LYNNWOOD
WASHINGTON

LYNNWOOD WWTP INTERIM SLUDGE DISPOSAL - CONTRACT ID# 3213

JULY 2022

90% SUBMITTAL

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CONTACT INFORMATION

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CITY OF LYNNWOOD OFFICIALS

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PATRICK DECKER	CITY COUNCIL
SHIRLEY SUTTON	CITY COUNCIL
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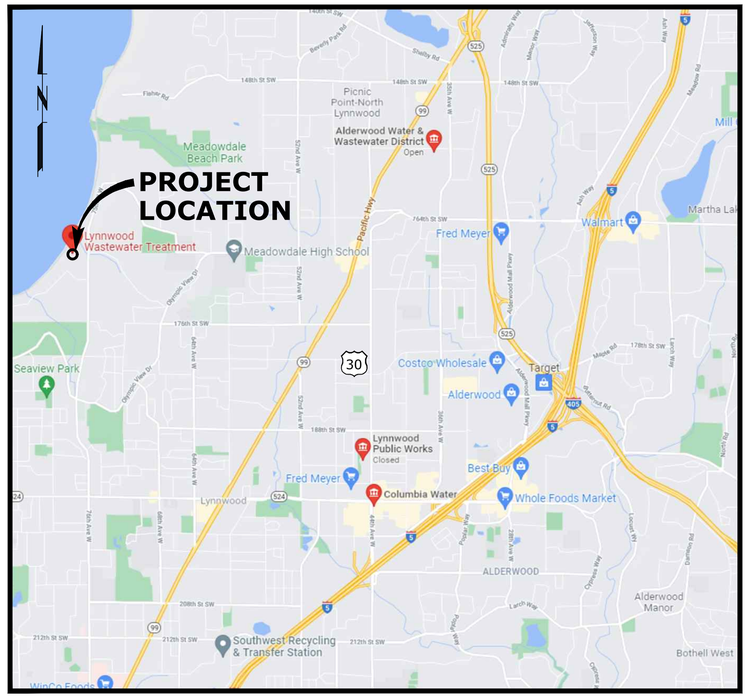
BILL FRANZ	PUBLIC WORKS DIRECTOR
EHSAN SHIRKHANI	CITY PROJECT MANAGER



VICINITY MAP

SCALE: NTS

PROJECT ADDRESS:

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21-3310

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GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CONTRACT PLANS AND SPECIFICATIONS, THE LATEST EDITION OF "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION" PREPARED BY WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT), CITY OF LYNNWOOD STANDARD PLANS AND PLAN NOTES, AND ANY CONDITIONS OF APPROVAL. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY CITY OF LYNNWOOD REGARDING ANY ERROR, OMISSION, OR VARIATION FROM THE ABOVE REQUIREMENTS FOUND IN THESE PLANS OR ACCOMPANYING SPECIFICATIONS.

2. ALL CONSTRUCTION IS SUBJECT TO DAILY INSPECTION BY THE CITY OF LYNNWOOD. FOR ALL REQUIRED SPECIAL INSPECTIONS, THE CONTRACTOR SHALL PROVIDE AT LEAST 24-HOUR PRIOR NOTIFICATION TO THE CITY'S CONSTRUCTION INSPECTOR TO PERMIT INSPECTIONS DURING THE NORMAL WORK DAY. WORK NOT READY FOR A REQUESTED SPECIAL INSPECTION UPON THE ARRIVAL OF THE SPECIAL INSPECTOR MUST BE RESCHEDULED FOR INSPECTION AND A RE-INSPECTION FEE MAY BE IMPOSED.

3. BEFORE ISSUANCE OF PERMITS, CONSTRUCTION OR ANY ON-SITE ACTIVITY, A PRECONSTRUCTION MEETING IS REQUIRED BETWEEN THE CITY OF LYNNWOOD RESIDENT ENGINEER AND THE CONTRACTOR'S CONSTRUCTION REPRESENTATIVE. REQUEST A PRECONSTRUCTION MEETING BY CONTACTING CITY OF LYNNWOOD PUBLIC WORKS RESIDENT ENGINEER AT (425) 670-5214. SPECIALTY PRE-ACTIVITY MEETINGS MAY ALSO BE REQUIRED. SEE CONTRACT DOCUMENTS.

4. BEFORE ANY ON-SITE MOBILIZATION OR WORK MAY BEGIN, CONTRACTOR MUST HAVE AN APPROVED SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN. SUBMITTAL OF THESE PLANS FOR APPROVAL PRIOR TO THE PRECONSTRUCTION MEETING IS REQUIRED. SEE SPECIAL PROVISIONS, SECTION 8-01.3(1)A.

5. CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER AND SHALL BE RESOLVED PRIOR TO PROCEEDING WITH AFFECTED CONSTRUCTION.

6. THE CONTRACTOR SHALL KEEP A SET OF PLANS ON SITE AT ALL TIMES FOR RECORDING "AS-BUILT" INFORMATION. SEE SECTION 1-05.18 OF THE PROJECT SPECIAL PROVISIONS FOR RECORD DRAWINGS REQUIREMENTS.

7. THE LOCATION OF UTILITIES IS APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. UTILITIES SHOWN HERE ARE FOR THE PURPOSE OF ASSISTING THE CONTRACTOR IN LOCATING SAID UTILITIES. THE CONTRACTOR SHALL CONTACT THE UNDERGROUND UTILITIES LOCATION CENTER (1-800-424-5555 OR 811) 48 HOURS MINIMUM PRIOR TO THE BEGINNING OF CONSTRUCTION AND OBTAIN ON-SITE UTILITIES LOCATIONS. CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH AFFECTED CONSTRUCTION.

8. SEE SECTION 1-07.6 OF THE SPECIAL PROVISIONS FOR A NON-INCLUSIVE LIST OF PERMITS KNOWN TO BE REQUIRED FOR THIS PROJECT. PERMITS OBTAINED AND PAID FOR BY CITY OF LYNNWOOD WILL BE TRANSFERRED TO THE CONTRACTOR AND PICKED UP BY THEM PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR WILL BE REQUIRED TO SHOW A CONTRACTOR'S LICENSE AND A CITY OF LYNNWOOD BUSINESS LICENSE BEFORE PERMITS WILL BE ISSUED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL OTHER APPLICABLE PERMITS AS MAY BE REQUIRED BY CITY OF LYNNWOOD OR OTHER PERMITTING AGENCIES.

9. CONSTRUCTION NOISE SHALL BE LIMITED AS PER LYNNWOOD MUNICIPAL CODE (SECTION 10.12.300) FROM 7AM TO 6PM (M-F). WEEKEND WORK PROHIBITED UNLESS APPROVED PER LMC 10.12.300. SEE ALSO SECTION 1-07.1(6), NOISE CONTROL AND WORK PERFORMED AT NIGHT, IN THE SPECIAL PROVISIONS.

10. DATUM SHALL BE CITY OF LYNNWOOD (NAVD88) UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF PUBLIC WORKS. THE BENCHMARK SHALL TIE TO THE CITY OF LYNNWOOD BENCHMARK LIST.

11. APPROVAL MUST BE OBTAINED FROM THE DEPARTMENT OF PUBLIC WORKS BEFORE ANY STRUCTURES, FILL OR OBSTRUCTIONS, INCLUDING FENCES, ARE LOCATED WITHIN ANY DRAINAGE EASEMENT, FLOOD PLAIN OR NATIVE GROWTH PROTECTION EASEMENT. STRUCTURES SHALL NOT BE PERMITTED WITHIN 15 FEET OF THE TOP OF BANK OF ANY CHANNEL OR POND (LMC 13.40.070).

12. WHERE CONSTRUCTION IS CARRIED OUT IN AREAS NOT SPECIFIED ON THE PLANS AND WHICH HAVE EXISTING IMPROVEMENTS, CONTRACTOR SHALL PROVIDE A COPY OF ALL PERMITS, SHOWING APPROVAL FOR SUCH WORK PRIOR TO STARTING. APPROPRIATE MEASURES SHALL BE TAKEN TO RESTORE SUCH AREAS TO CONDITIONS EXISTING PRIOR TO CONSTRUCTION OR AS REQUIRED BY THE CITY OF LYNNWOOD DEPARTMENT OF PUBLIC WORKS.

13. OFF SITE PREMISE STAGING OR STORAGE AREAS SHALL REQUIRE A WRITTEN RELEASE FROM THE AFFECTED PROPERTY OWNER. IN ADDITION, A RELEASE FROM THE CITY SHALL BE REQUIRED DESIGNATING THAT DAMAGE TO CITY PROPERTY IS NEGLIGIBLE OR NON-EXISTENT.

14. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF EMPLOYEES ON THE PROJECT AND SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF FEDERAL, STATE, AND MUNICIPAL SAFETY LAWS AND BUILDING CODES. THE CONTRACTOR SHALL ERECT AND PROPERLY MAINTAIN, AT ALL TIMES, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR PROTECTION OF WORKMEN AND THE PUBLIC; SHALL POST DANGER SIGNS WARNING AGAINST KNOWN OR UNUSUAL HAZARDS; AND SHALL DESIGNATE A RESPONSIBLE MEMBER OF THEIR ORGANIZATION ON THE CONSTRUCTION SITE WHOSE DUTY SHALL BE THE PREVENTION OF ACCIDENTS.

15. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL SIGNS AND DEVICES AND SUBMIT A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH SECTION 1-10.2(2) OF THE SPECIAL PROVISIONS. ALL TRAFFIC MARKINGS AND SIGNAGE TO BE IN ACCORDANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND CITY OF LYNNWOOD CURRENT STANDARDS. TRAFFIC CONTROL SIGNS AND DEVICES AS SET FORTH ON APPROVED TRAFFIC CONTROL PLANS ARE TO BE INSTALLED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION WITHIN THE PROJECT SITE.

16. THIS WORK TO TAKE PLACE DURING NORMAL TREATMENT PLANT OPERATIONS. CONNECTIONS TO EXISTING STRUCTURES WILL REQUIRE TEMPORARY SHUTDOWNS OF UNIT PROCESSES. COORDINATE WITH CITY OPERATIONS STAFF TO IDENTIFY CONSTRUCTION WINDOWS TO PERFORM THE WORK WITH MINIMAL PROCESS SHUTDOWNS.

17. THE CONTRACTOR SHALL DISPOSE OF ALL REMOVED OR REPLACED MATERIAL AND EQUIPMENT IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS, EXCEPT THOSE ITEMS DESIGNATED BY THE OWNER FOR SALVAGING. SALVAGED ITEMS SHALL REMAIN THE PROPERTY OF THE OWNER, AND SHALL BE CAREFULLY REMOVED AND STORED AS DIRECTED.

18. ALL STRUCTURES, LOTS, SWALES, DITCHES, CURBS, SPEED BUMPS, FENCES, WALLS, MAILBOXES, SIGNS, POLES, GUY WIRES, PIPING, AND UTILITIES DISTURBED DURING CONSTRUCTION TO BE RESTORED TO EXISTING CONDITION UNLESS OTHERWISE SPECIFIED. SUCH REPAIR SHALL BE CONSIDERED INCIDENTAL.

19. PROVIDE "AS CONSTRUCTED" DRAWINGS INDICATING ALL CHANGES IN GRADE, ALIGNMENT, FITTINGS AND MATERIALS INSTALLED AND ANY OTHER UTILITIES OR OBSTACLES NOT SO INDICATED ON THESE PLANS.

20. AT THE END OF EACH WORK DAY ALL OPEN TRENCHES SHALL BE BACKFILLED AND ALL TRENCHES WITHIN STREETS SHALL BE TEMPORARILY PAVED OR COVERED TO THE SATISFACTION OF THE OWNER.

21. NO UNDERGROUND WORK SHALL BE "BURIED" UNTIL INSPECTED AND APPROVED BY THE OWNER'S REPRESENTATIVE.

ABBREVIATIONS

AB	ANCHOR BOLT
AC	ASPHALTIC CONCRETE
ANC	ANCHOR
APPROX	APPROXIMATE
APPVD	APPROVED
ASSY	ASSEMBLY
BFV	BUTTERFLY VALVE
BLDG	BUILDING
BM	BEAM
BO	BLOW-OFF
BOT	BOTTOM
BV	BALL VALVE
CA	COMPRESSED AIR
CAP	CORRUGATED ALUMINUM PIPE
CL	CENTER LINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CND	CONDUIT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
COP	COPPER
CORP	CORPORATION
CPLG	COUPLING
CR	CRUSHED ROCK
CSP	CONCRETE SEWER PIPE
D	DRAIN
DET	DETAIL
DI	DUCTILE IRON
DIA	DIAMETER
DIM	DIMENSION
DR	DRAIN
DWG	DRAWING
DWY	DRIVEWAY
EA	EACH
EL	ELEVATION
E/ELEC	ELECTRIC(AL)
EOP	EDGE OF PAVEMENT
EQ	EQUAL
ESMT	EASEMENT
EW	EACH WAY
EXIST	EXISTING
FA	FOUL AIR
FAB	FABRICATE
FD	FLOOR DRAIN
FIN GR	FINISH GRADE
FITG	FITTING
FLEX	FLEXIBLE
FLG	FLANGE
FLR	FLOOR
FM	FORCE MAIN
FRP	FIBER REINFORCED PLASTIC
FTG	FOOTING
GALV	GALVANIZED
GRVL	GRAVEL
GV	GATE VALVE
HORIZ	HORIZONTAL
HORIZ	HORIZONTAL
ID	INSIDE DIAMETER
J-BOX	JUNCTION BOX
JT	JOINT
LB	POUNDS
LF	LINEAR FOOT
LONGIT	LONGITUDINAL
LS	LONG SLEEVE
MATL	MATERIAL
MAX	MAXIMUM
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
ML	MIXED LIQUOR
MMDWF	MAX MONTH DRY WEATHER FLOW
MMWWF	MAX MONTH WET WEATHER FLOW
NIC	NOT IN CONTRACT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OHA	OREGON HEALTH AUTHORITY
OPNG	OPENING
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OWRD	OREGON WATER RESOURCES DEPARTMENT
PE	PLAIN END
PERF	PERFORATED
PERP	PERPENDICULAR
PDF	PEAK DAY FLOW
PGE	PORTLAND GENERAL ELECTRIC
PL	PLATE
PROP	PROPOSED
PRV	PRESSURE REDUCING VALVE
PS	PUMP STATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PW	POTABLE WATER
RAS	RETURN ACTIVATED SLUDGE
RDCR	REDUCER
REINF	REINFORCE(D)(ING)(MENT)
REQ'D	REQUIRED
RESTR	RESTRAINED
RFCA	RESTRAINED FLANGED COUPLING ADAPTER
RS	RAW SEWAGE
R/W	RIGHT-OF-WAY
SCHED	SCHEDULE
SD	STORM DRAIN
SF	SQUARE FEET
SHT	SHEET
SLP	SLOPE
SPECS	SPECIFICATIONS
SPL	SPOOL
SS	SANITARY SEWER
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STL	STEEL
T	TELEPHONE
T&B	TOP AND BOTTOM
TB	THRUST BLOCK
TELM	TELEMETRY
TEMP	TEMPORARY
THK	THICK
TRANSV	TRANSVERSE
TYP	TYPICAL
VV	VALVE VAULT
VERT	VERTICAL
W	WATER
W/	WITH
XFMR	TRANSFORMER

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LYNNWOOD WASHINGTON
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GENERAL

GENERAL NOTES AND ABBREVIATIONS

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: MAY 2022

SHEET
G-2
2 33

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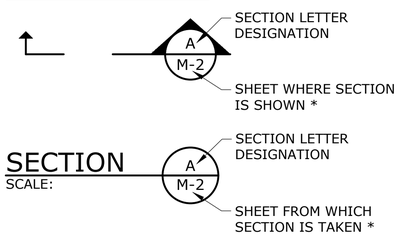
PIPE & FITTING SYMBOLS

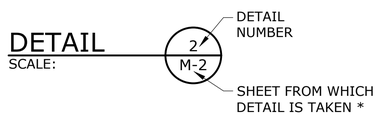
PLANT	SCHEMATIC	
		WELDED JOINT
		FLANGED JOINT
		GROOVED END JOINT
		MECHANICAL JOINT
		PUSH-ON JOINT (RUBBER GASKET)
		FLANGED COUPLING ADAPTER
		DOUBLE BALL FLEXIBLE EXTENSION COUPLING
		FLEXIBLE COUPLING W/ THRUST RING
		90° BEND UP
		90° BEND DOWN
		TEE UP
		TEE DOWN
		LATERAL UP
		LATERAL DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
		UNION
		BLIND FLANGE
		CAP
		LONG SLEEVE
		FLEXIBLE COUPLING
		FITTING (45°)

SECTION AND DETAIL DESIGNATIONS

SECTION DESIGNATIONS



DETAIL DESIGNATIONS



* NOTE: IF PLAN AND SECTION FOR DETAIL CALL-OUT AND DETAIL ARE SHOWN ON THE SAME DRAWING, DRAWING NUMBER IS REPLACED WITH A DASH.

TOPOGRAPHIC LEGEND

	EXISTING	PROPOSED
WATERLINE	10"W	12"DI W
ELECTRICITY	E	E
GAS	4"G	4"G
FIBER OPTIC	FO	2"FO
TELEPHONE/TELEMETRY	T	T
CABLE TELEVISION	CATV	CATV
SANITARY SEWER LINE	8"SS	8"SS
SANITARY SEWER FORCE MAIN	6"FM	6"FM
STORM DRAIN	8"SD	8"SD
CULVERT		18"D
ABANDON PIPE		
DRAINAGE DITCH		
CREEK CENTERLINE		
BARBWIRE FENCE		
CHAIN LINK FENCE		
TEMPORARY SILT FENCE		
STRAW WATTLES		
TREE/BUSH LINE		
CENTERLINE		
EASEMENT/PROPERTY LINE		
RIGHT-OF-WAY		
CITY LIMIT		
EDGE OF PAVEMENT/AC		
EDGE OF GRAVEL		
CURB		
SIDEWALK	S/W	
STRUCTURE OR FACILITY		
CONTOUR MINOR		
CONTOUR MAJOR	200	200
MANHOLE		
CLEAN-OUT		
CATCH BASIN/FIELD INLET		
ECOLOGY BLOCK		
VALVE		
FIRE HYDRANT ASSEMBLY		
WATER METER		
REMOVABLE BOLLARD		
BOLLARD		
SURFACE ELEVATION	+ 176.63	+ 176.63

PIPING SCHEDULE

SERVICE	DESCRIPTION	MATERIAL	SIZE	SPECIFICATION
D	DRAIN	PVC - SCH 40	6 IN	40 05 31
PW	POTABLE WATER	PVC - SCH 40	1 IN	40 05 31
CA	COMPRESSED AIR	COP	$\frac{3}{4}$ IN	40 05 13
FA	FOUL AIR	PVC - SCH 40	8 - 12 IN	40 05 31
SD	STORM DRAIN	PVC - SCH 40	8 IN	40 05 31
CHEM	CHEMICAL	PVC - SCH 80	</= 1 IN	40 05 31

VALVE SYMBOLS

PLANT	SCHEMATIC	
		BUTTERFLY VALVE
		GATE VALVE
		GLOBE VALVE
		BALL VALVE
		BALANCING VALVE
		PLUG VALVE (TOP)
		PLUG VALVE (SIDE)
		3-WAY PLUG VALVE
		CHECK VALVE
		SWING CHECK VALVE
		DOUBLE CHECK ASSEMBLY
		BALL SWING CHECK
		SILENT CHECK VALVE
		PRESSURE REDUCING VALVE
		ALTITUDE CONTROL VALVE
		SOLENOID VALVE
		RELIEF VALVE
		NEEDLE VALVE
		HOSE BIBB (SIDE)
		REDUCED PRESSURE BACKFLOW PREVENTER W/ GATE VALVES
		HOSE BIBB (TOP)

MISCELLANEOUS PIPING SYMBOLS

- STRAINER
- SIGHT GLASS
- PRESSURE GAUGE W/ COCK
- PRESSURE SWITCH W/ COCK
- M — METER
- SP — SLIP-ON JOINT PIPE
- R — RESTRAINED JOINT PIPE

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NOTICE

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GENERAL

GENERAL LEGEND

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: MAY 2022

SHEET G-3

3 OF 33

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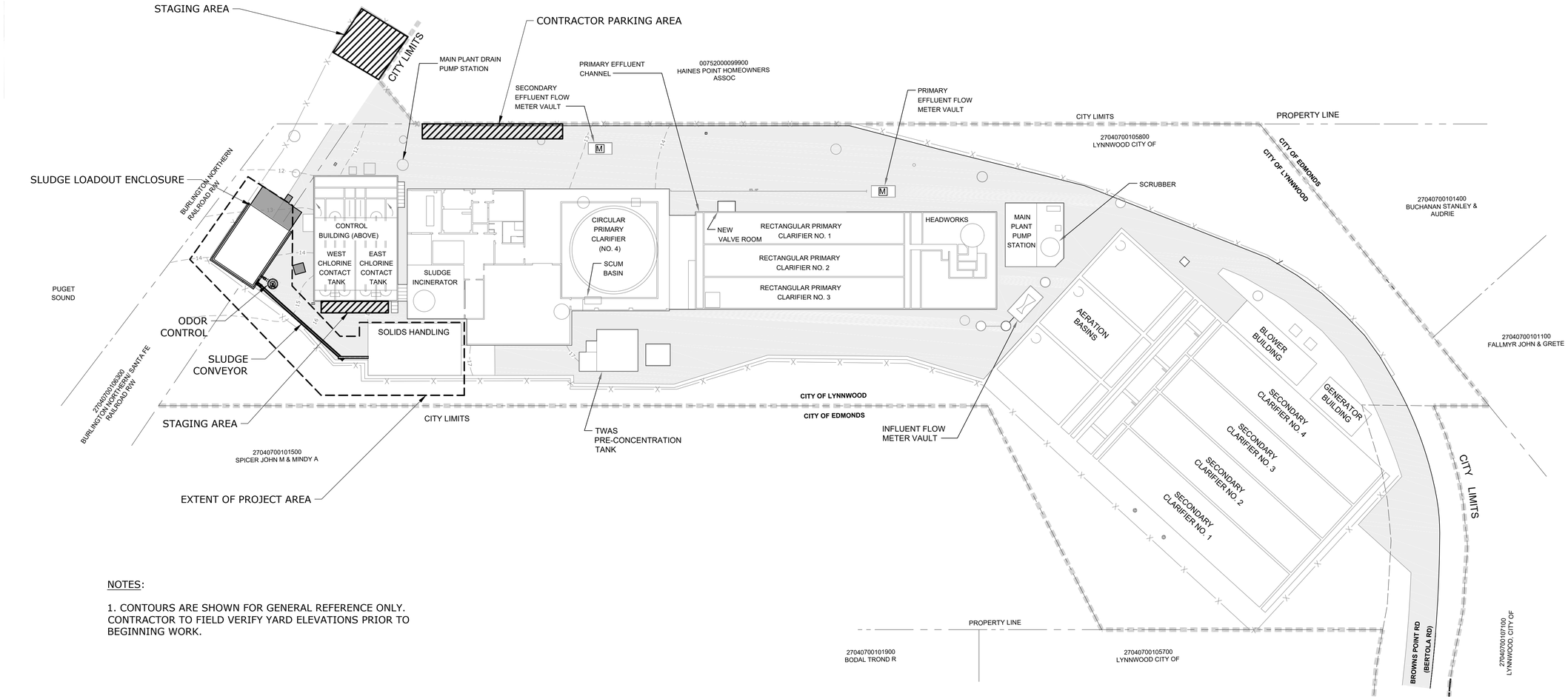

NOTES:

1. CONTOURS ARE SHOWN FOR GENERAL REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY YARD ELEVATIONS PRIOR TO BEGINNING WORK.

PLAN
SCALE: 1" = 30'

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CIVIL

OVERALL SITE PLAN

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: MAY 2022

SHEET C-1

4 OF 33

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LEGEND

INLET PROTECTION,
SEE DET, SHT C-4

SEDIMENT FENCING,
SEE DET, SHT C-4

EROSION CONTROL NOTES

1. REFER TO GENERAL PLAN NOTES FOR ADDITIONAL REQUIREMENTS.

2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS APPROVED, AND THE POTENTIAL FOR ON-SITE EROSION HAS PASSED.

3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN (INCLUDING INDIVIDUAL TREES TO BE SAVED) SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.

4. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED AS OUTLINED ON THE TYPICAL CONSTRUCTION SEQUENCE AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM OR VIOLATE APPLICABLE WATER STANDARDS.

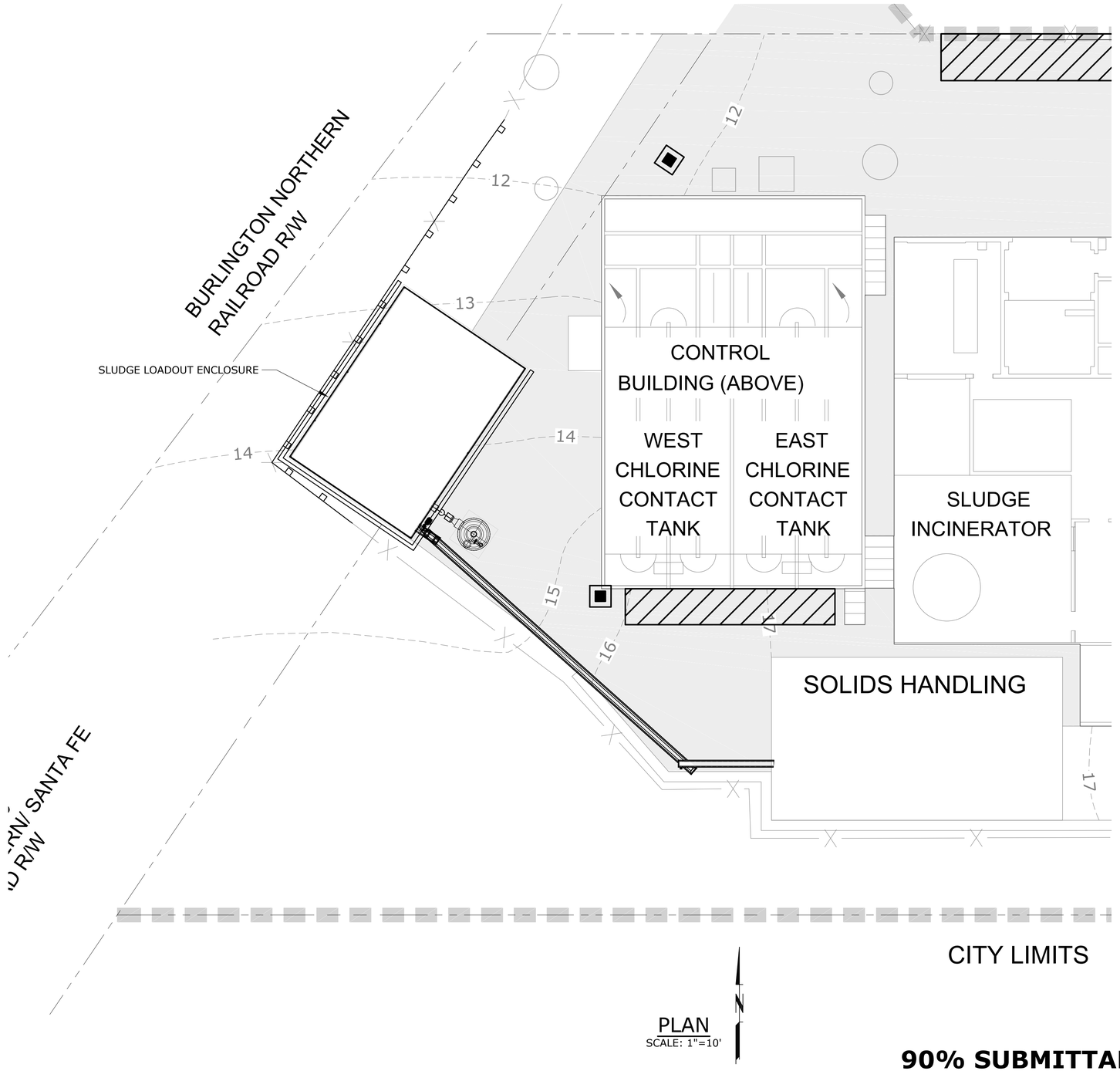
5. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED (E.G. ADDITIONAL SUMPS, RELOCATION OF DITCHES AND SILT FENCES, ETC.) AS NEEDED FOR UNEXPECTED STORM EVENTS.

6. CLEAN OR REMOVE AND REPLACE INLET PROTECTION DEVICES WHEN SEDIMENT HAS FILLED ONETHIRD OF THE AVAILABLE STORAGE. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.

7. STOCKPILES ARE TO BE LOCATED IN SAFE AREAS AND ADEQUATELY PROTECTED BY TEMPORARY SECURED PLASTIC COVER.

8. ANY AREA STRIPPED OF VEGETATION, INCLUDING ROADWAY EMBANKMENTS, WHERE NO FURTHER WORK IS ANTICIPATED FOR A PERIOD OF 2 DAYS DURING THE WET SEASON OR 7 DAYS DURING THE DRY, SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G. SEEDING, MULCHING, NETTING, EROSION BLANKETS, ETC.).

