CITY OF JOLIET
WILL COUNTY, ILLINOIS
SPECIFICATIONS, PLANS, CONTRACT PROPOSAL, CONTRACT AND CONTRACT BOND

FOR THE

COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN PHASE IV- EASTSIDE AND WESTSIDE COMBINED SEWER OVERFLOW REGULATORS

CONTRACT NO. 2699-0623

(PRE-QUALIFICATION REQUIRED THROUGH THE ILLINOIS DEPARTMENT OF TRANSPORTATION OR CAPITAL DEVELOPMENT BOARD OR CITY OF JOLIET)

APPROVED
DEPARTMENT OF PUBLIC UTILITIES

_____
DIRECTOR OF PUBLIC UTILITIES

DATE March 10, 2023

APPROVED

DEPARTMENT OF PUBLIC UTILITIES

_____
DEPUTY DIRECTOR- ENGINEERING

DATE: March 10, 2023

SUBMITTED BY

_____
CONTRACTORS NAME

_____
ADDRESS

_____
CITY AND STATE

_____
PHONE

DATE:_____, 2023

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Project Manual
For

Combined Sewer Overflow Long Term Control Plan Phase IV–Eastside and Westside Combined Sewer Overflow Regulators
Contract 2699-0623

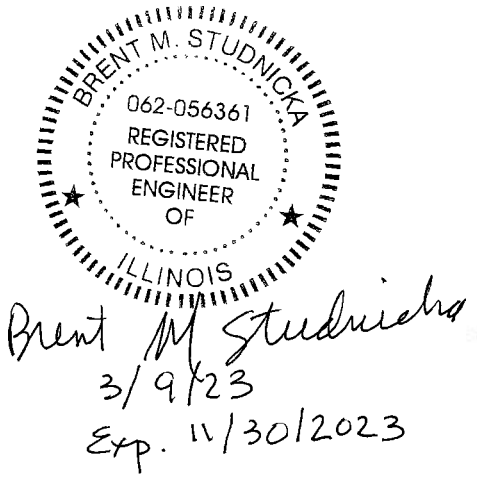
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Joliet, Illinois

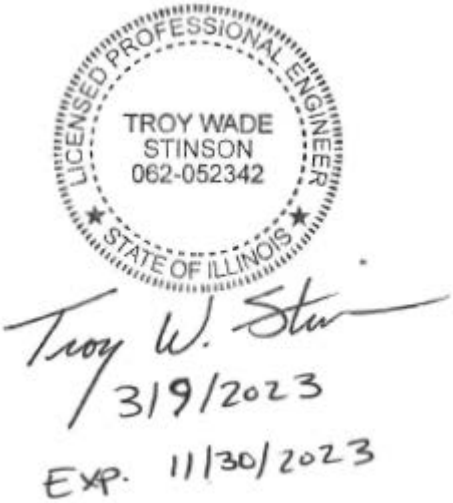
Issued for Bid
March 16, 2023

PREPARED BY
Strand Associates, Inc.®

PROJECT MANUAL

CITY OF JOLIET
JOLIET, ILLINOIS
COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN PHASE IV–
EASTSIDE AND WESTSIDE COMBINED SEWER OVERFLOW REGULATORS
CONTRACT 2699-0623







Prepared by:

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Issued for Bid
March 16, 2023

STRAND ASSOCIATES®
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SECTION 00 01 10

TABLE OF CONTENTS

CITY OF JOLIET
JOLIET, ILLINOIS
COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN PHASE IV–
EASTSIDE AND WESTSIDE COMBINED SEWER OVERFLOW REGULATORS
CONTRACT 2699-0623

	Pages Through
DIVISION 00–BIDDING AND CONTRACTING REQUIREMENTS	
INVITATION TO BID	01 11 13- 4
INSTRUCTIONS TO BIDDERS	00 21 13-18
BID	00 41 00-12
BID BOND	00 43 13- 2
PROPOSED SUBCONTRACTOR FORM	00 43 36R- 2
STATEMENT OF QUALIFICATION	00 45 13- 2
NON-COLLUSION AND CERTIFICATIONS STATEMENT	00 45 19- 2
BIDDER CERTIFICATION REGARDING THE USE OF AMERICAN IRON AND STEEL PRODUCTS	00 49 60- 2
DAVIS-BACON PREVAILING WAGE CERTIFICATION	00 49 60.1- 8
NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION	00 49 60.2-12
CERTIFICATION OF NONSEGREGATED FACILITIES	00 49 60.3- 2
NOTICE TO LABOR UNIONS OF OTHER ORGANIZATIONS OF WORKERS NONDISCRIMINATION IN EMPLOYMENT	00 49 60.4- 2
CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS	00 49 60.5- 2
CONSTRUCTION CONTRACTS OF LOAN RECIPIENT AND OTHER SECTIONS FROM “PROCEDURES FOR ISSUING LOANS FROM THE WATER POLLUTION CONTROL LOAN PROGRAM”	00 49 60.6- 4
BIDDER CERTIFICATION IN COMPLIANCE WITH ARTICLE 33E-11	00 49 60.7- 2
SPECIFICATIONS FOR DISADVANTAGED BUSINESS ENTERPRISE PARTICIPATION	00 49 60.8- 6
IEPA DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM FORMS	00 49 60.9- 4
RESPONSIBLE BIDDER ORDINANCE	00 49 60.10-22
MINORITY EMPLOYMENT REQUIREMENTS	00 49 60.11- 2
ETHICS ORDINANCE AND INSPECTOR GENERAL COMPLIANCE	00 49 60.12- 2
AFFIDAVITS–BUSINESS STATUS OF BIDDER	00 49 60.13- 8
AFFIDAVIT–REGARDING BIDDER AVAILABILITY	00 49 60.14- 2
BID CHECKLIST	2
AGREEMENT	00 52 00-12
NOTICE OF INTENT TO AWARD	00 53 00- 2
NOTICE OF AWARD	00 53 01- 2
CHANGE ORDER	00 53 02- 2
NOTICE TO PROCEED	00 55 00- 2
EROSION CONTROL CERTIFICATION	00 55 10- 2
PERFORMANCE BOND	00 61 13.13- 4
PAYMENT BOND	00 61 13.16- 4

	Pages Through
GENERAL CONDITIONS	00 72 00-70
SUPPLEMENTARY CONDITIONS	00 73 00-22
CERTIFICATE OF LIABILITY INSURANCE	2
SPECIFICATIONS	
DIVISION 01–GENERAL REQUIREMENTS	
SUMMARY OF WORK	01 11 00- 8
CONTRACT CONSIDERATIONS	01 29 00- 2
COORDINATION, FIELD ENGINEERING, AND MEETINGS	01 31 00- 4
SUBMITTALS	01 33 00-12
REGULATORY REQUIREMENTS	01 41 00- 4
REFERENCE STANDARDS AND DEFINITIONS	01 42 00- 6
QUALITY CONTROL	01 45 00- 2
TEMPORARY FACILITIES	01 50 00- 4
FIELD OFFICES AND SHEDS	01 52 13- 2
TEMPORARY CONTROLS	01 57 00- 4
MATERIALS AND EQUIPMENT	01 60 00- 4
MOBILIZATION AND DEMOBILIZATION	01 71 13- 2
CUTTING, PATCHING, AND ALTERATIONS	01 73 29- 6
CONTRACT CLOSEOUT	01 77 00- 4
STARTING OF SYSTEMS	01 91 00- 8
WAGE RATES	8
FEDERAL WAGE RATES	61
AMERICAN IRON AND STEEL SAMPLE CERTIFICATION	2
DE MINIMIS WAIVER FOR THE AMERICAN IRON AND STEEL SAMPLE CERTIFICATION	4
APPRENTICESHIP INITIATIVE INFORMATION FOR CONTRACTORS	6
DIVISION 02–WOOD, PLASTICS, AND COMPOSITES	
DEMOLITION	02 41 00- 4
DIVISION 03–CONCRETE	
CONCRETE FORMWORK	03 11 00- 4
CONCRETE REINFORCEMENT	03 20 00- 4
CAST-IN-PLACE CONCRETE	03 30 00-16
DIVISION 05–METALS	
METAL FABRICATIONS	05 50 00- 6
GRATING, FLOOR PLATES, AND FLOOR PLANK	05 53 00- 2
ANCHOR BOLTS AND POST-INSTALLED ANCHORS	05 56 00- 4
DIVISION 06–EXISTING CONDITIONS	
FIBERGLASS WEIRS	06 61 14- 2

	Pages Through
DIVISION 08–OPENINGS	
ACCESS DOORS AND FRAMES	08 31 13- 4
DIVISION 10–SPECIALTIES	
MISCELLANEOUS SPECIALTIES	10 00 20- 2
DIVISION 26–ELECTRICAL	
GENERAL ELECTRICAL REQUIREMENTS	26 05 00- 8
WIRE	26 05 19- 8
INSTRUMENT AND COMMUNICATION WIRE AND CABLE	26 05 23- 4
SECONDARY GROUNDING	26 05 26- 4
SUPPORTING DEVICES	26 05 29- 2
CONDUIT	26 05 33- 6
BOXES	26 05 35- 4
HANDHOLES	26 05 44- 2
ELECTRICAL IDENTIFICATION	26 05 53- 4
ARC FLASH LABELS	26 05 74- 4
CONTROLS AND INSTRUMENTATION	26 09 00-20
NOT TO EXCEED QUOTATION FOR SCADA EQUIPMENT AND SERVICES	2
CONTROLS AND INSTRUMENTATION DRAWINGS	26 09 10- 4
SCADA SYSTEM I/O LISTING	26 09 90- 4
ELECTRICAL SERVICE SYSTEM	26 21 00- 2
WIRING DEVICES	26 27 26- 2
DIVISION 31–EARTHWORK	
CLEARING AND GRUBBING	31 10 00- 2
EXCAVATION, FILL, BACKFILL, AND GRADING	31 23 00-18
ROCK REMOVAL	31 23 16.26- 4
GEOTECHNICAL INSTRUMENTATION	31 23 16.27-10
DEWATERING	31 23 19- 4
SLOPE PROTECTION AND EROSION CONTROL	31 25 00- 8
DIVISION 32–EXTERIOR IMPROVEMENTS	
AGGREGATE BASE COURSE	32 11 23- 2
HOT MIX ASPHALT PAVING	32 11 26- 4
CONCRETE CURB AND GUTTER, SIDEWALKS, AND DRIVEWAY APRONS	32 16 13- 4
PAVEMENT MARKINGS	32 17 23.13- 2
SEEDING AND SODDING	32 92 19- 6
DIVISION 33–UTILITIES	
BURIED PIPING AND APPURTENANCES	33 00 10-16
POST CONSTRUCTION SEWER TELEVISING	33 00 30.11- 6
SEWER BYPASS PUMPING	33 01 31- 4

	Pages Through
DIVISION 40–PROCESS INTERCONNECTIONS	
PIPING AND APPURTENANCES	40 05 00- 4
DIVISION 46–WATER AND WASTEWATER EQUIPMENT	
SCREENING EQUIPMENT	46 21 53- 4
DRAWINGS	
STANDARD DETAIL–STORM SEWER MANHOLES AND INLETS	01-975- 41A
STANDARD DETAIL–SANITARY SEWER APPURTENANCES	01-975- 43A
APPENDICES (NOT PART OF CONTRACT DOCUMENTS)	
SAMPLE DRAWINGS	24
GEOTECHNICAL REPORT, DATED SEPTEMBER 28, 2022	114
HYDRO INTERNATIONAL WET WEATHER SCREENING PROPOSAL PACKAGE	8
CONTRACT 5 DRAWINGS	4
CONTRACT 9 DRAWINGS	10

END OF SECTION

BIDDING AND CONTRACTING REQUIREMENTS

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SECTION 00 11 13

INVITATION TO BID

CITY OF JOLIET
JOLIET, ILLINOIS
COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN PHASE IV–
EASTSIDE AND WESTSIDE COMBINED SEWER OVERFLOW REGULATORS
CONTRACT 2699-0623

The City of Joliet (OWNER) is requesting Bids for the construction of the following Project:

Eastside and Westside Combined Sewer Overflow Regulators
Contract 2699-0623

Bids for the construction of the Project will be received at the Joliet City Hall located at 150 West Jefferson Street, Joliet, IL 60432, until Tuesday, May 2, 2023, at 10 A.M., local time. At that time the Bids received will be publicly opened and read aloud.

The Project includes the following Work: Rehabilitation or abandonment of combined sewer overflow regulators at the intersections of McDonough Street and Water Street (CSO-010, abandon), Wallace Street and Water Street (CSO-011), Washington Street and Des Plaines Street (CSO-012, abandon), Joliet Street and West Benton Street (CSO-017, abandon), Granite Street and Bluff Street (CSO-004), and East Duncan Street and River Street (CSO-009) and at Railroad Street south of the Interstate-80 Des Plaines river crossing (CSO-007).

The Work includes construction of concrete tanks, manholes, junction structures, underground piping, static screening equipment, associated electrical work, site grading, paving, roadway reconstruction, and restoration.

Bids are to be addressed to the City Clerk, City of Joliet, 150 West Jefferson Street, Joliet, IL 60432 and shall be marked “BID ENCLOSED–Combined Sewer Overflow Long Term Control Plan Phase IV–Eastside and Westside Combined Sewer Overflow Regulators–Contract 1-2023.”

If you do choose to hand deliver your Bid, it is to be hand delivered to the East or West side of City Hall, 150 W. Jefferson Street, Joliet, IL 60432 and marked clearly on the outside of the SEALED package with the CONTRACT NUMBER and NAME OF THE PROJECT, DATE AND TIME OF THE SUBMISSION DEADLINE, NAME, ADDRESS, AND PHONE NUMBER OF YOUR COMPANY, and RECEIPT OF ALL ADDENDA (if applicable). All other doors will be locked. Please make sure to mention you are delivering a sealed Bid so the receiver knows to time stamp the envelope upon receipt. If dropping off a Bid in person, it must be dropped off during business hours between 8 A.M. and 4:30 P.M. Receipt of your Bid in any location other than the City Clerk’s office at City Hall, 150 W. Jefferson Street, Joliet, IL 60432, does not constitute receipt. If you are using a delivery service, the fact that it was signed for by someone at City of Joliet does not constitute receipt. To ensure that your package was received prior to the opening, you can email cityclerk@joliet.gov or call (815) 724-3780 to verify receipt of document.

Those desiring to submit a Bid may examine the Bid Documents and detailed specifications in the City of Joliet Purchasing Division, 150 W Jefferson Street, Joliet, IL 60432 between the hours of 8 A.M. and 4:30 P.M., Monday through Friday. Electronic copies may be downloaded free of charge at https://www.joliet.gov/government/departments/finance/purchasing/bids-proposals.

All Bidders will be required to submit Bid Security in the form of a Certified Check, Cashier's Check, or a Bid Bond in the amount of 10% of the Base Bid, payable to the City of Joliet. All Bidding Document holders should sign up for RSS feeds at https://www.joliet.gov/government/departments/finance/purchasing/bids-proposals/construction-public-utilities and https://www.joliet.gov/government/departments/finance/purchasing/bids-proposals/labor-and-services and provide your first and last name and email address to automatically receive addenda. Addenda will also be posted on the city of Joliet's website at https://www.joliet.gov/government/departments/finance/purchasing/bids-proposals. To ensure timely delivery of emails related to this feed, please add iljoliet@public.govedelivery.com to your safe sender list. The potential vendor/contractor remains responsible for obtaining all addenda to the original specification so they should check the specific Bid page before submitting a Bid to make sure they have received all addenda to a specific contract. Bidder will execute and file the Agreement and 100% Performance and Payment Bonds within 15 days after the Notice of Award.

Any Contract or Contracts awarded under this Invitation for Bids are expected to be funded in part by a loan from the Illinois Environmental Protection Agency (IEPA). Neither the State of Illinois nor any of its departments, agencies, or employees is or will be a party to this Invitation for Bids or any resulting Contract. The procurement will be subject to regulations contained in the Procedures for Issuing Loans from the Water Pollution Control Loan program (35 IAC Part 365), the Davis Bacon Act (40 USC 276a through 276a 5) as defined by the United States Department of Labor, the Illinois "Prevailing Wage Act" (820 ILCS 130/1 12) as ascertained by the Illinois Department of Labor for Will County, Illinois, and the Employment of Illinois Workers on Public Works Act (30 ILCS 570) and the "Use of American Iron and Steel" requirements as contained in Section 436 of H.R. 3547, The Consolidated Appropriations Act, 2014. This procurement is also subject to the loan recipient's policy regarding the increased use of disadvantaged business enterprises. The loan recipient's policy requires all Bidders to undertake specified affirmative efforts at least 16 days prior to Bid opening. This policy is contained in the specifications. Bidders are also required to comply with the President's Executive Order No. 11246, as amended. The requirements for Bidders and contractors under this order are explained in 41 CFR 60 4. The City of Joliet Local Bidder Ordinance does not apply to this contract.

A pre-bid conference will be held at 10 A.M., local time, on April 11, 2023, at the Eastside Wastewater Treatment Plant, 815 Alder Street, Joliet, Illinois, 60436. Bidders are required to attend and participate in the conference.

Bids from Bidders who do not attend the pre-bid conference will be considered unresponsive and will not be opened.

The City of Joliet, Illinois reserves the right to reject any or all Bids, to waive any technicality, and to accept any Bid which it deems advantageous. All Bids shall remain subject to acceptance for 120 days after the time set for receiving Bids.

Contract award shall be made based on the lowest responsive and responsible Bidder.

Prequalification pursuant to Ordinance No. 7345 is necessary. Bidders are required to be pre-qualified through the Illinois Department of Transportation, the Capital Development Board or the City of Joliet. It is the responsibility of the Bidder to ensure that their pre-qualification information is provided to the City of Joliet Purchasing Division prior to the Bid opening. If Bidders are not prequalified through IDOT or Capital Development Board, then they must be prequalified with the City of Joliet. Financial prequalification forms can be obtained from the City of Joliet website at https://www.joliet.gov/government/departments/finance/purchasing/bids-proposals/labor-and-services. This prequalification MUST be renewed yearly. To check on your current prequalification status, you can contact purchasing@joliet.gov. The current price for City of Joliet prequalification is $175, which

offsets the costs for independent auditor review of the documents. Those documents are to be submitted to the Purchasing Division, City of Joliet, 150 W. Jefferson Street, Joliet, IL 60432 at least 6 days prior to the Bid opening.

Bids from Bidders who have not submitted required prequalification documents as listed above shall not be opened.

The Strand Associates, Inc.® project manager is Troy W. Stinson, P.E., who can be contacted at Strand Associates, Inc.®, 910 West Wingra Drive, Madison, WI 53715, (608) 251-4843, troy.stinson@strand.com.

ALL PROPOSALS ARE SUBJECT TO THE REQUIREMENTS OF THE CITY OF JOLIET PROCUREMENT CODE (Section 2-430–2-453 of the Code of Ordinances).

For all further requirements regarding Bid submittal, qualifications, procedures, and Contract Award, refer to the Instructions to Bidders that are included in the Bidding Documents.

Electronic download is free
Published in the Herald News
March 16, 2023

James Capparelli
City Manager

Melissa L. Lopez
Purchasing/Contracts Administrator

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SECTION 00 21 13

INSTRUCTIONS TO BIDDERS

A. These Instructions to Bidders establish requirements for Bidding and Award of Contract.

B. These articles are not necessarily numbered consecutively.

C. Table of Contents

ARTICLE 1–DEFINED TERMS 2
ARTICLE 2–BIDDING DOCUMENTS 2
ARTICLE 3–QUALIFICATIONS OF BIDDERS 3
ARTICLE 4–PRE-BID CONFERENCE 3
ARTICLE 5–SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE 4
ARTICLE 6–BIDDER'S REPRESENTATIONS AND CERTIFICATIONS 6
ARTICLE 7–INTERPRETATIONS AND ADDENDA 6
ARTICLE 8–BID SECURITY 7
ARTICLE 9–CONTRACT TIMES 7
ARTICLE 10–SUBSTITUTE OR "OR EQUAL" ITEMS 7
ARTICLE 11–SUBCONTRACTORS, SUPPLIERS, AND OTHERS 8
ARTICLE 12–PREPARATION OF BID 8
ARTICLE 13–BASIS OF BID 9
ARTICLE 14–SUBMITTAL OF BID 10
ARTICLE 15–MODIFICATION AND WITHDRAWAL OF BIDS 10
ARTICLE 16–OPENING OF BIDS 11
ARTICLE 17–BIDS TO REMAIN SUBJECT TO ACCEPTANCE 11
ARTICLE 18–EVALUATION OF BIDS AND AWARD OF CONTRACT 11
ARTICLE 19–BONDS AND INSURANCE 12
ARTICLE 20–SIGNING OF AGREEMENT 12
ARTICLE 21–RETAINAGE 12
ARTICLE 22–WAGE RATE DETERMINATION 12
ARTICLE 23–TAXES 13
ARTICLE 24–LAWS, ORDINANCES, AND REGULATIONS 13
ARTICLE 25–CERTIFICATION REGARDING COMPLIANCE WITH CRIMINAL CODE 16
ARTICLE 26–CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS 16
ARTICLE 27–NON-COLLUSION AND CERTIFICATION STATEMENT 16
ARTICLE 28–CERTIFICATION OF NON-SEGREGATED FACILITIES 16
ARTICLE 29–UTILIZATION OF DISADVANTAGED BUSINESS ENTERPRISE 16
ARTICLE 30–AFFIRMATIVE ACTION TO ENSURE EQUAL OPPORTUNITY EMPLOYMENT 16
ARTICLE 31–DAVIS-BACON WAGE ACT CERTIFICATION 16
ARTICLE 32–BIDDER CERTIFICATION REGARDING USE OF AMERICAN IRON AND STEEL PRODUCTS 17
ARTICLE 33–MINORITY EMPLOYMENT REQUIREMENTS 17
ARTICLE 34–PROCEDURES FOR ISSUING LOANS FROM THE WATER POLLUTION CONTROL LOAN PROGRAM 17

ARTICLE 35–EMPLOYMENT OF ILLINOIS WORKERS ON PUBLIC WORKS ACT, 30 ILCS 570 17
ARTICLE 36–APPRENTICESHIP INITIATIVE 17

ARTICLE 1–DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and the Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:

A. Issuing Office–The office from which the Bidding Documents are to be issued and which registers planholders. The City of Joliet Purchasing Division is the Issuing Office.

ARTICLE 2–BIDDING DOCUMENTS

2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents) as stated in Section 00 11 13–Advertisement to Bid. See the Agreement for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.

2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.

2.03 Electronic Documents

A. When the Bidding Requirements indicate that electronic (digital) copies of the Bidding Documents are available, such documents will be made available to the Bidders as Electronic Documents in the manner specified.

1. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf) that is readable by Adobe Acrobat Reader Version 6.0 or later. It is the intent of ENGINEER and OWNER that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because OWNER and ENGINEER cannot totally control the transmission and receipt of Electronic Documents nor CONTRACTOR's means of reproduction of such documents, OWNER and ENGINEER cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.

B. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.03.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents

versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.

ARTICLE 3–QUALIFICATIONS OF BIDDERS

3.01 Prequalification pursuant to Ordinance No. 7345 is necessary. All bidders shall become prequalified in one of the following ways:

A. Bidders are required to be pre-qualified through the Illinois Department of Transportation, the Capital Development Board or the City of Joliet. It is the responsibility of the Bidder to ensure that their pre-qualification information is provided to the City of Joliet Purchasing Division prior to the Bid opening. If Bidders are not prequalified through IDOT or Capital Development Board, then they must be prequalified with the City of Joliet. Financial prequalification forms can be obtained from the City of Joliet website at https://www.joliet.gov/government/departments/finance/purchasing/bids-proposals/labor-and-services. This prequalification MUST be renewed yearly. To check on your current prequalification status, you can contact purchasing@joliet.gov. The current price for City of Joliet prequalification is $175, which offsets the costs for independent auditor review of the documents. Those documents are to be submitted to the Purchasing Division, City of Joliet, 150 W. Jefferson Street, Joliet, IL 60432 at least 6 days prior to the Bid opening.

B Bids from bidders who have not submitted required prequalification documents as required above shall not be opened.

3.02 To demonstrate Bidder’s qualifications to perform the Work, within five days of OWNER’s request, Bidder shall submit written evidence such as financial data, previous experience, present commitments and other such data as may be called for below. All Bidders and subcontractors must have successfully completed at least two projects of equal size or greater in the past 5 years.

3.03 Bidder must be prepared to submit evidence of Bidder’s qualifications to do business in the state where the Project is located prior to award of the Contract.

3.04 A Bidder’s failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.

3.05 Bidders shall submit the documentation listed in Paragraph 7.01 of the Bid Form (Section 00 41 00).

3.06 No requirement in this Article 3 to submit information will prejudice the right of OWNER to seek additional pertinent information regarding Bidder’s qualifications.

3.07 Bidder is advised to carefully review those portions of the Bidding Documents requiring Bidder’s representations and certifications.

3.08 Bidder shall be required to sign and submit “Debarment Certification” form bound at the end of the Bid pages.

ARTICLE 4–PRE-BID CONFERENCE

4.01 A mandatory pre-bid conference will be held at the time, date, and place indicated in the Advertisement of Invitation to Bid.

Representatives of OWNER and ENGINEER will be present to discuss the Project. Bidders are required to attend and participate in the conference. ENGINEER will transmit to all prospective Bidders of record such Addenda as ENGINEER considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective. Bids submitted by Bidders who do not attend the prebid conference will be considered unresponsive and will not be opened.

4.02 Information presented at the pre-bid conference does not alter the Contract Documents. OWNER will issue Addenda to make any changes to the Contract Documents that result from discussions at the pre-bid conference. Information presented, and statements made at the pre-bid conference will not be binding or legally effective unless incorporated in an Addendum.

ARTICLE 5–SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

5.01 Site and Other Areas

A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by OWNER for the use of CONTRACTOR. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by CONTRACTOR.

5.02 Existing Site Conditions

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Supplementary Conditions identify the following regarding existing conditions at or adjacent to the Site:

a. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site.

b. Those drawings known to OWNER of existing physical conditions relating to existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities).

2. OWNER will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

5.03 Other Site-Related Documents

A. In addition to the documents regarding existing Site conditions referred to in Paragraph 5.02.A, the following other documents relating to conditions at or adjacent to the Site are known to OWNER and made available to Bidders for reference:

1. Contract No. 5, State of Illinois, Department of Purchases and Construction, Division of Waterways, The Illinois Waterway Brandon Road Lock and Dam, dated June 23, 1925.

2. Contract No. 9, Joliet, Illinois, Intercepting Sewer, Consoer, Townsend, & Associates, dated April 1954.

These documents are included in an appendix to these specifications.

B. OWNER has not verified the contents of these other Site-related documents, and Bidder may not rely on the accuracy of any data or information in such documents. Bidder is responsible for any interpretation or conclusion Bidder draws from the other Site-related documents.

C. The other Site-related documents are not part of the Contract Documents.

D. Bidders are encouraged to review the other Site-related documents, but Bidders will not be held accountable for any data or information in such documents. The requirement to review and take responsibility for documentary Site information is limited to information in (1) the Contract Documents and (2) the Technical Data.

5.04 Site Visit and Testing by Bidders

A. Bidder is required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. During the visit the Bidder must not disturb any ongoing operations at the Site.

B. Site visits are scheduled following the pre-bid conference. Maps to the Site will be available at the pre-bid conference.

C. Bidders visiting the Site are required to arrange their own transportation to the Site.

D. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.

E. On request, and to the extent OWNER has control over the Site, and schedule permitting, OWNER will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. OWNER will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on OWNER's authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.

F. Bidder must comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by OWNER or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.

G. Bidder must fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

5.05 OWNER’s Safety Program

A. Site visits and work at the Site may be governed by an OWNER safety program. If an OWNER safety program exists, it will be noted in the Supplementary Conditions.

5.06 Other Work at the Site

A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which OWNER is aware (if any) that is to be performed at the Site by OWNER or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If OWNER is party to a written contract for such other work, then on request, OWNER will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 6–BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 Express Representations and Certifications in Bid Form, Agreement

A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder's examination of Project documentation, Site visit, and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications, and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.

B. If Bidder is awarded the Contract, Bidder (as CONTRACTOR) will make similar express representations and certifications when it executes the Agreement.

ARTICLE 7–INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to ENGINEER in writing. Interpretations or clarifications considered necessary by ENGINEER in response to such questions will be issued by Addenda. All Bidding Document holders that sign up for th RSS feeds as indicated in the invitation to Bid will automatically receive addenda via e-mail. Addenda will also be e-mailed to those who attend the prebid meeting and provide an e-mail address.

7.02 All requests for interpretation must be received at least five days prior to the day set for receiving Bids. Addenda will be issued not later than three days prior to the day set for receiving Bids. Failure of any Bidder to receive any such Addendum or interpretation shall not relieve such Bidder from any obligations under the Bid as submitted. All Addenda so issued shall become part of the Contract Documents.

7.03 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

7.04 Receipt of all addenda must be acknowledged in space provided in the Bid.

7.05 All Addenda shall be acknowledged, not only on the Bid Form, but on the outside of the sealed opaque envelope. Bids received without acknowledgement of Addenda, if any, on the outside of the sealed opaque envelope shall be returned to Bidder unopened.

7.06 Each addendum shall be acknowledged separately on the envelope; (i.e., Addendum No. 1 of [DATE], Addendum No. 2 of [DATE]).

7.07 Addenda will be provided in an electronic format (.pdf format) via e-mail. All Bidding Document holders should sign up for RSS feeds at https://www.joliet.gov/government/departments/finance/purchasing/bids-proposals/construction-public-

utilities and provide your first and last name and email address to automatically receive addenda. Addenda will also be posted on the City of Joliet's website athttps://www.joliet.gov/government/departments/finance/purchasing/bids-proposals. To ensure timely delivery of emails related to this feed, please add iljoliet@public.govedelivery.com to your safe senders list. All Bidding Document holders must provide a name, address, and e-mail address to receive electronic addenda and must reply to the e-mail to indicate receipt of the addenda.

ARTICLE 8–BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to OWNER in an amount of 10% of the Bidder's maximum Bid price and in the form of a certified check, bank money order, or a Bid Bond (on form attached) issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions.

8.02 The Bid security of the apparent Successful Bidder will be retained until OWNER awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 15 days after the Notice of Award, OWNER may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited, in whole in the case of a Penal Sum Bid Bond, and to the extent of OWNER's damages in the case of a damages-form bond. Such forfeiture will be OWNER's exclusive remedy if Bidder defaults.

8.03 The Bid security of other Bidders that OWNER believes to have a reasonable chance of receiving the award may be retained by OWNER until the earlier of 7 days after the Effective Date of the Contract or 121 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

8.04 Bid security of other Bidders that OWNER believes do not have a reasonable chance of receiving the award will be released within 7 days after the Bid opening.

ARTICLE 9–CONTRACT TIMES

9.01 The number of days within which, or the dates by which, the Work is to be (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Agreement.

9.02 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 10–SUBSTITUTE OR "OR EQUAL" ITEMS

10.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without evaluation of Equipment Alternatives listed in the Lump Sum Base Bid, if any, and without evaluation of possible substitute or "or equal" items. Whenever it is specified or described in the Bidding Documents that an Equipment Alternative listed in the Lump Sum Base Bid or that a substitute or "or equal" item of material or equipment may be furnished or used by CONTRACTOR if acceptable to ENGINEER, application for such acceptance will not be evaluated by ENGINEER until after the Effective Date of the Contract.

10.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that CONTRACTOR will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.

ARTICLE 11–SUBCONTRACTORS, SUPPLIERS, AND OTHERS

11.01 A Bidder must be prepared to retain specific Subcontractors and Suppliers for the performance of the Work if required to do so by the Bidding Documents or in the Specifications. If a prospective Bidder objects to retaining any such Subcontractor or Supplier and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.

11.02 Subsequent to the submittal of the Bid, OWNER may not require the Successful Bidder or CONTRACTOR to retain any Subcontractor, Supplier, or other individual or entity against which CONTRACTOR has reasonable objection.

11.03 The apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to OWNER a list of the Subcontractors or Suppliers proposed for the Work. If requested by OWNER, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. If OWNER or ENGINEER, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, OWNER may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and OWNER may consider such price adjustment in evaluating Bids and making the Contract award.

11.04 If apparent Successful Bidder declines to make any such substitution, OWNER may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which OWNER or ENGINEER makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to OWNER and ENGINEER subject to subsequent revocation of such acceptance as provided in Paragraph 7.07 of the General Conditions.

ARTICLE 12–PREPARATION OF BID

12.01 The Bid Form is included with the Bidding Documents.

A. All blanks on the Bid Form shall be completed in ink and the Bid Forms shall be signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.

B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."

12.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown. The corporate seal shall be affixed and attested by the secretary or assistant secretary

12.03 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address and state of incorporation shall be shown.

12.04 A Bid by a limited liability company shall be executed in the name of the firm by a member, if the LLC is member-managed, or by a manager, if manager-managed, and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.

12.05 A Bid by an individual shall show the Bidder's name and official address.

12.06 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.

12.07 All names shall be printed in ink below the signatures.

12.08 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.

12.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

12.10 The Bid must contain evidence of Bidder's authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.

12.11 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder's licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

12.12 All Bids shall be signed in the presence of and be notarized by a Notary Public or other Officer authorized to administer oaths.

12.13 The Bid shall contain all documents listed in Article 7 of Section 00 41 00–Bid.

ARTICLE 13–BASIS OF BID

13.01 Lump Sum Base Bid

A. Bidders shall submit a Bid on a Lump Sum basis as set forth in the Bid Form.

13.02 Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

13.03 For Cash Allowances the Contract Price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of Cash Allowances, if any, named in the Contract Documents as provided for in Paragraph 13.02.B of the General Conditions. The final Contract Price will be adjusted to reflect actual costs on account of Cash Allowances.

13.04 The following Cash Allowances shall be included in the Bid for Contract(s).

Electrical Service	Section 26 21 00–Electrical Service System
Excavation and Disposal of Unanticipated Solid Waste	Section 31 23 00–Excavation, Fill, Backfill, and Grading
Field Density Testing	Section 31 23 00–Excavation, Fill, Backfill, and Grading
Unsuitable Foundation Material for Structures and Roads	Section 31 23 00–Excavation, Fill, Backfill, and Grading
Unsuitable Foundation material for Utility Trenches	Section 31 23 00–Excavation, Fill, Backfill, and Grading
Rock Excavation for Structures and Roads	Section 31 23 16.26–Rock Removal
Rock Excavation for Utility Trenches	Section 31 23 16.26–Rock Removal

ARTICLE 14–SUBMITTAL OF BID

14.01 Bids will be received for all divisions of the Specifications and all other provisions of the Bidding Documents.

14.02 Bidder is furnished one electronic copy of the Bidding Documents, Bid Forms, and the Bid Bond form. The Forms are to be completed and submitted with the Bid security along with any data required by the Bidding Documents to be attached to and made a condition of the Bid.

14.03 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement or Invitation to Bid and shall be enclosed in an opaque sealed envelope, plainly marked with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If the Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED–Combined Sewer Overflow Long Term Control Plan Phase IV–Eastside and Westside Combined Sewer Overflow Regulators–Contract 2699-0623." A mailed Bid shall be addressed to place indicated in the Advertisement or Invitation to Bid. No relief will be provided for a mailed Bid not being received by the prescribed time. No Bid will be considered which is received after the time set for receiving Bids.

14.04 Bids received after the date and time prescribed for the opening of Bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 15–MODIFICATION AND WITHDRAWAL OF BIDS

15.01 An unopened Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to that date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.

15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 and submit a new Bid prior to the date and time for the opening of Bids.

15.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, the Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further Bidding on the Work.

ARTICLE 16–OPENING OF BIDS

16.01 Bids will be opened at the time and place indicated in the Advertisement or Invitation to Bid and, unless obviously nonresponsive, read aloud publicly. An abstract of the amounts of the Base Bids and major alternatives and components, if any, will be made available to Bidders after the opening of Bids. An abstract of the amounts of the Bids and major alternatives or components (if any) will be made available to Bidders after the opening of the Bids.

ARTICLE 17–BIDS TO REMAIN SUBJECT TO ACCEPTANCE

17.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 18–EVALUATION OF BIDS AND AWARD OF CONTRACT

18.01 OWNER reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. OWNER also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.

18.02 OWNER will reject the Bid of any Bidder that OWNER finds, after reasonable inquiry and evaluation, to not be responsible.

18.03 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, whether in the Bid itself or in a separate communication to OWNER or ENGINEER, then OWNER will reject the Bid as nonresponsive.

18.04 In evaluating Bids, OWNER will consider whether or not the Bids comply with the prescribed requirements, and such alternatives, unit prices, and other data as may be requested in the Bid Form or prior to the Notice of Award.

18.05 In evaluating Bids, OWNER will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions. OWNER also may consider the operating costs, maintenance requirements, performance data, and guarantees of major items of materials and equipment proposed for incorporation in the work when such data is required to be submitted prior to the Notice of Award.

18.06.1 OWNER may conduct such investigations as OWNER deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals or entities to perform the Work in accordance with the Contract Documents to OWNER's satisfaction within the prescribed time. Bidder shall furnish to OWNER all such information and data for this purpose as OWNER may request. OWNER reserves the right to reject any Bid if the evidence submitted by, or investigation

of, such Bidder fails to satisfy OWNER that such Bidder is properly qualified to carry out the obligations of the Contract Documents and to complete the work contemplated therein.

18.06.2 OWNER shall be satisfied that Bidder involved (1) maintains a permanent place of business, (2) has adequate plant and equipment to do the work properly and expeditiously, (3) has a suitable financial status to meet obligations incident to the work, (4) has appropriate technical experience, and (5) can submit a satisfactory performance record.

18.07 If a Contract is to be awarded, it will be awarded to the responsible Bidder with the lowest responsive Bid whose evaluation by OWNER indicates to OWNER that the award will be in the best interests of the Project.

18.08 If a Contract is to be awarded, OWNER will give the successful Bidder a Notice of Award within 95 days after the time set for opening Bids.

ARTICLE 19–BONDS AND INSURANCE

19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth OWNER's requirements as to performance and payment bonds, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to OWNER, it must be accompanied by required bonds and insurance documentation.

19.02 Article 8, Bid Security, of these Instructions, addresses any requirements for providing Bid Bonds as part of the Bidding process.

ARTICLE 20–SIGNING OF AGREEMENT

20.01 When OWNER gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unexecuted counterparts of the Agreement along with all other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement and attached documents to ENGINEER with the required Bonds and insurances. Within 10 days after receipt of properly executed documents and Bonds and insurances which meet all requirements of the Contract Documents, ENGINEER will deliver one fully signed counterpart to Successful Bidder.

ARTICLE 21–RETAINAGE

21.01 Provisions concerning retainage are set forth in the Agreement.

ARTICLE 22–WAGE RATE DETERMINATION

22.01 All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout including the Employment of Illinois Workers on Public Works Act (30 ILCS 570), the Illinois "Prevailing Wage Act" (820 ILCS 130/1-12) as ascertained by the Illinois Department of Labor for Will County, Illinois and the Davis-Bacon Wage Act (40 USC 276a through 276a-5) as defined by the United States Department of Labor. Wage rates are inserted as part of the bidding documents and are available on the U.S. Government Printing Office web site at http://www.sam.gov/content/wage-determinations and will be on file at the office of the OWNER. Bidders shall inspect the wage rate determination and shall incorporate its requirements into their Bid. See General Requirements for additional requirements.

Payment shall be made at the Illinois prevailing wage for Will County or at Federal (Davis Bacon) wage rates, whichever is higher.

22.02 See Section 01 41 00–Regulatory Requirements of the General Requirements for additional information.

It will be the responsibility of CONTRACTOR to supply the City of Joliet with certified payrolls for all work related to this contract.

ARTICLE 23–TAXES

23.01 The Bid shall include all taxes in effect at the time the Bid is submitted. No charge will be allowed for taxes from which OWNER is exempt. Bidders who are uncertain as to what items are subject to tax, or who require further explanation or clarification, are requested to contact the Illinois Department of Revenue. Refer to the Supplementary Conditions SC-7.10 for additional information.

ARTICLE 24–LAWS, ORDINANCES, AND REGULATIONS

24.01 Bidder must familiarize itself with all laws, ordinances, and regulations by federal, state, city, or other governmental agency, which by reason of being neglected or violated may affect the Work contemplated and must secure and pay the fee required for any permits which may be necessary unless such fees are otherwise indicated to be paid in the Bidding Documents.

24.02 The City of Joliet has adopted a Responsible Bidder Ordinance (2-440). In addition to any other requirement, unless otherwise expressly stated in a Bid solicitation or an award of contract, or applicable state or federal law or regulation states otherwise, all Bidders must comply with the following requirements in order to submit a Bid or be awarded a contract.

1. The Bidder must be a duly organized legal entity in good standing with the Illinois Secretary of State and in compliance with all laws prerequisite to doing business in the state and submit a copy of the Illinois Secretary of State Department of Business Services online records evidencing that the Bidder has a current corporate annual report on file, if required. If the Bidder is an individual, sole proprietorship, or partnership, this subsection shall not apply.

2. The Bidder must have a valid Federal Tax Identification Number or Social Security Number (for individuals), documents evidencing current registration with the Illinois Department of Revenue and the Illinois Department of Employment Security (if Bidder has employees).

3. The Bidder must be an equal opportunity employer and comply with Section 2000(e) of Chapter 21, Title 42 of the United States Code and Executive Order11246.

4. The Bidder shall provide certificates of insurance indicating the following coverages, if called for in the Bid solicitation: general liability, workers compensation, completed operations, automobile, hazardous occupation, and product liability.

5. A statement that all employees are (i) covered under a current workers' compensation insurance policy, and (ii) properly classified under such policy. If the Bidder is insured with a carrier, the evidence of workers' compensation insurance shall be a copy of the "Information Page" which includes the name and address of the insured, as well as class codes upon which the compensation premium is based and the total estimated remuneration per class code.

6. A statement of compliance with all provisions of the Illinois Prevailing Wage Act (820 ILCS 130), as amended, and all the rules and regulations therein, for the past 5 years. Such statement shall also provide that CONTRACTOR has reviewed the Prevailing Wage Act or the federal Davis-Bacon and Related Acts, has reviewed and agrees to pay the applicable prevailing wage rates attached to the Bid specifications, and will strictly comply with the Prevailing Wage Act or federal Davis-Bacon and Related Acts and related requirements, including wages, medical and hospitalization insurance and retirement for those trades covered in the Act. A contractor who has been found, by the Illinois Department of Labor, to be in violation of the Prevailing Wage Act twice within a 3-year period shall be deemed to not be Responsible Bidder for 2 years from the date of the latest finding.

7. Certification of compliance with the Substance Abuse Prevention on Public Works Projects Act (820 ILCS 265/1, et seq.).

8. A certification that individuals who perform work on the public works project on behalf of CONTRACTOR are properly classified as either (i) an employee, or (ii) an independent contractor under all applicable state and federal laws and local ordinances.

9. Documents evidencing any professional or trade licenses required by law or local ordinance for any trade or specialty in which CONTRACTOR is seeking a contract award. Additionally, CONTRACTOR must disclose any suspension or revocation of such license held by the company, or of any director, officer, or manager of the company.

10. For construction contracts (construction of new facilities, renovation of existing facilities, or road construction projects), or demolition contracts, over $25,000 (twenty-five thousand dollars), evidence of participation in apprenticeship and training programs applicable to the work to be performed on the project, which are approved by and registered with the United States Department of Labor’s Office of Apprenticeship, or its successor organization. The required evidence includes but is not limited to a copy of all applicable apprenticeship standards or Apprenticeship Agreement(s) for any apprentice(s) who will perform work on the public works project.

11. Disclosure of the name and address of each subcontractor from whom CONTRACTOR has accepted a Bid and/or intends to hire on any part of the project. Further, each such subcontractor shall be required to adhere to the requirements set forth herein as though it were Bidding directly to the city. Each contractor shall submit all subcontractor information and supporting documentation to the city prior to the subcontractor commencing work on the project.

12. Unless otherwise agreed to in a collective bargaining agreement, the Bidder shall certify that it provides, or contributes to, a health care plan for those employees working on the project and shall provide a copy of the health care plan upon request. The contributions toward a health care plan must be part of the employee’s regular compensation, and not merely part of the employee’s compensation during the period of time for which the employee is performing work on the project.

13. Unless otherwise agreed to in a collective bargaining agreement, the Bidder shall certify that it contributes to an employee pension or retirement program, including but not limited to a 401K, a defined benefit plan or a similar plan for its field employees working on the project and shall provide a copy of the plan upon request. The contributions toward a pension or retirement program must be a part of the employee’s regular compensation and

not merely part of the employee's compensation during the period of time for which the employee is performing work on the project.

14. Certification that the Bidder has not been subject to any determinations by a court or governmental agency for violations of federal, state, or local laws, including but not limited to serious, willful, or repeated violations of the Occupational Safety and Health Act (OSHA), violations of contracting or antitrust laws, tax or licensing laws, environmental laws, or the federal Davis-Bacon and Related Acts.

15. Whenever practical, the Bidder should prequalify as a local Bidder.

16. Any material changes to CONTRACTOR's status, at any time during the performance of the project, must be reported in writing to the city within 14 days of its occurrence. Failure to comply with this requirement is grounds for CONTRACTOR to be deemed a non-responsible Bidder.

17. The submission requirements of this Ordinance also apply to subcontractors, except that CONTRACTOR shall submit all subcontractor submissions to the city prior to the subcontractor commencing work on the project. Failure of a subcontractor to submit the required information shall not disqualify the successful Bidder from performing work on the project and shall not constitute a contractual default and/or breach by the successful Bidder. However, the city may withhold all payments otherwise due for work performed by a subcontractor until the subcontractor submits the required information and the city approves such information. Further, where the city deems necessary, the city may also require that the successful Bidder remove the subcontractor from the project and replace it with a responsive and responsible subcontractor.

24.03 The City of Joliet has an Ethics Ordinance (Section 2-333 et seq. of the Code of Ordinances of the City of Joliet) which prohibits any appointed or elected official of the City of Joliet, or any employee of the City of Joliet from receiving or soliciting anything of value to influence that City official or employee in carrying out his or her official duties. The City of Joliet appreciates your anticipated cooperation in refraining from offering any official or employee any thing, item, service, or favor of value to influence that person's decision on any City business. With your cooperation, the City of Joliet will achieve its goal of maintaining a fair and competitive contract procedure that promotes the best interests of the citizens of the City of Joliet. You should report immediately any violation of the Ethics Ordinance to the Inspector General, including any solicitation of a thing of value by a City official or employee. A Bidder or contractor's participation or encouragement in the violation of the Ethics Ordinance may result in the rejection of a bid, termination of contract, or declaration of ineligibility to bid on future contracts.

It is the duty of any bidder, proposer, consultant, subcontractor, applicant for pre-qualification for a City contract, applicant for local Bidder certification, and all officers, directors, agents, partners and employees of any bidder, proposer, consultant, subcontractor, or such applicant to cooperate with the Inspector General in any investigation or hearing undertaken pursuant to City of Joliet Ordinance 2-180, et. seq.. Any of the aforementioned parties understands and will abide by all provisions of the aforementioned Ordinance. All contractors must inform subcontractors of the provision and require understanding and compliance with it.

A copy of the City of Joliet Ethics Ordinance and all other City Ordinances are available in the City Clerk's office or on the City website for your review.

24.04 Due to IEPA Funding, the City's local Bidder ordinance does not apply to this contract.

ARTICLE 25–CERTIFICATION REGARDING COMPLIANCE WITH CRIMINAL CODE

25.01 Bidder shall complete the form inserted as part of the Bidding Documents entitled "Bidder Certification in Compliance with Article 33E to the Criminal Code of 2012" and submit it with the Bid.

ARTICLE 26–CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

26.01 Bidders shall read the instructions and complete the form inserted as part of the Bidding Documents entitled "Certification Regarding Debarment, Suspension, and Other Responsibility Matters." The completed form shall be submitted with the Bid.

ARTICLE 27–NON-COLLUSION AND CERTIFICATION STATEMENT

27.01 Bidders shall complete the form inserted as part of the Bidding Documents entitled "Non-Collusion and Certification Statement" and submit it with the Bid.

ARTICLE 28–CERTIFICATION OF NON-SEGREGATED FACILITIES

28.01 Bidders shall complete the form inserted as part of the Bidding Documents entitled "U.S. Environmental Protection Agency Certification of Nonsegregated Facilities" and submit it with the Bid.

ARTICLE 29–UTILIZATION OF DISADVANTAGED BUSINESS ENTERPRISE

29.01 Bidders should review the Specifications inserted with the Bidding Documents entitled "City of Joliet Specifications for Disadvantaged Business Enterprise Participation" and complete the required forms. The required forms, certifications and other information shall be completed and submitted with the Bid as specified.

ARTICLE 30–AFFIRMATIVE ACTION TO ENSURE EQUAL OPPORTUNITY EMPLOYMENT

30.01 Bidders shall comply with the President's Executive Order No. 11246, as amended. The requirements for Bidders and Contractors under this order are explained in 41 CFR 60-4 included in the Bidding Documents. Bidder shall not discriminate on the basis of race, color, national origin or sex in the performance of this Contract. CONTRACTOR shall carry out applicable requirements of 40 CFR Part 33 in the award and administration of Contracts awarded under EPA financial assistance agreements. Failure by CONTRACTOR to carry out these requirements is a material breach of this Contract which may result in the termination of this Contract or other legally available remedies.

ARTICLE 31–DAVIS-BACON WAGE ACT CERTIFICATION

31.01 Bidders should review and comply with Davis-Bacon Wage Act Certification included with the bid. By submitting bid, CONTRACTOR certifies that neither it nor any person or firm who has an interest in the CONTRACTOR’s firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of Davis-Bacon Act or 29-CFR 5.12(a)(1).

ARTICLE 32–BIDDER CERTIFICATION REGARDING USE OF AMERICAN IRON AND STEEL PRODUCTS

32.01 Bidders shall comply with Section 436(a)-(f) of Consolidated Appropriations Act, 2014. Bidders shall complete form inserted as part of bidding documents entitled “Bidder Certification Regarding Use of American Iron and Steel Products.”

ARTICLE 33–MINORITY EMPLOYMENT REQUIREMENTS

33.01 Bidder shall review the specifications inserted with the Bidding Documents and complete the required forms. The required forms and other information shall be completed and submitted with the Bid. The City has a requirement that any combination of minority or female participation shall equal or exceed ten percent of the CONTRACTOR’s aggregate workforce measured against total hours performed, including all subcontracts.

ARTICLE 34–PROCEDURES FOR ISSUING LOANS FROM THE WATER POLLUTION CONTROL LOAN PROGRAM

34.01 Bidder shall review and comply with all requirements of Water Pollution Control Loan Program. Refer to information inserted with Bidding Documents titled, “Procedures for Issuing Loans from the Water Pollution Control Loan Program.”

ARTICLE 35–EMPLOYMENT OF ILLINOIS WORKERS ON PUBLIC WORKS ACT, 30 ILCS 570

35.01 If at the time this Contract is executed, or if during the term of this Contract, there is excessive unemployment in Illinois as defined in the Employment of Illinois Workers on Public Works Act, 30 ILCS 570, as two consecutive months of unemployment exceeding 5%, CONTRACTOR agrees to employ a work force that consists of at least 90% Illinois laborers. An “Illinois laborer” is defined as any person who has resided in Illinois for at least 30 days and intends to become or remain an Illinois resident. The Bidder shall require all subcontractors (if any) to conform with said laws, and any rules or regulations now and thereafter issued to said laws by Bidder, his subcontractors, and/or anyone working through or on behalf of Bidder or Bidder’s subcontractors.

ARTICLE 36–APPRENTICESHIP INITIATIVE

36.01 The Bidder agrees that he/she shall comply with the requirements of the IL Works Jobs Program Act (Apprenticeship Initiative), 30 ILCS 559/Art. 20. Refer to Division 01 for additional information.

END OF SECTION

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SECTION 00 41 00

BID

CITY OF JOLIET
JOLIET, ILLINOIS
COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN PHASE IV–
EASTSIDE AND WESTSIDE COMBINED SEWER OVERFLOW REGULATORS
CONTRACT 2699-0623

A. Table of Contents

ARTICLE 1. BID RECIPIENT
ARTICLE 2. BIDDER'S ACKNOWLEDGEMENTS
ARTICLE 3. BIDDER'S REPRESENTATIONS
ARTICLE 4. BIDDER'S CERTIFICATIONS
ARTICLE 5. BASIS OF BID
ARTICLE 6. TIME OF COMPLETION
ARTICLE 7. ATTACHMENTS TO THIS BID
ARTICLE 8. DEFINED TERMS
ARTICLE 9. COMMUNICATIONS
ARTICLE 10. BID SUBMITTAL

ARTICLE 1–BID RECIPIENT

1.01 Bids to be received until 10 A.M. local time, May 2, 2023.

1.02 This Bid is submitted to: City of Joliet
City Clerk
150 West Jefferson Street
Joliet, IL 60432

1.03 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2–BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

2.01 Bid Acceptance Period

A. This Bid will remain subject to acceptance for 120 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of OWNER.

2.02 Instructions to Bidders

A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

2.03 In submitting this Bid, Bidder represents the following:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following addenda:

Date:	Addendum Number:
_____	_____
_____	_____
_____	_____

2.04 Bidder will sign and deliver the required number of counterparts of the Agreement with the bonds, insurance certificates, and other documents required by the Bidding Requirements within 15 days after the date of OWNER's Notice of Award.

ARTICLE 3–BIDDER'S REPRESENTATIONS

3.01 Bidder's Representations

A. In submitting this Bid, Bidder represents the following:

1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.

2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.

4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.

5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.

6. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as CONTRACTOR; and (c) Bidder's (CONTRACTOR's) safety precautions and programs.

7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

8. Bidder is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents.

9. Bidder has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4–BIDDER'S CERTIFICATIONS

4.01 Bidder certifies the following:

A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.

B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.

C. Bidder has not solicited or induced any individual or entity to refrain from Bidding.

D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the Bidding process.

2. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the Bidding process to the detriment of OWNER, (b) to establish Bid prices at artificial non-competitive levels, or (c) to deprive OWNER of the benefits of free and open competition.

3. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of OWNER, a purpose of which is to establish Bid prices at artificial, non-competitive levels.

4. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the Bidding process or affect the execution of the Contract.

E. Bidder is prequalified in accordance with Article 3 of Section 00 21 13–Instructions to Bidders

ARTICLE 5–BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

The following abbreviations may be used in this Bid:

CIP	-	Complete in Place	LS	-	Lump Sum
CY	-	Cubic Yard	LT	-	Left
DI	-	Ductile Iron	MBF	-	Thousand Board Feet
DIA	-	Diameter	MFOB	-	Thousand Freight-On-Board
EA	-	Each	MH	-	Manhole
EST	-	Estimate(d)	RCP	-	Reinforced Concrete Pipe
EXCL	-	Excluding	RT	-	Right
FT	-	Feet	SF	-	Square Foot
GAL	-	Gallon	STA	-	Station
HERCP	-	Horizontal Elliptical RCP	SY	-	Square Yard
HRS	-	Hours	T	-	Ton
IN	-	Inch	VLF	-	Vertical Linear Foot
INCL	-	Including	W/	-	With
LBS	-	Pounds	W/O	-	Without
LF	-	Linear Foot			

BIDDERS SHOULD NOT ADD ANY CONDITIONS OR QUALIFYING STATEMENTS TO THIS BID OR THE BID MAY BE DECLARED IRREGULAR AS NOT BEING RESPONSIVE TO THE INSTRUCTIONS TO BIDDERS.

BID

CITY OF JOLIET
JOLIET, ILLINOIS
COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN PHASE IV–
EASTSIDE AND WESTSIDE COMBINED SEWER OVERFLOW REGULATORS
CONTRACT 2699-0623

LUMP SUM BASE BID:

_____ Dollars $_____
(Words) (Numbers)

See Section 01 29 00–Contract Considerations for discussion of Cash Allowances to include in the Bid.

The name of the Base Bid equipment manufacturer which Bidder shall include in the Lump Sum Base Bid is listed for each equipment item.

Item	Equipment Base Bid Manufacturer Included in the Lump Sum Base Bid	Cost of Equipment Included in the Lump Sum Base Bid
Controls and Instrumentation (Section 26 09 00)	Metropolitan Industries, Inc.	$214,900.00
Static Screens (Section 46 21 53)	Hydro International	$1,103,730.00

BID

CITY OF JOLIET
JOLIET, ILLINOIS
COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN PHASE IV–
EASTSIDE AND WESTSIDE COMBINED SEWER OVERFLOW REGULATORS
CONTRACT 2699-0623

CASH ALLOWANCES

The following Cash Allowances shall be included in the Lump Sum Base Bid. The Cash Allowances for non-Lump Sum items shall be equal to the product of the quantity included in the Lump Sum Base Bid and the Unit Price. The Cash Allowances will be adjusted in the event that estimated quantities to be included in the Lump Sum Base Bid are different from final measured quantities. A single Unit Price shall be bid for each item. Failure to include one or more of the following Unit Price items may result in rejection of the entire Bid as nonconforming. For items with a quantity of 1, the Cash Allowance shall be adjusted based on actual final costs.

Item Number	Description	Estimated Quantity Included in the Lump Sum Base Bid	Unit	Bid Unit Price	Total Bid Price Included in the Lump Sum Base Bid
1.	Electrical Service Section 26 21 00–Electrical and Telephone Service System	1	LS	$5,000.00	$5,000.00
2.	Excavation and Disposal of Unanticipated Solid Waste Section 31 23 00–Excavation, Fill, Backfill, and Grading	250	T	$	$
3.	Field Density Testing Section 31 23 00–Excavation, Fill, Backfill, and Grading	1	LS	$20,000.00	$20,000.00
4.	Unsuitable foundation Material for Structures Section 31 23 00–Excavation, Fill, Backfill, and Grading	50	CY	$	$
5.	Unsuitable foundation Material for Utility Trenches Section 31 23 00–Excavation, Fill, Backfill, and Grading	50	CY	$	$
6.	Rock Excavation for Structures and Roads Section 31 23 16.26–Rock Removal	1,400	CY	$	$
7.	Rock Excavation for Utility Trenches Section 31 23 16.26–Rock Removal	1,400	CY	$	$

ARTICLE 6–TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete substantially complete on or before December 31, 2024 and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before May 15, 2025.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the Contract Times.

ARTICLE 7–ATTACHMENTS TO THIS BID

7.01 The following documents are attached to and made a condition of this Bid:

A. Required Bid security in the form of _____ (Certified Check, Bank Money Order, or Bond)

B. Proposed Subcontractor Form.

C. Statement of Qualification.

D. Non-Collusion and Certifications Statement.

E. Bidder Certification Regarding The Use of American Iron and Steel Products.

F. Davis-Bacon Prevailing Wage Certification.

G. Notice of Requirement For Affirmative Action to Ensure Equal Employment Opportunity.

H. Certification of Nonsegregated Facilities.

I. Notice to Labor Unions of Other Organizations of Workers Nondiscrimination in Employment.

J. Certification Regarding Debarment, Suspension, and Other Responsibility Matters.

K. Construction Contracts of Loan Recipient and Other Sections From “Procedures For Issuing Loans From The Water Pollution Control Loan Program.”

L. Bidder Certification In Compliance With Article 33E-11 to the “Criminal Code of 2012.”

M. Specifications For Disadvantaged Business Enterprise Participation.

N. IEPA Disadvantaged Business Enterprise (DBE) Program Form #1, #3, and #4.

O. Notice–Responsible Bidder Ordinance.

P. Minority Employment Requirements.

Q. Notice to Bidders–Ethics Ordinance and Inspector General Requirements.

R. Affidavits–Business Status of Bidder.

S. Affidavit Regarding Bidder Availability.

ARTICLE 8–DEFINED TERMS

8.01 The terms used in this Bid with initial or all capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9–COMMUNICATIONS

9.01 Communications concerning this Bid shall be addressed to the address of Bidder indicated below:

Name: _____

Street: _____

City, State, Zip Code: _____

Phone No.: _____ Fax No.: _____

E-mail address: _____

ARTICLE 10–BID SUBMITTAL

Submitted on _____

State Contractor License Number _____ (if applicable).

If Bidder is:

An Individual

By: _____
(Individual's signature)

Name (typed or printed): _____

Doing business as: _____
Business address: _____
_____
Phone No.: _____ Fax No.: _____

E-mail address: _____

A Partnership

Partnership Name: _____
By: _____
(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed): _____
Business address: _____
_____
Phone No.: _____ Fax No.: _____

E-mail address: _____

A Corporation

Corporation Name: _____
State of Incorporation: _____
Type (General Business, Professional, Service, Limited Liability): _____
By: _____
(Signature -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Attest _____
(Signature of Corporate Secretary)

Business address: _____
_____
Phone No.: _____ Fax No.: _____

E-mail address: _____

Date of Qualification to do business in (State where the Project is located) is _____
_____

Sworn and subscribed to before me this
_____ day of_____, _____
_____

Notary Public or Other Officer
Authorized to Administer Oaths.
My Commission expires:_____

A Limited Liability Company (Note: If member-managed, an authorized member must sign; if manager-managed, the authorized manager must sign. Attach evidence of authority to sign on behalf of LLC).

_____
(Fill in complete name of LLC)

State of Formation: _____

By: _____
(Signature)

_____, [Member] [Manager]
(Print Name)

Business Address: _____

Telephone.: _____

Email: _____

Fax: _____

A Joint Venture

Name of Joint Venture: _____

First Joint Venturer Name: _____

By: _____
(Signature of first joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone No.: _____ Fax No.: _____

E-mail address: _____

Second Joint Venturer Name: _____

By: _____
(Signature of second joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone No.: _____ Fax No.: _____

E-mail address: _____

Phone No., Fax No., and postal and E-mail address for receipt of official communications:

_____

_____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder is currently certified as a MBE or WBE under EPA's DBE Program? _____ Yes

_____ No

(Check One)

Sworn and subscribed to before me this
_____ day of_____, _____
_____

Notary Public or Other Officer
Authorized to Administer Oaths.
My Commission expires:_____

END OF SECTION

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10% BID BOND

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

Bidder Name: [Full formal name of Bidder] Address *(principal place of business)*: [Address of Bidder's principal place of business]	Surety Name: [Full formal name of Surety] Address *(principal place of business)*: [Address of Surety's principal place of business]
Owner Name: [Full formal name of Owner] Address *(principal place of business)*: [Address of Owner's principal place of business]	Bid Project *(name and location)*: [Owner project/contract name, and location of the project] Bid Due Date: [Enter date bid is due]
Bond Penal Sum: [Amount] Date of Bond: [Date]	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder *(Full formal name of Bidder)* By: _____ *(Signature)* Name: _____ *(Printed or typed)* Title: _____ Attest: _____ *(Signature)* Name: _____ *(Printed or typed)* Title:	Surety *(Full formal name of Surety) (corporate seal)* By: _____ *(Signature) (Attach Power of* Name: _____ *(Printed or typed)* Title: _____ Attest: _____ *(Signature)* Name: _____ *(Printed or typed)* Title:
Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.	

EJCDC® C-430, Bid Bond (Penal Sum Form).
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1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
   3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
   3.2. All Bids are rejected by Owner, or
   3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

EJCDC® C-430, Bid Bond (Penal Sum Form).
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SECTION 00 43 36R

PROPOSED SUBCONTRACTOR FORM

This form should be submitted with the bid

To: City of Joliet
150 West Jefferson Street
Joliet, Illinois 60432

1. Pursuant to bidding requirements for the Work titled:

COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN PHASE IV - EASTSIDE AND WESTSIDE REGULATORS
CONTRACT 2699-0623
CITY OF JOLIET, ILLINOIS

For portions of the Work equaling or exceeding $10,000, Bidder proposes to use the following Subcontractors. Except as otherwise approved by Owner, Bidder proposes to perform all other portions of the Work with his own forces:

2. Portion of the Work — Subcontractor name and address

Portion of the Work	Subcontractor name and address

SECTION 00 45 13

STATEMENT OF QUALIFICATION FORM

PERFORMANCE REFERENCE FORM

(To be submitted within 5 days of the bid opening.)

In order to demonstrate qualifications for considerations of award of this contract, the Bidder (and its Subcontractors) shall providence evidence of satisfactory and successful completion on at least two (2) contracts or equal size or greater value (in the field of their scope of work) within the past five years. Evidence shall include references that can attest to the Bidder's experience, skill, business standing, and ability to conduct the work completely and in a timely manner as required under the terms of this contract.

(Bidder is to append additional pages as needed)

List of Current Projects:

Client:_____

Description of Work: _____

Contract Value: _____

Contact: _____

Client:_____

Description of Work: _____

Contract Value: _____

Contact: _____

List of Projects completed within the past 5 years (Equal or Greater Value):

Client: _____

Description of Work: _____

Contract Value: _____

Contact: _____

Client: _____

Description of Work: _____

Contract Value: _____

Contact: _____

Client: _____

Description of Work: _____

Contract Value: _____

Contact: _____

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NON-COLLUSION AND CERTIFICATION STATEMENT

1. By submission of the Bid, each Bidder and, in the case of a joint Bid, each party to the joint Bid certifies as to his or her own organization, that in connection with the Bid:

a. The prices in the Bid have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to the prices with any other bidder or with any competitor;

b. Unless otherwise required by law, the prices quoted in the Bid have not knowingly been directly or indirectly disclosed to any other bidder or to any competitor prior to Bid opening; and

c. No attempt has been made or will be made by the Bidder to induce any other person or firm to submit or withhold a Bid for the purpose of restricting competition. Also, each Bidder shall submit a certification regarding compliance with Article 33 E-11 of the Illinois Criminal Code of 2012 [720 ILCS 5/33 E-11]; and

2. Each person signing the Bid shall certify that (check one):

--- He/she is the person in the Bidder's organization responsible for the decision as to the prices being bid and that he/she has not participated, and will not participate, in any action contrary to 1.a. through 1.c.; or

--- He/she is not the person in the Bidder's organization responsible for the decision as to the prices being bid but that he/she has been authorized to act as agent certifying that the persons determining the prices have not participated, and will not participate, in any action contrary to 1.a. through 1.c., and as their agent shall so certify. He/She shall also certify that he/she has not participated, and will not participate, in any action contrary to 1.a. through 1.c.

_____

Signature of Authorized Representative Date

_____

Typed Name and Title of Authorized Representative

Sworn and subscribed to before me this _____ day of _____

_____

Notary Public or Other Officer
Authorized to Administer Oaths.
My Commission expires: _____

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Bidder Certification Regarding the Use of
American Iron and Steel Products

_____, do hereby certify that:
Name

1. I am_____(title) of the _____(company, partnership, etc.) and have authority to execute this certification on behalf of the firm.

2. This firm is aware that all iron and steel products used for this project must be produced in the United States per Section 436 (a) – (f) of the Consolidated Appropriations Act, 2014.

3. This firm is aware that the use of American iron and steel products applies to all projects for the construction, alteration, maintenance, or repair of publically owned treatment works (POTW) or public water systems.

4. This firm understands the term "iron and steel products" refers to the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

5. I am aware that this requirement applies to all portions of the project that are subcontracted.

Name of Firm_____

Signature_____

Title _____

Date _____

Corporate Seal (where appropriate)

Use of American Iron and Steel

Sec. 436. (a)(1) None of the funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j-12) shall be used for a project for the construction, alteration, maintenance, or repair of a public water system or treatment works unless all of the iron and steel products used in the project are produced in the United States.

(2) In this section, the term `iron and steel products' means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

(b) Subsection (a) shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency (in this section referred to as the `Administrator') finds that--

(1) applying subsection (a) would be inconsistent with the public interest;

(2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

(c) If the Administrator receives a request for a waiver under this section, the Administrator shall make available to the public on an informal basis a copy of the request and information available to the Administrator concerning the request, and shall allow for informal public input on the request for at least 15 days prior to making a finding based on the request. The Administrator shall make the request and accompanying information available by electronic means, including on the official public Internet Web site of the Environmental Protection Agency.

(d) This section shall be applied in a manner consistent with United States obligations under international agreements.

(e) The Administrator may retain up to 0.25 percent of the funds appropriated in this Act for the Clean and Drinking Water State Revolving Funds for carrying out the provisions described in subsection (a)(1) for management and oversight of the requirements of this section.

(f) This section does not apply with respect to a project if a State agency approves the engineering plans and specifications for the project, in that agency's capacity to approve such plans and specifications prior to a project requesting bids, prior to the date of the enactment of this Act.

DAVIS-BACON WAGE ACT CERTIFICATION

BIDDER certifies that wages paid in connection with the PROJECT shall be paid at prevailing rates not less than those prevailing under the Davis-Bacon Wage Act. Bidder further certifies that the provisions contained in the following clauses will be exercised in the performance of any contract resulting from this BID and are made a part of the CONTRACT DOCUMENTS thereto by their inclusion in the BID as follows:

"(1) Minimum wages.

(i) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.
Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)1(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

Sub recipients may obtain wage determinations from the U.S. Department of Labor's web site, www.wdol.gov.

(ii)(A) The sub recipient, on behalf of USEPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The USEPA award official shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the sub recipient agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the sub recipient to IEPA. IEPA will transmit the report, to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify or disapprove every additional classification action within 30 days of receipt and so advise IEPA or will notify IEPA within the 30-day period that additional time is necessary.

(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the sub recipient do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the questions, including the views of all interested parties and the recommendation of the award official, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(2) Withholding, the sub recipient shall upon written request of the USEPA Award Official or an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(3) Payrolls and basic records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or

costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the sub recipient, that is, the entity that receives the sub-grant or loan from IEPA. Such documentation shall be available on request of IEPA or USEPA. As to each payroll copy received, the sub recipient shall provide written confirmation indicating whether or not the project is in compliance with the requirements of 29 CFR 5.5(a)(1) based on the most recent payroll copies for the specified week. The payrolls shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). Form WH-347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the sub recipient for transmission to IEPA or USEPA, if requested, for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sub recipient.

(B) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR Part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR Part 5, and that such information is correct and complete.

(2) That each laborer and mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(C) The weekly submission of a properly executed certification set forth on the reverse side of optional Form WH-347, available for this purpose from the Wage and Hour Division Web site at

http://www.dol.gov/esa/whd/forms/wh347instr.htm or its successor site, shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.

(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of IEPA, USEPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency or IEPA may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(4) Apprentices and trainees –

(i) Apprentices. Apprentices will be permitted to work at less than predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on

the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

(5) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

(6) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the USEPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

(7) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(8) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

(9) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and sub recipients, IEPA, USEPA, the U.S. Department of Labor, or the employees or their representatives.

(10) Certification of eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

4. Contract Provision for Contracts in Excess of $100,000

(a) Contract Work Hours and Safety Standards Act. The sub recipient shall insert the following clauses set forth in paragraphs (a)(1), (2), (3), and (4) of the section in full in any contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item 3, above or 29 CFF 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible therefore shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clauses set forth in paragraph (b)(1) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

(3) Withholding for unpaid wages and liquidated damages. The sub recipient, upon written request of the USEPA Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld, form any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract su7bject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.

(b) In addition to the clauses contained in Item 3, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in 29 CFR 5.1, the Sub recipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social

security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Sub recipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the IEPA, USEPA and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job

5. Compliance Verification

(a) The sub recipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The sub recipient must use Standard Form 1445 or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from USEPA on request.

(b) The sub recipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, the sub recipient must conduct interviews with a representative group of covered employees within two weeks of each contractor or subcontractor's submission of its initial weekly payroll data and two weeks prior to the estimated completion date for the contract or subcontract. Sub recipients must conduct more frequent interviews if the initial interviews or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. Sub recipients shall immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(c) The sub recipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors and subcontractors are paying the appropriate wage rates. The sub recipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, the sub recipient must spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. Sub recipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations the sub recipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

(d) The sub recipient shall periodically review contractors and subcontractors use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S. Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(e) Sub recipients must immediately report potential violations of the DB prevailing wage requirements to the USEPA DB contact listed above and to the appropriated DOL Wage and Hour District Office listed at http://www.dol.gov/esa/contacts/whd/america2.htm".

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NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Timetables	Goals for minority participation for each trade	Goals for female participation in each trade
	Insert goals for* each year 20.9 %	Insert goals for* each year 6.9 %

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is **.

*goals and timetables published from time to time by the Director, Office of Federal Contract Compliance Programs (OFCCP)

**Insert description of the geographical areas where the contract is to be performed giving the state, county and city, if any.

CONSTRUCTION CONTRACTORS AFFIRMATIVE ACTION REQUIREMENTS
GOALS FOR MINORITY PARTICIPATION
(As published in the Friday, October 3, 1980 Federal Register)

FEMALE PARTICIPATION= 6.9% STATEWIDE

County	Percent	County	Percent	County	Percent
Adams	3.1	Jasper	11.4	Randolph	11.4
Alexander	11.4	Jefferson	11.4	Richland	11.4
Bond	11.4	Jersey	11.4	Rock Island	4.6
Boone	6.3	Jo Davis	0.5	Saline	3.5
Brown	3.1	Johnson	11.4	Sangamon	4.5
Bureau	18.4	Kane	19.6	Schuyler	3.3
Calhoun	11.4	Kankakee	9.1	Scott	4
Carroll	3.4	Kendall	18.4	Shelby	4
Cass	4	Knox	3.3	Stark	3.3
Champaign	7.8	Lake	19.6	St. Clair	14.7
Christian	4	La Salle	18.4	Stephenson	4.6
Clark	2.5	Lawrence	3.5	Tazwell	4.4
Clay	11.4	Lee	4.6	Union	11.4
Clinton	14.7	Livingston	18.4	Vermilion	4.8
Coles	4.8	Logan	4	Wabash	3.5
Cook	19.6	Macon	7.6	Warren	3.3
Crawford	2.5	Macoupin	11.4	Washington	11.4
Cumberland	4.8	Madison	14.7	Wayne	11.4
De Kalb	18.4	Marion	11.4	White	3.5
De Witt	4	Marshall	3.3	Whiteside	3.4
Douglas	4.8	Mason	3.3	Will	20.9
Du Page	19.6	Massac	5.2	Williamson	11.4
Edgar	4.8	McDonough	3.3	Winnebago	6.3
Edwards	3.5	McHenry	19.6	Woodford	4.4
Effingham	11.4	McLean	2.5		
Fayette	11.4	Menard	4.5		
Ford	4.8	Mercer	3.4		
Franklin	11.4	Monroe	14.7		
Fulton	3.3	Montgomery	11.4		
Gallatin	3.5	Morgan	4		
Greene	11.4	Moultrie	4		
Grundy	18.4	Ogle	4.6		
Hamilton	3.5	Peoria	4.4		
Hancock	3.4	Perry	11.4		
Hardin	5.2	Piatt	4.8		
Henderson	3.4	Pike	3.1		
Henry	4.6	Pope	5.2		
Iroquois	18.4	Pulaski	11.4		
Jackson	11.4	Putnam	18.4		

41 CFR 60

60-4.1 Scope and Application.

This part applies to all contractors and subcontractors that hold any Federal or federally assisted construction contract in excess of $10,000. The regulations in this part are applicable to all of a construction contractor's or subcontractor's construction employees who are engaged in on site construction including those construction employees who work on a non-Federal or non-federally assisted construction site. This part also establishes procedures, which all Federal contracting officers and all applicants, as applicable, shall follow in soliciting for and awarding Federal or federally assisted construction contracts. Procedures also are established which administering agencies shall follow in making any grant, contract, loan, insurance, or guarantee involving federally assisted construction which is not exempt from the requirements of Executive Order 11246, as amended. In addition, this part applies to construction work performed by construction contractors and subcontractors for Federal non-construction contractors and subcontractors if the construction work is necessary in whole or in part to the performance of a non-construction contract or subcontract.

[43 FR 49254, OCT. 20, 1978; 43 FR 51404, NOV. 3, 1978]

60-4.2 Solicitations.

(a) All Federal contracting officers and all applicants shall include the notice set forth in paragraph (d) of this section and the Standard Federal Equal Employment Opportunity Construction Contract Specifications set forth in § 60-4.3 of this part in all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts to be performed in geographical areas designated by the Director pursuant to § 60-4.6 of the part. Administering agencies shall require the inclusion of the notice set forth in paragraph (d) of this section and the specifications set forth in § 60-4.3 of this part as a condition of any grant, contract, subcontract, loan, insurance or guarantee involving federally assisted construction covered by this Part 60-4.

(b) All non-construction contractors covered by Executive Order 11246 and the implementing regulations shall include the notice in paragraph (d) of this section in all construction agreements, which are necessary in whole or in part to the performance of the covered non-construction contract.

(c) Contracting officers, applicants and non-construction contractors shall give written notice to the Director within 10 working days of award of a contract subject to these provisions. The notification shall include the name, address, and telephone number of the contractor; employer identification number; dollar amount of the contract, estimated starting and completion dates of the contract; the contract number; and geographical area in which the contract is to be performed.

(d) The following notice shall be included in, and shall be a part of, all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of $10,000 to be performed in geographical areas designated by the Director pursuant to § 60-4.6 of this part (see 41 CFR 60-4.2(a)):

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)

1. The Offeror or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Time- tables	Goals for minority participation for each trade	Goals for female participation in each trade
	20.9%	6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is (insert description of the geographical areas where the contract is to be performed giving the state, county, and city, if any).

[43 FR 49254, OCT. 20, 1978; 43 FR 51401, NOV. 3, 1978, AS AMENDED AT 45 FR 65977, OCT. 3, 1980]

60-4.3 Equal Opportunity Clauses.

(a) The equal opportunity clause published at 41 CFR 60-1.4(a) of this chapter is required to be included in, and is part of, all nonexempt Federal contracts and subcontracts, including construction contracts and subcontracts. The equal opportunity clause published at 41 CFR 60-1.4(b) is required to be included in, and is a part of, all nonexempt federally assisted construction contracts and subcontracts. In addition to the clauses described above, all Federal contracting officers, all applicants and all non-construction contractors, as applicable, shall include the specifications set forth in this section in all Federal and federally assisted construction contracts in excess of $10,000 to be performed in geographical areas designated by the Director pursuant to § 60-4.6 of this part and in construction subcontracts in excess of $10,000 necessary in whole or in part to the performance of non-construction Federal contracts and subcontracts covered under the Executive order.

Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246)

1. As used in these specifications:

a. "Covered area," means the geographical area described in the solicitation from which this contract resulted:

b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

d. "Minority" includes:

(i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals

for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, nor the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, the Contractor must employ such apprentices and trainees during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The

Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason; therefore, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written

notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a contractor’s work force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations, which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the

Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws, which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

(b) The notice set forth in 41 CFR 60-4.2 and the specifications set forth in 41 CFR 60-4.3 replace the New Form for Federal Equal Employment Opportunity Bid Conditions for Federal and Federally Assisted Construction published at 41 FR 32482 and commonly known as the Model Federal EEO Bid Conditions, and the New Form shall not be used after the regulations in 41 CFR Part 60-4 become effective.

[43 FR 49254, OCT. 20, 1978; 43 FR 51401, NOV. 3, 1978, AS AMENDED AT 45 FR 65978, OCT. 3, 1980]

60-4.4 Affirmative Action Requirements.

(a) To implement the affirmative action requirements of Executive Order 11246 in the construction industry, the Office of Federal Contract Compliance Programs previously has approved affirmative action programs commonly referred to as "Hometown Plans," has promulgated affirmative action plans referred to as "Imposed Plans" and has approved "Special Bid Conditions" for high impact projects constructed in areas not covered by a Hometown or an Imposed Plan. All solicitations for construction contracts made after the effective date of the regulations in this part shall include the notice specified in § 604.2 of this part and the specifications in § 60-4.3 of this part in lieu of the Hometown and Imposed Plans including the Philadelphia Plan and Special Bid Conditions. Until the Director has issued an order pursuant to § 60-4.6 of this part establishing goals and timetables for minorities in the appropriate geographical areas or for a project covered by Special Bid Conditions, the goals and timetables for minorities to be inserted in the Notice required by 41 CFR 60-4.2 shall be the goals and timetables contained in the Hometown Plan, Imposed Plan or Special Bid Conditions presently covering the respective geographical area or project involved.

(b) Signatories to a Hometown Plan (including heavy highway affirmative action plans) shall have 45 days from the effective date of the regulations in this part to submit under such a Plan (for the director's approval) goals and timetables for women and to include female representation on the Hometown Plan Administrative Committee. Such goals for female representation shall be at least as high as the goals established for female representation in the notice issued pursuant to 41 CFR 60-4.6. Failure of the signatories, within the 45-day period, to include female representation and to submit goals for women or a new plan, as appropriate, shall result in an automatic termination of the Office of Federal Contract Compliance Program's approval of the Hometown Plan. At any time, the Office of Federal Contract Compliance Programs terminates or withdraws its approval of a Hometown Plan, or when the plan expires and another plan is not approved, the contractors signatory to the plan shall be covered automatically by the specifications set forth in § 60-4.3 of this part and by the goals and timetables established for that geographical area pursuant to § 60-4.6 of this part.

60-4.5 Hometown Plans

(a) A contractor participating, either individually or through an association, in an approved Hometown Plan (including heavy highway affirmative action plans) shall comply with its affirmative action obligations under Executive Order 11246 by complying with its obligations under the plan: *Provided,* That each contractor or subcontractor participating in an approved plan is individually required to comply with the equal opportunity clause set forth in 41 CFR 60-1.4; to make a good faith effort to achieve the goals for each trade participating in the plan in which it

has employees; and that the overall good performance by other contractors or subcontractors toward a goal in an approved plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the plan's goals and timetables. If a contractor is not participating in an approved Hometown Plan it shall comply with the specifications set forth in § 60-4.3 of this part and with the goals and timetables for the appropriate area as listed in the notice required by 41 CFR 60-4.2 about that trade. For the purposes of this part 60-4, a contractor is not participating in a Hometown Plan for a particular trade if it:

(1) Ceases to be signatory to a Hometown Plan covering that trade;

(2) Is signatory to a Hometown Plan for that trade but is not party to a collective bargaining agreement for that trade;

(3) Is signatory to a Hometown Plan for that trade but is party to a collective bargaining agreement with labor organizations, which are not or cease to be signatories to the same Hometown Plan for that trade;

(4) Is signatory to a Hometown Plan for that trade but is party to a collective bargaining agreement with a labor organization for that trade but the two have not jointly executed a specific commitment to minority and female goals and timetables and incorporated the commitment in the Hometown Plan for that trade;

(5) Is participating in a Hometown Plan for that trade which is no longer acceptable to the Office of Federal Contract Compliance Programs;

(6) Is signatory to a Hometown Plan for that trade but is party to a collective bargaining agreement with a labor organization for that trade and the labor organization and the contractor have failed to make a good faith effort to comply with their obligations under the Hometown Plan for that trade.

(b) Contractors participating in Hometown Plans must be able to demonstrate their participation and document their compliance with the provision of the Hometown Plan.

[43 FR 49254, OCT. 20, 1978; 43 FR 51401, NOV. 3, 1978]

60-4.6 Goals and Timetables.

The Director, from time to time, shall issue goals and timetables for minority and female utilization, which shall be based on appropriate workforce, demographic, or other relevant data and which shall cover construction projects or construction contracts performed in specific geographical areas. The goals, which shall be applicable to each construction trade in a covered contractor's or subcontractor's entire workforce which is working in the area covered by the goals and timetables, shall be published as notices in the Federal Register, and shall be inserted by the contracting officers and applicants, as applicable, in the Notice required by 41 CFR 60-4.2. Covered construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed.

[45 FR 65978, OCT. 3, 1980]

60-4.7 Effect on Other Regulations.

The regulations in this part are in addition to the regulations contained in this chapter, which apply to construction contractors and subcontractors generally. See particularly, 41 CFR 60-1.4 (a), (b), (c), (d), and (e); 60-1.5; 60-1.7; 60-1.8; 60-1.26; 60-1.29; 60-1.30; 60-1.32; 60-1.41; 60-1.42; 60-1.43; and 41 CFR Part 60-3; Part 60-20; Part 60-30; Part 60-40; and Part 60-50.

60-4.8 Show Cause Notice.

If an investigation or compliance review reveals that a construction contractor or subcontractor has violated the Executive order, any contract clause, specifications or the regulations in this chapter and if administrative enforcement is contemplated, the Director shall issue to the contractor or subcontractor a notice to show cause which shall contain the items specified in paragraphs (i) through (iv) of 41 CFR 60-2.2(c)(1). If the contractor does not show good cause within 30 days, or in the alternative, fails to enter an acceptable conciliation agreement which includes where appropriate, make up goals and timetables, back pay, and seniority relief for affected class members, the OFCCP shall follow the procedure in 41 CFR 60-1.26(b): *Provided,* That where a conciliation agreement has been violated, no show cause notice is required prior to the initiation of enforcement proceedings.

[43 FR 49254, OCT. 20, 1978; 43 FR 51401, NOV. 3, 1978]

60-4.9 Incorporation by Operation of the Order.

By operation of the order, the equal opportunity clause contained in § 60-1.4, the Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246) contained in § 60-4.2, and the Standard Federal Equal Employment Opportunity Construction Contract Specifications (Executive Order 11246) contained in § 60-4.3 shall be deemed to be a part of every solicitation or of every contract and subcontract, as appropriate, required by the order and the regulations in this chapter to include such clauses whether or not they are physically incorporated in such solicitation or contract and whether or not the contract is written.

U.S. ENVIRONMENTAL PROTECTION AGENCY

CERTIFICATION OF NONSEGREGATED FACILITIES

(Applicable to federally assisted construction contracts and related subcontracts exceeding $10,000 that are not exempt from the Equal Opportunity clause.)

The federally assisted construction contractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor agrees that a breach of this certification is a violation of the Equal Opportunity clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated based on race, creed, color, or national origin, because of habit, local custom or otherwise. The federally assisted construction contractor agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certification in his files.

_____

Signature Date

_____

Name and Title of Signer (Please type)

_____

Firm Name

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

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NOTICE TO LABOR UNIONS OR OTHER ORGANIZATIONS OF WORKERS

NONDISCRIMINATION IN EMPLOYMENT

To: _____
(Name of union or organization of workers)

The undersigned currently holds contract(s) with _____
(name of applicant)
involving funds or credit of the U.S. Government or (a) subcontract(s) with a prime contractor holding such contract(s).

You are advised that under the provisions of the above contracts(s) or subcontract(s) and in accordance with Executive Order 11246, as amended, dated September 24, 1965, as amended, the undersigned is obliged not to discriminate against any employee or applicant for employment because of race, color, creed or national origin. This obligation not to discriminate in employment includes, but is not limited to, the following:

HIRING, PLACEMENT, UPGRADING, TRANSFER OR DEMOTION, RECRUITMENT, ADVERTISING, OR SOLICITATION FOR EMPLOYMENT, TRAINING DURING EMPLOYMENT, RATES OF PAY OR OTHER FORMS OF COMPENSATION, SELECTION FOR TRAINING INCLUDING APPRENTICESHIP, LAYOFF OR TERMINATION.

This notice is furnished you pursuant to the provisions of the above contract(s) or subcontracts(s) and Executive Order 11246, as amended.

Copies of this notice will be posted by the undersigned in conspicuous places available to employees or applicants for employment.

_____

_____

_____

_____
(Contractor or Subcontractor)

_____
(Date)

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EPA Project Control #: ___L171655___

United States Environmental Protection Agency
Washington, DC 20460

Certification Regarding Debarment, Suspension and Other Responsibility Matters

The prospective participant to the best of its knowledge and belief that it and its principles:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1) (b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

I understand that a false statement on this certification may be grounds for rejection of this proposal or termination of the award. In addition, under 18 USC Sec. 1001, a false statement may result in fine of up to $10,000 or imprisonment for up to 5 years, or both.

_____
(Typed Name & Title of Authorized Representative)

_____
(Signature of Authorized Representative) (Date)

_____

☐ I am unable to certify the above statements. My explanation is attached.

EPA FORM 5700-49 (11-88)

Instructions

Under Executive Order 12549 an individual or organization debarred or excluded from participation in Federal assistance or benefit programs may not receive any assistance award under a Federal program, or a sub-agreement thereunder for $25,000 or more.

Accordingly, each prospective recipient of an EPA grant, loan, or cooperative agreement and any contract or sub-agreement participant thereunder must complete the attached certification or provide an explanation why they cannot. For further details, see 40 CFR 32.510, Participants' responsibilities, in the attached regulation.

Where to Submit

The prospective EPA grant, loan, or cooperative agreement recipient must return the signed certification or explanation with its application to the appropriate EPA Headquarters or Regional office, as required in the application instructions.

A prospective prime contractor must submit a completed certification or explanation to the individual or organization awarding the contract.

Each prospective subcontractor must submit a completed certification or explanation to the prime contractor for the project.

How to Obtain Forms:

EPA includes the certification form, instructions, and a copy of its implementing regulation (40 CFR Part 32) in each application kit. Applicants may reproduce these materials as needed and provide them to their prospective prime contractor, who, in turn, may reproduce and provide them to prospective subcontractors.

Additional copies/assistance may be requested from:

Compliance Branch
Grants Administration Division (PM-216F)
U.S. Environmental Protection Agency
401 M Street, SW
Washington DC 20460
(Telephone: 202-475-8025)

EPA Form 5700-19 (11-88)

Construction Contracts of Loan Recipient and Other Sections From "Procedures for Issuing Loans from the Water Pollution Control Loan Program"

Section 365.420(b)(2) Change Orders

A) When the loan recipient authorizes the contractor to add, delete, or revise the work within the general scope of the contract documents, or authorizes an adjustment in the contract price or contract time, the loan recipient shall submit a change order to the Agency.

B) For each change order, the loan recipient shall submit to the Agency for approval the following documentation:

i) one copy of the fully executed change order signed by the loan recipient, construction engineer, and the contractor; and

ii) a description of any changes, with justification for the changes.

C) Prior approval by the Agency of a change order is required when a change order results in:

i) alterations in design scope that require a modification to a construction permit; or

ii) an increase in the amount of loan funds needed to complete the project.

D) Failure to give timely notice of proposed project changes or action by the loan recipient that is not consistent with the Agency's determination on those changes may result in disallowance of loan participation for costs incurred that are attributable to the change.

Section 365.620(f) Required Construction Contract Provisions

Each construction contract shall include the following provisions:

1) Audit; access to records:

A) The contractor shall maintain books, records, documents and other evidence directly pertinent to performance on loan work in accordance with Generally Accepted Accounting Principles (GAAP). The contractor shall also maintain the financial information and data used by the contractor in the preparation or support of any cost submissions required under Section 365.420 (b)(2) of the loan rules and a copy of the cost summary submitted to the owner. The Illinois Auditor General, the owner, the Agency, or any of their authorized representatives shall have access to the books, records, papers, documents, and other evidence for purposes of inspection, audit, examination, excerpts, transcriptions, and copying. The contractor shall provide facilities for access and inspection.

B) For a formally advertised, competitively awarded, fixed price contract, the contractor shall include access to records as required by subsection (a)(1)(A) of the loan rules for

all negotiated change orders and contract amendments in excess of $25,000 that affect the contract price. In the case of all other prime contracts, the contractor shall agree to include access to records required by subsection (a)(1)(A) in all contracts and all tier subcontracts or change orders in excess of $25,000 that are directly related to project performance.

C) Audits shall be in accordance with auditing standards generally accepted in the United States.

D) The contractor shall agree to the disclosure of all information and reports resulting from access to records required by subsection (a)(1)(A). When the audit concerns the contractor, the auditing agency shall afford the contractor an opportunity for an audit exit conference and an opportunity to comment on the pertinent portions of the draft audit report. The final audit report shall include the written comments, if any, of the audited parties.

E) The records required by subsection (a)(1)(A) shall be maintained and made available during performance of the work under the loan agreement and for 3 years after the date of the final loan audit. In addition, records that relate to any dispute or litigation or the settlement of claims arising out of any performance, costs or items to which an audit exception has been taken, shall be maintained and made available for 3 years after resolution of the dispute, appeal, litigation, claim or exception.

F) The right of access will generally be exercised with respect to financial records under:

i) Negotiated prime contracts;

ii) Negotiated change orders or contract amendments in excess of $25,000 affecting the price of any formally advertised, competitively awarded, fixed price contract; and

iii) Subcontracts or purchase orders under any contract other than a formally advertised, competitively awarded, fixed price contract.

G) The right of access will generally not be exercised with respect to a prime contract, subcontract, or purchase order awarded after effective price competition. In any event, the right of access shall be exercised under any type of contract or subcontract:

i) With respect to records pertaining directly to contract performance, excluding any financial records of the contractor; and

ii) If there is any indication that fraud, gross abuse, or corrupt practices may be involved in the award or performance of the contract or subcontract.

2) Covenant against contingent fees.

The contractor shall warrant that no person or selling agency has been employed or retained to solicit or secure the contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee. For breach or violation of this warranty, the owner shall have the right to annul the contract without liability or in its discretion to deduct from the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

3) Wage provisions.

The Contractor shall pay prevailing wages in accordance with the Davis-Bacon Act (40 USC 3141 through 3148) as defined by the U.S. Department of Labor.

4) Disadvantaged business enterprise requirements.

The contractor shall provide evidence that the contractor has taken affirmative steps in accordance with 40 CFR 33 to assure that disadvantaged business enterprises are used when possible as sources of supplies, equipment, construction, and services, consistent with the provisions of the Agency's Operating Agreement with USEPA.

5) Debarment and suspension provisions.

The contract shall require the successful bidders to submit a Certificate Regarding Debarment, Suspension and Other Responsibility Matters (EPA Form 5700-49) showing compliance with federal Executive Order 12549.

6) Nonsegregated facilities provisions

The contractor shall be required to submit a Certification of Nonsegregated Facilities on forms provided by the Agency.

7) American Iron and Steel

The contractor shall be required to use American Iron and Steel, if required by USEPA for that fiscal year.

8) A clause that provides:

"No contractor or subcontractor shall discriminate on the basis of race, color, national origin or sex in the performance of this contract. The contractor or subcontractor shall carry out applicable requirements of 40 CFR 33 in the award and administration of contracts awarded under the WPCLP. Failure by the contractor or subcontractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract or other legally available remedies."

Section 365.620(g) Subcontracts Under Construction Contracts

The award or execution of all subcontracts by a prime contractor and the procurement and negotiation procedures used by the prime contractor shall comply with:

1) All applicable provisions of federal, State and local law;

2) All provisions of Part 365 regarding fraud and other unlawful or corrupt practices;

3) All provisions of Part 365 with respect to access to facilities, records and audit of records; and

4) All provisions of subsection 365.620(f)(5) that require a Certification Regarding Debarment, Suspension, and Other Responsibility Matters (EPA Form 5700-49) showing compliance with any controlling federal Executive Orders.

Section 365.620(h) Contractor Bankruptcy

In the event of a contractor bankruptcy, the loan recipient shall notify the Agency and shall keep the Agency advised of any negotiations with the bonding company, including any proposed settlement. The Agency may participate in those negotiations and will advise the loan recipient of the impact of any proposed settlement to the loan agreement. The loan recipient shall be responsible for assuring that every appropriate procedure and incidental legal requirement is observed in advertising for bids and re-awarding a construction contract.

Section 365.620(i) Access

Every contract entered by the loan recipient for construction work, and every subagreement, shall provide the Agency representatives with access to the work. The contractor or subcontractor shall provide facilities for such access and inspection.

Section 365.640(c) Remedies

All claims, counter-claims, disputes and other matters in question between the recipient and the contractor arising out of, or relating to, a subagreement or its breach shall be decided by arbitration if the parties agree, or in a court of competent jurisdiction within the State.

Bidder Certification
In Compliance with Article 33E-11 to the
"Criminal Code of 2012"

I _____, do hereby certify that:
Name

1. I am _____ of the _____
Position Firm
and have authority to execute this certification on behalf of the firm

2. This firm is not barred from bidding on this contract due to either a Bid-rigging or Bid Rotating violation as set forth in Article 33E-11 to the "Illinois Criminal Code of 2012 [720 ILCS 5/33E-11]""

Name of Firm _____

Signature _____

Title _____

Date _____
Corporate Seal (where appropriate)

On this _____day of _____20_____, before me appeared (Name)

_____ to me personally known, who, being duly sworn, did execute the foregoing affidavit, and did state that he or she was properly authorized by (Name of Firm) _____ to execute the affidavit and did so as his or her free act and deed.

Notary Public _____Commission Expires _____

Notary Seal

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Specifications for Disadvantaged Business Enterprise Participation

(Name of Loan Recipient) City of Joliet _____

I. Disadvantaged Business Enterprise Policy

A. It is the policy of the State of Illinois to award a fair share of sub-agreements to disadvantaged businesses (DBEs). In complying with this requirement, contractors are required to take affirmative steps to assure that disadvantaged businesses are used when possible as sources of supplies, equipment, construction, and services as explained herein.

B. These specifications define the terms, conditions, and requirements of the State Revolving Fund Loan Program, and the (Name of Loan Recipient) _____'s policy and procedures for complying with these requirements.

C. As required by the award conditions of USEPA's Assistance Agreement with IEPA, the fair share percentages are 5% for MBEs and 12% for WBEs.

II. Pre-Contract Award Obligations

A. All bidders are required to advertise subcontracting opportunities and to negotiate with disadvantaged businesses prior to bid opening. Failure to document such affirmative efforts shall be deemed, relative to disadvantaged business compliance, non-responsive.

B. To establish a bid as responsible, the bidder will be required to document the proposed utilization of disadvantaged businesses with letters of intent signed by the bidder and by the disadvantaged business listed in the bid. The documentation requirements are outlined in Section III of this document.

C. (Name of Loan Recipient) _____'s disadvantaged business policy clearly intends for bidders to contact and encourage the participation of disadvantaged businesses prior to bid opening. Affirmative efforts (the written record of conscientious and honest communications between the bidder and disadvantaged business) must be initiated and completed by the bidder prior to bid opening. All bidders must document compliance with the requirements of the disadvantaged business policy.

III. Evaluation of Disadvantaged Business Utilization and Affirmative Efforts

A. As a prerequisite to demonstrate compliance with the (Name of Loan Recipient) _____'s disadvantaged business policy, ALL bidders shall provide the following with its bid:

1. Completed and signed certification from the bidder(s), attesting that the bidder will award no sub-agreements, including the procurement of equipment, materials, supplies and services, in the performance of this contract.

OR

2. "Certification of publication," or adequate proof of publication, including an actual copy of the newspaper advertisement from a daily newspaper. **The advertisement must run one day at least (16) days prior to bid opening.** An example advertisement follows this section.
Bidders may publish the advertisement in an established, online bidder's clearinghouse such as the "Dodge Report (https://www.construction.com)" If an online advertisement is placed with the "Dodge Report" or an equivalent website, a screenshot of the advertisement along with the webpage address, and a payment receipt is required as documentation. **The advertisement must run one day at least (16) days prior to bid opening.**

3. List of all disadvantaged business enterprise (DBE) and non-DBE's that submitted proposals to the bidder along with the date of the proposal. Names, addresses, phone number and/or e-mail are required.

4. List of disadvantaged businesses not being utilized and justification for non-utilization.

5. If DBE subcontractors will be utilized for the project, a completed and signed copy of IEPA DBE Form No. 3 (DBE Subcontractor Utilization Form) or an equivalent "Notice of Intent" is needed from each subcontractor.

6. If DBE subcontractors will be utilized for the project, a completed and signed certification from the bidder(s), attesting that the bidder has no controlling or dominating interest or conflict of interest with the disadvantaged business that will be utilized.

7. In instances where the bidder(s) does not receive any proposals from disadvantaged businesses prior to bid opening, the bidder(s) must provide a written certification attesting that no proposals were received.

Failure to submit the documentation pursuant to the requirements of A (1-7) above may cause rejection of the bid as non-responsive**.**

IV. Sanctions

A. The (Name of Loan Recipient) _____ may reject one or all bids when the information submitted by the bidder(s) fails to demonstrate compliance with the disadvantaged business requirements (i.e., the bidder fails to place their pre-bid advertisement in a daily newspaper, or approved website, at least 16 days prior to bid opening).

B. Upon finding that any Party has not complied with the requirements of these specifications, including misrepresenting a firm as a disadvantaged business, any one or a combination of the following actions may be taken.

1. Declare the bidder and/or subcontractor non-responsible and therefore, ineligible for contract award.

2. Disallow all contract costs associated with non-compliance.

3. Refer matters which may be fraudulent to the Illinois Attorney General.

V. Post-Contract Award Compliance

A. As required by the award conditions of USEPA's Assistance Agreement with IEPA, all sub-agreements of the prime contractor must identify that the fair share percentages are 5% for MBEs and 12 % for WBEs.

B. After award of the prime contract, copies of all disadvantaged business-related sub-agreements between the prime contractor and subcontractors shall be submitted to the owner.

C. After bid submission, any changes in previously reported disadvantaged businesses utilization shall be handled in accordance with 40 CFR Part 33.302(b-h). If the contractor fails to initiate such actions, the owner may withhold payments and/or institute other appropriate sanctions.

Suggested Disadvantaged Business (DBE)
Advertisement for Construction Contractors

Notice to Disadvantaged Businesses

_____, _____, _____, is
(Name of Company) (Address of Company) (Telephone)

seeking disadvantaged businesses for the_____
(Name of Loan Recipient)

Project for subcontracting opportunities in the following areas: _____, _____, _____, _____

All disadvantaged businesses should contact, IN WRITING, (certified letter, return receipt requested), _____ to discuss the subcontracting opportunities. All negotiations must
(Company Contact Person)

be completed prior to bid opening _____.
(Date of Bid Opening)

*The advertisement must clearly state the method of evaluating the proposals or quotations, and the relative importance attached to each criterion. Bidders must uniformly and objectively evaluate the proposals submitted by disadvantaged business in response to the advertisement based upon the evaluation criteria stated in the advertisement. The evaluation criteria must not be restrictive or exclusionary.

Summary Report of Disadvantaged Business Enterprise Requirements for Contractors

1) Completed and signed certification from bidder(s), attesting that the bidder will award no sub-agreements, including the procurement of equipment, materials, supplies and services in the performance of this contract (may use IEPA DBE Form #1).

OR

"Certificate of publication, or adequate evidence of proof of publication, including an actual copy of the newspaper advertisement from a daily publication. For advertisements placed in a construction project clearinghouse such as www.construction.com, a screenshot of the advertisement, link to website, and receipt is required for proof of advertising.

2) List of all disadvantaged business enterprises (DBE) and non-DBE's that submitted proposals to the bidder/prime contractor. Specify as DBE or non-DBE, type of DBE, and the other information listed below (DBE Form #4 may be used for this purpose).

Name of Company
Name of Owners
Address of Company
E-mail Address of Company
Telephone Number
Date of Proposal
Type of Business
Type of DBE
Description of work to be performed

3) List of disadvantaged businesses that submitted proposals to the bidder but will not be utilized. Justification for non-utilization must be provided (may use IEPA DBE Form #1).

4) Completed and signed copies IEPA DBE Form #3 (Subcontractor Utilization Form) or equivalent "Notice of Intent". Only applies if using DBE subcontractors.

5) Completed and signed certification from bidder(s) attesting that the bidder has no dominating or conflict of interest with the disadvantaged business to be utilized (IEPA DBE Form #1). Only applies if using DBE subcontractors.

6) In instances where the bidder(s) does not receive any proposals from disadvantaged businesses prior to bid opening, the bidder(s) must provide a written certification attesting that no proposals were received (IEPA DBE Form #1).

7) **Note:** DBE Form #2 is **not** included in this packet. It is for consultants/engineers to report DBE activity. This form may be found in IEPA's DBE Guidance Manual which is available on the Agency's website or mailed upon request by calling 217-782-2027.

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IEPA Disadvantaged Business Enterprise (DBE) Program Form #1
Contractor Certification Form

(To be completed by all Prime Contractors)

Please check the appropriate boxes that apply and complete the information on the bottom of the form.

☐This firm will award no subcontracts (including in the procurement of equipment, supplies, or services), in the performance of this contract.

☐This firm advertised for DBE subcontractors according to the good faith efforts outlined in the IEPA DBE Guidance Document.

☐This firm received proposals from DBE(s) that will not be utilized. A list of the DBEs not hired, along with their address, phone number, and reason(s) for non-utilization, is below.

☐This firm did not receive any inquiries from DBEs.

I certify that the above is true. I further certify that this firm and its partners, directors, and officers do not possess a controlling interest in ownership or conflict of interest or any other authority to control the DBE to be used during the performance of the contracts.

By: _____

NAME: _____

TITLE: _____

Company: _____

Date: ___/ ___ / _____

EPA Disadvantaged Business Enterprise (DBE) Program Form #3
Subcontractor Utilization Form

(Only complete this form if DBE subcontractors or sub-consultants will be working on a project)

This form is intended to capture the DBE subcontractor's description of work to be performed and the price of the work submitted to the prime contractor. All subcontractors must complete this form, and it must be included in the prime contractor's bid package.

Subcontractor Name	Project Name
Contact Person's Name & Title	
Address	
Telephone	Email
DBE Certified By:	Select all that apply. At least one is required: **MBE WBE SBE DBE**
Prime Contractor Name	

Type of Work to be Performed	**Cost Estimate of Work**

I certify under penalty of perjury that the forgoing statements are true and correct. Signing this form does not signify a commitment to using the subcontractors above. I am aware that in the event of a replacement of a subcontractor, I will adhere to the replacement requirements set forth in 40 C.F.R. Part 33 Section 33.302(c).

Prime Contractor Signature:	**Print Name:**
Date:	**Title:**
Subcontractor Signature:	**Print Name:**
Date:	**Title:**

IEPA Disadvantaged Business Enterprise (DBE) Program Form #4, Bidders List

(Only complete this form if subcontractors or sub-consultants will be working on a project)

Using this form/format is optional. Other formats are acceptable.

Company Name & Contact Person	Address	Phone No. w/ area code	Email	Proposed Work (supplies, paint, paint etc.)	DBE Status (MBE, WBE, DBE, SBE or Not Applicable)
					Check if Hired ☐
					Check if Hired ☐
					Check if Hired ☐
					Check if Hired ☐

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NOTICE

Responsible Bidder Ordinance

The City of Joliet has adopted a Responsible Bidder Ordinance (2-440). In addition to any other requirement, unless otherwise expressly stated in a bid solicitation or an award of contract, or applicable state or federal law or regulation states otherwise, all bidders must comply with the following requirements in order to submit a bid or be awarded a contract.

1. The bidder must be a duly organized legal entity in good standing with the Illinois Secretary of State and in compliance with all laws prerequisite to doing business in the state and submit a copy of the Illinois Secretary of State Department of Business Services online records evidencing that the bidder has a current corporate annual report on file, if required. If the bidder is an individual, sole proprietorship, or partnership, this subsection shall not apply.

2. The bidder must have a valid Federal Tax Identification Number or Social Security Number (for individuals), documents evidencing current registration with the Illinois Department of Revenue and the Illinois Department of Employment Security (if bidder has employees).

3. The bidder must be an equal opportunity employer and comply with Section 2000(e) of Chapter 21, Title 42 of the United States Code and Executive Order 11246.

4. The bidder shall provide certificates of insurance indicating the following coverages if called for in the bid solicitation: general liability, workers compensation, completed operations, automobile, hazardous occupation, and product liability.

5. A statement that all employees are (i) covered under a current workers' compensation insurance policy, and (ii) properly classified under such policy. If the bidder is insured with a carrier, the evidence of workers' compensation insurance shall be a copy of the "Information Page" which includes the name and address of the insured, as well as class codes upon which the compensation premium is based and the total estimated remuneration per class code.

6. A statement of compliance with all provisions of the Illinois Prevailing Wage Act (820 ILCS 130), as amended, and all the rules and regulations therein, for the past five (5) years. Such statement shall also provide that the contractor has reviewed the Prevailing Wage Act or the federal Davis-Bacon and Related Acts, has reviewed and agrees to pay the applicable prevailing wage rates attached to the bid specifications, and will strictly comply with the Prevailing Wage Act or federal Davis-Bacon and Related Acts and related requirements, including wages, medical and hospitalization insurance and retirement for those trades covered in the Act. A contractor who has been

found, by the Illinois Department of Labor, to be in violation of the Prevailing Wage Act twice within a three (3) year period shall be deemed to not be Responsible Bidder for two (2) years from the date of the latest finding.

7. Certification of compliance with the Substance Abuse Prevention on Public Works Projects Act (820 ILCS 265/1, et seq.).

8. A certification that individuals who perform work on the public works project on behalf of the contractor are properly classified as either (i) an employee, or (ii) an independent contractor under all applicable state and federal laws and local ordinances.

9. Documents evidencing any professional or trade licenses required by law or local ordinance for any trade or specialty in which the contractor is seeking a contract award. Additionally, the contractor must disclose any suspension or revocation of such license held by the company, or of any director, officer, or manager of the company.

10. For construction contracts (construction of new facilities, renovation of existing facilities, or road construction projects), or demolition contracts, over $25,000 (twenty-five thousand dollars), evidence of participation in apprenticeship and training programs applicable to the work to be performed on the project, which are approved by and registered with the United States Department of Labor's Office of Apprenticeship, or its successor organization. The required evidence includes but is not limited to a copy of all applicable apprenticeship standards or Apprenticeship Agreement(s) for any apprentice(s) who will perform work on the public works project.

11. Disclosure of the name and address of each subcontractor from whom the contractor has accepted a bid and/or intends to hire on any part of the project. Further, each such subcontractor shall be required to adhere to the requirements set forth herein as though it were bidding directly to the city. Each contractor shall submit all subcontractor information and supporting documentation to the city prior to the subcontractor commencing work on the project.

12. Unless otherwise agreed to in a collective bargaining agreement, the bidder shall certify that it provides, or contributes to, a health care plan for those employees working on the project and shall provide a copy of the health care plan upon request. The contributions toward a health care plan must be part of the employee's regular compensation, and not merely part of the employee's compensation during the period of time for which the employee is performing work on the project.

13. Unless otherwise agreed to in a collective bargaining agreement, the bidder shall certify that it contributes to an employee pension or retirement program, including but not limited to a 401k, a defined benefit plan or a similar plan for

its field employees working on the project and shall provide a copy of the plan upon request. The contributions toward a pension or retirement program must be a part of the employee's regular compensation and not merely part of the employee's compensation during the period of time for which the employee is performing work on the project.

14. Certification that the bidder has not been subject to any determinations by a court or governmental agency for violations of federal, state, or local laws, including but not limited to serious, willful, or repeated violations of the Occupational Safety and Health Act (OSHA), violations of contracting or antitrust laws, tax or licensing laws, environmental laws, or the federal Davis-Bacon and Related Acts.

15. Whenever practical, the bidder should prequalify as a local bidder.

16. Any material changes to the contractor's status, at any time during the performance of the project, must be reported in writing to the city within fourteen (14) days of its occurrence. Failure to comply with this requirement is grounds for the contractor to be deemed a non-responsible bidder.

17. The submission requirements of this Ordinance also apply to subcontractors, except that the contractor shall submit all subcontractor submissions to the city prior to the subcontractor commencing work on the project. Failure of a subcontractor to submit the required information shall not disqualify the successful bidder from performing work on the project and shall not constitute a contractual default and/or breach by the successful bidder. However, the city may withhold all payments otherwise due for work performed by a subcontractor until the subcontractor submits the required information and the city approves such information. Further, where the city deems necessary, the city may also require that the successful bidder remove the subcontractor from the project and replace it with a responsive and responsible subcontractor.

CERTIFICATIONS/ATTACHMENTS

For each required certification or submission, the bidder shall comply with the appropriate subsection of the City of Joliet code of ordinances by initialing the page and/or attaching the required documentation to the page.

The certification pages should be initialed and submitted with the bid along with the required attachments.

There are 16 certification pages and a checklist that follows.

2-440(1) - The bidder must be a duly organized legal entity in good standing with the Illinois Secretary of State and in compliance with all laws prerequisite to doing business in the state and submit a copy of the Illinois Secretary of State Department of Business Services online records evidencing that the bidder has a current corporate annual report on file, if required. If the bidder is an individual, sole proprietorship, or partnership, this subsection shall not apply.

I hereby certify that the bidder is a duly organized legal entity in good standing with the Illinois Secretary of State and in compliance with all laws prerequisite to doing business in the state.

_____

Initials of bidder

Or:

I certify that the bidder is an individual, sole proprietor, or partnership.

_____

Initials of bidder

Attachment: Illinois Secretary of State Department of Business Services online records evidencing that the bidder has a current corporate annual report on file (if required).

2-440(2) - The bidder must have a valid Federal Tax Identification Number or Social Security Number (for individuals), documents evidencing current registration with the Illinois Department of Revenue and the Illinois Department of Employment Security (if bidder has employees).

Attachment: Documents evidencing current registration with the Illinois Department of Revenue and the Illinois Department of Employment Security (if bidder has employees).

2-440(3) - The bidder must be an equal opportunity employer and comply with Section 2000(e) of Chapter 21, Title 42 of the United States Code and Executive Order 11246.

I certify that the bidder is an equal opportunity employer and is in compliance with Section 2000(e) of Chapter 21, Title 42 of the United States Code and Executive Order 11246.

_____

Initials of bidder

2-440(4) - The bidder shall provide certificates of insurance indicating the following coverages if called for in the bid solicitation: general liability, workers compensation, completed operations, automobile, hazardous occupation, and product liability.

Attachments: Certificates of insurance indicating the following coverages as called for in the bid solicitation.

2-440(5) - A statement that all employees are (i) covered under a current workers' compensation insurance policy, and (ii) properly classified under such policy. If the bidder is insured with a carrier, the evidence of workers' compensation insurance shall be a copy of the "Information Page" which includes the name and address of the insured, as well as class codes upon which the compensation premium is based and the total estimated remuneration per class code.

I certify that all employees are (i) covered under a current workers' compensation insurance policy, and (ii) properly classified under such policy.

_____

Initials of bidder

Attachment: "Information Page" which includes the name and address of the insured, as well as class codes upon which the compensation premium is based and the total estimated remuneration per class code (if applicable).

2-440(6) - A statement of compliance with all provisions of the Illinois Prevailing Wage Act (820 ILCS 130), as amended, and all the rules and regulations therein, for the past five (5) years. Such statement shall also provide that the contractor has reviewed the Prevailing Wage Act or the federal Davis-Bacon and Related Acts, has reviewed and agrees to pay the applicable prevailing wage rates attached to the bid specifications, and will strictly comply with the Prevailing Wage Act or federal Davis-Bacon and Related Acts and related requirements, including wages, medical and hospitalization insurance and retirement for those trades covered in the Act. A contractor who has been found, by the Illinois Department of Labor, to be in violation of the Prevailing Wage Act twice within a three (3) year period shall be deemed to not be Responsible Bidder for two (2) years from the date of the latest finding.

I certify that the bidder is in compliance with all provisions of the Illinois Prevailing Wage Act (820 ILCS 130), as amended, and all the rules and regulations therein, and has been for the past five (5) years.

_____

Initials of bidder

I certify that that the contractor has reviewed the Prevailing Wage Act or the federal Davis-Bacon and Related Acts, has reviewed and agrees to pay the applicable prevailing wage rates attached to the bid specifications, and will strictly comply with the Prevailing Wage Act or federal Davis-Bacon and Related Acts and related requirements, including wages, medical and hospitalization insurance and retirement for those trades covered in the Act.

_____

Initials of bidder

2-440(7) - Certification of compliance with the Substance Abuse Prevention on Public Works Projects Act (820 ILCS 265/1, et seq.).

I certify that the bidder is in compliance with the Substance Abuse Prevention on Public Works Projects Act (820 ILCS 265/1, et seq.).

_____

Initials of bidder

2-440(8) - A certification that individuals who perform work on the public works project on behalf of the contractor are properly classified as either (i) an employee, or (ii) an independent contractor under all applicable state and federal laws and local ordinances.

I certify that all individuals who perform work on the public works project on behalf of the contractor are properly classified as either (i) an employee, or (ii) an independent contractor under all applicable state and federal laws and local ordinances.

_____

Initials of bidder

2-440(9) - Documents evidencing any professional or trade licenses required by law or local ordinance for any trade or specialty in which the contractor is seeking a contract award. Additionally, the contractor must disclose any suspension or revocation of such license held by the company, or of any director, officer, or manager of the company.

Attachments: Documents evidencing any professional or trade licenses required by law or local ordinance for any trade or specialty in which the contractor is seeking a contract award.

Attachments: Disclosure of any suspension or revocation of such license held by the company, or of any director, officer, or manager of the company.

Or

I certify that the contractor has not been the subject of any suspension or revocation of such license held by the company, or of any director, officer, or manager of the company.

_____

Initials of bidder

2-440(10) - For construction contracts (construction of new facilities, renovation of existing facilities, or road construction projects), or demolition contracts, over $25,000 (twenty-five thousand dollars), evidence of participation in apprenticeship and training programs applicable to the work to be performed on the project, which are approved by and registered with the United States Department of Labor's Office of Apprenticeship, or its successor organization. The required evidence includes but is not limited to a copy of all applicable apprenticeship standards or Apprenticeship Agreement(s) for any apprentice(s) who will perform work on the public works project.

Attachments: Evidence of participation in apprenticeship and training programs applicable to the work to be performed on the project, which are approved by and registered with the United States Department of Labor's Office of Apprenticeship, or its successor organization. The required evidence includes but is not limited to a copy of all applicable apprenticeship standards or Apprenticeship Agreement(s) for any apprentice(s) who will perform work on the public works project.

2-440(11) - Disclosure of the name and address of each subcontractor from whom the contractor has accepted a bid and/or intends to hire on any part of the project. Further, each such subcontractor shall be required to adhere to the requirements set forth herein as though it were bidding directly to the city. Each contractor shall submit all subcontractor information and supporting documentation to the city prior to the subcontractor commencing work on the project.

Attachments: The name and address of each subcontractor from whom the contractor has accepted a bid and/or intends to hire on any part of the project.

I certify and acknowledge that the bidder shall submit all subcontractor information and supporting documentation to the city prior to the subcontractor commencing work on the project.

_____

Initials of bidder

2-440(12) - Unless otherwise agreed to in a collective bargaining agreement, the bidder shall certify that it provides, or contributes to, a health care plan for those employees working on the project and shall provide a copy of the health care plan upon request. The contributions toward a health care plan must be part of the employee's regular compensation, and not merely part of the employee's compensation during the period of time for which the employee is performing work on the project.

I certify that the bidder provides, or contributes to, a health care plan for those employees working on the project and shall provide a copy of the health care plan upon request. I further certify that these contributions are part of the employee's regular compensation, and not merely part of the employee's compensation during the period of time for which the employee is performing work on the project.

_____

Initials of bidder

Or

I certify that the bidder is subject to a collective bargaining agreement which addresses issues regarding a health care plan.

_____

Initials of bidder

2-440(13) - Unless otherwise agreed to in a collective bargaining agreement, the bidder shall certify that it contributes to an employee pension or retirement program, including but not limited to a 401k, a defined benefit plan or a similar plan for its field employees working on the project and shall provide a copy of the plan upon request. The contributions toward a pension or retirement program must be a part of the employee's regular compensation and not merely part of the employee's compensation during the period of time for which the employee is performing work on the project.

I certify that the bidder contributes to an employee pension or retirement program, including but not limited to a 401k, a defined benefit plan or a similar plan for its field employees working on the project and shall provide a copy of the plan upon request. These contributions toward a pension or retirement program are part of the employee's regular compensation and not merely part of the employee's compensation during the period of time for which the employee is performing work on the project.

_____

Initials of bidder

Or

I certify that the bidder is subject to a collective bargaining agreement which addresses contributions to an employee pension or retirement program, including but not limited to a 401k, a defined benefit plan or a similar plan for its field employees working on the project and shall provide a copy of the plan upon request.

_____

Initials of bidder

2-440(14) - Certification that the bidder has not been subject to any determinations by a court or governmental agency for violations of federal, state, or local laws, including but not limited to serious, willful, or repeated violations of the Occupational Safety and Health Act (OSHA), violations of contracting or antitrust laws, tax or licensing laws, environmental laws, or the federal Davis-Bacon and Related Acts.

I certify that the bidder has not been subject to any determinations by a court or governmental agency for violations of federal, state, or local laws, including but not limited to serious, willful, or repeated violations of the Occupational Safety and Health Act (OSHA), violations of contracting or antitrust laws, tax or licensing laws, environmental laws, or the federal Davis-Bacon and Related Acts.

_____

Initials of bidder

2-440(b) - Any material changes to the contractor's status, at any time during the performance of the project, must be reported in writing to the city within fourteen (14) days of its occurrence. Failure to comply with this requirement is grounds for the contractor to be deemed a non-responsible bidder.

I certify and acknowledge that any material changes to the contractor's status, at any time during the performance of the project, must be reported in writing to the city within fourteen (14) days of its occurrence. Failure to comply with this requirement is grounds for the contractor to be deemed a non-responsible bidder.

_____

Initials of bidder

2-440(d) - The submission requirements of this Ordinance also apply to subcontractors, except that the contractor shall submit all subcontractor submissions to the city prior to the subcontractor commencing work on the project. Failure of a subcontractor to submit the required information shall not disqualify the successful bidder from performing work on the project and shall not constitute a contractual default and/or breach by the successful bidder. However, the city may withhold all payments otherwise due for work performed by a subcontractor until the subcontractor submits the required information and the city approves such information. Further, where the city deems necessary, the city may also require that the successful bidder remove the subcontractor from the project and replace it with a responsive and responsible subcontractor.

I certify and acknowledge that the submission requirements of this Ordinance also apply to subcontractors. I further acknowledge that the city may withhold all payments otherwise due for work performed by a subcontractor until the subcontractor submits required information and the city approves such information. I further acknowledge that where the city deems necessary, the city may also require that the successful bidder remove the subcontractor from the project and replace it with a responsive and responsible subcontractor.

_____
Initials of bidder

CERTIFICATION CHECKLIST

Bidders/Contractor are required to certify to the following items:

2-440(1) – Good standing with S.O.S. _____

2-440(3) – Equal opportunity employer _____

2-440(5) – Workers' compensation coverage _____

2-440(6) – Prevailing Wage Act _____

2-440(7) – Substance Abuse Prevention on Public Works Act _____

2-440(8) – Employees properly classified _____

2-440(9) – Contractor properly licensed _____

2-440(11) – Disclosure of subcontractor information _____

2-440(12) – Employee health care plan _____

2-440(13) – Employee retirement plan _____

2-440(14) – OSHA compliance _____

2-440(b) – Required reporting of change in status _____

2-440(d) – Required updating of subcontractor information _____

Bidders/Contractor are required to attach the following documents:

2-440(1) – S.O.S. annual report (if required) _____

2-440(2) – Registration with IDOR and IDES _____

2-440(4) – Certificates of insurance _____

2-440(5) – Information page regarding workers' compensation _____

2-440(9) – Professional or trade licenses required _____

2-440(9) – Disclosure of suspension or revocation of license _____

2-440(10) – Apprenticeship standards or agreements (if required) _____

2-440(11) – List of subcontractors _____

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4. MINORITY EMPLOYMENT REQUIREMENTS:

For contracts valued greater than $100,000.00:

The Bidder's attention is called to the following Equal Employment Opportunity Construction Contract Specification:

The contractors aggregate workforce on all construction work covered by this contract shall include any combination of minority or female participation equaling or exceeding ten percent (10%) of the contractor's aggregate workforce. Compliance with this specification will be measured against the total hours performed, including all subcontracts.

The contractor shall submit to the Project Engineer monthly, certified payroll records in order to monitor the total work hours and those hours worked by minorities and/or females, before receiving a monthly payment. Upon completion of the contract, the contractor shall submit to the Project Engineer a summary of the total work hours and those hours worked by minorities and/or females prior to receiving any retainage reduction or final payment.

Non-compliance with this specification will result in the retainage of 2% of the total contract amount for a probationary period of one year from the completion of the contract. If within the one year probation period the Contractor exceeds the minority employment requirements by the number of man-hours previously deficient, on another City of Joliet contract, the retainage from the prior contract will be released to the Contractor. If the Contractor fails to make up the minority hours on another contract within the probation period, the Contractor will be penalized 2% of the original contract amount.

DEFINITION

Minority shall include:

1. Black (all persons having origins in any of the Black African racial groups not of Hispanic Origin).

2. Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race).

3. Asian and Pacific Island (all persons having origin in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands).

4. American Indian or Alaskan Native (all persons having origins in any of the original peoples of North American and maintaining identifiable tribal affiliations through membership and participation or community identification).

For contracts valued less than or equal to $100,000.00:

The contract does not contain a specific minority employment requirement; however, the City of Joliet encourages the contractor to maximize the amount of minority participation.

DEPARTMENT OF
PUBLIC WORKS & UTILITIES
815-724-4230 Direct
815-723-7770 Fax

CITY OF JOLIET

150 WEST JEFFERSON STREET
JOLIET, ILLINOIS 60432-4158

GENERAL CONTRACTOR

RE: 2023 CONSTRUCTION PROJECTS

Dear General Contractor:

The City of Joliet currently has specifications, which require ten **(10%)** percent minority participation in contracts over $100,000.00. In an effort to track this information better, the City of Joliet will be requiring all GENERAL CONTRACTS to submit to a complete list of sub-contractors they intend to use on the awarded project at the pre-construction meeting. The issuance of this sub-contractor list will help the City ensure that minority requirements are met as well as prevailing wages. The sub-contractor list should include the dollar amount or percentage of this contract for the work the sub-contractor is responsible. I.D.O.T. for BC 260-A is an example of such an acceptable form. In addition, the specification states that monthly certified payroll records are to be submitted to the Engineer. This will also be enforced for the upcoming construction season.

The City of Joliet appreciates your effort throughout the years and looks forward to working with you in the upcoming construction season.

Gregory P. Ruddy, P.E.
Director of Public Works

Allison Swisher
Director of Public Utilities

NOTICE TO BIDDERS – ETHICS ORDINANCE AND INSPECTOR GENERAL COMPLIANCE

The City of Joliet has an Ethics Ordinance (Section 2-333 et seq. of the Code of Ordinances of the City of Joliet) which prohibits any appointed or elected official of the City of Joliet, or any employee of the City of Joliet from receiving or soliciting anything of value to influence that City official or employee in carrying out his or her official duties. The City of Joliet appreciates your anticipated cooperation in refraining from offering any official or employee any thing, item, service, or favor of value to influence that person's decision on any City business. With your cooperation, the City of Joliet will achieve its goal of maintaining a fair and competitive contract procedure that promotes the best interests of the citizens of the City of Joliet. You should report immediately any violation of the Ethics Ordinance to the Inspector General, including any solicitation of a thing of value by a City official or employee. A bidder or contractor's participation or encouragement in the violation of the Ethics Ordinance may result in the rejection of a bid, termination of contract, or declaration of ineligibility to bid on future contracts.

It is the duty of any bidder, proposer, consultant, subcontractor, applicant for pre-qualification for a City contract, applicant for local bidder certification, and all officers, directors, agents, partners and employees of any bidder, proposer, consultant, subcontractor, or such applicant to cooperate with the Inspector General in any investigation or hearing undertaken pursuant to City of Joliet Ordinance 2-180, et. seq.. Any of the aforementioned parties understands and will abide by all provisions of the aforementioned Ordinance. All contractors must inform subcontractors of the provision and require understanding and compliance with it.

A copy of the City of Joliet Ethics Ordinance and all other City Ordinances are available in the City Clerk's office or on the City website for your review.

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AFFIDAVITS

Business Status of Bidder

BIDDER/APPLICANT:

_____
Name

_____
Principal place of business

_____
Address

_____
City, State, Zip Code

The Bidder is a:

_____ *Corporation*
_____ *Partnership*
_____ *Limited Liability Company*
_____ *Sole Proprietorship*
_____ *Other (please explain:* _____)

Corporation

The state of incorporation is: _____

The registered agent of the corporation in Illinois is:

Name _____

Address _____

_____

City, State, Zip _____

_____

The officers of the corporation are:

_____ _____
President *Secretary*

_____ _____
Vice President *Treasurer*

The Corporation is authorized to do business in the State of Illinois

Limited Liability Company

The state of registration is: _____

The registered agent of the Limited Liability Company in Illinois is:

Name _____

Address _____

City State Zip _____

The registered office of the Limited Liability Company in Illinois is:

Address _____

City State Zip _____

The managers and members of the Limited Liability Company are:

_____	_____
Name	*Name*
_____	_____
Address	*Address*
_____	_____
City, State	*City, State*

The LLC is authorized to do business in the State of Illinois

Sole Proprietorship

The address of the sole proprietor is:

_____
Address

_____
City, State

The sole proprietor transacts business in Illinois under the following assumed names:

_____ _____

BID RIGGING AND BID ROTATING

Section 2: That in connection with this solicitation for bids/proposals:

A. The bid is not made in the interest of or on behalf of any undisclosed person, partnership, company, association, organization or corporation;

B. The bidder has not in any manner directly or indirectly sought by consultation, communication or agreement with anyone to fix the bid price of said bidder or

any other bidder or to fix any overhead profit or cost element of such bid price or that of any other bidder or to secure any advantage against the public body awarding the contract or anyone interested in the proper contract;

C. The bid is genuine and not collusive or sham;

D. The prices or breakdowns thereof and any and all contents which had been quoted in this bid have not been knowingly disclosed by the bidder and will not be knowingly disclosed by the bidder directly or indirectly to any other bidder or any competitor prior to opening;

E. All statements contained in such bid are true;

F. No attempt has been made or will be made by the bidder to induce any other person or firm to submit a false or sham bid;

G. No attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition;

Section 2a ***NON-COLLUSION***

A. No officer or employee of the City of Joliet has a direct or indirect pecuniary interest in this bid.

B. No officer or employee of the City of Joliet has disclosed to the bidder any information related to the terms of a sealed bid.

C. No officer or employee of the City of Joliet has informed the bidder that the bid will be accepted only if specified persons are included as subcontractors.

D. Only the bidder will be entitled to the proceeds of the contract if this bid is accepted by the City of Joliet.

E. This bid is made without the benefit of information obtained in violation of law.

Section 3. The undersigned further states that: (circle A or B)

A. He is the person in the bidder's organization responsible within that organization for the decision as to the prices being bid herein and that he has not participated, and will not participate, in any action contrary to paragraphs A through G above; or

B. He is not the person in the bidder's organization responsible within that organization for the decision as to the prices being bid herein but that he has been authorized to act as agent for the persons responsible for such decision in certifying that such persons have not participated, and will not participate, in any action contrary to paragraphs A through G above and as their agent does hereby so certify; and

C. That he has not participated, and will not participate, in any action contrary to paragraphs A through G above.

Section 4. The undersigned certifies that the bidder has never been convicted for a violation of State laws prohibiting bid rigging or bid rotating.

THE REQUIREMENTS OF THE ILLINOIS DRUG FREE WORKPLACE ACT

Section 5. The undersigned will publish a statement:

A. Notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the aforementioned company's workplace;

B. Specifying the actions that will be taken against employees for violations of this prohibition;

C. Notifying the employees that, as a condition of their employment to do work under the contract with the City of Joliet, the employees will:

1. Abide by the terms of the statement; and

2. Notify the aforementioned company of any criminal drug statute conviction for a violation occurring the in the workplace not later than five (5) days after such a conviction.

D. Establishing a drug free awareness program to inform the aforementioned company's employees about:

1. The dangers of drug abuse in the workplace;

2. The aforementioned company's policy of maintaining a drug free workplace;

3. Any available drug counseling, rehabilitation, and employee assistance programs; and

4. The penalties that may be imposed upon employees for drug violations.

E. Making it a requirement to give a copy of the statement required by Section 5. to each employee engaged in the performance of the contract with the City of Joliet and to post the statement in a prominent place in the workplace;

F. Notifying the City of Joliet within ten (10) days after receiving notice under Section 5.C.2. from an employee or otherwise receiving actual notice of such a conviction;

G. Imposing a sanction on, or requiring the satisfactory participation in a drug abuse assistance or rehabilitation program by, any employee who is so convicted, as required by Section 6., below;

H. Training personnel to effectively assist employees in selecting a proper course of action in the event drug counseling, treatment, and rehabilitation is required and indicating that an effectively trained counseling and referral team is in place;

I. Making a good faith effort to continue to maintain a drug free workplace through implementing these requirements.

J. Making a good faith effort to continue to maintain a drug free workplace through implementation of this policy.

Section 6. The undersigned further affirms that within thirty (30) days after receiving notice from an employee of a conviction of a violation of the criminal drug statute occurring in the aforementioned company's workplace he shall:

A. Take appropriate personnel action against such employee up to and including termination; or

B. Require the employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a federal, state, or local health, law enforcement, or other appropriate agency.

TAX COMPLIANCE

Section 7. The undersigned on behalf of the entity making the foregoing proposal certifies that neither the undersigned nor the entity is barred from contracting with the City of Joliet because of any delinquency in the payment of any tax administered by the State of Illinois, Department of Revenue, unless the undersigned or the entity is contesting, in accordance with the procedures established by the appropriate revenue act, liability of the tax or the amount of tax.

Section 8. The undersigned or the entity making the proposal or bid understands that making a false statement regarding delinquency in taxes is a Class A Misdemeanor and in addition, voids the contract and allows the municipality to recover all amounts paid to the individual or entity under the contract in a civil action.

NON DISCRIMINATION AND EQUAL EMPLOYMENT OPPORTUNITY

Section 9. This EQUAL EMPLOYMENT OPPORTUNITY CLAUSE is required by the Illinois Human Rights Act and the Rules and Regulations of the Illinois Department of Human Rights published at 44 Illinois Administrative Code Section 750, et seq..

Section 10. In the event of the contractor's noncompliance with any provision of this Equal Employment Opportunity Clause, the Illinois Human Right Act, or the Rules and Regulations for Public Contracts of the Department of Human Rights (hereinafter referred to as the Department) the contractor may be declared nonresponsible and therefore ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations,

and the contract may be canceled or avoided in whole or in part, and such other sanctions or penalties may be imposed or remedies involved as provided by statute or regulation.

During the performance of this contract, the contractor agrees:

A. That it will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin or ancestry; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.

B. That, if it hires additional employees in order to perform this contract, or any portion hereof, it will determine the availability (in accordance with the Department's Rules and Regulations for Public Contracts) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.

C. That, in all solicitations or advertisements for employees placed by it or on its behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, marital status, national origin or ancestry, age, physical or mental handicap unrelated to ability, or an unfavorable discharge from military service.

D. That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the contractor's obligations under the Illinois Human Rights Act and the Department's Rules and Regulations for Public Contract. If any such labor organization or representative fails or refuses to cooperate with the contractor in its efforts to comply with such Act and Rules and Regulations, the contractor will promptly so notify the Department and the contracting agency will recruit employees from other sources when necessary to fulfill its obligations thereunder.

E. That it will submit reports as required by the Department's Rules and Regulations for Public Contracts, furnish all relevant information as may from time to time be requested by the Department or the contracting agency, and in all respects comply with the Illinois Human Rights Act and the Department's Rules and Regulations for Public Contracts.

F. That it will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and the Department for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and the Department's Rules and Regulations for Public Contracts.

G. That it will include verbatim or by reference the provisions of this Equal Employment Opportunity Clause in every subcontract it awards under which any portion of the contract obligations are undertaken or assumed, so that such provisions will be binding upon such subcontractor. In the same manner as the other provisions of this contract, the contractor will be liable for compliance with applicable provisions of this clause by such subcontractors; and further it will promptly notify the contracting agency and the Department in the event any subcontractor fails or refuses to comply therewith. In addition, the contractor will not utilize any subcontractor declared by the Illinois Human Rights Department to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations.

Section 11. For the purposes of subsection G of Section 10, "Subcontract" means any agreement, arrangement or understanding, written or otherwise, between a public contractor and any person under which any portion of the public contractor's obligations under one or more public contracts is performed, undertaken or assumed; the term "subcontract," however, shall not include any agreement, arrangement or understanding in which the parties stand in the relationship of an employer and an employee, or between a bank or other financial institution and its customers.

Section 12. It is expressly understood that the foregoing statements and representations and promises are made as a condition to the right of the bidder to receive payment under any award made under the terms and provisions of this bid.

Section 13. Have written sexual harassment policies that shall include, at a minimum, the following information: (i) the illegality of sexual harassment; (ii) the definition of sexual harassment under State law; (iii) a description of sexual harassment, utilizing examples; (iv) the vendor's internal complaint process including penalties; (v) the legal recourse, investigative and complaint process available through the Department and the Commission; (vi) directions on how to contact the Department and Commission; and (vii) protection against retaliation as provided by Section 6-101 of this Act. A copy of the policies shall be provided to the Department upon request.

Section 14. In the event that this contract is subject to Executive Order 11246, Seller certifies that it (1) is in compliance with Section 202 thereof and the Rules and Regulations issued thereunder; (2) does not and will not provide or maintain at any of it's establishments, or permit it's employees to perform their services at any location under its control where there are maintained, segregated facilities, and (3) agrees that a breach of this Certification violates the Equal Employment clause of Executive Order 11246. "Segregated Facilities," means facilities which are in fact segregated on a basis of race, color, creed, sex, religion or national origin, because of habit, local custom, or otherwise.

THE AMERICANS WITH DISABILITIES ACT

Section 15. As a condition of receiving this contract, the undersigned vendor certifies that services, programs and activities provided under this contract are and will continue to be in compliance with the Joliet Accessibility Code.

Signed by:_____
[name]

_____
[title]

Subscribed and Sworn to before me this _____ day of _____, 20___.

By: _____
Notary Public

-seal-

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STATE OF ILLINOIS)
) SS.
COUNTY OF WILL)

* *
*NOTE: THIS AFFIDAVIT MUST BE
*COMPLETED BY THE CHIEF OFFICER
*OF THE BIDDER
* *

AFFIDAVIT
REGARDING BIDDER AVAILABILITY

The undersigned, _____, being first duly sworn on oath and being duly authorized to make this Affidavit, hereby declares that the following is a true and correct statement relating to All uncompleted contracts of the undersigned for Federal, State, County, City and private work, including All subcontract work; and all pending low bids not yet awarded or rejected; and equipment available.

PART I. WORK UNDER CONTRACT

List below all work you have under contract as either a prime contractor or a subcontractor, including all pending low bids not yet awarded or rejected.

	1	2	3	4	5	Awards Pending	
County and Section No.							
Contract With							
Estimated Completion Date							
Total Contract Price							Total
Uncompleted Dollar Value							

PART II. UNCOMPLETED WORK TO BE DONE WITH YOUR OWN FORCES.

List below the uncompleted dollar value of work for each contract to be completed with your own forces. All work subcontract TO others will be listed on the reverse of this form. In a joint venture list only that portion of the work to be done by your company.

							TOTALS
Excav. Grading & Clearing							
Portland Cement Concrete Paving							
Bituminous Hot Mix Surface							
Bituminous Aggregate Mix							
Aggregate Bases & Surface							
Structures							
Drainage							

Electrical							
Curb & Gutter							
Sewer							
Water							
Sidewalks							
Demolition							
Other/Explain							
Totals							

Date Equipment Available For Work							

_____
(SIGNATURE)

_____
(PRINT NAME)

_____
(TITLE)

Subscribed and Sworn to before me this

_____ day of _____, AD, **20**___.

_____
NOTARY PUBLIC

STOP*

CHECK THE FOLLOWING LIST TO MAKE SURE THAT YOUR BID CONTAINS ALL OF THE REQUIRED DOCUMENTS.

_____ 1. BID SECURITY

_____ 2. BIDDING SCHEDULE

_____ 3. BID PROPOSAL, DULY SIGNED

_____ 4. ALL AFFIDAVITS, SIGNED & NOTARIZED

_____ 5. RESPONSIBLE BIDDER CHECKLIST

_____ 6. ALL OTHER REQUIRED ATTACHMENTS LISTED IN ARTICLE 7 OF SECTION 00 41 00.

FAILURE TO INCLUDE ANY ONE OR ALL OF THE ABOVE MAY CONSTITUTE SUITABLE GROUNDS FOR REJECTION OF YOUR BID.

***(FOR CONSTRUCTION CONTRACTS ONLY)**

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SECTION 00 52 00

AGREEMENT

THIS AGREEMENT is by and between ***CITY OF JOLIET, ILLINOIS***

(hereinafter called OWNER) and _____

(hereinafter called CONTRACTOR).

Terms used in this Agreement have the meanings stated in the General Conditions and the Supplementary Conditions.

OWNER and CONTRACTOR, in consideration of the mutual covenants set forth herein, agree as follows:

Article 1. WORK

1.01 CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

THE PROJECT INCLUDES THE FOLLOWING WORK: REHABILITATION OR ABANDONMENT OF COMBINED SEWER OVERFLOW REGULATOR STRUCTURES.

Article 2. THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Article 3. ENGINEER

3.01 OWNER has retained Strand Associates, Inc.® ("ENGINEER") to act as OWNER's representative, assume all duties and responsibilities of ENGINEER, and have the rights and authority assigned to ENGINEER in the Contract except for resident project representative services. OWNER will assume these duties and responsibilities and the rights and authority thereto in accordance with the Contract Documents.

3.02 The part of the Project that pertains to the Work has been designed by ENGINEER.

Article 4. CONTRACT TIMES

4.01 Time of the Essence

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 Dates for Substantial Completion and Final Payment

A. The Work will be substantially complete substantially complete on or before December 31, 2024 and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before May 15, 2025.

4.03 Liquidated Damages

A. CONTRACTOR and OWNER recognize that time is of the essence as stated in Paragraph 4.01 above and that OWNER will suffer financial and other losses if the Work is not completed and Milestones not achieved within the Contract Times, as duly modified. The parties also recognize the delays, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: CONTRACTOR shall pay OWNER $2,500 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete. This amount is comprised of $2,300 per day for engineering, construction administration services, and construction observation services, and $200 per day for administration, labor, expenses, and other costs that will be incurred by OWNER.

2. Completion of Remaining Work: After Substantial Completion, if CONTRACTOR shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, CONTRACTOR shall pay OWNER $2,500 for each day that expires after such time until the Work is completed and ready for final payment. This amount is comprised of $2,300 per day for engineering, construction administration services, and construction observation services, and $200 per day for administration, labor, expenses, and other costs that will be incurred by OWNER.

3. Liquidated damages for failing to timely attain Milestones, Substantial Completion, and final completion are not additive, and will not be imposed concurrently.

Article 5. CONTRACT PRICE

5.01 OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount in current funds as follows, subject to adjustment under the Contract:

A. For all Work, at the prices stated in CONTRACTOR's Bid, attached hereto as an exhibit.

B. All specific Cash Allowances are included in the Contract Price and have been computed in accordance with Paragraph 13.02 of the General Conditions.

Article 6. PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

A. CONTRACTOR shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by ENGINEER as provided in the General Conditions.

6.02 Progress Payments; Retainage

A. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment as established at the preconstruction conference during performance of the Work as provided in Paragraphs 6.02.A.1 and 6.02.A.2 below. All such payments will be measured by the schedule of values established in Paragraph 2.05.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements:

1. Prior to Substantial Completion, OWNER will retain an amount equal to 10% of each progress payment application until 50% of the Work has been completed. At 50% completion, further progress payment applications shall be paid in full to CONTRACTOR and no additional amounts will be retained unless ENGINEER certifies to OWNER that the job is not proceeding satisfactorily. Amounts previously retained shall not be paid to CONTRACTOR until substantial completion of the Work. At 50% completion of the Work, or any time thereafter when the character and progress of the Work is not satisfactory to OWNER on recommendation of ENGINEER, additional amounts may be retained, but in no event shall the total retainage be more than 10% of the value of the work completed.

2. Upon Substantial Completion, OWNER shall pay an amount sufficient to increase total payments to CONTRACTOR to 98% of the Work completed, less such amounts as ENGINEER shall determine in accordance with Paragraph 15.01.C.5 and 15.01.C.6 of the General Conditions and less 100% of ENGINEER's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

6.03 Final Payment

A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, OWNER shall pay the remainder of the Contract Price as recommended by ENGINEER as provided in said Paragraph 15.06. The date of final payment is established when CONTRACTOR provides all closeout documents, completes List of Items to be Completed or Corrected, and requests final payment

6.04 Consent of Surety

A. OWNER will not make final payment unless CONTRACTOR submits written consent of the surety to such payment, return, or release.

Article 7. HIERARCHY

7.01 In resolving inconsistencies among two or more sections of the Contract Documents, precedence shall be given in the following order:

First:	WRITTEN AMENDMENTS
Second:	CHANGE ORDERS/FIELD ORDERS/WORK CHANGE DIRECTIVES
Third:	ADDENDA
Fourth:	AGREEMENT
Fifth:	SUPPLEMENTARY CONDITIONS
Sixth:	GENERAL CONDITIONS
Seventh:	SPECIFICATIONS
Eighth:	DRAWINGS

For categories that have the same order of precedence, the document that includes the latest date shall control. Figure dimensions (numerical) on Drawings shall take precedence over dimensions measured utilizing a scale.

Article 8. REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS

8.01 CONTRACTOR's Representations

A. In order to induce OWNER to enter into this Contract, CONTRACTOR makes the following representations:

1. CONTRACTOR has examined and carefully studied the Contract Documents, including Addenda.

2. CONTRACTOR has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

3. CONTRACTOR is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.

4. CONTRACTOR has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site, if any, that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.

5. CONTRACTOR has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.

6. CONTRACTOR has considered the information known to CONTRACTOR itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR; and (c) CONTRACTOR's safety precautions and programs.

7. Based on the information and observations referred to in the preceding paragraph, CONTRACTOR agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.

8. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.

9. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.

10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

11. CONTRACTOR's entry into this Contract constitutes an incontrovertible representation by CONTRACTOR that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

12. CONTRACTOR shall not discriminate on the basis of race, color, national origin or sex in the performance of this Contract. CONTRACTOR shall carry out applicable requirements of 40 CFR Part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by CONTRACTOR to carry out these requirements is a material breach of this Contract which may result in the termination of this Contract or other legally available remedies.

8.02 CONTRACTOR’s Certifications

A. CONTRACTOR certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of OWNER, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive OWNER of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of OWNER, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

Article 9. CONTRACT DOCUMENTS

9.01 Contents

A. The Contract Documents consist of the following:

1. This Agreement (pages 00 52 00-1 through 00 52 00-____, inclusive);

2. Performance bond (pages to 00 61 13.13-1 through 00 61 13.13-4, inclusive);

3. Payment bond (pages 00 61 13.16-1 through 00 61 13.16-4, inclusive);

4. Other bonds

a. _____ (pages _____ to _____ , inclusive);

b. _____ (pages _____ to _____ , inclusive);

c. _____ (pages _____ to _____ , inclusive);

5. General Conditions (pages 00 72 00-1 through 00 72 00-_____, inclusive);

6. Supplementary Conditions (pages 00 73 00-1 through 00 73 00-___, inclusive);

7. Specifications as listed in the table of contents of the Project Manual;

8. Drawings–Sheets No. _____ through No. _____

_____

_____

inclusive incorporated herein by reference with each sheet bearing the following general title:

COMBINED SEWER OVERFLOW LONG TERM CONTROL PLAN PHASE IV-EASTSIDE AND WESTSIDE COMBINED SEWER OVERFLOW REGULATORS

as well as drawings listed in the table of contents that are bound at the back of these specifications.

9. Addenda (_____).

10. Exhibits to this Agreement (enumerated as follows:)

a. CONTRACTOR's Bid (pages _____ to _____);

b. Documentation submitted by CONTRACTOR prior to Notice of Award

(_____);

c. (_____);

11. The following may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:

a. Notice to Proceed (pages {_____} to {_____}, inclusive);
b. Erosion Control Certification (pages {_____} to {_____}, inclusive);
c. Work Change Directives (not attached to this Agreement);
d. Change Order(s) (not attached to this Agreement).

B. The Contract Documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 9.

D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 11.01 of the General Conditions.

Article 10. MISCELLANEOUS

10.01 Assignment of Contract

A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.02 Successors and Assigns

A. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect of all covenants, agreements, and obligations contained in the Contract Documents.

10.03 Severability

A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.04 Nonwaiver

A. No provision of the Contract Documents will be deemed waived by reason of one party failing to enforce the provision on one or more occasions. Any such waiver must be in writing.

10.05 Integration

A. The parties' entire agreement is contained in the Contract Documents, and the provisions of the Contract Documents supersede all prior discussions or writings between the parties.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in duplicate. One counterpart each has been delivered to OWNER and CONTRACTOR. All portions of the Contract Documents have been signed or identified by OWNER and CONTRACTOR or identified by ENGINEER on their behalf.

This Agreement will be effective on _____, _____ (which is the Effective Date of the Contract).

OWNER ***CITY OF JOLIET, ILLINOIS***

_____
Signature and Title

ATTEST:

By: _____
Signature and Title

Address for Giving Notices:

Name:	City of Joliet
Street:	150 West Jefferson Street
City, State, Zip Code:	Joliet, IL 60432
Phone:	(815) 724-4254
Facsimile:	(815) 723-7770
E-mail:	odean@joliet.gov
Designated Representative:	Owen T. Dean

CONTRACTOR _____

_____
Signature and Title

ATTEST:

By: _____
Signature and Title

Address for Giving Notices:

Name: _____

Street: _____

City, State, Zip Code: _____

Phone: _____

Facsimile: _____

E-mail: _____

Designated Representative: _____

License No.: _____
(Where applicable)

(If CONTRACTOR is a corporation, limited liability company, or a partnership, attach evidence of authority to sign.)

INSTRUCTIONS FOR EXECUTING CONTRACT

The full name and business address of CONTRACTOR should be inserted and the Agreement should be signed with CONTRACTOR's official signature. Please have the name of the signing party printed under all signatures to the Agreement.

If CONTRACTOR is operating as a partnership, each partner should sign the Agreement. If the Agreement is not signed by each partner, there should be attached to the Agreement a duly authenticated power of attorney evidencing the signer's (signers') authority to sign such Agreement for and on behalf of the partnership.

If CONTRACTOR is an individual, the trade name (if CONTRACTOR is operating under a trade name) should be indicated in the Agreement and the Agreement should be signed by such individual. If signed by other than CONTRACTOR, there should be attached to the Agreement a duly authenticated power of attorney evidencing the signer's authority to execute such Agreement for and on behalf of CONTRACTOR.

If CONTRACTOR is operating as a limited liability company, and it is member-managed, each member should sign the Agreement, or an authorized member should sign. If the LLC is manager-managed, an authorized manager should sign. If the Agreement is not signed by each member, there should be attached to the Agreement a duly authenticated power of attorney evidencing the signer's (signers') authority to sign such Agreement for and on behalf of the LLC.

If CONTRACTOR is a corporation, the Secretary of the corporation should sign the certificate below. If the Agreement itself is signed by the Secretary of the corporation, the certificate below should be executed by some other officer of the corporation. In lieu of the following certificate, there may be attached to the Agreement copies of so much of the records of the corporation which will show the official character and authority of the officers signing, duly certified by the Secretary or Assistant Secretary to be true copies.

I, _____, certify that I am the _____
(Print Name) *(Title of Officer Signing Certificate)*

of the corporation named as CONTRACTOR herein above; that _____,
(Print Name of Officer Signing Agreement)

who signed the foregoing Agreement on behalf of CONTRACTOR was then

_____ of said corporation; that said Agreement was duly signed
(Title of Officer Signing Agreement)

for and on behalf of said Corporation by authority of its governing body, and is within the scope of its corporate powers.

_____
(Officer Signature)

END OF SECTION

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NOTICE OF INTENT TO AWARD

To: _____

_____

_____

Project Description: The project includes the following work: Rehabilitation or abandonment of combined sewer overflow regulator structures.

The OWNER has considered the BID submitted by you for the above-described WORK, in response to its Advertisement for Bids, dated March 16, 2023 and Information for Bidders.

You are hereby notified that your BID will be accepted, contingent upon Illinois Environmental Protection Agency (IEPA) approval, for items in the amount of _____.

You will be required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND and certificates of insurance within ten

(10) calendar days from the date of the final Notice to be sent upon IEPA approval, to you.

Dated this day of _____

City of Joliet

OWNER

By: _____

Title: _____

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NOTICE OF AWARD

To: _____

_____

_____

_____

_____

PROJECT Description: The project includes the following work: Rehabilitation or abandonment of combined sewer overflow regulator structures.

The OWNER has considered the BID submitted by you for the above-described WORK in response to its Advertisement for Bids dated _____,20 _____ and Information for Bidders.

You are hereby notified that your BID has been accepted for items in the amount of $_____.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance BOND, Payment BOND and certificates of insurance within ten (10) calendar days from the date of this Notice to you.

If you fail to execute said Agreement and to furnish said BONDS within ten (10) days from the date of this Notice, said OWNER will be entitled to consider all your rights arising out of the OWNER'S acceptance of your BID as abandoned and as a forfeiture of your BID BOND. The OWNER will be entitled to such other rights as may be granted by law.

You are required to return an acknowledged copy of this NOTICE OF AWARD to the OWNER.

Dated this _____ day of _____, 20 _____.

_____
(Owner)

By _____

Title_____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged,

by _____,

this the _____day of _____, 20 _____.

By _____

Title _____

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Change Order No. _____

Date of Issuance: _____ Effective Date: _____

Project:	Owner:	Owner's Contract No.:
Contract:		Date of Contract:
Contractor:		Engineer's Project No.:

The Contract Documents are modified as follows upon execution of this Change Order:

Description:

Attachments: (List documents supporting change):

CHANGE IN CONTRACT PRICE:	**CHANGE IN CONTRACT TIMES:**
Original Contract Price:	Original Contract Times: ☐ Working days ☐ Calendar days
	Substantial completion (days or date): _____
$_____	Ready for final payment (days or date): _____
[Increase] [Decrease] from previously approved Change Orders No._____to No._____:	[Increase] [Decrease] from previously approved Change Orders No._____to No._____:
	Substantial completion (days): _____
$_____	Ready for final payment (days): _____
Contract Price prior to this Change Order:	Contract Times prior to this Change Order:
	Substantial completion (days or date): _____
$_____	Ready for final payment (days or date): _____
[Increase] [Decrease] of this Change Order:	[Increase] [Decrease] of this Change Order:
	Substantial completion (days or date): _____
$_____	Ready for final payment (days or date): _____
Contract Price incorporating this Change Order:	Contract Times with all approved Change Orders:
	Substantial completion (days or date): _____
$_____	Ready for final payment (days or date): _____

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____	By: _____	By: _____
Engineer (Authorized Signature)	Owner (Authorized Signature)	Contractor (Authorized Signature)
Date: _____	Date: _____	Date: _____

Approved by Funding Agency (if applicable): _____ Date: _____

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NOTICE TO PROCEED

To: _____ Date: _____

_____ Project: _____

__Combined Sewer Overflow Long Term Control Plan Phase IV - Eastside and Westside Combined Sewer Overflow Regulators_____ _____

_____ _____

You are hereby notified to commence WORK in accordance with the Agreement dated _____ _____, 20 _____, on or before _____, 20 _____, and you are to complete the WORK by the completion dates listed in the Agreement.
The date of completion of all WORK is therefore _____, 20 _____.

