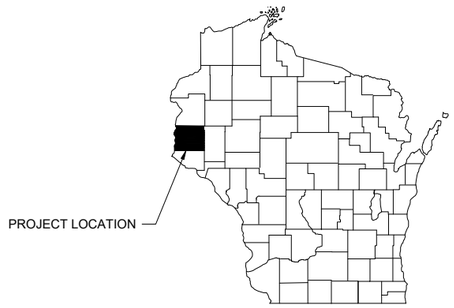
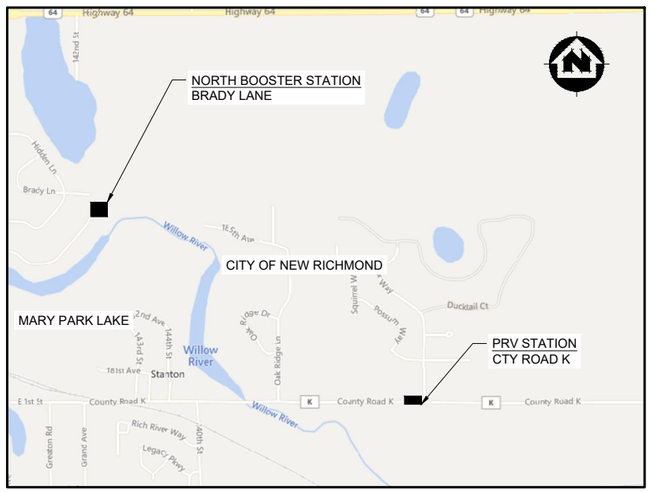
BOOSTER STATION AND PRV STATION

CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN



CITY OF NEW RICHMOND
THE CITY BEAUTIFUL

PLANS PREPARED ON BEHALF OF THE
CITY OF NEW RICHMOND, WISCONSIN



LOCATION MAP
NOT TO SCALE

QR CODE MAP LINKS

PRESSURE REDUCING VALVE STATION

NORTH BOOSTER STATION

CIVIL LEGEND

W	EXISTING WATER MAIN
	EXISTING WATER MAIN, VALVE & HYDRANT
	EXISTING WATER SERVICE & CURB STOP
	PROPOSED WATER MAIN, VALVE, & HYDRANT
	PROPOSED WATER SERVICE & CURB STOP
SAN	EXISTING SANITARY SEWER & MANHOLE
	PROPOSED SANITARY SEWER & MANHOLE
FM	EXISTING FORCEMAIN
SS	EXISTING STORM SEWER & INLET
	PROPOSED STORM SEWER & INLET
	PROPOSED STORM SEWER & MANHOLE
E	BURIED ELECTRIC
G	BURIED GAS & VALVE
TV	BURIED CABLE TELEVISION
T	BURIED TELEPHONE
FO	BURIED FIBER OPTICS
OH	OVERHEAD UTILITY
	RAILROAD TRACKS
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
CP	EXISTING CULVERT PIPE
	PROPOSED CULVERT PIPE
	FENCE LINE
	DRAINAGE ARROW
	SILT FENCE
	RIGHT-OF-WAY
	BASELINE
	PROPERTY LINE
	TREE LINE
	BENCHMARK
	IRON PIPE
	IRON ROD
	CONTROL POINT
	UTILITY POLE & GUY
1 000,00	SOIL BORING
	LIGHT POLE
	PEDESTAL
	STREET SIGN
	MAILBOX
	FLAGPOLE
	TREE - DECIDUOUS
	TREE - CONIFEROUS
	TREE TO BE REMOVED

UTILITY CONTACTS

NATURAL GAS:
XCEL ENERGY
ATTN: CATHY SCHANTNER
2426 7TH AVENUE
OSCEOLA, WI 54020
PH: (715) 737-1102

ELECTRIC:
NEW RICHMOND UTILITIES
ATTN: WESTON ARNDT, SUPERINTENDENT
156 E 1ST STREET
NEW RICHMOND, WI 54017
EMAIL: WARNDT@NEWRICHMONDWI.GOV
PH: (715) 246-4167

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NEW RICHMOND UTILITIES
ATTN: DAVID PUFALL, SUPERINTENDENT
156 E 1ST STREET
NEW RICHMOND, WI 54017
EMAIL: NRUWATER@NEWRICHMONDWI.GOV
PH: (715) 246-4167

CATV/FIBER:
NORTHWEST COMMUNICATIONS
116 HARRIMAN AVENUE
AMERY, WI 54001
PH: (715) 268-7101

PHONE/INTERNET:
FRONTIER COMMUNICATIONS
154 E 2ND STREET
NEW RICHMOND, WI 54017
PH: (715) 243-7004

WISCONSIN
LANCE E. TEUNISSEN
43365
SHEBOYGAN
WI
PROFESSIONAL ENGINEER
Lance Teunissen
11/18/2025

ELECTRICAL

WISCONSIN
ANDREW T. ROCKWEILER
E-47341
REEDSBURG, WI
PROFESSIONAL ENGINEER
11-18-25

GENERAL/CIVIL/PROCESS

WISCONSIN
SERENA H. GILLES
E-46901-6
MADISON
WI
PROFESSIONAL ENGINEER
11/18/2025

STRUCTURAL (BOOSTER STATION FOUNDATION)

DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

NOTE:
UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE AND CONTRACTOR SHALL HAVE APPROPRIATE UTILITY MARK EXACT LOCATIONS PRIOR TO CONSTRUCTION.

NO.	DATE	REVISION	BY

PROJECT DATE: NOVEMBER 18, 2025
DRAWN BY: JJY
DESIGNED BY: ATR
CHECKED BY: EE

PLOT DATE: 11/18/2025 1:44 PM, G:\07\07985\07985049\CADD\Construction Documents\07985049 Title Sheet.dwg

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

GENERAL
TITLE SHEET

PROJECT NO. 07985049.2
SHEET 00-G001

DISCIPLINE IDENTIFICATION & SHEET ORDER

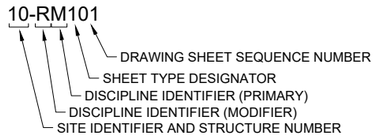
DESIGNATION	DISCIPLINE
G	GENERAL
R	REMOVAL/DEMOLITION
C	SITE CIVIL
L	LANDSCAPE
S	STRUCTURAL
A	ARCHITECTURAL
M	PROCESS MECHANICAL
P	PLUMBING
H	HVAC
E	ELECTRICAL
O	OPERATIONS
F	FIRE

NOTE: FOR CLARITY, PORTIONS OF THE WORK FOR A DISCIPLINE MAY BE SHOWN ON A SHEET WITH DIFFERENT DISCIPLINE DESIGNATION. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE THE WORK OF ALL DISCIPLINES SO THAT ALL WORK IS COMPLETED AS SHOWN, FOR A COMPLETE AND OPERABLE SYSTEM.

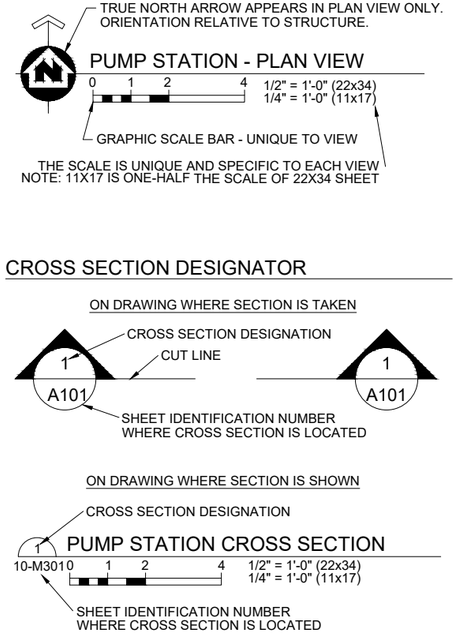
SHEET TYPE DESIGNATOR

DESIGNATOR	SHEET TYPE
0	GENERAL
1	PLANS
2	ELEVATIONS (EXTERIOR)
3	SECTIONS
4	LARGE-SCALE VIEWS
5	DETAILS
6	SCHEDULES & DIAGRAMS
7	NOT USED
8	NOT USED
9	ISOMETRICS

SHEET IDENTIFICATION NUMBERING EXAMPLE



PLAN VIEW LABEL



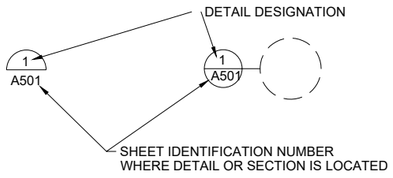
CROSS SECTION DESIGNATOR

ON DRAWING WHERE SECTION IS TAKEN

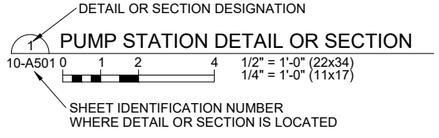
ON DRAWING WHERE SECTION IS SHOWN

DETAIL OR SECTION DESIGNATOR

ON DRAWING WHERE SECTION IS TAKEN



ON DRAWING WHERE SECTION IS SHOWN



SHEET INDEX

		NO.	DATE	REVISION	BY
PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: JJY	.	.	.	.
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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

GENERAL
SHEET IDENTIFIERS AND INDEX

PROJECT NO. 07985049.2
SHEET 00-G002

GENERAL NOTES:

1. THIS DRAWING IS A STANDARD LEGEND. SYMBOLS SHOWN MAY NOT ALL APPEAR ON DRAWINGS FOR THIS PROJECT.
2. ALL CONTACTS ARE SHOWN IN THE DE-ENERGIZED (SHELF) POSITION. BI-STABLE RELAYS ARE SHOWN IN THE RESET POSITION.
3. ONE-LINE DIAGRAMS FOR POWER SWITCHGEAR, USE ANSI STANDARD SYMBOLS AND ABBREVIATIONS.
4. SEE INSTRUMENTATION DRAWINGS FOR INSTRUMENTATION SYMBOLS AND DETAILS.
5. OTHER ABBREVIATIONS PER ANSI Z32.13 AND ISA S5.1
6. ELEVATIONS ADJACENT TO SYMBOLS ARE BASED ON STATION DATUM. HEIGHTS ADJACENT TO SYMBOLS (+4.0) ARE REFERENCED TO FINISHED FLOOR GRADE.
7. THE LETTERS "GFI" ADJACENT TO A RECEPTACLE INDICATES A GROUND FAULT INTERRUPTER FEED-THROUGH RECEPTACLE ASSEMBLY. THE LETTERS ADJACENT TO A PANELBOARD CIRCUIT BREAKER INDICATES A GROUND FAULT CIRCUIT BREAKER. THE LETTERS "IG" INDICATE AN ISOLATED GROUND RECEPTACLE, PROVIDE SEPARATE GROUND WIRE.
8. SEE SPECIFICATIONS AND SCHEDULES FOR COMPONENT REQUIREMENTS FOR MOTOR CONTROLLERS AND FOR CONTACTORS.
9. EXISTING PROCESS EQUIPMENT, ELECTRICAL EQUIPMENT, CONTROL DEVICES AND INSTRUMENTATION TO REMAIN WILL BE SHOWN AS HALF-TONE ON MOTOR CONTROL CENTER ONE-LINES AND PROCESS PIPING & INSTRUMENTATION DIAGRAMS.
10. EXISTING PROCESS EQUIPMENT, ELECTRICAL EQUIPMENT, CONTROL DEVICES AND INSTRUMENTATION TO REMAIN AND BE MODIFIED (RELOCATED, RE-WIRED, ETC.) WILL BE SHOWN AS FULL-TONE ON THE PROCESS PIPING & INSTRUMENTATION DIAGRAMS. REFER TO DRAWING NOTES AND CONTRACTUAL PROVISION REQUIREMENTS (P).

ELECTRICAL ABBREVIATIONS

AFD	ADJUSTABLE FREQUENCY DRIVE	EM	EMERGENCY	KVA	KILOVOLT-AMPERES	PC	PHOTO CONTROL
AFG	ABOVE FINISH GRADE	EP	CLASS 1, DIV. 1 EQUIPMENT	KW	KILOWATTS	PFR	PHASE FAIL RELAY
AHU	AIR HANDLING UNIT	EUH	ELECTRIC UNIT HEATER	MAU	MAKE-UP AIR UNIT	PVC	POLYVINYL CHLORIDE
AUTO	AUTOMATIC	EWC	ELECTRIC WATER COOLER	M.C.	MECHANICAL CONTRACTOR	REQ'D	REQUIRED
AUX	AUXILIARY	EWH	ELECTRIC WALL HEATER	MCC	MOTOR CONTROL CENTER	SPEC	SPECIFICATION
AWG	AMERICAN WIRE GAUGE	FBO	FURNISHED BY OTHERS	MFR	MANUFACTURER	SPD	160KA/PHASE MINIMUM SURGE PROTECTIVE DEVICE
BKR	BREAKER	G	GROUND	MS-AUX	MOTOR STARTER AUXIULIARY	SS	STAINLESS STEEL
C	CONDUIT	G.C.	GENERAL CONTRACTOR	mA	MILLIAMPERE	TC	7 DAY TIMECLOCK PROVIDED BY ELECTRICAL CONTRACTOR
CB	CIRCUIT BREAKER	GFI	GROUND FAULT INTERRUPTER	mV	MILLIVOLT	TYP	TYPICAL
CKT	CIRCUIT	GND	GROUND	MOD	MOTOR OPERATED DAMPER	UH	UNIT HEATER
CU	COPPER	HVAC	HEATING, VENTILATING & AIR CONDITIONING	NL	NIGHTLIGHT	UPS	UNINTERRUPTIBLE POWER SUPPLY
DISC	DISCONNECT	HTR	HEATER	N.O.	NORMALLY OPEN	W/	WITH
E.C.	ELECTRICAL CONTRACTOR	I.S.	INTRINSICALLY SAFE	N.C.	NORMALLY CLOSED	WH	WATER HEATER
ECB	ENCLOSED CIRCUIT BREAKER	I/O	INPUT/OUTPUT	NF	NON-FUSED	WP	WEATHER PROOF
EDH	ELECTRIC DUCT HEATER	IG	ISOLATED GROUND	NTS	NOT TO SCALE	XFMR	TRANSFORMER
EF	EXHAUST FAN	J-BOX	JUNCTION BOX	O.L.	OVERLOAD	XLP	CROSS LINKED POLYETHYLENE
ELEV	ELEVATION	KCMIL	THOUSAND CIRCULAR MILS	OHD	OVER HEAD DOOR		
		KV	KILOVOLTS				

ELECTRICAL PLAN SYMBOLS

- S — SINGLE POLE SWITCH, 2=2-POLE, 3=3 WAY, 4=4 WAY, P=PILOT R=RELAY, K=KEYED, I=ILLUMINATED, D=DIMMER M=MOTION X.P. = EXPLOSION PROOF
- SIMPLEX RECEPTACLE, GFI = GROUND FAULT CIRCUIT INTERRUPTER, WP = WEATHERPOROOF, XP=EXPLOSION PROOF,CW = CLOTHES WASHER, DW = DISCHWASHER, REF = REFRIGERATOR, = FREEZER, MIC = MICROWAVE
- DUPLEX RECEPTACLE GFI = GROUND FAULT CIRCUIT INTERRUPTER, WP = WEATHERPOROOF, XP=EXPLOSION PROOF,CW = CLOTHES WASHER, DW = DISCHWASHER, REF = REFRIGERATOR, = FREEZER, MIC = MICROWAVE
- DUPLEX RECEPTACLE, 42" ABOVE FINISHED FLOOR
- DUPLEX RECEPTACLE, HALF SWITCHED
- POWER RECEPTACLE 240V 30=30AMP 60=60AMP R = 50A RANGE OUTLET D = 30A DRYER OUTLET
- DUPLEX RECEPTACLE MOUNTED ABOVE COUNTER
- DUAL SERVICE FLOOR BOX, REFER TO DRAWINGS FOR REQUIREMENTS
- SINGLE SERVICE FLOOR BOX, REFER TO DRAWINGS FOR REQUIREMENTS
- POKE THROUGH FLOOR BOX, REFER TO DRAWINGS FOR REQUIREMENTS
- WIREMOLD PLUG STRIP
- EQUIPMENT CONNECTION
- SPECIAL OUTLET
- EQUIPMENT CONNECTION HOMERUN, SEE SPECIFIC PLAN FOR CIRCUIT
- DISCONNECT SWITCH, SEE SPECIFIC KEYNOTES. F = FUSED
- MS — MANUAL STARTER
- MOTOR CONNECTION
- J — J-BOX, SIZE AND TYPE AS NOTED
- LIGHT FIXTURE, CEILING MOUNTED, FLUSH OR SURFACE MOUNTED. REFER TO FIXTURE SCHEDULE
- LIGHT FIXTURE, CEILING MOUNTED, FLUSH OR SURFACE MOUNTED. REFER TO FIXTURE SCHEDULE
- LIGHT FIXTURE, WALL MOUNTED, FLUSH OR SURFACE. REFER TO FIXTURE SCHEDULE
- EMERGENCY LIGHT, WALL MOUNTED. REFER TO FIXTURE SCHEDULE.
- REMOTE EMERGENCY LIGHT, WALL MOUNTED. REFER TO FIXTURE SCHEDULE.
- EXIT LIGHT - ONE FACE, ARROWS IF SHOWN INDICATE DIRECTION TO EXIT. — WALL MOUNTED. NO LINES REPRESENT CEILING MOUNTED, TYPICAL ALL EXITS
- EXIT LIGHT - ONE FACE WITH EMERGENCY HEADS. ARROWS IF SHOWN INDICATE DIRECTION TO EXIT.
- EXIT LIGHT - TWO FACE. ARROWS IF SHOWN INDICATE DIRECTION TO EXIT.
- LIGHT FIXTURE, POLE MOUNTED, REFER TO SCHEDULE
- PC — PHOTOCELL

- DUAL TECHNOLOGY OCCUPANCY SENSOR, WALL MOUNTED WALL MOUNTED — WALL MOUNTED. NO LINES REPRESENT CEILING MOUNTED, TYPICAL.
- MULTI DIRECTION DUAL TECHNOLOGY OCCUPANCY SENSOR
- X — CEILING OCCUPANCY SENSOR WHERE X = TYPE. U = ULTRASONIC, L = LONG THROW, HB = HIGH BAY
- x — DATA OUTLET, X = NUMBER OF PORTS WHEN GREATER THAN 1.
- x — TELEPHONE OUTLET, X = NUMBER OF PORTS WHEN GREATER THAN 1.
- COMBINATION TELEPHONE/DATA OUTLET.
- WAP — WIRELESS ACCESS POINT
- TV — COAX OUTLET
- AI — 2 WAY INTERCOM SYSTEM DOOR STATION
- AM — 2 WAY INTERCOM SYSTEM MASTER STATION
- AO — AUTOMATIC DOOR OPENER
- CA — COMBINATION CARD ACCESS CARD READER PAD
- CR — CARD READER
- DC — DOOR POSITION SWITCH CONTACT
- DP — DOOR POSITION SWITCH
- DS — DOOR STRIKE
- EL — ELECTRIC TRIM LATCH
- KP — KEY PAD
- LS — LIMIT SWITCH
- M — SECURITY SYSTEM MOTION DETECTOR CEILING MOUNTED 360°
- M — SECURITY SYSTEM MOTION DETECTOR - WALL MOUNTED
- ML — MAGNETIC LOCK
- RX — REQUEST TO EXIT
- SECURITY CAMERA - DIRECTIONAL — WALL MOUNTED. NO LINES REPRESENT CEILING MOUNTED (TYPICAL)
- SECURITY CAMERA - 90°
- SECURITY CAMERA - 180°
- SECURITY CAMERA - 270°
- SECURITY CAMERA - 360°

PROCESS PIPING AND INSTRUMENEATION DIAGRAM SYMBOLS

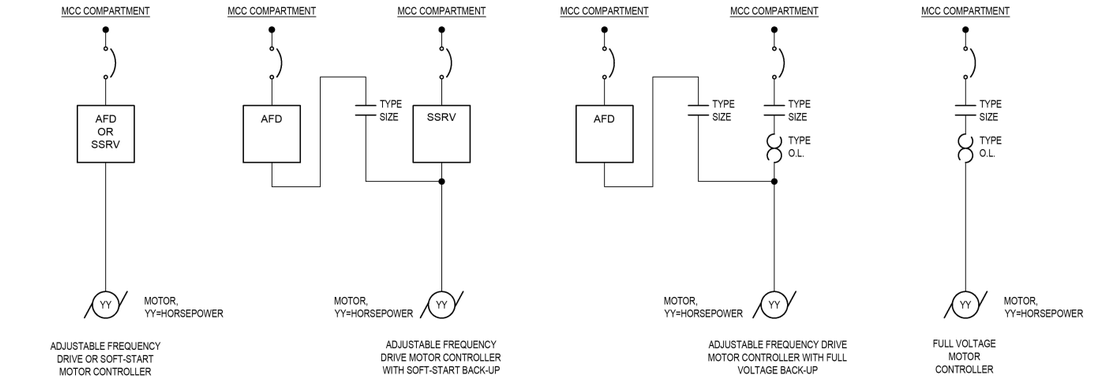
- FIELD MOUNTED INSTRUMENT OR CONTROL DEVICE
- PRIMARY FRONT-OF-PANEL MOUNTED INSTRUMENT OR CONTROL DEVICE
- PRIMARY BACK-OF-PANEL MOUNTED INSTRUMENT OR CONTROL DEVICE
- AUXILIARY FRONT-OF-PANEL MOUNTED INSTRUMENT OR CONTROL DEVICE
- AUXILIARY BACK-OF-PANEL MOUNTED INSTRUMENT OR CONTROL DEVICE
- NORMALLY ACCESSIBLE SCADA/HMI SYSTEM FUNCTION
- NOT NORMALLY ACCESSIBLE SCADA/HMI SYSTEM FUNCTION
- SCADA ALARM NOTIFICATION SYSTEM ALARM FUNCTION
- I — INTERLOCK FUNCTION, REFER TO SPECIFICATIONS
- RACK MOUNTED CONTROLLER INPUT/OUTPUT POINT (PLC OR PLC RACK I-O, ETC.)
- REMOTE MOUNTED NETWORK DEVICE INPUT/OUTPUT POINT (AFD, O.L., ETC.)

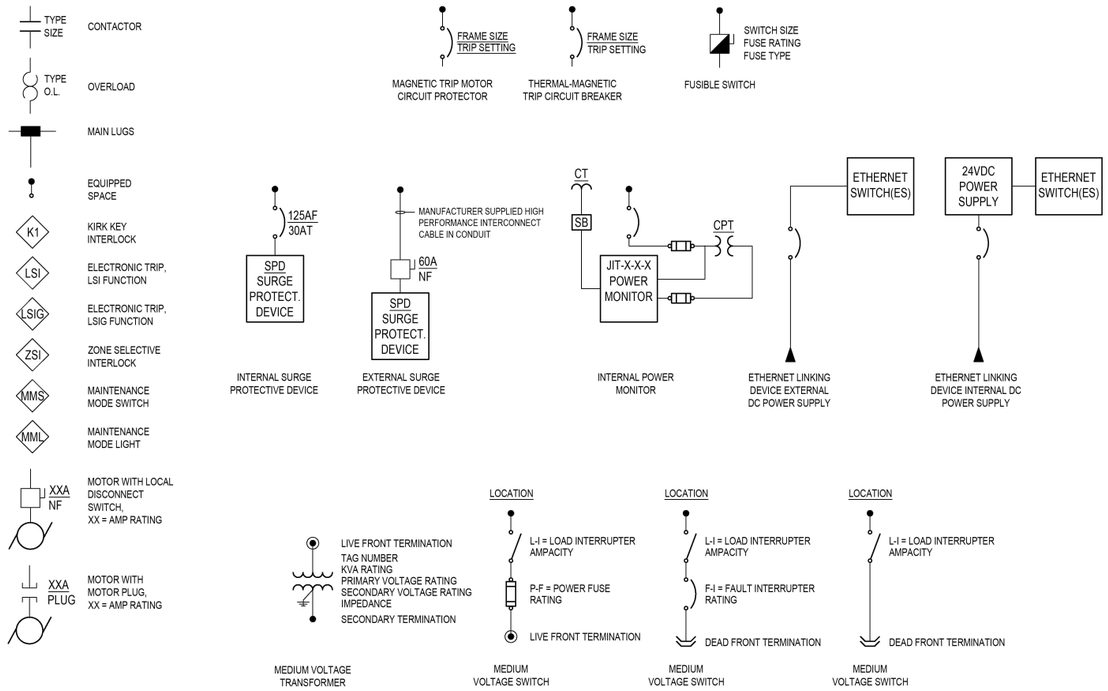
NOTE: REFER TO INSTRUMENTATION AND CONTROL DEVICE SYMBOL LEGEND FOR DESCRIPTORS AND CONTRACTUAL PROVISIONAL REQUIREMENTS.

- MS / XX — FULL VOLTAGE MOTOR CONTROLLER, XX INDICATES LOCATION
- XX / YY — MOTOR CONTROLLER, XX INDICATES TYPE OF CONTROLLER WHERE SSRV = REDUCED VOLTAGE SOFT STARTER AND AFD = ADJUSTABLE FREQUENCY DRIVE. YY INDICATES LOCATION, FOR EXAMPLE 10-MCC-001.

- FIRE ALARM PANEL OR SUPPORT ITEM. FACP = FIRE ALARM CONTROL PANEL, FAAP = FIRE ALARM ANNUNCIATOR PANEL, FAPS - FIRE ALARM POWER SUPPLY, FACC = FIRE ALARM COMMAND CENTER, RTS = REMOTE TEST SWITCH
- X — WALL MOUNTED AUDIO (HORN) / VISUAL NOTIFICATION APPLIANCE, X = CANDELLA LEVEL
- X — WALL MOUNTED AUDIO (VOICE) / VISUAL NOTIFICATION APPLIANCE, X = CANDELLA LEVEL; WALL MOUNTED FIRE ALARM SPEAKER
- SX — WALL MOUNTED VISUAL NOTIFICATION APPLIANCE, X = CANDELLA LEVEL
- X — CEILING MOUNTED AUDIO (HORN) / VISUAL NOTIFICATION APPLIANCE, X = CANDELLA LEVEL
- X — CEILING MOUNTED AUDIO (VOICE) /VISUAL NOTIFICATION APPLIANCE, X = CANDELLA LEVEL; CEILING MOUNTED FIRE ALARM SPEAKER
- SX — CEILING MOUNTED VISUAL NOTIFICATION, X = CANDELLA LEVEL APPLIANCE
- F — WALL MOUNTED AUDIO (HORN) NOTIFICATION APPLIANCE
- B — WALL MOUNTED BELL
- DOOR HOLDER. M = MAGNETIC, EH = ELECTRIC
- CM — ADDRESSABLE CONTROL MODULE
- F — MANUAL PULL STATION
- DETECTOR, H = HEAT, S = SMOKE, CM = CARBON MONOXIDE, DS = DUCT SMOKE, ES = ELEVATOR SMOKE
- S — SMOKE DETECTOR WITH SOUNDER BASE
- FS — SPRINKLER FLOW SWITCH
- PS — SPRINKLER PRESSURE SWITCH
- TS — SPRINKLER TAMPER SWITCH
- ADDRESSABLE MONITOR MODULE
- ARS — AREA OF REFUGE (CALL BOX) / TWO-WAY COMMUNICATION SYSTEM
- ARM — AREA OF REFUGE MASTER (BASE STATION) / TWO-WAY COMMUNICATION SYSTEM
- TWC — TWO-WAY COMMUNICATION (CALL BOX)
- TWCM — TWO-WAY COMMUNICATION MASTER (BASE STATION)

MOTOR CONTROL CENTER (MCC) SYMBOLS





PROCESS INSTRUMENTATION, EQUIPMENT, AND PROCESS VALVE ELECTRICAL INSTALLATION AND WIRING SCHEDULE WIRE LEGEND

ANALOG SIGNAL	Ax = 2C#16 SHIELDED TWISTED PAIR CABLE, WHERE x = NUMBER OF CABLES. PROVIDE IN CONDUIT(S) AS REQUIRED TO NOT EXCEED SPECIFIED MAXIMUM CONDUIT FILL, MINIMUM SIZE 3/4".
DISCRETE SIGNAL	Dx = #14 THHN WIRE, WHERE x = NUMBER OF WIRES. PROVIDE IN CONDUIT(S) AS REQUIRED TO NOT EXCEED SPECIFIED MAXIMUM CONDUIT FILL, MINIMUM SIZE 3/4".
MANUFACTURER'S SIGNAL	Mx = CONDUIT FOR CABLE SUPPLIED BY MANUFACTURER, WHERE x = NUMBER OF CONDUITS. MINIMUM 3/4" CONDUIT SIZE OR LARGER AS REQUIRED TO NOT EXCEED SPECIFIED MAXIMUM CONDUIT FILL.
ETHERNET SIGNAL	Ex = CAT6 CABLE, WHERE x = NUMBER OF CABLES. PROVIDE IN CONDUIT(S) AS REQUIRED TO NOT EXCEED SPECIFIED MAXIMUM CONDUIT FILL, MINIMUM SIZE 3/4".

PROCESS NOTES:

1. SIZE CONDUIT PER NEC. MINIMUM SIZE 3/4".
2. PROVIDE SEPARATE CONDUITS FOR THE FOLLOWING:
   a. 4-20mADC
   b. 120 VOLT CONTROL
   c. 120 VOLT POWER
   d. 480 VOLT POWER
   e. LOW VOLTAGE INSTRUMENTATION
   f. COMMUNICATION
3. REFER TO SPECIFICATION 26 90 00 FOR DETAILS ON VARIOUS LOOP FUNCTIONS AS WELL AS DETAILS REGARDING OPERATOR INTERFACE FUNCTIONS.
4. REFER TO DIVISION SPECIFICATIONS FOR ADDITIONAL DETAILS REGARDING INSTRUMENTATION AND CONTROL EQUIPMENT FURNISHED UNDER THOSE SPECIFICATIONS.

WIRING & CONDUIT

1. (X) #12 & #12G
   REFERS TO NUMBER OF WIRE(S) AND SIZE OF WIRE(S) REQUIRED, WHERE AS:
   (1) = ONE WIRE
   #12 = THE SIZE OF WIRE REQUIRED
   G = GROUND WIRE
2. (X) 1-1/2"C
   REFERS TO NUMBER OF CONDUIT(S) AND SIZE OF CONDUIT(S) REQUIRED, WHERE AS:
   (1) = ONE CONDUIT
   1-1/2"C = THE SIZE OF CONDUIT REQUIRED

REFER TO DRAWINGS FOR REQUIRED WIRE AND CONDUIT SIZES AND QUANTITIES.

PLOT DATE: 11/18/2025 5:06:22 PM — J:\Autodesk Docs\07985049 - New Richmond Water Tower #3 and Booster Station Design\07985049_ELECTRICAL MODEL_R24.rvt

PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: AMS	No	DATE	REVISIONS	BY
	DESIGNED BY: AMS				
	CHECKED BY: LET				

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

ELECTRICAL SYMBOLS AND ABBREVIATIONS

PROJECT NO. 07985049.2
SHEET 00-G003

EQUIPMENT / DEVICE TAG NAMING AND ADDITIONAL DESCRIPTOR CONVENTIONS

COMMON NOTATIONS (WHERE REFERENCED UNDER TAG CATEGORY)

ADDITIONAL DESCRIPTORS:

- P = CONTRACTUAL PROVISION REQUIREMENTS (ONLY IDENTIFIED ON CONSTRUCTION CONTRACT DRAWINGS) WHERE:
  - (BLANK) = EQUIPMENT PROVIDED UNDER DIVISION 26, REFER TO SPECIFICATIONS
  - * = EXISTING EQUIPMENT WITH WORK REQUIRED
  - ** = EQUIPMENT PROVIDED UNDER ANOTHER DIVISION
  - *** = SPECIAL CONDITION, REFER TO NOTES
- C = ATMOSPHERE (REFER TO SPACE CLASSIFICATION ON PLANS RATING REQUIREMENTS) / INSTALLATION REQUIREMENTS FOR ELECTRICALLY POWERED EQUIPMENT WHERE:
  - (BLANK) = NON-RATED ATMOSPHERE / NORMAL INSTALLATION REQUIREMENTS
  - i.s. = HAZARDOUS LOCATION ATMOSPHERE / INTRINSICALLY SAFE INSTALLATION REQUIREMENTS
  - x.p. = HAZARDOUS LOCATION ATMOSPHERE / EXPLOSION PROOF INSTALLATION REQUIREMENTS

AUTOMATICALLY OPERATED VALVES AND GATES

TAG NAMING:

- T = FLUID ABBREVIATION WHERE:
  - A = AIR
  - C = CHEMICAL
  - F = FUEL
  - L = LIQUID
  - S = SOLIDS
  - W = WATER (TREATED, NON-POTABLE, OR POTABLE)
- U = CONTROL TYPE WHERE:
  - C = AUTOMATICALLY CONTROLLED
- V = ELEMENT TYPE WHERE:
  - V = VALVE
  - G = GATE
- W = UNIT PROCESS NUMBER
- X = LOOP NUMBER
- Y = UNIT NUMBER, USED FOR MULTIPLE DEVICES WITH THE SAME W-X DESIGNATION
- Z = SET NUMBER, USED FOR MULTIPLE DEVICES WITH THE SAME W-X-Y DESIGNATION

ADDITIONAL DESCRIPTORS:

- A = NOMINAL PIPE SIZE
- B = VALVE OR GATE TYPE, REFER TO SPECIFICATIONS
- P = CONTRACTUAL PROVISION REQUIREMENTS (SEE COMMON NOTATIONS)
- C = ATMOSPHERE/INSTALLATION REQUIREMENTS FOR ELECTRICALLY POWERED EQUIPMENT (SEE COMMON NOTATIONS)
- D = ACTUATOR TYPE OR SERVICE WHERE::
  - (BLANK) = MANUAL
  - M = MODULATING
  - O/C = OPEN/CLOSE

EQUIPMENT

TAG NAMING:

- T = EQUIPMENT IDENTIFIER
- W = UNIT PROCESS NUMBER
- X = LOOP NUMBER
- Y = UNIT NUMBER, USED FOR MULTIPLE DEVICES WITH THE SAME W-X DESIGNATION

ADDITIONAL DESCRIPTORS:

- P = CONTRACTUAL PROVISION REQUIREMENTS (SEE COMMON NOTATIONS)
- C = ATMOSPHERE/INSTALLATION REQUIREMENTS FOR ELECTRICALLY POWERED EQUIPMENT (SEE COMMON NOTATIONS)
- NAME = DESCRIPTIVE EQUIPMENT NAME

PROCESS LINES

TAG NAMING:

- X = NOMINAL PIPE DIAMETER IN INCHES, (BLANK) INDICATES OPEN CONDUIT
- Y = FLOW STREAM IDENTIFIER FROM "FLOW STREAM ABBREVIATION TABLE"
- Z = UNIT PROCESS NUMBER (WHERE NOTED)
- AA = UNIT PROCESS FLOW STREAM NUMBER (WHERE NOTED)
- BB = FLOW STREAM ROUTE NUMBER (WHERE NOTED)
- CC = FLOW STREAM ROUTE SEGMENT NUMBER (WHERE NOTED)

PROCESS LINE LINKS

ADDITIONAL DESCRIPTORS:

- W = UNIT PROCESS NUMBER
- A = INTERFACE LETTER
- TO = DESTINATION DRAWING
- FROM = SOURCE DRAWING
- D = DESCRIPTIVE TEXT

VESSELS, STRUCTURES, AND TANKS

TAG NAMING:

- T = EQUIPMENT IDENTIFIER
- W = UNIT PROCESS NUMBER
- X = LOOP NUMBER
- Y = UNIT NUMBER, USED FOR MULTIPLE DEVICES WITH THE SAME W-X DESIGNATION

ADDITIONAL DESCRIPTORS:

- P = CONTRACTUAL PROVISION REQUIREMENTS (SEE COMMON NOTATIONS)
- NAME = DESCRIPTIVE EQUIPMENT NAME

MANUALLY OPERATED VALVES AND GATES

TAG NAMING:

- T = FLUID ABBREVIATION WHERE:
  - A = AIR
  - C = CHEMICAL
  - F = FUEL
  - L = LIQUID
  - S = SOLIDS
  - W = WATER (TREATED, NON-POTABLE, OR POTABLE)
- U = CONTROL TYPE WHERE:
  - (BLANK) = MANUALLY CONTROLLED
- V = ELEMENT TYPE WHERE:
  - V = VALVE
  - G = GATE
- W = UNIT PROCESS NUMBER
- X = LOOP NUMBER
- Y = UNIT NUMBER, USED FOR MULTIPLE DEVICES WITH THE SAME W-X DESIGNATION
- Z = SET NUMBER, USED FOR MULTIPLE DEVICES WITH THE SAME W-X-Y DESIGNATION

ADDITIONAL DESCRIPTORS:

- A = NOMINAL PIPE SIZE
- B = VALVE TYPE, REFER TO SPECIFICATIONS
- P = CONTRACTUAL PROVISION REQUIREMENTS (SEE COMMON NOTATIONS)

INSTRUMENTATION & CONTROL DEVICES

TAG NAMING:

- T = FIRST LETTER FROM "INSTRUMENT SOCIETY OF AMERICA INSTRUMENT DEFINITION TABLE"
- UV = SUCCEEDING LETTERS FROM "INSTRUMENT SOCIETY OF AMERICA INSTRUMENT DEFINITION TABLE"
- W = UNIT PROCESS NUMBER
- X = LOOP NUMBER
- Y = UNIT NUMBER, USED FOR MULTIPLE DEVICES WITH THE SAME W-X DESIGNATION
- Z = SET NUMBER, USED FOR MULTIPLE DEVICES WITH THE SAME W-X-Y DESIGNATION

ADDITIONAL DESCRIPTORS:

- A = NUMBER OF UNITS DEPICTED (Y VARIES WITH ASSOCIATED EQUIPMENT OR DEVICE UNIT NUMBER)
- B = NUMBER OF SETS DEPICTED, ONLY IDENTIFIED IF NECESSARY (Z VARIES FROM 1 TO B)
- P = CONTRACTUAL PROVISION REQUIREMENTS (SEE COMMON NOTATIONS)
- C = ATMOSPHERE/INSTALLATION REQUIREMENTS FOR ELECTRICALLY POWERED EQUIPMENT (SEE COMMON NOTATIONS) / EXPLOSION PROOF INSTALLATION REQUIREMENTS
- D = SUPPLEMENTAL DESCRIPTION, REFER TO ABBREVIATIONS
- XX = CONTROL SYSTEM INPUT/OUTPUT TYPE WHERE:
  - DI = DISCRETE INPUT
  - DO = DISCRETE OUTPUT
  - AI = ANALOG INPUT
  - AO = ANALOG OUTPUT
- YY = NUMBER OF POINTS DEPICTED, REFER TO I-O SCHEDULES

CONTROL PANELS

TAG NAMING:

- T = FIRST INDENTIFIER WHERE:
  - (BLANK) = LOCAL CONTROL PANEL
  - XXX = SCADA SYSTEM PLC CONTROL PANEL LOCATION STRUCTURE NUMBER
- UV = SECOND IDENTIFIER WHERE
  - LCP = LOCAL CONTROL PANEL
  - PLC = SCADA SYSTEM PLC CONTROL PANEL
- W = UNIT PROCESS NUMBER FOR LOCAL CONTROL PANELS
- X = LOOP NUMBER FOR LOCAL CONTROL PANELS
- Y = UNIT NUMBER FOR LOCAL CONTROL PANELS OR SCADA SYSTEM PLC CONTROL PANELS

ADDITIONAL DESCRIPTORS:

- P = CONTRACTUAL PROVISION REQUIREMENTS (SEE COMMON NOTATIONS)

PROCESS FLOW STREAM IDENTIFICATION

AIR

- AA = PROCESS AIR, ATMOSPHERIC
- CA = PROCESS AIR, CONTROL
- PALP = PROCESS AIR, LOW PRESSURE
- PAHP = PROCESS AIR, HIGH PRESSURE
- SA = PROCESS AIR, SERVICE

CHEMICAL

- APHC = ACIDIC PH CONTROL
- CLG = CHLORINATION GAS
- CLS = CHLORINATION SOLUTION
- CPHC = CAUSTIC PH CONTROL
- DCLG = DECHLORINATION GAS
- DCLS = DECHLORINATION SOLUTION
- NRC = NITROGEN REMOVAL CARBON
- PRF = PHOSPHORUS REMOVAL FLOCCULANT
- PRC = PHOSPHORUS REMOVAL COAGULANT
- STF = SLUDGE THICKENING FLOCCULANT
- SDF = SLUDGE DEWATERING FLOCCULANT

FUEL AND OIL

- BG = BIOGAS (DIGESTER GAS)
- DFS = DIESEL FUEL SUPPLY
- DFR = DIESEL FUEL RETURN
- FO = FUEL OIL
- HO = HYDRAULIC OIL
- LPL = LIQUEFIED PETROLEUM LIQUID
- LPG = LIQUEFIED PETROLEUM GAS
- LO = LUBRICATION OIL
- NG = NATURAL GAS
- TOS = THERMAL OIL SUPPLY
- TOR = THERMAL OIL RETURN

SOLIDS

- CKS = SLOPPY DRIED SLUDGE CAKE
- DDS = DEWATERED DIGESTED SLUDGE
- DS = DIGESTED SLUDGE
- DSC = DRIED SLUDGE CAKE
- GR = GRIT
- PSD = PRIMARY SLUDGE
- PSM = PRIMARY SCUM
- RAS = RETURN ACTIVATED SLUDGE
- SCR = SCREENINGS
- SP = SEPTAGE
- SSM = SECONDARY SCUM
- TDS = THICKENED DIGESTED SLUDGE
- TPSD = THICKENED PRIMARY SLUDGE
- TWAS = THICKENED WASTE ACTIVATED SLUDGE
- WAS = WASTE ACTIVATED SLUDGE

WATER

- W1 = POTABLE WATER, PROTECTED
- W2 = POTABLE WATER, UNPROTECTED
- W3 = NON-POTABLE WATER

WASTE

- CEN = CENTRATE
- DCT = DECANT
- EFR = EXCESS FLOW RETURN
- FBW = FILTER BACKWASH
- FCE = FINAL CLARIFIER EFFLUENT
- FE = FILTER EFFLUENT
- FI = PUMPED FILTER INFLUENT
- FIL = FILTRATE
- GR/R = GRIT RETURN
- INFL = WASTEWATER, INFLUENT
- ML = MIXED LIQUOR
- PCE = PRIMARY CLARIFIER EFFLUENT
- PCI = PRIMARY CLARIFIER INFLUENT
- PLE = PLANT EFFLUENT
- RWW = WASTEWATER, PRIOR TO HEADWORKS
- SAN = SANITARY
- SCE = SECONDARY CLARIFIER EFFLUENT
- SCR/R = SCREENINGS RETURN
- SPN = SUPERNATANT
- SS = SIDESTREAMS
- XX/D = PROCESS DRAIN, XX=FLOW STREAM
- XX/OF = PROCESS OVERFLOW, XX=FLOW STREAM
- XX/S = PROCESS SAMPLE, XX=FLOW STREAM
- XX/V = PROCESS VENT, XX=FLOW STREAM

NOTES:

1. THIS IS A COMPREHENSIVE SYMBOL AND ABBREVIATION LEGEND AND AS SUCH, MAY DEPICT SYMBOLS AND ABBREVIATIONS THAT ARE NOT APPLICABLE TO THIS PROJECT.
2. PROCESS PIPING AND VALVES SHOWN ON P&IDS ARE INTENDED TO COMPLIMENT OTHER DRAWINGS. ADDITIONAL PROCESS DETAILS AND ACCESSORIES MAY BE DEPICTED ON OTHER DRAWINGS.
3. REFER TO "EQUIPMENT / DEVICE TAG NAMING AND ADDITIONAL DESCRIPTOR CONVENTIONS" FOR DEFINITION OF THE NOTATIONS SHOWN ON:
   - 3.1. "INSTRUMENTATION AND CONTROL DEVICE SYMBOL LEGEND"
   - 3.2. "PROCESS AND SIGNAL LINE LINK LEGEND"
   - 3.3. "LINE AND EQUIPMENT TAG LEGEND"

INSTRUMENT SOCIETY OF AMERICA INSTRUMENT DEFINITION TABLE

LETTER	FIRST LETTER		SUCCEEDING LETTERS		
	PROCESS OR INITIATING VARIABLE	VARIABLE MODIFIER	READOUT/PASSIVE FUNCTION	OUTPUT/ACTIVE FUNCTION	FUNCTION MODIFIER
A	ANALYSIS (+)		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE (+)	USER'S CHOICE (+)	USER'S CHOICE (+)
C	CONDUCTIVITY			CONTROL	
D	DENSITY	DIFFERENTIAL			DEVIATION
E	VOLTAGE		SENSOR OR PRIMARY ELEMENT		
F	FLOW	RATIO (FRACTION)			
G	USER'S CHOICE (+)		GLASS OR VIEWING DEVICE	GATE	
H	HAND (MANUAL)			HIGH	HIGH
I	CURRENT		!NDICATE		
J	POWER		SCAN		
K	TIME OR SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (STATUS INDICATION)	LOW	LOW
M	MOISTURE				MIDDLE OR INTERMEDIATE
N	TORQUE		USER'S CHOICE (+)	USER'S CHOICE (+)	USER'S CHOICE (+)
O	USER'S CHOICE (+)		ORIFICE OR RESTRICTION		OPEN
P	PRESSURE (OR VACUUM)		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT (+)	INTEGRATE OR TOTALIZE			
R	RADIATION		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE (+)		MULTIFUNCTION (+)	MULTIFUNCTION (+)	MULTIFUNCTION (+)
V	VISCOSITY, VIBRATION, OR MECHANICAL ANALYSIS			VALVE, DAMPER, OR LOUVER	
W	WEIGHT OR FORCE		WELL OR PROBE		
X	USER'S CHOICE (+)	X AXIS	ACCESSORY DEVICES	UNCLASSIFIED (+)	UNCLASSIFIED (+)
Y	EVENT STATE (+)	Y AXIS		RELAY OR COMPUTE	
Z	POSITION	Z AXIS		DRIVE, ACTUATE, OR UNCLASSIFIED FINAL CONTROL ELEMENT	

(+) EXPLANATION IS INDICATED AS DESCRIPTOR ADJACENT TO INSTRUMENT SYMBOL. REFER TO ABBREVIATIONS OR SYMBOLS ON LEGEND FOR ADDITIONAL INFORMATION.

