



SAUSALITO MARIN CITY SANITARY DISTRICT
MARIN COUNTY, CALIFORNIA

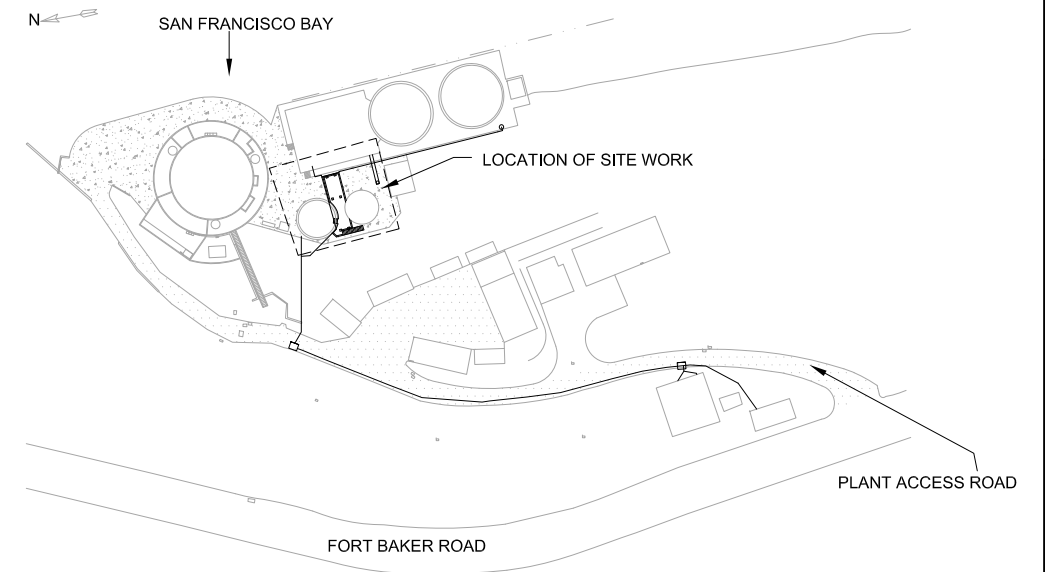
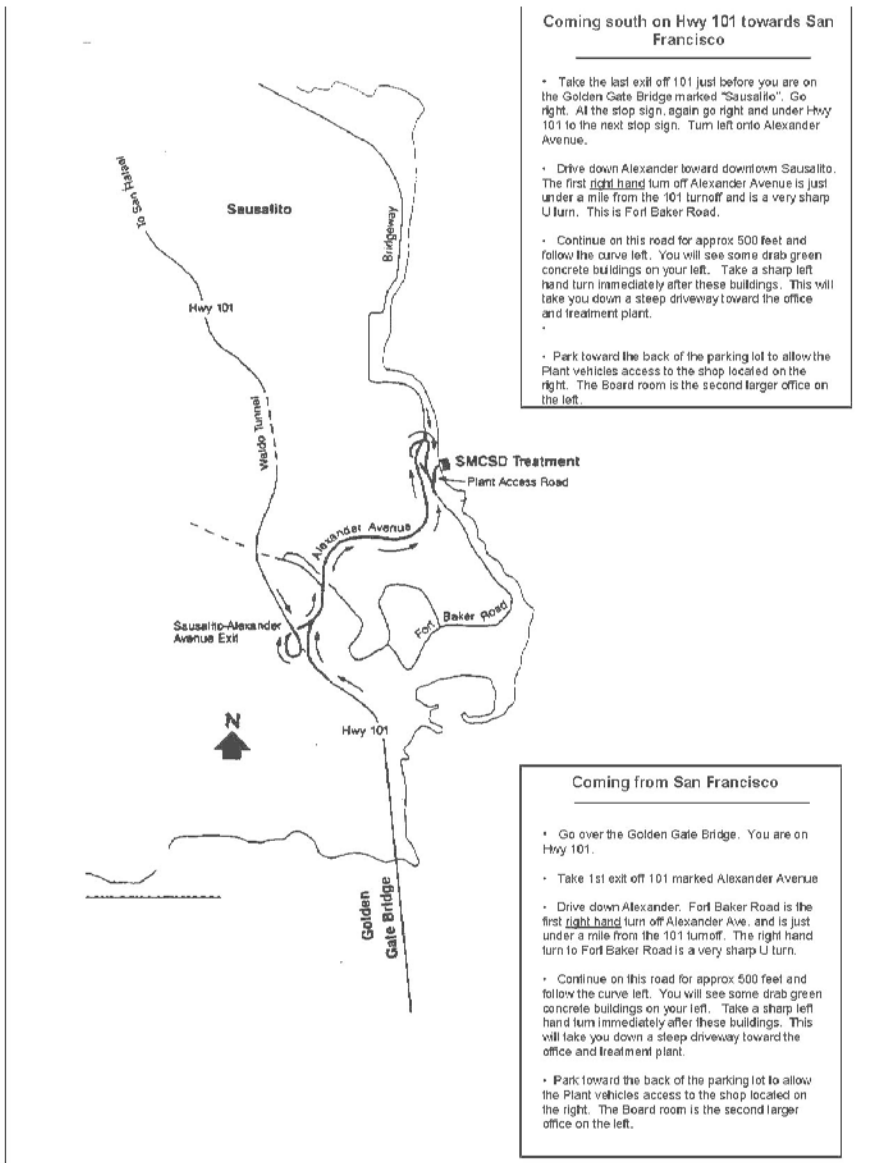
SLUDGE DEWATERING PROJECT

CONTRACT PROJECT PLANS VOLUME 2 OF 2

CONFORMED AND ISSUED FOR CONSTRUCTION
JUNE 2008

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LOCATION MAP
NO SCALE



WHITLEY BURCHETT & ASSOCIATES
Walnut Creek, California
(925) 945-6850

DESIGN CP
DRAWN CP
CHECKED MB

JOB NUMBER SMC 07-01
DATE MAY 2008

LINE IS 2 INCHES AT FULL SCALE
IF NOT 2 INCHES, SCALE ACCORDINGLY

SAUSALITO MARIN COUNTY
SANITARY DISTRICT
MARIN COUNTY, CALIFORNIA

SLUDGE DEWATERING
PROJECT

COVER SHEET, LOCATION MAP AND TREATMENT
PLANT SITE MAP

REV. ---
DWG. NO. **G-1**
1 OF 37

GENERAL NOTES

NOTES:

1. THE ALIGNMENT AND ELEVATION OF EXISTING FACILITIES AND UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS BASED UPON DESIGN AND RECORD INFORMATION AVAILABLE TO WHITLEY BURCHETT & ASSOCIATES AT THE TIME OF PREPARATION OF THESE PLANS. THEIR LOCATIONS HAVE NOT BEEN VERIFIED IN THE FIELD AND NO GUARANTEE IS MADE TO THE ACCURACY OF THE INFORMATION SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE PRECISE DIMENSIONS AND UTILITY SIZES, LOCATIONS, ELEVATIONS AND INVERTS PRIOR TO THE START OF WORK. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN ACTUAL LOCATIONS AND/OR ELEVATIONS AND THOSE SHOWN ON THE DRAWINGS TO DETERMINE IF DESIGN CHANGES ARE REQUIRED.
2. CONTRACTOR SHALL PROTECT ALL EXISTING IMPROVEMENTS NOT DESIGNATED FOR REMOVAL AND SHALL RESTORE DAMAGED OR TEMPORARILY RELOCATED IMPROVEMENTS TO A CONDITION EQUAL TO OR BETTER THAN THEY WERE PRIOR TO SUCH DAMAGE OR TEMPORARY RELOCATION.
3. ALL EXISTING IMPROVEMENTS REMOVED DURING CONSTRUCTION SHALL BE REPLACED IN KIND.

GENERAL

- EXISTING EQUIPMENT OR MATERIALS TO BE REMOVED (SCREENED)
- EXISTING PIPING, EQUIPMENT OR STRUCTURES (SCREENED)
- NEW PIPING, EQUIPMENT OR STRUCTURES
- BURIED OR HIDDEN EXISTING PIPING, EQUIPMENT OR STRUCTURES (SCREENED)
- BURIED OR HIDDEN NEW PIPING, EQUIPMENT OR STRUCTURES
- CENTERLINE
- PROPERTY LINE OR MATCH LINE
- WATER SURFACE

ARCHITECTURAL AND STRUCTURAL

- CONCRETE
- NEOPRENE, RUBBER, OR PLASTIC
- GRATING
- STEEL OR STAINLESS STEEL
- MORTAR OR GROUT
- ALUMINUM
- REINFORCEMENT IN SECTION
- CHECKER PLATE

GATES

- SLUICE
- SLIDE
- STOP

PIPING

- ELBOW UP
- ELBOW DOWN
- UNION
- STRAINER

CIVIL

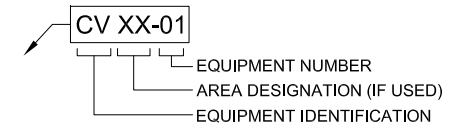
- CONCRETE
- NATIVE GROUND OR GRADE
- AC PAVEMENT IN PLAN
- AC PAVEMENT IN SECTION
- GRASS
- GRANULAR MATERIAL SUCH AS CRUSHED ROCK, GRAVEL, AGGREGATE BASE
- RIPRAP
- FENCE
- EXISTING GRADE CONTOURS (SCREENED)
- FINISH GRADE CONTOURS
- EXISTING SPOT ELEVATION (SCREENED)
- FINISH GRADE SPOT ELEVATION
- NORTHING AND EASTING
- SWALE OR DEPRESSION
- FLOWLINE WITH DIRECTIONAL ARROW
- SLOPE (3 HOR. TO 1 VERT.)
- CUT OR FILL SLOPE; ARROWS POINT DOWN SLOPE
- TREES, SHRUBS, OR HEDGES
- BURIED VALVE
- MANHOLE
- CATCH BASIN OR INLET
- HYDRANT
- LIGHT POST
- BOLLARD
- SOIL BORING AND DESIGNATION (REFER TO SOILS REPORT FOR LOCATION)

VALVES

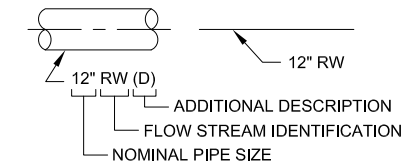
- GATE
- PLUG
- ECCENTRIC PLUG
- BUTTERFLY
- SWING CHECK
- DOUBLE DOOR CHECK
- GLOBE
- BALL
- PINCH
- DIAPHRAGM
- (BACK) PRESSURE (REDUCING/REGULATING)
- SOLENOID
- MOTORIZED
- AIR RELIEF
- PRESSURE RELIEF, VACUUM RELIEF

EQUIPMENT IDENTIFICATION

- CV CONTROL VALVE
- CP COMPRESSOR
- F FAN
- LCV LEVEL CONTROL VALVE
- ME MECHANICAL EQUIPMENT (MIXER, CLARIFIER, ETC)
- P PUMP
- PCV PRESSURE CONTROL VALVE
- PRV PRESSURE REDUCING VALVE / PRESSURE RELIEF VALVE
- PSV PRESSURE SAFETY VALVE
- SG SLUICE GATE
- TK TANK
- V VALVE (MANUAL, CHECK, ETC)

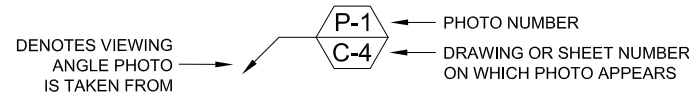


PIPING DESIGNATION

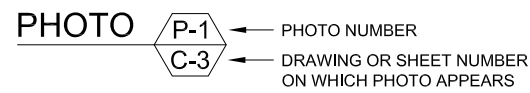


TYPICAL PHOTO DESIGNATION SYSTEM

1. DWG C-3 (WHERE THE PHOTO IS TAKEN FROM):



2. DWG C-4 (WHERE THE PHOTO APPEARS):

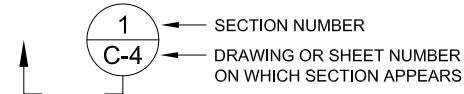


3. IF THE PHOTO APPEARS ON THE SAME DWG IT IS TAKEN FROM:

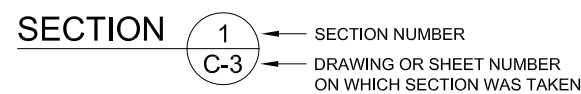


TYPICAL SECTION DESIGNATION SYSTEM

1. DWG C-3 (WHERE THE SECTION IS TAKEN FROM):



2. DWG C-4 (WHERE THE SECTION APPEARS):

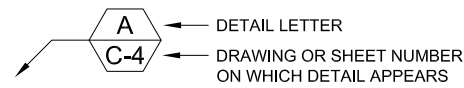


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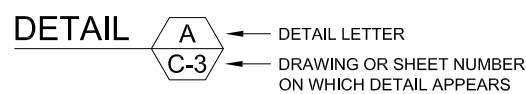


