

# HAMLER WTP IMPROVEMENTS CHEMICAL FEED SYSTEMS

PREPARED FOR:  
**CITY OF ROME, GEORGIA**  
**WATER AND SEWER DIVISION**

PREPARED BY:



**INSITE  
ENGINEERING**

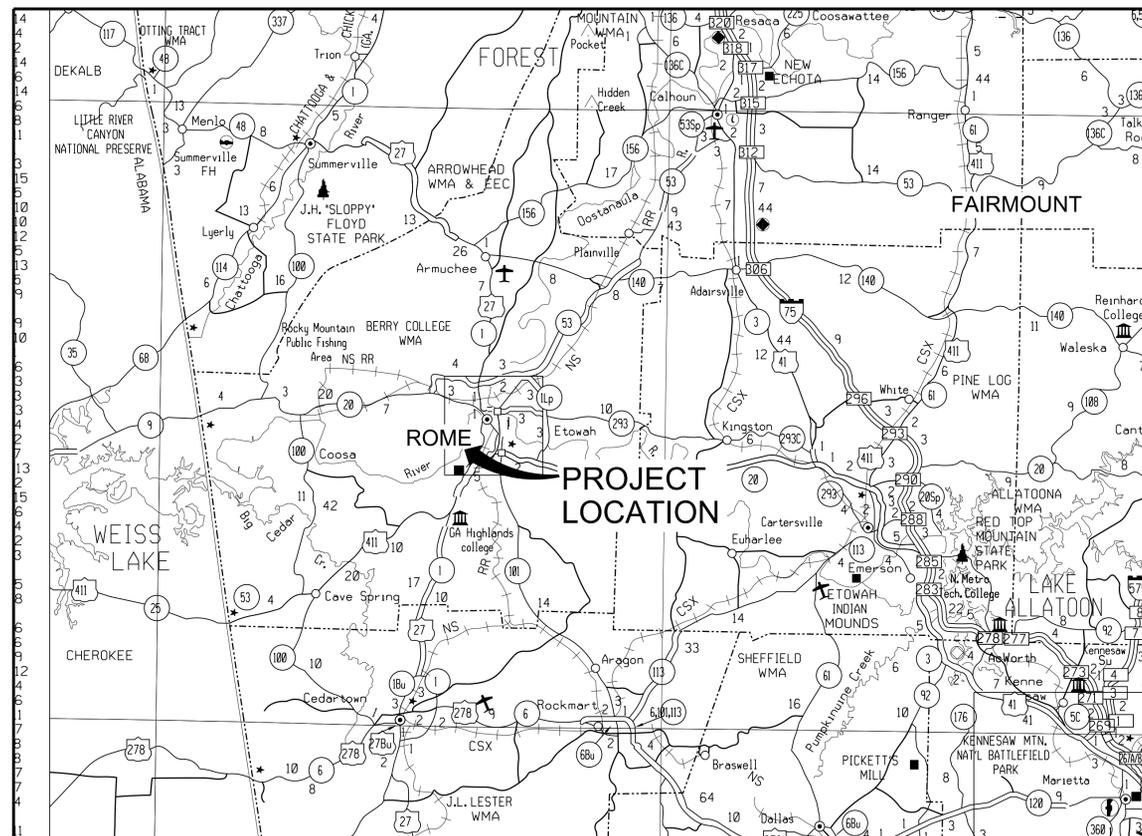
**INSITE ENGINEERING, LLC.**

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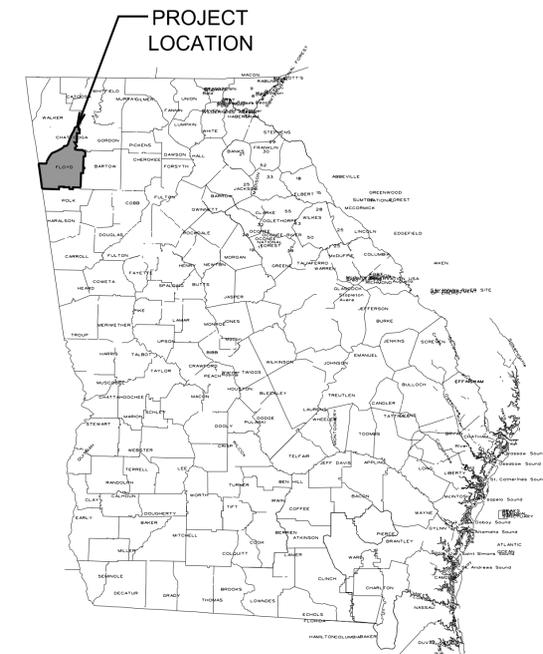
**PLANT**  
1 BLOSSOM HILL ROAD  
ROME, GEORGIA 30161  
PHONE: (706) 236-4527

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**LOCATION MAP**  
SCALE: NONE



**COUNTY LOCATION**  
SCALE: NONE



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CITY OF ROME, GEORGIA  
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### PROJECT INFO:

INSITE JOB No. 17021.00  
PLOTTED: 9/19/2017  
ADDENDUM NO. 1



9/19/2017

THIS SHEET CONTAINS:  
COVER SHEET AND  
SITE LOCATION

SCALE: NONE  
SHEET 1 OF 21

**GN-1**





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THIS SHEET CONTAINS:

GENERAL NOTES

SCALE: NONE  
SHEET 3 OF 21

**GN-3**

**EROSION CONTROL PLAN  
AND PERFORMANCE STANDARDS**

1. THE EROSION CONTROL PLAN SHALL CONTAIN A DESCRIPTION OF THE EXISTING SITE CONDITIONS, A DESCRIPTION OF ADJACENT TOPOGRAPHICAL FEATURES, INFORMATION NECESSARY TO DETERMINE THE EROSION QUALITIES OF THE SOIL ON THE SITE, POTENTIAL PROBLEM AREAS OF SOIL EROSION AND SEDIMENTATION, SOIL STABILIZATION SPECIFICATIONS, STORM WATER MANAGEMENT CONSIDERATIONS, PROJECTED TIME SCHEDULE FOR COMMENCEMENT AND COMPLETION OF THE LAND-DISTURBING ACTIVITY, SPECIFICATIONS FOR BMP PLAN MAINTENANCE DURING THE PROJECT AND AFTER THE COMPLETION OF THE PROJECT, CLEARING AND GRADING LIMITS, AND ALL OTHER INFORMATION NEEDED TO DEPICT ACCURATELY THE SOLUTIONS TO POTENTIAL SOIL EROSION AND SEDIMENTATION PROBLEMS TO THE MS4. THE CONTROL PLAN SHALL INCLUDE THE SERIES OF BMP'S AND SHALL BE REVIEWED BY, AND SUBJECT TO THE APPROVAL OF, THE OFFICIAL PRIOR TO THE ISSUANCE OF THE PERMIT.
2. CONTROL MEASURES SHALL BE MAINTAINED AS AN EFFECTIVE BARRIER TO SEDIMENTATION AND EROSION IN ACCORDANCE WITH THIS PLAN.
3. THERE SHALL BE NO DISTINCTLY VISIBLE FLOATING SCUM, OIL OR OTHER MATTER CONTAINED IN THE STORM WATER DISCHARGE. THE STORM WATER DISCHARGE TO AN MS4 MUST NOT CAUSE AN UNNATURAL COLOR (EXCEPT DYES OR OTHER SUBSTANCES DISCHARGED TO AN MS4 FOR THE PURPOSE OF ENVIRONMENTAL STUDIES AND WHICH DO NOT HAVE HARMFUL EFFECT ON THE BODIES OF WATER WITHIN THE MS4) OR ODOR IN THE COMMUNITY WATERS. THE STORM WATER DISCHARGE TO THE MS4 MUST RESULT IN NO MATERIALS IN CONCENTRATIONS SUFFICIENT TO BE HAZARDOUS OR OTHERWISE DETRIMENTAL TO HUMANS, LIVESTOCK, WILDLIFE, PLANT LIFE OR FISH AND AQUATIC LIFE IN THE COMMUNITY WATERS.

**EROSION CONTROL SEQUENCE**

ALL CONSTRUCTION SHALL BE DONE IN A LOGICAL SEQUENCE SO TO MINIMIZE THE AREA OF DISTURBANCE.

1. OBTAIN REQUIRED PERMITS.
2. STAKE PROPERTY LINES AND CLEARING LIMITS.
3. SELECTIVELY CLEAR PATH AS REQUIRED TO INSTALL SILT FENCING AND PERIMETER EROSION CONTROL MEASURES.
4. INSTALL SILT FENCES ALONG SIDE SLOPE BOUNDARIES.
5. INSTALL STONE ENTRANCE DRIVE.
6. PROTECT STORM DRAIN INLETS DOWNSTREAM OF CONSTRUCTION WITH HAY BALES, WATTLES, SILT FENCE AND/OR OTHER PROTECTIVE MEASURES.
7. INSTALL OTHER REQUIRED EROSION CONTROL MEASURES DOWNSTREAM OF PROJECT AREA.
8. PERFORM CLEARING AND GRUBBING.
9. INSTALL SILT FENCE AROUND STOCKPILES.
10. BEGIN EARTHWORK AND CONSTRUCT PROJECT.
11. MODIFY AND MAINTAIN EROSION CONTROL AS REQUIRED DURING CONSTRUCTION.
12. INSPECT ALL EROSION CONTROL MEASURES AFTER EVERY 0.50" RAINFALL. COPIES OF ALL INSPECTION REPORTS SHALL BE SUBMITTED TO THE PROPER AUTHORITIES IN ACCORDANCE WITH APPLICABLE PERMITS.
13. TEMPORARILY OR PERMANENTLY STABILIZE STRIPPED AREAS AND STOCKPILES LEFT INACTIVE FOR 14 OR MORE CALENDAR DAYS.
14. REMOVE ANY SEDIMENT REACHING PUBLIC OR PRIVATE ROADWAYS BY STREET CLEANING BEFORE THE END OF EACH DAY. FLUSHING OF STREETS WILL NOT BE ALLOWED
15. INSTALL TEMPORARY SEDIMENTATION PONDS OR DIVERSION BERMS AS NEEDED TO CONTROL THE FLOW OF WATER AND COLLECTION OF SEDIMENT DURING THE PROJECT.
16. COMPLETE FINE GRADING AND INSTALL PERMANENT SEEDING AND PLANTING.
17. COMPLETE FINAL PAVING FOR ROADS.
18. REMOVE SILT FENCE UPON COMPLETION OF ALL CONSTRUCTION ACTIVITY.
19. RESEED AND STABILIZE ANY BARE SPOTS OR WASHOUTS.
20. TERMINATE ALL PERMITS.

**GENERAL NOTES**

1. CONTRACTOR SHALL COORDINATE BETWEEN ARCHITECTURAL, MECHANICAL, STRUCTURAL, ELECTRICAL, AND OTHER DRAWINGS. ANY DISCREPANCIES BETWEEN DRAWINGS OF DIFFERENT DISCIPLINES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
2. UNDERGROUND UTILITY LOCATIONS SHOWN ARE FROM UTILITY COMPANY RECORDS OR FROM LINE LOCATOR MARKS AND ARE SHOWN IN APPROXIMATE MANNER ONLY. CONTRACTOR SHALL FIELD VERIFY THE EXISTENCE, LOCATION, SIZE, AND TYPE OF ANY AND ALL UTILITY LINES PRIOR TO BEGINNING ANY CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES AS A RESULT OF HIS CONSTRUCTION OPERATIONS.
3. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION METHODS, SEQUENCES, PROCEDURES, AND JOB SITE SAFETY. THE CONTRACTOR SHALL TAKE ALL MEANS NECESSARY TO MAINTAIN AND PROTECT THE INTEGRITY OF ALL CONSTRUCTION (NEW AND EXISTING) AT ALL STAGES. ENGINEER ASSUMES NO LIABILITY FOR SAFETY ON THE JOB SITE.
4. ALL UTILITIES WITHIN ROADWAY SHALL BE BACKFILLED COMPLETELY WITH STONE UNLESS OTHERWISE DIRECTED BY THE GEOTECHNICAL ENGINEER OR THE GOVERNING AUTHORITY.
5. ALL AREAS WHICH WILL LIE UNDER NEW STRUCTURES, PAVING, CONCRETE, OR WALKWAYS SHALL BE COMPACTED TO 100% STANDARD PROCTOR DENSITY.
6. ALL PERMITS, OTHER THAN THOSE LISTED IN THE SPECIFICATIONS, FOR THE DEVELOPMENT OF THESE PLANS ARE THE CONTRACTORS RESPONSIBILITY AND SHOULD BE OBTAINED PRIOR TO DISTURBING ANY AREAS OR BEGINNING ANY CONSTRUCTION.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND LEGAL DISPOSAL OF ALL MATERIALS AND DEBRIS NOT ACCEPTABLE TO THE OWNER.
8. CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER CONCURRENT WORK BEING PERFORMED IN THE AREA.

**GRADING NOTES**

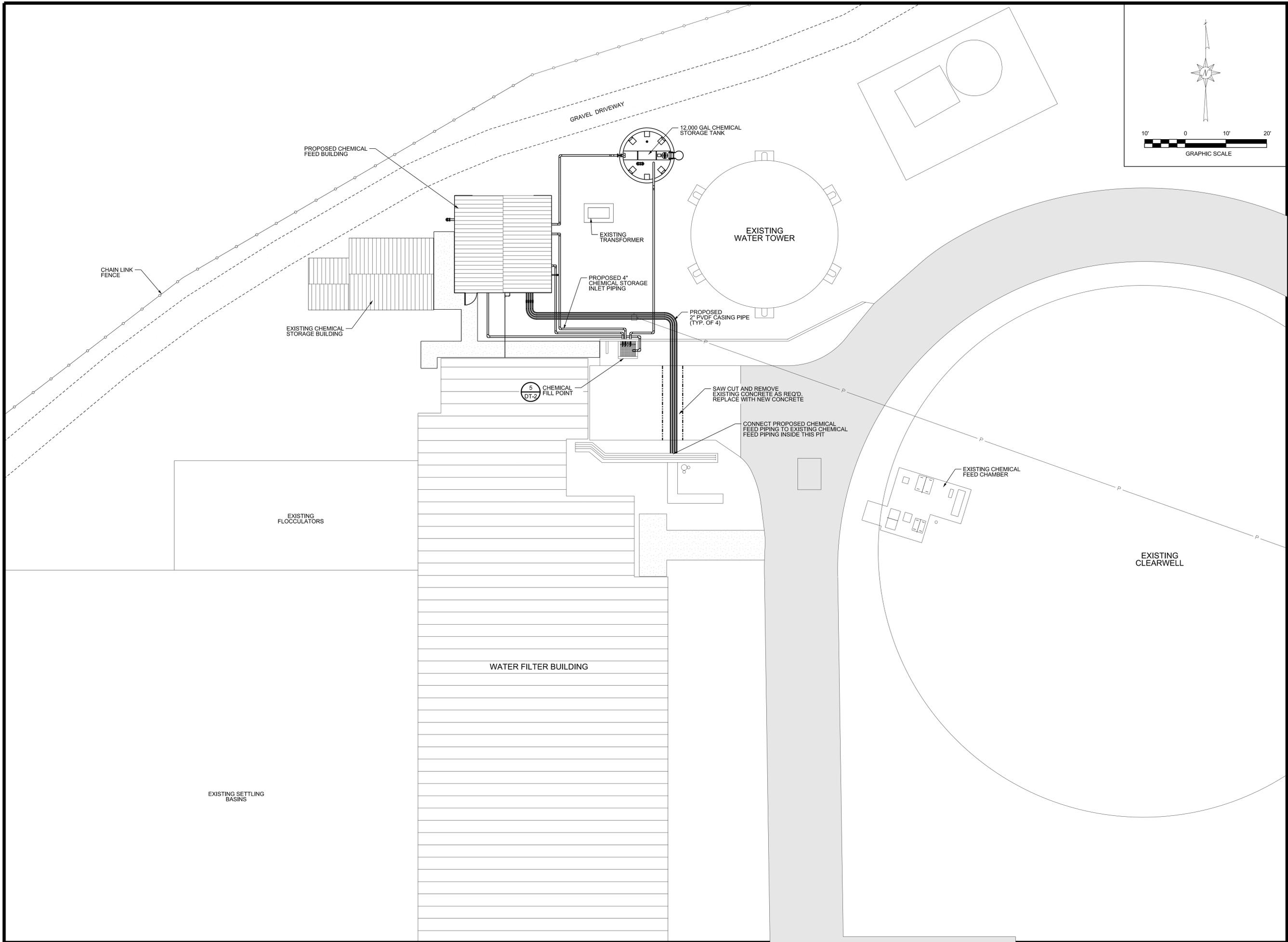
1. CITY ENGINEER TO BE PROVIDED AT LEAST 24 HOURS NOTICE PRIOR TO THE STARTING OF EACH PHASE OF WORK.
2. ALL PERMITS/APPROVALS BY EPD, GADOT, FEMA, CORPS OF ENGINEERS WILL BE REQUIRED PRIOR TO DISTURBING AREAS UNDER JURISDICTIONS OF SUCH PERMITS.
3. THERE SHALL BE NO LAND DISTURBING ACTIVITY UNTIL PROOF OF EPD NOR COVERAGE IS PROVIDED TO THE CITY AND ADEQUATE EROSION CONTROL MEASURES ARE IN PLACE.
4. ELEVATIONS SHOWN ARE FINISHED GRADE. THE CALCULATION OF THE APPROPRIATE SUBGRADE ELEVATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SUBGRADE ELEVATIONS SHALL VARY IN ACCORDANCE WITH THE SURFACE TREATMENT CALLED FOR ON THESE PLANS (I. E. ASPHALT PAVEMENT, CONCRETE PAVEMENT, SIDEWALK, TOPSOIL, ETC.) AND THE RELATED SECTIONS OR DETAILS.
5. CONTRACTOR SHALL TO ENSURE POSITIVE DRAINAGE.
6. ALL CUT AND FILL SIDE SLOPES ARE 2:1 UNLESS NOTED OTHERWISE.
7. CLEARING LIMITS TO BE 5' OUTSIDE OF TOE AND TOP OF SLOPE.

