

VINE STREET WATER TREATMENT PLANT CHEMICAL SYSTEM IMPROVEMENTS WTP-19-02

DECEMBER 2020

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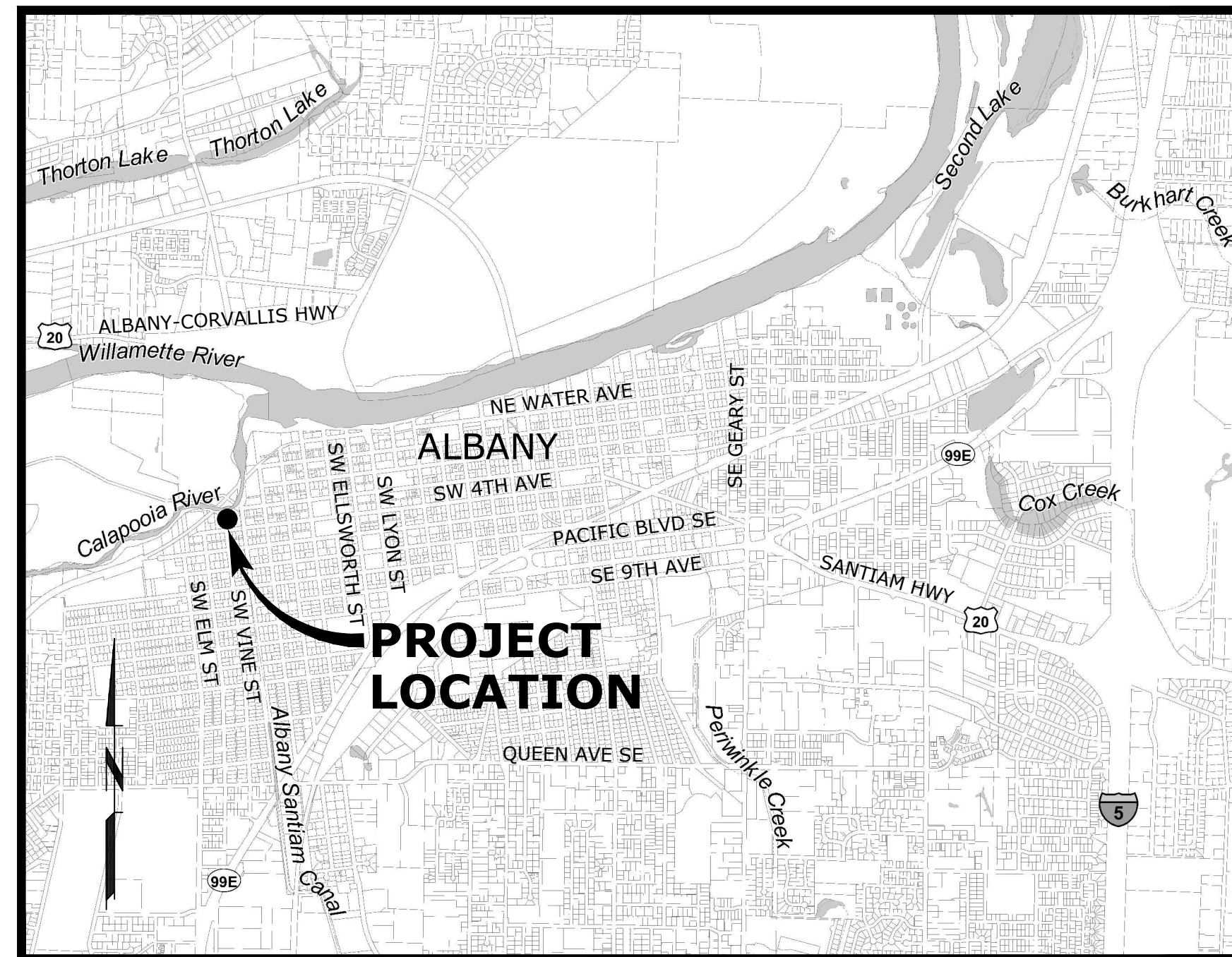
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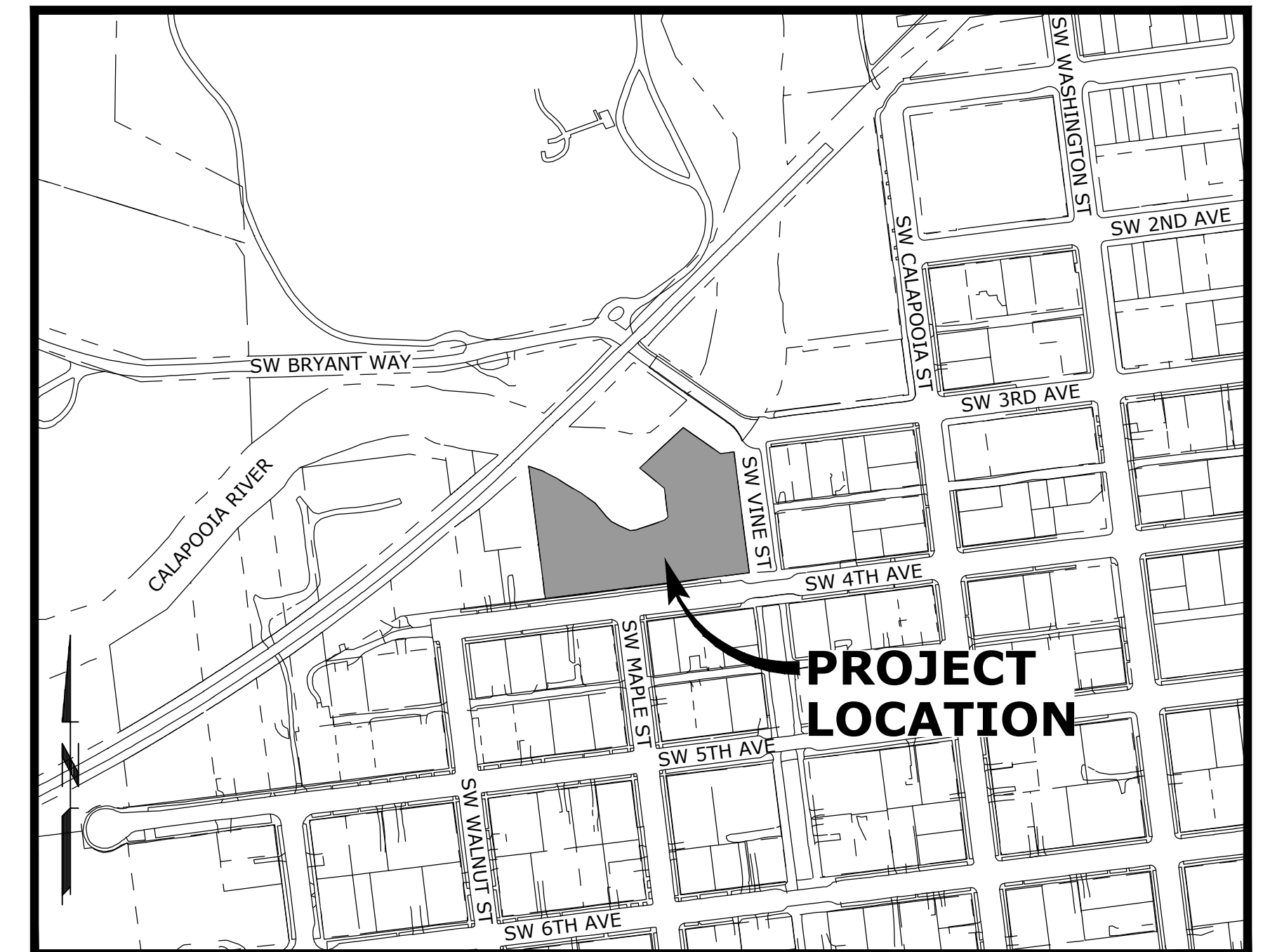
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LOCATION MAP
SCALE: 1"=2,000'



VICINITY MAP
SCALE: 1"=250'

murraysmith

888 SW 5TH AVENUE, SUITE 1170
PORTLAND, OREGON 97204
P 503.225.9010



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Know what's below.
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G:\PDX_Projects\2012757 - Albany - Vine St WTP Chemical Tank Imp\CAD\Sheets\20-2757-OR-G.dwg G-2 12/8/2020 6:04 PM BENTLEY SYSTEMS, INC. (BMS Tech)

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°)

VALVE SYMBOLS

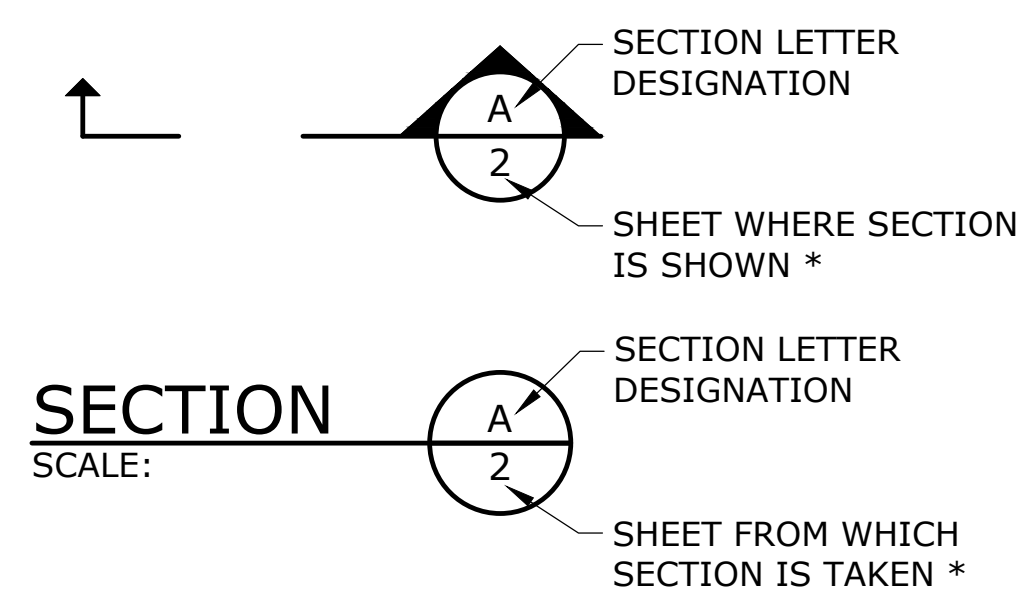
PLANT	SCHEMATIC	
		BUTTERFLY VALVE
		GATE VALVE
		GLOBE VALVE
		BALL VALVE
		BALANCING VALVE
		PLUG VALVE (TOP)
		PLUG VALVE (SIDE)
		3-WAY PLUG VALVE
		CHECK VALVE
		SWING CHECK VALVE
		DOUBLE CHECK ASSEMBLY
		BALL SWING CHECK
		SILENT CHECK VALVE
		PRESSURE REDUCING VALVE
		ALTITUDE CONTROL VALVE
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

TOPOGRAPHIC LEGEND

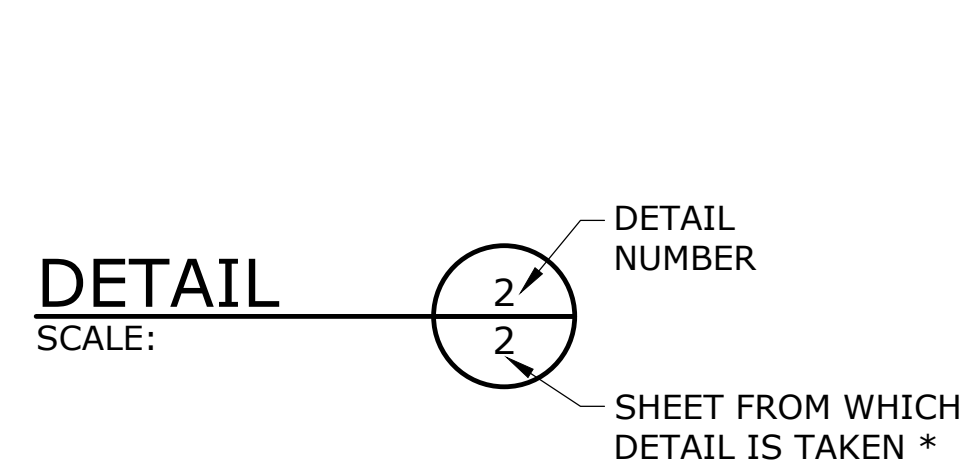
	EXISTING	PROPOSED
WATERLINE		
ELECTRICITY		
GAS		
TELEPHONE/TELEMETRY		
CABLE TELEVISION		
SANITARY SEWER LINE		
SANITARY SEWER FORCE MAIN		
STORM DRAIN		
CULVERT		
ABANDON PIPE		
DRAINAGE DITCH		
BARBWIRE FENCE		
CHAIN LINK FENCE		
TEMPORARY SILT FENCE		
GUARDRAIL		
ROCK WALL		
TREE/BUSH LINE		
CENTERLINE		
EASEMENT/PROPERTY LINE		
RIGHT-OF-WAY		
EDGE OF PAVEMENT/AC		
EDGE OF GRAVEL		
CURB		
SIDEWALK		
STRUCTURE OR FACILITY		
CONTOUR MINOR		
CONTOUR MAJOR		
MANHOLE		
CLEAN-OUT		
CATCH BASIN/FIELD INLET		
THRUST BLOCK		
VALVE		
AIR INJECTION ASSEMBLY		
BLOW-OFF ASSEMBLY		
AIR RELEASE ASSEMBLY		
FIRE HYDRANT ASSEMBLY		
WATER METER		
PULL BOX/JUNCTION BOX		
UTILITY POLE		
GUY WIRE		
LIGHT POST		
MAILBOX		
SIGN		
BENCHMARK		
TREE DECIDUOUS		
TREE CONIFEROUS		
TREE TO BE REMOVED		
SURFACE ELEVATION	+ 176.63	+ 176.63

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.

MISCELLANEOUS PIPING SYMBOLS

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

NO.	DATE	BY	REVISION

NOTICE	
	IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE
BRF DESIGNED	DKH DRAWN
AS CHECKED	

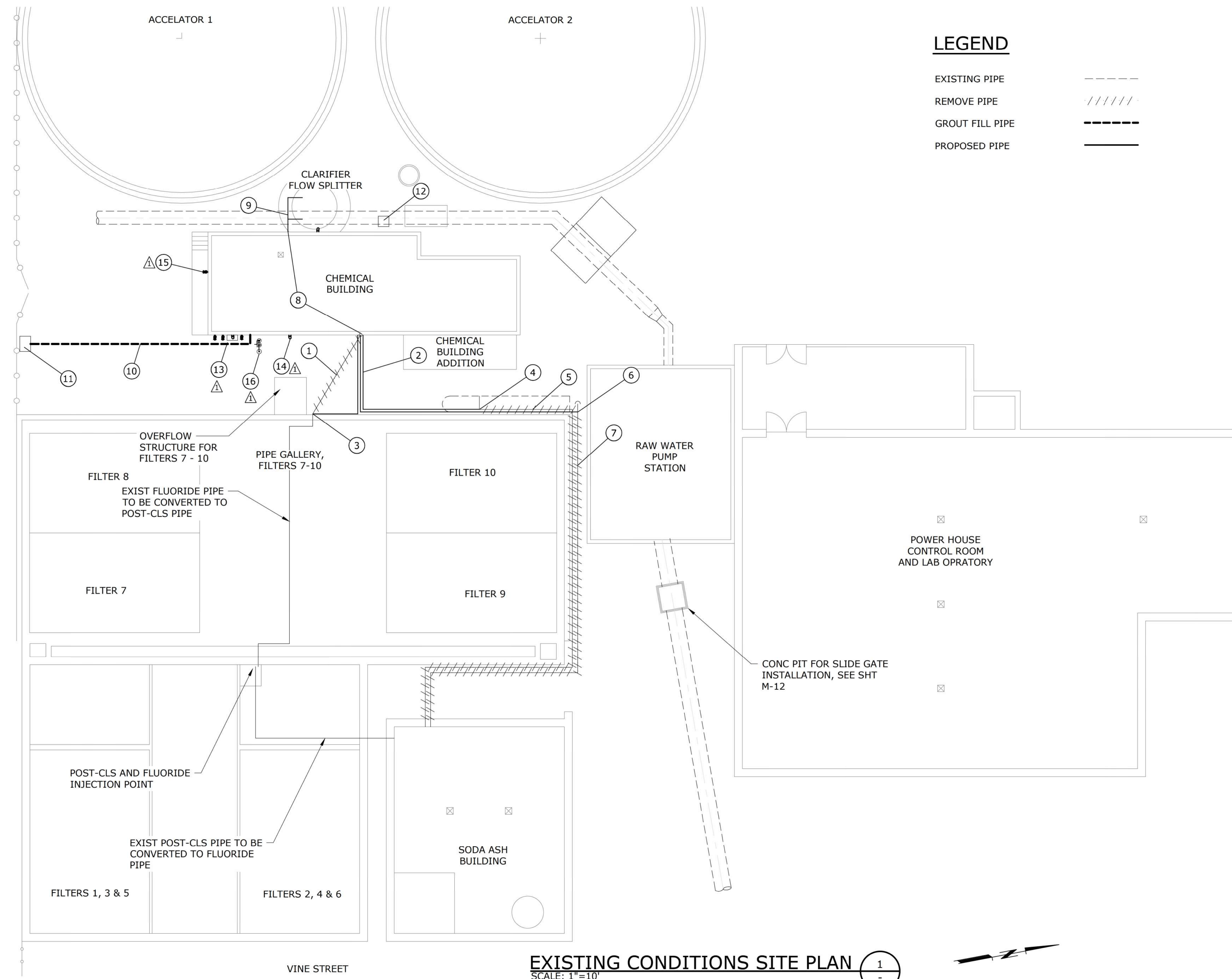


**VINE STREET WTP
CHEMICAL SYSTEM
IMPROVEMENTS
WTP-19-02**

LEGEND AND SYMBOLS			
PROJECT NO.:	20-2757	SCALE:	AS SHOWN
DATE:	DECEMBER 2020		

SHEET
G-2
2 of 29

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LEGEND

- EXISTING PIPE
- REMOVE PIPE
- GROUT FILL PIPE
- PROPOSED PIPE

GENERAL SHEET NOTES:

1. REMOVE PIPE LABELS FROM ANY EXISTING PIPE ABANDONED IN PLACE. SEE SPECIFICATIONS
2. REMOVE PIPE LABELS FROM PRE-CLS PIPE AND FLUORIDE PIPE THAT ARE BEING CONVERTED FROM ONE SERVICE TO THE OTHER. INSTALL NEW LABELS ON REPURPOSED PIPE IDENTIFYING NEW SERVICE.
3. INSTALL NEW PIPE LABELS ON ALL NEW PIPE.

DEMOLITION AND MODIFICATION NOTES

- ① REMOVE EXISTING OVERHEAD FLUORIDE PIPE BETWEEN CHEMICAL BUILDING AND FILTER PIPE GALLERY.
- ② FURNISH AND INSTALL NEW PVC PIPE FOR PRE-CLS, MID-CLS AND POST-CLS. SUPPORT PIPE BETWEEN CHEM BUILDING AND FILTER PIPE GALLERY, MIN 8'-0" CLEARANCE ABOVE GRADE. INSULATE PIPE IN EXTERIOR LOCATIONS. SEE SPECIFICATIONS.
- ③ CUT EXISTING FLUORIDE PIPE AT EXTERIOR FACE OF PIPE GALLERY WALL AND CONNECT TO NEW POST-CLS PIPE
- ④ CONNECT NEW MID-CLS PIPE TO EXISTING MID-CLS PIPE AT EXTERIOR FACE OF FILTER 10 WALL. SEE DETAIL 2, SHEET M-11.
- ⑤ CUT AND REMOVE EXISTING MID-CLS PIPE FROM SODA ASH BUILDING TO CONNECTION POINT OF NEW MID-CLS PIPE TO EXISTING. SEE DETAILS 1 AND 2, SHEET M-11.
- ⑥ CONNECT NEW PRE-CLS PIPE TO EXISTING PRE-CLS PIPE AT CORNER OF FILTER 10 WALL BEFORE PIPE ENTERS GROUND. SEE DETAIL 1, SHEET M-11.
- ⑦ CUT AND REMOVE EXISTING PRE-CLS PIPE FROM SODA ASH BUILDING TO CONNECTION POINT OF NEW PRE-CLS PIPE TO EXISTING. SEE DETAIL 1, SHEET M-11.
- ⑧ CORE DRILLED CONCRETE WALL PIPE PENETRATION PER DETAIL, FIELD LOCATE AS NEEDED TO INSTALL NEW PRE-CLS, MID-CLS, POST-CLS AND COAGULANT FEED PIPES.
- ⑨ DEMO EXISTING CLS PIPE TO CLARIFIER INFLUENT PIPES. INSTALL NEW PIPE AND VALVES FOR ALTERNATE COAGULANT INJECTION POINTS AT EXISTING FLANGES. MATCH EXISTING PIPE AND VALVE SIZE AND MATERIALS.
- ⑩ GROUT EXISTING BURIED COAGULANT TANK FILL PIPE FROM FILL STATION VAULT TO CHEMICAL BUILDING
- ⑪ CUT PIPE AT GROUND LEVEL. REMOVE FILL STATION VAULT.
- ⑫ RELOCATE EXIST DONALDSON CABINET DUST COLLECTOR FROM EXTERIOR OF CHEMICAL BUILDING TO INTERIOR OF SODA ASH BUILDING. SEE SHEET M-6.
- △ ⑬ CHEMICAL TANK FILL STATIONS AND TANK LEVEL MONITORING DISPLAY, SEE SHEET M-7
- △ ⑭ CHEMICAL TANK VENT TERMINATION, TYP OF 3, SEE SHEET M-7
- △ ⑮ SUMP PUMP DISCHARGE CONNECTION, SEE SHEET M-7
- △ ⑯ EMERGENCY SHOWER, SEE SHEET M-7

EXISTING CONDITIONS SITE PLAN 1
SCALE: 1"=10'

NO.	DATE	BY	REVISION
△	01/08/21	AS	ADDENDUM NO. 2

NOTICE
0 1/2 1
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VINE STREET WTP CHEMICAL SYSTEM IMPROVEMENTS WTP-19-02

WATER TREATMENT PLANT SITE PLAN

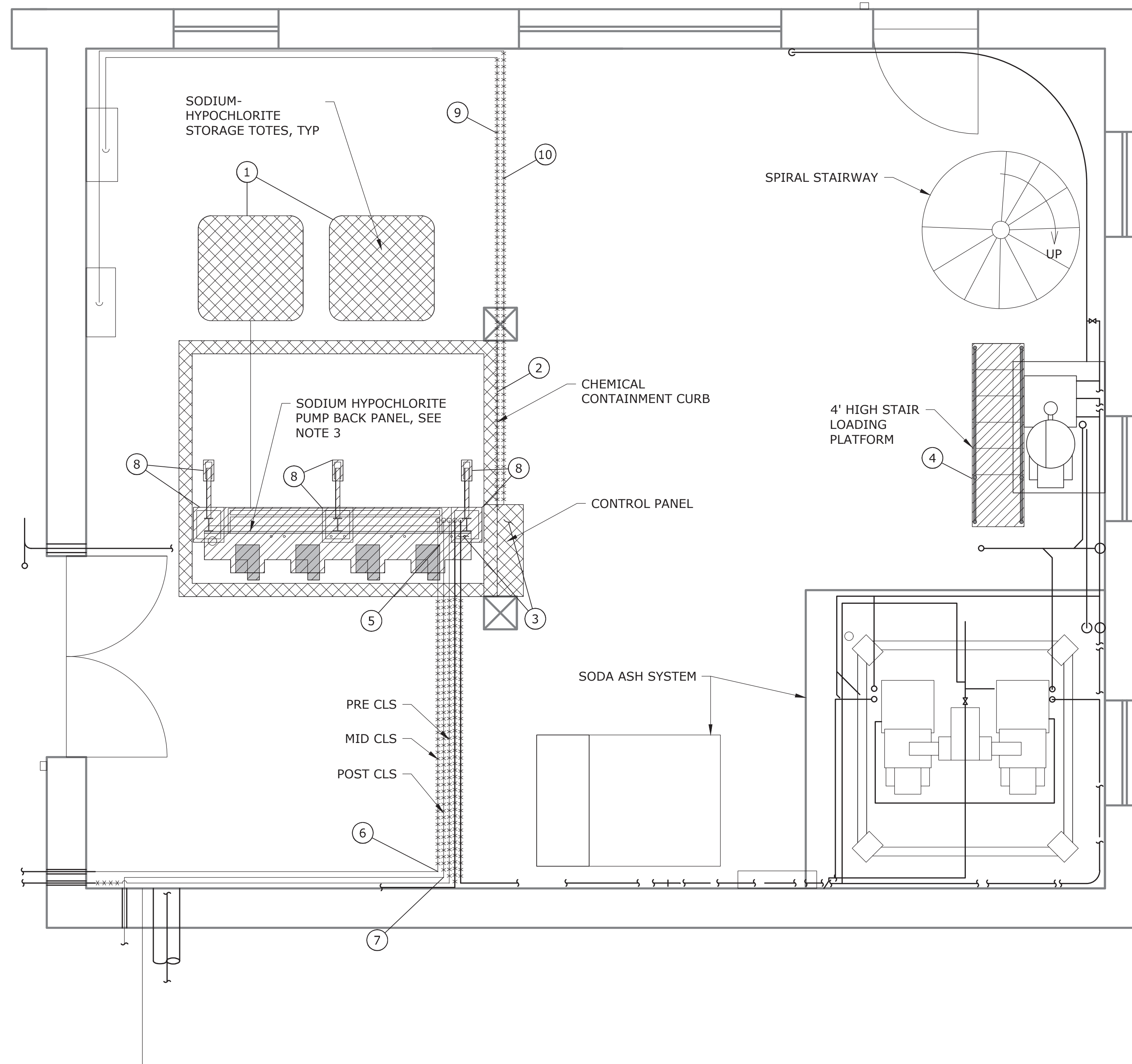
PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

SHEET M-1
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NOTES:

1. PRIOR TO REINSTALLATION OF THE SODIUM HYPOCHLORITE PANEL ON THE EAST INTERIOR WALL OF THE CHEMICAL BUILDING FIRST FLOOR, THE LATERAL BRACING SHALL BE REMOVED.



DEMO MATERIAL LIST

- ① REMOVE AND DISPOSE OF TOTE SECONDARY CONTAINMENT <OR RETURN TO OWNER?>
- ② REMOVE AND DISPOSE OF <OR RETURN TO OWNER?> CONTAINMENT CURBING
- ③ REMOVE SODIUM HYPOCHLORITE PUMP BACK PANEL AND CONTROL PANEL. REINSTALL IN CHEM BLDG, 1ST LEVEL, SEE SHEET X
- ④ RELOCATE 4' HIGH STAIR LOADING PLATFORM ELSEWHERE IN SODA ASH BLDG AS DIRECTED TO PROVIDE ACCESS TO FEED SYSTEM
- ⑤ CUT ALL PVC CLS, VENT AND WATER PIPES AT UPPER EDGE OF CHEMICAL PUMP BACK PANEL.
- ⑥ CUT PRE CLS, MID CLS, VENT AND WATER PIPES AT INSIDE FACE OF SOUTH WALL. CAP THE PIPES. REMOVE ALL OVER HEAD PIPE FROM PUMP BACK PANEL TO SOUTH WALL. RETAIN PIPE SUPPORT FOR REUSE WITH NEW FLUORIDE PIPE, SEE SHT M-6
- ⑦ CUT POST CLS PVC PIPE AT INSIDE FACE OF SOUTH WALL. CONNECT NEW PVC PIPE FROM FLUORIDE FEED SYSTEM AT THIS LOCATION. SEE SHEET M-6
- ⑧ CUT/GRIND GROUTED BASEPLATE PADS FLUSH WITH FIN FLR
- ⑨ REMOVE (4) OVERHEAD CONTROL CONDUITS FROM HYPOCHLORITE CONTROL PANEL TO WALL. CAP (3) CONDUITS AT WALL. REUSE (1) CONDUIT TO EXTEND CONTROL WIRES TO NEW LOCATION OF FLUORIDE FEED SYSTEM.
- ⑩ REMOVE (2) OVERHEAD POWER CONDUITS FROM HYPOCHLORITE CONTROL PANEL TO WALL. CAP (1) CONDUITS AT WALL. REUSE (1) CONDUIT TO EXTEND POWER WIRES TO NEW LOCATION OF FLUORIDE FEED SYSTEM.

LEGEND

- REMOVE AND REINSTALL
- REMOVE
- REMOVE PIPE/CONDUIT

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

NO.	DATE	BY	REVISION

NOTICE
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**VINE STREET WTP
CHEMICAL SYSTEM
IMPROVEMENTS
WTP-19-02**

**SODA ASH BUILDING
EXISTING CONDITIONS AND
DEMOLITION PLAN**

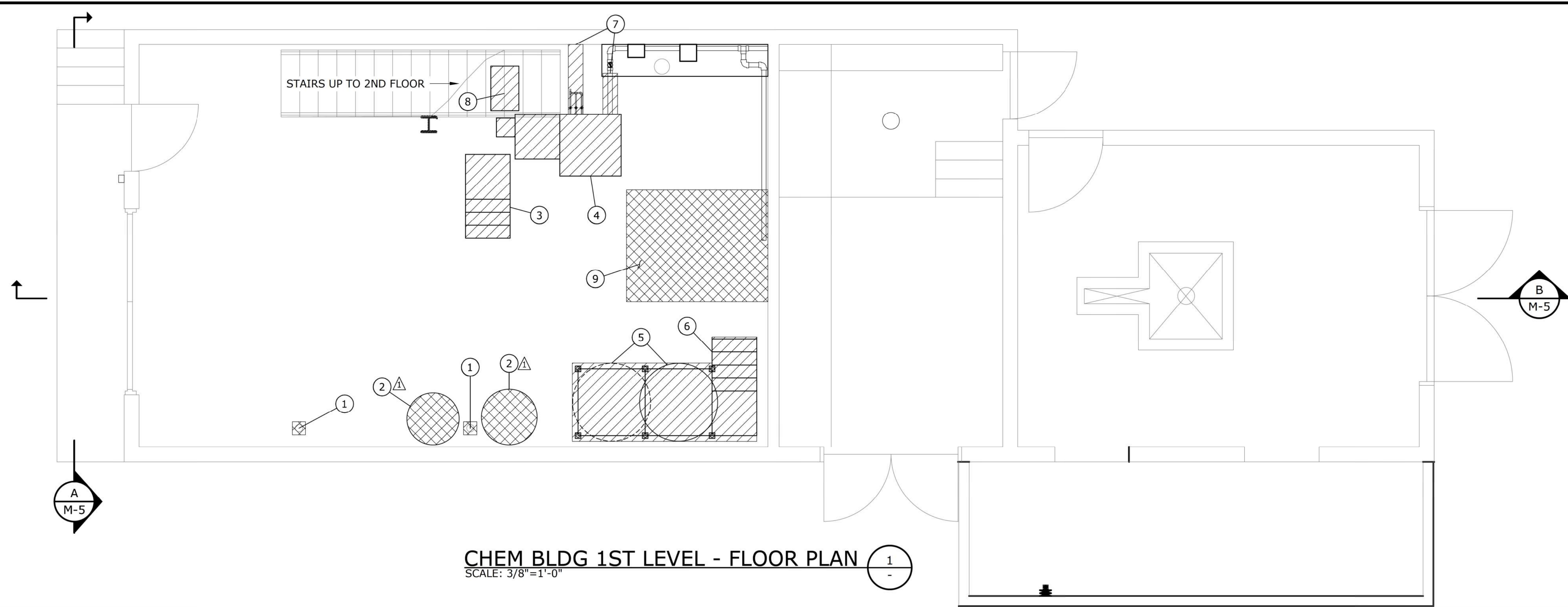
SHEET

M-2

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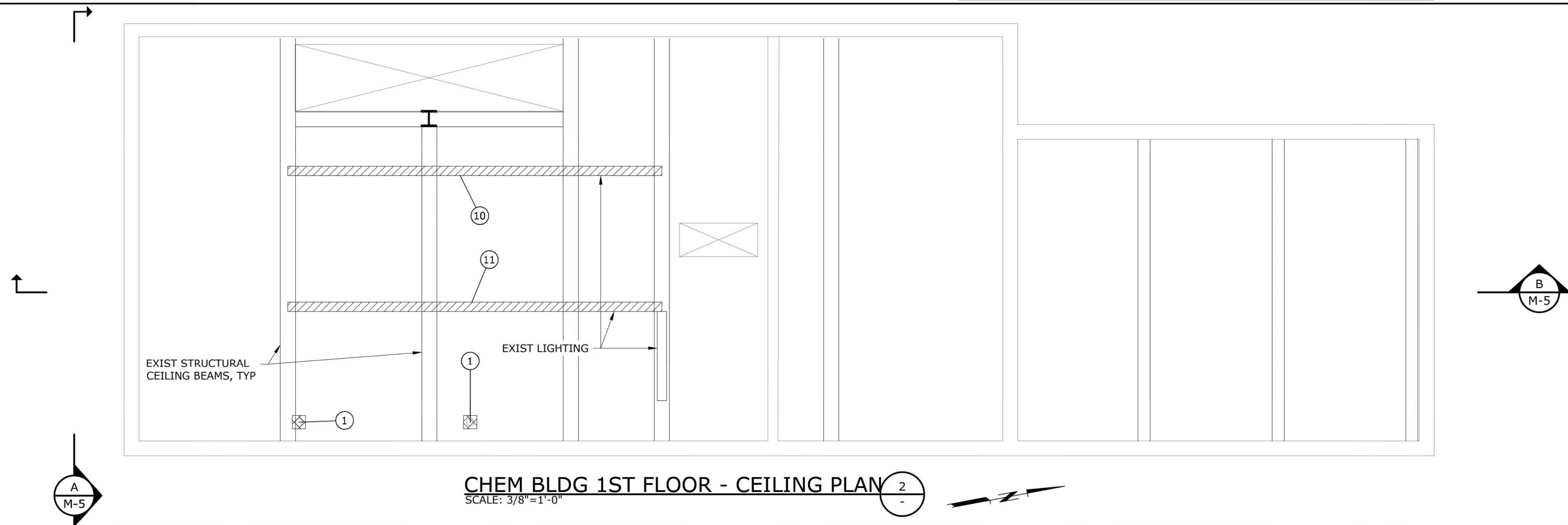
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CHEM BLDG 1ST LEVEL - FLOOR PLAN
SCALE: 3/8"=1'-0"

DEMO MATERIAL LIST

- ① CUT AND REMOVE BOTH 4" ALUM PIPES
- ② RELOCATE BOTH WATER HEATERS TO SECOND FLOOR, SEE SHEET M-10. REMOVE ALL FLEXIBLE METAL AND PLASTIC PIPE CONNECTING TO THE TANKS AND PLUG OR CAP ALL METAL HOT AND COLD WATER PIPE ON THE WALL AT THE METAL-PLASTIC TRANSITION
- ③ REMOVE STAIR AND LOADING PLATFORM. REINSTALL IN SODA ASH BLDG TO PROVIDE ACCESS TO FLUORIDE HOPPER, SEE SHEET M-6
- ④ REMOVE FLUORIDE SYSTEM AND RELOCATE TO SODA ASH BLDG FOR STORAGE, SEE SHEET M-6
- ⑤ REMOVE POLYMER SYSTEM, TANKS AND SUPPORT RACK AND REINSTALL ON SECOND FLOOR OF CHEM BLDG, SEE SHEET M-9
- ⑥ REMOVE STAIRWAY AND REINSTALL ON SECOND FLOOR OF CHEM BLDG FOR POLYMER SYSTEM, SEE SHEET M-9
- ⑦ CUT AND PLUG PVC PIPE FOR FLUORIDE SYSTEM AT FACE OF WEST WALL. DISPOSE OF PIPE BETWEEN THE WALL AND THE FEED SYSTEM.
- ⑧ REMOVE POWER PANEL FOR FLUORIDE SYSTEM. RELOCATE TO SODA ASH BLDG FOR STORAGE, SEE SHEET M-6
- ⑨ REMOVE AND DISPOSE OF STEEL PLATE OVER SUMP. GROUT THE FLOOR DRAIN IN THE BASE OF THE SUMP.
- ⑩ RELOCATE LIGHT FIXTURE TO THE WEST TO AVOID CONFLICT WITH TANK ACCESS MANWAY
- ⑪ RELOCATE LIGHT FIXTURE TO THE EAST TO AVOID CONFLICT WITH TANK ACCESS MANWAY



CHEM BLDG 1ST FLOOR - CEILING PLAN
SCALE: 3/8"=1'-0"