INSTRUMENTATION AND CONTROL DEVICE SYMBOL LEGEND

DEVICE LOCATION \ DEVICE TYPE	INSTRUMENT OR CONTROL DEVICE FIELD MOUNTED	INSTRUMENT OR CONTROL DEVICE FRONT-OF-PANEL MOUNTED	INSTRUMENT OR CONTROL DEVICE BACK-OF-PANEL MOUNTED	PILOT INDICATING DEVICE FRONT-OF-PANEL MOUNTED	SCADA / HMI SYSTEM FUNCTION NORMALLY ACCESSIBLE	SCADA / HMI SYSTEM FUNCTION NOT NORMALLY ACCESSIBLE	SCADA ALARM NOTIFICATION SYSTEM ALARM CONDITION	INPUT / OUTPUT POINT CONTROLLER RACK-MOUNTED DEVICE	INPUT / OUTPUT POINT REMOTE-MOUNTED NETWORK DEVICE
FIELD	P TUV W-X-Y-Z D C (A)(B)								
PRIMARY SCADA SYSTEM OR OTHER LOCAL (FIELD) CONTROL PANEL		P TUV W-X-Y-Z D (A)(B)	P TUV W-X-Y-Z D (A)(B)	P TUV W-X-Y-Z D (A)(B)	P TUV W-X-Y-Z D (A)(B)	P TUV W-X-Y-Z D (A)(B)	P TUV W-X-Y-Z (A)(B)	XX (YY)	XX (YY)
AUXILIARY MOTOR CONTROL CENTER OR OTHER LOCAL (FIELD) MOTOR CONTROL PANEL		P TUV W-X-Y-Z D (A)(B)	P TUV W-X-Y-Z D (A)(B)	P TUV W-X-Y-Z D (A)(B)	P TUV W-X-Y-Z D (A)(B)	P TUV W-X-Y-Z D (A)(B)	P TUV W-X-Y-Z (A)(B)	XX (YY)	XX (YY)

PROCESS AND SIGNAL LINE LINK LEGEND

- W-A TO — PROCESS LINE LINK WITH A MATCHING LINK DEPICTED ON ANOTHER P&ID IN THIS SET OF CONTRACT DRAWINGS
- FROM W-A
- W-A — PROCESS LINE LINK WITH A MATCHING LINK DEPICTED ON ANOTHER P&ID IN THAT IS NOT INCLUDED IN THIS SET OF CONTRACT DRAWINGS
- W-A
- D — PROCESS LINE LINK TO AN EXTERNAL PROCESS
- D
- W-A TO — SIGNAL LINE LINK WITH A MATCHING LINK DEPICTED ON ANOTHER P&ID IN THIS SET OF CONTRACT DRAWINGS
- FROM W-A

LINE AND EQUIPMENT TAG LEGEND

- X-Y — PROCESS LINE TAG OPTION 1
- Y — PROCESS LINE TAG OPTION 2
- X-Y-Z-AABBCC — PROCESS LINE TAG OPTION 3
- NAME T-W-X-Y P C — EQUIPMENT TAG
- TUV-W-X-Y-Z P C A D B — AUTOMATICALLY OPERATED VALVE TAG
- TUV-W-X-Y-Z A B P — MANUALLY OPERATED VALVE TAG
- T-W-X-Y NAME P — TANK, VESSEL, OR STRUCTURE TAG
- T-UV-W-X-Y P NAME — CONTROL PANEL TAG

SIGNAL LINE LEGEND

NEW		EXISTING
—o—	DIGITAL	—o—
- - - - - -	DISCRETE	- - - - - -
- -A- - -	ANALOG	- -A- - -
- -PF- - -	PULSE/FREQUENCY	- -PF- - -
- -M- - -	MANUFACTURER	- -M- - -
//	PNEUMATIC	//
X	CAPILLARY	X

PARALLEL SIGNAL LINES

DESCRIPTION (A) — DESCRIPTION (B)(C)

WHERE:
DESCRIPTION = AN ABBREVIATED IDENTIFICATION OF THE SIGNALS DEPICTED
A = TOTAL QUANTITY OF SIGNALS
B = QUANTITY OF TYPICAL SETS OF SIGNALS
C = QUANTITY OF SIGNALS IN EACH TYPICAL SET

PROCESS LINE LEGEND

NEW		EXISTING
	PRIMARY MAJOR	
	SECONDARY MAJOR	
	PRIMARY MINOR	
	SECONDARY MINOR	

CONNECTING LINES — NON-CONNECTING LINES

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PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: AMS	No	DATE	REVISIONS	BY
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	CHECKED BY: LET				

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

ELECTRICAL SYMBOLS AND ABBREVIATIONS

PROJECT NO. 07985049.2
SHEET 00-G004

PROCESS VALVE AND GATE SYMBOLS

PROCESS VALVES

GENERAL PURPOSE VALVES

- PLUG VALVE
- BUTTERFLY VALVE
- GATE VALVE
- KNIFE GATE VALVE
- BALL VALVE
- VEE BALL VALVE
- GLOBE VALVE
- DIAPHRAGM VALVE
- NEEDLE VALVE
- PINCH VALVE
- ROTARY VALVE
- TELESCOPING VALVE
- MUD VALVE

CHECK VALVES

- SWING CHECK VALVE
- BALL CHECK VALVE
- DOUBLE LEAF CHECK VALVE
- DUCKBILL CHECK VALVE
- FOOT VALVE

PRESSURE CONTROL VALVES

- PRESSURE REGULATING VALVE, SELF-SENSING
- PRESSURE REGULATING VALVE, EXTERNAL-SENSING
- PRESSURE REDUCING VALVE, SELF-SENSING
- PRESSURE REDUCING VALVE, EXTERNAL-SENSING
- PRESSURE RELIEF VALVE
- PRESSURE RELIEF VALVE (ATMOSPHERIC)
- VACUUM RELIEF VALVE (ATMOSPHERIC)

SPECIAL PURPOSE VALVES

- CIRCUIT SETTER VALVE
- BALANCING VALVE
- DAMPER
- BALANCING DAMPER
- QUICK ACTING VALVE
- FUSIBLE LINK VALVE
- BACKFLOW PREVENTER

MULTI-PORT GENERIC VALVES

- ANGLE VALVE
- 3-WAY VALVE
- 4-WAY VALVE

SYMBOL DEPICTS A GENERIC VALVE TYPE, REFER TO VALVE SPECIFICATION TYPE FOR VALVE DETAILS

PROCESS GATES

- FABRICATED SLIDE GATE
- BUTTERFLY GATE
- SLUICE GATE
- FLAP GATE
- STOP LOG
- SHEAR GATE

PROCESS VALVE AND GATE ACTUATORS

- E — ELECTRIC MOTOR ACTUATED VALVE
- H — HYDRAULICALLY ACTUATED VALVE
- P — PNEUMATICALLY ACTUATED VALVE
- S — SOLENOID ACTUATED VALVE
- E — ELECTRIC MOTOR ACTUATED GATE
- H — HYDRAULICALLY ACTUATED GATE
- P — PNEUMATICALLY ACTUATED GATE

NOTES:

1. SYMBOLS DEPICT GATE VALVES AND FABRICATED SLIDE GATES AS EXAMPLES, REFER TO P&IDS FOR ACTUAL VALVE AND GATE TYPE.
2. REFER TO TAG DESCRIPTIONS FOR ACTUATOR DETAILS SUCH AS "OPEN/CLOSE" OR "MODULATING" SERVICE.

FITTINGS AND COMPONENTS

IN-LINE FITTINGS AND COMPONENTS

- EXPANSION JOINT
- FLANGED COUPLING ADAPTER
- DISMANTLING JOINT
- DRESSER COUPLING
- Y-STRAINER
- Y-STRAINER W/ DRAIN VALVE
- BASKET STRAINER
- LIQUID FILTER
- GAS FILTER
- SUCTION DIFFUSER
- C.O. — CLEANOUT
- UNION

MISCELLANEOUS FITTINGS / COMPONENTS

- Y-TRAP, FLOOR DRAIN, OR AIR GAP
- P-TRAP
- PIPE CAP
- HOSE CONNECTION
- FLEXIBLE HOSE
- BLIND FLANGE
- PIPE FLARE
- SPRAY BALL

REDUCERS

- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- CONCENTRIC FLEXIBLE REDUCER
- ECCCENTRIC FLEXIBLE REDUCER

AIR FITTINGS AND COMPONENTS

- SILENCER, AIR SERVICE
- FILTER, AIR SERVICE
- FINE BUBBLE DIFFUSER
- COARSE BUBBLE DIFFUSER
- GAS CYLINDER

OTHER FITTINGS AND COMPONENTS

- DRYER, AIR SERVICE
- AFTER COOLER, AIR SERVICE
- CONTAINMENT OR CARRIER PIPE
- HEAT TRACE
- EDUCTOR
- STATIC MIXER

CHEMICAL FEED SYSTEMS

- LIQUID CHEMICAL DRUM
- CHEMICAL INJECTION RING
- LIQUID CHEMICAL TANK
- CHEMICAL TANK WITH HEAT BLANKET

PUMPS

- SUBMERSIBLE PUMP
- SUBMERSIBLE AXIAL PROPELLOR PUMP
- POSITIVE DISPLACEMENT PROGRESSIVE CAVITY PUMP
- DRY PIT SUBMERSIBLE PUMP
- DRY PIT PUMP
- POSITIVE DISPLACEMENT ROTARY LOBE PUMP
- POSITIVE DISPLACEMENT GEAR PUMP
- SUBMERSIBLE SOLIDS HANDLING PUMP
- DRY PIT SELF-PRIMING SOLIDS HANDLING PUMP
- POSITIVE DISPLACEMENT PISTON PUMP
- POSITIVE DISPLACEMENT PLUNGER PUMP
- DRY PIT SUBMERSIBLE SOLIDS HANDLING PUMP
- DRY PIT SOLIDS HANDLING PUMP
- HOSE PUMP
- AIR OPERATED DOUBLE DIAPHRAGM PUMP
- SUBMERSIBLE CHOPPER PUMP
- DRY PIT RECESSED IMPELLER PUMP
- DRY PIT SUBMERSIBLE CHOPPER PUMP
- DRY PIT CHOPPER PUMP
- SCREW PUMP
- POSITIVE DISPLACEMENT DOUBLE DISC PUMP
- AIR OPERATED SINGLE DIAPHRAGM PUMP
- VERTICAL TURBINE PUMP
- SOLIDS HANDLING VERTICAL TURBINE PUMP
- HORIZONTAL SPLIT-CASE PUMP
- SUBMERSIBLE WELL PUMP
- PERISTALTIC CHEMICAL METERING PUMP
- DIAPHRAGM CHEMICAL METERING PUMP, ADJUSTABLE SPEED CONTROLLER
- DIAPHRAGM CHEMICAL METERING PUMP, ADJUSTABLE STROKE LENGTH

BLOWERS AND COMPRESSORS

- REGENERATIVE BLOWER
- MULTI-STAGE CENTRIFUGAL BLOWER
- TURBO BLOWER
- SCREW BLOWER
- ROTARY LOBE POSITIVE DISPLACEMENT BLOWER
- MULTI-STAGE CENTRIFUGAL COMPRESSOR
- TURBO COMPRESSOR
- SCREW COMPRESSOR
- PISTON COMPRESSOR

CONVEYANCE

- SCREW CONVEYOR
- BELT CONVEYOR

PROCESS INSTRUMENTATION SYMBOLS

- FLOAT SWITCH
- LEVEL SENSOR SUBMERSIBLE -DIAPHRAGM
- LEVEL SENSOR SUBMERSIBLE -BULLET
- LEVEL SENSOR UTLRASONIC
- LEVEL SENSOR RADAR
- LEVEL SENSOR RADAR GUIDED WAVE
- BUBBLE TUBE
- GENERIC INSTRUMENT
- OPEN CHANNEL PARSHALL FLUME
- OPEN CHANNEL PALMER-BOWLUS FLUME
- OPEN CHANNEL TRAPEZOIDAL FLUME
- RECTANGULAR WEIR
- V-NOTCH WEIR
- TRAPEZOIDAL WEIR
- BENDING WEIR
- D — DRAIN
- FLOW TUBE MAGNETIC
- FLOW TUBE PROPELLOR
- FLOW TUBE ORIFICE PLATE
- FLOW TUBE VENTURI
- ROTAMETER
- PRESSURE SEAL DIAPHRAGM
- PRESSURE SEAL ANNULAR
- S — SAMPLE TAP
- F — FLUSHING TAP

TREATMENT MIXING

- DISC AERATOR
- PROPELLER MIXER
- AGITATION MIXER

SCREENING AND GRIT

- GRIT CLASSIFIER
- GRIT CLASSIFIER
- VERTICAL FINE SCREEN
- STAIR SCREEN
- INCLINED FINE SCREEN
- SCREENINGS WASH PRESS
- SCREENINGS WASH PRESS

SOLIDS HANDLING/DIGESTER

- GENERIC HEAT EXCHANGER
- PLATE FRAME HEAT EXCHANGER
- BOILER HEAT EXCHANGER
- SHELL TUBE HEAT EXCHANGER

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BOOSTER STATION AND PRV STATION
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ELECTRICAL SYMBOLS AND ABBREVIATIONS

PROJECT NO. 07985049.2
SHEET 00-G005

CONSTRUCTION SITE
EROSION CONTROL REQUIREMENTS

1. SECTION NR216.46 OF WISCONSIN STATE ADMINISTRATIVE CODE IDENTIFIES REQUIREMENTS FOR CONSTRUCTION SITE AND POST-CONSTRUCTION EROSION CONTROL. IT IS THE INTENT OF THESE PLANS TO SATISFY THESE REQUIREMENTS. THE METHODS AND STRUCTURES USED TO CONTROL EROSION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL IMPLEMENT AN APPROPRIATE MEANS OF CONTROLLING EROSION DURING SITE OPERATION AND UNTIL THE VEGETATION IS RE-ESTABLISHED. ADJUSTMENTS TO THE CONTROL SYSTEM SHALL BE MADE AS REQUIRED.
2. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE WISCONSIN DNR'S CONSERVATION PRACTICE STANDARDS. THESE STANDARDS ARE PERIODICALLY UPDATED AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN AND REFERENCE THE MOST RECENTLY RELEASED STANDARD.
3. THIS INFORMATION IS ONLY ONE PART OF THE OVERALL EROSION CONTROL REQUIREMENTS. ADDITIONAL REQUIREMENTS MAY ALSO BE SHOWN ON THE CONTRACT DRAWINGS AND IN THE ACCOMPANYING SPECIFICATIONS.
4. ADDITIONAL EROSION CONTROL MEASURES, AS REQUESTED IN WRITING BY THE STATE OR LOCAL INSPECTORS, OR THE OWNER'S ENGINEER, SHALL BE INSTALLED WITHIN 24 HOURS.
5. THE AREA OF EROSIVE LAND EXPOSED TO THE ELEMENTS BY GRUBBING, EXCAVATION, TRENCHING, BORROW AND FILL OPERATIONS AT ANY ONE TIME SHALL BE MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE. FOR ANY DISTURBED AREA THAT REMAINS INACTIVE FOR GREATER THAN 7 WORKING DAYS, OR WHERE GRADING WORK EXTENDS BEYOND THE PERMANENT SEEDING DEADLINES, THE SITE MUST BE TREATED WITH TEMPORARY STABILIZATION MEASURES SUCH AS SOIL TREATMENT, TEMPORARY SEEDING AND/OR MULCHING. ALL DISTURBED AREAS SHALL BE TREATED WITH PERMANENT STABILIZATION MEASURES WITHIN 3 WORKING DAYS OF FINAL GRADING.
6. ALL EROSION CONTROL MEASURES AND STRUCTURES SERVING THE SITE MUST BE INSPECTED AT LEAST WEEKLY OR WITHIN 24 HOURS OF THE TIME 0.5 INCHES OF RAIN HAS OCCURRED. ALL NECESSARY REPAIR AND MAINTENANCE WILL BE DONE AT THIS INSPECTION TIME.
7. ALL EROSION CONTROL DEVICES AND/OR STRUCTURES SHALL BE PROPERLY INSTALLED PRIOR TO CLEARING AND GRUBBING OPERATIONS WITHIN THEIR RESPECTIVE DRAINAGE AREAS. THESE SHALL BE PROPERLY MAINTAINED FOR MAXIMUM EFFECTIVENESS UNTIL VEGETATION IS RE-ESTABLISHED.
8. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY INSTALLED PRIOR TO ANY SOIL DISTURBANCE.
9. ANY SLOPES STEEPER THAN 3H:1V SHALL BE STAKED WITH EROSION CONTROL FABRIC UNLESS INDICATED ON THE PLAN.
10. ALL WASTE AND UNUSED BUILDING MATERIALS (INCLUDING GARBAGE, DEBRIS, CLEANING WASTES, WASTEWATER, TOXIC MATERIALS, OR HAZARDOUS MATERIALS) SHALL BE PROPERLY DISPOSED OF AND NOT ALLOWED TO BE CARRIED OFF-SITE BY RUNOFF OR WIND.
11. WIND EROSION SHALL BE KEPT TO A MINIMUM DURING CONSTRUCTION. WATERING, MULCH, OR A TACKING AGENT MAY BE REQUIRED TO PROTECT NEARBY RESIDENCES AND WATER RESOURCES.
12. CHANNELIZED RUNOFF ENTERING THE PROJECT SITE FROM ADJOINING LANDS SHALL BE DIVERTED THROUGH NATURALLY OR ARTIFICIALLY EROSION-RESISTANT CONVEYANCES. IF CHANNELIZED RUNOFF CANNOT BE DIVERTED, SITE BEST MANAGEMENT PRACTICES MUST ACCOUNT FOR THE ADDITIONAL FLOW RATES AND EROSION POTENTIAL THAT SUCH RUNOFF PRESENTS.
13. THE CONTRACTOR SHALL TAKE ALL POSSIBLE PRECAUTIONS TO PREVENT SOILS FROM BEING TRACKED ONTO PUBLIC OR PRIVATE ROADWAYS. PAVED SURFACES ADJACENT TO CONSTRUCTION SITE VEHICLE ACCESS SHALL BE SWEPT AND/OR SCRAPED (NOT FLUSHED) PERIODICALLY TO REMOVE SOIL, DIRT, AND/OR DUST.
14. EROSION CONTROLS SHALL BE INSTALLED ON THE DOWNSTREAM SIDE OF TEMPORARY STOCKPILES. ANY SOIL STOCKPILE THAT REMAINS FOR MORE THAN 30 DAYS SHALL BE COVERED OR TREATED WITH STABILIZATION PRACTICES SUCH AS TEMPORARY OR PERMANENT SEEDING AND MULCHING. ALL STOCK PILES SHALL BE PLACED AT LEAST 75 FEET FROM STREAMS OR WETLANDS.
15. ADDITIONAL EROSION CONTROL FOR UTILITY CONSTRUCTION (STORM SEWER, SANITARY SEWER, WATER MAIN, ETC.) SHALL INCLUDE THE FOLLOWING:
    a. PLACE EXCAVATED TRENCH MATERIAL ON THE HIGH SIDE OF THE TRENCH.
    b. BACKFILL, COMPACT, AND STABILIZE THE TRENCH IMMEDIATELY AFTER PIPE CONSTRUCTION.
    c. DISCHARGE OF TRENCH WATER OR DEWATERING EFFLUENT MUST BE PROPERLY TREATED TO REMOVE SEDIMENT IN ACCORDANCE WITH THE WDNR CONSERVATION PRACTICE STANDARD 1061 - DEWATERING OR A SUBSEQUENT WDNR DEWATERING STANDARD PRIOR TO DISCHARGE INTO A STORM SEWER, DITCH, DRAINAGEWAY, OR WETLAND OR LAKE.
16. ALL DRAINAGE CULVERTS, STORM DRAIN INLETS, MANHOLES, OR ANY OTHER EXISTING STRUCTURES THAT COULD BE DAMAGED BY SEDIMENTATION SHALL BE PROTECTED ACCORDING TO THE VARIOUS METHODS PROVIDED IN THE PRINTED CONSERVATION PRACTICE STANDARDS.
17. ANY SOIL EROSION THAT OCCURS AFTER FINAL GRADING AND/OR STABILIZATION MUST BE REPAIRED AND THE STABILIZATION WORK REDONE.
18. THE FIRST SIX WEEKS AFTER INITIAL STABILIZATION, ALL NEWLY SEEDED AND MULCHED AREAS SHALL WATERED WHENEVER 7 DAYS ELAPSE WITHOUT A RAIN EVENT.
19. WHEN THE DISTURBED AREA HAS BEEN STABILIZED BY PERMANENT VEGETATION OR OTHER MEANS, TEMPORARY BMP'S SUCH AS SILT FENCES, STRAW BALES, AND SEDIMENT TRAPS SHALL BE REMOVED AND THESE AREAS STABILIZED.
20. ALL TEMPORARY BEST MANAGEMENT PRACTICES SHALL BE MAINTAINED UNTIL THE SITE IS STABILIZED.
21. ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED WITH SEED AND MULCH UNLESS OTHERWISE SPECIFIED. A MINIMUM OF FOUR INCHES OF TOPSOIL SHALL BE APPLIED TO ALL AREAS TO BE SEEDED OR SODDED.

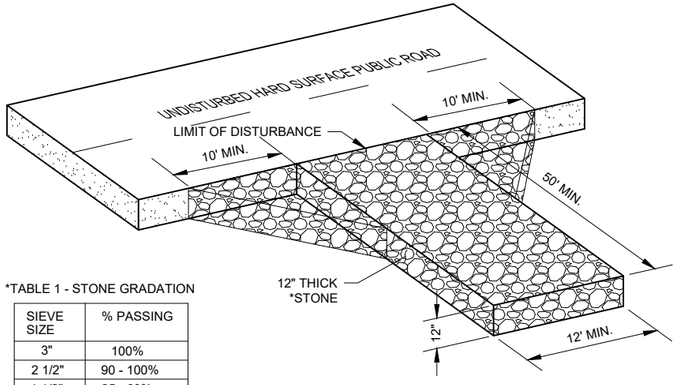
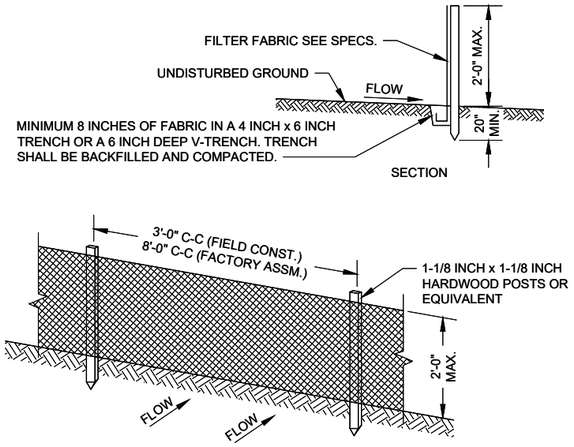


*TABLE 1 - STONE GRADATION

SIEVE SIZE	% PASSING
3"	100%
2 1/2"	90 - 100%
1 1/2"	25 - 60%
3/4"	0 - 20%
3/8"	0 - 5%

NOTES:
1. TRACKING PAD WIDTH SHALL BE AT LEAST THE FULL WIDTH OF HTE EGRESS POINT OR 12' WIDE MINIMUM.
2. TRACKING PAD LENGTH SHALL BE 50' FOR CONSTRUCTION SITES, 30' FOR SINGLE FAMILY RESIDENTIAL, OR AS SPECIFIED IN THE CONTRACT DOCUMENTS. LENGTH OF TRACKING PAD MAY NEED TO BE INCREASE OR ADDITIONAL SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED BY THE CONTRACTOR IS SEDIMENT TRACK-OUT OCCURS.
3. GEOTEXTILE FABRIC TYPE R SHALL BE INSTALLED BETWEEN THE STONE AND SUBGRADE ON SITES WHERE HIGH GROUND WATER IS OBSERVED.
4. CONTRACTOR SHALL CLEAN STREET/ROADWAY ADJACENT TO ALL CONSTRUCTION ACCESS POINTS AT THE END OF EACH WORKDAY OR MORE FREQUENTLY IF REQUESTED.

STONE TRACKING PAD
NO SCALE

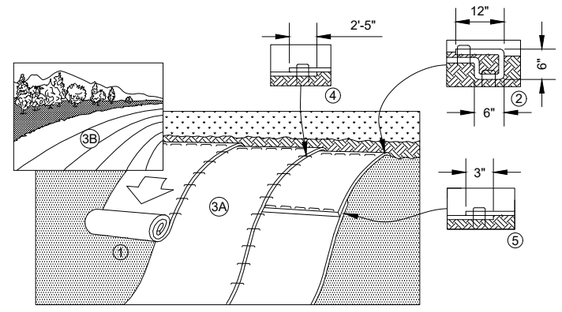


PERSPECTIVE VIEW

GENERAL NOTES:

1. ENDS OF FENCE SHALL BE TURNED UPSLOPE 1 TO 2 FEET IN ELEVATION TO PREVENT FLANKING.
2. STAPLE FABRIC WITH 1/2 INCH (MINIMUM) STAPLES TO THE UPSLOPE SIDE OF THE POSTS.
3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.

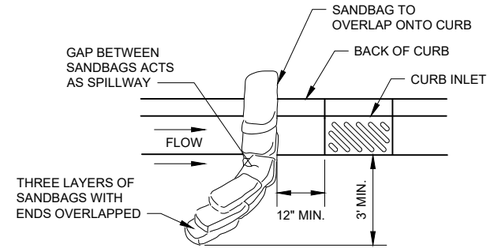
TYPICAL SILT FENCE INSTALLATION AT SITE PERIMETER DETAIL
NO SCALE

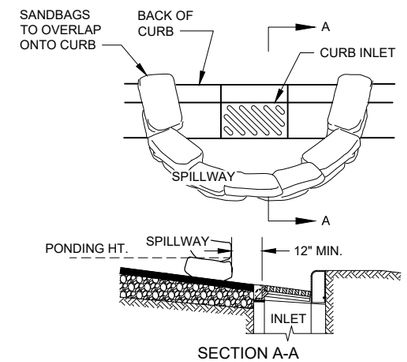


1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5 CM-12.5 CM) OVERLAP DEPENDING ON BLANKET TYPE.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE BLANKET WIDTH.

NOTE:
*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15 CM) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

EROSION CONTROL BLANKET DETAIL
NO SCALE





SECTION A-A

CURB INLET SEDIMENT BARRIER (SANDBAG TYPE) DETAIL
NO SCALE

		NO.	DATE	REVISION	BY
PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: JJY	.	.	.	.
	DESIGNED BY: ATR	.	.	.	.
	CHECKED BY: EE	.	.	.	.

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CITY OF NEW RICHMOND
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CIVIL DETAILS
EROSION CONTROL DETAILS

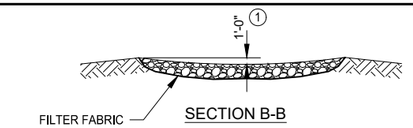
PROJECT NO. 07985049.2
SHEET 05-C501

TABLE OF QUANTITIES
RIPRAP AT RCP OUTLETS

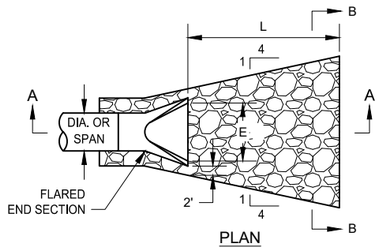
DIA. OF ROUND PIPE (IN.)	L (FT.)	12" DEPTH RIPRAP (CU.YDS.)	18" DEPTH RIPRAP (CU.YDS.)	24" DEPTH RIPRAP (CU.YDS.)
12	8	2.8	4.1	5.5
15	8	2.9	4.4	5.8
18	10	3.9	5.9	7.8
21	10	4.2	6.3	8.4
24	12	5.5	8.3	11.0
27	12	5.8	8.7	11.6
30	14	7.3	10.9	14.5
36	16	9.2	13.8	18.3
42	18	10.9	16.3	21.7
48	20	12.9	19.4	25.8

TABLE OF QUANTITIES
RIPRAP AT HERCP OUTLETS
OR BOXES OF EQUIVALENT SPAN WIDTH

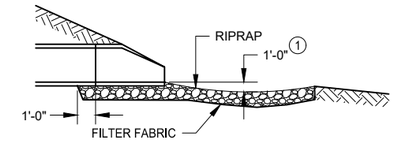
SPAN OF HERCP (IN.)	L (FT.)	LIGHT d50=6" 12" DEPTH RIPRAP (CU.YDS.)	MEDIUM d50=9" 18" DEPTH RIPRAP (CU.YDS.)	HEAVY d50=12" 24" DEPTH RIPRAP (CU.YDS.)
22	10	3.9	5.9	7.8
30	12	5.5	8.2	10.9
38	14	7.2	10.8	14.3
45	16	9.2	13.7	18.3
53	18	10.9	16.3	21.7
60	20	12.7	19.0	25.4



SECTION B-B



PLAN



SECTION A-A

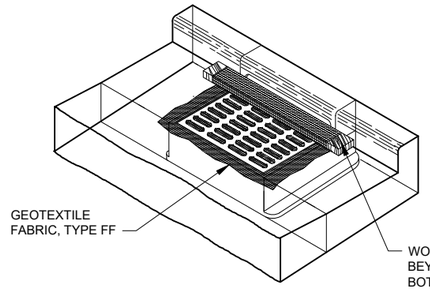
NOTES:

PIPE SIZES LARGER THAN THOSE SHOWN REQUIRE A SPECIAL DESIGN.

LIGHT RIPRAP SHALL BE UNDERLAIN WITH TYPE R FABRIC. MEDIUM AND HEAVY SHALL BE UNDERLAIN W/ TYPE HR FABRIC.

(1) FOR PIPES GREATER THAN OR EQUAL TO 30" USE 1.5'.

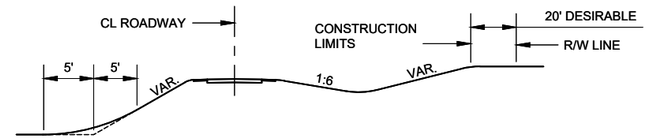
RIP RAP AT OUTLETS
NO SCALE



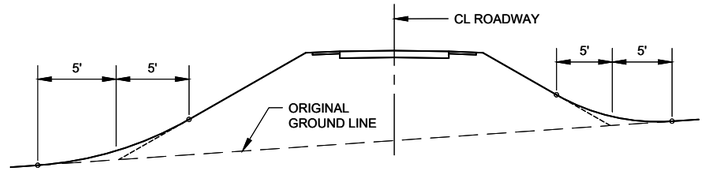
INSTALLATION NOTES:

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE. THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

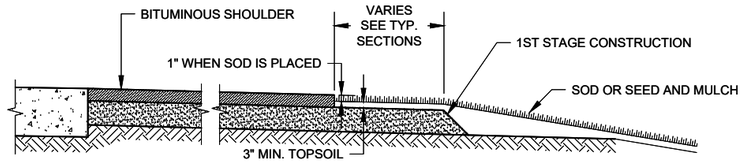
INLET PROTECTION, TYPE C
NO SCALE



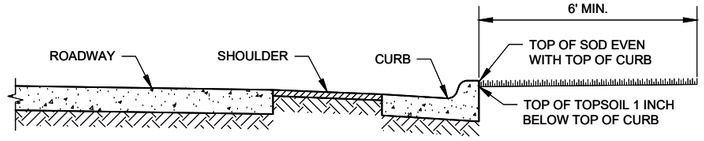
ROUNDING SHOULDERS AND BACKSLOPES



SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES

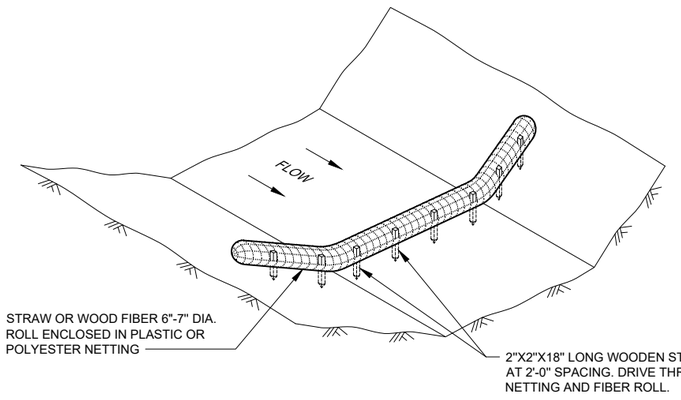


SHAPING AND TOPSOILING INSLOPES

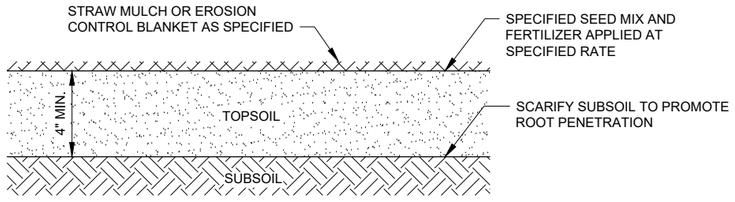


SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

SLOPE SHAPING DETAILS
NO SCALE



SEDIMENT LOG DETAIL
NO SCALE



NOTE: WHERE REQUIRED, PLANT HERBACEOUS PLUGS ACCORDING TO PLAN, OR AS DIRECTED BY ENGINEER.

TOPSOIL AND SEEDING DETAIL
NO SCALE

		NO.	DATE	REVISION	BY
PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: JJY	.	.	.	.
	DESIGNED BY: ATR	.	.	.	.
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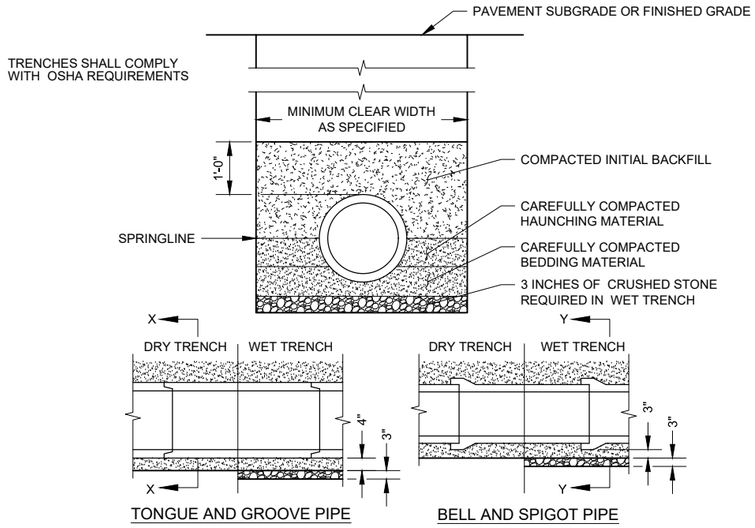
CIVIL DETAILS
EROSION CONTROL DETAILS

PROJECT NO. 07985049.2
SHEET 05-C502



TONGUE AND GROOVE PIPE

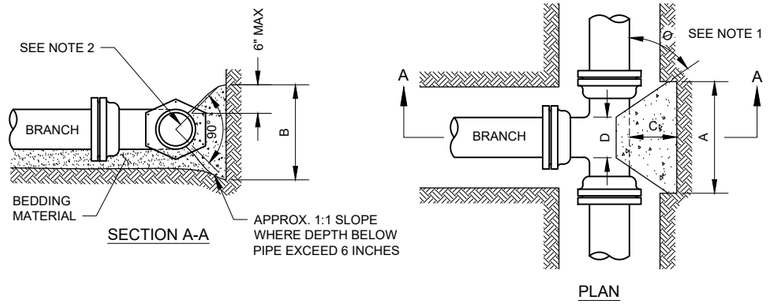
BELL AND SPIGOT PIPE

GENERAL NOTES:

1. BEDDING AND HAUNCHING MATERIAL SHALL BE WELL-GRADED 3/4 TO 1/4 INCH CRUSHED STONE OR OTHER NON-COHESIVE MATERIAL NOT SUBJECT TO MIGRATION AND FREE OF DEBRIS, ORGANIC MATERIAL, AND LARGE STONES.
2. BEDDING MATERIAL TO BE PLACED BEFORE SETTING PIPE, 4 INCH MINIMUM UNDER BARREL WITH 3 INCH MINIMUM UNDER BELL.
3. INITIAL BACKFILL SHALL BE DENSELY COMPACTED, NON-COHESIVE FINELY DIVIDED MATERIAL FREE OF DEBRIS, ORGANIC MATERIAL, AND LARGE STONES.
4. IN ROCK OR OTHER UNCOMPRESSIBLE MATERIALS, THE TRENCH SHALL BE OVEREXCAVATED A MINIMUM OF 6-INCHES AND REFILLED WITH GRANULAR MATERIAL.

CLASS "B" EMBEDMENT FOR RIGID PIPE DETAIL

NO SCALE



NOTES:

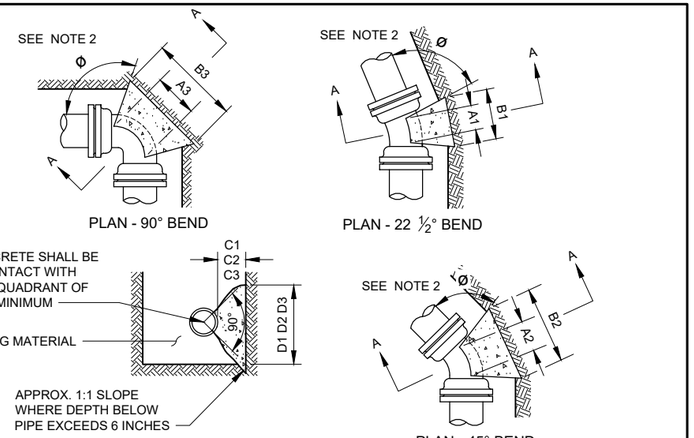
1. DIMENSION 'C' SHOULD BE LARGE ENOUGH TO MAKE ANGLE Ø GREATER THAN OR EQUAL TO 45°.
2. CONCRETE SHOULD BEAR ON THIS QUADRANT OF PIPE AT A MINIMUM.
3. DIMENSION 'D' SHOULD BE AS LARGE AS POSSIBLE BUT CONCRETE SHOULD NOT INTERFERE WITH MECHANICAL JOINTS.
4. BUTTRESS DIMENSIONS ARE BASED ON A SOIL RESISTANCE OF TWO TONS PER SQ. FT. AND A WATER PRESSURE OF 150 PSI. INFORM THE ENGINEER IF ON-SITE SOIL DOES NOT MEET THIS CONDITION OR PRESSURES EXCEED 150 PSI.
5. BUTTRESS TO BE PLACED AGAINST FIRM UNDISTURBED SOIL, OR DISTURBED SOIL COMPACTED TO 95%%% OF MODIFIED PROCTOR DENSITY, ASTM D1557.
6. CONCRETE SHALL HAVE A MINIMUM 7-DAY COMPRESSIVE STRENGTH OF 2000 PSI.
7. ALL POURED BUTTRESSED FITTINGS SHALL BE WRAPPED IN POLYETHYLENE.
8. IN ADDITION TO BUTTRESSES, ALL JOINTS SURROUNDING TEES SHALL BE RESTRAINED WITH WEDGE ACTION RESTRAINING GLANDS.

BUTTRESS DIMENSIONS				
DIA.	A	B	C	D
6"	1'-3"	1'-0"	SEE NOTE NO. 1	SEE NOTE NO. 3
8"	1'-6"	1'-4"		
10"	1'-10"	1'-8"		
12"	2'-3"	2'-0"		
16"	3'-2"	2'-6"		
20"	4'-0"	3'-0"		
24"	5'-3"	3'-4"		

DIA. = BRANCH DIAMETER

BUTTRESS FOR TEES DETAIL

NO SCALE



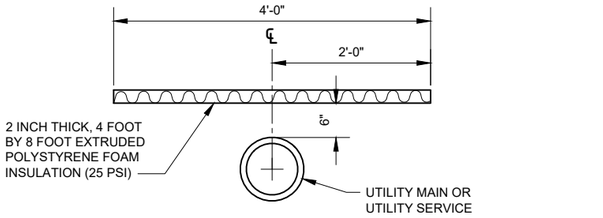
NOTES:

1. DIMENSIONS IN TABLE ARE BASED ON A WATER PRESSURE OF 150 P.S.I. AND AN EARTH RESISTANCE OF 2 TONS PER SQ. FT. INFORM THE ENGINEER IF PRESSURES EXCEED 150 PSI, OR ON-SITE SOIL DOES NOT MEET THIS CONDITION.
2. DIMENSION C1 C2 C3 SHOULD BE LARGE ENOUGH TO MAKE ANGLE Ø EQUAL TO OR LARGER THAN 45°.
3. DIMENSION A1 A2 A3 SHOULD BE AS LARGE AS POSSIBLE WITHOUT INTERFERING WITH THE MECHANICAL JOINT.
4. BUTTRESS TO BE POURED AGAINST FIRM UNDISTURBED SOIL, OR DISTURBED SOIL COMPACTED TO 95% OF MODIFIED PROCTOR DENSITY, ASTM D1557.
5. ALL BUTTRESSED FITTINGS SHALL BE WRAPPED IN POLYETHYLENE.
6. CONCRETE SHALL HAVE A MINIMUM 7-DAY COMPRESSIVE STRENGTH OF 2000 PSI.
7. IN ADDITION TO BUTTRESS, ALL JOINTS SURROUNDING BENDS SHALL BE RESTRAINED WITH WEDGE ACTION RESTRAINING GLANDS.

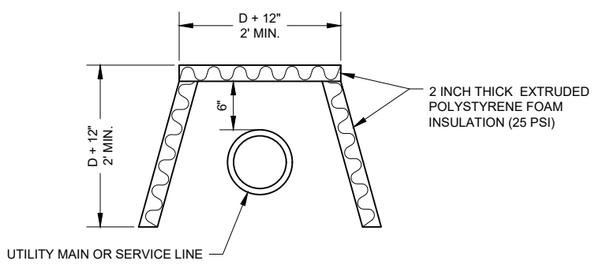
BUTTRESS DIMENSIONS						
PIPE SIZE	22 ½° BENDS		45° BENDS		90° BENDS	
	B1	D1	B2	D2	B3	D3
6"	1'-0"	1'-0"	1'-0"	1'-0"	1'-4"	1'-2"
8"	1'-0"	1'-0"	1'-4"	1'-2"	1'-10"	1'-6"
10"	1'-2"	1'-2"	1'-7"	1'-7"	2'-3"	1'-10"
12"	1'-4"	1'-4"	1'-10"	1'-10"	2'-8"	2'-3"
16"	1'-10"	1'-8"	2'-6"	2'-4"	3'-10"	2'-10"
20"	2'-4"	2'-0"	3'-3"	2'-10"	5'-0"	3'-4"
24"	2'-10"	2'-4"	4'-0"	3'-3"	6'-4"	3'-10"

BUTTRESS FOR BENDS DETAIL

NO SCALE



STANDARD INSTALLATION



SIDE PROTECTION INSTALLATION

GENERAL NOTES:

1. THE SIDE PROTECTION INSTALLATION SHALL BE USED WHERE FROST WILL PENETRATE BELOW THE PIPE INVERT.

PIPE INSULATION DETAIL

NO SCALE

RESTRAINED/TIED PIPE LENGTH CHART						
MIN LENGTH REQUIRING RESTRAINT IN FEET						
	6"	8"	10"	12"	16"	24"
FITTING TYPE						
11.25° BEND	10	10	10	10	10	10
22.5° BEND	10	10	10	10	11	15
45° BEND	10	15	15	20	25	30
90° BEND	25	30	35	40	55	75
TEE/CROSS	15	25	35	45	65	95
STUB OR PLUG	30	35	45	50	95	100
REDUCER	0	20	35	50	105	125
VERTICAL BEND (45°)	20	30	35	40	50	75

THE ABOVE LENGTHS (GIVEN IN FEET) REPRESENT THE MINIMUM LENGTH OF PIPE TO BE TIED TOGETHER IN EACH REQUIRED DIRECTION FROM THE FITTING DESCRIBED

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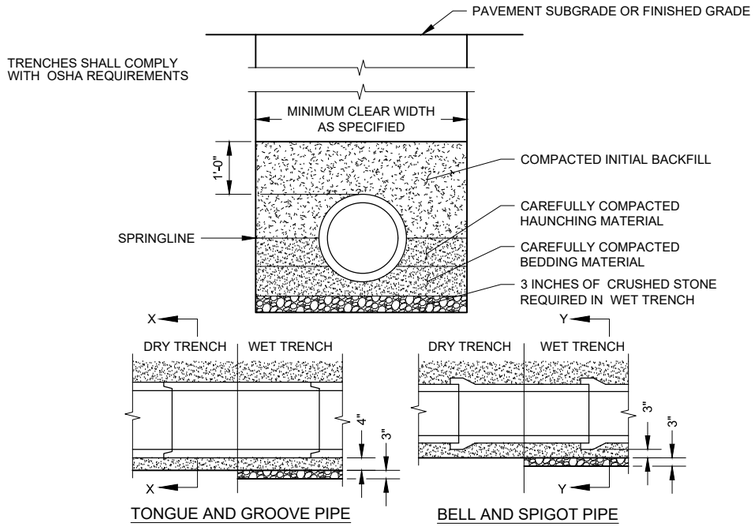
WATERMAIN DETAILS

PROJECT NO. 07985049.2
SHEET 05-C503



TONGUE AND GROOVE PIPE

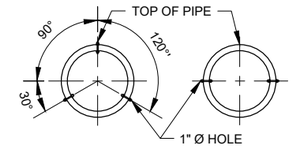
BELL AND SPIGOT PIPE

GENERAL NOTES:

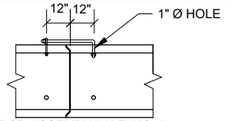
1. BEDDING AND HAUNCHING MATERIAL SHALL BE WELL-GRADED 3/4 TO 1/4 INCH CRUSHED STONE OR OTHER NON-COHESIVE MATERIAL NOT SUBJECT TO MIGRATION AND FREE OF DEBRIS, ORGANIC MATERIAL, AND LARGE STONES.
2. BEDDING MATERIAL TO BE PLACED BEFORE SETTING PIPE, 4 INCH MINIMUM UNDER BARREL WITH 3 INCH MINIMUM UNDER BELL.
3. INITIAL BACKFILL SHALL BE DENSELY COMPACTED, NON-COHESIVE FINELY DIVIDED MATERIAL FREE OF DEBRIS, ORGANIC MATERIAL, AND LARGE STONES.
4. IN ROCK OR OTHER UNCOMPRESSIBLE MATERIALS, THE TRENCH SHALL BE OVEREXCAVATED A MINIMUM OF 6-INCHES AND REFILLED WITH GRANULAR MATERIAL.