9. ADDITIONAL BMPS MAY BE REQUIRED AT ANY TIME DURING CONSTRUCTION



PLAN
SCALE: 1"=10'

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LYNNWOOD WWTP INTERIM SLUDGE DISPOSAL

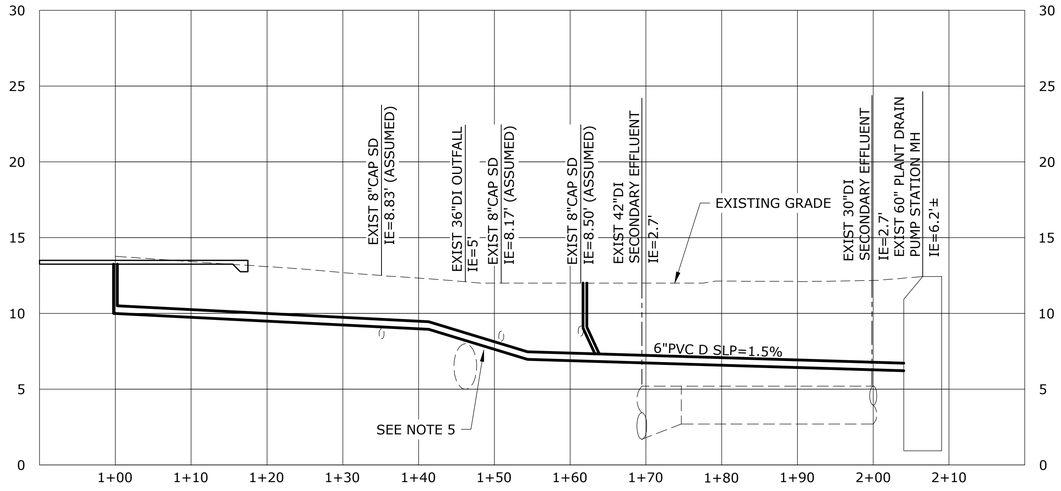
CIVIL

TEMPORARY EROSION AND SEDIMENT CONTROL PLAN

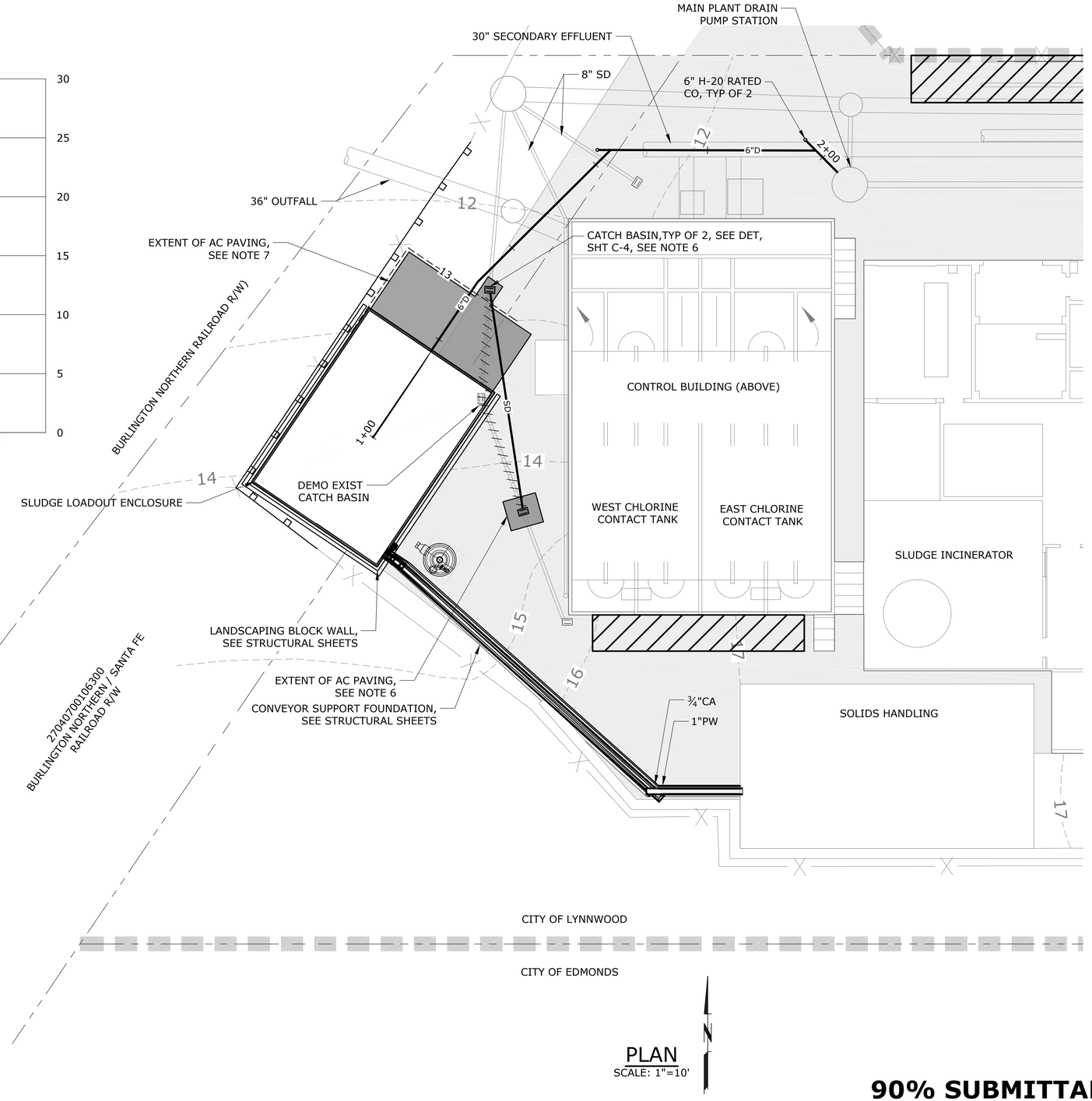
PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: MAY 2022

SHEET
C-2
5 OF 33

H:\EVT_Projects\21\3310 - Lynnwood, WA - WWTP Interim Sludge Disposal Design And SDC\CAD\Sheets\21-3310-WA-C.dwg C-2 5/12/2022 9:10 AM ELI.JEFFERSON 23.0s (LMS Tech)



DRAIN PIPE PROFILE (1)
SCALE: 1"=10' HORIZ, 1"=5' VERT



PLAN
SCALE: 1"=10'

90% SUBMITTAL

SHEET NOTES:

1. CONTOURS SHOWN ARE FOR GENERAL REFERENCE ONLY. CONTRACTOR TO FIELD VERIFY ELEVATIONS PRIOR TO COMMENCING WORK

2. CONTRACTOR TO POTHOLE ALL PIPE CROSSINGS PRIOR TO COMMENCING WORK. CONFIRM NUMBER OF POTHOLES WITH ENGINEER PRIOR TO POTHOLING.

3. NOTIFY ENGINEER WITHIN 24 HOURS OF ANY POTENTIAL CONFLICTS STEMMING FROM POTHOLING OR SITE SURVEY.

4. PVC DRAIN SHALL MAINTAIN MINIMUM 3' OF COVER OVER THE ENTIRE ALIGNMENT.

5. DEFLECT 6" DRAIN DOWNWARD USING FITTINGS AS NECESSARY TO AVOID EXISTING 8" FOUNDATION DRAIN.

6. CONNECT EXISTING CAP TO THE PROPOSED CATCH BASINS,

7. ADD AC PAVEMENT IN FRONT OF THE SLUDGE LOADOUT ENCLOSURE TO CREATE A SMOOTH TRANSITION FROM THE YARD INTO THE ENCLOSURE

NO.	DATE	BY	REVISION

NOTICE
0 ½ 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE

PMD DESIGNED
NEM DRAWN
XXX CHECKED

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LYNNWOOD WASHINGTON
LYNNWOOD WWTP INTERIM SLUDGE DISPOSAL

CIVIL

YARD PIPING AND CONVEYANCE PLAN

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: MAY 2022

SHEET C-3

6 33

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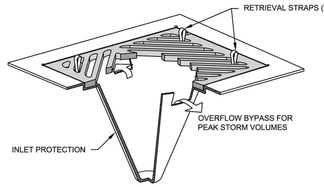


NOTES:

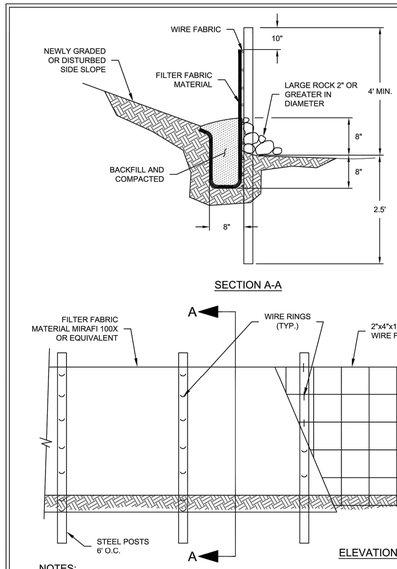
1. INSERT SHALL BE INSTALLED PRIOR TO CONSTRUCTION ACTIVITY, OR UPON PLACEMENT OF A NEW CATCH BASIN.
2. SEDIMENT SHALL BE REMOVED FROM THE UNIT WHEN IT BECOMES ONE-THIRD FULL. DISPOSE OF ACCUMUALTED SEDIMENT ACCORDING TO LOCAL, STATE AND FEDERAL REGULATIONS.
3. SEDIMENT REMOVAL SHALL BE ACCOMPLISHED BY REMOVING THE INSERT, EMPTYING, AND RE-INSERTING IT INTO THE CATCH BASIN.
4. BELOW INLET GRATE DEVICES SHALL BE PREFABRICATED UNITS SPECIFICALLY DESIGNED FOR INLET PROTECTION AND SHALL REMAIN SECURELY ATTACHED TO THE DRAINAGE STRUCTURE WHEN LOADED WITH SEDIMENT AND DEBRIS TO ONE-THIRD TOTAL CAPACITY.

LYNNWOOD WASHINGTON PUBLIC WORKS

INLET PROTECTION

D-TESC-4-Inlet-Protection.dwg

DRAWING NUMBER	D-TESC-4
SCALE	NONE
REVISION DATE	05/21
DEPARTMENT	PW



NOTES:

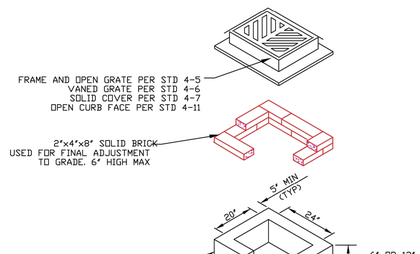
1. HIGH VISIBILITY SILT FENCE MAY BE USED IN LIEU OF INSTALLING BOTH TRADITIONAL SILT FENCE AND HIGH VISIBILITY FENCE AS LONG AS IT IS NOT MOVED DURING CONSTRUCTION.

LYNNWOOD WASHINGTON PUBLIC WORKS

SILT FENCE

D-TESC-1-Silt-Fence.dwg

DRAWING NUMBER	D-TESC-1
SCALE	NONE
REVISION DATE	10/21
DEPARTMENT	PW



CATCH BASIN TO CONFORM TO WSDOT STANDARD PLAN B-1

NOTES:

MAXIMUM DEPTH FROM FINISH GRADE TO PIPE INVERT SHALL BE 5 FEET. DEPTHS OVER 5 FEET SEE DETAIL #4-4

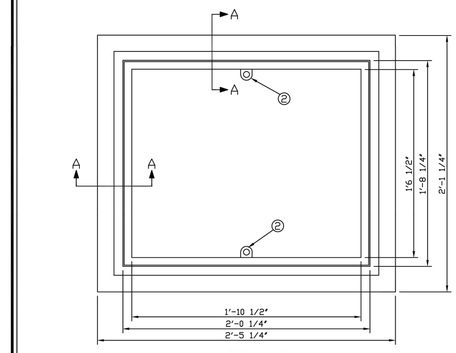
PIPES SHALL NOT PENETRATE MORE THAN 3" BEYOND WALL, AND PENETRATION SHALL BE MUDDED INTO A SMOOTH ROUNDED CONDITION.

LYNNWOOD WASHINGTON PUBLIC WORKS

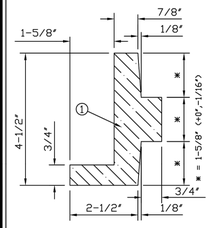
CATCH BASIN TYPE I

J:\S1standard_Plans

DRAWING NUMBER	STD4-2
SCALE	NONE
REVISION DATE	08/03
DEPARTMENT	PW



TOP VIEW



NOTES:

1. MATERIAL USED SHALL BE CAST IRON PER ASTM-A48, CLASS 30. FRAME SHALL HAVE A BITUMINOUS COATING APPLIED.
2. WHEN A LOCKING GRATE OR COVER IS REQUIRED THE FRAME SHALL BE FABRICATED SO AS TO ACCEPT TWO (2) 5/8" STAINLESS STEEL SOCKET HEAD CAP SCREWS OF GRATE OR COVER.
3. FOR APPROVED GRATES AND SOLID COVER SEE STD DWG'S 4-6 & 4-8

LYNNWOOD WASHINGTON PUBLIC WORKS

FRAME FOR GRATE OR SOLID COVER

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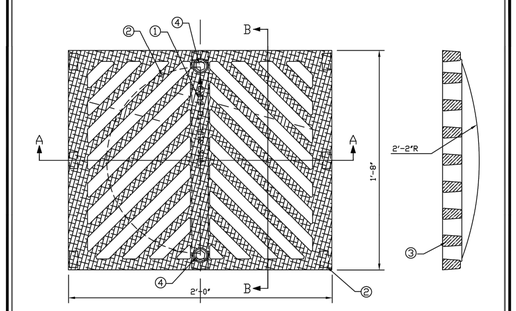
DRAWING NUMBER	STD4-5
SCALE	NONE
REVISION DATE	08/03
DEPARTMENT	PW



NOTES:

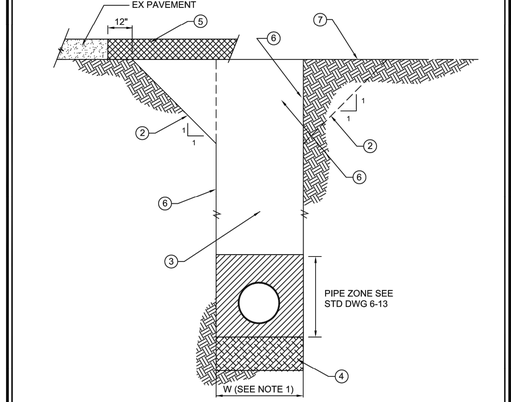
1. FOUNDRY NAME, THIS SIDE TO CURB W/ARROW AND CDI FOR DUCTILE IRON SHALL BE EMBOSSED ON TOP OF GRATE WITH 1/16" RECESSED LETTERS.
2. SEATING OF GRATE SHALL BE ACCOMPLISHED BY ONE OF THE FOLLOWING:
   A. INTEGRALLY CAST PADS (1-1/2"x3/4"x1/8").
   B. MACHINE BOTTOM SURFACE OUTSIDE A 17" DIA
3. MATERIAL USED SHALL BE DUCTILE IRON PER ASTM-A536, GRADE 80-55-06. ALL CASTINGS SHALL HAVE A BITUMINOUS COATING.
4. WHEN LOCKING GRATE REQUIRED HOLES WILL BE PROVIDED IN CASTING TO ALLOW FOR TWO 5/8" DIA STAINLESS STEEL SOCKET HEAD CAP SCREWS SO THAT NO PART OF HEAD PROTRUDES ABOVE TOP OF CASTING.
5. GRATE TO BE USED WITH FRAME SHOWN IN STANDARD DWG 4-5.

LYNNWOOD WASHINGTON PUBLIC WORKS

CATCH BASIN GRATE

J:\S1standard_Plans

DRAWING NUMBER	STD4-6
SCALE	NONE
REVISION DATE	08/03
DEPARTMENT	PW



NOTES

1. W = MAXIMUM WIDTH OF TRENCH. FOR PIPES 15" OR LESS IN DIA W=40". FOR PIPES 18" OR GREATER W=1-1/2 x I.D. + 18".
2. ALTERNATE LAID-BACK TRENCH TO MEET O.S.H.A. REQUIREMENTS (NO SLOPES STEEPER THAN 1:1 EXCEPT FOR ROCK).
3. TRENCH BACKFILL MATERIAL SHALL BE 5/8" CSTC OR 1 1/4" CSBC, CDF*, OR APPROVED ALTERNATIVE. SEE 6-17 FOR COMPACTION REQUIREMENTS.
4. FOUNDATION GRAVEL IF REQUIRED BY THE ENGINEER TO REPLACE UNSUITABLE MATIERAL. SHALL BE FOUNDATION MATERIAL CLASS A. WSDOT 9-03.17
5. SEE CITY OF LYNNWOOD STANDARD DWG 3-18 AND 3-18A FOR PAVEMENT
6. VERTICAL TRENCH WALLS WITH SHORING TO CONFORM TO O.S.H.A. REGULATIONS.
7. SUBGRADE OR GROUND SURFACE IN NON-PAVED AREAS.

ALL EXCAVATED MATERIAL TO BE LOADED OUT.

*CDF SHALL BE DESIGNED TO HAVE A MINIMUM 28-DAY STRENGTH OF 50PSI AND A MAXIMUM 28-DAY STRENGTH NOT TO EXCEED 300PSI. THE CDF CONSISTENCY SHALL BE FLOWABLE (APPROXIMATE SLUMP 3 TO 10 INCHES).

LYNNWOOD WASHINGTON PUBLIC WORKS

TYPICAL TRENCH SECTION IN RIGHT-OF-WAY

J:\S1standard_Plans

DRAWING NUMBER	STD6-12
SCALE	NONE
REVISION DATE	04/14
DEPARTMENT	PW

90% SUBMITTAL

NO.	DATE	BY	REVISION

NOTICE

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LYNNWOOD WASHINGTON

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CIVIL

CIVIL DETAILS 1 OF 2

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: MAY 2022

SHEET
C-4
7 OF 33

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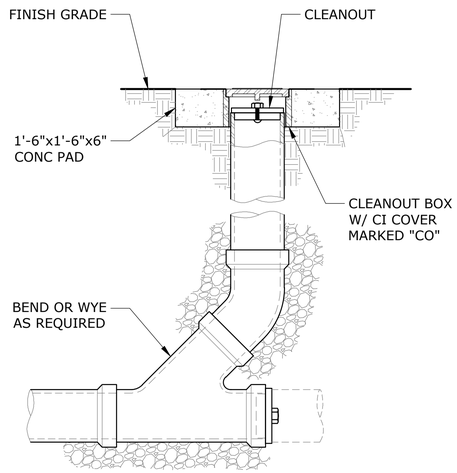
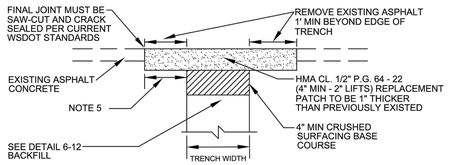


CLEANOUT (1)
SCALE: NTS



PAVEMENT PATCH

NOTES

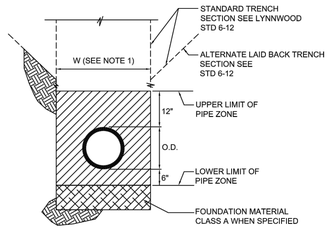
1. ALL TRENCHES IN ROADWAY AREAS SHALL BE BACKFILLED AND PATCHED WITH TEMPORARY ASPHALT AT THE END OF EACH WORK DAY, UNLESS PERMISSION IS GRANTED TO DO OTHERWISE BY THE CITY.
2. ALL TEMPORARY PATCHES ON TRENCHES SHALL BE PERMANENTLY PATCHED AS SOON AS POSSIBLE UPON COMPLETION OF WORK WITHIN THE ROADWAY AREA.
3. REPLACE AND RESTORE ALL SURFACE IMPROVEMENTS (I.E. TRAFFIC BUTTONS, CURBING, STRIPING) AS DIRECTED BY THE CITY.
4. IF THERE ARE MORE THAN 3 PARALLEL OR PERPENDICULAR PATCHES PROPOSED WITHIN 100 LINEAL FEET OF ROADWAY, THE DEVELOPER SHALL BE RESPONSIBLE TO GRIND AND OVERLAY THE ENTIRE AREA TO PUBLIC WORKS STANDARDS.
5. SEE COL STD 3-18C FOR PAVEMENT PATCHING REQUIREMENTS ON ARTERIALS AND OVERLAYS LESS THAN 5 YEARS OLD OR COL STD 3-18B FOR ALTERNATE PATCH DETAIL TO STD 3-18C.

LYNNWOOD WASHINGTON PUBLIC WORKS

PAVEMENT PATCHING DETAILS

I:\Standard_Plans

DRAWING NUMBER	STD3-18A
SCALE	NONE
REVISION DATE	12/16
DEPARTMENT	PW



NOTES

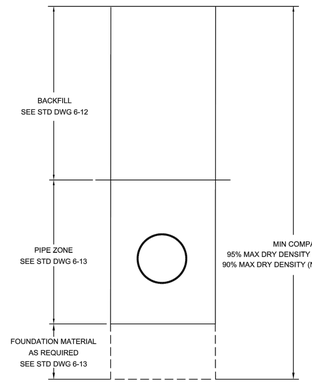
1. LIMITS OF TRENCH
   W = MAXIMUM WIDTH OF TRENCH
   FOR PIPES 15" OR LESS IN DIAMETER
   W= 40" MINIMUM
   FOR PIPES 18" OR GREATER IN DIAMETER
   W= 1 ½ X I.D. + 18".
2. GRAVEL BACKFILL FOR PIPE ZONE BEDDING SHALL CONSIST OF CRUSHED, PROCESSED, OR NATURALLY OCCURRING GRANULAR MATERIAL. IT SHALL BE ESSENTIALLY FREE FROM VARIOUS TYPES OF WOOD WASTE OR OTHER EXTRANEOUS OR OBJECTIONABLE MATERIALS. IT SHALL HAVE SUCH CHARACTERISTICS OF SIZE AND SHAPE THAT IT WILL COMPACT READILY PER WSDOT 9-03.12 (3).
3. PEA GRAVEL, SAND, ⅜" CHIPS, CDF AND ⅜" CSTC MAY BE REQUIRED AT THE DISCRETION OF THE PUBLIC WORKS INSPECTOR.
4. ALL FOUNDATION MATERIAL, IF REQUIRED, SHALL BE FOUNDATION MATERIAL CLASS "A" PER WSDOT SPEC 9-03.17
   REQUIRED COMPACTION PROCEDURES SHALL COMPLY WITH WSDOT SPEC 2-06. SEE LYNNWOOD STD. 6-17 FOR ADDITIONAL INFORMATION.

LYNNWOOD WASHINGTON PUBLIC WORKS

BEDDING FOR PIPE IN TRENCHES

I:\Standard_Plans

DRAWING NUMBER	STD6-13
SCALE	NONE
REVISION DATE	03/14
DEPARTMENT	PW



SECTION

NOTES:

1. ALL BACKFILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12 INCHES BEFORE COMPACTION UNLESS AUTHORIZED BY THE ENGINEER DUE TO THE CHARACTER OF THE MATERIAL AND THE COMPACTING EQUIPMENT.
2. MECHANICAL COMPACTION OF BACKFILL MATERIAL SHALL NOT BEGIN UNTIL THE DEPTH OF COMPACTED BACKFILL MATERIAL IS 2 FEET ABOVE THE TOP OF PIPE.
3. EACH LIFT SHALL BE MECHANICALLY COMPACTED TO THE REQUIRED DENSITY PRIOR TO PLACING SUCCEEDING LIFTS OF BACKFILL MATERIAL.
4. COMPACTION TESTS SHALL BE AS REQUIRED BY THE CITY ENGINEER, BUT IN NO CASE LESS THAN 2 TESTS EVERY 200 FEET OF TRENCH (ONE AT SUBGRADE AND ONE AT 50% OF TRENCH DEPTH).

LYNNWOOD WASHINGTON PUBLIC WORKS

TYPICAL TRENCH COMPACTION

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DRAWING NUMBER	STD6-17
SCALE	NONE
REVISION DATE	01/14
DEPARTMENT	PW

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NO.	DATE	BY	REVISION

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CIVIL

CIVIL DETAILS 2 OF 2

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: MAY 2022

SHEET
C-5
8 OF 33

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GENERAL STRUCTURAL NOTES:

1. THESE NOTES ARE GENERAL IN NATURE AND ARE INTENDED TO SET MINIMUM STANDARDS FOR CONSTRUCTION. THE CONTRACTOR SHALL BE COMPLETELY FAMILIAR WITH THE CONTRACT DOCUMENTS AND HAVE A COPY OF THEM ON SITE AT ALL TIMES.
2. FOR ANY PORTION OF THE CONSTRUCTION WHICH THE CONTRACTOR IS UNABLE TO ASCERTAIN THE REQUIRED CONSTRUCTION OR WHERE CONFLICTS EXIST, IT IS THE CONTRACTOR'S RESPONSIBILITY TO REQUEST ADDITIONAL INFORMATION (RFIs) AND/OR CLARIFICATIONS BEFORE CONSTRUCTION.
3. ALL WORK SHALL BE IN STRICT CONFORMANCE WITH THE 2018 INTERNATIONAL BUILDING CODE (IBC) AS AMENDED BY THE STATE OF WASHINGTON.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS BEFORE CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES.
5. THE CONTRACTOR AND SUPPLIERS SHALL ENSURE COORDINATION OF CONTRACTOR SUPPLIED/DESIGNED ELEMENTS AND DEFERRED SUBMITTALS WITH ALL DESIGN DISCIPLINES WITHIN THE CONSTRUCTION SET. COORDINATION SHALL IDENTIFY AND RECONCILE CONFLICTS BETWEEN THE CONTRACTOR SUPPLIED/DESIGNED ELEMENTS AND THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION AND DELIVERY TO THE PROJECT SITE. THE PROJECT ENGINEER SHALL BE NOTIFIED IF CONFLICTS EXIST.
6. THE CONTRACT STRUCTURAL DRAWINGS REPRESENT THE FINISHED STRUCTURE. METHODS, PROCEDURES, AND SEQUENCE OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.
7. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN LIVE LOAD FOR THE STRUCTURE. PROVIDE SHORING AND/OR BRACING WHERE LOADS EXCEED DESIGN CAPACITY AND WHERE STRUCTURES HAVE NOT ATTAINED DESIGN STRENGTH.
8. MECHANICAL AND ELECTRICAL FEATURES ARE OUTSIDE THE STRUCTURAL SCOPE OF WORK. ANY DEPICTION OF SUCH FEATURES ON THE STRUCTURAL DRAWINGS ARE NOT INTENDED TO BE USED FOR CONSTRUCTION. REPRESENTATION OF SUCH FEATURES ON THESE DRAWINGS MAY OR MAY NOT BE ACCURATE. REFER TO MECHANICAL OR ELECTRICAL DRAWINGS AND/OR SPECIFICATIONS.

JOB SITE CONDITIONS AND SAFETY:

CONTRACTOR AGREES THAT THEY SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE ENGINEER AND IT'S REPRESENTATIVE HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE ENGINEER.

DESIGN LOADS: PER 2018 IBC AS AMENDED BY THE STATE OF WASHINGTON

1603.1.2 – ROOF LOADS:	
DEAD LOAD	PER BLDG. MANUF'R
LIVE LOAD	PER BLDG. MANUF'R
1603.1.3 – SNOW LOADS:	
GROUND SNOW LOAD, P_g	25 PSF
FLAT ROOF SNOW LOAD, P_f	PER BLDG. MANUF'R
SNOW LOAD IMPORTANCE FACTOR	1.10
EQUIPMENT LOADS (PER MANUFACTURER):	
SCREW CONVEYOR DEAD LOAD	60 LB/FT
SCREW CONVEYOR LIVE LOAD	25 LB/FT
MOTOR DRIVES	400 LBS.
ODOR CONTROL PIPING	10 LB/FT
1603.1.4 – WIND DESIGN CRITERIA:	
ULTIMATE WIND DESIGN SPEED, V	105 MPH
RISK CATEGORY	III
WIND EXPOSURE	D
1603.1.5 – EARTHQUAKE DESIGN CRITERIA: (PER GEOTECHNICAL REPORT)	
RISK CATEGORY	III
SEISMIC IMPORTANCE FACTOR, I_E	1.25
SITE CLASS	D
DESIGN SPECTRAL ACCELERATION, S_{DS}	0.974 g
DESIGN SPECTRAL ACCELERATION, S_{D1}	0.566 g
SEISMIC DESIGN CATEGORY	D

STRUCTURAL STEEL:

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING GRADES, UNLESS NOTED OTHERWISE ON THE PLANS:

   ROLLED W-SHAPES – ASTM A992, Fy = 50 ksi
   ALL OTHER STEEL ROLLED SECTIONS & PLATES– ASTM A36 GR. 36
   HSS (RECTANGULAR) – ASTM A500 GR. B, Fy = 46 ksi
   HSS (ROUND) – ASTM A500 GR. B, Fy = 42 ksi

2. WELD ACCORDING TO CURRENT AWS STANDARDS WITH E70XX ELECTRODES.
3. WELD SIZES SHOWN ON THE DESIGN DRAWINGS ARE CONSIDERED EFFECTIVE WELD SIZES AND SHALL BE INCREASED IN ACCORDANCE WITH AWS AS REQUIRED BY GAPS OR SKEWS BETWEEN COMPONENTS.
4. ALL STRUCTURAL CONNECTION BOLTS SHALL BE ASTM F3125 GRADE A325, UNLESS NOTED OTHERWISE. ALL COUNTERSUNK BOLTS OR CARRIAGE BOLTS SHALL BE ASTM A307, UNLESS NOTED OTHERWISE.
5. ALL STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED, UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHAPES AND PLATES SHALL BE HOT-DIP GALVANIZED PER ASTM A123. BOLTS, HARDWARE, AND FASTENERS SHALL BE HOT-DIP GALVANIZED PER ASTM 153.
6. DAMAGED GALVANIZED AREAS SHALL BE REPAIRED TO ASTM 780 SPECIFICATIONS. THE THICKNESS OF THE APPLIED COATING SHALL BE A MINIMUM OF 3 MILS (0.003 IN).
7. CONTACT BETWEEN DISSIMILAR METALS SHALL BE ISOLATED USING PHENOLIC OR OTHERWISE APPROVED ISOLATION HARDWARE.