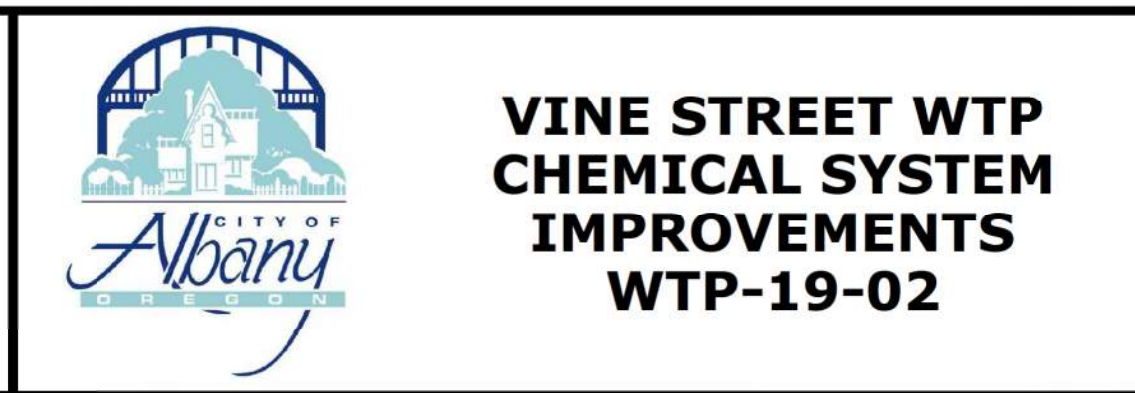
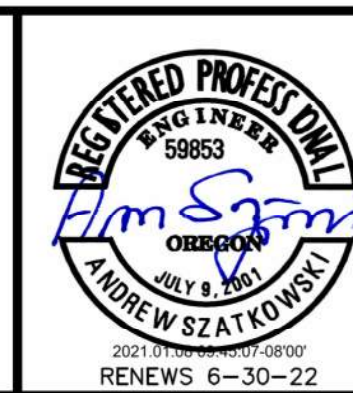
LEGEND

- REMOVE AND REINSTALL
- REMOVE AND DISPOSE

NO.	DATE	BY	REVISION
1	01/08/21	AS	ADDENDUM NO. 2

NOTICE
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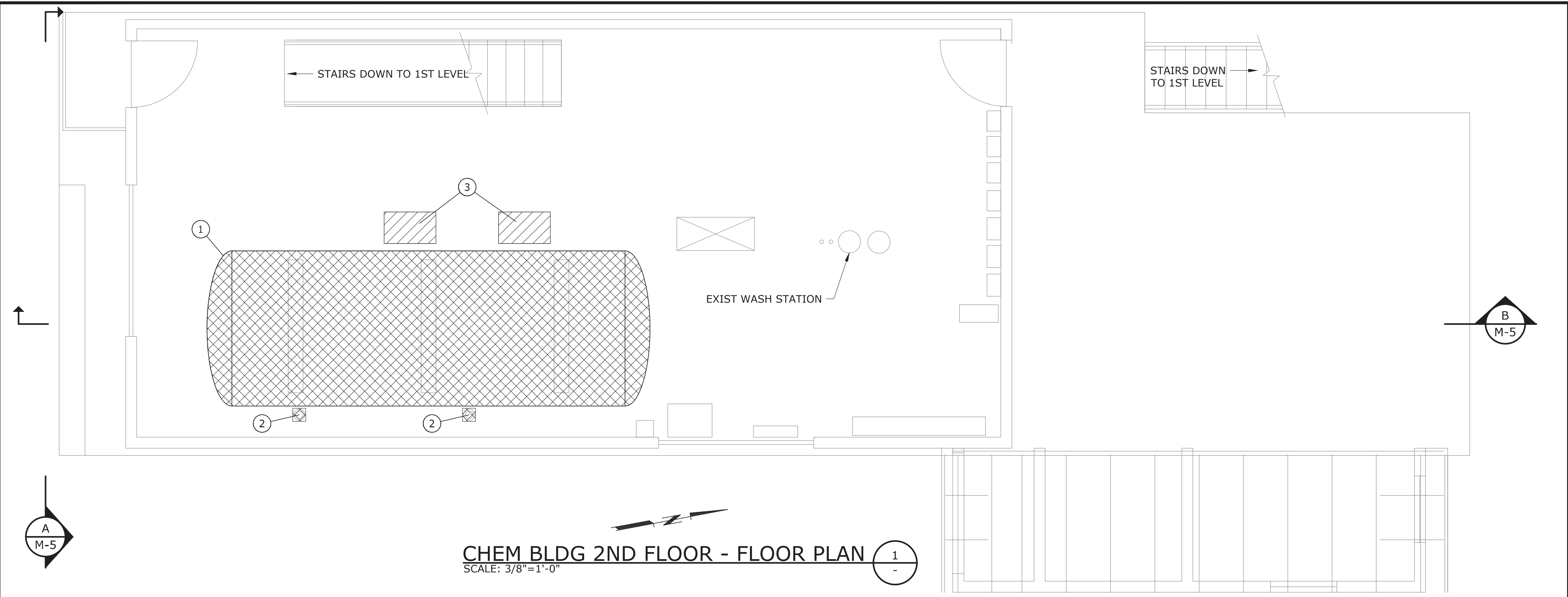


**CHEMICAL BUILDING
EXISTING CONDITIONS AND
DEMOLITION PLAN
1ST FLOOR**

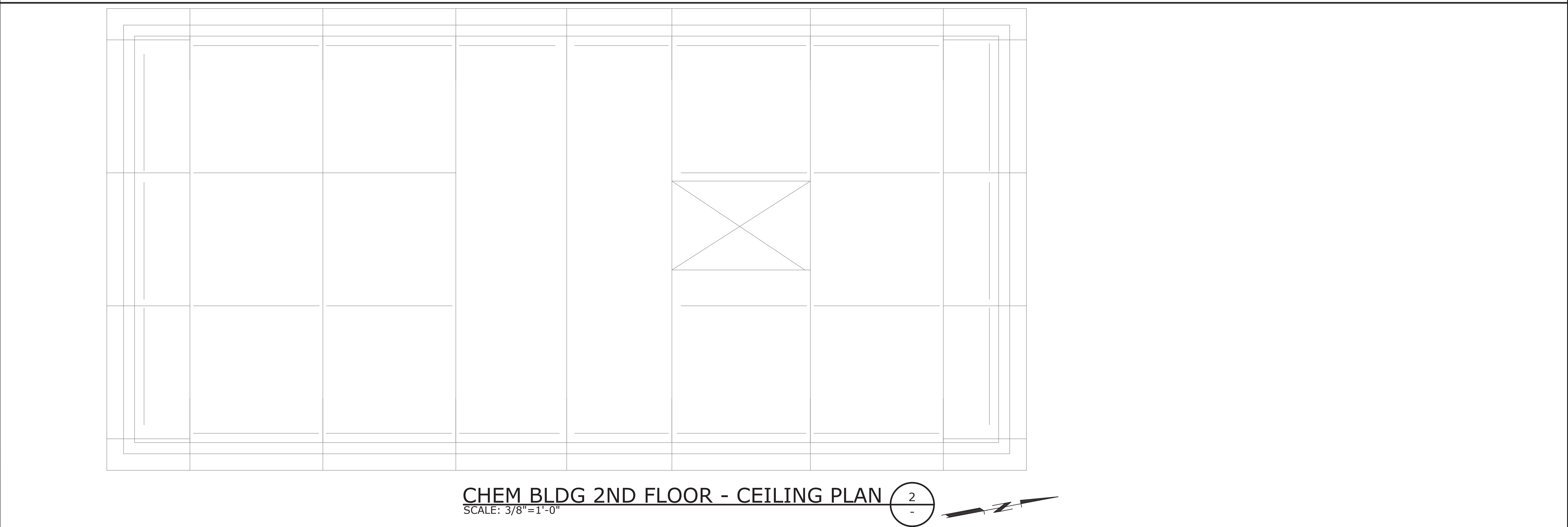
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SHEET
M-3
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CHEM BLDG 2ND FLOOR - FLOOR PLAN
SCALE: 3/8"=1'-0" (1)



CHEM BLDG 2ND FLOOR - CEILING PLAN
SCALE: 3/8"=1'-0" (2)

- DEMO MATERIAL LIST**
- ① DEMOLISH AND REMOVE THE ALUM STORAGE TANK, ALUM PLUMBING AND CONCRETE SUPPORT FOOTINGS, SEE SECTION B AND NOTE 3
 - ② CUT AND REMOVE BOTH 4" ALUM PIPES
 - ③ REMOVE COAGULANT FEED PUMPS AND REINSTALL ON FIRST FLOOR. SEE SHEET X. GRIND GROUDED EQUIPMENT PADS FLUSH WITH FIN FLR.

- LEGEND**
- REMOVE AND REINSTALL
 - REMOVE AND DISPOSE

NO.	DATE	BY	REVISION

NOTICE
0 1/2 1
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**CHEMICAL BUILDING
EXISTING CONDITIONS AND
DEMOLITION PLAN
2ND FLOOR**



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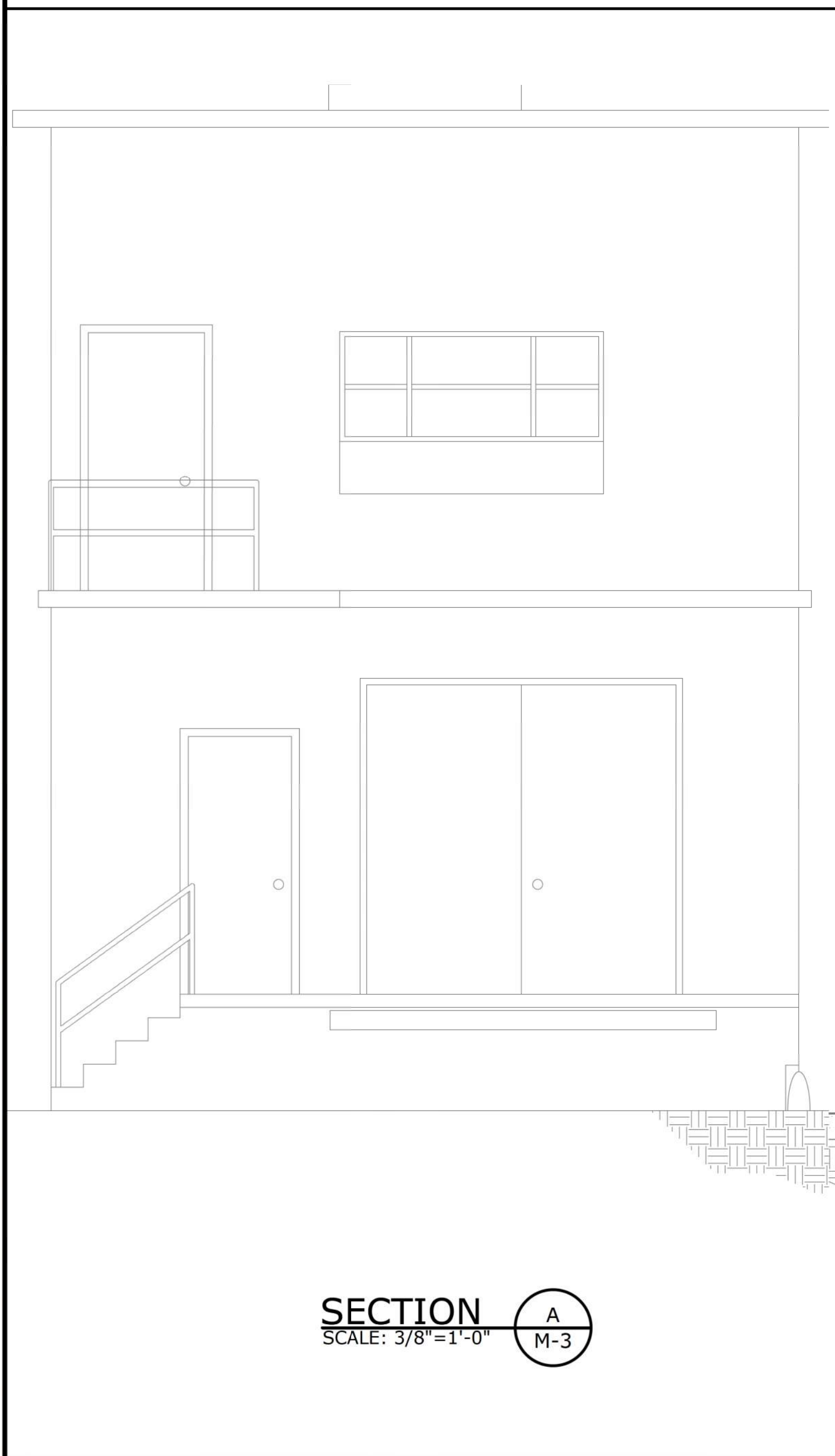
SHEET
M-4
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DEMO MATERIAL LIST

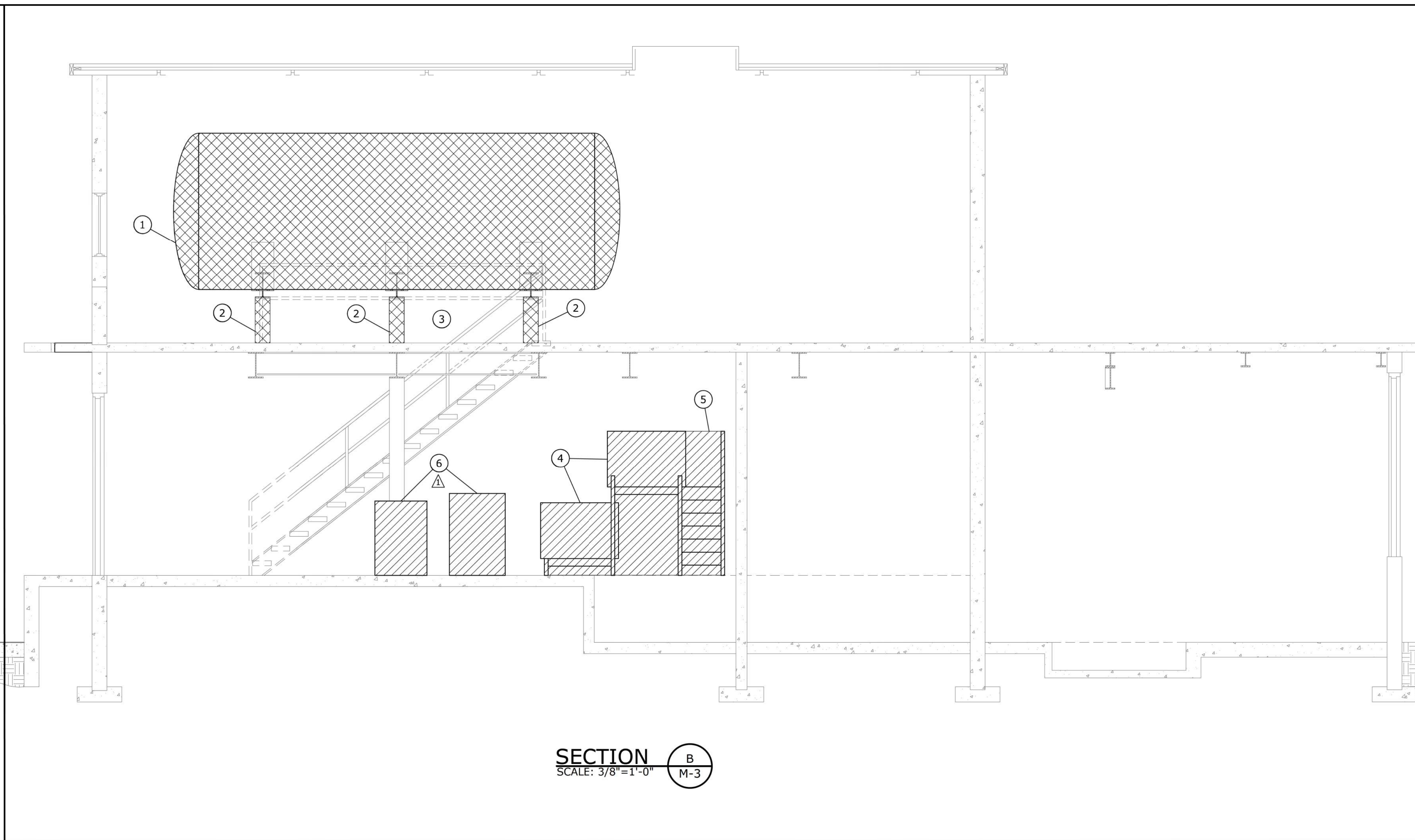
- ① DEMOLISH AND REMOVE THE ALUM STORAGE TANK, FOR PLAN VIEW SEE DET, SHT M-4.
- ② DEMOLISH AND REMOVE CONCRETE SUPPORT COLUMNS FOR ALUM TANK. CUT/GRIND COLUMNS FLUSH TO FIN FLR.
- ③ REMOVE ALUM PUMPS (NOT SHOWN) AND REINSTALL ON THE FIRST FLOOR, REPURPOSED FOR USE WITH THE PROPOSED ACH FEED SYSTEM
- ④ REMOVE POLYMER SYSTEM, TANKS AND SUPPORT RACK AND REINSTALL ON SECOND FLOOR OF CHEM BLDG, SEE SHEET M-10
- ⑤ REMOVE STAIRWAY AND REINSTALL ON SECOND FLOOR OF CHEM BLDG FOR POLYMER SYSTEM, SEE SHEET M-10
- ⚠⑥ RELOCATE BOTH WATER HEATERS TO SECOND FLOOR, SEE SHEET M-10

LEGEND

- REMOVE AND REINSTALL 
- REMOVE AND DISPOSE 



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



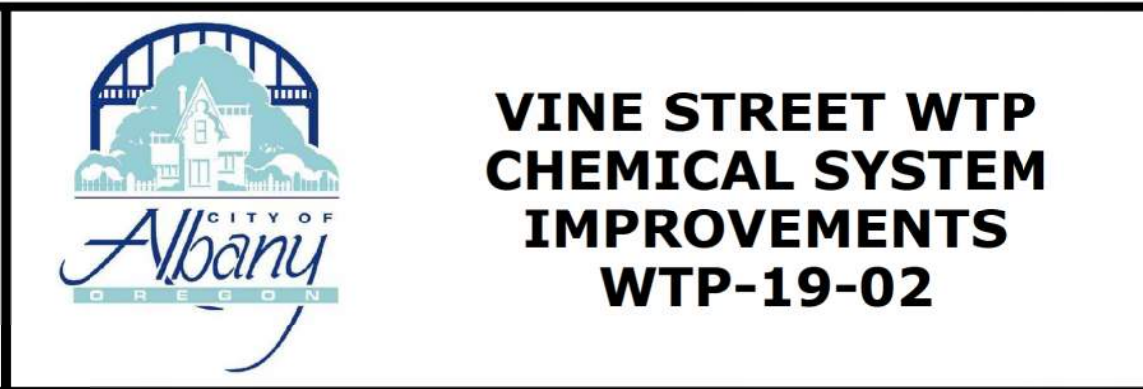
SECTION B
SCALE: 3/8"=1'-0"
M-3

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	01/08/21	AS	ADDENDUM NO. 2

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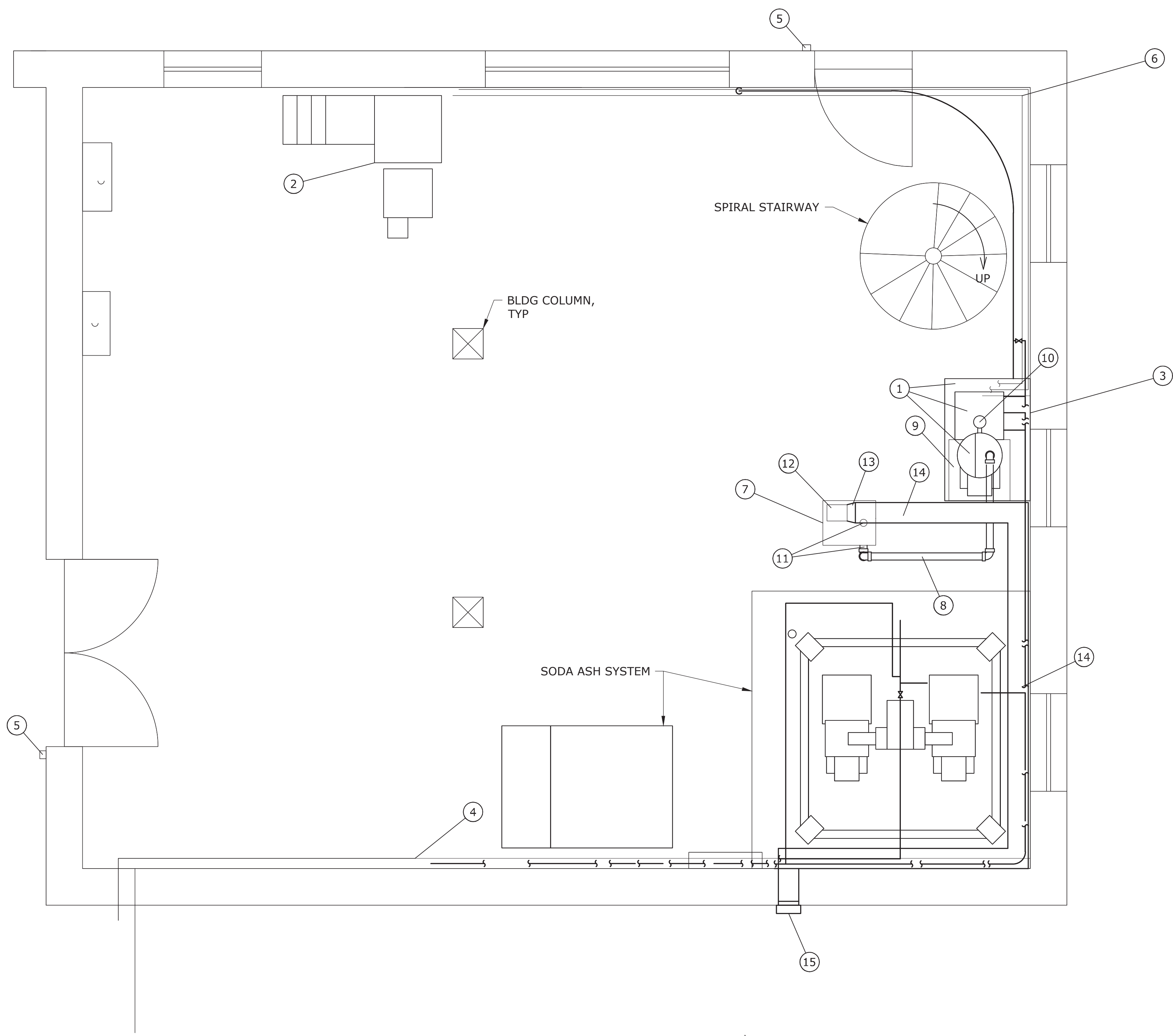
**VINE STREET WTP
CHEMICAL SYSTEM
IMPROVEMENTS
WTP-19-02**

**CHEMICAL BUILDING
EXISTING CONDITIONS AND
DEMOLITION SECTIONS**

PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

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MATERIAL LIST

- ① EXISTING DRY CHEMICAL FEED SYSTEM (PERMANGANATE), MOUNTED ON 42" X 60" CONCRETE PAD, TO BE CONVERTED TO FLUORIDE FEED.
- ② RELOCATE STAIRS, FLUORIDE HOPPER, DAY TANK AND POWER PANEL FROM CHEMICAL BUILDING FOR STORAGE IN SODA ASH BUILDING, LOCATE AS DIRECTED IN THE FIELD.
- ③ FURNISH AND INSTALL 1" PVC PIPE FROM OUTLET OF VENTURI TO CONNECTION POINT WITH EXISTING POST-CLS PIPE
- ④ CONNECT NEW FLUORIDE FEED PIPE TO EXISTING POST-CLS PIPE. SEE SHEET M2.
- ⑤ HAND SWITCH FOR EMERGENCY HORN
- ⑥ FURNISH AND INSTALL NEW CONDUIT AND CONDUCTOR FOR POWER AND CONTROL TO FLUORIDE FEED SYSTEM AND DUST FILTER
- ⑦ RELOCATE EXIST DONALDSON MODEL 64 CABINET DUST COLLECTOR. INSTALL ON EQUIPMENT PAD PER DETAIL. ANCHOR TO PAD WITH HILTI HIT-HY 200 ANCHOR SYSTEM OR EQUAL, QTY OF ANCHOR BOLTS TO MATCH NUMBER OF HOLES IN BASE PLATE.
- ⑧ INSTALL NEW PCV PIPE PER MFRS RECOMMENDATIONS, 3" DIA TO MATCH EXISTING, FROM HOPPER TO FILTER INTAKE WITH FLEX CONNECTIONS AT BOTH HOPPER AND FILTER.
- ⑨ FURNISH AND INSTALL NEW FEEDER SCALE LOCATED BENEATH FLUORIDE HOPPER, SEE SPECIFICATIONS. FIELD MEASURE FEEDER BASE DIMENSIONS AND COORDINATE WITH SCALE SUPPLIER TO ENSURE PRE-DRILLED HOLES IN SCALE PLATFORM MATCH FEEDER BASE ANCHORS.
- ⑩ MODIFY CONNECTION BETWEEN FEEDER SCREW OUTLET AND FEEDER DOWNSPOUT TO DAY TANK TO ACCOMMODATE CHANGES IN HORIZONTAL AND VERTICAL LOCATION OF FEEDER SCREW OUTLET RESULTING FROM INSTALLATION OF SCALE BENEATH HOPPER. INSTALL CAP ON TOP OF FEEDER DOWNSPOUT.
- ⑩ REMOVE PLATE BLOCKING AIR INLET ON SIDE OF CABINET AND INSTALL ON CURRENTLY OPEN AIR INLET ON TOP OF CABINET.
- ⑫ REMOVE EXISTING OUTDOOR EXHAUST DEFLECTOR. FURNISH AND INSTALL, PER MANUFACTURER'S INSTRUCTIONS, NEW INDOOR EXHAUST DEFLECTOR, DONALDSON PART NO. 2797500.
- ⑬ TRANSITION TO 10" SST RIGID ROUND DUCT W/ FLEXIBLE CONNECTION.
- ⑭ 10" SST RIGID ROUND DUCT, MIN 8' AFF.
- ⑮ CORE DRILL WALL, INSTALL 10" HOODED WALL VENT W/ SPRING LOADED DAMPER, GASKET AND SCREEN. MIN 28 GA THICK PRE-PAINTED GALV STL HOOD. PAINT HOOD AFTER INSTALLATION, COLOR TO MATCH EXTERIOR BRICK. FIELD LOCATE POSITION TO AVOID EXISTING EQUIPMENT. MOUNT HOOD APPROX 6' AFF.

GENERAL SHEET NOTE:

1. INSTALL NEW PIPE LABELS ON ALL NEW PIPE. SEE SPECIFICATIONS.

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

NO.	DATE	BY	REVISION

NOTICE
0 1/2 1
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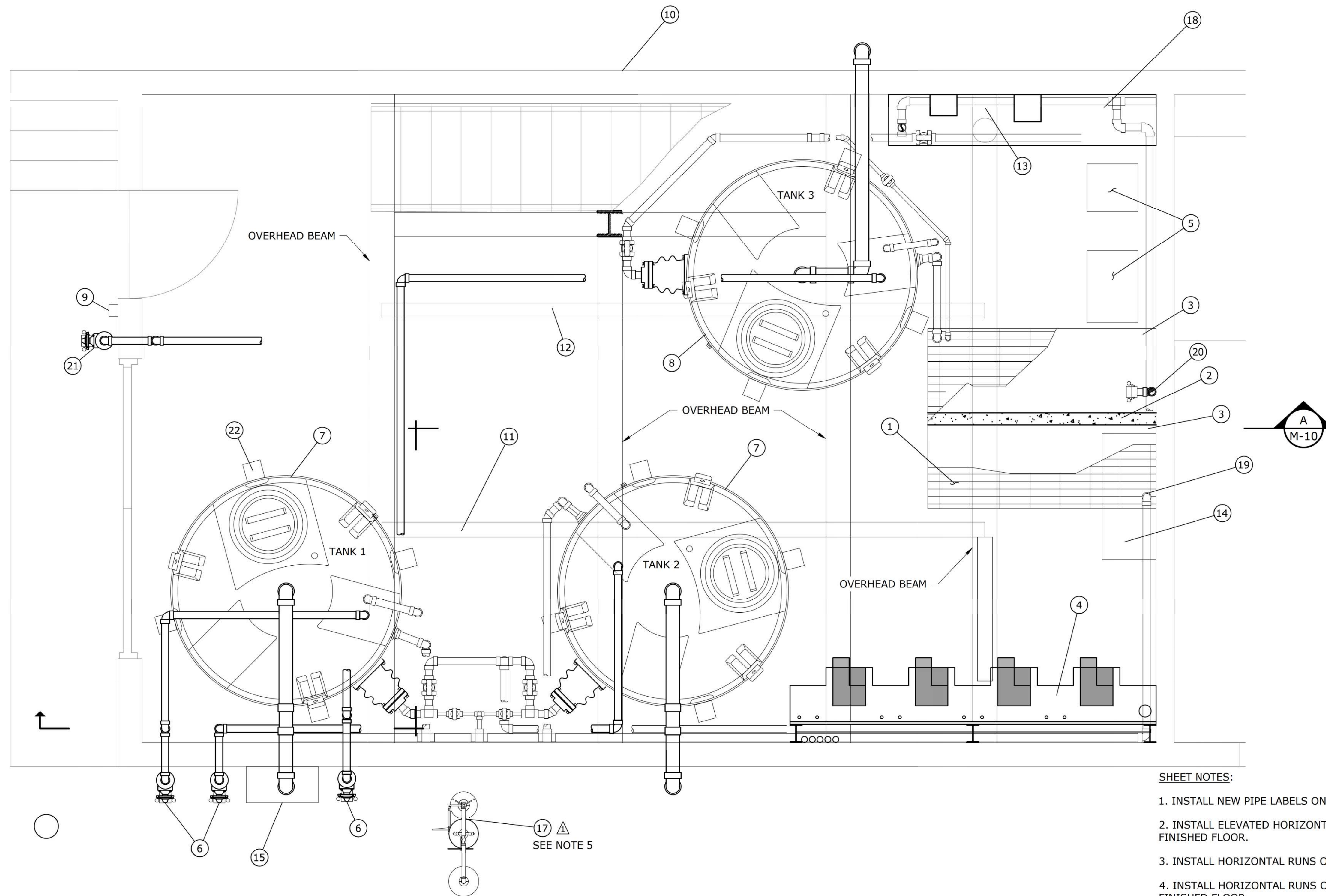
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SODA ASH BUILDING IMPROVEMENTS PLAN

PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

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MATERIAL LIST

- ① FRP GRATING, SEE STRUCTURAL AND SPECS
- ② CONC PARTITION IN SUMP, SEE STRUCTURAL
- ③ CONTAINMENT SUMP FLOOD SWITCH
- ④ INSTALL RELOCATED SODIUM HYPOCHLORITE PUMP BACK PANEL, SEE STRUCTURAL
- ⑤ INSTALL RELOCATED COAGULANT PUMPS ON EQUIPMENT PADS
- ⑥ CHEMICAL FILL STATION, SEE DETAIL
- ⑦ INSTALL OWNER FURNISHED DOUBLE WALL 1,015 GALLON STORAGE TANK FOR SODIUM HYPOCHLORITE
- ⑧ INSTALL OWNER FURNISHED DOUBLE WALL 1,015 GALLON STORAGE TANK FOR COAGULANT
- ⑨ HAND SWITCH FOR EMERGENCY HORN
- ⑩ CORE DRILL WEST WALL. FURNISH AND INSTALL NEW COAGULANT FEED PIPE TO ALTERNATIVE INJECTION POINTS. SEE SHEETS M-1 & M-13
- ⑪ RELOCATE LIGHT FIXTURE TO THE EAST TO AVOID CONFLICT WITH TANK ACCESS HATCH
- ⑫ RELOCATE LIGHT FIXTURE TO THE WEST TO AVOID CONFLICT WITH TANK ACCESS HATCH
- ⑬ CONNECT NEW POLYMER FEED PIPE TO EXISTING POLYMER FEED PIPE ON WEST WALL UPSTREAM FROM WHERE PIPE EXITS BUILDING
- ⑭ INSTALL SODIUM HYPOCHLORITE PUMP CONTROL PANEL, RELOCATED FROM SODA ASH BUILDING
- ⑮ TANK LEVEL MONITORING DISPLAY, SEE ELECTRICAL.
- ⚠ ⑯ NOT USED
- ⚠ ⑰ FURNISH AND INSTALL FREEZE RESISTANT EMERGENCY EYE/FACE WASH AND SHOWER, HAWS MODEL 8317CTFP OR APPROVED EQUAL, WITH THERMOSTATIC MIXING VALVE, HAWS MODEL 9201E OR APPROVED EQUAL
- ⑱ CONNECT NEW COAGULANT FEED PIPE FOR PRIMARY INJECTION POINT TO EXISTING COAGULANT FEED PIPE ON WEST WALL UPSTREAM FROM WHERE PIPE EXITS BLDG, SEE SHEET M-13
- ⑲ DRAIN AND OVERFLOW PIPE FROM HYPOCHLORITE TANKS
- ⑳ SUMP PUMP DISCHARGE CONNECTION PER CHEMICAL FILL STATION DETAIL, BUT WITHOUT DIAPHRAGM VALVE. ROUTE 2" PVC PIPE UP AND OVER TO DISCHARGE CONNECTION ON EXTERIOR FACE OF SOUTH WALL
- ㉑ SUMP PUMP DISCHARGE CONNECTION PER CHEMICAL FILL STATION DETAIL. ROUTE 2" PVC PIPE UP AND OVER TO DISCHARGE CONNECTION ON INTERIOR FACE OF NORTH WALL
- ㉒ INSTALL OWNER FURNISHED RESTRAINT CLIPS, FOUR PER TANK, TYP

SHEET NOTES:

- 1. INSTALL NEW PIPE LABELS ON ALL NEW PIPE. SEE SPECIFICATIONS.
- 2. INSTALL ELEVATED HORIZONTAL RUNS OF VENT PIPES AND FILL PIPES 8'-0" MIN ABOVE FINISHED FLOOR.
- 3. INSTALL HORIZONTAL RUNS OF DRAIN PIPE APPROXIMATELY 0'-4" ABOVE FINISHED FLOOR.
- 4. INSTALL HORIZONTAL RUNS OF CHEM FEED PUMP SUPPLY PIPE APPROXIMATELY 0'-6" ABOVE FINISHED FLOOR.
- ⚠ 5. FIELD LOCATE SHOWER, PROVIDE MINIMUM OF 5' BETWEEN FILTER 7-10 OVERFLOW STRUCTURE AND SHOWER. EXTEND COLD AND HOT WATER TO THERMOSTATIC MIXING VALVE, WITH HOT WATER FROM TANKS RELOCATED TO SECOND FLOOR. CORE DRILL WALL AS NEEDED. PROVIDE POWER FOR HEAT TRACE, SEE ELECTRICAL.