TYPICAL DETAIL DESIGNATION SYSTEM

1. DWG C-3 (WHERE THE DETAIL IS TAKEN FROM):



2. DWG C-4 (WHERE THE DETAIL APPEARS):



3. IF THE DETAIL APPEARS ON THE SAME DWG IT IS TAKEN FROM:



WHITLEY BURCHETT & ASSOCIATES
Walnut Creek, California
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SANITARY DISTRICT
MARIN COUNTY, CALIFORNIA

SLUDGE DEWATERING
PROJECT

LEGEND

REV. ---
DWG. NO. G-2
2 OF 37



1

2

3

4

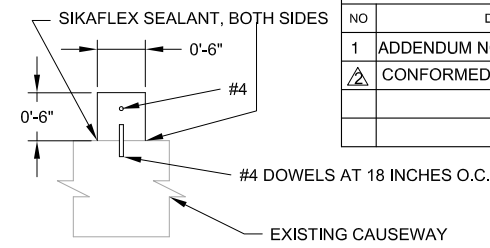
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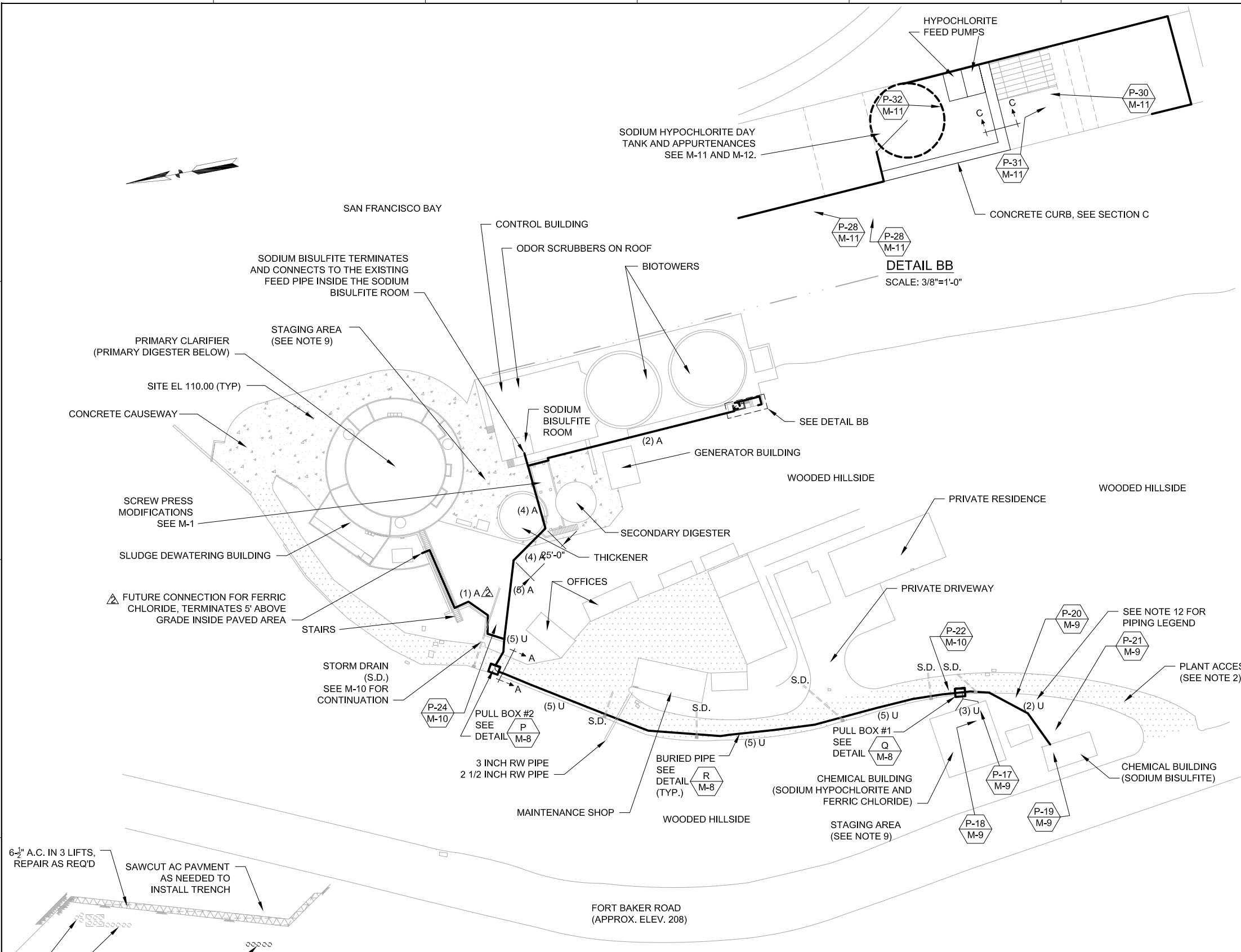
REVISIONS			
NO	DESCRIPTION	DATE	BY
1	ADDENDUM NO. 1 - REISSUANCE	3/21/08	CP
2	CONFORMED DRAWING	6/02/08	CP



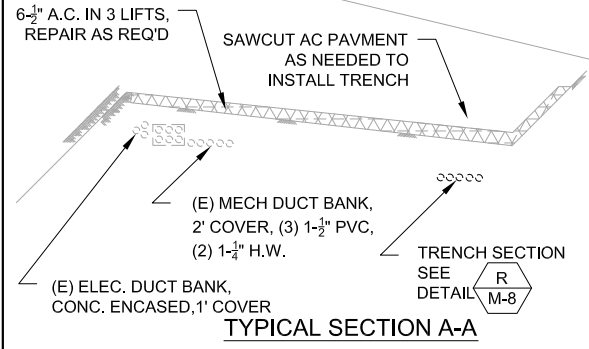
SECTION C
SCALE: 3/8"=1'-0"

NOTES:

- FOR CHEMICAL BUILDING INTERIORS, SEE P-17, P-18 AND P-19 ON SHEET M-9.
- PAVED ACCESS ROAD IS SINGLE LANE WITH GRADE AS STEEP AS 18%.
- ELEVATIONS ARE BASED ON A SEA LEVEL ELEVATION OF 100.00.
- CONTRACTOR SHALL FIELD DETERMINE AND ADJUST PIPING SUPPORTS SO THAT ALL PIPELINES ARE CONTINUOUSLY SLOPED DOWNWARD FROM THE CHEMICAL BUILDINGS TO THE APPLICATION POINTS.
- ALL BURIED PIPING SHALL BE PLACED AT A MINIMUM DEPTH OF 2'-6" FROM GRADE UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION MANAGER OR SHOWN OTHERWISE.
- ALL EXPOSED PIPING ALONG THE WOODED HILLSIDE SHALL BE SUPPORTED, SEE DETAILS J & K, ON M-7. SPACING BETWEEN SUPPORTS SHALL NOT EXCEED 6' UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION MANAGER. EXPOSED PIPING INSIDE THE TREATMENT PLANT SHALL BE SUPPORTED AND ANCHORED TO THE EXISTING STRUCTURES WITH NON-METALLIC SUPPORT SYSTEM, PER SPECIFICATION SECTION 15062.
- THE ENTIRE SODIUM BISULFITE PIPING SHALL BE HEAT TRACED WITH HEAT TRACING TAPE, RATED 3 WATTS/FT. FROM THE CHEMICAL BUILDING TO THE APPLICATION POINT. THE HEAT TRACING TAPE SHALL BE INSTALLED (PULLED) WITH THE CHEMICAL TUBING INSIDE THE CARRIER PIPE. SPLICING SHALL BE IN ACCORDANCE WITH THE RECOMMENDATION OF THE MANUFACTURER. THE EXPOSED PIPE SECTIONS SHALL BE INSULATED WITH 1/2" THICK FIBERGLASS INSULATION W/VINYL JACKET. CONTRACTOR SHALL PROPOSE AND SUBMIT A COMPLETED HEAT TRACING SYSTEM, INCLUDING INSTALLATION DETAILS AND CONTROL FEATURES, TO THE CONSTRUCTION MANAGER FOR REVIEW PER SPECIFICATION SECTION 01300. THE DESIGN PARAMETERS FOR THE SODIUM BISULFITE HEAT TRACING ARE AS FOLLOWS:
 - HEAT TRACING TAPE (SELF REGULATING) WILL BE PLACED INSIDE 2" PVC PIPE. THIS PIPE IS A CARRIER PIPE FOR 1" TUBING WHICH CARRIES SODIUM BISULFITE SOLUTION.
 - HEAT TRACING TAPE NEEDS TO BE FLEXIBLE AND STRONG ENOUGH FOR "PULLING" INSIDE THE PVC PIPE.
 - 1/2" THICK FIBERGLASS PIPE INSULATION WILL BE APPLIED TO THE EXPOSED PIPE SECTION.
 - SODIUM BISULFITE TEMPERATURE IS ASSUMED TO BE 60 DEG WHEN IT ENTERS THE PIPING SYSTEM.
 - FOR DESIGN PURPOSES, THE AMBIENT TEMPERATURE MAY BE ASSUMED TO BE 25 DEG. F. THE ANNULAR SPACE BETWEEN THE PVC PIPE AND 1" TUBING SHALL BE MAINTAINED AT 60 DEG. MINIMUM.
 - A CONTROL DEAD BAND OF 10 DEG. OR LESS WILL BE ACCEPTABLE.
 - SIMPLE CONTROL SCHEME IS PREFERRED. (THERMOSTAT CONTROL FOR ON/OFF OPERATION OF THE TRACING TAPE.
 - FLOW RATE OF SODIUM BISULFITE: 0.2 TO 1.0 GALLONS PER MINUTE
- CHEMICAL PIPING SHALL BE MARKED WITH 1/2" WIDE ELECTRICAL TAPES. MARKING SHALL BE APPLIED TO EACH STRAIGHT RUN AND AT A MAXIMUM SPACING OF 10'. MARKINGS SHALL BE COLOR CODED AS FOLLOW:
 - SODIUM HYPOCHLORITE: ORANGE
 - SODIUM BISULFITE: GREEN
 - FERRIC CHLORIDE: BROWN
- PARKING AND STAGING AREA TO BE IN THE PULLOUT AREAS AT THE TOP OF THE DRIVEWAY ON FORT BAKER ROAD, BUT NOT IN FRONT OF THE CHEMICAL STORAGE BUILDINGS. THE CAUSEWAY MAY BE USED AS A STAGING AREA AS LONG AS ACCESS TO EQUIPMENT IS NOT BLOCKED. ALL VEHICLES NOT REQUIRED FOR CURRENT CONSTRUCTION SHOULD BE PARKED ON FORT BAKER ROAD.
- CONTRACTOR SHALL OVER EXCAVATE AND BACKFILL WITH 6" THICK CLASS II AB FOR PULL BOXES FOUNDATION.
- CONTRACTOR TO EXPLORE AND CONFIRM ALL UTILITY CROSSINGS PRIOR TO TRENCHING AND REPORT SIZE AND VERTICAL ELEVATIONS TO OWNER WITHIN 30 DAYS AFTER NOTICE TO PROCEED.
- CHEMICAL PIPING LEGEND:
 - U: Underground
 - A: Above grade
- Number of Pipes
- ALL CHEMICAL PIPING SHALL BE DOUBLE CONTAINED PER DETAILS ON M-7, EXCEPT WHERE INDICATED OTHERWISE ON THE DRAWINGS.
- FERRIC CHLORIDE LINE SHALL BE SUPPORTED UNDERNEATH STAIRS ON EXISTING UNISTRUTS. SUPPORT ALONG THE EXISTING RETAINING WALL PER DETAIL L, SHEET M-7.



