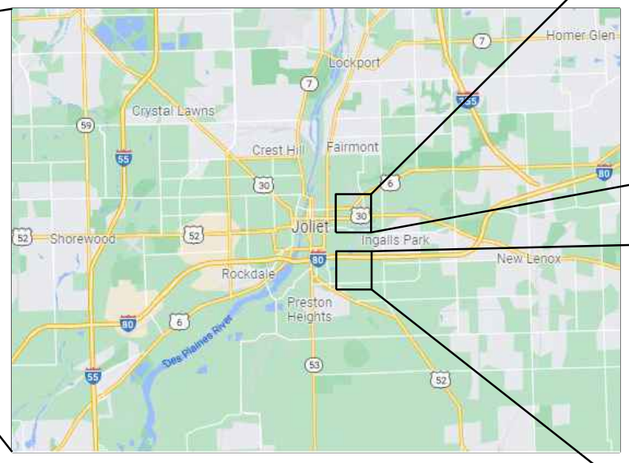
CITY OF JOILET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LIFT STATION AND GREENFIELD LIFT STATION
CONTRACT NUMBER 2809-0424

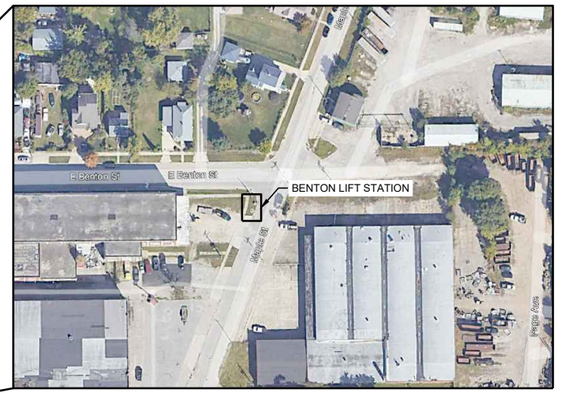
JOLIET, IL
FEBRUARY 2024



ILLINOIS



PROJECT LOCATION MAP



PROJECT SITE MAP

BENTON LIFT STATION:
225 MAPLE STREET, JOLIET, IL 60432



PROJECT SITE MAP

GREENFIELD LIFT STATION:
800 ROWELL AVE, JOLIET, IL 60433

PREPARED FOR

CITY OF JOLIET, IL
150 WEST JEFFERSON STREET
JOLIET, IL 60432

PREPARED BY

DONOHUE

230 MONROE STREET, SUITE 2925
CHICAGO, IL 60606
312-236-9147

DRAWING INDEX

SHEET NUMBER	DRAWING NUMBER	DRAWING DESCRIPTION
001 - GENERAL		
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2	001-G-2	DRAWING INDEX
3	001-G-3	SIGNATURE SHEET
4	001-G-4	GENERAL LEGEND SYMBOLS AND ABBREVIATIONS
5	001-G-5	CIVIL LEGEND AND GENERAL NOTES
6	001-G-6	PLUMBING LEGEND/HVAC LEGEND/ ELECTRICAL LEGEND
7	001-G-7	INSTRUMENTATION AND CONTROL STANDARD LEGEND
8	001-G-8	INSTRUMENTATION AND CONTROL STANDARD SYMBOLOGY
9	001-ENV-1	SPACE ENVIRONMENT AND HAZARDOUS RATING SCHEDULE AND MATERIALS SCHEDULE
002 - SITE DEVELOPMENT		
10	002-CK-1	KEY MAP
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11	007-RE-1	ONE-LINE DIAGRAM - REMOVAL/NEW
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009 - PROCESS AND INSTRUMENTATION DIAGRAM		
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28	200-EN-1	ELECTRICAL SITE PLAN
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37	999-C-4	CIVIL
38	999-C-5	CIVIL
39	999-S-1	STRUCTURAL
40	999-M-1	PROCESS-MECHANICAL
41	999-E-1	ELECTRICAL
42	999-E-2	ELECTRICAL
43	999-N-1	INSTRUMENTATION AND CONTROLS
44	999-N-2	INSTRUMENTATION AND CONTROLS

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	KJA
Drawn By	KJA
Checked By	MTR
Approved By	EPC
Filename	000G2 INDEX.DWG
Project No.	14163
Project Date	FEB 2024

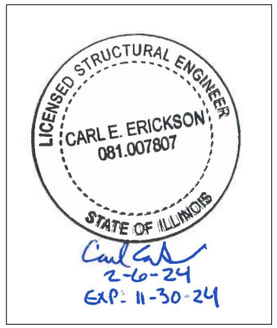
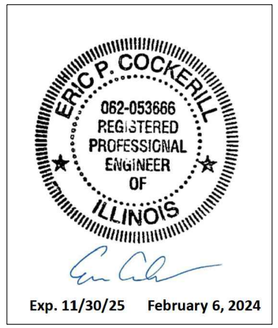
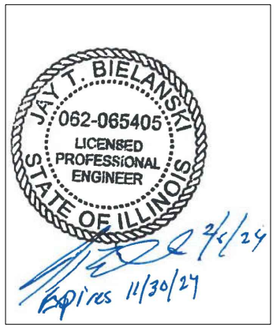
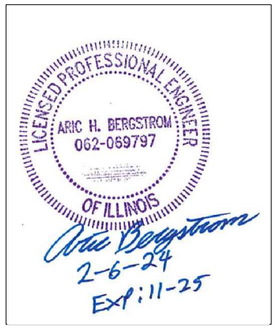
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GENERAL
DRAWING INDEX

DONOHUE

Sheet No. 2

Drawing No. 001-G-2

			
CARL ERICKSON SIGNATURE STRUCTURAL ENGINEER TITLE	ERIC COCKERILL SIGNATURE PROCESS-MECHANICAL, CIVIL ENGINEER TITLE	JAY BIELANSKI SIGNATURE ELECTRICAL ENGINEER TITLE	ARIC BERGSTROM SIGNATURE INSTRUMENTATION AND CONTROLS ENGINEER TITLE
100-SM-1 100-SM-2 200-SM-1 200-SM-2 999-S-1	001-G-2 001-G-3 001-G-4 001-G-5 001-ENV-1 100-CR-1 100-R-1 100-CTC-1 100-CFP-1 100-SM-1 100-SM-2 200-CF-1 200-CP-1 200-SM-1 200-SM-2 210-R-1 210-R-2 210-M-1 999-C-1 999-C-2 999-C-3 999-C-4 999-C-5 999-M-1	001-G-6 007-RE-1 007-RE-2 100-EN-1 100-E-2 100-EN-3 200-EN-1 200-E-2 200-EN-3 999-E-1 999-E-2	001-G-7 001-G-8 009-N-1 009-N-2 100-EN-1 100-EN-3 200-EN-1 200-EN-3 999-N-1 999-N-2

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	KJA
Drawn By	KJA
Checked By	MTR
Approved By	EPC
Filename	DASIGNATURE.DWG
Project No.	14163
Project Date	FEB 2024

CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

SIGNATURE SHEET

DONOHUE

Sheet No. 3

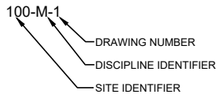
Drawing No. 001-G-3

GENERAL LEGEND

DISCIPLINE IDENTIFIER

DISCIPLINE	DISCIPLINE IDENTIFIER
GENERAL	G
CIVIL KEY	CK
CIVIL NOTES	CN
CIVIL REMOVAL	CR
CIVIL FACILITIES	CF
CIVIL GRADING	CG
CIVIL EROSION CONTROL	CE
CIVIL PIPING	CP
REMOVALS	R
ARCHITECTURAL	A
STRUCTURAL FOUNDATION	SF
STRUCTURAL	S
PROCESS-MECHANICAL	M
PLUMBING	P
HVAC	H
ELECTRICAL	E
ELECTRICAL LIGHTING	L
INSTRUMENTATION AND CONTROL	N

DRAWING NUMBER DESIGNATION



PLAN NOTE DESIGNATION



PLAN NOTE. SEE NOTES ON SAME DRAWING.

STANDARD DETAIL DESIGNATION

ON DRAWING WHERE DETAIL IS TAKEN

ON DRAWING WHERE DETAIL IS SHOWN



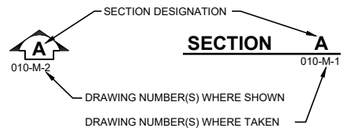
NOTE:
STANDARD DETAILS ARE LOCATED ON DRAWINGS THAT HAVE BEEN ASSIGNED A SITE IDENTIFIER OF 999 FOLLOWED BY A DISCIPLINE IDENTIFIER. THESE DRAWINGS ARE PLACED LAST IN THE DRAWING SET.

EXAMPLE: 999-M-1

SECTION DESIGNATION

ON DRAWING WHERE SECTION IS TAKEN

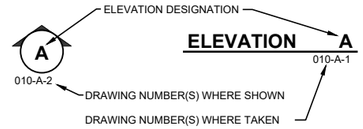
ON DRAWING WHERE SECTION IS SHOWN



CASEWORK ELEVATION DESIGNATION

ON DRAWING WHERE SECTION IS TAKEN

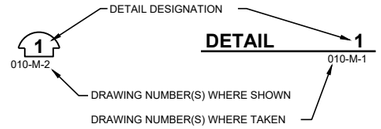
ON DRAWING WHERE SECTION IS SHOWN



DETAIL DESIGNATION

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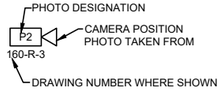
ON DRAWING WHERE DETAIL IS SHOWN



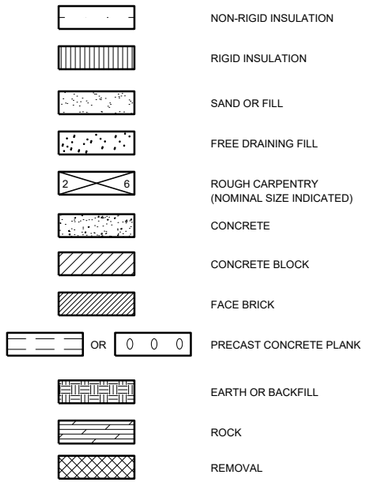
AREA DESIGNATION



PHOTO DESIGNATION

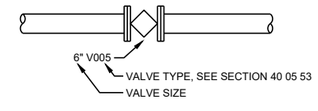


SYMBOLS



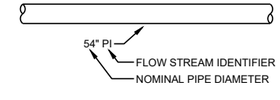
VALVE IDENTIFICATION

EXAMPLE:

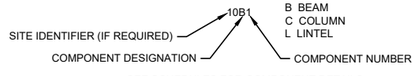


PIPE IDENTIFICATION

EXAMPLE:



STRUCTURAL COMPONENT IDENTIFICATION



SEE SCHEDULES FOR COMPONENT DETAILS

ABBREVIATIONS

ACT	ACOUSTICAL TILE
AD	ACCESS DOOR
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AL	ALUMINUM
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
AVG	AVERAGE
B	BOTTOM
B/	BOTTOM OF
BF	BLIND FLANGE
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BOB	BOTTOM OF BEAM
BOT	BOTTOM
BRD	BOARD
CL	CENTERLINE
CEM	CEMENT
CH	CEILING HEIGHT
CJ or CJT	CONTROL JOINT
CLG or CEIL	CEILING
CLO	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
COMPO	COMPOSITION
CONC	CONCRETE
CONF	CONFERENCE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACT/CONTRACTOR
CONTR JT	CONTRACTION JOINT
CORR	CORRIDOR
C.T.	CERAMIC TILE
CPVC	CHLORINATED POLYVINYL CHLORIDE
CSK	COUNTERSINK
CTR	CENTER
DBL	DOUBLE
DEG	DEGREE
DEG	DEGREES (ANGULAR)
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DN	DOWN
DWG	DRAWING
EA	EACH
ECC	ECCENTRIC
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV or EL	ELEVATION
ELL	ELBOW
ELEV	ELEVATOR
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EWC	ELECTRICAL WATER COOLER
EXIST or (X)	EXISTING
EXP	EXPANSION
EXP JT	EXPANSION JOINT
EXT	EXTERIOR
F/	FACE OF
FCA	FLANGED COUPLING ADAPTOR
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR
FFE	FINISH FLOOR ELEVATION
FH	FULL HEIGHT
FHC	FIRE HOSE CABINET
FIN	FINISH
FL or FLR	FLOOR
FLG	FLANGE
FO	FINISHED OPENING
FOC	FACE OF CONCRETE
FOS	FACE OF STUD
FOUND	FOUNDATION
FOW	FACE OF WALL
FRP	FIBER REINFORCED PLASTIC
FS	FLOOR SINK
FS	FULL SIZE
FSD	FULL SIZE DETAIL
FT	FEET
FTG	FOOTING
FV	FIELD VERIFY
GA	GAUGE
GALV	GALVANIZED
G.B.	GRAB BAR
GCMU	GLAZED CONCRETE MASONRY UNIT
GL	GLASS
GR	GRADE
GYP BD	GYPSUM BOARD
H	HIGH
HB	HOSE BIB
H/C	HANDICAPPED
HDWD	HARDWOOD
HDWR	HARDWARE
HM	HOLLOW METAL
HORZ	HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
HWL	HIGH WATER LEVEL
ID	INSIDE DIAMETER
INSUL	INSULATION
INT	INTERIOR
INV	INVERT
JAN	JANITOR
KITCH	KITCHEN
LAV	LAVATORY
LEV	LEVEL
LIG	LAY-IN-GRID CEILING
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LP	LOW POINT
LR	LONG RADIUS
LTG	LIGHTING
LTWT	LIGHT WEIGHT
LWL	LOW WATER LEVEL
MAINT	MAINTENANCE
MAT'L	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MET	METAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MO	MASONRY OPENING
MULL	MULLION
N	NEW
NIC	NOT IN CONTRACT
NO. or #	NUMBER
NOM	NOMINAL
NR	NON-RATED
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFI	OWNER FURNISHED ITEM
OFOI	OWNER FURNISHED OWNER INSTALLED
OPNG or OPN'G	OPENING
OPPO	OPPOSITE
P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
P. LAM.	PLASTIC LAMINATE
PC	PORTLAND CEMENT
PCP	PRE-STRESSED CONCRETE PIPE
PIPE	
PJF	PREFORMED JOINT FILLER
PL	PLATE
PLAS	PLASTIC
PLYWD	PLYWOOD
PR	PAIR
PREP	PREPARATION
PROJ	PROJECTION
PT	PAINT
PVC	POLYVINYL CHLORIDE
QT	QUARRY TILE
R	RISER
R or RAD	RADIUS
RC	ROOF CONDUCTOR
RCP	REINFORCED CONCRETE PIPE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REC	RECESSED
RED	REDUCER
REDW'D	REDWOOD
REF	REFERENCE
REFL	REFLECTED
REINF	REINFORCE/REINFORCING
REQ'D	REQUIRED
RES	RESILIENT
REV	REVISION/REVISED
RM	ROOM
RO	ROUGH OPENING
SCHED	SCHEDULE
SD	SUMP DISCHARGE
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SPA	SPACE OR SPACING
SPECS	SPECIFICATIONS
SQ	SQUARE
SR	SHORT RADIUS
SS or SST	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SV	STAIN AND VARNISH
T	TOP
T	TREAD
T/	TOP OF
T/S	TOP OF STEEL
T&B	TOP AND BOTTOM
T & G	TONGUE & GROOVE
TDC	TRAFFIC DECK COVERING
TEMP	TEMPERED
THK	THICK
TOC	TOP OF CONCRETE or CURB
TOP	TOP OF PARAPET
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VB	VINYL BASE
VCT	VINYL COMPOSITION TILE
VER	VERIFY
VERT	VERTICAL
VIF	VERIFY IN FIELD
W	WIDE
W/	WITH
WC	WATER CLOSET
WD	WOOD
WL	WATER LEVEL
WO	WITHOUT
WP	WATERPROOFING
WS	WATERSTOP
WWF	WELDED WIRE FABRIC
YR	YEAR

NOTE:

1. THIS IS STANDARD LEGEND. NOT ALL OF THE INFORMATION SHOWN ON THIS LEGEND IS NEEDED IN THESE CONTRACT DRAWINGS.
2. WORK IN THIS CONTRACT SHOWN FULL-TONE UNLESS OTHERWISE NOTED.

FLOW STREAM IDENTIFIERS

D	DRAIN
NG	NATURAL GAS
RWW	RAW WASTEWATER
V	VENT

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	KJA
Drawn By	KJA
Checked By	MTR
Approved By	EPC
Filename	001G3.DWG
Project No.	14163
Project Date	FEB 2024

CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GENERAL LEGEND
SYMBOLS AND ABBREVIATIONS

DONOHUE

Sheet No. 4

Drawing No. 001-G-4

LEGEND

EXISTING	PROPOSED	
		BENCHMARK
		CATCH BASIN
		CULVERT
		CULVERT OVER 24" (SHOWN ACTUAL SIZE)
		GAS VALVE
		GUY WIRE
		HAY BALES
		HEADWALL
		HYDRANT
		INLET
I.P.		IRON PIPE
		MANHOLE
		MARSH
M	M	METER
		UTILITY POLE
		UTILITY POLE WITH LIGHT
		SECTION CORNER
		SIGN
400.00 X	400.00 X	SPOT ELEVATION
		SOIL BORING
		STREET LIGHT
		SURVEY CONTROL POINT
		TELEPHONE PEDESTAL
		TREE CONIFEROUS, DECIDIOUS
		TREE REMOVAL
		TREE/SHRUB LINE
		WATER VALVE

LINE TYPE IDENTIFICATION

EXISTING	PROPOSED	
CATV		CABLE TV
		CENTERLINE OF ROAD
100	100	CONTOUR
		DITCH/SWALE
		EASEMENT
X X	X X	FENCE
E	E	ELECTRIC
DUCT	DUCT	ELECTRICAL DUCT
FO	FO	FIBER OPTIC
FM	FM	FORCEMAIN
G	G	GAS
		GUARDRAIL
OH		OVERHEAD ELECTRIC
		PIPE, ABANDON
		PIPE, PREVIOUSLY ABANDONED
		PIPE OVER 24" (SHOWN ACTUAL SIZE)
		PROPERTY LINE
		R.O.W.
		RAILROAD
SAN	SAN	SANITARY SEWER
		SILT FENCE
STM	STM	STORM SEWER
T		TELEPHONE
W	W	WATER
		WATERS EDGE
WET		WETLAND

ABBREVIATIONS

AGG	AGGREGATE
B/C	BACK OF CURB
BIT	BITUMINOUS/ASPHALT
CIP	CAST IRON PIPE
CO	CLEANOUT
CONC	CONCRETE
CMP	CORRUGATED METAL PIPE
CSP	CONCRETE SEWER PIPE
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	DEWATERING PIPE
EXTG	EXISTING
EOP	EDGE OF PAVEMENT
F&C	FRAME AND COVER
F/C	FACE OF CURB
F-F	FACE TO FACE
F/G	FINISHED GRADE
FES	FLARED END SECTION
INV	INVERT
L	LENGTH OF CURVE
LF	LINEAR FT
LT	LEFT
NG	NATURAL GAS
OH	OVERHEAD UTILITY
PC	POINT OF CURVATURE
PE	POLYETHYLENE PIPE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RIM	TOP OF CASTING ELEVATION
ROW	RIGHT OF WAY
RT	RIGHT
SAN	SANITARY SEWER
STM	STORM SEWER
SD	SUMP DISCHARGE
T/C	TOP OF CURB
T/W	TOP OF WALL
UD	UNDERDRAIN
VC	VERTICAL CURVE

SYMBOLS

- EXISTING CONCRETE PAVEMENT
- EXISTING ASPHALTIC PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED ASPHALTIC PAVEMENT
- REMOVE AND REPLACE EXISTING ASPHALT PAVEMENT
- PROPOSED OPEN CUT AREA FOR PIPE INSTALLATION
- PROPOSED GRAVEL SHOULDER
- PROPOSED GRASS

NOTE:

1. PROCESS FLOW STREAM IDENTIFIERS SAME AS SHOWN ON THE PROCESS MECHANICAL LEGEND
2. THIS IS STANDARD LEGEND. NOT ALL OF THE INFORMATION SHOWN ON THIS LEGEND IS NEEDED IN THESE CONTRACT DRAWINGS.

GENERAL NOTES

1. THE TOPOGRAPHIC MAPPING AND EXISTING FACILITIES SHOWN IS BASED ON A SURVEY PROVIDED BY HR GREEN ILLINOIS PROFESSIONAL DESIGN FIRM #184-001322 ON 10/12/2022.
2. DIMENSIONS OR COORDINATES TAKE PRECEDENCE OVER SCALE. CONTRACTORS TO VERIFY ALL DIMENSIONS AND COORDINATES IN THE FIELD FOR PROPER FIT AND ALIGNMENT.
3. THE CONTRACTOR SHALL CONTACT JULIE AT 1-800-891-0123 A MINIMUM OF 72 HOURS PRIOR TO PERFORMING ANY EARTH MOVING OR EXCAVATION ACTIVITIES. THE CONTRACTOR SHALL ALSO CONTACT ANY OTHER UTILITIES WHICH MAY BE PRESENT WHICH ARE NOT PART OF THE ONE CALL SYSTEM.
4. ACCESS CONSTRAINTS TO BE PLACED ON THE CONTRACTOR FOR THE PROJECT ARE SPECIFIED IN SECTION 01 11 00 OF THE SPECIFICATIONS.
5. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL SITE FACILITIES DURING CONSTRUCTION. CONTRACTOR SHALL PLAN ITS WORK SEQUENCE AND ACTIVITIES TO ENSURE THAT ITS WORK DOES NOT INTERFERE WITH PUBLIC NEEDS OR PUBLIC FACILITIES OPERATIONS, DELIVERIES, PICKUPS OR OTHER ACCESS NEEDS.
6. THE CONTRACTOR SHALL COORDINATE THE ACTIVITIES OF ITS PERSONNEL, SUBCONTRACTORS, AND UTILITIES PERFORMING WORK ON THIS PROJECT. THE CONTRACTOR SHALL ALSO COORDINATE WITH CITY CREWS AND OTHER CONTRACTORS WORKING IN OR NEAR THE PROJECT AREA.
7. THE CONTRACTOR SHALL MAINTAIN ON FILE WITH THE OWNER AND ENGINEER A CURRENT LIST OF EMERGENCY TELEPHONE NUMBERS FOR THE CONTRACTORS SUPERVISORY PERSONNEL ASSIGNED TO THIS PROJECT. NO LESS THAN 2 NAMES WITH 24 HOUR PHONE NUMBERS SHALL BE INCLUDED.
8. ELEVATIONS CALLED OUT ON THE DRAWINGS ARE TYPICALLY AT THE "INVERT" OR BOTTOM OF PIPES AND STRUCTURES, ALONG THE FLOW LINE IN GUTTERS AND SWALES, AND AT THE "RIM" OR TOP (FINISHED GRADE) OF THE FRAME AND COVERS. OTHER ELEVATIONS ARE SPECIFICALLY NOTED.
9. UNLESS NOTED OTHERWISE RESTORATION OF EXISTING SANITARY SEWERS AND SERVICE LINES, WATER MAINS AND SERVICE LINES, STORM SEWERS, OTHER UTILITIES, SIDEWALKS, CURBS, DRIVEWAYS, STREETS OR OTHER IMPROVEMENTS NOT SHOWN AS BEING REMOVED, REPLACED OR MODIFIED BY THE PROJECT IS REQUIRED ONLY TO THE EXTENT THEY ARE DAMAGED OR DISTURBED BY CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL RESTORE ALL DAMAGED AND DISTURBED IMPROVEMENTS TO THE IMPROVEMENT OWNERS AND ENGINEERS SATISFACTION.
10. WHERE NEW WORK ABUTS EXISTING CURBS, SIDEWALK, DRIVES, OR OTHER PAVEMENTS WHICH ARE TO REMAIN IN PLACE, THE CONTRACTOR SHALL PROVIDE NEAT SAWCUTS, FULL DEPTH AT THE LIMIT OF CONSTRUCTION.
11. CONTRACTOR SHALL PROVIDE SUPPORT AND SHALL MAINTAIN SERVICE TO ALL ABOVE AND BELOW GRADE UTILITIES INCLUDING POLES, CABLES, WIRES, WATER, GAS, STORM , AND SANITARY FACILITIES, OR WITH THE WRITTEN CONCURRENCE OF THE UTILITY OWNER, MAY REMOVE, STORE, REINSTALL AND REPLACE AS NECESSARY.
12. CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY DURING CONSTRUCTION OF THE PROJECT.
13. THE CONTRACTOR SHALL PROTECT ALL PROPERTY PINS (STEEL REBARS, PIPES, CAPPED PINS, ETC.) WHICH WERE FOUND OR LOCATED ON THE PROJECT SITE WHETHER SHOWN ON THE PLANS OR ENCOUNTERED DURING CONSTRUCTION FROM BEING DAMAGED, DESTROYED OR MOVED. IF PROPERTY PINS ARE DAMAGED, DESTROYED OR MOVED, THE CONTRACTOR SHALL PROVIDE THE SERVICES OF A REGISTERED ILLINOIS LAND SURVEYOR TO REPLACE THEM AT NO COST TO THE OWNER.
14. DIVISION II, III AND IV, AND APPLICABLE STANDARD DRAWINGS OF THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS", LATEST EDITION, SHALL GOVERN THE CONSTRUCTION PROPOSED IMPROVEMENT, EXCEPT AS MODIFIED OR REVISED, AND/OR AMENDED AS SHOWN ON THE PLANS, OR CALLED FOR ON THE CONTRACT DOCUMENT, AND/OR AS ORDERED BY THE ENGINEER. ALL THE REFERENCES IN DIVISION II, III, AND IV TO DIVISION I OF THE STANDARD SPECIFICATIONS SHALL BE DELETED AND REFERENCE MADE TO THE APPLICABLE SECTIONS OF THE CONTRACT DOCUMENTS. PAVING IMPROVEMENTS SHALL BE CONSTRUCTED IN CONFORMANCE WITH STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, BY ILLINOIS DEPARTMENT OF TRANSPORTATION.
15. VERIFY LOCATION, SIZE, AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE LOCATIONS OF EXISTING UTILITIES AS SHOWN ON THE DRAWINGS HAVE BEEN DETERMINED FROM THE BEST AVAILABLE INFORMATION AND IS GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER AND OWNER DO NOT ASSUME RESPONSIBILITY FOR THE ACCURACY OF THE LOCATION SHOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ALL UTILITY COMPANIES AND LOCATE UTILITIES PRIOR TO ANY WORK.
16. WHEREVER OBSTRUCTIONS NOT SHOWN ON THE DRAWINGS ARE ENCOUNTERED DURING THE PROGRESS OF THE WORK AND INTERFERE TO SUCH AN EXTENT `THAT ALTERATIONS TO THE DRAWINGS ARE REQUIRED, THE ENGINEER SHALL BE NOTIFIED PRIOR TO ANY CHANGES.
17. HORIZONTAL AND VERTICAL SEPARATION OF WATER MAINS AND SEWER LINES SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE "STANDARD SPECIFICATION FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS".
18. PROVIDE PROPERTY OWNERS ADVANCE NOTICE OF CONSTRUCTION ACTIVITIES THAT WILL RESTRICT THE USE OF THEIR DRIVEWAYS.
19. DO NOT STORE BEDDING AND BACKFILL MATERIALS, PIPES, FITTINGS, VAULTS, OR OTHER MATERIALS IN AREAS THAT WILL OBSTRUCT SIGHT LINES FOR STREETS AND DRIVEWAYS.
20. ALL PROPOSED UTILITIES UNDER AND WITHIN 2' OF PAVEMENT OR SIDEWALK SHALL BE BACKFILLED WITH TRENCH BACKFILL WHICH SHALL BE CRUSHED STONE, GRADATION CA 6 OR CA 7.
21. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF JOLIET DEPARTMENT OF PUBLIC UTILITIES APPROVED MATERIALS LIST, LATEST EDITION
22. INSTALL NEW WATER MAIN WITH A MINIMUM OF 5' COVER BELOW EXISTING OR PROPOSED GROUND SURFACE UNLESS GREATER DEPTH IS REQUIRED TO AVOID EXISTING UTILITIES OR WHERE INDICATED ON THE DRAWINGS.
23. PROVIDE 48 HOURS ADVANCE NOTICE TO THE CITY WHEN CONNECTION TO AN EXISTING WATER MAIN WILL BE MADE. COORDINATE SHUTDOWN OF EXISTING WATER MAINS WHEN REQUIRED WITH THE CITY. SCHEDULE THE WORK TO MINIMIZE THE NUMBER AND LENGTH OF SHUTDOWNS. PROVIDE WRITTEN NOTIFICATION OF SHUTDOWNS TO WATER USERS AFFECTED 24 HOURS IN ADVANCE.
24. NOTIFY THE CITY'S PUBLIC UTILITIES DEPARTMENT IMMEDIATELY IF EXISTING LEAD WATER SERVICES ARE DISCOVERED.
25. LOCATE PRESSURE CONNECTIONS, IF INDICATED ON THE DRAWINGS OR WHEN DIRECTED BY THE ENGINEER, A MINIMUM OF 2' FROM ANY EXISTING REPAIR SLEEVES OR PIPE JOINTS.
26. SEWER TESTING, CLEANING, AND TELEVISING REQUIREMENTS: ALL SANITARY SEWER MAINS SHALL BE DEFLECTION TESTED AND AIR TESTED PER THE LATEST EDICTION OF THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS". ALL NEWLY CONSTRUCTED SEWER MAINS SHALL BE CLEANED AND TELEVISED PRIOR TO BEING PUT INTO SERVICE.
27. USE RESTRAINED MECHANICAL JOINT FITTINGS WITH MEGALUG TO PLUG/CAP EXISTING WATER MAINS TO REMAIN IN SERVICE AND FOR EXISTING WATER MAINS TO BE ABANDONED. PLUGS/CAPS ON WATER MAIN TO REMAIN IN SERVICE SHALL INCLUDE AN ADEQUATELY SIZED CAST-IN-PLACE CONCRETE THRUST BLOCK AS DIRECTED BY THE CITY.
28. PAVEMENT RESTORATION WILL BE MEASURED IN PLACE AND THE AREA COMPUTED IN SQUARE YARDS. ALL AREAS DISTURBED WILL BE REPLACED, BUT THE MAXIMUM ALLOWABLE WIDTHS USED FOR PAY QUANTITY CALCULATIONS WILL BE 6 FEET CENTERED ON THE PIPE. IF THE CONTRACTOR RELOCATES THE TRENCH AWAY FROM THE CURB AND GUTTER, THE PAVEMENT PATCH WILL EXTEND FROM THE SAWCUT IN THE EXISTING PAVEMENT TO THE FACE OF THE GUTTER AND THE MAXIMUM ALLOWABLE WIDTH OF 6 FEET WILL BE USED FOR PAY QUANTITY CALCULATIONS.
29. REPLACE ALL CONCRETE SIDEWALKS DISTURBED BY CONSTRUCTION TO THE NEAREST CONSTRUCTION JOINT. A MAXIMUM LENGTH OF TEN LINEAL FEET PER CROSSING WILL BE UTILIZED FOR PAY QUANTITY CALCULATIONS.
30. AS-BUILT DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER AS SOON AS THE PROJECT IS COMPLETED. ANY CHANGE IN THE LENGTH, LOCATION, OR ALIGNMENT SHALL BE SHOWN IN RED.
31. EROSION CONTROL WILL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AS CONTAINED IN IEPA/WPC/87-012 OR CURRENT EDITION.
32. THE CITY OF JOLIET WATER DEPARTMENT SHALL BE RESPONSIBLE FOR COMPLETING ALL TAPS TO EXISTING WATER MAINS. CONTRACTOR WILL BE RESPONSIBLE FOR CALLING 815-724-4230 TO SCHEDULE AN APPOINTMENT WITH THE CITY WATER DEPARTMENT. APPOINTMENTS ARE AVAILABLE ON TUESDAYS AND THURSDAYS.
33. IT SHALL BE THE CONTRACTOR'S DUTY AND RESPONSIBILITY TO ASCERTAIN AND EXECUTE THE MEANS, METHODS, AND SEQUENCE OF CONSTRUCTION IN ACCORDANCE WITH THE DRAWINGS, SPECIFICATIONS, AND OTHER CONTRACT DOCUMENTS. THIS SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO, THE EXCLUSIVE DUTY AND RESPONSIBILITY TO PROVIDE FOR WORKPLACE SAFETY AND WORKER SUPERVISION. IT SHALL EXCLUSIVELY BE THE CONTRACTOR'S DUTY AND RESPONSIBILITY TO INVESTIGATE AND ASCERTAIN THE CURRENT PHYSICAL STATE AND OPERATIONAL STATUS OF THE CITY'S WATER SUPPLY SYSTEM AND THE CITY'S SANITARY SEWER SYSTEM, INCLUDING WHETHER A WATER MAIN OR OTHER VESSEL IS OPERATIONAL, CONTAINS WATER, IS PRESSURIZED, OR IS OTHERWISE SAFE TO ALTER. ANY INFORMATION PROVIDED BY THE CITY, OR ITS EMPLOYEES AND CONSULTANTS, REGARDING THE STATE OF ITS WATER SUPPLY AND SANITARY SEWER SYSTEMS IS PROVIDED AS A COURTESY TO THE CONTRACTOR BUT IS NOT WARRANTED TO BE TRUE AND MAY NOT BE RELIED ON BY THE CONTRACTOR IN SATISFACTION OF, OR TO DIMINISH, ITS EXCLUSIVE DUTY TO ASCERTAIN AND EXECUTE THE MEANS, METHODS, AND SEQUENCES OF CONSTRUCTION IN ACCORDANCE WITH THE DRAWINGS, SPECIFICATIONS, AND OTHER CONTRACT DOCUMENTS AND ITS EXCLUSIVE RESPONSIBILITY TO PROVIDE FOR WORKPLACE SAFETY AND WORKER SUPERVISION.