**EROSION CONTROL NOTES**

1. ALL EROSION CONTROL PERMITS FOR THE DEVELOPMENT OF THESE PLANS SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO ANY GROUND DISTURBANCE.
2. EROSION CONTROL MEASURES ARE TO BE INSTALLED PRIOR TO BEGINNING ANY OTHER CONSTRUCTION ON THE JOB SITE.
3. CONTRACTOR IS RESPONSIBLE FOR INSTALLING, MAINTAINING, AND REMOVING ALL EROSION AND SEDIMENT CONTROLS IN ACCORDANCE WITH BEST MANAGEMENT PRACTICES AS SHOWN ON THESE DRAWINGS OR REQUIRED BY LOCAL, STATE, AND/OR FEDERAL REGULATORY AUTHORITIES.
4. THE EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THESE DRAWINGS ARE CONSIDERED THE MINIMUM ACCEPTABLE AND SHALL BE MODIFIED IN THE FIELD AS NECESSARY TO COMPLY WITH LOCAL, STATE, AND/OR FEDERAL REQUIREMENTS.
5. EROSION CONTROL MEASURES MUST BE MAINTAINED UNTIL PERMANENT GROUND COVER IS ESTABLISHED AND THE NPDES PERMIT IS TERMINATED.
6. ALL DISTURBED AREAS NOT SHOWN TO BE LANDSCAPED SHALL BE SEEDED & MULCHED AS PER LOCAL STANDARDS AND SPECIFICATIONS.
7. CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS RELATING TO THE ONSITE STORAGE OF FUEL, OIL, AND GREASE. AN SPCC PLAN MUST BE MAINTANED AND IMPLEMENTED ON SITE.
8. STREAMS SHALL NOT BE USED AS TRANSPORTATION ROUTES FOR HEAVY EQUIPMENT. CROSSINGS SHALL BE LIMITED TO ONE POINT AND EROSION CONTROL MEASURES MUST BE UTILIZED WHERE STREAM BANKS AND DRAINAGE DITCHES ARE DISTURBED.

**PROJECT SPECIFIC NOTES**

1. CONTRACTOR IS RESPONSIBLE FOR BUILDING SITES FREE OF DRAINAGE PROBLEMS DUE TO ANY DEVIATION FROM THE DESIGN PLANS.
2. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO THE EXISTING PLANT INFRASTRUCTURE, INCLUDING ROADWAYS, CURBING, BUILDINGS, STRUCTURES, ETC. THAT MAY OCCUR THROUGHOUT THE DURATION OF THE PROJECT.
3. CONTRACTOR SHALL COORDINATE ALL DISRUPTIONS TO THE EXISTING PLANT CHEMICAL FEED SYSTEM WITH PLANT PERSONNEL A MINIMUM OF 36 HOURS IN ADVANCE.
4. A SIGNED AND SEALED COPY OF THE PLANS SHALL BE MAINTAINED ON SITE AND MADE READILY AVAILABLE FOR THE DURATION OF THE CONSTRUCTION.
5. CONTRACTOR SHALL KEEP A MARKED UP SET OF PLANS SHOWING ALL CHANGES, DIMENSIONS, ETC. TO PROVIDE TO THE ENGINEER AFTER THE JOB IS COMPLETE AND CAPABLE OF BEING UTILIZED AS AS-BUILT DRAWINGS FOR FUTURE LOCATES.




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CONSTRUCTION PLANS FOR:

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9/19/2017

THIS SHEET CONTAINS:

OVERALL SITE  
PLAN

SCALE: 1" = 10'

SHEET 4 OF 21

**SI-1**

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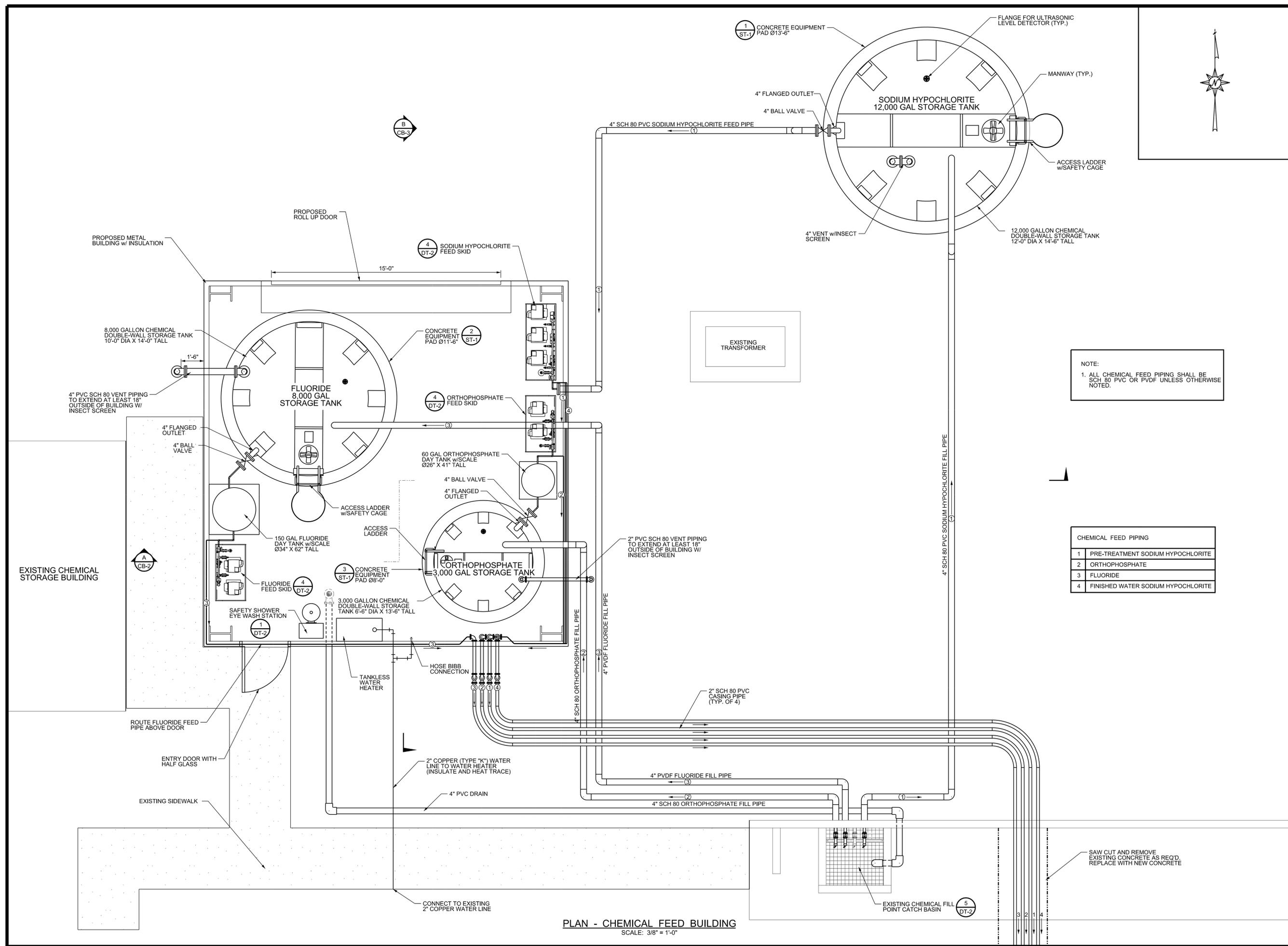
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INSITE JOB No. 17021.00  
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9/19/2017  
THIS SHEET CONTAINS:  
**CHEMICAL  
FEED BUILDING  
MECHANICAL PLAN**

SCALE: 3/8" = 1'-0"  
SHEET 5 OF 21

**CB-1**



NOTE:  
1. ALL CHEMICAL FEED PIPING SHALL BE  
SCH 80 PVC OR PVDF UNLESS OTHERWISE  
NOTED.

CHEMICAL FEED PIPING	
1	PRE-TREATMENT SODIUM HYPOCHLORITE
2	ORTHOPOSPHATE
3	FLUORIDE
4	FINISHED WATER SODIUM HYPOCHLORITE

**PLAN - CHEMICAL FEED BUILDING**  
SCALE: 3/8" = 1'-0"

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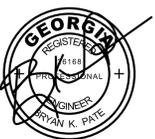
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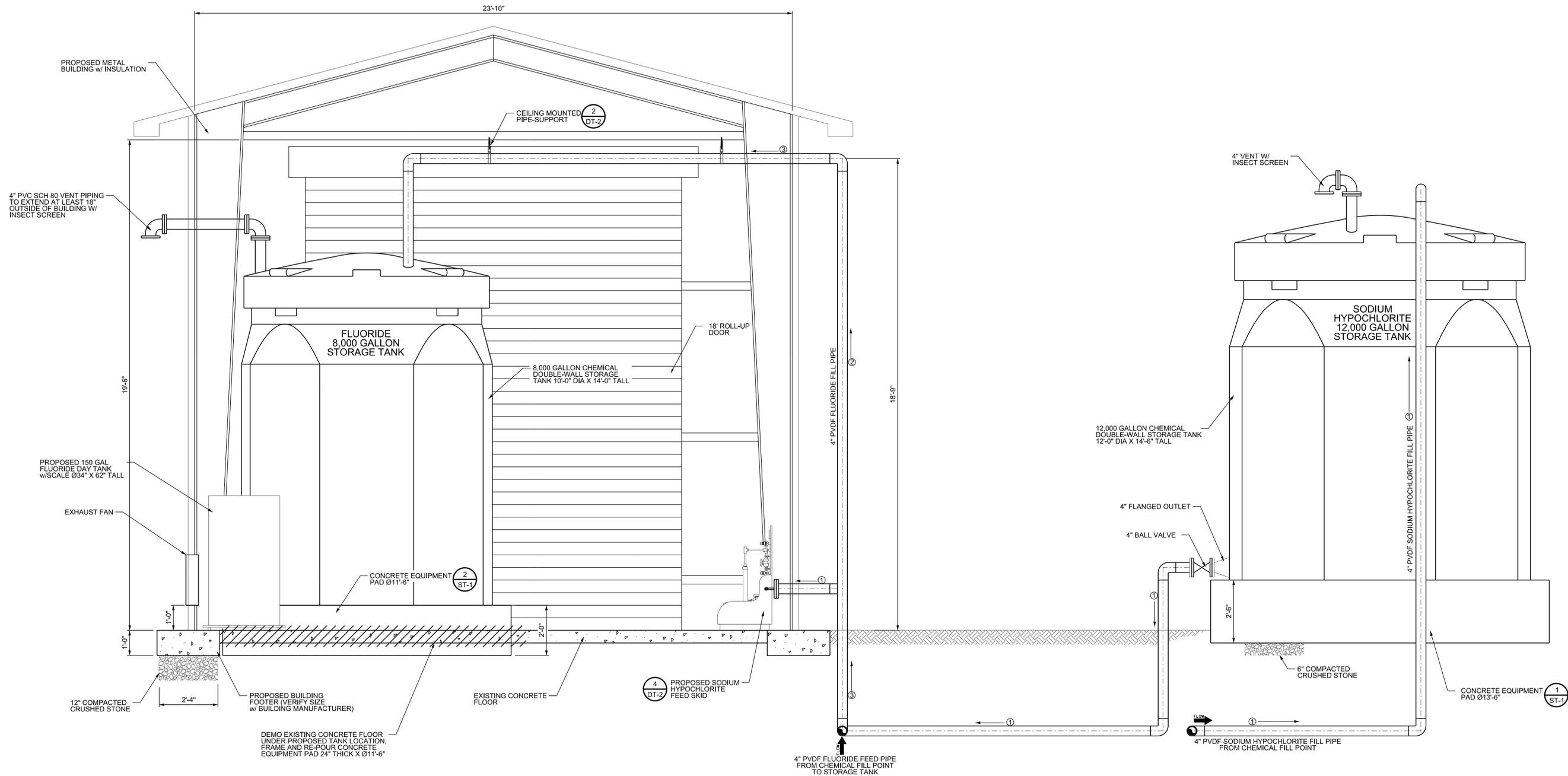
9/19/2017

THIS SHEET CONTAINS:

CHEMICAL  
FEED BUILDING  
MECHANICAL  
SECTION "A"

SCALE: 1/2" = 1'-0"  
SHEET 6 OF 21

**CB-2**



**SECTION "A" - CHEMICAL FEED BUILDING**  
SCALE: 1/2" = 1'-0"



CHEMICAL FEED PIPING	
1	PRE-TREATMENT SODIUM HYPOCHLORITE
2	ORTHOPHOSPHATE
3	FLUORIDE
4	FINISHED WATER SODIUM HYPOCHLORITE

NOTE:  
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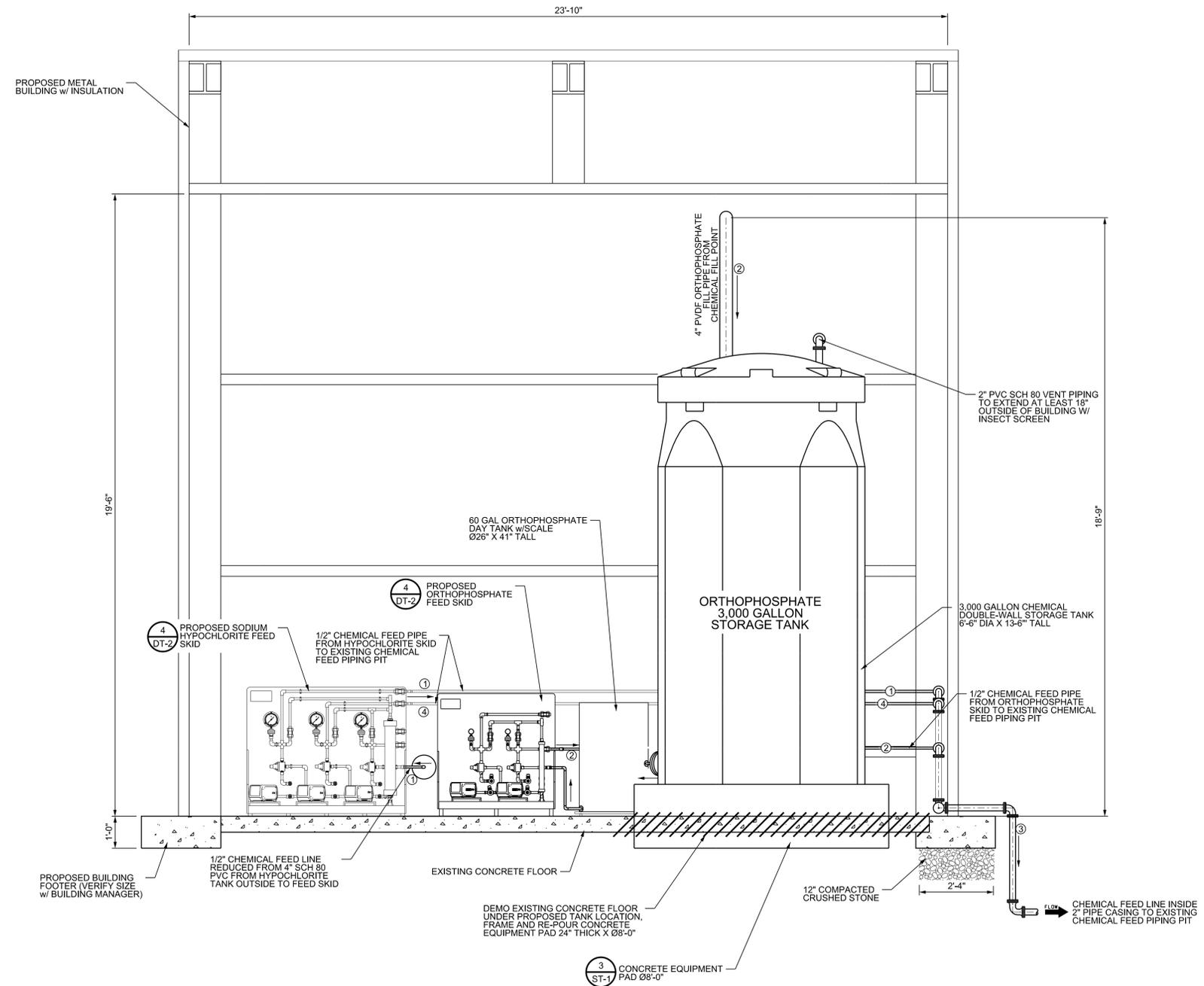
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THIS SHEET CONTAINS:

CHEMICAL  
FEED BUILDING  
MECHANICAL  
SECTION "B"

