Plot Date: 10/5/2022 11:10:43 AM

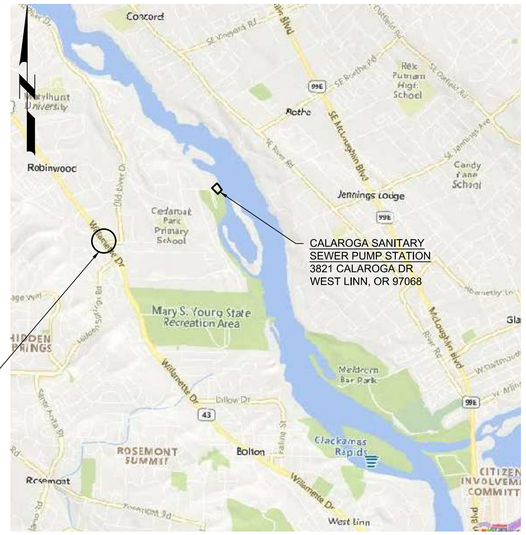
CITY OF West Linn

CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT

PROJECT PW-23-08

VOLUME 3 OF 3

NOVEMBER 2023



VICINITY MAP
NOT TO SCALE

CITY OF WEST LINN CONTACT:
ERICH LAIS
CITY ENGINEER
22500 SALAMO RD
WEST LINN, OR 97068
Elais@westlinnoregon.gov
503-722-3434

UTILITY CONTACTS:
PORTLAND GENERAL ELECTRIC
800-542-8818

COMCAST
800-391-3000

LUMEN
844-434-0323

NW NATURAL
800-422-4012

WATER/SEWER
503-722-3434 (City of West Linn)

CAROLLO ENGINEERS CONTACT:
CORIANNE BURNETT
PROJECT MANAGER
707 SW WASHINGTON ST
SUITE 500
PORTLAND, OR 97205
CBURNETT@CAROLLO.COM
503-881-9604

SURVEY DATUM NOTES:

HORIZONTAL DATUM:

OREGON NORTH STATE PLANE COORDINATE SYSTEM NAD 83 (2011) BASED ON GPS OBSERVATIONS TO NGS MONUMENT AND CITY OF WEST LINN CONTROL POINT SHEPHERD. (PID AJ8198) DISTANCES SHOWN HEREON ARE GROUND DISTANCES. INTERNATIONAL FEET, SCALED ABOUT CONTROL POINT NO 1, N=637900.77 E=7652082.03, TO CONVERT TO GRID DISTANCES MULTIPLY BY THE COMBINED FACTOR OF 0.999903641886

VERTICAL DATUM:

BASED ON GPS OBSERVATIONS TO NGS MONUMENT AND CITY OF WEST LINN CONTROL POINT SHEPHERD. (PID AJ8198) THIS NGS MONUMENT IS NOT AN OFFICIAL VERTICAL BENCHMARK BUT ITS VERTICAL POSITION IS REPRESENTED IN THE PROVIDED DATA, AND NOTED AS DERIVED FROM GPS MEASUREMENTS. THE ORTHO HEIGHT PUBLISHED FOR THE FEET UNITS IS NOT UPDATED AND IS ONLY REPRESENTED TO THE NEAREST FOOT. TO OBTAIN A MORE ACCURATE ORTHOMETRIC HEIGHT, THE HIGH-RESOLUTION GEOID HEIGHT OF -22.780 METERS WAS APPLIED WITH THE ELLIPSOID HEIGHT OF 36.545 METERS TO GET A SIGNIFICANTLY HIGHER ACCURACY ORTHOMETRIC HEIGHT OF 59.325 METERS OR 194.64 FEET.

LOCATION MAP

carollo®
707 SW WASHINGTON STREET
SUITE 500
PORTLAND, OREGON 97205
PHONE: 503-227-1885 FAX: 503-227-1747

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARE
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 81348 OREGON JUNE 10, 2014 MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Date: 2024.03.04 15:04:11 -08'00'

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CITY OF West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
GENERAL
COVER SHEET

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. G01
SHEET NO. 1 OF 58

LAST SAVED BY: tuy

PROJECT NO. 201779-100000 FILE NAME: 20177900G001.dwg

Plot Date: 10/5/2022 11:09:47 AM

DRAWING INDEX

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		(G) - GENERAL
1	G01	COVER SHEET
2	G02	DRAWING INDEX AND DESIGN CRITERIA
3	G03	CIVIL NOTES AND ABBREVIATION
4	G04	GENERAL AND CIVIL LEGEND AND ABBREVIATIONS
5	G05	SITE PLAN
		(D) - DEMOLITION
6	D01	DEMOLITION PLAN
		(C) - CIVIL
7	C01	GRADING PLAN
8	C02	EXCAVATION AND SHORING PLAN
9	C03	YARD PIPING PLAN
10	C04	PUMP STATION, VALVE VAULT, AND EXISTING WET WELL PLAN AND SECTIONS
11	C05	TRAFFIC CONTROL PLAN
12	C06	BYPASS PUMPING PLAN
13	C07	OREGON STANDARD DRAWINGS - TRAFFIC CONTROL
14	C08	OREGON STANDARD DRAWINGS - TRAFFIC CONTROL
15	C09	OREGON STANDARD DRAWINGS - TRAFFIC CONTROL
16	C10	OREGON STANDARD DRAWINGS - TRAFFIC CONTROL
17	C11	CITY OF WEST LINN STANDARD DRAWINGS
18	ESC01	EROSION AND SEDIMENT CONTROL COVER SHEET
19	ESC02	EROSION AND SEDIMENT CONTROL SITE PLAN
20	ESC03	EROSION AND SEDIMENT CONTROL DETAILS
		(L) - LANDSCAPE
21	L01	PLANTING PLAN
22	L02	PLANTING DETAILS
		(S) - STRUCTURAL
23	GS01	GENERAL STRUCTURAL NOTES
24	S01	RETAINING WALL PLAN AND SECTIONS
25	S02	WET WELL AND VALVE VAULT PLANS AND SECTIONS
26	S03	EXISTING WET WELL MODIFICATIONS PLAN AND SECTION
27	S04	ODOT GABION RETAINING WALL DETAILS
		(E) - ELECTRICAL
28	E01	ELECTRICAL INDEX, ABBREVIATIONS, & SYMBOLS
29	E02	POWER CONDUIT LAYOUT
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31	E04	POWER & CONTROL CONDUIT / CONDUCTOR SCHEDULE
32	E05	MAIN PANEL MP-1 LAYOUT
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34	E07	ONE-LINE DIAGRAM
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36	N02	PROCESS & INSTRUMENTATION LEGEND & SYMBOLS
37	N06	WET WELL PROCESS & INSTRUMENTATION DIAGRAM
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39	N12	PROCESS & INSTRUMENTATION DRAWING PCP-1 ENCLOSURE
40	N13	PROCESS & INSTRUMENTATION DRAWING PCP-1 FRONT AND SUB PANEL LAYOUT
41	N14	PROCESS & INSTRUMENTATION DRAWING PCP-1 TERMINAL BLOCK DETAIL
42	N15	PROCESS & INSTRUMENTATION DRAWING PCP-1 BILL OF MATERIALS
43	N16	PROCESS & INSTRUMENTATION DRAWING PCP-1 POWER SCHEMATIC
44	N17	PROCESS & INSTRUMENTATION DRAWING PCP-1 CONTROL DRAWING 1
45	N18	PROCESS & INSTRUMENTATION DRAWING PCP-1 MULTISMART INPUTS
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47	N20	PROCESS & INSTRUMENTATION DRAWING PCP-1 CONTROL DRAWING 2
48	N21	PROCESS & INSTRUMENTATION DRAWING PCP-1 INTRINSICALLY SAFE CONTROL
49	N22	PROCESS & INSTRUMENTATION DRAWING PCP-1 SCADA SYSTEM
50	N23	TYPICAL DETAILS PAGE 1
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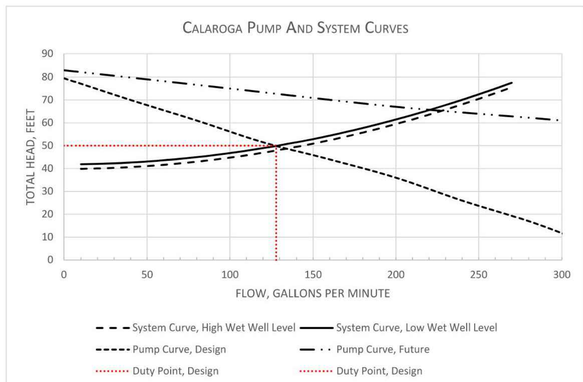
		(T) - TYPICAL DETAILS
52	TA01	ARCHITECTURAL 1
53	TC01	CIVIL 1
54	TM01	MECHANICAL 1
55	TM02	MECHANICAL 2
56	TN01	INSTRUMENTATION 1
57	TS01	STRUCTURAL 1
58	TS02	STRUCTURAL 2

DESIGN CRITERIA

CATEGORY	DESCRIPTION/VALUE
Lift Station Design Criteria	
Type	Submersible, Constant Speed
Number of Pumps	Two, one duty and one standby
Rated Pump Capacity	122 gallons per minute
Minimum Inflow	7 gallons per minute
Impeller Type	Hard-Iron
Pump Horsepower	4
Motor Data	230 V, 3 phase, 3600 rpm
Maximum Pump Starts	4 per hour
Wet Well Volume (Lead Pump On/Off)	500 gallons
Wet Well Access Hatch	Double leaf w/fall protection
Lift Station Operating Levels:	
Ground Elevation, ft	47.2
Emergency Overflow Alarm, ft	23.87
High Level Alarm, ft	14.00
Lead Pump On, ft	11.50
Lead Pump Off, ft	9.76
Low Level Alarm, ft	9.53
Impeller Elevation, ft	8.22
Wet Well Floor Elevation, ft	7.50
Overflow Information:	
Overflow Location	Upstream manhole with rim elevation 24.87'. Overflow will enter Trillium Creek.
Wet Well Overflow Storage (High Level Alarm to Emergency Overflow Alarm)	2841 gallons
Average Time to Overflow	23 minutes
Instrumentation, Controls, and Emergency Equipment	
Level Control Type	Multitrode
Telemetry	Cellular
Transfer Switch	Manual
Standby Power, Type	25kW Portable Diesel Engine Generator
Fuel Tank, Capacity	25 gallons, 2.5 hours at 100% loac
EPA Reliability Class	I
Flow Meter(s)	None
Force Main	
Size, inches	4
Length, ft	248
Profile	Not provided; existing pipe is majority of forcemain and existing profile indicates constant upward slope (IE 51.99 discharge)
Depth Range, ft	between 4 and 5 feet
Material	Ductile Iron Pipe (new, 38 ft) Asbestos Concrete (exist, 210 ft)
Discharge Manhole	MH 3A-25; Rim El. 58.50
Air Release Valves	None
Vacuum Release Valve	None



REV	DATE	BY	DESCRIPTION

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EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 14:50:31-05'00'

carollo®

CITY OF West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
GENERAL

DRAWING INDEX AND DESIGN CRITERIA

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0 1"
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JOB NO. 201779
DRAWING NO. G02
SHEET NO. 2 OF 58

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PROJECT NO. 201779-100000 FILE NAME: 20177900G002.dwg

ABBREVIATIONS

	△	DELTA, DEFLECTION ANGLE, OR CENTRAL ANGLE
	#	NUMBER (REBAR Ø)
	@	AT (MEASUREMENT)
	+/-	PLUS/MINUS
A	ABC	AGGREGATE BASE COURSE
	ABND	ABANDONED
	AC	ASPHALTIC CONCRETE
	ACI	AMERICAN CONCRETE INSTITUTE
	ACP	ASBESTOS CEMENT PIPE
	ADDL	ADDITIONAL
	ADJ	ADJACENT, ADJUST(ABLE)
	AL	ALUMINUM
	APPROX	APPROXIMATE(LY)
	ARV	AIR RELEASE VALVE
	ASSY	ASSEMBLY
	ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
	AVG	AVERAGE
	AVV	AIR AND VACUUM VALVE
B	BC	BEGIN CURB
	BF	BLIND FLANGE
	BFP	BACK FLOW PREVENTER
	BFV	BUTTERFLY VALVE
	BH	BOREHOLE
	BLDG	BUILDING
	BM	BENCH MARK
	BO	BLOW OFF
	BOC	BACK OF CURB
	BOP	BOTTOM OF PIPE
	BOT	BOTTOM
	BV	BALL VALVE
	BVC	BEGINNING OF VERTICAL CURVE
	BYP	BYPASS
C	CATV	CABLE TV
	CAV	COMBINATION AIR VALVE
	CB	CATCH BASIN
	CC	CENTER OF CURVATURE, CENTER TO CENTER, CONCRETE CURB
	CDT	CONDUIT
	CF	CUBIC FEET
	CFM	CUBIC FOOT PER MINUTE
	CFS	CUBIC FEET PER SECOND
	CI	CAST IRON
	CIP	CAST IRON PIPE
	CIPP	CURED IN PLACE PIPE
	CJ	CONSTRUCTION JOINT
	CL	CENTER LINE
	CLK	CHAIN LINK
	CLR	CLEAR / CLEARANCE
	CLSM	CONTROL LOW STRENGTH MATERIAL
	CMLC	CEMENT MORTAR LINED AND COATED
	CMP	CORRUGATED METAL PIPE
	CMU	CONCRETE MASONRY UNIT
	CO	CLEANOUT
	CONC	CONCRETE
	CONN	CONNECT, CONNECTION
	CONST	CONSTRUCTION
	CONT	CONTINUOUS OR CONTINUATION OR (D)
	COORD	COORDINATE
	CP	CONTROL POINT
	CPLG	COUPLING
	CSP	CORRUGATED STEEL PIPE
	CTJ	CONTROL JOINT
	CTL	CONTROL
	CTR	CENTER, CENTERED
	CU	CUBIC
	CULV	CULVERT
	CY	CUBIC YARD
D	D	DRAIN, DEPTH
	D/W	DRIVEWAY APRON
	DEG or °	DEGREE
	DEMO	DEMOLISH, DEMOLITION
	DET	DETAIL
	DI	DROP INLET
	DIA or Ø	DIAMETER
	DIFF	DIFFERENCE
	DIM	DIMENSION
	DIP	DUCTILE IRON PIPE
	DIST	DISTANCE
	DR	DRIVE, DRAIN
	DWG(S)	DRAWING(S)
E	E	ELECTRICAL, EAST
	EA	EACH
	EC	END OF CURB
	ECC	ECCENTRIC REDUCER
	EG	EXISTING GROUND
	EL	ELEVATION
	ELL	ELBOW
	ELEC	ELECTRICAL
	EMH	ELECTRICAL MANHOLE
	EOP	END OF PIPE
	EP	EDGE OF PAVEMENT
	EQ	EQUAL
	EQUIP	EQUIPMENT
	ES	EACH SIDE
	ESMT	EASEMENT
	EVC	END OF VERTICAL CURVE
	EW	EACH WAY
	EX/EXIST	EXISTING
	EXP	EXPANSION
	EXT	EXTERIOR
F	FC	FLEXIBLE COUPLING
	FCA	FLANGE COUPLING ADAPTER
	FF	FINISHED FLOOR
	FG	FINISHED GRADE
	FH	FIRE HYDRANT
	FIN	FINISH
	FL	FLOOR, FLOW LINE
	FLEX	FLEXIBLE
	FLG	FLANGE(D)
	FM	FORCE MAIN
	FND	FOUNDATION
	FO	FIBER OPTIC
	FOB	FLAT ON BOTTOM
	FOC	FACE OF CURB
	FOT	FLAT ON TOP
	FPM	FEET PER MINUTE
	FS	FIRE SERVICES
	FSP	FABRICATED STEEL PIPE
	FT or '	FOOT, FEET
	FTG	FOOTING
G	G	GAS, GUTTER
	GA	GAUGE
	GAL	GALLONS
	GALV	GALVANIZE(D)
	GB	GRADE BREAK
	GC	GROOVED COUPLING
	GEN	GENERAL, GENERATOR
	GM	GAS METER
	GND	GROUND
	GPD	GALLONS PER DAY
	GPM	GALLONS PER MINUTE
	GR	GRADE
	GRTG	GRATING
	GSP	GALVANIZED STEEL PIPE
	GV	GATE VALVE
H	HDPE	HIGH DENSITY POLYETHYLENE
	HORIZ	HORIZONTAL
	HP	HIGH POINT
	HPGM	HIGH PRESSURE GAS MAIN
	HW	HEADWALL, HOT WATER
	HWL	HIGH WATER LEVEL
	HWY	HIGHWAY
	HYD	HYDRANT
I	ID	INSIDE DIAMETER
	IE	INVERT ELEVATION
	IN or "	INCHES
	INCL	INCLUDE, INCLUDING
	INSTR	INSTRUMENTATION
	INV	INVERT
	IP	IRON PIPE
	IRR	IRRIGATION
J	JT	JOINT
L	L	LENGTH
	LAT	LATERAL, LATITUDE
	LB(S)	POUND(S)
	LF	LINEAL FEET
	LH	LEFT HAND
	LONG	LONGITUDINAL
	LP	LOW POINT
	LT	LEFT
	LWL	LOW WATER LEVEL
M	MATL	MATERIAL
	MAX	MAXIMUM
	MECH	MECHANICAL
	MFR	MANUFACTURER
	MGD	MILLION GALLONS PER DAY
	MH	MANHOLE
	MIN	MINIMUM
	MISC	MISCELLANOUS
	MJ	MECHANICAL JOINT
	MON	MONUMENT
N	N	NORTH, NORTHING
	NA	NOT APPLICABLE
	NE	NORTHEAST
	NG	NATURAL GAS
	NIC	NOT IN CONTRACT
	NO OR #	NUMBER
	NOM	NOMINAL
	NW	NORTHWEST
O	O.F.	OUTSIDE FACE
	OC	ON CENTER
	OD	OUTSIDE DIAMETER, OUTSIDE DIMENSION
	OHE	OVERHEAD ELECTRIC
P	PB	PULLBOX
	PC	POINT OF CURVATURE
	PCC	POINT OF COMPOUND CURVE
	PERP	PERPENDICULAR
	PH	POTHOLE
	PI	POINT OF INTERSECTION
	PL	PLATE, PROPERTY LINE
	POB	POINT OF BEGINNING
	PP	POWER POLE
	PRC	POINT OF REVERSE CURVATURE
	PROP	PROPERTY
	PL	PROPERTY LINE
	PSI	POUNDS PER SQUARE INCH
	PT	POINT, POINT OF TANGENCY
	PV	PLUG VALVE
	PVC	POINT OF VERTICAL CURVATURE
	PVC	POLYVINYL CHLORIDE
	PVI	POINT OF VERTICAL INTERSECTION
	PVMT	PAVEMENT
	PVT	POINT OF VERTICAL TANGENCY
Q	QTY	QUANTITY
R	R	RADIUS
	RAD	RADIAL
	RCB	REINFORCED CONCRETE BOX CULVERT
	RCP	REINFORCED CONCRETE PIPE
	RED	REDUCER
	REF	REFERENCE
	REINF	REINFORCE(D)(ING)(MENT)
	REQ'D	REQUIRED
	REV	REVISION
	RFCA	RESTRAINED FLEX COUPLING ADAPTER
	RH	RIGHT HAND
	ROW	RIGHT OF WAY
	RR	RAILROAD
	RS	RAW SEWAGE
	RT	RIGHT
S	S	SLOPE, SOUTH
	SCH	SCHEDULE
	SCV	SWING CHECK VALVE
	SD	STORM DRAIN
	SDDI	STORM DRAIN DROP INLET
	SDMH	STORM DRAIN MANHOLE
	SE	SOUTHEAST
	SECT	SECTION
	SHLD	SHOULDER
	SHT	SHEET
	SIM	SIMILAR
	SL	SLOPE
	SPEC(S)	SPECIFICATION(S)
	SQ	SQUARE
	SS	SANITARY SEWER
	SSCO	SANITARY SEWER CLEANOUT
	SSMH	SANITARY SEWER MANHOLE
	SST	STAINLESS STEEL
	ST	STREET
	STA	STATION
	STD(S)	STANDARD(S)
	STL	STEEL
	STRUCT	STRUCTURAL
	SW	SOUTHWEST
	SWK	SIDEWALK
	SYM	SYMMETRICAL
T	TB	THRUST BLOCK
	TC	TOP OF CURB
	TEL	TELEPHONE
	TOG	TOP OF GRATING
	TMH	TELEPHONE MANHOLE
	TOC	TOP OF CONCRETE
	TOP	TOP OF PIPE
	TOW or TW	TOP OF WALL
	TRD	TREAD
	TYP	TYPICAL
U	UC	UNDERCUT
	UG	UNDERGROUND
	UGE	UNDERGROUND ELECTRIC
	UNKN	UNKNOWN
	UNO	UNLESS NOTED OTHERWISE
	USA	UNDERGROUND SERVICE ALERT
V	V	VERTICAL, VALVE
	VAR	VARIES
	VB	VALVE BOX
	VC	VERTICAL CURVE, VICTAULIC COUPLER
	VCP	VITRIFIED CLAY PIPE
	VERT	VERTICAL
	VLT	VAULT
	VPI	VERTICAL POINT OF INTERSECTION
W	W	WATER, WIDTH OR WEST
	W/	WITH
	W/O	WITHOUT
	WL	WATER LEVEL
	WM	WATER METER
	WS	WATER SURFACE
	WSP	WELDED STEEL PIPE
	WSTP	WATERSTOP
	WV	WATER CONTROL VALVE
	WW	WASTEWATER
X	XFMR	TRANSFORMER
Y	YD	YARD

NOTES

GENERAL NOTES:

1. FOLLOWING NOTES ARE GENERAL AND APPLY TO ALL SHEETS OF THESE CONTRACT DOCUMENTS AS IF THEY WERE WRITTEN IN THEIR ENTIRETY ON EACH SHEET.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING CONDITIONS INCLUDING LOCATION AND DIMENSIONS OF ALL EXISTING CONSTRUCTION AND UTILITIES. CONTRACTOR SHALL NOTIFY ENGINEER IF THERE IS A CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONSTRUCTION BEFORE PROCEEDING WITH WORK.
3. UNLESS DETAILED, SPECIFIED, OR OTHERWISE INDICATED ON THE DRAWINGS, CONSTRUCTION SHALL BE AS INDICATED IN THE APPLICABLE TYPICAL DETAILS AND GENERAL NOTES. TYPICAL DETAILS SHALL APPLY EVEN THOUGH NOT REFERENCED AT SPECIFIC LOCATIONS ON DRAWINGS.
4. WHERE NO CONSTRUCTION DETAILS ARE SHOWN OR NOTED FOR ANY PART OF WORK. DETAILS SHALL BE IN THE SAME AS FOR OTHER SIMILAR WORK.
5. CONTRACTOR SHALL COMPLY WITH LOCAL CONSTRUCTION STORM WATER DISCHARGE REGULATIONS AND REQUIREMENTS.
6. PRIOR TO EXCAVATION FOR NEW STRUCTURES, ELECTRICAL CONDUIT, FABRICATION OF NEW PIPING AND/OR OTHER PROPOSED UTILITIES, CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING PIPING AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR SHALL TEMPORARILY RELOCATE CONFLICTING EXISTING UTILITIES AT TIE-IN/CONNECTION LOCATIONS AND REINSTALL THEM AS REQUIRED TO ELIMINATE THE CONFLICT AT NO ADDITIONAL COST TO THE OWNER.
7. ALL PIPELINES 12" AND LARGER SHALL HAVE A MINIMUM COVER OF 36" UNLESS THE COVER DEPTH IS SPECIFICALLY INDICATED ON THE DRAWINGS. PIPE SMALLER THAN 12" SHALL HAVE A MINIMUM COVER OF 30" UNLESS NOTED OTHERWISE. PIPES SHALL BE ROUTED AS SHOWN UNLESS MINOR REVISIONS ARE NECESSARY TO MISS EXISTING PIPES, STRUCTURES, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL FITTINGS AND ADAPTERS REQUIRED TO MAKE THE ROUTING CHANGES AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR MUST ALERT ENGINEER TO ANY ROUTE CHANGES AND SEEK APPROVAL FOR MODIFICATIONS. CONTRACTOR SHALL INCLUDE COST FOR THIS IN THE BID.
8. EXISTING FACILITY AND UTILITY INFORMATION SHOWN ON THE DRAWINGS WAS OBTAINED FROM AVAILABLE RECORDS OR ELECTRONIC FILES. NEITHER THE OWNER NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR FACILITIES AND UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL FIELD VERIFY ALL LOCATIONS, SIZES, MATERIAL TYPES, AND ELEVATIONS SHOWN AROUND OR NEAR AREAS OF NEW CONSTRUCTION PRIOR TO START OF CONSTRUCTION.
9. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT FROM DAMAGE EXISTING FACILITIES AND UTILITIES SHOWN OR NOT SHOWN THAT ARE TO REMAIN IN PLACE. ALL FACILITIES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE EXPEDITIOUSLY REPAIRED OR RECONSTRUCTED TO THE ORIGINAL OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE WITHOUT ADDITIONAL COMPENSATION.
10. CONTRACTOR SHALL MAKE CONNECTIONS TO EXISTING PIPE, EQUIPMENT, ETC. AS REQUIRED AND SHALL PROVIDE ALL FITTINGS, ADAPTERS, AND APPURTENANCES REQUIRED TO MAKE THE CONNECTIONS. PROVIDE ALL SUPPORTS REQUIRED FOR A RIGIDLY SUPPORTED COMPLETE AND WORKING SYSTEM.
11. ADJUST ALL VALVE BOXES, VAULTS, PULL BOXES, AND MANHOLES TO FINISHED GRADE UNLESS OTHERWISE SHOWN OR DIRECTED. MANHOLES IN OPEN FIELDS SHALL BE SET TWELVE INCHES ABOVE FINISHED GRADE AND VAULTS SHALL BE SIX INCHES ABOVE FINISHED GRADE.
12. THE CONTRACTOR SHALL CONTACT THE PROPER UTILITY REPRESENTATIVE FOR QUESTIONS OR COORDINATION OF CONSTRUCTION RELATED TO EXISTING UTILITIES.

    STATE/REGION/MUNICIPALITY SPECIFIC: 1-800-524-8818
13. CONTRACTOR SHALL VERIFY THAT PIPING SHOWN TO BE ABANDONED OR AS ABANDONED PREVIOUSLY IS NO LONGER IN SERVICE. LINES IN SERVICE SHALL BE MAINTAINED UNTIL NO LONGER REQUIRED BY THE CITY.
14. ALL EXISTING PIPES THAT ARE TO BE ABANDONED IN PLACE OR REMOVED MAY NOT BE SHOWN. WHERE PIPING IS TO BE ABANDONED AND MUST REMAIN IN SERVICE UNTIL COMPLETION OF OTHER PHASES OF WORK, AND IT CONFLICTS WITH NEW PIPING, TEMPORARILY RELOCATE PIPING AS REQUIRED TO MAINTAIN SERVICE BY THE CITY.
15. CONTRACTOR SHALL REROUTE THE EXISTING PIPING IF REQUIRED TO MISS THE PROPOSED STRUCTURES. THE EXISTING PIPE SHALL REMAIN IN SERVICE UNTIL NEW PIPING IS READY TO BE PLACED INTO SERVICE. DOWNTIME SHALL BE A MAXIMUM OF 2 HOURS, UNLESS SPECIFIED OR SHOWN OTHERWISE.
16. THE CONTRACTOR SHALL TAKE SPECIAL PRECAUTIONS IN THE VICINITY OF ANY OVERHEAD ELECTRIC LINES. CONTRACTOR SHALL ABIDE BY THE NATIONAL ELECTRIC CODE AND ANY REQUIREMENT BY THE OWNER OF THE ELECTRIC LINES.
17. PROVIDE ALL SHEETING/SHORING REQUIRED TO PROTECT EXISTING STRUCTURES, PIPES AND FACILITIES.
18. CONTRACTOR SHALL VERIFY LOCATION OF ALL ARCHITECTURAL, MECHANICAL, AND ELECTRICAL ITEMS BEFORE PLACING ANY STRUCTURAL STEEL OR CONCRETE. ALSO, STRUCTURAL DIMENSIONS AND OPENINGS CONTROLLED BY ARCHITECTURAL, MECHANICAL, OR ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
19. MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES, AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS, THAT ARE REQUIRED BY OTHER CONTRACT DRAWINGS, SHALL BE PROVIDED PRIOR TO CASTING CONCRETE.
20. CONSTRUCTION SHALL COMPLY WITH THE CITY OF WEST LINN PUBLIC WORKS CONSTRUCTION STANDARDS, MUNICIPAL CODE, AND COMMUNITY DEVELOPMENT CODE.

GENERAL PIPELINE NOTES:

1. DIMENSIONS TO STRUCTURES, REFERENCED PIPING, PAVING, AND OTHER IMPROVEMENTS IS APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND CONDITIONS 14 DAYS IN ADVANCE OF THE CONSTRUCTION WORK. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER.
2. CONTRACTOR SHALL MAINTAIN A MINIMUM CLEARANCE OF 10 FEET HORIZONTAL AND 3 FEET VERTICAL BETWEEN THE SEWER LINES AND EXISTING WATER LINES.
3. REFER TO THE GEOTECHNICAL REPORT LOCATED IN THE APPENDIX OF THE SPECIFICATIONS FOR ADDITIONAL INFORMATION ON THE GEOTECHNICAL CONDITIONS AND BORING INFORMATION.
4. IN ALL LOCATIONS WHERE TRENCH PLATE IS USED FOR VEHICULAR OR PEDESTRIAN TRAFFIC, THE CONTRACTOR SHALL APPLY SKID RESISTANT COATING ON THE TRENCH PLATES AND COLD MIX ASPHALT CONCRETE AT THE EDGES. THE TRENCH PLATES SHALL BE NOTCHED INTO THE ASPHALT, CONCRETE, OR TRAVELED SURFACE TO PREVENT SLIPPAGE AND ROCKING UNDER TRAFFIC.
5. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES ADJACENT TO THE WORK, THROUGHOUT THE CONSTRUCTION PERIOD.
6. ALL OPEN TRENCHES, WORK AREAS AND SHAFTS SHALL HAVE A SHORING SYSTEM IN ACCORDANCE WITH OSHA, STATE AND LOCAL REQUIREMENTS.
7. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, COUNTY, AND LOCAL LAWS AND ORDINANCES RELATING TO THE SAFETY AND CHARACTER OF WORK, EQUIPMENT AND PERSONNEL. THIS INCLUDES BUT IS NOT LIMITED TO SHEETING, SHORING, BRACING, VENTILATION, CONFORMANCE WITH TRAFFIC CONTROL AND MAINTENANCE OF BARRICADES AND WARNING DEVICES.
8. LAYOUT DRAWINGS ARE REQUIRED FOR PIPING INSTALLED.
9. ALL ROAD DITCHES, FENCE LINES, PASTURES AND SIMILAR AREAS SHALL BE RESTORED PER SPECIFICATION 02925.
10. CONTRACTOR SHALL TAKE ALL PRACTICAL PRECAUTIONS TO MINIMIZE DISTURBANCES TO STREAMS, VEGETATION, TREES AND CROP LANDS. WHEREVER PRACTICAL LEAVE EXISTING TREES AND VEGETATED AREAS UNDISTURBED.

UTILITY NOTES:

1. EXISTING UTILITIES IN THE PROJECT MAY BE IN A FRAGILE CONDITION. THE CONTRACTOR SHALL EXERCISE NECESSARY CAUTION WHEN WORKING NEAR EXISTING UTILITIES.
2. PLAN LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES ARE BASED ON RECORD DRAWINGS, POTHOLING AND SURVEY INFORMATION AND ARE CONSIDERED APPROXIMATE ONLY. WHERE NO ELEVATIONS ARE SHOWN, NO INFORMATION WAS AVAILABLE DURING THE DESIGN PERIOD.
3. SOME UTILITY SERVICES MAY NOT BE SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL TAKE NECESSARY MEASURES TO LOCATE AND PROTECT SERVICE DURING CONSTRUCTION.
4. CONTRACTOR SHALL CALL THE "LOCAL UTILITY LOCATOR" AT "811" PRIOR TO ANY EXCAVATION ACTIVITIES.
5. THE LOCATION, SIZE, AND MATERIALS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THESE DRAWINGS ARE APPROXIMATE AND IS SHOWN FOR BIDDING PURPOSES. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT THE UTILITY OWNERS SO THAT THOSE UTILITIES MAY MARK THE LOCATION OF THEIR UTILITIES PRIOR TO ANY EXCAVATION ACTIVITIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND PROTECT EXISTING UTILITIES.

EARTHWORK NOTES:

1. CLEAR THE CONSTRUCTION AREA OF NATURAL OBSTRUCTIONS EXISTING FOUNDATIONS, BUILDINGS, FENCES, LUMBER, WALLS, STUMPS, BRUSH, WEEDS, RUBBISH, TREES, BOULDERS, AND ANY OTHER ITEMS WHICH INTERFERES WITH CONSTRUCTION OPERATIONS OR ARE DESIGNATED FOR REMOVAL.
2. GRUB OUT AND DISPOSE OF TREE TRUNKS AND ROOT MATERIAL BELOW THE GROUND SURFACE REMAINING AFTER CLEARING.
3. DISPOSE OF THE UNACCEPTABLE BACKFILL MATERIAL FROM THE CLEARING AND GRUBBING OPERATIONS AT NO ADDITIONAL COST TO THE OWNER.
4. STRIP AND STOCKPILE THE TOPSOIL. THE DEPTH OF STRIPPING SHALL BE ESTIMATED TO BE 12-INCHES BUT WILL BE DETERMINED IN THE FIELD AS SOIL CONDITIONS DICTATE.
5. REPLACE STOCKPILED SOIL AND RESTORE SITE AS SPECIFIED.
6. ROCK AND AGGREGATE STORAGE AREAS SHALL BE RESTORED BY EXCAVATING ANY SOILS CONTAINING ROCK OR AGGREGATE AND BACKFILLING WITH TOPSOIL. SOIL REMOVED MAY BE USED FOR TRENCH BACKFILL ABOVE THE PIPE ZONE AND 3 FEET BELOW FINISHED GRADE.

REV	DATE	BY	DESCRIPTION

DESIGNED JY
DRAWN ARE
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 81348 OREGON JUNE 10, 2014 MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:16:59-05'00'

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CITY OF West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
GENERAL

CIVIL NOTES AND ABBREVIATIONS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. G03
SHEET NO. 3 OF 58

Plot Date: 10/5/2022 11:06:47 AM
LAST SAVED BY: tuy
PROJECT NO. 201779-100000 FILE NAME: 20177900G003.dwg

Plot Date: 10/5/2022 11:08:46 AM

DETAIL REFERENCES

PLAN/TITLE — VIEW; DESCRIPTION; VIEW TITLE; A — PLAN; SCALE: SCALE; FILE: FILE; PLAN NOT REFERENCED

SECTION CUT — A; VIEW; ##X##; - = SHOWN ON SAME DRAWING; ##X## = SEE INDICATED DRAWING

SECTION OR DETAIL — ALPHA = SECTION; NUMERIC = DETAIL; DESCRIPTION; VIEW TITLE; C/1; ##X##; ELEVATION; SCALE: SCALE; FILE: FILE

TITLE W/ REFERENCE — DRAWING CUT ORIGINATION

DETAIL CALL-OUT (ENLARGED) — 1; VIEW; ##X##; SEE INDICATED DRAWING

DRAWING REFERENCE — ##X##; AREA DESIGNATOR (WHEN APPLICABLE); DISCIPLINE DESIGNATOR; CONSECUTIVE SHEET NUMBER

TYPICAL DETAIL REFERENCE — ?; TYP; TYPICAL DETAIL #

EXTERIOR ELEVATION VIEWS — A; ##X##

PHOTO LOCATION — #; -; ARROW INDICATES POINT OF VIEW

GRID BUBBLE

TYPICAL DETAIL # — ?; TYP; LINE 3; LINE 1; LINE 2; TYPICAL DETAIL TITLE

S — MODIFICATION NOTE
S = STANDARD
J = JOB SPECIFIC
R = REVISED
N = NOTE TO TYPICAL DETAIL USER

SHT X OF X — SHEETS IN DETAIL

XX/XX/20XX — DATE CREATED (REVISED)

LINE WORK

NEW STRUCTURES OR EDGE OF PAVEMENT
EXISTING STRUCTURES (SCREENED)
NEW PIPING (TRIPLE LINES)
NEW PIPING (SINGLE LINE)
EXISTING PIPING (TRIPLE LINES) (SCREENED)
EXISTING PIPING (SINGLE LINE)(SCREENED)
HIDDEN LINE OR TRAIL EDGE
CENTER, MONUMENT, OR SURVEY LINE
GUARDRAIL
EXISTING CONTOURS (SCREENED) — 310
NEW CONTOURS — 310
NEW FENCE — X
EXISTING FENCE (SCREENED) — X
REMOVE OR ABANDONED (CROSS HATCHING: FENCE SHOWN AS EXAMPLE)
POWER POLE & LINE — OHE; PP; OHE
CABLE TV (UNDERGROUND) — CTV
FIBER OPTIC — FO
FUEL — F
NATURAL GAS — G
UNDERGROUND ELECTRIC — UGE
SANITARY SEWER — SS
FORCEMAIN SANITARY SEWER — FM
STORM DRAIN — SD
TELEPHONE — TEL
WATER — W
PROPERTY LINE OR RIGHT OF WAY
SLOPE
NEW ROAD
EXISTING ROAD (SCREENED)
FUTURE ROAD, WATER EDGE OR RIDGE
CURB & GUTTER
CURB
SWALE
FLOWLINE
SHORING
RAILROAD TRACKS
LIMITS OF CONSTRUCTION — LOC
SILT FENCE — SF
EASEMENT
EXISTING EASEMENT
CITY LIMITS
EXISTING GRADE (PROFILE)
PROPOSED GRADE (PROFILE)
MATCH LINE — MATCH LINE STA XXX SEE DWG XXX

COORDINATES / ELEVATION

COORDINATES — XX; N=1600000 E=1000000; N=XXXXXXX.XX E=XXXXXXX.XX

CONTROL POINT — XX

SPOT ELEVATION — FG=XX.XX; ANY SPECIFIC DESIGNATIONS NOTED WILL NEED TO REFER TO ABBREVIATIONS

EXISTING SPOT ELEVATION — X 1325.00

SLOPE CALLOUT — 2:1; 2; 1; 2.0%; S=0.0020

ROADWAY / PIPE CURVES

ROADWAY / PIPE CURVE

(SEE TABLE ON EACH PAVING AND GRADING OR CIVIL PIPING DWG WITH ROADWAY / PIPE CURVES.)

LENGTH; CURVE NUMBER; CXX; PC; CLOCKWISE; ANGLE; RADIUS; PT; RADIUS POINT; EDGE OF PVMT OR OUTSIDE FACE OF CURB

HATCH PATTERNS

AGGREGATE BASE COURSE (ABC)
ASPHALT PAVING
OR
(WITH AERIAL)
BEDROCK
CLSM
CONCRETE (ALL CLASSES)
DRAIN ROCK
GRAVEL
GRATING; SPAN
LANDSCAPING
RIPRAP
EXISTING/ UNDISTURBED SOIL
STRUCTURAL FILL OR BACKFILL
STEEL
STAGING AREA
TREAD PLATE

SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EXISTING CONTROL POINT	CTV	CABLE TV	CO	CLEANOUT
	EXISTING MONUMENT		POWER TOWER		AIR RELEASE VALVE
XX	CONTROL POINT		GATE		BLOW OFF VALVE
B-XX	SOIL BORING LOCATIONS		GUARD POST		HOSE BIBB / YARD HYDRANT
PH	POTHOLE		HEADWALL		SERVICE CONNECTION
PHX	POTHOLE NUMBER		ROCK WALL		BURIED VALVE
	FLOW/SLOPE DIRECTION		SHRUB/HEDGE		FLANGE
	MANHOLE (PLAN)		TREE		BALL VALVE
	MANHOLE (PROFILE)		SIGN/SIGN POST		BUTTERFLY VALVE
			LIGHT		CHECK VALVE
	CATCH BASIN		UTILITY POLE		GATE VALVE
E	ELECTRICAL MANHOLE AND PULL BOX		UTILITY POLE GUY WIRE		PLUG VALVE
M	METER BOX	PP	POWER POLE		PIPE CAP OR CONNECTION
P	PULL BOX		FIRE HYDRANT		REDUCER
T	TELEPHONE PEDESTAL				

NOTE: ALL SYMBOLS SHOWN AS NEW. EXISTING SYMBOLS ARE SCREENED.

BRACKET
BREAK LINE
PIPE BREAK PLAN VIEW
PIPE BREAK CROSS SECTION
SCALE — 0; 10'; 20'; 40'; SCALE: 1" = 20'
PIPE CONTINUATION (SINGLE LINE)
KEY NOTE — 34

REVISION DELTA — 2
EXISTING ELEVATION — EX TOW XXXX.X±
ELEVATION — TOC XXXX.XX
EQUIPMENT/DEVICE KEY TAG — 1
EQUIPMENT/DEVICE NUMBER — XXX-XX-XXX
PIPE TAG — *PIPE SIZE; FLOW STREAM; "X" XXX; FUTURE PIPING (WHERE APPLICABLE); FUTURE
* FOR EXISTING PIPING SHOW AS EX *SIZE FLOW STREAM*

NORTH ARROW/ PLANT NORTH — 30.0°; NORTH; NORTH; TRUE; PLANT

UNDERGROUND/ OVERHEAD WARNING (STATE/REGION SPECIFIC)

811 Know what's below. Call before you dig. usanorth811.org

REV	DATE	BY	DESCRIPTION

DESIGNED JY
DRAWN ARE
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 81348 OREGON JUNE 10, 2014 MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:17:21-05'00'

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CITY OF West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
GENERAL

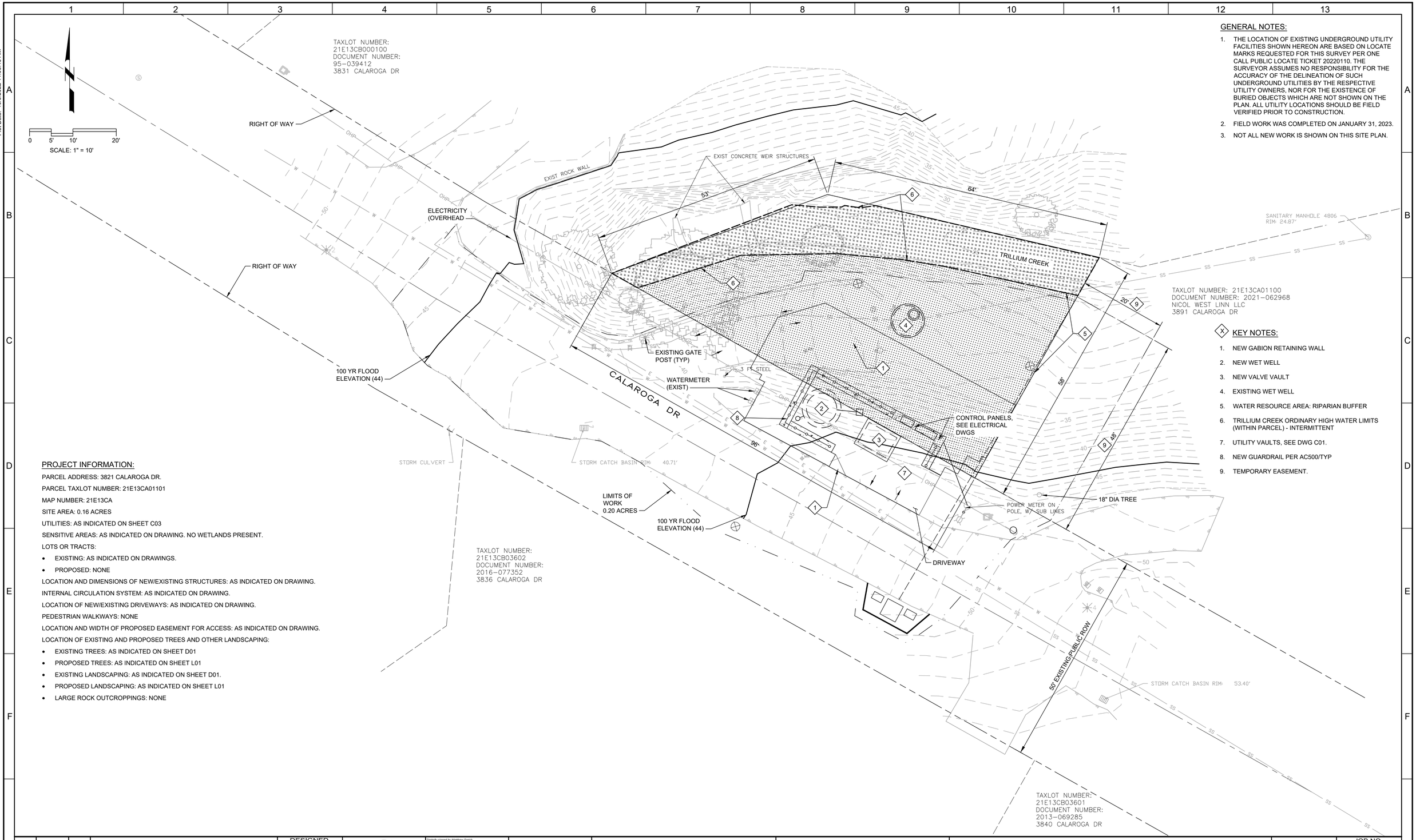
GENERAL AND CIVIL LEGEND AND SYMBOLS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 — 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. G04
SHEET NO. 4 OF 58

LAST SAVED BY: tuy

PROJECT NO. 201779-100000 FILE NAME: 20177900G004.dwg



GENERAL NOTES:

1. THE LOCATION OF EXISTING UNDERGROUND UTILITY FACILITIES SHOWN HEREON ARE BASED ON LOCATE MARKS REQUESTED FOR THIS SURVEY PER ONE CALL PUBLIC LOCATE TICKET 20220110. THE SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE DELINEATION OF SUCH UNDERGROUND UTILITIES BY THE RESPECTIVE UTILITY OWNERS, NOR FOR THE EXISTENCE OF BURIED OBJECTS WHICH ARE NOT SHOWN ON THE PLAN. ALL UTILITY LOCATIONS SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
2. FIELD WORK WAS COMPLETED ON JANUARY 31, 2023.
3. NOT ALL NEW WORK IS SHOWN ON THIS SITE PLAN.

KEY NOTES:

1. NEW GABION RETAINING WALL
2. NEW WET WELL
3. NEW VALVE VAULT
4. EXISTING WET WELL
5. WATER RESOURCE AREA: RIPARIAN BUFFER
6. TRILLIUM CREEK ORDINARY HIGH WATER LIMITS (WITHIN PARCEL) - INTERMITTENT
7. UTILITY VAULTS, SEE DWG C01.
8. NEW GUARDRAIL PER AC500/TYP
9. TEMPORARY EASEMENT.

PROJECT INFORMATION:

PARCEL ADDRESS: 3821 CALAROGA DR.

PARCEL TAXLOT NUMBER: 21E13CA01101

MAP NUMBER: 21E13CA

SITE AREA: 0.16 ACRES

UTILITIES: AS INDICATED ON SHEET C03

SENSITIVE AREAS: AS INDICATED ON DRAWING. NO WETLANDS PRESENT.

LOTS OR TRACTS:

- EXISTING: AS INDICATED ON DRAWINGS.
- PROPOSED: NONE

LOCATION AND DIMENSIONS OF NEW/EXISTING STRUCTURES: AS INDICATED ON DRAWING.

INTERNAL CIRCULATION SYSTEM: AS INDICATED ON DRAWING.

LOCATION OF NEW/EXISTING DRIVEWAYS: AS INDICATED ON DRAWING.

PEDESTRIAN WALKWAYS: NONE

LOCATION AND WIDTH OF PROPOSED EASEMENT FOR ACCESS: AS INDICATED ON DRAWING.

LOCATION OF EXISTING AND PROPOSED TREES AND OTHER LANDSCAPING:

- EXISTING TREES: AS INDICATED ON SHEET D01
- PROPOSED TREES: AS INDICATED ON SHEET L01
- EXISTING LANDSCAPING: AS INDICATED ON SHEET D01.
- PROPOSED LANDSCAPING: AS INDICATED ON SHEET L01
- LARGE ROCK OUTCROPPINGS: NONE

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARE
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER
81348
OREGON
JUNE 10, 2014
MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:17:48-05'00'

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City of West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
GENERAL
SITE PLAN

VERIFY SCALES
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0 1"
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JOB NO. 201779
DRAWING NO. G05
SHEET NO. 5 OF 58

Plot Date: 10/5/2022 11:08:46 AM
LAST SAVED BY: tuy

PROJECT NO. 201779-100000 FILE NAME: 20177900G005.dwg

Plot Date: 10/5/2022 11:08:46 AM

SANITARY MANHOLE 4808
RIM: 60.03'

RIGHT OF WAY

RIGHT OF WAY

0 5' 10' 20'
SCALE: 1" = 10'

6 18" DIA TREE

2 5 ELECTRICITY (OVERHEAD)

6 18" DIA TREE

6 6" DIA TREE

11

CALAROGA DR

9 WATER METER (EXIST)

COORDINATE WITH TV UTILITY FOR RELOCATION OF CABLE

10" DIA TREE

10" DIA TREE 6

1 REMOVE EXISTING PUMP STATION SECTIONS PER DETAIL A.

REMOVE FENCE

8

7 12" DIA TREE

TEMPORARILY RELOCATE POWER AND CONTROL CONDUITS AND WIRES

3

14" DIA TREE 7

12" DIA TREE 7

TEMPORARILY RELOCATE VENT PIPES

EXISTING CONTROL PANEL

18" DIA TREE 7

CABLE

10

5

4 5 EXISTING 4" FORCE MAIN

SANITARY MANHOLE 4806
RIM: 24.87'

20'-0"

48'-0"

WATER 5 9

SANITARY SEWER 5 9

ELECTRICITY 5

STORM DRAIN 5 9

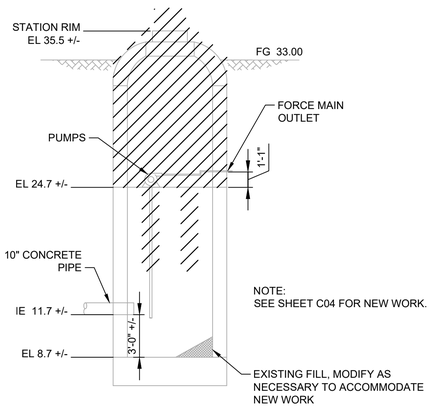
NATURAL GAS 5 9

GENERAL NOTES:

1. PROTECT EXISTING SITE FEATURES INCLUDING FENCES, SHRUBBERY AND TREES UNLESS OTHERWISE INDICATED.
2. PROTECT ALL UNDERGROUND UTILITIES UNLESS OTHERWISE INDICATED.
3. SEE SPECIFICATION SECTION 01354 - HAZARDOUS MATERIAL FOR PROCEDURES FOR HANDLING, REMOVING, AND DISPOSING OF AC PIPE.

X KEY NOTES:

1. CONTRACTOR TO DEMOLISH PUMP STATION, INCLUDING PUMPS, CONTROL PANELS, PIPING, VALVES, FABRICATED PUMP HOUSE, ACCESS MANHOLE, AND ALL CONDUITS AND CONDUCTORS AND ALL OTHER APPURTENANCES (VACUUM SYSTEM, ETC). COORDINATE DEMOLITION WITH NEW WORK.
2. TEMPORARILY RELOCATE OVERHEAD POWER LINE AS REQUIRED TO PERFORM WORK.
3. APPROXIMATE AREA INDICATED IS LIMITS OF HIMALAYAN BLACK BERRY AND ENGLISH IVY. CONTRACTOR TO REMOVE AS NEEDED TO ACCOMMODATE NEW WORK.
4. EXISTING FORCE MAIN LOCATION IS SHOWN APPROXIMATELY. ASSUMED DEPTH IS 4'-5' BELOW GRADE. PIPE MATERIAL IS ASBESTOS CEMENT. CONTRACTOR TO DEMOLISH AS NECESSARY TO ACCOMMODATE NEW WORK.
5. EXISTING UTILITY.
6. PROTECT TREES FROM CONTRACTOR WORK.
7. EXISTING TREE TO BE REMOVED.
8. PROTECT EXISTING DRAIN.
9. CONTRACTOR TO PROTECT EXISTING UTILITIES.
10. COORDINATE WITH PGE ON THE DEMOLITION OF THE EXISTING POWER POLE.
11. DEMOLISH AC PAVING WHERE SHOWN AND AS NEEDED TO ACCOMMODATE NEW WORK AND ASSOCIATED EXCAVATION. APPROXIMATE AREA TO BE DEMOLISHED IS 2,600 SF.



NOTE:
SEE SHEET C04 FOR NEW WORK.