CHEM BLDG 1ST FLOOR - SECTION: ALL TANKS 1,015 GALLONS
SCALE: 5/8"=1'-0"

NO.	DATE	BY	REVISION
1	01/08/21	AS	ADDENDUM NO. 2

NOTICE
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**VINE STREET WTP
CHEMICAL SYSTEM
IMPROVEMENTS
WTP-19-02**

**CHEMICAL BUILDING
IMPROVEMENTS PLAN
1ST FLOOR**

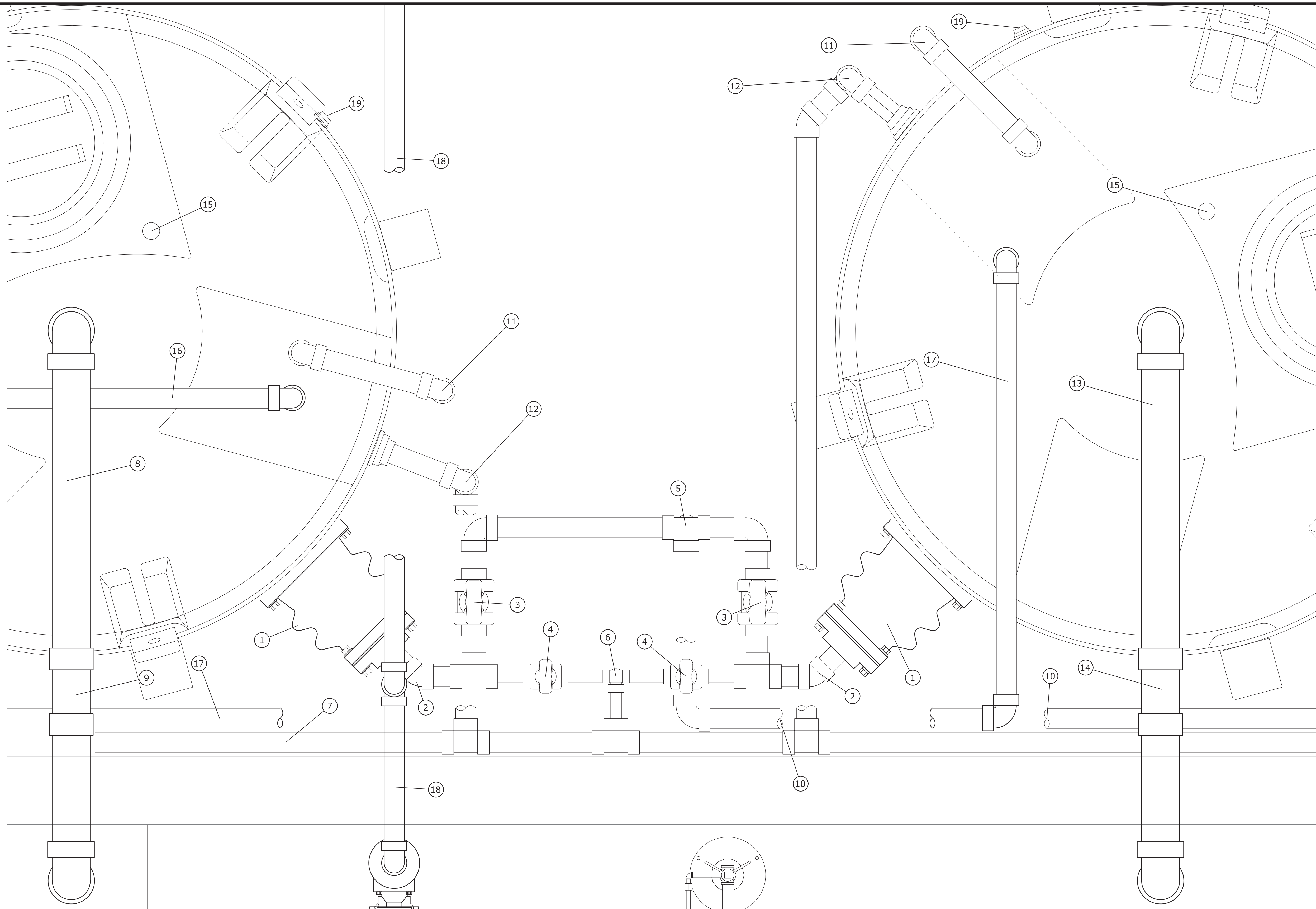
PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

SHEET

M-7

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MATERIAL LIST

- 1 OWNER FURNISHED TRANSITION FITTING
- 2 2" SCH 80 PVC OUTLET PIPE
- 3 2" PVC TRUE UNION BALL VALVE ON CHEM FEED PUMP SUPPLY PIPE
- 4 1" PVC TRUE UNION BALL VALVE ON CHEM TANK DRAIN PIPE
- 5 2" PVC TEE, VERTICALLY ORIENTED
- 6 1" PVC TEE, VERTICALLY ORIENTED
- 7 2" SCH 80 PVC DRAIN PIPE, EXTEND TO DRAIN SUMP TO THE NORTH, TO TANK 1 VENT PIPE TO THE SOUTH
- 8 4" SCH 80 PVC VENT PIPE FROM TANK 1, EXTEND THROUGH EAST WALL
- 9 4" PVC TEE, ORIENTED VERTICALLY. CONNECT BRANCH TO 2" VENT LINE FROM DRAIN PIPE BELOW
- 10 2" SCH 80 PVC, SUPPLY PIPE TO CHEM FEED PUMPS
- 11 OWNER FURNISHED REVERSE LEVEL GAGE
- 12 2" SCH 80 PVC OVERFLOW PIPE W/ WATER SEAL PER DETAIL, SEE SHT M-15. CONTINUE TO DRAIN
- 13 4" SCH 80 PVC VENT PIPE FROM TANK 2, EXTEND THROUGH EAST WALL
- 14 4" PVC TEE, ORIENTED VERTICALLY. CONNECT BRANCH TO COMBINED 2" VENT LINE FROM CHEM FEED PUMP PANEL
- 15 OWNER FURNISHED 2" UNIVERSAL BALL DOME FITTING FOR VERTICAL MOUNTING OF LEVEL SENSOR
- 16 2" SCH 80 PVC FILL PIPE FOR TANK 1
- 17 2" SCH 80 PVC FILL PIPE FOR TANK 2
- 18 2" PVC COAGULANT FILL PIPE FOR TANK 3, SEE SHT M-9
- 19 INSTALL 1" TRUE UNION BALL VALVE, NC, WITH PLUG ON LEAK MONITORING BULKHEAD FITG IN EXTERIOR TANK WALL

GENERAL SHEET NOTES:

- 1. INSTALL NEW PIPE LABELS ON ALL NEW PIPE. SEE SPECIFICATIONS.
- 2. INSTALL ELEVATED HORIZONTAL RUNS OF VENT PIPES AND FILL PIPES 8'-0" MIN ABOVE FINISHED FLOOR.
- 3. INSTALL HORIZONTAL RUNS OF DRAIN PIPE APPROXIMATELY 0'-4" ABOVE FINISHED FLOOR.
- 4. INSTALL HORIZONTAL RUNS OF CHEM FEED PUMP SUPPLY PIPE APPROXIMATELY 0'-6" ABOVE FINISHED FLOOR.

HYPOCHLORITE TANK PIPING DETAIL 1
SCALE: 2"=1'-0"

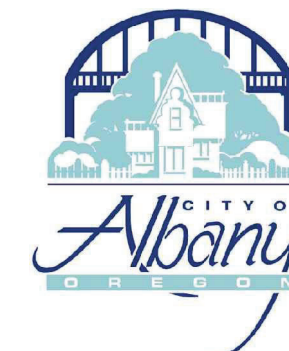
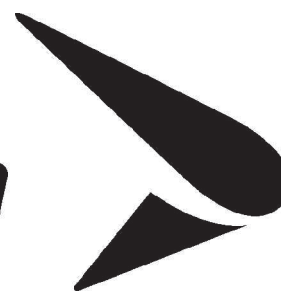
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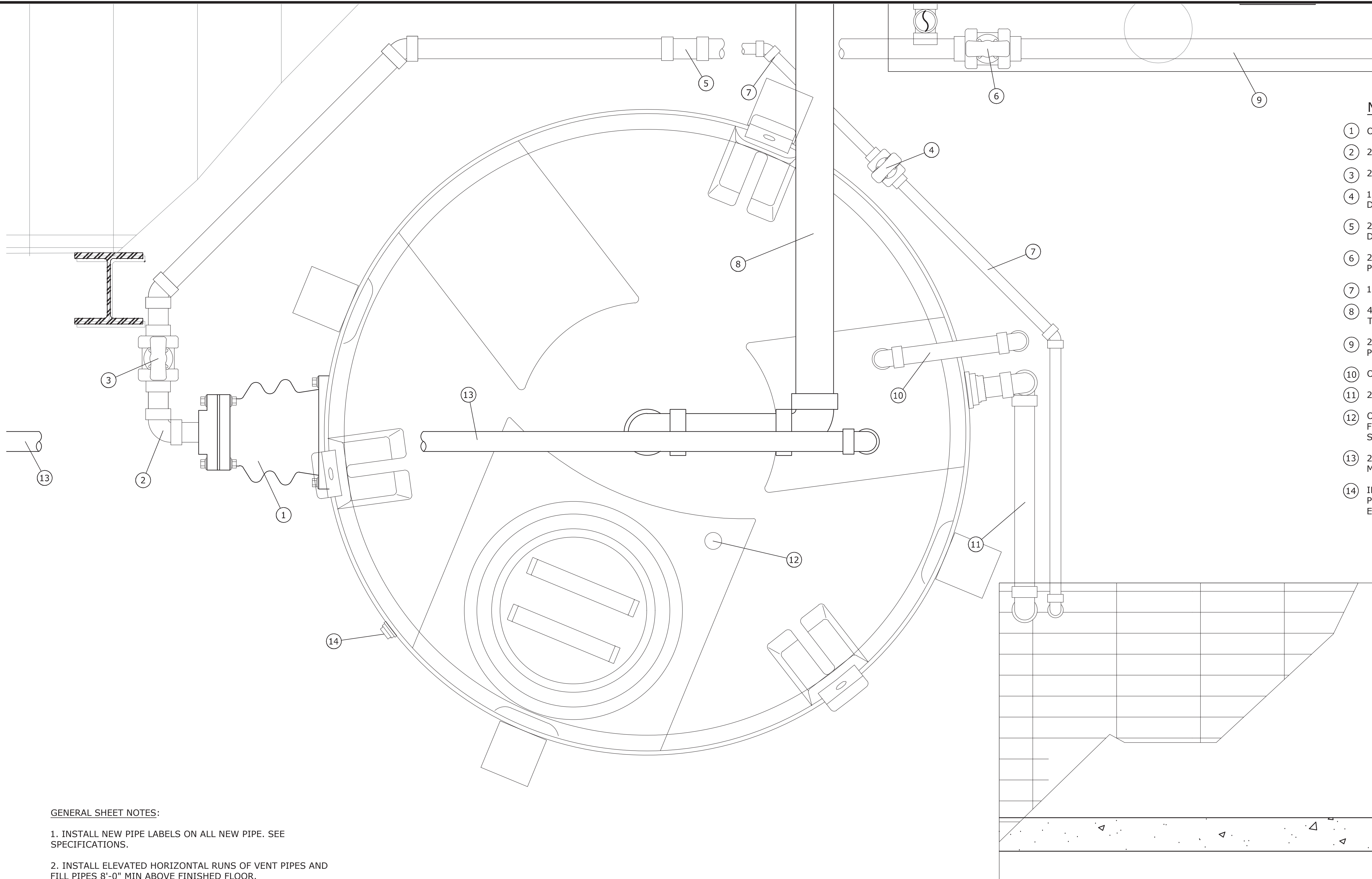
**VINE STREET WTP
CHEMICAL SYSTEM
IMPROVEMENTS
WTP-19-02**

**HYPOCHLORITE TANK
PIPING PLAN**

PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

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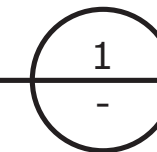
- ① OWNER FURNISHED TRANSITION FITTING
- ② 2" SCH 80 PVC OUTLET PIPE
- ③ 2" PVC TRUE UNION BALL VALVE ON OUTLET PIPE
- ④ 1" PVC TRUE UNION BALL VALVE ON CHEM TANK DRAIN PIPE
- ⑤ 2" PVC TEE, VERTICALLY ORIENTED, WITH 1" PVC DRAIN PIPE CONNECTED TO BRANCH
- ⑥ 2" PVC TRUE UNION BALL VALVE ON CHEM FEED PUMP SUPPLY PIPE
- ⑦ 1" SCH 80 PVC DRAIN PIPE TO SUMP
- ⑧ 4" SCH 80 PVC VENT PIPE FROM TANK 3, EXTEND THROUGH WEST WALL
- ⑨ 2" SCH 80 PVC, SUPPLY PIPE TO CHEM FEED PUMPS
- ⑩ OWNER FURNISHED REVERSE LEVEL GAGE
- ⑪ 2" SCH 80 PVC OVERFLOW PIPE TO SUMP
- ⑫ OWNER FURNISHED 2" UNIVERSAL BALL DOME FITTING FOR VERTICAL MOUNTING OF LEVEL SENSOR
- ⑬ 2" SCH 80 PVC FILL PIPE FOR TANK 3, SEE SHTS M-6 AND M-8
- ⑭ INSTALL 1" TRUE UNION BALL VALVE, NC, WITH PLUG ON LEAK MONITORING BULKHEAD FITG IN EXTERIOR TANK WALL

GENERAL SHEET NOTES:

- 1. INSTALL NEW PIPE LABELS ON ALL NEW PIPE. SEE SPECIFICATIONS.
- 2. INSTALL ELEVATED HORIZONTAL RUNS OF VENT PIPES AND FILL PIPES 8'-0" MIN ABOVE FINISHED FLOOR.
- 3. INSTALL HORIZONTAL RUNS OF DRAIN PIPE APPROXIMATELY 0'-4" ABOVE FINISHED FLOOR.
- 4. INSTALL HORIZONTAL RUNS OF CHEM FEED PUMP SUPPLY PIPE APPROXIMATELY 0'-6" ABOVE FINISHED FLOOR.

COAGULANT TANK PIPING DETAIL

SCALE: 2"=1'-0"



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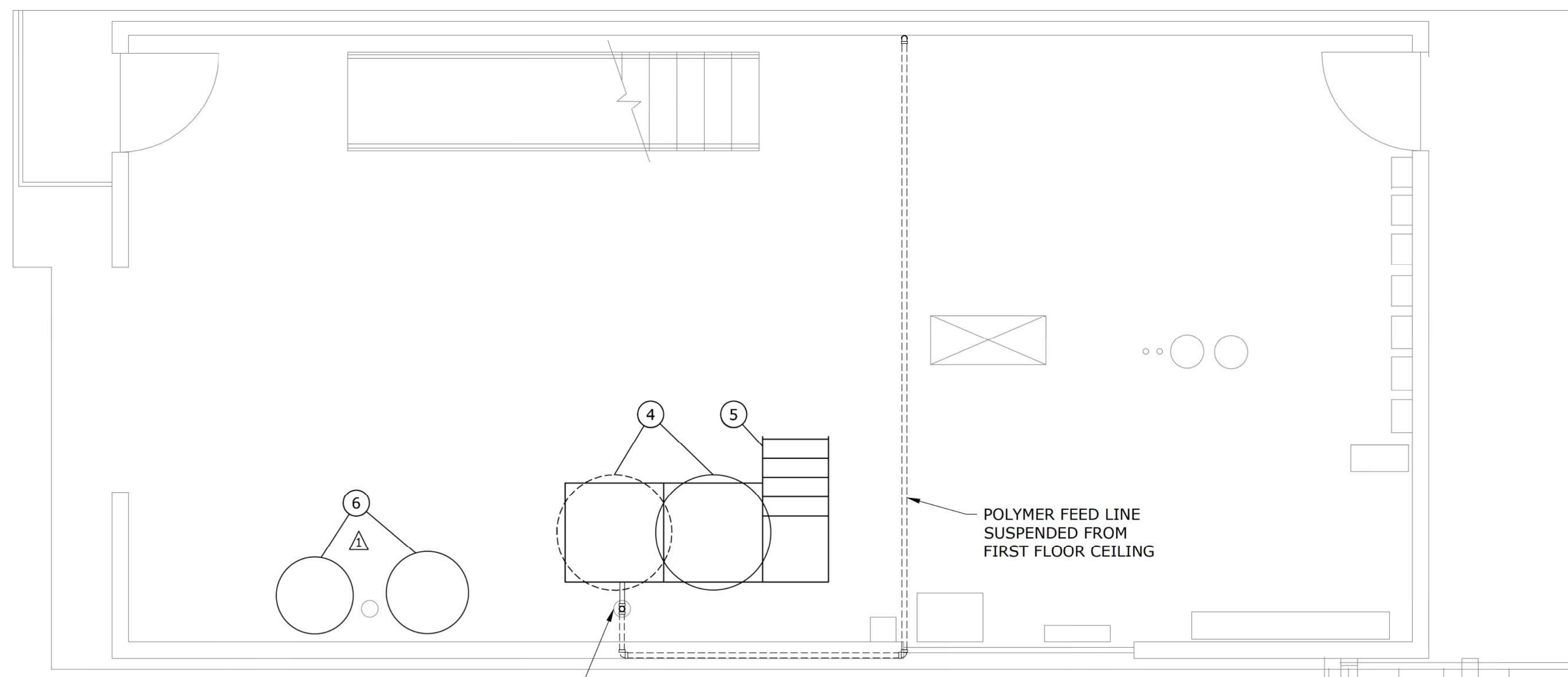
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 WTP-19-02**

**COAGULANT TANK
 PIPING PLAN**

PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

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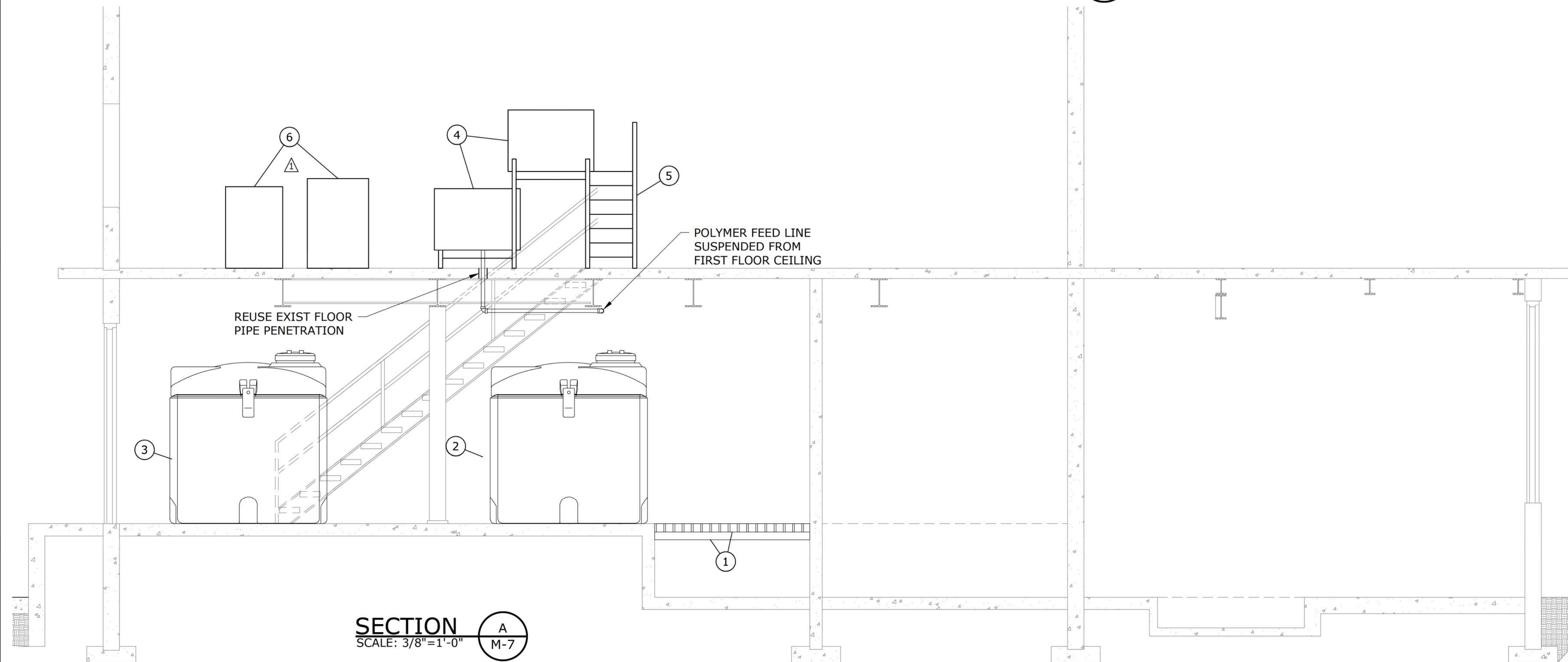
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CHEM BLDG 2ND FLOOR - FLOOR PLAN
SCALE: 3/8"=1'-0" 1

MATERIAL LIST

- ① FURNISH AND INSTALL FRP GRATING AND MID SPAN SUPPORT, SEE STRUCTURAL
- ② INSTALL OWNER FURNISHED COAGULANT STORAGE TANK
- ③ INSTALL OWNER FURNISHED SODIUM HYPOCHLORITE STORAGE TANK
- ④ INSTALL RELOCATED POLYMER SYSTEM, TANKS AND SUPPORT RACK
- ⑤ INSTALL RELOCATED POLYMER STAIRWAY AND PLATFORM
- ⚠️⑥ INSTALL RELOCATED WATER HEATER TANKS AS SHOWN. EXTEND COLD WATER TO BOTH TANKS AS NEEDED. CONNECT BOTH HOT WATER LINES AND PLUMB COMBINED HOT WATER LINE TO POLYMER TANK, SIMILAR TO EXISTING. PLUMB COMBINED HOT WATER LINE TO NEW EXTERIOR EMERGENCY SHOWER LOCATED OUTSIDE EAST WALL. RECONNECT POWER TO BOTH TANKS, SEE ELECTRICAL.



SECTION A
SCALE: 3/8"=1'-0" M-7

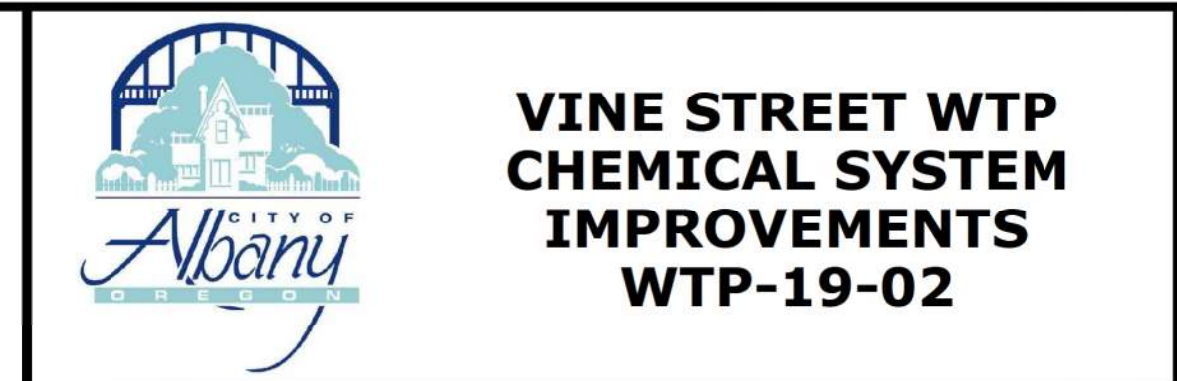
NOTES:

- 1. CHEMICAL TANK PIPING NOT SHOWN FOR CLARITY. SEE PLANS AND DETAILS FOR CHEMICAL TANK PIPING.
- 2. DUPLICATE THE EXISTING PLUMBING ON THE EXISTING POLYMER INSTALLATION AFTER RELOCATING EQUIPMENT TO 2ND FLOOR: EXTEND EXISTING PLANT WATER PIPE AS NEEDED TO PROVIDE WATER FOR THE POLYMER DAY TANK; EXTEND EXISTING PLANT WATER PIPE AS NEEDED TO PROVIDE CARRIER WATER FOR THE POLYMER FEED PIPE.

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NOTICE
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**VINE STREET WTP
CHEMICAL SYSTEM
IMPROVEMENTS
WTP-19-02**

**CHEMICAL BUILDING
IMPROVEMENTS SECTION
AND 2ND FLOOR PLAN**

PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

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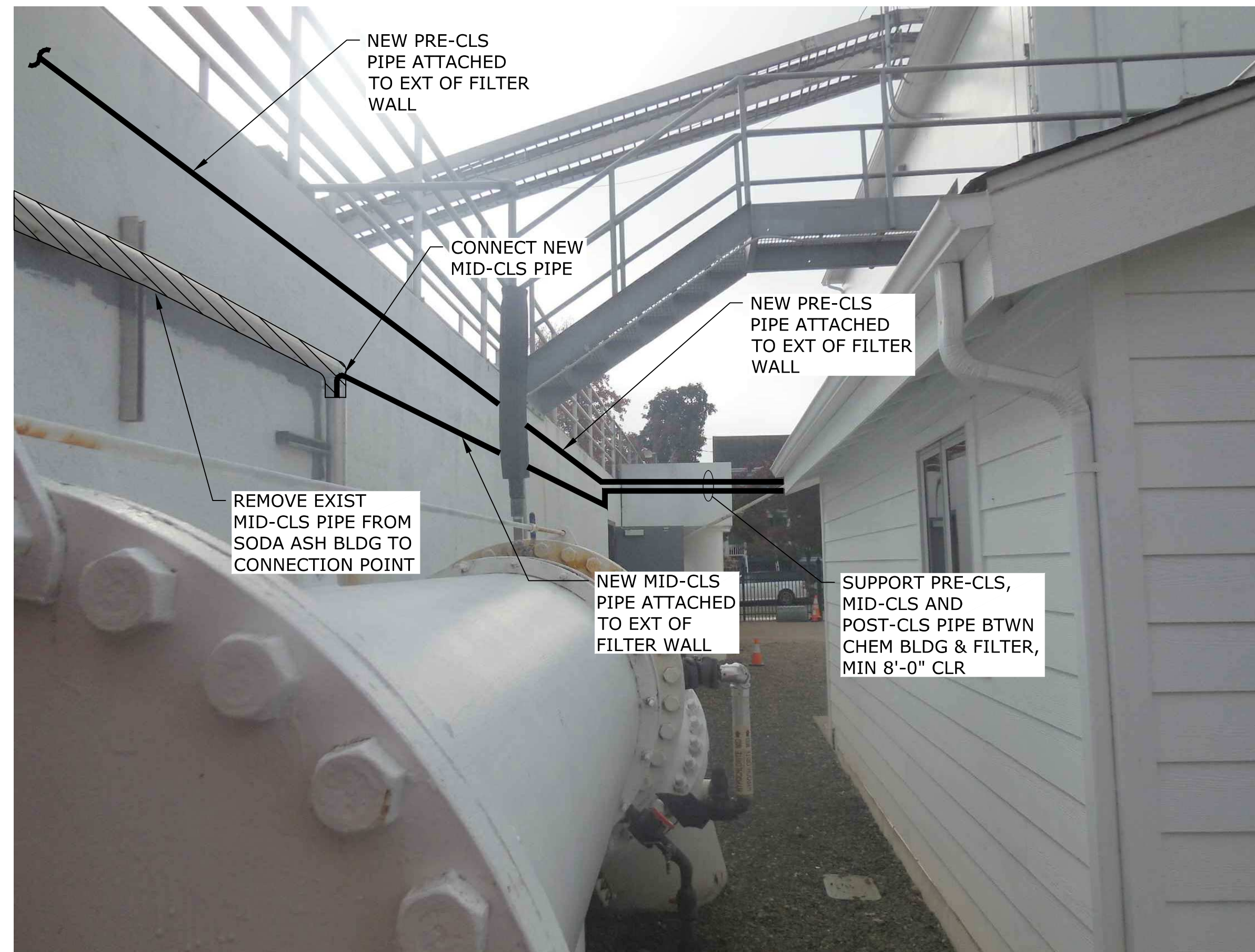
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PRE-CLS PIPE CONNECTION

SCALE: NTS

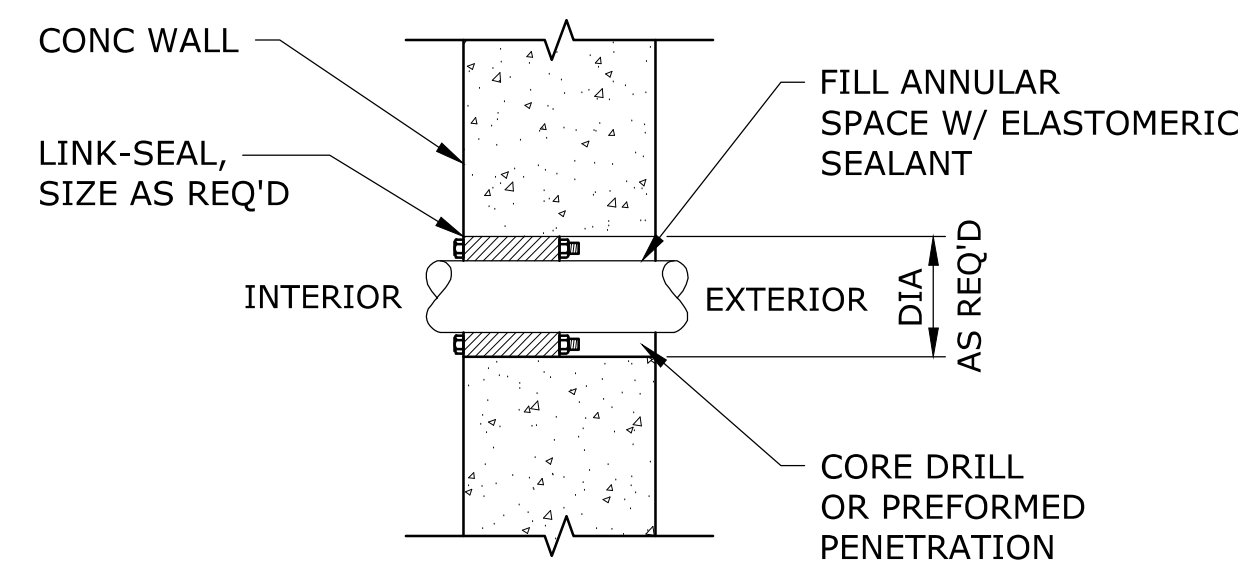
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MID-CLS PIPE CONNECTION

SCALE: NTS

2
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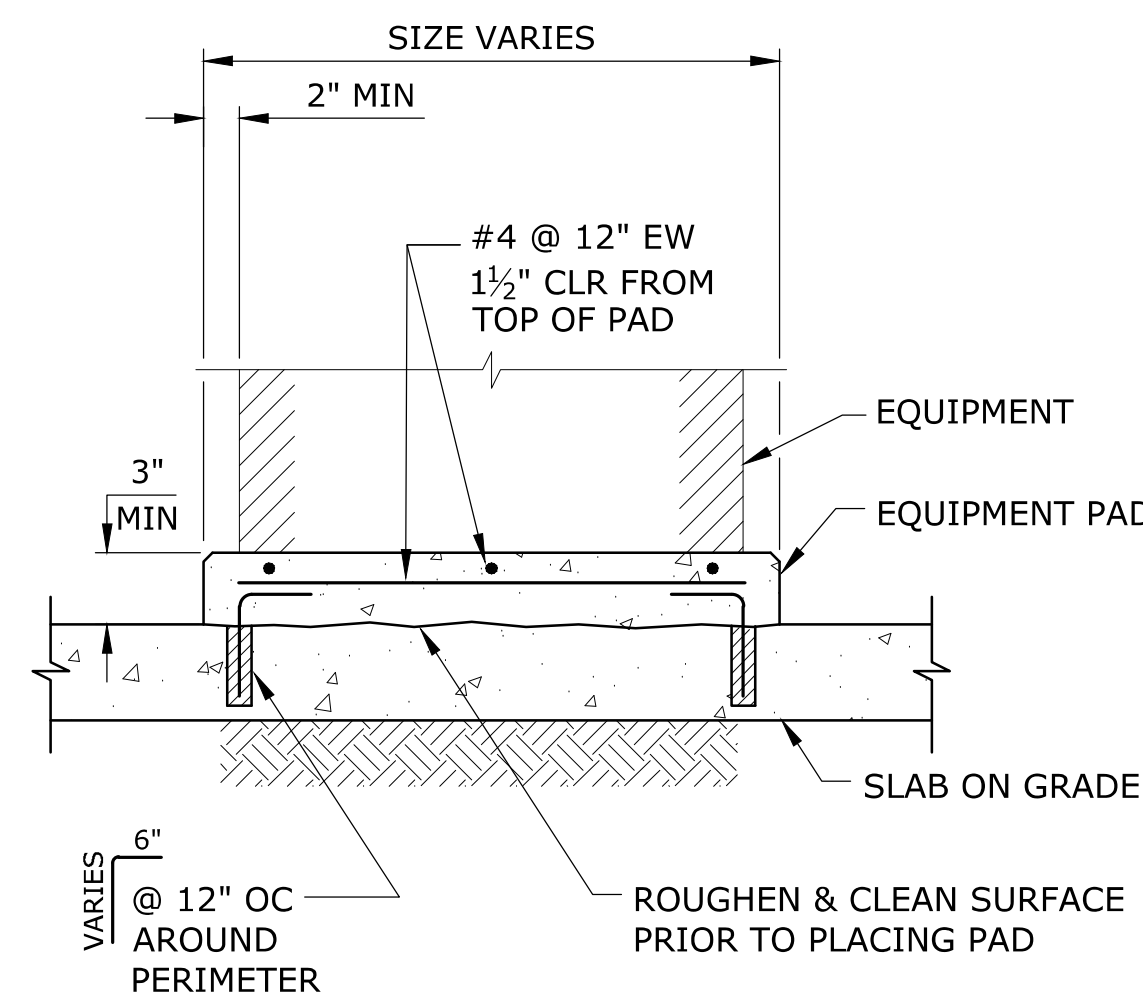
NOTE:

1. SEAL ALL WALL PIPE PENETRATIONS WITH LINK-SEAL TYPE SEAL UNLESS OTHERWISE NOTED.

CORE-DRILLED CONCRETE PENETRATION

SCALE: NTS

3
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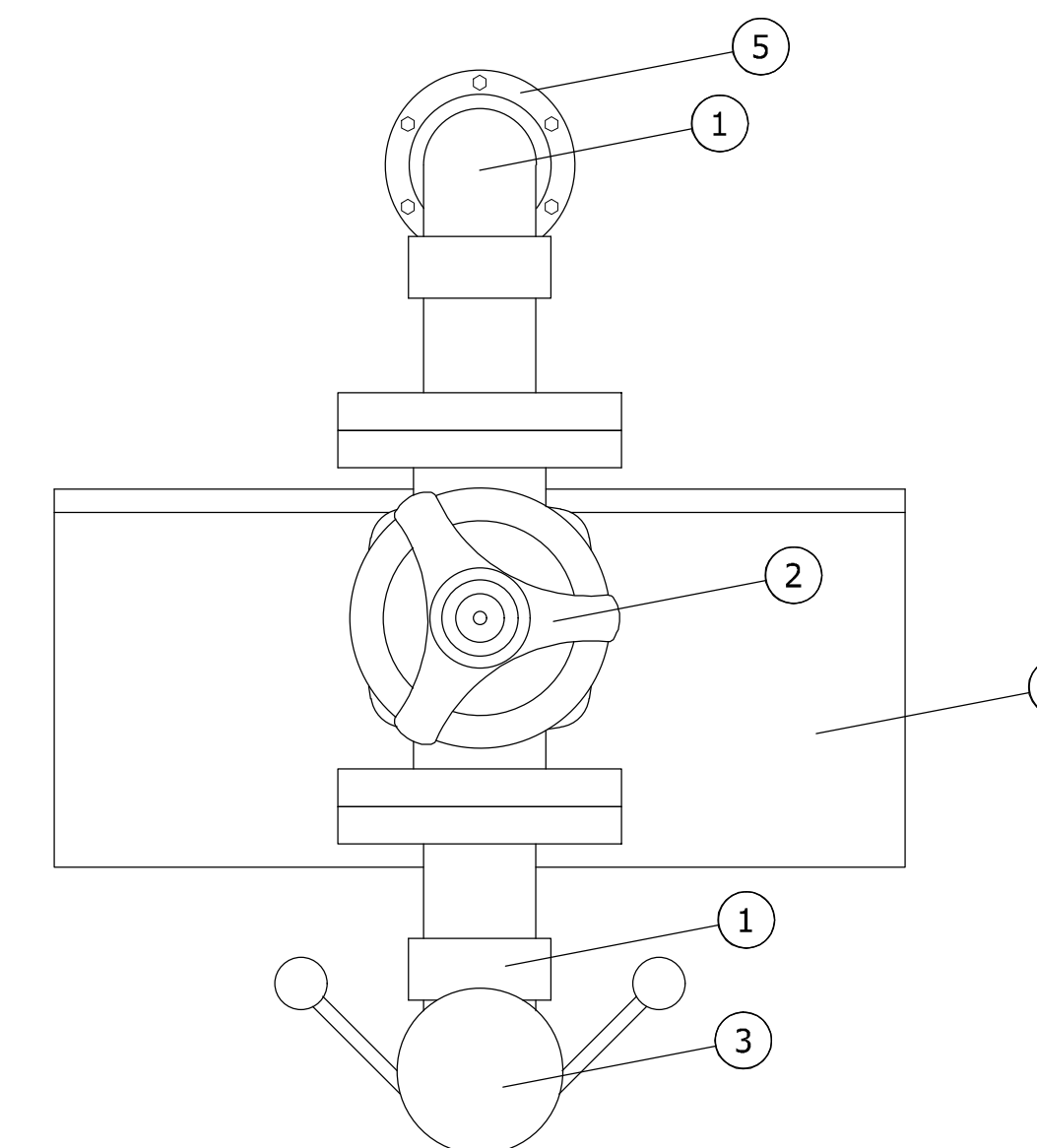
NOTE:

1. DRILL AND EPOXY TO SLAB WITH HILTI HIT-RE 500-SD EPOXY, 6" EMBEDMENT.

EQUIPMENT PAD

SCALE: NTS

4
-



CHEMICAL FILL STATION DETAIL

SCALE: NTS

5
-

MATERIAL LIST

- ① 2" SCH 80 PVC 90° BEND
- ② 2" FLG PVC DIAPHRAGM VALVE
- ③ 2" PP TYPE F CAMLOCK FITTING, MALE NIPPLE X MNPT, WITH 2" PP TYPE DC DUST COVER W/ LOCKING HANDLES
- ④ 8"x6"x1/2" STRUCTURAL FIBERGLASS ANGLE ANCHORED TO WALL & SUPPORTING THE VALVE FLG
- ⑤ CORE DRILLED CONC PIPE PENETRATION PER DET

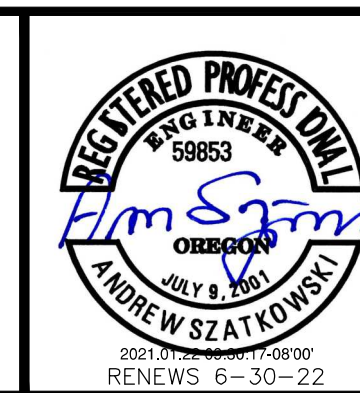
NOTE:

- ① 1. ALL PIPE SHALL BE SCHEDULE 80 PVC.