SCALE: 1/2" = 1'-0"  
SHEET 7 OF 21

**CB-3**



**SECTION "B" - CHEMICAL FEED BUILDING**

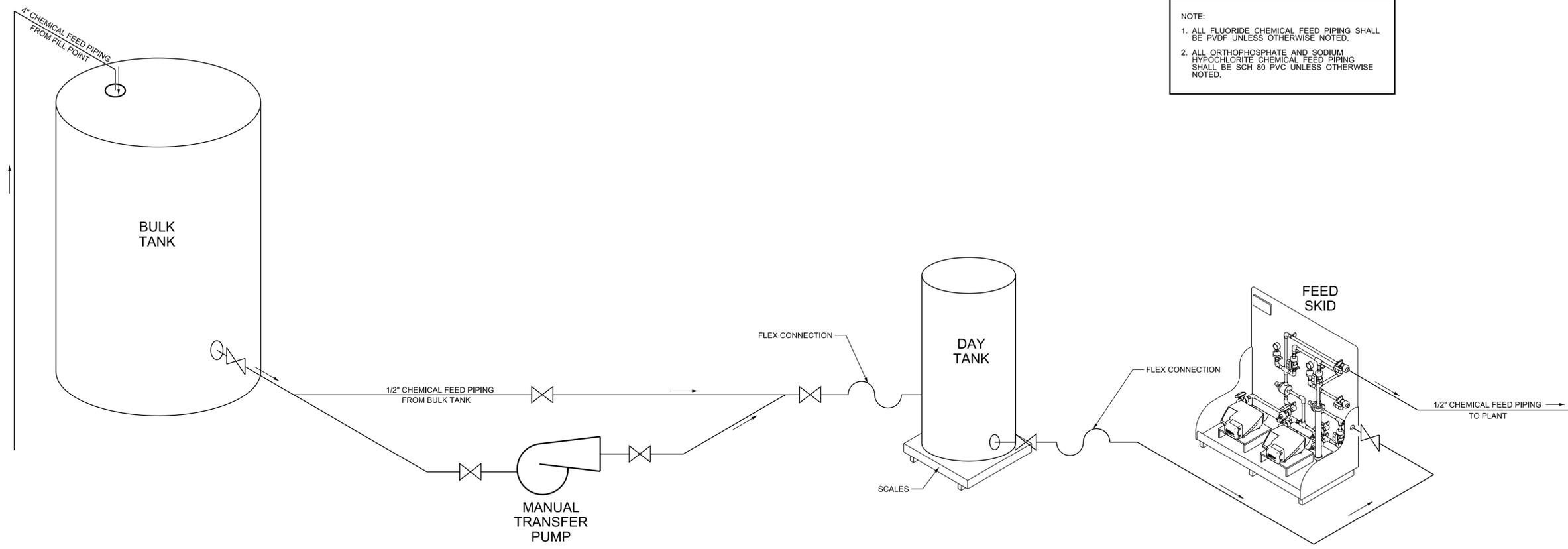
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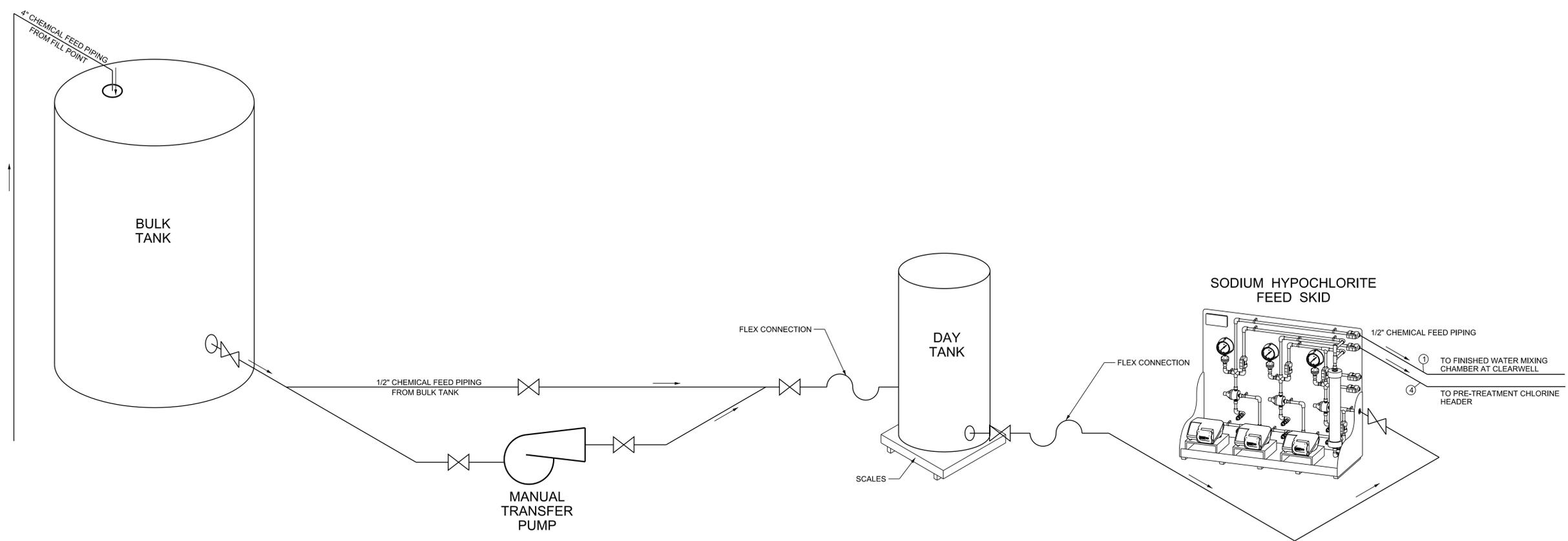
CHEMICAL FEED PIPING	
1	PRE-TREATMENT SODIUM HYPOCHLORITE
2	ORTHOPHOSPHATE
3	FLUORIDE
4	FINISHED WATER SODIUM HYPOCHLORITE

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NOTE:  
 1. ALL FLUORIDE CHEMICAL FEED PIPING SHALL BE PVDF UNLESS OTHERWISE NOTED.  
 2. ALL ORTHOPHOSPHATE AND SODIUM HYPOCHLORITE CHEMICAL FEED PIPING SHALL BE SCH 80 PVC UNLESS OTHERWISE NOTED.



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9/19/2017  
 THIS SHEET CONTAINS:  
 CHEMICAL FEED SCHEMATIC

SCALE: NONE  
 SHEET 8 OF 21

**SCH-1**



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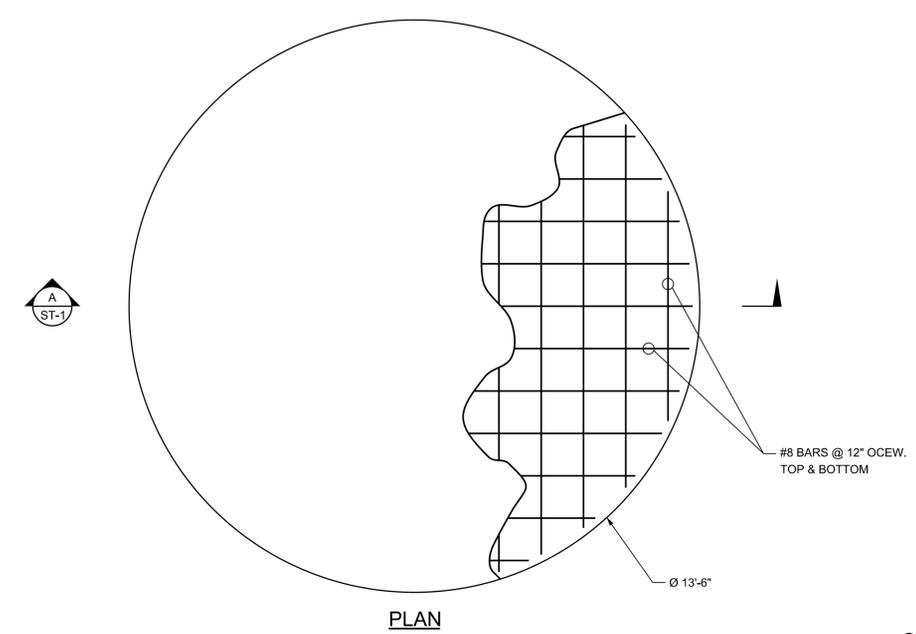


THIS SHEET CONTAINS:  
**CHEMICAL  
FEED BUILDING  
STRUCTURAL  
SECTIONS**

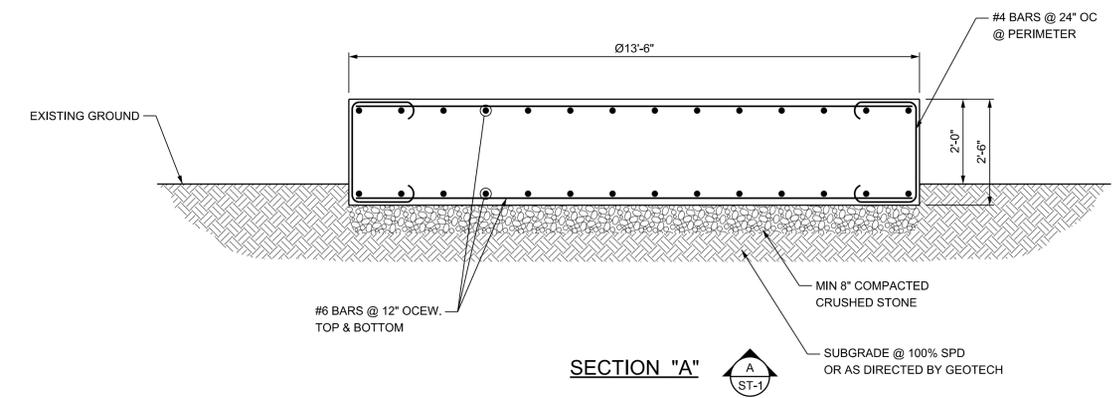
SCALE: 1/2" = 1'-0"  
SHEET 9 OF 21

**ST-1**

1



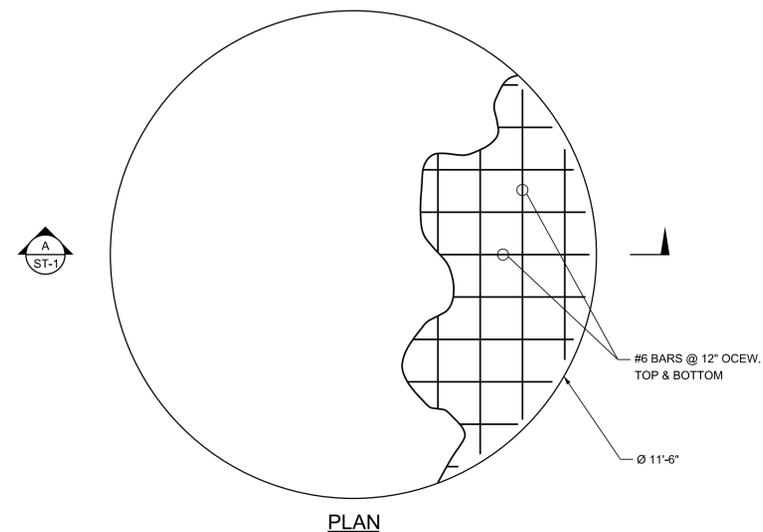
PLAN



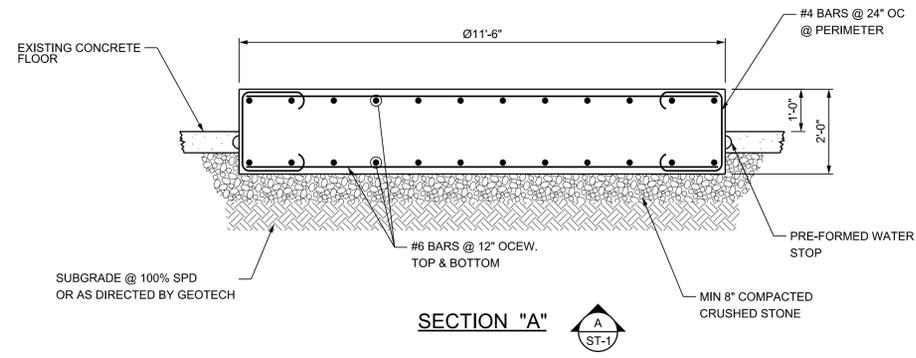
SECTION "A"

**SODIUM HYPOCHLORITE TANK PAD STRUCTURAL DETAILS**  
SCALE: 1/2" = 1'-0"

2



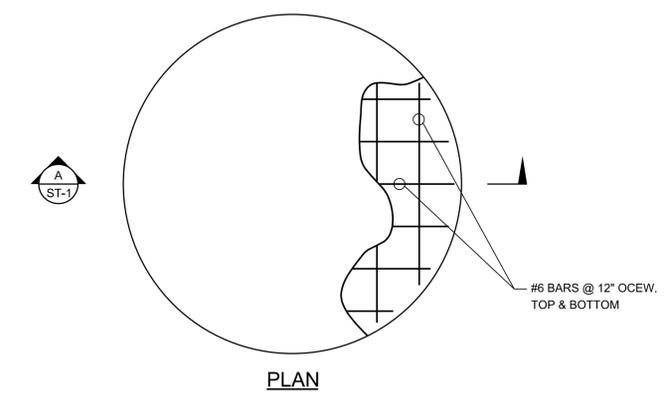
PLAN



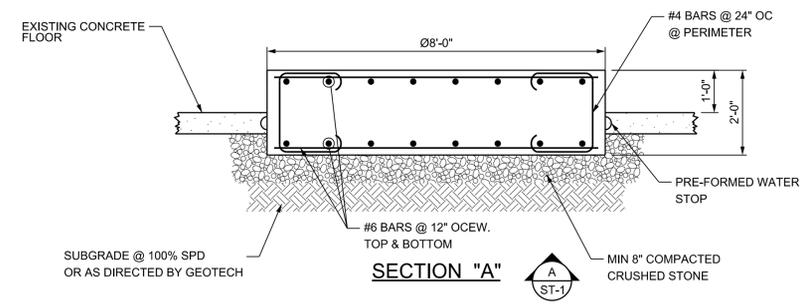
SECTION "A"

**FLUORIDE TANK PAD STRUCTURAL DETAILS**  
SCALE: 1/2" = 1'-0"

3



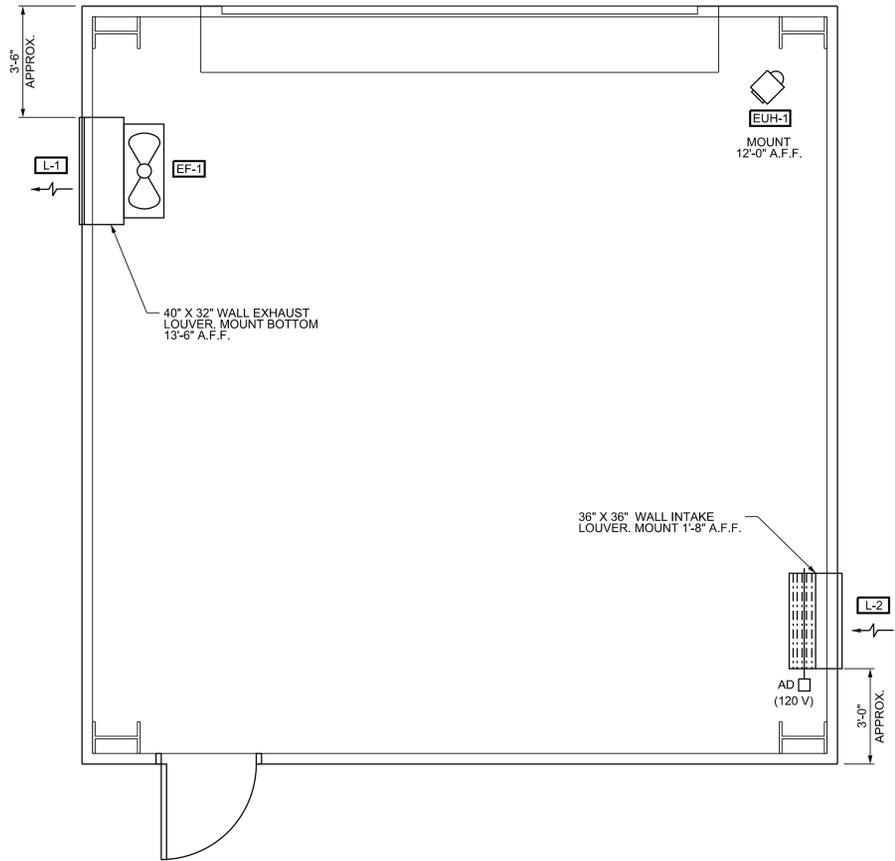
PLAN



SECTION "A"

**ORTHOPOSPHATE TANK PAD STRUCTURAL DETAILS**  
SCALE: 1/2" = 1'-0"

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ELECTRIC HEATER						
MARK	SERVES	TYPE	CAPACITY (KW)	ELECTRICAL V/Ø	ACCESSORIES	BASIS OF DESIGN (MARKET)
EUH-1	CHEMICAL BUILDING	(A)	10	480/3	①②③	UH SERIES

HEATER TYPES:

(A) HORIZONTAL UNIT HEATER

ACCESSORIES:

① INDUSTRIAL DUTY WALL MOUNTED THERMOSTAT  
 ② FACTORY PREWIRED INTEGRAL STARTER w/ LOCAL DISCONNECT SWITCH  
 ③ 24 V TRANSFORMER



**INSITE ENGINEERING**

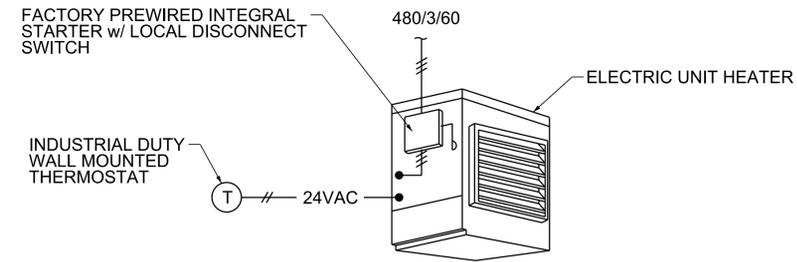
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CONSTRUCTION PLANS FOR:

**HAMLER WTP IMPROVEMENTS  
 CHEMICAL FEED SYSTEMS**

CITY OF ROME, GEORGIA  
 WATER AND SEWER DIVISION



**CONTROL SEQUENCE**

THE UNIT HEATER SHALL START ON A DROP IN TEMPERATURE BELOW 55°F AND STAGE HEAT TO MAINTAIN SETPOINT.

**UNIT HEATER CONTROLS**  
 NO SCALE

FAN SCHEDULE											
MARK	SERVES	LOCATION	TYPE	CFM	E.S.P. IN. W.G.	SONES	MOTOR		ACCESSORIES	INTERLOCK	BASIS OF DESIGN (GREENHECK)
							HP	V/Ø			
EF-1	CHEMICAL BUILDING	SIWALL	(A)	8000	0.125	15	1/2	115/1	①②③④	WALL T'STAT	SBE-1L-30

FAN TYPES:

(A) SIDEWALL PROPELLER EXHAUST FAN, BELT DRIVE

ACCESSORIES:

① BACKDRAFT DAMPER  
 ② FACTORY PREWIRED INTEGRAL STARTER w/ LOCAL DISCONNECT SWITCH  
 ③ WALL HOUSING WITH GUARD  
 ④ INDUSTRIAL DUTY WALL MOUNTED THERMOSTAT

LOUVER SCHEDULE							
MARK	TYPE	WIDTH	HEIGHT	DEPTH	ACCESSORIES	FINISH	BASIS OF DESIGN (GREENHECK)
L-1	(A)	40"	32"	6"	①②③	(A)	GREENHECK ESD-635
L-2	(A)	36"	36"	6"	①②③	(A)	GREENHECK ESD-635

TYPES:

(A) FIXED BLADE (ESD-635)

FINISH:

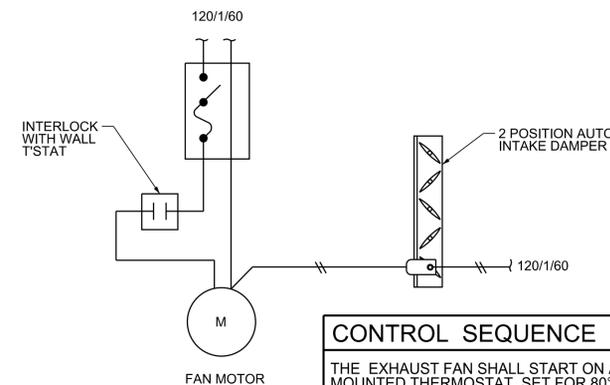
(A) BAKED ENAMEL

ACCESSORIES:

① FORMED ALUMINUM EXTENDED SILL  
 ② CHANNEL FRAME  
 ③ BIRDSCREEN, ALUMINUM

NOTES:

1. ALUMINUM ALL WELDED CONSTRUCTION.  
 2. COLOR SELECTED BY ARCHITECT FROM FACTORY STANDARD COLORS.  
 3. OTHER ACCEPTABLE MANUFACTURERS: RUSKIN, AIROLITE.