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	REK
Drawn By	REK
Checked By	PMS
Approved By	EPC
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Project No.	14163
Project Date	FEB 2024

CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

CIVIL LEGEND AND GENERAL NOTES

DONOHUE

Sheet No. 5

Drawing No. 001-G-5

PLUMBING / HVAC ABBREVIATIONS AND SYMBOLS

PLUMBING LEGEND

- HW - HOT WATER PIPE (ON PLUMBING DRAWINGS)
- HWRE - HOT WATER RECIRCULATING PIPE (ON PLUMBING DRAWINGS)
- HWS - HEATING WATER SUPPLY PIPE (ON HVAC DRAWINGS)
- HWR - HEATING WATER RETURN PIPE (ON HVAC DRAWINGS)
- PIPE (REFER TO FLOW STREAM IDENTIFIERS)
- BELOW SLAB OR BURIED PIPE (REFER TO FLOW STREAM IDENTIFIERS)
- VENT
- ELBOW FITTING (TURNED DOWN)
- ELBOW FITTING (TURNED UP)
- TEE OUTLET UP
- TEE OUTLET DOWN
- PIPE ANCHOR
- PIPE HANGER
- PIPE GUIDE
- CAP
- EXPANSION JOINT
- UNION
- FLANGE
- X" VTR — VENT THRU ROOF
- FLOOR DRAIN
- X" CO — CLEANOUT
- X" CO — FLOOR CLEANOUT
- WALL CLEANOUT
- X" HD — HUB DRAIN
- X" RD — ROOF DRAIN
- X" OD — OVERFLOW DRAIN
- TRENCH DRAIN
- YARD HYDRANT
- WH — WALL HYDRANT
- HB — HOSE BIBB
- REDUCER (CONCENTRIC)
- REDUCER (ECCENTRIC)
- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- GATE VALVE
- ANGLE STOP
- GLOBE VALVE
- PLUG VALVE
- PRESSURE REDUCING VALVE
- RELIEF OR SAFETY VALVE
- CONTROL VALVE (2-WAY)
- CONTROL VALVE (3-WAY)
- BALANCING VALVE
- MANUAL AIR VENT
- STRAINER
- BACKFLOW PREVENTER
- WATER HAMMER ARRESTOR

HVAC LEGEND

- AD — ACCESS DOOR
- 12x20 — DUCT (FIRST FIG. IS SIDE SHOWN)
- 20x12 — DUCT SECTION (RETURN)
- DUCT SECTION (SUPPLY)
- DUCT LINING
- RETURN, EXHAUST OR SUPPLY GRILLE W/ MVD
- ELBOW DOWN
- ELBOW W/ TURNING VANES
- MANUAL VOLUME DAMPER
- FLEXIBLE CONNECTOR
- SD — SMOKE DETECTOR
- T H P G XX — STAT, T=TEMP, H=HUMIDITY, P=PRESSURE, G=GAS GAS MONITORED
- T H P G XX — SENSOR WITH DISPLAY AND ADJUSTMENT
- T H P G XX — SENSOR WITHOUT DISPLAY OR ADJUSTMENT
- FIRE DAMPER
- MOTOR OPERATED DAMPER
- GRAVITY BACKDRAFT DAMPER
- PRESSURE GAUGE
- THERMOMETER

FLOWSTREAM IDENTIFIERS

AI	INSTRUMENT AIR	HWR	HEATING WATER RETURN
AHP	AIR (HIGH PRESSURE)	HWRE	HOT WATER RECIRCULATION
AV	ACID VENT	HWS	HEATING WATER SUPPLY
AW	ACID WASTE	RHG	REFRIGERANT (HOT GAS)
CND	CONDENSATE	RL	REFRIGERANT (LIQUID)
CGR	COOLING GLYCOL RETURN	RS	REFRIGERANT (SUCTION)
CGS	COOLING GLYCOL SUPPLY	SAN	SANITARY SEWER
CR	CONDENSATE RETURN	SLP	STEAM (LOW PRESSURE)
CWR	CHILLED WATER RETURN	STM	STORM SEWER
CWS	CHILLED WATER SUPPLY	TW	TEMPERED WATER
F	FIRE SPRINKLER	TWRE	TEMPERED WATER RETURN
NG	GAS (NATURAL)	V	VENT
HGR	HEATING GLYCOL RETURN	W1	POTABLE CITY WATER
HGS	HEATING GLYCOL SUPPLY	W2	NON-POTABLE CITY WATER
HPHW	HIGH PRESSURE HOT WATER	W3	PLANT EFFLUENT WATER
HPW	HIGH PRESSURE WATER		(NOT-POTABLE)
HW	HOT WATER		

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	MVD	MANUAL VOLUME DAMPER
BDD	BACKDRAFT DAMPER	OA	OUTSIDE AIR
BOD	BOTTOM OF DUCT	PSIG	POUND PER SQUARE INCH (GAUGE)
CL	CENTER LINE ELEVATION		
DFU	DRAINAGE FIXTURE UNIT	THRU	THROUGH
EL	ELEVATION	TOD	TOP OF DUCT
EXP	EXPLOSION PROOF	VTR	VENT THROUGH ROOF
H-O-A	HAND-OFF-AUTO SWITCH	WSFU	WATER SUPPLY FIXTURE UNIT
HP	HIGH POINT	VIF	VERIFY IN FIELD
LP	LOW POINT		

EQUIPMENT / FIXTURE TAG IDENTIFIERS

ACU	AIR CONDITIONING UNIT	LAV	LAVATORY
ACCU	AIR COOLED CONDENSING UNIT	MAU	MAKE-UP AIR UNIT
AHU	AIR HANDLING UNIT	MCD	MOTOR CONTROL DAMPER
ASHP	AIR SOURCE HEAT PUMP	MS	MOP SINK
B	BOILER	OAL	OUTSIDE AIR LOUVER
BS	BRANCH SELECTOR	P	PUMP
CO	CLEANOUT	RAL	RELIEF AIR LOUVER
CP	CIRCULATING PUMP	RD	ROOF DRAIN
CS	COUNTERTOP SINK	RG	RETURN GRILLE
DEH	DEHUMIDIFIER	RH	RELIEF HOOD
EAL	EXHAUST AIR LOUVER	RHP	RADIANT HEATING PANEL
EEW	EMERGENCY EYEWASH STATION	RPZ	REDUCED ZONE PRESSURE BACKFLOW PREVENTER
EF	EXHAUST FAN		
EG	EXHAUST GRILLE	RTU	ROOFTOP UNIT
EH	ELECTRIC HEATER	SD	SUPPLY DIFFUSER
EUH	ELECTRIC UNIT HEATER	SF	SUPPLY FAN
EWC	ELECTRIC WATER COOLER	SG	SUPPLY GRILLE
EWH	ELECTRIC WATER HEATER	SHR	SHOWER
EWS	EMERGENCY WASH STATION	SP	SUMP PUMP
FCU	FAN COIL UNIT	SPCP	SUMP PUMP CONTROL PANEL
FD	FLOOR DRAIN	SS	SERVICE SINK
GDCP	GAS DETECTION CONTROL PANEL	TCP	TEMPERATURE CONTROL PANEL
GUH	GAS UNIT HEATER	TG	TRANSFER GRILLE
GWH	GAS WATER HEATER	TMV	THERMOSTATIC MIXING VALVE
HB	HOSE BIB	UR	URINAL
HD	HUB DRAIN	VAV	VARIABLE AIR VOLUME BOX
HPHW	HIGH PRESSURE HOT WATER SYSTEM	WCCU	WATER COOLED CONDENSING UNIT
HPW	HIGH PRESSURE WATER SYSTEM	WC	WATER CLOSET
HUH	HOT WATER UNIT HEATER	WH	WALL HYDRANT
HWC	HOT WATER CONVECTOR	WHA	WATER HAMMER ARRESTOR ("x" LETTER INDICATES SIZE)
ICD	INSULATED MOTOR CONTROL DAMPER	WSHP	WATER SOURCE HEAT PUMP
IH	INTAKE HOOD		

ELECTRICAL ABBREVIATIONS AND SYMBOLS

ABBREVIATIONS

A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERE INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
C	CONTACTOR/CONDUIT/COIL
CB	CIRCUIT BREAKER
CKT, CCT	CIRCUIT
DISC	DISCONNECT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GRD	GROUND
GRS	GALVANIZED RIGID STEEL
HF	HARMONIC FILTER
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
J	JUNCTION BOX
KVA	KILOVOLT AMPERE
KW	KILOWATT
LC	LIGHTING CONTACTOR
LCP	LOCAL CONTROL PANEL
LED	LIGHT EMITTING DIODE
LP	LIGHTING PANEL
LSIGA	LONG TIME, SHORT TIME, INSTANTANEOUS, GROUND, ARC FLASH
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MH	MANHOLE
MV	MEDIUM VOLTAGE MANHOLE
NEC	NATIONAL ELECTRICAL CODE (ANSI/NFPA-70)
NEU, N	NEUTRAL
NC	NORMALLY CLOSED
NF	NON FUSED
NGR	NEUTRAL GROUND RESISTOR
NO	NORMALLY OPEN
OL	OVERLOAD RELAY
P	PHASE/POLE
PC	PHOTOCELL
PMG	PADMOUNT GEAR
PMT	PADMOUNT TRANSFORMER
PP	POWER PANEL
PVC	POLY VINYL CHLORIDE
SCCR	SHORT CIRCUIT CURRENT RATING
SPD	SURGE PROTECTIVE DEVICE
SW	SWITCH
SWBD	SWITCH BOARD
SWGR	SWITCHGEAR
V	VOLTS
VFC	VENDOR FURNISHED CABLE
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE
WP	WEATHERPROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

ONE-LINE SYMBOLS

- 15 M (OR) CL 600 AF 500 AT — MAGENTIC STARTER AND MOLDED CASE CIRCUIT BREAKER (UPPER NUMERAL INDICATES FRAME SIZE) (LOWER NUMERAL INDICATES TRIP SETTING) (CL - INDICATES CURRENT LIMITING CIRCUIT BREAKER) (M - INDICATES MOTOR CIRCUIT PROTECTOR)
- FVNR 2a 1b 2 — (FVNR - INDICATES FULL VOLTAGE NON-REVERSING) (FVR - INDICATES FULL VOLTAGE REVERSING) (SSRV - INDICATES SOLID STATE REDUCED VOLTAGE) (TSTW - INDICATES TWO SPEED TWO WINDING) (TSSW - INDICATES TWO SPEED SINGLE WINDING) (CONT - INDICATES CONTACTOR) (AUXILIARY CONTACTS - (2a TWO N.O.)(1b ONE N.C.) (NUMERAL INDICATES NEMA SIZE)
- FVNR 2a 1b 2 — COMBINATION MAGNETIC STARTER WITH MOLDED CASE CIRCUIT BREAKER (FVNR - INDICATES FULL VOLTAGE NON-REVERSING) (FVR - INDICATES FULL VOLTAGE REVERSING) (SSRV - INDICATES SOLID STATE REDUCED VOLTAGE) (TSTW - INDICATES TWO SPEED TWO WINDING) (AUXILIARY CONTACTS - (2a TWO N.O.)(1b ONE N.C.) (NUMERAL INDICATES NEMA SIZE)
- K — KEY INTERLOCK
- DELTA
- WYE GROUND
- ATS
- GENERATOR
- 3200AF 2000AT — DRAW-OUT LV POWER CIRCUIT BREAKER
- 80A — FUSED SWITCH (NUMERAL INDICATES FUSE SIZE)
- LIGHTNING ARRESTER
- UTILITY METER
- T — TRANSFORMER
- GROUND
- 75 — MOTOR (NUMERAL INDICATES HORSEPOWER)
- 52 — DRAW-OUT CIRCUIT BREAKER (NUMERAL INDICATES DEVICE NUMBER)
- MEDIUM-VOLTAGE TERMINATION
- 52 — CURRENT TRANSFORMER AND PROTECTIVE DEVICE (NUMERAL INDICATES DEVICE NUMBER)

PLAN SYMBOLS

- A — LED FIXTURE - RECESSED (LETTER DENOTES TYPE)
- A — LED FIXTURE - SURFACE/SUSPENDED (LETTER DENOTES TYPE)
- A — LED FIXTURE - WALL MOUNTED (LETTER DENOTES TYPE)
- A — LED OR HID FIXTURE - WALL MOUNTED (LETTER DENOTES TYPE)
- A — LED OR HID FIXTURE - POLE MOUNTED FIXTURE (LETTER DENOTES TYPE)
- A — LED OR HID FIXTURE - SURFACE/SUSPENDED (LETTER DENOTES TYPE)
- EMERGENCY BATTERY LIGHT
- REMOTE HEAD FOR EMERGENCY BATTERY LIGHT
- EXIT LIGHT WITH INDICATING DIRECTIONAL ARROW
- COMBO EMERGENCY LIGHT/EXIT SIGN
- $ $2 $3 $4 — SWITCH (SINGLE POLE, 2-POLE, 3-WAY, 4-WAY)
- $MC — MOMENTARY CONTACT SWITCH - CENTER OFF
- $P — SWITCH / PILOT LIGHT
- DUPLEX GROUNDED RECEPTACLE - 120V
- EXPLOSIONPROOF SIMPLEX GROUNDED RECEPTACLE - 120V
- TELEPHONE OUTLET, WALL MOUNT WITH 3/4" CONDUIT TO TELEPHONE TERMINAL CABINET
- D — DATA INFORMATION OUTLET
- X — RECESSED CEILING SPEAKER
- V — VOLUME CONTROL
- WALL SPEAKER
- S — SMOKE DETECTOR
- F — FIRE ALARM HORN
- F S — FIRE ALARM HORN AND STROBE
- S — FIRE ALARM STROBE
- F — FIRE ALARM PULL STATION
- H — HEAT DETECTOR
- F FS — FLOW SWITCH
- MD — MOTION DETECTOR
- CONNECTION TO EQUIPMENT
- SPECIAL PURPOSE RECEPTACLE, NEMA TYPE AND AMPERE RATING AS INDICATED
- C — DUPLEX GROUNDED RECEPTACLE - 120V MOUNTED ABOVE COUNTERS OR WORK BENCHES
- 3 WAY OR 4 WAY nLIGHT AIR SWITCHES
- MANUAL STARTER WITH PILOT LIGHT
- THREE PHASE MAGNETIC STARTER
- I — INFORMATION OUTLET
- THREE PHASE COMBINATION MAGNETIC STARTER AND DISCONNECT SWITCH
- SINGLE PHASE MAGNETIC STARTER
- 30 — NON-FUSED DISCONNECT SWITCH (NUMERAL INDICATES SWITCH RATING)
- F 60 40 — FUSED DISCONNECT SWITCH - 3 POLE UNLESS OTHERWISE INDICATED (UPPER NUMERAL INDICATES SWITCH RATING) (LOWER NUMERAL INDICATES FUSE RATING)
- $ — 3-PHASE MANUAL MOTOR SWITCH
- TERMINAL CABINET (ITC - INDICATES INSTRUMENTATION) (TTC - INDICATES TELEPHONE)
- M — MOTOR
- J — JUNCTION BOX
- HH — HANDHOLE
- MH — MANHOLE
- SURVEILLANCE CAMERA
- GROUND ROD
- GROUND TEST WELL
- AIR TERMINAL
- CONDUIT STUB
- CONDUIT TURNING UP OR TO OBSERVER
- CONDUIT TURNING DOWN OR AWAY FROM OBSERVER
- FLEXIBLE CONDUIT CONNECTION
- HOMERUN CIRCUIT OR CONDUCTORS
- DIRECT BURIAL CABLE
- E — E — UNDERGROUND ELECTRICAL DUCT, CONCRETE ENCASED.
- OH — OVERHEAD ELECTRIC

PANELBOARDS

010LP1-4

- BUILDING NO.
- LIGHTING OR POWER PANEL AS INDICATED
- PANEL NO.
- CIRCUIT NO.

MOTOR CONTROL CENTER

010MCC-1

- BUILDING NO.
- MCC, SWITCHBOARD OR SWITCHGEAR AS INDICATED
- MCC NO.

DEVICE NUMBER	FUNCTION
27	UNDERVOLTAGE RELAY
32	REVERSE POWER RELAY
46	PHASE-BALANCE CURRENT RELAY
47	PHASE-SEQUENCE VOLTAGE RELAY
50	INSTANTANEOUS OVERCURRENT
51	AC TIME OVERCURRENT RELAY
51N	GROUND OVERCURRENT
52	AC CIRCUIT BREAKER
59	OVERVOLTAGE RELAY
67	AC DIRECTIONAL OVERCURRENT
81	OVER/UNDER FREQUENCY RELAY
86	LOCKOUT RELAY
87	DIFFERENTIAL
89	POTENTIAL TRANSFORMER

NOTE:

1. THIS IS A STANDARD LEGEND. NOT ALL OF THE INFORMATION SHOWN ON THIS LEGEND IS NEEDED IN THESE CONTRACT DRAWINGS.
2. WORK IN THIS CONTRACT SHOWN FULL TONE UNLESS OTHERWISE NOTED.

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CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

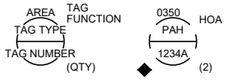
PLUMBING LEGEND / HVAC LEGEND / ELECTRICAL LEGEND

DONOHUE

Sheet No. 6

Drawing No. 001-G-6

INSTRUMENT TAG IDENTIFICATION



COMPONENT DESIGNATOR

AREA	0350:	BUILDING OR PROCESS AREA NUMBER
TAG TYPE	P:	FIRST LETTER, SEE TABLE BELOW
	AH:	SUCCEEDING LETTERS, SEE TABLE BELOW
TAG NUMBER	12:	P&ID NUMBER
	3:	LOOP NUMBER
	4:	EQUIPMENT NUMBER
	A:	DEVICE LETTER IF MULTIPLE DEVICES
TAG FUNCTION	HOA:	TAG FUNCTION ABBREVIATION, SEE LISTING AT RIGHT
(QUANTITY)	(2):	TOTAL NUMBER OF DEVICES WHERE MORE THAN ONE DEVICE IS REQUIRED. DEVICE NUMBERS ARE SEQUENTIAL BEGINNING WITH THE TAG NUMBER SHOWN. IF QUANTITY IS NOT SHOWN THEN ONE DEVICE ONLY IS REQUIRED.
COMPONENT DESIGNATOR	◆	SEE LISTING AT RIGHT

MISCELLANEOUS ABBREVIATIONS

ACC	ACCUMULATE/ACCUMULATION
ALT	ALTERNATE
CAM	CAMERA
CN	CONTROLNET
CPU	CENTRAL PROCESSING UNIT
CTL	CONTROL
DN	DEVICENET
DO	DATA OUTLET
DSC	DISCONNECT
ETM	ELAPSED TIME METER
FOC	FIBER OPTIC CABLE
FW	FIREWALL
HMI	HUMAN MACHINE INTERFACE
INIT	INITIATE
INT	INTERVAL
IP	INTERNET PROTOCOL
JBX	JUNCTION BOX
MOR	MOTOR OVERLOAD RELAY
MPR	MOTOR PROTECTION RELAY
MC	MEDIA CONVERTER
MM	MULTIMODE
MS	MOTOR STARTER
NIC	NETWORK INTERFACE CARD
OIU	OPERATOR INTERFACE UNIT
PCN	PROCESS CONTROL NETWORK
PLC	PROGRAMMABLE LOGIC CONTROLLER
PROT	PROTECTOR/PROTECTION
PTR	PRINTER
PWR	POWER
RAD	RADIO
RIO	REMOTE I/O
SBOX	SPLICE BOX
SEQ	SEQUENCE
SM	SINGLE MODE
SW	SWITCH
TEMP	TEMPERATURE
UPS	UNINTERRUPTIBLE POWER SUPPLY

TAG FUNCTION ABBREVIATIONS

ALT	ALTERNATE
C	CLOSE/CLOSED
COMM	COMMUNICATIONS
CM	COMPUTER-MANUAL
DIFF	DIFFERENCE/DIFFERENTIAL
DN	DEVICENET
DO	DISSOLVED OXYGEN
ESTP	EMERGENCY STOP (ESTOP)
F	FAIL
F(X)	CHARACTERIZED/FUNCTION
FOR	FORWARD-STOP(OFF)-REVERSE (MAINTAINED CONTACT)
FSR	FORWARD-STOP-REVERSE (MOMENTARY CONTACT)
FWD	FORWARD
F/R	FORWARD/REVERSE (MOTOR STARTER COILS)
HOA	HAND-OFF-AUTOMATIC (MAINTAINED CONTACT)
HOR	HAND-OFF-REMOTE (MAINTAINED CONTACT)
II	CURRENT TO CURRENT
IP	CURRENT TO PNEUMATIC
LL	LEAD-LAG (MAINTAINED CONTACT)
LOE	LOSS OF ECHO (ULTRASONIC SENSOR FAILURE)
LOR	LOCAL-OFF-REMOTE (MAINTAINED CONTACT
LOS	LOCKOUT STOP (LOCKABLE IN STOP POSITION)
L/R	LOCAL-REMOTE (MAINTAINED CONTACT)
MA	MANUAL-AUTOMATIC (MAINTAINED CONTACT)
MOA	MANUAL-OFF-AUTOMATIC (MAINTAINED CONTACT)
O	OPEN/OPENED
OA	OFF-AUTOMATIC
OCA	OPEN-CLOSE-AUTOMATIC (MAINTAINED CONTACT)
OC	OPEN-CLOSE
OSC	OPEN-STOP-CLOSE (SPRING RETURN TO CENTER)
OO	ON-OFF (MAINTAINED CONTACT)
OOA	ON-OFF-AUTO (MAINTAINED CONTACT)
OOR	ON-OFF-REMOTE (MAINTAINED CONTACT)
QTY	QUANTITY
R	RUN
REV	REVERSE
RST	RESET
SBL	SLUDGE BLANKET INTERFACE LEVEL
SP	SPEED POTENTIOMETER
SPD	SURGE PROTECTIVE DEVICE
SQRT	SQUARE ROOT
SS	START-STOP (MOMENTARY CONTACT)
SSA	START-STOP-AUTOMATIC (MOMENTARY CONTACT)
SSL	START-STOP-LOCK (LOCKABLE IN STOP POSITION)
SUM	SUMMATION
VIB	VIBRATION
X	MULTIPLE/MULTIPLY

COLOR ABBREVIATIONS

AMB	AMBER	ORG	ORANGE
BLK	BLACK	RED	RED
BLU	BLUE		
BRW	BROWN	WHT	WHITE
GRN	GREEN		
GRY	GRAY		

MEANINGS OF INSTRUMENT IDENTIFICATION LETTERS

LETTER	FIRST LETTER (S)		SUCCEEDING LETTERS		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (*)		ALARM (W. LOGGING)	ANNUNCIATE	
B	BURNER, FLAME, COMBUSTION		USERS CHOICE (*)	USERS CHOICE (*)	USERS CHOICE (*)
C	USERS CHOICE (*)			CONTROL	
D	USERS CHOICE (*)	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO			FEEDBACK
G	USERS CHOICE (*)		GLASS, VIEWING DEVICE		
H	HAND (MANUAL)				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME SCHEDULE	TIME RATE OF CHANGE	KEYPAD (DATA ENTRY)	CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTOR, MOISTURE, HUMIDITY	MOMENTARY			MONITORING
N	USERS CHOICE (*)		USERS CHOICE (*)	USERS CHOICE (*)	USERS CHOICE (*)
O	USERS CHOICE (*)		ORIFICE		
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY OR HEAT DUTY	INTEGRATE			
R	RADIATION		RECORD, TREND, LOG		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	UNIVERSAL/MULTIVARIABLE (*)		MULTIFUNCTION (*)	MULTIFUNCTION (*)	MULTIFUNCTION (*)
V	VIBRATION, MECHANICAL ANAL.			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE, TORQUE		WELL		
X	UNCLASSIFIED (*)	X AXIS	UNCLASSIFIED (*)	UNCLASSIFIED (*)	UNCLASSIFIED (*)
Y	EVENT, STATE, OR PRESENCE	Y AXIS		RELAY,COMPUTE,CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVE. ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

(*) WHEN USED. AN EXPLANATION IS SHOWN ADJACENT TO SYMBOL.

LINE IDENTIFICATION

PROCESS FLOW

FLOW STREAM IDENTIFIERS. SEE PROCESS MECHANICAL LEGEND FOR FLOW STREAM IDENTIFIER LISTING.

PI — NEW MAJOR PROCESS FLOW STREAM (CLOSED CONDUIT)

RAS — NEW INTERMEDIATE PROCESS FLOW STREAM (CLOSED CONDUIT)

ALP — NEW MINOR PROCESS FLOW STREAM (CLOSED CONDUIT)

PI — EXISTING MAJOR PROCESS FLOW STREAM (CLOSED CONDUIT)

RAS — EXISTING INTERMEDIATE PROCESS FLOW STREAM (CLOSED CONDUIT)

ALP — EXISTING MINOR PROCESS FLOW STREAM (CLOSED CONDUIT)

PI — NEW MAJOR PROCESS FLOW STREAM (OPEN CONDUIT)

PI — EXISTING MAJOR PROCESS FLOW STREAM (OPEN CONDUIT)

PI — HEAT TRACED PROCESS FLOW STREAM (CLOSED CONDUIT)

SIGNALS

A — MODULATED (4-20mA DC)

HARDWIRED DISCRETE INPUTS/OUTPUTS

FAILED SYSTEM (CAPILLARY TUBING ETC.)

PNEUMATIC

HYDRAULIC

EM — ELECTROMAGNETIC OR SONIC (GUIDED)

MECHANICAL LINK

S — SERIAL LINK (RS232/485)

FOC — FIBER OPTIC CABLE

CE — COPPER ETHERNET CABLE

DN — DEVICENET

CN — CONTROLNET

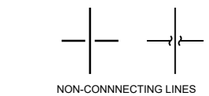
STRUCTURES AND EQUIPMENT

NEW, RELOCATED, OR REFURBISHED EQUIPMENT

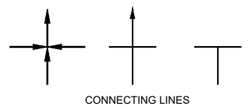
EXISTING EQUIPMENT

NEW OR RELOCATED STRUCTURE

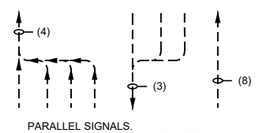
EXISTING STRUCTURE



NON-CONNNECTING LINES



CONNECTING LINES



PARALLEL SIGNALS.
(PARENTHETICAL NUMBER INDICATES QUANTITY OF SIGNALS REPRESENTED)

LOCAL CONTROL PANEL TAG IDENTIFICATION

TAG NUMBER

V-W-XYZ ◆

V: SITE IDENTIFIER
W: EQUIPMENT
- CS - CONTROL STATION
- ITC - INSTRUMENT TERM. CABINET
- LCP - LOCAL CONTROL PANEL
- SPCP - SUMP PUMP CONTROL PANEL
- VFD - VARIABLE FREQUENCY DRIVE

X: P&ID NUMBER
Y: LOOP NUMBER
Z: EQUIPMENT NUMBER
◆ COMPONENT DESIGNATOR

EQUIPMENT AND VALVE TAG IDENTIFICATION

TAG NUMBER

V-W-XYZ ✱✱

V: SITE IDENTIFIER
W: EQUIPMENT
- E - EJECTOR
- G - GATE
- M - MECHANICAL EQUIPMENT
- P - PUMP
- T - TANK
- ARV - AIR RELEASE VALVE
- AVRV - AIR & VACUUM RELIEF VALVE
- ATS - AUTOMATIC TRANSFER SWITCH
- EPS - EMERGENCY POWER SYSTEM
- LCV - LEVEL CONTROL VALVE
- PCV - PRESSURE CONTROL VALVE
- PSV - PRESSURE SAFETY (RELIEF) VALVE
- TCV - TEMPERATURE CONTROL VALVE

X: P&ID NUMBER
Y: LOOP NUMBER
Z: EQUIPMENT NUMBER
✱✱: COMPONENT DESIGNATOR

COMPONENT DESIGNATORS

◆ INDIVIDUAL CONTROLS COMPONENT.

◆◆ CONTROLS COMPONENT FURNISHED AS PART OF A MANUFACTURER'S OR VENDOR'S PACKAGED SYSTEM.

◆◆◆ EXISTING RELOCATED CONTROLS COMPONENT.

◆◆◆◆ OWNER FURNISHED CONTROLS COMPONENT.

✱ INDIVIDUAL MECHANICAL COMPONENT.

✱✱ MECHANICAL COMPONENT FURNISHED AS PART OF A MANUFACTURER'S OR VENDOR'S PACKAGED SYSTEM.

✱✱✱ EXISTING RELOCATED MECHANICAL COMPONENT.

✱✱✱✱ OWNER FURNISHED MECHANICAL COMPONENT.

● INDIVIDUAL ELECTRICAL COMPONENT.

●● ELECTRICAL COMPONENT FURNISHED AS PART OF A MANUFACTURER'S OR VENDOR'S PACKAGED SYSTEM.

●●● EXISTING RELOCATED ELECTRICAL COMPONENT.

●●●● OWNER FURNISHED ELECTRICAL COMPONENT.

COMPONENT DESIGNATORS ARE NOT INTENDED TO ENCOMPASS PIPING, CONDUIT, WIRING, OR CONCRETE STRUCTURES.

INSTRUMENT SYMBOLS

	FIELD MOUNTED	PANEL MOUNTED ACCESSIBLE TO OPERATOR	PANEL MOUNTED INACCESSIBLE TO OPERATOR	MOTOR STARTER MOUNTED ACCESSIBLE TO OPERATOR	MOTOR STARTER MOUNTED INACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS					
PROGRAMMABLE CONTROLLER-BASED FUNCTIONS					
PANEL MOUNTED OIU FUNCTIONS					
PC BASED HMI WORKSTATION FUNCTIONS					

WIRING LEGEND

( )	#14	(QUANTITY)	#14 THHN/THWN CONDUCTORS.
( )	STP	(QUANTITY)	#16 SHIELDED TWISTED PAIR.
( )	MB	(QUANTITY)	#16 SHIELDED TWISTED PAIR (MODBUS).
( )	3C-S	(QUANTITY)	#16 SHIELDED 3-CONDUCTOR.
( )	4C-S	(QUANTITY)	#16 SHIELDED 4-CONDUCTOR.
( )	5C-S	(QUANTITY)	#16 SHIELDED 5-CONDUCTOR.
( )	RTD	(QUANTITY)	3-WIRE RTD CABLE.
( )	E	(QUANTITY)	TYPE E THERMOCOUPLE CABLE.
( )	K	(QUANTITY)	TYPE K THERMOCOUPLE CABLE.
( )	FOC	(QUANTITY)	FIBER OPTIC CABLE.
( )	CE	(QUANTITY)	COPPER ETHERNET.
( )	VFC	(QUANTITY)	VENDOR FURNISHED CABLE.

Revision Number	Revision Description	Drawn By	Checked By	Date

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CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

INSTRUMENTATION AND CONTROL STANDARD LEGEND

DONOHUE

Sheet No. 7

Drawing No. 001-G-7

VALVE SYMBOLS

- ECCENTRIC PLUG (SEAT)
- BUTTERFLY
- BALL
- VENTED BALL (V)
- GLOBE
- GATE
- KNIFE GATE (K)
- PINCH
- DIAPHRAGM
- SOLENOID (S)
- THREE-WAY
- TELESCOPING (T)
- BALL CHECK
- SWING CHECK
- SPLIT DISC CHECK
- DIAPHRAGM CHECK
- CALIBRATED BALANCE
- PRESSURE CONTROL (REGULATED SIDE)
- TEMPERATURE CONTROL
- PRESSURE RELIEF
- AIR RELEASE AND VACUUM RELIEF
- MUD
- IRIS VALVE

GATE SYMBOLS

- SLUICE
- SLIDE
- FLAP GATE
- WEIR GATE
- STOP PLANK (LOG)

VALVE AND GATE POWER ACTUATOR SYMBOLS

- ELECTRIC MOTOR (E, XX)
- ELECTRIC MOTOR WITH POSITIONER (E, Z, XX)
- PNEUMATIC WITH SOLENOID (P, S, XX)
- PNEUMATIC WITH POSITIONER (P, Z, XX)
- HYDRAULIC WITH SOLENOID (H, S, XX)
- HYDRAULIC WITH POSITIONER (H, Z, XX)

NOTE ON 'XX':

ON LOSS OF PRIMARY POWER (PNEUMATIC OR ELECTRICAL)

XX:

FC	=	FAIL CLOSED POSITION
FIP	=	FAIL INTERMEDIATE POSITION
FLP	=	FAIL LAST POSITION
FO	=	FAIL OPEN POSITION

FLOW AND LEVEL ELEMENT SYMBOLS

- PARSHALL FLUME
- ROTAMETER
- PROPELLER OR TURBINE METER
- LEVEL ELEMENT, ULTRASONIC, SUSPENDED, NON-INTRUSIVE
- LEVEL ELEMENT, RADAR, SUSPENDED, NON-INTRUSIVE
- LEVEL ELEMENT, HYDROSTATIC, SUSPENDED, SUBMERSIBLE
- LEVEL ELEMENT, INDUCTIVE, SUSPENDED, SUBMERSIBLE
- LEVEL ELEMENT, LASER
- PULSE-DOPPLER VELOCITY PROFILER
- CLAMP ON ULTRASONIC FLOWMETER
- MAGNETIC FLOWMETER
- PITOT-STATIC
- VENTURI OR FLOW TUBE
- VORTEX SHEDDING
- ORIFICE METER
- BALL FLOAT
- FLOAT, MAGNETICALLY ACTIVATED REED SWITCH
- ANALYSIS ELEMENT, SUSPENDED, IMMERSIBLE
- THERMAL DISPERSION HOT-TAP RETRACTABLE FLOW ELEMENT

MISCELLANEOUS SYMBOLS

- SWITCHED RECEPTACLE (POWER, CONTROL OR SIGNAL) WITH CORD AND PLUG SET
- BLIND FLANGE OR CLEAN OUT
- DRAIN (D)
- STRAINER
- FLUSHING WATER CONNECTION (F)
- SEAL WATER CONNECTION (S)
- EJECTOR
- AUTOMATIC SAMPLER (S)
- DIFFUSER
- VENT
- PURGE SET (XP) X: W = WATER A = AIR
- PULSATION DAMPENER
- EXPANSION JOINT
- FLAME ARRESTOR
- FLAME TRAP ASSEMBLY
- FLAME CHECK
- DESK MOUNTED MONITOR AND KEYBOARD
- MC — MEDIA CONVERTER
- 120V — 120 VOLT, 60 HZ POWER SUPPLY POINT
- MIXER WITH ELECTRIC MOTOR
- ELECTRIC MOTOR
- MANUAL SAMPLE PORT (S)
- AUTOMATIC DRAIN (A)
- MANUAL DRIP TRAP (D)
- DIAPHRAGM SEAL
- ANNULAR SEAL
- FLOW STRAIGHTENING VANE
- CALIBRATION CHAMBER
- DENSITY METER (X) X: N - NUCLEAR O - OPTICAL U - ULTRASONIC M - MICROWAVE
- RUPTURE DISK
- BALANCING VALVE
- ANTENNA
- DESK MOUNTED THICK CLIENT/ WORK STATION WITH MONITOR(S)
- DO — INDUSTRIAL DATA OUTLET W/ 120VAC OUTLET AND ETHERNET CONNECTION

INPUTS & OUTPUTS (I/O) TO PLC OR DISTRIBUTED CONTROL SYSTEM

EQUIPMENT — FUNCTION (X)

UNIVERSAL INPUT/OUPUT (I/O = I/O POINT TYPE)

I/O POINT TYPES:

DI	(DIGITAL INPUT)
RO	(RELAY OUTPUT)
AI	(ANALOG INPUT)
AO	(ANALOG OUTPUT)
RTD	(RESISTANCE TEMPERATURE DETECTOR)

NOTE ON 'X':

X = TOTAL NUMBER OF I/O WHERE MORE THAN ONE I/O IS REQUIRED. IF QUANTITY IS NOT SHOWN THEN ONE I/O IS REQUIRED.

PUMP & COMPRESSOR SYMBOLS

- SUBMERSIBLE PUMP (XX)
- CENTRIFUGAL PUMP (DRY PIT, PLAN VIEW) (XX)
- CENTRIFUGAL PUMP (DRY PIT, ELEVATION) (XX)
- CENTRIFUGAL PUMP (INLINE)
- VERTICAL TURBINE PUMP (XX)
- PROGRESSING CAVITY PUMP (XX)
- CENTRIFUGAL BLOWER (XX)
- CHEMICAL INDUCTION MIXER (XX)
- ROTARY LOBE PUMP, BLOWER OR COMPRESSOR (POSITIVE DISPLACEMENT) (XX)
- AXIAL FLOW PUMP (XX)
- AIR OPERATED DIAPHRAGM PUMPS W. INTEGRAL CHECK VALVES:
- CYLINDER ASSIST (ZS, ZS)
- SPRING RETURN (ZS, ZS)
- COMPRESSOR (PISTON) (XX)
- CHEMICAL FEED PUMP (XX)
- PLUNGER PUMP (XX)
- DIAPHRAGM PUMP (XX)
- HOSE PUMP (M) (XX)

NOTE ON 'X':

AS : ADJUSTABLE SPEED
CS-1 : CONSTANT SPEED (SINGLE SPEED)
CS-2 : CONSTANT SPEED (TWO SPEED)
CS-R : CONSTANT SPEED (REVERSING)
MS : MECHANICAL SHIV (ADJUSTABLE)

INTERFACE SYMBOLS

PROCESS

- XXX / A — SOURCE SHEET NO. NOT VISIBLE; XXX = DESTINATION SHEET NO.; A = INTERFACE DESIGNATOR

ELECTRICAL

- XXX / A — SOURCE SHEET NO. NOT VISIBLE; XXX = DESTINATION SHEET NO.; A = INTERFACE DESIGNATOR
- TO EXISTING INTERFACE NOT IN CONTRACT
- TO NEW OR FUTURE INTERFACE NOT IN CONTRACT

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	JCE
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CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

INSTRUMENTATION AND CONTROL
STANDARD SYMBOLOGY

DONOHUE

Sheet No. 8

Drawing No. 001-G-8

SPACE ENVIRONMENT AND HAZARDOUS RATINGS SCHEDULE

SEE MATERIALS SCHEDULE FOR REQUIRED CONSTRUCTION MATERIALS FOR VARIOUS EXPOSURES

BUILDING	SPACE NO.	SPACE NAME	EXPOSURE	HAZARDOUS RATING	HAZARD NOTES
100 - BENTON LIFT STATION	90	EXISTING WET WELL	WET 3	CLASS I, DIVISION 1, GROUP D (CI, D1)	1, 2, 4
	95	EXISTING LIFT STATION	WET 2	CLASS I, DIVISION 2, GROUP D (CI, D2)	1, 3
	100	WET WELL	WET 3	CLASS I, DIVISION 1, GROUP D (CI, D1)	1, 2, 4
	110	VALVE VAULT	WET 2	CLASS I, DIVISION 2, GROUP D (CI, D2)	1, 3
	120	METER VAULT	WET 2	CLASS I, DIVISION 2, GROUP D (CI, D2)	1, 3
	130	EXTERIOR	EXTERIOR	UNCLASSIFIED	
200 - GREENFIELD LIFT STATION	100	WET WELL	WET 3	CLASS I, DIVISION 1, GROUP D (CI, D1)	1, 2, 4
	110	VALVE VAULT	WET 2	CLASS I, DIVISION 2, GROUP D (CI, D2)	1, 3
	120	METER VAULT	WET 2	CLASS I, DIVISION 2, GROUP D (CI, D2)	1, 3
	130	EXTERIOR	EXTERIOR	UNCLASSIFIED	
210 - EXISTING GREENFIELD LIFT STATION	100	WET WELL	WET 3	CLASS I, DIVISION 1, GROUP D (CI, D1)	1, 2, 4
	110	VALVE VAULT	WET 2	CLASS I, DIVISION 2, GROUP D (CI, D2)	1
	120	METER VAULT	WET 2	CLASS I, DIVISION 2, GROUP D (CI, D2)	1
	130	EXTERIOR	EXTERIOR	UNCLASSIFIED	

HAZARD NOTES

1. ENTIRE ENCLOSED AREA.
2. AREAS WITHIN 3'-0" RADIUS OF VENTS ARE CI, D1, AREA BETWEEN 3'-0" AND 5'-0" RADIUS OF VENTS ARE CI, D2.
3. AREAS WITHIN 3'-0" RADIUS OF VENTS ARE CI, D2.
4. AREAS WITHIN 3'-0" OF REMOVABLE/OPENABLE ACCESS HATCHES ARE CI, D2 TO A HEIGHT 1'-6" ABOVE DECK.
5. AREAS WITHIN 3'-0" OF DOORS OR OTHER EXTERIOR WALL OPENINGS ARE CI, D2.
6. AREAS WITHIN 10'-0" OF EQUIPMENT OR OPEN CHANNELS ARE CI, D2.
7. ENVELOPE INCLUDES ALL LOCATIONS WITHIN 10'-0" LATERALLY, UP TO 1'-6" ABOVE AND ALONG EXTERIOR FACE OF ENCLOSING WALLS AND 1'-6" ABOVE ADJACENT GRADE OR FLOOR SURFACES.
8. AREAS WITHIN 5-FEET HORIZONTALLY AND 10'-0" ABOVE ARE CI, D1. AREA BETWEEN 5'-0" AND 10'-0" HORIZONTALLY AND BETWEEN 10'-0" AND 25'-0" ABOVE ARE CI, D2.
9. AREAS WITHIN 5'-0" RADIUS OF VENTS ARE CI, D1. AREA BETWEEN 5'-0" AND 10'-0" RADIUS OF VENTS ARE CI, D2.
10. AREAS WITHIN 5'-0" RADIUS OF VENTS ARE CI, D2.
11. AREAS WITHIN 5'-0" OF DOORS, VENTS, AND EXTERIOR WALL OPENINGS ARE CI, D1. AREA BETWEEN 5'-10" AND 10'-0" OF OPENINGS ARE CI, D2.
12. AREAS WITHIN 5'-0" OF DOORS AND EXTERIOR WALL OPENINGS ARE CI, D2.
13. AREAS WITHIN 3'-0" RADIUS OF HAZARDOUS MATERIAL EQUIPMENT ARE CI, D2.
14. AREAS WITHIN 5'-0" RADIUS OF HAZARDOUS MATERIAL EQUIPMENT ARE CI, D1.
15. AREAS WITHIN 10'-0" RADIUS OF DIGESTER GAS VALVES OR PIPING APPURTENANCES ARE CI, D1.
16. AREAS WITHIN 10'-0" RADIUS OF DIGESTER GAS VALVES OR PIPING APPURTENANCES ARE CI, D2.
17. AREAS WITHIN 3'-0" RADIUS OF ODOR CONTROL EQUIPMENT AND POINTS OF LEAKAGE SUCH AS DAMPERS AND FLANGES ARE CI, D2.
18. AREAS WITHIN A 10'-0" ENVELOPE OF ALL FIXTURES, APPURTENANCES, AND HOUSING ARE CI, D1. THE AREAS WITHIN A 15'-0" ENVELOPE ABOVE AND 5-FOOT ENVELOPE ON ALL SIDES OF THE OF THE D1 ENVELOPE ARE CI, D2.
19. AREAS WITHIN EQUIPMENT PROCESSING DRIED SLUDGE ARE CII, D1.
20. AREAS WITHIN A 10'-0" ENVELOPE OF EQUIPMENT PROCESSING DRIED SLUDGE ARE CII, D2.
21. AREAS WITHIN TANKS STORING DRIED SLUDGE ARE CII, D1.
22. AREAS WITHIN A 10'-0" ENVELOPE OF TANKS STORING DRIED SLUDGE ARE CII, D2.
23. AREAS ARE CLASSIFIED AS A CI, D2 UNTIL PROPOSED SEPARATION AND VENTILATION IS COMPLETED.
24. AREAS WITHIN 10'-0" OF NATURAL GAS OR DIGESTER GAS VALVES AND APPURTENCES ARE CLASSIFIED AS A CI, D1 AND ENCLOSED AREAS ARE CLASSIFIED AS CI, D2 UNTIL NATURAL GAS AND DIGESTER GAS PIPING HAS BEEN REMOVE AND PROPOSED SEPARATION AND VENTILATION IS COMPLETED.