CLASS "B" EMBEDMENT FOR RIGID PIPE DETAIL

NO SCALE

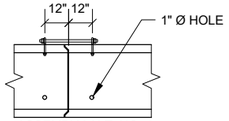


TRANSVERSE SECTION



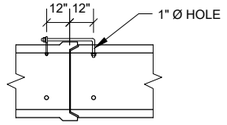
ROD ASSEMBLY ALT. NO. 2
TONGUE AND GROOVE EYE BOLT AND TIE

LONGITUDINAL SECTION



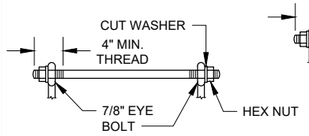
ASSEMBLY ALT. NO. 1
TONGUE & GROOVE EYE BOLT AND TIE ROD

LONGITUDINAL SECTION

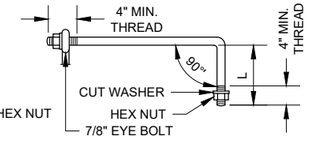


ASSEMBLY ALT. NO. 2
MODIFIED BELL EYE BOLT AND TIE ROD

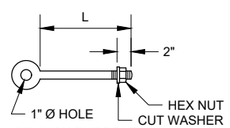
LONGITUDINAL SECTION



ALT. NO. 1 - 7/8 INCH TIE ROD



ALT. NO. 2 - 7/8 INCH TIE ROD



7/8 INCH EYE BOLT

EYE BOLT DIMENSION TABLE

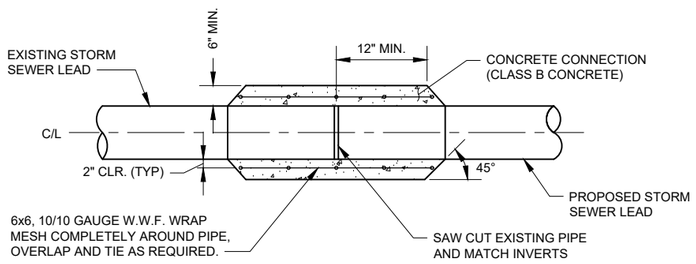
PIPE SIZE (INCHES)	LENGTH, L (INCHES)	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18 TO 24	4 1/2	5 1/2
30	5	7
36	5 1/2	7
42	5	
48	6 1/2	
60	7 1/2	
72	8 1/2	

GENERAL NOTES:

1. CONCRETE CULVERT PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED ON THE PLAN OR AS DIRECTED BY THE ENGINEER.
2. DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
3. HOLES SHALL BE FILLED WITH A NON-SHRINK GROUT OR A NON-SHRINK EPOXY GROUT AS DIRECTED BY THE ENGINEER
4. BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

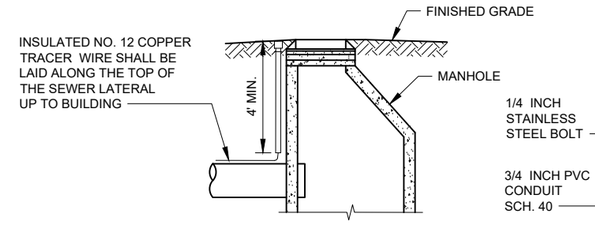
CONCRETE PIPE JOINT TIE DETAIL

NO SCALE

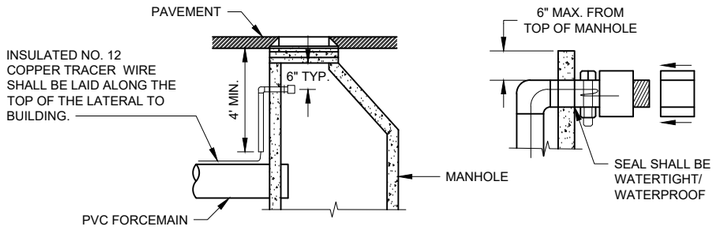


STORM SEWER CONNECTION DETAIL

NO SCALE



INSTALLATION IN UNPAVED AREA



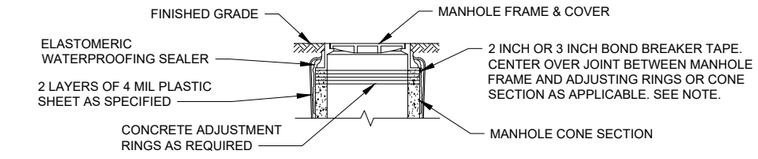
INSTALLATION IN PAVED AREA

GENERAL NOTES:

1. THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE.
2. A THREADED, FEMALE PVC SCHEDULE 40 PLUG AND MALE COUPLING GLUED TO 3/4 INCH SCHEDULE 40 SHALL BE INSTALLED IN OR ADJACENT TO THE VALVE VAULT AND MANHOLE.
3. WIRE PIGTAIL SHALL BE WRAPPED AROUND BOLT AND READILY ACCESSIBLE, WITH SUFFICIENT LENGTH FOR EASY CONNECTION.
4. SNAKEPIT TRACER WIRE SYSTEMS MAY BE SUBSTITUTED IN LIEU OF DETAILED PRODUCTS.

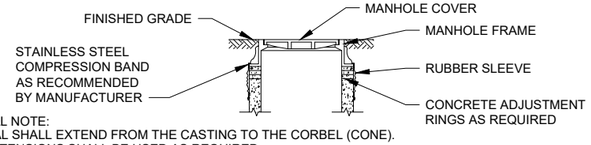
TRACER WIRE INSTALLATION FOR SANITARY LATERALS

NO SCALE



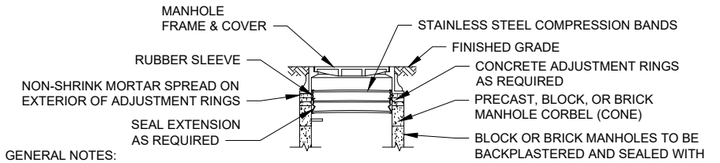
THE BOND BREAKER TAPE IS TO PREVENT THE SEALER FROM BONDING TO THE EDGE OF THE FLANGE OF THE MH FRAME AND THE UPPER 1-1/2 INCHES OF ADJUSTING RING OR CONE. IF THE EDGE OF FLANGE IS NOT FLUSH WITH ADJUSTING RING OR CONE, APPLY ADDITIONAL TAPE AS REQUIRED TO PREVENT SUCH BONDING.

ELASTOMERIC FRAME/CHIMNEY SEAL



GENERAL NOTE:
THE SEAL SHALL EXTEND FROM THE CASTING TO THE CORBEL (CONE). SEAL EXTENSIONS SHALL BE USED AS REQUIRED.

EXTERNAL RUBBER SLEEVE FRAME/CHIMNEY SEAL



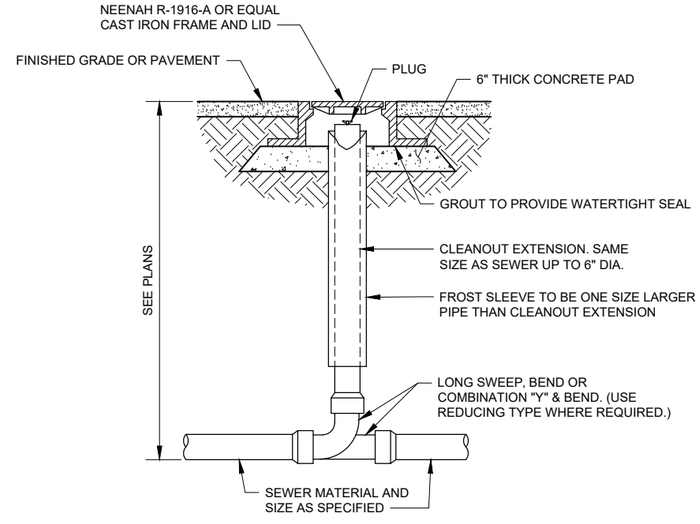
GENERAL NOTES:

1. THE SEAL SHALL EXTEND FROM THE CASTING TO THE CORBEL (CONE). SEAL EXTENSIONS SHALL BE USED AS REQUIRED.
2. AN INTERNAL ADAPTOR SEAL RING MAY BE USED IN LIEU OF THE RUBBER SLEEVE. THE INTERNAL ADAPTOR SEAL RING SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS.

INTERNAL RUBBER SLEEVE FRAME/CHIMNEY SEAL

MANHOLE WATERPROOFING DETAIL

NO SCALE



EXTERIOR CLEANOUT IN ROADWAY DETAIL

NO SCALE

NO.	DATE	REVISION	BY

PROJECT DATE: NOVEMBER 18, 2025
DRAWN BY: JJY
DESIGNED BY: ATR
CHECKED BY: EE

PLOT DATE: 11/17/2025 1:11 PM, G:\07\07985\07985049\CADD\Construction Documents\07985049 Civil Details.dwg

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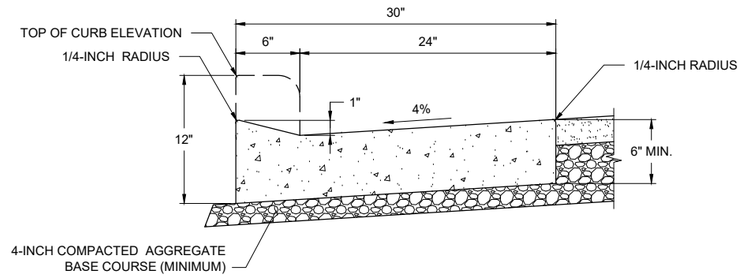
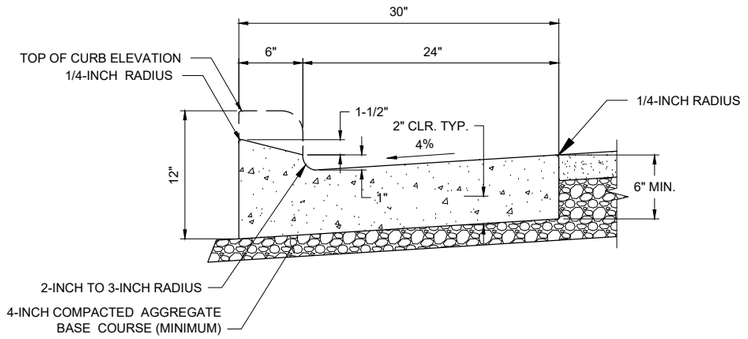
BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

CIVIL DETAILS
STORM & SANITARY SEWER DETAILS

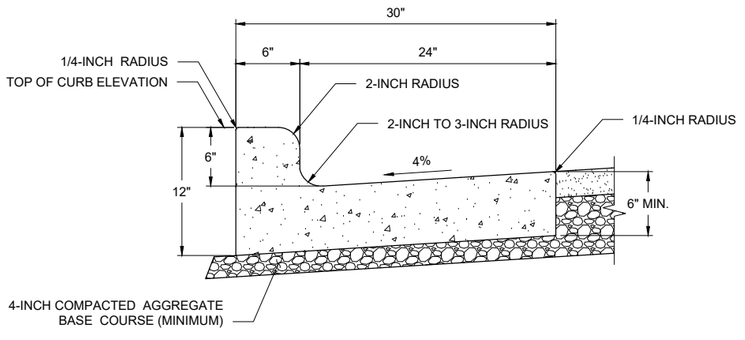
PROJECT NO. 07985049.2
SHEET 05-C504



DRIVEWAY SECTION



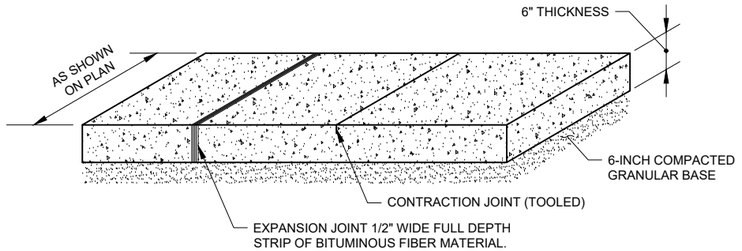
SPECIAL DRIVEWAY SECTION



STANDARD SECTION

TYPE L CURB AND GUTTER DETAIL

NO SCALE

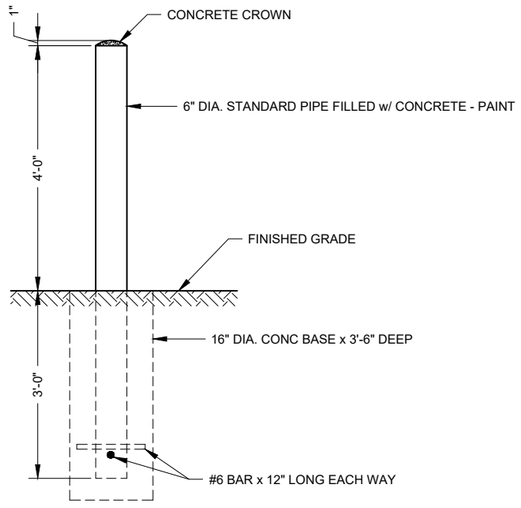


SIDEWALK NOTES:

1. ALL EXPOSED CONCRETE SHALL HAVE A LIGHT BROOM FINISH.
2. EXPANSION JOINTS SHALL BE PLACED AT ABUTTING WALKS, DRIVEWAYS, CURBS, OR OTHER FIXTURES.
3. EXPANSION JOINT MAXIMUM SPACING SHALL BE 96 FEET.
4. CONTRACTION JOINT SPACING TYPICALLY EQUAL TO SIDEWALK WIDTH.
5. CROSS SLOPE TYPICAL 1.5%

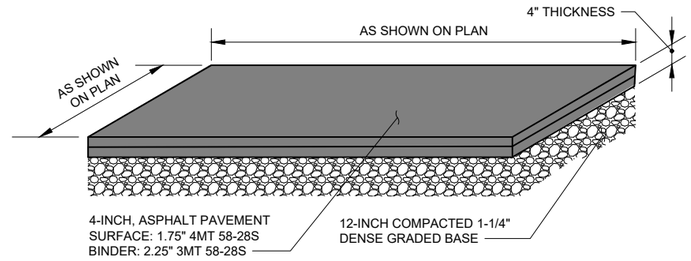
CAST-IN-PLACE-CONCRETE DETAIL

NO SCALE



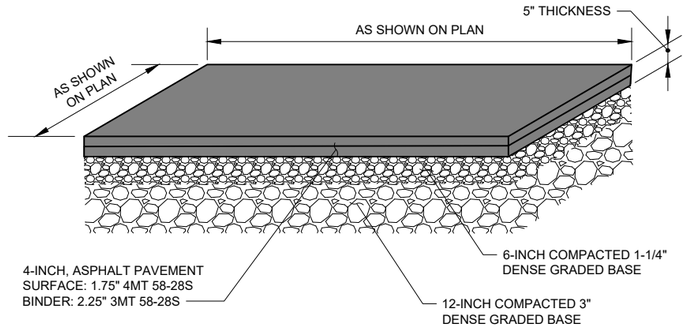
BOLLARD (GUARD POST) DETAIL

NO SCALE



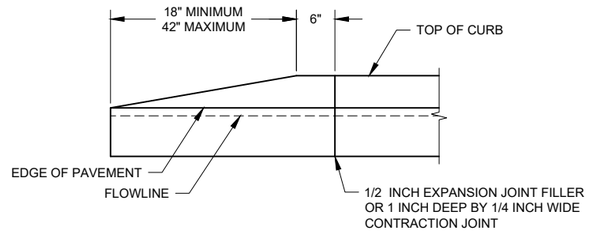
DRIVEWAY & BRADY LANE PAVEMENT PATCH PAVEMENT DETAIL

NO SCALE



COUNTY HWY K PAVEMENT PATCH PAVEMENT DETAIL

NO SCALE



CURB END DETAIL

NO SCALE

		NO.	DATE	REVISION	BY
PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: JJY	.	.	.	.
	DESIGNED BY: ATR	.	.	.	.
	CHECKED BY: EE	.	.	.	.

PLOT DATE: 11/17/2025 1:11 PM, G:\07\07985\07985049\CADD\Construction Documents\07985049 Civil Details.dwg

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

CIVIL DETAILS
STREET DETAILS

PROJECT NO. 07985049.2
SHEET 05-C505

SDD 15C04 Traffic Control, Advance Warning Signs 45 MPH or Greater Undivided Road Open to Traffic

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

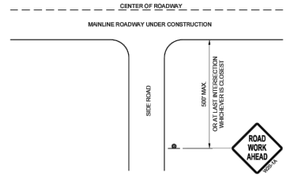
IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS REESTABLISHED.

★ OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS

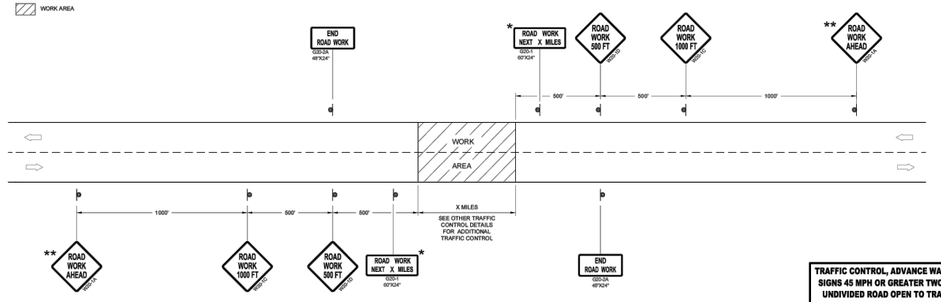
★★ PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA

LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA



TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL



TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 MPH OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 — DATE
/S/ Andrew Heidtke — WORK ZONE ENGINEER

FHWA

SDD 15C04 - 05

SDD 15D28 Traffic Control, Work on Shoulder or Parking Lane, Undivided Roadway

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- DIRECTION OF TRAFFIC
- WORK ZONE

GENERAL NOTES

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY THE REGIONAL TRAFFIC UNIT.

"W3" SIGN IS THE SAME AS "W" SIGN EXCEPT THE BACKGROUND IS ORANGE.

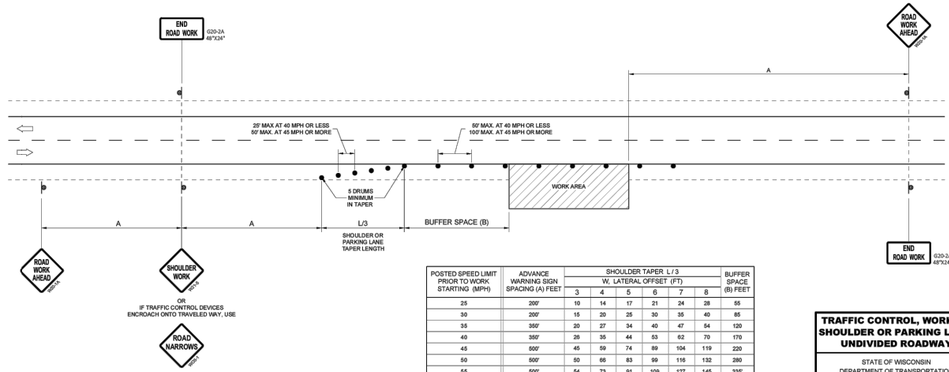
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH THE TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT) 3	4	5	6	7	8	BUFFER SPACE (B) FEET
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	65
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2020 — DATE
/S/ Andrew Heidtke — STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

FHWA

SDD 15D28 - 04

		NO.	DATE	REVISION	BY
PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: JJY	.	.	.	.
	DESIGNED BY: ATR	.	.	.	.
	CHECKED BY: EE	.	.	.	.

PLOT DATE: 11/17/2025 1:11 PM, G:\07\07985\07985049\CADD\Construction Documents\07985049 Civil Details.dwg

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

CIVIL DETAILS
TRAFFIC CONTROL DETAILS

PROJECT NO. 07985049.2
SHEET 05-C506

20-PLC-1
PRV STATION PLC
CONTROL PANEL

PRV STATION SCADA SYSTEM FUNCTIONS

ALARMS
- VALVE FAIL — YA 20-1-1-1
- PAH 20-3-1-1 (2)
- PAL 20-3-1-1 (2)
- FREEZE STAT — TAL 20-4-1-1

CONTROL
- O/C/ AUTO — HS 20-1-1-1
- VALVE CNTRL — XIC 20-1-1-1
- FIC 20-2-1-1

INTERLOCKS
- LAL 10-2-1-1

STATUS
- REQ'D POSITION — ZI 20-1-1-1
- ZI 20-1-1-2
- FLOW IND — FI 20-2-1-1
- FLOW RATE — FI 20-2-1-2
- PI 20-3-1-1 (2)

TRENDS
- FLOW TOTAL — ZIR 20-1-1-1
- FQI 20-2-1-1
- DAILY TOTAL — FQR 20-2-1-1

COMMUNICATION SCADA SYSTEM FUNCTIONS

ALARMS
- CNTRL PWR — YA 20-5-1-1
- UPS FAULT — YA 20-5-1-2
- COMM FAIL — YA 20-5-1-3

STATUS
- COMM STATUS — YL 20-5-1-1

CONTROL
- PLC ACTIV. — KIC 20-5-1-1

DI — CNTRL PWR — JS 20-5-1
DO — SCAN DELAY — KQ 20-5-1
DI — UPS FAULT — JA 20-5-1
PLC FAIL — YA 20-5-1

AI — A — ** — PRV CONTROLLER — XVC 20-1-1
AI — PRESSURE
DI — LOW TEMP
OPEN — POSITION — CLOSE
PRESSURE
DI — FLOW TOTAL
AI (2) — FORWARD & BACKWARD FLOW RATE (2)

PRV ENCLOSURE — TSL 20-4-1

S — S

PIT 20-3-2 — PI 20-3-2 — WV-20-1-3 8" BFV ** — 8"-W1 — WCV-20-1-1 ** 8" PRV O/C — 8"-W1 — WV-20-1-2 8" BFV ** — PIT 20-3-1 — PI 20-3-1

8"-W1 — WV-20-1-4 8" BFV ** — 8"-W1

8" — FE 20-2-1 — M — M — FIT 20-2-1

8"-W1 — 12"x8" — WV-20-1-5 12" GV ** — 12"-W1

8"-W1 — 12"x8" — WV-20-1-1 12" GV ** — 12"-W1

12"-W1 — 12"-W1 — WV-20-1-6 12" GV ** — 12"-W1 — 12"-W1

LOW-PRESSURE ZONE

STR-20, PRESSURE REDUCING VALVE STATION

HIGH-PRESSURE ZONE

PLOT DATE: 11/18/2025 5:09:26 PM
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PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: AMS	No	DATE	REVISIONS	BY
	DESIGNED BY: AMS				
	CHECKED BY: LET				

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

PRV STATION P&ID NO.1

PROJECT NO. 07985049.2
SHEET 06-N601

30-PLC-1
NORTH BOOSTER STATION
PLC CONTROL PANEL
(PARTIAL)

NORTH BOOSTER STATION SCADA SYSTEM FUNCTIONS

- ALARMS
  - UA 30-1-1-1 MTR (2)
  - PAH 30-4-1-1 (2)
  - PAL 30-4-1-1 (2)
- CONTROL
  - UX 30-1-1-1 MTR (2)
  - PRS/LVL/ HS 10-1-1-2 AUTO
  - FIC 30-3-1-1
  - PIC 30-4-1-1 (2)
  - SET POINTS PUK 30-4-1-1 (2)
  - EST SET POINTS LIC 10-2-1-1
- INTERLOCKS
  - PUMPS OFF FC 30-2-1-1
- STATUS
  - UL 30-1-1-1 MTR (2)
  - PRV FLOW FI 30-2-1-1
  - FLOW IND FI 30-3-1-1
  - FLOW RATE FI 30-3-1-2
  - PI 30-4-1-1 (2)
  - TOWER LEVEL LI 10-2-1-1
- TRENDS
  - UIR 30-1-1-1 MTR (2)
  - FLOW TOTAL FQI 30-3-1-1
  - DAILY TOTAL FQR 30-3-1-1
- DATA
  - UQR 30-1-1-1 MTR (2)

INTRUSION SCADA SYSTEM FUNCTIONS

- ALARMS
  - ZAL 30-6-1 INTR

BUILDING SCADA SYSTEM FUNCTIONS

- ALARMS
  - FREEZE STAT TAL 30-7-1-1
  - FLOOD LAH 30-7-1-1

POWER & COMMUNICATION SCADA SYSTEM FUNCTIONS

- ALARMS
  - E-STOP ENGAGED YA 30-8-1-1
  - NOT IN AUTO YA 30-8-1-2
  - UTILITY FAIL JA 30-8-1-1
  - ATS IN STBY JA 30-8-1-2
  - GENSET RUN JA 30-8-1-3
  - GENSET FAIL JA 30-8-1-4
- STATUS
  - GENSET R.T. KQI 30-8-1-1
  - DAILY R.T. KQR 30-8-1-1
  - DAILY STARTS YQR 30-8-1-1
  - GENSET EXERCISE JL 30-8-1-1

COMMUNICATION SCADA SYSTEM FUNCTIONS

- ALARMS
  - CNTRL PWR YA 30-9-1-1
  - UPS FAULT YA 30-9-1-2
  - COMM FAIL YA 30-9-1-3
- STATUS
  - COMM STATUS YL 30-9-1-1
- CONTROL
  - PLC ACTIV. KIC 30-9-1-1

DI CNTRL PWR JS 30-9-1 — DO SCAN DELAY KQ 30-9-1
DI UPS FAULT JA 30-9-1 — DO PLC FAIL YA 30-9-1

DI LEVEL — DI PRESS. — DI AUTO — HS 30-1-1-1 LPA

DI ZAL 30-6-1 DO

AI (2) FORWARD & BACKWARD FLOW RATE (2)
DI FLOW TOTAL
AI PRESSURE
DI ETHERNET COMMS (2)
DI FLOW
AI PRESSURE
DI INTRUSION — ZS 30-6-1 DOOR SWITCH
AI TEMP — TIT 30-7-1 BOOSTER ROOM
DI FLOOD — LSH 30-7-1 BOOSTER ROOM
DI (2) UTILITY AVAIL. / GEN AVAIL. (2)
DI GENSET EXERCISE
DI ON UTILITY
DI ON GEN
DI GENSET RUN
DI GENSET FAIL
DI NOT IN AUTO
DI E-STOP ENGAGED

DI (2) MTR TEMP (2)
DI (2) RESET (2)
DO (2) AFD RUN (2)
DO (2) AFD FAIL (2)
DI (2) AFD START (2)
DO (2) REQ'D (2)
DI (2) CNTRL AVAIL. (2)
AFD AFD-30-1-1 (2)

30-ATS-1
NORTH BOOSTER STATION
AUTOMATIC TRANSFER SWITCH

LCP-30-8-1
NORTH BOOSTER STATION STANDBY
GENERATOR CONTROL PANEL
HS 30-8-1 E-STOP
GENSET REQ'D
XS 30-8-1 E-STOP

LCP-30-8-2
NORTH BOOSTER STATION STANDBY
GENERATOR REMOTE ANNUNCIATOR

** FIT 30-3-1 — ** FE 30-3-1 — PIT 30-4-1 — ** PI 30-4-1

8"-W1 — 8" — 8"-W1 — 8"-W1

LOW-PRESSURE ZONE

06-N602 30-A CLS FROM HYPOCHLORITE CHEMICAL PUMP

** TSH 30-1-1 MTR TEMP — BOOSTER PUMP NO.1 P-30-1-1 **
** TSH 30-1-2 MTR TEMP — BOOSTER PUMP NO.2 P-30-1-2 **
*** TSH 30-1-3 MTR TEMP — BOOSTER PUMP NO.3 P-30-1-3 ***

6"-W1 — WV-30-1-1 6" BFV ** — 6"x4" — 4"-W1 — 2 1/2"-W1 — 6"x2 1/2" — 6"-W1 — WV-30-1-2 6" CV ** — WV-30-1-3 6" BFV **
6"-W1 — WV-30-1-4 6" BFV ** — 6"x4" — 4"-W1 — 2 1/2"-W1 — 6"x2 1/2" — 6"-W1 — WV-30-1-5 6" CV ** — WV-30-1-6 6" BFV **
6"-W1 — WV-30-1-7 6" BFV ** — 6"x4" — 4"-W1 — 2 1/2"-W1 — 6"x2 1/2" — 6"-W1 — WV-30-1-8 6" CV *** — WV-30-1-9 6" BFV **

FS 30-2-1
6"-W1 — WV-30-2-3 6" BFV ** — 6"-W1 — WV-30-2-2 6" PRV ** — WV-30-2-1 6" BFV ** — 8"-W1

PIT 30-4-2 — ** PI 30-4-2

HIGH-PRESSURE ZONE

STR-30, NORTH BOOSTER STATION

30-PLC-1
NORTH BOOSTER STATION
PLC CONTROL PANEL
(PARTIAL)

CHEMICAL FEED SYSTEM SCADA SYSTEM FUNCTIONS

- ALARMS
  - PUMP FAIL YA 30-5-1-1
  - LOW LVL LAL 30-5-1-1
- STATUS
  - PUMP REQ'D YL 30-5-1-1
  - PUMP SI 30-5-1-1
  - DAILY USAGE QIR 30-5-1-1
  - TODAY USAGE QIR 30-5-1-2
- CONTROL
  - FLOW PACE SIC 30-5-1-1
  - HS 30-5-1-1 HOA
- TRENDS
  - PUMP RUN SIR 30-5-1-1
  - TANK LVL LIR 30-5-1-1
- INTERLOCKS
  - PUMP RUN YS 30-1-1-1
  - FLOW LPZ TO HPZ YS 30-3-1-1

AI LEVEL — DO REQ'D — DI FAULT — DI RUN — AI SPEED — AO PACE

*** LT 30-5-1

CLS — HYPOCHLORITE CHEMICAL PUMP P-30-5-1 *** — CLS — 30-A 06-N602 TO BOOSTER PUMPS SUCTION HEADER

T-30-6-1 HYPOCHLORITE STORAGE TANK ***

STR-30, NORTH BOOSTER STATION

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION
P&ID NO.2

PROJECT NO. 07985049.2
SHEET 06-N602

PLOT DATE: 11/18/2025 5:06:28 PM
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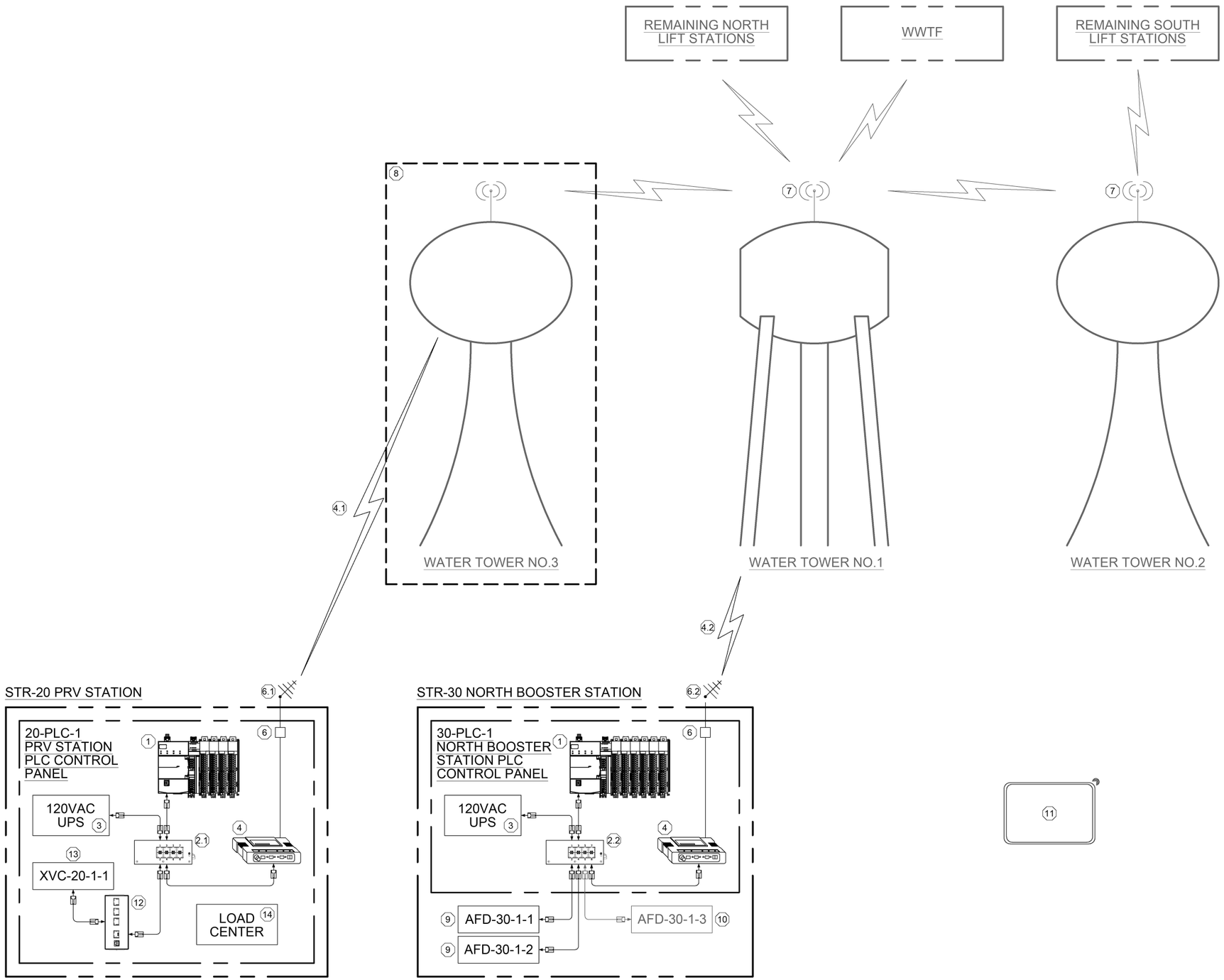

GENERAL NOTES

A. REFER TO CONTROL PANEL I-O SCHEDULES FOR DETAILED MODULE REQUIREMENTS OF NEW PLC SYSTEMS.

B. CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING AND LABELING ALL COMMUNICATIONS SYSTEM CABLING.

C. CONTRACTOR SHALL CONFIGURE ALL ETHERNET SWITCHING EQUIPMENT TO PROVIDE ACCEPTABLE NETWORK PERFORMANCE, INCLUDING THE MANAGING OF ALL SWITCHES AND DEVELOPMENT OF VLAN'S WHERE REQUIRED.

D. PROVIDE ALL REQUIRED UTP AND STP PATCH CABLES AS SPECIFIED.

E. PROVIDE ALL REQUIRED SERIAL, USB, VIDEO, AND OTHER INTERFACE CABLE AS REQUIRED FOR THE APPLICATION.

F. CONTRACTOR SHALL CONFIGURE NETWORK WITH NEW, UNIQUE PASSWORDS FOR ALL DEVICES AND OPERATORS.

G. CONTRACTOR SHALL CONFIGURE FIREWALL WITH FIP SECURITY BEST PRACTICES FOR SCADA SYSTEMS.

H. CONTRACTOR SHALL UPDATE MASTER AND ANY REDUNDANT SCADA SYSTEM PANEL AND/OR COMPUTER WITH NEW FUNCTIONALITY AS SHOWN AND AS SPECIFIED.

KEY NOTES (X)

1. PROVIDE TYPE I PROGRAMMABLE LOGIC CONTROLLER SYSTEM. REFER TO SPECIFICATIONS.
2. UNMANAGED ETHERNET SWITCH:
   - 2.1. PROVIDE 108TX - (8) 10/100 COPPER PORTS.
   - 2.2. PROVIDE 108TX - (8) 10/100 COPPER PORTS. RESERVE ONE PORT SPACE FOR FUTURE CHLORINE ANALYZER.
3. PROVIDE 120VAC UNINTERRUPTIBLE POWER SUPPLY - DOUBLE CONVERSION TYPE. 120VAC UPS SHALL BE LOCATED INSIDE OF THE PLC CONTROL PANEL.
4. PROVIDE RADIO COMPATIBLE WITH THE NEW SYSTEM BEING INSTALLED.
   - 4.1. STR-20 RADIO COMMUNICATES WITH FUTURE RADIO INFRASTRUCTURE AT FUTURE WATER TOWER NO.3.
   - 4.2. STR-30 RADIO COMMUNICATES WITH EXISTING RADIO INFRASTRUCTURE AT WATER TOWER NO.1.
5. PROVIDE ANTENNA CABLE, SURGE ARRESTERS, AND ATTENUATORS (WHERE REQUIRED).
6. PROVIDE YAGI-DIRECTIONAL ANTENNA:
   - 6.1. INSTALL ANTENNA PER DETAIL 2690-701 AND 2690-702. ANTENNA INSTALLATION SHALL NOT INTERFERE WITH OPENING ENCLOSURE COVER.
   - 6.2. INSTALL ANTENNA PER DETAIL 2690-700 AND 2690-701.
7. EXISTING RADIO EQUIPMENT AT EXISTING STRUCTURE TO REMAIN.
8. WATER TOWER NO.3 AND ASSOCIATED SYSTEM INTEGRATION WORK IS PROVIDED UNDER A SEPARATE CONTRACT. SCADA SYSTEM FUNCTIONALITY PROVIDED UNDER THIS CONTRACT SHALL BE INTEGRATED WITH BOTH THE EXISTING SCADA SYSTEM AND THE FUTURE SYSTEM AT WATER TOWER NO.3 AS SHOWN AND AS SPECIFIED.
9. WALL-MOUNTED AFD AS SPECIFIED.
10. FUTURE WALL-MOUNTED AFD.
11. PROVIDE WI-FI / CELLULAR CAPABLE TABLET CONFIGURED FOR REMOTE ACCESS INTO EXISTING SCADA SYSTEM.
12. PROVIDE PROTOCOL CONVERTER - RED LION DA10D, OR EQUAL. CONFIGURE PROTOCOL CONVERTER FOR MODBUS TCP TO ETHERNET/IP COMMUNICATIONS.
13. MANUFACTURER PROVIDED CONTROLLER - INTERFACE WITH SCADA SYSTEM AS SHOWN.
14. PLC CONTROL PANEL CONTAINS INTEGRAL LOAD CENTER. REFER TO ONE-LINES AND PANEL SCHEDULES.

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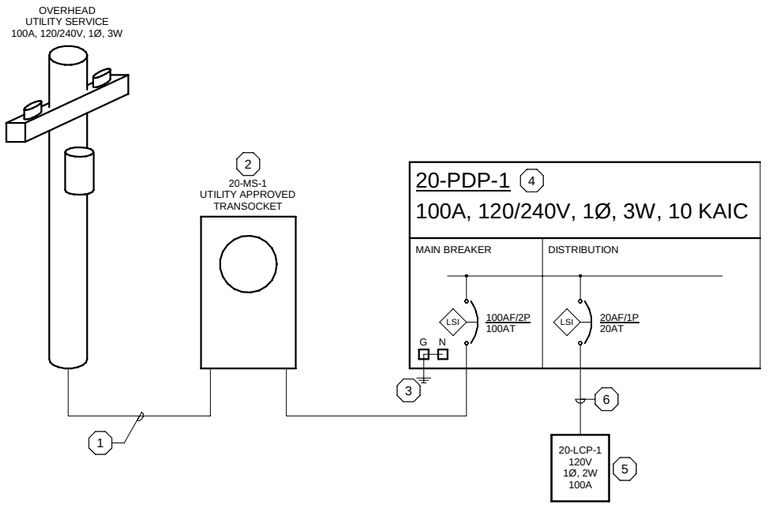
SCADA SYSTEM NETWORK ARCHITECTURE

PROJECT NO. 07985049.2
SHEET 06-N603



PRV STATION ONE-LINE

NTS

GENERAL NOTES

A. CIRCUIT BREAKER / ELECTRONIC TRIP UNITS SHALL BE PROVIDED WITH THE FOLLOWING FUNCTIONS WHERE SO INDICATED:
   a. "LSI" INDICATES ELECTRONIC TRIP WITH ADJUSTABLE LONG, SHORT, AND INSTANTANEOUS SETTINGS.

B. SEE "ONE-LINE DIAGRAM WIRING REQUIREMENTS" ON THIS DRAWING FOR NEW FEEDER AND BRANCH CIRCUIT WIRING REQUIREMENTS.

C. FEEDER SCHEDULE WIRING NOTATION IS SHOWN AS PHASE CONDUCTORS, NEUTRAL CONDUCTOR (WHERE REQUIRED), AND GROUND CONDUCTOR. WHERE MULTIPLE RUNS OF CONDUCTORS ARE INDICATED PROVIDE CONDUIT FOR EACH RUN.

D. FAULT CURRENTS INDICATED ARE ESTIMATED MAXIMUM AVAILABLE CURRENTS BASED ON DESIGN CONDITIONS. ACTUAL RATINGS SHALL BE DETERMINED BY THE SPECIFIED SYSTEM ANALYSIS STUDY.

E. THE PRIMARY OVERCURRENT PROTECTIVE DEVICES AND ASSOCIATED FEEDER CONDUCTORS FOR DRY TYPE TRANSFORMERS SHOWN ON THIS DRAWING ARE SIZED FOR 250% OF THE TRANSFORMER NAMEPLATE PRIMARY CURRENT. IF THE CONTRACTOR ELECTS TO SUPPLY TRANSFORMERS THAT REQUIRE LOWER RATED PRIMARY OVERCURRENT PROTECTIVE DEVICES TO ACCOUNT FOR LOWER INRUSH HARACTERISTICS, THEN THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING OVERCURRENT PROTECTIVE DEVICES AND FEEDERS THAT COMPLY WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. REFER TO SPECIFICATIONS.

F. REFER TO PANEL SCHEDULES FOR ADDITIONAL BRANCH CIRCUIT REQUIREMENTS NOT SHOWN ON PROPOSED OVERALL ONE-LINE DIAGRAM.

KEY NOTES ⓧ

1 PROVIDE CONDUIT AND CONDUCTORS FROM UTILITY POLE MOUNTED TRANSFORMER SECONDARY TERMINALS TO TRANSOCKET.

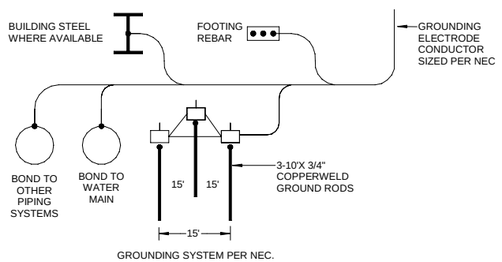
2 PROVIDE UTILITY APPROVED METER SOCKET WITH A LEVER ACTUATED POSITIVE BYPASS MECHANISM. SOCKET SHALL BE RATED FOR 200A MINIMUM. PROVIDE PROTECTIVE SHIELD FOR METER SOCKET IF METER SOCKET IS NOT PROTECTED BY A ROOF OVERHANG.