**CONTROL SEQUENCE**

THE EXHAUST FAN SHALL START ON A SIGNAL FROM THE WALL MOUNTED THERMOSTAT. SET FOR 80° F. THE ASSOCIATED AUTO DAMPER SHALL BE INTERLOCKED TO OPEN WHEN THE FAN RUNS. THE DAMPER SHALL CLOSE WHEN THE FAN IS OFF.

**EXHAUST FAN CONTROLS**  
 NO SCALE



**PROJECT INFO:**

INSITE JOB No. 17021.00  
 PLOTTED: 9/19/2017  
 ADDENDUM NO. 1

9/19/2017

THIS SHEET CONTAINS:

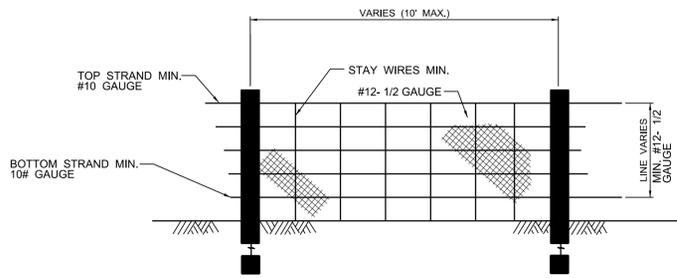
CHEMICAL FEED BUILDING FLOOR PLAN - MECHANICAL, SCHEDULES, LEGENDS, AND DETAILS

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

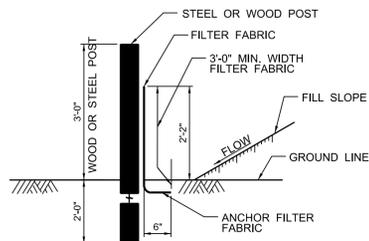
SHEET 10 OF 21

**CB-1**

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ELEVATION

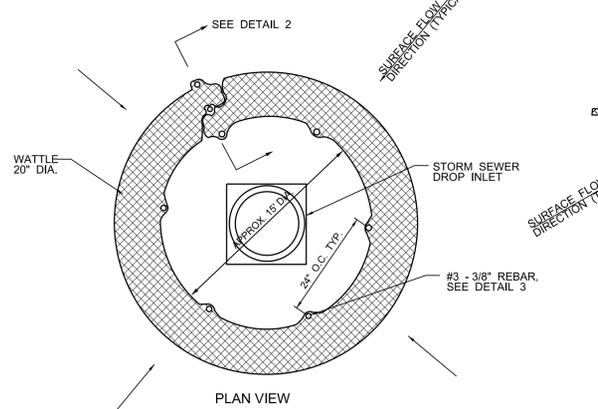


SECTION

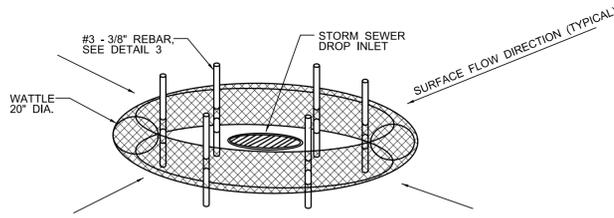
- GENERAL NOTES:
- SILT FENCE SHALL BE INSTALLED WHERE SHOWN ON EROSION CONTROL PLAN.
  - FILTER FABRIC SHALL BE A MINIMUM OF 36" IN WIDTH AND SHALL BE FASTENED SECURELY TO THE POSTS.
  - STEEL "T" POSTS SHALL BE 5'-0" IN HEIGHT AND BE OF SELF FASTENER ANGLE STEEL TYPE.
  - WOODEN POSTS SHALL BE A MINIMUM OF 6'-0" IN HEIGHT AND 4" OR MORE IN DIAMETER.
  - FILTER FABRIC SHALL BE FASTENED TO WOODEN POST WITH NOT LESS THAN #9 WIRE STAPLES @ 1" LONG.
  - CONTRACTOR SHALL PERIODICALLY REMOVE ACCUMULATED SEDIMENT, WHEN SEDIMENT DEPTH REACHES 12".
  - THE FILTER FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS:
    - EOS IS NOT LARGER THAN U.S. STANDARD SIEVE NO.70
    - GRAB STRENGTH 80-120 LB
    - CONFORM TO ASTM D-1682 OR ASTM D-177

DETAIL - SILT FENCE

SCALE: NONE



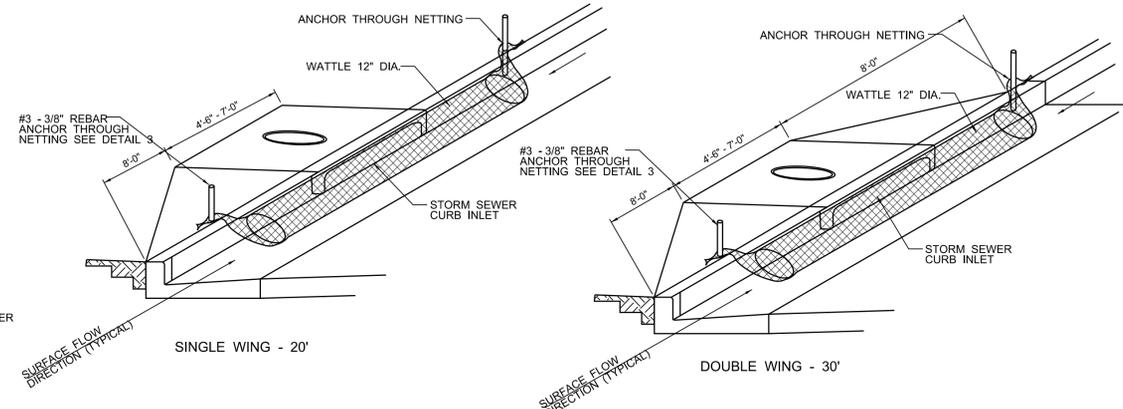
PLAN VIEW



SCHEMATIC

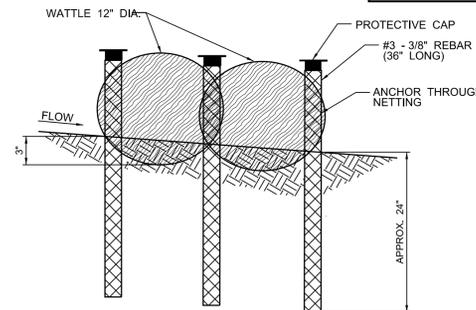
DROP INLET PROTECTION

1



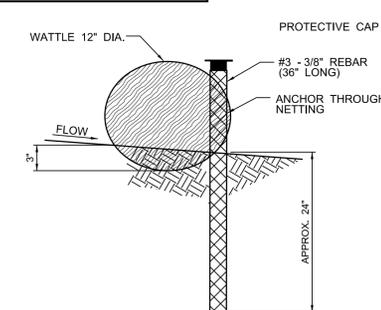
CURB INLET PROTECTION

NOTES: COST OF REBARS AND PROTECTIVE CAP SHALL BE INCLUDED IN COST OF WATTLES.



STAKE DETAIL

SCALE: NONE

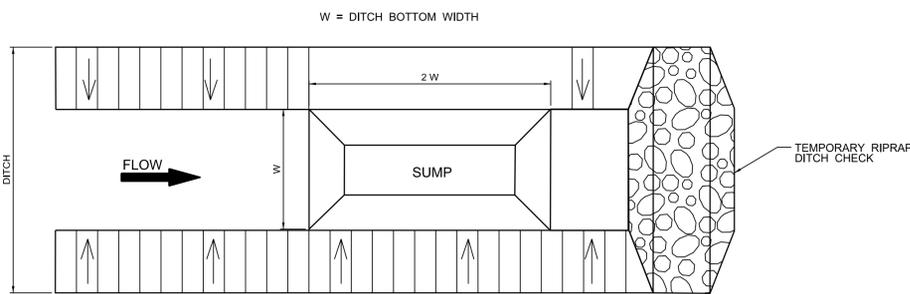


STAKE DETAIL

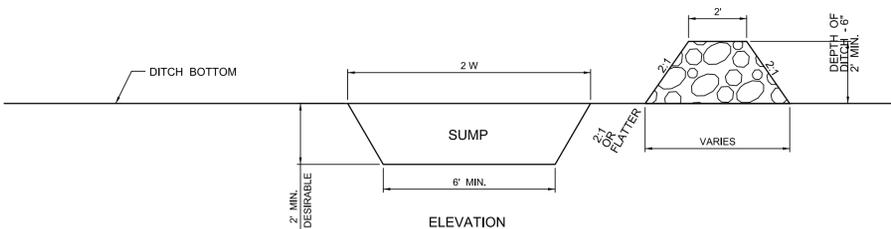
SCALE: NONE

DETAIL - DROP INLET PROTECTION AND CURB INLET PROTECTION

- GENERAL NOTES:
- TOTAL VOLUME OF SUMP EXCAVATIONS SHOULD BE APPROX. 67 CU. YDS. PER ACRE OF DISTURBED SOIL RUNOFF.
  - WHERE 67 CU. YDS. OR MORE IS REQUIRED AND SPACE IS LIMITED, MORE THAN ONE SUMP MAY BE REQUIRED.
  - WHERE SEDIMENT RETENTION IS NEEDED, BUT ROCK OUTCROPPING PREVENTS NORMAL EXCAVATION, AN ADEQUATE TEMPORARY DITCH CHECK ONLY SHALL BE INSTALLED.
  - ACCUMULATED SEDIMENT SHALL BE REMOVED AS NEEDED TO MAINTAIN SIZE OF DRAINAGE SUMP SHOWN. COST OF SEDIMENT REMOVAL SHALL BE A SUBSIDIARY OBLIGATION OF DRAINAGE SUMP EXCAVATION.



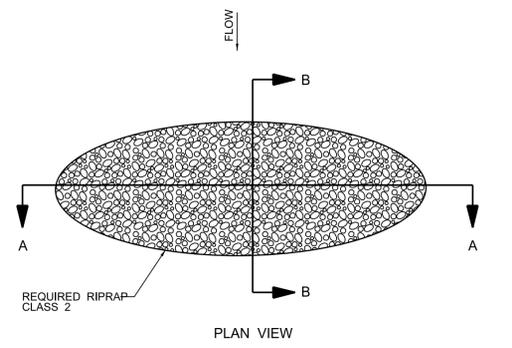
PLAN



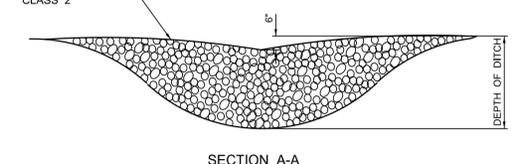
ELEVATION

DETAIL - DRAINAGE SUMP EXCAVATION

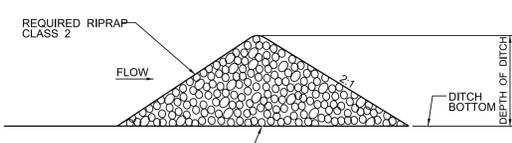
SCALE: NONE



PLAN VIEW



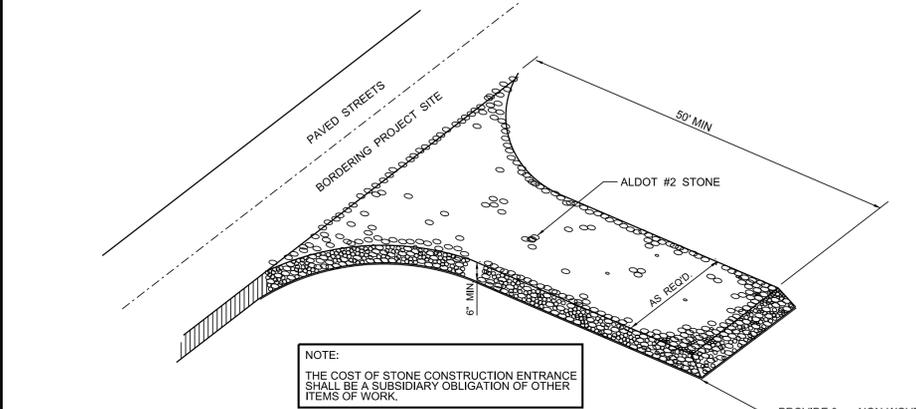
SECTION A-A



SECTION B-B

DETAIL - RIPRAP DITCH CHECK

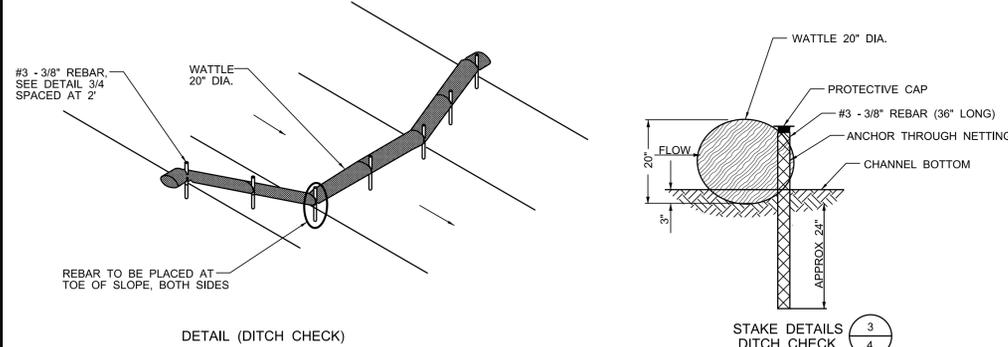
SCALE: NONE



NOTE: THE COST OF STONE CONSTRUCTION ENTRANCE SHALL BE A SUBSIDIARY OBLIGATION OF OTHER ITEMS OF WORK.

DETAIL - CONSTRUCTION ENTRANCE

SCALE: NONE



DETAIL (DITCH CHECK)

STAKE DETAILS

RECOMMENDED PLACEMENT INTERVAL BETWEEN SEDIMENT FILTER (DITCH CHECK) 100' UNLESS SPECIFIED

DETAIL - WATTLE DITCH CHECK

SCALE: NONE

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WATER AND SEWER DIVISION



PROJECT INFO:  
INSITE JOB No. 17021.00  
PLOTTED: 9/19/2017  
ADDENDUM NO. 1

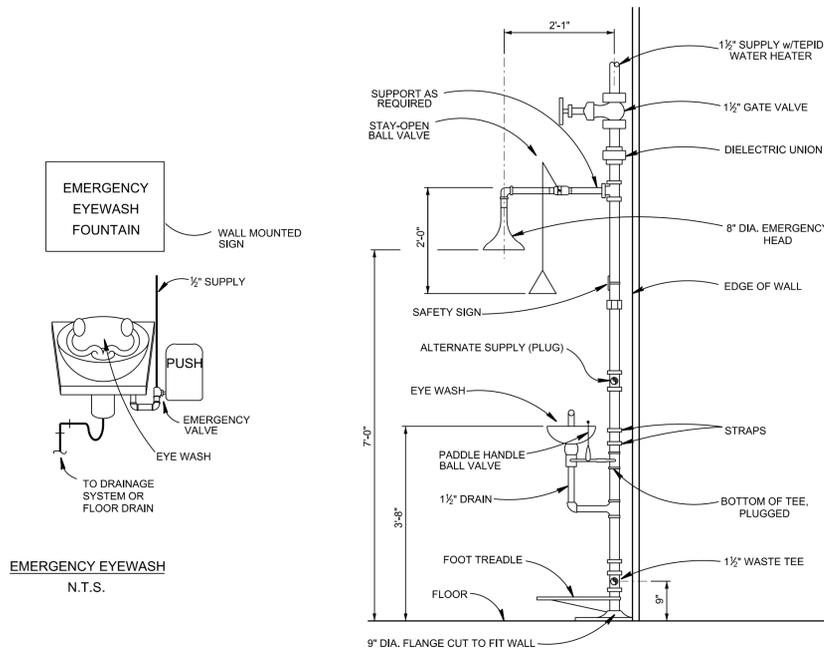


9/19/2017  
THIS SHEET CONTAINS:

EROSION CONTROL DETAILS

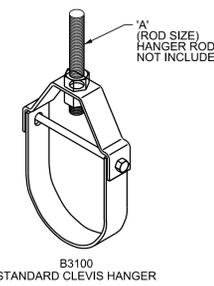
SCALE: AS NOTED  
SHEET 11 OF 21

DT-1



**DETAILS - SAFETY SHOWER EYE WASH**  
SCALE: NONE

1



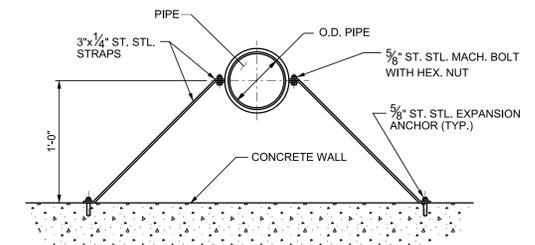
SEISMIC APPROVAL:  
LONGITUDINAL BRACE ATTACHMENTS  
UNDERWRITER'S LABORATORIES LISTED FOR 3/4" (20) THRU 12" (300).  
COMPLIES WITH FEDERAL SPECIFICATION WW-H-171E TYPE 1 AND  
MANUFACTURER'S STANDARDIZATION SOCIETY SP-69 TYPE 1.

NOTE: WHEN ATTACHING SEISMIC BRACING TO CLEVIS HANGER, INSTALL A B3100 PIPE SLEEVE OVER THE CROSS BOLT (SEE SEISMIC RESTRAINTS BROCHURE). ORDER B3100PS (PIPE SLEEVE) SEPARATELY.