_____
(Owner)

By _____

Title _Mayor_____

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE TO PROCEED
is hereby acknowledged by _____

_____,

this the _____day of

_____, 20 _____.

By _____

Title _____

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SECTION 00 55 10

EROSION CONTROL CERTIFICATION

Dated: _____

TO: _____
(OWNER)

ADDRESS: _____

_____

PROJECT: _____

OWNER'S CONTRACT NO.: _____

CONTRACT FOR: _____

_____
(Insert name of Contract as it appears in the Bidding Documents)

I certify under penalty of law that I understand the terms and conditions of the General National Pollutant Discharge Elimination System (NPDES) Permit (ILR10) that authorizes the stormwater discharges associated with industrial activities from the construction site and as may be detailed in the Contract Documents. This certification statement is a part of the Stormwater Pollution Prevention Plan (SWPP) for the project described above in accordance with the General NPDES Permit No. ILR10 issued by the Environmental Protection Agency.

I agree to indemnify and hold OWNER harmless from any claims, demands, suits, causes of action, settlements, fines, or judgments and the costs of litigation, including, but not limited to, reasonable attorneys fees and costs of investigation and arising from a condition, obligation, or requirement assumed or to be performed by CONTRACTOR for storm water pollution and erosion control.

Fines and other costs incurred against OWNER for CONTRACTOR's failure to provide the required erosion control practices will be paid by CONTRACTOR.

_____
(CONTRACTOR)

By: _____
(Authorized Signature)

_____
(Title)

END OF SECTION

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PERFORMANCE BOND

Contractor	Surety
Name: [Full formal name of Contractor] Address *(principal place of business)*: [Address of Contractor's principal place of business]	Name: [Full formal name of Surety] Address *(principal place of business)*: [Address of Surety's principal place of business]
Owner	**Contract**
Name: [Full formal name of Owner] Mailing address *(principal place of business)*: [Address of Owner's principal place of business]	Description *(name and location)*: [Owner's project/contract name, and location of the project] Contract Price: [Amount from Contract] Effective Date of Contract: [Date from Contract]

Bond

Bond Amount: [Amount]

Date of Bond: [Date]

(Date of Bond cannot be earlier than Effective Date of Contract)

Modifications to this Bond form:

☐ None ☐ See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

Contractor as Principal	Surety
_____ *(Full formal name of Contractor)*	_____ *(Full formal name of Surety) (corporate seal)*
By: _____ *(Signature)*	By: _____ *(Signature)(Attach Power of Attorney)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____
Attest: _____ *(Signature)*	Attest: _____ *(Signature)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.

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1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:

   3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;

   3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

   3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

   5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

   5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

   5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

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5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

   7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

   7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

   7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law,

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the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.

12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

14. Definitions

    14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

    14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

    14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

    14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

    14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

~~16. Modifications to this Bond are as follows: [Describe modification]~~

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PAYMENT BOND

Contractor	Surety
Name: [Full formal name of Contractor] Address *(principal place of business)*: [Address of Contractor's principal place of business]	Name: [Full formal name of Surety] Address *(principal place of business)*: [Address of Surety's principal place of business]
Owner	**Contract**
Name: [Full formal name of Owner] Mailing address *(principal place of business)*: [Address of Owner's principal place of business]	Description *(name and location)*: [Owner's project/contract name, and location of the project] Contract Price: [Amount, from Contract] Effective Date of Contract: [Date, from Contract]

Bond

Bond Amount: [Amount]

Date of Bond: [Date]

(Date of Bond cannot be earlier than Effective Date of Contract)

Modifications to this Bond form:

☐ None ☐ See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

Contractor as Principal	Surety
_____ *(Full formal name of Contractor)*	_____ *(Full formal name of Surety) (corporate seal)*
By: _____ *(Signature)*	By: _____ *(Signature)(Attach Power of Attorney)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____
Attest: _____ *(Signature)*	Attest: _____ *(Signature)*
Name: _____ *(Printed or typed)*	Name: _____ *(Printed or typed)*
Title: _____	Title: _____

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.

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1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond will arise after the following:

    5.1. Claimants who do not have a direct contract with the Contractor

        5.1.1. have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and

        5.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).

    5.2. Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).

6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

    7.1. Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

    7.2. Pay or arrange for payment of any undisputed amounts.

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7.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

8. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.

9. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.

11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

12. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.

14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.

15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

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16. Definitions

16.1. *Claim*—A written statement by the Claimant including at a minimum:

16.1.1. The name of the Claimant;

16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;

16.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;

16.1.4. A brief description of the labor, materials, or equipment furnished;

16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;

16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;

16.1.7. The total amount of previous payments received by the Claimant; and

16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2. *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.

~~18. Modifications to this Bond are as follows: [Describe modification]~~

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared By

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

TABLE OF CONTENTS

Page

Article 1—Definitions and Terminology 1
1.01 Defined Terms 1
1.02 Terminology 6
Article 2—Preliminary Matters 7
2.01 Delivery of Performance and Payment Bonds; Evidence of Insurance 7
2.02 Copies of Documents 7
2.03 Before Starting Construction 7
2.04 Preconstruction Conference; Designation of Authorized Representatives 8
2.05 Acceptance of Schedules 8
2.06 Electronic Transmittals 8
Article 3—Contract Documents: Intent, Requirements, Reuse 9
3.01 Intent 9
3.02 Reference Standards 9
3.03 Reporting and Resolving Discrepancies 10
3.04 Requirements of the Contract Documents 10
3.05 Reuse of Documents 11
Article 4—Commencement and Progress of the Work 11
4.01 Commencement of Contract Times; Notice to Proceed 11
4.02 Starting the Work 11
4.03 Reference Points 11
4.04 Progress Schedule 12
4.05 Delays in Contractor's Progress 12
Article 5—Site; Subsurface and Physical Conditions; Hazardous Environmental Conditions 13
5.01 Availability of Lands 13
5.02 Use of Site and Other Areas 14
5.03 Subsurface and Physical Conditions 15
5.04 Differing Subsurface or Physical Conditions 16

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5.05 Underground Facilities 17
5.06 Hazardous Environmental Conditions at Site 19
Article 6—Bonds and Insurance 21
6.01 Performance, Payment, and Other Bonds 21
6.02 Insurance—General Provisions 22
6.03 Contractor's Insurance 24
6.04 Builder's Risk and Other Property Insurance 25
6.05 Property Losses; Subrogation 25
6.06 Receipt and Application of Property Insurance Proceeds 27
Article 7—Contractor's Responsibilities 27
7.01 Contractor's Means and Methods of Construction 27
7.02 Supervision and Superintendence 27
7.03 Labor; Working Hours 27
7.04 Services, Materials, and Equipment 28
7.05 "Or Equals" 28
7.06 Substitutes 29
7.07 Concerning Subcontractors and Suppliers 31
7.08 Patent Fees and Royalties 32
7.09 Permits 33
7.10 Taxes 33
7.11 Laws and Regulations 33
7.12 Record Documents 33
7.13 Safety and Protection 34
7.14 Hazard Communication Programs 35
7.15 Emergencies 35
7.16 Submittals 35
7.17 Contractor's General Warranty and Guarantee 38
7.18 Indemnification 39
7.19 Delegation of Professional Design Services 39
Article 8—Other Work at the Site 40
8.01 Other Work 40
8.02 Coordination 41
8.03 Legal Relationships 41

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Article 9—Owner's Responsibilities 42
9.01 Communications to Contractor 42
9.02 Replacement of Engineer 42
9.03 Furnish Data 42
9.04 Pay When Due 42
9.05 Lands and Easements; Reports, Tests, and Drawings 43
9.06 Insurance 43
9.07 Change Orders 43
9.08 Inspections, Tests, and Approvals 43
9.09 Limitations on Owner's Responsibilities 43
9.10 Undisclosed Hazardous Environmental Condition 43
9.11 Evidence of Financial Arrangements 43
9.12 Safety Programs 43
Article 10—Engineer's Status During Construction 44
10.01 Owner's Representative 44
10.02 Visits to Site 44
10.03 Resident Project Representative 44
10.04 Engineer's Authority 44
10.05 Determinations for Unit Price Work 45
10.06 Decisions on Requirements of Contract Documents and Acceptability of Work 45
10.07 Limitations on Engineer's Authority and Responsibilities 45
10.08 Compliance with Safety Program 45
Article 11—Changes to the Contract 46
11.01 Amending and Supplementing the Contract 46
11.02 Change Orders 46
11.03 Work Change Directives 46
11.04 Field Orders 47
11.05 Owner-Authorized Changes in the Work 47
11.06 Unauthorized Changes in the Work 47
11.07 Change of Contract Price 47
11.08 Change of Contract Times 49
11.09 Change Proposals 49
11.10 Notification to Surety 50

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Article 12—Claims 50
12.01 Claims 50
Article 13—Cost of the Work; Allowances; Unit Price Work 51
13.01 Cost of the Work 51
13.02 Allowances 55
13.03 Unit Price Work 55
Article 14—Tests and Inspections; Correction, Removal, or Acceptance of Defective Work 56
14.01 Access to Work 56
14.02 Tests, Inspections, and Approvals 56
14.03 Defective Work 57
14.04 Acceptance of Defective Work 58
14.05 Uncovering Work 58
14.06 Owner May Stop the Work 58
14.07 Owner May Correct Defective Work 59
Article 15—Payments to Contractor; Set-Offs; Completion; Correction Period 59
15.01 Progress Payments 59
15.02 Contractor's Warranty of Title 62
15.03 Substantial Completion 62
15.04 Partial Use or Occupancy 63
15.05 Final Inspection 64
15.06 Final Payment 64
15.07 Waiver of Claims 65
15.08 Correction Period 66
Article 16—Suspension of Work and Termination 67
16.01 Owner May Suspend Work 67
16.02 Owner May Terminate for Cause 67
16.03 Owner May Terminate for Convenience 68
16.04 Contractor May Stop Work or Terminate 68
Article 17—Final Resolution of Disputes 69
17.01 Methods and Procedures 69
Article 18—Miscellaneous 69
18.01 Giving Notice 69
18.02 Computation of Times 69

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18.03 Cumulative Remedies 70
18.04 Limitation of Damages 70
18.05 No Waiver 70
18.06 Survival of Obligations 70
18.07 Controlling Law 70
18.08 Assignment of Contract 70
18.09 Successors and Assigns 70
18.10 Headings 70

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.

2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.

3. *Application for Payment*—The document prepared by Contractor, in a form acceptable to Engineer, to request progress or final payments, and which is to be accompanied by such supporting documentation as is required by the Contract Documents.

4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

5. *Bidder*—An individual or entity that submits a Bid to Owner.

6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.

7. *Bidding Requirements*—The Advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.

8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.

9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.

10. *Claim*

a. A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment of Contract Price or Contract Times; contesting an initial decision by Engineer concerning the

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requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.

b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.

c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.

d. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.

12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.

13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.

14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.

15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.

16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.

17. *Cost of the Work*—See Paragraph 13.01 for definition.

18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.

19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.

20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.

21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

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recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.

23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.

24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.

    a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.

    b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.

    c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.

25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.

28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.

29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.

30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.

31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.

32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

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33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.

34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.

35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer's review of the submittals.

36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.

39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.

40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers' instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.

42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion of such Work.

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43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.

44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.

45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.

46. *Technical Data*

    a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.

    b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.

    c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.

47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.

48. *Unit Price Work*—Work to be paid for on the basis of unit prices.

49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

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1.02 *Terminology*

A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives*: The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day*: The word "day" means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective*: The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:

1. does not conform to the Contract Documents;

2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or

3. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).

E. *Furnish, Install, Perform, Provide*

1. The word "furnish," when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word "install," when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.

3. The words "perform" or "provide," when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.

4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words "furnish," "install," "perform," or "provide," then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

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F. *Contract Price or Contract Times*: References to a change in "Contract Price or Contract Times" or "Contract Times or Contract Price" or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term "or both" is not expressed.

G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).

B. *Evidence of Contractor's Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.

C. *Evidence of Owner's Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully signed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.

B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;

2. a preliminary Schedule of Submittals; and

3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work

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into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work, and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other Submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Acceptance of Schedules*

A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will be made to Contractor until acceptable schedules are submitted to Engineer.

1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.

3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.

B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.

C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

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ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.

B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.

C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.

D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.

E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

G. Nothing in the Contract Documents creates:

1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or

2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

3.02 *Reference Standards*

A. *Standards Specifications, Codes, Laws and Regulations*

1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.

2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility

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inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. *Contractor's Verification of Figures and Field Measurements*: Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents*: If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract issued pursuant to Paragraph 11.01.

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:

a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or

b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

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B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

A. Contractor and its Subcontractors and Suppliers shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media versions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or

2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein precludes Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work may be done at the Site prior to such date.

4.03 *Reference Points*

A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the

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established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.

1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times must be submitted in accordance with the requirements of Article 11.

B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work will be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.

B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.

C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:

1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;

2. Abnormal weather conditions;

3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and

4. Acts of war or terrorism.

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D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:

1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.

2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.

3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.

E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:

1. The circumstances that form the basis for the requested adjustment;

2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;

3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;

4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and

5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.

Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.

F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.

G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

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B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.

2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

B. *Removal of Debris During Performance of the Work*: During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.

C. *Cleaning*: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment

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and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;

2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and

3. Technical Data contained in such reports and drawings.

B. *Underground Facilities*: Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

C. *Reliance by Contractor on Technical Data*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

D. *Limitations of Other Data and Documents*: Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;

3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or

4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

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5.04 *Differing Subsurface or Physical Conditions*

A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site:

1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate;

2. is of such a nature as to require a change in the Drawings or Specifications;

3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

B. *Engineer's Review*: After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

C. *Owner's Statement to Contractor Regarding Site Condition*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.

D. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

E. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in

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Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;

b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,

c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:

a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;

b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

c. Contractor failed to give the written notice required by Paragraph 5.04.A.

3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

F. *Underground Facilities; Hazardous Environmental Conditions*: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

A. *Contractor's Responsibilities*: Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:

1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;

2. complying with applicable state and local utility damage prevention Laws and Regulations;

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3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;

4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and

5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.

B. *Notice by Contractor*: If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.

C. *Engineer's Review*: Engineer will:

1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;

2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;

3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and

4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

D. *Owner's Statement to Contractor Regarding Underground Facility*: After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.

E. *Early Resumption of Work*: If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.

F. *Possible Price and Times Adjustments*

1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

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or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;

b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and

c. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.

3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

A. *Reports and Drawings*: The Supplementary Conditions identify:

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;

2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and

3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures

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of construction to be employed by Contractor, and safety precautions and programs incident thereto;

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or

3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.

C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.

E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.

G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.

H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special

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conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.

B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.

C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

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Regulations, and must be issued and signed by a surety named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.

E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.

F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.

G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.

H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

6.02 *Insurance—General Provisions*

A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.

B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

C. Alternative forms of insurance coverage, including but not limited to self-insurance and "Occupational Accident and Excess Employer's Indemnity Policies," are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.

D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

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Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.

F. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

H. Contractor shall require:

1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and

2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.

I. If either party does not purchase or maintain the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.

J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.

K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price will be adjusted accordingly.

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L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.

M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.

N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

A. *Required Insurance*: Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.

B. *General Provisions*: The policies of insurance required by this Paragraph 6.03 as supplemented must:

1. include at least the specific coverages required;

2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;

3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract;

4. apply with respect to the performance of the Work, whether such performance is by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable; and

5. include all necessary endorsements to support the stated requirements.

C. *Additional Insureds*: The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:

1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;

2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;

3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

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4. not seek contribution from insurance maintained by the additional insured; and

5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other Property Insurance*

A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.

B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.

C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.

D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.

E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

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Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.

B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.

1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.

C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.

D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

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6.06 *Receipt and Application of Property Insurance Proceeds*

A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.

B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.

C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *Supervision and Superintendence*

A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents.

B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *Labor; Working Hours*

A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall maintain good discipline and order at the Site.

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B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.

C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.04 *Services, Materials, and Equipment*

A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

B. All materials and equipment incorporated into the Work must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.

C. All materials and equipment must be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.05 *"Or Equals"*

A. *Contractor's Request; Governing Criteria*: Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.

1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:

a. in the exercise of reasonable judgment Engineer determines that the proposed item:

1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

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2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

3) has a proven record of performance and availability of responsive service; and

4) is not objectionable to Owner.

b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:

1) there will be no increase in cost to the Owner or increase in Contract Times; and

2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.

B. *Contractor's Expense*: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.

C. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

D. *Effect of Engineer's Determination*: Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.

E. *Treatment as a Substitution Request*: If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 *Substitutes*

A. *Contractor's Request; Governing Criteria*: Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.

1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

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3. Contractor shall make written application to Engineer for review of a proposed substitute item of equipment or material that Contractor seeks to furnish or use. The application:

    a. will certify that the proposed substitute item will:

        1) perform adequately the functions and achieve the results called for by the general design;

        2) be similar in substance to the item specified; and

        3) be suited to the same use as the item specified.

    b. will state:

        1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times;

        2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item; and

        3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

    c. will identify:

        1) all variations of the proposed substitute item from the item specified; and

        2) available engineering, sales, maintenance, repair, and replacement services.

    d. will contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.

B. *Engineer's Evaluation and Determination*: Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.

C. *Special Guarantee*: Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

D. *Reimbursement of Engineer's Cost*: Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

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E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.

B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.

C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.

D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.

E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.

F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.

G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

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H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.

I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.

J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.

K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.

L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.

M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If an invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights will be disclosed in the Contract Documents.

B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

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7.09 *Permits*

A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

7.10 *Taxes*

A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.11 *Laws and Regulations*

A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.

C. Owner or Contractor may give written notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *Record Documents*

A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

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7.13 *Safety and Protection*

A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.

B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.

C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:

1. all persons on the Site or who may be affected by the Work;

2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.

F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.

G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.

H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

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I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).

J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as material safety data sheets) or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

1. Before submitting a Shop Drawing or Sample, Contractor shall:

a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;

b. determine and verify:

1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;

2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and

3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;

c. confirm that the Submittal is complete with respect to all related data included in the Submittal.

2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

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3. With each Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.

B. *Submittal Procedures for Shop Drawings and Samples*: Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.

1. *Shop Drawings*

a. Contractor shall submit the number of copies required in the Specifications.

b. Data shown on the Shop Drawings must be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide, and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.C.

2. *Samples*

a. Contractor shall submit the number of Samples required in the Specifications.

b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the Submittal for the limited purposes required by Paragraph 7.16.C.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Engineer's Review of Shop Drawings and Samples*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. Engineer's review and approval will be only to determine if the items covered by the Submittals will, after installation or incorporation in the Work, comply with the requirements of the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction, or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

4. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will

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document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.

6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.

7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.

8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

D. *Resubmittal Procedures for Shop Drawings and Samples*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.

2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. *Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs*

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:

   a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.

   b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.

   c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

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d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.

2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03. 2.04, and 2.05.

F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

7.17 *Contractor's General Warranty and Guarantee*

A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.

B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:

1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and

2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.

C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

2. normal wear and tear under normal usage.

D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:

1. Observations by Engineer;

2. Recommendation by Engineer or payment by Owner of any progress or final payment;

3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;

4. Use or occupancy of the Work or any part thereof by Owner;

5. Any review and approval of a Shop Drawing or Sample submittal;

6. The issuance of a notice of acceptability by Engineer;

7. The end of the correction period established in Paragraph 15.08;

8. Any inspection, test, or approval by others; or

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9. Any correction of defective Work by Owner.

E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.

B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 *Delegation of Professional Design Services*

A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.

B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.

C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

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D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.

E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:

1. Checking for conformance with the requirements of this Paragraph 7.19;

2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and

3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.

F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.

G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

ARTICLE 8—OTHER WORK AT THE SITE

8.01 *Other Work*

A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.

C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.

D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

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E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

8.02 *Coordination*

A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:

1. The identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;

2. An itemization of the specific matters to be covered by such authority and responsibility; and

3. The extent of such authority and responsibilities.

B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

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B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.

1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.

2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.

C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9—OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents will be that of the former Engineer.

9.03 *Furnish Data*

A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

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9.05 *Lands and Easements; Reports, Tests, and Drawings*

A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.

B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.

C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *Limitations on Owner's Responsibilities*

A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

9.10 *Undisclosed Hazardous Environmental Condition*

A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.

B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

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ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *Owner's Representative*

A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 *Visits to Site*

A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Resident Project Representative*

A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.

B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

A. Engineer has the authority to reject Work in accordance with Article 14.

B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.

C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.

D. Engineer's authority as to changes in the Work is set forth in Article 11.

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E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *Determinations for Unit Price Work*

A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.06 *Decisions on Requirements of Contract Documents and Acceptability of Work*

A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs of which Engineer has been informed.

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ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.

C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

A. Owner and Contractor shall execute appropriate Change Orders covering:

1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;

2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;

3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and

4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.

B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

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B. If Owner has issued a Work Change Directive and:

1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.

2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.

B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *Owner-Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.

B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.

C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.06 *Unauthorized Changes in the Work*

A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

11.07 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.

B. An adjustment in the Contract Price will be determined as follows:

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1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);

2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or

3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).

C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit will be determined as follows:

1. A mutually acceptable fixed fee; or

2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;

b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;

c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;

d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;

e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and

f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

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11.08 *Change of Contract Times*

A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.

B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

A. *Purpose and Content*: Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

B. *Change Proposal Procedures*

1. *Submittal*: Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.

2. *Supporting Data*: The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.

    a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.

    b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

    The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

3. *Engineer's Initial Review*: Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.

4. *Engineer's Full Review and Action on the Change Proposal*: Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

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Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.

C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *Notification to Surety*

A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12—CLAIMS

12.01 *Claims*

A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:

1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;

2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;

3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and

4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.

B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

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and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.

D. *Mediation*

1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.

2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.

E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.

F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:

1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

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2. When needed to determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.

B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, will be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will accrue to Owner, and Contractor shall make provisions so that they may be obtained.

3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, which will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee will be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed or retained for services specifically related to the Work.

5. Other costs consisting of the following:

a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.

b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, which are

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consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.

2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.

3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.

e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.

f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.

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g. The cost of utilities, fuel, and sanitary facilities at the Site.

h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work does not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expediters, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.

2. The cost of purchasing, renting, or furnishing small tools and hand tools.

3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.

4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.

5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

6. Expenses incurred in preparing and advancing Claims.

7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:

a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.

b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:

1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.

2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.

2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

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Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

13.02 *Allowances*

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

B. *Cash Allowances*: Contractor agrees that:

1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment for any of the foregoing will be valid.

C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor for Work covered by allowances, and the Contract Price will be correspondingly adjusted.

13.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision

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thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:

a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and

b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.

2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.

3. Adjusted unit prices will apply to all units of that item.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply with such procedures and programs as applicable.

14.02 *Tests, Inspections, and Approvals*

A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.

B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work will be governed by the provisions of Paragraph 14.05.

C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

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D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:

1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;

2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;

3. by manufacturers of equipment furnished under the Contract Documents;

4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and

5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests will be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.

F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering will be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

A. *Contractor's Obligation*: It is Contractor's obligation to assure that the Work is not defective.

B. *Engineer's Authority*: Engineer has the authority to determine whether Work is defective, and to reject defective Work.

C. *Notice of Defects*: Prompt written notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.

D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.

E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs,

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losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work will be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.

B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.

2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work,

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or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.

B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.

C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

A. *Basis for Progress Payments*: The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.

B. *Applications for Payments*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

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establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.

4. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.

2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

   a. the Work has progressed to the point indicated;

   b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

   c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

3. By recommending any such payment Engineer will not thereby be deemed to have represented that:

   a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or

   b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

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4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:

    a. to supervise, direct, or control the Work;

    b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;

    c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;

    d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or

    e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.

6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:

    a. the Work is defective, requiring correction or replacement;

    b. the Contract Price has been reduced by Change Orders;

    c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

    d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or

    e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:

    a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

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b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;

c. Contractor has failed to provide and maintain required bonds or insurance;

d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;

e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;

f. The Work is defective, requiring correction or replacement;

g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

h. The Contract Price has been reduced by Change Orders;

i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;

j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;

k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or

l. Other items entitle Owner to a set-off against the amount recommended.

2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

15.03 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

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submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.

C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.

E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without

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significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.

2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.

2. The final Application for Payment must be accompanied (except as previously delivered) by:

   a. all documentation called for in the Contract Documents;

   b. consent of the surety, if any, to final payment;

   c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

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d. a list of all duly pending Change Proposals and Claims; and

e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.

3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Final Application and Recommendation of Payment*: If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. *Notice of Acceptability*: In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.

D. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.

E. *Final Payment Becomes Due*: Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

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appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

15.08 *Correction Period*

A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. correct the defective repairs to the Site or such adjacent areas;
2. correct such defective Work;
3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.

B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.

C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.

D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.

E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

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F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times directly attributable to any such suspension. Any Change Proposal seeking such adjustments must be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);

2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;

3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or

4. Contractor's repeated disregard of the authority of Owner or Engineer.

B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:

1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and

2. enforce the rights available to Owner under any applicable performance bond.

C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.

E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

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attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.

G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):

1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and

3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.

B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The

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provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17—FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

A. *Disputes Subject to Final Resolution*: The following disputed matters are subject to final resolution under the provisions of this article:

1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and

2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.

B. *Final Resolution of Disputes*: For any dispute subject to resolution under this article, Owner or Contractor may:

1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;

2. agree with the other party to submit the dispute to another dispute resolution process; or

3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18—MISCELLANEOUS

18.01 *Giving Notice*

A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:

1. in person, by a commercial courier service or otherwise, to the recipient's place of business;

2. by registered or certified mail, postage prepaid, to the recipient's place of business; or

3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

18.02 *Computation of Times*

A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

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18.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

A. A party's non-enforcement of any provision will not constitute a waiver of that provision, nor will it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination of the Contract or of the services of Contractor.

18.07 *Controlling Law*

A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Assignment of Contract*

A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 *Successors and Assigns*

A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 *Headings*

A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

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SECTION 00 73 00

SUPPLEMENTARY CONDITIONS

A. These Supplementary Conditions amend or supplement EJCDC© C-700, Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

B. The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

C. The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

D. Table of Contents

SC-1.01.A Defined Terms 2
SC-1.01.A.8 Change Order 2
SC-1.01.A.18 Drawings 2
SC-1.01.A.50 Work Change Directive 2
SC-1.01.A.51 Request for Information 3
SC-2.01 Delivery of Bonds and Evidence of Insurance 3
SC-2.02 Copies of Documents 3
SC-2.03 Before Starting Construction 3
SC-2.05 Acceptance of Schedules 3
SC–3.03 Reporting Discrepancies 4
SC-3.04 Requirements of the Contract Documents 4
SC-4.01 Commencement of Contract Times; Notice to Proceed 4
SC-4.03 Reference Points 4
SC-5.03 Subsurface and Physical Conditions 5
SC-5.05 Underground Facilities 5
SC-5.06 Hazardous Environmental Conditions at the Site 5
SC-6.01 Performance, Payment and Other Bonds 5
SC-6.03 CONTRACTOR's Insurance 6
SC-6.04 Builder's Risk and Other Property Insurance 10
SC-6.04.F Special Insurance 11
SC-7.03.C Labor; Working Hours 11
SC-7.04.B Services, Materials, and Equipment Warranty 11
SC-7.05 and 7.06 "Or Equals" and Substitutes 11
SC-7.09 Permits 12
SC-7.10 Taxes 12
SC-7.11 Laws and Regulations 12
SC-7.12 Record Documents 13
SC-7.13 Safety and Protection 14
SC-7.16 Submittals 14
SC-7.17 CONTRACTOR's General Warranty and Guarantee 14
SC-7.18 Indemnification 14
SC-7.19 Delegation of Professional Design Services 15
SC-9 OWNER's Responsibilities 15
SC-9.13 OWNER's Site Representative 15

SC-10.03 Resident Project Representative 15
SC-11.01 Amending and Supplementing the Contract 18
SC-11.07 Change of Contract Price 18
SC-11.09.C Change Proposals 18
SC-11.10 Notification to Surety 18
SC-12.01.A Claims Process 18
SC-14.01 Access to Work 18
SC-14.02.A Tests and Inspections 19
SC-15.01 Progress Payments 19
SC-15.01.B Applications for Progress Payment 19
SC-15.01.D Payment Becomes Due 21
SC-15.02 CONTRACTOR's Warranty of Title 21
SC-15.03 Substantial Completion 21
SC-15.04 Partial Use or Occupancy 21
SC-15.08.A Correction Period 22
SC-16.02 OWNER May Terminate for Cause 22
SC-16.03 OWNER May Terminate for Convenience 22

SC-1.01.A Defined Terms

Insert in the first sentence after the phrase "printed with initial capital letters" the following phrase:

"or with all capital letters"

SC-1.01.A.8 Change Order

Insert a comma and the word "ENGINEER" immediately after the word "CONTRACTOR" in this definition.

SC-1.01.A.18 Drawings

Add the following to the end of Paragraph 1.01.A.18:

The following Drawings are part of the Contract Documents:

Drawings titled "Combined Sewer Overflow Long Term Control Plan Phase IV–Eastside and Westside Combined Sewer Overflow Regulators, Contract 2699-0623, City of Joliet, Illinois," Sheets No.1 through No. 42, prepared by Strand Associates, Inc.® and Drawings listed in the table of contents that are bound at the back of these Specifications.

Electronic files were provided for the convenience of CONTRACTOR.

SC-1.01.A.50 Work Change Directive

Amend the phrase "signed by OWNER" in the first sentence of Paragraph 1.01.A.50 to read as follows:

"signed by OWNER and CONTRACTOR."

Add the following language to the end of Paragraph 1.01.A.50:

A Work Change Directive cannot change Contract Price or Contract Times without a subsequent Change Order.

SC-1.01.A.51 Request for Information

Add the following new paragraph immediately after Paragraph 1.01.A.50:

51. Request for Information:

Written request submitted by CONTRACTOR to ENGINEER on a form supplied by ENGINEER requesting clarification, interpretation, or additional information pertaining to Contract Documents.

SC-2.01 Delivery of Bonds and Evidence of Insurance

Delete Paragraphs 2.01.B. and C. in their entirety and insert the following in their place:

B. Evidence of CONTRACTOR's Insurance: When CONTRACTOR delivers the signed counterparts of the Agreement to OWNER, CONTRACTOR shall also deliver to OWNER copies of the policies (including all endorsements, and identification of applicable self-insured retentions and deductibles) of insurance required to be provided by CONTRACTOR in this Contract. CONTRACTOR may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

C. Evidence of OWNER's Insurance: After receipt from CONTRACTOR of the signed counterparts of the Agreement and all required bonds and insurance documentation, OWNER shall promptly deliver to CONTRACTOR copies of the policies of insurance to be provided by OWNER in this Contract (if any). OWNER may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

SC-2.02 Copies of Documents

Amend the first sentence of Paragraph 2.02.A. to read as follows:

OWNER shall not furnish to CONTRACTOR printed copies of the Drawings and Project Manual. OWNER shall only provide electronic files on a compact disk.

SC-2.03 Before Starting Construction

Add the following subparagraph to Paragraph 2.03:

4. a proposed listing of subcontractors and major material and equipment suppliers. The list shall include any proposed substitutions in accordance with Paragraph 7.06.

SC-2.05 Acceptance of Schedules

Add the following language to the end of Paragraph 2.05.A.2:

The schedule for Shop Drawings shall show all submittals complete before 50% of completion of the Work and the schedule for maintenance manuals shall show all submittals complete before 75% of completion of the Work.

Add the following new paragraph immediately after Paragraph 2.05.A:

B. The times included in this paragraph apply to the preliminary schedules. See Division 01 for other submittal and time requirements for the construction progress schedule and submittal schedule.

SC–3.03 Reporting Discrepancies

Add the following language at the end of Paragraph 3.03.A:

4. CONTRACTOR shall report apparent discrepancies to ENGINEER using a Request for Information form on a form supplied by ENGINEER. The Request for Information form shall:

a. be submitted by CONTRACTOR only;

b. be legible and complete;

c. not be used for the purposes of only confirming or verifying issues; and,

d. be prioritized by CONTRACTOR in the event that multiple Requests for Information are outstanding.

Requests for Information that are not in conformance with the requirements above shall be returned to CONTRACTOR without response.

5. CONTRACTOR shall not be relieved of its responsibility to coordinate the Work to prevent adverse impacts to CONTRACTOR's Project Schedule while submitting Requests for Information.

6. If CONTRACTOR believes the Scope of Work included in the Request for Information has a cost and/or time impact, CONTRACTOR should submit a claim in accordance with Article 12 of these General Conditions.

7. If CONTRACTOR proceeds with work when CONTRACTOR had actual knowledge or should have known that a conflict, error, ambiguity, or discrepancy existed as indicated above, correction of work constructed without such notification to ENGINEER shall be at CONTRACTOR's expense, (except in an emergency as authorized by Paragraph 7.15.A).

SC-3.04 Requirements of the Contract Documents

Delete Paragraph 3.04.C in its entirety.

SC-4.01 Commencement of Contract Times; Notice to Proceed

In the last sentence of Paragraph 4.01.A, change "60th day" to "120th day."

SC-4.03 Reference Points

Add the following new paragraph immediately after Paragraph 4.03.A:

B. CONTRACTOR is referred to the General Requirements for additional requirements for laying out the work.

SC-5.03 Subsurface and Physical Conditions

Add the following new paragraph(s) immediately after Paragraph 5.03.D:

E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which CONTRACTOR may rely:

Report Title	Date of Report	Technical Data
Geotechnical Engineering Study for Combined Sewer Overflow Long Term Control Plan, Phase IV, Eastside & Westside Combined Sewer Overflow Regulator Modifications for the City of Joliet, prepared by SEECO Consultants, Inc.	September 28, 2022	Boring methods, level of subsurface water, boring logs, laboratory test methods and results, and boring locations.

ENGINEER accepts no responsibility for accuracy of the soil data or water level information. Soil information, included with these Contract Documents, was not obtained for the purposes of designing excavations and trenches. Soil information was used by ENGINEER for design purposes only. CONTRACTOR shall assure itself by personal examination as to subsurface conditions and shall provide its own investigations and make its own assumptions to comply with OSHA and any other applicable laws and regulations regarding excavation and trenching requirements.

F. No drawings of physical conditions relating to existing surface or subsurface structures at the Site containing technical data, are known to OWNER. CONTRACTOR shall conduct its own personal investigation to determine conditions at the site which may affect the Work, including compliance with OSHA excavation and trenching requirements.

SC-5.05 Underground Facilities

Add the following paragraph immediately after Paragraph 5.05.F:

G. CONTRACTOR is referred to the General Requirements for requirements for keeping records of Underground Facilities and allowing facility owners to inspect.

SC-5.06 Hazardous Environmental Conditions at the Site

Delete Paragraphs 5.06.A and 5.06.B in their entirety and insert the following:

A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to OWNER.

B. Not Used.

SC-6.01 Performance, Payment and Other Bonds

Add the following new paragraphs immediately after Paragraph 6.01.H:

I. The forms of the performance and payment or other Bonds attached hereto shall be used for the Contract. Note instructions thereon as to the form applicable. Each form contemplates one corporate surety only. In case co-sureties or individual sureties will be furnished, proper forms therefore

shall be obtained. Besides the stipulations of Paragraphs 6.01 through 6.03, the surety on the Bonds shall provide a certificate indicating surety is licensed to underwrite contracts in the jurisdiction of the project location which shall be attached to the Bonds.

J. Bonds shall be placed with surety with a Best's rating of no less than A-.

SC-6.03 CONTRACTOR's Insurance

Add the following new language to the end of Paragraph 6.03.C.3:

CONTRACTOR shall provide an executed endorsement form CG 20 01 04 13, or equal, supporting this requirement.

Add the following new paragraph under Paragraphs 6.03.C:

D. Other Additional Insureds: As a supplement to the provisions of Paragraph 6.03.C of the General Conditions, the commercial general liability, automobile liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies must include as additional insureds (in addition to OWNER and ENGINEER) the following: Seeco Consultants, Inc., Illinois Department of Transportation, V3 Companies, Metropolitan Water Reclamation District of Greater Chicago, and the Raven's Club.

E. Worker's Compensation and Employer's Liability: CONTRACTOR shall purchase and maintain workers' compensation and employer's liability insurance, including, as applicable, United States Longshoreman and Harbor Workers' Compensation Act, Jones Act, stop-gap employer's liability coverage for monopolistic states, and foreign voluntary workers' compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

Workers' Compensation and Related Policies	**Policy limits of not less than:**
Workers' Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman's)	Statutory
Foreign voluntary workers' compensation (employer's responsibility coverage), if applicable	Statutory
Employer's Liability	
Each accident	$1,000,000
Each employee	$1,000,000
Policy limit	$1,000,000

F. *Commercial General Liability—Claims Covered:* CONTRACTOR shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of CONTRACTOR, on an occurrence basis, against claims for:

1. damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees,

2. damages insured by reasonably available personal injury liability coverage, and

3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.

G. *Commercial General Liability—Form and Content:* CONTRACTOR's commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage.

a. Such insurance must be maintained for three years after final payment.

b. CONTRACTOR shall furnish OWNER and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.

2. Blanket contractual liability coverage, including but not limited to coverage of CONTRACTOR's contractual indemnity obligations in Paragraph 7.18.

3. Severability of interests and no insured-versus-insured or cross-liability exclusions.

4. Underground, explosion, and collapse coverage.

5. Personal injury coverage.

6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together), or equal, for each required additional insured. If CONTRACTOR demonstrates to OWNER that the specified ISO endorsements are not commercially available, then CONTRACTOR may satisfy this requirement by providing equivalent endorsements.

7. Insurance certificates for commercial general, automobile, and umbrella shall specifically indicate by name the additional insureds which are to include OWNER and ENGINEER as well as other persons or entities so identified. Certificates shall be Acord 25-S or equivalent.

8. Endorsements or General Liability policy shall not exclude supervisory or inspection services.

H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:

1. Any modification of the standard definition of "insured contract" (except to delete the railroad protective liability exclusion if CONTRACTOR is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).

2. Any exclusion for water intrusion or water damage.

3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.

4. Any exclusion of coverage relating to earth subsidence or movement.

5. Any exclusion for the insured's vicarious liability, strict liability, or statutory liability (other than worker's compensation).

6. Any limitation or exclusion based on the nature of CONTRACTOR's work.

7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.

I. *Commercial General Liability—Minimum Policy Limits*

Commercial General Liability	**Policy limits of not less than:**
General Aggregate	$5,000,000
Products—Completed Operations Aggregate	$1,250,000
Personal and Advertising Injury	$5,000,000
Bodily Injury and Property Damage—Each Occurrence	$2,500,000

General Aggregate Limits specified above shall apply separately to this project by attachment of:

"Amendment of Limits of Insurance–Designated Location(s) General Aggregate Limit Endorsement (ISO Form No. CG 25 04 05 09) or "Designated Construction Project(s) General Aggregate Limit" Endorsement (ISO Form CG 25 03 05 09) or equivalent endorsement coverage.

J. *Automobile Liability:* CONTRACTOR shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

Automobile Liability	**Policy limits of not less than:**
Bodily Injury	
Each Person	$1,000,000
Each Accident	$1,000,000
Property Damage	
Each Accident	$1,000,000
or	
Combined Single Limit	
Combined Single Limit (Bodily Injury and Property Damage)	$1,000,000

CONTRACTOR shall also provide an Additional Insured Endorsement for the automobile policy. Endorsement form shall be CA 20 48, or equal.

K. *Umbrella or Excess Liability:* CONTRACTOR shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the Paragraphs above. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

Excess or Umbrella Liability	**Policy limits of not less than:**
Each Occurrence	$3,000,000
General Aggregate	$10,000,000

L. *Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements:* CONTRACTOR may meet the policy limits specified for employer's liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy's policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein. If such umbrella or excess liability policy was required under this Contract, at a specified minimum policy limit, such umbrella or excess policy must retain a minimum limit of $5,000 after accounting for partial attribution of its limits to underlying policies, as allowed above.

M. *Contractor's Pollution Liability Insurance:* CONTRACTOR shall purchase and maintain a policy covering third-party injury and property damage, including cleanup costs, as a result of pollution conditions arising from CONTRACTOR's operations and completed operations. This insurance must be maintained for no less than three years after final completion.

Contractor's Pollution Liability	**Policy limits of not less than:**
Each Occurrence/Claim	Not Applicable
General Aggregate	Not Applicable

☒ If box is checked, CONTRACTOR is not required to provide this insurance.

CONTRACTOR's Pollution Liability coverage shall include coverage for fungus, mold, and bacteria.

N. *Contractor's Professional Liability Insurance:* If CONTRACTOR will provide or furnish professional services under this *Contract*, through a delegation of professional design services or otherwise, then CONTRACTOR shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance must cover negligent acts, errors, or omissions in the performance of professional design or related services by the insured or others for whom the insured is legally liable. The insurance must be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. The retroactive date on the policy must pre-date the commencement of furnishing services on the Project.

CONTRACTOR's Professional Liability	**Policy limits of not less than:**
Each Claim	Not Applicable
Annual Aggregate	Not Applicable

☒ If box is checked, CONTRACTOR is not required to provide this insurance.

O. *Railroad Protective Liability Insurance:* Prior to commencing any Work within 50 feet of railroad-owned and controlled property, CONTRACTOR shall (1) endorse its commercial general liability policy with ISO CG 24 17, removing the contractual liability exclusion for work within 50 feet of a railroad, (2) purchase and maintain railroad protective liability insurance meeting the following requirements, (3) furnish a copy of the endorsement to OWNER, and (4) submit a copy of the railroad protective policy and other railroad-required documentation to the railroad, and notify OWNER of such submittal.

Railroad Protective Liability Insurance	**Policy limits of not less than:**
Each Claim	Not Applicable
Aggregate	Not Applicable

☒ If box is checked, CONTRACTOR is not required to provide this insurance.

P. *Unmanned Aerial Vehicle Liability Insurance:* If CONTRACTOR uses unmanned aerial vehicles (UAV—commonly *referred* to as drones) at the Site or in support of any aspect of the Work, CONTRACTOR shall obtain UAV liability insurance in the amounts stated; name OWNER, ENGINEER, and all individuals and entities identified in the Supplementary Conditions as additional insureds; and provide a certificate to OWNER confirming CONTRACTOR's compliance with this requirement. Such insurance will provide coverage for property damage, bodily injury or death, and invasion of privacy.

Unmanned Aerial Vehicle Liability Insurance	**Policy limits of not less than:**
Each Claim	Not Applicable
General Aggregate	Not Applicable

☒ If box is checked, CONTRACTOR is not required to provide this insurance.

Q. Waiver of Subrogation: CONTRACTOR's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall provide a waiver of subrogation covering OWNER and ENGINEER, and any individuals or entities identified in the Supplementary Conditions. CONTRACTOR shall obtain all necessary endorsements to support these requirements. Endorsement shall be CG 24 04 05 09, or equal.

R. General Liability, Automobile Liability, and Umbrella Liability shall include coverage for mental anguish and punitive damages.

SC-6.04 Builder's Risk and Other Property Insurance

Delete Paragraph 6.04.A and insert the following in its place:

A. OWNER shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.

OWNER's property insurance includes a $5,000 deductible for which CONTRACTOR shall be responsible.

SC-6.04.F Special Insurance

Add the following new paragraph immediately after Paragraph 6.04.E:

F. Special Insurance:

1. Prior to commencing work, CONTRACTOR shall obtain and review OWNER's insurance policies and advise OWNER of the adequacy of the policy to meet CONTRACTOR's requirements.

2. If CONTRACTOR does not advise OWNER in writing of special insurance needs, CONTRACTOR relinquishes any claim against OWNER for any loss CONTRACTOR may incur during the course of completing the Work.

SC-7.03.C Labor; Working Hours

Add the following new subparagraphs immediately after Paragraph 7.03.C:

1. Regular working hours will be *7* A.M. to 5:30 P.M. CST.

2. OWNER's legal holidays are New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the day after Thanksgiving, Christmas Eve and Christmas Day.

D. CONTRACTOR shall be responsible for the cost of any overtime pay or other expense incurred by OWNER for ENGINEER's services (including those of the Resident Project Representative, if any), OWNER's representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If CONTRACTOR is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then OWNER may impose a reasonable set-off against payments due under Article 15.

SC-7.04.B Services, Materials, and Equipment Warranty

Add the following to the end of Paragraph 7.04.B:

Suppliers shall be deemed to impliedly warrant that their products and all component materials incorporated into them are suitable and fit for the intended use of such products and shall be free from defect in material, workmanship or design, such warranty to run to the benefit of OWNER and ENGINEER. The foregoing applies whether the products or their component materials are specified in the Contract Documents or are of Supplier's design.

SC-7.05 and 7.06 "Or Equals" and Substitutes

Add the following new paragraph immediately after Paragraph 7.05.E.:

F. All requirements of Paragraph 7.05 shall apply to review and acceptance of Base Bid equipment manufacturers listed on the Equipment Alternatives form of the Lump Sum Base Bid, except for Paragraph D., Reimbursement of ENGINEER's Cost.

SC-7.09 Permits

Delete last sentence of Paragraph 7.09.A and add the following in its place:

See General Requirements and technical specification sections for utility charge provisions.

Add Paragraph 7.09.B as follows:

B. See General Requirements for additional permit information.

SC-7.10 Taxes

Add the following new paragraph immediately after Paragraph 7.10.A:

B. OWNER is exempt from payment of sales and compensating use taxes of the State of Illinois, the City of Joliet, and the County of Will on all materials to be incorporated into the Work.

1. OWNER will furnish the required certificates of tax exemption to CONTRACTOR for use in the purchase of supplies and materials to be incorporated into the Work.

2. OWNER's exemption does not apply to highway, street, or road construction included in the Work.

3. OWNER's exemption also does not apply to construction, tools, machinery, equipment, or other property purchased by or leased by CONTRACTOR, or to supplies or materials not incorporated into the Work.

SC-7.11 Laws and Regulations

Add the following new paragraph immediately after Paragraph 7.11.C:

D. CONTRACTOR shall comply with Employment of Illinois Workers on Public Works Act 30 ILCS 570, which requires contractors to use Illinois laborers on all public works construction and improvement projects during a period of excessive unemployment. Excessive unemployment is defined as any month immediately following two consecutive calendar months that the Illinois unemployment rate exceeds 5%, CONTRACTOR agrees to employ a work force that is comprised of at least 90% Illinois laborers. An "Illinois laborer" is defined as any person who has resided in Illinois for at least 30 days and intends to become or remain an Illinois resident.

Add the following new paragraph immediately after Paragraph 7.11.D:

E. CONTRACTOR shall comply with the following, including all reporting or notification requirements:

1. Title VI of the Civil Rights Act of 1964 (P.L. 88-352), which provides that no person shall on the grounds of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

2. Federal Water Pollution Control Act Amendments of 1972, Section 13, which provides that no person shall on the basis of sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance under this Act.

3 Title IX of the Education Amendments of 1972, which provides that no person shall on the basis of sex be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance.

4. Age Discrimination Act of 1975 (P.L. 94-135), which prohibits, with certain exceptions, discrimination on the basis of age in programs or activities receiving federal financial assistance.

5. Section 504 of the Rehabilitation Act of 1973 (including Executive Orders 11914 and 11250), which provides that no otherwise qualified handicapped individual shall solely by reason of his or her handicap, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance.

6. Equal Employment Opportunity Requirements, Executive Order 11246, which requires that a contractor under a federal or federally assisted constructed project not discriminate in employment on the basis of race, color, religion, sex, or national origin. The Order requires contractors to take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Further, it requires CONTRACTOR to post all mandatory equal opportunity notices and complete all required Department of Labor and Equal Opportunity Commission reporting forms.

7. Davis-Bacon Act (40 U.S.C., 276 et. seq.), which requires that wages for all laborers and mechanics employed by contractors or subcontractors for federally-funded treatment works conform to prevailing wage rates established for the locality as determined by the Secretary of Labor under the Davis-Bacon labor wage provisions.

8. Debarment and Suspension Requirements, Executive Order, 40 CFR, Part 32, which requires recipients, contractors, and subcontractors to provide certifications that they will not knowingly enter into contracts with individuals or businesses which have been debarred or suspended from federal assistance programs.

9. Women's and Minority Business Enterprise, Executive Orders 11625 and 12138, and 40 CFR 35.3145(d) and (e), which establishes requirements and procedures for the utilization and reporting of minority and women owned (MBE/WBE) business participation in for federally funded projects, and Small Rural Business Enterprise requirements.

10. Section 306 of the Clean Air Act and Section 508 of the Clean Water Act, including Executive Order 11738, Administration of the Clean Air Act and Federal Water Pollution Control Act with Respect to Federal Contracts, Grants, or Loans, which prohibits the recipient from entering into contracts or otherwise extending federal assistance to individuals or facilities listed in the Environmental Protection Agency's list of Violating Facilities.

SC-7.12 Record Documents

In Paragraph 7.12.A delete last sentence and insert the following:

Upon completion of the Work, these record documents, samples, and shop drawings shall be delivered by CONTRACTOR to OWNER.

SC-7.13 Safety and Protection

Add the following language to the end of Paragraph 7.13.A:

If the Work includes excavation or trenches, CONTRACTOR shall keep at the Site at all times during the progress of the Work a competent person to comply with OSHA trenching and excavation requirements. The competent person shall be one who is capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

SC-7.16 Submittals

Add the following new paragraphs immediately after Paragraph 7.16.F:

G. CONTRACTOR shall furnish required submittals with sufficient information and accuracy in order to obtain required approval of an item with no more than three submittals. ENGINEER will record ENGINEER's time for reviewing subsequent submittals of Shop Drawings, samples or other items requiring approval and CONTRACTOR shall reimburse OWNER for ENGINEER's charges for such time.

H. In the event that CONTRACTOR requests a substitution for a previously approved item, CONTRACTOR shall reimburse OWNER for ENGINEER's charges for its review time unless the need for such change is beyond the control of CONTRACTOR.

SC-7.17 CONTRACTOR's General Warranty and Guarantee

Add the following new paragraph immediately after Paragraph 7.17.E:

F. At a minimum, CONTRACTOR's general warranty shall extend throughout the correction period as defined in Paragraph 15.08.

SC-7.18 Indemnification

Add the following to the end of Paragraph 7.18.A:

In addition, CONTRACTOR shall indemnify, hold harmless, and pay for the defense of OWNER and ENGINEER from and against claims, losses, or damages in regard to any act or failure to act by OWNER or ENGINEER in connection with general supervision, inspection and/or coordination of CONTRACTOR's operations.

CONTRACTOR shall, at its own expense, appear, defend, and pay all fees of attorneys and all costs and other expenses arising therefrom or incurred in connection therewith; and, if any judgments shall be rendered against any individual or entity indemnified hereunder in any such action, CONTRACTOR shall, at its own expense, satisfy and discharge same. CONTRACTOR expressly understands and agrees that any Letter of Credit or insurance protection required by the Contract, or otherwise provided by CONTRACTOR, shall in no way limit the responsibility to indemnify, keep and, save harmless, and defend any individual or entity indemnified hereunder as herein provided.

Add the following new paragraph immediately after Paragraph 7.18.B:

C. For any matter for which OWNER and ENGINEER are indemnified under Paragraph 7.18.A, CONTRACTOR shall pay for OWNER's and ENGINEER's reasonable defense, including, but not limited to, all fees and charges of engineers, architects, attorneys, and other

professionals and all court or arbitration or other dispute resolution costs or awards until OWNER or ENGINEER are found negligent. If OWNER or ENGINEER are found negligent, OWNER or ENGINEER shall reimburse CONTRACTOR for the prorata extent of OWNER's or ENGINEER's negligence for the cost of OWNER's or ENGINEER's reasonable defense.

D. In Paragraphs 7.18.A through C as may be amended by the Supplementary Conditions, ENGINEER shall also include V3 Companies.

SC-7.19 Delegation of Professional Design Services

Add the following new paragraphs immediately after Paragraph 7.19.G:

H. The design professional providing the design calculations and design drawings shall be licensed in the State of the Project.

I. The design calculation and design drawings are not shop drawings, but shall be submitted to ENGINEER separately along with the required shop drawings for the system, material, or equipment specified. These calculations will be forwarded to OWNER for their records.

SC-9 OWNER's Responsibilities

Add the following new paragraph immediately after Paragraph 9.12:

SC-9.13 OWNER's Site Representative

A. OWNER will furnish an "OWNER's Site Representative" to represent OWNER at the Site and assist OWNER in observing the progress and quality of the Work. OWNER's Site Representative is not ENGINEER's consultant, agent, or employee.

SC-10.03 Resident Project Representative

Add the following new subparagraph immediately after Paragraph 10.03.A:

1. Strand Associates, Inc.® provided design services for the Project and will assume all duties and responsibilities of ENGINEER in Article 10 with the exception of Paragraph 10.03.

Add the following new paragraphs immediately after Paragraph 10.03.B:

C. The Resident Project Representative (RPR) will be OWNER's representative at the Site. RPR's dealings in matters pertaining to the Work in general will be with ENGINEER and CONTRACTOR. RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of CONTRACTOR. The RPR will:

1. Conferences and Meetings: Attend meetings with CONTRACTOR, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including CONTRACTOR's safety meetings), and as appropriate prepare and circulate copies of minutes thereof.

2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by CONTRACTOR and consult with ENGINEER concerning acceptability.

3. Liaison:

a. Serve as ENGINEER's liaison with CONTRACTOR. Working principally through CONTRACTOR's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.

b. Assist ENGINEER in serving as OWNER's liaison with CONTRACTOR when CONTRACTOR's operations affect OWNER's on-Site operations.

c. Assist in obtaining from OWNER additional details or information, when required for proper execution of the Work.

4. Interpretation of Contract Documents: Report to ENGINEER when clarifications and interpretations of the Contract Documents are needed and transmit to CONTRACTOR clarifications and interpretations as issued by ENGINEER.

5. Modifications: Consider and evaluate CONTRACTOR's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to ENGINEER. Transmit to CONTRACTOR in writing decisions as issued by ENGINEER.

6. Review of Work and Rejection of Defective Work:

a. Conduct on-Site observations of CONTRACTOR's work in progress to assist ENGINEER in determining if the Work is in general proceeding in accordance with the Contract Documents.

b. Report to ENGINEER whenever RPR believes that any part of CONTRACTOR's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise ENGINEER of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

7. Tests and System Start-ups:

a. Observe that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate OWNER's personnel, and that CONTRACTOR maintains adequate records thereof.

b. Observe, record, and report to ENGINEER appropriate details relative to the test procedures and systems start-ups.

8. Records:

a. Prepare a daily report or keep a diary or log book, and send periodic reports to ENGINEER.

9. Reports:

a. Furnish to ENGINEER periodic reports as required of progress of the Work and of CONTRACTOR's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.

b. Draft and recommend to ENGINEER proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from CONTRACTOR.

c. Notify ENGINEER of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.

10. Payment Requests: Review applications for payment with CONTRACTOR for compliance with the established procedure for their submission and forward with recommendations to ENGINEER, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

11. Certificates, Operation and Maintenance Manuals: During the course of the Work, review materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by CONTRACTOR are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to ENGINEER for review and forwarding to OWNER prior to payment for that part of the Work.

12. Completion:

a. Participate in ENGINEER's visits regarding Substantial Completion.

b. Assist in the preparation of a punch list of items to be completed or corrected.

c. Participate in ENGINEER's visit to the Site in the company of OWNER and CONTRACTOR regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by CONTRACTOR.

d. Observe whether items on the final punch list have been completed or corrected.

D. The RPR will not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

2. Exceed limitations of ENGINEER's authority as set forth in the Contract Documents.

3. Undertake any of the responsibilities of CONTRACTOR, Subcontractors, or Suppliers.

4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction.

5 Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of OWNER or CONTRACTOR.

6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by ENGINEER.

7. Authorize OWNER to occupy the Project in whole or in part.

SC-11.01 Amending and Supplementing the Contract

Delete the second sentence in Paragraph 11.01.C in its entirety.

SC-11.07 Change of Contract Price

Amend the phrase at the end of Paragraph 11.07.B.2 to read:

(which may include an allowance for overhead and profit in accordance with Paragraph 11.07.C.2. unless OWNER and CONTRACTOR agree that these allowances are not appropriate for the Work involved.)

SC-11.09.C Change Proposals

Delete Paragraph 11.09.C in its entirety and insert the following in its place:

"Not used."

SC-11.10 Notification to Surety

Add the following new paragraphs immediately after Paragraph 11.10.A:

B. CONTRACTOR shall be responsible for notifying the surety of any assignment, modification, or change of the Contract, change in the Work covered thereby, or extension of time for the completion of the project.

C. Failure to provide notice to the surety of any such change shall not exonerate the surety from its obligations under the bond.

SC-12.01.A Claims Process

Delete Paragraph 12.01.A.3 in its entirety and insert the following in its place:

"Not used."

SC-14.01 Access to Work

Add the following paragraph after Paragraph 14.01.A:

B. Representatives of the Illinois Environmental Agency (IEPA), or any of their duly authorized representatives will have full access to and the right to examine any pertinent books, documents, papers, and records of CONTRACTOR involving transactions related to the project.

SC-14.02.A Tests and Inspections

Add the following to the beginning of Paragraph 14.02.A:

All Work is subject to testing to indicate compliance with Contract Document requirements. Duplicate copies of test results of all tests required shall be submitted to ENGINEER. Tests and inspection of work may be conducted by OWNER or an independent laboratory employed by OWNER. Tests may also be performed in the field by ENGINEER as a basis for acceptance of the Work.

Add the following to the end of Paragraph 14.02.A:

Samples required for testing shall be furnished by CONTRACTOR at no cost to OWNER. In the event that completed Work does not conform to specification requirements during the initial test, the Work shall be corrected and retested for conformance. The entire cost of retesting completed Work shall be borne by CONTRACTOR. This shall include the extra cost for inspection to OWNER which will be deducted from the final amount due CONTRACTOR.

SC-15.01 Progress Payments

Add the following language at the end of Paragraph 15.01.B.1:

An updated Progress Schedule shall be submitted with each Application for Payment. Applications for Payment submitted without an acceptable updated Progress Schedule will be returned to CONTRACTOR without review. Progress Schedules that are submitted which do not reflect current project conditions, will not be considered acceptable.

SC-15.01.B Applications for Progress Payment

Delete Paragraph 15.01.B.3 in its entirety and renumber Paragraph 15.01.B.4 as 15.01.B.3.

Add the following language at the end of Paragraph 15.01.B.3:

No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage, or invest the retainage for the benefit of CONTRACTOR.

Add the following paragraph immediately after Paragraph 15.01.B.3:

4. CONTRACTOR shall submit with each pay request CONTRACTOR's partial waiver of lien for the full amount of the requested payment. Beginning with the second pay request, and with each succeeding pay request, CONTRACTOR shall submit partial waivers of lien for each Subcontractor and Supplier showing that the amount paid to date to each is at least equivalent to the total value of Subcontractor's or Supplier's work, less retainage, included on the previous pay request. CONTRACTOR shall submit with each pay request a signed Waiver of Lien Log clearly documenting the following:

a. The names of all Subcontractors/Suppliers on the project.

b. Contract amounts for each Subcontractor/Supplier.

c. Amount paid to date to each Subcontractor/Supplier.

d. Lien waivers provided with current pay application for previous month's payments.

e. Amount to be paid to each Subcontractor/Supplier included in the pending pay request.

f. Remaining balance for each Subcontractor/Supplier.

5. CONTRACTOR shall submit one original and one copy on 8 1/2-inch by 11-inch paper of each lien waiver submitted.

6. CONTRACTOR shall submit five copies of each pay request for approval.

7. No advanced payment for shop drawing preparation will be made. Shop drawing costs will be paid when equipment and materials are delivered and suitably stored on the site.

8. All stored equipment and materials for which payment is requested shall have two copies of invoices included with the pay request. Equipment shall be identified thoroughly on the invoices, including serial numbers.

9. Payment for the stored equipment and material which are on the site shall not exceed the invoiced amount for each item, less the Contract retainage. The overhead and profit for the stored items shall not be invoiced until the item is installed.

10. Payment for off-site storage is normally reserved for sensitive or very large pieces of equipment that in ENGINEER's opinion would not be practical to have stored on the site. Payment for off-site stored items shall be limited to 75% of the invoiced value of the item, less Contract retainage. CONTRACTOR shall reimburse OWNER the cost of inspecting off-site stored items. When off-site storage is approved, CONTRACTOR shall provide Insurance Certificates and Document of Ownership to OWNER.

11. Payment for PLC and SCADA programming shall be limited to 75% of the invoiced time spent, less Contract retainage.

To allow this payment value, programming must be completed by area and system. CONTRACTOR must provide the following:

a. Signed certification by an officer of CONTRACTOR and electrical subcontractor that work has been completed.

b. Ladder diagram or function block dump with complete descriptive narrative in PDF format.

c. Database cross reference report for graphics (if applicable).

d. I/O partition list.

e. Smart I/O (DeviceNet, profibers, control net, Ethernet I/O, field bus, etc.) configuration report.

f. Processor configuration report.

g. Subroutine listing.

SC-15.01.D Payment Becomes Due

Delete Paragraph 15.01.D.1 and insert the following in its place:

1. Within 10 days after presentation of the Application for Payment to OWNER with ENGINEER's recommendation, OWNER will (subject to the provisions of Paragraph 15.01.E) approve and submit the Application for Payment to Illinois Environmental Protection Agency for approval. Payment to CONTRACTOR shall be subject to Agency internal procedures and reviews.

SC-15.02 CONTRACTOR's Warranty of Title

Amend Paragraph 15.02.A by striking out the following text: "no later than seven days after the time of payment by OWNER" and inserting "no later than the time of payment by OWNER."

SC-15.03 Substantial Completion

Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by ENGINEER, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by CONTRACTOR to OWNER. If CONTRACTOR does not pay, or the parties are unable to agree as to the amount owed, then OWNER may impose a reasonable set-off against payments due under this Article 15.

SC-15.04 Partial Use or Occupancy

Add the following new paragraph immediately after Paragraph 15.04.A.4:

5. OWNER may at any time request CONTRACTOR in writing to permit OWNER to take over operation of any part of the Work although it is not substantially complete. A copy of such request will be sent to ENGINEER, and within a reasonable time thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion and will prepare a list of the items remaining to be completed or corrected thereon before final payment. If CONTRACTOR does not object in writing to OWNER and ENGINEER that such part of the Work is not ready for separate operation by OWNER, ENGINEER will finalize the list of items to be completed or corrected and will deliver such lists to OWNER and CONTRACTOR together with a written recommendation as to the division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, maintenance, utilities, insurance, warranties, and guarantees for that part of the Work which will become binding upon OWNER and CONTRACTOR at the time when OWNER takes over such operation (unless they shall have otherwise agreed in writing and so informed ENGINEER). During such operation and prior to Substantial Completion of such part of the Work, OWNER shall allow CONTRACTOR reasonable access to complete or correct items on said list and to complete other related Work.

SC-15.08.A Correction Period

Delete in Paragraph 15.08.A the phrase “If within one year after the date of Substantial Completion” and insert in its place the following:

“If within one year of the date of final payment or from the date established by ENGINEER that the Work or portion thereof began operating or was used in a continuous, satisfactory manner for its intended purpose, whichever is earlier,”

SC-16.02 OWNER May Terminate for Cause

Add the following new paragraphs immediately after Paragraph 16.02.B.2:

3. complete the Work as OWNER may deem expedient at the expense of CONTRACTOR and surety;

4. apply the amounts retained from partial payments to the completion of the Work; and

5. authorize the surety to complete the steps in Paragraphs 16.02.B.1 through 4.

SC-16.03 OWNER May Terminate for Convenience

Add the following paragraph after Paragraph 16.03.B:

C. CONTRACTOR shall require similar provisions contained in Paragraph 16.03 in each of its subcontracts to protect CONTRACTOR from claims by Subcontractors arising from OWNER’s termination for convenience, or to minimize claims by such subcontractors. The remedy provided to CONTRACTOR under this Paragraph 16.03 shall be CONTRACTOR’s sole remedy in the event of termination for convenience by OWNER.

END OF SECTION

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
Insurance Agency	PHONE (A/C, No, Ext):	FAX (A/C, No):
	E-MAIL ADDRESS:	
	PRODUCER CUSTOMER ID #:	

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
Contractor	INSURER A : Insurance Company	
	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
	GENERAL LIABILITY						EACH OCCURRENCE	$ 2,500,000
	X COMMERCIAL GENERAL LIABILITY						DAMAGE TO RENTED PREMISES (Ea occurrence)	$
	[ ] CLAIMS-MADE [X] OCCUR						MED EXP (Any one person)	$ 10,000
		X					PERSONAL & ADV INJURY	$ 5,000,000
							GENERAL AGGREGATE	$ 5,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						PRODUCTS - COMP/OP AGG	$ 1,250,000
	[ ] POLICY [X] PRO-JECT [ ] LOC							$
	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	X ANY AUTO						BODILY INJURY (Per person)	$ 1,000,000
	ALL OWNED AUTOS						BODILY INJURY (Per accident)	$ 1,000,000
	SCHEDULED AUTOS	X					PROPERTY DAMAGE (Per accident)	$ 1,000,000
	HIRED AUTOS							$
	NON-OWNED AUTOS							$
	UMBRELLA LIAB X OCCUR						EACH OCCURRENCE	$ 3,000,000
	EXCESS LIAB [ ] CLAIMS-MADE	X					AGGREGATE	$ 10,000,000
								$
								$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N						X WC STATU-TORY LIMITS [ ] OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [ ] **(Mandatory in NH)**	N / A					E.L. EACH ACCIDENT	$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000

SPECIMEN

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

Combined Sewer Overflow Long Term Control Plan Phase IV-Eastside and Westside Combined Sewer Overflow Regulators, Contract 2699-0623, City of Joliet, Illinois. The City of Joliet, Strand Associates, Inc., Illinois Department of Transportation, Seeco Consultants, V3 Companies, Metropolitan Water Reclamation District of Greater Chicago, and Raven's Club are additional insured with respect to General Liability, Automobile Liability, and Excess/Umbrella Liability. The
In addition, see attached Additional Insured Endorsements for the General Liability and Automobile Liability policies.

CERTIFICATE HOLDER (Provide separate certificate to each party.)

City of Joliet
150 West Jefferson Street
Joliet, IL 60431

Strand Associates, Inc.
910 West Wingra Drive
Madison, WI 53715

Raven's Club
767 North Bluff Street
Joliet, IL 60435

Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, IL 62764

V3 Companies
444 North Wells Street,
Suite 602
Chicago, IL 60654

Seeco Consultants
7350 Duvan Drive
Tinley Park, IL 60477

Metropolitan Water Reclamation District of Greater Chicago

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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SPECIFICATIONS

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SECTION 01 11 00

SUMMARY OF WORK

PART 1–GENERAL

1.01 DIVISION ONE

A. The requirements of Division 01 apply to all sections of the Contract.

1.02 PROJECT SCOPE

A. Rehabilitation of combined sewer overflow regulators at the intersections of Wallace Street and Water Street (CSO-011), Granite Street and Bluff Street (CSO-004), East Duncan and River Street (CSO-009), and at Railroad Street south of the Interstate-80 Des Plaines River Crossing (CSO-007).

B. Abandonment of combined sewer overflow regulators at the intersections of McDonough and Water Street (CSO-010) Washington Street and Des Plaines Street (CSO-012), and Joliet Street and West Benton Street (CSO 017).

C. CONTRACTOR shall provide all items, articles, materials, operations or methods mentioned or scheduled on the Drawings or herein specified: including all labor, supervision, equipment, incidentals, taxes, and permits necessary to complete the Work as described within the Contract Documents. CONTRACTOR shall install all items provided by OWNER as mentioned or scheduled on the Drawings or herein specified.

1.03 CONTRACT DOCUMENTS–INTENT AND USE

A. Intent of Documents:
   1. Singular notations and specifications shall be considered plural where application is reasonably inferred.
   2. Mention or indication of extent of work under any division or Specification section is done only for convenience of CONTRACTOR and shall not be construed as describing all work required under that division or section.
   3. Some individual sections may contain a list of related sections. The list of related sections in individual sections is provided for the convenience of CONTRACTOR and is not necessarily all-inclusive. CONTRACTOR may not rely upon this listing for determination of scope of work. Other sections of the Specifications not referenced in individual sections shall apply as required for proper performance of the Work.
   4. Command type sentences may be used in the Contract Documents. These sentences refer to and are directed to CONTRACTOR.
   5. Symbols for various elements and systems are shown on the Drawings. Should there be any doubt regarding the meaning or intent of the symbols used, a written interpretation shall be obtained from ENGINEER.

B. Use of Documents:
   1. CONTRACTOR shall examine all Specifications and Drawings for the Work, including those that may pertain to Work CONTRACTOR does not normally perform with its own forces.

2. CONTRACTOR shall use all of the Project Drawings and Specifications:
    a. For a complete understanding of the Project.
    b. To determine the type of construction and systems required.
    c. For coordination with other contractors.
    d. To determine what other work may be involved in various parts or phases.
    e. To anticipate and notify others when work by others will be required.
    f. And all other relevant matters related to the project.
3. CONTRACTOR is also bound by all requirements of the Contract Documents which are applicable to, pertain to, or affect its Work as may be shown or inferred by the entire set of Project Drawings and Specifications.

1.04 CONSTRUCTION REQUIREMENTS

A. General Information and Requirements:
1. During normal operations the regulator structures in the City of Joliet convey combined sewer flow to the East side wastewater Treatment Plant. During wet weather events overflow is conveyed to the Des Plaines River or East Wall Sewer through the regulator structures.
2. Wastewater conveyance shall be maintained at all times during construction and the capacity must be equal to that achieved prior to the start of construction with the exception of during wet weather events. During wet weather events, CONTRACTOR shall provide bypass pumping capacity as specified.
3. It shall be the responsibility of CONTRACTOR to not in any impair the normal operating efficiency of the facilities, regardless of the work underway. No bypassing of raw or partially treated wastewater to receiving stream shall occur at any time during dry weather flows as a result of this construction. In general, this requires that new facilities be complete and ready for service or that temporary facilities be provided prior to removing existing units from service for modification or repair. CONTRACTOR shall provide all temporary piping, bypass pumping, and temporary construction required to complete the work.

B. Construction Sequence:
1. The following construction sequence is provided as a general guideline for the information and for the benefit of CONTRACTOR. This construction sequence is not intended to dictate means, method of construction, or direct construction activities. This construction sequence is a conceptual general construction sequence with minimum recommended outage, shutdowns, and operating units to be maintained in service. The general construction sequence is projected to allow the Work to be completed while maintaining treatment of the wastewater treatment plant. It is not intended to be all inclusive and does not list all work elements or details that are required to complete the Work, complete treatment processes, or place unit processes in service. CONTRACTOR shall be responsible for implementing any additional details required, including temporary piping, bypass pumping, or temporary construction at no additional cost to OWNER.
2. CONTRACTOR may propose alternate sequence or modifications to this sequence. OWNER will review the proposed modification and determine if such modification of the sequence interferes with the proper operation of the treatment activities. Any modifications to this general construction sequence shall be proposed in writing and shall be approved by OWNER prior to their implementations.
3. The following general construction sequence shall be implemented:
    a. Construction may commence at any time for Combined Sewer Overflow Regulator Site Nos. 007 and 010 in accordance with the requirements described below.

b. Construction at the CSO 004 site shall generally be accordance with the following construction sequence and may commence at any time with the exception that entrance on Broadway Street to Granite Street cannot be open between November 15 and April 1. CONTRACTOR shall install MH 19801A. CONTRACTOR shall install temporary bypass pumping equipment (21 mgd capacity) from manhole MH 19799 to MH 19801A for installation of manhole MH 19800 and a 30-inch gravity bypass from MH 19800 to MH 19801A. CONTRACTOR shall complete installation of MH 19800 and the 30-inch gravity bypass from MH 19800 to MH 19801A within 30 days of bypass pumping system being operational. After MH 19800, MH 19801A, and the 30-inch gravity bypass are installed and operational construction of the CSO 004 Regulator Structure and interconnecting manholes and piping may commence. All conflicting piping and manholes can also be removed. After the CSO 004 Regulator Structure is operational the existing CSO 004 Regulator Structure Diversion Chamber and Overflow Chamber can be abandoned and the gravity bypass system removed.
c. Construction at the CSO 010 site shall generally be accordance with the following construction sequence. Removal of the existing brick bulkhead in the CSO 010 Regulator Structure shall be completed prior to work at the CSO 011 site. Remaining work at the CSO 010 site can be completed at any time prior to substantial completion. CONTRACTOR shall install MH 15337A prior to installing MH 15330. CONTRACTOR shall provide temporary bypass pumping equipment from manhole MH 15329 to MH 15337A. After bypass pumping equipment (2 mgd capacity) is operational, CONTRACTOR shall complete work requiring bypass pumping, including installation of MH 15330 and interconnecting piping within 20 days. The existing regulator at the CSO-010 site will be converted into a storm sewer structure as part of the work.
d. Construction at the CSO 007 site shall generally be accordance with the following construction sequence. OWNER is not planning to install a temporary bypass pumping system but plans to install bypass pumping (24 mgd capacity) if significant rain events are forecasted during the work. CONTRACTOR shall complete at a minimum the installation of MH 20580, interconnecting piping, and partial construction of the CSO 007 Regulator Structure to re-establish the outlet connection at the river wall within 45 days of demolition work beginning. Work at CSO 009 and 011 shall not proceed until the outlet connection to the river wall is reestablished. CONTRACTOR shall stockpile 50 cubic yards of backfill material at the CSO 007 site until the base slab concrete for the Regulator Structure is poured which has a top slab elevation of 531.50. If a significant rainfall event occurs prior to the base slab being constructed, CONTRACTOR will be required to fill the excavation with backfill material to a minimum elevation of 530.00.
e. Construction at the CSO 011 site shall generally be accordance with the following construction sequence. Construction of the CSO 011 Regulator Structure, 42-inch SAN piping between the CSO 011 Regulator Structure and the Outlet Chamber, and 72-inch SAN and OF piping between the CSO 011 Regulator Structure and CSO 011 Junction Structure may commence at any time, but is required to be complete prior to construction of the CSO 011 Junction Structure, 60-inch SAN piping, manholes MH 16146A and MH 16146B, 30-inch SS piping, 24-inch SAN piping, MH 16146 and MH 16146C. Installation of the static screen in the CSO 011 Regulator Structure is not required to begin construction of the CSO 011 Junction Structure, 60-inch SAN piping, manholes MH 16146A and MH 16146B, 30-inch SS piping, 24-inch SAN piping, MH 16146 and MH 16146C.
f. Construction of the CSO 011 Junction Structure, 60-inch SAN piping, MH 16146A, and MH 16146B shall not occur until the CSO 007 Regulator Structure is

reconnected to the outlet connection in the riverwall and CONTRACTOR-installed bypass pumping system (22 mgd) is operational. Installation of the static screen in CSO 007 is not required to begin construction of the CSO 011 Junction Structure, 60-inch SAN piping, and manholes MH 16146A and MH 16146B.

g. CONTRACTOR shall commence demolition of the existing CSO 011 Regulator Structure during a period of 5 days of forecasted dry weather to allow for a temporary reconnection of the existing 14-inch and 18-inch throttle pipes to MH 16146A to convey dry weather flows. CONTRACTOR shall provide all piping and fittings for the temporary connection to the throttle pipes within 5 days of bypass pumping system being operational. CONTRACTOR shall complete construction of the CSO 011 Junction Structure, MH 16146A and MH 16146B, and 60-inch piping from MH 16146A to MH 16146B within 30 days of bypass pumping (22 mgd capacity) system being operational.
h. Prior to installation of the 60-inch piping between CSO 011 Junction Structure and MH 16146B, 30-inch SS piping, 24-inch SAN piping, MH 16146, and MH 16146C CONTRACTOR shall install bypass pumping equipment (16 mgd capacity) from MH 16145 to the CSO 011 Regulator Structure. After bypass pumping equipment is operational, CONTRACTOR shall complete work that requires bypass pumping within 15 days of bypass pumping system being operational.
i. Construction at CSO Regulator Site No. 009 may commence after the CSO 011 Regulator Structure and CSO 011 Junction Structure are connected to the 72-inch OF piping. Installation of the static screen in CSO 011 is not required to begin construction at CSO 009.
j. Construction at the CSO 009 site shall generally be in accordance with the following construction sequence. CONTRACTOR shall install temporary bypass pumping equipment (4 mgd capacity) from MH 1032 to MH 19342. After bypass pumping equipment is operational, CONTRACTOR shall complete all work that requires bypass pumping, including but not limited to, installation of the CSO 009 Regulator Structure (static screen installation is not required) and interconnecting piping and manholes within 60 days of bypass pumping system being operational.
k. Construction at CSO Regulator Site No. 12 may commence after the construction at CSO-009 is substantially complete. Installation of the static screen is not required for construction to be considered complete. Construction at the CSO 012 site shall generally be in accordance with the following construction sequence. CONTRACTOR shall install MH 1547C prior to completing other work at the CSO 012 site. After MH 1547C is installed, CONTRACTOR shall install bypass pumping equipment (7 mgd capacity) from manhole MH 1547 to MH 1547 C. After bypass pumping equipment is operational, CONTRACTOR shall complete remaining work that requires bypass pumping within 15 days of bypass pumping system being operational. The existing regulator structure at the CSO-012 site will be converted to a storm sewer structure as a part of this project.
l. Construction at CSO Regulator Site No. 17 may commence after the construction of CSO-009 is complete. Installation of the static screen is not required for construction to be considered complete. Construction at the CSO 017 site shall generally be accordance with the following construction sequence. CONTRACTOR shall install MH 2101B prior to completing other work at the CSO 017 site. After MH 2101B is installed, CONTRACTOR shall install temporary bypass pumping equipment (6 mgd capacity) from manhole MH 2101B to MH 2101. After bypass pumping equipment is operational, CONTRACTOR shall complete remaining work that requires bypass pumping within 30 days of bypass pumping system being operational. The existing regulator structure at the CSO-017 site will be converted to a storm sewer structure as a part of this project.

m. CONTRACTOR shall implement traffic control, protection, temporary controls, and site security in the area of the site as required for the Work. CONTRACTOR shall confirm storage, staging, and parking areas acceptable to OWNER prior to implementation.
n. All new piping and manholes required for completing the work shall be delivered and stored at the site prior to beginning demolition of the existing regulator structures.

1.05 CONTRACTOR USE OF SITE

A. General:
1. The “area of the site” referred to in these Specifications shall be as shown on the Drawings. If the “area of the site” is not shown, OWNER's property lines, the Project right-of-way and/or any easements obtained for the Project shall be considered the “area of the site.”
2. Construction activities shall be confined within the “area of the site” limits.
3. From the start of work to completion CONTRACTOR is responsible for the care of the site and the premises which are affected by operations of Work of this Contract.
4. Except for permanent site improvements provided under the Contract, CONTRACTOR shall restore property disturbed during the Work, to the conditions which previously existed.

B. Parking and Deliveries:
1. CONTRACTOR is responsible for control of traffic by vehicles and persons within the limits of its operations.
2. Parking for employees, subcontractors, and agents of CONTRACTOR shall be in areas subject to approval of OWNER.
3. Access to the site for delivery of construction material or equipment shall be subject to approval of OWNER.

1.06 EXISTING SERVICES, OVERHEAD UTILITIES, AND UNDERGROUND FACILITIES INCLUDING STRUCTURES

A. Interruption of existing services and systems including water, sanitary, and similar work shall be kept to an absolute minimum and shall be limited to times approved by OWNER.

B. If deemed necessary by OWNER, such work shall be accomplished after OWNER’s normal office hours.

C. Work shall not commence until all labor, materials, and equipment are available so Work can continue without interruption or delay.

D. Should uncharted or incorrectly charted services or Underground Facilities be encountered during installation, notify OWNER and consult with utility owner immediately.

E. Cooperate with OWNER and utility companies in keeping respective services and Underground Facilities in operation and repair any damage.

F. CONTRACTOR shall not interrupt existing services and Underground Facilities occupied and used by OWNER or others, except when permitted in writing by OWNER.

G. Any accidental interruption of services and Underground Facilities shall be repaired immediately, including provision of temporary facilities until permanent repairs can be made.

H. Prior to any excavation, demolition, or drilling on site, CONTRACTOR shall contact owners of the Underground Facilities in and near the construction area of the intent to excavate, demolish, or drill. As part of this notification requirement, CONTRACTOR shall contact “JULIE” (811 or 1-800-892-0123). CONTRACTOR shall be aware that not all owners participate in “JULIE.” A call to this agency shall not absolve CONTRACTOR of the requirements for contacting owners of all Underground Facilities in and near the construction area. CONTRACTOR shall give reasonable advance notice to “JULIE” and other owners for the notification which shall not be less than the minimum advance notification required.

I. Locations and elevations of services and Underground Facilities as shown on the Drawings are approximate. It shall be CONTRACTOR’s responsibility to determine their exact location when in their vicinity. To this end, CONTRACTOR shall proceed with caution in the excavation and preparation of the Site so the exact location of services and Underground Facilities can be determined. CONTRACTOR shall include in the Contract Price any costs for temporary or permanent relocations of such services and Underground Facilities required to complete the Work unless specifically indicated on the plans that they will be relocated prior to construction.

J. Where potential grade conflicts might occur with existing services and Underground Facilities, CONTRACTOR shall uncover such services and Underground Facilities sufficiently in advance of construction so that elevations may be determined to allow any necessary adjustments to be made.

K. CONTRACTOR shall coordinate with overhead utility companies prior to the Work. CONTRACTOR shall provide all necessary temporary and permanent support relocation or temporary and permanent restraint to maintain overhead utilities in service.

L. CONTRACTOR shall keep an accurate and complete record of all such services and Underground Facilities encountered and shall provide OWNER a copy of this record. The record shall include a description of the item encountered, opinion as to conditions, and adequate measurements and depths so that the item can be located in the future.

M. CONTRACTOR shall inspect all services and Underground Facilities for condition and soundness. Unsound conditions shall be reported to OWNER immediately after exposing. CONTRACTOR shall not proceed with the Work until the service or facility owner has been notified. Service or facility owner shall then be given time to inspect and correct, if required, the service or Underground Facility. CONTRACTOR may make claim under the provisions of Articles 11 and 12 of the General Conditions should CONTRACTOR feel a price or time adjustment is justified.

N. Any additional costs incurred because of failure of CONTRACTOR to report the condition of any and all existing services and Underground Facility encountered shall be paid for by CONTRACTOR.

O. Whenever utilities are not shown on the drawings CONTRACTOR shall explore and excavate to determine the location of existing services and Underground Facilities, CONTRACTOR shall make explorations and excavations for such purposes. If CONTRACTOR is required to perform additional Work in making the explorations and excavations, extra compensation will be allowed as provided for in the General Conditions. Additional compensation will not be allowed for excavations specifically noted on the drawings.

1.07 PROTECTION OF WORK AND IMPROVEMENTS

A. CONTRACTOR shall protect the property of OWNER, existing improvements, and the Work installed by CONTRACTOR and others from abuse, damage, dust, debris, and other objectionable materials resulting from construction activities.

B. CONTRACTOR shall provide suitable covers, partitions, or other dust and fume containment devices to suit construction operations.

C. CONTRACTOR shall keep property, existing improvements, and the Work including structures, mains, fittings, and accessories free from dirt and foreign matter at all times.

D. CONTRACTOR shall provide temporary plugging of openings, holes, and pipe ends that are existing or that CONTRACTOR has installed.

E. Property, improvements, and Work damaged by CONTRACTOR shall be repaired or replaced by CONTRACTOR to the satisfaction of OWNER.

F. CONTRACTOR is cautioned that existing public and private streets, alleyways, and roads may not hold up to typical construction traffic or activities. CONTRACTOR shall repair or replace streets, alleyways, roads, and shoulders damaged by its construction activities to their original condition at CONTRACTOR's expense.

1.08 AVAILABILITY OF LANDS

A. Easements were obtained for this Project. CONTRACTOR shall confine its operations, equipment and storage areas to the easements, lands and rights-of-way in which the Project is to be located. CONTRACTOR may enter into written agreements with property owners for use of other lands during construction. Copies of such agreements shall be provided to OWNER.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

NOT APPLICABLE

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SECTION 01 29 00

CONTRACT CONSIDERATIONS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Cash Allowances.
   2. Inspection and Testing Allowances.
   3. Measurement and Payment.

1.02 CASH ALLOWANCES

A. See Paragraph 13.02 of the General Conditions for costs to be included in allowances.

B. Refer to sections of the specifications identified in the Bid Form for specific information on use of cash allowances.

C. The Bid shall include the amount equal to the specified quantity times the unit price.

1.03 INSPECTION AND TESTING ALLOWANCES

A. Costs Included in Inspection and Testing Allowances: Cost of engaging an inspection or testing firm; execution of inspection and tests; and reporting results.

B. Costs not to be included in Inspection and Testing Allowances but to be included in the Contract Price:
   1. Costs of incidental labor and facilities required to assist inspection or testing firm.
   2. Costs of testing laboratory services used by CONTRACTOR separate from Contract Document requirements.
   3. Costs of retesting upon failure of previous tests.
   4. Costs of tests specified to be provided by CONTRACTOR.

C. Payment Procedures: Submit one copy of the inspection or testing firm's invoice with next application for payment.

D. Refer to technical sections of specifications for required testing and any associated allowances.

1.04 MEASUREMENT AND PAYMENT–LUMP SUM

A. Payment for Lump Sum projects will be based on the accepted schedule of values for the project.

B. An acceptable schedule of values will include the following features:
   1. Schedule shall list the installed value of the component parts of the work in sufficient detail to serve as a basis for computing values for progress payments during construction. Schedule shall be subdivided as necessary by specification section and work area.

2. Identify each line item with the number and title of the respective Specification Section.
3. For each major line item list sub-values of major products or operations under the item.
4. For the various portions of the work:
    a. Each item shall include a directly proportional amount of CONTRACTOR's overhead and profit.
    b. For items on which progress payments will be requested for stored materials, break down the value into:
        (1) The cost of the materials, delivered and unloaded, with taxes paid. Paid invoices are required for materials upon request by ENGINEER.
        (2) The total installed value.
5. The sum of all values listed in the schedule shall equal the total Contract Sum.
6. Schedule shall include a separate listing of general items such as bonds, insurance, mobilization, demobilization, field supervision, and record documents.

C. Once a schedule of values is accepted, it shall not be revised, except for changes associated with subsequently executed change orders.

D. No separate measurement for payment will be performed for Lump Sum Work.

E. CONTRACTOR shall estimate percentage of Work completed. ENGINEER will review CONTRACTOR's estimate of quantity of Work completed.

F. Payment will be made based on the percentage of the Contract completed less retainage and/or liquidated damages.

G. Unless noted otherwise, all Work described in the Specifications and/or shown on the Drawings shall be included in the Lump Sum Bid.

H. Some technical specification sections may include payment provisions. These provisions are in addition to the provisions of this section which apply to all of the Work.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01 31 00

COORDINATION, FIELD ENGINEERING, AND MEETINGS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Coordination.
   2. Field engineering.
   3. Progress meetings.
   4. Preinstallation meeting.
   5. Preconstruction video.

1.02 COORDINATION

A. CONTRACTOR shall coordinate scheduling, submittals, and work of the various sections of the work to provide an efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later. See Section 01 11 00–Summary of Work for specific construction sequence.

B. CONTRACTOR shall verify utility requirements and characteristics of operating equipment are compatible with building utilities and coordinate Work of various sections having interdependent responsibilities for installing, connecting to, and placing in service such equipment.

C. CONTRACTOR shall coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on the Drawings and shall follow routing shown for pipes, ducts, and conduit as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

D. In finished areas, except as otherwise indicated, CONTRACTOR shall conceal pipes, ducts, and wiring within the construction and coordinate locations of fixtures and outlets with finish elements.

E. CONTRACTOR shall coordinate completion and cleanup of Work of separate sections in preparation for substantial completion and for portions of Work designated for OWNER's occupancy.

F. After OWNER occupancy of premises, CONTRACTOR shall coordinate access to Site for correction of defective Work and Work not in accordance with Contract Documents to minimize disruption of OWNER's activities.

G. CONTRACTOR shall coordinate bypass pumping with the City of Joliet. Refer to Section 33 01 31–Sewer Bypass Pumping for additional requirements.

1.03 FIELD ENGINEERING

A. CONTRACTOR shall locate and protect property stakes, legal survey monuments, benchmarks, and survey control and reference points. CONTRACTOR shall pay for replacement of disturbed property stakes and legal survey monuments by a Registered Land Surveyor acceptable to OWNER and for replacement of benchmarks and survey control and reference points provided by ENGINEER.

B. CONTRACTOR shall provide field engineering services as required to establish elevations, lines, and levels utilizing recognized engineering survey practices. Project layout and staking shall be reviewed by OWNER's designated representative.

C. CONTRACTOR shall furnish all required plummets and graduated poles to check all Work.

D. CONTRACTOR shall furnish a rod person to assist in construction staking.

E. If stakes and boards have to be reset because of negligence of CONTRACTOR, CONTRACTOR shall bear the cost of such work.

F. If laser beam is used, CONTRACTOR shall check its Work against intermediate grade stakes provided between manholes. Prior to initial use of the laser, CONTRACTOR shall set up laser on ground surface and check line and gradient controls. Lasers not functioning properly shall be immediately removed.

G. CONTRACTOR shall be responsible for all lines, elevations, and measurements of buildings, structures, piping, utilities, and other work executed by CONTRACTOR under the Contract. CONTRACTOR must exercise proper precaution to verify figures before laying out the Work and will be held responsible for any error resulting from its failure to exercise such precaution.

1.04 PROGRESS MEETINGS

A. CONTRACTOR and major subcontractors shall be required to attend a preconstruction meeting prior to the start of construction of the project.

B. Progress meetings will be held throughout progress of the Work at intervals agreed to by OWNER, ENGINEER, and CONTRACTOR. Interval will generally be biweekly when construction activities are commencing and monthly when contractor is not working.

C. CONTRACTOR's project manager, job superintendent, major subcontractors, and suppliers shall attend as appropriate to address agenda topics for each meeting. CONTRACTOR's representatives shall have authority to bind CONTRACTOR to decisions at the meetings.

D. The project schedule shall be updated monthly and shall be reviewed at each progress meeting.

E. CONTRACTOR shall also provide the following information in written form at each meeting.
   1. Construction progress, including:
      a. Activities completed this reporting period.
      b. Activities in progress this reporting period.
      c. Activities scheduled to commence this reporting period.
   2. Description of problem areas.

3. Current and anticipated delays.
    a. Cause of the delay.
    b. Corrective action and schedule adjustments to correct the delay.
    c. Impact of the delay on other activities, on milestones, and on completion dates.
4. Changes in construction sequence.

F. ENGINEER will prepare and distribute minutes to all attending parties.

1.05 PREINSTALLATION MEETING

A. When required in individual specification sections, CONTRACTOR shall convene a preinstallation meeting at Work Site prior to commencing Work of the section.

B. CONTRACTOR shall require attendance of parties directly affecting or affected by work of the specific section.

C. CONTRACTOR shall notify ENGINEER seven days in advance of meeting date.

D. CONTRACTOR shall prepare agenda and preside at meeting:
1. Review conditions of installation, preparation, and installation procedures.
2. Review coordination with related work.

E. CONTRACTOR shall record minutes and distribute copies to participants within two days after meeting; two copies to ENGINEER, participants, and those affected by decisions made.

1.06 PRECONSTRUCTION VIDEO

A. Prior to mobilization at each site, CONTRACTOR shall furnish to ENGINEER a high-resolution color audio-video recording of all planned construction areas, including but not limited to streets, driveways, sidewalks, curbs, fencing, visible utilities, retaining structures, and adjacent building structures. The purpose of the video is to document existing conditions and to provide a fair measure of required restoration. Care should be taken to record all existing conditions that exhibit deterioration, imperfections, structural failures, or situations that would be considered substandard.

B. The video recording shall be performed by a professional firm specializing in audio-video work. The videos shall be high quality, color, and high-resolution. The video shall be provided in a digitized format that is supported by Window Media Player. The videos shall be provided via DVD, thumb drive, or other media requested by OWNER. Temporary lighting shall be provided as necessary to properly video areas where natural lighting is insufficient (indoors, shadows, etc.). The videos shall include an audio soundtrack, to provide the following information.
1. Detailed description of location being viewed referenced to Contract Drawings (i.e., station number, building designation, pipeline route, etc.).
2. Direction (N, S, E, W, looking up, looking down, etc.) of camera view.
3. Date, time, temperature, and environmental conditions at time of video.

C. Video recording shall not be performed during inclement weather or when the ground is covered partially of totally with snow, ice, leaves, etc.

D. As many videos as are necessary to satisfy the requirements of this section shall be prepared. The original videos shall be submitted to ENGINEER accompanied by a detailed log of the contents of each video. The log should include location descriptions to facilitate the quick location of information contained in the videos. The videos will be maintained by ENGINEER during construction and may be viewed at any time by CONTRACTOR upon request. Upon final acceptance, the videos will become permanent property of OWNER.

E. All costs associated with this shall be included in the Lump Sum Bid for this Work.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01 33 00

SUBMITTALS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
1. Whenever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined either by manufacturer's name and catalog number or by reference to recognized industry standards.
2. To facilitate CONTRACTOR's understanding of the design intent, procedures have been established for advance submittal of design data and for its review or rejection by ENGINEER.
3. The type of submittal requirements specified in this section include construction progress schedule, submittal schedule, shop drawings, product data, samples, maintenance manuals, and other miscellaneous work-related submittals.

B. Related work described elsewhere: More detailed requirements for submittals are described in other sections of these specifications for some materials and equipment. They are to be considered additional requirements to supplement the requirements specified in this section. Submittals shall conform to Article 7 of the General Conditions.

C. Definitions: "Electronic Submittal" is defined as any submittal transmitted electronically to ENGINEER for review.

1.02 IDENTIFICATION OF SUBMITTALS

A. CONTRACTOR shall completely identify each submittal and resubmittal by showing at least the following information:
1. Name and address of submitter, plus name and telephone number of the individual who may be contacted for further information.
2. Name and location of project and identification number.
3. Drawing number and specifications section number to which the submittal applies.
4. Include the date of each submittal or resubmittal.

1.03 GROUPING OF SUBMITTALS

A. Unless otherwise specifically permitted by ENGINEER, CONTRACTOR shall make all submittals in groups containing all associated items so that information is available for checking each item when it is received.

B. Partial submittals may be rejected as not complying with the provisions of the Contract Documents.

1.04 TIMING OF SUBMITTALS

A. CONTRACTOR shall make all submittals far enough in advance of scheduled dates of installation to provide required time for reviews, for securing necessary approval, for possible revision and resubmittal, and for placing orders and securing delivery.

B. The review period for submittals that are received after 3 P.M. shall commence on the following business day.

1.05 CONSTRUCTION PROGRESS AND SUBMITTAL SCHEDULES

A. Submit preliminary schedules within 10 days of the Effective Date of the Contract.

B. Revise schedules incorporating any comments provided at the schedule review conference required in GC-2.05 and resubmit.

C. As a minimum, the construction progress schedule shall consist of a horizontal bar chart with a separate line for each major portion of Work or operation, identifying first workday of each week.

D. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration for each activity. Identify activities that are on the critical path.

E. Include line items for milestones (if any), Substantial, and Final Completion.

F. Submit updated schedules with each Application for Payment, identifying changes since previous version.

G. Indicate estimated percentage of completion for each item of Work at each submission.

H. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates.

1.06 SHOP DRAWINGS

A. Shop drawings shall include specially prepared technical data for this project including drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements, and similar information not in standard printed form for general application to a range of similar projects. Shop drawings shall be submitted for all manufactured or fabricated items. See individual technical sections for special requirements.

B. CONTRACTOR shall make all shop drawings accurately to scale and sufficiently large to show all pertinent aspects of the item and its method of connection to the work.

C. Shop drawings shall be checked, approved, and stamped by CONTRACTOR in accordance with the General Conditions before transmittal to ENGINEER for review and approval.

D. Complete shop drawings and descriptive data shall be submitted on all manufactured or fabricated items prior to 50% completion of the Work. Applications for payment beyond 50% of the Contract amount will not be recommended for payment until all shop drawings are submitted, including the required hard copies, or a revised schedule for any remaining submittals is agreed to by OWNER and ENGINEER.

E. CONTRACTOR shall submit shop drawings following the electronic submittal procedure described below. If electronic submittal is impossible, CONTRACTOR may request ENGINEER to review hard copy submittals on a limited basis. ENGINEER may request to review hard copy submittals on a limited basis for submittals that are over 100 pages in

length. If ENGINEER agrees to or requests hard copy submittal review, CONTRACTOR shall submit six color copies of shop drawings and descriptive data to ENGINEER for approval. Three copies of these will be returned to CONTRACTOR if approved. If shop drawings are not approved or if they are stamped “Approved as Noted-Resubmit,” two corrected copies will be returned to CONTRACTOR for use in resubmittal. If CONTRACTOR desires more than three approved copies, submitted quantity shall be increased accordingly.

F. Shop drawings submitted to ENGINEER will be reviewed and stamped “Approved,” “Approved as Noted,” “Approved as Noted-Resubmit,” or “Not Approved.” CONTRACTOR shall resubmit the above number of corrected shop drawings for all shop drawings stamped “Approved as Noted-Resubmit” and “Not Approved” and will continue this process until shop drawings are stamped “Approved” or “Approved as Noted.” If drawings are stamped “Approved as Noted-Resubmit,” fabrication may proceed in accordance with the marked-up shop drawings. Installation shall not proceed until shop drawings have been resubmitted and stamped “Approved” or “Approved as Noted.”

G. If shop drawings are stamped “Approved as Noted” or “Approved as Noted-Resubmit” and CONTRACTOR does not agree with revisions or cannot conform with revisions, fabrication shall not proceed and shop drawings shall be resubmitted with explanation of CONTRACTOR’s position.

H. All shop drawings used for construction site activities shall bear the “Approved” or “Approved as Noted” stamp of ENGINEER.

I. Arrangements may be made between CONTRACTOR and ENGINEER to provide additional copies of “Approved” shop drawings for field activity purposes.

J. Electronic Submittal Procedures:
   1. Summary:
      a. Shop drawing and product data submittals shall be transmitted to ENGINEER in electronic (PDF) format using City of Joliet’s OneDrive, or equal, a website service designed specifically for transmitting submittals between construction team members, or equal.
      b. The intent of electronic submittals is to expedite the construction process by reducing paperwork, improving information flow, and decreasing turnaround time.
      c. The electronic submittal process is not intended for color samples, color charts, or physical material samples.
   2. Procedures:
      a. CONTRACTOR shall review and apply electronic stamp certifying that the submittal complies with the requirements of the Contract Documents including verification of manufacturer/product, dimensions and coordination of information with other parts of the work.
      b. CONTRACTOR shall transmit each submittal to ENGINEER using the City of Joliet’s OneDrive.
      c. ENGINEER review comments will be made available on the City of Joliet’s OneDrive for downloading.
      d. Distribution of reviewed submittals to subcontractors and suppliers is the responsibility of CONTRACTOR.
      e. Electronically submitted shop drawings shall follow the following format:
         (1) Filenames for the shop drawing submittals shall follow a XX XX XX.YYY-Z. Description convention where XX XX XX is the specification section number, YYY is the submittal number, .Z is the resubmittal number, and description is

a short description of what the submittal includes. Submittals shall be consecutively numbered in direct sequence of submittal. Resubmittals shall be consecutively numbered with the first submittal numbered with a -0 and the first resubmittal numbered with a -1. Example file name: 03 20 00.016-1. Structure 10 Concrete Reinforcement. This would be the first revision of the sixteenth submittal and contain information on concrete reinforcement.

(2) All files shall be delivered in PDF format with a minimum resolution of 300 dpi unless otherwise requested by ENGINEER. Scanned in material shall be scanned in color and any markings by CONTRACTOR shall be made in red. Pages shall be rotated to the appropriate position for easy reading on a computer monitor such that the majority of text is vertical.

(3) Files shall be delivered without security features activated.

(4) Shop Drawings shall be uploaded as individual files. Files combined into a zip drive are not acceptable. All pages of one submittal should be contained in one file.

(5) The file shall open to a cover page containing, at a minimum, the following information:

(a) CONTRACTOR's stamp.

(b) Name, e-mail, and telephone number of the individual who may be contacted for further information.

(c) Project number.

(d) Submittal number.

(e) Submission date, if resubmittal, all previous submission dates.

(f) Index detailing contents and the total number of pages in the submittal.

f. Once a shop drawing has been "Approved" or "Approved as Noted," CONTRACTOR shall provide three hard color copies of the "Approved" or "Approved as Noted," shop drawings to ENGINEER. CONTRACTOR is responsible for the hard copy color replication of ENGINEER's "Approved" or "Approved as Noted," shop drawings for use by CONTRACTOR. Hard copy shop drawings shall be submitted in 3-ring binders or 3-tab report covers.

K. CONTRACTOR is fully responsible for obtaining any and all copyright permission associated with conversion of shop drawing information to electronic format.

L. Shop drawings shall include verification that the item meets applicable codes and standards.

1.07 COLORS AND PATTERNS

A. Unless the precise color and pattern is specifically described in the Contract Documents, whenever a choice of color or pattern is available in a specified product, CONTRACTOR shall submit accurate color charts and pattern charts to ENGINEER for OWNER's review and selection.

B. Unless all available colors and patterns have identical wearing capabilities and are identically suited for the installation, CONTRACTOR shall completely describe the relative capabilities of each.

1.08 SAMPLES AND FIELD MOCKUPS

A. CONTRACTOR shall provide samples and field mockups where noted or specified.

B. Samples are physical examples which illustrate materials, equipment, or workmanship and establish standards by which the work will be judged.

C. Samples shall be of sufficient size and quantity to clearly illustrate the functional characteristics of the product and full range of color, texture, and pattern.

D. Samples shall have labels firmly attached, bearing the following information:
   1. Name of project.
   2. Description of product and finish.
   3. Name of CONTRACTOR.
   4. Trade name and number of product.
   5. Standards met by the product.

E. Approval of samples must be obtained prior to proceeding with any work affected by material requiring sample approval.

F. Samples, unless otherwise noted, become the property of OWNER.

G. In situations specifically approved by ENGINEER, the retained sample may be used in the construction as one of the installed items.

H. Field Mockups:
   1. CONTRACTOR shall erect field mockups at the project site in a location acceptable to ENGINEER and OWNER.
   2. When accepted by ENGINEER, the mockup will become the basis for comparison of the actual work.
   3. Remove mockup at conclusion of the work if it was not incorporated into the work.

1.09 PRODUCT DATA

A. CONTRACTOR shall provide product data as required to supplement shop drawings.

B. Product data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by CONTRACTOR to illustrate a material, product, or system for some portion of the work.

C. CONTRACTOR shall collect required product data into one submittal for each unit of work or system.

D. CONTRACTOR shall include manufacturer’s standard printed recommendations for application and use, compliance with standards, performance characteristics, wiring and piping diagrams and controls, component parts, finishes, dimensions, required clearances, and other special coordination requirements.

E. CONTRACTOR shall mark each copy of standard printed data to identify pertinent products, models, options, and other data.

F. CONTRACTOR shall supplement manufacturer’s standard data to provide information unique to the work.

1.10 RESUBMISSION REQUIREMENTS

A. Make any corrections or changes in the submittals required by ENGINEER.

B. Shop Drawings and Product Data:
   1. Revise initial drawings or data and resubmit as specified for initial submittal.
   2. Itemize in a cover letter any changes which have been made other than those requested by ENGINEER.

C. Electronic shop drawing resubmissions shall follow the nomenclature described in Section 1.06.J.2.e.

D. See SC-7.16 for additional information regarding resubmittals.

1.11 MANUFACTURER'S DIRECTIONS

A. Manufactured articles, materials, and equipment shall be stored, commissioned, operated, applied, installed, connected, erected, used, cleaned, and conditioned as directed by the manufacturer, unless specified to the contrary.

B. Wherever specifications call for work to be performed or materials to be installed in accordance with the manufacturer's printed instructions or directions, CONTRACTOR shall furnish copies as required for shop drawings of those instructions or directions to ENGINEER before installing the material or performing the work.

1.12 MAINTENANCE MANUAL

A. Prior to 75% completion of the Contract or at a minimum of 45 days prior to the scheduled start-up date of any individual item of equipment, whichever is earlier, CONTRACTOR shall furnish to ENGINEER four complete copies of a maintenance manual for all equipment furnished. Applications for payment beyond 75% of the contract amount will not be recommended for payment until all maintenance manuals are submitted or a revised schedule for remaining maintenance manuals is agreed to by OWNER and ENGINEER.

B. The manuals shall include manufacturer's instructions for maintenance and operation for each item of mechanical and electrical equipment. Manuals shall be specific for the equipment as installed; provide project specific inserts as required. Manuals shall contain: operation instructions, lubrication schedules, types and quantities, preventative maintenance program, spare parts list, parts lists, I.D. No. and exploded views, assembly instructions, parts supplier location, trouble shooting and startup procedures and, where applicable, test data and curves.

C. All sheets shall have reduced dimensions as described for shop drawings, and shall be furnished in 3-ring binders or 3-tab report covers.

D. CONTRACTOR is responsible for producing an electronic version of the Equipment Operations and Maintenance (O&M) Manuals Manual. The Electronic Equipment O&M Manual shall be delivered in Portable Document Format (PDF). The entire manual may be converted to PDF via scanning or other method of conversion. Drawings or other graphics must be converted to PDF format and made part of the PDF document. CONTRACTOR shall provide all Equipment O&M Manuals in the electronic format as defined below.

E. The filename for the Equipment O&M Manual submittal will be provided with the request for final Equipment O&M Manuals. Filenames use the "eight dot three" convention (XX XX XX_YY.PDF) where XX XX XX is the specification section number and YY is an ID number. No one file shall be larger than 10 MB. If technical problems require that the

submittal be divided into more than one file, a letter extension shall be added to the end of each filename.

F. The number of files shall be kept to a minimum. Equipment O&M Manuals that span more than one file shall have the final Bookmark “Return to Table of Contents” which shall take the User to the first file on the Equipment O&M Manual.

G. All text (word processed), spreadsheets, and electronic graphics shall be delivered in portable document format (*.PDF). The resolution of all scanned images shall be a minimum of 300 dpi unless otherwise requested by ENGINEER. Scanned images shall be processed with the “original image with hidden text” option (Adobe Acrobat 6 or higher). This results in a clear image and provides for optical character recognition (OCR) and word search functionality. Graphical files shall be fully searchable. All submittals must be indexed with the Adobe Catalog feature. Placement and structure of index files shall be in accordance with Adobe's recommendations to minimize problems when transferring files. Successful searches for words or strings in the PDF document shall demonstrate proof of OCR.

H. Rotate pages viewed in landscape to the appropriate position for easy reading on a computer monitor.

I. Bookmarks shall be created in the navigation frame for each entry in the Table of Contents. Three levels deep is usually enough (i.e., “Chapter,” “Section,” “Subsection”); however, complex submittals like instrumentation and electrical may be required at the discretion of ENGINEER. When setting bookmarks for Chapter level heading, the page shall be displayed at Full Page. Section and Subsection level heading pages shall be displayed as a magnified view. Bookmarks shall be displayed as subordinate to other bookmarks in their hierarchy set so that only the Chapter level headings are displayed.

J. Thumbnails shall be generated and embedded in each PDF file.

K. Files shall be delivered without Security features activated. Password protected files will be unacceptable.

L. The opening view for PDF files shall be set as follows:
   1. Initial View: Bookmarks and Page
   2. Magnification: Fit In Window
   3. Page Layout: Single Page

M. The file shall open to the cover page of the Equipment O&M Manual with bookmarks to the left. The first bookmark shall be the name of Equipment O&M Manual.

N. O&M PDFs shall be delivered electronically.

O. CONTRACTOR shall reprocess any portion of the document that does not view or print to OWNER's satisfaction.

P. CONTRACTOR is fully responsible for obtaining any and all copyright permissions associated with conversion of this information to electronic format.

Q. Each maintenance manual shall include a completed equipment maintenance summary form for each type and size of equipment being furnished that requires power, lubrication, or maintenance. Equipment Summary forms are located at the end of this section.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

NOT APPLICABLE

EQUIPMENT MAINTENANCE SUMMARY FORM(1)

Equipment No.:

Specification Section:

Equipment Name:

Building Name: Room No.:

Plant Location:

Manufacturer:

Address:

Phone:

Service Representative:

Address:

Phone: Fax:

Make: Model:

Serial No.: Type:

Size:

Equipment Speed:

Capacity:

Operating Range:

Material:

Alarms:

Drive Ratio:

Motor Speed: Service Factor:

Volts: Phase: hp: Efficiency:

Motor Type:

Motor Sensors:

Motor Manufacturer:

Model: Motor Frame:

Insulation Class: FLA: LRA:

(1) Complete as applicable; attach supplementary pages as necessary.

Maintenance Requirements

(Use additional sheets if more space is needed.)

LUBRICATION

Item	Generic Type of Lubricant	Supplier	Estimated Frequency	Annual Quantity

PREVENTIVE MAINTENANCE

Item	Action	Frequency	Reference

SUGGESTED MINIMUM SPARE PARTS LIST

Manufacturer	Part No.	Quantity Unit	Description

The following information is included in O&M Manual:

Check or mark N/A

1. Recommended installation, adjustment, calibration, and troubleshooting. _____
2. Complete internal and connection wiring diagrams. _____
3. Complete parts lists, by generic title and identification number, with exploded views of each assembly. _____
4. Disassembly, overhaul, and reassembly instructions. _____
5. Recommended prestart checks. _____
6. Recommended start procedure. _____
7. Recommended shutdown procedure for both short and long term. _____
8. Recommended operating precautions that include safety for personnel and equipment. _____
9. Recommended standing maintenance procedure. _____

END OF SECTION

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SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
1. OSHA requirements.
2. 35 III. Adm. Code 652.
3. 35 Ill. Adm. Code 1100.
4. Roadway limits.
5. Permits.
6. Wage rates.
7. American Iron and Steel requirements.
8. Apprenticeship initiative.
9. Employment of Illinois Workers on Public Works Act, 30 ILCS 570.

1.02 OSHA REQUIREMENTS

A. All work including site safety, equipment, materials, and fabricated items provided under the Contract shall comply with the provisions of the “Occupational Safety and Health Act.”

1.03 35 ILL. ADM. CODE 652

A. CONTRACTOR shall comply with 35 Ill. Adm. Code 652 during the project and shall use protective coatings personnel to carry out corrosion prevention and mitigation methods and use inspectors so that best practices and standards are adhered to.

1.04 35 ILL. ADM. CODE 1100

A. CONTRACTOR shall comply with 35 Ill. Adm. Code 1100 when disposing of clean construction or demolition debris (CCDD) or uncontaminated soil at a CCDD or uncontaminated soil fill operation.

1.05 ROADWAY LIMITS

A. CONTRACTOR shall comply with roadway weight restrictions including seasonal weight restrictions.

1.06 PERMITS

A. The following permits are being obtained by OWNER:
1. Army Corps of Engineers Permit (Pending).
2. Illinois Environmental Protection Agency Permit to Construct (Pending).
3. Illinois Department of Transportation Utility Permit (Pending).

B. They will be provided when they are obtained. CONTRACTOR shall comply with all provisions of these permits and shall be responsible for notifications as required by these permits. CONTRACTOR shall obtain all other permits required for the Work. Where the

requirements of any permit is more restrictive than the Drawings or the Specifications, the permit requirements shall govern.

C. A building permit will be required from OWNER. However, OWNER will waive fees associated with the permit.

D. Any permits required for dewatering operations shall be obtained and paid for by CONTRACTOR.

E. CONTRACTOR shall be required to execute a Notice of Intent (NOI) form, pay the application fee, and to adhere to NPDES Permit ILR10 for Contract 2010-0914.

F. CONTRACTOR shall be required to obtain a permit from OWNER for the pressure connection tap to the existing water main.

1.07 WAGE RATES

A. CONTRACTOR and any subcontractor shall pay all laborers, workers, and mechanics performing work under the Contract not less than the prevailing wage rates adopted by OWNER or determined by the court on review and filed with the Secretary of State in Springfield. A copy of the Schedule of Prevailing Wage Rates is attached hereto.

B. CONTRACTOR shall keep or cause to be kept a record of employees and wages paid as required by the Prevailing Wage Act (820 ILCS 130/1-12). CONTRACTOR shall also require each subcontractor employed on the project to keep these same records. In accordance with Illinois Public Act 94-0515, CONTRACTOR shall submit certified payroll records on a monthly basis to OWNER, along with a statement affirming that such records are true and accurate, that the wages paid to each worker are not less than the required prevailing rate and that CONTRACTOR is aware that filing records he or she knows to be false is a Class B misdemeanor.

C. The certified payroll records shall include for every worker employed on the project the name, address, telephone number, social security number, job classification, hourly wages paid in each pay period, number of hours worked each day, and starting and ending time of work each day.

D. If at the time this Contract is executed, or if during the term of this Contract, there is excessive unemployment in Illinois as defined in the Employment of Illinois Workers on Public Works Act, 30 ILCS 570, as two consecutive months of unemployment exceeding 5%, CONTRACTOR agrees to employ a work force that is comprised of at least 90% Illinois laborers. An “Illinois laborer” is defined as any person who has resided in Illinois for at least 30 days and intends to become or remain an Illinois resident.

E. See Wage Rate Forms bound at the end of Division 01.

F. CONTRACTOR shall comply with either the attached Will County or Federal Wage Rates, whichever are higher.

1.08 AMERICAN IRON AND STEEL REQUIREMENTS

A. CONTRACTOR shall comply with the American Iron and Steel (AIS) requirements of the Consolidated Appropriations Act of 2014. CONTRACTOR shall submit, with each shop drawing, step certification that regulated iron and steel products meet AIS requirements. A

sample certification letter is attached at the end of Division 01. Certification letters shall include the following at minimum:

1. Identification of the product.
2. City and State where the product was manufactured.
3. Reference to OWNER and/or project.
4. Signature of authorized manufacturer employee.
5. Reference to current AIS requirements.

B. The Consolidated Appropriations Act of 2014 (Public Law 113-76) does grant the possibility of a De Minimis waiver if certain conditions are met. The De Minimis Waiver of Section 436 of P.L. 113-76, Consolidated Appropriations Act (CAA), 2014 Decision Memorandum issued April 15, 2014, included following Division 01.

C. CONTRACTOR shall provide required AIS documentation prior to installation of regulated iron and steel product.

1.09 APPRENTICESHIP INITIATIVE

A. CONTRACTOR shall comply with the Illinois Works Jobs Program Act (Apprenticeship Initiative). It will be the contractors responsibility to track labor hours and submit periodic summary reports with each pay request. Information can be found following Division 01.

1.10 EMPLOYMENT OF ILLINOIS WORKERS ON PUBLIC WORKS ACT, 30 ILCS 570

A. If at the time this Contract is executed, or if during the term of this Contract, there is excessive unemployment in Illinois as defined in the Employment of Illinois Workers on Public Works Act, 30 ILCS 570, as two consecutive months of unemployment exceeding 5%, CONTRACTOR agrees to employ a work force that consists of at least 90% Illinois laborers. An “Illinois laborer” is defined as any person who has resided in Illinois for at least 30 days and intends to become or remain an Illinois resident. The Bidder shall require all subcontractors (if any) to conform with said laws, and any rules or regulations now and thereafter issued to said laws by Bidder, his subcontractors, and/or anyone working through or on behalf of Bidder or Bidder’s subcontractors.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

NOT APPLICABLE

END OF SECTION

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SECTION 01 42 00

REFERENCE STANDARDS AND DEFINITIONS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Reference Standards:
      a. Throughout the Contract Documents, reference is made to codes and standards which establish qualities and types of workmanship and materials, and which establish methods for workmanship and materials, and which establish methods for testing and reporting on the pertinent characteristics.
      b. Where materials or workmanship are required by these Contract Documents to meet or exceed the specifically named code or standard, it is CONTRACTOR's responsibility to provide materials and workmanship which meet or exceed that specifically named code or standard.
      c. It is also CONTRACTOR's responsibility, when so required by the Contract Documents, to deliver to ENGINEER all required proof that the material or workmanship, or both, meet or exceed the requirements of the specifically named code or standard.
   2. Definitions:
      a. A substantial amount of specification language constitutes definitions for terms found in other Contract Documents, including the Drawings which must be recognized as diagrammatic in nature and not completely descriptive of requirements indicated thereon.
      b. Certain terms used in the Contract Documents are defined generally in this section to supplement definitions of the Agreement, General Conditions, Supplementary Conditions, and other general contract documents.
      c. Definitions and explanations of this section are not necessarily either complete or exclusive, but are general for the Work.

B. Related Work Described Elsewhere: The specific naming of codes or standards occurs on the Drawings and in other sections of these Specifications.

1.02 QUALITY ASSURANCE

A. Familiarity with Pertinent Codes and Standards:
   1. It is CONTRACTOR's responsibility to verify the requirements of the specifically named codes and standards and to verify that the items procured for use in this Work meet or exceed the specified requirements.
   2. When required by individual sections of these specifications, CONTRACTOR shall obtain a copy of each pertinent code or standard and maintain the copies at the job site during submittals, planning, and progress of the Work until Substantial Completion of the Work is attained.

B. Overlapping or Conflicting Requirements:
   1. Where compliance with two or more industry standards or sets of requirements are specified, and the overlapping of those standards or requirements establishes different or conflicting minimums or levels of quality, the most stringent requirement (which is

generally recognized to be also most costly) is intended and will be enforced, unless more detailed language written directly into Contract Documents clearly indicates that a less stringent requirement is acceptable.

2. The specifications that will govern this project if not covered within this specification include:
   a. City of Joliet Special Provisions.
   b. Standard Specification for Road and Bridge Construction (latest edition).
   c. Standard Specifications for Water and Sewer Construction in Illinois.
3. Refer all uncertainties to ENGINEER for decision before proceeding.

1.03 REFERENCE STANDARDS

A. The City of Joliet referenced Special Provisions and General Conditions can be located at https://www.joliet.gov/government/departments/finance/purchasing/special-provisions-general-conditions

B. Applicable standards of the construction industry are made a part of the Contract Documents by reference as if copied directly into the Contract Documents, or as if published copies were bound herewith. See Article 3.02 of the General Conditions for additional provisions regarding references.

C. Standards referenced directly in the Contract Documents or by governing regulation, have precedence over nonreferenced standards which are recognized in industry for applicability to the Work.

D. Nonreference standards are hereby defined to have no particular applicability to the Work except as a general measurement of whether the Work complies with standards recognized in the construction industry.

E. Reference standards and codes listed in these specifications may include, but are not necessarily limited to, standards or codes published by the following agencies and organizations:

1. AA — Aluminum Association
   1525 Wilson Boulevard, Arlington, VA 22209

2. AAMA — American Architectural Manufacturer's Association
   1827 Walden Office Square Suite 550, Schaumberg, IL 60173-4268

3. AASHTO — American Association of State Highway & Transportation Officials
   444 North Capitol Street NW Suite 249, Washington, DC 20001

4. ACI — American Concrete Institute
   38800 Country Club Drive, Farmington Hills, MI 48331-3439

5. AI — Asphalt Institute
   2696 Research Park Drive, Lexington, KY 40511-8480

6. AISC — American Institute of Steel Construction
   One East Wacker Drive Suite 700, Chicago, IL 60601-1802

7.	AISI	American Iron and Steel Institute 25 Massachusetts Avenue NW Suite 800, Washington, DC 20001
8.	ANSI	American National Standards Institute 25 West 43rd Street, New York, NY 10036
9.	APA	American Plywood Association 7011 South 19th, Tacoma, WA 98466-5333
10.	API	American Petroleum Institute 1220 L Street NW, Washington, DC 20005-4070
11.	ARI	Air-Conditioning & Refrigeration Institute 4100 North Fairfax Drive Suite 200, Arlington, VA 22203
12.	ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers 1791 Tullie Circle NE, Atlanta, GA 30329
13.	ASME	American Society of Mechanical Engineers Two Park Avenue, New York, NY 10016-5990
14.	ASSE	American Society of Sanitary Engineering 901 Canterbury Suite A, Westlake, OH 44145
15.	ASTM	ASTM International 100 Barr Harbor Drive, West Conshohoken, PA 19428-2959
16.	AWI	Architectural Woodwork Institute 46179 Westlake Drive Suite 120, Potomac Falls, VA 20165-5874
17.	AWPA	American Wood Protection Association P.O. Box 361784, Birmingham, AL 35236-1784
18.	AWS	American Welding Society 8669 Doral Boulevard Suite 130, Doral, FL 33166
19.	AWWA	American Water Works Association 6666 West Quincy Avenue, Denver, CO 80235
20.	BHMA	Builder's Hardware Manufacturers Association 355 Lexington Avenue 15th floor, New York, NY 10017
21.	BIA	Brick Industry Association 1850 Centennial Park Drive Suite 301, Reston, VA 20191
22.	CRSI	Concrete Reinforcing Steel Institute 9333 North Plum Grove Road, Schaumburg, IL 60173

23. DOT	U.S. Department of Transportation 1200 New Jersey Avenue, SE, Washington, DC 20590
24. EJMA	Expansion Joint Manufacturers Association 25 North Broadway, Tarrytown, NY 10591
25. FM	FM Global FM Global Corporate Offices, 270 Central Avenue, Johnston, RI 02919
26. FTI	Facing Tile Institute Box 8880, Canton, OH 44711
27. GA	Gypsum Association 6525 Belcrest Road Suite 480, Hyattsville, MD 20782
28. GANA	Glass Association of North America 800 SW Jackson Street Suite 1500, Topeka, KS 66612-1200
29. ICC	International Code Council 500 New Jersey Avenue NW 6th Floor, Washington, DC 20001
30. IDOT	Illinois Department of Transportation Hanley Building, 2300 S. Dirksen Parkway, Springfield, IL 62764
31. IES	Illuminating Engineering Society 120 Wall Street, Floor 17, New York, NY 10005-4001
32. MIL	Military Specifications Naval Publications and Forms Center 5801 Tabor Avenue, Philadelphia, PA 19120
33. NAAMM	National Association of Architectural Metal Manufacturers 800 Roosevelt Road Building C Suite 312, Glen Ellyn, IL 60137
34. NCMA	National Concrete Masonry Association 13750 Sunrise Valley Drive, Herndon, VA 20171-4662
35. NECA	NECA National Electrical Contractors Association 3 Bethesda Metro Center Suite 1100, Bethesda, MD 20814
36. NEMA	National Electrical Manufacturers Association 1300 North 17th Street Suite 1752, Rosslyn, VA 22209
37. NFPA	National Fire Protection Association 1 Batterymarch Park, Quincy, MA 02169-7471
38. NIST	National Institute of Standards and Technology (U.S. Department of Commerce), 100 Bureau Drive, Stop 1070 Gaithersburg, MD 20899-1070

39. NRCA National Roofing Contractors Association
10255 West Higgins Road Suite 600, Rosemont, IL 60018-5607

40. NSF National Sanitation Foundation International
P.O. Box 130140, 789 North Dixboro Road, Ann Arbor, MI 48113-0140

41. OSHA Occupational Safety & Health Administration
200 Constitution Avenue NW, Washington, DC 20210

42. PCA Portland Cement Association
5420 Old Orchard Road, Skokie, IL 60077

43. PCI Prestressed Concrete Institute
200 West Adams Street Suite 2100, Chicago, IL 60606

44. SAE Society of Automotive Engineers
SAE World Headquarters
400 Commonwealth Drive, Warrendale, PA 15096-0001

45. SDI Steel Deck Institute
P.O. Box 25, Fox River Grove, IL 60021

46. SDI Steel Door Institute
30200 Detroit Road, Westlake, OH 44145-1987

47. SIGMA Sealed Insulating Glass Manufacturers Assoc.
401 North Michigan Avenue Suite 2400, Chicago, IL 60611

48. SJI Steel Joist Institute
234 Cheves Street, Florence, SC 29501

49. SMACNA Sheet Metal and Air Conditioning
Contractor's National Association
4201 Lafayette Center Drive, Chantilly, VA 20151-1219

50. SSPC Society for Protective Coatings
40 24th Street 6th Floor, Pittsburgh, PA 15222-4656

51. TCA Tile Council of America
100 Clemson Research Boulevard, Anderson, SC 29625

52. UL Underwriters Laboratories
333 Pfingston Road; Northbrook, IL 60062

1.04 SUBMITTALS

A. For OWNER's records, CONTRACTOR shall submit copies of permits, licenses, certifications, inspection reports, and similar documents, correspondence and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

1.05 DEFINITIONS

A. Indicated:
   1. The term “indicated” is a cross-reference to details, notes, or schedules on the drawings, to other paragraphs or schedules in the specifications and to similar means of recording requirements in the Contract Documents.
   2. Where terms such as “shown,” “noted,” “scheduled,” and “specified” are used in lieu of “indicated,” it is for the purpose of helping the reader locate cross-reference, and no limitation is intended except as specifically noted.

B. Approve (or Words of Similar Nature):
   1. Where used in conjunction with ENGINEER's response to submittals, requests, applications, inquiries, reports, and claims by CONTRACTOR, the meaning of the term “approve” will be held to the limitation of ENGINEER's responsibilities and duties as specified in Paragraph 1.02.B.1. of the General Conditions.
   2. In no case will “approval” by ENGINEER be interpreted as a release of CONTRACTOR from responsibility to fulfill requirements of the Contract Documents.

C. Minimum Requirements:
   1. Indicated requirements are for a specific minimum acceptable level of quality or quantity, as recognized in the industry.
   2. Actual work must comply with (or within specified tolerances) or exceed minimums.
   3. CONTRACTOR shall refer uncertainties to ENGINEER before proceeding.

D. Abbreviations: Abbreviations, where not defined in the Contract Documents, will be interpreted to mean the normal construction industry terminology.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL

PART 1–GENERAL

1.01 SUMMARY

A. Work Includes:
   1. Quality Assurance–Control of Installation.
   2. Tolerances.
   3. Manufacturers' Field Services and Reports.

1.02 QUALITY ASSURANCE–CONTROL OF INSTALLATION

A. CONTRACTOR shall monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce Work of specified quality.

B. CONTRACTOR shall comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, CONTRACTOR shall request clarification from ENGINEER before proceeding.

D. CONTRACTOR shall comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Work shall be performed by persons qualified to produce workmanship of specified quality.

F. CONTRACTOR shall secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.03 TOLERANCES

A. CONTRACTOR shall monitor tolerance control of installed products to produce acceptable work and shall not permit tolerances to accumulate.

B. CONTRACTOR shall comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, CONTRACTOR shall request clarification from ENGINEER before proceeding.

C. CONTRACTOR shall adjust products to appropriate dimensions; position before securing products in place.

1.04 MANUFACTURERS' FIELD SERVICES AND REPORTS

A. When specified in individual specification sections or when requested by ENGINEER, CONTRACTOR shall require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, and quality of workmanship.

B. CONTRACTOR shall submit qualifications of observer to ENGINEER 30 days in advance of required observations.

C. CONTRACTOR shall report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

D. CONTRACTOR shall submit report in duplicate within 30 days of observation to ENGINEER for information.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Temporary utilities.
   2. Temporary stairs and access.
   3. Temporary support facilities.
   4. Removal of temporary facilities.
   5. Submittals.

B. CONTRACTOR shall arrange for and provide temporary facilities as required for proper and expeditious prosecution of the Work.

C. CONTRACTOR shall pay all costs, except as otherwise specified, until final acceptance of the Work unless OWNER makes arrangements for use of completed portions of the Work after substantial completion in accordance with the provisions of the General Conditions.

D. CONTRACTOR shall make all temporary connections to utilities and services in locations acceptable to OWNER and local authorities having appropriate jurisdiction.
   1. Furnish all necessary labor and materials.
   2. Make all installations in a manner subject to the acceptance of such authorities and OWNER.
   3. Maintain such connections.
   4. Remove temporary installation and connection when no longer required.
   5. Restore services and sources of supply to proper operating conditions.

1.02 TEMPORARY UTILITIES

A. Temporary Toilets: CONTRACTOR shall provide and maintain sanitary temporary chemical toilet facilities conforming to state and local health and sanitation regulations. Toilet facilities shall be located where approved by OWNER and in sufficient number required for the work force employed by CONTRACTOR. CONTRACTOR shall maintain toilet facilities in sanitary condition and keep facility properly supplied with toilet paper. CONTRACTOR shall remove toilet facilities from site before final acceptance of work.

B. Temporary Electrical Services:
   1. CONTRACTOR shall make all necessary arrangements, furnish, install, and maintain necessary temporary electrical services at the Site. CONTRACTOR shall remove all temporary services when Project is complete.
   2. All utility charges for installation of the temporary services shall be paid for by CONTRACTOR. All metering installation charges and all energy charges for electric current used for temporary lighting and power are to be paid by CONTRACTOR.
   3. No permanent electrical equipment or wiring shall be used without express written permission of OWNER. Such approval, if given, shall not affect guarantee period. If OWNER authorizes use of permanent service facilities, CONTRACTOR shall pay all metering costs until acceptance or occupancy (whichever occurs first) of building by OWNER.

C. Weather Protection and Temporary Heat: CONTRACTOR shall provide weather protection to protect the Work from damage because of freezing, rain, snow, and other inclement weather.

D. Temporary Water:
   1. All water used on the project must be metered using an approved hydrant meter. Upon the Contractor's request, the City can provide the Contractor with a rental water meter to record all water taken from the City's water distribution system. Upon completion of the work, the Contractor shall return the water meter and submit payment to the City for the total volume of water supplied based on the final water meter reading less the initial meter reading. A deposit is required at time of pickup.
   2. CONTRACTOR has the option to provide their own meter. The meter must be approved by Public Utilities Superintendent prior to the start of construction. CONTRACTOR must provide a backflow prevention device to be utilized between the hydrant and CONTRACTOR's equipment. ENGINEER will record monthly meter readings and provide to the City for billing.
   3. CONTRACTOR shall not connect to any portion of the City's water distribution system without prior approval by the City, and connection may only be made at hydrants designated by the City for their use.
   4. CONTRACTOR will be charged the following for water usage:
      a. Meter rental: $10 service charge plus $0.123/day rental fee.
      b. Water consumption: City's current utility rate for water consumption.

E. Temporary Fire Protection: CONTRACTOR and Subcontractor(s) who maintain or provide an enclosed shed or trailer shall provide and maintain in operating order in each shed or trailer a minimum of one fire extinguisher. More extinguishers shall be provided as necessary. Fire extinguishers shall be minimum dry chemical, nonfreezing-type, UL rating 2A-30BC, with 10-pound capacity for Class A, B, and C fires. Fire hydrants shall remain accessible at all times to OWNER.

1.03 TEMPORARY STAIRS AND ACCESS

A. CONTRACTOR shall provide and maintain all equipment such as temporary stairs, ladders, ramps, runways, chutes, and so on as required for proper execution of the Work. CONTRACTOR shall be responsible for providing its own scaffolds, hoists, etc.

B. All such apparatus, equipment, and construction shall meet all requirements of OSHA, the labor laws, and other applicable State and local laws. Provide stairs with handrails. As soon as possible and where applicable, permanent stairs shall be installed.

C. As soon as permanent stairs are created, provide temporary protective treads, handrails, and shaft protection.

D. Provide barricades at hazardous locations, complete with signs, temporary general lighting, warning lights, and similar devices as required.

1.04 TEMPORARY SUPPORT FACILITIES

A. CONTRACTOR shall provide whatever facilities and services which may be needed to properly support primary construction process and meet compliance requirements and governing regulations.

B. CONTRACTOR shall not use permanent facilities except as otherwise indicated, unless authorized by OWNER.

1.05 REMOVAL OF TEMPORARY FACILITIES

A. Remove temporary materials, equipment, services, and construction as soon as practicable but no later than just prior to substantial completion inspection.

B. Clean and repair damage caused by installation or use of temporary facilities and restore existing facilities used during construction to specified, or to original, condition.

1.06 SUBMITTALS

A. A list of hydrants requested for temporary water use.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

NOT APPLICABLE

END OF SECTION

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SECTION 01 52 13

FIELD OFFICES AND SHEDS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Materials, equipment, and furnishings.
   2. Construction.
   3. Environmental control.
   4. CONTRACTOR office and facilities.
   5. Storage areas and sheds.
   6. Preparation.
   7. Maintenance and cleaning.
   8. Removal.

PART 2–PRODUCTS

2.01 MATERIALS, EQUIPMENT, AND FURNISHINGS

A. Materials, equipment, and furnishings shall be serviceable, new or used, and adequate for required purpose. All materials required by this specification are to meet Contractor's needs and not a requirement.

2.02 CONSTRUCTION

A. Portable or mobile buildings or buildings shall be constructed with floors raised above ground, securely fixed to foundations, with steps and landings at entrance doors.

B. CONTRACTOR shall provide structurally sound, secure, weathertight enclosures for office and storage spaces.

C. Temperature transmission resistance of floors, walls, and ceilings shall be compatible with occupancy and storage requirements.

D. Exterior materials shall be weather resistant.

E. Interior materials in offices shall consist of sheet type materials for walls and ceilings, prefinished or painted; resilient floors and bases.

F. Lighting for offices shall be 50 footcandles minimum at desk top height, with exterior lighting at entrance doors.

G. Provide appropriate type fire extinguisher at each office and each storage area.

H. Interior materials in storage sheds shall be as required to provide specified conditions for storage of products.

2.03 ENVIRONMENTAL CONTROL

A. Heating, cooling, and ventilating for offices shall consist of automatic equipment to maintain comfort conditions; 70°F heating and 78°F cooling.

B. Heating and ventilation for storage spaces shall be as needed to maintain products in accordance with Contract Documents and to provide adequate lighting for maintenance and observation of products.

2.04 CONTRACTOR OFFICE AND FACILITIES

A. CONTRACTOR shall provide facilities to meet CONTRACTOR's needs and to provide space for Project meetings.

B. Provide telephone as required for CONTRACTOR's needs.

C. Provide furnishings in meeting area. As a minimum, provide conference table and chairs to seat at least eight persons; racks and files for Contract Documents, submittals, and project record documents.

2.05 STORAGE AREAS AND SHEDS

A. Provide storage areas and sheds of size to meet storage requirements for products of individual sections, allowing for access and orderly provision for maintenance and for observation of products to meet requirements of Section 01 60 00–Materials and Equipment.

PART 3–EXECUTION

3.01 PREPARATION

A. CONTRACTOR shall fill and grade sites for temporary structures to provide drainage away from buildings.

3.02 MAINTENANCE AND CLEANING

A. CONTRACTOR shall maintain approach walks free of mud, water, and snow.

3.03 REMOVAL

A. Upon final acceptance and completion of the Work, CONTRACTOR shall remove field offices, foundations, utility services, and debris and shall restore areas.

END OF SECTION

SECTION 01 57 00

TEMPORARY CONTROLS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Dust Control.
   2. Water, Erosion, and Sediment Control.
   3. Noise Control.
   4. Traffic Control.
   5. Site Security.
   6. Daily Cleanup.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

3.01 DUST CONTROL

A. CONTRACTOR shall execute the Work by methods to minimize raising dust from construction operations.

B. CONTRACTOR shall provide positive means to prevent airborne dust from dispersing into atmosphere.

C. CONTRACTOR shall provide partitions, enclosures, etc., within buildings as necessary to confine dust and protect adjacent areas.

3.02 WATER, EROSION, AND SEDIMENT CONTROL

A. CONTRACTOR shall grade site to drain and shall maintain excavations free of water. Provide, operate, and maintain pumping equipment.

B. CONTRACTOR shall protect Site from puddling or running water.

C. CONTRACTOR shall provide erosion control measures as necessary to control discharge of sediment laden water to surface waters and wetlands.

D. Except as provided for in the document, overland discharge of water from dewatering operations shall not be allowed. Depending on water quality, such water shall either be piped directly to the surface water or shall be directed to sedimentation basins or other such structures or features prior to discharge to surface waters so as not to cause damage to existing ground and improvements, erosion, or deposition in the discharge area.

E. CONTRACTOR shall use jute or synthetic netting, silt fences, straw bales, dikes, channels, and other applicable measures to prevent erosion of soils disturbed by its construction operation.

F. Restoration of the Site shall proceed concurrently with the construction operation. See Drawings and Specifications for erosion control measures in addition to that which may be required above.

G. Erosion control measures shall comply with the following document: "Standard Specifications for Soil Erosion and Sediment Control," of the Illinois Environmental Protection Agency, IEPA/WPC 87-012.

3.03 NOISE CONTROL

A. All engines and engine driven equipment used for construction or for hauling shall be equipped with an adequate muffler in constant operation and properly maintained to prevent excessive or unusual noise. Any machine or device or part thereof which is regulated by or becomes regulated by Federal of State noise standards shall conform to those standards.

B. CONTRACTOR shall equip all engines with mufflers and/or enclose to keep noise level less than 50 decibels or 10 decibels above ambient noise levels when measured at building closest to noise source.

3.04 TRAFFIC CONTROL

A. CONTRACTOR shall be responsible for providing all signs, barricades, flagmen, and other traffic control devices in the construction zone.

B. Conduct operations with minimum interference to roadways.

C. Maintain two-way traffic on streets at all times.

D. All traffic control measures shall meet the requirements of Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, Latest Edition, and the Standard Specifications for Traffic control Items, Latest Edition.

E. Do not close or obstruct roadways without approval of OWNER.

3.05 SITE SECURITY

A. CONTRACTOR shall have the sole responsibility of safeguarding the Site perimeter to prevent unauthorized entry to the Site throughout the duration of the Project. CONTRACTOR shall at all times provide such permanent and temporary fencing or barricades or other measures as may be necessary to restrict unauthorized entry to its construction area including construction in public rights-of-way or easements. Site security measures shall include safeguards against attractive nuisance hazards as a result of construction activity.

B. CONTRACTOR shall at all times be responsible for the security of the Work including materials and equipment. OWNER will not take any responsibility for missing or damaged equipment, tools, or personal belongings. CONTRACTOR shall have the sole responsibility of safeguarding the Work and the Site throughout the duration of the Project.

3.06 DAILY CLEANUP

A. CONTRACTOR shall clean up the Site and remove all rubbish on a daily basis.

B. CONTRACTOR shall clean up public streets and highways and remove any dirt, mud, or other materials due to project traffic on daily basis and shall comply with all local and state ordinances and permit requirements.

C. All excavations shall be backfilled or plated at the end of each day, unless approved by ENGINEER and OWNER.

D. CONTRACTOR shall complete street cleaning with a street sweeper if requested by OWNER.

END OF SECTION

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SECTION 01 60 00

MATERIALS AND EQUIPMENT

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: CONTRACTOR shall be responsible for the delivery, handling, storage and protection of all material and equipment required to complete the Work as specified herein.

B. Related Sections and Divisions: Specific requirements for the handling and storage of material and equipment are described in other sections of these Specifications.

1.02 PRODUCTS

A. Components required to be supplied in quantity within a Specification section shall be the same, and shall be interchangeable.

B. CONTRACTOR shall not use materials and equipment removed from existing construction, except as specifically required, or allowed, by the Contract Documents.

C. When any construction deviations from the Drawings and/or Specifications necessary to accommodate equipment supplied by CONTRACTOR, result in additional costs to CONTRACTOR or other contractors, such additional costs shall be borne by CONTRACTOR. CONTRACTOR shall also pay any additional costs necessary for revisions of Drawings and/or Specifications by ENGINEER.

D. Each major component of equipment shall bear a nameplate giving the name and address of the manufacturer and the catalogue number or designation.

1.03 TRANSPORTATION AND HANDLING

A. Materials, products and equipment shall be properly containerized, packaged, boxed, and protected to prevent damage during transportation and handling.

B. CONTRACTOR shall not overload any portion of the structure in the transporting or storage of materials.

C. CONTRACTOR shall not damage other construction by careless transportation, handling, spillage, staining or impact of materials.

D. CONTRACTOR shall provide equipment and personnel to handle products, including those provided by OWNER, by methods to prevent soiling and damage.

E. CONTRACTOR shall provide additional protection during handling to prevent marring and otherwise damaging products, packaging, and surrounding surfaces.

F. CONTRACTOR shall handle product by methods to avoid bending or overstressing. Lift large and heavy components only at designated lift points.

1.04 DELIVERY AND RECEIVING

A. CONTRACTOR shall arrange deliveries of products in accordance with the Progress Schedule, allowing time for observation prior to installation.

B. CONTRACTOR shall coordinate deliveries to avoid conflict with the Work and conditions at the Site; work activities of other contractors or OWNER; limitations on storage space; availability of personnel and handling equipment and OWNER's use of premises.

C. CONTRACTOR shall deliver products in undamaged, dry condition, in original unopened containers or packaging with identifying labels intact and legible.

D. CONTRACTOR shall clearly mark partial deliveries of component parts of equipment to identify equipment and contents to permit easy accumulation of parts and to facilitate assembly.

E. Immediately on delivery, CONTRACTOR shall inspect shipment to review that:
   1. Product complies with requirements of Contract Documents and reviewed submittals.
   2. Quantities are correct.
   3. Accessories and installation hardware are correct.
   4. Containers and packages are intact and labels legible.
   5. Products are protected and undamaged.

1.05 STORAGE AND PROTECTION

A. General:
   1. CONTRACTOR shall store products, immediately on delivery, in accordance with manufacturer's instructions, with all seals and labels intact and legible.
   2. Any additional off-site space required shall be arranged by CONTRACTOR.
   3. CONTRACTOR shall allocate the available storage areas and coordinate their use by the trades on the job.
   4. CONTRACTOR shall arrange storage in a manner to provide access for maintenance of stored items and for observation.

B. In enclosed storage, CONTRACTOR shall:
   1. Provide suitable temporary weather tight storage facilities as may be required for materials that will be damaged by storage in the open.
   2. Maintain temperature and humidity within ranges stated in manufacturer's instructions.
   3. Provide ventilation for sensitive products as required by manufacturer's instructions.
   4. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.
   5. Store solid materials such as insulation, tile, mechanical and electrical equipment, fittings, and fixtures under shelter, in original packages, away from dampness and other hazards.
   6. Store liquid materials away from fire or intense heat and protect from freezing.

C. At exterior storage, CONTRACTOR shall:
   1. Store unit materials such as concrete block, brick, steel, pipe, conduit, door frames, and lumber off ground, out of reach of dirt, water, mud and splashing.
   2. Store tools or equipment that carry dirt outside.
   3. Store large equipment so as not to damage the Work or present a fire hazard.
   4. Cover products subject to discoloration or deterioration from exposure to the elements, with impervious sheet material and provide ventilation to avoid condensation.

5. Completely cover and protect any equipment or material which is prime coated or finish painted with secured plastic or cloth tarps. Store out of reach of dirt, water, mud and splashing.
6. Store loose granular materials on clean, solid surfaces such as pavement, or on rigid sheet materials, to prevent mixing with foreign matter.
7. Provide surface drainage to prevent erosion and ponding of water.
8. Prevent mixing of refuse or chemically injurious materials or liquids.
9. Cover aggregates such as sand and gravel in cold wet weather.
10. Remove all traces of piled bulk materials at completion of work and return site to original or indicated condition.

1.06 MAINTENANCE OF STORAGE

A. CONTRACTOR shall periodically inspect stored products on a scheduled basis.

B. CONTRACTOR shall verify that storage facilities comply with manufacturer's product storage requirements, and verify that manufacturer required environmental conditions are maintained continually.

C. CONTRACTOR shall verify that surfaces of products exposed to the elements are not adversely affected and that any weathering of finishes is acceptable under requirements of Contract Documents.

D. CONTRACTOR shall perform scheduled maintenance of equipment in storage as recommended by the manufacturer. A record of the maintenance shall be kept and turned over to ENGINEER when the equipment is installed.

1.07 INSTALLATION REQUIREMENTS

A. Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned as directed by the respective manufacturers, unless otherwise specified.

B. After installation, CONTRACTOR shall protect all materials and equipment against weather, dust, moisture, and mechanical damage.

C. CONTRACTOR shall be responsible for all damages that occur in connection with the care and protection of all materials and equipment until completion and final acceptance of the Work by OWNER. Damaged material and equipment shall be immediately removed from the Site.

1.08 EQUIPMENT WARRANTIES

A. Warranties shall be nonprorated, include all parts and labor, and be in written form. Warranties shall specifically exclude buyer's indemnification language. Warranty language shall not eliminate manufacturer’s responsibility for sizing of the equipment. During warranty period, manufacturer shall be responsible for any travel expenses, outside contractor fees, and rental equipment fees associated with providing warranty service. Manufacturer shall pay expenses incurred for repairs and parts replacement not made by manufacturer if manufacturer’s response is not within 72 hours of notification by OWNER. Warranty language shall be provided with the shop drawings.

1.09 CONCRETE EQUIPMENT BASE

A. Cast-in-place concrete equipment bases shall be provided for all new and relocated equipment including electrical control panels, motor control centers, switchgear, etc. Concrete equipment bases shall be provided by CONTRACTOR except where specifically noted to be provided by others. Bases shall be 3 1/2-inch minimum height and shall be a minimum of 3 inches larger than equipment being supported. Grouting of equipment bases shall be as recommended by equipment manufacturer.

B. Concrete and grout shall meet applicable sections of the specifications.

C. Provide all anchor bolts, metal shapes and templates to be cast in concrete or used to form concrete for support of equipment.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01 71 13

MOBILIZATION AND DEMOBILIZATION

PART 1–GENERAL

1.01 SUMMARY

A. The work shall consist of the mobilization and demobilization of CONTRACTOR's forces and equipment necessary for performing the work required under the contract.

B. This work shall not include mobilization and demobilization for specific items of work for which payment is provided elsewhere in the contract.

C. Mobilization will not be considered as work in fulfilling the contract requirements for commencement of work.

1.02 MEASUREMENT AND PAYMENT

A. Payment for this item includes the expenses incurred by CONTRACTOR for moving-in of minimum major equipment/tools required for the project and moving out of the same after final acceptance of the work including cleaning-up. Fifty percent of the total amount shall be payable after mobilization activity while the remaining 50 percent payable after acceptance of the completed project.

1.03 REFERENCE STANDARDS

A. IDOT Standard Specifications for Road and Bridge Construction: Section 671. Mobilization.

1.04 GENERAL

A. Mobilization shall include all activities and associated costs for transportation of CONTRACTOR's personnel, equipment, and operating supplies to the site; establishment of offices, buildings, and other necessary general facilities for CONTRACTOR's operations at the site; premiums paid for performance and payment bonds, including coinsurance and reinsurance agreements as applicable.

B. Demobilization shall include all activities and costs for transportation of personnel, equipment, and supplies not required or included in the contract from the site; including the disassembly, removal and site cleanup, of offices, buildings and other facilities assembled on the site specifically for this contract.

C. This work includes mobilization and demobilization required by the contract at the time of award. If additional mobilization and demobilization activities and costs are required during the performance of the contract as a result of changed, deleted, or added items of work for which CONTRACTOR is entitled to an adjustment in contract price, compensation for such costs will be included in the price adjustment for the item or items of work changed or added.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

NOT APPLICABLE

END OF SECTION

SECTION 01 73 29

CUTTING, PATCHING, AND ALTERATIONS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: CONTRACTOR shall be responsible for all cutting, fitting, patching, and other alterations required to complete the Work as specified herein or to:
   1. Make its several parts fit together properly.
   2. Uncover portions of the Work to install improperly sequenced Work.
   3. Remove and replace defective Work.
   4. Remove and replace Work not conforming to requirements of the Contract Documents.
   5. Remove samples of installed Work as specified for testing.
   6. Provide penetrations of surfaces for installation of piping and electrical conduit.

1.02 REFERENCES

A. ANSI A10 Safety Requirements for Construction and Demolition.

1.03 QUALITY ASSURANCE

A. CONTRACTOR shall perform all cutting, patching, and alterations in strict accordance with pertinent requirements of these Specifications.

B. Except as modified by governing codes, CONTRACTOR shall comply with the applicable provision and recommendations of ANSI A10.

1.04 SUBMITTALS

A. CONTRACTOR shall submit a written request to OWNER well in advance of executing any cutting or alteration which affects the following:
   1. Work of OWNER or any separate contractor.
   2. Structural value or integrity of any element of the Project.
   3. Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.
   4. Efficiency, operational life, maintenance, or safety of operational elements.
   5. Visual qualities of sight-exposed elements.

B. The request shall include:
   1. Description of affected work.
   2. The necessity for cutting, patching, or alteration.
   3. Effect on work of OWNER, any separate contractor, or on the structural or weather-proof integrity of the Project.
   4. Description of proposed work to include:
      a. Scope of cutting, patching, or alteration.
      b. Trades who will execute the Work.
      c. Products proposed to be used.
      d. Extent of refinishing to be done.
   5. Alternatives to cutting and patching.
   6. Written permission of any separate contractor whose work will be affected.

C. Submit written notice to OWNER designating the date and the time the Work will be uncovered or executed.

1.05 SCHEDULING AND COORDINATION

A. All work under this section shall be coordinated with OWNER's work forces and those of other contractors and shall be accomplished at times acceptable to OWNER.

B. Before starting any work relating to existing utilities (electrical, etc.) that will temporarily discontinue or disrupt service to the existing building, notify ENGINEER and OWNER 72 hours in advance and obtain OWNER's approval before proceeding with this phase of the Work. Temporary facilities, if required, shall be in place prior to disruption of service.

PART 2–PRODUCTS

2.01 NEW MATERIALS

A. For replacement of work removed, CONTRACTOR shall use materials which comply with the pertinent sections of these Specifications.

B. All new materials for patching and extending work shall match existing products and work.

C. CONTRACTOR shall determine type and quality of existing products by inspection and any necessary testing and workmanship by use of existing as the standard.

PART 3–EXECUTION

3.01 INSPECTION

A. Prior to starting work on the siphon control structure and interface with the existing river wall, CONTRACTOR shall provide to OWNER a contingency plan for addressing potential deteriorated concrete, cracks, and leakage from the existing river wall.

B. CONTRACTOR shall use appropriate means and methods in cutting and demolition of the existing river wall to maintain the integrity of the wall. CONTRACTOR shall repair any portion of wall adversely affected by demolition using repair materials and methods approved by OWNER and the United States Army Corps of Engineers.

C. CONTRACTOR shall inspect existing conditions including elements subject to movement or damage during cutting, patching, and other alterations.

D. After uncovering the Work, CONTRACTOR shall inspect conditions affecting installation of new products or performance of new work.

E. CONTRACTOR shall report unsatisfactory or questionable conditions to ENGINEER in writing.

F. CONTRACTOR shall not proceed with work until unsatisfactory or questionable conditions are resolved.

G. Beginning of cutting, patching, and alterations work means acceptance of existing conditions by CONTRACTOR.

3.02 PREPARATION AND PROTECTION

A. CONTRACTOR shall provide temporary bracing, shoring, needling, and support of the structure during alterations work as necessary to prevent collapse, settling, or deflection and to protect persons and property from injury or damage.

B. Temporary supports must adequately carry all existing and imposed load.

C. CONTRACTOR shall provide and maintain temporary protection of surface finishes, equipment, and adjacent work designated to remain where demolition, removal, and new work is being done, connections are being made, materials are being handled, or equipment is being removed.

D. CONTRACTOR shall provide temporary partitions or barriers to contain all dust, dirt, and debris from entering into finished.

E. CONTRACTOR shall provide adequate fire protection in accordance with local Fire Department requirements.

F. CONTRACTOR shall provide waterproofing, weather protection, heat, and other facilities for that portion of the Work which may be exposed by cutting and patching, demolition, or other alterations.

G. CONTRACTOR shall cut, move, or remove items as necessary for access to alterations and renovations work and replace and restore at completion of the Work.

H. CONTRACTOR shall prepare surfaces and remove surface finishes to provide for proper installation of new work and new finishes.

I. CONTRACTOR shall be responsible for any damage to the existing structure or its contents directly or indirectly by its crews or those of its subcontractors.

3.03 PERFORMANCE

A. CONTRACTOR shall accomplish all Work of cutting, removal, demolition, patching, or other alterations using only persons skilled in the appropriate trade.

B. CONTRACTOR shall execute the Work in a careful and orderly manner with the least possible disturbance to the public.

C. CONTRACTOR shall execute cutting and demolition by methods which will prevent damage to other work and will provide proper surfaces to receive installation of repairs.

D. CONTRACTOR shall execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances, and finishes.

E. CONTRACTOR shall fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

F. CONTRACTOR shall thoroughly clean and prepare all surfaces to receive new finish or covering to completely remove all dirt, dust, grease, oil, paint, loose materials, and soil.

G. CONTRACTOR shall refinish entire surface as necessary to provide an even finish to match adjacent finishes:
   1. For continuous surfaces, refinish to nearest intersection.
   2. For an assembly, refinish entire unit.

3.04 DEMOLITION, CUTTING, AND REMOVAL

A. Cutting and removal of construction shall be performed by CONTRACTOR so as not to cut or remove more than is necessary and so as not to damage adjacent work.

B. CONTRACTOR shall cut out embedded anchorages and attachment items as required to properly provide for patching and repair of the respective finishes.

C. CONTRACTOR shall not cut structural work in a manner resulting in a reduction of load-carrying capacity or load/deflection ratio.

D. CONTRACTOR shall not cut operational elements and safety components in a manner resulting in decreased performance, shortened useful life, or increased maintenance.

E. CONTRACTOR shall not cut work exposed to view (exterior or interior) in a manner resulting in noticeable reduction of visual qualities as determined by OWNER.

F. Construction that is to remain which is loosened, cracked, or otherwise damaged or defaced as a result of careless cutting or demolition and is unsuitable for use intended shall be removed and replaced at no additional cost to OWNER.

G. CONTRACTOR shall clean demolished areas and remove debris, waste, and rubbish from the building at the conclusion of each day's work.

H. CONTRACTOR shall not let piled waste material endanger the structure.

3.05 PATCHING, EXTENDING, AND MATCHING

A. Patching work shall conform to the standards of the Specifications where applicable, and where not specified, work shall conform to the highest standards of the applicable trade.