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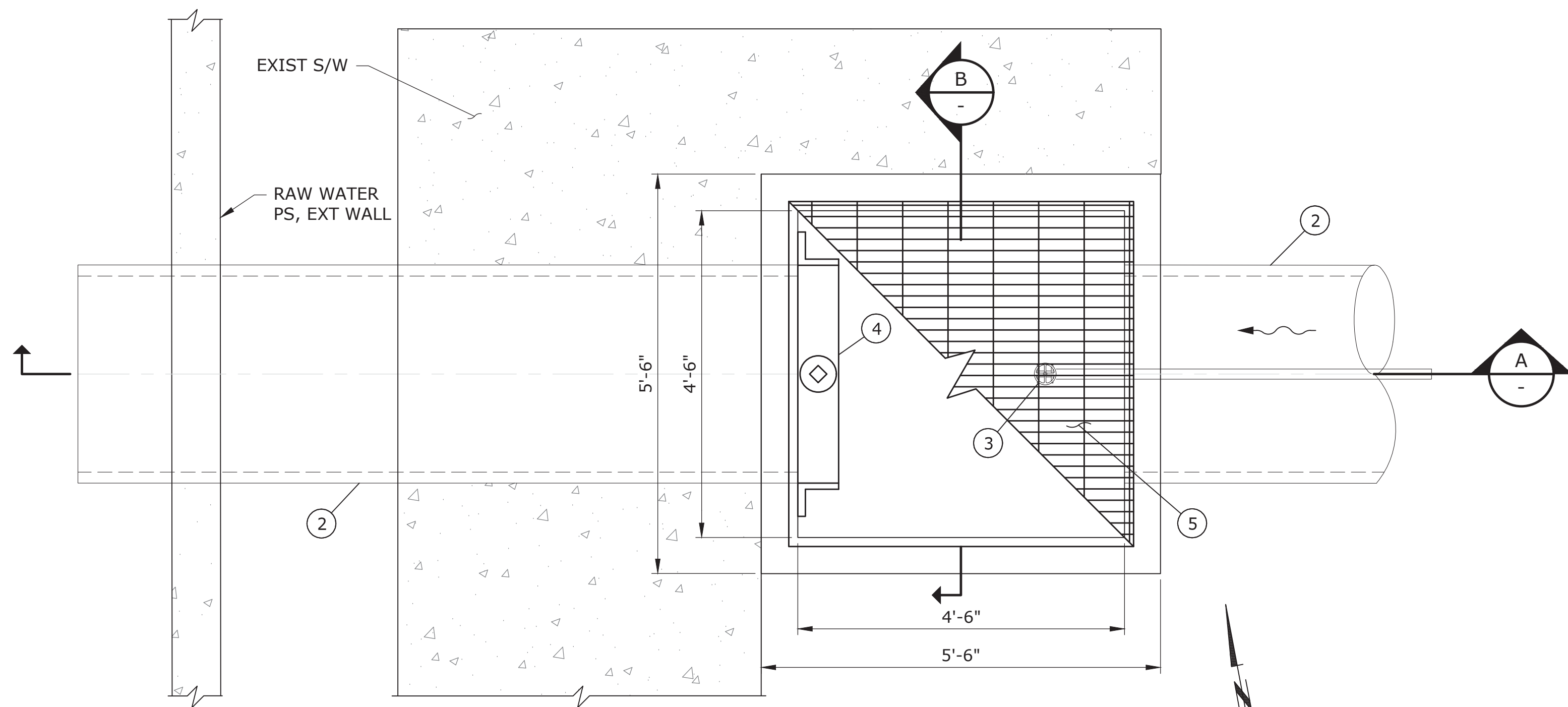


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CHEMICAL SYSTEM
IMPROVEMENTS
WTP-19-02**

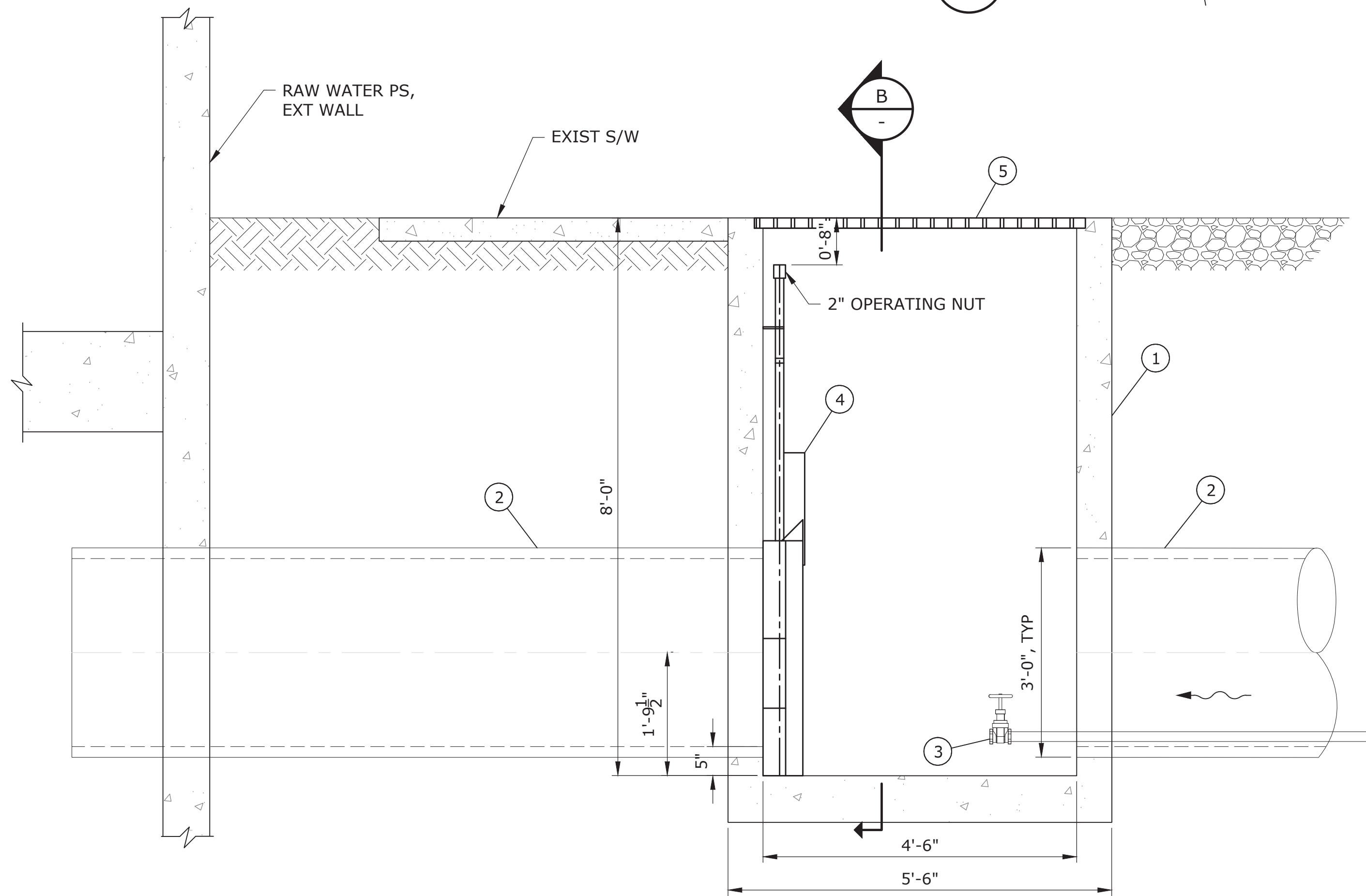
PROJECT NO.:	20-2757	SCALE:	AS SHOWN	DATE:	DECEMBER 2020
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M-11
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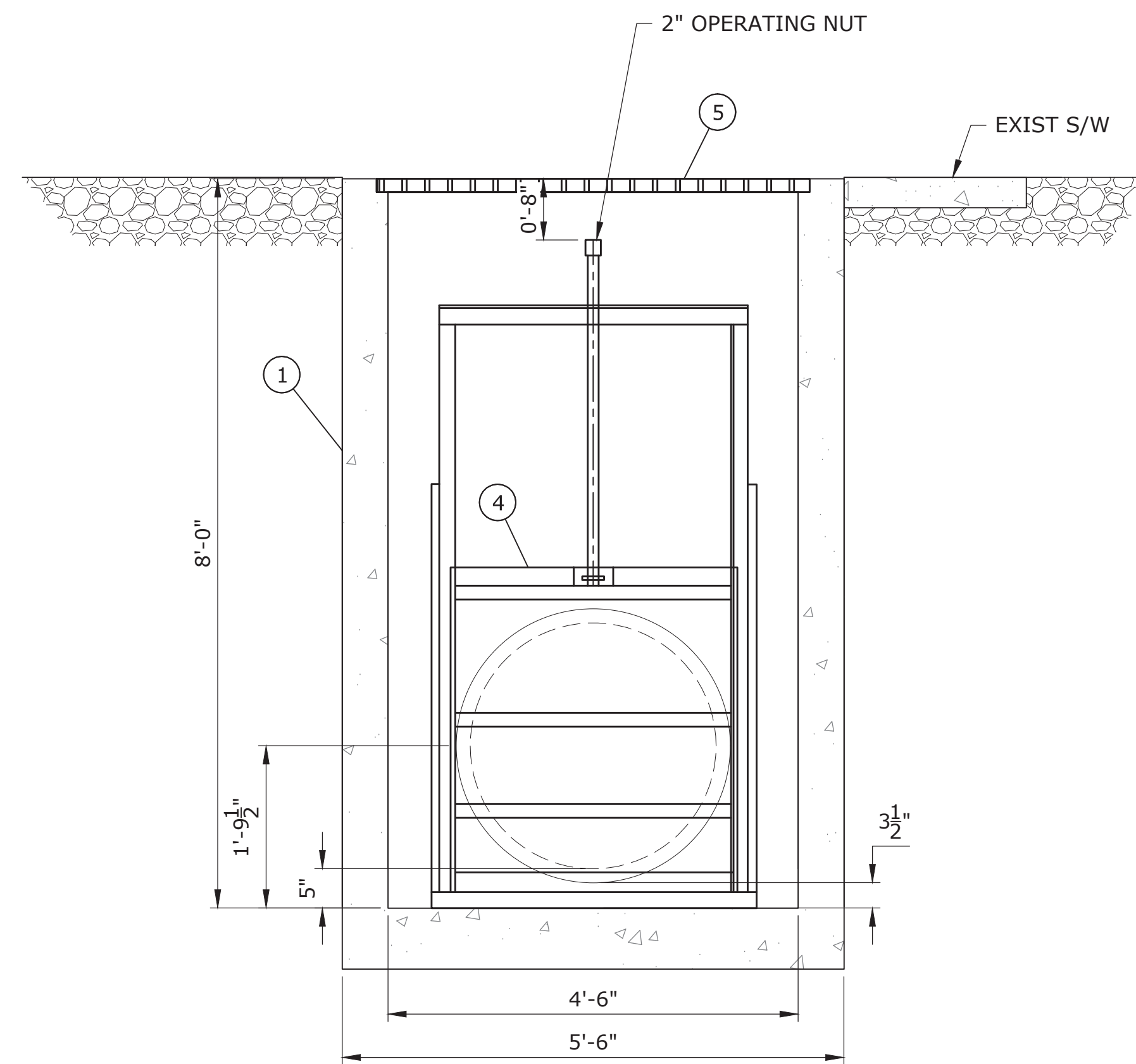
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SCREEN PIT PLAN (1)
SCALE: 3/4"=1'-0"



SECTION A
SCALE: 3/4"=1'-0"



SECTION B
SCALE: 3/4"=1'-0"

NOTE:

1. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS OF SCREEN PIT PRIOR TO ORDERING PROPOSED MATERIALS.

MATERIAL LIST

EXISTING

- ① CONC SCREEN PIT W/ REMOVABLE COVER
- ② 36" PIPE
- ③ 1-1/2" VALVE & GALV PIPE

INSTALL, OWNER FURNISHED

- ④ SLIDE GATE, 36"x36" GOLDEN HARVEST MODEL GH-46, SEE SPECS

FURNISH AND INSTALL

- ⑤ 2" THK FRP GRATING, MIN 5-FOOT SPAN, SEE STRUCTURAL AND SPECS

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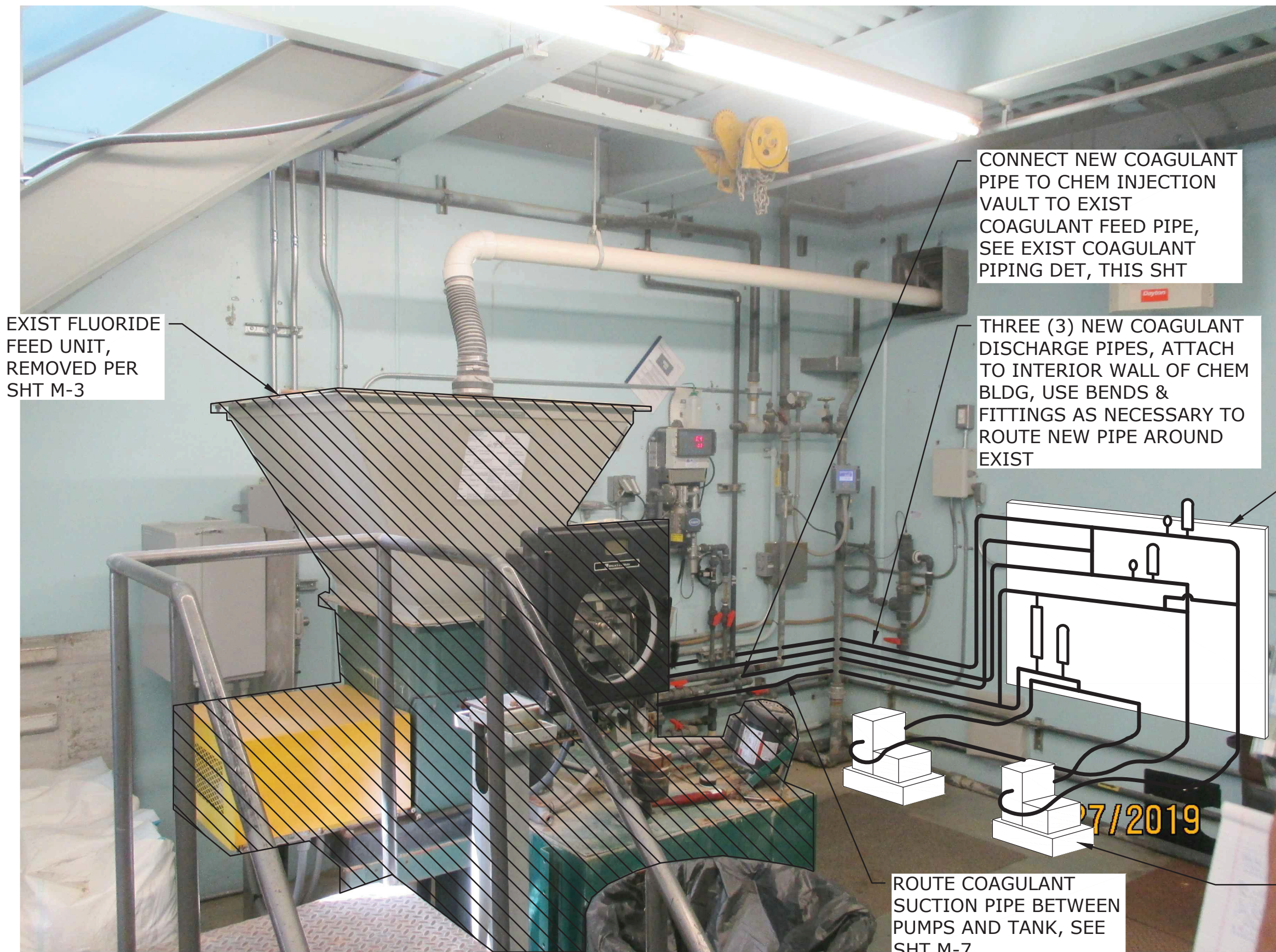
**VINE STREET WTP
CHEMICAL SYSTEM
IMPROVEMENTS
WTP-19-02**

**SCREEN PIT AND SLIDE GATE
PLAN AND DETAIL**

PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

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15 of 29

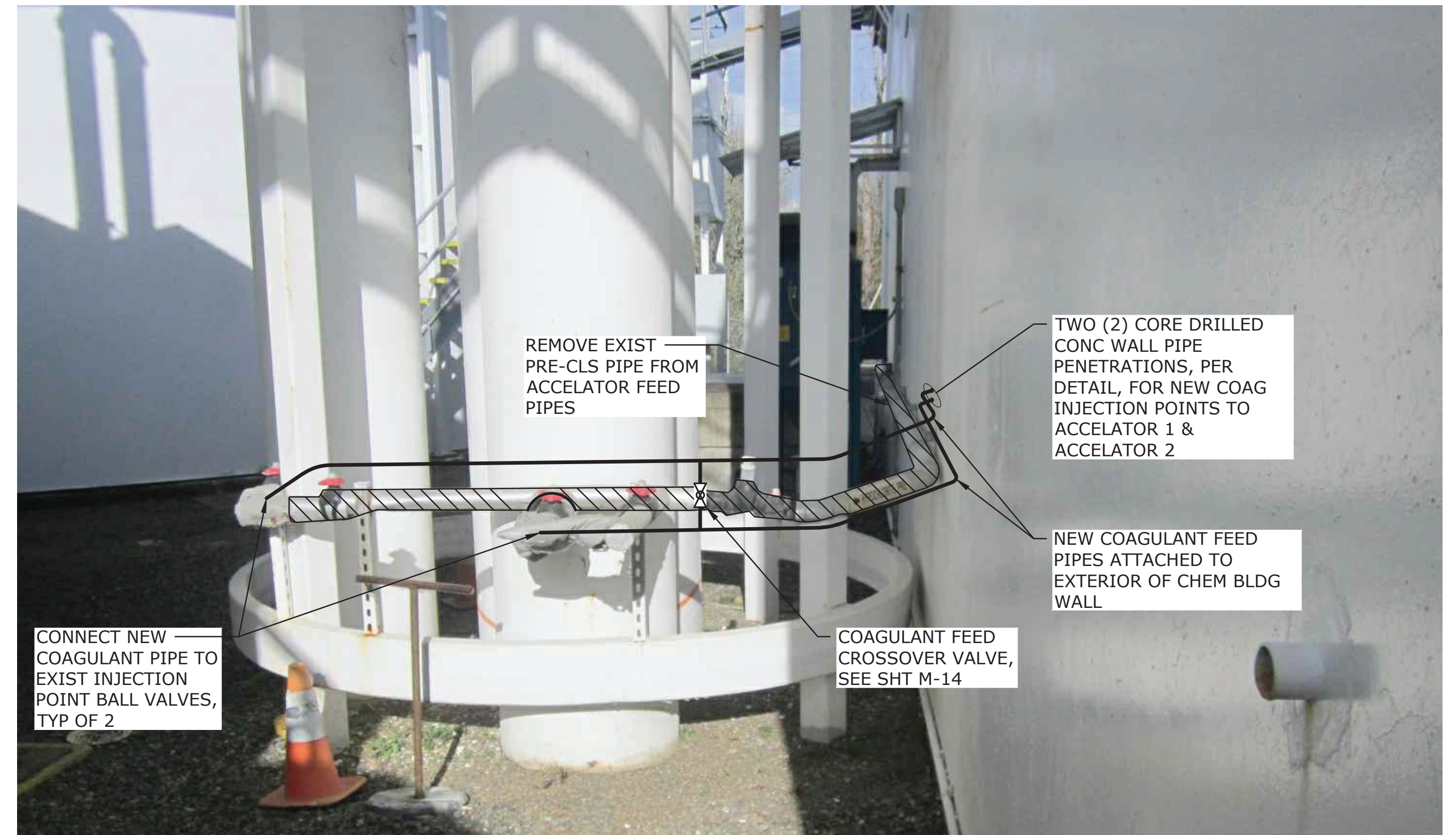
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COAGULANT PUMP AND PIPING LAYOUT

SCALE: NTS

1
-



NEW COAGULANT INJECTION POINTS

SCALE: NTS

2
-



CONTINUE TWO (2) NEW COAGULANT FEED PIPES TO ACCELERATOR 1 & ACCELERATOR 2. SEE NEW COAGULANT INJECTION POINTS DETAIL, THIS SHT

EXISTING COAGULANT PIPING DETAIL

SCALE: NTS

3
-

NO.	DATE	BY	REVISION

NOTICE
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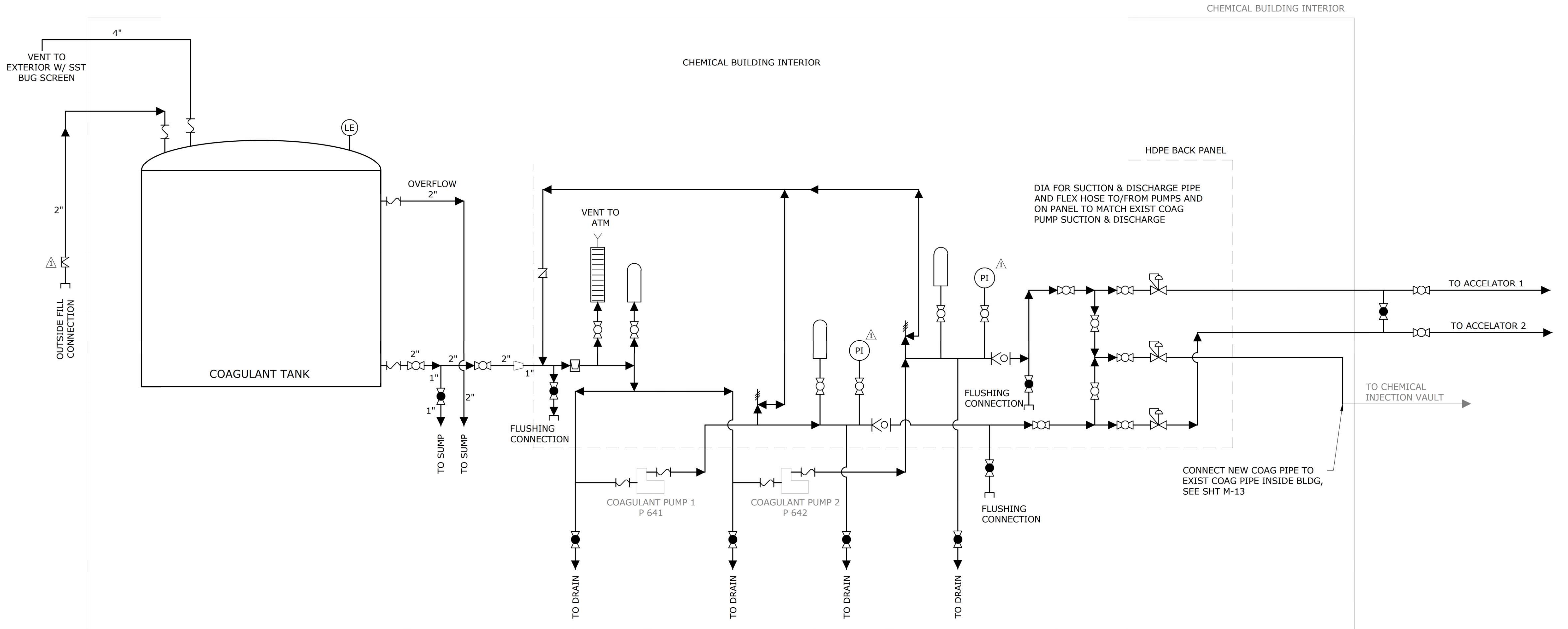
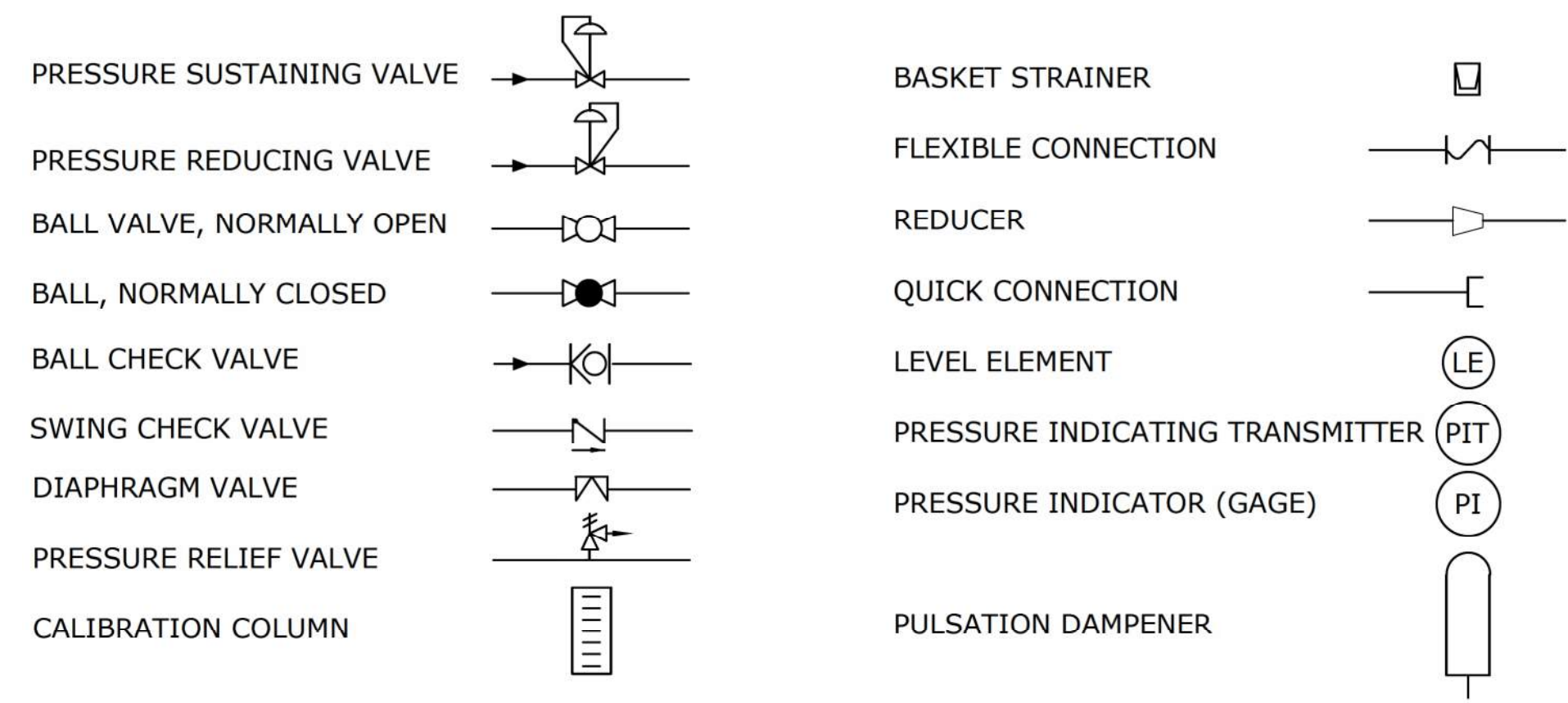
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CHEMICAL SYSTEM
IMPROVEMENTS
WTP-19-02**

COAGULANT PUMP AND PIPING LAYOUTS

PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

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△ PROCESS PIPING SYMBOLS

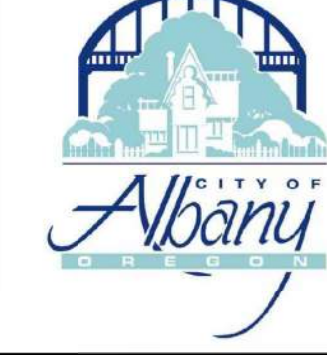


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NOTICE
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VINE STREET WTP
CHEMICAL SYSTEM
IMPROVEMENTS
WTP-19-02

COAGULANT PUMP AND PIPING
SCHEMATIC

PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

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M-14
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REMOVE EXIST SUCTION & VENT/DRAIN PIPING FROM BACKSIDE OF PANEL, INSTALL NEW SUCTION & DRAIN PIPING ON FRONT SIDE OF PANEL PER SUCTION & DRAIN PIPING DET, THIS SHT

EXISTING CLS PUMP PANEL - BACK

SCALE: NTS

1
-



CUT EXIST VENT ABOVE BV. POINT OF CONNECTION FOR NEW VENT PIPE AFTER RELOCATION OF PANEL.

CONNECT NEW SODIUM HYPOCHLORITE SUCTION LINE TO EXIST BALL VALVE, TYP OF 5, USE BENDS & FITTINGS AS NECESSARY

NEW CLS SUCTION LINE, SEE SUCTION & DRAIN PIPING DET, THIS SHT

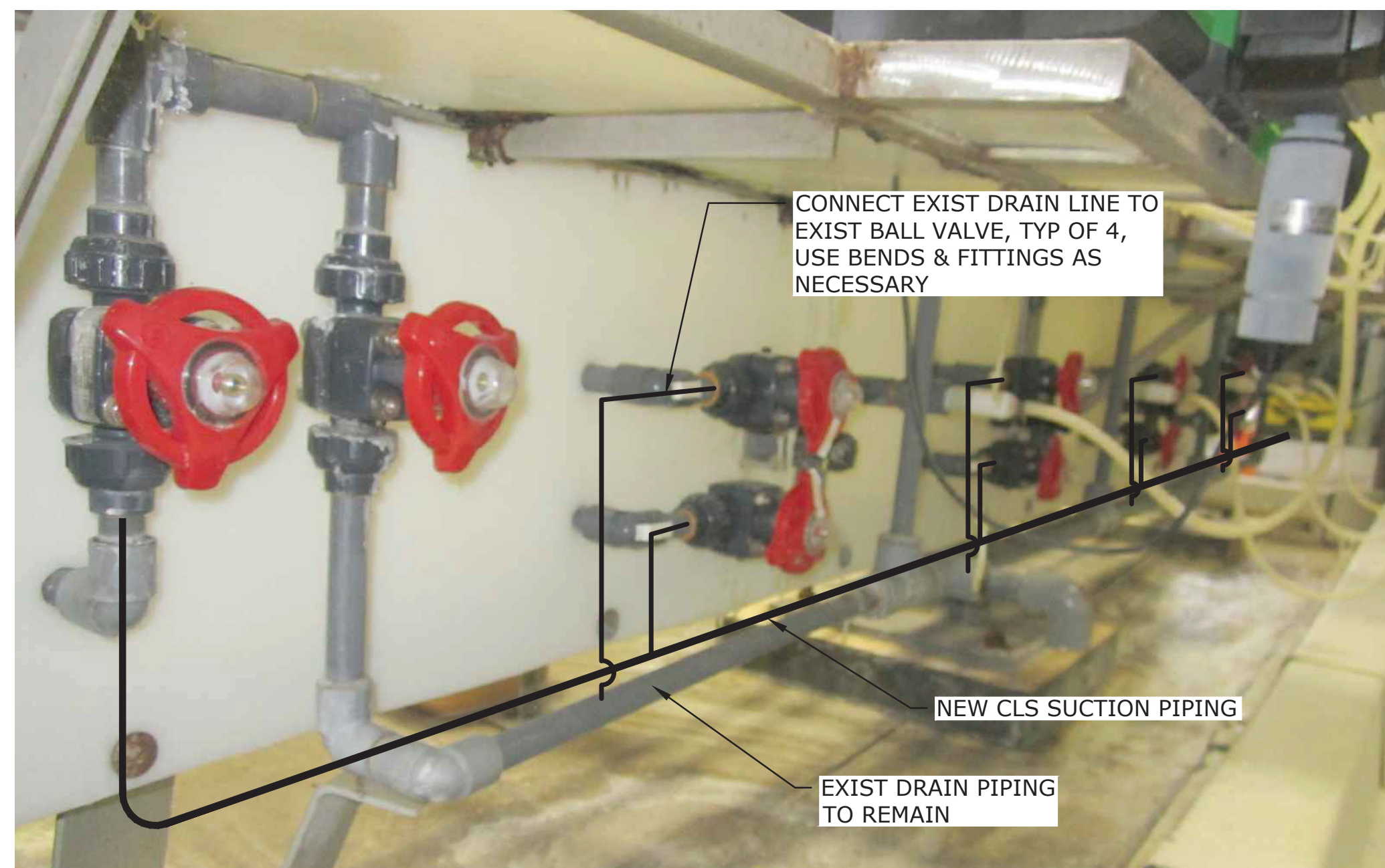
CUT FEED PIPE ABOVE THE TEE, REMOVE PIPE FROM THIS POINT TO POINT OF NEW CONNECTION, TYP OF (3) PIPES.

RETAIN VALVE, PRESSURE GAGE, AND PRESSURE SWITCH CLUSTER, TYP OF (3). RELOCATE TO CHEM BLDG WITH PANEL.