MATERIALS SCHEDULE

SEE SPACE ENVIRONMENT AND HAZADOUS RATINGS SCHEDULE FOR AREAS ASSOCIATED WITH EXPOSURES LISTED

REQUIREMENTS GIVEN IN DETAILED SPECIFICATIONS SUPERCEDE MATERIALS GIVEN IN THIS SCHEDULE

EXPOSURE	ANCHOR BOLTS/FASTENERS	PIPING NUTS AND BOLTS (7)	HANGERS AND SUPPORTS	CONDUIT	ENCLOSURES (3)(8)	DUCTWORK	PLUMBING PIPING
CHEMICAL 1	316SST	316SST	316SST	SCH 80 PVC	NEMA 4X - FRP	316SST	PVC, CPVC, OR SST
CHEMICAL 2	NON-METALLIC	316SST	FRP/NYLON	SCH 80 PVC	NEMA 4X - FRP	PVC OR FRP	PVC OR CPVC
CHEMICAL 3	NON-METALLIC	316SST	FRP/NYLON	SCH 80 PVC	N/A	PVC OR FRP	PVC OR CPVC
CHEMICAL 4							
DRY 1	ELECTROPLATED STEEL	CARBON STEEL (10)	GALVANIZED STEEL	EMT	NEMA 1 (9) - CAST OR STEEL	GALVANIZED STEEL	COPPER, PVC, OR CPVC
DRY 2	ELECTROPLATED STEEL	CARBON STEEL (10)	GALVANIZED STEEL	GRS OR ALUMINUM	NEMA 1 (9) - CAST OR STEEL	GALVANIZED STEEL	COPPER, PVC, OR CPVC
DRY 3	GALVANIZED STEEL	CARBON STEEL (10)	GALVANIZED STEEL	GRS OR ALUMINUM	NEMA 9 - SST	ALUMINUM	PVC, CPVC, OR SST
DRY 4							
EXTERIOR	316SST	316SST (11)	316SST (6)	PVC COATED (6)	NEMA 4X - 316SST	ALUMINUM (5)	SST
WET 1	GALVANIZED STEEL	N/A	GALVANIZED STEEL	EMT (1)	NEMA 1 - STEEL	GALVANIZED STEEL	COPPER
WET 2	GALVANIZED STEEL	CARBON STEEL (10)	GALVANIZED STEEL	GRS (2)	NEMA 4 - STEEL	GALVANIZED STEEL	PVC, CPVC, OR SST
WET 3	316SST	316SST	316SST	ALUMINUM OR PVC COATED	NEMA 4X - 316SST	316SST	PVC, CPVC, OR SST
WET 4	316SST	316SST	316SST	N/A (4)	N/A (4)	N/A (4)	PVC
WET 5							

NOTES (X):

1. GRS FROM FLOOR TO 6'-0" ABOVE.
2. FIBERGLASS CONDUIT ALLOWABLE IN PIPING GALLERIES AND TUNNELS.
3. HAZARDOUS RATING GIVEN IN SPACE ENVIRONMENT AND HAZARDOUS RATING SCHEDULE TAKES PRECEDENCE; NEMA 7 FOR CLASS I AND NEMA 9 FOR CLASS II AREAS.
4. NOT ALLOWED ON INTERIOR WALLS OF WATER HOLDING STRUCTURES.
5. IF TEMPERED AIR USED PREINSULATED DUCTWORK SYSTEM.
6. ALUMINUM WHERE SUPPORTED FROM ALUMINUM RAILING.
7. UNLESS OTHERWISE SPECIFIED IN THE DETAILED IN PIPING SYSTEMS SPECIFICATIONS.
8. NEMA 7 ENCLOSURES LOCATED IN EXTERIOR, WET 2, OR WET 3 LOCATIONS SHALL PROVIDED WITH AN O-RING OR GASKET IN COVER TO PREVENT WATER ENTRY.
9. ENCLOSURES FOR PLCS, EQUIPMENT CONTROL PANELS, AND OTHER CONTROL ENCLOSURES SHALL BE NEMA 12.
10. COATED ALONG WITH PIPING SYSTEM.
11. FOR PIPING SYSTEMS BEING COATED PROVIDE CARBON STEEL NUTS AND BOLTS.

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	KJA
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Checked By	MTR
Approved By	EPC
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Project No.	14163
Project Date	FEB 2024

CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

SPACE ENVIRONMENT AND HAZARDOUS RATING AND MATERIALS SCHEDULE

DONOHUE

Sheet No. 9

Drawing No. 001-ENV-1

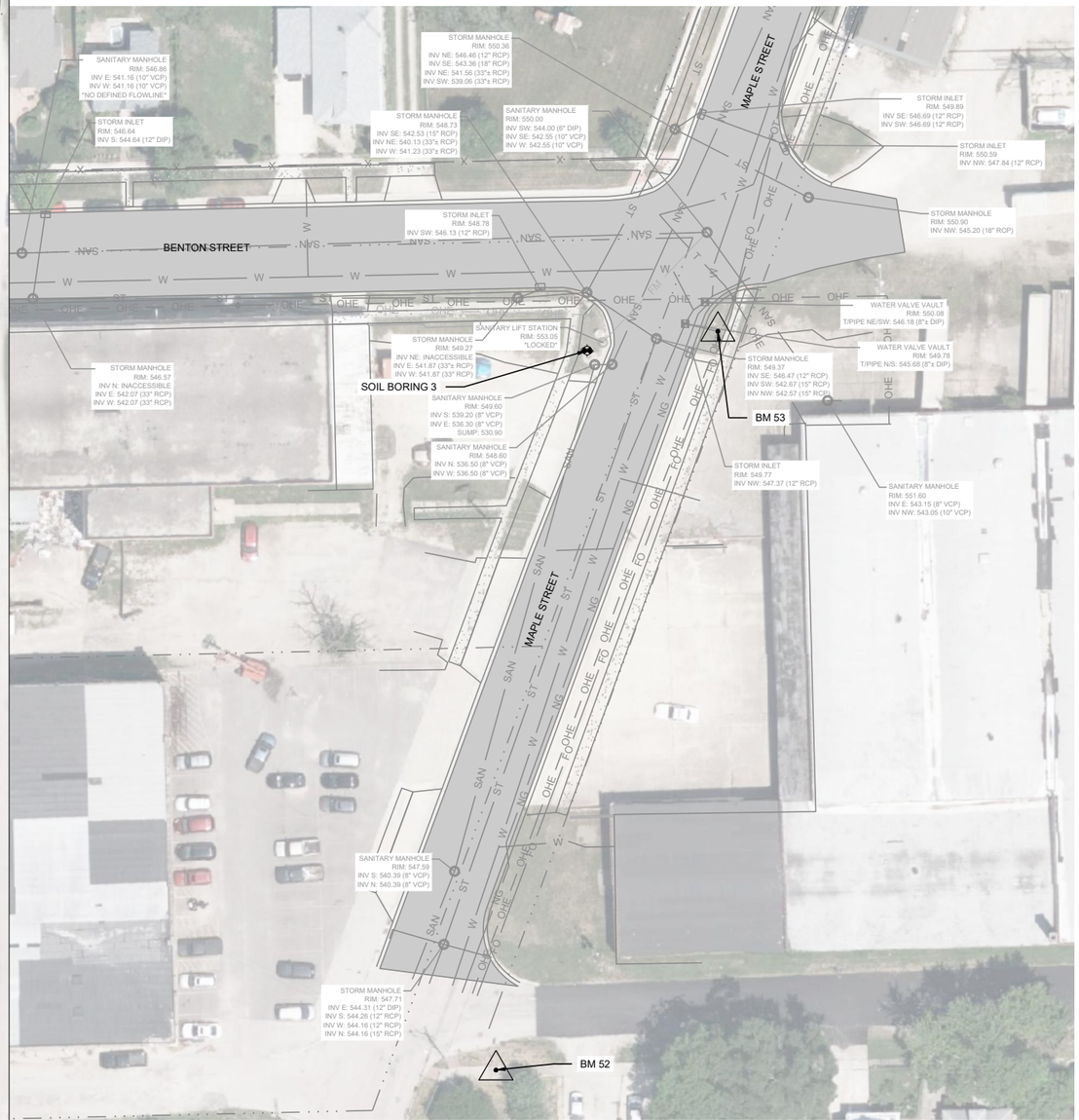
BENCH MARKS IL STATE PLANE EAST NAVD88

BM	NORTHING	EASTING	ELEVATION	DESCRIPTION
50	1764221.31	1058653.80	605.69	CUT "X" SE BOLT UPPER FLANGE HYDRANT ON NE CORNER ROWELL AVE & NEW LENOX RD
51	1763652.98	1058596.88	602.68	NE ARROW BOLD UPPER FLANGE HYDRANT ON WEST SIDE OF ROWELL AVE
52	1771404.68	1059020.16	550.12	SW BOLT ON UPPER FLANGE HYDRANT ON SE CORNER MAPLE ST & BENTON ST
53	1771104.26	1058930.06	549.23	SW ARROW BOLT ON UPPER FLANGE HYDRANT ON SE CORNER MAPLE ST & BENTON ST

0 30'



GREENFIELD LIFT STATION SITE



BENTON LIFT STATION SITE

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	REK
Drawn By	REK
Checked By	PMS
Approved By	EPC
Filename	002CK1.DWG
Project No.	14163
Project Date	FEB 2024

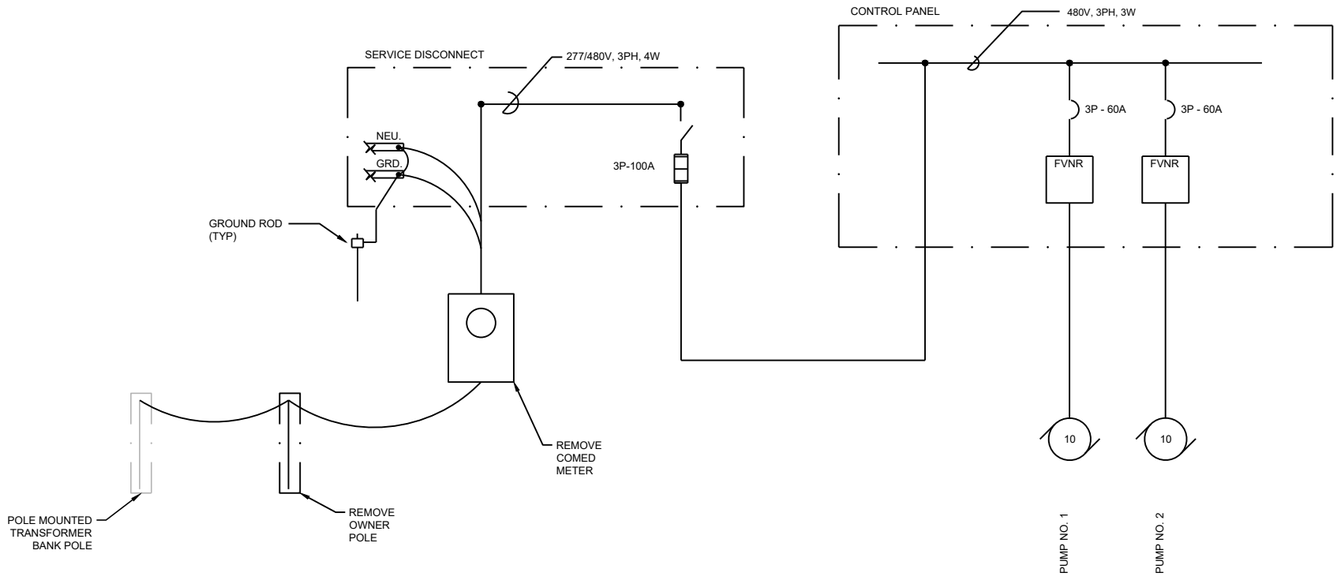
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

SITE DEVELOPMENT
KEY MAP

DONOHUE

Sheet No. 10

Drawing No. 002-CK-1



ONE-LINE DIAGRAM - REMOVAL
BENTON LIFT STATION

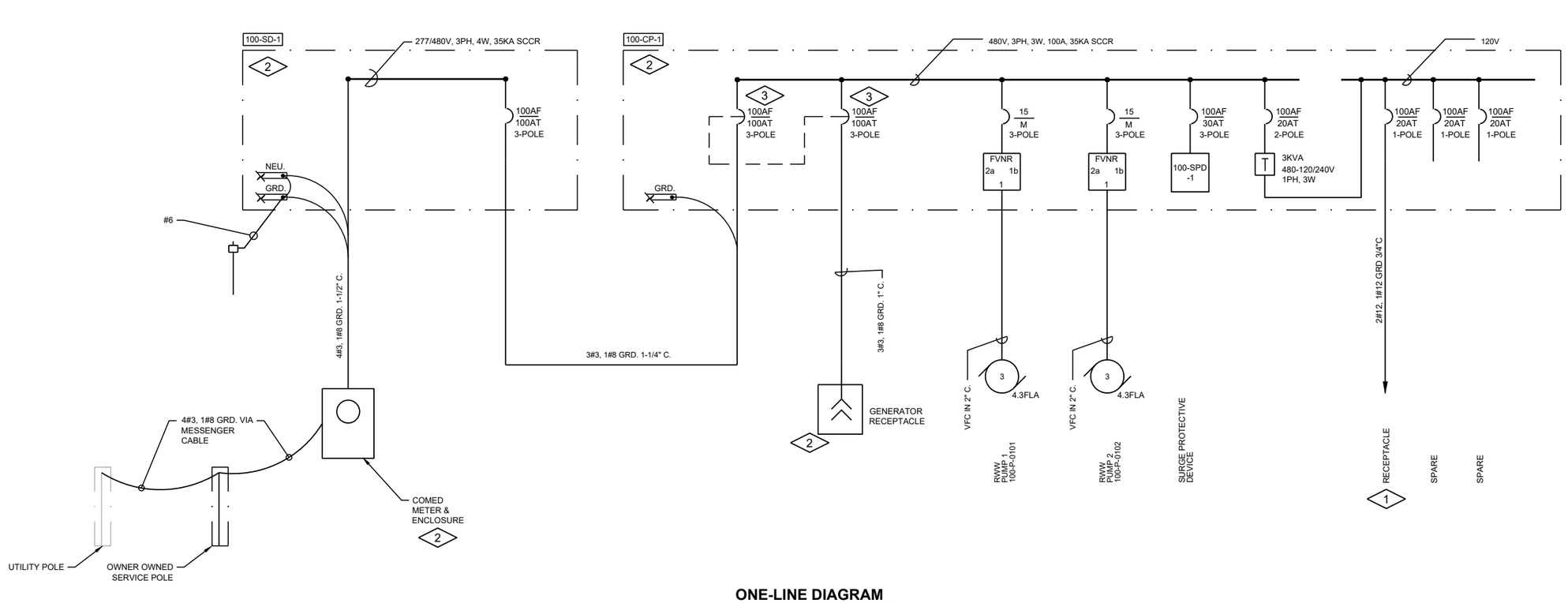
NTS

GENERAL NOTES:

1. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT CONSTRAINTS.
2. REFER TO SPACE ENVIRONMENT AND HAZARDOUS RATING SCHEDULE PER 001-ENV-1 FOR HAZARDOUS RATINGS AND MATERIAL.

PLAN NOTES:

1. RECEPTACLE SHALL BE MOUNTED TO EXTERIOR OF CONTROL PANEL.
2. SEE DETAIL (E301) FOR EQUIPMENT RACK MOUNTING AND WEATHERHEAD DETAILS.
3. CIRCUIT BREAKERS SHALL BE MECHANICALLY INTERLOCKED.



ONE-LINE DIAGRAM
BENTON LIFT STATION

NTS

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	JRR
Drawn By	JRR
Checked By	JTB
Approved By	JTB
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Project No.	14163
Project Date	FEB 2024

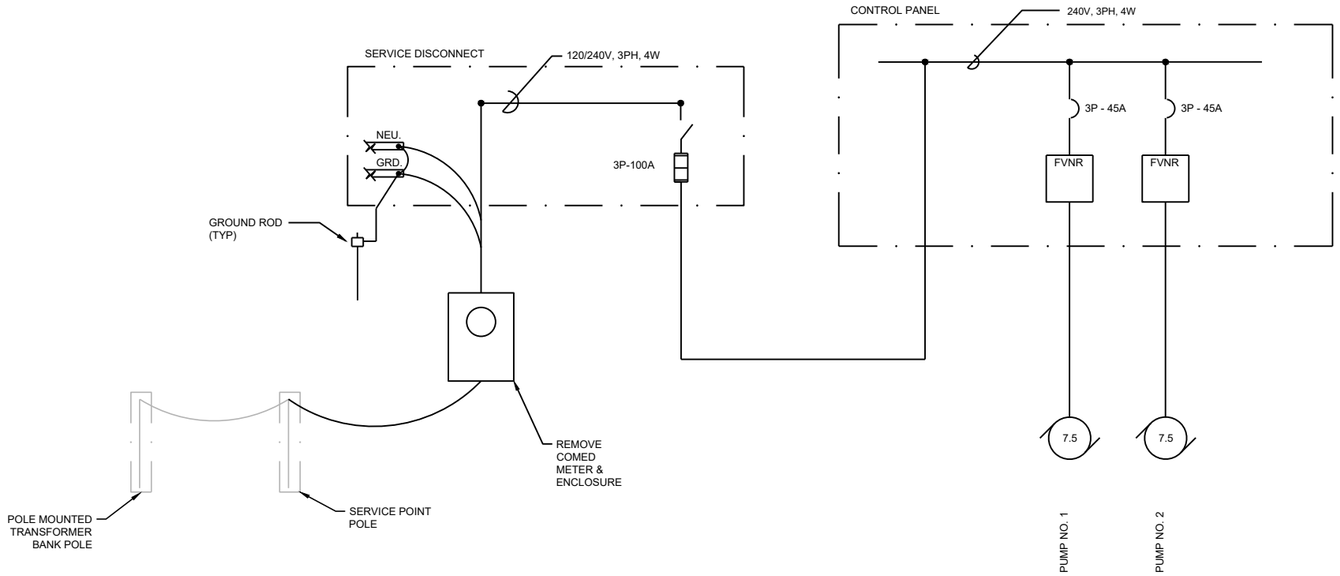
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

ELECTRICAL DISTRIBUTION
ONE-LINE DIAGRAM - REMOVAL/NEW

DONOHUE

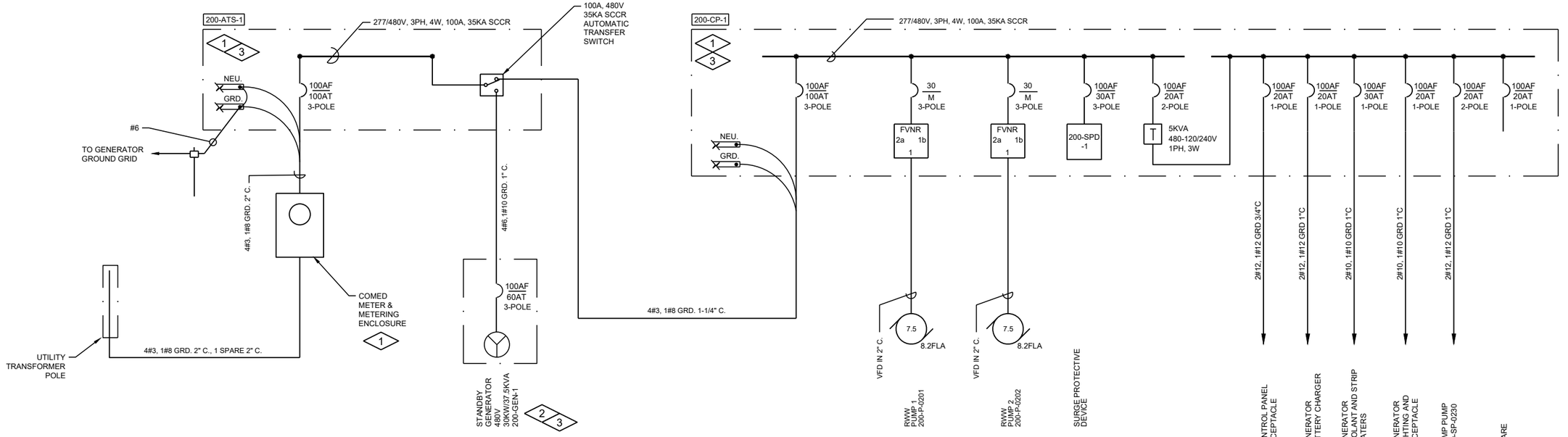
Sheet No. 11

Drawing No. **007-RE-1**



EXISTING/REMOVAL ONE-LINE DIAGRAM GREENFIELD LIFT STATION

NTS



ONE-LINE DIAGRAM GREENFIELD LIFT STATION

NTS

GENERAL NOTES:

1. SEE SPECIFICATION SECTION 01 11 00 FOR PROJECT CONSTRAINTS.
2. REFER TO SPACE ENVIRONMENT AND HAZARDOUS RATING SCHEDULE PER 001-ENV-1 FOR HAZARDOUS RATINGS AND MATERIAL.

PLAN NOTES:

1. SEE DETAIL (E302) FOR EQUIPMENT RACK MOUNTING.
2. INSTALL OWNER FURNISHED GENERATOR.
3. SEE DETAIL (E606) .

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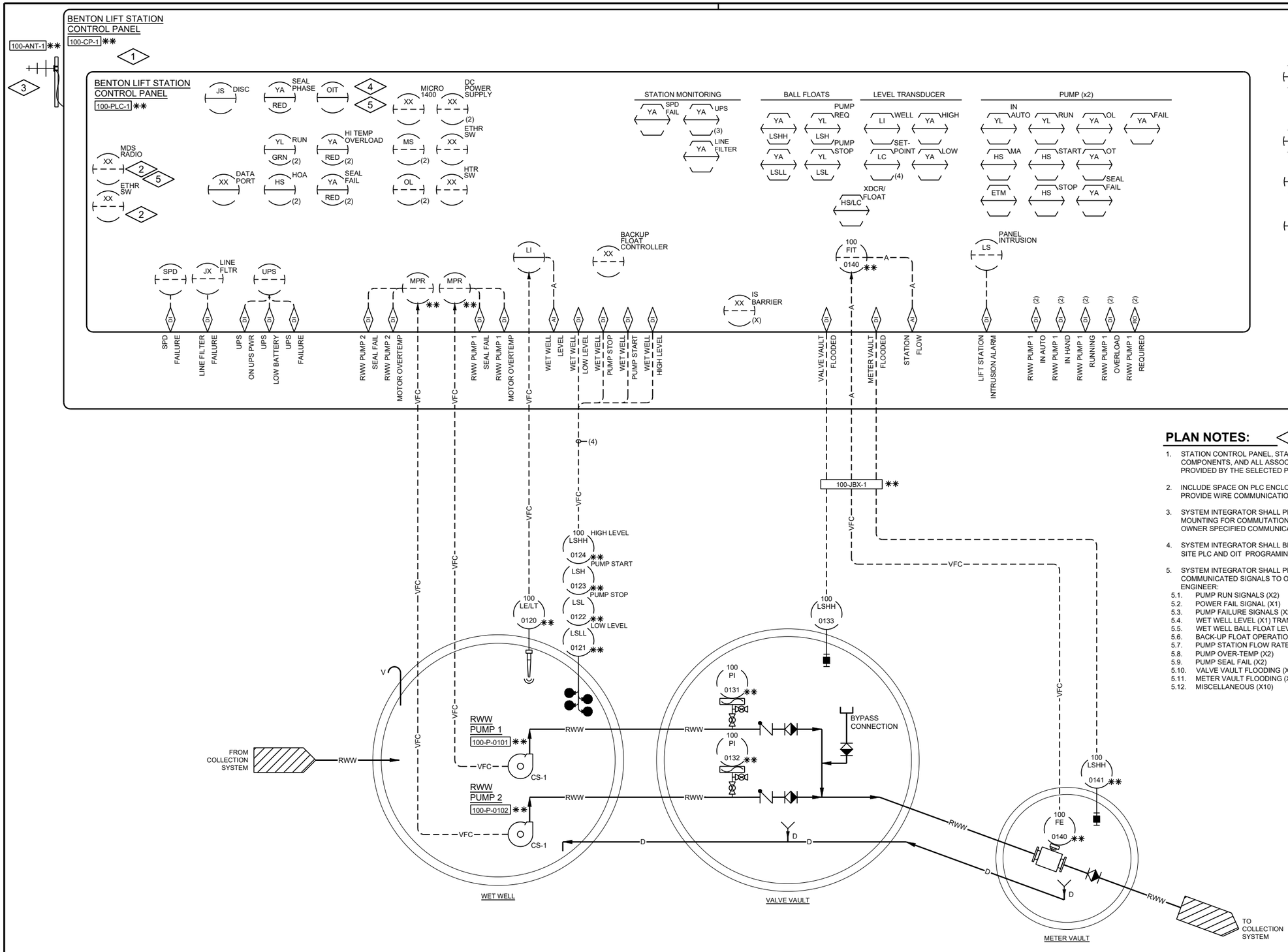
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

ELECTRICAL DISTRIBUTION
ONE-LINE DIAGRAM - REMOVAL/NEW

DONOHUE

Sheet No. 12

Drawing No. **007-RE-2**



PLAN NOTES:

1. STATION CONTROL PANEL, STATION PLC PANEL, ELECTRICAL COMPONENTS, AND ALL ASSOCIATED INSTRUMENTATION SHALL BE PROVIDED BY THE SELECTED PUMP SUPPLIER.
2. INCLUDE SPACE ON PLC ENCLOSURE BACK PANEL FOR OWNER PROVIDE WIRE COMMUNICATION EQUIPMENT.
3. SYSTEM INTEGRATOR SHALL PROVIDE ANTENNA AND ANTENNA MOUNTING FOR COMMUTATION EQUIPMENT. COORDINATE WITH OWNER SPECIFIED COMMUNICATION EQUIPMENT PROVIDER.
4. SYSTEM INTEGRATOR SHALL BE RESPONSIBLE FOR ALL FUNCTION SITE PLC AND OIT PROGRAMING.
5. SYSTEM INTEGRATOR SHALL PROVIDE FOR THE FOLLOWING COMMUNICATED SIGNALS TO OWNER SPECIFIED APPLICATION ENGINEER:
   - 5.1. PUMP RUN SIGNALS (X2)
   - 5.2. POWER FAIL SIGNAL (X1)
   - 5.3. PUMP FAILURE SIGNALS (X2)
   - 5.4. WET WELL LEVEL (X1) TRANSDUCER AND FLOAT)
   - 5.5. WET WELL BALL FLOAT LEVEL (X4)
   - 5.6. BACK-UP FLOAT OPERATION ACTIVE (X1)
   - 5.7. PUMP STATION FLOW RATE (X1)
   - 5.8. PUMP OVER-TEMP (X2)
   - 5.9. PUMP SEAL FAIL (X2)
   - 5.10. VALVE VAULT FLOODING (X1)
   - 5.11. METER VAULT FLOODING (X1)
   - 5.12. MISCELLANEOUS (X10)

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	JCE
Drawn By	JCE
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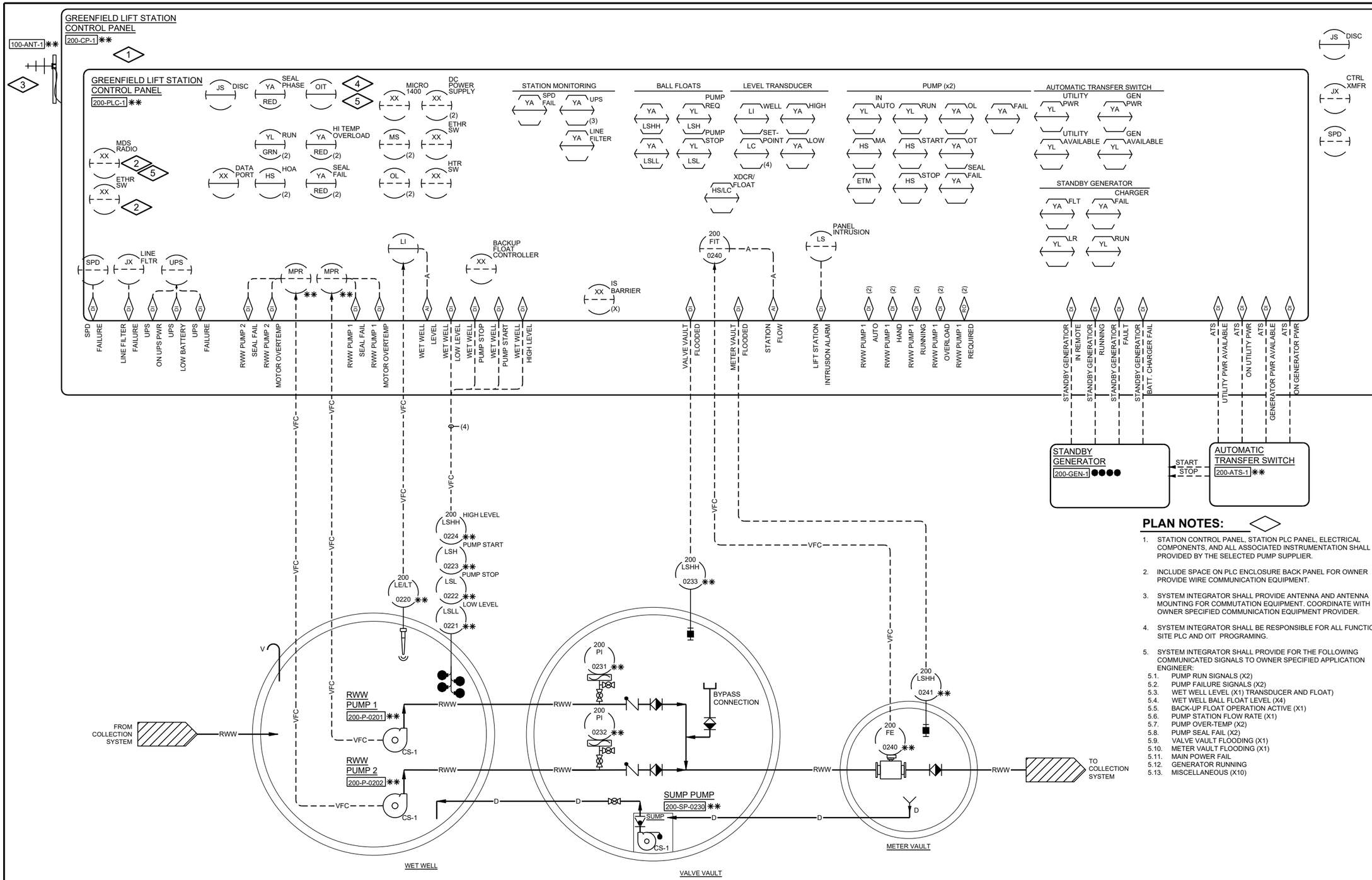
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

PROCESS AND INSTRUMENTATION DIAGRAM
BENTON PUMP STATION

DONOHUE

Sheet No. 13

Drawing No. **009-N-1**



PLAN NOTES:

1. STATION CONTROL PANEL, STATION PLC PANEL, ELECTRICAL COMPONENTS, AND ALL ASSOCIATED INSTRUMENTATION SHALL BE PROVIDED BY THE SELECTED PUMP SUPPLIER.
2. INCLUDE SPACE ON PLC ENCLOSURE BACK PANEL FOR OWNER PROVIDE WIRE COMMUNICATION EQUIPMENT.
3. SYSTEM INTEGRATOR SHALL PROVIDE ANTENNA AND ANTENNA MOUNTING FOR COMMUTATION EQUIPMENT. COORDINATE WITH OWNER SPECIFIED COMMUNICATION EQUIPMENT PROVIDER.
4. SYSTEM INTEGRATOR SHALL BE RESPONSIBLE FOR ALL FUNCTION SITE PLC AND OIT PROGRAMING.
5. SYSTEM INTEGRATOR SHALL PROVIDE FOR THE FOLLOWING COMMUNICATED SIGNALS TO OWNER SPECIFIED APPLICATION ENGINEER:
   - 5.1. PUMP RUN SIGNALS (X2)
   - 5.2. PUMP FAILURE SIGNALS (X2)
   - 5.3. WET WELL LEVEL (X1) TRANSDUCER AND FLOAT)
   - 5.4. WET WELL BALL FLOAT LEVEL (X4)
   - 5.5. BACK-UP FLOAT OPERATION ACTIVE (X1)
   - 5.6. PUMP STATION FLOW RATE (X1)
   - 5.7. PUMP OVER-TEMP (X2)
   - 5.8. PUMP SEAL FAIL (X2)
   - 5.9. VALVE VAULT FLOODING (X1)
   - 5.10. METER VAULT FLOODING (X1)
   - 5.11. MAIN POWER FAIL
   - 5.12. GENERATOR RUNNING
   - 5.13. MISCELLANEOUS (X10)

Revision Number	Revision Description	Drawn By	Checked By	Date

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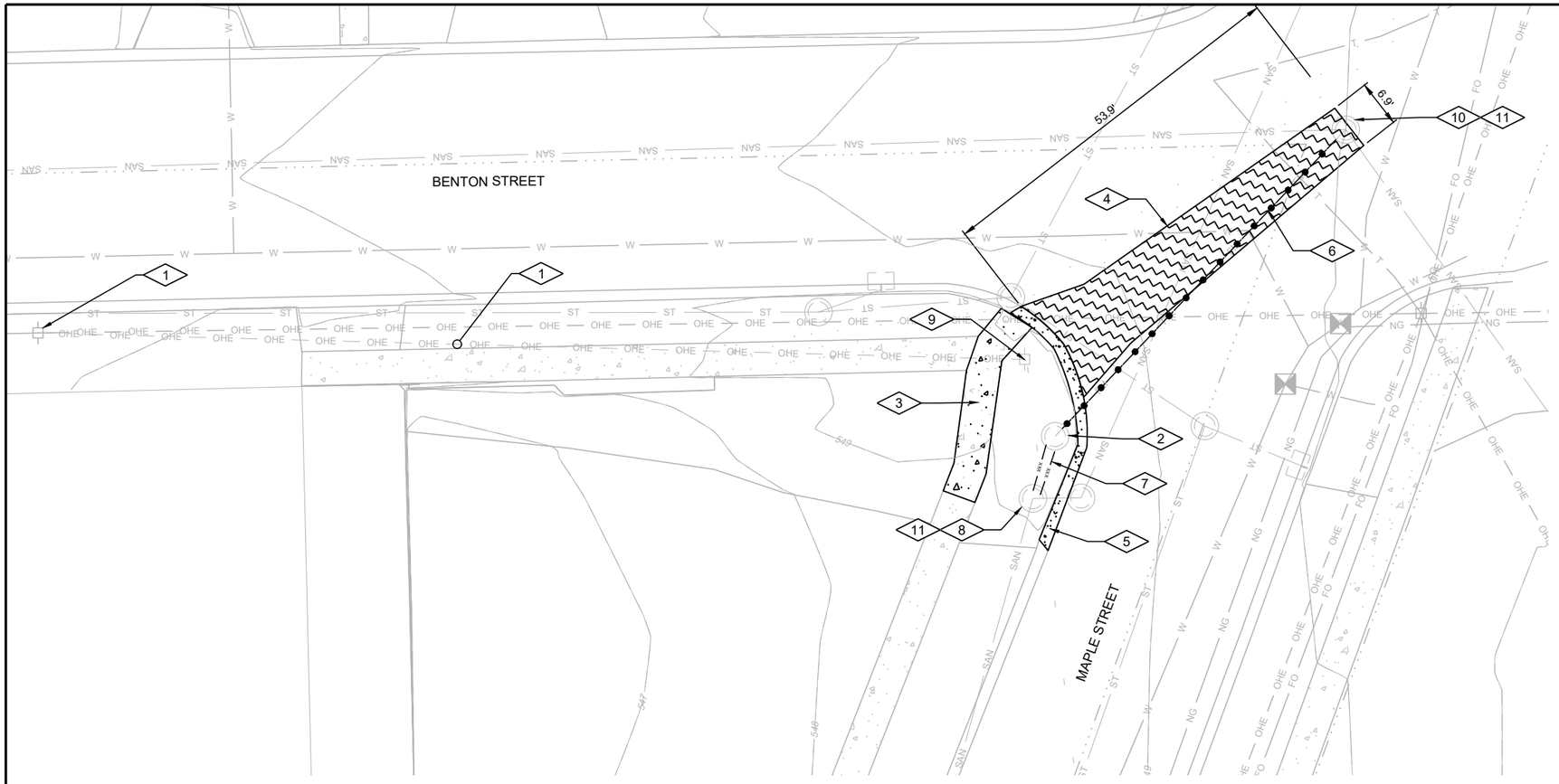
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

PROCESS AND INSTRUMENTATION DIAGRAM
GREENFIELD PUMP STATION

DONOHUE

Sheet No. 14

Drawing No. **009-N-2**



GENERAL NOTES:

1. ALL EXISTING PIPING AND UTILITIES SHALL BE FIELD VERIFIED FOR LOCATION AND ELEVATION. CONTACT ENGINEER IF UNKNOWN CONFLICTS EXIST.

PLAN NOTES:

1. COORDINATE WITH ELECTRIC UTILITY AND REMOVE CONDUCTORS TO POLE MOUNTED TRANSFORMERS.
2. EXISTING LIFT STATION, TO BE REMOVED. SEE 100-R-1 FOR DETAILS.
3. REMOVE AND REPLACE CONCRETE SIDEWALK. (C150) (C199) ±30 LINEAR FEET SHOWN. MATCH IN KIND, AND CONFORM WITH IDOT STANDARDS (424021-06).
4. REMOVE AND REPLACE ASPHALT PAVEMENT. (C120) (C199)
5. REMOVE AND REPLACE CURB IN KIND. ±45 LINEAR FEET SHOWN. PATCH PAVEMENT AT INTERFACE OF CURB AND PAVEMENT AS REQUIRED. (C165)
6. CAP AND ABANDON EXISTING FORCEMAIN.
7. ALL CONNECTIONS BETWEEN EXISTING LIFT STATION AND WET WELL TO BE REMOVED.
8. EXISTING WET WELL TO REMAIN AND TIE INTO NEW WET WELL.
9. REMOVE POWER POLE. REMOVE EXISTING METER AND DISCONNECT. PROVIDE TEMPORARY SIGN POST DURING RELOCATION FOR STOP SIGN AND STREET SIGN. COORDINATE WITH CITY AND PROVIDE PERMANENT POST FOR SIGNS OR RELOCATE SIGNS TO NEW POWER POLE; SEE 100-EN-1 FOR POLE LOCATION.
10. PROVIDE INTERNAL CHIMNEY SEAL.
11. PROVIDE INTERIOR CORROSION CONTROL COATING: RAVEN 405, OR SHERWIN WILLIAMS DURAPLATE 6100.