SITE PLAN
1 INCH = 30 FEET



TYPICAL SECTION A-A



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DESIGN	CP	JOB NUMBER	SMC 07-01
DRAWN	CP	DATE	MAY 2008
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SAUSALITO MARIN COUNTY SANITARY DISTRICT
MARIN COUNTY, CALIFORNIA

SLUDGE DEWATERING PROJECT

SITE PLAN AND YARD PIPING

REV. ---
DWG. NO. **C-1**
3 OF 37

GENERAL STRUCTURAL NOTES

G1 SCOPE

1. THE GENERAL NOTES AND TYPICAL DETAILS APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THERE ARE SPECIFICATIONS TO THE CONTRARY.
2. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE CALIFORNIA BUILDING CODE (CBC 2007) EXCEPT WHERE OTHER APPLICABLE CODES OR PROJECT DOCUMENTS ARE MORE RESTRICTIVE.
3. CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS AND DIMENSIONS PRIOR TO FABRICATION AND INSTALLATION.
4. THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE DRAWINGS OF ALL OTHER DISCIPLINES AND THE SPECIFICATIONS. THE CONTRACTOR SHALL VERIFY REQUIREMENTS OF ALL OTHER TRADES AND OTHER ITEMS TO BE PLACED OR SET IN THE STRUCTURAL WORK.
5. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL LATEST SAFETY PRECAUTIONS AND REGULATIONS DURING CONSTRUCTION. THE ENGINEER WILL NOT ADVISE NOR ISSUE DIRECTIONS AS TO SAFETY PRECAUTIONS AND PROGRAMS.
6. CONTRACTORS SHALL VISIT THE PROJECT SITE PRIOR TO BID TO ASCERTAIN CONDITIONS WHICH MAY ADVERSELY AFFECT THE WORK OR COST THEREOF.
7. THE STRUCTURAL DRAWINGS HEREIN REPRESENT THE FINISHED STRUCTURE. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY GUYING AND BRACING REQUIRED TO ERECT AND HOLD THE STRUCTURE IN PROPER ALIGNMENT UNTIL ALL STRUCTURAL WORK AND CONNECTIONS HAVE BEEN COMPLETED. THE INVESTIGATION, DESIGN, SAFETY, ADEQUACY AND INSPECTION OF ERECTION BRACING, SHORING TEMPORARY SUPPORTS, ETC. ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE METHODS, TECHNIQUES AND SEQUENCES OF PROCEDURES TO PERFORM THE WORK. THE SUPERVISION OF THE WORK IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
9. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION, WHERE CONDITIONS ARE NOT SPECIFICALLY SHOWN. SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO APPROVAL BY THE ENGINEER. STRUCTURAL DRAWINGS SHALL NOT BE SCALED.
10. ALL STRUCTURAL SYSTEMS WHICH ARE TO BE COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH THE SUPPLIER'S INSTRUCTIONS AND REQUIREMENTS.
11. LOADING APPLIED TO THE STRUCTURE DURING THE PROCESS OF CONSTRUCTION SHALL NOT EXCEED THE SAFE LOAD-CARRYING CAPACITY OF THE STRUCTURAL MEMBERS. THE LIVE LOADS USED IN THE DESIGN OF THIS STRUCTURE ARE INDICATED IN THE "DESIGN CRITERIA". DO NOT APPLY ANY CONSTRUCTION LOADS UNTIL STRUCTURAL FRAMING IS PROPERLY CONNECTED TOGETHER AND UNTIL ALL TEMPORARY SHORING AND BRACING IS IN PLACE.
12. ALL ASTM AND OTHER REFERENCES ARE PER THE LATEST EDITIONS OF THESE STANDARDS, UNLESS OTHERWISE NOTED.
13. SHOP DRAWINGS AND OTHER ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION. ALL SHOP DRAWINGS SHALL BE REVIEWED, STAMPED AND SIGNED BY THE GENERAL CONTRACTOR BEFORE SUBMITTAL. THE ENGINEER'S REVIEW IS TO BE FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE RELEVANT CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW, CHECK AND COORDINATE THE SHOP DRAWINGS PRIOR TO SUBMISSION. THE CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATION OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, DIMENSIONS, ETC.
14. SPECIAL INSPECTIONS
IN ACCORDANCE WITH SECTION CBC 2007, SPECIAL INSPECTIONS WILL BE REQUIRED FOR THIS PROJECT. SPECIAL INSPECTIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE "SCHEDULE OF SPECIAL INSPECTIONS". ALL FABRICATORS SHALL SATISFY THE "EXCEPTION" NOTED IN SECTION 1705.2.2, WHICH REQUIRES THE FABRICATOR TO MAINTAIN AN AGREEMENT WITH AN APPROVED INDEPENDENT INSPECTION OR QUALITY CONTROL AGENCY. THE CONTRACTOR SHALL NOTIFY THE SPECIAL INSPECTOR AT LEAST 48 HOURS IN ADVANCE FOR WORK THAT WILL REQUIRE INSPECTION OR TESTING. SPECIAL INSPECTIONS ARE REQUIRED FOR THE FOLLOWING ITEMS:
 - A. ALL FIELD AND SHOP WELDING
 - B. BOLTS CAST IN CONCRETE - EPOXY ANCHORS, WEDGE ANCHORS & ANCHOR RODS
 - C. FIBER REINFORCED POLYMER STRENGTHENING SYSTEM

15. DEFERRED ITEMS

THE FOLLOWING ITEMS ARE DEFERRED SUBMITTALS AND NOT DESIGNED BY THE ENGINEER OF RECORD:

- A. METAL STAIRS, GRATINGS AND RAILINGS INCLUDING ALL ATTACHMENTS
- B. EQUIPMENT ANCHORAGES
SUBMIT ITEMS TO ENGINEER FOR REVIEW. GENERAL CONTRACTOR SHALL REVIEW AND APPROVE DIMENSIONS AND DETAILS SHOWN ON THE SHOP DRAWINGS PRIOR TO SUBMITTAL. DRAWINGS AND CALCULATIONS SHALL BE PREPARED, SEALED AND SIGNED BY CALIFORNIA LICENSED CIVIL OR STRUCTURAL ENGINEER.

16. FIBER REINFORCED POLYMER STRENGTHENING SYSTEM

- A. PROPOSED FRP COMPOSITE SYSTEM SHALL HAVE A CURRENT ICC EVALUATION REPORT AND BE INSTALLED ACCORDING TO THE CONTRACT DOCUMENTS, MANUFACTURER'S AND ICC RECOMMENDATIONS AND PROCEDURES.
- B. CONTRACTOR SHALL HAVE A MINIMUM OF TEN (10) STRENGTHENING PROJECTS REFERENCES USING FRP COMPOSITE SYSTEMS FOR SIMILAR PROJECTS AND APPLICATIONS IN THE LAST TWO YEARS. THIS LIST SHALL BE INCLUDED IN THE SHOP DRAWING SUBMITTAL.
- C. THE ONSITE SUPERVISOR, FOREMAN AND SATURATION/MIXING TECHNICIAN SHALL HAVE A MINIMUM OF THREE (3) YEARS EXPERIENCE ON AT LEAST FIFTEEN (15) DIFFERENT PROJECTS. THESE THREE INDIVIDUALS SHALL PROVIDE WRITTEN VERIFICATION FROM THE MATERIAL MANUFACTURER AS BEING FULLY TRAINED AND CERTIFIED TO INSTALL THE FRP.
- D. COMPOSITE SYSTEM APPLICATOR SHALL SUBMIT WITNESS PANELS PREPARED AT THE JOBSITE FOR MATERIALS TESTING (ASTM D339). THE TESTING SHALL BE DONE BY AN INDEPENDENT TESTING LABORATORY TO VERIFY ALL SUBMITTED DESIGN PROPERTIES. TESTING SHALL BE PAID FOR BY THE OWNER. FIELD TEST RESULTS THAT ARE LOWER THAN THE DESIGN PROPERTIES SUBMITTED SHALL REQUIRE THE CONTRACTOR TO PAY FOR REMEDIAL MEASURES TO BE APPROVED BY THE ENGINEER OF-RECORD.
- E. CONTRACTOR SHALL SUBMIT CALCULATIONS VERIFYING COMPLIANCE WITH THE DESIGN CRITERIA STATED ON THE CONTRACT DRAWINGS. CALCULATIONS SHALL BE BASED ON THE VERIFIED MATERIAL PROPERTIES AND CORRESPONDING LAYER THICKNESS AND SHALL BE STAMPED AND DESIGNED BY A CIVIL AND STRUCTURAL ENGINEER REGISTERED IN STATE OF CALIFORNIA.
- F. CONTRACTOR SHALL VERIFY AND COORDINATE LOCATION OF ALL ANCHORS AND ANCHOR BOLTS IN EXISTING CONCRETE PRIOR TO INSTALLATION OF FRP STRENGTHENING SYSTEM.

CAST IN PLACE CONCRETE

C1 APPLICABLE CODE
CONCRETE CONSTRUCTION SHALL CONFORM TO THE 2005 EDITION OF THE ACI BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-05 AND ACI 318R-05) PLUS SUPPLEMENT.

C2 REINFORCING STEEL
ALL DETAILING, FABRICATION, AND ERECTION OF REINFORCING BARS, UNLESS OTHERWISE NOTED SHALL BE IN ACCORDANCE WITH MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCING CONCRETE STRUCTURES (CRSI AND ACI-315) LATEST EDITION.

C3 DESIGN STRESSES
A. CONCRETE (MINIMUM 28 DAYS COMPRESSIVE STRENGTH) SHALL BE 4000 PSI UNLESS OTHERWISE NOTED.
B. REINFORCING STEEL- ALL REINFORCING STEEL SHALL BE ASTM A615, GRADE 60 UNLESS NOTED OTHERWISE.

C4 CONCRETE COVER
WHERE NOT SPECIFICALLY CALLED OUT, CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS:

- A. FOOTINGS AND FLOOR SLAB CAST AGAINST EARTH - 3"
- B. FORMED SURFACES IN CONTACT W/ EARTH OR WEATHER - 2"
- C. OTHERS - 1 1/2"

C5 EXTRA ACCESSORY BARS

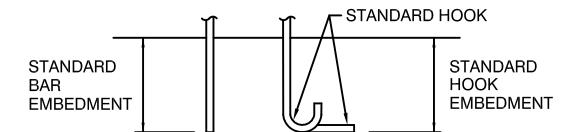
IN ADDITION TO NORMAL ACCESSORIES USED TO HOLD REINFORCING STEEL FIRMLY IN POSITION, EXTRA ACCESSORY BARS SHALL BE USED WHEN REQUIRED TO CONFORM TO ACI TOLERANCES.

REVISIONS			
NO	DESCRIPTION	DATE	BY

C6 BAR LAP SPLICES

1. ALL LAP SPLICES TO BE CLASS B, REFERENCE TABLE BELOW

REINFORCEMENT LAP SPlice AND EMBEDMENT LENGTH								
BAR SIZE	BAR SPACING	** MIN. LAP LENGTH (IN.)				**MIN. EMBEDMENT LGTH.(IN)		
		TOP BARS		OTHER BARS		STRAIGHT BARS		WITH STD. HOOK
		CLASS	CLASS	TOP BARS	OTHER BARS			
A	B	A	B	A	B	A	B	
REQUIREMENTS FOR SLABS & WALLS								
#3	6" TO 12"	14	19	12	14	14	12	6
#4		19	24	14	19	19	14	7
#5		23	30	18	23	23	18	9
#6		28	36	21	28	28	21	10
#7		32	42	25	32	32	25	12
#8		44	57	34	44	44	34	14
#9	6"	69	90	53	69	69	53	15
	7" TO 12"	55	72	43	55	55	43	
#10	6" TO 7"	88	114	67	88	88	67	17
	8" TO 12"	70	91	54	70	70	54	
#11	6" TO 8"	108	140	83	108	108	83	19
	9" TO 12"	86	112	66	86	86	66	



** FOR BAR CLEAR SPACING LESS THAN 3 BAR DIAMETER, ADD 40%
FOR BAR CLEAR SPACING LESS THAN 2 BAR DIAMETER, ADD 100%.

2. TOP BARS ARE ALL HORIZONTAL BARS PLACED SO THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BARS. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.

C7 STANDARD HOOKS

ALL HORIZONTAL REINFORCING BARS SHALL BE TERMINATED IN STANDARD HOOKS UNLESS OTHERWISE SHOWN.

C8 CHAMFERS

EXCEPT WHERE OTHERWISE REQUIRED, EXPOSED CONCRETE CORNERS AND EDGES SHALL HAVE 3/4" CHAMFERS. RE-ENTRANT CORNERS SHALL NOT HAVE FILLETS.

STEEL

ST1 APPLICABLE CODE

STEEL CONSTRUCTION SHALL CONFORM TO SPECIFICATIONS AND STANDARDS PRESENTED IN THE AISC 9TH EDITION ASD STEEL CONSTRUCTION MANUAL.

ST2 MATERIAL

ALL STRUCTURAL STEEL SHAPES, BARS, PLATES AND SHEETS INDICATED ON THE DRAWINGS SHALL BE ASTM A-36 UNLESS OTHERWISE NOTED.

ST3 WELDING

WELDING SHALL CONFORM TO AWS D1.1 CODE LATEST EDITION FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION. WELDER SHALL BE CERTIFIED BY AWS.

ST4 PAINTING

STRUCTURAL STEEL SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH SPECIFICATIONS.