B. CONTRACTOR shall patch construction to match adjacent work unless noted otherwise.

C. Patching or restoration shall be carried to natural breaks (e.g., corners) wherever possible.

D. CONTRACTOR shall provide adequate support to substrate for patching finishes.

3.06 UNANTICIPATED MECHANICAL AND ELECTRICAL WORK EXPOSED

A. Where unanticipated mechanical piping or electrical conduit is exposed during removal of partitions or walls, removal or rerouting shall be accomplished by CONTRACTOR as applicable.
   1. Rerouted piping shall be located and shall be connected to maintain all functions in proper operations.

2. Abandoned piping 15 inches or less in diameter may be left in place where it is buried in floors or walls, providing that it is completely disconnected from its source and capped.
3. There shall be no “dead end” gas, water, sewer, or vent piping existing in the completed work.
4. Unless otherwise shown, abandoned piping, ductwork, conduit, or other mechanical or electrical items in chases, vertical enclosures, or concealed above ceilings shall be completely removed.

B. Removals, capping, or otherwise terminating services which are abandoned shall be accomplished without additional cost to OWNER.

C. Relocation of services resulting from unanticipated conflicts of new and existing work in concealed spaces shall be paid for in accordance with the General Conditions.

END OF SECTION

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SECTION 01 77 00

CONTRACT CLOSEOUT

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Closeout procedures.
   2. Final cleaning.
   3. Adjusting.
   4. Project record documents.
   5. Warranties.
   6. Spare parts and maintenance materials.

1.02 CLOSEOUT PROCEDURES

A. CONTRACTOR shall provide submittals to ENGINEER that are required by governing or other authorities.

B. CONTRACTOR shall comply with General Conditions and Supplementary Conditions and complete the following before requesting ENGINEER's observation of the Work or designated portion thereof for substantial completion.
   1. Submit executed warranties, workmanship bonds, maintenance agreements, inspection certificates, and similar required documentation for specific units of Work, enabling OWNER's unrestricted occupancy and use.
   2. Submit record documentation, maintenance manuals, tools, spare parts, keys, and similar operational items.
   3. Complete on-site function acceptance testing per specification Section 26 09 00–Controls and Instrumentation.
   4. Provide post televising videos and database as specified.
   5. Submit consent of surety (if surety required in Contract).
   6. Complete final cleaning, touch-up work of marred surfaces, and remove temporary facilities and tools.

1.03 FINAL CLEANING

A. It is CONTRACTOR's responsibility to completely clean up the inside and outside of all structures and the construction site at the completion of the Work.

B. CONTRACTOR shall clean areas of the structures in which painting and finishing work is to be performed just prior to the start of this work and maintain these areas in satisfactory condition for painting and finishing. This cleaning includes:
   1. Removal of trash and rubbish from these areas.
   2. Broom cleaning of floors.
   3. Removal of any mortar, dust, and other extraneous materials from finish surfaces, including but not limited to exposed structural steel, miscellaneous metal, masonry, concrete, mechanical equipment, piping, and electrical equipment.

C. In addition to the cleaning specified above and the more specific cleaning that may be required in various technical sections of the Specifications, CONTRACTOR shall prepare the Project by a thorough cleaning throughout, which shall include the following:
   1. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
   2. Clean site; sweep paved areas, rake clean landscaped surfaces.
   3. Remove waste and surplus materials, rubbish, and construction facilities from the Site.
   4. CONTRACTOR shall complete street cleaning with a street sweeper if requested by OWNER.

1.04 ADJUSTING

A. CONTRACTOR shall adjust operating products and equipment to provide smooth and unhindered operation.

1.05 PROJECT RECORD DOCUMENTS

A. CONTRACTOR shall maintain on Site one set of the following record documents to record actual revisions to the Work:
   1. Drawings.
   2. Specifications.
   3. Addenda.
   4. Change orders and other modifications to the Contract.
   5. Reviewed shop drawings, product data, and samples.
   6. Manufacturer's instruction for assembly, installation, and adjusting.

B. CONTRACTOR shall make entries that are complete and accurate, enabling future reference by OWNER.

C. CONTRACTOR shall store record documents separate from documents used for construction.

D. CONTRACTOR shall record information concurrent with construction progress.

E. Specifications: CONTRACTOR shall legibly mark and record at each Product section description of actual products installed, including the following:
   1. Manufacturer's name and product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by addenda and modifications.

F. Record Drawings: CONTRACTOR shall legibly mark each item to record actual construction including:
   1. Measured depths of foundations in relation to finish floor datum.
   2. Measured horizontal and vertical locations of underground utilities and appurtenances referenced to permanent surface improvements.
   3. Measured locations of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of the Work.
   4. Field changes of dimension and detail.
   5. Details not on original Contract Drawings.
   6. CONTRACTOR shall survey all new structures and provide a CAD file for OWNER to import into their GIS database.

1.06 WARRANTIES

A. CONTRACTOR shall provide warranties beyond project one-year warranty as required by technical sections.

B. Submit warranty information as follows:
   1. Provide original copies bearing authorized signatures.
   2. Execute and assemble transferable warranty documents from Subcontractors, suppliers, and manufacturers, and provide Table of Contents and assemble in three-ring binder with durable cover.
   3. Submit with request for certificate of Substantial Completion.
   4. For items of work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance listing date of acceptance as start of warranty period.

1.07 SPARE PARTS AND MAINTENANCE MANUALS

A. CONTRACTOR shall provide spare parts, maintenance, and extra materials in quantities specified in these Specifications.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

NOT APPLICABLE

END OF SECTION

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SECTION 01 91 00

STARTING OF SYSTEMS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
1. General.
2. Equipment and system installation.
3. Starting equipment and systems.
4. Demonstration and instructions.
5. Start-up and testing.
6. Equipment systems requiring certification of proper installation.
7. Equipment systems requiring additional documentation.

B. CONTRACTOR shall perform the Work described in the following subsections.

1.02 GENERAL

A. The number of days for manufacturer's services stated in the Specifications shall be considered as the minimum number of days. Should additional time be required for services because of equipment malfunction or other problem, such time shall be at the expense of CONTRACTOR, with no change in Contract Price.

B. "Days" specified shall consist of 8-hour days on-site, excluding travel time.

C. CONTRACTOR shall designate and provide one person to be responsible for scheduling, coordinating, and expediting the specified services. Scheduling the services shall be done in cooperation with, and with the prior approval of ENGINEER and OWNER. Such schedule shall be arranged with the appropriate subcontractors, manufacturers, and suppliers with sufficient time to allow their compliance with the service requirements.

D. CONTRACTOR shall manage equipment checkout such that checkout has been completed and deficiencies addressed prior to demonstration and training. Scheduling training prior to checkout may result in cancellation when checkout cannot be completed prior to training.

1.03 EQUIPMENT AND SYSTEM INSTALLATION

A. Competent and experienced technical personnel shall represent the manufacturers of all equipment and systems for as many days as may be necessary to provide proper installation and to resolve assembly or installation problems at the site that are attributable to, or associated with, the equipment furnished. This requirement applies to manufacturers for all equipment furnished, whether or not specifically set forth in the Specifications.

B. Where a Certificate of Proper Installation is called for in this Specification Section, the manufacturer's representative shall provide the attached Certificate of Proper Installation stating that the equipment or system has been installed in accordance with the manufacturer's instructions and has been inspected by a manufacturer's authorized representative and that any other manufacturer requirements have been met. This

certification shall be provided to ENGINEER and OWNER prior to the start-up. This certificate is in addition to the manufacturer's standard startup reports, checklists, and other pertinent information.

C. Manufacturer shall demonstrate, using laser alignment equipment, if appropriate, that the installed equipment has been aligned properly. Final acceptance of equipment will not be granted until manufacturer has demonstrated to ENGINEER that acceptable alignment to tolerances have been achieved.

1.04 STARTING EQUIPMENT AND SYSTEMS

A. Where field testing and start-up services are called for in the Specifications, or when technical assistance is necessary as a result of any malfunction of the equipment or system furnished, the manufacturer's representative shall provide such services.

B. Manufacturer's representative shall also conduct and/or assist with performance testing, as required by the Specifications. These services shall continue until such times as the applicable equipment or system has been successfully tested for performance and has been accepted by OWNER for full-time operation.

C. Coordinate schedule for start-up of various equipment and systems. Coordination includes, but is not limited to, communication with subcontractors, suppliers, OWNER, and ENGINEER. CONTRACTOR shall confirm that all necessary work is complete and that the equipment and systems can be operated in conjunction with all associated processes.

D. Notify ENGINEER and OWNER a minimum of 7 days prior to start-up of each item using the attached Equipment Startup and O&M Training Scheduling form. CONTRACTOR shall submit form to ENGINEER.

E. Execute start-up under supervision of applicable manufacturer's representative and CONTRACTOR's personnel in accordance with manufacturers' instructions.

F. Require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up and to supervise placing equipment or system in operation. Authorized representative shall provide approval for starting of systems in writing where specified.

G. Equipment manufacturer shall provide a written report covering checkout, testing, inspections, and start-up and shall identify any deficiencies noted. Report shall be submitted to ENGINEER. CONTRACTOR shall be responsible for correcting all deficiencies noted in report. In addition, CONTRACTOR shall submit a fully executed Certificate of Proper Installation form if required in Paragraph 3.01 of this section.

1.05 DEMONSTRATION, INSTRUCTIONS, AND OPERATOR TRAINING

A. For all mechanical equipment and systems and where called for in the Specifications, provide a qualified technical representative to provide detailed instructions to OWNER's personnel for operation and maintenance of equipment and associated instrumentation. Training services shall include pre-start-up classroom instruction and start-up on-site instruction, as stated in the Specifications.

B. Refer to the Specifications for additional training requirements.

C. CONTRACTOR shall coordinate the pre-start-up training periods with OWNER's operating personnel and manufacturers' representatives.
   1. Schedule training dates and times with OWNER, that are acceptable to the OWNER, using equipment, startup, and O&M training form. Normal hours available for training are between 7:30 A.M. to 3 P.M., Monday through Friday, except for holidays.
   2. Submit outline and presentation to ENGINEER at least 7 days in advance of training.
   3. Provide name, contact information, and brief synopsis of qualifications of the trainer.
   4. If materials above are not provided at least 7 days in advance, training may be canceled.
   5. Failure of supplier's or manufacturer's representative to appear for scheduled training, failure to notify OWNER 24 hours in advance of need to cancel scheduled training or failure to arrive within 30 minutes of start of scheduled training shall result in reimbursement to OWNER for time lost by OWNER's personnel in waiting for arrival of manufacturer's representative. Except in case of failure to arrive on time, time will not exceed 1 hour for each employee scheduled to receive training. Failure to arrive on time will be reimbursed by actual time late, up to 1 hour, after 1 hour, training will be rescheduled. CONTRACTOR shall reimburse OWNER via a change order.
   6. During the training, instructor will dedicate its time solely to training and not start-up services.
   7. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with OWNER's personnel in detail to explain all aspects of operation and maintenance.
   8. Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment.
   9. Prepare and insert additional data in operation and maintenance manuals when need for additional data becomes apparent during instruction.
   10. OWNER may videorecord the training for future internal use. Provide to OWNER paper and electronic copies of any media used as part of training.
   11. Provide training handouts for each of OWNER's personnel present.

D. CONTRACTOR shall provide attached Certificate of Operator Training cosigned by OWNER and supplier's representative verifying training was accomplished to satisfaction of all parties.

E. Operation and maintenance manual submitted in accordance with Section 01 33 00–Submittals shall be provided prior to operator training.

F. For equipment or systems requiring seasonal operation, perform demonstration for dormant season at start of dormant season.

G. Final payment for various items of equipment will not be made by OWNER until the equipment is operating to OWNER's satisfaction.

H. Where items of equipment are placed into service at different times or sequence, manufacturer's services for start-up, field testing, and supervision shall be provided for each time or sequence. Training shall be provided prior to or at the time the first similar item of equipment is placed in service.

1.06 START-UP AND TESTING

A. Prior to acceptance of any portion of the Work, start-up and testing of all equipment and testing of all materials furnished on the Project by CONTRACTOR shall have been conducted in the presence of representatives of CONTRACTOR, OWNER, and ENGINEER and also manufacturer if requested by OWNER or ENGINEER.

B. CONTRACTOR shall provide whatever temporary installations and conditions are necessary in order to perform start-up and testing operations on all equipment and materials furnished under the Contract. Temporary connections and equipment necessary during start-up and testing operations shall include, but not be limited to, temporary piping and electrical power and control equipment and devices, temporary connection from various parts of the systems and any other labor, materials, fuel, devices, or items that may be required for start-up and testing operations. Temporary conditions shall include filling with water, if necessary, to check equipment and materials.

C. All temporary installations and conditions shall be removed by CONTRACTOR upon completion of start-up and testing.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

3.01 EQUIPMENT SYSTEMS REQUIRING CERTIFICATION OF PROPER INSTALLATION

A. All equipment specified in Division 46.

3.02 EQUIPMENT SYSTEMS REQUIRING ADDITIONAL DOCUMENTATION

A. Section 26 09 00–Controls and Instrumentation: Documented date(s) of CONTRACTOR written request for Factory Acceptance Test.

B. Section 26 09 00–Controls and Instrumentation: Documented date(s) of CONTRACTOR written request for On-Site Acceptance Test.

TS No. _____

EQUIPMENT START-UP AND O&M TRAINING SCHEDULING FORM
STRAND ASSOCIATES, INC.®

PROJECT _____ CLIENT _____

CONTRACT _____

CONTRACTOR _____ Date: _____

The following equipment is scheduled for start-up on _____

EQUIPMENT NAME: _____ SPECIFICATION SECTION: _____

MANUFACTURER: _____ MINIMUM HOURS OF TRAINING: _____

DATE O&M MANUALS SUBMITTED: _____

Specification Section 01 91 00 requires that start-up and operation and training be conducted by a qualified manufacturer's representative prior to placing equipment in operation. Review Specification Sections 01 33 00 and 01 45 00 and the individual equipment sections for start-up and training requirements. OWNER may find it necessary to propose alternate dates for training based on conflicts with other training and staff availability. The Operation and Maintenance Manuals must be submitted prior to training.

After the equipment or system has been properly installed and is functioning correctly, submit a written report in accordance with Specification Section 01 45 00.

Submit the completed form to ENGINEER and OWNER at least 7 days prior to start-up and training.

Proposed Training Date: _____ Time of Training: _____

Factory-trained representative giving training:

Name(s): _____

Company: _____

Address: _____

Phone: _____

Fax: _____

E-mail: _____

CERTIFICATE OF PROPER INSTALLATION

Project_____

Equipment_____

Specification Section_____

Contract_____

I hereby certify the equipment supplier/manufacturer has inspected this equipment and that it has been properly installed, adjusted, and calibrated. I further certify this equipment may now be operated for test purposes and/or normal use.

MANUFACTURER'S REPRESENTATIVE

Signature_____ Date_____

Name (print)_____

Title_____

Representing_____

CONTRACTOR

Signature_____ Date_____

Name (print)_____

Title_____

This form shall be completed and submitted to ENGINEER prior to OWNER training.

CERTIFICATE OF OPERATOR TRAINING

Project _____

Equipment _____

Specification Section _____

Contract _____

I hereby certify the equipment supplier/manufacturer has instructed OWNER's personnel in the start-up operation and maintenance of this equipment as required in the Specifications.

MANUFACTURER'S REPRESENTATIVE

Signature _____ Date _____

Name (print) _____

Title _____

Representing _____

CONTRACTOR

Signature _____ Date _____

Name (print) _____

Title _____

OWNER

I hereby state that my operating personnel received instruction for start-up, operation, and maintenance of this equipment.

Signature _____ Date _____

Name (print) _____

Title _____

END SECTION

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WAGE RATES

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Will County Prevailing Wage Rates posted on 3/1/2023

						Overtime								
Trade Title	**Rg**	**Type**	**C**	**Base**	**Foreman**	**M-F**	**Sa**	**Su**	**Hol**	**H/W**	**Pension**	**Vac**	**Trng**	**Other Ins**
ASBESTOS ABT-GEN	All	ALL		47.40	48.40	1.5	1.5	2.0	2.0	17.05	15.21	0.00	0.90	
ASBESTOS ABT-MEC	All	BLD		39.60	42.77	1.5	1.5	2.0	2.0	14.77	13.59	0.00	0.86	
BOILERMAKER	All	BLD		53.66	58.48	2.0	2.0	2.0	2.0	6.97	23.69	0.00	2.67	
BRICK MASON	All	BLD		49.81	54.79	1.5	1.5	2.0	2.0	12.10	21.56	0.00	1.10	
CARPENTER	All	ALL		52.01	57.21	2.0	2.0	2.0	2.0	11.79	28.57	0.25	0.80	
CEMENT MASON	All	ALL		45.25	47.25	2.0	1.5	2.0	2.0	12.15	30.65	0.00	0.55	
CERAMIC TILE FINISHER	All	BLD		44.18	44.18	1.5	1.5	2.0	2.0	12.25	14.77	0.00	1.00	
CERAMIC TILE LAYER	All	BLD		51.44	55.44	1.5	1.5	2.0	2.0	12.25	18.48	0.00	1.08	
COMMUNICATION TECHNICIAN	All	BLD		41.50	45.65	1.5	1.5	2.0	2.0	16.49	15.46	0.00	0.75	2.21
ELECTRIC PWR EQMT OP	All	ALL		58.25	63.91	1.5	1.5	2.0	2.0	13.08	19.67	0.00	3.19	
ELECTRIC PWR GRNDMAN	All	ALL		45.44	63.91	1.5	1.5	2.0	2.0	10.20	15.34	0.00	2.49	
ELECTRIC PWR LINEMAN	All	ALL		58.25	63.91	1.5	1.5	2.0	2.0	13.08	19.67	0.00	3.19	
ELECTRICIAN	All	BLD		50.00	54.50	1.5	1.5	2.0	2.0	16.94	21.05	0.00	1.23	4.47
ELEVATOR CONSTRUCTOR	All	BLD		62.47	70.28	2.0	2.0	2.0	2.0	16.03	20.21	5.00	0.65	
GLAZIER	All	BLD		48.75	50.25	1.5	2.0	2.0	2.0	15.19	24.43	0.00	1.70	
HEAT/FROST INSULATOR	All	BLD		52.80	55.97	1.5	1.5	2.0	2.0	14.77	16.76	0.00	0.86	
IRON WORKER	All	ALL		47.80	52.58	2.0	2.0	2.0	2.0	13.11	28.39	0.00	1.00	
LABORER	All	ALL		47.40	48.15	1.5	1.5	2.0	2.0	17.05	15.21	0.00	0.90	
LATHER	All	ALL		52.01	57.21	2.0	2.0	2.0	2.0	11.79	28.57	0.25	0.80	
MACHINIST	All	BLD		53.18	57.18	1.5	1.5	2.0	2.0	9.93	8.95	1.85	1.47	
MARBLE FINISHER	All	ALL		38.00	51.41	1.5	1.5	2.0	2.0	12.10	19.60	0.00	0.60	
MARBLE SETTER	All	BLD		48.96	53.86	1.5	1.5	2.0	2.0	12.10	21.03	0.00	0.78	
MATERIAL TESTER I	All	ALL		37.40		1.5	1.5	2.0	2.0	17.05	15.21	0.00	0.90	
MATERIALS TESTER II	All	ALL		42.40		1.5	1.5	2.0	2.0	17.05	15.21	0.00	0.90	
MILLWRIGHT	All	ALL		52.01	57.21	2.0	2.0	2.0	2.0	11.79	28.57	0.25	0.80	
OPERATING ENGINEER	All	BLD	1	55.10	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	BLD	2	53.80	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	BLD	3	51.25	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	BLD	4	49.50	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	BLD	5	58.85	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	BLD	6	56.10	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	

OPERATING ENGINEER	All	BLD	7	58.10	59.10	2.0	2.0	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	FLT	1	61.10	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	FLT	2	59.60	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	FLT	3	58.10	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	FLT	4	53.60	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	FLT	5	62.60	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	FLT	6	41.00	61.10	1.5	1.5	2.0	2.0	21.40	18.60	2.00	2.40	
OPERATING ENGINEER	All	HWY	1	53.30	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	HWY	2	52.75	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	HWY	3	50.70	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	HWY	4	49.30	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	HWY	5	48.10	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	HWY	6	56.30	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55	
OPERATING ENGINEER	All	HWY	7	54.30	57.30	1.5	1.5	2.0	2.0	22.15	19.30	2.00	2.55	
PAINTER	All	ALL		50.30	56.59	1.5	1.5	1.5	2.0	14.26	14.99	0.00	1.72	
PAINTER - SIGNS	All	BLD		41.55	46.67	1.5	1.5	2.0	2.0	3.04	3.90	0.00	0.00	
PILEDRIVER	All	ALL		52.01	57.21	2.0	2.0	2.0	2.0	11.79	28.57	0.25	0.80	
PIPEFITTER	All	BLD		53.00	56.00	1.5	1.5	2.0	2.0	11.85	22.85	0.00	2.92	
PLASTERER	All	BLD		47.75	50.62	1.5	1.5	2.0	2.0	17.08	19.18	0.00	1.00	
PLUMBER	All	BLD		54.80	58.10	1.5	1.5	2.0	2.0	16.70	17.04	0.00	1.58	
ROOFER	All	BLD		48.00	53.00	1.5	1.5	2.0	2.0	11.83	15.26	0.00	0.99	
SHEETMETAL WORKER	All	BLD		53.33	56.00	1.5	1.5	2.0	2.0	11.85	19.43	0.00	1.59	2.54
SPRINKLER FITTER	All	BLD		54.55	57.30	1.5	1.5	2.0	2.0	14.20	18.70	0.00	0.75	
STONE MASON	All	BLD		49.81	54.79	1.5	1.5	2.0	2.0	12.10	21.56	0.00	1.10	
TERRAZZO FINISHER	All	BLD		45.57	45.57	1.5	1.5	2.0	2.0	12.25	17.14	0.00	1.03	
TERRAZZO MECHANIC	All	BLD		49.41	52.91	1.5	1.5	2.0	2.0	12.25	18.60	0.00	1.07	
TRAFFIC SAFETY WORKER I	All	HWY		39.30	40.90	1.5	1.5	2.0	2.0	9.65	9.10	0.00	0.10	
TRAFFIC SAFETY WORKER II	ALL	HWY		40.30	41.90	1.5	1.5	2.0	2.0	9.65	9.10	0.00	0.10	
TRUCK DRIVER	All	ALL	1	42.70	43.25	1.5	1.5	2.0	2.0	10.65	11.96	0.00	0.15	
TRUCK DRIVER	All	ALL	2	42.85	43.25	1.5	1.5	2.0	2.0	10.65	11.96	0.00	0.15	
TRUCK DRIVER	All	ALL	3	43.05	43.25	1.5	1.5	2.0	2.0	10.65	11.96	0.00	0.15	
TRUCK DRIVER	All	ALL	4	43.25	43.25	1.5	1.5	2.0	2.0	10.65	11.96	0.00	0.15	
TUCKPOINTER	All	BLD		49.53	50.53	1.5	1.5	2.0	2.0	9.04	21.06	0.00	1.07	

Legend

Rg Region

Type Trade Type - All,Highway,Building,Floating,Oil & Chip,Rivers
C Class
Base Base Wage Rate
OT M-F Unless otherwise noted, OT pay is required for any hour greater than 8 worked each day, Mon through Fri. The number listed is the multiple of the base wage.
OT Sa Overtime pay required for every hour worked on Saturdays
OT Su Overtime pay required for every hour worked on Sundays
OT Hol Overtime pay required for every hour worked on Holidays
H/W Health/Welfare benefit
Vac Vacation
Trng Training
Other Ins Employer hourly cost for any other type(s) of insurance provided for benefit of worker.

Explanations WILL COUNTY

The following list is considered as those days for which holiday rates of wages for work performed apply: New Years Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day, Christmas Day and Veterans Day in some classifications/counties. Generally, any of these holidays which fall on a Sunday is celebrated on the following Monday. This then makes work performed on that Monday payable at the appropriate overtime rate for holiday pay. Common practice in a given local may alter certain days of celebration. If in doubt, please check with IDOL.

EXPLANATION OF CLASSES

ASBESTOS - GENERAL - removal of asbestos material/mold and hazardous materials from any place in a building, including mechanical systems where those mechanical systems are to be removed. This includes the removal of asbestos materials/mold and hazardous materials from ductwork or pipes in a building when the building is to be demolished at the time or at some close future date.

ASBESTOS - MECHANICAL - removal of asbestos material from mechanical systems, such as pipes, ducts, and boilers, where the mechanical systems are to remain.

CERAMIC TILE FINISHER

The grouting, cleaning, and polishing of all classes of tile, whether for interior or exterior purposes, all burned, glazed or unglazed products; all composition materials, granite tiles, warning detectable tiles, cement tiles, epoxy composite materials, pavers, glass, mosaics, fiberglass, and all substitute materials, for tile made in tile-like units; all mixtures in tile like form of cement, metals, and other materials that are for and intended for use as a finished floor surface, stair treads, promenade roofs, walks, walls, ceilings, swimming pools, and all other places where tile is to form a finished interior or exterior. The mixing of all setting mortars including but not limited to thin-set mortars, epoxies, wall mud, and any other sand and cement mixtures or adhesives when used in the preparation, installation, repair, or maintenance of tile and/or similar materials. The handling and unloading of all sand, cement, lime, tile, fixtures, equipment, adhesives, or any other materials to be used in the preparation, installation, repair, or maintenance of tile and/or similar materials. Ceramic Tile Finishers shall fill all joints and voids regardless of method on all tile work, particularly and especially after installation of said tile work. Application of any and all protective coverings to all types of tile installations including, but not be limited to, all soap compounds, paper products, tapes, and all polyethylene coverings, plywood, masonite, cardboard, and any new type of products that may be used to protect tile installations, Blastrac equipment, and all floor scarifying equipment used in preparing floors to receive tile. The clean up and removal of all waste and materials. All demolition of existing tile floors and walls to be re-tiled.

COMMUNICATIONS TECHNICIAN

Installation, operation, inspection, maintenance, repair and service of radio, television, recording, voice, sound and vision production and reproduction, telephone and telephone interconnect, facsimile, equipment and appliances used for domestic, commercial, educational and entertainment purposes, pulling of wire through conduit but not the installation of conduit.

MARBLE FINISHER

Loading and unloading trucks, distribution of all materials (all stone, sand, etc.), stocking of floors with material, performing all rigging for heavy work, the handling of all material that may be needed for the installation of such materials, building of scaffolding, polishing if needed, patching, waxing of material if damaged, pointing up, caulking, grouting and cleaning of marble, holding water on diamond or Carborundum blade or saw for setters cutting, use of tub saw or any other saw needed for preparation of material, drilling of holes for wires that anchor material set by setters, mixing up of molding plaster for installation of material, mixing up thin set for the installation of material, mixing up of sand to cement for the installation of material and such other work as may be required in helping a Marble Setter in the handling of all material in the erection or installation of interior marble, slate, travertine, art marble, serpentine, alberene stone, blue stone, granite and other stones (meaning as to stone any foreign or domestic materials as are specified and used in building interiors and exteriors and customarily known as stone in the trade), carrara, sanionyx, vitrolite and similar opaque glass and the laying of all marble tile, terrazzo tile, slate tile and precast tile, steps, risers treads, base, or any other materials that may be used as substitutes for any of the aforementioned materials and which are used on interior and exterior which are installed in a similar manner.

MATERIAL TESTER I: Hand coring and drilling for testing of materials; field inspection of uncured concrete and asphalt.

MATERIAL TESTER II: Field inspection of welds, structural steel, fireproofing, masonry, soil, facade, reinforcing steel, formwork, cured concrete, and concrete and asphalt batch plants; adjusting proportions of bituminous mixtures.

OPERATING ENGINEER - BUILDING

Class 1. Asphalt Plant; Asphalt Spreader; Autograde; Backhoes with Caisson Attachment; Batch Plant; Benoto (requires Two Engineers); Boiler and Throttle Valve; Caisson Rigs; Central Redi-Mix Plant; Combination Back Hoe Front End-loader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Conveyor (Truck Mounted); Concrete Paver Over 27E cu. ft; Concrete Paver 27E cu. ft. and Under: Concrete Placer; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes, All; Cranes, Hammerhead; Cranes, (GCI and similar Type); Creter Crane; Spider Crane; Crusher, Stone, etc.; Derricks, All; Derricks, Traveling; Formless Curb and Gutter Machine; Grader, Elevating; Grouting Machines; Heavy Duty Self-Propelled Transporter or Prime Mover; Highlift Shovels or Front Endloader 2-1/4 yd. and over; Hoists, Elevators, outside type rack and pinion and similar machines; Hoists, One, Two and Three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes; Hydraulic Boom Trucks; Hydro Vac (and similar equipment); Locomotives, All; Motor Patrol; Lubrication Technician; Manipulators; Pile Drivers and Skid Rig; Post Hole Digger; Pre-Stress Machine; Pump Cretes Dual Ram; Pump Cretes: Squeeze Cretes-Screw Type Pumps; Gypsum Bulker and Pump; Raised and Blind Hole Drill; Roto Mill Grinder; Scoops - Tractor Drawn; Slip-Form Paver; Straddle Buggies; Operation of Tie Back Machine; Tournapull; Tractor with Boom and Side Boom; Trenching Machines.

Class 2. Boilers; Broom, All Power Propelled; Bulldozers; Concrete Mixer (Two Bag and Over); Conveyor, Portable; Forklift Trucks; Highlift Shovels or Front Endloaders under 2-1/4 yd.; Hoists, Automatic; Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (Self-Propelled); Rock Drill (Truck Mounted); Rollers, All; Steam Generators; Tractors, All; Tractor Drawn Vibratory Roller; Winch Trucks with "A" Frame.

Class 3. Air Compressor; Combination Small Equipment Operator; Generators; Heaters, Mechanical; Hoists, Inside Elevators (remodeling or renovation work); Hydraulic Power Units (Pile Driving, Extracting, and Drilling); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Low Boys; Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 4. Bobcats and/or other Skid Steer Loaders; Oilers; and Brick Forklift.

Class 5. Assistant Craft Foreman.

Class 6. Gradall.

Class 7. Mechanics; Welders.

OPERATING ENGINEERS - HIGHWAY CONSTRUCTION

Class 1. Asphalt Plant; Asphalt Heater and Planer Combination; Asphalt Heater Scarfire; Asphalt Spreader; Autograder/GOMACO or other similar type machines: ABG Paver; Backhoes with Caisson Attachment; Ballast Regulator; Belt Loader; Caisson Rigs; Car Dumper; Central Redi-Mix Plant; Combination Backhoe Front Endloader Machine, (1 cu. yd. Backhoe Bucket or over or with attachments); Concrete Breaker (Truck Mounted); Concrete Conveyor; Concrete Paver over 27E cu. ft.; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Tower Cranes of all types: Creter Crane: Spider Crane; Crusher, Stone, etc.; Derricks, All; Derrick Boats; Derricks, Traveling; Dredges; Elevators, Outside type Rack & Pinion and Similar Machines; Formless Curb and Gutter Machine; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver Truck Mounted; Hoists, One, Two and Three Drum; Heavy Duty Self-Propelled Transporter or Prime Mover; Hydraulic Backhoes; Backhoes with shear attachments up to 40' of boom reach; Lubrication Technician; Manipulators; Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill - Crawler or Skid Rig; Rock Drill - Truck Mounted; Rock/Track Tamper; Roto Mill Grinder; Slip-Form Paver; Snow Melters; Soil Test Drill Rig (Truck Mounted); Straddle Buggies; Hydraulic Telescoping Form (Tunnel); Operation of Tieback Machine; Tractor Drawn Belt Loader; Tractor Drawn Belt Loader (with attached pusher - two engineers); Tractor with Boom; Tractaire with Attachments; Traffic Barrier Transfer Machine; Trenching; Truck Mounted Concrete Pump with Boom; Raised or Blind Hole Drills (Tunnel Shaft); Underground Boring and/or Mining Machines 5 ft. in diameter and over tunnel, etc; Underground Boring and/or Mining Machines under 5 ft. in diameter; Wheel Excavator; Widener (APSCO).

Class 2. Batch Plant; Bituminous Mixer; Boiler and Throttle Valve; Bulldozers; Car Loader Trailing Conveyors; Combination Backhoe Front Endloader Machine (Less than 1 cu. yd. Backhoe Bucket or over or with attachments); Compressor and Throttle Valve; Compressor, Common Receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S Series to and including 27 cu. ft.; Concrete Spreader; Concrete Curing Machine, Burlap Machine, Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or Similar Type); Drills, All; Finishing Machine - Concrete; Highlift Shovels or Front Endloader; Hoist - Sewer Dragging Machine; Hydraulic Boom Trucks (All Attachments); Hydro-Blaster; Hydro Excavating (excluding hose work); Laser Screed; All Locomotives, Dinky; Off-Road Hauling Units (including articulating) Non Self-Loading Ejection Dump; Pump Cretes: Squeeze Cretes - Screw Type Pumps, Gypsum Bulker and Pump; Roller, Asphalt; Rotary Snow Plows; Rototiller, Seaman, etc., self-propelled; Self-Propelled Compactor; Spreader - Chip - Stone, etc.; Scraper - Single/Twin Engine/Push and Pull; Scraper - Prime Mover in Tandem (Regardless of Size); Tractors pulling attachments, Sheeps Foot, Disc, Compactor, etc.; Tug Boats.

Class 3. Boilers; Brooms, All Power Propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer (Two Bag and Over); Conveyor, Portable; Farm-Type Tractors Used for Mowing, Seeding, etc.; Forklift Trucks; Grouting Machine; Hoists, Automatic; Hoists, All Elevators; Hoists, Tugger Single Drum; Jeep Diggers; Low Boys; Pipe Jacking Machines; Post-Hole Digger; Power Saw, Concrete Power Driven; Pug Mills; Rollers, other than Asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with "A" Frame; Work Boats; Tamper-Form-Motor Driven.

Class 4. Air Compressor; Combination - Small Equipment Operator; Directional Boring Machine; Generators; Heaters, Mechanical; Hydraulic Power Unit (Pile Driving, Extracting, or Drilling); Light Plants, All (1 through 5); Pumps, over 3" (1 to 3 not to exceed a total of 300 ft.); Pumps, Well Points; Vacuum Trucks (excluding hose work); Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches.

Class 5. SkidSteer Loader (all); Brick Forklifts; Oilers.

Class 6. Field Mechanics and Field Welders

Class 7. Dowell Machine with Air Compressor; Gradall and machines of like nature.

OPERATING ENGINEER - FLOATING

Class 1. Craft Foreman; Master Mechanic; Diver/Wet Tender; Engineer; Engineer (Hydraulic Dredge).

Class 2. Crane/Backhoe Operator; Boat Operator with towing endorsement; Mechanic/Welder; Assistant Engineer (Hydraulic Dredge); Leverman (Hydraulic Dredge); Diver Tender.

Class 3. Deck Equipment Operator, Machineryman, Maintenance of Crane (over 50 ton capacity) or Backhoe (115,000 lbs. or more); Tug/Launch Operator; Loader/Dozer and like equipment on Barge, Breakwater Wall, Slip/Dock, or Scow, Deck Machinery, etc.

Class 4. Deck Equipment Operator, Machineryman/Fireman (4 Equipment Units or More); Off Road Trucks; Deck Hand, Tug Engineer, Crane Maintenance (50 Ton Capacity and Under) or Backhoe Weighing (115,000 pounds or less); Assistant Tug Operator.

Class 5. Friction or Lattice Boom Cranes.

Class 6. ROV Pilot, ROV Tender

TRAFFIC SAFETY Worker I

Traffic Safety Worker I - work associated with the delivery, installation, pick-up and servicing of safety devices during periods of roadway construction, including such work as set-up and maintenance of barricades, barrier wall reflectors, drums, cones, delineators, signs, crash attenuators, glare screen and other such items, and the layout and application or removal of conflicting and/or temporary roadway markings utilized to control traffic in construction zones, as well as flagging for these operations.

TRAFFIC SAFETY WORKER II

Work associated with the installation and removal of permanent pavement markings and/or pavement markers including both installations performed by hand and installations performed by truck.

TRUCK DRIVER - BUILDING, HEAVY AND HIGHWAY CONSTRUCTION

Class 1. Two or three Axle Trucks. A-frame Truck when used for transportation purposes; Air Compressors and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry-alls; Fork Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors 2-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Power Mower Tractors; Self-propelled Chip Spreader; Skipman; Slurry Trucks, 2-man operation; Slurry Truck Conveyor Operation, 2 or 3 man; Teamsters; Unskilled Dumpman; and Truck Drivers hauling warning lights, barricades, and portable toilets on the job site.

Class 2. Four axle trucks; Dump Crets and Adgetors under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yeards; Ready-mix Plant Hopper Operator, and Winch Trucks, 2 Axles.

Class 3. Five axle trucks; Dump Crets and Adgetors 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnatrailers or turnapulls when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, 1-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long; Slurry trucks, 1-man operation; Winch

trucks, 3 axles or more; Mechanic--Truck Welder and Truck Painter.

Class 4. Six axle trucks; Dual-purpose vehicles, such as mounted crane trucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front.

TERRAZZO FINISHER

The handling of sand, cement, marble chips, and all other materials that may be used by the Mosaic Terrazzo Mechanic, and the mixing, grinding, grouting, cleaning and sealing of all Marble, Mosaic, and Terrazzo work, floors, base, stairs, and wainscoting by hand or machine, and in addition, assisting and aiding Marble, Masonic, and Terrazzo Mechanics.

Other Classifications of Work:

For definitions of classifications not otherwise set out, the Department generally has on file such definitions which are available. If a task to be performed is not subject to one of the classifications of pay set out, the Department will upon being contacted state which neighboring county has such a classification and provide such rate, such rate being deemed to exist by reference in this document. If no neighboring county rate applies to the task, the Department shall undertake a special determination, such special determination being then deemed to have existed under this determination. If a project requires these, or any classification not listed, please contact IDOL at 217-782-1710 for wage rates or clarifications.

LANDSCAPING

Landscaping work falls under the existing classifications for laborer, operating engineer and truck driver. The work performed by landscape plantsman and landscape laborer is covered by the existing classification of laborer. The work performed by landscape operators (regardless of equipment used or its size) is covered by the classifications of operating engineer. The work performed by landscape truck drivers (regardless of size of truck driven) is covered by the classifications of truck driver.

MATERIAL TESTER & MATERIAL TESTER/INSPECTOR I AND II

Notwithstanding the difference in the classification title, the classification entitled "Material Tester I" involves the same job duties as the classification entitled "Material Tester/Inspector I". Likewise, the classification entitled "Material Tester II" involves the same job duties as the classification entitled "Material Tester/Inspector II".

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FEDERAL WAGE RATES

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"General Decision Number: IL20230008 01/20/2023

Superseded General Decision Number: IL20220008

State: Illinois

Construction Types: Building and Residential

Counties: Du Page, Grundy, Kane, Kendall, Lake, McHenry and Will Counties in Illinois.

BUILDING AND RESIDENTIAL PROJECTS (does not include landscape projects).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number Publication Date

0	01/06/2023
1	01/13/2023
2	01/20/2023

ASBE0017-005 06/01/2021

	Rates	Fringes
ASBESTOS WORKER/INSULATOR includes the application of all insulating materials, protective coverings, coatings, and finishes to all types of mechanical systems	$ 51.80	30.60
Fire Stop Technician	$ 41.44	27.85
HAZARDOUS MATERIAL HANDLER includes preparation, wetting, stripping, removal, scrapping vacuuming, bagging and disposing of all insulation materials from mechanical systems, whether they contain asbestos or not	$ 38.85	27.85

BOIL0001-003 05/01/2021

DU PAGE, GRUNDY, KANE, KENDALL, LAKE, MCHENRY, AND WILL COUNTIES

	Rates	Fringes
BOILERMAKER	$ 52.61	33.07

BRIL0014-001 06/01/2021

DU PAGE, GRUNDY, LAKE, and WILL COUNTIES

	Rates	Fringes
BRICKLAYER	$ 48.56	34.05

BRIL0021-002 06/01/2021

	Rates	Fringes
MARBLE SETTER	$ 47.71	33.20

BRIL0021-008 06/01/2021

	Rates	Fringes
TERRAZZO WORKER/SETTER	$ 48.38	30.79
TILE FINISHER	$ 42.80	26.97
TILE SETTER	$ 49.75	30.79

BRIL0021-010 06/01/2017

	Rates	Fringes
MARBLE FINISHER	$ 33.95	26.03

BRIL0027-002 06/01/2016

KANE, KENDALL, and MCHENRY COUNTIES

	Rates	Fringes
BRICKLAYER	$ 44.88	26.62

CARP0555-003 06/01/2022

DUPAGE ANE LAKE COUNTIES

	Rates	Fringes
CARPENTER		
Building	$ 52.01	38.85
Heavy & Highway	$ 52.01	38.85

CARP0555-004 10/01/2022

Residential

DU PAGE and LAKE COUNTIES

	Rates	Fringes
CARPENTER	$ 44.11	34.47

CARP0555-006 06/01/2022

WILL COUNTY

BUILDING

	Rates	Fringes
Carpenter; Millwright; Piledrivermen	$ 52.01	41.41

CARP0555-007 10/01/2022

WILL COUNTY

RESIDENTIAL

	Rates	Fringes
CARPENTER	$ 44.11	34.47

CARP0555-009 06/01/2022

KANE, KENDALL, AND McHENRY COUNTIES

BUILDING

	Rates	Fringes
CARPENTER		
Carpenter, Floor Layer, Lather, Millwright, and Piledriver	$ 52.01	38.86

CARP0555-010 10/01/2022

KANE, KENDALL, and McHENRY COUNTIES

RESIDENTIAL

	Rates	Fringes
CARPENTER	$ 44.11	34.47

CARP0555-012 10/01/2022

GRUNDY COUNTY

	Rates	Fringes
CARPENTER		
Carpenter, Millwright, Piledriver, and Soft Floor Layer		
Building	$ 52.01	38.86
Residential	$ 44.11	34.47

ELEC0009-002 05/29/2022

WILL COUNTY

	Rates	Fringes
Line Construction		
Groundman	$ 45.44	61.70%
Lineman and Equipment Operator	$ 58.25	61.70%

ELEC0117-002 05/30/2022

KANE (Northern Half) and McHENRY COUNTIES

	Rates	Fringes
ELECTRICIAN		
Building	$ 53.43	38.39%+17.55

ELEC0117-003 10/31/2022

KANE (Northern Half), and McHENRY COUNTIES

	Rates	Fringes
ELECTRICIAN		
ELECTRICAL TECHNICIAN	$ 44.56	32.11

Work includes the installation, maintenance and removal of telecommunication facilities (voice, sound, data and video), telephone, security, fire alarm systems that are a component of a multiplex system and share a common cable, and data inside wire, interconnect, terminal equipment, central office, PABX and equipment, micro waves, V-SAT, bypass, CATV, WAN, (wide area networks), LAN (Local area networks), and ISDN (integrated system digital network).The work shall cover the pulling of wire in raceways, but not the installation of raceways.

ELEC0117-004 08/29/2022

KANE (Northern Half) and McHENRY COUNTIES

	Rates	Fringes

ELECTRICIAN
Residential.....$ 44.40 34.00

ELEC0150-002 10/31/2022

LAKE COUNTY

	Rates	Fringes
ELECTRICIAN		
Building	$ 42.82	45.77
Residential	$ 43.02	35.02

ELEC0150-003 10/31/2022

LAKE COUNTY

	Rates	Fringes
ELECTRICIAN		
ELECTRICAL TECHNICIAN	$ 41.20	35.85

Work includes the installation, maintenance and removal of telecommunication facilities (voice, sound, data and video), telephone, security, fire alarm systems that are a component of a multiplex system and share a common cable, and data inside wire, interconnect, terminal equipment, central office, PABX and equipment, micro waves, V-SAT, bypass, CATV, WAN, (wide area networks), LAN (Local area networks), and ISDN (integrated system digital network).The work shall cover the pulling of wire in raceways, but not the installation of raceways.

ELEC0176-003 06/01/2021

Grundy and Will Counties

	Rates	Fringes
ELECTRICIAN		
Residential	$ 43.97	32.42

ELEC0176-008 06/21/2021

GRUNDY and WILL COUNTIES

	Rates	Fringes
ELECTRICIAN		
Building	$ 48.50	42.34

ELEC0176-015 06/01/2020

GRUNDY and WILL COUNTIES

	Rates	Fringes
ELECTRICIAN		
ELECTRICAL TECHNICIAN	$ 38.50	32.81

Work includes the installation, maintenance and removal of telecommunication facilities (voice, sound, data and video), telephone, security, fire alarm systems that are a component of a multiplex system and share a common cable,

and data inside wire, interconnect, terminal equipment, central office, PABX and equipment, micro waves, V-SAT, bypass, CATV, WAN, (wide area networks), LAN (Local area networks), and ISDN (integrated system digital network).The work shall cover the pulling of wire in raceways, but not the installation of raceways.

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* ELEC0461-002 10/31/2022

KANE (Southern Half) AND KENDALL COUNTIES

	Rates	Fringes
ELECTRICIAN		
Building	$ 51.84	38.38
Residential	$ 46.44	31.43

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* ELEC0461-005 10/31/2022

KANE (Southern Half), AND KENDALL COUNTIES

	Rates	Fringes
ELECTRICIAN		
ELECTRICAL TECHNICIAN	$ 43.08	33.87

Work includes the installation, maintenance and removal of telecommunication facilities (voice, sound, data and video), telephone, security, fire alarm systems that are a component of a multiplex system and share a common cable, and data inside wire, interconnect, terminal equipment, central office, PABX and equipment, micro waves, V-SAT, bypass, CATV, WAN, (wide area networks), LAN (Local area networks), and ISDN (integrated system digital network).The work shall cover the pulling of wire in raceways, but not the installation of raceways.

ELEC0701-002 11/04/2019

DUPAGE COUNTY

	Rates	Fringes
ELECTRICIAN		
Building	$ 41.00	105.86%
Residential	$ 39.60	81.43%

ELEC0701-003 07/05/2021

DU PAGE COUNTY

	Rates	Fringes
ELECTRICIAN		
ELECTRICAL TECHNICIAN	$ 34.71	116.63%+.10

Work includes the installation, maintenance and removal of telecommunication facilities (voice, sound, data and video), telephone, security, fire alarm systems that are a component of a multiplex system and share a common cable, and data inside wire, interconnect, terminal equipment, central office, PABX and equipment, micro waves, V-SAT, bypass, CATV, WAN, (wide area networks), LAN (Local area

networks), and ISDN (integrated system digital network).The work shall cover the pulling of wire in raceways, but not the installation of raceways.

ELEV0002-002 01/01/2023

DU PAGE, KANE, KENDALL, LAKE, & WILL COUNTIES

	Rates	Fringes
ELEVATOR MECHANIC	$ 65.12	37.335+a+b

FOOTNOTES:

a) PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Day after Thanksgiving Day; Veterans' Day and Christmas Day.

b) Employer contributes 8% of regular hourly rate as vacation pay credit for employee with more than 5 years of service, and 6% for employee with less than 5 years service

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ELEV0015-002 01/01/2023

McHENRY COUNTY

	Rates	Fringes
ELEVATOR MECHANIC	$ 56.97	37.335+a+b

FOOTNOTES:

a. Employer contributes 8% of regular basic hourly rate as vacation pay credit for employees with more than 5 years of service, and 6% for under 5 years of service.

b. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Friday after Thanksgiving Day, Veterans' Day and Christmas Day.

ELEV0055-001 01/01/2023

GRUNDY COUNTY

	Rates	Fringes
ELEVATOR MECHANIC	$ 53.26	37.335+a+b

FOOTNOTES:

A. Employer contributes 8% of regular basic hourly rate as vacation pay credit for employees with more than 5 years of service, and 6% for under 5 years of service.

B. Paid Holidays: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Day after Thanksgiving; Veterans' Day & Christmas Day

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* ENGI0150-026 06/01/2022

BUILDING and RESIDENTIAL

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1	$ 55.10	46.00
GROUP 2	$ 53.80	46.00
GROUP 3	$ 51.25	46.00
GROUP 4	$ 49.50	46.00

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Mechanic; Asphalt Plant*; Asphalt Spreader; Autograde*; Backhoes with Caisson attachment*:Batch Plant*; Benoto(Requires two Engineers); Boiler and Throttle Valve; Caisson Rigs*; Central Redi-Mix Plant*; Combination Backhoe Front Endloader Machine; Compressor and Throttle Valve; Concrete Breaker (Truck Mounted)*; Concrete Conveyor; Concrete Conveyor, Truck Mounted; Concrete Paver over 27E cu. ft.*; Concrete Paver 27E cu ft and Under*; Concrete Placer*; Concrete Placing Boom; Concrete Pump (Truck Mounted); Concrete Tower; Cranes*; Cranes, Hammerhead*; Cranes, (GCI and similar type Requires two operators only); Creter Crane; Crusher, Stone, etc; Derricks; Derricks, Traveling*; Formless Curb and Gutter Machine*; Grader, Elevating; Grouting Machines; Highlift Shovels or Front Endloader 2 1/4 yd. and over; Hoists, Elevators, Outside Type Rack and pinion and similar Machines; Hoists, One, Two, and Three Drum; Hoists, Two Tugger One Floor; Hydraulic Backhoes*; Hydraulic Boom Trucks; Hydraulic Vac (and similar equipment);Locomotives; Motor Patrol*; Pile Drivers amd Skid Rig*; Post Hole Digger; Pre- Stress Machine; Pump Cretes Dual Ram(Requiring frequent Lubrication and Water); Pump Cretes; Squeeze Cretes-Screw Type Pumps Gypsum Bulker and Pump; Raised and Blind Hole Drill*; Roto Mill Grinder (36"" and Over)*; Roto Mill Grinder (Less Than 36"")*; Scoops-Tractor Drawn; Slip-Form Paver*; Straddle Buggies; Tournapull; Tractor with Boom, and Side Boom; and Trenching Machines*.

GROUP 2: Bobcat (over 3/4 cu yd); Boilers; Brick Forklift; Broom, Power Propelled; Bulldozers; Concrete Mixer (Two Bag and over); Conveyor, Portable; Forklift Trucks; Greaser Engineer; Highlift Shovels or Front End loaders under 2 1/4 cu yd; Aotomatic Hoists, Hoists, Inside Elevators; Hoists, Sewer Dragging Machine; Hoists, Tugger Single Drum; Laser Screed; Rock Drill (Self-Propelled); Rock Drill (Truck Mounted)*; Rollers; Steam Generators; Tractors; Tractor Drawn Vibratory Roller (Receives an additional $.50 per hour); Winch Trucks with ""A"" Frame.

GROUP 3: Air Compressor-Small 250 and Under (1 to 5 not to exceed a total of 300 ft); Air Compressor-Large over 250; Combination-Small Equipment Operator; Generator- Small 50 kw and under; Generator-Large over 50 kw; Heaters, Mechanical; Hoists, Inside Elevators (Remodeling or Renovatin work); Hydrualic Power Units (Pile Driving, Extracting, and Drilling); Low Boys; Pumps Over 3"" (1 To 3 not to exceed a total of 300 ft); Pumps, Well Points; Welding Machines (2 through 5); Winches, 4 Small Electric Drill Winches; Bobcat (up to and including 3/4 cu yd)

GROUP 4 - Bobcats and/or other Skid Steer Loaders; Brick Forklifts; Oilers *-Requires Oiler

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IRON0001-014 06/01/2021

DU PAGE (Eastern 1/4), LAKE, AND MCHENRY (Hebron, Woodstock, and East thereof) COUNTIES

	Rates	Fringes
IRONWORKER		
Sheeter	$ 54.76	41.45
Structural and Reinforcing	$ 54.51	41.45

IRON0063-003 06/01/2021

LAKE, DUPAGE (Eastern 1/4) and McHENRY (HEBRON, WOODSTOCK & EAST THEREOF) COUNTIES

	Rates	Fringes
IRONWORKER, ORNAMENTAL	$ 52.13	39.47

IRON0063-004 06/01/2020

LAKE, DUPAGE (Eastern 1/4), and McHENRY (HEBRON, WOODSTOCK & EAST THEREOF) COUNTIES

	Rates	Fringes
IRONWORKER		
Fence Erector	$ 44.42	29.73

IRON0136-002 07/01/2022

LAKE, DUPAGE (Eastern 1/4) and McHENRY (HEBRON, WOODSTOCK & East thereof) COUNTIES

	Rates	Fringes
IRONWORKER		
Machinery Movers; Riggers; Machinery Erectors	$ 47.00	40.54
Master Riggers	$ 49.50	40.54

IRON0393-002 06/01/2021

DUPAGE (REMAINDER), KANE, KENDALL (NORTHERN PART), and MCHENRY (SOUTHEAST 1/4) COUNTIES

	Rates	Fringes
IRONWORKER	$ 48.83	39.84

IRON0444-002 06/01/2022

DUPAGE (ARGONNE & VIC), GRUNDY, KENDALL (Southern Part), and WILL COUNTIES

	Rates	Fringes
IRONWORKER	$ 47.80	42.50

IRON0498-006 06/01/2021

McHENRY COUNTY (Northwest Part)

	Rates	Fringes
IRONWORKER	$ 41.37	44.41

LABO0002-003 06/01/2018

DU PAGE COUNTY

	Rates	Fringes
LABORER		
GROUP 1	$ 42.72	28.19
GROUP 2	$ 42.72	28.19
GROUP 3	$ 42.80	28.19
GROUP 4	$ 42.82	28.19
GROUP 5	$ 42.87	28.19
GROUP 6	$ 42.92	28.19
GROUP 7	$ 42.95	28.19
GROUP 8	$ 43.05	28.19
GROUP 9	$ 43.07	28.19
GROUP 10	$ 43.17	28.19
GROUP 11	$ 43.00	28.19
GROUP 12	$ 43.72	28.19

LABORER CLASSIFICATIONS

GROUP 1: Building laborers, Plasterer tenders, Pumps for Dewatering & other Unclassified Laborers

GROUP 2: Fireproofing and fire shop laborers

GROUP 3: Cement gun laborers and hose

GROUP 4: Chimney over 40 feet; Scaffold laborers; Weldman-wreckers Burners

GROUP 5: Cement gun nozzle (gunite) laborers; Windlass and capstan person

GROUP 6: Stone derrickmen and handlers

GROUP 7: Jackhammermen, Power driven concrete saws and other power equipment

GROUP 8: Firebrick & boiler laborers

GROUP 9: Chimney on fire brick; Caisson Diggers; Well Point system men

GROUP 10: Boiler setter plastic laborers

GROUP 11: Jackhammermen on fire brick work only

GROUP 12: Dosimeter (any device) monitoring nuclear exposure); Asbestos abatement laborers; Toxic and Hazardous waste removal laborers

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LABO0075-001 06/01/2017

GRUNDY AND WILL COUNTIES

	Rates	Fringes
LABORER		
GROUP 1	$ 41.20	27.47
GROUP 2	$ 41.20	27.47
GROUP 3	$ 41.28	27.47
GROUP 4	$ 41.40	27.47
GROUP 5	$ 41.40	27.47
GROUP 6	$ 41.55	27.47
GROUP 7	$ 41.40	27.47

LABORER CLASSIFICATIONS

GROUP 1 - Mortar mixers, handling asphalt shingles; Scaffolds; Sewer and trench work (ground level down to 8 feet); Catch basin and manhole diggers, mesh handling on road work; Cement and mineral filler handler; Concrete puddlers; Batch dumpers (cement & asphalt); Vibrator operators; Sand and stone wheelers to mixer Handlers); Concrete wheelers; Airtamping hammermen; Concrete & paving breakers; Rock drillers/Jackhammermen; Chipping hammermen 1-Bag mixer; Asphalt laborer; Chain and power saws; Pit men; Fencing laborers; Mason tenders (mortar and brick wheeler); Kettlemen & tarmen, tank cleaners; Scaffold and staging laborers; Pot Firemen (tarmen); Heaters tender for any purpose; Water pumps (portable water pumps shall be tended by laborers if the employer determines tending is required); Rip rap; Handling of slab steel road forms in any manner, except road form setting, setting center strips, Contraction and expansion joints (road work); Unloading and handling of lumber, brick, transite materials, cast iron water pipe, reinforced concrete rods, sewer and drain tile, railroad tiles and all other creosoted materials; paving blocks and concrete forms; Handling of insulation of any type; all work involving the unloading of materials, fixtures, or furnishing, whether crated or uncrated; all mortar and composition mixers of sewer work; track laborers; Chimney and silo laborers working at a height of 1 to 48 feet; All laborers working on swinging suspended, or any type or make of scaffolding 1 to 48 feet; All laborers working inside a sphere or any type or make of tank; Working inside a sphere or any type or make of tank from bottom to a height of 48 feet; Form strippers (any type); Mechanical or motorized buggies, for concrete or masons employers; Use of skid steer loads or any other machinery which replaces the wheelbarrow or buggy; Handling multiple concrete duct or any other type of pipe used in public utility work unless otherwise specified herein; Snapping of wall ties and removal of rods; drilling of anchor bolt holes; Concrete or asphalt clipper type saws and self-propelled saws; Shoulder and grade laborers; All hydraulic electric and air or any other type of tools; Grouting and caulking; Cleaning lumber, Nail pulling, Deck hand; Dredgehand; Shore laborer; Bankmen on Floating Plant; Tool and material checkers; Signalmen and Flagmen on all construction work; Cleaning of debris; Removal of trees; Concrete curing, temporary concrete protection regardless of manner or materials used; Laborers on Apsco; Janitorial; Wrecking and demolition laborers

GROUP 2 - Sewer and drain pipe layers and multiple concrete duct or any other type of pipe used, on public utility work (ground level to 8 feet); Pumpcrete pipe handlers

GROUP 3 - Asphalt rakers; Hod carriers; Plasterer laborers; Gunnite laborers, Slab for setters on roads, highways, streets, airport runaways, and radii (any type of form) stringline men for all aforementioned work; Wagon and tower drillers on land and floating plant used on dredging; Asphalt gunners and plug men (undercoating on road work); Mortar pump laborers; Plaster pump laborers

GROUP 4 - Tunnel miners, and all laborers inside tunnel; Air blow pipemen; Torchmen (burners); Mortaring men on sewer and drain pipe (the applying of mortar and composition mixes); All bottom men on sewer work-all sewer and drain pipelayers-multiple concrete duct or any other type of pipe used on public utility work-8 feet or more below ground level, and all other sewer and trench laborers 8 feet or more below ground level regardless of excavation area; All labor work inside cofferdam; Use of a 10 foot or more drill steel for hand held drills; Caisson laborers ground level down 15 feet; All air tools 8 feet or more below ground level; All laborers working on swinging-suspended or any type or make of scaffolds, 48 feet to 100 feet; All chimney and silo laborers working at a height of 48 to 100 feet; All tamping hammers over 150 lbs.; All laborers working inside of a sphere or any type or make of tank at a height of 48 feet to 100 feet; all hydraulic, electric and air tools or any other type 8 feet or more below ground level; Vibrators-any type-8 feet or more below ground level

GROUP 5 - Gunnite nozzle men; Caisson laborers and all tamping hammers from 150 lbs and over; from 15 feet below ground level down to 50 feet; and all laborers working inside of a sphere or any type of tank for every additional 50 feet or part thereof above 100 feet in height

GROUP 6 - All underground cavern laborers; Caisson laborers 50 feet or more below ground level; Laborers working under radio active conditions (suiting up); Blasting men (Powdermen)

GROUP 7 - Dosimeter (any device) used for monitoring nuclear exposure; Asbestos abatement worker; Toxic and hazardous waste removal laborer; and chimney and silo laborers for every additional 50 feet or any part thereof above 100 feet high

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LABO0149-001 06/01/2018

KANE, KENDALL, AND McHENRY COUNTIES

	Rates	Fringes
LABORER		
GROUP 1	$ 42.72	28.19
GROUP 2	$ 41.65	28.19
GROUP 3	$ 42.72	28.19
GROUP 4	$ 41.65	28.19
GROUP 5	$ 41.65	28.19
GROUP 6	$ 41.90	28.19
GROUP 7	$ 41.90	28.19
GROUP 8	$ 41.60	28.19

LABORER CLASSIFICATIONS

GROUP 1 Common Laborer

GROUP 2 Power Vibrator

GROUP 3 Torchman (demolition only), Mortarmen

GROUP 4 Power Tamper

GROUP 5 Jackhammer & Airspade; Chainsaw, Swinging Stage and Boatswain Chair; Cement Gun Nozzleman; Hod Carrier; Plasterer Tender, and Tunnel Man

GROUP 6 Tile Layers; Bottom Men

GROUP 7 Caisson Laborers; Dynamiters

GROUP 8 Asbestos abatement laborers, Toxic and hazardous waste removal laborers, Dosimeter (any device) monitoring nuclear exposure

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LABO0152-001 06/01/2017

LAKE COUNTY

	Rates	Fringes
LABORER		
GROUP 1	$ 41.20	27.47
GROUP 2	$ 41.28	27.47
GROUP 3	$ 41.30	27.47
GROUP 4	$ 41.40	27.47
GROUP 5	$ 41.40	27.47
GROUP 6	$ 41.43	27.47
GROUP 7	$ 41.53	27.47
GROUP 8	$ 41.55	27.47
GROUP 9	$ 41.40	27.47
GROUP 10	$ 41.75	27.47
GROUP 11	$ 41.40	27.47

LABORER CLASSIFICATIONS

GROUP 1: Building laborers; Plasterer tenders, General laborers (wrecking and demolition); Fireproofing and fire shop laborers

GROUP 2: Cement gun laborers and hose

GROUP 3: Chimney over 40 feet; Scaffold laborers; Wall men or wreckers

GROUP 4: Cement Gun nozzle (gunite) laborers

GROUP 5: Stone derrickmen and handlers

GROUP 6: Jackhammermen (tampers & vibrators); Power driven concrete saws

GROUP 7: Firebrick & boiler laborer setters

GROUP 8: Chimney laborers (on fire brick); Caisson Diggers; Well Point system men

GROUP 9: Windlass and capstan persons

GROUP 10: Boiler setter plastic laborers

GROUP 11: Dosimeter (any device) monitoring nuclear exposure; Asbestos abatement laborers; Toxic and hazardous waste removal laborers

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PAIN0014-002 06/01/2022

GRUNDY, LAKE, and WILL COUNTIES

	Rates	Fringes
PAINTER		
Brush, Decorator, and Paperhanger	$ 50.30	31.07

PAIN0027-003 06/01/2022

	Rates	Fringes
GLAZIER	$ 48.75	41.32

PAIN0030-001 06/01/2022

DE KALB, DU PAGE, KANE, KENDALL AND MCHENRY COUNTIES

	Rates	Fringes
PAINTER		
Brush, Drywall Taper/Finisher, Sandblaster, and Spray	$ 50.30	25.43

PLAS0005-003 07/01/2015

GRUNDY and WILL COUNTIES

	Rates	Fringes
PLASTERER	$ 42.25	26.65

PLAS0005-006 07/01/2015

DU PAGE COUNTY

	Rates	Fringes
PLASTERER	$ 42.25	26.65

PLAS0011-008 06/01/2022

DE KALB, KANE, KENDALL, AND McHENRY COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 49.70	38.94

PLAS0011-012 06/01/2020

GRUNDY AND WILL COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 44.19	39.41

PLAS0011-014 06/01/2022

LAKE COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 48.00	40.66
PLASTERER	$ 48.65	40.51

PLAS0803-002 08/01/2010

DUPAGE COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 38.00	24.03

PLUM0093-001 06/01/2015

LAKE and McHENRY COUNTIES

	Rates	Fringes
PLUMBER	$ 45.76	26.92

PLUM0130-002 06/01/2021

DUPAGE (Argonne National Laboratories and Fermi National Laboratory), GRUNDY & WILL COUNTIES

	Rates	Fringes
PLUMBER	$ 52.80	34.67

PLUM0501-001 12/01/2013

DUPAGE (excluding Argonne National Laboratory and Fermi National Laboratory), KANE, and KENDALL (except the Mich-Wis Pumping Station in Milbrook, Silicas and Plant and Village of Newark, excludes Yorkville) COUNTIES

	Rates	Fringes
PLUMBER/PIPEFITTER	$ 41.20	29.15

PLUM0597-001 06/01/2022

DUPAGE (Argonne National Laboratories, and Fermi National Laboratory), GRUNDY, LAKE, MCHENRY & WILL COUNTIES

	Rates	Fringes
PIPEFITTER	$ 53.00	37.62

ROOF0011-004 12/01/2022

DUPAGE, KANE, KENDALL, LAKE, MCHENRY, and WILL COUNTIES

	Rates	Fringes
ROOFER	$ 48.00	28.08

ROOF0011-009 12/01/2022

	Rates	Fringes
ROOFER	$ 37.30	25.48

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* SFIL0281-002 01/01/2023

DuPAGE, KANE, KENDALL, LAKE, McHENRY, and WILL COUNTIES

	Rates	Fringes
SPRINKLER FITTER	$ 54.55	33.65

SHEE0073-003 06/01/2022

LAKE COUNTY

	Rates	Fringes
Sheet metal worker	$ 49.10	42.91

SHEE0073-004 06/08/2018

LAKE COUNTY

	Rates	Fringes
Sheet Metal Worker		
ALUMINUM GUTTER WORK	$ 31.32	37.02

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* SHEE0265-001 06/01/2022

DU PAGE, GRUNDY, KANE, KENDALL, McHENRY, and WILL COUNTIES

	Rates	Fringes
SHEET METAL WORKER	$ 53.33	35.41

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* TEAM0179-001 06/01/2017

GRUNDY, KENDALL, and WILL COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2 or 3 Axle Trucks	$ 37.68	0.15+a
4 Axle Trucks	$ 37.83	0.15+a
5 Axle Trucks	$ 38.03	0.15+a
6 Axle Trucks	$ 38.23	0.15+a

FOOTNOTES:
a. $733.20 per week.
b. Lowboy rate based on number of axles

An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes; Air Compressor and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Articulated Dumps; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry Alls; Forl Lifts and Hoisters;

Helpers; Mechanics Helpers and Greasers; Oil Distributors, two-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Pothole Repair Trucks; Power Mower Tractors; Quick Change Barrier; Self-Propelled Chip Spreader; Shipping and Receiving Clerks and Checkers; Skipman; Slurry Trucks, two-man operation; Slurry Trucks, Conveyor Operated - 2 or 3 man operation; Teamsters; Unskilled Dumpmen; Warehousemen and Dockmen; Truck Drivers hauling warning lights, barricades, and portable toilets on the job site

Group 2 - Dispatcher; Dump Crets and Adgetators under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper Operator; Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, one-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long;
Slurry Trucks, one-man operation; Winch Trucks, 3 axles or more; Mechanic - *Truck Welder and *Truck Painter*These classifications shall only apply in areas where and when it has been a past area practice; Asphalt Plant Operators in areas where it has been past practice

Group 4 - Dual-purpose vehicels, such as mounted crane tucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front

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* TEAM0301-001 06/01/2019

LAKE AND MCHENRY COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2-3 AXLES	$ 39.34	10.75+a
4 AXLES	$ 39.49	10.75+a
5 AXLES	$ 39.69	10.75+a
6 AXLES	$ 39.89	10.75+a

FOOTNOTES:
a. 380.00 per week pension.
b. Lowboy rate based on number of axles

An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

900 straight time hours or more in 1 calendar year for the same employer shall receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes; Air Compressor and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Articulated Dumps; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry Alls; Forl Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors, two-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Pothole Repair Trucks; Power Mower Tractors; Quick Change Barrier; Self-Propelled Chip Spreader; Shipping and Receiving Clerks and Checkers; Skipman; Slurry Trucks, two-man operation; Slurry Trucks, Conveyor Operated - 2 or 3 man operation; Teamsters; Unskilled Dumpmen; Warehousemen and Dockmen; Truck Drivers hauling warning lights, barricades, and portable toilets on the job site

Group 2 - Dispatcher; Dump Crets and Adgetators under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper Operator; Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, one-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long;
Slurry Trucks, one-man operation; Winch Trucks, 3 axles or more; Mechanic - *Truck Welder and *Truck Painter*These classifications shall only apply in areas where and when it has been a past area practice; Asphalt Plant Operators in areas where it has been past practice

Group 4 - Dual-purpose vehicels, such as mounted crane tucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front

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* TEAM0673-003 06/01/2019

DU PAGE and KANE COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2-3 AXLES	$ 38.47	0.25+a
4 AXLES	$ 38.62	0.25+a
5 AXLES	$ 38.82	0.25+a
6 AXLES	$ 39.02	0.25+a

FOOTNOTE: a. $861.10 per week.

An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

900 straight time hours or more in 1 calendar year for the same employer shall receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes; Air Compressor and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Articulated Dumps; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry Alls; Forl Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors, two-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Pothole Repair Trucks; Power Mower Tractors; Quick Change Barrier; Self-Propelled Chip Spreader; Shipping and Receiving Clerks and Checkers; Skipman; Slurry Trucks, two-man operation; Slurry Trucks, Conveyor Operated - 2 or 3 man operation; Teamsters; Unskilled Dumpmen; Warehousemen and Dockmen; Truck Drivers hauling warning lights, barricades, and portable toilets on the job site

Group 2 - Dispatcher; Dump Crets and Adgetators under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper Operator; Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, one-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long;
Slurry Trucks, one-man operation; Winch Trucks, 3 axles or more; Mechanic - *Truck Welder and *Truck Painter*These classifications shall only apply in areas where and when it has been a past area practice; Asphalt Plant Operators in areas where it has been past practice

Group 4 - Dual-purpose vehicels, such as mounted crane tucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including

preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material,

etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

"General Decision Number: IL20230011 03/03/2023

Superseded General Decision Number: IL20220011

State: Illinois

Construction Types: Heavy and Highway

Counties: Boone, De Kalb, Du Page, Kane, Kendall, Lake, McHenry and Will Counties in Illinois.

HEAVY AND HIGHWAY CONSTRUCTION PROJECTS (does not include landscape projects).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number Publication Date

0 01/06/2023
1 03/03/2023

CARP0555-003 06/01/2022

DUPAGE ANE LAKE COUNTIES

	Rates	Fringes
CARPENTER		
Building	$ 52.01	38.85
Heavy & Highway	$ 52.01	38.85

CARP0555-008 06/01/2020

WILL COUNTY

	Rates	Fringes
Carpenter and Piledriver	$ 49.76	38.26

CARP0555-011 06/01/2022

KANE, McHENRY (North of Hwy 52), AND KENDALL COUNTIES

	Rates	Fringes
Carpenter and Piledriver	$ 52.01	38.86

CARP0790-003 05/01/2022

DE KALB COUNTY

	Rates	Fringes
CARPENTER	$ 45.81	34.16

CARP0790-004 05/01/2022

CARROLL, JO DAVIESS, LEE, OGLE (Oregon and South thereof), STEPHENSON, and WHITESIDE COUNTIES

	Rates	Fringes
CARPENTER	$ 45.81	34.16

CARP0792-003 05/01/2022

BOONE COUNTY

	Rates	Fringes
CARPENTER	$ 47.00	32.97

ELEC0009-002 05/29/2022

WILL COUNTY

	Rates	Fringes
Line Construction		
Groundman	$ 45.44	61.70%
Lineman and Equipment Operator	$ 58.25	61.70%

ELEC0117-001 05/30/2022

KANE (Northern Half) and McHENRY (All) COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 53.43	38.39%+17.55

ELEC0150-001 05/31/2021

LAKE COUNTY

	Rates	Fringes
ELECTRICIAN	$ 42.82	45.77

ELEC0176-011 06/01/2020

WILL COUNTY

	Rates	Fringes
ELECTRICIAN	$ 47.00	41.09

ELEC0196-001 03/02/2020

BOONE, DEKALB, DUPAGE, KANE, KENDALL, LAKE, and MCHENRY COUNTIES

	Rates	Fringes
Line Construction		
Equipment Operator	$ 44.61	36.25%+6.50+A
Groundman Truck Driver	$ 35.52	36.25%+6.50+A
Groundman	$ 34.27	36.25%+6.50+A
Lineman, Substation		
Technician, Cable Splicing		
Technician, Digger		
Operator, Crane Operator		
20 tons and above, and		
Signal Technician	$ 53.63	36.25%+6.50+A

FOOTNOTE: A. PAID HOLIDAYS: Memorial Day, Independence Day, Labor Day, and Thanksgiving Day

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ELEC0364-003 05/30/2022

BOONE (All) & DEKALB (Remainder) COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 52.00	39.36

ELEC0461-006 05/30/2022

DEKALB (Sandwich TWP), KANE (Southern Half) & KENDALL (All) COUNTIES

	Rates	Fringes
ELECTRICIAN	$ 51.84	38.38

ELEC0701-001 06/03/2019

DUPAGE COUNTY

	Rates	Fringes
ELECTRICIAN	$ 41.00	105.86%

ENGI0150-015 06/01/2022

BOONE and DE KALB COUNTIES

	Rates	Fringes
OPERATOR: Power Equipment		
Group 1	$ 49.40	46.20
Group 2	$ 48.85	46.20
Group 3	$ 47.55	46.20
Group 4	$ 46.10	46.20
Group 5	$ 44.65	46.20

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt Plant; Asphalt Heater and Planer combination; Asphalt Spreader; Asphalt Silo Tender; Autograder, GOMACO or similar; Belt Loader; Caisson Rigs; Car Dumper, Central Redi-Mix Plant; Combination Backhoe Front End Loader Machine (1 cu yd or over Backhoe bucket with attachments); Backhoe with Shear attachment; Concrete Breaker (truck mounted); Concrete Conveyor; Concrete Paver over 27E cu ft; Concrete Placer; Concrete Tube Float; Cranes, all attachments; Cranes, Hammerhead, Linden, Peco and machines of a like nature; Creter Crane; Crusher, stone; Derricks; Derrick Boats; Derricks, traveling; Dredges; Field Mechanic Welder; Formless Curb and Gutter Machine; Gradall and machines of a like nature; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver mounted; Hoists, one, two, and three Drum; Hydraulic Backhoes; Locomotive, all Mucking Machine; Pile Drivers and Skid Rig; Pre-Stress Machine; Pump Cretes Dual Ram; Rock Drill-Crawler or Skid Rig; Rock Drill truck mounted; Roto Mill Grinder, 36"" and over; Roto Mill Grinder, less than 36""; Slip- Form Paver; Soil Test Drill Rig, truck mounted; Straddle Buggies; GCI Crane and similar; Hydraulic Telescoping Form (tunnel); Tie Back MAchine; Tractor Drawn Belt Loader: Tractor Drawn Belt Loader with attached Pusher; Tractor with boom; Tractaire with attachment; Traffic Barrier Conveyor Machine; Raised or Blind Hoe Drill (Tunnel & Shaft); Trenching Machine; Truck Mounted Concrete Pump with boom; Truck mounted Concrete Conveyor; Underground Boring and/or Mining Machines under 5 ft; Wheel Excavator & Widener (Apsco)

GROUP 2: Batch Plant; Bituminous Mixer; Bobcats over .75 cu yd; Boiler and Throttle Valve; Bulldozer; Car Loader Trailing Conveyors; Combination Backkhoe Front End Loader Machine, less than 1 cu yd Backhoe Bucket with attachments; Compressor and Throttle Valve; Compressor, common receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S series to and including 27 cu ft; Concrete Spreader; Concrete Curing Machine, Burlap Machine; Belting Machine and Sealing Machine; Conveyor Muck Cars (Haglund or similar type); Finishing Machine-Concrete; Greaser Engineer; Highlift Shovels or Front End Loader; Hoist-Sewer Dragging Machine; Hydraulic

Boom Trucks, all attachments; Locomotives, Dinky; Pump Cretes, Squeeze Cretes-Screw Type pumps, Gypsum Bulker and Pump; Roller Asphalt; Rotary Snow Plows; Rototiller, Seaman, etc self-Propelled; Scoops-Tractor Drawn; Self-propelled Compactor; Spreader-Chip- Stone etc; Scraper; Scraper-Prime Mover in Tandem regardless of size (add $1.00 to to Group 2 hourly rate for each hour and for each machine attached thereto); Tank Car Heater; Tractors, Push, pulling Sheeps Foot, Disc, or Compactor, etc; Tug Boats

GROUP 3: Boilers; Brooms, all power propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer, two bag and over; Conveyor, Portable; Farm type Tractors used for mowing, seeding, etc; Fireman on Boilers; Forklift Trucks; Grouting Machines; Hoists, Automatic; Hoists, all Elevators; Hoists, Tugger single Drum; Jeep Diggers; Pipe Jacking Machines; Post- hole Digger; Power Saw, Concrete, Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with A-Frame; Work Boats; Tamper-Form motor driven

GROUP 4: Air compressor - Small 185 and under (1 to 5 not to exceed a total of 300 ft); Air Compressor - Large over 185; Asphalt Spreader Backend Man; Combination - Small Equipment Operator; Generators - Small 50 kw and under; Generators - Large , over 50 kw; Heaters, Mechanical; Hydraulic power unit (Pile Driving, Extracting or Drilling); Light Plants All (1 to 5); Pumps, over 3"" (1 to 3, not to exceed a total of 300 ft); Pumps, Well Points; Tractaire; Welding Machines (2 through 5); Winches, 4 small electric drill winches; Bobcats up to and including .75 cu yd

GROUP 5: Oilers

PREMIUM PAY:

Long Boom :
Cranes & Derricks 90' to 150' including jib receive an extra $.50 per hour. Cranes & Derricks over 150' including jib receive an extra $.50 per hour plus an additional $.10 for each additional 10' of boom or jib.

Capacity Pay: Cranes & Derricks with maximum capacity exceeding 50 ton with less than 90' of boom or jib shall be compensated $.01 per hour for each ton of the rated capacity in excess of 50 ton.

Long Boom pay and Capacity pay cannot be combined.

Crane mounted earth auger, raised and blind hole drills, and truck mounted drill rigs receive an extra $.50 per hour.

Creter Cranes:
When the Creter Crane is equipped with a conveyor system capable of extending 70' or more, the engineer shall receive an extra $.50 per hour.

Truck Mounted Concrete Pumps:
When the Truck Mounted Concrete Pump is equipped with a boom, which is capable of extending 90' or more, the engineer shall receive $.50 per hour extra.

Truck Mounted Concrete Conveyor:
Truck Mounted Concrete Conveyors equipped with conveyors that

are capable of extending 90' or more, the engineer shall receive an extra $.50 per hour.

Underground Work:
Employees working in tunnels, shafts, etc. shall be paid an additional $.40 per hour. Employees working under air pressure 1/2 pound to 7 pounds shall receive an additional $.50 per hour. Employees working under air pressure of 7 pounds or over shall receive $.65 per hour more.

Mining Machines- Boring Machines:
The crew operating and maintaining the Mining Machines shall be compensated an additional $.50 per hour.

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* ENGI0150-024 06/01/2022

DUPAGE, KANE, KENDALL, LAKE, McHENRY, and WILL COUNTIES

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1	$ 53.30	46.00
GROUP 2	$ 52.75	46.00
GROUP 3	$ 50.70	46.00
GROUP 4	$ 49.30	46.00
GROUP 5	$ 48.10	46.00

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt Plant*; Asphalt Heater and Planer combination; Asphalt Heater Scarfire*, Asphalt Spreader; Autograder/ GOMACO or similar; ABG Paver*, Backhoes with Caisson attachment*, Ballast Regulator, Belt Loader*; Caisson Rigs*Car Dumper, Central Redi-Mix Plant*, Combination Backhoe; Front End Loader Machine (1 cu yd or over Backhoe bucket or with attachments); Concrete Breaker (truck mounted); Concrete Conveyor; Concrete Paver over 27E cu ft*; Concrete Placer*; Concrete Tube Float; Cranes, all attachments*; Cranes, Hammerhead, Linden, Peco and machines of a like nature*; Creter Crane; Crusher, stone; All Derricks; Derrick Boats; Derricks, traveling*; Dowell Machine with Air Compressor ($1.00 above Class 1); Dredges*; Field Mechanic Welder; Formless Curb and Gutter Machine*; Gradall and machines of a like nature*; Grader, Elevating; Grader, Motor Grader, Motor Patrol, Auto Patrol, Form Grader, Pull Grader, Subgrader; Guard Rail Post Driver mounted*; Hoists, one, two, and three Drum; Hydraulic Backhoes*; Backhoes with Shear attachments*; Mucking Machine; Pile Drivers and Skid Rig*; Pre-Stress Machine; Pump Cretes Dual Ram (requires frequent lubrication and water)*; Rock Drill- Crawler or Skid Rig*; Rock Drill truck mounted*; Rock/ Track Tamper; Roto Mill Grinder, (36"" and over)*; Slip-Form Paver*; Soil Test Drill Rig, truck mounted*; Straddle Buggies; Hydraulic Telescoping Form (tunnel); Tractor Drawn Belt Loader*; Tractor Drawn Belt Loader with attached Pusher (two engineers); Tractor with boom; Tractaire with attachment; Traffic Barrier Transfer Machine*; Trenching Machine; Truck Mounted Concrete Pump with boom*; Underground Boring and/or Mining Machines 5 ft in diameter and over tunnel, etc.*; Wheel Excavator* & Widener (Apsco); Raised or Blind Hoe Drill, Tunnel & Shaft*

GROUP 2: Batch Plant*; Bituminous Mixer; Boiler and Throttle Valve; Bulldozer; Car Loader Trailing Conveyors;

Combination Backkhoe Front End Loader Machine, (less than 1 cu yd Backhoe Bucket with attachments); Compressor and Throttle Valve; Compressor, common receiver (3); Concrete Breaker or Hydro Hammer; Concrete Grinding Machine; Concrete Mixer or Paver 7S series to and including 27 cu ft; Concrete Spreader; Concrete Curing Machine; Burlap Machine; Belting Machine and Sealing Machine; Concrete Wheel Saw; Conveyor Muck Cars (Haglund or similar type); Drills (all); Finishing Machine-Concrete; Greaser Engineer; Highlift Shovels or Front End Loader; Hoist- Sewer Dragging Machine; Hydraulic Boom Trucks, all attachments; Hydro-Blaster (requires two operators); Laser Screed*; Locomotives, Dinky; Off-Road Hauling Units (including articulating); Pump Cretes; Squeeze Cretes-Screw Type pumps, Gypsum Bulker and Pump; Roller Asphalt; Rotary Snow Plows; Rototiller, Seaman, self-Propelled; Scoops-Tractor Drawn; Self- propelled Compactor; Spreader-Chip-Stone; Scraper; Scraper-Prime Mover in Tandem regardless of size (add $1.00 to Group 2 hourly rate for each hour and for each machine attached thereto add $1.00 to Group 2 hourly rate for each hour); Tank Car Heater; Tractors, Push, pulling Sheeps Foot, Disc, or Compactor, etc; Tug Boats

GROUP 3: Boilers; Brooms, all power propelled; Cement Supply Tender; Compressor, Common Receiver (2); Concrete Mixer, two bag and over; Conveyor, Portable; Farm type Tractors used for mowing, seeding, etc; Fireman on Boilers; Forklift Trucks; Grouting Machines; Hoists, Automatic; Hoists, all Elevators; Hoists, Tugger single Drum; Jeep Diggers; Low Boys; Pipe Jacking Machines; Post-hole Digger; Power Saw, Concrete, Power Driven; Pug Mills; Rollers, other than asphalt; Seed and Straw Blower; Steam Generators; Stump Machine; Winch Trucks with A-Frame; Work Boats; Tamper-Form motor driven

GROUP 4: Air compressor - Small 250 and under (1 to 5 not to exceed a total of 300 ft); Air Compressor - Large over 250; Combination - Small Equipment Operator; Directional Boring Machine; Generators - Small 50 kw and under; Generators - Large , over 50 kw; Heaters, Mechanical; Hydraulic power unit (Pile Driving, Extracting or Drilling); Light Plants (1 to 5); Pumps, over 3"" (1 to 3, not to exceed a total of 300 ft); Pumps, Well Points; Tractaire; Welding Machines (2 through 5); Winches, 4 small electric drill winches;

GROUP 5: Bobcats (All); Brick Forklifts; Oilers; Directional Boring

*Requires Oiler

IRON0001-014 06/01/2021

DU PAGE (Eastern 1/4), LAKE, AND MCHENRY (Hebron, Woodstock, and East thereof) COUNTIES

	Rates	Fringes
IRONWORKER		
Sheeter	$ 54.76	41.45
Structural and Reinforcing	$ 54.51	41.45

IRON0063-003 06/01/2021

LAKE, DUPAGE (Eastern 1/4) and McHENRY (HEBRON, WOODSTOCK & EAST THEREOF) COUNTIES

	Rates	Fringes
IRONWORKER, ORNAMENTAL	$ 52.13	39.47

IRON0393-003 06/01/2021

DEKALB (SOUTHEASTERN 2/3 including Sycamore and Dekalb), DUPAGE (REMAINDER), KANE, KENDALL (NORTHERN PART), and MCHENRY (SOUTHEAST 1/4) COUNTIES

	Rates	Fringes
IRONWORKER	$ 48.83	39.84

IRON0444-006 06/01/2022

KENDALL (Southern Part) and WILL COUNTIES

	Rates	Fringes
IRONWORKER	$ 47.80	42.50

IRON0498-003 06/01/2021

BOONE, DEKALB (EXCEPT Southeast), and MCHENRY (Northwest) COUNTIES

	Rates	Fringes
IRONWORKER	$ 41.37	44.41

LABO0002-004 06/01/2018

DUPAGE COUNTY

	Rates	Fringes
LABORER (SEWER CONSTRUCTION)		
GROUP 1	$ 42.72	28.19
GROUP 2	$ 42.85	28.19
GROUP 3	$ 42.95	28.19
GROUP 4	$ 43.07	28.19
GROUP 5	$ 42.72	28.19

LABORER CLASSIFICATIONS

GROUP 1: Signalmen Top Laborers, and all other Laborers not Mentioned.

GROUP 2: Concrete Laborers; Steel Setters.

GROUP 3: Cement Carriers; Cement Mixers; Concrete Repairmen; Mortar Men; Scaffold Men; and Second Bottom Men.

GROUP 4: Bottom Men; Bracers-Bracing; Bricklayer's Tender; Catch Basin Digger; Drainlayer; Dynamiter; Form Men; Jackhammermen; Powerpac; Pipelayers; Rodders; Welders & Burners; Well Point System Men.

GROUP 5: Asbestos Abatement Laborers, Toxic and Hazardous Waste Removal Laborers & Dosimeter use (any device) Monitoring Nuclear Exposure.

LABO0002-009 06/01/2018

DU PAGE COUNTY

	Rates	Fringes
LABORER (Compressed Air)		
0 - 15 lbs	$ 43.72	28.19
16 - 20 lbs	$ 44.22	28.19
21 - 26 lbs	$ 44.72	28.19
27 - 33 lbs	$ 45.72	28.19
34 lbs and over	$ 46.72	28.19
LABORER (Tunnel and Sewer)		
GROUP 1	$ 42.72	28.19
GROUP 2	$ 42.85	28.19
GROUP 3	$ 42.95	28.19
GROUP 4	$ 43.07	28.19
GROUP 5	$ 42.72	28.19

LABORER CLASSIFICATIONS (TUNNEL)

GROUP 1: Cage tenders; Dumpmen; Flagmen; Signalmen; Top laborers

GROUP 2: Air hoist operator; Key board operator; concrete laborer; Grout; Lock tenders (Free Air Side); Steel setters; Tuggers; Switchmen; Car pusher

GROUP 3: Concrete repairmen; Lock tenders (pressure side); Mortar men; Muckers; Grout machine operators; Track layers

GROUP 4: Air trac drill operator; Miner; Bricklayer tenders; Concrete blower operator; Drillers; Dynamiters; Erector operator; Form men; Jackhammermen; Powerpac; Mining machine operators; Mucking machine operator; Laser beam operator; Liner plate and ring setters; Shield drivers; Power knife operator; Welder- burners; Pipe jacking machine operator; skinners; Maintenance technician

GROUP 5: Asbestos abatement laborer; Toxic and hazardous waste removal laborer; Dosimeter (any device) monitoring nuclear exposure

LABORER CLASSIFICATIONS (SEWER)

GROUP 1: Signalmen; Top laborers and All other laborers

GROUP 2: Concrete laborers and Steel setters

GROUP 3: Cement carriers; Cement mixers; Concrete repairmen; Mortar men; Scaffold men; Second Bottom men

GROUP 4: Air trac drill operator; Bottom men; Bracers-bracing; Bricklayer tenders; Catch basin diggers; Drainlayers; dynamiters; Form men; Jackhammermen; Powerpac; Pipelayers; Rodders; Welder-burners; Well point systems men

GROUP 5: Asbestos abatement laborer, Toxic and hazardous waste removal laborer; Dosimeter (any device) monitoring nuclear exposure

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LABO0032-007 05/01/2021

DE KALB COUNTY

	Rates	Fringes
LABORER		
General Laborer	$ 38.75	34.91
Skilled Laborer	$ 41.90	34.91

LABORER CLASSIFICATIONS

General Laborer: Carpenter Tender, Tool Cribman, Fireman or Salamander Tender, Flagman, Gravel Box Man, Bumpman & Spotter, Form Handler, Material Handler, Fencing Laborer, Cleaning Lumber, Pit Man, Material Checker, Landscaper, Unloading Explosives, Laying of Sod, Planting of Trees, Asphalt Workers With Machine & Layers, Asphalt Plant Laborer, Wrecking, Fire-proofing, Driving Stakes, Stringlines for All Machinery, Window Cleaning, Demolition Worker, Explosive Handling, Trimming & Removal of Trees, Multi-Plate Pipe, Pilot Cars for Traffic Control, Power Rigging

Skilled Laborer: Asbestos Abatement Worker; Hazardous Waste Worker Handling any Materials with any Foreign Matter Harmful to Skin or Clothing, Track Labor, Cement Handler, Chloride Handler, Unloading & Laborers with Steel Workers & Re-bars, Wet Concrete Workers, Tunnel Tenders in Free Air, Batch Dumper, Mason Tender, Kettle & Tar Man, Tank Cleaner, Plastic Installer, Scaffold Worker, Motorized Buggies or Motorized Unit Used For Wet Concrete or Handling of Building Materials, Laborers With De-Watering Systems, Sewer Workers Plus Depth, Vibrator Operator; Cement Silica, Clay, Fly Ash, Lime & Plasters Handlers (Bulk or Bag); Cofferdam Worker Plus Depth, Concrete Paving, Placing, Cutting & Tying of Reinforcing, Deck Hand, Dredge Hand and Shore Laborer, Bankman on Floating Plant, Grade Checker, Power Tools, Front End Man on Chip Spreader, Caisson Worker Plus Depth, Gunnite Nozzleman, Leadman on Sewer Work, Welder, Cutter, Burner & Torchman, Chain Saw Operator, Jackhammer & Drill Operator, Layout Man and/or Tile Layer, Steel Form Setter - Street & Highway, Air Tamping Hammerman, Signal Man On Crane, Concrete Saw Operator, Screenman on Asphalt Paver, Tending Masons with Hot Material or Where Foreign Materials are used, Mortar Mixer Operator, Multiple Concrete Duct - Leadman, Luteman, Asphalt Raker Curb Asphalt Machine Operator, Ready Mix Scaleman Permanent Portable or Temporart Plant, Laborer Handling Masterplate or Similar Materials, Laser Beam Operator, Concrete Burning Machine Operator, Coring Machine Operator, Plaster Tender, Underpinning & Shoring of Buildings, Pump Man, Manhole & Catch Basin, Dirt & Stone Tamper, Hoseman on Concrete Pump.

LABO0075-002 06/01/2017

WILL COUNTY

	Rates	Fringes
LABORER		

GROUP 1	$ 41.20	27.47
GROUP 2	$ 41.55	27.47
GROUP 3	$ 41.20	27.47
GROUP 4	$ 41.55	27.47
GROUP 5	$ 41.40	27.47
GROUP 6	$ 41.55	27.47
GROUP 7	$ 41.40	27.47

LABORER CLASSIFICATIONS

GROUP 1 - Mortar mixers, handling asphalt shingles; Scaffolds; Sewer and trench work (ground level down to 8 feet); Catch basin and manhole diggers, mesh handling on road work; Cement and mineral filler handler; Concrete puddlers; Batch dumpers (cement & asphalt); Vibrator operators; Sand and stone wheelers to mixer Handlers); Concrete wheelers; Airtamping hammermen; Concrete & paving breakers; Rock drillers/Jackhammermen; Chipping hammermen 1-Bag mixer; Asphalt laborer; Chain and power saws; Pit men; Fencing laborers; Mason tenders (mortar and brick wheeler); Kettlemen & tarmen, tank cleaners; Scaffold and staging laborers; Pot Firemen (tarmen); Heaters tender for any purpose; Water pumps (portable water pumps shall be tended by laborers if the employer determines tending is required); Rip rap; Handling of slab steel road forms in any manner, except road form setting, setting center strips, Contraction and expansion joints (road work); Unloading and handling of lumber, brick, transite materials, cast iron water pipe, reinforced concrete rods, sewer and drain tile, railroad tiles and all other creosoted materials; paving blocks and concrete forms; Handling of insulation of any type; all work involving the unloading of materials, fixtures, or furnishing, whether crated or uncrated; all mortar and composition mixers of sewer work; track laborers; Chimney and silo laborers working at a height of 1 to 48 feet; All laborers working on swinging suspended, or any type or make of scaffolding 1 to 48 feet; All laborers working inside a sphere or any type or make of tank; Working inside a sphere or any type or make of tank from bottom to a height of 48 feet; Form strippers (any type); Mechanical or motorized buggies, for concrete or masons employers; Use of skid steer loads or any other machinery which replaces the wheelbarrow or buggy; Handling multiple concrete duct or any other type of pipe used in public utility work unless otherwise specified herein; Snapping of wall ties and removal of rods; drilling of anchor bolt holes; Concrete or asphalt clipper type saws and self-propelled saws; Shoulder and grade laborers; All hydraulic electric and air or any other type of tools; Grouting and caulking; Cleaning lumber, Nail pulling, Deck hand; Dredgehand; Shore laborer; Bankmen on Floating Plant; Tool and material checkers; Signalmen and Flagmen on all construction work; Cleaning of debris; Removal of trees; Concrete curing, temporary concrete protection regardless of manner or materials used; Laborers on Apsco; Janitorial; Wrecking and demolition laborers

GROUP 2 - Sewer and drain pipe layers and multiple concrete duct or any other type of pipe used, on public utility work (ground level to 8 feet); Pumpcrete pipe handlers

GROUP 3 - Asphalt rakers; Hod carriers; Plasterer laborers; Gunnite laborers, Slab for setters on roads, highways, streets, airport runaways, and radii (any type of form) stringline men for all aforementioned work; Wagon and tower

drillers on land and floating plant used on dredging; Asphalt gunners and plug men (undercoating on road work); Mortar pump laborers; Plaster pump laborers

GROUP 4 - Tunnel miners, and all laborers inside tunnel; Air blow pipemen; Torchmen (burners); Mortaring men on sewer and drain pipe (the applying of mortar and composition mixes); All bottom men on sewer work-all sewer and drain pipelayers-multiple concrete duct or any other type of pipe used on public utility work-8 feet or more below ground level, and all other sewer and trench laborers 8 feet or more below ground level regardless of excavation area; All labor work inside cofferdam; Use of a 10 foot or more drill steel for hand held drills; Caisson laborers ground level down 15 feet; All air tools 8 feet or more below ground level; All laborers working on swinging-suspended or any type or make of scaffolds, 48 feet to 100 feet; All chimney and silo laborers working at a height of 48 to 100 feet; All tamping hammers over 150 lbs.; All laborers working inside of a sphere or any type or make of tank at a height of 48 feet to 100 feet; all hydraulic, electric and air tools or any other type 8 feet or more below ground level; Vibrators-any type-8 feet or more below ground level

GROUP 5 - Gunnite nozzle men; Caisson laborers and all tamping hammers from 150 lbs and over; from 15 feet below ground level down to 50 feet; and all laborers working inside of a sphere or any type of tank for every additional 50 feet or part thereof above 100 feet in height

GROUP 6 - All underground cavern laborers; Caisson laborers 50 feet or more below ground level; Laborers working under radio active conditions (suiting up); Blasting men (Powdermen)
GROUP 7 - Dosimeter (any device) used for monitoring nuclear exposure; Asbestos abatement worker; Toxic and hazardous waste removal laborer; and chimney and silo laborers for every additional 50 feet or any part thereof above 100 feet high

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LABO0149-002 06/01/2018

BOONE, KANE, KENDALL, AND McHENRY COUNTIES

	Rates	Fringes
LABORER		
GROUP 1	$ 42.72	28.19
GROUP 2	$ 43.00	28.19
GROUP 3	$ 43.00	28.19
GROUP 4	$ 43.00	28.19
GROUP 5	$ 42.95	28.19
GROUP 6	$ 43.07	28.19
GROUP 7	$ 43.07	28.19
GROUP 8	$ 42.72	28.19
GROUP 9	$ 43.72	28.19

LABORER CLASSIFICATIONS

GROUP 1: Common laborer, Asphalt laborer, Asphalt plant laborer, Striping laborer, Clipper type concrete saw, Self-propelled saws

GROUP 2: Air tampers & Vibrators

GROUP 3: Mortar & Concrete mixers

GROUP 4: Stringline & form setter; Torchman (demolition), Sheeting & Cribbing, Black top rakers & lutemen, Machine screwmen

GROUP 5: Chain saw man, Jackhammer man, Drillman, Concrete breaders & air spade,

GROUP 6: Tunnel laborers, Tile layers & bottom men

GROUP 7: Caisson diggers, Dynamiters

GROUP 8: Flagman

GROUP 9: Asbestos apatement laborers, Toxic & hazardous waste removal laborers & Dosimeter (any device) monitoring nuclear exposure

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LABO0152-003 06/01/2017

LAKE COUNTY

	Rates	Fringes
LABORER		
GROUP 1	$ 41.20	27.47
GROUP 2	$ 41.28	27.47
GROUP 3	$ 41.20	27.47
GROUP 4	$ 41.43	27.47
GROUP 5	$ 41.40	27.47
GROUP 6	$ 41.40	27.47

LABORER CLASSIFICATIONS

GROUP 1: General laborers; Asphalt

GROUP 2: Cement gun laborers

GROUP 3: Asphalt Tampers and Smoothers

GROUP 4: Rakers and Lutemen; Machine screwman; Kettlemen; Mixermen, Drum-Men; Jackhammermen (Asphalt); Mite Box Spreaders; Laborers on birch overman and similar spreader equipment; Laborers on apsco; Laborers on Air Compressors; Paving Form Setters; Jackhammerman (Concrete); Power Drive Concrete Saws

GROUP 5: Cement Gun Nozzle (Gunite)

GROUP 6: Asbestos abatement laborers; Toxic and hazardous waste removal laborers; Dosimeter (any device monitoring nuclear exposure)

PAIN0014-003 06/01/2022

LAKE and WILL COUNTIES

	Rates	Fringes
PAINTER: Brush Only	$ 50.30	31.07

PAIN0030-001 06/01/2022

DE KALB, DU PAGE, KANE, KENDALL AND MCHENRY COUNTIES

	Rates	Fringes
PAINTER		
Brush, Drywall		
Taper/Finisher,		
Sandblaster, and Spray	$ 50.30	25.43

PAIN0030-004 06/01/2022

BOONE, JO DAVIESS, LEE, OGLE, STEPHENSON AND WINNEBAGO COUNTIES

	Rates	Fringes
PAINTER		
Brush, Roller, Spray,		
Sandblasting, Paperhanger,		
Drywall Finishing, Taper,		
and Spray Structural Steel	$ 42.90	27.41

PLAS0011-002 06/01/2020

WILL COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 44.19	39.41

PLAS0011-008 06/01/2022

DE KALB, KANE, KENDALL, AND McHENRY COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 49.70	38.94

PLAS0011-013 06/01/2022

LAKE COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 48.00	40.66

PLAS0011-015 06/01/2022

BOONE COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 40.10	34.62
PLASTERER	$ 37.00	35.86

PLAS0803-001 08/01/2010

DUPAGE COUNTY

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER	$ 38.00	24.03

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* TEAM0179-002 06/01/2017

KENDALL and WILL COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2 or 3 Axle Trucks	$ 37.68	0.15+a
4 Axle Trucks	$ 37.83	0.15+a
5 Axle Trucks	$ 38.03	0.15+a
6 Axle Trucks	$ 38.23	0.15+a

FOOTNOTES:
a. $733.20 per week.
b. Lowboy rate based on number of axles

An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes; Air Compressor and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Articulated Dumps; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry Alls; Forl Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors, two-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Pothole Repair Trucks; Power Mower Tractors; Quick Change Barrier; Self-Propelled Chip Spreader; Shipping and Receiving Clerks and Checkers; Skipman; Slurry Trucks, two-man operation; Slurry Trucks, Conveyor Operated - 2 or 3 man operation; Teamsters; Unskilled Dumpmen; Warehousemen and Dockmen; Truck Drivers hauling warning lights, barricades, and portable toilets on the job site

Group 2 - Dispatcher; Dump Crets and Adgetators under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper Operator; Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, one-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long;
Slurry Trucks, one-man operation; Winch Trucks, 3 axles or more; Mechanic - *Truck Welder and *Truck Painter*These classifications shall only apply in areas where and when it has been a past area practice; Asphalt Plant Operators in areas where it has been past practice

Group 4 - Dual-purpose vehicels, such as mounted crane tucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front

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* TEAM0301-001 06/01/2019

LAKE AND MCHENRY COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2-3 AXLES	$ 39.34	10.75+a
4 AXLES	$ 39.49	10.75+a
5 AXLES	$ 39.69	10.75+a
6 AXLES	$ 39.89	10.75+a

FOOTNOTES:
a. 380.00 per week pension.
b. Lowboy rate based on number of axles

An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

900 straight time hours or more in 1 calendar year for the same employer shall receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes; Air Compressor and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Articulated Dumps; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry Alls; Forl Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors, two-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Pothole Repair Trucks; Power Mower Tractors; Quick Change Barrier; Self-Propelled Chip Spreader; Shipping and Receiving Clerks and Checkers; Skipman; Slurry Trucks, two-man operation; Slurry Trucks, Conveyor Operated - 2 or 3 man operation; Teamsters; Unskilled Dumpmen; Warehousemen and Dockmen; Truck Drivers hauling warning lights, barricades, and portable toilets on the job site

Group 2 - Dispatcher; Dump Crets and Adgetators under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper Operator; Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, one-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long;
Slurry Trucks, one-man operation; Winch Trucks, 3 axles or more; Mechanic - *Truck Welder and *Truck Painter*These classifications shall only apply in areas where and when it has been a past area practice; Asphalt Plant Operators in areas where it has been past practice

Group 4 - Dual-purpose vehicels, such as mounted crane tucks

with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front

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* TEAM0325-004 06/01/2020

BOONE and WINNEBAGO COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2 - 3 Axles	$ 39.87	22.60
4 Axles	$ 40.02	22.60
5 Axles	$ 40.22	22.60
6 Axles	$ 40.33	22.60

FOOTNOTE: An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes; Air Compressor and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Forl Lifts and Hoisters; Helpers;
Mechanics Helpers and Greasers; Oil Distributors, two-man operation; Pavement Breakers
Pole Trailer, up to 40 feet; Power Mower Tractors; Skipman; Slurry Trucks, two-man operation; Teamsters; Truck Drivers hauling warning lights, barricades, and portable toilets on the job site

Group 2 - Dump Crets and Adgetators under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper Operator; Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, one-man operation
Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long, additional $0.50 per hour; Slurry Trucks, one-man operation; Winch Trucks, 3 axles or more
*Mechanic*Truck Welder and Truck Painter; *Winter Rate: Between Dec. 15 and Feb. 28 the mechanic and welder rate shall be $2.00 less than the scheduled scale. Truck Painter and Truck Welder classifications shall only apply in areas where and when it has been a past area practice;
Dual-purpose vehicels, such as mounted crane tucks with hoist and accessories

Group 4 - Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front

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* TEAM0330-002 06/01/2019

DEKALB COUNTY

	Rates	Fringes
TRUCK DRIVER		
2-3 AXLES	$ 38.23	0.25+a
4 AXLES	$ 38.38	0.25+a
5 AXLES	$ 38.58	0.25+a
6 AXLES	$ 38.78	0.25+a

FOOTNOTE: a. $868.50 per week

An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

900 straight time hours or more in 1 calendar year for the same employer shall receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes; Air Compressor and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Articulated Dumps; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry Alls; Forl Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors, two-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Pothole Repair Trucks; Power Mower Tractors; Quick Change Barrier; Self-Propelled Chip Spreader; Shipping and Receiving Clerks and Checkers; Skipman; Slurry Trucks, two-man operation; Slurry Trucks, Conveyor Operated - 2 or 3 man operation; Teamsters; Unskilled Dumpmen; Warehousemen and Dockmen; Truck Drivers hauling warning lights, barricades, and portable toilets on the job site

Group 2 - Dispatcher; Dump Crets and Adgetators under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper Operator; Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, one-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long;
Slurry Trucks, one-man operation; Winch Trucks, 3 axles or more; Mechanic - *Truck Welder and *Truck Painter*These classifications shall only apply in areas where and when it has been a past area practice; Asphalt Plant Operators in areas where it has been past practice

Group 4 - Dual-purpose vehicels, such as mounted crane tucks with hoist and accessories; Foreman; Master Mechanic;

Self-loading equipment like P.B. and trucks with scoops on the front

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* TEAM0673-003 06/01/2019

DU PAGE and KANE COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2-3 AXLES	$ 38.47	0.25+a
4 AXLES	$ 38.62	0.25+a
5 AXLES	$ 38.82	0.25+a
6 AXLES	$ 39.02	0.25+a

FOOTNOTE: a. $861.10 per week.

An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

900 straight time hours or more in 1 calendar year for the same employer shall receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes; Air Compressor and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Articulated Dumps; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry Alls; Forl Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors, two-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Pothole Repair Trucks; Power Mower Tractors; Quick Change Barrier; Self-Propelled Chip Spreader; Shipping and Receiving Clerks and Checkers; Skipman; Slurry Trucks, two-man operation; Slurry Trucks, Conveyor Operated - 2 or 3 man operation; Teamsters; Unskilled Dumpmen; Warehousemen and Dockmen; Truck Drivers hauling warning lights, barricades, and portable toilets on the job site

Group 2 - Dispatcher; Dump Crets and Adgetators under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper Operator; Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, one-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long;
Slurry Trucks, one-man operation; Winch Trucks, 3 axles or more; Mechanic - *Truck Welder and *Truck Painter*These classifications shall only apply in areas where and when it

has been a past area practice; Asphalt Plant Operators in areas where it has been past practice

Group 4 - Dual-purpose vehicels, such as mounted crane tucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front

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* TEAM0731-002 04/01/2022

	Rates	Fringes
Traffic Control Device Monitor TRAFFIC SAFETY WORKER: Primary duties include but are not limited to the delivery, maintenance and pick-up of traffic control devices, the set-up and installation of traffic signs, pavement markings, barricades, crash barrels and glare screens, traffic control surveillance, the repair and maintenance trucks, cars, arrow boards, message signs, barricade and sign fabrication equipment	$ 39.30	19.75

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

"General Decision Number: IL20230020 01/06/2023

Superseded General Decision Number: IL20220020

State: Illinois

Construction Types: Building Landscape, Heavy Landscape, Highway Landscape and Residential Landscape

Counties: Boone, Cook, De Kalb, Du Page, Grundy, Henry, Kane, Kankakee, Kendall, Lake, McHenry, McLean, Ogle, Peoria, Rock Island, Tazewell, Will, Winnebago and Woodford Counties in Illinois.

LANDSCAPING WORK ON BUILDING, RESIDENTIAL, HEAVY AND HIGHWAY CONSTRUCTION PROJECTS.

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at

http://www.dol.gov/whd/govcontracts.

Modification Number Publication Date
0 01/06/2023

ENGI0150-013 06/01/2021

BUILDING AND HIGHWAY CONSTRUCTION (LANDSCAPE WORK): The landscape work for the Landscape Equipment Operator excludes the preparation of sub-grade prior to application of finish landscape materials and the utilization of any equipment over one cubic yard.

BOONE, COOK, DUPAGE, GRUNDY, KANE, KENDALL, LAKE, MCHENRY, AND WILL COUNTIES

	Rates	Fringes
Operators:	$ 34.55	8.00+A+B

Includes Angle Dozer, Small; Bobcat and other similar type machines, 1 cu yd or less; Chipping Machine; Combination Backhoe and Front End Loader 1 cu yd or less; Fork Lift Truck; Hi-Reach and High-Ranger;Hydraulic Boom with Clam;Log Skidder; Sttraw Blower and Seeder; Stump Machine;Tractors, Crawlers, Rubber Tire Tractors, Highlift Shovels or Front End Loaders 1 cu yd or less; Tree Spades, all; Utility Tractor and attachments, and Rubber Tire Front End loader or similar machine of 1 to 1.5 cu yd solely used for placement of large decorative boulders, trees with balled soil, and other decorative landscape material too large to be accommodated in a 1 cu yd bucket. All other equipment utilized for performing landscape work, tree trimming or removal of stees, and to install plants; transport trees; excavate plant pits; place soil and other landscape materials; and apply finish landscape material on subgrade prepared by others

FOOTNOTE:

A. Health and Welfare contribution is $1,496.00 per month.

B. Paid Holidays: New Year's Day; Memorial Day; Fourth of July; Labor Day; Thanksgiving Day; and Christmas Day provided that all such employees shall have in fact worked their regularly scheduled work day immediately preceding and the regularly scheduled work day immediately succeeding the occurrence of such holiday.

ENGI0150-023 06/01/2021

HIGHWAY CONSTRUCTION (LANDSCAPE WORK): The landscape work for the Landscape Equipment Operator excludes the preparation of sub-grade prior to application of finish landscape materials and the utilization of any equipment over one cubic yard.

HENRY, MCLEAN, OGLE, PEORIA, ROCK ISLAND, TAZEWELL, WINNEBAGO, and WOODFORD COUNTIES

	Rates	Fringes

Operators:.....$ 34.55 8.00+A+B
Includes the following: Angle Dozer, Small; Bobcat and other similar type machines, 1 cu yd or less; Chipping Machine; Combination Backhoe and Front End Loader 1 cu yd or less; Fork Lift Truck; Hi-Reach and High-Ranger;Hydraulic Boom with Clam;Log Skidder; Sttraw Blower and Seeder; Stump Machine;Tractors, Crawlers, Rubber Tire Tractors, Highlift Shovels or Front End Loaders 1 cu yd or less; Tree Spades, all; Utility Tractor and attachments, and Rubber Tire Front End loader or similar machine of 1 to 1.5 cu yd solely used for placement of large decorative boulders, trees with balled soil, and other decorative landscape material too large to be accommodated in a 1 cu yd bucket. All other equipment utilized for performing landscape work, tree trimming or removal of stees, and to install plants; transport trees; excavate plant pits; place soil and other landscape materials; and apply finish landscape material on subgrade prepared by others

FOOTNOTE:

A. Health and Welfare contribution is $1,496.00 per month.

B. Paid Holidays: New Year's Day; Memorial Day; Fourth of July; Labor Day; Thanksgiving Day; and Christmas Day provided that all such employees shall have in fact worked their regularly scheduled work day immediately preceding and the regularly scheduled work day immediately succeeding the occurrence of such holiday.

LABO0032-004 05/01/2021

HIGHWAY CONSTRUCTION

WINNEBAGO COUNTY

	Rates	Fringes
Landscape Laborer.....	$ 38.75	34.91

LABO0362-003 05/01/2018

HIGHWAY CONSTRUCTION

MCLEAN COUNTY

	Rates	Fringes
Landscape Laborer.....	$ 31.08	24.43

LABO0751-004 05/01/2021

HIGHWAY CONSTRUCTION

KANKAKEE COUNTY

	Rates	Fringes
Landscape Laborer.....	$ 39.44	32.54

LABO0852-004 05/01/2006

HIGHWAY CONSTRUCTION

ROCK ISLAND AND HENRY COUNTIES

	Rates	Fringes
Landscape Laborer	$ 21.94	12.79

LABO0996-004 05/01/2018

HIGHWAY CONSTRUCTION

PEORIA, TAZEWELL, AND WOODFORD COUNTIES

	Rates	Fringes
Landscape Laborer	$ 32.73	23.74

TEAM0026-005 05/01/2020

MCLEAN (South of a straight line from where Route 24 intersects the Woodford County line in a Southeast direction to the South Southwest corner of Livingston County) COUNTY

	Rates	Fringes
TRUCK DRIVER		
Group 1	$ 38.93	20.39
Group 2	$ 39.50	20.39
Group 3	$ 39.77	20.39
Group 4	$ 40.14	20.39
Group 5	$ 41.21	20.39

CLASSIFICATIONS:

GROUP 1: Drivers on 2 axles hauling less than 9 tons; air compressor & welding machines and brooms, including those pulled by separate units; Truck Driver Helper, warehouse employees; Mechanic Helpers; greasers and tiremen; pick-up trucks when hauling material, tools, or workers to and from and on the job site; and forklifts up to 6,000 lb capacity.

GROUP 2: 2 or 3 axles hualing more than 9 tons but hauling less than 16 tons; A-frame winch trucks; hydrolift trucks; Vactor Trucks or similar equipment when used for transportation purposes; Forklift over 6,000 lb.capacity; winch trucks; and four axle combiation units.

GROUP 3: 2, 3 or 4 Axles hauling 16 tons or more; 5-Axles or more combination units; drivers on water pulls; articulated dump trucks; mechanics and working forepersons.

GROUP 4: Low Boy and Oil Distributors.

GROUP 5: Drivers who require special protective clothing while employed on hazardous waste work.

TEAM0179-004 06/01/2017

GRUNDY, KENDALL, MCLEAN (North of a straight line starting at the intersection of McLean-Woodford Counties line & Route 24 in a Southeastern direction to the South Southwest corner of Livingston County), WILL, and WOODFORD (Northeast corner east of Route 51/251 & North of Route 24) COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2-3 AXLES	$ 37.68	0.15+a
4 AXLES	$ 37.83	0.15+a
5 AXLES	$ 38.03	0.15+a
6 AXLES	$ 38.23	0.15+a

FOOTNOTES:
a. $733.20 per week.
b. Lowboy rate based on number of axles

An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes; Air Compressor and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Articulated Dumps; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry Alls; Forl Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors, two-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Pothole Repair Trucks; Power Mower Tractors; Quick Change Barrier; Self-Propelled Chip Spreader; Shipping and Receiving Clerks and Checkers; Skipman; Slurry Trucks, two-man operation; Slurry Trucks, Conveyor Operated - 2 or 3 man operation; Teamsters; Unskilled Dumpmen; Warehousemen and Dockmen; Truck Drivers hauling warning lights, barricades, and portable toilets on the job site

Group 2 - Dispatcher; Dump Crets and Adgetators under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper Operator; Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, one-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long;
Slurry Trucks, one-man operation; Winch Trucks, 3 axles or more; Mechanic - *Truck Welder and *Truck Painter*These classifications shall only apply in areas where and when it has been a past area practice; Asphalt Plant Operators in areas where it has been past practice

Group 4 - Dual-purpose vehicels, such as mounted crane tucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front

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TEAM0179-008 06/01/2019

KANKAKEE COUNTY

	Rates	Fringes
TRUCK DRIVER		
2 or 3 axles	$ 39.20	0.25+a
4 axles	$ 39.35	0.25+a
5 axles	$ 39.55	0.25+a
6 axles	$ 39.75	0.25+a
All Lowboy Trucks	$ 39.75	0.25+a

FOOTNOTES:
a. $829.20 per week.

An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes; Air Compressor and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Articulated Dumps; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry Alls; Forl Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors, two-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Pothole Repair Trucks; Power Mower Tractors; Quick Change Barrier; Self-Propelled Chip Spreader; Shipping and Receiving Clerks and Checkers; Skipman; Slurry Trucks, two-man operation; Slurry Trucks, Conveyor Operated - 2 or 3 man operation; Teamsters; Unskilled Dumpmen; Warehousemen and Dockmen; Truck Drivers hauling warning lights, barricades, and portable toilets on the job site

Group 2 - Dispatcher; Dump Crets and Adgetators under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper Operator; Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, one-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long;
Slurry Trucks, one-man operation; Winch Trucks, 3 axles or more; Mechanic - *Truck Welder and *Truck Painter*These classifications shall only apply in areas where and when it has been a past area practice; Asphalt Plant Operators in areas where it has been past practice

Group 4 - Dual-purpose vehicels, such as mounted crane tucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front

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TEAM0301-001 06/01/2019

LAKE AND MCHENRY COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2-3 AXLES	$ 39.34	10.75+a
4 AXLES	$ 39.49	10.75+a
5 AXLES	$ 39.69	10.75+a
6 AXLES	$ 39.89	10.75+a

FOOTNOTES:
a. 380.00 per week pension.
b. Lowboy rate based on number of axles

An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

900 straight time hours or more in 1 calendar year for the same employer shall receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes; Air Compressor and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Articulated Dumps; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry Alls; Forl Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors, two-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Pothole Repair Trucks; Power Mower Tractors; Quick Change Barrier; Self-Propelled Chip Spreader; Shipping and Receiving Clerks and Checkers; Skipman; Slurry Trucks, two-man operation; Slurry Trucks, Conveyor Operated - 2 or 3 man operation; Teamsters; Unskilled Dumpmen; Warehousemen and Dockmen; Truck Drivers hauling warning lights, barricades, and portable toilets on the job site

Group 2 - Dispatcher; Dump Crets and Adgetators under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper Operator; Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, one-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long;
Slurry Trucks, one-man operation; Winch Trucks, 3 axles or more; Mechanic - *Truck Welder and *Truck Painter*These classifications shall only apply in areas where and when it has been a past area practice; Asphalt Plant Operators in areas where it has been past practice

Group 4 - Dual-purpose vehicels, such as mounted crane tucks with hoist and accessories; Foreman; Master Mechanic;

Self-loading equipment like P.B. and trucks with scoops on the front

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TEAM0325-004 06/01/2020

BOONE and WINNEBAGO COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2 - 3 Axles	$ 39.87	22.60
4 Axles	$ 40.02	22.60
5 Axles	$ 40.22	22.60
6 Axles	$ 40.33	22.60

FOOTNOTE: An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes; Air Compressor and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Forl Lifts and Hoisters; Helpers;
Mechanics Helpers and Greasers; Oil Distributors, two-man operation; Pavement Breakers
Pole Trailer, up to 40 feet; Power Mower Tractors; Skipman; Slurry Trucks, two-man operation; Teamsters; Truck Drivers hauling warning lights, barricades, and portable toilets on the job site

Group 2 - Dump Crets and Adgetators under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper Operator; Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, one-man operation
Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long, additional $0.50 per hour; Slurry Trucks, one-man operation; Winch Trucks, 3 axles or more
*Mechanic*Truck Welder and Truck Painter; *Winter Rate: Between Dec. 15 and Feb. 28 the mechanic and welder rate shall be $2.00 less than the scheduled scale. Truck Painter and Truck Welder classifications shall only apply in areas where and when it has been a past area practice;
Dual-purpose vehicels, such as mounted crane tucks with hoist and accessories

Group 4 - Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front

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TEAM0330-004 06/01/2017

DEKALB and OGLE (North of Route 72/East of Route 251, Adeline, Byron, Creston, Dement, Forreston North of Route 72, Leaf River North of Route 72, Lynnville, Monroe, Rochelle, & Scott) COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2-3 AXLES	$ 36.64	0.15+a
4 AXLES	$ 36.79	0.15+a
5 AXLES	$ 36.99	0.15+a
6 AXLES	$ 37.19	0.15+a

FOOTNOTE: a. $780.90 per week

An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

900 straight time hours or more in 1 calendar year for the same employer shall receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes; Air Compressor and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Articulated Dumps; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry Alls; Forl Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors, two-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Pothole Repair Trucks; Power Mower Tractors; Quick Change Barrier; Self-Propelled Chip Spreader; Shipping and Receiving Clerks and Checkers; Skipman; Slurry Trucks, two-man operation; Slurry Trucks, Conveyor Operated - 2 or 3 man operation; Teamsters; Unskilled Dumpmen; Warehousemen and Dockmen; Truck Drivers hauling warning lights, barricades, and portable toilets on the job site

Group 2 - Dispatcher; Dump Crets and Adgetators under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper Operator; Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, one-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long;
Slurry Trucks, one-man operation; Winch Trucks, 3 axles or more; Mechanic - *Truck Welder and *Truck Painter*These classifications shall only apply in areas where and when it has been a past area practice; Asphalt Plant Operators in areas where it has been past practice

Group 4 - Dual-purpose vehicels, such as mounted crane tucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front

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TEAM0371-004 05/01/2020

HENRY and ROCK ISLAND COUNTIES

	Rates	Fringes
TRUCK DRIVER		
Group 1	$ 39.04	20.63
Group 2	$ 39.60	20.63
Group 3	$ 39.91	20.63
Group 4	$ 40.25	20.63
Group 5	$ 41.33	20.63

CLASSIFICATIONS:

GROUP 1: Drivers on 2 axles hauling less than 9 tons; air compressor & welding machines and brooms, including those pulled by separate units; Truck Driver Helper, warehouse employees; Mechanic Helpers; greasers and tiremen; pick-up trucks when hauling material, tools, or workers to and from and on the job site; and forklifts up to 6,000 lb capacity.

GROUP 2: 2 or 3 axles hualing more than 9 tons but hauling less than 16 tons; A-frame winch trucks; hydrolift trucks; Vactor Trucks or similar equipment when used for transportation purposes; Forklift over 6,000 lb.capacity; winch trucks; and four axle combiation units.

GROUP 3: 2, 3 or 4 Axles hauling 16 tons or more; 5-Axles or more combination units; drivers on water pulls; articulated dump trucks; mechanics and working forepersons.

GROUP 4: Low Boy and Oil Distributors.

GROUP 5: Drivers who require special protective clothing while employed on hazardous waste work.

TEAM0627-004 05/01/2019

PEORIA, TAZEWELL, and WOODFORD COUNTIES

	Rates	Fringes
TRUCK DRIVER		
Group 1	$ 38.06	19.62
Group 2	$ 38.61	19.62
Group 3	$ 38.87	19.62
Group 4	$ 39.23	19.62
Group 5	$ 40.27	19.62

CLASSIFICATIONS:

GROUP 1: Drivers on 2 axles hauling less than 9 tons; air compressor & welding machines and brooms, including those pulled by separate units; Truck Driver Helper, warehouse employees; Mechanic Helpers; greasers and tiremen; pick-up trucks when hauling material, tools, or workers to and from

and on the job site; and forklifts up to 6,000 lb capacity.

GROUP 2: 2 or 3 axles hualing more than 9 tons but hauling less than 16 tons; A-frame winch trucks; hydrolift trucks; Vactor Trucks or similar equipment when used for transportation purposes; Forklift over 6,000 lb.capacity; winch trucks; and four axle combiation units.

GROUP 3: 2, 3 or 4 Axles hauling 16 tons or more; 5-Axles or more combination units; drivers on water pulls; articulated dump trucks; mechanics and working forepersons.

GROUP 4: Low Boy and Oil Distributors.

GROUP 5: Drivers who require special protective clothing while employed on hazardous waste work.

TEAM0673-003 06/01/2019

DU PAGE and KANE COUNTIES

	Rates	Fringes
TRUCK DRIVER		
2-3 AXLES	$ 38.47	0.25+a
4 AXLES	$ 38.62	0.25+a
5 AXLES	$ 38.82	0.25+a
6 AXLES	$ 39.02	0.25+a

FOOTNOTE: a. $861.10 per week.

An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

900 straight time hours or more in 1 calendar year for the same employer shall receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

CLASSIFICATIONS:

Group 1 - Frame Truck when used for transportation purposes; Air Compressor and Welding Machines, including those pulled by cars, pick-up trucks and tractors; Ambulances; Articulated Dumps; Batch Gate Lockers; Batch Hopperman; Car and Truck Washers; Carry Alls; Forl Lifts and Hoisters; Helpers; Mechanics Helpers and Greasers; Oil Distributors, two-man operation; Pavement Breakers; Pole Trailer, up to 40 feet; Pothole Repair Trucks; Power Mower Tractors; Quick Change Barrier; Self-Propelled Chip Spreader; Shipping and Receiving Clerks and Checkers; Skipman; Slurry Trucks, two-man operation; Slurry Trucks, Conveyor Operated - 2 or 3 man operation; Teamsters; Unskilled Dumpmen; Warehousemen and Dockmen; Truck Drivers hauling warning lights, barricades, and portable toilets on the job site

Group 2 - Dispatcher; Dump Crets and Adgetators under 7 yards; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment under 16 cubic yards; Mixer Trucks under 7 yards; Ready-Mix Plant Hopper

Operator; Winch Trucks, 2 Axles

Group 3 - Dump Crets and Adgetators, 7 yards and over; Dumpsters, Track Trucks, Euclids, Hug Bottom Dump Turnapulls or Turnatrailers when pulling other than self-loading equipment or similar equipment over 16 cubic yards; Explosives and/or Fission Material Trucks; Mixer Trucks 7 yards or over; Mobile Cranes while in transit; Oil Distributors, one-man operation; Pole Trailer, over 40 feet; Pole and Expandable Trailers hauling material over 50 feet long;
Slurry Trucks, one-man operation; Winch Trucks, 3 axles or more; Mechanic - *Truck Welder and *Truck Painter*These classifications shall only apply in areas where and when it has been a past area practice; Asphalt Plant Operators in areas where it has been past practice

Group 4 - Dual-purpose vehicels, such as mounted crane tucks with hoist and accessories; Foreman; Master Mechanic; Self-loading equipment like P.B. and trucks with scoops on the front

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TEAM0722-005 05/01/2015

OGLE (North of Route 72/East of Route 251) COUNTY

	Rates	Fringes
TRUCK DRIVER		
Group 1	$ 34.10	17.09
Group 2	$ 34.60	17.09
Group 3	$ 34.82	17.09
Group 4	$ 35.14	17.09
Group 5	$ 36.06	17.09

CLASSIFICATIONS:

GROUP 1: Drivers on 2 axles hauling less than 9 tons; air compressor & welding machines and brooms, including those pulled by separate units; Truck Driver Helper, warehouse employees; Mechanic Helpers; greasers and tiremen; pick-up trucks when hauling material, tools, or workers to and from and on the job site; and forklifts up to 6,000 lb capacity.

GROUP 2: 2 or 3 axles hualing more than 9 tons but hauling less than 16 tons; A-frame winch trucks; hydrolift trucks; Vactor Trucks or similar equipment when used for transportation purposes; Forklift over 6,000 lb.capacity; winch trucks; and four axle combiation units.

GROUP 3: 2, 3 or 4 Axles hauling 16 tons or more; 5-Axles or more combination units; drivers on water pulls; articulated dump trucks; mechanics and working forepersons.

GROUP 4: Low Boy and Oil Distributors.

GROUP 5: Drivers who require special protective clothing while employed on hazardous waste work.

TEAM0731-001 06/01/2017

COOK COUNTY - HEAVY AND HIGHWAY

	Rates	Fringes
TRUCK DRIVER		
2 or 3 Axles	$ 35.60	22.10
4 Axles	$ 35.85	22.10
5 Axles	$ 36.05	22.10
6 Axles	$ 36.25	22.10

FOOTNOTES:

A. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

B. 900 straight time hours or more in 1 calendar year for the same employer shall receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

C. An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

TEAM0786-001 06/01/2017

COOK COUNTY - BUILDING AND RESIDENTIAL

	Rates	Fringes
TRUCK DRIVER		
2 & 3 Axles	$ 39.942	0.25+a
4 Axles	$ 39.75	0.25+a
5 Axles	$ 39.967	0.25+a
6 Axles	$ 40.184	0.25+a

FOOTNOTES:

a. $719.00 per week.

An additional $.20 per axle shall be paid for all vehicles with more than six (6) axles.

Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

900 straight time hours or more in 1 calendar year for the same employer shall receive 1 week paid vacation; 3 years - 2 weeks paid vacation; 10 years - 3 weeks paid vacation; 20 years - 4 weeks paid vacation.

SUIL1993-001 01/19/1993

BUILDING CONSTRUCTION (LANDSCAPE WORK):

	Rates	Fringes
LABORER		
BOONE, GRUNDY, KANE, KENDALL, LAKE, MCHENRY, & WILL COUNTIES		
LANDSCAPE LABORERS	$ 7.25 **	
COOK COUNTY		
LANDSCAPE LABORERS	$ 7.25 **	
LANDSCAPE PLANTSMAN	$ 9.80 **	1.82

DE KALB COUNTY
LANDSCAPE LABORERS.....$ 7.25 **
LANDSCAPE OPERATORS.....$ 7.25 **
LANDSCAPE PLANTSMAN.....$ 9.66 ** .26
DU PAGE COUNTY
LANDSCAPE LABORERS.....$ 7.25 **
LANDSCAPE PLANTSMAN.....$ 9.04 ** 1.16
GRUNDY, LAKE & WILL
COUNTIES
LANDSCAPE DRIVER 2 & 3
Axles.....$ 11.86 ** 2.81
LANDSCAPE PLANTSMAN.....$ 12.00 ** 3.32

SUIL1993-002 01/19/1993

HEAVY CONSTRUCTION (LANDSCAPE WORK)

	Rates	Fringes
LABORER		
BOONE, GRUNDY, KANE, KENDALL, LAKE, MCHENRY & WILL COUNTIES:		
LANDSCAPE DRIVER, 2 & 3		
AXLES	$ 11.94 **	2.42
LANDSCAPE LABORERS	$ 7.25 **	
LANDSCAPE OPERATORS	$ 13.11 **	3.01
LANDSCAPE PLANTSMAN	$ 9.73 **	2.05
COOK COUNTY:		
LANDSCAPE DRIVER, 2 & 3		
AXLES	$ 9.93 **	1.89
LANDSCAPE LABORERS	$ 7.25 **	
LANDSCAPE OPERATORS	$ 10.98 **	2.12
LANDSCAPE PLANTSMAN	$ 10.08 **	2.06
DE KALB COUNTY:		
LANDSCAPE LABORERS	$ 7.25 **	
LANDSCAPE OPERATORS	$ 7.25 **	
LANDSCAPE PLANTSMAN	$ 9.66 **	.26
DU PAGE COUNTY:		
LANDSCAPE DRIVER, 2 & 3		
AXLES	$ 8.32 **	1.02
LANDSCAPE LABORERS	$ 7.25 **	
LANDSCAPE OPERATORS	$ 10.75 **	
LANDSCAPE PLANTSMAN	$ 10.65 **	

SUIL1993-003 01/19/1993

HIGHWAY CONSTRUCTION (LANDSCAPE WORK):

	Rates	Fringes
LABORER		
DE KALB COUNTY		
LANDSCAPE LABORERS	$ 7.25 **	
LANDSCAPE OPERATORS	$ 7.25 **	
LANDSCAPE PLANTSMAN	$ 9.66 **	.26
KANKAKEE COUNTY:		
LANDSCAPE DRIVER	$ 8.75 **	.17
LANDSCAPE OPERATOR	$ 16.57	3.56
PEORIA, TAZEWELL, & WOODFORD COUNTIES:		
TRUCK DRIVERS 2 & 3 AXLES	$ 17.58	5.88

WELDERS - Receive rate prescribed for craft performing

operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($16.20) or 13658 ($12.15). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations

Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

===

END OF GENERAL DECISIO"

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AMERICAN IRON AND STEEL SAMPLE CERTIFICATION

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Sample Certification

The following information is provided as a sample letter of step certification for AIS compliance. Documentation must be provided on company letterhead.

Date

Company Name
Company Address
City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:
1. Xxxx
2. Xxxx
3. Xxxx

Such process took place at the following location:

_____

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

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USEPA DE MINIMIS WAIVER

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF WATER

DECISION MEMORANDUM

SUBJECT: De Minimis Waiver of Section 436 of P.L. 113-76, Consolidated Appropriations Act (CAA), 2014

FROM: Nancy K. Stoner
Acting Assistant Administrator

The EPA is hereby granting a nationwide waiver pursuant to the "American Iron and Steel (AIS)" requirements of P.L. 113-76, Consolidated Appropriations Act, 2014 (Act), section 436 under the authority of Section 436(b)(1) (public interest waiver) for de minimis incidental components of eligible water infrastructure projects. This action permits the use of products when they occur in de minimis incidental components of such projects funded by the Act that may otherwise be prohibited under section 436(a). Funds used for such de minimis incidental components cumulatively may comprise no more than a total of 5 percent of the total cost of the materials used in and incorporated into a project; the cost of an individual item may not exceed 1 percent of the total cost of the materials used in and incorporated into a project.

P.L. 113-76, Consolidated Appropriations Act, 2014 (Act), includes an "American Iron and Steel" (AIS) requirement in section 436 that requires Clean Water State Revolving Loan Fund (CWSRF) and Drinking Water State Revolving Loan Fund (DWSRF) assistance recipients to use specific domestic iron and steel products that are produced in the United States if the project is funded through an assistance agreement executed beginning January 17, 2014 (enactment of the Act), through the end of Fiscal Year 2014, unless the agency determines it necessary to waive this requirement based on findings set forth in Section 436(b). The Act states, "[the requirements] shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency...finds that— (1) applying subsection (a) would be inconsistent with the public interest" 436(b)(1).

In implementing section 436 of the Act, the EPA must ensure that the section's requirements are applied consistent with congressional intent in adopting this section and in the broader context of the purposes, objectives, and other provisions applicable to projects funded under the SRF. Water infrastructure projects typically contain a relatively small number of high-cost components incorporated into the project. In bid solicitations for a project, these high-cost components are generally described in detail via project specific technical specifications. For these major components, utility owners and their contractors are generally familiar with the conditions of availability, the potential alternatives for each detailed specification, the approximate cost, and the country of manufacture of the available components.

Every water infrastructure project also involves the use of thousands of miscellaneous, generally low-cost components that are essential for, but incidental to, the construction and are incorporated into the physical structure of the project. For many of these incidental components, the country of manufacture and the availability of alternatives is not always readily or reasonably identifiable prior to procurement in the normal course of business; for other incidental components, the country of manufacture may be known but the miscellaneous character in conjunction with the low cost, individually and (in total) as typically procured in bulk, mark them as properly incidental. Examples of incidental components could include small washers, screws, fasteners (i.e., nuts and bolts), miscellaneous wire, corner bead, ancillary tube, etc. Examples of items that are clearly not incidental include significant process fittings (i.e., tees, elbows, flanges, and brackets), distribution system fittings and valves, force main valves, pipes for sewer collection and/or water distribution, treatment and storage tanks, large structural support structures, etc.

The EPA undertook multiple inquiries to identify the approximate scope of de minimis incidental components within water infrastructure projects during the implementation of the American Reinvestment and Recovery Act (ARRA) and its requirements (Buy American provisions, specifically). The inquiries and research conducted in 2009 applies suitably for the case today. In 2009, the EPA consulted informally with many major associations representing equipment manufacturers and suppliers, construction contractors, consulting engineers, and water and wastewater utilities, and performed targeted interviews with several well-established water infrastructure contractors and firms who work in a variety of project sizes, and regional and demographic settings to ask the following questions:

- What percentage of total project costs were consumables or incidental costs?

- What percentage of materials costs were consumables or incidental costs?

- Did these percentages vary by type of project (drinking water vs. wastewater treatment plant vs. pipe)?

The responses were consistent across the variety of settings and project types, and indicated that the percentage of total costs for drinking water or wastewater infrastructure projects represented by these incidental components is generally not in excess of 5 percent of the total cost of the materials used in and incorporated into a project. In drafting this waiver, the EPA has considered the de minimis proportion of project costs generally represented by each individual type of these incidental components within the many types of such components comprising those percentages, the fact that these types of incidental components are obtained by contractors in many different ways from many different sources, and the disproportionate cost and delay that would be imposed on projects if the EPA did not issue this waiver.

Assistance recipients who wish to use this waiver should in consultation with their contractors determine the items to be covered by this waiver and must retain relevant documentation (i.e., invoices) as to those items in their project files.

If you have any questions concerning the contents of this memorandum, please contact Timothy Connor, Chemical Engineer, Municipal Support Division, at connor.timothy@epa.gov or (202) 566-1059 or Kirsten Anderer, Environmental Engineer, Drinking Water Protection Division, at anderer.kirsten@epa.gov or (202) 564-3134.

Issued on: APR 15 2014

Approved by: _____

Nancy K. Stoner
Acting Assistant Administrator

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APPRENTICESHIP INITIATIVE INFORMATION FOR CONTRACTORS

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Illinois Works Jobs Program Act – Apprenticeship Initiative
Information for Contractors

Summary: The Illinois Works Jobs Program Act, 30 ILCS 559/Art. 20, is a statewide initiative to ensure that all Illinois residents have access to State capital projects and careers in the construction industry and building trades and to provide contracting and employment opportunities to historically underrepresented populations in the construction industry. This will be accomplished through three programs created by the Illinois Works Jobs Program Act: the Illinois Works Apprenticeship Initiative, the Illinois Works Pre-Apprenticeship Program, and the Illinois Works Bid Credit Program. Additional information is available at the following website: https://www2.illinois.gov/dceo/WorkforceDevelopment/Pages/IllinoisWorksJobsProgramAct.aspx.

The goal of the Illinois Works Apprenticeship Initiative ("10% apprenticeship goal") is that for projects estimated to cost $500,000 or more, apprentices will perform either 10% of the total labor hours actually worked in each prevailing wage classification or 10% of the estimated labor hours in each prevailing wage classification, whichever is less. The 10% apprenticeship goal applies to projects being paid for in whole or in part by appropriated capital funds to construct a public work either through a contract or grant issued by a State agency. A determination was made that this requirement also applies to IEPA loans. The $500,000 threshold applies to the total project cost and NOT the total cost or value of an individual construction contract.

Certification: Apprentices are required to be U.S. Dept. of Labor certified (not limited to pre-apprentice program graduates).

Applicability

If a project is estimated to received $500,000 or more of State Capital Funding for the Project:

If the state's contribution to the project amount equals 50% or more of the cost for the project, the 10% apprenticeship requirement applies to all prevailing wage eligible work performed by contractors on the public works project.

If the state's contribution to the project is less than 50% of the cost for the project, the 10% apprenticeship requirement applies only to prevailing wage eligible work being funded from state funds.

The Project has less than $500,000 of State Capital Funding, but the Total Estimated Project Cost is $500,000 or more:

If the state's contribution to the project amount equals 50% or more of the estimated cost for the project, the 10% apprenticeship requirement applies to all prevailing wage eligible work performed by contractors on the public works project.

If the state's contribution to the project is less than 50% of the estimated cost for the project, the 10% apprenticeship requirement does not apply.

Total Estimated Project Cost is less than $500,000: The 10% apprenticeship requirement does not apply. The $500,000 threshold applies to the total project cost and NOT the total cost or value of an individual construction contract.

Waivers from the Requirements: If goals cannot be met, the state has discretion to grant waivers, reductions or to hold public hearings on the issue. Factors to be considered include the scale of the project and whether the contractor or subcontractor seeking the action has previously requested reductions or waivers. A waiver form is available on the IEPA website at: https://www2.illinois.gov/epa/Documents/epa-forms/water/financial-assistance/apprenticeship/Waiver-Request.pdf. The form can also be obtained from DCEO.

Reporting: An example quarterly reporting form is attached. A fillable version is available on the IEPA website. Contractors should coordinate with the loan applicant and their consultant for further instructions regarding these forms. Loan applicants are ultimately responsible for reporting quarterly labor hours to the state, but coordination with their contractor is essential. All loan funded projects are subject to payment of Davis Bacon wages.

For general apprenticeship questions, please contact the Illinois Works Office at: CEO.ILWorks@Illinois.gov.

ILLINOIS WORKS APPRENTICESHIP INITIATIVE
QUARTERLY PERIODIC GRANTEE REPORT

Loan Recipient Organization Name:		FEIN Number:		Unique Entity ID Number:	
Loan Awarding Agency:		Project Start Date:		Project End Date:	
Loan Number:		Estimated Total Project Costs:		Estimated Total State Contribution:	

REPORTING PERIOD:

Period Start Date: _____ Period End Date: _____

APPLICABLE APPRENTICESHIP GOAL (SELECT ALL THAT APPLY):

☐ 10% Total Project Cost ☐ 10% Total State Contribution Only

☐ Waiver Approved by IL DCEO IL DCEO Waiver Approval Date: _____

(If a waiver was granted for any prevailing wage classification, the Grantee does not need to report on those classifications on this form.)

☐ Reduction Approved by IL DCEO IL DCEO Reduction Approval Date: _____

(If selected, enter the applicable prevailing wage classification(s) and approved reduced percentage(s).)

PREVAILING WAGE CLASSIFICATION	REDUCED PERCENTAGE

PREVAILING WAGE CLASSIFICATION	REDUCED PERCENTAGE

ILLINOIS WORKS APPRENTICESHIP INITIATIVE
QUARTERLY PERIODIC GRANTEE REPORT

Please provide information in this chart for the entire project if the apprenticeship goal applies to the entire project. Provide information for only thestate contribution if the apprenticeship goal applies only to state appropriated capital funds.

PREVAILING WAGE CLASSIFICATION	TOTAL HOURS FOR CLASSIFICATION IN REPORTING PERIOD	TOTAL APPRENTICESHIP HOURS FOR CLASSIFICATION IN REPORTING PERIOD	% OF APPRENTICESHIP HOURS	TOTAL HOURS FOR CLASSIFICATION YTD	TOTAL APPRENTICESHIP HOURS YTD	% OF APPRENTICESHIP HOURS YTD	IF NO APPRENTICESHIP HOURS RECORDED, EXPLAIN

ILLINOIS WORKS APPRENTICESHIP INITIATIVE
QUARTERLY PERIODIC REPORT

Loan Recipient Organization Certification and State Agency Acknowledgement

1. Loan Recipient Organization Certification

By signing this form, I certify to the best of my knowledge and belief that the form is true, complete and accurate and that any false, fictitious or fraudulent information or the omission of any material fact could result in the immediate termination of my loan(s).

Loan Recipient Organization Name

Printed Name (Executive Director or equivalent)

Title (Executive Director or equivalent)

Signature (Executive Director or equivalent)

Date/Time Field

2. State Agency Acknowledgement

State Agency

Printed Name

Title

Signature

Date/Time Field

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SECTION 02 41 00

DEMOLITION

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: All demolition, removal, and salvage work as shown on the drawings.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 SUBMITTALS

A. CONTRACTOR shall submit permits and notices, if required, authorizing building demolition.

1.03 QUALITY ASSURANCE

A. CONTRACTOR shall perform demolition, removal, and salvage in conformity with applicable federal, state, and local safety practices and code requirements.

B. Obtain and pay for all necessary permits, licenses and certificates required.

1.04 SEQUENCE

A. No demolition, removal, or salvage work shall commence until approval to proceed has been granted by OWNER. Such work shall be completed in accordance with the construction sequence included in Division 01 of these specifications and in accordance with the construction phases of this project and work to be done by other contractors.

PART 2–PRODUCTS

2.01 GENERAL

A. Compacted fill shall meet the requirements of Section 31 23 00–Excavation, Fill, Backfill, and Grading.

B. Pipe fittings and materials shall meet the requirements of Section 33 00 10–Buried Piping and Appurtenances and Section 40 05 00–Piping and Appurtenances.

PART 3–EXECUTION

3.01 BREAKING DOWN AND REMOVING STRUCTURES

A. General:
   1. All existing structures, with all attached parts and connections, shown on the drawings or specified to be removed or that interfere with the new construction, shall be entirely removed within the limits shown or specified, unless otherwise provided.

2. When a portion of any existing structure is to be retained, CONTRACTOR shall take care during demolition operations so as not to impair the value of the retained portion.
    a. Complete all operations necessary for the removal of any existing structure which might endanger the new construction prior to the construction of the new work.
    b. Do not use any equipment or devices which might damage structures, facilities, or property which are to be preserved and retained.
3. When existing reinforcing is exposed at the surface of removal areas, CONTRACTOR shall burn back the reinforcing bars 2 inches and patch with nonshrink grout, unless noted otherwise.

B. Pavement, Curb, Gutter, Sidewalk, Driveways, Crosswalk, and Similar Structures:
1. Where portions of the existing structure are to be left in the surface of the finished work, CONTRACTOR shall remove the structure to an existing joint, or saw and chip the structure to a true line.
2. Sufficient removal shall be made to provide for proper grades and connections in the new work.

C. Walls, Piers, Surface Drains, Foundations, and Similar Masonry Structures:
1. Remove entirely or break down to an elevation at least 2 feet below the earth subgrade within the areas of a road bed and elsewhere to 2 feet below the finished slopes or natural ground, as the case may be.
2. Remove existing construction as required to clear new construction.

3.02 ABANDONING AND REMOVING UTILITIES AND UNDERGROUND PROCESS PIPING

A. Except where otherwise specified that the City is completing bypass pumping, CONTRACTOR shall be responsible for diverting or bypassing all flow from sewer piping before starting the demolition work. Remove all piping that is shown or specified to be removed. Remove utility lines that are to be abandoned as needed to clear new construction.

B. The ends of utility lines and process piping shown or specified to be abandoned that are exposed by excavation shall be plugged with a mechanical wing plug with concrete cap to prevent soil infiltration into the pipes. Piping larger than 15 inches shall be filled with flowable fill.

3.03 SALVAGE

A. OWNER has first right of refusal to all material, piping, and equipment removed.

B. All equipment, material, and piping, except as specified hereinafter, within the limits of the demolition and additional items noted to be removed, will become the property of CONTRACTOR if OWNER does not claim under first right of refusal and shall be removed from the project site. Comply with State and local ordinances and regulations for disposing of materials.

C. If CONTRACTOR chooses to dispose of materials in a Clean Construction or Demolition Debris (CCDD) fill operation, CONTRACTOR shall provide all required testing, certifications and fees associated with using the CCDD fill operation.

D. CONTRACTOR shall deliver all existing manhole frames removed as a part of this project to 921 Washington Street, Joliet, IL, 60433.

3.04 BACKFILL

A. CONTRACTOR shall fill all abandoned structures and excavations resulting from removal of structures and utilities with compacted fill. See Section 31 23 00–Excavation, Fill, Backfill, and Grading for required degree of compaction.

B. Prior to filling, CONTRACTOR shall break one opening in the floor or wall near the base of each compartment to allow groundwater to freely migrate through the structure.

END OF SECTION

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SECTION 03 11 00

CONCRETE FORMWORK

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Forms for cast-in-place concrete.
   2. Form accessories.
   3. Openings for other work.
   4. Form stripping.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 REFERENCES

A. ACI 117–Tolerances for Concrete Construction.

B. ACI 301–Structural Concrete for Buildings.

C. ACI 318–Building Code Requirements for Reinforced Concrete.

D. ACI 347–Recommended Practice for Concrete Formwork.

E. PS1–Construction and Industrial Plywood.

1.03 DESIGN

A. All formwork shall comply with ACI 347 and ACI 301.

B. CONTRACTOR shall assume the responsibility for the complete design and construction of the formwork.

1.04 SUBMITTALS

A. Submit shop drawings in accordance with Section 01 33 00–Submittals for form ties, form coatings, form liners (if any), and any other form accessories.

B. Submit geometry of forms for circular structures.

PART 2–PRODUCTS

2.01 FORMS

A. Forms shall be of wood, plywood, steel, fiberboard lined, or other approved materials which will produce concrete which meets the specified requirements. The type, size, quality, and shape of all materials of which the forms are made are subject to the review of ENGINEER.

B. Caution shall be exercised in the use of wood or composition forms or form liner to be certain that no chemical reaction will take place which causes a damaging effect on the concrete surface.

2.02 FORM TIES–NONREMOVABLE

A. Internal wall ties shall contain positive stops at the required wall thickness. The exterior clamp portions of the tie shall be adjustable in length. Ties shall have cones on the water side of water-containing structures. Ties shall provide a positive disconnection on both ends 1 to 1 1/2 inches inside the finished face of the concrete.

B. All wall ties used in the placement of structures which have hydrophilic water-stopped construction joints shall contain integral waterstops. All such ties shall be crimped or deformed in such a manner that the bond between concrete and tie cannot be broken in removal of the outer units. This portion of the tie shall not be removed prior to 24 hours after completion of the concrete placement.

C. The use of wood spacers and wire ties will not be approved.

2.03 FORM TIES–REMOVABLE

A. Taper ties which are designed to be removed entirely from the wall may be used with forms designed for this tie type and spacing.

B. Tie holes shall be plugged with either a neoprene plug, Sure-Plug by Dayton Superior, Inc., or an EPDM rubber plug, X-Plug by Sika Greenstreak, or equal.

C. Cementitious waterproofing material for patching taper tie holes shall be Hey Di K-11, Xypex Patch-N-Plug, or equal. Taper tie holes above the normal operating water surface shall be patched with mortar mix as specified in Section 03 30 00–Cast-In-Place Concrete for patching tie holes.

2.04 FORM COATINGS

A. Provide commercial formulation form-coating compounds that will not bond with, stain, nor adversely affect concrete surfaces requiring bond or adhesion, nor impede the wetting of surfaces to be cured with water or curing compounds.

2.05 CHAMFER STRIPS

A. Provide 3/4-inch by 3/4-inch wood or plastic chamfer strips at all exposed corners, except as noted.

2.06 KEYWAYS

A. Keyways shall be formed with wood inserts.

PART 3–EXECUTION

3.01 CONSTRUCTION

A. Forms shall conform to the shape, line, grade, and dimensions as shown on the drawings. They shall be mortar-tight and sufficiently rigid to prevent displacement or sagging between supports and shall support the loads and pressures without deflection from the prescribed lines. They shall be properly braced or tied together so as to maintain position and shape. Spacing of ties shall be recommended by the tie manufacturer.

B. Formwork and finished concrete construction shall meet the tolerances specified in ACI 117.

C. All exposed curved surfaces shall be formed to the continuous surface of the radius specified. Where segmented forms are proposed, a form system which deviates more than 3/8 inch from a circle through pan edges will not be allowed.

D. When forms are placed for successive concrete placement, thoroughly clean concrete surfaces, remove fins and laitance, and tighten forms to close all joints. Align and secure joints to avoid offsets.

E. At the request of ENGINEER, temporary openings shall be provided at the base of column forms and wall forms and at other points where necessary to facilitate cleaning and observation immediately before depositing concrete.

F. Provide inserts and provide openings in concrete form work to accommodate work of other trades. Verify size and location of openings, recesses, and chases with the trade requiring such items. Securely support items to be built into forms.

G. Provide top forms for inclined surfaces where the slope is too steep to place and vibrate concrete.

H. Bevel wood inserts for forming keyways (except in expansion joints where inserts shall have square edges), reglets, recesses, and the like to allow for ease of removal. Inserts shall be securely held in place prior to concrete placement. Unless otherwise shown, chamfer strips shall be placed in the angles of the forms to provide 3/4-inch bevels at exterior edges and corners of all exposed concrete.

I. The forms shall be oiled with a field-applied commercial form oil or a factory-applied nonabsorptive liner. Oil shall not stain or impede the wetting of surfaces to be cured with water or curing compounds. The forms shall be coated prior to placing reinforcing steel. Oil on reinforcement will not be permitted.

J. All form surfaces shall be thoroughly cleaned, patched, and repaired before reusing and are subject to review of ENGINEER.

3.02 FORM REMOVAL

A. Supporting forms and shoring shall not be removed until the member has acquired sufficient strength to support its own weight and the construction live loads on it.

B. All form removal shall be accomplished in such a manner that will prevent injury to the concrete.

C. Forms shall not be removed before the expiration of the minimum times as stated below or until the concrete has attained its minimum 28-day design strength as confirmed by concrete cylinder tests, unless specifically authorized by ENGINEER.
   1. Wall and vertical faces: 24 hours.
   2. Columns: 24 hours.
   3. Beams and elevated slabs: 14 days.

END OF SECTION

SECTION 03 20 00

CONCRETE REINFORCEMENT

PART 1–GENERAL

1.01 SUMMARY

A. Work includes providing complete, in-place, all steel required for reinforcement of cast-in-place concrete as shown on the drawings.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 REFERENCES

A. Applicable standards listed in this section include, but are not necessarily limited to the following:
   1. ACI 315–Manual of Standard Practice for Detailing Reinforced Concrete Structures.
   2. ACI 318–Building Code Requirements for Reinforced Concrete.
   3. ASTM A615–Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
   4. ASTM A996–Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcing.
   5. CRSI–Manual of Standard Practice.

1.03 SUBMITTALS

A. Comply with pertinent provisions of Section 01 33 00–Submittals.

B. Provide complete shop drawings of all material to be furnished and installed under this section:
   1. Before fabrication of the reinforcement is begun, CONTRACTOR shall obtain the approval of ENGINEER on reinforcing bar lists and placing drawings.
   2. These drawings and lists shall show in detail the number, size, length, bending, and arrangement of the reinforcing. Reinforcing supports shall also be located on the shop drawings.
   3. Shop drawings shall be in accordance with ACI 315.

1.04 PRODUCT HANDLING

A. Delivery:
   1. Deliver reinforcement to the job site bundled, tagged, and marked.
   2. Use metal tags indicating bar size, lengths, and other information corresponding to markings shown on placement diagrams.

B. Storage: Store reinforcement at the job site on blocks and in a manner to prevent damage and accumulation of dirt and excessive rust.

PART 2–PRODUCTS

2.01 MATERIALS

A. Reinforcing bars shall comply with ASTM A615 or A996 Type R, Grade 60. Reinforcing bars required to be welded shall be ASTM A706 low alloy.

B. Reinforcement supports including bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcement in place shall be:
   1. Wire bar-type supports complying with CRSI recommendations, unless otherwise indicated.
   2. For slabs on grade, supports with sand plates, or horizontal runners where base material will not support chair legs.
   3. For exposed-to-view concrete surfaces or where the concrete surface will be exposed to weather or moisture, where legs of supports are in contact with forms, supports with either hot-dipped galvanized or plastic protected legs.
   4. When supports bear directly on the ground and it is not practical to use steel bar supports, precast concrete blocks may be used to support only the bottom lift of reinforcement. The precast blocks must be solid, be of an equal or higher strength than the concrete being placed, must provide adequate support to the reinforcement, and be of proper height to provide specified reinforcing cover. The use of face bricks, hollow concrete blocks, rocks, wood blocks, or other unapproved objects will not be permitted.

C. Mechanical Splices and Threaded Couplers:
   1. Mechanical splices shall be Zap Screwlok by Bar Splice Products, Inc., or equal.
   2. Threaded couplers and dowel bar replacements shall be Dowel Bar Splicer System by Dayton/Richmond, or equal.
   3. Mechanical splices and couplers shall be capable of developing at least 125% of the yield strength of the reinforcing bar.