3 PROVIDE NEW GROUNDING IN ACCORDANCE WITH NEC. SEE DETAIL ON THIS SHEET.

4 20-PDP-1 IS A SERVICE ENTRANCE RATED INTEGRAL LOAD CENTER WITHIN 20-PLC-1. PROVIDE SQUARE D NQ OR EQUIVALENT TYPE PANEL. REFER TO 20-CE101 AND PANEL SCHEDULES FOR LOAD CENTER REQUIREMENTS.

5 PROVIDE NEMA 12 SCADA CONTROL PANEL AS SCHEDULED AND AS SHOWN ON DRAWINGS. CONTROL PANEL SHALL HAVE AN INTEGRAL LOAD CENTER.

6 REFER TO ELECTRICAL INSTALLATION AND WIRING SCHEDULES FOR THE CIRCUIT REQUIREMENTS OF THIS FEEDER.



GROUNDING ELECTRODE, CONDUCTOR AND BONDING REQUIREMENTS

NTS

STR-20 ONE-LINE DIAGRAM WIRING REQUIREMENTS

LOAD	SOURCE	FEEDER CIRCUIT		FEEDER CIRCUIT WIRING			NOTES
		VOLTAGE	RATING	WIRE SIZE	CONDUIT SIZE	CONDUCTOR MATERIAL	
20-MS-1	UTILITY TRANSFORMER	240 V	100 A / 2 P	2-#3, 1-#3, 1-#8	1"	Copper Conductor w/Neutral	1,2
20-PDP-1	20-MS-1	240 V	100 A / 2 P	2-#3, 1-#3, 1-#8	1"	Copper Conductor w/Neutral	1

GENERAL NOTES

A. REFER TO WIRNIG SCHEDULES FOR ADDITIONAL WIRING REQUIREMENTS.

SCHEDULE NOTES

1. CONDUIT SIZE LISTED IS MINIMUM INTERIOR OR EXTERIOR ABOVE GRADE CONDUIT SIZE. FOR MINIMUM UNDERGROUND CONDUIT SIZE, REFER TO ELECTRICAL PLANS.
2. COORDINATE WITH UTILITY FOR CONDUIT REQUIREMENTS.

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PRV STATION ONE-LINE

PROJECT NO. 07985049.2

SHEET 07-E601

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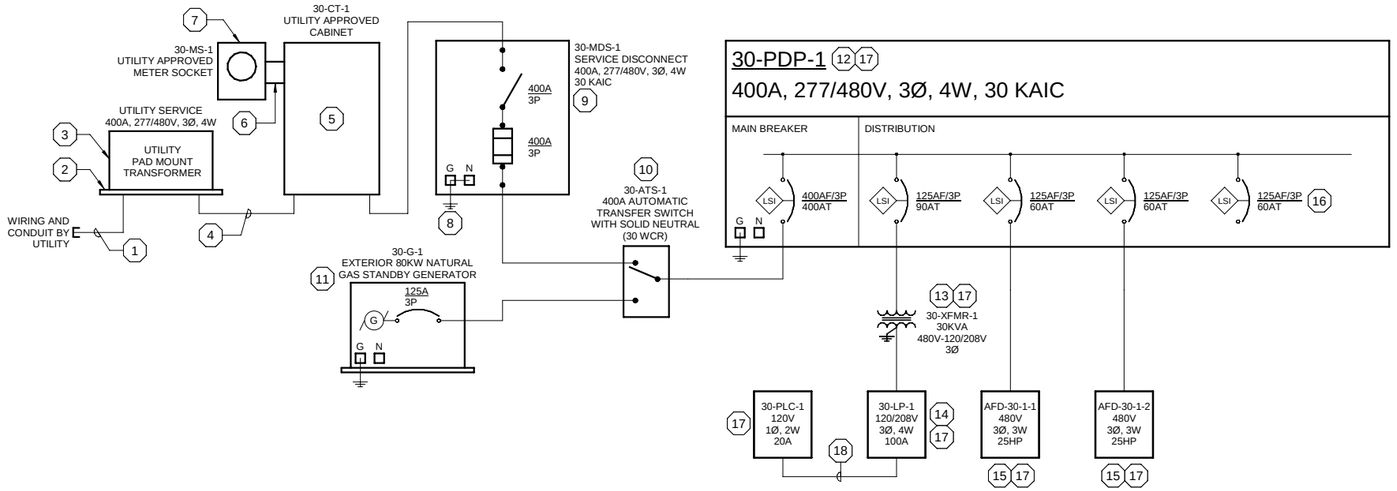
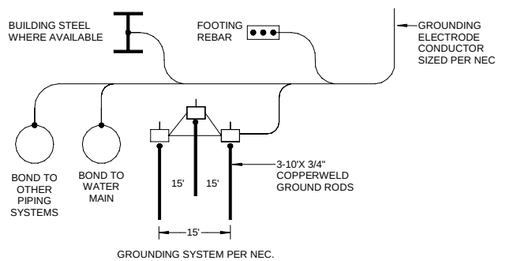


NORTH BOOSTER STATION ONE-LINE

NTS



GROUNDING ELECTRODE, CONDUCTOR AND BONDING REQUIREMENTS

NTS

STR-30 ONE-LINE DIAGRAM WIRING REQUIREMENTS

LOAD	SOURCE	FEEDER CIRCUIT VOLTAGE	FEEDER CIRCUIT RATING	FEEDER CIRCUIT WIRING WIRE SIZE	CONDUIT SIZE	CONDUCTOR MATERIAL	NOTES
30-CT-1	UTILITY TRANSFORMER	480 V	400 A / 3 P	3-#600, 1-#600, 1-#3	4"	Copper Conductor w/Neutral	1,2
30-MDS-1	30-CT-1	480 V	400 A / 3 P	3-#600, 1-#600, 1-#3	4"	Copper Conductor w/Neutral	
30-ATS-1 (NORMAL)	30-MDS-1	480 V	400 A / 3 P	3-#600, 1-#600, 1-#3	4"	Copper Conductor w/Neutral	
30-G-1	30-ATS-1 (EMERGENCY)	480 V	125 A / 3 P	3-#1, 1-#1, 1-#6	1 1/2"	Copper Conductor w/Neutral	1
30-PDP-1	30-ATS-1 (LOAD)	480 V	400 A / 3 P	3-#600, 1-#600, 1-#3	4"	Copper Conductor w/Neutral	
AFD-30-1-1	30-PDP-1	480 V	60 A / 3 P	3-#8, 1-#8	1"	Copper Conductor w/o Neutral	
AFD-30-1-2	30-PDP-1	480 V	60 A / 3 P	3-#8, 1-#8	1"	Copper Conductor w/o Neutral	
30-XMFR-1	30-PDP-1	480 V	90 A / 3 P	3-#3, 1-#8	3/4"	Copper Conductor w/o Neutral	
30-LP-1	30-XMFR-1	208 V	100 A / 3 P	3-#3, 1-#3, 1-#8	1 1/4"	Copper Conductor w/Neutral	

GENERAL NOTES

A. REFER TO WIRNIG SCHEDULES FOR ADDITIONAL WIRING REQUIREMENTS.

SCHEDULE NOTES

1. CONDUIT SIZE LISTED IS MINIMUM INTERIOR OR EXTERIOR ABOVE GRADE CONDUIT SIZE. FOR MINIMUM UNDERGROUND CONDUIT SIZE, REFER TO ELECTRICAL PLANS.
2. COORDINATE WITH UTILITY FOR CONDUIT REQUIREMENTS.

GENERAL NOTES

A. CIRCUIT BREAKER / ELECTRONIC TRIP UNITS SHALL BE PROVIDED WITH THE FOLLOWING FUNCTIONS WHERE SO INDICATED:
   a. "LSI" INDICATES ELECTRONIC TRIP WITH ADJUSTABLE LONG, SHORT, AND INSTANTANEOUS SETTINGS.

B. SEE "ONE-LINE DIAGRAM WIRING REQUIREMENTS" ON THIS DRAWING FOR NEW FEEDER AND BRANCH CIRCUIT WIRING REQUIREMENTS.

C. FEEDER SCHEDULE WIRING NOTATION IS SHOWN AS PHASE CONDUCTORS, NEUTRAL CONDUCTOR (WHERE REQUIRED), AND GROUND CONDUCTOR. WHERE MULTIPLE RUNS OF CONDUCTORS ARE INDICATED PROVIDE CONDUIT FOR EACH RUN.

D. FAULT CURRENTS INDICATED ARE ESTIMATED MAXIMUM AVAILABLE CURRENTS BASED ON DESIGN CONDITIONS. ACTUAL RATINGS SHALL BE DETERMINED BY THE SPECIFIED SYSTEM ANALYSIS STUDY.

E. THE PRIMARY OVERCURRENT PROTECTIVE DEVICES AND ASSOCIATED FEEDER CONDUCTORS FOR DRY TYPE TRANSFORMERS SHOWN ON THIS DRAWING ARE SIZED FOR 250% OF THE TRANSFORMER NAMEPLATE PRIMARY CURRENT. IF THE CONTRACTOR ELECTS TO SUPPLY TRANSFORMERS THAT REQUIRE LOWER RATED PRIMARY OVERCURRENT PROTECTIVE DEVICES TO ACCOUNT FOR LOWER INRUSH HARACTERISTICS, THEN THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING OVERCURRENT PROTECTIVE DEVICES AND FEEDERS THAT COMPLY WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. REFER TO SPECIFICATIONS.

F. REFER TO PANEL SCHEDULES FOR ADDITIONAL BRANCH CIRCUIT REQUIREMENTS NOT SHOWN ON PROPOSED OVERALL ONE-LINE DIAGRAM.

KEY NOTES (X)

1 PRIMARY CONDUCTORS PROVIDED, INSTALLED, AND TERMINATED BY UTILITY.
2 PROVIDE PAD FOR PAD MOUNT TRANSFORMER. COORDINATE PAD REQUIREMENTS WITH UTILITY.
3 UTILITY PAD MOUNTED TRANSFORMER FURNISHED, INSTALLED, AND TERMINATED BY UTILITY.
4 PROVIDE CONDUIT AND CONDUCTORS FROM PAD MOUNT TRANSFORMER SECONDARY TERMINALS TO INSTRUMENT TRANSFORMER COMPARTMENT. UTILITY TO MAKE TERMINATIONS AND CONNECTIONS TO THE TRANSFORMER.
5 PROVIDE UTILITY APPROVED NEMA 4X INSTRUMENT TRANSFORMER CABINET. UTILITY SHALL FURNISH CT AND PT TRANSFORMERS.
6 PROVIDE 1" METERING CONDUIT FROM THE INSTRUMENT TRANSFORMER CABINET TO THE METER SOCKET.
7 UTILITY TO FURNISH METER SOCKET. CONTRACTOR SHALL INSTALL PER UTILITY REQUIREMENTS.
8 PROVIDE NEW GROUNDING IN ACCORDANCE WITH NEC. SEE DETAIL ON THIS SHEET.
9 PROVIDE SERVICE ENTRANCE RATED NEMA 3R FUSED DISCONNECT SWITCH.
10 PROVIDE NEMA 12 AUTOMATIC TRANSFER SWITCH.
11 NATURAL GAS FUELED STANDBY ENGINE GENERATOR PER DETAIL 2632-301. PROVIDE FUEL PIPING, AND NORMAL AND EMERGENCY VENT PIPING AS REQUIRED TO MEET ALL APPLICABLE NFPA REQUIREMENTS.
12 PROVIDE NEMA 12 POWER DISTRIBUTION PANEL AS SCHEDULED AND AS SHOWN ON DRAWINGS.
13 PROVIDE NEMA 12 FLOOR MOUNTED TRANSFORMER.
14 PROVIDE NEMA 12 LIGHTING PANEL AS SCHEDULED AND AS SHOWN ON DRAWINGS.
15 PROVIDE WALL MOUNTED NEMA 12 AFD. REFER TO ELECTRICAL PLANS AND SPECIFICATIONS.
16 PROVIDE SPARE BREAKER IN 30-PDP-1 FOR FUTURE AFD.
17 BUILDING WALL SPACE IS LIMITED. REFER TO 30-E101 FOR SPACE REQUIREMENTS AND SPECIFICATIONS FOR CONTROL PANEL SIZES.
18 REFER TO ELECTRICAL INSTALLATION AND WIRING SCHEDULES FOR THE CIRCUIT REQUIREMENTS OF THIS FEEDER.

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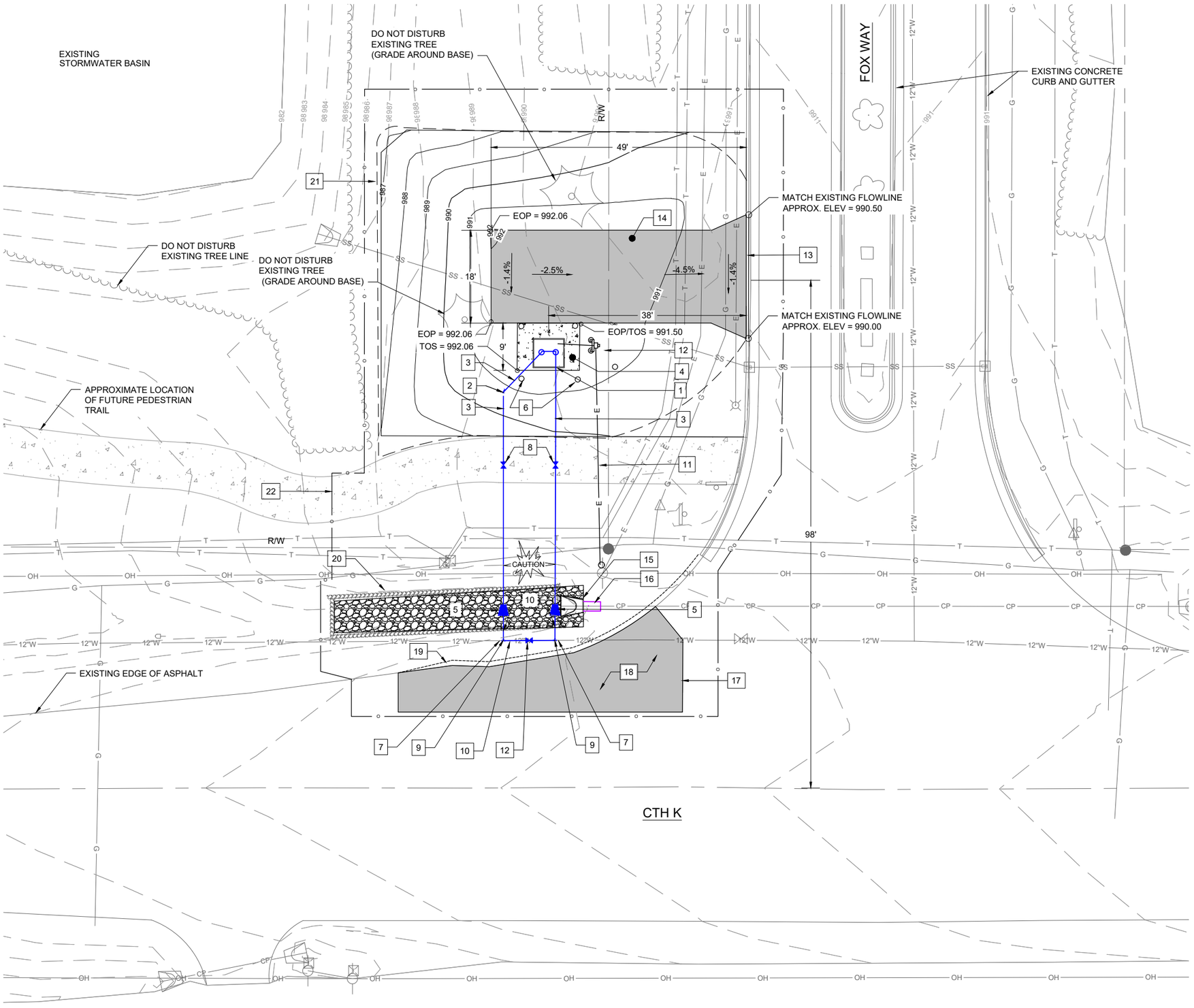
NORTH BOOSTER STATION ONE-LINE

PROJECT NO. 07985049.2
SHEET 07-E602



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GENERAL NOTES

A. CONSTRUCTION DISTURBANCE, INCLUDING STAGING, STOCK PILING, AND CONSTRUCTING SHALL BE CONTAINED WITHIN THE CONSTRUCTION LIMITS IDENTIFIED ON THIS SHEET.

B. REFER TO MECHANICAL SHEETS FOR ENCLOSURE AND PIPING INFORMATION.

C. REFER TO ELECTRICAL SHEETS FOR SITE ELECTRICAL INFORMATION

D. EXISTING TOPSOIL WITHIN THE ANTICIPATED DISTURBANCE LIMITS OF THE PROPOSED WORK SHALL BE STRIPPED,SALVAGED, AND STOCKPILED (ONSITE) TO BE USED FOR FINAL RESTORATION OF THE SITE.

E. TOPSOIL (VIRGIN AND SALVAGED) SHALL BE A MIN. OF 4-INCHES THICK FOR FINAL RESTORATION.

F. ALL DISTURBED AREAS, UNLESS OTHERWISED SURFACED, SHALL BE RESTORED WILL TOPSOIL, SEED, FERTILIZER, AND MULCH

KEY NOTES

1. PACKAGED PRESSURE REDUCING VALVE STATION - SEE MECHANICAL SHEETS
2. 8" DUCTILE IRON BEND
3. 8" DUCTILE IRON WATER MAIN
4. 3' WIDE CONCRETE PAVEMENT ON EAST, WEST, AND NORTH SIDES OF PACKAGED PRV STATION. PROVIDE BOND BREAKER ALONG PRV ENCLOSURE STRUCTURE
5. 12" X 8" REDUCER
6. PIPE BOLLARD, TYP. OF FOUR (4)
7. 12" X 12" TEE
8. 8" VALVE & BOX
9. CONNECT TO EXISTING WATER MAIN
10. 12" DUCTILE IRON WATER MAIN
11. UNDERGROUND ELECTRICAL CONDUIT, REFER TO ELECTRICAL PLANS
12. ELECTRICAL EQUIPMENT RACK & METER SOCKET, REFER TO ELECTRICAL SITE PLAN
13. CUT EXISTING CURB HEAD FOR DRIVEWAY OPENING
14. ASPHALT DRIVEWAY, SEE DETAIL
15. REMOVE AND REPLACE EXISTING CULVERT ENDWALL - MATCH EXISTING PIPE DIAMETER AND MATERIAL
16. REMOVE AND REPLACE PIPE AS REQUIRED FOR WATER MAIN INSTALLATION. SAWCUT CLEAN EDGE ON EXISTING PIPE. REFER TO STORM SEWER CONNECTION DETAIL (SHEET 05-C504)
17. SAWCUT AND MATCH EXISTING ASPHALT PAVEMENT
18. REPLACE EXISTING ASPHALT PAVEMENT, SEE DETAIL. REFER TO TEMPORARY TRAFFIC CONTROL PLANSHEET FOR TRAFFIC CONTROL STAGING.
19. 1-FOOT WIDE AGGREGATE SHOULDER, INSTALL FULL LENGTH OF ASPHALT REPLACEMENT
20. REMOVE AND REPLACE EXISTING MEDIUM RIPRAP, REINSTALL WITH GEOTEXTILE FABRIC, TYP.
21. SLOPE INTERCEPT OF FILLED AREA. ALL OTHER DISTURBED AREAS SHALL MATCH EXISTING ELEVATIONS AND SLOPES.
22. CONSTRUCTION LIMITS, TYP.
23. 12" VALVE & BOX

NO.	DATE	REVISION	BY

PROJECT DATE: NOVEMBER 18, 2025
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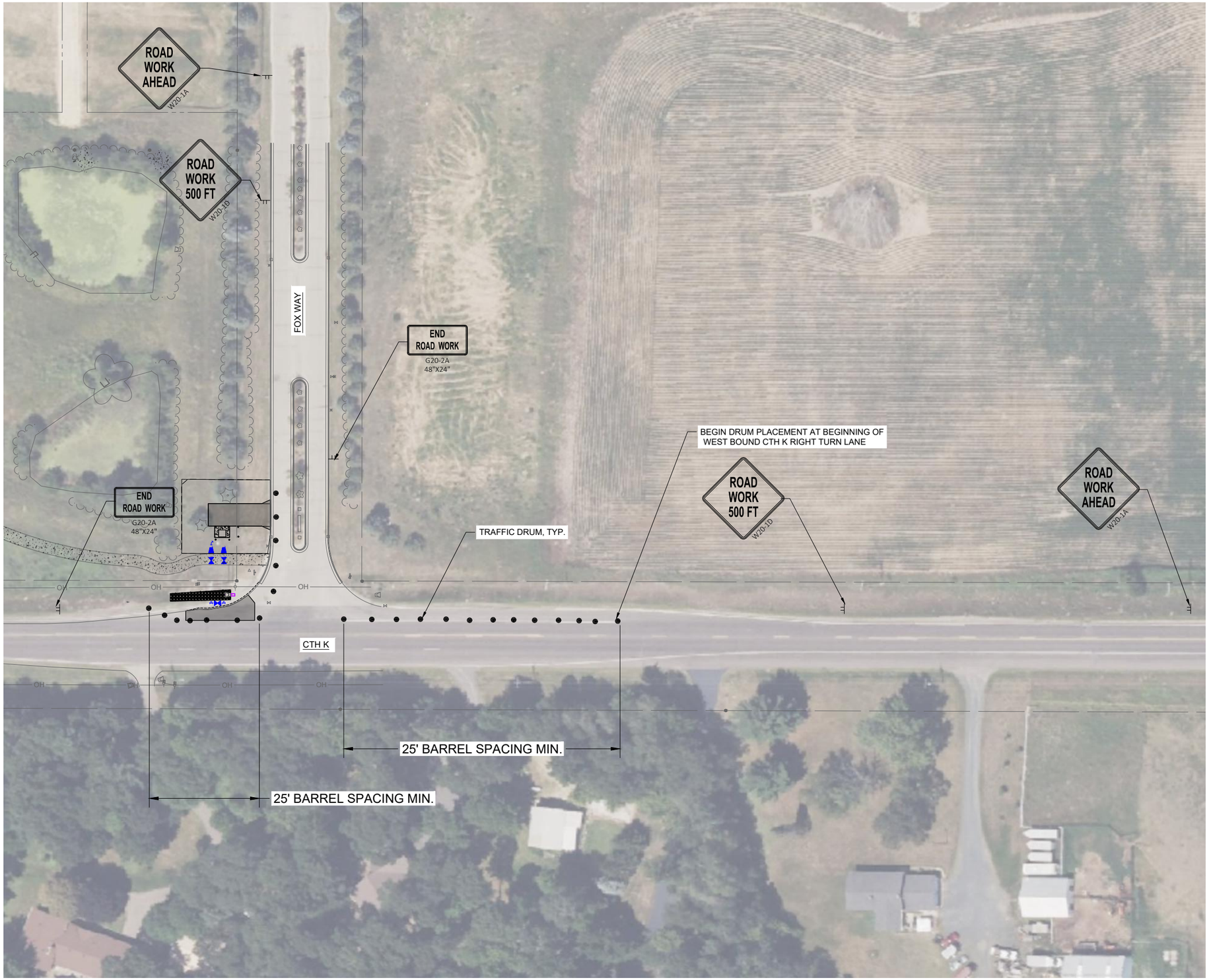
BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

PRESSURE REDUCING VALVE STATION SITE, UTILITY, AND GRADING PLAN

PROJECT NO. 07985049.2
SHEET 20-C101



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GENERAL NOTES

A. TRAFFIC CONTROL SHOWN IS THE MINIMUM REQUIRED. THE CONTRACTOR IS REQUIRED TO PROVIDE AND CONDUCT A SAFE ENVIRONMENT FOR WORKERS, PEDESTRIANS, AND ROADWAY USERS.

B. THE CONTRACTOR SHALL ADD ADDITIONAL TRAFFIC CONTROL MEASURES AS DIRECTED BY THE ENGINEER OR OWNER.

C. THE CONTRACTOR MAY SUBSTITUTE THE USE OF DRUMS ALONG FOX WAY FOR HIGH VISIBILITY SAFETY FENCING.

		NO.	DATE	REVISION	BY
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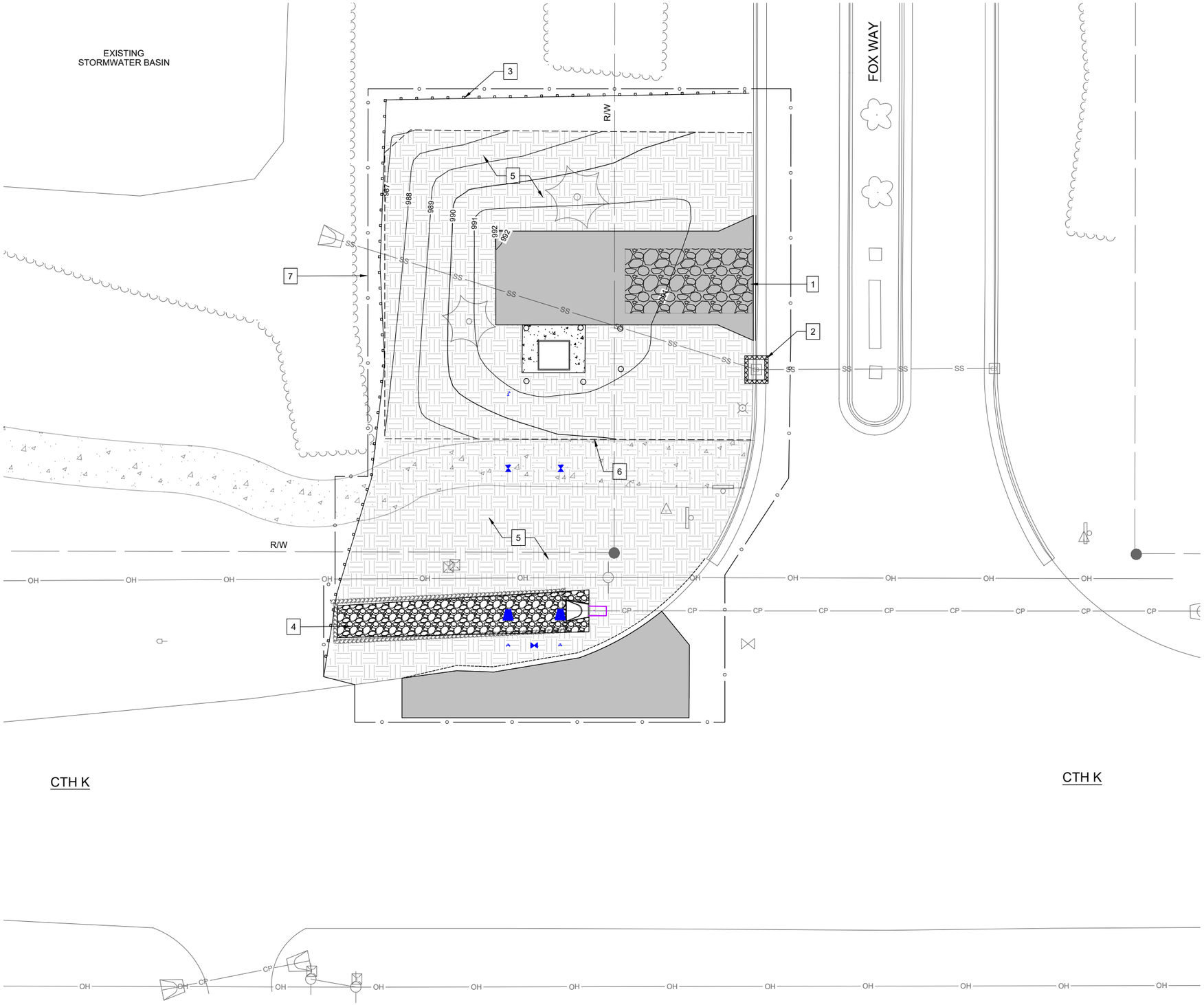
BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

PRESSURE REDUCING VALVE STATION
TEMPORARY TRAFFIC CONTROL PLAN

PROJECT NO. 07985049.2
SHEET 20-C102



GENERAL NOTES

A. ALL AREAS, UNLESS OTHERWISE SURFACED, SHALL RECEIVE TOPSOIL (SALVAGED AND/OR VIRGIN), SEED, FERTILIZER, AND MULCH.

B. EROSION CONTROL BMPS ARE THE MINIMUM REQUIRED. ADDITIONAL EROSION CONTROL ITEMS SHALL BE INSTALLED AS DIRECTED BY ENGINEER OR OWNER

C. ALL DISTURBED AREAS WITH SLOPES GREATER THAT 4:1 SHALL BE RESTORED WITH EROSION MAT, SEED, AND FERTILIZER.

KEY NOTES

1. TRACKING PAD AT SITE ENTRANCE, TYP.
2. INLET PROTECTION, TYPE C, TYP.
3. PERIMETER SILT FENCE, TYP.
4. REMOVE AND REPLACE EXISTING MEDIUM RIPRAP WITH FABRIC AT APRON ENDWALL, TYP.
5. RESTORE ALL DISTURBED AREAS WITH TOPSOIL (SALVAGED OR VIRGIN), SEED, FERTILIZER, AND MULCH (EROSION MAT OR HYDRO-SEED) UNLESS OTHERWISE NOTED.
6. SLOPE INTERCEPT, TYP.
7. CONSTRUCTION LIMITS, TYP.

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
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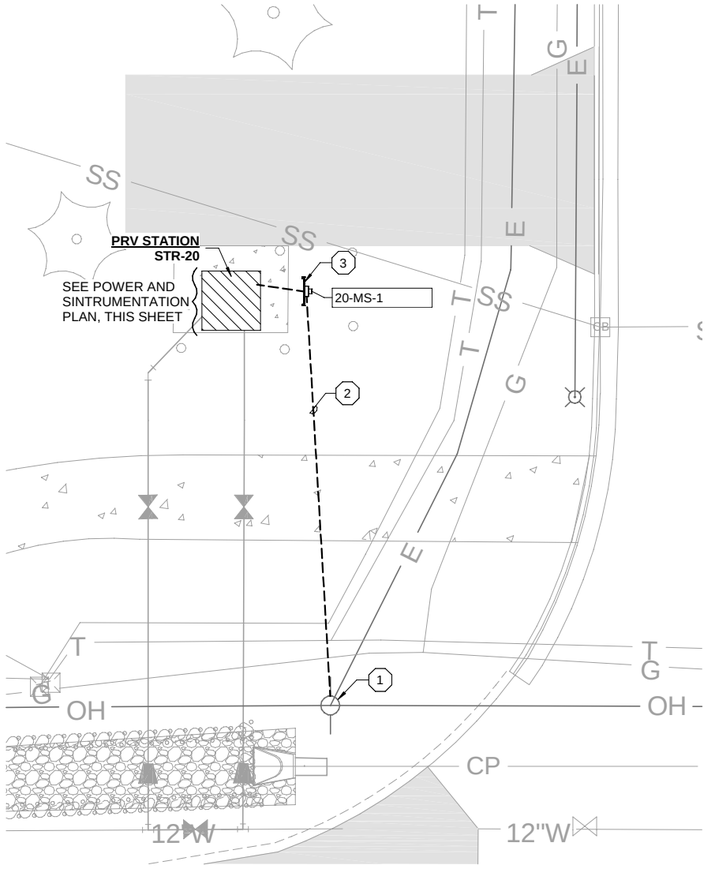
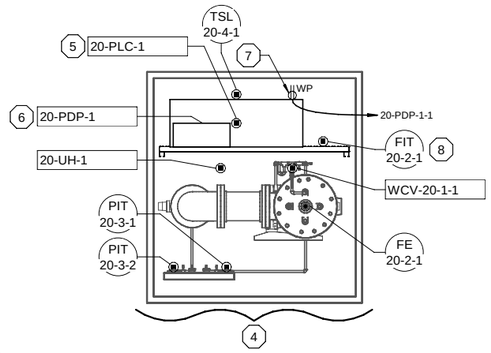
PRESSURE REDUCING VALVE STATION
EROSION CONTROL PLAN

PROJECT NO. 07985049.2
SHEET 20-C103



SITE PLAN

1/8" = 1'-0" (22" x 34")
1/16" = 1'-0" (11" x 17")
0 4 8 16



POWER AND INSTRUMENTATION PLAN

1/2" = 1'-0" (22" x 34")
1/4" = 1'-0" (11" x 17")
0 1 2 4

GENERAL NOTES

A. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ENGINEER BEFORE CONTINUING WITH CONSTRUCTION.

B. ALL ELECTRICAL INSTALLATIONS SHALL MEET NEC REQUIREMENTS FOR MINIMUM WORKING SPACE IN FRONT OF EQUIPMENT AND DEDICATED EQUIPMENT SPACE ABOVE SWITCHBOARDS, SWITCHGEAR, PANELBOARDS AND MOTOR CONTROL CENTERS. COORDINATE LAYOUT OF ALL ELECTRICAL EQUIPMENT PRIOR TO INSTALLATION.

C. UNDERGROUND CONDUIT ROUTING IS DIAGRAMMATIC IN NATURE AND IS NOT INTENDED TO DICTATE EXACT ROUTING. CONTRACTOR IS TO DETERMINE BEST ROUTING BASED ON OTHER UTILITIES AND FIELD CONDITIONS.

D. DIRECT BURIED CONDUITS SHALL BE INSTALLED PER DETAIL 2605-310. PROVIDE SPACERS TO PHYSICALLY SEPARATE LOW VOLTAGE AND CONTROL CONDUITS FROM POWER CONDUITS. INSTALL PULL CORD IN ALL EMPTY CONDUITS. UNLESS SHOWN OTHERWISE, ALL CONDUITS SHALL BE BURIED 24" MINIMUM BELOW FINISHED GRADE.

E. PULL BOXES AND HANDHOLES SHALL BE INSTALLED PER DETAIL 2605-550. SIZE PULL BOXES AS REQUIRED FOR DUCT BANK. PROVIDE PULL BOXES AS REQUIRED FOR PULL LENGTH. PULL BOXES AND HANDHOLES INSTALLED WITHIN FIVE FEET OF PAVEMENT AREAS SHALL BE ANSI TIER 22 TRAFFIC RATED WITH EXTRA HEAVY-DUTY COVERS.

F. CONDUIT SHALL BE 3/4" MINIMUM OR AS NOTED OTHERWISE.

G. CONDUIT WALL AND FLOOR PENETRATIONS PER DETAILS 2605-303 AND 2605-305.

H. SEE ONE-LINE DIAGRAMS, PANEL SCHEDULES, AND ELECTRICAL INSTALLATION AND WIRING SCHEDULES FOR WIRING OF ALL FIELD INSTRUMENTATION AND EQUIPMENT.

I. INSTALL FIELD INSTRUMENTATION AND EQIUPMENT PER DETAIL REFERENCED IN ELECTRICAL INSTALLATION AND WIRING SCHEDULES.

J. SEE SCADA SYSTEM NETWORK ARCHITECTURE FOR COMMUNICATIONS CABLING REQUIREMENTS.

K. ROOM/AREA ATMOSPHERE REQUIREMENTS, REFER TO SECTION 26 05 00:
   a. PRV STATION SITE EXTERIOR: GENERAL, WET, NEW CONSTRUCTION
   b. PRV STATION SITE UNDERGROUND: UNDERGROUND CONSTRUCTION
   c. PRV STATION ENCLOSURE: GENERAL, DAMP, NEW CONSTRUCTION

KEY NOTES ⓧ

1 UTILITY POLE AND POLE-MOUNTED TRANSFORMER PROVIDED BY UTILITY.
2 PROVIDE (1) 2" DIRECT BURIED CONDUIT FOR ELECTRICAL SERVICE LATERAL CONDUCTORS TO RACK MOUNTED METERING EQUIPMENT. COORDINATE WITH UTILITY FOR CONDUIT REQUIREMENTS.
3 PROVIDE EQUIPMENT RACK PER DETAIL 2605-400. WIDTH SHALL BE LARGE ENOUGH TO ACCOMMODATE METER SOCKET.
4 REFER TO P&IDS AND PROCESS PLANS FOR PROCESS PIPING SECTION VIEWS.
5 MOUNT 20-PLC-1 HIGHER THAN PRV ENCLOSURE BASE TO PREVENT OBSTRUCTION OF THE PANEL AND TO ALLOW THE PANEL DOOR TO FULLY OPEN.
6 20-PDP-1 IS AN INTEGRAL LOAD CENTER TO 20-PLC-1.
7 CONVENIENCE RECEPTACLE FLUSH WITH SCADA CONTROL PANEL DOOR.
8 INSTALL FIT-20-2-1 PER DETAIL 2605-401. FIT-20-2-1 SHALL BE MOUNTED TO THE SAME RACK AS 20-PLC-1.

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

PRV STATION
ELECTRICAL SITE PLAN

PROJECT NO. 07985049.2
SHEET 20-CE101

KEYNOTES:

1. PREFABRICATED INSULATED FIBERGLASS ENCLOSURE - BY STATION SUPPLIER
2. 8 INCH CLASS 52 FLANGED DUCTILE IRON PIPE
3. BI-DIRECTIONAL MAGNETIC FLOW METER - PROVIDED BY STATION SUPPLIER, SPECIFIED UNDER DIVISION 26
4. 8"X8"X8" FLANGED DUCTILE IRON TEE
5. BUTTERFLY VALVE, LUGGED STYLE, WITH LEVER HANDLE OPERATOR
6. PRESSURE AND FLOW CONTROL VALVE - SEE DIVISION 40 SPECIFICATIONS
7. PROVIDE 3/4-INCH NPT TAP AND COPPER PIPING TO PRESSURE MONITORING PANEL (TYP. OF 2)
8. 8" 90 DEGREE FLANGED DUCTILE IRON ELBOW
9. NOT USED.
10. PRESSURE MONITORING PANEL AND RACK. ALUMINUM RACK SHALL BE LARGE ENOUGH TO MOUNT THE FOLLOWING EQUIPMENT:
    - A. PRESSURE GAUGE (2)
    - B. SAMPLE TAP (2)
    - C. BALL VALVES (4)
    - D. ASSOCIATED COPPER PIPING
11. FLANGE ADAPTER (MEGA-FLANGE SERIES 2100 OR EQUAL)
12. PIPE SUPPORT (SADDLE TYPE)

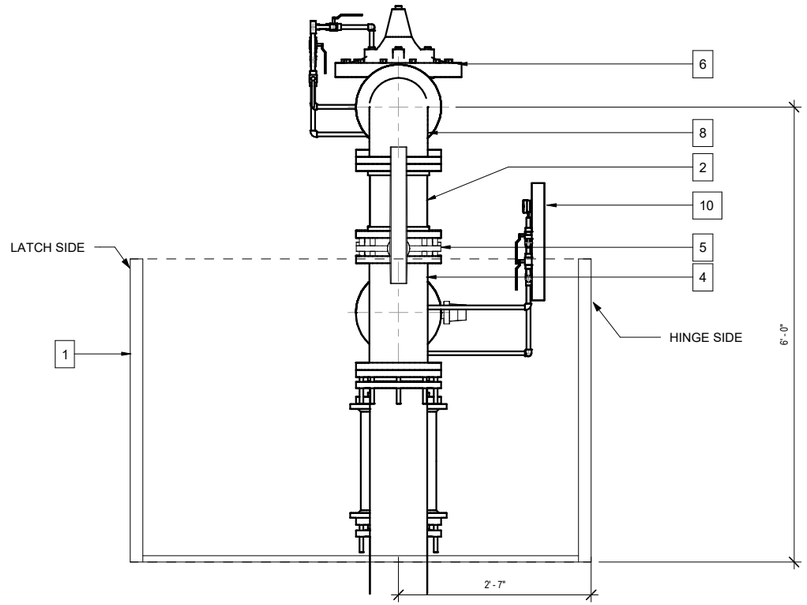
LEGEND

PROVIDED AND INSTALLED BY SITE UTILITY CONTRACTOR (OR GENERAL)

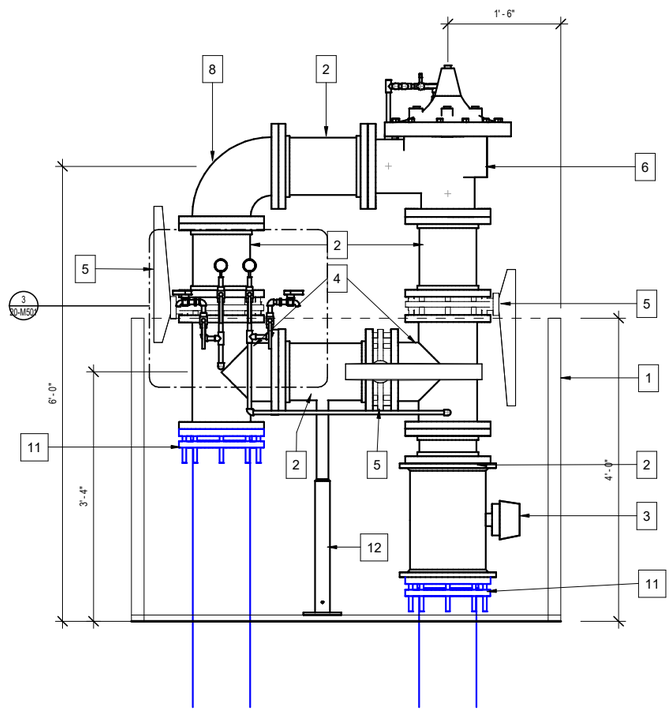
ASSEMBLED AND FURISHED BY PREFABRICATED STATION MANUFACTURER

GENERAL NOTES:

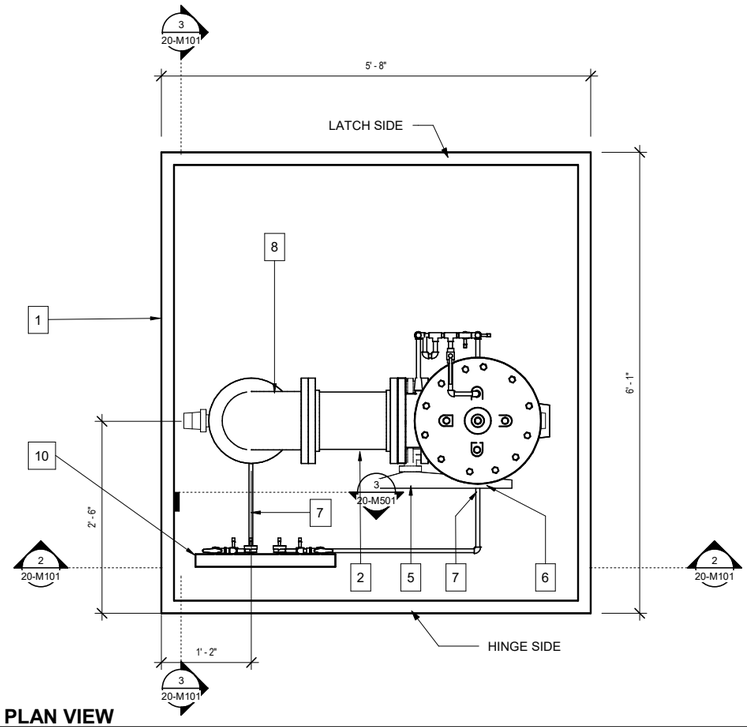
A. PIPING SHOWN AS FLANGED CLASS 52 DUCTILE IRON. MAY SUBSTITUTE STAINLESS OR SCH. 40 STEEL PIPING AS ALTERNATE.
B. FLANGED CONNECTION SHOWN ON DRAWINGS, PACKAGED PRESSURE REDUCING STATION SUPPLIER MAY SUBSTITUTE WELDED CONNECTIONS, AND FITTINGS AND BENDS IN LOCATIONS APPROVED BY ENGINEER OR OWNER.
C. ALL BUTTERFLY VALVES SHALL BE LUGGED STYLE WITH LEVER HANDLE OPERATORS.