2/25/08

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DESIGN <u>W. MAN</u>	JOB NUMBER SMC07-1
DRAWN <u>E. POSADAS</u>	DATE FEBRUARY 2008
CHECKED <u>C. PAO</u>	

LINE IS 2 INCHES AT FULL SCALE
IF NOT 2 INCHES, SCALE ACCORDINGLY

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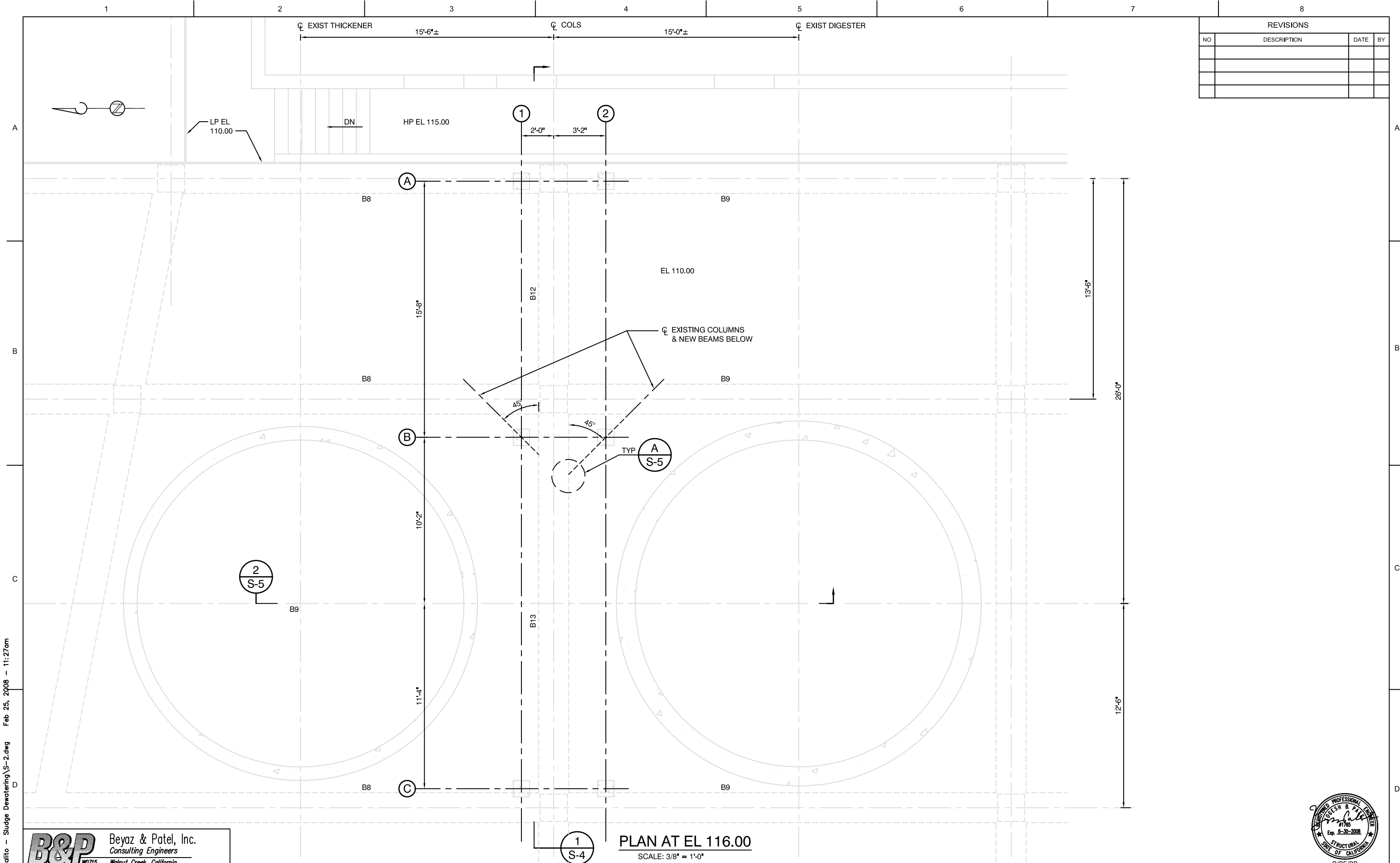
**SLUDGE DEWATERING
PROJECT**

STRUCTURAL NOTES

REV. 0
DWG. NO. S-1
4 OF 37

T:\W0715 Sausalito - Sludge Dewatering\S-1.dwg Feb 25, 2008 - 11:26am

REVISIONS			
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T:\W0715 Sausalito - Sludge Dewatering\S-2.dwg Feb 25, 2008 - 11:27 am

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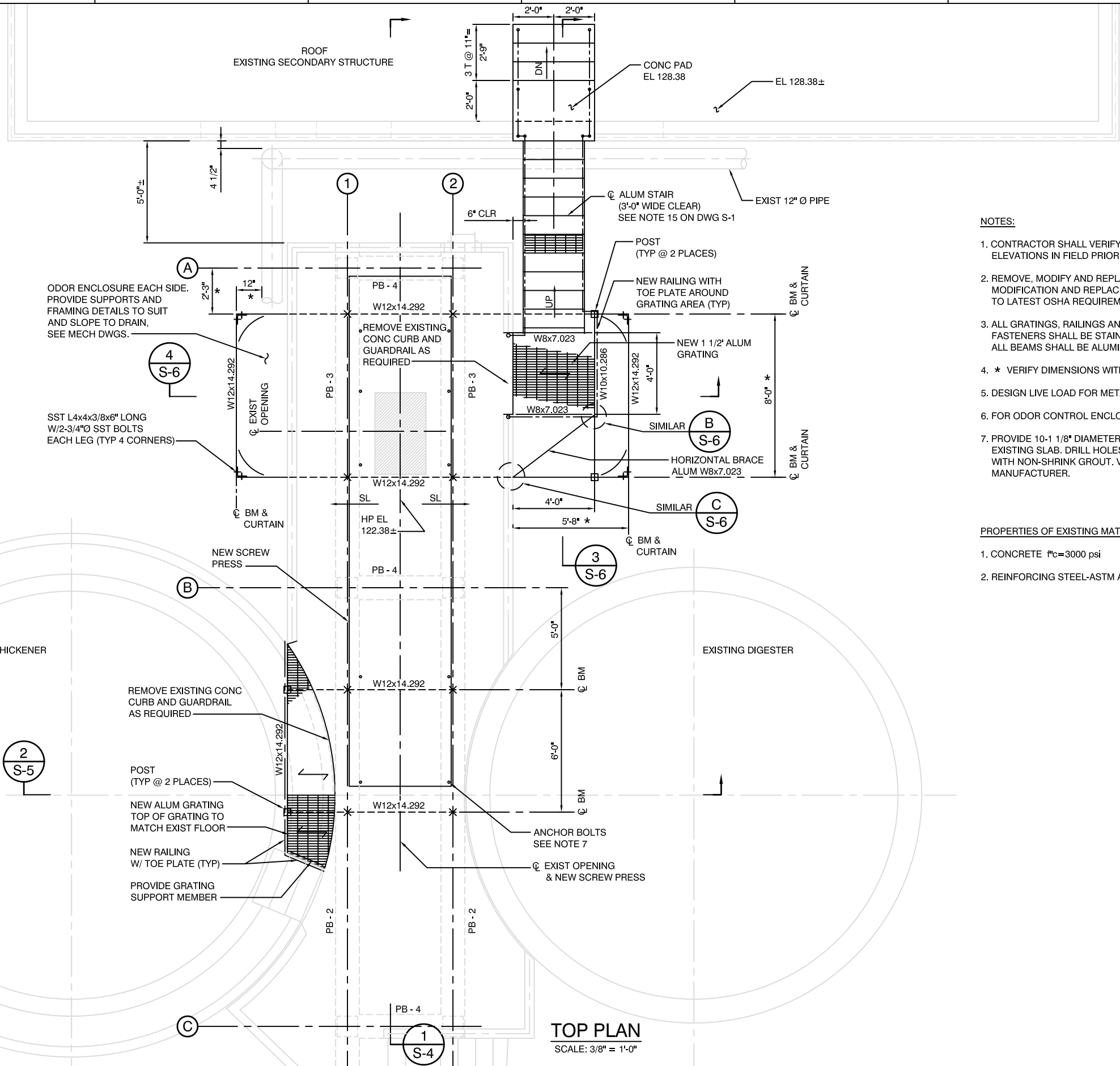
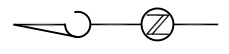
SLUDGE DEWATERING
PROJECT

PLAN AT EL 116.00



REV. 0
DWG. NO. S-2
5 OF 37

REVISIONS			
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- NOTES:**
1. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND ELEVATIONS IN FIELD PRIOR TO FABRICATION AND INSTALLATION.
 2. REMOVE, MODIFY AND REPLACE EXISTING RAILING AS REQUIRED. MODIFICATION AND REPLACEMENT OF RAILING SHALL CONFORM TO LATEST OSHA REQUIREMENTS.
 3. ALL GRATINGS, RAILINGS AND STAIRS SHALL BE ALUMINUM AND ALL FASTENERS SHALL BE STAINLESS STEEL UNLESS INDICATED OTHERWISE. ALL BEAMS SHALL BE ALUMINUM, 6061-T6. SEE SPECIFICATIONS.
 4. * VERIFY DIMENSIONS WITH MECHANICAL DRAWINGS.
 5. DESIGN LIVE LOAD FOR METAL STAIR AND GRATING AREA = 100 PSF
 6. FOR ODOR CONTROL ENCLOSURE AND CURTAIN SEE SECTION 2/M-5.
 7. PROVIDE 10-1 1/8" DIAMETER SST AB WITH 4"x4"x1/4" SST PLATE THROUGH EXISTING SLAB. DRILL HOLES, SET BOLTS, LEVELING NUTS AND WASHERS WITH NON-SHRINK GROUT. VERIFY SIZE AND LOCATION WITH EQUIPMENT MANUFACTURER.

- PROPERTIES OF EXISTING MATERIALS:**
1. CONCRETE $f'_c=3000$ psi
 2. REINFORCING STEEL-ASTM A615 - GRADE 60.

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

T:\W0715 Sausalito - Sludge Dewatering\S-3.dwg Feb 25, 2008 - 11:28am

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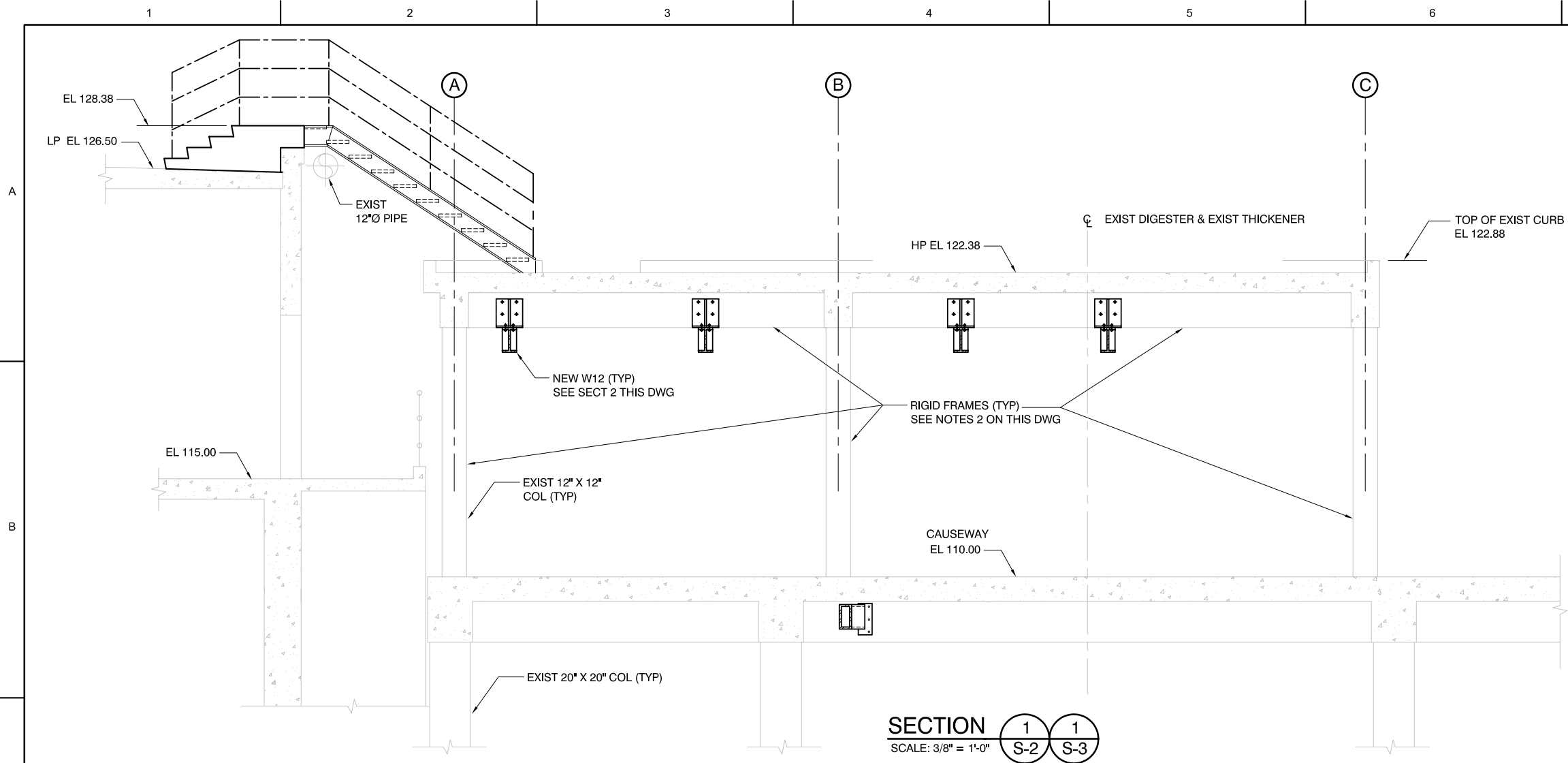
**SLUDGE DEWATERING
PROJECT**