2.02 FABRICATION

A. General:
   1. Fabricate reinforcing bars to conform to required shapes and dimensions with fabrication tolerances which comply with CRSI Manual.
   2. In case of fabricating errors, do not rebend or straighten reinforcement in a manner that will injure or weaken the material.
   3. Unless otherwise shown on the drawings, all end hook dimensions shall conform with “ACI Standard Hooks.”

B. Reinforcement with any of the following defects shall be deemed unacceptable and will not be permitted in the work:
   1. Bar lengths, depths, and bends exceeding specified fabrication tolerances.
   2. Bend or kinks not indicated on drawings or final shop drawings.
   3. Bar with reduced cross section because of excessive rusting or other cause.

PART 3–EXECUTION

3.01 INSPECTION

A. Examine the substrate, formwork, and the conditions under which concrete reinforcement is to be placed.

B. Correct conditions detrimental to the proper and timely completion of the work.

C. Do not proceed until unsatisfactory conditions have been corrected.

3.02 INSTALLATION

A. General:
   1. Comply with the specified standards for details and methods of placing reinforcement and supports.
   2. Clean reinforcement to remove loose rust, mill scale, earth, and other materials which reduce or destroy bond with concrete.

B. Placing Reinforcement:
   1. All reinforcing shall be placed in accordance with Contract drawings and with shop drawings stamped and approved by ENGINEER.
   2. Position, support, and secure reinforcing against displacement by formwork, construction, or concrete placement operations.
   3. Support reinforcing by metal chairs, runners, bolsters, spacers, and hangers as needed.
   4. Unless otherwise shown on the drawings, the reinforcement is to be so detailed and placed as to allow the following concrete protection:
      a. Three inches of cover where the concrete is placed directly against ground.
      b. Two inches of cover where the concrete is placed in forms but is to be exposed to weather, liquid, or the ground.
      c. One-inch cover in slabs and walls not exposed to weather, liquid, or the ground.
      d. One and one-half-inch cover in beams, girders, and columns not exposed to weather, liquid, or the ground. This cover applies to beam stirrups and column ties where applicable.
   5. Reinforcement shall be positioned within ±3/8 inch for members with depth to tension reinforcing from compression face less than or equal to 8 inches. Tolerance shall be ±1/2 inch for members with depth to tension reinforcing from compression face greater than 8 inches. Tolerance on dimension between adjacent bars in slab and wall reinforcing mats shall be 1 inch. Secure against displacement by anchoring at the supports and bar intersections with wire or clips.
   6. Bars shall be securely tied at all intersections except where spacing is less than 1 foot in each direction when alternate intersections shall be tied. To avoid interference with embedded items, bar spacing may be varied slightly if acceptable to ENGINEER. Tack welding of reinforcing will not be permitted.
   7. Set wire ties so that twisted ends are directed away from exposed concrete surfaces.
   8. If reinforcing must be cut because of openings or embedded items in the concrete, additional reinforcing must be provided adjacent to the opening at least equal in cross sectional area to that reinforcing which was cut, and it shall extend a minimum of 36 bars diameters beyond the opening on each side or as shown on the drawings. At sumps or depressions in slabs, bars shall be bent and/or extended under sumps or depressions.
   9. Wall reinforcing mats shall be secured in a vertical plane by providing clearance from forms with bar supports and by using Z-shaped bars at ±4 feet on center wired between

two mats of steel, spacing and staying both of them. Nails shall not be driven into the forms to support reinforcement and neither shall wire for this purpose come in contact with the forms. Alternate top transverse bars in slab shall be supported by individual bar chairs at approximately 3-foot 0-inch centers. Bottom longitudinal bars shall be supported by continuous bar chairs at approximately 4-foot 0-inch centers.

10. If carrier bars are to be used, CONTRACTOR shall provide reinforcing bars for this purpose in addition to the reinforcing called for by the drawings and specifications.

C. Reinforcement Supports:
   1. Strength and number of supports shall be sufficient to carry reinforcement.
   2. Do not place reinforcing bars more than 2 inches beyond the last leg of any continuous bar support.
   3. Do not use supports as bases for runways for concrete-conveying equipment and similar construction loads.

D. Splices:
   1. Provide standard reinforcement splices by lapping ends, placing bars in contact, and tightly wire tying.
   2. Lap splices in reinforcing shall be provided as shown on the drawings. Where lap splice lengths are not shown on the drawings, provide Class B, Category 1 lap splices in accordance with ACI 318.
   3. Adjacent splices of tangential bars in circular slabs and horizontal bars in circular walls shall be staggered a minimum of one full lap splice length or 3 feet, whichever is greater, unless otherwise shown. Stagger dimension shall be measured from center to center of lap splices.
   4. For circular walls, horizontal bar lap splices shall not coincide in vertical arrays more frequently than every third bar.
   5. Mechanical splices and threaded dowel bar inserts may be used where approved by ENGINEER.

E. Embedded Items:
   1. Allow other trades to install embedded items as necessary.
   2. Particularly after bottom layer of reinforcing is placed in slabs, allow electrical contractors to install conduit scheduled for encasement in slabs prior to placing upper layer of reinforcing.

F. Minimum Reinforcing: Where reinforcing is not shown, provide a minimum of No. 4 at 8-inch centers each way in members 10 inches or less in thickness and No. 5 at 12-inch centers each way in each face in members greater than 10 inches thick.

END OF SECTION

SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. All cast-in-place concrete as shown except as noted otherwise.
   2. Hydrophilic waterstops, expansion joint fillers, bonding agents, patching mortars, curing compounds, nonshrink grout, grout topping, floor sealer, and other related items and accessories.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 REFERENCES

A. ACI 211.1–Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete.

B. ACI 301–Specifications for Structural Concrete.

C. ACI 304R–Guide for Measuring, Mixing, Transporting, and Placing Concrete.

D. ACI 305R–Guide to Hot Weather Concreting.

E. ACI 306R–Guide to Cold Weather Concreting.

F. ACI 308–Specification for Curing Concrete.

G. ACI 309–Guide for Consolidation of Concrete.

H. ACI 318–Building Code Requirements for Structural Concrete and Commentary.

I. ASTM C31–Standard Practice for Making and Curing Concrete Test Specimens in the Field.

J. ASTM C33–Standard Specification for Concrete Aggregates.

K. ASTM C39–Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.

L. ASTM C40–Standard Test Method for Organic Impurities in Fine Aggregates for Concrete.

M. ASTM C88-Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.

N. ASTM C94–Standard Specification for Ready-Mixed Concrete.

O. ASTM C143–Standard Test Method for Slump of Hydraulic-Cement Concrete.

P. ASTM C150–Standard Specification for Portland Cement.

Q. ASTM C156–Standard Test Method for Water Loss (from a Mortar Specimen) Through Liquid Membrane-Forming Curing Compounds for Concrete.

R. ASTM C172–Standard Practice for Sampling Freshly Mixed Concrete.

S. ASTM C231–Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.

T. ASTM C260–Standard Specification for Air-Entraining Admixtures for Concrete.

U. ASTM C309–Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete.

V. ASTM C494–Standard Specification for Chemical Admixtures for Concrete.

W. ASTM C595–Standard Specification for Blended Hydraulic Cements.

X. ASTM C618–Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.

Y. ASTM C652–Standard Specification for Hollow Brick (Hollow Masonry Units Made From Clay or Shale).

Z. ASTM D994–Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type).

AA. ASTM D1752–Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction.

1.03 SUBMITTALS

A. Submit shop drawings in accordance with Section 01 33 00–Submittals.

B. Submit the following information:
1. Gradation of fine and coarse aggregate–ASTM C33.
2. Specific gravity and dry rodded density of each aggregate.
3. Test of deleterious substances in fine and coarse aggregate–ASTM C33.
4. Design mix of each individual concrete mix to be used.
5. Previous test results or trial batch results with 7- and 28-day compressive strengths for each concrete mix proposed.
6. Certified mill test results for cement identifying brand, type, and chemistry of cement to be used.
7. Brand, type, principal ingredient, and amount of each admixture to be used.

C. It is important that the above data be submitted to ENGINEER well in advance of anticipated concreting operations to avoid any delay in construction.

PART 2–PRODUCTS

2.01 CEMENT

A. Cement shall be Portland cement Type I/II conforming to ASTM C150, or Portland-limestone cement Type 1L conforming to ASTM C595. Cement used for structures exposed to

wastewater, sludge, combined sewage, or sanitary sewage shall be Type II or Type I/II. All other cement shall be Type I or Type I/II. All cement shall be the product of one reputable manufacturer and mill.

B. Cement shall be stored in a dry, weathertight, properly ventilated structure with the floor raised not less than 1 foot above the ground.

2.02 FLY ASH

A. All fly ash used as an admixture in Portland cement concrete shall be Class C or F conforming to the requirements of ASTM C618.

2.03 AGGREGATE

A. All aggregates shall be washed and shall consist of natural sand, gravel, or crushed rock and shall have clean, hard, durable, uncoated grains of strong minerals. The amounts of deleterious substances present in the fine and coarse aggregate expressed in percentages by weight shall not exceed the following:

	Aggregate	
Deleterious Substance	Fine	Coarse
Clay Lumps and Friable Particles	3.0	3.0
Coal and Lignite	0.5	0.5
Mineral finer than No. 200 sieve	3.0	
Soft Fragments	3.0	3.0
Chert*	---	5.0
Sum of Chert and Clay Lumps		5.0

* Material classified as chert and having a bulk specific gravity of less than 2.45. The percentage of chert shall be determined on the basis of the weight of chert in the sample retained on a 3/8-inch sieve divided by the weight of the total sample.

B. The combined amount of all deleterious substances in an aggregate shall not exceed 5% of the weight of the aggregate.

C. If requested by ENGINEER, sodium sulfate soundness tests (ASTM C88) shall be performed on the aggregate. When the aggregate is subjected to 5 cycles, the weight loss shall not exceed 12%. Samples of proposed aggregates shall be submitted to an independent laboratory for testing in advance of concrete work. All testing shall be performed in accordance with ASTM C33. Certified test results shall be submitted to ENGINEER confirming that aggregate complies with all stated specifications. Report shall identify source of aggregate and absorbed water.

D. Fine aggregate shall be well-graded from coarse to fine and shall conform to the following requirements:

Percentage by Weight	
Passing 3/8-inch sieve	100
Passing No. 4 sieve	95-100
Passing No. 8 sieve	80-100
Passing No. 16 sieve	50-85

Percentage by Weight	
Passing No. 30 sieve	25-60
Passing No. 50 sieve	5-30
Passing No. 100 sieve	0-10

E. Gradation of fine aggregate shall be reasonably uniform and not subject to the extreme percentages of gradation specified above. The fineness modulus shall be not less than 2.3 or more than 3.1, nor shall the fineness modulus of any sample vary by more than +0.20 from the fineness modulus of the representative sample used in proportioning the concrete.

F. If requested by ENGINEER, fine aggregate shall be subjected to the color-metric test for organic impurities (ASTM C40) and shall not produce a color darker than Figure 1, unless they pass the mortar strength test. Aggregate producing color darker than Figure 2 shall not be used in any event.

G. Coarse aggregate shall be well-graded from coarse to fine, and when tested by laboratory sieves having square openings, shall conform to the following requirements:

	Percentage by Weight Aggregate	
	3/4-Inch Stone	1 1/2-Inch Stone
Passing 2-inch sieve	---	100
Passing 1 1/2-inch sieve	---	90-100
Passing 1-inch sieve	100	20-55
Passing 3/4-inch sieve	90-100	0-15
Passing 3/8-inch sieve	20-55	0-5
Passing No. 4 sieve	0-10	---
Passing No. 8 sieve	0-5	---

H. The 3/4-inch aggregate shall be used in concrete members no thinner than 4 inches and less than 10 inches thick. A blend of 3/4-inch and 1 1/2-inch aggregate shall be used in members 10 inches thick and thicker with the 3/4-inch aggregate comprising between 35% and 65% of the total course aggregate. When members thinner than 10 inches are placed monolithically with members thicker than 10 inches, the aggregate requirements for the thinner member shall apply.

I. Aggregates must be allowed to drain for at least 12 hours before being used. The ground upon which aggregates are stored must be hard, firm, well-drained, and free from all vegetable matter. Various sizes of aggregates must be stored separately, and if they have become contaminated or merged with each other, they shall not be used.

2.04 WATER

A. Water used in mixing concrete shall be clean and free from injurious amounts of oil, alkali, organic matter, or other deleterious substances.

2.05 ADMIXTURES

A. Water Reducing Admixture shall be Master Pozzolith® 200 by Master Builders Solutions, Daracem 19 by Grace, or equal. Water reducing admixture shall conform to ASTM C494, Type A and Type F. Water reducing admixture shall not reduce durability, shall increase strength 10%, and shall not affect bleeding characteristics over reference mix.

B. Air-Entraining Admixture shall be equal to MasterAir® AE 90 by Master Builders Solutions, Darex by Grace Construction Products, or equal. Air-entraining admixture shall conform to ASTM C260.

C. No other admixture will be allowed without written approval of ENGINEER. All admixture shall be compatible with cement, aggregate, and water used.

2.06 PROPORTIONING

A. The proportions of aggregate to cement shall be such as to produce a workable mixture that can be thoroughly compacted and that will work readily in the forms and around reinforcement without permitting materials to segregate or excess water to collect on the surfaces. The combined aggregates shall be such that when separated on the No. 4 sieve, the weight passing the sieve shall not be less than 30% nor greater than 50%.

B. Concrete of various classes shall have the following maximum water/cement or water/(cement + fly ash) ratio minimum compressive strengths at 28 days and minimum cement and fly ash contents:

Class	Maximum Water/ Cement or Water/ (Cement+Fly Ash)	Minimum 28 Day Strength-Pounds per Square Inch	Cement Content-Pounds per Cubic Yard	Fly Ash-Pounds per Cubic Yard	
				Type C	Type F
A	0.45	4,000	564	---	---
A-FA	0.45	4,000	480	110	125
X	---	2,000	376	---	---

C. Except as otherwise indicated on the drawings or specified, all concrete shall be Class A or Class A-FA concrete.

D. All concrete mixes shall be designed for a strength of 15% above that specified to allow for job variations. All mixes shall be designed in accordance with ACI 211.1 by a competent concrete engineer or competent laboratory technician. Required materials test data shall be submitted with design mixes for review and approval by ENGINEER. Mix computations shall be submitted if requested by ENGINEER.

E. The slump for all concrete shall be 3 inches and concrete with a slump within the range of 2 to 3 1/2 inches will be acceptable unless otherwise stated.

F. A water-reducing admixture shall be used in all concrete. A qualified representative of the manufacturer shall be available to assist in proportioning the concrete, advise on the proper addition of the admixture to the concrete, and advise on adjustments of concrete proportions to suit job conditions.

G. An air-entraining admixture shall be used in all concrete except as noted. Air content shall be tested by the pressure method as outlined in ASTM C231 and shall be between 4% to 7% by volume. An air-entraining admixture is not required for concrete patching and for concrete floors, equipment pads, and supports in interior heated buildings where the concrete will be protected from freezing during and after construction.

H. CONTRACTOR shall submit to ENGINEER concrete cylinder compressive strength results from previous projects for the same concrete mixes proposed on the current project. If this

information is not available, one cubic yard trial batches of each individual mix proposed for use shall be made prior to use in the work. Four test cylinders shall be made for each trial batch, two to be tested at 7 days and two at 28 days. The trial batches shall be made preceding actual placement operations so that the results of the 7-day tests can be obtained. All costs for material, equipment, and labor incurred during design of concrete mixes shall be borne by CONTRACTOR.

I. All aggregates shall be measured by weight. The concrete mixer is to be equipped with an automatic water-measuring device that can be adjusted to deliver the desired amount of water.

2.07 WATERSTOPS

A. Hydrophilic waterstop shall be a flexible hydrophilic natural rubber strip composed of nonvulcanized rubber and urethane polymer hydrophilic agent creating a moisture-activated, self-healing waterproofing compound.

B. Hydrophilic waterstop shall be Adeka Ultraseal, or equal, products as follows:
   1. Construction Joints:
      a. Wall/slab thickness greater than 9 inches with double mat of reinforcing: MC-2010MN (3/4 inch by 3/8 inch) with embedded stainless steel wire mesh for expansion control. The waterstop shall develop a minimum of 400 psi expansion pressure and withstand a minimum 150-foot hydrostatic head. Expansion amount shall not exceed 120%.
      b. Wall/slab thickness between 4 inches and 9 inches with 1-inch minimum cover and single or double mat of reinforcing: KBA-1510FP (9/16 inch by 3/8 inch). Expansion amount shall not exceed 30%.
   2. Pipe Penetrations:
      a. Wall/slab thickness between 4 inches and 9 inches and pipe diameter greater than 4 inches and less than or equal to 24 inches: KBA-1510FP (9/16 inch by 3/8 inch).
      b. Wall/slab thickness greater than 9 inches and pipe diameter greater than 4 inches and less than or equal to 24 inches: MC-2005T (3/4 inches by 3/16 inches).
      c. Wall/slab thickness greater than 9 inches and pipe diameter greater than 24 inches: MC-2010MN (3/4 inch by 3/8 inch) with embedded stainless steel wire mesh for expansion control.

2.08 JOINT FILLER

A. Expansion joints shall have standard 1/2-inch-thick cork expansion joint filler, W. R. Meadows, or equal, meeting ASTM D1752–Type II. Exceptions to this are expansion joints in exterior concrete walks and between concrete walks and other structures which shall be asphalt expansion joint filler, 1/2-inch-thick, Grace, W.R. Meadows, or equal, meeting ASTM D994.

2.09 BONDING AGENT

A. Acceptable manufacturers include MasterEmaco® P 124 by Master Builders Solutions, or equal.

2.10 PATCHING ADDITIVE

A. Acceptable manufacturers include MasterEmaco® A 660 by Master Builders Solutions, Sonocrete by Sonneborn Contech Co., or equal.

2.11 NONSHRINK GROUT

A. Acceptable manufacturers include Dayton Superior, Master Builders Solutions, or equal. Grout shall be nonshrink, nonmetallic and shall achieve a strength of 7,500 psi in 28 days.

2.12 CURE–SEAL HARDENER

A. Penetrating sealer for interior building floors shall be Ashford Formula by Curecrete Chemical Company, Inc., or equal. See finish schedule for locations to be used.

PART 3–EXECUTION

3.01 MIXING

A. Ready-mixed concrete shall be batched, mixed, and delivered in accordance with ASTM C94 and ACI 304R. In general, concrete shall be mixed 50 revolutions at plant, 20 upon arrival at site, and 20 each time water is added; maximum of 110 revolutions at mixing speed. Concrete shall be delivered and discharged within 1 1/2 hours or before the drum has revolved 300 times after introduction of water to the cement and aggregates or the cement to the aggregates. Truck mixers shall be equipped with drum revolution counters. In no event shall concrete which has taken its initial set be allowed to be used. Retempering of concrete is not permitted.

B. A representative of ENGINEER may be at the batching plant periodically to observe the batching and mixing.

C. No water shall be added on the job unless required by CONTRACTOR and with the knowledge of ENGINEER; the amount of water, if added, shall be recorded on all copies of the delivery tickets. If water is added, CONTRACTOR shall verify that the required water-cement ratio is not exceeded.

D. Concrete shall have a temperature not less than 60°F nor more than 80°F as delivered to the jobsite.

E. With each load of concrete, CONTRACTOR shall obtain delivery tickets and shall make these tickets available for review by ENGINEER. Delivery tickets shall provide the following information:
   1. Date.
   2. Name of ready-mix concrete plant, job location, and CONTRACTOR.
   3. Type of cement and admixtures, if any.
   4. Specified cement content in sacks per cubic yard of concrete and approved concrete mix number or designation.
   5. Amount of concrete in load, in cubic yards.
   6. Water-cement ratio.
   7. Water added at job, if any.
   8. Truck number and time dispatched.
   9. Number of mixing drum revolutions.

F. For job-mixed concrete, all concrete materials shall be mixed in a machine batch mixer for at least 1 1/2 minutes after all ingredients are in the mixer and shall continue until there is a uniform distribution of the materials and the mass is uniform in color and homogeneous. The mixer shall not be loaded beyond the capacity given by the manufacturer and shall be rotated

at the speed recommended by the manufacturer. The mixer is to be provided with positive timing device that will positively prevent discharging the mixture until the specified mixing time has elapsed.

3.02 JOINTS

A. CONTRACTOR shall place all joints as shown on the drawings or specified herein. If acceptable to ENGINEER, CONTRACTOR may, at its own expense, place construction joints in addition to and at places other than those shown on the drawings. Unless otherwise shown, all joints shall be straight, truly vertical or horizontal, and proper methods shall be employed to obtain this result.

B. Where construction joints are not shown on the drawings or specified elsewhere, CONTRACTOR shall provide construction joints in walls as follows:
   1. Vertical construction joints at 60 feet on center maximum but not more than 15 feet from corners or intersections.
   2. Horizontal construction joints at 18 feet on center maximum for walls 12 inches or more in thickness.
   3. Horizontal construction joints of 8 feet on center maximum for walls 10 inches or less in thickness.

C. Immediately after completion of the first pour at a joint, the concrete surface, reinforcement, and waterstop projecting beyond the joint shall be thoroughly cleaned and laitance removed. The waterstops shall not be disturbed after the concrete in the first pour at a joint has set. Concrete around waterstops shall be thoroughly compacted by hand spading and vibrating. Immediately before the second pour, all extraneous matter shall be removed from the joint, the waterstop and steel cleaned, and the surface thoroughly wetted.

D. Concrete at all joints shall have been in place at least 48 hours before abutting concrete is placed. At least two hours must elapse after depositing concrete in columns or walls before depositing in beams, girders, or slab supported thereon. Beams, girders, brackets, column capital, and haunches shall be considered as part of the floor system and shall be placed integrally therewith.

3.03 WATERSTOPS

A. Unless noted otherwise, hydrophilic waterstops shall be provided at all expansion joints and at construction joints in floors and walls of structures exposed to ground or liquid on one side and occupied by personnel or nonsubmerged equipment on the other side.

B. Hydrophilic waterstops shall be provided at all construction joints in liquid holding tanks and channels that are not adjacent to areas occupied by personnel and at joints between new and existing concrete. Waterstop shall be placed as shown on drawing details, if any, and in accordance with the manufacturer’s recommendations.

3.04 BONDING TO EXISTING CONCRETE

A. When placing new concrete adjacent to existing concrete, the existing concrete shall be thoroughly roughened, cleaned, and saturated with water 24 hours before pouring new concrete. Existing concrete is defined as concrete more than six months old. At time of new pour, remove any standing water and apply bonding agent. Bonding agent shall be applied in accordance with manufacturer’s recommendations.

3.05 PATCHING EXISTING CONCRETE

A. When patching existing concrete, remove poor concrete until firm hard concrete is exposed; roughen and clean surface of the existing concrete, clean any exposed reinforcing bars, and pour new concrete. Concrete finish shall match existing concrete. New concrete shall be 4,000 psi 28-day strength mixed with patching additive, mixed according to manufacturer's instructions. Concrete shall not be air-entrained.

3.06 EMBEDDED ITEMS IN CONCRETE

A. All sleeves, inserts, anchors, and embedded items required for adjoining work or for its support shall be placed prior to concreting.

B. All contractors whose work is related to the concrete or must be supported by it shall be given ample notice and opportunity to introduce and/or furnish embedded items before the concrete is placed.

C. Embedded items shall be positioned accurately and supported against displacement. Reinforcing bars shall clear embedded items a minimum of 2 inches.

3.07 PLACING CONCRETE

A. Before placing concrete, all equipment, forms, ground, reinforcements, and other surfaces with which the concrete will come in contact are to be thoroughly cleaned of all debris, ice, and water. Ground shall be wetted prior to placement of concrete on it.

B. After reinforcement is placed and before concrete is placed over it, ENGINEER shall be allowed sufficient time to observe the reinforcing.

C. Unless otherwise authorized by ENGINEER, all concrete shall be placed in the presence of ENGINEER.

D. Concrete shall be conveyed from the mixer to the place of final deposit as rapidly as practicable by methods that will prevent the segregation or loss of materials. Chuting for conveying purposes must be accomplished in such a manner as to prevent segregation or loss of materials. Receiving hoppers shall be installed at the chute discharge and at no point in its travel from the mixer to place of final deposit shall the concrete pass through a free vertical drop of more than 3 feet. Elephant trunks or tremies shall be used in all wall pours to prevent coating of forms and reinforcing bars.

E. Care shall be taken to avoid an excess of water on the concrete surface. Excess water shall be drained or otherwise removed from the surface. Dry cement or a mixture of cement and sand shall not be sprinkled directly on the surface to absorb water.

F. Concrete in wall and beam pours shall be deposited in approximately horizontal layers not to exceed 18 inches in thickness. Each layer shall be well worked into the preceding layer while both layers are still soft.

G. Concrete shall be deposited as nearly as practicable in its final position to avoid segregation from rehandling or flowing. The maximum allowable lateral movement of the concrete after being deposited is 3 feet. Once concreting is started, it shall be carried on as a continuous operation until the placing of the section or panel is completed.

H. All concrete shall be placed with the aid of mechanical vibrating equipment in accordance with ACI 309. In congested areas, vibration shall be supplemented by hand spading adjacent

to the forms. Vibration should secure the desired results within 5 to 15 seconds at intervals of 18 inches apart maximum. The vibrator shall penetrate the preceding layer of concrete. Vibrators shall have a frequency of not less than 10,000 impulses per minute when in operation submerged in concrete.

I. A sufficient number of spare vibrators shall be kept in ready reserve to provide adequate vibration in case of breakdown of those in use.

J. In placing concrete in beams where it is intended to be continuous and monolithic with the slab above, a delay to provide for settlement of the deep concrete shall be scheduled before placing the upper concrete in the slab. The length of delay shall be as long as possible and still permit the revibration of the deep concrete.

K. Concrete is not to be placed under water. A suitable means shall be provided for lowering the water level below surfaces upon which concrete is to be placed. This may require excavating approximately 12 inches below the bottom of the concrete surface and refilling with gravel and compacting. The groundwater shall not be allowed to rise to the bottom of the concrete until 24 hours after the concrete pour has been completed. Water shall not be allowed to fall upon or run across the concrete during this period.

L. No extra payment will be allowed for dewatering, undercutting, and gravel fill.

3.08 MOIST CURING

A. All concrete shall be maintained in a moist condition for at least 7 days after being deposited except that for high-early strength concrete, a 3-day period will be sufficient. Moist curing shall be accomplished by one of the following methods:
   1. Wood forms left in place and kept wet at all times. If wood forms are not going to be kept wet or if metal forms are used, they shall be removed as soon as practicable and other methods of moist curing shall be started without delay.
   2. Use of a curing compound conforming to ASTM C309, Type I as approved by ENGINEER. Curing compound shall be applied at a uniform rate as indicated by the manufacturer sufficient to comply with the requirements of the test water retention of ASTM C156. Curing compound applied to vertical concrete surfaces after forms are removed shall be specially adapted to provide required coverage on the vertical surface. On nonformed surfaces, the curing compound shall be applied immediately after the disappearance of the water sheen after finishing of the concrete. Curing compound shall not be used on concrete surfaces that are to be painted, receive ceramic tile or resilient flooring, or be waterproofed. Care shall be taken not to get curing compound on construction joints, reinforcing steel, and other surfaces against which new concrete will be poured.
   3. Use of plastic film. Plastic film shall have a minimum thickness of 4 mils. It shall be placed over the wet surface of the fresh concrete as soon as possible without marring the surface and shall be weighted so that it remains in contact with all exposed surfaces of the concrete. All joints and edges shall be lapped and weighted. Any tears in the film shall be immediately repaired.
   4. Application of wet coverings weighing 9 ounces per square yard such as burlap, cotton mats, or other moisture-retaining fabrics. The covering system shall include two layers and shall be kept continuously moist so that a film of water remains on the concrete surface throughout the curing period.
   5. Use of an approved waterproof curing paper. Edges of adjacent sheets shall be overlapped several inches and tightly sealed.
   6. Ponding of water or continuous sprinkling of water is permitted. Sprinkling at intervals will not be permitted.

7. Construction joints shall be moist cured by one of the methods listed above except by Method “2.”

B. The use of moist earth, sand, hay, or another method that may discolor hardened concrete will not be permitted.

3.09 HOT WEATHER CONCRETING

A. When the atmospheric temperature exceeds 80°F during concrete placement, this section and ACI 305 shall apply in addition to all other sections of the specifications.

B. The temperature of the delivered concrete shall not exceed 85°F.

C. Care shall be exercised to keep mixing time and elapsed time between mixing and placement at a minimum. Ready-mix trucks shall be dispatched so as to avoid delay in concrete placement, and the work shall be organized to use the concrete promptly after arrival at the jobsite.

D. The subgrade, forms, and reinforcing shall be sprinkled with cool water just prior to placement of concrete. Prior to placing concrete, there shall be no standing water or puddles on the subgrade.

E. If approved by ENGINEER, an admixture for retarding the setting of the concrete may be used.

F. Exposed concrete surfaces shall be carefully protected from drying. Continuous water curing is preferred. Curing compounds shall be white pigmented.

3.10 COLD WEATHER CONCRETING

A. Conditions of this section shall apply, in addition to all other sections of the specifications, when placing concrete in cold weather. Cold weather is defined as a period when, for more than three successive days, the average daily temperature drops below 40°F. When temperatures above 50°F occur during more than half of any 24-hour period, the period will no longer be regarded as cold weather. The average daily temperature is the average of the highest and lowest temperature during the period from midnight to midnight. Cold weather concreting shall conform to all requirements of ACI 306.1, except as modified by the requirements of these specifications.

B. Detailed procedures for the production, placement, protection, curing, and temperature monitoring of concrete during cold weather shall be submitted to ENGINEER. Cold weather concreting shall not begin until these procedures have been reviewed for conformance with ACI 306.1.

C. All concrete materials, forms, ground, mixing equipment, and other surfaces with which the concrete is to come in contact shall be free from frost, and the temperature of contact surfaces shall be 35°F or above. Ground upon which concrete is to be placed shall not be frozen at any depth.

D. The mixing water and aggregates shall be heated and when entering the mixer shall have temperatures not exceeding 175°F and 80°F, respectively. Concrete temperature as mixed shall not exceed 80°F and shall typically be between 55°F and 70°F. Concrete, when placed in the forms, shall have a temperature of not less than 50°F.

E. Freshly placed concrete shall be protected by adequate covering, insulating, or housing and heating. If heating is used, ambient temperature inside the housing shall be maintained at a minimum of 70°F for 3 days or 50°F for 5 days. The maximum ambient temperature during curing shall not exceed 80°F. If insulating methods are used, recommendations contained in ACI 306R shall be followed. Surface temperature shall be maintained at 50°F for 7 days. After the curing period, the temperature of the concrete shall be reduced uniformly at a rate not to exceed 40°F per 24 hours until outside air temperature is reached. Heating of enclosure shall continue if it is anticipated that the outside air temperature will drop more than 20°F in the next 24 hours. The concrete temperature shall be obtained by attaching a thermometer provided by CONTRACTOR to the concrete surface. Concrete shall be kept moist.

F. If heating is used, the housing shall be constructed weathertight and shall be constructed in a manner that will provide uniform air circulation and air temperatures over the complete concrete area that is being cured. Special attention shall be given to the edges and ends of a concrete pour with the housing extending at least 5 feet beyond any concrete surface being protected. The housing shall be in place and heat applied within 2 hours after concrete placement.

G. Heating may be by steam or hot air. Heaters shall be vented to outside of the housing. Open burning salamanders will not be permitted. Heating devices shall not be placed so close to the concrete as to cause rapid drying or discoloration from smoke.

H. If heating is used, CONTRACTOR shall provide sufficient 24-hour inspection of the heaters to provide compliance with the above-specified temperature requirements during the curing period. CONTRACTOR shall provide maximum-minimum thermometers for ENGINEER's use.

I. The use of calcium chloride, salts, or other chemical admixtures for the prevention of freezing is prohibited.

J. Salts or other deleterious materials shall not be used on temporary or permanent structures above concrete surfaces that are being placed, finished, or cured.

3.11 FINISHING

A. Flat Work:
   1. Floated Finish: Place, consolidate, strike off, and level concrete eliminating high spots and low spots. Do not work concrete further until it is ready for floating. Begin floating with a hand float, a bladed power float equipped with float shoes, or a powered disk float when the bleed water sheen has disappeared and the surface has stiffened sufficiently to permit the operation. Immediately refloat the slab to a uniform texture.
   2. Light Troweled Finish: Float concrete surface, then power trowel the surface. Hand trowel the surface smooth and free of trowel marks.
   3. Hard Troweled Finish: Float concrete surface, then power trowel the surface. Hand trowel the surface smooth and free of trowel marks. Continue hand troweling until a ringing sound is produced as the floor is troweled.
   4. Tolerance for concrete floors shall be 1/4 inch within 10 feet in any direction. Straight edge shall be furnished by CONTRACTOR.
   5. Broom or Belt Finish: Immediately after concrete has received a floated finish, give the concrete surface a coarse transverse scored texture by drawing a broom or burlap belt across the surface.
   6. The above finishes shall be used in the following locations:
      a. Float Finish: Surface to receive roofing, waterproofing, or sand bed terrazzo.
      b. Light Troweled Finish: Submerged tank slabs.

c. Hard Troweled Finish: Building floors.
d. Broom or Belt Finish: Exterior slabs, sidewalks, tops of walls, and tank slabs to receive grout topping.

B. Formed Surfaces:
1. Within 2 days after removing forms and prior to application of a curing compound, all concrete surfaces shall be observed and any poor joints, voids, stone pockets, or other defective areas shall be patched at once before the concrete is thoroughly dry. Defective areas shall be chipped away to remove all loose and partially bonded aggregate. The area shall be thoroughly wetted and filled with as dry as practical mortar mix placed to slightly overfill the recess. Mortar shall include a bonding agent. After partial set has taken place, the excess mortar shall be removed flush with the surface on the concrete using a wood float. All patching shall be cured, protected, and covered as specified for concrete. All cracks, leaks, or moist spots that appear shall be repaired. No extra compensation will be allowed CONTRACTOR for such work.
2. The exterior or removal portion of nonremovable ties shall be removed with the use of a special tool designed for this purpose. Cutting or chipping of concrete to permit removal of exterior portion will not be permitted.
3. For nonremovable ties, tie rod holes left by the removal of the exterior portion of the tie and cone shall be thoroughly wetted and filled by ramming with as dry as practical mortar mix in such a manner such that it completely fills the hole. Mortar shall include a bonding agent. All patching shall be cured, protected, and covered as specified for concrete. The holes are to be filled immediately after removal of the exterior portion of the tie.
4. Holes left by removable ties shall be filled by installing a neoprene plug near the center of the wall. The balance of the hole shall be filled with mortar as specified above to within 1 inch of the face of the wall. The remainder of the hole shall be filled with a waterproofing compound.
5. All finished or formed surfaces shall conform accurately to the shape, alignment, grades, and sections as shown or prescribed by ENGINEER. All surfaces shall be free from fins, bulges, ridges, offsets, honeycombing, or roughness. All sharp angles, where required, shall be rounded or beveled. Any formed surface to be painted shall be free of any material that will be detrimental to the paint. The surface of the concrete shall be given one of the following finishes immediately after form stripping:
a. Finish A shall be referred to as a sack finish. Surfaces shall be free of contaminants prior to sacking. After wetting the surface, a grout shall be rubbed in using a rubber float or burlap. After the grout hardens sufficiently, it shall be scraped from the surface with the edge of a steel trowel without disturbing the grout in the air holes. After further drying, the surface shall be rubbed with burlap to remove all surface grout. The entire surface shall be finished to secure a continuous, hard, dust-free uniform texture surface free from pinholes and other minor imperfections. Finish A will be required for all unpainted surfaces, interior surfaces of equipment rooms, operation areas, and permanently exposed vertical surfaces. Where steel-faced forms are used to form walls, the portion of wall to receive the sack finish shall first be roughened by brush blasting or other acceptable method to achieve a texture similar to 40 to 60 grit sandpaper.
b. Finish B shall be the same as Finish A, except that the final burlap rubbing may be omitted, providing the steel trowel scraping removes the loose buildup from the surface. Finish B shall be provided for waterproof- and moistureproof-coated surfaces.
c. Finish C shall be referred to as a finish that has surface imperfections less than 3/8 inch in any dimension. Surface imperfections greater than 3/8 inch shall be repaired or removed and the affected areas neatly patched. Finish C or smoother shall be provided for interior surfaces of wet wells, tanks, and channels from 1 foot

below minimum water surfaces and down and otherwise unfinished interior surfaces.

d. Finish D shall be the finish for surfaces that may be left as they come from the forms, except that tie holes shall be plugged and defects greater than 1/2 inch in any dimension shall be repaired. Finish D shall be provided for surfaces to be buried or covered by other construction such as masonry veneer.

C. All precautions shall be taken to protect the concrete from stains or abrasions, and any such damage shall be removed or repaired under this Contract.

3.12 LOADING OF CONCRETE STRUCTURES

A. No concrete structure or portion thereof shall be loaded with its design load until the concrete has obtained its specified 28-day compressive strength. This shall include but not be limited to vertical live load, equipment loading, water loading, groundwater loading, and backfill load. Concrete strength at time of loading shall be determined by testing field-cured concrete cylinders.

B. Extreme care shall be taken so that construction loads do not exceed design loading of the structure.

3.13 NONSHRINK GROUT

A. Nonshrink, nonmetallic grout shall be used for filling recesses and pockets left for equipment installation and for setting of base plates. The material used shall be approved by ENGINEER. Store, mix, and place the nonshrinking compound as recommended by the manufacturer. The minimum compressive strength shall be 5,000 psi at age 7 days and 7,500 psi at age 28 days.

3.14 TESTING AND SAMPLING

A. The following tests of fresh concrete shall be performed by CONTRACTOR. CONTRACTOR shall prepare, protect, transport, and have tested all cylinders at its expense.
   1. Sampling of concrete for slump tests, air tests, temperature tests, and for making concrete test cylinders shall be performed in accordance with ASTM C172.
   2. Cylinders:
      a. Three test cylinders shall be made for each pour less than 25 cubic yards, four test cylinders shall be made for each pour between 25 and 100 cubic yards, and eight test cylinders shall be made for each pour in excess of 100 cubic yards. Each concrete mix shall be represented by at least four cylinders for the entire job. Concrete for cylinders shall be collected near the middle of the load and/or as requested by ENGINEER.
      b. Cylinders shall be made and tested in accordance with ASTM C31 and ASTM C39, respectively. The cylinders must be kept moist and at temperatures between 60°F and 80°F and shall remain undisturbed and stored in a location free from vibration. In hot weather, the cylinders shall be covered with wet burlap and stored in a shaded area. It is CONTRACTOR's responsibility to provide a suitable protected location for storing cylinders on the jobsite.
      c. After 24 hours, the cylinders shall be transferred to an independent testing laboratory acceptable to OWNER. The cylinders shall be packed in sawdust or other cushioning material for transit to avoid any bumping or jarring of the cylinders.
      d. Cylinders shall be broken at 7 and 28 days or as requested by ENGINEER. Test results shall be transmitted immediately and directly to ENGINEER and OWNER. Test data shall include date and location of pour and concrete mix used.

3. Slump Test: CONTRACTOR shall make one slump test near the beginning of all pours with two tests being made for all pours in excess of 25 yards or as requested by ENGINEER. Slump tests shall conform to ASTM C143.
4. Air Test:
    a. When air-entrained concrete is used, the air content shall be checked by CONTRACTOR near the beginning of all pours with at least two checks being made for all pours in excess of 25 cubic yards, or as requested by ENGINEER.
    b. The air contents shall be checked using the pressure method in accordance with ASTM C231. The pocket-sized alcohol air indicator shall not be used unless it is first used in conjunction with the pressure method test.

B. All costs of additional testing and sampling of fresh or hardened concrete needed because of suspected or actual violation of the specifications shall be borne by CONTRACTOR.

3.15 RECORDS

A. A record is to be kept of all concrete work. The record shall include the date, location of pour, concrete mix, slump, air content, test cylinder identification, concrete temperature, and ambient air temperature. In addition, for cold weather concreting the record shall include the daily maximum-minimum thermometer readings of all thermometers during the entire curing period for all concrete pours. The Project Representative will keep this record, and CONTRACTOR shall assist in obtaining needed information.

3.16 CONCRETE REMOVAL AND PATCHING

A. All areas disturbed as a result of concrete removal or repair shall be patched as specified in Bonding to Existing Concrete.

END OF SECTION

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SECTION 05 50 00

METAL FABRICATIONS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: Shop-fabricated stainless steel, and aluminum items, including ladders and weirs.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 REFERENCES

A. ASTM A36–Carbon Structural Steel.

B. ASTM A53–Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

C. ASTM A123–Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

D. ASTM A143–Practice for Safeguarding Against Embrittlement of Hot-Dipped Galvanized Structural Steel Products and Procedure for Detecting Embrittlement.

E. ASTM A153–Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

F. ASTM A240–Standard Specification for Chromium and Chromium Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

G. ASTM A276–Stainless Steel Bars and Shapes.

H. ASTM A307–Carbon Steel Bolts, Studs, and Threaded Rod 60,000 psi Tensile Strength.

I. ASTM A384–Practice for Safeguarding Against Warpage and Distortion During Hot-Dip Galvanizing of Steel Assemblies.

J. ASTM A385–Practice for Providing High-Quality Zinc Coatings (Hot-Dip).

K. ASTM A780–Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.

L. ASTM A992–Structural Steel Shapes.

M. ASTM B209–Aluminum and Aluminum-Alloy Sheet and Plate.

N. ASTM B211–Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire.

O. ASTM B221–Aluminum and-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes.

P. AWS A2.0–Standard Symbols for Welding, Brazing, and Nondestructive Examination.

Q. AWS A5.4–Stainless Steel Electrodes for Shielded Metal Arc Welding.

R. AWS D1.1–Structural Welding Code–Steel.

S. AWS D1.2–Structural Welding Code–Aluminum.

T. AWS D1.6–Structural Welding Code–Stainless Steel.

U. ASTM F593–Standard Specifications for Stainless Steel Bolts, Hex Cap Screws, and Studs.

V. ASTM F594–Standard Specification for Stainless Steel Nuts.

1.03 DESIGN REQUIREMENTS

A. All fabrications shall meet applicable code requirements including OSHA.

1.04 SUBMITTALS FOR REVIEW

A. Comply with pertinent provisions of Section 01 33 00–Submittals.

B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, sections, elevations, and details where applicable.

C. Mill Test Reports: Submit indicating structural strength and composition.

D. Indicate welded connections using standard AWS A2.0 welding symbols. Indicate net weld lengths.

1.05 QUALITY ASSURANCE

A. Fabricate steel members in accordance with AISC Code of Standard Practice.

B. Welders Certificates: Certify welders employed on the work, verifying AWS qualification within the previous 12 months.

1.06 QUALIFICATIONS

A. Qualify welding processes and welding operators in accordance with AWS *Standard Qualifications Procedures*.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver all materials to job site properly marked to identify the structure for which it is intended and at such intervals to allow uninterrupted progress of the work. Marking shall correspond to markings indicated on the shop drawings.

B. Store all members off the ground using pallets, platforms, or other supports.

C. Do not store materials on the structure in a manner that might cause distortion or damage to the members of the supporting structures.

D. In the event of damage, immediately make all repairs and replacements necessary at no additional cost to OWNER.

PART 2–PRODUCTS

2.01 MATERIALS–STAINLESS STEEL

A. Unless otherwise noted, all stainless steel bars and shapes shall meet the requirements of ASTM A276 and shall be Type 316L.

B. Unless otherwise noted, all stainless steel bolts shall meet the requirements of ASTM F593 and shall be Type 316L.

C. Unless otherwise noted, all stainless steel nuts shall meet the requirements of ASTM F594 and shall be Type 316L.

D. If components are not available in Type 316L, other 300 Series type shall be used as approved by ENGINEER.

E. Welding Electrodes:
1. Comply with AWS D1.6.
2. Use ER316L electrodes for 316L stainless steel.
3. Use ER308L electrodes for 304L stainless steel.

2.02 MATERIALS–ALUMINUM

A. Extruded Aluminum: ASTM B221, Alloy 6061, Temper T6.

B. Sheet Aluminum: ASTM B209, Alloy 3005.

C. Aluminum-Alloy Bars: ASTM B211, Alloy 6061, Temper T6.

D. Bolts, Nuts, and Washers: Stainless steel.

E. Welding Materials: AWS D1.2; type required for materials being welded.

2.03 FABRICATION

A. Fabrication and Assembly:
1. Fabricate items of structural steel in accordance with AISC Specifications and as indicated on the approved shop drawings.
2. Properly mark and match-mark materials for field assembly and for identification as to structure and site for which intended.
3. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials.
4. Where finishing is required, complete the assembly, including welding of units, before start of finishing operation.
5. Provide finish surfaces of members exposed in the final structure free of markings, burrs, and other defects.

B. Connections:
   1. Bolts and washers of all types and sizes shall be provided for completion of all field erection.
   2. Comply with AWS Code for procedures, appearance, and quality of welds used in correcting welded work.
   3. Assemble and weld built-up sections to produce true alignment of axes without warp.
   4. Welding shall be done by the shielded arc process.
   5. All welds shall be chipped, ground smooth, and primed immediately after fabrication.

C. Workmanship:
   1. Use materials of size and thickness shown or, if not shown, of size and thickness to produce strength and durability in the finished product.
   2. Work to dimensions shown or accepted on the shop drawings using proven details of fabrication and support.
   3. Form exposed work true to line and level, with accurate angles and surfaces, and with straight sharp edges.
   4. Form bent metal corners to smallest radius possible without causing grain separation or otherwise impairing works.
   5. Cap all open ends of pipe and structural tubing.
   6. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush; match and blend with adjoining surfaces.
   7. Provide for anchorage of the type shown. Coordinate with supporting structures. Fabricate and space the anchoring devices to provide adequate support for intended use.
   8. Cut, reinforce, drill, and tap miscellaneous metal work as indicated to receive hardware and similar items.

2.04 MISCELLANEOUS METAL FABRICATION

A. Aluminum Ladder: Provide fixed aluminum ladder. Aluminum ladder shall have serrated surface on rungs.

2.05 FINISHES

A. Aluminum shall have a mill finish unless otherwise specified. Any aluminum in contact with concrete or dissimilar metal shall be coated with multiple coats of bituminous paint, minimum 10 mils dry.

PART 3–EXECUTION

3.01 EXAMINATION

A. Correct conditions detrimental to the proper and timely completion of the work.

B. Do not proceed until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Furnish setting drawings, diagrams, templates, instructions, and directions for installation of anchorages such as concrete inserts, anchor bolts, and miscellaneous items having integral anchors which are to be embedded in concrete construction.

B. Coordinate delivery of such items to project.

C. Clean and strip primed steel items to bare metal where site welding is required.

3.03 INSTALLATION

A. Setting Precast Anchorages:
   1. Clean bearing surfaces free from bond-reducing materials, and roughen to improve bond to surfaces. Clean the bottom surface of bearing plates.
   2. After the bearing members have been positioned and plumbed, tighten and anchor bolts. Do not remove wedges or shims, but if protruding, cut off flush with the edge of the bearing plate before packing with grout.
   3. Pack grout solidly between bearing surfaces and plates so that no voids remain.

B. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction including threaded fasteners for concrete inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors.

C. Cutting, Fitting, and Placement:
   1. Perform cutting, drilling, and fitting for installation of miscellaneous metal fabrications.
   2. Set work accurately in location, alignment, and elevation and make plumb, level, true, and free from rack measured from established lines and levels.
   3. Fit exposed connections accurately together to form tight hairline joints.
   4. Weld connections that are not to be left as exposed joints, grind joints smooth, and touchup shop paint coat or galvanizing repair.

D. Weirs and Baffles:
   1. Provide watertight splice plates at joints between sections of weirs and baffles.
   2. Weirs and baffles shall be installed level with a tolerance of ±1/8 inch.

E. Install Safety Climb Equipment:
   1. Remove and dispose of all existing fall protection equipment.
   2. After all other work is completed, install the new safety climb equipment to all ladders.
   3. Safety climb equipment on the shaft ladders shall extend above the platforms. Provide telescoping brackets as required to accommodate equipment.
   4. Safety climb equipment shall be inspected and the installation shall be approved by a representative of the manufacturer.

3.04 FIELD WELDING

A. Comply with AWS Code for procedures of manual shielded metal arc welding (steel, stainless steel) and gas metal arc welding (aluminum), appearance and quality of weld made, and methods in correcting welding work.

3.05 SCHEDULE

A. The following schedule is a list of principal items only. Refer to Drawing details for items not specifically scheduled.

B. Guard Posts: Steel pipe, concrete-filled, crowned cap, as detailed-galvanized and field finish paint as described below:
   1. Surface Preparation–Galvanized: Where galvanized items are not submerged or buried, they shall be cleaned with nonhydrocarbon solvent cleaner (such as Clean N Etch, or equal) in accordance with SSPC-SP1 and shall be abrasive-blasted in accordance with SSPC-SP16 Brush-Off Blast Cleaning.
   2. Application:
      a. One shop coat of N69-1255 Hi-Build Epoxoline, Macropoxy 646 Beige as primer.
      b. Touch-up primer prior to finish coat, and either one coat of N69 Hi-Build Epoxoline II, Macropoxy 646, and one coat of 1074 Endura-Shield, Acrolon 218HS for exterior surfaces.

C. Serrated aluminum treads. Mill finish.

D. Aluminum ladder.

END OF SECTION

SECTION 05 53 00

GRATING, FLOOR PLATES, AND FLOOR PLANK

PART 1–GENERAL

1.01 SUMMARY

A. Work includes checkered floor plate.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 REFERENCES

A. NAAMM Metal Bar Grating Manual ANSI NAAMM MBG531 and MBG532.

B. ASTM B221-Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.

1.03 PERFORMANCE REQUIREMENTS

A. Checkered floor plate thickness shall be determined based on a maximum deflection of L/150 of the short side or a stress of 28,000 psi under a 100 psf uniform load. The larger plate thickness shall govern. Where plate thickness does not meet these requirements, or where a thinner plate is desired, CONTRACTOR shall design and provide welded aluminum stiffeners that, in combination with the provided floor plate, meet these load and deflection requirements.

1.04 FIELD MEASUREMENTS

A. Take all field measurements prior to preparation of shop drawings. Verify that field measurements are as indicated on shop drawings.

PART 2–PRODUCTS

2.01 ALUMINUM CHECKERED FLOOR PLATE

A. Aluminum checkered plate shall be manufactured from aluminum alloy 6061-T6.

B. Where shown on the drawings, aluminum plate shall be insulated with 2-inch-thick polystyrene foam cemented and mechanically attached securely to aluminum floor plate.

C. Provide welded aluminum stiffeners for checkered plate where required by design.

D. Support angles for floor plate shall be aluminum.

E. Provide hand hole in each plate.

F. Plate size shall be limited to a maximum weight of 75 pounds.

2.02 FINISHES

A. Protection of Aluminum from Dissimilar Materials:
   1. Where aluminum surfaces come into contact with dissimilar metals, surfaces shall be kept from direct contact by painting the dissimilar metal with multiple coats of bituminous paint, minimum 10 mils dry, or other approved insulating material.
   2. Where aluminum surfaces come into contact with dissimilar materials such as concrete, masonry, or lime mortar, exposed aluminum surfaces shall be painted with multiple coats of bituminous paint, minimum 10 mils dry, or other approved insulating material.

PART 3–EXECUTION

3.01 EXAMINATION

A. Verify that opening sizes and dimensional tolerances are acceptable.

B. Prior to installation, CONTRACTOR shall inspect supports for correct size, layout, and alignment. Any inconsistencies between contract drawings and supporting structure deemed detrimental to placement shall be reported in writing to ENGINEER prior to placement.

3.02 INSTALLATION

A. Place embedded frames and supports in correct position, plumb and level. Provide blocking as required to maintain alignment of sections.

B. Seal small gaps between embedded angles at face of wall with backer rod to prevent concrete entry.

C. All aluminum floor grating and plank shall be secured to supporting members with aluminum or stainless steel saddle clips supplied by the grating manufacturers. Stud bolts and other hardware shall be supplied by CONTRACTOR.

D. Install in accordance with shop drawings and standard installation clearances as recommended by the NAAMM Metal Bar Grating Manual.

E. Cutting, Filling, and Placement:
   1. Perform all cutting and fitting required for installation.
   2. Cutouts for circular obstructions are to be at least 2 inches larger in diameter than the obstruction. Cutouts for all piping 4 inches or less shall be made in the field.
   3. All rectangular cutouts are to be made to the next bearing bar beyond the penetration with a clearance not to exceed bearing bar spacing.
   4. Utilize standard panel widths wherever possible.

END OF SECTION

SECTION 05 56 00

ANCHOR BOLTS AND POST-INSTALLED ANCHORS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: Anchor bolts, expansion bolts, adhesive anchors, and screw anchors.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 REFERENCES

A. ASTM A36/A36M–Standard Specification for Carbon Structural Steel.

B. ASTM F1554–Anchor Bolts, Steel, 36, 55, and 105-ksi yield strength.

C. ICC-ES International Code Council–Evaluation Service.

D. AC 193–Acceptance Criteria for Mechanical Anchors in Concrete Elements.

E. AC 308–Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete.

F. ACI 355.2–Qualification of Post-Installed Mechanical Anchors in Concrete and Commentary.

G. ACI 355.4–Qualification of Post-Installed Adhesive Anchors in Concrete and Commentary.

PART 2–PRODUCTS

2.01 GENERAL

A. Unless indicated otherwise on the drawings or specified, use the following bolt material for the various installation situations:
   1. Stainless Steel: For all submerged locations, below final grade, and in contact with aluminum appurtenances and other items not to be painted. Also for anchoring equipment, unless otherwise specified.
   2. Steel: In other locations in contact with items to be painted or encased in concrete.

2.02 ANCHOR BOLTS

A. Anchor bolts complete with washers and nuts shall be fabricated as shown or as specified by the equipment manufacturer and unless otherwise indicated shall be hot-dip galvanized carbon steel or 316 stainless steel. Anchor bolts shall, as a minimum, conform to the requirements of ASTM F1554-Grade 36.

B. Stainless steel anchor bolts shall be used in all submerged locations, below final grade, and in contact with aluminum and other items not to be painted. Galvanized anchor bolts shall be used elsewhere.

2.03 EXPANSION BOLTS

A. Expansion bolts shall be KWIK Bolt TZ by Hilti, Inc., Power-Stud+ SD2, SD4, or SD6 by DeWalt, Strong-Bolt or Strong-Bolt 2 by Simpson Strong-Tie Anchor Systems, or approved equal.

B. All expansion bolts shall comply with the 2015 International Building Code, AC 193, and ACI 355.2. They shall be ICC-ES approved for use in cracked and uncracked concrete.

C. Expansion bolts will not be permitted as substitutes for embedded anchor bolts except with the prior written acceptance of ENGINEER or where otherwise specifically called for.

2.04 ADHESIVE ANCHORS

A. Adhesive anchors shall be HIT HY 200 by Hilti, Inc., Red Head C6+ or Red Head A7+ by ITW, Pure 110+ or AC200+ by DeWalt, Set-XP by Simpson Strong-Tie Anchor Systems, or approved equal.

B. All adhesive anchors shall comply with the 2015 International Building Code, AC 308, and ACI 355.4. They shall be ICC-ES approved for use in cracked and uncracked concrete.

2.05 SCREW ANCHORS

A. Screw anchors shall be KWIK HUS-EZ by Hilti, Inc., Screw-Bolt by DeWalt, Titen-HD by Simpson Strong-Tie Anchor Systems, or approved equal.

B. 2015 International Building Code. Shall be ICC-ES approved for use in cracked and uncracked concrete.

PART 3–EXECUTION

3.01 ANCHOR BOLTS

A. Anchor bolts for structural members shall be located as shown and specified.

B. Anchor bolts for mechanical equipment shall have embedment length, edge distances, and spacing as required by the equipment manufacturer.

C. All dirt or foreign materials shall be removed prior to embedding into concrete. After anchor bolts have been embedded, their threads shall be protected by grease and by installing the nuts or by other means until the time of installation of the equipment or metal work.

3.02 EXPANSION BOLTS

A. Unless otherwise noted on the drawings, expansion bolt edge distance and spacing shall be in accordance with manufacturer’s printed installation instructions.

B. Bolt embedment shall at least equal 6-bolt diameters.

C. Installation procedures shall be in accordance with the manufacturer's printed installation instructions.

D. Where location of bolts is adjustable, reinforcing steel shall be located prior to drilling holes and bolts shall be located to clear reinforcing steel.

3.03 ADHESIVE ANCHORS

A. At locations shown on the drawings, reinforcing bars or threaded rod shall be provided in existing concrete by drilling holes, injecting epoxy adhesive, and inserting the reinforcing bar.

B. All existing surfaces to receive adhesive anchors, including the entire area in contact with the new concrete, shall be cleaned and roughened to amplitude of 1/4 inch.

C. Installation procedures shall be in accordance with the manufacturer's printed installation instructions.

D. Where location of anchors is adjustable, reinforcing steel shall be located prior to drilling holes and anchors shall be located to clear reinforcing steel.

E. CONTRACTOR shall arrange an anchor manufacturer's representative to provide on-site installation training for installation of their adhesive anchor system products. Submit documentation that all CONTRACTOR's personnel or subcontractors who install adhesive anchors have been trained prior to the announcement of anchor installation.

3.04 SCREW ANCHORS

A. Unless otherwise noted on the drawings, screw anchor edge distance and spacing shall be in accordance with manufacturer's recommendations.

B. Anchor embedment shall at least equal 6-bolt diameters.

C. Installation procedures shall be in accordance with the manufacturer's printed installation instructions.

D. Where location of anchors is adjustable, reinforcing steel shall be located prior to drilling holes and anchors shall be located to clear reinforcing steel.

END OF SECTION

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SECTION 06 61 14

FIBERGLASS WEIRS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: Fiberglass weirs as shown on the drawings.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 REFERENCES

A. ANSI/AWWA F102–Matched-Die-Molded, Fiberglass-Reinforced Plastic Weir Plates.

B. ASTM D570–Standard Test Method for Water Absorption of Plastics.

C. ASTM D638–Standard Test Method for Tensile Properties of Plastics.

D. ASTM D790–Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

E. ASTM D2583–Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.

F. NSF/ANSI 61 Drinking Water System Components–Health Effects.

1.03 QUALITY ASSURANCE

A. Manufacturer shall maintain a continuous quality control program and shall, upon request, furnish ENGINEER with certified test reports of physical properties

B. Weir plates shall be fabricated to ANSI/AWWA F102 Standards.

1.04 PACKING AND STORAGE

A. Should it be necessary to store product prior to installation, precautions should be taken to prevent warpage or distortion.

PART 2–PRODUCTS

2.01 WEIRS AND BAFFLES

A. Weirs shall be fiberglass.

B. Fiberglass shall be as manufactured by Hydro International of Hillsboro, Oregon. All fasteners and anchors shall be type 304 stainless steel of size and type recommended by manufacturer of weirs and baffles.

C. All weir plates shall be fiberglass reinforced plastic molded to produce uniform smooth surfaces. The surface shall be resin rich, free of voids and porosity, without dry spots, crazes or unreinforced areas and shall provide for increased corrosion resistance and UV protection. All edges shall be sealed in the mold. The weirs shall be green in color.

D. Laminate will have Type “C” (chemical) glass surfacing mat, 10 to 20 mils thick, with a silane finish and a styrene soluble binder, on both sides. Required thickness will be achieved using the appropriate number of piles of Type “E” (electrical borosilicate) glass mat with chrome or silane finish and a styrene soluble binder. Glass content of laminate will be 28 ± 3% by weight. Resin filters shall be 40 ±2% of the resin mixture. Final laminate thickness shall be within ±10% of the nominal specified thickness.

E. The fiberglass laminate shall have the following minimum physical properties:

		Test Method
Tensile Strength (min)	14,000 psi	ASTM D638
Flexural Strength (min)	25,000 psi	ASTM D790
Flexural Modulus (min)	1.0×10^6	ASTM D790
Impact, Notched, Izod, foot pound per inch (min)	15.0	ASTM D256
Barcol Hardness (min avg)	40	ASTM D2583
Water Absorption, % 24 hours (max)	0.2%	ASTM D570
Average Coefficient of Thermal Expansion inch per inch per °F (max)	10.5 x 10-6	ASTM D696

F. All machined or cut edges shall be sealed with Polyester Resin.

2.02 NEOPRENE GASKETS

A. All splices and connections of weirs and troughs shall have a minimum 1/4 inch thick, or as noted on drawings, neoprene gasket in accordance with Section 10 00 00–Miscellaneous Specialties.

PART 3–EXECUTION

3.01 INSTALLATION

A. Install weirs in accordance with details shown on the drawings using Type 316L stainless steel or fiberglass connection hardware. Weirs shall be installed per manufacturer’s instructions.

B. Weirs shall be installed level to within ±1/8 inch.

C. All weir splices and connections shall be watertight. Provide neoprene gaskets between all splices and connections to provide complete watertight unit. Provide splice plates as required.

END OF SECTION

SECTION 08 31 13

ACCESS DOORS AND FRAMES

PART 1–GENERAL

1.01 SUMMARY

A. Work included: Aluminum floor doors, aluminum access doors, and frame units.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

PART 2–PRODUCTS

2.01 ALUMINUM FLOOR DOORS AND FRAMES

A. Acceptable products include the following, or equal: The Bilco Company, Types K or J as scheduled.

B. Type J doors shall be designed for a minimum live load of 300 psf with a maximum deflection of 1/150 of span. Type K doors shall be designed for minimum live load of 150 psf with a maximum deflection of 1/150 of span.

C. Doors shall be constructed of stiffened 1/4-inch aluminum diamond-pattern plate.

D. Channel frame for Type J doors shall be 1/4-inch extruded aluminum with bend-down anchor tabs. Depth of frame shall be 6 inches. A continuous EPDM gasket shall be mechanically attached to the frame around the entire perimeter.

E. Hinges shall be through bolted to the door and frame with tamper-proof Type 316 stainless steel lock bolts.

F. Provide 1 1/2-inch drain coupling located in corner of channel frame for Type J doors.

G. Type J doors shall be equipped with required number and size of compression spring operators for door to operate easily and smoothly. Provide heavy-forged cam-action hinges to open door so edge of door does not open into channel. Type K doors shall have cast steel cam-action hinges that pivot on torsion bars. Doors shall have smooth controlled operation and not be affected by temperature.

H. Provide hold-open arm that automatically locks in open position. Provide snap lock with fixed handle mounted to underside of cover. Provide removable exterior turn/lift handle with spring-loaded ball detent to open cover. All hardware shall be Type 316 stainless steel for corrosive environment.

2.02 ACCESS DOORS AND FRAMES

A. Access doors shall be 14-gauge steel with 16-gauge frame.

B. Acceptable products include the following, or equal: The Bilco Company, type J floor doors.

2.03 FINISH

A. Aluminum floor doors and frames shall have mill finish. Apply bituminous coating to portions of frames in contact with concrete.

2.04 ACCESSORIES

A. Provide Bilco Ladder-Up, or equal, at all floor doors that have a ladder access. Materials and finishes shall be aluminum, mill finish.

B. All aluminum floor/door openings shall be fitted with a permanently installed, fall-through prevention rail and net system that is easily retractable for access to the opening below. This system shall be Hatch Net 121 as manufactured by Safe Approach, Inc., Poland, Maine, or approved equal.

C. The fall-through prevention system shall consist of the following components:
1. A polyester safety net manufactured to ANSI A10.11 specification for personnel nets.
2. Extruded aluminum side rails: Aluminum Alloy 6061-T-6 with an ultimate tensile strength of 18 KSI, a yield strength of 8 KSI, and a shear strength of 12 KSI.
3. 316 stainless steel corner hooks.

D. Each net assembly will come with a permanently attached label with the following information: Name of manufacturer, identification of net material, date of manufacture, date of prototype test, name of testing agency, and serial number.

E. All stainless steel hardware and instructions necessary for proper installation of the net system shall be provided by the net system manufacturer. Installation shall be in accordance with the manufacturer's instructions.

F. The complete assembly, including the net, shall be warranted against defects in material and workmanship for manufacturer's standard time period.

PART 3–EXECUTION

3.01 INSTALLATION

A. Installation shall be in accordance with manufacturer's instructions and approved submittals. Locate units level, plumb, and in proper alignment with adjacent work.

B. Provide piping from channel frames for Type J floor doors from outlet to base of wall nearest floor drain or through wall to ground for tank structures. Terminate pipe in minimum 1 cubic foot of clear stone if termination is below ground.

3.02 ADJUSTING AND CLEANING

A. Clean exposed surfaces using methods acceptable to the manufacturer that will not damage finish.

B. Test units for proper function and adjust until proper operation is achieved.

C. Repair finishes damaged during installation.

D. Restore finishes so no evidence remains of corrective work.

3.03 SCHEDULE

A. See Door Schedule on the drawings.

END OF SECTION

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SECTION 10 00 20

MISCELLANEOUS SPECIALTIES

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: Neoprene gaskets.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

PART 2–PRODUCTS

2.01 NEOPRENE GASKETS

A. Furnish and install neoprene gaskets at weir plates and as called for on the drawings.

B. Neoprene shall be of the size and thickness shown on the drawings. Minimum thickness shall be 1/8 inch. The material shall be 40-50 durometer premium-grade neoprene. Only virgin polymers shall be used to manufacture the neoprene. A certificate of material quality shall be furnished.

C. Where splices are necessary, they shall be butt splices made with a two-part neoprene base-bonding cement. The vulcanizing cement shall be Black Cement by CPR Industries of Carteret, New Jersey, or equal.

D. At splices in weir plates, provide an additional thickness of neoprene to match the plate material. Bond the additional neoprene to the continuous gasket using the cement specified for splices.

E. All gaskets shall be watertight.

PART 3–EXECUTION

3.01 INSTALLATION

A. Install accessories in accordance with manufacturer’s instructions.

END OF SECTION

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SECTION 26 05 00

GENERAL ELECTRICAL REQUIREMENTS

PART 1–GENERAL

1.01 SUMMARY

A. Work includes general requirements for all electrical work.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern Work in this section.

1.02 REFERENCES

A. ANSI/NFPA 70–National Electrical Code (NEC).

B. ANSI/IEEE C2–National Electrical Safety Code.

1.03 CONTRACT DOCUMENTS

A. Any equipment roughed in improperly and/or not positioned on implied centerlines or as dictated by good practice shall be repositioned at no cost to OWNER.

B. The Drawings are generally diagrammatic, and CONTRACTOR shall coordinate the Work so that interferences are avoided. Provide all offsets in conduit, fittings, etc., necessary to properly install the work. All offsets, fittings, etc., shall be provided without additional expense to OWNER.

C. Hazardous or classified locations, where referenced in the Specifications or on the Drawings, shall be as defined in the NEC.

1.04 REGULATORY REQUIREMENTS

A. Conform to ANSI/NFPA 70.

B. Conform to ANSI/IEEE C2.

C. The rules and regulations of the federal, state, local, and civil authorities and utility companies in force at the time of execution of the Contract shall become a part of this specification.

D. Obtain electrical permits and inspections from authority having jurisdiction. Costs for permits and inspections shall be paid by CONTRACTOR.

1.05 CODES AND ORDINANCES

A. CONTRACTOR is expected to know or to ascertain, in general and in detail, the requirements of all codes and ordinances applicable to the construction and operation of systems covered by this Contract. CONTRACTOR shall know or ascertain the rulings and

interpretations of code requirements being made by all authorities having jurisdiction over the work to be performed by them.

B. In preparing a Bid, CONTRACTOR shall include the cost of all items and procedures necessary to satisfy the requirements of all applicable codes, ordinances, and authorities, whether or not these are specifically covered by the Drawings and Specifications. All cases of apparent conflicts between the Drawings, Specifications, and codes shall be brought to ENGINEER's attention, as herein before specified. CONTRACTOR shall carry out work and complete construction as required by applicable codes and ordinances and in such a manner as to obtain approval of all authorities whose approval is required.

C. When requested by ENGINEER, CONTRACTOR shall provide written calculations to show compliance with applicable codes or the Contract Documents. This shall include, but not be limited to, conduit and wire sizing, junction and pull box fill and sizing, manhole/handhole sizing, conductor derating, and voltage drop. CONTRACTOR shall indicate calculation method used as well as compliance with applicable code, drawing, or specification.

1.06 EQUIPMENT PROVIDED UNDER OTHER DIVISIONS

A. Included in this Contract are electrical connections to equipment provided under other divisions. CONTRACTOR shall refer to final shop drawings for equipment being furnished under other divisions, for exact location of electrical equipment, and the various connections required.

1.07 ELECTRICAL DISTRIBUTION SYSTEM

A. Provide a complete electrical distribution system consisting of components indicated on the Drawings or specified herein including, but not limited to:
   1. All miscellaneous equipment coordination and related appurtenances required by power company.
   2. 120/240-volt, single-phase, 3-wire service entrance conductors.
   3. All control wiring.
   4. Access panels and access doors for access to equipment installed by Division 26.
   5. Wiring between system components if equipment is not prewired.
   6. Support system design and supports for electrical raceways.
   7. Code-required disconnects.

B. CONTRACTOR shall connect all equipment furnished by other Divisions consisting of components indicated on the Drawings or specified herein.

C. Provide balancing and adjusting of electrical loads.

D. CONTRACTOR shall instruct OWNER's representative in the operation and maintenance of all equipment. The instruction shall include a complete operating cycle on all apparatus.

E. Provide miscellaneous items for a complete and functioning system as indicated on the Drawings and specified herein.

F. A partial list of work not included in Division 26 is as follows: Painting (except as otherwise specified herein).

1.08 NOISE

A. Eliminate any abnormal noises that are not considered by ENGINEER to be an inherent part of the systems as designed. Abnormal buzzing in equipment components will not be acceptable.

1.09 DRAWINGS

A. The Drawings indicate approximate locations of the various items of the electrical systems. These items are shown approximately to scale and attempt to show how these items should be integrated with building construction. Locate all the various items by on-the-job measurements in conformance with Contract Documents and cooperation with other trades.

B. Prior to locating equipment, confer with ENGINEER as to desired location in the various areas. In no case should equipment locations be determined by scaling drawings. Relocate equipment and bear cost of redoing work or other trades' work necessitated by failure to comply with this requirement.

C. In certain instances, receptacles or other electrical devices and equipment, etc., may be relocated. Where relocation is within 10 feet of location shown on the Drawings, and when CONTRACTOR is informed of necessary relocation before work is begun on this portion of the job, the relocation shall be at CONTRACTOR's expense.

D. The Drawings are schematic in nature and are not intended to show exact locations of conduit, but rather to indicate distribution, circuitry, and control.

E. Where locations of future structures are shown on the Drawings, CONTRACTOR shall not route any conduit or install any materials or equipment within 30 feet of the boundaries shown.

1.10 EXISTING UNDERGROUND UTILITIES

A. The Drawings show approximate location of existing underground utilities based on OWNER-provided record drawings. CONTRACTOR shall excavate and verify the location of all underground utilities prior to installing new electrical equipment and prior to making modifications to existing electrical. This shall include, but not be limited to, feeders to structures and equipment, branch circuit wiring, instrument wiring, and control wiring. CONTRACTOR shall temporarily relocate existing underground utilities to keep the existing facility in operation and for any new construction, and all costs for relocating existing electrical shall be included in the Bid.

1.11 SUBMITTALS

A. CONTRACTOR shall submit to ENGINEER for approval prior to beginning work, shop drawings on the equipment and materials proposed to be furnished and installed. See Section 01 33 00–Submittals for requirements.

B. CONTRACTOR shall, in addition, submit drawings and/or diagrams for review and for job coordination in all cases where deviation from the Contract drawings are contemplated because of job conditions, interference or substitution of equipment, or when requested by ENGINEER for purposes of clarification of CONTRACTOR's intent. CONTRACTOR shall also submit detailed drawings, rough-in sheets, etc., for all special or custom-built items or

equipment. Drawings and details under this section shall include, but not be limited to, the following, where applicable to this project: Electrical interconnection wiring diagrams; see Section 26 09 00–Controls and Instrumentation.

C. These drawings and diagrams shall show applicable electrical switch and breaker sizes as well as the manufacturer's name and catalog number for each piece of equipment used.

D. Equipment and material submittals must show sufficient data to indicate complete compliance with Contract Documents as follows:
   1. Proper sizes and capacities.
   2. That the item will fit in the available space in the manner that will allow proper service.
   3. Construction materials and finishes.

E. When the manufacturer's reference numbers are different from those specified, provide correct cross-reference number for each item. The shop drawings shall be clearly marked and noted accordingly.

F. When equipment and items specified include accessories, parts, and additional items under one designation, shop drawings shall be complete and include all components.

G. See additional requirements of shop drawings under Division 01–General Requirements.

PART 2–PRODUCTS

2.01 STANDARD PRODUCTS

A. All equipment and products shall be of new manufacture per applicable specifications.

B. All equipment shall be UL and NEMA approved.

C. All equipment and wiring shall be selected and installed for conditions in which it will perform (e.g., general purpose, weatherproof, raintight, explosionproof, dustproof, or any other special type).

2.02 SUBSTITUTION OF MATERIALS AND EQUIPMENT

A. While it is not the intention of OWNER to discriminate against any manufacturer of equipment which may be equivalent to specified equipment, a strict interpretation of such equivalency will be exercised in considering any equipment offered as a substitute for specified equipment. CONTRACTOR shall submit with each request for approval of substitute material or equipment sufficient data to show conclusively that it is equivalent to that specified in the following respects:
   1. Performance:
      a. Capacity at conditions and operating speeds scheduled shall be equal to or greater than that of the specified equipment.
      b. Energy consumption at the point of rating shall not exceed that of the specified equipment.
      c. Vibration and noise production at the point of rating shall not exceed that of the specified equipment.
   2. Materials of construction.
   3. Gauges, weights, and sizes of all portions and component parts.

4. Design arrangements, methods of construction, and workmanship.
5. Coatings, finishes, and durability of wearing parts.
6. National reputation of the manufacturer as a producer of first quality equipment of the type under consideration.
7. Availability of prompt, reliable, and efficient service facilities franchised by or affiliated with the equipment manufacturer. This shall include the maintenance of local stocks of critical replacement parts equal to those maintained for the specified equipment.

B. Requests for substitution shall include CONTRACTOR's reason for the request.

C. If ENGINEER does not consider the items equivalent to those specified, CONTRACTOR shall provide those specified.

D. See General Conditions for additional requirements.

PART 3–EXECUTION

3.01 UTILITY SERVICES

A. Utility connection requirements shall be determined. All costs for coordinating utility service shall be included in the price bid as described in Section 26 21 00–Electrical Service System of these specifications.

B. All costs for temporary service, temporary routing of piping, or any other requirements of a temporary nature associated with the utility service shall be included in the Base Bid.

C. It shall be CONTRACTOR's responsibility to police this situation and protect its equipment.

3.02 CONTINUITY OF SERVICE

A. CONTRACTOR shall provide and maintain continuous services (power, controls, alarms, etc.) during the entire construction period.

B. No service shall be interrupted or changed without permission from OWNER. Written permission shall be obtained before any work is started.

C. When interruption of service is required, all persons concerned shall be notified and a prearranged time agreed upon. Notice shall be a minimum of 72 hours prior to the interruption.

3.03 CLEANUP AND REMOVAL OF RUBBISH

A. All control panels and disconnect switch enclosures, junction boxes, and pullboxes shall be cleaned of debris and wires neatly arranged with surplus length cut off before installation of covers.

B. Where louvers are provided in control panels, louvers shall be vacuumed free of all dust and dirt. Where air filters are provided in equipment such as control panels, CONTRACTOR shall replace all filters with new at the time of final completion.

C. Equipment shall be thoroughly cleaned of all stains, paint spots, dirt, and dust. All temporary labels not used for instruction or operation shall be removed.

3.04 PAINTING

A. All painting of electrical equipment shall be done by CONTRACTOR unless equipment is specified to be furnished with factory-applied finish coats.

B. All electrical equipment shall be provided with factory-applied prime finish, unless otherwise specified.

C. If the factory finish on any equipment furnished by CONTRACTOR is damaged in shipment or during construction, the equipment shall be refinished by CONTRACTOR.

D. One can of touch-up paint shall be provided for each different color factory finish which is to be the final finished surface of the product.

3.05 CAULKING

A. Caulk with a caulking sealant where indicated on the electrical drawings or hereinafter specified.

B. Caulking sealant shall be silicone construction sealant as manufactured by General Electric or two-part polysulfide conforming to the requirements and bearing the seal of the Thiokol Chemical Corporation.

C. Caulking sealant shall contain no acid or ingredients that will stain stone, corrode metal, or have injurious effect on painting. It shall be colored to match adjacent surroundings.

3.06 COORDINATION

A. Provide wiring for all motors and all electrically powered or electrically controlled equipment.

B. All disconnects, relays, wire, conduit, push buttons, pilot lights, and other devices for the power and control of motors or electrical equipment shall be provided by CONTRACTOR except as specifically noted elsewhere in these specifications or on the Drawings.

C. Where devices are provided by others, they shall be connected and wired by CONTRACTOR.

D. CONTRACTOR’s drawings and specifications shall show number and horsepower rating of all motors furnished, together with their actuating devices. Should any change in size, horsepower rating, or means of control be made to any motor or other electrical equipment after the Contract is awarded, any additional costs because of these changes shall be the responsibility of CONTRACTOR.

E. CONTRACTOR shall provide all line voltage power and control wiring.

F. CONTRACTOR shall connect and wire all apparatus according to approved wiring diagrams furnished by the various trades.

3.07 EXCAVATION AND BACKFILL

A. Backfill of exterior trenches shall be compacted granular fill, unless otherwise noted. Compaction shall meet the requirements of Section 31 23 00–Excavation, Fill, Backfill, and Grading..

B. Lines passing under foundation walls shall have a minimum of 1 1/2-inch clearance.

C. Care shall be taken so that there is no disturbance of bearing soil under foundations.

D. CONTRACTOR shall follow underground pipe runs where possible to avoid additional rock excavation. See Division 31 for rock excavation requirements.

3.08 EQUIPMENT ACCESS AND LOCATION

A. CONTRACTOR shall coordinate work of this division with that of other divisions so that all systems, equipment, and other components of the structure will be installed at the proper time, will fit the available space, and will allow proper service access to those items requiring maintenance. This means adequate access to all equipment not just that installed under this division. Any components for the electrical systems that are installed without regard to the above shall be removed and relocated as required to provide adequate access at CONTRACTOR's expense.

B. Where various items of equipment and materials are specified and scheduled, the purpose is to define the general type and quality level, not to set forth the exact trim to fit the various types of finishes. Provide materials that will fit properly the types of finishes actually installed.

C. All equipment, junction and pull boxes, and accessories shall be installed to permit access to equipment for maintenance. Any relocation of conduits, equipment, or accessories to provide maintenance access shall be accomplished by CONTRACTOR at no additional cost.

D. Electrical equipment, devices, instruments, hardware, etc., shall be installed with ample space allowed for removal, repair, calibration or changes to the equipment. Ready accessibility to equipment and wiring shall be provided without moving other equipment that is to be installed or that is already in place.

3.09 WORKMANSHIP

A. All work shall be performed in compliance with the NEC.

B. Install work using procedures defined in NECA Standard of Installation.

C. Location of process equipment as shown on the Drawings is approximate.

D. Utilization equipment and control devices required under these specifications shall be mounted in a code-approved manner.

E. Locations of utilization equipment and control devices as shown on the Drawings are within 10 feet of actual positions. Any mounting of this equipment within this 10-foot distance shall be performed at no additional cost to OWNER.

F. Unless otherwise noted, conduit shall be fastened to structure or equipment framework and not placed on the floor.

G. Where materials, equipment apparatus, or other products are specified by manufacturer, brand name, and type or catalog number, such designation is to establish standards of desired quality and style and shall be the basis of the Bid.

H. Materials and equipment of the types for which there are National Board of Fire Underwriters Laboratories (UL) listings shall be so labeled and shall be used by CONTRACTOR.

3.10 AREA CLASSIFICATION

A. As noted on the Drawings.

B. Where referenced herein, damp and wet locations shall include, but not be limited to, all NEMA 4X areas, structures and areas below grade, and exterior locations.

END OF SECTION

SECTION 26 05 19

WIRE

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Wire.
   2. Terminal blocks and accessories.
   3. Wiring connections and terminations.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 QUALITY ASSURANCE

A. Manufacturers of Wire: Firms regularly engaged in the manufacture of electrical wire products of the types and ratings needed whose products have been in satisfactory use in similar service for not less than 5 years.

B. Installer: A firm with at least 5 years of successful installation experience on projects with electrical wiring installation work similar to that in this project.

C. Code Compliance: Comply with National Electrical Code (NFPA 70) and any and all local codes as applicable to construction and installation of electrical wiring devices, material, and equipment herein specified.

D. UL Labels: Provide electrical material, which has been listed and labeled by Underwriters Laboratories.

E. NECA Standard: Comply with applicable portions of National Electrical Contractor's Association's "Standard of Installation."

1.03 SUBMITTALS

A. Submit shop drawings and product data under the provisions of Section 01 33 00–Submittals.

B. Submit shop drawings for wiring system including layout of distribution devices, branch circuit conduit and cables, circuiting arrangement, and outlet devices.

C. Submit manufacturer's instructions.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Provide factory-wrapped, waterproof, flexible-barrier material for covering wire on wood reels, where applicable, and weather-resistant fiberboard containers for factory-packaging of wire, connectors, outlets, boxes, lamps, fuses, etc., to protect against physical damage in transit. Do not install damaged wire or other material; remove from project site.

B. Store wire and other material in factory-installed coverings in a clean, dry, indoor space which provides protection against the weather.

PART 2–PRODUCTS

2.01 WIRE

A. All wire for permanent installation shall be new stranded copper delivered to project in unopened cartons or reels, except where specifically noted and be UL listed for the use intended. No wire smaller than 12 AWG shall be used unless specifically noted. The use of multiconductor cable is not allowed.

B. All wiring within control panels, shall be insulation-type MTW, minimum size 16 AWG.

C. Wiring shall be XHHW-2.

D. Refer to Section 26 05 53–Electrical Identification for required wire insulation color coding and conductor labeling requirements. Initial phase color shall be used throughout the run, even for switch legs. Colors must meet code requirements for each class voltage. Do not duplicate colors, including neutral, on different voltages.

2.02 LOW-VOLTAGE WIRING (LESS THAN 100 VOLTS)

A. Low-voltage wiring specified in this section shall be applicable to all systems installed that utilize low-voltage wiring where such wiring is not specified in other technical sections.

B. All wiring shall have copper conductors with 300-volt insulation rating and meet the requirements of NEC Article 725.

C. All conductors must be suitable for the application intended. Conductors 16 AWG and larger shall be stranded. Conductors 18 AWG and smaller may be solid or stranded.

D. Control Cable for Class 1 Remote Control and Signal Circuits: Individual conductors twisted together, shielded, and covered with an overall PVC jacket. Cable shall be UL listed, temperature rated, and plenum or nonplenum rated for the application as required in the National Electrical Code.

E. Control Cable for Class 2 or Class 3 Remote Control and Signal Circuits shall be constructed, UL listed, temperature rated, and plenum or nonplenum rated for the application as required in the NEC Article 725.

2.03 WIRING CONNECTIONS AND TERMINATIONS

A. Provide crimp type UL or ETL listed terminations for 6 AWG and smaller stranded conductor connections to electrical devices and equipment such as receptacles, switches, and terminal strips. Crimp devices shall be Sta-kon, or equal.

B. Provide insulated, silicone-filled spring wire connectors with plastic caps for 8 AWG conductors and smaller. Connectors shall be King Silicone-Filled Safety Connectors, or

equal. Spring wire connectors shall only be allowed in junction, outlet, or switch boxes. Spring wire connectors are not allowed for terminating motor conductors.

C. No splices will be allowed unless reviewed by ENGINEER. Where allowed, provide in-line splices for all conductor connections, 6 AWG and larger. Splice crimp component shall be Burndy UGSKIT2 or equal. Splice shall be made with crimp tool by manufacturer that allows expanded conductor ranges. Splice insulation component shall be Raychem heavy-wall, low-voltage tubing, type WCSM, or equal.

2.04 TERMINAL BLOCKS AND ACCESSORIES

A. Terminal Blocks: ANSI/NEMA ICS 4: UL listed or UL recognized under UL 467, UL 486E, UL1059, and UL 1953 (power terminals only).

B. Power Terminal Blocks: Unit construction type, closed-back type, tin-plated copper, with tubular pressure screw connectors, rated 600 volts as manufactured by Allen-Bradley 1492-PDL, or equal.

C. 600-Volt Fuse Holders: Fuse holders for circuit rated up to 30 amps and 600 volts AC shall be finger safe, UL Listed, DIN-rail mountable, and shall include blown-fuse indicating lights. Fuse holders shall be as manufactured by Allen-Bradley Bulletin 1492-FB, or equal.

D. Signal and Control Terminal Blocks:
   1. General-Purpose Terminal Blocks:
      a. Terminal blocks shall be rated up to 600 volts AC/DC.
      b. Terminal blocks shall accept center-mounted jumper bars without increasing the installed space.
      c. Terminal blocks shall be Allen-Bradley Bulletin 1492-J, or equal.
      d. Terminal block color shall be gray.
   2. Grounding Terminal Blocks:
      a. Terminal blocks shall be Allen-Bradley Bulletin 1492-JG, or equal.
      b. Terminal block color shall be green/yellow.
   3. Disconnect-type Terminal Blocks (300-Volt Class):
      a. Terminal blocks shall be feed-through type with a knife-blade disconnect.
      b. Terminal blocks shall be Allen-Bradley Bulletin 1492-JKD, or equal, depending on the application.
      c. Terminal block color shall be gray.
   4. Fuse-type Terminal Blocks with Indicator (300-Volt Class):
      a. Terminal blocks for applications from 100 to 300 volts AC shall be Allen-Bradley Bulletin 1492-H4, or equal, with neon blown-fuse indicator.
      b. Terminal blocks for applications from 10 to 50 volts AC/DC shall be Allen-Bradley Bulletin 1492-H5, or equal, with LED blown-fuse indicator.
      c. Terminal block color shall be black.
   5. Terminal blocks shall have self-locking screw compression clamps rated for the size of conductors being terminated and upstream overcurrent protection for each application.
   6. The same manufacturer and style of terminal block shall be used throughout the entire project for all applications.
   7. Terminal blocks shall have tin-plated copper current bars and tin-plated steel screws. Terminal housings shall be completely finger safe from all live circuits and be constructed of self-extinguishing material with minimum UL 94-V0 flammability rating.

8. Terminal blocks shall accept pre-printed, snap-in labeling cards on both sides without increasing the installed space. Provide terminal block manufacturer's end barriers and screw-type retainers for all terminal block groupings.
9. Terminal blocks shall mount on standard DIN rail and shall be able to be removed without removing adjacent terminal blocks.
10. Multi-level terminal blocks and stacked, single-level terminal block installations are not acceptable.

E. Refer to Section 26 05 53–Electrical Identification for terminal block labeling requirements.

PART 3–EXECUTION

3.01 GENERAL WIRING METHODS

A. Install electrical wire and connectors in accordance with the manufacturer's written instructions, applicable requirements of the NEC, the National Electrical Contractors Association's "Standard of Installation," and in accordance with recognized industry practices so that products serve the intended functions. Use appropriate wiring methods and materials for the equipment or environment.

B. Stranded conductors shall be terminated using crimp-type devices specified herein. Conductors may not be wrapped around a terminal screw.

C. Place an equal number of conductors for each phase of a circuit in the same raceway.

D. Torque conductor connections and terminations with calibrated torque wrench to manufacturer's recommended values. Provide permanent marking on lug, bolt, nut, or connection for conductors larger than 4 AWG.

E. Splice only in junction or outlet boxes. Splicing is not allowed in disconnects, control panels, equipment, etc. Avoid splices between terminals of interconnecting power and control wiring.

F. Spring wire connectors shall only be used in junction, outlet, or switch boxes. Control panels shall not have any spring-wire connectors installed; all terminations shall be on terminal strips.

G. Neatly train, lace, and tie wrap all wiring inside boxes, equipment, and control panels.

H. Make conductor lengths for parallel circuits equal.

I. The same color shall be used for each numbered wire throughout its entire length.

J. Terminate all wiring on terminal blocks in control panels, starter cubicles, and similar equipment. This shall include all spare or unused wires.

K. Provide a dedicated neutral for each branch circuit or feeder requiring a neutral. Ampacity of neutral conductor shall match that of the branch circuit or feeder.

L. Do not use a pulling means that can damage the raceway.

M. Signal wiring (below 100 volts) and intrinsically safe wiring must be in a conduit separate from power and/or control wiring (over 100 volts). Signal wire shall include, but not be limited to, loop-powered devices, voice and data communications, and communication wiring (i.e., Ethernet, serial, etc.). Analog wiring shall be in a conduit separate from all other wiring. Intrinsically safe wiring shall be separated and identified in accordance with Article 504 of the NEC.

N. Provide junction or pull boxes to facilitate the “pulling in” of wires or to make necessary connections. All raceways and apparatus shall be thoroughly blown out and cleaned of foreign matter prior to pulling in wires.

O. Thoroughly clean wires before installing lugs and connectors.

P. Make splices, taps, and terminations to carry full capacity of conductors without perceptible temperature rise.

Q. Terminate spare conductors within control panels, etc., on terminal strips and label as “SPARE.” Spare wiring in pull or junction boxes may be terminated with electrical tape and labeled as “SPARE.” All spare conductor labels shall indicate where the conductors terminate. Refer to Section 26 05 53–Electrical Identification, for additional requirements.

3.02 GENERAL LOW-VOLTAGE WIRING METHODS (LESS THAN 100 VOLTS)

A. Low-voltage wiring installation requirements specified herein shall be applicable to all systems installed that utilize low-voltage wiring where such wiring installation is not specified in other technical sections.

B. Low-voltage wiring shall be installed in conduit.

C. Do not use wire smaller than 14 AWG for control wiring greater than 60 volts, or 18 AWG for voltages less than 60 volts. All sizes subject to NEC 725 requirements.

D. Low-voltage cable splices shall only be allowed in junction boxes.

3.03 WIRING INSTALLATION IN RACEWAYS

A. Pull all conductors into a raceway at the same time. Use UL-listed wire-pulling lubricant for pulling 4 AWG and larger wires. Wax-based pulling lubricant is not allowed unless it includes a Teflon additive.

B. Completely and thoroughly swab raceway system before installing conductors.

C. Conductors No. 6 AWG and larger shall be pulled into conduits by hand or by utilizing a tugger with built-in tension meter. Other motorized machines of any type are not allowed for any wire pulling. CONTRACTOR shall provide a report to ENGINEER for each pull indicating maximum tension reached during the pull along with manufacturer’s maximum pulling tension.

D. Conductors shall be installed in conduit system in such a manner that insulation is not damaged, conductors are not overstressed in pulling, and walls are not damaged. No splices are permitted except in junction boxes or outlet boxes.

E. CONTRACTOR shall observe code limitation on the number and size of wires in an outlet box. CONTRACTOR shall either lay out work so that the wires do not exceed the particular box limitation or provide larger boxes approved for additional capacity.

F. Panel riser feeder conductors shall be identified with colored tape at panel lugs. The same phase relation shall be maintained throughout.

G. Circuiting is indicated diagrammatically on the Drawings.

3.04 TERMINAL BLOCK INSTALLATION

A. A maximum of one conductor shall be installed on the field-wired side of each terminal block. If rated to accept more than one conductor, a maximum of two conductors shall be installed on the enclosure-wired side of each terminal block. Provide additional terminal blocks and shorting jumpers as required.

B. Provide a separate ground-type terminal block for each shielded-cable drain conductor.

C. Provide ten percent spare terminal blocks for each type of connected terminal block, minimum five spare terminal blocks total. For each grouping of terminal blocks, provide 25% spare DIN rail space.

D. Maintain a minimum of 1 1/2 inches between terminal blocks and adjacent devices and enclosure wireways.

3.05 FIELD QUALITY CONTROL

A. Inspect wire for physical damage and proper connection.

B. Prior to energizing, check conduit, raceways, outlet boxes, and wire for continuity of circuitry and for short circuits. Correct malfunction when detected.

C. Subsequent to wire hookups, energize circuitry and demonstrate functionality in accordance with these specifications.

D. Perform continuity test on all power and equipment branch circuit conductors. Verify proper phasing connections.

E. Perform field inspection and testing according to provisions of this section.

3.06 ACCEPTANCE TESTS

A. CONTRACTOR shall furnish all materials, labor, and equipment necessary for the acceptance tests specified herein. Acceptance tests shall be performed in the presence of OWNER or OWNER’s representative and must be passed before final acceptance of the work.

B. CONTRACTOR shall be responsible for powered tests of each field-installed device unless specifically noted otherwise. CONTRACTOR shall be responsible for device operation as powered from its power source and signals as received at the I/O modules.

C. Operation Test: By operational testing, OWNER will give final acceptance of the wiring system when all of the wiring is considered a complete system. All equipment shall function and operate in the proper manner as indicated in the details of the specifications and on the Drawings. All motors shall be properly connected to protective devices, and motor rotation shall be in the correct direction.

D. A written record of performance tests on electrical and control and instrumentation systems and equipment shall be supplied to OWNER. Such tests shall show compliance with governing codes.

3.07 WIRE INSTALLATION SCHEDULE

A. Install all wiring in raceways except as otherwise noted. This includes all low-voltage wiring such as temperature control, instruments, network, etc.

END OF SECTION

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SECTION 26 05 23

INSTRUMENT AND COMMUNICATION WIRE AND CABLE

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: This specification contains the requirements for instrument wire and cable as opposed to electrical power wire and cable.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 QUALITY ASSURANCE

A. Standards: Comply with standards specified in this section as listed in Division 01.

B. Qualifications of Installers: Workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and the methods needed for proper performance of the work.

1.03 PRODUCT HANDLING

A. Instrument cable shall be furnished in lengths as necessary.

B. Reels, coils, or package rolls of instrument cable shall be identified with the project name and other tagging identification as called for.

1.04 SUBMITTALS

A. Submit shop drawings and product data in accordance with provisions of Section 01 33 00–Submittals.

1.05 QUALIFICATIONS

A. CONTRACTOR shall have at least 10 years of experience in the installation of similar systems. CONTRACTOR shall provide documentation upon request to certify that all assigned staff have attended training courses corresponding to the type of cabling and equipment specified herein.

B. CONTRACTOR shall currently be licensed to install low voltage electronic cabling systems in the state of the project.

C. CONTRACTOR shall currently meet all manufacturer’s requirements for the provision and installation of all equipment specified herein.

PART 2–PRODUCTS

2.01 SHIELDED PAIR CABLING FOR ELECTRONIC INSTRUMENTS

A. Shielded pair cabling shall have stranded, tinned-copper conductors, No. 16 AWG, twisted with 2-inch lay.

B. Insulation of conductors shall be 15 mil, 90°C minimum PVC, rated for 300 volts. Materials shall equal or exceed UL 13 requirements for physical properties.

C. Color coding shall be manufacturer's standard or as stated.

D. The outer jacket shall be flame-retardant and weather- and ultraviolet-resistant PVC, 35 mils thick, and 80°C minimum rating. The outer jacket shall contain a ripcord and shall equal or exceed the requirements of UL 1277. Cable shall be UL labeled as power-limited circuit cable.

E. A 100% coverage shield shall be applied over the insulated conductors. The shield shall consist of a 0.85 mil minimum thickness aluminum mylar tape. A stranded, tinned-copper drain wire shall be furnished in continuous electrical contact with the shield.

F. Single-pair shielded cables shall be Belden 9316, or equal.

2.02 INDUSTRIAL ETHERNET CABLE

A. Below-Grade 300-Volt Rated Shielded Cable:
   1. Communication cables routed in underground conduit and raceways with power wiring under 300 volts shall be 300 volt-rated, 4-pair, shielded (F/UTP), twisted-pair cables. Transmission characteristics of the cables shall meet full Category 6 performance criteria as defined by the ANSI/TIA-568-C.2 standard.
   2. Cable conductors shall be minimum 23 AWG with polyolefin jacket and aluminum foil shield with 100% coverage. The cable outer jacket shall be OSP-grade polyethylene. Cable shall be OSP-rated, UL-listed, and shall be Superior Essex Model 04-001-64, or equal.
   3. Cable jacket color shall be black.
   4. Provide a shielded RJ45 connector on one end of each cable and an unshielded RJ45 connector on the other end of each cable.

B. 300-Volt Rated Unshielded Cable:
   1. For communication with plant SCADA Systems and equipment in communication racks, supervisory control centers, and control panels without VFDs, etc., under 300 volts, and other areas or raceways with power wiring under 300 volts, provide 300-volt safety voltage rated, 80-volt operating voltage rated, 4-pair, unshielded (U/UTP), twisted-pair cables. Transmission characteristics of the cables shall meet full Category 6 performance criteria as defined by the ANSI/TIA-568-C.2 standard.
   2. Industrial Ethernet cable shall be minimum 23 AWG with PVC jacket. The cable outer jacket shall be industrial-grade PVC with a maximum overall cable diameter of 0.24 inch. Cable shall be CMR rated, UL listed, and shall be Systimax Solutions 1071E, or equal.
   3. Cable jacket color shall be light blue.
   4. Provide unshielded RJ45 connectors on both ends of each cable.

C. Patch cables shall be provided premanufactured by the cable manufacturer or connector manufacturer in sufficient length to connect the associated equipment to any port on the equipment, patch panel, or switch. Field-attached plugs shall be insulation displacement type and shall be by the same manufacturer as the cable.

PART 3–EXECUTION

3.01 INSTALLATION REQUIREMENTS AND SPECIAL CONSIDERATIONS

A. Shielded pair cabling specified in this section shall be installed in conduit, and may not be run free-air or in nonmetallic tubing such as innerduct.

3.02 GROUNDING

A. The shielded connection for shielded network cabling shall be connected at the network switch or patch panel and not at the field device connection. Ground patch panels and network switches accepting shielded network cables.

B. Shielded cabling shall be installed in accordance with manufacturer's instructions and to minimize electrical noise and interference to associated instruments. Refer to instrument manufacturer's instructions for additional requirements.

C. Ends of signal wires shall be sealed to prevent the migration of moisture into the cable and to prevent unintentional grounding of the shield at the open end. Seal signal wires using a minimum 1-inch piece of heat-shrink tubing installed over PVC jacket and individual wires, and heat-shrink to a watertight fit.

D. All shields must be grounded.

E. Shields shall be grounded at one point only. Shielded cabling shall be isolated and left open at the instrument.

F. Cable shield grounds shall be isolated from control system signal grounds, except at instrument system grounding electrodes.

END OF SECTION

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SECTION 26 05 26

SECONDARY GROUNDING

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Power system grounding.
   2. Electrical equipment and raceway grounding and bonding.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 SUBMITTALS

A. Indicate location of system grounding electrode connections and routing of grounding electrode conductor.

B. Submit shop drawings and product data in accordance with provisions of Section 01 33 00–Submittals.

PART 2–PRODUCTS

2.01 MATERIALS

A. Ground Rods: Copper-bonded, 5/8-inch diameter; minimum length 10 feet.

B. Ground Connections Below Grade: Exothermic type by Cadweld, compression type by ABB (Thomas & Betts), or equal. Compression connectors shall be prefilled with an oxide inhibitor.

C. Ground Fittings: O-Z/Gedney, Type ABG, CG, TG, GBL, or equal.

PART 3–EXECUTION

3.01 INSTALLATION

A. Compression-type connectors shall be installed with the manufacturer recommended tools. Compression dies shall emboss index on the connector when installed correctly. An indenter crimp shall be made on ground rods prior to connection of grounding conductor.

B. Provide a separate insulated equipment grounding conductor for each feeder and branch circuit. Terminate each end on a grounding lug, bus, or bushing.

C. Bond together system neutrals, service equipment enclosures, exposed noncurrent carrying metal parts of electrical equipment, metal raceway systems, grounding conductor in raceways and cables, and receptacle ground connectors.

D. Connect grounding electrode conductors to metal frame of structure or structural reinforcing bars using suitable ground clamps.

E. Ground system, transformer neutrals, and equipment as required by code and local ordinances.

F. All feeder neutrals shall be connected to neutral at only one point in the control panel.

G. All bare copper conductors installed outdoors shall be buried a minimum of 2 feet below grade.

H. A minimum of one ground rod near service shall be provided. These shall be connected to ground bus by conductors sized to code requirements. The above are minimum requirements.

I. Include ground for grounded receptacles and equipment items shown on the Drawings.

J. Flexible connections do not qualify for ground. All flexible connections must have separate green ground wire from motor base, or equipment frame to conduit system.

K. Provide a separate grounding conductor system for the grounding of devices installed in the same conduit as the branch circuit conductors. Ground conductors shall be individually connected at each fixture or device.

L. All equipment in NEMA 4X areas that are fed from circuits in PVC conduit shall be provided with a separate green ground wire that is terminated at the metallic conduit system and the equipment.

M. Separately derived systems as defined by the National Electrical Code shall be grounded as such. This shall include, but not be limited to, 4-wire transformers and 4-wire standby generators.

N. Refer to Section 26 05 23–Instrument and Communication Wire and Cable for additional grounding requirements.

3.02 TESTING

A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

B. Provide ground system resistance test report for each ground grid. Test reports shall document ground system resistance following the three-point “Fall-of-Potential” test. The test results shall include a graph of the results plus a diagram of the testing layout. The remote current probe (C2) shall be placed a minimum of 100 feet from the ground system potential/current probe (P1/C1) or as required to provide sufficient spacing to demonstrate a resistance plateau on the graph. The ground resistance shall be tested with the potential probe (P2) between the P1/C1 probe and the C2 probe at 10% intervals starting at 0% and ending at 100% of the distance between P1/C1 and C2, 11 points total. A single point of measurement is not acceptable, and the two-point method of ground system testing shall only be used where there is no or insufficient “open earth” area to use the three-point Fall-of-Potential method. Resistance at any point in the grounding system shall not exceed

5 ohms. All ground system tests shall be witnessed by ENGINEER or OWNER. ENGINEER shall be notified a minimum of 72 hours in advance of all ground system testing.

C. The test meter shall be Associated Research Vibroground test set with null balance, or equal. All ground system tests shall be performed in accordance with the procedures outlined in the instruction manuals of the ground system test equipment.

D. Ground resistance testing shall be performed with all rods connected and shall be isolated from all metallic connections, such as from the ground rod to other grounded structures and electrical system neutrals.

E. Multiple ground rod grids shall be isolated from all metallic connections such as from grid under test to other grounded structures and electrical system neutrals.

F. Provide test report using the attached Form 26 05 26. Each ground grid, including service entrance transformers, switchgear, etc., shall have a form submitted.

FORM 26 05 26

GROUND ROD RESISTANCE TO EARTH TEST RECORD

1. DATE _____

2. PROJECT NAME _____

3. LOCATION OF TEST _____

4. GROUND ROD TYPE _____

   DIAMETER _____ LENGTH _____

5. TEST METHOD _____

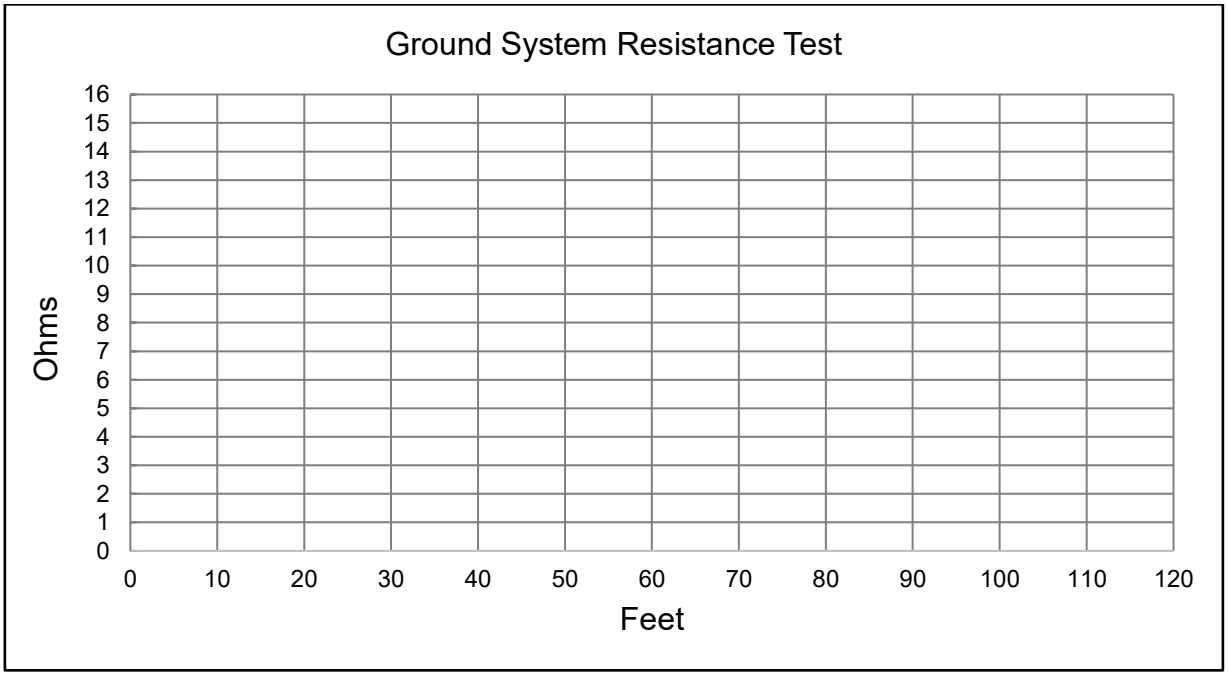
   INSTRUMENT TYPE _____

   SERIAL NO. _____

6. REQUIRED MAXIMUM RESISTANCE TO EARTH _____

7. MEASURED RESISTANCE TO EARTH

   GROUND ROD SYSTEM _____



TEST PERFORMED BY: _____
Signature

TEST WITNESSED BY: _____
Signature

END OF SECTION

SECTION 26 05 29

SUPPORTING DEVICES

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Conduit and equipment support members.
   2. Fastening hardware.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 QUALITY ASSURANCE

A. Support systems shall be adequate for weight of equipment and conduit, including wiring, which they carry.

1.03 SUBMITTALS

A. Submit shop drawings and product data in accordance with provisions of Section 01 33 00–Submittals.

PART 2–PRODUCTS

2.01 MATERIAL

A. Support Members: 316 stainless steel.

B. Hardware:
   1. Stainless steel in exterior locations, Class I locations, NEMA 4X areas, and damp and wet locations.
   2. PVC-coated steel clamps and stainless steel hardware with stainless steel members where used to support PVC-coated rigid steel conduits.

C. Manufacturers: Unistrut P-1000, B-line, Superstrut, or equal.

PART 3–EXECUTION

3.01 INSTALLATION

A. All supporting devices and support structures shall be constructed such that the structure adequately supports the load of the equipment installed on it including any wind and/or snow loads. Provide additional support members to those shown on the Drawings to adequately support load.

B. Fasten hanger rods, conduit clamps, and outlet and junction boxes to building structure using expansion anchors or support members. Do not use spring steel clips and clamps. Provide standoffs or suspended ceiling grid bridge supports as specified in other technical sections.

C. Use self-drilling anchors or expansion anchors on concrete surfaces.

D. The ends of all support members shall be ground smooth.

E. Do not fasten supports to piping, ductwork, mechanical equipment, or conduit.

F. Do not use powder-actuated anchors.

G. Do not drill structural steel members.

H. Fabricate supports with welded end caps and all welds and surfaces ground smooth for neat appearance. Use hexagon head bolts with steel spring-lock washers under all nuts.

I. Do not use chain, wire rope, or perforated strap hangers.

J. All welds shall be continuous and ground smooth.

END OF SECTION

SECTION 26 05 33

CONDUIT

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. PVC externally and internally coated galvanized rigid metal conduit and fittings.
   2. Conduit seals and special fittings.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 REFERENCES

A. ANSI/NEMA FB 1–Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable.

B. NEMA RN 1–Polyvinyl-Chloride (PVC) Externally Coated Galvanized Rigid Steel Conduit and Intermediate Metal.

1.03 QUALITY ASSURANCE

A. Manufacturers of Raceways: Firms regularly engaged in the manufacture of electrical raceways of the types and capacities required whose products have been in satisfactory use in similar service for not less than 5 years.

B. Installer: A firm with at least 5 years of successful installation experience on projects with electrical wiring installation work similar to that for the project.

C. Code Compliance: Comply with National Electrical Code (NFPA 70) and any and all local codes as applicable to construction and installation of electrical wiring devices, material, and equipment herein specified.

D. UL Labels: Provide electrical materials, which have been listed and labeled by Underwriters Laboratories.

E. Prior to shipment to the site, all conduit provided shall be new, unused material, and shall not have been stored outdoors or exposed to weather.

F. NECA Standard: Comply with applicable portions of National Electrical Contractor's Association's "Standard of Installation."

1.04 SUBMITTALS

A. Submit shop drawings and product data in accordance with provisions of Section 01 33 00–Submittals.

1.05 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Provide color-coded thread protectors on the exposed threads of threaded rigid metal conduit.

B. Handle conduit carefully to prevent end damage and to avoid scoring the finish.

C. Store conduit inside and protect from weather. When necessary to store outdoors, elevate well above grade and enclose with durable, waterproof wrapping.

PART 2–PRODUCTS

2.01 RIGID METAL CONDUIT AND FITTINGS

A. PVC-coated conduit and fittings shall be internally and externally hot dipped galvanized rigid metal conduit with hot dipped galvanized threads and PVC coating. PVC coating shall be UL listed with rigid metal conduit as the primary means of corrosion protection for the conduit, and PVC coating shall have an external 40 mil thickness with an internal 2 mil urethane coating. Acceptable manufacturers shall be Plasti-bond RedH_2OT by Robroy Industries, Ocal-Blue by ABB (Thomas & Betts), Calbond, or equal. All installers shall be field-certified from the factory for installation and shall provide proof of certification. PVC-coated conduit and fittings shall meet the following listings and manufacturing standards, without exception:
   1. ANSI C80.1.
   2. UL6.
   3. NEMA RN1.

B. Conduit bodies for PVC-coated rigid conduit shall be as manufactured by Plasti-bond RedH_2OT by Robroy Industries, Ocal-Blue by ABB (Thomas & Betts), Calbond, or equal, and have a 40 mil PVC exterior coating and 2 mil red urethane interior coating. Conduit bodies shall be Form 8 style or pulling elbow and include domed, gasketed covers and stainless steel screws. Covers for conduit bodies must have bolts that thread into the conduit body. Snaptight and wedgenut covers are not allowed. CONTRACTOR shall select body style and size according to application.

C. Fittings and Conduit Bodies: ANSI/NEMA FB 1 and UL 514B; threaded-type material to match conduit. For hazardous locations, fittings and conduit bodies shall meet the requirements of UL 886. Split couplings are not allowed.

D. Supports: One-hole straps with conduit clamps and backspacers shall be used for surface-mounted conduit. Where standoffs are required, provide conduit clamps and supporting devices as specified in Section 26 05 29–Supporting Devices. One-hole straps with conduit clamps and backspacers for PVC-coated rigid steel conduit shall be PVC-coated rigid steel material.

2.02 CONDUIT SEALS AND SPECIAL FITTINGS

A. Conduit seal-offs for Class I Locations: Robroy Industries Plasti-Bond Red H_2OT Series EYS seal fittings and Crouse Hinds “Chico A” sealing compound, Arrow-Hart, or equal.

B. Conduit Seals: Duct sealing compound, OZ Gedney Type DUX, or equal.

C. Expansion Fittings: Crouse Hinds or Robroy Type XJG (non-hazardous location) or Type UNY/UNF (hazardous location), or equal, for PVC-coated rigid conduit. Carlon E945 Series.

D. Expansion Deflection Fittings: O-Z type “DX,” Crouse Hinds or Appleton.

E. Ground Bushings: Crouse Hinds Model GLL, or equal.

F. Mechanical Seals: 316 stainless steel, Link Seal, or equal. Link seals shall be provided with 316 stainless steel bolts, nuts, and fasteners.

G. Watertight Hubs: Diecast, insulated and gasketed, rated for wet or dry locations indoors or outdoors. Watertight hubs shall be Appleton HUBXXXDN, Crouse-Hinds Myers Hubs, or equal.

H. Conduit Plugs: Kwik N Sure pipe plug as manufactured by Cherne Industries, or equal. Plug shall include natural rubber O-ring with galvanized wing nut and hex nut.

I. Conduit Threads Joint Compound: Kopr-shield conductive, anti-corrosion joint compound as manufactured by Thomas & Betts, or equal.

PART 3–EXECUTION

3.01 CONDUIT SIZING, ARRANGEMENT, AND SUPPORT

A. Size conduits for branch circuit conductors, control wires, and instrumentation cables so as to have not less than 25% spare capacity after installation; 3/4 inch minimum size.

B. Maintain at least 1 inch of separation between conduit sizes to 1 1/2 inches and 2 inches between conduits 1 1/2 inches or larger. Maintain 1 foot of separation between signal conduits (below 100 volts) and power conduits (100 volts and above).

C. All conduit shall be supported in accordance with the NEC and as specified herein. This shall apply to all conduit types, including flexible conduit.

D. Provide for the proper application, installation, and location of inserts, supports, and anchor bolts for a satisfactory raceway system. Where any component of the raceway system is damaged, replace or provide new raceway system.

E. Conduits shall be attached to structure surfaces and not suspended unless installed in a Unistrut-type conduit rack as specified herein. Individual conduits shall not be suspended. Clevis hangers are not allowed.

F. Independently support or attach the raceway system to structural parts of construction in accordance with good industry practice.

3.02 GENERAL CONDUIT INSTALLATION REQUIREMENTS

A. All conduit installed below grade shall be buried a minimum of 2 feet 0 inch.

B. PVC-coated rigid steel conduit installed in earth (interior and exterior) shall be bedded in compacted sand with a minimum of 6-inch cover on all sides.

C. Ream conduit smooth at ends, cap upon installation, rigidly attach to all other components of the raceway system.

D. Provide conduit raceway for exposed cables that are not UV resistant. This shall include, but not be limited to, instrument wiring, float cables, etc.

E. Conduit seals shall be provided for intrinsically safe circuits, any conduit entering a wet location, and any conduit entering a NEMA 4X area.

F. Provide conduit expansion-deflection fittings as specified herein in all conduit runs where movement perpendicular to axis of conduit may be encountered.

G. The PVC-coated rigid conduit manufacturer's touch-up compound shall be used on all conduit interior and exterior bare steel exposed because of nicks, cuts, abrasions, thread cutting, and reaming; minimum six coats.

H. Conduits installed in damp and wet locations shall have all threads coated with conduit threads joint compound.

3.03 CONDUIT PENETRATIONS AND TERMINATIONS

A. Where fittings are brought into an enclosure with a knockout, a gasket assembly consisting of an O-ring and retainer shall be installed on the outside. Fittings shall be insulated throat type.

B. Conduit penetrations for control panels or enclosures containing electronic equipment shall utilize watertight hubs and, if entering the top of the enclosure, shall be located at the front of the enclosure and not over any electronic equipment (e.g., PLC, power supplies, etc.).

C. Conduit penetrations for all exterior enclosures (e.g., disconnects, junction boxes, control panels) shall utilize watertight hubs and enter the sides or bottom of the enclosure. Conduits shall not penetrate the top of the enclosure.

D. Provide conduit expansion fittings for conduits protruding from earth.

E. All conduits that protrude from poured concrete and earth shall be PVC-coated rigid conduit.

F. Conduits passing through masonry, concrete, or similar construction shall be cast in place using PVC-coated rigid conduit extending completely through the construction.

3.04 CONDUIT INSTALLATION IN HAZARDOUS LOCATIONS

A. All conduits installed in or passing through "hazardous locations" as defined by the NEC, NFPA, or as noted on the Drawings, shall be installed with seal-offs as specified herein.

B. All conduits in hazardous locations shall be installed in accordance with the NEC.

C. Conduits for intrinsically-safe circuits shall be dedicated to intrinsically-safe wiring. Conduits shall be installed and identified by labeling or color coding in accordance with Article 504 of the NEC.

3.05 CONDUIT INSTALLATION SCHEDULE

A. The following schedule lists specific conduit types allowed in designated areas. Those areas not listed under a specific conduit type shall not have that type of conduit installed: PVC-coated rigid steel:
   1. Class I, Division 1 locations.
   2. Conduits protruding from concrete and earth.
   3. Interior and exterior locations requiring mechanical protection.
   4. Earth.
   5. Exterior locations and locations exposed to weather.
   6. Conduits within manholes.

END OF SECTION

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SECTION 26 05 35

BOXES

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Switch, outlet, and small junction boxes.
   2. Pull and junction boxes.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern Work in this section.

1.02 REFERENCES

A. NEMA 250–Enclosures for Electrical Equipment (1000 Volts Maximum).

1.03 QUALITY ASSURANCE

A. Manufacturers of switches, outlets, boxes, lugs, etc.: Firms regularly engaged in the manufacture of these products, of the types and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Installer: A firm with at least 5 years of successful installation experience on projects with electrical wiring installation Work similar to that in this project.

C. Code Compliance: Comply with National Electrical Code (NFPA 70) and any and all local codes as applicable to construction and installation of electrical wiring devices, material, and equipment herein specified.

D. UL Labels: Provide electrical cable, boxes, raceways, wire, connectors, outlets, switches, etc. that have been listed and labeled by Underwriters Laboratories.

E. NECA Standard: Comply with applicable portions of National Electrical Contractor's Association's "Standard of Installation."

1.04 SUBMITTALS

A. Submit shop drawings and product data in accordance with provisions of Section 01 33 00–Submittals.

PART 2–PRODUCTS

2.01 SWITCH, OUTLET, AND SMALL JUNCTION BOXES

A. Cast Boxes: Aluminum or cast feraloy, deep-type, gasketed cover, threaded hubs, Eaton FD Series, or equal.

B. PVC-Coated Cast Boxes: Boxes shall be deep type and be by the same manufacturer as the conduit.

C. Covers for switch and outlet boxes used as junction boxes shall have covers that match box type.

2.02 PULL AND JUNCTION BOXES

A. Cast Boxes: NEMA 250; Type 4, surface-mounted junction box, UL-listed as watertight. Cast aluminum or feraloy box and cover with ground flange, neoprene gasket, and stainless steel cover screws, Crouse-Hinds WCB Series, or equal. Boxes larger than 12 inches in any dimension shall have hinged cover.

B. PVC-Coated Cast Boxes: Provide PVC-coated cast boxes in areas where PVC-coated conduit is used. Boxes shall be by the same manufacturer as the conduit. Boxes larger than 12 inches in any dimension shall have hinged cover.

C. Where terminal blocks or other devices are mounted in a pull or junction box, provide a 14-gauge steel back panel with a white enamel finish for mounting.

D. All enclosures with double doors or that are free-standing shall have a three-point latch.

E. Boxes specified in this section are not allowed to have knockouts and are not allowed to be used as enclosures for control panels.

PART 3–EXECUTION

3.01 COORDINATION OF BOX LOCATIONS

A. Provide electrical boxes as necessary for splices, taps, wire pulling, cable bending radii, equipment connections, and code compliance.

B. Electrical box locations shown on the Drawings are approximate. Verify location and size of outlet boxes in all work areas.

C. Where dedicated raceways are provided for different voltage systems or wiring, separate boxes shall also be provided unless acceptable to ENGINEER. Where acceptable to ENGINEER, combined boxes shall be physically divided to separate the wiring.

D. Locate and install boxes to allow access. Where installation is inaccessible, coordinate locations and sizes of access doors.

E. Locate and install to maintain headroom and to present a neat appearance.

F. All boxes attached to building surfaces that may be damp or wet shall be spaced to avoid rust and/or corrosion. All boxes in damp and wet locations shall be on 1/2-inch standoffs.

3.02 SWITCH, OUTLET, AND SMALL JUNCTION BOX INSTALLATION

A. Provide knockout closures for unused openings.

B. Support boxes independently of conduit.

C. Use multiple gang boxes where more than one device is mounted together; do not use sectional boxes. Provide barriers to separate wiring of different voltage systems.

D. Switch and outlet boxes provided for branch circuits and feeders shall not contain control wiring. Control wiring, and intrinsically safe wiring shall each have dedicated pull and junction boxes provided. Wiring for different voltage systems (e.g., 24 V, 120 V) shall have dedicated pull and junction boxes for each voltage.

E. For weatherproof devices, use cast boxes with proper cover and gasket.

F. Knockout punches or saws shall be used for holes; boxes with prepunched holes are not acceptable.

G. Cast boxes with 3/4-inch hubs and aluminum fittings and enclosures may be used with all conduit types.

H. Provide PVC-coated cast boxes in all areas where PVC-coated conduit is used. Boxes in hazardous locations shall be rated for Class I, Division 1, Groups C and D locations. Boxes shall be by the same manufacturer as the PVC-coated conduit.

3.03 PULL AND JUNCTION BOX INSTALLATION

A. Support pull and junction boxes independent of conduit.

B. Knockout punches or saws shall be used for holes; boxes with prepunched holes are not acceptable.

C. Refer to Section 26 05 53–Electrical Identification for junction box labeling requirements.

D. All exterior junction and pull boxes shall be NEMA 4X stainless steel.

E. Boxes in hazardous locations shall be rated for Class I, Division 1, Groups C and D locations. Boxes shall be by the same manufacturer as the PVC-coated conduit.

END OF SECTION

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SECTION 26 05 44

HANDHOLES

PART 1–GENERAL

1.01 DESCRIPTION

A. Work Included: Precast polymer concrete handholes.

B. Related Sections: Applicable provisions of Division 01 shall govern work in this section.

1.02 REFERENCES

A. ANSI/SCTE 77–Specification for Underground Enclosure Integrity.

B. ASTM D4101–Specification for Polypropylene Injection and Extrusion Materials.

1.03 SUBMITTALS

A. Submit shop drawings and product data in accordance with provisions of Section 01 33 00–Submittals.

B. Shop drawing submittals shall include the following:
   1. Interior elevations of each wall of all handholes provided under this Contract. Each conduit shall be identified as to what it serves.
   2. Product data (handholes): Manufacturer's technical information for handholes and accessories proposed for use.

PART 2–PRODUCTS

2.01 PRECAST POLYMER CONCRETE HANDHOLES

A. Material and Construction:
   1. Precast polymer concrete.
   2. Duct entrances sized and located to suit duct banks.
   3. Enclosures, boxes and covers are required to conform to test provisions of ANSI/SCTE 77 for Tier 22 applications.
   4. Handholes shall be a minimum of 30 inches deep. Handholes shall be sized in accordance with the NEC.
   5. Covers shall have the following stamped logo:

      “ELECTRICAL”

   6. Handholes shall be Hubbel, Quazite, PG-Style, or equal.

PART 3–EXECUTION

3.01 INSPECTION AND COORDINATION

A. Examine conditions under which the Work is to be installed and notify ENGINEER in writing of conditions detrimental to proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected.

3.02 HANDHOLE INSTALLATION

A. Coordinate handhole installation with piping, sheeting, and other underground systems and structures, and locate clear of interferences.

B. Install handholes where shown and verify locations in field. Perform excavation and backfilling required for installation. Excavation and backfilling shall be in accordance with Section 26 05 00–General Electrical Requirements.

C. Install handholes on a 3/4-inch crushed stone foundation 1 foot under all handholes, and within 2 feet of handholes. Handhole bases shall be set at the proper grade and carefully leveled and aligned.

D. All conduits must enter the sides of handholes. Conduits entering the bottom will not be permitted. Conduits shall enter handholes a minimum of 6 inches above bottom of handhole. Provide handhole depth as required. Conduit burial depth shall be 24 inches as specified.

E. Handholes shall be considered wet locations for purposes of equipment selection.

F. All conduits shall be pitched so that drainage is towards handholes and away from all structures.

3.03 GRADING AT HANDHOLES

A. Handholes in unpaved areas shall be built as shown to a rim elevation higher than the original ground. The ground surface shall be graded to drain away from the handhole. Fill shall be placed around handholes to the level of the upper rim of the handhole frame, and the surface evenly graded on a one (vertical) to five (horizontal) slope to surrounding ground, unless otherwise shown.

B. CONTRACTOR shall be solely responsible for proper height of handholes necessary to reach final grade. ENGINEER’s review of shop drawings for handhole components is general in nature, and CONTRACTOR shall provide random length handhole riser sections to adjust handholes to meet field conditions for final grading.

END OF SECTION

SECTION 26 05 53

ELECTRICAL IDENTIFICATION

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Nameplates.
   2. Labeling tags.
   3. Wire markers.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 SUBMITTALS

A. Submit shop drawings and product data in accordance with provisions of Section 01 33 00–Submittals.

B. Provide schedule for nameplates and labeling tags with shop drawings. Reference Drawings for type used.

PART 2–PRODUCTS

2.01 NAMEPLATES

A. Type “A”:
   1. Use:
      a. Cabinets, enclosures, pull, and junction boxes.
      b. Field devices (level transmitters, etc.).
   2. Size: As required.
   3. Material: 2-layer laminated Micarta.
   4. Background Color: Black.
   5. Character Color: White.
   6. Character Size: 1/2-inch.
   7. Engraving: See one-line or as requested by ENGINEER. Label shall include equipment number and description (i.e., SCAL-60-01, Fluoride Scale).
   8. Mounting Location: Front exterior.

B. Type “B”:
   1. Use: Control panel.
   2. Size: As required.
   3. Material: 2-layer laminated Micarta.
   4. Background Color: Black.
   5. Character Color: White.
   6. Character Size: 2 1/4 inches.
   7. Engraving: Equipment label. Label shall include equipment number and description (i.e., LP-10-01, First Floor Power Panel).
   8. Mounting Location: Equipment: Top center.

2.02 LABELING TAGS

A. Use: Field-mounted devices without surfaces suitable for mounting fixed nameplates (Level Transmitters, etc.).
   1. Size: As required.
   2. Material: 2-layer laminated Micarta.
   3. Character Size: 1/4-inch.
   4. Engraving: As requested by ENGINEER.

2.03 WIRE AND CABLE MARKERS

A. Wire and cable markers shall be permanently-attached, heat-shrink type labels.
   1. Sleeve: Permanent, PVC, white, with legible machine-printed black markings.
   2. Acceptable Manufacturers: Raychem Model D-SCE or ZH-SCE, Brady Model 3PS, or equal.
   3. Grounding Conductor: Provide green wire marker; minimum 2 inches wide.

B. Wire or cable numbering preprinted on the conductor or cable insulation, flag-type labels, and individual wraparound numbers (such as Brady preprinted markers) are not acceptable. All wire markers shall be the same throughout the project.

PART 3–EXECUTION

3.01 INSTALLATION

A. Degrease and clean surfaces to receive nameplates.

B. Install nameplates parallel to equipment lines.

C. Affix nameplates with weatherproof, UV-resistant adhesive in outdoor locations and sticky back adhesive in indoor locations.

D. Affix labeling tags with stainless steel leaders; vinyl locking wire ties are not acceptable. Provide 3/8-inch hole to accommodate wire tie.

E. Labeling tags shall only be used for equipment enclosures without surfaces suitable for mounting fixed nameplates.

3.02 WIRE IDENTIFICATION

A. Provide wire markers on each conductor, including neutral and spare conductors, in pull boxes, outlet and junction boxes, and at load connection. Neutral conductor labels shall include the associated branch circuit number. Identify with branch circuit or feeder number for power, and with control wire number as indicated on schematic and interconnection diagrams for control wiring. Spare conductors shall have control wire number or shall indicate termination point of wire.

B. Conductors in pull boxes and control panels shall be grouped as to circuits and arranged in a neat manner. All conductors of a feeder or branch circuit shall be grouped, bound together with nylon ties, and identified. Phase identification shall be consistent throughout the system.

All wiring labels shall be able to be read without removing wire management (i.e., wiring trough covers, spiral windings, etc.) or twisting the wire/cable.

C. Where terminal blocks are factory provided with non-project-specific labels by equipment manufacturers in control panels and similar equipment and are wired to terminal blocks in control panels with project-specific labels, the interconnecting wiring shall be labeled at both ends to match the project-specific terminal blocks in the control panel. Provide an additional label on the end of each wire that is connected to a terminal block with a non-project-specific label to indicate the associated terminal block.

D. Power Conductor Insulation Color Code:
   1. 6 AWG and Larger: Provide general-purpose, flame-retardant, permanent tape at each termination and at accessible locations such as handholes, etc. Apply tape with at least six full, overlapping wraps; minimum 2 inches wide.
   2. 8 AWG and Smaller: Provide conductors with color-coded insulation.
   3. Colors:

System	Conductor	Color
All Systems	Equipment Grounding	Green
120/240 Volts Single-Phase, Three-Wire	Grounded Neutral One Hot Leg Other Hot Leg	White* Black Red
* When installed as part of a 120-volt branch circuit, provide a color-coded stripe on the white neutral conductor insulation matching the branch circuit insulation.		

E. Control Panel and Field-Installed Control Conductor Insulation Color Code:
   1. All conductors shall have color-coded insulation.
   2. Colors:

System	Conductor	Color
Supply Voltage	Ungrounded Circuit Conductors Neutral	Black White
Discrete 120-volt AC Input/Output	Control Circuit Conductor Neutral	Red White
Discrete 12/24-volt DC Input/Output	Control Circuit Conductor Common	Blue White with Blue Stripe
Conductors energized when the main disconnect is in the "off" position (e.g., foreign supply voltages)	Control Circuit Conductor AC Neutral DC Common Ground	Orange White White with Blue Stripe Green
Intrinsically Safe	Control Circuit Conductor DC Common	Light Blue White with Two Light Blue Stripes

F. Circuit Identification:
   1. Identify power, instrumentation, and control conductors at each termination and at accessible locations such as handholes.
   2. Control conductor identification shall match the associated terminal block label.
   3. Circuits Not Listed in Circuit Directories:
      a. Assign circuit name based on unique device or equipment at load end of circuit.
      b. Where unique device or equipment names are not available or apparent, add a unique number or letter modifier to each otherwise identical circuit name.

3.03 JUNCTION BOX IDENTIFICATION

A. All junction boxes shall be labeled with permanent nameplates. Nameplates shall indicate circuit or load served, as well as the power source and highest voltage present on any conductor.

3.04 CONDUIT FITTINGS IDENTIFICATION

A. All conduit fittings that contain splices of any kind shall be labeled with permanent nameplates indicating “splice within.” Nameplates shall be clearly visible at location installed. Nameplates shall be fastened to each conduit fitting with heavy duty, UV-resistant, cold weather cable ties.

3.05 TERMINAL BLOCK IDENTIFICATION

A. Terminal blocks shall be labeled on both sides of each terminal block. Terminal block numbering shall match the numbers shown on the project-specific wiring diagrams.

B. Fused terminal blocks labels shall be located on top of the terminal blocks and include the fuse voltage and ampere rating.

3.06 COMPONENT IDENTIFICATION

A. All components (e.g., relays, timers, power supplies, transformers, etc.) within enclosures shall be identified with sticky-back adhesive, self-laminating, machine-printed marking labels. Labels shall be installed on the enclosure back panel and not on the device itself, wireway covers, or any other removable devices. Labels shall be included on the as-built drawings.

3.07 LABELING FONT REQUIREMENTS

A. The font for all conductor, cable, and device labels shall be Arial with black characters on white background, and minimum font size 12.

B. The text for all conductor, cable, and device labels shall be machine printed. Handwritten labels are not acceptable.

END OF SECTION

SECTION 26 05 74

ARC FLASH LABELS

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: CONTRACTOR shall retain the services of an independent third-party firm to provide arc flash labels for the electrical distribution system at each site with a new service entrance. The third-party firm shall be responsible for collecting all data and information required to prepare and apply the labels.

B. The analysis shall include all portions of the new and existing electrical distribution system as shown on the one-line diagrams.

C. Normal system connections and those which result in maximum fault conditions shall be adequately covered in the analysis.

D. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 REFERENCES

A. ANSI/IEEE Standards C37, 242, and 399.

B. ASTM E 1934-99a–Standard Guide for Examining Electrical and Mechanical Equipment with Infrared Thermography.

C. IEEE Standard 1584–IEEE Guide for Performing Arc Flash Hazard Calculations.

D. International Electrical Testing Association–Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems, Latest Edition.

E. NFPA70–National Electrical Code.

F. NFPA70E–Standard for Electrical Safety in the Workplace, Latest Edition.

G. OSHA 29 Code of Federal Regulations (CFR) Part 1910, Subpart S.

H. UL489–Underwriter’s Laboratories.

1.03 QUALITY ASSURANCE

A. The third-party firm shall be NETA Accredited and currently involved in high- and low-voltage power system evaluation. The analysis shall be performed, stamped, and signed by a registered professional engineer (electrical) in the state where the project is located. Credentials of the individual(s) performing the study and background of the firm shall be submitted to ENGINEER for approval prior to start of the work. A minimum of 5 years of experience in power system analysis shall be required for the project manager.

1.04 SUBMITTALS

A. The analysis results shall meet the following requirements:
   1. Submit two bound copies of the final report. Provide two USB flash drives with the final report and thermographic surveys in PDF format. The two USB flash drives shall also include all report files in Word format, one-line diagrams in PDF and CAD formats, and all power analysis software files and associated libraries.
   2. Organize and submit the report with the following sections. Below are minimum requirements:
      a. Part I–Overview and Executive Summary.
      b. Part II–Power System Analysis: Arc Flash Hazard Assessment:
         (1) Purpose.
         (2) Explanation of data.
         (3) Assumptions.
         (4) General and specific procedures followed.
         (5) Analysis of results, including arcing fault currents, device clearing times, incident energy levels, working distances, flash protection boundary, and recommended personal protective equipment (PPE).
         (6) Recommendations, including system modifications that may reduce arc flash hazard based on analysis of results.
         (7) Arc flash evaluation report, including sample labels for major distribution equipment.
      c. Part III–Overall Conclusion and Recommendations.
      d. Part IV–Suggested Preventive Maintenance and Schedule.
      e. Part V–Supporting Information.
      f. Appendices:
         (1) One-line diagrams of the system in similar format as the Contract Documents from the power analysis software showing project-specific equipment, wire and cable types and lengths, fault currents, and recommended device settings.
         (2) Protective device summaries generated by the power analysis software.
         (3) Reference data.
         (4) Paper copy of warning labels to be provided for the project.

B. Refer to Part 3–Execution for additional requirements and specific analyses to be performed.

PART 2–PRODUCTS

2.01 POWER SYSTEM STUDY SOFTWARE

A. The power system study shall be performed using the latest version of SKM Power Tools software utilizing all required evaluation modules to perform the assessments specified herein.

2.02 ARC FLASH HAZARD LABELS

A. Labels shall be provided for new and existing equipment shown on the one-line diagrams on the Drawings and specified in all Division 26 sections, as well as for equipment provided in other Divisions where an arc flash hazard may exist. This shall include junction boxes and disconnect switches for motors 50 hp and larger. A separate label shall be installed on each panelboard, generator, automatic transfer switch, etc. For switchgear, switchboards, and

MCCs with a main circuit breaker, a minimum of two labels shall be provided (one for main circuit breaker section and one for remaining sections in the equipment lineup). Provide labels as manufactured by Brady, or equal, and meet the following minimum requirements:

1. Self-adhesive, vinyl, 6 inches by 4 inches minimum.
2. Equipment identification corresponding to the Contract Documents.
3. Study date.
4. Arc-flash boundary.
5. Incident Energy Working Distance.
6. Nominal system voltage.
7. Shock-hazard boundaries (limited approach and restricted approach).
8. Available incident energy.

PART 3–EXECUTION

3.01 DATA COLLECTION

A. Third-party firm shall gather the required data from shop drawings for the analysis. The firm performing the analysis shall visit the site as needed to properly carry out the work and meet the requirements of these specifications.

B. Third-party firm shall expedite collection of the data to complete the analysis within the deadlines specified herein. The following minimum information shall be collected and used:
   1. Available fault current from the electric utility company serving the facility.
   2. Installed cable lengths, along with the specific rating, type and manufacturer.

3.02 ARC FLASH HAZARD ASSESSMENT

A. Include in the appropriate report sections noted above, the following minimum requirements:
   1. Determine and document all possible utility sources that are capable of being connected to each piece of electrical gear. Calculations shall be based on the highest possible source connection.
   2. Arc flash values for two normal cases to define the highest values (low short-circuit and high short-circuit).
   3. Arc flash values for two maintenance cases which define the arc flash values available at the equipment, which would be available if the instantaneous trip of the upstream circuit breaker is set at a minimum value. This is recommended for personnel working on live equipment.
   4. Recommendations to reduce the arc flash incident energy in all areas that require 8 cal/cm^2 and higher PPE.
   5. Calculations shall conform to the latest version of the National Fire Protection Association (NFPA) 70E calculation standards. All incident energy units shall be calculated in calories per square centimeter.

B. Provide labeling as specified herein based upon the results of the assessment.

3.03 FIELD SETTINGS

A. CONTRACTOR shall perform field adjustments of the new protective devices as required to place the equipment in final operating condition. The adjustments shall be in accordance with the recommended settings described in the report.

END OF SECTION

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SECTION 26 09 00

CONTROLS AND INSTRUMENTATION

PART 1–GENERAL

1.01 SUMMARY

A. Related Sections and Divisions:
1. Applicable provisions of Division 01 shall govern work in this section.
2. Section 26 09 10–Controls and Instrumentation Drawings.
3. All other sections of Division 26.

PART 1–GENERAL 1
1.01 SUMMARY 1
1.02 SYSTEM DESCRIPTION 2
1.03 QUALITY ASSURANCE 2
1.04 SUBMITTALS 3
1.05 OPERATION AND MAINTENANCE DATA 3
1.06 DELIVERY, STORAGE, AND HANDLING 4
1.07 SYSTEM ENGINEERING 4
1.08 DESCRIPTION OF THE CITY OF JOLIET LIFT STATION SCADA SYSTEM 4
1.09 CONTRACTOR AND SYSTEM SUPPLIER GENERAL REQUIREMENTS 5
1.10 FACTORY ACCEPTANCE TESTING, SYSTEM STARTUP, AND SUPPORT SERVICES 5
1.11 COMMON REQUIREMENTS ALL EQUIPMENT 7
1.12 GENERAL CONTROL ALGORITHMS 8
1.13 WARRANTY 9
PART 2–PRODUCTS 9
2.01 HUMAN MACHINE INTERFACE (HMI) CONFIGURATION 9
2.02 EQUIPMENT ENCLOSURES 10
2.03 PLC REMOTE TELEMETRY SYSTEMS 11
2.04 MICROLOGIX PROGRAMMABLE LOGIC CONTROLLERS 12
2.05 UNINTERRUPTIBLE POWER SUPPLIES 13
2.06 INDUSTRIAL CONTROL RELAYS AND CONTACTORS 13
2.07 CELLULAR ROUTERS 14
2.08 RADAR LEVEL TRANSMITTERS 16
2.09 THERMOSTATS 16
2.10 SURGE PROTECTIVE DEVICES FOR CONTROL PANELS, INSTRUMENTATION, AND NETWORK EQUIPMENT 16
2.11 INTRINSIC SAFETY BARRIERS 17
2.12 INDUSTRIAL ETHERNET SWITCHES 17
PART 3–EXECUTION 17
3.01 CONTROL PANEL GENERAL 17
3.02 LIFT STATION MASTER AT WESTSIDE WASTEWATER TREATMENT PLANT 17
3.03 SCADA PANEL 004 (CSO 004 GRANITE STREET) 18
3.04 SCADA PANEL 009 (CSO 009 EAST DUNCAN STREET) 18
3.05 SCC-CS11 (CSO 011 WALLACE STREET) 19
3.06 SCC-10 (CSO 007 WEST DUNCAN STREET) 19

1.02 SYSTEM DESCRIPTION

A. The work includes furnishing, delivering, installing all items furnished, and placing in operation additions to the Lift Station the Supervisory Control and Data Acquisition (SCADA) System for the City of Joliet, Illinois.

B. System Supplier shall be defined as the fabricator, assembler, and supplier of all system components. This shall include, but not be limited to, all instrumentation as specified, all PLC cabinets and required interface hardware and internal wiring, the SCADA System drawings and system software.

C. ENGINEER will be responsible for development of the SCADA System computer HMI graphics.

D. CONTRACTOR shall inspect all work. The Bid shall include everything necessary to obtain a complete installation operating in accordance with these specifications and the Bidder's proposal, whether necessary items and equipment are contained in, or are remote from the enclosures furnished under this Contract. All responsibility for this system ultimately lies with CONTRACTOR.

E. CONTRACTOR shall be responsible for the placing of circuits and making of electrical connections in accordance with System Supplier-furnished drawings, instructions, and field supervision to provide proper connection. CONTRACTOR shall include the services of a System Supplier factory engineer to supervise making of connections to power supplies, communication circuits, and any other connections external to the new control equipment; adjust the equipment; initiate and check operation; instruct OWNER's electrician on operation and maintenance of the equipment; and place the equipment in operation in an acceptable manner. This shall include on-site review of software/hardware controls from the central control point.

F. Any auxiliary interface relays and controls needed for completion of this project, if not specifically called for, shall be by System Supplier. All switches and control and indicating lights associated with the control panels shall be new. All new telemetry equipment and controls shall be installed in new supervisory control panels.

1.03 QUALITY ASSURANCE

A. System Suppliers: Firms regularly engaged in the design and manufacture of SCADA systems of the size and complexity specified herein, and whose systems have been in satisfactory use in similar service for not less than 10 years.

B. Installer: A firm with at least 10 years of successful installation experience on projects with SCADA System design and installation work similar to that required for the project.

C. Code Compliance: Comply with National Electrical Code (NFPA 70) and any and all local codes as applicable to construction and installation of electrical wiring devices, material, and equipment herein specified.

D. UL Labels: Provide control panels, power supplies, controllers, relays, wire, and connectors that have been listed and labeled by Underwriters Laboratories.

E. NECA Standards: Comply with applicable portions of National Electrical Contractor's Association's Standard of Installation.

1.04 SUBMITTALS

A. Manufacturer's Data: Submit manufacturer's data, specifications, and installation recommendations for each item specified herein.

B. Submit shop drawings and product data in accordance with provisions of Section 01 33 00–Submittals.

C. Provide product data on all equipment and devices specified herein as well as wiring schematics for all systems.

D. Shop drawing submittals shall include the following:
   1. Detailed catalog information, descriptive literature, and specifications of hardware and software. All items being provided must be specifically noted on this literature, including all field devices and instruments.
   2. Project implementation plan, including information on project organization, project management, engineering, programming, configuration, training, startup, and maintenance services. Plan shall include key personnel on project, point of contact, and communication protocol.
   3. Overall network schematic showing all controllers, cellular modems, network switches, and hardware addresses applicable to the system.
   4. Wiring diagrams for all control panels.
   5. Database with PLC addresses.

1.05 OPERATION AND MAINTENANCE DATA

A. Submit operation and maintenance data under provision of Section 01 33 00–Submittals.

B. Include spare parts data listing, source and current prices of replacement parts and supplies, and recommended maintenance procedures and intervals.

C. Submit Operation and Maintenance Manuals in accordance with Division 01. The following additional information shall apply:
   1. Manuals shall contain, but not be limited to, the following:
      a. System Hardware.
      b. System Software.
   2. Hardware section shall include:
      a. Safety precautions, physical description, functional description, operating procedures, theory of operation, maintenance instructions, checkout procedures, troubleshooting procedures, servicing, and removal and replacement procedures.
      b. Wiring schematic and logic diagrams, parts list, and point-to-point wiring.
      c. Listing of all hardware timers installed in MCCs and SCCs, as well as the ranges set on each timer. Listing shall also include actual timer setting after completion of startup.
   3. Software section shall include:
      a. Program documentation (i.e., PLCs) shall include programs, documentation files, database and configuration as installed. Provide two USB flash drives with this information. Usernames and passwords for all programmable devices (i.e., PLCs) shall be turned over to OWNER at the time of final completion.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.

B. Handle in accordance with manufacturer's written instructions. Lift only with lugs provided for the purpose. Handle carefully to avoid damage to SCC components, enclosure, and finish.

1.07 SYSTEM ENGINEERING

A. System Supplier shall provide all engineering necessary to accomplish and document the requirements of this specification and be in accordance with the system configuration. The engineering to be performed by System Supplier on this project shall include, but not be limited to, the following categories:
   1. PLC system layouts.
   2. Panel layouts.
   3. I/O configuration and wiring drawings.
   4. PLC programming.
   5. Network configuration.

B. Installation: CONTRACTOR shall install all the system equipment including PLCs and interconnecting cabling as required. This work shall include all interconnection wiring from new and existing equipment as required for the completion of the system.

C. It shall be the responsibility of System Supplier to ascertain that all field devices are compatible and consistent with the new system design. This includes reviewing drawings and data to ascertain the compatibility and consistency of the system with the field devices on such considerations as:
   1. Equipment size and available space.
   2. Power levels.
   3. Power sources.
   4. Logic schemes.
   5. Signal types and levels.
   6. Interface devices where required.
   7. All other aspects of field devices impacting the design of the system.

D. The system shall be programmed to implement the control sequences and to provide the monitoring according to this specification. It shall be the responsibility of System Supplier to include all the inputs and outputs required to meet all aspects of this specification, regardless of whether they are specifically included in the I/O listing in this specification.

E. System Supplier shall provide a complete list of spare parts required and where they may be obtained for operating the system for 3 years from startup.

1.08 DESCRIPTION OF THE CITY OF JOLIET LIFT STATION SCADA SYSTEM

A. Included as part of the project shall be the monitoring of three remote sites via cellular telemetry as specified herein. CONTRACTOR shall be responsible for reviewing each site and include in price bid all services, equipment, and devices required to provide the monitoring and control functions described herein and shown in Section 26 09 90–SCADA System I/O Listing.

1.09 CONTRACTOR AND SYSTEM SUPPLIER GENERAL REQUIREMENTS

A. All components shall be standard make acceptable to OWNER, with one manufacturer to provide all similar components. The Base Bid System Supplier shall be Metropolitan Industries (Keith Girup), (815) 545-7032.

B. Equipment listed in this specification was pre-selected by OWNER and ENGINEER. The manufacturer's proposal included scope of equipment supply, notes and clarifications, lead time preparation of shop drawings and manufacturing, terms for equipment delivery, number of days and trips included for manufacturer field visits, duration of time for which the pricing is valid, and other potentially useful information is included as an appendix. The price in the proposal is the basis on which CONTRACTOR and equipment manufacturer will enter into an agreement. CONTRACTOR and equipment manufacturer may renegotiate any elements of the proposal including, but not limited to, scope of supply, price and delivery, as mutually agreed, while still meeting all Contract requirements. Note that proposals are provided for CONTRACTOR's convenience in negotiation of a final agreement with the equipment manufacturer and shall not supersede any Contract requirements provided herein.

1.10 FACTORY ACCEPTANCE TESTING, SYSTEM STARTUP, AND SUPPORT SERVICES

A. System Supplier shall be responsible for development of a formal address listing associated with each PLC and shall provide ENGINEER with an organized spreadsheet of all addresses to be used for programming of the HMI software specified herein. Point listing shall be provided in Microsoft Excel format, grouped individually for each PLC, and neatly organized into groups such as discrete I/O, analog I/O, setpoints, alarms, and historical data. Points not used with the HMI software or for internal PLC logic shall be removed or hidden from the listing. Spreadsheet shall be sent to ENGINEER a minimum of 12 weeks prior to the factory acceptance testing specified below. Any revisions made to the original spreadsheet shall be clearly identified by highlighting, colored text, or notes within the documents. CONTRACTOR shall provide ENGINEER an as-built version of the spreadsheet prior to Substantial Completion. Electronic files shall be named with the date and revision number.

B. Permit ENGINEER and OWNER to observe vendor's staging records or other quality assurance records relating to system(s) supplied. System Supplier shall assemble the system components as a complete process monitoring and control system and demonstrate that the system is operational before shipment from System Supplier factory to the job site. This testing shall be as an integrated assembly by simulating each of the specified I/O points and all specified algorithms.

C. This test shall be witnessed by OWNER and ENGINEER (two personnel). System Supplier shall provide lodging, meals, and transportation in the Bid for one day as a minimum for this witness test. Travel costs shall include all rental car fees and refueling fees for each person attending where the driving distance is less than 250 miles. ENGINEER will travel from Joliet, Illinois and OWNER will travel from Joliet, Illinois. All problems, errors, insufficiencies, and failures identified during testing shall be resolved before shipment. In the event the equipment does not operate in accordance with the specifications, programming of controllers/computers is incomplete, or setup of equipment is incomplete, there shall be deducted from payments due CONTRACTOR the amount of $1,500 per day for ENGINEER's time plus travel and expenses, $500 per day for OWNER's travel and expenses, as well as all costs for additional time plus travel and expenses for OWNER and ENGINEER to witness additional factory acceptance testing.

D. System Supplier shall make provisions to allow ENGINEER to test any modifications to existing PLC logic. This shall include a mock-up in their factory with temporary, equivalent, PLCs using project-specific programs and all required ancillary equipment.

E. On-Site Functional Acceptance Testing:
   1. After all equipment has been installed and is placed in full-time operation or after all equipment associated with the group of equipment scheduled for on-site functional acceptance testing has been installed and placed in full-time operation, CONTRACTOR and System Supplier shall demonstrate that all equipment and controls operate in compliance with the Contract Documents. For each piece of equipment being tested, all systems associated with the operation of the equipment (e.g., controls, supply/discharge piping, etc.) shall be installed and be in full operating condition so that all equipment functions are able to be completely tested without delay using real-time process I/O.
   2. All control wiring, hardwired interlocks, control programming, etc., shall be checked out and functionally tested by System Supplier prior to ENGINEER's on-site functional acceptance testing. All functional errors shall be corrected prior to ENGINEER's on-site functional acceptance testing.
   3. Coordination Videoconferences:
      a. CONTRACTOR shall schedule and conduct an initial functional acceptance testing coordination videoconference at least two months prior to the anticipated functional acceptance testing. The videoconference shall include CONTRACTOR, System Supplier, Division 26 contractor, OWNER, and ENGINEER, and all other parties responsible for the equipment and controls scheduled for functional acceptance testing.
      b. CONTRACTOR shall provide the following information in written form at each videoconference. All information shall be updated prior to each videoconference.
         (1) Equipment installation and manufacturer's startup schedule.
         (2) Status of all power and control system wiring for the equipment scheduled for functional acceptance testing.
         (3) Schedule and status of System Supplier's on-site checkout and functional testing.
         (4) Anticipated delays and the cause of each delay.
         (5) Conflicts with OWNER's operation of the facility.
         (6) Proposed dates for acceptance testing of all equipment and controls.
         (7) Proposed dates for future acceptance testing coordination videoconferences.
   4. After being notified by CONTRACTOR that the equipment has been installed and is in full operating condition and ready for ENGINEER's functional acceptance testing, ENGINEER will make one half-day trip to check operation. CONTRACTOR and System Supplier shall be on-site during testing to adjust equipment, correct erroneous wiring, and make modifications to control system, as necessary. If the equipment and controls do not operate according to the Contract Documents, or if CONTRACTOR and System Supplier are not present during the scheduled testing, there will be deducted from payments due to CONTRACTOR the amount of $1,500 a day for ENGINEER's time plus travel and expenses, and for all additional field and office time spent by ENGINEER checking equipment. OWNER will deduct the amount of these charges from payments made to CONTRACTOR.
   5. System Supplier shall provide functional acceptance testing support through one or more on-site field service engineers and the project control system programmer. Time for the on-site field service engineers and programmer scheduled for functional acceptance testing shall be dedicated to the functional acceptance testing process and shall not be interrupted for other construction-related activities.

F. Final acceptance and payment will not be made until the system has operated satisfactorily for a minimum of 30 consecutive days. CONTRACTOR shall include in Bid field follow-up to provide proper adjustments and operation during the first year following project final completion. Prior to beginning the 30-day test, the following criteria shall be met:
   1. Satisfactory operation of I/O control loops.
   2. Satisfactory operation of software.
   3. Satisfactory operation of control program.
   4. Satisfactory operation of peripheral equipment.
   5. The necessary debugging programs have been performed.
   6. Data output is reliable.
   7. Checking and calibrating of systems have been completed.
   8. Wireless communication systems are reliable.

G. CONTRACTOR, through System Supplier, shall provide the following support services:
   1. Field Service Engineer: Field service engineer shall be responsible for programming of system PLCs in the factory and at the site. Field service engineer shall be present at the factory acceptance test and be present for startup of all systems and available throughout the entire construction process until final completion. Service technicians sent for system startup will not be acceptable. Support shall include on-site time. Services shall include, but not be limited to:
      a. Commissioning, installation, startup, and testing of equipment.
      b. Revising or rewriting manuals to incorporate an installed and accepted system.
      c. On-site training.
      d. Software modifications.
   2. In-factory support shall include consultation following the acceptance testing and shipment. Services shall include, but not be limited to:
      a. Researching and answering questions related to the system operation, documentation, and system use and functions.
      b. Program modifications.
      c. Revising or rewriting manuals.
   3. Post-startup support shall include follow-up services during the one-year period following final acceptance. Service shall include follow-up recalibration and replacement of defective equipment, as well as additional training, software modifications, and control configurations as requested by OWNER. This shall include eight hours for work on-site other than warranty repair or replacement of defective equipment. This time shall be used for software enhancements and modifications to improve the operation of the system. In addition to the eight hours, include one trip to the site.

H. CONTRACTOR shall not install any hardware or software to enable remote access or control without written permission from OWNER and ENGINEER.

1.11 COMMON REQUIREMENTS ALL EQUIPMENT

A. All indicating and recording devices shall be electric or electronic.

B. All indicating and control devices mounted on control panel enclosure doors (e.g., meters, gauges, electronic indicators, pilot lights, selector switches, etc.) shall be located at eye level, minimum 48 inches, maximum 60 inches, from floor to bottom of device.

C. Provide lightning protection, isolation transformers, and fused disconnects at each end of each power circuit, supervisory circuit, and local supervisory circuit with transformers and relays, if necessary, to obtain supervisory power. 120-volt power shall be available at all control points. Lightning protection shall be completely solid-state and self-healing and shall

not require the use of fuses. Provide a single switch with an indicating light to deenergize the control power for each location. Each panel shall have a GFI, duplex, 15 ampere, 120-volt receptacle.

D. Where equipment is necessary to perform a function as called for in one part of this specification, it shall be provided, even though the detailed enumeration at various control points may omit listing that equipment.