Revision Number	Revision Description	Drawn By	Checked By	Date

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Project No.	14163
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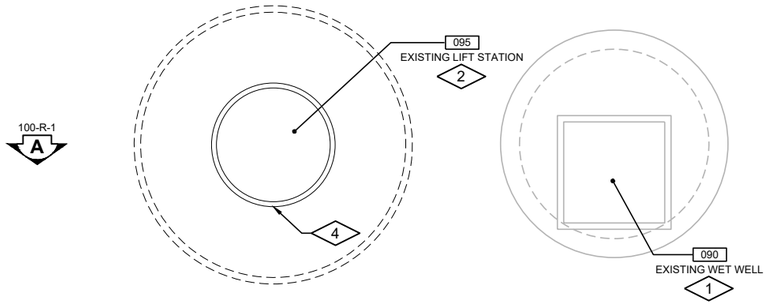
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

BENTON LIFT STATION
SITE REMOVAL PLAN

DONOHUE

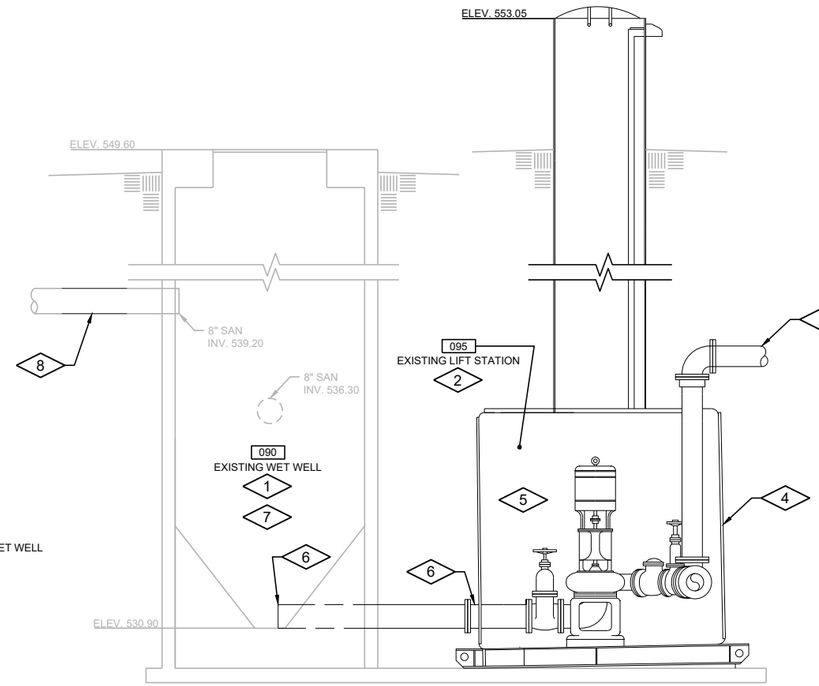
Sheet No. 15

Drawing No. 100-CR-1



REMOVAL UPPER PLAN

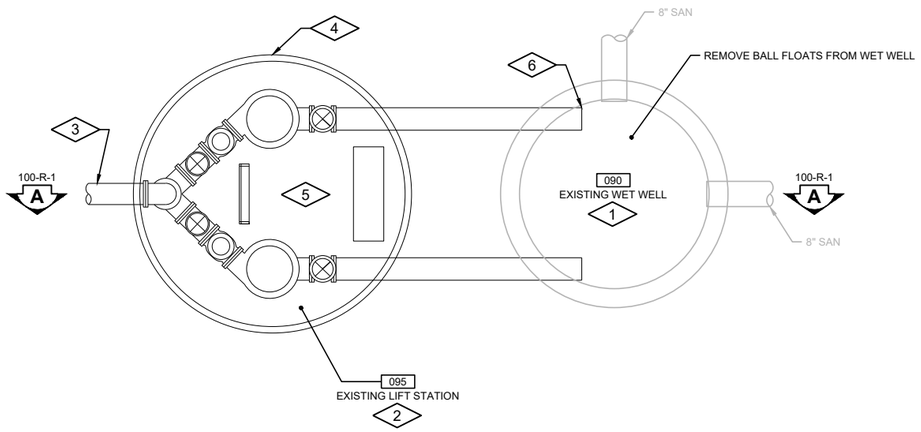
0 1' 2'



REMOVAL SECTION A

100-R-1

0 1' 2'



REMOVAL LOWER PLAN

0 1' 2'

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. FULL TONE COMPONENTS TO BE REMOVED.
3. SAWCUT AND REMOVE CONCRETE TO THE LIMITS NOTED. IN EXPOSED AREAS NOT COVERED BY NEW CONSTRUCTION, REMOVE REINFORCEMENT AND EMBEDMENTS 1" BEYOND FINISHED SURFACE AND PATCH SURFACE WITH PATCHING MORTAR TO MATCH ADJACENT FINISHED SURFACE.
4. REMOVE CONCRETE ANCHORS, ANCHOR BOLTS, AND OTHER EMBEDMENTS FOR MATERIALS AND EQUIPMENT BEING REMOVED. IN EXPOSED AREAS NOT COVERED BY NEW CONSTRUCTION, REMOVE CONCRETE ANCHORS, ANCHOR BOLTS, AND OTHER EMBEDMENTS 1" BEYOND FINISHED SURFACE AND PATCH SURFACE WITH PATCHING MORTAR. FINISH SURFACE TO MATCH ADJACENT FINISHED SURFACE.
5. WHERE EQUIPMENT IS INDICATED TO BE REMOVED, REMOVE ALL ASSOCIATED POWER AND CONTROL WIRING AND CONDUIT BACK TO SOURCE. REMOVE JUNCTION BOXES AND PULL BOXES ASSOCIATED WITH THE REMOVED CONDUITS. WHERE CONDUIT SYSTEM CONTAINS CIRCUITS TO OTHER EQUIPMENT THAT REMAINS, RETAIN THESE CIRCUITS AND RELOCATE EXISTING CONDUIT AND EXTEND EXISTING CIRCUITS AS REQUIRED FOR THE INSTALLATION OF NEW EQUIPMENT.
6. REMOVE ALL SUPPORTS ASSOCIATED WITH REMOVED PIPING, DUCTWORK, CONDUIT, AND EQUIPMENT. REMOVE RODS AND FASTENERS FROM CEILINGS, FLOORS, AND WALLS WITH CARE. WHERE SURFACE HAS BEEN MARRED, CHIPPED, SPAWLED, ETC. AS A RESULT OF REMOVAL, PATCH SURFACE WITH PATCHING MORTAR AND FINISH TO MATCH ADJACENT FINISHED SURFACE.
7. REMOVE EXISTING CONCRETE PADS OF ANY EQUIPMENT BEING REMOVED. REMOVE CONCRETE REINFORCEMENT A MINIMUM OF 1" BEYOND FINISHED SURFACE AT ANY LOCATION WHERE NEW CONCRETE PAD WILL NOT COVER ROUGH SURFACE OF REMOVED PAD. PATCH SURFACE WITH PATCHING MORTAR AND FINISH TO MATCH ADJACENT FINISHED SURFACE.
8. WHERE OPENINGS ARE LEFT IN WALLS, SLABS, OR CEILINGS DUE TO REMOVED PIPING, DUCTWORK, EQUIPMENT, OR OTHER WORK, PATCH OPENING TO MATCH ADJACENT SURFACES UNLESS NOTED OTHERWISE. THE PERIMETER OF OPENINGS IN CONCRETE WALLS AND SLABS EXPOSED TO EARTH, WEATHER, OR WATER SHALL BE LINED WITH A GASKET TYPE WATERSTOP PRIOR TO PATCHING OF THE WALL. OPENINGS IN PRECAST CONCRETE ROOF MEMBERS ARE TO BE PATCHED WITH CONCRETE AND DOWELED TO THE EXISTING ROOF MEMBERS UNLESS NOTED OTHERWISE. ROOFING SYSTEM SHALL BE PATCHED TO PREVENT ANY LEAKING AT THE OPENING.
9. COORDINATE WITH OWNER TO IDENTIFY COMPONENTS TO SALVAGE. DELIVER SALVAGED COMPONENTS TO OWNER PRIOR TO DEMOLITION.

PLAN NOTES:

1. EXISTING WET WELL CLASSIFIED AS

   CLASS I, DIVISION 1, HAZARDOUS LOCATION

2. EXISTING LIFT STATION CLASSIFIED AS

   CLASS I, DIVISION 2, HAZARDOUS LOCATION

3. REMOVE 6" FORCE MAIN TO 5'-0" OUTSIDE OF STRUCTURE, SEE 100-CR-1 FOR CONTINUATION.
4. REMOVE LIFT STATION STRUCTURE AND REPLACE WITH COMPACTED STRUCTURAL FILL.
5. REMOVE EXISTING PUMPS, VALVES, PIPING, MECHANICAL AND ELECTRICAL EQUIPMENT FROM THE LIFT STATION.
6. PLUG 4" SUCTION PIPES, TYP.
7. FILL WITH CLSM TO PROPOSED EFFLUENT SEWER INVERT AND FORM BENCH.
8. REMOVE PORTION OF SANITARY SEWER AND INSTALL EXTERIOR DROP PER DETAIL C240

Revision Number	Revision Description	Drawn By	Checked By	Date

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CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

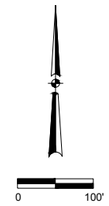
BENTON LIFT STATION
REMOVAL PLANS AND SECTION

DONOHUE

Sheet No. 16

Drawing No. 100-R-1





GENERAL NOTES:

1. SEE SECTION 01 52 00 AND 01 11 00.

PLAN NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING LANE CLOSURE AND TRAFFIC CONTROL PLAN PER CITY OF JOLIET AND IDOT STANDARDS.
2. REFERENCE SHEETS 100-CR-1 AND 100-CFP-1.

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CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

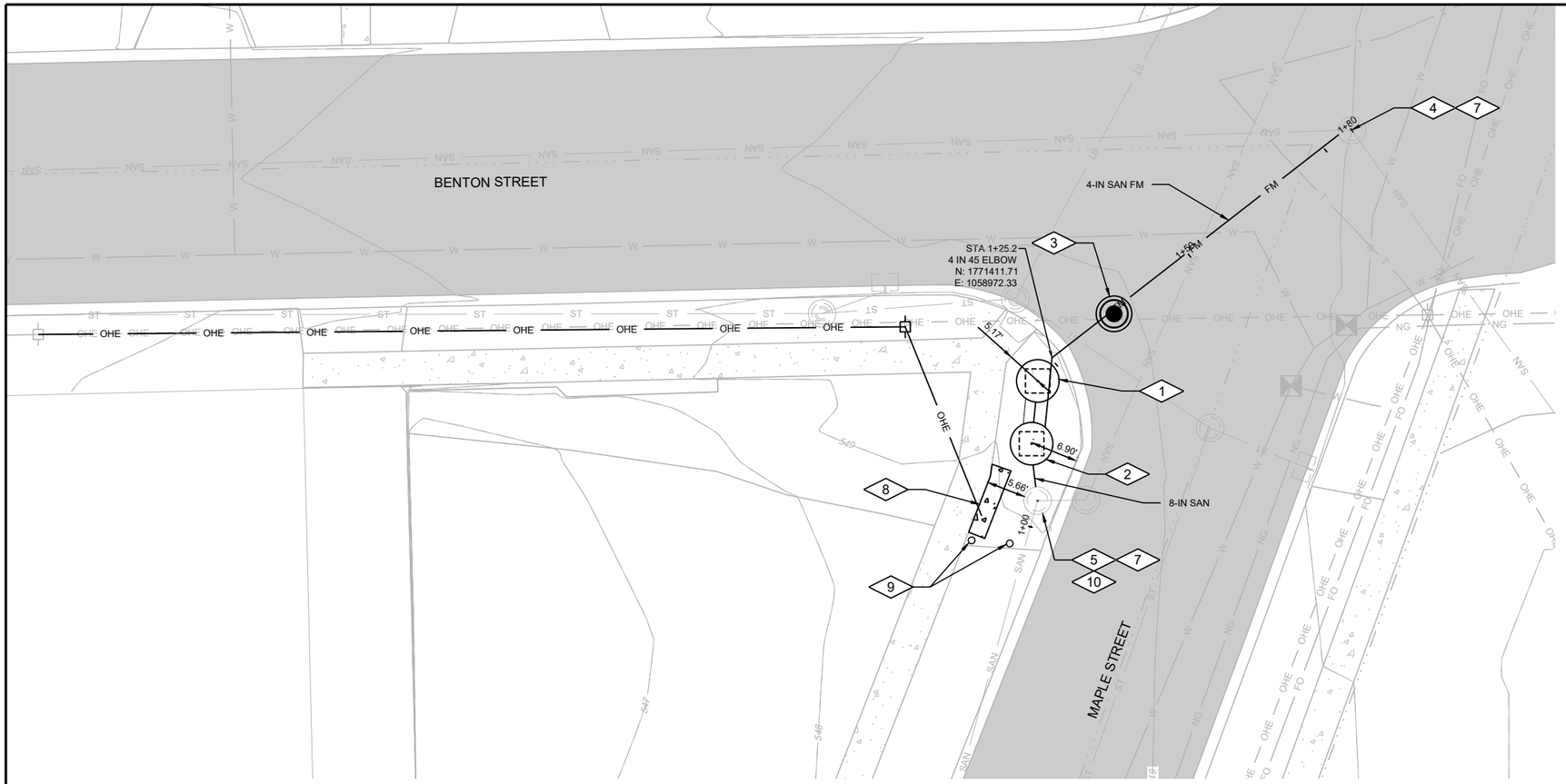
BENTON LIFT STATION
TRAFFIC CONTROL PLAN

DONOHUE

Sheet No. 17

Drawing No.

100-CTC-1



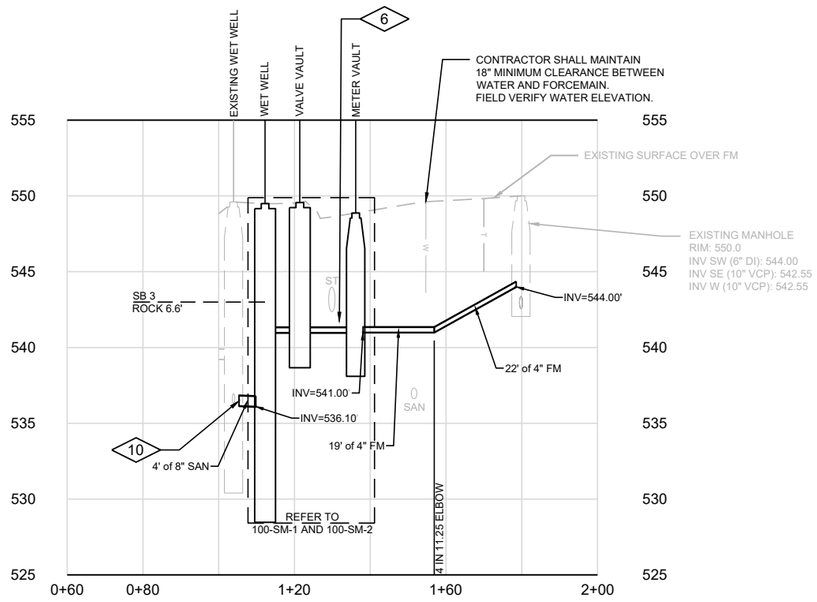
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GENERAL NOTES:

1. ALL EXISTING PIPING AND UTILITIES SHALL BE FIELD VERIFIED FOR LOCATION AND ELEVATION. CONTACT ENGINEER IF UNKNOWN CONFLICTS EXIST.
2. INSTALL PIPING IN CONFORMANCE WITH APPROPRIATE TRENCHING, BEDDING AND BACKFILL REQUIREMENTS. SEE DETAILS C500 C505 C506 C507
3. RESTORE ALL DAMAGED TURF AREAS WITH SEED AND MULCH. SEE C050
4. PROVIDE RESTRAINED JOINTS AT ALL BENDS AND DEFLECTIONS AND FOR 50 FT MINIMUM ON EACH SIDE.

PLAN NOTES:

1. VALVE VAULT, SEE PROCESS DRAWINGS.
2. WET WELL, SEE PROCESS DRAWINGS.
3. 48 INCH MANHOLE METER VAULT, CONTRACTOR TO COORDINATE WITH AMEREN ELECTRIC TO BLANKET AND PROTECT OHE FOR INSTALLATION.
4. CONNECT 4 INCH FORCEMAIN TO EXISTING MANHOLE. CORE NEW HOLE AND PROVIDE BOOTED CONNECTION WITH 90 DEGREE BEND DOWN INTO MANHOLE. C220 C240
5. EXISTING WET WELL, TO REMAIN. CONNECT 8 INCH SANITARY TO NEW WET WELL WITH BOOTED CONNECTION. ADJUST ANY BENCHING IN FIELD. C220
6. INSULATION REQUIRED BETWEEN FORCEMAIN AND STORM BETWEEN VALVE VAULT AND METER VAULT. C565
7. BYPASS PUMPING REQUIRED DURING CONSTRUCTION. TIE INTO CURRENT OUTFALL MANHOLE, OR PROVIDE FITTINGS TO USE EXISTING FORCEMAIN. ADD RAVEN 405 COATING, OR EQUAL AS APPROVED BY OWNER, TO EXISTING WET WELL AND DISCHARGE MANHOLE PER MANUFACTURER RECOMMENDATIONS FOR APPLICATION, SURFACE PREPARATION AND ENVIRONMENTAL CONDITIONS.
8. PROVIDE CONCRETE PAD, PER DETAIL: C150
9. PROVIDE GUARD POSTS (BOLLARDS), COORDINATE LOCATIONS WITH OWNER, PER DETAIL: S101
10. CONNECT TO EXISTING MAN HOLE, SEE DETAIL: M812



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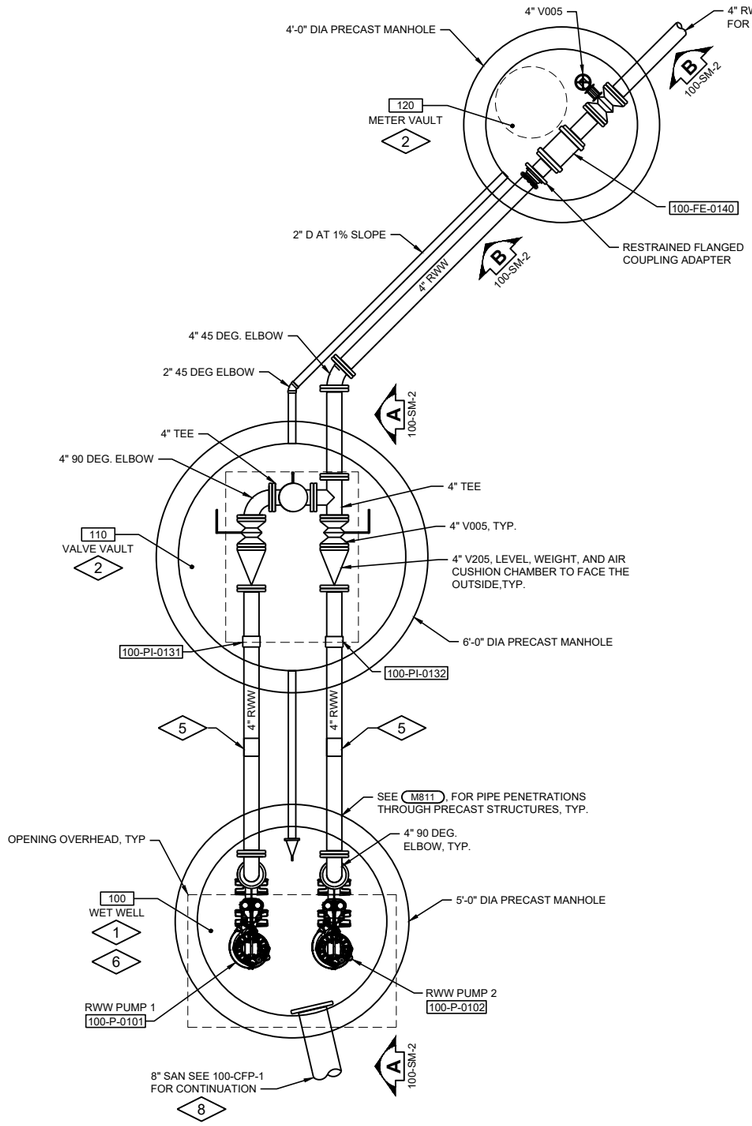
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

BENTON LIFT STATION
FACILITY SITE AND PIPING PLAN

DONOHUE

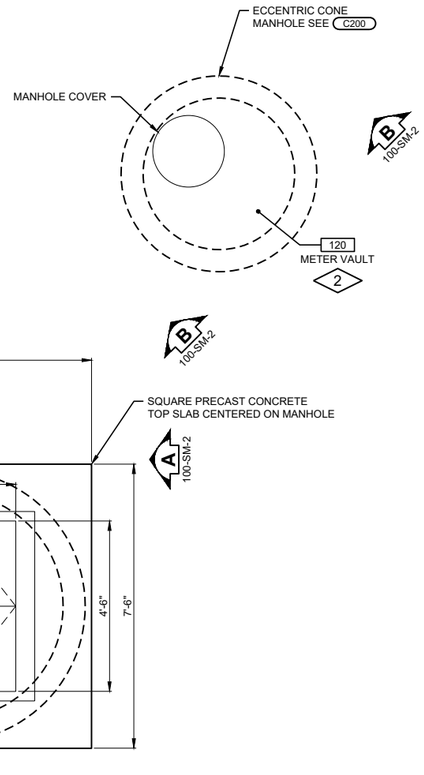
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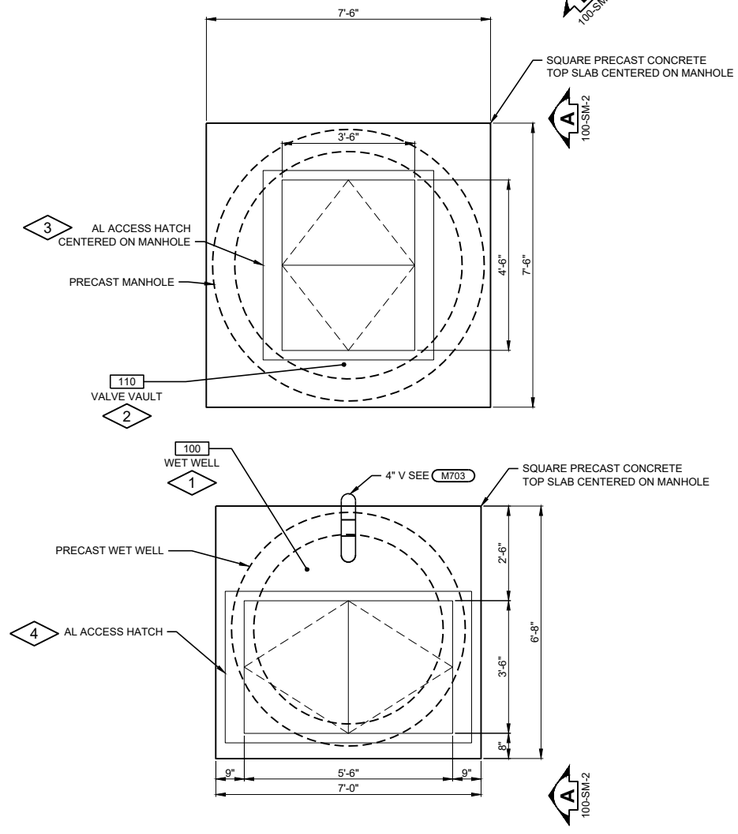
Drawing No. 100-CFP-1



LOWER PLAN

0 1' 2'





UPPER PLAN

0 1' 2'

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. CONTRACTOR TO REFER TO SPACE ENVIRONMENT AND HAZARDOUS RATING SCHEDULE PER 001-ENV-1 FOR HAZARDOUS RATINGS AND MATERIAL.

PLAN NOTES:

1. WET WELL CLASSIFIED AS
   CLASS I, DIVISION 1, HAZARDOUS LOCATION
2. VALVE VAULT, AND METER VAULT CLASSIFIED AS
   CLASS I, DIVISION 2, HAZARDOUS LOCATION
3. ROUTE HATCH DRAIN TO FLOOR BELOW.
4. ROUTE HATCH DRAIN TO WET WELL BELOW.
5. MECHANICAL JOINT COUPLING
6. ADD RAVEN 405 COATING TO WET WELL PER MANUFACTURER RECOMMENDATIONS FOR APPLICATION, SURFACE PREPARATION AND ENVIRONMENTAL CONDITIONS.
7. CONNECT TO WET WELL, SEE M811

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	KJA
Drawn By	ESF
Checked By	CEE/EPC
Approved By	CEE/EPC
Filename	100SMP1.DWG
Project No.	14163
Project Date	FEB 2024

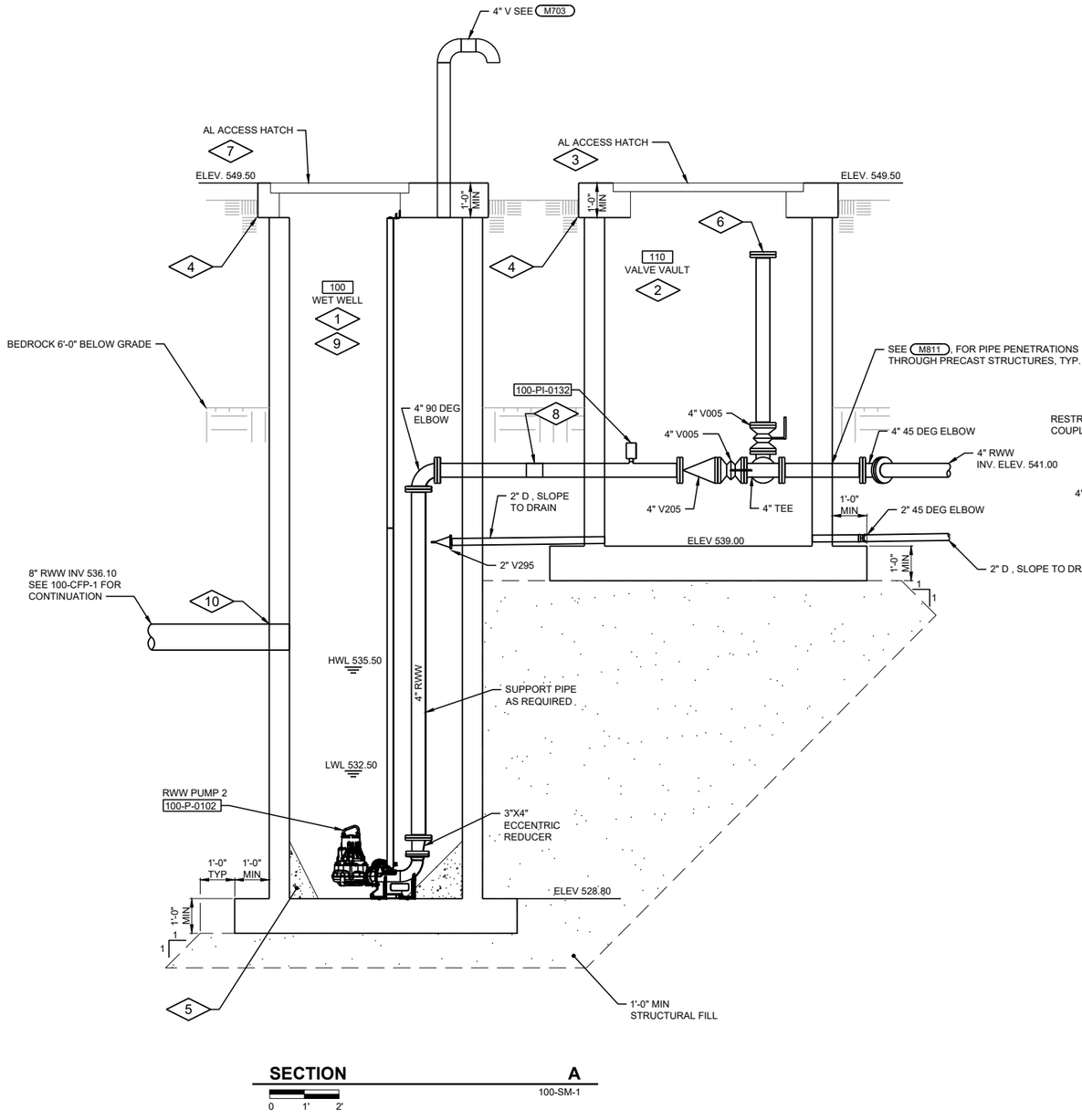
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

BENTON LIFT STATION PLANS

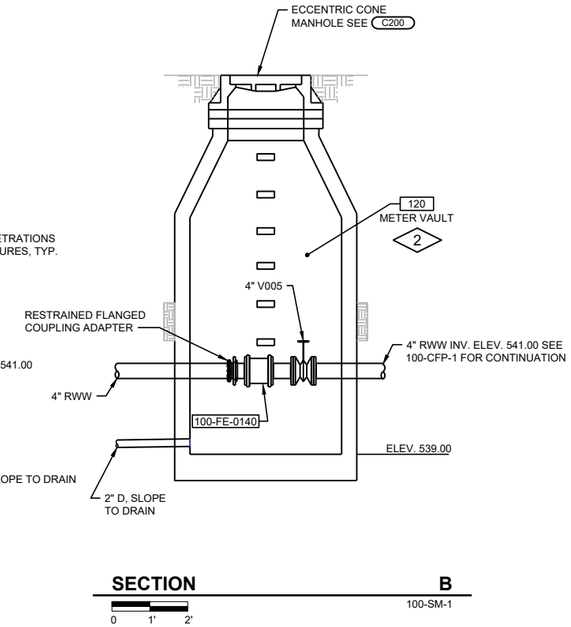
DONOHUE

Sheet No. 19

Drawing No. **100-SM-1**



SECTION A
100-SM-1
0 1' 2'



SECTION B
100-SM-1
0 1' 2'

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. CONTRACTOR TO REFER TO SPACE ENVIRONMENT AND HAZARDOUS RATING SCHEDULE PER 001-ENV-1 FOR HAZARDOUS RATINGS AND MATERIAL.

PLAN NOTES:

1. WET WELL CLASSIFIED AS
   CLASS I, DIVISION 1, HAZARDOUS LOCATION
2. VALVE VAULT AND METER VAULT CLASSIFIED AS
   CLASS I, DIVISION 2, HAZARDOUS LOCATION
3. ROUTE HATCH DRAIN TO FLOOR.
4. PROVIDE 1'-0" OF STRUCTURAL FILL UNDER THE SQUARE TOP SLAB.
5. CLASS B FIBER REINFORCED FILLETS. COORDINATE FILLET SIZE AND LOCATION WITH PUMP MFR.
6. 4" EMERGENCY CONNECTION, BLIND FLANGE END.
7. ROUTE HATCH DRAIN TO WET WELL BELOW.
8. MECHANICAL JOINT COUPLING
9. ADD RAVEN 405 COATING TO WET WELL PER MANUFACTURER RECOMMENDATIONS FOR APPLICATION, SURFACE PREPARATION AND ENVIRONMENTAL CONDITIONS.
10. CONNECT TO WET WELL, SEE M811

Revision Number	Revision Description	Drawn By	Checked By	Date

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Drawn By	ESF
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Filename	100SMP1.DWG
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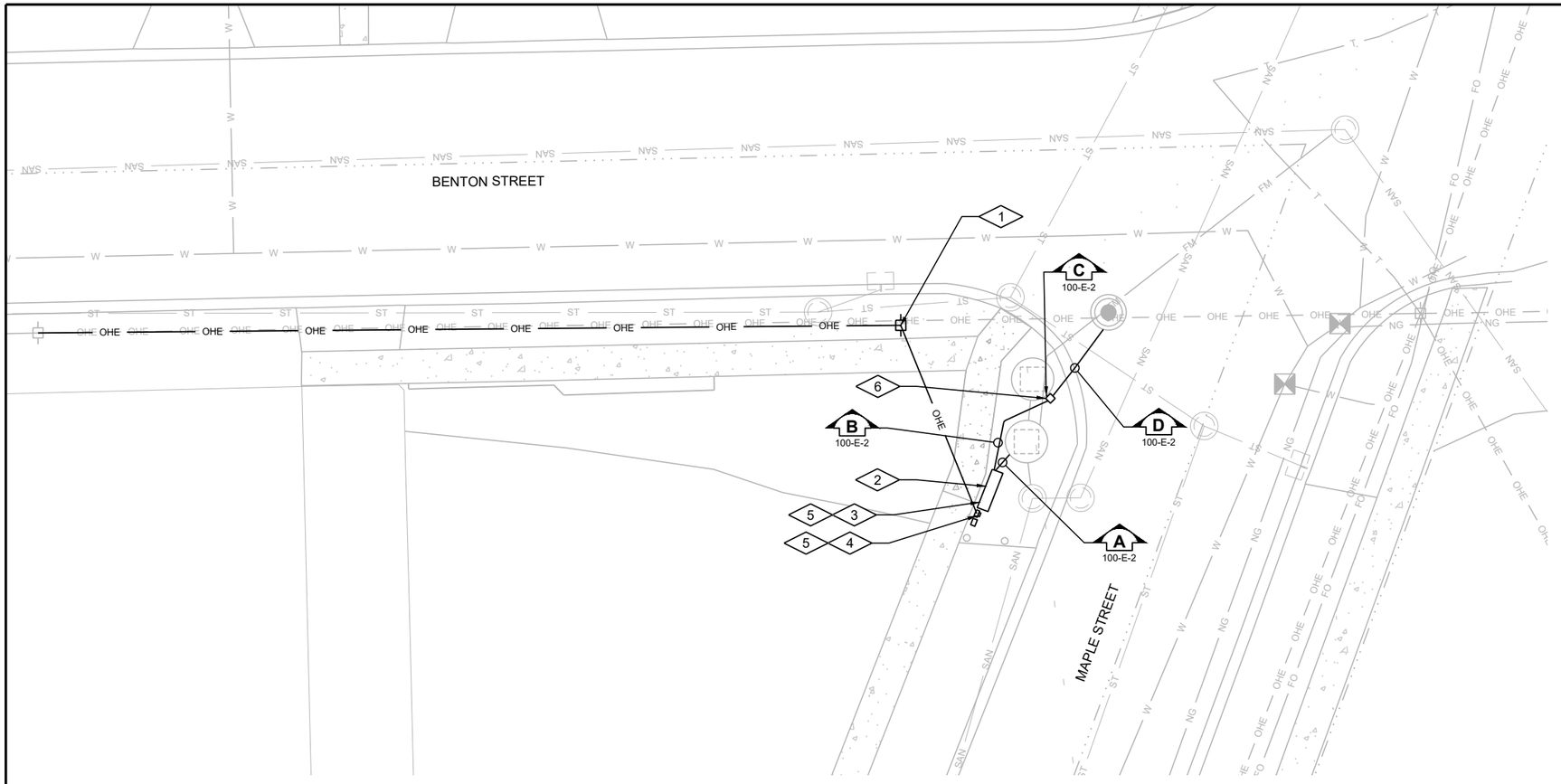
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

BENTON LIFT STATION
SECTION

DONOHUE

Sheet No. 20

Drawing No. 100-SM-2



GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS, ELEVATIONS AND LOCATIONS PRIOR TO CONSTRUCTION AND / OR FABRICATION.
2. REFER TO 001 DRAWINGS FOR THE SPACE ENVIRONMENT / HAZARDOUS RATING SCHEDULE REGARDING ENVIRONMENTAL CONDITIONS ANTICIPATED WITHIN EACH SPACE AND ALLOWABLE MATERIALS OF CONSTRUCTION TO BE USED WITHIN EACH SPACE.
3. HAZARDOUS RATINGS IDENTIFIED ON THIS DRAWING INDICATE SPACES IN WHICH A HAZARDOUS ENVIRONMENT MAY GENERALLY EXIST. CONTRACTOR SHALL REFER TO SPACE ENVIRONMENT / HAZARDOUS RATING SCHEDULE IN 001 SERIES OF DRAWINGS FOR ADDITIONAL INFORMATION EXPLAINING THE EXTENT AND ENVELOPE ASSOCIATED WITH THESE HAZARDS
4. SEE SECTION 01 11 00 FOR PROJECT CONSTRAINTS.
5. CONTRACTOR SHALL POT HOLE AND HAND DIG TO FIELD VERIFY EXISTING UTILITIES; SEE SECTION 31 10 00 FOR REQUIREMENTS.
6. CONTRACTOR SHALL NOTIFY OWNER AND ENGINEER IMMEDIATELY OF ANY DISCREPANCIES SHOWN ON THE DRAWINGS AND ANY CONFLICTS BETWEEN EXISTING AND NEW.
7. THE EXACT HORIZONTAL LOCATION OF HANDHOLES AND BENDS SHOWN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE IN ACCORDANCE WITH THE GENERAL CONFIGURATION SHOWN.
8. COSTS FOR SHEETING, SHORING, AND SUPPORT OF ADJACENT OR CROSSING PIPING AND ELECTRICAL CONDUITS IS ENTIRELY THE CONTRACTORS RESPONSIBILITY AND CAN BE MINIMIZED OR AVOIDED BY ADJUSTING THE INSTALLATION SEQUENCE.
9. SEE DETAIL (E011) FOR CONDUITS ENTERING WET WELL, VALVE VAULT AND METER VAULT.

PLAN NOTES:

1. PROVIDE 20-FT, SOUTHERN YELLOW PINE POWER POLE. POLE LOCATION SHALL BE COORDINATED WITH COMED.
2. CONTROL PANEL (100-CP-1); SEE DETAIL (N181) .
3. ELECTRIC METER.
4. SERVICE DISCONNECT (100-SD-1).
5. EQUIPMENT SHALL BE RACK MOUNTED; SEE (E301) DETAIL .
6. JUNCTION BOX (100-JBX-1); SEE DETAIL (E031) .

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	JRR/JCE
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CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

BENTON LIFT STATION
ELECTRICAL SITE PLAN

DONOHUE

Sheet No. 21

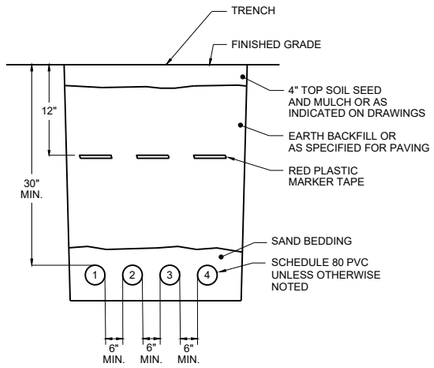
Drawing No. 100-EN-1

DUCTBANK SCHEDULE

NUMBER	SIZE	FROM	TO	CONTENTS	REMARKS
1	2"	100-CP-1	100-P-0101	POWER	VFC; 480V
2	2"	100-CP-1	100-P-0102	POWER	VFC; 480V
3	1"	100-CP-1	100-LE/LT-0120	ANALOG CONTROL	PVC COATED GRS
4	2"	100-CP-1	WET WELL	DISCRETE CONTROL	
5	1"	100-CP-1	100-JBX-1	ANALOG CONTROL	PVC COATED GRS
6	1"	100-CP-1	100-JBX-1	DISCRETE CONTROL	
7	1"	100-JBX-1	100-LSHH-0133	DISCRETE CONTROL	
8	1"	100-JBX-1	100-FE-0140	ANALOG CONTROL	PVC COATED GRS
9	1"	100-JBX-1	100-LSHH-0141	DISCRETE CONTROL	

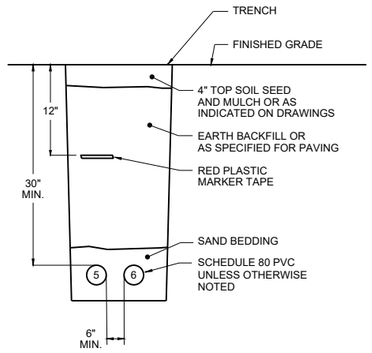
GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS, ELEVATIONS AND LOCATIONS PRIOR TO CONSTRUCTION AND / OR FABRICATION.
2. SEE SECTION 01 11 00 FOR PROJECT CONSTRAINTS.
3. CONDUIT ELBOWS IN UNDERGROUND DUCT BANKS SHALL BE PVC COATED GRS OR FIBERGLASS CONDUIT.
4. CONDUIT STUB-UPS SHALL PVC COATED GRS CONDUIT.
5. CONTRACTOR SHALL VERIFY CONDUIT DUCT BANK LAYOUTS. CONTRACTOR SHALL MODIFY CONDUIT LOCATIONS IN DUCT BANK TO SUIT FIELD CONDITIONS.
6. TOP OF DUCT BANKS SHALL BE A MINIMUM OF 30" BELOW GRADE IN VEHICULAR TRAFFIC AREAS.