CONCRETE:

1. ALL CONCRETE SHALL BE HARD ROCK CONCRETE MEETING REQUIREMENTS OF ACI-301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS". MIX PROPORTIONS SHALL BE PER ACI-301, METHOD 2 OR THE ALTERNATE PROCEDURE. SUBMIT MIX DESIGN FOR REVIEW BY STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. HANDMIX DESIGN IS ACCEPTABLE FOR FOUNDATION AND PIER POURS.
2. STRUCTURAL CONCRETE SHALL ATTAIN THE FOLLOWING MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS:

TYPE	f'c	SLUMP	w/c	AIR
SLAB-ON-GRADE	4,500 psi	1-4"	0.45	5%
EQUIP. PADS	2,500 psi*	1-4"	0.45	0%

   *SPECIAL INSPECTION NOT REQUIRED PER IBC SECTION 1705.3.

3. ALL CONCRETE EXPOSED TO WEATHER SHALL CONTAIN 5% (±) 1.5% AIR ENTRAINMENT BY VOLUME. AIR ENTRAINMENT SHALL BE IN CONFORMANCE WITH ASTM C260 AND C494.
4. COLD WEATHER PLACEMENT SHALL CONFORM TO ACI-306. HOT WEATHER PLACEMENT SHALL CONFORM TO ACI-305. MECHANICALLY VIBRATE ALL FORMED CONCRETE. DO NOT OVER-VIBRATE. PLACE CONCRETE MONOLITHICALLY BETWEEN CONSTRUCTION OR CONTROL JOINTS. PROTECT ALL CONCRETE FROM PREMATURE DRYING.
5. CHAMFER ALL EXTERIOR CORNERS ¾" UNLESS SHOWN OTHERWISE.
6. SLUMP LIMITS MAY BE INCREASED BY ADDITION OF ADMIXTURES PROVIDED THAT THE WATER/CEMENT RATIO OF THE ORIGINAL MIX DESIGN IS NOT EXCEEDED. WATER REDUCING ADMIXTURE SHALL BE IN CONFORMANCE WITH ASTM494, USED IN CONFORMANCE WITH MANUFACTURER'S INSTRUCTIONS. SUBMIT ADMIXTURES TO ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.
7. CEMENT SHALL BY TYPE I OR II IN CONFORMANCE WITH ASTM C150 OR AN APPROVED SACK MIX. AGGREGATES SHALL BE IN CONFORMANCE WITH ASTM C33 AND USE CRUSHED (NOT ROUND) GRAVEL OR STONE. COARSE AGGREGATES SHALL NOT EXCEED 3/4". WATER SHALL BE CLEAN AND POTABLE.
8. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. GRADE 40 MAY BE USED FOR #3 AND SMALLER TIES AND STIRRUPS. DETAIL AND PLACE ACCORDING TO ACI MANUAL SP-66.
9. UNLESS OTHERWISE NOTED, MINIMUM COVER SHALL BE 1½" FOR #5 AND SMALLER BARS, 2" FOR #6 AND LARGER BARS AND 3" WHEN POURED AGAINST EARTH. SUPPORT REINFORCEMENT WITH APPROVED CHAIRS, SPACERS, OR TIES.
10. SPLICES IN REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN OTHERWISE ON THE PLANS.
11. FORMWORK SHALL BE IN ACCORDANCE WITH ACI-347 "GUIDE TO FORMWORK FOR CONCRETE". FORMS SHALL BE DESIGNED BY THE CONTRACTOR. BRACING SHALL BE PROVIDED AS REQUIRED OR UNTIL THE CONCRETE HAS REACHED ITS SPECIFIED 28-DAY STRENGTH. ALL SHORING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. FORMWORK, SUPPORTS, AND SHORING SHALL PROVIDE FINISHED CONCRETE SURFACES AT ALL FACES: LEVEL, PLUMB, AND TRUE TO DIMENSIONS AND ELEVATIONS SHOWN IN THE DRAWINGS.

FOUNDATIONS:

1. SOIL CHARACTERISTICS HAVE BEEN ASSUMED PER THE 2018 IBC SECTION 1806 PRESUMPTIVE LOAD-BEARING VALUES OF SOILS CONSISTENT WITH CLAY, SANDY CLAY, SILTY CLAY, CLAYEY SILT, SILT AND SANDY SILT (CL, ML, MH AND CH) SOIL TYPES. THE CONTRACTOR SHALL VERIFY THE PRESUMED SOIL TYPES PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER AND ARCHITECT OF NON-CONFORMING IN-SITU CONDITIONS IF PRESENT BEFORE PROCEEDING.
2. ALL FOUNDATIONS TO BEAR ON UNDISTURBED NATIVE MATERIAL, OR GRANULAR COMPACTED FILL.
3. SOIL DESIGN CRITERIA, PER 2018 IBC SECTION 1806:
   3.1. SOIL BEARING – 1,500 PSF
   3.2. ⅓ INCREASE ALLOWED FOR SHORT TERM LOADS
   3.3. SOIL PROFILE – D
   3.4. COHESION – 130 PSF
   3.5. EMBEDDED POLES, PASSIVE – 100 PCF

QUALITY ASSURANCE AND CONTROL PLAN:

QUALITY ASSURANCE FOR SEISMIC RESISTANCE SHALL BE ENSURED BY THE REVIEW OF THE FOLLOWING SUBMITTALS, PERFORMING THE LISTED STRUCTURAL OBSERVATIONS, AND IMPLEMENTATION OF THE LISTED SPECIAL INSPECTION AND MATERIAL TESTING.

SHOP DRAWINGS & SUBMITTALS:

SHOP DRAWINGS, CALCULATIONS, SUBMITTALS AND/OR MILL CERTIFICATES FOR THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE OWNER AND ENGINEER OF RECORD FOR REVIEW A MINIMUM OF 21 DAYS PRIOR TO FABRICATION:

1. MECHANICAL/ELECTRICAL EQUIPMENT ANCHORAGE
2. CONCRETE REINFORCEMENT SHOP DRAWINGS
3. CONCRETE MIX DESIGN
4. STRUCTURAL STEEL SHOP DRAWINGS
5. ODOR CONTROL VESSEL PRODUCT DATA
6. SCREW CONVEYOR PRODUCT DATA
7. PRE-FABRICATED BUILDING STRUCTURAL DRAWINGS AND CALCULATIONS

STRUCTURAL OBSERVATION REQUIREMENTS:

1. THE OWNER SHALL EMPLOY THE ENGINEER OF RECORD OR AN ALTERNATE WASHINGTON LICENSED PROFESSIONAL ENGINEER, APPROVED BY THE ENGINEER OF RECORD, TO PERFORM STRUCTURAL OBSERVATIONS IN ACCORDANCE WITH SECTION 1704.6 OF THE INTERNATIONAL BUILDING CODE.
2. STRUCTURAL OBSERVATION IS THE VISUAL OBSERVATION OF THE STRUCTURAL SYSTEM BY A REGISTERED DESIGN PROFESSIONAL FOR GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF THE STRUCTURAL SYSTEM. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY FOR ANY OTHER INSPECTION CRITERIA, INCLUDING SPECIAL INSPECTION, AS REQUIRED BY THE BUILDING OFFICIAL OR AS INDICATED WITHIN THE INTERNATIONAL BUILDING CODE.
3. DEFICIENCIES SHALL BE REPORTED IN WRITING TO THE OWNER AND THE BUILDING OFFICIAL (AND THE ENGINEER OF RECORD IF AN ALTERNATE ENGINEER IS USED FOR STRUCTURAL OBSERVATION). AT THE CONCLUSION OF THE STRUCTURAL WORK INCLUDED WITHIN THE PERMIT, THE STRUCTURAL OBSERVER SHALL SUBMIT TO THE BUILDING OFFICIAL AND THE OWNER (AND THE ENGINEER OF RECORD IF AN ALTERNATE ENGINEER IS USED FOR STRUCTURAL OBSERVATION) A WRITTEN STATEMENT THAT THE SITE VISITS HAVE BEEN MADE AND IDENTIFY ANY REPORTED DEFICIENCIES WHICH, TO THE BEST OF THE STRUCTURAL OBSERVER'S KNOWLEDGE, HAVE NOT BEEN RESOLVED.
4. THE CONTRACTOR SHALL MAKE AVAILABLE ALL MEANS AND METHODS NECESSARY FOR THE STRUCTURAL OBSERVER TO PERFORM THE REQUIRED STRUCTURAL OBSERVATIONS. IN ADDITION, THE CONTRACTOR SHALL NOTIFY THE OWNER AND STRUCTURAL OBSERVER A MINIMUM OF 48 HOURS BEFORE THE TIME AT WHICH THE SPECIFIED STRUCTURAL OBSERVATIONS MAY BE PERFORMED. IN ADDITION THE CONTRACTOR SHALL UPDATE THE STRUCTURAL OBSERVER OF THE CONSTRUCTION PROGRESS.
5. STRUCTURAL OBSERVATIONS SHALL BE PERFORMED AT THE OWNER'S DISCRETION AND COORDINATED WITH THE PROJECT ENGINEER.

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LYNNWOOD WWTP INTERIM SLUDGE DISPOSAL

STRUCTURAL
GENERAL STRUCTURAL NOTES & QUALITY ASSURANCE PLAN (1 of 2)

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: MAY 2022

SHEET S-1

SPECIAL INSPECTIONS:

1. AN INDEPENDENT TESTING LABORATORY CHOSEN BY THE OWNER SHALL PROVIDE SPECIAL INSPECTIONS IN ACCORDANCE WITH CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE AS OUTLINED IN TABLE 2 FOR THE STRUCTURAL SYSTEMS OUTLINED HEREIN. ALL OTHER ELEMENTS SHALL COMPLY WITH THE SPECIAL INSPECTION & TESTING REQUIREMENTS OF CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE.
2. THE TESTING AGENCY SHALL PROVIDE THE ENGINEER OF RECORD, THE OWNER, AND THE BUILDING OFFICIAL COPIES OF ALL RELEVANT TEST REPORTS AND SPECIAL INSPECTIONS.
3. INSPECTION/TESTING COMPANIES SHALL BE SUBMITTED TO, AND APPROVED BY, THE ENGINEER PRIOR TO COMMENCEMENT OF TESTING.
4. SPECIAL INSPECTION REQUIREMENTS FOR SEISMIC RESISTANCE SHALL APPLY TO THE SYSTEMS AND COMPONENTS LISTED IN STATEMENT OF SPECIAL INSPECTION TABLE 7 AND 8. EQUIPMENT INCLUDES: PUMPS, MOTORS, MOTOR CONTROL CENTERS, STANDBY GENERATORS, REMOTE TELEMETRY UNIT, AND THE AUTOMATIC TRANSFER SWITCH.

REQUIRED STRUCTURAL SPECIAL INSPECTIONS					
SYSTEM or MATERIAL	INSPECTION				REMARKS
	IBC CODE REFERENCE	CODE or STANDARD REFERENCE	FREQUENCY		
			CONTINUOUS	PERIODIC	
CONCRETE (TABLE 1705.3)					
1. REINFORCING STEEL	1908.4	ACI 318: CH: 20, 25.2, 25.3, 26.6.1–26.6.3		X	TOLERANCES AND REINFORCING PLACEMENT PER ACI 26.6.2; SPACING LIMITS FOR REINFORCING ACI 25.2 PROTECTION OF REINFORCEMENT PER ACI 20.6.1
3. INSPECTION OF ANCHORS CAST IN CONCRETE	TABLE 1705.3	ACI 318: 17.8.2		X(a)	
4. INSPECTION OF ANCHORS POST–INSTALLED IN HARDENED CONCRETE A. ADHESIVE ANCHORS INSTALL IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATION TO RESIST SUSTAINED TENSION LOADS	TABLE 1705.3	ACI 318: 17.8.2.4	X		SPECIAL INSPECTIONS APPLY TO ANCHOR PRODUCT NAME, TYPE, AND DIMENSIONS, HOLE DIMENSIONS, COMPLIANCE WITH DRILL BIT REQUIREMENTS, CLEANLINESS OF THE HOLE AND ANCHOR, ADHESIVE EXPIRATION DATE, ANCHOR/ADHESIVE INSTALLATION, ANCHOR EMBEDMENT, AND TIGHTENING TORQUE
B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED ABOVE		ACI 318: 17.8.2		X(a)	
5. VERIFYING USE OF REQUIRED MIX DESIGN(S)	TABLE 1705.3 1904.1 1904.2 1908.2 1908.3	ACI 318: CH 19, 26.4.3, 26.4.4		X	
7. INSPECT CONCRETE PLACEMENT	1908.6 1908.7 1908.8	ACI 318: 26.5	X		
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	TABLE 1705.3 1908.9	ACI 318: 26.5.3–26.5.5		X	

SOILS (TABLE 1705.6)					
GEOTECHNICAL INVESTIGATION	TABLE 1705.6, 1803	GEOTECHNICAL REPORT			GEOTECHNICAL INVESTIGATION SHALL INCLUDE ITEMS OF SPECAIL INSPECTION AND TESTING AS NOTED IN TESTING TABLES (ON THIS SHEET)
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATION ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	TABLE 1705.6			X	BY THE GEOTECHNICAL ENGINEER
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL				X	
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS	TABLE 1705.6, 1803.5.1			X	TESTING OF COMPACTED FILL MATERIALS (SEE TESTING TABLES)
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL	TABLE 1705.6		X		BY THE GEOTECHNICAL ENGINEER
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY				X	

REQUIRED SPECIAL INSPECTION FOR SESIMIC RESISTANCE OF SYSTEMS AND COMPONENTS					
SYSTEM or MATERIAL	INSPECTION				REMARKS
	IBC CODE REFERENCE	CODE or STANDARD REFERENCE	FREQUENCY		
			CONTINUOUS	PERIODIC	
ELECTRICAL COMPONENTS					
INSTALLATION OF ANCHORAGE OF ELECTRICAL EQUIPMENT FOR EMERGENCY OR STANDBY POWER SYSTEMS	1705.12.6			X	
INSTALLATION OF ANCHORAGE OF OTHER ELECTRICAL EQUIPMENT	1705.12.6			X	
ANCHORAGE OF OTHER ELECTRICAL OR MECHANICAL EQUIPMENT OVER 400 LB. ON FLOORS OR ROOFS	1705.12.6			X	PER PROJECT SPECIFICATIONS
PROCESS MECHANICAL COMPONENTS					
ANCHORAGE OF PIPELINES GREATER THAN 8 INCHES IN DIAMETER	1705.12.6			X	PER PROJECT SPECIFICATIONS
ANCHORAGE OF DUCTS GREATER THAN 6 SF IN CROSS–SECTION	1705.12.6			X	PER PROJECT SPECIFICATIONS
BUILDING MECHANICAL COMPONENTS					
INSTALLATION OF HVAC DUCTWORK THAT WILL CONTAIN HAZARDOUS MATERIALS	1705.12.6			X	
INSTALLATION OF OTHER SEISMIC SUPPORTS FOR DESIGNATED ELECTRICAL SYSTEMS AND THEIR COMPONENTS	1705.13.3			X	PER PROJECT SPECIFICATIONS
DESIGNATED SEISMIC SYSTEM VERIFICATION					
DESIGNATED SEISMIC SYSTEM VERIFICATION	1705.12.4			X	VERIFY THAT THE LABEL, ANCHORAGE OR MOUNTING CONFORMS TO THE CERTIFICATE OF COMPLIANCE. DESIGNATED SEISMIC SYSTEMS SHALL BE QUALIFIED IN ACCORDANCE WITH ASCE 7–16 13.2.2

SPECIAL INSPECTION TESTING TABLES					
SYSTEM or MATERIAL	INSPECTION				REMARKS
	IBC CODE REFERENCE	CODE or STANDARD REFERENCE	FREQUENCY		
			CONTINUOUS	PERIODIC	
CONCRETE					
AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	TABLE 1705.3 1908.10	ASTM C 172 ASTM C 31 ACI 318: 26.5, 26.12	X		FABRICATE SPECIMENS AT TIME FRESH CONCRETE IS PLACED PER SPECIFICATION SCHEDULE FOR SLABS, FOOTING, AND/OR PILES
CONCRETE STRENGTH	TABLE 1705.3 1908.10	ASTM C39	X		
CONCRETE SLUMP	TABLE 1705.3	ASTM C143	X		
CONCRETE AIR CONTENT		ASTM C231	X		
CONCRETE TEMPERATURE		ASTM C1064	X		

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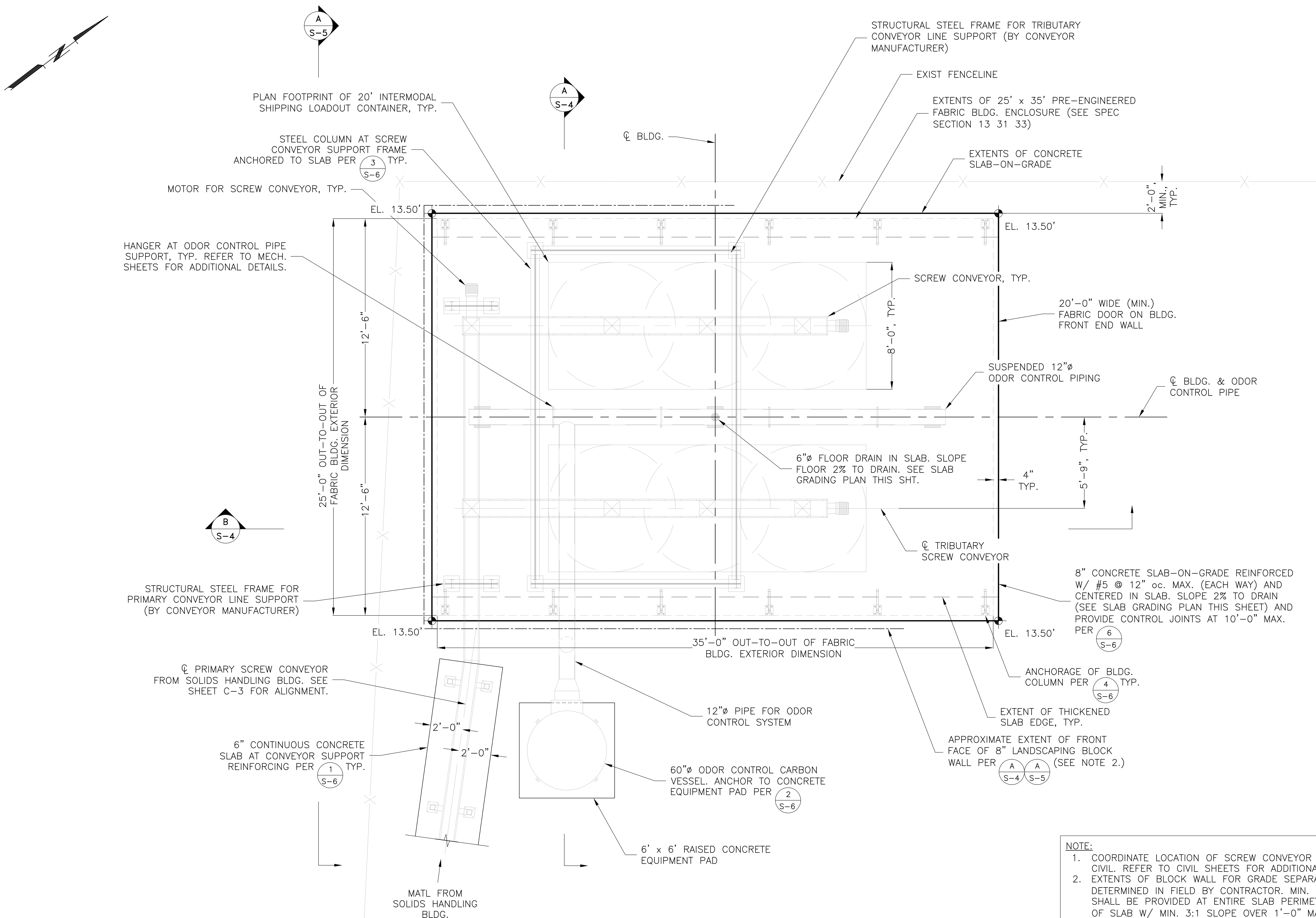
STRUCTURAL

GENERAL STRUCTURAL NOTES & QUALITY ASSURANCE PLAN (2 of 2)

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: MAY 2022

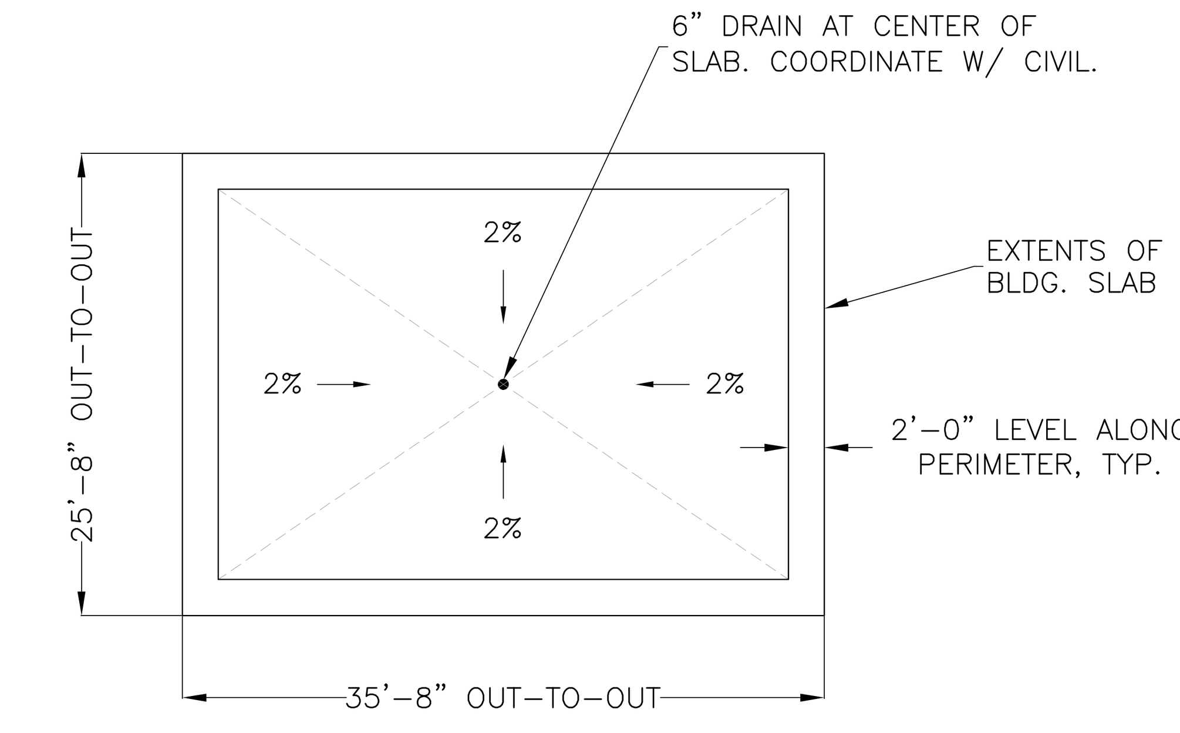
SHEET S-2

10 OF 33

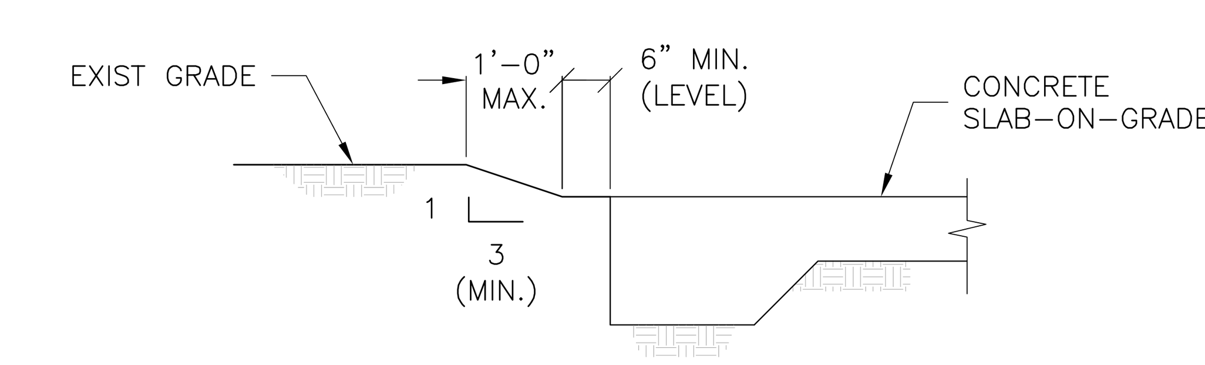


SLUDGE LOADOUT ENCLOSURE FOUNDATION PLAN & LAYOUT (1)

1/4" = 1'-0"



SLAB GRADING PLAN



SOIL GRADING AT SLAB PERIMETER

NOTE: LANDSCAPE BLOCK WALL SHALL BE PROVIDED WHERE THE ABOVE CONDITIONS CANNOT BE MET

NOTE:
1. COORDINATE LOCATION OF SCREW CONVEYOR SYSTEM W/ CIVIL. REFER TO CIVIL SHEETS FOR ADDITIONAL DETAILS.
2. EXTENTS OF BLOCK WALL FOR GRADE SEPARATION TO BE DETERMINED IN FIELD BY CONTRACTOR. MIN. 6" LEVEL GRADE SHALL BE PROVIDED AT ENTIRE SLAB PERIMETER FROM EDGE OF SLAB W/ MIN. 3:1 SLOPE OVER 1'-0" MAX. TO MEET EXISTING GRADE. SEE DETAIL THIS SHT. FOR ADDITIONAL DETAILS.

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FOUNDATION PLAN & LAYOUT

SHEET S-3

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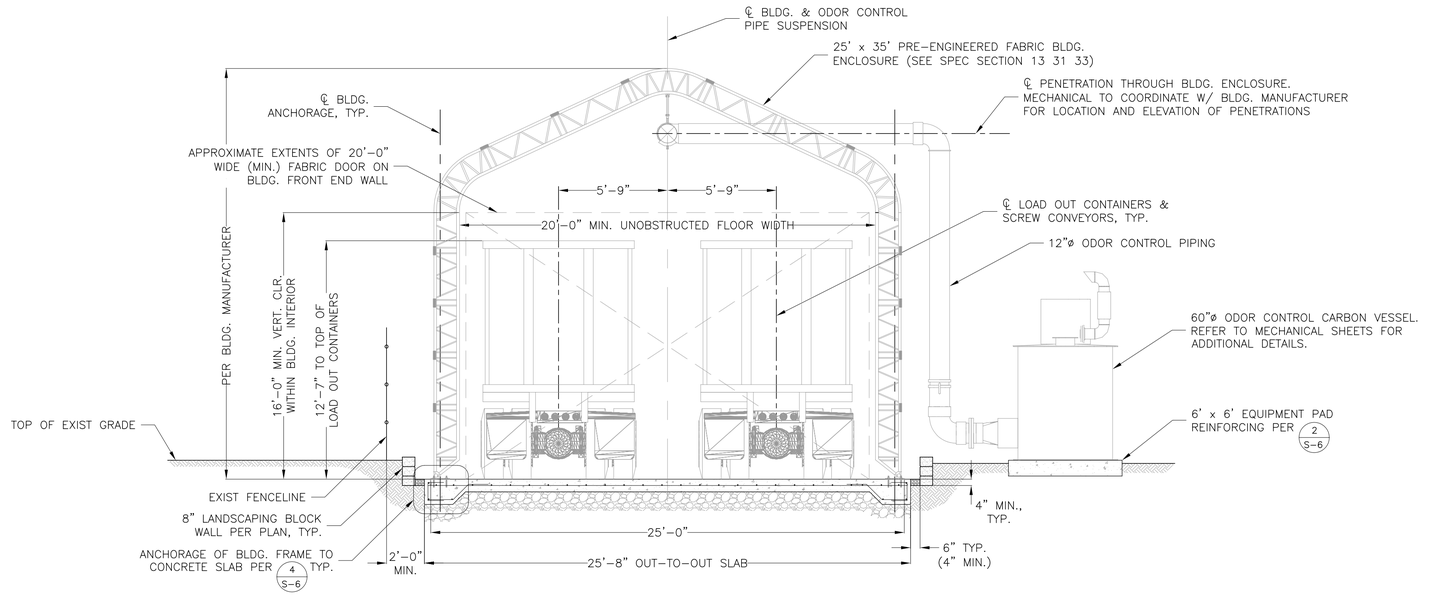
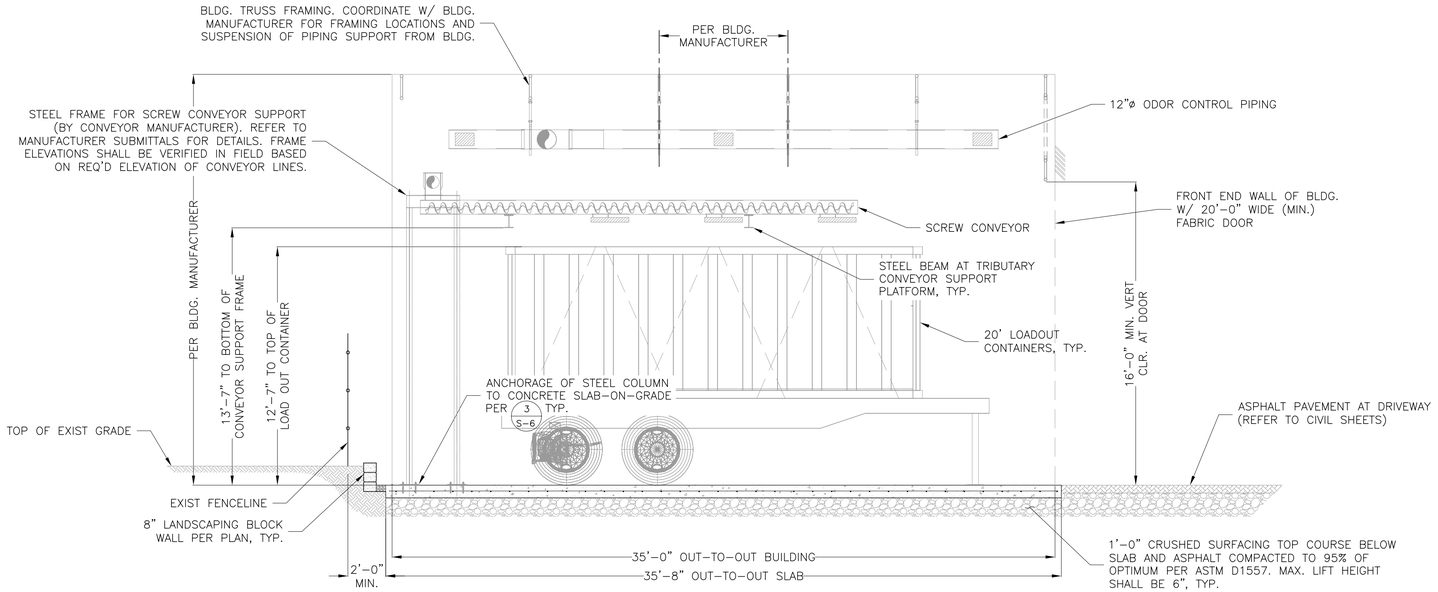