EXISTING PUMP STATION

A --- DETAIL
SCALE: 3/16" = 1'-0"
FILE: --

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARE
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER
81348
OREGON
JUNE 10, 2014
MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:13:23-05'00'

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City of West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
DEMOLITION

DEMOLITION PLAN

VERIFY SCALES
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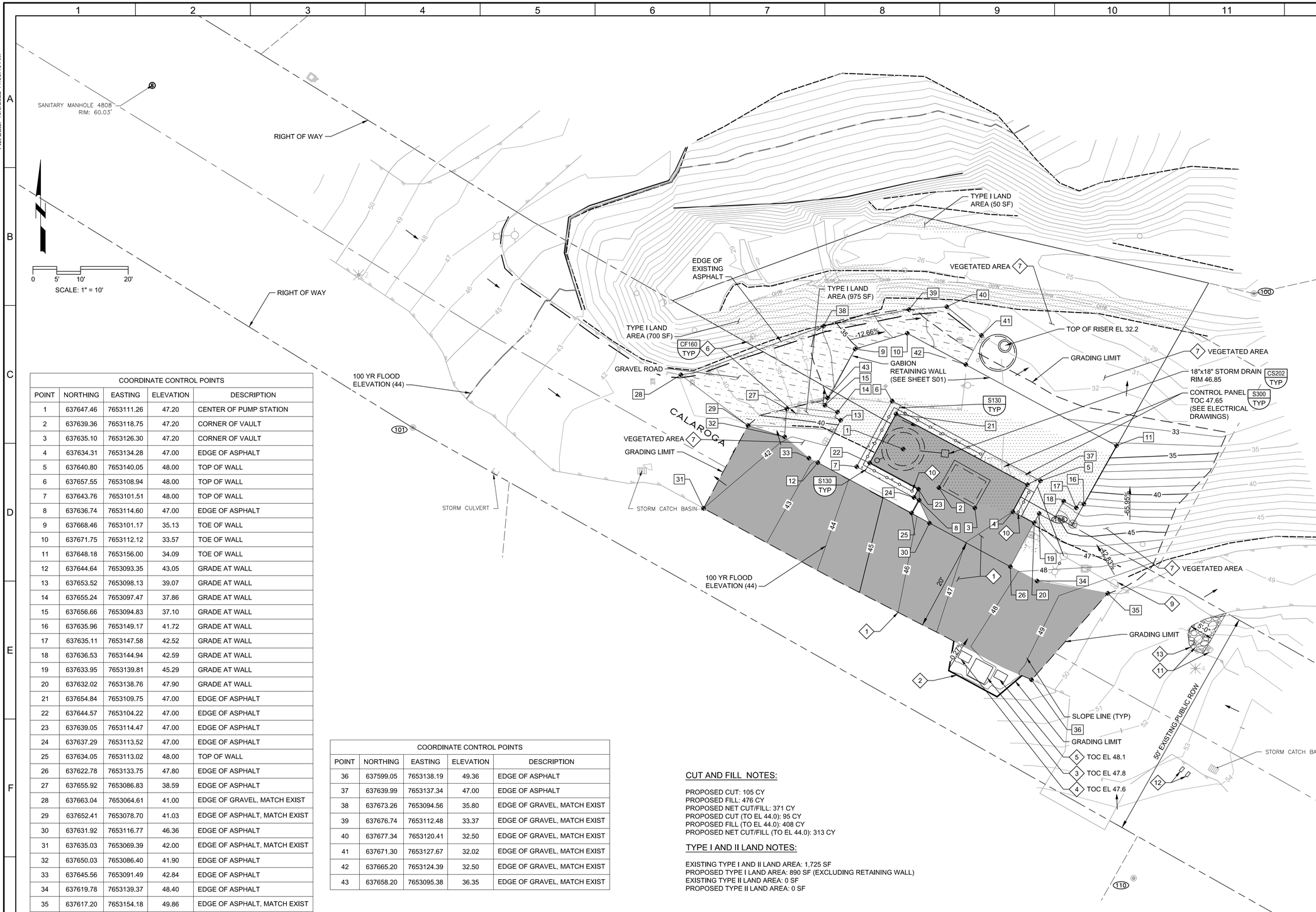
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. D01
SHEET NO. 6 OF 58

LAST SAVED BY: AEvans

PROJECT NO. 201779-100000 FILE NAME: 20177900D001.dwg



COORDINATE CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	637647.46	7653111.26	47.20	CENTER OF PUMP STATION
2	637639.36	7653118.75	47.20	CORNER OF VAULT
3	637635.10	7653126.30	47.20	CORNER OF VAULT
4	637634.31	7653134.28	47.00	EDGE OF ASPHALT
5	637640.80	7653140.05	48.00	TOP OF WALL
6	637657.55	7653108.94	48.00	TOP OF WALL
7	637643.76	7653101.51	48.00	TOP OF WALL
8	637636.74	7653114.60	47.00	EDGE OF ASPHALT
9	637668.46	7653101.17	35.13	TOE OF WALL
10	637671.75	7653112.12	33.57	TOE OF WALL
11	637648.18	7653156.00	34.09	TOE OF WALL
12	637644.64	7653093.35	43.05	GRADE AT WALL
13	637653.52	7653098.13	39.07	GRADE AT WALL
14	637655.24	7653097.47	37.86	GRADE AT WALL
15	637656.66	7653094.83	37.10	GRADE AT WALL
16	637635.96	7653149.17	41.72	GRADE AT WALL
17	637635.11	7653147.58	42.52	GRADE AT WALL
18	637636.53	7653144.94	42.59	GRADE AT WALL
19	637633.95	7653139.81	45.29	GRADE AT WALL
20	637632.02	7653138.76	47.90	GRADE AT WALL
21	637654.84	7653109.75	47.00	EDGE OF ASPHALT
22	637644.57	7653104.22	47.00	EDGE OF ASPHALT
23	637639.05	7653114.47	47.00	EDGE OF ASPHALT
24	637637.29	7653113.52	47.00	EDGE OF ASPHALT
25	637634.05	7653113.02	48.00	TOP OF WALL
26	637622.78	7653133.75	47.80	EDGE OF ASPHALT
27	637655.92	7653086.83	38.59	EDGE OF ASPHALT
28	637663.04	7653064.61	41.00	EDGE OF GRAVEL, MATCH EXIST
29	637652.41	7653078.70	41.03	EDGE OF ASPHALT, MATCH EXIST
30	637631.92	7653116.77	46.36	EDGE OF ASPHALT
31	637635.03	7653069.39	42.00	EDGE OF ASPHALT, MATCH EXIST
32	637650.03	7653086.40	41.90	EDGE OF ASPHALT
33	637645.56	7653091.49	42.84	EDGE OF ASPHALT
34	637619.78	7653139.37	48.40	EDGE OF ASPHALT
35	637617.20	7653154.18	49.86	EDGE OF ASPHALT, MATCH EXIST

COORDINATE CONTROL POINTS				
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
36	637599.05	7653138.19	49.36	EDGE OF ASPHALT
37	637639.99	7653137.34	47.00	EDGE OF ASPHALT
38	637673.26	7653094.56	35.80	EDGE OF GRAVEL, MATCH EXIST
39	637676.74	7653112.48	33.37	EDGE OF GRAVEL, MATCH EXIST
40	637677.34	7653120.41	32.50	EDGE OF GRAVEL, MATCH EXIST
41	637671.30	7653127.67	32.02	EDGE OF GRAVEL, MATCH EXIST
42	637665.20	7653124.39	32.50	EDGE OF GRAVEL, MATCH EXIST
43	637658.20	7653095.38	36.35	EDGE OF GRAVEL, MATCH EXIST

CUT AND FILL NOTES:

PROPOSED CUT: 105 CY
PROPOSED FILL: 476 CY
PROPOSED NET CUT/FILL: 371 CY
PROPOSED CUT (TO EL 44.0): 95 CY
PROPOSED FILL (TO EL 44.0): 408 CY
PROPOSED NET CUT/FILL (TO EL 44.0): 313 CY

TYPE I AND II LAND NOTES:

EXISTING TYPE I AND II LAND AREA: 1,725 SF
PROPOSED TYPE I LAND AREA: 890 SF (EXCLUDING RETAINING WALL)
EXISTING TYPE II LAND AREA: 0 SF
PROPOSED TYPE II LAND AREA: 0 SF

GENERAL NOTES:

1. THE LOCATION OF EXISTING UNDERGROUND UTILITY FACILITIES SHOWN HEREON ARE BASED ON LOCATE MARKS REQUESTED FOR THIS SURVEY PER ONE CALL PUBLIC LOCATE TICKET 20220110. THE SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE DELINEATION OF SUCH UNDERGROUND UTILITIES BY THE RESPECTIVE UTILITY OWNERS, NOR FOR THE EXISTENCE OF BURIED OBJECTS WHICH ARE NOT SHOWN ON THE PLAN. ALL UTILITY LOCATIONS SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
2. FIELD WORK WAS COMPLETED ON JANUARY 31, 2023
3. CONTRACTOR TO PROVIDE POSITIVE DRAINAGE FROM EXISTING AND NEW STRUCTURES.
4. CONTRACTOR TO RESTORE DISTURBED AREA TO GROUND ELEVATION INDICATED. BRING SITE TO FINISH GRADE ELEVATION WITH AGGREGATE BASE COURSE EXCEPT WHERE AC PAVING/ VEGETATION IS INDICATED ON THE DRAWINGS.

KEY NOTES:

1. AC PAVING PER CITY OF WEST LINN STANDARD DRAWING "STANDARD STREET CROSS-SECTION COLLECTOR" ON SHEET C11. CURB NOT REQUIRED.
2. INTERLOCKING BLOCK RETAINING WALL PER SPECIFICATION SECTION 02836. TOP OF WALL AT ELEVATION 51.0.
3. 4'-0" x 4'-0" PRECAST PGE VAULT.
4. 30" x 17" LUMEN HANDHOLE.
5. 30" x 17" COMCAST HANDHOLE.
6. CONTRACTOR TO REPLACE EXISTING BOLLARDS AND CHAIN WITH NEW.
7. CONTRACTOR TO RESTORE DISTURBED AREA TO GROUND ELEVATION INDICATED. BRING SITE TO 6-INCHES BELOW FINISH GRADE ELEVATION WITH AGGREGATE BASE COURSE AND INSTALL TOPSOIL APPROVED BY OWNER FOR TOP 6-INCHES. WHERE PLANTINGS ARE SHOWN ON LANDSCAPE SHEETS, CONTRACTOR TO MEET THOSE SPECIFIC REQUIREMENTS.
8. GUARDRAIL PER DETAIL AC508/TYP WITH CONCRETE CURB. SEE SHEET S01 FOR REQURIEMENTS.
9. NEW UTILITY POLE INSTALLED BY PGE. LOCATION IS APPROXIMATE.
10. WELD EYEBOLT ONTO END GUARDRAIL POST AND PROVIDE 3/8" GALVANIZED CHAIN ACROSS PUMP STATION ENTRANCE WITH "NO ENTRY" WARNING SIGN COORDINATED WITH OWNER.
11. EXISTING MAILBOXES TO BE RELOCATED
12. TEMPORARY RELOCATE EXISTING MAILBOXES IN APPROXIMATE LOCATION SHOWN. RELOCATE MAILBOXES TO ORIGINAL LOCATION BEFORE FINAL COMPLETION.
13. REMOVE LANDSCAPING FROM AREA SHOWN AND EXCAVATE AS NEEDED TO PLACE MINIMUM 6-INCHES OF COMPACTED ABC TO ALLOW TRUCK/ TRAILER TRAFFIC TO ACCESS NEIGHBORS DRIVEWAY. INSTALL TEMPORARY ROCK TO MATCH DRIVEWAY SLOPE. REMOVE AND RESTORE AREA TO ORIGINAL CONDITION BEFORE FINAL COMPLETION INCLUDING PLACEMENT OF TOPSOIL AND PLANTINGS TO MATCH EXISTING CONDITIONS.

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARH
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER
81348
OREGON
JUNE 10, 2014
MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Date: 2024.02.26 08:39:10-08'00'

carollo

CITY OF West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
CIVIL
GRADING PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. C01
SHEET NO. 7 OF 58

Plot Date: 10/5/2022 11:08:46 AM
LAST SAVED BY: AEvans
PROJECT NO. 201779-100000 FILE NAME: 20177900C001.dwg

Plot Date: 10/5/2022 11:08:46 AM

GENERAL NOTES:

1. THE LOCATION OF EXISTING UNDERGROUND UTILITY FACILITIES SHOWN HEREON ARE BASED ON LOCATE MARKS REQUESTED FOR THIS SURVEY PER ONE CALL PUBLIC LOCATE TICKET 20220110. THE SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE DELINEATION OF SUCH UNDERGROUND UTILITIES BY THE RESPECTIVE UTILITY OWNERS, NOR FOR THE EXISTENCE OF BURIED OBJECTS WHICH ARE NOT SHOWN ON THE PLAN. ALL UTILITY LOCATIONS SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
2. FIELD WORK WAS COMPLETED ON JANUARY 31, 2023.
3. CONTRACTOR IS RESPONSIBLE FOR ALL SHORING REQUIRED FOR WORK SAFETY AND SITE STABILIZATION AND PROTECTION. ALL SHORING MUST ABIDE BY REQUIREMENTS PRESENTED IN SPECIFICATION SECTION 02260. MAJOR SHORING SHOWN IS ENGINEER'S RECOMMENDATION. DRIVEN SHORING THAT MAY INDUCE MAJOR VIBRATION IN THE SOILS IS NOT ACCEPTABLE. CONTRACTOR MUST SUBMIT A EXCAVATION, DEWATERING, AND SHORING PLAN PRIOR TO COMMENCING WORK. SHORING REQUIREMENTS MUST BE COORDINATED WITH NEW CONSTRUCTION AND DEMOLITION OF EXISTING STRUCTURES.
4. PROPOSED INFRASTRUCTURE SHOWN TO PROVIDE CLARITY FOR PROPOSED CAISSON AND TRENCH LOCATIONS.
5. PROPOSED EXCAVATION SLOPES MUST BE VERIFIED BY CONTRACTOR TO MEET OSHA REQUIREMENTS. BENCHING NOT SHOWN; CONTRACTOR TO ESTABLISH BENCHES AS REQUIRED FOR THE WORK.

KEY NOTES:

1. CONTRACTOR TO INSTALL INJECTED GROUT AROUND IN A 5-FT ENVELOPE AROUND SHORING.
2. PROPOSED LOCATION OF VIBRATION MONITORING. CONTRACTOR TO PROVIDE VIBRATION MONITORING LOCATIONS IN EXCAVATION PLAN.
3. CONTRACTOR TO PROTECT EXISTING UTILITIES.
4. LIMITS OF SUBGRADE PROBING AND GROUTING PER SPECIFICATION SECTION 02256, WITH 5 FOOT MINIMUM PROBE HOLE SPACING OUTSIDE OF EXCAVATION SUPPORT.
5. NEW UTILITY POLE INSTALLED BY PGE. LOCATION IS APPROXIMATE.
6. EXISTING POWER POLE IS INTENDED TO MOUNT ONLY THE POWER AND METER FOR EXISTING PUMP STATION. CONTRACTOR TO PROJECT POLE AS NEEDED TO MAINTAIN POWER AND PUMP STATION OPERATION.

TAXLOT NUMBER:
21E13CB000100
DOCUMENT NUMBER:
95-039412
3831 CALAROGA DR

TAXLOT NUMBER: 21E13CA01100
DOCUMENT NUMBER: 2021-062968
NICOL WEST LINN LLC
3891 CALAROGA DR

TAXLOT NUMBER:
21E13CB03602
DOCUMENT NUMBER:
2016-077352
3836 CALAROGA DR

TAXLOT NUMBER:
21E13CB03601
DOCUMENT NUMBER:
2013-069285
3840 CALAROGA DR

SANITARY MANHOLE 4808
RIM: 60.03'

RIM: 24.87'

STORM CULVERT

STORM CATCH BASIN RIM:40.71'

STORM CATCH BASIN RIM:53.40'

EXIST CONCRETE WEIR STRUCTURES

EXIST ROCK WALL

RIGHT OF WAY

ELECTRICITY (OVERHEAD

ELECTRICAL LINE

CALAROGA DR

VIBRATION MONITORING LOCATION # 3 (2)

CAISSON STYLE (4)

TRENCH SHORING

DISTRUBANCE LIMIT

VIBRATION MONITORING LOCATION # 2 (2)

CAISSON STYLE (3)

VIBRATION MONITORING LOCATION # 1 (2)

CABLE (3)

WATER (3)

SANITARY SEWER (3)

ELECTRICITY (3)

STORM DRAIN (3)

NATURAL GAS (3)

80' EXISTING PUBLIC ROW

POWER POLE W/ LINES

-67.70%
-68.32%
-78.98%
-67.36%
-100.86%
-90.87%
-95.36%
-89.90%

0 5' 10' 20'
SCALE: 1" = 10'

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN SCR
CHECKED TT
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER
81348
OREGON
JUNE 10, 2014
MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact: matt@carollo.com
Date: 2023.12.28 10:54:47-08'00'

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CITY OF WEST LINN

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
CIVIL

EXCAVATION AND SHORING PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. C02
SHEET NO. 8 OF 58

LAST SAVED BY: tuy

PROJECT NO. 201779-100000 FILE NAME: 20177900C002.dwg

GENERAL NOTES:

1. THE LOCATION OF EXISTING UNDERGROUND UTILITY FACILITIES SHOWN HEREON ARE BASED ON LOCATE MARKS REQUESTED FOR THIS SURVEY PER ONE CALL PUBLIC LOCATE TICKET 20220110. THE SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE DELINEATION OF SUCH UNDERGROUND UTILITIES BY THE RESPECTIVE UTILITY OWNERS, NOR FOR THE EXISTENCE OF BURIED OBJECTS WHICH ARE NOT SHOWN ON THE PLAN. ALL UTILITY LOCATIONS SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
2. FIELD WORK WAS COMPLETED ON JANUARY 31, 2023.
3. PIPE TRENCHES SHALL BE PER DETAIL CY111/TYP.

KEY NOTES:

1. CONTRACTOR TO EXPOSE EXISTING FORCEMAIN ORIGINALLY INSTALLED IN EXISTING SS TRENCH AND CONNECT NEW FORCE MAIN TO EXISTING. CONTRACTOR TO ASSUME EXISTING ELBOW WILL BE REPLACED WITH NEW ELBOW AND AND CONNECTION TO EXISTING FORCEMAIN WITH EBAA IRON MEGALUG 1100 OR EQUAL.
2. INVERT ELEVATIONS PROVIDED CORRESPOND TO BEST KNOWN INFORMATION FOR THE PIPING WITHIN VICINITY OF THE CALLOUT. CONTRACTOR TO FIELD VERIFY.
3. EX PIPE MATERIAL:
   RS = ASBESTOS CEMENT
   SS = CONCRETE
   W = DUCTILE IRON
4. SEE DRAWING C04 FOR INSTALLATION PLAN AND SECTIONS.

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARE
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 81348 OREGON JUNE 10, 2014 MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:10:56-05'00'

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CITY OF West Linn

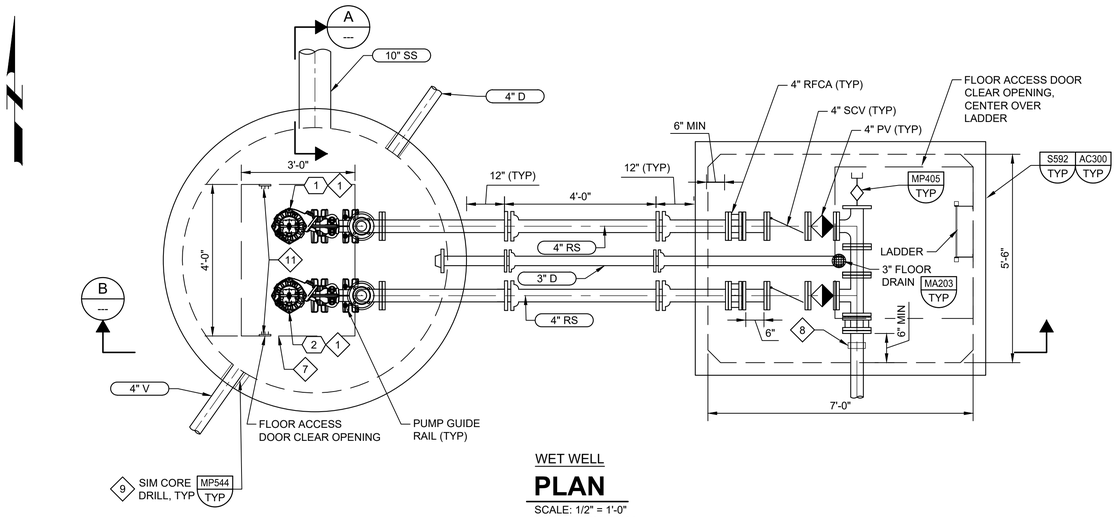
CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
CIVIL

YARD PIPING PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. C03
SHEET NO. 9 OF 58

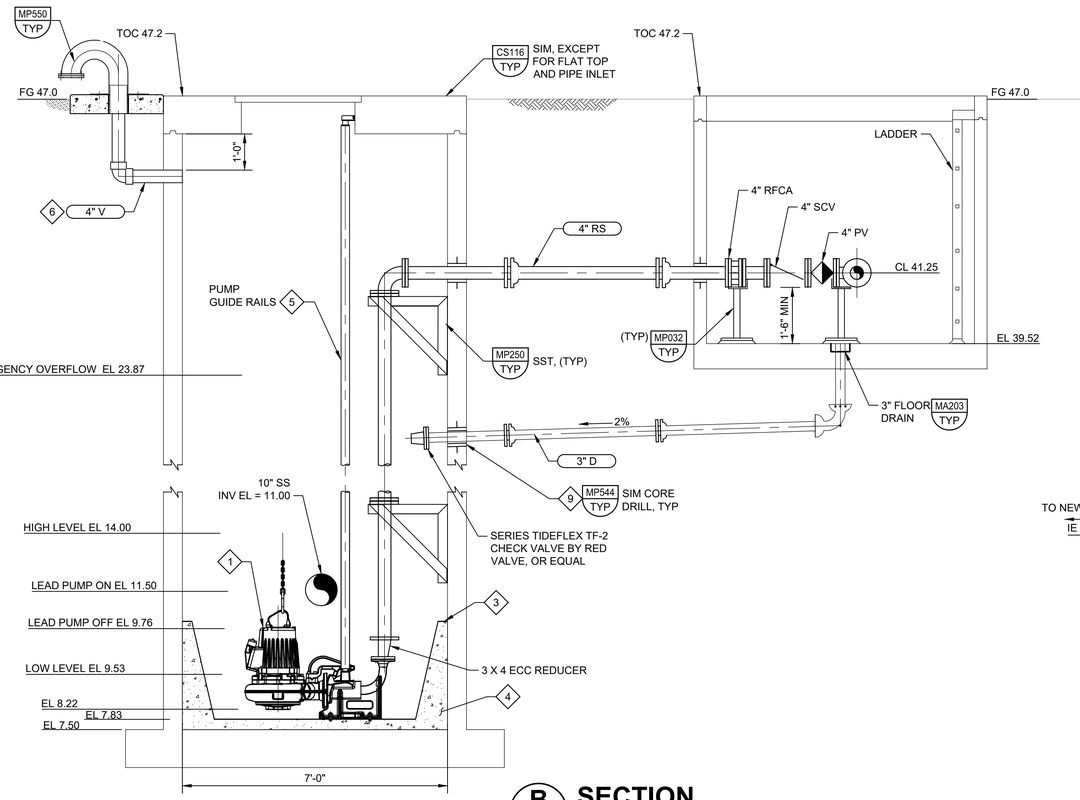
Plot Date: 10/5/2022 11:08:46 AM
LAST SAVED BY: tuy
PROJECT NO. 201779-100000 FILE NAME: 20177900C003.dwg



WET WELL

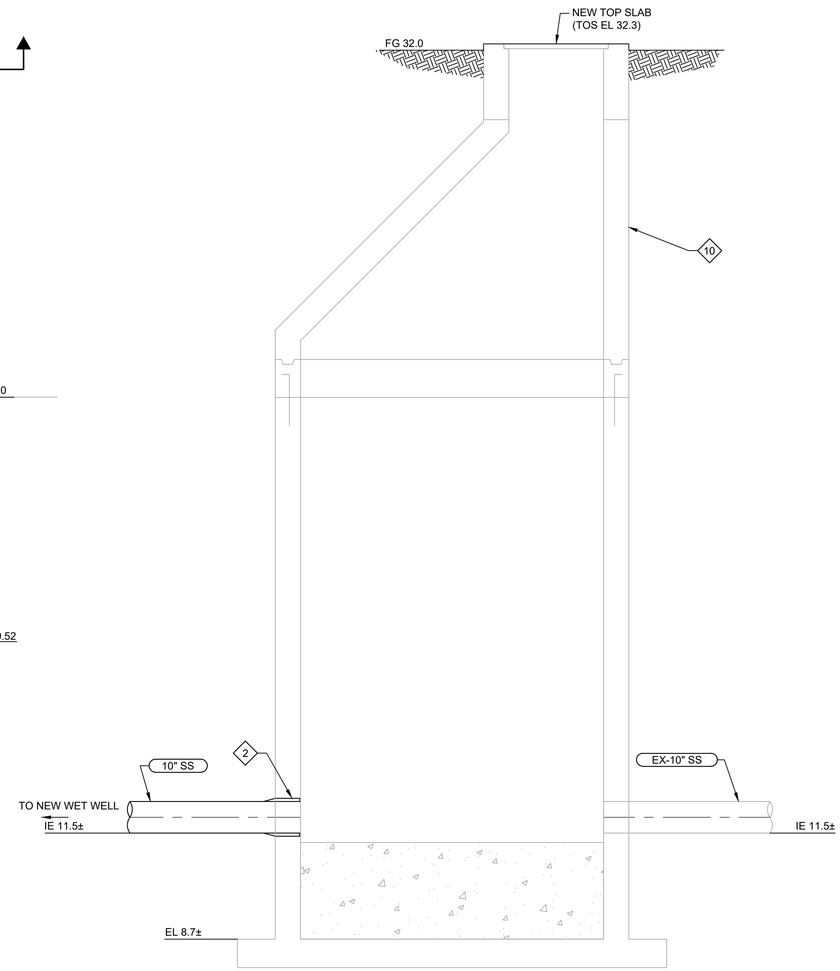
PLAN

SCALE: 1/2" = 1'-0"
FILE: 20177901M101



B SECTION

SCALE: 1/2"=1'-0"
FILE: 8709A12201M306



C SECTION

C03
SCALE: 1/2"=1'-0"
FILE: 8709A12201M306

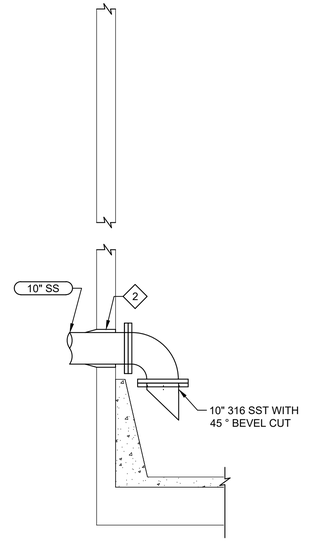
KEY TAGS:

1 PMP-101

2 PMP-102

KEY NOTES:

1. SUBMERSIBLE MEDIUM CAPACITY CENTRIFUGAL PUMP. SEE SPECIFICATION SECTION 11312K FOR REQUIREMENTS.
2. INSTALL WITH FLEXIBLE MANHOLE BOOT, KOR-N-SEAL OR EQUAL.
3. FIBERGLASS REINFORCED PLASTIC PUMP BASE. SEE SPECIFICATION SECTION 11312K FOR REQUIREMENTS. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
4. CONTROLLED LOW STRENGTH MATERIAL. FILL ANNULAR SPACE BETWEEN PUMP BASE AND WET WELL.
5. PROVIDED BY CONTRACTOR.
6. SHOWN OUT OF SECTION FOR CLARITY.
7. COORDINATE FLOOR ACCESS DOOR OPENING WITH PUMP MANUFACTURER.
8. DISCHARGE HEADER PRESSURE GAUGE. SEE INSTRUMENTATION DRAWINGS FOR REQUIREMENTS.
9. CONTRACTOR TO COORDINATE PIPE PENETRATIONS WITH PRECAST MANUFACTURER.
10. SEE SHEET S03 FOR EXISTING WET WELL MODIFICATIONS. MANHOLE RING AND BACKFILL SIMILAR TO DETAIL CS116/TYP.
11. FABRICATE AND INSTALL SST J-HOOK PLATE ASSEMBLY TO HANG PUMP LIFTING CHAIN AND EXTRA ELECTRICAL CABLE. J-HOOK PLATE MUST BE CONSTRUCTED OF 1/4-INCH 316L SST PLATE AND 1/4-INCH (J-HOOK) RODS.



A SECTION

SCALE: 3/8"=1'-0"
FILE: 8709A12201M306

0 2' 4' 6'
SCALE: 3/8" = 1'

0 1' 2' 4'
SCALE: 1/4" = 1'-0"

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARE
CHECKED TT
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 81348 OREGON JUNE 10, 2014 MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:10:33-05'00'

carollo

CITY OF WEST LINN

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
CIVIL

PUMP STATION, VALVE VAULT, AND WET WELL PLAN AND SECTIONS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. C04
SHEET NO. 10 OF 58

Plot Date: 9/12/2022 7:29:07 AM
LAST SAVED BY: tuy
PROJECT NO. 201779-100000 FILE NAME: 20177900C004.dwg

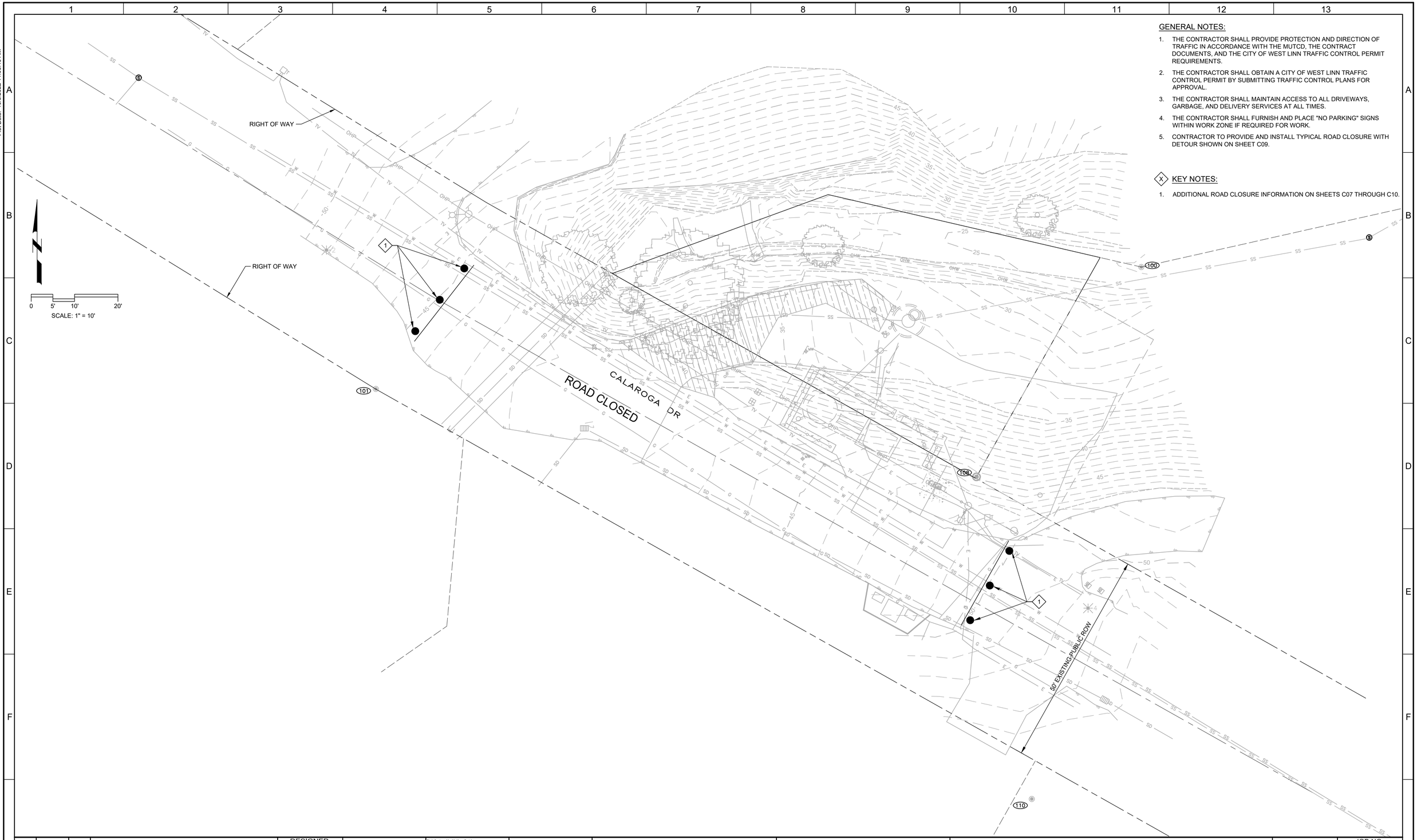
Plot Date: 10/5/2022 11:08:46 AM

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE PROTECTION AND DIRECTION OF TRAFFIC IN ACCORDANCE WITH THE MUTCD, THE CONTRACT DOCUMENTS, AND THE CITY OF WEST LINN TRAFFIC CONTROL PERMIT REQUIREMENTS.
2. THE CONTRACTOR SHALL OBTAIN A CITY OF WEST LINN TRAFFIC CONTROL PERMIT BY SUBMITTING TRAFFIC CONTROL PLANS FOR APPROVAL.
3. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS, GARBAGE, AND DELIVERY SERVICES AT ALL TIMES.
4. THE CONTRACTOR SHALL FURNISH AND PLACE "NO PARKING" SIGNS WITHIN WORK ZONE IF REQUIRED FOR WORK.
5. CONTRACTOR TO PROVIDE AND INSTALL TYPICAL ROAD CLOSURE WITH DETOUR SHOWN ON SHEET C09.

KEY NOTES:

1. ADDITIONAL ROAD CLOSURE INFORMATION ON SHEETS C07 THROUGH C10.



REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARE
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER
81348
OREGON
JUNE 10, 2014
MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:10:59-05'00'

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CITY OF West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
CIVIL

TRAFFIC CONTROL PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. C05
SHEET NO. 11 OF 58

LAST SAVED BY: tuy

PROJECT NO. 201779-100000 FILE NAME: 20177900C005.dwg

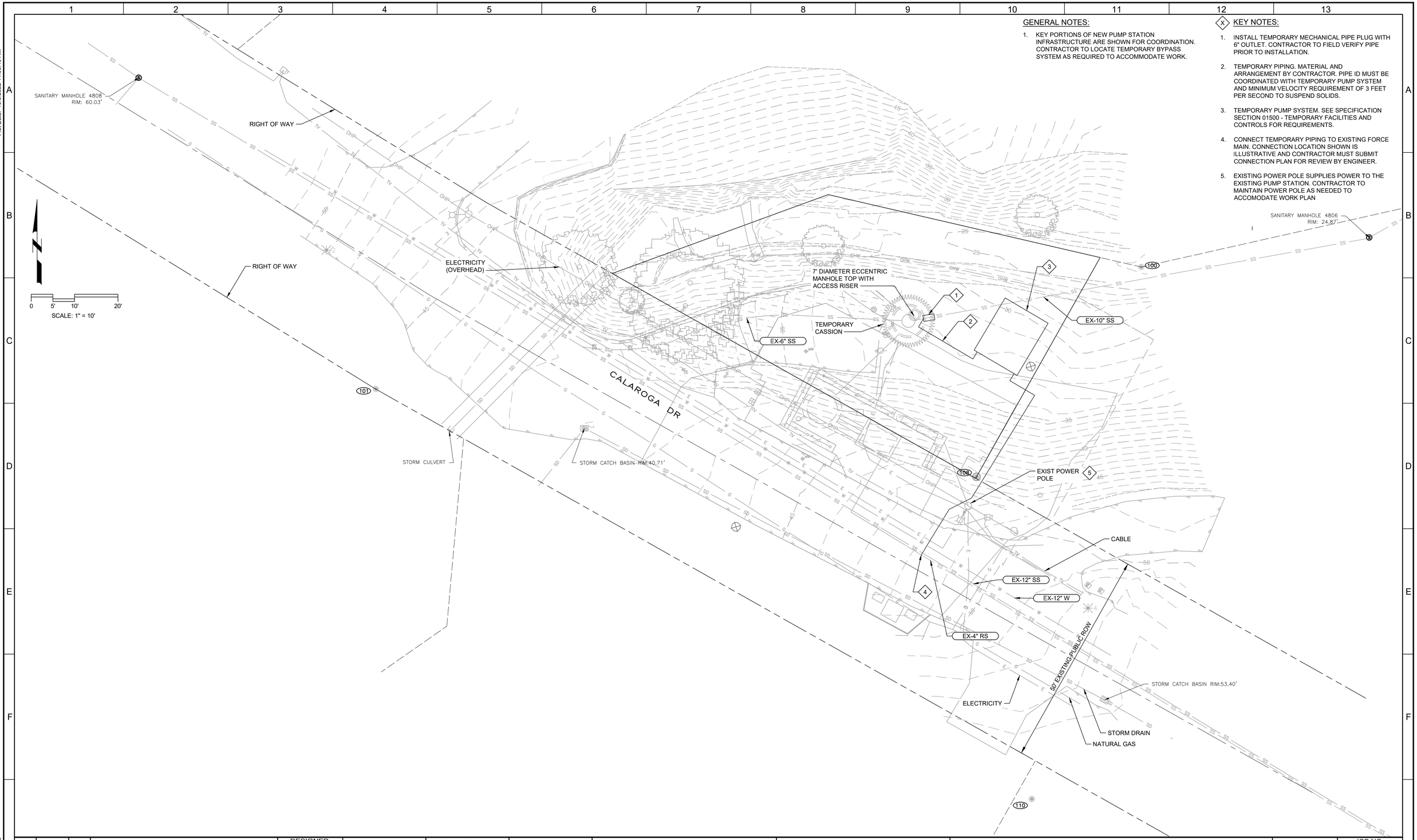
Plot Date: 10/5/2022 11:08:46 AM

GENERAL NOTES:

1. KEY PORTIONS OF NEW PUMP STATION INFRASTRUCTURE ARE SHOWN FOR COORDINATION. CONTRACTOR TO LOCATE TEMPORARY BYPASS SYSTEM AS REQUIRED TO ACCOMMODATE WORK.

KEY NOTES:

1. INSTALL TEMPORARY MECHANICAL PIPE PLUG WITH 6" OUTLET. CONTRACTOR TO FIELD VERIFY PIPE PRIOR TO INSTALLATION.
2. TEMPORARY PIPING. MATERIAL AND ARRANGEMENT BY CONTRACTOR. PIPE ID MUST BE COORDINATED WITH TEMPORARY PUMP SYSTEM AND MINIMUM VELOCITY REQUIREMENT OF 3 FEET PER SECOND TO SUSPEND SOLIDS.
3. TEMPORARY PUMP SYSTEM. SEE SPECIFICATION SECTION 01500 - TEMPORARY FACILITIES AND CONTROLS FOR REQUIREMENTS.
4. CONNECT TEMPORARY PIPING TO EXISTING FORCE MAIN. CONNECTION LOCATION SHOWN IS ILLUSTRATIVE AND CONTRACTOR MUST SUBMIT CONNECTION PLAN FOR REVIEW BY ENGINEER.
5. EXISTING POWER POLE SUPPLIES POWER TO THE EXISTING PUMP STATION. CONTRACTOR TO MAINTAIN POWER POLE AS NEEDED TO ACCOMODATE WORK PLAN



REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARE
CHECKED TT
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER
81348
OREGON
JUNE 10, 2014
MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:11:26-05'00'

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CITY OF West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
CIVIL

BYPASS PUMPING PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. C06
SHEET NO. 12 OF 58

LAST SAVED BY: AEvans

PROJECT NO. 201779-100000 FILE NAME: 20177900C006.dwg

TAPER TYPES & FORMULAS	
TAPER	FORMULA
Merging (Lane Closure)	"L"
Shifting	"L"/2 or ½"L"
Shoulder Closure	"L"/3 or ⅓"L"
Flagging (See Drg. TM850)	50' – 100'
Downstream (Termination)	Varies (See Drawings)

Use Pre-Construction Posted Speed to select the Speed from the Tables below:

TEMPORARY BARRIER FLARE RATE TABLE	
SPEED (mph)	MINIMUM FLARE RATE
30	8:1
35	9:1
40	10:1
45	12:1
50	14:1
55	16:1
60	18:1
65	19:1
70	20:1

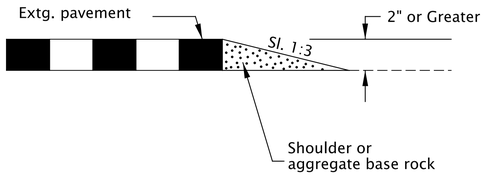
MINIMUM LENGTHS TABLE					
"L" VALUE FOR TAPERS (ft)					BUFFER "B" (ft)
SPEED (mph)	W = Lane or Shoulder Width being closed or shifted				
	W 10	W = 12	W = 14	W = 16	
25	105	125	145	165	75
30	150	180	210	240	100
35	205	245	285	325	125
40	265	320	375	430	150
45	450	540	630	720	180
50	500	600	700	800	210
55	550	660	770	880	250
60	600	720	840	960	285
65	650	780	910	1000	325
70	700	840	980	1000	365
FREEWAYS					
55	1000	1000	1000	1000	250
60	1000	1000	1000	1000	285
65	1000	1000	1000	1000	325
70	1000	1000	1000	1000	365

NOTES:
- For Lane closures where W < 10', use "L" value for W = 10'.
- For Shoulder closures where W < 10', use "L" value for W = 10' or calculate "L" using formula, for Speeds ≥ 45: L = WS, Speeds < 45: L = S W/60, S = Speed, W=Width

TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE				
SPEED (mph)	Sign Spacing (ft)			Max. Channelizing Device Spacing (ft)
	A	B	C	
20 – 30	100	100	100	20
35 – 40	350	350	350	20
45 – 55	500	500	500	40
60 – 70	700	700	700	40
Freeway	1000	1500	2640	40

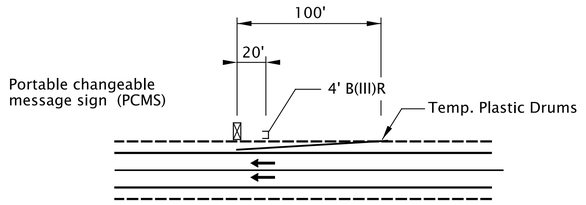
NOTES:
- Place traffic control devices on 10 ft. spacing for intersection and access radii.
- When necessary, sign spacing may be adjusted to fit site conditions. Limit spacing adjustments to 30% of the "A" dimension for all speeds.

NOTES:
- When paved shoulders adjacent to excavations are less than four feet wide protect longitudinal abrupt edge as shown.
- Use aggregate wedge when abrupt edge is 2 inches or greater.



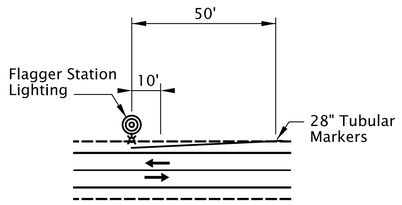
EXCAVATION ABRUPT EDGE

NOTES:
- Install PCMS beyond the outside shoulder, when possible.
- Use the appropriate type of barricade panels for PCMS location. Right shoulder, use Type B(III)R Left shoulder, use Type B(III)L
- Use six drums in shoulder taper on 20' spacing. The drums and barricade may be omitted when PCMS is placed behind a roadside barrier.
- Detail as shown is used for trailered and non-crashworthy components of:
  - Portable Traffic Signals
  - Smart Work Zone Systems



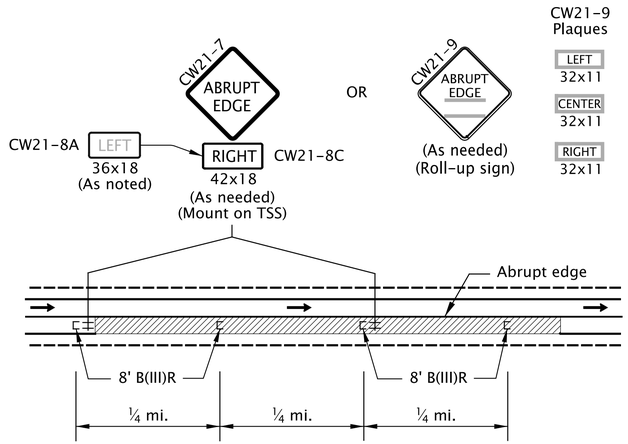
PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) INSTALLATION

NOTES:
- Install Flagger Station Lighting beyond the outside shoulder, where practical.
- Use six tubular markers in shoulder taper on 10' spacing.
- Place cart / generator / power supply off of the shoulder, as far as practical.



FLAGGER STATION LIGHTING DELINEATION

NOTES:
- Abrupt edges may be created by paving, operations, excavations or other roadway work. Use abrupt edge signing for longitudinal abrupt edges of 1 inch or greater.
- If the excavation is located on left side of traffic, replace the 8' B(III)R barricades with 8' B(III)L barricades and replace the "RIGHT" (CW21-8C) riders with "LEFT" (CW21-8A) riders.
- Continue signing and other traffic control devices throughout excavation area at spacings shown.
- If roll-up signs are used, attach the correct (CW21-9) plaques to the sign face using hook and loop fasteners. Place roll-up signs in advance of barricades.



TYPICAL ABRUPT EDGE DELINEATION

GENERAL NOTES FOR ALL TCP DRAWINGS:
- Signs and other Traffic Control Devices (TCD) shown are the minimum required.
- Place a barricade approx. 20' ahead of all sequential arrow boards.
- Arrows shown in roadway are directional arrows to indicate traffic movements.
- All signs are 48" x 48" unless otherwise shown. Use fluorescent orange sheeting for the background of all temporary warning signs.
- All diamond shaped warning signs mounted on barrier sign supports shall be 36" by 36". All other signs mounted on barrier sign supports shall not exceed 12 sq. ft. in total sign area.
- Low speed highways have a pre-construction posted speed of 40 mph or less. High speed highways have a pre-construction posted speed of 45 mph or higher.
- Do not locate sign supports in locations designated for bicycle or pedestrian traffic.
- Combine drawing details to complete temporary traffic control for each work activity.
- Coordinate and control pedestrian movements through a Temporary Accessible Route using Flaggers, Traffic Control Measures, or as directed.
- To be accompanied by Dwg. Nos. TM820 & TM821.

Temp. Plastic Drums See TCD Spacing Table for max. spacing.

28" Tubular Markers See TCD Spacing Table for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION

0

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARE
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 81348 OREGON JUNE 10, 2014 MATTHEW S. SPRICK EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:11:47-05'00'

carollo®

City of West Linn

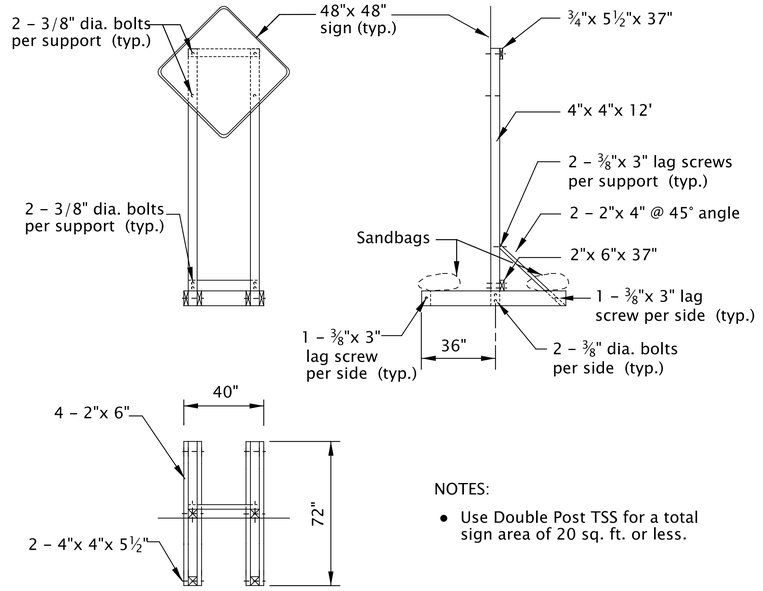
CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
CIVIL
OREGON STANDARD DRAWINGS
TRAFFIC CONTROL

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. C07
SHEET NO. 13 OF 58

PROJECT NO. 201779-100000 FILE NAME: 20177900C007.dgn

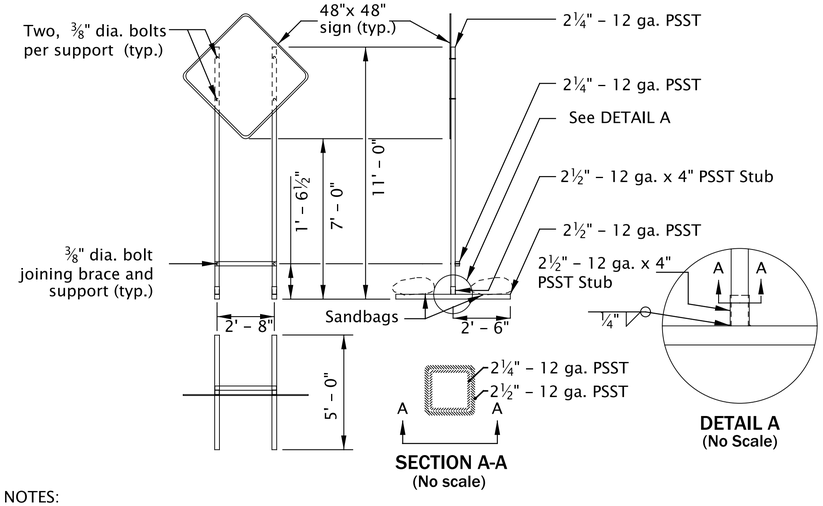
Plot Date: 7-NOV-2023 10:28:32 AM
User: svcPW
PlotScale: 1:1
DesignScript: Carollo_Std_Pen_v0905.pen
ColorTable: gshade.ctb
Model: Layout1
LAST SAVED BY: AEvans



NOTES:

- Use Double Post TSS for a total sign area of 20 sq. ft. or less.

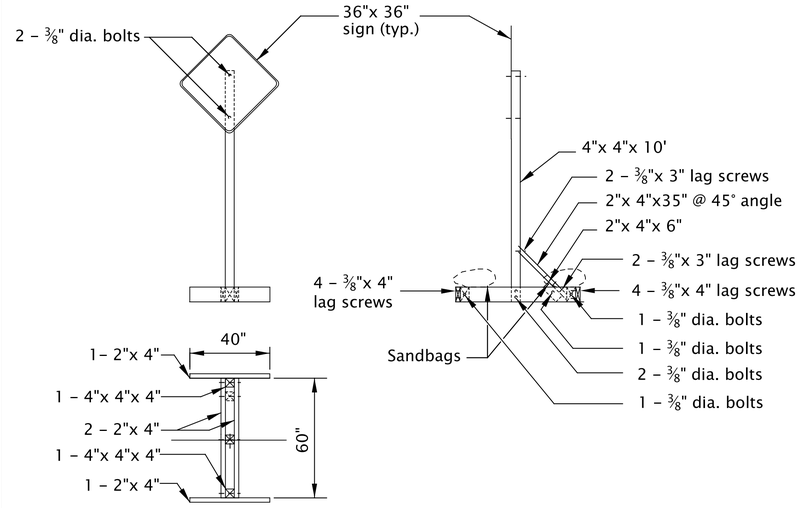
DOUBLE POST DETAIL



NOTES:

- Use PSST TSS's for a total sign area of 16 sq. ft. or less.
- All members shall have a minimum yield stress of 50 ksi.
- Galvanize steel according to ASTM A653 with coating designation G90. Remove Galvanizing from steel before welding. Repair Galvanizing according to ASTM A780.
- Use A325 Bolts or equivalent.
- 2¼" - 12 ga. PSST to extend entire length inside of the 2½" - 12 ga. x 4" PSST Stub.
- Do not use bolt to secure 2¼" PSST inside of the 2½" - 12 ga. x 4" PSST Stub.
- Weld steel according to American Welding Society (AWS) D.1.1.