EXISTING CLS PUMP PANEL - FRONT

SCALE: NTS

2
-



CONNECT EXIST DRAIN LINE TO EXIST BALL VALVE, TYP OF 4, USE BENDS & FITTINGS AS NECESSARY

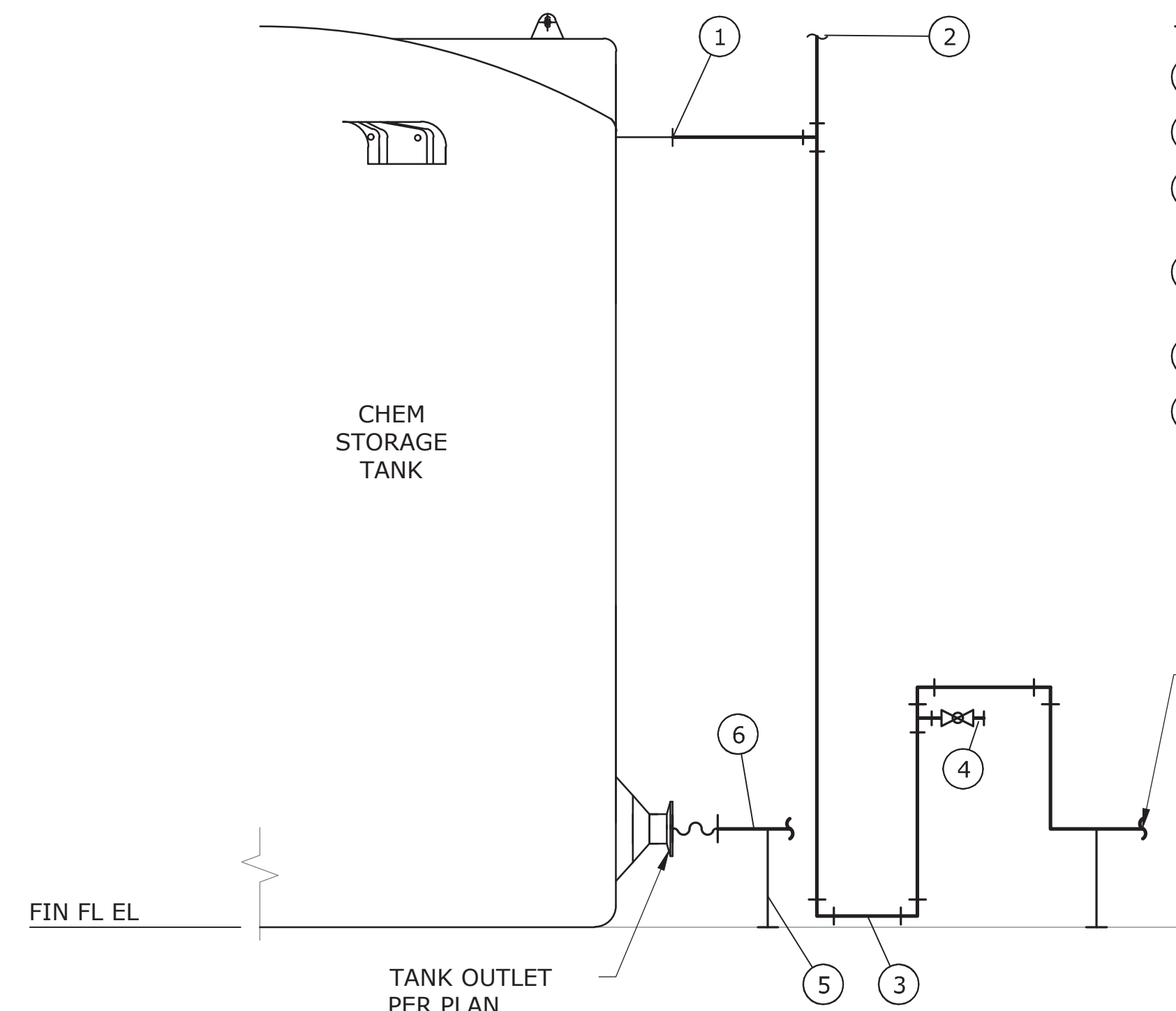
NEW CLS SUCTION PIPING

EXIST DRAIN PIPING TO REMAIN

SUCTION AND DRAIN PIPING DETAIL

SCALE: NTS

3
-



CLS OVERFLOW WATER SEAL DETAIL

SCALE: NTS

KEY NOTES

- ① 2" TANK OF PER PLAN
- ② EXTEND OF TO TANK VENT, SEE SHTS M-7 & M-16
- ③ WATER SEAL, SECURE TO FLOOR W/ UNISTRUT, CLAMP & CONC ANCHORS
- ④ 3/4" WATER CONN, PROVIDE 2"x2" TEE, 2"x3/4"RDCR BUSHING, 3/4" BV, AND 3/4" HOSE CONN
- ⑤ PIPE SUPPORT, TYP
- ⑥ TANK OUTLET CONNECTION

NOTES:

- 1. ALL PIPE AND FITTINGS TO BE SCHEDULE 80 PVC.
- 2. PROVIDE FITTINGS AND SUPPORT AS REQUIRED FOR A FULLY FUNCTIONING SYSTEM.

4
-

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**VINE STREET WTP
CHEMICAL SYSTEM
IMPROVEMENTS
WTP-19-02**

**HYPOCHLORITE
PUMP PANEL MODIFICATIONS
AND PIPING DETAILS**

PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

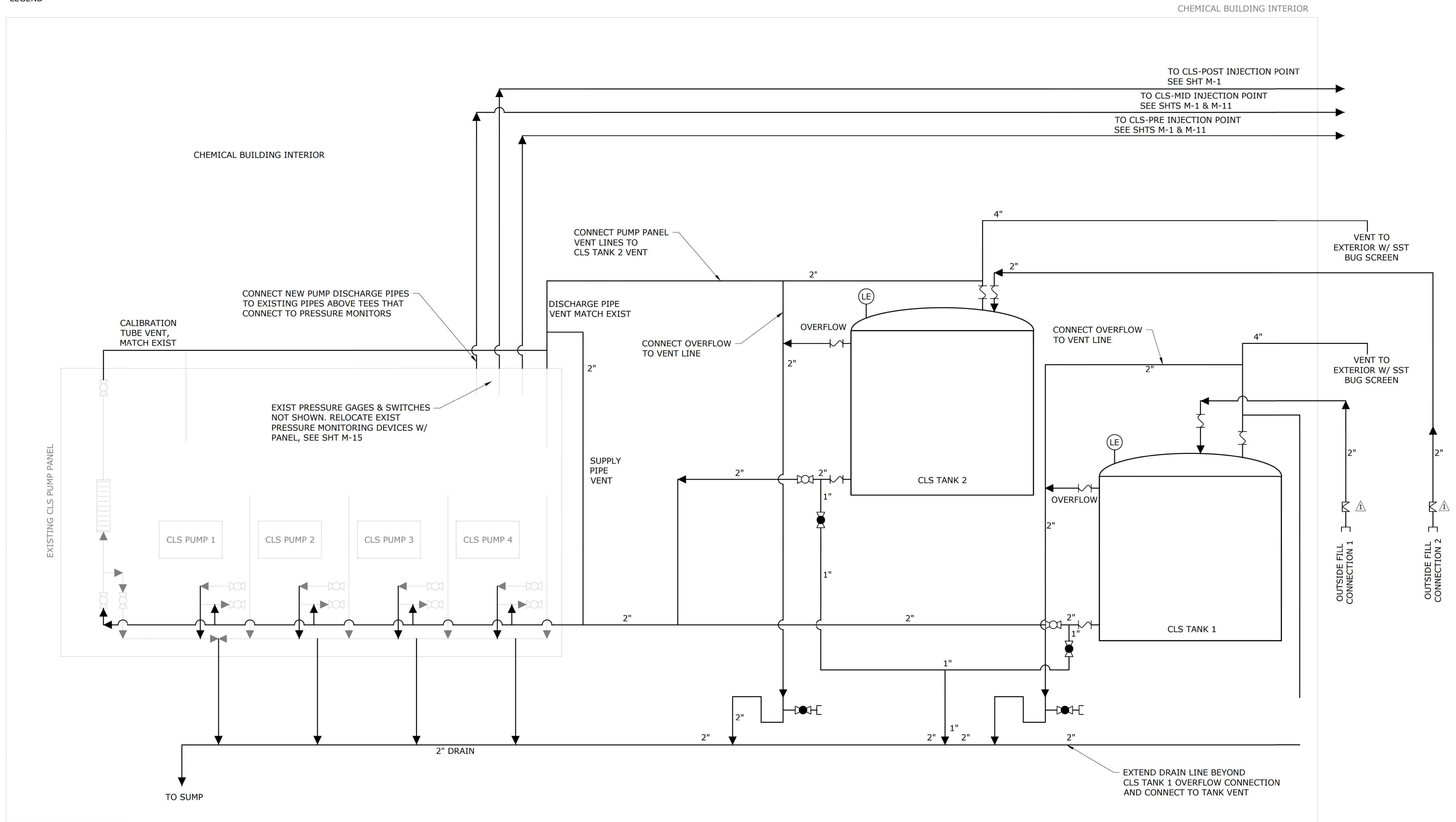
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M-15

18 of 29

GENERAL SHEET NOTE:

1. SEE SHEET M-14 FOR PROCESS PIPING SYMBOLS LEGEND

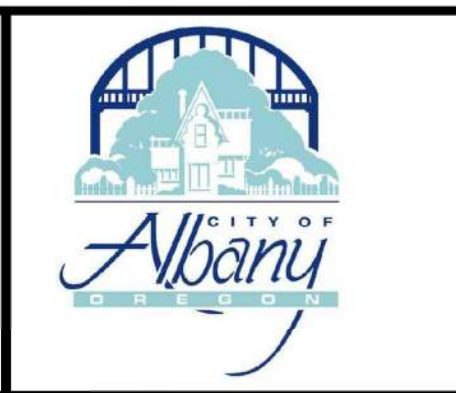


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**VINE STREET WTP
 CHEMICAL SYSTEM
 IMPROVEMENTS
 WTP-19-02**

**HYPOCHLORITE
 PUMP AND PIPING SCHEMATIC**

PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

SHEET
M-16
 19 of 29

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STRUCTURAL SHEETS:

- S-1 GENERAL STRUCTURAL NOTES
- S-2 SUMP DIVIDER AND GRATING LEDGER DETAILS
- S-3 HYPOCHLORITE BACK PANEL STRUCTURAL DETAILS

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 2019 OREGON STRUCTURAL SPECIALTY CODE (OSSC). ALL BUILDING ELEMENTS AND COMPONENTS NOT SPECIFICALLY DETAILED IN THESE STRUCTURAL CONSTRUCTION DOCUMENTS SHALL BE FABRICATED AND CONSTRUCTED IN ACCORDANCE WITH THE MINIMUM STANDARDS CONTAINED IN THE IBC AS AMENDED BY THE STATE OF OREGON.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS BEFORE CONSTRUCTION. THE ARCHITECT AND ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES.
5. THE CONTRACTOR, SUBCONTRACTORS 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. CLADDING, WATERPROOFING, AND ARCHITECTURAL 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 ARCHITECTURAL DRAWINGS AND/OR SPECIFICATIONS.

DESIGN LOADS: PER 2018 IBC & 2019 OSSC

GRATING LOADS:	
DEAD LOAD	5 PSF
LIVE LOAD	200 PSF UNIFORM OR 1000 LB CONCENTRATED LOAD

PANEL LOADS:	
DEAD LOAD	1350 LBS
RISK CATEGORY	IV
SEISMIC IMPORTANCE FACTOR, I _e	1.50
SPECTRAL ACCELERATION, S _a	0.811 g
SPECTRAL ACCELERATION, S ₁	0.426 g
SITE CLASS	D
SPECTRAL RESPONSE COEFFICIENT, S _{ps}	0.636 g
SPECTRAL RESPONSE COEFFICIENT, S _{p1}	0.532 g
SEISMIC DESIGN CATEGORY	CATEGORY D
SEISMIC FORCE RESISTING SYSTEM(S)	OTHER MECHANICAL OR ELECTRICAL COMPONENTS PER CHAPTER 13

SPECIAL INSPECTIONS:

1. AN INDEPENDENT TESTING LABORATORY, SELECTED AND ENGAGED BY THE OWNER, SHALL PROVIDE SPECIAL INSPECTIONS IN ACCORDANCE WITH CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE 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. REQUIRED SPECIAL INSPECTION OF STRUCTURAL SYSTEMS OUTLINED IN THESE CONSTRUCTION DOCUMENTS INCLUDE THE FOLLOWING AREAS OF WORK:
 - 1.1. POST-INSTALLED ADHESIVE CONCRETE ANCHORS
 - 1.2. POST-INSTALLED MECHANICAL CONCRETE ANCHORS
2. EACH SPECIAL INSPECTION AND MATERIAL TESTING REPORT SHALL BE DISTRIBUTED TO THE OWNER, CONTRACTOR AND ENGINEER OF RECORD IN A TIMELY FASHION.
3. THE CONTRACTOR SHALL MAKE AVAILABLE ALL MEANS AND METHODS NECESSARY FOR THE SPECIAL INSPECTOR TO PERFORM THE REQUIRED INSPECTIONS. IN ADDITION, THE CONTRACTOR SHALL NOTIFY THE OWNER AND SPECIAL INSPECTOR A MINIMUM OF 48 HOURS BEFORE THE TIME AT WHICH THE SPECIFIED SPECIAL INSPECTIONS MAY BE PERFORMED.

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.
2. STRUCTURAL CONCRETE SHALL ATTAIN THE FOLLOWING MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS:

TYPE	f' _c	SLUMP	w/c	AIR
WALLS	4,500 psi	1-4"	0.45	0%
3. SPECIAL INSPECTION NOT REQUIRED. 2,500 psi COMPRESSIVE STRENGTH IS SPECIFIED FOR DURABILITY. STRUCTURAL DESIGN OF CONCRETE BASED ON 2,500 psi COMPRESSIVE STRENGTH.
4. ALL CONCRETE EXPOSED TO WEATHER SHALL CONTAIN 6% (±) 1% AIR ENTRAINMENT BY VOLUME. AIR ENTRAINMENT SHALL BE IN CONFORMANCE WITH ASTM C260 AND C494.
5. 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.
6. CHAMFER ALL EXTERIOR CORNERS 1/2" UNLESS SHOWN OTHERWISE.
7. 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.
8. CEMENT SHALL BY TYPE I OR II IN CONFORMANCE WITH ASTM C150. 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.
9. 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.
10. UNLESS OTHERWISE NOTED, MINIMUM COVER SHALL BE 1 1/2" 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.
11. PROVIDE MINIMUM 48 BAR DIAMETERS AT SPLICES. NO MORE THAN 50% OF REINFORCING SHALL BE SPLICED AT ANY LOCATION. UNLESS OTHERWISE NOTED, BEND ALL HORIZONTAL REINFORCING A MINIMUM OF 2'-0" AT CORNERS AND WALL/FOOTING INTERSECTIONS WITH MIN. EMBEDMENT BEYOND INTERFACE PER DEVELOPMENT LENGTH SPECIFIED IN ACI 318.
12. 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.

GRATING:

1. GRATING SHALL BE 2-INCH FIBERGLASS GRATING PER THE SPECIFICATIONS. GRATING SHALL BE CAPABLE OF SUPPORTING A 200 PSF UNIFORM LOAD OR A 1000-LB POINT LOAD WITH A MAXIMUM DEFLECTION EQUAL TO THE LESSER OF 1/4" OR THE SPAN DIVIDED BY 360.

POST-INSTALLED CONCRETE ANCHORS:

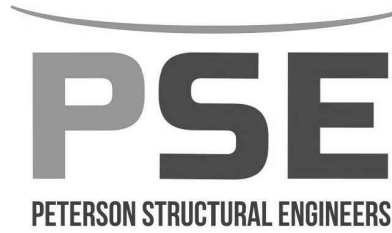
1. ADHESIVE:
 - 1.1. ADHESIVE ANCHORS SHALL BE INSTALLED BY QUALIFIED PERSONNEL TRAINED TO INSTALL ADHESIVE ANCHORS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND WITH STRICT ADHERENCE TO THE PROVISIONS WITHIN THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
 - 1.2. AT THE TIME OF ANCHOR INSTALLATION, IN ACCORDANCE WITH ACI 318-14 SECTION 17.1.2, ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS.
 - 1.3. WHERE THE AUTHORITY HAVING JURISDICTION OVER THIS PROJECT REQUIRES ADHERENCE TO ACI 318-14 SECTION 17.8.2.2, INSTALLATION OF ADHESIVE ANCHORS IN HORIZONTAL TO VERTICALLY OVERHEAD ORIENTATION SHALL BE DONE BY A CERTIFIED ADHESIVE ANCHOR INSTALLER (AAI) AS CERTIFIED THROUGH ACI AND IN ACCORDANCE WITH ACI 318-14 SECTION 17.8.2.2. PROOF OF CURRENT CERTIFICATION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF INSTALLATION. NOTE: THE STATE OF OREGON DOES NOT REQUIRE ADHERENCE TO ACI 318-14 SECTION 17.8.2.2.
2. MECHANICAL:
 - 2.1. MECHANICAL ANCHORS SHALL BE INSTALLED BY QUALIFIED PERSONNEL TRAINED TO INSTALL MECHANICAL ANCHORS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND WITH STRICT ADHERENCE TO THE PROVISIONS WITHIN THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.

STRUCTURAL STEEL:

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING GRADES, UNLESS NOTED OTHERWISE ON THE PLANS:
 - PLATES & BARS- ASTM A36
 - ANGLES - ASTM A36
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 STEEL EXPOSED TO WEATHER SHALL BE PAINTED OR HOT-DIP GALVANIZED, UNLESS NOTED OTHERWISE.
5. ALL STRUCTURAL CONNECTION BOLTS SHALL BE ASTM F3125 GRADE A325, UNLESS NOTED OTHERWISE. HOOKED, HEADED, THREADED, AND NUTTED ANCHOR RODS SHALL BE ASTM F1554 (F_y = 36 ksi), UNLESS NOTED OTHERWISE.
6. CONTACT BETWEEN DISSIMILAR METALS SHALL BE ISOLATED USING PHENOLIC OR OTHERWISE APPROVED ISOLATION HARDWARE

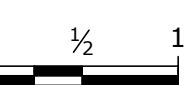
STRUCTURAL STEEL (STAINLESS STEEL):

1. ALL STRUCTURAL STEEL SHALL BE AMERICAN IRON AND STEEL INSTITUTE (AISI) TYPE 316 STAINLESS STEEL.
2. WELDS SHALL CONFORM TO THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY (AWS) D1.6 STRUCTURAL WELDING CODE, STAINLESS STEEL.
3. ALL STRUCTURAL WELDING TO BE PERFORMED IN WELDING SHOP PRE-QUALIFIED FOR SELF INSPECTION AS RECORDED BY THE JURISDICTION OF RECORD.
4. WELDS FOUND TO BE DEFECTIVE OR THAT HAVE BEEN REJECTED BY THE OWNER'S REPRESENTATIVE, SPECIAL INSPECTOR, OR CERTIFIED WELDING INSPECTOR SHALL BE REPAIRED IN ACCORDANCE WITH THE APPROPRIATE AWS CODE AND RE-INSPECTED AND RE-TESTED AS REQUIRED.
5. ANCHOR BOLTS SHALL BE AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) F593, AISI TYPE 316 STAINLESS STEEL, CONDITION CW.
6. ALL STRUCTURAL CONNECTION BOLTS SHALL BE ASTM F593, AISI TYPE 316 STAINLESS STEEL, CONDITION CW.
7. ALL STRUCTURAL FASTENERS, SCREWS, AND WASHERS SHALL BE AISI TYPE 316 STAINLESS STEEL.
8. CONTACT BETWEEN DISSIMILAR METALS SHALL BE SEPARATED USING INSULATING SLEEVES AND PHENOLIC WASHERS OR OTHERWISE APPROVED HARDWARE TO ELECTRONICALLY ISOLATE THE DIFFERING METALS.



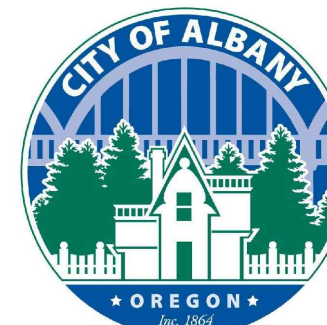
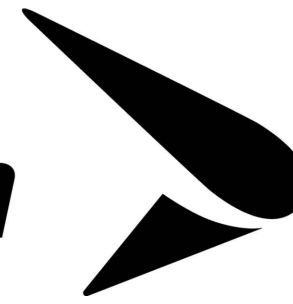
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**VINE STREET WTP
CHEMICAL SYSTEM
IMPROVEMENTS
WTP-19-02**

**GENERAL STRUCTURAL
NOTES**

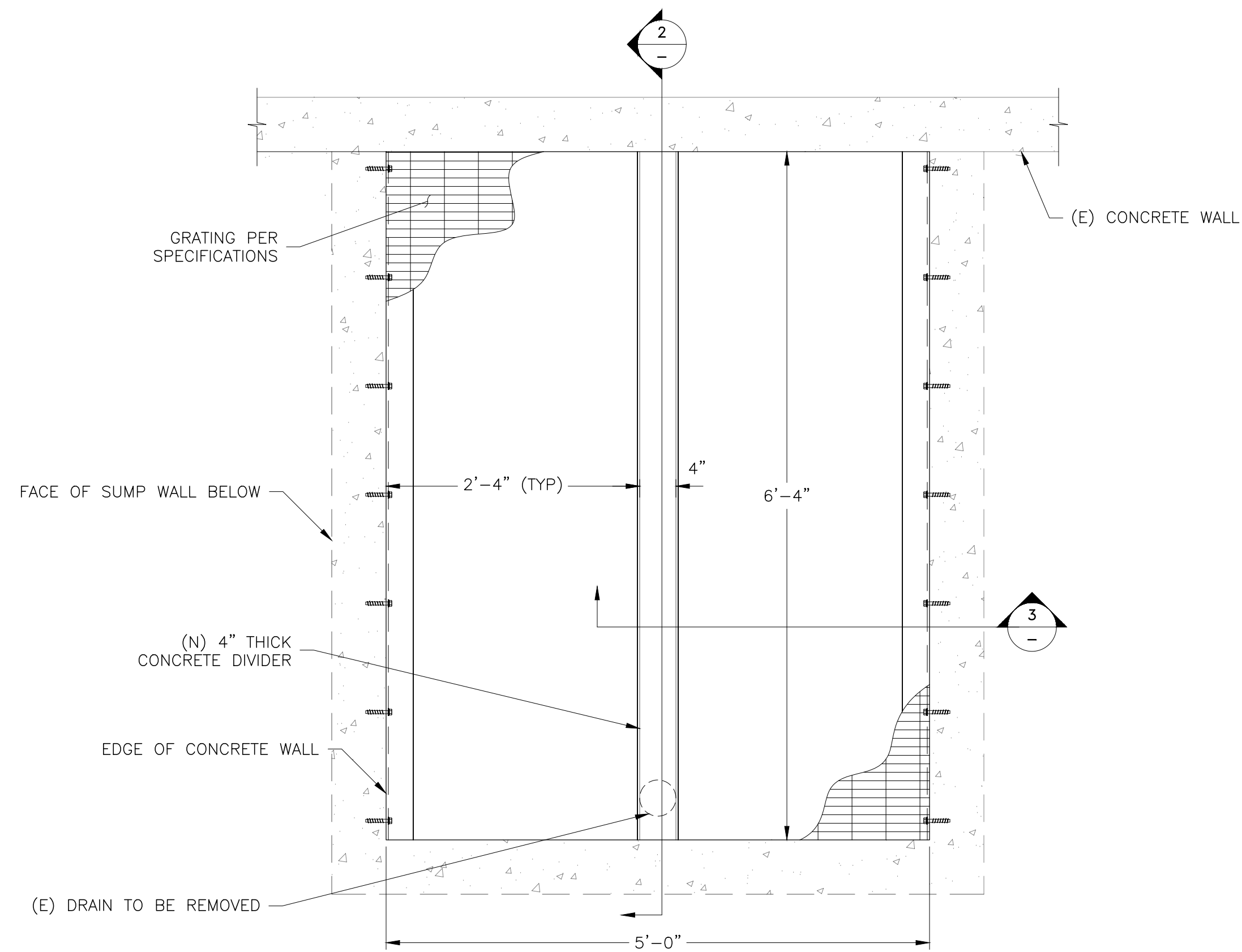
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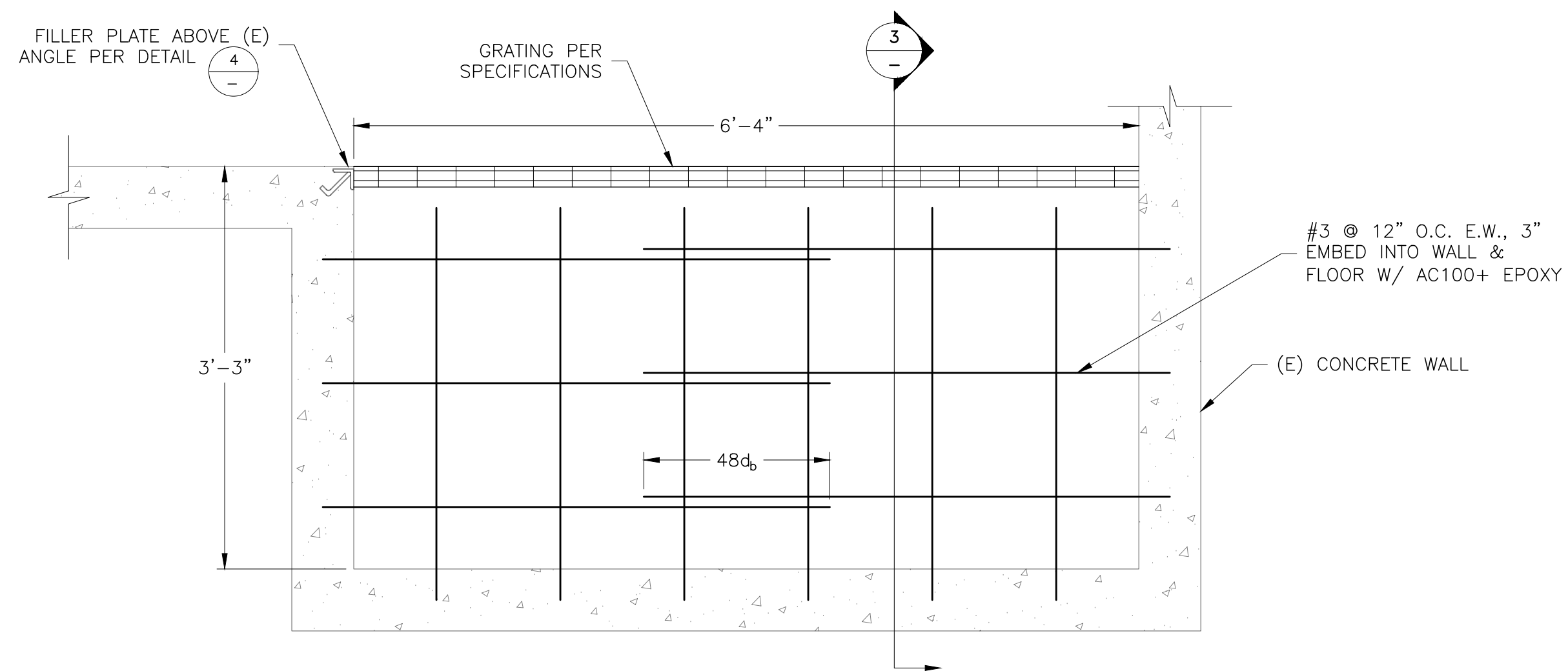
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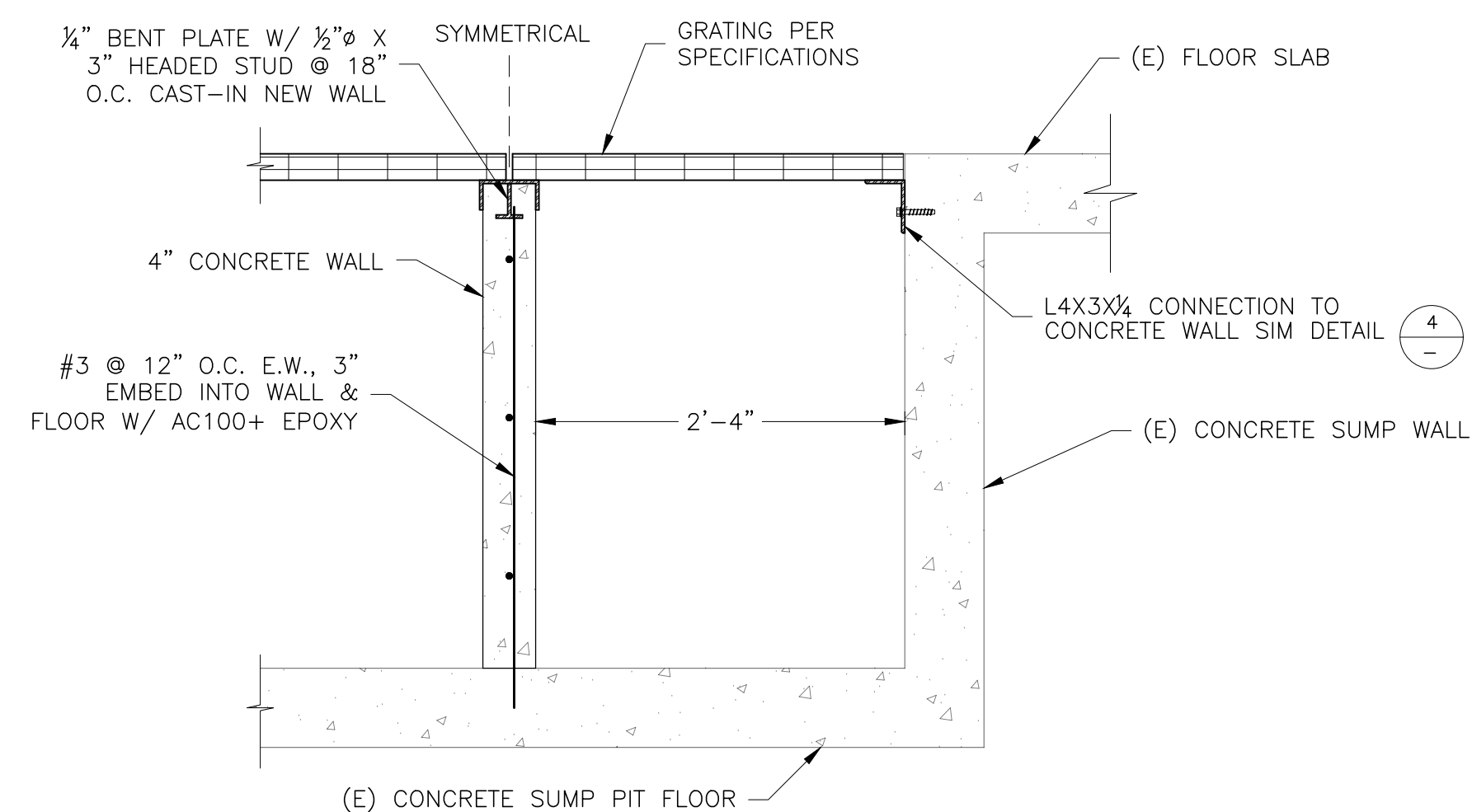
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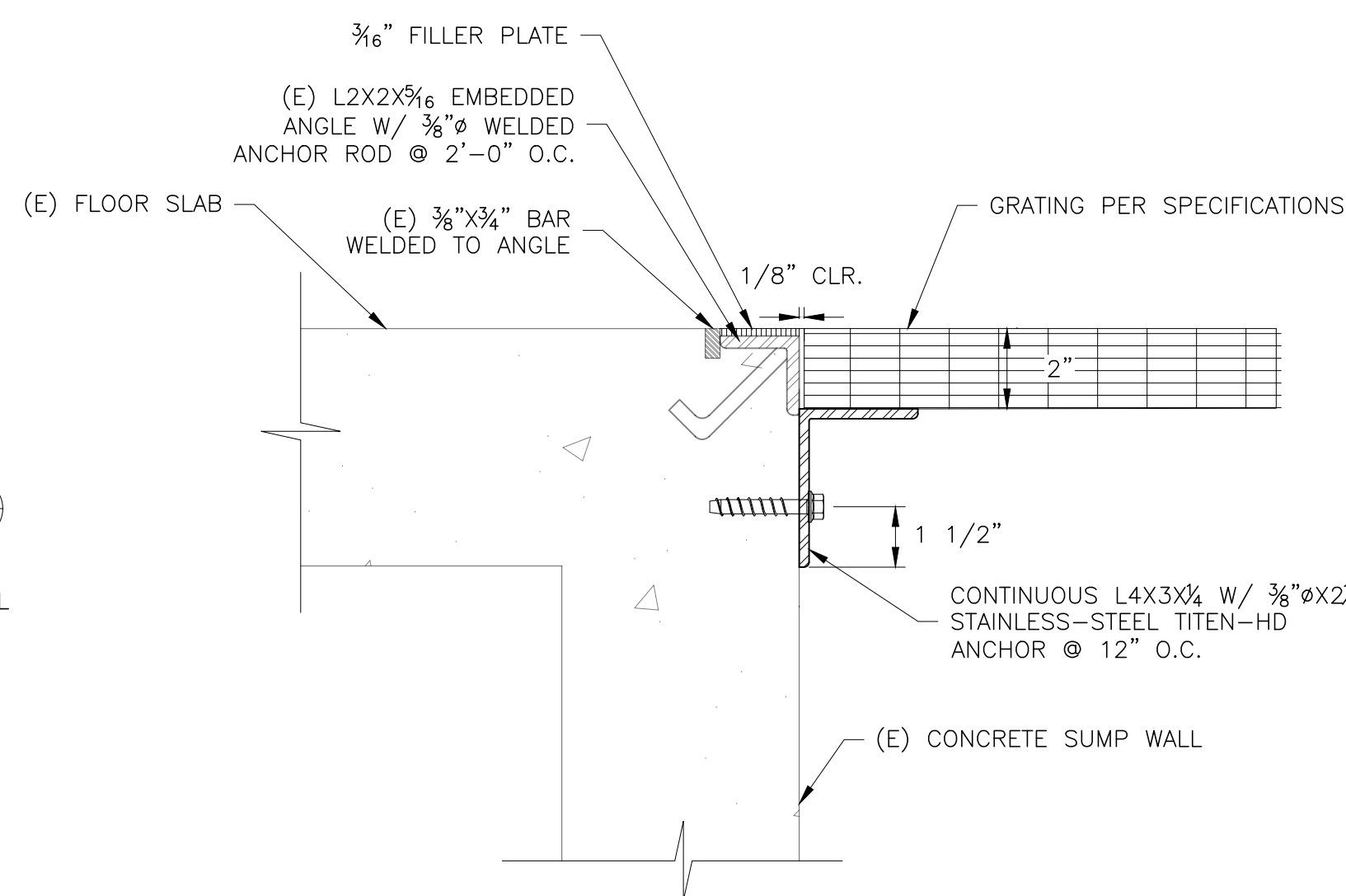
SUMP PIT PLAN (1)
1" = 1'-0"



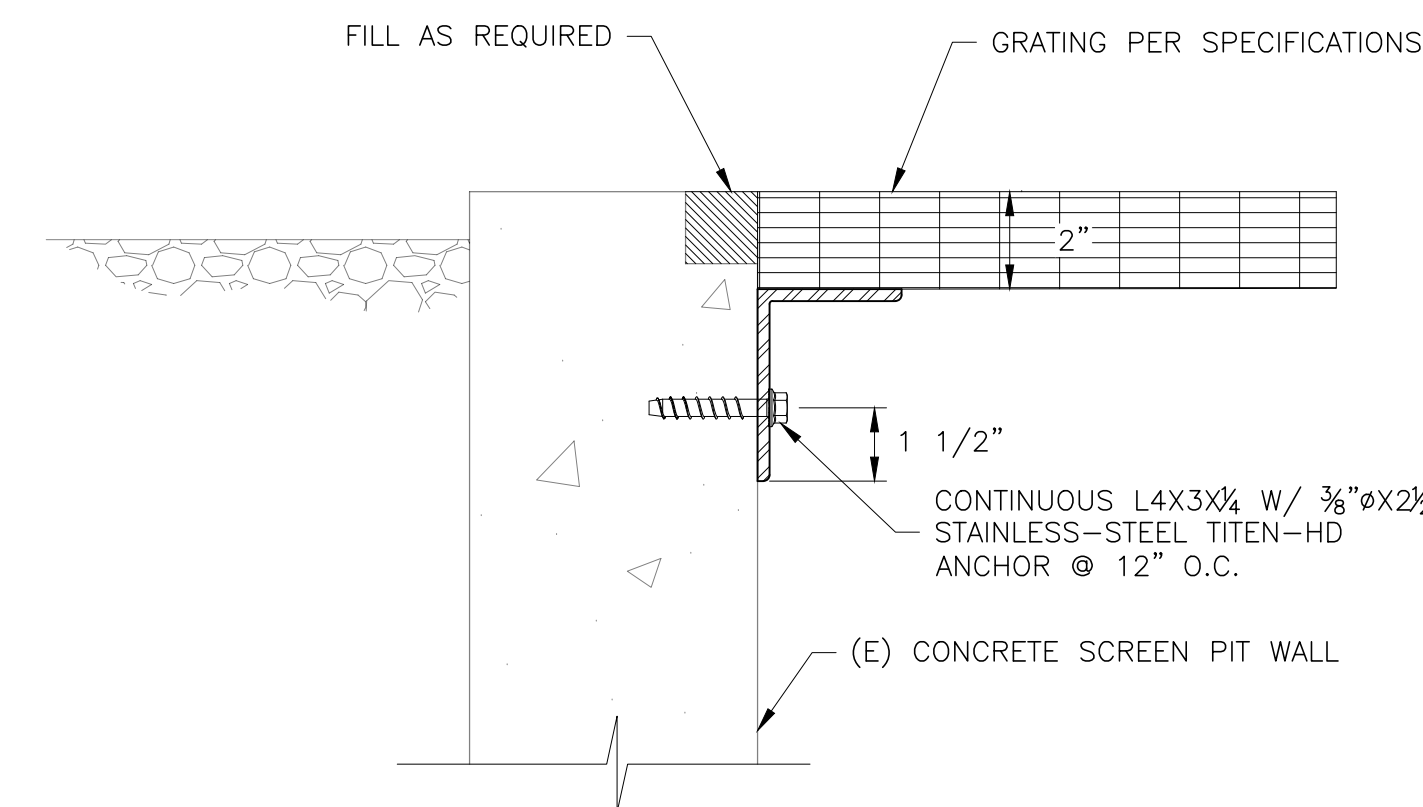
SUMP PIT SECTION (2)
1" = 1'-0"