SECTION – AT ODOR CONTROL PIPING (A S-3)

1/4" = 1'-0"



SECTION – AT ODOR CONTROL PIPING (B S-3)

1/4" = 1'-0"

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SECTIONS (1 of 2)

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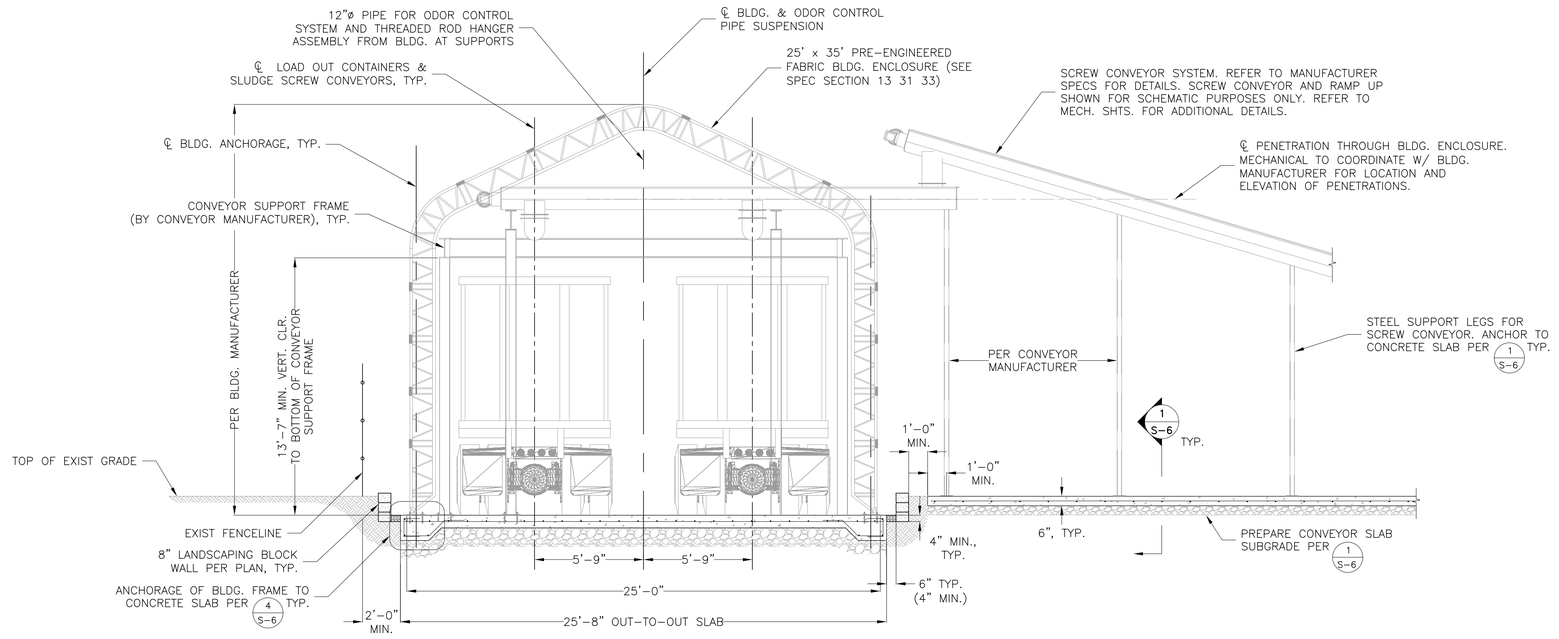

SECTION – AT CONVEYOR PLATFORM A/S-3

1/4" = 1'-0"

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SECTIONS (2 of 2)

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SHEET S-5

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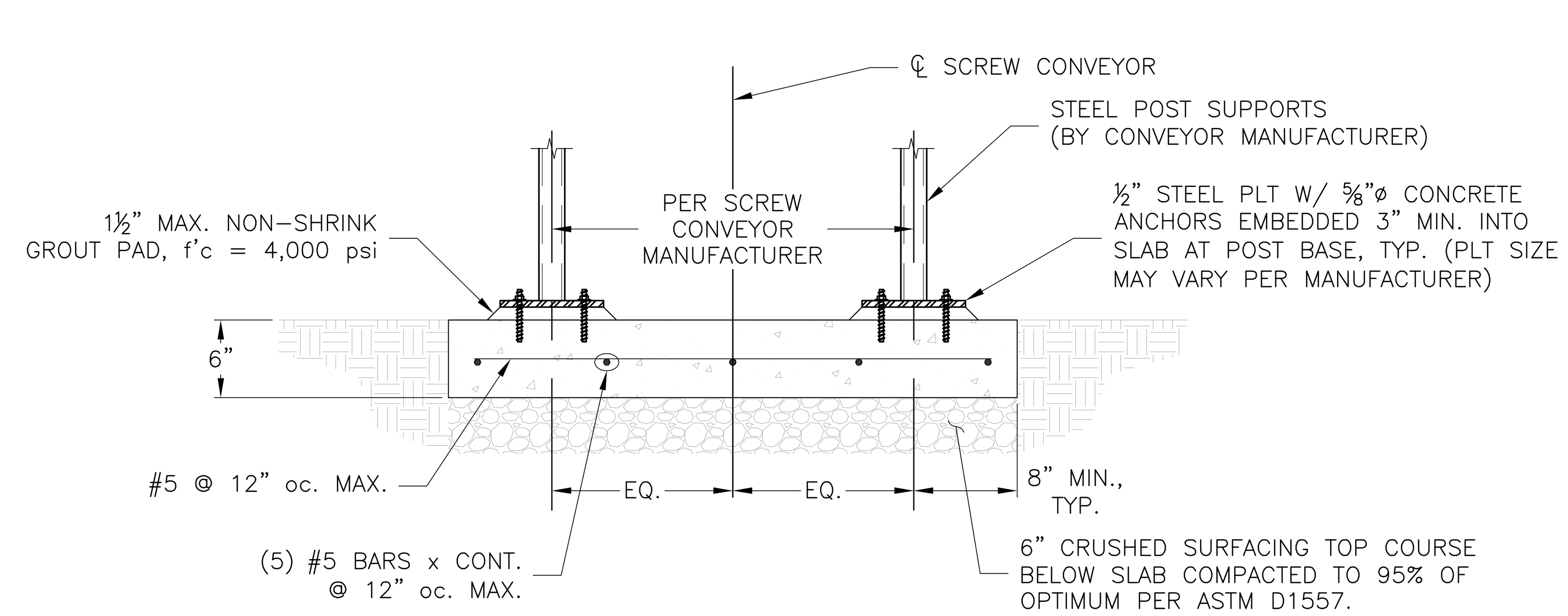
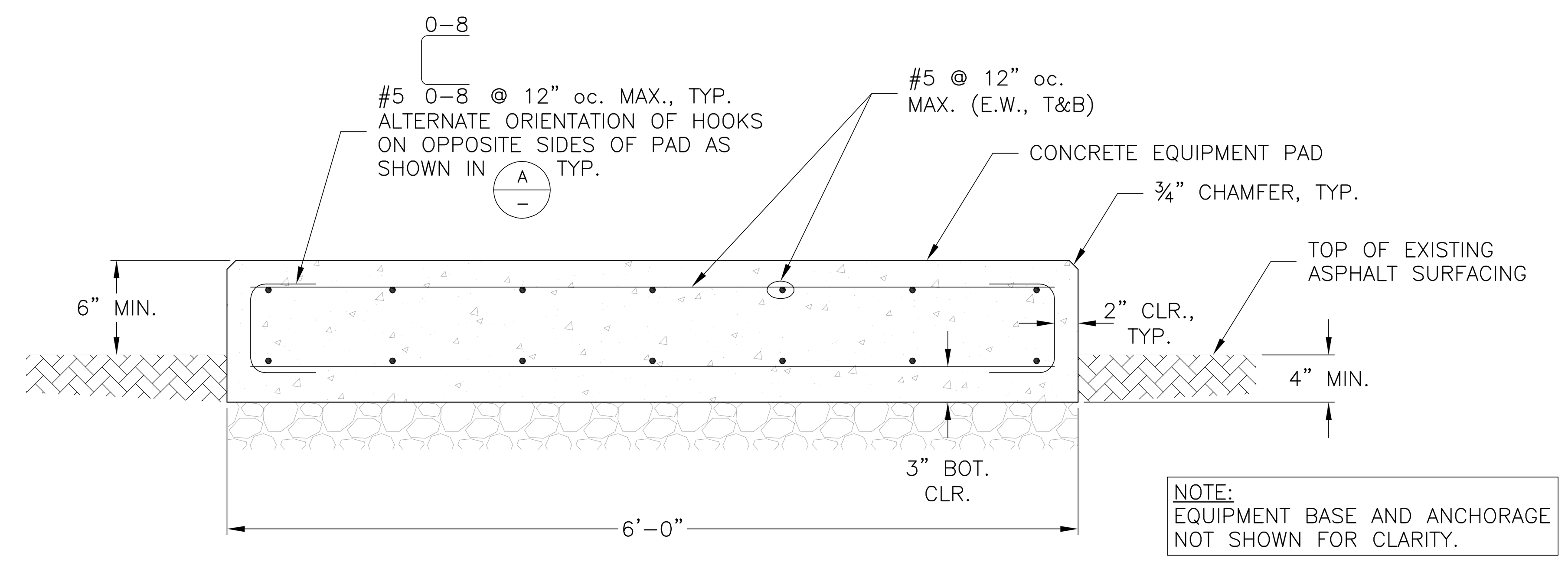


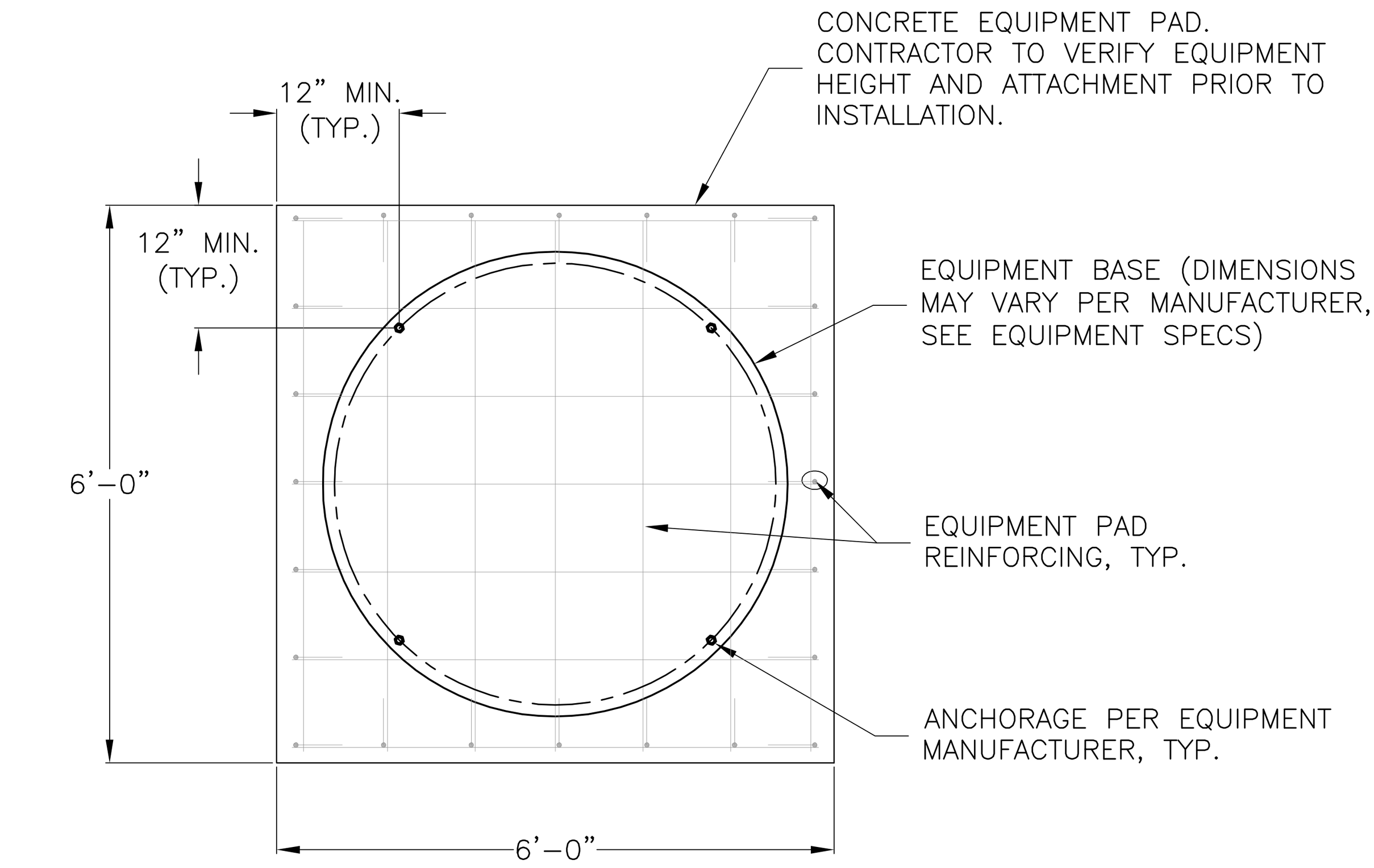
TYP. CONVEYOR SUPPORT ANCHORAGE & SLAB DETAIL 1 / – S-3 S-4 S-5

1" = 1'-0"



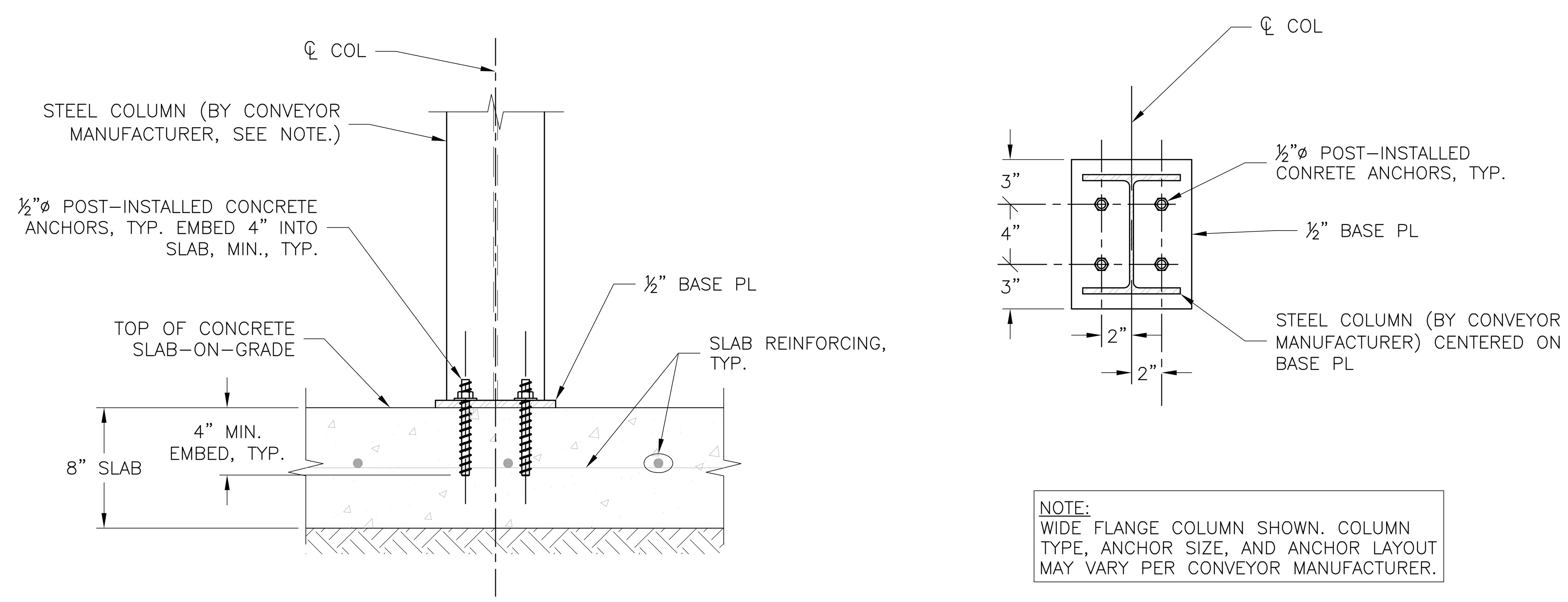
EQUIPMENT PAD DETAIL – SECTION 2 / – S-3 S-4

1" = 1'-0"



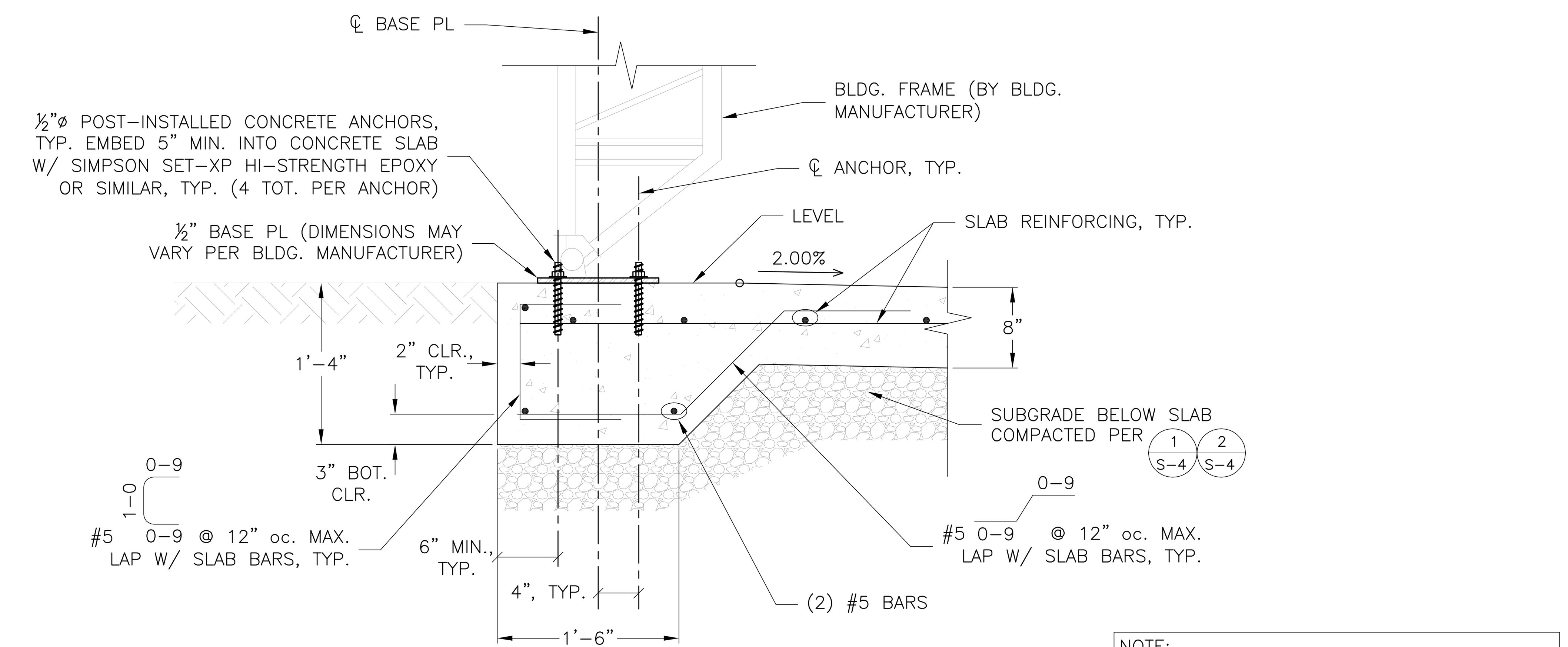
EQUIPMENT PAD DETAIL – PLAN A / –

1/2" = 1'-0"



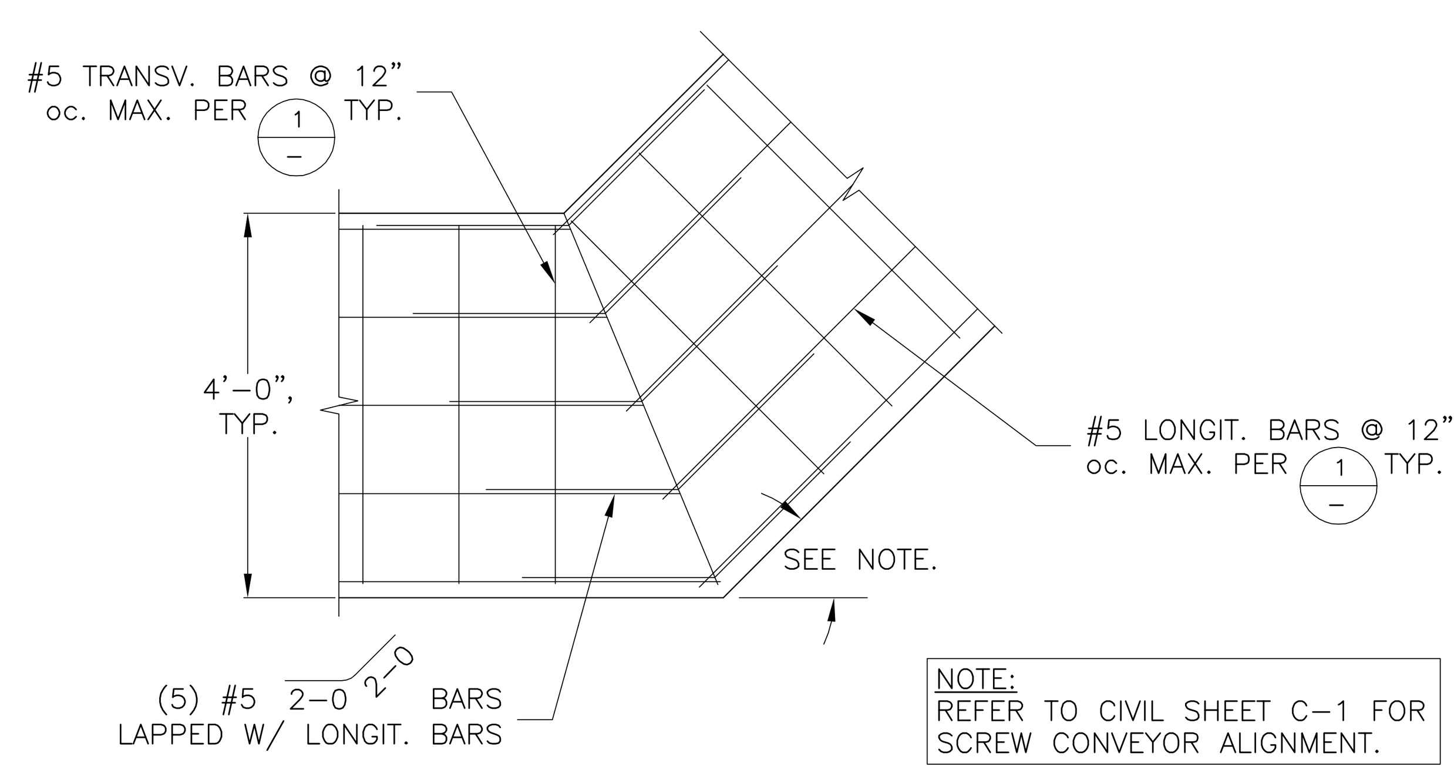
TYPICAL WF COLUMN ANCHORAGE DETAIL 3 / – S-3 S-4

1 1/2" = 1'-0"



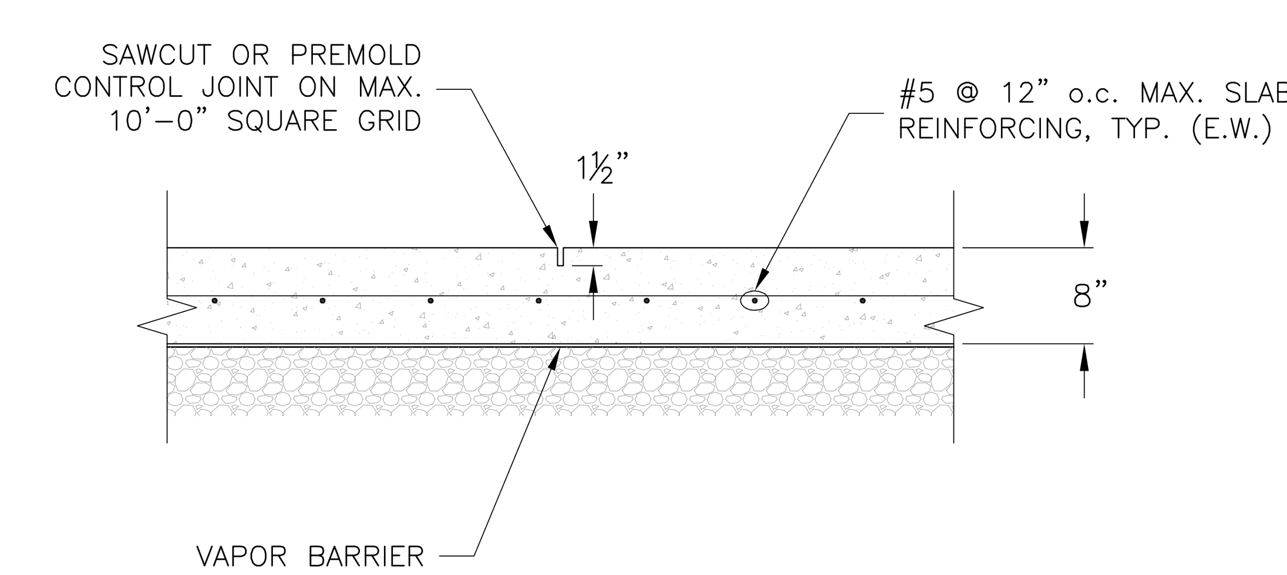
BLDG. ANCHORAGE DETAIL 4 / – S-3 S-4 S-5

1" = 1'-0"



REINFORCING PLAN AT SLAB TURN 5 / –

1/2" = 1'-0"



SLAB CONTROL JOINT DETAIL 6 / S-3

3/4" = 1'-0"

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EQUIPMENT SUPPORT & ANCHORAGE DETAILS

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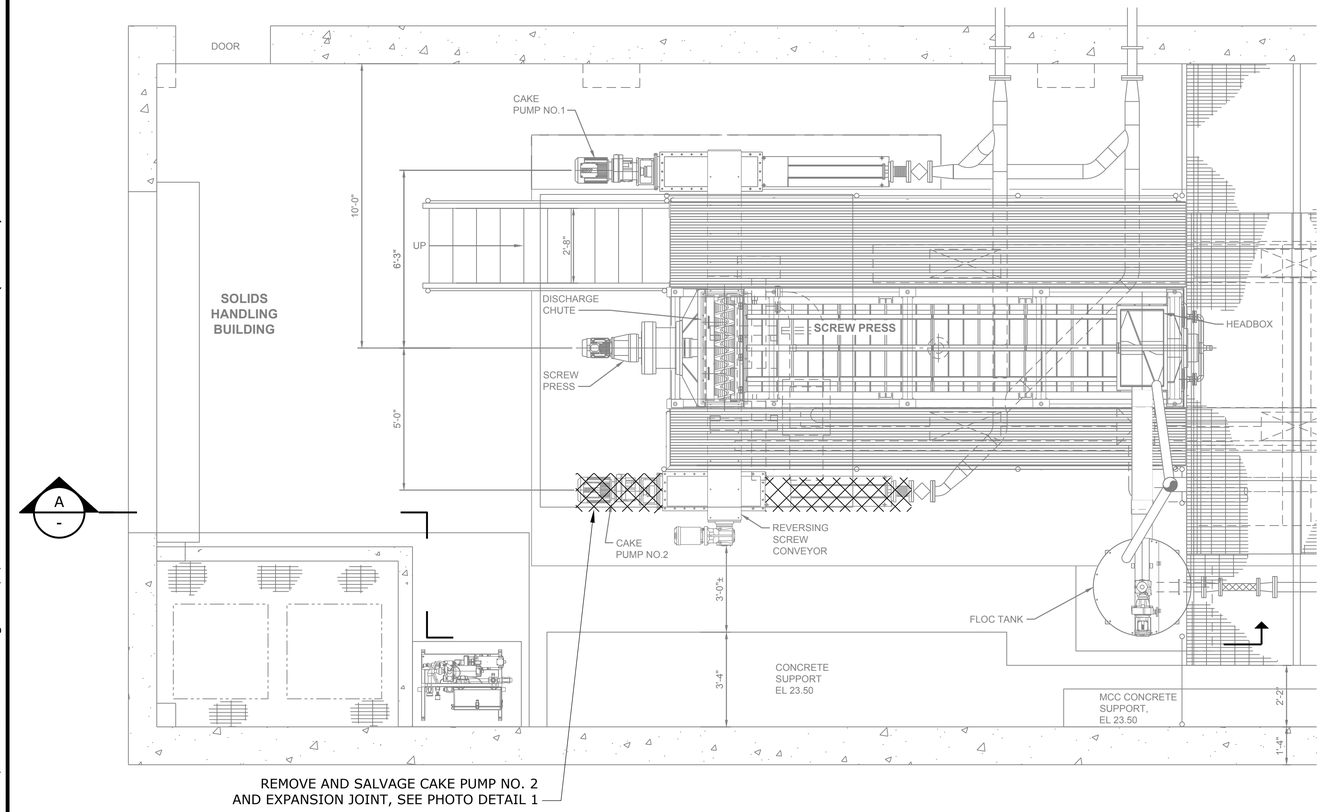
SHEET S-6