TOP PLAN



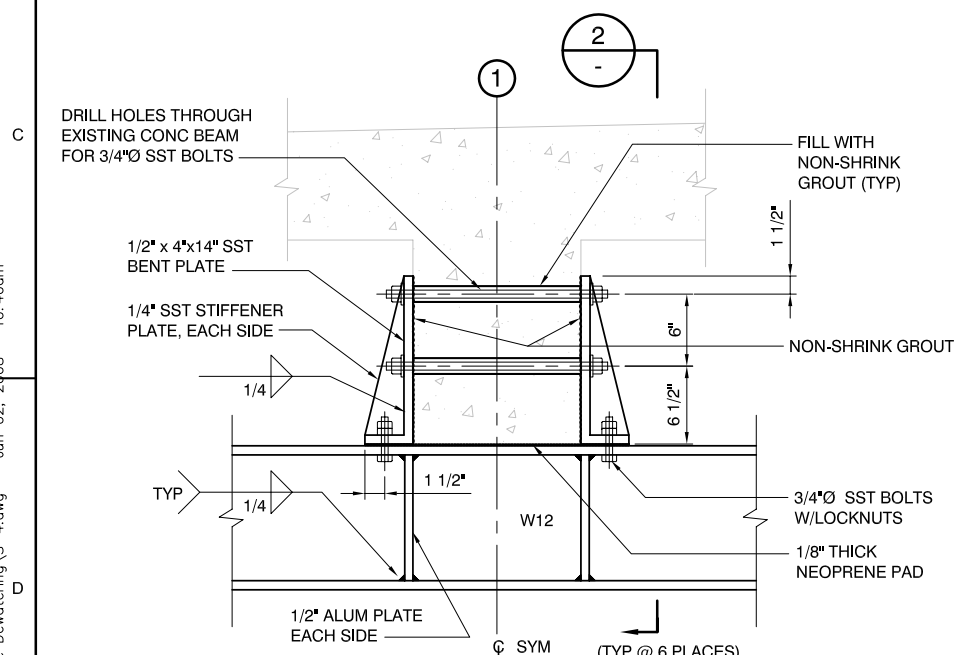
REV.	0
DWG. NO.	S-3
	6 OF 37

REVISIONS			
NO	DESCRIPTION	DATE	BY
△	CONFORMED DRAWING	6/2/08	CP

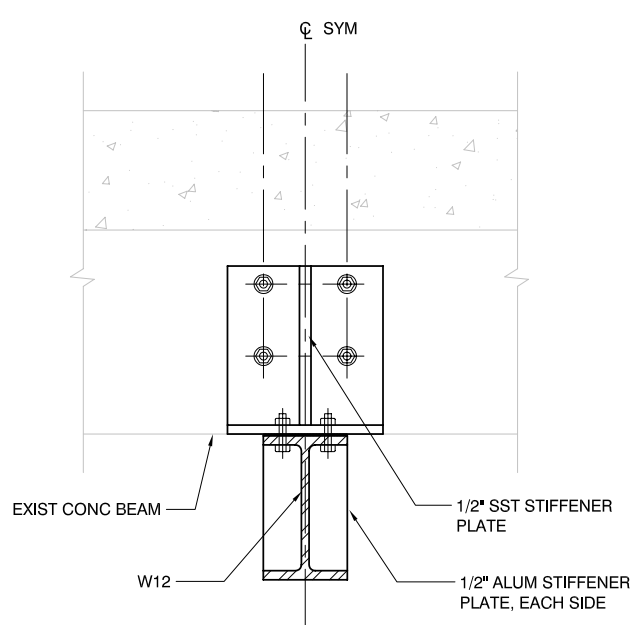


- NOTES:**
- RIGID FRAME AT COLUMN LINE ② AS SHOWN. RIGID FRAME AT COLUMN LINES ① SIMILAR.
 - EXISTING REINFORCED CONCRETE RIGID FRAMES SHALL BE STRENGTHENED USING EXTERNALLY BONDED FIBER REINFORCED POLYMER (FRP) SYSTEM. PER SPECIFICATION SECTION 13900.
 - ALL EXISTING COLUMNS SHALL BE STRENGTHENED FOR ADDITIONAL CAPACITIES AS FOLLOWS:
 SHEAR $V_R = 4$ KIPS FULL HEIGHT EACH DIRECTION
 MOMENT $M_R = 68$ ft KIPS FULL HEIGHT EACH FACE EACH DIRECTION
 - ALL EXISTING BEAMS SHALL BE STRENGTHENED FOR ADDITIONAL SHEAR AND MOMENT CAPACITIES, SEE DWG S-6.
 - △ THE BEAM CANTILVERED ALONG COLUMN LINE #1, WEST OF COLUMN LINE #4 SHALL BE STRENGTHENED IN ACCORDANCE WITH NOTE 4 ABOVE.
 - △ REMOVE THE STAIRS AND GRATING ON THE WEST END OF COLUMN LINE C AS NEEDED SO THAT THE COLUMNS AND/OR BEAMS CAN PROPERLY PREPARED AND WRAPPED AS SPECIFIED.

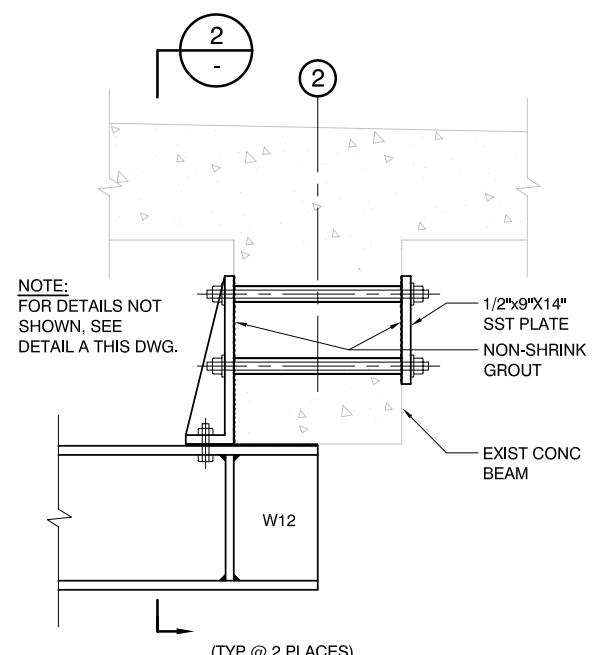
SECTION 1
SCALE: 3/8" = 1'-0"



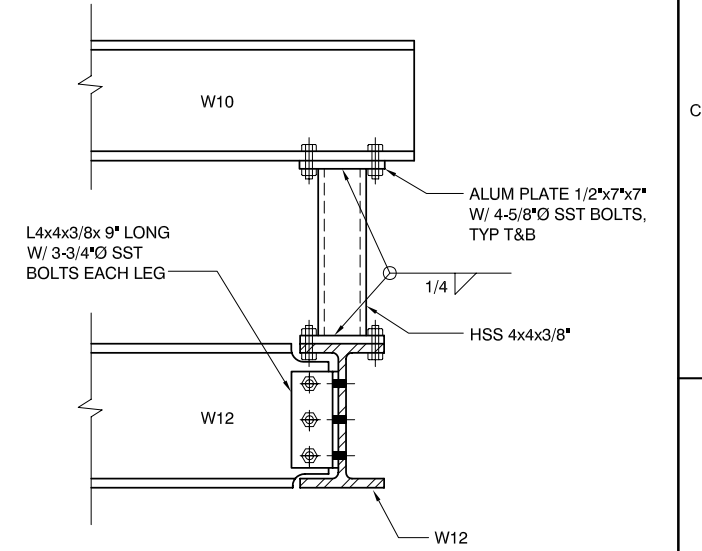
DETAIL A
SCALE: 1 1/2" = 1'-0"



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



DETAIL B
SCALE: 1 1/2" = 1'-0"



DETAIL C
SCALE: 1 1/2" = 1'-0"

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MARIN COUNTY, CALIFORNIA

SLUDGE DEWATERING PROJECT

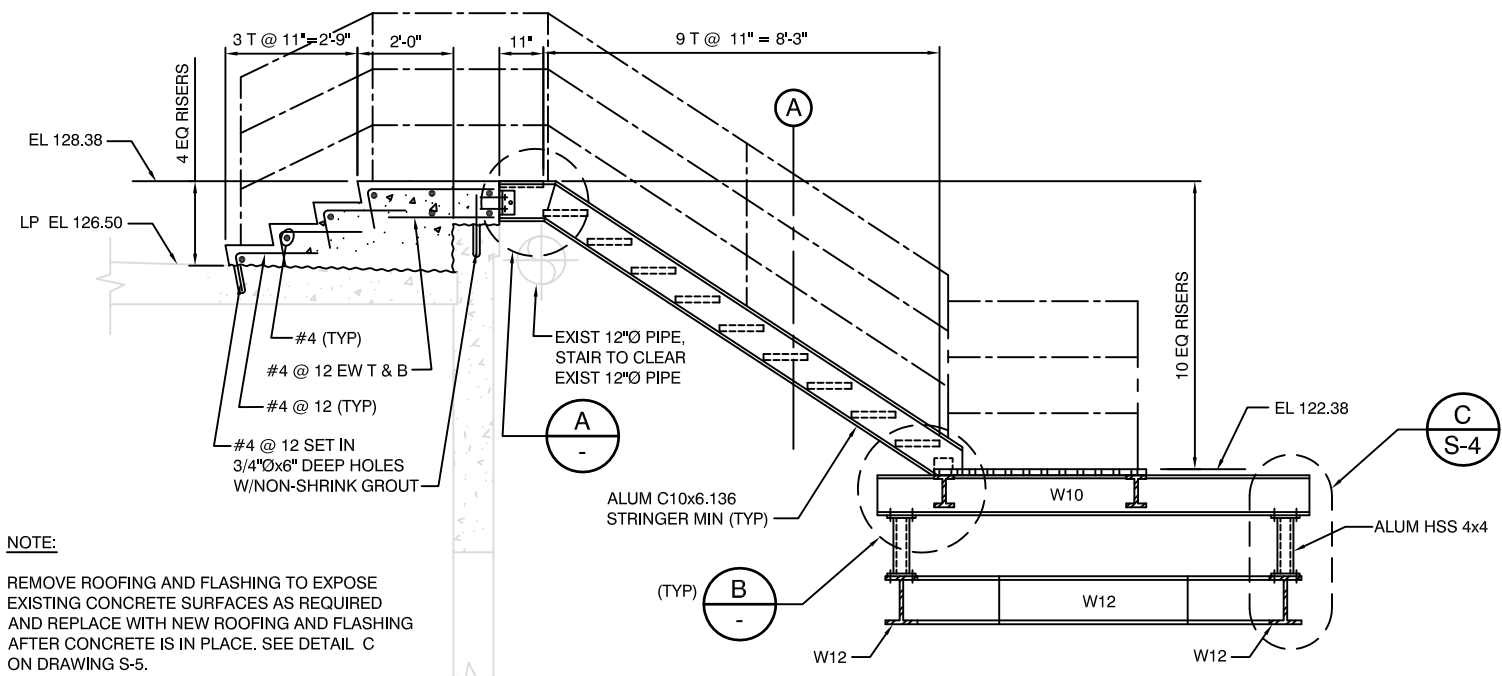
SECTIONS AND DETAILS

REV. 0
DWG. NO. S-4
7 OF 37

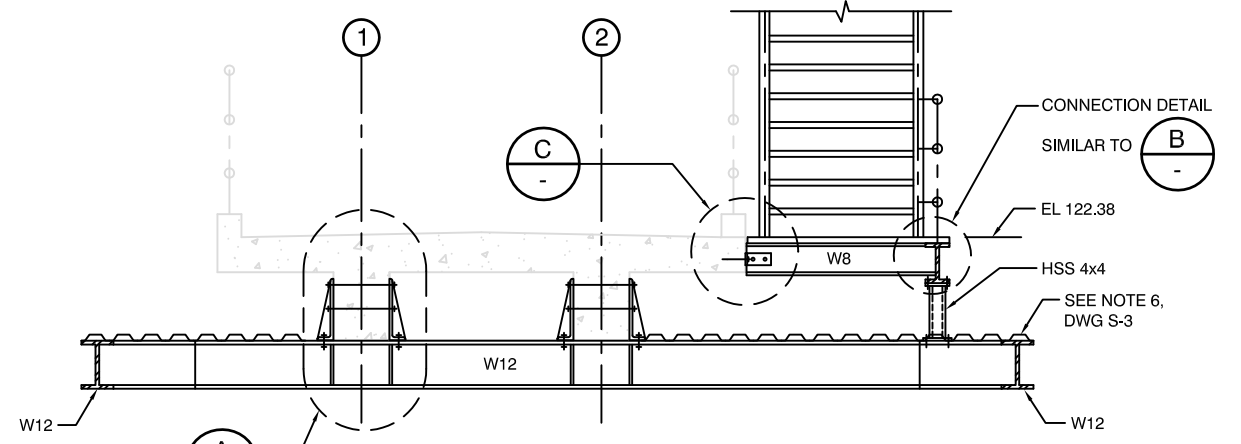


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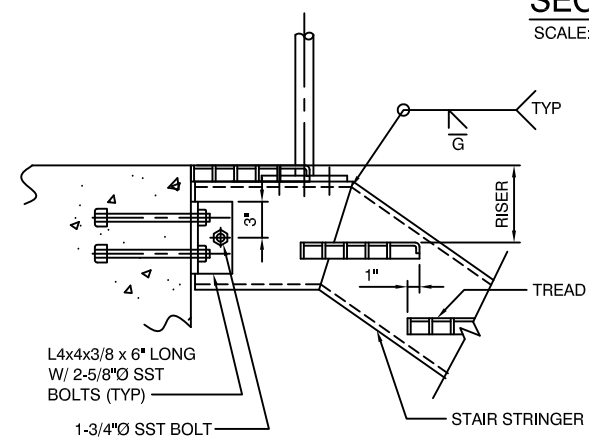


NOTE:
REMOVE ROOFING AND FLASHING TO EXPOSE EXISTING CONCRETE SURFACES AS REQUIRED AND REPLACE WITH NEW ROOFING AND FLASHING AFTER CONCRETE IS IN PLACE. SEE DETAIL C ON DRAWING S-5.