3 **PROCESS PIPING SECTION**
20-M101 1" = 1'-0" (22"x34")



2 **PROCESS PIPING SECTION**
20-M101 1" = 1'-0" (22"x24") 0 6" 1' 2'
1/2" = 1'-0" (11"x17")



PLAN VIEW
1" = 1'-0" (22"x24") 0 6" 1' 2'
1/2" = 1'-0" (11"x17")

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WATER TOWER #3 AND BOOSTER STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

PRESSURE REDUCING VALVE STATION PROCESS PLAN

PROJECT NO. 07985049.2
SHEET 20-M101

PLOT DATE: 11/17/2025 12:42:11 PM
Autodesk Docs://07985049 - New Richmond Water Tower #3 and Booster Station Design/07985049 New Richmond Pressure Reducing Station_MECH.rvt

LEGEND

PROVIDED AND INSTALLED BY SITE UTILITY CONTRACTOR (OR GENERAL)

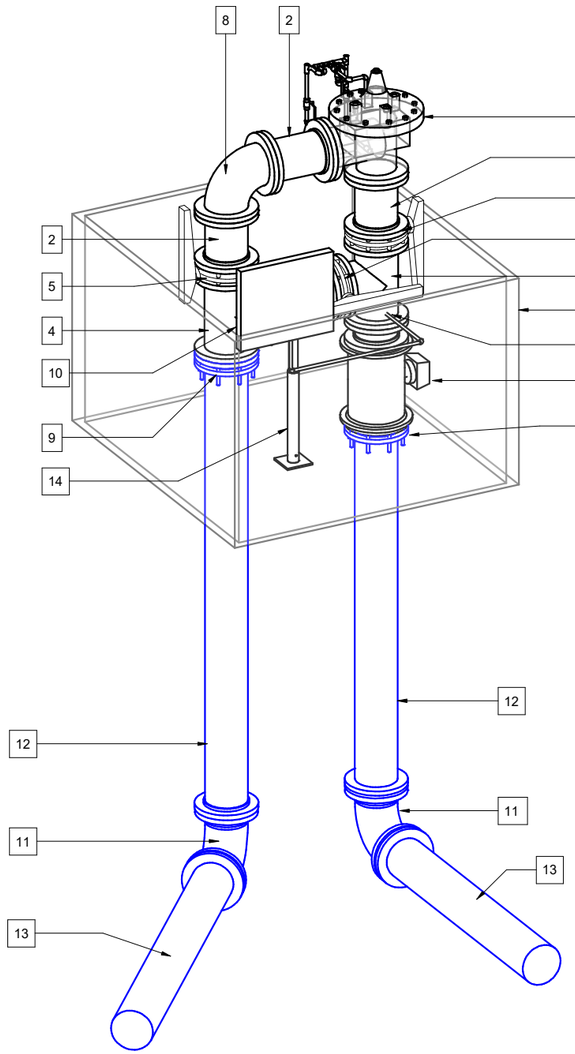
ASSEMBLED AND FURISHED BY PREFABRICATED STATION MANUFACTURER

GENERAL NOTES:

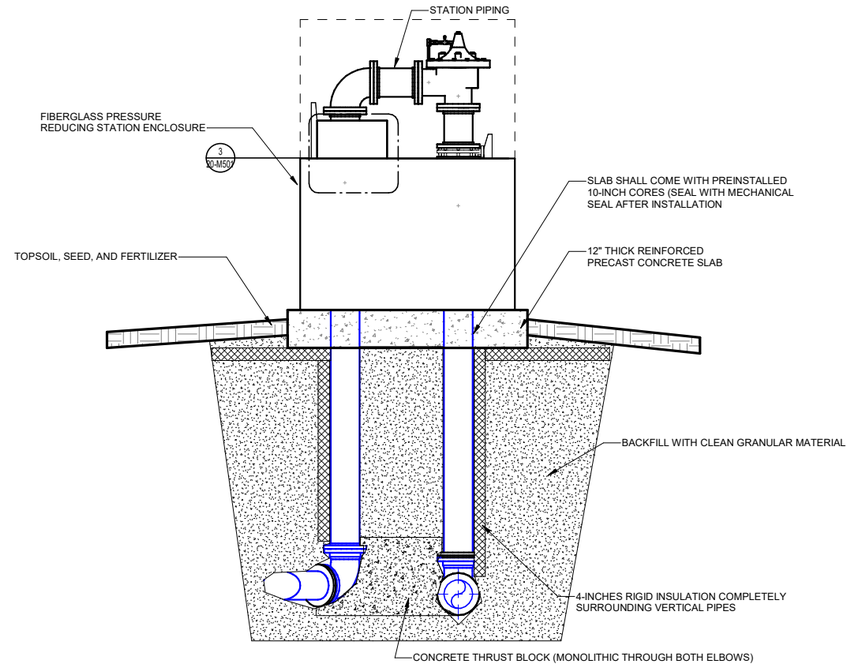
A. PIPING SHOWN AS FLANGED CLASS 52 DUCTILE IRON. MAY SUBSTITUTE STAINLESS OR SCH. 40 STEEL PIPING AS ALTERNATE.
B. FLANGED CONNECTION SHOWN ON DRAWINGS, PACKAGED PRESSURE REDUCING STATION SUPPLIER MAY SUBSTITUTE WELDED CONNECTIONS, AND FITTINGS AND BENDS IN LOCATIONS APPROVED BY ENGINEER OR OWNER.
C. ALL BUTTERFLY VALVES SHALL BE LUGGED STYLE WITH LEVER HANDLE OPERATORS.

KEYNOTES:

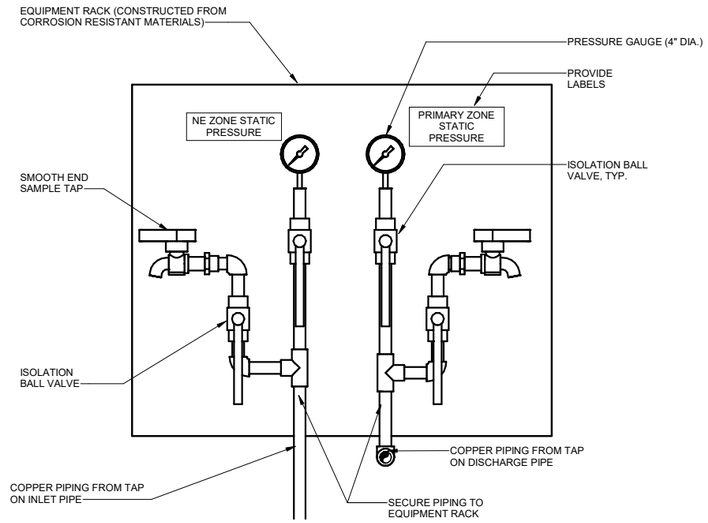
1. PREFABRICATED INSULATED FIBERGLASS ENCLOSURE - BY STATION SUPPLIER
2. 8 INCH CLASS 53 FLANGED DUCTILE IRON PIPE
3. BI-DIRECTIONAL MAGNETIC FLOW METER - PROVIDED BY STATION SUPPLIER, SPECIFIED UNDER DIVISION 26
4. 8"X8"X8" FLANGED DUCTILE IRON TEE
5. BUTTERFLY VALVE, LUGGED STYLE, WITH LEVER HANDLE OPERATOR
6. PRESSURE AND FLOW CONTROL VALVE - SEE DIVISION 40 SPECIFICATIONS
7. PROVIDE 3/4-INCH NPT TAP AND COPPER PIPING TO PRESSURE MONITORING PANEL (TYP. OF 2)
8. 8" 90 DEGREE FLANGED DUCTILE IRON ELBOW
9. FLANGE APAPTER (SERIES 2100 OR EQUAL MEGA-FLANGE)
10. PRESSURE MONITORING PANEL AND RACK. ALUMINUM RACK SHALL BE LARGE ENOUGH TO MOUNT THE FOLLOWING EQUIPMENT:
    A. PRESSURE GAUGE (2)
    B. SAMPLE TAP (2)
    C. BALL VALVES (4)
    D. ASSOCIATED COPPER PIPING
11. 8" 90 DEGREE MECHANICAL JOINT DUCTILE IRON ELBOW. PROVIDE MEGA-LUG JOINT RESTRAIN, SEE SITE PLAN
12. 8 INCH DUCTILE IRON PIPE (MJxPE)
13. 8 INCH DUCTILE IRON PIPE (BY SITE UTILITY CONTRACTOR)
14. PIPE SUPPORT (SADDLE TYPE)



1 PROCESS PIPING ISOMETRIC
20-M501 NOT TO SCALE



2 INSTALLATION DETAIL
20-M501 NOT TO SCALE



GENERAL NOTES:
A. EQUIPMENT RACK SHALL BE CONSTRUCTED FROM CORROSION RESISTANT MATERIALS (STAINLESS STEEL, GALVANIZED STEEL, OR ALUMINUM).
B. THE CONTRACTOR OR SUPPLIER MAY SUBSTITUTE STAINLESS STEEL PIPING.
C. BALL VALVES SHALL BE STAINLESS STEEL OR LEAD FREE BRONZE.
D. PRESSURE GAUGES SHALL HAVE A MINIMUM DIAMETER OF 4 INCHES.
E. SAMPLE TAP SHALL HAVE A SMOOTH BORE AND A MINIMUM DIAMTER OF 3/4 INCHES.
F. RACK SHALL BE MOUNTED TO PRV ENCLOSURE FRAMING OR UNISTRUT STRUCTURE SECURED TO FLOOR.

3 PRESSURE MONITORING RACK DETAIL
20-M501 NOT TO SCALE

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WATER TOWER #3 AND BOOSTER STATION
CITY OF NEW RICHMOND
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PRESSURE REDUCING VALVE STATION PROCESS DETAILS

PROJECT NO. 07985049.2
SHEET 20-M501

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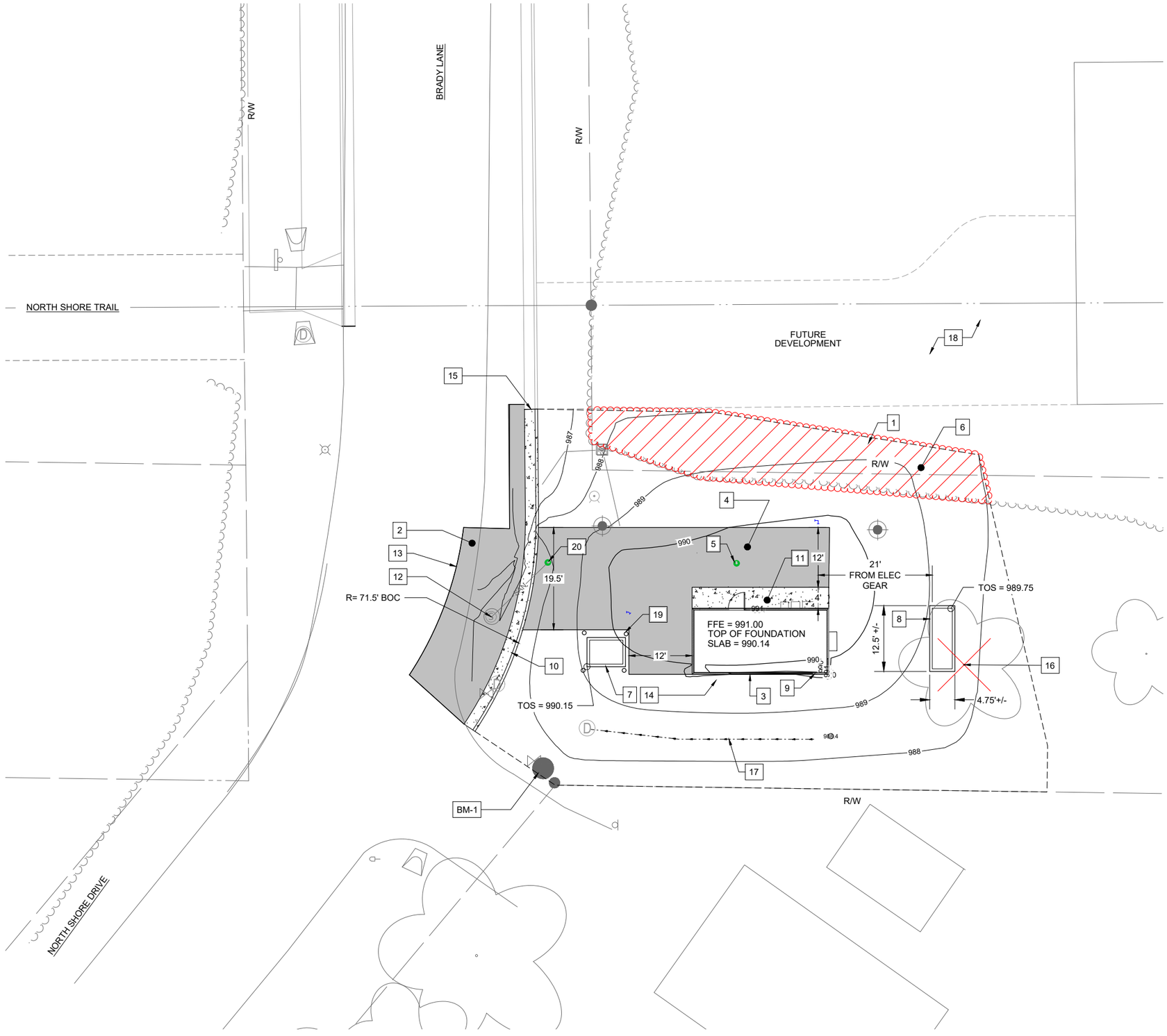

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GENERAL NOTES

A. ALL ELEVATIONS ARE TO TOP OF FINISHED GRADE UNLESS OTHERWISE SPECIFIED.

B. GRADE SLOPES AWAY FROM THE STATION AT 5% FOR A MINIMUM OF 10 LINEAR FEET FOR PROPOSED PERVIOUS SURFACES (TURF).

C. GRADE SLOPES AWAY FROM BUILDING AT 2% FOR A MINIMUM 10 LINEAR FEET FOR ALL PROPOSED NON-PERVIOUS SURFACES (PAVEMENT).

D. PERMEABLE SURFACES' GRADE AT STATION WALLS SHALL BE A MINIMUM 2 INCHES BELOW TOP OF FOUNDATION SLAB ELEVATION FOR VENEER DRAINAGE.

E. TOP OF GENERATOR SLAB SHALL BE A MIN. OF 6" ABOVE FINISHED GRADE.

KEY NOTES [X]

1. SLOPE INTERCEPT (GRADING LIMITS), TYP.
2. 4" ASPHALTIC CONCRETE PAVEMENT PATCH - SEE TYPICAL SECTIONS
3. PREFABRICATED BOOSTER STATION
4. 4" ASPHALTIC CONCRETE PAVEMENT DRIVEWAY - SEE TYPICAL SECTIONS
5. 4" EXTERIOR SANITARY SEWER CLEANOUT
6. CLEAR & GRUB AS REQ'D FOR STATION CONSTRUCTION
7. PAD MOUNTED ELECTRICAL UTILITY TRANSFORMER, SEE ELECTRICAL SITE PLAN
8. PROVIDE REINFORCED CONCRETE GENERATOR PAD - SEE DETAIL. CONFIRM DIMENSIONS WITH APPROVED GENERATOR SHOP DRAWINGS.
9. UTILITY SUPPLIED NATURAL GAS METER & REGULATOR
10. CONCRETE CURB AND GUTTER, 30-INCH. PROVIDE DRIVE-OVER CUT FULL LENGTH (+3' EACH WAY) FOR DRIVEWAY OPENING.
11. 4' WIDE CONCRETE APRON (6-INCH THICK)
12. ADJUST EXISTING MANHOLE, PROVIDE NEW ADJUSTMENT RINGS, WATERPROOFING, AND CASTING
13. SAWCUT EXISTING PAVEMENT
14. ELECTRICAL SERVICE GEAR, SEE ELECTRICAL PLAN
15. SAWCUT EXISTING CONCRETE CURB & GUTTER. DOWEL INTO EXISTING WITH TWO (2) #5 BARS.
16. GRUB EXISTING TREE AND STUMP
17. GRADE AREA TO DRAIN TO EXISTING STORM SEWER AREA DRAIN
18. FUTURE DRIVEWAY, BY OTHERS
19. PIPE BOLLARDS - TYP. OF FOUR (4) AT TRANSFORMER
20. EXISTING CLEANOUT

BENCHMARK TABLE

TAG	ELEVATION	DESCRIPTION
BM-1	990.2100	TOP NUT OF EXISTING HYDRANT

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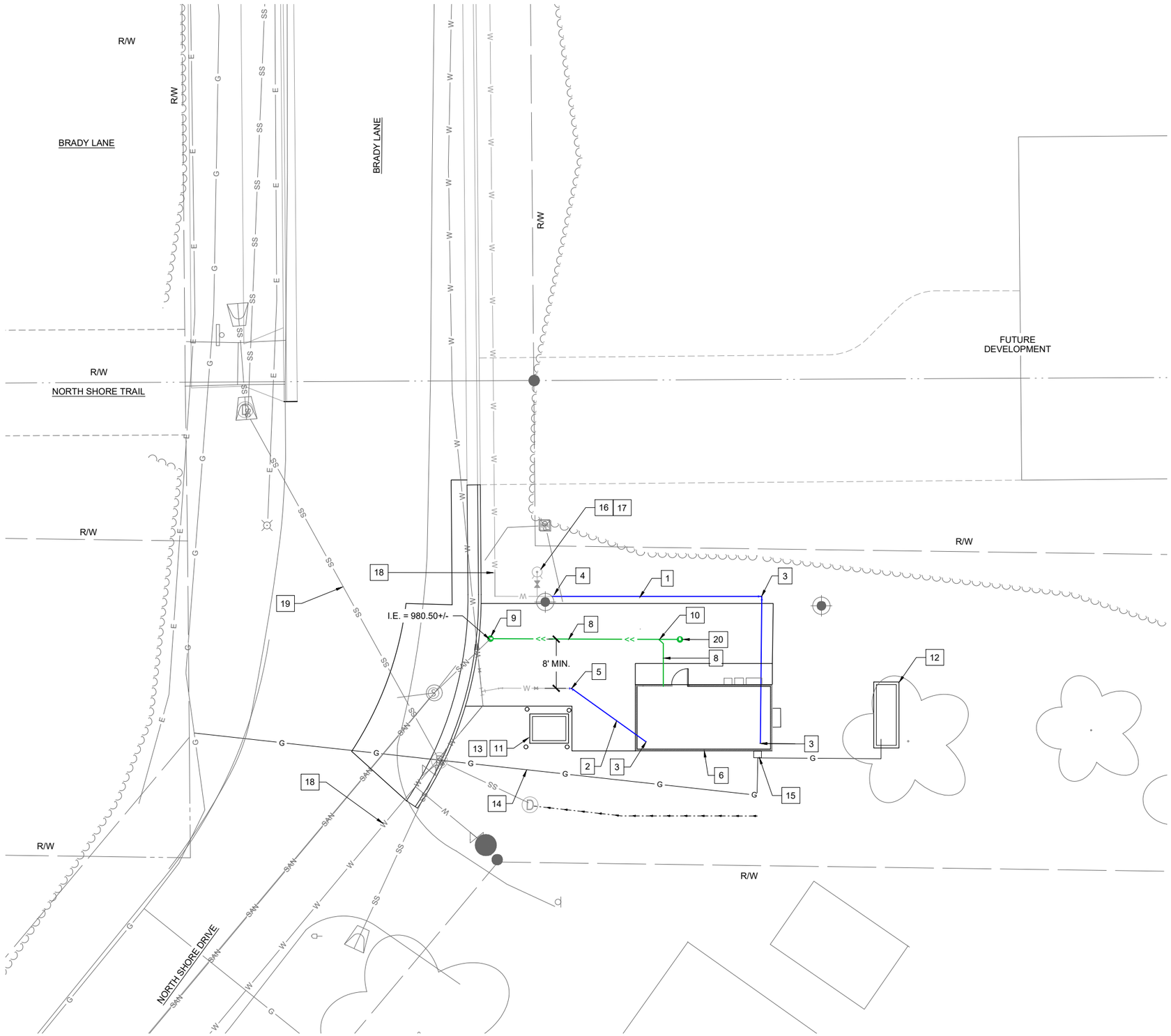
BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION
SITE AND GRADING PLAN

PROJECT NO. 07985049.2
SHEET 30-C101



GENERAL NOTES

A. REFER TO ENLARGED SITE AND GRADING PLAN FOR DIMENSIONS AND GRADING INFORMATION

B. PROPOSED WATER MAIN SHALL MAINTAIN A MINIMUM BURY DEPTH OF 8' UNLESS OTHERWISE NOTED.

C. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING WATER MAIN BURY DEPTHS AND SIZE.

D. PROVIDE TANDEM MEGALUG JOINT RESTRAINTS AT JOINTS UNDER BUILDING STRUCTURES.

KEY NOTES [X]

1. 8" DUCTILE IRON WATER MAIN (BOOSTED DISCHARGE)
2. 8" DUCTILE IRON WATER MAIN (LOW PRESSURE SUCTION)
3. DUCTILE IRON 90° BEND
4. CONNECT TO EXISTING WATER MAIN. REMOVE PLUG. PROVIDE 8" DUCTILE IRON HARD SLEEVE
5. CONNECT TO EXISTING WATER MAIN. REMOVE PLUG. PROVIDE 8" DUCTILE IRON 45° BEND
6. PREFABRICATED BOOSTER STATION
7. NOT USED
8. 4" PVC SDR 35 SEWER LATERAL
9. CONNECT TO EXISTING SANITARY CLEANOUT
10. 4"x4" PVC WYE
11. PAD MOUNTED ELECTRICAL UTILITY TRANSFORMER, SEE ELECTRICAL SITE PLAN
12. STANDBY GENERATOR, SEE ELECTRICAL SITE PLAN
13. COORDINATE ELECTRICAL SERVICE, SEE ELECTRICAL SITE PLAN
14. COORDINATE NATURAL GAS SERVICE
15. UTILITY SUPPLIED NATURAL GAS METER & REGULATOR
16. EXISTING 6" DUCTILE IRON WATER MAIN (HYDRANT LEAD)
17. EXISTING HYDRANT
18. EXISTING WATER MAIN
19. EXISTING STORM SEWER
20. PROVIDE 4" PVC SANITARY CLEANOUT - REFER TO DETAIL FOR INSTALLATION IN PAVED AREA.

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	DESIGNED BY: ATR	.	.	.	.
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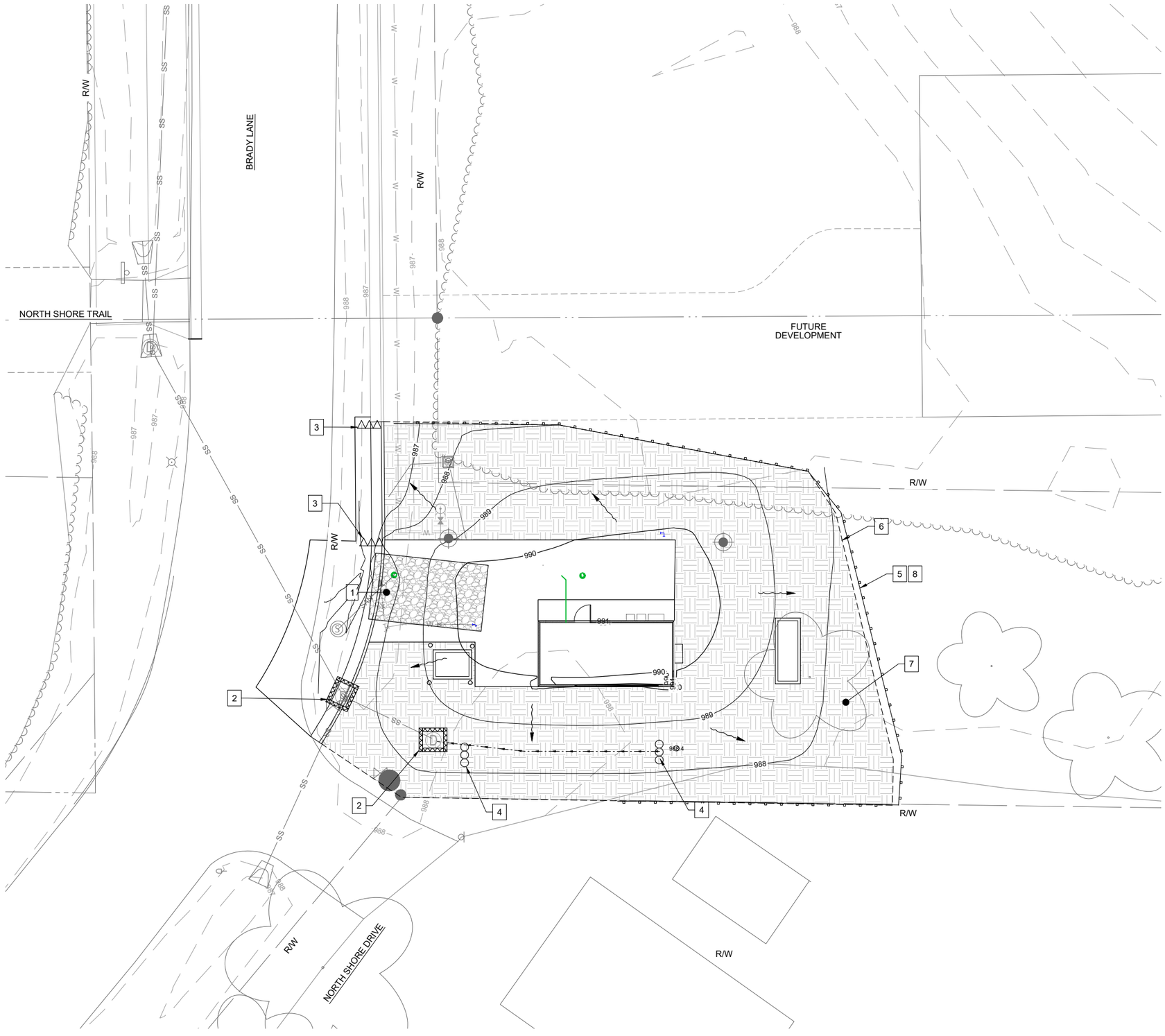
BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION UTILITY PLAN

PROJECT NO. 07985049.2
SHEET 30-C102



0 20 40

GENERAL NOTES

A. EROSION CONTROL BMPS SHOWN ARE THE MINIMUM REQUIRED. THE CONTRACTOR SHALL INSTALL ADDITIONAL BMPS TO CONTROL SEDIMENT DISCHARGE AS INDICATED BY THE ENGINEER OR OWNER.

B. SEDIMENT LOGS SHALL BE 12-INCH DIAMETER MINIMUM.

C. EXISTING TOPSOIL SHALL BE STRIPPED, STOCKPILED, AND SALVAGED FOR REUSE ON THE SITE. THE CONTRACTOR SHALL IMPORT ADDITIONAL TOPSOIL AS REQUIRED TO MEET MINIMUM TOPSOIL DEPTHS FOR FINAL RESTORATION.

D. ALL DISTURBED AREAS SHALL BE RESTORED WITH TOPSOIL, SEED, FERTILIZER AND MULCH, UNO.

KEY NOTES [#]

1. TRACKING PAD AT SITE ENTRANCE
2. INLET PROTECTION - TYPE C
3. CHECK DAM AT CURB AND GUTTER (EDGE OF DRIVEWAY ENTRANCE AND MATCH LOCATION)
4. INSTALL SEDIMENT LOGS EVERY 100 LINEAR FEET OR EVERY 2' FEET OF VERTICAL DROP (WHICHEVER IS LESS) PERPENDICULAR TO OVERLAND FLOW IN DITCHLINE.
5. PERIMETER SILT FENCE
6. SLOPE INTERCEPT, TYP.
7. RESTORE DISTURBED AREAS WITH TOPSOIL (SALVAGED OR VIRGIN), SEED, FERTILIZER, AND MULCH (STRAW MULCH, EROSION MAT, OR HYDRO-SEED)
8. SILT FENCE SHALL ALSO FUNCTION AS AN EXCLUSION FENCING - AS REQ'D. PROVIDE FENCING PER WDNR AMPHIBIAN AND REPTILE EXCLUSION FENCING PROTOCOLS.

		NO.	DATE	REVISION	BY
PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: JJY	.	.	.	.
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BOOSTER STATION AND PRV STATION
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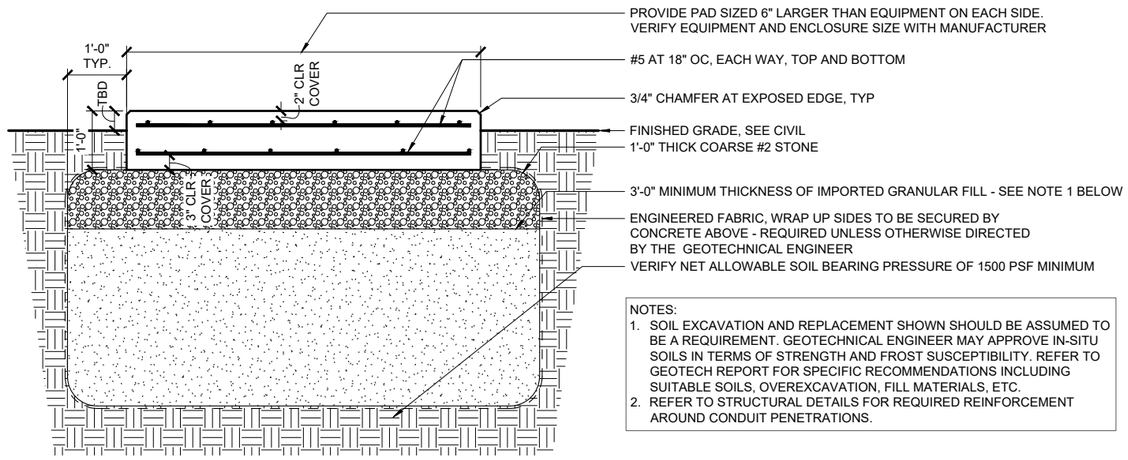
NORTH BOOSTER STATION
EROSION CONTROL PLAN

PROJECT NO. 07985049.2
SHEET 30-C103



NOTES:
1. SOIL EXCAVATION AND REPLACEMENT SHOWN SHOULD BE ASSUMED TO BE A REQUIREMENT. GEOTECHNICAL ENGINEER MAY APPROVE IN-SITU SOILS IN TERMS OF STRENGTH AND FROST SUSCEPTIBILITY. REFER TO GEOTECH REPORT FOR SPECIFIC RECOMMENDATIONS INCLUDING SUITABLE SOILS, OVEREXCAVATION, FILL MATERIALS, ETC.
2. REFER TO STRUCTURAL DETAILS FOR REQUIRED REINFORCEMENT AROUND CONDUIT PENETRATIONS.

1
30-C501

GENERATOR EQUIPMENT PAD DETAIL

NO SCALE

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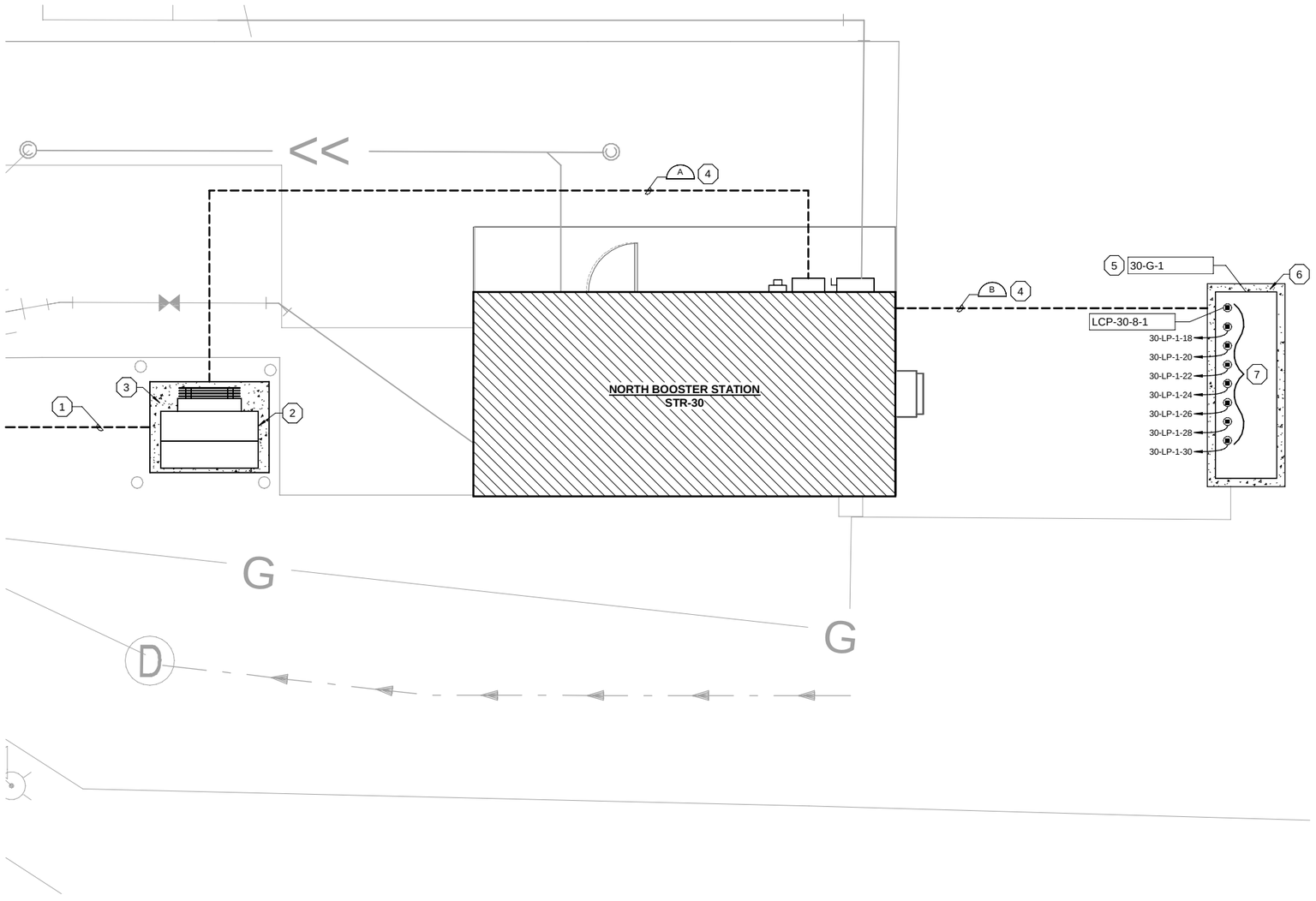
BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION
GENERATOR EQUIPMENT PAD DETAIL

PROJECT NO. 07985049.2
SHEET 30-C501



SITE PLAN

1/4" = 1'-0" (22" x 34")
1/8" = 1'-0" (11" x 17")
0 2 4 8

GENERAL NOTES

A. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ENGINEER BEFORE CONTINUING WITH CONSTRUCTION.

B. ALL ELECTRICAL INSTALLATIONS SHALL MEET NEC REQUIREMENTS FOR MINIMUM WORKING SPACE IN FRONT OF EQUIPMENT AND DEDICATED EQUIPMENT SPACE ABOVE SWITCHBOARDS, SWITCHGEAR, PANELBOARDS AND MOTOR CONTROL CENTERS. COORDINATE LAYOUT OF ALL ELECTRICAL EQUIPMENT PRIOR TO INSTALLATION.

C. UNDERGROUND CONDUIT ROUTING IS DIAGRAMMATIC IN NATURE AND IS NOT INTENDED TO DICTATE EXACT ROUTING. CONTRACTOR IS TO DETERMINE BEST ROUTING BASED ON OTHER UTILITIES AND FIELD CONDITIONS.

D. DIRECT BURIED CONDUITS SHALL BE INSTALLED PER DETAIL 2605-310. PROVIDE SPACERS TO PHYSICALLY SEPARATE LOW VOLTAGE AND CONTROL CONDUITS FROM POWER CONDUITS. INSTALL PULL CORD IN ALL EMPTY CONDUITS. UNLESS SHOWN OTHERWISE, ALL CONDUITS SHALL BE BURIED 24" MINIMUM BELOW FINISHED GRADE.

E. PULL BOXES AND HANDHOLES SHALL BE INSTALLED PER DETAIL 2605-550. SIZE PULL BOXES AS REQUIRED FOR DUCT BANK. PROVIDE PULL BOXES AS REQUIRED FOR PULL LENGTH. PULL BOXES AND HANDHOLES INSTALLED WITHIN FIVE FEET OF PAVEMENT AREAS SHALL BE ANSI TIER 22 TRAFFIC RATED WITH EXTRA HEAVY-DUTY COVERS.

F. CONDUIT SHALL BE 3/4" MINIMUM OR AS NOTED OTHERWISE.

G. CONDUIT WALL AND FLOOR PENETRATIONS PER DETAILS 2605-303 AND 2605-305.

H. SEE ONE-LINE DIAGRAMS, PANEL SCHEDULES, AND ELECTRICAL INSTALLATION AND WIRING SCHEDULES FOR WIRING OF ALL FIELD INSTRUMENTATION AND EQUIPMENT.

I. INSTALL FIELD INSTRUMENTATION AND EQIUPMENT PER DETAIL REFERENCED IN ELECTRICAL INSTALLATION AND WIRING SCHEDULES.

J. SEE SCADA SYSTEM NETWORK ARCHITECTURE FOR COMMUNICATIONS CABLING REQUIREMENTS.

K. ROOM/AREA ATMOSPHERE REQUIREMENTS, REFER TO SECTION 26 05 00:
   a. NORTH B.S. SITE EXTERIOR: GENERAL, WET, NEW CONSTRUCTION
   b. NORTH B.S. SITE UNDERGROUND: UNDERGROUND CONSTRUCTION

KEY NOTES (X)

1 APPROXIMATE ROUTE OF NEW UTILITY-PROVIDED ELECTRIC SERVICE PRIMARY CONDUCTORS.
2 PAD MOUNT UTILITY TRANSFORMER. REFER TO ONE-LINE.
3 PROVIDE PAD FOR PAD MOUNT TRANSFORMER. COORDINATE PAD REQUIREMENTS WITH UTILITY.
4 PROVIDE DIRECT BURIED CONDUIT AS SCHEDULED.
5 MAINTAIN GENERATOR SETBACK REQUIREMENTS FROM BUILDING AND ELECTRICAL GEAR AS SHOWN.
6 PROVIDE CONCRETE EQUIPMENT PAD. REFER TO CIVIL DETAILS - INSTALL AS SCHDULED AND PER MANUFACTURERS REQUIREMENTS.
7 COORDINATE EXACT CONDUIT STUB-UP REQUIREMENTS WITH GENERATOR SUBMITTAL DRAWINGS.

UNDERGROUND CONDUIT SCHEDULE

ROUTE	TYPE	CIRCUIT TYPE	NO. OF CONDUITS	SIZE	NOTES
A	DIRECT BURIED	277/480VAC POWER	1	4"	1
B	DIRECT BURIED	277/480VAC POWER	1	4"	
		120/208VAC POWER	1	2"	
		24VDC DISCRETE CONTROL	1	2"	
		MANUFACTURER'S CABLE	1	2"	
		SPARE	1	2"	

GENERAL NOTES
1. REFER TO SECTION 26 05 00 FOR ADDITIONAL REQUIREMENTS.
2. CONDUIT SIZES ARE MINIMUM REQUIRED BASED ON DESIGN CIRCUITS. PROVIDE NUMBER AND SIZE OF CONDUITS AS REQUIRED FOR ACTUAL CIRCUITS

SCHEDULE NOTES
1. COORDINATE WITH UTILITY FOR CONDUIT REQUIREMENTS.

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION
ELECTRICAL SITE PLAN

PROJECT NO. 07985049.2
SHEET 30-CE101

GENERAL STRUCTURAL FOUNDATION NOTES

A. SEE GENERAL NOTES ON ARCHITECTURAL DRAWINGS AS THEY APPLY TO THIS WORK.

B. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ARCHITECT/EOR BEFORE CONTINUING WITH CONSTRUCTION.

C. ALL DIMENSIONS ARE TO FACE OF CONCRETE, UNO.

D. SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL DIMENSIONS.

E. COORDINATE ALL DIMENSIONS SHOWN WITH BUILDING MANUFACTURER. CONFIRM ALL DIMENSIONS WITH BUILDING MANUFACTURER PRIOR TO PLACING FOUNDATION ELEMENTS. ANCHORING OR ATTACHMENT OF THE BUILDING TO THE FOUNDATION SLAB OR WALLS IS BY OTHERS.

F. OPENINGS FOR PROCESS MECHANICAL, PLUMBING, HVAC, AND ELECTRICAL IN WALLS, FLOORS, ROOF, AND OTHER STRUCTURAL ELEMENTS SHALL BE PROVIDED BY BUILDING MANUFACTURER. LOCATION AND SIZE OF THESE OPENINGS SHALL BE THE RESPONSIBILITY OF THE ASSOCIATED CONTRACTOR.

G. CONTRACTOR TO COORDINATE DETAILS, DIMENSIONS, ELEVATIONS, AND OPENINGS BETWEEN STRUCTURAL, ARCHITECTURAL, PLUMBING, HVAC, PROCESS MECHANICAL, AND ELECTRICAL DRAWINGS.

H. SLEEVES, PIPES, AND OTHER ELEMENTS CAST INTO CONCRETE SHALL BE PROVIDED BY THE CONTRACTOR. COORDINATE SIZES AND LOCATIONS WITH CORRESPONDING DISCIPLINE DRAWINGS.

I. NOTIFY ARCHITECT AND EOR OF ANY VARIANCE BEFORE COMMENCING CONSTRUCTION. IN NO CASE SHALL STRUCTURAL ALTERATIONS OR WORK AFFECTING A STRUCTURAL MEMBER BE MADE, UNLESS APPROVED BY EOR.

J. SIMILAR PORTIONS OF THE STRUCTURE SHALL HAVE SIMILAR DETAILING, UNO.

K. FOOTINGS SHALL BE CENTERED UNDER THE WALLS, UNO.

L. FOR BUILDING FOUNDATION WALLS, ALL FORM TIES SHALL BE KNOCKED OFF FLUSH w/ FACE OF THE WALL (INTERIOR AND EXTERIOR.) AT TIES BELOW FINISHED FLOOR AND/OR FINISHED GRADE, INSTALL (1) LAYER OF DAMP-PROOFING PRODUCT OVER THE AREA OF THE REMOVED TIE, TYP.

M. BACKFILL FOUNDATION WALLS ON BOTH SIDES SIMULTANEOUSLY TO AVOID OFFSET LATERAL LOADING CONDITIONS.

N. REFER TO GEOTECHNICAL REPORT FOR REQUIREMENTS AND RECOMMENDATIONS FOR REMOVAL OF UNDESIRABLE SOILS, SITE SOIL, AND SUBGRADE PREPARATIONS. COMPACTION OF SUBGRADE, GRANULAR FILL, AND STRUCTURAL BACKFILL SHALL BE MONITORED BY A QUALIFIED GEOTECHNICAL ENGINEER.

O. SEE ARCHITECTURAL DRAWINGS FOR BOARD INSULATION REQUIREMENTS AT THE BUILDING FOUNDATION PERIMETER AND FOR UNDER-SLAB INSULATION, WHERE REQUIRED.

P. CONTRACTOR SHALL REFER TO GEOTECHNICAL REPORT FOR EXISTING SOIL INFORMATION, EXPECTED GROUNDWATER CONTROLS, AND BACKFILL RECOMMENDATIONS.

Q. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN, INSTALLATION, AND REMOVAL OF ALL TEMPORARY BRACING AND CONSTRUCTION SUPPORTS FOR STRUCTURES AS NECESSARY TO COMPLETE THE PROJECT. NO PORTION OF THE PROJECT, WHILE UNDER CONSTRUCTION IS INTENDED TO BE STABLE IN THE ABSENCE OF THE CONTRACTOR'S TEMPORARY BRACES AND SUPPORTS. CONTRACTOR SHALL RETAIN A STRUCTURAL ENGINEER LICENSED IN THE STATE OF PROJECT LOCATION TO DESIGN ALL TEMPORARY BRACING AND CONSTRUCTION SUPPORT.

CONCRETE AND REINFORCING NOTES

1. ALL LAPS SHALL BE CLASS 'B' PER ACI 318, CURRENT EDITION, UNO ON THE DESIGN DRAWINGS.

2. LAP LENGTH SHALL BE SPECIFICALLY NOTED BY DETAILER ON SHOP DRAWINGS WHEN MORE THAN ONE BAR MAKES UP A CONTINUOUS STRING. DETAILER SHALL PROVIDE STAGGERED LAPS FOR CONTINUOUS BAR RUNS. TOP BAR LAP LENGTHS SHALL BE USED FOR ALL HORIZONTAL WALL BARS AND FOR BARS IN SLABS WITH MORE THAN 12" OF CONCRETE BELOW THE LAP.

3. BAR PLACEMENT TOLERANCES SHALL BE AS SPECIFIED IN THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI) MANUAL OF STANDARD PRACTICE, CURRENT EDITION.

4. ALL REINFORCING BAR LENGTHS ARE FROM OUT-TO-OUT OF BAR. ALL BEND ANGLES ARE AT 45° AND 90° UNO. BAR SPACINGS ARE ON-CENTER UNO.

5. PROVIDE ADDITIONAL DIAGONAL REINFORCING AROUND ALL OPENINGS AND PENETRATIONS THROUGH WALLS AND SLABS. - SEE DETAIL 1/30-S501.

6. DOWEL BAR HOOKS SHALL BE PLACED AT THE SAME HORIZONTAL LEVEL AS BOTTOM LAYER STEEL REINFORCING, UNO.

DESIGN LOADS AND CRITERIA

BUILDING CODE....WISCONSIN COMMERCIAL BUILDING CODE, REFERS TO IBC 2021
BUILDING RISK CATEGORY....IV

WIND LOADS*

BASIC WIND SPEED....121 MPH
WIND EXPOSURE....C
PER ASCE 7-16, SIMPLIFIED DESIGN PROCEDURE
MAIN WIND FORCE RESISTING SYSTEM
WALLS (LATERAL) ZONE A.... +35.3 PSF
ZONE C.... +23.5 PSF
ROOF (LATERAL) ZONE B/D.... -11.7 PSF
ROOF (UPLIFT) ZONE E.... -33.7 PSF
ZONE F.... -22.0 PSF
OVERHANG MAX.... -47.3 PSF
COMPONENTS AND CLADDING (C&C)
ASSUMED EFFECTIVE WIND AREA....10 SF
ROOF C&C, VERTICAL PRESSURES:
TYPICAL POS. PRESSURE.... +19.3 PSF
INT ZONE 1 NEG. PRESSURE.... -59.0 PSF
EDGE ZONE 2 NEG. PRESSURE.... -85.9 PSF
CORNER ZONE 3 NEG. PRESSURE.... -102.2 PSF
WALL C&C HORIZONTAL PRESSURES:
POS. PRESSURE.... +31.9 PSF
NEG. PRESSURE.... -42.7 PSF
OVERHANG TYP.... -129.5 PSF

* PLUS AND MINUS SIGNS SIGNIFY PRESSURES ACTING TOWARD AND AWAY FROM THE SURFACES, RESPECTIVELY.