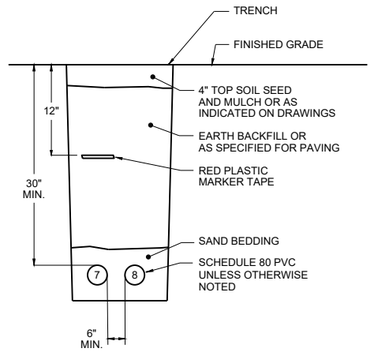
CONDUIT SECTION A

NTS 100-EN-1



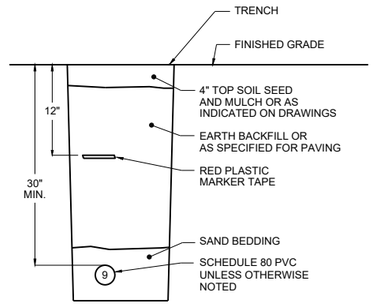
CONDUIT SECTION B

NTS 100-EN-1



CONDUIT SECTION C

NTS 100-EN-1



CONDUIT SECTION D

NTS 100-EN-1

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	JRR
Drawn By	JRR
Checked By	JTB
Approved By	JTB
Filename	002ENP1.DWG
Project No.	14163
Project Date	FEB 2024

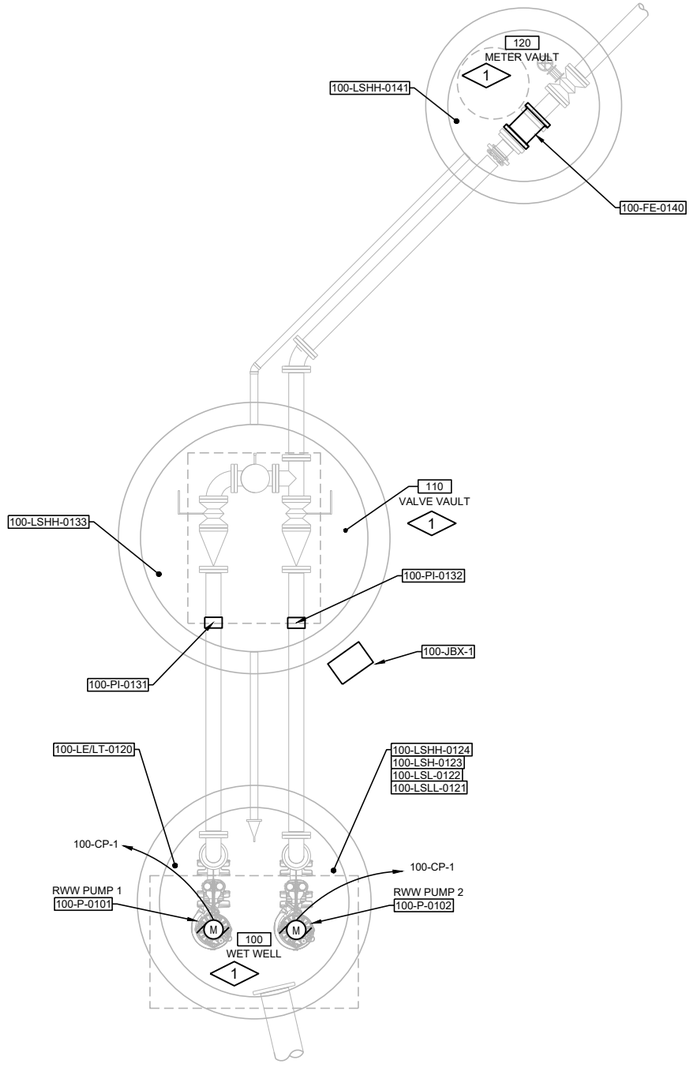
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

BENTON LIFT STATION
DUCT BANK SCHEDULE & SECTIONS

DONOHUE

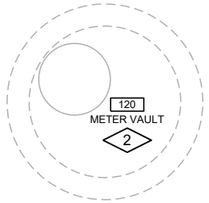
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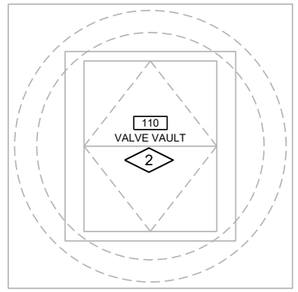
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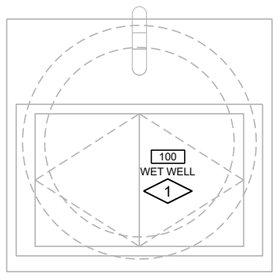


LOWER PLAN

0 1' 2'







UPPER PLAN

0 1' 2'

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. CONTRACTOR TO REFER TO SPACE ENVIRONMENT AND HAZARDOUS RATING SCHEDULE PER 001-ENV-1 FOR HAZARDOUS RATINGS AND MATERIAL.

PLAN NOTES:

1. WET WELL CLASSIFIED AS

   CLASS I, DIVISION 1, HAZARDOUS LOCATION

2. VALVE VAULT, AND METER VAULT CLASSIFIED AS

   CLASS I, DIVISION 2, HAZARDOUS LOCATION

3. LOCATION FOR 100-CP-1 SHOWN ON 100-EN-1.

3

TAG	DESCRIPTION	DETAIL	WIRING	DESTINATION
100-CP-1	BENTON LIFT STATION CONTROL PANEL	N181	--	--
100-SPD-1	SURGE PROTECTIVE DEVICE	MFR.	(2) #14	100-CP-1
100-P-0101	RWW PUMP 1	MFR.	(1) VFC	100-CP-1
100-P-0102	RWW PUMP 2	MFR.	(1) VFC	100-CP-1
100-LE/LT-0120	WET WELL RADAR LEVEL TRANSDUCER	N238	(1) VFC	100-CP-1
100-LSLL-0121	WET WELL LOW LEVEL BALL FLOAT SWITCH	N269	(1) VFC	100-CP-1
100-LSL-0122	WET WELL PUMP STOP BALL FLOAT SWITCH	N269	(1) VFC	100-CP-1
100-LSH-0123	WET WELL PUMP START BALL FLOAT SWITCH	N269	(1) VFC	100-CP-1
100-LSHH-0124	WET WELL HIGH LEVEL BALL FLOAT SWITCH	N269	(1) VFC	100-CP-1
100-PI-0131	RWW PUMP 1 DISCHARGE PRESSURE GAUGE	N590	--	--
100-PI-0132	RWW PUMP 2 DISCHARGE PRESSURE GAUGE	N590	--	--
100-JBX-1	INSTRMENTATION SPLICE BOX	E031	(4) #14	100-CP-1
			(1)STP	100-CP-1
100-LSHH-0133	VALVE VAULT FLOODED VERTICAL FLOAT SWITCH	N275	(2) #14	100-JBX-1
100-FE-0140*	BENTON PUMP STATION FLOW METER	N382	(2) VFC	100-JBX-1
100-LSHH-0141	METER VAULT FLOODED VERTICAL FLOAT SWITCH	N275	(2) #14	100-JBX-1
* - NUMBER OF CONDUCTORS MAY VARY BY MANUFACTURER.				
SEE 999-N-1 FOR ADDITIONAL GENERAL NOTES.				

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	JRR/JCE
Drawn By	JRR/JCE
Checked By	JTB/AHB
Approved By	JTB/AHB
Filename	100ENP1.DWG
Project No.	14163
Project Date	FEB 2024

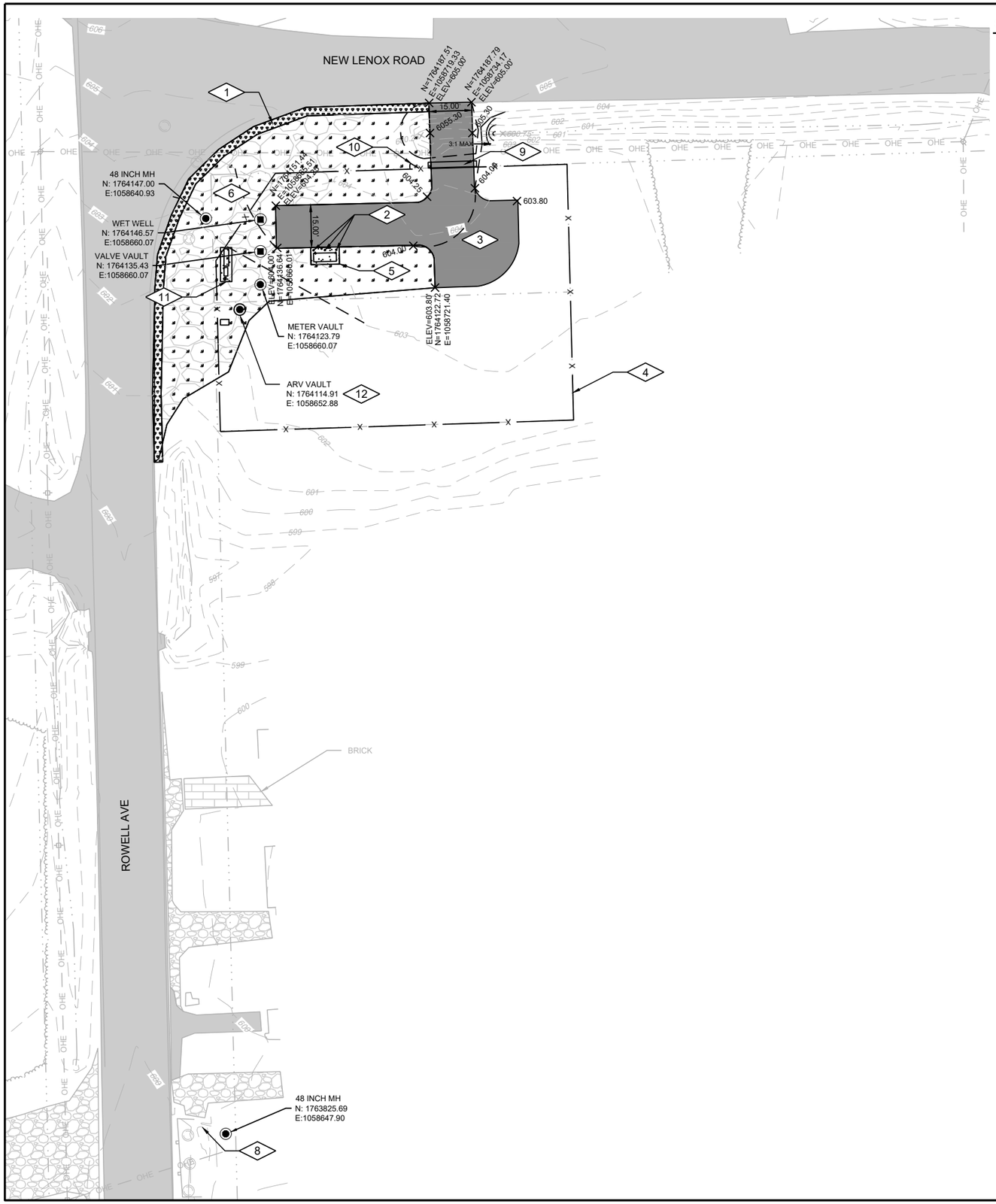
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

BENTON LIFT STATION PLANS

DONOHUE

Sheet No. 23

Drawing No. 100-EN-3



GENERAL NOTES:

1. ALL EXISTING FEATURES SHALL BE FIELD VERIFIED FOR LOCATION AND ELEVATION. CONTACT ENGINEER IF UNKNOWN CONFLICTS EXIST.
2. RESTORE ALL SHOWN AND DAMAGED AREAS WITH SEED AND MULCH. SEE C050
3. RESTORE ALL EXCAVATED AREAS TO THE EXISTING CONTOURS EXCEPT WHERE PROPOSED CONTOURS ARE SHOWN. C111

PLAN NOTES:

1. 3-FOOT WIDE GRAVEL SHOULDER C111
2. PROVIDE GUARD POSTS (BOLLARDS), COORDINATE LOCATIONS WITH OWNER, PER DETAIL: S101
3. PROVIDE ASPHALT DRIVEWAY, PER DETAIL: C118
4. PROVIDE FENCE, PER DETAIL: C703 C705
5. SEE DETAIL S348 FOR GENERATOR PAD.
6. REMOVE EXISTING GRAVEL PARKING AREA TO 6 INCHES BELOW EXISTING GRADE, REPLACE WITH TOP SOIL TO EXISTING GRADE. SEED GRASS. C050
7. REMOVE EXISTING VALVE VAULT. FILL WITH EXCAVATION SPOIL. SEE 210-R-1 FOR ADDITIONAL INFORMATION.
8. RESTORE RIP RAP TO ORIGINAL CONDITION AFTER CONSTRUCTION. C113 C114
9. INSTALL FENCE SLIDE GATE WITH 10 FOOT WIDE OPENING, PER DETAIL: C710
10. INSTALL PERSON SWING GATE, PER DETAIL: C711
11. INSTALL 12-FOOT BY 4-FOOT CONCRETE PAD, PER DETAIL: S348
12. 48 INCH AIR RELEASE VALVE (ARV) VAULT, PER DETAIL: C410

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	REK
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Approved By	EPC
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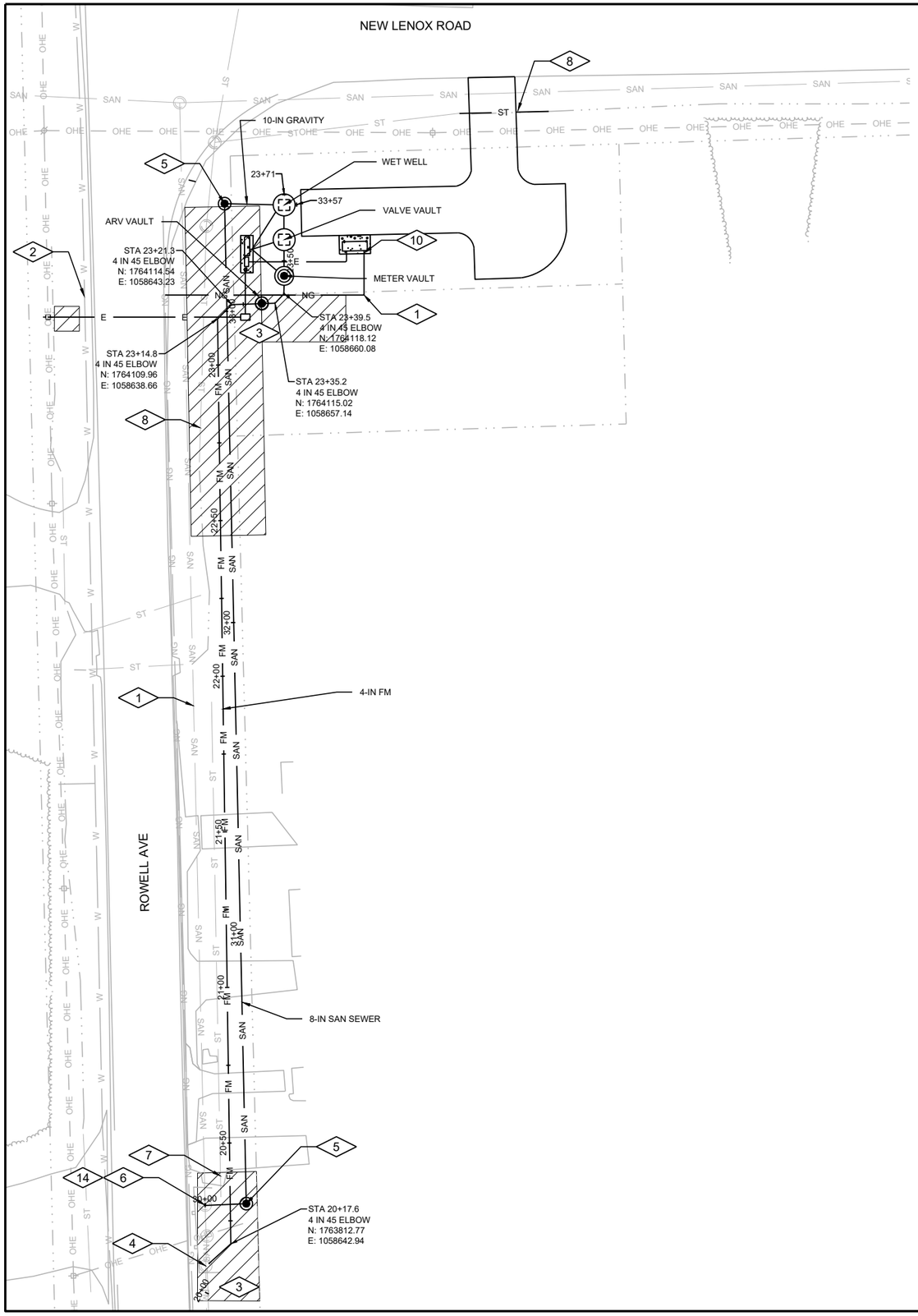
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GREENFIELD LIFT STATION
FACILITY SITE PLAN

DONOHUE

Sheet No. 24

Drawing No. 200-CF-1



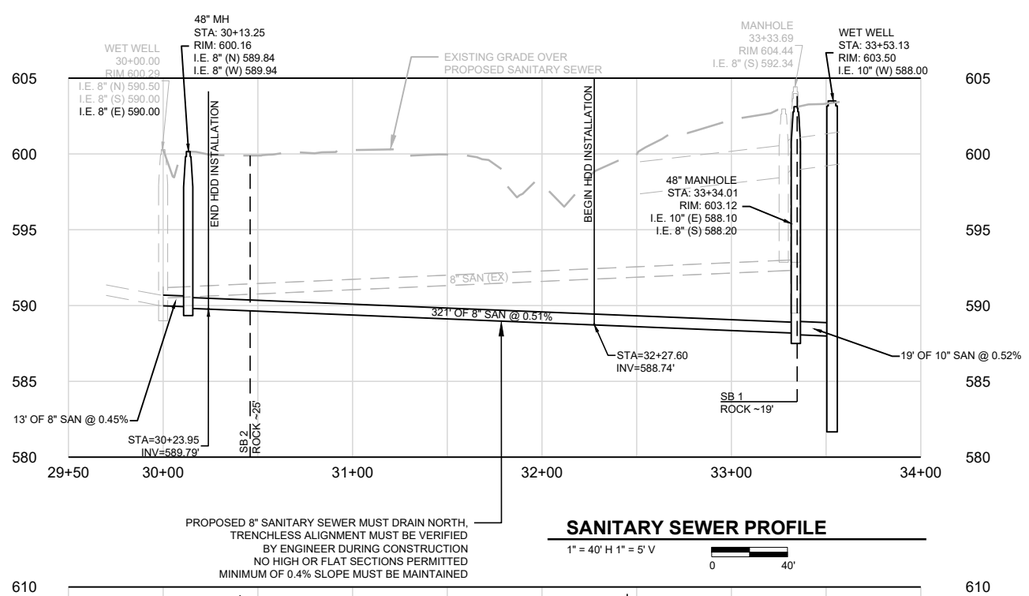
GENERAL NOTES:

1. ALL EXISTING PIPING AND UTILITIES SHALL BE FIELD VERIFIED FOR LOCATION AND ELEVATION. CONTACT ENGINEER IF UNKNOWN CONFLICTS EXIST.
2. INSTALL PIPING IN CONFORMANCE WITH APPROPRIATE TRENCHING, BEDDING AND BACKFILL REQUIREMENTS. SEE DETAILS C500 C505 C506 C507
3. PROVIDE RESTRAINED JOINTS AT ALL BENDS AND DEFLECTIONS IN FORCEMAIN AND FOR 50 FT MINIMUM ON EACH SIDE.
4. FOR SANITARY INSTALLATION, HDPE SHALL BE USED ON THE FORCE MAIN WHEN USING TRENCHLESS METHODS, DUCTILE IRON AT STRUCTURES AND FITTINGS. PVC SHALL BE USED FOR BOTH TRENCHED AND TRENCHLESS INSTALLATION ON THE GRAVITY SEWER.
5. ALL SANITARY PIPES ARE REQUIRED TO HAVE 4 FEET OF COVER.
6. FIELD LOCATE EXISTING SANITARY SERVICES. PROTECT DURING CONSTRUCTION.
7. AT CONTRACTOR'S DISCRETION, OPEN CUT INSTALLATION MAY BE USED. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING PROJECT AGREEMENTS WITH ALL IMPACTED PARCEL OWNERS, LOCATION AND PROTECTION OF SERVICES, AND ALL OTHER COSTS ASSOCIATED WITH OPEN CUT INSTALLATION PER CITY DETAILS.
8. CONTRACTOR SHALL SHUTDOWN PUMPS OR SAN FLOW FOR MAXIMUM OF 2 HOURS UNLESS BYPASS FACILITIES ARE PROVIDED.

PLAN NOTES:

1. NEW UNDERGROUND NATURAL GAS SERVICE BY LOCAL UTILITY (NICOR). CONTRACTOR TO COORDINATE AND PAY FOR ASSOCIATED COSTS, AND COMPLY WITH NICOR SERVICE AGREEMENTS. PROVIDE NG PIPING FROM REGULATOR TO GENERATOR INLET, SPECIFICALLY A NEW 1 INCH SERVICE TO DELIVER 5-11 INCHES WC FOR A 30 KW STANDBY GENERATOR (±102,365 BTU/HR) AND METER.
2. PROTECT EXISTING WATER LINE.
3. PROPOSED PITS FOR TRENCHLESS INSTALLATION.
4. TIE INTO EXISTING 4 INCH DUCTILE FORCEMAIN WITH WYE FITTING. SEE 210-M-1 FOR DETAILS.
5. 48 INCH MANHOLE C200
6. EXISTING WET WELL, CORE IN SANITARY SEWER PIPE WITH BOOTED CONNECTION. C220
7. PROTECT EXISTING STORM, PROVIDE INLET PROTECTION. REMOVE AND REPLACE IN KIND IF NECESSARY. C550
8. PROVIDE 24 INCH CPP CULVERT BELOW NEW DRIVEWAY, CONNECTING TO EXISTING WITH GRAVITY FLOW COUPLER, PRINSCO GOLDLOK OR EQUAL. MATCH EXISTING CULVERT ELEVATION ON WEST SIDE (600.23), AND AN EAST INVERT OF 600.75. SHOWN WITH A ±6 DEGREE DEFLECTION, SPREAD OUT OVER PIPE SEGMENTS. PROVIDE RIP RAP WITH FABRIC AT OPEN END OF PIPE, PER DETAIL: C113 C114 C310
9. PROVIDE INTERIOR CORROSION CONTROL COATING: RAVEN 405 OR SHERWIN-WILLIAMS DURAPLATE 6100.
10. AT NATURAL GAS SERVICE CONNECTION, MAKE FINAL CONNECTION TO GENERATOR WITH BALL VALVE, UNION, DIRT LEG, AND FLEXIBLE CONNECTION. INSTALL METER ON GENERATOR PAD.

0 20'

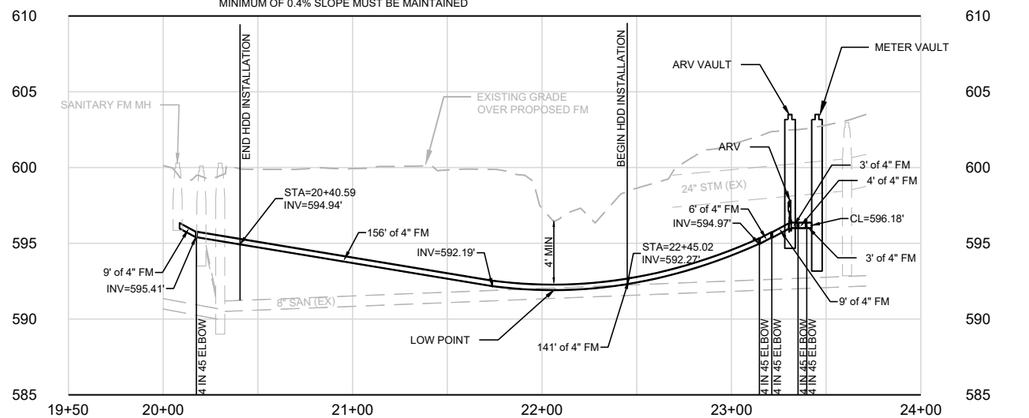


PROPOSED 8" SANITARY SEWER MUST DRAIN NORTH,
TRENCHLESS ALIGNMENT MUST BE VERIFIED
BY ENGINEER DURING CONSTRUCTION
NO HIGH OR FLAT SECTIONS PERMITTED
MINIMUM OF 0.4% SLOPE MUST BE MAINTAINED

SANITARY SEWER PROFILE

1" = 40' H 1" = 5' V

0 40'



SANITARY FORCEMAIN PROFILE

1" = 40' H 1" = 5' V

NO INTERMITTENT HIGH POINTS PERMITTED

0 40'

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	REK
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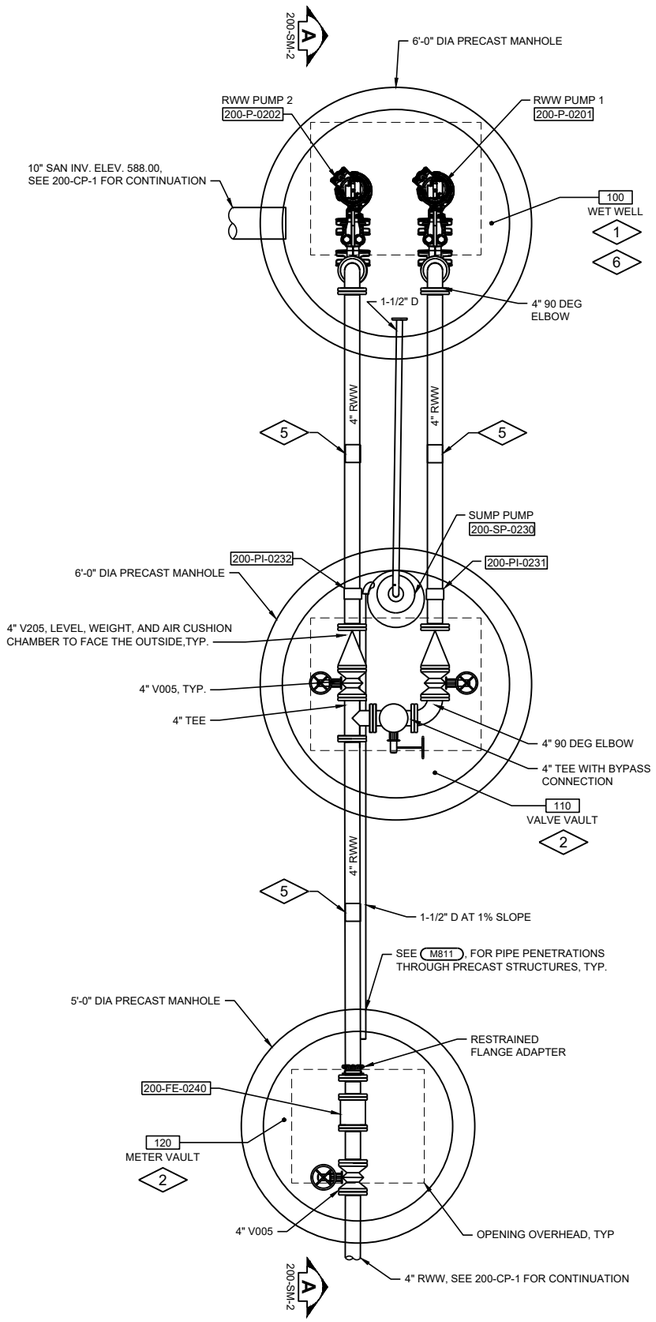
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GREENFIELD LIFT STATION
SITE PIPING PLAN

DONOHUE

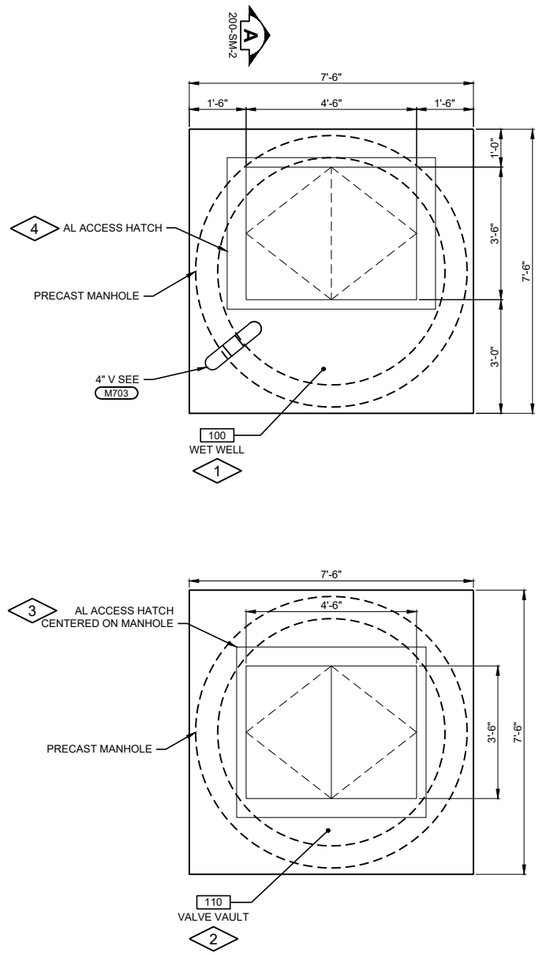
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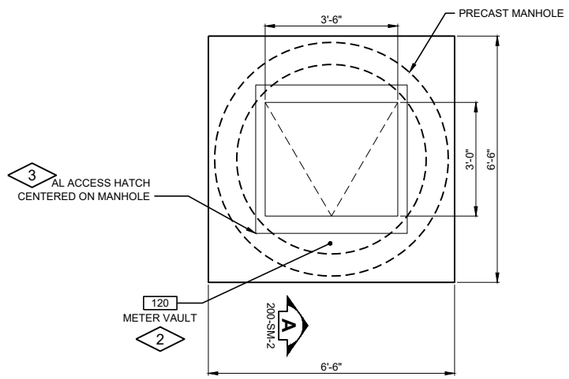
Drawing No. 200-CP-1



LOWER PLAN

0 1' 2'





UPPER PLAN

0 1' 2'

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. CONTRACTOR TO REFER TO SPACE ENVIRONMENT AND HAZARDOUS RATING SCHEDULE PER 001-ENV-1 FOR HAZARDOUS RATINGS AND MATERIAL.

PLAN NOTES:

1. WET WELL CLASSIFIED AS
   CLASS I, DIVISION 1, HAZARDOUS LOCATION
2. VALVE VAULT AND METER VAULT CLASSIFIED AS
   CLASS I, DIVISION 2, HAZARDOUS LOCATION
3. ROUTE HATCH DRAIN TO FLOOR BELOW.
4. ROUTE HATCH DRAIN TO WET WELL BELOW.
5. MECHANICAL JOINT COUPLING
6. ADD RAVEN 405 COATING TO WET WELL PER MANUFACTURER RECOMMENDATIONS FOR APPLICATION, SURFACE PREPARATION AND ENVIRONMENTAL CONDITIONS.

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	KJA
Drawn By	ESF
Checked By	CEE/EPC
Approved By	CEE/EPC
Filename	200SMP1.DWG
Project No.	14163
Project Date	FEB 2024

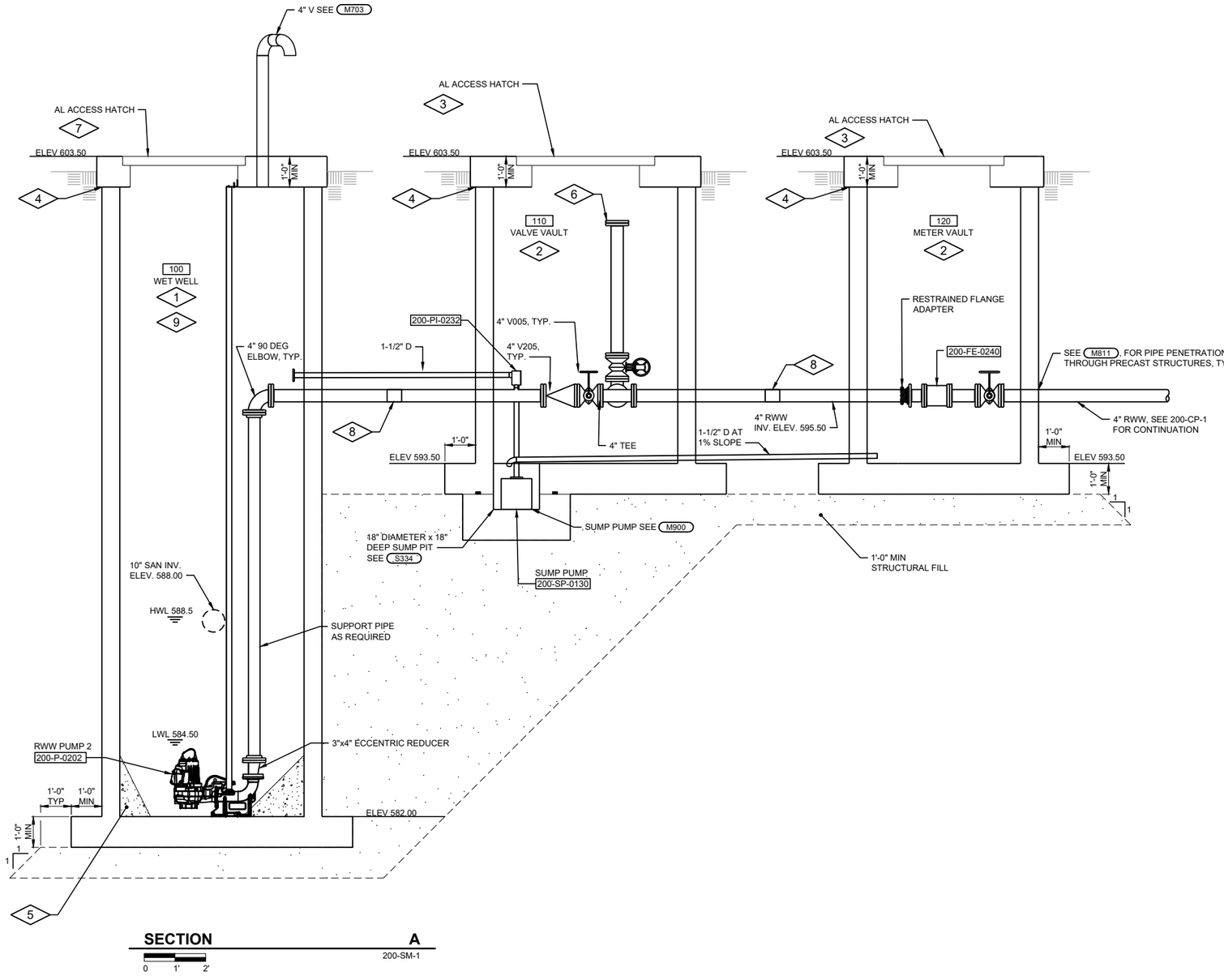
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GREENFIELD LIFT STATION
PLANS

DONOHUE

Sheet No. 26

Drawing No. 200-SM-1



SECTION A

200-SM-1

0 1' 2'

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. CONTRACTOR TO REFER TO SPACE ENVIRONMENT AND HAZARDOUS RATING SCHEDULE PER 001-ENV-1 FOR HAZARDOUS RATINGS AND MATERIAL.

PLAN NOTES:

1. WET WELL CLASSIFIED AS

   CLASS I, DIVISION 1, HAZARDOUS LOCATION

2. VALVE VAULT AND VALVE VAULT CLASSIFIED AS

   CLASS I, DIVISION 2, HAZARDOUS LOCATION

3. ACCESS HATCH WITH DRAINAGE CHANNEL. ROUTE HATCH DRAIN TO FLOOR BELOW.
4. PROVIDE 1'-0" OF STRUCTURAL FILL UNDER THE SQUARE TOP SLAB.
5. CLASS B FIBER REINFORCED FILLETS. COORDINATE FILLET SIZE AND LOCATION WITH PUMP MFR.
6. 4" EMERGENCY CONNECTION, BLIND FLANGE END.
7. ROUTE HATCH DRAIN TO WET WELL BELOW.
8. MECHANICAL JOINT COUPLING
9. ADD RAVEN 405 COATING TO WET WELL PER MANUFACTURER RECOMMENDATIONS FOR APPLICATION, SURFACE PREPARATION AND ENVIRONMENTAL CONDITIONS.

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	KJA
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Filename	200SMP1.DWG
Project No.	14163
Project Date	FEB 2024

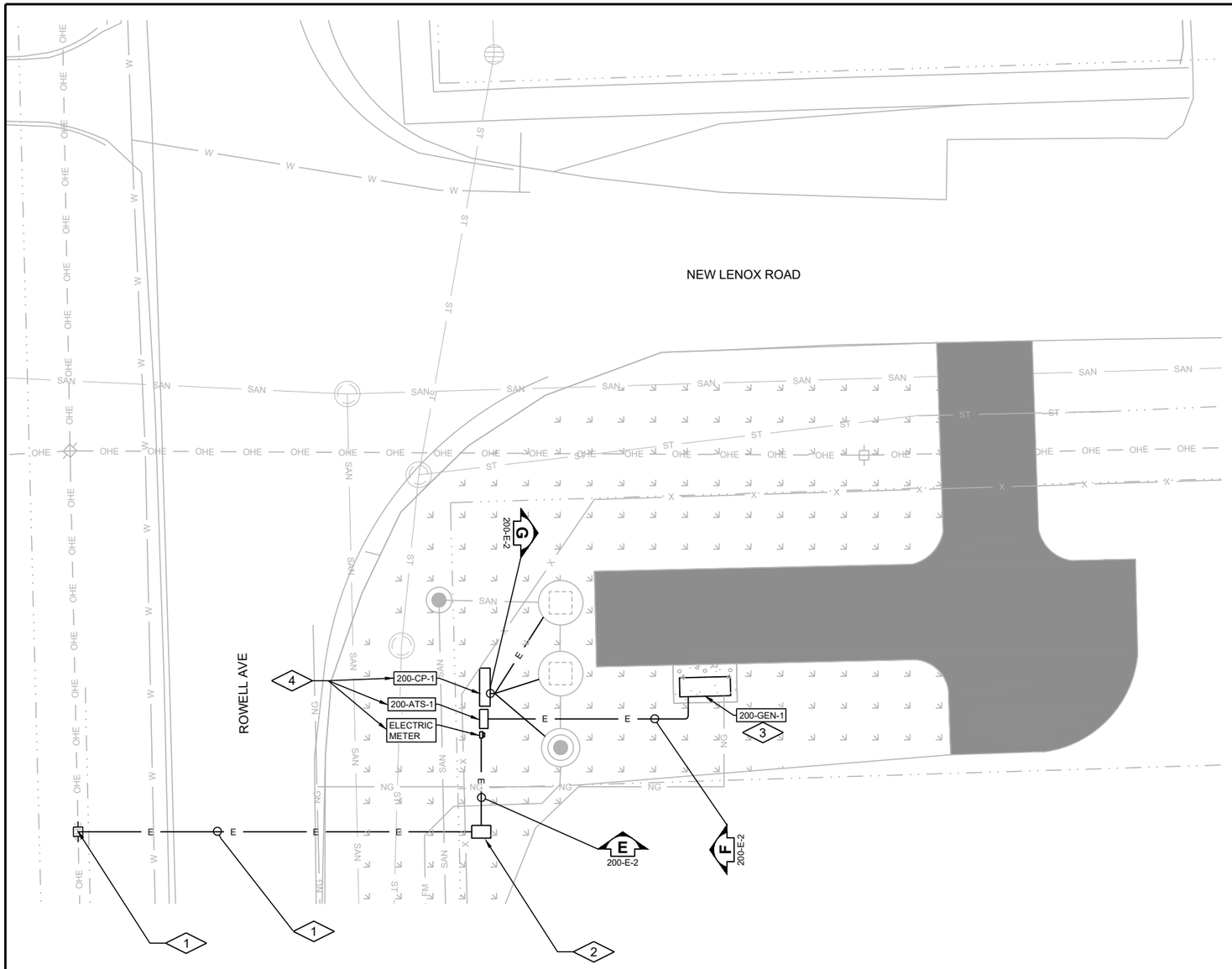
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GREENFIELD LIFT STATION
SECTION

DONOHUE

Sheet No. 27

Drawing No. 200-SM-2



GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS, ELEVATIONS AND LOCATIONS PRIOR TO CONSTRUCTION AND / OR FABRICATION.
2. REFER TO 001 DRAWINGS FOR THE SPACE ENVIRONMENT / HAZARDOUS RATING SCHEDULE REGARDING ENVIRONMENTAL CONDITIONS ANTICIPATED WITHIN EACH SPACE AND ALLOWABLE MATERIALS OF CONSTRUCTION TO BE USED WITHIN EACH SPACE.
3. HAZARDOUS RATINGS IDENTIFIED ON THIS DRAWING INDICATE SPACES IN WHICH A HAZARDOUS ENVIRONMENT MAY GENERALLY EXIST. CONTRACTOR SHALL REFER TO SPACE ENVIRONMENT / HAZARDOUS RATING SCHEDULE IN 001 SERIES OF DRAWINGS FOR ADDITIONAL INFORMATION EXPLAINING THE EXTENT AND ENVELOPE ASSOCIATED WITH THESE HAZARDS
4. SEE SECTION 01 11 00 FOR PROJECT CONSTRAINTS.
5. CONTRACTOR SHALL POT HOLE AND HAND DIG TO FIELD VERIFY EXISTING UTILITIES; SEE SECTION 31 10 00 FOR REQUIREMENTS.
6. CONTRACTOR SHALL NOTIFY OWNER AND ENGINEER IMMEDIATELY OF ANY DISCREPANCIES SHOWN ON THE DRAWINGS AND ANY CONFLICTS BETWEEN EXISTING AND NEW.
7. THE EXACT HORIZONTAL LOCATION OF HANDHOLES AND BENDS SHOWN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE IN ACCORDANCE WITH THE GENERAL CONFIGURATION SHOWN.
8. COSTS FOR SHEETING, SHORING, AND SUPPORT OF ADJACENT OR CROSSING PIPING AND ELECTRICAL CONDUITS IS ENTIRELY THE CONTRACTORS RESPONSIBILITY AND CAN BE MINIMIZED OR AVOIDED BY ADJUSTING THE INSTALLATION SEQUENCE.
9. SEE DETAIL (E011) FOR CONDUITS ENTERING WET WELL, VALVE VAULT AND METER VAULT.