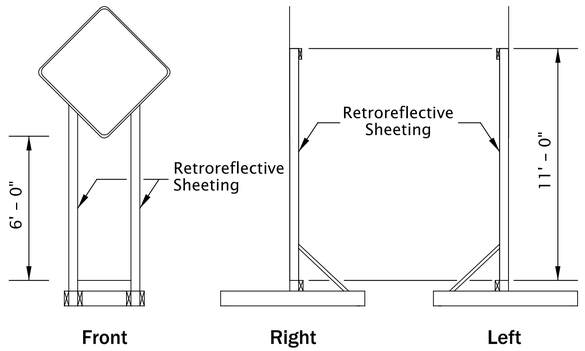
PERFORATED STEEL SQUARE TUBE (PSST) DETAIL



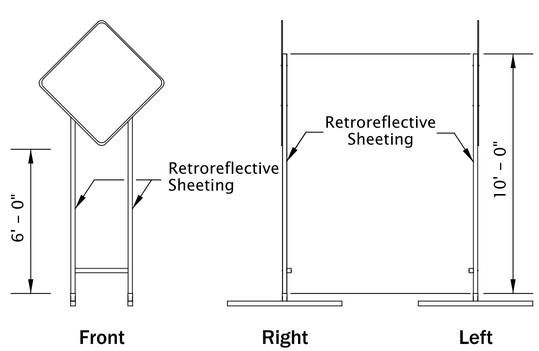
NOTES:

- Use Single Post TSS for a total sign area of 12 sq. ft. or less.
- Use Single Post TSS for mounting "Business Access" (CG20-11) signs. Do not mount signs on Type II or III Barricades.

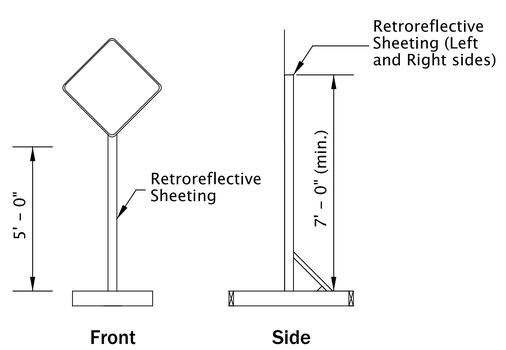
SINGLE POST DETAIL



Double Post



Perforated Steel Square Tube (PSST)



Single Post

TEMPORARY SIGN SUPPORT GENERAL NOTES:

- Do not tip over TSS at any time.
- Do not locate TSS's in locations that block pedestrian or bicycle traffic.
- For wooden TSS's, use either Douglas Fir or Hem Fir, which is surfaced four sides (S4S) and free of heart center (FOHC).
- See "Temporary Sign Placement" detail on TM822 for sign installation heights.
- Do not place or stack ballast more than 24" above the ground.
- When sign is inconsistent with current work zone conditions, cover sign: or turn sign 90 degrees away from approaching traffic. Remove TSS from roadway when signing is not needed for more than 3 days.
- Place a minimum of 50 lbs of sandbags on each of the four TSS supports legs. (25 lb. max per bag) (min. 100 lbs per side of each TSS).
- See Dwg. No. TM204 for flag board mounting detail.

NOTES:

- Apply fluorescent orange, ANSI Type VIII or IX retroreflective sheeting to TSS posts, as shown, for all temporary signs, except "STOP" and "DO NOT ENTER". For "STOP" and "DO NOT ENTER" signs, used red ANSI Type III or IV retroreflective sheeting on the TSS posts.
- Apply sign post retroreflectivity to each TSS post facing front; and to the left and right sides of the TSS, as shown. Use 3" wide sheeting for wood post TSS's. Use 2" wide sheeting for PSST TSS's.
- Sheeting may be applied directly to post material; or applied to a rigid, lightweight substrate, then securely attached to the posts.

SIGN POST REFLECTIVE SHEETING PLACEMENT

0

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARE
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 81348 OREGON JUNE 10, 2014 MATTHEW S. SPRICK EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:12:54-05'00'

carollo®

City of West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
CIVIL
OREGON STANDARD DRAWINGS
TRAFFIC CONTROL

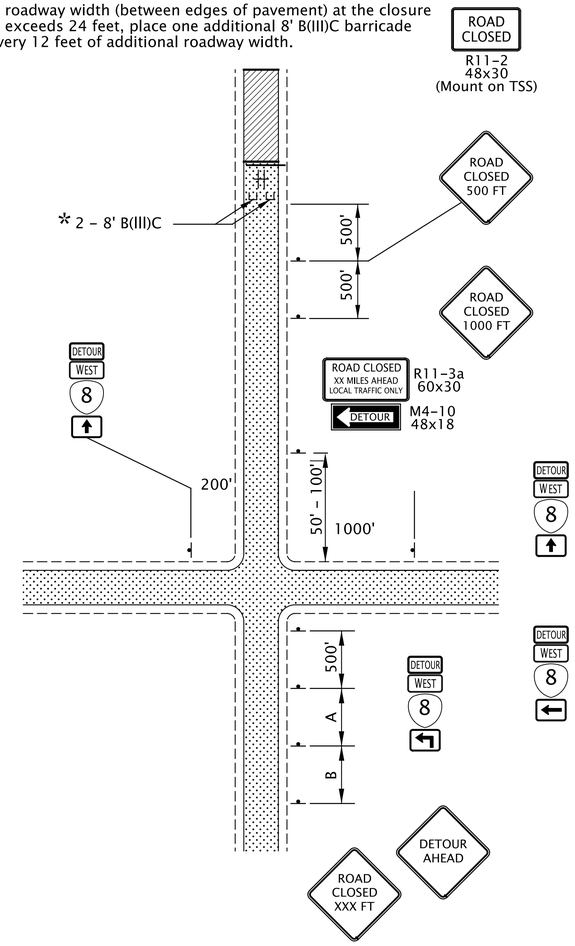
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. C08
SHEET NO. 14 OF 58

PROJECT NO. 201779-100000 FILE NAME: 20177900C008.dgn

NOTES:
If closure point is less than 1500 ft. from nearest intersection, use a "ROAD CLOSED TO THRU TRAFFIC" (R11-4)sign in place of the "ROAD CLOSED XX MILES AHEAD" sign.

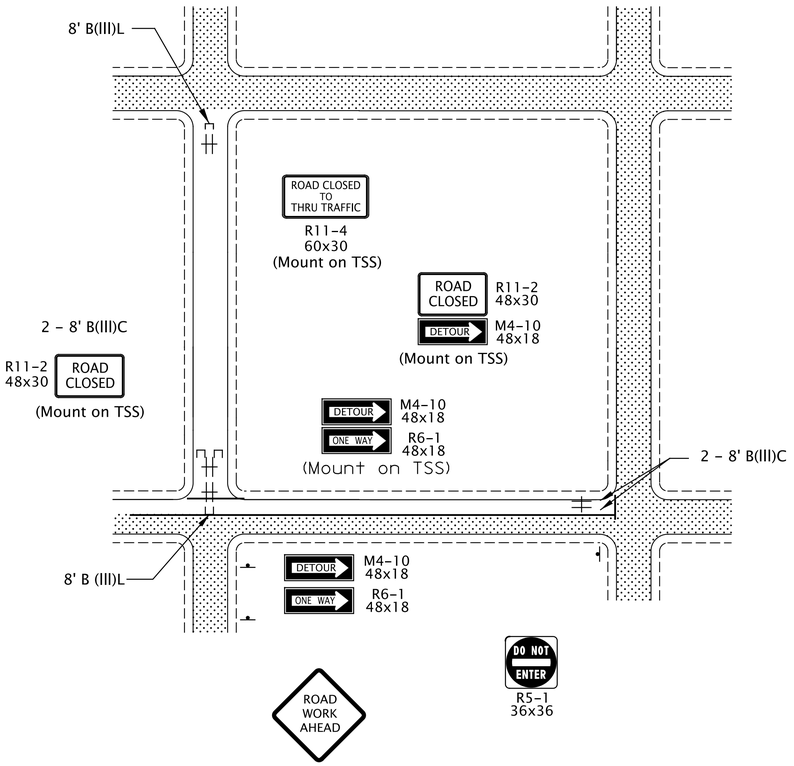
* If the roadway width (between edges of pavement) at the closure point exceeds 24 feet, place one additional 8' B(III)C barricade for every 12 feet of additional roadway width.



TYPICAL ROAD CLOSURE WITH DETOUR

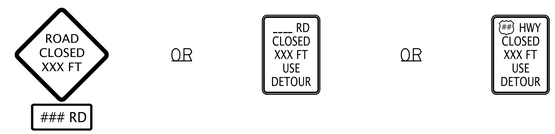
NOTE:
- When detour routes overlap, each Route Shield will include a seperate cardinal direction, detour, and directional arrow auxiliary sign assembly.

TYPICAL TRAILBLAZER ASSEMBLY



TYPICAL PARTIAL ROAD CLOSURE

GENERAL NOTES FOR ALL DETAILS:
A "Street Name" rider may be used to enhance Road Closure signing; or provide a project specific design; or, as shown in the traffic control plan.



##x18 Rider
Rider width to be determined by width of street name.

48 x 60 (nom.)
Project Specific Design

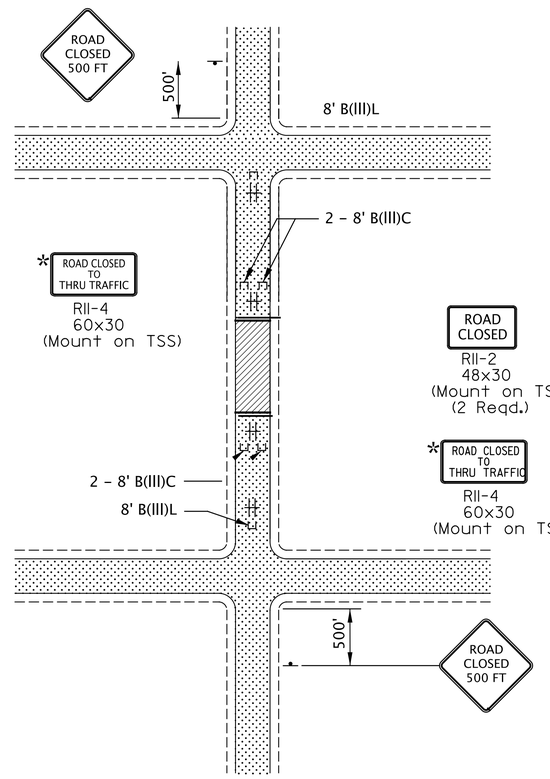
48 x 60 (nom.)
Project Specific Design

- Use a minimum of two Type III barricades for a road closure. For roads ≥ 36' wide between curbs or edge of pavement, use a minimum of three Type III barricades for the closure point.
- For full road closures, the C or LR barricade may be used.
- Place additional signing as directed.
- To determine sign spacing A, B, & C, use the "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Dwg. TM800.
- To be accompanied by Dwg. Nos.TM820 & TM821.

——— 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION



NOTE:
* If accesses exist between intersection and point of closure, install "ROAD CLOSED TO THRU TRAFFIC" sign as shown.

TYPICAL ROAD CLOSURE

0

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARE
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 81348 OREGON JUNE 10, 2014 MATTHEW S. SPRICK EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:12:25-05'00'

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CITY OF West Linn

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CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
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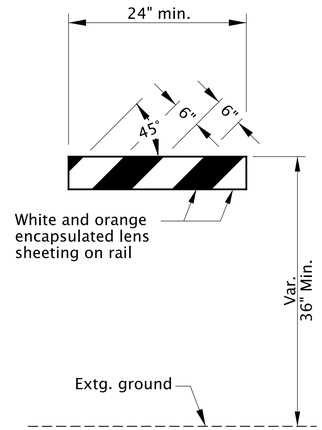
TRAFFIC CONTROL

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

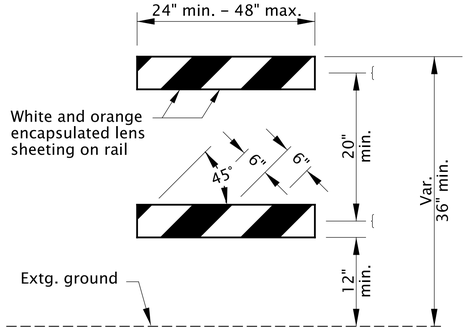
JOB NO. 201779
DRAWING NO. C09
SHEET NO. 15 OF 58

PROJECT NO. 201779-100000 FILE NAME: 20177900C009.dgn

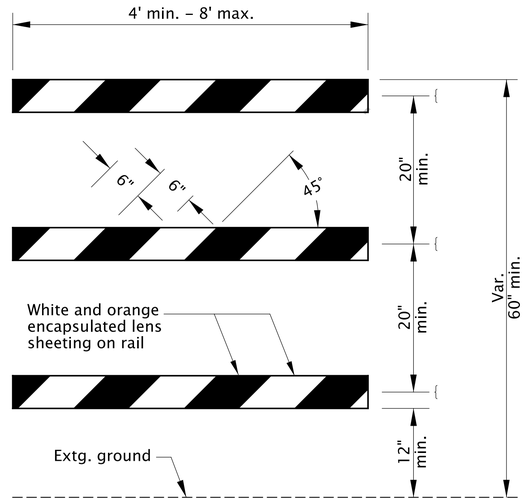
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1 Plot Date: 7-NOV-2023 10:39:38 AM User: svcPW LAST SAVED BY: AEvans



TYPE I



TYPE II



TYPE III

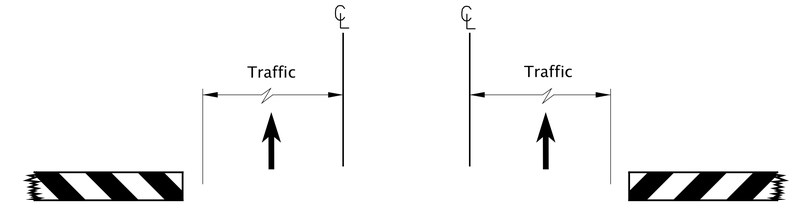
BARRICADE RAIL LAYOUT

GENERAL NOTES FOR ALL DETAILS:

- Sandbags (approximately 25 lb sack filled with sand) may be placed on lower frame to provide additional ballast.
- Ballast shall not extend above bottom rail or be suspended from barricade.
- For rails less than 36" long, 4" wide stripes shall be used.
- Rails must be 8" min. to 12" max. in height.
- Use barricades from ODOT Qualified Products List (QPL).
- Use 4' Type III barricades where horizontal space is limited.
- Do not block bike lanes or shoulders unless the facility is properly closed and signed.
- Do not place barricades in sidewalks unless sidewalk is closed and a temporary pedestrian accessible route (TPAR) is signed according to the TCP. See Dwg. No. TM844.

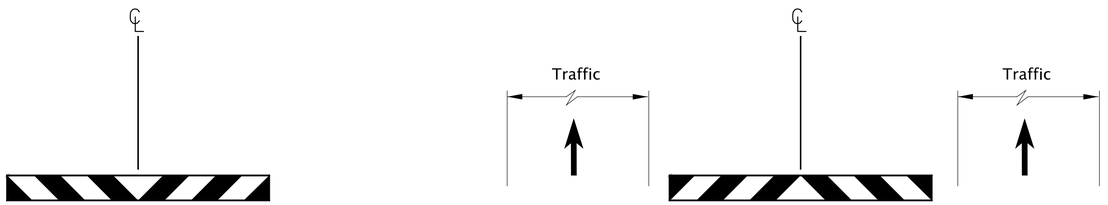
NOTES:

- Markings for barricade rails shall slope downward at an angle of 45° in the direction traffic is to pass.
- Where a barricade extends entirely across a roadway, it is desirable that the stripes slope downward in the direction toward which traffic must turn in detouring.
- Where both right and left turns are provided for, slope the chevron striping downward in both directions from the center of the barricade.
- For full roadway closures, the C or LR barricade may be used. Extend barricades completely across roadway unless access is required for local road users.



LT. SIDE - L
(For approaching traffic)

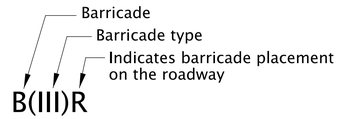
RT. SIDE - R
(For approaching traffic)



CLOSED - C
(For approaching traffic)

LT. / RT. - LR
(For approaching traffic)

DIAGRAM FOR BARRICADE PLACEMENT AND SLOPE MARKING



BARRICADE NOTATION

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REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARE
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 81348 OREGON JUNE 10, 2014 MATTHEW S. SPRICK EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:12:42-08'00'

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CITY OF West Linn

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CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
CIVIL
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TRAFFIC CONTROL

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BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
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JOB NO. 201779
DRAWING NO. C10
SHEET NO. 16 OF 58

PROJECT NO. 201779-100000 FILE NAME: 20177900C010.dgn

Plot Date: 7-NOV-2023 10:40:00 AM
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PlotScale: 1:1
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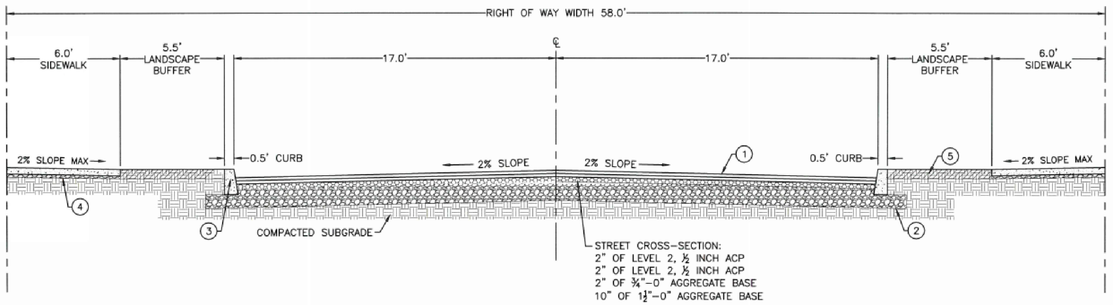
ColorTable: gshade.ctb
Model: Layout1
LAST SAVED BY: AEvans



STANDARD STREET CROSS - SECTION COLLECTOR

NOTE:

1. UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER, STREETS SHALL BE PAVED TO FINAL GRADE USING 2 OR MORE LIFTS. FINAL LIFT SHALL BE PLACED ONLY AFTER ACCEPTANCE OF THE FIRST LIFT AT A TIME AS DIRECTED OR APPROVED BY THE CITY ENGINEER. A PLAIN CONCRETE PAVEMENT ALTERNATIVE CROSS-SECTION, CONSISTING OF 7 INCH PCC ON COMPACTED SUBGRADE, IS ALLOWED WITH APPROVAL OF CITY ENGINEER.
2. ROAD BASE SHALL BE PREPARED 1 FOOT BEHIND CURB.
3. STANDARD CURB PER ODOT RD700. H=16", E=4"
4. 4" OF PORTLAND CEMENT CONCRETE OVER 2" OF ¾"-0" AGGREGATE BASE.
5. LANDSCAPE BUFFER SHALL BE COVERED WITH 6" OF QUALITY TOPSOIL.

GENERAL NOTES:

1. THIS SHEET IS PROVIDED TO SHOW MINIMUM REQUIREMENTS FOR THE ROAD SECTION FOR THIS PROJECT. CURBING AND SIDEWALKS ARE NOT REQUIRED.

Plot Date: 10/5/2022 11:08:46 AM

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARE
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER
81348
OREGON
JUNE 10, 2014
MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:13:04-05'00'

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CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
CIVIL
CITY OF WEST LINN STANDARD DRAWINGS

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0 1"
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JOB NO. 201779
DRAWING NO. C11
SHEET NO. 17 OF 58

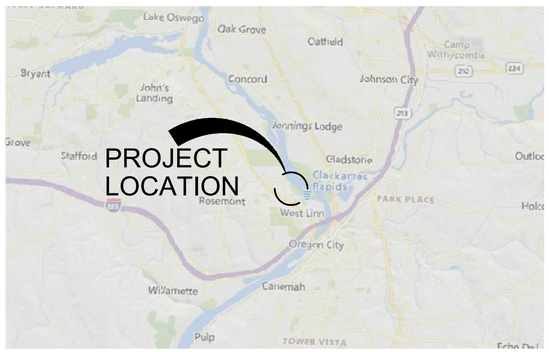
LAST SAVED BY: tuy

PROJECT NO. 201779-100000 FILE NAME: 20177900C011.dwg

EROSION AND SEDIMENT CONTROL PLANS

CALAROGA SANITARY SEWER PUMP STATION

SITE MAP *NOT TO SCALE*



VICINITY MAP *NOT TO SCALE*

PROJECT LOCATION:
3821 CALAROGA DRIVE
WEST LINN, OR 97068

PROPERTY DESCRIPTION:
TAX LOT NUMBER 21E13CA01101
PARCEL NUMBER 00296744

ATTENTION EXCAVATORS:
OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THESE RULES FROM THE CENTER BY CALLING 503-232-1987. IF YOU HAVE ANY QUESTIONS ABOUT THE RULES, YOU MAY CONTACT THE CENTER. YOU MUST NOTIFY THE CENTER AT LEAST TWO BUSINESS DAYS, BEFORE COMMENCING AN EXCAVATION, CALL 503-246-6699.

OWNER
CITY OF WEST LINN
ERICH LAIS
CITY ENGINEER
22500 SALAMO RD
WEST LINN, OR 97068
Elais@westlinnoregon.gov
503-722-3434

ENGINEERING FIRM
CAROLLO ENGINEERS
707 SW WASHINGTON STREET
SUITE 500
PORTLAND, OR 97205
(503) 227-1885
FAX (503) 227-1747

NARRATIVE DESCRIPTIONS

EXISTING SITE CONDITIONS:
THE PROJECT IS LOCATED ON THE PARCEL USED FOR THE CALARGOA SANITARY SEWER PUMP STATION.

DEVELOPED CONDITIONS:
THE SITE CONSISTS OF THE CALAROGA SANITARY SEWER PUMP STATION NEAR TRILLIUM CREEK.

NATURE OF CONSTRUCTION ACTIVITY:
CONSTRUCTION OF NEW SANITARY SEWER PUMP STATION, GRAVITY AND PRESSURIZED PIPES, AND VALVE VAULT.

ESTIMATE OF TOTAL PERMITTED PROJECT AREA:
0.20 ACRES

TOTAL DISTURBED AREA:
0.20 ACRES

SITE SOIL CLASSIFICATION:
-30 FT EL AND ABOVE: SAND TO SILTY SAND
-BELOW 30 FT EL: WEATHER BASALT BEDROCK

RECEIVING WATER BODIES:
WILLAMETTE RIVER VIA TRILLIUM CREEK.

ESTIMATED TIME TABLE :
MARCH 2024 TO APRIL 2025

PERMITTEE'S SITE INSPECTOR: _____
COMPANY/AGENCY: _____
PHONE: _____
FAX: _____
E-MAIL: _____
DESCRIPTION OF EXPERIENCE: _____

INSPECTION FREQUENCY:

SITE CONDITION	MINIMUM FREQUENCY
1. PERIODS DURING WHICH DISCHARGE IS UNLIKELY DUE TO FROZEN CONDITIONS.	MONTHLY, RESUME MONITORING IMMEDIATELY UPON MELT, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY.

STANDARD EROSION AND SEDIMENT CONTROL PLAN DRAWING NOTES:

1. Hold a pre-construction meeting of project construction personnel that includes the inspector to discuss erosion and sediment control measures and construction limits. (Schedule A.8.C.I.(3))
2. All inspections must be made in accordance with DEQ 1200-C permit requirements. (Schedule A.12.B and Schedule B.1)
3. Inspection logs must be kept in accordance with DEQ's 1200-C permit requirements. (Schedule B.1.C and B.2)
4. Retain a copy of the ESCP and all revisions on site and make it available on request to DEQ, Agent, or the local municipality. During inactive periods of greater than seven (7) consecutive calendar days, the above records must be retained by the permit registrant but do not need to be at the construction site. (Schedule B.2.C)
5. All permit registrants must implement the ESCP. Failure to implement any of the control measures or practices described in the ESCP is a violation of the permit. (Schedule A A.8)
6. The ESCP must be accurate and reflect site conditions. (Schedule A.12.C.I)
7. Submission of all ESCP revisions is not required. Submittal of the ESCP revisions is only under specific conditions. Submit all necessary revision to DEQ or agent within 10 days. (Schedule A.12.C.IV. and V)
8. Phase clearing and grading to the maximum extent practical to prevent exposed inactive areas from becoming a source of erosion (Schedule A.7.A.III)
9. Identify, mark, and protect (by construction fencing or other means) critical riparian areas and vegetation including important trees and associated rooting zones, and vegetation areas to be preserved. Identify vegetative buffer zones between the site and sensitive areas (e.g. wetlands(, and other areas to be preserved, especially in perimeter areas. (Schedule A.8.C.I.(1) and (2))
10. Preserve existing vegetation when practical and re-vegetate open areas. re-vegetate open areas when practicable before and after grading or construction. Identify the type of vegetative seed mix used. (Schedule A.7.A.V)
11. Maintain and delineate any existing natural buffer within the 50-feet of waters of the state. (Schedule A.7.B.I. and (2(A)(B))
12. Install perimeter sediment control, including storm drain inlet protection as well as all sediment basins, traps, and barriers prior to land disturbance. (Schedule A.8.C.I.(5))
13. Control both peak flow rates and total stormwater volume, to minimize erosion at outlets and downstream channels and streambanks. (Schedule A.7.C)
14. Control sediment as needed along the site perimeter and at all operational internal storm drain inlets at all times during construction, both internally and at the site boundary. (Schedule A.7.D.I)
15. Establish concrete truck and other concrete equipment washout areas before beginning concrete work. (Schedule A.8.C.I.(6))
16. Apply temporary and/or permanent soil stabilization measure immediately on all disturbed areas as grading progresses. temporary or permanent stabilizations measures are not required for area that are intended to be left unvegetated, such as dirt access roads or utility pole pads. (ISchedule A.8.C.II.(3))
17. Establish material and waste storage areas, and other non-stormwater controls. (Schedule A.8.C.I.(7))
18. Prevent tracking of sediment onto public or private roads using BMPS such as: Construction Entrance, Graveled (or Paved) exits and parking areas, gravel all unpaved roads located onsite, or use an exist tire wash. These BMPS must be in place prior to land disturbing activities. (Schedule A 7.D.II and A.8.C.I(4))
19. When trucking saturated soils from the site, either use water-tight trucks or drain loads on site. (Schedule A.7.D.II.(5))
20. Control prohibited discharges from leaving the construction site, i.e. concrete wash-out, wastewater from cleanout of stucco, paint and curing compounds. (Schedule (A.6)
21. Use BMPS to prevent or minimize stormwater exposure to pollutants from spills; vehicle and equipment fueling, maintenance, and storage; other cleaning and maintenance activities; and waste handling activities. These pollutants include fuel, hydraulic fluid, and other oils from vehicles and machinery, as well as debris, fertilizer, pesticides and herbicides, paints, solvents, curing compounds and adhesives from construction operations. (Schedule A.7.E.I.(2))
22. Implement the following BMPS when applicable: Written spill prevention and response procedures, employee training on spill prevention and proper disposal procedures, spill kits in all vehicles, regular maintenance schedule for vehicles and machinery, material delivery and storage controls, training and signage, and covered storage areas for waste and supplies. (Schedule A.7.E.III.)
23. Use water, soil-binding agent or other dust control technique as needed to avoid wind-blown soil. (Schedule A.7.A.IV)
24. The application rate of fertilizers used to reestablish vegetation must follow manufacturer's recommendations to minimize nutrient releases to surface waters. Exercise caution when using time-release fertilizers within any waterway riparian zone. (Schedule A.9.B.III)
25. If an active treatment system (for example, electro-coagulation, flocculation, filtration, etc.) for sediment or other pollutant removal is employed, submit an operation and maintenance plan (including system schematic, location of system, location of inlet, location of discharge, discharge dispersion device design, and a sampling plan and frequency) before operating the treatment system. Obtain plan approval before operating the treatment system. Operate and maintain the treatment system according to manufacturer's specifications. (Schedule A.9.D)
26. Temporarily stabilize soils at the end of the shift before holidays and weekends, if needed. The registrant is responsible for ensuring that soils are stable during rain events at all times of the year. (Schedule A.7.B)
27. As needed based on weather conditions, at the end of each workday soil stockpiles must be stabilized or covered, or other BMPS must be implemented to prevent discharges to surface waters or conveyance systems leading to surface waters. (Schedule A.7.E.II.(2))
28. Construction activities must avoid or minimize excavation and bare ground activities during wet weather. (Schedule A.7.A.I)
29. Sediment fence: remove trapped sediment before it reaches one third of the above ground fence height and before fence removal. (Schedule A.9.C.I)
30. Other sediment barriers (such as biobags): remove sediment before it reaches two inches depth above ground height and before BMP remove. (Schedule A.9.C.I)
31. Catch basins: clean before retention capacity has been reduced by fifty percent. Sediment basins and sediment traps: remove trapped sediments before design capacity has been reduced by fifty percent and at completion of project. (Schedule A.9.C.III & IV)
32. Within 24 hours, significant sediment that has left the construction site, must be remediated. Investigate the cause of the sediment release and implement steps to prevent a recurrence of the discharge within the same 24 hours. Any in-stream clean-up or sediment shall be performed according to the Oregon Division of State Lands required time frame. (Schedule A.9.B.I)
33. The intentional washing of sediment into storm sewers or drainage ways must not occur. vacuuming or dry sweeping and material pickup must be used to cleanup released sediments. (Schedule A.9.B.II)
34. The entire site must be temporarily stabilized using vegetation or a heavy mulch layer, temporary seeding, or other method should all construction activities cease for 30 days or more. (Schedule A.7.F.I)
35. Provide temporary stabilization for that portion of the site where construction activities cease for 14 days or more with a covering of blown straw and a tackifier, loose straw, or an adequate covering of compost mulch until work resumes on that portion of the site. (Schedule A.7.F.II)
36. Do not remove temporary sediment control practices until permanent vegetation or other cover of exposed areas is established. Once construction is complete and the site is stabilized, all temporary erosion controls and retained soils must be removed and disposed of properly, unless doing so conflicts with local requirements. (Schedule A.8.C.III(1) and D.3.C.II and III)

* Hold a pre-construction meeting of project construction personnel that includes the inspector to discuss erosion and sediment control measures and construction limits.
* All inspections must be made in accordance with DEQ's 1200-c permit requirements.
* Inspection logs must be kept in accordance with DEQ's 1200-c permit requirements.
* Retain a copy of the ESCP and all revisions on site and make it available on request to DEQ, agent, or the local municipality, during inactive periods of greater than seven (7) consecutive calendar days, retain the ESCP at the construction site or at another location.

THE PERMITTEE IS REQUIRED TO MEET ALL THE CONDITIONS OF THE 1200-C PERMIT. THIS ESCP AND GENERAL CONDITIONS HAVE BEEN DEVELOPED TO FACILITATE COMPLIANCE WITH THE 1200-C PERMIT REQUIREMENTS. IN CASES OF DISCREPANCIES OR OMISSIONS, THE 1200-C PERMIT REQUIREMENTS SUPERCEDE REQUIREMENTS OF THE PLAN.

BMP MATRIX FOR CONSTRUCTION

REFER TO DEQ GUIDANCE MANUAL FOR A COMPREHENSIVE LIST OF AVAILABLE BMP'S.

	CLEARING	MASS GRADING	UTILITY INSTALLATION	PAVING CONSTRUCTION	FINAL STABILIZATION	WET WEATHER (OCT. 1-MAY 31ST)
EROSION PREVENTION						
PRESERVE NATURAL VEGETATION	X	X	X	X	X	X
GROUND COVER		X			X	X
PLASTIC SHEETING	X	X	X	X	X	X
STRAW MULCH COVER		X	X	X	X	X
DUST CONTROL	X	X	X	X	X	X
TEMPORARY/PERMANENT SEEDING		X			X	X
BUFFER ZONE	X	X	X	X	X	X
SEDIMENT CONTROL						
SEDIMENT FENCE (INTERIOR)	**X	X	X	X	X	X
INLET PROTECTION	**X	X	X	X	X	X
DEWATERING		X				
RUN OFF CONTROL						
CONSTRUCTION ENTRANCE	**X	X	X	X		X
POLLUTION PREVENTION						
PROPER SIGNAGE	X	X	X	X	X	X
HAZ WASTE MGMT	X	X	X	X	X	X
SPILL KIT ON-SITE	X	X	X	X	X	X
CONCRETE WASHOUT AREA			X	X	X	X

* SIGNIFIES ADDITIONAL BMP'S REQUIRED FOR WORK WITHIN 50' OF WATER OF THE STATE.

** SIGNIFIES BMP THAT WILL BE INSTALLED PRIOR TO ANY GROUND DISTURBING ACTIVITY.

NDPES 1200C INSPECTION FREQUENCY TABLE

SITE CONDITION	MINIMUM FREQUENCY
1. ACTIVE PERIOD	DAILY WHEN STORMWATER RUNOFF, INCLUDING RUNOFF FROM SNOW MELT, IS OCCURRING.
2. PRIOR TO THE SITE BECOMING INACTIVE OR IN ANTICIPATION OF SITE INACCESSIBILITY.	ONCE TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURE ARE IN WORKING ORDER. ANY NECESSARY MAINTENANCE AND REPAIR MUST BE MADE PRIOR TO LEAVING THE SITE.
3. INACTIVE PERIODS GREATER THAN FOURTEEN (14) CONSECUTIVE CALENDAR DAYS.	ONCE EVERY MONTH.
4. PERIODS DURING WHICH THE SITE IS INACCESSIBLE DUE TO INCLEMENT WEATHER.	IF PRACTICAL, INSPECTIONS MUST OCCUR DAILY AT A RELEVANT AND ACCESSIBLE DISCHARGE POINT OR DOWNSTREAM LOCATION.
5. PERIODS DURING WHICH DISCHARGE IS UNLIKELY DUE TO FROZEN CONDITIONS.	MONTHLY. RESUME MONITORING IMMEDIATELY UPON MELT, OR WHEN WEATHER CONDITIONS MAKE DISCHARGES LIKELY.

RATIONALE STATEMENT

A COMPREHENSIVE LIST OF AVAILABLE BEST MANAGEMENT PRACTICES (BMP) OPTIONS BASED ON DEQ'S GUIDANCE MANUAL HAS BEEN REVIEWED TO COMPLETE THIS EROSION AND SEDIMENT CONTROL PLAN. SOME OF THE ABOVE LISTED BMP'S WERE NOT CHOSEN BECAUSE THEY WERE DETERMINED TO NOT EFFECTIVELY MANAGE EROSION PREVENTION AND SEDIMENT CONTROL FOR THE PROJECT BASED ON SPECIFIC SITE CONDITIONS, INCLUDING SOIL CONDITIONS TOPOGRAPHIC CONSTRAINTS, ACCESSIBILITY TO THE SITE, AND OTHER RELATED CONDITIONS, AS THE PROJECT PROGRESSES AND THERE IS A NEED TO REVISE THE ESC PLAN, AN ACTION PLAN WILL BE SUBMITTED.

MSS
INITIAL

SHEET INDEX

EROSION AND SEDIMENT CONTROL PLANS

REV	DATE	BY	DESCRIPTION

DESIGNED JEY
DRAWN SCR
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 81348 OREGON JUNE 10, 2014 MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:14:56-05'00'

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CITY OF West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
CIVIL
EROSION AND SEDIMENT CONTROL COVER SHEET

VERIFY SCALES
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JOB NO. 201779
DRAWING NO. ESC01
SHEET NO. 18 OF 58

$$$$DATE$$$$ 10/19/2023 2:23:40 PM
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$$$$PLOT_INFO$$$$
LAST SAVED BY: luy

PROJECT NO. 201779-100000 FILE NAME: 20177900ESC001.dwg

Plot Date: 10/19/2023 2:25:52 PM

GENERAL NOTES:

1. THE LOCATION OF EXISTING UNDERGROUND UTILITY FACILITIES SHOWN HEREON ARE BASED ON LOCATE MARKS REQUESTED FOR THIS SURVEY PER ONE CALL PUBLIC LOCATE TICKET 20220110. THE SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE DELINEATION OF SUCH UNDERGROUND UTILITIES BY THE RESPECTIVE UTILITY OWNERS, NOR FOR THE EXISTENCE OF BURIED OBJECTS WHICH ARE NOT SHOWN ON THE PLAN. ALL UTILITY LOCATIONS SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
2. FIELD WORK WAS COMPLETED ON JANUARY 31, 2023.
3. SEE CITY OF WEST LINN EROSION PREVENTION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL FOR LOCAL ESC MEASURE REQUIREMENTS.

X KEY NOTES:

1. SEE SHEET ESC03 FOR DETAILS.
2. CONTRACTOR TO PROTECT NEAREST STORM WATER INLET ON ROADWAY TO THE NORTHWEST.

REV	DATE	BY	DESCRIPTION

DESIGNED: MSS
DRAWN: ARE
CHECKED: KR
DATE: NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER
81348
OREGON
JUNE 10, 2014
MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:15:14-05'00'

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CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
CIVIL

EROSION AND SEDIMENT CONTROL SITE PLAN

VERIFY SCALES
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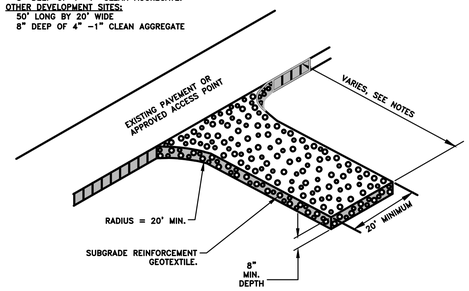
JOB NO. 201779
DRAWING NO. ESC02
SHEET NO. 19 OF 58

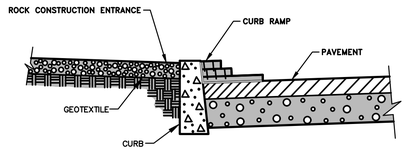
LAST SAVED BY: tuy

PROJECT NO. 201779-100000 FILE NAME: 20177900ESC002.dwg

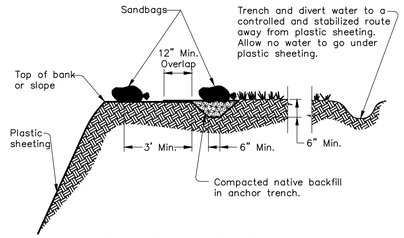
NOTES:

DIMENSIONS
SINGLE FAMILY AND DUPLEX:
20' LONG BY 20' WIDE
8" DEEP OF 4"-1" CLEAN AGGREGATE.
OTHER DEVELOPMENT SITES:
50' LONG BY 20' WIDE
8" DEEP OF 4" -1" CLEAN AGGREGATE

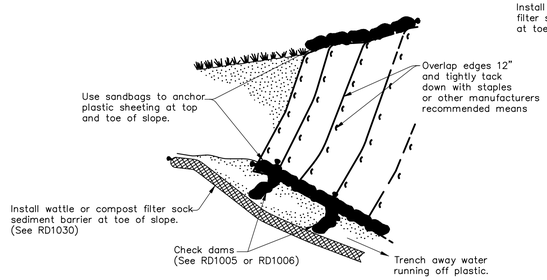




CONSTRUCTION ENTRANCE

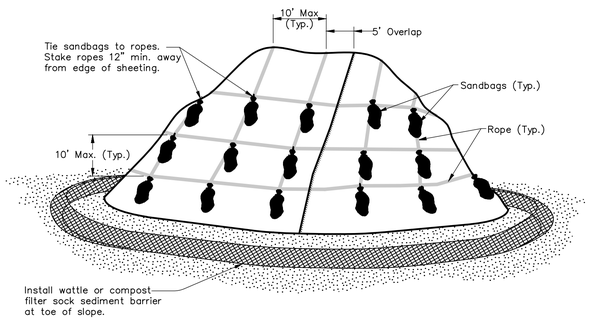


TOP OF SLOPE TIE DOWN



SLOPES

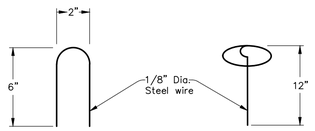
PLASTIC SHEETING



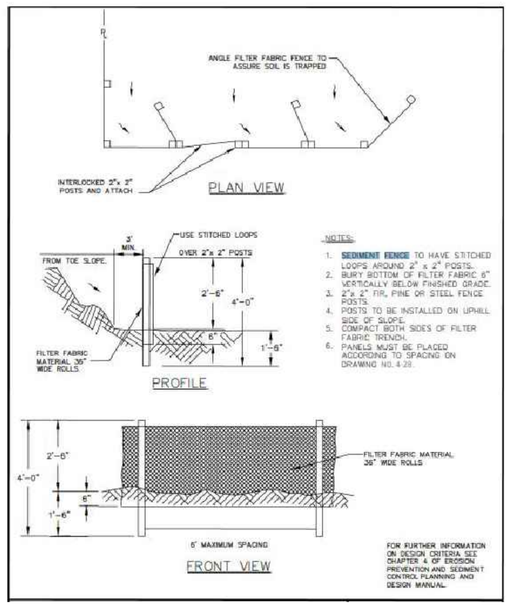
STOCKPILE

NOTES:

1. Install plastic sheeting vertically down slope.
2. Install plastic sheeting so edges overlap and are shingled away from prevailing winds.



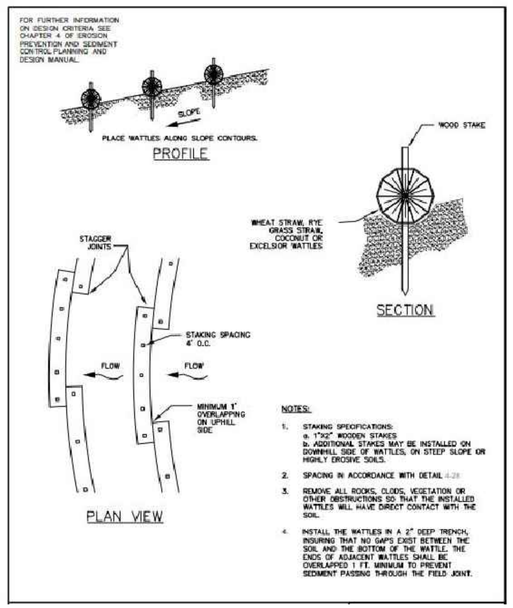
STAPLE DETAIL



NOTES:

1. SEDIMENT FENCE TO HAVE STITCHED LOOPS AROUND 2" x 2" POSTS.
2. BURY BOTTOM OF FILTER FABRIC 6" VERTICALLY BELOW FINISHED GRADE.
3. 2"x 2" FIR, PINE OR STEEL FENCE POSTS.
4. POSTS TO BE INSTALLED ON UPHILL SIDE OF SLOPE.
5. COMPACT BOTH SIDES OF FILTER FABRIC TRENCH.
6. PANELS MUST BE PLACED ACCORDING TO SPACING ON DRAWING NO. 4.29.

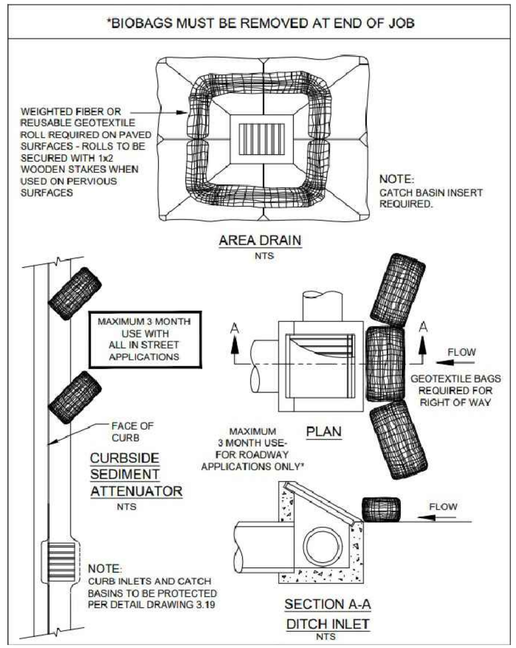
SEDIMENT FENCE



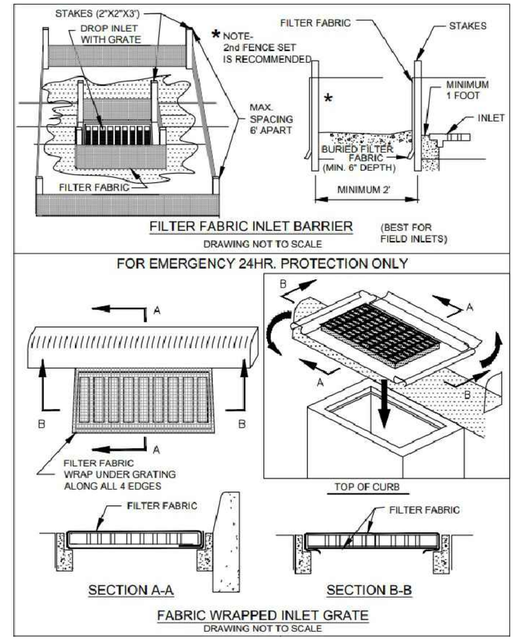
NOTES:

1. STAKING SPECIFICATIONS:
   a. 1"x2" WOODEN STAKES
   b. ADDITIONAL STAKES MAY BE INSTALLED ON DOWNHILL SIDE OF WATTLES, ON STEEP SLOPE OR HIGHLY EROSIVE SOILS.
2. SPACING IN ACCORDANCE WITH DETAIL 4.28.
3. REMOVE ALL ROCKS, CLODS, VEGETATION OR OTHER OBSTRUCTIONS SO THAT THE INSTALLED WATTLES WILL HAVE DIRECT CONTACT WITH THE SOIL.
4. INSTALL THE WATTLES IN A 2" DEEP TRENCH, INSURING THAT NO GAPS EXIST BETWEEN THE SOIL AND THE BOTTOM OF THE WATTLE. THE ENDS OF ADJACENT WATTLES SHALL BE OVERLAPPED 1 FT. MINIMUM TO PREVENT SEDIMENT PASSING THROUGH THE FIELD JOINT.

WATTLES



BIOBAGS



CATCH BASIN INSERT

REV	DATE	BY	DESCRIPTION

DESIGNED JEY
DRAWN SCR
CHECKED KR
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 81348 OREGON JUNE 10, 2014 MATTHEW S. SPRICK
EXPIRES: 06/30/24

Digitally signed by Matthew Sprick
Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:16:05-08'00'

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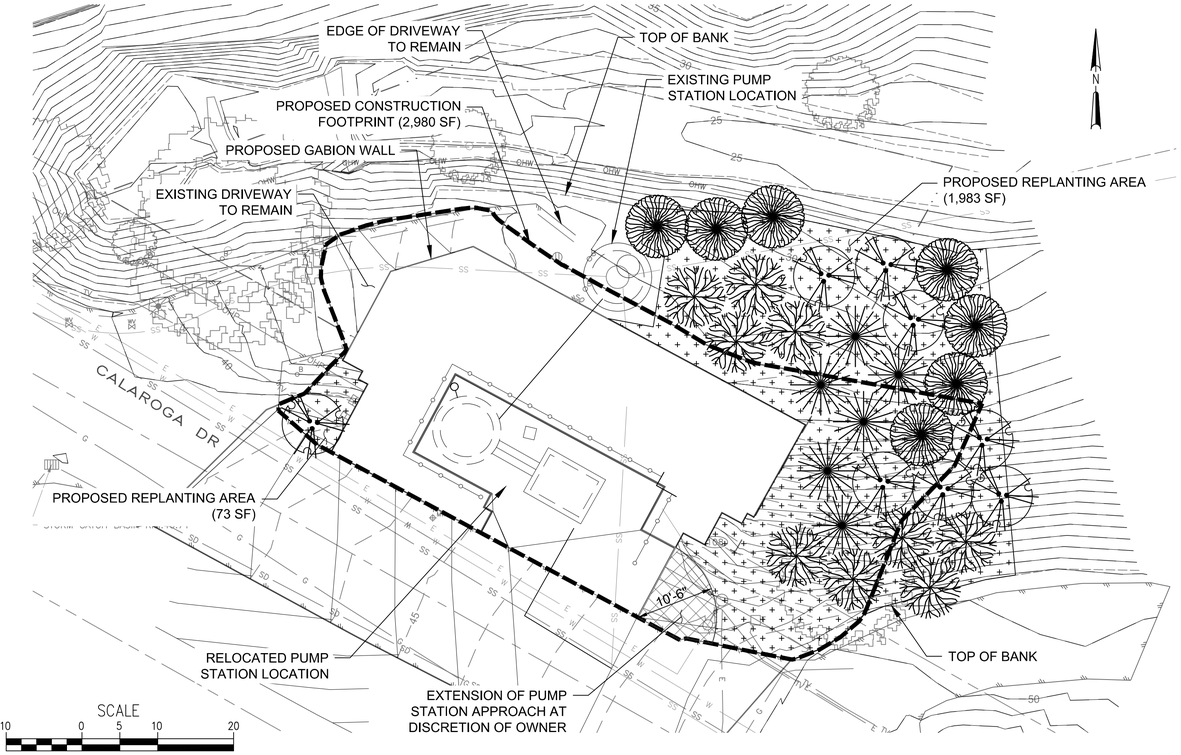
JOB NO. 201779
DRAWING NO. ESC03
SHEET NO. 20 OF 58



PLANT SCHEDULE:

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	QTY
TREES					
	ACER CIRCINATUM	VINE MAPLE	½" CAL. B&B	AS SHOWN	8
	ACER MACROPHYLLUM	BIGLEAF MAPLE	½" CAL. B&B	AS SHOWN	9
	ALNUS RUBRA	RED ALDER	½" CAL. B&B	AS SHOWN	7
	THUJA PLICATA	WESTERN REDCEDAR	3' HT., ½" CAL. MIN. B&B	AS SHOWN	6
				TOTAL PROPOSED TREES = 30	
SHRUBS AND GROUNDCOVER					
	SHRUBS				
	POLYSTICHUM MUNITUM	WESTERN SWORD FERN	1 GAL. CONT., 12" HT. MIN.	48" O.C.	50
	SAMBUCUS RACEMOSA	RED ELDERBERRY		48" O.C.	49
	SYMPHORICARPOS ALBUS	COMMON SNOWBERRY		48" O.C.	50
				TOTAL PROPOSED SHRUBS = 149	
	NATIVE SEED MIX		PLS SPECIFIED RATE LB/AC (PLS**)	APPLICATION RATE LB/AC (PLS*)	
	ELYMUS GLAUCUS / BLUE WILDRYE		26.1	43	0.05 AC
	HORDEUM BRACHYANTHERUM / MEADOW BARLEY		13.0		
	BROMUS CARINATUS / CALIFORNIA BROME		4.3		

* PLS = PURE LIVE SEED

PLANTING NOTES:

1. PRIOR TO INSTALLATION OF PLANT MATERIAL, ALL INVASIVE SPECIES WITHIN PLANTING AREA SHALL BE REMOVED MANUALLY.
2. ALL PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE OF PESTS AND DISEASE. STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK" REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
3. COMBINE 3" DEPTH COMPOST WITH 8" DEPTH SANDY LOAM TOPSOIL WITHIN PLANTING PITS PRIOR TO PLANTING. REFER TO DETAILS FOR ADDITIONAL REQUIREMENTS FOR PLANTING SOILS WITHIN PLANTING PITS.
4. ALL TREES SHALL HAVE A STRAIGHT TRUNK AND FULL HEAD.
5. ALL MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE, DURING, AND AFTER INSTALLATION.
6. ALL TREE AND SHRUB PLANTING PITS SHALL BE MULCHED 3" IN DEPTH AND 18" IN DIAMETER WITH NON-CHEMICALLY TREATED COMPOSTED BARK OR LEAVES AS SHOWN IN THE TREE/SHRUB PLANTING INSTALLATION DETAIL.
7. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR 1) TO VERIFY THE LOCATIONS OF UTILITY LINES AND ADJACENT TO THE WORK AREA 2) TO PROTECT OF ALL UTILITY LINES DURING THE CONSTRUCTION PERIOD 3) TO REPAIR ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE CONSTRUCTION.
8. SOIL WITHIN TEMPORARY CONSTRUCTION AREAS SHALL BE DECOMPACTED TO AN 18" DEPTH IN PLANTING AREAS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING THE WORK.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETE COVERAGE OF ALL PLANTING BEDS AS SHOWN ON THE PLANS AT SPACING SHOWN GRAPHICALLY.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULLY MAINTAINING (INCLUDING BUT NOT LIMITED TO: WATERING, MULCHING, FERTILIZING, PRUNING, REPLACING) ALL OF THE PLANT MATERIALS FOR A PERIOD OF ONE YEAR. AT THE END OF THE MAINTENANCE PERIOD, THE WORK MUST BE ACCEPTED IN FULL BY THE OWNER.
12. ANY PLANT MATERIAL WHICH IS DISEASED, DISTRESSED, DEAD, OR REJECTED (PRIOR TO SUBSTANTIAL COMPLETION) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE AND MEETING ALL PLANT LIST SPECIFICATIONS.
13. THE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS DURING THE NORMAL PLANTING SEASON.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERY SCHEDULE AND PROTECTION BETWEEN DELIVERY AND PLANTING TO MAINTAIN HEALTHY PLANT CONDITIONS.
15. THE CONTRACTOR IS ENCOURAGED TO COMPLETE TEMPORARY OR PERMANENT MULCHING IN STAGES FOR SOIL STABILIZATION AS AREAS ARE COMPLETED AFTER GRADING.
16. THIS PLAN DOES NOT PRESENT ANY TEMPORARY STABILIZATION MEASURES REQUIRED FOR EROSION CONTROL. SEE EROSION AND SEDIMENT CONTROL PLANS.
17. BARE ROOT TREES SHALL BE PLANTED BETWEEN DECEMBER 1ST AND FEBRUARY 28TH. POTTED PLANTS SHALL BE PLANTED BETWEEN OCTOBER 15TH AND APRIL 30TH.
18. THOROUGHLY 'WATER-IN' ALL PLANT MATERIALS WITHIN 6 HOURS FOLLOWING INSTALLATION.