E. Where a certain accuracy of sensing and transmitting levels or flows and controlling operations are called for, means must be provided to read or determine that the levels or flows are within the limits or accuracy specified of the sensing, transmitting, and controlling devices. Where no accuracy is specified, but a knowledge of levels is necessary to set operating points, an indicating device of accuracy consistent with the operation of the system is required.

F. All control and auxiliary relays shall have indicating LEDs. All timing relays shall have On and timing Out LEDs.

G. An anti-condensation heater shall be provided in all control panels located outdoors. The anti-condensation heater shall be as manufactured by Hoffman Model DAHX001, or equal, sized based on control panel and exterior temperature. Anti-condensation heater shall be rated for a minimum of 500,000 operating hours.

1.12 GENERAL CONTROL ALGORITHMS

A. Definitions:
   1. The "Master Telemetry PLC" for the SCADA System shall be the PLC located in SCC-LS at the West Side Wastewater Treatment Plant. This PLC shall send and receive information to and from all remote PLCs connected to this PLC via cellular telemetry, and shall make this information available to other networked PLCs and available for display at the SCADA System.
   2. Where referenced herein, a "Remote Telemetry-Connected PLC" includes any PLC located at a facility remote from the Master Telemetry PLC location that communicates information back to the SCADA System via the Master Telemetry PLC via radio or cellular communications.

B. All alarm contacts or system changes following a command must exist or not change for 0 to 5 seconds to activate an alarm at the SCADA System.

C. All analog and digital inputs shall be monitored in the PLC. This shall include, but not be limited to, levels. The following analog signals shall have minimum, maximum, and running average calculated values: all levels. Instantaneous values, totals, maximum, minimum, and average values shall be read by the HMI software and be reset on a daily basis as described below. Minimum, maximum, and average values shall be stored in the PLC for the current day and previous day.

D. Indication of time remaining for all timers (hardcoded and operator adjustable) within PLCs shall be made available for indication at the SCADA System.

E. The clock and date setting shall be transmitted from the Master Telemetry PLC to all Remote Telemetry-Connected PLCs based on the setting in the Master Telemetry PLC.

F. All analog signals shall be scaled to engineering units in the PLC with real or floating-point data types to prevent scaling values in the HMI. For PLCs that do not support real or floating-point data types, use implied decimals to allow storage in integer registers. System Supplier shall provide all analog ranges and PLC register/tag addresses, and any implied decimal scaling factors to ENGINEER for use with the HMI software. This shall include upper and lower limits for the associated device (i.e., 0 to 150 psi).

G. For all analog input signals to the PLC I/O cards, provide a Transmitter Fail alarm at the SCADA System for each transmitter. Transmitter fail shall be defined as the signal from the transmitter being out of range.

H. The following analog signals shall have associated high and low setpoints and alarms: all levels.

I. PLCs shall be set up so that the ranges of all analog input signals to the PLC I/O cards can be configured from the HMI software. Provide two operator-adjustable setpoints for each analog input, one corresponding to 4 mA and the other corresponding to 20 mA. These setpoints are applicable to devices attached to the Remote Telemetry-Connected PLCs (via the Master Telemetry PLC). This feature is intended to be used for startup and calibration purposes.

J. The Master Telemetry PLC shall be setup so that the PLC monitors the cycle of each associated Remote Telemetry-Connected PLC to detect a communication failure.

K. Each alarm shall have a discrete PLC tag that is able to be toggled at the SCADA System HMI to enable or disable the associated alarm from being activated.

L. Cellular modems installed in control panels shall be powered through a normally closed control power relay contact. If the PLC detects a communication fail, the PLC shall energize the control power relay that will deenergize power to the modem. The relay shall be energized for 5 seconds and then deenergized. One additional modem power cycle shall be attempted if the first power cycle does not restore communication.

1.13 WARRANTY

A. Standard One-Year Warranty: Unless otherwise stated below, manufacturer shall warrant the equipment to be free from defects in material and workmanship for a period of one year from the earlier of either the date established for partial utilization in accordance with GC15.03 and 15.04, as modified in the Supplementary Conditions, or Substantial Completion of the project.

PART 2–PRODUCTS

2.01 HUMAN MACHINE INTERFACE (HMI) CONFIGURATION

A. The SCADA System HMI computers are existing. Modifications and additions to the existing graphics will be made by ENGINEER. System supplier shall provide a database of the tags in .xslx format as required herein for ENGINEER’s use in developing the graphics.

2.02 ENCLOSURES

A. New enclosures shall be front access only, minimum No. 14 gauge steel, with continuously-hinged doors. Enclosures equal to or smaller than 24 inches wide by 24 inches high shall be equipped with at least two quarter turn latches. Enclosures larger than 24 inches in any dimension shall be equipped with 3-point latch with top and bottom bolts actuated by one rotating, lockable handle on each door. Provide a door stop kit for each door, data pocket for wiring diagrams, and minimum 12-inch, bolt-on, LED light and door switch. Panels over 48 inches wide shall have two lights. Painting shall include phosphate treatment, zinc chromate iron oxide primer, baked rust-inhibiting enamel, and white interior. All doors and panels shall be gasketed. All louvers shall be filtered and forced-air cooling shall be provided as necessary for conditions where installed. Provide enclosure dimensions as specified herein. Enclosures shall be as manufactured by Hoffman or Saginaw. MCC structures are not acceptable. Where installed next to motor control centers, enclosure color shall match that of the MCC.

B. Each PLC enclosure shall include, but not be limited to, the following equipment:
   1. PLC, I/O modules, and communication modules.
   2. Power supplies.
   3. Surge protective devices.
   4. DIN-rail mounted terminal blocks for field wiring terminations.
   5. Plastic wiring ducts.
   6. General purpose 15-amp, 120-volt AC duplex GFCI receptacle.
   7. 20-amp, 120-volt AC main circuit breaker and branch circuit breakers as required to feed the PLC and the I/O controlled field devices.
   8. Other accessories required to provide a complete and working PLC system.
   9. UPS backup for the SCC.
   10. Network switch.
   11. Front panel-mounted programming port with RJ-45 jack and 120-volt receptacle.

C. The equipment mounted within the enclosures shall be mounted on the enclosure back panel, neatly organized, and shall be in accordance with the manufacturer's recommendations.

D. Refer to Section 26 05 53–Electrical Identification for the control panel and field wiring color code.

E. 24 VDC power supplies shall be provided in the enclosures to power all 24 VDC devices and loop-powered analog input signals, where required.

F. NEMA ratings of enclosures shall be as required for the area where installed, unless specified otherwise.

G. Manufacturer of Accessories:
   1. Plastic wiring duct shall be Panduit Panduct, or equal.
   2. Terminal blocks shall meet the requirements of Section 26 05 19–Wire.
   3. Wire markers shall meet the requirements of Section 26 05 53–Electrical Identification.
   4. Circuit breakers shall be Square D Type QO with mounting bases, or equal. Circuit breakers can be rail-mounted type, Square D, Class 9080, Type GCB-150, or equal.
   5. Power supplies shall be Sola, DIN rail mount, SPD or SDN Series, or equal.
   6. Signal conditioners shall be Action Instruments, DIN rail mount, or equal.

H. All wiring within the enclosure shall be through plastic wiring troughs. Plastic wiring troughs shall have removable covers. Maximum fill for wiring troughs shall be 60%. All wiring in supervisory enclosures and control panels not in wiring troughs shall be bound with continuous-type spiral windings. Terminal strips located adjacent to wiring troughs shall have a minimum of 1 1/2 inches between terminal strip and wiring trough. All wiring labels shall be able to be read without removing wiring trough covers. Wiring troughs shall be provided for all field wiring.

I. All wiring for new panels shall be done in the factory, Class II, Type C with master terminal strips for exterior connections. Terminal strips shall be located either at the bottom or on the side of the enclosure, depending on where the I/O conduits penetrate the enclosure. Splices are not allowed within enclosures or wireways. All enclosures must pass through doors to point of installation, and if enclosures are shipped in sections, all wiring and connections between sections shall be done by CONTRACTOR. The field wiring terminals shall be clearly identified as to which I/O terminals they are wired. Jumpers between adjacent terminal blocks shall be copper jumper bars supplied by the terminal block manufacturer. All wiring shall be labeled at each end with corresponding numbers matching the associated terminal block. This numbering shall be shown on the shop and Record Drawings.

J. All door-mounted devices shall be furnished flush-mounted, and an exterior-engraved phenolic nameplate worded by OWNER (upon receipt of shop drawings) shall be provided for each component, device, and light. All components within the enclosures shall be identified with sticky-back adhesive, self-laminating, machine-printed marking labels with white background and black text; minimum size 12 font. Labels shall be installed on the enclosure back panel and not on the device or wireway. Devices shall be grouped for each device or unit being controlled.

K. All panels with DIN rail-mounted equipment shall include a minimum of 25% spare DIN rail space.

L. In addition to spare I/O specified herein, provide a minimum of 25% spare hot and neutral terminals wired to terminal strips. Spares shall be provided for all voltage sources within the panel (e.g., 120 V, 24 V).

M. Enclosures that include motor controllers shall have a main disconnect for the enclosure.

2.03 PLC REMOTE TELEMETRY SYSTEMS

A. All control signals, status signals, alarm, and variable analog data shall be transmitted and received between the existing Lift Station Master PLC at the Westside Wastewater Treatment Plant and the Remote PLCs via digital telemetry. The mode of communication for the PLCs shall be via cellular modems as specified herein using the City's Verizon Private Network. The System shall convert commands, alarms, and variable analog data to digital data blocks and transmit this information between a master and the remote sites.

B. The digital blocks of data shall be sent/received in half-duplex mode from the Telemetry system to the PLCs via the Ethernet serial interface.

C. If communications cannot be verified between the Master PLC and a Remote PLC, the Master PLC shall try to send the data three times before a data fail output is energized.

D. The system shall communicate at a rate sufficient to perform any command to receive any status feedback signals within 5 seconds.

E. The Master PLC sequentially polls the Remote PLCs. Poll sequence shall be optimized to minimize the update time for critical remotes by adjusting the delay between PLC interrogations and between scan sequences.

2.04 MICROLOGIX PROGRAMMABLE LOGIC CONTROLLERS

A. Construction:
1. A single chassis shall house the CPU, memory, embedded I/O circuitry, communications, power supply and display.
2. The PLC shall be able to operate in an industrial environment with an ambient temperature of (-4°F to 140°F).
3. The PLC shall be able to operate in a free airflow environment.
4. The PLC shall be able to operate in high electrical noise environments.
5. The PLC shall support up to 7 front-accessible expansion modules for a total of up to 256 discrete I/O: Each input and output point shall have a visual indicator to display ON/OFF status.
6. The CPU shall be a self-contained unit, and shall be capable of:
   a. Providing system timing and scheduling I/O updates.
   b. Controlling all I/O scanning and communications service.
   c. Performing internal diagnostic checks and providing visual indication by illuminating a “green” indicator when no fault is detected and a “red” indicator when a fault is detected.
   d. The CPU shall have a real-time clock.
7. Non-volatile memory shall store the operating system, user program and all user data to protect against memory loss in the case of power loss or system shutdown. The PLC shall be capable of storing a minimum of 10 KB of data and 10 KB of program.
8. A minimum of four isolated discrete input groups, one isolated analog input group, six isolated discrete output groups and one isolated analog output group shall be located on the self-contained controller. At least four relays shall be individually isolated.
9. The manufacturer shall have available a variety of I/O modules including, but not limited to, AC or DC discrete input, AC or DC relay contact output:
   a. Inputs: 120 VAC, 24 VDC, DC sink, DC source, 4-20 mA analog, and RTD.
   b. Outputs: 120 VAC relay, 24 VDC relay, 4-20mA analog.
   c. Discrete I/O modules shall be 120 VAC, unless noted otherwise.
10. Programming Environment:
   a. The programming port shall be RS-232 or Ethernet/IP.
   b. The programming software shall run on the latest version of Windows and the programming methods shall be IEC-61131 compliant:
      (1) Ladder–Project Tree navigation and simultaneous multiple rung editing:
      (2) Online editing.
      (3) Data logging.
      (4) Diagnostics.
      (5) Reporting.
11. Communication:
   a. Two dedicated serial ports that support RS-232 and one serial port that supports RS-485; DF1, DH-485, Modbus RTU, DNP3, ASCII. These ports shall be capable of local and remote programming, troubleshooting, and data manipulation.
   b. One RJ-45 port that supports 10/100 Mbps Ethernet; Ethernet/IP, Modbus TCP, and DNP3 over IP. This port shall be capable of local and remote programming, troubleshooting, and data manipulation.

12. Power:
    a. The PLC shall operate on 120 VAC or 24 VDC.
    b. The onboard power supply shall be capable of supplying all necessary power to all subsystems (CPU, memory, local I/O, etc.) in addition to a minimum of seven expansion I/O modules, without external wiring.
    c. The power supply shall provide surge protection, isolation and power outage carryover of at least one cycle of the AC line.
13. The PLC shall have a simple embedded display with the ability to monitor/change user data, display messages and data to the user, receive numeric input, and provide access to two electronic trim pots which can each be adjusted between 0 and 250 for use in the controller's program.

B. The PLC shall be as manufactured by Rockwell Automation MicroLogix 1400 Series, or equal.

C. System Supplier shall provide all the equipment necessary for data gathering, monitoring, and control as specified herein and shown on the Drawings. Each PLC system shall include, but not be limited to, CPUs with adequate memory and instructions, local power supplies, I/O modules, communications modules, and all other components required to make the PLC perform all required functions. Each PLC shall be mounted in new enclosures where specified herein or shown on the Drawings. The PLC enclosures shall be completely assembled, prewired, and tested at the System Supplier's factory.

D. PLC Programming and PLC Software: System Supplier shall provide all PLC programming and software required to meet this specification. The software shall include, but not be limited to, the following:
    1. PLC logic programs to be written by System Supplier for the PLC systems to accomplish the monitoring and control functions as specified herein. The System Supplier shall document and annotate the programs, update them as required after startup, and then turn the programs over to OWNER on two USB flash drives.
    2. System Supplier shall provide a commercially available PLC programming and documentation software package as developed by the system manufacturer for documenting and modifying the PLC programs.
    3. All I/O addressing that is to be viewed or manipulated by the HMI software shall be organized into contiguous blocks of integer tags for discrete bits and floating point tags for all other values to facilitate block data transfer between computers and PLCs.

2.05 UNINTERRUPTIBLE POWER SUPPLIES

A. Exterior control panels with PLCs shall be provided with a 24 VDC battery controller for a UPS system.
    1. UPS shall have a rated current of 40 A, battery charging current of 2 A, and dry contacts rated for 30 VDC, 1 A for DC Bus OK, Battery Fail, and Battery Discharged.
    2. UPS shall be Delta Model DRU-24V40ABN, or equal.

2.06 INDUSTRIAL CONTROL RELAYS AND CONTACTORS

A. Industrial control and power relays shall be installed in motor control centers, pump control panels, and motor starter enclosures where required by System Supplier. Relays used to interface with PLC I/O, motor control circuits, hard-wired control logic, and for loads less than 8 amps shall be terminal style, interposing/isolation relays. Relays for inductive loads, alarm lights, alarm horns, field wiring, or loads up to 15 amps shall be industrial, general purpose square base relays. Relays for monitoring the output voltage of uninterruptable power

supplies shall be UPS voltage monitoring relays. Contactors for lighting circuits, branch circuits, or loads greater than 15 amps shall be industrial, electrically-held lighting contactors. Contactors for motor power control shall be industrial, electrically-held power contactors.

B. Relays shall meet the following requirements:
   1. Interposing/isolation relays:
      a. Configuration: SPDT or DPDT as required by System Supplier.
      b. Mounting: DIN rail with screw terminal base socket.
      c. Voltage: 120 VAC, or as required by System Supplier.
      d. Contact rating: 8 A (DPDT), 16 A (SPDT).
      e. Operating life: 10 million cycles.
      f. Status: On-Off flag-type or LED indicator.
      g. UL listed.
      h. Manufacturer: Allen-Bradley, 700-HK, or equal.
   2. General purpose relays:
      a. Configuration: DPDT or 3PDT as required by System Supplier.
      b. Mounting: DIN rail with screw terminal base socket.
      c. Voltage: 120 VAC.
      d. Contact rating: 15 A, minimum; 3/4 hp.
      e. Operating life: 10 million cycles.
      f. Status: On-Off flag-type or LED indicator.
      g. UL listed.
      h. Manufacturer: Allen-Bradley, 700-HB, or equal.
   3. Lighting contactors:
      a. Configuration: Electrically-held, 2-12 poles.
      b. Mounting: DIN rail.
      c. Voltage: 120 VAC.
      d. Contact rating: 30 A continuous.
      e. UL listed.
      f. Manufacturer: Square D, Class 8903L, or equal.

2.07 CELLULAR ROUTERS

A. Provide cellular access points at the locations described herein and all required accessories for a complete operational cellular telemetry system.

B. Cellular Routers:
   1. The cellular routers shall use a 4G LTE radio that is compatible with the Verizon Wireless 4G LTE network. No license shall be required to operate the cellular routers.
   2. The cellular routers shall be industrial rated, with a Mean Time Between Failures of 25 years or greater.
   3. The cellular routers shall have built-in security mechanisms to prevent network access to unauthorized users.
   4. The cellular routers shall be capable of over-the-air transmission throughput of 600 Mbps downlink and 150 Mbps uplink.
   5. The cellular routers shall provide integral diagnostic capability to allow the user to verify communications reliability. All system configuration parameters shall be capable of being set by the user via a PC connected directly to the cellular routers either through the Ethernet port or through a serial port.
   6. Basic diagnostic information shall be available from each cellular router via external LEDs including as a minimum: Power, link status, alarm state, Ethernet connection status, cellular router data activity, Ethernet data activity, and serial data activity.

7. Remote management for each individual cellular router shall be accessible via a standard Web browser. Networkwide remote management shall be an integral part of the cellular router and shall be compatible with SNMP-based network managers.

C. The cellular routers shall meet the following specifications:
   1. Data Interface (Ethernet):
      a. User Interface: 10BaseT/100BaseT.
      b. Interface Connectors: RJ-45.
   2. Data Interface (Serial):
      a. User Interface: RS-232/RS-485.
      b. Interface Connectors: RJ-45.
   3. Power: 10 to 60 volts DC.
   4. Environmental:
      a. Humidity: 95% at 40°C (104°F); noncondensing.
      b. Temperature Range: -40° to 158°F.
   5. Security:
      a. Encryption: 128-bit and 256-bit AES.
      b. Key Management: Automatic key rotation on traffic and/or time.
      c. Two-way Authentication: Wireless MAC based list at router and remote.
      d. HTTP Encryption: MD5 Digest, or equal.
      e. Early Warning Notification: SNMP traps on security related events.

D. The cellular routers shall be as manufactured by Cradlepoint, or equal.

E. Transmission cable for all antennas shall be low-loss foam dielectric-type Heliax cable with copper-clad aluminum inner conductor and corrugated copper outer conductor with 100% coverage. Cables over 100 feet shall have a hollow copper, round-tube inner conductor.
   1. Provide a 6-foot section (3-foot for master radio) of “super flexible” transmission cable with male Type N connectors at the cellular router antenna ports to the connector at the enclosure. This section shall pass through the enclosure. Provide standard Type N connectors for connection to a continuous cable extending from enclosure to antenna. Cable shall be weatherproof and suitable for direct environmental exposure. Connections shall have O-ring seals.
   2. Provide a male-to-male Type N connector where the antenna cable leaves the enclosure in which the cellular router is mounted. Cable from cellular router to connector at enclosure shall be “super flexible” and from the enclosure to the antenna shall be low-loss foam. Provide a coaxial lightning arrestor for the antenna cable.
   3. Coaxial lines to antennas shall be installed in conduit. Provide a drip loop where antenna cabling exits the conduit.
   4. Antenna cables shall be as manufactured by Commscope, model as follows, or equal.
      a. For run lengths less than 50 feet: LDF2-50.
      b. For run lengths between 50 and 100 feet: LDF4-50.
      c. For run length greater than 100 feet: AVA5-50.

F. System Supplier shall supervise the installation of all cellular router systems by CONTRACTOR.

G. System Supplier shall coordinate with City of Joliet IT Department to add the new cellular modems to OWNER’s existing Verizon Private Network SCADA pool. Provide all required configuration for each router to communicate via the Verizon Wireless private network.

2.08 RADAR LEVEL TRANSMITTERS

A. Radar level transmitters shall utilize a microwave, non-contacting method with a beam angle of 8 degrees to measure level with an accuracy of ±2 mm. Transmitter adjustments shall be performed from a smartphone, tablet, or notebook using Bluetooth. The transmitter shall be loop-powered at 24-volts DC and the output shall be 4-20 mA DC.

B. Transmitters in non-hazardous locations shall be FM approved and have an operating range of -40°F to 176°F.

C. Transmitters in hazardous locations shall be FM approved as being suitable for Class I, Division 1, Groups C and D locations and have an operating range of -40°F to 176°F. Provide an intrinsically safe wiring barrier as required.

D. Transmitter enclosures shall be PVDF with an IP66/IP68 protection rating and be rated NEMA 6P. The enclosure shall have threaded NPT connections on the process connection and conduit/cable connection and be provided with all required mounting hardware. The transmitter shall be provided with an interconnecting cable with length as required to reach the point of connection as shown on the Drawings.

E. Radar level transmitters shall be as manufactured by VEGA Model VEGAPULS C 21, or equal. Provide cable length as required for a continuous run to the terminating point as shown on the Drawings. Transmitters shall not be supported using the cables.

F. Provide a remote-mounted display for radar level transmitters within the control panel. Displays shall have an aluminum housing with an IP66/IP67 protection rating and have an operating range of -4°F to 158°F. Displays shall be FM approved. The display housing shall have threaded NPT connections. The display shall be loop-powered at 24-volts DC and the output shall be 4-20 mA DC. Remote-mounted displays shall be as manufactured by VEGA Model VEGADIS 82, or equal.

2.09 THERMOSTATS

A. Thermostats shall be System Supplier’s standard temperature switch for use within a control panel.

2.10 SURGE PROTECTIVE DEVICES FOR CONTROL PANELS, INSTRUMENTATION, AND NETWORK EQUIPMENT

A. The incoming power supply of each control panel supervisory control center shall be protected with a surge protective device (SPD). SPD unit shall be as manufactured by Citel Model DS240, or equal. Surge protection shall be provided for all phases and neutral.

B. Each analog signal entering or leaving a supervisory control panel and leaving a building shall be provided with a DIN-rail mounted surge protection device as manufactured by Citel Model DLA-24D3, or equal. Each transmitter shall be provided with a surge protection device as manufactured by Citel Model TSP15M, or equal, on the output and Citel Model DS240, or equal, on the power supply. Surge protection shall be provided for all phases and neutral.

2.11 INTRINSIC SAFETY BARRIERS

A. Instrumentation equipment located in hazardous areas as noted on the Drawings shall be wired to intrinsic safety barriers. Safety barriers for discrete devices shall include indicating LED and be DIN-rail mounted, as manufactured by Phoenix Contact, Model MACX MCR-EX-SL-2NAM, (voltage as required), PR Electronics, Model 5202B2, or equal. Safety barriers for analog devices shall be DIN-rail mounted, as manufactured by Phoenix, Model MACX MCR-EX-SL-RPSSI, PR Electronics, Model 5104B, or equal.

2.12 INDUSTRIAL ETHERNET SWITCHES

A. Provide unmanaged Ethernet switches for networks shown on the Drawings that include only personal computers and/or PLCs. Unmanaged switches shall be as manufactured by Hirschman, Spider Series, or Allen-Bradley Stratix 2000 Series and include fiber and copper ports to accommodate wiring shown on the Drawings. Each switch shall include the following.
   1. Full/half-duplex operation.
   2. Auto-sensing speed and flow control.
   3. IEEE 802.3 compliance.
   4. DIN rail mounting and a 24-volt DC power supply input. Provide a dedicated power supply, Hirschmann Model RPS Series, or equal.
   5. Store and forward switching.
   6. Minimum of 4 copper ports.
   7. 8 spare copper ports.

PART 3–EXECUTION

3.01 CONTROL PANEL GENERAL

A. Provide a control power fail relay in each SCC that shall be used to indicate an incoming control power fail alarm at the SCADA System. Provide a red indicating light on the front of each SCC to indicate a loss of incoming line power to the SCC. Control power fail wiring shall be hardwired and not through the PLC.

B. Provide a red indicating light within the panel to indicate loss of communication with the Lift Station Master PLC.

C. Refer to Section 29 09 90–SCADA System I/O Listing for all required I/O that shall interface with each PLC. For each PLC, provide 25% spare I/O. All spare and unused I/O shall be wired to terminal blocks.

D. System Supplier shall coordinate all Ethernet addresses. Provide a master list of all IP addresses as part of the O&M submittal.

3.02 LIFT STATION MASTER AT WESTSIDE WASTEWATER TREATMENT PLANT

A. Provide modifications to the existing Allen Bradley CompactLogix 1769-L33ER Lift Station Master PLC to add the three combined sewer overflow facilities to the existing telemetry logic.

B. Coordinate with the City of Joliet IT Department to facilitate communication between the remote PLCs and the Lift Station Master PLC via the City's Verizon Private Network and City network infrastructure.

3.03 SCADA PANEL 004 (CSO 004 GRANITE STREET)

A. Provide a NEMA 4X, 316 stainless steel, PLC-based control panel, sized a minimum of 24 inches wide by 10 inches deep, by 24 inches high, where shown on the drawings. All control algorithms and alarms described herein shall be programmed into this PLC.

B. Provide a 100-amp main circuit breaker disconnect with door interlocked pad lockable handle. Provide a defeater to allow opening the door without disconnecting the power feed. Power to the control panel shall be 120/240-volt, single-phase. The interrupting rating shall be minimum 22,000 amps.

C. Provide accommodations within the panel to accept the 120/240-volt, single phase, 3-wire service entrance conductors. The neutral shall be bonded to the ground.

D. Provide a 20-amp, 1-pole, 120-volt breaker within the panel for power to the GFI receptacle mounted below the control panel.

E. Install the loop powered level indicators within the control panel.

F. There shall be an operator-adjustable “CSO 4 Structure Operating” setpoint (0 to 10 feet) on each Regulator Structure Level (LT-04-01 through LT-04-04). When the level in the regulator structure rises above this setpoint a “CSO 4 Structure Operation (LT-04-0X)” alarm shall be generated and displayed at the SCADA system.

3.04 SCADA PANEL 009 (CSO 009 EAST DUNCAN STREET)

A. Provide a NEMA 4X, 316 stainless steel, PLC-based control panel, sized a minimum of 24 inches wide by 10 inches deep, by 24 inches high, where shown on the drawings. All control algorithms and alarms described herein shall be programmed into this PLC.

B. Provide a 100-amp main circuit breaker disconnect with door interlocked pad lockable handle. Provide a defeater to allow opening the door without disconnecting the power feed. Power to the control panel shall be 120/240-volt, single-phase. The interrupting rating shall be minimum 22,000 amps.

C. Provide accommodations within the panel to accept the 120/240-volt, single phase, 3-wire service entrance conductors. The neutral shall be bonded to the ground.

D. Provide a 20-amp, 1-pole, 120-volt breaker within the panel for power to the GFI receptacle mounted below the control panel.

E. Install the loop powered level indicators within the control panel.

F. There shall be an operator adjustable "CSO 9 Structure Operating" setpoint (0 to 10 feet) on each Regulator Structure Level (LT-09-01 through LT-09-04). When the level in the regulator structure rises above this setpoint a "CSO 9 Structure Operation (LT-09-0X)" alarm shall be generated and displayed at the SCADA system.

3.05 SCC-11 (CSO 011 WALLACE STREET)

A. Provide a NEMA 4X, 316 stainless steel, PLC-based control panel, sized a minimum of 24 inches wide by 10 inches deep, by 24 inches high, where shown on the Drawings. All control algorithms and alarms described herein shall be programmed into this PLC.

B. Provide a 100-amp main circuit breaker disconnect with door interlocked pad lockable handle. Provide a defeater to allow opening the door without disconnecting the power feed. Power to the control panel shall be 120/240-volt, single-phase. The interrupting rating shall be minimum 22,000 amps.

C. Provide accommodations within the panel to accept the 120/240-volt, single phase, 3-wire service entrance conductors. The neutral shall be bonded to the ground.

D. Provide a 20-amp, 1-pole, 120-volt breaker within the panel for power to the GFI receptacle mounted below the control panel.

E. Install the loop powered level indicators within the control panel.

F. There shall be an operator adjustable "CSO 11 Structure Operating" setpoint (0-10.0 Feet) on each Regulator Structure Level (LT-11-01 through LT-11-04). When the level in the regulator structure rises above this setpoint a "CSO 11 Structure Operation (LT-11-0X)" alarm shall be generated and displayed at the SCADA system.

3.06 SCC-10 (CSO 007 WEST DUNCAN STREET)

A. System supplier shall obtain the services of Wunderlich-Malec, (Greg Manning) (630) 827-0200, to perform the following:
   1. Modify the existing SCC-10 drawings to reflect the addition of the level display within this SCC and the wiring for LT-07-01, LT-07-02, and LT-07-03 to a spare analog inputs.
   2. Install the level displays furnished by the System Supplier in SCC-10.
   3. Add the LT-007-01, LT-07-02, and LT-07-03 level signals to the existing SCC-10 analog inputs and make these signals available to the existing SCADA System HMI computers in the Eastside Wastewater Treatment Plant Central Control Center.
   4. Provide an operator adjustable "CSO 7 Structure Operating" setpoint (0 to 10 feet) on the Regulator Structure Level (LT-07-01). When the level in the regulator structure rises above this setpoint a "CSO 7 Structure Operation" alarm shall be generated and displayed at the SCADA system.
   5. Provide a database of the new tags in .xlsx format to ENGINEER for ENGINEER's use in adding the regulator structure to the existing SCADA System HMI graphics.

END OF SECTION

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NOT TO EXCEED QUOTATION
FOR
SCADA EQUIPMENT AND SERVICES

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METROPOLITAN
PUMP COMPANY
A Division of METROPOLITAN INDUSTRIES, INC.
37 FORESTWOOD DRIVE • ROMEOVILLE, IL • 60446-1343
(815) 886-9200 FAX (815) 886-4573
www.metropolitanind.com

Project: CSO Structures - SCADA
Joliet, IL.
Strand Associates

We are pleased to provide the following Not To Exceed Quotation for SCADA Equipment and Services for the subject project.

The SCADA EQUIPMENT & SERVICES will Consist of and Include the following:

QTY	DESCRIPTION
1/L	**CSO-004 - Granite Street Equipment & Services**
	1 SCADA Panel (004) with free air wire guard as specified in 26 09 00
	4 Radar Level Transmitters (LT-04-01, LT-04-02, LT-04-03, LT-04-04) including mounting brackets
	1/L PLC (CSO-004) Programming
	1/L WSTP Master Polling SCADA PLC Programming
	1/L Factory Acceptance Testing, Functional Acceptance Testing, Start-up & Support Services
	1/L System Engineered Shop Drawing Submittals, Operation & Maintenance Manuals
1/L	**CSO-007 - West Duncan Equipment & Services**
	3 Radar Level Transmitters (LT-07-01, LT-07-02, LT-07-03) including mounting brackets
	1/L Radar Level Display Installations into Existing SCC-10
	1/L PLC (SCC-10) Programming
	1/L System Engineered Shop Drawing Submittals, Operation & Maintenance Manuals
	1/L Factory Acceptance Testing, Functional Acceptance Testing, Start-up & Support Services
	1/L System Engineered Shop Drawing Submittals, Operation & Maintenance Manuals
1/L	**CSO-009 - East Duncan Street Equipment & Services**
	1 SCADA Panel (009) with free air wire guard as specified in 26 09 00
	4 Radar Level Transmitters (LT-09-01, LT-09-02, LT-09-03, LT-09-04) including mounting brackets
	1/L PLC (CSO-004) Programming
	1/L WSTP Master Polling SCADA PLC Programming
	1/L Factory Acceptance Testing, Functional Acceptance Testing, Start-up & Support Services
	1/L System Engineered Shop Drawing Submittals, Operation & Maintenance Manuals
1/L	**CSO-011 - Wallace Street Equipment & Services**
	1 SCADA Panel (011) with free air wire guard as specified in 26 09 00
	4 Radar Level Transmitters (LT-11-01, LT-11-02, LT-11-03, LT-11-04) including mounting brackets
	1/L PLC (CSO-004) Programming
	1/L WSTP Master Polling SCADA PLC Programming
	1/L Factory Acceptance Testing, Functional Acceptance Testing, Start-up & Support Services
	1/L System Engineered Shop Drawing Submittals, Operation & Maintenance Manuals

Your NOT TO EXCEED COST for the listed EQUIPMENT & SERVICES is: **$214,900.00**

NOTES & CLARIFICATIONS:

Not Included: ComEd Meters, Conduits, Seal-Offs, Wires, Unistrut, Junction Boxes, Loose Electrical Disconnects, Sim-Cards, Antenna Mast, Concrete, Hatches, Valves, Anchoring Hardware, Taxes, Field Installation, SCADA Software Integration and Anything not listed.

TERMS: Net 30 days from date of invoice. All invoices are payable in full when due, with no retainage allowed.

THIS QUOTATION, SUBJECT TO THE CONDITIONS ON THE REVERSE SIDE HEREOF, MAY BE ACCEPTED ONLY BY SIGNING ONE COPY OF THIS QUOTATION AND RETURNING IT TO METROPOLITAN PUMP CO. NOT LATER THAN THE DATE INDICATED ON THE FACE HEREOF AFTER WHICH THIS QUOTATIONS IS VOID. THIS QUOTATION AFTER ACCEPTANCE BY BUYER MAY BE CANCELLED BY EITHER PARTY WITH NO PENALTY ONLY IF ENGINEER FAILS TO APPROVE SELLERS APPROVAL BROCHURE.

Accepted:		Estimate No:	Keith030723MS
Firm:		Submitted:	March 7, 2023
By:		Void after:	December 31, 2023
Title:		Prepared By:	Keith Girup

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SECTION 26 09 10

CONTROLS AND INSTRUMENTATION DRAWINGS

PART 1-GENERAL

1.01 SUMMARY

A. Work Included: Applicable provisions of Division 01 shall govern work in this section.

1.02 SUBMITTALS

A. Submit drawings in accordance with provisions of Section 01 33 00–Submittals.

1.03 COORDINATION

A. The requirements set forth in this section are intended to apply to the drawings provided as specified in Section 26 09 00–Controls and Instrumentation.

PART 2-PRODUCTS

NOT APPLICABLE

PART 3-EXECUTION

3.01 GENERAL REQUIREMENTS

A. A bound set of as-built drawings shall be provided in the associated equipment enclosure.

B. All drawings shall have the following information:
   1. Project information, including name of OWNER and specific project name.
   2. Drawing title, accurately representing what is on the drawing.
   3. Unique drawing identifier, consisting of a unique drawing number or drawing number with individual sheet number. If sheet numbers are used, total number of sheets must be identified on each sheet.
   4. System Supplier company name, address, and phone number.
   5. Original design information, including person responsible for design, date of original design, person responsible for checking of design, and date of design check.
   6. Revision block indicating revision number, date, description of revision, and person responsible for revision.

C. All drawings shall have line numbers that can be uniquely referenced from other drawings.

D. All drawings showing wiring shall include unique wire numbers assigned to wiring that is installed between devices in the panel. The wire number shall be shown on the drawings.

E. All drawings showing relays shall include reference to the drawings where the relay contacts are shown. Spare relay contacts that are not used shall be identified.

3.02 DRAWINGS REQUIRED

A. Index of Drawings: Index of Drawings shall list drawing number, sheet number (if applicable), and drawing title for each drawing in drawing package.

B. Symbol Sheet: Symbol Sheet shall include:
   1. Explanation of all symbols used on the drawings, including, but not limited to, normally open/normally closed contacts, flow switches, limit switches, pressure switches, selector switches, pushbuttons, timers, control relays, solenoids, fuses, circuit breakers, terminal blocks, and contactors. Symbol sheet does not need to be specific to project, but must contain explanation of all symbols used on the drawings (i.e., special symbols used for a particular project must be added to standard symbol sheets).
   2. List of abbreviations used on the drawings.
   3. Explanation of continuation method for circuits that cannot be shown on a single sheet.

C. Exterior Enclosure Layout Drawing: Exterior layout drawing shall show location of all externally-mounted equipment. Exterior layout drawing shall include:
   1. Enclosure dimensions, enclosure NEMA rating (i.e., NEMA 1, NEMA 4X stainless steel, NEMA 4X nonmetallic, etc.), and enclosure color or finish.
   2. Location and actual depiction of panel latches, hinges, mounting holes and lifting eyes.
   3. Location and accurate representation of equipment mounted on enclosure (i.e., switches should look like actual switches being installed; indicating lights should look like actual lights being installed).
   4. Equipment nameplate location.
   5. Description for each piece of equipment or unique identifier and parts list, or bill of materials.
   6. Nameplate list including nameplate wording, size, construction (i.e., lamicoid with Black background and White letters), and mounting method (i.e., stainless steel screws). Label size must include size in inches or reference to standard sizes included on symbol sheet, or elsewhere in drawing package.
   7. Identification of area reserved for equipment located inside enclosure, but not actually mounted on enclosure back panel, such as UPSs, fiber optic patch panels, and lighting packages.

D. Interior Enclosure Layout Drawing: Interior layout drawing shall show location of all internally-mounted equipment. Interior layout drawing shall include:
   1. Back panel dimensions and finish.
   2. Location and accurate representation of equipment (i.e., terminal blocks should look like actual terminal blocks; receptacle should look like actual receptacle, etc.).
   3. Dimensions of internally-mounted equipment are not necessary, but equipment should be drawn to scale such that an accurate representation of the way equipment will be mounted is shown on the drawing.
   4. Description for each piece of equipment or unique identifier and parts list, or bill of materials.

E. Interconnection Diagram, Network Diagram or Block Diagram: Interconnection Diagram, Network Diagram or Block Diagram shall show all cabling between system components and identify any station addressing or node numbers that are assigned to equipment. All cables shall be identified by cable type, including specific manufacturer and model/part number. Party responsible for furnishing and installing cable shall also be included. Some examples of cables that must be shown are:
   1. Antenna cables.

2. Communications cables between system components (fiber and/or copper). This includes fiber optic jumpers between fiber patch panels and equipment, and Ethernet patch cables between switches and devices.
3. Communications cables (fiber and/or copper) between PLCs, controllers, operator interface equipment and security devices (e.g., card readers, electric strikes, and motion detectors) that are not shown on the elementary schematics.

F. Elementary Schematic: Elementary schematics shall be developed for each motor or supplied equipment and shall include:
1. Nominal voltage, AC or DC designation, number of phases (if AC), and frequency in hertz (if AC) for each source of electrical supply to the enclosure.
2. Prospective short-circuit current available at the point of electrical supply to the enclosure.
3. Type of power supply system grounding (e.g., wye phase midpoint grounded, delta phases corner grounded, wye phases midpoint grounded, delta phases ungrounded, etc.).
4. Complete documentation of electrical circuit from supply to motor or supplied equipment. Documentation shall include disconnecting means, main overcurrent protection (when supplied), branch overcurrent protection (when supplied), control circuit and special purpose control protection, motor control, overload protection, local disconnect (when supplied) and motor horsepower, and full load amps from nameplate or supplied equipment full load amps.
5. Documentation of PLC or controller inputs and outputs.
6. Documentation of all circuit breaker/motor protector ratings, fuse sizes, control power transformer VA ratings, dip switch settings, etc.
7. Documentation of all RVSS settings (e.g., under-voltage shutdown, ramp time, overload, excessive starts/hour, etc.) which have been changed from the factory default setting.

G. Wiring Diagram: Wiring diagrams shall show all terminations for all cables external to the enclosure. Terminations may be shown on the elementary schematics as long as the termination information is concise and easily understood by the personnel installing the field wiring. Termination information shall be shown for all devices, including devices that are not part of System Supplier's scope of supply. A box with two dots or continuation arrows indicating continuation to a piece of equipment are not acceptable. Information shown on System Supplier's wiring diagrams shall include a description of the drawings where terminations are found (i.e., drawing title), drawing number where the terminations are found, and terminal blocks referenced on the drawing. System Supplier shall coordinate with supplier of other wiring diagram to provide information on System Supplier's wiring diagrams.

H. Calculations Summary: Calculations summary shall include calculations performed to:
1. Determine size of UPS.
2. Determine air conditioning equipment requirement.
3. Determine control power transformer sizing. Control power transformer sizing calculations may be generic based on typical circuits.

I. Functional Testing Recommendations: Testing recommendations shall include description of functional tests that must be performed by operators. Functional test description shall be included for UPS, indicating lights, and other devices whose condition can only be determined by testing.

3.03 SAMPLE DRAWINGS

A. Sample drawings showing an acceptable format are included in the appendix. The samples included in the appendix do not represent the only acceptable method of showing the required information.

END OF SECTION

SCADA SYSTEM I/O LISTING

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STRAND ASSOCIATES INC.
CITY OF JOLIET
JOLIET, ILLINOIS
COMBINED SEWER OVERFLOW FLONG TERM CONTROL PLAN PHASE IV-EASTSIDE AND WESTSIDE COMBINED SEWER OVERFLOW REGULATORS
CONTRACT 2699-0623
SCADA SYSTEM I/O LISTING - CONTROL PANEL 004 (GRANITE STREET)

CP	EQUIPMENT NAME	NUMBER	DI	DO	AI	AO	WIRE	COMMENTS
004	**CONTROL POWER FAIL**		1	0	0	0	2~#14	FROM CONTROL POWER FAIL RELAY IN THIS CONTROL PANEL
004	**UPS DC BUS OK**		1	0	0	0	2~#14	FROM UPS IN THIS CONTROL PANEL
004	**UPS BATTERY FAIL**		1	0	0	0	2~#14	FROM UPS IN THIS CONTROL PANEL
004	**UPS BATTERY DISCHARGED**		1	0	0	0	2~#14	FROM UPS IN THIS CONTROL PANEL
004	**REGULATOR STRUCTURE LEVEL NO. 1**	LT-04-01	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
004	**REGULATOR STRUCTURE LEVEL NO. 2**	LT-04-02	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
004	**REGULATOR STRUCTURE LEVEL NO. 3**	LT-04-03	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
004	**REGULATOR STRUCTURE LEVEL NO. 4**	LT-04-04	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
004	**LOW PANEL TEMPERATURE**	TS-04-01	1	0	0	0	2~#14	FROM THERMOSTAT IN THIS CONTROL PANEL
004	**PANEL DOOR SWITCH**	ZA-04-01	1	0	0	0	2~#14	FROM DOOR SWITCH ON PANEL DOOR
004	**LOSS OF COMMUNICATION**		0	1	0	0	2~#14	TO RED PILOT LIGHT IN THIS CONTROL PANEL
	TOTALS		6	1	4	0		

STRAND ASSOCIATES INC.
CITY OF JOLIET
JOLIET, ILLINOIS
COMBINED SEWER OVERFLOW FLONG TERM CONTROL PLAN PHASE IV-EASTSIDE AND WESTSIDE COMBINED SEWER OVERFLOW REGULATORS
CONTRACT 2699-0623
SCADA SYSTEM I/O LISTING - CONTROL PANEL 009 (EAST DUNCAN STREET)

CP	EQUIPMENT NAME	NUMBER	DI	DO	AI	AO	WIRE	COMMENTS
009	**CONTROL POWER FAIL**		1	0	0	0	2~#14	FROM CONTROL POWER FAIL RELAY IN THIS CONTROL PANEL
009	**UPS DC BUS OK**		1	0	0	0	2~#14	FROM UPS IN THIS CONTROL PANEL
009	**UPS BATTERY FAIL**		1	0	0	0	2~#14	FROM UPS IN THIS CONTROL PANEL
009	**UPS BATTERY DISCHARGED**		1	0	0	0	2~#14	FROM UPS IN THIS CONTROL PANEL
009	**REGULATOR STRUCTURE LEVEL NO. 1**	LT-09-01	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
009	**REGULATOR STRUCTURE LEVEL NO. 2**	LT-09-02	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
009	**REGULATOR STRUCTURE LEVEL NO. 3**	LT-09-03	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
009	**REGULATOR STRUCTURE LEVEL NO. 4**	LT-09-04	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
009	**LOW PANEL TEMPERATURE**	TS-09-01	1	0	0	0	2~#14	FROM THERMOSTAT IN THIS CONTROL PANEL
009	**PANEL DOOR SWITCH**	ZA-09-01	1	0	0	0	2~#14	FROM DOOR SWITCH ON PANEL DOOR
009	**LOSS OF COMMUNICATION**		0	1	0	0	2~#14	TO RED PILOT LIGHT IN THIS CONTROL PANEL
	TOTALS		6	1	4	0		

STRAND ASSOCIATES INC.
CITY OF JOLIET
JOLIET, ILLINOIS
COMBINED SEWER OVERFLOW FLONG TERM CONTROL PLAN PHASE IV-EASTSIDE AND WESTSIDE COMBINED SEWER OVERFLOW REGULATORS
CONTRACT 2699-0623
SCADA SYSTEM I/O LISTING - CONTROL PANEL 011 (WALLACE STREET)

CP	EQUIPMENT NAME	NUMBER	DI	DO	AI	AO	WIRE	COMMENTS
011	**CONTROL POWER FAIL**		1	0	0	0	2~#14	FROM CONTROL POWER FAIL RELAY IN THIS CONTROL PANEL
011	**UPS DC BUS OK**		1	0	0	0	2~#14	FROM UPS IN THIS CONTROL PANEL
011	**UPS BATTERY FAIL**		1	0	0	0	2~#14	FROM UPS IN THIS CONTROL PANEL
011	**UPS BATTERY DISCHARGED**		1	0	0	0	2~#14	FROM UPS IN THIS CONTROL PANEL
011	**REGULATOR STRUCTURE LEVEL NO. 1**	LT-11-01	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
011	**REGULATOR STRUCTURE LEVEL NO. 2**	LT-11-02	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
011	**REGULATOR STRUCTURE LEVEL NO. 3**	LT-11-03	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
011	**REGULATOR STRUCTURE LEVEL NO. 4**	LT-11-04	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
011	**LOW PANEL TEMPERATURE**	TS-11-01	1	0	0	0	2~#14	FROM THERMOSTAT IN THIS CONTROL PANEL
011	**PANEL DOOR SWITCH**	ZA-11-01	1	0	0	0	2~#14	FROM DOOR SWITCH ON PANEL DOOR
011	**LOSS OF COMMUNICATION**		0	1	0	0	2~#14	TO RED PILOT LIGHT IN THIS CONTROL PANEL
	TOTALS		6	1	4	0		

STRAND ASSOCIATES INC.
CITY OF JOLIET
JOLIET, ILLINOIS
COMBINED SEWER OVERFLOW FLONG TERM CONTROL PLAN PHASE IV-EASTSIDE AND WESTSIDE COMBINED SEWER OVERFLOW REGULATORS
CONTRACT 2699-0623
SCADA SYSTEM I/O LISTING - SCC-10

SCC	EQUIPMENT NAME	NUMBER	DI	DO	AI	AO	WIRE	COMMENTS
010	**REGULATOR STRUCTURE LEVEL NO. 1**	LT-07-01	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
010	**REGULATOR STRUCTURE LEVEL NO. 2**	LT-07-02	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
010	**REGULATOR STRUCTURE LEVEL NO. 3**	LT-07-03	0	0	1	0	SH. PR.	FROM LEVEL INDICATOR IN THIS CONTROL PANEL
	TOTALS		0	0	3	0		

END OF SECTION

SECTION 26 21 00

ELECTRICAL SERVICE SYSTEM

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Utility company.
   2. Primary service characteristics.
   3. Secondary service characteristics.
   4. Definitions.
   5. Underground electrical service.

B. Allowances: CONTRACTOR shall include in the Bid the cost of the following items specified in this Section. Refer to the following individual sections for a complete description of the Work required: Electric Utility Service Entrance, Paragraph 1.05–Underground Electrical Service.

C. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

D. See Division 01 for temporary service requirements. This section applies to permanent services only.

1.02 UTILITY COMPANY

A. The Utility Company is ComEd.

1.03 SECONDARY SERVICE CHARACTERISTICS

A. The secondary service at CSO 004, Granite Street, will be 120/240-volt.

B. The secondary service at CSO 007, West Duncan Street, will be 120/240-volt.

C. The secondary service at CSO 011, Wallace Street, will be 120/240-volt.

1.04 DEFINITIONS

A. Service: As defined in the NEC, Article 100.

B. Primary Voltage: Above 600 volts.

C. Secondary Voltage: 600 volts and below.

1.05 UNDERGROUND ELECTRICAL SERVICE

A. Provide complete underground electrical services except for items provided by the Utility Company.

B. Coordinate the new electrical services with the Utility. An allowance of $5,000 shall be included in the Lump Sum Bid for the work provided by the Utility and will be adjusted at final payment in accordance with actual Utility charges. All other costs for the electrical service shall be included in the Lump sum Bid.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

3.01 UTILITY COORDINATION

A. Division 26 Contractor shall obtain all required permits and licenses, pay all charges and fees, and give all notices necessary for utilities to perform the Work. Division 26 Contractor shall comply with all permit requirements whether the permit is issued to CONTRACTOR, the state, or the maintaining authority.

B. Division 26 Contractor shall complete all required electrical service applications and forms based on the Drawings and Division 26 Contractor’s means and methods for the work required.

END OF SECTION

SECTION 26 27 26

WIRING DEVICES

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Receptacles.
   2. Cover plates.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 REFERENCES

A. NEMA WD 1–General-Color Requirements for Wiring Devices.

B. NEMA WD 5–Specific-Purpose Wiring Devices.

C. Drawings–Bill of Materials.

1.03 QUALITY ASSURANCE

A. Manufacturers of switches, outlets, boxes, fuses, lugs, etc.: Firms regularly engaged in the manufacture of these products, of the types and ratings required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Installer: A firm with at least 5 years of successful installation experience on projects with electrical wiring installation work similar to that in this project.

C. Code Compliance: Comply with National Electrical Code (NFPA 70) and any and all local codes as applicable to construction and installation of electrical wiring devices, material, and equipment herein specified.

D. UL Labels: Provide electrical material, etc., which have been listed and labeled by Underwriters Laboratories.

E. NECA Standard: Comply with applicable portions of National Electrical Contractor's Association's "Standard of Installation."

1.04 SUBMITTALS

A. Submit shop drawings and product data in accordance with provisions of Section 01 33 00–Submittals.

B. Provide product data showing configurations, finishes, dimensions, and manufacturer's instructions.

PART 2–PRODUCTS

2.01 RECEPTACLES

A. Weather-Resistant Receptacle: Weather-resistant receptacles shall include GFCI protection and be UL 498 listed, 20 ampere, 125-volt, NEMA 5-20R, heavy-duty, commercial grade, with WR marking on the face, Eaton WRSGF20, or equal.

B. GFCI Receptacle: GFCI receptacles shall be UL 943 listed, Pass and Seymour 2097, Eaton TRSGF20 receptacle with integral ground fault current interrupter. Provide ivory color.

2.02 COVER PLATES

A. While in use receptacle covers for exterior use shall be Leviton IUM1V-GY, or equal.

PART 3–EXECUTION

3.01 INSTALLATION

A. All receptacles shall be mounted vertically.

B. Weather-resistant receptacles shall be provided in all damp and wet locations.

C. GFCI receptacles shall not be series wired.

D. Install devices and cover plates flush and level.

E. Back wiring is not allowed for switches and receptacles. Wires shall be terminated with the device screw terminal.

F. Individual labels shall be placed on the back of all switch faceplates and receptacle faceplates indicating the lighting panel and circuit from which the switch or receptacle is fed. Labels shall be white background with black lettering no smaller than 12-point font. Provide permanently attached self-adhesive type, machine fed, and self-laminating labels, or equal. All labels must be by the same manufacturer, same size, and same font. Handwritten labels are not acceptable.

END OF SECTION

SECTION 31 10 00

CLEARING AND GRUBBING

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Cutting and disposing of trees, brush, windfalls, logs, and other vegetation.
   2. Removing and disposing of roots, stumps, stubs, logs, and other timber.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

C. Payment: Payment for clearing and grubbing shall be included in the lump sum bid.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

3.01 PREPARATION

A. CONTRACTOR shall identify existing plant life to remain and shall tag accordingly.

3.02 PROTECTION

A. CONTRACTOR shall protect from damage utilities and structures that are to remain.

B. CONTRACTOR shall protect trees, plant growth, and features designated to remain as final landscaping.

C. See Division 01 for protection of survey monumentation.

3.03 CLEARING AND GRUBBING

A. Clearing and grubbing shall consist of cutting and disposing of trees, brush, windfalls, logs, and other vegetation, and the removing and disposing of roots, stumps, stubs, grubs, logs, and other timber from within the clearing limits as defined on the Drawings, designated to be removed on the Drawings or in the Specifications, or fall within the excavation, embankment, or improved areas of the site. Tree pruning shall be completed using appropriate pruning equipment, such as chain saws, and not construction equipment, such as backhoes.

B. All roots and stumps shall be removed to a depth of not less than 12 inches below the original ground surface in embankment areas. In cut areas, such material shall be removed to a depth of not less than 12 inches below the subgrade.

C. Disposal by burning or burying clearing and grubbing items within the project limits is not allowed.

END OF SECTION

SECTION 31 23 00

EXCAVATION, FILL, BACKFILL, AND GRADING

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: Excavating, filling, backfilling, and grading for this work includes, but is not necessarily limited to:
   1. Excavating for foundations, roads, utilities, sidewalks, driveways, parking lots, restoration, and miscellaneous areas.
   2. Furnishing and placing all fill and backfill.
   3. Provide compaction of all fill and backfill.
   4. Furnishing and placing vapor barrier and granular cushion below interior slabs on grade.
   5. Furnishing and placing of crushed stone mat below tank slabs and manhole/vault slabs, basement floors, or other structures where required.
   6. Rough and finish grading prior to paving, seeding, etc.
   7. Furnishing and placing all flowable fill.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

C. Allowances:
   1. CONTRACTOR shall INCLUDE in the Bid an allowance of $20,000 for geotechnical testing. This allowance shall be adjusted by change order (up or down), based on the actual cost of geotechnical testing invoiced to CONTRACTOR. Costs of additional geotechnical field work and testing required because of suspected or actual nonconformance of the specification shall be borne by CONTRACTOR and shall not be paid by this allowance. CONTRACTOR shall retain SEECO Consultants, Inc. for geotechnical testing.
   2. CONTRACTOR shall INCLUDE in the Bid the cost of replacing 50 cubic yards of unsuitable foundation material for structures and roads as defined in this section. The unit price shall include the cost of dewatering and slope stabilization and other incidental items associated with this work. Payment to CONTRACTOR for unsuitable foundation material for structures and roads will be adjusted, add or deduct, based upon the actual unsuitable material excavated (more or less than 50 cubic yards) and the unit price for replacing unsuitable foundation material. Volume shall be as measured in the ground. Extra payment will not be made for specified undercutting and filling or gravel bedding material required for placing concrete above water level as required under the concrete specifications. The Bid shall include any removal and replacement of excavated material so indicated on the Drawings or specified herein.
   3. CONTRACTOR shall INCLUDE in the Bid the cost of replacing 50 cubic yards of unsuitable foundation material for utility trenches as defined in this section. The unit price shall include the cost of dewatering and slope stabilization and other incidental items associated with this work. Payment to CONTRACTOR for unsuitable foundation material for utility trenches will be adjusted, add or deduct, based upon the actual unsuitable material excavated (more or less than 50 cubic yards) and the unit price for replacing unsuitable foundation material. Volume shall be as measured in the ground. Extra payment will not be made for specified undercutting, filling, or bedding. The Bid shall include any removal and replacement of excavated material so indicated on the Drawings or specified herein.

4. CONTRACTOR shall INCLUDE in the Bid the cost of removing, stockpiling, loading, hauling, and disposing of in a licensed landfill 250 tons of excavated Unanticipated Solid Waste for Landfill Disposal as defined in this section. The cost shall include excavation, temporarily stockpiling of the soil, if needed, any testing required by the landfill, obtaining landfill approval, dewatering and water disposal, manifesting of waste loads, loading, transportation, additional safety considerations, and landfill disposal fees. Payment for Excavation and Disposal of Unanticipated Solid Waste will be adjusted, add or deduct, based upon the actual amount of solid waste disposal (more or less than 250 tons) and the unit price bid for Excavation and Disposal of Unanticipated Solid Waste. Landfill tonnage shall be based on weight tickets. Copies of all weight tickets for landfilled solid waste fill material shall be provided to OWNER for documentation purposes to calculate actual quantities. Weight tickets shall be duly and accurately completed. Weight tickets with incomplete or illegible information shall not be acceptable. This allowance does not include costs to dispose of excess soils at sites CSO 011 and CSO 012 in a licensed landfill. Those costs shall be included in the lump sum bid as described in Paragraph 1.01 D.2.

D. Payment:
   1. Common excavation shall include all excavation specified, including but not limited to boulders, rubble, and other fill materials; undercutting; fill; backfill and grading; except rock excavation and unsuitable foundation material, as hereinafter described. All common excavation shall be included in the Lump Sum Bid. Changes which require additions to or deductions from the excavation will be adjusted on the basis of the unit price for changes contained in the Contract.
   2. Excavation and Disposal of Excess Soil shall include removing, stockpiling, loading, hauling, and disposing of in a licensed landfill all excess excavated soil generated during construction of CSO Structures 011 and 012, as defined in this section. Excavation and Disposal of Excess Soil shall include excavation, temporarily stockpiling of the soil, if needed, any testing required by the landfill, obtaining landfill approval, dewatering and water disposal, manifesting of waste loads, loading, transportation, additional safety considerations, and landfill disposal fees. Excavation and Disposal of Excess Soil shall be included in the Lump Sum Bid.

1.02 REFERENCED STANDARDS

A. Standard Specifications: Unless otherwise indicated, Standard Specifications within this section shall refer to the State of Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, current edition, including all issued supplemental specifications.

B. ASTM C33–Standard Specification for Concrete Aggregates.

C. ASTM D1557–Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2,700 kN-m/m^3)).

D. ASTM D4832–Standard Test Method for Preparation and Testing of Controlled Low Strength Material (CLSM) Test Cylinders.

E. ASTM C1017/C1017M–Standard Specification for Chemical Admixtures for Use in Producing Flowing Concrete.

1.03 SUBMITTALS

A. Submit sources and gradations for materials proposed for use as compacted fill, utility trench backfill, trench bedding and cover material, crushed stone mat, and granular cushion.

B. Submit samples of materials proposed for use in Paragraph 1.03.A to a soils testing laboratory for analysis of its suitability and for recommendations on moisture content during compaction, compaction methods, or other appropriate information.

C. Submit sufficient samples of each different type or classification of soil to obtain representative values.

D. Field Quality-Control Submittals:
   1. Mix Design:
      a. Furnish flowable fill mix design for each specified strength.
      b. Furnish separate mix designs when admixtures are required for the following:
         (1) Flowable fill Work during hot and cold weather.
         (2) Air entrained flowable fill Work.
      c. Identify design mix ingredients, proportions, properties, admixtures, and tests.
   2. Furnish test results to certify flowable fill mix design properties meet or exceed specified requirements.

E. Delivery Tickets: Furnish duplicate delivery tickets indicating actual materials delivered to Project Site.

F. Submit qualifications for flowable fill supplier.

1.04 JOB CONDITIONS

A. The elevations shown for existing work and ground are reasonably correct, but are not guaranteed to be absolutely accurate. No extras will be allowed because of variations between drawings and actual grades.

B. Soil borings were made and the soils information is included in an appendix to these Specifications. The information contained is not guaranteed to be indicative of conditions to be encountered during construction. It is CONTRACTOR's responsibility to make its own investigations to determine physical conditions at the site, which may affect the work.

1.05 QUALIFICATIONS

A. Manufacturer: Flowable fill shall be manufactured by a ready-mix concrete producer with a minimum one year experience in the production of similar products.

B. Materials: For each type of material required for the work of this section, provide primary materials that are the products of one manufacturer. If not otherwise specified here, materials shall comply with recommendations of ACI 229, "Controlled Low Strength Materials."

PART 2–PRODUCTS

2.01 COMPACTED FILL

A. All fill and backfill material designated to be compacted fill shall be granular with no stones larger than 4 inches and shall be reasonably well-graded throughout the particle size range. A minimum 65% of the material shall pass the 3/4-inch sieve, and the material shall be capable of being compaction tested in accordance with ASTM D1557, as determined by the Project Soils Engineer. Of that portion of the material passing the No. 4 sieve, not more than 25% shall pass the No. 200 sieve, and material shall have less than 5% clay content. When placing fill during wet weather or in wet areas, this requirement shall be modified to not more than 5% passing the No. 200 sieve. Adequately dewatered areas are not defined as wet areas.

B. Native material may be used as compacted fill if it meets the above specification. CONTRACTOR shall determine whether native material meets the above specification. CONTRACTOR shall provide all needed fill material whether from on-site or off-site at no additional cost to OWNER.

2.02 CRUSHED STONE MAT

A. Crushed stone mat below tank slabs, manholes, vault slabs and basement floors shall be 3/4-inch clear crushed stone and shall meet all requirements of Illinois DOT Article 351, gradation CA7/11.

2.03 CLAY FILL

A. Clay fill shall contain at least 25% clay minerals (material finer than 0.002 mm).

2.04 FLOWABLE FILL

A. Flowable fill shall be a self-compacting, self-leveling, material consisting of a mixture of fine aggregate and filler (as needed), water, and cementitious materials (Portland cement, fly ash, granulated blast furnace slag) that is in a flowable state at the time of placement meeting the requirements of the National Ready Mixed Concrete Association Guide Specification for Controlled Low Strength Materials (CLSM). The flowable fill shall be proportioned by the ready mixed concrete supplier on the basis of field experience and/or laboratory trial mixtures to produce a cohesive and nonsegregating mixture which has the following properties:
   1. Minimum compressive strength: 50 psi.
   2. Maximum compressive strength: 150 psi.

B. CONTRACTOR shall submit the following information well in advance of fill placement to avoid any delay in construction:
   1. Gradation of fine aggregate.
   2. Design mix.
   3. Previous test results with 7- and 28-day compressive strengths.
   4. Certified mill test results for cement identifying brand, type, and chemistry of cement to be used.
   5. Brand, type, principle ingredient, and amount of each admixture if used.

2.05 EMBANKMENT FILL

A. Embankment fill shall contain no stumps, brush, rubbish, or other perishable material. The top 12 inches of the earth embankment shall be earthy material free from large stones.

2.06 TRENCH BEDDING MATERIAL

A. Bedding material shall meet the requirements of IDOT Article 351 gradation CA7/11.

B. All rigid sanitary sewer pipe and related appurtenances shall be bedded and covered in accordance with the Class B bedding detail as shown on the Drawings.

C. Concrete and other rigid pipe used in nonsanitary sewer applications may be bedded using the Class C bedding detail as shown on the Drawings.

D. Ductile and cast iron pipe shall be bedded in accordance with Class C bedding detail as shown on the Drawings, or the Type 4 laying condition of AWWA C600.

E. Thermoplastic sanitary sewer pipe and related appurtenances shall be bedded and covered in accordance with the Thermoplastic Pipe Bedding Detail on the Drawings.

F. All other sanitary sewer pipe and related appurtenances shall be bedded and covered in accordance with the Class B bedding detail as shown on the Drawings.

G. PVC water main shall be bedded and covered in accordance with the Thermoplastic Pipe Bedding Detail on the Drawings or in accordance with the Type 4 laying condition of AWWA C605.

2.07 TRENCH COVER MATERIAL

A. Material which is to be placed from the bedding material to 1 foot above the top of the pipe shall be termed cover material. All trenches shall be backfilled by hand to 1 foot above the top of the pipe with cover material. Cover material shall be deposited in the trench for its full width on each side of the pipe, fittings and appurtenances simultaneously in 6-inch layers and shall be compacted using hand tamping bars and/or mechanical tampers. Use special care in placing cover material to avoid injury to or movement of the pipe. Cover material shall meet the requirements of IDOT Article 351 gradation CA7/11.

B. Native trench materials may be used for cover material if they substantially conform to the above gradation specifications and a suitable credit is extended to OWNER.

C. All bedding materials may be substituted for cover material when requested by CONTRACTOR except where polyethylene encasement is used. In such case, only those bedding materials specifically noted for polyethylene encasement may be used.

D. Material that is to be placed from the bedding material around and to 1 foot above the top of all pipes shall be termed cover material. Except as otherwise specified, (a) cover material shall consist of durable granular particles ranging in size from fine to coarse in a substantially uniform combination, (b) no stones larger than 3/4 inch in their greatest dimension shall be allowed in the cover material, and (c) native materials may be used If they conform to the above specifications.

2.08 TRENCH BACKFILL MATERIAL

A. Backfill shall be that material placed between the top of cover material up to subgrade for placement of restoration materials. Backfill for storm inlets shall be bedding material.

B. When the type of backfill material is not otherwise specified or shown on the Drawings, CONTRACTOR may backfill with the excavated material, provided that such material consists of loam clay, sand, gravel, or other materials which, in the opinion of Project Soils Engineer, are suitable for backfilling. Backfill material shall meet the requirements of IDOT Article 351 gradation CA6/7 in paved areas.

C. All backfill material shall exceed a temperature of 35°F and be free from frost, cinders, ashes, refuse, vegetable or organic matter, boulders, rocks, or stone, frozen lumps, or other material which in the opinion of Project Soils Engineer is unsuitable. From 1 foot above the top of the pipe to the trench subgrade, well-graded material containing stones up to 8 inches in their greatest dimension may be used, unless otherwise specified. Care should be taken in backfilling so as not to damage the installed pipe.

D. In refilling the trench, if there is not sufficient material excavated therefrom suitable for refilling, CONTRACTOR shall, without extra compensation, furnish the deficiency. Where indicated on the Drawings, fill shall be provided over projecting conduits. Such fill shall be free of large boulders, and the top 6 inches shall be of suitable material to fit the adjoining ground.

E. Backfill material shall meet the requirements of IDOT Article 351 gradation CA6/7 for locations within 2-feet of paved areas and within 10-feet of structures. Backfill for non-paved areas further than 2-feet from paved areas can be embankment fill.

PART 3–EXECUTION

3.01 GENERAL

A. Prior to all excavating, CONTRACTOR shall become thoroughly familiar with the site and site conditions.

3.02 PROTECTION

A. CONTRACTOR shall provide all necessary sheeting, shoring, or other soil retention systems including all labor, material, equipment, and tools required, or as necessary to maintain the excavation in a condition to provide safe working conditions, to permit the safe and efficient installation of all items of Contract work, and to protect adjacent property. CONTRACTOR shall be held liable for any damage which may result to property from excavation or construction operations. Sheeting, shoring, and other soil retainage systems shall be withdrawn or removed in a manner so as to prevent subsequent settlement of structures, utilities, and other improvements.

B. Design of sheet piling and other soil retaining systems shall be the sole responsibility of CONTRACTOR. Where such systems are shown on the Drawings, no parameters such as embedment depth, section profile, presence or lack of whalers, etc., nor system type or suitability shall be inferred. CONTRACTOR is responsible for designing and providing a fully functional system compatible with construction and site requirements.

C. Nothing in this specification shall be deemed to allow the use of protective systems less effective than those required by the Occupational Safety and Health Administration (OSHA) and other applicable code requirements.

3.03 FINISH ELEVATIONS AND LINES

A. CONTRACTOR is responsible for setting and establishing finish elevations and lines.

B. Where lasers are used, CONTRACTOR shall check the Work against intermediate grade stakes. Prior to initial use of the laser, CONTRACTOR shall set up laser on ground surface and check line and gradient controls. Lasers not functioning properly shall be immediately removed.

C. If existing property stakes, not within the limits of the trench or street slope limits, are removed or damaged by CONTRACTOR, CONTRACTOR shall bear the cost of replacement. Replacement shall be made by a legal survey performed by a licensed Land Surveyor hired by OWNER. Cost for survey shall be deducted from the Contract Price.

3.04 COMMON EXCAVATION

A. After the site has been cleared and stripped, the site shall be cut and filled to the indicated subgrade as shown or specified.

B. All excavated material that does not meet the specification for compacted fill or embankment fill or meets the specification but is not needed for fill, shall be classified as excess material and shall be removed from the site and disposed of at a licensed Subtitle D landfill or reused at OWNER's facility as described in this section. OWNER shall make available to CONTRACTOR all available testing, certifications, and documentation of uncontaminated soil identified at CSO Structures that meet the definition of clean construction or demolition debris (CCDD) in Illinois Administration Code Title 35, Subtitle J, Chapter I, Part 1100.

C. All material other than suitable bearing soil or bedrock, as determined by the Project Soils Engineer, shall be removed from under concrete to be poured on ground.

D. Excavation for all footings, foundation walls, pits, etc., shall be large enough to provide adequate clearance for the proper execution for the work within them.

E. Excavations scheduled to extend below groundwater shall not be started until the area has been dewatered. See Section 31 23 19–Dewatering.

F. CONTRACTOR shall backfill and compact all overexcavated areas.

G. All street excavation shall be performed as called for in Section 205 of the Standard Specifications and as herein modified.

H. The following items of Work shall be included in common excavation:
   1. The excavation to subgrade elevations as detailed in the Drawings including road bed areas, terraces, sidewalks, bike paths, driveways, and other miscellaneous surface improvements.
   2. Removal (and stockpiling, if the use of salvaged topsoil is required) of topsoil from all cut areas and fill areas within a 1:1 slope of finished street, sidewalks, bike paths, driveways, and other miscellaneous surface improvements.

3. The preparation, grading, compaction, and proof-rolling of subgrade areas for roadbed, sidewalks, bike paths, driveways, and other miscellaneous surface improvements to the elevations detailed on the Drawings.
4. Excavation and grading required to realign and/or create ditch lines and drainage ways to route drainage to or from storm facilities as shown on the Drawings, or as necessary to maintain positive drainage.
5. Removal of temporary backfill placed in new utility trenches above the subgrade.
6. The removal and disposal of all undesirable and surplus materials.

I. Common excavation may be completed as part of utility construction prior to initiating general street excavation activities.

J. All subgrade areas in streets and parking lots, including utility trench restoration areas, shall be proof-rolled with a heavily loaded triaxle dump truck or other similar equipment requested by ENGINEER prior to the placement of any fill materials or base course. ENGINEER must be present during proof-rolling to review the Work necessary for the stabilization of any unstable areas identified.

K. Saw cuts shall be made 2 feet beyond disturbed surfaces in existing pavement, driveways, curb and gutter, and sidewalks to allow restoration to neat straight lines. Saw cuts damaged during construction shall be recut prior to beginning restoration.

3.05 UTILITY TRENCH EXCAVATIONS

A. Caution In Excavation; CONTRACTOR shall proceed with caution in the excavation and preparation of the trench so that the exact location of underground structures may be determined and shall be held responsible for the repair of such structures when broken or otherwise damaged because of carelessness on its part.

B. Subsurface Exploration: When determined that it is necessary to explore and excavate to determine the location of existing underground facilities, CONTRACTOR shall make explorations and excavations for such purposes. If CONTRACTOR is asked to perform additional Work (Locate utilities outside of excavation limits. Excavation for elevation verification indicated on the drawings will not qualify for additional compensation.) in making the explorations and excavations, extra compensation will be allowed as specified In the General Conditions.

C. The trench shall be dug so that the utilities can be laid to the alignment and depth specified. Unless otherwise allowed by ENGINEER, trenches shall not be excavated more than 60 feet in advance of pipe laying. Earth excavation shall include all excavation except rock and unsuitable foundation material. Included in earth excavation shall be removal of street paving of all types, existing structures, existing improvements and trees smaller than 4 inches in diameter measured 4 feet above the ground, all as necessary to complete the pipe installation.

D. The trench shall be finished to the depth necessary to provide a uniform and continuous bearing and support for the pipe on the bedding material provided at every point between bell holes. Any part of the bottom of trench excavated below the specified grade shall be corrected with bedding material, thoroughly compacted in place. The bedding shall be shaped and finished with hand tools to fit the bottom quadrant to the pipe.

E. If unstable soil conditions are encountered at subgrade, CONTRACTOR shall replace the unstable soil with special bedding. CONTRACTOR shall be allowed extra compensation for

the special bedding, unless the unstable soil conditions are caused by CONTRACTOR's failure to adequately dewater the trench, in which case CONTRACTOR shall bear the entire cost.

F. All excavated material shall be piled in a manner that will not endanger the Work. Stockpiles not for immediate backfilling shall have silt fences placed around their perimeter for erosion control. The Work shall be conducted in such a manner that pedestrian and motor traffic is not unnecessarily disrupted. Fire hydrants, valve boxes and manholes shall be left unobstructed. Gutters shall be kept clear or other satisfactory provisions made for street drainage, and natural water courses shall not be obstructed.

G. Excavated material designated by ENGINEER as being undesirable for backfilling and all surplus excavated material shall be immediately removed as excavation progresses. All such material shall be disposed of in an environmentally safe manner in accordance with local, state, and federal regulations. No such materials shall be disposed of in wetlands, floodplains, or other environmentally sensitive areas. Disposal sites are also subject to approval of OWNER. All undesirable and surplus material disposed of must be leveled off and graded to rough elevations as determined by OWNER. Appropriate erosion control measures shall be provided and maintained at disposal sites until disposal is complete and the disposal site is permanently stabilized.

H. CONTRACTOR shall remove bituminous pavement and road surface as a part of the trench excavation. The width of pavement removed shall be the minimum possible, and acceptable, for convenient and safe installation of utilities and appurtenances.

I. All bituminous pavement shall be cut on neat, straight lines and shall not be damaged beyond the limits of the trench.

J. Where it is necessary to trench through concrete pavement, a strip shall be sawed and removed in such a manner as not to disturb the remainder of the pavement. Paving and undermining of existing concrete pavement shall be prevented by CONTRACTOR. If CONTRACTOR unnecessarily removes or damages pavement or surfaces beyond limits acceptable to ENGINEER, such pavement and surfaces shall be replaced or repaired at the expense of CONTRACTOR.

K. All trees, shrubs, and improved areas outside the excavation shall be protected from damage.

L. Pipe shall be placed only on dry foundations.

M. Excavation shall include all necessary incidental work such as tunneling, sheet piling, shoring, underpinning, pumping, bailing, transportation, and all fill and backfilling.

N. CONTRACTOR shall excavate whatever materials, are encountered as required to place at the elevations shown, all pipe, manholes, and other work as required to complete the project as shown.

O. The excavation at the crossing of all underground utility services in place shall be as narrow as practicable. All underground services shall be protected from damage and maintained in service at their original location and grade during the process of the work. Any damage to underground services shall be replaced or repaired at no cost to OWNER or to the owner of the service. The present underground services shown on the Drawings are located in accordance with available data. Encountering these services at a different location or

encountering services not shown shall not release CONTRACTOR from the above-stated conditions

P. Any water, drainage, gas sewer, or electric lines encountered in the excavation that are not to be disturbed shall be properly underpinned and supported. Any service connections encountered that are to be removed shall be cut off at limits of the excavation and capped in accordance within the requirements of or permits governing such removals. Any permits required for this work will be obtained by OWNER upon request of CONTRACTOR.

Q. CONTRACTOR shall be responsible for determining and providing the minimum width necessary to provide a safe trench in accordance with current OSHA standards and all other applicable standards. The top width of trench excavation shall be kept as narrow as is reasonably possible and acceptable to minimize pavement damage. Pay items related to maximum trench widths shall not limit CONTRACTOR's responsibility to provide safe trench conditions.

R. Width of Trench–Rigid Pipe: The width of trench below the outside top of the pipe shall be as shown in the following table for the sizes listed. A minimum clearance of 8 inches between the outside of the pipe barrel and the trench wall at the pipe spring line shall be maintained to allow for bedding and haunching. If sheeting is used and is going to remain in place, the trench width shall be measured as the clear distance between inside faces of the sheeting. Otherwise, the trench width shall be based on the width between stable trench walls after sheeting is removed.

MAXIMUM WIDTH OF TRENCH BELOW TOP OF PIPE

Nominal Pipe Diameter (Inches)	Trench Width (Inches)
4	30
6	30
8	30
10	30
12	30
14 - 18	36
20 - 24	42
27 - 30	48
33 and larger	Pipe O.D. Plus x 1.33

S. Where the width of trench below the outside top of the pipe barrel cannot be otherwise maintained within the limits shown above, CONTRACTOR, at its own expense, shall furnish an adequate pipe installation for the actual trench width which will meet design conditions. This may be accomplished by furnishing higher class bedding, a stronger pipe, concrete cradle, cap or envelope or by driving sheeting prior to excavation to subgrade. Removal of sheeting below the top of the pipe, if allowed by ENGINEER, shall be gradual during backfilling.

T. If the maximum trench width is exceeded for any reason other than by request of ENGINEER, the concrete cradle, cap, sheeting, bedding or the stronger pipe shall be placed by CONTRACTOR at its own expense. Where the maximum trench width is exceeded at the

written request of ENGINEER, the concrete cradle, cap, sheeting, bedding or stronger pipe will be paid for on the basis of the price bid.

U. Width of Trench–Thermoplastic: The trench width for flexible pipe shall be minimum three times the pipe outside diameter or the maximum trench width specified for rigid pipe, whichever is greater. A minimum clearance of 8 inches between the outside of the pipe barrel and the trench wall at the pipe spring line shall be maintained to allow for bedding and haunching.

V. Special bedding shall consist of stone material and filter fabric as described herein. Where the bottom of the trench at subgrade is found to be unstable or of unsuitable material, which should be removed, CONTRACTOR shall excavate and remove such unstable or unsuitable material to the trench width and to a depth of 2 feet. The excavated area shall be lined with filter fabric, Mirafi 140 N, US Fabrics US 120NW, Propex Geotex 401, or equal, and backfilled with material meeting the requirements of IDOT Article 351 gradation CA1. At subgrade the filter fabric shall be wrapped over the special bedding with an 18-inch overlap. Bedding material shall then be placed over the special bedding to support the piping. See Dewatering and Excavation to Subgrade sections for additional conditions.

W. If soil conditions require it, concrete cradle or encasement shall be placed around the pipe as shown on the Drawings. Excavation shall be carried below the grade line to a depth requested by ENGINEER and concrete cradle or encasement placed. Before the concrete is placed, the pipe shall be laid to line and grade, blocked and braced, and the joint made. The cradle shall then be placed, taking care not to disturb the pipe. Concrete shall have a minimum 28-day compressive strength of 4,000 psi. Concrete cradle shall not be used for thermoplastic piping. See Trench Width section for additional conditions.

X. Open-cut trenches shall be sheeted and braced as required by any governing federal regulations including OSHA, state laws, and municipal ordinances; and as may be necessary to protect life, property, improvements or the Work. Underground or aboveground improvements to be left in place shall be protected and, if damaged, shall be repaired or replaced at the expense of CONTRACTOR.

Y. Sheeting and bracing which is to be left in place must be removed for a distance of 4 feet below the present or proposed final grade of the street, road, or land, whichever is lower. Trench bracing, except that which shall be left in place, may be removed after backfilling has been completed or has been brought up to such an elevation as to permit its safe removal.

Z. Portable Trench Box: Whenever a portable trench box or shield is used, special precautions shall be taken so as not to pull already jointed pipe apart or leave voids around the pipe wall. Whenever possible, the bottom edge of the box shall be kept at a level approximately even with the top of pipe. Cover material shall be placed to at least the top of pipe before moving the box ahead.

AA. All trenches shall be backfilled using specified material so that excessive lengths of trench are not left open. In general, the backfilling operation shall proceed so that no more than 60 feet of trench is open behind the pipe laying operation.

BB. Backfill shall be left below the original surface to allow for placement of restoration materials including pavement, base course, concrete, topsoil, sod, plus any pavement replacement specified in accordance with the Asphaltic Paving section herein. When settlement occurs,

CONTRACTOR shall restore the surface improvements at its expense to maintain the finished surface.

3.06 PREPARATION OF SUBGRADE

A. After the site has been cleared, stripped, and excavated to subgrade, thoroughly compact subgrade to the requirements specified for compacted fill below. Scarify and moisture condition the subgrade as recommended by the Project Soils Engineer.

B. Remove all ruts, hummocks, and other uneven surfaces by surface grading prior to placement of fill.

C. All slab-on-grade and road subgrades shall be proofrolled with a heavy rubber-tired construction vehicle (such as a fully loaded tandem-axle dump truck) in the presence of the Project Soils Engineer.

D. ENGINEER may request the excavation of unsuitable materials in areas of unstable subgrade. The excavation of such materials, except in areas where CONTRACTOR has completed utility construction or placed street fill, shall be measured by ENGINEER for payment.

E. The excavation and replacement of unstable utility trench backfill and/or street fill placed by CONTRACTOR shall be at CONTRACTOR's expense.

F. Base course placed on unstable foundation shall be removed and replaced at CONTRACTOR's cost following excavation of the affected area.

G. Where requested by ENGINEER in the field, excavation below subgrade areas shall be lined with geotextile material as specified in Section 31 23 19–Dewatering and backfilled with 3-inch crushed stone dense graded base as specified herein.

H. Geotextile shall be placed where requested by ENGINEER to stabilize street subgrade areas. Fabric shall be as specified in Section 31 23 19–Dewatering. Vibratory compaction shall not be used in the compaction of base course in areas where geotextile fabrics are used.

3.07 COMPACTED FILL AND BACKFILL

A. All fill and backfill, except as otherwise specified, shall be compacted fill placed to within 4 inches of the bottom of the topsoil or to the bottom of the structure or other improvement.

B. Unless otherwise noted, structures with a top slab shall not be backfilled until the slab is in place and has reached its specified 28-day strength.

C. In fill areas above existing grade around structures, compacted fill shall be placed within a minimum of 10 feet from the structure.

D. No fill shall be placed under water or over unsuitable subgrade conditions.

E. All fill and backfill, except embankment fill and clay fill, shall be compacted as follows:
   1. Class 1 Compaction: This class of compaction shall apply to all fill areas under buildings, structures, piping, bituminous roadway and parking areas, curb and gutter, and backfill within 10 feet of structure walls. All compacted material shall be placed in

uniform layers not exceeding 8 inches in loose thickness prior to compaction. Each layer shall be uniformly compacted to a dry density at least 95% of the maximum dry density as determined by a laboratory compaction test at the optimum moisture content (ASTM Test Designation D1557). Compaction shall be obtained by compaction equipment appropriate for the conditions.

2. Class 2 Compaction: This class of compaction shall be used in excavated areas beyond 10 feet of structures without any piping or adjacent foundations. Material for backfill shall be as specified above. The material shall be deposited, spread, and leveled in layers generally not exceeding 12 inches in thickness before compaction. Each layer of the fill shall be compacted to at least 85% of the maximum dry density (testing same as Class 1). Compaction shall be obtained by compaction equipment appropriate for the conditions.

F. No frozen material shall be placed nor shall any material be placed on frozen ground.

G. Four inches of clay fill shall be placed and compacted to at least a firm consistency in areas to be seeded or sodded prior to placement of topsoil.

3.08 EMBANKMENT FILL

A. Embankment fill may be placed in fill areas to be seeded or sodded if no piping exists in the fill and the areas are at least 10 feet from any structure.

B. Embankment fill shall be deposited, spread, and leveled in layers generally not exceeding 12 inches in thickness before compaction. Each layer shall be compacted to the degree that no further appreciable consolidation is evidenced under the action of the compaction equipment. The required compaction shall be obtained for each layer before any material for a succeeding layer is placed thereon. Compaction shall be obtained using the hauling and leveling equipment, and in addition, tamping rollers, pneumatic-tired rollers, vibratory rollers, or other types of equipment required to produce the desired results.

3.09 CONCRETE FILL

A. In areas where there is inadequate room for compaction equipment and in other areas as shown or specified, Class X concrete or flowable fill shall be used as fill material.

3.10 PLACING CRUSHED STONE AND GEOTEXTILE FABRIC

A. The same day that the subgrade is exposed, place geotextile fabric on subgrade, and place 12 inches of crushed stone mat below tank slabs and manholes. Compact in place.

B. Geotechnical fabric shall extend up the side edge of the stone mat and extend across the top of the stone to a minimum of 12 inches past the edge of base slab.

3.11 PIPE BEDDING AND COVER

A. Immediately prior to placing the pipe, the trench bottom shall be shaped by hand to fit the entire bottom quadrant of the pipe. If pipe is of the bell and spigot type; bell holes shall be provided to prevent the bell from supporting the backfill load. Bell holes shall be large enough to permit proper making of the joint, but not larger than necessary to make the joint. All adjustments to line and grade must be done by scraping away or filling in bedding material under the body of the pipe. Any fill used must be bedding material. If necessary to obtain

uniform contact of the pipe with the subgrade, a template shall be used to shape the bedding material. All pipe shall be placed on bedding material at least 6 inches thick. See the Drawings. Bedding material shall then be placed and tamped into place up alongside the pipe in maximum 6-inch layers shovel slicing the bedding material under the haunches to provide firm contact with the pipe. CONTRACTOR shall perform all necessary excavation and shall furnish all necessary material to provide this bedding.

B. Trenches shall be kept water-free and dry during bedding, laying, and jointing. CONTRACTOR shall provide, operate, and maintain all pumps or other equipment necessary to drain and keep all excavation pits and trenches and the entire subgrade area free from water under any and all circumstances that may arise,

3.12 TRENCH BACKFILL CONSOLIDATION

A. All trenches shall be consolidated as specified in this section for the entire depth and width of the trench.

B. Consolidation shall be achieved by use of smooth surface vibratory compactors or backhoe operated hydraulic compactors for granular materials and rotating sheepsfoot type mechanisms for loam/clay soils. The lift height shall not exceed 8 inches for walk behind, hand operated, vibratory compactors and sheepsfoot. Lift height shall not exceed 12 inches for self-propelled vibratory drum or backhoe operated hydraulic compactors. Smaller lift heights shall be provided as necessary to achieve the degree of compaction specified.

C. Unless specified otherwise, backfill material beneath paved areas or future paved areas and within 5 feet of paved areas or future paved areas shall be consolidated as follows: Within 3 feet of the surface 95% of maximum dry density, below 3 feet from the surface to 1 foot above the pipe 90% of maximum dry density, as determined by the modified Proctor Test (ASTM D1557).

D. Unless otherwise specified, backfill material placed in all other areas shall be compacted to the point where no additional consolidation can be observed from the compaction and backfill equipment being used.

E. Backfill material not meeting the compaction specification shall be recompacted by CONTRACTOR at no cost to OWNER. Cost for additional testing on recompacted material shall be at CONTRACTOR’s expense.

3.13 FLOWABLE FILL

A. Examination: Verify that excavation is dry and that utility installation is complete and tested before placing flowable fill.

B. Preparation:
   1. Support and restrain utilities to prevent movement and flotation during installation of flowable fill.
   2. Protect structures and utilities from damage caused by hydraulic pressure of flowable fill before fill hardens.
   3. Protect utilities to prevent intrusion of flowable fill.

C. Execution–Plugs:
   1. Sanitary sewer to be abandoned shall be plugged with mechanical wing plugs of the specified diameter and topped with concrete plug.
   2. Brick and mortar plugs will not be acceptable in lieu of concrete.
   3. CONTRACTOR shall install plugs in all abandoned sanitary sewers or where requested by ENGINEER. The minimum install depth of the mechanical plug shall be two pipe diameters up to 24 inches.
   4. The minimum thickness of the concrete to the plug shall be two pipe diameters up to 24 inches.
   5. CONTRACTOR shall submit data sheets for mechanical wing plugs for use on this project.

D. Execution–Sanitary Sewer Abandonment:
   1. Verify pipes and conduits are not clogged and are sufficiently empty to permit gravity installation of flowable fill for entire length indicated to be filled.
   2. Seal lower end of pipes and conduits by method to contain flowable fill and to vent trapped air caused by filling operations.
   3. Fill pipes and conduits from high end.
   4. After filling sanitary sewer, plug both ends.

E. Field Quality Control:
   1. Perform in place penetration (density) tests using hand held penetrometer to measure penetration resistance of hardened flowable fill according to ASTM C403.
   2. Defective Flowable Fill: Fill failing to meet the following test requirements or fill delivered without the following documentation.
      a. Minimum temperature requirement at point of delivery.
      b. Compressive strength requirements for each type of fill.
      c. Documentation: Duplicate delivery tickets.

F. Cleaning:
   1. Remove spilled and excess flowable fill from Project Site.
   2. Restore facilities and Site areas damaged or contaminated by flowable fill installation to existing condition before installation.

G. Required Environmental Conditions. Do not install flowable fill during inclement weather or when ambient temperature is less than 40°F.

3.14 GRADING

A. CONTRACTOR shall perform all rough and finish grading required to attain the elevations shown on the Drawings.

B. Grading Tolerances:
   1. Rough Grade: Buildings, parking areas, and sidewalks–±0.1 feet.
   2. Finish Grade: Granular cushion or crushed stone mat under concrete slabs–±0.03 feet.
   3. Lawn areas away from buildings, parking areas, and sidewalks–±0.25 feet.

3.15 MAINTENANCE OF SURFACE

A. CONTRACTOR shall maintain all backfilling, resurfacing, repaving, and other surface improvements constructed under this Contract. CONTRACTOR shall, upon proper notice from OWNER, make all repairs in surfaces of trenches and excavations. All expenses

incurred by OWNER and/or CONTRACTOR in making repairs and all expenses in maintaining trench and excavation surfaces shall be at the expense of CONTRACTOR regardless of the material used in backfilling trench excavations. OWNER reserves the right to make all emergency repairs necessary to make safe all streets and walks at the expense of CONTRACTOR regardless of the material used in backfilling trench excavations.

B. CONTRACTOR shall be responsible for controlling dust dispersion during utility and street construction. Remedial actions required as a result of inadequate dust control shall be CONTRACTOR's responsibility. To control dust, CONTRACTOR shall apply calcium chloride or ammonium lignin sulfonate in 12 to 14% solution or other dust control palliative acceptable to OWNER. Prior to application of dust palliative, the street shall be graded smooth.

3.16 COMPACTION TESTING

A. Compaction tests shall be done by the Project Soils Engineer. Location and frequency of the tests shall be as recommended by the Project Soils Engineer and paid for by allowance.

3.17 MANAGEMENT OF EXCAVATED SOIL

A. CONTRACTOR shall comply with 35 III. Adm. Code 1100 when disposing of CCDD or uncontaminated soil at a CCDD or uncontaminated soil fill operation.

B. The geotechnical engineering report for the project prepared by SEECO Consultants, Inc. and dated September 28, 2022 is included with the attachments to these specifications. The report includes documentation of source site certification services for CCDD disposal and includes IEPA LPC-663 Certification Forms.

C. Test results documented in the geotechnical report found that soils meet the requirements of the CCDD regulations for CSO structures 004, 007, 009, 010 and 017 and LPC-663 Certification Forms are provided in the report for those structures. Soils from excavations at CSO structures 004, 007, 009, 010 and 017 are suitable for disposal at a CCDD facility or an Uncontaminated Soil Fill Operation. Soils generated during excavations at these structures shall be management as specified in Section 3.15 Excavation and Reuse of Soil.

D. Test results documented in the geotechnical report found that soils did not meet the requirements of the CCDD regulations for CSO structures 011 and 012 and LPC-663 were not prepared for those locations. Soils from CSO Structures 011 and 012 will require disposal at a licensed Subtitle D landfill. A landfill in proximity to these locations is the Waste Management landfill facility in Joliet. Soils generated during excavations at these structures shall be managed as specified in Section 3.19 Excavation and Disposal of Soil.

E. If unanticipated, potentially contaminated soils exhibiting odors or staining are encountered at CSO structures 004, 007, 009, 010 or 017, CONTRACTOR shall stop work in the area and notify ENGINEER and OWNER. OWNER will determine if the potentially contaminated soils should be managed as specified in Section 3.18 Excavation and Reuse of Soil or as specified in Section 3.19 Excavation and Disposal of Soil. This work shall be paid for by allowance as Excavation and Disposal of Unanticipated Solid Waste.

F. None of the Drawings, Specifications, or geotechnical reports shall be considered a guarantee that excavated material shall meet the requirements of 35 III. Adm. Code 1100, and CONTRACTOR shall be responsible for satisfactory removal and disposal of all material

as specified herein. Other than additional testing required for landfill disposal, no additional environmental testing of soils may be performed without the written permission of OWNER.

3.18 EXCAVATION AND REUSE OF SOIL

A. All material excavated from CSO Structures 004, 007, 009, 010 and 017 shall be transported to an Uncontaminated Soil Fill Operation.

B. CONTRACTOR shall be responsible for the satisfactory removal and disposal of all CCDD materials at CSO Structures 004, 007, 009, 010 and 017, including soils, asphalt, concrete, stone, and debris generated or discovered in the course of the work. Removal and disposal of excavated CCDD materials shall be at an Uncontaminated Soil Fill Operation and shall meet the requirement of 35 III. Adm. Code 1100. This work shall be considered Excavation And Reuse of Soil and shall be incidental and shall not be paid for separately.

3.19 EXCAVATION AND DISPOSAL OF SOIL

A. CONTRACTOR shall identify and select a licensed Subtitle D landfill for disposal of all non-CCDD material generated during construction. CONTRACTOR shall obtain confirmation of acceptance of material for this project and shall determine any additional soil analysis required to obtain landfill acceptance for the non-CCDD materials. CONTRACTOR shall base its bid on hauling and disposal of all non-CCDD material generated by this project to the selected lanfill and shall provide the name, location, and contact information of the proposed landfill facility to OWNER upon award of Contract to CONTRACTOR. No additional compensation will be allowed for hauling to any other licensed Subtitle D landfill, for any reason. Any costs associated with additional sampling, analysis, and/or reporting to meet the acceptance requirements of the selected landfill shall be borne by the bidding CONTRACTOR and included within CONTRACTOR's lump sum bid. By submitting a bid, CONTRACTOR agrees that the intended landfill facility will accept the material and shall be used for disposal of all non-CCDD materials from this project, unless otherwise determined. In the event that CONTRACTOR needs to alter the landfill facility used for disposal of non-CCDD material, CONTRACTOR shall notify OWNER no less than three days in advance of the planned alteration. In no event shall material be hauled to an alternate facility without the written permission of OWNER.

B. CONTRACTOR shall INCLUDE in its Lump Sum Bid the cost of removing, stockpiling, loading, hauling, and disposing of all excavated soil generated during construction of CSO Structures 011 and 012 at a licensed Subtitle D landfill. The cost shall include excavation, temporarily stockpiling of the soil, if needed, any testing required by the landfill, obtaining landfill approval, dewatering and water disposal, manifesting of waste loads, loading, transportation, additional safety considerations, and landfill disposal fees. OWNER will sign landfill documents as the Generator of the waste. Payment for all non-CCDD material excavation and disposal from CSO Structures 011 and 012 shall be incidental and shall not be paid for separately.

C. CONTRACTOR shall INCLUDE in its Bid the cost of removing, stockpiling, loading, hauling, and disposing of in a licensed landfill all unanticipated, potentially contaminated soils encountered at CSO structures 004, 007, 009, 010 or 017. The management of all Unanticipated Solid Waste for Landfill Disposal shall include excavation, temporarily stockpiling of the soil, if needed, any testing required by the landfill, obtaining landfill approval, dewatering and water disposal, manifesting of waste loads, loading, transportation, additional safety considerations, and landfill disposal fees. Payment for

management of this non-CCDD material will be adjusted, add or deduct, based upon the actual amount of material excavation and disposal (more or less than 250 tons) at the unit price for Excavation and Disposal of Unanticipated Solid Waste.

D. Landfill tonnage shall be based on weight tickets. Copies of all weight tickets for landfilled material shall be provided to OWNER for documentation purposed to calculate actual quantities. Weight tickets shall be duly and accurately completed. Weight tickets with incomplete or illegible information shall not be acceptable.

END OF SECTION

SECTION 31 23 16.26

ROCK REMOVAL

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Removal of rock during excavation for structures and roads.
   2. Removal of rock during excavation for utility trenches.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

C. Payment:
   1. CONTRACTOR shall INCLUDE in its Bid the cost of removing 1,400 cubic yards of rock for structures and roads as defined in this section. Payment for rock excavation for structures and roads will be adjusted, add or deduct, based upon the actual rock excavation (more or less than 1,400 cubic yards) and the cash allowance unit price for rock excavation for structures and roads.
   2. CONTRACTOR shall INCLUDE in its Bid the cost of removing 1,400 cubic yards of rock for utility trenches as defined in this section. Payment for rock excavation for utility trenches will be paid based upon the actual rock excavation (more or less than 1,400 cubic yards) and the cash allowance unit price for rock excavation for utility trenches.

D. Measurement:
   1. In calculating the volume of rock excavation for dimensioned structures and roads the amount paid for rock excavation will be limited to an area extending 1 foot beyond the perimeter of the bottom slab on all sides and a height equal to the average depth from the surface of the rock to 6 inches below the bottom of the floor slab or as shown on the Drawings. For circular structures, the amount paid for rock excavation will not exceed the volume of a cylinder of diameter equal to the external diameter of the structure plus 4 feet and height equal to the average depth from the surface of the rock to 6 inches below the bottom of the base slab.
   2. In calculating the volume of excavation in rock for utility trenches the amount allowed will not exceed the volume in a width equal to the specified trench width for the pipe and height equal to the average depth from the surface of the rock to a point 6 inches below the outside bottom of the pipe.
   3. In calculating the length of utility trenches when the length method of measurement is specified, the measured length of trench will be the lengths of pipe installed, minus the width of overlapping trenches.
   4. When rock is encountered, it shall be stripped of earth and ENGINEER notified and given proper time to measure the same before removal. Any rock which has been removed prior to measurement by ENGINEER will not be classified as rock excavation.
   5. The above paragraphs list the methodology for determining the payable quantity of rock removed. It is CONTRACTOR's responsibility to remove the quantity of rock needed to result in a trench that meets OSHA's requirements.

1.02 DEFINITIONS

A. Rock excavation for structures, roads, and utility trenches shall include all hard, solid rock ledges, bedded deposits and unstratified masses, and all conglomerate deposits or any other material so firmly cemented that it is not practical to excavate and remove same with a 270-net flywheel horsepower tractor (Caterpillar D-8 with power shift, or equal) equipped with dozer blade and hydraulic-mounted parallelogram ripper; 225-net flywheel horsepower hydraulic backhoe, or equal, except after continuous drilling and blasting. No soft or disintegrated rock which can be removed with a pick; no loose, shaken, or previously broken rock; and no rock which may fall into the excavation from outside the limits of excavation will be classified as rock excavation. Rock excavation shall also include all rock boulders necessary to be removed having a volume of one cubic yard or more.

1.03 PROJECT CONDITIONS

A. CONTRACTOR shall conduct survey and document conditions of buildings near locations of rock removal, both prior to and after rock removal, in the presence of adjacent property owners.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

3.01 ROCK REMOVAL

A. When rock is encountered, it shall be stripped of earth and ENGINEER or OWNER's representative notified and given proper time to evaluate same before removal. Any rock removed which has not been measured by ENGINEER or OWNER's representative will not be classified as rock excavation.

B. Removal of rock shall be by mechanical methods. Blasting is not allowed.

C. CONTRACTOR shall provide seismographic monitoring during progress of rock removal at the CSO 004 site.

D. Disintegrate rock and remove from excavation.

E. Remove rock at excavation bottom to form level bearing surface.

F. The depth of trench in rock shall be 6 inches below the lowest outside bottom of the pipe.

G. Rock excavation for streets shall include removal of rock to subgrade elevations.

H. Rock shall be removed 2 feet below finish grade in areas to receive seed, sod, or trees.

I. Remove shaled layers to provide a sound and unshattered base for foundations.

J. Unauthorized rock removal shall be corrected in accordance with backfilling and compacting requirements of Section 31 23 00–Excavation, Fill, Backfill, and Grading or with concrete fill.

K. All excavated rock shall be classified as undesirable backfill material and shall be disposed of as specified in Section 31 23 00–Excavation, Fill, Backfill, and Grading, unless it is crushed and screened to meet backfill requirements for use on-site.

L. All excavations and trenches in rock shall be backfilled with approved backfill materials furnished by CONTRACTOR. Costs for such materials shall be included in the price bid for rock excavation. Rock may only be used for backfill if it meets the specified gradation of backfill material.

END OF SECTION

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SECTION 31 23 16.27

GEOTECHNICAL INSTRUMENTATION

PART 1–GENERAL

1.01 SCOPE

A. This section covers the installation and monitoring of settlement monitors, seismographs, and other instrumentation which shall be used to monitor surface and subsurface conditions during construction at site CSO 004.

B. Work shall include furnishing all equipment, material, and labor for installing, maintaining, monitoring, analyzing, reporting, and removing instrumentation required to monitor ground movement.

1.02 RELATED SECTIONS AND DIVISIONS

A. Applicable provisions of Division 01 shall govern work in this Section.

1.03 QUALIFICATIONS

A. Geotechnical Instrumentation Engineer: The Geotechnical Instrumentation Engineer shall be a qualified Geotechnical Instrumentation Specialist who is a licensed Engineer or licensed Geologist, registered in the State of Illinois, specialized in geotechnical engineering and with experience in the installation, monitoring and maintenance of instruments of the types specified in this Section. The Instrumentation Engineer shall be onsite to supervise and direct instrument installation and be responsible for the instrument installation. The Geotechnical Instrumentation Specialist shall have installed similar number and types of instruments specified.

1.04 DEFINITIONS

A. Geotechnical Instrument: Any device designed to facilitate measurement of ground, or structure response such as movements and stresses due to construction activities.

B. Instrument Monitoring: Gathering, plotting, analyzing, and reporting data from geotechnical instruments.

C. Contingency Measures: Measures to be implemented in the construction process to remediate ground movement and eliminate the potential for endangering the stability and integrity of existing structures, facilities, underground or overhead utilities, and roadway during subsequent construction activities. Contingency measures shall be provided in the submitted Contingency Plan.

D. Initial Instrumentation Monitoring: The initial set of two readings from each installed instrument taken before excavation has started to establish a pre-excavation baseline.

E. Peak Particle Velocity: The maximum rate of change with respect to time of the particle displacement, measured on the ground by seismographs. Maximum Peak Particle Velocity amplitudes are given in units of inches per second (in/sec) zero-to-peak amplitude

measured at any one of three mutually perpendicular components. The three components of peak particle velocity are:

1. Longitudinal (radial) measured in a direct line horizontally toward the blast from the point of interest of measurement.
2. Transverse measured horizontally at 90 degrees to the longitudinal plane.
3. Vertical measured vertically at 90 degrees to both preceding planes.

F. Frequency of Vibration: The number of oscillations that occur in one second. Frequency units are hertz, where 1 hertz = 1 cycle per second.

G. Dominant Frequency: The frequency at the maximum peak particle velocity, as calculated visually from the seismograph waveform strip chart for the half-cycle that has its peak at the maximum particle velocity.

H. Threshold and Limit Values: Specified values of ground movement which if met or exceeded cause CONTRACTOR to implement the Contingency Plan.

I. Structural Instrumentation: Devices installed prior to construction activities at or on the existing building and other structures to monitor horizontal and vertical movements of structural elements.

J. Surface Monitoring Point (SMP): Markers or points fixed to the ground surface and monitored by optical survey control to determine vertical and/or horizontal displacements that may occur during construction.

1.05 SUBMITTALS

A. The following shall be submitted in accordance with Section 01 30 00–Submittals. Comply with additional requirements as specified below:
   1. SD-01 Preconstruction Submittals:
      a. Submittals required to be submitted by CONTRACTOR a minimum of 30 days prior to the start of geotechnical instrumentation-related activity:
         (1) Qualifications: Submit personnel qualifications documentation as required in this Section.
         (2) Geotechnical Instrumentation Work Plan: Submit a Geotechnical Instrumentation Work Plan 30 days prior to installation of instrumentation. At a minimum, the Plan should include:
            (a) A detailed list of specified instrumentation to be installed, including proposed coordinates with elevations and depths.
            (b) The proposed instrumentation installation sequence and schedule.
            (c) The proposed method of instrumentation installation.
            (d) The methods for conducting post-installation acceptance tests.
            (e) The methods for protecting instruments from any form of damage and an instrumentation maintenance schedule, including methods to maintain, re-calibrate, re-install, or re-establish any instrument as per manufacturer’s recommendations.
            (f) The installation log format, the test and acceptance form, the initial reading form, and the reading form including proposed graphical plots showing incremental and cumulative readings, the maintenance and calibration log, and the software used to plot readings, for each instrument.

(3) Equipment and Materials List: Submit equipment and materials list, which shall include the make, model and manufacturer specifications of all instrumentation hardware and software to be installed.

(4) Contingency Plan: At least 30 days prior to the start of construction or any excavation, CONTRACTOR shall submit a Contingency Plan that defines the remedial measures to be implemented if any geotechnical instrumentation reading meets or exceeds the Threshold Values or Limit Values specified in this Section or any evidence of ground movement or damage is observed. As a minimum, the Contingency Plan shall include:

(a) The names and qualifications of personnel responsible for directing and implementing the procedures as listed in the Contingency Plan.

(b) A list of stand-by, immediately available, material and equipment to be used for remedial measures means and methods to stabilize ground movement. Should any Contingency Plan means and methods require equipment and personnel from off-site locations, provide a schedule of availability to implement remedial measures.

(c) The Contingency Plan implementation details should any instrument reading meet or exceed Threshold Value.

(d) The Contingency Plan implementation details should any instrument reading meet or exceed Limit Value.

(e) The Contingency Plan implementation details should provide remediation for any evidence of ground movement or damage observed.

(f) Notification procedures when implementation of the Contingency Plan is required.

(g) Methods of verification of the successful implementation of remedial measures.

2. SD-06 Test Reports:

a. Daily Monitoring Reports: CONTRACTOR shall supply daily reports of the instrumentation monitored and provided to OWNER and OWNER's Representative within 48 hours of the instrument reading time in the approved formats. The report shall include:

(1) Electronic and paper copies of monitoring data in latest version of Excel, clearly indicating instrument identification numbers and locations, date and time of all past and current readings, and reference elevations and depths for readings.

(2) Electronic and paper copies of water levels and cumulative plots of movement.

(3) An analysis of any instrument meeting or exceeding Threshold or Limit values stating reasons for meeting or exceedance and steps taken to mitigate exceedance as per the Contingency Plan.

3. SD-07 Certificates: Instrument Calibration Certificates: Submit factory calibration certification certificates at least 14 days prior to instrument installation.

1.06 QUALITY ASSURANCE

A. The installation, calibration, and data collection and analysis of results from the instrumentation systems shall be performed by qualified individuals with a minimum of five years of previous experience with the devices or systems specified.

B. Instrument Calibration, Protection and Maintenance: A factory calibration shall be conducted on all instruments prior to shipment. Certification shall be provided to indicate that the test equipment used for this purpose is calibrated and maintained in accordance

with the test equipment manufacturer's calibration requirements. All readout instruments shall be calibrated at the manufacturer's facility prior to shipment. CONTRACTOR shall maintain all instrumentation in working order. Should an anomalous reading be recorded for any instrument at any time, CONTRACTOR shall re-read the instrument immediately at no additional cost to OWNER. In case of equipment failure or repeated anomalous readings from any instrument, CONTRACTOR shall replace those instruments within 24 hours of detection, at no additional cost to OWNER. All instruments shall be protected from construction activity damage and all instrumentation at ground surface shall be protected by roadway boxes or pipe bollards. All instruments shall be protected from weather related damage, flooding and freezing.

C. Conformance with Manufacturer's Requirements: CONTRACTOR shall install and operate the instrument systems in strict conformance with the manufacturer's requirements or as specified, whichever is more stringent.

1.07 TOLERANCES

A. CONTRACTOR shall meet the following tolerances:
   1. Establish the initial elevations of all instruments to 0.01 feet.
   2. Record subsequent elevations of all instrument elevation points to 0.01 feet.
   3. Establish the initial coordinates of all instruments to 0.01 feet.
   4. Record the subsequent coordinates of all instruments to 0.01 feet.

1.08 MONITORING PROGRAM

A. CONTRACTOR shall document the preconstruction conditions of structures and utilities adjacent to the work. The Geotechnical Instrumentation shown on the drawings delineates the minimum required instruments and monitoring points that are a part of this Contract.

1.09 AVAILABILITY OF DATA

A. All data collection, instrument readings and monitoring survey data shall be performed by CONTRACTOR. This information shall be furnished to OWNER and ENGINEER on the schedule as specified. Data reports and all other unprocessed data, readings, and observations shall not be disclosed to third parties outside the Contract without the express written permission of OWNER.

1.10 DELIVERY, HANDLING, AND STORAGE

A. Confirm receipt of sufficient materials to install instrumentation as shown on the Drawings. Perform and document calibration and operational checks on each instrument prior to installation. All materials and instruments shall be free of defects and in acceptable working condition. Load, transport, unload, and store materials and instruments as recommended by the manufacturer.

PART 2–PRODUCTS

2.01 SEISMOGRAPHS

A. CONTRACTOR shall furnish, install, calibrate, maintain and operate seismograph instrumentation for measuring and recording vibrations, including both the low and high frequency (noise) portions of the air pressure waves.

B. Recording seismographs instruments shall be four-component waveform recorders (seismographs), measuring and recording the three components (longitudinal, transverse, and vertical) of the particle velocity waveform (amplitude time history). The specific make and model of the instruments to be employed shall be as recommended by the Geotechnical Instrumentation Engineer.

C. Instruments shall be replaced, repaired, or re-calibrated when needed and when directed by CONTRACTOR's Geotechnical Instrumentation Engineer or OWNER.

D. Measurements shall be taken under supervision of CONTRACTOR's Geotechnical Instrumentation Engineer. The Geotechnical Instrumentation Engineer shall interpret the readings and shall establish the vibration limitations at the various locations and structures, but under no circumstances shall the limits exceed the values specified, or as established by jurisdictional ordinance or regulation.

2.02 SURFACE MONITORING POINT (SMP)

A. Surface monitoring points (SMPs), as shown on the Drawings, will be used to monitor vertical settlement of various facilities and ground surfaces at selected locations shown on the Drawings. Surface monitoring points shall be a PK Nail in applicable hard surfaces, and a driven rebar in applicable soft surfaces.

B. Readings shall be submitted, in a graphical format submitted to and reviewed by OWNER and Project Soils Engineer as part of the Geotechnical Instrumentation Work Plan, showing incremental and cumulative movement.

PART 3–EXECUTION

3.01 GENERAL

A. CONTRACTOR shall install all instrumentation, test, and take two sets of repeatable initial readings from all specified instruments a minimum of 14 days before start of any excavation, any soil or rock removal, any ground surface penetration, or any ground disturbance. The two initial readings on each instrument shall be taken a minimum of 24 hours apart.

B. Instrumentation reading devices for the various monitoring systems shall be procured, furnished, and installed and monitored by CONTRACTOR and instrumentation readings provided to OWNER in an approved format within two business days from the time of each reading. The instrumentation should be installed in the presence of OWNER's Representative.

C. CONTRACTOR shall comply with all Federal, State and local laws, regulations and ordinances relating to the performance of this work. CONTRACTOR shall, at his own expense, procure all required permits, certifications and licenses required of him by Federal, State and local law for execution of this work.

D. CONTRACTOR shall provide access to the work at all times and access to all instrument readout locations to allow OWNER and OWNER's Representative to take instrumentation readings. No additional charges or claims shall result from activities required to permit OWNER and OWNER's Representative such access.

E. CONTRACTOR shall obtain utility clearance for all surface instrument locations from all applicable agencies prior to drilling or excavating. Should utility conflicts arise, CONTRACTOR shall immediately notify the OWNER and ENGINEER prior to any drilling or excavation.

F. CONTRACTOR shall install instrumentation in accordance with manufacturer's recommendations and as shown on the Drawings unless otherwise required by OWNER. The location of instruments shown on the drawings is approximate. Exact locations of instrumentation shall be field-determined and be approved by OWNER and/or OWNER's Representative prior to installation.

G. CONTRACTOR shall be responsible for supplying all necessary power for the monitoring equipment.

H. Performance Period: Immediately after installation CONTRACTOR shall implement and maintain instrumentation until the Final Completion of the Work or as required by OWNER.

I. Survey: Immediately prior to proceeding with instrument installation, the location of all instruments to be installed should be accurately determined and surveyed.

J. Location and Orientation: Instrumentation shall be installed to tolerances specified or as recommended by the manufacturer whichever is more stringent. To the extent possible, the instruments shall be installed at locations to avoid interference or disturbance by construction activities, utilities and traffic. Any offset from the Plan location shall be approved by Project Soils Engineer prior to instrument installation.

K. Identification: Each instrument shall be permanently marked with an identification number and shall be referred to by the field marked identification numbers in reports.

L. Protection to Work and Cleanup: Protection of the shafts, existing roadways, railways, and adjacent properties is mandatory. During the work, CONTRACTOR shall keep the work area clean. This includes managing debris generated from the work, including: water, cuttings, and trash. All cuttings will be collected, containerized and disposed of off-site at a location approved by OWNER. Drilling fluid will be collected and treated, as necessary, prior to discharge at an approved location. CONTRACTOR shall be responsible for contacting applicable entities and obtaining the required permits for disposal of all wastes generated. At the completion of work at each location, CONTRACTOR shall remove all equipment, tools, materials, and supplies, and shall leave the site clean and clear of all debris generated by the work.

3.02 PRE-CONSTRUCTION /PRE-BLAST INSPECTIONS

A. Perform preconstruction inspections of properties, utilities, government areas, and structures within 200 feet in any direction from areas with rock excavation at CSO 004.

B. Pre-Construction Inspection Guidelines:
   1. The main purpose of the inspection shall be to point out the following:
      a. Hairline cracks.
      b. Settlement damage.
      c. Water damage.
      d. Weathering effects.
      e. Other construction defects that are unknown to the property owner.

2. Pre-construction inspections shall include the following as needed to provide adequate documentation of existing structural defects for future defense of claims:
    a. Diagrams.
    b. Crack survey sketches.
    c. Video notes.
    d. High resolution color photographs (at least 10 megapixels per photo) with adequate lighting.
3. The pre-construction inspector shall communicate with property owners that no damage is expected from rock excavation, and answer general questions regarding rock excavation operations.

3.03 INSTALLATION

A. Surface Monitoring Points (SMP): Surface monitoring points shall be installed at the locations shown on the Drawings. For paved sections, one inch long fired fixing nails, PK type, shall be shot into the pavement slab. For unpaved surfaces rebar shall be driven into the ground surface to a depth unaffected by frost heave. Monitoring of SMPs shall be the responsibility of CONTRACTOR, and shall be done by a surveyor licensed in Illinois.

3.04 PROTECTION AND MAINTENANCE

A. All surface instrumentation shall have utility box type protective access covers.

B. All protective instrumentation access covers are to be lockable and keyed alike. CONTRACTOR shall provide keys to OWNER and ENGINEER. CONTRACTOR shall protect and maintain all instruments and keep the protective covers locked.

3.05 MONITORING SCHEDULE AND LIMITS

A. CONTRACTOR shall monitor all installed instrumentation, and shall report as described below and as shown on the Drawings:
    1. Initial instrumentation readings for all instruments shall be made and recorded between 48 and 72 hours after installation. Measure at least two times at 24-hour intervals and until repeatable readings are obtained prior to construction.
    2. All instrumentation shall be monitored daily when excavation is within 250 feet of each instrument, weekly thereafter as per the schedule shown on the drawings and shall be continued until the frequency is changed or suspended by OWNER.
    3. Readings from all instruments and survey points shall be submitted to OWNER and ENGINEER in the approved format as part of the Daily Monitoring Report, within one (1) business day of collecting data.
    4. OWNER may occasionally conduct quality assurance measurements of instruments. Measurements by OWNER shall take precedence over CONTRACTOR's measurements. OWNER’s measurement will be made available to CONTRACTOR upon request; however CONTRACTOR shall rely on CONTRACTOR's own instrument readings for construction purposes.
    5. Monitoring Frequency: CONTRACTOR shall record readings as specified. Should instrumentation readings from any instrument exceed Threshold Value or Limit Value, CONTRACTOR shall immediately re-read the instrument and immediately notify OWNER and ENGINEER if the second reading still shows exceedance.
    6. All elevations shall be referenced to fixed points which are a minimum of 200 feet away from all excavations so that the reference points remain accurate.
    7. CONTRACTOR shall limit the effects of construction as shown in the contract drawings.

B. If a Threshold Value is reached or exceeded, CONTRACTOR shall take the following actions:
   1. Meet with OWNER's representative to discuss the need for response actions. If required, CONTRACTOR shall submit a detailed specific plan of action, based as appropriate on the submitted Contingency Plan.
   2. CONTRACTOR shall install additional instruments and/or increase the frequency of readings as shown in the Contingency Plan.

C. If a Limit Value is reached or exceeded, CONTRACTOR shall take the following actions:
   1. Immediately notify OWNER and ENGINEER.
   2. Cease all related construction operations.
   3. Implement corrective actions as per the submitted Contingency Plan.
   4. Meet with OWNER, OWNER's Representative, ENGINEER, and Project Soils Engineer to discuss further course of action. If required, CONTRACTOR shall submit a detailed specific plan of action, based as appropriate on the submitted Contingency Plan.

D. Monitoring Locations:
   1. Placement of the seismographs for vibration monitoring will depend on the location of the rock excavation heading at the time of monitoring and the results of the pre-construction surveys. In general, at least two seismographs should be utilized during active construction and any other vibration inducing activities. One seismograph should be placed on each side of Granite Street to monitor vibration.
   2. The location of each seismograph shall be determined by the Geotechnical Instrumentation Engineer.

E. Ground Vibration Limits:
   1. Conduct all rock excavation in such a manner as to reduce vibrations that reach adjacent structures and facilities at or below acceptable limits as established by CONTRACTOR's Geotechnical Instrumentation Engineer, but which shall not exceed the peak particle velocity limits specified below or such other limits as established by ordinance or regulation, whichever is lower.
   2. Maximum peak particle velocity:

Type of Structure	Peak Particle Velocity
Commercial/Light Industrial Structure	1.0 in/sec
Sensitive Commercial/Residential	0.2 in/sec
Very Old/Sensitive Residential	0.05 in/sec
Underground Utilities and Sewers	2.0 in/sec

   3. CONTRACTOR may need to use lower values than designated above if the rock excavation procedures being used are damaging the adjacent rock, concrete, or structures.

F. Compliance with Limits:
   1. Compliance with the vibration levels specified shall not relieve CONTRACTOR of its responsibilities with respect to structural or other damages or its responsibilities under law, ordinance, or regulation.
   2. If peak particle velocity exceeds 80 percent of the controlling ground vibration level specified in this Section for any single axis measured, CONTRACTOR shall, in less than four hours, notify OWNER and ENGINEER. The report shall give the proposed corrective action.

3. If CONTRACTOR exceeds 100 percent of the controlling ground vibration level specified in this Section for any single axis measured, CONTRACTOR shall cease all activities immediately, Consultant shall submit a written report to OWNER and ENGINEER within 24 hours. The report shall include any necessary proposed corrective action to ensure that the specified vibration limits will not be exceeded. The loss of the time and effort for ceasing and restarting the operation to meet the specified limits are incidental to the Work.

3.06 POST-CONSTRUCTION/POST-INSPECTIONS

A. At the termination of operations, post-construction/inspections shall verify no damage exists at the pre-construction/inspection locations as a result of CONTRACTOR's operations.

3.07 COMPLAINTS

A. Inform OWNER and ENGINEER of all complaints immediately upon receipt. Within 24 hours of complaint receipt, submit a written report including the name, address, date, time received, date and time of the complaint, and a brief description of the alleged damages or the other circumstances upon which the complaint is predicated in each report.

B. When settlement of a claim is made, furnish OWNER and ENGINEER with a copy of the release of claim by the claimant.

C. Notify OWNER's Representative immediately, throughout the statutory period of liability, of any formal claims or demands made by attorneys on behalf of claimants; of the serving of any notice, summons, subpoena, or other legal documents incidental to litigation; and of any out-of-court settlement or court verdicts resulting from litigation. Notify OWNER and ENGINEER immediately of any investigations, hearings, or orders received from any Governmental agency, board or body claiming to have authority to regulate blasting operations.

3.08 DAMAGE TO INSTRUMENTATION

A. CONTRACTOR shall protect all instruments and all instrumentation components from damage due to construction operations, weather, traffic, and vandalism.

B. If an instrument, including an existing instrument installed by others, is damaged or inoperative, CONTRACTOR's instrumentation personnel shall repair or replace the damaged or inoperative instrument within 24 hours.

C. Instruments damaged by CONTRACTOR shall be replaced by CONTRACTOR at no cost to OWNER. CONTRACTOR shall repair or replace damaged instrumentation within 24 hours at no additional cost to OWNER. CONTRACTOR shall immediately notify OWNER and ENGINEER of all damaged or otherwise non-functioning instrumentation. OWNER will be the sole judge of the cause of the damage and whether repair or replacement is required.

D. After instrumentation repair or replacement, CONTRACTOR shall conduct post-installation acceptance tests of the repaired or replaced components.

END OF SECTION

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SECTION 31 23 19

DEWATERING

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Removal of groundwater to allow belowgrade construction.
   2. Site grading to prevent surface water from entering the excavation.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

C. Payment:
   1. The expense for making all extra excavations necessary to prevent water from interfering with the proper construction of the work and for forming all dams or diversions, digging of sumps or pump wells, bailing, and installation and pumping of wells shall be borne by CONTRACTOR.
   2. The cost for removal of groundwater and surface water shall be included in the prices bid for the work. No separate payment will be made for dewatering whether accomplished by use of sumps and pumps, well point systems, deep wells, or any other method.
   3. Any permits necessary for the dewatering operations shall be obtained and paid for by CONTRACTOR.

1.02 REFERENCES

A. Illinois Urban Manual.

B. See Division 01, Regulatory Requirements for permit requirements and water, erosion, and sediment control.

1.03 SYSTEM REQUIREMENTS

A. CONTRACTOR shall, at its own expense, keep the excavation clear of water while structures, mains, and appurtenances are being built, utilities are being installed, and fill and backfill are being compacted. Under no conditions shall the work be laid in or under water. No water shall flow over the work until the joints are complete or the concrete has set.

B. Wherever necessary, CONTRACTOR shall excavate in advance of the completed work, lead the water into sumps or pump wells, and provide erosion control measures to prevent water or sediment damage.

C. CONTRACTOR’s dewatering system shall perform so that the soils within the trench will not be destabilized by hydrostatic uplift pressures from adjacent groundwater. If conditions warrant, CONTRACTOR shall furnish and install well point systems or deep wells.

D. Dewatering shall be sufficient to lower the piezometric level to at least 2 feet below the bottom of the excavation. Additional lowering shall be provided as necessary to create a stable subgrade.

E. In areas where rock is encountered, the water level shall be kept at or below top of rock, but at least 6 inches below bottom of concrete. Additional rock shall be removed as needed to provide clearances.

F. The control of groundwater shall be such that softening or heaving of the bottom of excavations or formation of “quick” conditions or “boils” shall be prevented.

G. Dewatering systems shall be designed and operated so as to prevent the migration or removal of soils.

1.04 QUALITY ASSURANCE

A. All dewatering shall be done in accordance with Illinois Urban Manual Code 813 and with all other applicable federal, state, and local code requirements.

B. In particular, groundwater observation wells shall be provided and subsequently abandoned in accordance with the Illinois Urban Manual Code 996. CONTRACTOR shall complete all observation well construction and abandonment forms as required and shall submit the forms to OWNER within 15 days of construction or abandonment activities.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

3.01 DEWATERING

A. Dewatering shall be started, and the water level shall be lowered as specified herein prior to beginning excavation and shall be continued until structure, main, or appurtenance has been completed and fill has been placed and compacted to final grade.

B. CONTRACTOR shall provide at least two groundwater observation wells near each area to be excavated to aid CONTRACTOR in determining whether the minimum specified requirements have been met prior to excavation. The observation well shall be a minimum 2-inch-diameter slotted PVC pipe. The observation well shall be installed and backfilled in such a way as to allow an accurate determination of actual groundwater levels. The observation well shall be properly abandoned after use unless specified otherwise.

C. CONTRACTOR shall provide all necessary materials and equipment to keep the excavation free from water during construction. CONTRACTOR shall at all times have on hand sufficient pumping equipment and machinery in good working condition for all ordinary emergencies, including power outages, and shall have available at all times competent workers for the operation of the pumping equipment. The dewatering systems shall not be shut down between shifts, on holidays or weekends, or during the work stoppages.

D. CONTRACTOR shall meet all requirements of applicable IEPA permits for construction pit or trench dewatering.

E. The release of groundwater to its static level shall be performed in such a manner as to maintain the undisturbed state of the natural foundation soils, prevent disturbance of compacted fill or backfill, and prevent floatation or movement of all structures and pipelines.

3.02 PROTECTION

A. CONTRACTOR shall take all necessary precautions during the dewatering operation to protect adjacent structures against subsidence, flooding, or other damage. The dewatering system shall be installed and operated so that the groundwater level outside the excavation is not reduced to the extent that would damage or endanger adjacent structures or property. Any such facilities and structures damaged shall be repaired or replaced to the satisfaction of their owner.

B. Prior to dewatering, CONTRACTOR shall take into account the effect of its proposed dewatering operation on existing private water supply systems and shall make arrangements with property owners for protecting their supplies or providing alternative means of supply.

C. In the event that CONTRACTOR's dewatering operation adversely affects private water supply systems, CONTRACTOR shall provide property owners with alternative potable and nonpotable supplies until dewatering operations are ceased and groundwater levels return to normal. If the water in private water supply wells is contaminated, through no fault of CONTRACTOR after restoration of original groundwater levels, OWNER will provide measures to restore water potability. CONTRACTOR is responsible for restoration of the water supply, not its potability after restoration.

D. In areas where continuous operation of dewatering pumps is required, CONTRACTOR shall avoid noise disturbance to nearby residences to the greatest extent possible by using electric-driven pumps, or intake and exhaust silencers or housing to minimize noise from engine-driven generators or engine-driven pumps.

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SECTION 31 25 00

SLOPE PROTECTION AND EROSION CONTROL

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: Erosion control devices.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 PAYMENT

A. All costs associated with slope protection and erosion control shall be included in CONTRACTOR's Bid. This work shall include, but is not limited to, erecting fence, excavation, placing posts, backfilling, attaching woven wire and geotextile fabric; placing ditch checks; installing sediment traps; removing the fence at completion of project; cleaning and repairing; removing or spreading accumulated sediment to form a surface suitable for seeding; replacing silt fence and damages caused by overloading of sediment material or ponding of water adjacent to silt fence; and furnishing labor, tools, equipment, and incidentals necessary to complete the work in accordance with the Contract.

1.03 REFERENCES

A. Illinois Urban Manual published by the Natural Resources Conservation Service (NRCS) in Illinois (http://www.nrcs.usda.gov).

1.04 REGULATORY REQUIREMENTS

A. Land disturbance less than 1 acre. Where land disturbance activities do not exceed 1 acre, CONTRACTOR shall maintain site conditions where erosion and pollution are controlled.

1.05 QUALITY CONTROL

A. Construct and maintain erosion sediment control measures in accordance with the Illinois Urban Manual.

B. Check facilities weekly and after any rainfall event, and make needed repairs within 24 hours.

PART 2–PRODUCTS

2.01 EROSION MATS

A. Uniform web of interlocking wood excelsior fibers, with a net backing on one side. The wood from which the blanket is produced shall have been properly cured to achieve adequately curled and barbed fibers. The blanket shall be of uniform thickness with the wood fibers evenly distributed over the entire area of the blanket. The blanket shall be furnished in rolled

strips. The width of the strips shall be 48 inches, ±1 inch. Weight of blanket measured under average atmospheric conditions shall be 78 pounds per 80 square yards, ±10%. Net backing shall have mesh size not exceeding 1 1/2 by 3 inches and may be woven from twisted paper, cotton cord, a biodegradable plastic, or other alternate method. The blanket shall be nontoxic to vegetation.

2.02 SILT FENCE

A. Use geotextile fabric consisting of either woven or nonwoven polyester, polypropylene, stabilized nylon, polyethylene, or polyvinylidene chloride with the following requirements. Fabric shall have the minimum strength values in the weakest principal direction. Nonwoven fabric may be needle punched, heat bonded, resin bonded, or combination thereof.

VALUE MINIMUM REQUIREMENTS (1)

Test	Method	Silty Soils(4)	Sandy Soils(5)
Grab Tensile-Strength/ Strip-Breaking Force	ASTM D-5034, D5035(2)	100	100
Mullen Burst Strength (psi)	ASTM D-3786	200	200
Equivalent Opening Size	CW-02215-77	50-140	20-50
U.S. Standard Sieve	Corps of Engineers		
Water Flow Rate (gal/min/ft.^{2}) at 50 mm Constant Head	ASTM D-4491(3)	10	10
Ultraviolet Radiation Stability (percent)	ASTM D-4355	90	90

(1) All numerical values represent minimum average roll values (i.e., the average of test results on any roll in a lot should meet or exceed the minimum values in the table).
(2) ASTM D-5034 Grab Test and ASTM D-5035 Breakout Force and Elongation Strip Method, Method 16, using a 4-inch by 8-inch sample, 3-inch gauge length clamped in 1-inch by 2-inch long grip, tested at a strain rate of 12 inches/min.
(3) Water Flow Rate in gal/min/ft shall be determined by multiplying Permittivity in sec. as determined by ASTM D4491 by a conversion factor of 74.
(4) Silty Soil: More than 15% by weight passing No. 200 sieve.
(5) Sandy Soil: Less than 15% by weight passing No. 200 sieve.

B. Furnish geotextile fabric in a wrapping which will protect the fabric from ultraviolet radiation and from abrasion because of shipping and handling. Keep geotextile dry until installed.

2.03 CONCRETE WASHOUT FACILITY

A. Temporary concrete washout facilities are used to contain concrete liquids when the chutes of concrete trucks are rinsed out after delivery of concrete to the construction site. These washout facilities function to consolidate solids for disposal and prevent runoff liquids associated with concrete. Failure to comply with appropriate washout location requirements will result in monetary deficiency deduction against the contractor.

B. Location of pit shall be at a location approved by OWNER/ENGINEER.

C. Constructed pit shall be made via the use of polyethylene sheeting and sandbags.

D. Contractor may propose alternate facility.

2.04 STABILIZED CONSTRUCTION ENTRANCE

A. Stabilized pad of coarse aggregate, underlain with geotextiles designed to vibrate accumulated sediment from tires and under chassis. This is to be located at any point where traffic will be entering and leaving the construction site.

B. See standard details for material information.

2.05 INLET PROTECTION

A. Flexstorm inlet filters manufactured by Inlet & Pipe Protection, Inc. (or approved equal) with woven monofilament geotextile filter fabric sediment bags shall be installed on the storm sewer inlet structures at all drainage discharge points prior to the excavation. Also, metal plates of adequate size, shape, and thickness shall be installed directly on all drainage structures providing a clean seal hindering debris from entering the drainage system.

B. Flexstorm inlet filters shall be installed on all storm sewer inlet structure castings with open lids or grates, within or adjacent to the project limits, and shall remain in place until the vegetation is established. The entire frame and sediment bag shall be remove and the structure cleared of all debris prior to OWNER accepting this project.

C. It is CONTRACTOR's responsibility to review the plans and /or worksite to determine the quantity of each drainage structure casting type. The foundry casting number or the exact grate size and clear opening size will provide the information necessary to identify the required Flexstorm Inlet Filter part number.

D. CONTRACTOR shall be responsible for inspecting the sediment bags once per week and after every major rain event (1/2-inch or more), and removing and cleaning the sediment bag if it is more than half full or damaged. This shall be done until the Flexstorm inlet filters are permanently removed.

E. Excess/waste construction material shall be properly disposed off-site. No cleaning of equipment or tools, including concrete trucks, will be allowed within the project limits or into OWNER's storm sewer drainage system. CONTRACTOR shall provide a concrete truck washout plan at the time of the project pre-construction meeting, which is in compliance with NPDES permit requirements.

PART 3–EXECUTION

3.01 GENERAL

A. Install devices before construction activities begin.

B. Proceed carefully with construction adjacent to stream channels to avoid washing, sloughing, or deposition of materials into the stream. If possible, the work area should be diked off and the volume and velocity of water that crosses disturbed areas be reduced by means of planned engineering works (diversion, detention basins, berms).

C. Unless noted on Drawings, do not remove trees and surface vegetation.

D. Expose the smallest practical area of soil at any given time through construction scheduling. Make the duration of such exposure before application of temporary erosion control measures or final revegetation as short as practicable.

3.02 EROSION MAT INSTALLATION

A. Place erosion mat immediately after seeding or sodding operations have been completed. Before mat placement, remove all material or clods over 1 1/2 inches in diameter and all organic material or other foreign material which interfere with the mat bearing completely on the soil or sod.

B. Any small stones or clods which prevent contact of the mats with the soil shall be pressed in the soil with a small lawn-type roller or by other effective means. The mat shall have its lateral edge so impressed in the soil as to permit runoff water to flow over it.

C. The matting strips shall be rolled on or laid in direction of flow. Spread mat evenly, smoothly, in a natural position without stretching and with all parts bearing on soil, and place blanket with netting on top. Overlap adjacent strips at least 4 inches. Overlap strip ends at least 10 inches. Make overlaps with the upgrade section on top.

D. Bury upgrade end of each strip of fabric or blanket at least 6 inches in a vertical slot cut in the soil and press soil firmly against the embedded fabric or blanket.

E. Anchor mats in place with vertically driven staples, driven until their tops are flush with the soil. Space staples at 3-foot centers along mat edges and stagger space at 3-foot centers through the center. Place staples at 10-inch centers at end or junction slots.

F. Reseed areas damaged or destroyed during erosion mat placing operations as specified for original seeding.

G. Dispose of surplus excavated materials and all stones, clods, or other foreign material removed in the preparation of the seeded soil or sodded surface before placing mat.

H. Following mat placement, uniformly apply water to the area to moisten seedbed to 2-inch depth and in a manner to avoid erosion.

I. Maintain erosion mat and make satisfactory repairs of damage from erosion, traffic, fires or other causes until work acceptance.

3.03 GEOTEXTILE FABRIC

A. Before placing fabric, grade area smooth and remove stones, organic matter, or other foreign material which would interfere with fabric being completely in contact with soil.

B. Place fabric loosely and lay parallel to direction of water movement. Pinning or stapling is acceptable to hold geotextile in place. Overlap or sew together separate pieces of fabric. Overlap joints a minimum 24 inches in the flow direction. After placement, do not expose fabric more than 48 hours before covering.

C. Cover damaged areas with a patch of fabric using a 3-foot overlap in all directions.

3.04 SILT FENCE INSTALLATION

A. Erect silt fence before starting construction operations which might cause sedimentation or siltation at site of proposed silt fence.

B. Construct silt fence in an arc or horseshoe shape with ends pointing up slope. Construct silt fence to the dimensions and details shown on Drawings. Remove silt fences after slopes and ditches have been stabilized and turf developed to the extent that future erosion is unlikely. Dispose of materials remaining after removal.

C. Inspect all silt fences immediately after each rainfall and at least daily. Correct deficiencies immediately. Where construction activity changes the earth contour and drainage runoff, make a daily review so that silt fences are properly located for effectiveness. Where deficiencies exist, install additional silt fences.

D. Remove and dispose of sediment deposits. Sediment deposits remaining in place after the silt fence is no longer required shall be dressed to conform with the existing grade and the area topsoiled, fertilized, and seeded as required.

E. Incorporate erosion control devices indicated on the Drawings into the Project at the earliest practicable time.

F. OWNER/ENGINEER may require installation of additional silt fence not shown on the plans.

G. Construct, stabilize and activate erosion controls before site disturbance within tributary areas of those controls.

H. CONTRACTOR shall provide erosion control protection as necessary, including silt fence, excelsior roll, and temporary ditch checks all to be installed in accordance with IDOT Standard Specifications Article 280.

3.05 DITCH CHECKS

A. Ditch checks shall be installed in accordance with the IDOT Bureau Local Roads and Streets Manual Section 41-3.03(b)

B. Spacing and Placement shall be in accordance with this Section.

C. Specifications shall be in accordance with Section 280 of the IDOT Standard Specifications.

D. Locations shall be as shown on drawings.

E. Additional locations may be required as determined in the field.

3.06 CONCRETE WASHOUT

A. Maintaining washout facilities shall include removing and disposing of hardened concrete and/or slurry and retuning the facilities to a functional condition.

B. Temporary concrete washout facilities are to be inspected during the weekly erosion and sediment control inspection, after a storm event of 1/2-inch or greater and at the end of any day when concrete has been poured on the construction site. The inspection is to ensure

that there are no leaks, no spills and that the facilities capacity has not yet been compromised.

C. Any overflowing of the washout facilities onto the ground must be cleaned up and removed within 24 hours of discovery.

D. If a rain or snow event is forecasted, a non-collapsing, non-water collecting cover shall be placed over the washout facility and secured to prevent accumulation and overflow of precipitation.

E. Contents of each concrete washout facility are not to exceed 75% of its designed capacity. If the contents reach 75% capacity, discontinue pouring concrete into the facility until it has been cleaned out.

F. Allow slurry to evaporate or remove from the site in a safe manner (i.e., vacuum truck). All hardened material can then be removed and disposed of properly.

G. If a lined basin is used, immediately replace the liner if it becomes damaged.

H. Remove temporary concrete washout facilities when they are no longer needed and restore the disturbed areas to their original condition.

3.07 STABILIZED CONSTRUCTION ENTRANCE

A. Stabilized construction entrance shall be installed in accordance with the standard detail and the IDOT Bureau of Local Roads and Streets Manual Section 41-3.06(a).

B. Stabilized entrance/exit shall be checked on a regular basis as it may require periodic top dressing.

C. Any run-off must be routed through a sediment trapping measure.

3.08 FIELD QUALITY CONTROL

A. Inspect erosion control devices on a weekly basis and after each runoff event. Make necessary repairs to ensure erosion and sediment controls are in good working order.

B. Maintenance of erosion control systems is incidental to the contract unit prices.

3.09 CLEANING

A. Section 01 77 00–Execution and Closeout Requirements: Requirements for cleaning.

B. When sediment accumulation in sedimentation structures has reached a point one-third depth of sediment structure or device, remove and dispose of sediment.

C. Do not damage structure or device during cleaning operations.

D. Do not permit sediment to erode into construction or site areas or natural waterways.

E. Clean channels when depth of sediment reaches approximately one-half channel depth.

3.10 PROTECTION

A. Section 01 77 00–Execution and Closeout Requirements: Requirements for protecting finished Work.

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SECTION 32 11 23

AGGREGATE BASE COURSE

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Aggregate base course for roads and parking areas.
   2. Gravel roads.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

C. CONTRACTOR is cautioned that existing private and public roads and shoulders may not hold up to typical construction traffic or activities. CONTRACTOR shall repair all roads, shoulders, and gravel areas damaged in accordance with this section. All paved areas shall also be repaired in accordance with Section 32 11 26–Hot Mix Asphalt Paving.

1.02 MEASUREMENT AND PAYMENT

A. Repair or replacement of aggregate base course shall be considered incidental and included in the price Bid.

1.03 REFERENCES

A. Standard Specifications: Unless otherwise indicated, Standard Specifications shall refer to the State of Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, current edition, including all issued supplemental specifications.

1.04 DEFINITIONS

A. Street or road shall include streets, roads, driveways, and parking lots.

1.05 SUBMITTALS

A. Submit sieve analysis for proposed materials in accordance with Section 01 33 00–Submittals.

1.06 DRAINAGE DURING CONSTRUCTION

A. CONTRACTOR shall comply with the provisions of Article 280 of the Standard Specifications.

PART 2–PRODUCTS

2.01 AGGREGATES

A. Aggregate for base course shall consist of crushed stone and shall meet the requirements of Article 351 of the Standard Specifications. The material furnished shall be uniformly graded and shall conform to ASTM C33.

B. Base course shall be uniformly graded and shall conform to the requirements of No. CA6.

C. Material for top layer of shoulders shall meet the requirements of No. CA4.

PART 3–EXECUTION

3.01 PREPARATION

A. The subgrade shall be graded and rolled to provide uniform density and shall comply with the profile and cross sections contained in the Drawings. All street subgrade in cut areas and all areas to receive fill shall be proof-rolled in the presence of OWNER or ENGINEER with a heavily loaded triaxle dump truck or similar equipment prior to the placement of any fill materials or base course. The subgrade shall be prepared in accordance with Article 301 of the Standard Specifications.

3.02 CONSTRUCTION

A. Base course grade shall be set to allow placement of thickness of asphaltic pavement shown or specified.

B. Depth of base course shall be provided according to the standard cross sections or details provided on the Drawings.

C. Depth of base course shall be the existing depth or 12 inches, whichever is greater.

D. Base course shall be placed directly on subgrade areas or on top of salvaged asphalt millings unless otherwise indicated on the Drawings.

E. Each layer of base course shall be wetted and rolled to provide maximum compaction in accordance with Article 351.05 of the Standard Specifications.

F. The finished base course shall be fine graded in preparation for paving.

G. After final grading, CONTRACTOR shall maintain the base course until asphaltic paving work has been completed.

H. All gravel surfaces damaged during construction shall be replaced. The depth of aggregate shall match existing or 8 inches, whichever is greater.

END OF SECTION

SECTION 32 11 26

HOT MIX ASPHALT PAVING

PART 1–GENERAL

1.01 SUMMARY

A. Work includes Hot Mix Asphalt (HMA) paving, prime coat, and casting adjustments.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

C. CONTRACTOR is cautioned that existing private and public roads and shoulders may not hold up to typical construction traffic or activities. CONTRACTOR shall replace all roads, shoulders, and paved areas damaged during the project in accordance with this section. Gravel shoulders, gravel roads, and parking areas shall be repaired in accordance with Section 32 11 23–Aggregate Base Course.

1.02 MEASUREMENT AND PAYMENT

A. Payment: Payment for HMA paving shall be considered incidental to the project and included in the Lump Sum Bid.

1.03 REFERENCES

A. Standard Specifications: Unless otherwise indicated, Standard Specifications shall refer to the State of Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, current edition, including all issued supplemental specifications.

1.04 DEFINITIONS

A. Street or road shall include streets, roads, driveways, and parking lots.

1.05 SUBMITTALS

A. Prior to the commencement of paving, mix designs and aggregate sieve analysis shall be submitted to ENGINEER for approval in accordance with Section 01 33 00–Submittals.

PART 2–PRODUCTS

2.01 HMA PAVEMENT

A. HMA surface course shall be Mix “D,” N50, with a mix type of IL 9.5 mm and percent air voids of 4% at 50 gyrations. HMA binder course shall be IL 19.0 mm, N50, with percent air voids of 4% at 50 gyrations. HMA binder shall have a PG binder grade of PG 64-28. HMA surface course shall have a PG binder grade of SBS-PG-76-28.

B. Aggregate shall conform to the requirements of Article 406.02 of the Standard Specifications.

C. Where existing pavement is replaced, minimum pavement thickness shall be 4 inches or existing thickness, whichever is greater. Lower layer shall be 2 1/4 inches minimum. Upper layer shall be 1 3/4 inches minimum.

D. Materials for prime coat shall conform to the requirements of Article 406.02.

E. Pavement markings shall conform to Section 780 for white markings, except without the reflective additive.

PART 3–EXECUTION

3.01 ALLOWABLE REMOVAL OF PAVEMENT

A. CONTRACTOR shall remove asphalt pavement and road surface as a part of the general excavation. The width of pavement removed shall be the minimum possible and acceptable for convenient and safe installation of structures, utilities, and appurtenances.

B. All asphalt pavement shall be cut on neat, straight lines and shall not be damaged beyond the limits of the excavation. Should the cut edge be damaged, a new cut shall be made in neat, straight lines parallel to the original cut encompassing all damaged areas. Pavement removal shall be extended to a seam or joint if seam or joint is within 3 feet of damaged pavement.

3.02 CASTING ADJUSTMENTS

A. All new and existing manhole castings and valve boxes within the paving limits of the street, which require adjustment, shall be adjusted to match the finished asphaltic surface. Adjustments shall not be made greater than 48 hours prior to the anticipated time of paving. Adjustments shall be performed as called for in Section 33 00 10–Buried Piping and Appurtenances. CONTRACTOR shall furnish Class 1 barricades with flashers on all adjusted castings until paving has been completed. Tops of castings and valve boxes shall be oiled or protected by other methods to prevent sealing of lids and filling of lift holes during paving. Upon completion of paving operations, CONTRACTOR shall check all castings and valve boxes to see that the lids are clean and operational. Manhole casting adjustment shall be included in the cost of other items of work, and no further compensation will be made. Valve box adjustment shall be considered an incidental item of work.

3.03 BITUMINOUS MATERIALS (TACK COAT AND PRIME COAT)

A. All work shall be in accordance with the Standard Specifications, Article 406.05.

B. If hot mix asphalt surface course is applied to an existing street or is not applied the same day as binder course, the existing street or binder surface shall be tack coated prior to surface paving. Prior to placement of tack coat, the streets shall be thoroughly cleaned and broomed according to Section 358 of the Standard Specifications. Tack coat shall be applied at a rate of 0.05 pounds per square foot.

C. In situations where traffic must be maintained, tack coat shall not be placed on the traveled half of the street until traffic can be switched to the new pavement.

D. Aggregate bases shall have a layer of prime coat applied prior to paving the binder course. The prime coat shall be applied at the rate of 0.25 pounds per square foot.

3.04 JOINTS

A. Joints between old and new pavements or between successive day's work shall be constructed and treated to provide a thorough and continuous bond between the old and new mixtures. Transverse construction joints shall be constructed by cutting the material back for its full depth to expose the full depth of the course. Where a header is used, the cutting may be omitted provided the joint conforms to the specified thickness. These joints shall be treated with prime coat material applied with a hose and spray nozzle attachment to fully coat the joint surface.

B. The longitudinal joint shall be made by overlapping the screed on the previously laid material for a width of not more than 2 inches and depositing a sufficient amount of asphaltic mixture so that the finished joint will be smooth and tight. Longitudinal joints in the surface course shall at no time be placed immediately over similar joints in the binder course beneath. A minimum distance of 12 inches shall be permitted between the location of the joints in the binder course and the location of similar joints in the surface course above.

C. All costs for furnishing and applying prime coat to butt joints as specified above shall be considered incidental.

3.05 FINISHING ROADWAY

A. The finished base course shall be fine-graded in preparation for HMA paving. Base course ramps at all existing pavement shall be removed to provide a full depth butt joint. Base course around manhole castings and valve boxes shall be hand-trimmed and compacted with a vibratory plate compactor.

B. This item shall include all of the following preparatory and finishing items and any other incidental items of work required for construction. Asphaltic ramps around manholes on existing binder course to receive surface course shall be removed. Asphaltic ramps shall be installed on all manholes and at all butt joints in areas to receive binder course only.

C. Finishing roadway shall be considered incidental to HMA paving.

D. Paint all markings as shown on Drawings with lines not less than 4 inches wide.

3.06 TESTING HOT MIX ASPHALT

A. ENGINEER may require samples of HMA pavement for testing. CONTRACTOR shall cut samples from the finished pavement where marked by ENGINEER and patch the sample area. Samples for sieve analysis and asphalt content will be taken by ENGINEER prior to placement.

3.07 HOT MIX ASPHALT PAVING

A. HMA paving work shall include the construction of plant-mixed hot mix asphalt pavement in the areas shown on the Drawings. All work shall be performed in accordance with Section 406 of the Standard Specifications.

B. Prior to commencement of paving operations, CONTRACTOR shall examine the finished road bed. CONTRACTOR shall notify ENGINEER of any areas of suspected instability.

C. The pavement structure for streets, roadway, and parking lot construction shall be determined from the standard cross sections provided on the Drawings.

END OF SECTION

SECTION 32 16 13

CONCRETE CURB AND GUTTER, SIDEWALKS, AND DRIVEWAY APRONS

PART 1–GENERAL

1.01 SUMMARY

A. Work includes concrete curb and gutter, sidewalks, and driveway aprons as shown on the drawings.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 MEASUREMENT AND PAYMENT

A. All costs of the Work shall be included in the Lump Sum Bid.

1.03 REFERENCES

A. Standard Specifications: Unless otherwise indicated, Standard Specifications shall refer to the State of Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, current edition, including all issued supplemental specifications.

B. AASHTO M148 Standard Specifications for Liquid Membrane–Forming Compounds for Curing Concrete.

1.04 QUALITY ASSURANCE

A. Unless otherwise specified, all curb and gutter, sidewalks, and driveway apron construction shall meet the requirements of the Standard Specifications.

PART 2–PRODUCTS

2.01 CONCRETE

A. All concrete shall conform to Section 1020 of the Standard Specifications, Class SI air entrained.

2.02 CURING COMPOUND

A. Liquid curing compounds shall conform to the requirements of the Standard Specifications for Liquid Membrane-Forming Compounds for Curing Concrete, AASHTO Designation M148, Type 2, White Pigmented.

PART 3–EXECUTION

3.01 BASE PREPARATION–CURB AND GUTTER

A. The base course beneath the curb and gutter shall be trimmed or filled as necessary to provide a full depth of curb and gutter to match existing. Prior to placement of concrete, the base shall be thoroughly compacted and moistened.

3.02 BASE PREPARATION–SIDEWALKS AND DRIVEWAYS

A. The subgrade shall be thoroughly compacted and finished to a trim, firm surface. All soft or unsuitable material shall be removed and replaced with suitable material.

B. A minimum 4-inch-thick layer of sand, sand and gravel, or base course shall be placed under all sidewalks. This material shall be thoroughly moistened and compacted before the concrete is placed.

3.03 FORMS

A. Forms shall be of metal and of sufficient strength to resist distortion or displacement. Metal forms shall be used to construct a curb and gutter cross section to match existing. Forms shall be full depth of the required work. Facing boards, if used, shall be built so as to obtain the cross section called for on the Drawings. Forms shall be securely staked and held firmly to line and grade. Forms shall be cleaned thoroughly and oiled before reuse.

B. All curved curb and gutter shall form smooth curves and shall not be a series of chords. Radius forms shall be used for all curved curb and gutter where the radius of curvature is 100 linear feet or less.

3.04 PLACING AND FINISHING CONCRETE

A. Unless otherwise specified, concrete shall be placed in accordance with the Standard Specifications.

B. Concrete shall be thoroughly tamped to remove all voids. The exposed surfaces of the curb and gutter shall be thoroughly troweled and finished with a brush at right angles to the line of the curb and gutter. The back edge of the curb, the edge of the gutter adjacent to the pavements, and edges adjacent to expansion joints shall be rounded with a 1/4-inch-radius edger. Honeycombed areas along the back of the curb shall be pointed with mortar.

C. Before final finishing of curb and gutter, a 10-foot straight edge shall be used to check the surface. Any areas showing a variation of more than 1/4 inch from the straight edge shall be corrected. Final finishing shall be delayed a sufficient time so that excess water and grout will not be brought to the surface.

D. Concrete for sidewalk shall be placed to a minimum thickness of 5 inches, except at driveways and alleys, which shall have a minimum thickness equal to that of the driveway. Driveways shall have a minimum thickness of 8 inches. The concrete shall be thoroughly spaded and tamped to remove all voids. The surface of the driveway or sidewalk shall be thoroughly troweled and finished with a brush at right angles to the driveways or sidewalk line.

3.05 MACHINE FORMED CURB AND GUTTER

A. CONTRACTOR may elect to use a machine for placing, forming, and consolidating concrete curb and gutter. If a machine is used, the resulting curb and gutter shall be of such a quality as to equal or exceed that produced by the method described above.

3.06 JOINTING–CURB AND GUTTER

A. A 3/4-inch expansion joint filler shall be placed through the curb and gutter at the radius points of all intersection curbs. This expansion joint filler shall extend through the entire thickness of concrete and shall be perpendicular to the surface and at right angles to the line of the curb and gutter.

B. At intervals of not more than 10 feet, a contraction joint shall be tooled to a depth of one-fifth of the total concrete thickness with a 1/4-inch-radius jointer. The contraction joint shall be at right angles to the line of the curb and gutter.

C. If machine-formed curb and gutter is provided by CONTRACTOR, CONTRACTOR shall create a plane of weakness at all joints that is sufficient to cause contraction cracking at the joints.

D. CONTRACTOR may saw contraction joints. The depth of cut shall be a minimum of one-fifth of the total concrete thickness. Sawing shall be done as soon as practicable after the concrete has set sufficiently to preclude raveling during the sawing and before any shrinkage cracking takes place in the concrete. If this method results in random cracking, CONTRACTOR will be required to tool the contraction joints as specified above.

E. The use of steel separator plates will not be allowed.

F. Jointing shall be included in the price bid for curb and gutter.

3.07 JOINTING–SIDEWALKS AND DRIVEWAYS

A. Concrete sidewalk shall be cut into rectangular blocks approximately 5 feet long. The cut must extend at least one-fifth of the total thickness of concrete. The edges of the sidewalk along forms and joints shall be rounded with an edging tool of 1/4-inch radius. All joints shall be at right angles to the centerline of the sidewalk.

B. Concrete driveways shall be jointed in approximately square sections. The depth of the joint and the finishing of the edges shall be the same as for concrete sidewalk.

3.08 EXPANSION JOINTS

A. A 1-inch-thick expansion joint filler shall be placed between curb ramps and back of curb.

B. A 3/4-inch-thick expansion joint shall be placed at all sidewalk corners, between sidewalks and buildings, and between back of curb and sidewalk.

3.09 SLOPE

A. Sidewalk cross slope shall be 1/4 inch per foot unless otherwise noted in the drawings or requested by ENGINEER.

3.10 CURB RAMP

A. Curb ramps shall be constructed in accordance with Standard 424001-07/ 424006-01/424016-01/424021-02.

3.11 INLET CASTING ADJUSTMENT

A. Inlet casting shall be adjusted to grade as required for the installation of the new curb and gutter. Inlet casting backs shall be adjusted for a depressed flow line at all inlets in the low points (0.72 feet); all other inlet shall be adjusted for a normal flow line (0.50 feet).

3.12 UTILITY MARKINGS

A. The ends of utility service lines (sewer, water, and electrical conduits) shall be marked during installation. The curb top shall be marked immediately adjacent to these utility markers. Curb markers shall be 2 inches in height and shall consist of a “W” for water, “S” for sewer, and “E” for electric and blank conduits. Markings shall be embossed a minimum of 1/4 inch deep and be 3/8 inch thick. Utility markings shall be considered incidental work to curb and gutter.

3.13 CURING

A. As soon after finishing operations as the free water has disappeared, the concrete surface shall be sealed by spraying on it a uniform coating of curing material in such a manner as to provide a continuous water impermeable film on the entire concrete surface.