PART NO.	NOMINAL PIPE SIZE		ROD SIZE 'A'	DESIGN LOAD	
	In.	(mm)		Lbs.	(KN)
B3100-1/2	1/2"	(15)	3/8"-16	610	(2.71)
B3100-3/4	3/4"	(20)	3/8"-16	610	(2.71)
B3100-1	1"	(25)	3/8"-16	610	(2.71)
B3100-1 1/4	1 1/4"	(32)	3/8"-16	610	(2.71)
B3100-1 1/2	1 1/2"	(40)	3/8"-16	610	(2.71)
B3100-2	2"	(50)	3/8"-16	610	(2.71)
B3100-2 1/2	2 1/2"	(65)	1/2"-13	1130	(5.02)
B3100-3	3"	(80)	1/2"-13	1130	(5.02)
B3100-3 1/2	3 1/2"	(90)	1/2"-13	1130	(5.02)
B3100-4	4"	(100)	5/8"-11	1430	(6.36)
B3100-5	5"	(125)	5/8"-11	1430	(6.36)
B3100-6	6"	(150)	3/4"-10	1940	(8.63)
B3100-8	8"	(200)	7/8"-9	2000	(8.89)
B3100-10	10"	(250)	7/8"-9	3600	(16.01)
B3100-12	12"	(300)	7/8"-9	3800	(16.01)

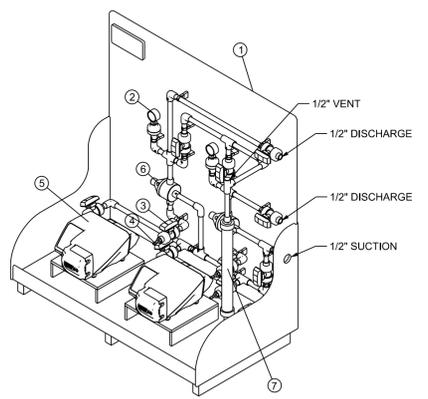
**DETAIL - CEILING MOUNTED PIPE SUPPORT**  
SCALE: NONE

2



**DETAIL - WALL MOUNTED PIPE SUPPORT**  
SCALE: NONE

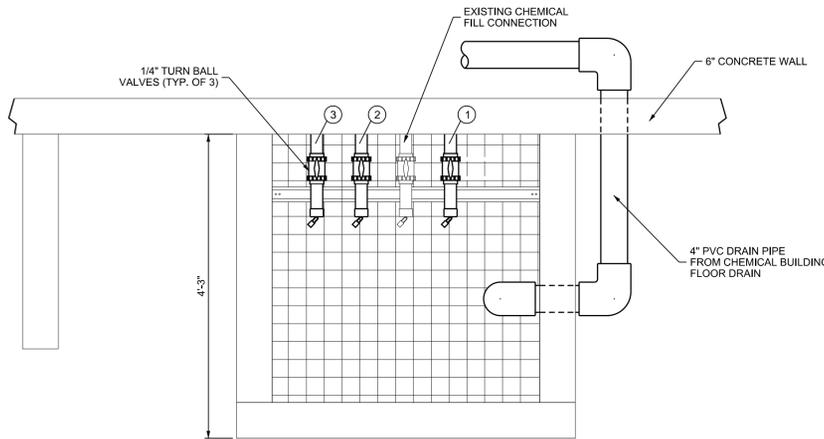
3



**FLUORIDE AND ORTHOPHOSPHATE CHEMICAL FEED SKIDS**

**CHEMICAL FEED SKID MATERIALS LIST**

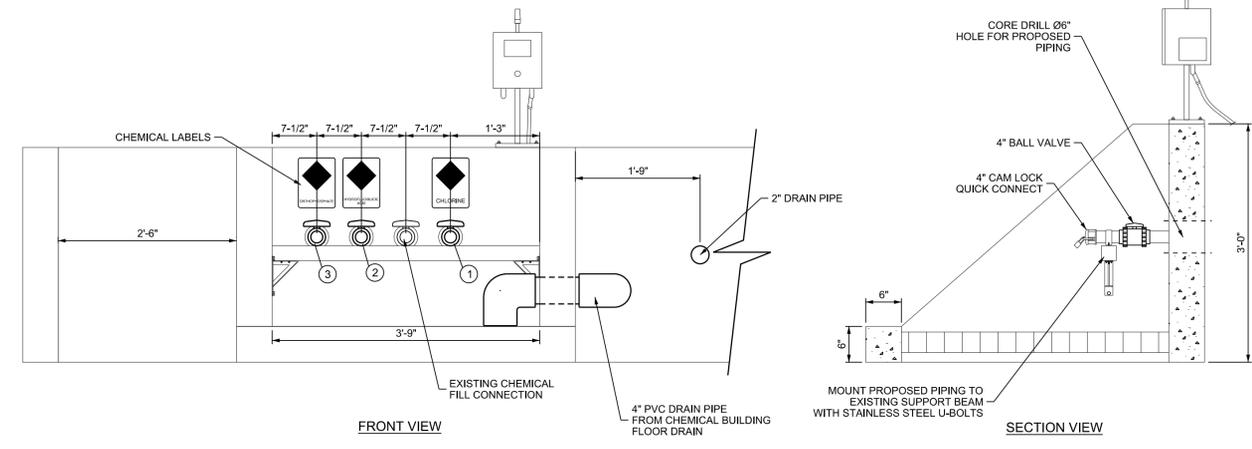
- STANDARD DUPLEX SKID - POLYPROPYLENE
- GAUGE GUARD W/ 2.5 GAUGE
- TRUE UNION BALL VALVE 1/2" - NON VENTED
- 1/2" HOSE BARB
- WATSON MARLOW PUMP - 530
- PRESSURE RELIEF VALVE
- CALIBRATION COLUMN - 2000ML



**TOP VIEW**

**CHEMICAL FEED PIPING**

1	SODIUM HYPOCHLORITE
2	ORTHOPHOSPHATE
3	FLUORIDE

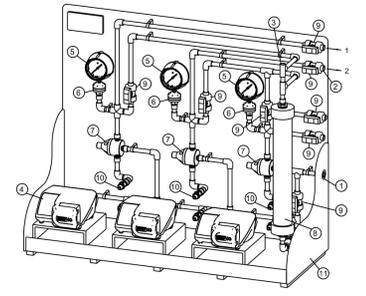


**DETAIL - CHEMICAL CATCH BASIN**  
SCALE: NONE

5

**SODIUM HYPOCHLORITE CHEMICAL FEED SKID MATERIALS LIST**

- SUCTION - 1/2"
- DISCHARGE - 1/2"
- VENT - 1/2"
- CHEMICAL FEED PUMP
- PRESSURE GAUGE
- GAUGE GUARD
- PRESSURE RELIEF VALVE - 1/2"
- CALIBRATION COLUMN - 5000ML
- TRU-UNION BALL VALVE - 1/2"
- QUICK DISCONNECT - 1/2"
- POLYPROPYLENE SKID



**SODIUM HYPOCHLORITE CHEMICAL FEED SKID**

**SODIUM HYPOCHLORITE CHEMICAL FEED PIPING**

1	1" CHEMICAL FEED TO FINISHED WATER MIXING CHAMBER AT CLEARWELL
2	1" CHEMICAL FEED TO PRE-TREATMENT CHLORINE HEADER

**DETAIL - CHEMICAL FEED SKIDS**  
SCALE: NONE

4



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**PROJECT INFO:**  
INSITE JOB No. 17021.00  
PLOTTED: 9/19/2017  
ADDENDUM NO. 1



9/19/2017  
THIS SHEET CONTAINS:  
MISCELLANEOUS  
DETAILS

SCALE: AS NOTED  
SHEET 12 OF 21

**DT-2**

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GENERAL ELECTRICAL LEGEND

NORMAL EMERGENCY

FIXTURE OUTLET - LINEAR - SURFACE OR PENDANT MOUNTED.

FIXTURE OUTLET - WALL MOUNTED.

FIXTURE OUTLET - EXIT SIGN - CEILING OR WALL MOUNTED AS INDICATED - QUANTITY AND ORIENTATION OF FACES AND DIRECTIONAL ARROWS AS INDICATED.

FIXTURE DESIGNATIONS:

A FIXTURE TYPE "A" - MAY BE USED WITH OTHER TYPES.  
b SWITCH LEG TO WHICH FIXTURE IS CONNECTED - MAY BE USED WITH OTHER LOWER-CASE LETTERS.

SWITCH OUTLET - S.P.S.T. - 20A - 120-277VAC - HUBBELL 1281 WITH YELLOW CORROSION RESISTANT PLATE HBL17CM50.

SWITCH OUTLET - MANUAL MOTOR STARTER - TOGGLE TYPE - 2 POLE - LEVITON #MS4X WITH CORROSION RESISTANT NON-METALLIC ENCLOSURE WITH LOCK-OFF PROVISIONS.

DOUBLE DUPLEX

WALL OUTLET - RECEPTACLE - 20A - 125V - 2P - 3W - GROUNDING - NEMA 5-20R - SINGLE PLATE.

WALL OUTLET - RECEPTACLE - 20A - 125V - 2P - 3W - GROUNDING - "GFI" TYPE - WEATHER RESISTANT - NEMA 5-20R - SINGLE PLATE.

WALL OUTLET - CORROSION RESISTANT - DUPLEX - 20A - 125V - 2P - 3W - GROUNDING - HUBBELL 53CM62 WITH HUBBELL 52CM21 COVERPLATE PLATE(S).

OUTLET DESIGNATIONS (APPLY TO ALL OUTLETS, DEVICES & EQUIPMENT):

ES EQUIPMENT MOUNTED TO EQUIPMENT STAND - SEE DETAIL "E-ES".

SRS PROVIDE SUN/RAIN SHIELD FOR DEVICE/EQUIPMENT PER DETAIL "E-SRS".

VL VERIFY EXACT OUTLET LOCATION PRIOR TO ROUGH-IN.

W WEATHER PROOF - OUTLET SHALL BE INSTALLED WITH WEATHERPROOF, IN-USE, CAST COVER.

FLOOR OR SURFACE-MOUNTED OUTLET - JUNCTION BOX.

BRANCH/FEEDER CIRCUIT - CONCEALED IN WALLS OR CEILING.

BRANCH/FEEDER CIRCUIT - EXPOSED ON WALLS OR CEILING.

BRANCH/FEEDER CIRCUIT - CONCEALED IN FLOOR SLAB OR DIRT FILL.

BRANCH/FEEDER CIRCUIT - OVERHEAD BETWEEN POLES.

BRANCH/FEEDER CIRCUIT - HOMERUN - CAN BE USED WITH OTHER BRANCH/FEEDER TYPES.

BRANCH/FEEDER CIRCUIT MODIFIERS:

2#12 & 1#12G UNLESS NOTED OTHERWISE.

3#12 & 1#12G, ETC. UNLESS NOTED OTHERWISE (TICK MARKS INDICATE CONDUCTOR QUANTITY NOT INCLUDING GROUND WIRE).

2#10 & 1#10G UNLESS NOTED OTHERWISE (NUMBER INDICATES WIRE AWG).

SIZE CONDUIT PER N.E.C. OR AS NOTED (WHICHEVER IS GREATER).

FLEXIBLE CONNECTION TO EQUIPMENT.

POWER DISTRIBUTION EQUIPMENT.

LIGHTING PANEL - SURFACE MOUNTED.

TRANSFORMER - POWER.

TYPICAL SCADA CONTROL & INSTRUMENTATION WIRING MARK (WHERE "SC" REPRESENTS A UNIQUE IDENTIFIER CONSISTING OF LETTERS AND NUMBERS) - SEE CONTROL & INSTRUMENTATION WIRING SCHEDULES.

MAGNETIC MOTOR STARTER.

DISCONNECT SWITCH - NONFUSED.

DISCONNECT SWITCH - INTEGRAL TO EQUIPMENT.

GROUND CONNECTION.

MOTOR OUTLET - SIZE AS SHOWN.

UNIT HEATER - ELECTRICAL - ARROW INDICATES DIRECTION.

CIRCUIT BREAKER.

AUTOMATIC (MOTORIZED) DAMPER(S) - 120V-1Ø - VERIFY EXACT QUANTITIES, LOCATIONS & CONTROL INTERLOCK REQUIREMENTS WITH HVAC CONTRACTOR PRIOR TO ROUGH-IN - PROVIDE WITH LOCAL TOGGLE-TYPE MANUAL MOTOR STARTER DISCONNECT SWITCH.

THERMOSTAT - COOLING - SINGLE STAGE - LINE VOLTAGE - WALL MOUNTED AT 48" A.F.F. - LABEL FUNCTION WITH ENGRAVED NAMEPLATE.

THERMOSTAT - HEATING - SINGLE STAGE - LOW VOLTAGE - WALL MOUNTED AT 48" A.F.F. - LABEL FUNCTION WITH ENGRAVED NAMEPLATE.

BARE SUPPLEMENTAL GROUND WIRE - #4/ØG IF NOT INDICATED OTHERWISE - INSTALLED A MINIMUM OF 24" BELOW GRADE AND 24" MINIMUM FROM STRUCTURES WHERE POSSIBLE.

SUPPLEMENTAL GROUNDING SYSTEM - GROUND ROD - 3/4" x10'-0" COPPER-CLAD - TOP DRIVEN A MINIMUM OF 24" BELOW GRADE.

SUPPLEMENTAL GROUNDING SYSTEM - GROUND CONNECTION - CADWELD WHERE BELOW GRADE OR CONCEALED.

SUPPLEMENTAL GROUNDING SYSTEM - GROUND CONNECTION - TO EQUIPMENT OR STRUCTURE.

ULTRASONIC LEVEL TRANSDUCER.

WEIGHT SENSOR.

LEVEL INDICATING TRANSMITTER.

DETAIL DESIGNATOR - "A" INDICATED DETAIL MARK - "E-1" INDICATED SHEET NUMBER WHERE DETAIL IS LOCATED (TYPICAL).

GENERAL ABBREVIATIONS:

EX EXISTING TO REMAIN.

EX-R EXISTING TO BE REMOVED - REMOVE ALL ASSOCIATED ELECTRICAL EQUIPMENT, DEVICES, CONDUIT AND WIRING CONNECTIONS TO OTHER ELECTRICAL ITEMS.

EX-RL EXISTING TO BE RELOCATED - REMOVE ALL ASSOCIATED ELECTRICAL EQUIPMENT, DEVICES, CONDUIT AND WIRING AT EXISTING LOCATION. RELOCATE ITEM TO NEW LOCATION SHOWN ON ELECTRICAL PLANS.

EX-RP EXISTING TO BE REPLACED - EXTEND AND RECONNECT EXISTING CONDUIT AND WIRING TO REPLACED ITEM.

ELECTRICAL ABBREVIATIONS:

C CONDUIT.

E.C. EMPTY CONDUIT.

FPN FUSE PER NAMEPLATE.

G GROUND CONDUCTOR.

ELECTRICAL ABBREVIATIONS:

A AMPERES.

AIC AMPERES INTERRUPTING CAPACITY.

AFF ABOVE FINISHED FLOOR.

AL ALUMINUM.

ATS AUTOMATIC TRANSFER SWITCH.

AWG AMERICAN WIRE GAUGE.

C CONDUIT.

CU COPPER.

EC EMPTY CONDUIT OR ELECTRICAL CONTRACTOR.

FPN FUSE PER NAMEPLATE.

G GROUND CONDUCTOR.

KVA KILOVOLT-AMPERES.

KW KILOWATT.

LV LOW VOLTAGE.

MCM THOUSAND CIRCULAR MILS.

MV MEDIUM VOLTAGE.

N NEUTRAL.

NEC NATIONAL ELECTRICAL CODE.

NEMA NATIONAL ELECTRICAL MANUFACTURER ASSOCIATION.

NIC NOT IN CONTRACT.

NSV NEW, SPARE OR VACATED.

OC ON CENTER.

P POLES.

PF POWER FACTOR.

Ø PHASE.

PVC POLYVINYL CHLORIDE.

SLD SINGLE LINE DIAGRAM.

SS STAINLESS STEEL.

UL UNDERWRITERS LABORATORY.

UNO UNLESS NOTED OTHERWISE.

V VOLTS.

W WIRES.

CFCI CONTRACTOR FURNISHED, CONTRACTOR INSTALLED.

FOI OWNER FURNISHED, OWNER INSTALLED.

OFOI OWNER FURNISHED, OWNER INSTALLED, CONTRACTOR INSTALLED.

TYPICAL CIRCUITRY DESIGNATIONS:

2 SETS OF 4#3/Ø & 1#3G - 2 1/2"Ø

CONDUIT SIZE.

GROUND CONDUCTOR WIRE GAUGE.

QUANTITY OF GROUND CONDUCTORS (PER SET).

PHASE/NEUTRAL CONDUCTOR WIRE GAUGE.

QUANTITY OF PHASE/NEUTRAL CONDUCTORS (PER SET).

QUANTITY OF PARALLEL SETS OF THE PHASE/NEUTRAL CONDUCTORS, GROUND CONDUCTOR AND CONDUIT SPECIFIED.

MULTI-CONDUCTOR CONTROL 600V TRAY CABLE DESIGNATIONS:

(2) 4C#14 W/G - 1 1/4"Ø

CONDUIT SIZE.

"W/G" = WITH ADDITIONAL INTEGRAL GROUND CONDUCTOR WITH GREEN INSULATION IN EACH CABLE SHEATH.

WIRE GAUGE.

QUANTITY OF CONDUCTORS IN EACH CABLE SHEATH (NOT INCLUDING GROUND).

QUANTITY OF MULTI-CONDUCTOR CABLES OF THE TYPE SPECIFIED WITHIN THE SPECIFIED CONDUIT.

TWISTED, SHIELDED INSTRUMENTATION CABLE DESIGNATIONS:

(2) #16TSP - 1"Ø

CONDUIT SIZE.

"TSP" = TWISTED SHIELDED PAIR.

WIRE GAUGE.

QUANTITY OF INSTRUMENTATION CABLES IN THE SPECIFIED CONDUIT.