MITIGATION AND PLANTING REQUIREMENTS:

REQUIRED MINIMUM ENHANCEMENT AREA

DISTURBANCE TYPE	DISTURBANCE AREA	ENHANCEMENT REPLACEMENT MULTIPLIER	REQUIRED ENHANCEMENT AREA
PREVIOUSLY DISTURBED AREA*	2,980 SF	0.5	1,490 SF
		TOTAL MINIMUM REQUIRED ENHANCEMENT AREA =	1,490 SF

* ENTIRE SUBJECT PARCEL CONSIDERED TO BE PDA DUE TO PREVIOUS PUMP STATION DEVELOPMENT

TREE AND SHRUB PLANTING REQUIREMENTS

PREVIOUSLY DISTURBED AREA	REQUIRED SHRUBS	PROPOSED SHRUBS	REQUIRED TREES	PROPOSED TREES
2,980 SF	PLANTED AT A RATE OF 25 SHRUBS PER EVERY 500 SF OF PDA: 2,980 SF / 500 SF = 5.96 X 25 SHRUBS = 149 SHRUBS	149**	PLANTED AT A RATE OF 5 TREES PER EVERY 500 SF OF PDA: 2,980 SF / 500 SF = 5.96 X 5 TREES = 29.8 TREES	30

** 149 SHRUBS PLANTED WITH TRIANGULAR SPACING AT 48" O.C. REQUIRES A PLANTING AREA OF 2,056 SF

REV	DATE	BY	DESCRIPTION

DESIGNED TSD
DRAWN TSD / KEMA
CHECKED STF / EJRO
DATE NOVEMBER 2023

REGISTERED LANDSCAPE ARCHITECT
970
DIGITALLY SIGNED 2024.02.27 13:44:39-08'00'
TAMARA S. DANISCH
OREGON
02/22/18
EXPIRES: 02/28/25

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CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
PLANTING PLAN

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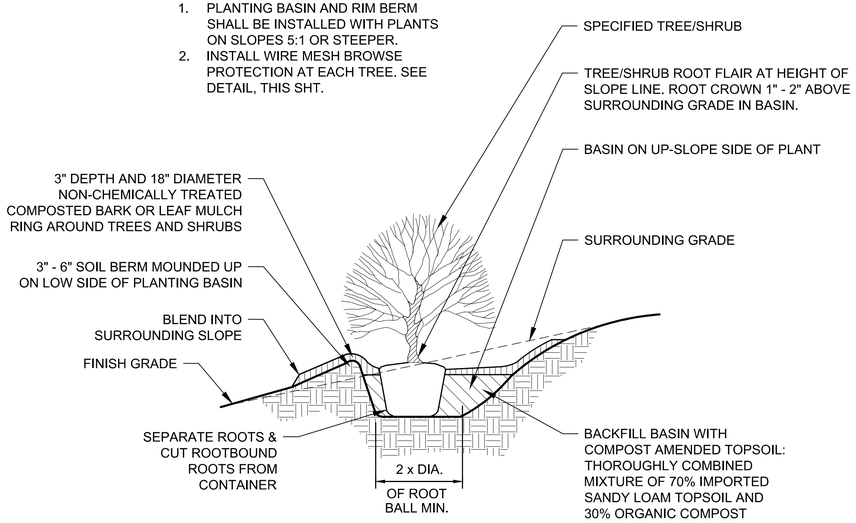
JOB NO. 201779
DRAWING NO. L01
SHEET NO. 21 OF 58

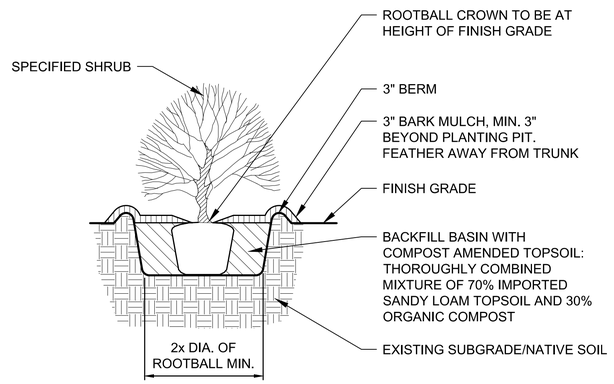
NOTES:

1. PLANTING BASIN AND RIM BERM SHALL BE INSTALLED WITH PLANTS ON SLOPES 5:1 OR STEEPER.
2. INSTALL WIRE MESH BROWSE PROTECTION AT EACH TREE. SEE DETAIL, THIS SHT.



TREE/SHRUB PLANTING INSTALLATION ON SLOPE

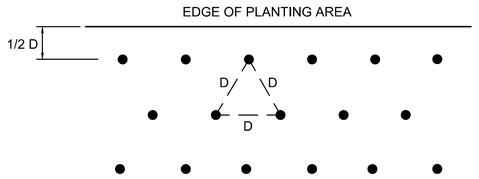
NOT TO SCALE



SHRUB PLANTING DETAIL

NOT TO SCALE

NOTE:
D = PLANT SPACING.
(SEE PLANTING SCHEDULE, L01)
LOCATE PLANTS SPACED EQUAL DISTANCE (D) FROM EACH OTHER AS SHOWN.

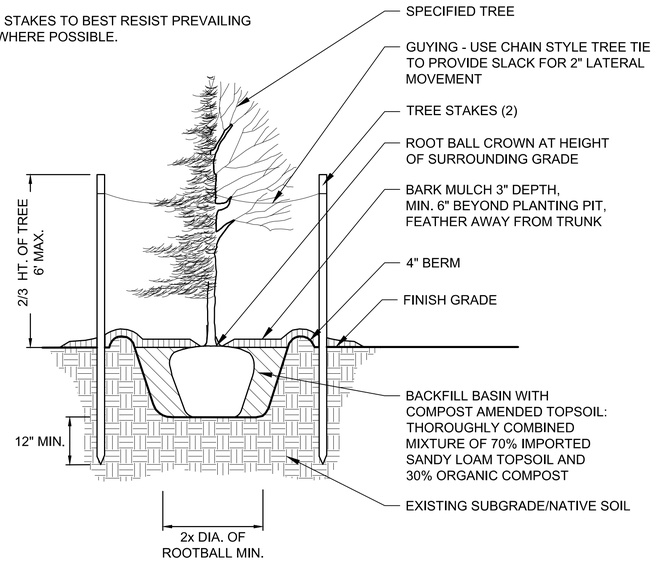


TYPICAL SHRUB SPACING DETAIL - PLAN VIEW

NOT TO SCALE

NOTES:

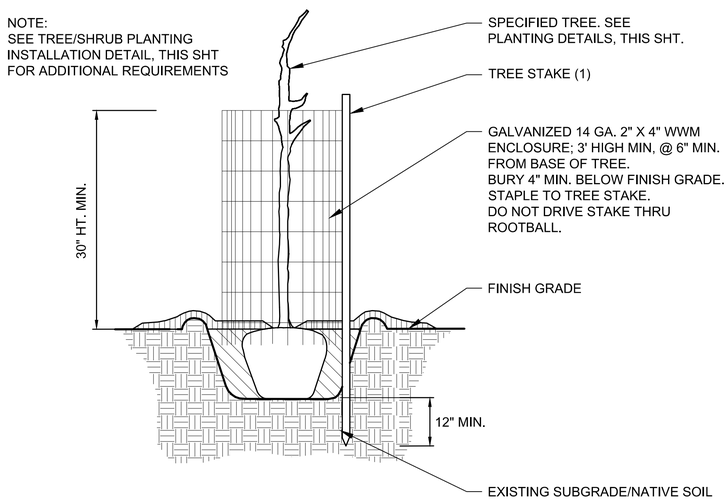
1. FURNISH TREE STAKES ON ALL TREE PLANTINGS. STAKES TO BE CONSTRUCTION GRADE, ROUGH SAWN OR FINISHED DOUGLAS FIR OR PINE. STAIN WITH DARK BROWN PENETRATING OIL. STAKE SIZE IS TO BE 1 ½" x 1 ½" x HT. SHOWN ON DETAIL.
2. LOCATE STAKES TO BEST RESIST PREVAILING WINDS WHERE POSSIBLE.



TREE PLANTING/STAKING DETAIL

NOT TO SCALE

NOTE:
SEE TREE/SHRUB PLANTING INSTALLATION DETAIL, THIS SHT FOR ADDITIONAL REQUIREMENTS



WIRE MESH BROWSE PROTECTION INSTALLATION

NOT TO SCALE

MITIGATION PLANTING NOTES:

1. PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY, THE APPLICANT SHALL SUBMIT A SIGNED LETTER FROM A NATURAL RESOURCE SPECIALIST TO THE PLANNING DIRECTOR VERIFYING THE INSTALLATION MITIGATION PLANTINGS AS SHOWN IN SHEETS L01 AND L02 OF THE SEPTEMBER 19, 2023 REPORT BY DAVID EVANS AND ASSOCIATES, INC.
2. THE APPLICANT SHALL ENSURE A MINIMUM SURVIVAL RATE OF 80% OF TREES AND SHRUBS PLANTED BY THE THIRD YEAR AFTER THE DATE AT WHICH ALL MITIGATION PLANTINGS WERE COMPLETED AND SUBMIT A REPORT AT THAT TIME FROM THE PARTIES RESPONSIBLE FOR PLANTINGS THAT DEMONSTRATES THE SURVIVAL OF PLANTINGS. THE APPLICANT SHALL BE RESPONSIBLE FOR MONITORING AND MAINTAINING ALL PLANTINGS WITH THE FOLLOWING PRACTICES:
   a. PLANTS THAT DIE MUST BE REPLACED IN KIND
   b. NEW PLANTINGS SHALL BE MULCHED TO A MINIMUM OF THREE INCHES IN DEPTH AND 18 INCHES IN DIAMETER
   c. PLANTINGS SHALL BE WATERED ONE INCH PER WEEK BETWEEN JUNE 15th TO OCTOBER 15th FOR THREE YEARS FOLLOWING THE PLANTING
   d. NON-NATIVE AND/OR NOXIOUS VEGETATION SHALL BE CONTROLLED OR REMOVED

REV	DATE	BY	DESCRIPTION

DESIGNED TSD
DRAWN TSD / KEMA
CHECKED STF / EJRO
DATE NOVEMBER 2023

REGISTERED LANDSCAPE ARCHITECT
970
DIGITALLY SIGNED 2024.02.27 13:45:04-08'00'
TAMARA S. DANISCH
OREGON
02/22/18
EXPIRES: 02/28/25

carollo®

CITY OF West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
PLANTING DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. L02
SHEET NO. 22 OF 58

GENERAL NOTES:

1. USE STRUCTURAL DRAWINGS IN CONJUNCTION WITH PROJECT DRAWINGS BY OTHER DISCIPLINES AND WITH THE SPECIFICATIONS.

2. UNLESS DETAILED, SPECIFIED, OR INDICATED OTHERWISE, CONSTRUCTION SHALL BE AS INDICATED IN THE GENERAL NOTES AND TYPICAL DETAILS.

3. PRESENTATION CONVENTIONS FOR STRUCTURAL DRAWINGS:

   A. SCREENED LINE WORK INDICATES EXISTING CONDITIONS.
   B. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED SIZES.
   C. PLANS ARE TREATED AS HORIZONTAL SECTIONS. (I.E.: "PLAN AT ELEVATION 110" SHOWS CONSTRUCTION AT AND BELOW ELEVATION 110.)

4. VERIFY DIMENSIONS AND CONDITIONS BEFORE BEGINNING WORK. ADVISE ENGINEER IMMEDIATELY OF DISCREPANCIES BETWEEN EXISTING CONDITIONS AND DIMENSIONS, AND INFORMATION SHOWN ON THESE DRAWINGS. CONFIRM THE FOLLOWING BEFORE PREPARATION AND SUBMITTAL OF SHOP DRAWINGS:

   A. DIMENSIONS AND WEIGHTS FOR EQUIPMENT SELECTED.
   B. SIZES AND LOCATIONS OF EQUIPMENT PADS FOR EQUIPMENT SELECTED.

5. TYPICAL DETAILS ARE INCLUDED ON THE "TS" DRAWINGS.

   A. TYPICAL DETAILS ARE INTENDED TO APPLY AT LOCATIONS DESCRIBED BY THEIR TITLES, EVEN WHEN NOT SPECIFICALLY REFERENCED ON THE DRAWINGS.
   B. IN STRUCTURAL TYPICAL DETAILS, ORIENTATION OF BARS IN EACH MAT OF REINFORCEMENT (WHETHER "LINES" OR "DOTS"ARE CLOSER TO THE FACE OF THE CONCRETE) IS GENERALLY ARBITRARY. SEE DRAWINGS OF EACH STRUCTURE FOR ORIENTATION REQUIRED AT THAT STRUCTURE.

6. SEE CIVIL DRAWINGS FOR STRUCTURE COORDINATES. POINTS ON THE STRUCTURES TO WHICH SITE COORDINATES REFER ARE SHOWN ON THE STRUCTURAL PLANS.

7. DRAWINGS PREPARED BY OTHER DISCIPLINES INCLUDE OPENINGS, ANCHORS, PIPES, CONDUITS, AND OTHER ITEMS THAT ARE EMBEDDED INTO OR PASS THROUGH STRUCTURES.

   A. CONFIRM SIZE AND LOCATIONS OF OPENINGS, PENETRATIONS AND EMBEDMENT FOR ITEMS AND EQUIPMENT FURNISHED.
   B. IN GENERAL, OPENINGS, EMBEDMENTS, AND PENETRATIONS LESS THAN 12 INCHES IN DIAMETER ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS.
   C. SEE MECHANICAL DRAWINGS FOR DETAILS OF PIPE PENETRATIONS, PIPE SUPPORTS, AND ASSOCIATED STRUCTURAL REQUIREMENTS.
   D. SEE MECHANICAL DRAWINGS FOR EQUIPMENT PADS AND PIPE SUPPORTS.

STRUCTURAL DESIGN CRITERIA - GENERAL:

SEE DRAWINGS OF INDIVIDUAL STRUCTURES FOR SPECIFIC DESIGN CRITERIA BASED ON THESE OVERALL CRITERIA FOR THE SITE.

1. BUILDING CODE:

   A. 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC) WITH ASCE 7-16 INCLDUING SUPPLEMENTS 1, 2, & 3.

2. STRUCTURE RISK CATEGORY: III.

3. DEAD LOADS: CALCULATED FOR STRUCTURE SELF-WEIGHT.

4. LIVE LOADS:

   A. H20 TRUCK AND 200 PSF TRUCK SURCHARGE

5. FLUID PRESSURE LOADS: 63 PSF/FT (UNO).

6. WIND DESIGN DATA:

   A. SPECIAL WIND REGION: NO
   B. WIND-BORNE DEBRIS REGION: NO
   C. BASIC WIND SPEED (3 SEC GUST, 33 FEET ABOVE GROUND): 103 MPH.

7. EARTHQUAKE DESIGN DATA:

		0.2 SECOND	*1.0 SECOND
A.	SITE CLASS: C.		
B.	MAPPED SPECTRAL RESPONSE ACCELERATIONS:	Ss = 0.863 g	S1 = 0.384 g
C.	SITE COEFFICIENTS:	Fa = 1.2	Fv = 1.5
D.	MAXIMUM CONSIDERED ACCELERATIONS:*	Sms = 1.035 g	Sm1 = 0.576 g
E.	DESIGN SPECTRAL RESPONSE ACCELERATIONS:*	Sds = 0.690 g	Sd1 = 0.384 g

   (* 5% DAMPED).

8. FLOOD LOADS:

   A. FLOOD HAZARD AREA: YES
      1) REFERENCE MAP ("FIRM"): 41005C0019D
      2) DESIGN FLOOD ELEVATION: 44.0 RETURN INTERVAL: 100 YEAR

9. CONSTRUCTION LOADS:
   STRUCTURES HAVE BEEN DESIGNED FOR OPERATING LOADS ON COMPLETED FACILITIES. UNTIL CONSTRUCTION IS COMPLETE AND MEMBERS HAVE ACHIEVED THEIR DESIGN STRENGTH, PROTECT STRUCTURES AS REQUIRED BY SHORING, BRACING, AND BALANCING.

GEOTECHNICAL REPORT / FOUNDATION DESIGN CRITERIA:

1. GEOTECHNICAL INVESTIGATION REPORT:

   TITLE: CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT
   PREPARED BY: NORTHWEST GEOTECH INC.
   DRAFT REPORT NO: 00-223529-1 DATED: AUGUST 28, 2023

2. FOUNDATION DESIGNS ARE BASED ON RECOMMENDATIONS IN THE GEOTECHNICAL INVESTIGATION REPORT.

   A. NET ALLOWABLE BEARING PRESSURE 1,500 PSF

   B. FROST DEPTH: 12" BELOW FINISH GRADE

   C. LATERAL EARTH PRESSURE (UNO):
      SURCHARGE: EQUIVALENT TO 2 FEET OF SOIL ABOVE FINISHED GRADE.

	STATIC
ACTIVE (PSF/FT):	35
AT REST (PSF/FT):	60
PASSIVE (PSF/FT):	300
SLIDING COEFFICIENT OF FRICTION:	0.60

   D. GROUNDWATER EL 30.

TYPICAL STRUCTURAL MATERIALS:

1. MATERIALS SHALL CONFORM TO THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

2. SEE PROJECT SPECIFICATIONS AND NOTES ON DRAWINGS OF SPECIFIC STRUCTURES FOR DETAILED AND LOCATION-SPECIFIC REQUIREMENTS.

REINFORCING STEEL (FOR CONCRETE AND MASONRY):

1. DEFORMED BARS:
   A. TYPICAL: ASTM A 615, GRADE 60.
   B. WHERE INDICATED ON THE DRAWINGS: ASTM A 706.

2. WELDED WIRE FABRIC: ASTM A 1064.

3. PRESTRESSING STRANDS: ASTM A 416, 270 KSI YIELD STRENGTH, 7-WIRE.

4. HORIZ JOINT REINF (FOR MASONRY: ASTM A 951, 3/16"DIA x 2 RODS), GALV.

CONCRETE:

1. NORMAL DENSITY.

2. MINIMUM SPECIFIED CONCRETE COMPRESSIVE STRENGTH, f'c (AT 28 DAYS UNO).

   A. STRUCTURES: "CLASS A" f'c = 4000 PSI.
   B. FILL AND THRUST BLOCKS: "CLASS C" f'c = 2500 PSI.
   C. PIPE ENCASEMENT: "CLASS C" f'c = 2500 PSI.
   D. ELECTRICAL DUCT ENCASEMENT: "CLASS CE" f'c = 2500 PSI.
   E. PRECAST: f'c = 5000 PSI.

STRUCTURAL STEEL:

1. SECTIONS

   A. SHAPES W, WT: ASTM A 992 (Fy = 50 KSI)
   B. SHAPES S, ST, M, MT, HP, C, MC, L: ASTM A 36 (Fy = 36 KSI)
   C. PLATES AND BARS: ASTM A 36 (Fy = 36 KSI)
   D. PIPES: ASTM A 53, GRADE B (Fy = 35 KSI)
   E. HOLLOW STRUCTURAL SECTIONS:
      ROUND: ASTM A 500, GRADE B (Fy = 42 KSI)
      SQUARE AND RECTANGULAR: ASTM A 500, GRADE B (Fy = 46 KSI)

2. CONNECTIONS:

   A. BOLTS - STEEL TO-STEEL:
      ASTM F 3125 GRADE A325 HIGH-STRENGTH BOLTS.
   B. BOLTS - STEEL TO CONCRETE:
      ANCHOR BOLTS WITH HEX FORGED HEAD.
      ASTM F 593, STAINLESS TYPE 316 (304)
   C. WELDS - SHIELDED METAL ARC PROCESS USING E70-XX ELECTRODES.

STAINLESS STEEL:

1. ANSI TYPE 316/316L EXCEPT WHERE TYPE 304/304L IS INDICATED ON THE DRAWINGS.

2. SECTIONS: SHAPES AND BARS: ASTM A 276.

3. BOLTED CONNECTIONS - BOLTS AND ANCHOR BOLTS:

   A. MATCH ALLOY OF THE STRUCTURAL MEMBERS CONNECTED.
   B. TYPE 316/316L: ASTM F 593, GRADE B8M, CLASS 1, HEAVY HEX.
   C. TYPE 304/304L: ASTM F 593, GRADE B8, CLASS 1, HEAVY HEX.

4. WELDED CONNECTIONS:

   A. TYPE 316L: E316L-15 ELECTRODES.
   B. TYPE 304L: E304L-15 ELECTRODES.

STRUCTURAL ALUMINUM:

1. SECTIONS

   A. SHAPES: ASTM B 308, ALLOY 6061-T6.
   B. SHEET AND PLATE: ASTM B 209, ALLOY 6061-T6.

2. BOLTED CONNECTIONS - BOLTS AND ANCHOR BOLTS:

   A. STAINLESS STEEL - TYPE 316, ASTM F 593, GRADE B8M, CLASS 1, HEAVY HEX.

3. WELDED CONNECTIONS:

   A. GAS METAL ARC (MIG) OR GAS TUNGSTEN ARC (TIG) PROCESS USING FILLER ALLOY 4043 ELECTRODES.

CONSTRUCTION:

CONFORM TO THE FOLLOWING REQUIREMENTS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

EXCAVATION AND BACKFILLING:

1. EXPOSE AND PREPARE SUBGRADE AS SHOWN ON THE DRAWINGS AND SPECIFIED. OBTAIN ENGINEER'S OBSERVATION OF SUBGRADE SURFACES, AS EXPOSED AND AS PREPARED, BEFORE PROCEEDING WITH FOUNDATION CONSTRUCTION.

2. DO NOT PLACE BACKFILL AGAINST WALLS UNTIL STRUCTURES SUPPORTING THE TOP OF THE WALL ARE IN PLACE, ARE COMPLETE, AND (IN THE CASE OF CONCRETE) HAVE CURED TO THEIR MINIMUM SPECIFIED 28-DAY COMPRESSIVE STRENGTH.

3. WHERE BACKFILL MUST BE PLACED AGAINST WALLS BEFORE STRUCTURES ABOVE ARE COMPLETE, PROVIDE BRACING FOR WALLS. KEEP BRACING IN PLACE UNTIL THE STRUCTURE ABOVE IS COMPLETE AND (IN THE CASE OF CONCRETE) HAS CURED TO ITS MINIMUM SPECIFIED 28-DAY COMPRESSIVE STRENGTH.

CONCRETE:

1. SEE S101/TYP FOR CONCRETE NOTES, INCLUDING CLEAR COVER AND LAP SPLICE LENGTH REQUIREMENTS FOR REINFORCING.

2. SUBMIT LOCATIONS OF CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS FOR ACCEPTANCE BY THE ENGINEER BEFORE FORM LAYOUT.

3. PROVIDE CHAMFER AT EXPOSED EDGES OF CAST-IN-PLACE CONCRETE. SEE SPECIFICATION 03102 FOR CHAMFERS.

4. PROVIDE REINFORCING:

   A. AT OPENINGS - AS INDICATED IN S180/TYP.

5. WELDING OF REINFORCING IS NOT PERMITTED UNLESS DETAILED ON THE DRAWINGS OR ACCEPTED IN ADVANCE BY THE ENGINEER.

6. MAINTAIN MINIMUM 3 INCHES CLEAR CONCRETE COVER BETWEEN REINFORCING AND EMBEDMENTS.

7. FINISH CONCRETE AS SPECIFIED IN SECTION 03366.

STEEL, STAINLESS STEEL, AND ALUMINUM - CONNECTIONS:

1. BOLTED:

   A. MADE USING 3/4-INCH DIAMETER BOLTS.
   B. HAVING A MINIMUM OF 2 BOLTS, SPACED NOT CLOSER THAN 3 INCHES ON CENTER.
   C. WITH A DISTANCE OF AT LEAST 1 1/2 INCHES FROM CENTER OF BOLT TO ANY EDGE OF A PLATE OR STRUCTURAL ELEMENT.

2. WELDED:

   A. FILLET WELDS: PER AWS CODE BASED ON THE THICKNESS OF THE MATERIALS BEING JOINED, AND FULL LENGTH OF THE JOINT.

3. INTERFACE BETWEEN MATERIALS:

   A. AT BOLTED CONNECTIONS THAT INCLUDE DIFFERENT METALS (E.G.: STEEL AND STAINLESS STEEL, OR ALUMINUM AND STEEL) PROVIDE MYLAR ISOLATING SLEEVES AND PHENOLIC WASHERS.
   B. WHERE ALUMINUM IS IN CONTACT WITH MASONRY OR CONCRETE, COAT ALUMINUM SURFACES WITH EPOXY MASTIC.

4. POST-INSTALLED ANCHORS IN CONCRETE AND MASONRY:

   A. INSTALL IN FULL COMPLIANCE WITH ACCEPTED BUILDING CODE EVALUATION REPORT AND MANUFACTURER'S INSTRUCTIONS.
   B. DO NOT CUT, DAMAGE, OR INTERRUPT EXISTING REINFORCEMENT TO INSTALL ANCHORS. USE NON-DESTRUCTIVE TESTING EQUIPMENT TO IDENTIFY LOCATIONS OF REINFORCEMENT IN MEMBERS BEFORE DRILLING HOLES FOR ANCHORS.

METAL FABRICATIONS:

1. HANDRAILS AND GUARDRAILS:

   A. ALUMINUM, EXCEPT WHERE OTHER MATERIALS ARE NOTED.

2. GRATING:

   A. ALUMINUM WITH TYPE 316 STAINLESS STEEL FASTENERS, UNLESS OTHERWISE NOTED.
   B. GRATING AND ITS SEATS OR SUPPORTS SHALL BE OF THE SAME MATERIAL.
   C. UNLESS INDICATED ON THE DRAWINGS AS "REMOVABLE GRATING", SECURELY FASTEN GRATING TO SUPPORTS.

3. COVER PLATES:

   A. ALUMINUM WITH TYPE 316 STAINLESS STEEL FASTENERS, UNLESS OTHERWISE NOTED.
   B. COVER PLATE AND ITS SEATS OR SUPPORTS SHALL BE OF THE SAME MATERIAL.

SPECIAL INSPECTION:

1. SPECIAL INSPECTION IS REQUIRED FOR THE FOLLOWING STRUCTURAL MATERIALS AND CONSTRUCTION. SEE SPECIFICATION SECTION 01455 FOR DETAILS.

2. DIVISION 2 SITE CONSTRUCTION (EARTHWORK)

   A. EXCAVATION DEPTH.
   B. ADEQUACY OF EXPOSED SURFACE TO PROVIDE REQUIRED SUPPORT.
   C. PREPARATION OF SOILS/SURFACES SUPPORTING CONSTRUCTION.
   D. FILL AND BACKFILL.

STRUCTURAL OBSERVATION:

1. STRUCTURAL OBSERVATION IS REQUIRED FOR THE FOLLOWING STAGES OF GABION RETAINING WALL CONSTRUCTION

   A. AFTER EXCAVATION AND PRIOR TO PLACING ANY GABION BASKETS.
   B. WHEN PLACING FIRST COURSE OF GABION BASKETS.
   C. PRIOR TO COMPLETION OF RETAINING WALL WHEN CORRECTONS CAN BE MADE.

STRUCTURAL SYMBOLS:

1. SEE DRAWING G04 FOR KEY TO DRAWING TITLES AND SECTION CUTS, AND FOR DEFINITION OF MATERIALS SHADING PATTERNS.

2. WELDING: SYMBOLS: IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) A2.4.

STRUCTURAL ABBREVIATIONS:

1. SEE DRAWING G03 FOR GENERAL LIST OF ABBREVIATIONS USED ON DRAWINGS.

2. ABBREVIATIONS FOR NAMES OF TECHNICAL GROUPS MAY BE FOUND IN THE PROJECT SPECIFICATIONS.

3. STRUCTURAL MEMBERS:

   A. STEEL: ABBREVIATIONS AND DESIGNATIONS ARE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION'S STEEL CONSTRUCTION MANUAL, CURRENT EDITION.

   B. ALUMINUM: ABBREVIATIONS AND DESIGNATIONS ARE IN ACCORDANCE WITH THE ALUMINUM ASSOCIATION'S ALUMINUM DESIGN MANUAL, CURRENT EDITION.

4. ABBREVIATIONS FOR STRUCTURAL DRAWINGS:
   WHEN USED ON THE STRUCTURAL DRAWINGS, THE FOLLOWING ABBREVIATIONS HAVE THE MEANINGS LISTED.

REINFORCEMENT:		OTHER:	
BO	BOTTOM OF	L	ANGLE
EF	EACH FACE	PL	PLATE
I.F.	INSIDE FACE		
O.F.	OUTSIDE FACE		
T.O.	TOP OF		
#	NUMBER (REINFORCING BAR SIZE)		
H1E	HOOK ONE END		

DEFERRED DESIGN SUBMITTALS

AS DEFINED IN THE BUILDING CODE, DEFERRED DESIGN SUBMITTALS ARE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION, AND THAT ARE TO BE REVIEWED BY THE REGISTERED DESIGN PROFESSIONAL AND SUBSEQUENTLY SUBMITTED TO THE BUILDING OFFICIAL.

DEFERRED DESIGN SUBMITTALS FOR THIS PROJECT INCLUDE:

1. DIVISION 2 SITE CONSTRUCTION (EARTHWORK).

   A. 02337 GABION BASKET RETAINING WALLS.
   B. 02836 INTERLOCKING BLOCK RETAINING WALLS.

2. DIVISION 5 METALS.

   A. 05500 HANDRAILS AND GUARDRAILS.

REV	DATE	BY	DESCRIPTION

DESIGNED MED
DRAWN TU
CHECKED LS
DATE NOVEMBER 2023

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 85742 OREGON SEP 13, 2011 MICHAEL E. DADK EXPIRES: 12/31/23

Digitally signed by Mike Dadk
Contact Info: Carollo Engineers, Inc.
Date: 2023.12.27 14:13:53-08'00'

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CITY OF West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
GENERAL STRUCTURAL NOTES

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. GS01
SHEET NO. 23 OF 58

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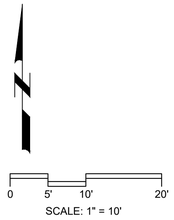

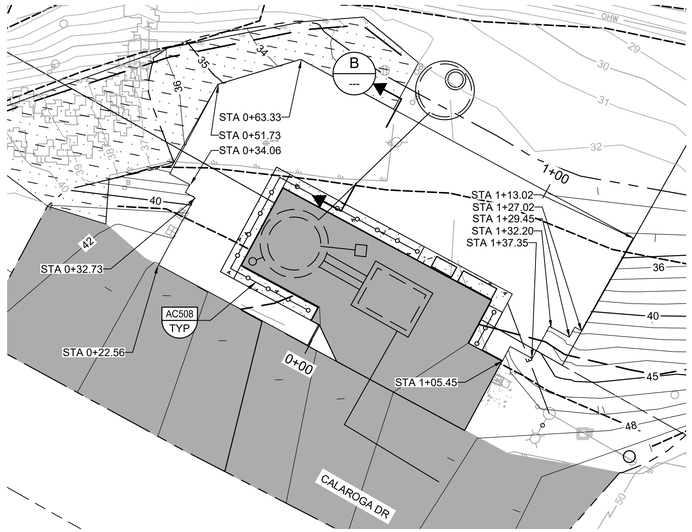

WALL

A PLAN

SCALE: 1"= 10'
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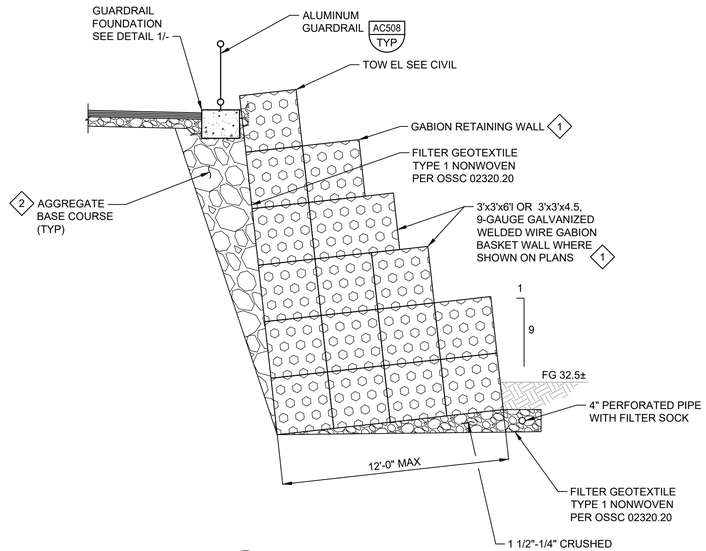


B SECTION

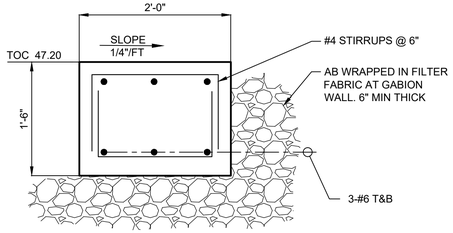
SCALE: 1/4" = 1'-0"
FILE: 20177900C0801

GENERAL NOTES:

1. EXISTING NATIVE SOIL MUST BE REMOVED DOWN TO ELEVATION 30 FT BETWEEN STATIONS 0+51 AND 1+27 AS SHOWN ON SHEET C02.

X KEY NOTES:

1. GABION WALL BASKET RETAINING WALL REFER TO ODOT DETAIL DET2000 SHOWN ON SHEET S04 AND SECTION 02337.
2. REFER TO SECTION 02050 FOR AGGREGATES FOR EARTHWORK.
3. WHERE WALL TOE IS SET AT ELEVATION 35 OR GREATER, DRAIN ROCK AND PERFORATED PIPE IS NOT REQUIRED.



1 DETAIL

SCALE: 1" = 1'-0"
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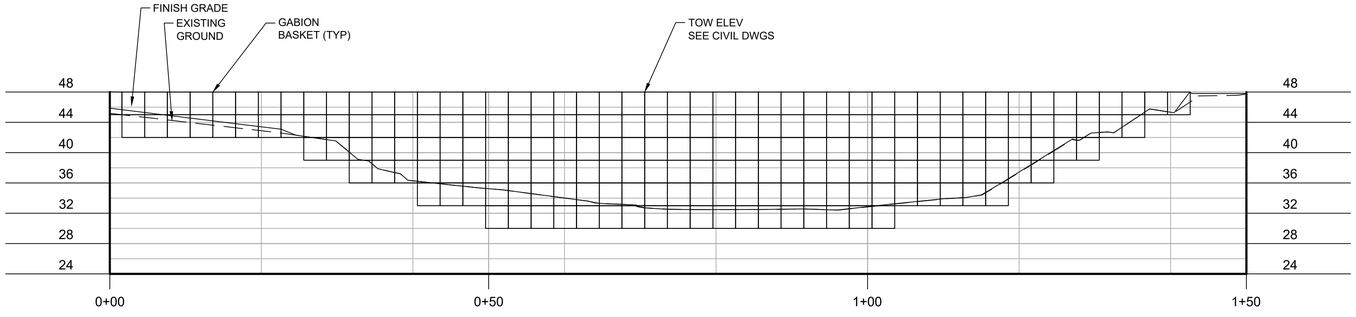

WALL

DEVELOPED ELEVATION

FILE: 20177900C0801

HORIZONTAL
0 5' 10' 20'
SCALE: 1" = 10'

VERTICAL
0 5' 10' 20'
SCALE: 1" = 10'

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARH
CHECKED LS
DATE NOVEMBER 2023

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 85742 OREGON SEP 13, 2011 MICHAEL E. DADIK
EXPIRES: 12/31/23

Digitally signed by Mike Dadik
Contact Info: Carollo Engineers, Inc.
Date: 2023.12.27 14:14:52-08'00'

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CITY OF West Linn

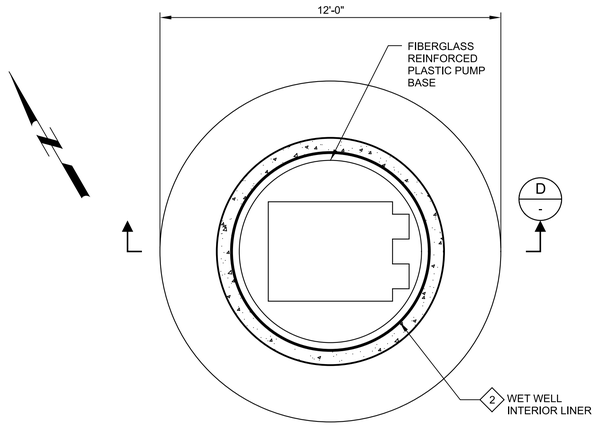
CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
STRUCTURAL
RETAINING WALL PLAN AND SECTIONS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

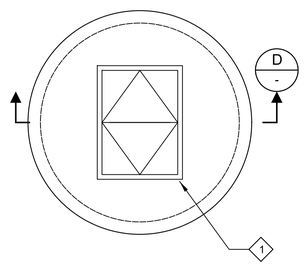
JOB NO. 201779
DRAWING NO. S01
SHEET NO. 24 OF 58

LAST SAVED BY: tuy

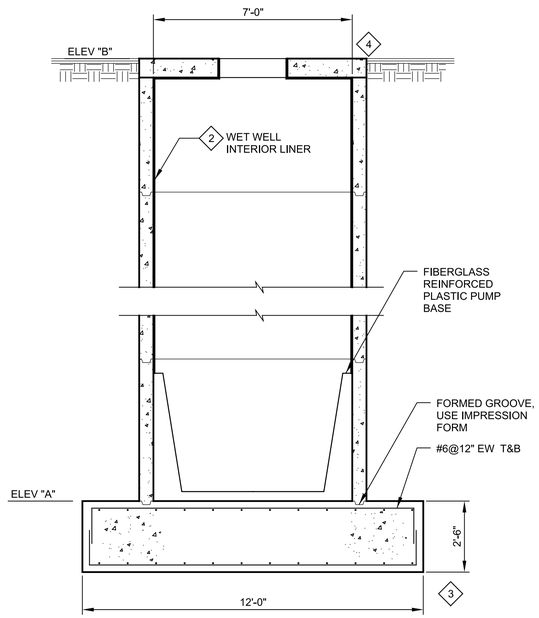
PROJECT NO. 201779-100000 FILE NAME: 20177900S001.dwg



2 WET WELL FOUNDATION PLAN
SCALE: 3/8"=1'-0"
FILE: 20177900S101



3 WET WELL TOP PLAN
SCALE: 3/8"=1'-0"
FILE: 20177900S101



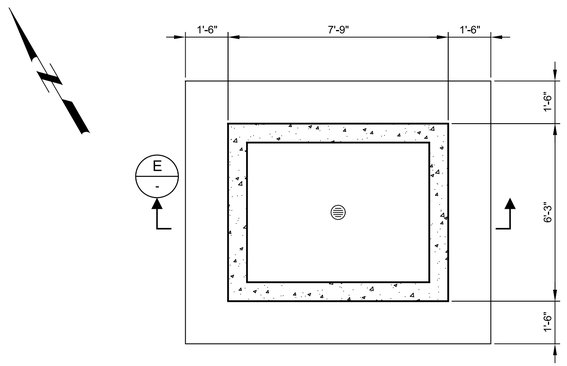
D SECTION
SCALE: 3/8"=1'-0"
FILE: 20177900S301

GENERAL NOTES:

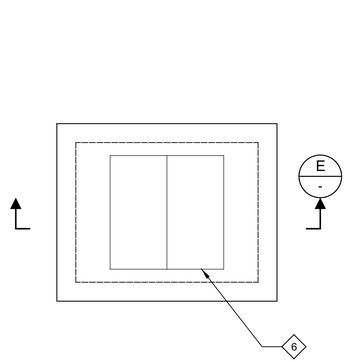
1. PRECAST WET WELL AND VALVE VAULT SECTIONS, INCLUDING TOP AND BOTTOM SLABS, TO BE DESIGNED BY PRECAST MANUFACTURER. SEE SPECIFICATION SECTION 02085.
2. SEE SCHEDULE FOR PRECAST SECTION SIZES AND ELEVATIONS.
3. PRECAST MANUFACTURER TO COORDINATE HATCH FRAME INSTALLATION WITH HATCH MANUFACTURER.
4. CONTRACTOR TO COORDINATE LOCATION OF HATCHES WITH PUMP MANUFACTURER TO ASSURE PUMP REMOVAL.

KEY NOTES:

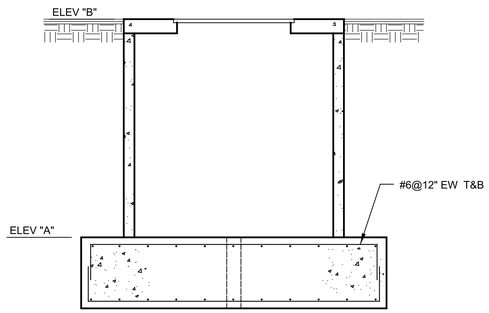
1. INSTALL DOUBLE LEAF HEAVY DUTY OFF STREET FLOOR ACCESS DOOR WITH 3'-0"X4'-0" CLEAR OPENING AND FALL PROTECTION SYSTEM PER SPECIFICATION SECTION 08320.
2. CONTRACTOR TO APPLY HIGH PERFORMANCE COATING PER SPECIFICATION SECTION 09960.
3. BASE SLAB SHALL HAVE MINIMUM DIMENSIONS AS SHOWN.
4. JOINT BETWEEN WET WELL AND SURROUNDING PAVEMENT AND/OR CONCRETE SHALL BE PER DETAIL S310/TYP.
5. SEE PLUMBING DRAWINGS FOR PIPE INVERT ELEVATIONS.
6. INSTALL DOUBLE LEAF HEAVY DUTY OFF STREET FLOOR ACCESS DOOR WITH 4'-0"X4'-0" CLEAR OPENING AND FALL PROTECTION SYSTEM PER SPECIFICATION 08320.



4 VAULT FOUNDATION PLAN
SCALE: 3/8"=1'-0"
FILE: 20177900S102



5 VAULT TOP PLAN
SCALE: 3/8"=1'-0"
FILE: 20177900S102



E SECTION
SCALE: 3/8"=1'-0"
FILE: 20177900S302

PRECAST WET WELL SCHEDULE			
WET WELL	ELEV "A"	ELEV "B"	SIZE
PS WET WELL	7.50	47.20	7'-0" DIA
VALVE VAULT	39.52	47.20	7'-9"x6'-3" (LxW)

PRECAST VALVE VAULT SCHEDULE			
VALVE VAULT	L x W	FLOOR	DRAIN
CALAROGA	7'-9" x 6'-3"	YES	TO CALAROGA PS

0

REV	DATE	BY	DESCRIPTION

DESIGNED MED
DRAWN TUY
CHECKED LS
DATE NOVEMBER 2023

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 85742 OREGON SEP 13, 2011 MICHAEL E. DADIK EXPIRES: 12/31/23

Digitally signed by Mike Dadik
Contact Info: Carollo Engineers, Inc.
Date: 2023.12.27 14:15:35-8'00'

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CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
STRUCTURAL
WET WELL AND VALVE VAULT PLANS AND SECTIONS

VERIFY SCALES
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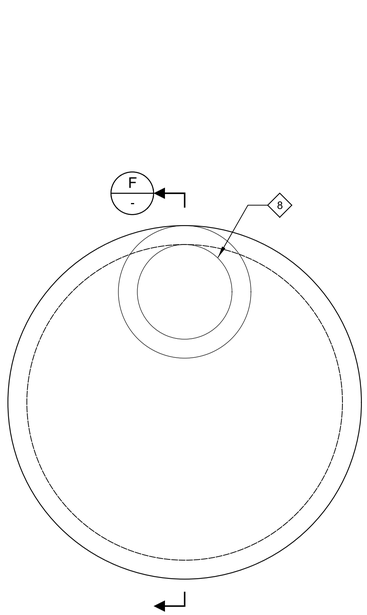
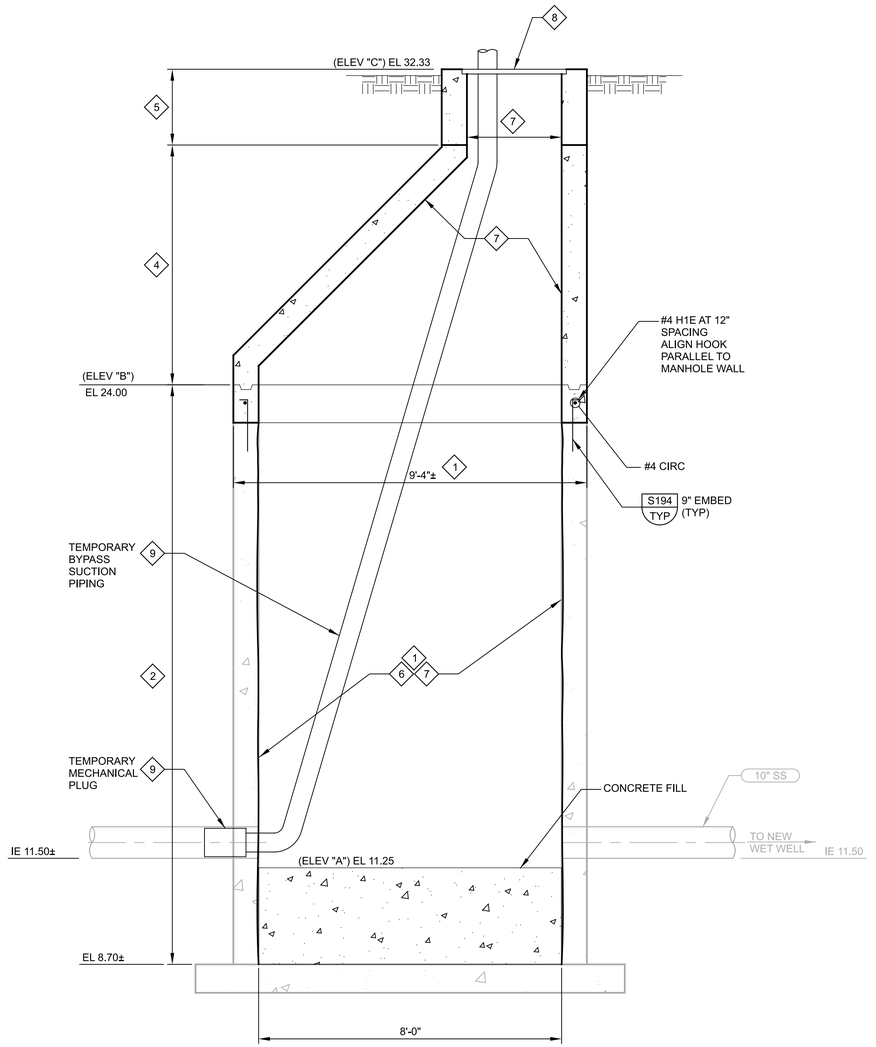
JOB NO. 201779
DRAWING NO. S02
SHEET NO. 25 OF 58



6 WET WELL TOP PLAN

SCALE: 3/8"=1'-0"
FILE: 20177900S101

PRECAST WET WELL SCHEDULE				
WET WELL	ELEV "A"	ELEV "B"	ELEV "C"	SIZE
ECCENTRIC RISER	NA	24.00	32.33	100" OD ◇3
WET WELL	11.25	NA	NA	8'-0 INSIDE DIA



F SECTION

SCALE: 1/2"=1'-0"
FILE: 20177900S303

GENERAL NOTES:

1. PRECAST WET WELL AND VALVE VAULT SECTIONS, INCLUDING TOP SLAB AND RISERS, TO BE DESIGNED BY PRECAST MANUFACTURER. SEE SPECIFICATION SECTION 02085.

KEY NOTES:

1. FIELD VERIFY EXISTING MANHOLE DIMENSIONS. SUBMIT TO ENGINEER. ALLOW TWO WEEKS FOR ENGINEER'S REVIEW.
2. EXISTING WET WELL WITH NEW CAST-IN-PLACE CONCRETE TRANSITION RING. ABRASIVE BLAST CLEAN INTERIOR SURFACES.
3. CAST IN PLACE CONCRETE TRANSITION. MATCH EXISTING AND NEW MANHOLE WALL THICKNESS. PROVIDE GROOVED JOINT MATCHING PRECAST SECTION. FORM USING AN IMPRESSION RING. SEAL WITH JOINT SEALANT (RAMNECK OR EQUAL).
4. PRECAST CONCRETE ECCENTRIC MANHOLE RISER.
5. ADJUSTING RINGS, 2 MAX. AND PRECAST CONCRETE MANHOLE COVER WITH 24" DIAMETER MANHOLE. PROVIDE "SANITARY SEWER" CAST IN MANHOLE COVER.
6. ABRASIVE BLAST EXISTING MANHOLE INTERIOR, APPLY STRUCTURAL CONCRETE REPAIR MORTAR, SECTION 09968, TO RESTORE TO 2" MINIMUM, 6" MAXIMUM.
7. COAT ALL INTERIOR SURFACES, EXISTING AND NEW AS SPECIFED IN SECTION 09968
8. 30" DIA MANHOLE COVER WITH SKID-RESISTANT GRID PATTERN STAMPED WITH "SANITARY SEWER" LABEL.
9. COORDINATE WORK WITH TEMPORARY BYPASS PIPING THAT WILL REMAIN IN CONTINUOUS OPERATION DURING ALL PHASES OF CONSTRUCTION.

0

REV	DATE	BY	DESCRIPTION

DESIGNED MED
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STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 85742 OREGON SEP 13, 2011 MICHAEL E. DADIK
EXPIRES: 12/31/23

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STRUCTURAL
EXISTING WET WELL MODIFICATIONS PLAN AND SECTION

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JOB NO. 201779
DRAWING NO. S03
SHEET NO. 26 OF 58

PROJECT NO. 201779-100000 FILE NAME: 20177900S003.dgn

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PlotScale: 1:1
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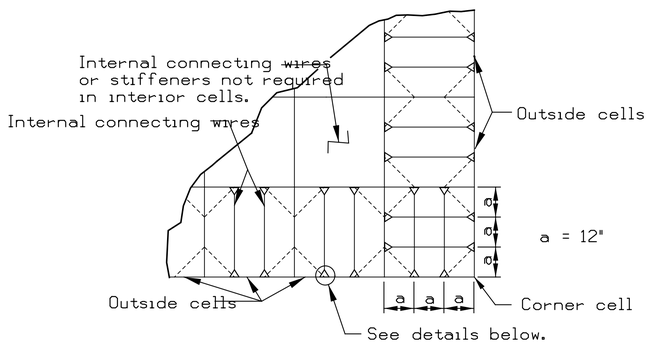
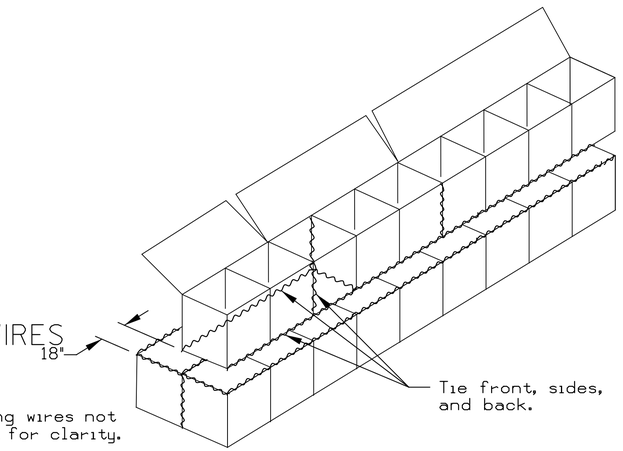
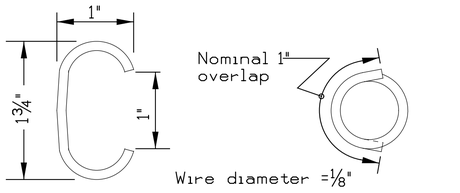
GABION RETAINING WALL DETAILS



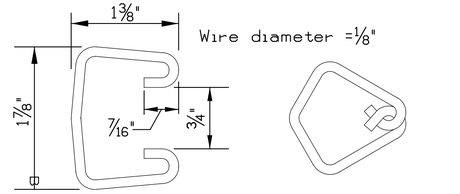
TYPICAL PLAN FOR INTERNAL CONNECTING WIRES



GABION BASKET TYING DETAIL

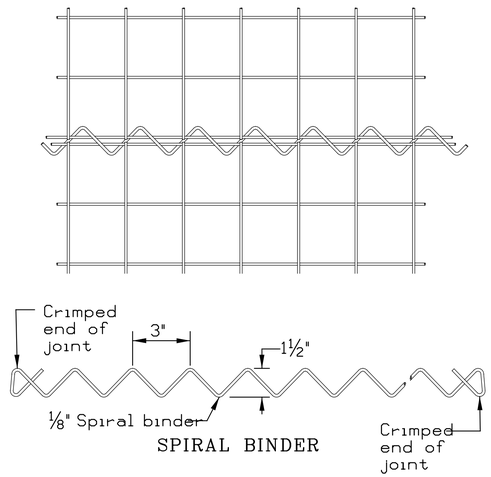


OVERLAPPING FASTENER*



INTERLOCKING FASTENER*

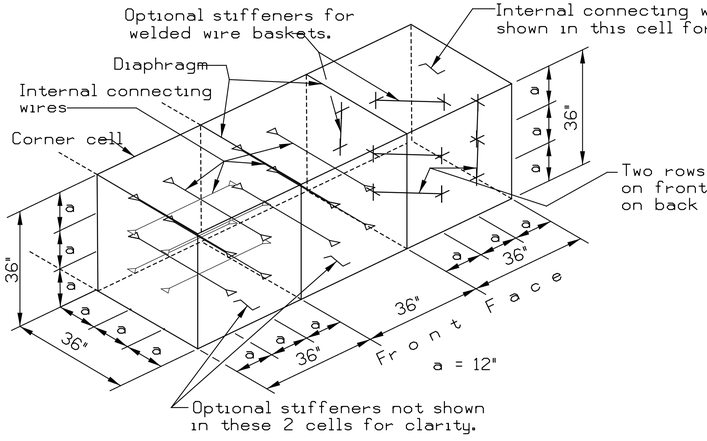
*Use for basket assembly only.