B. The material shall be applied to form a uniform coverage at the rate of not less than one-half gallon per 100 square feet of surface area.

C. Within 30 minutes after the forms have been removed, the edges of the concrete shall be coated with the curing compound applied at the same rate as on the finished surface.

3.14 PROTECTION OF CONCRETE

A. CONTRACTOR shall erect and maintain suitable barricades to protect the new concrete. Where it is necessary to provide for pedestrian traffic, CONTRACTOR shall, at their own cost, construct adequate crossings. Crossing construction shall be such that no load is transmitted to the new concrete.

B. Any part of the work damaged or vandalized prior to final acceptance shall be repaired or replaced at the expense of CONTRACTOR in a manner satisfactory to ENGINEER.

C. Pedestrian traffic shall not be permitted over new concrete prior to 72 hours after application of curing material. Vehicular traffic shall not be permitted over newly placed concrete within 7 days after completion when temperatures are 70°F or higher, 10 days when temperatures are not lower than 60°F and up to a maximum of 21 days when the temperatures are generally lower than 60°F.

END OF SECTION

SECTION 32 17 23.13

PAVEMENT MARKINGS

PART 1–GENERAL

1.01 SUMMARY

A. This section describes furnishing and installing pavement markings conforming to the State of Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Section 780 and as shown on the Drawings.

1.02 MEASUREMENT AND PAYMENT

A. The cost of this shall be included in the Lump Sum Bid.

1.03 REFERENCES

A. State of Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Section 780.

1.04 SUBMITTALS

A. Submittals shall be in accordance with provisions of Section 01 33 00–Submittals.

PART 2–PRODUCTS

2.01 PAVEMENT MARKINGS

A. Provide epoxy pavement markings in accordance with State of Illinois Department of Transportation Standard Specifications for Road and Bridge Construction.

PART 3–EXECUTION

3.01 PAVEMENT MARKINGS

A. Place markings in accordance with Section 780 of the Standard Specifications.

B. Centerline marking shall be double 4-inch solid yellow line placed at the marked centerline.

C. Traffic lane marking shall be single 4-inch broken white line placed 12 feet from median curb flange or as shown, or requested by ENGINEER. Turning-lane markings and crosswalk markings shall be 8 inches and 6 inches solid white, respectively. Stop bars shall be 18 inches solid white.

D. Markings shall be placed at locations noted within 1-inch tolerance.

END OF SECTION

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SECTION 32 92 19

SEEDING AND SODDING

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. Preparation of subsoil.
   2. Placing topsoil.
   3. Seeding, sodding, mulching and fertilizing.
   4. Maintenance.

B. Except for paved, riprapped, or built-up areas, all areas of the site which are disturbed and areas noted on the Drawings shall be seeded or sodded. Surfaces on 3-to-1 slope or less may either be seeded or sodded, but surfaces on greater than 3-to-1 slope shall be sodded.

C. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 REFERENCES

A. FS O-F-241–Fertilizers, Mixed, Commercial.

B. Standard Specifications: Unless otherwise indicated, Standard Specifications shall refer to the State of Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, current edition, including all issued supplemental specifications.

1.03 QUALITY ASSURANCE

A. Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.

B. Sod: Minimum age of 18 months, with root development that will support its own weight without tearing when suspended vertically by holding the upper two corners. Submit sod certification for grass species and location of sod source.

1.04 DELIVERY, STORAGE, AND PROTECTION

A. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable.

B. Deliver sod on pallets or in rolls. Protect exposed roots from dehydration. Do not deliver more sod than can be laid within 24 hours.

C. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

PART 2–PRODUCTS

2.01 SEED MIXTURE

A. Seed Mix Class 1–Lawn Mixture per Standard Specifications. Use blue tag certified seed. Do NOT use bent or Poa Annua. Each seed lot will be subject to sampling and testing by the State seed laboratory.

B. Weed content shall not exceed 0.5% in mixture.

2.02 SOD

A. Follow Section 252 of the Standard Specifications.

B. Erosion control blanket or turf reinforcement shall be in accordance with Section 251.05 of the Standard Specifications.

C. Anchorage staples shall be in accordance with Section 252.07 of the Standard Specifications.

2.03 SOIL MATERIALS

A. Topsoil: Fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, taken from drained site; free of subsoil, clay, or impurities, plants, weeds, roots and rocks; pH value of minimum 5.4 and maximum 7.0.

B. Topsoil from the site may be used if it meets the above requirements. Additional topsoil shall be provided as required by Drawings and Specifications.

2.04 ACCESSORIES

A. Mulching material shall be oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.

B. Fertilizer shall be FS O-F-241, Type I, Grade A; recommended for grass, with 50% of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil to the following proportions: Nitrogen 10%, phosphoric acid 10%, soluble potash 10%. Submit composition deviations to suit site conditions for ENGINEER's review.

C. Water shall be clean, fresh, and free of substances or matter which could inhibit vigorous growth of grass.

PART 3–EXECUTION

3.01 EXAMINATION

A. Verify that prepared soil base is ready to receive the work of this section.

3.02 PREPARATION OF SUBSOIL

A. Prepare subsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles, and contours. Make changes in grade gradual. Blend slopes into level areas.

B. Remove foreign materials, weeds, and undesirable plants and their roots. Remove contaminated subsoil in accordance with local, state, and federal regulations.

C. Scarify subsoil to a depth of 3 inches where topsoil is to be placed. Repeat deep (> 12 inches) subsoiling or cultivation in areas where equipment used for hauling and spreading topsoil has compacted subsoil.

3.03 PLACING TOPSOIL

A. Spread topsoil to a minimum depth of 6 inches over area to be seeded. Rake until smooth.

B. Place topsoil during dry weather and on dry unfrozen subgrade.

C. Remove vegetable matter and foreign nonorganic material from topsoil while spreading.

D. Grade topsoil to eliminate rough, low or soft areas, and to provide positive drainage.

E. Manually spread topsoil around trees, plants, and buildings to prevent damage.

F. Leave stockpile area and site clean and raked, ready to receive landscaping.

3.04 FERTILIZING

A. Apply fertilizer at a rate of 17 pounds per 1,000 square feet.

B. Apply after smooth raking of topsoil and prior to installation of seed or sod, no more than 18 hours before seeding or 48 hours before sodding.

C. Do not apply fertilizer at same time or with same machine as will be used to apply seed.

D. Mix thoroughly into upper 2 inches of topsoil.

E. Lightly water to aid the dissipation of fertilizer.

3.05 SEEDING

A. Apply seed at a total rate of 3 1/2 pounds per 1,000 square feet. Apply evenly in two intersecting directions. Rake in lightly or roll the seeded area after seeding.

B. Do not seed areas in excess of that which can be mulched on same day.

C. Planting season shall be between April 15 and June 15, or between August 15 and October 15.

D. Do not sow immediately following rain, when ground is too dry or during windy periods.

E. Immediately following seeding, apply mulch:
   1. Minimum Spread Rate: 1 1/2 tons per acre.
   2. Maximum Depth: 1 1/2 inches to 2 inches.

F. Apply water with a fine spray immediately after each area has been mulched and on a daily basis to keep straw in place.

G. Seeding shall be maintained by CONTRACTOR until grass is well established. Grass is well established when it covers the entire seeded areas to a height of 2 inches.

H. Place erosion control mats per Section 31 25 00–Slope Protection and Erosion Control.

3.06 LAYING SOD

A. Moisten prepared surface immediately prior to laying sod.

B. Lay sod immediately after delivery to site to prevent deterioration.

C. Lay sod tight with no open joints visible and no overlapping; stagger end joints 12 inches minimum. Do not stretch or overlap sod pieces.

D. Lay smooth. Align with adjoining grass areas.

E. Place bottom elevation of sod 1 inch below top of adjoining edging, paving, or curbs.

F. On slopes 4-to-1 and steeper, sod will be secured with wooden pegs at a maximum of 24 inches on center.

G. On slopes 2-to-1 and steeper, lay sod perpendicular to slope and secure every row with wooden pegs at maximum 2 feet on center. Drive pegs flush with soil portion of sod.

H. All sod placed in ditches, flumes, or other appurtenances where a concentrated flow of water may be expected shall be staked regardless of the slope.

I. Water sodded areas immediately after installation. Saturate sod to 4-inch depth of soil.

3.07 MAINTENANCE

A. Mow grass at regular intervals to maintain at a maximum height of 2 1/2 inches. Do not cut more than one-third of grass blade at any one mowing.

B. Immediately remove clippings after mowing.

C. Water to prevent grass and soil from drying out.

D. Immediately reseed areas which fail to show adequate catch. Bare spots shall not exceed 5 square feet in area and not exceed 3% of the total seeded areas. Immediately replace sod in areas which show bare spots or deterioration.

E. Correct damage resulting from erosion, gullies, rills, or other causes by filling with topsoil, tamping, refertilizing, and reseeding if damage occurs prior to acceptance of work.

F. Maintain seeded lawns for not less than 60 days after substantial completion.

G. If seeded in fall and not given full 60 days of maintenance, or if not considered acceptable at that time, continue maintenance the following spring until acceptable lawn is established.

H. Maintain sodded lawns for not less than 30 days after substantial completion.

I. Maintain lawns by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regrading, and replanting as required to establish a smooth acceptable lawn free of eroded or bare areas.

END OF SECTION

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SECTION 33 00 10

BURIED PIPING AND APPURTENANCES

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. All underground piping, valves, and appurtenances of every description.
   2. Excavation, dewatering, and backfilling for all work under this section unless otherwise noted.
   3. Concrete foundations and anchor bolts for all equipment furnished under this section.
   4. Underground piping connections to all equipment, whether furnished under this section or not.
   5. Vacuum testing of sanitary manholes.
   6. Pipeline flushing and cleaning.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 REFERENCED SPECIFICATIONS

A. Standard Specifications for Water and Sewer Construction in Illinois, current edition, referred to herein as SSWSC.

B. Illinois Department of Transportation, Standard Specifications for Road and Bridge Construction, current edition, including all issued supplemental specifications, referred to herein as SSRBC.

C. ASTM C1244–Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill.

1.03 SUBMITTALS

A. Shop Drawings: General arrangement drawings of 3 inches or larger exterior (belowground) ductile iron, piping shall be submitted to ENGINEER for approval. Drawings shall include proposed materials, length, location, and elevation of pipe, fittings, pipe restraint, valves, and appurtenances.

B. See Section 01 33 00–Submittals for shop drawing submittal procedures.

C. Submit following items prior to start of vacuum testing:
   1. Testing procedures.
   2. List of test equipment.
   3. Testing sequence schedule.
   4. Provisions for disposal of flushing and test water.
   5. Certification of test gage calibration.

1.04 QUALITY ASSURANCE

A. Reference Standards:
   1. American Society for Testing and Materials (ASTM), Latest Edition
   2. Illinois Department of Transportation (IDOT Standard and Specifications)
      a. Standard Specifications for Road and Bridge Construction, Latest Edition (IDOTSPECS).
      b. Supplemental Specifications and Recurring Special Provisions, Latest Edition
   3. Standard Specifications for Sewer and Water Main Construction in Illinois Latest Edition.

B. ASTM International:
   1. ASTM C478–Standard Specification for Circular Precast Reinforced Concrete Manhole Sections.
   2. ASTM C497–Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile.
   3. ASTM C877–Standard Specification for External Sealing Bands for Concrete Pipe, Manholes, and Precast Box Sections.
   4. ASTM C913–Standard Specification for Precast Concrete Water and Wastewater Structures.
   5. ASTM C923–Standard Specification for Resilient Connectors between Reinforced Concrete Manhole Structures, Pipes, and Laterals.
   6. ASTM C990–Standard Specification for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.

PART 2–PRODUCTS

2.01 MATERIALS OF CONSTRUCTION

A. Size and Type:
   1. All materials shall conform to the size and type shown on the Drawings or called for in the specifications.
   2. In joining two dissimilar types of pipe, standard fittings shall be used when available. In the event standard fittings are not available, the method of joining shall be standard selected by CONTRACTOR and submitted for review by ENGINEER.

B. Materials provided shall be suitable for the conditions in which they are being installed and used. CONTRACTOR shall review installation requirements of the Contract with material suppliers and incorporate any additional installation requirements necessary to meet the required use within the price bid for the Work.

C. All pipe and materials used in performance of the Work shall be clearly marked as to strength, class, or grade. Pipe and materials not so marked shall be subject to rejection.

D. When requested by ENGINEER, material suppliers shall furnish certificates of compliance indicating that all tests required by various Standards have been conducted and that the text results comply with the Standards.

E. Piping appurtenances shall be made of the materials specified. All appurtenances not designated as to type shall be selected by CONTRACTOR and submitted for review by ENGINEER.

2.02 MANHOLES

A. General: All provisions of Drawing 01-975-43A, enclosed in these specifications, except those contrary to provisions delineated herein or on the Drawings shall apply.

B. Unless otherwise specified or shown on the Drawings for special manholes, all manholes shall be reinforced concrete precast manholes. Reinforced concrete manhole base sections, riser sections, cones, and flat slabs shall conform to the requirements of ASTM C478. Solid precast manhole bottoms shall be provided. Manhole base shall be integral with the structure and have a nominal thickness of 8 inches. Manholes shall be provided with minimum diameters as shown on Drawing 01-975-43A.

C. Manhole top sections shall be precast reinforced eccentric cones unless precast reinforced flat slabs are specifically required or shown on the Drawings or are necessary because of shallow depth. Flat slabs shall have opening offset unless otherwise required or shown. Flat slabs shall be designed for HS20 loadings.

D. Exterior surface of manhole shall be coated with two coats of factory applied bituminous coating, minimum 23 millimeters total thickness. Bituminous coating shall be Con-Seal CS-55, or equal.

E. Manhole Chimney Adjusting Rings:
   1. Provide concrete manhole adjusting rings.
   2. Precast concrete adjusting rings for standard manholes shall have an inside diameter of 26 inches, be not less than 2 inches nor more than 6 inches high, and shall have a wall thickness of 6 inches unless otherwise specified. The rings shall contain a minimum of one No. 2 reinforcing rod centered within the ring. The joints between rings and between rings and castings shall be sealed with preformed flexible joint sealant as specified herein.
   3. A maximum of two rings should be provided and at least one rubber ring in paved areas. Rubber ring shall be EJ Infra-riser or equal.

F. Frames and Covers:
   1. Frames and covers shall be provided for the openings indicated on the Drawings.
   2. For standard manholes, frames shall be EJ 1050Z1, or equal. Frames and covers shall be cast iron with Type B lid and two concealed pickholes equipped with self-sealing gaskets. Catch basin grates in paved areas shall be Neenah R-2668, catch basin frame, and Type C grate, or equal. Catch basin grates in other areas shall be Neenah R4340-B, or equal. Interior mud basin castings shall be Neenah R-6118, or equal, with grey iron Class 35 frame and grating for heavy-duty use. Cover shall be EJ 1020 AGS and state “CITY OF JOLIET” and indicate utility “SANITARY,” “STORM,” or “WATER.” Bolt down frames and covers shall be Neenhah R-1916-C or approved equal. Lids shall be machined flat and be removable.

G. Manhole Chimney Seals:
   1. External manhole chimney seals shall be provided for all new manholes. Chimney seal shall be Infi-sheild Uni-band , Wrapid Seal, or equal.
   2. Existing manholes exposed during the construction period shall have the adjustment rings replaced and a new chimney seal installed. Existing castings shall be reused.

H. Precast Reinforced Concrete Manholes:

1. Lengths of manhole riser (barrel) shall be furnished in such combinations as to conveniently make up the depth of the manhole. A maximum of two handling holes per length of riser will be permitted.
2. Drop entrances to sanitary sewer manholes shall be installed where indicated on the Drawings and as shown on Drawing 01-975-43A. Drop entrances shall be of the same diameter as the sewer main from sizes 8 inches through 18 inches. For larger diameters, the drop shall be 18 inches unless otherwise shown on the Drawings. Drop entrances for storm sewer manholes are not required.
3. The interior bottom of sanitary sewer and storm sewer manholes shall be constructed of concrete benches which shall be precast or poured in place in the field. Benches shall extend to the top of each pipe to a maximum height of 42 inches. Flow lines shall be made smooth with uniform curves to promote flow through the manhole.
4. All joints between manhole pipe sections and top shall be tongue and groove conforming to ASTM C913. Manhole joints shall be sealed with circular O ring or preformed flexible joint sealant that shall be Ram-nek, Kent-Seal, Mas-stik, or equal. Provide Type II Mac Wrap sealant at all joints between manholes. Maximum leakage shall not exceed 0.025 gallons per hour per foot of joint at 3 feet of head.
5. Manhole connections for sanitary sewer mains shall be made using flexible, watertight connections, PSX Press Seal, Kor N Seal, or equal, for sewers up through 18-inch diameter and meeting the requirements of ASTM C-923. All other sanitary sewer manhole connections shall be made with A Lok, PSX Press Seal, Kor N Seal, or equal. The joint shall provide a flexible, watertight connection between pipe and manhole. Manhole connections for storm sewer mains and leads may be made with cast-in-place concrete during completion of manhole interior in lieu of above. Both cast-in or pressed-on connection types are permitted. Cast-in type boot shall be installed in initial pouring of manhole section.
6. Manhole bottoms for sanitary sewer shall be monolithically precast with the bottom section for manholes up through 6 foot diameter. Bottoms for larger diameter manholes shall be precast but need not be monolithically cast with the bottom section. All other manhole bottoms shall be either poured in place or precast concrete.
7. Manholes shall be furnished of minimum diameters as shown on Drawing 01-975-43A. Manholes shall be furnished large enough to provide a minimum distance, between adjacent pipe, measured tangentially along the inside face of the manhole, equal to one half the outside diameter of the intersecting sewer pipe. In any event, manholes shall be furnished in the diameter necessary to accommodate intersecting sewer pipe and the pipe to manhole connection as proposed for use.
8. Steps shall be installed in all manholes by the manufacturer as shown on Drawing 01-975-43A and shall be cast iron conforming to ASTM A48 or steel reinforced plastic conforming to ASTM A615, Grade 60 and ASTM D4101 with molded copolymer polypropylene covering conforming to ASTM D4101, Type PP200B33450Z02, or equal. Manhole steps shall be spaced 16 inches on center with an allowable tolerance of (plus or minus) 1 inch. Steps shall be inserted in manhole riser, cone, and flat slab sections prior to the initial set of the concrete in accordance with ASTM C478 and shall have maximum embedment and pullout resistance in accordance with ASTM C497. The top step shall be located 10 inches or less from the top of the manhole cone section or uppermost structure section. Manhole steps shall be Neenah Type R-1981-N, M.A Industries, Inc. PS1-PF, or equal.
9. Precast reinforced concrete manhole risers and tops shall be tested in accordance with ASTM C497. Precast reinforced concrete manhole risers and tops meeting the strength requirements will be considered acceptable and shall be stamped with an appropriate monogram. When requested, copies of test reports shall be submitted to

ENGINEER before the manhole sections are installed in the Project. Final acceptance will be made after field inspection upon delivery to the jobsite.

10. Precast reinforced concrete manhole sections shall be subject to rejection for failure to conform to any of the requirements of the Standard Specifications. In addition, individual sections of manhole risers and tops may be rejected because of any of the following reasons:
    a. Fracture or cracks passing through the wall, except for a single end crack that does not exceed the depth of the joint.
    b. Defects that indicate imperfect proportioning, mixing, and molding.
    c. Surface defects indicating honey combed or open texture.
    d. Damaged ends, where such damage would prevent making a satisfactory joint.
    e. Manhole steps out of line, or not properly spaced.
    f. Noticeable infiltration into manhole.
    g. Variation in diameter of the manhole section of more than 1% from the nominal diameter.
    h. Any continuous crack having a surface width of 0.01 inch or more and extending for a length of 12 inches or more regardless of position in the section wall.
11. Holes shall be smooth, radial to centerline of manhole, and perpendicular to manhole wall.
12. Holes for Sanitary and Storm Pipes: circular.
13. Holes shall be cast in initial pouring of section or shall be cored in after concrete cured. Broken out holes or holes cut into green concrete are not permitted.
14. Walls shall be precast sections conforming to ASTM C-923. Sections and component parts to be marked by manufacturer with trade name and/or trademark and ASTM designation. Exterior wall shall be coated with ConSeal water based product. Wall thickness shall be 5-inch minimum.
15. Provide channels in invert to direct flows from incoming to outgoing pipe.

I. Each precast reinforced concrete manhole riser and top section shall be clearly marked with the name or trademark of the manufacturer and the date of manufacture. This marking shall be indented into the manhole section or shall be painted thereon with waterproof paint.

J. Storm Sewer Inlets: All inlets shall meet the requirements of ASTM C913. Construction shall conform to Drawing 01-975-41A. Inlets, in general, shall be rectangular in shape and shall be constructed of precast or poured-in-place concrete.

K. Manhole and Inlet Castings:
    1. All manhole and inlet castings shall be gray iron and meet the requirements of ASTM A48. Unless otherwise shown on the Drawings, standard manhole castings shall be Neenah R1550 with machined frame, Type B solid lid, concealed pick holes and self-sealing gaskets, East Jordan Iron Works, or equal. Floodproof castings shall be Neenah R1916 C with machined frame, type B solid lid, concealed pick holes and self-sealing gaskets, East Jordan Iron Works, or equal.
    2. Inlet castings for locations with curb and gutter shall be Neenah R3067 with type L grates on slopes and type R grates at low points, East Jordan Iron Works, or equal. For driveway areas, inlet castings shall be Neenah R3290 with Type C grates, East Jordan Iron Works, or equal.

L. Mortar: Mortar shall meet the requirements of ASTM C270. Mortar shall be one part Portland cement and 2 1/4 parts washed mortar sand.

M. Preformed Flexible Joint Sealant: Preformed flexible joint sealant shall be EZ Stik, Kent Seal, Ram Nek, or equal, meeting the requirements of ASTM C990.

N. External Manhole Sealing:
1. All external bands shall conform to ASTM C 877. Approved product is Type II Macwrap or approved equal. External joint seals shall consist of a collar 9 inches wide with an outer layer of polyethylene, with a minimum tensile strength of 4000 psi and a minimum tear resistance of 1500 psi, and an under layer of rubberized mastic that is reinforced with the collar 3/4 inch from the edge. The straps shall be confined in tubes that isolate them from the mastic and allow them to slip freely when mechanically tightened and locked around the manhole. The collar shall be furnished with a minimum 6 inches overlap and a closing flap to cover any remaining exposed strap. Product shall be installed at all external joints.
2. All sections (wall and cone) are to be supplied with pre applied coating of ConSeal CS 55 Water based product or approved equal.

2.03 BURIED PIPING

A. Ductile Iron Piping and Fittings:
1. Unless otherwise shown or specified, all underground piping 3 inches in diameter or larger shall be ductile iron conforming to AWWA C151/A21.51 with mechanical joints or push-on joints. Unless otherwise shown or specified, all piping shall be minimum Special Thickness Class 52 with a water hammer allowance of 100 psi. Pipe wall thickness shall be furnished as required by AWWA C150 for buried piping with the depth of cover as shown on the Drawings when using laying condition 4 of AWWA C600 unless otherwise shown or specified.
2. Each pipe and fitting shall have the weight, class or nominal thickness, country where cast, casting period, manufacturer's mark, the year in which the pipe was produced, and the letters DI or DUCTILE cast or stamped thereon. Improper or incomplete marking will be cause for rejection of the pipe or fitting.
3. CONTRACTOR shall furnish certification data representing each class of pipe or fitting furnished. The certification report shall clearly state that all pipe and fittings furnished meet the appropriate AWWA specification. Ductile iron pipe shall consist of pipe centrifugally cast in metal or sand-lined molds. Pipe wall shall be homogeneous from inside to outside and shall be completely free of laminations, blisters, or other imperfections. Defects may be removed at the factory only.
4. Except as otherwise specified, underground pipe shall have mechanical joints or push-on joints conforming to AWWA C110 and C111, as well as AWWA C153 (compact), with vulcanized styrene butadiene rubber gaskets conforming to AWWA C111. Gaskets that include metal locking segments vulcanized into the gasket to grip the pipe and provide joint restraint are not acceptable. Bolts on mechanical joints shall be high-strength low-alloy steel (Corten, or equal), conforming to AWWA C111. Certificate to that effect shall be provided.
5. Underground pipe shall have mechanical joint or push-on joint ductile iron fittings conforming to AWWA C110 and C111 or AWWA C153 compact fittings with a minimum rated working pressure of 150 psi. Gaskets for fittings shall be as specified for underground piping.
6. All ductile iron fittings shall be American Cast Iron Pipe, Tyler, U.S. Pipe, Clow, Griffin, or equal.
7. Ductile iron wall pipes shall be provided as shown on the Drawings. For piping over 24 inches that does not require restraints, wall pipes shall be provided with push-on joint connection at exterior end of wall pipe. For piping over 24 inches that requires

restraint, wall pipes shall be provided with Flex Ring or Lok Ring by American Ductile Iron Pipe Company, TR Flex by U.S. Pipe Company, TR Flex by McWane, or equal, connection. For piping over 24 inches, wall pipes may also be provided with mechanical joint connection at exterior end of wall pipe. For piping that requires restraint, mechanical joint connections at exterior end of wall pipe shall be restrained as specified for mechanical joints.

8. Unless otherwise specified, all exterior ductile iron piping and fittings shall be cement-mortar lined and asphaltic-coated inside. Cement-mortar lining shall be in accordance with AWWA C104. Unless otherwise specified, underground piping and fittings shall be shop primed or asphaltic-coated outside. Asphaltic coating shall conform to applicable standards herein for the pipe and fittings.
9. All ductile iron piping and fitting designated to receive ceramic or ceramic-epoxy interior coating shall be provided as specified in Section 40 05 00–Piping and Appurtenances.
10. Piping and fittings for installation in manholes, wet wells or other such structures, and elsewhere exterior as shown on the Drawings or specified shall be flanged and provided as specified in Section 40 05 00–Piping and Appurtenances.
11. All buried ductile iron piping and appurtenances shall be polyethylene encased in accordance with AWWA C105. Polyethylene encasement shall be Class C (carbon black) and shall be minimum 8 mil thickness. Tape for securing the film shall be a thermoplastic material with a pressure sensitive adhesive face capable of bonding to metal, asphaltic coating, and polyethylene. Tape shall have a minimum thickness of 8 mils and a minimum width of 1 inch. The polyethylene film envelope shall be as free as is commercially possible of gels, streaks, pinholes, particles of foreign matter, and undispersed raw materials. There shall be no other visible defect, such as holes, tears, blisters, or thinning out at folds.

B. Reinforced Concrete Pipe:

1. Reinforced concrete pipe may be used for piping greater than 24 inches in diameter for sanitary sewer and all storm sewer piping and shall meet the requirements of ASTM C76, ASTM C507 for elliptical pipe, or ASTM C655 for D-load pipe. All pipes shall have a smooth interior wall. (Sanitary sewer pipe shall be provided with either a smooth exterior wall (i.e., no bell) or with an R-4 big bell joint and shall be Class IV minimum. Sanitary sewer pipe shall be D-load reinforced concrete pipe meeting ASTM C655. Manufacturer shall provide pipe design calculations for proposed installation loading as part of shop drawing submittals.) Strength and class of the pipe shall conform to the Drawings and as specified herein. All reinforced concrete pipe used in the work shall be of adequate strength to support the trench loads applied. Unless otherwise shown or specified, all reinforced concrete pipe shall be Class IV minimum and shall have a minimum “B” wall construction. All reinforcing cages shall be circular for circular pipe. All reinforcing cages shall be elliptical for elliptical pipe. Reinforcing cage shall extend to the full width into the bell end of the pipe and to within 1 inch of the spigot end of the pipe.
2. Standard and special fittings shall be of approved manufacturer and shall conform to requirements of the trade and these specifications. All fittings shall be of a strength at least equal to that of the sewer main and shall be jointed with the same type of joint as used in the sewer main.
3. Not more than one lift hole per length of pipe shall be used in storm sewer. Lift holes will not be permitted in sanitary sewers.
4. Reinforced concrete pipe and fittings shall be provided with joints and gaskets that meet ASTM C1628 for sanitary sewer pipe and ASTM C443 or ASTM C361 for storm sewer pipe. Joints for sanitary sewer shall be sealed with rubber gaskets of either

continuous O-ring or profile cross section. Joints for circular and elliptical storm sewer shall be sealed with rubber gaskets having a continuous O-ring cross section, Tylox Superseal, or equal. All pipe shall be specifically built to fit the gasket used. Provide precast concrete endwalls on all storm sewers.

5. Joints for all smooth exterior wall reinforced concrete (Sanitary and Storm) pipe (except where open cut is not allowed) shall be provided with an external bitumastic wrap, Mac Wrap, or equal. Wrap shall be minimum 12 inches wide and shall be secured on the pipe with a minimum of one stainless steel band seal connector on each side of the joint.
6. All reinforced concrete pipe used for sanitary sewer shall be vacuum tested from end to end at the factory in accordance with ASTM C1214. Test results, date, pipe class, date of manufacture, and individualized pipe i.d. shall be clearly marked on each pipe. Written vacuum test results for each pipe i.d. shall be kept and submitted to ENGINEER. ENGINEER shall be provided an opportunity to observe all tests.
7. Nonstandard pipe lengths may be used at manholes and structures as necessary to allow them to be located at the locations identified on the Drawings. Reinforced concrete bends, tees, and reducers shall be manufactured to provide for the required transitions as shown on the Drawings. Sufficient additional reinforcement shall be added at the spring lines and top and bottom of the pipe to prevent shearing after installation. Repairs to complete fabricated pipe fittings shall be such that the completed unit shall have the same strength as that of the remainder of the pipe barrel and the concrete used to complete the section shall not spall or separate.
8. Acceptance of reinforced concrete pipe shall be on the basis of plant load-bearing tests, material tests, and inspection of manufactured pipe for visual defects and imperfections.
9. Cement used in the manufacture of reinforced concrete pipe shall meet the requirements of ASTM C150, Standard Specification for Portland Cement for Type II cement.
10. A three-edge bearing test shall be conducted by the manufacturer according to ASTM C497 as proof of design by determining the ultimate load capacity of the pipe. One segment of pipe from each pipe class must pass the three-edge bearing test such that the load required to produce the ultimate load exceeds the load rating of the pipe. The test results shall be maintained in a log and provided to OWNER. Manufacturer shall also maintain concrete cylinder testing data and quality control records to verify that pipe meets the required ASTM standards.
11. An alkalinity test shall be conducted on the concrete mixture used for each type and class of reinforced concrete pipe used in the Project. The alkalinity test shall be conducted according to ASTM C497 and the alkalinity of all concrete mixtures shall be equal to or greater than 0.2 grams of $CaCO_3$ equivalent reactivity per gram of concrete. The manufacturer shall complete the alkalinity tests.
12. The costs of the tests shall be incidental to the pipe cost. CONTRACTOR shall include all such costs in the price bid for the Work. CONTRACTOR shall submit a signed, dated, and certified copy of the test data to OWNER (in a format acceptable to OWNER) for review prior to delivering any pipe to the Project site. No additional compensation will be made to CONTRACTOR for the required testing.
13. The pipe leakage shall not exceed 150 gallons/day/inch inside diameter/mile of pipe. The manufacturer shall provide a written and signed statement indicating the pipe meets this criterion.
14. CONTRACTOR shall provide written certification that pipe meets the standards herein.

C. Solid Wall PVC:
   1. Polyvinyl chloride (PVC) pipe shall meet the requirements of ASTM D3034 for pipe sizes 4 inches through 15 inches and ASTM F679 for pipe sizes 18 inches through 24 inches.
   2. PVC material for ASTM D3034 pipe shall have cell classification 12454 or 12364 as defined in ASTM D1784 with minimum modulus of elasticity of 400,000 psi. Pipe stiffness shall be minimum 46 psi when tested in accordance with ASTM D2412. Pipe shall have a maximum standard dimension ratio (SDR) of 26. In locations with bury depths between 18 and 25 feet, PVC shall be SDR21. In locations with bury depths greater than 25 feet, PVC shall be C900.
   3. PVC material for ASTM F679 pipe shall have cell classification 12454 or 12364 as defined in ASTM D1784 with a minimum modulus of elasticity of 500,000 psi. Pipe stiffness shall be a minimum 115 psi when tested in accordance with ASTM D2412.
   4. Pipe and fittings shall be the product of one manufacturer, and the manufacturer shall have experience records substantiating acceptable performance of the pipe and fittings to be furnished. The minimum wall thickness of fittings shall be the same as the pipe to which it connects.
   5. Acceptance of piping and fittings shall be subject to tests conducted in accordance with ASTM D3034 and/or ASTM F679.
   6. Fittings such as saddles, elbows, tees, wyes, and others shall be of material and construction corresponding to and have a joint design compatible with the adjacent pipe. Approved adapters shall be provided for transitions to other types of pipe.
   7. Joints shall be of the elastomeric type for pipes 4 inches or larger and elastomeric or solvent cement for pipes less than 4 inches.
   8. Elastomeric joints shall be a bell and spigot joint conforming to ASTM D3212 sealed by a rubber gasket conforming to ASTM F477 so that the assembly will remain watertight under all conditions of service, including the movements resulting from the expansion, contraction, settlement, and deformation of the pipe. Bells shall be formed integrally with the pipe and shall contain a factory-installed positively restrained gasket.
   9. Solvent cement joints shall be assembled using solvent cement obtained from the pipe manufacturer, which conforms to the requirements of ASTM D2564.
   10. The assembled joint shall pass the performance tests as required in ASTM D3212.

D. Centrifugally-Cast Fiberglass reinforced polymer motar (CCFRPM) Pipe: Material for the Pipe sizes 48 inches in diameter or larger may be CCFRPM pipe. 60 inch SAN at CSO 011 shall be CCFRPM pipe and shall meet the following requirements:
   1. Resin Systems: Only use polyester resin systems with a proven history of performance for this project application.
   2. Glass Reinforcements: Use reinforcing glass fibers of highest quality commercial grade E-glass filaments with binder and sizing compatible with impregnating resins to manufacture components.
   3. Fillers: Silica sand of other suitable materials may be used. Use minimum 98% silica with maximum moisture content of 0.2%.
   4. Additives: Resin additives, such as pigments, dyes, curing agents, and other agents, when used, shall not be detrimental to performance of product.
   5. Internal liner resin for sanitary sewer applications shall be suitable for service as sanitary sewer pipes, be highly resistant to exposure to sulfuric acid as produced by biological activity from hydrogen sulfide gases, and shall meet or exceed requirements of ASTM D 3681.
   6. Pipe diameters shall be according to ASTM 3262. Pipe lengths shall be supplied in nominal lengths of 20 feet. Shorter lengths to be supplied as required for pipe layout.

7. The CCFRPM pipe shall have pipe ends square to the pipe axis with a maximum tolerance of 1/8-inch.
8. The CCFRPM pipe stiffness shall be minimum 46 psi when tested in accordance with ASTM D 2412.
9. Prior to installation of the pipe, shop drawings accompanied by calculations shall be provided showing pipe stiffness numbers and proposed installation loading.
10. Fittings for flanges, elbows, reducers, tees, and other fittings shall be capable of withstanding operating conditions when installed. Provide a contact molded or manufactured from mitered sections of pipe joined by glass fiber-reinforced overlays. Fittings may be manufactured out of solid wall reinforced thermosetting resin pipe according to ASTM 3262.
11. The CCFRPM sewer pipe shall be manufactured by centrifugal casting processes that result in a dense, corrosion-resistant, consistent, composite structure. The manufacturer of the CCFRPM pipe shall have a minimum of 15 year's experience of its pipe being installed in the United States.
12. All joints on CCFRPM sewer shall be gasketed joints with fiberglass sleeve couplings that utilize elastomeric sealing gaskets as the sole means to maintain joint water tightness. Joints shall meet performance requirements of ASTM D4161. Gaskets shall conform to ASTM F-477.
13. Refer to Part 3 for pressure testing and installation requirements.

E. Transition Coupling for Gravity Sewer Service: transition couplings shall be provided to join dissimilar pipe materials or to connect pipe where a standard pipe joint cannot be provided. Couplings shall be designed to join the pipe materials matching flow line elevations. Transition couplings for gravity sewer service shall be Fernco 5000 RC Strongback, Mission Flex Seal ARC shielded, or equal. Shear rings shall be provided to minimize differential settlement. All bands, clamps, shear rings, and other metal components shall be stainless steel. Bushings or transitions shall be provided to accommodate pipe size differences.

2.04 CONCRETE

A. All concrete poured under this Contract, unless shown or specified otherwise, shall conform to the requirements of Division 03.

PART 3–EXECUTION

3.01 INSTALLATION

A. Underground Piping:
1. Utility lines shall be laid and installed to the lines and grades specified with valves, fittings, manholes, and other appurtenances at the specified locations; spigots centered in bells; and all manholes and riser pipes plumb. Sanitary and storm sewer shall be installed to within (plus or minus) 0.03 feet of designed grades. Staking shall be completed in conformance with Division 01 of the Standard Specifications.
2. Deviations Occasioned by Underground Facilities: Wherever significant obstructions not shown on the Drawings are encountered during the progress of the Work, CONTRACTOR shall proceed in accordance with the General Conditions to notify owners and protect the facilities. Existing items unnecessarily damaged during the performance of the Work shall be repaired and replaced at the expense of CONTRACTOR.

3. Prior to commencing pipe laying, CONTRACTOR shall notify ENGINEER of the intended date for starting Work. ENGINEER may request at CONTRACTOR's expense the removal and relaying of pipe which was installed prior to notification of ENGINEER.
    a. Proper implements, tools, and facilities shall be provided and used by CONTRACTOR for the safe and convenient prosecution of the Work. All pipe, fittings, and appurtenances shall be carefully lowered into the trench piece by piece with a crane, rope, or other suitable tools or equipment, in such manner as to prevent damage to materials. Under no circumstance shall pipe be dropped or rolled into the trench.
    b. Materials shall be as shown on the Drawings or as specified herein.
4. Material Inspection: CONTRACTOR shall inspect the pipe, fittings, and appurtenances for defects when delivered to the jobsite and prior to lowering into the trench. Defective material shall be removed from the jobsite. All material shall be clean and free of deleterious substances prior to use in the Work.
5. Except where noted or specified, reinforced concrete pipe shall be installed in accordance with ASTM C12.
6. CONTRACTOR shall lay all gravity pipe to the line and grade shown on the Drawings with bell ends uphill wherever possible. If not possible, CONTRACTOR shall lay pipe to the line and grade shown on the Drawings with bell ends in the direction of laying.
7. Any pipe or fittings cracked in cutting or handling or otherwise not free from defects shall not be used. Pipe must be kept clean of mortar, cement, clay, sand, or other material. When PVC piping is installed during hot weather, it shall be laid in the trench with slack or permitted to cool to ground temperature before it is cut to length for making final connections. PVC expansion joints shall be provided where needed.
8. At times when pipe laying is not in progress, the open ends of pipe shall be closed with plugs to prevent the entry of foreign material. Acceptable plugs include Foreman Nite Caps by APS, mechanical joint cap or plug, bladder plug, or test plug. All foreign material shall be removed from the pipe prior to acceptance.
9. The locations and elevations of existing piping and manholes are approximate. Where necessary, existing piping shall be exposed by CONTRACTOR to confirm location and elevation before installing new piping. Any changes in pipe location or elevation shall be approved by OWNER.
10. General Excavation:
    a. Pipe Laying:
        (1) All pipe shall be laid accurately to the line and grade as designated. Preparatory to making pipe joints, all surfaces of the portions of the pipe to be joined or of the factory made jointing material shall be clean and dry. Lubricants, primers, adhesives, and other joint material shall be used and installed as recommended by the pipe or joint manufacturer's specifications. The jointing materials or factory fabricated joints shall then be placed, fitted, joined, and adjusted in such a workmanlike manner as to obtain the degree of watertightness specified. Pertinent specifications from the joint and pipe manufacturer which outline procedures to be followed in making the joint shall be furnished to ENGINEER.
        (2) Wyes, tees, and special fittings shall be installed as called for on the Drawings, or as requested by ENGINEER. Wyes, tees, and special fittings, shall, in general, be jointed with the same type of joint as used in the pipe.
        (3) In joining two dissimilar types of pipe, manufactured adapters and fittings shall be used. Adapters and fittings shall be configured to maintain invert elevations at same level.

(4) Joint deflections shall not exceed the limits established by the pipe manufacturer for the pipe and joint being used.
(5) Joints that are damaged because of carelessness, improper handling, or failure to prevent imperfections in manufacture shall be subject to rejection and gaskets shall be subject to rejection whenever they show surface cracking, tears, or splice separation.
(6) At times when pipe laying is not in progress, the open ends of pipe shall be closed with plugs to prevent the entry of foreign material. All foreign material shall be removed from the pipe prior to acceptance.
(7) After placing a length of pipe in the trench, the spigot end shall be centered in the bell and the pipe forced home and brought to correct line and grade. The pipe shall be secured in place with specified backfill material tamped around it except at the bells.
(8) Pipe shall be brought home by using a cross member and levers or jacks. It will not be permissible to push pipe home with motor powered excavation equipment.

b. Manholes:
(1) Manholes shall be installed in accordance with Drawing 01-975-43A for sanitary sewer. Manholes shall be plumb with any steps aligned and openings located over steps. For sanitary sewers, openings shall be located over the bench and not the sewer flow line itself.
(2) All manholes shall be made watertight and shall show no visible signs of leakage at the time of final review and within the correction period. Any leakage shall be sealed from the exterior of the manhole.

c. Storm Sewer Inlets:
(1) Storm sewer inlets shall be installed in accordance with Drawing 01-975-41A. Inlets shall be set to the line and grade as furnished by ENGINEER. The outside end of the lift hole shall be covered with filter fabric to prevent the entrance of fines into the inlet.
(2) Inlets shall be connected to the storm sewer main either at manholes, at wye branches in the main, or to other inlets, all as shown on the Drawings. Minimum size of inlet lead pipe shall be 12 inches.
(3) Storm inlets shall be backfilled to undisturbed soil and at least 2 feet along connecting piping with bedding material.

11. Centrifugally-Cast Fiberglass Reinforced Polymer Mortar (CCFRPM) Pipe Installation:
a. Installation: Installation of pipe and fittings shall be in accordance with the manufacturer's requirements.
b. Pipe Handling: Use textile slings, other suitable materials, or a forklift. Use of chains or cable is not recommended.
c. Jointing:
(1) Clean ends of pipe and coupling components.
(2) Apply joint lubricant to pipe ends or bell interior surfaces and the elastomeric seals. Use only lubricants approved by the pipe manufacturer.
(3) Use suitable equipment and end protection to push or pull the pipes together.
(4) Do not exceed forces recommended by the manufacturer for joining or pushing pipe.
(5) Join pipes in straight alignment, then deflect to required angle. Do not allow the deflection angle to exceed the deflection permitting by the manufacturer.

d. Deflection: Maximum allowable long-term deflection is normally 5% of the initial diameter.

3.02 FIELD QUALITY CONTROL

A. CONTRACTOR shall include the cost of all televising, testing, and cleaning in the price bid.

B. Work shall be tested as specified in this section. Unless indicated in writing before testing begins, tests shall be witnessed by ENGINEER and others as necessary. Test results shall be recorded, and reports or appropriate certificates shall be submitted to ENGINEER in triplicate.

C. New piping shall be tested. Prior to conducting the pressure and leakage test, CONTRACTOR shall backfill the trench for its full depth. All bends shall be adequately blocked and tied prior to the test. Any damage caused to the main or its appurtenances during performance of these tests shall be corrected by CONTRACTOR at its expense. Should underground piping fail test, CONTRACTOR shall be responsible for removal and replacement of backfill, and relay new pipe if necessary, to repair the defective pipe. Under no circumstances shall defects be sealed from the interior of the pipe, and only where specifically allowed by ENGINEER, shall defects be sealed from the exterior of the pipe. Piping, interior or exposed, shall be subject to test before being covered with insulation or paint. Piping and appurtenances shall be watertight or airtight and free from visible leaks. Manholes and precast reinforced concrete wet wells and appurtenances shall be free of any visible leaks. Any leakage shall be sealed by methods acceptable to OWNER, from the exterior of the manhole or structure. Precast reinforced concrete manhole risers and tops shall be tested in accordance with ASTM C497.

D. Manhole Testing:
   1. Sanitary sewer and process piping manholes shall be vacuum tested in accordance with ASTM C1244. Pipes entering the manhole shall be plugged and the seal inflated in accordance with manufacturer’s recommendations. CONTRACTOR shall provide all required test apparatus, including vacuum pump and gauges.
   2. Vacuum testing of storm sewer and other manholes will not be required.

E. All piping shall be flushed or blown out after installation prior to testing. CONTRACTOR shall provide all necessary piping connections, water, air, test pumping equipment, water meter, bulkheads, valves, pressure gauge and other equipment, materials, and facilities necessary to complete the specified tests. CONTRACTOR shall provide all temporary sectionalizing devices and vents for testing.

F. Pressure Tests:
   1. Pressure tests shall be performed as required by AWWA C600 and AWWA C605.
   2. When test medium for piping is water, all air shall be removed from piping by flushing, opening vents, loosening flanges, utilizing equipment vents and/or installation of corporations at high points in system and securely bracing plugs and piping. Test pumping equipment used shall be centrifugal pumps or other pumping equipment that will not place shock pressures on the main. Power plunger pumps will not be permitted for use on closed pipe systems. Pumps shall be disconnected. Presence or absence of air will be determined during pressurization of the piping system.
   3. The test pressure in all lines shall be held for one hour during which time the leakage allowance shall not exceed that specified. In case repairs are required, the pressure test shall be repeated until the pipeline installation conforms to the specified requirements.
   4. CONTRACTOR shall keep a record of all tests performed. These records shall show the individual lengths of main tested and test results.

5. All testing of pipelines shall proceed concurrently with installation. CONTRACTOR is advised that it may be advantageous to conduct daily preliminary testing of its Work.
6. Gauges used for testing shall have increments as follows:
   a. Tests requiring a pressure of 10 psi or less shall use a testing gauge having increments of 0.10 psi or less.
   b. Tests requiring a pressure of greater than 10 psi by less than or equal to 100 psi shall use a testing gauge having increments of 1 psi or less.
   c. Tests requiring a pressure of greater than 100 psi shall use a testing gauge having increments of 2 psi or less.

Fluid Abbreviation or Name	Minimum Test Pressure in psi	Test Medium	Leakage Allowance Designation
SAN, EF	10	Water	"A"(1)

(1) Leakage allowance designation "A" shall mean not more than 0.002 gallons per hour per inch diameter per 100 feet of buried pipe for all piping except buried mechanical joint or push-on joint pipe. Buried mechanical and push-on joint pipe shall meet the leakage specifications of AWWA C600.

G. Prior to making final connection between new and existing piping, new piping shall be tested as specified above.

H. Vacuum Testing:
1. Connect vacuum pump to outlet port with valve open, then draw vacuum to 10-in Hg. Close valve.
2. Record vacuum drop during test period per table below:

Manhole Diameter (inches)		**30**	**33**	**36**	**42**	**48**	**54**	**60**	**66**	**72**
Depth (feet) Test Time (seconds)	**8**	11	12	14	17	20	23	26	29	33
	10	14	15	18	21	25	29	33	36	41
	12	17	18	21	25	30	35	39	43	49
	14	20	21	25	30	35	41	46	51	57
	16	22	24	29	34	40	46	52	58	67
	18	25	27	32	38	45	52	59	65	73
	20	28	30	35	42	50	53	65	72	81
	22	31	33	39	46	55	64	72	79	89
	24	33	36	42	51	59	64	78	87	97
	26	36	39	46	55	64	75	85	94	105
	28	39	42	49	59	69	81	91	101	113
	30	42	45	53	65	74	87	89	108	121

   a. If vacuum drop is greater than 1 inch Hg during testing period, repair and retest manhole.
   b. If vacuum drop of 1 inch Hg does not occur during test period, manhole is acceptable; discontinue testing.
   c. If vacuum test fails to meet 1-inch Hg drop in specified time after repair, repair and retest manhole.
3. If unsatisfactory testing results are achieved, repair manhole and retest until result meets criteria.
4. Repair visible leaks regardless of quantity of leakage.

5. If the manhole vacuum test fails then CONTRACTOR shall repair the manhole using methods approved by OWNER a no additional cost. Then CONTRACTOR will retest the structure until passing test is achieved.

I. Deflection Testing:
   1. All PVC pipe used for sanitary sewer shall be tested for vertical deflection. Maximum deflection after completion of backfilling shall be 5% of the inside pipe diameter. Testing shall not be started until trench backfill has been in place for 30 days. CONTRACTOR shall keep a record of all tests performed. These records shall show the individual lengths of main tested and test results. Deflection shall be measured by pulling a mandrel with a vertical diameter equal to 95% of the pipe inside diameter through the line, after thoroughly flushing the lines to be tested. The testing device shall be controlled using cables at both the upstream and downstream manholes. The testing device must pass freely through the sewer without the use of unreasonable force on the control cables. Any line that will not pass the test cylinder will not be accepted until the faulty sections have been removed and replaced and the line retested.
   2. Deflection testing of thermoplastic storm sewer shall be provided in accordance with the above requirements.

J. Individual Joint Testing: For RCP, PVC, or CCFRPM (48 inch and larger), individual joints may be pressure-tested with a portable tester to 5 psi maximum with air or water.

3.03 CLEANUP

A. Upon completion of the work, all improvements disturbed by CONTRACTOR's operations shall be repaired or replaced. Broken concrete, rubble fill, and other excess material shall be removed from the site and wasted.

B. All areas used for the storage of materials or the temporary deposit of excavated earth shall be leveled off and cleaned up. All surplus material, tools, and equipment shall be removed, and the premises shall be left free of everything of the kind.

C. All pipes and manholes shall be flushed until clean, and all debris and mud shall be removed.

3.04 DEMOLITION

A. All exterior piping removals, including manholes and appurtenances and abandonment, shall be by CONTRACTOR. The locations and elevations of existing piping are approximate. Where necessary, existing piping shall be exposed before installing new piping. Any changes in pipe location or elevation shall be reviewed by ENGINEER.

B. CONTRACTOR shall remove or abandon all existing piping and appurtenances as noted. Unless otherwise shown or specified, piping and appurtenances to be removed shall become the property of CONTRACTOR and shall be removed from the site for salvage or disposal. Unless otherwise shown or specified, piping shown or specified to be abandoned shall have each end plugged with mechanical wing plugs with concrete caps. Nonshrink grout shall be as specified in Division 03. Wherever excavations cross piping to be abandoned, piping shall be removed to the limits of the excavation and the ends shall be filled as specified above. Flowable fill installation shall be done in accordance with Section 31 10 00–Excavation, Fill, Backfill, and Grading.

C. It is the responsibility of CONTRACTOR to remove the items listed below, including piping and appurtenances, as specified, and patch all holes resulting therefrom unless specified or shown otherwise. The intent of these specifications is to require that the removal of materials, patching of all existing holes, and repiping be done in a workmanlike manner. All costs shall be included in the Lump Sum Bid.

3.05 PLUG PIPE AND ABANDON SANITARY MANHOLE

A. Sewer pipes to be abandoned shall be plugged with mechanical wing plugs of the specified diameter and topped with concrete plug.

B. Brick and mortar plugs will not be acceptable in lieu of concrete.

C. CONTRACTOR shall install plugs in all abandoned sewers or where requested by ENGINEER. The minimum install depth of the mechanical plug shall be two pipe diameters up to 24 inches.

D. The minimum thickness of the concrete to the plug shall be two pipe diameters up to 24 inches.

E. CONTRACTOR shall submit data sheets for mechanical wing plugs for use on this project.

F. CONTRACTOR shall remove frame, cover and adjustment rings of the manhole structures, and cone/flat-top/wall to a minimum of 2 feet below finished grade.

G. Remainder of the structure is to be filled with trench backfill which will be considered incidental to this item.

H. CONTRACTOR shall be responsible for off-site disposal of adjustment rings.

I. The frame and cover must be returned to the City of Joliet at 921 Washington Street (Bill Baltz at (815) 409-6876).

3.06 FINAL ACCEPTANCE

A. Final acceptance of the sanitary sewer will be when all post construction televising has been reviewed and deemed to be satisfactory.

END OF SECTION

SECTION 33 01 30.11

POST CONSTRUCTION SEWER TELEVISING

PART 1–GENERAL

1.01 SUMMARY

A. Section Includes:
1. Pipeline flushing and cleaning.
2. Television inspection of sewer pipelines.
3. Audio-video recording of pipeline interior.

1.02 SUBMITTALS

A. Section 01 33 00–Submittal Procedures: Requirements for submittals.

B. External hard drive
1. CONTRACTOR shall provide a color digital video of all pipe line segments in ".mpeg" format on two external hard drives with USB 2.0 connections. Each video shall be named according to the "upstream manhole number–downstream number.mpg" format. Separate MPEG files and PDF reports shall be created for each manhole to manhole pipe segment inspected. Video recordings shall be one file per sewer line section and shall be included on the external hard drives submitted.
2. Any out-of-focus video recordings, or portions thereof, shall be cause for rejection of the video recording and will necessitate re-televising at CONTRACTOR's expense. Televising shall be done one section at a time. Inspections shall be performed using NAASCO's PACP version 6.0.1. The sewer pipe video inspection reports must be saved with the PACP overview report.
3. Audio and video observation documentation is to be provided in NASSCO PACP (V6.0.1) coding methodology database. The PACP Version 6.0.1 data base shall include all header information as well as any observations recorded. Links to the videos and the ".pdf" format of the reports shall be included within the data base.
4. The deliverable video files shall be full-color, high-resolution, and shall include all pipe surfaces above the water line. At each lateral and connected service line, the camera shall stop, rotate, and record a clear image of the lateral connection. The inspection and database shall be fully compatible with PACP V 6.0.1 format.
5. CONTRACTOR shall record inspection in a PACP format. Video recordings and inspection shall visually display and include a narrative noting:
   a. Date, time of day, and depth of flow.
   b. Sewer segment number "from manhole to manhole."
   c. Direction of Flow.
   d. Distance from upstream manhole.
   e. Locations of service connections into sewer.
   f. All other information encountered during the inspection i.e., obstructions, structural defects, sags, etc.
6. The television inspection reports shall be provided both electronically in Adobe Acrobat Reader ".pdf" format as well as two bound hardcopies of the printed paper report. The file naming format shall follow a similar format to the video naming format. Each inspection report shall be named according to the "upstream manhole number–downstream manhole number.pdf" format. For example, a pipe segment with an

upstream manhole of 12345 and downstream manhole 67890 would be named “12345–67890.pdf”.

7. The final report files, in paper and electronic “.pdf” formats, shall include a still shot image of every observation. These detailed reports shall include the following information at a minimum:
   a. Project Name.
   b. System Owner Name.
   c. Survey Customer Name.
   d. Contractor Name, Phone Number, and Address.
   e. Surveyor’s Name and PACP Certification Number.
   f. Date and Time of Televising.
   g. Location (Street Name and Number).
   h. Address (nearest to each manhole).
   i. Rim to Invert Measurements (for both Upstream and Downstream Manholes).
   j. Pipe Segment ID Number.
   k. Upstream Manhole Number and Downstream Manhole Number.
   l. Drainage Area.
   m. Weather.
   n. Segment Length.
   o. Joint Length.
   p. Pipe Material.
   q. Pipe Height (and Width if not Circular).
   r. Total Pipe Length.
   s. Total Length Surveyed.
   t. Flow Control.
   u. Tape/Media Number.
   v. Pre-Cleaning / Cleaning method.
   w. Pipe condition observations (i.e., grease, roots, deposits, cracks, fractures, sags voids etc.).
   x. Location of all service connections.
   y. Location of all manholes.
   z. Still shot photos of each observation.

C. Qualifications Statement: NASSCO certification number of operators must be supplied.

1.03 QUALITY ASSURANCE

A. Perform Work according to NASSCO PACP standards.

1.04 QUALIFICATIONS

A. Applicator: Company specializing in performing Work of this Section with minimum 3 years' experience.

B. The video operator(s) shall be Pipeline Assessment Certification Program (PACP) certified by the National Association of Sewer Service Companies (NASSCO) and will be required to show proof of PACP ID or certification before performing work on this project. Certification dates must be current including renewal every three years. Operators with expired PACP ID numbers will not be allowed to work on the project until they have undergone the renewal process. CONTRACTOR shall provide copies of each equipment operator’s Certification Number at the preconstruction conference.

PART 2–PRODUCTS

2.01 EXTERNAL HARD DRIVES

A. Description: Digital video Audio track containing simultaneously recorded narrative commentary and evaluations of videographer, describing in detail condition of pipeline interior.

PART 3–EXECUTION

3.01 EXAMINATION

A. All new sewers are to be inspected.

3.02 PREPARATION

A. Flush and clean pipeline to remove sludge, dirt, sand, stone, grease, and other materials to provide clear view of interior conditions, if previously placed in service. The sewer sections designated for Sewer Cleaning shall be cleaned using hydraulically propelled, high-velocity jet, or mechanically powered equipment. Selection of the equipment used shall be based on the conditions of the sewer lines at the time the work commences. The equipment and methods selected shall be satisfactory to ENGINEER. This item shall include the cleaning of sewer and removal of dirt, grease, rocks, sand and other materials and obstructions from sewer lines and manhole troughs. Should dirt or debris be observed and/or detected, in a manhole or sewer after cleaning, CONTRACTOR shall re-clean said manhole and the adjacent downstream sewer segment(s) at no additional cost.

B. Satisfactory precautions shall be taken to protect the sewer segments and sewer manholes from damage that might be inflicted by the improper use of cleaning equipment. Whenever hydraulically propelled cleaning tools, which depend upon water pressure to provide their cleaning force, or any tools which retard the flow of water in the sewer segment are used, precautions shall be taken so that the water pressure created does not cause any damage or flooding to public or private property being served by the sewer segment involved.

C. The use of a vactor truck or debris catcher is required in each downstream manhole to remove the debris and prevent it from passing further downstream.

D. Debris:
   1. Intercept flushed debris at next downstream manhole using weir or screening device.
   2. Remove and dispose of debris off site.

E. Bypassing (if sewer in service):
   1. Furnish temporary bypass pumping system or plugging around work area for time required to complete television inspection.
   2. Provide standby pump of equal or greater capacity at bypass location.
   3. No backups shall occur.

3.03 APPLICATION

A. Closed-Circuit Television (CCTV) Camera System:
   1. Use cameras specifically designed and constructed for closed-circuit sewer line inspection.
   2. Use camera equipment with pan-and-tilt capability to view each lateral connection at multiple angles.
   3. Use camera capable of moving both upstream and downstream with minimum 1,000 feet horizontal distance within one setup and using direct-reading cable position meter.

3.04 INSPECTION

A. Pipeline Inspection:
   1. The Inspection of sewer lines by CCTV shall be performed on all lines after construction by trained experienced PACP certified personnel. CONTRACTOR shall take all necessary measures to televise the internal surface of each sewer segment in its entirety. Audio-video record sections of sewer pipeline between designated manholes.
   2. CONTRACTOR shall furnish all labor, electronic equipment and technicians schooled and licensed in PACP 6.0.1 format, to perform the closed-circuit television inspection of the sewers. Operation of the equipment is to be controlled from above ground with a skilled technician at the control panel in the television studio, controlling the movement of the television camera through the sewer in either direction one segment at a time.
   3. CONTRACTOR shall begin each inspection with an onscreen written and verbal explanation of the project name, a detailed description of the location, the manhole to manhole segment, the direction of flow, the direction of camera setup and date. The depth (rim-invert) measurement of each manhole shall be recorded on the PDF report as well. A continuous footage counter shall be provided during the entire inspection and shall be used to accurately record the locations of defects, connections, or objects in the pipe. The counter shall be accurate to two tenths of a foot. Maintain verbal commentary to identify any item that is called out on the report.
   4. All inspections shall begin and end in the center of the manhole. The start of the video shall NOT begin already in the pipe segment. At the end of each inspection, CONTRACTOR shall pan the camera around the ending manhole to get a view of what it looks like for identification purposes as well as documenting all incoming pipes.
   5. The camera shall be moved through the line in either direction at a uniform rate of 30 feet per minute, stopping when necessary to provide proper documentation of the sewer's condition. CONTRACTOR shall take all necessary measures to televise 95% of the internal surface of each sewer segment in its entirety. If dewatering with the jet truck is required to see 95% of the pipe, this shall be done at no additional charge to the City. Lighting system shall be adequate for quality pictures. A reflection in front of the camera may be required to enhance lighting.
   6. Identify and record locations of flat grades, dips, deflected joints, open joints, broken pipe, protrusions into pipeline, and points of infiltration.
   7. Locate and record service connections.
   8. Record locations of pipeline defects, connection horizontal distance in feet, and direction from manholes.
   9. Use flow-control methods as specified for bypass pumping system to eliminate surcharging and to reduce flow.

B. Televising shall show that the sewer system has been constructed in accordance with the drawings and specifications, that the sewer is free and clear of all accumulations of foreign substance and debris so as to prevent clogging, and that there are no structural defects.

3.05 FIELD QUALITY CONTROL

A. Requirements for inspecting and testing. Condition Assessment:
   1. Failure criteria for sewer testing:
      a. Visible infiltration at any joint.
      b. Joints not "fully home" in accordance with pipe manufacturer's recommendations.
      c. Out-of-roundness in PVC pipes which exceeds 5% of the pipe diameter. (CONTRACTOR shall pull a "95%" mandrel through PVC pipes after pipes are backfilled to demonstrate roundness).
      d. Failure of air-testing only for pipe without lateral service connections.
      e. Cracks or spall in pipe.
      f. Displaced gaskets.
   2. Correction of defects:
      a. Repair sections failing tests or quality requirements by removal and replacement of affected sections, or internal grouting of failed joints.
      b. Correct sewers failing deflection tests by re-excavating to sewer at point of failure and 10 feet on either side, allowing sewer to return to original round cross-section, and re-backfilling according to specifications. Re-test deflection limits as described herein. Sewers failing to return to original round cross-section or failing second deflection test shall be removed and replaced at no additional cost to OWNER. Use of devices generating internal pressures or vibrations to correct sewers failing deflection testing are expressly prohibited.
      c. Re-televise failed sewer, in accordance with this section, to provide evidence of corrected defect.

3.06 FINAL ACCEPTANCE

A. Final acceptance of the sanitary sewer will be when all post construction televising has been reviewed and deemed to be satisfactory.

END OF SECTION

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SECTION 33 01 31

SEWER BYPASS PUMPING

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: Providing all materials, labor, equipment, power, and maintenance necessary to perform bypass pumping while the Work is being completed. OWNER will operate the bypass pumping system including fueling, routine maintenance, and responding to alarms after the system has been successfully operating for 24 hours. CONTRACTOR is responsible for all other work associated with bypass pumping including installing and maintaining plugs.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

C. Coordinate the Work of this section with Section 33 01 30–Summary of Work–Utilities.

D. Payment:
   1. No separate payment item is included for Sewer Bypass Pumping. All costs for bypass pumping required to complete the Work shall be considered incidental to the Work and included in the cost of adjacent or related Work.
   2. The cost of retrieving equipment under all circumstances, including when it becomes lodged, shall be incidental to the Work.

1.02 SUBMITTALS

A. Submittals shall be in accordance with provisions of Section 01 33 00–Submittals.
   1. CONTRACTOR shall submit to OWNER detailed plans and descriptions outlining all provisions and precautions to be taken by CONTRACTOR regarding the handling of existing sewage flows. This plan must be specific and complete, including such items as schedules, locations, elevations, capacities of equipment, materials, and all other incidental items necessary and/or required to provide proper protection of the facilities, including protection of the access and bypass pumping locations from damage because of the discharge flows and compliance with the requirements specified in these Contract Documents. No rehabilitation or construction shall begin until all provisions and requirements have been reviewed by OWNER.
   2. The Bypass Pumping plan shall include but not be limited to details of the following:
      a. Staging areas for pumps.
      b. Sewer plugging method and types of plugs.
      c. Number, size, material, location, and method of installation of suction piping.
      d. Number, size, material, method of installation, and location of installation of discharge piping.
      e. Bypass pump sizes, capacity, number of each size to be on-site, and power requirements.
      f. Standby power generator size and location.
      g. Downstream discharge plan.
      h. Method of protecting discharge manholes or structures from erosion and damage.
      i. Method of noise control for each pump and/or generator.

j. Any temporary pipe supports and anchoring required.
k. Design plans for access to bypass pumping locations.
l. Schedule for installation of bypass pumping lines.
m. Plan indicating location of bypass pumping lines.

B. Any proposed method of other flow controls shall be submitted for review by OWNER.

PART 2–PRODUCTS

NOT APPLICABLE

PART 3–EXECUTION

3.01 SEWER BYPASS PUMPING

A. Where required by sewage flows or inability to prevent debris from falling into the flow stream, CONTRACTOR shall bypass the sewage around the sewer sections or manholes as required to complete the Work.

B. Precautions shall be taken when bypass pumping is required to prevent the flooding of nearby property.

C. Under no circumstances will the diversion or dumping of raw sewage be allowed onto the streets, trenches, or into storm sewers. The bypass shall be made by plugging an existing upstream manhole and pumping the sewage into a downstream manhole or adjacent sanitary sewer system if acceptable to OWNER. Bypass pumping shall mean the use of pumps, tanks, hoses, and other necessary equipment to cause uninterrupted flow of sewage around the section or reach in which the Work is being accomplished.

D. All bypass pumping operations shall contain an auto-dialer system to monitor the operation of the pump(s) and system and notify CONTRACTOR and OWNER immediately in the event of a power failure, high level alarm, or overflow situation. All personnel and equipment for setup and operation of the dialer system shall be provided by CONTRACTOR throughout bypass pumping operations. Auto-dialer system shall be provided with cellular call boxes.

E. All hoses and pumps shall be sized by CONTRACTOR to be of sufficient capacity to handle the existing sewage flow, plus additional flow that may occur during wet weather periods and during periods of high runoff. Refer to the Construction Sequence in Section 01 11 00–Summary of Work for bypass flow capacity requirements. All equipment used in bypass pumping shall be operated and maintained in proper running condition at all times.

F. All hose connections shall be watertight and no leakage shall be allowed to the surface. Pumping system hoses and appurtenances shall be tested prior to use in the sewer system to provide watertightness.

G. CONTRACTOR shall provide a pump capable of conveying the flow rates indicated in Section 01 11 00–Summary of Work. Backup pumping shall be provided such that the flow rates listed in Section 01 11 00 are met with the largest pump out of service. A backup generator capable of powering the bypass pump, if not integral to the backup pump, shall be provided on site during bypass pumping operations.

H. At the end of each working day, the reach or section being bypassed shall be placed in service and the bypass plug removed.

I. The pumps shall be specifically designed for sewage, capable of passing 3-inch solids.

J. CONTRACTOR shall satisfactorily demonstrate to OWNER that the bypass system works for at least the diurnal flow pattern before beginning any Work.

END OF SECTION

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SECTION 40 05 00

PIPING AND APPURTENANCES

PART 1–GENERAL

1.01 SUMMARY

A. Work Included:
   1. All piping, valves, and appurtenances of every description.
   2. Concrete foundations and anchor bolts for all equipment furnished under this section.
   3. Piping connections to all equipment, whether furnished under this section or not.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 SUBMITTALS

A. Applicable provisions of Section 01 33 00–Submittals cover requirements for shop drawings and Operation and Maintenance Manuals.

B. General arrangement drawings, including support system of 3 inches or larger interior and 3 inches or larger exterior (aboveground) ductile iron piping shall be submitted to ENGINEER for approval. Shop drawings for all interior and aboveground exterior piping shall be two-line drawings drawn to scale. Drawings shall include proposed materials, length, location, and elevation of pipe, fittings, supports, and valves and appurtenances. Plug valve orientation, including operator and plug orientation, shall be shown on Drawings.

PART 2–PRODUCTS

2.01 MATERIALS OF CONSTRUCTION

A. Materials of Construction: All materials used in the manufacture, assembly, and painting of piping and valves in contact with chemical feed systems shall be compatible with the chemicals being used. All glues, solvents, solders, etc., shall likewise be compatible. For instance, no lead-base solders shall be used.

B. Size and Type:
   1. All materials shall conform to the size and type called for in the specifications.
   2. In joining two dissimilar types of pipe, standard fittings shall be used when available. In the event standard fittings are not available, the method of joining shall be selected by CONTRACTOR and submitted for review by ENGINEER.

C. Piping appurtenances shall be made of the materials specified. All appurtenances not designated as to type shall be subject to approval of ENGINEER.

2.02 PIPE AND PIPE FITTINGS

A. Ductile Iron Piping and Fittings:
   1. Unless otherwise shown or specified, all interior piping 3 inches in diameter or larger

may be ductile iron conforming to AWWA C151.

2. Interior piping shall be minimum Special Class 53 with a minimum rated working pressure of 250 psi.
3. Except where shown, interior pipe joints shall be flanged. Flanged joints shall conform to applicable flanged joint sections of AWWA C110, C111, and C115 and shall be compatible with ANSI B16.1 Class 125. Flanges shall be ductile iron.
4. The words “Ductile Iron” and the weight and class of pipe shall be plainly marked on each piece of pipe.
5. Gaps between flanges and all locations where a gap exists at flange hub/pipe intersection shall be caulked prior to finish painting with Sonneborn NP-1 by Sonneborn-Chem Rex, Inc., Sika FLEX 1-A, or equal. Caulking shall be completed following installation and testing. Trim back excess edge of rubber gasket between flanges as necessary to achieve a uniform and flush caulk joint, but no more than 1/8-inch form outside edge of flange. Caulking shall be done and fully cured as required prior to painting of piping.
6. Flanged gaskets shall be minimum 1/8-inch-thick, styrene butadiene rubber (SBR), full-face, Toruseal, Flange-Tyte, Maloney, or equal, gaskets. Thicker gaskets shall be provided as recommended by the manufacturer to meet joint tolerance.
7. Flanged bolts and nuts installed in regulator structures.
8. Flanged fittings shall be of ductile iron with ductile iron flanges. Flanged fittings shall conform to AWWA C110 and ANSI B16.1, as applicable, with a minimum rated working pressure of 150 psi.
9. All ductile iron fittings shall be American Ductile Iron Pipe, Griffin, Tyler Union, U.S. Pipe, or equal.
10. All flanged sections of pipe shall be made up in accordance with AWWA C115 specifications. No field makeup flanges will be allowed unless strictly conforming to AWWA C115, with facing done after turning pipe through flange.
11. Unless otherwise specified, all ductile iron piping and fittings shall be cement mortar lined and asphaltic-coated inside. Cement mortar lining shall be in accordance with AWWA C104. Asphaltic coating shall conform to applicable standards herein for the pipe and fittings. Exterior exposed, submerged, and interior piping shall be furnished with outside surfaces prepared by abrasive blasting in accordance with NAPF 500C-03. Cleaned surfaces shall then be shop-primed. Factory shop prime with one coat of Tnemec N69 or N140 or Sherwin Williams Duraplate 235 or Macropoxy 646PW, or equal, applied at a minimum 5.0 mils dry film thickness. Primer used shall be compatible with proposed finish coats; CONTRACTOR shall verify. It is the intent of this specification that all piping, supports, and appurtenances shall be furnished shop-primed, clean, and ready to accept finish painting by CONTRACTOR with a minimal amount of surface preparation.
12. Unless otherwise specified, piping and fittings in manholes shall be asphaltic-coated outside. Asphaltic coating shall conform to applicable standards herein for the pipe and fittings.

2.03 VALVES

A. Backflow Prevention Check Valves: Except where noted, all backflow prevention check valves shall be Tideflex TF-1 by Red valve Company, Inc., or equal, of Chlotobutyl or EPDM construction, and secured in place using 316 stainless steel clamps. The outer diameter of the pipes requiring backflow prevention shall be field verified to the nearest 1/16-inch before requesting product fabrication.

2.04 PIPING APPURTENANCES AND MISCELLANEOUS MATERIALS

A. General: Piping appurtenances shall be made of the materials specified. All appurtenances not designated as to type shall be subject to approval of ENGINEER.

PART 3–EXECUTION

3.01 GENERAL

A. Refer to requirements specified in Division 01 for equipment installation, quality control, testing, supervision, start-up, and operator training.

3.02 INSTALLATION

A. Wall and Other Pipe Penetrations:
   1. CONTRACTOR shall furnish and place hangers, supports, wall pipes, sleeves, and floor boxes in the forms before concrete is poured wherever needed or shown on the Drawings.
   2. Nonshrink grout shall be as specified in Division 03.

B. Cleaning and Disinfection: All equipment and materials shall be clean before installation.

3.03 DEMOLITION

A. All interior piping removals, including appurtenances and abandonment, shall be by CONTRACTOR. The locations and elevations of existing piping are approximate. Any change in pipe location or elevation shall be reviewed by ENGINEER.

B. CONTRACTOR shall remove or abandon all existing piping and appurtenances as noted. Unless otherwise shown or specified, piping and appurtenances to be removed shall become the property of CONTRACTOR and shall be removed from the site for salvage or disposal.

C. It is the responsibility of CONTRACTOR to remove the following, including piping and appurtenances, as specified and patch all holes resulting therefrom unless specified or shown otherwise. The intent of these specifications is to require that the removal of materials, patching of all existing holes, and repiping be done in a workmanlike manner. All costs shall be included in the Lump Sum Bid.

3.04 CLEANING

A. All equipment and materials shall be clean before installation.

B. Broken concrete, rubble fill, and other excess material shall be removed from the site and wasted.

C. All surplus material, tools, and equipment shall be removed and the premises shall be left free of everything of the kind.

END OF SECTION

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SECTION 46 21 53

SCREENING EQUIPMENT

PART 1–GENERAL

1.01 SUMMARY

A. Work Included: This section includes furnishing, installing, and placing into successful operation five Hydro-Static® screening units manufactured by Hydro International, 2925 NE Aloclek Drive #140, Hillsboro, OR, 97124, 503-615-8130.

B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 SYSTEM DESCRIPTION

A. Data on service history and operation of existing installations using the submitted equipment shall be made available to the Engineer, upon request, for use in determining that the Screening components offered meets the intent of the contract, performance requirements and criteria stated in these specifications.

1.03 SUBMITTALS

A. Submittals shall be provided in accordance with the General Conditions and shall include the following:
   1. Manufacturer's catalog data and descriptive literature including equipment weights and performance data.
   2. General arrangement and dimensional drawings of the screening unit.
   3. Written recommended procedures for job site storage, handling, and installation of the equipment.

B. Operation and maintenance manuals shall be provided at the completion of the job and in accordance with the General Conditions. The manuals shall include the following data:
   1. Alignment, adjustment, and repair instructions.
   2. Manufacturer’s installation instructions.
   3. Assembly diagrams.
   4. Troubleshooting guide.

1.04 WARRANTY

A. Standard One-Year Warranty: Unless otherwise stated below, manufacturer shall warrant the equipment to be free from defects in material and workmanship for a period of one year from the earlier of either the date established for partial utilization in accordance with GC15.03 and 15.04, as modified in the Supplementary Conditions, or Substantial Completion of the project.

PART 2–PRODUCTS

2.01 MANUFACTURERS

A. The screens shall be hydrostatic screens manufactured by Hydro International, 2925 NE Aloclek Drive #140, Hillsboro, OR, 97124, 503-615-8130. This listed equipment is part of the Base Bid as indicated on the Bid pages and will be considered as establishing the type, function, appearance, and quality required, as defined in the General Conditions. The drawings were prepared based on Hydro International, 2925 NE Aloclek Drive #140, Hillsboro, Oregon.

B. Equipment listed in this specification was pre-selected by OWNER and ENGINEER. The manufacturer's proposal included scope of equipment supply, notes and clarifications, lead time preparation of shop drawings and manufacturing, terms for equipment delivery, number of days and trips included for manufacturer field visits, duration of time for which the pricing is valid, and other potentially useful information is included as an appendix. The price in the proposal is the basis on which CONTRACTOR and equipment manufacturer will enter into an agreement. CONTRACTOR and equipment manufacturer may renegotiate any elements of the proposal including, but not limited to, scope of supply, price and delivery, as mutually agreed, while still meeting all Contract requirements. Note that proposals are provided for CONTRACTOR's convenience in negotiation of a final agreement with the equipment manufacturer and shall not supersede any Contract requirements provided herein.

2.02 GENERAL

A. CSO 004 Design Data:
   1. Number of Units: 1.
   2. Nominal Screen Opening: 4 mm.
   3. Quantity of Screen Panels/Unit: 20.
   4. Screen Panel Area: 9 ft^2.
   5. Total Screen Area/Unit: 180 ft^2.
   6. Hydraulic Capacity/Unit: 38.3 mgd.
   7. Loading Rate: 148 gpm/ft^2.
   8. Headloss @ 0% Blinded/Unit: less than 1 inch.
   9. Headloss @ 50% Blinded/Unit: less than 4 inches.
   10. Material of Construction: 304 Stainless Steel Polymer Coating on Screen.

B. CSO 007 Design Data:
   1. Number of Units: 1.
   2. Nominal Screen Opening: 4 mm.
   3. Quantity of Screen Panels/Unit: 30.
   4. Screen Panel Area: 9 ft^2.
   5. Total Screen Area/Unit: 270 ft^2.
   6. Hydraulic Capacity/Unit: 57.5 mgd.
   7. Loading Rate: 148 gpm/ft^2.
   8. Headloss @ 0% Blinded/Unit: less than 1 inch.
   9. Headloss @ 50% Blinded/Unit: less than 4 inches.
   10. Material of Construction: 304 Stainless Steel Polymer Coating on Screen.

C. CSO 009 Design Data:
   1. Number of Units: 1.
   2. Nominal Screen Opening: 4 mm.
   3. Quantity of Screen Panels/Unit: 10.
   4. Screen Panel Area: 9 ft^2.
   5. Total Screen Area/Unit: 90 ft^2.
   6. Hydraulic Capacity/Unit: 19.1 mgd.
   7. Loading Rate: 148 gpm/ft^2.
   8. Headloss @ 0% Blinded/Unit: less than 1 inch.
   9. Headloss @ 50% Blinded/Unit: less than 4 inches.
   10. Material of Construction: 304 Stainless Steel Polymer Coating on Screen.

D. CSO 011 Design Data:
   1. Number of Units: 1.
   2. Nominal Screen Opening: 4 mm.
   3. Quantity of Screen Panels/Unit: 20.
   4. Screen Panel Area: 9 ft^2.
   5. Total Screen Area/Unit: 180 ft^2.
   6. Hydraulic Capacity/Unit: 38.3 mgd.
   7. Loading Rate: 148 gpm/ft^2.
   8. Headloss @ 0% Blinded/Unit: less than 1 inch.
   9. Headloss @ 50% Blinded/Unit: less than 4 inches.
   10. Material of Construction: 304 Stainless Steel Polymer Coating on Screen.

E. Operation: The Hydro-Static® Screen shall be designed to withstand all loadings which may occur during fabrication, shipping, installation, and operation of the equipment.

F. Construction:
   1. The Hydro-Static® Screen to be 12 gauge (minimum) grade 304 stainless steel punched plate containing 4 mm holes with 51% open area (flat panel). Each plate is then corrugated with 2 3/8-inch high corrugations and covered in a polythene coat (black) approximately 1/32-inch thick reducing the hole size to 1/6 inch. Due to the corrugated design the effective surface area (in plan) gives an equivalent open area of approximately 70%.
   2. The screen housing will be designed to suit each particular application. Emergency overflow panels are incorporated into the upflow design as standard to stop the screen being overtopped before the rising water level has found its way up to the emergency overflow. Flow modifying baffles may also be incorporated into upflow type static screens where depth allows. Weir walls and emergency overflow weirs can be provided at an additional cost. All components and associated fixings used in the static screen assembly will be made from grade 304 stainless steel.

2.03 FINISHES

A. Screening equipment shall be provided with a polymer coating. Touch-up product shall be provided by manufacturer.

B. Exterior Surfaces Finishes
   1. All surfaces shall be free of sharp edges, weld spatter and residue. All welds shall be ground smooth.
   2. All stainless steel surfaces shall be acid washed.

2.04 ANCHOR BOLTS

A. Provide all anchor bolts required for equipment furnished. Anchor bolts shall be 316 stainless steel of ample strength for the intended service. Provide anchor bolts in accordance with Division 05.

PART 3–EXECUTION

3.01 GENERAL

A. Refer to requirements specified in Division 01 for equipment installation, quality control, testing, supervision, startup, and operator training. Comply with additional requirements as specified below.

B. A minimum of one trip and one day on site shall be provided for startup and training services.

3.02 STARTUP AND TESTING

A. Prior to plant startup, all equipment shall be inspected for proper alignment, connection, and satisfactory operation (if flow is present). It is CONTRACTOR's responsibility to duly notify the manufacturer of any inabilities to perform functional testing prior to operator training.

END OF SECTION

DRAWINGS

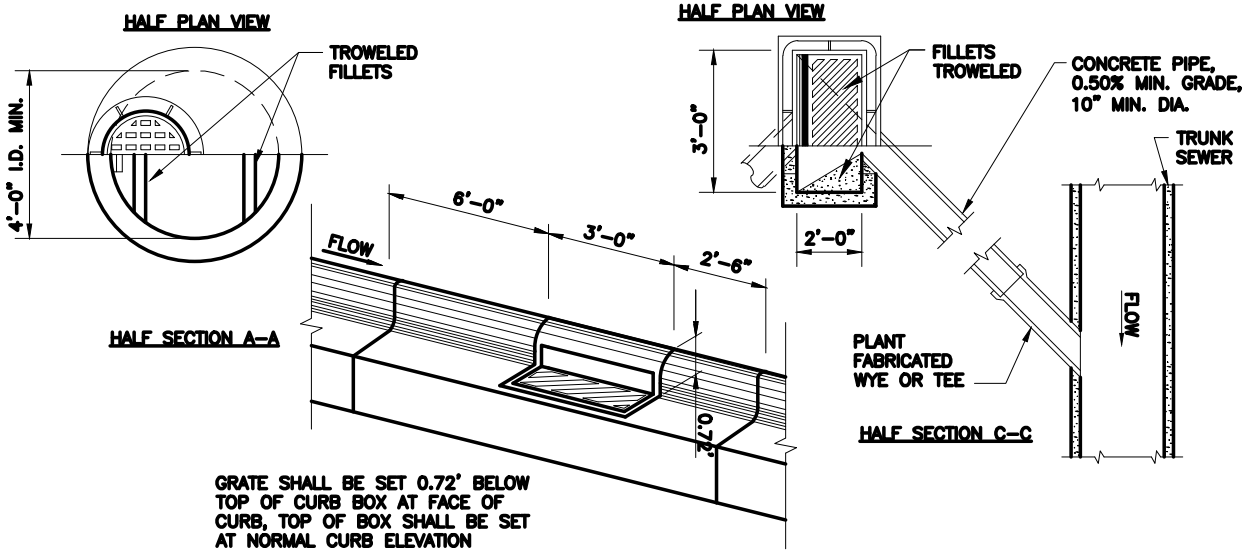
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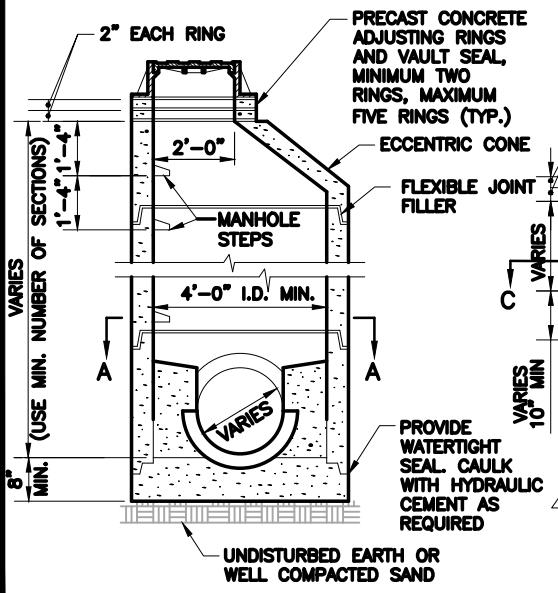
STORM SEWER

MANHOLES AND INLETS

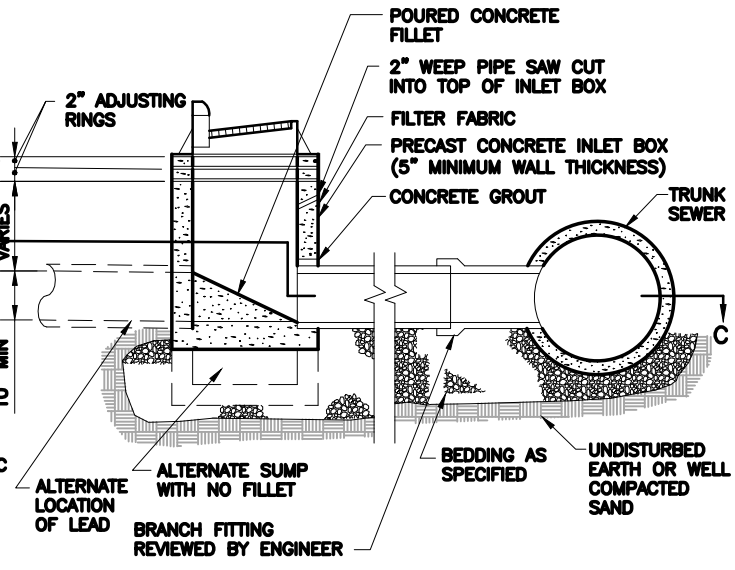
STANDARD DETAIL



DEPRESSED INLET DETAIL



STANDARD PRECAST MANHOLE



PRECAST INLET DETAIL

NOTES

1. DETAILS RELATIVE TO ITEMS SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE SPECIFICATIONS.

2. VARIATIONS IN DIMENSIONS AND DESIGN MAY BE PERMISSABLE PROVIDING EQUIVALENT CAPACITY AND STRENGTH ARE ATTAINED.

3. WHEN ANY STRUCTURE IS CONSTRUCTED OF CONCRETE, CONCRETE BLOCK OR REINFORCED CONCRETE CULVERT PIPE, THE TOP OF THE MASONRY SHALL BE LEFT SUFFICIENTLY LOW TO PERMIT PROPER ADJUSTMENT OF COVER TO GRADE.

4. REINFORCED PRECAST FLAT SLAB SHALL BE USED IN LIEU OF PRECAST ECCENTRIC CONE WHEN SHOWN ON THE DRAWINGS AND SHALL BE DESIGNED FOR H-20 TRUCK LOADING.

5. PRECAST REINFORCED CONCRETE MANHOLE RISERS AND TOPS SHALL CONFORM TO ASTM C-478. JOINTS BETWEEN MANHOLE SECTIONS SHALL BE SEALED WITH RAM NEK, HANDLING HOLES SHALL BE FILLED WITH MORTAR, AND BOTH MADE WATER TIGHT.

6. STEPS SHALL BE INSTALLED IN ALL MANHOLES.

7. AT ALL BENDS IN SEWER, A SMOOTH RADIUS FLOW LINE SHALL BE PROVIDED IN MANHOLES. ALL CONCRETE FILLETS SHALL BE HAND TROWELED.

8. INSIDE DIMENSIONS FOR MANHOLES: USE MINIMUM 4' DIAMETER FOR SEWER LESS THAN 18" IN DIAMETER; USE MINIMUM 5' DIAMETER FOR SEWER 18" THRU 24" IN DIAMETER; USE MINIMUM 6' DIAMETER OR MINIMUM 6' SQUARE FOR SEWER OVER 24" IN DIAMETER, UNLESS OTHERWISE SPECIFIED.

9. ARRANGEMENT AND NUMBER OF INLETS AND DISCHARGE PIPES SHALL CONFORM TO THE NEEDS OF THE PERTINENT LOCATION.

10. PROVIDE MINIMUM 2'-0" COVER FOR ALL INLET LEAD PIPE, UNLESS OTHERWISE SPECIFIED.

11. ALL INLETS SHALL BE DEPRESSED AS SHOWN.

12. INLET DEPTH AND GRADE OF INLET LEAD PIPE VARY ACCORDING TO DEPTH OF TRUNK SEWER. MINIMUM INLET DEPTH BELOW TOP OF CURB SHALL BE 4'-0".

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01-975-41A

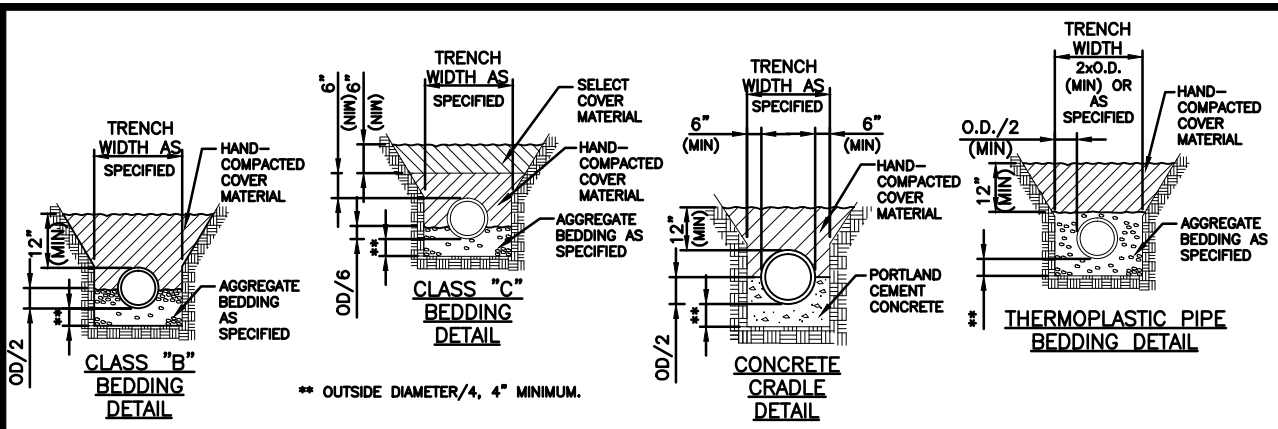
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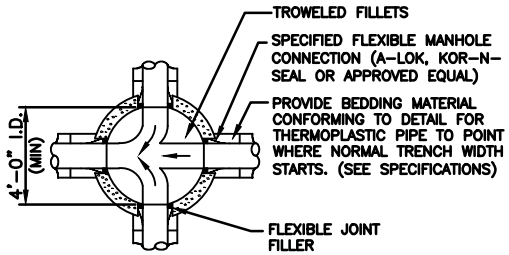
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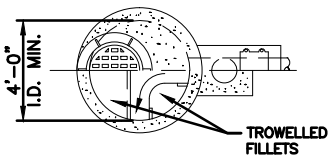
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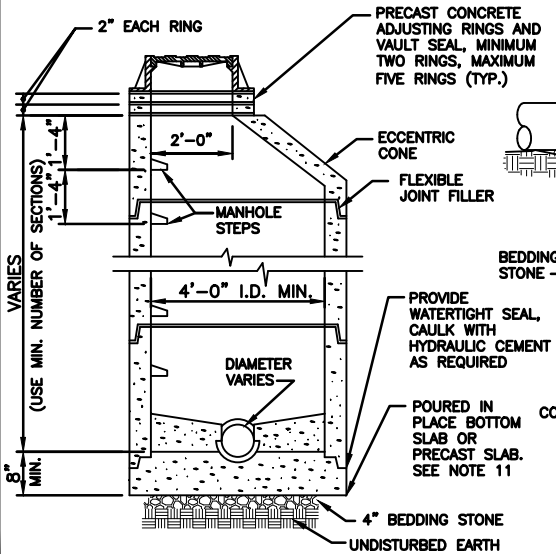
SANITARY SEWER APPURTENANCES

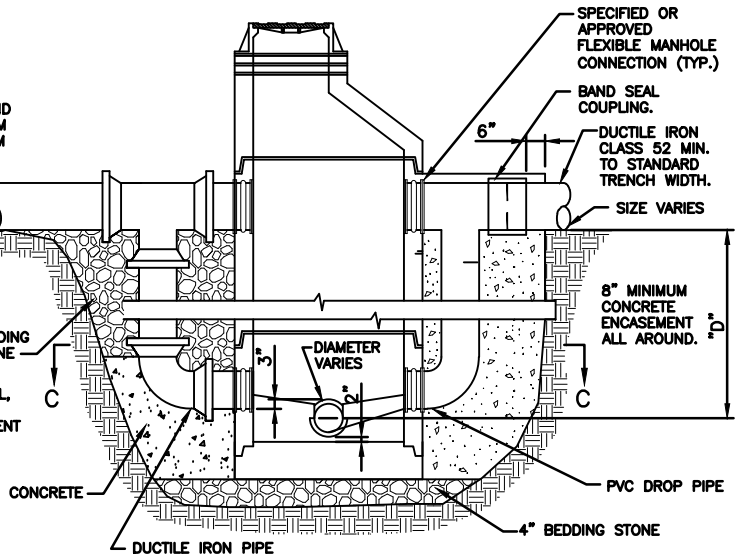
STANDARD DETAIL











NOTES

1. DETAILS RELATIVE TO ITEMS SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

2. VARIATIONS IN DIMENSIONS AND DESIGN MAY BE PERMISSIBLE, PROVIDING EQUIVALENT CAPACITY AND STRENGTH ARE ATTAINED.

3. ALL CONCRETE FILLETS SHALL BE HAND TROWELED WITH A 1/4"/FT. SLOPE.

4. INSIDE DIMENSIONS FOR MANHOLES: USE MINIMUM 4' DIAMETER FOR SEWER LESS THAN 18" IN DIAMETER; USE MINIMUM 5' DIAMETER FOR SEWER 18" THRU 24" IN DIAMETER; USE MINIMUM 6' DIAMETER OR MINIMUM 6' SQUARE FOR SEWER OVER 24" IN DIAMETER.

5. BEDDING CLASSES "B" AND "C" SHALL MEET OR EXCEED ASTM C12 REQUIREMENTS.

6. DROP TYPE ENTRANCE TO STANDARD MANHOLE WILL BE PAID FOR SEPARATELY IF SO LISTED IN THE BID.

7. SEE DRAWINGS FOR DROP TYPE ENTRANCES FOR SANITARY SEWERS LARGER THAN 15".

8. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF REGULATORY BODIES OF THE STATE AND APPLICABLE MUNICIPAL ORDINANCES.

9. ALL NEW CONSTRUCTION SHALL BE PLACED ON UNDISTURBED EARTH OR STONE BEDDING.

10. FLAT SLAB TOPS SHALL BE DESIGNED FOR H-20 TRUCK LOADING AND SHALL MEET REQUIREMENTS OF ASTM C-478.

11. BASE SLABS SHALL BE REINFORCED AS FOLLOWS: REINFORCING SHALL BE PLACED IN EACH DIRECTION AT 2" CLEAR FROM TOP SURFACE OF SLAB, REINFORCING SHALL BE GRADE 60. USE OF CAST-IN-PLACE SLAB SHALL NOT RELIEVE CONTRACTOR OF REQUIREMENTS TO PROVIDE WATERTIGHT JOINTS.

INSIDE DIA.	DEPTH	REINF.
4'	≦ 30'	#3@8"
5'	≦ 20'	#3@8"
5'	20'-30'	#4@10"
6'	≦ 20'	#4@10"
6'	20'-25'	#4@8"
6'	25'-30'	#4@6"

12. FLAT SLABS SHALL BE PROVIDED IN SHALLOW DEPTH SITUATIONS IN LIEU OF ECCENTRIC CONES.

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01-975-43A

OCTOBER 2011

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SAMPLE DRAWINGS

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CONDUCTORS

- CONDUCTOR
- CONDUCTORS NOT CONNECTED
- CONDUCTORS CONNECTED
- CONDUCTOR SHIELD
- FIELD CONDUCTOR
- EARTH GROUND
- CHASSIS GROUND
- SHIELD GROUND (ISOLATED IF REQUIRED BY SPEC.)

TERMINALS

- #### — TERMINAL BLOCK FOR FIELD TERMINATION
- #### — TERMINAL BLOCK FOR INTERNAL USE ONLY TERMINATION
- #### — DEVICE TERMINATION POINT
- XA, #### — FUSED TERMINAL BLOCK FOR DEVICES LOCATED INTERNALLY

RELAY COILS

- CR1 — DEVICE ID, CONTROL RELAY; NO, NC
- M1 — MOTOR STARTER; NO, NC
- TD1, SET @ XXSEC — ELECTRIC TIMER WITH ADJUSTABLE TIMING RANGE; NO, NC
- SOL1 — SOLENOID
- OL1 — THERMAL OVERLOAD

SWITCHES

- DESC1, DESC2, PB1 — DESCRIPTION TEXT (EXAMPLE: LAMP TEST); NORMALLY OPEN PUSHBUTTON
- DESC1, DESC2, PB2 — NORMALLY CLOSED PUSHBUTTON
- DESC1, DESC2, PB3 — NORMALLY CLOSED MUSHROOM HEAD E-STOP
- MECHANICAL CONNECTION
- DESC1, DESC2, SS1, POS1, POS2 — TWO POSITION SELECTOR SWITCH SHOWN IN 'POS1'; CONTACT MADE IN 'POS2'
- DESC1, DESC2, SS2, POS1, POS2, POS3 — THREE POSITION SELECTOR SWITCH SHOWN IN 'POS1' POSITION, ARROW INDICATES SPRING RETURN FROM 'POS3'; CONTACT MADE IN 'POS3'
- DESC1, DESC2, SS3, POS1, POS2, POS3, POS4 — FOUR POSITION SELECTOR SWITCH SHOWN IN 'POS1' POSITION; CONTACT MADE IN 'POS3'

LIMIT SWITCHES

- DESC1, DESC2, ZS1 — NORMALLY OPEN
- DESC1, DESC2, ZS2 — NORMALLY CLOSED
- DESC1, DESC2, ZS3 — NORMALLY OPEN HELD CLOSED
- DESC1, DESC2, ZS4 — NORMALLY CLOSED HELD OPEN

PROCESS SWITCHES

- DESC1, DESC2, WS1 — TORQUE SWITCH, NORMALLY OPEN, CLOSE ON INCREASE TORQUE
- DESC1, DESC2, WS2 — TORQUE SWITCH, NORMALLY CLOSED, OPEN ON INCREASE TORQUE
- DESC1, DESC2, LS1 — LIQUID LEVEL SWITCH, NORMALLY OPEN, CLOSE ON RISE
- DESC1, DESC2, LS2 — LIQUID LEVEL SWITCH, NORMALLY CLOSED, OPEN ON RISE
- DESC1, DESC2, FS1 — FLOW SWITCH, NORMALLY OPEN, CLOSE ON INCREASE FLOW
- DESC1, DESC2, FS2 — FLOW SWITCH, NORMALLY CLOSED, OPEN ON INCREASE FLOW
- DESC1, DESC2, PS1 — PRESSURE SWITCH, NORMALLY OPEN, CLOSE ON RISE
- DESC1, DESC2, PS2 — PRESSURE SWITCH, NORMALLY CLOSED, OPEN ON RISE
- DESC1, DESC2, TS1 — TEMPERATURE SWITCH, NORMALLY OPEN, CLOSE ON RISE
- DESC1, DESC2, TS2 — TEMPERATURE SWITCH, NORMALLY CLOSED, OPEN ON RISE

PILOT LIGHTS

- PL1, A — PILOT LIGHT, COLOR: AMBER
- COLOR CODES: A-AMBER, W-WHITE, R-RED, B-BLUE, G-GREEN
- PL2, R — PUSH TO TEST PILOT LIGHT

INPUT/OUTPUT DEVICES

- 0/0/0 — DIGITAL INPUT ADDRESS, RACK/SLOT/POINT
- 0/0/0 — DIGITAL OUTPUT ADDRESS, RACK/SLOT/POINT
- AI, 0/0/0 — ANALOG INPUT ADDRESS, RACK/SLOT/POINT
- AO, 0/0/0 — ANALOG OUTPUT ADDRESS, RACK/SLOT/POINT

COIL CONTACTS

- CR1 — NORMALLY OPEN CONTACT
- CR2 — NORMALLY CLOSED CONTACT
- TD1 — NORMALLY OPEN CONTACT ON DELAY
- TD2 — NORMALLY CLOSED CONTACT ON DELAY
- TD3 — NORMALLY OPEN CONTACT OFF DELAY
- TD4 — NORMALLY CLOSED CONTACT OFF DELAY

WIRE COLOR STANDARDS

BLK	BLACK, INCOMING POWER AC
WHT	WHITE, NEUTRAL AC
GRN	GREEN, GROUND
RED	RED, CONTROL POWER AC
BLU	BLUE, CONTROL POWER DC
BLU/S	BLUE WITH STRIP, CONTROL POWER COMMON DC
SHLD	SHIELDED 2 CONDUCTOR BLACK(+) WHITE(-), LOW SIGNAL CIRCUITS
YEL	YELLOW, SEPARATE EXTERNAL CONTROL POWER SOURCE

MISCELLANEOUS

- CB1, ##AMP — CIRCUIT BREAKER WITH AMPERAGE
- FU1, ##AMP — FUSE WITH AMPERAGE
- AH1 — AUDIBLE DEVICE
- EIN — ELAPSED TIME METER
- R1, 250 OHMS — RESISTOR 250 OHM
- D1 — RECTIFIER, DIODE
- C1 — CAPACITOR, ELECT.
- XF1, H1, H3, H2, H4, X1, X2, ##VAC — TRANSFORMER SECONDARY VOLTAGE AND RATING INDICATED AS APPLICABLE

INSTRUMENTATION DEVICES

- FQ, # — SUBPANEL MOUNTED DEVICE WITH LOOP OR SEQUENCE NUMBER
- LI, # — PANEL MOUNTED DEVICE WITH LOOP OR SEQUENCE NUMBER
- FT, # — FEILD MOUNTED DEVICE WITH LOOP OR SEQUENCE NUMBER

ISA CODES
FI - FLOW RATE INDICATOR
LI - LEVEL INDICATOR
FT - FLOW TRANSMITTER
FY - FLOW INTEGRATOR
FQ - FLOW QUANTITY

RESERVED WIRE NUMBERS

10	GROUND FAULT CIRCUIT HOT	5	12V DC POSITIVE
N2	GROUND FAULT CIRCUIT NEUTRAL	6	12V DC COMMON
3	24V DC POSITIVE	7	LOW VOLTAGE AC HOT
4	24V DC COMMON	8	LOW VOLTAGE AC NEUTRAL

DEVICE ID / DRAWING CROSS REFERENCE

XX#### — SEQUENCE 00-99; DRAWING CROSS REFERENCE 1-99; FAMILY CODE ABREVIATION
EXAMPLE: CR2101

####X-### — DRAWING NUMBER 000-999; SEPARATOR; PANEL DESIGNATION A-X; PROJECT NUMBER

DATE LAST EDITED: 12/6/2007

REVISION	
DATE	DESCRIPTION

DATE	11/12/2007	PROJECT	
DWN	JA	STANDARD SYMBOL SHEET	PROJ. NO.
CKD.	GK		
ENGR.	JJ		DWG. NO. SYM
ASSEM.			
SHEET	1 OF 1		

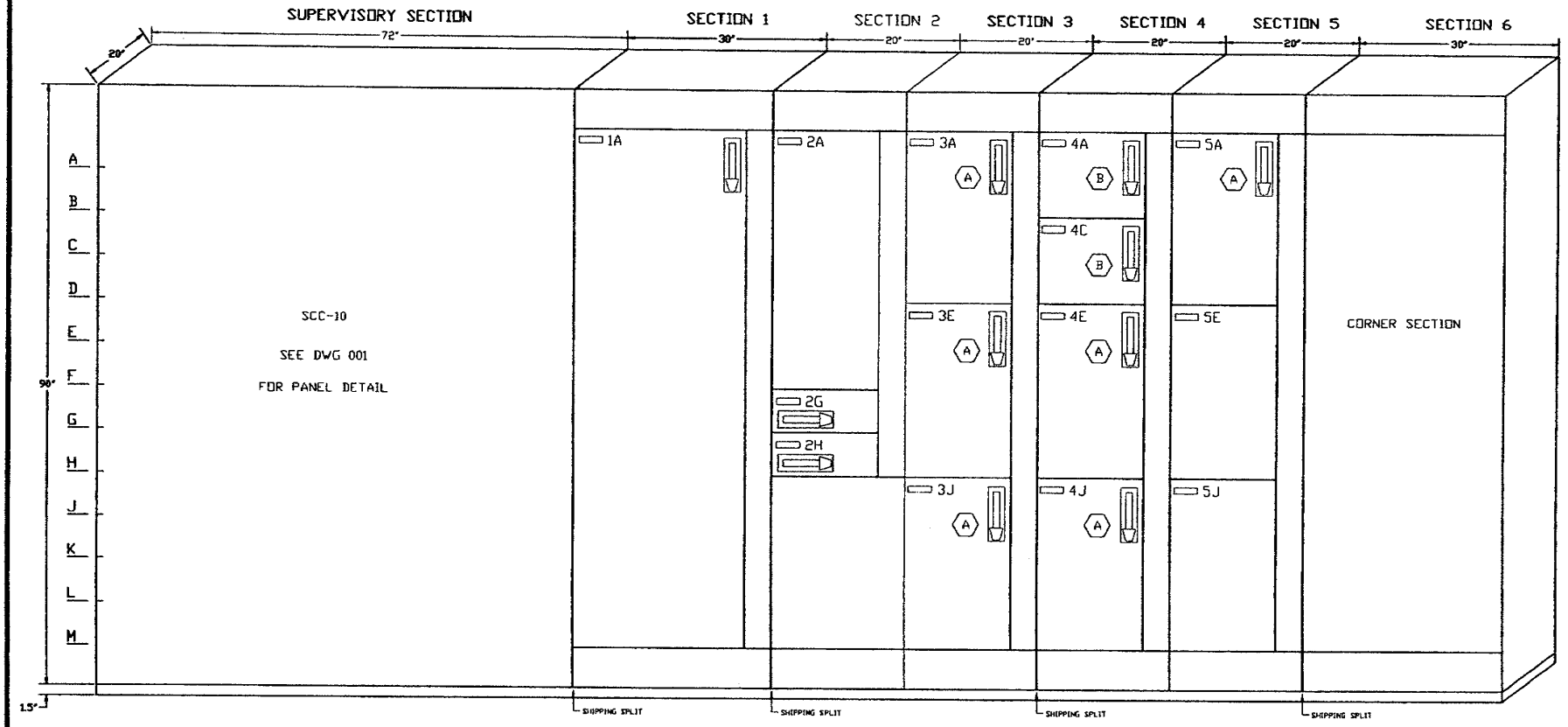
Sample Symbol sheet

Standard Abbreviations

Abbreviation	Description
A	Air Compressed
AC	Air Condition
AD	Auto Dialer
AH	Alarm Horn
AL	Alarm Light
AM	Amp Meter/Ammeter
ANN	Annunciator
AR	Alternating Relay
AWG	American Wire Gauge
BA	Battery
BLU	Blue
BRN	Brown
CA	Cable
CB	Circuit Breaker
CR	Control Relay
CT	Current Transformer
DB	Distribution Block
DI	Diode
DS	Disconnect Switch
EC	Electronic Control Device
ETM	Elapsed Time Meter
EN	Enclosure
FO	Fiber Optic
FS	Flow Switch
FU	Fuse
GFI	Ground Fault Interrupter
GND	Ground
GRN	Green
HTR	Heater
LA	Lightning Arrestor
LP	Lighting Panel
LR	Latching Relay
LS	Level Switch
MS	Motor Starter Contactor
M	Motor
NP	Nameplate
OIT	Operator Interface Terminal
OL or O/L	Overload
ORG	Orange

Abbreviation	Description
OV	Overvoltage
PB	Pushbutton
PC	Pull Cord
PC	Personal Computer
PFC	Power Factor Capacitor
PL	Pilot Light
PLC	Programmable Logic Controller
PM	Power or Phase Monitor
PN	Pneumatic
PR	Pressure Regulator
PS	Pressure Switch
PS	Power Supply
PSH	Pressure Switch High
PSL	Pressure Switch Low
REC	Receptacle
SP	Surge Protector
SS	Selector Switch
STP	Shielded Twisted Pair
SV	Solenoid Valve
TD	Time Delay Relay
TG	Toggle Switch
TS	Temperature Switch
TSP	Twisted Shielded Pair
TT	Temperature Transmitter
UPS	Uninterruptible Power Supply
UTP	Unshielded Twisted Pair
VA	Voltampere
VFD	Variable
VM	Voltmeter
WHT	White
WS	Weight Switch
WT	Weight Transmitter
XFMR	Transformer
SI	Signal Isolator
SS	Speed Switch
ZS	Position Switch

Sample List of Abbreviations



NOTE: SEE DETAILS ON DRAWINGS 004 AND 005.

SCALE

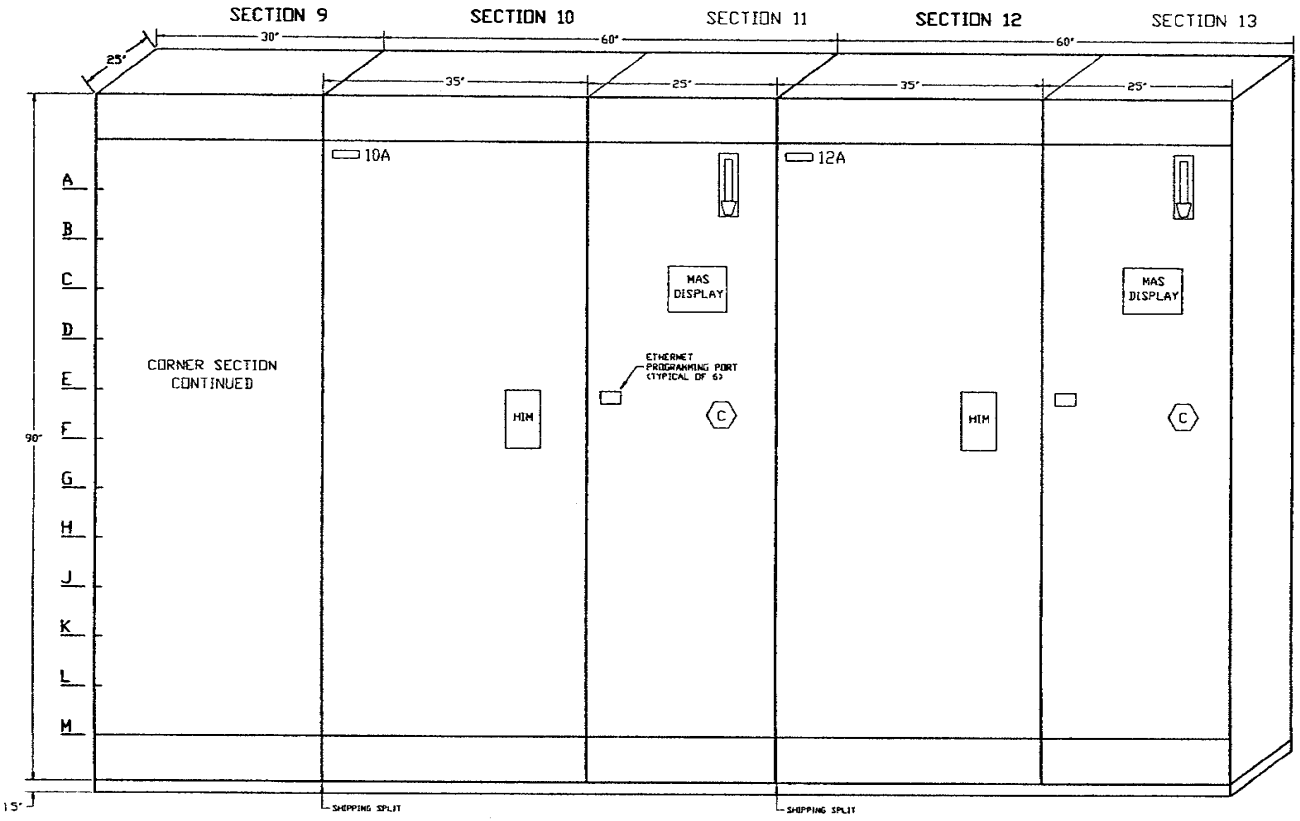
0 15" 30" 60"

REVISION	
DATE	DESCRIPTION
6/13/05	RELEASE FOR CONSTRUCTION
9/6/06	AS BUILT
2/15/07	AS INSTALLED

DATE LAST EDITED 2/15/2007

DATE	3/16/06	PROJECT	
DWN	JA	MCC-10 ELEVATION DETAIL	PROJ. NO.
CKD.	GK		
ENGR.	BA		
ASSEM.			DWG. NO. 003B
SHEET	4 OF 149		

Sample Exterior Layout Drawing



NOTE: SEE DETAILS ON DRAWINGS 004 AND 005.
SECTIONS 10 THROUGH 13 ARE MOUNTED BACK-TO-BACK WITH SECTIONS 14 THROUGH 17.

SCALE
0 15" 30" 60"

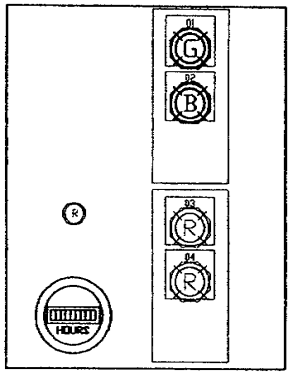
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2/15/07	AS INSTALLED

DATE LAST EDITED 2/15/2007

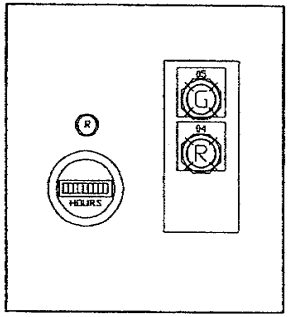
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ENGR.	BA	PROJ. NO. -
ASSEM.		DWG. NO. 003D
SHEET	6 OF 149	

Sample Exterior Layout Drawing

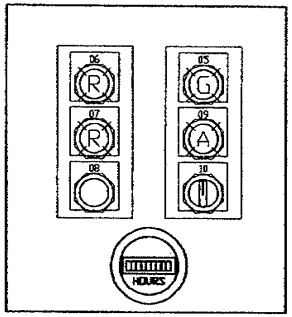
A DETAIL



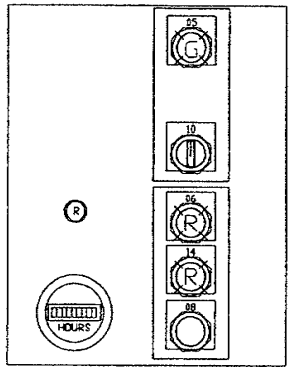
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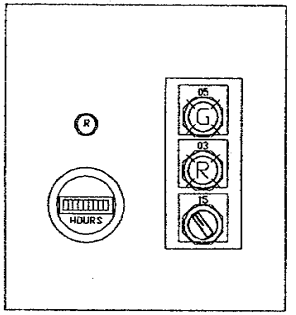
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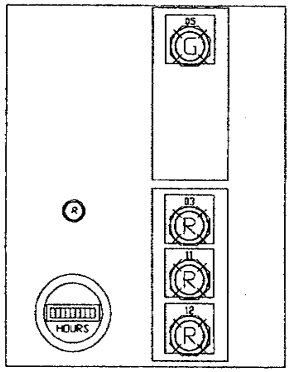
G DETAIL



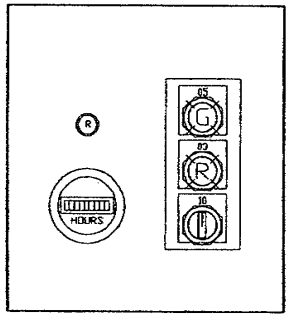
H DETAIL



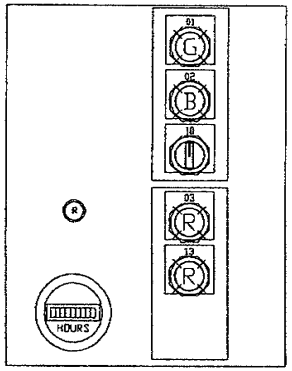
D DETAIL



E DETAIL



F DETAIL



LEGEND PLATE SCHEDULE					
TAG	DESC1	DESC2	DESC3	SIZE	REMARKS
01	FORWARD			1-13/16" SQ	
02	REVERSE			1-13/16" SQ	
03	OVERLOAD			1-13/16" SQ	
04	OVERCURRENT			1-13/16" SQ	
05	RUN			1-13/16" SQ	
06	VFD FAULT			1-13/16" SQ	
07	MOTOR/BEARING	HIGH TEMP		1-13/16" SQ	
08	RESET			1-13/16" SQ	
09	JBOX/MOTOR	MOISTURE		1-13/16" SQ	
10	HAND AUTO	OFF		1-13/16" SQ	
11	ZERO SPEED	ALARM		1-13/16" SQ	
12	ESTOP	ACTIVATED		1-13/16" SQ	
13	INSPECTION	DOOR OPEN		1-13/16" SQ	
14	MOTOR	OVERTEMP		1-13/16" SQ	
15	OFF ON			1-13/16" SQ	

SCALE

0 3" 6" 12"

REVISION	
DATE	DESCRIPTION
6/13/05	RELEASE FOR CONSTRUCTION
9/6/06	AS BUILT
2/15/07	AS INSTALLED

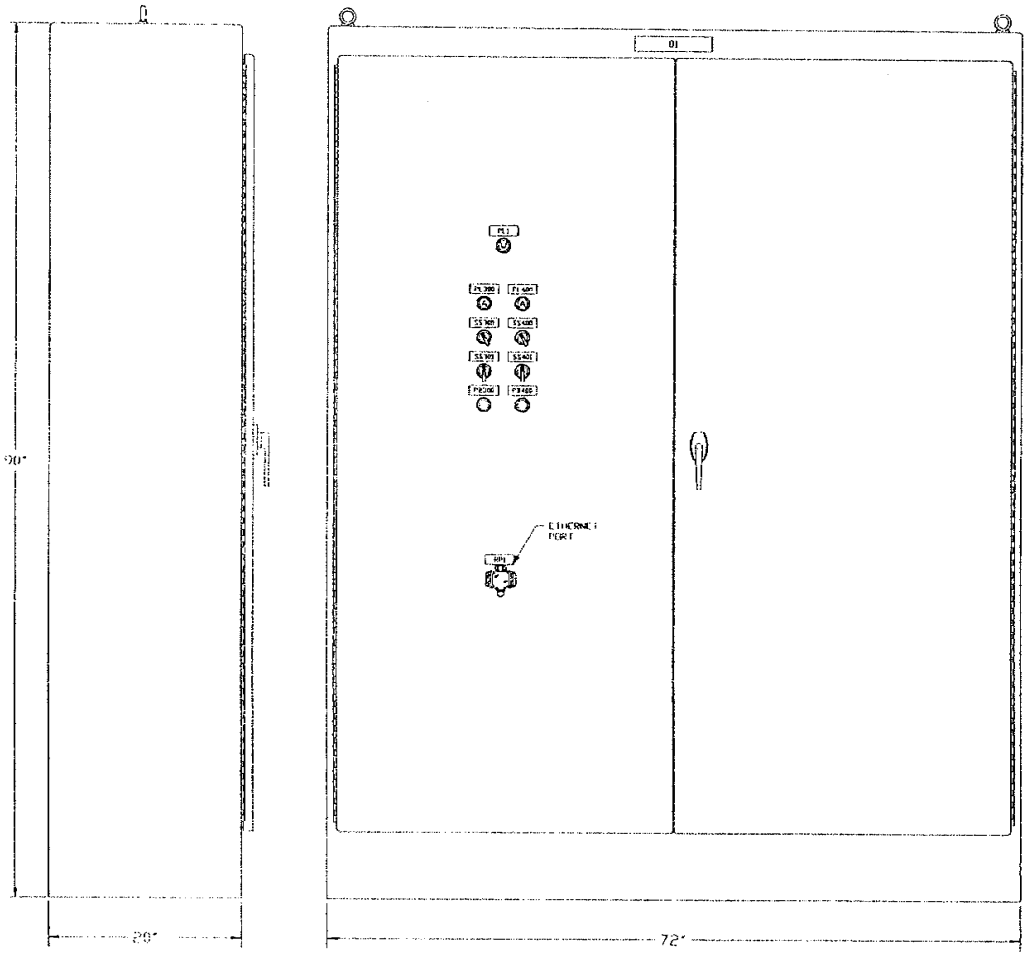
DATE LAST EDITED 2/15/2007

DATE	3/16/06	PROJECT
DWN.	JA	
CKD.	GK	MCC-10 BUCKET DETAILS
ENGR.	BA	
ASSEM.		
SHEET	11 OF 149	

PROJ. NO.

DWG. NO. 004

Sample Exterior Layout Drawing



SIDE VIEW

FRONT VIEW

NAMEPLATE SCHEDULE					
TAG	DESC1	DESC2	DESC3	SIZE	REMARKS
01	SCC-10			15x8	
PB300	RESET			1X3	
PB400	RESET			1X3	
PL1	POWER ON UPS			1X3	
PL300	INFLUENT	WET WELL NO1	BACKUP FLOATS ACTIVE	1X3	
PL400	INFLUENT	WET WELL NO2	BACKUP FLOATS ACTIVE	1X3	
SS300	BACKUP FLOATS	ON - AUTO		1X3	
SS301	LEAD PUMP	03 - AUTO - 05		1X3	
SS400	BACKUP FLOATS	ON - AUTO		1X3	
SS401	LEAD PUMP	04 - AUTO - 06		1X3	
RP1	ETHERNET	PROGRAMMING PORT		1X3	

NAMEPLATES ARE BLACK WITH WHITE LETTERS

NOTES

1. ENCLOSURE IS A NEMA TYPE 12 FREESTANDING HOFFMAN A-9072208FSD WITH INNER PANEL HOFFMAN A-90P72E1
2. FINISH IS ANSI 61 GRAY
3. UL# BF-3171536

SCALE

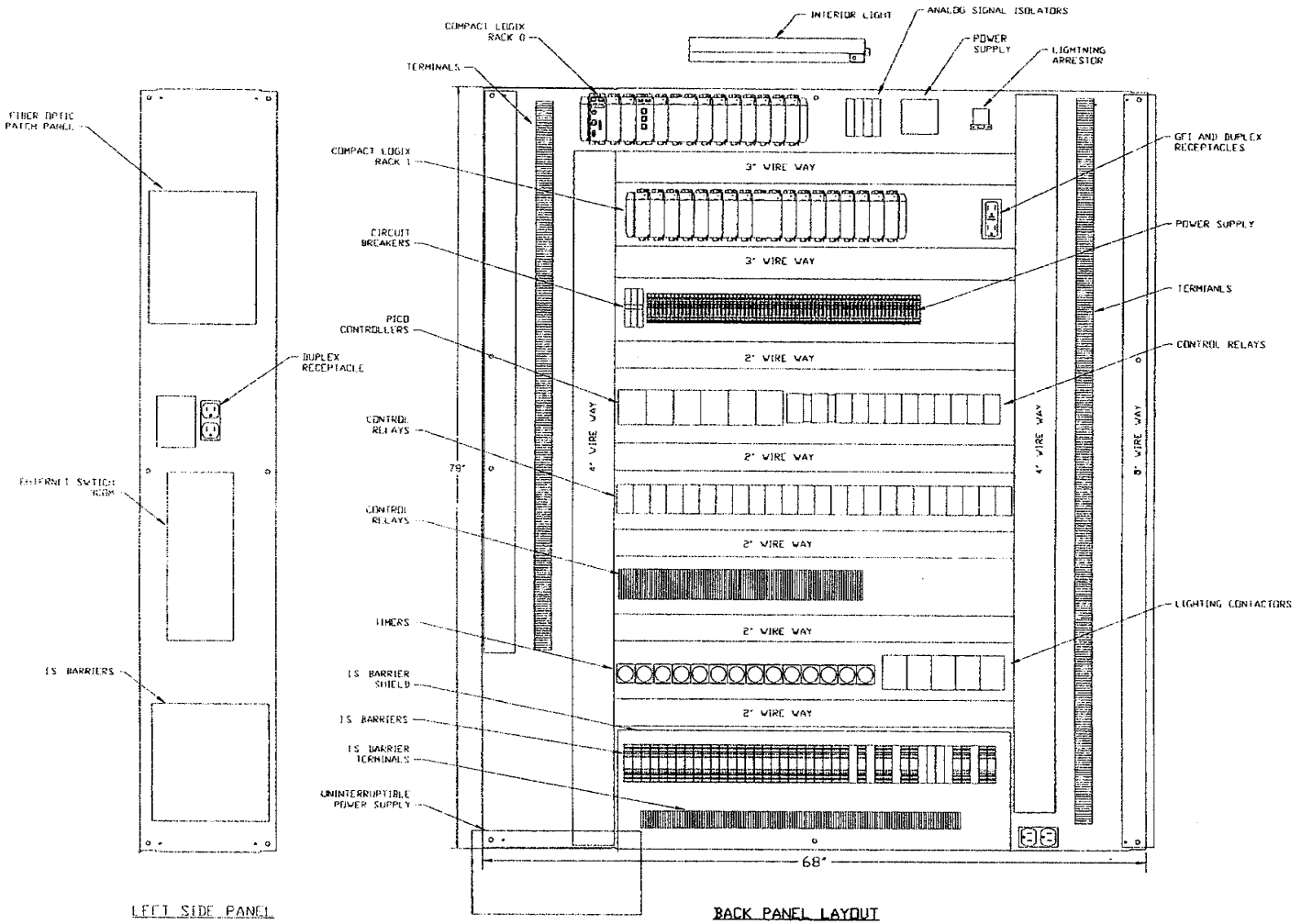
0 6" 12" 24"

DATE LAST EDITED 2/15/2007

REVISION	
DATE	DESCRIPTION
6/13/05	RELEASE FOR CONSTRUCTION
9/6/06	AS BUILT
2/15/07	AS INSTALLED

DATE	3/16/06	PROJECT
DWN.	JA	
CKD.	GK	SCC-10 ENCLOSURE DETAIL
ENGR.	BA	PROJ. NO. -
ASSEM.		DWG. NO. 001
SHEET	1 OF 149	

Sample Exterior Layout Drawing



SCALE

0 6" 12" 24"

REVISION	
DATE	DESCRIPTION
6/13/05	RELEASE FOR CONSTRUCTION
9/6/06	AS BUILT
2/15/07	AS INSTALLED

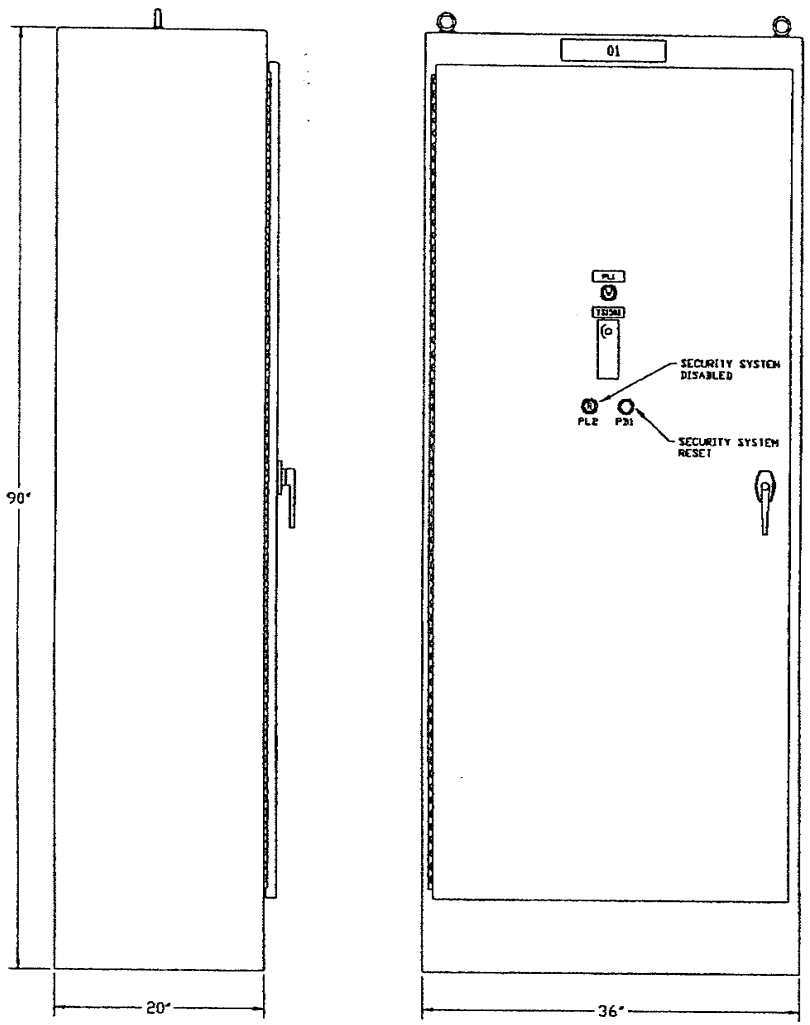
DATE LAST EDITED 2/15/2007

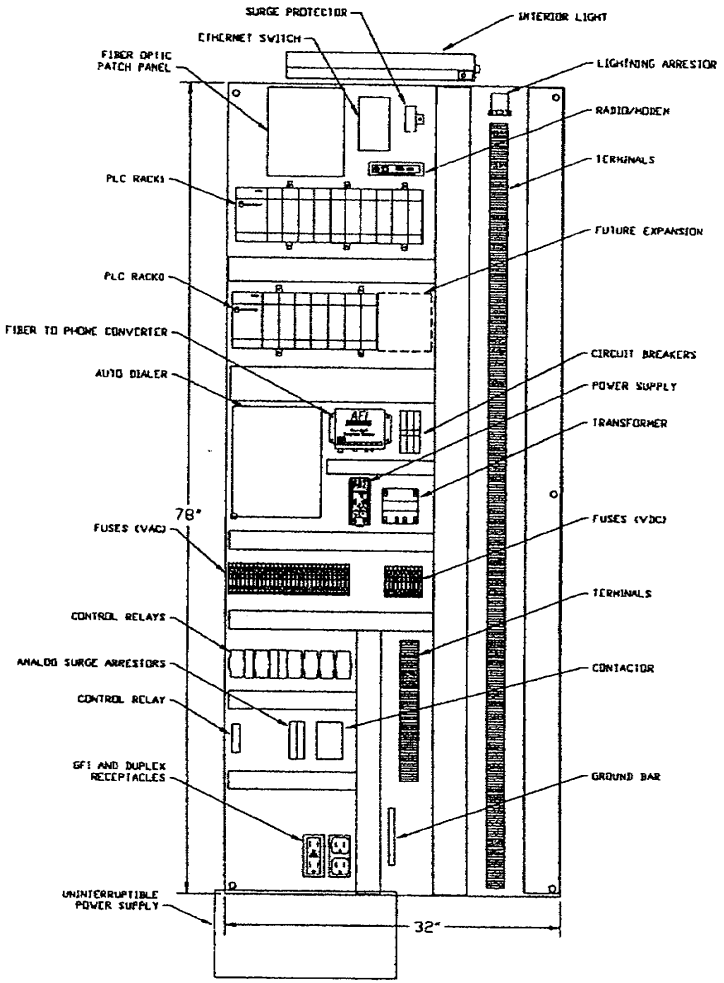
DATE	3/16/06	PROJECT
DWN	JA	SCC-10 BACK PANEL LAYOUT
CKD.	GK	
ENGR.	BA	
ASSEM.		
SHEET	2 OF 149	

PROJ. NO.

DWG. NO. 002

Sample Interior Layout Drawing





PANEL LAYOUT

NOTES:

1. ENCLOSURE IS A NEMA TYPE 12 FREESTANDING HOFFMAN A903620FS, WITH INNER PANEL HOFFMAN A90P36FI.
2. FINISH IS ANSI 61 GRAY.
3. UL 508A

NAMEPLATE SCHEDULE					
TAG	LINE 1	LINE 2	LINE 3	SIZE	REMARKS
01	SCC-MAIN			2x10	
PL1	POWER ON UPS			1X3	
TS1560	LOW BUILDING TEMPERATURE			1X3	

NAMEPLATES ARE BLACK WITH WHITE LETTERS

SCALE

0 6" 12" 24"

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NOT FOR CONSTRUCTION
DATE LAST EDITED: 12/6/2007

REVISION	
DATE	DESCRIPTION

DATE	11/12/2007
DWN	JA
CKD.	GK
ENGR.	JJ
ASSEM.	
SHEET	1 OF 34

PROJECT

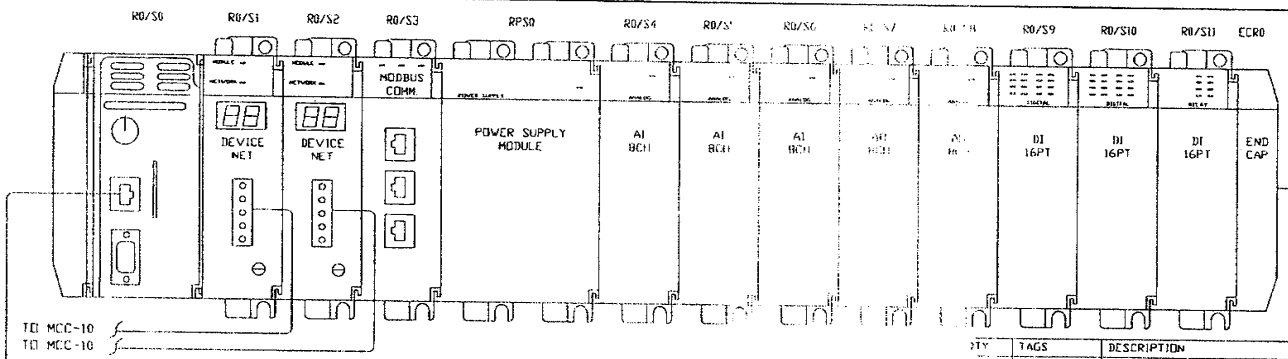
SCC-MAIN
ENCLOSURE DETAIL

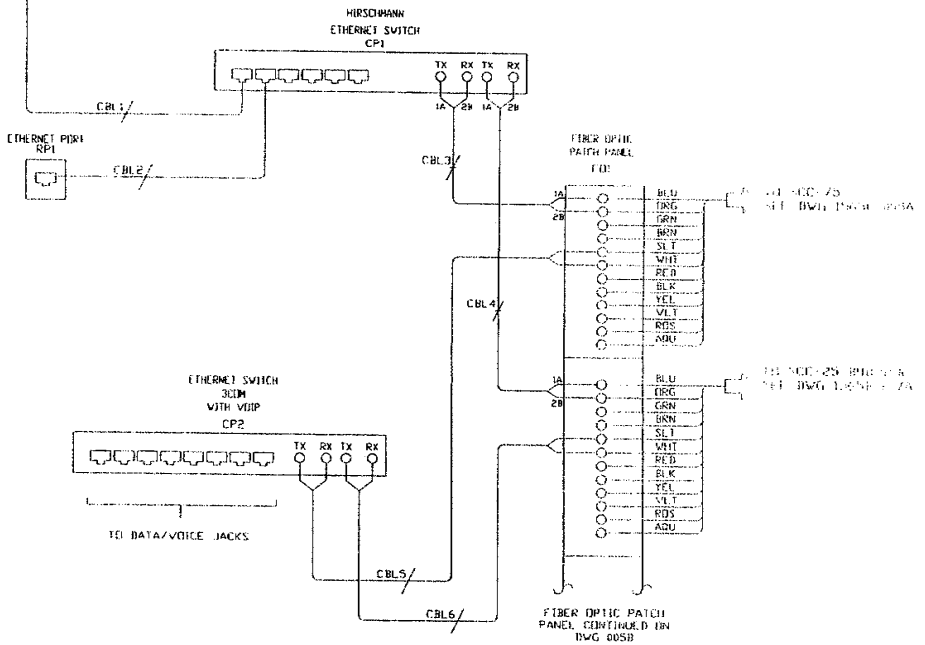
PROJ. NO.