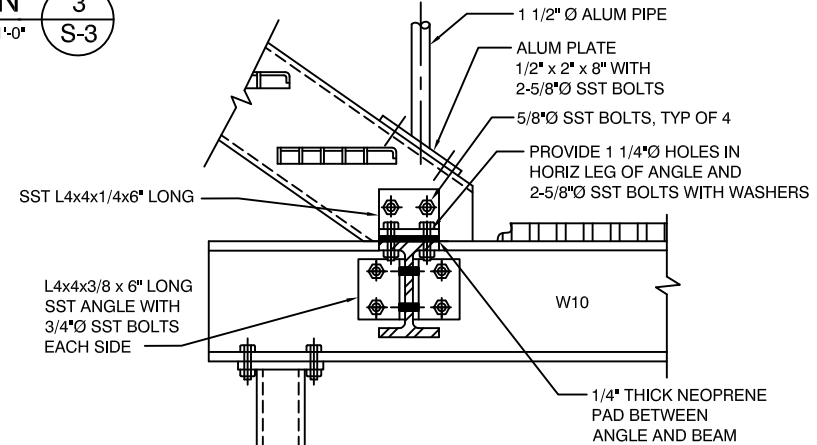


SECTION 3
SCALE: 1/2" = 1'-0"
S-3

SECTION 4
SCALE: 1/2" = 1'-0"
S-3



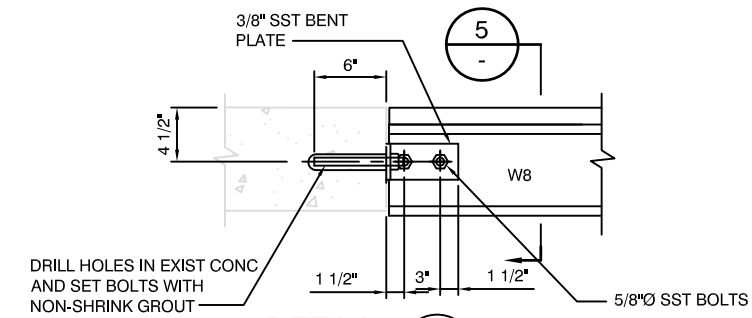
DETAIL A
SCALE: 1 1/2" = 1'-0"
-



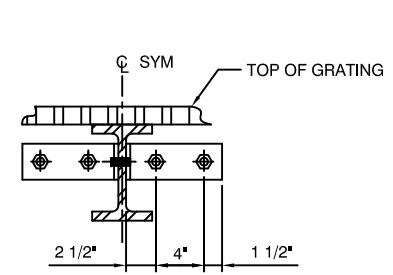
DETAIL B
SCALE: 1 1/2" = 1'-0"
-

BEAM SCHEDULE						
BEAM NO. SEE PLANS	EXISTING BEAM SIZE	M _R @ TOP OF END SUPPORT	M _R @ BOTTOM	M _R @ TOP OF INTERMEDIATE SUPPORT	V _R	REMARKS
PB - 2	14 x 28	34.0	16.0	54.0	16.0	ADDITIONAL ULTIMATE SHEAR CAPACITIES REQUIRED FOR 1/4 LENGTH OF THE BEAM SPAN
PB - 3	14 x 28	20.0	-	54.0	8.0	ADDITIONAL ULTIMATE SHEAR CAPACITIES REQUIRED FOR 1/4 LENGTH OF THE BEAM SPAN
PB - 4	14 x 28	38.0	-	-	16.0	ADDITIONAL CAPACITIES REQUIRED FULL LENGTH OF THE BEAM

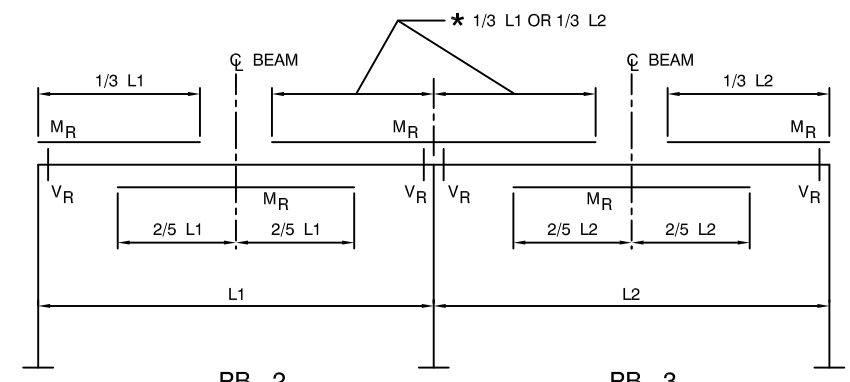
NOTE:
M_R - ADDITIONAL ULTIMATE MOMENT CAPACITY REQUIRED IN FT KIPS
V_R - ADDITIONAL ULTIMATE SHEAR CAPACITY REQUIRED IN KIPS FROM FACE OF EACH SUPPORT AND IN BOTH DIRECTIONS FOR INTERMEDIATE SUPPORTS



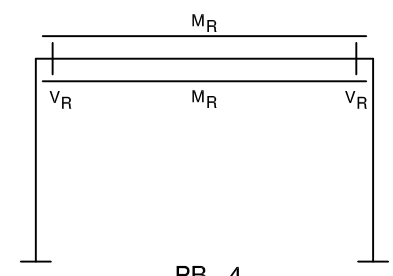
DETAIL C
SCALE: 1 1/2" = 1'-0"
-



SECTION 5
SCALE: 1 1/2" = 1'-0"
-



NOTE:
* WHICHEVER IS GREATER.



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DATE FEBRUARY 2008

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MARIN COUNTY, CALIFORNIA

SLUDGE DEWATERING
PROJECT

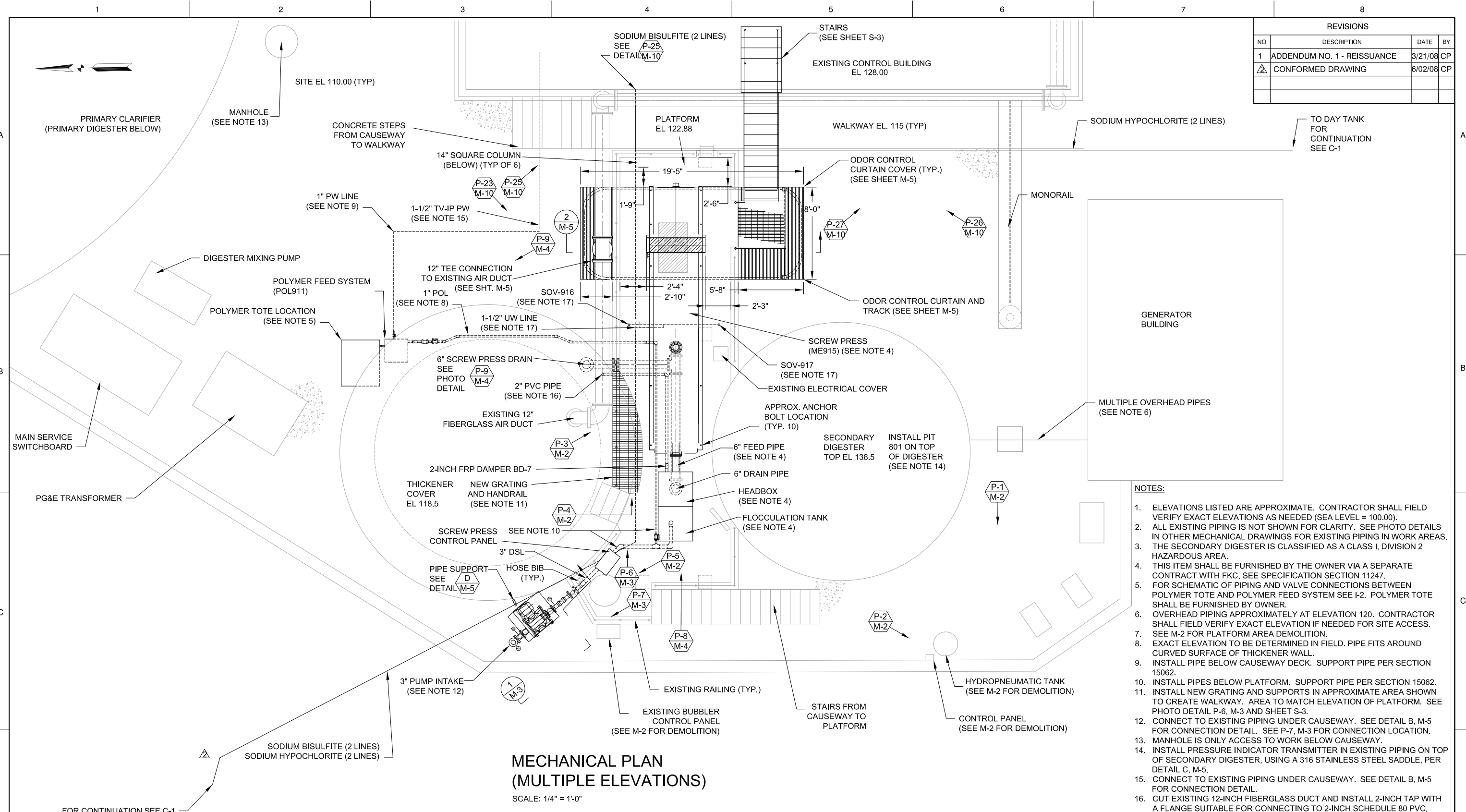
SECTIONS AND DETAILS



REV. 0
DWG. NO. S-6
9 OF 37

T:\W0715 Sausalito - Sludge Dewatering\S-6.dwg Feb 25, 2008 11:31am

REVISIONS			
NO	DESCRIPTION	DATE	BY
1	ADDENDUM NO. 1 - REISSUANCE	3/21/08	CP
2	CONFORMED DRAWING	6/02/08	CP



**MECHANICAL PLAN
(MULTIPLE ELEVATIONS)**
SCALE: 1/4" = 1'-0"

- NOTES:**
- ELEVATIONS LISTED ARE APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY EXACT ELEVATIONS AS NEEDED (SEA LEVEL = 100.00).
 - ALL EXISTING PIPING IS NOT SHOWN FOR CLARITY. SEE PHOTO DETAILS IN OTHER MECHANICAL DRAWINGS FOR EXISTING PIPING IN WORK AREAS.
 - THE SECONDARY DIGESTER IS CLASSIFIED AS A CLASS I, DIVISION 2 HAZARDOUS AREA.
 - THIS ITEM SHALL BE FURNISHED BY THE OWNER VIA A SEPARATE CONTRACT WITH FK. SEE SPECIFICATION SECTION 11247.
 - FOR SCHEMATIC OF PIPING AND VALVE CONNECTIONS BETWEEN POLYMER TOTE AND POLYMER FEED SYSTEM SEE I-2. POLYMER TOTE SHALL BE FURNISHED BY OWNER.
 - OVERHEAD PIPING APPROXIMATELY AT ELEVATION 120. CONTRACTOR SHALL FIELD VERIFY EXACT ELEVATION IF NEEDED FOR SITE ACCESS.
 - SEE M-2 FOR PLATFORM AREA DEMOLITION.
 - EXACT ELEVATION TO BE DETERMINED IN FIELD. PIPE FITS AROUND CURVED SURFACE OF THICKENER WALL.
 - INSTALL PIPE BELOW CAUSEWAY DECK. SUPPORT PIPE PER SECTION 15062.
 - INSTALL PIPES BELOW PLATFORM. SUPPORT PIPE PER SECTION 15062.
 - INSTALL NEW GRATING AND SUPPORTS IN APPROXIMATE AREA SHOWN TO CREATE WALKWAY. AREA TO MATCH ELEVATION OF PLATFORM. SEE PHOTO DETAIL P-6, M-3 AND SHEET S-3.
 - CONNECT TO EXISTING PIPING UNDER CAUSEWAY. SEE DETAIL B, M-5 FOR CONNECTION DETAIL. SEE P-7, M-3 FOR CONNECTION LOCATION.
 - MANHOLE IS ONLY ACCESS TO WORK BELOW CAUSEWAY.
 - INSTALL PRESSURE INDICATOR TRANSMITTER IN EXISTING PIPING ON TOP OF SECONDARY DIGESTER, USING A 316 STAINLESS STEEL SADDLE, PER DETAIL C, M-5.
 - CONNECT TO EXISTING PIPING UNDER CAUSEWAY. SEE DETAIL B, M-5 FOR CONNECTION DETAIL.
 - CUT EXISTING 12-INCH FIBERGLASS DUCT AND INSTALL 2-INCH TAP WITH A FLANGE SUITABLE FOR CONNECTING TO 2-INCH SCHEDULE 80 PVC. INSTALL A 2-INCH PVC PIPE AND DAMPER BETWEEN EXISTING DUCT AND HEADBOX FOR ODOR CONTROL.
 - CONNECT UW LINE TO EXISTING HOSE BIB, SEE DETAIL B, M-5. WATER PIPING WITH SOLENOID VALVES SHALL BE CONNECTED TO THE SCREW PRESS SKID. ACTUAL LOCATIONS SHALL BE DETERMINED IN THE FIELD.