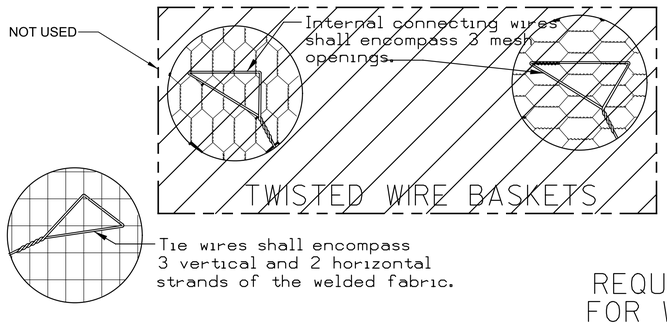
SPIRAL BINDER

ALTERNATE GABION JOINT FASTENERS

(FASTENER DIMENSIONS NOMINAL)

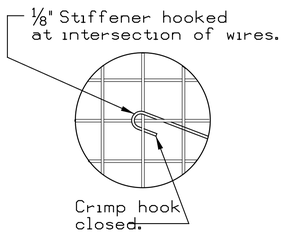


INTERNAL CONNECTING WIRES

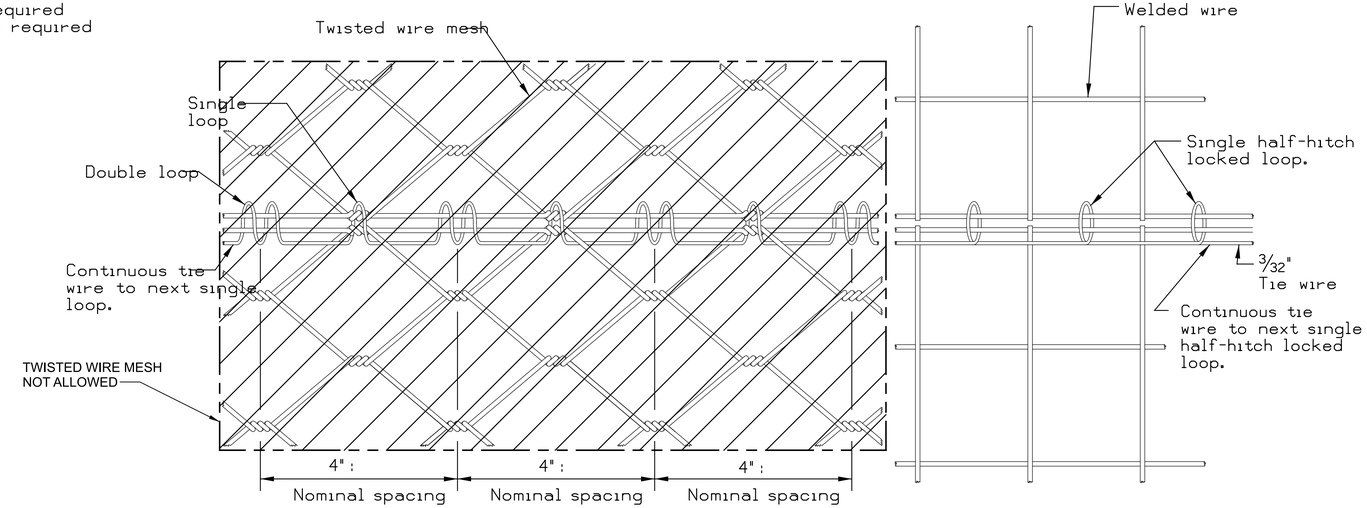


TWISTED WIRE BASKETS

WELDED WIRE BASKETS



REQUIRED STIFFENER CONNECTION FOR WELDED WIRE GABION BASKETS



STANDARD 3/32" TIE WIRE DETAIL

0

REV	DATE	BY	DESCRIPTION

DESIGNED MED
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CHECKED LS
DATE NOVEMBER 2023

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 85742 OREGON SEP 13, 2011 MICHAEL E. DADIK
EXPIRES: 12/31/23

Digitally signed by Mike Dadik
Contact Info: Carollo Engineers, Inc.
Date: 2023.12.27 14:17:04-08'00'

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CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
STRUCTURAL
ODOT GABION RETAINING WALL DETAILS

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DRAWING NO. S04
SHEET NO. 27 OF 58

PROJECT NO. 201779-100000 FILE NAME: 20177900S004.dgn

Plot Date: 1-NOV-2023 8:55:14 AM
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PlotScale: 1:1
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LAST SAVED BY: tuy

ELECTRICAL DRAWING INDEX

SHEET	DWG NO.	TITLE	COMMENTS
50	E01	ELECTRICAL DRAWING INDEX, ABBREVIATIONS & SYMBOLS	–
51	E02	POWER CONDUIT LAYOUT	–
52	E03	CONTROL CONDUIT LAYOUT	–
53	E04	POWER & CONTROL CONDUCTOR/CONDUIT SCHEDULE	–
54	E05	MAIN PANEL MP–1 LAYOUT	–
55	E06	MAIN PANEL MP–1 BILL OF MATERIALS	–
56	E07	ONE–LINE DIAGRAM	–

ELECTRICAL ONE–LINE SYMBOLS

SYMBOL	DESCRIPTION
NAME, PRI (kV), RATING (kV), Z%, SEC (kV), DT	TRANSFORMER WITH DELTA–Y–GROUNDED CONNECTION. MAY BE SHOWN AS DELTA–DELTA, Y–DELTA, ETC. Z% = IMPEDANCE
EMERGENCY, NORMAL, LOAD	MANUAL TRANSFER SWITCH
NAME, RATING (kVA), VOLTAGE (V)	GENERATOR
AF, AT, 3P	MOLDED CASE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED AF = FRAME SIZE IN AMPS AT = TRIP RATING IN AMPS
RATING (A), 3P	FUSE, 3 POLE UNLESS OTHERWISE NOTED
RATING (A)	DISCONNECT SWITCH
JB NAME	JUNCTION BOX
PANEL NAME, AT	PANEL WITH MAIN BREAKER AT = TRIP RATING IN AMPS
SS NAME, SS	MOTOR SOFT STARTER
FVNR NAME, FVNR	FULL VOLTAGE NON–REVERSING MOTOR STARTER
VFD NAME, VFD	VARIABLE FREQUENCY DRIVE
HP, NAME	MOTOR
	GENERATOR RECEPTACLE
	DOUBLE RECEPTACLE

ELECTRICAL ABBREVIATIONS

1P	1 POLE
3P	3 POLE
A	AMPERE
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
AIC	AMPERES INTERRUPTING CURRENT
AT	AMPERE TRIP
AWG	AMERICAN WIRE GAUGE
CB	CIRCUIT BREAKER
CBL	CABLE
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER
CU	COPPER
FDR	FEEDER
FLA	FULL LOAD AMPERES
FS	FUSE
G	GROUND
GEN	GENERATOR
GND	GROUND
HP	HORSEPOWER
JB	JUNCTION BOX
kA	KILOAMPERE
kcmil	THOUSAND CIRCULAR MILS
kV	KILOVOLT
kVA	KILAVOLT–AMPERE
kW	KILOWATT
LP	LIGHTING PANEL
MFR	MANUFACTURER
MP	MAIN PANEL
MTS	MANUAL TRANSFER SWITCH
N	NEUTRAL
P	POLE
PH	PHASE
PDP	POWER DISTRIBUTION PANEL
PFR	POWER FAIL RELAY
PNL	PANEL
PRI	PRIMARY
PWR	POWER
SD	SERVICE DISCONNECT
SEC	SECONDARY
SPD	SURGE PROTECTIVE DEVICE
SW	SWITCH
TX	TRANSFORMER
UTIL	UTILITY
V	VOLT
VA	VOLT–AMPERE
VAC	VOLTAGE ALTERNATING CURRENT
VFD	VARIABLE FREQUENCY DRIVE
W	WATT
Y	WYE
Z	IMPEDANCE

ELECTRICAL LINE LEGEND

SYMBOL	DESCRIPTION
————	CONDUCTORS, PANELS OR OTHER ELECTRICAL COMPONENTS
– — — — –	MAIN POWER AND CONTROL ENCLOSURE

REV	DATE	BY	DESCRIPTION
0	2/19/23	EC	CREATED

DESIGNED: D. DELGADO
DRAWN: E. CHOW
CHECKED: F. DELGADO
DATE: NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER
65577PE
OREGON
JAN. 15, 2002
FIDEL DELGADO
RENEWAL DATE: 12/31/23
SIGNED DATE: 11/06/23

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ELECTRICAL INDEX, ABBREVIATIONS, & SYMBOLS

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JOB NO. 201779
DRAWING NO. E01
SHEET NO. 28 OF 58

POWER CONDUIT LAYOUT

SHEET NOTES:

1. ALL CONDUITS SHALL BE DIRECT BURIED. MINIMUM BURIAL DEPTH IS 24 INCHES.
2. CORE DRILL THE WET WELL AND VALVE VAULT FOR ENTRANCE OF CONDUITS. SEAL PENETRATIONS IN ACCORDANCE WITH TYPICAL DETAIL DE004 (DWG. N23).
3. THE WET WELL INTERIOR IS A CLASS 1 DIVISION 1 LOCATION. THE VALVE VAULT INTERIOR IS A CLASS 1 DIVISION 2 LOCATION.
4. FOR ELECTRICAL ONE-LINE, SEE DWG. E03.
5. FOR CONDUIT/CONDUCTOR SCHEDULE, SEE DWG. E07.
6. INSTALL CONDUIT AND CONDUCTORS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) AND ANY APPLICABLE LOCAL CODES.

KEY NOTES:

〈1〉 LOCATE LIMIT SWITCHES SO THEY DO NOT INTERFERE WITH ACCESS TO THE VAULTS OR EQUIPMENT REMOVAL. LIMIT SWITCHES TO BE SUBMERSIBLE RATED.

〈2〉 INSTALL CONDUIT FOR EACH PUMP CABLE BETWEEN THE JUNCTION BOX JB-1 AND THE INSIDE OF THE WET WELL. PROVIDE MESH CABLE GRIPS FOR THE PUMP CABLES.

〈3〉 JB-1 TO BE 16"X14"X6" NEMA TYPE 4X JUNCTION BOX WITH TERMINALS FOR TRANSITIONING THE PUMP POWER & CONTROL CABLES, INTRUSION SWITCH ZS-101, AND LEVEL PROBES LE-100 AND LE-103 CONTROL WIRES BETWEEN THE PUMP CONTROL PANEL AND THE WET WELL. SEPARATE 240V POWER, 120V, AND 24V CONTROL WIRING. MOUNT THE JUNCTION BOX ON THE SIDE OF THE WET WELL SIMILAR TO TYPICAL DETAIL DE007 (DWG. N23). PROVIDE CONDUIT SEALS PER TYPICAL DETAIL DE004 (DWG. N23) ONLY BETWEEN THE JUNCTION BOX AND THE WET WELL.

〈4〉 JB-2 TO BE 6"X6"X4" NEMA TYPE 4X JUNCTION BOX WITH TERMINALS FOR TRANSITIONING THE INTRUSION SWITCH ZS-200 AND FLOOD LEVEL FLOAT SWITCH LSH-200 CONTROL WIRES BETWEEN THE PUMP CONTROL PANEL AND THE VALVE VAULT.
MOUNT THE JUNCTION BOX ON THE SIDE OF THE WET WELL SIMILAR TO TYPICAL DETAIL DE007 (DWG. N23). PROVIDE CONDUIT SEALS PER TYPICAL DETAIL DE004 (DWG. N23) ONLY BETWEEN THE JUNCTION BOX AND THE WET WELL.

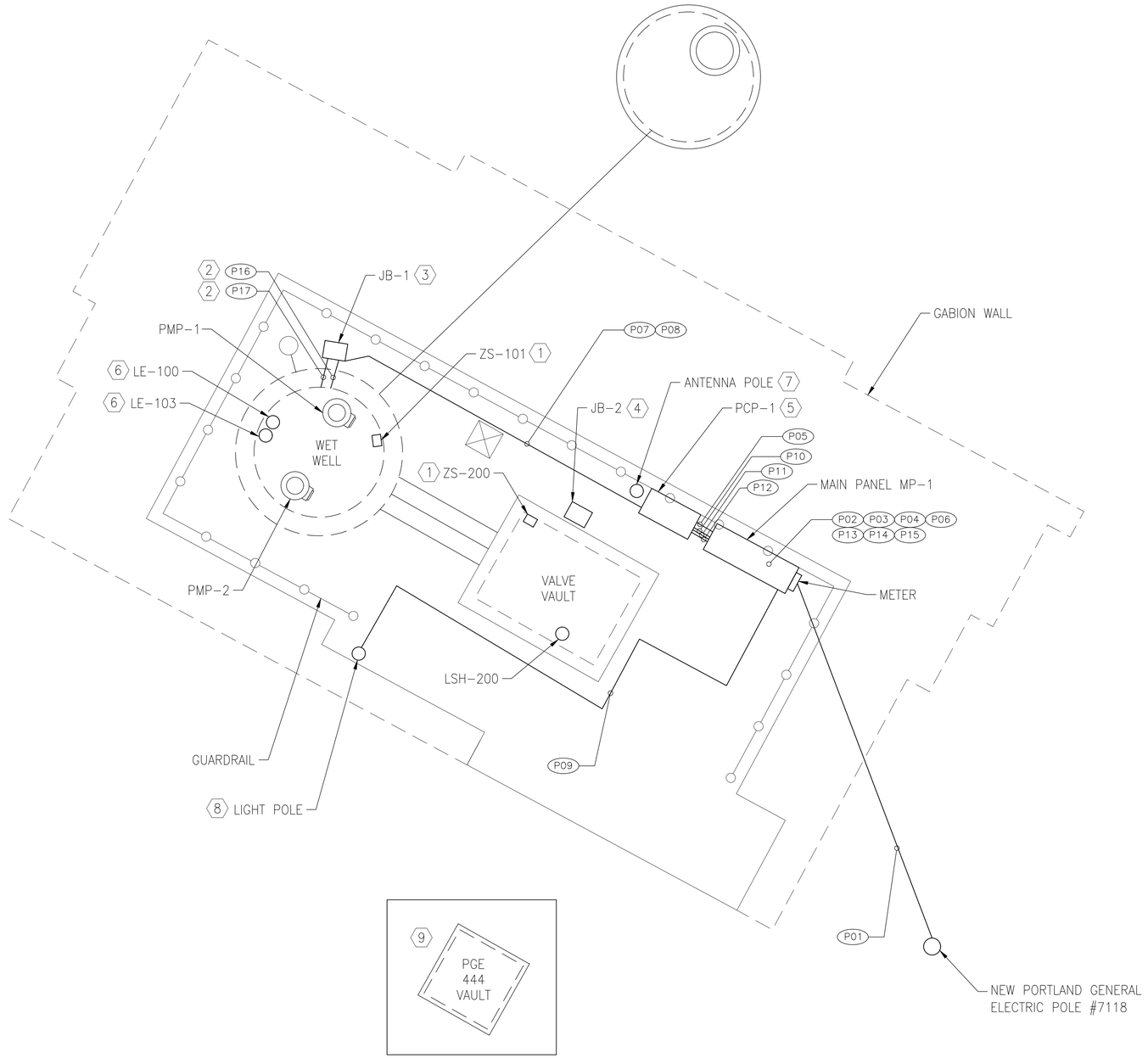
〈5〉 MOUNT PCP-1 SIMILAR TO TYPICAL DETAIL DE007 (DWG. N23).

〈6〉 MOUNT LEVEL PROBES SIMILAR TO TYPICAL DETAIL DE010 (DWG. N24).

〈7〉 MOUNT SCADA SYSTEM ANTENNA NEXT TO PCP-1 SIMILAR TO TYPICAL DETAIL DE012 (DWG. N24).

〈8〉 INSTALL AN OUTDOOR RATED POLE MOUNTED LIGHT. INSTALL 15' POLE; SEE TYPICAL DETAIL DE013 (DWG. N24) FOR POLE MOUNTING DETAILS. LUMINAIRE TYPE MUST BE LED AND SHALL NOT EXCEED 300K CORRELATED COLOR TEMPERATURE (CCT). FIXTURE SHALL BE 13,000 LUMENS (+/-3%) WITH TYPE III LIGHT DISTRIBUTION. WIRE THE LIGHT PER TYPICAL DETAIL DE014 (DWG. N24).

〈9〉 PGE VAULT WILL BE LOCATED ACROSS THE STREET FROM THE SITE. FOR ACTUAL LOCATION, REFER TO DWG. C03. CONTRACTOR IS RESPONSIBLE FOR INSTALLING FIBERGLASS SWEEPS FOR THE CONDUIT AT THE PGE TAKEOFF POLE #6943 (NOT SHOWN, LOCATED ACROSS THE CREEK) AND THE TWO 90-DEGREE BENDS TO THE 444 VAULT. ALL BENDS WITHIN THAT RUN ARE TO BE FIBERGLASS.



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DESIGNED D. DELGADO
DRAWN E. CHOW
CHECKED F. DELGADO
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 65577PE OREGON JAN. 15, 2003 FIDEL DELGADO
RENEWAL DATE: 12/31/23
SIGNED DATE: 11/06/23

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CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
POWER CONDUIT LAYOUT

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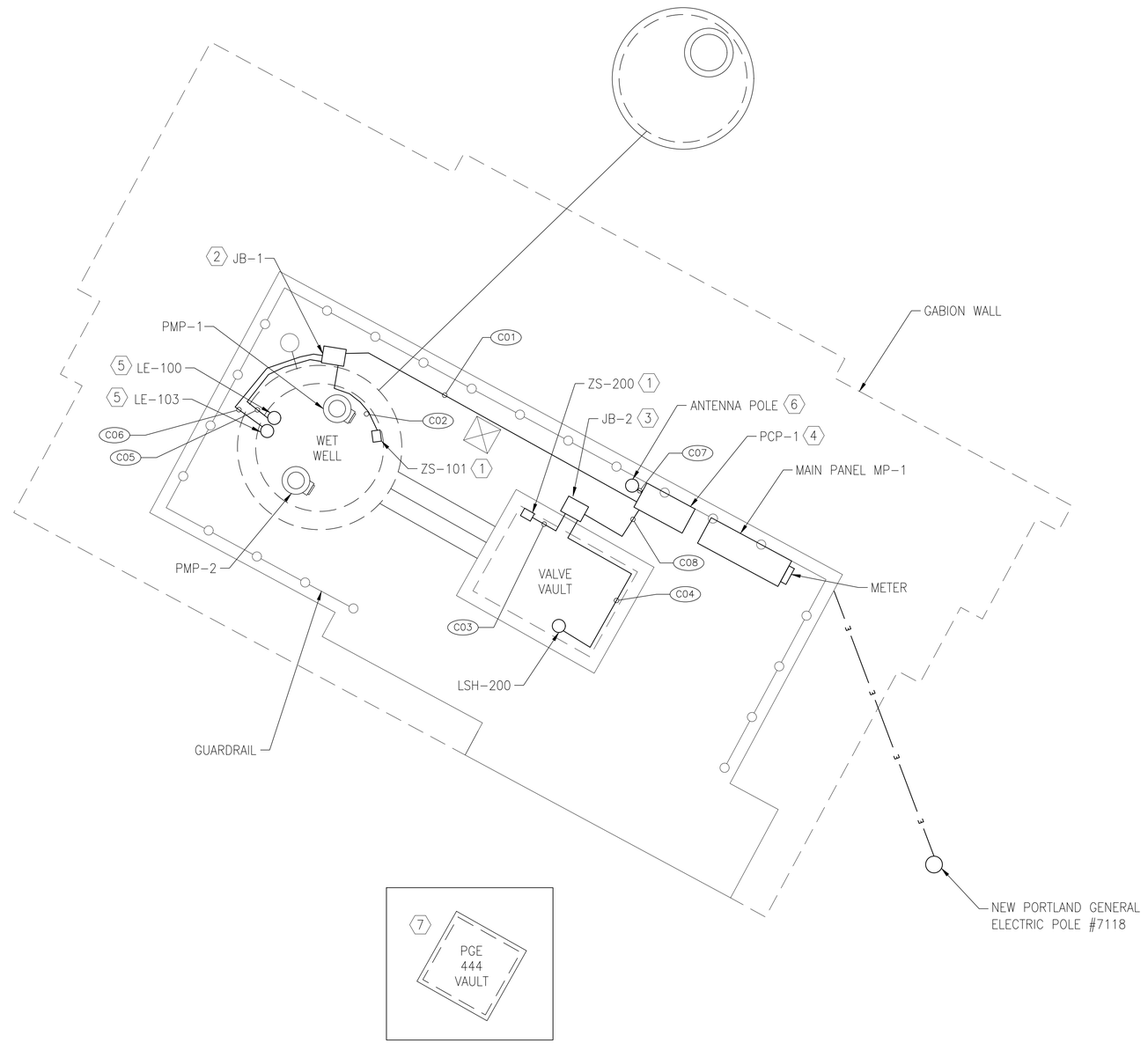
JOB NO. 201779
DRAWING NO. E02
SHEET NO. 29 OF 58

CONTROL CONDUIT LAYOUT

SHEET NOTES:

1. ALL CONDUITS SHALL BE DIRECT BURIED. MINIMUM BURIAL DEPTH IS 24 INCHES.
2. CORE DRILL THE WET WELL AND VALVE VAULT FOR ENTRANCE OF CONDUITS. SEAL PENETRATIONS IN ACCORDANCE WITH TYPICAL DETAIL DE004 (DWG. N23).
3. THE WET WELL INTERIOR IS A CLASS 1 DIVISION 1 LOCATION. THE VALVE VAULT INTERIOR IS A CLASS 1 DIVISION 2 LOCATION.
4. FOR ELECTRICAL ONE-LINE, SEE DWG. E03.
5. FOR CONDUIT/CONDUCTOR SCHEDULE, SEE DWG. E07.
6. INSTALL CONDUIT AND CONDUCTORS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) AND ANY APPLICABLE LOCAL CODES.



KEY NOTES:

1. LOCATE LIMIT SWITCHES SO THEY DO NOT INTERFERE WITH ACCESS TO THE VAULTS OR EQUIPMENT REMOVAL. LIMIT SWITCHES TO BE SUBMERSIBLE RATED.

2. JB-1 TO BE 16"X14"X6" NEMA TYPE 4X JUNCTION BOX WITH TERMINALS FOR TRANSITIONING THE PUMP POWER & CONTROL CABLES, INTRUSION SWITCH ZS-101, AND LEVEL PROBES LE-100 AND LE-103 CONTROL WIRES BETWEEN THE PUMP CONTROL PANEL AND THE WET WELL. SEPARATE 240V POWER, 120V, AND 24V CONTROL WIRING.
MOUNT THE JUNCTION BOX ON THE SIDE OF THE WET WELL SIMILAR TO TYPICAL DETAIL DE007 (DWG. N23).
PROVIDE CONDUIT SEALS PER TYPICAL DETAIL DE004 (DWG. N23) ONLY BETWEEN THE JUNCTION BOX AND THE WET WELL.

3. JB-2 TO BE 6"X6"X4" NEMA TYPE 4X JUNCTION BOX WITH TERMINALS FOR TRANSITIONING THE INTRUSION SWITCH ZS-200 AND FLOOD LEVEL FLOAT SWITCH LSH-200 CONTROL WIRES BETWEEN THE PUMP CONTROL PANEL AND THE VALVE VAULT.
MOUNT THE JUNCTION BOX ON THE SIDE OF THE WET WELL SIMILAR TO TYPICAL DETAIL DE007 (DWG. N23).
PROVIDE CONDUIT SEALS PER TYPICAL DETAIL DE004 (DWG. N23) ONLY BETWEEN THE JUNCTION BOX AND THE WET WELL.

4. MOUNT PCP-1 SIMILAR TO TYPICAL DETAIL DE007 (DWG. N23).

5. MOUNT LEVEL PROBES SIMILAR TO TYPICAL DETAIL DE010 (DWG. N24).

6. MOUNT SCADA SYSTEM ANTENNA NEXT TO PCP-1 SIMILAR TO TYPICAL DETAIL DE012 (DWG. N24).

7. PGE VAULT WILL BE LOCATED ACROSS THE STREET FROM THE SITE. FOR ACTUAL LOCATION, REFER TO DWG. C03. CONTRACTOR IS RESPONSIBLE FOR INSTALLING FIBERGLASS SWEEPS FOR THE CONDUIT AT THE PGE TAKEOFF POLE #6943 (NOT SHOWN, LOCATED ACROSS THE CREEK) AND THE TWO 90-DEGREE BENDS TO THE 444 VAULT. ALL BENDS WITHIN THAT RUN ARE TO BE FIBERGLASS.

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DESIGNED D. DELGADO
DRAWN E. CHOW
CHECKED F. DELGADO
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 65577PE OREGON JAN. 15, 2002 FIDEL DELGADO
RENEWAL DATE: 12/31/23
SIGNED DATE: 11/06/23

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CONTROL CONDUIT LAYOUT

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JOB NO. 201779
DRAWING NO. E03
SHEET NO. 30 OF 58

POWER CONDUIT / CONDUCTOR SCHEDULE

CONDUIT	CONDUITS			CONDUCTORS PER CONDUIT							FROM	TO	NOTES
ID No.	QTY	SIZE	MATERIAL	POWER	NEUTRAL	GND	SPARE	MATERIAL	INSULATION	LENGTH			
P01	1	TBD	TBD	TBD	TBD	-		TBD	TBD	TBD	UTILITY TX	CT/METER BOX	UTILITY SERVICE
P02	1	1.25"	GRC	3-1 AWG	1-1 AWG	-		CU	XHHW-2	3'	CT/METER BOX	SD-1	1 SET OF THREE 1 AWG
P03	1	1.25"	GRC	3-1 AWG	1-1 AWG	-		CU	XHHW-2	3'	SD-1	MTS-1	1 SET OF THREE 1 AWG
P04	1	1.5"	GRC	3-1 AWG	1-1 AWG	1-8 AWG		CU	XHHW-2	3'	MTS-1	GEN RECEPTACLE	1 SET OF THREE 1 AWG
P05	1	1"	GRC	3-4 AWG	-	-		CU	XHHW-2	3'	MTS-1	PCP-1	1 SET OF THREE 4 AWG
P06	1	1"	GRC	2-8 AWG	1-8 AWG	1-8 AWG		CU	XHHW-2	3'	MTS-1	PANEL LP-1	1 SET OF THREE 8 AWG
P07	1	1"	GRC	3-10 AWG	-	1-10 AWG		CU	XHHW-2	TBD	PCP-1	JB-1	1 SET OF THREE 10 AWG
P08	1	1"	GRC	3-10 AWG	-	1-10 AWG		CU	XHHW-2	TBD	PCP-1	JB-1	1 SET OF THREE 10 AWG
P09	1	1"	GRC	1-14 AWG	1-14 AWG	1-14 AWG		CU	THHN	TBD	PANEL LP-1	LIGHT POLE	1 SET OF TWO 14 AWG
P10	1	1"	GRC	-	-	-		-	-	TBD	MP-1	PCP-1	SPARE CONDUIT
P11	1	1"	GRC	-	-	-		-	-	TBD	MP-1	PCP-1	SPARE CONDUIT
P12	1	1"	GRC	1-14 AWG	1-14 AWG	1-14 AWG		-	-	TBD	PANEL LP-1	PCP-1	1 SET OF TWO 14 AWG, FOR HEATER
P13	1	1"	GRC	2-14 AWG	-	-		CU	THHN	TBD	PANEL LP-1	SW-1	1 SET OF TWO 14 AWG, FOR LIGHT POLE SWITCH
P14	1	1"	GRC	1-14 AWG	1-14 AWG	1-14 AWG		CU	THHN	TBD	PANEL LP-1	RECEP-1	1 SET OF TWO 14 AWG
P15	1	1"	GRC	1-14 AWG	1-14 AWG	1-14 AWG		CU	THHN	TBD	RECEP-1	RECEP-2	1 SET OF TWO 14 AWG
P16	1	1.5"	PVC	1-CABLE	N/A	N/A		-	-	TBD	JB-1	WET WELL INTERIOR WALL	MANUFACTURER CABLE FOR PUMP 1.
P17	1	1.5"	PVC	1-CABLE	N/A	N/A		-	-	TBD	JB-1	WET WELL INTERIOR WALL	MANUFACTURER CABLE FOR PUMP 2.
CBL1	1	N/A	N/A	1-CABLE	N/A	N/A		N/A	N/A	TBD	JB-1	PUMP 1	MANUFACTURER CABLE FOR PUMP 1.
CBL2	1	N/A	N/A	1-CABLE	N/A	N/A		N/A	N/A	TBD	JB-1	PUMP 2	MANUFACTURER CABLE FOR PUMP 2.

NOTES: 1. TBD = TO BE DETERMINED

CONTROL CONDUIT / CONDUCTOR SCHEDULE

CONDUIT	CONDUITS			CONDUCTORS PER CONDUIT							FROM	TO	NOTES
ID No.	QTY	SIZE	MATERIAL	CONTROL	CABLE	GND	SPARE	MATERIAL	INSULATION	LENGTH			
C01	1	2"	GRC	SEE NOTE	SEE NOTE	SEE NOTE	4-14 AWG	CU	XHHW-2	TBD	PCP-1	JB-1	CONTAINS C02, C04, C05 & C06 CABLES + SPARE WIRES.
C02	1	1"	GRC	2-14 AWG		1-14 AWG		CU	XHHW-2	TBD	JB-1	ZS-101	MANUFACTURER CABLE FOR INTRUSION SWITCH IN WET WELL.
C03	1	1"	GRC	2-14 AWG		1-14 AWG		CU	XHHW-2	TBD	JB-2	ZS-200	MANUFACTURER CABLE FOR INTRUSION SWITCH IN VALVE VAULT.
C04	1	1"	N/A	N/A	1-CABLE	N/A		N/A	N/A	TBD	JB-2	LSH-200	MANUFACTURER CABLE FOR FLOOD FLOAT IN VALVE VAULT.
C05	1	1"	N/A	N/A	1-CABLE	N/A		N/A	N/A	TBD	JB-1	LEVEL PROBE LE-100	MANUFACTURER CABLE FOR HIGH LEVEL PROBE SENSOR.
C06	1	1"	N/A	N/A	1-CABLE	N/A		N/A	N/A	TBD	JB-1	LEVEL PROBE LE-103	MANUFACTURER CABLE FOR LEVEL PROBE SENSORS.
C07	1	1"	N/A	N/A	1-CABLE	N/A		N/A	N/A	TBD	PCP-1	ANTENNA POLE	MANUFACTURER CABLE FOR LTE ANTENNA FOR SCADA SYSTEM.
C08	1	1"	GRC	SEE NOTE	SEE NOTE	SEE NOTE	4-14 AWG	CU	XHHW-2	TBD	PCP-1	JB-2	CONTAINS C03 & C04 CABLES + SPARE WIRES.

NOTES: 1. TBD = TO BE DETERMINED

SHEET NOTES:

1. FOR ELECTRICAL ONE-LINE, SEE DWG. E07.
2. FOR POWER CONDUIT LAYOUT, SEE DWG. E02.
3. FOR CONTROL CONDUIT LAYOUT, SEE DWG. E03.
4. INSTALL CONDUIT AND CONDUCTORS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) AND ANY APPLICABLE LOCAL CODES.

REV	DATE	BY	DESCRIPTION
0	2/19/23	EC	CREATED

DESIGNED D. DELGADO
DRAWN E. CHOW
CHECKED F. DELGADO
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 65577PE OREGON JAN. 15, 2002 FIDEL DELGADO
RENEWAL DATE: 12/31/23
SIGNED DATE: 11/06/23

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City of West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
POWER & CONTROL
CONDUIT / CONDUCTOR SCHEDULE

VERIFY SCALES
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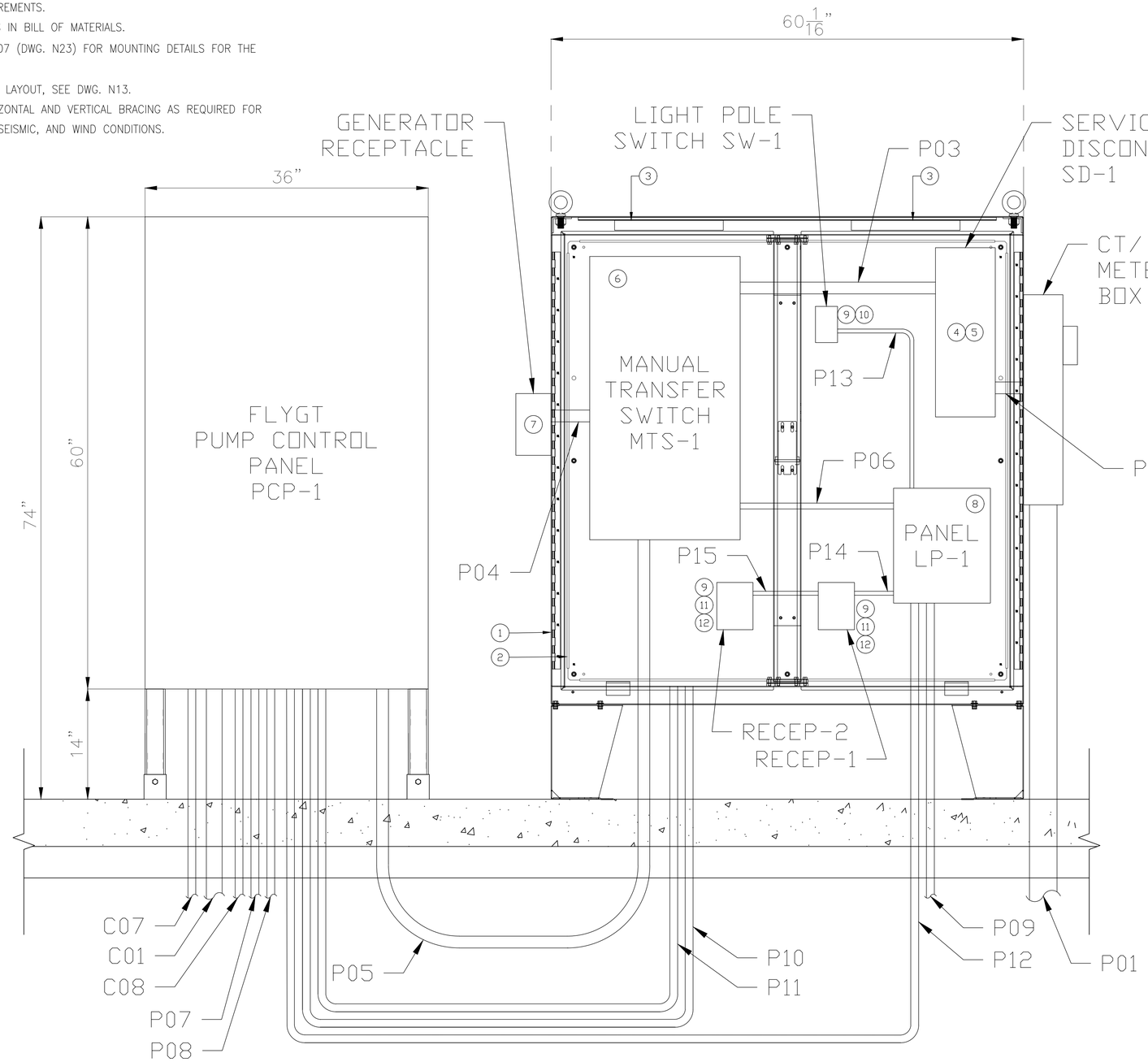
JOB NO. 201779
DRAWING NO. E04
SHEET NO. 31 OF 58

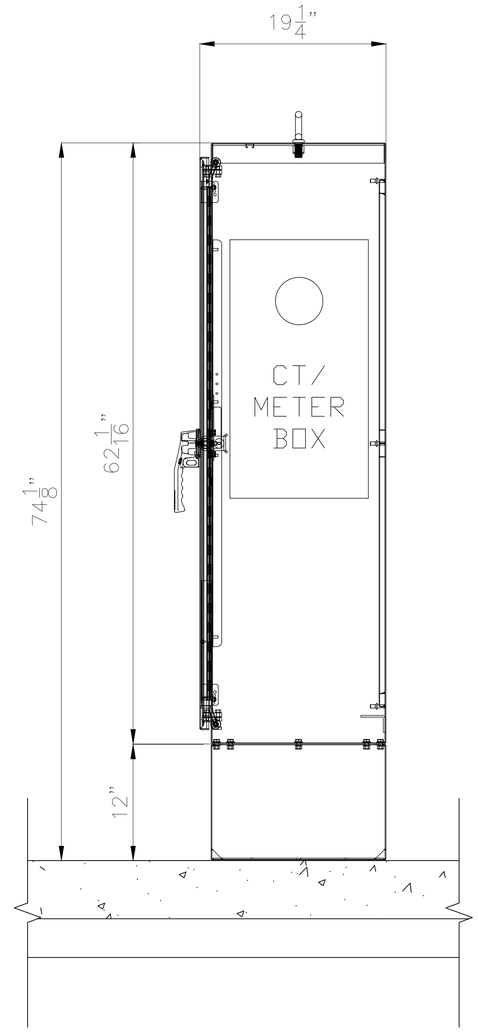
SHEET NOTES:

1. CONTRACTOR TO PROVIDE METER SOCKET AND ENCLOSURE PER PORTLAND GENERAL ELECTRIC REQUIREMENTS.
2. SEE DWG. E06 FOR ITEMS IN BILL OF MATERIALS.
3. SEE TYPICAL DETAIL (DE007 (DWG. N23) FOR MOUNTING DETAILS FOR THE FLYGT PANEL PCP-1.
4. FOR FLYGT PANEL PCP-1 LAYOUT, SEE DWG. N13.
5. PROVIDE ADDITIONAL HORIZONTAL AND VERTICAL BRACING AS REQUIRED FOR THE EQUIPMENT WEIGHT, SEISMIC, AND WIND CONDITIONS.

FRONT VIEW



SIDE VIEW



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CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
MAIN PANEL MP-1 LAYOUT

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JOB NO. 201779
DRAWING NO. E05
SHEET NO. 32 OF 58

BILL OF MATERIALS FOR MAIN PANEL MP-1

Item	Label	Qty	Manufacturer	Catalog #	Description
1	MP-1	1	Hoffman	A62H6018SSLP3PT	Enclosure, 2-Door Floor-Stand 3-Point Latches Type 4X, 62x60x18, Stainless Steel Type 304
2	(None)	1	Hoffman	A60P60	Panel for Enclosure, fits 60x60, White, Steel
3	(None)	2	Hoffman	LEDA1S35	LED Light Kit for Enclosure, 1.34x1.26x13.82, VAC Switch Screw Mounting, Plastic
4	SD-1	1	Siemens	ED43B125	Sentron ED4, 125A, 3P Breaker, 65kAIC at 240VAC
5	SD-1	1	Siemens	CED6N1S	Enclosure for ED4 breaker, NEMA 1
6	MTS-1	1	Siemens	DTNF324	Heavy Duty Safety Switches, Non-Fusible, Double Throw, 200A, 3P, 240V, 3W, Type 1
7	GEN RECEP	1	Appleton	AJA20034-150	200A Generator Receptacle with Mounting Box, 3W, 4P
8	Panel LP-1	1	Siemens	E1020MB1100FCGP	Siemens EQ 100-Amp 10-Spaces 20-Circuit Indoor Main Breaker Load Center
9	SW-1, RECEP-1, RECEP-2	3	Commerical Electric	WTC111G	1-Gang Weatherproof Toggle Switch Cover Combination with Switch, Gray
10	SW-1	1	Commerical Electric	WSB550XG	Switch Box, Gangable, 2-1/2" Deep, Conduit Knockouts, Ears
11	RECEP-1, RECEP-2	2	Commerical Electric	WCW1PC	Clear 1-Gang Extra-Duty Non-Metallic While-In-Use Weatherproof Horizontal/Vertical Receptacle Cover
12	RECEP-1, RECEP-2	2	General Electric	54263	15A, 12VAC Tamper Resistant Duplex Outlet Grounded Receptacle, White

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CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
MAIN PANEL MP-1
BILL OF MATERIALS

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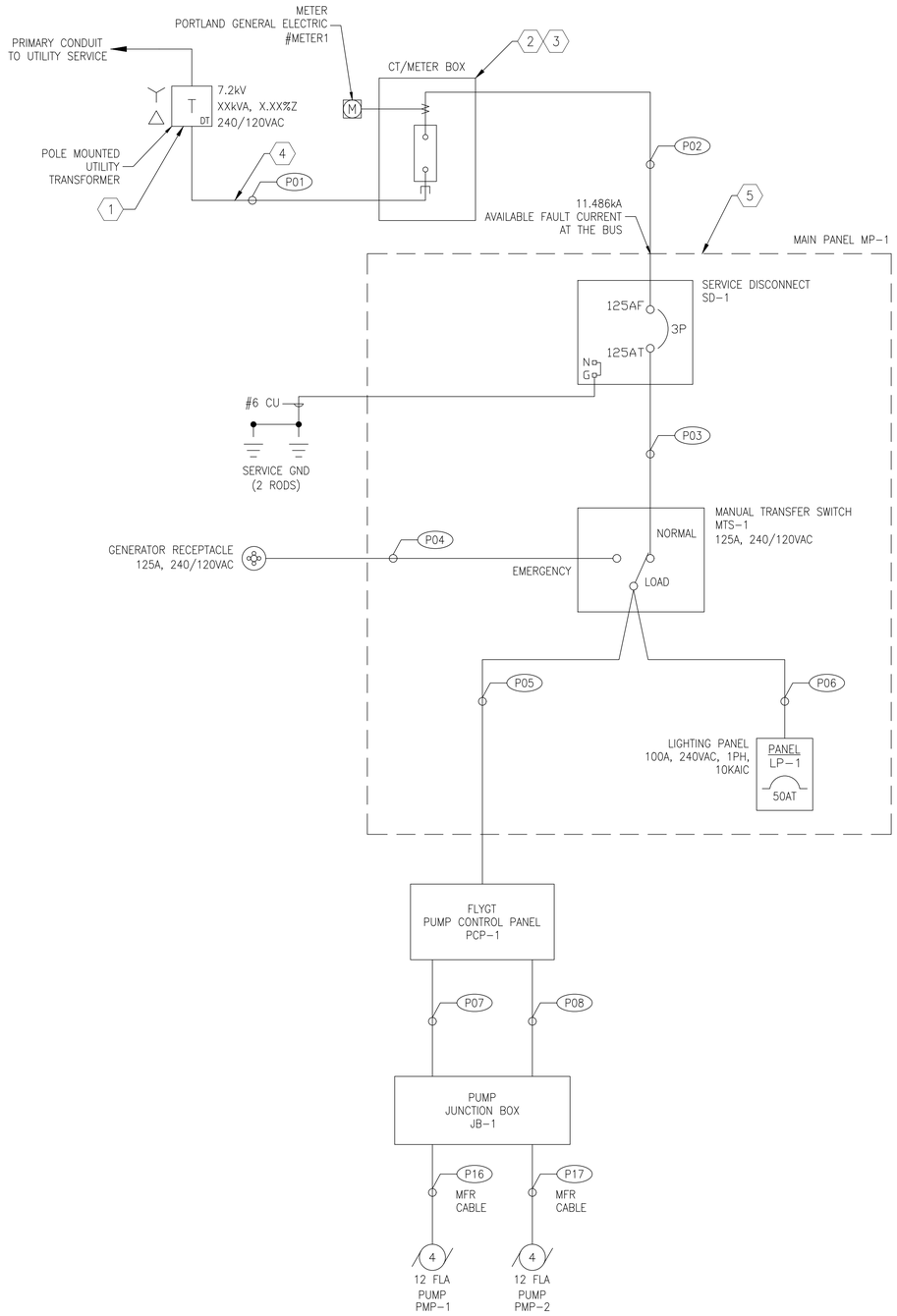
JOB NO. 201779
DRAWING NO. E06
SHEET NO. 33 OF 58



VOLTS =	240	/120		POWER DISTRIBUTION PANEL =	PANEL LP-1			MAIN =	50A MCB		
PHASE =	1			LOCATION =	INSIDE ENCLOSURE			MOUNTING =	SURFACE		
WIRES =	3			AIC =	10K						

DESCRIPTION	BKR	CKT	POLE	LOAD (VA)	PHASE	LOAD (VA)	POLE	CKT	BKR	DESCRIPTION
HEATER	20A	1	1	100	A	1000	1	2	20A	RECEPTACLES
UPS RECEPTACLE (FUTURE)	20A	3	1	1200	B	10	1	4	20A	PANEL LIGHT
OUTDOOR LIGHT	20A	5	1	250	A	0	1	6	20A	SPARE

PANEL LP-1 CONNECTED LOAD			
LOAD PER PHASE	A =	1350	VA
	B =	1210	VA
TOTAL LOAD (VA) =		2560	VA
TOTAL LOAD (W) =		2432	W
TOTAL LOAD AMPS (2560/240) =		10.7	A

*Assumptions: PF=0.95

PANEL LP-1 LOAD			
PANEL LP-1 SPECIFICATIONS:	50A	120/240V	1-PHASE 3W 60HZ 10 KAIC
CONNECTED LOAD VA =	2560.0		
CONNECTED LOAD AMPS =	10.7		
MOTORS LOAD			
MOTORS	**HP**	**FLA PER NEC 2023**	
PUMP 1	10.0	28.0	3-PHASE LOAD 240V
PUMP 2	10.0	28.0	3-PHASE LOAD 240V
TOTAL MOTOR LOAD	20.0	56.0	
TOTAL LOAD			
EQUIPMENT	**AMPS**	**KVA**	
PANEL LP-1	10.7	2.56	1-PHASE LOAD 240V
PANEL PCP-1 (MOTOR LOADS & CONTROL COMPONENTS)	68.0	28.23	3-PHASE LOAD 240V
MAX TOTAL CONNECTED LOAD	78.7	30.79	
FORMULAS USED:			
1PH:	KVA = AMPS*VOLTS/1000		
3PH:	KVA = AMPS*(VOLTS*1.732)/1000		
CONNECTED KVA LOAD = SUM OF CONNECTED EQUIPMENT KVA			
ASSUMPED PF = 0.8			

SHEET NOTES:

1. INSTALL IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) AND ANY APPLICABLE LOCAL CODES.
2. ALL EQUIPMENT SHOULD BE UL LISTED.
3. USE PVC CONDUIT FOR UNDERGROUND RUNS, AND GRC CONDUIT FOR ABOVE GROUND RUNS.
4. FOR CONDUIT/CONDUCTOR SCHEDULE, SEE DWG. E07.

KEY NOTES:

1. TRANSFORMER WITH 240/120VAC SECONDARY IS PROVIDED BY PORTLAND GENERAL ELECTRIC (PGE).
2. THE CONTRACTOR SHALL FURNISH AND INSTALL THE UTILITY METER SOCKET IN ACCORDANCE WITH ALL PGE STANDARDS AND PROVIDE GROUNDING PER UTILITY STANDARDS.
3. UTILITY METER IS FURNISHED BY PGE.
4. INSTALL A FLAT PULL LINE CAPABLE OF 1000 POUNDS OF TENSION MINIMUM. PROVIDE AT LEAST 72" OF EXTRA LINE AT BOTH ENDS OF THE CONDUIT.
5. THE POWER AND CONTROL ENCLOSURE ONE-LINE SHOWS ALL THE MAJOR PANEL COMPONENTS. REFER TO THE ELECTRICAL/INSTRUMENTATION DRAWINGS FOR DETAIL.

REV	DATE	BY	DESCRIPTION
0	2/19/23	EC	CREATED

DESIGNED D. DELGADO
DRAWN E. CHOW
CHECKED F. DELGADO
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 65577PE OREGON JAN. 15, 2003 FIDEL DELGADO
RENEWAL DATE: 12/31/23
SIGNED DATE: 11/06/23

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CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
ONE-LINE DIAGRAM

VERIFY SCALES
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JOB NO. 201779
DRAWING NO. E07
SHEET NO. 34 OF 58

PROCESS & INSTRUMENTATION DRAWING INDEX

SHEET	DWG NO.	TITLE	COMMENTS
23	N01	PROCESS & INSTRUMENTATION DRAWING INDEX	–
24	N02	PROCESS & INSTRUMENTATION LEGEND & SYMBOLS	–
25	N03	–	–
26	N04	–	–
27	N05	–	–
28	N06	WET WELL PROCESS & INSTRUMENTATION DIAGRAM	–
29	N07	VALVE VAULT PROCESS & INSTRUMENTATION DIAGRAM	–
30	N08	–	
31	N09	–	
32	N10	–	
33	N11	–	
34	N12	PCP–1 ENCLOSURE LAYOUT	
35	N13	PCP–1 PANEL LAYOUT	
36	N14	PCP–1 TERMINAL BLOCKS	
37	N15	PCP–1 BOM	
38	N16	PCP–1 POWER SCHEMATIC	
39	N17	PCP–1 CONTROL DRAWING PAGE 1	
40	N18	PCP–1 MULTISMART INPUTS	
41	N19	PCP–1 MULTISMART OUTPUTS	
42	N20	PCP–1 CONTROL DRAWING PAGE 2	
43	N21	PCP–1 INTRINSICALLY SAFE CONTROL DRAWING	
44	N22	PCP–1 SCADA SYSTEM	
45	N23	TYPICAL DETAILS PAGE 1	
46	N24	TYPICAL DETAILS PAGE 2	

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REGISTERED PROFESSIONAL ENGINEER
65577PE
OREGON
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PROCESS & INSTRUMENTATION INDEX

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JOB NO. 201779
DRAWING NO. N01
SHEET NO. 35 OF 58

PROCESS & INSTRUMENTATION ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	EMERGENCY STOP PILOT DEVICE		LIMIT SWITCH
	INTERNAL DEVICE TERMINAL		TERMINAL BLOCK
	PUMP MOTOR		RELAY COIL
	RELAY CONTACT		CIRCUIT BREAKER
	FUSE		SOLENOID
	FLOW SWITCH		AUDIBLE ALARM

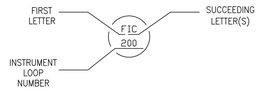
PROCESS & INSTRUMENTATION INDICATORS

SYMBOL	DESCRIPTION
RUN / YIR / 200	PANEL FRONT MOUNTED INDICATING LIGHT
AUTO / HS / 11	PANEL FRONT MOUNTED OPERATOR DEVICE

PROCESS & INSTRUMENTATION VALVES & GAUGES

SYMBOL	DESCRIPTION
	GATE VALVE
	SWING CHECK VALVE
	PLUG
	PRESSURE GAUGE
	ANNULAR SEAL

INSTRUMENT IDENTIFICATION TAG LETTERS



	FIRST LETTER		SUCCEEDING LETTER(S)		
ID	MEASURED or INITIATING VARIABLE	MODIFIER	READOUT or PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER FLAME		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY (ELECTRICAL)			CONTROLLER	
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE (EMF)		PRIMARY ELEMENT		
F	FLOW	RATIO			
G	GAUGING (DIMENSIONAL)		GLASS		
H	HAND (MANUALLY INITIATED)				HIGH and HIGH–HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME or TIME SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW and LOW–LOW
M	MOISTURE or HUMIDITY				MID./ INTERMEDIATE
N	TORQUE		ISOLATOR		
O	USER'S CHOICE		ORIFICE		
P	PRESSURE or PNEUMATIC		POINT		
Q	QUANTITY	INTEGRATE TOTALIZE			
R	RADIOACTIVITY		RECORD or PRINT		
S	SPEED or FREQUENCY			SWITCH	
T	TEMPERATURE			TRANSMITTER	
U	MULTI–VARIABLE		MULTI–FUNCTION	MULTI–FUNCTION	MULTI–FUNCTION
V	VISCOSITY			VALVE DAMP./ LOUVER	
W	WEIGHT or FORCE		WELL		
X	UNCLASSIFIED		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE or PRESENCE			RELAY or COMPUTE	
Z	POSITION				

PROCESS & INSTRUMENTATION LOGIC

SYMBOL	DESCRIPTION
I	CONTROL LOGIC GENERALIZED TO REPRESENT PLC and/or HARDWIRED RELAY LOGIC
I	CONTROL LOGIC WITH DIGITAL and/or ANALOG SIGNAL INPUTS
I	CONTROL LOGIC WITH DIGITAL and/or ANALOG SIGNAL OUTPUTS
RESET / HI–HI ALARM / PB / 120g	CONTROL FUNCTION RESIDENT IN DCS OR OIT (MMI) DEVICES

PROCESS & INSTRUMENTATION PUMPS

SYMBOL	DESCRIPTION
M	SUBMERSIBLE PUMP AND MOTOR

PROCESS & INSTRUMENTATION TRANSMITTERS

SYMBOL	DESCRIPTION
LSLL / 110	LEVEL FLOAT SWITCH
LE / 101	LEVEL PROVE

PROCESS & INSTRUMENTATION LINE & INTERFACE LEGEND

SYMBOL	DESCRIPTION
	PLC/DCS PROGRAM LOGIC (SOFTWARE)
	ELECTRICAL SIGNAL
	PRIMARY PROCESS FLOW IN PIPE
TO WET WELL	PROCESS ENTRY/EXIT POINTS
	INTERFACE TO OR FROM PROCESS EXTERNAL TO PROJECT

REV	DATE	BY	DESCRIPTION
0	2/19/23	EC	CREATED

DESIGNED F. DELGADO
DRAWN E. CHOW
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CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
PROCESS & INSTRUMENTATION LEGEND & SYMBOLS

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JOB NO. 201779
DRAWING NO. N02
SHEET NO. 36 OF 58

SHEET NOTES:

1. DWG. SHOWS SCADA AND HMI POINTS ASSOCIATED WITH INSTRUMENTATION & CONTROL COMPONENTS ONLY. FOR COMPLETE LIST OF SCADA & HMI POINTS, REF. PROCESS NARRATIVE IN SPECIFICATIONS.