SEISMIC DESIGN DATA

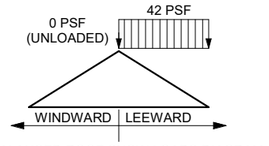
SEISMIC IMPORTANCE FACTOR, Ie....1.5
SEISMIC DESIGN CATEGORY....A
SEISMIC SITE CLASS....D [PRESUMED]
ANALYSIS PROCEDURE....EQUIVALENT LATERAL FORCE
MAPPED SPECTRAL RESPONSE ACCELERATIONS
Ss....0.045
S1....0.029
SPECTRAL RESPONSE COEFFICIENTS
Sds....0.048
Sd1....0.046
SEISMIC FORCE-RESISTING SYSTEM....LIGHT-FRAME WALLS WITH SHEAR PANELS OF ALL OTHER MATERIALS
SEISMIC RESPONSE COEFFICIENT, Cs....0.01
RESPONSE MODIFICATION FACTOR, R....2.0
SEISMIC BASE SHEAR, V....0.5 KIPS

LIVE LOADS

ROOF LIVE LOAD (MINIMUM)....20 PSF
FLOOR LIVE LOAD....125 PSF

SNOW LOADS

GROUND SNOW LOAD, Pg.... 50.0 PSF
FLAT-ROOF SNOW LOAD, Pf.... 42.0 PSF
SNOW EXPOSURE FACTOR, Ce....1.00
SNOW IMPORTANCE FACTOR, Is....1.20
THERMAL FACTOR, Ct....1.00
SLOPED ROOF SNOW LOAD, Ps....42.0 PSF
ROOF SLOPE FACTOR, Cs....1.00
DESIGN SNOW LOAD....42.0 PSF
UNBALANCED ROOF SNOW LOADS....NOT REQD FOR ROOF SLOPES < 15 DEG]



NOTE:
LOADS CAN OCCUR ON EITHER SIDE OF RIDGE

UNBALANCED ROOF SNOW LOADS DIAGRAM

DESIGN STRESSES

GEOTECHNICAL INFORMATION

NET ALLOWABLE SOIL BEARING PRESSURE....q = 3,000 PSF
MIN REQD SOIL BEARING PRESSURE....qmin = 2,000 PSF
GEOTECHNICAL REPORT No. 23366.24.WIL PREPARED BY:
CHOSEN VALLEY TESTING, INC.
DATED: APRIL 26, 2024

CAST-IN-PLACE CONCRETE

FOOTINGS.... f'c = 4000 PSI
WALLS.... f'c = 4000 PSI
SLAB-ON-GRADE.... f'c = 4000 PSI
OTHER.... f'c = 3500 PSI

REINFORCING STEEL

REINFORCING.... fy = 60 KSI

STEEL REINFORCING

MIN CLEAR COVER, UNO

FOUNDATION WALLS
#5 BARS & SMALLER.... 1 1/2"
#6 BARS & LARGER....2"

NON-STRUCTURAL SLABS-ON-GRADE
BOTTOM & SIDES.... 1 1/2"
TOP.... 3/4"

FOOTINGS AND STRUCTURAL SLABS-ON-GRADE
BOTTOM & SIDES.... 3"
TOP.... 2"

GENERAL NOTES

1. CLASS 'B' LAP SPLICES: #5 BARS = 31"; #6 BARS = 37"
2. STANDARD HOOKS: #5 = 10"; #6 = 12"

PLOT DATE: 11/14/2025 4:23:43 PM - Autodesk Docs://07985049 - New Richmond Water Tower #3 and Booster Station Design/07985049 New Richmond Booster_Prefabricated Building Foundation_STRUCT .rvt

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
NEW RICHMOND, ST. CROIX COUNTY, WISCONSIN

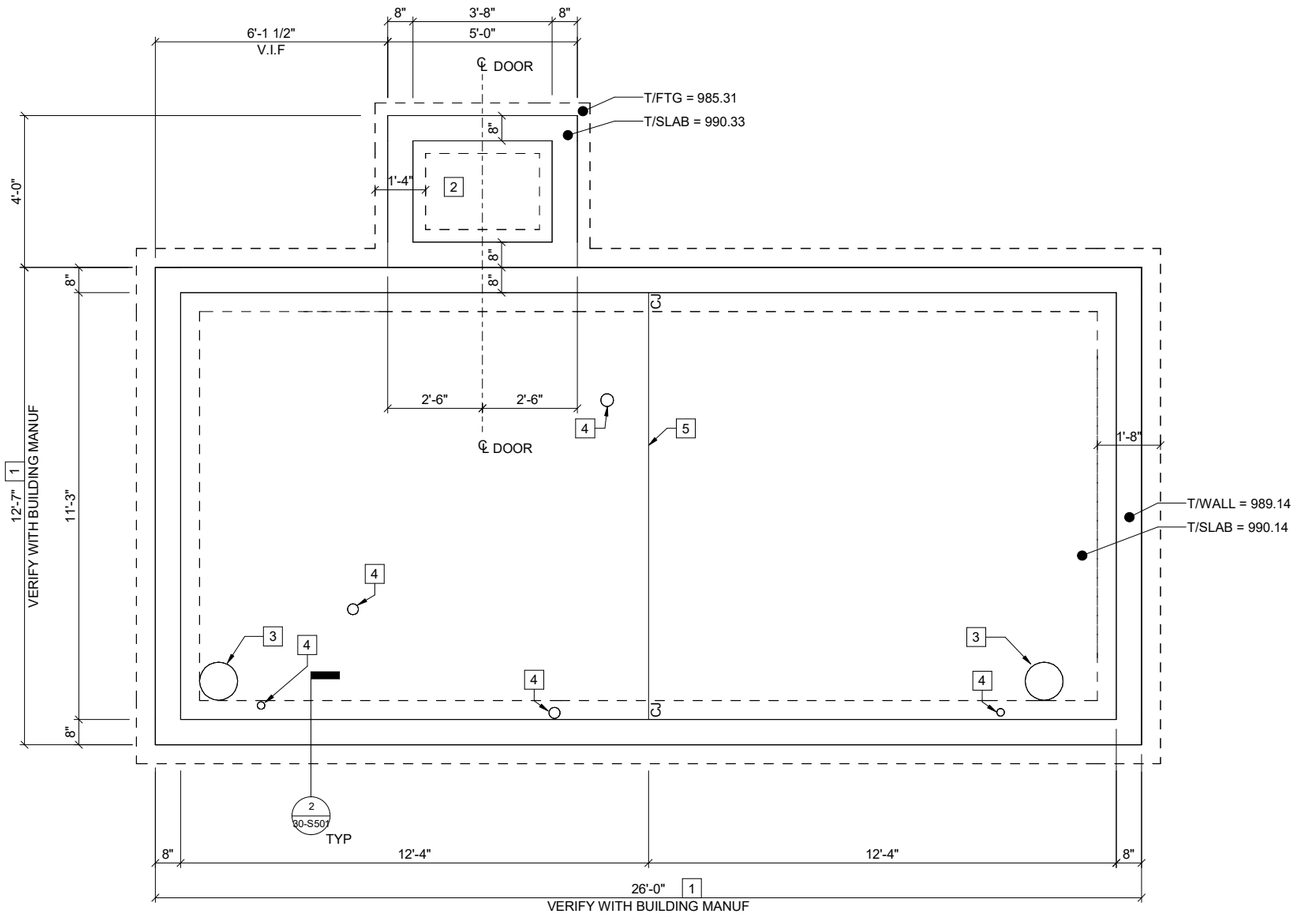
NORTH BOOSTER STATION
STRUCTURAL SCHEDULES AND GENERAL NOTES

PROJECT NO. 07985049.2
SHEET 30-S001

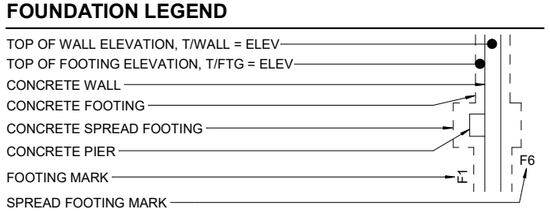
KEY NOTES [#]

1. 12" THICK FLAT AND LEVEL CONCRETE SLAB ON FOUNDATION WALL w/ #5 BARS AT 12" OC EACH WAY TOP AND BOTTOM OVER VAPOR BARRIER OVER 12" THICK COMPACTED GRAVEL FILL. SLAB SHALL HAVE A FLOOR FLATNESS (FF) OF 50 (SINGLE 1/8" DEFECT ACROSS 10') AND HAVE A FLOOR LEVELNESS (FL) OF 35 (VERY FLAT). VERIFY DIMENSIONS WITH BUILDING MANUF.
2. COORDINATE STOOP SIZE AND LOCATION WITH BUILDING MANUF
3. PROCESS MECHANICAL PIPE THROUGH FLOOR SLAB LOCATION - SEE PROCESS MECHANICAL. COORDINATE FINAL LOCATION w/ BUILDING MANUF. PROVIDE THROUGH SLAB. OPENING REINFORCING PER DETAIL 1/30-S501
4. SANITARY PIPE THROUGH FLOOR SLAB LOCATION - SEE PROCESS MECHANICAL. COORDINATE FINAL LOCATION w/ BUILDING MANUFACTURER. PROVIDE SLEEVE THROUGH SLAB FOR PLUMBING PIPE
5. CONTROL JOINT (CJ) - SEE DETAIL 4/30-S501

NOTE: COORDINATE ALL DIMENSIONS SHOWN WITH BUILDING MANUFACTURER. DOOR LOCATIONS AND BUILDING SIZE ARE SUBJECT TO CHANGE. CONFIRM ALL DIMENSIONS WITH BUILDING MANUFACTURER PRIOR TO PLACING FOUNDATION ELEMENTS. CONTRACTOR TO ADJUST SIZES WITH NO CHANGE IN COST TO THE OWNER.



FOUNDATION LEGEND



FOUNDATION PLAN

1/2" = 1'-0" (22" x 34")
1/4" = 1'-0" (11" x 17")
0 1 2 4

PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: AAZ	No	DATE	REVISIONS	BY
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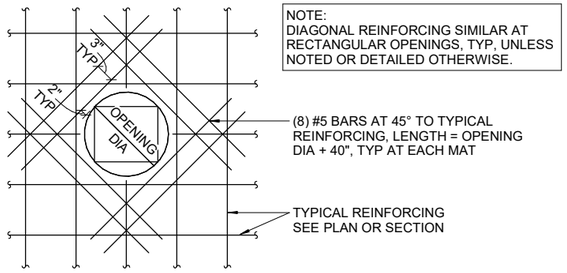
BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
NEW RICHMOND, ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION FOUNDATION PLAN

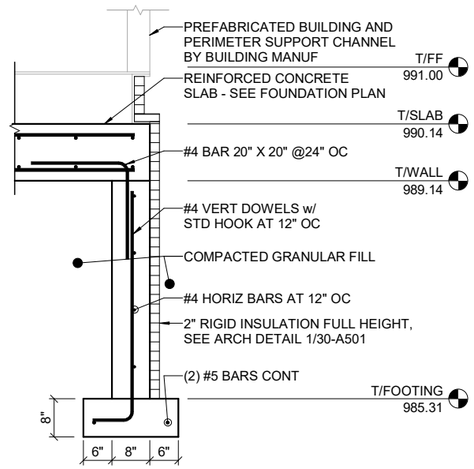
PROJECT NO. 07985049.2
SHEET 30-S101



NOTE:
DIAGONAL REINFORCING SIMILAR AT RECTANGULAR OPENINGS, TYP, UNLESS NOTED OR DETAILED OTHERWISE.

1 DIAGONAL REINF AT CONCRETE WALL AND SLAB OPENINGS

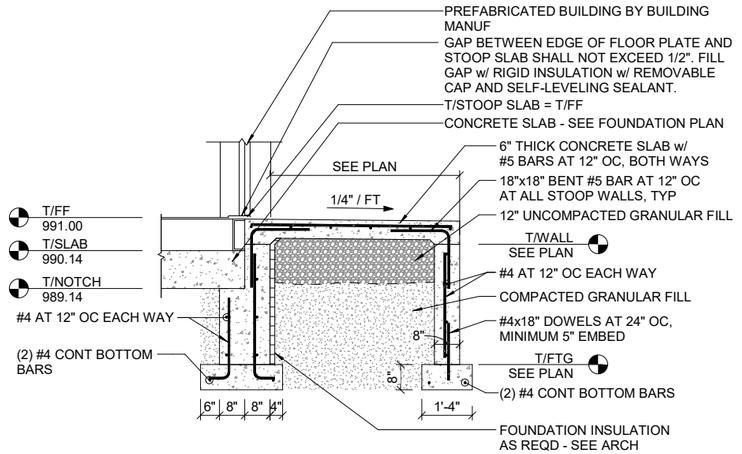
30-S501 1/4" = 1'-0" (22" x 34") 0 2 4 8
1/8" = 1'-0" (11" x 17")



NOTE: PROVIDE 18" x 18" CORNER HORIZ BARS AT INTERSECTING WALLS. BARS SHALL BE THE SAME SIZE AND LOCATIONS AS TYP HORIZ REINF BARS.

2 TYPICAL FOUNDATION WALL DETAIL

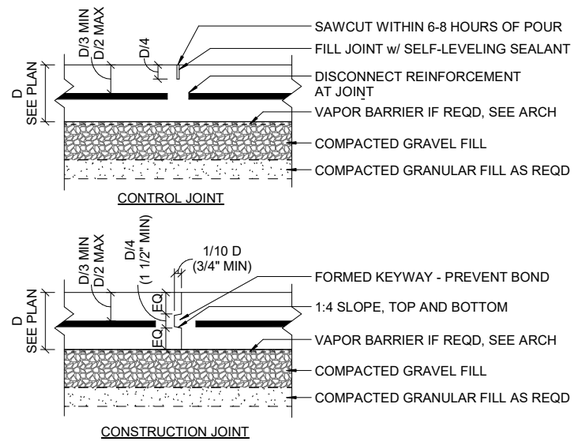
30-S501 3/4" = 1'-0" (22" x 34") 0 6" 1' 2' 3'
3/8" = 1'-0" (11" x 17")



NOTES:
1. STOOP IS A STRUCTURAL SLAB; THEREFORE, REINFORCEMENT AND SLAB THICKNESS ARE CRITICAL
2. PROVIDE 18"x18" BENT #5 BAR AT 12" OC WHERE STOOP SLAB MEETS BUILDING WALL. ALTERNATIVELY PROVIDE BENT #5 BAR WITH (1) 18" HORIZONTAL LEG, DRILL AND EPOXY WITH MINIMUM 6" EMBED.

3 STOOP DETAIL

30-S501 1/2" = 1'-0" (22" x 34") 0 1 2 4
1/4" = 1'-0" (11" x 17")



4 TYPICAL SLAB-ON-GRADE CJ DETAIL

30-S501 1 1/2" = 1'-0" (22" x 34") 0 6" 1' 2' 3'
3/4" = 1'-0" (11" x 17")

PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: JJK	No	DATE	REVISIONS	BY
	DESIGNED BY: SHG				
	CHECKED BY: KEB				

PLOT DATE: 11/14/2025 4:23:45 PM

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
NEW RICHMOND, ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION STRUCTURAL DETAILS

PROJECT NO. 07985049.2
SHEET 30-S501

GENERAL NOTES

A. ALL DIMENSIONING IS TO FACE OF STUD, FRAMING, CMU, OR CONCRETE.
B. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ENGINEER BEFORE CONTINUING WITH CONSTRUCTION.
C. OPENINGS FOR VENTILATION, PLUMBING, PROCESS MECHANICAL, AND ELECTRICAL WORK IN WALLS, FLOORS, ROOF, CEILING, ETC, SHALL BE PROVIDED BY THE GC. LOCATION AND SIZE OF THESE OPENINGS SHALL BE THE RESPONSIBILITY OF THE ASSOCIATED CONTRACTOR.
D. EXTERIOR WALL AND RELATED EXTERIOR OPENINGS BY ALL TRADE PENETRATIONS SHALL BE FLASHED AND CAULKED BY THE GC.
E. ALL EXPOSED ANCHORS, PIPING, CONDUIT, DUCTWORK, AND INSULATION WITHOUT FINISHED JACKET SHALL BE PAINTED, UNO.

KEY NOTES [#]

1. FIRE ESTINGUISHER AND BRACKET
2. NEC ELECTRICAL WORKING SPACE - SEE ELECTRICAL
3. CONCRETE STOOP - SEE STRUCTURAL
4. PROCESS MECHANICAL EQUIPMENT AND PIPING - SEE MECHANICAL SHEETS
5. BUILDING SIZE BY BUILDING MANUFACTURER
6. INSULATED WALL PANEL BY BUILDING MANUFACTURER
7. HVAC SYSTEM
8. HIGH EFFICIENCY DEHUMIDIFIER - FLOOR MOUNTED BY BUILDING MANUFACTURER
9. LOUVER BLOWER BY BUILDING MANUFACTURER
10. ELECTRICAL SERVICE GEAR
11. CHEMICAL CLOSET FOR FUTURE CHEMICAL FEED EQUIPMENT
12. CONCRETE PAVEMENT OVER COMPACTED GRANULAR FILL - REFER TO SITE PLAN.
13. CONTRACTION JOINT, TYP.
14. 1/2" EXPANSION JOINT WITH FLOWABLE SEALANT
15. 10 MIL REINFORCED VAPOR BARRIER UNDER 12-INCH THICK CONCRETE SLAB
16. 2" RIGID INSULATION ALONG FOUNDATION WALL (FULL HEIGHT) AROUND PERIMETER OF FOUNDATION WALLS
17. ELECTRICAL SERVICE EQUIPMENT

DOOR SCHEDULE

OPENING No	DOOR					FRAME		REMARKS
	TYPE	MAT'L	NOMINAL SIZE			TYPE	MAT'L	
			WIDTH	HEIGHT	THICKNESS			
102E	FLUSH	STEEL	3' - 0"	6' - 8"	2"	DOUBLE RABBET	STEEL	1,2,3,4
102G	FLUSH	STEEL	3' - 0"	6' - 8"	2"	DOUBLE RABBET	STEEL	1,5

GENERAL NOTES

A. REFER TO SECTION 13 34 30.

REMARKS

1. UNDERCUT DOOR 3/4 INCH
2. LOCKSET SHALL BE CYLINDRICAL WITH SATIN STAINLESS STEEL FINISH.
3. PROVIDE METAL SHIELD ABOVE DOOR FOR RAIN & SNOW DIVERSION.
4. PROVIDE EXTRUDED ALUMINUM SILL PLATE.
5. INSTALL WARNING SIGN TO EXTERIOR OF DOOR AFTER PAINTING IS COMPLETE

ROOM FINISH SCHEDULE

ROOM No	ROOM NAME	FLOOR	BASE	WALLS				CEILING		REMARKS
				NORTH	EAST	SOUTH	WEST	MAT'L	HEIGHT	
101	PUMP ROOM	F1	-	W1	W1	W1	W1	C1	8'-0"	
102	CHEMICAL	F1	-	W2	-	-	W2	C1	8'-0"	

GENERAL NOTES

A. PAINT ALL EXPOSED PIPES, CONDUIT, DUCTWORK, ETC.
B. VINYL BASE AT DRYWALL WALLS ONLY

REMARKS

1. NONE

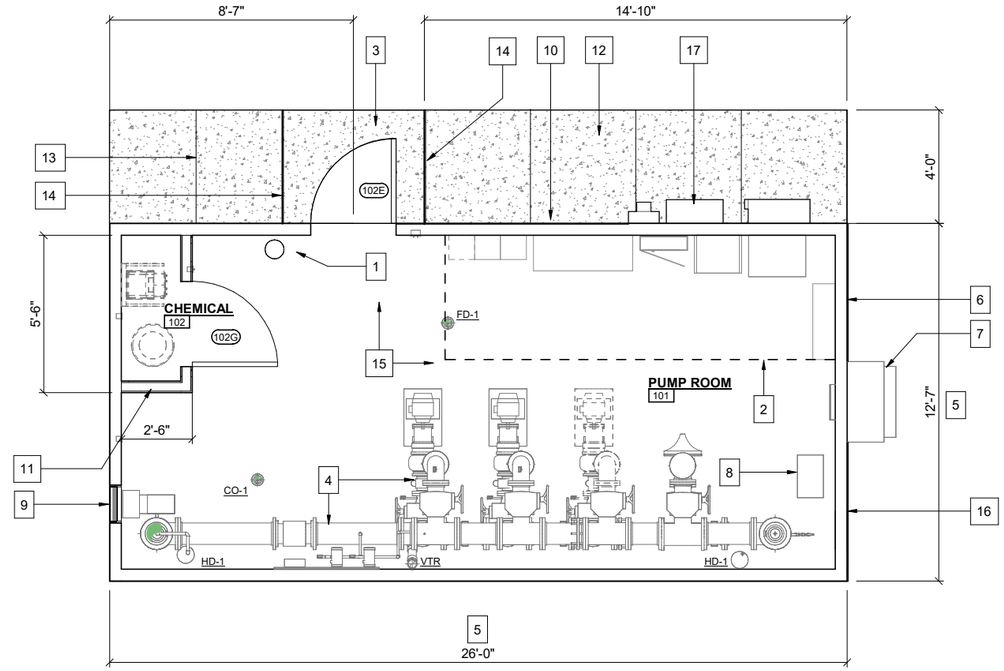
LEGEND

FLOOR:
F1. NEOPRENE FLOOR MAT OVER 10" CHANNEL OVER 12" THICK REINFORCED SLAB W/ 10 MIL VAPOR BARRIER

BASE:
- NONE

WALLS:
- NONE
W1: INSULATED WALL PANEL (BY MANUFACTURER)
W2: INTERIOR WALL PANEL (BY MANUFACTURER)

CEILINGS:
C1: INSULATED CEILING PANEL (BY MANUFACTURER)



FLOOR PLAN

3/8" = 1'-0" (22"x34")
3/16" = 1'-0" (11"x17")
0 1 2 4 6

No	DATE	REVISIONS	BY

PROJECT DATE: NOVEMBER 18, 2025
DRAWN BY: JJY
DESIGNED BY: ATR
CHECKED BY: EE

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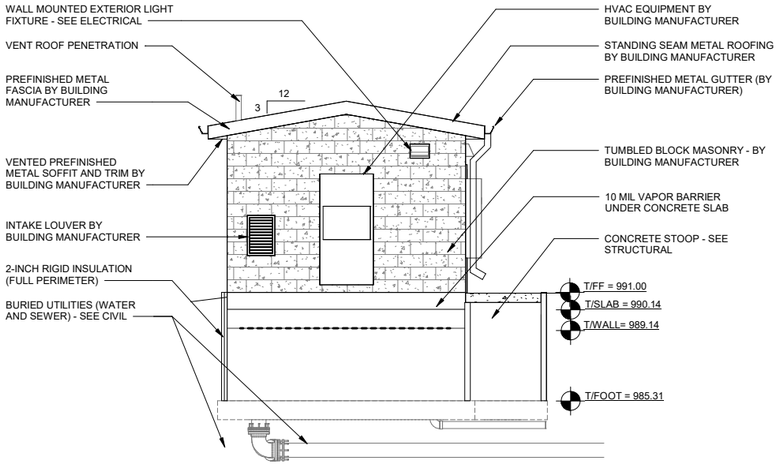
BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
NEW RICHMOND, ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION
FLOOR PLAN

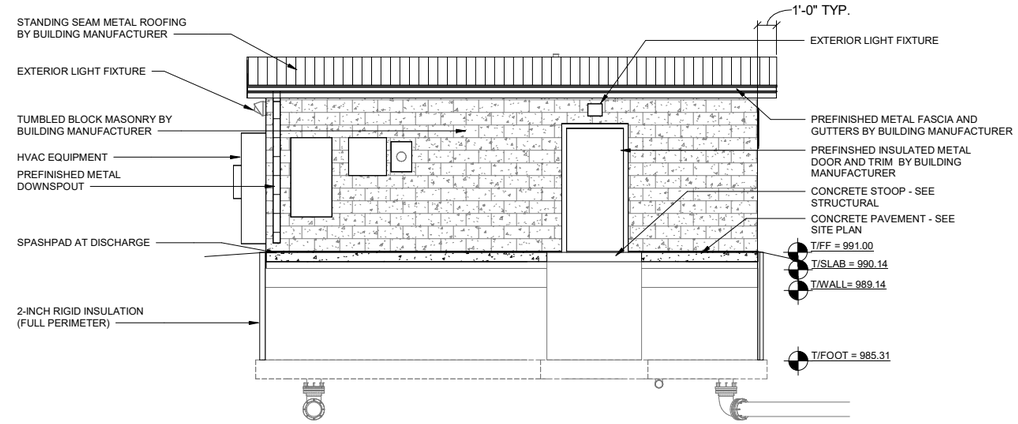
PROJECT NO. 07985049.2
SHEET 30-A101

PLOT DATE: 11/17/2025 12:39:37 PM
Autodesk Docs://07985049 - New Richmond Water Tower #3 and Booster Station Design/07985049 New Richmond Booster_Prefabricated Building.rvt



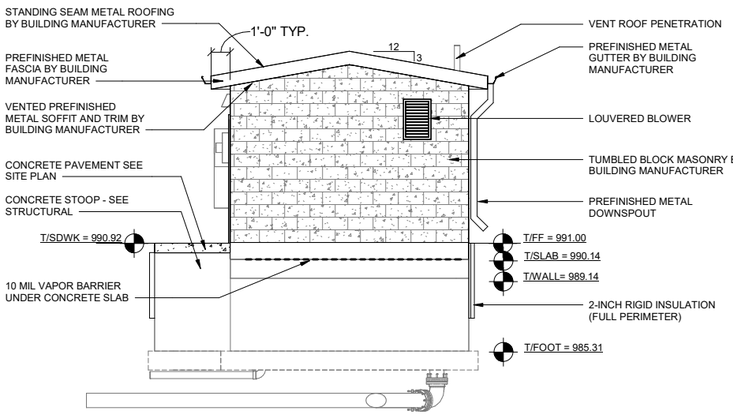
EAST EXTERIOR BUILDING ELEVATION

1/4" = 1'-0" (22"x34")
1/8" = 1'-0" (11"x17")



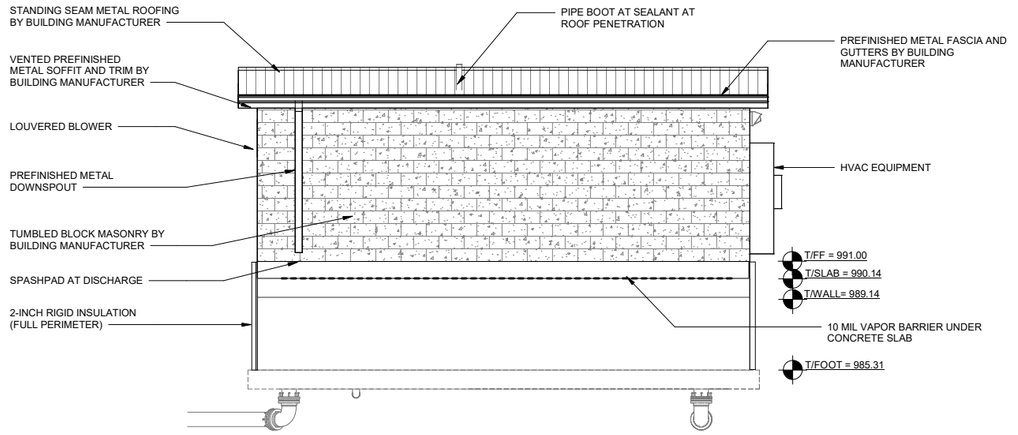
NORTH EXTERIOR BUILDING ELEVATION

1/4" = 1'-0" (22"x34")
1/8" = 1'-0" (11"x17")



WEST EXTERIOR BUILDING ELEVATION

1/4" = 1'-0" (22"x34")
1/8" = 1'-0" (11"x17")



SOUTH EXTERIOR BUILDING ELEVATION

1/4" = 1'-0" (22"x34")
1/8" = 1'-0" (11"x17")

PLOT DATE: 11/17/2025 12:39:38 - Autodesk Docs://07985049 - New Richmond Water Tower #3 and Booster Station Design/07985049 New Richmond Booster_Prefabricated Building.rvt

PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: JJY
	DESIGNED BY: ATR
	CHECKED BY: BJS

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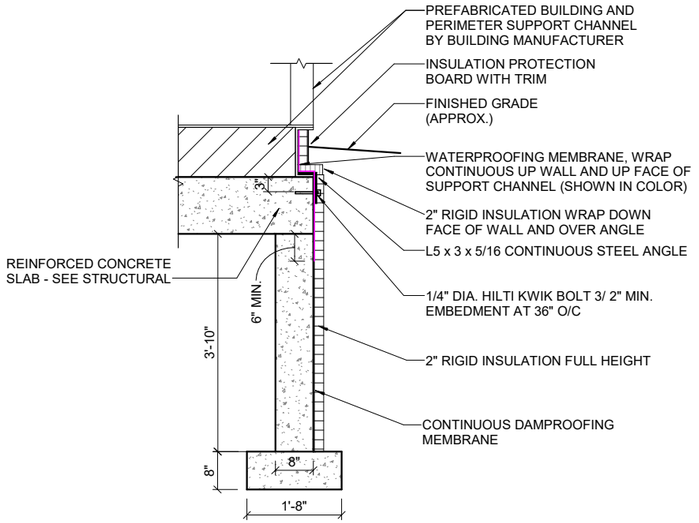
BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
NEW RICHMOND, ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION EXTERIOR ELEVATIONS

PROJECT NO. 07985049.2
SHEET 30-A201



1 30-A501 **BASE OF BUILDING ANCHOR DETAIL**

3/4" = 1'-0" (22"x34")
1-1/2" = 1'-0" (11"x17")

PLOT DATE: 11/17/2025 12:39:38 _ Autodesk Docs://07985049 - New Richmond Water Tower #3 and Booster Station Design/07985049 New Richmond Booster_Prefabricated Building.rvt

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
NEW RICHMOND, ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION
ARCHITECTURAL DETAILS

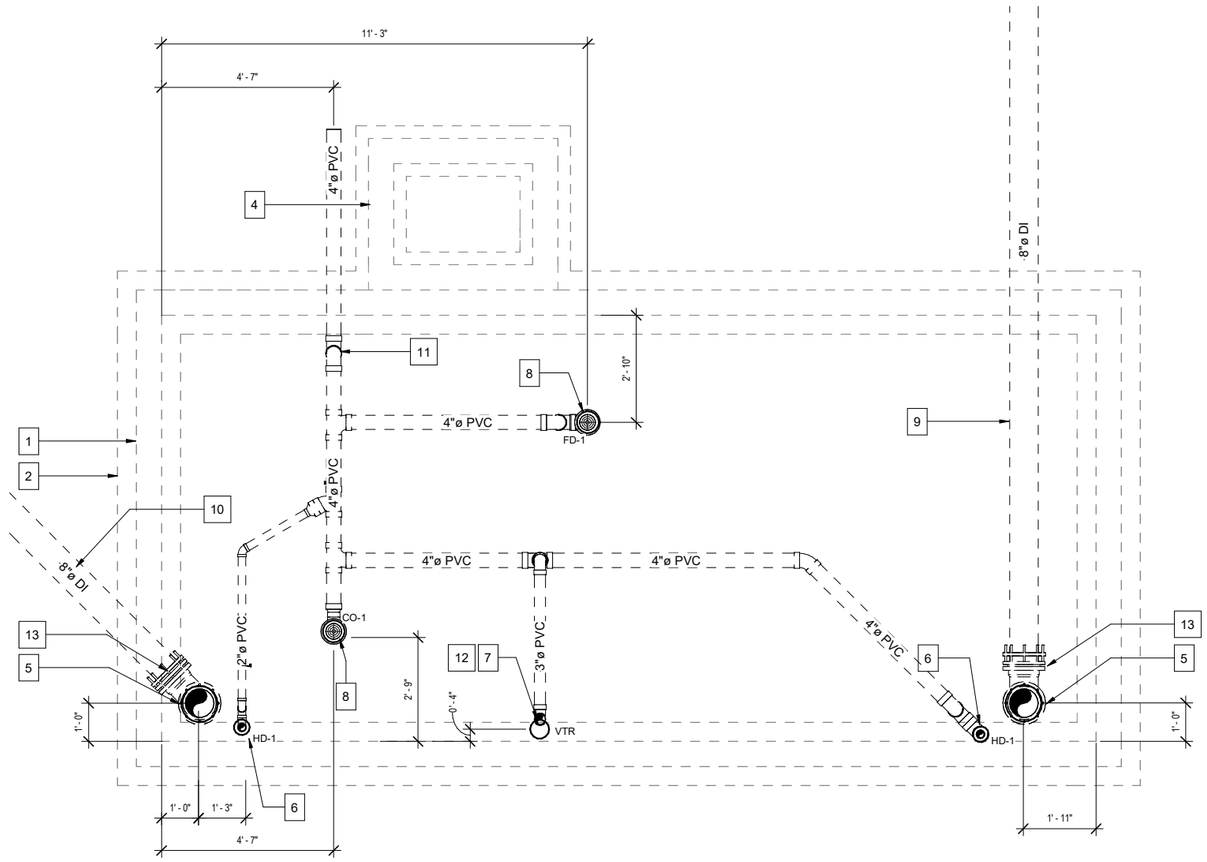
PROJECT NO. 07985049.2
SHEET 30-A501

KEYNOTES:

1. TOP OF CAST-IN-PLACE CONCRETE FOUNDATION WALL, SEE STRUCTURAL
2. EDGE OF CAST-IN-PLACE CONCRETE FOUNDATION FOOTING, SEE STRUCTURAL
3. NOT USED
4. EDGE OF CAST-IN-PLACE CONCRETE STOOP, SEE STRUCTURAL
5. PENETRATION SHALL BE A MIN. OF 11" IN DIAMETER FOR WATERMAIN VERTICAL PIPING THROUGH SLAB AND FLOOR
6. PENETRATION SHALL BE A MIN. OF 5" IN DIAMETER FOR HUB DRAIN VERTICAL RISERS THROUGH SLAB AND FLOOR
7. PENETRATION SHALL BE A MIN. OF 6" IN DIAMETER FOR DRAIN VENT VERTICAL PIPING THROUGH SLAB AND FLOOR
8. PENETRATION SHALL BE A MIN. OF 7" IN DIAMETER FOR FLOOR DRAIN AND CLEANOUT FIXTURES. PROVIDE VERTICAL RISERS THROUGH SLAB AND FLOOR. CONTRACTOR SHALL FURISH A RECESSED DRAIN FITTING TO INSTALL ON RISER. CONTRACTOR SHALL BACKFILL ANNULAR SPACE BETWEEN FLOOR JOISTS AND SLAB PENETRATION WITH NON SHRINK GROUT.
9. 8" DUCTILE IRON (MECHANICAL JOINT) - BOOSTER DISCHARGE
10. 8" DUCTILE IRON (MECHANCAL JOINT) - LOW PRESSURE SUCTION
11. PROVIDE REQUIRED PVC BENDS TO DROP PIPE TO A MIN. ELEVATION OF 6" BELOW BOTTOM OF FOOTING. PENETRATION THROUGH STOOP OR FOUNDATION WALL WILL NOT BE PERMITTING FOR SANITARY OR WATER PIPING NETWORKS
12. ROUTE VENT STACK VERTICALLY THROUGH SLAB & FLOOR. SECURE TO WALL
13. DUCTILE IRON 90 DEGREE BEND. PROVIDE TANDEM MEGA-LUG JOINT RESTRAINTS AND CONCRETE THRUST RESTRAINT BLOCKING. REFER TO CIVIL DETAILS FOR WATERMAIN THRUST BLOCK REQUIREMENTS.

GENERAL NOTES:

A. FLANGED CONNECTION SHOWN ON DRAWINGS, PACKAGED BOOSTER SKID SUPPLIER MAY SUBSTITUTE WELDED CONNECTIONS, AND FITTINGS AND BENDS IN LOCATIONS APPROVED BY ENGINEER OR OWNER.
B. BELOW GRADE DUCTILE IRON PIPE SHALL BE MECHANICAL JOINTED, CLASS 53 DUCTILE IRON. VERTICAL PIPES SHALL BE FIELD CUT TO LENGTH FOR CONNECTION WITH THE PREFABRICATED BOOSTER STATION PIPING. THE CONTRACTOR SHALL PROVIDE RESTRAINED FLANGE ADAPTER TO CONNECT TO THE PREFABRICATED PIPING. ANNULAR SPACE BETWEEN THE SLAB AND THE VERTICAL PIPE, AND THE JOISTS AND THE VERTICAL PIPE SHALL BE FILLED WITH NONE SHRINK GROUT.
C. ALL DRAIN PIPING SHALL BE CONSTRUCTED FROM SCH. 40 PVC.
D. DASHED LINEWORK INDICATES BELOW GRADE PIPING AND/OR EQUIPMENT



BELOW GRADE PROCESS PLAN

1/2" = 1'-0" (22"x24")
1/4" = 1'-0" (11"x17")
0 1 2 4

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WATER TOWER NO. 3 AND BOOSTER STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION
PROCESS BELOW GRADE PLAN

PROJECT NO. 07985049.2
SHEET 30-M101

PLOT DATE: 11/17/2025 12:51:54 PM
Autodesk Docs://07985049 - New Richmond Water Tower #3 and Booster Station Design/07985049 New Richmond Booster_MECH.rvt

KEYNOTES:

1. PREFABRICATED BOOSTER STATION
2. HVAC UNIT BY BUILDING MANUFACTURER
3. FLOOR MOUNTED HIGH EFFECIENCY DEHUMIDIFIER BY STATION MANUFACTURER.
4. LOUVED BLOWER BY STATION MANUFACTURER
5. FUTURE SODIUM HYPOCHLORITE PUMP AND PUMP SHELF
6. FUTURE CHEMICAL STORAGE TANK AND SECONDARY CONTAINMENT
7. HUB DRAIN FOR PROCESS PIPING DISCHARGE. SEE DETAIL.
8. COPPER DISCHARGE PIPING FOR AIR RELEASE VALVE. PLUMB TO HUB DRAIN SEE DETAIL.
9. FLOOR DRAIN, INSTALL FLUSH WITH FINISHED FLOOR. REFER TO 30-M101
10. INTERIOR CLEANOUT, INSTALL FLUSH WITH FINISHED FLOOR - REFER TO 30-M101
11. DRAIN VENT TO ROOF - SECURE TO VERTICAL WALL. PROVIDE ROOFING BOOT AND SEALANT AT ROOF PENETRATION.
12. INSTRUMENT PANEL - SEE DETAIL. MOUNTED ALUMINUM RACK TO STATION WALL. PROVIDE ENGRAVED LABELS.
13. 8-INCH RESTRAINED EXPANSION JOINT FITTING
14. SMOOTH BORE SAMPLE TAP (1/2"). PROVIDE TAP AND BALL VALVE FOR ISOLATION.
15. PROVIDE BENDS AS NEEDED TO CLEAR PROCESS PIPING
16. FLOW TRANSMITTER - MOUNTED TO INSTRUMENT PANEL
17. 3/4" NPT TAP WITH BALL VALVE AND PRESSURE GAUGE FOR BOOSTER PUMP DISCHARGE - TYP. OF ALL PROPOSED PUMPS

GENERAL NOTES:

A. BOOSTER STATION PROCESS PIPING 3"+ IS SHOWN AS FLANGED CLASS 53 DUCTILE IRON. REFER TO SPECIFICATOINS FOR ALTERNATE PIPING MATERIAL.
B. FLANGED CONNECTION ARE SHOWN ON DRAWINGS, PACKAGED BOOSTER SKID SUPPLIER MAY SUBSTITUTE WELDED CONNECTIONS, AND FITTINGS AND BENDS IN LOCATIONS APPROVED BY ENGINEER AND OWNER.
C. ALL BUTTERFLY VALVES SHALL BE LUGGED STYLE.
D. FUTURE EQUIPMENT AND PIPING SHOWN AS DASHED LINEWORK IN VIEW.
E. PROVIDE ALL PIPE WITH STICKER OR PAINTED LABELS WITH FLOW DIRECTION ARROWS. REFER TO DIVISIN 40.
F. SUCTION SIDE PROCESS PIPING SHALL BE PAINTED SHERWIN WILLIAMS 4063 ROBOTIC BLUE, OR EQUAL. DISCHARGE (BOOSTED) PROCESS PIPING SHALL BE PAINTED SHERWIN WILLIAMS 4086 SAFETY BLUE, OR EQUAL.

PUMP/INSTRUMENT SCHEDULE - PROPOSED

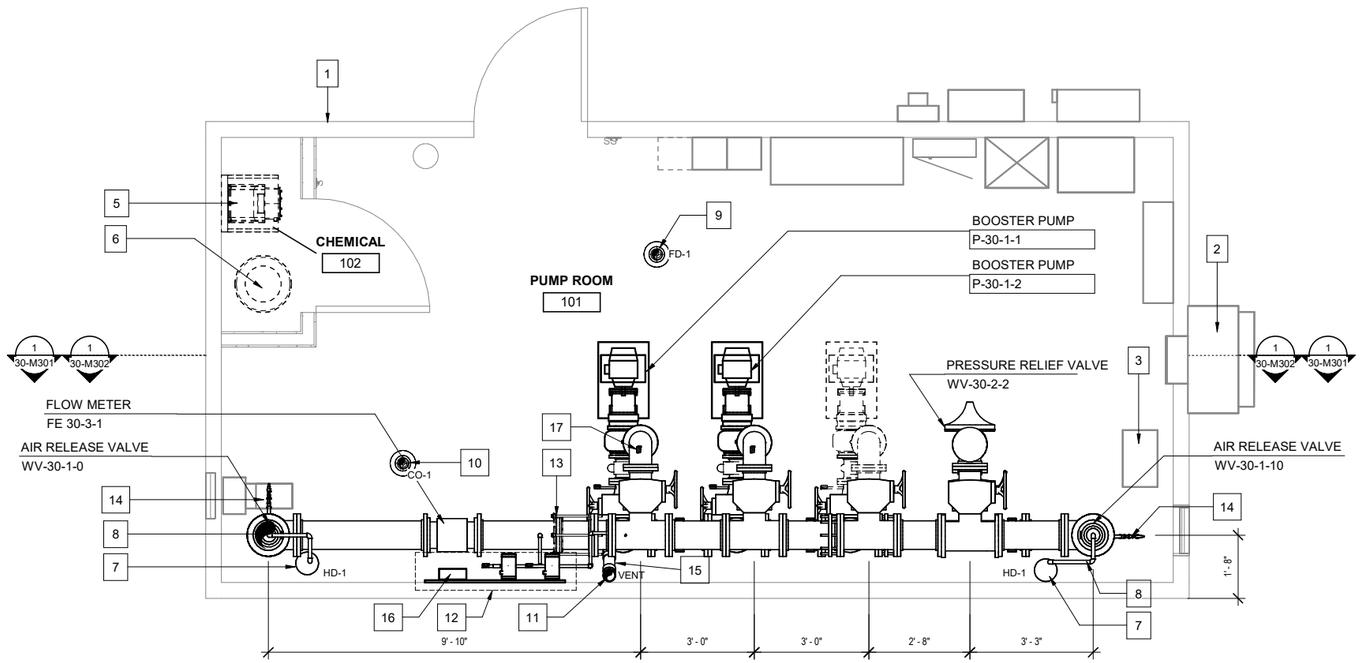
NOTE: PUMPSCHEDULE IS PROVIDED AS A GENERAL REFERENCE. CONTRACTOR SHALL VERIFY ANY INFORMATION LISTED AND NOTIFY ENGINEER OF ANY CONFLICTS, DISCREPANCIES, OR MISSING INFORMATION.

TAG ID	PHASE/VOLTAGE	MODEL	COMMENTS
P-30-1-1	3 PH/ 480V	GOULDS MODEL 16BF	SEE DETAIL FOR TYPICAL PUMP INSTALLATION
P-30-1-2	3 PH/ 480V	GOULDS MODEL 16BF	SEE DETAIL FOR TYPICAL PUMP INSTALLATION
PIT 30-4-1	1 PH/ 120V	SEE DIV 26	REFER TO DIVISION 26 SPECIFICATIONS AND DETAILS
PIT 30-4-2	1 PH/ 120V	SEE DIV 26	REFER TO DIVISION 26 SPECIFICATIONS AND DETAILS

APPURTENANCES SCHEDULE - PROPOSED

NOTE: APPURTENANCE SCHEDULE IS PROVIDED AS A GENERAL REFERENCE. APPURTENANCES (NOT SHOWN) MAY BE REQUIRED TO COMPLETE THE PROJECT. CONTRACTOR IS REQUIRED TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. CONTRACTOR SHALL VERIFY ANY INFORMATION LISTED AND NOTIFY ENGINEER OF ANY CONFLICTS, DISCREPANCIES, OR MISSING INFORMATION.