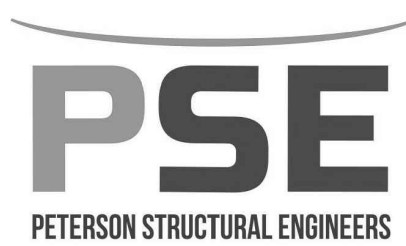
SUMP PIT SECTION (3)
1" = 1'-0"



SUMP GRATING LEDGER DETAIL (4)
3" = 1'-0"

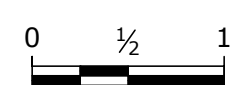


SCREEN PIT GRATING LEDGER DETAIL (5)
3" = 1'-0"



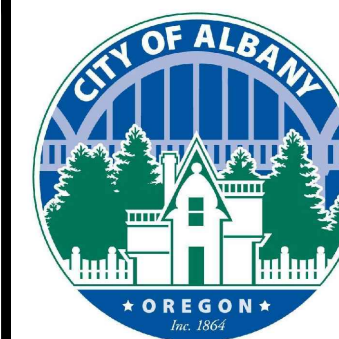
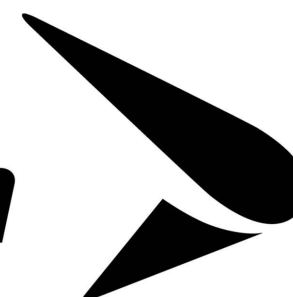
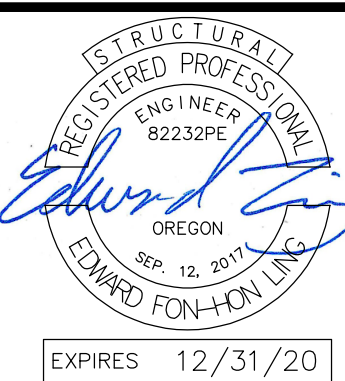
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SUMP DIVIDER AND
GRATING LEDGER
DETAILS

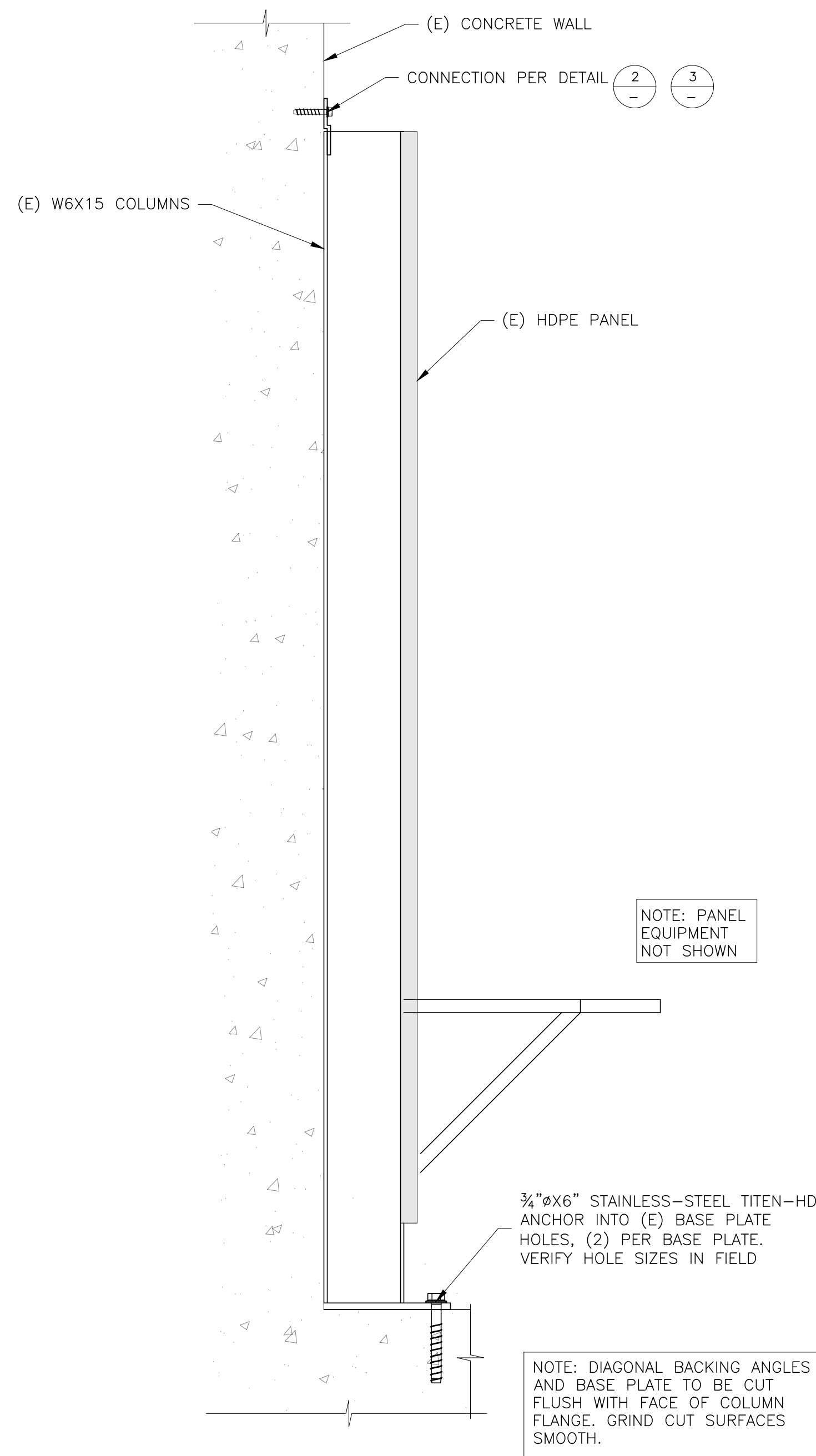
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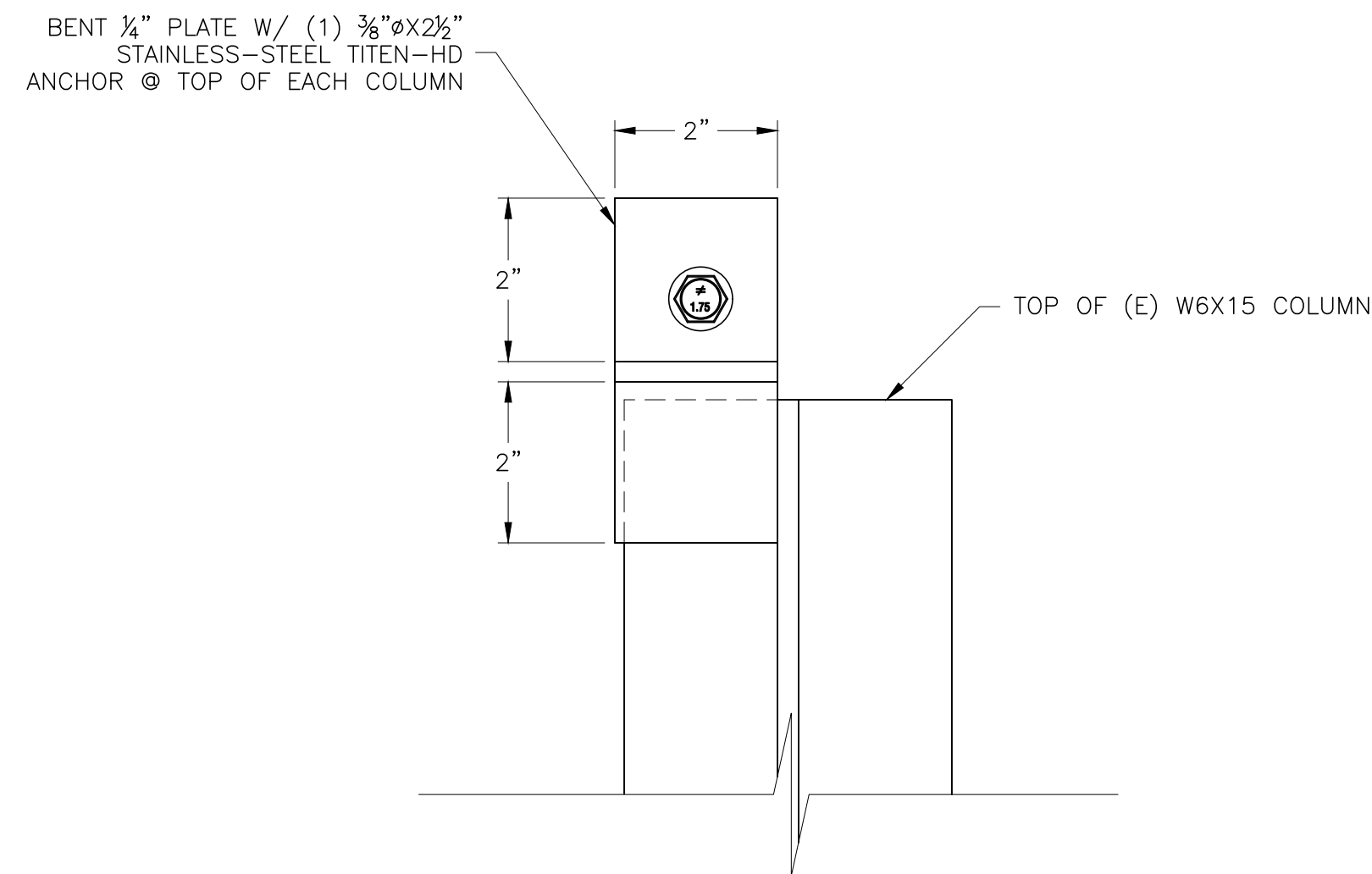
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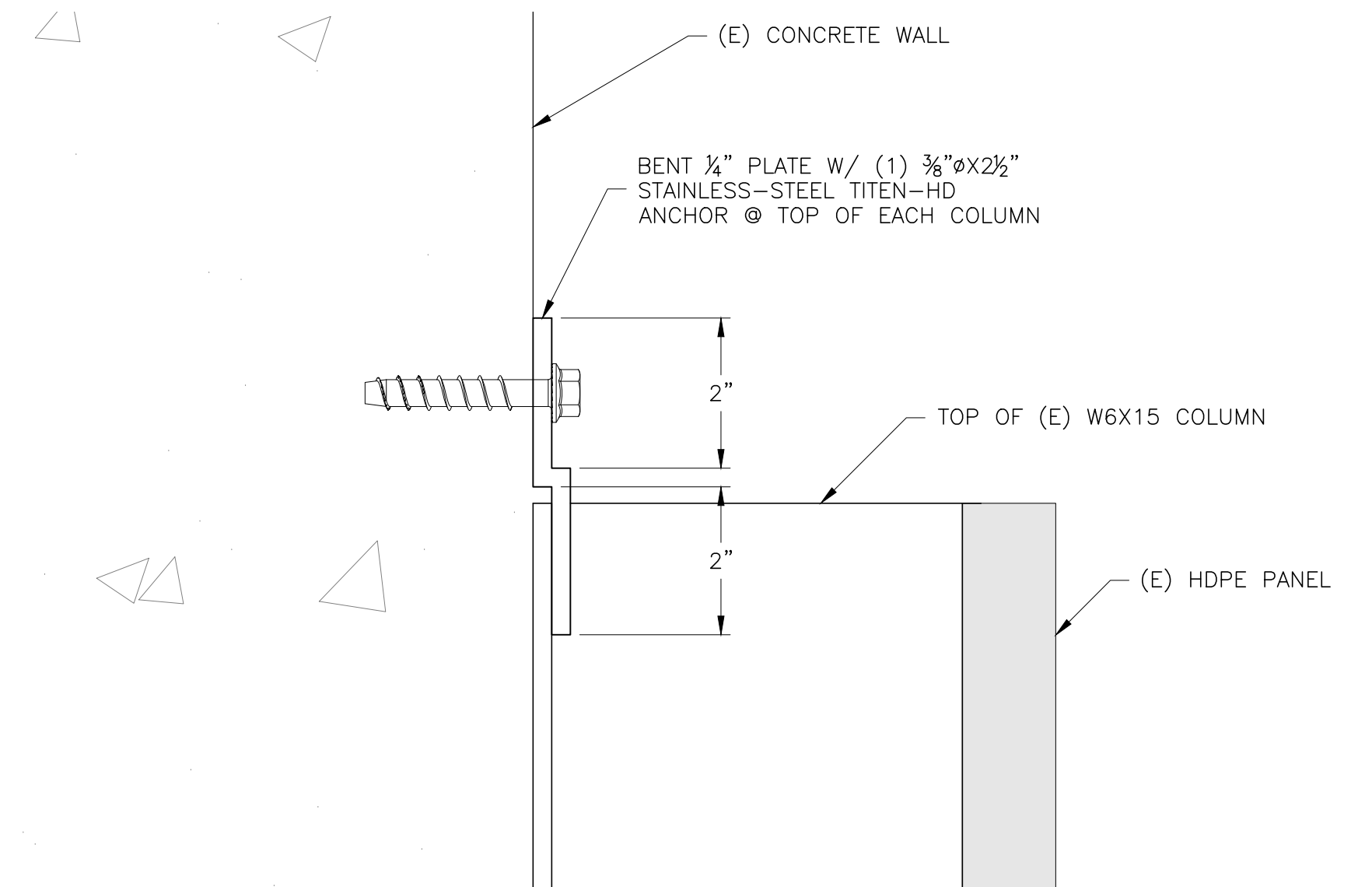
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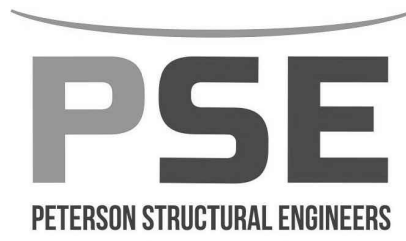
HDPE PANEL ELEVATION $\frac{1}{-}$
1 1/2" = 1'-0"



TOP COLUMN CONNECTION $\frac{2}{-}$
6" = 1'-0"



TOP COLUMN CONNECTION $\frac{3}{-}$
6" = 1'-0"

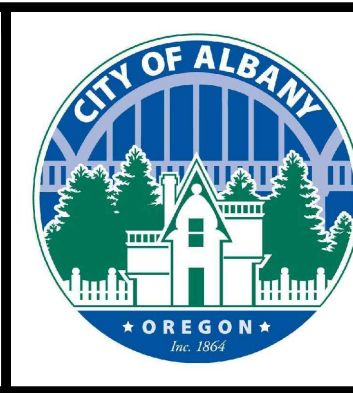
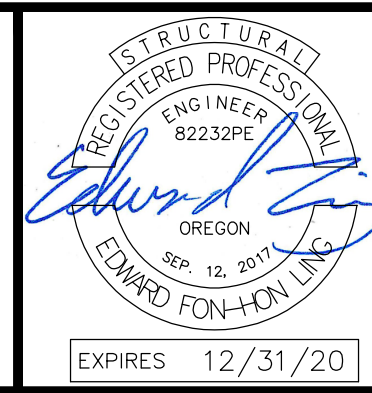


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HYPOCHLORITE BACK
PANEL STRUCTURAL
DETAILS

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S-3

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GENERAL NOTES

- 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.
- REFER TO THE ELECTRICAL CIRCUIT SCHEDULE FOR CIRCUIT IDENTIFICATIONS, ROUTING, CONDUCTOR SIZES, ETC.
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER DISCIPLINES AS REQUIRED TO MITIGATE INTERFERENCES.
- 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		120V CONTROL RELAY, DPDT MINIMUM
	EXISTING ELECTRICAL EQUIPMENT		24VDC CONTROL RELAY, DPDT MINIMUM
	DISCONNECT RECEPTACLE AND PLUG CONNECTION		RELAY CONTACT, NO, NC
	SPECIAL EQUIPMENT CONNECTION AS SHOWN		PUSHBUTTON AND SWITCH CONTACT BLOCK
	MOTOR CONNECTION, HORSEPOWER INDICATED		THREE POSITION SWITCH
	JUNCTION BOX		PUSH-TO-TEST LED PILOT LIGHT
	DISCONNECT SWITCH, AMPERAGE RATING SHOWN		SPEED POTENTIOMETER
	FUSED DISCONNECT SWITCH, SWITCH AND FUSE RATING SHOWN 60/40 = 60A SWITCH WITH 40A FUSE		FUSED TERMINAL, SIZE SHOWN
	FUSE, SIZE SHOWN 10A		FIELD TERMINAL
	THERMAL MAGNETIC CIRCUIT BREAKER W/ KEY INTERLOCK		LOCAL TERMINAL OR LUG CONNECTION
	THERMAL MAGNETIC CIRCUIT BREAKER		CONDUIT SEAL-OFF
	MAGNETIC ONLY CIRCUIT BREAKER (MOTOR CIRCUITS ONLY) CONTINUOUS CURRENT RATING AND TRIP SETTINGS SHOWN		CONDUIT CONCEALED UNDERFLOOR OR UNDERGROUND
	MOTOR STARTER, SIZE SHOWN		CONDUIT CONCEALED IN WALL OR ABOVE CEILING IN FINISHED AREAS, EXPOSED IN PROCESS AND EQUIPMENT AREAS.
	VARIABLE FREQUENCY DRIVE		CONDUIT UP
	LINE OR LOAD REACTOR, IMPEDENCE SHOWN		CONDUIT DOWN
	TRANSFORMER		CONDUIT UP FROM UNDERGROUND RACEWAY
	AUTOMATIC TRANSFER SWITCH		CONDUIT STUB
	CURRENT TRANSFORMER		FLEXIBLE CONDUIT OR MFR CABLE
	GROUND CONNECTION PER NEC ARTICLE 250		ELECTRICAL CIRCUIT IDENTIFICATION

ABBREVIATIONS

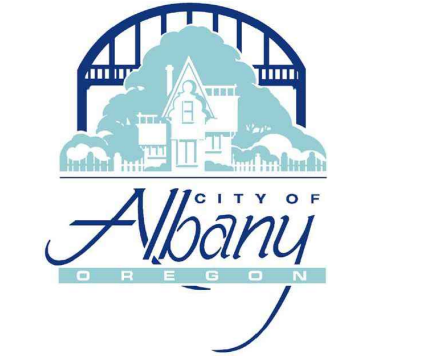
a	CIRCUIT BREAKER AUX. CONTACT, CLOSED WHEN BREAKER IS CLOSED	MCC	MCP	PANELBOARD
A	ALTERNATING CURRENT ANALOG	MOV		PHOTOELECTRIC PHOTOELECTRIC
AC	TO DIGITAL AMPERE FRAME	MS		CELL POWER FACTOR
A/D	AMPERES INTERRUPTING CAPACITY	MTD		MEASURE OF ACIDITY OR ALKALINITY
AF	ALTERNATOR AUTO/MANUAL CONTROLLER ANNUNCIATOR	MTG		PHASE
AIC	AMMETER SWITCH	MTS		PROGRAMMABLE LOGIC CONTROLLER
ALT	ADJUSTABLE SPEED DRIVE	(N)		POWER MONITOR
A/M	AMPERE TRIP	NEC		PANEL
ANN	AUTOMATIC TRANSFER SWITCH	NEMA		PRIMARY
AS	AUTOMATIC	NO		PRESSURE SWITCH POUNDS PER SQUARE INCH POWER
ASD	AMERICAN WIRE GAGE CIRCUIT BREAKER AUX. CONTACT, CLOSED WHEN BREAKER IS OPEN	NEUT		RELOCATE
AT	BARE COPPER GROUND CONDUIT, CONTACTOR CAPACITOR	NTS		RELOCATED
ATS	CIRCUIT BREAKER CONTROL	OVHD		RECEPTACLE
AUTO	CABLE, CLOSING COIL	OL		REPEAT CYCLE TIMER
AWG	COMMUNICATION HANDHOLE	OT		REVOLUTIONS PER MINUTE RESET TIMER
b	CHLORINE	P		SILICON CONTROLLED RECTIFIER
BCG	CIRCUIT	PB		SMOKE DETECTOR SOFT-DRAWN
c	COMMUNICATION MANHOLE	PBD		BARE COPPER
CAP	CONDUIT ONLY COMMUNICATION	PD		SECONDS, SECONDARY SECTION
CB	CONTACTOR	PE		SUPPLY FAN
CC	CONDUCTOR	PEC		SIGNAL HANDHOLE
CHH	CONTINUED, CONTINUATION	PF		SIGNAL
CL	CONTROL POWER TRANSFORMER	PH		SOLID NEUTRAL SPECIFICATIONS
CKT	CONTROL PANEL	PH		SURGE PROTECTIVE DEVICE
CMH	CONTROL RELAY	PLC		SINGLE POLE, DOUBLE THROW
CO	CONTROL SWITCH CURRENT	PM		STAINLESS STEEL, SOLID STATE
COMM	TRANSFORMER COLD WATER PIPE	PNL		SWITCH SWITCHBOARD
COND	DIRECT CURRENT	PM		SWITCHGEAR SYNCHRONIZING
CONT	DIAGRAM	PNL		TERMINAL BOX, TERMINAL BOARD
CPT	DISCONNECT	PRI		TELEPHONE CABINET
CP	DISTRIBUTION	PS		TEMPERATURE
CR	DRY ISOLATION TRANSFORMER	PSI		TEMPERATURE
CR	DISTRIBUTION PANEL DOUBLE POLE, DOUBLE THROW	PWR (RL)		TERMINAL JUNCTION BOX
CS	DOUBLE POLE, SINGLE THROW	(RL) RCPT		TERMINAL JUNCTION BOX
CT	EXISTING	RCT		TRANSIENT VOLTAGE SURGE SUPPRESSOR
CWP	EXHAUST FAN	RPM		UNIT HEATER
DC	ELECTRICAL HANDHOLE	RT		ULTRA VIOLET
DIAG	ELEMENTARY	SCR		VOLTS
DISC	EMERGENCY	SD	SDBC	VOLT-AMPERES
DISTR	EFFLUENT	SEC	SECT	VARIABLE FREQUENCY DRIVE
DIT	EQUAL	SF		VOLT AMPERES REACTIVE
DP	EQUIPMENT	SHH		VERTICAL
DPDT	ELAPSED TIME METER	SIG		VAR-HOUR
DPST	FIRE ALARM CONTROL PANEL	SN	SPEC	VOLTMETER SWITCH
	FINISHED FLOOR	SPD		WIRE, WATTS
	FLEXIBLE	SPD		WATT HOUR METER WATT HOUR DEMAND METER
EXST	FLUORESCENT			WEATHERPROOF WATERTIGHT
EF	FIBER OPTIC			WATER TREATMENT PLANT
EHH	FREQUENCY	SS		
ELEM	FUSE	SW	SWBD	
EMERG	FUTURE	SWGR		
EQ	FULL VOLTAGE, NON REVERSING	SYNC		
EQUIP	FULL VOLTAGE, REVERSING	TB		
ETM	FORWARD	TC		
FIN FL	GENERATOR	TEMP		
FLEX	GROUND FAULT INTERRUPTER	TJB		
FLUOR	GALVANIZED RIGID STEEL	TP		
FO	HUMAN MACHINE INTERFACE	TSP	TVSS	
FREQ	HAND-OFF-AUTOMATIC			
FU	HAND-OFF-REMOTE HORIZONTAL	UH		
FUT	HIGH VOLTAGE SODIUM HEATER	UV		
FVNR	HIGH VOLTAGE	V		
FVR	HERTZ (CYCLES PER SECOND)	VA		
FWD	INDICATING LIGHT INCANDESCENT	VFD		
GA	INPUT/OUTPUT	VAR	VERT	
GEN	JUNCTION BOX KILOAMPERES	VH		
GFI	THOUSANDS OF CIRCULAR MILS	VS		
GRS	KILOVOLTS	W		
H ₂ O ₂	KILOVOLT AMPERES KILOVOLT	WHM	WHDM	
HMI	AMPERES REACTIVE	WP		
HOA	KILOVOLT AMPERES REACTIVE	WTRT		
HORZ	HOURS KILOWATTS	WTP		
HPS	KILOWATT HOURS LIGHTING			
HTR	CONTROL PANEL LIGHTING PANEL			
HV	LOW PRESSURE SODIUM LIGHTING			
HZ	LIGHT(S)			
IND LT	MODIFIED			
INCAND	MILLIAMPERES			
I/O	MOTOR CONTROL CENTER MOTOR			
JB	CIRCUIT PROTECTOR			
KA	MOTOR OPERATED VALVE MOTOR			
KCMIL	STARTER MOUNTED			
KV	MOUNTING			
KVA	MANUAL TRANSFER SWITCH			
KVARH	NEW			
KW	NATIONAL ELECTRICAL CODE			
KWH	NATIONAL ELECTRICAL			
LCP	MANUFACTURER'S ASSOC.			
LP	NEUTRAL			
LPS	NORMALLY OPEN, NUMBER NOT TO SCALE			
LTG	OVERHEAD			
LT(S)	THERMAL OVERLOAD RELAY			
(M)	OVER TEMPERATURE			
Ma	POWER			
	PULLBOX, PUSHBUTTON			

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NOTICE
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**VINE STREET WTP
CHEMICAL SYSTEM
IMPROVEMENTS
WTP-19-02**

**ELECTRICAL LEGEND, SYMBOLS,
AND ANNOTATIONS**

PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

SHEET
E-1
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NO.	DATE	BY	REVISION

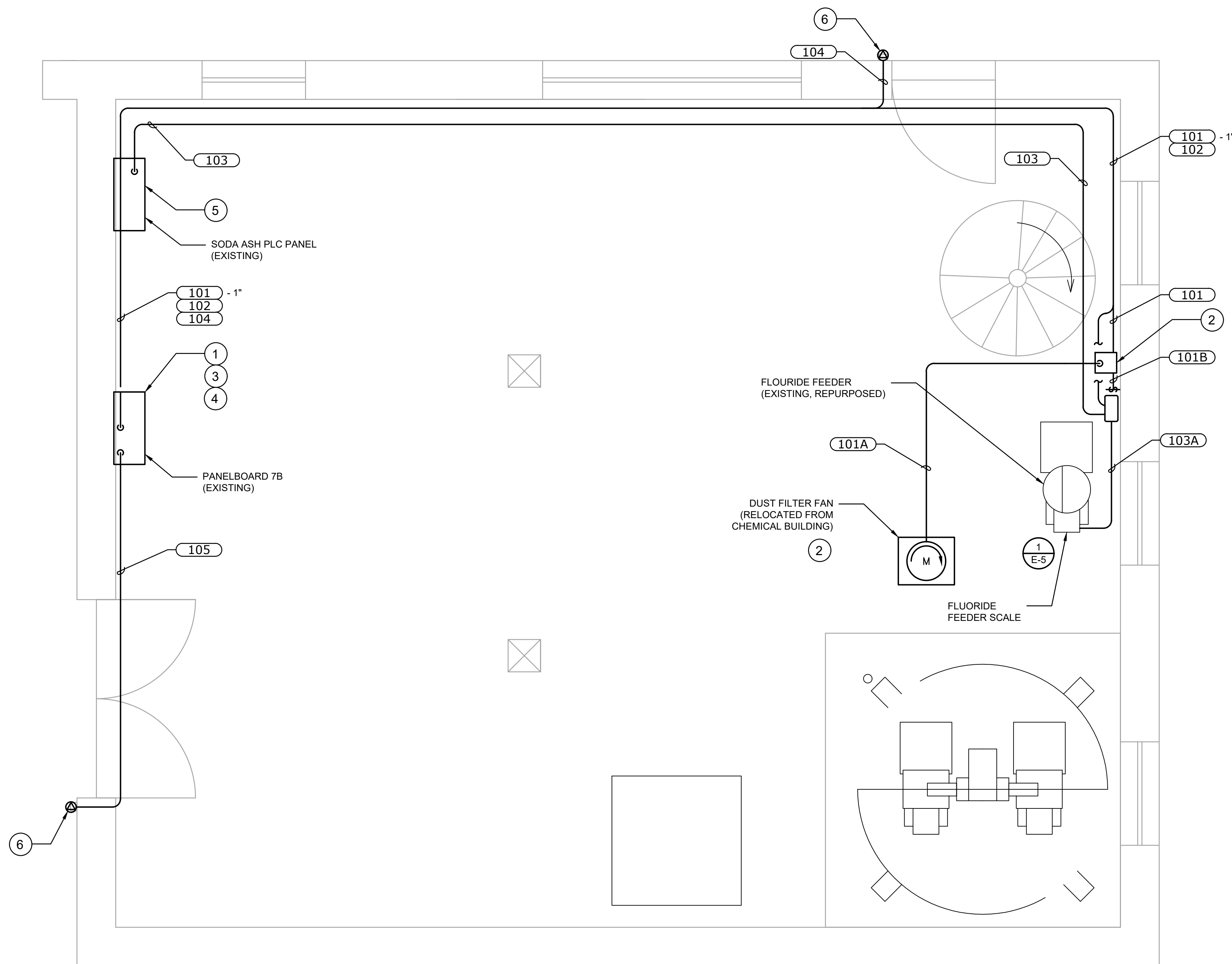
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GENERAL NOTES:

- NOT ALL EXISTING ELECTRICAL EQUIPMENT IS SHOWN.
- SEE SHEET M-2 FOR DEMOLISHED ELECTRICAL EQUIPMENT AND CONDUIT.

KEY NOTES:

- RELABEL CIRCUIT #5 IN PANELBOARD TO READ "FLUORIDE FEEDER", CIRCUIT #10 TO READ "NORTH ALARM BEACON", AND CIRCUIT #13 TO READ "WEST ALARM BEACON".
- RELOCATED DUST FAN STARTER PANEL AND TIMER SWITCH (RELOCATED FROM CHEMICAL BUILDING). RECONNECT THE WIRING THE SAME AS IT WAS.
- DISCONNECT PANELBOARD 7B CIRCUITS THAT WERE USED FOR SODIUM HYPOCHLORITE CONTROL PANEL AND REPLACE LABELS IN PANELBOARD WITH 'SPARE'.
- REPLACE PANELBOARD 7B CIRCUITS 26, 28, AND 30 WITH 3-POLE 15A BREAKER. ADD LABEL TO PANELBOARD: "DUST FILTER FAN".
- TERMINATE PLC ANALOG INPUT WIRES ON EXISTING SPARE TERMINALS. LOCATED ADJACENT TO OTHER ANALOG INPUT SIGNALS ON INTERIOR SIDE OF PANEL. SEE DRAWING E-5 FOR WIRING DETAILS.
- INSTALL OUTDOOR HORN/STROBE ON EXTERIOR OF BUILDING. INSTALL EMERGENCY STOP PUSH BUTTON BELOW THE ENABLING HORN/STROBE.



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.

CIRCUIT NUMBER	FROM	TO	CONDUCTORS	RACEWAY	NOTES
101	PANELBOARD 7B, CKTS 26,28,30	DUST FILTER STARTER PANEL (RELOCATED)	(3) #12 AWG, P (1) #12 AWG, G	1"	DUST FILTER POWER
101A	DUST FILTER STARTER PANEL	DUST FILTER FAN (RELOCATED)	(3) #12 AWG, P (1) #12 AWG, G	1"	
101B	DUST FILTER STARTER PANEL	DUST FILTER FAN TIMER SWITCH (RELOCATED)	(3) #12 AWG, P (1) #12 AWG, G	3/4"	DUST FILTER CONTROL
102	PANELBOARD 7B, CKT 24	FLUORIDE TANK SCALE INDICATOR	(2) #12 AWG, P (1) #12 AWG, G	1"	SCALE POWER
103	SODA ASH PLC PANEL	FLUORIDE TANK SCALE INDICATOR	(1) #18 AWG, TSP	3/4"	SCALE SIGNAL TO PLC
103A	FLUORIDE TANK SCALE INDICATOR	FLUORIDE TANK SCALE	MFR CABLE		
104	PANELBOARD 7B, CKT 10	EMERGENCY BUTTON W/HORN AND STROBE NORTH SIDE OF SODA ASH BUILDING	(2) #12 AWG, P (1) #12 AWG, G	3/4"	POWER
105	PANELBOARD 7B, CKT 13	EMERGENCY BUTTON W/HORN AND STROBE WEST SIDE OF SODA ASH BUILDING	(2) #12 AWG, P (1) #12 AWG, G	3/4"	POWER
201	CHEMICAL BUILDING PLC PANEL	HYPOCHLORITE PUMP CONTROL PANEL	(25) #14 AWG, C (8) #18 AWG TSP, C (6) #14 AWG, SP (2) #18 AWG TSP, SP	2"	CONTROL SIGNALS
202	PANELBOARD PNL CHEM-1 (NEW CIRCUIT BREAKER IN PANEL)	HYPOCHLORITE PUMP CONTROL PANEL	(2) #12 AWG, P (1) #12 AWG, G		POWER
203	CHEMICAL BUILDING PLC PANEL	TANK FILL STATION CONTROL PANEL (SODIUM HYPOCHLORITE TANK #1/2/3)	(3) #18 AWG, TSP	1"	TANK LEVEL SIGNALS
203A	TANK FILL STATION CONTROL PANEL (SODIUM HYPOCHLORITE TANK #1/2/3)	TANK LEVEL TRANSMITTER #1 (SODIUM HYPOCHLORITE TANK #1)	(1) #18 AWG TSP, C	3/4"	LOOP POWERED LEVEL SIGNAL
203B	TANK FILL STATION CONTROL PANEL (SODIUM HYPOCHLORITE TANK #1/2/3)	TANK LEVEL TRANSMITTER #2 (SODIUM HYPOCHLORITE TANK #2)	(1) #18 AWG TSP, C	3/4"	LOOP POWERED LEVEL SIGNAL
203C	TANK FILL STATION CONTROL PANEL (SODIUM HYPOCHLORITE TANK #1/2/3)	TANK LEVEL TRANSMITTER #3 (SODIUM HYPOCHLORITE TANK #3)	(1) #18 AWG TSP, C	3/4"	LOOP POWERED LEVEL SIGNAL
204	CHEMICAL BUILDING PLC PANEL	SUMP FLOOD SWITCH #1	(2) #14 AWG, C	3/4"	
205	CHEMICAL BUILDING PLC PANEL	SUMP FLOOD SWITCH #2	(2) #14 AWG, C	3/4"	
206	PANELBOARD SUB PNL CHEM-2 CKTS 14 & 16	COAGULANT PUMP CONTROL PANELS	(6) #12 AWG, P (1) #12 AWG, G	1"	POWER COAGULANT PUMP #1 POWER COAGULANT PUMP #2 POWER
206A	COAGULANT PUMP CONTROL PANEL #1	COAGULANT PUMP #1	(2) #12 AWG, P (1) #12 AWG, G	3/4"	
206B	COAGULANT PUMP CONTROL PANEL #2	COAGULANT PUMP #2	(2) #12 AWG, P (1) #12 AWG, G	3/4"	
207	CHEMICAL BUILDING PLC PANEL	COAGULANT PUMP CONTROL PANELS	(8) #14 AWG, C (2) #18 AWG TSP, C (4) #14 AWG, SP	1"	RUN COMMANDS RUNNING FEEDBACK FEED RATE SETPOINTS
208	PANELBOARD SUB PNL CHEM-2 CKTS 12	POLYMER PUMP	(2) #12 AWG, P (1) #12 AWG, G	3/4"	POWER
209	CHEMICAL BUILDING PLC PANEL	POLYMER PUMP	(4) #14 AWG, C (1) #14 AWG TSP, C	3/4"	RUN COMMAND RUNNING FEEDBACK FEED RATE SETPOINT
210	PANELBOARD SUB PNL CHEM-2 CKTS (ELECTRICIAN TO FIELD VERIFY CKT #)	POLYMER MIXER	(3) #12 AWG, P (1) #12 AWG, G	3/4"	POWER
211	CHEMICAL BUILDING PLC PANEL	POLYMER MIXER	(4) #14 AWG, C	3/4"	RUN COMMAND RUNNING FEEDBACK
212	PANELBOARD PNL CHEM-1 (NEW CIRCUIT BREAKER IN PANEL)	OUTDOOR RECEPTACLE SOUTH SIDE OF CHEMICAL BUILDING	(2) #12 AWG, P (1) #12 AWG, G	3/4"	POWER
213	PANELBOARD PNL CHEM-1 (NEW CIRCUIT BREAKER IN PANEL)	EMERGENCY BUTTON W/HORN AND STROBE SOUTH SIDE OF CHEMICAL BUILDING	(2) #12 AWG, P (1) #12 AWG, G	3/4"	POWER
214	PANELBOARD PNL CHEM-1 ("WH1" BREAKERS IN PANEL)	WATER HEATER #1	(2) #12 AWG, P (1) #12 AWG, G	3/4"	POWER
215	PANELBOARD PNL CHEM-1 ("WH2" BREAKERS IN PANEL)	WATER HEATER #2	(2) #12 AWG, P (1) #12 AWG, G	3/4"	POWER
216	PANELBOARD PNL CHEM-1	OUTDOOR RECEPTACLE EAST SIDE OF CHEMICAL BUILDING	(2) #12 AWG, P (1) #12 AWG, G	3/4"	POWER
217	PANELBOARD PNL CHEM-1	EMERGENCY EYE/FACE WASH	(2) #12 AWG, P (1) #12 AWG, G	3/4"	POWER

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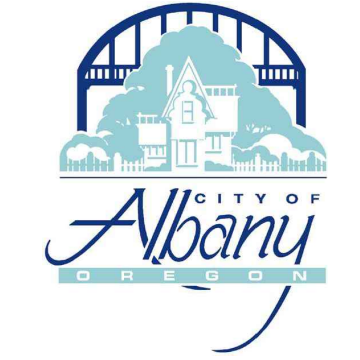
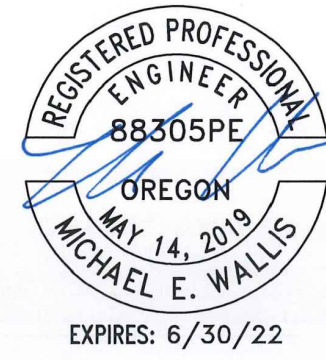
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AK #1018436
PROJECT# 2029.01

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

NO.	DATE	BY	REVISION
	01/08/21	MW	ADDENDUM NO.2

NOTICE
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VINE STREET WTP CHEMICAL SYSTEM IMPROVEMENTS WTP-19-02

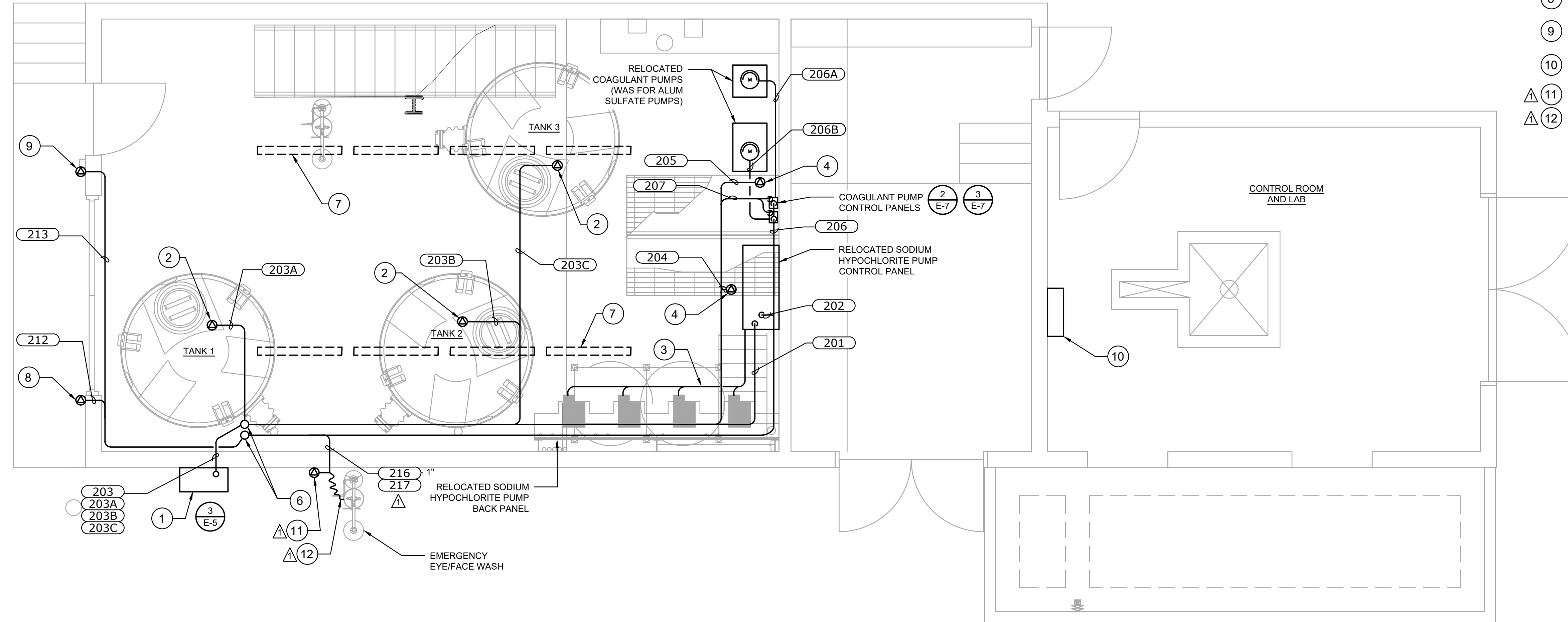
SODA ASH BUILDING ELECTRICAL PLAN
PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

SHEET **E-2**
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GENERAL NOTES:
 1. SEE SHEET E-2 FOR CIRCUIT SCHEDULE.