0 10'

PLAN NOTES:

1. NEW POWER POLE PROVIDED BY COMED; CONTRACTOR TO COORDINATE WITH COMED FOR EXACT POLE LOCATION. SEE DRAWING 200-CP-1 FOR TRENCHLESS INSTALLATION REQUIREMENTS BENEATH ROWELL AVE.
2. ELECTRIC HANDHOLE; SEE DETAIL (E234) . HANDHOLE SHALL BE SET AFTER TRENCHLESS INSTALLATION IS COMPLETE.
3. INSTALL OWNER FURNISHED GENERATOR. SEE DETAIL (E450) .
4. EQUIPMENT SHALL BE RACK MOUNTED; SEE (E302) DETAIL .

TAG	EQUIPMENT	DETAIL	WIRING	DESTINATION
200-CP-1	GREENFIELD LIFT STATION CONTROL PANEL	N181	-	-
200-ATS-1	AUTOMATIC TRANSFER SWITCH	MFR.	(8) #14	200-CP-1
			(4) #14	200-GEN-1
200-GEN-1	STANDBY GENERATOR	MFR.	(10) #14	200-CP-1

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	JRR/JCE
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Project No.	14163
Project Date	FEB 2024

CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GREENFIELD LIFT STATION
ELECTRICAL SITE PLAN

DONOHUE

Sheet No. 28

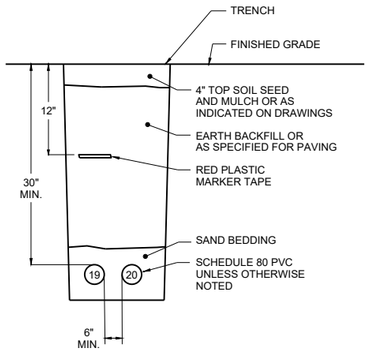
Drawing No. 200-EN-1

DUCTBANK SCHEDULE

NUMBER	SIZE	FROM	TO	CONTENTS	REMARKS
10	2"	200-CP-1	200-P-0201	POWER	VFC; 480V
11	2"	200-CP-1	200-P-0202	POWER	VFC; 480V
12	1"	200-CP-1	100-LE/LT-0220	ANALOG CONTROL	PVC COATED GRS
13	2"	200-CP-1	WET WELL	DISCRETE CONTROL	
14	1"	200-CP-1	200-LSHH-0233	DISCRETE CONTROL	
15	1"	200-CP-1	200-FE-0240	ANALOG CONTROL	PVC COATED GRS;VIA 200-JBX-1
16	1"	200-CP-1	200-LSHH-0241	DISCRETE CONTROL	
17	2"	METER	COMED POLE	POWER	277/480V VIA HANDHOLE
18	2"	METER	COMED POLE	POWER	VIA HANDHOLE
19	1"	200-CP-1	200-SP-0230	POWER	120V
20	1"	200-GEN-1	200-ATS-1	POWER	277/480V
21	1"	200-GEN-1	200-ATS-1	SPARE	
22	1"	200-ATS-1	200-GEN-1	DISCRETE CONTROL	
23	1"	200-ATS-1	200-CP-1	DISCRETE CONTROL	
24	1"	200-GEN-1	200-CP-1	DISCRETE CONTROL	

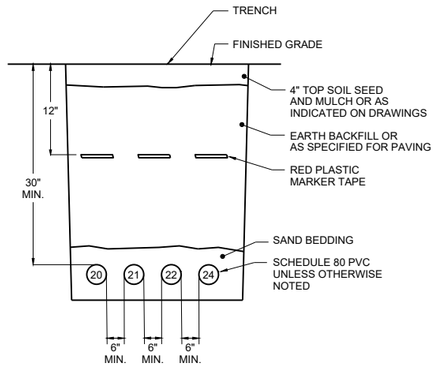
GENERAL NOTES:

1. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS, ELEVATIONS AND LOCATIONS PRIOR TO CONSTRUCTION AND / OR FABRICATION.
2. SEE SECTION 01 11 00 FOR PROJECT CONSTRAINTS.
3. CONDUIT ELBOWS IN UNDERGROUND DUCT BANKS SHALL BE PVC COATED GRS OR FIBERGLASS CONDUIT.
4. CONDUIT STUB-UPS SHALL PVC COATED GRS CONDUIT.
5. CONTRACTOR SHALL VERIFY CONDUIT DUCT BANK LAYOUTS. CONTRACTOR SHALL MODIFY CONDUIT LOCATIONS IN DUCT BANK TO SUIT FIELD CONDITIONS.
6. TOP OF DUCT BANKS SHALL BE A MINIMUM OF 30" BELOW GRADE IN VEHICULAR TRAFFIC AREAS.



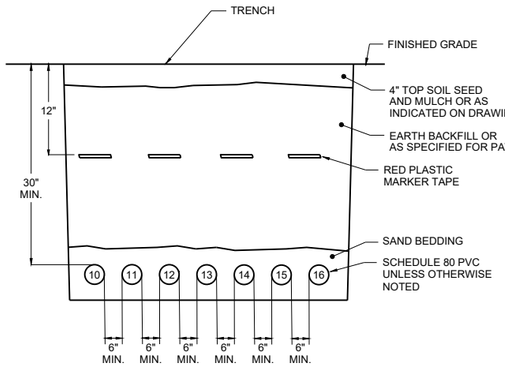
CONDUIT SECTION E

NTS 200-EN-1



CONDUIT SECTION F

NTS 200-EN-1



CONDUIT SECTION G

NTS 200-EN-1

Revision Number	Revision Description	Drawn By	Checked By	Date

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Project No.	14163
Project Date	FEB 2024

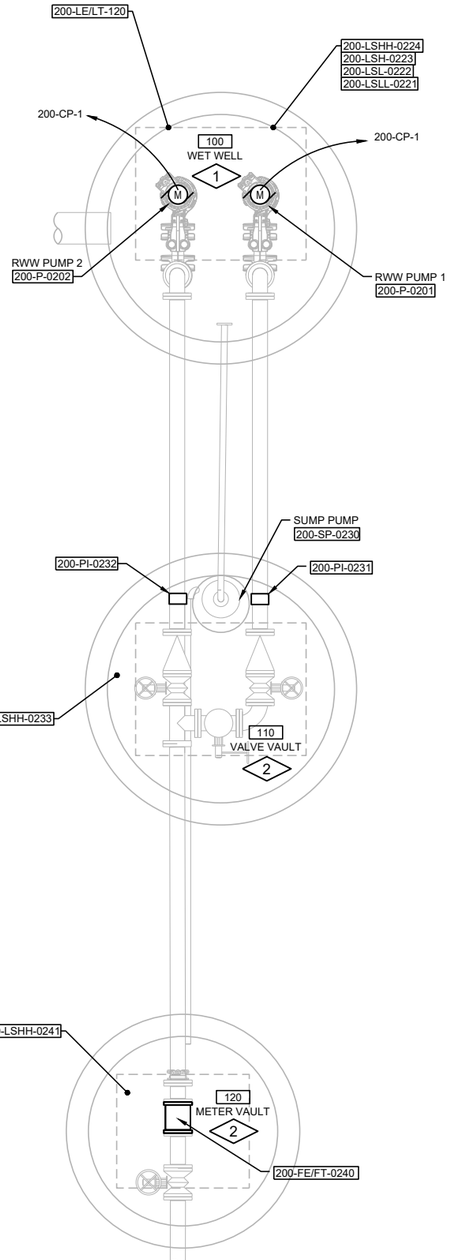
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GREENFIELD LIFT STATION
DUCT BANK SCHEDULE & SECTIONS

DONOHUE

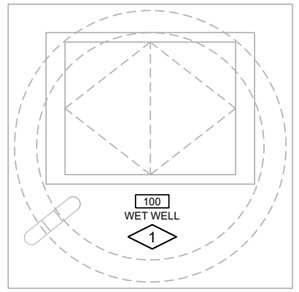
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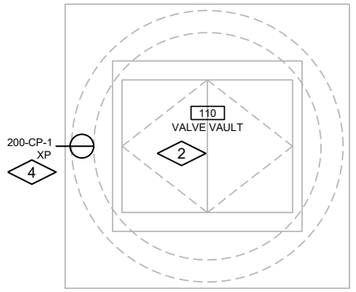
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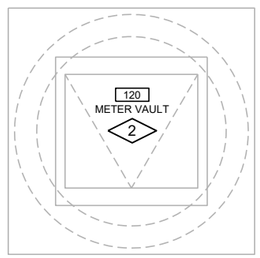


LOWER PLAN

0 1' 2'







UPPER PLAN

0 1' 2'

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. CONTRACTOR TO REFER TO SPACE ENVIRONMENT AND HAZARDOUS RATING SCHEDULE PER 001-ENV-1 FOR HAZARDOUS RATINGS AND MATERIAL.

PLAN NOTES:

1. WET WELL CLASSIFIED AS:
   CLASS I, DIVISION 1, HAZARDOUS LOCATION
2. VALVE VAULT AND METER VAULT CLASSIFIED AS:
   CLASS I, DIVISION 2, HAZARDOUS LOCATION
3. LOCATION FOR 200-CP-1 SHOWN ON 200-EN-1.
4. SEE DETAIL E099

3

TAG	DESCRIPTION	DETAIL	WIRING	DESTINATION
200-CP-1	GREENFIELD LIFT STATION CONTROL PANEL	N181	--	--
200-SPD-1	SURGE PROTECTION DEVICE	MFR.	(2) #14	200-CP-1
200-P-0201	RWW PUMP 1	MFR.	(1) VFC	200-CP-1
200-P-0202	RWW PUMP 2	MFR.	(1) VFC	200-CP-1
200-LE/LT-0220	WET WELL RADAR LEVEL TRANSDUCER	N238	(1) #VFC	200-CP-1
200-LSLL-0221	WET WELL LOW LEVEL BALL FLOAT SWITCH	N269	(1) VFC	200-CP-1
200-LSL-0222	WET WELL PUMP STOP BALL FLOAT SWITCH	N269	(1) VFC	200-CP-1
200-LSH-0223	WET WELL PUMP START BALL FLOAT SWITCH	N269	(1) VFC	200-CP-1
200-LSHH-0224	WET WELL HIGH LEVEL BALL FLOAT SWITCH	N269	(1) VFC	200-CP-1
200-PI-0231	RWW PUMP 1 DISCHARGE PRESSURE GAUGE	N590	(1) VFC	--
200-PI-0232	RWW PUMP 2 DISCHARGE PRESSURE GAUGE	N590	(1) VFC	--
200-LSHH-0233	VALVE VAULT FLOODED VERTICAL FLOAT SWITCH	N269	(2) #14	200-CP-1
200-FE-0240*	GREENFIELD PUMP STATION FLOW METER	N382	(1) VFC	200-CP-1
200-LSHH-0241	METER VAULT FLOODED VERTICAL FLOAT SWITCH	N269	(2) #14	200-CP-1
* - NUMBER OF CONDUCTORS MAY VARY BY MANUFACTURER.				
SEE 999-N-1 FOR ADDITIONAL GENERAL NOTES.				

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	JRR/JCE
Drawn By	JRR/JCE
Checked By	JTB/AHB
Approved By	JTB/AHB
Filename	200ENP1.DWG
Project No.	14163
Project Date	FEB 2024

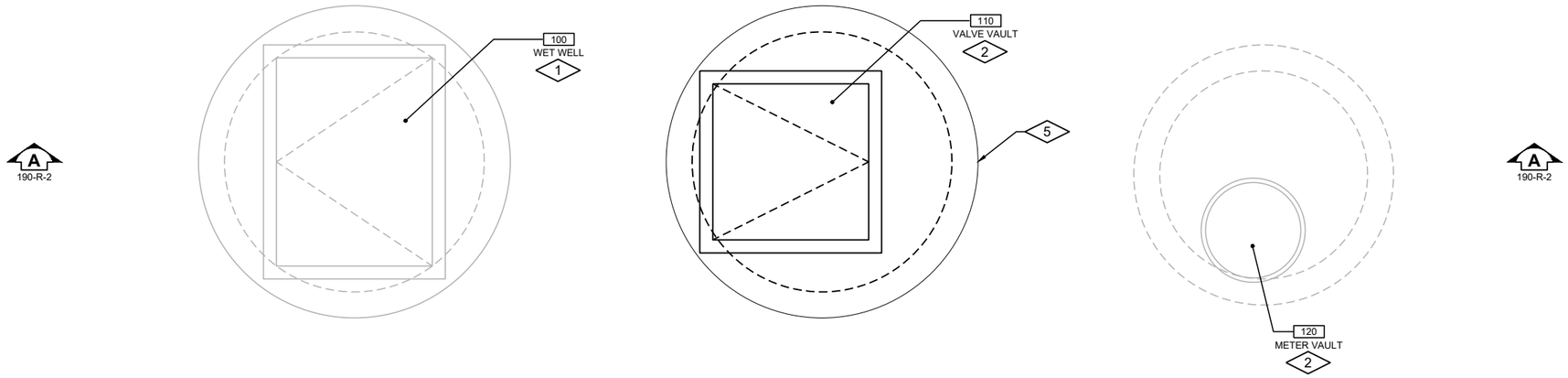
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GREENFIELD LIFT STATION PLANS

DONOHUE

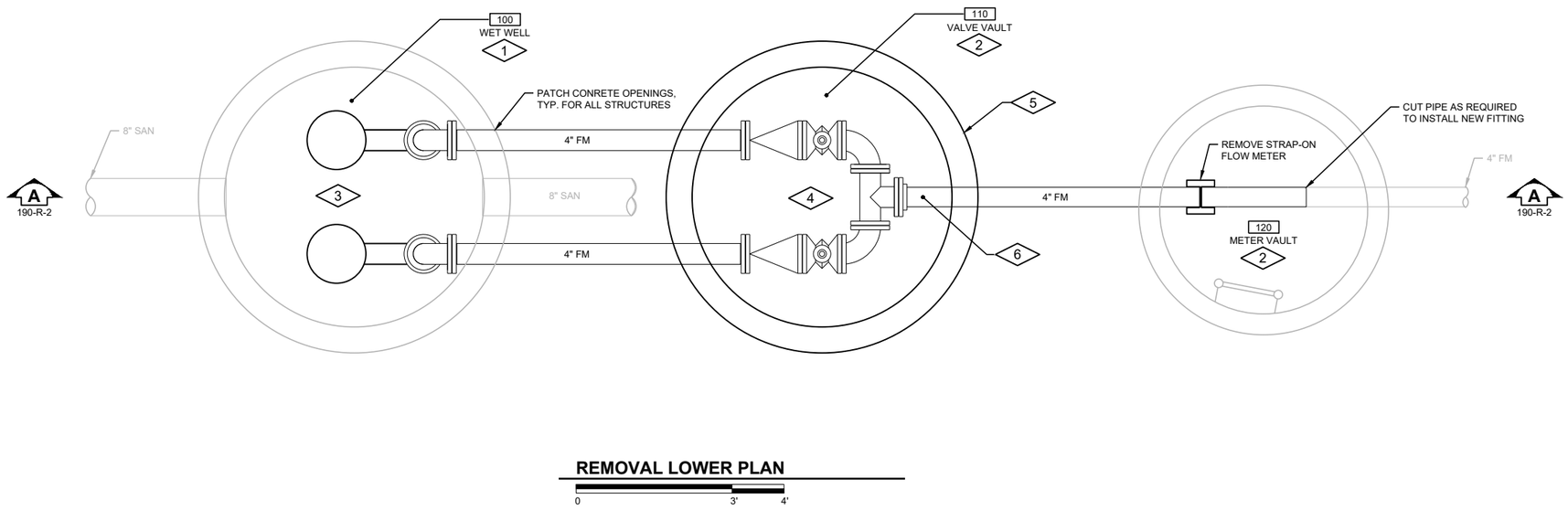
Sheet No. 30

Drawing No. 200-EN-3



REMOVAL UPPER PLAN

0 3' 4'



REMOVAL LOWER PLAN

0 3' 4'

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. FULL TONE COMPONENTS TO BE REMOVED.
3. SAWCUT AND REMOVE CONCRETE TO THE LIMITS NOTED. IN EXPOSED AREAS NOT COVERED BY NEW CONSTRUCTION, REMOVE REINFORCEMENT AND EMBEDMENTS 1" BEYOND FINISHED SURFACE AND PATCH SURFACE WITH PATCHING MORTAR TO MATCH ADJACENT FINISHED SURFACE.
4. REMOVE CONCRETE ANCHORS, ANCHOR BOLTS, AND OTHER EMBEDMENTS FOR MATERIALS AND EQUIPMENT BEING REMOVED. IN EXPOSED AREAS NOT COVERED BY NEW CONSTRUCTION, REMOVE CONCRETE ANCHORS, ANCHOR BOLTS, AND OTHER EMBEDMENTS 1" BEYOND FINISHED SURFACE AND PATCH SURFACE WITH PATCHING MORTAR. FINISH SURFACE TO MATCH ADJACENT FINISHED SURFACE.
5. WHERE EQUIPMENT IS INDICATED TO BE REMOVED, REMOVE ALL ASSOCIATED POWER AND CONTROL WIRING AND CONDUIT BACK TO SOURCE. REMOVE JUNCTION BOXES AND PULL BOXES ASSOCIATED WITH THE REMOVED CONDUITS. WHERE CONDUIT SYSTEM CONTAINS CIRCUITS TO OTHER EQUIPMENT THAT REMAINS, RETAIN THESE CIRCUITS AND RELOCATE EXISTING CONDUIT AND EXTEND EXISTING CIRCUITS AS REQUIRED FOR THE INSTALLATION OF NEW EQUIPMENT.
6. REMOVE ALL SUPPORTS ASSOCIATED WITH REMOVED PIPING, DUCTWORK, CONDUIT, AND EQUIPMENT. REMOVE RODS AND FASTENERS FROM CEILINGS, FLOORS, AND WALLS WITH CARE. WHERE SURFACE HAS BEEN MARRED, CHIPPED, SPAWLED, ETC. AS A RESULT OF REMOVAL, PATCH SURFACE WITH PATCHING MORTAR AND FINISH TO MATCH ADJACENT FINISHED SURFACE.
7. REMOVE EXISTING CONCRETE PADS OF ANY EQUIPMENT BEING REMOVED. REMOVE CONCRETE REINFORCEMENT A MINIMUM OF 1" BEYOND FINISHED SURFACE AT ANY LOCATION WHERE NEW CONCRETE PAD WILL NOT COVER ROUGH SURFACE OF REMOVED PAD. PATCH SURFACE WITH PATCHING MORTAR AND FINISH TO MATCH ADJACENT FINISHED SURFACE.
8. WHERE OPENINGS ARE LEFT IN WALLS, SLABS, OR CEILINGS DUE TO REMOVED PIPING, DUCTWORK, EQUIPMENT, OR OTHER WORK, PATCH OPENING TO MATCH ADJACENT SURFACES UNLESS NOTED OTHERWISE. THE PERIMETER OF OPENINGS IN CONCRETE WALLS AND SLABS EXPOSED TO EARTH, WEATHER, OR WATER SHALL BE LINED WITH A GASKET TYPE WATERSTOP PRIOR TO PATCHING OF THE WALL. OPENINGS IN PRECAST CONCRETE ROOF MEMBERS ARE TO BE PATCHED WITH CONCRETE AND DOWELED TO THE EXISTING ROOF MEMBERS UNLESS NOTED OTHERWISE. ROOFING SYSTEM SHALL BE PATCHED TO PREVENT ANY LEAKING AT THE OPENING.
9. COORDINATE WITH OWNER TO IDENTIFY COMPONENTS TO SALVAGE. DELIVER SALVAGED COMPONENTS TO OWNER PRIOR TO DEMOLITION.

PLAN NOTES:

1. WET WELL CLASSIFIED AS

   CLASS I, DIVISION 1, HAZARDOUS LOCATION

2. VALVE VAULT AND METER VAULT CLASSIFIED AS

   CLASS I, DIVISION 2, HAZARDOUS LOCATION

3. REMOVE PUMPS, PIPING, GUIDE RAILS, AND BALL FLOATS FROM WET WELL. PLUG EXISTING CONDUIT ENTRANCE, CUT OFF BELOW GRADE AT THE EXISTING PANEL AND ABANDON IN PLACE.
4. REMOVE PIPING AND VALVES FROM VALVE VAULT.
5. REMOVE VALVE VAULT STRUCTURE AND REPLACE WITH COMPACTED STRUCTURAL FILL..
6. REMOVE PRESSURE GAUGE AND ASSOCIATED PIPING.

Revision Number	Revision Description	Drawn By	Checked By	Date

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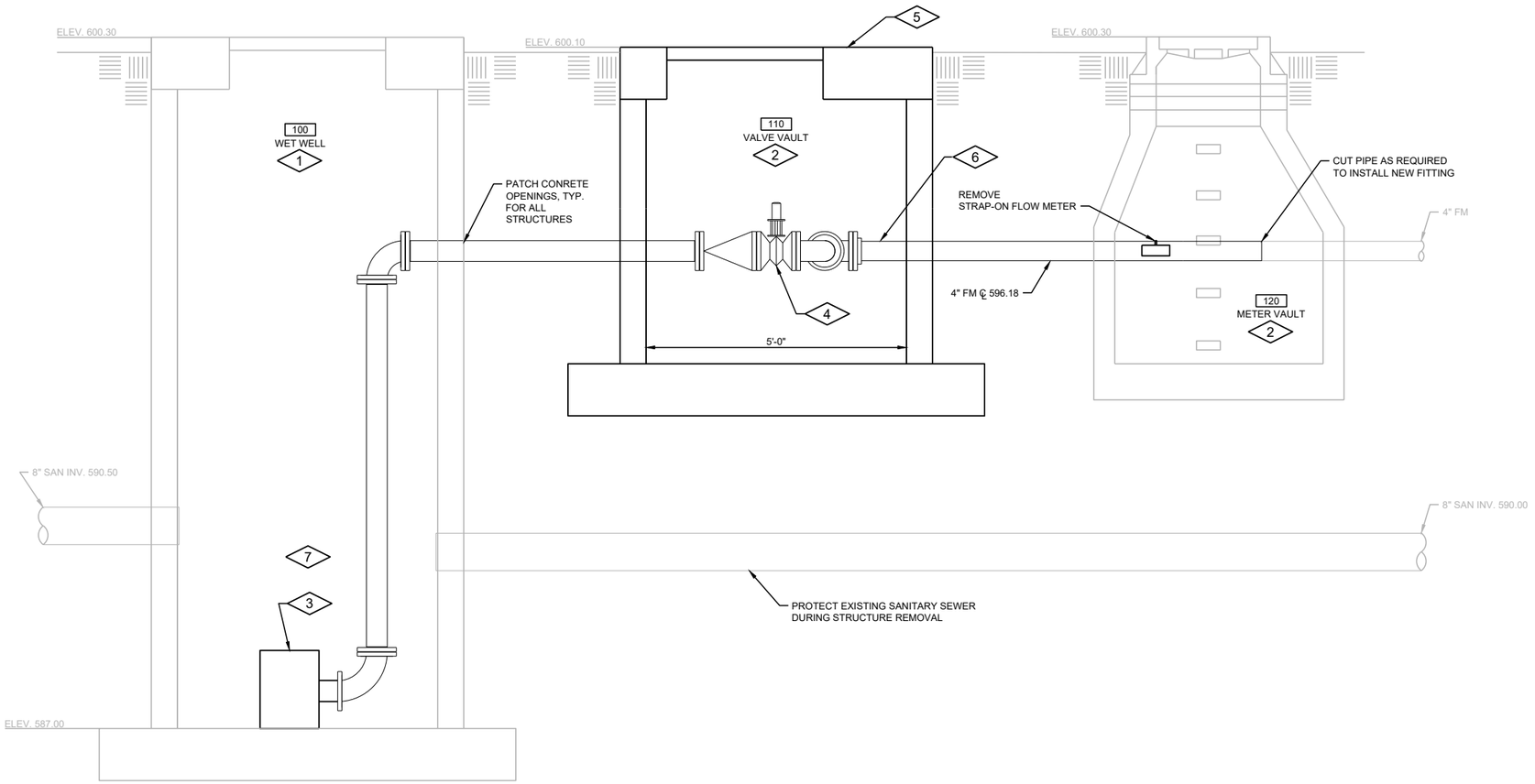
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

EXISTING GREENFIELD LIFT STATION
REMOVAL PLANS

DONOHUE

Sheet No. 31

Drawing No. **210-R-1**



REMOVAL SECTION A

190-R-1

0 3' 4'

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. FULL TONE COMPONENTS TO BE REMOVED.
3. SAWCUT AND REMOVE CONCRETE TO THE LIMITS NOTED. IN EXPOSED AREAS NOT COVERED BY NEW CONSTRUCTION, REMOVE REINFORCEMENT AND EMBEDMENTS 1" BEYOND FINISHED SURFACE AND PATCH SURFACE WITH PATCHING MORTAR TO MATCH ADJACENT FINISHED SURFACE.
4. REMOVE CONCRETE ANCHORS, ANCHOR BOLTS, AND OTHER EMBEDMENTS FOR MATERIALS AND EQUIPMENT BEING REMOVED. IN EXPOSED AREAS NOT COVERED BY NEW CONSTRUCTION, REMOVE CONCRETE ANCHORS, ANCHOR BOLTS, AND OTHER EMBEDMENTS 1" BEYOND FINISHED SURFACE AND PATCH SURFACE WITH PATCHING MORTAR. FINISH SURFACE TO MATCH ADJACENT FINISHED SURFACE.
5. WHERE EQUIPMENT IS INDICATED TO BE REMOVED, REMOVE ALL ASSOCIATED POWER AND CONTROL WIRING AND CONDUIT BACK TO SOURCE. REMOVE JUNCTION BOXES AND PULL BOXES ASSOCIATED WITH THE REMOVED CONDUITS. WHERE CONDUIT SYSTEM CONTAINS CIRCUITS TO OTHER EQUIPMENT THAT REMAINS, RETAIN THESE CIRCUITS AND RELOCATE EXISTING CONDUIT AND EXTEND EXISTING CIRCUITS AS REQUIRED FOR THE INSTALLATION OF NEW EQUIPMENT.
6. REMOVE ALL SUPPORTS ASSOCIATED WITH REMOVED PIPING, DUCTWORK, CONDUIT, AND EQUIPMENT. REMOVE RODS AND FASTENERS FROM CEILINGS, FLOORS, AND WALLS WITH CARE. WHERE SURFACE HAS BEEN MARRED, CHIPPED, SPAWLED, ETC. AS A RESULT OF REMOVAL, PATCH SURFACE WITH PATCHING MORTAR AND FINISH TO MATCH ADJACENT FINISHED SURFACE.
7. REMOVE EXISTING CONCRETE PADS OF ANY EQUIPMENT BEING REMOVED. REMOVE CONCRETE REINFORCEMENT A MINIMUM OF 1" BEYOND FINISHED SURFACE AT ANY LOCATION WHERE NEW CONCRETE PAD WILL NOT COVER ROUGH SURFACE OF REMOVED PAD. PATCH SURFACE WITH PATCHING MORTAR AND FINISH TO MATCH ADJACENT FINISHED SURFACE.
8. WHERE OPENINGS ARE LEFT IN WALLS, SLABS, OR CEILINGS DUE TO REMOVED PIPING, DUCTWORK, EQUIPMENT, OR OTHER WORK, PATCH OPENING TO MATCH ADJACENT SURFACES UNLESS NOTED OTHERWISE. THE PERIMETER OF OPENINGS IN CONCRETE WALLS AND SLABS EXPOSED TO EARTH, WEATHER, OR WATER SHALL BE LINED WITH A GASKET TYPE WATERSTOP PRIOR TO PATCHING OF THE WALL. OPENINGS IN PRECAST CONCRETE ROOF MEMBERS ARE TO BE PATCHED WITH CONCRETE AND DOWELED TO THE EXISTING ROOF MEMBERS UNLESS NOTED OTHERWISE. ROOFING SYSTEM SHALL BE PATCHED TO PREVENT ANY LEAKING AT THE OPENING.
9. COORDINATE WITH OWNER TO IDENTIFY COMPONENTS TO SALVAGE. DELIVER SALVAGED COMPONENTS TO OWNER PRIOR TO DEMOLITION.

PLAN NOTES:

1. WET WELL CLASSIFIED AS

   CLASS I, DIVISION 1, HAZARDOUS LOCATION

2. VALVE VAULT AND METER VAULT CLASSIFIED AS

   CLASS I, DIVISION 2, HAZARDOUS LOCATION

3. REMOVE PUMPS, PIPING, GUIDE RAILS, AND BALL FLOATS FROM WET WELL.
4. REMOVE PIPING AND VALVES FROM VALVE VAULT.
5. REMOVE VALVE VAULT STRUCTURE AND REPLACE WITH COMPACTED STRUCTURAL FILL.
6. REMOVE PRESSURE GAUGE AND ASSOCIATED PIPING.
7. FILL WITH CLSM AND FORM BENCH FOR PROPOSED SAN INV. 590.00. SEE 210-M-1

Revision Number	Revision Description	Drawn By	Checked By	Date

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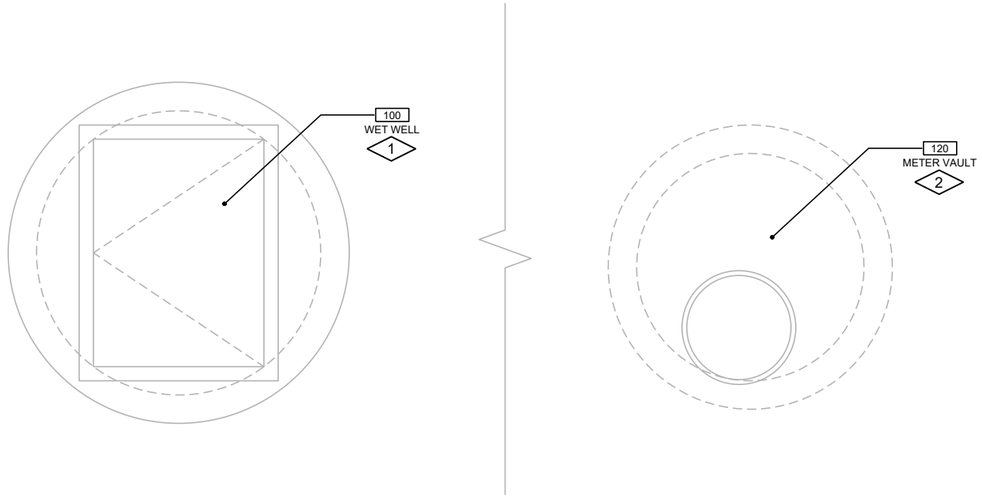
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

EXISTING GREENFIELD LIFT STATION
REMOVAL SECTION

DONOHUE

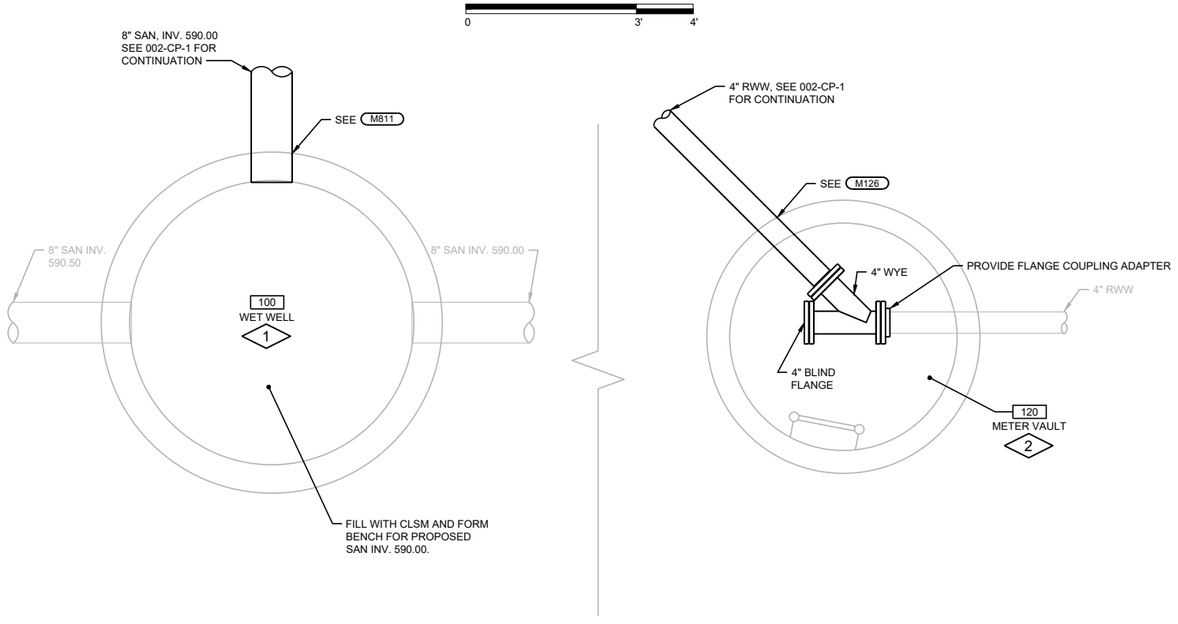
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Drawing No. 210-R-2



UPPER PLAN

0 3' 4'



LOWER PLAN

0 3' 4'

GENERAL NOTES:

1. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS PRIOR TO CONSTRUCTION AND/OR FABRICATION.
2. CONTRACTOR TO REFER TO SPACE ENVIRONMENT AND HAZARDOUS RATING SCHEDULE PER 001-ENV-1 FOR HAZARDOUS RATINGS AND MATERIAL.

PLAN NOTES:

1. WET WELL CLASSIFIED AS

   CLASS I, DIVISION 1, HAZARDOUS LOCATION

2. METER VAULT CLASSIFIED AS

   CLASS I, DIVISION 2, HAZARDOUS LOCATION

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	KJA
Drawn By	KJA
Checked By	MTR
Approved By	EPC
Filename	210MP1.DWG
Project No.	14163
Project Date	FEB 2024

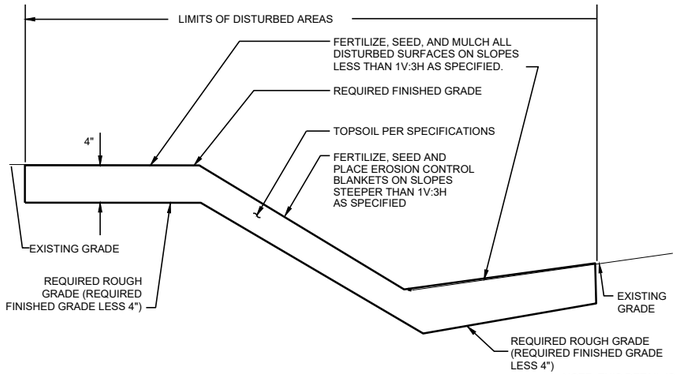
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

EXISTING GREENFIELD LIFT STATION PLANS

DONOHUE

Sheet No. 33

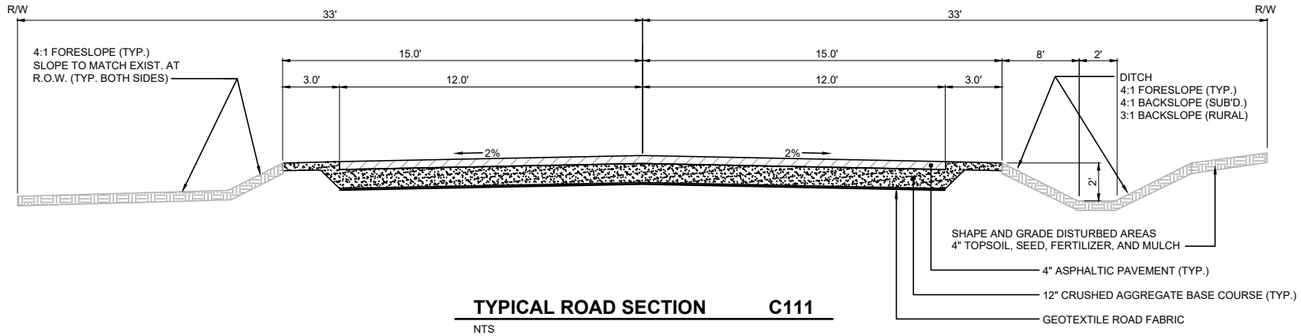
Drawing No. **210-M-1**



TYPICAL TURF RESTORATION FOR TOPSOIL AND TURF C050

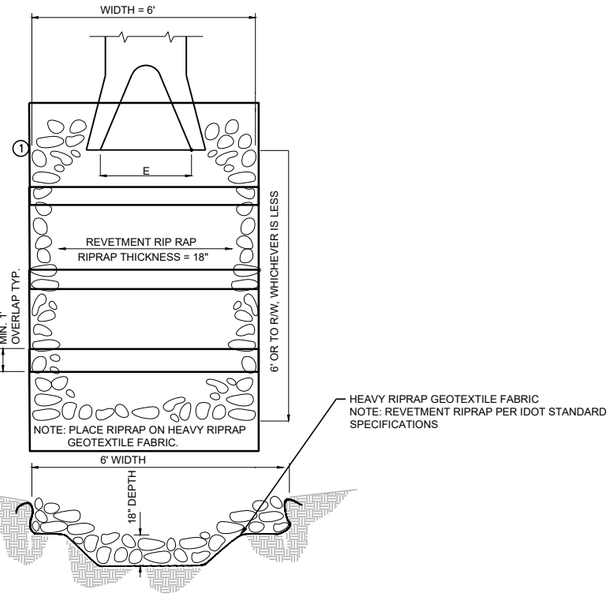
NTS

NOTE: THIS DETAIL IS INTENDED TO SHOW THAT:
A. 4" OF TOPSOIL IS TO BE PLACED ON ALL SURFACES TO HAVE TURF ESTABLISHED.
B. MULCH IS TO BE USED ON OTHER SLOPES LESS THAN 1V:3H.
C. EROSION CONTROL BLANKETS ARE TO BE USED ON ALL SLOPES STEEPER THAN 1V:3H.