GENERAL ELECTRICAL NOTES

- SPECIAL ATTENTION IS CALLED TO THE FACT THAT THE REQUIRED WORK IS AT OPERATING FACILITIES, AND AS SUCH, NO UNNECESSARY SHUTDOWNS WILL BE ALLOWED. ANY NECESSARY SHUTDOWNS SHALL BE APPROVED IN WRITING BY THE PLANT MANAGER A MINIMUM OF TWO (2) WEEKS IN ADVANCE. TEMPORARY/PORTABLE PUMPING PROVISIONS (AND OTHER TEMPORARY PROVISIONS AS REQUIRED FOR OPERATION OF THE EXISTING SYSTEMS) SHALL BE PROVIDED BY THE CONTRACTOR IF OWNER-MANDATED MAXIMUM SHUTDOWN PERIODS ARE ANTICIPATED OR ARE POSSIBLE.
- ELECTRICAL PLANS & DETAILS INDICATE TYPICAL WIRING REQUIREMENTS FOR PROCESS EQUIPMENT. VERIFY EXACT WIRING REQUIREMENTS & ALL DEVICE LOCATIONS WITH APPROVED MANUFACTURERS SHOP DRAWINGS PRIOR TO ROUGH-IN. NO ADDITIONAL COMPENSATION WILL BE PAID FOR MINOR CIRCUITRY ADJUSTMENTS REQUIRED TO COMPLY WITH MANUFACTURERS INSTALLATION DETAILS.
- THIS CONTRACTOR SHALL VERIFY EXACT REQUIREMENTS FOR ALL MECHANICAL EQUIPMENT FROM MANUFACTURER'S RECOMMENDATIONS PRIOR TO ROUGHING IN CONDUIT AND SHALL ADJUST CONDUIT SIZE, WIRE SIZE AND CIRCUIT PROTECTION SIZE ACCORDINGLY. IF REQUIREMENTS ARE LARGER THAN CALLED FOR ON ELECTRICAL PLANS NOTIFY ENGINEER IMMEDIATELY.
- CONTRACTOR SHALL VISIT THE SITE OF THE WORK PRIOR TO SUBMITTING BID TO EXAMINE CAREFULLY LOCAL CONDITIONS AND DIFFICULTIES TO BE ENCOUNTERED. ANY DISCREPANCY BETWEEN PLANS AND EXISTING CONDITIONS SHALL IMMEDIATELY BE CALLED TO THE ATTENTION OF THE ENGINEER.
- ALL EQUIPMENT SHALL BE GROUNDED AND BONDED IN ACCORDANCE WITH NEC.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MOUNTING OF ALL INSTRUMENTATION DEVICES. SEE INSTALLATION DETAILS ON CIVIL & ELECTRICAL DRAWINGS AND PROVIDED BY SUPPLIERS. COORDINATE ALL REQUIREMENTS WITH SUPPLIERS PRIOR TO ROUGH-IN.
- ALL HVAC CIRCUITRY (INCLUDING CONTROL CIRCUITRY NOT SHOWN ON THESE PLANS) SHALL BE INSTALLED TO MEET DIVISION 26 SPECIFICATIONS. COORDINATE ALL HVAC CONTROLS CIRCUITRY REQUIRED WITH HVAC CONTRACTOR PRIOR TO BID.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING IDENTIFICATION/LABELING FOR ALL INSTRUMENTS, UTILIZATION EQUIPMENT (PUMPS, ETC.), CONTROL DEVICES, STARTERS, POWER PANELS, ETC. (REGARDLESS OF WHICH ENTITY PROVIDES THE EQUIPMENT) PER DETAILED REQUIREMENTS OF SPECIFICATION SECTION 26 05 53.

LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER	CATALOG NUMBER	VOLTAGE	LAMPS			MOUNTING HEIGHT	MOUNTING TYPE	REMARKS
				NUMBER	WATTS	TYPE			
L	LITHONIA COLUMBIA DAY-BRITE	DMW2-4000LM-ACL-MD	120	1	39.9 (5,001 LUMENS)	LED	CEILING	FIBERGRASS UNISTRUT	
LE	LITHONIA COLUMBIA DAY-BRITE	DMW2-4000LM-ACL-MD-PS1050	120	1	39.9 (5,001 LUMENS)	LED	CEILING	FIBERGRASS UNISTRUT	EM14
LW	LITHONIA COLUMBIA DAY-BRITE	DMW2-4000LM-ACL-MD	120	1	39.9 (5,001 LUMENS)	LED	12" A.F.F.	SURFACE - 45" FIBERGLASS MOUNTING BRACKET	
W	LITHONIA COLUMBIA DAY-BRITE	DSXW1-LED-10C-530-T3M	120	1	20 (2,159 LUMENS)	LED	8'-0" A.F.F.	OUTLET BOX	
WE	LITHONIA COLUMBIA DAY-BRITE	DSXW1-LED-10C-530-T3M-ELCW	120	1	20 (2,159 LUMENS)	LED	8'-0" A.F.F.	OUTLET BOX	EM
X1	LITHONIA COLUMBIA DAY-BRITE	LVS-W-1-R-ELN	120	FURNISHED WITH FIXTURE			ABOVE DOOR	OUTLET BOX	EMX

- LIGHTING FIXTURE SCHEDULE GENERAL NOTES:**
- ALL LAMPS SHALL BE 4000K WITH A MINIMUM CRI OF 80 UNLESS NOTED OTHERWISE.
  - CONTRACTOR SHALL COORDINATE ALL FIXTURE MOUNTING PROVISIONS WITH THE ASSOCIATED CEILING TYPE(S) PRIOR TO ORDERING FIXTURES.
  - ALL FIXTURES AND BALLASTS/DRIVERS SHALL BE RATED FOR OPERATION IN AMBIENT TEMPERATURES UP TO 55 DEGREES CELSIUS.
- LIGHTING FIXTURE SCHEDULE KEYED NOTES:**
- EM EMERGENCY FIXTURE. PROVIDE EMERGENCY BATTERY PACK RATED FOR AT LEAST 500 LUMENS.
- EM14 EMERGENCY FIXTURE. PROVIDE EMERGENCY BATTERY PACK RATED FOR AT LEAST 1400 LUMENS.
- EMX EMERGENCY FIXTURE. PROVIDE EMERGENCY BATTERY PACK RATED FOR AT LEAST 90 MINUTES OF OPERATION.



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CONSTRUCTION PLANS FOR:  
**HAMLER WTP IMPROVEMENTS  
CHEMICAL FEED SYSTEMS**  
CITY OF ROME, GEORGIA  
WATER AND SEWER DIVISION



**PROJECT INFO:**  
INSITE JOB No. 17021.00  
PLOTTED: 9/19/2017  
ADDENDUM NO. 1



9/19/2017  
THIS SHEET CONTAINS:  
ELECTRICAL LEGEND,  
NOTES & LIGHTING  
FIXTURE SCHEDULE

SHEET 13 OF 21

**GE-1**

PANELBOARD SCHEDULE - PP-CHEM										
PANEL TYPE		SQUARE D' TYPE NF			AIC RATING		30KAIC (MINIMUM)			
VOLTAGE		277/480V-3P-4W			MOUNTING		SURFACE			
AMPS & TYPE		100/3 MAIN BKR			LOCATION		CHEMICAL FEED BUILDING			
FED FROM		EX FILTER BLDG MCC			FEEDER:		4#3 & 1#8G - 1 1/2" C			
CR. NO.	DESCRIPTION	VOLTS	P	HP	KW OR KVA	AMPS	BKR SIZE	LOCAL SAFETY SW. RATING	WIRE AND COND. SIZE	REMARKS
1	RP-CHEM (15 KVA XFORMER)	480	3		7.0		25/3	-	3#10 & 1#10G - 3/4" C	
2	EUH-1	480	3		10.0		20/3	-	3#12 & 1#12G - 3/4" C	
3	TANKLESS WATER HEATER	480	3		24.0		40/3	-	3#8 & 1#10G - 1" C	
4	SPACE	277/480	3				-/3	-		
5	SPACE	277/480	3				-/3	-		
6	SPACE	277/480	3				-/3	-		
TOTAL CONNECTED LOAD						40.7 KVA	NOTES:			
						50.8 AMPS	1. ENCLOSURE SHALL BE NEMA 4X STAINLESS STEEL.			
TOTAL DEMAND LOAD						40.7 KVA				
						50.8 AMPS				
TOTAL COMPUTED LOAD						43.5 KVA				
						54.4 AMPS				

PANELBOARD SCHEDULE - RP-CHEM										
PANEL TYPE		SQUARE D' TYPE NQOD			AIC RATING:		10KAIC (MINIMUM)			
VOLTAGE		120/208V-3P-4W			MOUNTING		SURFACE			
AMPS & TYPE:		60/3 MAIN BKR			LOCATION:		CHEMICAL FEED BUILDING			
FED FROM		PP-CHEM			FEEDER:		4#6 & 1#8G - 1 1/4" C			
CKT NO.	NOTES	BKR	DESCRIPTION	WATTS	PHASE	WATTS	DESCRIPTION	BKR	NOTES	CKT NO.
1	-	20/1	INTERIOR LIGHTS	440	A	1,200	EF-1	20/1	-	16
2	-	20/1	EXTERIOR LIGHTS	165	B		SPARE	20/1	-	17
3	GFI	20/1	BUILDING CONVENIENCE RECEPS	800	C		SPARE	20/1	-	18
4	-	20/1	SPARE		A		SPARE	20/1	-	19
5	-	20/1	SPARE		B			20/1	-	20
6	-	20/1	SPARE		C			20/1	-	21
7	-	20/1	SODIUM HYPO BULK TANK RECEP	200	A			20/1	-	22
8	-	20/1	SODIUM HYPO BULK TANK LEVEL XMTR	100	B			20/1	-	23
9	-	20/1	SODIUM HYPO FEED PUMPS	750	C			20/1	-	24
10	-	20/1	ORTHOPHOSPHATE FEED PUMPS	500	A			20/1	-	25
11	-	20/1	FLUORIDE FEED PUMPS	500	B			20/1	-	26
12	-	20/1	ORTHOPHOSPHATE LEVEL XMTRS	200	C			20/1	-	27
13	-	20/1	FLUORIDE LEVEL XMTRS	200	A			20/1	-	28
14	-	20/1	SCADA PLC-CHEM	800	B			20/1	-	29
15	GFI	20/1	HEAT TRACING	800	C			20/1	-	30
NOTES:				PH. A.	PH. B.	PH. C.	TOTAL CONNECTED LOAD:			
1. ENCLOSURE SHALL BE NEMA 4X STAINLESS STEEL.				2,540	1,565	2,550	18.5 AMPS			
2. PROVIDE INTEGRAL 150KA (PER PHASE) SURGE PROTECTION DEVICE.							TOTAL DEMAND LOAD:			
							6.7 KVA			
							18.5 AMPS			
							TOTAL COMPUTED LOAD:			
							7.0 KVA			
							19.5 AMPS			

TRANSFORMER SCHEDULE								
MARK	SIZE (KVA)	DESCRIPTION	PRIMARY VOLTAGE & PHASE	SECONDARY VOLTAGE & PHASE	PANEL FED	MOUNTING	GROUND SIZE	REMARKS
T-CHEM	15	DRY-TYPE	480V-3P-3W	120/208V-3P-4W	RP-CHEM	6" CONC. PAD	#8	NEMA 3R S.S. ENCLOSURE

TRANSFORMER SCHEDULE NOTES:

- EXACT TRANSFORMER LOCATIONS SHALL BE FIELD COORDINATED TO PROVIDE CODE-REQUIRED CLEARANCES AND WORKING SPACES AROUND TRANSFORMERS AND ADJACENT EQUIPMENT (SUCH AS PANELBOARDS).
- ALL TRANSFORMERS SHALL BE MOUNTED ON VIBRATION ISOLATORS PER SPECIFICATION REQUIREMENTS.

PANELBOARD/EQUIPMENT SCHEDULE(S) KEYED NOTES LEGEND	
KEYED NOTE	DESCRIPTION
GFI	INDICATED BREAKER SHALL BE GFI-TYPE (5mA TRIP).
GFI	INDICATED BREAKER SHALL BE GFI-EPD TYPE (30mA TRIP).

PLC-CHEM SCADA POINT LIST AND CONTROL & INSTRUMENTATION WIRING SCHEDULE								
ROW/CR. MARK	TO	EQUIPMENT DESCRIPTION	PARAMETER	POINT TYPE	TAG	WIRING	SHEET	REMARKS
SC-1110	PLC-CHEM	SODIUM HYPO BULK TANK LEVEL XMTR	LEVEL INDICATION	AI	1110-LI	(1) #18TSP - 3/4" C	CBE-2	
SC-1210	PLC-CHEM	ORTHOPHOSPHATE BULK TANK LEVEL XMTR	LEVEL INDICATION	AI	1210-LI	(2) #16TSP - 1" C	CBE-2	
		ORTHOPHOSPHATE DAY TANK LEVEL XMTR	LEVEL INDICATION	AI	1220-LI			
SC-1310	PLC-CHEM	FLUORIDE BULK TANK LEVEL XMTR	LEVEL INDICATION	AI	1310-LI	(2) #16TSP - 1" C	CBE-2	
		FLUORIDE DAY TANK LEVEL XMTR	LEVEL INDICATION	AI	1320-LI			
SC-2110	PLC-CHEM	SODIUM HYPO FEED PUMP NO. 1	ON/OFF STATUS	DI	2110-YI	(5) 80#14 - 2" C AND (10) #16TSP - 2" C	CBE-2	
			HOVA SWITCH POSITION INDICATION	DI	2110-HS			
			ALARM	DI	2110-YA			
			ON/OFF CONTROL	DO	2110-YC			
			SPEED CONTROL	AO	2110-SC			
			SPEED INDICATION	AI	2110-SI			
		SODIUM HYPO FEED PUMP NO. 2	ON/OFF STATUS	DI	2120-YI			
			HOVA SWITCH POSITION INDICATION	DI	2120-HS			
			ALARM	DI	2120-YA			
			ON/OFF CONTROL	DO	2120-YC			
			SPEED CONTROL	AO	2120-SC			
			SPEED INDICATION	AI	2120-SI			
		SODIUM HYPO FEED PUMP NO. 3	ON/OFF STATUS	DI	2130-YI			
			HOVA SWITCH POSITION INDICATION	DI	2130-HS			
			ALARM	DI	2130-YA			
			ON/OFF CONTROL	DO	2130-YC			
			SPEED CONTROL	AO	2130-SC			
			SPEED INDICATION	AI	2130-SI			
		ORTHOPHOSPHATE FEED PUMP NO. 1	ON/OFF STATUS	DI	2210-YI			
			HOVA SWITCH POSITION INDICATION	DI	2210-HS			
			ALARM	DI	2210-YA			
			ON/OFF CONTROL	DO	2210-YC			
			SPEED CONTROL	AO	2210-SC			
			SPEED INDICATION	AI	2210-SI			
		ORTHOPHOSPHATE FEED PUMP NO. 2	ON/OFF STATUS	DI	2220-YI			
			HOVA SWITCH POSITION INDICATION	DI	2220-HS			
			ALARM	DI	2220-YA			
			ON/OFF CONTROL	DO	2220-YC			
			SPEED CONTROL	AO	2220-SC			
			SPEED INDICATION	AI	2220-SI			
SC-2310	PLC-CHEM	FLUORIDE FEED PUMP NO. 1	ON/OFF STATUS	DI	2310-YI	(2) 80#14 - 1 1/4" C AND (4) #16TSP - 1 1/4" C	CBE-2	
			HOVA SWITCH POSITION INDICATION	DI	2310-HS			
			ALARM	DI	2310-YA			
			ON/OFF CONTROL	DO	2310-YC			
			SPEED CONTROL	AO	2310-SC			
			SPEED INDICATION	AI	2310-SI			
		FLUORIDE FEED PUMP NO. 2	ON/OFF STATUS	DI	2320-YI			
			HOVA SWITCH POSITION INDICATION	DI	2320-HS			
			ALARM	DI	2320-YA			
			ON/OFF CONTROL	DO	2320-YC			
			SPEED CONTROL	AO	2320-SC			
			SPEED INDICATION	AI	2320-SI			

CONTROL & INSTRUMENTATION WIRING SCHEDULES LEGEND & NOTES	
<b>LEGEND:</b>	
DI	- DISCRETE INPUT POINT
DO	- DISCRETE OUTPUT POINT
AI	- ANALOG INPUT POINT
AO	- ANALOG OUTPUT POINT
<b>NOTES:</b>	
1. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS & INFORMATION.	
2. SEE PLANT NETWORK CONNECTION DIAGRAM FOR ADDITIONAL REQUIREMENTS & INFORMATION.	
3. ALL CONTROL CABLING (IDENTIFIED WITH "CMT" OR SIMILAR DESIGNATIONS) SHALL BE 600V MULTI-CONDUCTOR TRAY CABLE PER SPECIFICATION REQUIREMENTS.	
4. ALL INSTRUMENTATION CABLING (IDENTIFIED WITH "TSP" OR "SH" DESIGNATIONS) SHALL BE 300V TWISTED, OVERBraid-SHEATHED TRAY CABLE.	