- KEY NOTES:**
- 1 CONTROL PANEL FOR TANK LEVEL MONITORING. SEE SHEET E-4
 - 2 TANK LEVEL TRANSMITTER (TYP OF 3). E+H FMR20 SERIES. MOUNT INSTRUMENT PER MANUFACTURER'S INSTRUCTIONS. ENSURE NO CONDUCTIVE MATERIALS ARE LOCATED WITHIN SIGNAL BEAM.
 - 3 RECONNECT CIRCUITS BETWEEN RELOCATED HYPOCHLORITE PUMP BACK PANEL AND PUMP CONTROL PANEL.
 - 4 CONTAINMENT SUMP FLOOD SWITCH.
 - 5 INTERCEPT EXISTING POWER FROM 120VAC CIRCUIT THAT USED TO POWER POLYMER FEED PUMP AND MIXER. INSTALL JBOX AND EXTEND POWER TO RELOCATED SODIUM HYPOCHLORITE PUMP CONTROL PANEL. VERIFY CIRCUIT NUMBERS IN PANELBOARD CHEM-1 AND LABEL CIRCUITS INSIDE OF PANELBOARD.
 - 6 RUN CONDUITS TO SECOND FLOOR THROUGH EXISTING HOLE. SEE SHEET E-4 FOR CONTINUATION.
 - 7 RELOCATE EXISTING LIGHT FIXTURES AS REQUIRED TO MAKE SPACE FOR NEW CHEMICAL TANKS. LIGHT FIXTURES SHALL ONLY BE RELOCATED TO THE MINIMAL EXTEND POSSIBLE. RECONNECT EXISTING FIXTURES TO THE SAME CIRCUITS AS BEFORE. INSTALL JUNCTION BOXES AS REQUIRED.
 - 8 INSTALL WEATHERPROOF GFCI RECEPTACLE ON EXTERIOR OF BUILDING. COORDINATE LOCATION WITH INSTALLATION OF TOTE PUMP.
 - 9 INSTALL OUTDOOR HORN/STROBE ON EXTERIOR OF BUILDING. INSTALL EMERGENCY STOP PUSHBUTTON BELOW THE ENABLING THE HORN/STROBE.
 - 10 APPROXIMATE LOCATION OF POWER PANELBOARD "SUB PNL CHEM-2". FIELD VERIFY EXACT LOCATION.
 - 11 INSTALL WEATHERPROOF GFCI RECEPTACLE ON EXTERIOR OF BUILDING.
 - 12 INSTALL FLEX CONDUIT FOR FINAL CONNECTION AT EYE/FACE WASH.



1 CHEMICAL BLDG 1ST FLOOR - ELECTRICAL PLAN
 SCALE: 3/8" = 1'-0"

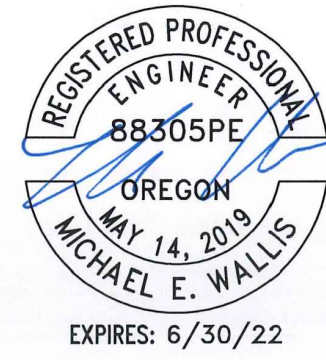
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NOTICE
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 MW
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**VINE STREET WTP
 CHEMICAL SYSTEM
 IMPROVEMENTS
 WTP-19-02**

**CHEMICAL BUILDING
 ELECTRICAL PLAN
 1ST FLOOR**

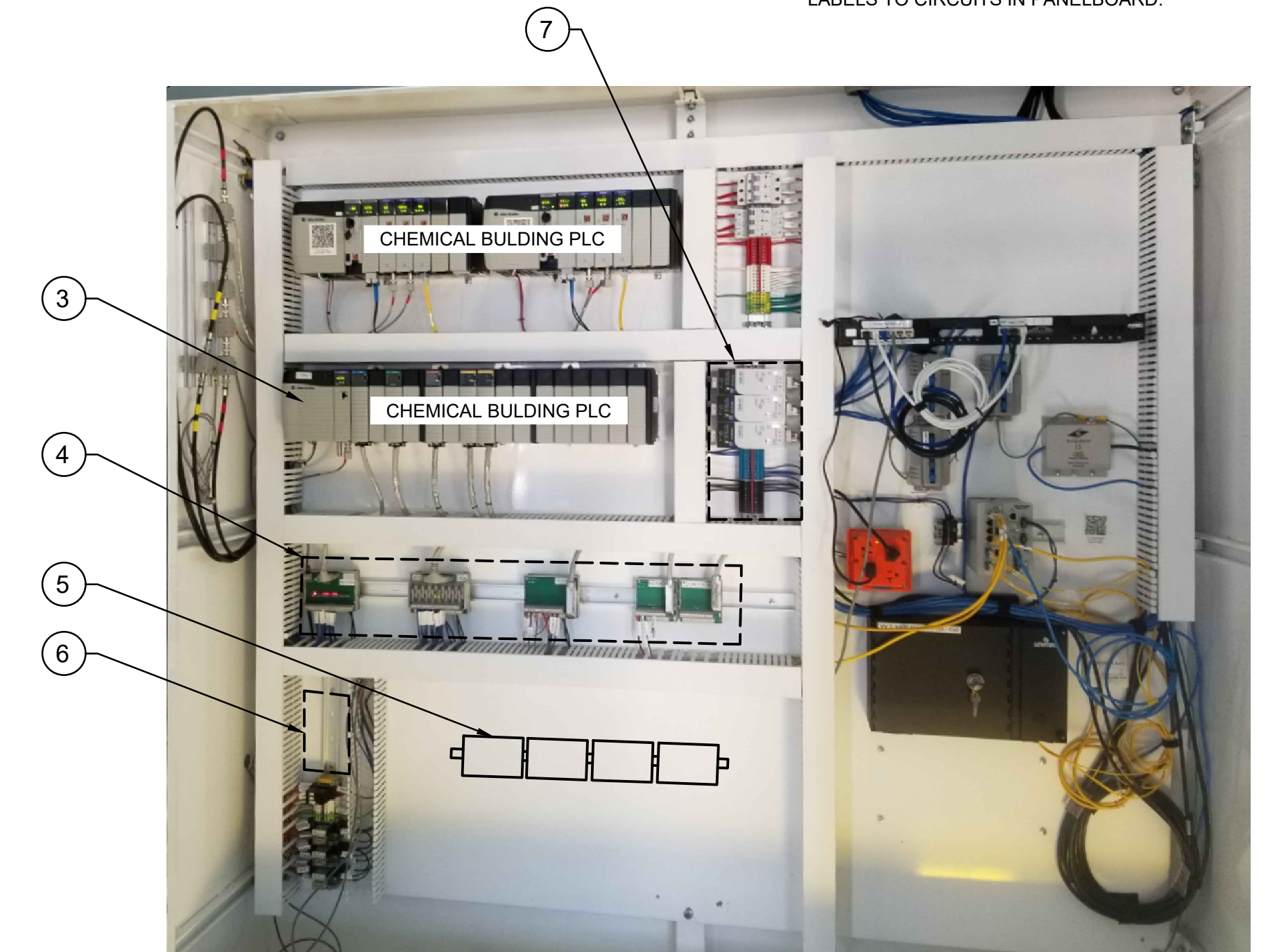
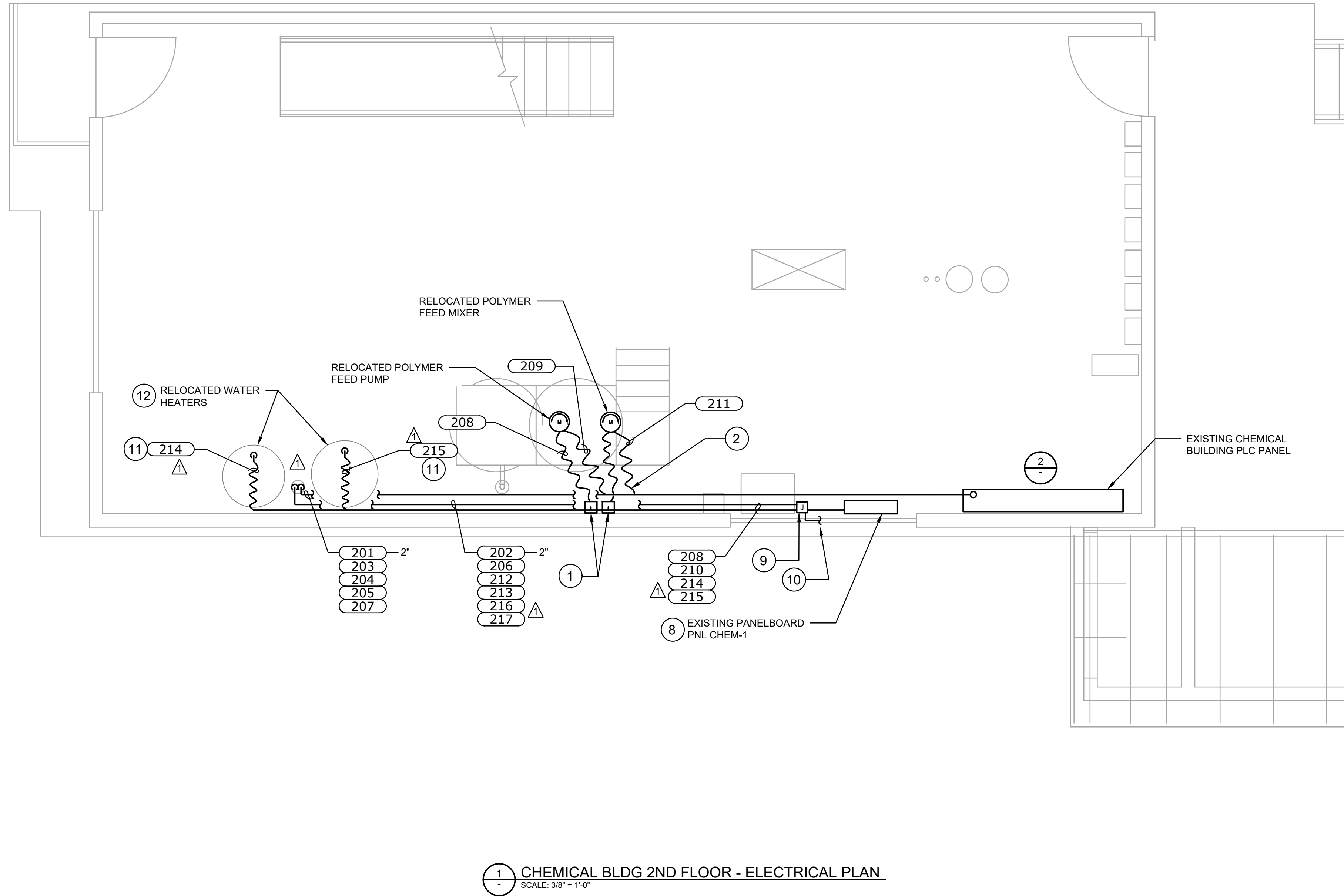
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 25 of 29

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GENERAL NOTES:
 1. SEE SHEET E-2 FOR CIRCUIT SCHEDULE.

- KEY NOTES:**
1. INSTALL TWO RECEPTACLES: ONE FOR POLYMER FEED MIXER AND ONE FOR POLYMER FEEDER MOTOR.
 2. INSTALL FLEX CONDUIT FOR FINAL CONDUIT RUN TO MOTORS.
 3. ADD PLC MODULES. SEE E-6 FOR ADDITIONAL DETAILS. COORDINATE WITH CITY DURING INSTALLATION.
 4. WIRE TO EXISTING TERMINAL INTERFACE MODULES. SEE E-6 FOR DETAILS.
 5. ADD DIN RAIL AND TERMINAL INTERFACE MODULES. SEE E-6 FOR DETAILS. COORDINATE WITH CITY DURING INSTALLATION.
 6. ADD FIELD TERMINALS AND FUSES AS REQUIRED PER WIRING SHOWN ON E-6.
 7. EXISTING 24VDC POWER DISTRIBUTION TERMINALS, TO BE USED FOR 24VDC FOR TANK LEVEL TRANSMITTER LOOP POWER. SEE WIRING DETAILS ON E-5.
 8. THE CIRCUITS THAT ARE CURRENTLY BEING USED FOR THE FILTER FAN SHALL BE REPLACED WITH CIRCUITS FOR THE HYPO PANEL, OUTDOOR RECEPTACLE, & HORN/LIGHT (SEE CKTS 202, 212, AND 213 ON THE CIRCUIT SCHEDULE). LABELS SHALL BE ADDED TO THE PANELBOARD.
 9. INSTALL JBOX FOR ROUTING ALL POWER CIRCUITS.
 10. FIELD ROUTE CONDUIT TO PANELBOARD "SUB PNL CHEM-2" LOCATED IN CONTROL ROOM DOWNSTAIRS. SEE E-3 FOR APPROXIMATE LOCATION.
 11. INSTALL FLEX CONDUIT FOR FINAL CONNECTION AT EQUIPMENT. ROUTE ALONG WALL FOR CLEAN APPEARANCE.
 12. WATER HEATERS ARE RELOCATED FROM FIRST FLOOR. RECONNECT POWER FROM PNL CHEM-1, USING THE SAME CIRCUIT BREAKERS. ADD LABELS TO CIRCUITS IN PANELBOARD.



2 CHEMICAL BUILDING CONTROL PANEL INTERIOR
 SCALE: NTS

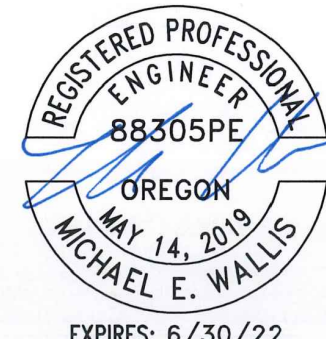
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MW
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 JB
 DRAWN
 MW
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**VINE STREET WTP
 CHEMICAL SYSTEM
 IMPROVEMENTS
 WTP-19-02**

**CHEMICAL BUILDING
 ELECTRICAL PLAN
 2ND FLOOR**

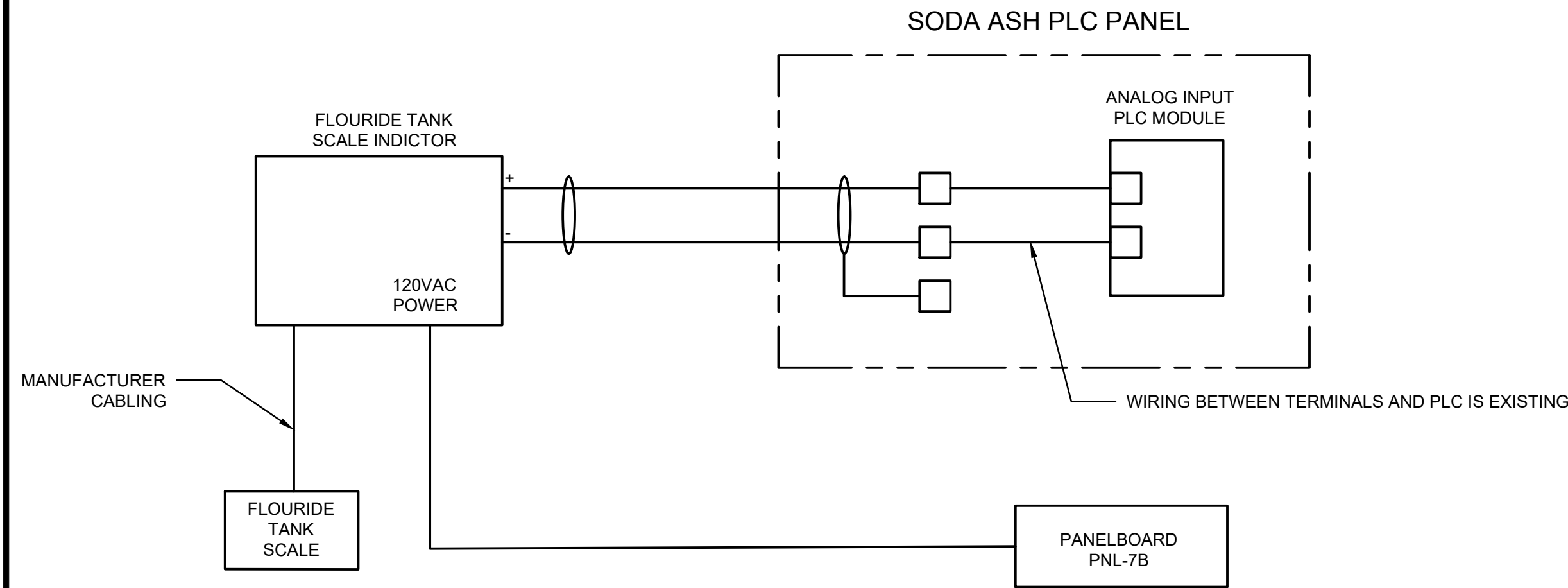
PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

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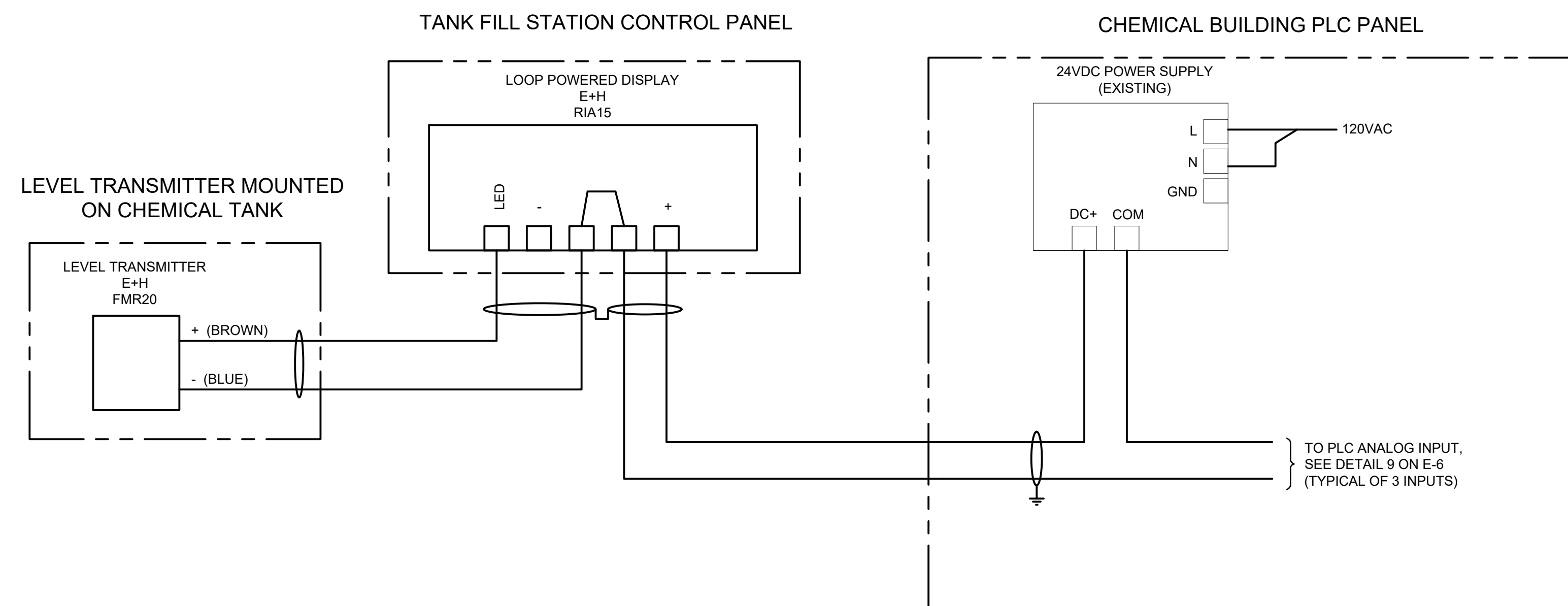
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KEY NOTES:

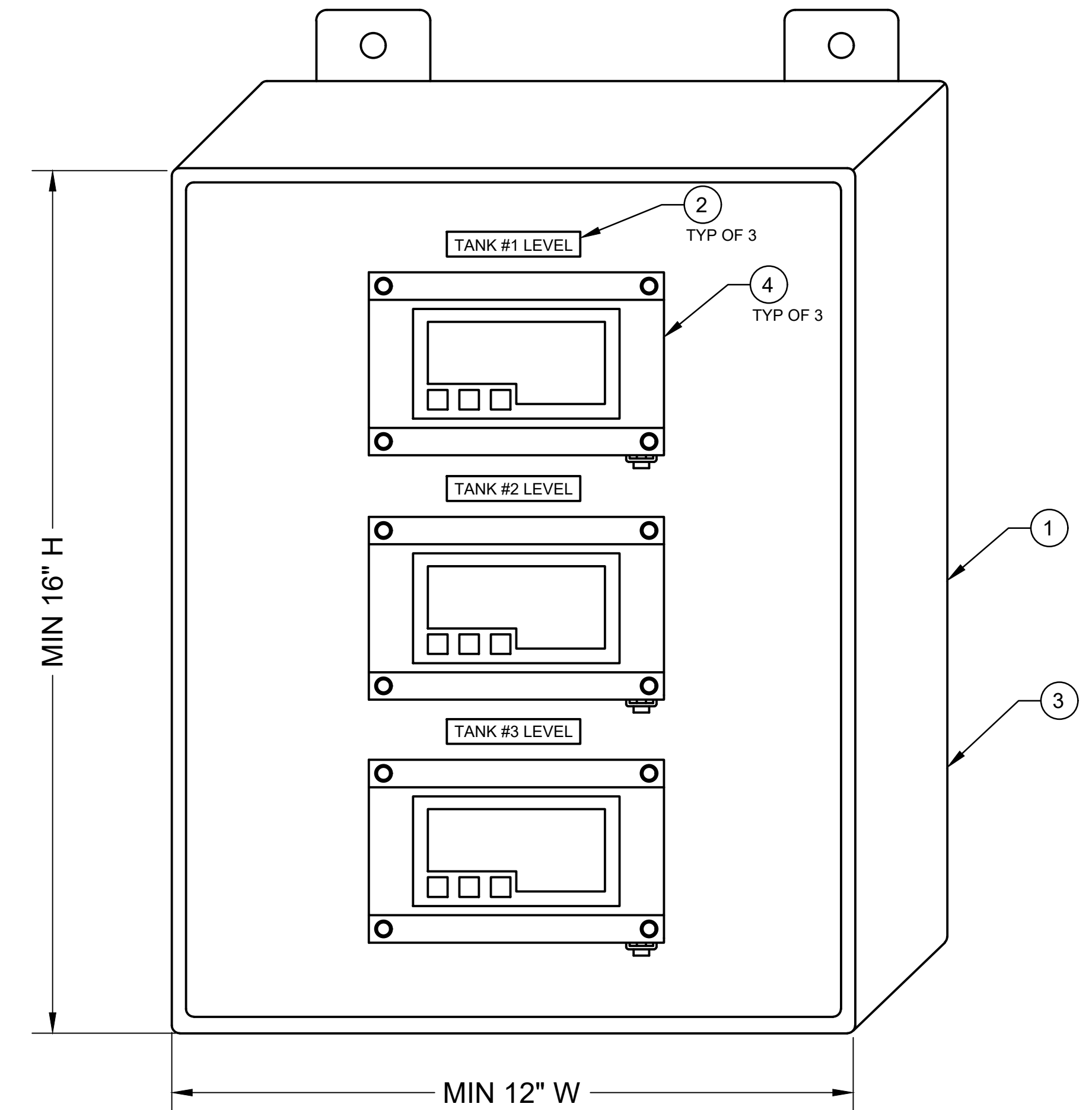
- 1 PANEL SHALL BE NEMA 4 RATED. PANEL SHALL BE SIZED TO ADEQUATELY MOUNT LEVEL DISPLAY UNITS WITH ADEQUATE SPACING PER MANUFACTURER RECOMMENDATIONS.
- 2 NAMEPLATES SHALL BE WHITE WITH ENGRAVED BLACK TEXT.
- 3 MOUNT CONTROL PANEL ON EXTERIOR OF BUILDING AS SHOWN ON SITE PLAN. CONDUIT ENTRY SHALL BE ON BOTTOM OF PANEL AND BE INSTALLED WITH WEATHER PROOF SEALS.
- 4 E+H RIA 15. FLUSH MOUNT ON PANEL WITH WEATHER SEAL.



1 FLOURIDE SCALE WIRING DIAGRAM
SCALE: NTS



2 TANK LEVEL TRANSMITTER WIRING DIAGRAM (TYPICAL OF 3)
SCALE: NTS

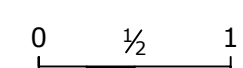


3 CHEMICAL TANK FILL STATION CONTROL PANEL
SCALE: NTS

Industrial Systems INC

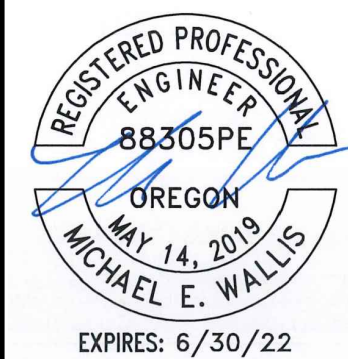
12119 NE 99th Street
Suite #2090
Vancouver, Washington 98682
Phone: (360) 716-7267
Fax: (360) 952-8958
e-mail: is@industrialsystems-inc.com
OR CC# #196597 WA #INDUS1880K9
AK #1018436
PROJECT# 2029.01

NOTICE



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

MW DESIGNED
JB DRAWN
MW CHECKED



murraysmith



**VINE STREET WTP
CHEMICAL SYSTEM
IMPROVEMENTS
WTP-19-02**

ELECTRICAL DETAILS

SHEET

E-5

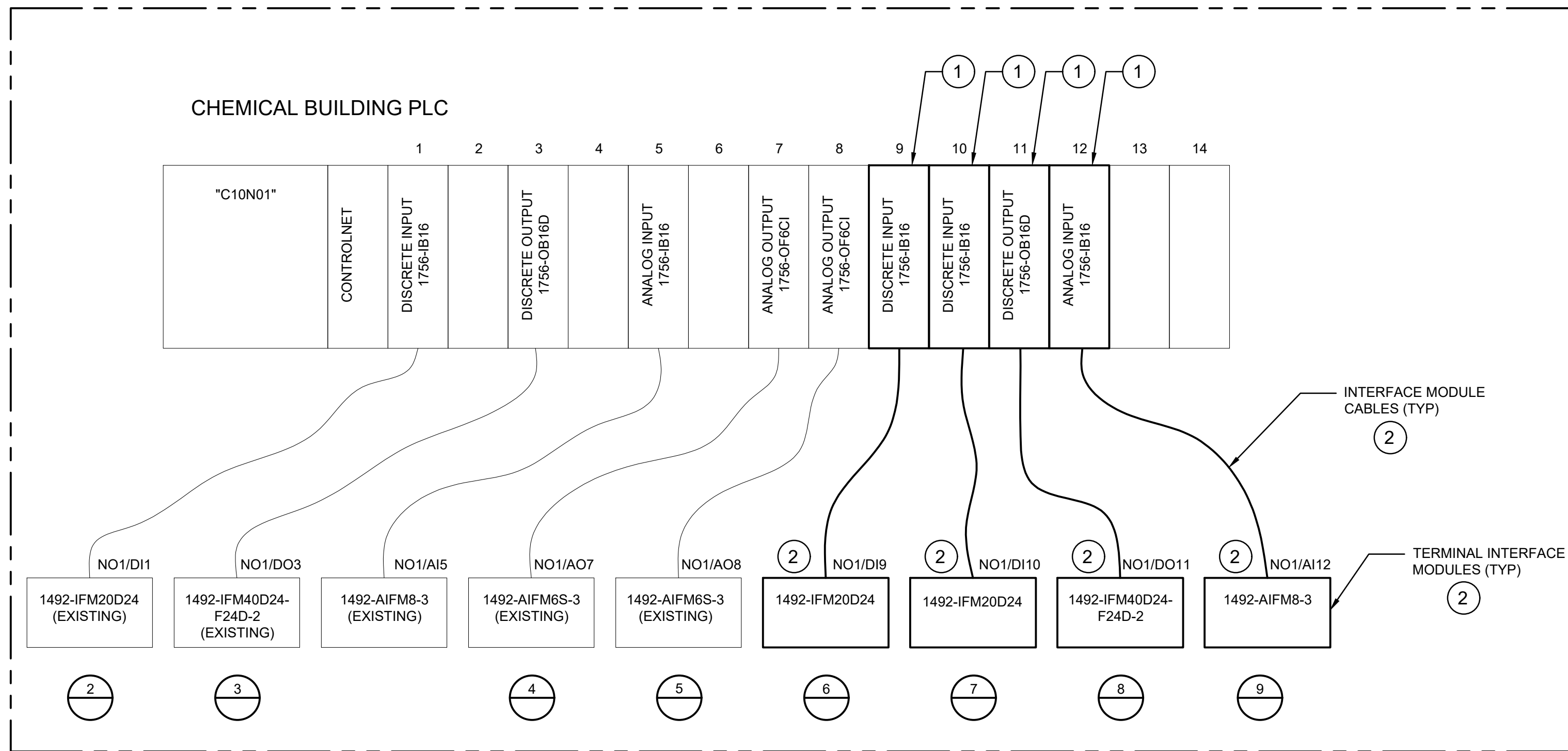
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NO.	DATE	BY	REVISION

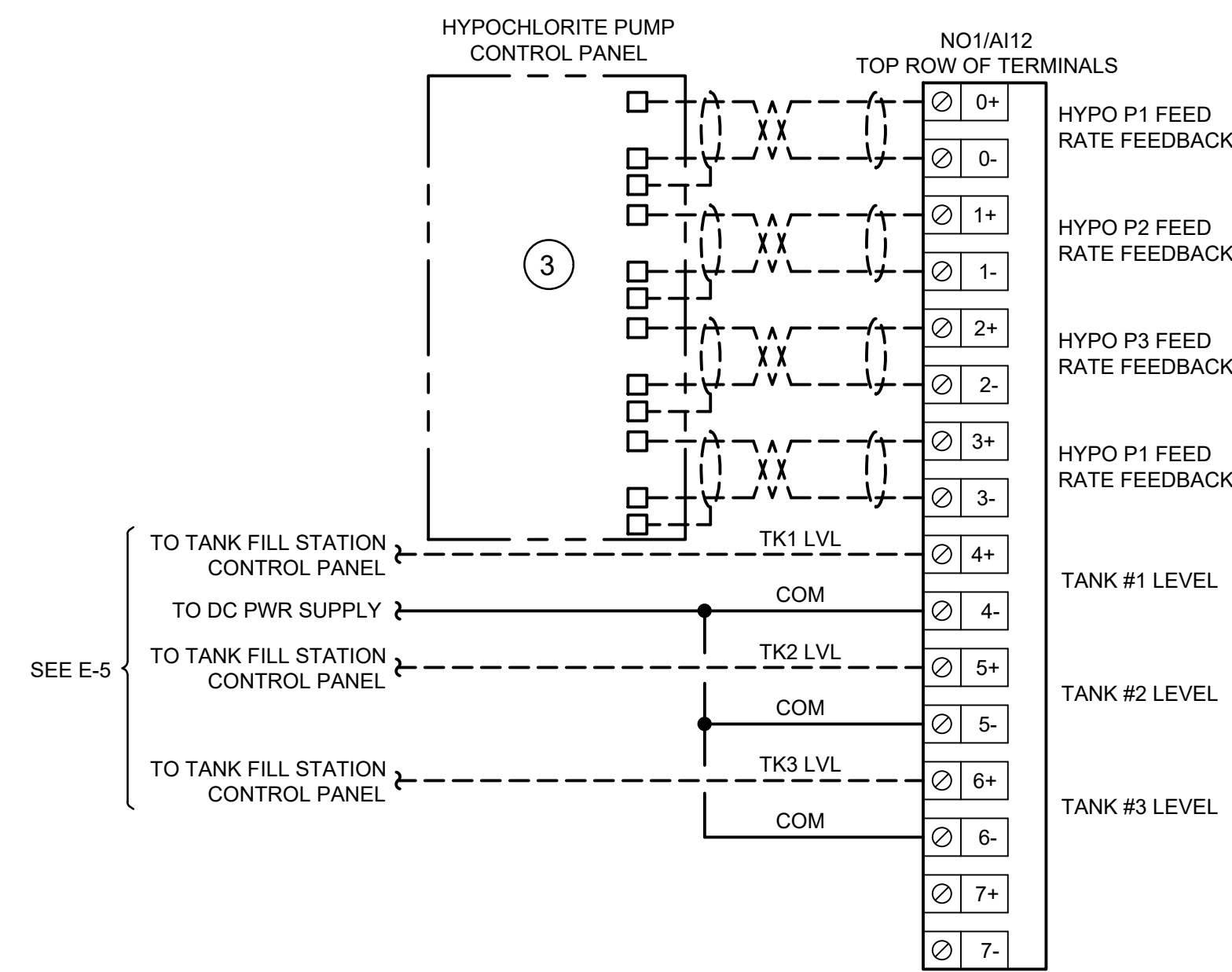
PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