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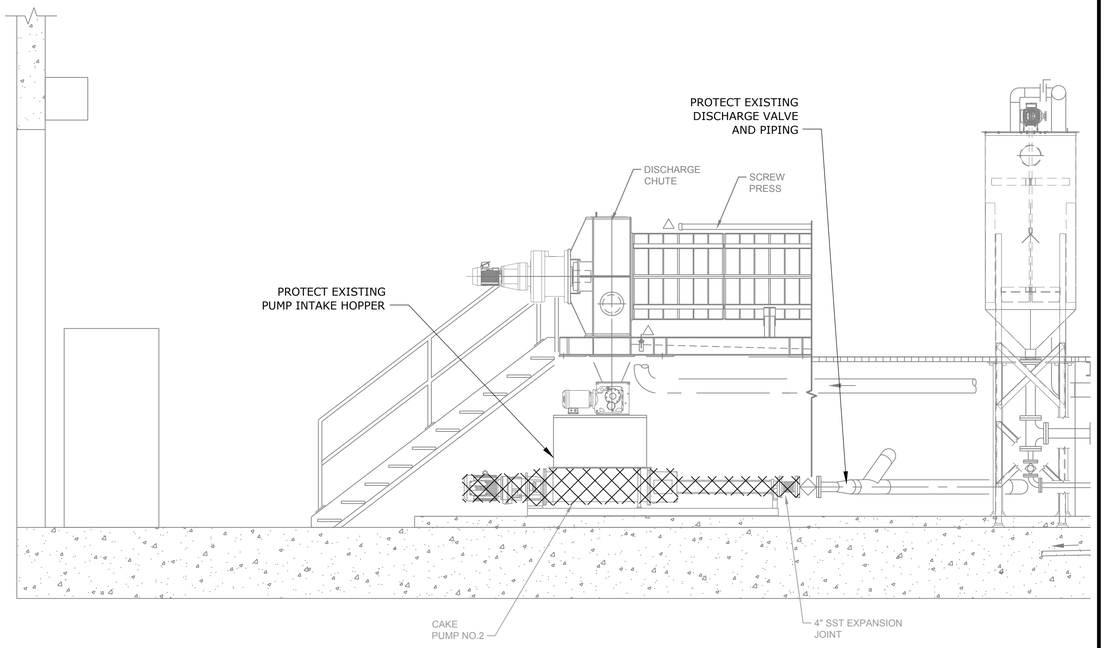
PLAN
SCALE: 3/8" = 1'-0"



SECTION
SCALE: 3/8" = 1'-0"

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PHOTO DETAIL
SCALE: NTS

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MECHANICAL

SLUDGE HANDLING BUILDING DEMOLITION PLAN AND SECTION

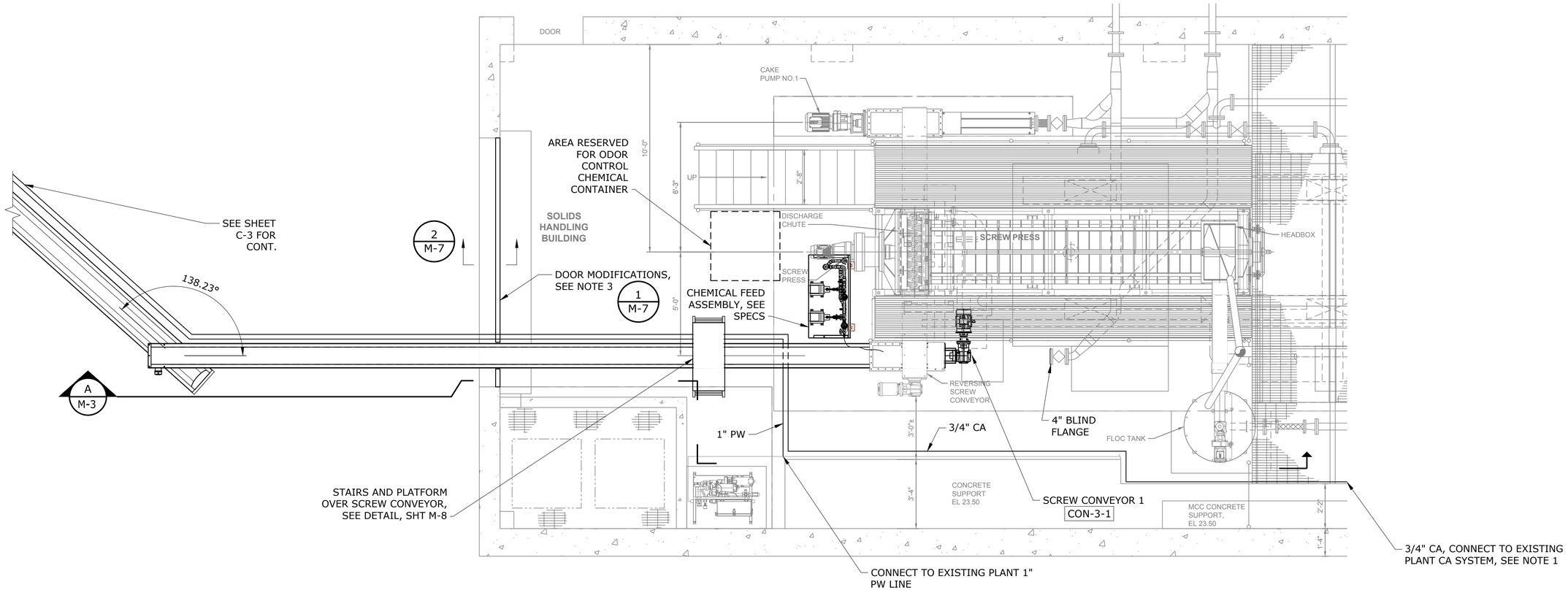
PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET
M-1
15 OF 33

H:\EVT_Projects\21\3310 - Lynnwood, WA - WWTP Interim Sludge Disposal Design And SDC\CAD\Sheets\21-3310-WA-M-1.dwg M-1 5/3/2022 9:34 AM TODD.BLACKETTER 23.0s (LMS Tech)

SHEET NOTES:

1. CONTRACTOR TO FIELD LOCATE AND VERIFY SIZE OF EXISTING 3/4" CA PRIOR TO COMMENCING WORK.
2. CONTRACTOR TO FIELD VERIFY CONNECTION POINT BETWEEN SCREW CONVEYOR AND EXISTING SLUDGE HOPPER. FABRICATE ALUMINUM SKIRT, AS NECESSARY, TO CONNECT HOPPER TO CONVEYOR.
3. INSTALL FRP DOOR SKIRT ON THE UNDERSIDE OF SOLIDS HANDLING BLDG. ROLL-UP DOOR, SEE DOOR MODIFICATION ELEVATION, SHEET M-7



PLAN
SCALE: 3/8" = 1'-0"

90% SUBMITTAL

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LYNNWOOD WASHINGTON
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MECHANICAL

SLUDGE HANDLING BUILDING SCREW CONVEYOR PLAN

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET M-2

16 OF 33

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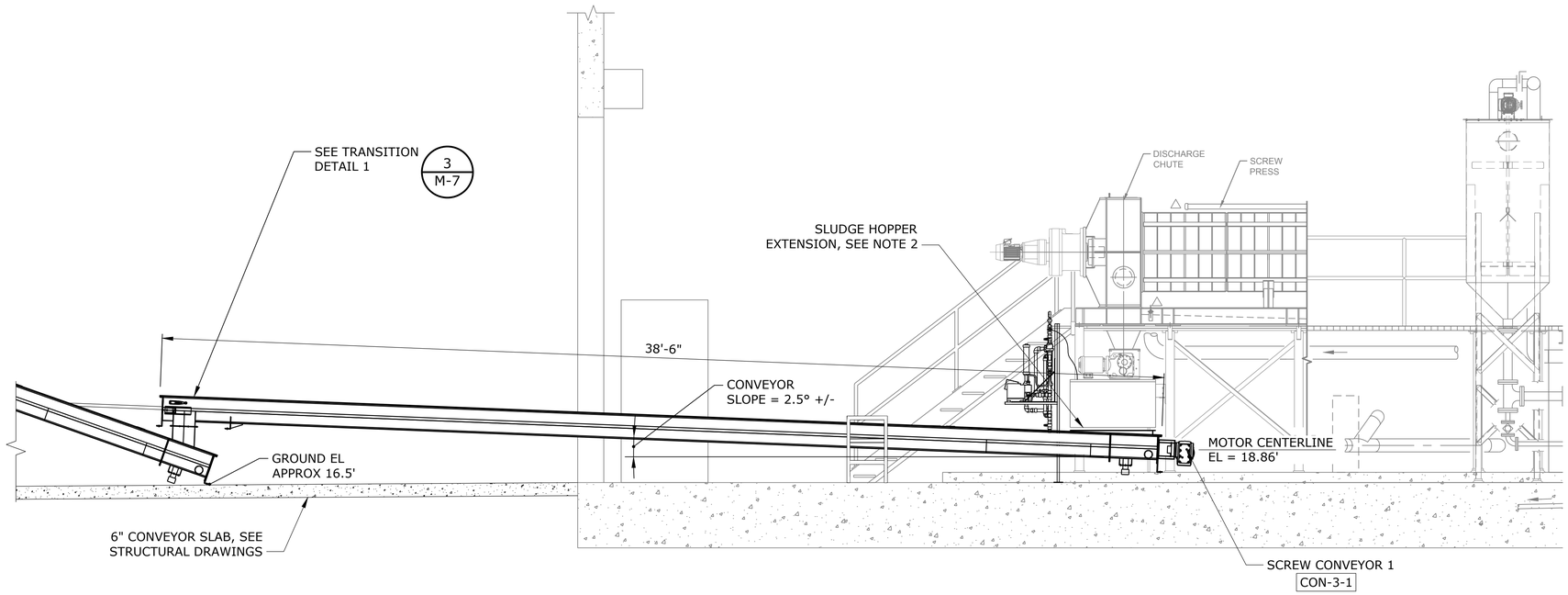
SHEET NOTES:

1. CONTRACTOR TO FIELD LOCATE AND VERIFY SIZE OF EXISTING 3/4" CA PRIOR TO COMMENCING WORK.
2. CONTRACTOR TO FIELD VERIFY CONNECTION POINT BETWEEN SCREW CONVEYOR AND EXISTING SLUDGE HOPPER. FABRICATE ALUMINUM SKIRT, AS NECESSARY, TO CONNECT HOPPER TO CONVEYOR.
3. INSTALL FRP DOOR SKIRT ON THE UNDERSIDE OF SOLIDS HANDLING BLDG. ROLL-UP DOOR, SEE DOOR MODIFICATION ELEVATION, SHEET M-6.
4. CONVEYOR SUPPORTS BY CONVEYOR MANUFACTURER. SUPPORTS NOT SHOWN HERE FOR CLARITY.



SECTION
SCALE: 3/8" = 1'-0"

A
M-2

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NOTICE
0 ½ 1
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LYNNWOOD WASHINGTON
LYNNWOOD WWTP INTERIM SLUDGE DISPOSAL

MECHANICAL

SLUDGE HANDLING BUILDING SCREW CONVEYOR SECTION

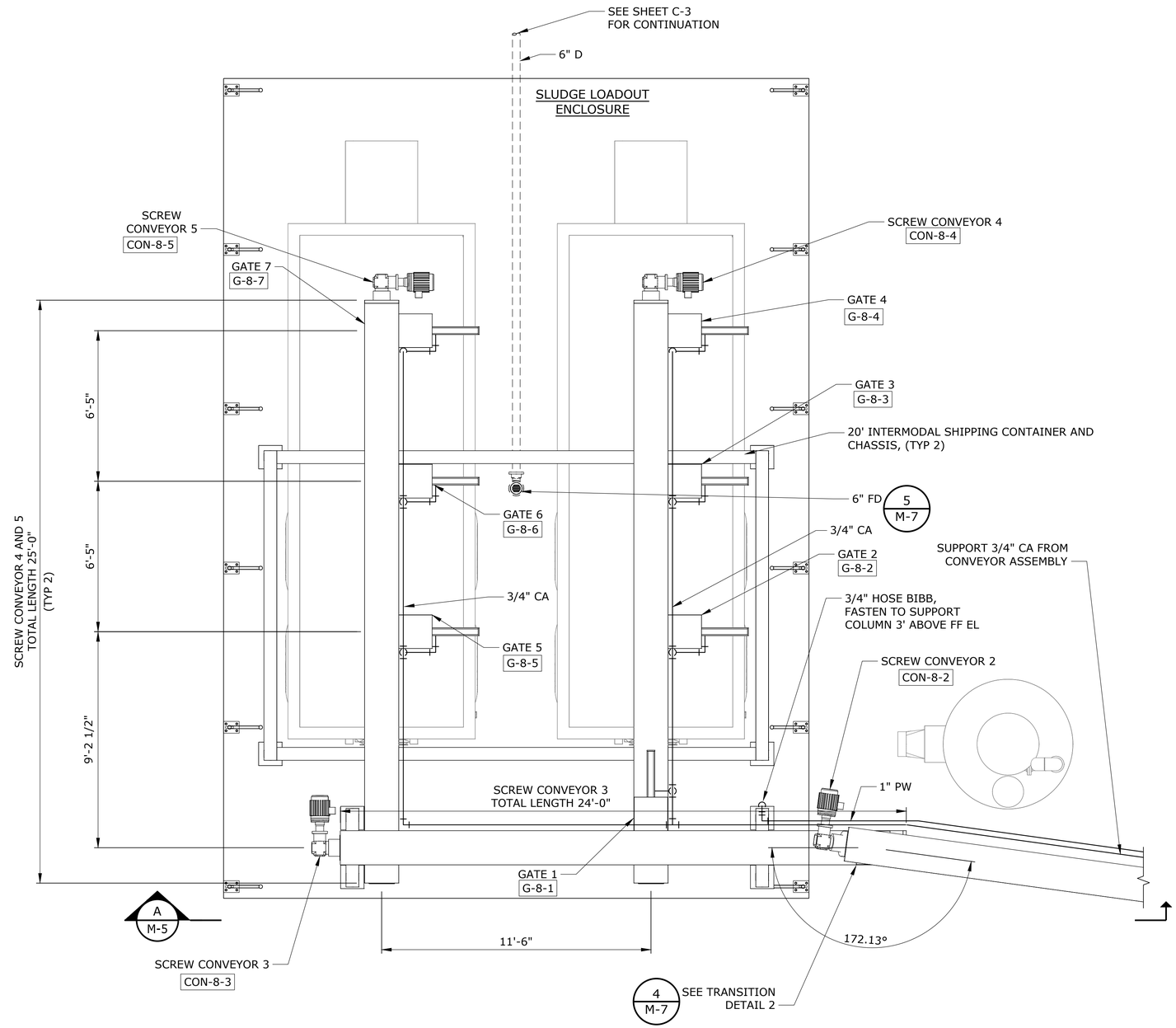
PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET
M-3
17 OF 33

H:\EVT_Projects\21\3310 - Lynnwood, WA - WWTP Interim Sludge Disposal Design And SDC\CAD\Sheets\21-3310-WA-M-3.dwg M-3 5/16/2022 4:35 PM TODD.BLACKETTER 23.0s (LMS Tech)

SHEET NOTES:

1. 20' INTERMODAL CONTAINERS AND CHASSIS SHOWN FOR REFERENCE ONLY



PLAN

SCALE: 3/8" = 1'-0"

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MECHANICAL

SLUDGE LOADOUT PLAN

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET M-4

18 OF 33

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SHEET NOTES:

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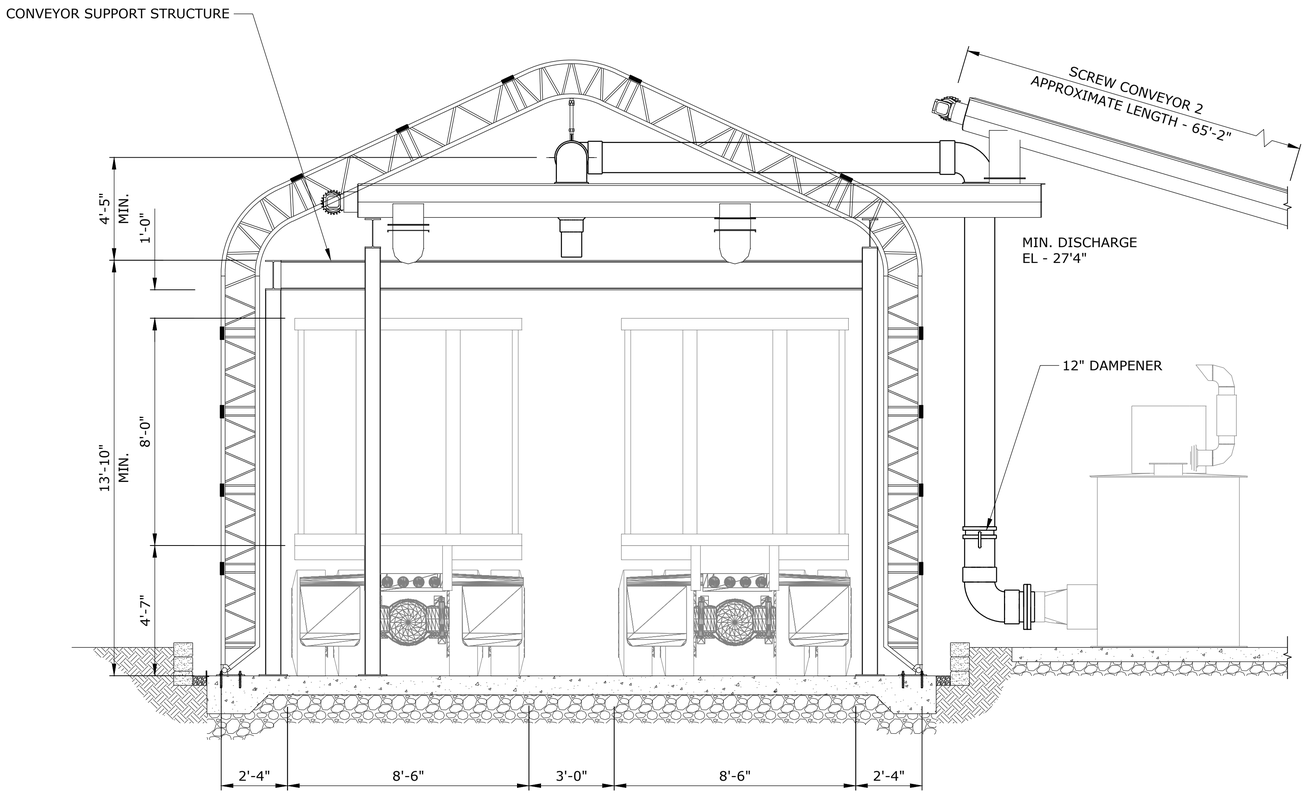

SECTION
SCALE: 3/8" = 1'-0"

A
M-5

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MECHANICAL

SLUDGE LOADOUT SECTION

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET M-5

19 OF 33

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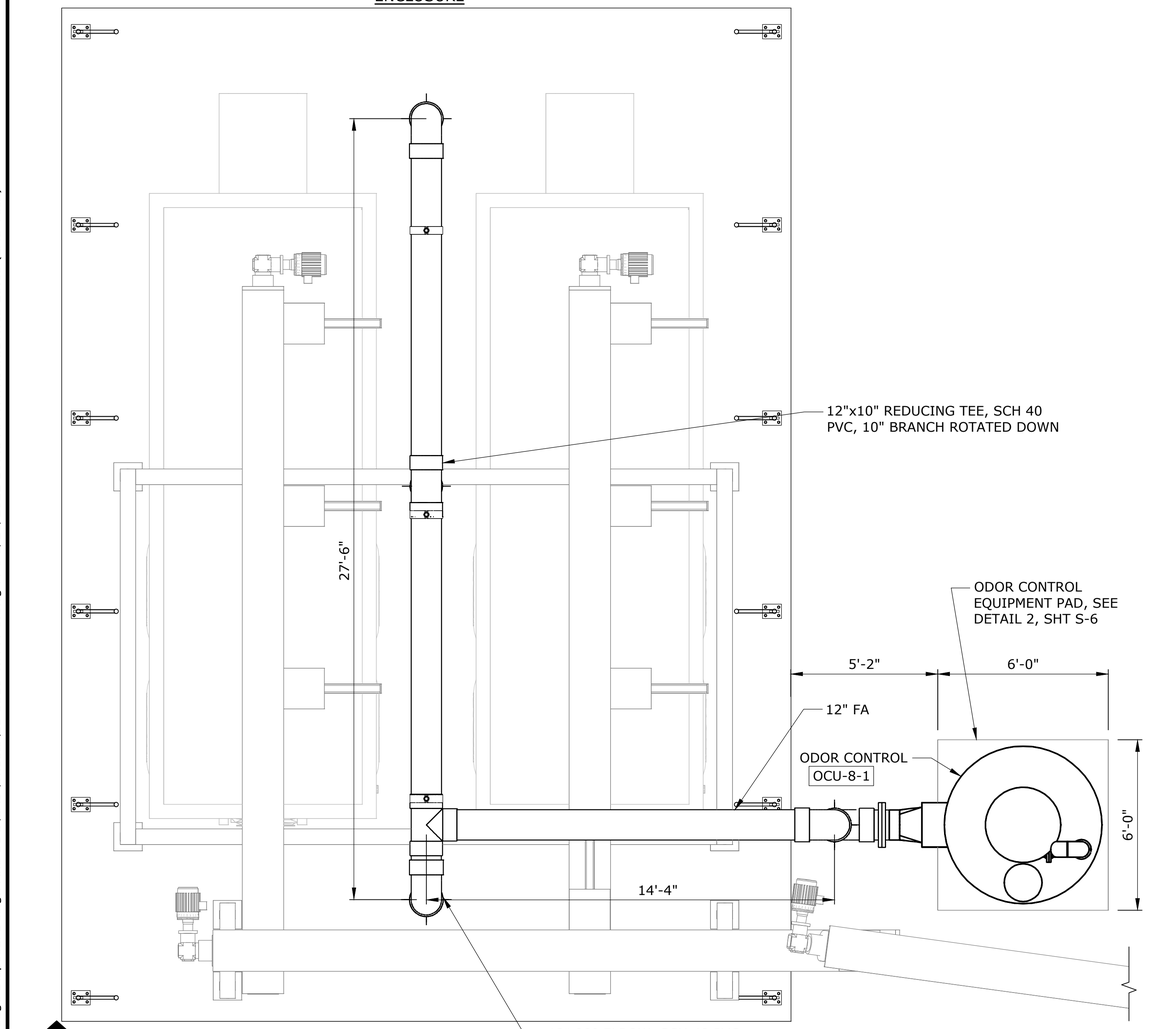
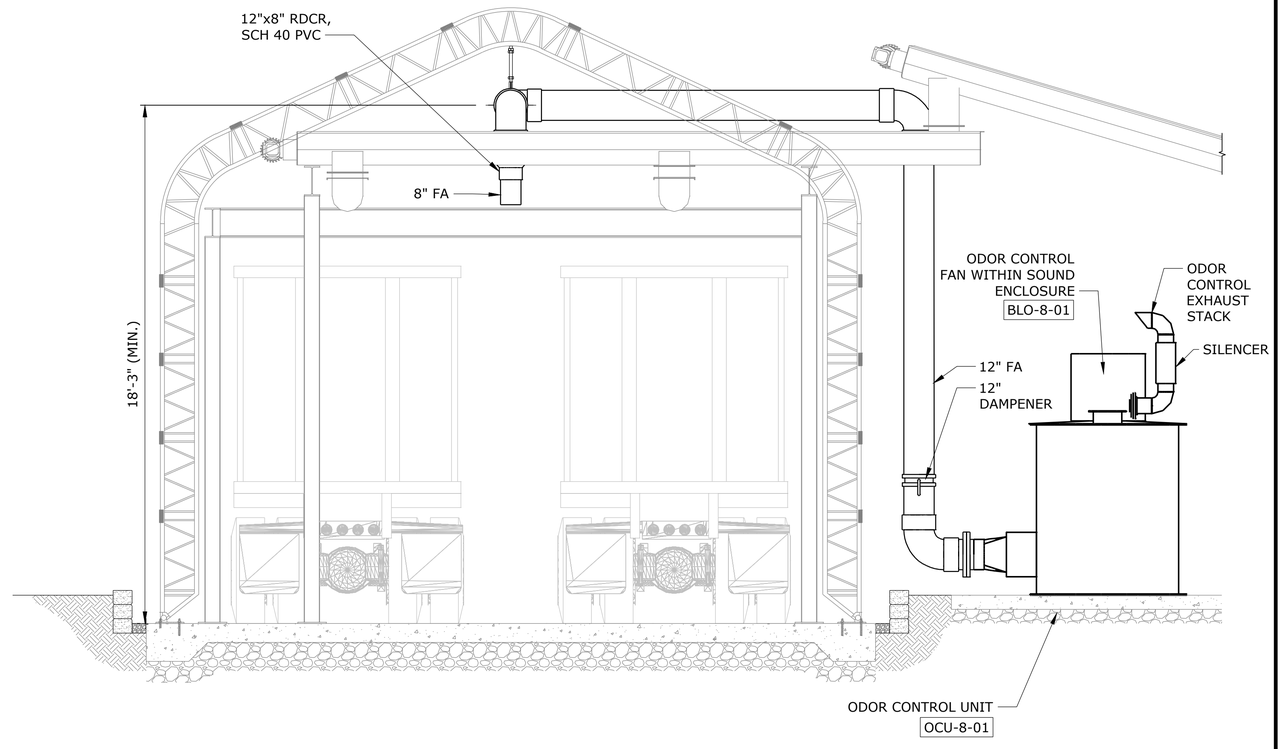
SHEET NOTES:

1. 20' INTERMODAL CONTAINERS AND CHASSIS SHOWN FOR REFERENCE ONLY

SLUDGE LOADOUT ENCLOSURE



PLAN
SCALE: 3/8" = 1'-0"



SECTION
SCALE: 3/8" = 1'-0"
A
-

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MECHANICAL

ODOR CONTROL PLAN AND SECTION

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET M-6

20 33

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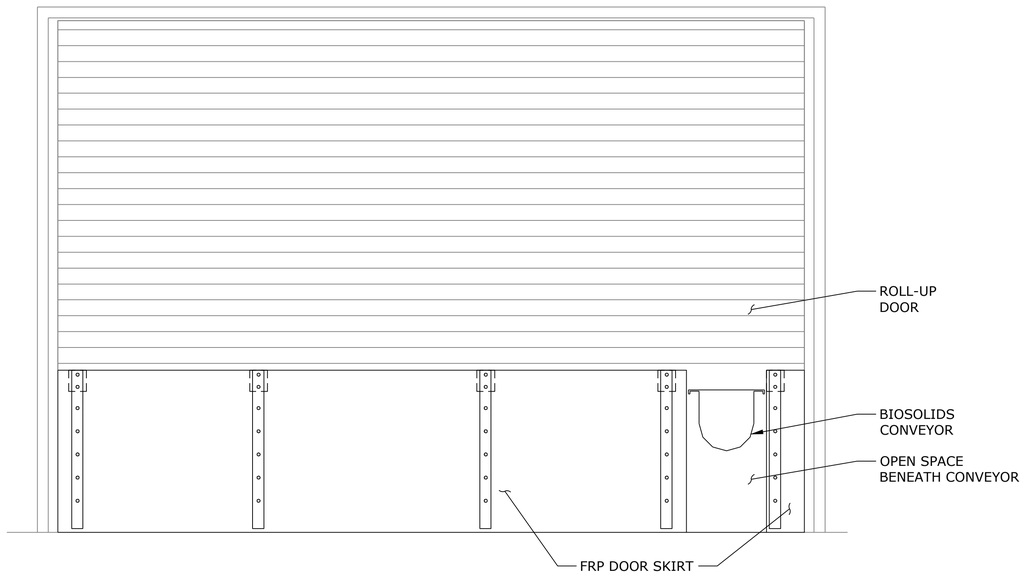
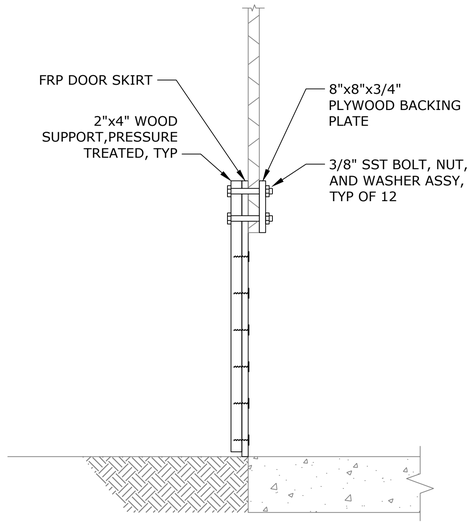
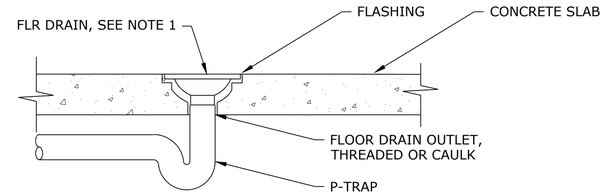


DOOR MODIFICATION DETAIL 1
SCALE: NTS



NOTES:
1. ALL BOLT HOLES ARE TO MANTAIN 2" CLEARANCE FROM THE EDGE OF THE FRP PANELS AND FROM THE EDGE OF THE ROLL-UP DOOR
2. CONTRACTOR TO FIELD VERIFY DIMENSIONS OF FRP DOOR SKIRTS PRIOR TO INSTALLATION