DWG. NO. 001

Sample Exterior and Interior Layout Drawing

COMPACT LOGIX I/O SCHEDULE





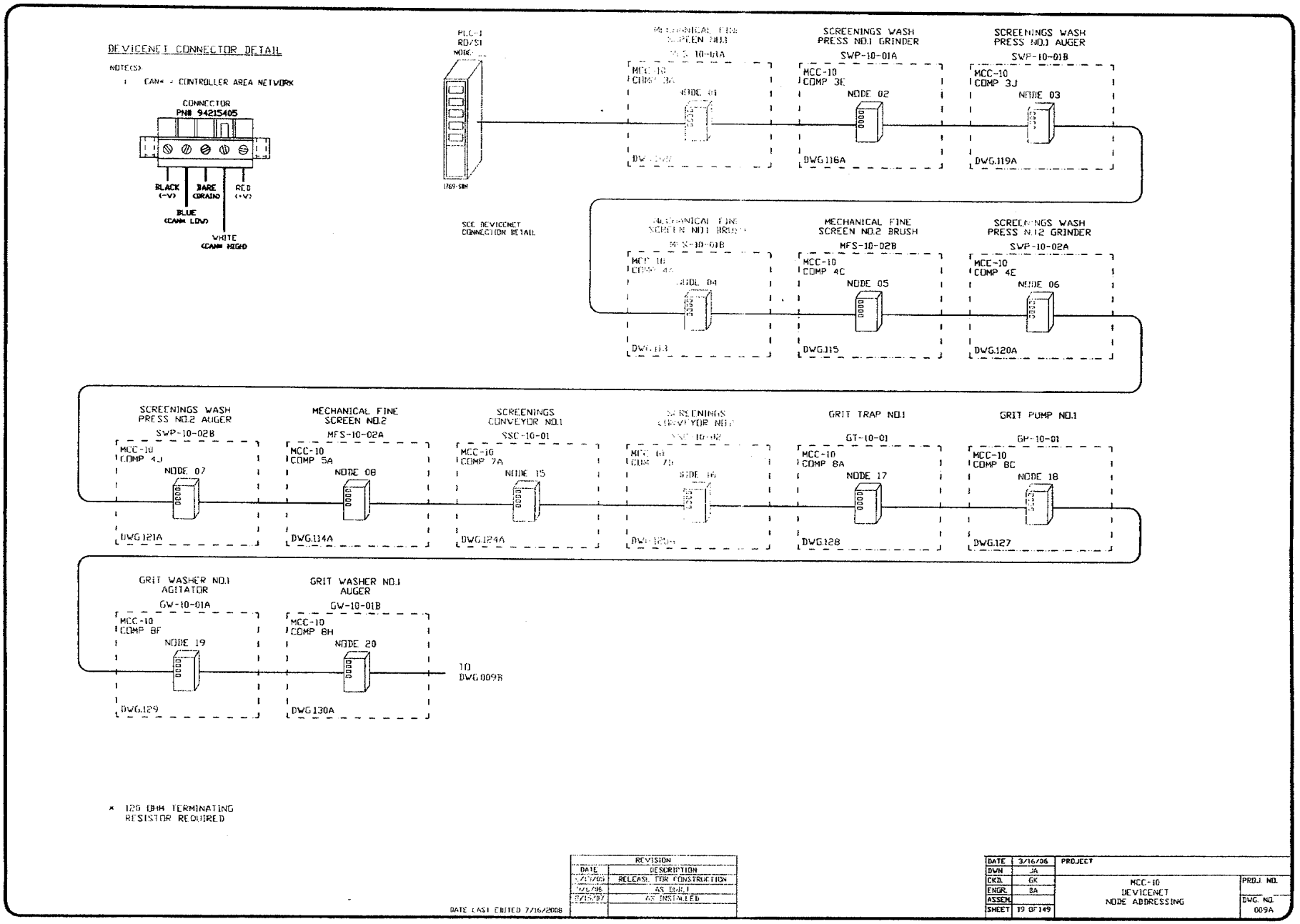
QTY	TAGS	DESCRIPTION	MFG	CATALOG
	RO/S0	PLC PROCESSOR CPU COMPACT LOGIX, 1.5MB MEMORY 120V AC	ALLEN BRADLEY	1769-L35E
	RPS0	COMPACT LOGIX POWER SUPPLY 120V AC	ALLEN BRADLEY	1769-PA4
	RO/S1 RO/S2	PLC COMM MODULE DEVICENET SCANNER	ALLEN BRADLEY	1769-SDN
	RO/S2	PLC ADDRESS RESERVE MODULE 1769 COMPACTLOGIX 5VDC 60mA	ALLEN BRADLEY	1769-ARM
	RO/S3	MODBUS INTERFACE MODULE MODBUS MASTER/SLAVE COMM. MODULE	PROSOFT	MVI69-MCM
	RO/S4 RO/S5 RO/S6	PLC ANALOG I/O MODULE 8 ANALOG INPUTS (+/-10VDC, +/-20mA) 14 BIT RESOLUTION	ALLEN BRADLEY	1769-IF8
	RO/S7 RO/S8	PLC ANALOG I/O MODULE 1769-OF8C 16 BIT RESOLUTION (8) 4-20MA	ALLEN BRADLEY	1769-OF8C
	RO/S10 RO/S11 RO/S9	PLC DIGITAL I/O MODULE 16 POINT INPUT - GENERAL PURPOSE 85-132V AC (INPUTS)	ALLEN BRADLEY	1769-IA16
	ECR0	EXPANDABLE RACK RIGHT SIDE END CAPS	ALLEN BRADLEY	1769-CRR1
	RP1	ETHERNET PORT CAT 5 RJ45 F/F BULKHEAD GRACEPORT CAT 5 LOW VOLTAGE (DATA)	GRACE ENG PRODUCTS	P-R2-B3
	CP1	MANAGED ETHERNET SWITCH / MEDIA CONVERTER RS20-0800M2M2SDAEH01.0 (2) 100BASE-FX SC FIBER OPTIC (6) 10/100 BASE-TX COPPER	HIRSCHMANN	943 434-003
	CP2	ETHERNET SWITCH 2226-PWR PLUS 10/100 AUTOSENSING WITH 3CSFP91 FIBER OPTIC TRANSCEIVER (24) 10/100 PORTS	3COM	3C16490-US
	CP2	1000BASE-SX SFP TRANSCEIVER 2226-PWR PLUS 1000BASE-SX FIBER OPTIC ETHERNET	3COM	3CSFP91
	FO1	FIBER OPTIC PATCH PANEL FTU4SP (4) ADAPTER PANELS	HUBBELL	FTU4SP
	FO1	ADAPTER MODULES BLUE 6 SC DUPLEX BULKHEADS	HUBBELL	FSPSC06
	CBL1 CBL2	UTP PATCH CABLE PCXSE803 CAT 5E RJ45	HUBBELL	PCXSE803
	CBL3 CBL4	FIBER OPTIC PATCH CABLE 1 METER (1 PAIR) (2) FIBERS SC MM 62.5	HUBBELL	DFPCSCSCC1MM
	CBL5 CBL6	FIBER OPTIC PATCH CABLE 2 METER (1 PAIR) (2) FIBERS SC-LC MM 62.5	HUBBELL	DFPCLCSCC2MM

REVISION	
DATE	DESCRIPTION
12/15/06	RELEASE FOR CONSTRUCTION
12/15/06	AS-BUILT FILED
2/15/07	

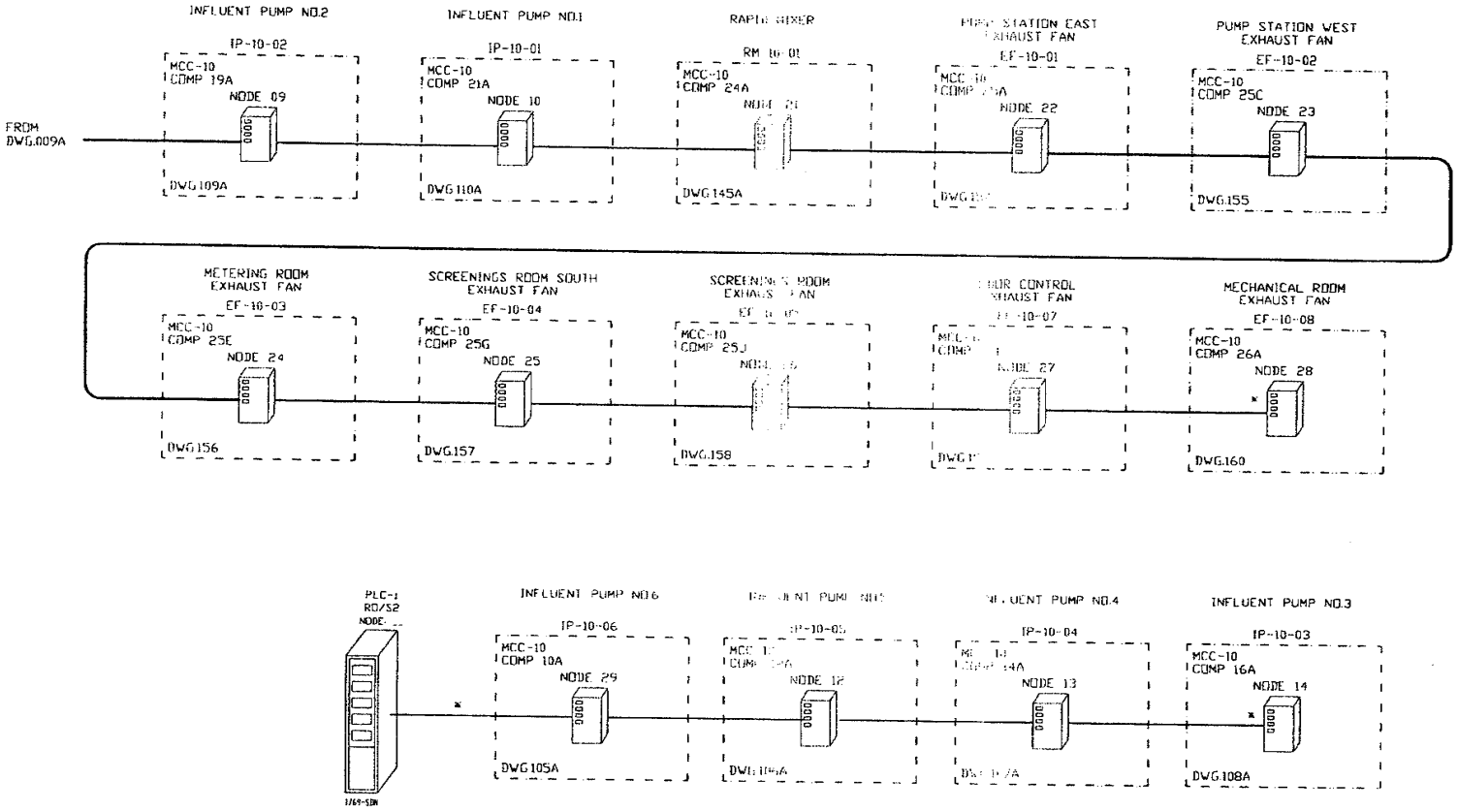
DATE LAST EDITED 11/13/2007

DATE	3/[illegible]/06	PROJECT	
DWN	A	SCC-10 PLC I/O SCHEDULE	PROJ. NO.
CKD	K		
ENGR.	EA		DWG. NO. 008A
ASSEM.			
SHEET	17 OF 149		

Sample Interconnection Diagram



Sample Network Diagram



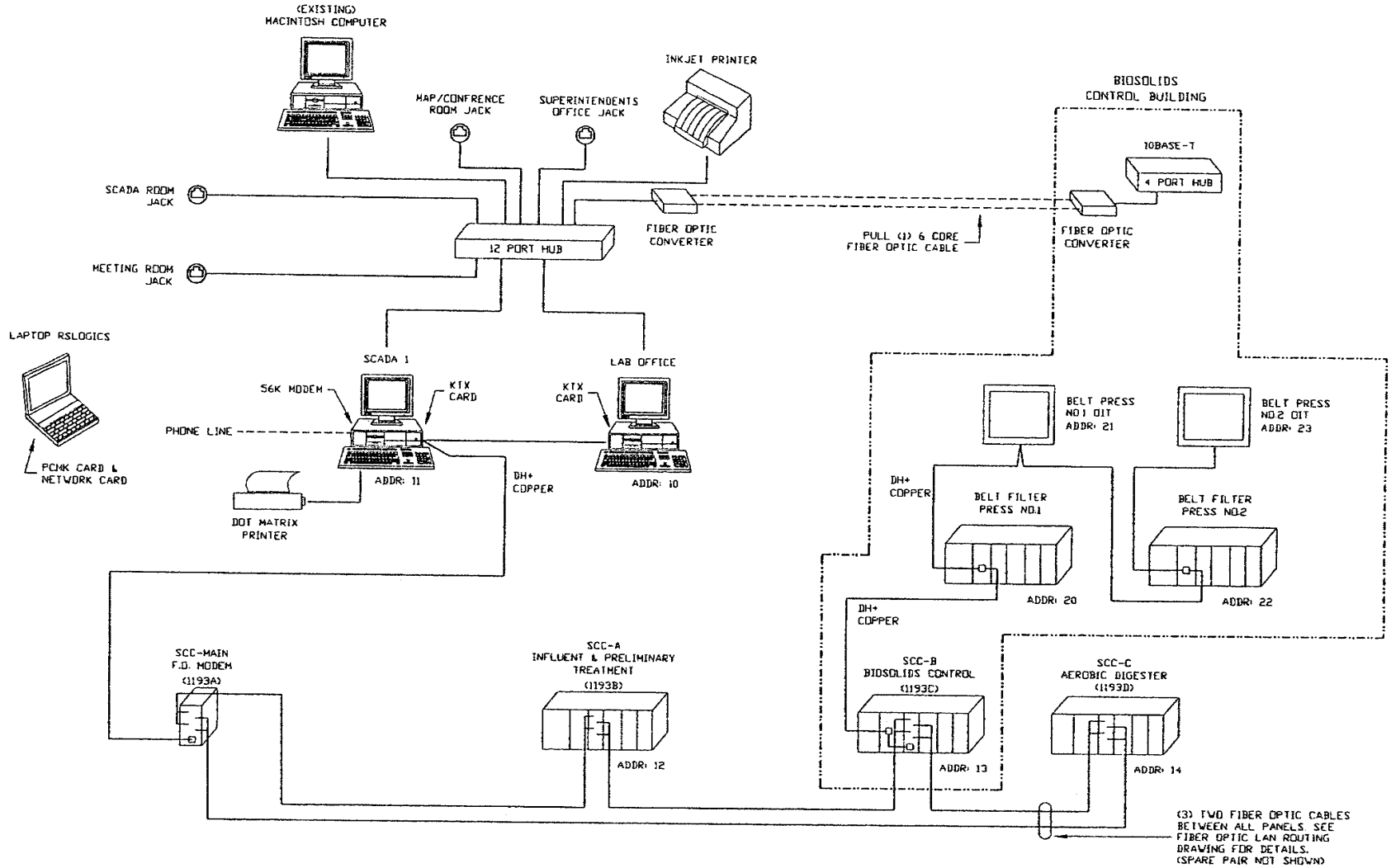
■ 120 OHM TERMINATING RESISTOR REQUIRED

REVISION	
DATE	DESCRIPTION
6/21/05	RELEASE FOR CONSTRUCTION
12/19/06	AS BUILT
2/15/07	AS INSTALLED

DATE LAST EDITED 7/16/2008

DATE	3/10/06	PROJECT
DWN	JA	
CKD	GK	MCC-10 DEVICENET NODE ADDRESSING
ENGR	BA	PROJ. NO.
ASSEM.		DWG. NO. 009B
SHEET	28 OF 149	

Sample Network Diagram



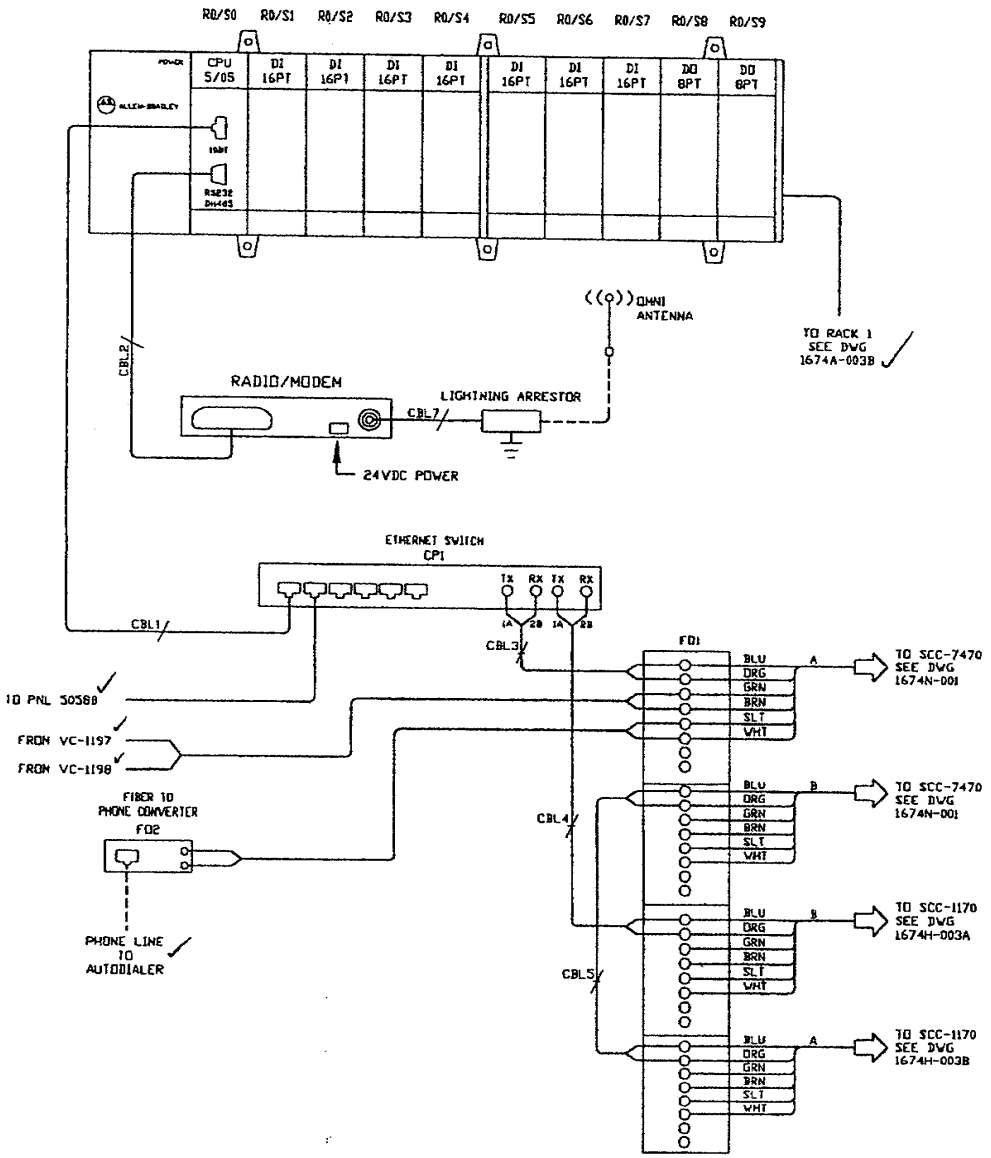
REVISION	
DATE	DESCRIPTION

DATE	3/12/01	PROJECT
DWN	JA	
CKD.	GK	SCADA SYSTEM LAYOUT
ENGR.	PS	PROJ. NO.
ASSEM.		
SHEET	OF	DWG. NO. 001

DATE LAST EDITED 02/09/01

Sample Network Diagram

SLC500 I/O SCHEDULE



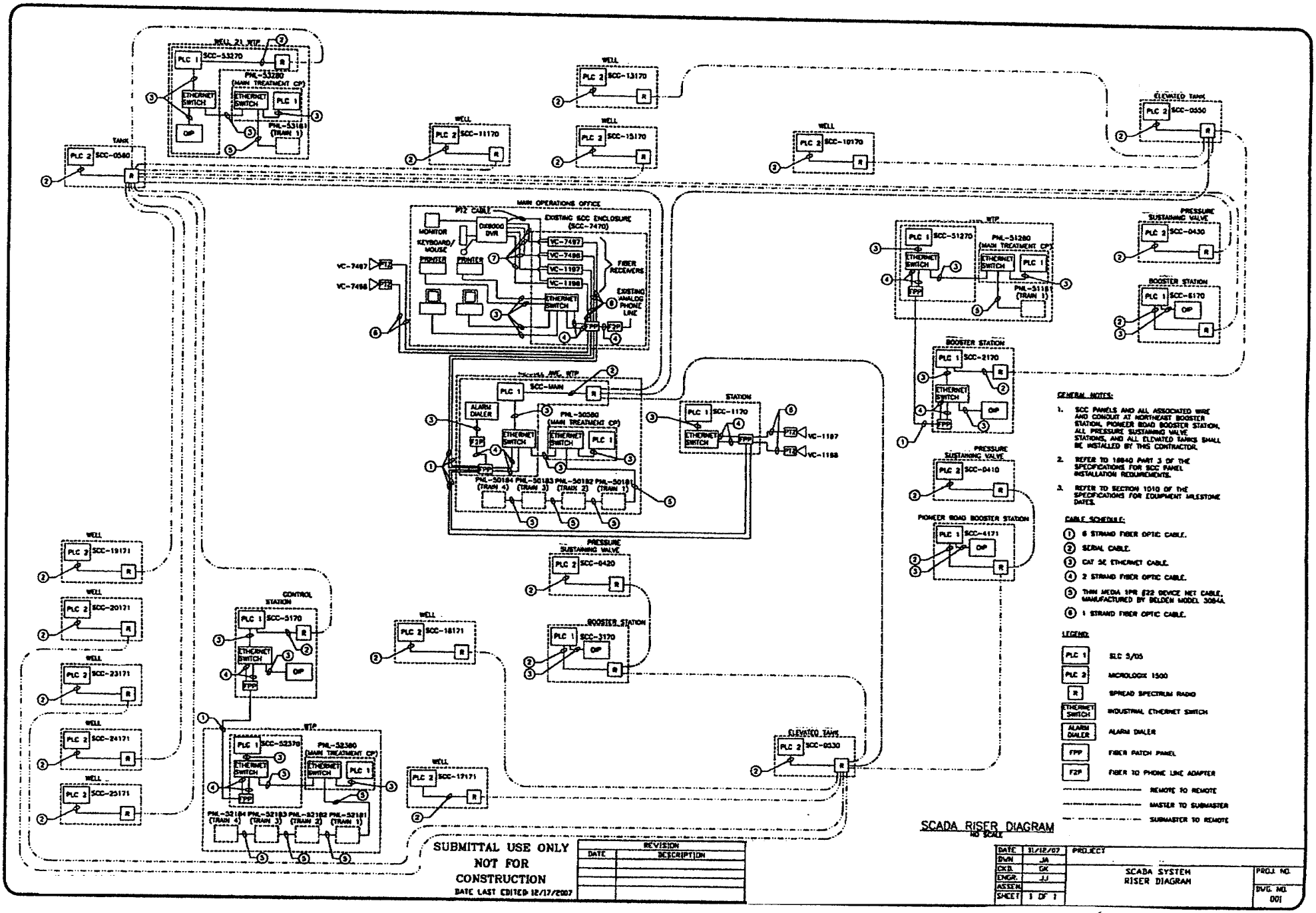
QTY	TAGS	DESCRIPTION	MFG	CATALOG
1	R0	PLC RACK 10 SLOT BASE RACK	ALLEN BRADLEY	1746-A10
1	RPS0	PLC POWER SUPPLY RACK POWER SUPPLY (5A @ 5VDC) 120/240V AC	ALLEN BRADLEY	1746-P2
1	R0/S0	PLC CPU WITH ETHERNET CPU 5/05 WITH 32K MEMORY	ALLEN BRADLEY	1747-LS52
7	R0/S1 R0/S2 R0/S3 R0/S4 R0/S5 R0/S6 R0/S7	PLC DIGITAL I/O MODULE 16 POINT INPUT - GENERAL PURPOSE 85-132V AC	ALLEN BRADLEY	1746-IA16
2	R0/S8 R0/S9	PLC DIGITAL I/O MODULE 8 POINT RELAY CONTACT OUTPUT (ISOLATED) 3A @ 120V AC	ALLEN BRADLEY	1746-OX8
1	CP1	8 PORT ETHERNET HUB RS20-0800M2M2DAEHH01.0 10/100 MBIT/S AUTOSENSING (2) SC DUPLEX FIBER OPTIC (6) RJ45 PORTS	HIRSCHMANN	943 434-021
1	FO1	FIBER OPTIC PATCH PANEL, BLACK SWIC3-M	SIEMON COMPANY	SWIC3-M-01
4	FO1	ST BULKHEAD CONNECTOR MODULE RIC-F-SC8-01	SIEMON COMPANY	RIC-F-SC8-01
1	FO2	TELEPHONE LINE EXTENDER 86 SERIES 12VAC 500mA N/A N/A	AMERICAN FIBERTEK	MT-86CC
1	CBL1	UTP PATCH CABLE PCX5E CAT 5E RJ45	HUBBELL	PCX5EB03
1	CBL2	SERIAL COMMUNICATIONS CABLE 1001 3 FEET DB9F/DB9M STRAIGHT THROUGH	CABLE WHOLESALE	1001-03203
3	CBL3 CBL4 CBL5	FIBER OPTIC PATCH CABLE 1 METER (1 PAIR) (2) FIBERS SC MM 62.5 SC MM 62.5	HUBBELL	DFPCSCSCCIMM
1	CBL7	ANTENNA CABLE RG142B/U RG142 - 3FT LENGTH NMALE - TNC	TESSCO	448350

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DATE LAST EDITED: 12/6/2007

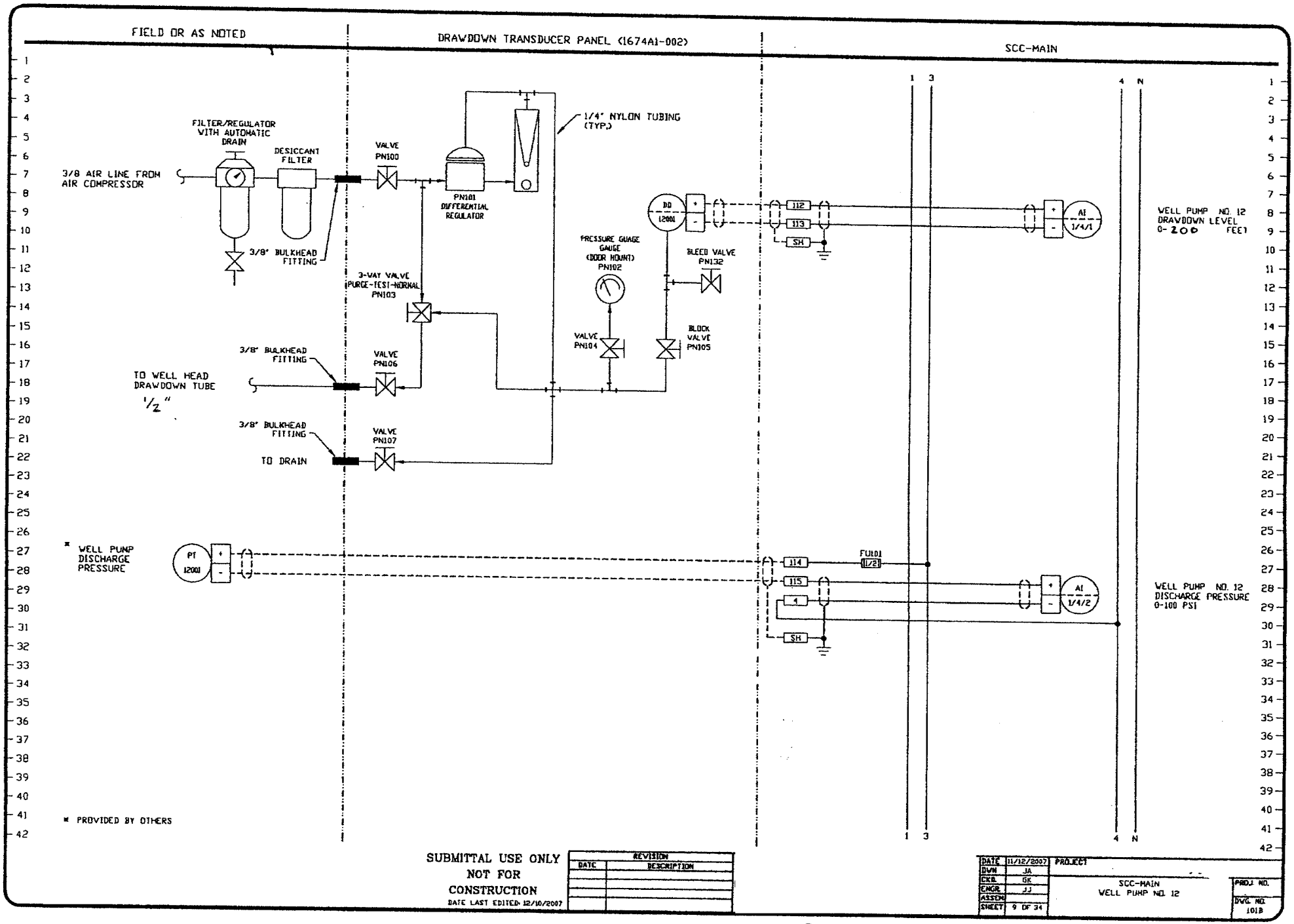
REVISION	
DATE	DESCRIPTION

DATE	01/12/2007	PROJECT
DWN	JA	
CKD.	GK	SCC-MAIN PLC I/O SCHEDULE
ENGR.	JJ	PROJ. NO.
ASSGN.		
SHEET	3 OF 34	DWG. NO. 003A

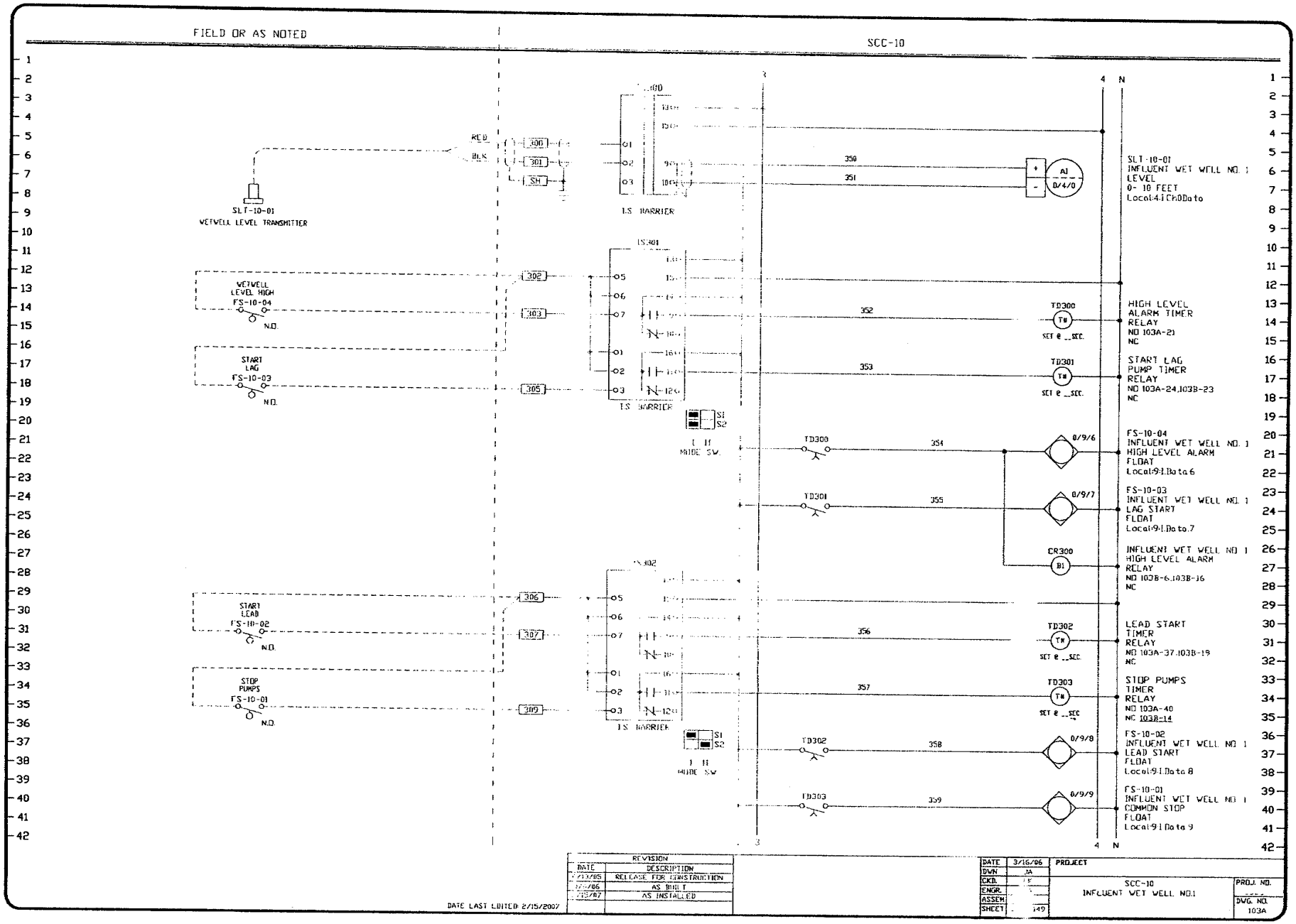
Sample Interconnection Diagram



Sample Interconnection Diagram



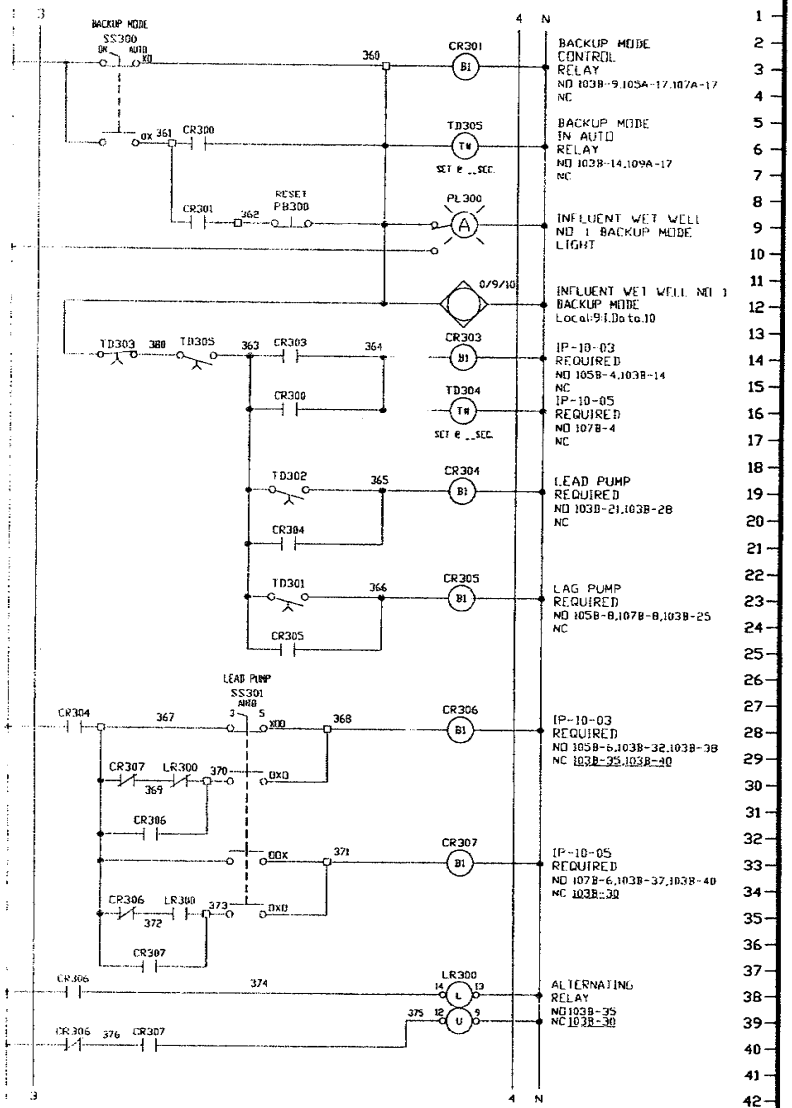
Sample Elementary schematic



Sample Elementary schematic

FIELD OR AS NOTED

SCC-10



REVISION	
DATE	DESCRIPTION
7/13/05	RELEASE FOR CONSTRUCTION
2/5/06	AS BUILT
7/13/07	AS INSTALLED

DATE	3/16/06
DWN	JA
CKD.	CR
ENGR.	
ASSES.	
SHEET	9

PROJECT

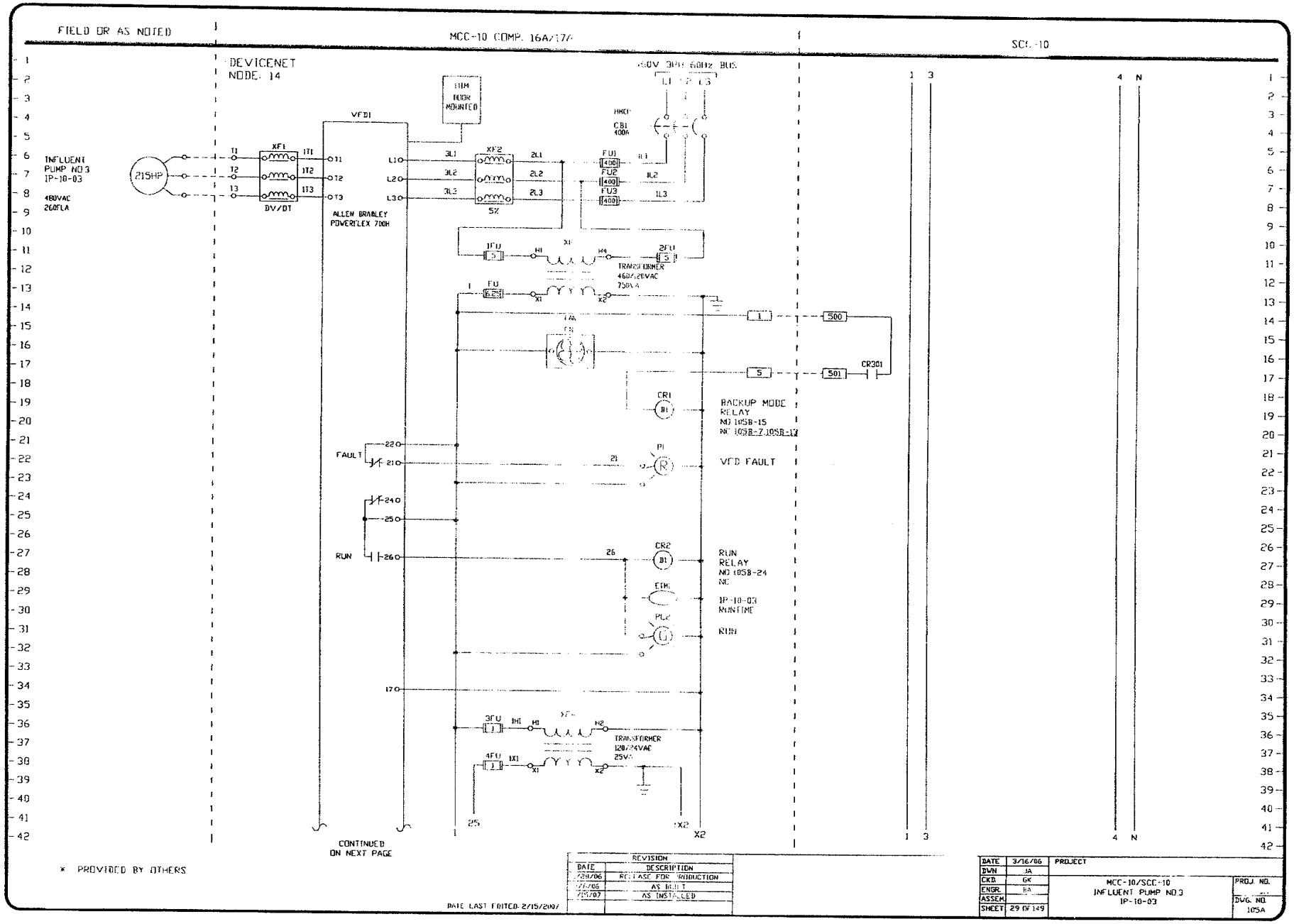
SCC-10
INFLUENT WET WELL NO1

PROJ. NO.

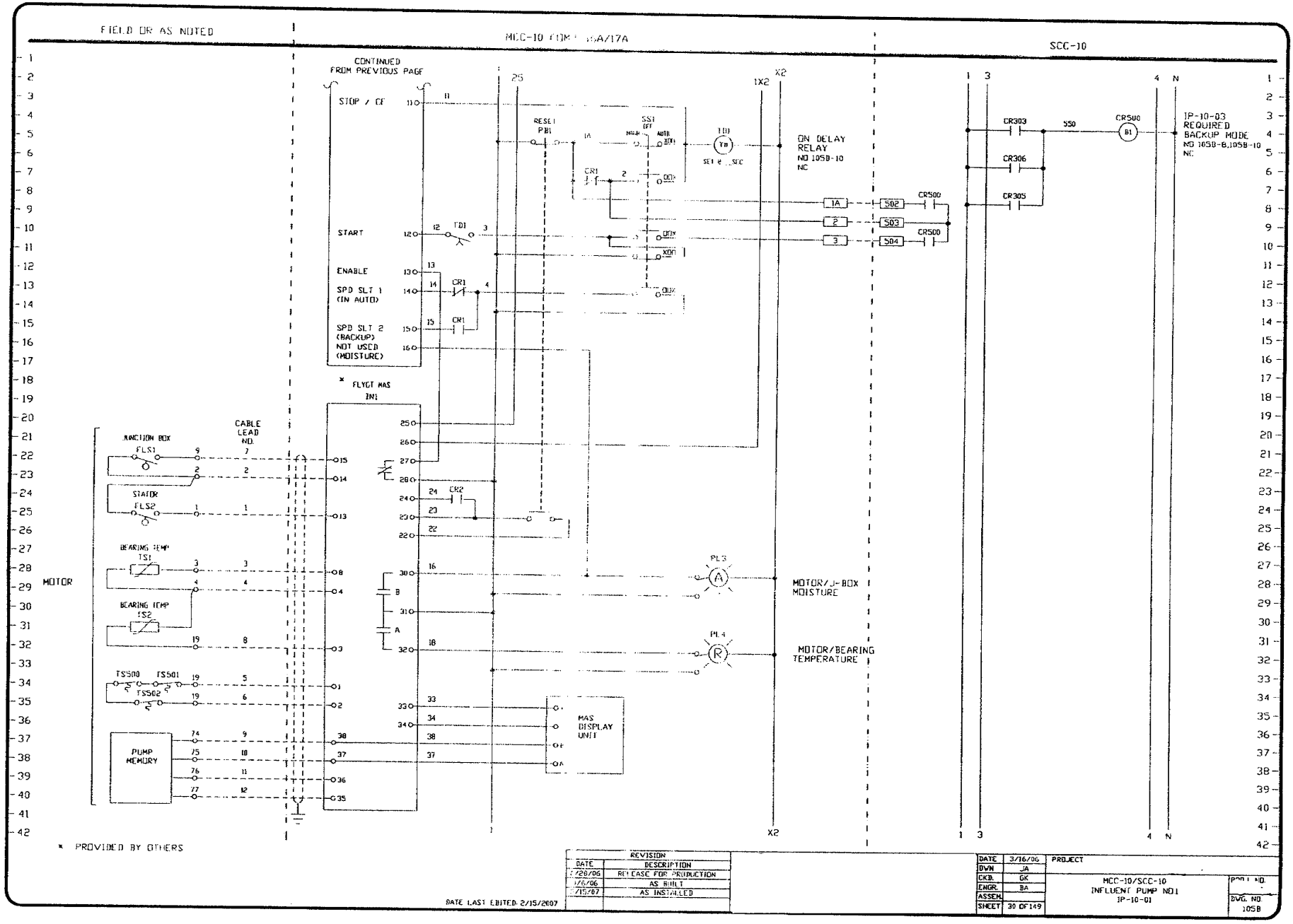
DWG. NO.
103B

DATE LAST EDITED 2/15/2007

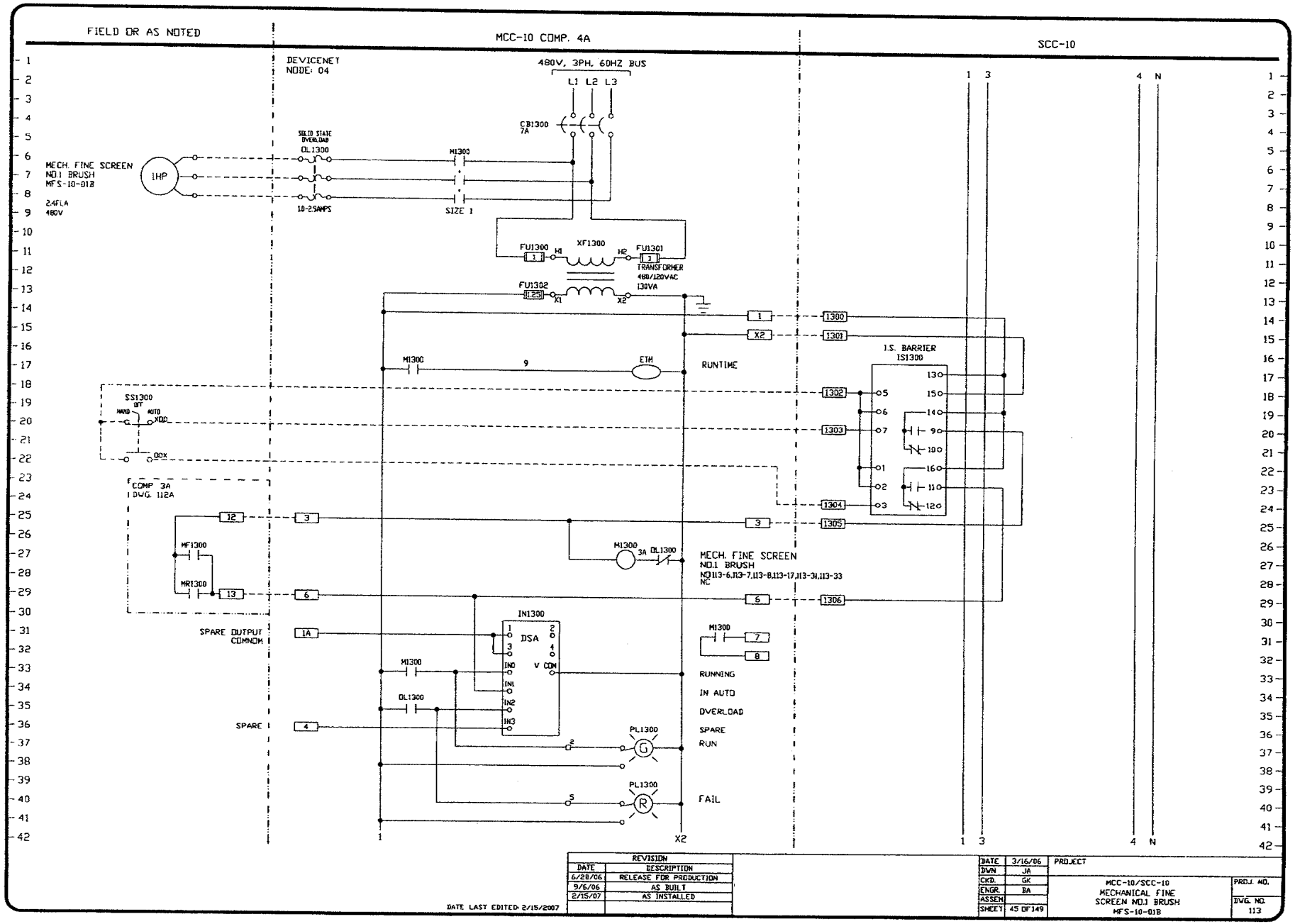
Sample Elementary Schematic



Sample Elementary schematic



Sample Elementary Schematic



REVISION	
DATE	DESCRIPTION
6/28/06	RELEASE FOR PRODUCTION
9/6/06	AS BUILT
2/15/07	AS INSTALLED

DATE LAST EDITED 2/15/2007

DATE	3/16/06
DWN	JA
CKD	GK
ENGR.	BA
ASSEM.	
SHEET	45 OF 149

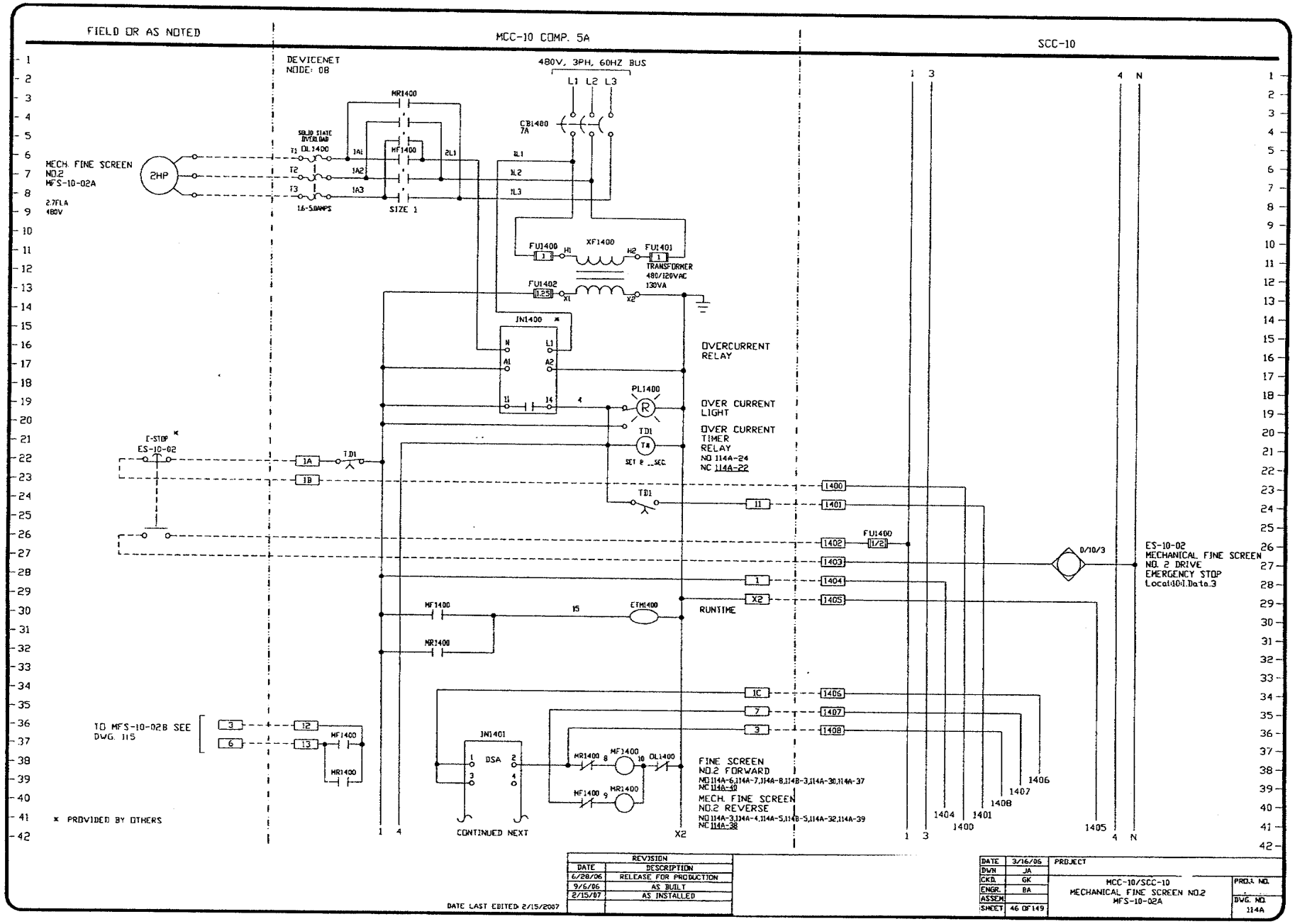
PROJECT

MCC-10/SCC-10
MECHANICAL FINE
SCREEN NO.1 BRUSH
MFS-10-01B

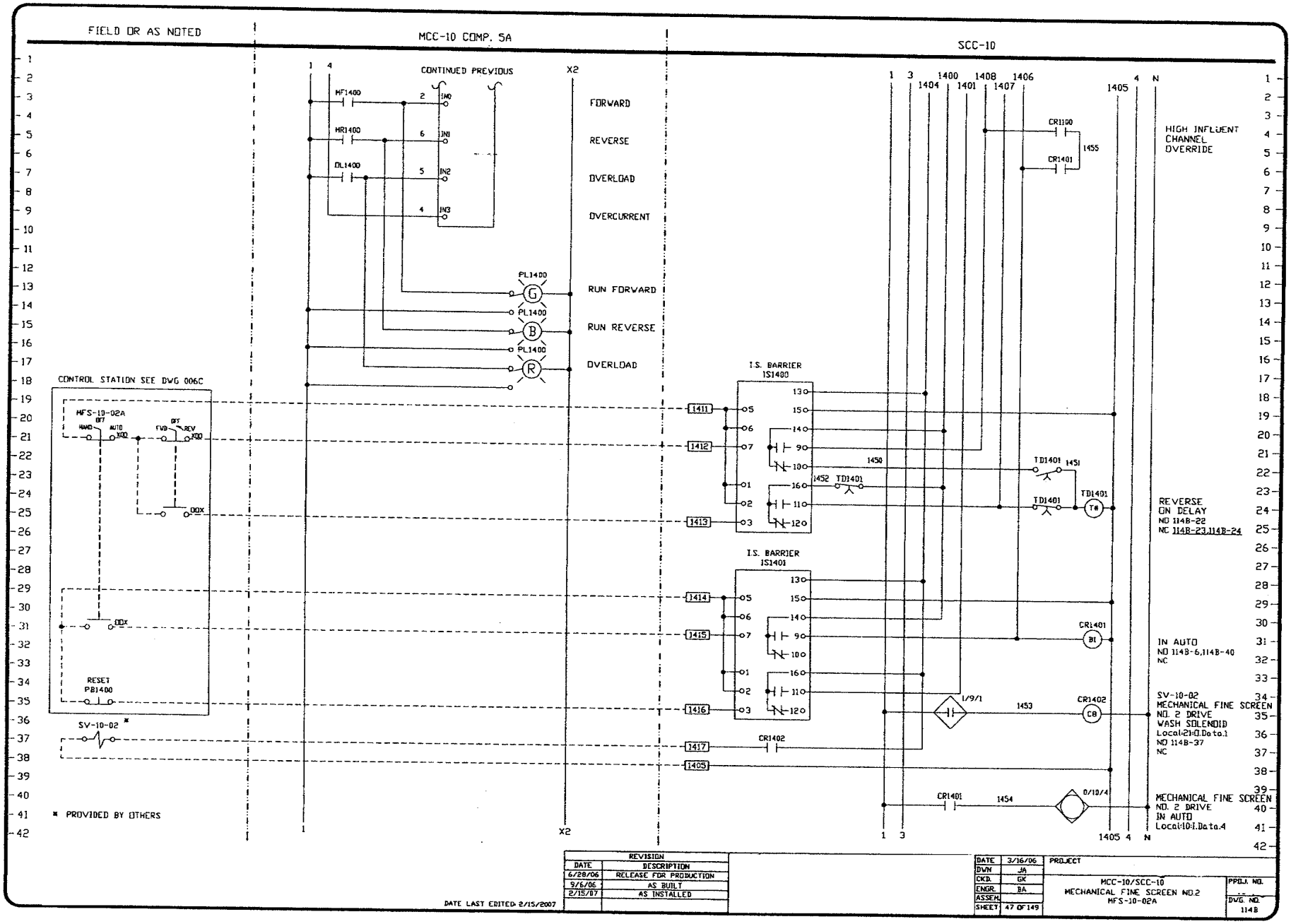
PROJ. NO.

DWG. NO. 113

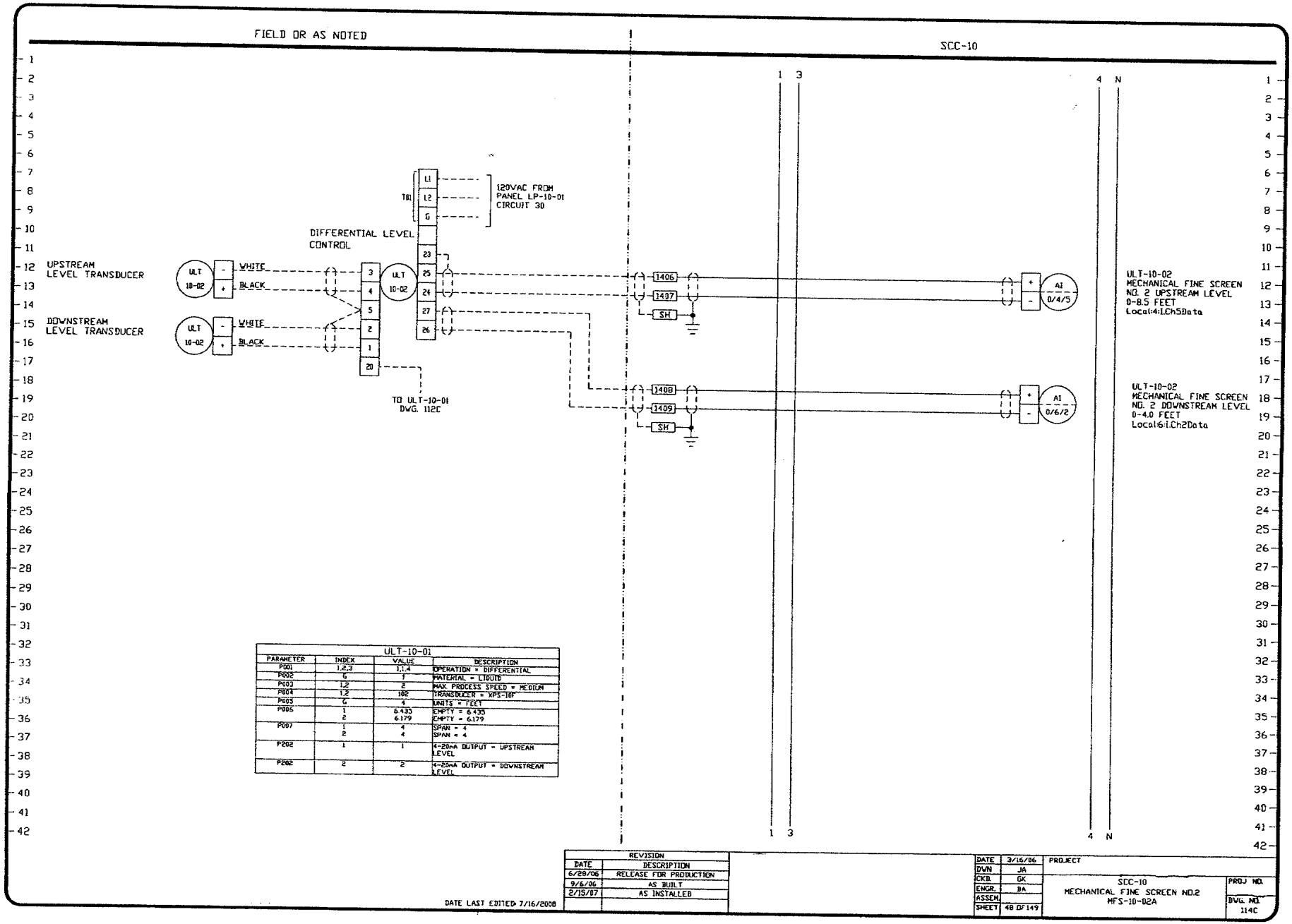
Sample Elementary schematic



Sample Elementary Schematic



Sample Elementary Schematic



ULT-10-01

PARAMETER	INDEX	VALUE	DESCRIPTION
P001	1,2,3	1,1,4	OPERATION = DIFFERENTIAL
P002	G	1	MATERIAL = LIQUID
P003	1,2	2	MAX. PROCESS SPEED = MEDIUM
P004	1,2	102	TRANSDUCER = XPS-10F
P005	G	4	UNITS = FEET
P006	1	6.435	EMPTY = 6.435
	2	6.179	EMPTY = 6.179
P007	1	4	SPAN = 4
	2	4	SPAN = 4
P202	1	1	4-20mA OUTPUT = UPSTREAM LEVEL
P202	2	2	4-20mA OUTPUT = DOWNSTREAM LEVEL

DATE LAST EDITED: 7/16/2008

REVISION	
DATE	DESCRIPTION
6/28/06	RELEASE FOR PRODUCTION
9/6/06	AS BUILT
2/15/07	AS INSTALLED

DATE	3/16/06
DWN	JA
CKD.	GK
ENGR.	BA
ASSEM.	
SHEET	48 OF 149

PROJECT: SCC-10 MECHANICAL FINE SCREEN NO.2 MFS-10-02A

PROJ NO.

DWG. NO. 114C

Sample Elementary Schematic

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GEOTECHNICAL REPORT

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SEPTEMBER 28, 2022
SEECO JOB NO. 13085G

GEOTECHNICAL ENGINEERING STUDY FOR COMBINDER SEWER OVERFLOW LONG TERM CONTROL PLAN, PHASE IV, EASTSIDE & WESTSIDE COMBINED SEWER OVERFLOW REGULATOR MODIFICATIONS FOR THE CITY OF JOLIET, ILLINOIS

PREPARED FOR:

CITY OF JOLIET, ILLINOIS
150 WEST JEFFERSON STREET
JOLIET, ILLINOIS 6043
ENGINEERING DEPARTMENT
MR. OWEN DEAN, P.E.

PREPARED BY:

SEECO CONSULTANTS, INC.
7350 DUVAN DRIVE
TINLEY PARK, ILLINOIS 60477
(708) 429-1666

TABLE OF CONTENTS

PAGE

REPORT SUMMARY 1

Project Authorization 2

GENERAL PROJECT DESCRIPTION 2

ENVIRONMENTAL SOIL SAMPLING AND SCREENING 2

GEOTECHNICAL ANALYSIS & RESULTS 3

Subsurface Exploration Procedures 3

Geotech Laboratory Testing Program 4

Soil Conditions 5

Bedrock Conditions 6

Site Groundwater Conditions 7

UNCONTAMINATED SOIL CERTIFICATION SERVICES 7

GEOTECHNICAL ENGINEERING RECOMMENDATIONS 9

Foundation Engineering Summary 10

Main Structures 10

Design Lateral Earth Pressure Parameters 14

Site Classification for Seismic Design 16

Site Soil Excavations 16

Trench Backfill 17

Pipe Bedding 17

POTENTIAL CONSTRUCTION PROBLEMS 17

Bedrock Excavation 17

Groundwater 18

CONSTRUCTION CONSULTATION ENGINEERING 18

CLOSING REMARKS 19

APPENDIX 20

REPORT SUMMARY

Strand Associates, Inc. is in the process of designing improvements for five (5) CSO regulators for the City of Joliet, Illinois. The improvements include the installation of cast in place concrete mat slab screening structures, manholes, buried piping and site work. The five (5) screening structures vary in size and depths and are shown on Strand Associates preliminary plans for geotech engineering review dated 9/23/2022 from Mr. Phil Bzdusek, P.E., Strand Associates, Inc. with the other manhole structure modifications.

Fourteen (14) borings were made for this exploration and investigation between 8/17/22 to 9/1/22 inclusive. Boring B-10A was an extra boring authorized by the City of Joliet Engineering Department since B-10 soil boring hit a reinforced concrete pipe filled with crushed stone at 17 feet below finished pavement grade on Washington Street.

This geotechnical engineering study consists of borings and rock coring for five (5) new regulatory structures for the subject project as well as 5 new manhole structures for City of Joliet Combined Sewer Overflow (CSO) Long Term Control Plan – Phase IV East side and West side CSO regulatory structures.

These regulator structures are as follows:

CSO 004 – Granite Street
CSO 007 – West Duncan Street
CSO 009 – East Duncan Street
CSO 011 – Wallace Street
CSO 017 – Benton Street

and five (5) manhole structures one by CSO 010 McDonough Street 15337A north side of CSO 010 and CSO 012 Washington Street Junction Structure 1547A will now be a new Doghouse Manhole and another New Manhole and add a bigger size pipe to 24 inches between the two (2) new manholes. See Strand Plan Sheet 12-01.01 and CSO 017 - 3 Manholes and CSO 017 – South Manhole – Benton Street and CSO 011 South Manhole – Wallace Street.

The **Boring Location Plans** and the individual **Soil and Rock Core Logs** are found in the **Appendix** of this report.

Boring B-1 and B-10 both encountered a concrete pipe. Boring B-1 encountered an unmarked concrete pipe at approximately 2.5 feet below the top of pavement grade at this boring location and Boring B-10 encountered an unmarked reinforced concrete pipe at approximately 17.0 feet below existing top of pavement at its location on Washington Street.

The body of this report will give the maximum net allowable soil or bedrock bearing capacity and depth of the reinforced concrete regulator mat foundations are to be founded in the bedrock or on soil and the lateral design at rest earth pressure for the five (5) new regulatory structures.

Project Authorization

Authorization to proceed with this engineering work provided through SEECO Consultants Inc. purchase order 22000837-00 from the City of Joliet dated 8/15/22 and Amendment No. 1 dated and signed 8/31/22 by the City of Joliet, City Manager.

GENERAL PROJECT DESCRIPTION

This project consists of construction of five (5) new CSO regulator structures in the City of Joliet, Illinois. These new regulator structures are as follows:

CSO 004 – Granite Street

CSO 007 – West Duncan Street

CSO 009 – East Duncan Street

CSO 011 – Wallace Street

CSO 017 – Benton Street

plus five (5) manhole structures one by CSO 010 McDonough Street and CSO 012 Washington Street Junction Structure 1547A will now be a new Dog House Manhole and another New Manhole with a 24 inch diameter pipe between the two new manholes and CSO 017 3 Manholes – Benton Street and CSO 017 South Manhole and CSO 011 South Manhole – Wallace Street.

ENVIRONMENTAL SOIL SAMPLING AND SCREENING

One (1) environmental soil sample was taken each of the seven sites for environmental chemical testing of SVOCs, VOCs, 8 RCRA Metals, pH, Pesticides and PCBs. These soil samples are as follows:

CSO Structure	Boring Number	Depth Below Surface (Ft.)
004	B-2	3.0
007	B-3	2.0
009	B-4	3.0

CSO Structure	Boring Number	Depth Below Surface (Ft.)
010	B-6	5.0
011	B -7	4.0
012	B-10	5.0
017	B-12	4.0

The seven (7) environmental soil samples were obtained in the field and placed in individual 8oz. laboratory clean borosilicate glass jars. These soil samples were picked up by a representative of First Environmental Laboratories, Inc., Naperville, Illinois for chemical environmental testing. All of the soil samples obtained for this investigation exhibited zero PID readings for VOCs when tested.

Of the seven (7) soil samples tested five (5) of the results are below the IEPA MAC CCDD regulations as well as the pH soil values are between 6.25 and 9.00. So the five (5) completed IEPA LPC-663 forms are found in the Appendix of this report with an explanation of why 2 of the sites failed the CCDD disposal criteria.

GEOTECHNICAL ANALYSIS & RESULTS

Subsurface Exploration Procedures

Between 8/17/22 and 9/1/22, fourteen (14) soil and rock core borings were made for the subject project by SEECO Consultants Inc.

All soil borings were laid out in the field by a representative of SEECO Consultants Inc. The City of Joliet Public Works Department cleared the public utilities locations before SEECO Consultants commended drilling, sampling and coring on the sites with a truck mounted Diedrich D-50 drill rig and 2 man crew from SEECO Consultants Inc.

All soil samples were obtained utilizing a split spoon sampler in accordance with ASTM 1586-18. In the split barrel sampling procedure, a split spoon sampler having a two-inch outside diameter and inside diameter of 1-3/8 inches and a length of two feet is driven into the soil. This sampler is advanced by driving with a 140 pound weight falling freely from a height of 30 inches with Standard Penetration Resistance being recorded as the number of blows required to advance the sampling spoon a distance of 12 inches after an initial driving of six inches has been used to seat the soil sampler. The “N” value is a measure of the consistency (softness or stiffness) of a clay soil and relative density of primarily cohesionless soil sand in general related

to the bearing capacity of the material. Representative portions of the split spoon samples were field screened and placed in glass containers with screw-type Teflon lids and taken to our geotechnical laboratory for further examination and testing.

A two (2) man drill crew with a truck mounted Diedrich D-50 drill rig drilled, cored and sampled the soils and bedrock at this site. All soil sampling was done according to ASTM D 1586-18 and all rock coring was done with an NX (2-1/8") double tube core barrel per ASTM D 2113-19 Practice for Rock Core Drilling and Sampling of Rock for Site Exploration. After the rock core was recovered the Total Rock Core Recovery was computed as well as the RQD (Rock Quality Designation) for each rock core run.

The following holes were cored for this exploration B-2, B-4, B-7 and B-11, Maximum depth of coring was in Boring B-11 to 19 feet below existing pavement grade.

RQD is defined as the number of rock core pieces in inches recovered over 4 inch length not counting mechanical breaks divided by the original length of the rock core run in inches times 100%.

An RQD of zero indicates a thinly bedded, jointed rock or highly weathered bedrock. An RQD = 90% indicates a bedrock of high quality and good recovery since 90% of the recovered rock pieces are over 4 inches in size.

All rock core samples were taken out of the bore barrel and placed in the proper order of recovery in plastic core boxes from the top of the runs to the bottom of the runs and then taken to our geotech laboratory for further examination and testing.

Geotech Laboratory Testing Program

The geotech laboratory testing program consisted of performing insitu natural moisture content on selected soil samples unconfined compressive soil strength tests on the basis of calibrated penetrometer readings for cohesive soil samples and visual classification of all soil samples obtained in this investigation.

Insitu moisture content or natural water content is determined in the laboratory as per ASTM D 2216-19. A portion of each soil sample consisting of a one inch piece is weighed, oven-dried at

110° ±5°C, and reweighed to obtain the weight of dry soil expressed as a percentage of the total dry unit weight.

After completion of the geotech soil testing program, each soil sample was visually classified on the basis of texture and plasticity in accordance with the **Unified Soil Classification System** (ASTM D 2487-17 and D 2488-17). The estimated group symbol according to this system is included following the description of the soil on the **Boring Logs** in the **Appendix** of this report. A brief explanation of the **Unified Soil Classification System** is included in the **Appendix** of this report. All laboratory test data is noted on the **Boring Logs** which is included in the **Appendix** of this report.

Seven (7) bedrock cores were tested for unconfined compressive strength per ASTM D2012 – Method C and for dry unit weight for this Joliet formation Silurian Age dolomite limestone bedrock. These results are as follows and are also given on the **Boring Logs** in the **Appendix** of this report.

Boring Number & Run Depth	DD (pcf)	Qu (psi)
B-2 Run 8'-8"	169.0	9,960
B-4 Run 12'-1"	164.2	8,280
B-7 Run 11'-7"	166.1	5,520
B-7 Run 12'-2"	163.7	5,670
B-7 Run 13'-1"	164.8	6,030
B-11 Run 16'-1"	169.0	15,100
B-11 Run 17'-2"	165.1	6,000

Most of the intact bedrock core samples with RQDs greater than 50% exhibited R3 Grade bedrock which is medium strong rock per ISRM Intact Rock Strength Chart with some R4 strong rock (Core B-2 & B-4) with one R5 Very Strong Rock Core (B-11) – 16'-1".

All geotech laboratory test data is noted on the **Boring Logs** which are included in the **Appendix** of this report.

Soil Conditions

Since all of these seven (7) sites are in the downtown City of Joliet east of the canal except CSO 004 Granite Street and CSO 007 West Duncan Street in a very old area of the City of

Joliet all of the borings exhibited different type of urban fill before encountering the dolomite limestone bedrock as follows:

Boring Number	Soil Fill Type
B-1	Gray Crushed Stone
B-2	Poorly Graded Brown & Gray Sand and Gravel
B-3	Poorly Graded Sand Brown to Black
B-4	Dark Brown Clayey Gravel with Cobbles
B-5	Dark Brown to Brown Silty Clay
B-6	Poorly Graded Dark Brown Gravel to Well Graded Gravel
B-7	Brown and Black Sandy Gravel to Black Poorly Graded Sand
B-8	Sandy Gravel, Black and Brown to Brown Sandy Gravel
B-9	Black Silty Clay to Dark Brown Silty Clay
B-10	Brown Silty Clay overlying Light Gray Crushed Stone
B-10A	Brown and Gray Silty Clay Overlying Black and Dark Brown Poorly Graded Sand
B-11	Light Brown Sandy Gravel Overlying Clayey Topsoil Overlying Soft Silty Clay
B-12	Silty Clay, Dark Brown
B-13	Silty Clay, Dark Brown

As you can see the urban fill under the downtown City of Joliet streets is highly variable. See the **Boring Location Plans** and **Boring Logs** in the **Appendix** of this report.

Bedrock Conditions

All of the borings drilled and sampled and cored for this exploration hit the bedrock except for Boring B-1 hit a concrete pipe, Boring B-3 no bedrock to 25 feet depth below finished pavement grade at this boring location, Boring B-6 no bedrock encountered to 15 feet below grade at this boring location, Boring B-10 no bedrock encountered to a depth 10 feet from finished pavement grade at this boring location. All the other 10 borings encountered the dolomite limestone bedrock at variable depths:

Boring Number	Approximate Depth to Bedrock (Ft.)	Approximate Elevation to Bedrock (MSL)
B-2	4.0	545.0
B-4	10.0	510.0
B-5	7.0	512.0
B-7	9.5	515.5
B-8	9.5	515.0
B-9	6.0	517.0
B-10A	23.0	513.5
B-11	13.0	524.2

Boring Number	Approximate Depth to Bedrock (Ft.)	Approximate Elevation to Bedrock (MSL)
B-13	9.5	526.9

The top of the tan to light gray dolomite limestone where encountered was weathered to depths of 1 to 3 feet below its surface and then encountered the more unweathered with better RQD of greater than 40% generally. The unconfined compressive strength of the intact bedrock varied for the seven (7) core samples tested per ASTM D 7012 varied from 6000 PSI (510 TSF) B-11 17'-2" depth to 15,100 psi (1087 TSF) B-11 16'-1" depth

See the strength chart under the Geotechnical Laboratory Testing Program to follow.

The majority of the intact unweathered dolomite limestone Joliet Formation Silurian Age Formation is strong to very strong per the International Society of Rock Mechanics **Intact Rock Classification Sheet** found in the A**ppendix** of this report.

Site Groundwater Conditions

While drilling and sampling the overburden soils at these site no groundwater was encountered to the depth of either the bottom of the boreholes B-1, B-3, B-6 and B-10A, B-5, B-8, B-9, B-10, B-11 and B-12.

In the rock core holes B-2, B-4, B-7 and B-11 since in order to cool the diamond core barrel bit water is injected into the corehole so the groundwater reading after a coring run is done is not the true groundwater level in the bedrock.

It appears that not much groundwater is in the overburden at these sites but some sump pumping may be needed during rainy weather from stormwater runoff.

UNCONTAMINATED SOIL CERTIFICATION SERVICES

Source site certification services for Clean Construction or Demolition Debris (CCDD) disposal were performed for this project.

Limited Due Diligence was performed utilizing IEPA and commercially available databases with respect to each of the various CSO locations prior to the performance of the soil borings. Each CSO location was identified as either a Potentially Impacted Property (PIP), or adjacent to a PIP

based on previous and or current land use. As such, environmental chemical laboratory analysis was recommended for a representative sample from each CSO location.

A geoenvironmental engineer from SEECO Consultants, Inc. environmentally screened the soil samples using photoionization detector (PID) readings in the SEECO Consultants geotech laboratory utilizing a Mini RAE 3000 PID 11.8 (eV) lamp in conjunction with visual and olfactory observations to determine the presence of petroleum contamination in the subsurface soils. The OVM PID readings of the soil samples obtained for this exploration are given on the boring logs and are all 0.0 PPM. The visual and olfactory observations indicate no petroleum odors and/or staining were present in the soil samples taken.

One (1) representative environmental soil sample from each CSO structure location was selected for environmental chemical laboratory analysis for VOCs, SVOCs, Total 8 RCRA Metals, Pesticides/PCBs and pH and were collected and placed in individual 4 oz. laboratory cleaned borosilicate glass jars and sent to First Environmental Laboratories, Naperville, Illinois. The representative soil samples were selected for environmental chemical testing in order to determine if the chemical constituents are above the 'Maximum Allowable Concentrations of Chemical Constituents In Uncontaminated Soil Used as Fill Material At Regulated Fill Operations (35 Ill. Adm. Code 1100 Subpart F). The CSO Structures and the representative sample tested were as follows:

CSO 004	B-2	3'
CSO 007	B-3	2'
CSO 009	B-4	3'
CSO 010	B-6	5'
CSO 011	B-7	4'
CSO 012	B-10	5'
CSO 017	B-12	4'

The results of the environmental chemical tests and the applicable completed **IEPA LPC-663** form are attached and meet with the MAC requirements of the IEPA CCDD regulations for CSO structures CSO 004, CSO 007, CSO 009, CSO 010 and CSO 017.

The environmental chemical test results for CSO 011 from Boring B-7, 4' and CSO 012 from Boring B-10, 5' did not meet the MAC Table requirements so LPC 663 Forms were not prepared for these two (2) locations.

For CSO 011, the concentrations of Arsenic, Cadmium and Lead all exceeded the maximum allowable concentrations for CCDD material disposal. For CSO 012, every compound of the Semi Volatile Organic Compounds (SVOCs) exceeded the maximum allowable concentrations and pH exceeded the 9.0 limit as well.

As it does not appear that construction at these two (2) locations (CSO 011 and CSO 012) will have the potential for onsite reuse of excavated materials, the excavation spoils will require legal disposal as special waste or certified non-special waste at a subtitle D landfill. The landfill in closest proximity to these locations is Waste Management's Landfill Facility in Joliet.

Prior to disposal, a representative soil sample from each location (CSO 011 and CSO 012) will need to be obtained for chemical analysis by an IEPA Approved Environmental Laboratory for the Code R Parameters. Upon receipt of said analytical test results, a waste management Waste Profile will need to be prepared and submitted to Waste Management for approval prior to disposal.

Screening of soil samples at the job site is no guarantee that landfill facility will accept/not reject materials since this report is prepared strictly on the basis of soil samples obtained from the borings only and it is not possible to determine if the site is entirely clean of contaminants per current IEPA CCDD standards. Environmental chemical analysis may be required if the soils at the time of excavation are found to be contaminated.

GEOTECHNICAL ENGINEERING RECOMMENDATIONS

The five (5) CSO regulators reinforced concrete box structures with screens and weirs to slow down the water flow are each supported on a reinforced concrete mat slab on either the dolomite limestone bedrock or soil.

The applied bearing pressure on the bottom of the reinforced concrete mat foundations from Strand Associates Structural Engineering Department dated 8/26/2022 emailed to SEECO Consultants assuming the total tank (regulatory structure) weight includes the concrete structure weight, water weight and 300 psf live load for the following structures:

Structure	Total Load Kips	Applied Pressure KSF
CSO 011 Junction Structure	390	1.43
CSO 011 Regulatory Structure	1440	1.82
CSO 007 Regulatory Structure	1230	1.71
CSO 004 Regulatory Structure	820	1.12
CSO 009 Regulatory Structure	720	1.60

The applied pressures were computed based on the actual size of the bottom reinforced concrete mat slab for each regulatory structure per Strand Associates plans.

The latest 9/23/2922 plans by Strand Associates exhibit the following. See table below:

Foundation Engineering Summary

Based on the interpolated ground elevation from Strand Associates Demolition Plans and estimated ground surface elevations from nearby manholes CSO 010 the following is hereby given based on Strand Associates preliminary plans and the Basic Scope of Geotech Services by Strand Associates for the City of Joliet the following is given. All regulator structures are similar to junction chambers and are reinforced concrete with reinforced concrete mat slab foundations.

Main Structures

CSO 004 Screening Structure – Granite Street

CSO 007 Screening Structure – West Duncan Street

CSO 009 Screening Structure – East Duncan Street

CSO 011 Screening Structure – Wallace Street

CSO 012 Manhole Structures – Washington Street

CSO 017 3 Manhole Structures – Benton Street

CSO 011 Junction Structure – Wallace Street

CSO 011 Manhole South of CSO 011 – Wallace Street

CSO 017 New South Manhole and Piping – Benton Street

Sanitary Sewer Manhole – McDonough Street Manhole North of CSO 010

The following data was derived from the Strand Associates Regulator Structure Plans which are preliminary in order to determine whether the bottom of the reinforced concrete mat slab needs rock excavation as follows from the 9/23/2022 Demolition, Site Plans and Structure Plans:

CSO 004 Screening Structure – Granite St.

Boring No.	± EGS MSL	Top of Rock El.	Bottom of Structure MSL	Approximate Rock Excavation Depth (Ft.)
B-1	551.2	Hit concrete pipe at 2’		
B-2	549.0	545.0	535.50	9.5
$Q_{applied}$ = 1.12 ksf OK				

CSO 007 Screening Structure – West Duncan Street

Boring No.	± EGS MSL	Top of Rock El.	Bottom of Hole	Bottom of Structure MSL	Material Bearing on
B-3	538.0	-	25 ft (513 MSL)	528.00	Sand Fill
$Q_{applied}$ = 1.71 ksf OK for Bearing					

CSO 009 Screening Structure – East Duncan Street

Boring No.	± EGS MSL	Top of Rock El.	Bottom of Structure MSL	Approximate Rock Excavation Depth (Ft.)
B-4	520.8	510.8	504.17	6.63
B-5	519.8	512.8	504.17	8.63
$Q_{applied}$ = 1.6 ksf OK				

CSO 011 Screening Structure – Wallace Street

Boring No.	± EGS MSL	Top of Rock El.	Bottom of Structure MSL	Approximate Rock Excavation Depth (Ft.)
B-7	525.0	515.5	504.67	10.83
B-8	524.5	515.0	504.67	10.33
$Q_{applied}$ = 1.82 ksf OK				

CSO 011 Junction Structure - Wallace Street

Boring No.	± EGS MSL	Top of Rock El.	Bottom of Structure MSL	Approximate Rock Excavation Depth (Ft.)
B-7	525.0	515.5	505.0	10.5
B-8	524.5	515.0	505.0	10.0
$Q_{applied}$ = 1.43 ksf OK				

CSO 012– Washington Street

Boring No.	± EGS MSL	Bottom of Structure MSL	Bottom of Sanitary Manhole
B10	536.5	Hit RCP Pipe at 17.5 feet	
B-10A	537.5	527.5 – Hit Water Main at 10.0 feet	521.90
New Doghouse Manhole and New Manhole South of CSO 012 and new piping			

CSO 017 3 Manholes Structures – Benton Street

Boring No.	± EGS MSL	Top of Rock El.	Lowest Invert Bottom of Structure MSL	Approximate Rock Excavation Depth (Ft.)
B-11	537.20	524.2	520.20	4.00
B-12	537.40	526.4	520.40	6.00

CSO 011 Manhole South – Wallace Street

Boring No.	± EGS MSL	Top of Rock El.	Bottom of Manhole Invert (MSL)	Approximate Rock Excavation Depth (Ft.)
B-9	523.00	517	506.38	10.62 feet in bedrock

CSO 017 Add South New Manhole – Benton Street

Boring No.	± EGS MSL	Top of Rock El.	Lowest Pipe Invert (MSL)	Approximate Rock Excavation Depth (Ft.)
B-13	536.4	526.9	519.30	7.6

Sanitary Sewer Piping – Added to MH 15337A to North Side of CS010 Structure – McDonough Street

Boring No.	± EGS MSL	
B-6	530.0	All Soil to 15 Foot Depth Elevation 515.0 MSL – See Boring B-6 Log

<u>New CSO 004 Regulatory Structure Granite Street</u>

Approximately 17'-0" by 32'-0" long being top of west wall 552.5 MSL and top of east wall 548.00 MSL with the bottom mat slab elevation of 535.50 MSL giving the west wall being 16.5 feet high and the east wall being 12.5 feet high. Based on the two (2) borings drilled and sampled for this structure the structure with bottom of mat slab at 535.50 MSL rock excavation will be approximately 9.5 feet at this location based on Boring B-2 of this exploration.

<u>Regulator Structure CSO 007 West Duncan Street</u>

With a bottom of mat slab of 528.00 MSL will be found approximately 10 feet into the dense poorly graded fine sand fill with very good bearing (q_{allnet} = 4 ksf vs. 1.71 ksf applied pressure).

<u>CSO 009 Regulatory Structure East Duncan Street</u>

Should encounter dolomite limestone bedrock since the bottom of this mat slab regulatory structure is proposed to be 504.17 MSL and the top of the bedrock was encountered as follows:

Boring Number	**Top of Rock (MSL)**	**Approximate Rock Excavation Depth (Ft.)**
B-4	510.8	6.63
B-5	512.8	8.63

CSO 010 Manhole North on McDonough Street and North of CSO 010

Boring B-6 was 15 feet deep in soil only so any structure less than 515.0 MSL bottom bearing should not encounter bedrock. If the MH 15337A will have a 48" sanitary line at 505.0 MSL invert we don't know if bedrock will be encountered if the existing ground surface elevation is 529.00 - 15 = 514 MSL and this is 9 feet higher than the 505.0 MSL invert elevation.

CSO 011 Regulatory Structure Wallace Street

Calls for removal of existing CSO 011 Regulatory Structure with replacement of CSO 011 in its entirety with new structure bottom of mat slab being equal to 504.67 MSL and the top of bedrock from Boring B-7 giving the top of rock at 515.50 MSL and on Boring B-8 515.0 MSL therefore approximately 10.58 feet of bedrock excavation at this location.

CSO 011 Junction Structure Wallace Street

With a bottom of mat slab at 505.0 MSL and the top of bedrock from Boring B-7 being 515.5 MSL (closest boring) giving approximately 10.5 feet of rock excavation.

CSO 012 Washington Street

Calls for a new Doghouse Manhole east side of street with new manhole just south of CSO 012 west side of street with increase in pipe diameter to 24 inch diameter and a divider wall in the Regulatory Structure. CSO 012 which formerly was to be abandoned but now will be rehabilitated.

CSO 017 Benton Street

Three (3) new manholes with rim elevations and inverts as follows:

Manhole Number	Rim Elevation (MSL)	Lowest Invert Elevation (MSL)
MH 2101A	537.30	520.20
MH 2084B	537.40	520.40
MH 2084A	537.30	522.00

CSO 017 Benton Street South Manhole

Add additional manhole MH5064, Rim Elevation 536± MSL and lowest invert = 519.3±MSL near Boring B-13 which approximately 7.6 feet of rock excavation will be needed.

All of rock bearing capacity of net allowable bedrock bearing capacity with an RQD = 0% is a minimum of 10,000 PSF = 10 KSF so all the mat slabs bearing on the bedrock is okay since none of the structures exert an applied pressure greater than 1.82 ksf.

Reinforced Concrete Mat Slab Design should be based on a Kv = 500 kcf for the dolomite limestone bedrock and in the location of Boring B-3 Kv = 300 kcf based on dense poorly graded fine sand fill.

Design Lateral Earth Pressure Parameters

For lateral earth pressure design of below grade wall structures on this project site, the following is recommended:

All foundation walls for the proposed structures should be designed to resist the lateral earth pressure plus any surcharge (q) loads (surcharge loads are horizontal pressures due to vertical surcharge on the backfill behind each wall). Imported granular fill should be used as backfill material within at rest, active, and passive wedges behind each proposed recessed foundation walls for each structure, it should be compacted in thin (eight-inch) loose lifts to a minimum of 90% Modified Proctor density per ASTM D 1557-12 and the following design earth pressure parameters may be used for the foundation walls. A typical granular fill consists of CA-6, Type B crushed stone per the State of Illinois "Standard Specifications for Road and Bridge Construction," 2022 Edition.

The equation for computation of the at rest (ko) or active (ka) or passive (kp) lateral earth pressure (p) is given below:

$(p) = (k_o \text{ or } k_a \text{ or } k_p) \times ((Y \times h) + q)$

where:

p	=	at rest (ko) or active (ka) or passive (kp) lateral earth pressure [psf]/ft
ko	=	at rest lateral earth pressure coefficient
ka	=	active lateral earth pressure coefficient
kp	=	passive at rest lateral earth pressure coefficient
Y	=	unit weight of backfill [pcf]
h	=	depth of backfill [ft]
q	=	vertical surcharge on backfill [psf]

To calculate lateral earth pressures, following earth pressure parameters should be used for imported granular backfill (compacted to 90% per ASTM D 1557-12) (IDOT CA-6, Type B crushed stone):

ko (at rest) = 0.42

k_a (active) = 0.27

k_p (passive) = 3.7

Y = 130 pcf

Below is a summary of equivalent fluid pressures for at rest, active and passive drained and undrained conditions.

Lateral Earth Pressure Design Parameters

Equivalent Fluid Pressure (psf/ft)						
Backfill Type	**At Rest**		**Active**		**Passive**	
	Drained	Undrained	Drained	Undrained	Drained	Undrained
Granular	56	91	35	81	481	313

The design equivalent fluid earth pressure for the proposed recessed walls for each proposed structures (where applicable) should be computed by taking the equivalent fluid pressure pounds per square foot per foot length of recessed wall for the applicable case (at rest, active or passive (undrained or drained) where imported crushed stone (IDOT CA-6, Type B) is used as backfill plus the horizontal pressure due to vertical surcharge times the appropriate earth pressure coefficient given in the above table plus the groundwater hydrostatic pressure for End of Construction and Long Term Loading Cases.

The Project Design Structural Engineer, Strand Associates, Inc. is responsible for selecting the case which is applicable for each specified structure at this site for design purposes. The at rest case assumes a restrained wall with no lateral movement whereas the active case assumes a movement of .05 to .10H at the top of the wall outward and the passive pressure movement of .10H of the wall height, H, inward.

The lateral earth pressure will also be resisted by friction between the granular drainage fill layer and bottom of the foundation for each structure. The approximate average value of the friction

angle between the granular fill and concrete is given below. The normal effective stress times the friction factor gives the bottom base frictional resistance force in granular fill soils:

	Drainage Fill (Crushed Stone CA-7)	Structural Backfill (Crushed Stone CA-6)
Friction factor (tan δ)	0.55	0.60
Friction angle, δ	29°	31°

A factor of safety of 1.5 against horizontal sliding and a factor of safety of 2.0 against overturning moment is recommended when all steady state and transient loads are applied to the sidewalls of the proposed structures, if necessary.

Site Classification for Seismic Design

The site soil classification for seismic design is defined in sub-section 1613.5.2 of Earthquake loads section as given in the 2015 International Building Code (IBC). Site is classified based on the site soil properties and the Site Classification (A, B, C, D, E and F) as given in Table 1613.5.2 "Site Classification" in the ASCE-7-10 Load Book, as referenced in the International Building Code (2015 IBC). The site classification is applied to the upper 100 foot of soils at the site based on the average properties on the top 100 feet of subsurface materials. Ten (10) soil borings were drilled and sampled to a depth of 4.0 to 23 feet depth below the existing grade before dolomitic limestone bedrock refusal was encountered in order to evaluate the seismic site classification. Based on the presence of dolomite bedrock below 4 to 23 feet from existing surface grade at this project site, it is concluded that this site is classified as Site Class 'B' Rock per Table 1613.5.2 of the ASCE 7-10 Load Book Site Classification. Based on the 2015 IBC, the net allowable bearing capacity of the soil may be increased by 33% when performing applied transient load analysis which includes applied lateral wind loading and/or seismic loading.

Site Soil Excavations

The excavations that extend greater than five feet in depth should be designed in accordance with U.S. Department of Labor, Occupational Safety and Health Administration 1989 (OSHA) "Occupational Safety and Health Standards - Excavations; Final Rule" 29 CFR, Part 1926, Subpart P. Temporary open excavations in sandy soils (Type C soils) as encountered at this site should be made with side slopes of 1.5H: 1V for excavation depth greater than 4 feet and less than 20 feet. If open excavation is not possible due to space limitations, then braced excavation earth retention systems (steel sheet piling, slide rail shoring or soldier pile and wood lagging wall or stacked trench boxes) should be utilized to prevent excavation instability and

provide safety. Safety is the responsibility of the excavation subcontractor. The general contractor and excavation subcontractor are responsible for the means and methods of safe construction excavation per the current OSHA regulations referenced above. Stockpiles of materials or construction equipment should not be placed near the edge of excavation slopes per OSHA.

Trench Backfill

The approved granular trench backfill material should be placed in maximum eight-inch loose lifts with each lift compacted to a minimum of 95% of maximum density as per AASHTO T-99. Trench backfill material should be FA-1, FA-2, FA-6 or CA-6 of the IDOT Standard Specifications for Road and Bridge Construction, 2022 Edition. However, the final one foot of trench backfill should be compacted to 100% of maximum density as obtained according to AASHTO T-99.

Pipe Bedding

Bedding material should comply with Article 1003.04 of the IDOT Standard Specifications for Road and Bridge Construction, 2016 Edition. The bedding material should be a well-graded granular material equivalent to IDOT FA-1, FA-2 or FA-6. A minimum 4.0 inches of bedding material is required. The bedding material must be placed in maximum 4.0 inch loose lifts and compacted to a minimum 95% of the maximum density according to AASHTO T-99. The placement of bedding material must comply with Article 550.04 of the IDOT Standard Specifications for Road and Bridge Construction, 2022 Edition.

POTENTIAL CONSTRUCTION PROBLEMS

Bedrock Excavation

In 10 of the 14 borings drilled, sampled and cored for this exploration, bedrock was encountered between 4 to 23 feet from the existing ground surface grade at this project site.

It was determined that the apparent top of weathered dolomitic limestone bedrock was encountered in these 10 of 14 borings drilled and sampled at this project site. The apparent top of weathered bedrock is the depth below the existing grade where bedrock was encountered and the bedrock will have to be excavated in most of the CSO Regulatory Structures and some new manhole structures and piping.

Special methods will be required for the excavation of bedrock. The two zones of bedrock that were encountered in this exploration are given below:

1) Weathered Dolomitic Limestone Bedrock: Generally 1 to 3 feet of dolomitic limestone bedrock at this location is highly weathered and the excavations to be made in the weathered bedrock strata may be excavated possibly by using conventional backhoe excavating equipment in conjunction with rock ripper attachment which is attached to the backhoe bucket (for excavating weathered dolomitic limestone bedrock).

2) Unweathered Dolomitic Limestone Bedrock: Conventional excavation methods will not be able to remove the solid unweathered bedrock zone. A hydraulic rock hammer can be used to mechanically break up the solid rock mass into pieces that can be removed by mucking out using a backhoe to the required depths of excavations. This method of rock removal will have to be done in several stages of breaking up the bedrock and then mucking out the broken rock and loading with a backhoe and hauling it out offsite and then legally dispose of the broken rock offsite. See the intact bedrock compressive strength values under Geotech Laboratory Testing Program section of this report.

Existing utility line obstructions not marked or presently located in the field may be a problem for the contractor when excavating for either new structures or pipelines.

Groundwater

No groundwater was encountered while drilling and sampling the overburden between 8/17/2022 and 9/1/2022.

But storm water runoff from heavy rains may bring the need to dewater the excavations for structures and trenches by using sumps and pumps.

There may be groundwater in the upper bedrock which is weathered and fractured but it should not be a large quantity of groundwater and should be able to be handled by the sump and pump method of dewatering.

CONSTRUCTION CONSULTATION ENGINEERING

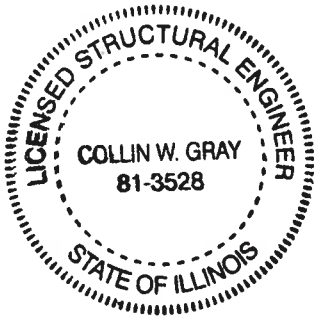
A representative of the Geotechnical Engineer should be present during the excavation for the proposed buildings foundations for compliance with the specifications and construction plans. Due to potential variations in site conditions and the necessity for foundation undercutting for footings and possible floor slab areas, we recommend that the adequacy of the foundation

conditions for the proposed structures should be confirmed in the field for adequate bearing capacity of bearing soils and/or bedrock and bearing depth by a Field Geotechnical Engineer from SEECO Construction Services, Inc.

Due to potential variations in site conditions, we recommend that the net allowable bearing capacity of each structure be confirmed in the field by a Field Geotechnical Engineer from SEECO Construction Services, Inc. at the time of construction. Field density tests to determine the degree of compaction of the backfill materials and as well as the granular fill underneath the floor slabs and mat slabs should be performed by a Field Engineering Technician or Field Geotechnical Engineer from SEECO Construction Services, Inc.

CLOSING REMARKS

We trust this report and the information contained herein is sufficient for your present requirements. We have welcomed the opportunity to be of service to you on this project. If there are any questions regarding this report, please contact us at your convenience. Respectfully submitted,



SEECO Consultants, Inc.

Collin W. Gray, S.E., P.E.
President

CWG:arm
I:\REPORTS\Geotech\SewerWaterUtilities&WWTP\13085G - CSO Regulator Modifications, Joliet\13085G FINAL Report 092722.doc

APPENDIX

1. **BORING AND CORING LOCATION PLANS**

2. **GENERAL NOTES**

3. **BORING LOGS**

4. **UNIFIED SOIL CLASSIFICATION SYSTEM**

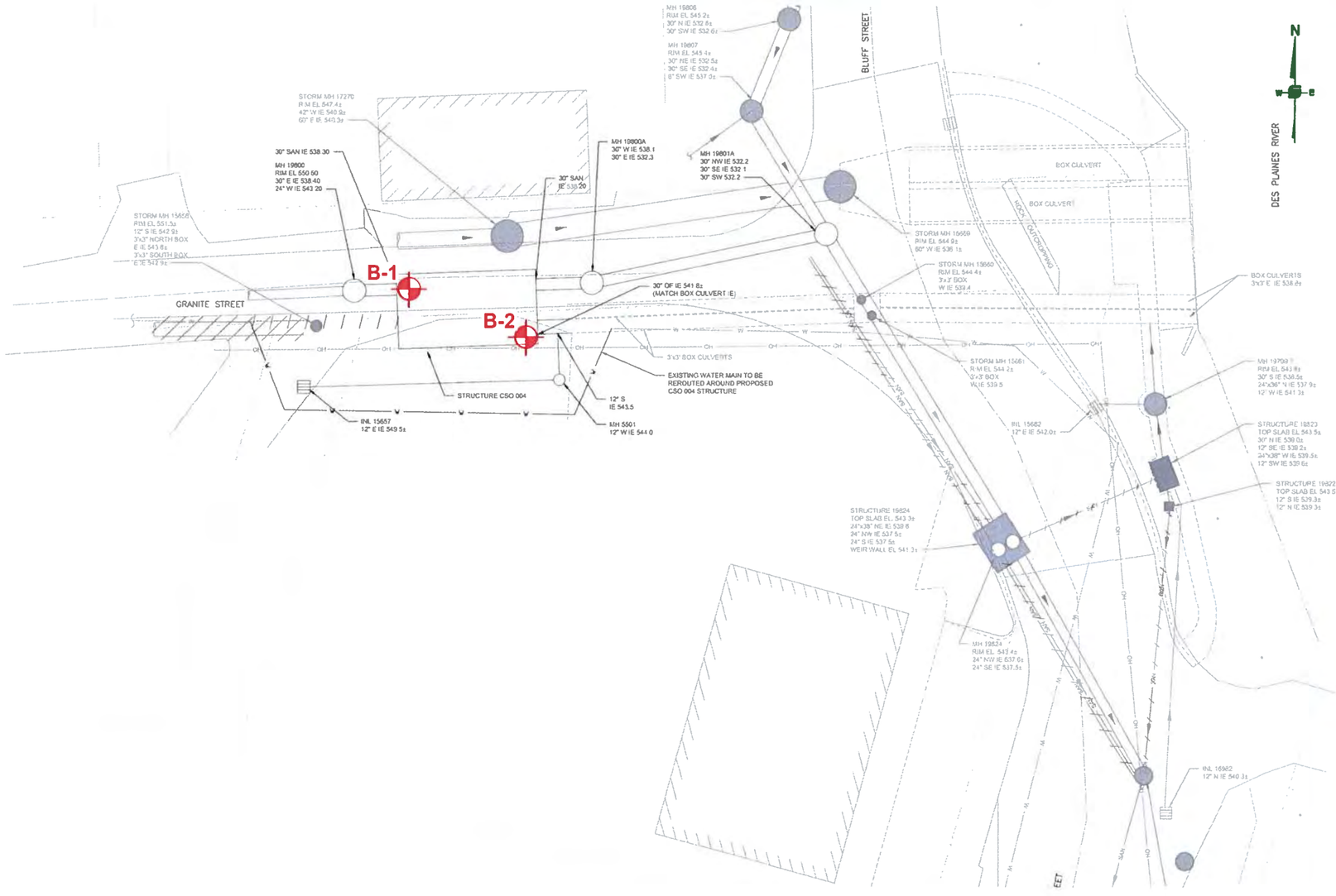
5. **INTACT ROCK STRENGTH (ISRM) and RQD**

6. **COMPLETED LPC 663 FORMS (5)**

7. **GENERAL REMARKS**

APPENDIX 1

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LEGEND

B-1 APPROXIMATE BORING LOCATION

PROJECT LOCATION

VICINITY MAP
SCALE: NONE



NO	DATE	REVISIONS	BY

DRAWN SW
DESIGNED SW
APPROVED CWG

SEECO Consultants, Inc.
7350 Duvan Drive, Tinley Park, Illinois 60477
OFFICE (708) 429-1666 FAX: (708) 429-1689

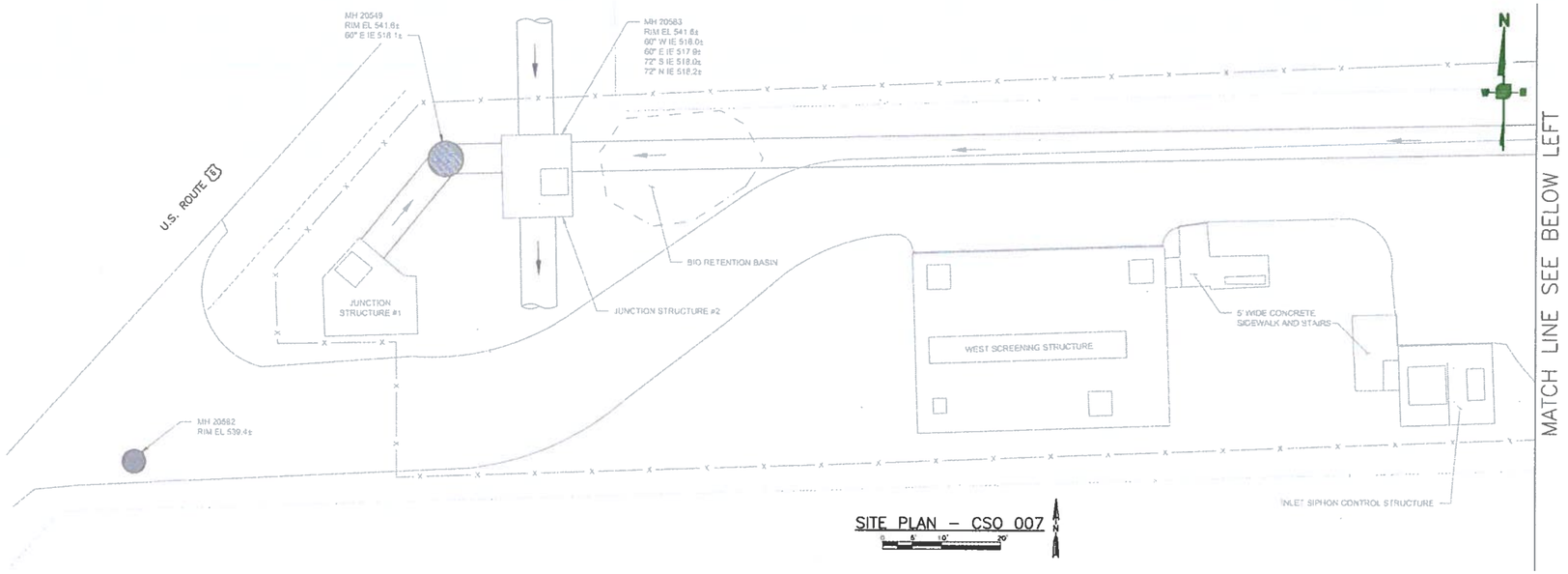
CLIENT: City of Joliet

PROJECT NAME AND LOCATION: Proposed Combined Sewer Overflow Long Term Control Plan-Phase IV
Various Location, Joliet, IL

BORING LOCATION PLAN
CSO 004

DATE 9/15/2022
SCALE NONE
JOB NO 13085G

SHEET 1 OF 7



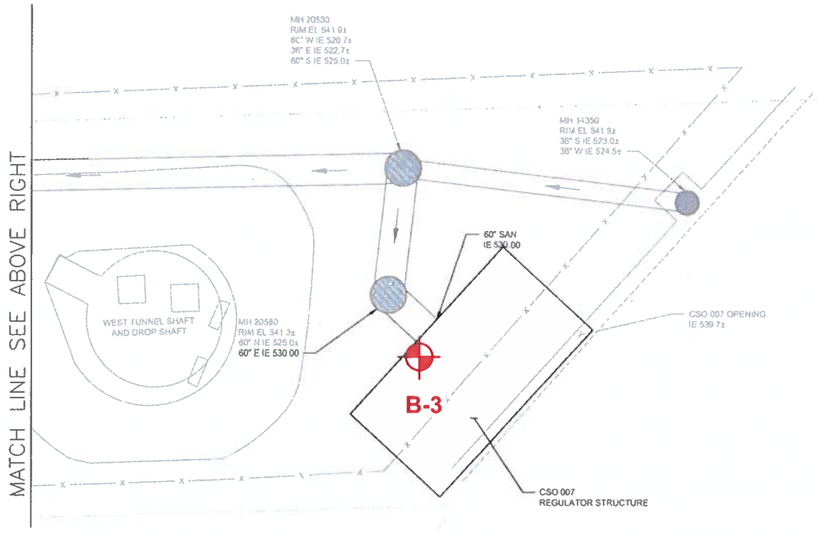
LEGEND

B-3 APPROXIMATE BORING LOCATION

PROJECT LOCATION



VICINITY MAP
SCALE: NONE





NO	DATE	REVISIONS	BY

DRAWN SW
DESIGNED SW
APPROVED CWG

SEECO Consultants, Inc.
7350 Duvan Drive, Tinley Park, Illinois 60477
OFFICE: (708) 429-1666 FAX: (708) 429-1689

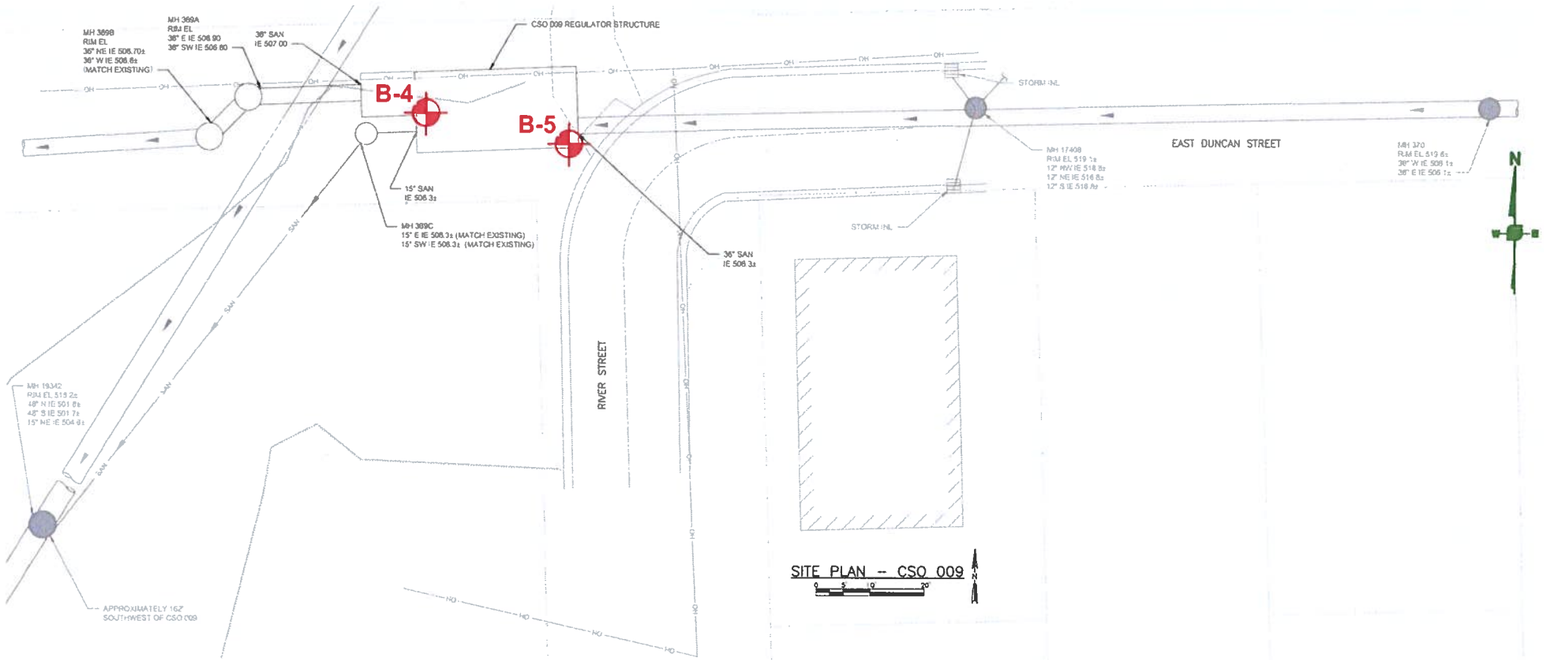
CLIENT: City of Joliet

PROJECT NAME AND LOCATION: Proposed Combined Sewer Overflow Long Term Control Plan-Phase IV
Various Location, Joliet, IL

BORING LOCATION PLAN
CSO 007

DATE 9/15/2022
SCALE NONE
JOB NO. 13085G

SHEET 2 OF 7



SITE PLAN -- CSO 009

0 5 10 20

LEGEND

B-4 APPROXIMATE BORING LOCATION

PROJECT LOCATION

N

VICINITY MAP
SCALE: NONE



NO	DATE	REVISIONS	BY

DRAWN SW
DESIGNED SW
APPROVED CWG

SEECO Consultants, Inc.
7350 Duvan Drive, Tinley Park, Illinois 60477
OFFICE: (708) 429-1666 FAX: (708) 429-1689

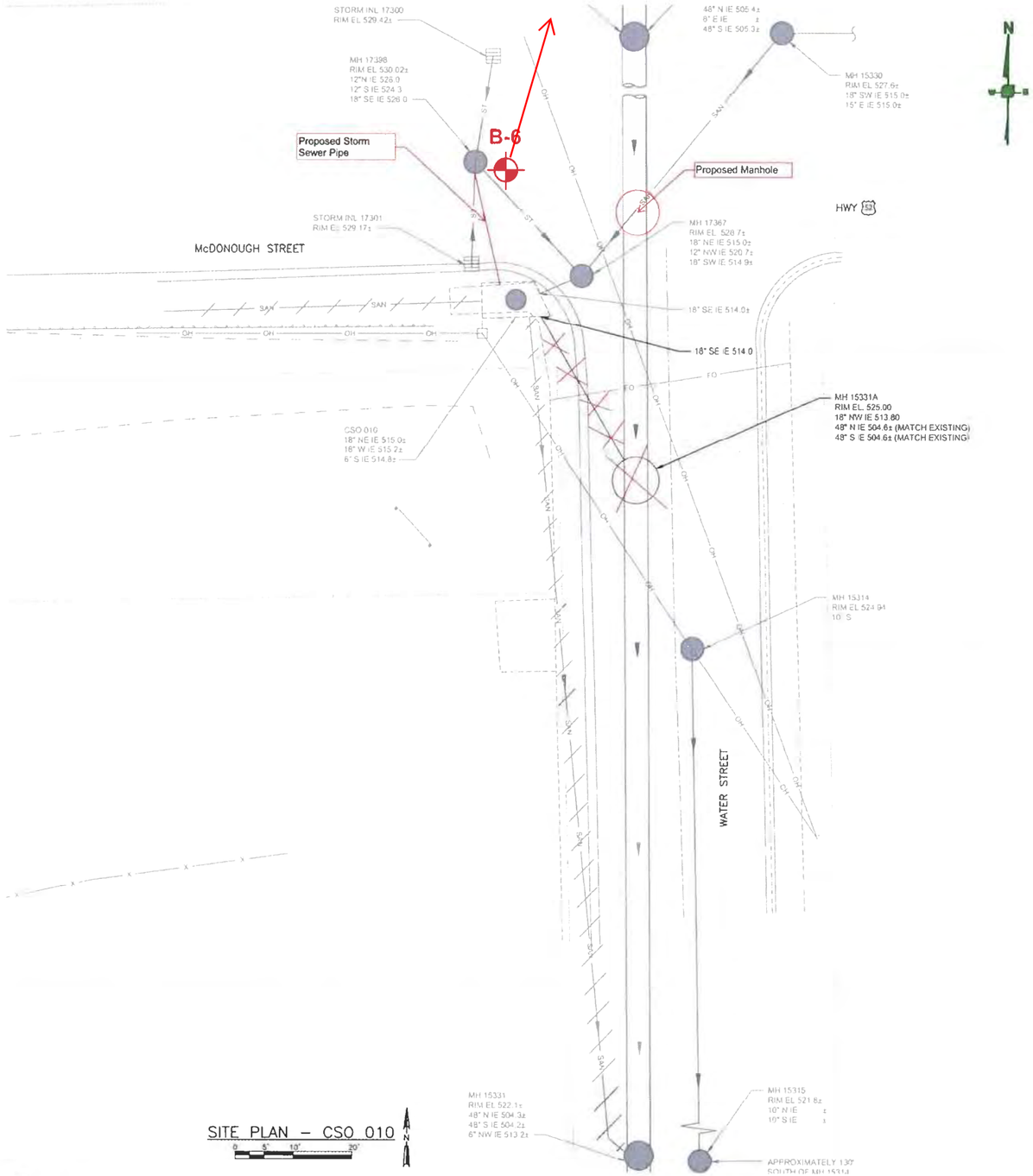
CLIENT: City of Joliet

PROJECT NAME AND LOCATION: Proposed Combined Sewer Overflow Long Term Control Plan-Phase IV
Various Location, Joliet, IL

BORING LOCATION PLAN
CSO 009

DATE 9/15/2022
SCALE NONE
JOB NO. 13085G

SHEET 3 OF 7



SITE PLAN – CSO 010

0 5' 10' 20'

N

LEGEND

B-6 APPROXIMATE BORING LOCATION

PROJECT LOCATION

N

VICINITY MAP
SCALE: NONE



NO	DATE	REVISIONS	BY

DRAWN SW
DESIGNED SW
APPROVED CWG

SEECO Consultants, Inc.
7350 Duvan Drive, Tinley Park, Illinois 60477
OFFICE: (708) 429-1666 FAX: (708) 429-1689

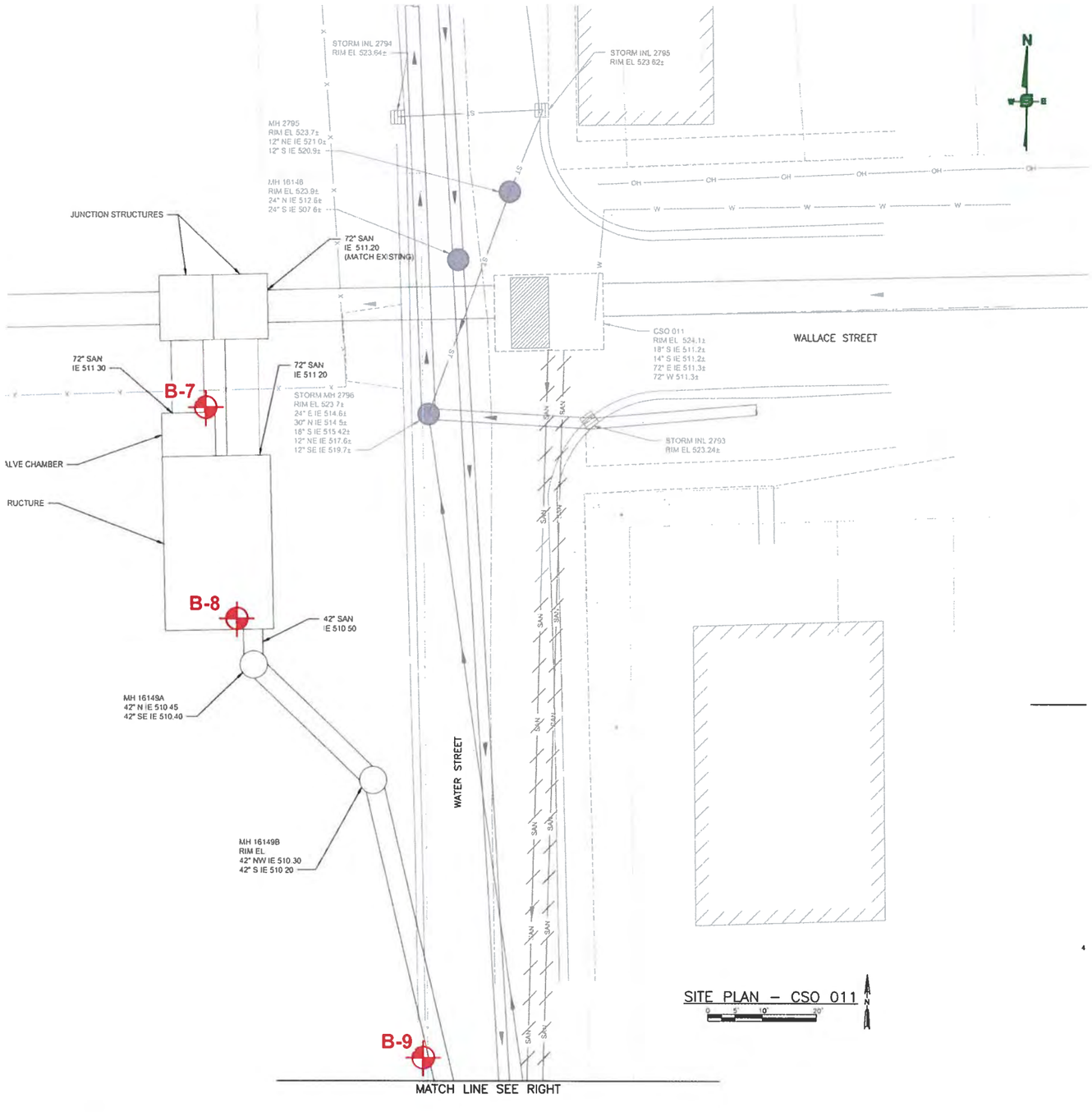
CLIENT: City of Joliet

PROJECT NAME AND LOCATION: Proposed Combined Sewer Overflow Long Term Control Plan-Phase IV
Various Location, Joliet, IL

BORING LOCATION PLAN
CSO 010

DATE 9/15/2022
SCALE NONE
JOB NO. 13085G

SHEET 4 OF 7



SITE PLAN – CSO 011

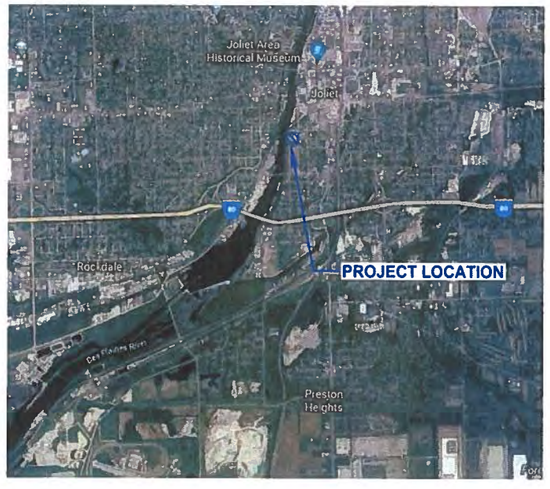
0 5' 10' 20'

LEGEND

B-7 APPROXIMATE BORING LOCATION

PROJECT LOCATION

VICINITY MAP
SCALE: NONE



NO	DATE	REVISIONS	BY

DRAWN SW
DESIGNED SW
APPROVED CWG

SEECO Consultants, Inc.
7350 Duvan Drive, Tinley Park, Illinois 60477
OFFICE (708) 429-1666 FAX: (708) 429-1689

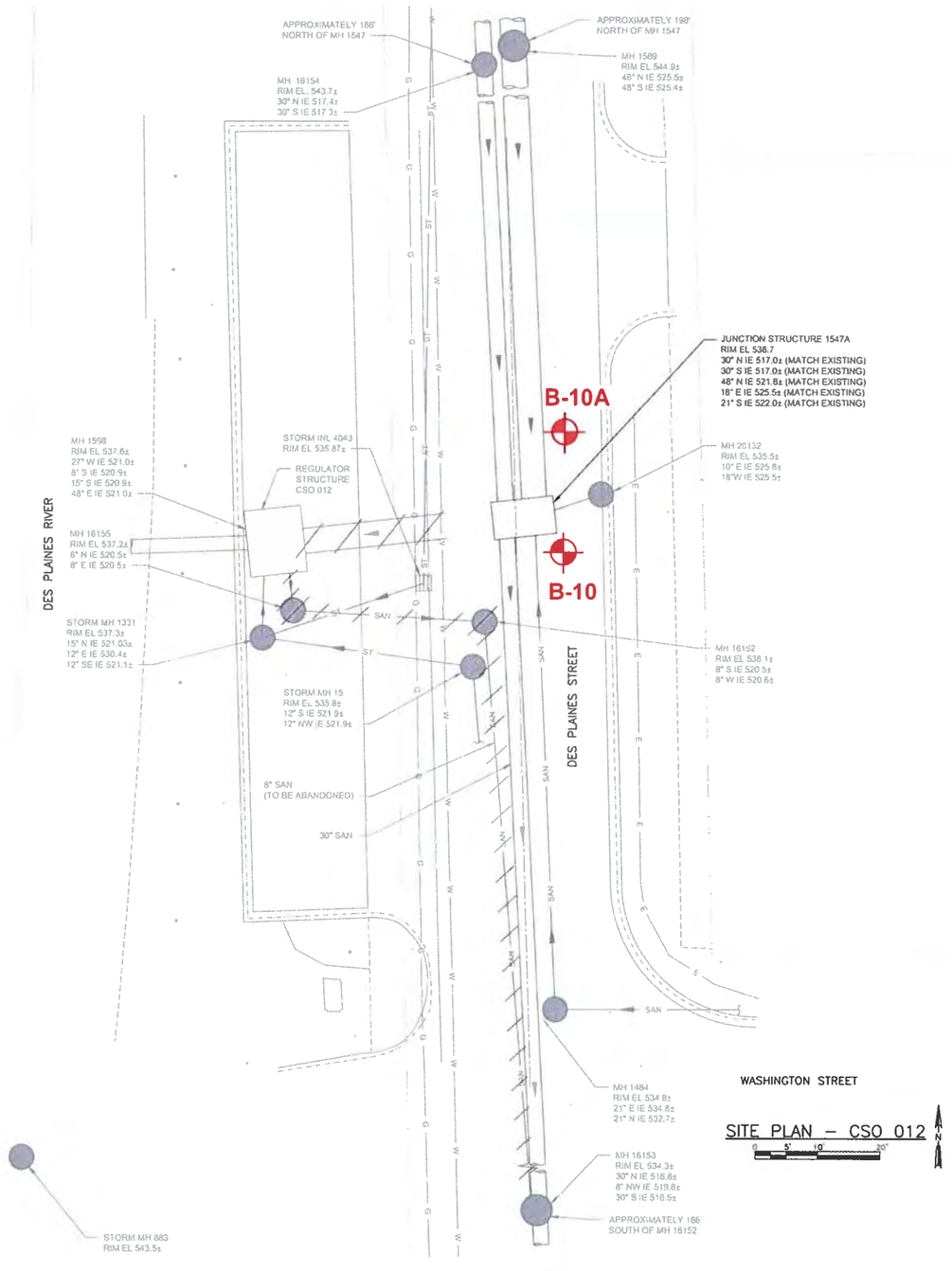
CLIENT: City of Joliet

PROJECT NAME AND LOCATION: Proposed Combined Sewer Overflow Long Term Control Plan-Phase IV
Various Location, Joliet, IL

BORING LOCATION PLAN
CSO 011

DATE 9/15/2022
SCALE NONE
JOB NO 13085G

SHEET 5 OF 7



N

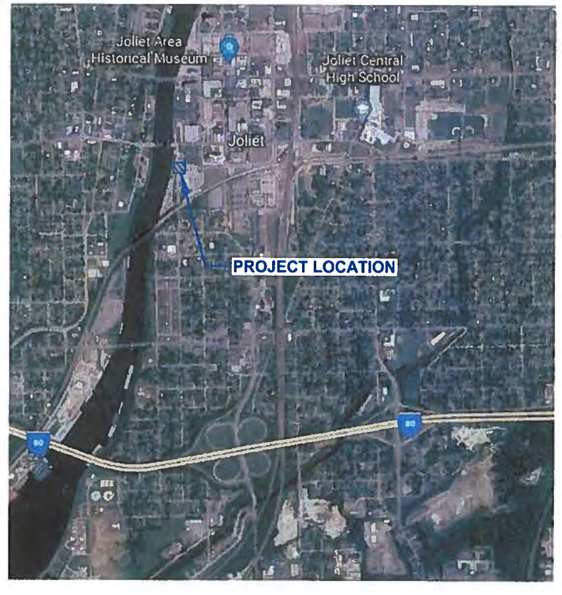
LEGEND

B-10 APPROXIMATE BORING LOCATION

PROJECT LOCATION

N

VICINITY MAP
SCALE: NONE



NO	DATE	REVISIONS	BY

DRAWN SW
DESIGNED SW
APPROVED CWG

SEECO Consultants, Inc.
7350 Duvan Drive, Tinley Park, Illinois 60477
OFFICE: (708) 429-1666 FAX: (708) 429-1689

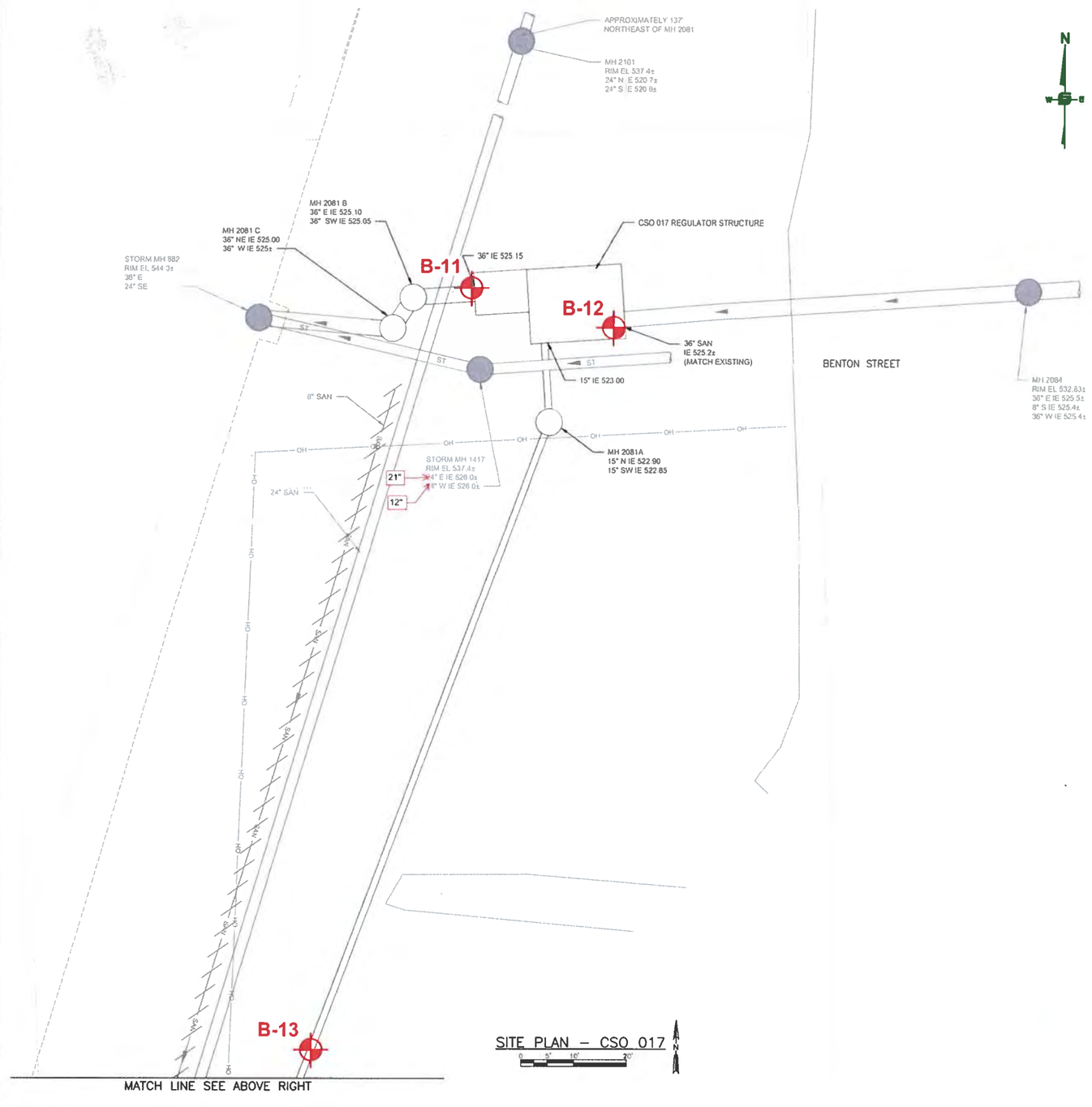
CLIENT: City of Joliet

PROJECT NAME AND LOCATION: Proposed Combined Sewer Overflow Long Term Control Plan-Phase IV
Various Location, Joliet, IL

BORING LOCATION PLAN
CSO 012

DATE 9/15/2022
SCALE NONE
JOB NO. 13085G

SHEET 6 OF 7



SITE PLAN – CSO 017

LEGEND

B-11 APPROXIMATE BORING LOCATION

PROJECT LOCATION

VICINITY MAP
SCALE: NONE



NO	DATE	REVISIONS	BY

DRAWN SW
DESIGNED SW
APPROVED CWG

SEECO Consultants, Inc.
7350 Duvan Drive, Tinley Park, Illinois 60477
OFFICE (708) 429-1666 FAX: (708) 429-1689

CLIENT: City of Joliet

PROJECT NAME AND LOCATION: Proposed Combined Sewer Overflow Long Term Control Plan-Phase IV
Various Location, Joliet, IL

BORING LOCATION PLAN
CSO 017

DATE 9/15/2022
SCALE NONE
JOB NO. 13085G

SHEET 7 OF 7

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APPENDIX 2

SEECO Consultants Inc.
7350 DUVAN DRIVE
TINLEY PARK, ILLINOIS 60477

GENERAL NOTES

DRILLING AND SAMPLING SYMBOLS

SS	SPLIT SPOON	1-3/8" I.D. x 2" O.D. (EXCEPT WHERE NOTED)
2T	THINWALL TUBE SAMPLER	2" O.D. x 1-7/8" I.D.
3T	THINWALL TUBE SAMPLER	3" O.D. x 2-7/8" I.D.
3P	PISTON SAMPLER	3" O.D. THINWALL TUBE
FA	CONTINUOUS FLIGHT AUGER	4" O.D.
HS	HOLLOW STEM AUGER	6-3/4" O.D. x 3-1/4" I.D.
HA	HAND AUGER	
RB	ROLLER ROCK BIT	
FT	FISHTAIL BIT	
DB	DIAMOND BIT	
AX	ROCK CORE	1-3/16" DIAMETER
BX	ROCK CORE	1-5/8" DIAMETER
NX	ROCK CORE	2-1/8" DIAMETER
AS	AUGER SAMPLE	
WS	WASH SAMPLE	
CA	COMBINED ANALYSIS	
SA	SIEVE ANALYSIS	

Standard "N" Penetration: Blows per foot of a 140 pound hammer falling 30 inches on a two inch O.D. split spoon, except where noted.

WATER LEVEL MEASUREMENT SYMBOLS

▼	WATER LEVEL OBSERVATION	WD	WHILE DRILLING
WCI	WET CAVE-IN	BCR	BEFORE CASING REMOVAL
DCI	DRY CAVE-IN	ACR	AFTER CASING REMOVAL
WS	WHILE SAMPLING	AB	AFTER BORING

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable groundwater levels. In impervious soils, the accurate determination of groundwater elevations are not possible in even several days observation, and additional evidence on groundwater elevations must be sought.

SOIL IDENTIFICATION TERMINOLOGY

COHESIONLESS SOILS

COMPONENT	SIZE RANGE	DESCRIPTIVE TERM	PERCENT OF WEIGHT
BOULDERS	OVER 8"	TRACE	0 – 10
COBBLES	8" TO 3"	LITTLE	10 – 20
GRAVEL	3" TO #4 SIEVE (4.75 mm)	SOME	20 – 35
SAND	#4 TO #200 SIEVE (0.074 mm)	AND	35 – 50
SILT	PASSING #200 SIEVE (0.074 mm)		

SEECO Consultants Inc.
7350 DUVAN DRIVE
TINLEY PARK, ILLINOIS 60477

GENERAL NOTES

SOIL IDENTIFICATION TERMINOLOGY (Cont'd)

COHESIVE SOILS

DESCRIPTIVE TERM	PLASTICITY INDEX
CLAYEY SILT OR ORGANIC CLAYEY SILT	4 – 7
SILTY CLAY OR ORGANIC SILTY CLAY	8 – 30
CLAY OR ORGANIC CLAY	> 30

INTERMEDIATE SOILS

DESCRIPTIVE TERM	PLASTICITY INDEX
SILT	0 – 3

Unconfined compression tests are generally not applicable for intermediate soils.

CONSISTENCY OF COHESIVE SOILS

UNCONFINED COMP. STRENGTH, Qu, TSF	CONSISTENCY
<0.25	VERY SOFT
0.25 - 0.49	SOFT
0.50 - 1.00	MEDIUM
1.01 - 1.99	STIFF
2.00 - 3.99	VERY STIFF
4.00 - 8.00	HARD
>8.00	VERY HARD

RELATIVE DENSITY OF GRANULAR SOILS

1-3/8" I.D. x 2" O.D. with 140 pound hammer falling 30"

N – BLOWS/FT.	RELATIVE DENSITY
0 – 3	VERY LOOSE
4 – 9	LOOSE
10 – 29	MEDIUM DENSE
30 – 49	DENSE
50 – 80	VERY DENSE
>80	EXTREMELY DENSE

CONSISTENCY OF COHESIVE SOILS

N – BLOWS/FT.	RELATIVE DENSITY
0 – 2	VERY SOFT
2 – 4	SOFT
4 – 8	MEDIUM
8 – 15	STIFF
15 – 30	VERY STIFF
>30	HARD

APPENDIX 3

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-1**

APPROX. SURFACE ELEVATION (M.S.L.) **551.20** +/-

NORTH | EAST

DEPTH ELEVATION	SAMPLE NO.	SAMPLER TYPE	SAMPLE REC. (%)	SOIL GRAPHIC LOG	DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)	UNIT DRY WT. LBS./FT.^{3}	Unconfined Compressive Strength, Tons/Ft.^{2} / PL MC LL / STD "N" PENETRATION BLOWS PER FT.	REMARKS
		HS			8.5" PORTLAND CEMENT CONCRETE			
					FILL: CRUSHED STONE, Light Gray, Medium Dense, Dry			
2.5	1	SS	21		CONCRETE PIPE		70/3"	SPT N=70 Blows/ 8" Refusal
					Void			
5.0					End of Boring at 5.5 Feet			
					Note:			
7.5					1. Unmarked concrete pipe was encountered at an approximate 2.5 feet depth (Driller's Observation).			
					2. All soil samples were screened with a MiniRae300 OVM photo-ionization detector (PID) and by utilizing olfactory senses. No petroleum odors were detected in all samples and all PID = 0 ppm.			
10.0								
12.5								
15.0								
17.5								
20.0								
22.5								

Calibrated Penetrometer Unconfined Compression

Water Level Observations		SEECO Consultants, Inc.	Boring Started	8/22/22	
			Boring Completed	8/22/22	
Dry WS/WD	N/A	7350 Duvan Drive, Tinley Park, IL 60477	Driller EN	Rig	D-50
		Approved By GG / Job No. 13085G	Drawn By SW	Sheet	1 of 1

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-2**

APPROX. SURFACE ELEVATION (M.S.L.) **549.00** + -

NORTH | EAST

DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)

Unconfined Compressive Strength, Tons/Ft.^{2}

1 2 3 4 5

PL MC LL

STD "N" PENETRATION BLOWS PER FT.

10 20 30 40 50

DEPTH ELEVATION	SAMPLE NO.	SAMPLER TYPE	SAMPLE REC. (%)	SOIL GRAPHIC LOG	DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)	UNIT DRY WT. LBS./FT.^{3}	REMARKS
		HS			8.75" BITUMINOUS CONCRETE PAVEMENT		
					7.25" CRUSHED STONE BASE COURSE, Dark Brown		
2.5	1	SS	58		FILL: POORLY GRADED SAND AND GRAVEL, Brown and Gray, Medium Dense, Moist (GP-SP)		Env. Sample
		HS					
5.0	2	SS	8		DOLOMITIC LIMESTONE BEDROCK, Tan, Weathered		SPT N=50/2" Refusal
		HS					
7.5	R1	NX	95		SHALEY DOLOMITIC LIMESTONE BEDROCK, Light Gray and Greenish Gray, Trace Pink, Slightly Weathered, Closely Spaced Horizontal Joints, Closely Spaced Vertical Joints, Clay Filled Joints, Fine Grained, Weak HCL Reaction, Fair Discontinuity Condition, Rock Quality Designation is Poor, Strong Rock	169.0	Qu = 717 TSF RQD = 40%
10.0							
12.5					End of boring at 11 feet Notes: 1. Total split spoon sampler refusal was encountered at approximately 5.5 feet below the existing ground surface level, and total hollow stem auger refusal was encountered at approximately 6 feet below the existing ground surface level. A Tri-Cone rock roller bit was used to clean out the borehole before rock coring was started. At approximately 6 feet below the existing grade level, a NX size (2-1/8" diameter) 10 foot long diamond bit core barrel attached to the drill rods was then used to core the bedrock. 2. The apparent top of weathered dolomitic limestone bedrock is approximately 4 feet below the existing grade level and the apparent top of solid dolomitic limestone bedrock is approximately 6 feet below the existing grade level. 3. The groundwater level reading after coring the bedrock was not recorded due to injecting water into the borehole during the coring process to cool the rock coring bit, and therefore is not accurate. 4. Boring was offset approximately 5 feet into the street from original location due to the large underground sewer pipes (Driller's Observation)		
15.0							
17.5							
20.0							
22.5							

Calibrated Penetrometer Unconfined Compression

Water Level Observations		SEECO Consultants, Inc.			Boring Started	8/22/22		
					Boring Completed	8/22/22		
Dry WS/WD	N/A	7350 Duvan Drive, Tinley Park, IL 60477			Driller	EN	Rig	D-50
		Approved By	GG	Job No. 13085G	Drawn By	SW	Sheet	1 of 2

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-2**

APPROX. SURFACE ELEVATION (C.C.D.) **549.00** + -

NORTH | EAST

DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)

DEPTH ELEVATION | SAMPLE NO. | SAMPLER TYPE | SAMPLE REC. (%) | SOIL GRAPHIC LOG | UNIT DRY WT. LBS./FT.^{3} | Unconfined Compressive Strength, Tons/Ft.^{2} | REMARKS

Unconfined Compressive Strength, Tons/Ft.^{2}: 1 2 3 4 5

PL MC LL

STD "N" PENETRATION BLOWS PER FT.: 10 20 30 40 50

5. All soil samples were screened with a MiniRae 300 OVM photo-ionization detector (PID) and by utilizing olfactory senses. No petroleum odors were detected in all samples and all PID = 0 ppm.

6. Sample 1 was discretely chosen to be environmental chemically tested for VOCs, SVOCs, Total 8 RCRA Metals, Pesticides/PCBS, and pH by an independent environmental laboratory.

27.5
30.0
32.5
35.0
37.5
40.0
42.5
45.0
47.5
50.0

⊗ Calibrated Penetrometer Unconfined Compression

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-3**

APPROX. SURFACE ELEVATION (M.S.L.) **538.00** + -

NORTH | EAST

Unconfined Compressive Strength, Tons/Ft.^{2}

1 2 3 4 5

PL MC LL

STD "N" PENETRATION BLOWS PER FT.

10 20 30 40 50

UNIT DRY WT. LBS./FT.^{3}

DEPTH ELEVATION	SAMPLE NO.	SAMPLER TYPE	SAMPLE REC. (%)	SOIL GRAPHIC LOG	DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)	REMARKS
		HS			5" BITUMINOUS CONCRETE PAVEMENT	
					CRUSHED STONE BASE COURSE	
2.5	1	SS	67		FILL: POORLY GRADED SAND, Grayish Brown, Some Gravel, Dense to Very Dense to Dense, Moist to Dry (SP)	Env. Sample
		HS				
5.0	2	SS	50			
		HS				
7.5	3	SS	42			
		HS				
10.0	4	SS	63			
12.5		HS				
	5	SS	75			
15.0						
		HS				
17.5					FILL: POORLY GRADED SAND, Brown and Gray, Trace Gravel, Medium Dense, Moist (SP)	
	6	SS	58			
20.0						
		HS				
22.5						
	7	SS	46		FILL: POORLY GRADED SAND, Black, Trace Brown, Trace Gravel, Dense, Moist	
25.0					End of Boring at 25 feet	
					Note:	
27.5					3. All soil samples were screened with a MiniRae 300 OVM photo-ionization detector (PID) and by utilizing olfactory senses. No petroleum odors were detected in all samples and all PID = 0 ppm.	

Calibrated Penetrometer Unconfined Compression

Water Level Observations		SEECO Consultants, Inc.	Boring Started	9/1/22
			Boring Completed	9/1/22
Dry WS/WD	N/A	7350 Duvan Drive, Tinley Park, IL 60477	Driller EN	Rig D-50
		Approved By CWG Job No. 13085G	Drawn By SW	Sheet 1 of 2

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-3**

APPROX. SURFACE ELEVATION (C.C.D.) **538.00** + -

NORTH | EAST

DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)

DEPTH ELEVATION | SAMPLE NO. | SAMPLER TYPE | SAMPLE REC. (%) | SOIL GRAPHIC LOG | UNIT DRY WT. LBS./FT.^{3} | REMARKS

Unconfined Compressive Strength, Tons/Ft.^{2}

1 2 3 4 5

PL MC LL

STD "N" PENETRATION BLOWS PER FT.

10 20 30 40 50

4. Sample 1 was discretely chosen to be environmental chemically tested for VOCs, SVOCs, Total 8 RCRA Metals, Pesticides/PCBS, and pH by an independent environmental laboratory.

32.5
35.0
37.5
40.0
42.5
45.0
47.5
50.0
52.5
55.0
57.5
60.0

⊗ Calibrated Penetrometer Unconfined Compression

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-4**

APPROX. SURFACE ELEVATION (M.S.L.) + **520.80** -

NORTH | EAST

Unconfined Compressive Strength, Tons/Ft.^{2} (1 2 3 4 5)

PL MC LL

STD "N" PENETRATION BLOWS PER FT. (10 20 30 40 50)

DEPTH ELEVATION	SAMPLE NO.	SAMPLER TYPE	SAMPLE REC. (%)	SOIL GRAPHIC LOG	DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)	UNIT DRY WT. LBS./FT.^{3}	REMARKS
		HS			FILL: SILTY CLAY, Dark Brown and Black, Some Brown, With Gravel		
2.5	1	SS	33		FILL: CLAYEY GRAVEL, Dark Brown, Some Cobbles, Medium Dense, Moist (GC)		Env. Sample
		HS					
5.0	2	SS	42				
		HS					
7.5	3	SS	54				
		HS					
10.0	4	SS	4		DOLOMITIC LIMESTONE BEDROCK, Tan and Light Gray, Weathered		SPT N=50 blows/2" Refusal
		HS					
12.5	R1	NX	93		DOLOMITIC LIMESTONE BEDROCK to SHALEY DOLOMITIC LIMESTONE BEDROCK, Light Gray and Tan, Moderately Weathered to Highly Weathered, Closely Spaced Horizontal Joints, Moderately to Very Closely Spaced Vertical Joints, Greenish Gray Shale Inclusions, Fine Grained, Weak HCL Reaction, Poor Discontinuity Condition, Rock Quality Designation is Poor	164.2	Qu = 596 TSF RQD = 41%
15.0	R2	NX	100		SHALEY DOLOMITIC LIMESTONE BEDROCK, Light Gray and Greenish Gray, Highly Weathered, Closely Spaced Horizontal Joints, Very Closely Vertical Joints, Fine Grained, Weak HCL Reaction, Poor Discontinuity Condition, Rock Quality Designation is Very Poor, Medium Strong to Strong Rock		RQD = 0%
17.5					End of Boring at 16 feet		
20.0					Notes: 1. Total split spoon sampler refusal was encountered at approximately 10.17 feet below the existing ground surface level, and total hollow stem auger refusal was encountered at approximately 11 feet below the existing ground surface level. A Tri-Cone rock roller bit was used to clean out the borehole before rock coring was started. At approximately 11 feet below the existing grade level, a NX size (2-1/8" diameter) 10 foot long diamond bit core barrel attached to the drill rods		
22.5							

Calibrated Penetrometer Unconfined Compression

Water Level Observations		SEECO Consultants, Inc.	Boring Started	8/17/22		
			Boring Completed	8/17/22		
Dry WS/WD	N/A	7350 Duvan Drive, Tinley Park, IL 60477	Driller	EN	Rig	D-50
		Approved By GG Job No. 13085G	Drawn By	SW	Sheet	1 of 2

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-4**

APPROX. SURFACE ELEVATION (C.C.D.) **520.80** + -

NORTH | EAST

DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)

DEPTH ELEVATION | SAMPLE NO. | SAMPLER TYPE | SAMPLE REC. (%) | SOIL GRAPHIC LOG | UNIT DRY WT. LBS./FT.^{3} | Unconfined Compressive Strength, Tons/Ft.^{2} | REMARKS

Unconfined Compressive Strength, Tons/Ft.^{2}: 1 2 3 4 5

PL MC LL

STD "N" PENETRATION BLOWS PER FT.: 10 20 30 40 50

was then used to core the bedrock.

2. The apparent top of weathered dolomitic limestone bedrock is approximately 10 feet below the existing grade level and the apparent top of solid dolomitic limestone bedrock is approximately 11 feet below the existing grade level.

3. The groundwater level reading after coring the bedrock was not recorded due to injecting water into the borehole during the coring process to cool the rock coring bit, and therefore is not accurate.

4. All soil samples were screened with a MiniRae 300 OVM photo-ionization detector (PID) and by utilizing olfactory senses. No petroleum odors were detected in all samples and all PID = 0 ppm.

5. Sample 1 was discretely chosen to be environmental chemically tested for VOCs, SVOCs, Total 8 RCRA Metals, Pesticides/PCBS, and pH by an independent environmental laboratory.

27.5
30.0
32.5
35.0
37.5
40.0
42.5
45.0
47.5
50.0

⊗ Calibrated Penetrometer Unconfined Compression

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-5**

APPROX. SURFACE ELEVATION (M.S.L.) **519.80** + -

NORTH | EAST

Unconfined Compressive Strength, Tons/Ft.^{2} (1 2 3 4 5)

PL MC LL

STD "N" PENETRATION BLOWS PER FT. (10 20 30 40 50)

UNIT DRY WT. LBS./FT.^{3}

DEPTH ELEVATION	SAMPLE NO.	SAMPLER TYPE	SAMPLE REC. (%)	SOIL GRAPHIC LOG	DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)	REMARKS
		HS			FILL: SILTY CLAY, Dark Brown and Some Brown, With Gravel	
2.5	1	SS	50		FILL: SILTY CLAY, Dark Brown and Brown, Trace Sand, Little Gravel, Hard, Moist (CL)	
		HS				
5.0	2	SS	42		FILL: SILTY CLAY, Dark Brown and Brown, Trace Sand, Little Gravel, Hard, Dry (CL)	
		HS				
7.5	3	SS	58		DOLOMITIC LIMESTONE BEDROCK, Tan, Weathered	
		HS				
10.0					End of Boring at 10 feet	SPT N=50 Blows/0" Refusal
12.5					Note 1. The apparent top of weathered dolomitic limestone bedrock is approximately 7 feet below the existing ground level and the apparent top of solid limestone bedrock is approximately 10 feet below the existing level.	
15.0					2. Total split spoon sampler refusal was encountered at approximately 10 feet below the existing ground surface level, and total hollow stem auger refusal was encountered at approximately 10 feet below the existing ground surface level.	
17.5					3. All soil samples were screened with a MiniRae300 OVM photo-ionization detector (PID) and by utilizing olfactory senses. No petroleum odors were detected in all samples and all PID = 0 ppm.	
20.0						
22.5						

⊗ Calibrated Penetrometer Unconfined Compression

Water Level Observations		SEECO Consultants, Inc.	Boring Started	8/17/22
			Boring Completed	8/17/22
Dry WS/WD	N/A	7350 Duvan Drive, Tinley Park, IL 60477	Driller EN	Rig D-50
		Approved By GG / Job No. 13085G	Drawn By SW	Sheet 1 of 1

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-6**

APPROX. SURFACE ELEVATION (M.S.L.) **530.00** + -

NORTH | EAST

Unconfined Compressive Strength, Tons/Ft.^{2} (1 2 3 4 5)

PL MC LL

STD "N" PENETRATION BLOWS PER FT. (10 20 30 40 50)

DEPTH ELEVATION	SAMPLE NO.	SAMPLER TYPE	SAMPLE REC. (%)	SOIL GRAPHIC LOG	DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)	UNIT DRY WT. LBS./FT.^{3}	REMARKS
		HS			FILL: POORLY GRADED GRAVEL, Dark Brown, Some Sand, Medium Dense, Moist to Dry to Moist		
2.5	1	SS	42		(Some Dark Brown Clay from 0 to 1 Feet)		
		HS					
5.0	2	SS	29		(Trace Glass at 4 to 6 Feet)		Env. Sample
		HS					
7.5	3	SS	38				
		HS					
10.0	4	SS	54		FILL: WELL GRADED GRAVEL, Brown, Little Black Sand, Medium Dense, Moist (GW)		
12.5		HS					
	5	SS	58		FILL: SILTY CLAY, Dark Brown, Trace Black, Trace Sand, Little Gravel, Contains Brick Fragments, Medium, Wet		
15.0					End of Boring at 15 feet		
17.5					Note:		
					1. All soil samples were screened with a MiniRae 300 OVM photo-ionization detector (PID) and by utilizing olfactory senses. No petroleum odors were detected in all samples and all PID = 0 ppm.		
20.0					2. Sample 2 was discretely chosen to be environmental chemically tested for VOCs, SVOCs, Total 8 RCRA Metals, Pesticides/PCBS, and pH by an independent environmental laboratory.		
22.5							

⊗ Calibrated Penetrometer Unconfined Compression

Water Level Observations		SEECO Consultants, Inc.	Boring Started	8/18/22
			Boring Completed	8/18/22
Dry WS/WD	N/A	7350 Duvan Drive, Tinley Park, IL 60477	Driller EN	Rig D-50
		Approved By GG / Job No. 13085G	Drawn By SW	Sheet 1 of 1

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-7**

APPROX. SURFACE ELEVATION (M.S.L.) **525.00** + -

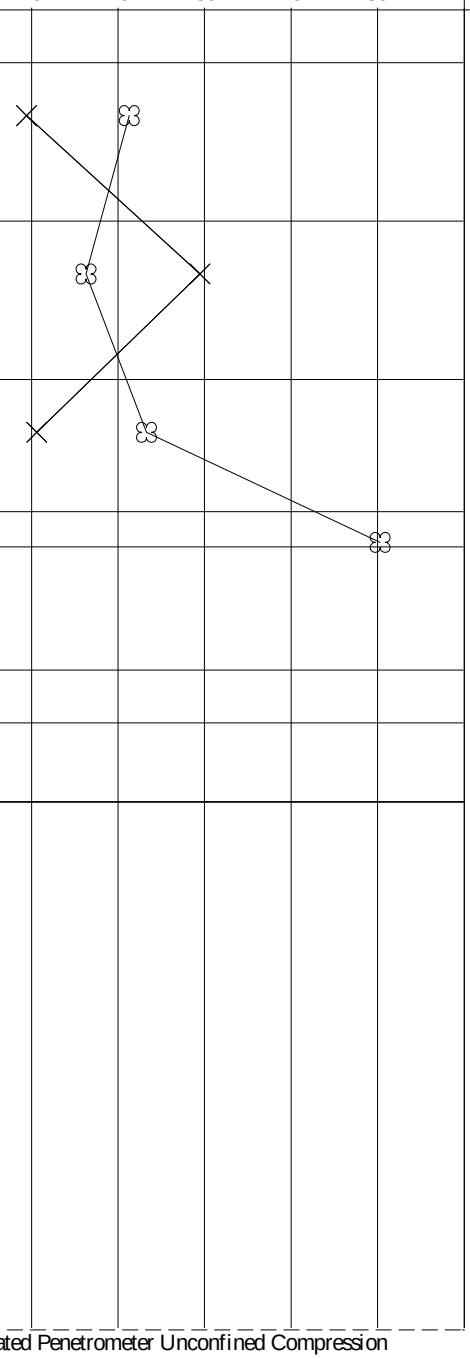
NORTH | EAST

Unconfined Compressive Strength, Tons/Ft.^{2} (1 2 3 4 5)

PL MC LL

STD "N" PENETRATION BLOWS PER FT. (10 20 30 40 50)

DEPTH ELEVATION	SAMPLE NO.	SAMPLER TYPE	SAMPLE REC. (%)	SOIL GRAPHIC LOG	DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)	UNIT DRY WT. LBS./FT.^{3}	REMARKS
		HS			FILL: SANDY CLAY, Dark Brown, Some Brown, Trace Gravel		
2.5	1	SS	42		FILL: SANDY GRAVEL, Brown and Black, Medium Dense, Dry (GP)		Env. Sample
		HS					
5.0	2	SS	54		FILL: POORLY GRADED SAND, Black, Some Gravel, Contains Slag and Bricks, Medium Dense, Moist		
		HS					
7.5	3	SS	33		FILL: POORLY GRADED GRAVEL, Dark Brown, Some Sand, Medium Dense, Moist (GP)		
		HS					
10.0		SS			DOLOMITIC LIMESTONE BEDROCK, Tan, Weathered		SPT N=50/2" Refusal
	R1	NX	87		DOLOMITIC LIMESTONE BEDROCK, Tan, Moderately Weathered, Closely Spaced Horizontal Joints, Closely Spaced Vertical Joints, Fine Grained, Weak HCL Reaction, Poor Discontinuity Condition, Rock Quality Designation is Poor	166.1	RQD = 40% Qu =397 TSF
12.5	R2	NX	100		DOLOMITIC LIMESTONE BEDROCK, Tan, Slightly Weathered, Closely Spaced Horizontal Joints, Closely Spaced Vertical Joints, Fine Grained, Weak HCL Reaction, Poor Discontinuity Condition, Rock Quality Designation is Good	163.7	RQD = 83% Qu =408 TSF
	R3	NX	72			164.8	RQD = 50% Qu =434 TSF
15.0					DOLOMITIC LIMESTONE BEDROCK, Tan, Moderately Weathered, Closely Spaced Horizontal Joints, Closely Spaced Vertical Joints, Fine Grained, Weak HCL Reaction, Poor Discontinuity Condition, Rock Quality Designation is Fair, Medium Strong Rock		
17.5					End of Boring at 15 Feet		
20.0					Note:		
22.5					1. Total split spoon sampler refusal was encountered at approximately 10.17 feet below the existing ground surface level. A Tri-Cone rock roller bit was used to clean out the borehole before rock coring was started. At approximately 10.17 feet below the existing grade level, a NX size (2-1/8" diameter) 10 foot long diamond bit core barrel attached to the drill rods was then used to core the bedrock.		
					2. The apparent top of weathered dolomitic		



Calibrated Penetrometer Unconfined Compression

Water Level Observations		SEECO Consultants, Inc.	Boring Started	8/18/22
			Boring Completed	8/18/22
Dry WS/WD	N/A	7350 Duvan Drive, Tinley Park, IL 60477	Driller EN	Rig D-50
		Approved By GG / Job No. 13085G	Drawn By SW	Sheet 1 of 2

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-7**

APPROX. SURFACE ELEVATION (C.C.D.) **525.00** + -

NORTH | EAST

DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)

DEPTH ELEVATION | SAMPLE NO. | SAMPLER TYPE | SAMPLE REC. (%) | SOIL GRAPHIC LOG | UNIT DRY WT. LBS./FT.^{3} | Unconfined Compressive Strength, Tons/Ft.^{2} | REMARKS

Unconfined Compressive Strength, Tons/Ft.^{2}: 1 2 3 4 5

PL MC LL

STD "N" PENETRATION BLOWS PER FT.: 10 20 30 40 50

limestone bedrock is approximately 9.5 feet below the existing grade level and the apparent top of solid dolomitic limestone bedrock is approximately 10.17 feet below the existing grade level.

3. The groundwater level reading after coring the bedrock was not recorded due to injecting water into the borehole during the coring process to cool the rock coring bit, and therefore is not accurate.

4. All soil samples were screened with a MiniRae 300 OVM photo-ionization detector (PID) and by utilizing olfactory senses. No petroleum odors were detected in all samples and all PID = 0 ppm.

5. Sample 1 was discretely chosen to be environmental chemically tested for VOCs, SVOCs, Total 8 RCRA Metals, Pesticides/PCBS, and pH by an independent environmental laboratory.

27.5
30.0
32.5
35.0
37.5
40.0
42.5
45.0
47.5
50.0

⊗ Calibrated Penetrometer Unconfined Compression

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-8**

APPROX. SURFACE ELEVATION (M.S.L.) **524.50** + -

NORTH | EAST

Unconfined Compressive Strength, Tons/Ft.^{2} (1 2 3 4 5)

PL MC LL

STD "N" PENETRATION BLOWS PER FT. (10 20 30 40 50)

DEPTH ELEVATION	SAMPLE NO.	SAMPLER TYPE	SAMPLE REC. (%)	SOIL GRAPHIC LOG	DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)	UNIT DRY WT. LBS./FT.^{3}	REMARKS
		HS			FILL: SILTY CLAY, Dark Brown and Brown, Trace Sand		
	1	SS	63		FILL: SANDY GRAVEL, Black and Brown, Medium Dense, Moist (GP)		
2.5		HS					
	2	SS	38		FILL: POORLY GRADED GRAVEL, Black and Brown, Some Sand, Trace Black Clay, Contains Red Brick Pieces, Loose, Moist		
5.0		HS					
	3	SS	67		FILL: SANDY GRAVEL, Brown, Little Black, Medium Dense, Moist (GP)		
7.5		HS					
10.0	4	SS	8		Possible Bedrock at 9.5 to 10 feet (Hard Drilling)		
					DOLOMITIC LIMESTONE BEDROCK, Tan, Weathered		SPT N=50 Blows/3" Refusal
					End of Boring at 10.25 feet		
12.5					Note		
15.0					1. The apparent top of weathered dolomitic limestone bedrock is approximately 9.5 feet below the existing grade level and the apparent top of solid dolomitic limestone bedrock is approximately 10.25 feet below the existing level.		
17.5					2. Total split spoon sampler refusal was encountered at approximately 10.25 feet below the existing ground surface level.		
20.0					3. All soil samples were screened with a MiniRae300 OVM photo-ionization detector (PID) and by utilizing olfactory senses. No petroleum odors were detected in all samples and all PID = 0 ppm.		
22.5							

⊗ Calibrated Penetrometer Unconfined Compression

Water Level Observations		SEECO Consultants, Inc.	Boring Started	8/18/22		
			Boring Completed	8/18/22		
Dry WS/WD	N/A	7350 Duvan Drive, Tinley Park, IL 60477	Driller	EN	Rig	D-50
		Approved By GG Job No. 13085G	Drawn By	SW	Sheet	1 of 1

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-9**

APPROX. SURFACE ELEVATION (M.S.L.) **523.00** +/-

NORTH | EAST

DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)

Unconfined Compressive Strength, Tons/Ft.^{2} (1 2 3 4 5)

PL MC LL

STD "N" PENETRATION BLOWS PER FT. (10 20 30 40 50)

UNIT DRY WT. LBS./FT.^{3}

DEPTH ELEVATION	SAMPLE NO.	SAMPLER TYPE	SAMPLE REC. (%)	SOIL GRAPHIC LOG	DESCRIPTION OF MATERIALS	REMARKS
		HS			FILL: SILTY CLAY, Dark Brown, Some Brown,	
2.5	1	SS	50		FILL: SILTY CLAY, Black, Trace Brown, Little Sand and Gravel, Very Stiff, Moist (CL)	
		HS				
5.0	2	SS	42		FILL: SILTY CLAY, Dark Brown, Trace Sand, Medium, Moist (CL)	
		HS				
7.5	3	SS	17		DOLOMITIC LIMESTONE BEDROCK, Tan, Weathered	SPT N=121 121 Blows/6" Refusal
10.0					End of Boring at 8 Feet	
12.5					Note	
15.0					1. The apparent top of weathered dolomitic limestone bedrock is approximately 6 feet below the existing ground level and the apparent top of solid limestone bedrock is approximately 8 feet below the existing ground level.	
17.5					2. Total split spoon sampler refusal was encountered at approximately 7 feet below the existing ground surface level, and total hollow stem auger refusal was encountered at approximately 8 feet below the existing ground surface level.	
20.0					3. All soil samples were screened with a MiniRae300 OVM photo-ionization detector (PID) and by utilizing olfactory senses. No petroleum odors were detected in all samples and all PID = 0 ppm.	
22.5						

Calibrated Penetrometer Unconfined Compression

Water Level Observations		SEECO Consultants, Inc.			Boring Started	8/18/22		
					Boring Completed	8/18/22		
Dry WS/WD	N/A	7350 Duvan Drive, Tinley Park, IL 60477			Driller	EN	Rig	D-50
		Approved By	GG	Job No. 13085G	Drawn By	SW	Sheet	1 of 1

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-10**

APPROX. SURFACE ELEVATION (M.S.L.) **536.50** + -

NORTH | EAST

DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)

Unconfined Compressive Strength, Tons/Ft.^{2}

PL MC LL

STD "N" PENETRATION BLOWS PER FT.

DEPTH ELEVATION	SAMPLE NO.	SAMPLER TYPE	SAMPLE REC. (%)	SOIL GRAPHIC LOG	DESCRIPTION OF MATERIALS	UNIT DRY WT. LBS./FT.^{3}	REMARKS
		HS			6.5" BITUMINOUS CONCRETE PAVEMENT		
					6.5" CRUSHED STONE BASE COURSE		
	1	SS	54		FILL: SILTY CLAY, Brown, With Crushed Stone, Trace Sand, Stiff, Dry (CL)		
2.5		HS					
	2	SS	42		FILL: CRUSHED STONE, Light Gray, Trace Black Sand, Loose, Dry		Env. Sample
5.0		HS					
	3	SS	67		FILL: CRUSHED STONE, Light Gray, Medium Dense to Loose, Dry		
7.5		HS					
10.0	4	SS	38				
12.5		HS					
	5	SS	50		FILL: CRUSHED STONE, Light Gray, Some Brown Fine Sand, Loose, Dry		
15.0		HS					
	6	SS	8		REINFORCED PORTLAND CEMENT CONCRETE PIPE		SPT N=50 Blows/3" Refusal
17.5		HS					
					FILL: CRUSHED STONE, Light Gray		
20.0	R1	NX	20				
22.5					4" REINFORCED PORTLAND CEMENT CONCRETE PIPE		
	7	SS	33		DOLOMITIC LIMESTONE BEDROCK, Tan, Weathered		

⊗ Calibrated Penetrometer Unconfined Compression

Water Level Observations		SEECO Consultants, Inc.	Boring Started	8/22/22		
			Boring Completed	8/22/22		
Dry WS/WD	N/A	7350 Duvan Drive, Tinley Park, IL 60477	Driller	EN	Rig	D-50
		Approved By GG Job No. 13085G	Drawn By	SW	Sheet	1 of 2

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-10**

APPROX. SURFACE ELEVATION (C.C.D.) **536.50** + -

NORTH | EAST

DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)

DEPTH ELEVATION | SAMPLE NO. | SAMPLER TYPE | SAMPLE REC. (%) | SOIL GRAPHIC LOG | UNIT DRY WT. LBS./FT.^{3} | REMARKS

Unconfined Compressive Strength, Tons/Ft.^{2}

1 2 3 4 5

PL MC LL

STD "N" PENETRATION BLOWS PER FT.

10 20 30 40 50

End of Boring at 25

Note

1. The apparent top of weathered dolomitic limestone bedrock is approximately 23 feet below the existing ground surface level.

2. An obstruction was encountered at approximately 17 to 18 feet depth and at a 22.67 feet depth and may be a possible old reinforced concrete pipe/structure.

3. The groundwater level reading after coring the bedrock was not recorded due to injecting water into the borehole during the coring process to cool the rock coring bit, and therefore is not accurate.

4. All soil samples were screened with a MiniRae 300 OVM photo-ionization detector (PID) and by utilizing olfactory senses. No petroleum odors were detected in all samples and all PID = 0 ppm.

5. Sample 2 was discretely chosen to be environmental chemically tested for VOCs, SVOCs, Total 8 RCRA Metals, Pesticides/PCBS, and pH by an independent environmental laboratory.

27.5
30.0
32.5
35.0
37.5
40.0
42.5
45.0
47.5
50.0

⊗ Calibrated Penetrometer Unconfined Compression

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-10A**

APPROX. SURFACE ELEVATION (M.S.L.) + - **537.50**

NORTH | EAST

DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)

Unconfined Compressive Strength, Tons/Ft.^{2}

STD "N" PENETRATION BLOWS PER FT.

DEPTH ELEVATION	SAMPLE NO.	SAMPLER TYPE	SAMPLE REC. (%)	SOIL GRAPHIC LOG	DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)	UNIT DRY WT. LBS./FT.^{3}	REMARKS
		HS			7" BITUMINOUS CONCRETE PAVEMENT		
					5" SAND AND GRAVEL BASE COURSE, Brown		
2.5	1	SS	67		FILL: SILTY CLAY, Brown and Gray, Trace Dark Brown, Trace Sand and Gravel, Very Stiff, Moist (CL)		
		HS					
5.0	2	SS	54		FILL: POORLY GRADED SAND, Black and Dark Brown, Some Gravel, Dense, Dry (SP)		
		HS					
7.5	3	SS	42		FILL: POORLY GRADED SAND, Black, Trace Gravel, Contains Slag Pieces, Medium Dense, Moist		
		HS					
10.0					End of Boring at 10 feet		
12.5					Note:		
15.0					1. Hollow stem auger hit an unlocated water main at approximately 10 feet below the existing ground surface level. (Driller's Observation)		
17.5					2. All soil samples were screened with a MiniRae300 OVM photo-ionization detector (PID) and by utilizing olfactory senses. No petroleum odors were detected in all samples and all PID = 0 ppm.		
20.0							
22.5							

Calibrated Penetrometer Unconfined Compression

Water Level Observations		SEECO Consultants, Inc.			Boring Started	9/1/22	
					Boring Completed	9/1/22	
Dry WS/WD	N/A	7350 Duvan Drive, Tinley Park, IL 60477			Driller	EN	Rig D-50
		Approved By	CWG	Job No. 13085G	Drawn By	SW	Sheet 1 of 1

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-11**

APPROX. SURFACE ELEVATION (M.S.L.) **537.20** +/-

NORTH | EAST

Unconfined Compressive Strength, Tons/Ft.^{2} (1 2 3 4 5)

PL MC LL

STD "N" PENETRATION BLOWS PER FT. (10 20 30 40 50)

DEPTH ELEVATION	SAMPLE NO.	SAMPLER TYPE	SAMPLE REC. (%)	SOIL GRAPHIC LOG	DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)	UNIT DRY WT. LBS./FT.^{3}	REMARKS
		HS			2.5" BITUMINOUS CONCRETE PAVEMENT 10" CRUSHED STONE BASE COURSE		
2.5	1	SS	58		FILL: SANDY GRAVEL, Light Brown, Medium Dense, Dry (Trace Clay at 1'-3')		
		HS			Contains Red Bricks at 4'-6')		
5.0	2	SS	25				
		HS					
7.5	3	SS	50		FILL: CLAY TOPSOIL, Black, Trace Sand, Some Gravel, Contains Trace Red Brick Pieces, Soft, Wet		
		HS			FILL: SILTY CLAY, Dark Brown, Trace Black, Trace Sand, Some Gravel, Soft, Moist (CL)		
10.0	4	SS	46				
12.5		HS					
		SS	75		DOLOMITIC LIMESTONE BEDROCK, Tan and Light Gray, Weathered		SPT N=50 Blows/4" Refusal
		HS					
15.0		NX	94		DOLOMITIC LIMESTONE BEDROCK, Light Gray and Tan, Slightly Weathered, Closely Spaced Horizontal Joints, Closely to Moderately Spaced Vertical Joints, Fine Grained, Weak HCL Reaction, Fair Discontinuity Condition, Rock Quality Designation is Good, Very Strong to Medium Strong Rock	169.0	Qu = 1,087 TSF RQD = 81%
17.5						165.1	Qu = 510 TSF
20.0					End of Boring at 19 feet Note: 1. Total split spoon sampler refusal was encountered at approximately 13.33 feet below the existing ground surface level, and total hollow stem auger refusal was encountered at approximately 14 feet below the existing ground surface level. A Tri-Cone rock roller bit was used to clean out the borehole before rock coring was started. At approximately 14 feet below the existing grade level, a NX size (2-1/8" diameter) 10 foot long		
22.5							

⊗ Calibrated Penetrometer Unconfined Compression

Water Level Observations		SEECO Consultants, Inc.	Boring Started	8/19/22		
			Boring Completed	8/19/22		
Dry WS/WD	N/A	7350 Duvan Drive, Tinley Park, IL 60477	Driller	EN	Rig	D-50
		Approved By GG / Job No. 13085G	Drawn By	SW	Sheet	1 of 2

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-11**

APPROX. SURFACE ELEVATION (C.C.D.) **537.20** + -

NORTH | EAST

DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)

DEPTH ELEVATION | SAMPLE NO. | SAMPLER TYPE | SAMPLE REC. (%) | SOIL GRAPHIC LOG | UNIT DRY WT. LBS./FT.^{3} | Unconfined Compressive Strength, Tons/Ft.^{2} | REMARKS

Unconfined Compressive Strength, Tons/Ft.^{2}: 1 2 3 4 5

PL MC LL

STD "N" PENETRATION BLOWS PER FT.: 10 20 30 40 50

diamond bit core barrel attached to the drill rods was then used to core the bedrock.

2. The apparent top of weathered dolomitic limestone bedrock is approximately 13 feet below the existing grade level and the apparent top of solid dolomitic limestone bedrock is approximately 14 feet below the existing grade level.

3. The groundwater level reading after coring the bedrock was not recorded due to injecting water into the borehole during the coring process to cool the rock coring bit, and therefore is not accurate.

4. All soil samples were screened with a MiniRae300 OVM photo-ionization detector (PID) and by utilizing olfactory senses. No petroleum odors were detected in all samples and all PID = 0 ppm.

27.5
30.0
32.5
35.0
37.5
40.0
42.5
45.0
47.5
50.0

⊗ Calibrated Penetrometer Unconfined Compression

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-12**

APPROX. SURFACE ELEVATION (M.S.L.) + **537.40** -

NORTH | EAST

Unconfined Compressive Strength, Tons/Ft.^{2} (1 2 3 4 5)

PL MC LL

STD "N" PENETRATION BLOWS PER FT. (10 20 30 40 50)

UNIT DRY WT. LBS./FT.^{3}

DEPTH ELEVATION	SAMPLE NO.	SAMPLER TYPE	SAMPLE REC. (%)	SOIL GRAPHIC LOG	DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)	REMARKS
		HS			3" BITUMINOUS CONCRETE PAVEMENT	
					9" CRUSHED STONE BASE COURSE	
	1	SS	46		FILL: SILTY CLAY, Dark Brown, Trace Black, Trace Sand, Little Gravel, Contains Glass, Medium, Moist	Env. Sample
2.5		HS				
	2	SS	54		FILL: SILTY CLAY, Dark Brown, Trace Brown, Trace Sand, Little Gravel, Medium, Moist (CL)	
5.0		HS				
	3	SS	42		FILL: SILTY CLAY, Dark Brown, Trace Black, Trace Sand, Little Gravel, Medium, Moist (CL)	
7.5		HS				
10.0						
	4	SS	38		DOLOMITIC LIMESTONE BEDROCK, Tan, Weathered	SPT N=50 Blows/6" Refusal
12.5					End of boring at 12 feet	
15.0						
17.5						
20.0						
22.5						

Note

1. The apparent top of weathered dolomitic limestone bedrock is approximately 11 feet below the existing ground level and the apparent top of solid dolomitic limestone bedrock is approximately 12 feet below the existing ground level.