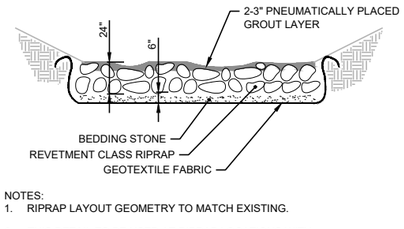
TYPICAL ROAD SECTION C111

NTS



PLACEMENT OF RIPRAP AT CULVERT DISCHARGE C113

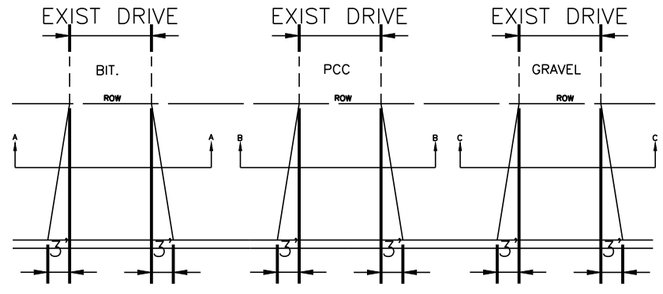
NTS

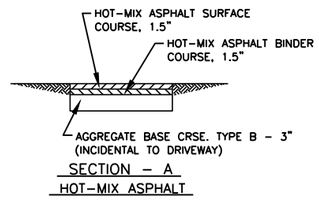


NOTES:
1. RIPRAP LAYOUT GEOMETRY TO MATCH EXISTING.
2. THIS DETAIL TO BE USED AT RIPRAP LOCATIONS WITH NO ENDWALL.

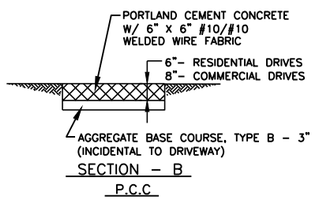
REPLACEMENT OF RIPRAP W/ FABRIC DETAIL C114

NTS

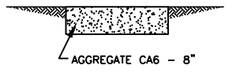




SECTION – A
HOT-MIX ASPHALT



SECTION – B
P.C.C



SECTION – C
GRAVEL

NOTES:

1. APRON: 8:1 SLOPE FROM FRONT OF SIDEWALK TO BACK OF CURB.
2. SIDEWALK: 1/4" / FT SLOPE

NOT TO SCALE

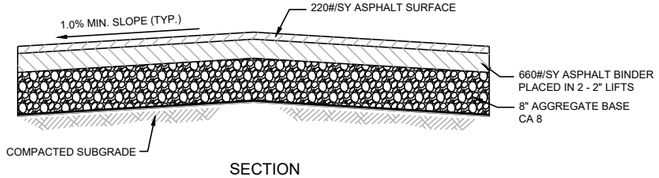
CITY OF JOLIET, ILLINOIS

DRIVEWAY PAVEMENT DETAIL
PVT-01

DATE: OCT. 2017

EXISTING DRIVEWAY REPLACEMENT C125

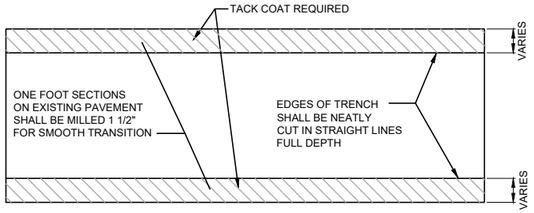
NTS



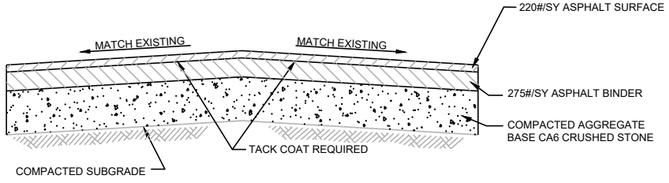
SECTION

BITUMINOUS DRIVEWAY PAVEMENT DETAIL C118

NTS



TOP VIEW



ASPHALT PAVEMENT RESTORATION C120

NTS

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	REK
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Project Date	FEB 2024

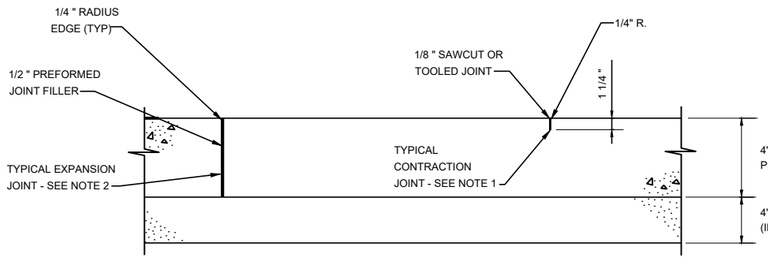
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GENERAL NOTES, SCHEDULES, AND STANDARD DETAILS
CIVIL

DONOHUE

Sheet No. 34

Drawing No. 999-C-1

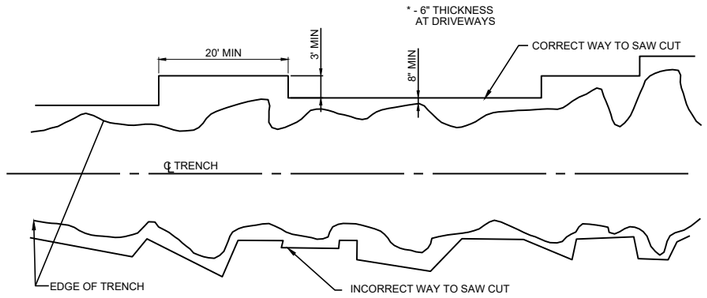


NOTE:

1. CONTRACTION JOINTS TO BE SPACED 6'-0" O.C. MAXIMUM EACH DIRECTION
2. EXPANSION JOINTS TO BE SPACED AT 50' MAXIMUM EACH DIRECTION AND WHERE SIDEWALK MEETS BUILDINGS, CURBS, AND EXISTING SIDEWALKS WHICH REMAIN IN PLACE.
3. ALL MATERIALS AND WORKMANSHIP TO BE IN ACCORDANCE WITH IDOT STANDARD SPECIFICATIONS.
4. LONGITUDIAL SLOPES TO MATCH EXISTING, CROSS SLOPE OF NEW SIDEWALK TO BE 1/2% MINIMUM.

UNREINFORCED CONCRETE SIDEWALK C150

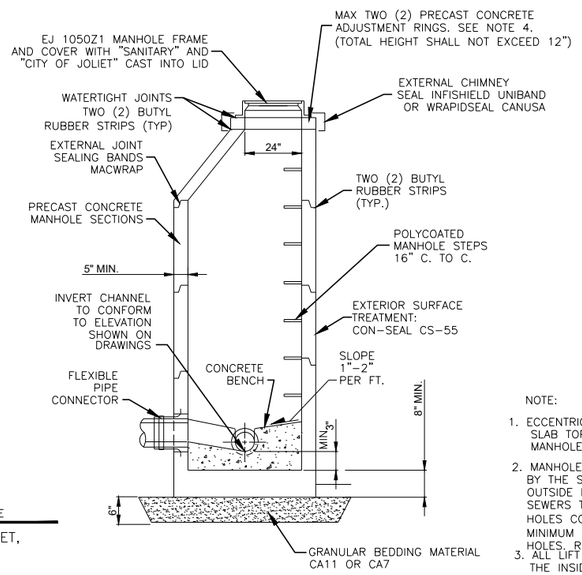
NTS



NOTE:
WHEN SAW CUTTING THE PAVEMENT FOR TRENCH RESTORATION FOLLOWING CONSTRUCTION, ALL SAW CUTS SHALL BE MADE PARALLEL, OR PERPENDICULAR, TO THE CENTERLINE OF THE TRENCH. PARALLEL CUTS SHALL BE A MINIMUM LENGTH OF 20 FT. AND PERPENDICULAR CUTS SHALL BE A MINIMUM OF 3 FT. IN LENGTH.

PAVEMENT SAWCUTTING C199

NTS



NOTE:

1. ECCENTRIC CONES REQUIRED, FLAT SLAB TOPS PERMITTED ONLY FOR MANHOLES TOO SHALLOW FOR CONES.
2. MANHOLE DIAMETER SHALL BE DETERMINED BY THE SEWER DEPTH, THE SEWER OUTSIDE DIAMETER, RELATIVE ANGLES OF SEWERS TO EACH OTHER, THE SIZE OF HOLES CORED/CAST FOR BOOTS, AND A MINIMUM OF 8" BETWEEN CORED/CAST HOLES. REFER TO DESIGN MANUAL.
3. ALL LIFT HOLES ARE TO BE GROUTED FROM THE INSIDE AND OUTSIDE BEFORE BACKFILLING.
4. FOR MANHOLES INSTALLED IN PAVEMENT, PROVIDE ONE RUBBER COMPOSITE ADJUSTMENT RING. EJ INFRA-RISER OR APPROVED EQUAL.

NOT TO SCALE

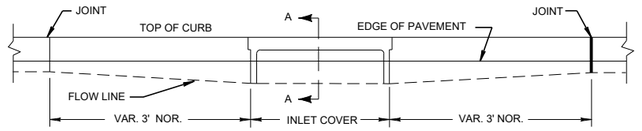
CITY OF JOLIET, ILLINOIS

SANITARY MANHOLE DETAIL SAN-01

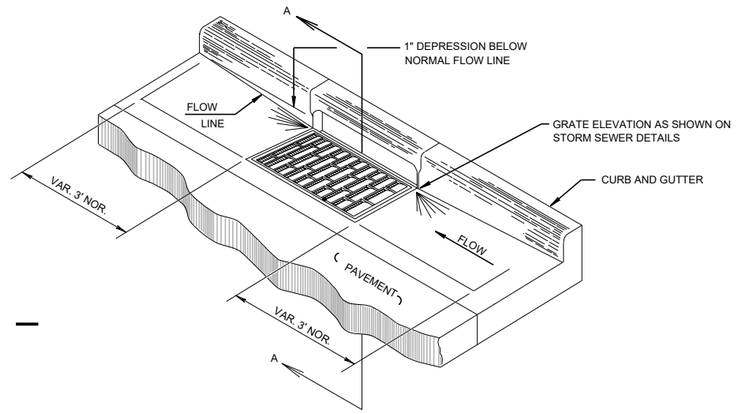
DATE: MARCH 2019

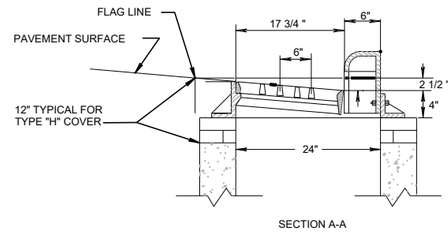
48-INCH STANDARD CONCRETE MANHOLE DETAIL C200

NTS



ELEVATION

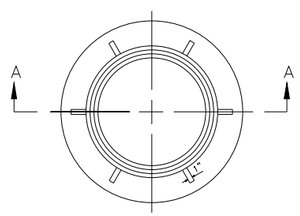




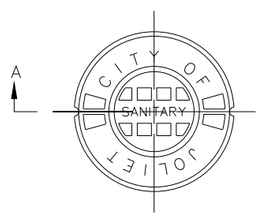
SECTION A-A

DETAIL OF CURB AND GUTTER AT INLETS C165

NTS



PLAN



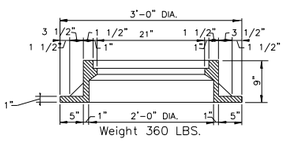
PLAN

NOT TO SCALE

CITY OF JOLIET, ILLINOIS

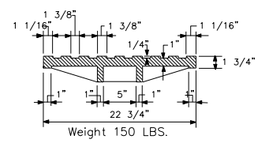
FRAME AND COVER CASTING SAN-19

DATE: NOVEMBER 2022



Weight 360 LBS.

Section A-A
Plan - Manhole
No Scale



Weight 150 LBS.

Section A-A
Standard Closed Lid
No Scale

Sanitary Sewer:
East Jordan 1020 AGS cover and 1050Z1 frame W/Watertight Lid

FRAME AND COVER C210

NTS

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	REK
Drawn By	REK
Checked By	PMS
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Project No.	14163
Project Date	FEB 2024

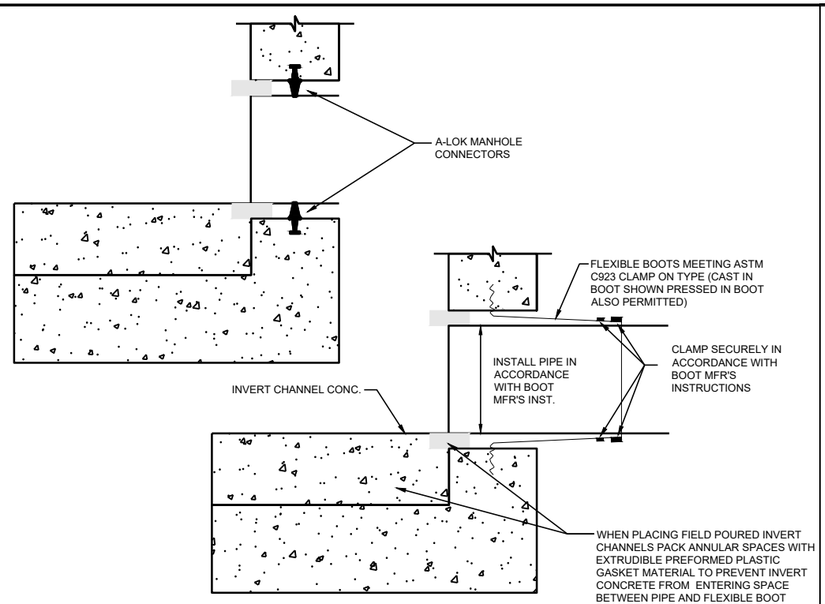
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GENERAL NOTES, SCHEDULES, AND STANDARD DETAILS
CIVIL

DONOHUE

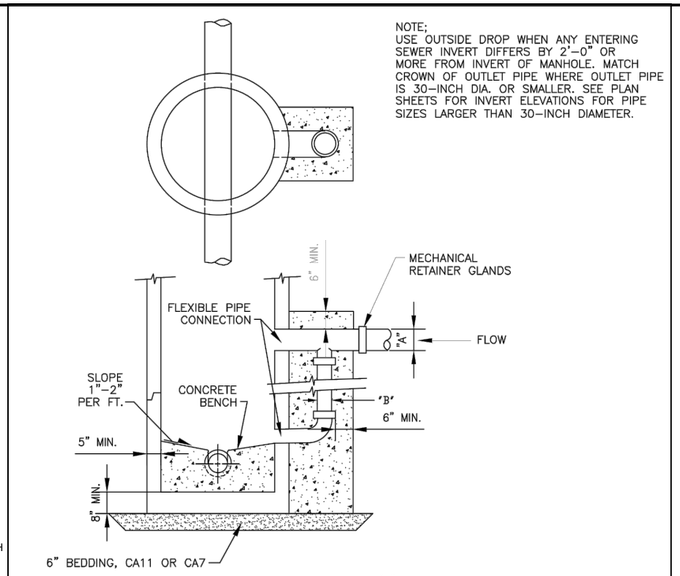
Sheet No. 35

Drawing No. 999-C-2



MANHOLE PIPE CONNECTION DETAILS C220

NTS



NOTES:

1. 8-INCH TO 12-INCH DIAMETER DROP: DUCTILE IRON CLASS 50. UTILIZE DUCTILE IRON RESTRAINED JOINT PIPE AND FITTINGS FOR DROP ELBOW, PIPE, AND TEE AT INCOMING SEWER. ENCASE ENTIRE DROP PIPE FROM BASE OF MANHOLE TO 6 INCHES ABOVE TOP OF INCOMING SEWER WITH 4000 PSI CONCRETE AT A MINIMUM THICKNESS OF 6 INCHES.
2. OVER 12-INCH DIAMETER DROP: DUCTILE IRON CLASS 50. ENCASE DROP ELBOW AT BASE OF MANHOLE TO 2 FEET ABOVE TOP OF ELBOW IN CONCRETE. UTILIZE DUCTILE IRON RESTRAINED JOINT PIPE AND FITTINGS FOR DROP ELBOW, PIPE, AND DUCTILE IRON TEE AT INCOMING SEWER. SUPPORT DROP PIPE TO MANHOLE WALL WITH STAINLESS STEEL BRACKETS AND STRAPPING WHERE DROPS ARE OVER 10 FEET LONG.

"A"- DIAMETER OF INCOMING SEWER
"B"- DIAMETER OF DROP PIPE

WHEN: "A"=12-INCH OR LESS, "B"="A" BUT NOT SMALLER THAN 8-INCH.
WHEN: "A"=GREATER THAN 12-INCH, BUT LESS THAN OR EQUAL TO 18-INCH, "B"=12-INCH.
WHEN: "A"=GREATER THAN 18-INCH, "B"=2/3 "A" MINIMUM.

NOT TO SCALE

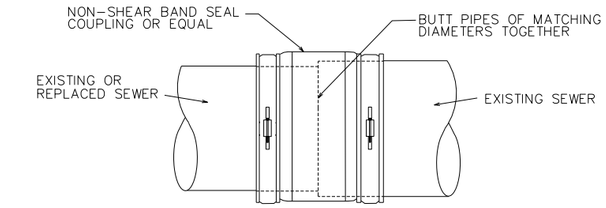
CITY OF JOLIET, ILLINOIS

EXTERIOR DROP MANHOLE DETAIL
SAN-04

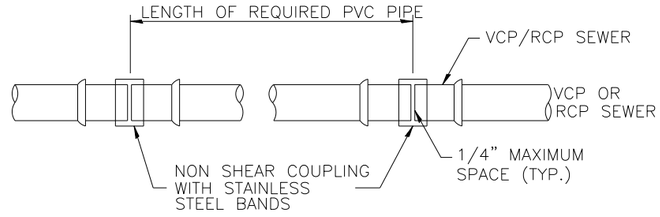
DATE: OCT. 2017

INSIDE DROP MANHOLE CONNECTION DETAIL C240

NTS



PIPE COUPLING DETAIL



NOTES:

1. CONNECTION TO CIPP LINING SHALL BE NON-SHEAR COUPLINGS THAT ARE MADE SPECIFICALLY TO FIT THE OUTSIDE DIAMETER OF CURED-IN-PLACE PIPE (CIPP)

CONNECTING PIPES C250

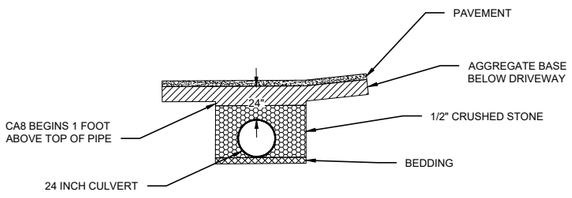
NTS

NOT TO SCALE

CITY OF JOLIET, ILLINOIS

CONNECTING SEWER PIPES OF DISSIMILAR MATERIAL
SAN-14

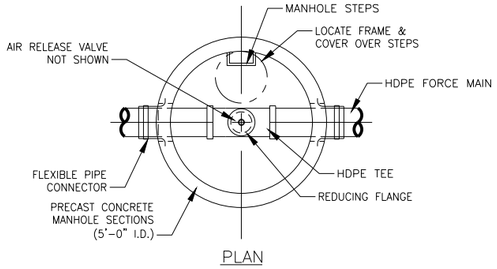
DATE: NOVEMBER 2022



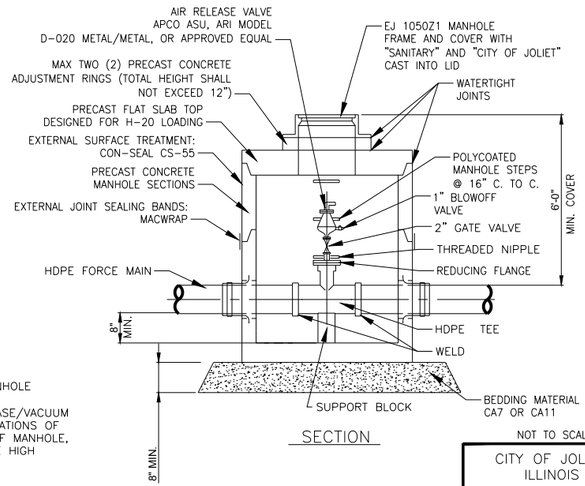
NOTE: 24 INCHES OF COVER REQUIRED BETWEEN TOP OF CULVERT AND BOTTOM OF PAVEMENT BASE.

CPP CULVERT C310

NTS



PLAN



SECTION

* DETERMINE DEPTH OF COVER AT MANHOLE BASED ON FORCE MAIN SIZE AND MANUFACTURER/MODEL OF AIR RELEASE/VACUUM VALVE. DETERMINE AND ADJUST ELEVATIONS OF FORCE MAIN PIPE ON BOTH SIDES OF MANHOLE, IF REQUIRED, TO AVOID INTERMEDIATE HIGH POINTS IN FORCE MAIN.

AIR RELEASE AND VAULT C410

NTS

NOT TO SCALE

CITY OF JOLIET, ILLINOIS

AIR RELEASE / VACUUM VALVE AND VAULT
SAN-06

DATE: MARCH 2019

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Designed By	REK
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Filename	999CD1.DWG
Project No.	14163
Project Date	FEB 2024

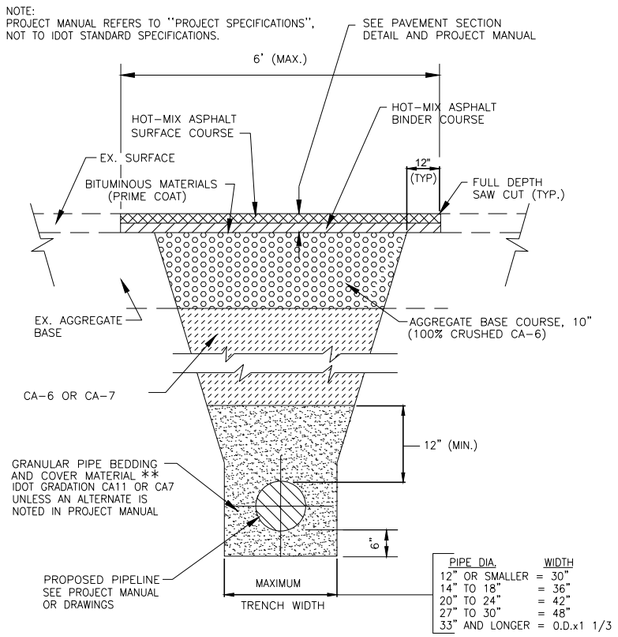
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GENERAL NOTES, SCHEDULES, AND STANDARD DETAILS
CIVIL

DONOHUE

Sheet No. 36

Drawing No. 999-C-3



FOR PAVEMENT WITH AGGREGATE BASE AND COMPACTED GRANULAR BACKFILL MATERIAL

** FOR FLEXIBLE THERMOPLASTIC PIPE COMPLY WITH ASTM D2321, CLASS IA, IB, OR II., (IDOT GRADATION CA15)

FOR RIGID PIPE COMPLY WITH ASTM C12, BEDDING CLASS B.

NOT TO SCALE

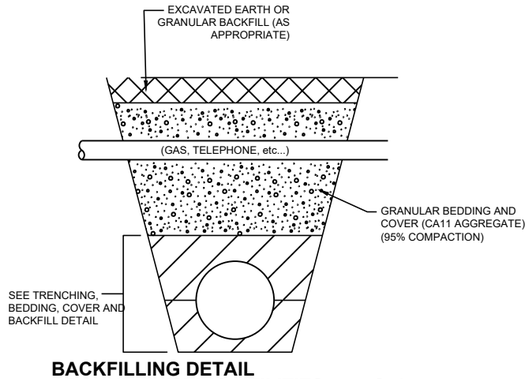
CITY OF JOLIET, ILLINOIS

TYPICAL TRENCH DETAIL PAVEMENT AREA AGGREGATE BASE GEN-04

DATE: OCT. 2017

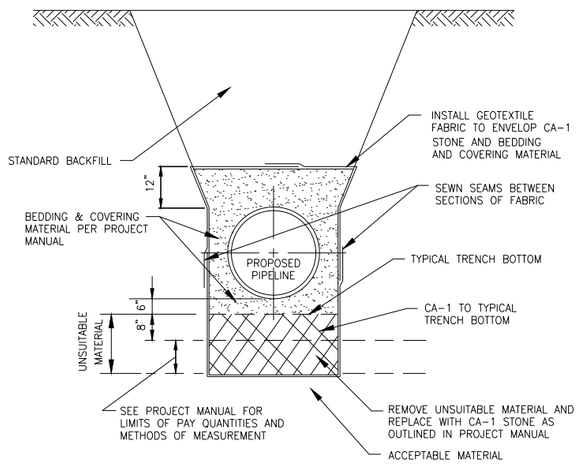
TRENCH BEDDING COVER & BACKFILL IN OR WITHIN 2' OF PAVEMENT C500

NTS



BACKFILLING DETAIL AROUND EXISTING UTILITIES C507

NTS



NOT TO SCALE

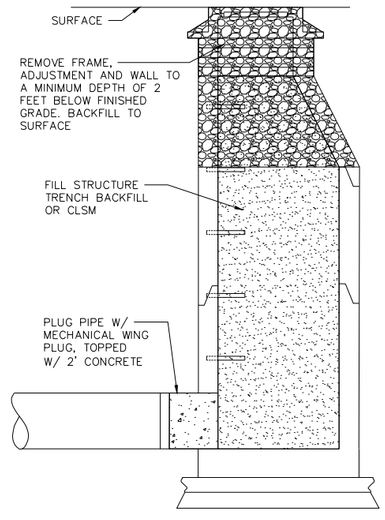
CITY OF JOLIET, ILLINOIS

OPEN CUT PIPELINE INSTALLATION UNSUITABLE MATERIAL REMOVAL/REPLACEMENT GEN-03

DATE: OCT. 2017

FILTER FABRIC STABILIZATION OF TRENCH BOTTOM C505

NTS



NOTE:

- ALL CONNECTING PIPES SHALL BE PLUGGED WITH MECHANICAL WING PLUGS OF THE SPECIFIED DIAMETER AND TOPPED WITH CONCRETE PLUG. BRICK AND MORTAR PLUGS WILL NOT BE ACCEPTABLE IN LIEU OF CONCRETE.
- THE MINIMUM THICKNESS OF THE CONCRETE TO THE PLUG SHALL BE TWO PIPE DIAMETERS UP TO 24 INCHES.
- CONTRACTOR SHALL REMOVE FRAME, COVER, CONE AND ADJUSTMENT RINGS OF THE MANHOLE STRUCTURES, AND CONE/FLAT-TOP/WALL TO A MINIMUM OF TWO (2') FEET BELOW FINISHED GRADE.
- REMAINDER OF THE STRUCTURE IS TO BE FILLED WITH TRENCH BACKFILL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OFF-SITE DISPOSAL OF ADJUSTMENT RINGS, FRAME AND COVER MUST BE RETURNED TO THE CITY.

NOT TO SCALE

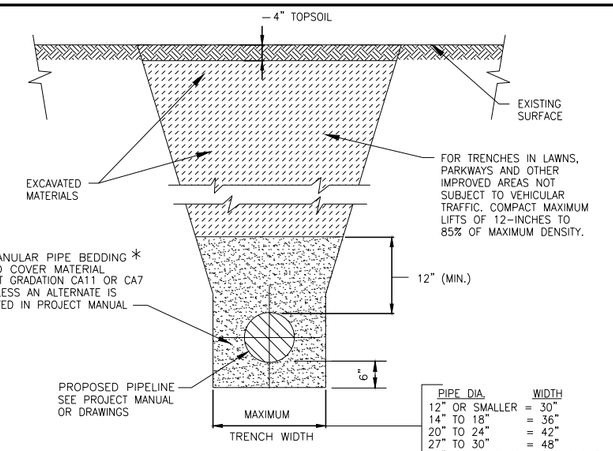
CITY OF JOLIET, ILLINOIS

STRUCTURE ABANDONMENT SAN-15

DATE: NOVEMBER 2022

STRUCTURE ABANDONMENT C510

NTS



NOTES:

1. PROJECT MANUAL REFERS TO "PROJECT SPECIFICATIONS", NOT TO IDOT STANDARD SPECIFICATIONS.
2. FARM FIELDS, GARDENS, AND WETLAND AREAS MAY REQUIRE STRIPPING, STOCKPILING, AND REPLACING ORIGINAL MATERIAL TO A SPECIFIC DEPTH. SEE PROJECT MANUAL OR GENERAL NOTES FOR REQUIREMENTS.

FOR NON-PAVED AREAS

* FOR HDPE PIPE COMPLY WITH ASTM 2321, CLASS I OR II. FOR RIGID PIPE COMPLY WITH ASTM C12, BEDDING CLASS B.

NOT TO SCALE

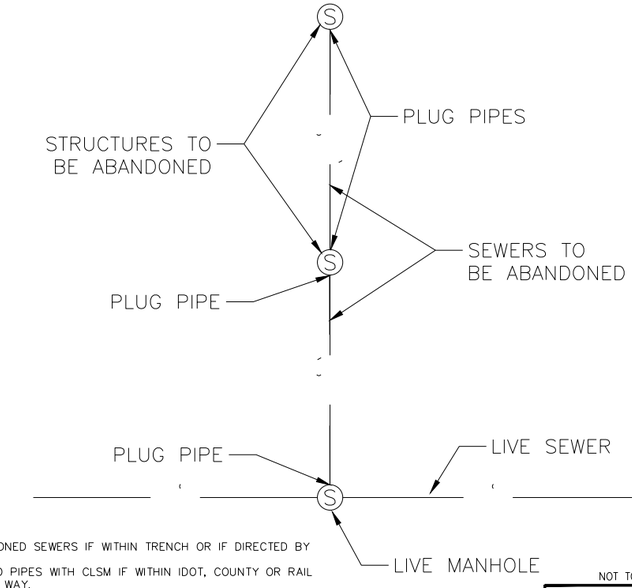
CITY OF JOLIET, ILLINOIS

TYPICAL TRENCH DETAIL NON PAVED AREAS GEN-05

DATE: OCT. 2017

TRENCH BEDDING COVER & BACKFILL GREATER THAN 2' FROM PAVEMENT C506

NTS



NOTE:

- REMOVE ABANDONED SEWERS IF WITHIN TRENCH OR IF DIRECTED BY ENGINEER.
- FILL ABANDONED PIPES WITH CLSM IF WITHIN IDOT, COUNTY OR RAIL ROAD RIGHT OF WAY.
- FILL ABANDONED PIPES WITH CLSM IF PIPE DIAMETER IS 15-INCHES OR GREATER.
- PLUG ALL PIPES IN STRUCTURES TO BE ABANDONED
- ABANDON STRUCTURES PER THE "ABANDONMENT OF STRUCTURES" DETAIL (SAN-15).

NOT TO SCALE

CITY OF JOLIET, ILLINOIS

ABANDONMENT OF SEWERS SAN-16

DATE: NOVEMBER 2022

PIPE ABANDONMENT C511

NTS

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	REK
Drawn By	REK
Checked By	PMS
Approved By	EPC
Filename	999CD1.DWG
Project No.	14163
Project Date	FEB 2024

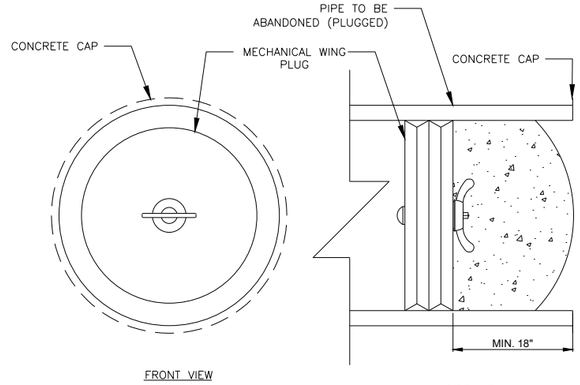
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GENERAL NOTES, SCHEDULES, AND STANDARD DETAILS
CIVIL

DONOHUE

Sheet No. 37

Drawing No. 999-C-4



NOTE:

1. PIPES TO BE PLUGGED AND ABANDONED ARE TO BE CLEARED OF ANY DEBRIS PRIOR TO ABANDONMENT.
2. MECHANICAL WING PLUG TO BE INSERTED A MIN. OF 18 INCHES OR THE DIAMETER OF THE PIPE, WHICHEVER IS GREATER.
3. A CONCRETE CAP IS TO BE PLACED ON THE ABANDONED PIPE AFTER THE MECHANICAL WING PLUG HAS BEEN PROPERLY INSTALLED.
4. THE MECHANICAL WING PLUG MUST BE PRESSURE RATED GREATER THAN THE HEAD PRESSURE OF THE DEPTH OF THE PIPE.
5. BRICK AND MORTAR PLUGS WILL NOT BE ACCEPTABLE IN LIEU OF CONCRETE.

NOT TO SCALE

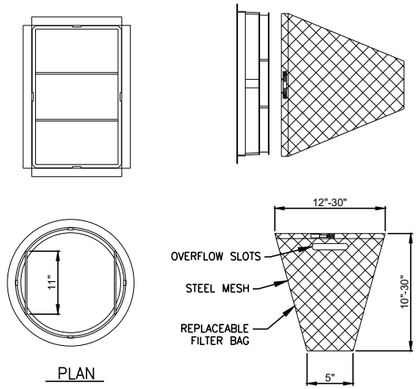
CITY OF JOLIET, ILLINOIS

PLUG PIPE DETAIL SAN-18

DATE: NOVEMBER 2022

PIPE PLUG C512

NTS



GENERAL NOTES:

FRAME: TOP RING CONSTRUCTED FROM 1 1/4" x 1 1/4" x 1/8" ANGLE. BASE RING CONSTRUCTED OF 1 1/2" x 1/2" x 1/8" CHANNEL. HANDLES & SUSPENSION BRACKETS CONSTRUCTED FROM 1/4" x 1 1/4" FLAT. ALL STEEL CONFORMING TO ASTM-A36.

REPLACEABLE BAG: CONSTRUCTED FROM 4 OZ./SQ. YD. NON-WOVEN POLYPROPYLENE GEOTEXTILE REINFORCED WITH POLYESTER MESH. CONNECTED TO BASE RING WITH STAINLESS STEEL STEEL STRAP & LOCK.

REMOVABLE STAINLESS STEEL MESH STRAINER BASKET. 1/4" DIA. HOLE SIZE, 58% OPEN AREA.

NOT TO SCALE

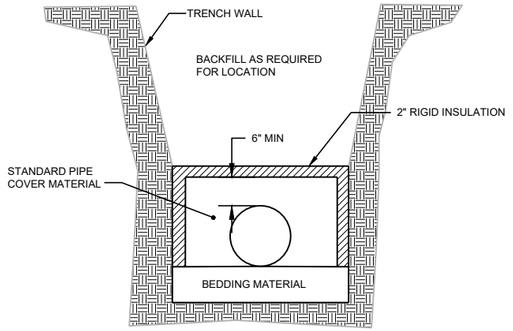
CITY OF JOLIET, ILLINOIS

INLET PROTECTION FILTER DETAIL GEN-02

DATE: OCT. 2017

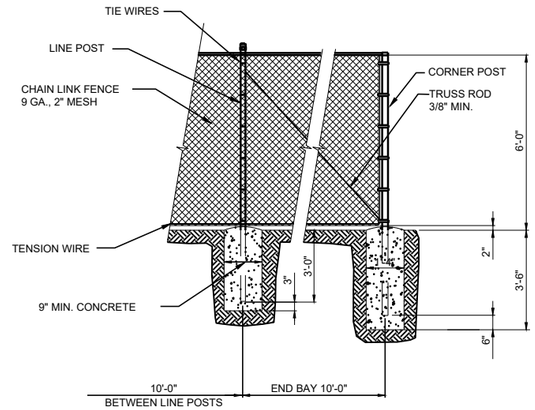
INLET PROTECTION DETAIL C550

NTS



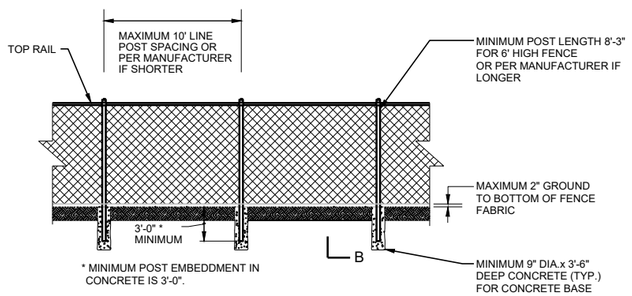
BURIED PIPING INSULATION DETAIL C565

NTS



CHAIN LINK FENCE CORNER C703

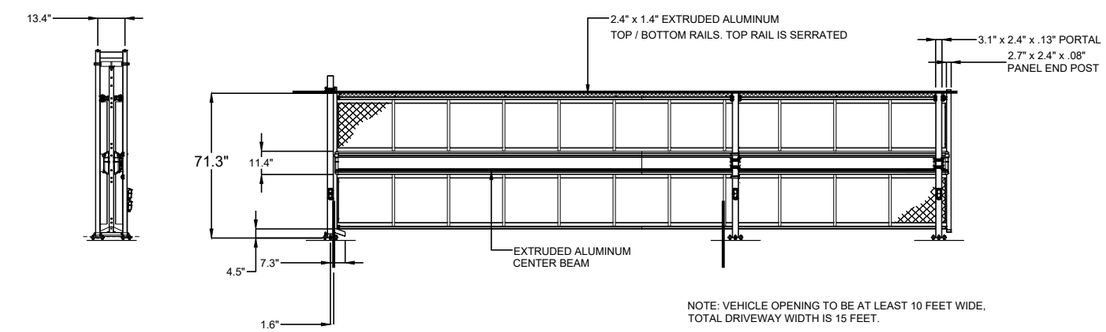
NTS



CHAIN LINK FENCING C705

NTS

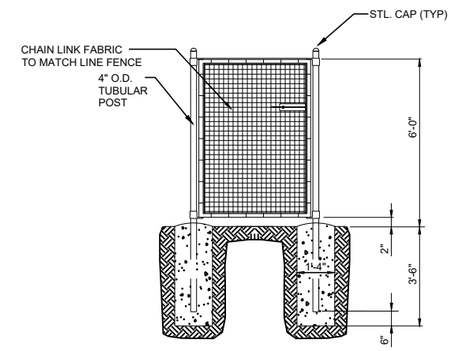




NOTE: VEHICLE OPENING TO BE AT LEAST 10 FEET WIDE, TOTAL DRIVEWAY WIDTH IS 15 FEET.

SLIDING GATE DETAIL C710

NTS



PERSON GATE C711

NTS

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	REK
Drawn By	REK
Checked By	PMS
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Project No.	14163
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CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GENERAL NOTES, SCHEDULES, AND STANDARD DETAILS
CIVIL

DONOHUE

Sheet No. 38

Drawing No. 999-C-5

GENERAL STRUCTURAL NOTES

GENERAL

1. THE GENERAL STRUCTURAL NOTES AND STANDARD STRUCTURAL DETAILS APPLY TO THE ENTIRE PROJECT UNLESS SPECIFICALLY NOTED OTHERWISE.

DESIGN CRITERIA

1. DESIGN AND CONSTRUCT IN CONFORMANCE WITH THE INTERNATIONAL BUILDING CODE, 2015 EDITION.
2. SUPERIMPOSED DESIGN LOADS

A. LIVE LOADS	H-20 TRAFFIC LOADING
B. MECHANICAL EQUIPMENT	VERIFY WITH MFR

FOUNDATIONS

1. PLACE FOOTINGS ON NATURAL UNDISTURBED EARTH OR STRUCTURAL FILL
2. PLACE FILL AGAINST FOUNDATION WALLS ENCLOSING INTERIOR SPACES AFTER CONSTRUCTION SUCH AS SLABS ARE IN PLACE TO BRACE WALL.
3. TO MINIMIZE LATERAL FORCES AGAINST THE STRUCTURE DUE TO WEDGING ACTION OF THE SOIL, BEGIN COMPACTION OF EACH LAYER AT THE STRUCTURE WALL.