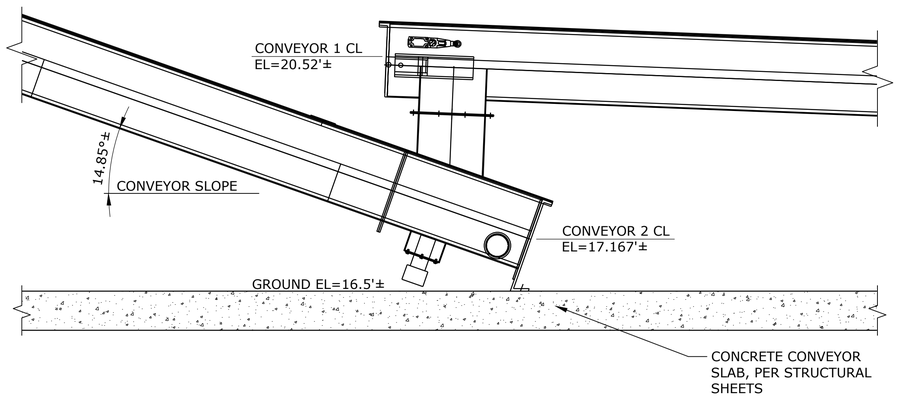
DOOR MODIFICATION DETAIL 2
SCALE: NTS



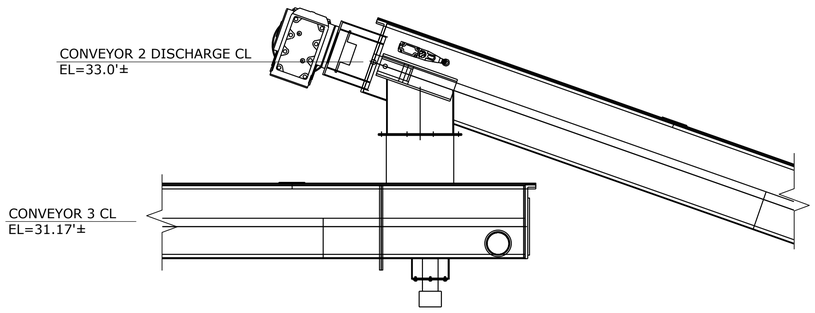
NOTE:

1. PROVIDE SIDE OUTLET MEDIUM DUTY FLOOR DRAIN WITH 12 ROUND TOPS, TRACTOR GRATE AND SEDIMENT BUCKET, GALVANIZED CAST IRON, THREADED OUTLET, SMITH JAY R 2233 OR APPROVED EQUAL

FLOOR DRAIN
SCALE: NTS



TRANSITION DETAIL 1
SCALE: NTS



TRANSITION DETAIL 2
SCALE: NTS

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MECHANICAL

MECHANICAL DETAILS 1 OF 2

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET M-7

21 33

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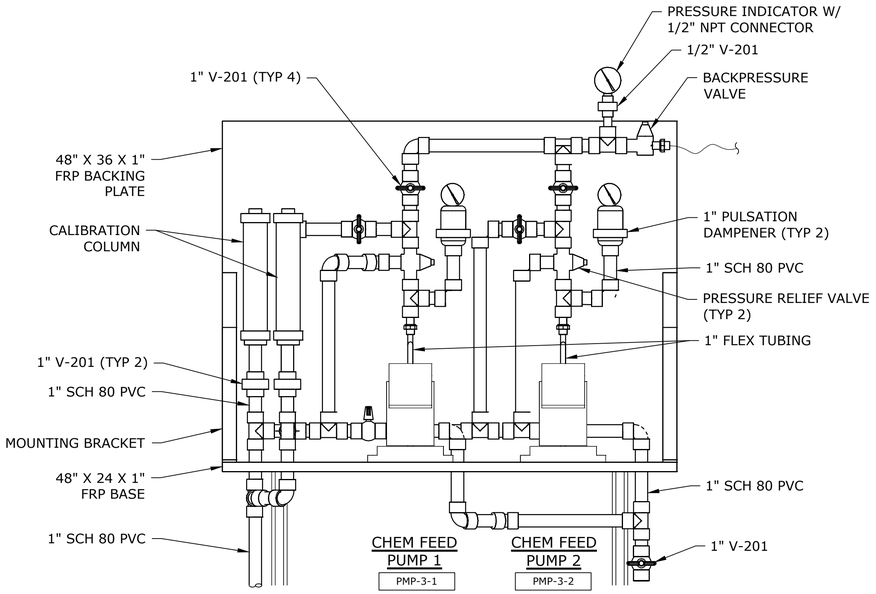
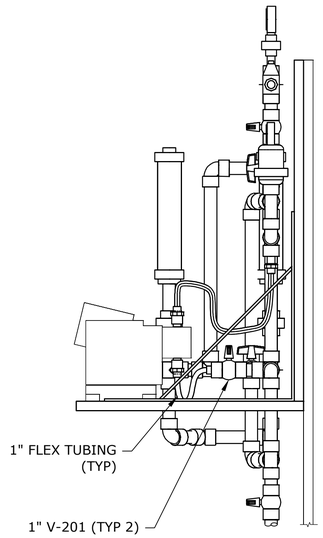


FRONT

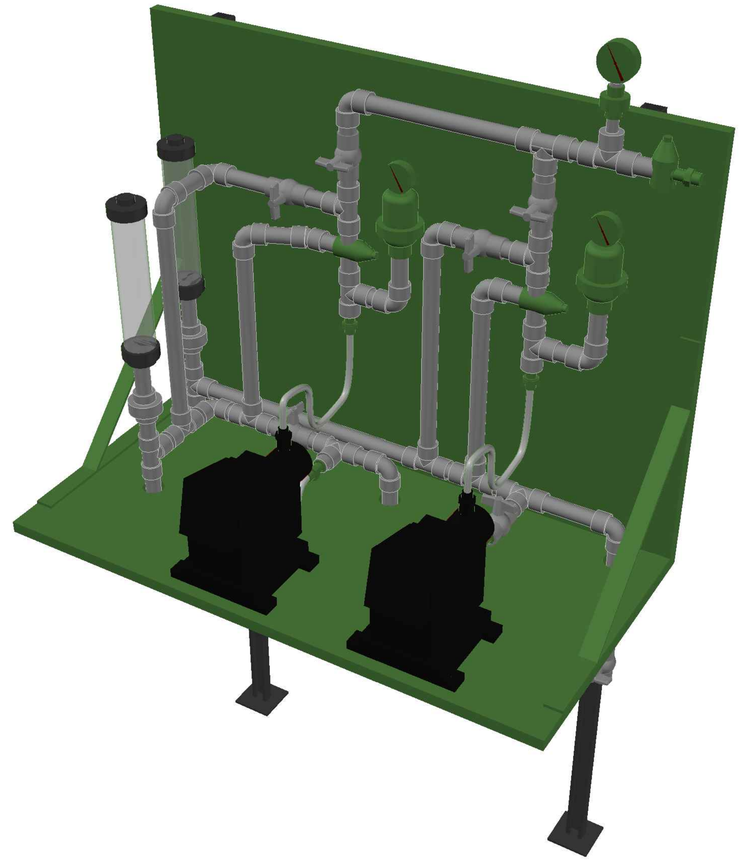


SIDE

CHEM FEED PUMPS DETAIL

SCALE: NTS

1 / -



CHEM FEED PUMPS PERSPECTIVE

SCALE: NTS

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MECHANICAL

MECHANICAL DETAILS 2 OF 2

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET M-8

22 33

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GENERAL NOTES

1. ALL MATERIALS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE LATEST NATIONAL ELECTRICAL CODE. INSTALLATION DRAWINGS, CONSTRUCTION SPECIFICATIONS AND LOCAL CODES. ALL MATERIALS SHALL BE NEW AND LISTED BY THE UNDERWRITERS' LABORATORY INC. (UL). ALL ELECTRICAL WORK SHALL BE INSTALLED IN A GOOD AND WORKMANLIKE MANNER.
2. REFER TO THE ELECTRICAL CIRCUIT SCHEDULE FOR CIRCUIT IDENTIFICATIONS, ROUTING, CONDUCTOR SIZES, ETC.
3. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER DISCIPLINES AS REQUIRED TO MITIGATE INTERFERENCES.
4. CONDUIT MATERIAL SHOWN ON ELECTRICAL PLANS ARE SPECIFIC FOR THE LOCATION WHERE THE CONDUIT STARTS. CONTRACTOR IS RESPONSIBLE FOR TRANSITIONING TO APPROVED CONDUIT MATERIAL BASED ON LOCATION AND IN ACCORDANCE TO ELECTRICAL SPECIFICATIONS.

SYMBOLS

NEW ELECTRICAL EQUIPMENT

EXISTING ELECTRICAL EQUIPMENT

EQUIPMENT TO BE DEMO'D OR REMOVED

SURFACE MOUNTED LED LUMINAIRE *

RECESSED MOUNTED LED LUMINAIRE *

WALL MOUNTED LED LUMINAIRE *

* SHADED LUMINAIRE INDICATES BATTERY BACKED UNIT

$ $3
WALL SWITCH STANDARD TOGGLE,
DESIGNATOR
3 = 3-WAY
D = DIMMER
T = TIMER

GFI
DUPLEX, QUADPLEX RECEPTACLE,
W/DESIGNATOR
GFI = GROUND FAULT INTERRUPTING
WP = WEATHERPROOF
+48 = HEIGHT AFF.

M
METERBASE W/UTILITY METER

DISCONNECT RECEPTACLE AND PLUG

SPECIAL EQUIPMENT CONNECTION
AS SHOWN

3
MOTOR CONNECTION,
HORSEPOWER INDICATED

J J
JUNCTION BOX

20A 30A
DISCONNECT SWITCH,
AMPERAGE RATING SHOWN

F 60/40
FUSED DISCONNECT SWITCH, SWITCH
AND FUSE RATING SHOWN
60/40 = 60A SWITCH WITH 40A FUSE

5A
FUSE, SIZE SHOWN

THERMAL MAGNETIC CIRCUIT BREAKER

30AC
150AT
MAGNETIC ONLY CIRCUIT BREAKER (MOTOR
CIRCUITS ONLY) CONTINUOUS CURRENT
RATING AND TRIP SETTINGS SHOWN

2
MOTOR STARTER, SIZE SHOWN

VARIABLE FREQUENCY DRIVE

LINE OR LOAD REACTOR, IMPEDENCE
SHOWN

T
TRANSFORMER

SPD
SURGE PROTECTIVE DEVICE

CURRENT TRANSFORMER

GROUND ROD

GROUND ROD TEST WELL

AUTOMATIC TRANSFER SWITCH

DOUBLE THROW SWITCH

GROUND CONNECTION PER
NEC ARTICLE 250

CR
120V CONTROL RELAY, DPDT MINIMUM

CR
24VDC CONTROL RELAY, DPDT MINIMUM

RELAY CONTACT - NO, NC

PUSHBUTTON OR
SWITCH CONTACT BLOCK - NO, NC

OFF HAND AUTO
THREE POSITION SWITCH

ON OFF
TWO POSITION SWITCH, KEYED

R R
PUSH-TO-TEST LED PILOT LIGHT

FLOAT SWITCH - NO, NC

TEMPERATURE SWITCH - NO, NC

LIMIT SWITCH - NO, NC

TIME DELAY CONTACTS,
NORMALLY OPEN TIMED CLOSED
NORMALLY CLOSED TIMED OPEN

ETM
ELAPSED TIME METER

CNT
COUNTER

FU 1A
FUSED TERMINAL, SIZE SHOWN

FIELD TERMINAL

LOCAL TERMINAL OR LUG CONNECTION

S
SMOKE/HEAT DETECTOR

I
INTRUSION SWITCH

T
THERMOSTAT/TEMPERATURE
TRANSMITTER

MD
MOTION DETECTOR/OCCUPANCY SENSOR

CONDUIT SEAL-OFF

CONDUIT CONCEALED
UNDERFLOOR OR UNDERGROUND

CONDUIT CONCEALED IN WALL
OR ABOVE CEILING IN FINISHED
AREAS, EXPOSED IN PROCESS
AND EQUIPMENT AREAS.

CONDUIT UP

CONDUIT DOWN

CONDUIT UP FROM UNDERGROUND RACEWAY

CONDUIT STUB

FLEXIBLE CONDUIT OR MFR CABLE

XXX
XXX
HOME RUN, ELECTRICAL PANEL DESTINATION SHOWN.

1. RUNS MARKED WITH CROSS-HATCHES INDICATE NUMBER OF NO.12 WIRE. LARGER GAUGES ARE SHOWN OR NOTED ELSEWHERE. LONG CROSS HATCH INDICATES NEUTRAL, SHORT INDICATES PHASE CONDUCTOR, SLANT INDICATES GROUND WIRE PER NEC ARTICLE 250.
2. FOR UNMARKED CONDUIT RUNS, CONTRACTOR SHALL INSTALL REQUIRED NUMBER OF WIRES FOR POWER AND/OR CONTROL OF ELEMENTS IN CIRCUIT(S) SHOWN. SIZE OF WIRE SHALL BE NO. 12, UNLESS OTHERWISE NOTED OR REQUIRED BY CODE.
3. SIZE CONDUIT ACCORDING TO SPECIFICATIONS AND APPLICABLE CODE.
4. DASHED LINE INDICATE CONDUITS CONCEALED UNDERGROUND OR UNDERFLOOR.
5. SOLID HOME RUN INDICATES CONDUIT ABOVE CEILING IN FINISHED AREA, CONCEALED IN WALL OR EXPOSED IN PROCESS AND EQUIPMENT AREAS.

P1
ELECTRICAL CIRCUIT
IDENTIFICATION

P1 P2
C1 C2
MULTIPLE ELECTRICAL CIRCUITS,
SEPARATE CONDUITS

1"C P1 P2
P3 P4
MULTIPLE ELECTRICAL CIRCUITS,
COMMON CONDUIT (SIZE SHOWN)

ABBREVIATIONS

a	CIRCUIT BREAKER AUX. CONTACT, CLOSED WHEN BREAKER IS CLOSED
A	AMMETER, AMPERES
AC	ALTERNATING CURRENT
A/D	ANALOG TO DIGITAL
AF	AMPERE FRAME
AFE	ACTIVE FRONT END (VFD)
AIC	AMPERES INTERRUPTING CAPACITY
ALT	ALTERNATOR
A/M	AUTO/MANUAL CONTROLLER
ANN	ANNUNCIATOR
AS	AMMETER SWITCH
ASD	ADJUSTABLE SPEED DRIVE
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AWG	AMERICAN WIRE GAGE
b	CIRCUIT BREAKER AUX. CONTACT, CLOSED WHEN BREAKER IS OPEN
BCG	BARE COPPER GROUND
C	CONDUIT, CONTACTOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CC	CONTROL CABLE, CLOSING COIL
CHH	COMMUNICATION HANDHOLE
CL	CHLORINE
CKT	CIRCUIT
CMH	COMMUNICATION MANHOLE
CO	CONDUIT ONLY
COMM	COMMUNICATION
CON	CONTACTOR
COND	CONDUCTOR
CONT	CONTINUED, CONTINUATION
CPT	CONTROL POWER TRANSFORMER
CP	CONTROL PANEL
CR	CONTROL RELAY
CS	CONTROL SWITCH
CT	CURRENT TRANSFORMER
CWP	COLD WATER PIPE
DC	DIRECT CURRENT
DIAG	DIAGRAM
DISC	DISCONNECT
DISTR	DISTRIBUTION
DP	DISTRIBUTION PANEL
DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE, SINGLE THROW
(E)	EXISTING
EF	EXHAUST FAN
EHH	ELECTRICAL HANDHOLE
ELEM	ELEMENTARY
EMERG	EMERGENCY
EFFL	EFFLUENT
EQ	EQUAL
EQUIP	EQUIPMENT
ETM	ELAPSED TIME METER
FACP	FIRE ALARM CONTROL PANEL
FIN FL	FINISHED FLOOR
FLEX	FLEXIBLE
FLUOR	FLUORESCENT
FO	FIBER OPTIC
FREQ	FREQUENCY
FU	FUSE
FUT	FUTURE
FVNR	FULL VOLTAGE, NON REVERSING
FVR	FULL VOLTAGE, REVERSING
FWD	FORWARD
GA	GAUGE
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GRS	GALVANIZED RIGID STEEL
H_2O_2	HYDROGEN PEROXIDE
HMI	HUMAN MACHINE INTERFACE
HOA	HAND-OFF-AUTOMATIC
HOR	HAND-OFF-REMOTE
HORZ	HORIZONTAL
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
HV	HIGH VOLTAGE
HZ	HERTZ (CYCLES PER SECOND)
IND LT	INDICATING LIGHT
INCAND	INCANDESCENT
I/O	INPUT/OUTPUT
JB	JUNCTION BOX
KA	KILOAMPERES
KCMIL	THOUSANDS OF CIRCULAR MILS
KV	KILOVOLTS
KVA	KILOVOLT AMPERES
KVAR	KILOVOLT AMPERES REACTIVE
KVARH	KILOVOLT AMPERES REACTIVE HOURS
KW	KILOWATTS
KWH	KILOWATT HOURS
LCP	LIGHTING CONTROL PANEL
LP	LIGHTING PANEL
LPS	LOW PRESSURE SODIUM
LTG	LIGHTING
LT(S)	LIGHT(S)
(M)	MODIFIED
Ma	MILLIAMPERES
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MOV	MOTOR OPERATED VALVE
MS	MOTOR STARTER
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
(N)	NEW
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOC.
NEUT	NEUTRAL
NO	NORMALLY OPEN, NUMBER
NTS	NOT TO SCALE
OVHD	OVERHEAD
OL	THERMAL OVERLOAD RELAY
OT	OVER TEMPERATURE
PB	PULLBOX, PUSHBUTTON
PD	POSITIVE DISPLACEMENT
PE	PHOTOELECTRIC
PEC	PHOTOELECTRIC CELL
PF	POWER FACTOR
pH	MEASURE OF ACIDITY OR ALKALINITY
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PM	POWER MONITOR
PNL	PANEL
PNLBD	PANELBOARD
PRI	PRIMARY
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
PWR	POWER
(RL)	RELOCATE
(RLD)	RELOCATED
RCPT	RECEPTACLE
RCT	REPEAT CYCLE TIMER
RPM	REVOLUTIONS PER MINUTE
RT	RESET TIMER
SCR	SILICON CONTROLLED RECTIFIER
SD	SMOKE DETECTOR
SDBC	SOFT-DRAWN BARE COPPER
SEC	SECONDS, SECONDARY
SECT	SECTION
SF	SUPPLY FAN
SHH	SIGNAL HANDHOLE
SIG	SIGNAL
SN	SOLID NEUTRAL
SPEC	SPECIFICATIONS
SPD	SURGE PROTECTIVE DEVICE
SPDT	SINGLE POLE, DOUBLE THROW
SS	STAINLESS STEEL, SOLID
SW	STATE SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYNC	SYNCHRONIZING TERMINAL BOX, TERMINAL BOARD
TB	TELEPHONE CABINET
TC	TEMPERATURE
TEMP	TWISTED PAIR UNSHIELDED
TP	TWISTED SHIELDED PAIR
TSP	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TVSS	UNIT HEATER
UH	ULTRA VIOLET
UV	VOLTS
V	VOLT-AMPERES
VA	VARIABLE FREQUENCY DRIVE
VFD	VOLT AMPERES REACTIVE
VAR	VERTICAL
VERT	VAR-HOUR
VH	VOLTMETER SWITCH
VS	WIRE, WATTS
W	WATTHOUR METER
WHM	WATTHOUR DEMAND METER
WHDM	WEATHERPROOF
WP	WATERTIGHT
WTRT	WATER TREATMENT PLANT
WTP	TRANSDUCER
XDCR	TRANSMITTER
XMTR	

Industrial Systems INC
12119 NE 99th Street
Suite #2090
Vancouver, Washington 98682
Phone: (360) 718-7267
Fax: (360) 952-8958
e-mail: is@industrialsystems-inc.com
OR CCB #196597 WA #INDUSSI880K9
AK #1018436
PROJECT#: 21.77.01

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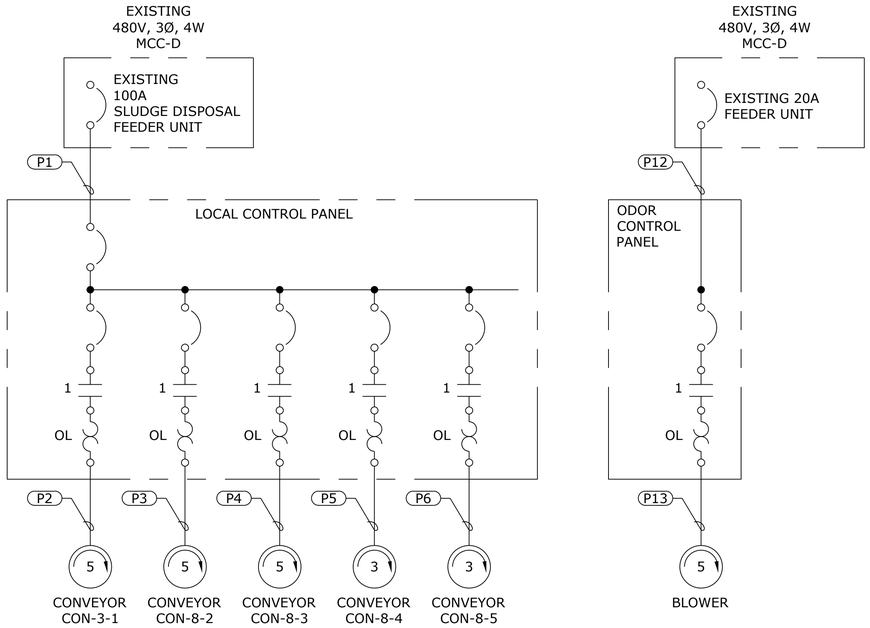
LYNNWOOD WASHINGTON
LYNNWOOD WWTP INTERIM SLUDGE DISPOSAL

ELECTRICAL
SYMBOLS, LEGEND & ABBREVIATIONS

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET
E-1
23 OF 33



ONE-LINE DIAGRAM

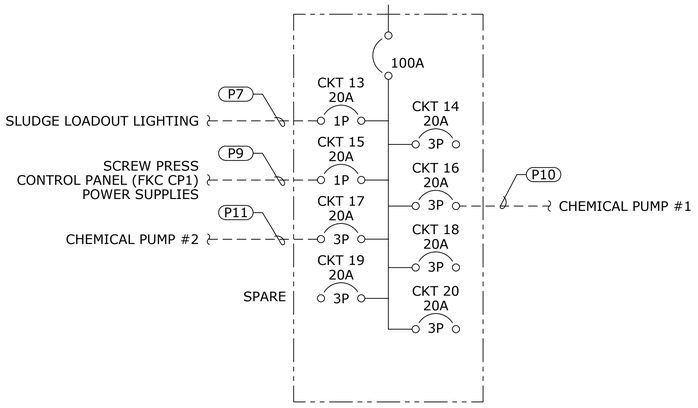
1
-

SCALE: NTS

SWITCHBOARD MCC-D - SOLIDS HANDLING AREA #3

3
-

SCALE: NTS



MCC-D PANELBOARD, PANEL PPD

2
-

SCALE: NTS

LOAD SUMMARY: LOCAL CONTROL PANEL			
Voltage	480	3 Phase	4 Wire
DESCRIPTION	LOAD KVA	LOAD HP	Amperes @ 480 VAC
Conveyor 1	5.28	5.00	7.6
Conveyor 2	5.28	5.00	7.6
Conveyor 3	3.17	3.00	4.8
Conveyor 4	3.17	3.00	4.8
Conveyor 5	3.17	3.00	4.8
SUBTOTAL		**19.0**	**29.6**
LARGEST MOTOR X 25%			1.9
NON-MOTOR LOADS X 25%			
TOTAL		**19.0**	**31.5**

LOAD SUMMARY: ODOR CONTROL PANEL			
Voltage	480	3 Phase	4 Wire
DESCRIPTION	LOAD KVA	LOAD HP	Amperes @ 480 VAC
BLOWER	5.28	5.00	7.6
SUBTOTAL		**5.0**	**7.6**
LARGEST MOTOR X 25%			1.9
TOTAL		**5.0**	**9.5**

LOAD SUMMARY

2
-

SCALE: NTS

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OR CCB #196597 WA #INDUSSI880K9
AK #1018436
PROJECT#: 21.77.01

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LYNNWOOD WASHINGTON
LYNNWOOD WWTP INTERIM SLUDGE DISPOSAL

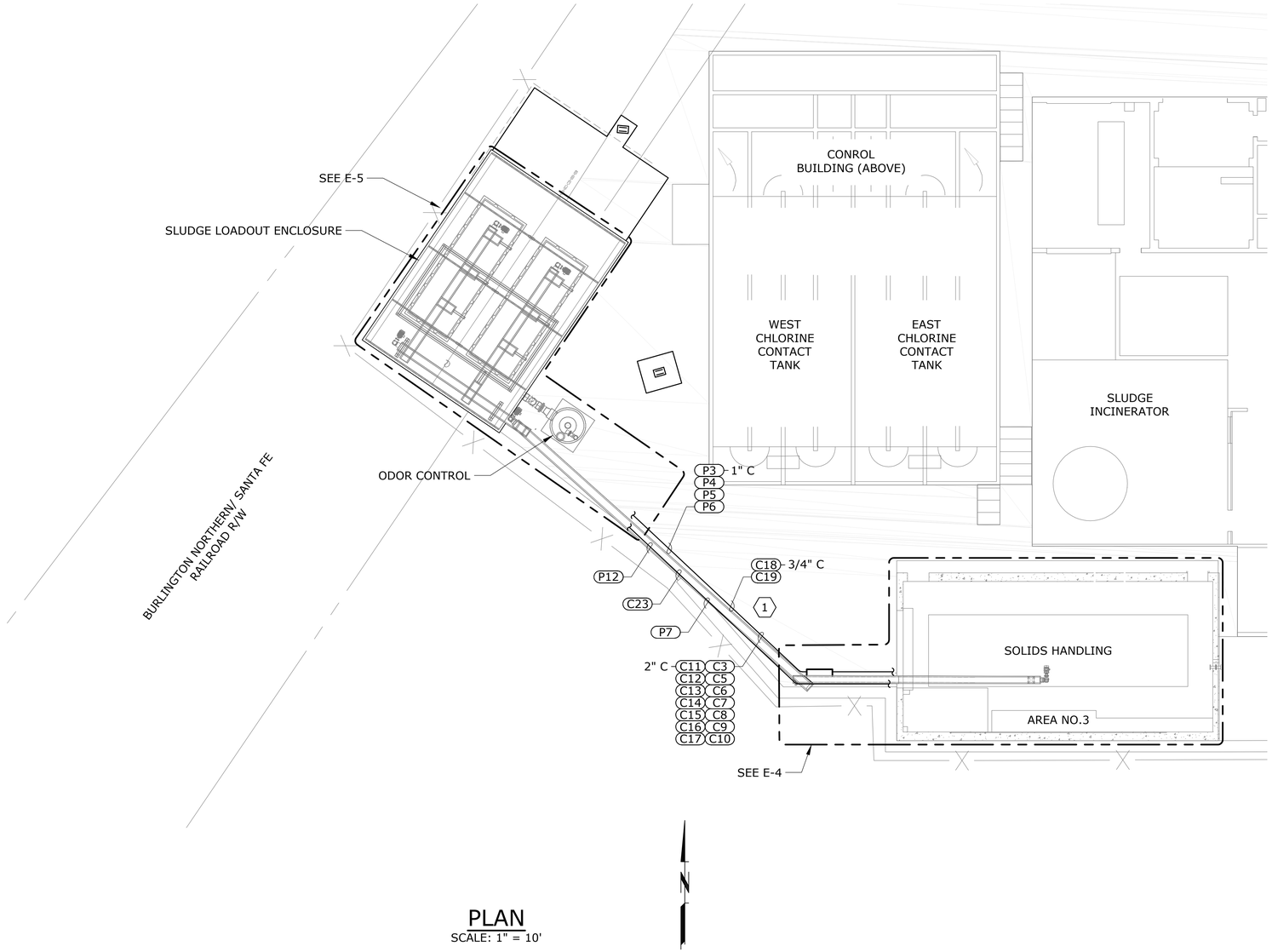
ELECTRICAL
ONE-LINE DIAGRAM

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET
E-2
24 OF 33

KEYED NOTES

1. CONTRACTOR SHALL COORDINATE WITH CONVEYOR SUPPLIER TO INSTALL CONDUITS ALONG LENGTH OF CONVEYOR SUPPORT STRUCTURE.



PLAN
SCALE: 1" = 10'

CONDUCTOR SIZES ARE BASED ON COPPER CONDUCTORS.
MULTIPLE CIRCUITS RUN IN COMMON CONDUITS ARE SHOWN ON PLANS AND SUPERSEDE THE BASIC CONDUIT SIZE SHOWN.

RACEWAY SIZES ARE IN INCHES WITH QUANTITIES IN EXCESS OF (1) SHOWN IN ADJACENT PARENTHESIS.
P = POWER CONDUCTORS; G = GROUND CONDUCTORS; N = FOR NEUTRAL CONDUCTORS; C = CONTROL CONDUCTORS;
SP = SPARE CONDUCTORS; TSP = TWISTED SHIELDED PAIR.