KEY NOTES:

1 NONE.

REMOTE SCADA

CONTROL PANEL PCP1 HMI

CONTROL PANEL PCP1 CONTROL

FIELD

WETWELL

PUMP 1

PUMP 2

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CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
WET WELL
PROCESS & INSTRUMENTATION DIAGRAM

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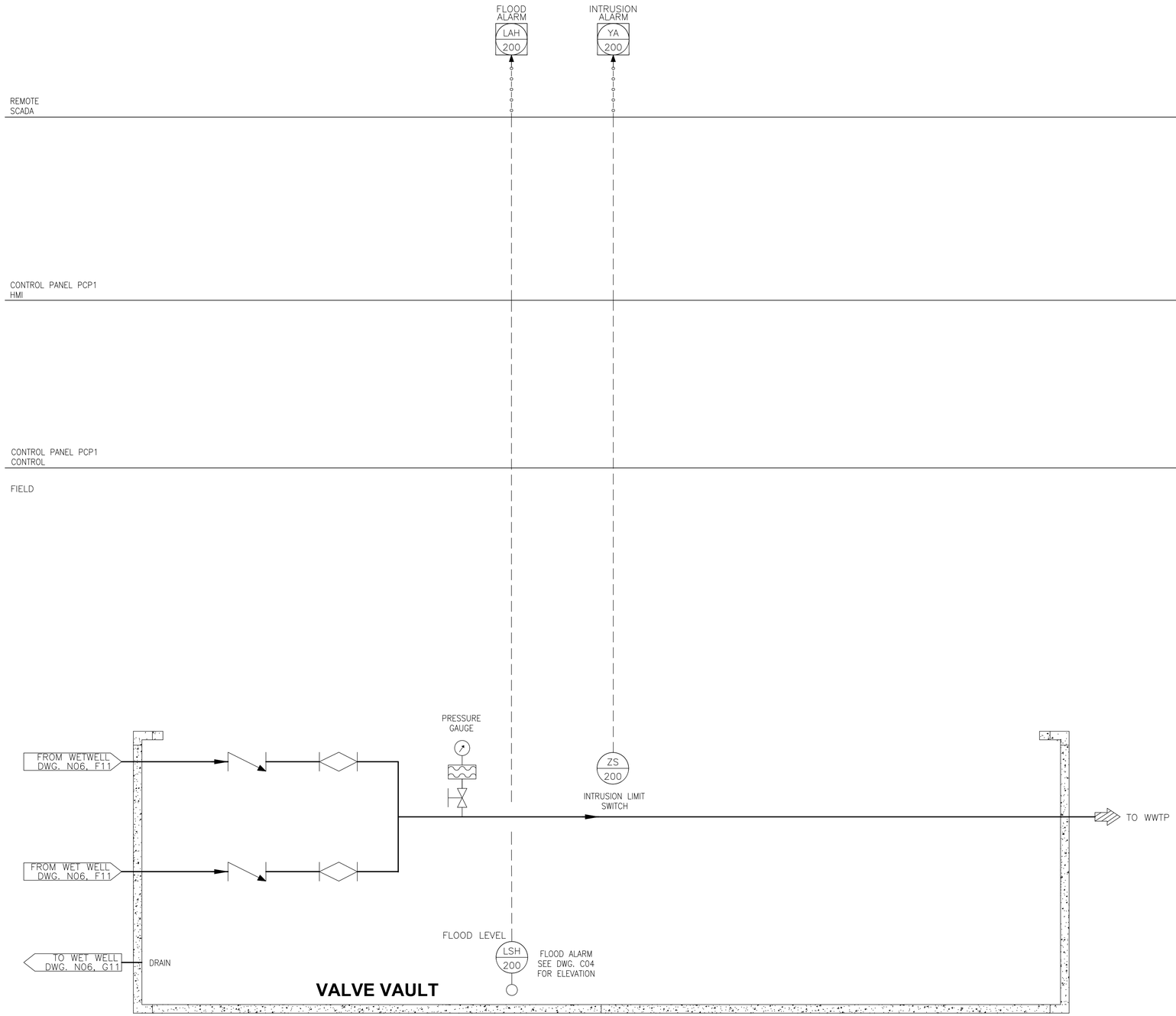
DRAWING NO. N06
SHEET NO. 37 OF 58



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KEY NOTES:

(1) NONE.

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CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
VALVE VAULT
PROCESS & INSTRUMENTATION DIAGRAM

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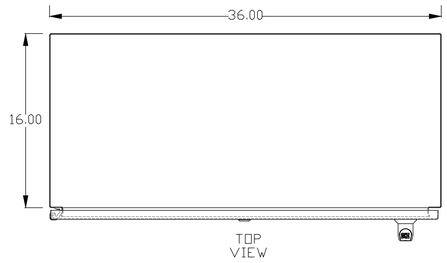
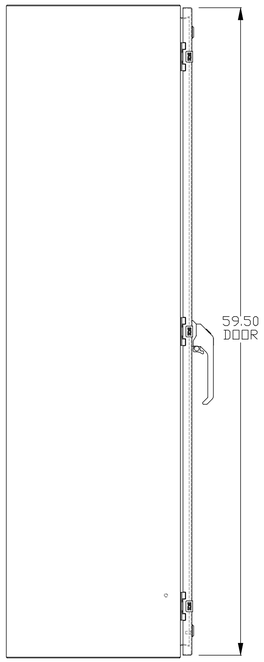
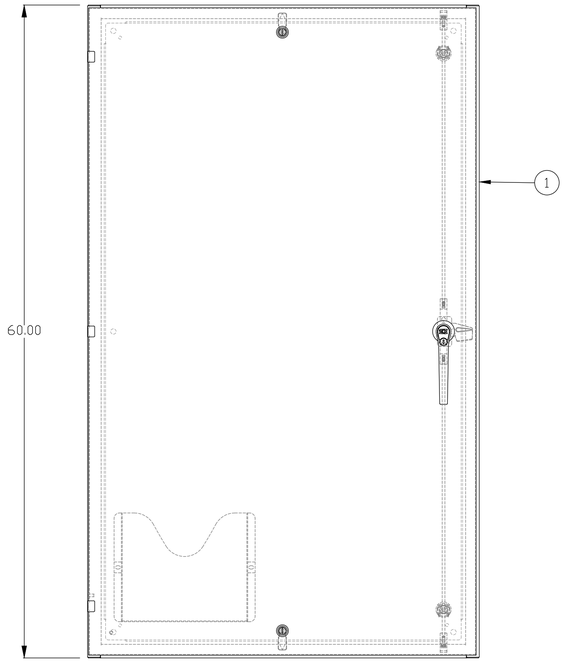
DRAWING NO. N07
SHEET NO. 38 OF 58

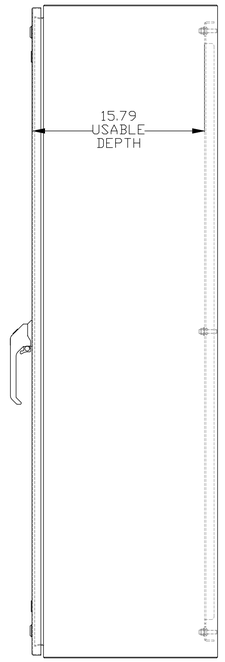




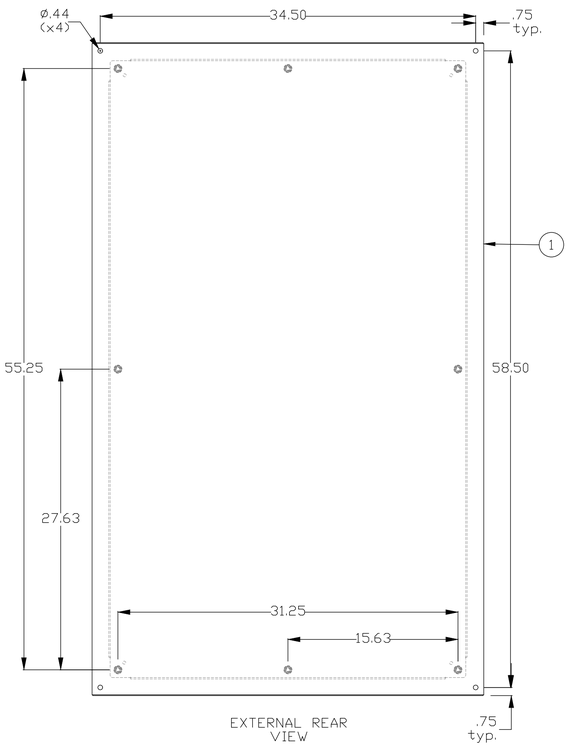
LEFT SIDE
VIEW



FRONT
VIEW



RIGHT SIDE
VIEW



EXTERNAL REAR
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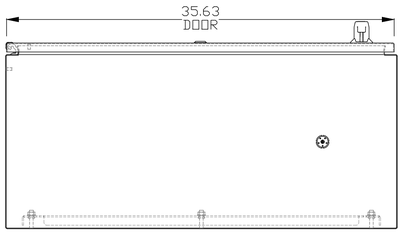

BOTTOM
VIEW

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0	2/19/23	EC	CREATED

DESIGNED F. DELGADO
DRAWN E. CHOW
CHECKED F. DELGADO
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER
65577PE
OREGON
JAN. 15, 2003
FIDEL DELGADO
RENEWAL DATE: 12/31/23
SIGNED DATE: 11/06/23

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PROCESS & INSTRUMENTATION
PCP-1 ENCLOSURE

VERIFY SCALES
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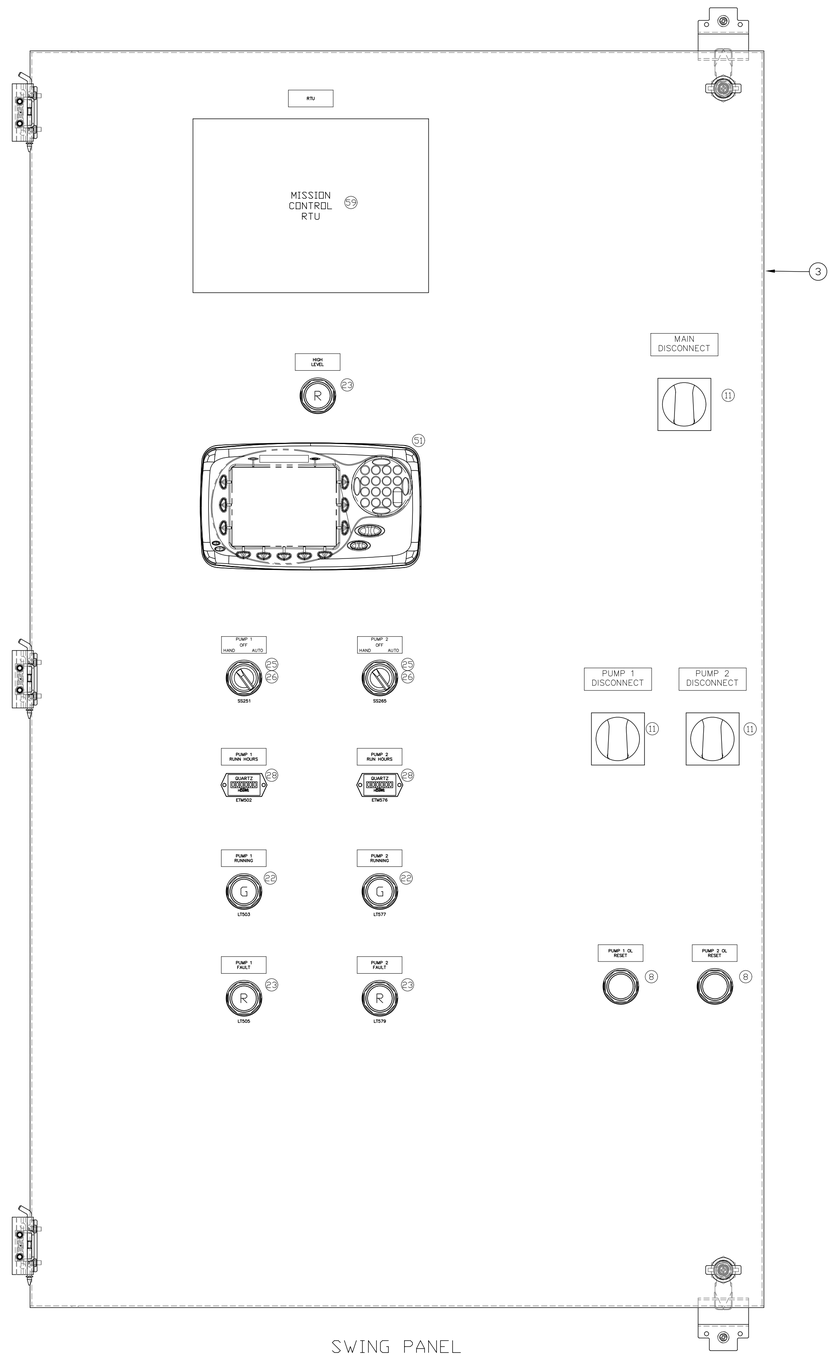
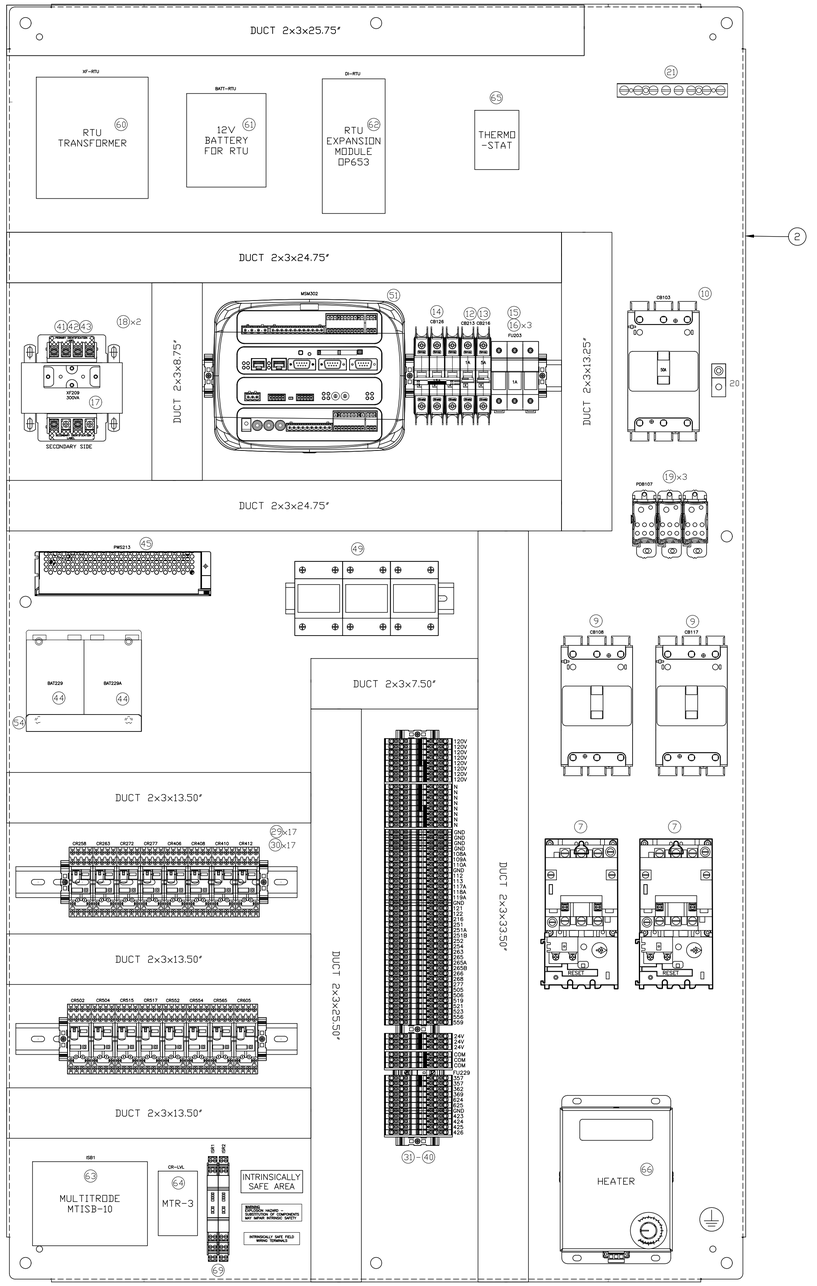
JOB NO. 201779
DRAWING NO. N12
SHEET NO. 39 OF 58



SWING PANEL
FRONT VIEW



PANEL FRONT
VIEW

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PROCESS & INSTRUMENTATION
PCP-1 FRONT AND SUB PANEL LAYOUT

VERIFY SCALES
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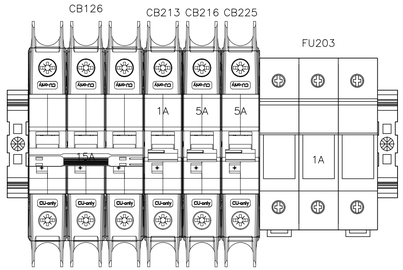
JOB NO. 201779
DRAWING NO. N13
SHEET NO. 40 OF 58



WARNING
EXPLOSION HAZARD. TO PREVENT IGNITION OF FLAMMABLE OR COMBUSTIBLE ATMOSPHERES, DISCONNECT POWER BEFORE SERVICING

PLACARDS TYP. x2
DIMENSIONS 1x5"
BLACK W/WHITE TEXT
TEXT HEIGHT 0.125"
AFFIXED W/ DOUBLE SIDED TAPE

PROVIDES INTRINSICALLY SAFE CIRCUIT EXTENSIONS FOR USE IN CLASS I GROUPS A,B,C,D HAZARDOUS LOCATIONS WHEN CONNECTED PER CONTROL DRAWING NO.16018

WARNING
EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY

PLACARD
DIMENSIONS 0.75x2.75"
BLACK W/WHITE TEXT
TEXT HEIGHT 0.1"
AFFIXED W/ DOUBLE SIDED TAPE

INTRINSICALLY SAFE FIELD WIRING TERMINALS

PLACARD
DIMENSIONS 0.5x2.75"
BLACK W/WHITE TEXT
TEXT HEIGHT 0.1"
AFFIXED W/ DOUBLE SIDED TAPE

INTRINSICALLY SAFE CIRCUITS

PLACARDS TYP. x2
DIMENSIONS 1x3"
BLACK W/WHITE TEXT
TEXT HEIGHT 0.20"
AFFIXED W/ DOUBLE SIDED TAPE

INTRINSICALLY SAFE CIRCUITS

INTRINSICALLY SAFE AREA

PLACARDS TYP. x3
DIMENSIONS 1x3"
BLACK W/WHITE TEXT
TEXT HEIGHT 0.25"
AFFIXED W/ DOUBLE SIDED TAPE

MAIN DISCONNECT

PUMP 1 DISCONNECT

PUMP 2 DISCONNECT

PLACARDS TYP. x3
DIMENSIONS 0.75x2"
BLACK W/WHITE TEXT
TEXT HEIGHT 0.125"
AFFIXED W/ DOUBLE SIDED TAPE

HIGH LEVEL

PUMP 1 OFF HAND AUTO

PUMP 2 OFF HAND AUTO

PUMP 1 OL RESET

PUMP 1 RUN HOURS

PUMP 2 RUN HOURS

PUMP 1 RUNNING

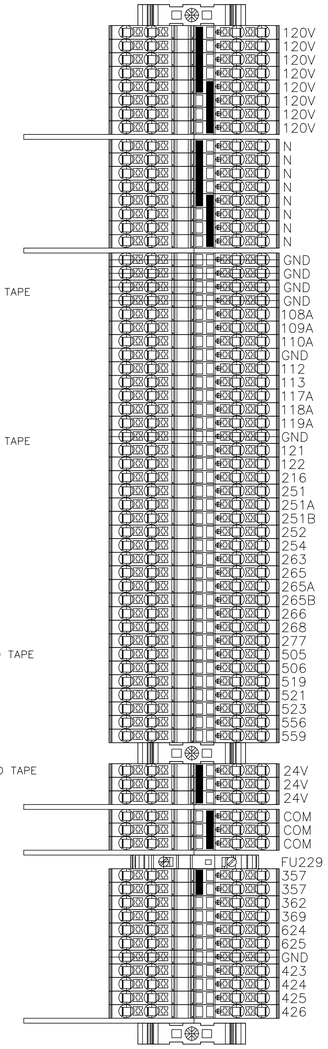
PUMP 2 OL RESET

PUMP 2 RUNNING

PUMP 1 FAULT

PUMP 2 FAULT

PLACARDS TYP. x11
DIMENSIONS 1x3"
BLACK W/WHITE TEXT
TEXT HEIGHT 0.25"
AFFIXED W/ DOUBLE SIDED TAPE



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PCP-1 TERMINAL BLOCK DETAIL

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JOB NO. 201779
DRAWING NO. N14
SHEET NO. 41 OF 58

BILL OF MATERIALS FOR PUMP CONTROL PANEL PCP-1

ITEM #	TAG	QTY	DESCRIPTION	MANUFACTURER	PART NUMBER
1	ENCLOSURE	1	60 X 36 X 16 NEMA 4X 304SS ENCLOSURE	SAGINAW	SCE-60EL3616SSLPPL
2	BACK PANEL	1	60 X 36 BACK PANEL WHITE	SAGINAW	SCE-60P36
3	DEADFRONT	1	DEADFRONT KIT FOR 60 X 36 ENCLOSURE	SAGINAW	SCE-DF60EL36LP
4	DRAIN	1	ENCLOSURE DRAIN, TYPE 3R/4/4X	SAGINAW	SCE-BVKD
5	M251, M256	2	CONTACTOR, NEMA 1 STARTER W/ SOLID STATE OVERLOAD, 120V COIL, OL 3-9A	SCHNEIDER	8536SCO3V02H309S
6	M251, M256	2	NO AUX CONTACT, FOR TYPE S CONTACTOR	SCHNEIDER	9999SX6
7	OL251,OL256	2	AUX CONTACT, FOR OL TRIP INDICATION	SCHNEIDER	9999AC04
8	OL251,OL256	2	OVERLOAD RESET PB THROUGH THE DOOR FOR NEMA OL	SCHNEIDER	9066RA1
9	CB108,CB117	2	15A molded circuit breaker, 3P	SCHNEIDER	BDL36015
10	CB103	1	30A molded circuit breaker, 3P	SCHNEIDER	BDL36030
11	HANDLE	3	Extended rotary handle red IP 54, B FRAME	SCHNEIDER	LV426933
12	CB213	1	1A, 1P, 277VAC, 48VDC MINI BREAKER, UL489	Allen Bradley	1489-M1C010
13	CB216	1	5A, 1P, 277VAC, 48VDC MINI BREAKER, UL489	Allen Bradley	1489-M1C050
14	CB126	1	15A, 3P, 277VAC, 48VDC MINI BREAKER, UL489	Allen Bradley	1489-M3C150
15	FB203	1	CLASS CC 3 POLE FUSE HOLDER	Littelfuse	LPSM003
16	FU203	3	1A CLASS CC	Littelfuse	KLDR001
17	FU210	1	3A, FLM series, Midget 10x38mm Fuse	Littelfuse	FLM003
18	FU207	2	3A CLASS CC	Littelfuse	KLDR003
19	PDB107	3	ERICO 150A 1 POLE DIST. BLK. - 569020	Erico	UDJ125A
20	GND LUG	1	ILSCO UL467 GROUND TERMINAL	ILSCO	TA-2/0
21	GND BAR	1	GROUND BAR	PANDUIT	UGB 2/0-414-6
22	LTxx	2	PILOT LIGHT GREEN, PTT, 12-130VAC/VDC	Allen Bradley	800HC-QRTH2G
23	LTxx	3	PILOT LIGHT RED, PTT, 12-130VAC/VDC	Allen Bradley	800HC-QRTH2R
24			NOT USED		
25	SS251,SS265	2	SELECTOR SWITCH, 3 POS, M-M-M, X-X-X	Allen Bradley	800HC-JR2KC1 B
26	SS251,SS265	2	1 NO CONTACT BLOCK	Allen Bradley	800TC-XD1
27			NOT USED		
28	ETM502,ETM576	2	HOUR METER; QUARTZ, 2 HOLE RECTANGULAR, 120/240VAC, TYPE 4X WITH GASKET	TRUMETER	722-0001
29	CRxx	16	RELAY, 4PDT, 8A, LED, PTT, 120VAC COIL	SCHNEIDER	RXM4AB2F7
30	CRxx	16	RELAY, 4P SOCKET, DIN, BOX LUG	SCHNEIDER	RXZE2M114M
31	TERM	18	PT 4 Push-in Terminal Block, 6.2mm width, AWG: 24 - 10, 32A Feed-Through, Single Level, 1 point on each six	Phoenix Contact	3211757
32	TERM	1	PT 4-PE Push-in Terminal Block, 6.2mm width, AWG: 24 - 10, GND Block, Single Level, 1 point on each side p	Phoenix Contact	3211766
33	TERM	2	PT 4 End cover, gray, 1 point each side	Phoenix Contact	3030420
34	TERM	67	PT 4-QUATTRO Push-in Terminal Blocks, 6.2mm width, AWG: 24-10, 32A Feed-Through, Single Level, 2 Poi	Phoenix Contact	3211797
35	TERM	6	PT 4- QUATTRO PE Push-in Terminal Blocks, 6.2mm width, AWG: 24-10, GND block, Single Level, 2 Points	Phoenix Contact	3211809
36	TERM	5	PT 4 End Cover, Gray 2 points on one side, 2 points on other side	Phoenix Contact	3208979
37	TERM	17	PT End Stop	Phoenix Contact	800886
38	TERM	2	PT 4 Center Jumper, 3 Pole, Red FBS 2-6	Phoenix Contact	3030242
39	TERM	2	PT 4 Center Jumper, 4 Pole, Red, FBS 4-6	Phoenix Contact	3030255
40	TERM	2	PT 4 Center Jumper, 5 Pole, Red, FBS 5-6	Phoenix Contact	3030349
41	XF209	1	Transformer, SOOVA, 220/230/240x440/460/480 -110/15/120	EATON	C0500E2A
42	XF209	1	PRIMARY FINGER SAFE COVERS	EATON	FSKFB
43	XF209	1	FINGER SAFE TERMINAL COVERS	EATON	FSK4
44	BAT229, BAT229A	2	BATTERY, LEAD CALCIUM, 12 VOLT, 7.20AH, RECHARGEABLE	POWER SONIC	PS1270 F1
45	PWS227	1	5A, 24VDC POWER SUPPLY WITH UPS FUNCTION 120VAC INPUT/24VDC OUT, W/ BATTERY TERMINALS	Meanwell	AD-155B
46			NOT USED		
47	ISB622	1	INTRINSICALLY SAFE BARRIER, ANALOG, ONE CHANNEL, ISOLATED,24-230VAC/DC	PR ELECTRONICS	5104B-B2A
48	ISB602	1	INTRINSICALLY SAFE RELAY, TWO CHANNEL, ISOLATED,24-230VAC/DC	PR ELECTRONICS	5202B4
49	SPD126	1	SURGE PROTECT PRO, 480V, 3P	Flygt	14-400255
50			NOT USED		
51	MSM302	1	MULTISMART 3PC2	Flygt	84-800085
52			NOT USED		
53			NOT USED		
54	BRACKET	1	BATTERY BRACKET	WIT	15733
55			NOT USED		
56	FU229	1	UT4-HESILED (5X20) FUSE HOLDER (*50 min), 24VDC LED INDICATION	Phoenix Contact	3046090
57	FU229	1	5X20 5A FUSE, AC/DC RATED, FAST ACTING	Littelfuse	0217005. MXP
58	TR515	1	1 POLE TIME DELAY RELAY, 24..240V AC/DC COIL, MULTI FUNCTION	Finder	83.01.0240.0000
59	RTU	1	MyDro 150 or MyDro 850 RTU	Mission	MyDro850
60	XF-RTU	1	120VAC STEP DOWN TRANSFORMER TO 12VAC, 1.2A	Mission	PW429
61	BAT-RTU	1	12VDC, 5Ah, SEALED, LEAD-ACID BATTERY	Mission	PW441
62	DI-RTU	1	EXPANSION MODULE, DIGITAL INPUT, 8 CHANNELS	Mission	OP653
63	ISB1	1	INTRINSICALLY SAFE BARRIER, 10 CHANNELS	Flygt	MTISB10
64	CR-LVL	1	LEVEL CONTROL RELAY, 110VAC, 2 CONTACT SETS: 1 N/O & 1 C/O	Flygt	MTR3
65	THERMOSTAT	1	THERMOSTAT CONTROLLER, 2.64"x1.97"x1.50", 115V, FAHRENHEIT, LT GRAY, PLASTIC	Hoffman	THERM16F
66	HEATER	1	ELECTRIC HEATER, 115VAC, 100W, 5.5"x4x4", BRUSHED, ALUMINUM	Hoffman	D-AH1001A
67	LIGHT	1	LED LIGHT WITH ON/OFF SWITCH, 700 LUMENS, 120VAC	SAGINAW	SCE-SLOF700
68	CBL-LIGHT	1	LED STRIP LIGHT CONNECTION CORD	SAGINAW	SCE-SLCC
69	ISR1, ISR2	2	INTRINSIC SAFETY ISOLATOR, SWITCH AMPLIFIER, DIGITAL INPUT, RELAY OUTPUT, 24VDC, 2CH, 12.5MM	Allen Bradley	937TH-DISAR-DC2

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DESIGNED F. DELGADO
DRAWN E. CHOW
CHECKED F. DELGADO
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 65577PE OREGON JAN. 15, 2002 FIDEL DELGADO
RENEWAL DATE: 12/31/23
SIGNED DATE: 11/06/23

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CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
PROCESS & INSTRUMENTATION
PCP-1 BILL OF MATERIALS

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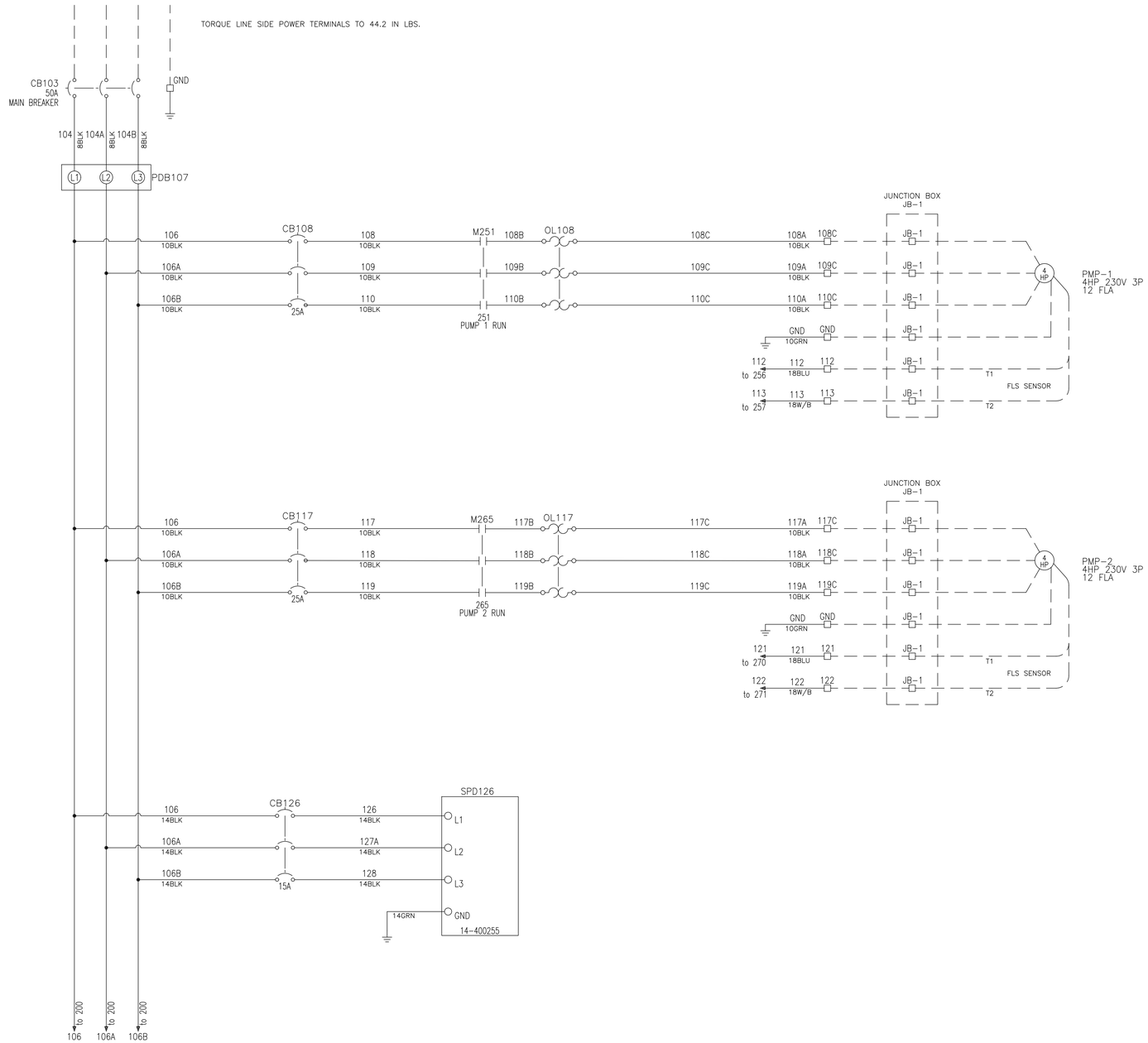
JOB NO. 201779
DRAWING NO. N15
SHEET NO. 42 OF 58

INCOMING POWER 230V, 60Hz, 3P 3W+G, PANEL FLA 19A
SHORT CIRCUIT CURRENT: 10kA RMS SYMMETRICAL, 230V MAXIMUM

TORQUE LINE SIDE POWER TERMINALS TO 44.2 IN LBS.



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PCP-1 POWER SCHEMATIC

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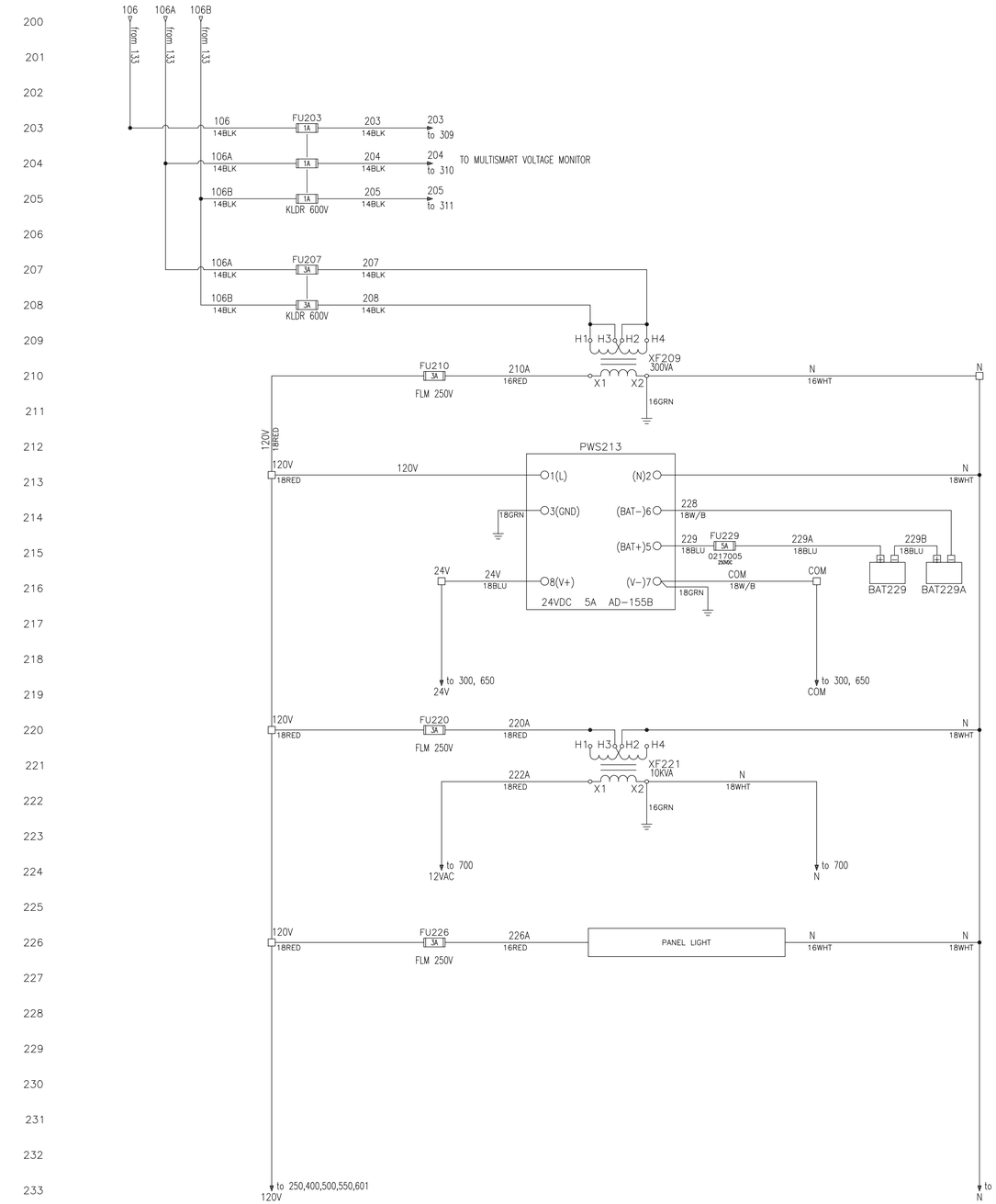
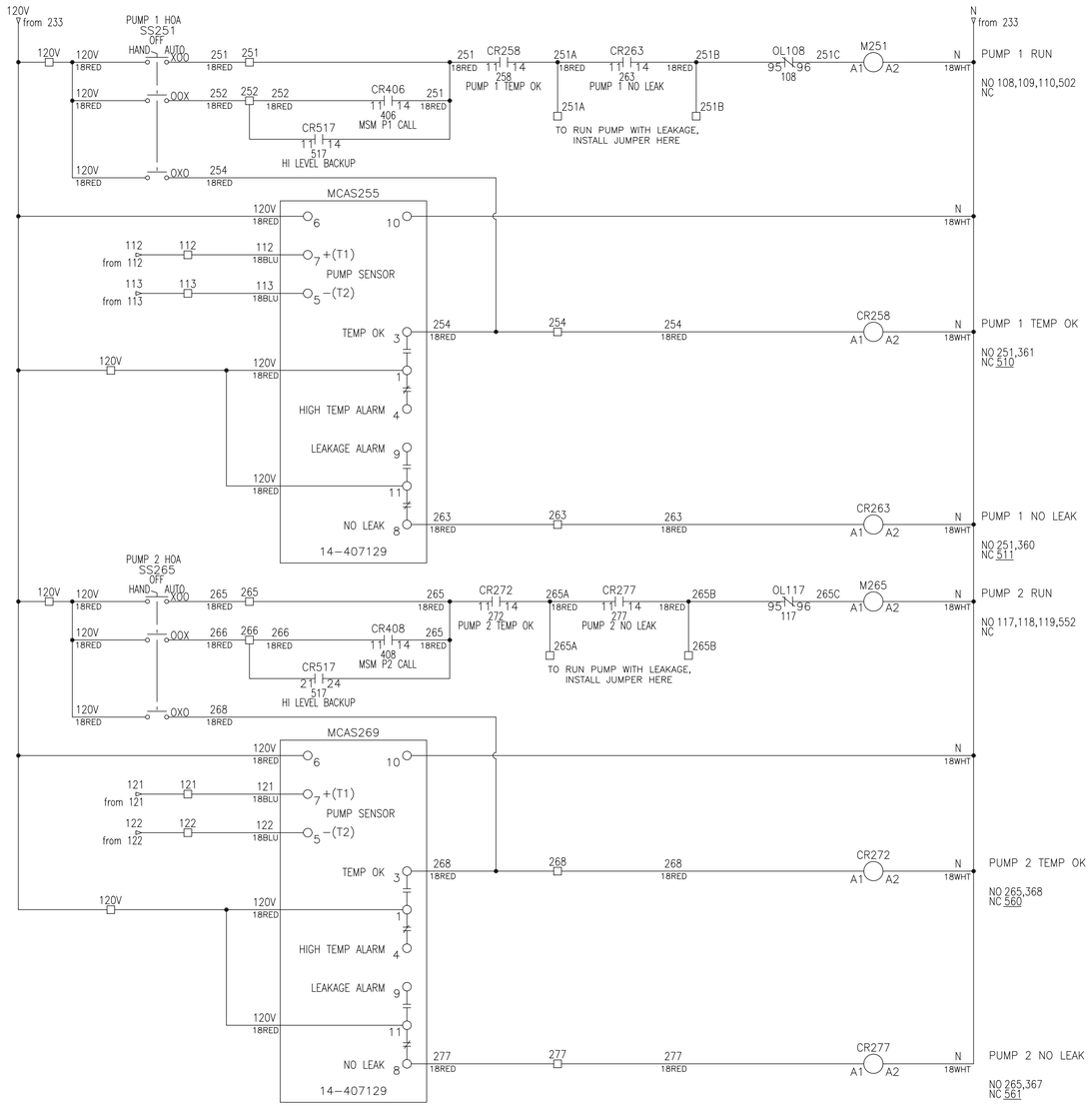
JOB NO. 201779
DRAWING NO. N16
SHEET NO. 43 OF 58





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PCP-1 CONTROL DRAWING 1

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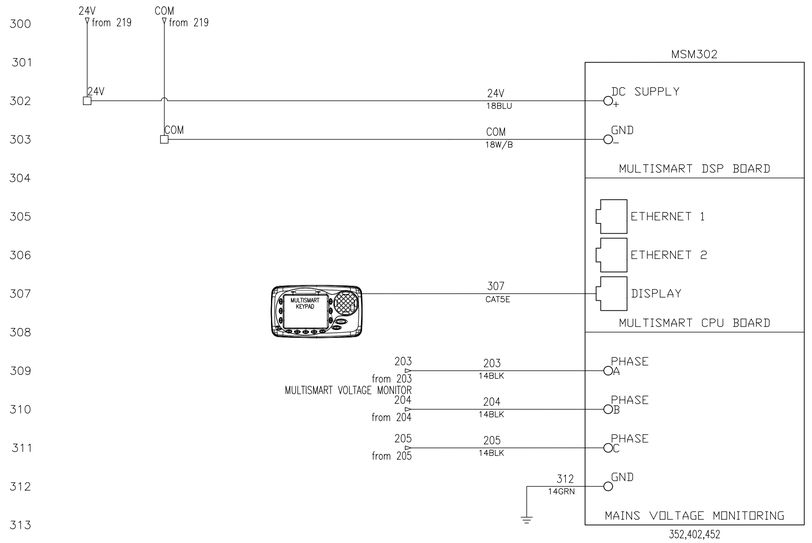
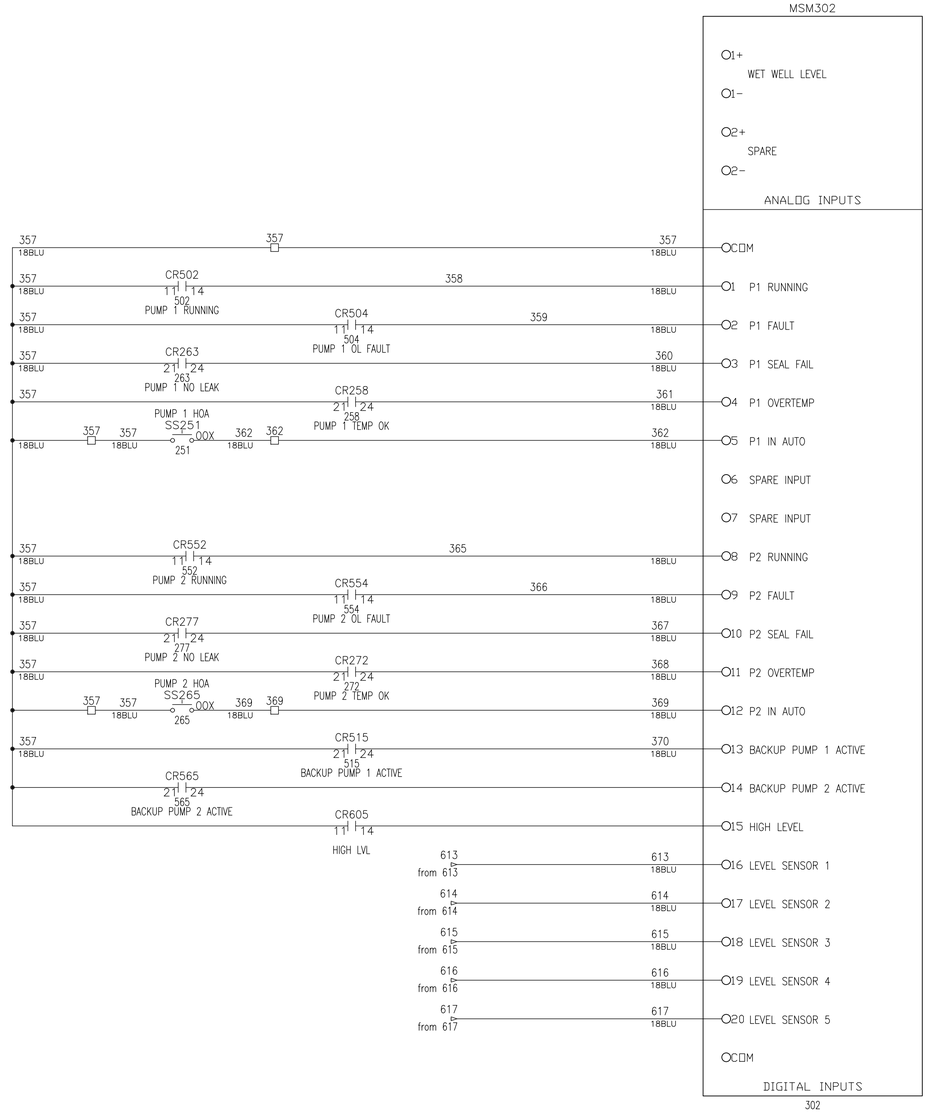
JOB NO. 201779
DRAWING NO. N17
SHEET NO. 44 OF 58





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PCP-1 MULTISMART INPUTS

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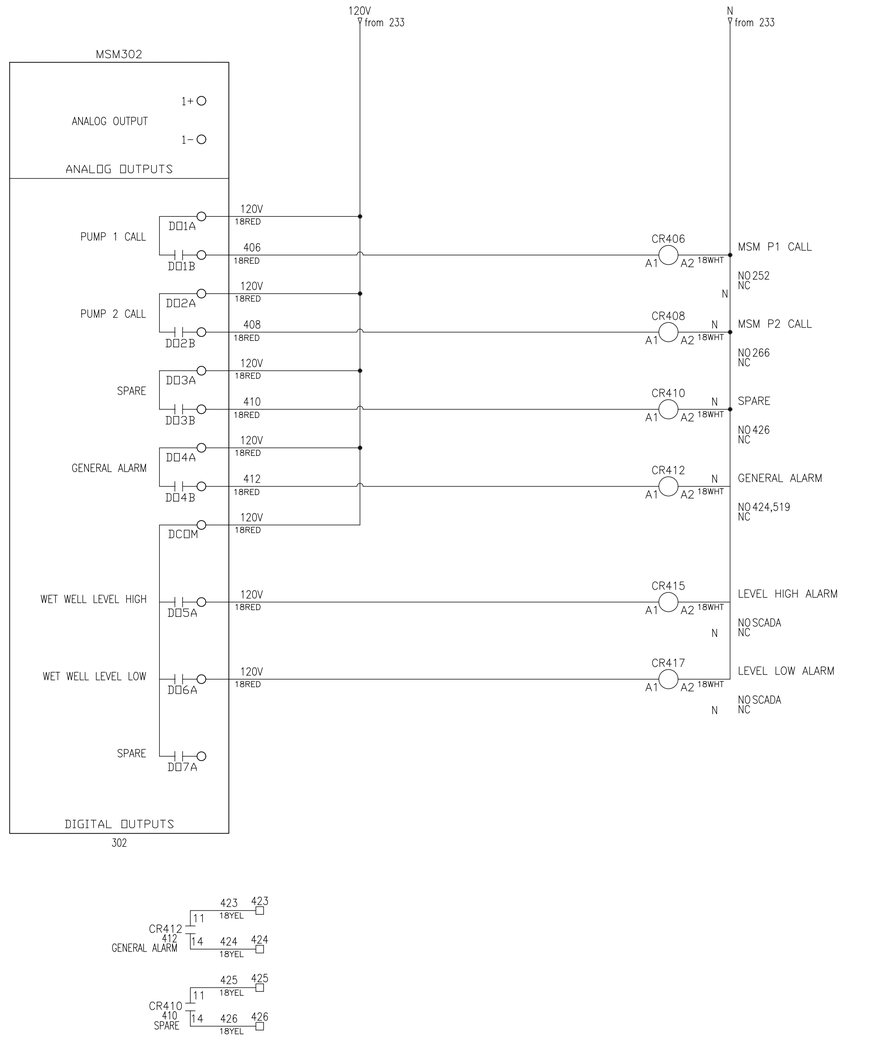
JOB NO. 201779
DRAWING NO. N18
SHEET NO. 45 OF 58