TAG ID	APPURTENANCE	ABBREVIATION	SIZE	COMMENTS
30-WV-2-3	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
FE 30-3-1	FLOW METER	FE	16"ø-16"ø	MOUNT TRANSMITTER TO INSTRUMENT PANEL
WV-30-1-0	AIR RELEASE VALVE	ARV	2"ø-2"ø	PROVIDE ISOLATION BALL VALVE UPSTREAM OF ARV. ROUTE DISCHARGE PIPING TO HUB DRAIN
WV-30-1-1	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-2	CHECK VALVE	CV	6"ø-6"ø	
WV-30-1-3	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-4	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-5	CHECK VALVE	CV	6"ø-6"ø	
WV-30-1-6	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-7	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-9	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-10	AIR RELEASE VALVE	ARV	2"ø-2"ø	PROVIDE ISOLATION BALL VALVE UPSTREAM OF ARV. ROUTE DISCHARGE PIPING TO HUB DRAIN
WV-30-2-1	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-2-2	PRESSURE RELIEF VALVE	PRV	6"ø-6"ø	CLA-VAL MODEL 90-01 , REFER TO DIVISION 40 23 23 SPECIFICATIONS



PROCESS FLOOR PLAN

1/2" = 1'-0" (22"x24")
1/4" = 1'-0" (11"x17")
0 1 2 4

PLOT DATE: 11/17/2025 12:51:54 _ Autodesk Docs://07985049 - New Richmond Water Tower #3 and Booster Station Design/07985049 New Richmond Booster_MECH.rvt

PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: JJY
	DESIGNED BY: JJY
	CHECKED BY: ATR

No	DATE	REVISIONS	BY

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WATER TOWER NO. 3 AND BOOSTER STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION
PROCESS FLOOR PLAN

PROJECT NO. 07985049.2
SHEET 30-M102

KEYNOTES:

1. PREFABRICATED BOOSTER STATION
2. HVAC UNIT BY BUILDING MANUFACTURER
3. FLOOR MOUNTED HIGH EFFECIENCY DEHUMIDIFIER BY STATION MANUFACTURER.
4. PROVIDE ALUMINUM RACK FOR MOUNTING OF PRESSURE MONITORING EQUIPMENT. MOUNT TO STATION WALL.
5. SMOOTH BORE SAMPLING TAP WITH ISOLATION BALL VALVE, SEE DETAIL
6. PRESSURE TRANSMITTER (PROVIDED BY DIVISION 26) AND GAUGE. MOUNT TO PRESSURE MONITORING PANEL. SECURE PIPING TO WALL AND RACK.
7. SUCTION PRESSURE GAUGE WITH ISOLATION BALL VALVE. TYPICAL OF EACH PUMP LOOP.
8. DISCHARGE PRESSURE GAUGE WITH ISOLATION BALL VALVE. TYPICAL OF EACH PUMP LOOP.
9. FLOW TRANSMITTER - MOUNTED TO INSTRUMENT PANEL

GENERAL NOTES:

A. BOOSTER STATION PROCESS PIPING 3"+ IS SHOWN AS FLANGED CLASS 53 DUCTILE IRON. REFER TO SPECIFICATOINS FOR ALTERNATE PIPING MATERIAL.
B. FLANGED CONNECTION ARE SHOWN ON DRAWINGS, PACKAGED BOOSTER SKID SUPPLIER MAY SUBSTITUTE WELDED CONNECTIONS, AND FITTINGS AND BENDS IN LOCATIONS APPROVED BY ENGINEER AND OWNER.
C. ALL BUTTERFLY VALVES SHALL BE LUGGED STYLE.
D. FUTURE EQUIPMENT AND PIPING SHOWN AS DASHED LINEWORK IN VIEW.
E. PROVIDE ALL PIPE WITH STICKER OR PAINTED LABELS WITH FLOW DIRECTION ARROWS. REFER TO DIVISIN 40.
F. SUCTION SIDE PROCESS PIPING SHALL BE PAINTED SHERWIN WILLIAMS 4063 ROBOTIC BLUE, OR EQUAL. DISCHARGE (BOOSTED) PROCESS PIPING SHALL BE PAINTED SHERWIN WILLIAMS 4086 SAFETY BLUE, OR EQUAL.

PUMP/INSTRUMENT SCHEDULE - PROPOSED

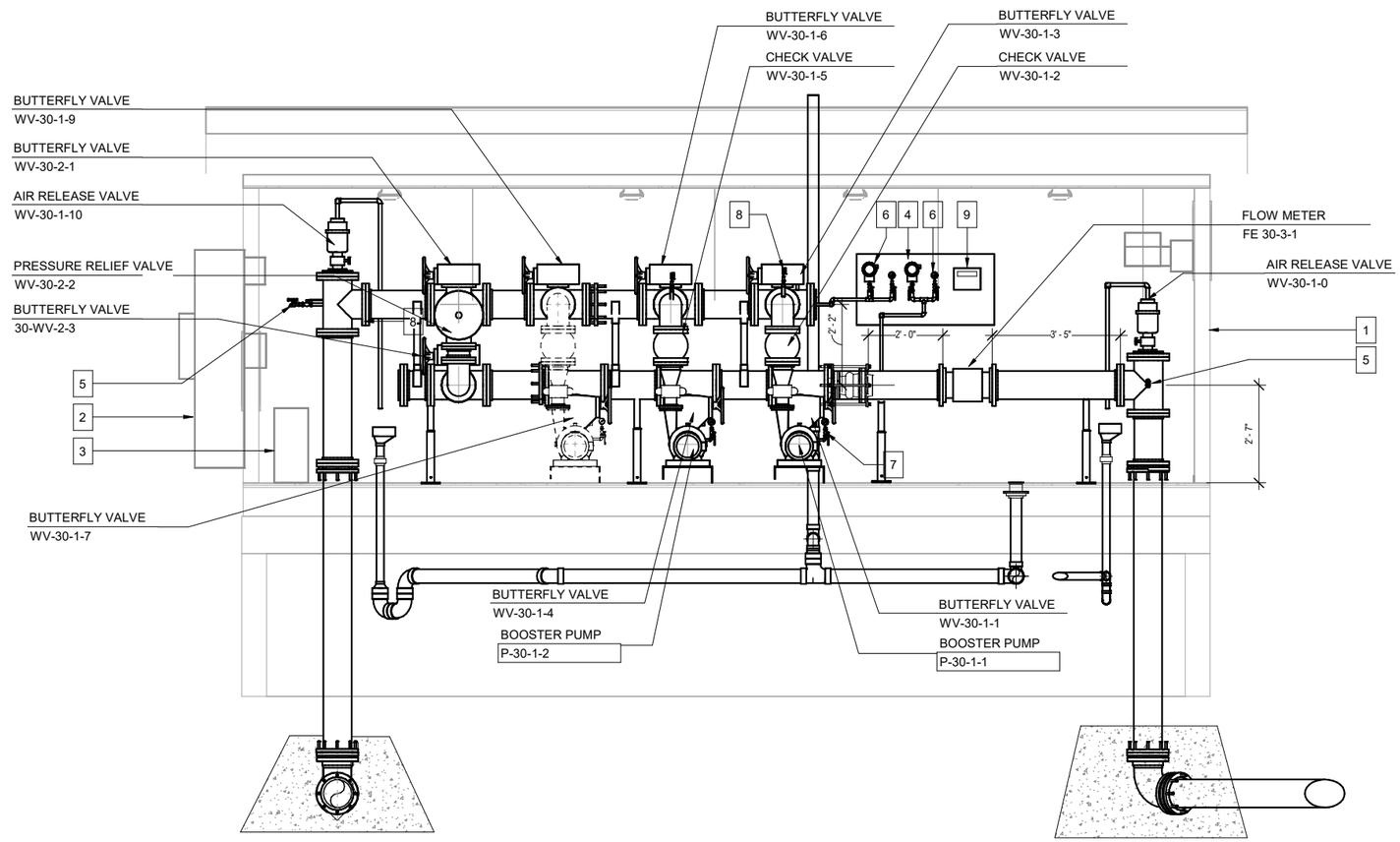
NOTE: PUMPSCHEDULE IS PROVIDED AS A GENERAL REFERENCE. CONTRACTOR SHALL VERIFY ANY INFORMATION LISTED AND NOTIFY ENGINEER OF ANY CONFLICTS, DISCREPANCIES, OR MISSING INFORMATION.

TAG ID	PHASE/VOLTAGE	MODEL	COMMENTS
P-30-1-1	3 PH/ 480V	GOULDS MODEL 16BF	SEE DETAIL FOR TYPICAL PUMP INSTALLATION
P-30-1-2	3 PH/ 480V	GOULDS MODEL 16BF	SEE DETAIL FOR TYPICAL PUMP INSTALLATION
PIT 30-4-1	1 PH/ 120V	SEE DIV 26	REFER TO DIVISION 26 SPECIFICATIONS AND DETAILS
PIT 30-4-2	1 PH/ 120V	SEE DIV 26	REFER TO DIVISION 26 SPECIFICATIONS AND DETAILS

APPURTENANCES SCHEDULE - PROPOSED

NOTE: APPURTENANCE SCHEDULE IS PROVIDED AS A GENERAL REFERENCE. APPURTENANCES (NOT SHOWN) MAY BE REQUIRED TO COMPLETE THE PROJECT. CONTRACTOR IS REQUIRED TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. CONTRACTOR SHALL VERIFY ANY INFORMATION LISTED AND NOTIFY ENGINEER OF ANY CONFLICTS, DISCREPANCIES, OR MISSING INFORMATION.

TAG ID	APPURTENANCE	ABBREVIATION	SIZE	COMMENTS
30-WV-2-3	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
FE 30-3-1	FLOW METER	FE	16"ø-16"ø	MOUNT TRANSMITTER TO INSTRUMENT PANEL
WV-30-1-0	AIR RELEASE VALVE	ARV	2"ø-2"ø	PROVIDE ISOLATION BALL VALVE UPSTREAM OF ARV. ROUTE DISCHARGE PIPING TO HUB DRAIN
WV-30-1-1	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-2	CHECK VALVE	CV	6"ø-6"ø	
WV-30-1-3	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-4	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-5	CHECK VALVE	CV	6"ø-6"ø	
WV-30-1-6	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-7	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-9	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-10	AIR RELEASE VALVE	ARV	2"ø-2"ø	PROVIDE ISOLATION BALL VALVE UPSTREAM OF ARV. ROUTE DISCHARGE PIPING TO HUB DRAIN
WV-30-2-1	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-2-2	PRESSURE RELIEF VALVE	PRV	6"ø-6"ø	CLA-VAL MODEL 90-01 , REFER TO DIVISION 40 23 23 SPECIFICATIONS



1 PREFABRICATED BUILDING SECTION - PROPOSED EQUIPMENT
30-M301 1/2" = 1'-0" (22"x24") 1/4" = 1'-0" (11"x17") 0 1 2 4

PLOT DATE: 11/17/2025 12:51:56 - Autodesk Docs://07985049 - New Richmond Water Tower #3 and Booster Station Design/07985049 New Richmond Booster_MECH.rvt

PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: JJY	No	DATE	REVISIONS	BY
	DESIGNED BY: JJY				
	CHECKED BY: ATR				

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WATER TOWER NO. 3 AND BOOSTER STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION
PREFABRICATED BUILDING SECTION

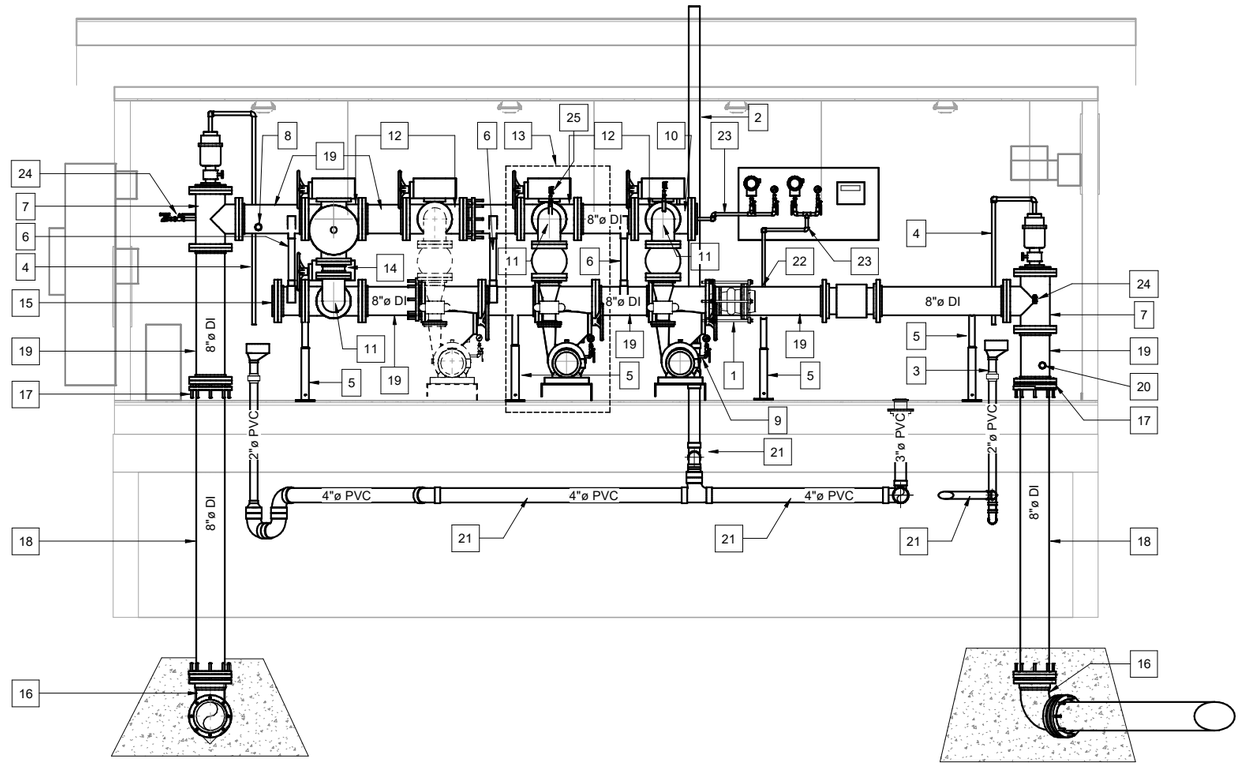
PROJECT NO. 07985049.2
SHEET 30-M301

KEYNOTES:

1. 6-INCH RESTAINED EXPANSION JOINT FITTING
2. 3-INCH PVC VENT TERMINAL. SECURE TO WALL. PROVIDE ROOF PENETRATION.
3. HUB DRAIN FOR PROCESS DISCHARGE, SEE DETAIL
4. 1" COPPER AIR RELEASE VALVE DISCHARGE PIPING - ROUTE TO HUB DRAIN
5. PIPE SUPPORT - FLOOR MOUNTED
6. PIPE SUPPORT - DOUBLE SADDLE TYPE
7. 8"X8"x8" DI TEE WITH BLIND FLANGE TAPPED FOR 2-INCH AIR RELEASE VALVE PIPING
8. 1" NPT TAP FOR FUTURE CHEMICAL INJECTION. TAP SHALL INSTALLED AT A 45 DEGREE ANGLE FROM HORIZONTAL ORIENTED UP FROM THE BOTTOM OF THE PIPE. PLUG TAP
9. 1/2" TAP AND PRESSURE GAUGE AT SUCTION AND DISCHARGE PIPING OF PUMPS. PROVIDE ISOLATION BALL VALVE UPSTREAM OF INSTRUMENT
10. 8"X8"X6" DI REDUCING TEE WITH 8-INCH BLIND FLANGE. PROVIDE 1" NPT TAP FOR PRESSURE MONTORING.
11. 6" DI 90 DEGREE ELBOW
12. 8"X8"X6" DI REDUCING TEE
13. SEE TYPICAL PUMP DETAIL FOR PIPING INFORMATION
14. 6" DI SPOOL PIPE OR FILLER FLANGE AS REQ'D FOR PRESSURE RELIEF VALVE CONNECTION.
15. 8" SPOOL AND BLIND FLANGE FOR SUCTION HEADER PIPING
16. 8" DI 90 DEGREE ELBOW (BELOW GRADE MECHANICAL JOINT). PROVIDE CONCRETE THRUST BLOCK PER CIVIL STANDARD DETAILS. RESTRAIN WITH TANDEM MEGA-LUG MECHANICAL JOINT RESTRAINT
17. RESTAINED FLANGE ADPATER (MEGA-FLANGE). CONNECTION SHALL BE PROVIDED IN THE FIELD BETWEEN CONTRACTOR'S BELOW GRADE PIPING AND SUPPLIER'S PREFABRICATED STATION PIPING.
18. 8-INCH CLASS 53, MECHANICALLY JOINTED, DUCTILE IRON PIPE FOR BELOW GRADE WATERMAIN (BY UTILITY CONTRACTOR)
19. 8-INCH CLASS 53 FLANGED DUCTILE IRON PIPE (BY STATION MANUFACTURER)
20. 1" NPT TAP FOR FUTURE CHLORINE ANALYZER FEED EQUIPMENT. PLUG TAP
21. BELOW SLAB PVC DRAIN PIPING (BY UTILITY CONTRACTOR)
22. 1" NPT TAP FOR SUCTION PRESSURE INSTRUMENTS
23. 1" COPPER PIPING AND ISOLATION BALL VALVES FOR PRESSURE MONITORING EQUIPMENT.
24. 1/2" TAP AND SMOOTH BORE SAMPLE TAP. PROVIDE ISOLATION BALL VALVE UPSTREAM OF FIXTURE. SAMPLE TAP SHALL BE STAINLESS STEEL OR CHROME.

GENERAL NOTES:

A. BOOSTER STATION PROCESS PIPING 3"+ IS SHOWN AS FLANGED CLASS 53 DUCTILE IRON. REFER TO SPECIFICATOINS FOR ALTERNATE PIPING MATERIAL.
B. FLANGED CONNECTION ARE SHOWN ON DRAWINGS, PACKAGED BOOSTER SKID SUPPLIER MAY SUBSTITUTE WELDED CONNECTIONS, AND FITTINGS AND BENDS IN LOCATIONS APPROVED BY ENGINEER AND OWNER.
C. ALL BUTTERFLY VALVES SHALL BE LUGGED STYLE.
D. FUTURE EQUIPMENT AND PIPING SHOWN AS DASHED LINEWORK IN VIEW.
E. PROVIDE ALL PIPE WITH STICKER OR PAINTED LABELS WITH FLOW DIRECTION ARROWS. REFER TO DIVISIN 40.
F. SUCTION SIDE PROCESS PIPING SHALL BE PAINTED SHERWIN WILLIAMS 4063 ROBOTIC BLUE, OR EQUAL. DISCHARGE (BOOSTED) PROCESS PIPING SHALL BE PAINTED SHERWIN WILLIAMS 4086 SAFETY BLUE, OR EQUAL.



1 / 30-M302 **PREFABRICATED BUILDING SECTION - PROPOSED PIPING**

1/2" = 1'-0" (22"x24")
1/4" = 1'-0" (11"x17")
0 1 2 4

PLOT DATE: 11/17/2025 12:51:58 PM | Autodesk Docs://07985049 - New Richmond Water Tower #3 and Booster Station Design/07985049 New Richmond Booster_M5CH.rvt

PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: JJY	No	DATE	REVISIONS	BY
	DESIGNED BY: JJY				
	CHECKED BY: ATR				

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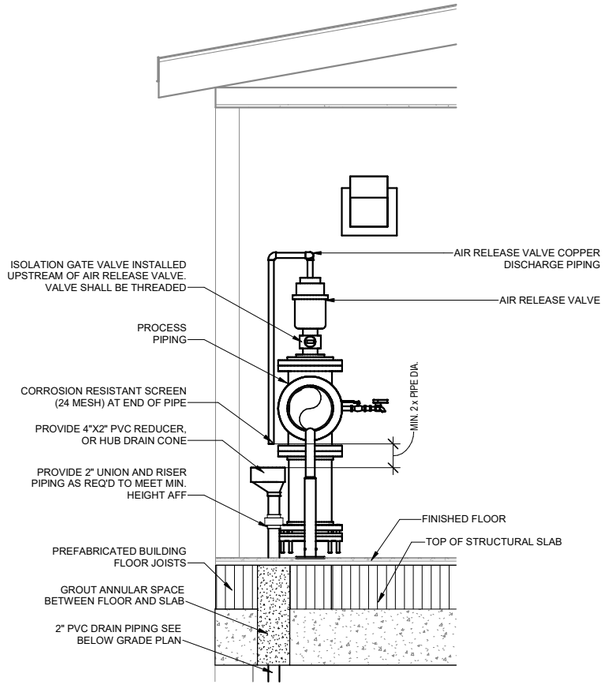
WATER TOWER NO. 3 AND BOOSTER STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

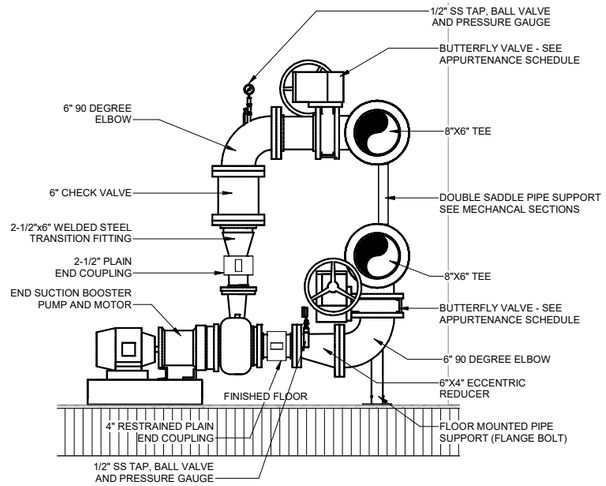
NORTH BOOSTER STATION
PREFABRICATED BUILDING SECTIONS

PROJECT NO. 07985049.2
SHEET 30-M302



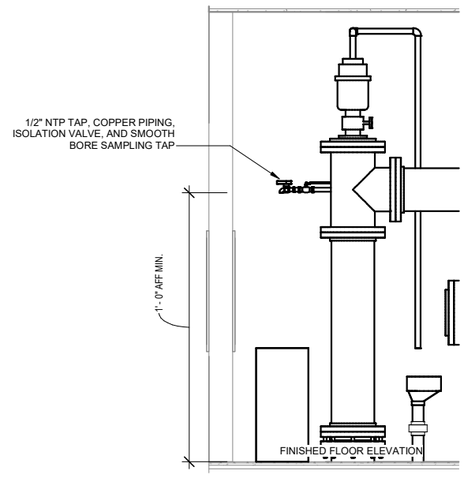
1 HUB DRAIN DETAIL

30-M501 NOT TO SCALE



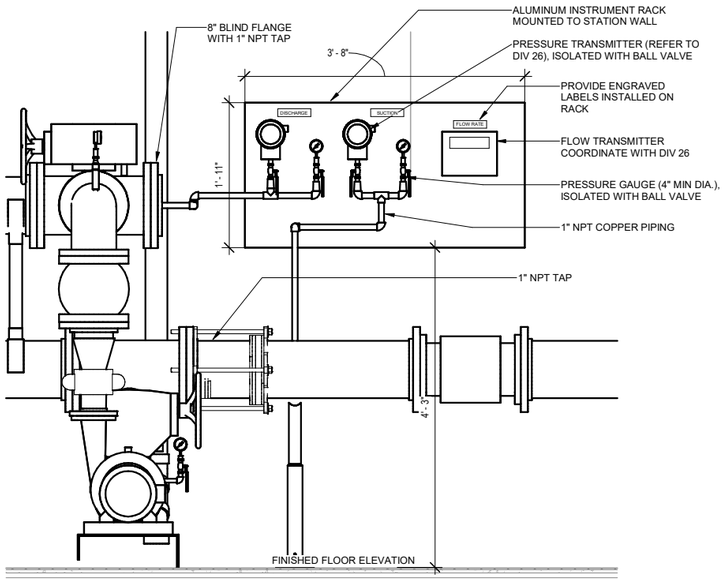
2 TYPICAL PUMP INSTALLATION

30-M501 NOT TO SCALE



3 TYPICAL SAMPLE TAP INSTALLATION

30-M501 NOT TO SCALE



4 INSTRUMENT PANEL DETAIL

30-M501 NOT TO SCALE

PLOT DATE: 11/17/2025 12:51:58 - Autodesk Docs://07985049 - New Richmond Water Tower #3 and Booster Station Design/07985049 New Richmond Booster_MECH.rvt

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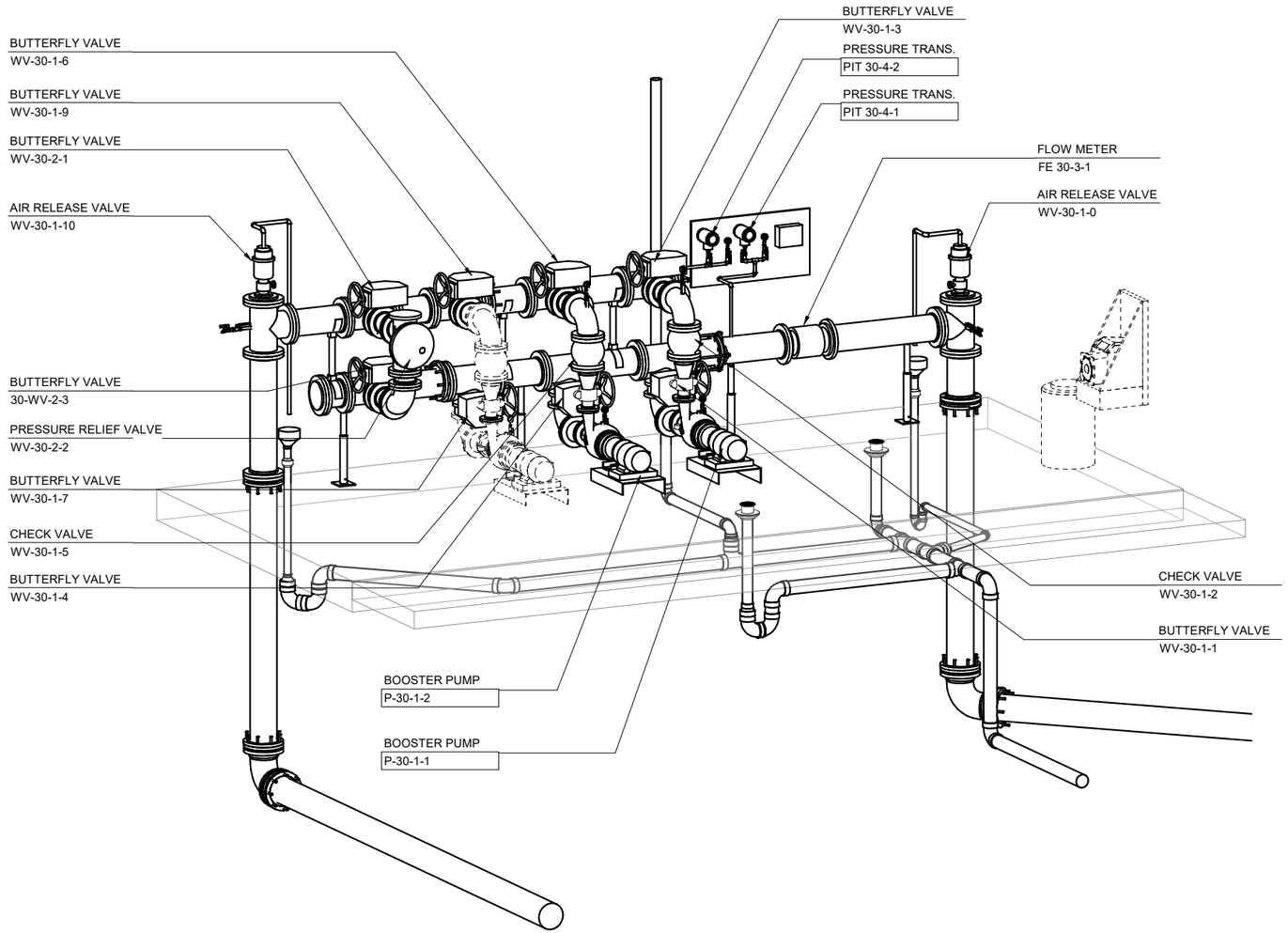
WATER TOWER NO. 3 AND BOOSTER STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION PROCESS DETAILS

PROJECT NO. 07985049.2
SHEET 30-M501

GENERAL NOTES:

A. BOOSTER STATION PROCESS PIPING 3"+ IS SHOWN AS FLANGED CLASS 53 DUCTILE IRON. REFER TO SPECIFICATOINS FOR ALTERNATE PIPING MATERIAL.
B. FLANGED CONNECTION ARE SHOWN ON DRAWINGS, PACKAGED BOOSTER SKID SUPPLIER MAY SUBSTITUTE WELDED CONNECTIONS, AND FITTINGS AND BENDS IN LOCATIONS APPROVED BY ENGINEER AND OWNER.
C. ALL BUTTERFLY VALVES SHALL BE LUGGED STYLE.
D. FUTURE EQUIPMENT AND PIPING SHOWN AS DASHED LINEWORK IN VIEW.
E. PROVIDE ALL PIPE WITH STICKER OR PAINTED LABELS WITH FLOW DIRECTION ARROWS. REFER TO DIVISIN 40.
F. SUCTION SIDE PROCESS PIPING SHALL BE PAINTED SHERWIN WILLIAMS 4063 ROBOTIC BLUE, OR EQUAL. DISCHARGE (BOOSTED) PROCESS PIPING SHALL BE PAINTED SHERWIN WILLIAMS 4086 SAFETY BLUE, OR EQUAL.



1 30-M901 **PROCESS MECHANICAL ISOMETRIC - EQUIPMENT PLAN**
NOT TO SCALE

PUMP/INSTRUMENT SCHEDULE - PROPOSED

NOTE: PUMPSCHEDULE IS PROVIDED AS A GENERAL REFERENCE. CONTRACTOR SHALL VERIFY ANY INFORMATION LISTED AND NOTIFY ENGINEER OF ANY CONFLICTS, DISCREPANCIES, OR MISSING INFORMATION.

TAG ID	PHASE/VOLTAGE	MODEL	COMMENTS
P-30-1-1	3 PH/ 480V	GOULDS MODEL 16BF	SEE DETAIL FOR TYPICAL PUMP INSTALLATION
P-30-1-2	3 PH/ 480V	GOULDS MODEL 16BF	SEE DETAIL FOR TYPICAL PUMP INSTALLATION
PIT 30-4-1	1 PH/ 120V	SEE DIV 26	REFER TO DIVISION 26 SPECIFICATIONS AND DETAILS
PIT 30-4-2	1 PH/ 120V	SEE DIV 26	REFER TO DIVISION 26 SPECIFICATIONS AND DETAILS

APPURTENANCES SCHEDULE - PROPOSED

NOTE: APPURTENANCE SCHEDULE IS PROVIDED AS A GENERAL REFERENCE. APPURTENANCES (NOT SHOWN) MAY BE REQUIRED TO COMPLETE THE PROJECT. CONTRACTOR IS REQUIRED TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. CONTRACTOR SHALL VERIFY ANY INFORMATION LISTED AND NOTIFY ENGINEER OF ANY CONFLICTS, DISCREPANCIES, OR MISSING INFORMATION.

TAG ID	APPURTENANCE	ABBREVIATION	SIZE	COMMENTS
30-WV-2-3	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
FE 30-3-1	FLOW METER	FE	16"ø-16"ø	MOUNT TRANSMITTER TO INSTRUMENT PANEL
WV-30-1-0	AIR RELEASE VALVE	ARV	2"ø-2"ø	PROVIDE ISOLATION BALL VALVE UPSTREAM OF ARV. ROUTE DISCHARGE PIPING TO HUB DRAIN
WV-30-1-1	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-2	CHECK VALVE	CV	6"ø-6"ø	
WV-30-1-3	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-4	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-5	CHECK VALVE	CV	6"ø-6"ø	
WV-30-1-6	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-7	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-9	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-1-10	AIR RELEASE VALVE	ARV	2"ø-2"ø	PROVIDE ISOLATION BALL VALVE UPSTREAM OF ARV. ROUTE DISCHARGE PIPING TO HUB DRAIN
WV-30-2-1	BUTTERFLY VALVE	BFV	6"ø-6"ø	LUGGED STYLE W/ HANDWHEEL OPERATOR
WV-30-2-2	PRESSURE RELIEF VALVE	PRV	6"ø-6"ø	CLA-VAL MODEL 90-01 , REFER TO DIVISION 40 23 23 SPECIFICATIONS

PLOT DATE: 11/17/2025 12:51:59 - Autodesk Docs://07985049 - New Richmond Water Tower #3 and Booster Station Design/07985049 New Richmond Booster_MECH.rvt

PROJECT DATE: NOVEMBER 18, 2025	DRAWN BY: JJY
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	CHECKED BY: ATR

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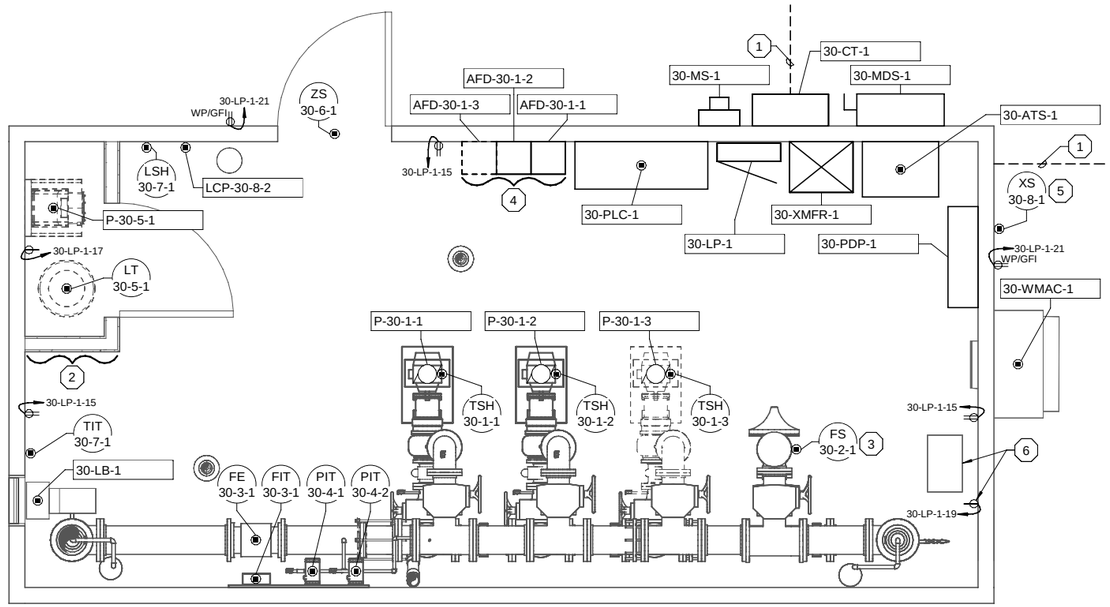
WATER TOWER NO. 3 AND BOOSTER STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

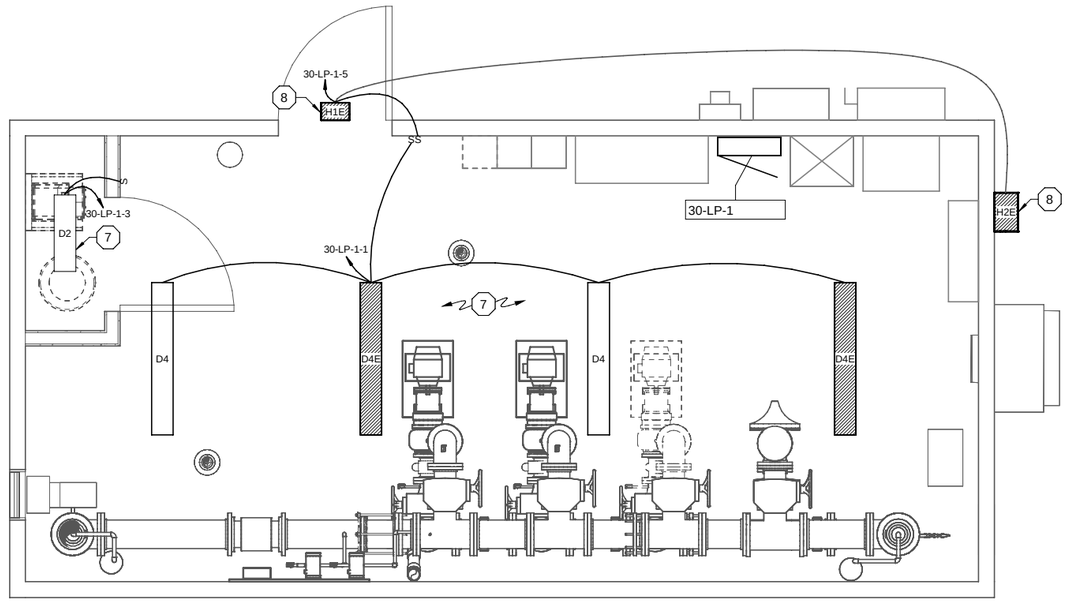
NORTH BOOSTER STATION
PROCESS ISOMETRICS

PROJECT NO. 07985049.2
SHEET 30-M901



POWER AND INSTRUMENTATION PLAN

1/2" = 1'-0" (22" x 34")
1/4" = 1'-0" (11" x 17")
0 1 2 4



LIGHTING PLAN

1/2" = 1'-0" (22" x 34")
1/4" = 1'-0" (11" x 17")
0 1 2 4

GENERAL NOTES

A. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE ENGINEER BEFORE CONTINUING WITH CONSTRUCTION.

B. ALL ELECTRICAL INSTALLATIONS SHALL MEET NEC REQUIREMENTS FOR MINIMUM WORKING SPACE IN FRONT OF EQUIPMENT AND DEDICATED EQUIPMENT SPACE ABOVE SWITCHBOARDS, SWITCHGEAR, PANELBOARDS AND MOTOR CONTROL CENTERS. COORDINATE LAYOUT OF ALL ELECTRICAL EQUIPMENT PRIOR TO INSTALLATION.

C. 120V HOMERUN WIRING SHALL BE A MINIMUM OF (2) #12 & #12G OR AS NOTED OTHERWISE. SIZE FOR VOLTAGE DROP.

D. CONDUIT SHALL BE 3/4" MINIMUM OR AS NOTED OTHERWISE.

E. CONDUIT WALL AND FLOOR PENETRATIONS PER DETAILS 2605-303 AND 2605-305.

F. SEE ONE-LINE DIAGRAMS, PANEL SCHEDULES, AND ELECTRICAL INSTALLATION AND WIRING SCHEDULES FOR WIRING OF ALL FIELD INSTRUMENTATION AND EQUIPMENT.

G. INSTALL FIELD INSTRUMENTATION AND EQIUPMENT PER DETAIL REFERENCED IN ELECTRICAL INSTALLATION AND WIRING SCHEDULES.

H. SEE SCADA SYSTEM NETWORK ARCHITECTURE FOR COMMUNICATIONS CABLING REQUIREMENTS.

I. PROVIDE RACEWAY FOR ALL HVAC EQUIPMENT. PROVIDE WIRING FOR LINE VOLTAGE AND ABOVE POWER AND CONTROL WIRING.

J. DISCONNECTS RELATED TO HVAC AND PLUMBING CONNECTIONS SHALL BE FURNISHED BY EQUIPMENT SUPPLIER AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

K. ALL INTERIOR RECEPTACLES TO BE MOUNTED 22" ABOVE FINSIHED FLOOR TO CENTERLINE, EXCEPT WHERE NOTED OTHERWISE.

L. ALL EXTERIOR RECEPTACLES TO BE GFCI WEATHERPROOF "WHILE IN USE" TYPE COVER MOUNTED AT 30" ABOVE FINISHED GRADE TO CENTERLINE.

M. MOUNT LIGHT SWITCHES AT 42" ABOVE FINSIHED FLOOR TO CENTERLINE. ALL SWITCHES IN CLASSIFIED LOCATIONS SHALL BE EXPLOSION PROOF.

N. SHADED FIXTURE (▨) OR FIXTURE TAG SUFFIXED WITH "E" INDICATES EMERGENCY FIXTURE. REFER TO FIXTURE SCHEDULE.

O. ROOM/AREA ATMOSPHERE REQUIREMENTS, REFER TO SECTION 26 05 00:
   a. NORTH B.S. SITE EXTERIOR: GENERAL, WET, NEW CONSTRUCTION
   b. NORTH B.S. PUMP ROOM: GENERAL, DAMP, NEW CONSTRUCTION
   c. NORTH B.S. CHEMICAL CLOSET: CORROSIVE, DAMP, NEW CONSTRUCTION

KEY NOTES ⓧ

1 APPROXIMATE LOCATION OF NEW DIRECT BURIED CONDUITS. REFER TO ELECTRICAL SITE PLAN FOR CONSTRUCTION DETAILS AND CONDUIT REQUIREMENTS.

2 WALL SPACE RESERVED FOR FUTURE CHLORINE ANALYZER.

3 LOCATE FLOW SWITCH IN THE ELBOW OF THE PROCESS PIPING ON THE OUTLET SIDE OF THE PRESSURE REDUCING VALVE. FLOW SWITCH SHALL BE CONFIGURED TO TRIP ONLY WHEN THERE IS FLOW THROUGH THE PRESSURE REDUCING VALVE AND SHALL NOT HAVE FALSE READINGS.

4 WALL MOUNTED ADJUSTABLE FREQUENCY DRIVE AS SPECIFIED. INSTALL PER DETAIL 2690-800 AND PER MANUFACTURER REQUIREMENTS. PROVIDE ENOUGH REMAINING WALL SPACE TO ACCOMODATE THE FUTURE INSTALLATION OF A THIRD DRIVE.

5 PROVIDE CLEAR, HINGED COVER FOR GENERATOR E-STOP PUSHBUTTON. GENERATOR E-STOP ENCLOSURE SHALL BE RATED NEMA 4X.

6 RECEPTACLE DEDICATED TO DEHUMIDIFIER. COORDINATE LOCATION WITH OWNER.

7 MOUNT FIXTURES IN THIS ROOM TIGHT TO CEILING.

8 MOUNT FIXTURE 7'-2" ABOVE FINISHED FLOOR ELEVATION TO BOTTOM OF FIXTURE.

PLOT DATE: 11/18/2025 5:06:35 PM
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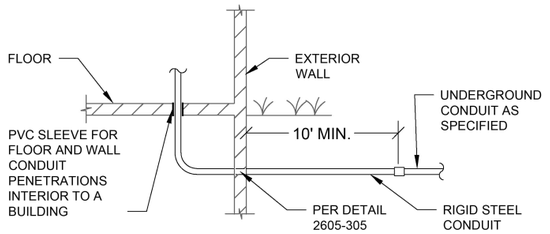
BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

NORTH BOOSTER STATION ELECTRICAL PLANS

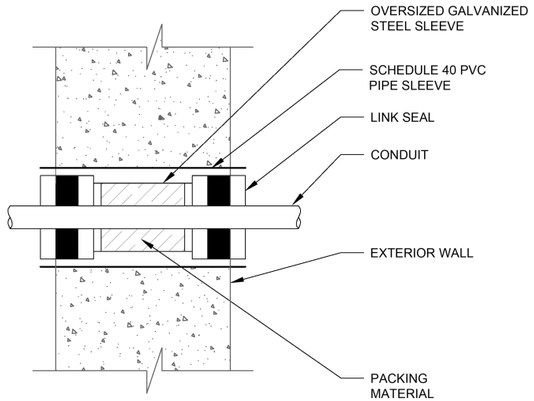
PROJECT NO. 07985049.2
SHEET 30-E101



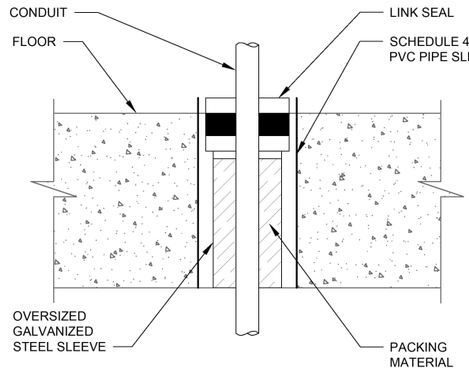
CONDUIT INSTALLATION, INTERIOR WALL AND FLOOR PENETRATIONS AND EXTERIOR DIRECT BURIED INTO A NEW SPACE

NTS

2605-303



FOUNDATION WALL PENETRATION

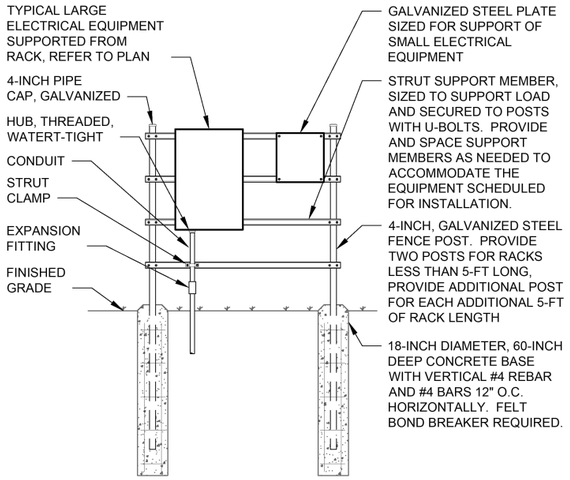


FLOOR PENETRATION

CONDUIT WALL AND FLOOR PENETRATIONS WHERE WATER IS PRESENT

NTS

2605-305



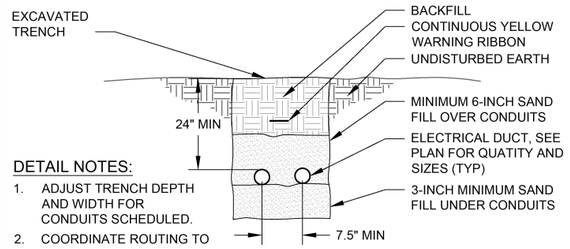
DETAIL NOTES:

1. REFER TO PLAN, FOR LOCATION, ORIENTATION, AND IDENTIFICATION OF EQUIPMENT SCHEDULED FOR INSTALLATION ON RACK..
2. CONTRACTOR SHALL VERIFY THAT SELECTED COMPONENTS ARE SUITABLE FOR THE WEIGHT OF THE MOUNTED EQUIPMENT.
3. SUPPORT MEMBERS SHALL BE CONSTRUCTED OF GALVANIZED OR STAINLESS STEEL AS SPECIFIED. ALL HARDWARE SHALL BE CONSTRUCTED OF STAINLESS STEEL.