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**SLUDGE DEWATERING
PROJECT**

MECHANICAL PLAN
REV. ---
DWG. NO. **M-1**
10 OF 37

REVISIONS			
NO	DESCRIPTION	DATE	BY
1	CONFORMED DRAWING	6/02/08	CP



PHOTO
(HYDROPNEUMATIC TANK)
NOT TO SCALE

P-1
M-1

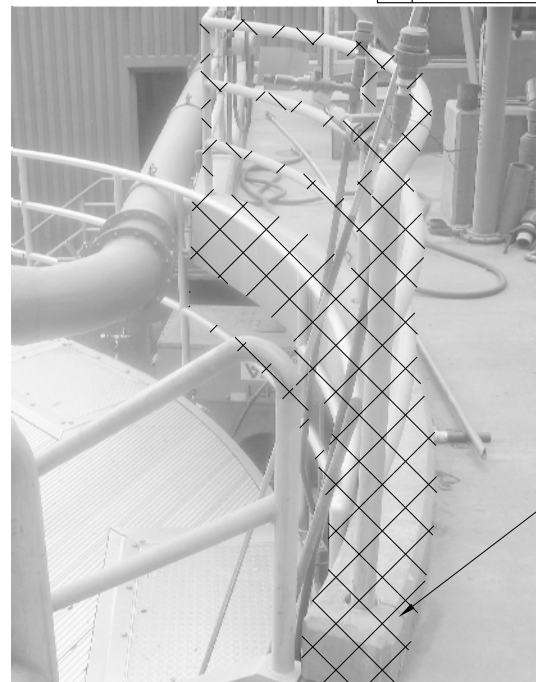


PHOTO
(CURB AND RAILING)
NOT TO SCALE

P-4
M-1

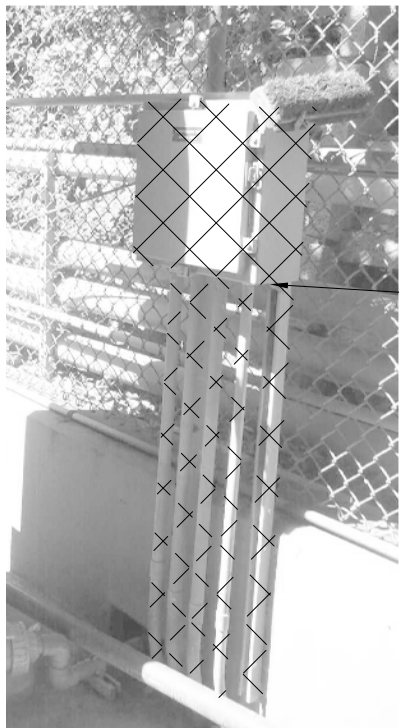


PHOTO
(LOCAL CONTROL PANEL)
NOT TO SCALE

P-2
M-1

PHOTO
(GRIT CLASSIFIER, HOPPER, PIPING AND APPURTENANCES)
NOT TO SCALE

P-3
M-1



PHOTO
(BUBBLER CONTROL PANEL)
NOT TO SCALE

P-5
M-1

NOTES:

1. REMOVE AND DISPOSE OF ALL CROSS-HATCHED ITEMS.
2. INSTALL WATERTIGHT CAPS ON EXISTING ELECTRICAL CONDUITS.
3. REMOVE AND DISPOSE OF CONCRETE AND HANDRAILING AS NEEDED FOR INSTALLATION OF NEW GRATING AND HANDRAIL.. SEE SHEET S-3.
4. REMOVE AND DISPOSE OF EXISTING PANEL AND BUBBLERLEVEL DEVICE. REPLACE BUBBLER WITH ULTRASONIC LEVEL INDICATOR TRANSMITTER.
5. GRIT CLASSIFIER AND GRIT WASHER SHOWN IN PHOTO DETAIL 3 SHALL BE TURNED OVER TO THE DISTRICT AFTER REMOVAL. REMOVE THESE ITEMS CAREFULLY SO THAT THEY ARE NOT DAMAGED.
6. REMOVE AND DISPOSE OF ALL EXISTING ABOVE GRADE SODIUM BISULFITE AND SODIUM HYPOCHLORITE PIPES AND INSULATION BETWEEN THE CONNECTION TO SODIUM BISULFITE ROOM AND HILLSIDE. CAP REMAINING ENDS OF THE PIPING WHERE IT DAYLIGHTS ON THE HILLSIDE. THIS WORK SHALL BE COMPLETED ONLY AFTER THE NEW SODIUM BISULFITE AND SODIUM HYPOCHLORITE PIPING SYSTEMS HAVE BEEN INSTALLED, TESTED AND PROVEN OPERATIONAL TO THE SATISFACTION OF THE DISTRICT.



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MARIN COUNTY, CALIFORNIA

SLUDGE DEWATERING PROJECT

DEMOLITION DETAILS



REV. ---
DWG. NO. **M-2**
11 OF 37

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PHOTO P-3a
 (GRIT CLASSIFIER
 PIPING)
 NOT TO SCALE



PHOTO P-3b
 (GRIT CLASSIFIER
 PIPING)
 NOT TO SCALE

Notes:

1. HATCHED PIPING TO BE REMOVED.
2. GATE VALVE TO BE REMOVED AND RETURNED TO DISTRICT. REMAINING PIPE TO BE CAPPED.
3. REMOVE EXISTING PIPING FROM SLAB AND SEAL WITH NON-SHRINK GROUT.



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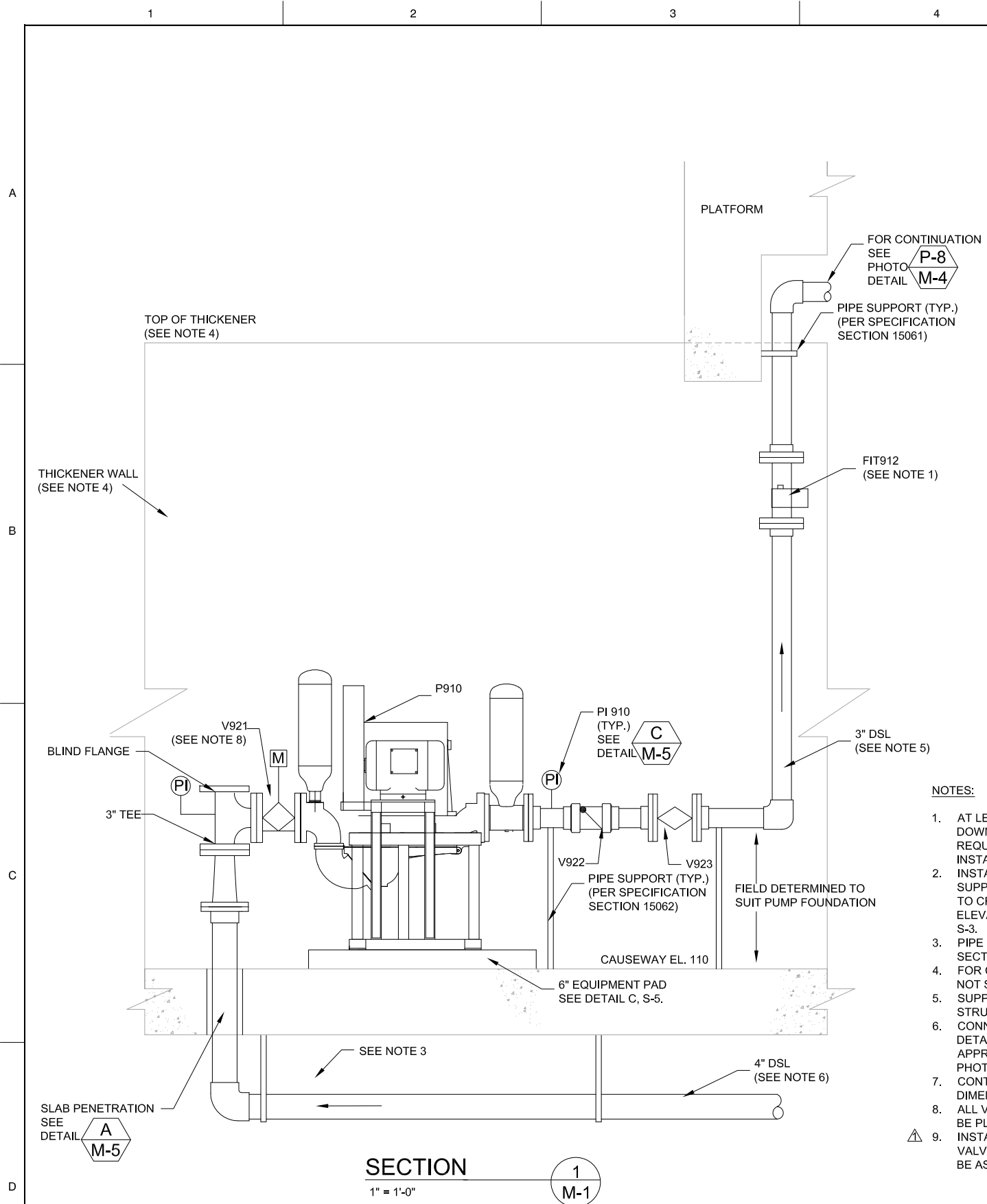
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**SLUDGE DEWATERING
 PROJECT**

DEMOLITION DETAILS

REV. ---
 DWG. NO. **M-2a**
 11a OF 37

REVISIONS			
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1	CONFORMED DRAWING	6/02/08	CP



- NOTES:
1. AT LEAST 3 FEET UPSTREAM AND 2 FEET DOWNSTREAM OF STRAIGHT PIPE REQUIRED FOR FLOW METER INSTALLATION.
 2. INSTALL NEW GRATING, HANDRAIL AND SUPPORTS IN APPROXIMATE AREA SHOWN TO CREATE WALKWAY. AREA TO MATCH ELEVATION OF PLATFORM. SEE DRAWING, S-3.
 3. PIPE SUPPORT PER SPECIFICATION SECTION 15062 - NON METALLIC.
 4. FOR CLARITY EQUIPMENT IN THE VICINITY NOT SHOWN.
 5. SUPPORT PIPE AND FLOW METER USING STRUT TYPE SYSTEM.
 6. CONNECT DSL TO EXISTING PIPING PER DETAIL B, M-5. CONNECTION POINT IS APPROXIMATELY 20 FEET FROM RISE. SEE PHOTO, P-7 FOR CONNECTION LOCATION. CONTRACTOR TO FIELD VERIFY DIMENSIONS BEFORE CONSTRUCTION.
 7. ALL VALVES FOR SLUDGE SERVICE SHALL BE PLUG VALVES.
 8. INSTALL A 1-INCH SAMPLE TAP WITH PLUG VALVE IN THE 3-INCH DSL. LOCATION SHALL BE AS DIRECTED BY THE DISTRICT.