P:\Projects\20_29_01_MSA_Albany_Vine_St_WTP_Chemical_Improvements\DWG\E-6 - Layout1.dwg E-6 12/10/2020 11:56 AM JESSICAB 23.1s (LMS Tech)

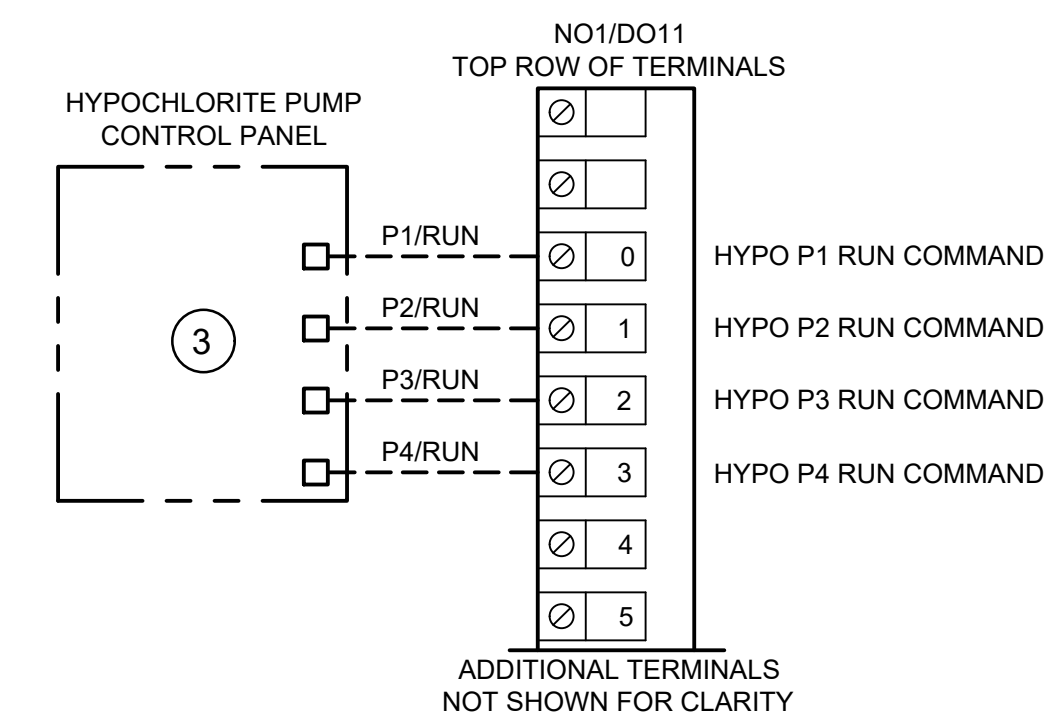
CHEMICAL BUILDING PLC PANEL



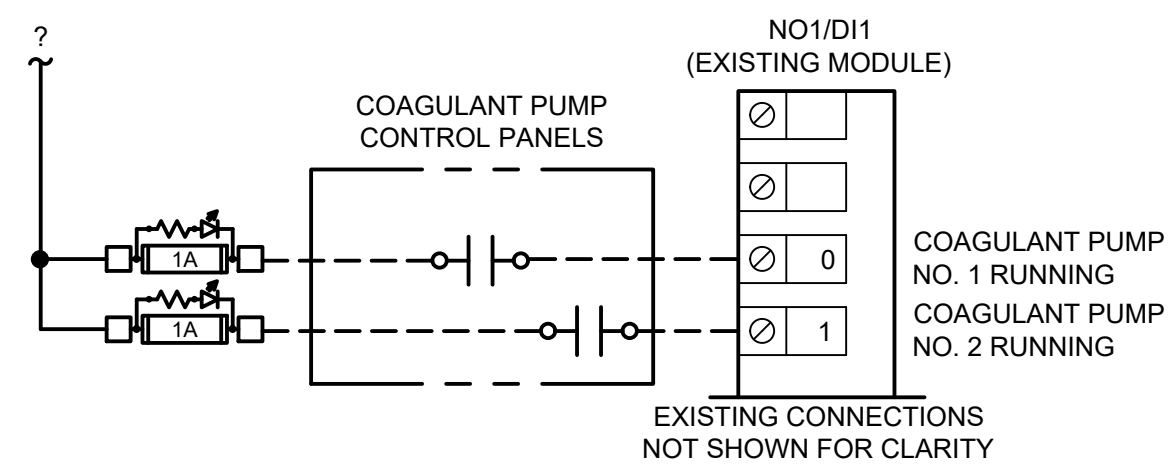
1 CHEMICAL BUILDING PLC MODIFICATIONS
SCALE: NTS



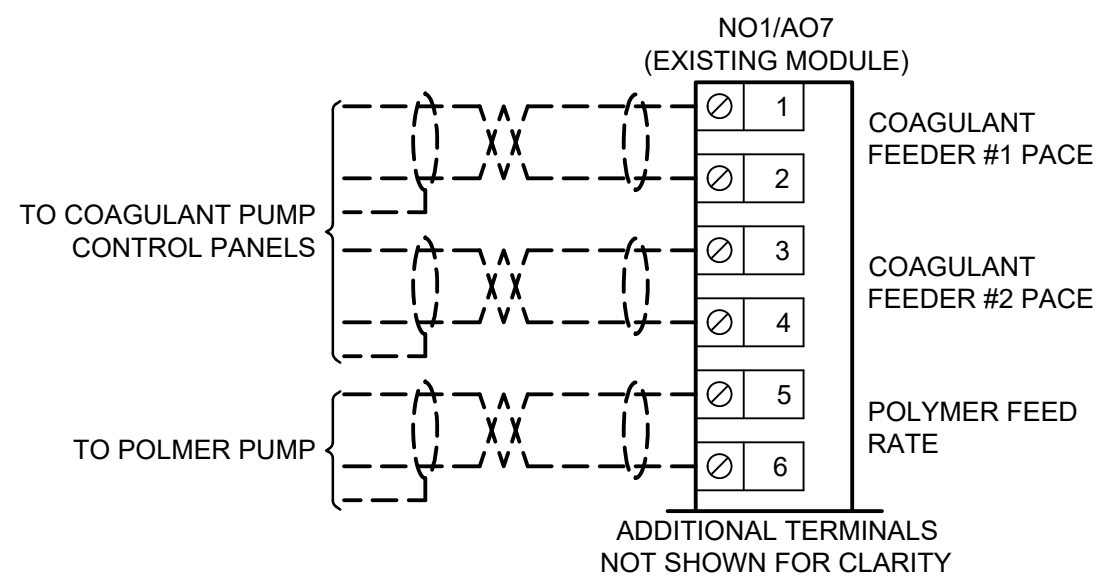
9 PLC MODULE WIRING, AI12
SCALE: NTS



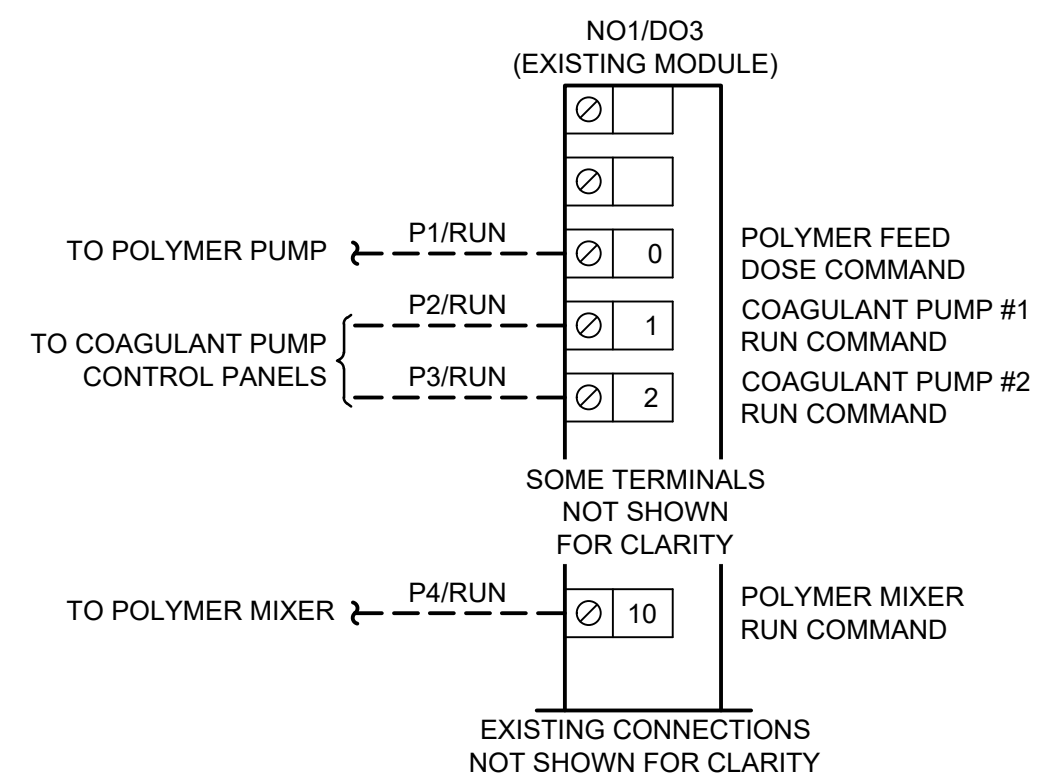
8 PLC MODULE WIRING, DO11
SCALE: NTS



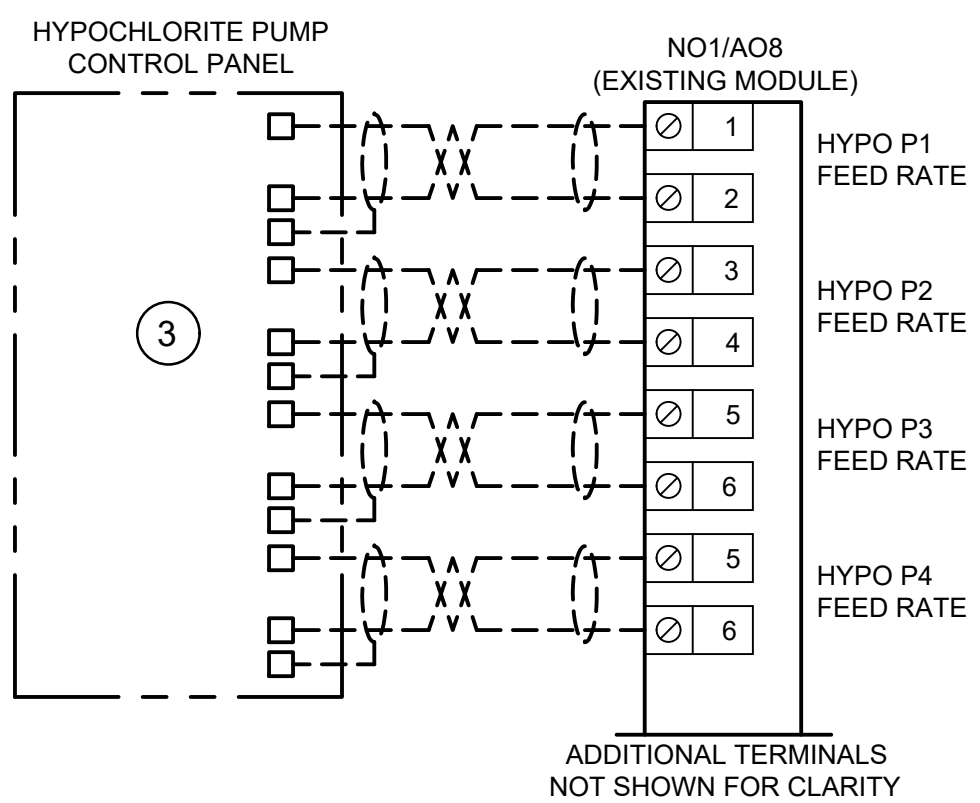
2 PLC MODULE WIRING, DI1
SCALE: NTS



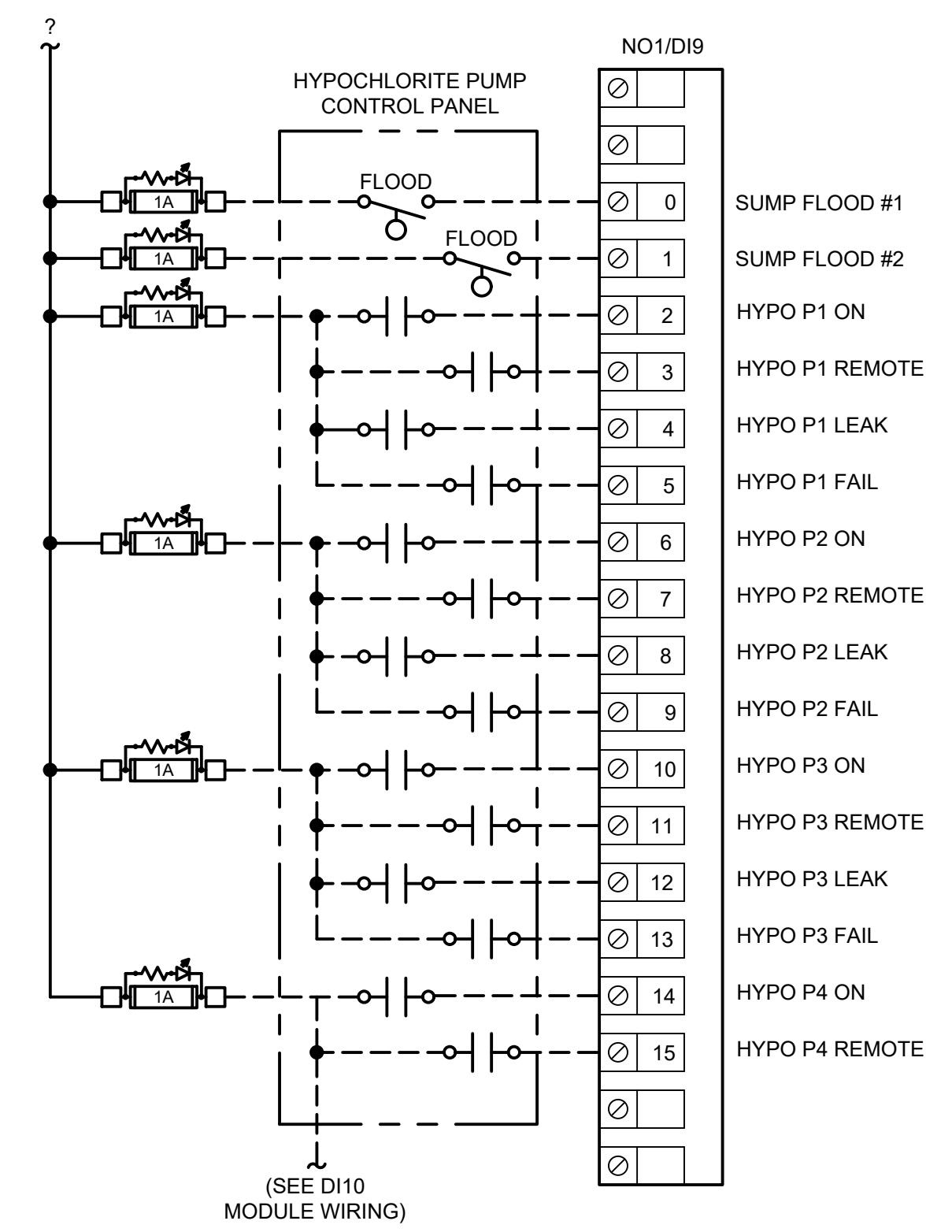
4 PLC MODULE WIRING, AO7
SCALE: NTS



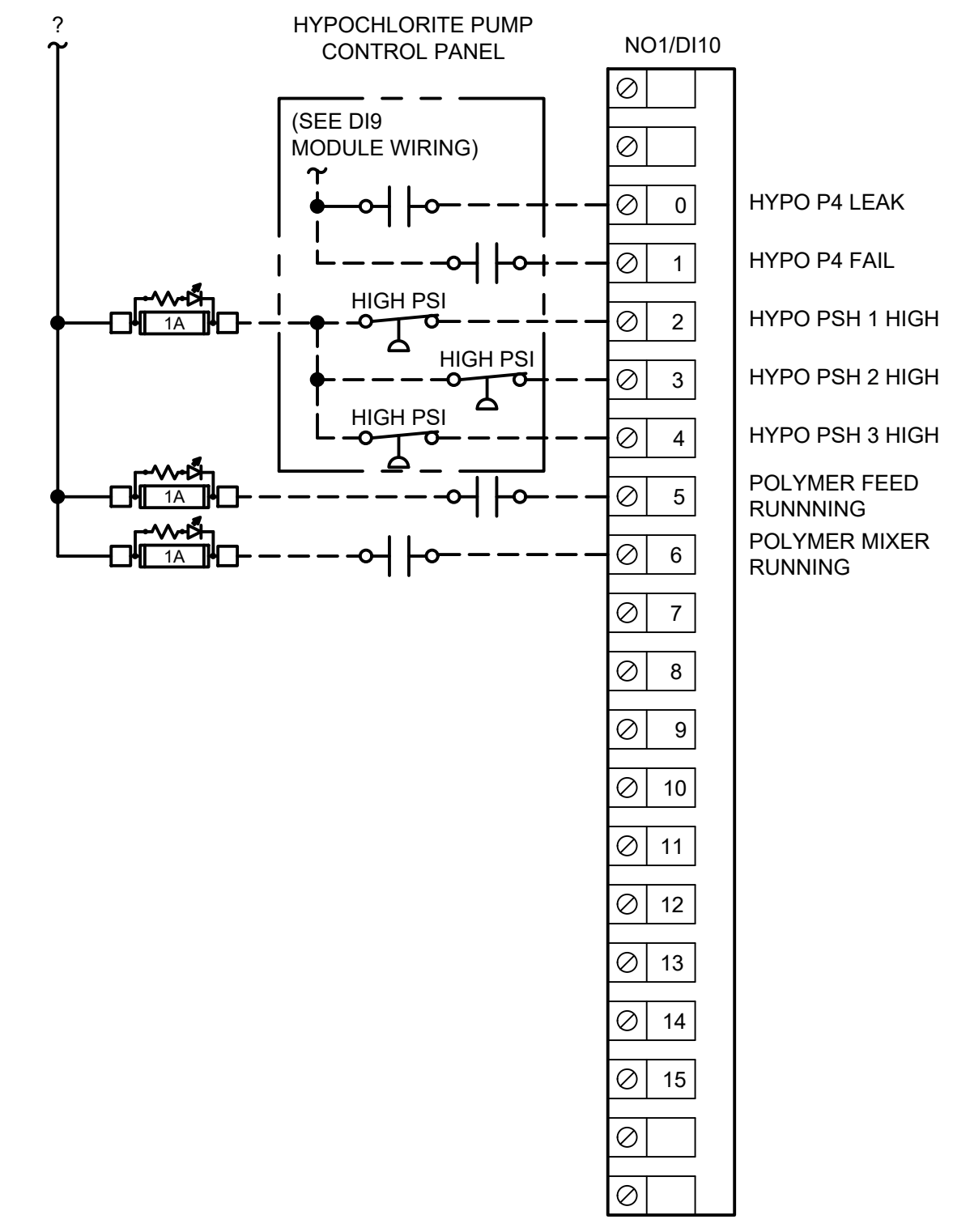
3 PLC MODULE WIRING, DO3
SCALE: NTS



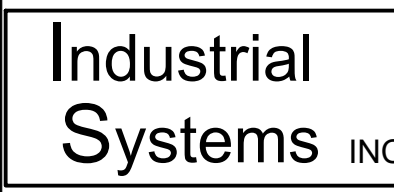
5 PLC MODULE WIRING, AO8
SCALE: NTS



6 PLC MODULE WIRING, DI9
SCALE: NTS



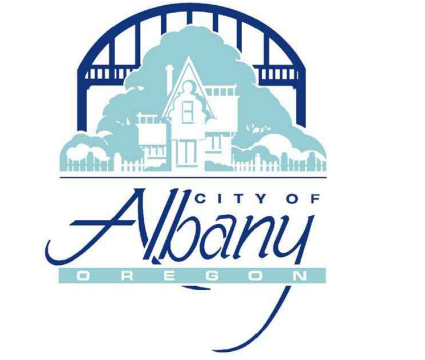
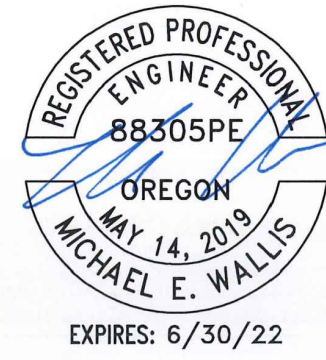
7 PLC MODULE WIRING, DI10
SCALE: NTS



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WTP-19-02

ELECTRICAL DETAILS
PROJECT NO.: 20-2757 SCALE: AS SHOWN DATE: DECEMBER 2020

SHEET
E-6
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GENERAL NOTES:

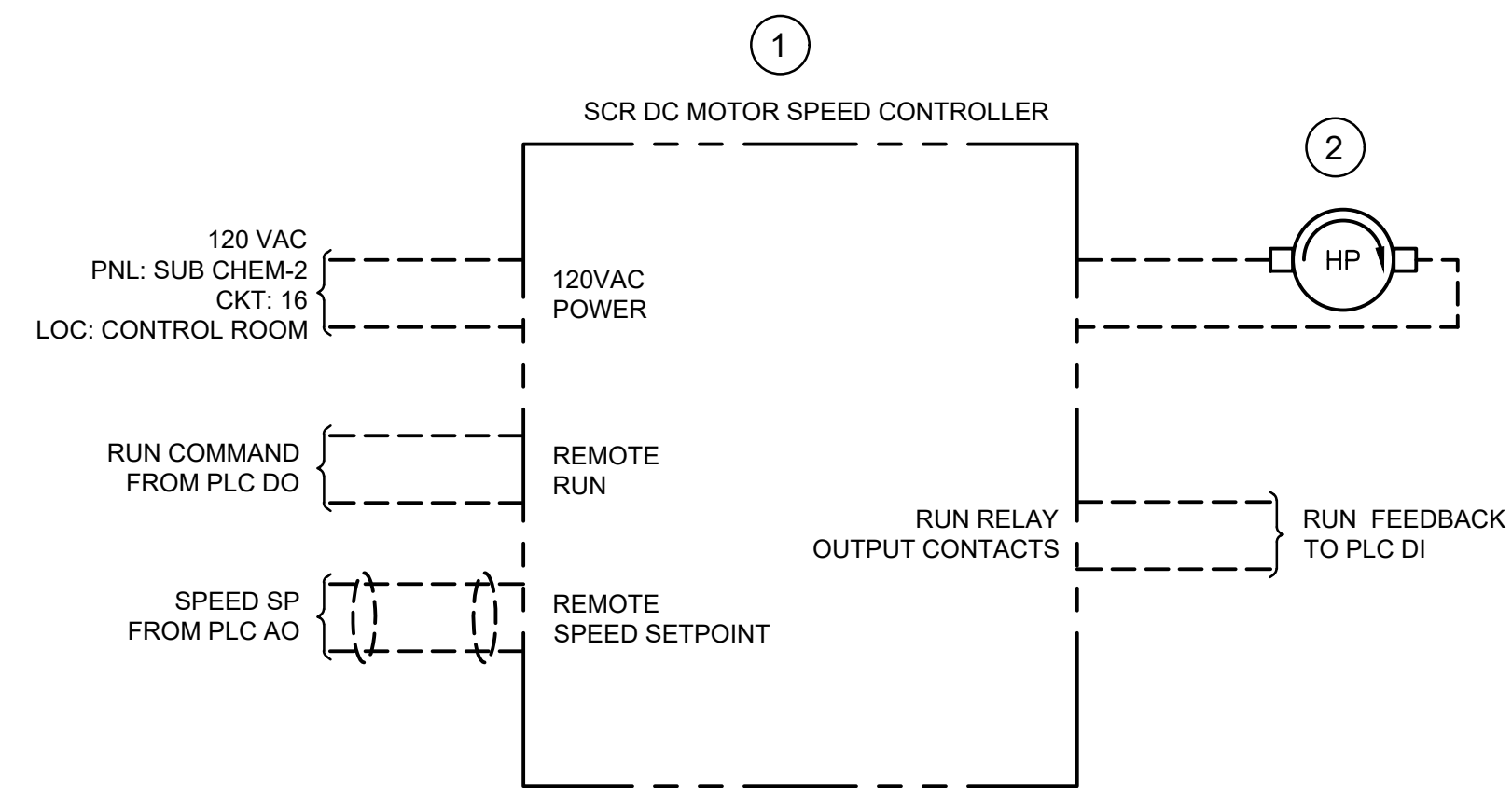
1. PLC AND SCADA PROGRAMMING TO BE COMPLETED BY CITY.

KEY NOTES:

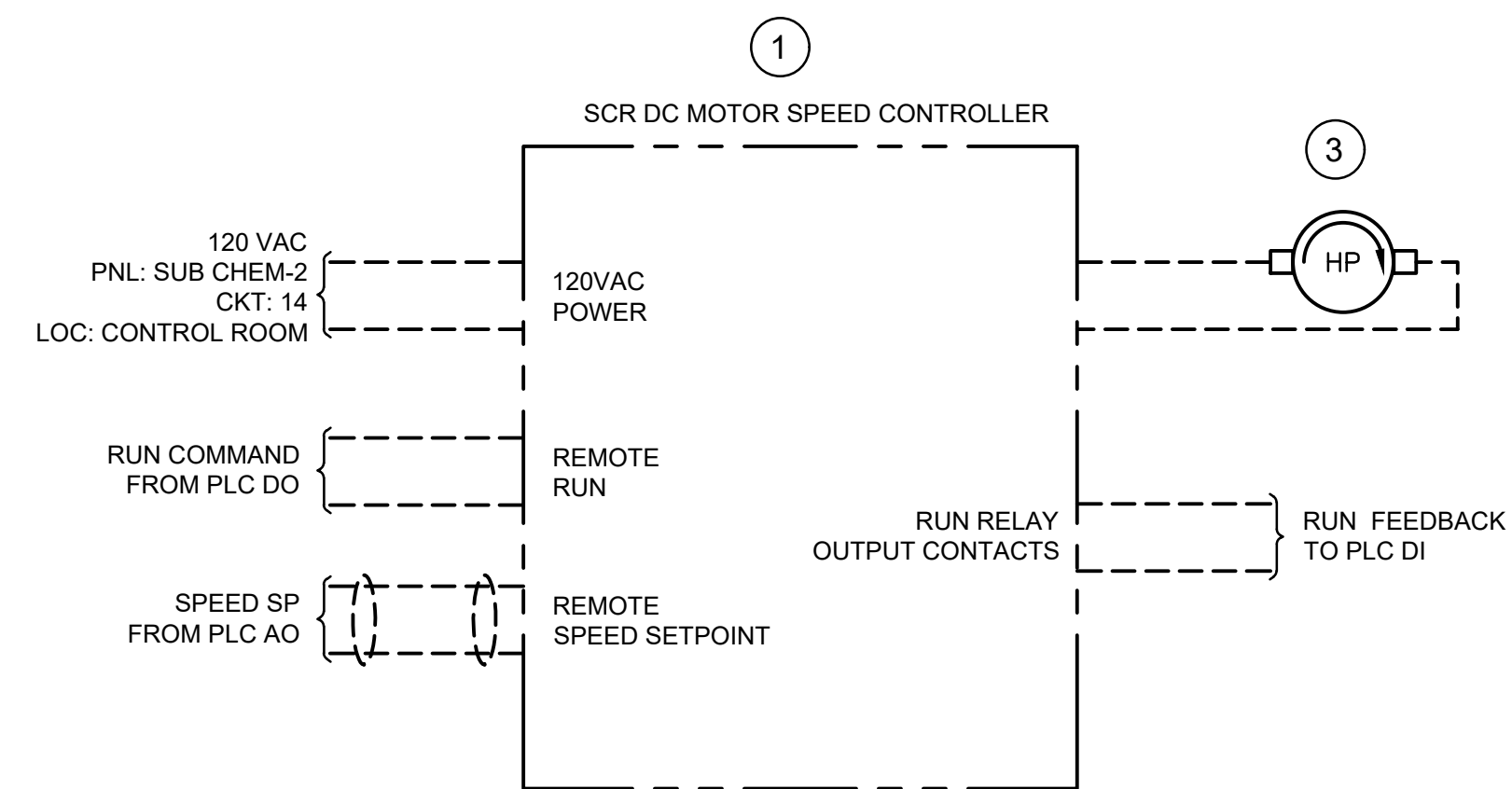
1. SCR DC MOTOR SPEED CONTROLLER IN NEMA 4X ENCLOSURE. BALDOR BC154 WITH AUTO/MANUAL SWITCH AND ANALOG SIGNAL ISOLATOR OPTIONS, OR APPROVED EQUAL.
2. COAGULANT PUMP MOTOR #1 IS 90 VOLT DIRECT CURRENT, 0.5 HP, 5.2 AMPS.
3. COAGULANT PUMP MOTOR #2 IS 90 VOLT DIRECT CURRENT, 0.25 HP, 2.5 AMPS.

FIELD DEVICE	DESCRIPTION	SIGNAL TYPE	INTERFACE MODULE	INTERFACE MODULE PART #	PLC MODULE	PLC SLOT	PLC POINT
COAGULANT PUMP CONTROL PANEL	COAGULANT PUMP NO. 1 RUNNING	DI	NO1/DI1	1492-IFM20D24	1756-IB16	1	1
COAGULANT PUMP CONTROL PANEL	COAGULANT PUMP NO. 2 RUNNING	DI	NO1/DI1	1492-IFM20D24	1756-IB16	1	2
POLYMER PUMP	POLYMER FEED DOSE COMMAND	DO	NO1/DO3	1492-IFM40D24-F24D-2	1756-OB16D	3	0
COAGULANT PUMP CONTROL PANEL	COAGULANT PUMP NO. 1 RUN COMMAND	DO	NO1/DO3	1492-IFM40D24-F24D-2	1756-OB16D	3	1
COAGULANT PUMP CONTROL PANEL	COAGULANT PUMP NO. 2 RUN COMMAND	DO	NO1/DO3	1492-IFM40D24-F24D-2	1756-OB16D	3	2
POLYMER MIXER	POLYMER MIXER COMMAND	DO	NO1/DO3	1492-IFM40D24-F24D-2	1756-OB16D	3	10
COAGULANT PUMP CONTROL PANEL	COAGULANT FEEDER 1 PACE	AO	NO1/AO7	1492-AIFM65-3	1756-OF6CI	7	0
COAGULANT PUMP CONTROL PANEL	COAGULANT FEEDER 2 PACE	AO	NO1/AO7	1492-AIFM65-3	1756-OF6CI	7	1
POLYMER PUMP	POLYMER FEED RATE	AO	NO1/AO7	1492-AIFM65-3	1756-OF6CI	7	2
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P1 FEED RATE	AO	NO1/AO8	1492-AIFM65-3	1756-OF6CI	8	0
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P2 FEED RATE	AO	NO1/AO8	1492-AIFM65-3	1756-OF6CI	8	1
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P3 FEED RATE	AO	NO1/AO8	1492-AIFM65-3	1756-OF6CI	8	2
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P4 FEED RATE	AO	NO1/AO8	1492-AIFM65-3	1756-OF6CI	8	3
SUMP FLOOD SWITCH #1	SUMP #1 FLOOD	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	0
SUMP FLOOD SWITCH #2	SUMP #2 FLOOD	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	1
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P1 ON	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	2
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P1 REMOTE	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	3
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P1 LEAK	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	4
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P1 FAIL	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	5
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P2 ON	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	6
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P2 REMOTE	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	7
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P2 LEAK	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	8
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P2 FAIL	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	9
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P3 ON	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	10
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P3 REMOTE	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	11
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P3 LEAK	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	12
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P3 FAIL	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	13
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P4 ON	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	14
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P4 REMOTE	DI	NO1/DI9	1492-IFM20D24	1756-IB16	9	15
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P4 LEAK	DI	NO1/DI10	1492-IFM20D24	1756-IB16	10	0
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P4 FAIL	DI	NO1/DI10	1492-IFM20D24	1756-IB16	10	1
HYPOCHLORITE PUMP CONTROL PANEL	HYPO PSH 1 HIGH	DI	NO1/DI10	1492-IFM20D24	1756-IB16	10	2
HYPOCHLORITE PUMP CONTROL PANEL	HYPO PSH 2 HIGH	DI	NO1/DI10	1492-IFM20D24	1756-IB16	10	3
HYPOCHLORITE PUMP CONTROL PANEL	HYPO PSH 3 HIGH	DI	NO1/DI10	1492-IFM20D24	1756-IB16	10	4
POLYMER PUMP	POLYMER FEED RUNNING	DI	NO1/DI10	1492-IFM20D24	1756-IB16	10	5
POLYMER MIXER	POLYMER MIXER RUNNING	DI	NO1/DI10	1492-IFM20D24	1756-IB16	10	6
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P1 RUN COMMAND	DO	NO1/DO11	1492-IFM40D24-F24D-2	1756-OB16D	11	0
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P2 RUN COMMAND	DO	NO1/DO11	1492-IFM40D24-F24D-2	1756-OB16D	11	1
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P3 RUN COMMAND	DO	NO1/DO11	1492-IFM40D24-F24D-2	1756-OB16D	11	2
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P4 RUN COMMAND	DO	NO1/DO11	1492-IFM40D24-F24D-2	1756-OB16D	11	3
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P1 FEED RATE REEDBACK	AI	NO1/AI12	1492-AIFM8-3	1756-IF16	12	0
COAGULANT PUMP CONTROL PANEL	HYPO P2 FEED RATE REEDBACK	AI	NO1/AI12	1492-AIFM8-3	1756-IF16	12	1
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P3 FEED RATE REEDBACK	AI	NO1/AI12	1492-AIFM8-3	1756-IF16	12	2
HYPOCHLORITE PUMP CONTROL PANEL	HYPO P4 FEED RATE REEDBACK	AI	NO1/AI12	1492-AIFM8-3	1756-IF16	12	3
TANK FILL STATION CONTROL PANEL	TANK #1 LEVEL	AI	NO1/AI12	1492-AIFM8-3	1756-IF16	12	4
TANK FILL STATION CONTROL PANEL	TANK #2 LEVEL	AI	NO1/AI12	1492-AIFM8-3	1756-IF16	12	5
TANK FILL STATION CONTROL PANEL	TANK #3 LEVEL	AI	NO1/AI12	1492-AIFM8-3	1756-IF16	12	6

1 CHEMICAL BUILDING PLC INPUT/OUTPUT MODIFICATIONS
SCALE: NTS



2 COAGULANT PUMP CONTROL PANEL #1
SCALE: NTS

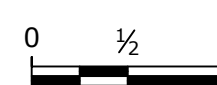


3 COAGULANT PUMP CONTROL PANEL #2
SCALE: NTS

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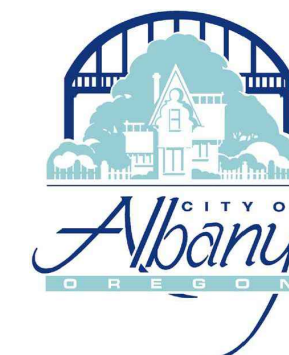


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