2. Total hollow stem auger refusal was encountered at approximately 12 feet below the existing ground surface level.

3. All soil samples were screened with a MiniRae 300 OVM photo-ionization detector (PID) and by utilizing olfactory senses. No petroleum odors were detected in all samples and all PID = 0 ppm.

4. Sample 1 was discretely chosen to be environmental chemically tested for VOCs, SVOCs, Total 8 RCRA Metals, Pesticides/PCBS, and pH by an independent environmental laboratory.

⊗ Calibrated Penetrometer Unconfined Compression

Water Level Observations		SEECO Consultants, Inc.	Boring Started	8/19/22
			Boring Completed	8/19/22
Dry WS/WD	N/A	7350 Duvan Drive, Tinley Park, IL 60477	Driller EN	Rig D-50
		Approved By GG / Job No. 13085G	Drawn By SW	Sheet 1 of 1

BORING LOG

CLIENT **City of Joliet**

PROJECT **Proposed Combined Sewer Overflow Long Term Control Plan- Phase IV**

ENGINEER **Strand Associates, Inc.**

LOCATION **Various Locations, Joliet, IL**

BORING NUMBER **B-13**

APPROX. SURFACE ELEVATION (M.S.L.) **536.40** + -

NORTH | EAST

Unconfined Compressive Strength, Tons/Ft.^{2} (1 2 3 4 5)

PL MC LL

STD "N" PENETRATION BLOWS PER FT. (10 20 30 40 50)

DEPTH ELEVATION	SAMPLE NO.	SAMPLER TYPE	SAMPLE REC. (%)	SOIL GRAPHIC LOG	DESCRIPTION OF MATERIALS (LABORATORY CLASSIFICATION)	UNIT DRY WT. LBS./FT.^{3}	REMARKS
		HS			3" BITUMINOUS CONCRETE PAVEMENT		
					7" SAND AND GRAVEL BASE COURSE, Dark Brown		
2.5	1	SS	63		FILL: SILTY CLAY, Dark Brown and Brown, Trace Sand and Gravel, Medium, Dry (CL)		
		HS					
5.0	2	SS	29		FILL: SILTY CLAY, Dark Brown, Trace Brown, Little Sand and Gravel, Medium, Moist (CL)		
		HS					
7.5	3	SS	54		FILL: SILTY CLAY, Dark Brown, Trace Brown, Trace Sand and Gravel, Medium, Moist (CL)		
		HS					
10.0	4	SS	8		DOLOMITIC LIMESTONE BEDROCK, Tan, Weathered		SPT N=50 Blows/3" Refusal
					End of boring at 10.25 feet		
12.5							
15.0							
17.5							
20.0							
22.5							

Note:

1. The apparent top of weathered dolomatic limestone bedrock is approximately 9.5 feet below the existing ground level and the apprent top of solid limestone bedrock is approximately 10.25 feet below the existing ground level.

2. Total split spoon sampler refusal was encountered at approximately 10.25 feet below the existing ground surface level, and total hollow stem auger refusal was encountered at approximately 10.25 feet below the existing ground surface level.

3. All soil samples were screened with a MiniRae300 OVM photo-ionization detector (PID) and by utilizing olfactory senses. No petroleum odors were detected in all samples and all PID = 0 ppm.

Calibrated Penetrometer Unconfined Compression

Water Level Observations		SEECO Consultants, Inc.	Boring Started	8/19/22	
			Boring Completed	8/19/22	
Dry WS/WD	N/A	7350 Duvan Drive, Tinley Park, IL 60477	Driller EN	Rig	D-50
		Approved By GG Job No. 13085G	Drawn By SW	Sheet	1 of 1

APPENDIX 4

CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES

ASTM Designation: D 2487-10

(Based on United Soil Classification System)

SEECO Consultants, Inc.

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests[A]

			Soil Classification	Group Symbol	Group Name[B]
Coarse Grained Soils More than 50% retained on No. 200 sieve	Gravels More than 50% coarse fraction retained on No. 4 sieve	Clean Gravels Less than 5% fines[C]	Cu≥4 and 1≤Cc≤3[E]	GW	Well graded gravel[F]
			Cu≥4 and/or 1>Cc>3[E]	GP	Poorly graded gravel[F]
		Gravels with fines More than 12% fines[C]	Fines classify as ML or MH	GM	Silty gravel[F, G, H]
			Fines classify as CL or CH	GC	Clayey gravel[F, G, H]
	Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands Less than 5% fines[D]	Cu≥6 and 1≤Cc≤3[E]	SW	Well-graded sand[I]
			Cu<6 and /or 1>Cc>3[E]	SP	Poorly graded sand[I]
		Sands with fines More than 12% fines[D]	Fines classify as ML or MH	SM	Silty sand[G, H, I]
			Fines classify as CL or CH	SC	Clayey sand[G, H, I]
Fine-Grained Soils 50% or more passes the No. 200 sieve	Silts and Clays Liquid limit less than 50	Inorganic	PI>7 and plots on or above "A" line[J]	CL	Lean clay[K, L, M]
			PI<4 or plots below "A" line[J]	ML	Silt[K, L, M]
		Organic	Liquid limit –oven dried / Liquid limit –not dried <0.75	OL	Organic clay[K, L, M, N]
				OL	Organic silt[K, L, M, O]
	Silts and Clays Liquid limit 50 or more	Inorganic	PI plots on or above "A" line	CH	Fat clay[K, L, M]
			PI plots below "A" line	MH	Elastic silt[K, L, M]
		Organic	Liquid limit –oven dried / Liquid limit –not dried <0.75	OH	Organic clay[K, L, M, P]
					Organic silt[K, L, M, Q]
Highly organic soils	Primarily organic matter, dark in color, and organic odor			PT	Peat

[A]Based on the material passing the three inch (75 MM) sieve

[B]If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name

[C]Gravels with 5 to 12% fines require dual symbols:
GW-GM well-graded gravel with silt
GW-GC well-graded gravel with clay
GP-GM poorly graded gravel with silt
GP-GC poorly graded gravel with clay

[D]Sands with 5 to 12% fines require dual symbols:
SW-SM well-graded sand with silt
SW-SC well-graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay

[E]$Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$

[F]If soil contains ≥15% sand, add "with sand" to group name

[G]If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM

[H]If fines are organic, add "with organic fines" to group name

[I]If soils contains ≥15% gravel, add "with gravel" to group name

[J]If Atterberg limits plot in hatched area, soil is a CL-ML, silty clay

[K]If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant

[L]If soil contains ≥30% plus No. 200, predominantly sand, add "sandy" to group name

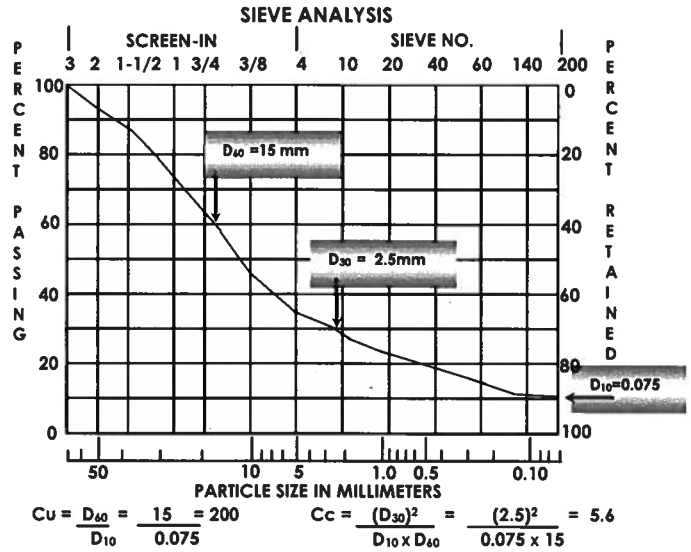
[M]If soil contains ≥30% plus No. 200, predominantly gravel, add "gravelly" to group name

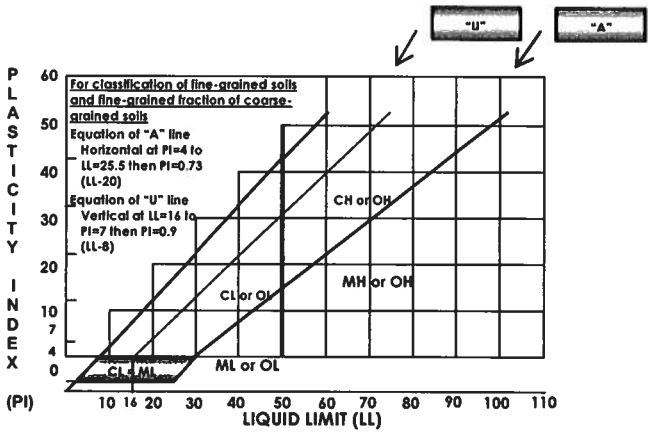
[N]PI ≥4 and plots on or above "A" line

[O]PI <4 or plots below "A" line

[P]PI plots on or above "A" line

[Q]PI plots below "A" line





APPENDIX 5

Strength of Intact Rock

ISRM Grade	Description or Classification	Approximate Range of Uniaxial Compressive Strength		Point Load Index		Field Estimate of Strength	Examples
		MPa	psi	MPa	psi		
R6	Extremely strong rock	>250	>36 000	>10	>1500	Rock can only be chipped by a geologic hammer	Fresh basalt, chert, diabase, gneiss, granite, quartzite
R5	Very strong rock	100–250	15 000–36 000	4–10	600–1500	Requires many blows of geological hammer to cause fracture	Amphibolite, sandstone, basalt, gabbro, gneiss, granodirite, peridotite, rhyiolite, tuff
R4	Strong rock	50–100	7000–15 000	2–4	300–600	Requires more than one hammer blow to cause fracture	Limestone, marble, sandstone, schist
R3	Medium strong rock	25–50	3500–7000	1–2	150–300	Cannot be scraped or peeled with a pocket knife; can be fractured with a single blow of geologic hammer	Concrete, phyllite, schist, siltstone
R2	Weak rock	5.0–25	725–3500	[a]	[a]	Can be peeled by a pocket knife with difficulty; shallow indentations made by blow with point of geologic hammer	Chalk, claystone, potash, marl, siltstone, shale, rocksalt
R1	Very weak rock	1.0–5.0	150–725	[a]	[a]	Crumbles under firm blows with point of geological hammer	Highly weathered or altered rock, shale
R0	Extremely weak rock	0.25–1.0	35–150	[a]	[a]	Indented by thumbnail	Stiff fault gouge

Spacing of Discontinuities in Rock Masses

Description	Spacing (m)
Extremely wide	>6
Very wide	2–6
Wide	0.6–2
Moderate	0.2–0.6
Close	0.06–0.2
Very close	0.02–0.06
Extremely close	<0.02

After International Society for Rock Mechanics (1981), Wyllie (1999).

Rock Mass Classifications Based on RQD and Velocity Index

RQD, %	Velocity Index	Description of Rock Quality
90–100	0.80–1.00	Excellent
75–90	0.60–0.80	Good
50–75	0.40–0.60	Fair
25–50	0.20–0.40	Poor
0–25	0–0.20	Very poor

After Hunt (2005).

APPENDIX 6

Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

Uncontaminated Soil Certification
by Licensed Professional Engineer or Licensed Professional Geologist
for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: Combined Sewer Overflow Structure CSO 004 Office Phone Number, if available: _____

Physical Site Location (address, including number and street):

Granite Street East of Bluff Street

City: Joliet State: IL Zip Code: 60431

County: Will Township: Joliet

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 41.53815 (Decimal Degrees) Longitude: - 88.08419 (-Decimal Degrees)

Identify how the lat/long data were determined:

○ GPS ⊘ Map Interpolation ○ Photo Interpolation ○ Survey ○ Other

IEPA Site Number(s), if assigned: BOL: _____ BOW: _____ BOA: _____

Approximate Start Date (mm/dd/yyyy): _____ Approximate End Date (mm/dd/yyyy): _____

Estimated Volume of debris (cu. Yd.): _____

II. Owner/Operator Information for Source Site

Site Owner

Name: City of Joliet
Street Address: 150 W. Jefferson St
PO Box: _____
City: Joliet State: IL
Zip Code: 60431 Phone: (815) 724-4200
Contact: Greg Ruddy
Email, if available: _____

Site Operator

Name: City of Joliet
Street Address: 150 W. Jefferson St
PO Box: _____
City: Joliet State: IL
Zip Code: 60431 Phone: (815) 724-4200
Contact: Greg Ruddy
Email, if available: _____

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed $50,000 for the violation and an additional civil penalty of not to exceed $10,000 for each day during which the violation continues (415 ILCS 5/42). This form has been approved by the Forms Management Center.

Project Name: Combined Sewer Overflow Structure CSO 004 Latitude: 41.53815 Longitude: - 88.08419

Uncontaminated Soil Certification

III. Basis for Certification and Attachments

For each item listed below, reference the attachments to this form that provide the required information.

a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a)]:

Performed 2 soil borings (B-1 & B-2) and obtained 1 representative sample (B-2 at 3') for analytical testing. Materials certified here with as CCDD material must be free of rebar, rubble, deleterious materials, garbage, odors, etc. and any said materials must be segregated from CCDD materials and disposed of in other legal means.

b. Analytical soil testing results to show that soil chemical constituents comply with the maximum allowable concentrations established pursuant to 35 Ill. Adm. Code Part 1100, Subpart F and that the soil pH is within the range of 6.25 to 9.0,including the documentation of chain of custody control, a copy of the lab analysis; the accreditation status of the laboratory performing the analysis; and certification by an authorized agent of the laboratory that the analysis has been performed in accordance with the Agency's rules for the accreditation of environmental and the scope of the accreditation [35 Ill. Adm. Code 1100.201(g), 1100.205(a), 1100.610]:

SEECO screened for volatile organics using a Photo Ionization Detector which indicates the presence of volatile organics in parts per million (ppm). No readings indicated the presence of volatile organics associated with contamination at the locations tested. Laboratory analysis were within the MAC range set forth by the IEPA and soil pH range is acceptable (results attached).

IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist

I, Garrett Gray, PE (name of licensed professional engineer or geologist) certify under penalty of law that the information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete. In accordance with the Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I certify that the soil from this site is uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. In addition, I certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. All necessary documentation is attached.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Company Name:	SEECO Environmental Services, Inc.
Street Address:	7350 Duvan Drive
City:	Tinley Park State: IL Zip Code: 60477
Phone:	708-429-1685

Garrett Gray
Printed Name:

Garrett W Gray
Licensed Professional Engineer or
Licensed Professional Geologist Signature:

Sep 27, 2022
Date:

GARRETT W. GRAY
062-060834
REGISTERED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

P.E. or P.G. Seal:

Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

Uncontaminated Soil Certification
by Licensed Professional Engineer or Licensed Professional Geologist
for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: Combined Sewer Overflow Structure CSO 007 Office Phone Number, if available: _____

Physical Site Location (address, including number and street):

East Side of Route 6 at West Duncan Street

City: Joliet State: IL Zip Code: 60431

County: Will Township: Joliet

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 41.51136 (Decimal Degrees) Longitude: - 88.09378 (-Decimal Degrees)

Identify how the lat/long data were determined:

○ GPS ⊘ Map Interpolation ○ Photo Interpolation ○ Survey ○ Other

IEPA Site Number(s), if assigned: BOL: _____ BOW: _____ BOA: _____

Approximate Start Date (mm/dd/yyyy): _____ Approximate End Date (mm/dd/yyyy): _____

Estimated Volume of debris (cu. Yd.): _____

II. Owner/Operator Information for Source Site

Site Owner

Name: City of Joliet
Street Address: 150 W. Jefferson St
PO Box: _____
City: Joliet State: IL
Zip Code: 60431 Phone: (815) 724-4200
Contact: Greg Ruddy
Email, if available: _____

Site Operator

Name: City of Joliet
Street Address: 150 W. Jefferson St
PO Box: _____
City: Joliet State: IL
Zip Code: 60431 Phone: (815) 724-4200
Contact: Greg Ruddy
Email, if available: _____

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed $50,000 for the violation and an additional civil penalty of not to exceed $10,000 for each day during which the violation continues (415 ILCS 5/42). This form has been approved by the Forms Management Center.

Project Name: Combined Sewer Overflow Structure CSO 007 Latitude: 41.51136 Longitude: - 88.09378

Uncontaminated Soil Certification

III. Basis for Certification and Attachments

For each item listed below, reference the attachments to this form that provide the required information.

a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a)]:

Performed 1 soil boring (B-3) and obtained 1 representative sample (B-3 at 2') for analytical testing. Materials certified here with as CCDD material must be free of rebar, rubble, deleterious materials, garbage, odors, etc. and any said materials must be segregated from CCDD materials and disposed of in other legal means.

b. Analytical soil testing results to show that soil chemical constituents comply with the maximum allowable concentrations established pursuant to 35 Ill. Adm. Code Part 1100, Subpart F and that the soil pH is within the range of 6.25 to 9.0,including the documentation of chain of custody control, a copy of the lab analysis; the accreditation status of the laboratory performing the analysis; and certification by an authorized agent of the laboratory that the analysis has been performed in accordance with the Agency's rules for the accreditation of environmental and the scope of the accreditation [35 Ill. Adm. Code 1100.201(g), 1100.205(a), 1100.610]:

SEECO screened for volatile organics using a Photo Ionization Detector which indicates the presence of volatile organics in parts per million (ppm). No readings indicated the presence of volatile organics associated with contamination at the locations tested. Laboratory analysis were within the MAC range set forth by the IEPA and soil pH range is acceptable (results attached).

IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist

I, Garrett Gray, PE (name of licensed professional engineer or geologist) certify under penalty of law that the information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete. In accordance with the Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I certify that the soil from this site is uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. In addition, I certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. All necessary documentation is attached.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

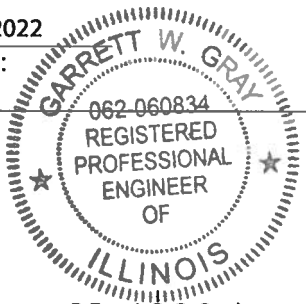
Company Name:	SEECO Environmental Services, Inc.
Street Address:	7350 Duvan Drive
City:	Tinley Park State: IL Zip Code: 60477
Phone:	708-429-1685

Garrett Gray
Printed Name:

Licensed Professional Engineer or
Licensed Professional Geologist Signature:

Sep 27, 2022
Date:

P.E or L.P.G. Seal:



Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

Uncontaminated Soil Certification
by Licensed Professional Engineer or Licensed Professional Geologist
for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: Combined Sewer Overflow Structure CSO 009 Office Phone Number, if available: _____

Physical Site Location (address, including number and street):

West of River Street and East Duncan Street

City: Joliet State: IL Zip Code: 60431

County: Will Township: Joliet

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 41.51157 Longitude: - 88.08919

(Decimal Degrees) (-Decimal Degrees)

Identify how the lat/long data were determined:

○ GPS ⊘ Map Interpolation ○ Photo Interpolation ○ Survey ○ Other

IEPA Site Number(s), if assigned: BOL: _____ BOW: _____ BOA: _____

Approximate Start Date (mm/dd/yyyy): _____ Approximate End Date (mm/dd/yyyy): _____

Estimated Volume of debris (cu. Yd.): _____

II. Owner/Operator Information for Source Site

Site Owner

Name: City of Joliet

Street Address: 150 W. Jefferson St

PO Box: _____

City: Joliet State: IL

Zip Code: 60431 Phone: (815) 724-4200

Contact: Greg Ruddy

Email, if available: _____

Site Operator

Name: City of Joliet

Street Address: 150 W. Jefferson St

PO Box: _____

City: Joliet State: IL

Zip Code: 60431 Phone: (815) 724-4200

Contact: Greg Ruddy

Email, if available: _____

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed $50,000 for the violation and an additional civil penalty of not to exceed $10,000 for each day during which the violation continues (415 ILCS 5/42). This form has been approved by the Forms Management Center.

Project Name: Combined Sewer Overflow Structure CSO 009 Latitude: 41.51157 Longitude: - 88.08919

Uncontaminated Soil Certification

III. Basis for Certification and Attachments

For each item listed below, reference the attachments to this form that provide the required information.

a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a)]:

Performed 2 soil borings (B-4 & B-5) and obtained 1 representative sample (B-4 at 3') for analytical testing. Materials certified here with as CCDD material must be free of rebar, rubble, deleterious materials, garbage, odors, etc. and any said materials must be segregated from CCDD materials and disposed of in other legal means.

b. Analytical soil testing results to show that soil chemical constituents comply with the maximum allowable concentrations established pursuant to 35 Ill. Adm. Code Part 1100, Subpart F and that the soil pH is within the range of 6.25 to 9.0,including the documentation of chain of custody control, a copy of the lab analysis; the accreditation status of the laboratory performing the analysis; and certification by an authorized agent of the laboratory that the analysis has been performed in accordance with the Agency's rules for the accreditation of environmental and the scope of the accreditation [35 Ill. Adm. Code 1100.201(g), 1100.205(a), 1100.610]:

SEECO screened for volatile organics using a Photo Ionization Detector which indicates the presence of volatile organics in parts per million (ppm). No readings indicated the presence of volatile organics associated with contamination at the locations tested. Laboratory analysis were within the MAC range set forth by the IEPA and soil pH range is acceptable (results attached).

IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist

I, Garrett Gray, PE (name of licensed professional engineer or geologist) certify under penalty of law that the information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete. In accordance with the Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I certify that the soil from this site is uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. In addition, I certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. All necessary documentation is attached.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Company Name:	SEECO Environmental Services, Inc.
Street Address:	7350 Duvan Drive
City:	Tinley Park State: IL Zip Code: 60477
Phone:	708-429-1685

Garrett Gray
Printed Name:

Licensed Professional Engineer or
Licensed Professional Geologist Signature:

Sep 27, 2022
Date:



P.E. Seal:

Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

Uncontaminated Soil Certification
by Licensed Professional Engineer or Licensed Professional Geologist
for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: Combined Sewer Overflow Structure CSO 010 Office Phone Number, if available:

Physical Site Location (address, including number and street):

McDonough Street and Water Street

City: Joliet State: IL Zip Code: 60431

County: Will Township: Joliet

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 41.51632 Longitude: - 88.08694

(Decimal Degrees) (-Decimal Degrees)

Identify how the lat/long data were determined:

○ GPS ⊘ Map Interpolation ○ Photo Interpolation ○ Survey ○ Other

IEPA Site Number(s), if assigned: BOL: BOW: BOA:

Approximate Start Date (mm/dd/yyyy): Approximate End Date (mm/dd/yyyy):

Estimated Volume of debris (cu. Yd.):

II. Owner/Operator Information for Source Site

Site Owner

Name: City of Joliet

Street Address: 150 W. Jefferson St

PO Box:

City: Joliet State: IL

Zip Code: 60431 Phone: (815) 724-4200

Contact: Greg Ruddy

Email, if available:

Site Operator

Name: City of Joliet

Street Address: 150 W. Jefferson St

PO Box:

City: Joliet State: IL

Zip Code: 60431 Phone: (815) 724-4200

Contact: Greg Ruddy

Email, if available:

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed $50,000 for the violation and an additional civil penalty of not to exceed $10,000 for each day during which the violation continues (415 ILCS 5/42). This form has been approved by the Forms Management Center.

Project Name: Combined Sewer Overflow Structure CSO 010 Latitude: 41.51632 Longitude: - 88.08694

Uncontaminated Soil Certification

III. Basis for Certification and Attachments

For each item listed below, reference the attachments to this form that provide the required information.

a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a)]:

Performed 1 soil boring (B-6) and obtained 1 representative sample (B-6 at 5') for analytical testing. Materials certified here with as CCDD material must be free of rebar, rubble, deleterious materials, garbage, odors, etc. and any said materials must be segregated from CCDD materials and disposed of in other legal means.

b. Analytical soil testing results to show that soil chemical constituents comply with the maximum allowable concentrations established pursuant to 35 Ill. Adm. Code Part 1100, Subpart F and that the soil pH is within the range of 6.25 to 9.0,including the documentation of chain of custody control, a copy of the lab analysis; the accreditation status of the laboratory performing the analysis; and certification by an authorized agent of the laboratory that the analysis has been performed in accordance with the Agency's rules for the accreditation of environmental and the scope of the accreditation [35 Ill. Adm. Code 1100.201(g), 1100.205(a), 1100.610]:

SEECO screened for volatile organics using a Photo Ionization Detector which indicates the presence of volatile organics in parts per million (ppm). No readings indicated the presence of volatile organics associated with contamination at the locations tested. Laboratory analysis were within the MAC range set forth by the IEPA and soil pH range is acceptable (results attached).

IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist

I, Garrett Gray, PE (name of licensed professional engineer or geologist) certify under penalty of law that the information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete. In accordance with the Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I certify that the soil from this site is uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. In addition, I certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. All necessary documentation is attached.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))

Company Name:	SEECO Environmental Services, Inc.
Street Address:	7350 Duvan Drive
City:	Tinley Park State: IL Zip Code: 60477
Phone:	708-429-1685

Garrett Gray
Printed Name:

Licensed Professional Engineer or
Licensed Professional Geologist Signature:

Sep 27, 2022
Date:

GARRETT W. GRAY
062-060834
REGISTERED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

P.E or L.P.G. Seal

Illinois Environmental Protection Agency

1021 North Grand Avenue East • P.O. Box 19276 • Springfield • Illinois • 62794-9276 • (217) 782-3397

Uncontaminated Soil Certification
by Licensed Professional Engineer or Licensed Professional Geologist
for Use of Uncontaminated Soil as Fill in a CCDD or Uncontaminated Soil Fill Operation LPC-663

Revised in accordance with 35 Ill. Adm. Code 1100, as amended by PCB R2012-009 (eff. Aug. 27, 2012)

This certification form is to be used by professional engineers and professional geologists to certify, pursuant to 35 Ill. Adm. Code 1100.205(a)(1)(B), that soil (i) is uncontaminated soil and (ii) is within a pH range of 6.26 to 9.0. If you have questions about this form, please telephone the Bureau of Land Permit Section at 217/524-3300.

This form may be completed online, saved locally, printed and signed, and submitted to prospective clean construction or demolition debris (CCDD) fill operations or uncontaminated soil fill operations.

I. Source Location Information

(Describe the location of the source of the uncontaminated soil)

Project Name: Combined Sewer Overflow Structure CSO 017 Office Phone Number, if available: _____

Physical Site Location (address, including number and street):

West of Joliet Street at Benton Street

City: Joliet State: IL Zip Code: 60431

County: Will Township: Joliet

Lat/Long of approximate center of site in decimal degrees (DD.ddddd) to five decimal places (e.g., 40.67890, -90.12345):

Latitude: 41.52962 Longitude: - 88.08488

(Decimal Degrees) (-Decimal Degrees)

Identify how the lat/long data were determined:

○ GPS ⊘ Map Interpolation ○ Photo Interpolation ○ Survey ○ Other

IEPA Site Number(s), if assigned: BOL: _____ BOW: _____ BOA: _____

Approximate Start Date (mm/dd/yyyy): _____ Approximate End Date (mm/dd/yyyy): _____

Estimated Volume of debris (cu. Yd.): _____

II. Owner/Operator Information for Source Site

Site Owner

Name: City of Joliet

Street Address: 150 W. Jefferson St

PO Box: _____

City: Joliet State: IL

Zip Code: 60431 Phone: (815) 724-4200

Contact: Greg Ruddy

Email, if available: _____

Site Operator

Name: City of Joliet

Street Address: 150 W. Jefferson St

PO Box: _____

City: Joliet State: IL

Zip Code: 60431 Phone: (815) 724-4200

Contact: Greg Ruddy

Email, if available: _____

This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed $50,000 for the violation and an additional civil penalty of not to exceed $10,000 for each day during which the violation continues (415 ILCS 5/42). This form has been approved by the Forms Management Center.

Project Name: Combined Sewer Overflow Structure CSO 017 Latitude: 41.52962 Longitude: - 88.08488

Uncontaminated Soil Certification

III. Basis for Certification and Attachments

For each item listed below, reference the attachments to this form that provide the required information.

a. A Description of the soil sample points and how they were determined to be sufficient in number and appropriately located 35 Ill. Adm. Code 1100.610(a)]:

Performed 3 soil borings (B-11 to B-13) and obtained 1 representative sample (B-12 at 4') for analytical testing. Materials certified here with as CCDD material must be free of rebar, rubble, deleterious materials, garbage, odors, etc. and any said materials must be segregated from CCDD materials and disposed of in other legal means.

b. Analytical soil testing results to show that soil chemical constituents comply with the maximum allowable concentrations established pursuant to 35 Ill. Adm. Code Part 1100, Subpart F and that the soil pH is within the range of 6.25 to 9.0,including the documentation of chain of custody control, a copy of the lab analysis; the accreditation status of the laboratory performing the analysis; and certification by an authorized agent of the laboratory that the analysis has been performed in accordance with the Agency's rules for the accreditation of environmental and the scope of the accreditation [35 Ill. Adm. Code 1100.201(g), 1100.205(a), 1100.610]:

SEECO screened for volatile organics using a Photo Ionization Detector which indicates the presence of volatile organics in parts per million (ppm). No readings indicated the presence of volatile organics associated with contamination at the locations tested. Laboratory analysis were within the MAC range set forth by the IEPA and soil pH range is acceptable (results attached).

IV. Certification Statement, Signature and Seal of Licensed Professional Engineer or Licensed Professional Geologist

I, Garrett Gray, PE (name of licensed professional engineer or geologist) certify under penalty of law that the information submitted, including but not limited to, all attachments and other information, is to the best of my knowledge and belief, true, accurate and complete. In accordance with the Environmental Protection Act [415 ILCS 5/22.51 or 22.51a] and 35 Ill. Adm. Code 1100.205(a), I certify that the soil from this site is uncontaminated soil. I also certify that the soil pH is within the range of 6.25 to 9.0. In addition, I certify that the soil has not been removed from the site as part of a cleanup or removal of contaminants. All necessary documentation is attached.

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Company Name: SEECO Environmental Services, Inc.

Street Address: 7350 Duvan Drive

City: Tinley Park State: IL Zip Code: 60477

Phone: 708-429-1685

Garrett Gray
Printed Name:

Licensed Professional Engineer or
Licensed Professional Geologist Signature:

Sep 27, 2022
Date:

GARRETT W. GRAY
062-060834
REGISTERED
PROFESSIONAL
ENGINEER
OF
ILLINOIS

P.E. Seal

First Environmental Laboratories, Inc

IL ELAP / NELAC Certification # 100292

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September 13, 2022

Mr. Don Cassier
SEECO ENVIRONMENTAL SERVICES
7350 Duvan Drive
Tinley Park, IL 60477

Project ID: 13085
First Environmental File ID: 22-6551
Date Received: August 31, 2022

Dear Mr. Don Cassier:

The above referenced project was analyzed as directed on the enclosed chain of custody record.

All Quality Control criteria as outlined in the methods and current IL ELAP/NELAP have been met unless otherwise noted. QA/QC documentation and raw data will remain on file for future reference. Our accreditation number is 100292 and our current certificate is number:

1002922022-8: effective 02/10/2022 through 02/28/2023.

I thank you for the opportunity to be of service to you and look forward to working with you again in the future. Should you have any questions regarding any of the enclosed analytical data or need additional information, please contact me at (630) 778-1200.

Sincerely,

Ryan Gerrick
Project Manager

First
Environmental
Laboratories, Inc

IL ELAP / NELAC Certification # 100292

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Case Narrative

SEECO ENVIRONMENTAL SERVICES

Lab File ID: **22-6551**

Project ID: **13085**

Date Received: **August 31, 2022**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The results in this report apply to the samples in the following table:

Laboratory Sample ID	Client Sample Identifier	Date/Time Collected
22-6551-001	B-2 3'	8/22/2022 9:00
22-6551-002	B-3 2'	8/22/2022 9:30
22-6551-003	B-4 3'	8/22/2022 10:00
22-6551-004	B-6 5'	8/22/2022 10:30
22-6551-005	B-7 4'	8/22/2022 11:00
22-6551-006	B-10 5'	8/22/2022 11:30
22-6551-007	B-12 4'	8/22/2022 12:00

Sample Batch Comments:

Method 5035 vials for soil VOCs were not received. Samples preserved in lab.

Method Comments

Lab Number	Sample ID	Comments:
22-6551-006	B-10 5'	*Semi-Volatile Compounds* The reporting limits are elevated due to matrix interference.

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Case Narrative

SEECO ENVIRONMENTAL SERVICES

Lab File ID: **22-6551**

Project ID: **13085**

Date Received: **August 31, 2022**

All quality control criteria, as outlined in the methods, have been met except as noted below or on the following analytical report.

The following is a definition of flags that may be used in this report:

Flag	Description	Flag	Description
A	Method holding time is 15 minutes from collection. Lab analysis was performed as soon as possible.		
B	Analyte was found in the method blank.	L	LCS recovery outside control limits.
<	Analyte not detected at or above the reporting limit.	M	MS recovery outside control limits; LCS acceptable.
C	Sample received in an improper container for this test.	P	Chemical preservation pH adjusted in lab.
D	Surrogates diluted out; recovery not available.	Q	Result was determined by a GC/MS database search.
E	Estimated result; concentration exceeds calibration range.	S	Analysis was subcontracted to another laboratory.
G	Surrogate recovery outside control limits.	T	Result is less than three times the MDL value.
H	Analysis or extraction holding time exceeded.	W	Reporting limit elevated due to sample matrix.
I	ICVS % rec outside 95-105% but within 90-110%		
J	Estimated result; concentration is less than routine RL but greater than MDL.	N	Analyte is not part of our NELAC accreditation or accreditation may not be available for this parameter.
RL	Routine Reporting Limit (Lowest amount that can be detected when routine weights/volumes are used without dilution.)	ND	Analyte was not detected using a library search routine; No calibration standard was analyzed.

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-2 3'
Sample No: 22-6551-001

Date Collected: 08/22/22
Time Collected: 9:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540G 2011**				
Analysis Date: 09/02/22				
Total Solids	90.95		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 09/02/22				
Acetone	< 200	200	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
trans-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-2 3'
Sample No: 22-6551-001

Date Collected: 08/22/22
Time Collected: 9:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B** Analysis Date: 09/02/22				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C** **Preparation Method 3540C** Analysis Date: 09/02/22 Preparation Date: 09/01/22				
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	489	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	

First
Environmental
Laboratories, Inc

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-2 3'
Sample No: 22-6551-001

Date Collected: 08/22/22
Time Collected: 9:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 09/02/22		Preparation Date: 09/01/22		
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 90	90	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	
2,4,5-Trichlorophenol	< 330	330	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-2 3'
Sample No: 22-6551-001

Date Collected: 08/22/22
Time Collected: 9:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 09/02/22		**Preparation Method 3540C** Preparation Date: 09/01/22		
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs **Method: 8081A/8082** Analysis Date: 09/07/22		**Preparation Method 3540C** Preparation Date: 09/01/22		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
Total Metals **Method: 6010C** Analysis Date: 09/07/22		**Preparation Method 3050B** Preparation Date: 09/06/22		
Arsenic	2.2	1.0	mg/kg	
Barium	25.4	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-2 3'
Sample No: 22-6551-001

Date Collected: 08/22/22
Time Collected: 9:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 09/07/22			Preparation Date: 09/06/22		
Chromium		7.2	0.5	mg/kg	
Lead		17.6	0.5	mg/kg	
Selenium		< 1.0	1.0	mg/kg	
Silver		< 0.2	0.2	mg/kg	
Total Mercury	**Method: 7471B**				
Analysis Date: 09/07/22					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:2	**Method: 9045D**				
Analysis Date: 09/02/22 10:30					
pH @ 25°C, 1:2		8.68		Units	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-3 2'
Sample No: 22-6551-002

Date Collected: 08/22/22
Time Collected: 9:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540G 2011**				
Analysis Date: 09/02/22				
Total Solids	92.63		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 09/02/22				
Acetone	< 200	200	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
trans-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-3 2'
Sample No: 22-6551-002

Date Collected: 08/22/22
Time Collected: 9:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 09/02/22				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 09/02/22		Preparation Date: 09/01/22		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-3 2'
Sample No: 22-6551-002

Date Collected: 08/22/22
Time Collected: 9:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 09/02/22		**Preparation Method 3540C** Preparation Date: 09/01/22		
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 90	90	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	
2,4,5-Trichlorophenol	< 330	330	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-3 2'
Sample No: 22-6551-002

Date Collected: 08/22/22
Time Collected: 9:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 09/02/22		**Preparation Method 3540C** Preparation Date: 09/01/22		
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs **Method: 8081A/8082** Analysis Date: 09/12/22		**Preparation Method 3540C** Preparation Date: 08/31/22		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
Total Metals **Method: 6010C** Analysis Date: 09/07/22		**Preparation Method 3050B** Preparation Date: 09/06/22		
Arsenic	3.0	1.0	mg/kg	
Barium	20.7	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-3 2'
Sample No: 22-6551-002

Date Collected: 08/22/22
Time Collected: 9:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 09/07/22			Preparation Date: 09/06/22		
Chromium		6.1	0.5	mg/kg	
Lead		5.0	0.5	mg/kg	
Selenium		< 1.0	1.0	mg/kg	
Silver		< 0.2	0.2	mg/kg	
Total Mercury	**Method: 7471B**				
Analysis Date: 09/07/22					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:2	**Method: 9045D**				
Analysis Date: 09/02/22 10:30					
pH @ 25°C, 1:2		8.76		Units	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-4 3'
Sample No: 22-6551-003

Date Collected: 08/22/22
Time Collected: 10:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540G 2011**				
Analysis Date: 09/02/22				
Total Solids	87.13		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 09/02/22				
Acetone	< 200	200	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
trans-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-4 3'
Sample No: 22-6551-003

Date Collected: 08/22/22
Time Collected: 10:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 09/02/22				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 09/02/22		Preparation Date: 09/01/22		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	< 90	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-4 3'
Sample No: 22-6551-003

Date Collected: 08/22/22
Time Collected: 10:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 09/02/22		Preparation Date: 09/01/22		
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 90	90	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	
2,4,5-Trichlorophenol	< 330	330	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-4 3'
Sample No: 22-6551-003

Date Collected: 08/22/22
Time Collected: 10:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 09/02/22		Preparation Date: 09/01/22		
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs **Method: 8081A/8082**		**Preparation Method 3540C**		
Analysis Date: 09/12/22		Preparation Date: 08/31/22		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 09/07/22		Preparation Date: 09/06/22		
Arsenic	8.2	1.0	mg/kg	
Barium	83.6	0.5	mg/kg	
Cadmium	0.7	0.5	mg/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-4 3'
Sample No: 22-6551-003

Date Collected: 08/22/22
Time Collected: 10:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 09/07/22			Preparation Date: 09/06/22		
Chromium		14.2	0.5	mg/kg	
Lead		61.4	0.5	mg/kg	
Selenium		< 1.0	1.0	mg/kg	
Silver		< 0.2	0.2	mg/kg	
Total Mercury	**Method: 7471B**				
Analysis Date: 09/07/22					
Mercury		0.07	0.05	mg/kg	
pH @ 25°C, 1:2	**Method: 9045D**				
Analysis Date: 09/02/22 10:30					
pH @ 25°C, 1:2		8.43		Units	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-6 5'
Sample No: 22-6551-004

Date Collected: 08/22/22
Time Collected: 10:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540G 2011**				
Analysis Date: 09/02/22				
Total Solids	93.02		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 09/02/22				
Acetone	< 200	200	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
trans-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-6 5'
Sample No: 22-6551-004

Date Collected: 08/22/22
Time Collected: 10:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B** Analysis Date: 09/02/22				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C** **Preparation Method 3540C** Analysis Date: 09/02/22 Preparation Date: 09/01/22				
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	199	90	ug/kg	
Benzo(b)fluoranthene	< 330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-6 5'
Sample No: 22-6551-004

Date Collected: 08/22/22
Time Collected: 10:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 09/02/22		**Preparation Method 3540C** Preparation Date: 09/01/22		
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 90	90	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	
2,4,5-Trichlorophenol	< 330	330	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-6 5'
Sample No: 22-6551-004

Date Collected: 08/22/22
Time Collected: 10:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 09/02/22		**Preparation Method 3540C** Preparation Date: 09/01/22		
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs **Method: 8081A/8082** Analysis Date: 09/12/22		**Preparation Method 3540C** Preparation Date: 08/31/22		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
Total Metals **Method: 6010C** Analysis Date: 09/07/22		**Preparation Method 3050B** Preparation Date: 09/06/22		
Arsenic	5.0	1.0	mg/kg	
Barium	97.8	0.5	mg/kg	
Cadmium	0.9	0.5	mg/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-6 5'
Sample No: 22-6551-004

Date Collected: 08/22/22
Time Collected: 10:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Total Metals **Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 09/07/22		Preparation Date: 09/06/22		
Chromium	10.8	0.5	mg/kg	
Lead	135	0.5	mg/kg	
Selenium	< 1.0	1.0	mg/kg	
Silver	< 0.2	0.2	mg/kg	
Total Mercury **Method: 7471B**				
Analysis Date: 09/07/22				
Mercury	0.14	0.05	mg/kg	
pH @ 25°C, 1:2 **Method: 9045D**				
Analysis Date: 09/02/22 10:30				
pH @ 25°C, 1:2	8.84		Units	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-7 4'
Sample No: 22-6551-005

Date Collected: 08/22/22
Time Collected: 11:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540G 2011**				
Analysis Date: 09/02/22				
Total Solids	77.97		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 09/02/22				
Acetone	< 200	200	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
trans-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-7 4'
Sample No: 22-6551-005

Date Collected: 08/22/22
Time Collected: 11:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 09/02/22				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 09/02/22		Preparation Date: 09/01/22		
Acenaphthene	< 330	330	ug/kg	
Acenaphthylene	< 330	330	ug/kg	
Anthracene	< 330	330	ug/kg	
Benzidine	< 330	330	ug/kg	
Benzo(a)anthracene	< 330	330	ug/kg	
Benzo(a)pyrene	204	90	ug/kg	
Benzo(b)fluoranthene	330	330	ug/kg	
Benzo(k)fluoranthene	< 330	330	ug/kg	
Benzo(ghi)perylene	< 330	330	ug/kg	
Benzoic acid	< 330	330	ug/kg	
Benzyl alcohol	< 330	330	ug/kg	
bis(2-Chloroethoxy)methane	< 330	330	ug/kg	
bis(2-Chloroethyl)ether	< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 330	330	ug/kg	
4-Bromophenyl phenyl ether	< 330	330	ug/kg	
Butyl benzyl phthalate	< 330	330	ug/kg	
Carbazole	< 330	330	ug/kg	
4-Chloroaniline	< 330	330	ug/kg	
4-Chloro-3-methylphenol	< 330	330	ug/kg	
2-Chloronaphthalene	< 330	330	ug/kg	
2-Chlorophenol	< 330	330	ug/kg	
4-Chlorophenyl phenyl ether	< 330	330	ug/kg	
Chrysene	< 330	330	ug/kg	
Dibenzo(a,h)anthracene	< 90	90	ug/kg	
Dibenzofuran	< 330	330	ug/kg	
1,2-Dichlorobenzene	< 330	330	ug/kg	
1,3-Dichlorobenzene	< 330	330	ug/kg	
1,4-Dichlorobenzene	< 330	330	ug/kg	
3,3'-Dichlorobenzidine	< 660	660	ug/kg	
2,4-Dichlorophenol	< 330	330	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-7 4'
Sample No: 22-6551-005

Date Collected: 08/22/22
Time Collected: 11:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 09/02/22		Preparation Date: 09/01/22		
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 90	90	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	357	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	
2,4,5-Trichlorophenol	< 330	330	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-7 4'
Sample No: 22-6551-005

Date Collected: 08/22/22
Time Collected: 11:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 09/02/22		**Preparation Method 3540C** Preparation Date: 09/01/22		
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs **Method: 8081A/8082** Analysis Date: 09/12/22		**Preparation Method 3540C** Preparation Date: 08/31/22		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
Total Metals **Method: 6010C** Analysis Date: 09/07/22		**Preparation Method 3050B** Preparation Date: 09/06/22		
Arsenic	86.1	1.0	mg/kg	
Barium	143	0.5	mg/kg	
Cadmium	54.8	0.5	mg/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-7 4'
Sample No: 22-6551-005

Date Collected: 08/22/22
Time Collected: 11:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 09/07/22			Preparation Date: 09/06/22		
Chromium		15.4	0.5	mg/kg	
Lead		437	0.5	mg/kg	
Selenium		< 1.0	1.0	mg/kg	
Silver		0.7	0.2	mg/kg	
Total Mercury	**Method: 7471B**				
Analysis Date: 09/07/22					
Mercury		0.21	0.05	mg/kg	
pH @ 25°C, 1:2	**Method: 9045D**				
Analysis Date: 09/02/22 10:30					
pH @ 25°C, 1:2		7.90		Units	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-10 5'
Sample No: 22-6551-006

Date Collected: 08/22/22
Time Collected: 11:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540G 2011**				
Analysis Date: 09/02/22				
Total Solids	95.61		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 09/02/22				
Acetone	< 200	200	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
trans-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-10 5'
Sample No: 22-6551-006

Date Collected: 08/22/22
Time Collected: 11:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 09/02/22				
Vinyl acetate	< 10.0	10.0	ug/kg	
Vinyl chloride	< 10.0	10.0	ug/kg	
Xylene, Total	< 5.0	5.0	ug/kg	
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 09/07/22		Preparation Date: 09/01/22		
Acenaphthene	< 1,320	330	ug/kg	
Acenaphthylene	< 1,320	330	ug/kg	
Anthracene	< 1,320	330	ug/kg	
Benzidine	< 1,320	330	ug/kg	
Benzo(a)anthracene	< 1,320	330	ug/kg	
Benzo(a)pyrene	< 360	90	ug/kg	
Benzo(b)fluoranthene	< 1,320	330	ug/kg	
Benzo(k)fluoranthene	< 1,320	330	ug/kg	
Benzo(ghi)perylene	< 1,320	330	ug/kg	
Benzoic acid	< 1,320	330	ug/kg	
Benzyl alcohol	< 1,320	330	ug/kg	
bis(2-Chloroethoxy)methane	< 1,320	330	ug/kg	
bis(2-Chloroethyl)ether	< 1,320	330	ug/kg	
bis(2-Chloroisopropyl)ether	< 1,320	330	ug/kg	
bis(2-Ethylhexyl)phthalate	< 1,320	330	ug/kg	
4-Bromophenyl phenyl ether	< 1,320	330	ug/kg	
Butyl benzyl phthalate	< 1,320	330	ug/kg	
Carbazole	< 1,320	330	ug/kg	
4-Chloroaniline	< 1,320	330	ug/kg	
4-Chloro-3-methylphenol	< 1,320	330	ug/kg	
2-Chloronaphthalene	< 1,320	330	ug/kg	
2-Chlorophenol	< 1,320	330	ug/kg	
4-Chlorophenyl phenyl ether	< 1,320	330	ug/kg	
Chrysene	< 1,320	330	ug/kg	
Dibenzo(a,h)anthracene	< 360	90	ug/kg	
Dibenzofuran	< 1,320	330	ug/kg	
1,2-Dichlorobenzene	< 1,320	330	ug/kg	
1,3-Dichlorobenzene	< 1,320	330	ug/kg	
1,4-Dichlorobenzene	< 1,320	330	ug/kg	
3,3'-Dichlorobenzidine	< 2,640	660	ug/kg	
2,4-Dichlorophenol	< 1,320	330	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-10 5'
Sample No: 22-6551-006

Date Collected: 08/22/22
Time Collected: 11:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 09/07/22		Preparation Date: 09/01/22		
Diethyl phthalate	< 1,320	330	ug/kg	
2,4-Dimethylphenol	< 1,320	330	ug/kg	
Dimethyl phthalate	< 1,320	330	ug/kg	
Di-n-butyl phthalate	< 1,320	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 6,400	1600	ug/kg	
2,4-Dinitrophenol	< 6,400	1600	ug/kg	
2,4-Dinitrotoluene	< 1,000	250	ug/kg	
2,6-Dinitrotoluene	< 1,040	260	ug/kg	
Di-n-octylphthalate	< 1,320	330	ug/kg	
Fluoranthene	< 1,320	330	ug/kg	
Fluorene	< 1,320	330	ug/kg	
Hexachlorobenzene	< 1,320	330	ug/kg	
Hexachlorobutadiene	< 1,320	330	ug/kg	
Hexachlorocyclopentadiene	< 1,320	330	ug/kg	
Hexachloroethane	< 1,320	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 1,320	330	ug/kg	
Isophorone	< 1,320	330	ug/kg	
2-Methylnaphthalene	< 1,320	330	ug/kg	
2-Methylphenol	< 1,320	330	ug/kg	
3 & 4-Methylphenol	< 1,320	330	ug/kg	
Naphthalene	< 1,320	330	ug/kg	
2-Nitroaniline	< 6,400	1600	ug/kg	
3-Nitroaniline	< 6,400	1600	ug/kg	
4-Nitroaniline	< 6,400	1600	ug/kg	
Nitrobenzene	< 1,040	260	ug/kg	
2-Nitrophenol	< 6,400	1600	ug/kg	
4-Nitrophenol	< 6,400	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 360	90	ug/kg	
n-Nitrosodimethylamine	< 1,320	330	ug/kg	
n-Nitrosodiphenylamine	< 1,320	330	ug/kg	
Pentachlorophenol	< 1,320	330	ug/kg	
Phenanthrene	< 1,320	330	ug/kg	
Phenol	< 1,320	330	ug/kg	
Pyrene	< 1,320	330	ug/kg	
Pyridine	< 1,320	330	ug/kg	
1,2,4-Trichlorobenzene	< 1,320	330	ug/kg	
2,4,5-Trichlorophenol	< 1,320	330	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-10 5'
Sample No: 22-6551-006

Date Collected: 08/22/22
Time Collected: 11:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 09/07/22		**Preparation Method 3540C** Preparation Date: 09/01/22		
2,4,6-Trichlorophenol	< 1,320	330	ug/kg	
Pesticides/PCBs **Method: 8081A/8082** Analysis Date: 09/12/22		**Preparation Method 3540C** Preparation Date: 08/31/22		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
Total Metals **Method: 6010C** Analysis Date: 09/07/22		**Preparation Method 3050B** Preparation Date: 09/06/22		
Arsenic	< 1.0	1.0	mg/kg	
Barium	6.6	0.5	mg/kg	
Cadmium	< 0.5	0.5	mg/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-10 5'
Sample No: 22-6551-006

Date Collected: 08/22/22
Time Collected: 11:30
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 09/07/22			Preparation Date: 09/06/22		
Chromium		2.2	0.5	mg/kg	
Lead		3.9	0.5	mg/kg	
Selenium		< 1.0	1.0	mg/kg	
Silver		< 0.2	0.2	mg/kg	
Total Mercury	**Method: 7471B**				
Analysis Date: 09/07/22					
Mercury		< 0.05	0.05	mg/kg	
pH @ 25°C, 1:2	**Method: 9045D**				
Analysis Date: 09/02/22 10:30					
pH @ 25°C, 1:2		9.45		Units	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-12 4'
Sample No: 22-6551-007

Date Collected: 08/22/22
Time Collected: 12:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Solids, Total **Method: 2540G 2011**				
Analysis Date: 09/02/22				
Total Solids	83.49		%	
Volatile Organic Compounds **Method: 5035A/8260B**				
Analysis Date: 09/02/22				
Acetone	< 200	200	ug/kg	
Benzene	< 5.0	5.0	ug/kg	
Bromodichloromethane	< 5.0	5.0	ug/kg	
Bromoform	< 5.0	5.0	ug/kg	
Bromomethane	< 10.0	10.0	ug/kg	
2-Butanone (MEK)	< 100	100	ug/kg	
Carbon disulfide	< 5.0	5.0	ug/kg	
Carbon tetrachloride	< 5.0	5.0	ug/kg	
Chlorobenzene	< 5.0	5.0	ug/kg	
Chlorodibromomethane	< 5.0	5.0	ug/kg	
Chloroethane	< 10.0	10.0	ug/kg	
Chloroform	< 5.0	5.0	ug/kg	
Chloromethane	< 10.0	10.0	ug/kg	
1,1-Dichloroethane	< 5.0	5.0	ug/kg	
1,2-Dichloroethane	< 5.0	5.0	ug/kg	
1,1-Dichloroethene	< 5.0	5.0	ug/kg	
cis-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
trans-1,2-Dichloroethene	< 5.0	5.0	ug/kg	
1,2-Dichloropropane	< 5.0	5.0	ug/kg	
cis-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
trans-1,3-Dichloropropene	< 4.0	4.0	ug/kg	
Ethylbenzene	< 5.0	5.0	ug/kg	
2-Hexanone	< 10.0	10.0	ug/kg	
Methyl-tert-butylether (MTBE)	< 5.0	5.0	ug/kg	
4-Methyl-2-pentanone (MIBK)	< 10.0	10.0	ug/kg	
Methylene chloride	< 20.0	20.0	ug/kg	
Styrene	< 5.0	5.0	ug/kg	
1,1,2,2-Tetrachloroethane	< 5.0	5.0	ug/kg	
Tetrachloroethene	< 5.0	5.0	ug/kg	
Toluene	< 5.0	5.0	ug/kg	
1,1,1-Trichloroethane	< 5.0	5.0	ug/kg	
1,1,2-Trichloroethane	< 5.0	5.0	ug/kg	
Trichloroethene	< 5.0	5.0	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-12 4'
Sample No: 22-6551-007

Date Collected: 08/22/22
Time Collected: 12:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Volatile Organic Compounds	**Method: 5035A/8260B**				
Analysis Date: 09/02/22					
Vinyl acetate		< 10.0	10.0	ug/kg	
Vinyl chloride		< 10.0	10.0	ug/kg	
Xylene, Total		< 5.0	5.0	ug/kg	
Semi-Volatile Compounds	**Method: 8270C**		**Preparation Method 3540C**		
Analysis Date: 09/02/22			Preparation Date: 09/01/22		
Acenaphthene		< 330	330	ug/kg	
Acenaphthylene		< 330	330	ug/kg	
Anthracene		< 330	330	ug/kg	
Benzidine		< 330	330	ug/kg	
Benzo(a)anthracene		< 330	330	ug/kg	
Benzo(a)pyrene		160	90	ug/kg	
Benzo(b)fluoranthene		< 330	330	ug/kg	
Benzo(k)fluoranthene		< 330	330	ug/kg	
Benzo(ghi)perylene		< 330	330	ug/kg	
Benzoic acid		< 330	330	ug/kg	
Benzyl alcohol		< 330	330	ug/kg	
bis(2-Chloroethoxy)methane		< 330	330	ug/kg	
bis(2-Chloroethyl)ether		< 330	330	ug/kg	
bis(2-Chloroisopropyl)ether		< 330	330	ug/kg	
bis(2-Ethylhexyl)phthalate		< 330	330	ug/kg	
4-Bromophenyl phenyl ether		< 330	330	ug/kg	
Butyl benzyl phthalate		< 330	330	ug/kg	
Carbazole		< 330	330	ug/kg	
4-Chloroaniline		< 330	330	ug/kg	
4-Chloro-3-methylphenol		< 330	330	ug/kg	
2-Chloronaphthalene		< 330	330	ug/kg	
2-Chlorophenol		< 330	330	ug/kg	
4-Chlorophenyl phenyl ether		< 330	330	ug/kg	
Chrysene		< 330	330	ug/kg	
Dibenzo(a,h)anthracene		< 90	90	ug/kg	
Dibenzofuran		< 330	330	ug/kg	
1,2-Dichlorobenzene		< 330	330	ug/kg	
1,3-Dichlorobenzene		< 330	330	ug/kg	
1,4-Dichlorobenzene		< 330	330	ug/kg	
3,3'-Dichlorobenzidine		< 660	660	ug/kg	
2,4-Dichlorophenol		< 330	330	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-12 4'
Sample No: 22-6551-007

Date Collected: 08/22/22
Time Collected: 12:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 09/02/22		**Preparation Method 3540C** Preparation Date: 09/01/22		
Diethyl phthalate	< 330	330	ug/kg	
2,4-Dimethylphenol	< 330	330	ug/kg	
Dimethyl phthalate	< 330	330	ug/kg	
Di-n-butyl phthalate	< 330	330	ug/kg	
4,6-Dinitro-2-methylphenol	< 1,600	1600	ug/kg	
2,4-Dinitrophenol	< 1,600	1600	ug/kg	
2,4-Dinitrotoluene	< 250	250	ug/kg	
2,6-Dinitrotoluene	< 260	260	ug/kg	
Di-n-octylphthalate	< 330	330	ug/kg	
Fluoranthene	< 330	330	ug/kg	
Fluorene	< 330	330	ug/kg	
Hexachlorobenzene	< 330	330	ug/kg	
Hexachlorobutadiene	< 330	330	ug/kg	
Hexachlorocyclopentadiene	< 330	330	ug/kg	
Hexachloroethane	< 330	330	ug/kg	
Indeno(1,2,3-cd)pyrene	< 330	330	ug/kg	
Isophorone	< 330	330	ug/kg	
2-Methylnaphthalene	< 330	330	ug/kg	
2-Methylphenol	< 330	330	ug/kg	
3 & 4-Methylphenol	< 330	330	ug/kg	
Naphthalene	< 330	330	ug/kg	
2-Nitroaniline	< 1,600	1600	ug/kg	
3-Nitroaniline	< 1,600	1600	ug/kg	
4-Nitroaniline	< 1,600	1600	ug/kg	
Nitrobenzene	< 260	260	ug/kg	
2-Nitrophenol	< 1,600	1600	ug/kg	
4-Nitrophenol	< 1,600	1600	ug/kg	
n-Nitrosodi-n-propylamine	< 90	90	ug/kg	
n-Nitrosodimethylamine	< 330	330	ug/kg	
n-Nitrosodiphenylamine	< 330	330	ug/kg	
Pentachlorophenol	< 330	330	ug/kg	
Phenanthrene	< 330	330	ug/kg	
Phenol	< 330	330	ug/kg	
Pyrene	< 330	330	ug/kg	
Pyridine	< 330	330	ug/kg	
1,2,4-Trichlorobenzene	< 330	330	ug/kg	
2,4,5-Trichlorophenol	< 330	330	ug/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
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Sample No: 22-6551-007
Date Collected: 08/22/22
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Results are reported on a dry weight basis.

Analyte	Result	R.L.	Units	Flags
Semi-Volatile Compounds **Method: 8270C** Analysis Date: 09/02/22		**Preparation Method 3540C** Preparation Date: 09/01/22		
2,4,6-Trichlorophenol	< 330	330	ug/kg	
Pesticides/PCBs **Method: 8081A/8082** Analysis Date: 09/12/22		**Preparation Method 3540C** Preparation Date: 08/31/22		
Aldrin	< 8.0	8.0	ug/kg	
Aroclor 1016	< 80.0	80.0	ug/kg	
Aroclor 1221	< 80.0	80.0	ug/kg	
Aroclor 1232	< 80.0	80.0	ug/kg	
Aroclor 1242	< 80.0	80.0	ug/kg	
Aroclor 1248	< 80.0	80.0	ug/kg	
Aroclor 1254	< 160	160	ug/kg	
Aroclor 1260	< 160	160	ug/kg	
alpha-BHC	< 2.0	2.0	ug/kg	
beta-BHC	< 8.0	8.0	ug/kg	
delta-BHC	< 8.0	8.0	ug/kg	
gamma-BHC (Lindane)	< 8.0	8.0	ug/kg	
alpha-Chlordane	< 80.0	80.0	ug/kg	
gamma-Chlordane	< 80.0	80.0	ug/kg	
4,4'-DDD	< 16.0	16.0	ug/kg	
4,4'-DDE	< 16.0	16.0	ug/kg	
4,4'-DDT	< 16.0	16.0	ug/kg	
Dieldrin	< 16.0	16.0	ug/kg	
Endosulfan I	< 8.0	8.0	ug/kg	
Endosulfan II	< 16.0	16.0	ug/kg	
Endosulfan sulfate	< 16.0	16.0	ug/kg	
Endrin	< 16.0	16.0	ug/kg	
Endrin aldehyde	< 16.0	16.0	ug/kg	
Endrin ketone	< 16.0	16.0	ug/kg	
Heptachlor	< 8.0	8.0	ug/kg	
Heptachlor epoxide	< 8.0	8.0	ug/kg	
Methoxychlor	< 80.0	80.0	ug/kg	
Toxaphene	< 160	160	ug/kg	
Total Metals **Method: 6010C** Analysis Date: 09/07/22		**Preparation Method 3050B** Preparation Date: 09/06/22		
Arsenic	8.0	1.0	mg/kg	
Barium	44.6	0.5	mg/kg	
Cadmium	1.5	0.5	mg/kg	

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Analytical Report

Client: SEECO ENVIRONMENTAL SERVICES
Project ID: 13085
Sample ID: B-12 4'
Sample No: 22-6551-007

Date Collected: 08/22/22
Time Collected: 12:00
Date Received: 08/31/22
Date Reported: 09/13/22

Results are reported on a dry weight basis.

Analyte		Result	R.L.	Units	Flags
Total Metals	**Method: 6010C**		**Preparation Method 3050B**		
Analysis Date: 09/07/22			Preparation Date: 09/06/22		
Chromium		7.8	0.5	mg/kg	
Lead		103	0.5	mg/kg	
Selenium		< 1.0	1.0	mg/kg	
Silver		< 0.2	0.2	mg/kg	
Total Mercury	**Method: 7471B**				
Analysis Date: 09/07/22					
Mercury		0.55	0.05	mg/kg	
pH @ 25°C, 1:2	**Method: 9045D**				
Analysis Date: 09/02/22 10:30					
pH @ 25°C, 1:2		8.86		Units	

First Environmental Laboratories, Inc.

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Naperville, IL 60563
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E-Mail: firstinfo@firstenv.com
IEPA Accreditation #100292
www.firstenv.com

Company Name: SEECO
Street Address:
City: State: Zip
Phone e-Mail: cassier@seeco.com
Send Report To: Cassier Hardcopy: ☐ PDF e-Mail: ☒
Sampled By: DM

Project ID: 13085
PO #:

Date/Time Taken	Sample Description	Matrix*	VOCs	SVOCs	Total 8 RCRA Metals	pH	PCBs / PCB's		HOLD-Do not analyze	Comments	Lab I.D.
8/22/22 9:00	B-2 3'	S								22-6551	001
9:32	B-3 2'										002
10:02	B-4 3'										003
10:32	B-6 5'										004
11:02	B-7 4'										005
11:32	B-10 5'										006
12:00	B-12 4'										007

Enter analyses required on the lines to the left. Place an "X" in the box below to indicate which samples require what analysis.

FOR LAB USE ONLY:
Cooler Temperature: 0 1-6°C Yes 1 No 4 °C
Received within 6 hrs of collection:
Ice Present: Yes ✓ No

FOR LAB COURIER USE ONLY:
Sample Refrigerated: Yes No
Refrigerator Temperature: °C

Program: ☐ TACO/SRP ☒ CCDD ☐ NPDES ☐ LUST ☐ SDWA

*Matrix Code Key: DW-drinking water GW-groundwater WW- wastewater S-soil SL-sludge WIPE-wipe O-other

Notes and Special Instructions: Extra 10%

Relinquished By	Date/Time:	Received By:	Date/Time
	8/31/22		8/31/22 09:09
Relinquished By	Date/Time:	Received By:	Date/Time

Rev 10/19

APPENDIX 7

GENERAL REMARKS

This report has been prepared in order to aid in the evaluation of this property and to assist the architect and/or engineer in the design of this project. The scope is limited to the specific project and location described herein, and our description of the project represents our understanding of the significant aspects relevant to soil and foundation characteristics. In the event that any changes in the design or location of the building(s) as outlined in this report are planned, we should be informed so the changes can be reviewed and the conclusions of this report modified as necessary in writing by the geotechnical engineer. As a check, we recommend that we be authorized to review the project plans and specifications to confirm that the recommendations contained in this report have been interpreted in accordance with our intent. Without this review, we will not be responsible for misinterpretation of our data, our analysis, and/or our recommendations, nor how these are incorporated into the final design.

It is recommended that all construction operations dealing with earthwork and foundations be reviewed by an experienced geotechnical engineer to provide information on which to base a decision whether the design requirements are fulfilled in the actual construction. If you wish, we would welcome the opportunity to provide field construction services for you during construction.

The analysis and recommendations submitted in this report are based upon the data obtained from the soil borings performed at the locations indicated on the location diagram and from any other information discussed in this report. This report does not reflect any variations which may occur between these borings. In the performance of subsurface explorations, specific information is obtained at specific locations at specific times. However, it is a well-known fact that variations in soil and rock conditions exist on most sites between boring locations and also such situations as groundwater levels vary from time to time. The nature and extent of variations may not become evident until the course of construction. If variations then appear evident, it will be necessary for re-evaluation of the recommendations of this report after performing on-site observations during the construction period and noting the characteristics of any variations.

HYDRO INTERNATIONAL WET WEATHER SCREENING PROPOSAL PACKAGE

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March 9, 2023

To: **All Bidding Contractors**

RE: Screening Equipment - Spec Section 46 21 53
CSOs 004, 007, 009, 011
Joliet, IL
File #21_11_0275

Hydro International is pleased to present our quote for Hydro-Static® Screen Units. The units will meet the requirements described in Section 46 21 53 with comments noted below.

Comments

1. Hydro's requested Payment Terms are as follows and are prefaced on the following timeline:
   Receipt of a purchase order by August 30, 2023, release to fabrication by February 28, 2024, and shipment of the equipment prior to July 17, 2024.

Milestone	Incremental Payment	Cumulative Payment
Upon Fully Executed PO	10%	10%
Upon Approval of Shop Drawings	10%	20%
Upon Release to Fabrication	10%	30%
Upon Delivery of Equipment to Site	65%	95%
Upon Final Acceptance or 45 days following completion of equipment start up	5%	100%

Equipment Summary

1. One (1) 180 ft^2 Hydro-Static® Screen unit fabricated in 304 stainless steel shall be supplied to CSO 004. Twenty (20) screen panels shall be corrugated perforated screen panels with a non-stick powder coating. The screen panels shall have a design loading rate of 148 gpm/ft^2 with a headloss of 4 inches when less than 50% blinded. A support frame and overflow emergency weirs shall be provided with the unit. The concrete chamber shall be designed and supplied by others.

   The Hydro Static® Screen shall retain debris 4 mm and larger in two directions at a total capacity flow of 38.3 mgd.

2. One (1) 270 ft^2 Hydro-Static® Screen unit fabricated in 304 stainless steel shall be supplied to CSO 007. Thirty (30) screen panels shall be corrugated perforated screen panels with a non-stick powder coating. The screen panels shall have a design loading rate of 148 gpm/ft^2 with a headloss of 4 inches when less than 50% blinded. A support frame and overflow emergency weirs shall be provided with the unit. The concrete chamber shall be designed and supplied by others.

   The Hydro Static® Screen shall retain debris 4 mm and larger in two directions at a total capacity flow of 57.5 mgd.

Hydro International
2925 NE Aloclek Suite 140 · Hillsboro, OR 97124
Tel: (866) 615-8130 Fax: (503) 615-2906 Web: hydro-int.com

3. One (1) 90 ft² Hydro-Static® Screen unit fabricated in 304 stainless steel shall be supplied to CSO 009. Ten (10) screen panels shall be corrugated perforated screen panels with a non-stick powder coating. The screen panels shall have a design loading rate of 148 gpm/ft² with a headloss of 4 inches when less than 50% blinded. A support frame and overflow emergency weirs shall be provided with the unit. The concrete chamber shall be designed and supplied by others.

   The Hydro Static® Screen shall retain debris 4 mm and larger in two directions at a total capacity flow of 19.1 mgd.

4. One (1) 180 ft² Hydro-Static® Screen unit fabricated in 304 stainless steel shall be supplied to CSO 011. Twenty (20) screen panels shall be corrugated perforated screen panels with a non-stick powder coating. The screen panels shall have a design loading rate of 148 gpm/ft² with a headloss of 4 inches when less than 50% blinded. A support frame and overflow emergency weirs shall be provided with the unit. The concrete chamber shall be designed and supplied by others.

   The Hydro Static® Screen shall retain debris 4 mm and larger in two directions at a total capacity flow of 38.3 mgd.

Appurtenances Per Unit

Hydro-Static® Screen

DESCRIPTION	QTY
Anchor Bolts Hilti 316SS HAS-R Anchor Rods for use with HIT HY Anchor System	Set

Start-up

One (1) factory trained representative, one (1) trip, for start-up and instruction services as required totaling one (1) day for each location.

Exclusions

Any item(s) not specifically described above are excluded and are not to be supplied by Hydro International including but not limited to the following:

- Field assembly, erection, and installation
- Interconnecting piping and valving not expressly stated above
- Pipe connections and fittings not expressly stated above
- All pipe supports, hangers and braces
- Controls, switches, control panels and instrumentation of any kind not expressly stated above
- Wiring and conduit
- Pump(s) and associated piping, valving, gauges
- Field or touch-up paint, painting, blasting and touch-up of surface finish
- Spare parts not specifically stated above
- Unloading, hauling and storage charge
- Lubricating oil and greases
- Field performance testing, laboratory testing and sample collection and analysis
- All concrete and grouting work
- Insulation and heat tracing of any kind
- Seismic analysis
- Performance, Payment, Warranty, Efficacy or Supply Bond(s)
- Translation Services
- Pits and concrete work
- Grout and grouting
- Adjustable Intake Gate
- Shims
- Underflow Baffles

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- Bending Weirs
- Inspection Hatches
- Adjustable Gates
- Flow Tests

Insurance Limitations

- Commercial General Liability is limited to $1,000,000 each occurrence
- Automobile combined single limit of $1,000,000 each occurrence
- Worker's Compensation is limited to $1,000,000 each accident
- Excess Liability $4,000,000 on each of the above

Warranty

Hydro International's one year warranty from substantial completion shall apply per the Terms and Conditions of Sale (estimated start date 12/31/2024).

Delivery

Please allow 20-22 weeks after receipt of purchase order for approval drawings. Shipment is typically a maximum of 18-20 weeks after receipt of "Approved" or "Approved As Noted, Resubmittal Not Required" submittal package. Price includes truck freight to jobsite but does not include any state or local taxes if required. The grit removal system shall be delivered to site fully fabricated, subject to size, packaging and transportation constraints. The General Contractor must inspect equipment prior to unloading and notify Hydro International of any damage to equipment within 5 days to effect proper remedial action. Failure to notify Hydro International of damage to equipment prior to unloading will void all warranties pertaining to subject equipment.

Terms & Conditions

Hydro International payment terms are detailed in the attached terms and conditions. Price includes truck freight to jobsite and does not include any state or local taxes if required. The prices quoted are firm based on a receipt of a purchase order by August 30, 2023, release to fabrication by February 28, 2024, and shipment of the equipment prior to July 17, 2024. For any delays in delivery which are beyond Hydro International's responsibility, a finance charge of 1.5% of the contract value per month will be due and payable to Hydro.

Total Firm Price

$1,103,730.00

Purchase Order

Please make purchase orders to:

Hydro International
2925 NE Aloclek Drive, Suite 140
Hillsboro, OR 97124

Local Representative

Plant Representative:

Mr. Bob Curie
Drydon Equipment
2445 Westfield Drive, Suite 100
Elgin, IL 60124
Ph: (815) 341-1055
Fax: (224) 629-4061
bcurie@drydon.com

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If you have any questions or concerns, do not hesitate to contact me.

Regards,
Hydro International



Sam Randall
Applications Engineer

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Standard Terms and Conditions of Sale

1. **DEFINITIONS.** “Hydro” is Hydro International with an address of 2925 NE Aloclek Drive #140 in Hillsboro, Oregon. "Buyer" is the party purchasing the goods from Hydro.

2. **ENTIRE AGREEMENT**. Hydro’s agreement is based on these terms and conditions of sale. This document, together with any additional writings signed by Hydro, represents a final, complete, and exclusive statement of the agreement between the parties and may not be modified, supplemented, explained, or waived by parol evidence, Buyer’s purchase order, any course of dealing, Buyer’s payment or acceptance, or in any other way except in writing signed by Hydro through its authorized representative. These terms and conditions are intended to cover all activity of Hydro and Buyer hereunder, including sales and use of products, parts, and work, and all related matters (references to products include parts and references to work include construction and installation). Hydro’s obligations hereunder are expressly conditioned on Buyer’s assent to these terms and conditions. Hydro objects to any terms that are different from, or additional to, these terms and conditions. Any applicable detail drawings and specifications are hereby incorporated and made a part of these Terms and Conditions of Sale insofar as they apply to the material supplied hereunder.

3. **SPECIFICATIONS.** Products are supplied in accordance with information received by Hydro, or its duly authorized agent, from Buyer. Hydro shall have no responsibility for products created or sold based upon inaccurate and/or incomplete information supplied to it. Buyer shall ensure that Hydro receives all relevant information in time to enable it to supply the appropriate products.

4. **INSTALLATION AND APPLICATION OF PRODUCTS.** Products supplied hereunder shall be installed and used only in the application for which they were specifically designed. Buyer should not presume that any products supplied by Hydro may be utilized for any applications other than those specified; nor shall Hydro’s obligations, including, without limitation, any warranty obligations, survive Buyer’s transfer of products supplied hereunder to third parties unless the products are transferred with Hydro’s consent. In addition, Buyer shall not use any product supplied hereunder at any location other than at the location for which Hydro has previously received notice from Buyer. Any breach of any of the foregoing restrictions may amount to an infringement of the patent for the products in question and will in any event void all express or implied warranties relating to the products supplied hereunder.

5. **PURCHASE PRICE AND PAYMENT TERMS.** All prices are in U.S. dollars and all payments shall be made in U.S. dollars. Payment terms are as follows:

	Incremental Payment	Cumulative Payment
Upon Fully Executed PO	10%	10%
Upon Approval of Shop Drawings	10%	20%
Upon Release to Fabrication	10%	30%
Upon Delivery of Equipment to Site	65%	95%
Upon Final Acceptance or 45 days following completion of equipment start up	5%	100%

If payments are not made in conformance with the terms stated herein, any unpaid balance shall be subject to interest at a rate 1½% per month, but not to exceed the maximum amount permitted by law. If shipment is delayed by Buyer, the previously agreed date of readiness for shipment shall be deemed to be the date of shipment for payment purposes. If manufacture is delayed by Buyer, a payment shall be made based on purchase price and percentage of completion, with the balance payable in accordance with the terms as stated. If at any time in Hydro's judgment Buyer may be or may become unable or unwilling to meet the terms specified, Hydro may require satisfactory assurance or full or partial payment as a condition to commencing, or continuing manufacture, or in advance of shipment.

Until payment in full has been received by Hydro, this Standard Terms and Conditions of Sale shall constitute a security agreement and Buyer hereby grants Hydro a purchase money security interest in and to the products produced by Hydro hereunder, and any products or proceeds thereof. In particular:

a. Hydro will retain an express purchase money security interest in and to the products and all proceeds thereof.

b. Until full payment for the products is received by Hydro, Hydro reserves the right to retake possession of the products at any time and for this purpose Buyer authorizes Hydro or its duly authorized agent to enter upon land or premises where it believes the product may be.

c. Proceeds of any disposal of the products shall be held in trust for Hydro pursuant to the terms of the Maine Uniform Commercial Code.

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d. Buyer grants Hydro a power of attorney for the purpose of filing a UCC-1 financing statement in the name of Buyer to evidence Hydro's security interest in the products.

6. **BACKCHARGES.** In the event that Buyer is required to make repairs, corrections or modifications to the goods supplied by Hydro, it shall only do so upon written approval from Hydro. Backcharges shall be limited to the costs directly associated in making the repairs, corrections or modifications to the goods supplied by Hydro. The costs of such backcharges shall be subject to approval by Hydro and shall be limited to: (1) directly related labor and material costs, (2) directly related equipment and tool rental at prevailing rates in the project location and (3) Buyer's overhead & supervision costs to make repairs, corrections or modifications to the goods supplied by Hydro. Buyer shall submit complete documentation to Hydro's satisfaction including but not limited to labor time sheets, material lists, and rental fees detailing the nature of the back charges. Backcharges shall be in the form of an adjustment to the contract price or reduction in retained payments and not a direct payment. No incidental or consequential backcharges shall be allowed.

7. **DELIVERY.** The goods are sold DDP (Incoterms 2010) jobsite, freight prepaid to Buyer at job site. Except as outlined in Paragraph 8 below, the risk of loss passes to Buyer after Hydro delivers the goods to the jobsite. Hydro reserves the right to select the method of shipment and carrier. Delivery dates are approximate only and are not a guarantee of delivery on a particular day. Hydro is not liable for failure or delays in deliveries of any cause whatsoever beyond the control of Hydro.

8. **TITLE & INSURANCE:** Title to the product(s) and risk of loss or damage shall pass to Buyer upon delivery to a carrier as outlined in Paragraph 7 above, or, in the event Buyer delays shipment, by the previously agreed date of readiness for shipment, except that a security interest in the product(s) or any replacement shall remain in Hydro's name, regardless of the mode of attachment to realty or other property, until the full price has been paid in cash. Buyer agrees to protect Hydro's interest by adequately insuring the product(s) against loss or damage from any external cause with Hydro named as insured or co-insured.

9. **ERECTION:** Unless otherwise stated in writing, the goods provided hereunder shall be assembled and erected by and at the expense of Buyer.

10. **CANCELLATION & BREACH:** Orders placed cannot be canceled, nor shipments of goods made up, or in process, be deferred beyond the original shipment dates specified, except with Hydro's written consent and upon terms which shall indemnify Hydro against all loss. In the event of cancellation or the substantial breach of Buyer's obligations, as by failing to make any of the payments when due, the parties agree that Hydro will suffer a serious and substantial damage that will be difficult, if not impossible, to measure, both as of the time of entering into this purchase agreement and as of the time of such cancellation or breach. Therefore, the parties agree that, upon such cancellation or breach, Buyer shall pay to Hydro the sums set forth herein below, which sums the parties do hereby agree shall constitute agreed and liquidated damages in such event:

    a. If cancellation or breach shall occur after the acceptance of the purchase order but prior to mailing of submittal documents by Hydro to Buyer, liquidated damages shall be 10% of the selling price.

    b. If cancellation or breach shall occur within thirty (30) days from the mailing of submittal documents by Hydro to Buyer, the liquidated damages shall be 20% of the selling price.

    c. If the cancellation or breach occurs after thirty (30) days from the mailing of submittal documents by Hydro to Buyer, but prior to notification that the order is ready for shipment, the liquidated damages shall be the total of 30% of the selling price plus the expenses incurred, cost of material, and reasonable value of the work expended to fill the order involved herein by Hydro's engineers and other employees, agents and representatives after the mailing of general arrangement drawings by Hydro to Buyer, said sums to be determined at the sole reasonable discretion of Hydro; provided, however, that the total liquidated damages under this provision shall not exceed the total selling price.

    d. If cancellation or breach shall occur after Hydro has notified Buyer that the order is ready for shipment, then the liquidated damages shall be the total selling price, less costs associated with startup or field testing.

11. **MATERIALS OF CONSTRUCTION, PAINTS AND COATINGS**: Buyer is responsible for determining the suitability of, and for giving final approval of, the materials of construction, paints, coatings, etc. to be used by Hydro.

12. **WARRANTY:** Any product that proves defective in material, workmanship or design within one (1) year from substantial completion (estimated start date 12/31/2024) will be, at the discretion of HYDRO, modified, repaired or replaced, or Buyer's payment for the products will be refunded. This shall be Buyer's sole remedy. HYDRO EXPRESSLY EXCLUDES AND DISCLAIMS ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTIES, EXPRESS OR IMPLIED.

    This warranty does not cover any defects or costs caused by: (1) normal wear and tear of equipment from designed operation. (2) modification, alteration, repair or service of the goods by anyone other than Hydro; (3) physical abuse to, or misuse of, the goods, or operation thereof in a manner contrary to Hydro's instructions; (4) any use of the goods other than that for which they were intended; (5) chemicals or components which were not disclosed to Hydro; (6) storage contrary to Hydro's instructions; or (7) failure to maintain the goods in accordance with Hydro's instructions.

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This warranty does not apply to component parts of the goods that were not both originally designed and manufactured by Hydro, including, but not limited to, valves and controls. These component parts do not carry any warranties by Hydro, and only carry the warranties, if any, of their manufacturers.

In order for Buyer to make a claim under this warranty, Buyer must promptly, and within the warranty period, notify Hydro in writing of any defect(s) in the goods covered by this warranty. If any defect(s) in the goods covered by this warranty are visible at the time of delivery, Buyer must notify Hydro of the defect(s) in writing within five working days. To make any claim under this warranty, Buyer must also fully comply with written authorization and return instructions from Hydro.

13. **FIELD SERVICE:** Startup/Field Service will only be scheduled upon written request. Buyer shall notify Hydro of schedule requirements at least ten (10) working days in advance, or additional charges may be added to cover late-scheduled travel costs. Additional costs will be limited to those arising out of late-scheduled costs. Should Buyer have outstanding balances due Hydro, no startup / field service will be scheduled until such payments are received by Hydro. Hydro will send documents to Buyer defining the service or startup requirements. Buyer assumes all responsibility for the readiness of the system when it requests startup service. Should Hydro's Field Service Engineer arrive at the jobsite and determine that the system cannot be started up within a reasonable time, Hydro shall have the option to bring the Field Service Engineer home and bill Buyer for time, travel and living expenses. Additional field service is available from Hydro at the prevailing per-diem rate at the time of the request for service plus all travel and living expenses, portal-to-portal. A purchase order or change order will be required prior to scheduling this additional service.

14. **LIMITATION OF HYDRO'S LIABILITY.** Hydro assumes no liability or responsibility for the misuse of its products by Buyer, Buyer's employees, agents or assigns, or other use inconsistent with the use appropriate to the performance specification requirements submitted to Hydro, and Buyer agrees to indemnify and hold harmless Hydro for any loss, costs, expense or liability that it may incur or be put to as a result of misuse or inconsistent use of the products. In addition, Hydro shall have no liability to Buyer for any consequential or incidental damages incurred by Buyer in connection with the contract documents or the products purchased by Buyer. Hydro shall not be liable for any loss which results from delay in delivery caused by any reason beyond its control, including, but not limited to, acts of God, casualty, civil disturbance, labor disputes, strikes, transportation or inability to obtain materials or services, any interruption of its facilities, or act of any governmental authority. The total liability of Hydro to Buyer in the form of liquidated damages for any loss, indemnity, damage or delay of any kind will not under any circumstances exceed 25% of the Contract Sum.

15. **DELAYS AND EXTENSIONS OF TIME.** In the event of any delay in delivery caused by any reason beyond Hydro's control, including, but not limited to, acts of God, casualty, civil disturbance, labor disputes, strikes, pandemics, transportation or inability to obtain materials or services, including related to supply chain disruptions, any interruption of its facilities, or act of any governmental authority, the time for delivery shall be automatically extended during the continuance of such conditions.

16. **INTELLECTUAL PROPERTY**. Hydro shall retain sole ownership of all of its intellectual property used or produced in connection with the Project, including but not limited to all drawings, specifications, software, written materials, manuals, marks, business methods, and all other property that is capable of protection by a patent, copyright or trademark (whether or not such protection has actually been sought). Buyer shall not use such intellectual property except for the purpose of confirming the quality of design and/or manufacturing of the products and services set forth in the Proposal. Buyer shall not photocopy, duplicate or in any way copy such intellectual property except for the Buyer's internal purposes only (but not for rendering services or selling products to third persons). Buyer shall not sell, license, assign or transfer the intellectual property protected by this paragraph to anyone. Buyer shall ensure that Owner is in possession of valid licenses for all third-party software (not provided by Hydro) used for the Project, and shall indemnify and hold harmless Hydro against all claims by licensors of such software. Hydro makes no warranty regarding the effect of such third-party software on the performance of the software to be developed by Hydro for the Project and Hydro shall be released from any warranties given to Buyer to the extent that such software causes or contributes to problems. Following acceptance and final payment to Hydro, Hydro will grant to the Owner a non-transferable, non-exclusive license to use the software for the Owner's internal purposes only in the form of the license agreement attached as Exhibit A. Patent: www.hydro-int.com/patents

17. **TAXES.** Prices stated herein do not include any tax, excise, duty or levy now or hereafter enacted or imposed, by any governmental authority on the manufacture, sale, delivery and/or use of any item delivered. An additional charge will be made therefore and paid by Buyer unless Hydro is furnished with a proper exemption certificate relieving Hydro of paying or collecting the tax, excise, duty or levy in question.

18. **INTERPRETATION OF CONTRACT.** This contract shall be construed according to the laws of the State of Maine.

19. **CHOICE OF FORUM**. Buyer and Hydro hereby consent and agree that the United States District Court for the District of Maine or the District Court or Superior Court located in the City of Portland, County of Cumberland, Maine will have exclusive jurisdiction over any legal action or proceeding arising out of or relating to the contract documents, and each party consents to the personal jurisdiction of such Courts for the purpose of any such action or proceeding. Buyer and Hydro further hereby consent and agree that the exclusive venue for any legal action or proceeding arising out of or relating to the contract documents will be in the County

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of Cumberland, Maine. Each party hereby waives all rights it has or which may hereafter arise to contest such exclusive jurisdiction and venue.

20. **ATTORNEYS' FEES.** If any judicial or non-judicial proceeding is initiated for the purpose of enforcing a provision of this contract, the prevailing party shall be awarded reasonable attorneys' fees in addition to all other costs associated with the proceeding, whether or not the proceeding advances to judgment.

21. **SEVERABILITY.** If any provisions of this contract are held invalid by a court of competent jurisdiction, the remainder of this contract shall not be rendered invalid, and such invalid provisions shall be modified, in keeping with the letter and spirit of this contract, to the extent permitted by applicable law so as to be rendered valid.

22. **ANTI-BRIBERY.** Hydro International will not engage in any form of bribery or corruption. The offering, giving or receiving of bribes is contrary to Hydro International's values and can play no part in the way in which it carries out its business. Hydro requires you to support our approach and implement provisions consistent with our policy through your own organization and your supply chain. Please find a copy of our Anti-Bribery and Corruption Policy on our website at https://www.hydro-int.com/sites/default/files/hydro_international_anti-bribery_and_corruption_policy_-_july_2018.pdf

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CONTRACT NO. 5 DRAWINGS

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STRUCTURE	SHEET No.
Lock	7 to 15, 19, 38 to 50.
Upstream Approach	16, 18.
Downstream Approach	17.
Junction Lock	20, 53, 54.
Head Gate Structure	22, 23, 51, 52.
Details of Earth Dam	21.
Junction of Head Gate Structure and Dam	24.
East Retaining Wall and Spillway	25, 26, 27.
West Retaining Wall and ditch	28.
Brandon Road Lift Bridge	29, 30, 31, 81 to 105.
Sluice Gate Dam	32 to 37.
Ice Chute	55 to 69.
Culvert Valve Gates	70, 71.
Miter Gates and Anchorage	72 to 80
Spillway Taintor Gates	26, 106
" Bridge	107
Office Building	108



The stations shown on these drawings are for purposes of estimate and approximate only.

Contract No. 5

STATE OF ILLINOIS
DEPARTMENT OF PURCHASES AND CONSTRUCTION
DIVISION OF WATERWAYS
THE ILLINOIS WATERWAY

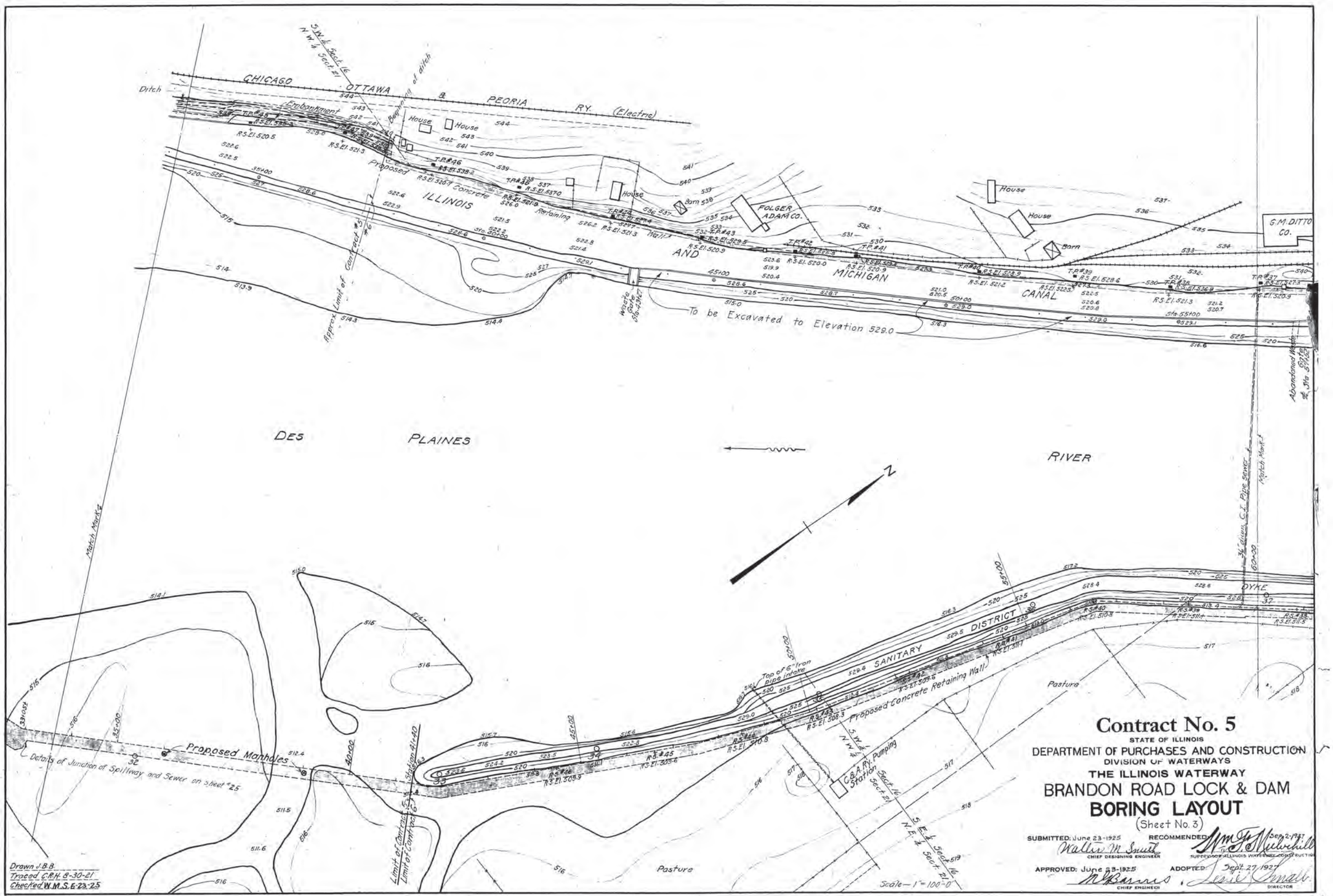
BRANDON ROAD LOCK & DAM

LOCATION PLAN

SUBMITTED: June 23-1925 RECOMMENDED: Sept 2, 1927
Walter M. Smith — Wm. J. Mulvihill
CHIEF ENGINEER ILLINOIS — SUPERVISOR ILLINOIS WATERWAY CONSTRUCTION

APPROVED: June 23, 1925 ADOPTED: Sept 27 1927
M. L. Sarrus — Lesslie Gerald
CHIEF ENGINEER — DIRECTOR

Drawn J.B.B.
Traced J.K. - C.M.H.
Checked W.M.S 8-31-25



Contract No. 5

STATE OF ILLINOIS
DEPARTMENT OF PURCHASES AND CONSTRUCTION
DIVISION OF WATERWAYS
THE ILLINOIS WATERWAY

BRANDON ROAD LOCK & DAM

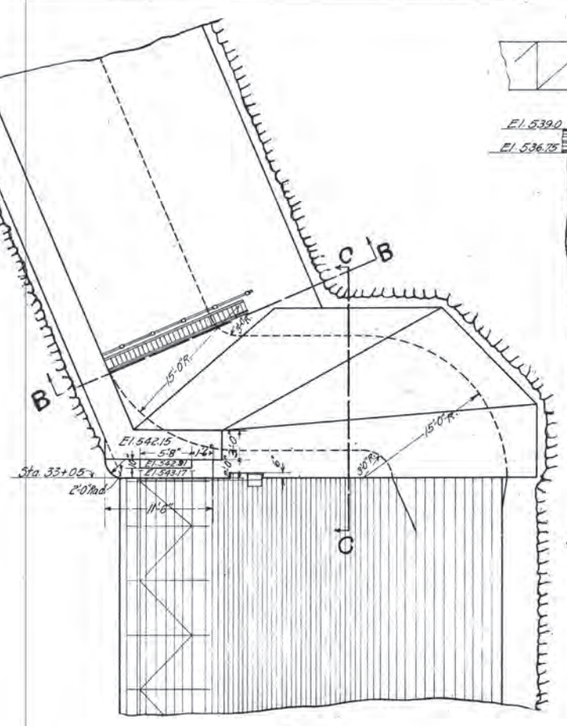
BORING LAYOUT

(Sheet No. 3)

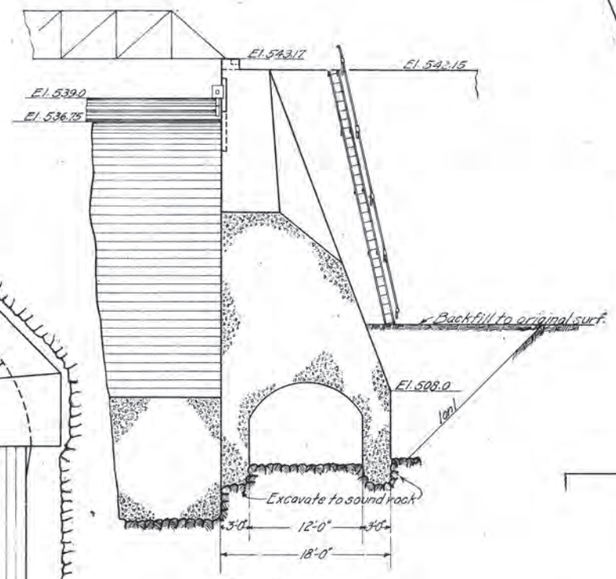
Drawn J.B.B.
Traced C.R.H. 8-30-21
Checked W.M.S. 6-23-25

SUBMITTED: June 23-1925 — Walter M Smith, CHIEF DESIGNING ENGINEER
RECOMMENDED: Sept 2-1927 — Wm F. Mulvihill, SUPERVISOR ILLINOIS WATERWAY CONSTRUCTION
APPROVED: June 23-1925 — M Barnes, CHIEF ENGINEER
ADOPTED: Sept 27, 1927 — Jesse Donath, DIRECTOR

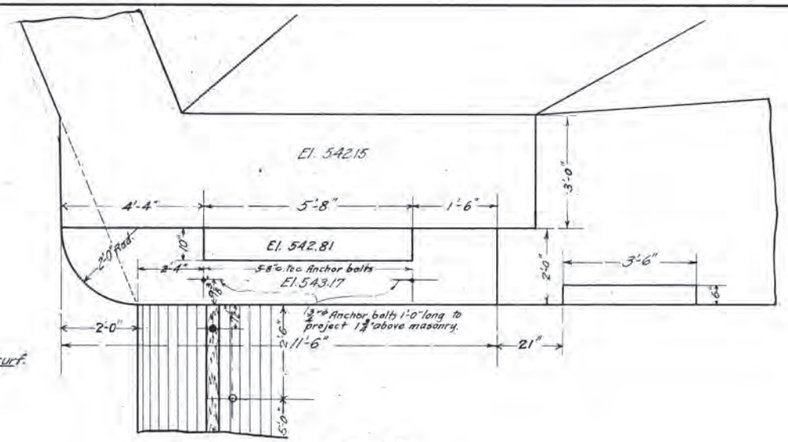
Acc No. 521 4



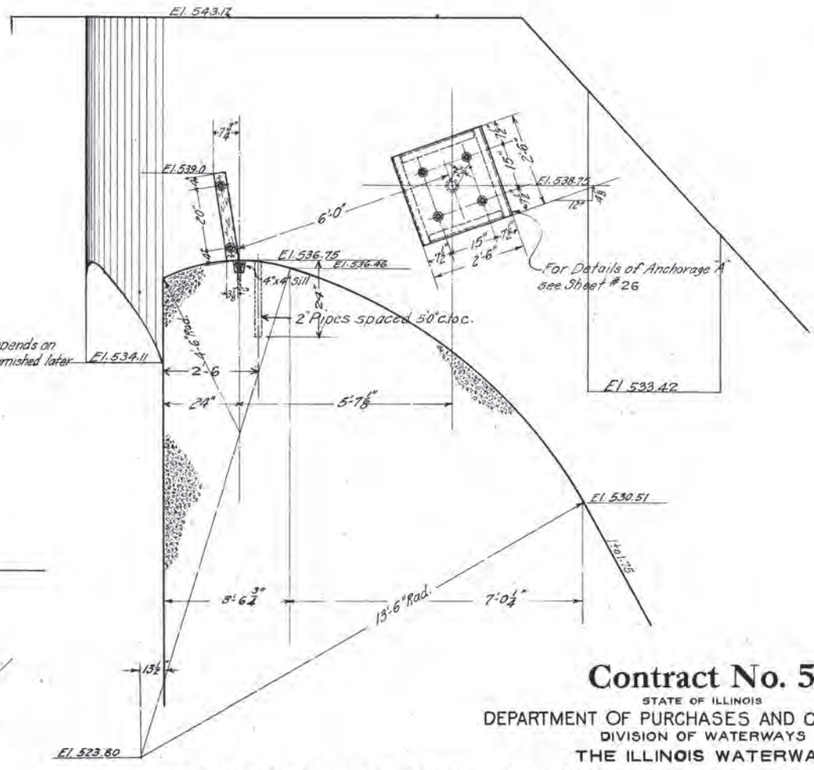
PLAN



SECTION C C

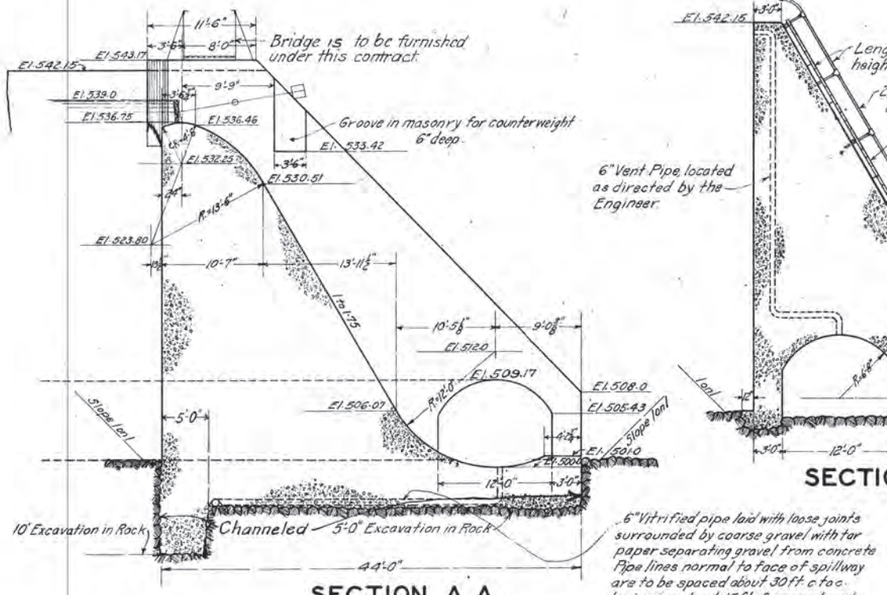


PLAN



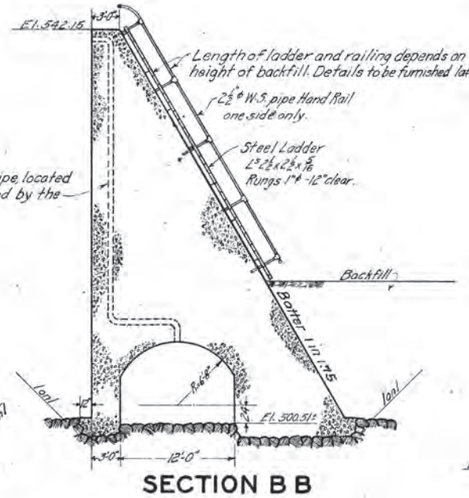
SECTIONAL ELEVATION

Scale 1/2" = 1'-0"



SECTION A A

DETAILS OF OUTLET OF SEWER



SECTION B B

6" Vitrified pipe laid with loose joints surrounded by coarse gravel with tar paper separating gravel from concrete Pipe lines normal to face of spillway are to be spaced about 30 ft. c to c. beginning about 15 ft. from each end.

Scale 1/8" = 1'-0"

Drawn J.L.S. 1-15-25
Traced G.R.H. 2-2-25
Checked W.M.S. 10-22-25

Contract No. 5

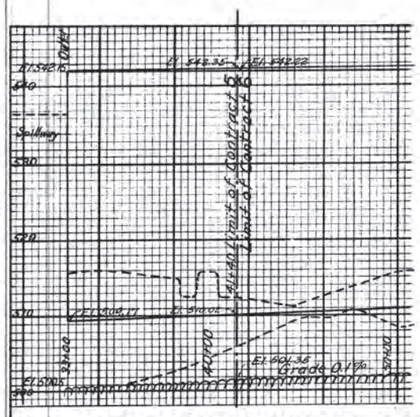
STATE OF ILLINOIS
DEPARTMENT OF PURCHASES AND CONSTRUCTION
DIVISION OF WATERWAYS
THE ILLINOIS WATERWAY

BRANDON ROAD LOCK & DAM

JUNCT'N. OF WALL & WEIR

SUBMITTED: July 23, 1927. Walter M. Smith, CHIEF DESIGNING ENGINEER
RECOMMENDED: Sep. 2, 1927. Wm. E. Mulvihill, SUPERVISING ILLINOIS WATERWAY CONSTRUCTION
APPROVED: July 23, 1927. M. G. Barnes, CHIEF ENGINEER
ADOPTED: Sept. 27 1927. Louis C. Small, DIRECTOR

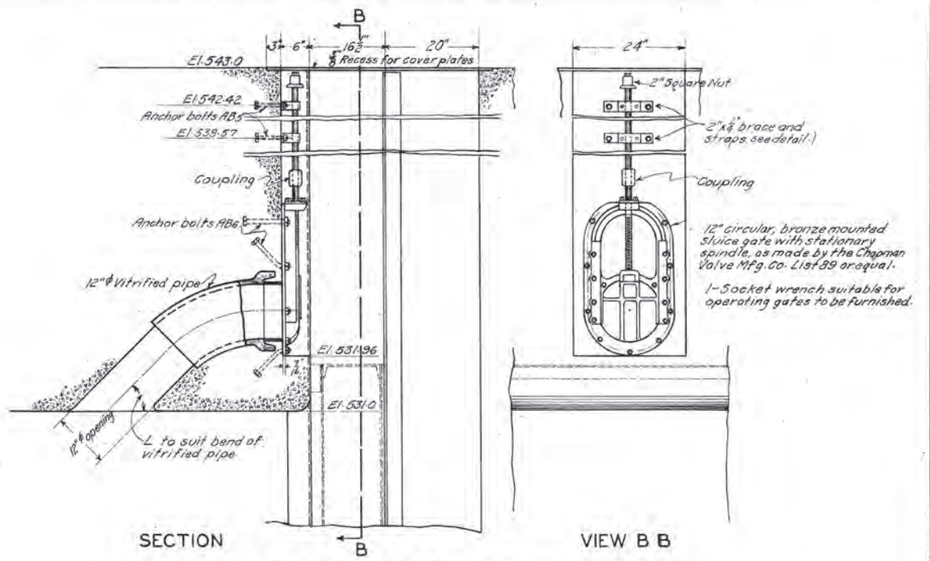
Acc. No. 1013



PROFILE OF EAST SEWER & RETAINING WALL

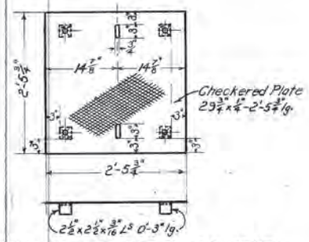
Hor. Scale - 1" = 400'-0"

Total No.	Description	Mark	Weight
2	Checkered Pl. 29¾"x4'-1"x2'-3¾"		141 #
80	Ladder Steps		481 #
2	2½"x2½"x⅜"x30'-5" lg. L's		308 #
53 lin. Ft.	2½" ϕ W.S. Hand Railing		309 #
14	Anchor Bolts ¾" ϕ x18" lg.		37 #
29	1" ϕ Ladder Rungs		39 #



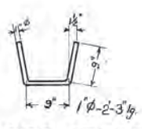
SLUICE GATE 8 Required

For location see Sheet No. 23
Scale: ¾" = 1'-0"



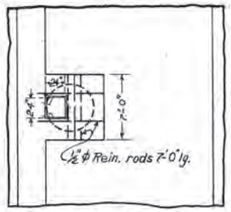
MANHOLE COVER PLATE

Scale: ¾" = 1'-0" 2 Req'd.

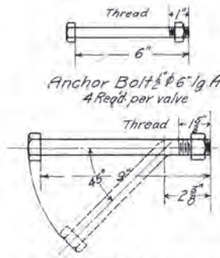


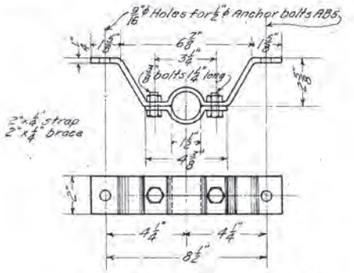
LADDER STEPS

80 Req'd.
Scale ¾" = 1'-0"



PLAN

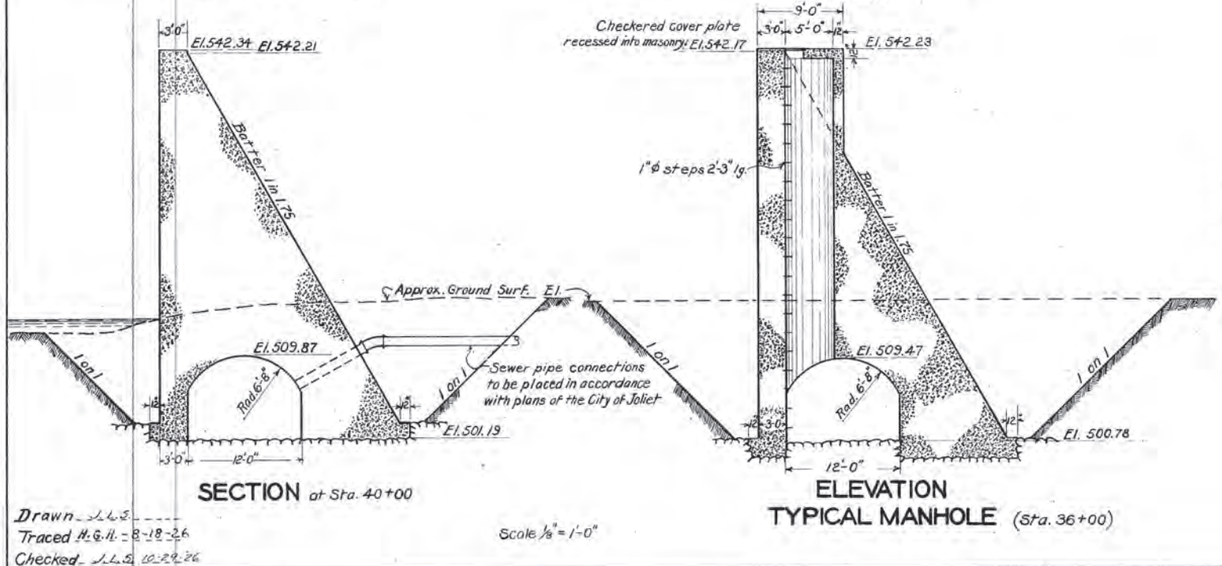




SPINDLE GUIDE 2 Req'd per valve

Scale: 3" = 1'-0"

For Bill of Material see sheet #51



Drawn - J.L.S.
Traced H.G.H. - 8-18-26
Checked - J.L.S. 10-29-26

NOTE: Elevations given are only approximate and may be changed by the Engineer if found necessary to obtain satisfactory foundation. Limits of excavation shown shall be attained as nearly as practicable unless otherwise ordered.

All sewers at present entering the river on the east side shall be connected to the intercepting sewer in the base of the wall and provisions will be made for future connections of sewers wherever directed by the City of Joliet.
Scale: ⅛" = 1'-0"

Contract No. 5

STATE OF ILLINOIS
DEPARTMENT OF PURCHASES AND CONSTRUCTION
DIVISION OF WATERWAYS
THE ILLINOIS WATERWAY
BRANDON ROAD LOCK & DAM

RETAINING WALL & SEWER

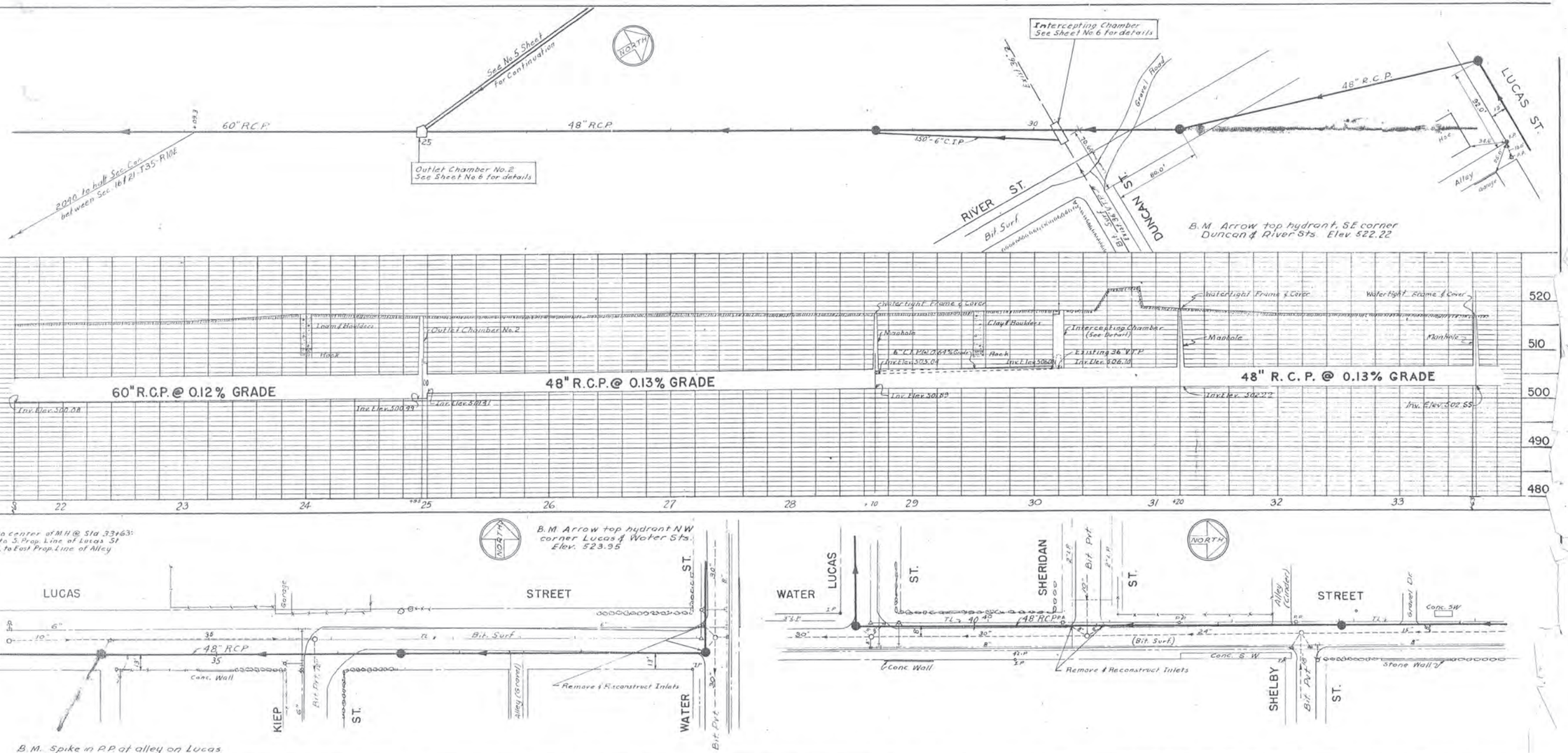
SUBMITTED: July 23, 1927. Hallie M. Smith, CHIEF DESIGNING ENGINEER
RECOMMENDED: Sept. 2, 1927. Wm. F. Mulvihill, SUPERINTENDENT NATIONAL WATERWAY COMMISSION
APPROVED: July 23, 1927. M. L. Sarnis, CHIEF ENGINEER
ADOPTED: Sept. 27, 1927. Louis L. Emmerson, DIRECTOR

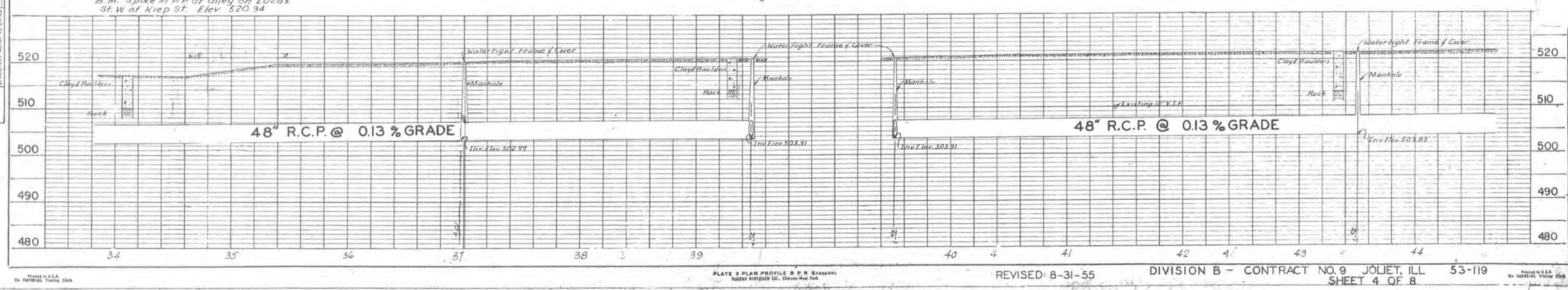
Acc. No. 1103

CONTRACT NO. 9 DRAWINGS

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PLAN — SURVEYED · PLOTTED · CHECKED · NOTE BOOK · R.R. CROSS. CHECKED · R.R. OF WAY CHECKED · R.W. · STRUCTURE NOTATNS CHK'D · BY · DATE





PROFILE — SURVEYED · PLOTTED · CHECKED · NOTE BOOK · R.R. CROSS. CHECKED · R.R. OF WAY CHECKED · R.W. · STRUCTURE NOTATNS CHK'D · BY · DATE

Printed in U.S.A. by IMPERIAL Tracing Cloth

PLATE 2 PLAN PROFILE B.P.R. STANDARD
RUSSELL SMITZER CO., Chicago-New York

REVISED: 8-31-55

DIVISION B — CONTRACT NO. 9 JOLIET, ILL. 53-119
SHEET 4 OF 8

Printed in U.S.A. by IMPERIAL Tracing Cloth

PLAN
SURVEYED
PLOTTED
NOTE BOOK
NO.
LINES CHECKED
ALIGNMENT CHECKED
RT. OF WAY CHECKED

DATE | BY

B.M.
Top of arrow on Hydrant on N.E. Corner of Munroe and Water Sts.
Elev 524.35

Intercepting Chamber See Sheet No 6 for details

NORTH

WATER ST. | STREET | ST.

JASPER | MONROE | McDONOUGH

Gravel Surf. | Bit. Surf. | Bit. Surf.

12"C.I.P. | 48" R.C.P. | 6"C.I.P. | 11½ I.P. | 48" R.C.P. in Tunnel | 48" R.C.P.

6" Retaining Wall | 4" Sidewalk | 45 | 50 | TL | 55 | 60 | 18" | 14" | 10" | 8" | 8" | 4" C.I.P.

Bit. Surf. | 8" | 4" C.I.P. | Remove & Reconstruct Inlet | Conc. Retaining Wall | 36" | 6" I.P. Conc. | Conc. Retaining Wall

520 / 510 / 500 / 490 / 480

Clay & Boulders | Rock | Manhole | Inv. Elev. 504.35 | 48" R.C.P. @ 0.13 % GRADE

Inv. Elev. 514.9 | Manhole | Drop Pipe | 6"C.I.P. @ 0.64% Grade | Inv. Elev. 515.15 | Inv. Elev. 504.87

Intercepting Chamber (See Detail) | Exist 18" V.T.P. Inv. Elev. 515.26 | 280' Tunnel | 48" R.C.P. @ 0.130% GRADE | Inv. Elev. 505.25

Manhole | Clay & Boulders | Rock

45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | + 60

B.M.
Spike in P.P. on N.E. Corner of Wallace and Water Sts.
Elev 525.22

NORTH

WATER STREET | Spur Track 60 | WALLACE ST.

48" R.C.P. | Gravel Surf. | 4" C.I.P. | 60 | TL | 200-18" C.I.P. | Bit. Surf. | 19"C.I.P. | 8" C.I.P. | 12" | Bit. Surf.

Outlet Chamber No.1 See Sheet No.6 for details | Connect Inlet Pipe to West Section of Intercepting Chamber | Intercepting Chamber See Sheet No.6 for details

Top of Wall | Bottom at Batter of East Retaining Wall | Exist Wall Manhole | Brandon Road Pool

60" R.C.P. | 300'-16" C.I. Throttle Pipe | 300'-18" C.I. Throttle Pipe | Intercepting Chamber | 36" C.I. | Exist Boat Manhole | See Sheet No.7 for detail

Outlet Chamber No.2 | 48" R.C.P. | 27

NORTH

PROFILE
SURVEYED
PLOTTED
NOTE BOOK
NO.
LINES CHECKED
& M.S. NOTED
STRUCTURE NOTATNG CHKD.

520 / 510 / 500 / 490 / 480

Water tight Frame & Cover | Manhole | Clay & Boulders | Rock | Inv. Elev. 505.70 | 48" R.C.P. @ 0.130% GRADE

Outlet Chamber No.1 (See Detail) | 1-18"C.I. Throttle Pipe @ 2.0% Grade | Inv. Elev. 506.18 | Inv. Elev. 507.00

Clay & Boulders | Rock | Intercepting Chamber (See Detail) | Exist 12" R.C.P. Inv. Elev. 511.07 | Inv. Elev. 511.00

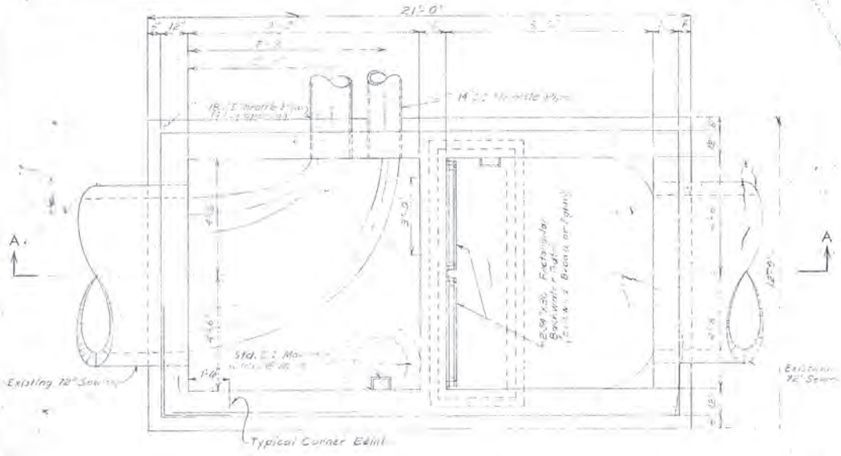
60" R.C.P. | Inv. Elev. 503.00 | Inv. Elev. 506.49 | 1-16 & 1-18" C.I.P. @ 2.67% Grade | 36" C.I.P. | Inv. Elev. 511.00

57 | 58 | 59 | 60 | 61 | 62 | 63

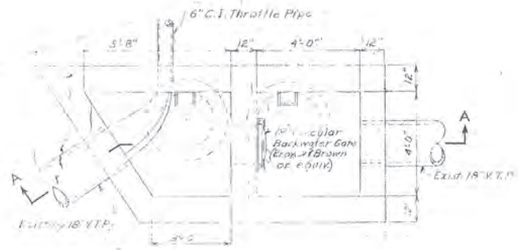
PLATE 7=PLAN-PROFILE U.S.P.W.A.R.S.
CHARLES BRUNING COMPANY, INC.

REVISED: 8-31-55

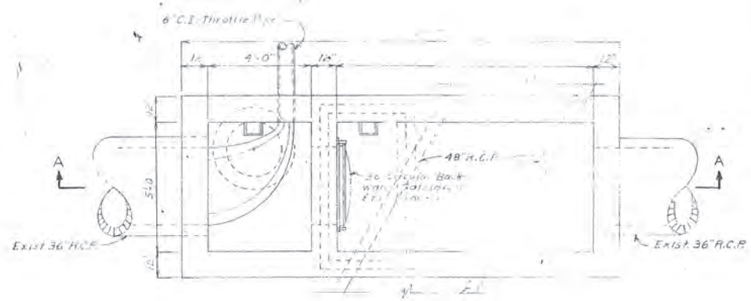
DIVISION B - CONTRACT NO. 9 JOLIET, ILL 53-119
SHEET 5 OF 8



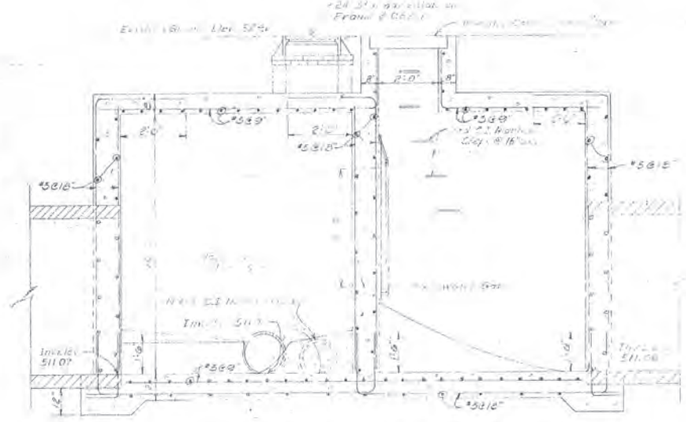
PLAN



PLAN

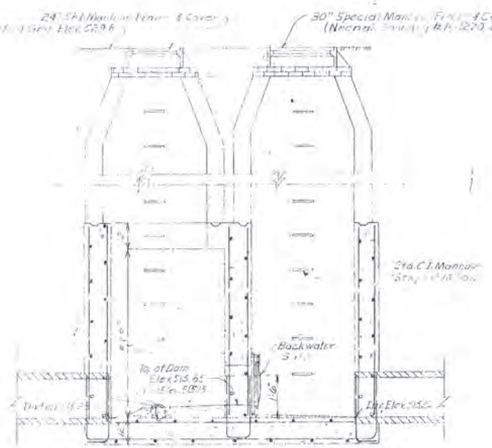


PLAN



SECTION A-A

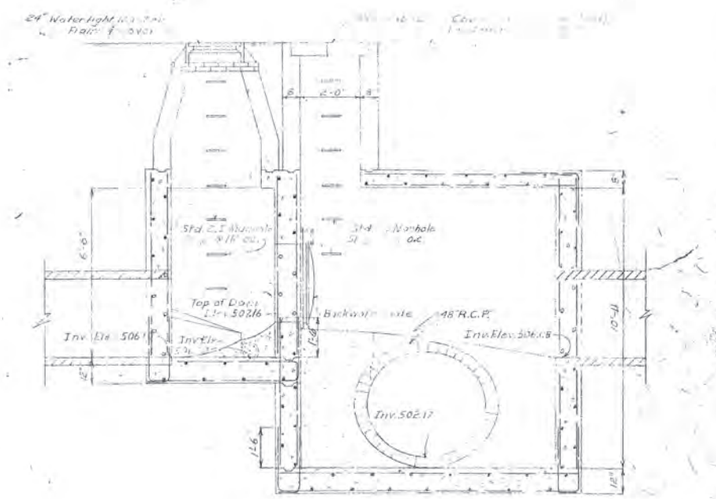
WALLACE STREET INTERCEPTING CHAMBER



SECTION A-A

McDONOUGH STREET INTERCEPTING CHAMBER

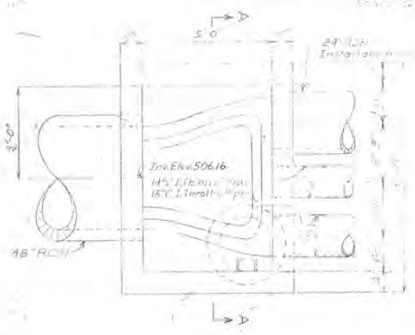
Scale: 3/8"=1'-0"



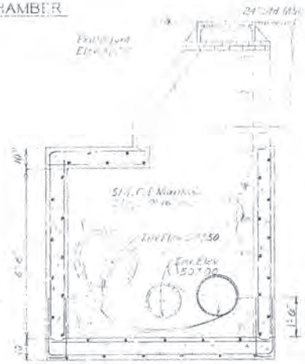
SECTION A-A

DUNCAN STREET INTERCEPTING CHAMBER

Scale: 3/8"=1'-0"



PLAN

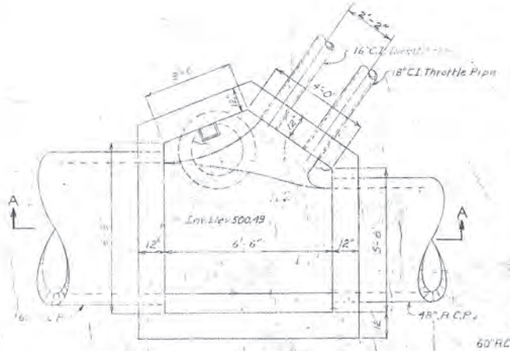


SECTION A-A

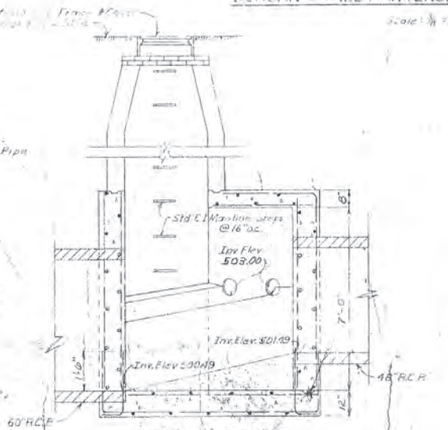
OUTLET CHAMBER NO. 1

Scale: 3/8"=1'-0"

Note: #5 Reinf. Bars are 5/8" ϕ



PLAN



All reinf. #5@18"

SECTION A-A

OUTLET CHAMBER NO. 2

Scale: 3/8"=1'-0"



PLAN



SECTION

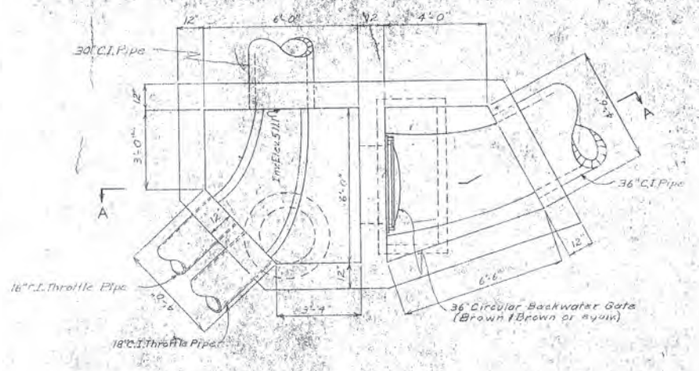
DETAIL OF PRE-FAB. CONC. COVER SLAB

JOLIET, ILLINOIS
INTERCEPTING SEWER

DETAILS

DRAWN BY: V.B.S.T.	CONSOER, TOWNSEND & ASSOCIATES	SCALE: As Shown
DATE:	CONSULTING ENGINEERS	REVISED: APRIL 1954
CHECKED BY: A.A.J.	CHICAGO, ILL.	SHEET NO. 6
APPROVED BY:		OF 6 SHEETS

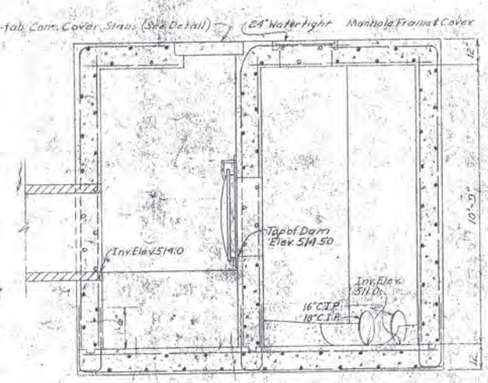
CONTRACT NO. 53-118



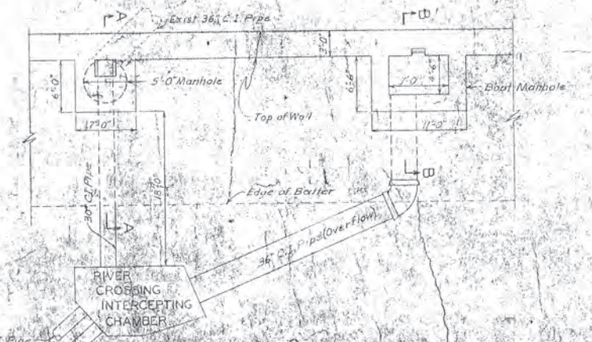
PLAN



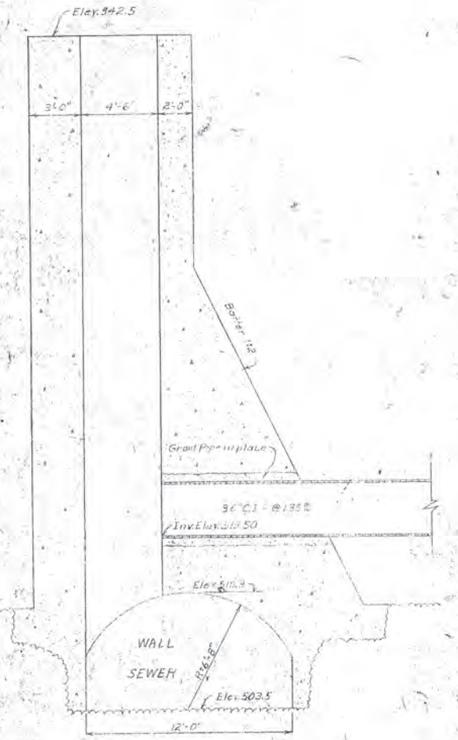
SECTION A-A
TENTATIVE DETAILS OF CONNECTION TO 36" RIVER CROSSING PIPE
AT JUNCTION WITH EAST WALL SEWER



SECTION A-A
RIVER CROSSING INTERCEPTING CHAMBER
Scale: 3/8" = 1'-0"



LAYOUT PLAN OF EAST RETAINING WALL
AND RIVER CROSSING INTERCEPTING CHAMBER



SECTION B-B
CONNECTION OF OVERFLOW PIPE TO WALL SEWER
Scale: 1/4" = 1'-0"

JOLIET - ILLINOIS
INTERCEPTING SEWER
DETAILS

DRAWN BY: A.S.	CONSOER, TOWNSEND & ASSOCIATES	SCALE:
DATE:	CONSULTING ENGINEERS	
CHECKED BY:	CHICAGO, ILL.	
APPROVED BY:		

CONTRACT NO. 6

NORTH

MATCH LINE - STA 21+00

MH 22+39

8" H.P.

12"

15" Storm Sewer

8" W

PROPOSED 30" SEWER

6" water line cut and plugged just south of valve South of Washington - 8" line abandoned.

TRUCK PARKING

WASHINGTON ST.

DESPLAINES

MH 24+36
See Insert

MH 24+04
See Insert

Sta 24+17 Intercepting Chamber See Sht No. 15 for details
See Insert

24" R.C.P. SEWER SEAWALL

8" Manhole P.

PROPOSED 8" THROTTLE PIPE

8" H.P.

12"

4"

21" R.C.P.

MH 24+21

Lite Junction Box

#6

MH 23+42

MH 23+30

20" x 30" Stone Box Culvert

Note:
4" Gas line abandoned from Washington St. To Jefferson St. Bridge House into City Hall. Services taken from 8" N.H. Gas main.

PARKING

PROPOSED 30" SEWER

MH 25+88

48" R.C.P. SEWER

MH 26+18

Lite Junction Box

#7

457 Lf TUNNEL

15" Int. Sewer

Gate

Gate

ST.

PARKING

JEFFERSON STREET

4'-2.5" Brick Arch Sewer

MATCH LINE - STA. 27+00

PROFILE OF 6" THROTTLE PIPE FROM STA. 23+98 TO STA. 24+50

24+05

24+36

24+47

530
525
520

6" @ 0.60%

Inv. Elev. 520.50

Inv. Elev. 520.83

Inv. Elev. 520.89

Inv. Elev. 521.51

48" R.C.P. SEWER

Profile of Pavement Along ℄ of Proposed Sewer

545
540
535
530
525
520
515

Top of rock

Electric Conduit

21" RCP

Inv. Elev. 523.50

Inv. Elev. 524.28

Inv. Elev. 520.58

Inv. Elev. 521.28

Inv. 6" Throttle Elev. 519.63

6" @ 0.60%

30" @ 0.20%

30" @ 0.20%

Inv. Elev. 516.95

Gas

Sand

Crushed Stone Sand & Clay

Electric Conduit

18" Water

Inv. Rock

4'-0" RCP CONNECTS TO EXISTING 4'-2.5" STONE ARCH SEWER WITH CONCRETE COLLAR

Inv. Elev. 525.41

30" @ 0.12%

457 Lf TUNNEL

+18 MH

+39 MH

+48 MH

21 22 23 24 25 26 27

As built
Dec. 15, 1970 R.R. Stauffer

Scales
Plan: 1"=20'-0"
Profile: Horiz. 1"=20'-0"
Vert. 1"=5'-0"

PLATE I—PLAN PROFILE U. F. S. STANDARD
THE FREDERICK POST CO., CHICAGO

JOLIET, ILLINOIS - DIVISION B

SHEET NO 7 OF 18 SHEETS

68095

PLAN
SURVEYED
PLOTTED
NOTE BOOK
NO.
ALIGNMENT CHECKED
RT. OF WAY CHECKED
DATE
BY

PROFILE
SURVEYED
PLOTTED
NOTE BOOK
NO.
R. R.'S NOTED
STRUCTURE NOTATIONS CHKD.
DATE
BY

PLAN
SURVEYED BY DATE
DRAWN
GRADES CHECKED
NOTE BOOK ALIGNMENT CHECKED
NO. R. R. 'S NOTED FT. OF WAY CHECKED
STRUCTURE LOCATIONS CK'D.

NORTH

DESPLAINES

SEAWALL

CASS STREET BRIDGE

RIVER

MATCH LINE - STA. 33+00

MH 33+28

MH 34+13

MH 35+19

MH 36+30

MH 36+44

MH 37+88

Wall Footing

Lot inletdrain

TUNNEL

PROPOSED 30" SEWER

Sta. 37+20 Intercepting Chamber See Sht. No. 14 for Details

Barricade

VALVE

EASEMENT No. 1

EASEMENT No. 2

EASEMENT No. 3

EASEMENT No. 4

CONCRETE WALL

conc. Slab

MATCH LINE - STA. 39+00

CLINTON ST.

CASS ST.

DESPLAINES STREET

PROFILE
SURVEYED BY
DRAWN
GRADES CHECKED
NOTE BOOK STRUCTURE LOCATIONS CK'D.
NO.

Profile of Ground Along ℄ of Proposed Sewer

TOE OF SLOPE

8" Gas

12" Sewer

Elec. Conduit

Telephone Vault

Top of rock

8" Sewer

6" @ 0.60%

Inv. Elev. 526.04

Inv. Elev. 526.75

Inv. Elev. 527.26

12" Sewer Inv. Elev. 527.51

Elec. Conduit

16" Water

30" @ 0.12%

Inv. Elev. 518.6

Inv. End. 518.50

Inv. Elev. 518.64

Inv. Elev. 518.79

Inv. Elev. 518.94

BOLF TUNNEL

18 B.L.F. TUNNEL

550
545
540
535
530
525
520
515

33 34 35 36 37 38 39

As Built
Dec. 15/70 R.B. Stauffer

Scales
Plan 1" = 20'-0"
Profile
Horiz. 1" = 20'-0"
Vert. 1" = 5'-0"

PLATE I—PLAN PROFILE U. F. R. STANDARD
THE FREDERICK POST CO., CHICAGO

JOLIET, ILLINOIS - DIVISION B SHEET NO. 9 OF 18 SHEETS 68095

2-3-544

DESPLAINES RIVER

NORTH

SEAWALL ℄

SEAWALL ℄

℄ Wall Footing

8" 3 Post Anchor

EASEMENT № 5

EASEMENT № 4

PROPOSED 30" SEWER

MH 41+68

EASEMENT № 7

EASEMENT № 6

ALLEY

PROPOSED 8" THROTTLE-PIPE

EASEMENT № 9

EASEMENT № 8

PROPOSED 24" SEWER

℄ Wall Footing

Sta. 44+65 Intercepting Chamber See Sheet No. 14 for Details

EASEMENT № 10

BENTON ST. (VACATED)

PROPOSED 24" SEWER

EASEMENT № 11

MATCH LINE - STA 39+00

MATCH LINE - STA 45+00

WEBSTER ST

ALLEY

ALLEY

CITY OF JOLIET

Inlet

Curb

JOLIET ST

PLAN — SURVEYED ____ PLOTTED ____ NOTE BOOK ____ NO. ____ ALL POINT CHECKED ____ ALL BKGD. RT. OF WAY CHECKED ____ BY ____ DATE ____

PROFILE — SURVEYED ____ PLOTTED ____ NOTE BOOK ____ NO. ____ BKGD. & R. R. NOTED ____ STRUCTURE NOTATIONS CHKD. ____ BY ____ DATE ____

Profile of ground Along ℄ of Proposed Sewer

Top of rock

Top of rock

Inv. Elev. 522.70

Inv. Elev. 519.30

Inv. Elev. 519.40

30" @ 0.12%

8" @ 0.50%

24" @ 25%

Inv. Elev. 526.27

Curb

Curb

535

530

525

520

515

535

530

525

520

515

39+20

40

41

42

43

44

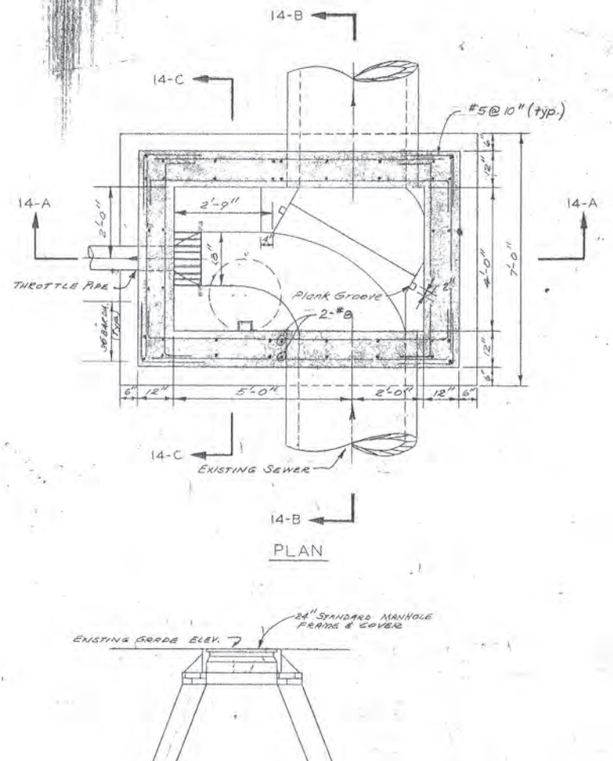
45

As Built Dec. 13/70 R.B. Stauffer

Scales: Plan: 1" = 20'-0" Profile: Horiz. 1" = 20'-0" Vert. 1" = 5'-0"

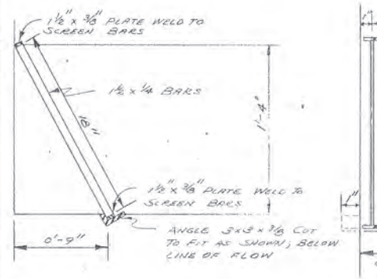
PLATE I—PLAN PROFILE S. F. R. STANDARD THE FREDERICK POST CO., CHICAGO

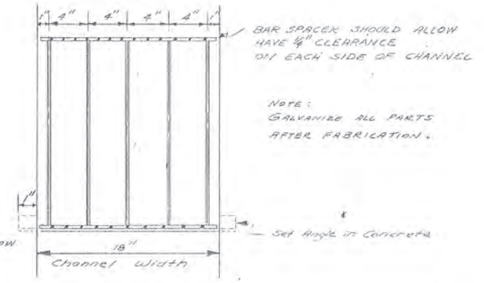
JOLIET, ILLINOIS - DIVISION B SHEET NO. 10 OF 18 SHEETS 68095



PLAN

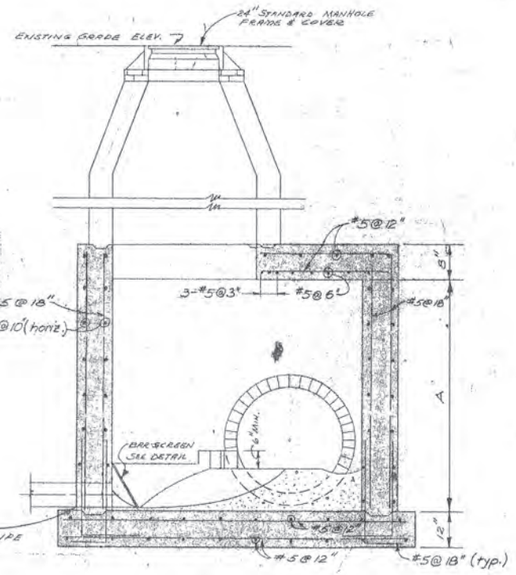
INTERCEPTING CHAMBER SCHEDULE						
CHAMBER LOCATION	SIZE AND INVERT ELEVATION EXISTING SEWER	SIZE AND INVERT ELEVATION THROTTLE PIPE	INVERT ELEVATION OF DAM	APPROX. GRADE EL.	DEPTH A	ENTRANCE TYPE
LAFAYETTE & DESPLAINES	12" V.C.P. INV. 525.73	6" DUCTILE IRON INV. 522.17	INV. 524.09	529.0	5'-0"	III
VAN BUREN & DESPLAINES	15" V.C.P. INV. 528.38	6" DUCTILE IRON INV. 528.13	INV. 528.38	535.5	6'-6"	III
CASS ST. AT EAST WALL OF WATERWAY	12" V.C.P. INV. 527.51	6" DUCTILE IRON INV. 527.26	INV. 528.01	550.5	6'-6"	I
BENTON ST. AT EAST WALL OF WATERWAY	36" SEWER INV. 524.75	8" DUCTILE IRON INV. 524.20	INV. 525.32	538.0	6'-6"	I
CROWLEY & JOLIET	8" V.C.P. INV. 526.18	6" DUCTILE IRON INV. 525.93	INV. 526.68	533.0	5'-0"	II
JACKSON & JOLIET	12" V.C.P. INV. 529.69	6" DUCTILE IRON INV. 529.19	INV. 530.13	EL. 538.0	5'-0"	II



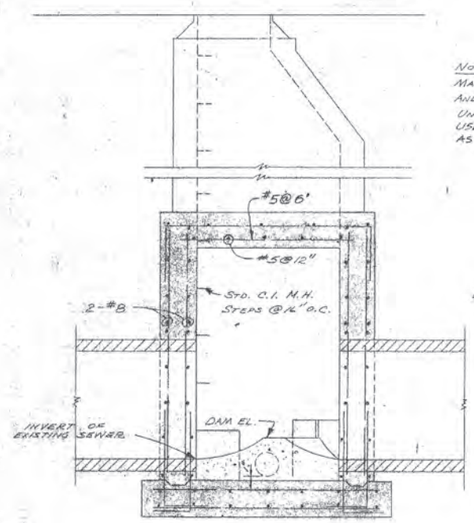


BAR SCREEN DETAIL

No Scale



SECTION 14-A-(TYPE I)

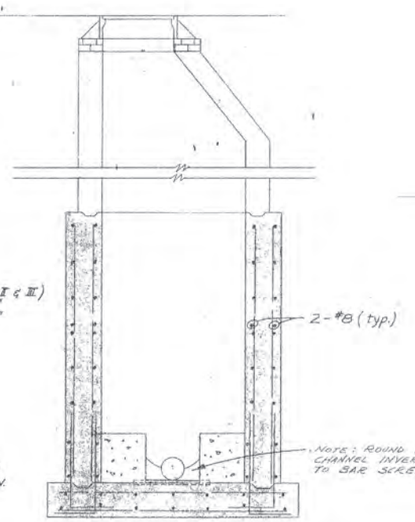


Note:
Manhole Sidewall and Frame and Cover to be paid for under Unit Price Items. Use Type I, II, III Entrance as required.

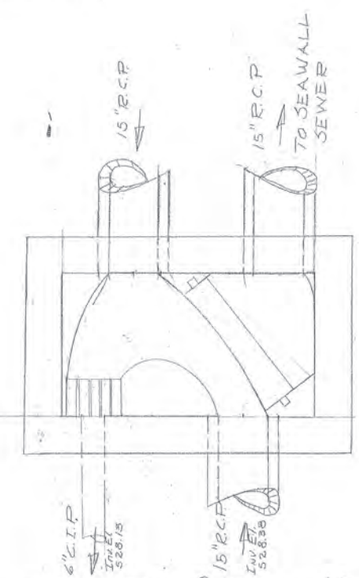
Typical Wall Reinforcing: (Type I, II & III)
All horiz. bars: #5@10"
All vert. bars: #5@18"

Typ. Footing Slab: (Type I, II & III)
#5@12" Top & Bott. - E.W.

SECTION 14-B-(TYPE I)



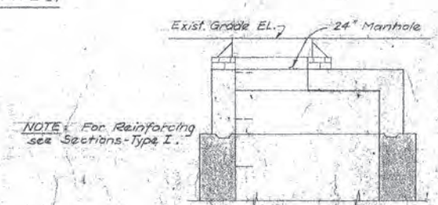
SECTION 14-C-(TYPE I)



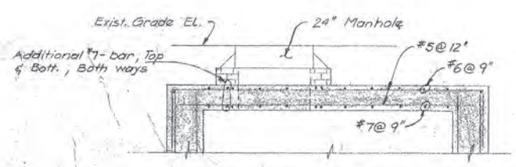
PLAN FOR VAN BUREN & DESPLAINES

Note: Intercept. Chamber dimensions and re-inforcing similar to original plan.

ALL REINFORCING ASTM A615 - GRADE 60.
ALL LAPS & SPLICES 36 BAR DIA.



SECTION 14-C-(TYPE II)



SECTION 14-A-(TYPE III)

CITY OF JOLIET, ILLINOIS
EAST SIDE INTERCEPTING SEWER EXTENSION

INTERCEPTING CHAMBER DETAILS

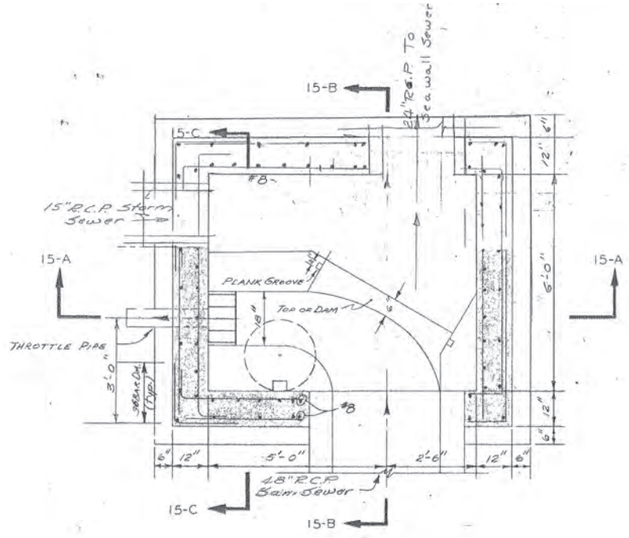
DRAWN BY: J.W.
DATE: 2-26-69
CHECKED BY: G.J.L.
APPROVED BY: W.J.B.

CONSOER, TOWNSEND & ASSOCIATES
CONSULTING ENGINEERS
CHICAGO, ILL.

SCALE: ½"=1'-0"
REVISED:
SHEET NO. 14 OF 18 SHEETS

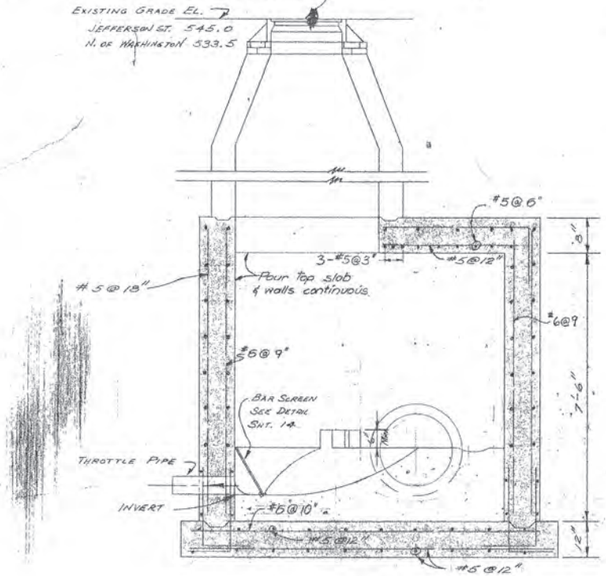
DIVISION B

68-095

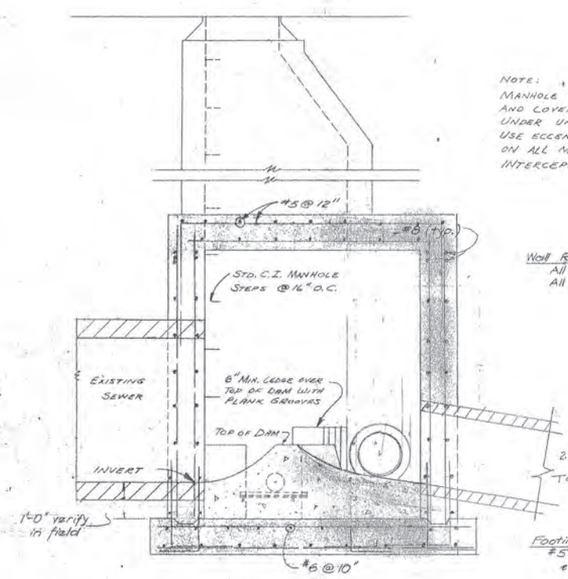


PLAN

INTERCEPTING CHAMBER SCHEDULE			
CHAMBER LOCATION	SIZE AND INVERT ELEVATION EXISTING SEWER	SIZE AND INVERT ELEVATION THROTTLE PIPE	INVERT ELEVATION OF DAM
JEFFERSON & DESPLAINES	48" x 30" BRICK ARCH INV. 527.00	6" DUCTILE IRON INV. 526.75	INV. 529.05
DESPLAINES ST. NORTH OF WASHINGTON ST.	48" R.C.P. Inv. Elev. 521.51	6" DUCTILE IRON INV. 520.89	INV. 522.56



SECTION 15-A

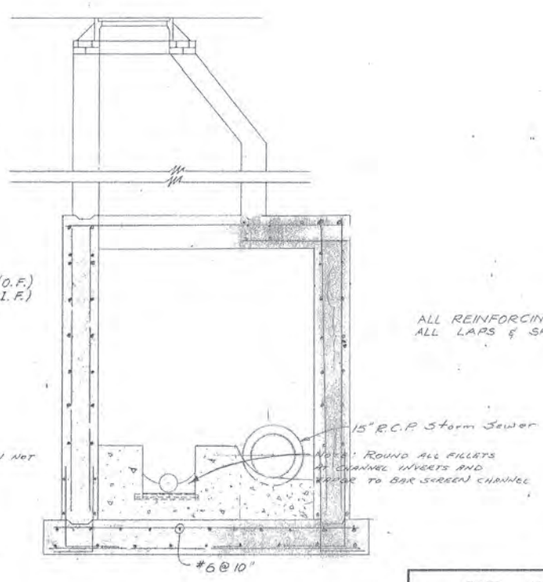


NOTE:
MANHOLE SIDEWALL AND FRAME AND COVER TO BE PAID FOR UNDER UNIT PRICE ITEMS USE ECCENTRIC CONES AS SHOWN ON ALL MANHOLE SIDEWALL OVER INTERCEPTING CHAMBERS

Wall Reinforcing:
All horiz. bars : #5 @ 12"
All vert. bars : #5 @ 18" (O.F.)
#6 @ 9' (I.F.)

Footing Slab:
#5 @ 12" - Top & Bott. - E.W. except as noted.

SECTION 15-B



ALL REINFORCING ASTM A 615 - GRADE 60
ALL LAPS & SPLICES 36 BAR DIA.

NOTE: ROUND ALL FILLETS AT CHANNEL INVERTS AND TRANSITION TO BAR SCREEN CHANNEL

SECTION 15-C

L.J. Burke
Dec. 24/70 R.B. Stouffer

CITY OF JOLIET, ILLINOIS
EAST SIDE INTERCEPTING SEWER EXTENSION

INTERCEPTING CHAMBER DETAILS

DRAWN BY: J.W.	CONSOER, TOWNSEND & ASSOCIATES	SCALE: 1/2" = 1'-0"
DATE: 2-26-69		REVISED:
CHECKED BY: G.J.C.	CONSULTING ENGINEERS	
APPROVED BY: W.J.B.	CHICAGO, ILL.	SHEET NO. 15 OF 18 SHEETS

DIVISION B

68095

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*Corporate Headquarters

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