REINFORCEMENT

1. REINFORCEMENT STEEL
   - A. DEFORMED BARS: ASTM A615 - GRADE 60
2. UNLESS NOTED OTHERWISE PROVIDE CLEAR COVER FOR REINFORCEMENT AS FOLLOWS:
   - A. CAST AGAINST:
     - 1. EARTH: 3 INCHES
   - B. EXPOSED TO EARTH, WEATHER, OR WATER
     - 1. SLABS
       - A. #5 BARS OR SMALLER: 1 1/2 INCHES
       - B. #6 THROUGH #11 BARS: 2 INCHES
     - 2. WALLS: 2 INCHES
3. PLACE DOWELS BEFORE PLACING CONCRETE.
4. DO NOT FIELD WELD OR FIELD BEND REINFORCING BARS.

CONCRETE

1. DESIGN STRENGTH
   - A. FENCE POST PIERS AND WHERE SPECIFICALLY NOTED CLASS B: F'C = 3000 PSI
   - B. ALL LOCATIONS, EXCEPT WHERE CLASS B SPECIFIED CLASS A: F'C = 4500 PSI
   - C. STRUCTURAL PRECAST CONCRETE F'C = 4000 PSI
2. PROVIDE 3/4 IN. CHAMFER ON EXTERNAL CORNERS OF EXPOSED EDGES OF CONSTRUCTION JOINTS.
3. VERIFY EQUIPMENT PAD AND CURB LOCATIONS, DIMENSIONS, AND ELEVATIONS WITH EQUIPMENT MANUFACTURERS.

METALS

1. STEEL
   - A. W SHAPES: ASTM A992
   - B. S, C, AND MC SHAPES: ASTM A36
   - C. SQUARE OR RECTANGULAR TUBE: ASTM A500, GRADE B, 46 KSI
   - D. PIPE: ASTM A53
   - E. PLATES AND BARS: ASTM A36
   - F. BOLTED CONNECTIONS FOR STEEL MEMBERS: ASTM F3125 GRADE A325, GALVANIZED
   - G. BOLTED CONNECTIONS FOR ALUMINUM MEMBERS: STAINLESS STEEL
   - H. STAINLESS STEEL
     - 1. EXTERIOR AND SUBMERGED USES: AISI, TYPE 316
     - 2. INTERIOR AND ARCHITECTURAL USES: AISI, TYPE 304
     - 3. CAST-IN-PLACE ANCHOR BOTLS: AISI, TYPE 316
2. ALUMINUM
   - A. SHAPES AND PLATES: ALLOY 6061-T6 OR 6063-T6
3. ANCHOR RODS, 1/2" MINIMUM DIA:
   - A. DRY LOCATIONS: ASTM F1554, GRADE 36, GALVANIZED
   - B. ALL OTHER LOCATIONS: STAINLESS STEEL
4. WELD STRUCTURAL STEEL WITH E70XX ELECTRODES IN ACCORDANCE WITH AWS REQUIREMENTS.
5. WELD ALUMINUM IN ACCORDANCE WITH AWS AND AA REQUIREMENTS.
6. COAT ALUMINUM SURFACES IN CONTACT WITH CONCRETE IN ACCORDANCE WITH AA REQUIREMENTS. UNDER NO CIRCUMSTANCES SHALL ALUMINUM CONTACT DISSIMILAR METALS.

MISCELLANEOUS

1. VERIFY PERTINENT EXISTING CONDITIONS AND DIMENSIONS BEFORE STARTING CONSTRUCTION AND/OR FABRICATION.
2. FOR ADDITIONAL OPENINGS, ANCHORS, AND EMBEDDED ITEMS SEE PROCESS AND ELECTRICAL DRAWINGS.

REMOVALS

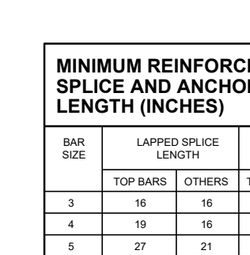
1. REMOVE ALL CONCRETE ANCHORS, ANCHOR BOLTS AND OTHER EMBEDMENTS A MINIMUM OF 1" BEYOND FINISHED SURFACE AND PATCH SURFACE WITH PATCHING MORTAR TO MATCH EXISTING.
2. REMOVE EXISTING CONCRETE PADS OF ANY EQUIPMENT BEING REMOVED. REMOVE CONCRETE AND REINFORCEMENT A MINIMUM OF 1" BEYOND FINISHED SURFACE AT ANY LOCATION WHERE NEW CONCRETE PAD WILL NOT COVER ROUGH SURFACE OF REMOVAL. PATCH BACK TO FINISHED SURFACE WITH PATCHING MORTAR.
3. SAWCUT AND REMOVE CONCRETE TO LIMITS NOTED. REMOVE CONCRETE AND REINFORCEMENT A MINIMUM 1" BEYOND FINISHED SURFACE AT ANY LOCATION WHERE NEW CONCRETE WILL NOT COVER ROUGH SURFACE OF REMOVAL. PATCH BACK TO FINISHED SURFACE WITH PATCHING MORTAR.

MINIMUM REINFORCEMENT BAR SPLICE AND ANCHORAGE LENGTH (INCHES) S010

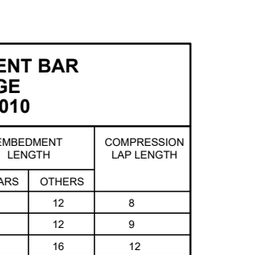
BAR SIZE	LAPPED SPLICE LENGTH		EMBEDMENT LENGTH		COMPRESSION LAP LENGTH
	TOP BARS	OTHERS	TOP BARS	OTHERS	
3	16	16	12	12	8
4	19	16	14	12	9
5	27	21	21	16	12
6	38	29	29	22	14
7	61	47	47	36	16
8	76	59	59	45	18
9	92	71	71	55	21
10	110	84	84	65	23
11	128	98	98	76	25

NOTES:

1. TOP BARS ARE HORIZONTAL BARS SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
2. FOR BARS SPACED LESS THAN 6 BAR DIAMETER OC INCREASE LENGTH BY 25%.
3. WHEN LAPPING TWO DIFFERENT SIZE BARS USE THE LAP LENGTH OF THE SMALLER BAR UNLESS NOTED OTHERWISE.
4. EMBEDMENT LENGTH IS MINIMUM LENGTH OF EMBEDMENT FOR STRAIGHT DOWELS WHERE END HOOK IS NOT SHOWN, UNLESS OTHERWISE NOTED.
5. COMPRESSION LAP LENGTH FOR VERTICAL COLUMN BARS ONLY.
6. HOOKS SHALL BE ACI STANDARD UNLESS OTHERWISE NOTED.
7. FOR EPOXY COATED REINFORCEMENT, INCREASE LENGTH BY 20% FOR TOP BARS AND 50% FOR OTHERS.



RECTANGULAR OPENING



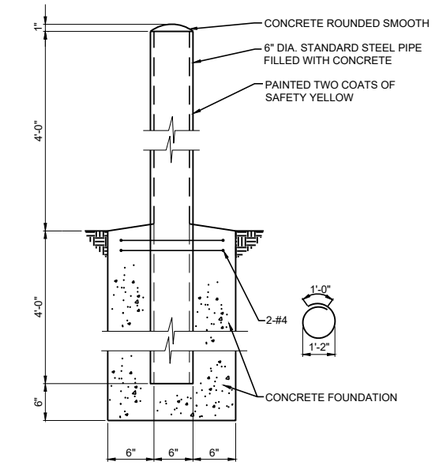
CIRCULAR OPENING

NOTES:

1. THESE DETAILS APPLY TO ALL OPENINGS IN CONCRETE WALLS AND SLABS WHEN THE LARGEST OPENING DIMENSION IS GREATER THAN TWO TIMES SECTION THICKNESS OR GREATER THAN REINFORCING SPACING IN THE SECTION, UNLESS OTHERWISE INDICATED IN THE DRAWINGS.
2. THE AREA OF ADDITIONAL REINFORCING REQUIRED IN EACH FACE ON EACH SIDE OF AN OPENING SHALL EQUAL OR EXCEED ONE-HALF OF THE AREA OF THE INTERCEPTED BARS IN EACH FACE, IN EACH DIRECTION, RESPECTIVELY WITH A MINIMUM OF 1-#5 BAR EACH FACE.
3. PLACE THE ADDED BARS IN THE SAME LAYERS AS THE WALL OR SLAB REINFORCING.
4. LD = EMBEDMENT LENGTH. SEE (S010)

ADDITIONAL REINFORCEMENT AT OPENINGS IN WALLS AND SLABS DETAIL S020

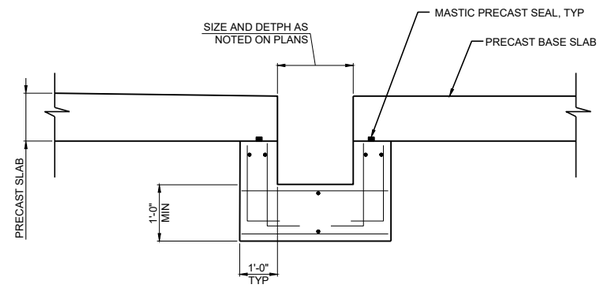
NTS



SECTION

GUARD POST DETAIL S101

NTS

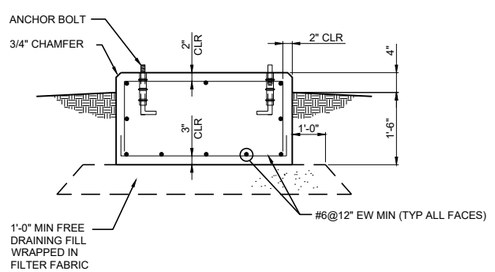


NOTES:

1. REINFORCEMENT SHOWN AT SUMP SHOWN #5@9".
2. AT CONTRACTOR'S OPTION, POUR SUMP INTEGRAL WITH PRECAST BASE SLAB.

SUMP DETAIL S334

NTS



EQUIPMENT PAD DETAIL S348

NTS

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	CEE
Drawn By	CEE
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Approved By	CEE
Filename	999S1.DWG
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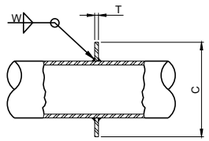
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GENERAL NOTES, SCHEDULES, AND STANDARD DETAILS
STRUCTURAL

DONOHUE

Sheet No. 39

Drawing No. 999-S-1

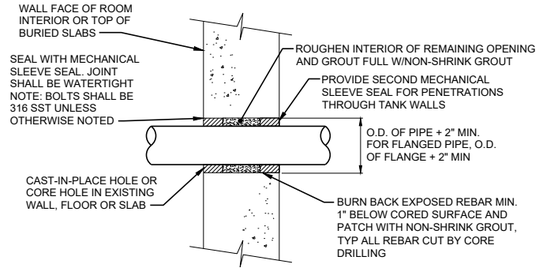


MINIMUM DIMENSIONS

NOMINAL PIPE DIA (INCHES)	T THICKNESS (INCHES)	C DIAMETER (INCHES)	W WELD SIZE (INCHES)
1	0.250	3.50	1/8
1 1/2	0.250	4.00	1/8
2	0.250	5.00	1/8
2 1/2	0.250	6.00	1/8
3	0.250	6.50	1/8
4	0.375	8.00	3/16
6	0.375	10.00	3/16
8	0.375	12.50	3/16
10	0.375	14.50	3/16
12	0.375	16.50	3/16
14	0.50	19.50	1/4
16	0.50	21.75	1/4
18	0.50	23.75	1/4
20	0.50	25.75	1/4
24	0.50	30.25	1/4
30	0.75	36.50	5/16
36	0.75	43.00	5/16
42	0.75	49.50	5/16
48	1.25	56.50	5/16
54	1.50	63.00	5/16

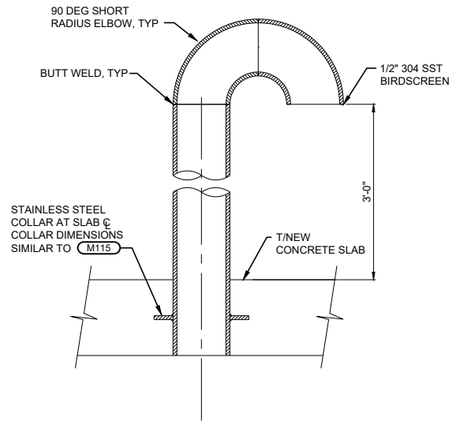
STEEL WALL AND FLOOR PIPE COLLAR DIMENSION DETAIL M115

NTS



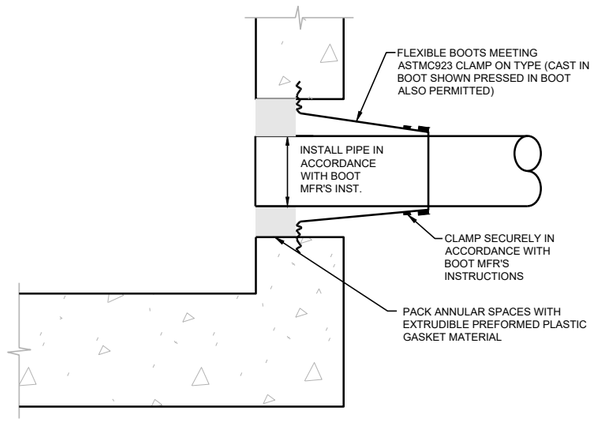
PIPE PENETRATION DETAIL M126

NTS



STAINLESS STEEL VENT PIPE DETAIL M703

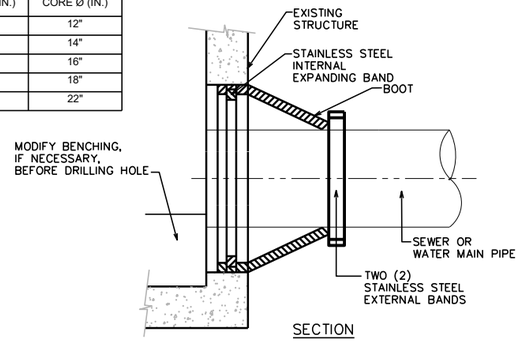
NTS



MANHOLE PIPE CONNECTION DETAILS M811

NTS

PVC PIPE CORING SIZES	
PIPE Ø (IN.)	CORE Ø (IN.)
8"	12"
10"	14"
12"	16"
15"	18"
18"	22"

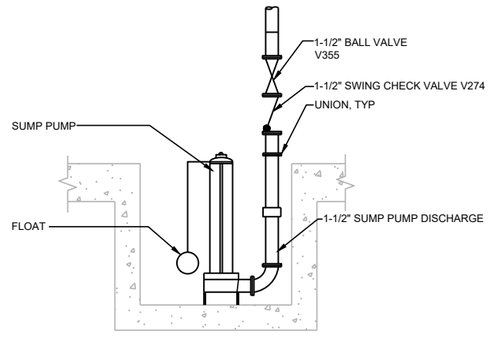


NOTES:

1. CORE-DRILL CIRCULAR OPENING IN STRUCTURE WALL OF DIAMETER TO FIT THE REQUIRED BOOT SIZE.
2. A-LOC OR KOR-N SEAL FLEXIBLE RUBBER BOOT SHALL BE USED FOR CONNECTIONS TO MANHOLES OR AS APPROVED BY CITY ENGINEERING SHALL BE USED FOR WATERTIGHT CONNECTION.
3. CUT, SHAPE AND SLOPE NEW INVERT CHANNEL IN THE EXISTING CONCRETE BENCH FOR SMOOTH FLOW FROM NEW CONNECTION.
4. CLEAN EXISTING STRUCTURE AND SEWER PIPE OF ANY DIRT, CONCRETE OR DEBRIS WHICH MAY ACCUMULATE DURING THE CONSTRUCTION PROCESS.
5. CONNECTION SHALL CONFORM TO ASTM C-923.

CORE AND CONNECTION TO EXISTING MANHOLE M812

NTS



SUMP PUMP DETAIL M900

NTS

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	KJA
Drawn By	KJA
Checked By	MTR
Approved By	EPC
Filename	999M1.DWG
Project No.	14163
Project Date	FEB 2024

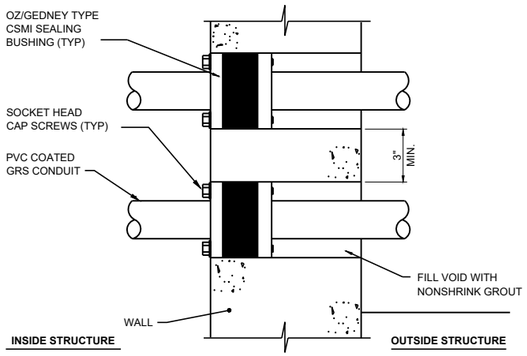
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GENERAL NOTES, SCHEDULES, AND STANDARD DETAILS
PROCESS-MECHANICAL

DONOHUE

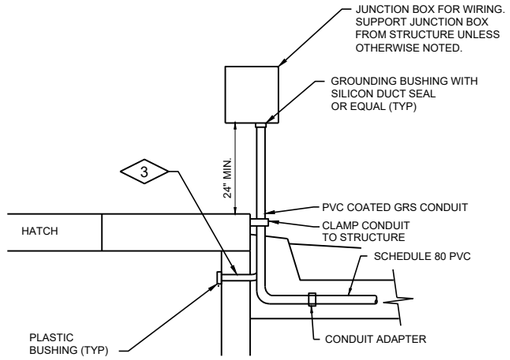
Sheet No. 40

Drawing No. 999-M-1



CONDUIT ENTRY THRU EXISTING WALL DETAIL E011

NTS

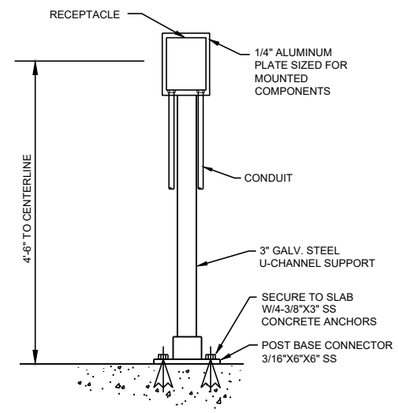


NOTE: PROVIDE CORROSION RESISTANT SPLICES.

NOTE: CONDUITS SHALL BE DIRECT BURIED.

SPLICEBOX DETAIL E031

NTS



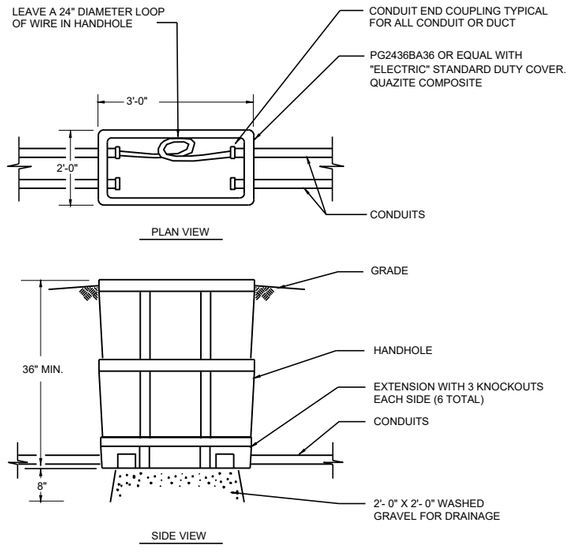
CONDUIT AND WIRING IN ACCORDANCE WITH NEC AND DIVISION 26.

CHANNEL MOUNT RECEPTACLE E099

NTS

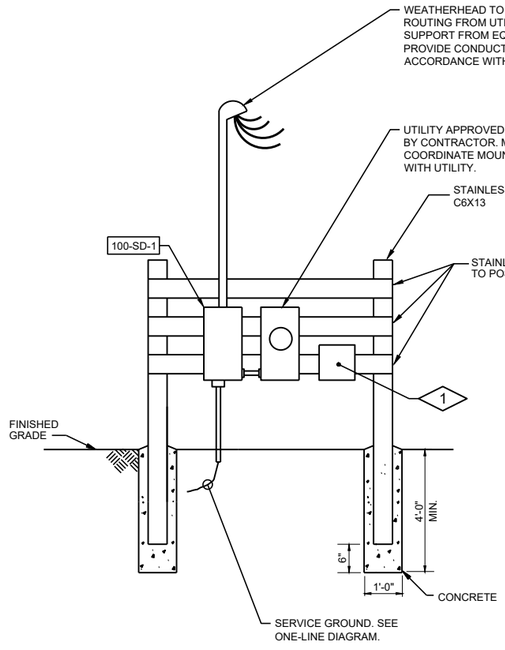
PLAN NOTES:

1. GENERATOR RECEPTACLE.
2. CONTRACTOR TO CORE DRILL NEW TOP SLAB. PROVIDE LINK SEAL; SEE DETAIL (E011). ENTIRE CONDUIT ROUTING FROM JUNCTION BOX SHALL BE PVC COATED GRS.



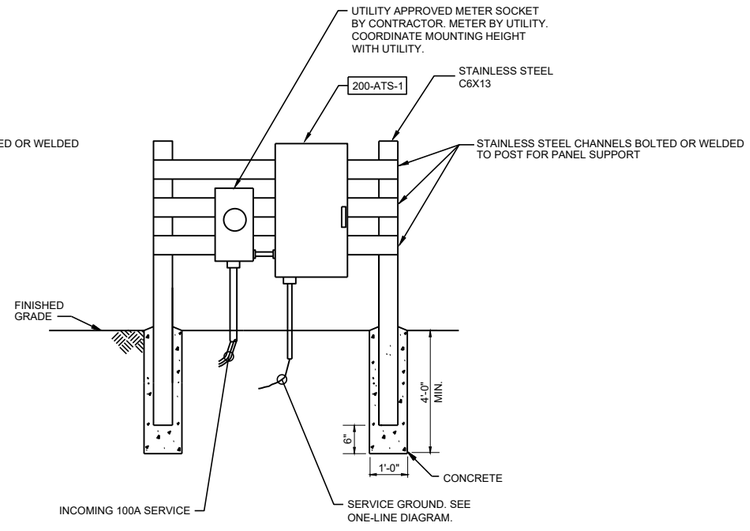
HANDHOLE DETAIL E234

NTS



PANEL MOUNTING DETAIL E301

NTS



PANEL MOUNTING DETAIL E302

NTS

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	JRR
Drawn By	JRR
Checked By	JTB
Approved By	JTB
Filename	999E1.DWG
Project No.	14163
Project Date	FEB 2024

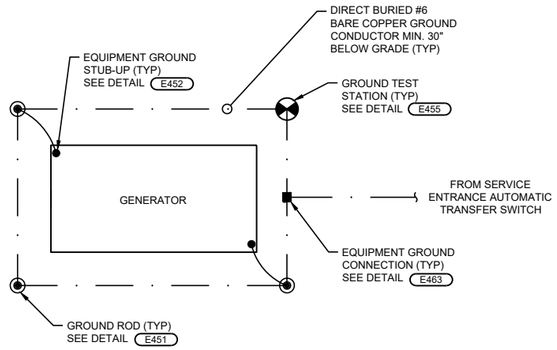
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
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JOLIET, IL

GENERAL NOTES, SCHEDULES, AND STANDARD DETAILS
ELECTRICAL

DONOHUE

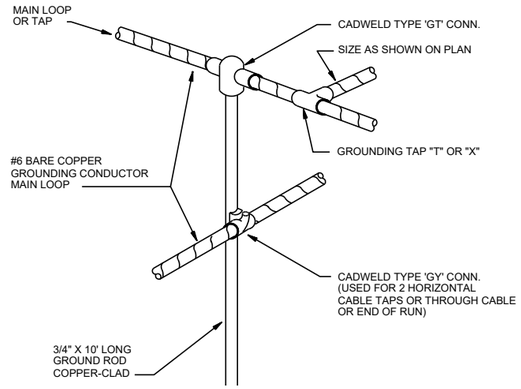
Sheet No. 41

Drawing No. **999-E-1**



GENERATOR GROUNDING DETAIL E450

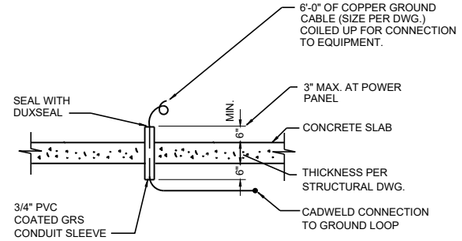
NTS



NOTE: HARGER ULTRA SHOT EXOTHERMIC CONNECTIONS ARE CONSIDERED AN OR EQUAL TO CADWELD

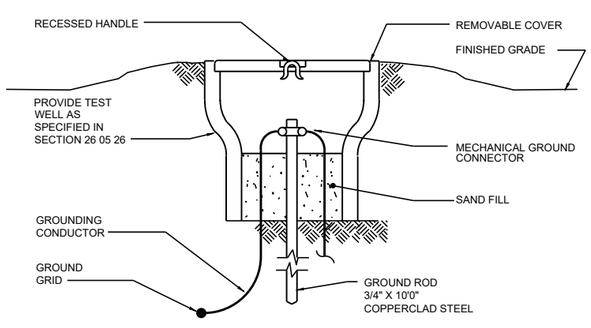
CONDUCTOR TO GROUND ROD CONNECTION DETAIL E451

NTS



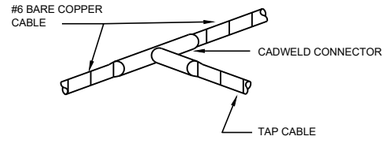
EQUIPMENT GROUND CABLE STUB-UP E452

NTS



GROUNDING TEST STATION DETAIL E455

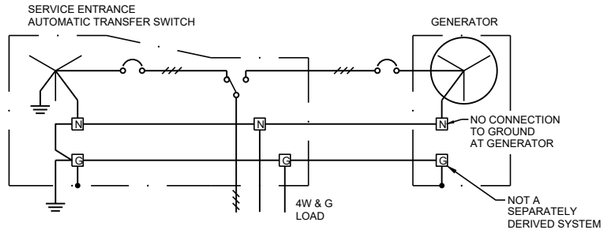
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NOTE: HARGER ULTRA SHOT EXOTHERMIC CONNECTIONS ARE CONSIDERED AN OR EQUAL TO CADWELD

GROUNDING CONNECTION DETAIL E463

NTS



STANDBY GENERATOR GROUNDING DETAIL E606

NTS

Revision Number	Revision Description	Drawn By	Checked By	Date

Designed By	JRR
Drawn By	JRR
Checked By	JTB
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Project Date	FEB 2024

CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
BENTON LS AND GREENFIELD LS - CONTRACT NO. 2809-0424
JOLIET, IL

GENERAL NOTES, SCHEDULES, AND STANDARD DETAILS
ELECTRICAL

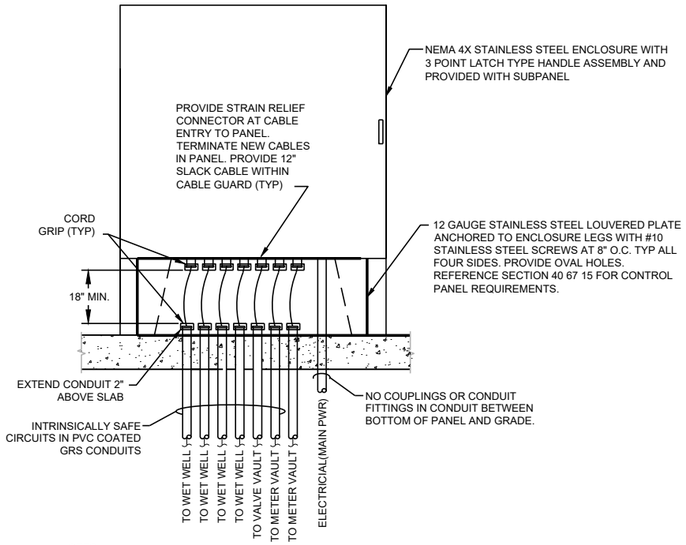
DONOHUE

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Drawing No. **999-E-2**

INSTRUMENTATION AND CONTROLS GENERAL NOTES

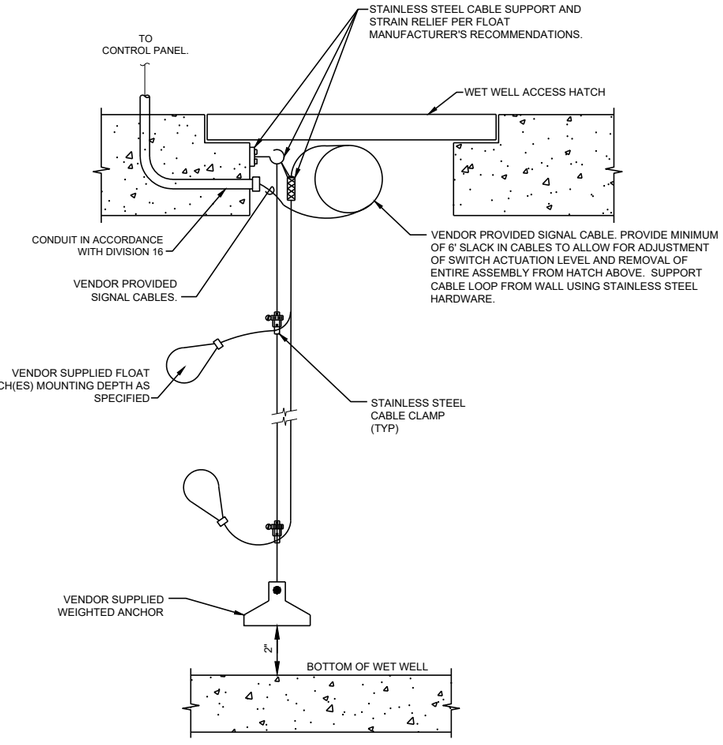
1. DRAWINGS SHOW CONTROL, SIGNAL, AND ASSOCIATED SINGLE PHASE POWER WIRING REQUIREMENTS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WIRING, WHETHER SHOWN OR NOT, NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM.
3. DRAWINGS SHOW APPROXIMATE LOCATIONS OF DEVICES AND PANELS. FIELD VERIFY DIMENSIONS AND ELEVATIONS.
4. SHIELDED AND UNSHIELDED CONDUCTORS SHALL BE RUN IN CONDUIT. SHIELDED CONDUCTORS SHALL NOT BE COMBINED WITH UNSHIELDED CONDUCTORS IN ANY CONDUIT. NEITHER SHIELDED NOR UNSHIELDED CONDUCTORS SHALL BE INCLUDED IN THE SAME CONDUIT AS POWER WIRING. INTRINSICALLY SAFE CIRCUITS SHALL BE RUN IN SEPARATE CONDUITS FROM NON-INTRINSICALLY SAFE CIRCUITS.
5. SHIELDED AND UNSHIELDED CONDUCTORS SHALL HAVE A MINIMUM OF 6" SEPARATION BETWEEN CONDUIT ON PARALLEL RUNS.
6. SHIELDED AND UNSHIELDED CONDUCTORS SHALL BE SEPARATED BY STEEL BARRIERS IN ALL COMBINED SIGNAL JUNCTION BOXES AND INSTRUMENT TERMINATION CABINETS.
7. CONDUITS SHALL BE SIZED TO ACCOMMODATE REQUIRED CONDUCTORS AND SPARES.
8. DRAWINGS DO NOT SHOW CONDUIT SYSTEMS. PROVIDE, AS A MINIMUM, PULL BOXES AS RECOMMENDED BY CONDUCTOR MANUFACTURER. CONDULETS SHALL NOT BE USED AS PULL BOXES.
9. PROVIDE EXPLOSION-PROOF SEAL-OFF FITTINGS ON ALL CONDUIT EXITING CLASSIFIED OR RATED LOCATIONS AS REQUIRED PER THE NEC.
10. CONDUCTORS SHALL NOT BE SPLICED EXCEPT AT TERMINALS OR AS DESIGNATED BY ENGINEER.
11. FOR EACH CONDUIT, PROVIDE A MINIMUM OF TWO CONDUCTORS OR 10% OF TOTAL CONDUCTORS IN CONDUIT, WHICHEVER IS GREATER AS SPARES. TAG BOTH ENDS OF EACH SPARE. TERMINATE EACH END OF SPARE CONDUCTORS AT TERMINALS WHENEVER POSSIBLE.
12. SPARE AND GROUND CONDUCTORS ARE GENERALLY NOT SHOWN IN WIRING TABLES.
13. INSTRUMENTATION TRANSMITTERS, DISPLAYS, AND OTHER INDICATORS SHALL BE ORIENTED SUCH THAT THEY ARE EASILY READABLE AND ACCESSIBLE FROM OPERATING LOCATIONS.



NOTES:
1. ROUND OFF ALL EXPOSED EDGES & CORNERS.
2. PAINT METAL IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.
3. PROVIDE SUFFICIENT COOLING AND AIR CONDITIONING TO MAINTAIN INTERIOR OF PANEL AT OR BELOW 90° F.

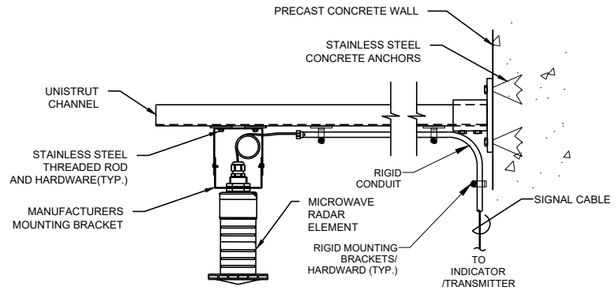
CONTROL PANEL N181

NTS



BALL FLOATS CABLE SUSPENSION WITH HATCH ACCESS N269

NTS



NOTES:
1. MOUNT RADAR ELEMENT IN A MANNER THAT BEAM ANGLE DOES NOT REFLECT OFF PIPING, BRACKETS OR FIXTURES INSIDE OF WET WELL.
2. MOUNT IN A LOCATION THAT IS EASILY ACCESSIBLE FROM HATCH OPENING
3. MOUNT RADAR ELEMENT IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
4. PAINT METAL IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.
5. PROVIDE MOUNTING FIXTURE AND HARDWARE THAT HAS CORROSION RESISTANT

RADAR LEVEL ELEMENT N238

NTS

Revision Number	Revision Description	Drawn By	Checked By	Date

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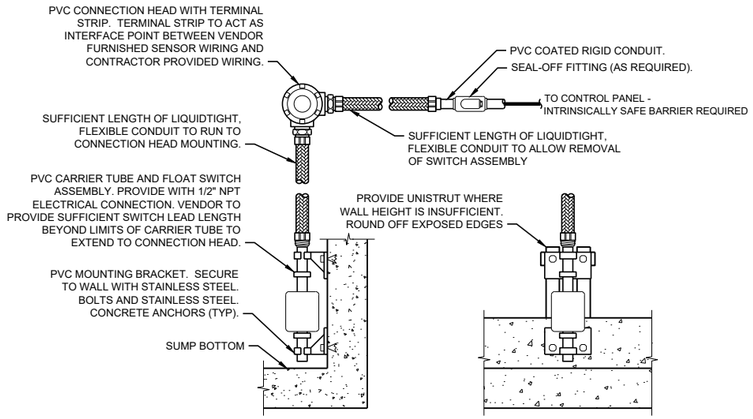
CITY OF JOLIET
2024 LIFT STATION REPLACEMENT PROGRAM
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JOLIET, IL

GENERAL NOTES, SCHEDULES, AND STANDARD DETAILS
INSTRUMENTATION AND CONTROLS

DONOHUE

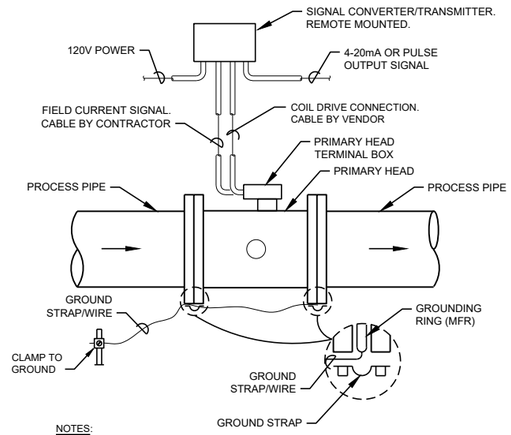
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Drawing No. **999-N-1**



VERTICAL FLOAT LEVEL SWITCH WALL MOUNTED N275

NTS

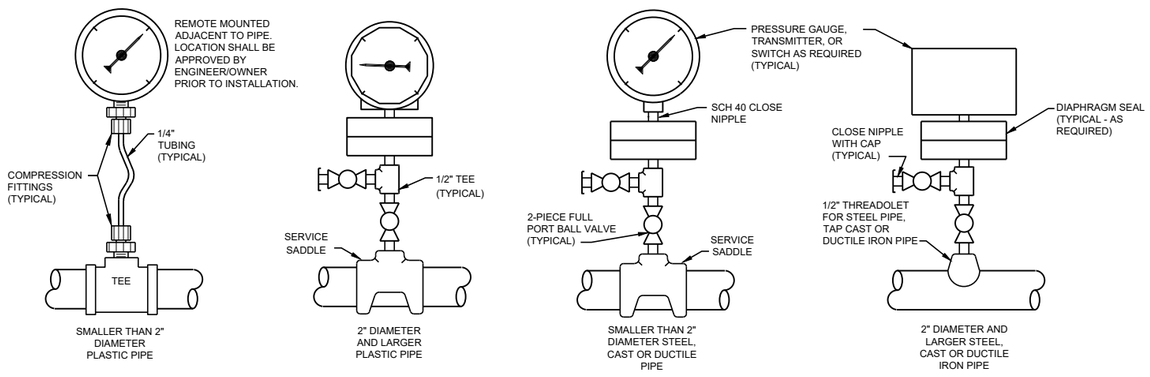


NOTES:

1. GROUND SHALL BE LESS THAN 0.5 OHM RESISTANCE AND LESS THAN 100 MILLIVOLT WHEN TESTED WITH STANDARD METHODS.
2. LENGTH OF COIL DRIVE AND FIELD CURRENT CABLES SHALL NOT EXCEED MAXIMUM LENGTH AS ESTABLISHED BY MANUFACTURER.
3. RUN COIL DRIVE AND FIELD CURRENT CABLES IN SEPARATE CONDUITS.

MAGNETIC FLOWMETER W/ REMOTE CONVERTOR/TRANSMITTER N382

NTS



NOTES:

1. ALL MATERIALS ARE TO BE AS NOTED UNLESS NOTED MATERIAL IS NOT COMPATIBLE WITH PROCESS STREAM. IF NOTED MATERIALS NOT COMPATIBLE WITH PROCESS STREAM PROVIDE MATERIALS THAT ARE COMPATIBLE.
2. 1/2" PIPE SHALL NOT BE REDUCED PRIOR TO FLUSHING TEE OR ISOLATION VALVE
3. INSTRUMENTATION TRANSMITTERS, DISPLAYS, AND OTHER INDICATORS SHALL BE ORIENTATED SUCH THAT THEY ARE EASILY READABLE AND ACCESSIBLE FROM OPERATING LOCATIONS.

PRESSURE ELEMENTS PIPE MOUNTED - W OR WO DIAPHRAGM SEAL N590

NTS

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2024 LIFT STATION REPLACEMENT PROGRAM
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GENERAL NOTES, SCHEDULES, AND STANDARD DETAILS
INSTRUMENTATION AND CONTROLS

DONOHUE

Sheet No. 44

Drawing No. 999-N-2