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CONSTRUCTION PLANS FOR:  
**HAMLER WTP IMPROVEMENTS  
 CHEMICAL FEED SYSTEMS**  
 CITY OF ROME, GEORGIA  
 WATER AND SEWER DIVISION



**PROJECT INFO:**

INSITE JOB No. 17021.00  
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9/19/2017

THIS SHEET CONTAINS:  
 ELECTRICAL SCHEDULES

SHEET 14 OF 21

**GE-2**



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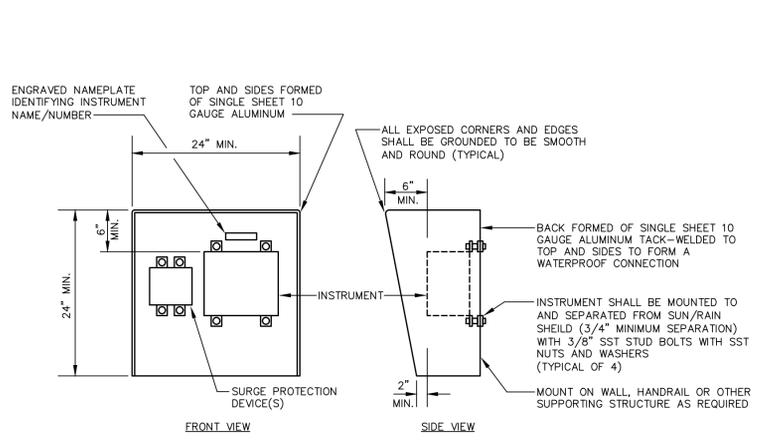


9/19/2017

THIS SHEET CONTAINS:  
ELECTRICAL DIAGRAMS

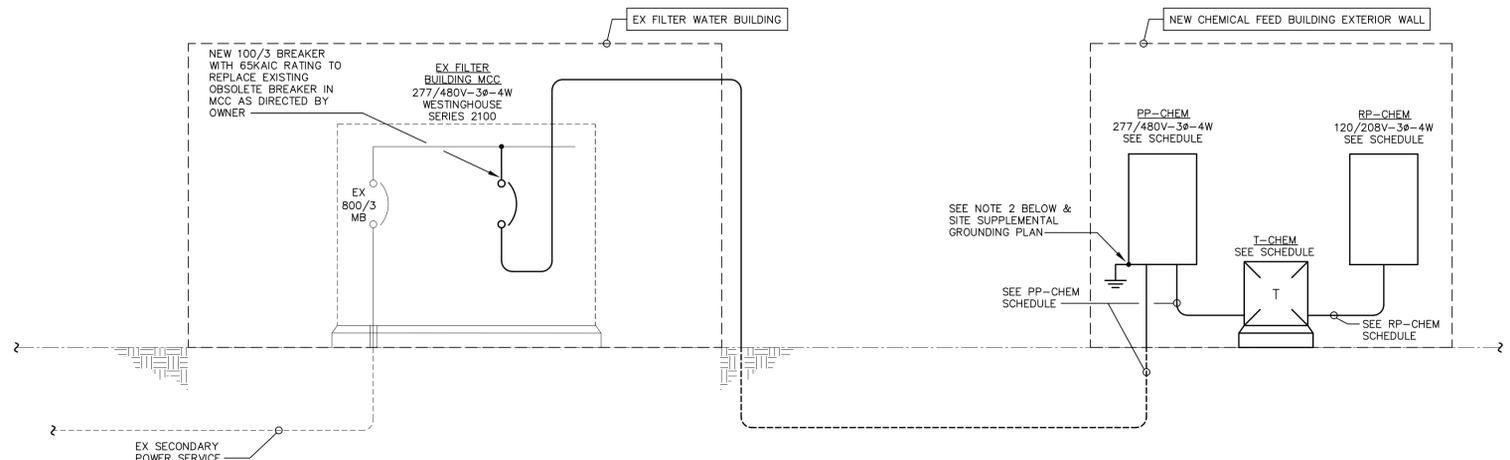
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**GE-3**



**DETAIL "E-SRS"  
INSTRUMENT SUN/RAIN SHIELD  
INSTALLATION DETAIL**  
SCALE : NONE

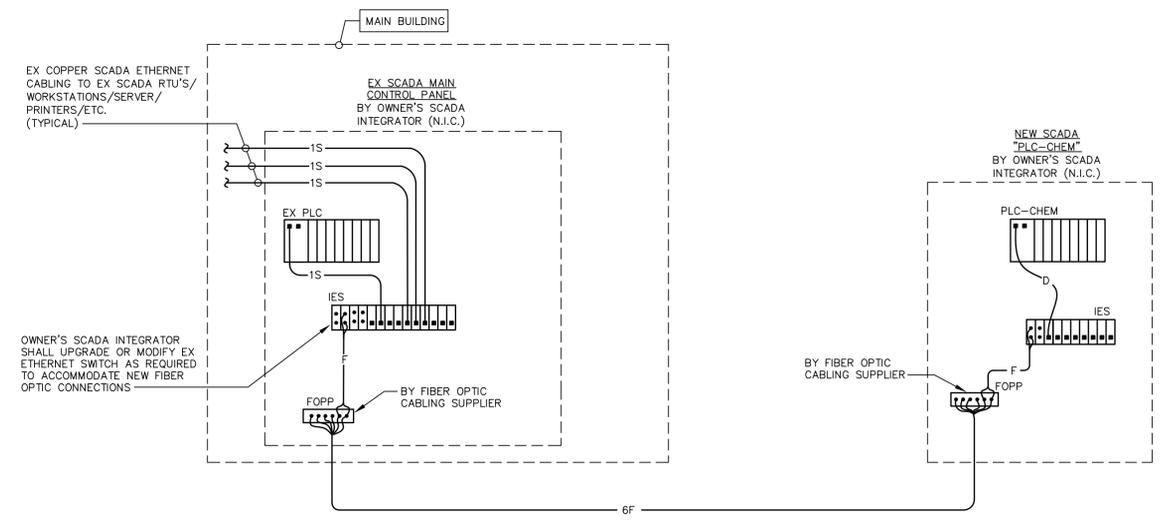
DETAIL NOTES	
1.	SUN/RAIN SHIELDS SHALL BE FURNISHED FOR ALL ELECTRONIC INSTRUMENTS THAT WILL BE EXPOSED TO SUN OR RAIN (OR WHERE OTHERWISE SPECIFICALLY NOTED).
2.	DIMENSIONS SHOWN ABOVE ARE MINIMUM. SUN/RAIN SHIELDS SHALL BE SUFFICIENTLY SIZED TO ACCOMMODATE INSTRUMENT PLUS ASSOCIATED SURGE PROTECTION DEVICE(S), POWER SUPPLIES, AND OTHER SIMILAR DEVICES.



**PARTIAL SINGLE LINE DIAGRAM**  
SCALE : NONE

DIAGRAM NOTES	
1.	REFER TO PANELBOARD SCHEDULES FOR ALL APPLICABLE FEEDER SIZES, BREAKER RATINGS, ETC. NOT SHOWN ON THIS DIAGRAM.
2.	NO NEUTRAL-GROUND BOND SHALL BE MADE AT THE FOLLOWING LOCATIONS: A. SECONDARY SIDE OF ALL TRANSFORMERS. B. EXISTING FILTER BUILDING MCC MAIN BREAKER (EXISTING).

PLANT NETWORK DIAGRAM LEGEND	
	FIBER OPTIC PATCH PANEL - FURNISHED AND INSTALLED BY FIBER OPTIC CABLING SUPPLIER PER STRUCTURED CABLING SYSTEM SPECIFICATIONS - WITH FIBER BREAKOUT KIT AND TERMINATIONS FOR ALL STRANDS AS REQUIRED.
	INDUSTRIAL MANAGED ETHERNET SWITCH - FURNISHED AND INSTALLED BY PLC SUPPLIER WITHIN PLC ENCLOSURE - DIN-RAIL MOUNTABLE WITH RJ45 PORTS AND FIBER OPTIC PORTS AS REQUIRED FOR ALL SPECIFIED DROPS/CABLES PLUS 50% SPARE CAPACITY.
	PROGRAMMABLE LOGIC CONTROLLER (WITH ACCESSORIES AS REQUIRED) - PROVIDED BY SCADA INTEGRATOR OR EQUIPMENT SUPPLIER.
	FIBER OPTIC CABLE - 6-STRAND - MULTI-MODE (50uM) OM4-RATED - INDOOR/OUTDOOR RATED (PROVIDED BY STRUCTURED CABLING SYSTEM PROVIDER PER SPECIFICATION REQUIREMENTS) - 2°C - NO CABLE SPLICES ALLOWED.
	FIBER OPTIC PATCH CABLE - 2-STRAND - MULTI-MODE (50uM) OM4-RATED - INDOOR/OUTDOOR RATED (PROVIDED BY STRUCTURED CABLING SYSTEM PROVIDER PER SPECIFICATION REQUIREMENTS).
	CAT6 COPPER DATA CABLE.
	CAT6 COPPER SCADA CABLE.

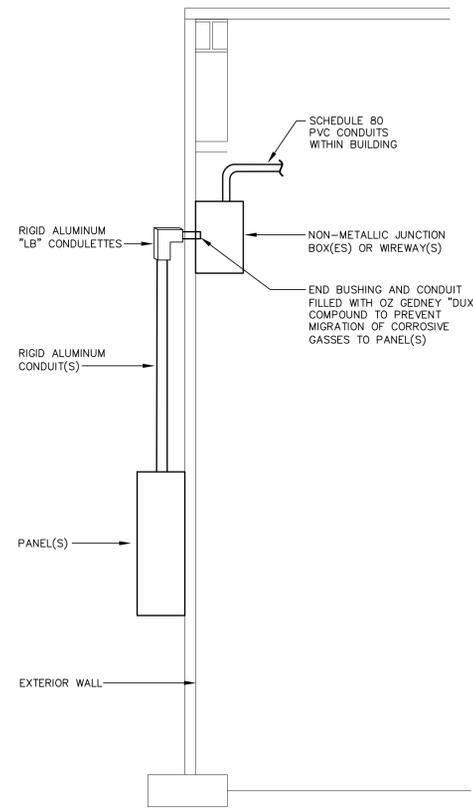


**PARTIAL PLANT NETWORK DIAGRAM**  
SCALE : NONE

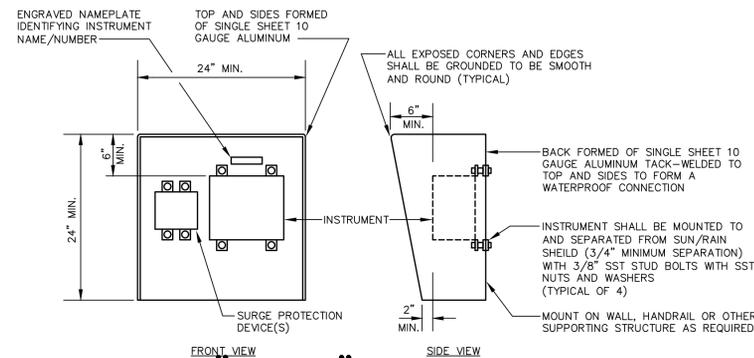
PLANT NETWORK DIAGRAM NOTES	
1.	DIAGRAM IS NOT INTENDED TO SHOW ALL NETWORK CONNECTIONS AT FACILITY. REFER TO POINT LISTS, PLANS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2.	CONTRACTOR SHALL VERIFY ALL SCADA-RELATED ITEMS (FIBER OPTIC & COPPER NETWORK INTERCONNECTIONS, ETC.) SHOWN ON THIS DIAGRAM WITH SCADA EQUIPMENT SUPPLIER PRIOR TO INSTALLATION AND SHALL INSTALL ENTIRE SYSTEM PER THE SCADA EQUIPMENT SUPPLIER'S DIRECTION.
3.	NEW FIBER OPTIC CABLING SHALL BE INSTALLED BY A CERTIFIED STRUCTURED CABLING INSTALLER & TESTED IN ACCORDANCE WITH SPECIFICATION REQUIREMENTS. FURNISH TEST LOG AND LETTER OF CERTIFICATION WITH CLOSE-OUT DOCUMENTS.
4.	SCADA SYSTEM (INCLUDING PLC CABINETS, ETC.) SHALL BE FURNISHED BY OWNER'S SCADA VENDOR (N.I.C.) & INSTALLED BY CONTRACTOR. CONTRACTOR'S SCOPE SHALL INCLUDE ALL COSTS REQUIRED FOR A COMPLETE SYSTEM.
5.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR MOUNTING ALL SCADA AND PLANT PROCESS INSTRUMENTS/DEVICES/CONTROL PANELS IN ACCESSIBLE LOCATIONS AT ACCESSIBLE HEIGHTS AS DIRECTED BY THE EQUIPMENT SUPPLIER. EXACT FINAL LOCATIONS SHALL BE APPROVED BY CIVIL ENGINEER PRIOR TO ROUGH-IN.

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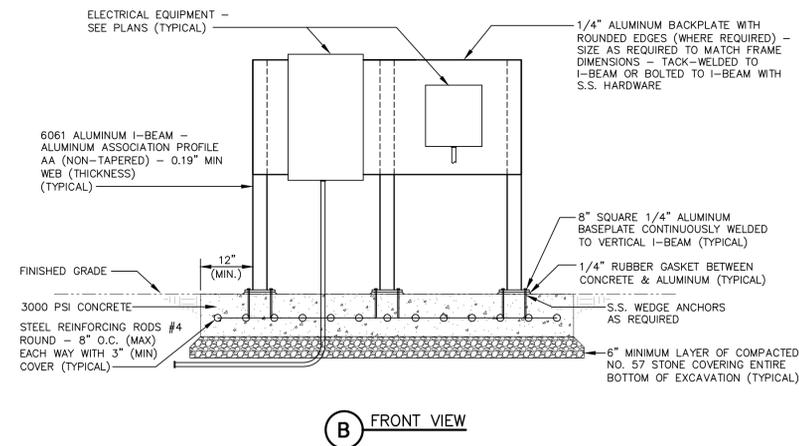
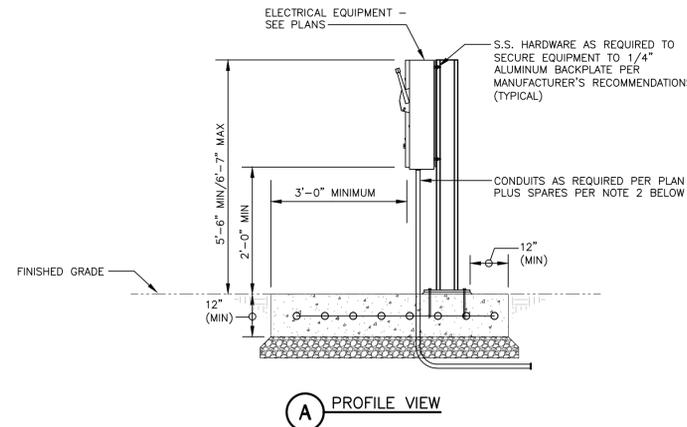
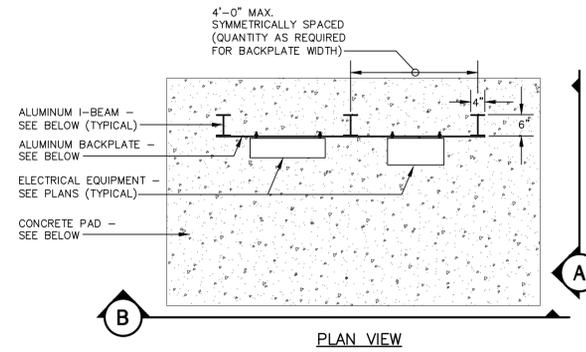
**DETAIL "E-CFC"**  
**CHEMICAL FEED BUILDING**  
**CONDUIT SEALING DETAIL**  
 SCALE : NONE



**DETAIL "E-SRS"**  
**INSTRUMENT SUN/RAIN SHIELD**  
**INSTALLATION DETAIL**  
 SCALE : NONE

**DETAIL NOTES**

- SUN/RAIN SHIELDS SHALL BE FURNISHED FOR ALL ELECTRONIC INSTRUMENTS THAT WILL BE EXPOSED TO SUN OR RAIN (OR WHERE OTHERWISE SPECIFICALLY NOTED).
- DIMENSIONS SHOWN ABOVE ARE MINIMUM. SUN/RAIN SHIELDS SHALL BE SUFFICIENTLY SIZED TO ACCOMMODATE INSTRUMENT PLUS ASSOCIATED SURGE PROTECTION DEVICE(S), POWER SUPPLIES, AND OTHER SIMILAR DEVICES.

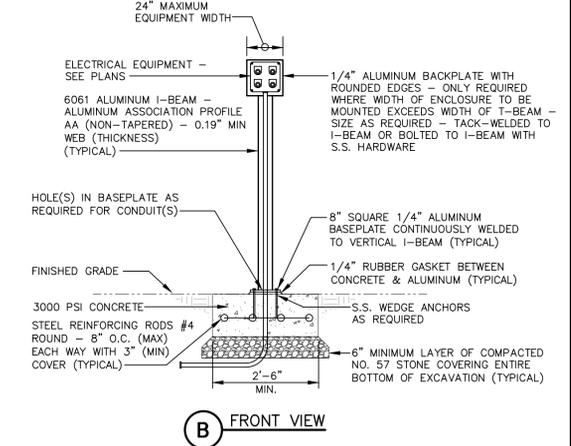
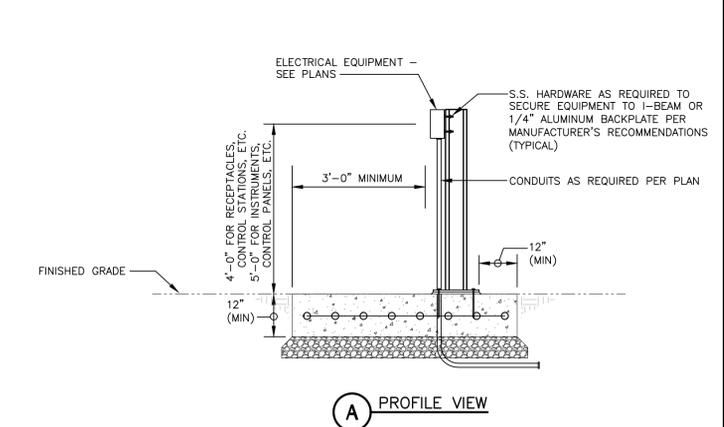
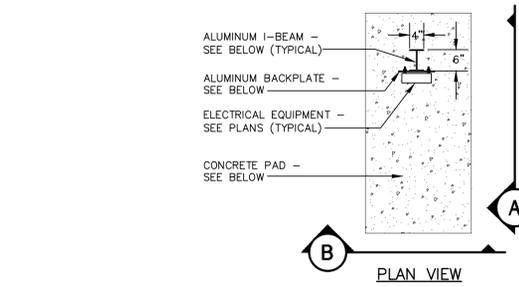


**DETAIL "E-EDL" ELECTRICAL**  
**DISTRIBUTION EQUIPMENT LABEL**  
 SCALE : NONE

**DETAIL NOTES**

- PANEL NAMES & RATINGS LISTED ABOVE ARE FOR EXAMPLE PURPOSES ONLY. NAMES & RATINGS SHALL BE ADJUSTED TO MATCH ASSOCIATED EQUIPMENT.
- THE INTENT OF THIS DETAIL IS TO DEMONSTRATE GENERAL ELECTRICAL IDENTIFICATION REQUIREMENTS FOR ELECTRICAL DISTRIBUTION AND UTILIZATION EQUIPMENT. REFER TO SPECIFICATIONS FOR SPECIFIC REQUIREMENTS REGARDING LOCATIONS, CONTENT, MATERIALS, ETC..

NAME:	RP-A
RATING:	120/208V-3Ø-4W
FED FROM:	PP-A CIR. 4 (IN MAIN ELEC. ROOM)



**DETAIL "E-ES"**  
**EQUIPMENT SUPPORT**  
 SCALE : NONE

**DETAIL NOTES**

- ALL DIMENSIONS SHOWN ARE TYPICAL.
- WHERE LOCATED IN HIGHLY CORROSIVE ENVIRONMENTS, SUCH AS CHEMICAL ROOMS CONTAINING CHLORINE OR FLUORIDE, ALL METAL SHOWN SHALL BE COATED WITH PRIMER & TWO (2) COATS OF GREY ENAMEL PAINT UNLESS OTHERWISE APPROVED BY ENGINEER.