CIRCUIT NUMBER	FROM	TO	CONDUCTORS	RACEWAY	NOTES
P1	MCC-D	LOCAL CONTROL PANEL	(3) # 1 AWG, P (1) # 8 AWG, G	1-1/2"	
P2	LOCAL CONTROL PANEL	CONVEYOR CON-3-1 MOTOR	(3) 12 AWG, P (1) 12 AWG, G	3/4"	
P3	LOCAL CONTROL PANEL	CONVEYOR CON-8-2 MOTOR	(3) 12 AWG, P (1) 12 AWG, G	3/4"	
P4	LOCAL CONTROL PANEL	CONVEYOR CON-8-3 MOTOR	(3) 12 AWG, P (1) 12 AWG, G	3/4"	
P5	LOCAL CONTROL PANEL	CONVEYOR CON-8-4 MOTOR	(3) 12 AWG, P (1) 12 AWG, G	3/4"	
P6	LOCAL CONTROL PANEL	CONVEYOR CON-8-5 MOTOR	(3) 12 AWG, P (1) 12 AWG, G	3/4"	
P7	MCC-D PANELBORD	SLUDGE LOADOUT LIGHTING	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
P8	MCC-D PANELBORD	SLUDGE LOADOUT RECEPTACLES	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
P9	MCC-D PANELBORD	SCREW PRESS CONTROL PANEL (FKC CP1)	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	ETHERNET SWITCH AND PoE POWER INJECTOR
P10	MCC-D PANELBORD	CHEMICAL PUMP #1	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
P11	MCC-D PANELBORD	CHEMICAL PUMP #2	(1) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
P12	MCC-D PANELBOARD	ODOR CONTROL PANEL	(3) 12 AWG, P (1) 12 AWG, N (1) 12 AWG, G	3/4"	
C1	LOCAL CONTROL PANEL	CONVEYOR CON-3-1 PULL CORD A/B	(2) #14 AWG, C (1) #14 AWG, G	3/4"	PULL CORD A & B WIRED IN SERIES
C2	LOCAL CONTROL PANEL	CONVEYOR CON-3-1 SPEED SWITCH	(1) #14 AWG, P (1) #14 AWG, N (2) #14 AWG, C (1) #14 AWG, G	3/4"	ZERO SPEED POWER ZERO SPEED CONTROL CONTACT
C3	LOCAL CONTROL PANEL	CONVEYOR CON-8-2 PULL CORD	(2) #14 AWG, C (1) #14 AWG, G	3/4"	
C4	LOCAL CONTROL PANEL	CONVEYOR CON-8-2 SPEED SWITCH	(1) #14 AWG, P (1) #14 AWG, N (2) #14 AWG, C (1) #14 AWG, G	3/4"	ZERO SPEED POWER ZERO SPEED CONTROL CONTACT
C5	LOCAL CONTROL PANEL	CONVEYOR CON-8-3 PULL CORD	(2) #14 AWG, C (1) #14 AWG, G	3/4"	
C6	LOCAL CONTROL PANEL	CONVEYOR CON-8-3 SPEED SWITCH	(1) #14 AWG, P (1) #14 AWG, N (2) #14 AWG, C (1) #14 AWG, G	3/4"	ZERO SPEED POWER ZERO SPEED CONTROL CONTACT
C7	LOCAL CONTROL PANEL	CONVEYOR CON-8-3 GATE1 VALVE SV-8-1	(6) #14 AWG, C (1) #14 AWG, G	3/4"	SOLENOID VALVES AND LIMIT SWITCHES
C8	LOCAL CONTROL PANEL	CONVEYOR CON-8-4 PULL CORD	(6) #14 AWG, C (1) #14 AWG, G	3/4"	
C9	LOCAL CONTROL PANEL	CONVEYOR CON-8-4 SPEED SWITCH	(1) #14 AWG, P (1) #14 AWG, N (2) #14 AWG, C (1) #14 AWG, G	3/4"	ZERO SPEED POWER ZERO SPEED CONTROL CONTACT
C10	LOCAL CONTROL PANEL	CONVEYOR CON-8-2 GATE2 VALVE SV-8-2	(6) #14 AWG, C (1) #14 AWG, G	3/4"	SOLENOID VALVES AND LIMIT SWITCHES
C11	LOCAL CONTROL PANEL	CONVEYOR CON-8-2 GATE3 VALVE SV-8-3	(6) #14 AWG, C (1) #14 AWG, G	3/4"	SOLENOID VALVES AND LIMIT SWITCHES
C12	LOCAL CONTROL PANEL	CONVEYOR CON-8-2 GATE4 VALVE SV-8-4	(6) #14 AWG, C (1) #14 AWG, G	3/4"	SOLENOID VALVES AND LIMIT SWITCHES
C13	LOCAL CONTROL PANEL	CONVEYOR CON-8-5 PULL CORD	(2) #14 AWG, C (1) #14 AWG, G	3/4"	
C14	LOCAL CONTROL PANEL	CONVEYOR CON-8-5 SPEED SWITCH	(1) #14 AWG, P (1) #14 AWG, N (2) #14 AWG, C (1) #14 AWG, G	3/4"	ZERO SPEED POWER ZERO SPEED CONTROL CONTACT
C15	LOCAL CONTROL PANEL	CONVEYOR CON-8-5 GATE5 VALVE SV-8-5	(6) #14 AWG, C (1) #14 AWG, G	3/4"	SOLENOID VALVES AND LIMIT SWITCHES
C16	LOCAL CONTROL PANEL	CONVEYOR CON-8-5 GATE6 VALVE SV-8-6	(6) #14 AWG, C (1) #14 AWG, G	3/4"	SOLENOID VALVES AND LIMIT SWITCHES
C17	LOCAL CONTROL PANEL	CONVEYOR CON-8-5 GATE7 VALVE SV-8-7	(6) #14 AWG, C (1) #14 AWG, G	3/4"	SOLENOID VALVES AND LIMIT SWITCHES
C18	SCREW PRESS CONTROL PANEL (FKC CP1)	CAMERA 1	CAT 6 (PoE)	3/4"	
C19	SCREW PRESS CONTROL PANEL (FKC CP1)	CAMERA 2	CAT 6 (PoE)	3/4"	
C20	SCREW PRESS CONTROL PANEL (FKC CP1)	SLUDGE DISPOSAL LOCAL CONTROL PANEL	CAT 6	3/4"	
C21	SLUDGE HANDLING CONTROL PANEL (SHCP)	CHEMICAL PUMP #1	(1) 18 AWG, TSP (4) 14 AWG, C (1) 18 AWG, G	3/4"	SPEED CONTROL, RUN COMMAND AND RUN CONFIRM
C22	SLUDGE HANDLING CONTROL PANEL (SHCP)	CHEMICAL PUMP #2	(1) 18 AWG, TSP (4) 14 AWG, C (1) 18 AWG, G	3/4"	SPEED CONTROL, RUN COMMAND AND RUN CONFIRM
C23	SCREW PRESS CONTROL PANEL (FKC CP1)	ODOR CONTROL PANEL	(6) #14 AWG, C (1) #14 AWG, G	3/4"	REMOTE START, RUN CONFIRM, FAIL
C24	SCREW PRESS CONTROL PANEL (FKC CP1)	PRESSURE SWITCH	(2) #14 AWG, C (1) #14 AWG, G	3/4"	

CIRCUIT SCHEDULE
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LYNNWOOD WASHINGTON

LYNNWOOD WWTP INTERIM SLUDGE DISPOSAL

ELECTRICAL

SITE PLAN & CIRCUIT SCHEDULE

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET
E-3
25 OF 33

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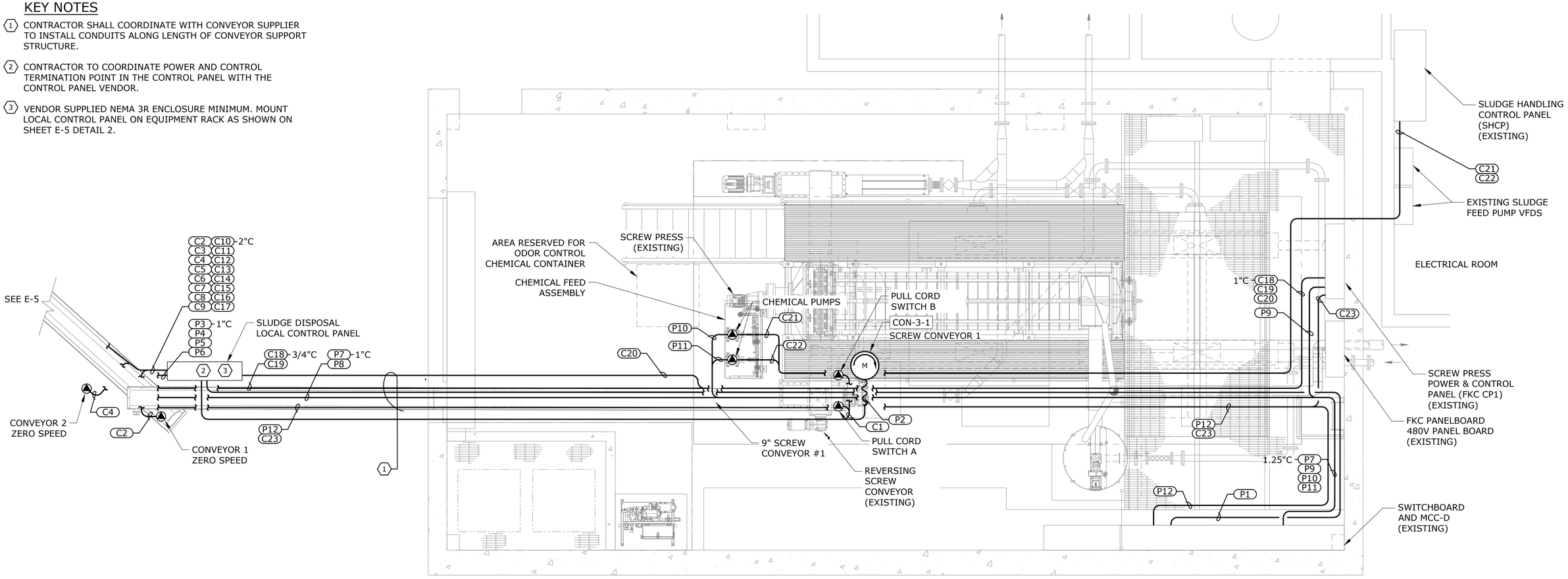
KEY NOTES

1. CONTRACTOR SHALL COORDINATE WITH CONVEYOR SUPPLIER TO INSTALL CONDUITS ALONG LENGTH OF CONVEYOR SUPPORT STRUCTURE.
2. CONTRACTOR TO COORDINATE POWER AND CONTROL TERMINATION POINT IN THE CONTROL PANEL WITH THE CONTROL PANEL VENDOR.
3. VENDOR SUPPLIED NEMA 3R ENCLOSURE MINIMUM. MOUNT LOCAL CONTROL PANEL ON EQUIPMENT RACK AS SHOWN ON SHEET E-5 DETAIL 2.



PLAN

SCALE: 3/8" = 1'-0"

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ELECTRICAL

SOLIDS HANDLING AREA ELECTRICAL PLAN

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET E-4

26 OF 33

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GENERAL NOTES

1. CLASS 1 DIV 2 WITHIN SLUDGE LOADOUT ENCLOSURE.
2. CLASS 1 DIV 2 WITHIN 3 FEET OF ODOR CONTROL VESSEL AND DUCT WORK.

KEYED NOTES

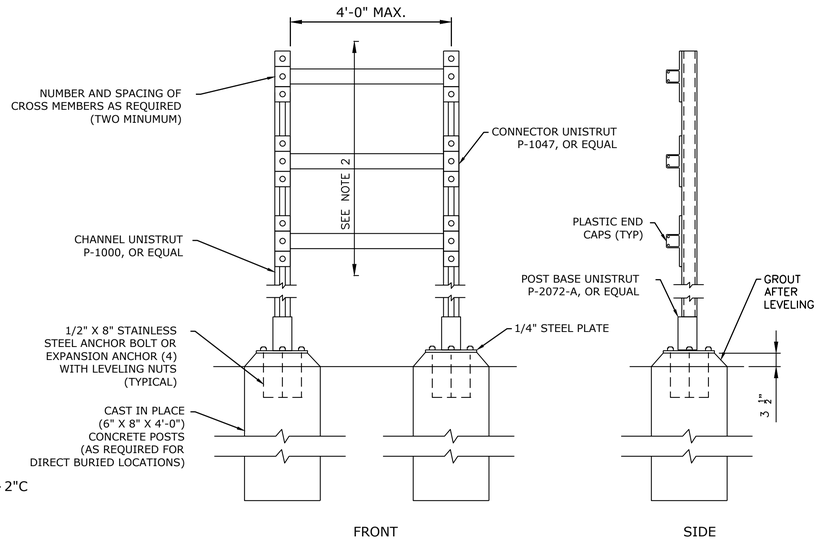
1. EXPLOSION PROOF LIGHT SWITCH, 3-WAY CAPABLE, MOUNTED 4' OFF OF FLOOR.
2. MOUNT ODOR CONTROL PANEL MINIMUM THREE FEET FROM ODOR CONTROL EQUIPMENT. MOUNT ON EQUIPMENT RACK AS SHOWN ON DETAIL 2.
3. EXPLOSION PROOF NETWORK IP CAMERA WITH POE. COORDINATE MOUNTING LOCATION OF CAMERAS FOR BEST VIEWING ANGLE OF LOADOUT CONTAINERS. CAMERA SHALL BE LARSON EXPCMR-IP-POE-4MP-IR, OR APPROVED EQUAL.

LUMINAIRE SCHEDULE				
DEVICE/LOCATION/USE	DESCRIPTION	VOLTS	WATTS	SUGGESTED MANUFACTURER & CATALOG NUMBER
BUILDING INTERIOR LIGHT	5450 LUMEN LED LUMINAIRE HXPL SERIES 48"	120V	46.9	HOLOPHANE HXPL L48 2 5L 120 DM 40K CLASS 1 DIV 2 RATED LED LIGHT

LUMINAIRE SCHEDULE

SCALE: N/A

3



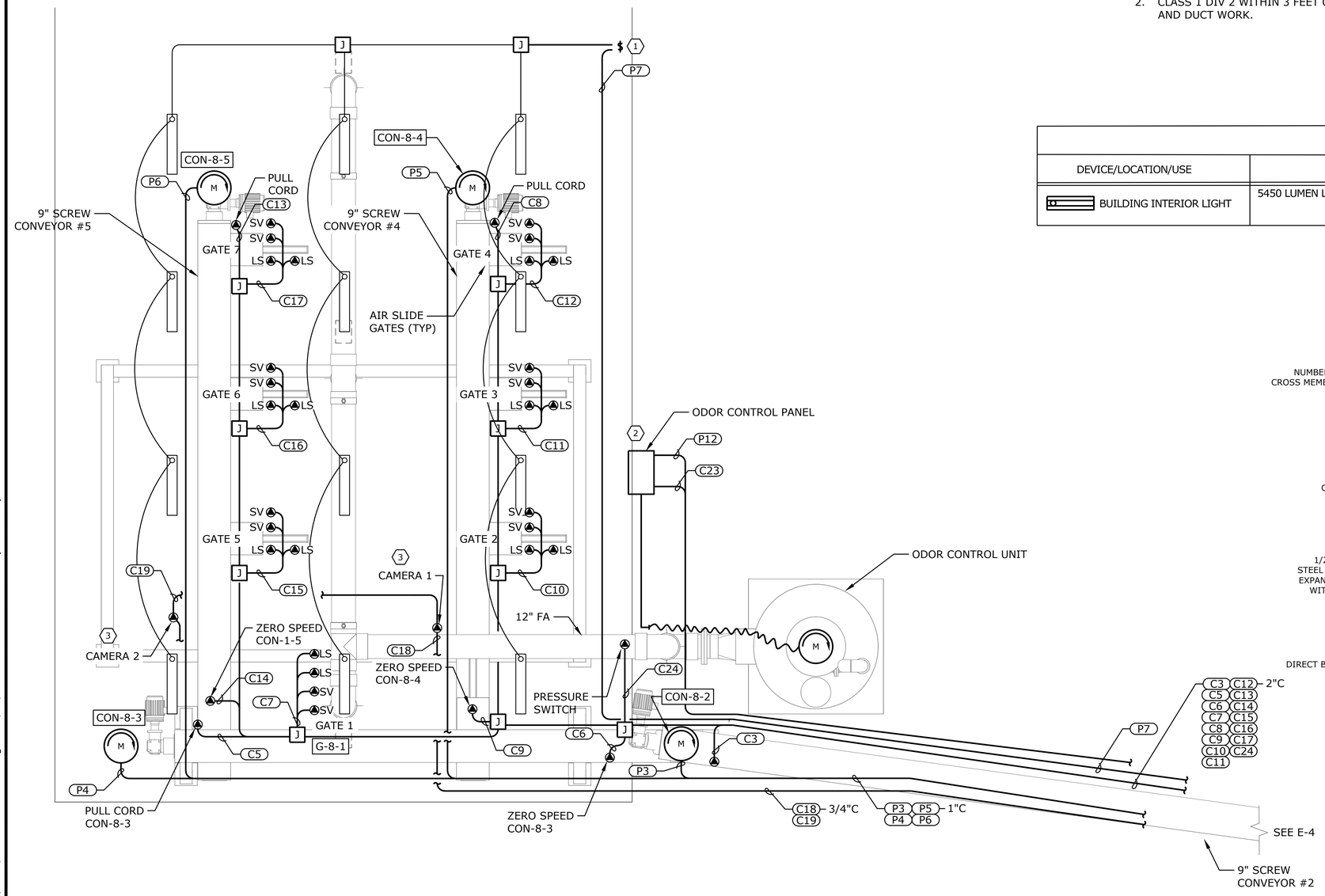
ELECTRICAL EQUIPMENT RACK DETAIL NOTES:

1. RACK CHANNELS AND FITTINGS SHALL BE 316 STAINLESS STEEL.
2. CONTROL PANELS AND INSTRUMENTS SHALL BE MOUNTED SO THAT INDICATION OR ADJUSTMENTS ARE FOUR TO FIVE FEET ABOVE FLOOR OR PLATFORM.

ELECTRICAL EQUIPMENT RACK

SCALE: N/A

2



PLAN

SCALE: 3/8" = 1'-0"

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ELECTRICAL

SLUDGE LOADOUT ENCLOSURE ELECTRICAL PLAN

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET
E-5
27 OF 33

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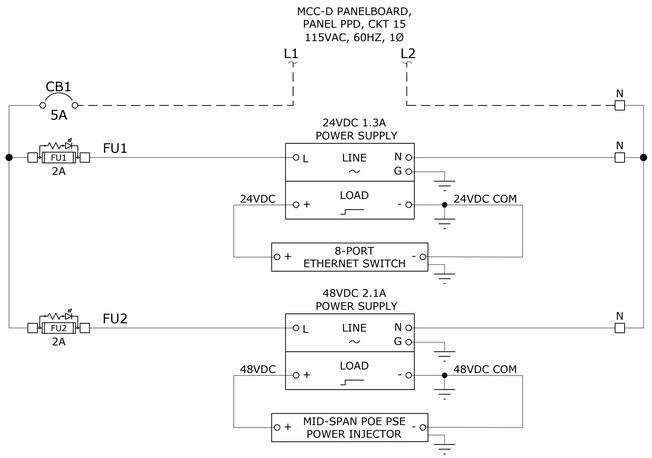
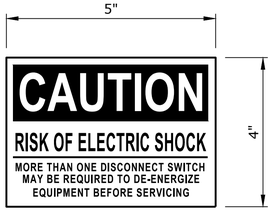


ADDITIONAL POWER DISTRIBUTION

1 / -

SCALE: N/A



ENCLOSURE DOOR SAFETY LABEL

2 / -

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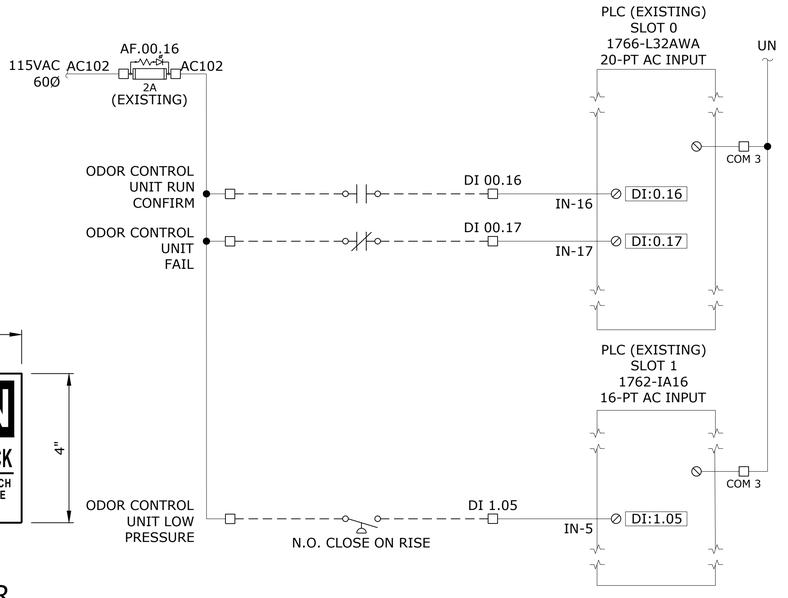


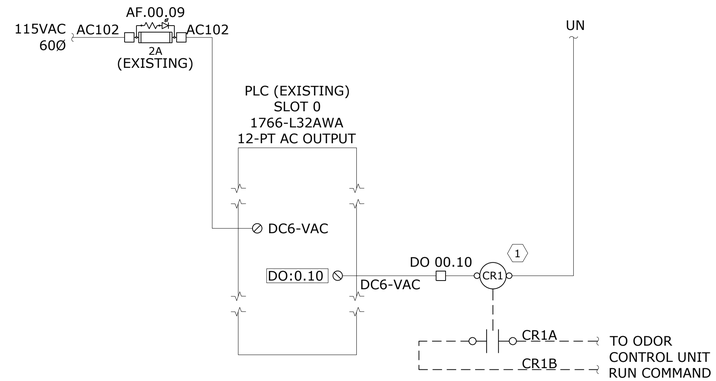
ODOR CONTROL UNIT PLC DIGITAL INPUTS

3 / -

SCALE: N/A

KEYED NOTES

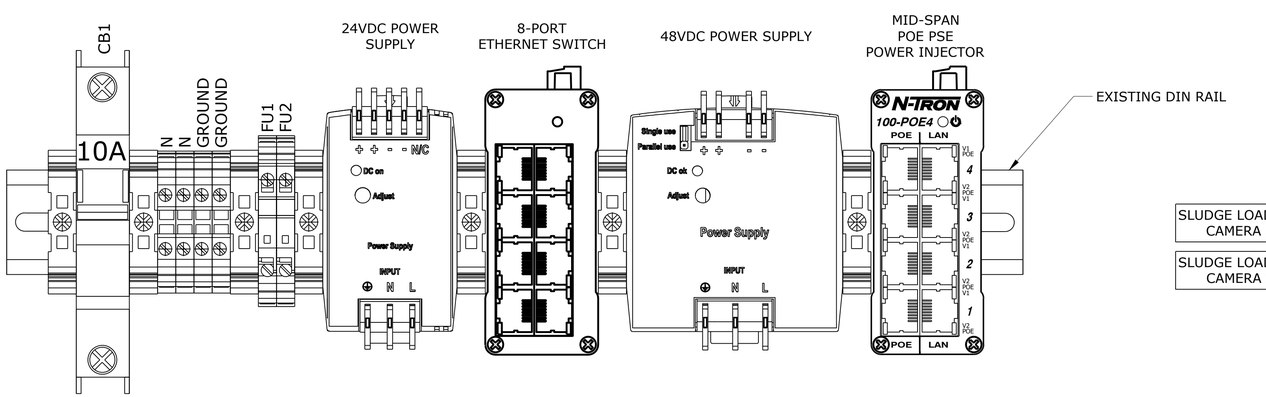
1. CR1 IS AN EXISTING UNUSED 11-PIN TUBE BASE RELAY. THE RELAY SHALL BE REPLACED.
2. INSTALL RJ45 BLOCKOUT DEVICE ON PORTS 3&4 TO PREVENT UNINTENTIAL CONNECTION AND POSSIBLE DAMAGE TO ETHERNET DEVICES.



ODOR CONTROL UNIT PLC DIGITAL OUTPUTS

4 / -

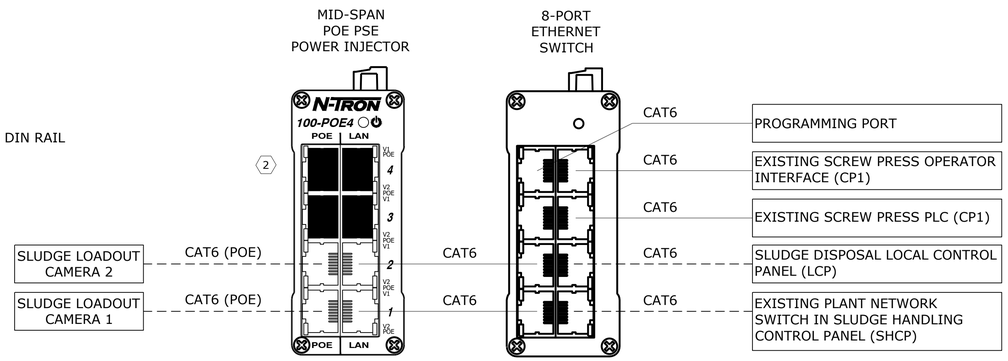
SCALE: N/A



ADDITIONAL HARDWARE TERMINAL BLOCK

5 / -

SCALE: N/A



ADDITIONAL HARDWARE TERMINAL BLOCK

6 / -

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LYNNWOOD WWTP INTERIM SLUDGE DISPOSAL

ELECTRICAL
SCREW PRESS
CONTROL PANEL (FKC CP1)
MODIFICATIONS

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET
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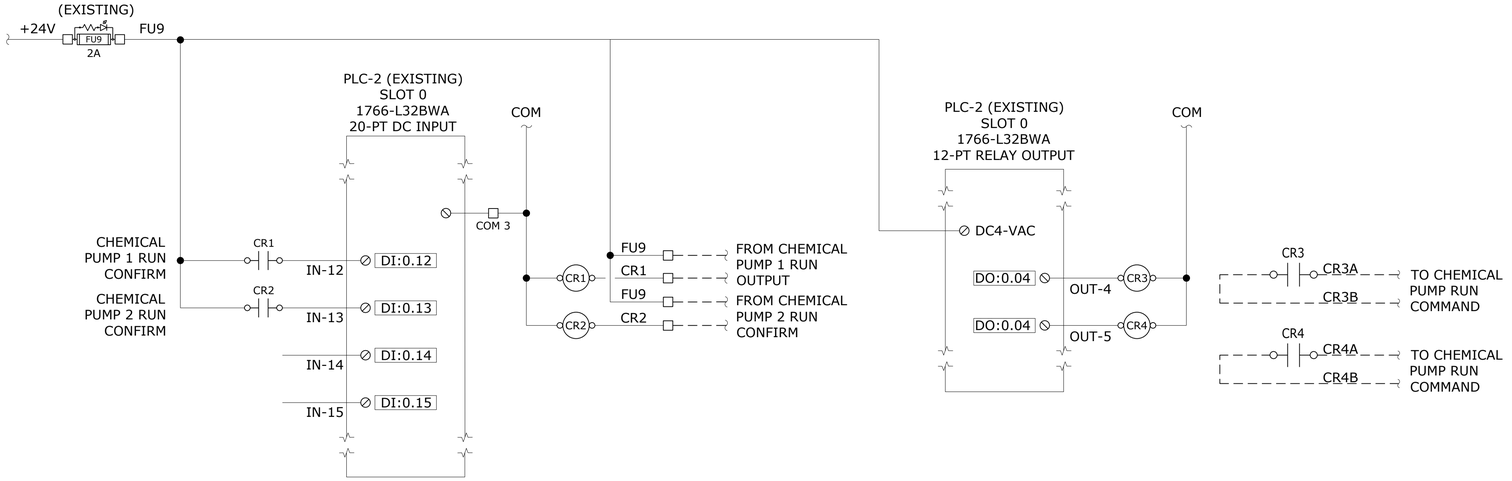


CHEMICAL PUMP PLC DIGITAL INPUTS

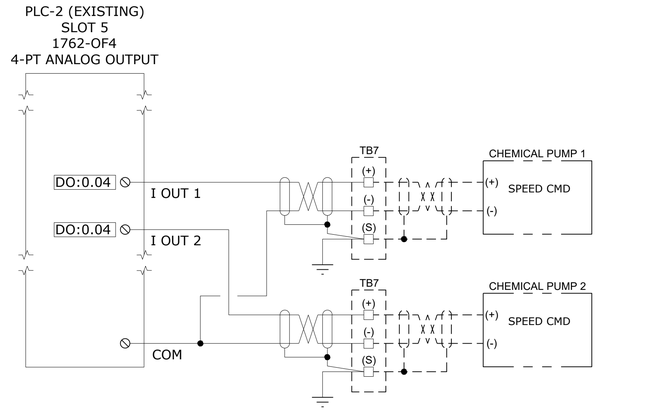
SCALE: N/A

3 / -

CHEMICAL PUMP PLC DIGITAL OUTPUTS

SCALE: N/A

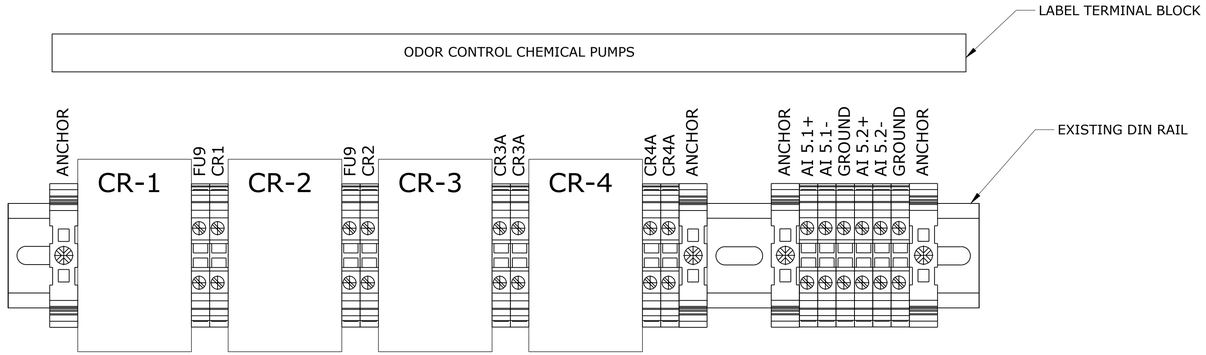
3 / -



CHEMICAL PUMP PLC ANALOG OUTPUTS

SCALE: N/A

3 / -



ADDITIONAL TERMINAL BLOCKS AND RELAYS

SCALE: N/A

4 / -

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LYNNWOOD WWTP INTERIM SLUDGE DISPOSAL