SUPPORT HARDWARE INSTALLATION EXTERIOR FREE-STANDING RACK

NTS

2605-400



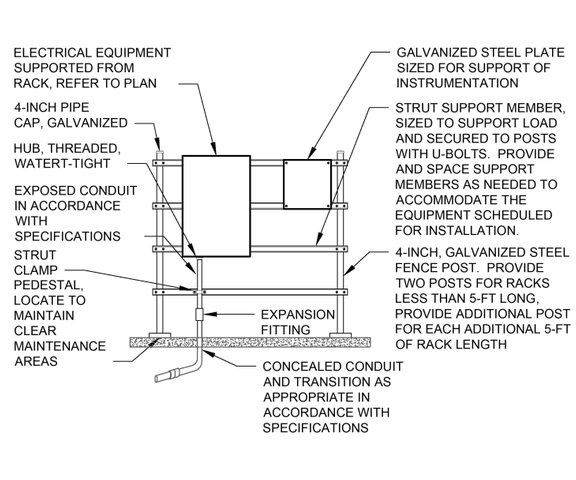
DETAIL NOTES:

1. ADJUST TRENCH DEPTH AND WIDTH FOR CONDUITS SCHEDULED.
2. COORDINATE ROUTING TO AVOID CONFLICTS WITH MECHANICAL PIPING.

RACEWAY INSTALLATION UNDERGROUND, DIRECT-BURIED

NTS

2605-310



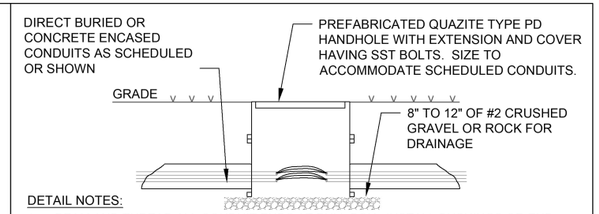
DETAIL NOTES:

1. REFER TO PLAN, FOR LOCATION, ORIENTATION, AND IDENTIFICATION OF EQUIPMENT SCHEDULED FOR INSTALLATION ON RACK..
2. CONTRACTOR SHALL VERIFY THAT SELECTED COMPONENTS ARE SUITABLE FOR THE WEIGHT OF THE MOUNTED EQUIPMENT.
3. SUPPORT MEMBERS SHALL BE CONSTRUCTED OF GALVANIZED OR STAINLESS STEEL AS SPECIFIED. ALL HARDWARE SHALL BE CONSTRUCTED OF STAINLESS STEEL.

SUPPORT HARDWARE INSTALLATION INTERIOR FREE-STANDING RACK

NTS

2605-401



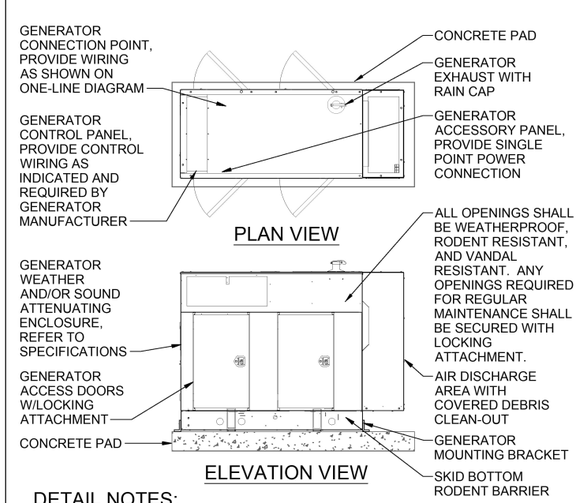
DETAIL NOTES:

1. REAM AND THREAD ALL CONDUIT ENDS AT PULL BOX. INSTALL BUSHINGS OR END BELLS ON METALLIC/NON-METALLIC CONDUITS RESPECTIVELY PRIOR TO PULLING IN NEW WIRE. SEAL CONDUITS WITH DUCT-SEAL OR EQUAL.
2. DO NOT MAKE SPLICES WITHOUT ENGINEER APPROVAL. SPLICE KITS WHEN ALLOWED SHALL BE INSULATING, MOISTURE-SEALING ELECTRICAL SPLICE-KITS SUITABLE FOR USE WITH CABLE AND WIRE TYPES INSTALLED, "SCOTCH-CAST" OR EQUAL.

EXTERIOR HANDHOLE INSTALLATION

NTS

2605-550



PLAN VIEW

ELEVATION VIEW

DETAIL NOTES:

1. INSTALL GENERATOR PER MANUFACTURER'S INSTRUCTIONS, IN ACCORDANCE WITH ALL CODES, AND ON CONCRETE ISOLATION PAD, REFER TO ELECTRICAL/ARCHITECTURAL/STRUCTURAL/CIVIL PLANS FOR DIMENSIONS.
2. REFER TO SITE PLAN FOR LOCATION AND ORIENTATION.
3. MAINTAIN 3-FT MINIMUM EQUIPMENT ACCESS AND MAINTENANCE CLEARANCE ON ALL SIDES OF GENERATOR.

PERMANENT GENERATOR EXTERIOR INSTALLATION

NTS

2632-301

PLOT DATE: 11/18/2025 5:06:37 PM , Autodesk Docs://07985049 - New Richmond Water Tower #3 and Booster Station Design/07985049_ELECTRICAL MODEL_R24.rvt

PROJECT DATE: NOVEMBER 18, 2025			No	DATE	REVISIONS	BY
	DRAWN BY:	AMS				
	DESIGNED BY:	AMS				
	CHECKED BY:	LET				

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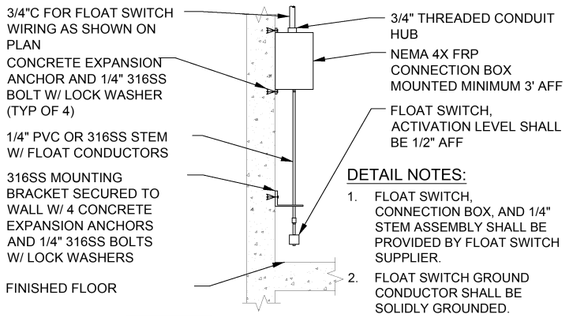
BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

ELECTRICAL DETAILS

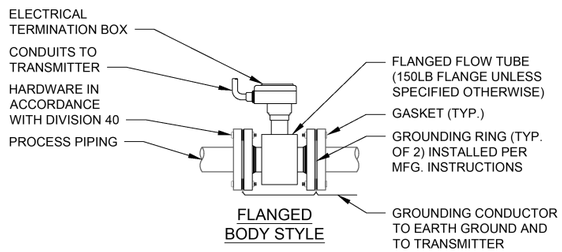
PROJECT NO. 07985049.2
SHEET 99-E501



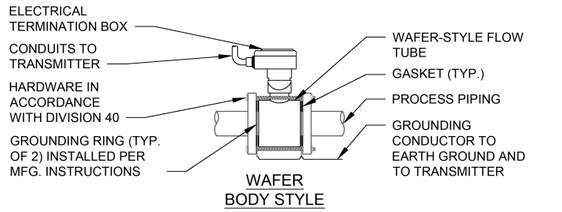
DETAIL NOTES:

1. FLOAT SWITCH, CONNECTION BOX, AND 1/4" STEM ASSEMBLY SHALL BE PROVIDED BY FLOAT SWITCH SUPPLIER.
2. FLOAT SWITCH GROUND CONDUCTOR SHALL BE SOLIDLY GROUNDED.

2690-080 FLOAT SWITCH INSTALLATION DRY WELL
NTS



FLANGED BODY STYLE



WAFER BODY STYLE

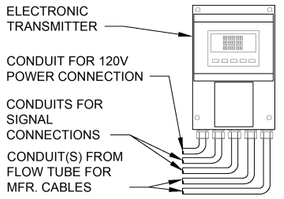
DETAIL NOTES:

1. INSTALL FLOW METER TO MAINTAIN STRAIGHT RUN OF 5 UPSTREAM PIPE DIAMETERS AND 2 DOWNSTREAM PIPE DIAMETERS, MINIMUM.
2. INSTALL CONDUIT(S) BETWEEN FLOW TUBE AND TRANSMITTER IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
3. ALL CABLES SHALL BE INSTALLED IN CONDUIT.
4. INSULATED GROUND CONDUCTOR NEED NOT BE INSTALLED IN CONDUIT.
5. GROUNDING SYSTEM SHALL PROVIDE LESS THAN 0.5 OHM, 100MV WHEN TESTED WITH STANDARD METHODS.

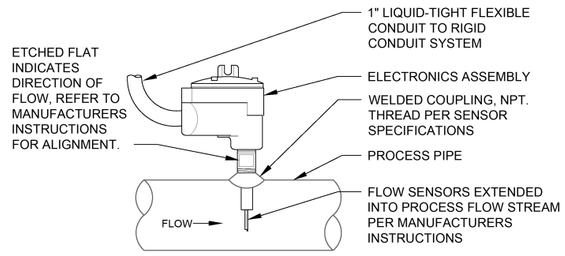
2690-100 INSTRUMENT INSTALLATION, ELECTROMAGNETIC FLOW SENSOR
NTS

DETAIL NOTES:

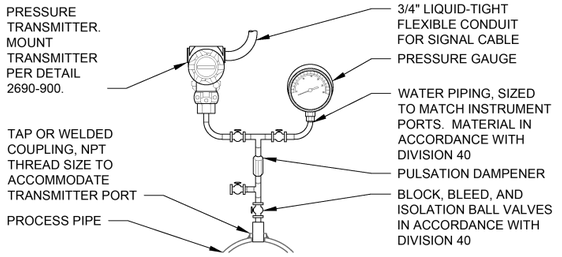
1. INSTALL CONDUIT(S) BETWEEN FLOW TUBE AND TRANSMITTER. CONDUIT(S) SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND MANUFACTURER'S WRITTEN INSTRUCTIONS.
2. ALL CABLES SHALL BE INSTALLED IN CONDUIT.
3. MOUNT TRANSMITTER ON WALL PER DETAIL 2690-900.
4. DISCRETE AND ANALOG SIGNAL CIRCUITS SHALL BE RUN IN SEPARATE CONDUITS.



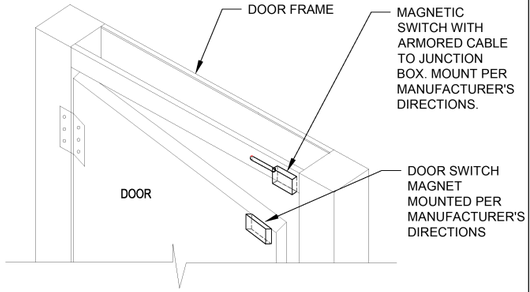
2690-101 INSTRUMENT INSTALLATION, ELECTRO-MAGNETIC REMOTE FLOW TRANSMITTER
NTS



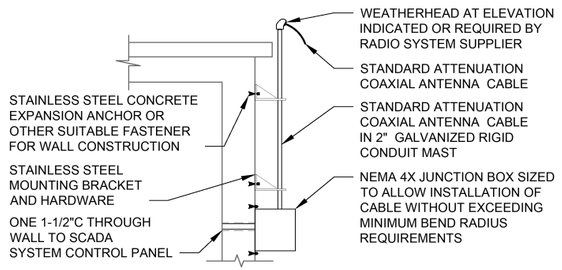
2690-151 INSTRUMENT INSTALLATION, THERMAL DISPERSION FLOW SWITCH
NTS



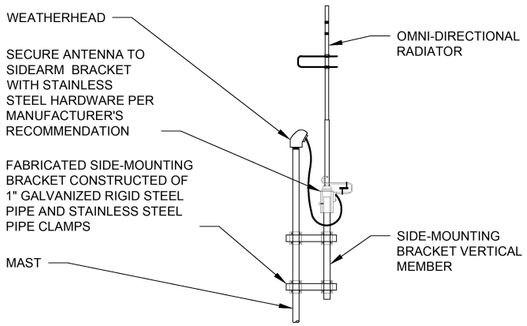
2690-301 INSTRUMENT INSTALLATION, PRESSURE TRANSMITTER/GAUGE
NTS



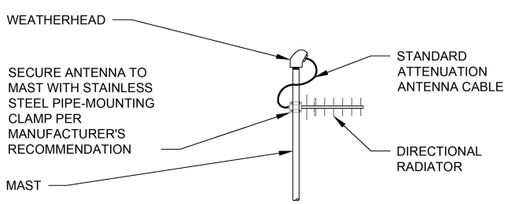
2690-601 INTRUSION ALARM DOOR SWITCH
NTS



2690-700 RF ANTENNA INSTALLATION, BUILDING SUPPORTED
NTS

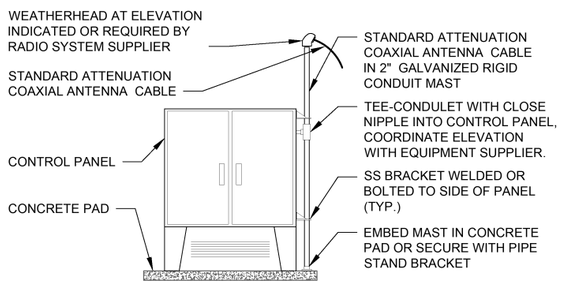


OMNI-DIRECTIONAL RADIATOR

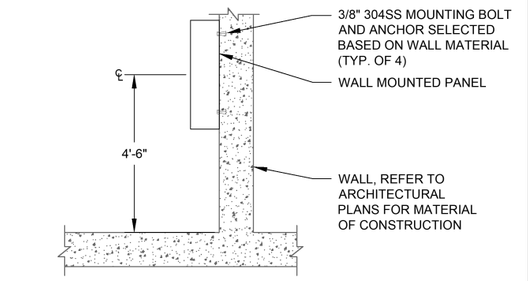


DIRECTIONAL RADIATOR

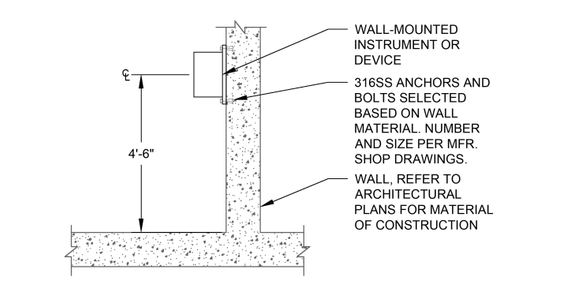
2690-701 RF RADIATOR INSTALLATION, MAST MOUNTED
NTS



2690-702 RF ANTENNA MOUNTING, CONTROL PANEL SUPPORTED
NTS



2690-800 CONTROL PANEL INSTALLATION WALL-MOUNTED
NTS



2690-900 CASE-MOUNTED DEVICE WALL-MOUNT INSTALLATION
NTS

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

ELECTRICAL DETAILS

PROJECT NO. 07985049.2
SHEET 99-E502

PANEL SCHEDULE - 20-PDP-1

TYPE: SQUARE D - NQ
MOUNT: SURFACE
ISOLATED GROUND BUS: Yes
GROUND BUS: Yes
LOCATION: PRV STATION STR-20
VOLTAGE: 120/240V 1P, 3W
BUS AMPACITY: 100 A
MAIN CIRCUIT BKR: 100 A
SUB FEED LUGS: No
AMPS AIC: 10 KAIC

CKT. NO.	TRIP/P	DESCRIPTION	A		B		DESCRIPTION	TRIP/P	CKT. NO.
1	20 A/1	Convenience Receptacle	1.5 A	0.0 A			20-PLC-1	20 A/1	2
3	20 A/2	20-UH-1			0.8 A	2.5 A	FIT-20-2-1	20 A/1	4
5			0.8 A	0.0 A			Spare	20 A/1	6
7	20 A/1	Spare			0.0 A	0.0 A	Spare	20 A/1	8
9	/1	Space	--	--			Space	/1	10
11	/1	Space			--	--	Space	/1	12
			280 VA		400 VA				
			2.3 A		3.3 A				

NOTES:
SERVICE ENTRANCE RATED PANEL. 20-PDP-1 SHALL BE INTEGRAL TO 20-PLC-1.

Load Classification	Connected Load	Demand Factor	Estimated...	Panel Totals	
Receptacles	180 VA	100.00%	180 VA		
HVAC	200 VA	100.00%	200 VA	**Total Conn. Load:**	680 VA
Process Equipment	300 VA	100.00%	300 VA	**Total Est. Demand:**	680 VA
				Total Conn. Current:	2.8 A
				Total Est. Demand...	2.8 A

PANEL SCHEDULE - 30-PDP-1

TYPE: SQUARE D - NF
MOUNT: SURFACE
ISOLATED GROUND BUS: No
GROUND BUS: Yes
LOCATION: NORTH BOOSTER STATIO...
VOLTAGE: 277/480V 3P, 4W
BUS AMPACITY: 400 A
MAIN CIRCUIT BKR: 400A
SUB FEED LUGS: No
AMPS AIC: 30 KAIC

CKT. NO.	TRIP/P	DESCRIPTION	A		B		C		DESCRIPTION	TRIP/P	CKT. NO.
1			3.7 A	34.0 A							2
3	90 A/3	30-XMFR-1			7.8 A	34.0 A			AFD-30-1-1	60 A/3	4
5							9.7 A	34.0 A			6
7			16.0 A	34.0 A							8
9	20 A/3	30-WMAC-1			16.0 A	34.0 A			AFD-30-1-2	60 A/3	10
11							16.0 A	34.0 A			12
13			0.0 A	0.0 A							14
15	20 A/3	Spare			0.0 A	0.0 A			Spare (Future AFD-30-1-3)	60 A/3	16
17							0.0 A	0.0 A			18
19			--	--							20
21	/3	Space			--	--			Space	/3	22
23							--	--			24
25			--	--							26
27	/3	Space			--	--			Space	/3	28
29							--	--			30
			24297 VA		25279 VA		25815 VA				
			87.7 A		91.8 A		93.7 A				

NOTES:

Load Classification	Connected Load	Demand Factor	Estimated...	Panel Totals	
Lighting	200 VA	125.00%	250 VA		
Receptacles	1680 VA	100.00%	1680 VA	**Total Conn. Load:**	75391 VA
Power	2808 VA	100.00%	2808 VA	**Total Est. Demand:**	75441 VA
HVAC	13377 VA	100.00%	13377 VA	**Total Conn. Current:**	90.7 A
Process Equipment	57327 VA	100.00%	57327 VA	**Total Est. Demand...**	90.7 A

PANEL SCHEDULE - 30-LP-1

TYPE: SQUARE D - NQ
MOUNT: SURFACE
ISOLATED GROUND BUS: No
GROUND BUS: Yes
LOCATION: NORTH BOOSTER STATIO...
VOLTAGE: 120/208V 3P, 4W
BUS AMPACITY: 100 A
MAIN CIRCUIT BKR: 100 A
SUB FEED LUGS: No
AMPS AIC: 10 KAIC

CKT. NO.	TRIP/P	DESCRIPTION	A		B		C		DESCRIPTION	TRIP/P	CKT. NO.
1	20 A/1	Pump Room Lights	1.3 A	4.0 A					30-PLC-1	20 A/1	2
3	20 A/1	Closet Light			0.2 A	2.5 A			FIT-30-3-1	20 A/1	4
5	20 A/1	Exterior Lights					0.2 A	0.1 A	FS-30-2-1	20 A/1	6
7	20 A/1	Spare	0.0 A	0.0 A					Spare	20 A/1	8
9	20 A/1	Spare			0.0 A	0.0 A			Spare	20 A/1	10
11	20 A/1	Spare					0.0 A	0.0 A	Spare	20 A/1	12
13	20 A/1	Spare	0.0 A	0.0 A					Spare	20 A/1	14
15	20 A/1	Interior Receptacles			8.0 A	0.6 A			30-LB-1	20 A/1	16
17	20 A/1	Chem. Pump Dedicated Rec.					1.5 A	6.0 A	* Gen. Battery Charger	20 A/1	18
19	20 A/1	Dehumidifier Dedicated Rec.	1.5 A	1.7 A					* Gen. Battery Heater	20 A/1	20
21	20 A/1	Exterior Receptacles			3.0 A	0.8 A			* Gen. Alternator Heater	20 A/1	22
23	20 A/1	Spare					0.0 A	12.5 A	* Gen. Coolant Heater	20 A/1	24
25	20 A/1	Spare	0.0 A	0.1 A					* Gen. Louvers	20 A/1	26
27	20 A/1	Spare			0.0 A	1.5 A			* Gen. Convenience Rec.	20 A/1	28
29	20 A/1	Spare					0.0 A	0.8 A	* Gen. Enclosure Light	20 A/1	30
			1019 VA		2001 VA		2536 VA				
			8.5 A		17.9 A		22.4 A				

NOTES:
* COORDINATE EXACT GENERATOR AUXILIARY COMPONENT CIRCUIT BREAKER AND WIRING REQUIREMENTS WITH GENERATOR SUBMITTAL.

Load Classification	Connected Load	Demand Factor	Estimated...	Panel Totals	
Lighting	200 VA	125.00%	250 VA		
Receptacles	1680 VA	100.00%	1680 VA	**Total Conn. Load:**	5555 VA
Power	2808 VA	100.00%	2808 VA	**Total Est. Demand:**	5605 VA
HVAC	75 VA	100.00%	75 VA	**Total Conn. Current:**	15.4 A
Process Equipment	793 VA	100.00%	793 VA	**Total Est. Demand...**	15.6 A

FIXTURE SCHEDULE

ID	QTY	DESCRIPTION	WATTS	LAMP TYPE	LAMP QTY.	MANUFACTURER	CATALOG NUMBER	NOTES
D2	1	2' SURFACE ENCLOSED INDUSTRIAL - WET LABEL	39 W	LED-4000K	W/FIX	LITHONIA	FEM L24 6000LM LPAFL WD MVOLT 40K 80CRI	
D4	2	4' SURFACE ENCLOSED INDUSTRIAL - WET LABEL	38 W	LED-4000K	W/FIX	LITHONIA	FEM L48 6000LM LPAFL WD MVOLT 40K 80CRI	
D4E	2	4' SURFACE ENCLOSED INDUSTRIAL - WET LABEL, EMERGENCY BATTERY PACK	38 W	LED-4000K	W/FIX	LITHONIA	FEM L48 6000LM LPAFL WD MVOLT 40K 80CRI E10WMCP	
H1E	1	EXTERIOR LED WALL PACK, DOWNWARD THROW, EMERGENCY BATTERY PACK	7 W	LED-5000K	W/FIX	LITHONIA	WDGE1 LED P0 50K 80CRI VF MVOLT SRM E4WH DDBTXD	1
H2E	1	EXTERIOR LED WALL PACK, FORWARD THROW, EMERGENCY BATTERY PACK	16 W	LED-5000K	W/FIX	LITHONIA	TWR1 LED ALO SWW2 UVOLT PE DDBTXD E7WC	1,2

GENERAL NOTES

A. ALL FIXTURES SHALL BE UNIVERSAL VOLTAGE ULNESS OTHERWISE INDICATED.
B. ALL LED FIXTURES SHALL BE DESIGNLIGHTS$_{TM}$ CONSORTIUM QUALIFIED.
C. FIXTURES BY MANUFACTURERS OTHER THAN THOSE SHOWN IN THE SCHEDULE SHALL BE CONSIDERED EQUAL PROVIDED THEY ARE OF SIMILAR QUALITY OF CONSTRUCTION AND HAVE ALL FEATURES, OPTIONS, AND ACCESSORIES AS THE SCHEDULED FIXTURE.

FIXTURE NOTES

1. TENATIVE FIXTURE COLOR SELECTION IS BRONZE. FINAL FIXTURE COLOR FROM STANDARD COLORS TO BE SELECTED BY THE ARCHITECT AND OWNER.
2. ADJUST DEFAULT OUT OF BOX SETTINGS TO LOW LUMEN OUTPUT AND 5000K COLOR SETTINGS. STANDARD DAWN-TO-DUSK OPERATION SHALL BE DISABLED.

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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

PANEL & FIXTURE SCHEDULES

PROJECT NO. 07985049.2
SHEET 99-E601

PRV & BOOSTER STATION - EQUIPMENT ELECTRICAL INSTALLATION AND WIRING SCHEDULE

TAG NUMBER	DESCRIPTION	FIRST SIGNAL/CONTROL HOMERUN			SECOND SIGNAL/CONTROL HOMERUN			POWER HOMERUN			DETAIL	NOTES
		DESTINATION	WIRING TYPE	WIRING	DESTINATION	WIRING TYPE	WIRING	PANEL	CIRCUIT RATING	CIRCUIT WIRING		
STR-20												
PRV STATION												
20-UH-1	PRV STATION UNIT HEATER							20-PDP-1	240 V - 20 A / 2 P	2-#12, 1-#12, 1-#12		2
STR-30												
NORTH BOOSTER STATION												
30-WMAC-1	NORTH BOOSTER STATION WALL-MOUNT AIR CONDITIONER							30-PDP-1	480 V - 20 A / 3 P	3-#12, 1-#12, 1-#12		2
30-LB-1	NORTH BOOSTER STATION LOUVERED BLOWER							30-LP-1	120 V - 20 A / 1 P	1-#12, 1-#12, 1-#12		2
P-30-1-1	BOOSTER PUMP NO.1							AFD-30-1-1	480 V - 20 A / 3 P	3-#12, 1-#12, 1-#12		2,7
P-30-1-2	BOOSTER PUMP NO.2							AFD-30-1-2	480 V - 20 A / 3 P	3-#12, 1-#12, 1-#12		2,7
P-30-1-3	BOOSTER PUMP NO.3											6
P-30-5-1	HYPOCHLORITE CHEMICAL PUMP											6

PRV & BOOSTER STATION - PROCESS INSTRUMENTATION ELECTRICAL INSTALLATION AND WIRING SCHEDULE

TAG NUMBER	DESCRIPTION	FIRST SIGNAL/CONTROL HOMERUN			SECOND SIGNAL/CONTROL HOMERUN			POWER HOMERUN			DETAIL	NOTES
		DESTINATION	WIRING TYPE	WIRING	DESTINATION	WIRING TYPE	WIRING	PANEL	CIRCUIT RATING	CIRCUIT WIRING		
STR-20												
PRESSURE REDUCING VALVE STATION												
20-PLC-1	PRV STATION PLC CONTROL PANEL							20-PDP-1	120 V - 20 A / 1 P	1-#12, 1-#12, 1-#12	2605-401	1,4,5
FE-20-2-1	PRV STATION POTABLE WATER FLOW METER	FIT-20-2-1	MANUFACTURERS CABLE	M1							2690-100	2
FIT-20-2-1	PRV STATION POTABLE WATER FLOW TRANSMITTER	20-PLC-1	24VDC ANALOG SIGNAL	A2	20-PLC-1	24VDC PULSE SIGNAL	A1	20-PDP-1	120 V - 20 A / 1 P	1-#12, 1-#12, 1-#12	2690-101	3
PIT-20-3-1	PRV STATION HPZ PRESSURE TRANSMITTER	20-PLC-1	24VDC ANALOG SIGNAL	A1							2690-301	1
PIT-20-3-2	PRV STATION LPZ PRESSURE TRANSMITTER	20-PLC-1	24VDC ANALOG SIGNAL	A1							2690-301	1
TSL-20-4-1	PRV STATION ENCLOSURE FREEZE STATE	20-PLC-1	24VDC DISCRETE SIGNAL	D2								1,8
STR-30												
NORTH BOOSTER STATION												
30-PLC-1	NORTH BOOSTER STATION PLC CONTROL PANEL							30-LP-1	120 V - 20 A / 1 P	1-#12, 1-#12, 1-#12	2690-800	1,4,5
30-ATS-1	NORTH BOOSTER STATION AUTOMATIC TRANSFER SWITCH	30-PLC-1	24VDC DISCRETE SIGNAL	D10	LCP-30-8-1	24VDC DISCRETE SIGNAL	D2				2690-800	1
LCP-30-8-1	NORTH BOOSTER STATION STANDBY GENERATOR CONTROL PANEL	30-PLC-1	24VDC DISCRETE SIGNAL	D4							2632-301	1
LCP-30-8-2	NORTH BOOSTER STATION STANDBY GENERATOR REMOTE ANNUNCIATOR	LCP-30-8-1	MANUFACTURERS CABLE	M1							2690-900	1
XS-30-8-1	NORTH BOOSTER STATION STANDBY GENERATOR REMOTE E-STOP	LCP-30-8-1	24VDC DISCRETE SIGNAL	D2							2690-900	1
TIT-30-7-1	NORTH BOOSTER STATION TEMPERATURE TRANSMITTER	30-PLC-1	24VDC ANALOG SIGNAL	A1							2690-900	1
LSH-30-7-1	NORTH BOOSTER STATION ROOM FLOOD SWITCH	30-PLC-1	24VDC DISCRETE SIGNAL	D2							2690-080	1
ZS-30-6-1	NORTH BOOSTER STATION INTRUSION DOOR SWITCH	30-PLC-1	24VDC DISCRETE SIGNAL	D2							2690-601	1
TSH-30-1-3	NORTH BOOSTER STATION BOOSTER PUMP NO.3 MOTOR HIGH TEMPERATURE SWITCH	AFD-30-1-3	24VDC DISCRETE SIGNAL	D2								6
TSH-30-1-2	NORTH BOOSTER STATION BOOSTER PUMP NO.2 MOTOR HIGH TEMPERATURE SWITCH	AFD-30-1-2	24VDC DISCRETE SIGNAL	D2								2
TSH-30-1-1	NORTH BOOSTER STATION BOOSTER PUMP NO.1 MOTOR HIGH TEMPERATURE SWITCH	AFD-30-1-1	24VDC DISCRETE SIGNAL	D2								2
FE-30-3-1	NORTH BOOSTER STATION POTABLE WATER FLOW METER	FIT-30-3-1	MANUFACTURERS CABLE	M1							2690-100	2
FIT-30-3-1	NORTH BOOSTER STATION POTABLE WATER FLOW TRANSMITTER	30-PLC-1	24VDC ANALOG SIGNAL	A1	30-PLC-1	24VDC PULSE SIGNAL	A1	30-LP-1	120 V - 20 A / 1 P	1-#12, 1-#12, 1-#12	2690-101	3
PIT-30-4-1	NORTH BOOSTER STATION LPZ PRESSURE TRANSMITTER	30-PLC-1	24VDC ANALOG SIGNAL	A1							2690-301	1
PIT-30-4-2	NORTH BOOSTER STATION HPZ PRESSURE TRANSMITTER	30-PLC-1	24VDC ANALOG SIGNAL	A1							2690-301	1
FS-30-2-1	NORTH BOOSTER STATION PRESSURE REDUCING VALVE FLOW SWITCH	30-PLC-1	24VDC DISCRETE SIGNAL	D2				30-LP-1	120 V - 20 A / 1 P	1-#12, 1-#12, 1-#12	2690-151	1
LT-30-5-1	NORTH BOOSTER STATION HYPOCHLORITE STORAGE TANK T-30-6-1 LEVEL SENSOR											6

PRV & BOOSTER STATION - PROCESS VALVE ELECTRICAL INSTALLATION AND WIRING SCHEDULE

TAG NUMBER	DESCRIPTION	FIRST SIGNAL/CONTROL HOMERUN			SECOND SIGNAL/CONTROL HOMERUN			POWER HOMERUN			DETAIL	NOTES
		DESTINATION	WIRING TYPE	WIRING	DESTINATION	WIRING TYPE	WIRING	PANEL	CIRCUIT RATING	CIRCUIT WIRING		
STR-20												
PRV STATION												
WCV-20-1-1	PRV STATION PRESSURE REDUCING VALVE	XVC-20-1-1	24VDC DISCRETE SIGNAL	D4	XVC-20-1-1	24VDC ANALOG SIGNAL	A1					2,4

ELECTRICAL INSTALLATION AND WIRING SCHEDULE

1. EQUIPMENT PROVIDED BY DIVISION 26.
2. EQUIPMENT FURNISHED AND INSTALLED UNDER ANOTHER DIVISION OF THE SPECIFICATIONS BUT WIRED UNDER DIVISION 26.
3. EQUIPMENT FURNISHED UNDER ANOTHER DIVISION OF THE SPECIFICATIONS BUT INSTALLED AND WIRED UNDER DIVISION 26.
4. REFER TO SCADA SYSTEM NETWORK ARCHITECTURE DRAWINGS FOR COMMUNICATION CABLING REQUIREMENTS.
5. REFER TO ONE-LINE DIAGRAM FOR POWER WIRING REQUIREMENTS.
6. FUTURE EQUIPMENT OR INSTRUMENTATION TO BE PROVIDED UNDER A FUTURE CONTRACT.
7. MINIMUM SIZE CONDUCTORS AND CONDUIT ARE IDENTIFIED IN THE SCHEDULE FOR THE MOTOR. CONTRACTOR SHALL PROVIDE SHIELDED DRIVE CABLE (THREE CONDUCTOR AND GROUND) FOR THE MOTOR AND SHALL ADJUST CONDUIT SIZE TO ACCOMMODATE THE CABLE. FOR BIDDING PURPOSES ASSUME CONDUIT SIZE WILL INCREASE ONE STANDARD TRADE SIZE.
8. MOUNT FROM BOTTOM OR FACE OF CONTROL PANEL. OTHERWISE FIELD COORDINATE LOCATION.

PLOT DATE: 11/19/2025 5:06:40 PM , Autodesk Docs://07985049 - New Richmond Water Tower #3 and Booster Station Design/07985049_ELECTRICAL MODEL_R24.rvt

PROJECT DATE: NOVEMBER 18, 2025		No	DATE	REVISIONS	BY
	DRAWN BY: AMS				
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BOOSTER STATION AND PRV STATION
CITY OF NEW RICHMOND
ST. CROIX COUNTY, WISCONSIN

WIRING SCHEDULES

PROJECT NO. 07985049.2
SHEET 99-E602

20-PLC-1, CONTROL PANEL PLC I/O SCHEDULE

RACK	SLOT	POINT	TYPE	DESCRIPTION	NOTES
01	00	00	N/A	TYPE I CONTROLLER	1
01	01	00	AI	PRV STATION POTABLE WATER FORWARD FLOW RATE	1
01	01	01	AI	PRV STATION LPZ PRESSURE	1
01	01	02	AI	PRV STATION HPZ PRESSURE	1
01	01	03	AI	PRV STATION PRESSURE RECUDING VALVE CONTROLLER	1
01	01	04	AI	PRV STATION POTABLE WATER BACKWARD FLOW RATE	1
01	01	05	AI	SPARE	1
01	01	06	AI	SPARE	1
01	01	07	AI	SPARE	1
01	02	00	AO	SPARE	1
01	02	01	AO	SPARE	1
01	02	02	AO	SPARE	1
01	02	03	AO	SPARE	1
01	03	00	DI	20-PLC-1 CONTROL POWER	1
01	03	01	DI	20-PLC-1 UPS FAULT	1
01	03	02	DI	PRV STATION ENCLOSURE LOW TEMPERATURE	1
01	03	03	DI	PRV STATION POTABLE WATER FLOW TOTAL	1
01	03	04	DI	SPARE	1
01	03	05	DI	SPARE	1
01	03	06	DI	SPARE	1
01	03	07	DI	SPARE	1
01	03	08	DI	SPARE	1
01	03	09	DI	SPARE	1
01	03	10	DI	SPARE	1
01	03	11	DI	SPARE	1
01	03	12	DI	SPARE	1
01	03	13	DI	SPARE	1
01	03	14	DI	SPARE	1
01	03	15	DI	SPARE	1
01	04	00	DO	20-PLC-1 SCAN DELAY	1
01	04	01	DO	SPARE	1
01	04	02	DO	SPARE	1
01	04	03	DO	SPARE	1
01	04	04	DO	SPARE	1
01	04	05	DO	SPARE	1
01	04	06	DO	SPARE	1
01	04	07	DO	SPARE	1
01	04	08	DO	SPARE	1
01	04	09	DO	SPARE	1
01	04	10	DO	SPARE	1
01	04	11	DO	SPARE	1
01	04	12	DO	SPARE	1
01	04	13	DO	SPARE	1
01	04	14	DO	SPARE	1
01	04	15	DO	SPARE	1

30-PLC-1, CONTROL PANEL PLC I/O SCHEDULE

RACK	SLOT	POINT	TYPE	DESCRIPTION	NOTES
01	00	00	N/A	TYPE I CONTROLLER	1
01	01	00	AI	NORTH BOOSTER STATION POTABLE WATER FORWARD FLOW RATE	1
01	01	01	AI	NORTH BOOSTER STATION LPZ PRESSURE	1
01	01	02	AI	NORTH BOOSTER STATION HPZ PRESSURE	1
01	01	03	AI	SPARE	1
01	01	04	AI	NORTH BOOSTER STATION ROOM TEMPERATURE	1
01	01	05	AI	NORTH BOOSTER STATION POTABLE WATER BACKWARD FLOW RATE	1
01	01	06	AI	SPARE	1
01	01	07	AI	SPARE	1
01	02	00	AI	HYPOCHLORITE CHEMICAL PUMP SPEED	2
01	02	01	AI	HYPOCHLORITE STORAGE TANK T-30-6-1 LEVEL	2
01	02	02	AI	SPARE	1
01	02	03	AI	SPARE	1
01	02	04	AI	SPARE	1
01	02	05	AI	SPARE	1
01	02	06	AI	SPARE	1
01	02	07	AI	SPARE	1
01	03	00	AO	HYPOCHLORITE CHEMICAL PUMP PACE	2
01	03	01	AO	SPARE	1
01	03	02	AO	SPARE	1
01	03	03	AO	SPARE	1
01	04	00	DI	30-PLC-1 CONTROL POWER	1
01	04	01	DI	30-PLC-1 UPS FAULT	1
01	04	02	DI	NORTH BOOSTER STATION POTABLE WATER FLOW TOTAL	1
01	04	03	DI	NORTH BOOSTER STATION INTRUSION ALARM	1
01	04	04	DI	NORTH BOOSTER STATION INTRUSION ALARM DISIENABLE	1
01	04	05	DI	NORTH BOOSTER STATION ROOM FLOOD ALARM	1
01	04	06	DI	HYPOCHLORITE CHEMICAL PUMP FAULT	2
01	04	07	DI	HYPOCHLORITE CHEMICAL PUMP RUN	2
01	04	08	DI	NORTH BOOSTER STATION LEVEL CONTROL IN WATER TOWER LEVEL	1
01	04	09	DI	NORTH BOOSTER STATION LEVEL CONTROL IN LOCAL PRESSURE	1
01	04	10	DI	NORTH BOOSTER STATION LEVEL CONTROL IN AUTO	1
01	04	11	DI	NORTH BOOSTER STATION PRESSURE REDUCING VALVE FLOW	1
01	04	12	DI	SPARE	1
01	04	13	DI	SPARE	1
01	04	14	DI	SPARE	1
01	04	15	DI	SPARE	1
01	05	00	DI	NORTH BOOSTER STATION UTILITY AVAILABLE	1
01	05	01	DI	NORTH BOOSTER STATION GENERATOR AVAILABLE	1
01	05	02	DI	NORTH BOOSTER STATION GENSET EXERCISE	1
01	05	03	DI	NORTH BOOSTER STATION ON UTILITY	1
01	05	04	DI	NORTH BOOSTER STATION ON GENERATOR	1
01	05	05	DI	NORTH BOOSTER STATION GENSET RUN	1
01	05	06	DI	NORTH BOOSTER STATION GENSET FAIL	1
01	05	07	DI	NORTH BOOSTER STATION GENSET REMOTE E-STOP ENGAGED	1
01	05	08	DI	NORTH BOOSTER STATION GENSET NOT IN AUTO	1
01	05	09	DI	SPARE	1
01	05	10	DI	SPARE	1
01	05	11	DI	SPARE	1
01	05	12	DI	SPARE	1
01	05	13	DI	SPARE	1
01	05	14	DI	SPARE	1
01	05	15	DI	SPARE	1
01	06	00	DO	30-PLC-1 SCAN DELAY	1
01	06	01	DO	NORTH BOOSTER STATION INTRUSION ALARM LIGHT ON/OFF	1
01	06	02	DO	HYPOCHLORITE CHEMICAL PUMP REQUIRED	2
01	06	03	DO	SPARE	1
01	06	04	DO	SPARE	1
01	06	05	DO	SPARE	1
01	06	06	DO	SPARE	1
01	06	07	DO	SPARE	1
01	06	08	DO	SPARE	1
01	06	09	DO	SPARE	1
01	06	10	DO	SPARE	1
01	06	11	DO	SPARE	1
01	06	12	DO	SPARE	1
01	06	13	DO	SPARE	1
01	06	14	DO	SPARE	1
01	06	15	DO	SPARE	1

AFD-30-1-1, ETHERNET I/O SCHEDULE

MCC COMPARTMENT	MODULE	POINT	TYPE	MODULE TYPE	DESCRIPTION	NOTES
N/A	01A	00	AI	AFD INTEGRAL I/O	SPARE	3
N/A	01A	01	AI	AFD INTEGRAL I/O	SPARE	3
N/A	01B	00	AO	AFD INTEGRAL I/O	SPARE	3
N/A	01B	01	AO	AFD INTEGRAL I/O	SPARE	3
N/A	01C	00	DI	AFD INTEGRAL I/O	BOOSTER PUMP NO.1 SCADA SYSTEM CONTROL AVAILABLE	3
N/A	01C	01	DI	AFD INTEGRAL I/O	BOOSTER PUMP NO.1 AFD START	3
N/A	01C	02	DI	AFD INTEGRAL I/O	BOOSTER PUMP NO.1 RESET	3
N/A	01C	03	DI	AFD INTEGRAL I/O	BOOSTER PUMP NO.1 HIGH MOTOR TEMPERATURE	3
N/A	01C	04	DI	AFD INTEGRAL I/O	SPARE	3
N/A	01C	05	DI	AFD INTEGRAL I/O	SPARE	3
N/A	01D	00	DO	AFD INTEGRAL I/O	BOOSTER PUMP NO.1 REQUIRED	3
N/A	01D	01	DO	AFD INTEGRAL I/O	BOOSTER PUMP NO.1 AFD RUN	3
N/A	01D	02	DO	AFD INTEGRAL I/O	BOOSTER PUMP NO.1 AFD FAIL	3

AFD-30-1-2, ETHERNET I/O SCHEDULE

MCC COMPARTMENT	MODULE	POINT	TYPE	MODULE TYPE	DESCRIPTION	NOTES
N/A	01A	00	AI	AFD INTEGRAL I/O	SPARE	3
N/A	01A	01	AI	AFD INTEGRAL I/O	SPARE	3
N/A	01B	00	AO	AFD INTEGRAL I/O	SPARE	3
N/A	01B	01	AO	AFD INTEGRAL I/O	SPARE	3
N/A	01C	00	DI	AFD INTEGRAL I/O	BOOSTER PUMP NO.2 SCADA SYSTEM CONTROL AVAILABLE	3
N/A	01C	01	DI	AFD INTEGRAL I/O	BOOSTER PUMP NO.2 AFD START	3
N/A	01C	02	DI	AFD INTEGRAL I/O	BOOSTER PUMP NO.2 RESET	3
N/A	01C	03	DI	AFD INTEGRAL I/O	BOOSTER PUMP NO.2 HIGH MOTOR TEMPERATURE	3
N/A	01C	04	DI	AFD INTEGRAL I/O	SPARE	3
N/A	01C	05	DI	AFD INTEGRAL I/O	SPARE	3
N/A	01D	00	DO	AFD INTEGRAL I/O	BOOSTER PUMP NO.2 REQUIRED	3
N/A	01D	01	DO	AFD INTEGRAL I/O	BOOSTER PUMP NO.2 AFD RUN	3
N/A	01D	02	DO	AFD INTEGRAL I/O	BOOSTER PUMP NO.2 AFD FAIL	3

I/O SCHEDULE NOTES

1. I/O POINT PROVIDED, INSTALLED, AND CONFIGURED IN NEW PLC SYSTEM UNDER THIS CONTRACT.
2. I/O POINT PROVIDED, INSTALLED AND CONFIGURED IN NEW PLC SYSTEM UNDER THIS CONTRACT. I/O POINT RESERVED FOR FUTURE EQUIPMENT.
3. I/O POINT PROVIDED, INSTALLED, AND CONFIGURED IN NEW INTEGRAL AFD I/O UNDER THIS CONTRACT.

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I/O SCHEDULES

PROJECT NO. 07985049.2
SHEET 99-E603