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PCP-1 MULTISMART OUTPUTS

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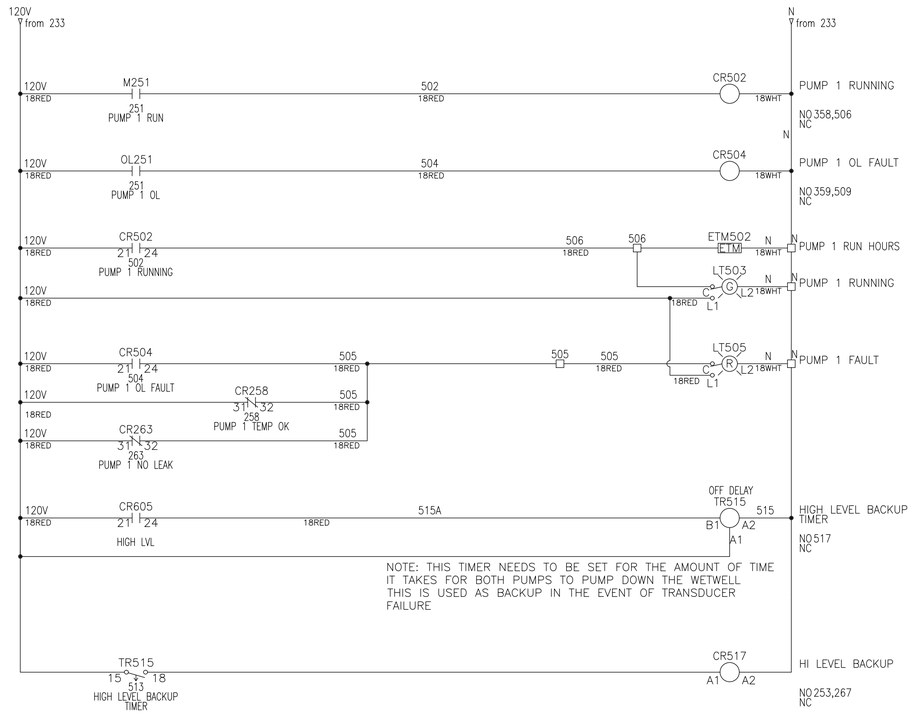
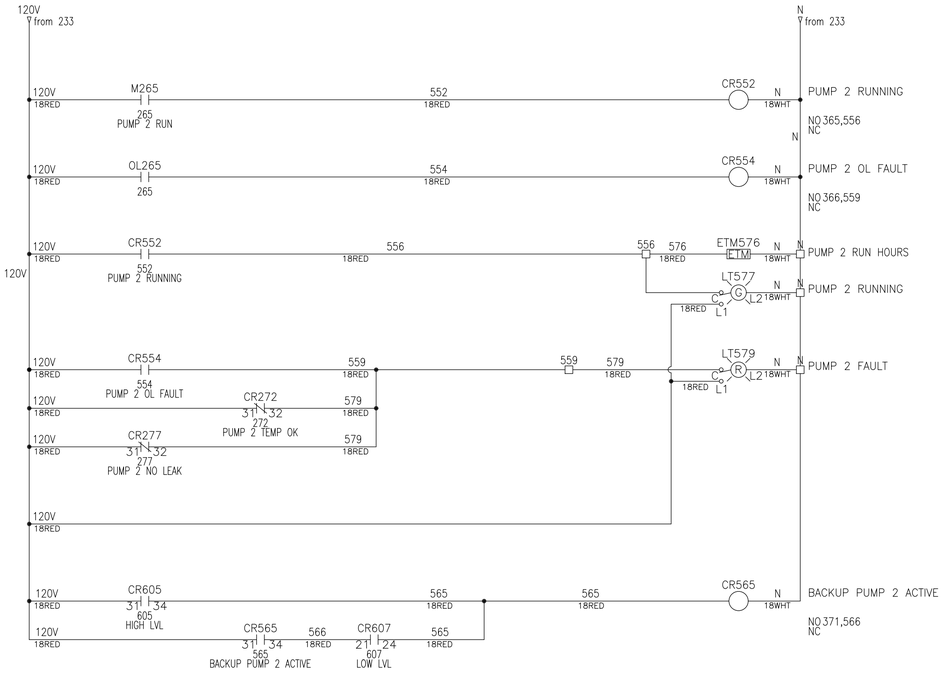
JOB NO. 201779
DRAWING NO. N19
SHEET NO. 46 OF 58





NOTE: THIS TIMER NEEDS TO BE SET FOR THE AMOUNT OF TIME IT TAKES FOR BOTH PUMPS TO PUMP DOWN THE WETWELL THIS IS USED AS BACKUP IN THE EVENT OF TRANSDUCER FAILURE

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PCP-1 CONTROL DRAWING 2

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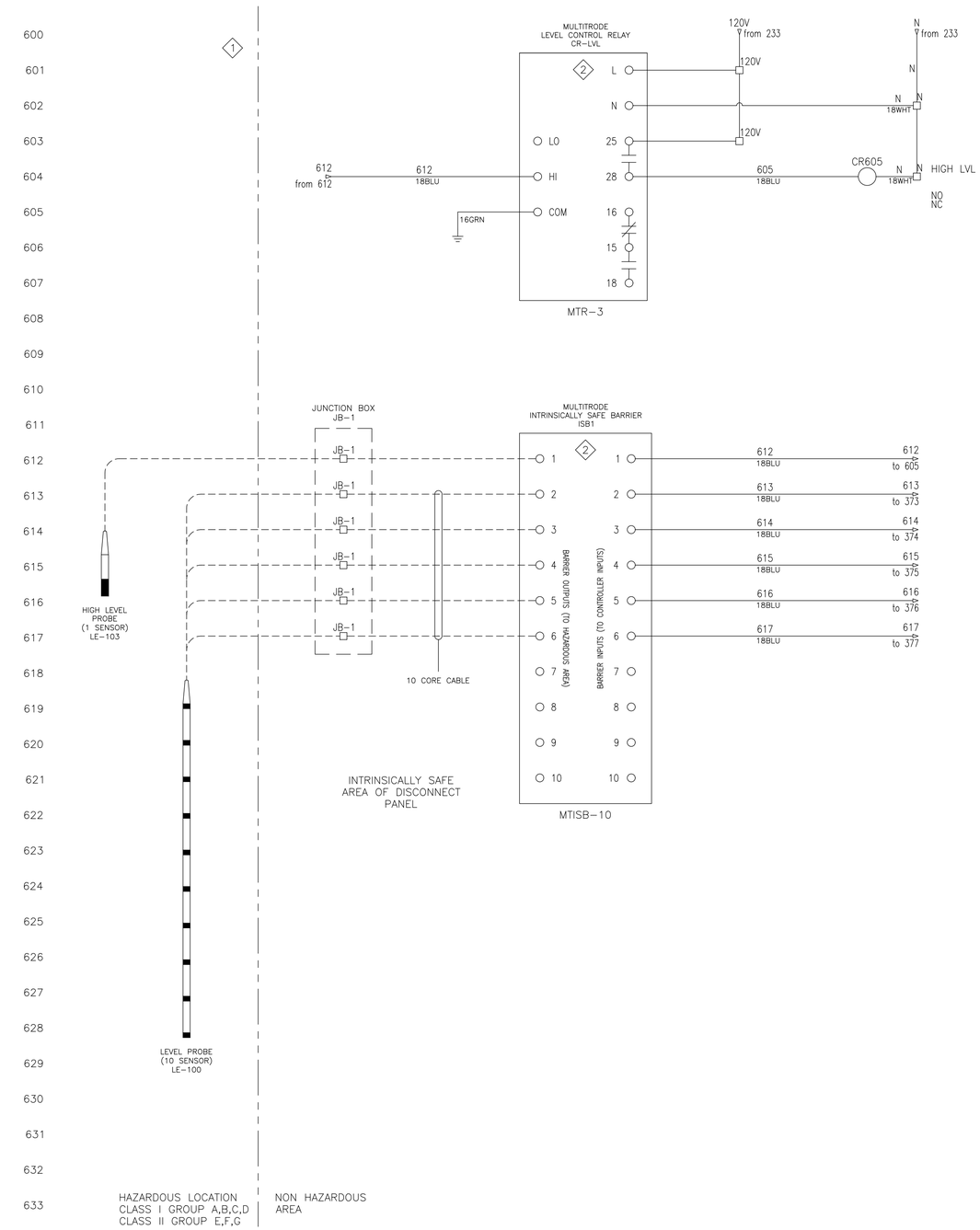
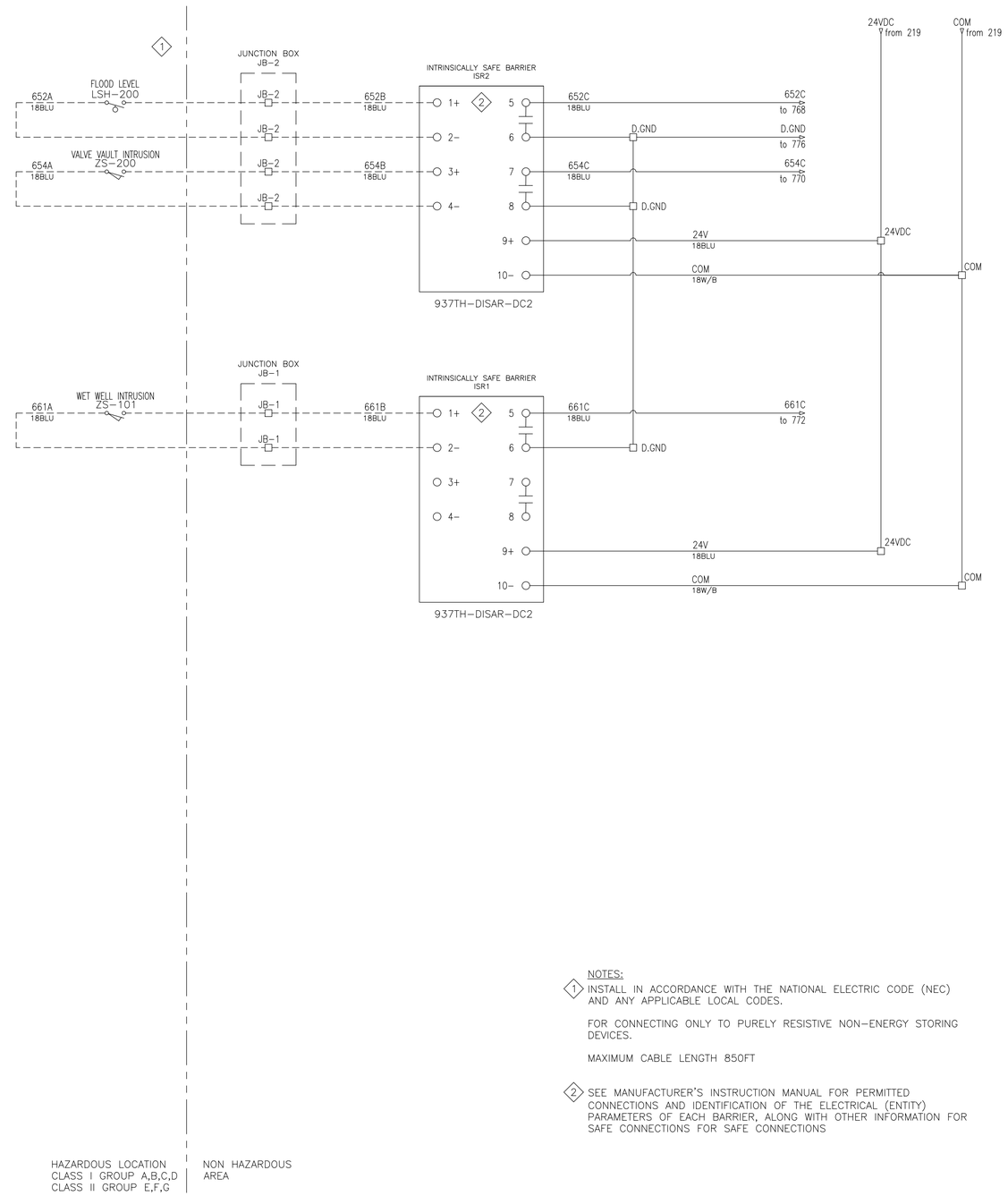
JOB NO. 201779
DRAWING NO. N20
SHEET NO. 47 OF 58





NOTES:

1. INSTALL IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC) AND ANY APPLICABLE LOCAL CODES.

   FOR CONNECTING ONLY TO PURELY RESISTIVE NON-ENERGY STORING DEVICES.

   MAXIMUM CABLE LENGTH 850FT

2. SEE MANUFACTURER'S INSTRUCTION MANUAL FOR PERMITTED CONNECTIONS AND IDENTIFICATION OF THE ELECTRICAL (ENTITY) PARAMETERS OF EACH BARRIER, ALONG WITH OTHER INFORMATION FOR SAFE CONNECTIONS FOR SAFE CONNECTIONS

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DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER
65577PE
OREGON
JAN. 15, 2003
FIDEL DELGADO
RENEWAL DATE: 12/31/23
SIGNED DATE: 11/06/23

CE engineers
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City of West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
PROCESS & INSTRUMENTATION
PCP-1 INTRINSICALLY SAFE CONTROL

VERIFY SCALES
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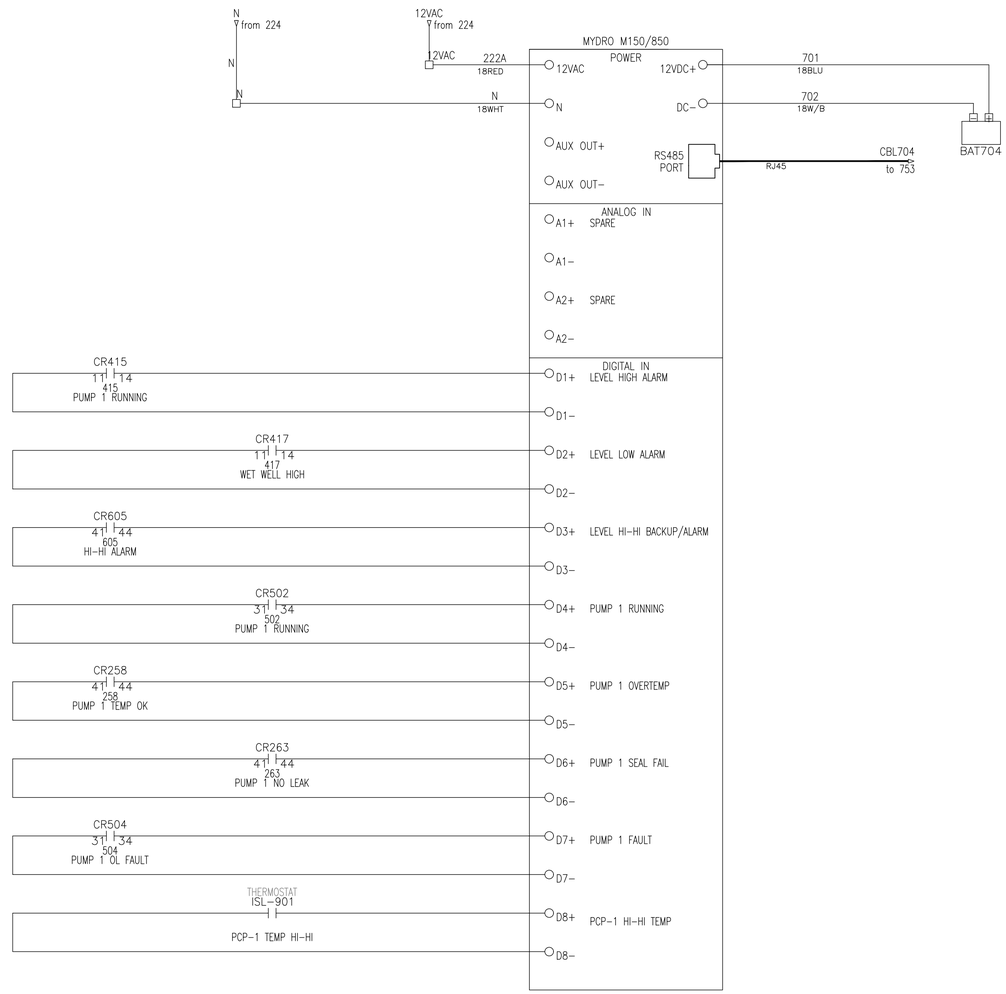
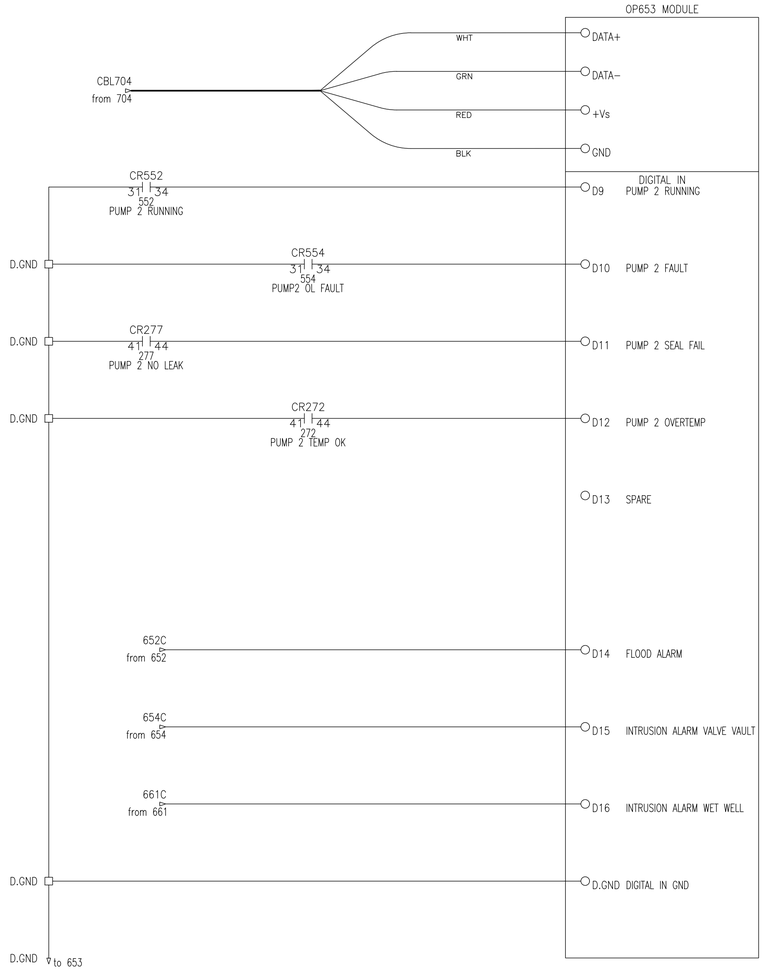
JOB NO. 201779
DRAWING NO. N21
SHEET NO. 48 OF 58





REV	DATE	BY	DESCRIPTION
0	2/19/23	EC	CREATED

DESIGNED F. DELGADO
DRAWN E. CHOW
CHECKED F. DELGADO
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER
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CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
PROCESS & INSTRUMENTATION
PCP-1 SCADA SYSTEM

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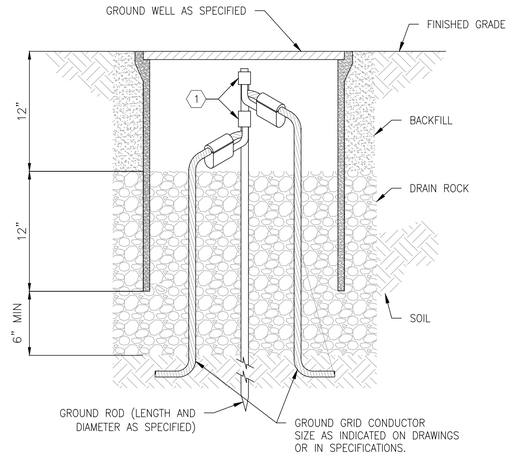
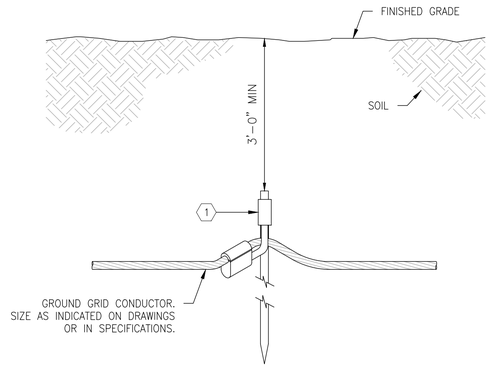
JOB NO. 201779
DRAWING NO. N22
SHEET NO. 49 OF 58



KEY NOTES:

1. GROUND ROD TO GROUND GRID CROSS CONNECTOR. SIZE FOR ROD AND CABLE PER CONNECTOR MANUFACTURER'S GUIDELINES.

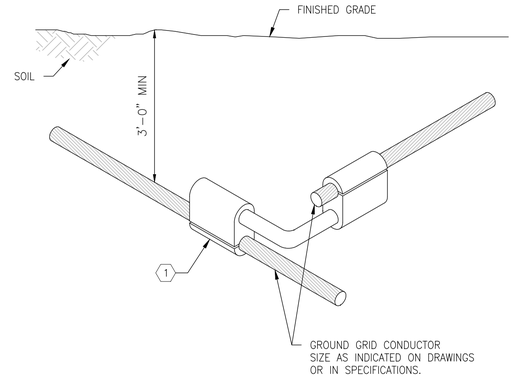
DE001 TYP — GROUND ROD AND GROUNDWELL COMPRESSION CONNECTION



KEY NOTES:

1. GROUND ROD TO GROUND GRID CROSS CONNECTOR. SIZE FOR ROD AND CABLE PER CONNECTOR MANUFACTURER'S GUIDELINES.

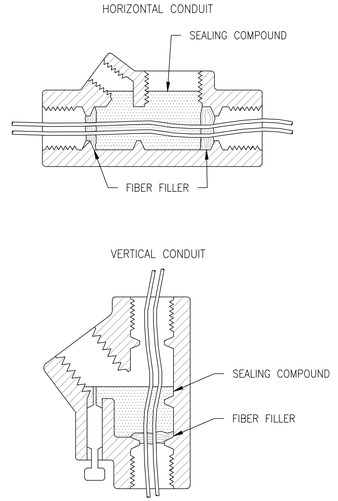
DE002 TYP — GROUND ROD COMPRESSION CONNECTION



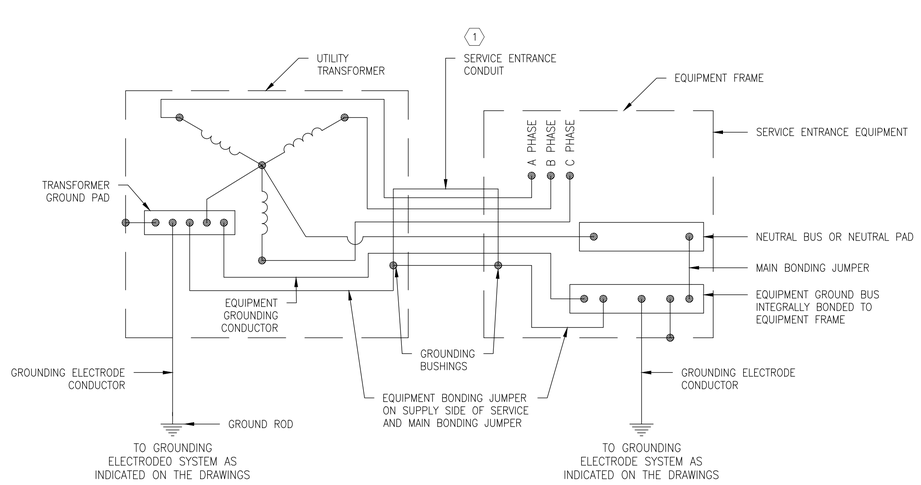
KEY NOTES:

1. GROUND GRID CROSS CONNECTORS. SIZE FOR CABLE PER CONNECTOR MANUFACTURER'S GUIDELINES.

DE003 TYP — COPPER GROUNDING CABLE CONNECTION COMPRESSION CONNECTION



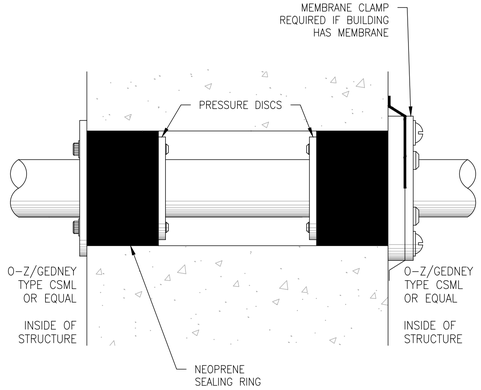
DE004 TYP — CONDUIT SEAL DAMMING AND POURING DETAIL



KEY NOTES:

1. UTILITY METERING NOT SHOWN FOR CLARITY.

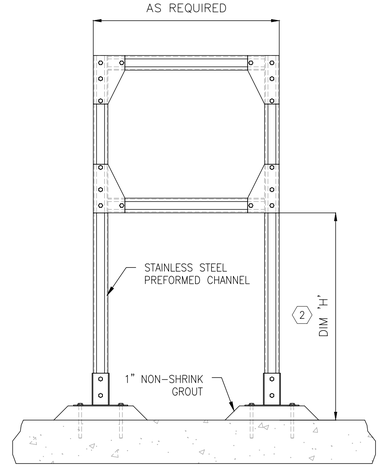
DE005 TYP — 3-PHASE, 3 OR 4-WIRE UTILITY TRANSFORMER SECONDARY, SOLIDLY GROUNDED DETAIL



KEY NOTES:

1. GROUND GRID CROSS CONNECTORS. SIZE FOR CABLE PER CONNECTOR MANUFACTURER'S GUIDELINES.

DE006 TYP — CONDUIT WALL PENETRATION BELOW GRADE



KEY NOTES:

1. PROVIDE CROSS BRACING AND SUPPORT LEGS EVERY 3 FEET.
2. HEIGHT "H" FOR PUMP CONTROL PANEL MOUNTING TO BE 14". HEIGHT "H" FOR JUNCTION BOXES JB-1 AND JB-2 TO BE 42".

DE007 TYP — PANEL MOUNTING

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DESIGNED F. DELGADO
DRAWN E. CHOW
CHECKED F. DELGADO
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REGISTERED PROFESSIONAL ENGINEER 65577PE OREGON JAN. 15, 2002 FIDEL DELGADO
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TYPICAL DETAILS
PAGE 1

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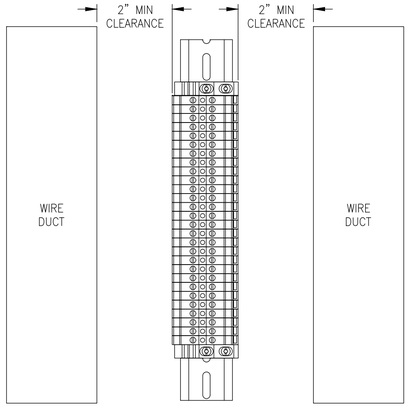
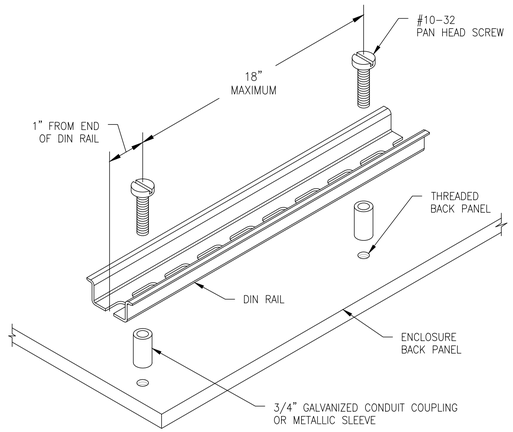
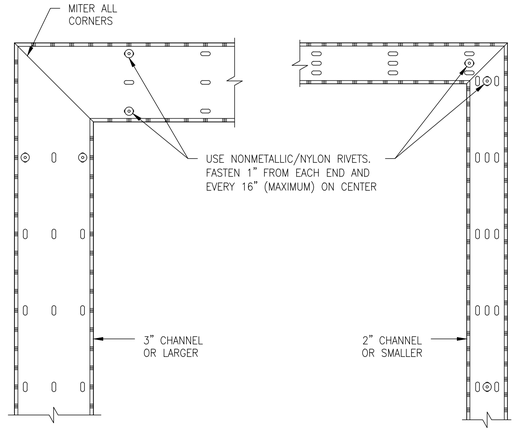
JOB NO. 201779
DRAWING NO. N23
SHEET NO. 50 OF 58



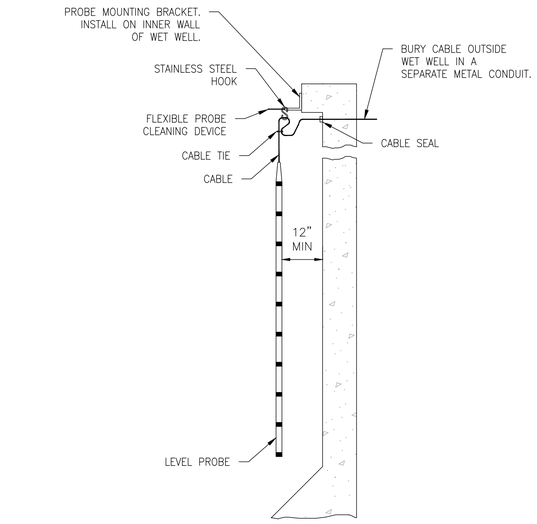
DE008 TYP — TERMINAL BLOCK CLEARANCE



DE009 TYP — DIN RAIL MOUNTING



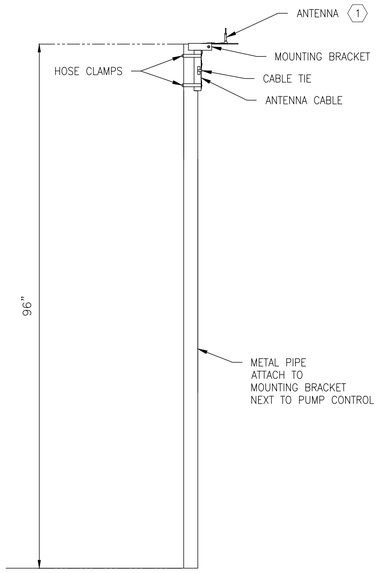
DE010 TYP — PANEL WIRING DUCT MOUNTING



KEY NOTES:

1. INSTALL LEVEL PROBE PER MANUFACTURER'S INSTRUCTIONS.

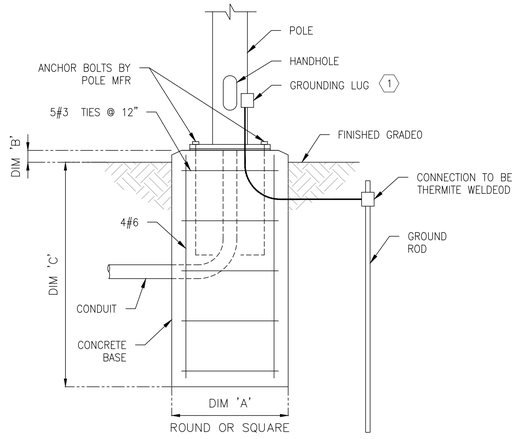
DE011 TYP — LEVEL PROBE WET WELL INSTALLATION



KEY NOTES:

1 INSTALL ANTENNA PER MANUFACTURER'S INSTRUCTIONS.

DE012 TYP — DATA COMMUNICATION REMOTE TERMINAL UNIT CELLULAR SIGNAL ANTENNA MOUNTING



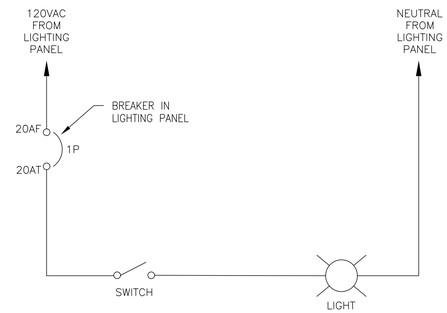
KEY NOTES:

1. INSTALL POLE ACCORDING TO MANUFACTURER'S INSTRUCTIONS.

1 CONNECT GROUNDS TO BUSHINGS AND POLE.

DIM A	DIM B	DIM C	POLE LENGTH
1'-0"	2"	3'-0"	10' to 12'
1'-6"	3"	4'-0"	12' to 20'
2'-0"	3"	5'-0"	20' to 40'
2'-0"	3"	5'-0"	20' to 40'

DE013 TYP — POLE MOUNTING DETAIL



DE014 TYP — LIGHT SWITCH 120VAC WIRING DIAGRAM

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CHECKED F. DELGADO
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PAGE 2

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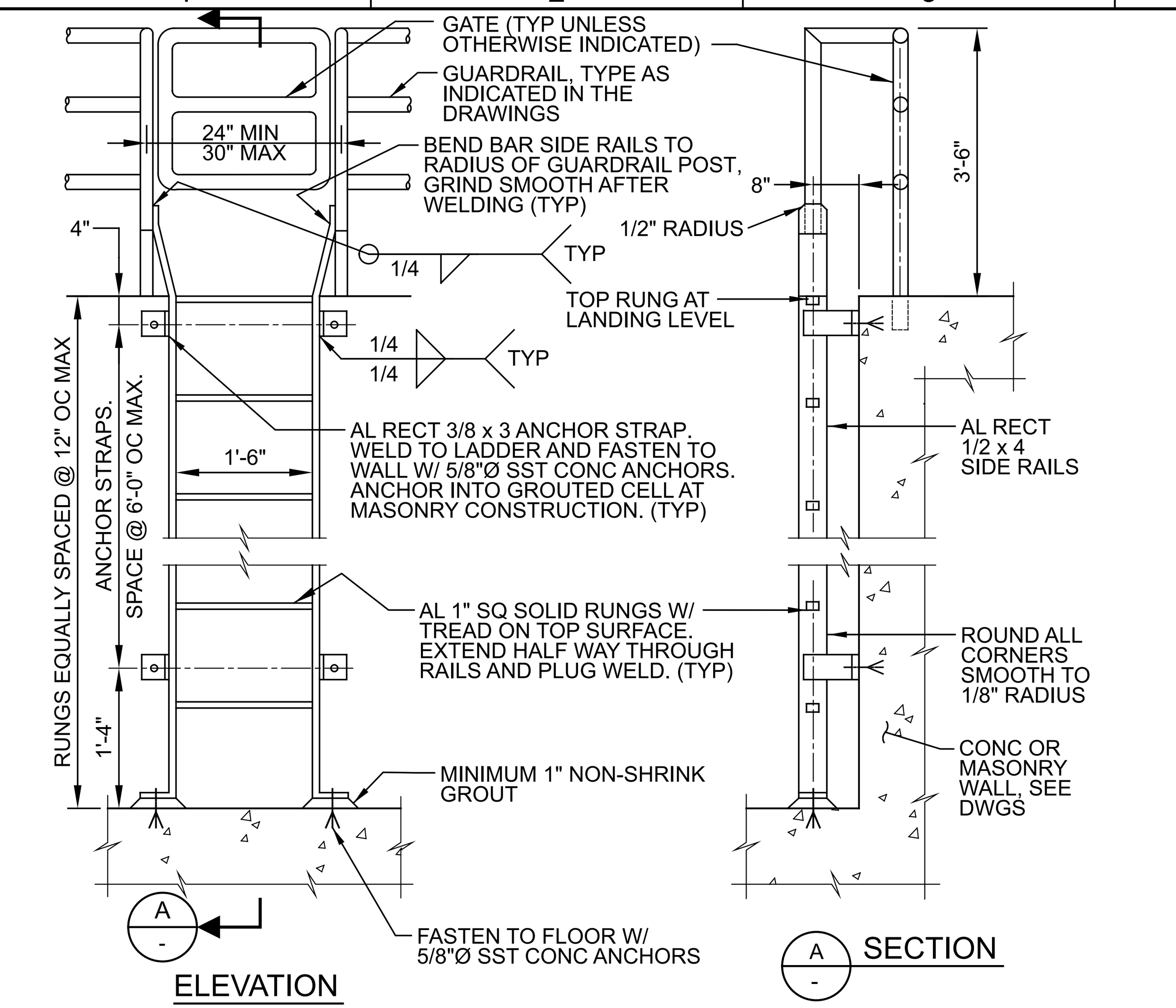


NOTES:

1. INSTALL FALL PREVENTION SYSTEM PER SPEC WHERE HEIGHT OF LADDER EXCEEDS 24'-0".
2. MINIMUM CLEARANCE TO ANY OBSTRUCTION ADJACENT TO LADDER: 2'-6" ON CLIMBING SIDE (2'-3" AT SMOOTH WALL). 1'-3" EACH SIDE OF CENTER LINE, ON EACH SIDE OF LADDER.
3. COAT ALL AL SURFACES IN CONTACT W/ CONC AND MASONRY, AND INSTALL ISOLATION SLEEVES AND WASHERS AT DISSIMILAR METALS, AS SPECIFIED.
4. WHERE GUARDRAIL IS SST, BOLT PIPE TO RAIL W/ 2 - 1/2"Ø SST BOLTS.

AC300 TYP LADDER - ALUMINUM - WALL

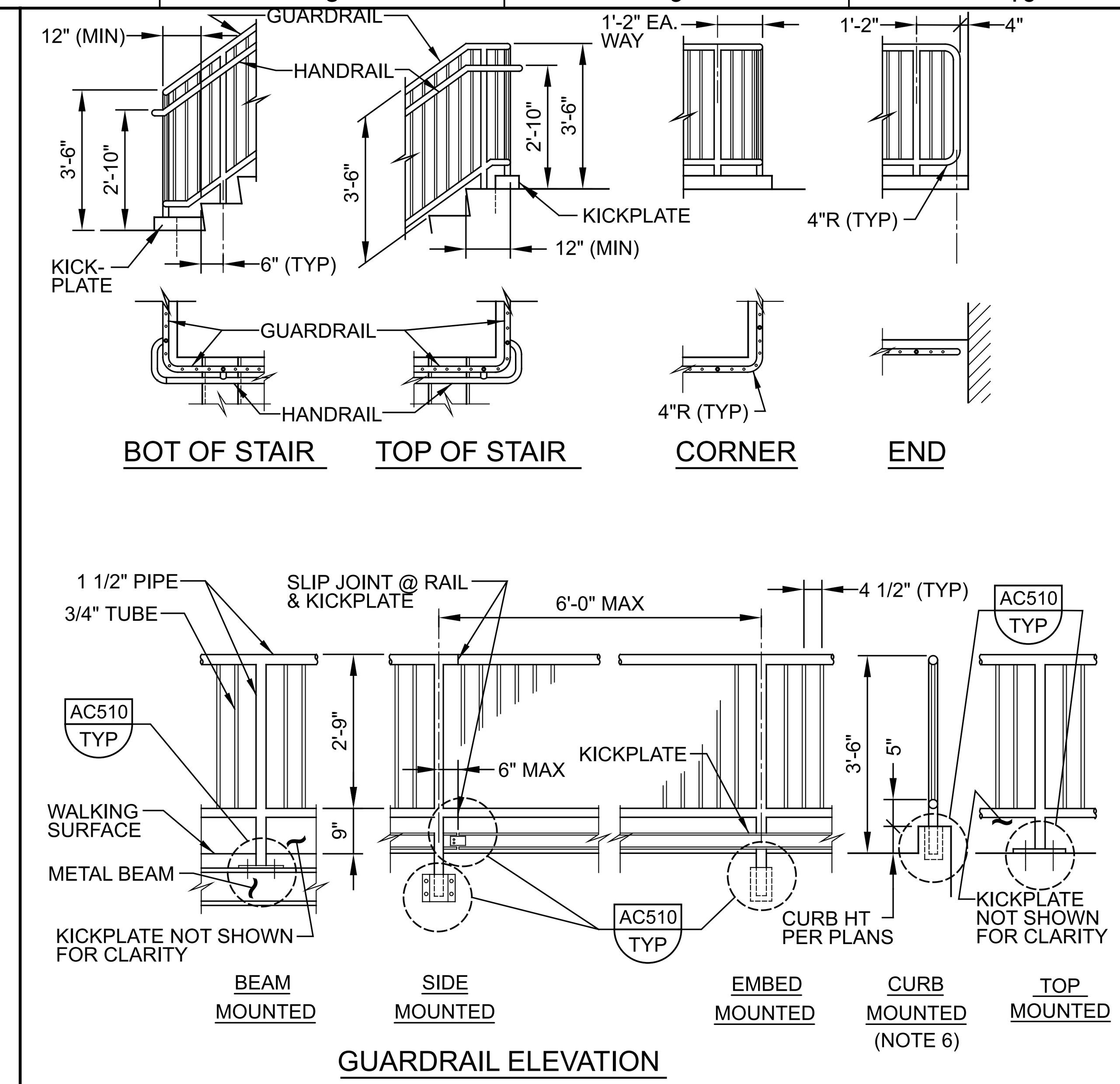
S 12/28/20

NOTES:

1. PROVIDE GUARDRAILS AT STAIRS AND AT OPEN SIDED WALKING SURFACES THAT ARE ELEVATED MORE THAN 30" ABOVE GRADE OR ADJACENT CONSTRUCTION.
2. WHERE EQUIPMENT IS LOCATED LESS THAN 10' FROM EDGE OF ROOF AND ELEVATED MORE THAN 30" ABOVE GRADE OR ADJACENT CONSTRUCTION, PROVIDE 42" HIGH GUARDRAIL FORMING A PROTECTIVE BARRIER. PARAPET WALL 42" OR MORE IN HEIGHT MAY BE THE GUARDRAIL AT ROOF LOCATIONS.
3. SEE DRAWINGS AND SPECIFICATIONS FOR GUARDRAIL MATERIAL TYPE(S).
4. PROVIDE HANDRAIL AT BOTH SIDES OF EVERY STAIR HAVING 2 OR MORE RISERS.
5. PROVIDE CONTINUOUS HANDRAIL GRIPPING SURFACES FOR THE FULL LENGTH OF THE STAIR.
6. PROVIDE HANDRAIL EXTENSIONS AT BOTH SIDES OF STAIRS AT TOP AND BOTTOM. HANDRAIL EXTENSION ON STAIR MOUNTED GUARDRAIL MAY BE OMITTED WHERE IT IS PERPENDICULAR TO AND IMPEDES EXIT FLOW.
7. MAKE INSIDE HANDRAIL ON SWITCHBACK STAIRS CONTINUOUS.
8. FOR WALL MOUNTED HANDRAILS, PROVIDE SINGLE RAIL WITH TOP OF RAIL AT 2'-10" HEIGHT ABOVE LANDINGS OR TREAD NOSINGS. PROVIDE MATCHING HANDRAIL ON OPPOSITE SIDE.
9. GUARDRAIL SHALL BE FIXED UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
10. PLACE CENTER OF EMBEDDED POSTS 6" FROM EDGE OF CONCRETE AND 6" FROM FRONT EDGE OF CONCRETE STAIR NOSINGS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
11. PLACE GUARDRAIL POSTS OPPOSITE EACH OTHER WHERE RAILINGS ARE PARALLEL.
12. FOR GUARDRAIL POSTS MOUNTED TO BEAM OR STAIR CHANNEL, PROVIDE MANUFACTURERS REINFORCED CONNECTION FROM POST TO PLATE. PLATE AND REINFORCED INSERTS SHALL BE ALUMINUM OR STAINLESS STEEL.
13. PROVIDE SLIDING JOINTS AT 24' MAX SPACING FOR EXPANSION OF RAIL AND KICKPLATE. LOCATE SLIDING JOINTS NEAR FACE OF POST. GAP AT TIME OF INSTALLATION SHALL BE BASED ON TEMPERATURE OF GUARDRAIL. PROVIDE 1/4" GAP AT 100°F AND 5/8" GAP AT 0°F. INTERPOLATE GAP FOR OTHER INSTALLATION TEMPERATURES. AT CONCRETE EXPANSION JOINTS, PROVIDE MINIMUM 1" GAP IN SLIDING JOINTS BUT NOT LESS THAN WIDTH OF CONCRETE EXPANSION JOINT. MAKE INSERT SLEEVES IN RAILS LONG ENOUGH TO ALLOW FOR THE FULL RANGE OF MOVEMENT.
14. MATERIAL FOR KICKPLATE CHANNEL SLIDING JOINT PLATES, SHALL BE OF THE SAME MATERIAL AS THE GUARDRAIL.
15. JOINTS FOR STAINLESS STEEL GUARDRAIL AND HANDRAIL SHALL BE COPED, WELDED, AND GROUND SMOOTH.
16. PROVIDE KICKPLATE AT ALL LOCATIONS EXCEPT AT SLOPING GUARDRAIL ON STAIRS AND WHERE GUARDRAIL IS MOUNTED ON A 4" MIN CURB. KICKPLATE MAY BE EXTRUDED OR BENT PLATE AND SHALL BE ATTACHED WITH SST BOLTS IN 5/16" x 3/4" SLOTTED HOLES. BOLT KICKPLATE TO POST WITH BOTTOM 1/4" CLEAR ABOVE FLOOR. FOR SIDE MOUNTED GUARDRAIL, PROVIDE STANDARD SPACER BLOCK BETWEEN POST AND KICKPLATE TO MAINTAIN 1/4" MAX CLEAR SPACING. HAND TIGHTEN AND CENTER PUNCH BOLT THREADS TO LOCK.
17. COAT SURFACES OF ALUMINUM IN CONTACT WITH CONCRETE AS SPECIFIED. PROVIDE NEOPRENE GASKET BETWEEN ALUMINUM AND STEEL.

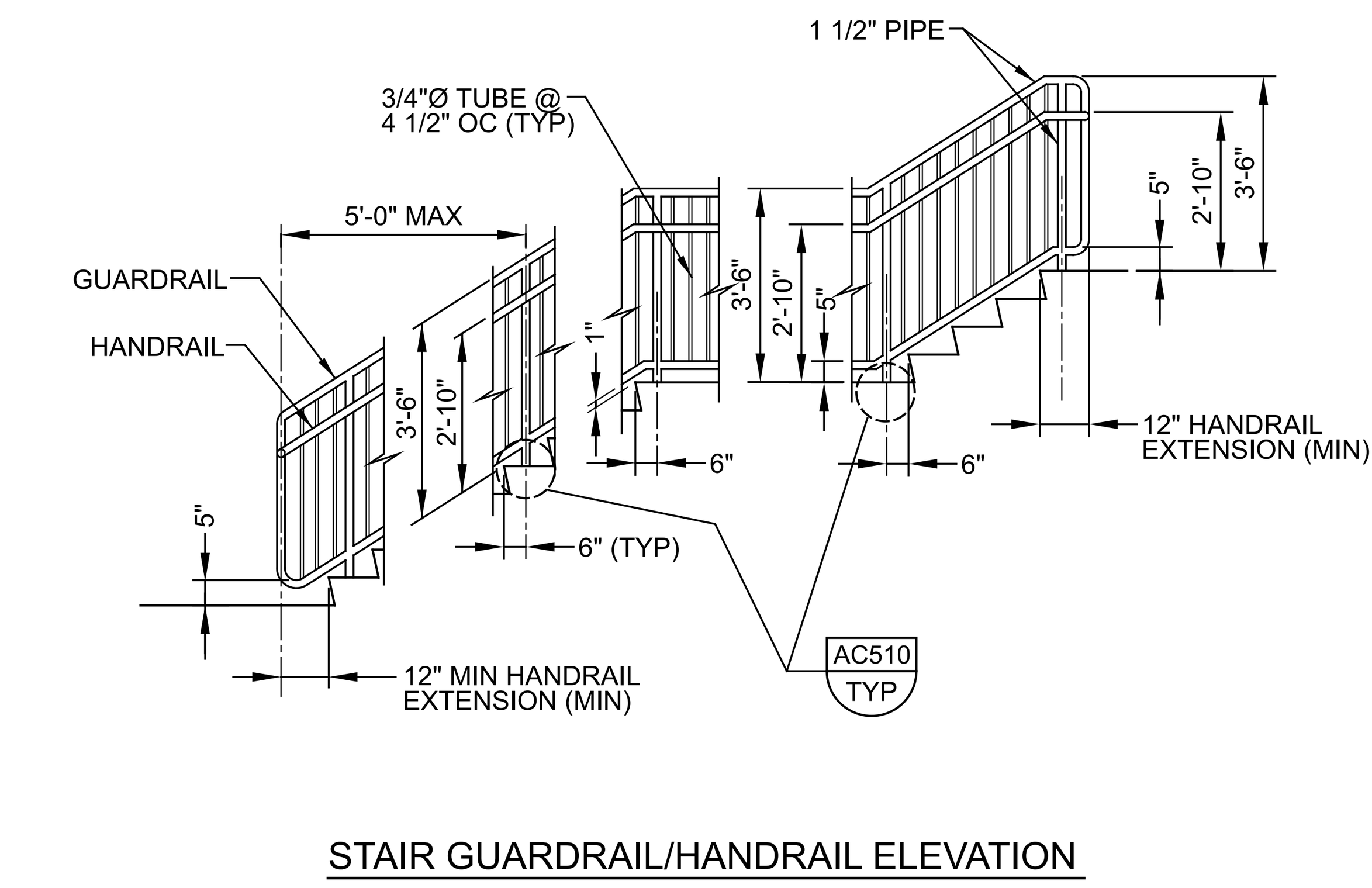
AC500 TYP GUARDRAIL - HANDRAIL - NOTES

NS 06/21/19



AC508 TYP GUARDRAIL - PICKET

NS SHEET 1 OF 3

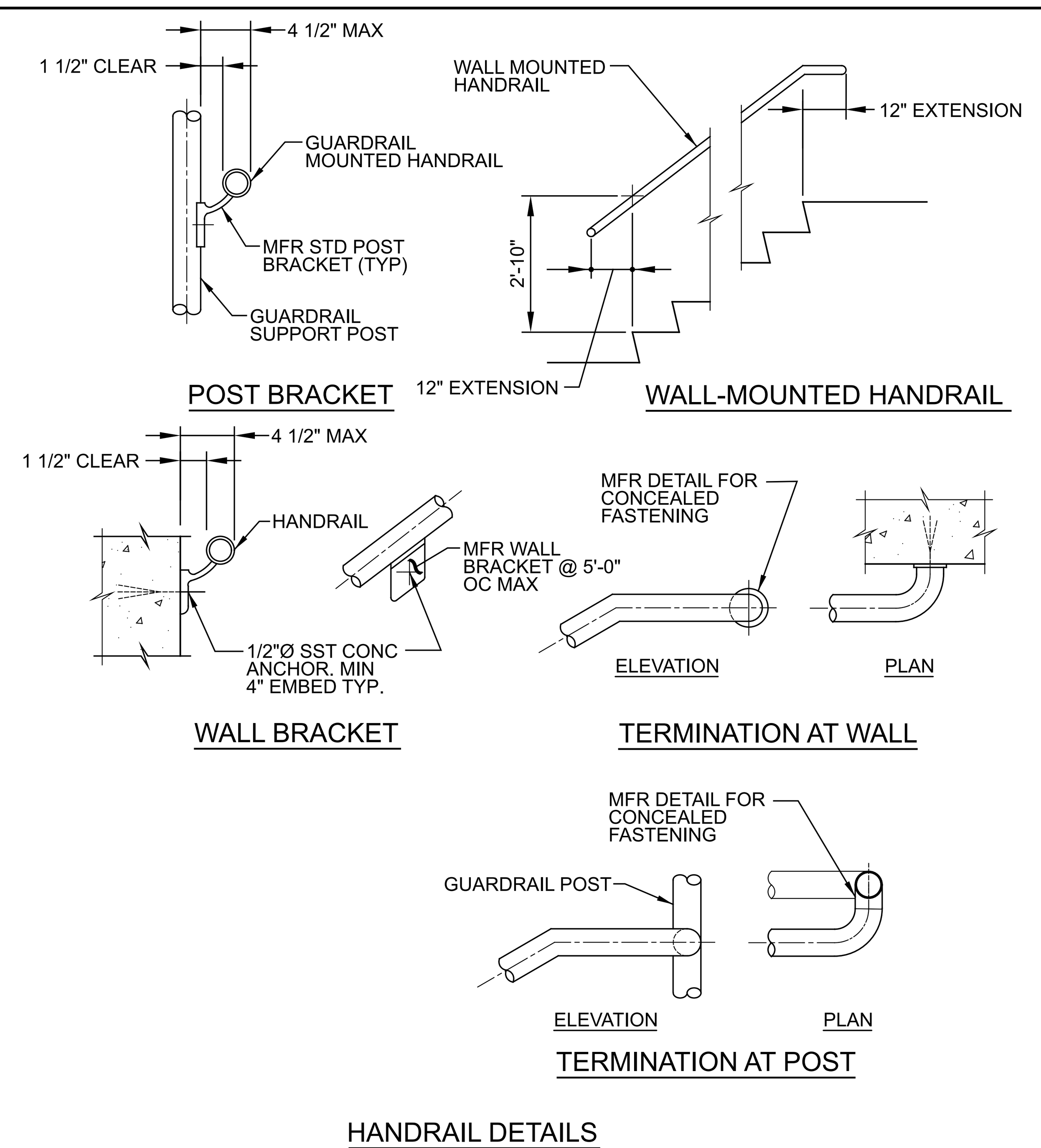


NOTES:

1. THIS DETAIL IS APPLICABLE AT STAIRS USED BY THE PUBLIC OR BY EMPLOYEES WHO MAY HAVE DISABILITIES. DETAILS AND INSTALLATION SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT, THE BUILDING CODE, AND IN CALIFORNIA TITLE 24.
2. SEE SPECIFICATIONS AND DETAIL AC500/TYP FOR ADDITIONAL REQUIREMENTS.
3. VARIOUS POST MOUNTING DETAILS ARE ILLUSTRATED. SEE DRAWINGS AND DETAIL AC510/TYP FOR SPECIFIC MOUNTING REQUIREMENTS.
4. WHERE THIS DETAIL IS USED, STAIR RISERS SHALL HAVE CLOSED FACES. SEE STAIR TREAD AND RISER DETAILS.
5. HANDRAIL EXTENSIONS ARE REQUIRED ON BOTH SIDES OF STAIR, EXCEPT WHERE INSIDE HANDRAIL IS CONTINUOUS AS AT SWITCHBACK STAIR.
6. AT CURB, USE EMBEDDED OR TOP MOUNTED POST AS INDICATED ON THE DRAWING.