ELECTRICAL
SLUDGE HANDLING CONTROL PANEL (SHCP) MODIFICATIONS

PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

SHEET
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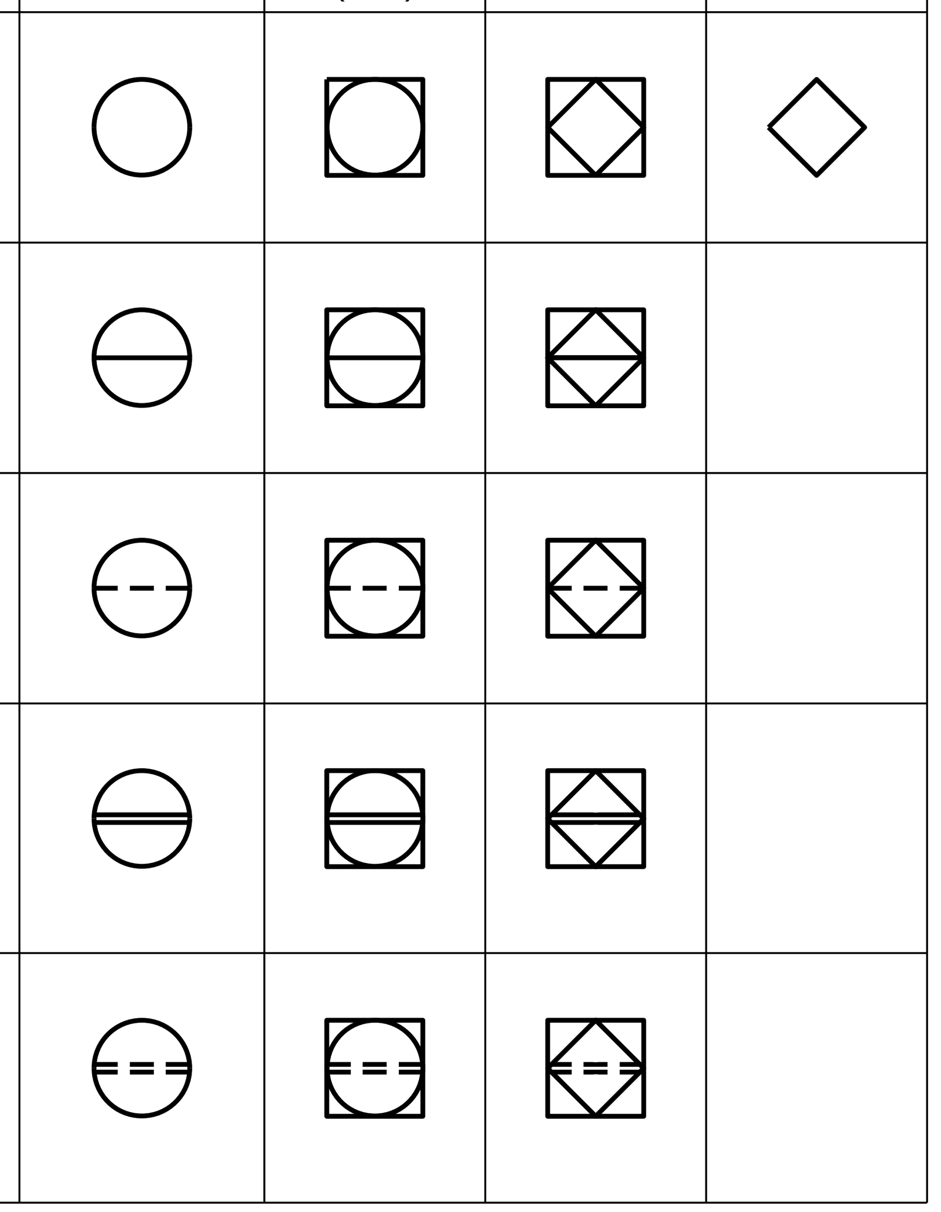
GENERAL INSTRUMENT SYMBOLS

LOCATION/ACCESSIBILITY	DISCRETE INSTRUMENTS	SHARED DISPLAY AND CONTROL (DCS)	PLC	DISCRETE HARDWARE INTERLOCK
FIELD MOUNTED 1. FIELD OR LOCALLY MOUNTED. 2. ACCESSIBLE TO AN OPERATOR AT DEVICE.				
PRIMARY LOCATION NORMALLY ACCESSIBLE TO AN OPERATOR 1. CENTRAL OR MAIN CONTROL ROOM. 2. FRONT OF MAIN PANEL OR CONSOLE MOUNTED. 3. VISIBLE ON VIDEO DISPLAY. 4. ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.				
PRIMARY LOCATION NORMALLY INACCESSIBLE TO AN OPERATOR 1. CENTRAL OR MAIN CONTROL ROOM. 2. REAR OF PANEL OR CABINET MOUNTED. 3. NOT VISIBLE ON VIDEO DISPLAY. 4. NOT NORMALLY ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.				
AUXILIARY LOCATION NORMALLY ACCESSIBLE TO AN OPERATOR 1. SECONDARY OR LOCAL CONTROL ROOM. 2. FIELD OR LOCAL CONTROL PANEL. 3. FRONT OF SECONDARY OR LOCAL PANEL MOUNTED. 4. VISIBLE ON VIDEO DISPLAY. 5. ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.				
AUXILIARY LOCATION NORMALLY INACCESSIBLE TO AN OPERATOR 1. SECONDARY OR LOCAL CONTROL ROOM. 2. FIELD OR LOCAL CONTROL PANEL. 3. REAR OF SECONDARY OR LOCAL PANEL OR CABINET MOUNTED. 4. NOT VISIBLE ON VIDEO DISPLAY. 5. NOT NORMALLY ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE.				



ABBREVIATIONS

AG	ABOVE GROUND	LO	LOCKED OPEN
ATM	ATMOSPHERE	LP	LOW PRESSURE
BYP	BYPASS	LPT	LOW POINT
CC	CHEMICAL CLEANOUT	MTL	MATERIAL
CL	CENTERLINE	MAX	MAXIMUM
CO	CLEANOUT	MCC	MOTOR CONTROL CENTER
CONN	CONNECTION	MCP	MAIN CONTROL PANEL
CVLS	CHECK VALVE LIMIT SWITCH	MIN	MINIMUM
CTR	CENTER	MOV	MOTOR OPERATED VALVE
DCS	DISTRIBUTED CONTROL SYSTEM	MW	MANWAY
DES	DESIGN	NC	NORMALLY CLOSED
DIA	DIAMETER	NNF	NORMALLY NO FLOW
DP	DESIGN PRESSURE	NO	NORMALLY OPEN
D/P	DIFFERENTIAL PRESSURE	NOZ	NOZZLE
DRN	DRAIN	O/C	OPEN/CLOSE
DT	DESIGN TEMPERATURE	O/O	ON/OFF
DWG	DRAWING	OIT	OPERATOR INTERFACE TERMINAL
(E)	EXISTING	OP	OUTPUT
EL	ELEVATION	OVHD	OVERHEAD
ESD	EMERGENCY SHUTDOWN	PLC	PROGRAMMABLE LOGIC CONTROLLER
FOF	FACE OF FLANGE	PRESS	PRESSURE
(F)	FURNISHED	PV	PROCESS VARIABLE
FC	FAIL CLOSED	(R)	RELOCATED
FI	FAIL INDETERMINATE	REQD	REQUIRED
FL	FAIL LOCKED (LAST POSITION)	RIO	REMOTE I/O PANEL
FLG	FLANGE	RTD	RESISTANCE TEMPERATURE DETECTOR
FO	FAIL OPEN	SC	SAMPLE CONNECTION
FP	FULL PORT	SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION
FV	FULL VACUUM		
GO	GEAR OPERATED	SCH	SCHEDULE
GR	GRADE	SD	SHUTDOWN
HC	HOSE CONNECTION	SG	SPECIFIC GRAVITY
HDR	HEADER	SIS	SAFETY INSTRUMENTED SYSTEM
HH	HAND HOLE	SO	STEAM OUT
HOA	HAND/OFF/AUTOMATIC	SP	SET POINT
HP	HIGH PRESSURE	SS	STAINLESS STEEL S/S or START/STOP
HPT	HIGH POINT	STD	STANDARD
IAS	INSTRUMENT AIR SUPPLY	T/C	THERMOCOUPLE
LC	LOCKED CLOSED	TDH	TOTAL DIFFERENTIAL HEAD
LCP	LOCAL CONTROL PANEL	TEMP	TEMPERATURE
		THRD	THREADED
		TSO	TIGHT SHUT-OFF
		TYP	TYPICAL
		UG	UNDERGROUND
		VNT	VENT
		VAC	VACUUM
		VB	VORTEX BREAKER
		VFD	VARIABLE FREQUENCY DRIVE
		W/	WITH
		W/O	WITHOUT

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AK #1018436
PROJECT#: 21.77.01

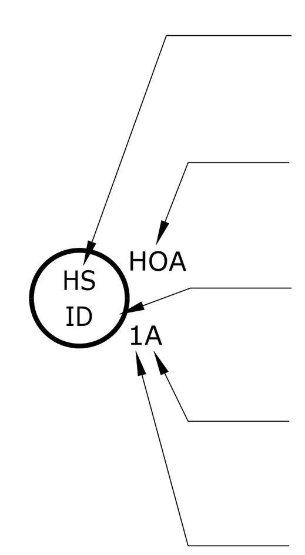
/STREAM IDENTIFIERS

ASIN EFFLUENT PI = PRIMARY INFLUENT
PLE = PLANT EFFLUENT

INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, FLAME, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE (TYPICALLY CONDUCTIVITY - ELECTRICAL)			CONTROL, COMMAND	CLOSED
D	USER'S CHOICE (TYPICALLY DENSITY OR SPECIFIC GRAVITY)	DIFFERENTIAL			DIVERT
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE OR GAUGING (DIMENSIONAL)		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE (TYPICALLY MOISTURE OR HUMIDITY)	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY OR HEAT DUTY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	THROUGH
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE, TORQUE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

TYPICAL INSTRUMENT TAG NUMBERS & DESIGNATION



INSTRUMENT TYPE
SEE 'INSTRUMENT IDENTIFICATION LETTERS'

ADDITIONAL INSTRUMENT IDENTIFICATION
SEE 'HAND SWITCH ABBREVIATIONS'

INSTRUMENT IDENTIFICATION
(DIGITS DENOTE ASSOCIATED AREA)

WHEN USED, LETTER DISTINGUISHES BETWEEN MULTIPLE SIMILAR DEVICES

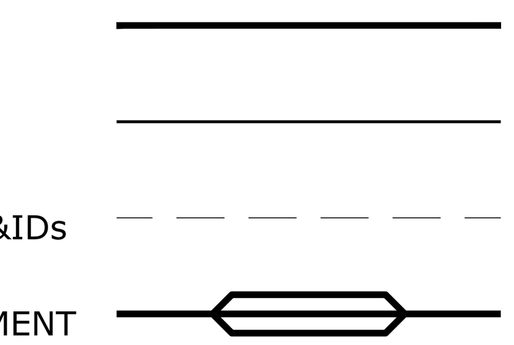
USED WHEN MULTIPLE TRAINS ARE USED AND REPRESENTS THE TRAIN NUMBER

HAND SWITCH ABBREVIATIONS

AO = AUTO/OFF	LOS = LOCKOUT/STOP
AM = AUTO/MANUAL	LA = LOCAL/AUTO
CM = COMPUTER/MANUAL	LR = LOCAL/REMOTE
CL = COMPUTER LOCAL	OC = OPEN/CLOSE
ES = EMERGENCY STOP	OCA = OPEN/CLOSE/AUTO
FR = FORWARD/REVERSE	OO = ON/OFF
FOR = FORWARD/OFF/REVERSE	OOA = ON/OFF/AUTO
FS = FAST/SLOW	OSC = OPEN/STOP/CLOSE
FOS = FAST/OFF/SLOW	RES = RESET
HA = HAND/AUTO	RF = RUN/FAULT
HIM = HUMAN INTERFACE MODULE	RSL = RAISE/STOP/LOWER
HOA = HAND/OFF/AUTOMATIC	SS = START/STOP
LLS = LEAD/LAG/STANDBY	SOR = START/OFF/RESET
LOC = LOCAL/OFF/COMPUTER	V/B = VFD/BYPASS
LOR = LOCAL/OFF/REMOTE	

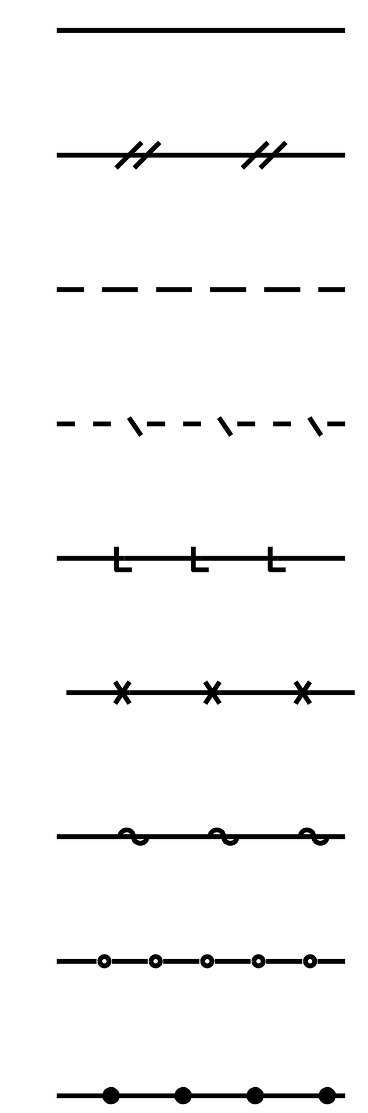
PIPING LINE SYMBOLS

PRIMARY (AG & UG)
SECONDARY / UTILITY (AG & UG)
FUTURE OR EXISTING ON NEW P&IDs
JACKETED OR DOUBLE CONTAINMENT

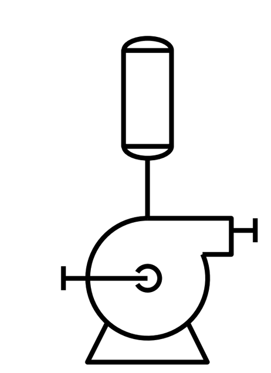


INSTRUMENT LINE SYMBOLS

INSTRUMENT SUPPLY OR CONNECTION TO PROCESS
PNEUMATIC SIGNAL
ELECTRIC SIGNAL (ANALOG)
ELECTRIC SIGNAL (DISCRETE)
HYDRAULIC SIGNAL
CAPILLARY TUBE
ELECTROMAGNETIC, SONIC, OPTICAL, OR NUCLEAR SIGNAL
SOFTWARE OR DATA LINK
MECHANICAL LINK



TYPICAL EQUIPMENT TAG NUMBERS & DESIGNATION



AER = AERATOR	FLT = FILTER
BIN = BIN	HEX = HEAT EXCHANGER
BLO = BLOWER	MIX = MIXER
CEL = CELL	P = PUMP
CLA = CLARIFIER	PRS = PRESS
CLS = CLASSIFIER	SCN = SCREEN
CND = CONDENSATE TRAP	SDG = SLIDE GATE
CON = CONVEYOR	SL = SLUICE GATE
CMP = COMPRESSOR	SMP = SUMP
DIF = DIFFUSER	THK = THICKENER
DIG = DIGESTER	TNK = TANK
DIS = DISINFECTION UNIT	WEL = WET WELL
FED = FEEDER	

UNIQUE IDENTIFIER
EQUIPMENT AREA
EQUIPMENT TYPE
(SEE CHART ABOVE)

OFF-PAGE CONNECTORS AND TIE-IN SYMBOL

A. OFF-PLOT CONNECTOR

CONNECTOR NUMBER — SERVICE DESCRIPTION / XX | P&ID No / ORIGIN/DESTINATION

B. PRIMARY/SECONDARY LINES AND INSTRUMENT SIGNAL CONNECTOR

CONNECTOR NUMBER — SERVICE DESCRIPTION / XX | P&ID No / ORIGIN /DESTINATION

C. UTILITY CONNECTOR

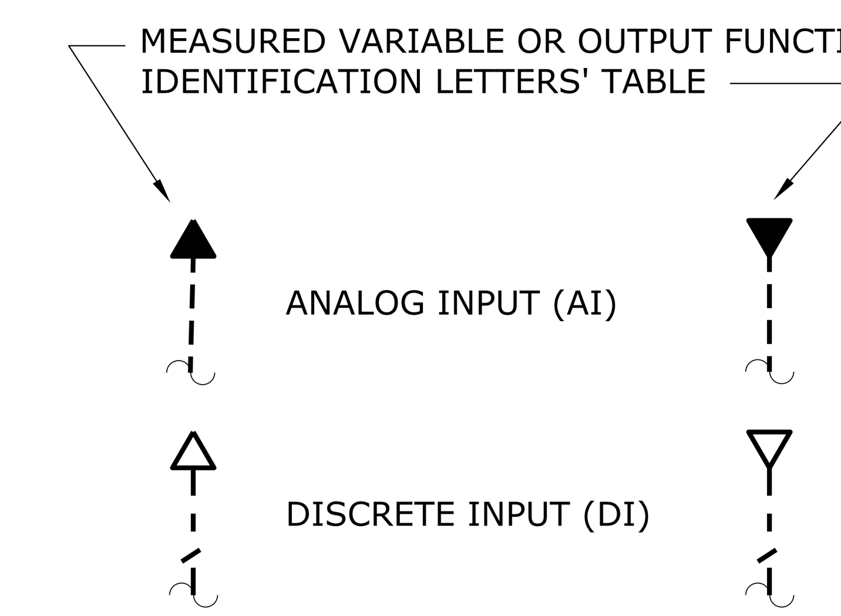
CONNECTOR NUMBER — XX / P&ID No

D. TIE-IN SYMBOL

TIE-IN NUMBER — T / XXX

INPUT / OUTPUT SIGNALS

MEASURED VARIABLE OR OUTPUT FUNCTION FROM 'INSTRUMENT IDENTIFICATION LETTERS' TABLE



ANALOG INPUT (AI)
ANALOG OUTPUT (AO)
DISCRETE INPUT (DI)
DISCRETE OUTPUT (DO)

DRAIN CONNECTORS

CLOSED DRAIN

CONNECTOR NUMBER — XXXX
DESTINATION LINE — YYY
SERVICE CODE — P&ID#

OPEN DRAIN

CONNECTOR NUMBER — XXXX
DESTINATION LINE — YYY
SERVICE CODE — P&ID#

CLOSED DRAIN (NO P&ID)

DESTINATION LINE — YYY
SERVICE CODE

OPEN DRAIN (NO P&ID)

DESTINATION LINE — YYY
SERVICE CODE

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LYNNWOOD WASHINGTON
LYNNWOOD WWTP INTERIM SLUDGE DISPOSAL

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PROCESS & INSTRUMENTATION LEGEND

PROJECT NO.: 21-3310 SCALE: AS NOTED DATE: May 2022

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PRIMARY ELEMENT SYMBOLS

XX — GENERAL SYMBOL IN-LINE ELEMENT XX = FS, FG, FE, FT

FIT (XXXX) — IN-LINE FLOW ELEMENT WITH INTEGRAL INDICATING TRANSMITTER XXXX = MASS, CORIOLIS, THERMAL, INT. ORIFICE ...

FIT / FE (XXXX) — IN-LINE FLOW ELEMENT WITH SEPARATE INDICATING TRANSMITTER XXXX = MASS, CORIOLIS, THERMAL...

ORIFICE

M — MAGNETIC

TURBINE OR PROPELLER

ULTRASONIC

VORTEX

PITOT TUBE

AVERAGING PITOT TUBE

FLOW NOZZLE

VENTURI

WEDGE METER

LE — RADAR (NON-CONTACT)

LE — ULTRASONIC LEVEL SENSOR

LE — RADAR (GUIDED)

LS* — FLOAT SWITCH
FLOAT SWITCH
* = L/LL/H/HH

FS* — FLOW SWITCH
* = H/L

FG — FLOW GLASS

FLOW CONDITIONING DEVICES (e.g., STRAIGHTENING VANES)

FO — RESTRICTION ORIFICE

AE X — ANALYZER ELEMENT
X INDICATES TYPE
pH = HYDROGEN POTENTIAL
DO = DISSOLVED OXYGEN
H2S = HYDROGEN SULFIDE
LEL = LOWER EXPLOSIVE LIMIT
O2 = OXYGEN
ORP = OXYGEN REDUCTION POTENTIAL
TUR = TURBIDITY

ROTAMETER

FI — ROTAMETER WITH INTEGRAL VALVE (SHOWN WITH OPTIONAL INTEGRAL VALVE)

FLUME

WEIR

POSITIVE DISPLACEMENT

ORIFICE IN QUICK CHANGE FITTING

TARGET

ANNULAR SEAL

VALVE SYMBOLS (N.C. WHEN SHADED)

GATE VALVE
CHECK VALVE
STOP CHECK VALVE
GLOBE VALVE
BUTTERFLY VALVE
NEEDLE VALVE
BALL VALVE
BALANCING VALVE
PLUG VALVE
DIAPHRAGM VALVE
3-WAY VALVE
4-WAY VALVE
PINCH VALVE
ANGLE VALVE
KNIFE VALVE
SLUICE OR SLIDE GATE
AIR RELEASE VALVE

PIPING FITTINGS

FLANGE
WELDED CONNECTION
CONCENTRIC REDUCER
ECCENTRIC REDUCER
SPACER
BLANK
OPEN FIGURE 8 BLIND
CLOSED FIGURE 8 BLIND
PLUG
BLIND FLANGE
HOSE CONNECTION
CAP

PIPING SPECIALTY ITEMS

Y-TYPE STRAINER
CONE STRAINER
T-TYPE STRAINER
DUPLEX STRAINER
BASKET STRAINER
TEMPORARY STRAINER
FILTER
DETONATION ARRESTOR (D)
FLAME ARRESTOR (F)
STEAM TRAP (T)
EXHAUST HEAD
IN-LINE SILENCER (S)
VENT SILENCER (S)
MECHANICAL COUPLING
EJECTOR
REMOVABLE SPOOL (RS)
DESUPERHEATER (DS)
FLEXIBLE HOSE
EXPANSION JOINT
DAMPER
BREATHER
VENT COVER
IN-LINE MIXER
DIVERTER VALVE
ROTARY VALVE
EXCESS FLOW VALVE
PULSATION DAMPENER
INJECTION SPOOL

PROCESS EQUIPMENT

HORIZONTAL CENTRIFUGAL PUMP
VERTICAL INLINE PUMP
SUBMERSIBLE PUMP
PROPELLER PUMP
PROGRESSIVE CAVITY PUMP
MULTI-RAKE
ROTARY SCREW AIR COMPRESSOR
POSITIVE DISPLACEMENT PUMP
LIQUID RING VACUUM PUMP
VERTICAL CAN PUMP
SCREW PUMP
MANUAL BAR SCREEN
SUBMERSIBLE MIXER
POSITIVE DISPLACEMENT BLOWER
CENTRIFUGAL BLOWER
CENTRIFUGAL COMPRESSOR
RECIPROCATING COMPRESSOR
SCREW COMPRESSOR
GRIT CHAMBER
FLOCCULATION TANK
DOME ROOF TANK
OPEN TOP TANK / WET WELL/ CHANNEL
GRIT CLASSIFIER
CLOTH FILTER
SCREW CONVEYOR
OUTFALL DIFFUSER
CLOSED TOP TANK
CLARIFIER
WASH PRESS
DRAFT TUBE PUMP
ROTARY SCREEN THICKENER
AERATION DIFFUSER
SPIRAL HEAT EXCHANGER
SCREW PRESS

CONTROL VALVE ACTUATOR SYMBOLS

MANUAL OPERATOR
DIAPHRAGM
PRESSURE BALANCED DIAPHRAGM
HANDWHEEL WITH ACTUATOR
CYLINDER - PISTON
M — MOTOR OPERATED - CONSTANT SPEED
E/P — ELECTRO-PNEUMATIC
S — SINGLE SOLENOID
S R — SINGLE SOLENOID - MANUAL RESET
S R — SINGLE SOLENOID - REMOTE RESET

MISCELLANEOUS INSTRUMENT SYMBOLS

CHEMICAL SEAL- DIAPHRAGM
LEVEL SENSOR
X — PILOT LIGHT OR GAUGE GLASS ILLUMINATOR
X INDICATES COLOR
R = RED B = BLUE G = GREEN
A = AMBER W = WHITE
DUAL FUNCTION OR INSTRUMENTS SHARING COMMON HOUSING
I — UNDEFINED INTERLOCK LOGIC

SELF-ACTUATED DEVICES

RUPTURE DISC - PRESSURE RELIEF SAFETY HEAD FOR PRESSURE RELIEF (EXPLOSION PANEL)
RUPTURE DISC - VACUUM RELIEF SAFETY HEAD FOR VACUUM RELIEF (EXPLOSION PANEL)
PRESSURE RELIEF - SAFETY VALVE
VACUUM RELIEF VALVE
PRESSURE AND VACUUM RELIEF VALVE CONSERVATION VENT
P — PILOT OPERATED RELIEF VALVE WITH REMOTE SENSOR (USE APPROPRIATE RELIEF VALVE SYMBOL)
PRESSURE REDUCING REGULATOR (SELF-CONTAINED)
BACK PRESSURE REGULATOR (SELF-CONTAINED)
BACK PRESSURE REGULATOR W/ EXTERNAL TAP
PRESSURE REDUCING REGULATOR W/ EXTERNAL TAP
DIFFERENTIAL PRESSURE REDUCING REGULATOR
TEMPERATURE REGULATOR FILLED SYSTEM TYPE

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AAB — DRAWN
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LYNNWOOD WASHINGTON
LYNNWOOD WWTP INTERIM SLUDGE DISPOSAL

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PROJECT NO.: 21-3310 | SCALE: AS NOTED | DATE: May 2022

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SCADA

SCREW PRESS PLC
(PANEL FKC CP1)

FIELD

TYPICAL OF 5

TYPICAL FOR GATES 2-7

AUTO ENABLED	AUTO START	AUTO RUNNING	LOADOUT 1 SELECT	LOADOUT 2 SELECT	CONV 1 RUNNING	CONV 1 FAULT	GATE 1 OPEN	GATE 1 CLOSE	GATE 1 FAULT	GATE OPEN	GATE CLOSE	LOADOUT SELECT	GATE FAULT
YI 200	YC 200	YI 201	YC 201	YC 202	YI 101A	YA 101A	YI 101B	YI 101C	YA 101B	YI 102A	YI 102B	YC 102	YA 102

SCADA COMPUTER

KEY NOTES

1. VENDOR PROVIDED EQUIPMENT.
2. PULL CORDS WITH E-STOP SWITCH LOCATED ON BOTH SIDES OF CONVEYOR.

LCP (1)

SYSTEM HS HOA | CONVEYORS HS 4-5 | GATES HS 2-3-4 | GATES HS 5-6-7

ETHERNET I/P PLC

CONVEYORS R 1 THRU 5 ON

CONVEYORS R 1 THRU 5 FAULT

SYSTEM R FAULT

CHEM P-4

DS FROM SCREW PRESS

CON-3-1 SCREW CONVEYOR 1

PULL CORD

HS 101A ES

HS 102B ES (1) (2)

SSL 101 (1)

SSL 102 (1)

CON-8-2 SCREW CONVEYOR 2

HS 102 (1)

SV-8-1 S

SSL 103 (1)

ZIS 101A

ZIS 101B (1)

GATE 1 G-8-1

HS 103 ES (1)

CON-8-3 SCREW CONVEYOR 3

HS 105 ES (1)

SSL 105 (1)

(*3)

(*3)

(*3)

(*3)

HS 104 ES (1)

SSL 104 (1)

CON-8-5 SCREW CONVEYOR 5

ZIS 105A / ZIS 105B (1) — GATE 5 G-8-5 — SV-8-5 S

ZIS 106A / ZIS 106B (1) — GATE 6 G-8-6 — SV-8-6 S

ZIS 107A / ZIS 107B (1) — GATE 7 G-8-7 — SV-8-7 S

CON-8-4 SCREW CONVEYOR 4

ZIS 102A / ZIS 102B (1) — GATE 2 G-8-2 — SV-8-2 S

ZIS 103A / ZIS 103B (1) — GATE 3 G-8-3 — SV-8-3 S

ZIS 104A / ZIS 104B (1) — GATE 4 G-8-4 — SV-8-4 S

SOLIDS MONITORING CAMERA 1

SOLIDS MONITORING CAMERA 2

CA FROM PLANT COMPRESSOR

LOADOUT CONTAINER 1

LOADOUT CONTAINER 2

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LYNNWOOD WWTP INTERIM SLUDGE DISPOSAL

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CONVEYOR & LOADOUT ASSEMBLY

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SHEET P-3

SCADA

SCREW PRESS PLC
(PANEL FKC CP1)

SLUDGE HANDLING PLC-2
(PANEL SHCP)

FIELD

LOW PRESSURE
YI 120A

AUTO START
YC 120

RUN'G
YI 120B

FAIL
YI 120C

TYPICAL OF 2

SPD CTRL
SC 110

AUTO START
YC 110

RUN'G
YI 110

KEY NOTES

1. VENDOR PROVIDED EQUIPMENT.

LCP
1
FAN
HS
HOA
ON
R
TROUBLE
A

PSL 120

FA
FROM SLUDGE LOADOUT ENCLOSURE

ACTIVATED CARBON BEDS

ODOR CONTROL FAN
BLO-8-1

TO ATM

PREFILTER

ODOR CONTROL UNIT
OCU-8-1

ODOR CONTROL CHEMICAL TOTE

PI

PCV

CHEM
2E
P-3
TO SCREW CONVEYOR 1

FI

CALIBRATION COLUMN

PSV

CHEMICAL PUMP 1
PMP-3-1

CHEMICAL PUMP 2
PMP-3-2

CHEMICAL FEED UNIT

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LYNNWOOD WWTP INTERIM SLUDGE DISPOSAL

P&ID

ODOR CONTROL & CHEMICAL FEED SYSTEM

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