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CONSTRUCTION PLANS FOR:  
**HAMLER WTP IMPROVEMENTS**  
**CHEMICAL FEED SYSTEMS**  
 CITY OF ROME, GEORGIA  
 WATER AND SEWER DIVISION



**PROJECT INFO:**

INSITE JOB No. 17021.00  
 PLOTTED: 9/19/2017  
 ADDENDUM NO. 1



THIS SHEET CONTAINS:  
 ELECTRICAL DETAILS

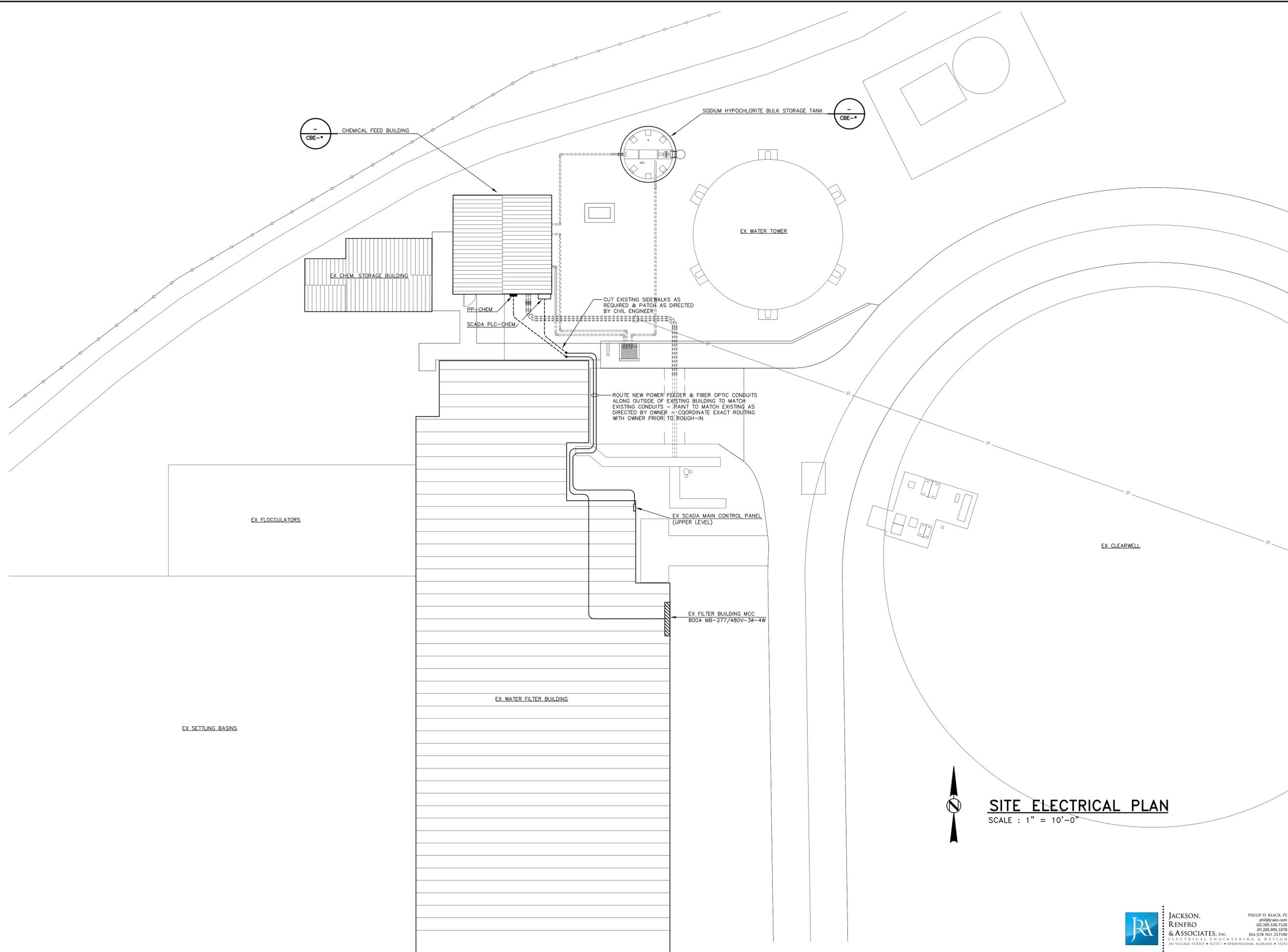
SHEET 16 OF 21

**GE-4**



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 JRA JOB NO. 217140  
 ELECTRICAL ENGINEERING & DESIGN  
 14 VILLAGE STREET, SUITE 14 BIRMINGHAM, ALABAMA 35242



**SITE ELECTRICAL PLAN**  
SCALE : 1" = 10'-0"



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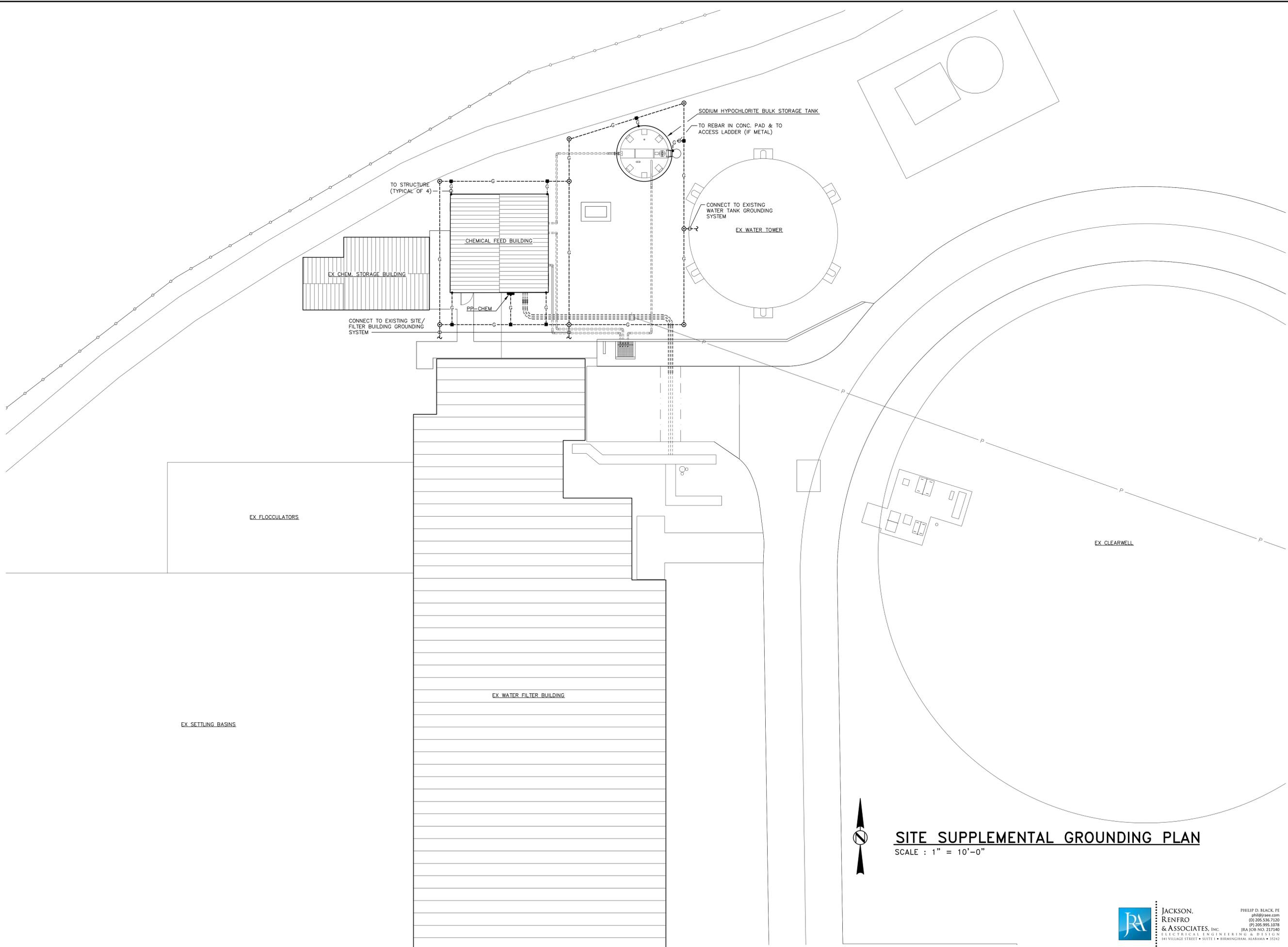
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 THIS SHEET CONTAINS:  
 SITE ELECTRICAL PLAN

SHEET 17 OF 21

**SIE-1**




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9/19/2017

THIS SHEET CONTAINS:  
SITE SUPPLEMENTAL  
GROUNDING PLAN

SHEET 18 OF 21

**SIE-2**



**SITE SUPPLEMENTAL GROUNDING PLAN**  
SCALE : 1" = 10'-0"

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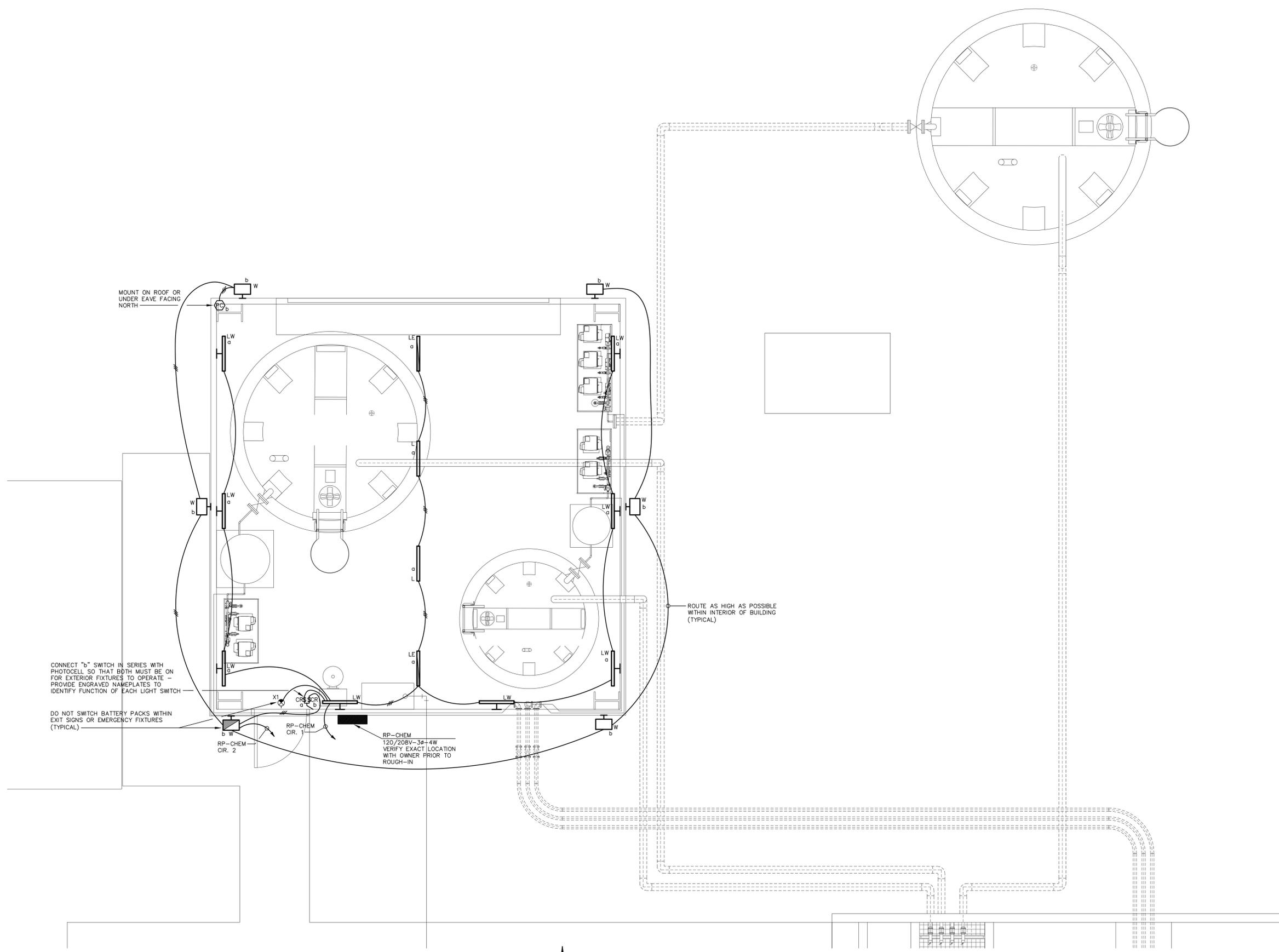
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THIS SHEET CONTAINS:

CHEMICAL FEED  
BUILDING LIGHTING  
PLAN

SHEET 19 OF 21

**CBE-1**



MOUNT ON ROOF OR  
UNDER EAVE FACING  
NORTH

CONNECT "b" SWITCH IN SERIES WITH  
PHOTOCELL SO THAT BOTH MUST BE ON  
FOR EXTERIOR FIXTURES TO OPERATE -  
PROVIDE ENGRAVED NAMEPLATES TO  
IDENTIFY FUNCTION OF EACH LIGHT SWITCH

DO NOT SWITCH BATTERY PACKS WITHIN  
EXIT SIGNS OR EMERGENCY FIXTURES  
(TYPICAL)

RP-CHEM  
CIR. 2

RP-CHEM  
CIR. 1

RP-CHEM  
120/208V-3Ø-4W  
VERIFY EXACT LOCATION  
WITH OWNER PRIOR TO  
ROUGH-IN

ROUTE AS HIGH AS POSSIBLE  
WITHIN INTERIOR OF BUILDING  
(TYPICAL)

**PLAN NOTES**

- 1. THE INTERIOR OF THE NEW CHEMICAL FEED BUILDING SHALL BE CONSIDERED A HIGHLY CORROSIVE AREA (FOR DETERMINATION OF ACCEPTABILITY OF ELECTRICAL EQUIPMENT/DEVICE/MATERIAL TYPES PER SPECIFICATION REQUIREMENTS). PROVIDE SCHEDULE 80 PVC CONDUITS & CORROSION RESISTANT NON-METALLIC OR PVC-COATED RECEPTACLES, SWITCHES, BOXES, ETC.. SEAL ALL CONDUITS ENTERING/EXITING AREA PER DETAIL "E-CFC". SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.



**CHEMICAL FEED BUILDING  
LIGHTING PLAN**

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



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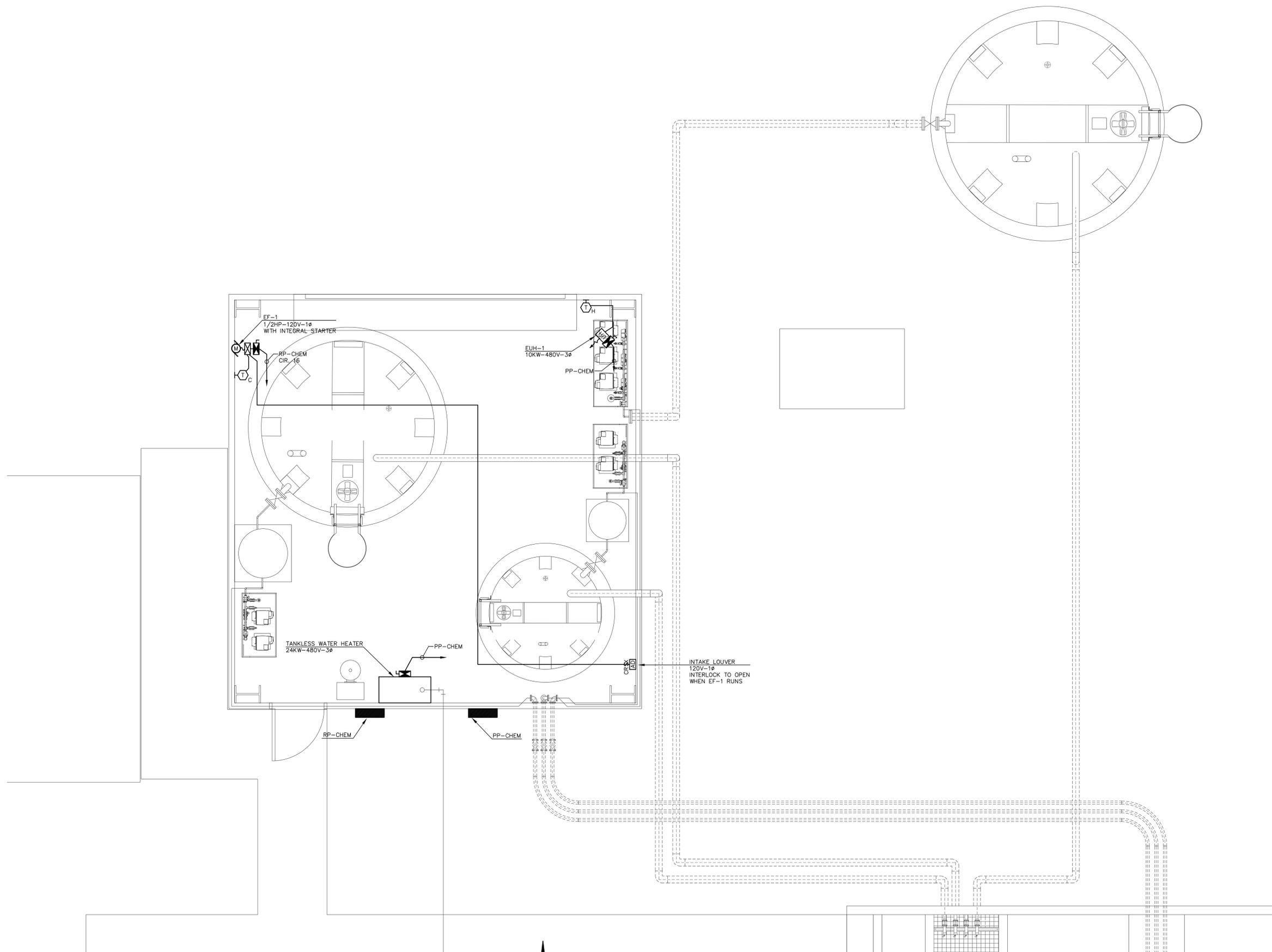
9/19/2017

THIS SHEET CONTAINS:

CHEMICAL FEED  
BUILDING PLUMBING &  
HVAC ELECTRICAL PLAN

SHEET 21 OF 21

**CBE-3**



**PLAN NOTES**

1. THE INTERIOR OF THE NEW CHEMICAL FEED BUILDING SHALL BE CONSIDERED A HIGHLY CORROSIVE AREA (FOR DETERMINATION OF ACCEPTABILITY OF ELECTRICAL EQUIPMENT/DEVICE/MATERIAL TYPES PER SPECIFICATION REQUIREMENTS). PROVIDE SCHEDULE 80 PVC CONDUITS & CORROSION RESISTANT NON-METALLIC OR PVC-COATED RECEPTACLES, SWITCHES, BOXES, ETC.. SEAL ALL CONDUITS ENTERING/EXITING AREA PER DETAIL "E-CFC". SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.



**CHEMICAL FEED BUILDING  
PLUMBING & HVAC  
ELECTRICAL PLAN**

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



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