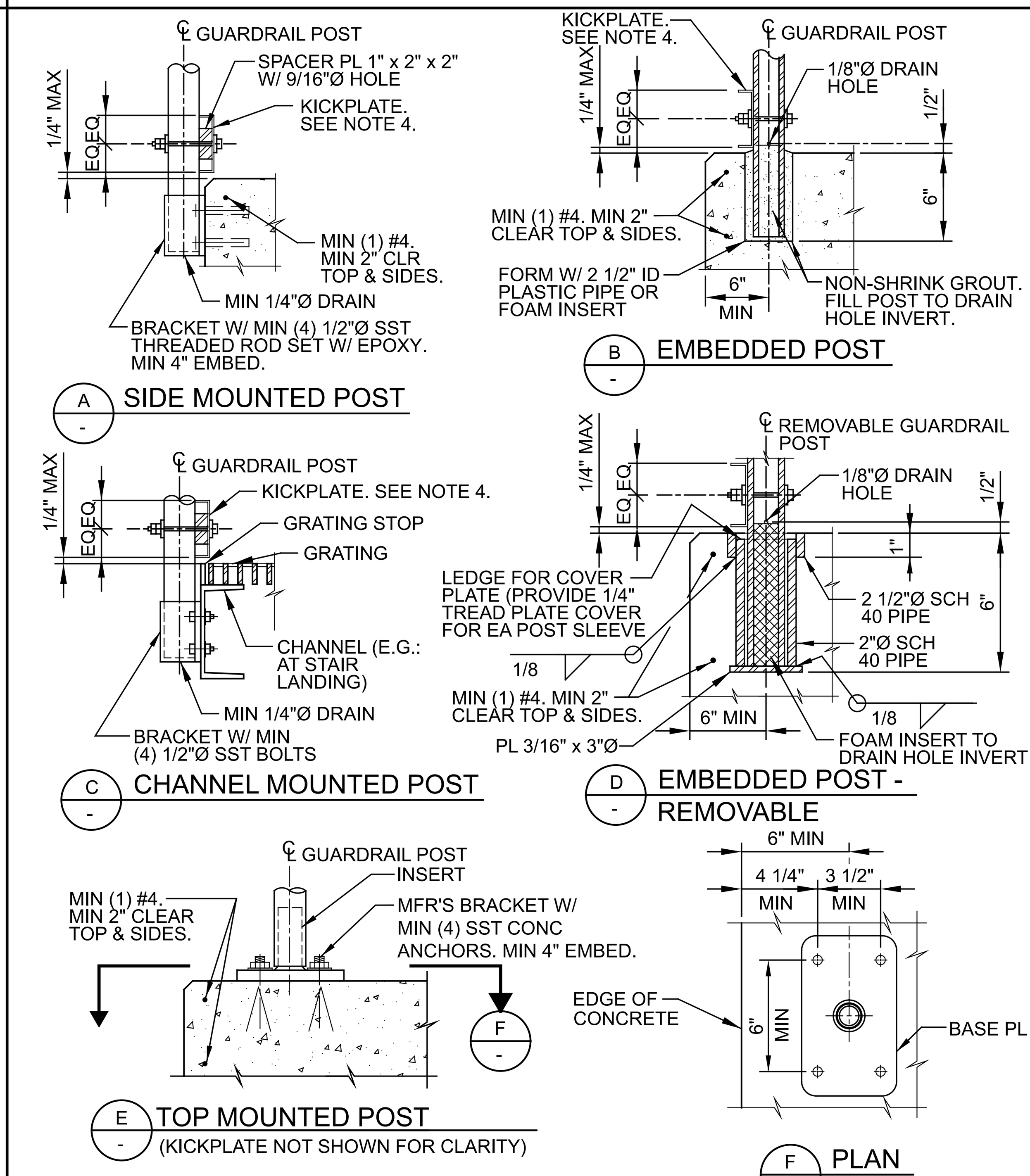
AC508 TYP GUARDRAIL - PICKET

NS SHEET 2 OF 3 06/21/19



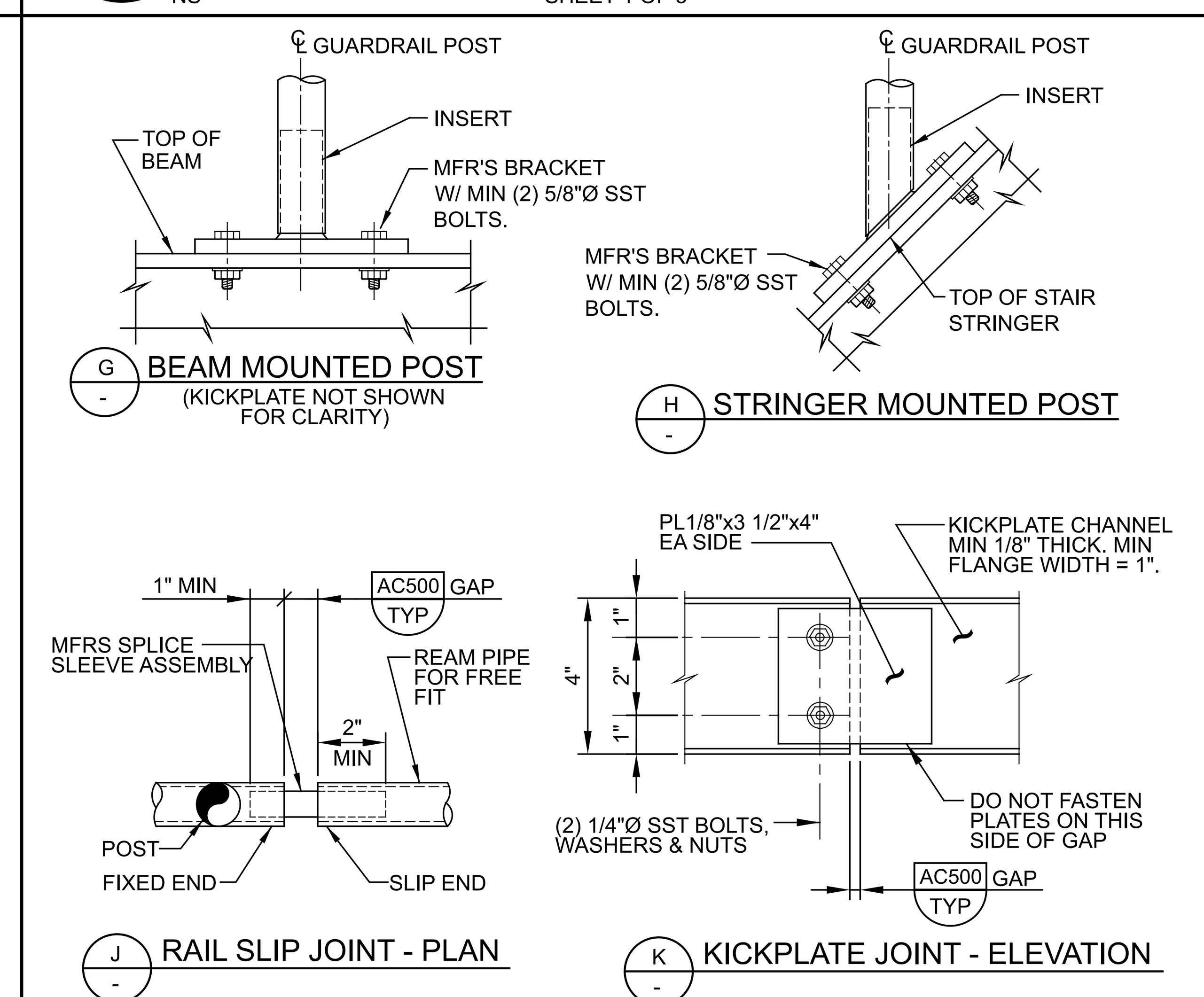
AC508 TYP GUARDRAIL - PICKET

NS SHEET 3 OF 3 06/21/19



AC510 TYP GUARDRAIL - MOUNTING

NS SHEET 1 OF 2 06/21/19



NOTES:

1. FOR ADDITIONAL REQUIREMENTS, SEE DETAIL AC500/TYP.
2. SEE DRAWINGS FOR MATERIAL TYPES.
3. COAT ALUMINUM SURFACES IN CONTACT WITH CONCRETE OR DISSIMILAR METALS AS SPECIFIED.
4. KICKPLATE CONNECTION AT POST: MIN 3/4" HORIZONTAL SLOTTED HOLE IN CHANNEL W/ MIN 1/4"Ø BOLT. PROVIDE WASHER AND DOUBLE NUTS. INSIDE NUT FINGER-TIGHT TO PERMIT EXPANSION AND CONTRACTION.

AC510 TYP GUARDRAIL - MOUNTING

NS SHEET 2 OF 2 06/21/19

REV	DATE	BY	DESCRIPTION

DESIGNED: MED
DRAWN: ARE
CHECKED: LS
DATE: NOVEMBER 2023

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 85742 OREGON SEP 13, 2011 MICHAEL E. DADIK EXPIRES: 12/31/23

Digitally signed by Mike Dadik Contact Info: Carollo Engineers, Inc. Date: 2023.12.27 14:16:05-08'00'

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TYPICAL

ARCHITECTURAL1

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SHEET NO. 52 OF 58

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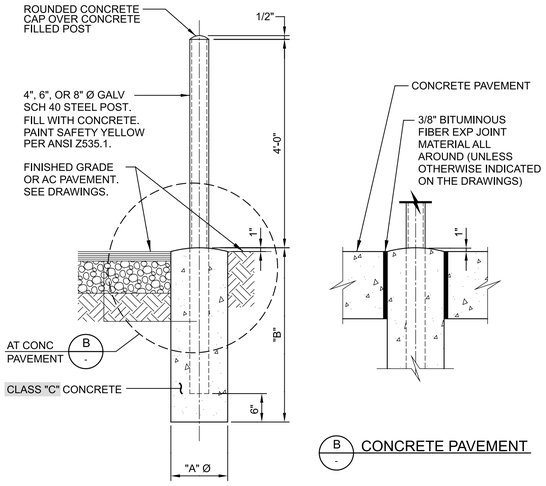


A - AC PAVEMENT OR FINISHED GRADE

B - CONCRETE PAVEMENT

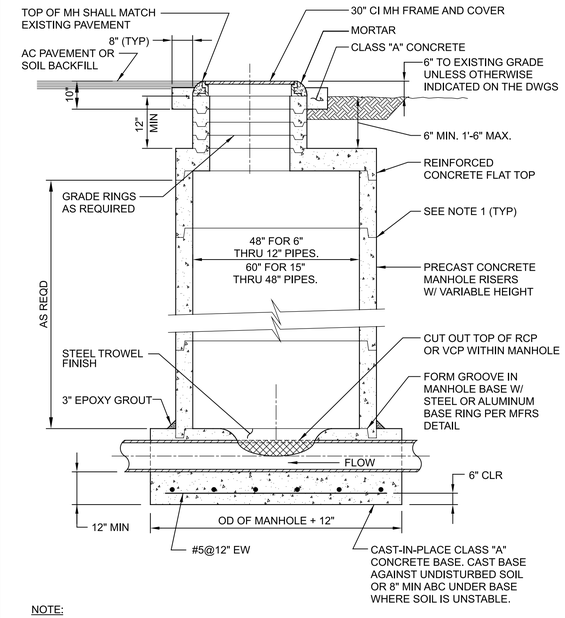
SIZE	"A"	"B"
4"Ø	1'-3"	3'-0"
6"Ø	1'-6"	4'-0"
8"Ø	1'-9"	5'-0"

CF160 GUARD POST

TYP

N

03/22/2021



NOTE:

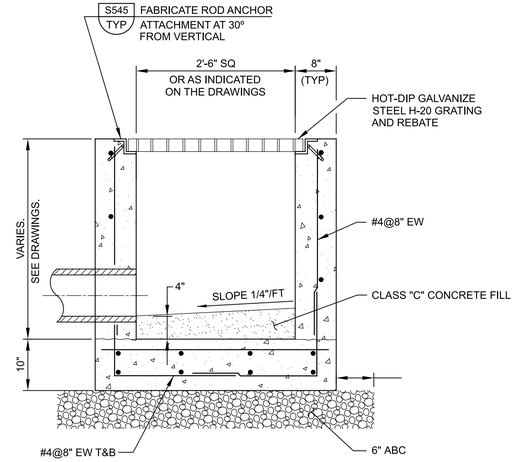
1. SEAL JOINTS WITH PRECAST CONCRETE JOINT SEALANT.

CS116 MANHOLE - MINIMUM COVER CONDITION

TYP

N

12/29/2020

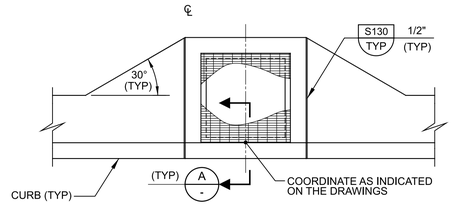


CS202 CATCH BASIN

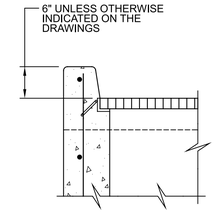
TYP

SHEET 1 OF 4

12/24/2020



TYPE 1 - CATCH BASIN AT CURB AND GUTTER



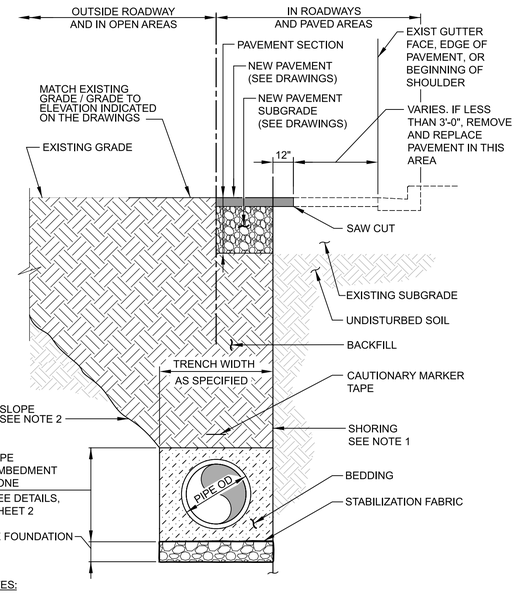
A - SECTION

CS202 CATCH BASIN

TYP

SHEET 2 OF 4

12/24/2020



NOTES:

1. SEE SPECIFICATIONS FOR SHORING REQUIREMENTS.
2. SEE SPECIFICATIONS FOR SLOPE REQUIREMENTS.
3. SEE SPECIFICATIONS FOR DEPTH AND WIDTH REQUIREMENTS.

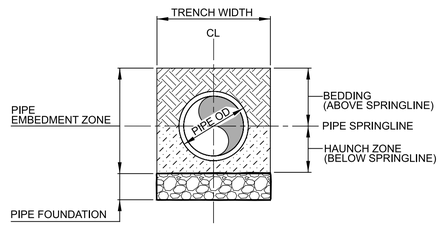
CY111 PIPE TRENCH

TYP

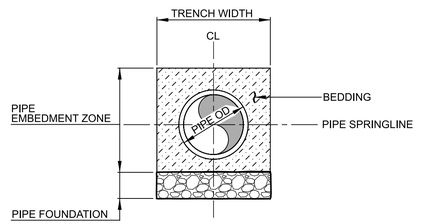
SN

SHEET 1 OF 2

08/19/22



A - PIPE ZONE EMBEDMENT - RIGID PIPE



B - PIPE ZONE EMBEDMENT - FLEXIBLE PIPE

CY111 PIPE TRENCH

TYP

SN

SHEET 2 OF 2

08/19/22

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARE
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DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 81348 OREGON JUNE 10, 2014 MATTHEW S. SPRICK EXPIRES: 06/30/24

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Contact Info: Carollo Engineers, Inc
Date: 2023.12.27 15:19:06-05'00'

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CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
TYPICAL
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VERIFY SCALES
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JOB NO. 201779
DRAWING NO. TC01
SHEET NO. 53 OF 58

PROJECT NO. 201779-100000 FILE NAME: 20177900TC01.dgn

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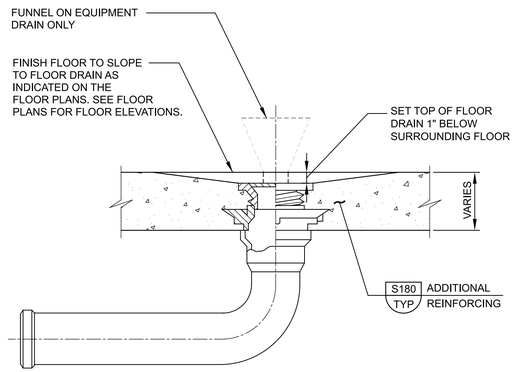
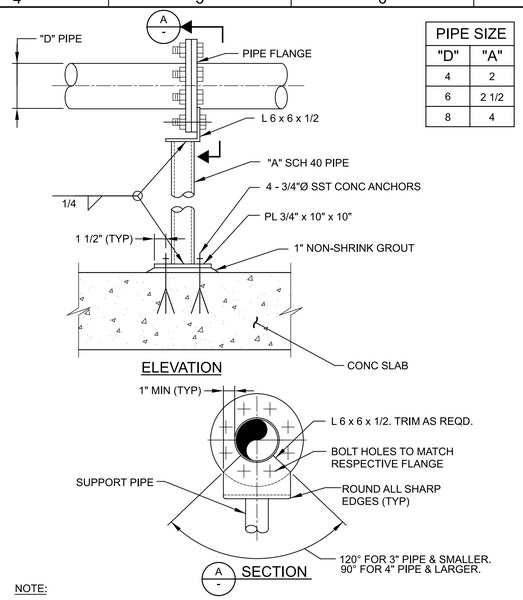


NOTE:

1. PROVIDE 12" RADIUS SLOPE TO EQUIPMENT DRAINS WHERE FLOOR DOES NOT SLOPE TO DRAIN.

MA203 TYP — DRAIN - FLOOR OR EQUIPMENT DRAIN W/O TRAP

12/01/22



PIPE SIZE	
"D"	"A"
4	2
6	2 1/2
8	4

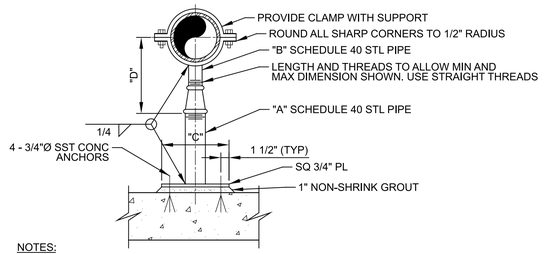
NOTE:

1. IF SUPPORT IS SUBMERGED OR LOCATED BELOW THE TOP OF WALL IN WATER BEARING STRUCTURE, ALL MATERIAL FOR SUPPORT SHALL BE STAINLESS STEEL. IN ALL OTHER AREAS, ALL MATERIAL FOR SUPPORT SHALL BE HOT-DIP GALVANIZED STEEL UNLESS OTHERWISE INDICATED ON DRAWINGS. HOT-DIP GALVANIZE AFTER FABRICATION.

MP032 TYP — PIPE SUPPORT - POST ON CONCRETE: FIXED HEIGHT STEEL W/ TOP CONNECTION TO PIPE FLANGE

NS 12/01/22

ADJUSTABLE PIPE SADDLE SUPPORT SCHEDULE (INCHES)					
SIZE OF SUPPORTED PIPE **	PIPE SIZE "A"	PIPE SIZE "B"	"C"	"D"	
				MINIMUM	MAXIMUM
2 1/2 *	2 1/2	1 1/2	12	8	13
3	2 1/2	1 1/2	12	8 1/2	13 1/2
3 1/2	2 1/2	1 1/2	12	8 1/2	13 1/2
4	3	2 1/2	12	9 1/2	14
6	3	2 1/2	12	10 1/2	15 1/2
8	3	2 1/2	12	11 1/2	16 1/2
10	3	2 1/2	12	13 1/2	18 1/2
12	3	2 1/2	12	15	19 1/2
14	4	3	12	16 1/2	20 1/2
16	4	3	12	17 1/2	22 1/2
18	6	3 1/2	14	19 1/2	24
20	6	3 1/2	14	21	25 1/2
24	6	4	14	23 1/2	28 1/2
30	6	4	14	27	31 1/2
32	6	4	14	28 1/2	32 1/2
36	6	4	14	30 1/2	34 1/2

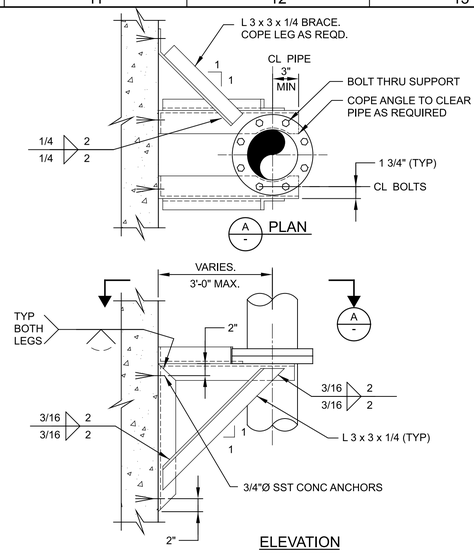


NOTES:

1. HOT-DIP GALVANIZED SUPPORT AFTER FABRICATION.
2. * = USE 2 1/2" SUPPORTS FOR PIPES LESS THEN 2 1/2"Ø.
3. ** = NOMINAL PIPE SIZE.

MP034 TYP — PIPE SUPPORT - POST ON CONCRETE: ADJUSTABLE HEIGHT STEEL W/ TOP SADDLE

NS 12/01/22

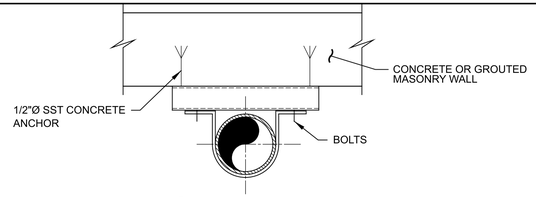


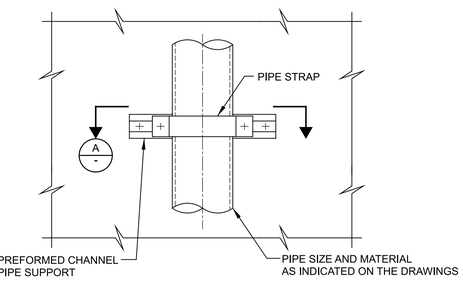
NOTE:

1. HOT-DIP GALVANIZE SUPPORT AFTER FABRICATION.

MP250 TYP — PIPE SUPPORT - WALL - VERTICAL PIPE ON FABRICATED SUPPORT AT FLANGES

N 12/01/22



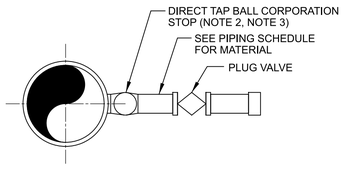


NOTE:

1. IF SUPPORT IS SUBMERGED OR LOCATED BELOW THE TOP OF WALL IN WATER BEARING STRUCTURE, ALL MATERIAL SHALL BE STAINLESS STEEL. IN ALL OTHER AREAS, THE MATERIALS SHALL BE HOT-DIP GALVANIZED STEEL UNLESS OTHERWISE INDICATED ON THE DRAWINGS. HOT-DIP GALVANIZE AFTER FABRICATION.

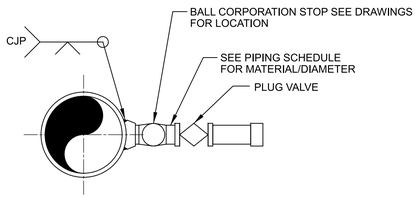
MP253 TYP — PIPE SUPPORT - OVERHEAD PREFORMED CHANNEL: SURFACE MOUNTED

12/01/22



DIP NOMINAL DIAMETER	FLUSHING CONNECTION DIAMETER
4"	3/4"
6" - 14"	1"
16"	1 1/2"
18" AND ABOVE	2"

DETAIL A - DUCTILE IRON PIPE FLUSHING CONNECTION



DETAIL B - STEEL PIPE FLUSHING CONNECTION

NOTE:

1. CJP = COMPLETE JOINT PENETRATION.
2. CORPORATION STOP SHALL BE FURNISHED WITH AWWA TAPER THREADS PER AWWA C800. PIPE SHALL BE TAPPED ACCORDINGLY.
3. CONNECTIONS GREATER THAN 2" SHALL REQUIRE A TAPPING SADDLE.

MP405 TYP — PIPE CONNECTION - FLUSHING

12/01/22

REV	DATE	BY	DESCRIPTION

DESIGNED: MSS
DRAWN: ARE
CHECKED: TT
DATE: NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 81348 OREGON JUNE 10, 2014 MATTHEW S. SPRICK EXPIRES: 06/30/24

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JOB NO. 201779
DRAWING NO. TM01
SHEET NO. 54 OF 58

PROJECT NO. 201779-100000 FILE NAME: 20177900TM01.dgn

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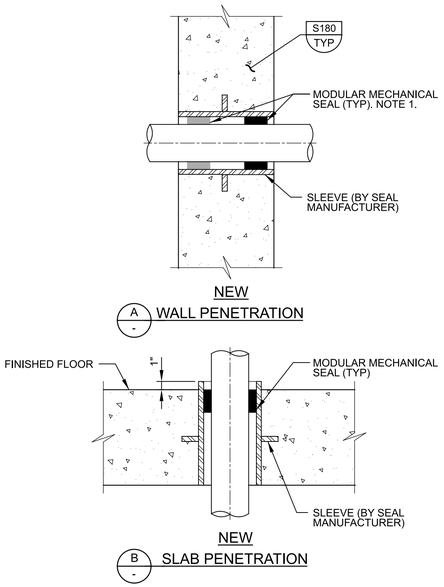
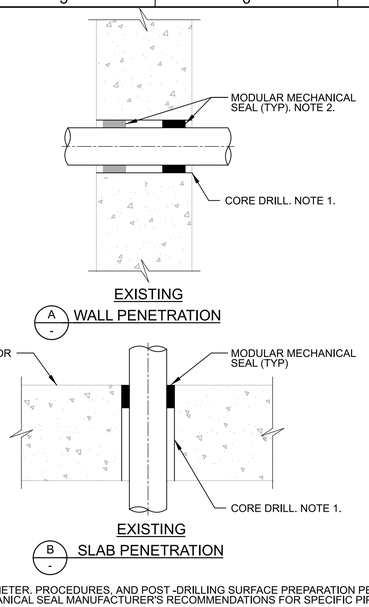


NOTES:

1. WALLS THICKER THAN 12" INSTALL MODULAR MECHANICAL SEAL AT BOTH ENDS OF WALL SLEEVE.

MP544 TYP — WALL PENETRATION - CAST-IN SLEEEVE W/ BARRIER SEALS

NS SHEET 1 OF 2 12/01/22

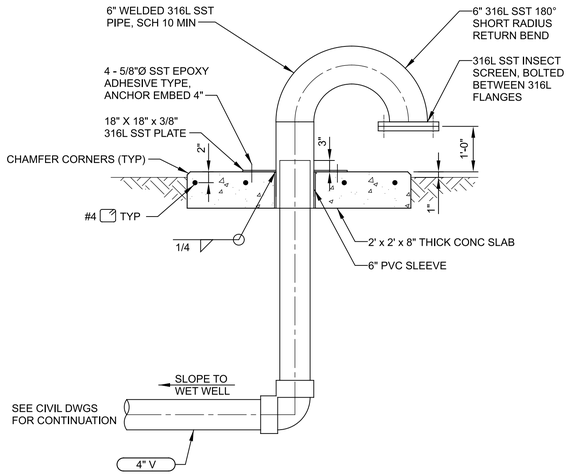


NOTES:

1. CORE DRILL DIAMETER, PROCEDURES, AND POST -DRILLING SURFACE PREPARATION PER MODULAR MECHANICAL SEAL MANUFACTURER'S RECOMMENDATIONS FOR SPECIFIC PIPE OD.
2. WALLS 12" OR THICKER INSTALL MODULAR MECHANICAL SEAL AT BOTH ENDS OF PENETRATION.

MP544 TYP — WALL PENETRATION - CAST-IN SLEEEVE W/ BARRIER SEALS

NS SHEET 2 OF 2 12/01/22



MP550 TYP — VENT DETAIL

J 07/25/23

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
DRAWN ARE
CHECKED TT
DATE NOVEMBER 2023

REGISTERED PROFESSIONAL ENGINEER 81348 OREGON JUNE 10, 2014 MATTHEW S. SPRICK EXPIRES: 06/30/24

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TYPICAL
MECHANICAL 1

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DRAWING NO. TM02
SHEET NO. 54 OF 58

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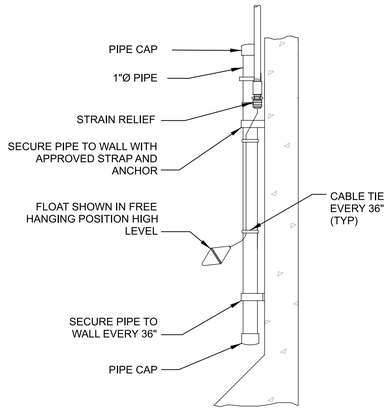
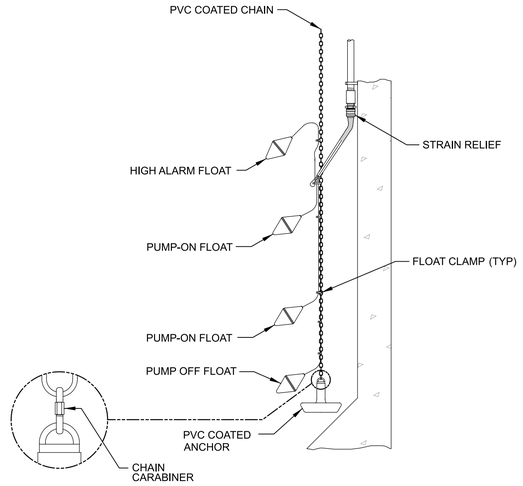


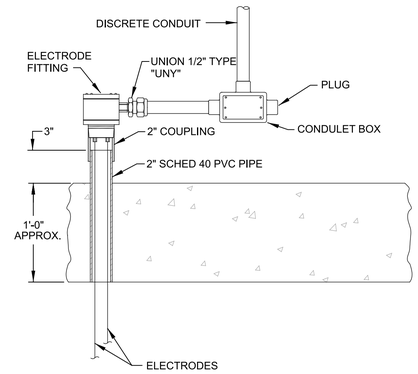
NL101 TYP S — FLOAT SWITCH INSTALLATION



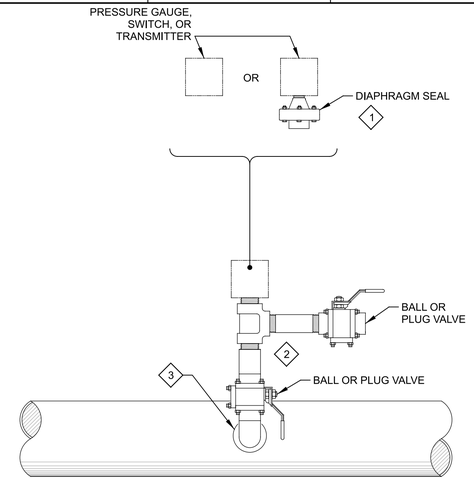
GENERAL NOTES:

1. NUMBER OF FLOATS AS SHOWN ON DRAWINGS.

NL108 TYP S — LEVEL FLOAT WITH CHAIN



NL111 TYP S — ELECTRODE LEVEL SENSOR MOUNTING DETAIL



◇# KEY NOTES:

1. USE THE INSTRUMENT DATA SHEETS IN DIVISION 17 OR DIVISIONS 40 SPECS TO IDENTIFY INDIVIDUAL REQUIREMENTS FOR DIAPHRAGM SEALS.
2. ALL VALVE AND PIPE MATERIAL SHALL BE COMPATIBLE WITH PROCESS FLUID.
3. THREADED TAP OR SADDLE CONNECTION FOR DUCTILE IRON PIPE. WELD-O-LET OR THREAD-O-LET FOR WELDED PIPE. TEE OR REDUCING TEE FOR NON-METALLIC PIPE.

NP502 TYP S — PRESSURE INSTRUMENT MOUNTING DETAIL

REV	DATE	BY	DESCRIPTION

DESIGNED MSS
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DATE NOVEMBER 2023

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EXPIRES: 06/30/24

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INSTRUMENTATION 1

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JOB NO. 201779
DRAWING NO. TN01
SHEET NO. SHT OF 58

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1. SEE DIVISION 03 SPECIFICATION FOR REQUIREMENTS FOR CONCRETE CONSTRUCTION.
2. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, MINIMUM REINFORCEMENT OF CONCRETE WALLS OR SLABS SHALL BE AS FOLLOWS. CONTACT ENGINEER FOR LOCATIONS INSIDE CONCRETE.
   10" THICK OR LESS: .....#5 @ 12" EACH WAY.
   MORE THAN 10" THICK: .....#5 @ 12" EACH WAY, EACH FACE.
3. WALL REINFORCEMENT AT CORNERS OR JUNCTIONS OF WALLS SHALL BE CONTINUOUS, LAP SPLICED, OR TERMINATED IN AN ACI STANDARD 90 DEGREE HOOK. SEE DETAIL S144/TYP.
4. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, DOWELS BETWEEN ADJACENT CONCRETE PLACEMENTS SHALL BE THE SAME SIZE AND SPACING AS THE REINFORCEMENT WHICH IS SPLICED TO THE DOWELS.
5. SLAB, BEAM AND COLUMN REINFORCING BARS SHALL HAVE A MINIMUM EXTENSION OR ANCHORAGE INTO SUPPORTS IN ACCORDANCE WITH ACI 318 AND ACI 350.
6. PROVIDE STIRRUP SUPPORT BARS SHALL BE TO SECURE TOP BARS AGAINST DISPLACEMENT AS REQUIRED.
7. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, CONCRETE COVER OVER #11 AND SMALLER REINFORCING BARS SHALL BE AS FOLLOWS:
   A. SLABS AND JOISTS:
      FORMED CONCRETE SURFACES AND UNFORMED TOP SURFACES FOR DRY CONDITIONS
      #7 BARS AND SMALLER.....1"
      #8 BARS AND LARGER.....1 1/2"
      FORMED CONCRETE SURFACES AND UNFORMED TOP SURFACES EXPOSED TO WEATHER, IN CONTACT WITH SOIL OR FLUIDS, OR LOCATED OVER FLUIDS.....2"
   B. BEAMS AND COLUMNS:
      FORMED CONCRETE SURFACES FOR DRY CONDITIONS:
      STIRRUPS, SPIRALS, AND TIES.....1 1/2"
      PRINCIPAL REINFORCEMENT.....2"
      FORMED CONCRETE SURFACES EXPOSED TO WEATHER, IN CONTACT WITH SOIL OR FLUIDS, OR IN BEAMS LOCATED OVER FLUIDS:
      STIRRUPS AND TIES.....2"
      PRINCIPAL REINFORCEMENT.....2 1/2"
   C. WALLS:
      FORMED CONCRETE SURFACES FOR DRY CONDITIONS:
      #7 BARS AND SMALLER.....1"
      #8 BARS AND LARGER.....1 1/2"
      FORMED CONCRETE SURFACES EXPOSED TO WEATHER, OR IN CONTACT WITH SOIL OR FLUIDS.....2"

S101 TYP S — REINFORCED CONCRETE NOTES

D. FOOTINGS AND SLABS ON GRADE:
   FORMED VERTICAL CONCRETE SURFACES.....2"
   AT UNFORMED CONCRETE SURFACES CAST AGAINST SOIL, ROCK, OR CONCRETE WORK MATS.....3"
   TOP SURFACE OF FOOTINGS AND SLABS.....SAME AS SLABS
8. WATERSTOPS:
   A. PROVIDE WATERSTOPS AT JOINTS IN SLABS AND WALLS OF LIQUID-CONTAINING STRUCTURES, AND PORTIONS OF STRUCTURES BELOW THE DESIGN GROUNDWATER LEVEL. MAKE WATERSTOPS CONTINUOUS THROUGH STRUCTURE, SPLICING WATERSTOPS IN SLABS WITH WATERSTOPS IN WALLS.
   B. END WATERSTOPS 3" BELOW TOP OF WALLS. WHERE TOP OF WALL IS COVERED BY A SLAB WITHOUT WATERSTOPS, CONTINUE WATERSTOP TO WALL/SLAB JOINT. WHERE TOP OF WALL IS COVERED BY A SLAB WITH WATERSTOPS, MAKE WATERSTOPS CONTINUOUS, SPLICING WATERSTOPS IN WALLS WITH WATERSTOPS IN SLAB.
9. CURE CONCRETE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WHERE WATER CURING IS SPECIFIED, MEMBRANE CURING IS NOT ALLOWED.
   A. THE CONTRACTOR IS WARNED THAT WATER CURING IS DIFFICULT AT TIMES DUE TO WIND AND DRY CONDITIONS. STUDY SPECIFICATION REQUIREMENTS AND FURNISH ADEQUATE SYSTEMS TO PROVIDE WATER CURING WHERE REQUIRED.
   B. KEEP WATER CURED SURFACES VISIBLY MOIST AT ALL TIMES. FLOOD TOPS OF WALLS NOT LESS THEN 3 TIMES DAILY.
10. DO NOT PLACE BACKFILL AGAINST WALLS UNTIL:
   A. WALLS HAVE BEEN CAST TO FULL HEIGHT OF STRUCTURE AND CONCRETE HAS REACHED THE MINIMUM SPECIFIED COMPRESSIVE STRENGTH (f'c).
   B. CONNECTING SLABS AND BEAMS HAVE BEEN CAST AND CONCRETE IN THOSE ELEMENTS HAS REACHED THE MINIMUM SPECIFIED COMPRESSIVE STRENGTH (f'c).
11. LAP SPLICES:
   A. SEE TABLE 1 OF THIS DETAIL FOR LAP SPLICE LENGTHS.
   B. WHEN MULTIPLE BARS ARE SPLICED AT THE SAME SECTION, THE "CLEAR BAR SPACING" IS DEFINED AS THE MINIMUM CLEAR DISTANCE BETWEEN THE BARS OUTSIDE THE SPLICE LENGTH MINUS ONE BAR DIAMETER.
   C. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, BARS AT A LAP SPLICE SHALL BE IN CONTACT WITH EACH OTHER.
   D. "TOP BARS" ARE HORIZONTAL REINFORCEMENT AT LOCATIONS WHERE MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.
12. FORM EXPOSED CONCRETE CORNERS AND EDGES WITH 3/4" CHAMFER UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

S101 TYP S — REINFORCED CONCRETE NOTES

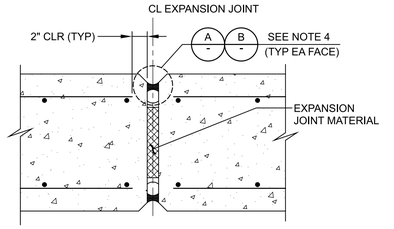
TABLE 1: REINFORCING BAR LAP SPLICES: f'c = 4000 PSI, Fy = 60,000 PSI

BAR SIZE	MINIMUM COVER (BAR DIA)	MINIMUM CLEAR BAR SPACING (BAR DIA)	LAP SPLICE LENGTH (INCHES)	
			TOP BARS	OTHER BARS
#4	MORE THAN 1	MORE THAN 2	32 *	25 *
	MORE THAN 2	MORE THAN 4	20	16
#5	MORE THAN 1	MORE THAN 2	40 *	31 *
	MORE THAN 2	MORE THAN 4	26	20
#6	MORE THAN 1	MORE THAN 2	48 *	37 *
	MORE THAN 2	MORE THAN 4	30	24
#7	MORE THAN 1	MORE THAN 2	70 *	54 *
	MORE THAN 2	MORE THAN 4	43	33
#8	MORE THAN 1	MORE THAN 2	81 *	62 *
	MORE THAN 2	MORE THAN 4	50	38
#9	MORE THAN 1	MORE THAN 2	90 *	70 *
	MORE THAN 2	MORE THAN 4	56	42
#10	MORE THAN 1	MORE THAN 2	104 *	81 *
	MORE THAN 2	MORE THAN 4	62	48
#11	MORE THAN 1	MORE THAN 2	114 *	88 *
	MORE THAN 2	MORE THAN 4	69	54

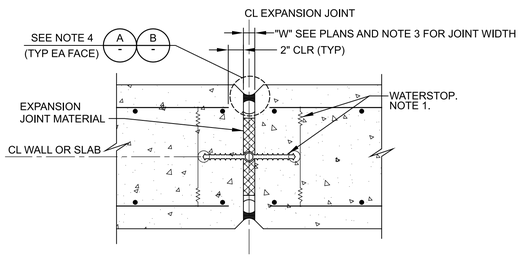
REINFORCING BAR LAP SPLICE TABLE NOTES:

1. TABULATED SPLICE LENGTHS ARE APPLICABLE ONLY WHEN BOTH REQUIREMENTS FOR MINIMUM COVER AND FOR MINIMUM CLEAR BAR SPACING ARE SATISFIED.
2. * = IF THE CLEAR BAR SPACING IS LESS THAN OR EQUAL TO TWO BAR DIAMETERS, OR THE COVER IS LESS THAN OR EQUAL TO ONE BAR DIAMETER, THE LAP SPLICE LENGTH SHALL BE INCREASED BY 50 PERCENT.

S101 TYP S — REINFORCED CONCRETE NOTES

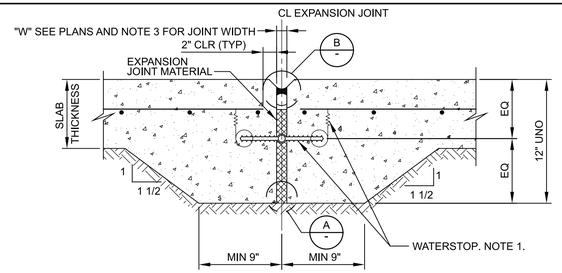


NON-WATER BEARING SLAB OR WALL

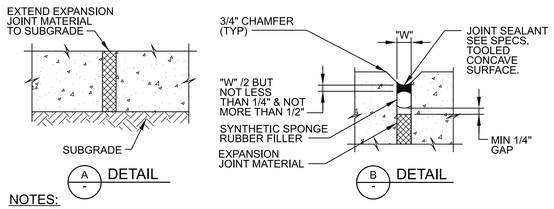


WATER BEARING SLAB OR WALL

S130 TYP S — EXPANSION JOINT



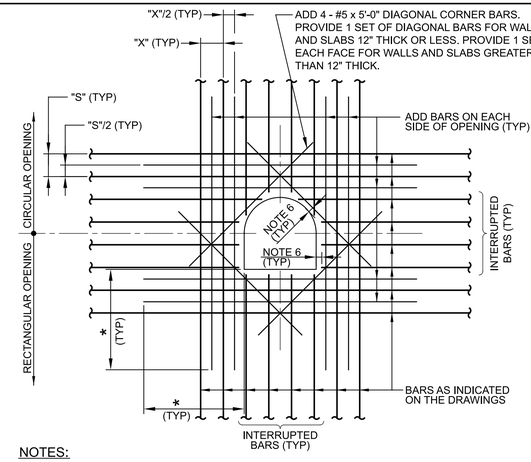
WATER BEARING SLAB LESS THAN 12" THICK



NOTES:

1. 9" WATERSTOP WITH CENTER BULB CENTERED ON JOINT - SEE DETAIL S106/TYP. PROVIDE WIRE TIES MAX 2'-0" OC. HOG RINGS MAY BE USED IN LIEU OF WIRE LOOPS. THOROUGHLY CLEAN WATERSTOP BEFORE PLACING CONCRETE IN SECOND POUR.
2. JOINT EDGES:
   A. FOR WALLS AND BOTTOM OF EXPOSED SLABS: FORM EDGES WITH 3/4" CHAMFER.
   B. FOR SLABS: EDGE TOP AND ENDS WITH 1/4" RADIUS.
3. "W"=1" UNLESS OTHERWISE INDICATED ON PLANS. (MIN JOINT WIDTH = 3/8". MAX JOINT WIDTH = 2")
4. USE DETAIL A ONLY AT SOIL SIDE OF SLABS ON GRADE. USE DETAIL B AT ALL OTHER LOCATIONS.

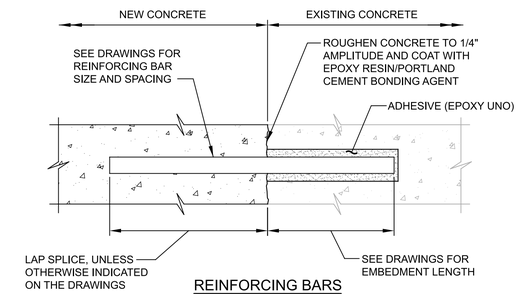
S130 TYP S — EXPANSION JOINT



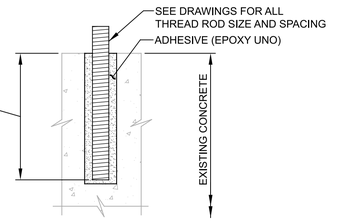
NOTES:

1. AREA OF ADD BARS AT EACH EDGE OF OPENING IN EACH DIRECTION SHALL BE EQUAL TO OR GREATER THAN 1/2 THE CROSS SECTIONAL AREA OF THE INTERRUPTED BARS.
2. PROVIDE STANDARD ACI HOOKS ON BARS IF STRAIGHT EXTENSION PAST THE OPENING, CANNOT BE ACHIEVED.
3. PLACE ADD BARS IN SAME PLANES AS INTERRUPTED REINFORCING.
4. PLACE #5 DIAGONAL BARS ON INSIDE OF INTERRUPTED REINFORCING.
5. * DIMENSION EQUALS OPENING DIMENSION MEASURED PERPENDICULAR TO ADD BARS PLUS LAP SPLICE LENGTH.
6. 2" CLEAR TO CONCRETE OPENINGS OR OUTSIDE FACE OF PIPES AND PIPE SLEEVES. DO NOT OVERCUT REINFORCEMENT FOR EASIER PLACEMENT OF WEEP RINGS AND FLANGES.
7. ADD BARS ARE NOT REQUIRED AT SIDES OF OPENINGS PARALLEL TO AND WITHIN 6" OF A WALL OR BEAM.

S180 TYP S, N — ADDITIONAL REINFORCING AT OPENINGS IN CONCRETE SLABS OR WALLS



REINFORCING BARS



ALL-THREAD RODS

NOTE:

1. INSTALLATION OF REINFORCING BARS AND ALL THREAD RODS AS INDICATED IN THE SPECIFICATIONS.

S194 TYP S — ADHESIVE BONDED REINFORCING BARS OR ALL THREAD RODS

REV	DATE	BY	DESCRIPTION

DESIGNED MED
DRAWN ARE
CHECKED LS
DATE NOVEMBER 2023

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 85742 OREGON SEP 13, 2011 MICHAEL E. DADIK EXPIRES: 12/31/23

Digitally signed by Mike Dadik
Contact Info: Carollo Engineers, Inc.
Date: 2023.12.27 14:19:41-08'00'

carollo®

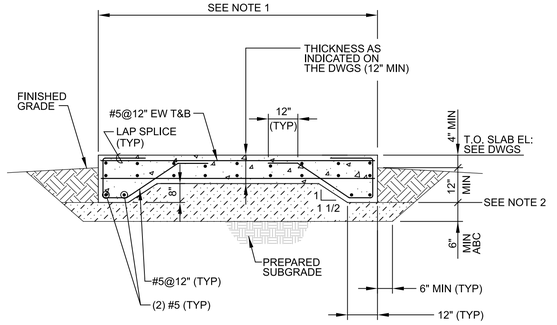
CITY OF West Linn

CITY OF WEST LINN
CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
TYPICAL

STRUCTURAL 1

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

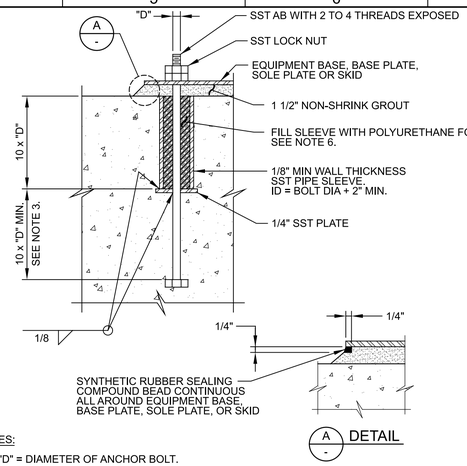
JOB NO. 201779
DRAWING NO. TS01
SHEET NO. 57 OF 58



NOTE:

1. DIMENSIONS AS REQUIRED TO SUIT EQUIPMENT OR AS INDICATED ON THE DRAWINGS.
2. MAKE ELEVATION AT BOTTOM OF THICKENED EDGE UNIFORM AROUND PAD. SET ELEVATION TO PROVIDE INDICATED HEIGHT ABOVE AND DEPTH BELOW FINISHED GRADES INDICATED ON THE DRAWINGS.

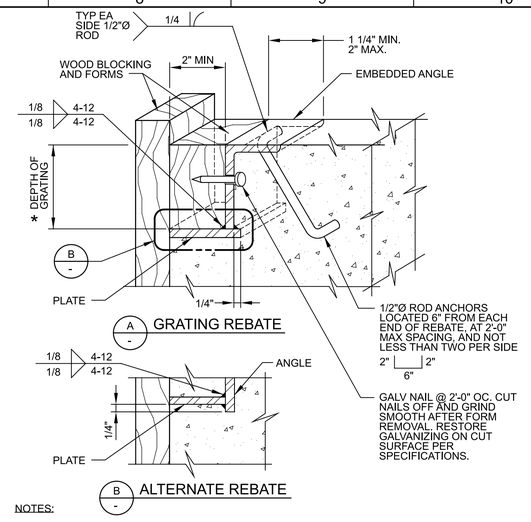
S300 TYP S EQUIPMENT SLAB — 09/21/23



NOTES:

1. "D" = DIAMETER OF ANCHOR BOLT.
2. ANCHOR BOLT DIAMETER AS INDICATED ON THE DRAWINGS. IF NOT INDICATED ON THE DRAWINGS, THE ANCHOR BOLT SIZE SHALL BE AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
3. WHERE CONCRETE SLAB OR BEAM THICKNESS WILL NOT ACCOMMODATE THE ANCHOR BOLT, PROVIDE EXTRA THICKNESS OF SLAB OR BEAM.
4. PREFABRICATED PLASTIC ANCHOR BOLT SLEEVE OPTIONAL.
5. DO NOT USE ALL THREAD RODS AS A SUBSTITUTE FOR BOLTS WITH A BOLT HEAD. SMOOTH RODS THREADED AT THE ENDS MAY BE USED IF ACCEPTABLE TO THE ENGINEER. DO NOT WELD NUTS TO THE THREADED RODS.
6. COMPLETELY REMOVE ANY POLYURETHANE FOAM FROM CONCRETE, EQUIPMENT BASE, BASE PLATE, SOLE PLATE, OR SKID, AND ANCHOR BOLTS ABOVE TOP OF CONCRETE.
7. DO NOT USE LEVELING NUTS TO SUPPORT AND LEVEL EQUIPMENT BASE, BASE PLATE, SOLE PLATE, OR SKID.

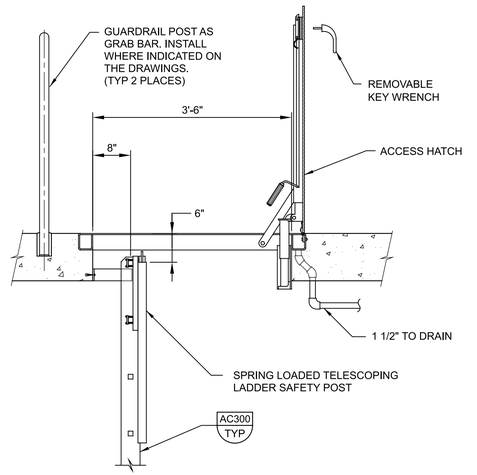
S310 TYP N ANCHOR BOLT - EMBED AND SLEEVE — 05/20/15



NOTES:

1. SEE SPECIFICATIONS FOR H-20 HEAVY DUTY HOT-DIP GALVANIZED STEEL GRATING.
2. MAKE REBATE AND/OR SEAT CONTINUOUS AROUND OPENING.
3. EMBEDDED REBATE ANGLE AND PLATE SHALL BE 1/4" MINIMUM THICKNESS.
4. HOT-DIP GALVANIZED AFTER FABRICATION.
5. * = DIMENSION AS REQUIRED BY GRATING MANUFACTURER. SEE SPECIFICATIONS.

S545 TYP S GRATING - REBATE, H-20 HEAVY DUTY HOT-DIP GALVANIZED — 06/21/19



S592 TYP HATCH WITH LADDER — 06/21/19

REV	DATE	BY	DESCRIPTION

DESIGNED MED
DRAWN ARE
CHECKED LS
DATE NOVEMBER 2023

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 85742 OREGON SEP 13, 2011 MICHAEL E. DADIK
EXPIRES: 12/31/23

Digitally signed by Mike Dadik
Contact Info: Carollo Engineers, Inc.
Date: 2023.12.27 14:19:34-08'00'

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CALAROGA SANITARY SEWER PUMP STATION REPLACEMENT PROJECT
TYPICAL
STRUCTURAL 2

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 201779
DRAWING NO. TS02
SHEET NO. 58 OF 58

PROJECT NO. 201779-100000 FILE NAME: 20177900TS02.dgn

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1 Plot Date: 1-NOV-2023 8:56:41 AM User: svcPW LAST SAVED BY: tuy