PHOTO P-6
NOT TO SCALE M-1



PHOTO P-7
NOT TO SCALE M-1



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MARIN COUNTY, CALIFORNIA

SLUDGE DEWATERING PROJECT

SECTIONS AND PHOTO DETAILS - 1

REV. ---
DWG. NO. **M-3**
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REVISIONS			
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1	ADDENDUM NO. 1 - REISSUANCE	3/21/08	CP

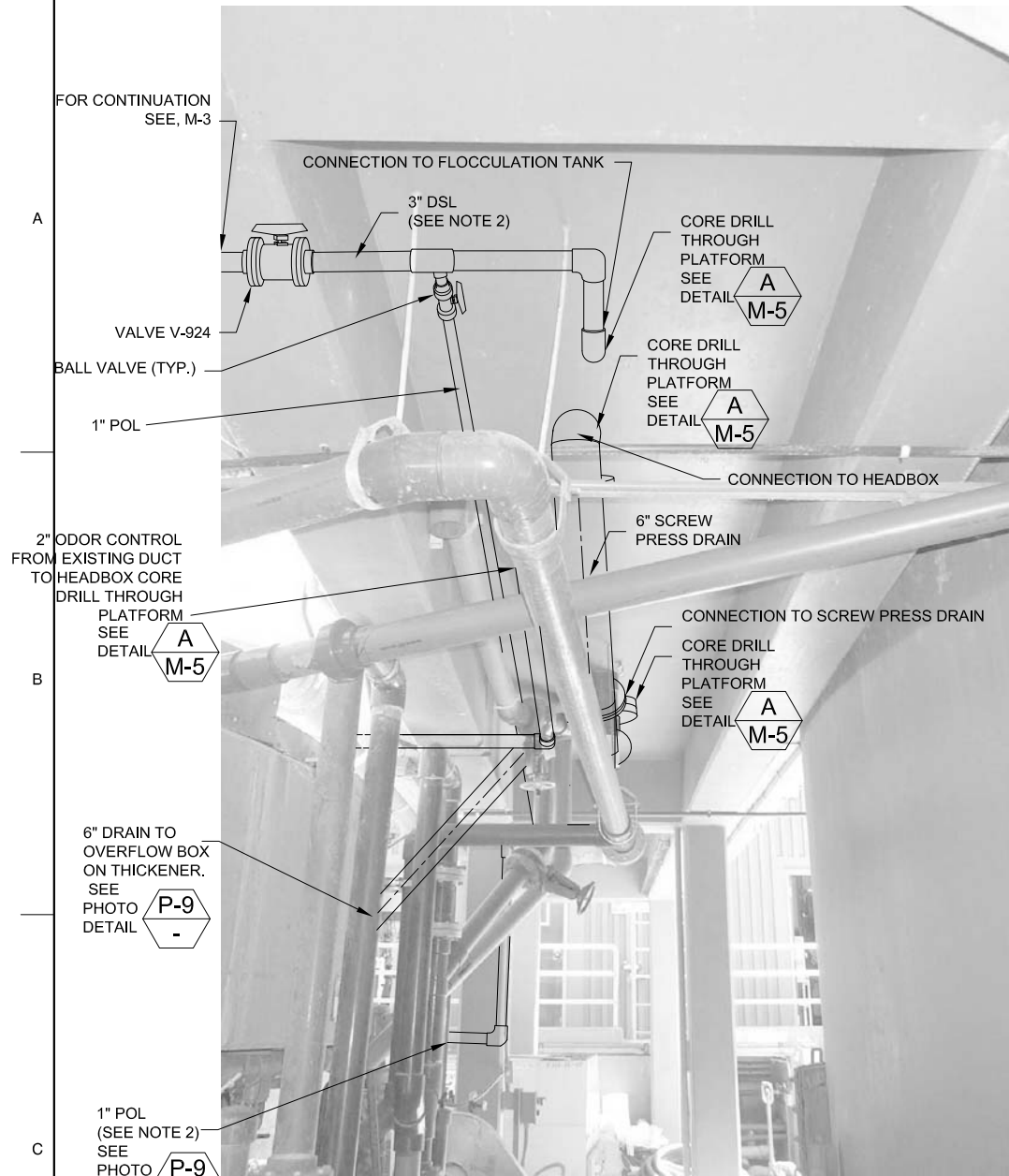


PHOTO P-8 M-1
NOT TO SCALE

NOTES:

- PIPE SHALL BE SUPPORTED OFF CONCRETE COLUMN AND ALONG THE SIDE OF CONCRETE BEAM - SEE SECTION 15062.
- STRUT TYPE PIPE SUPPORTS, ANCHORS AND BOLTS NOT SHOWN - SEE SECTION 15062.
- INSTALL PIPE AROUND CURVED WALL USING 22.5° ELBOWS AS NEEDED. PIPE TO BE SUPPORTED UNDERNEATH THICKENER OVERHANG PER SECTION 15062.
- EXISTING DUMPSTER WILL BE REMOVED BY DISTRICT BEFORE CONSTRUCTION BEGINS.
- EXACT LOCATION OF POLYMER FEED SYSTEM AND TOTE SHALL BE DETERMINED IN THE FIELD BY THE OWNER.
- CONNECT 1" PW LINE TO EXISTING PW LINE UNDER CAUSEWAY PER DETAIL B, M-5.
- INSTALL ELBOW AND SPOOL PIECE AS NEEDED TO PENETRATE THICKENER OVERFLOW BOX STRAIGHT THROUGH WALL.
- INSTALL TUBING, VALVES, STRAINER AND QUICK CONNECT COUPLING BETWEEN POLYMER FEED SYSTEM AND TOTE. SUPPORT SO TUBING IS A MINIMUM OF 4 INCHES ABOVE GRADE. SEE I-2, FOR SCHEMATIC REPRESENTATION OF REQUIRED TUBING ARRANGEMENT.

6" SCREW PRESS DRAIN PIPE

CORE DRILL THROUGH THICKENER WALL (SEE NOTE 7) SEE DETAIL A M-5

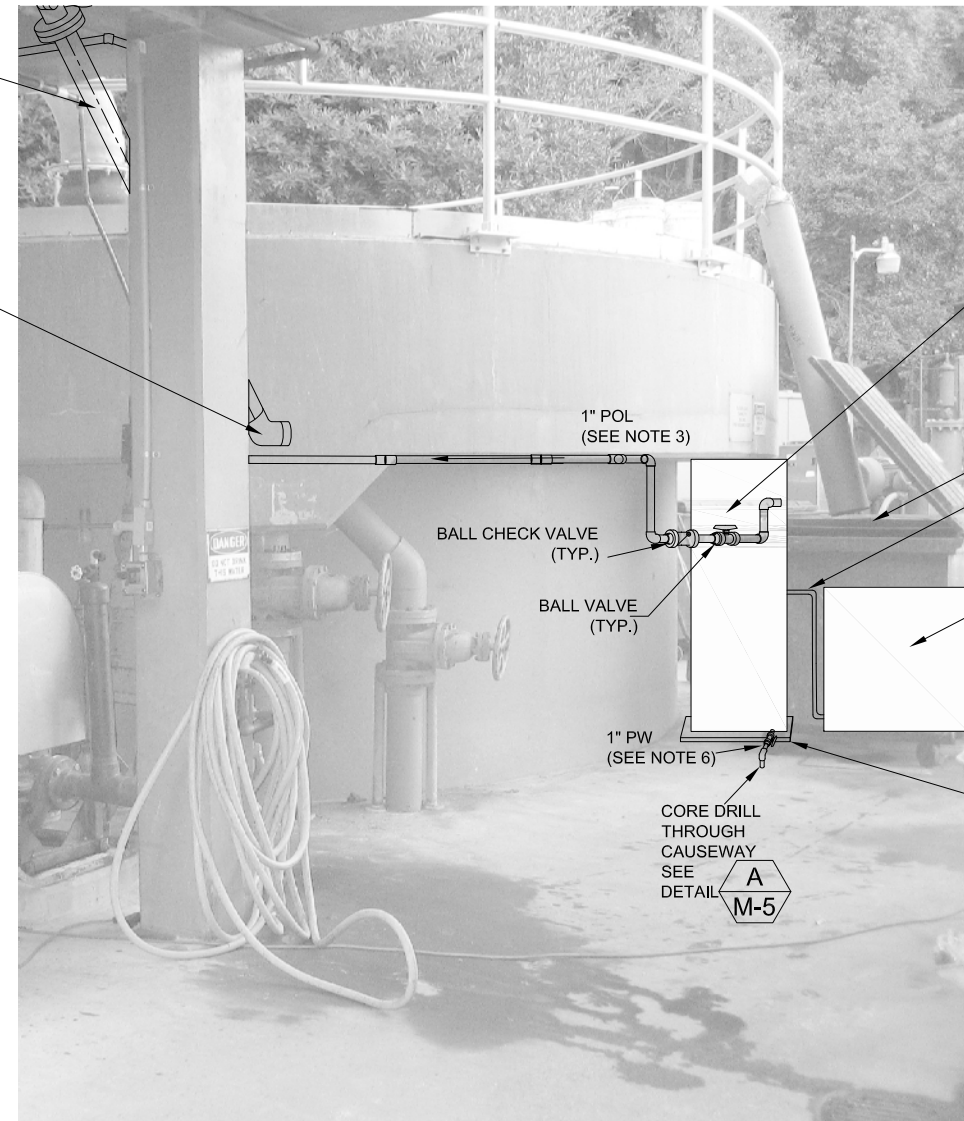


PHOTO P-9 M-1
NOT TO SCALE



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JOB NUMBER SMC 07-01
DATE MAY 2008

LINE IS 2 INCHES AT FULL SCALE
IF NOT 2 INCHES, SCALE ACCORDINGLY

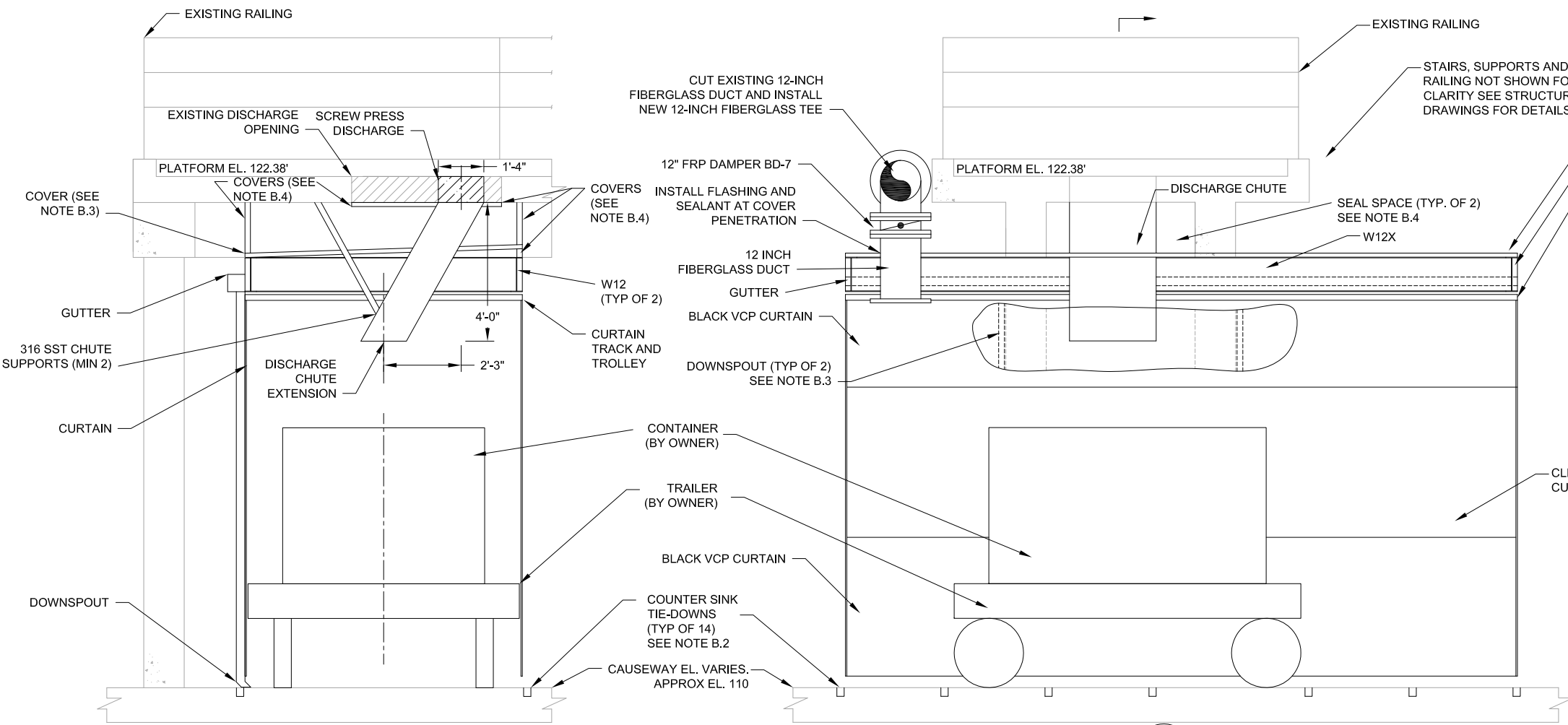
SAUSALITO MARIN COUNTY SANITARY DISTRICT
MARIN COUNTY, CALIFORNIA

SLUDGE DEWATERING PROJECT

SECTIONS AND PHOTO DETAILS - 2

REV. ---
DWG. NO. M-4
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REVISIONS			
NO	DESCRIPTION	DATE	BY
1	ADDENDUM NO. 1 - REISSUANCE	3/21/08	CP

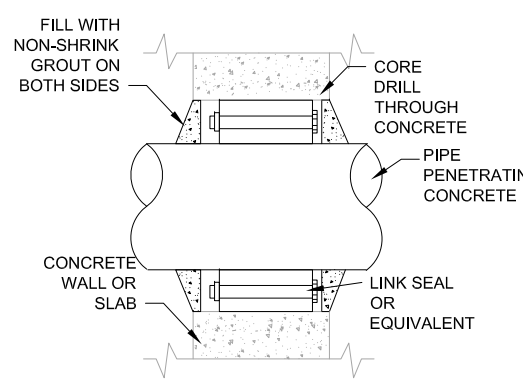


ODOR CONTROL CURTAIN AND COVER SYSTEM NOTES

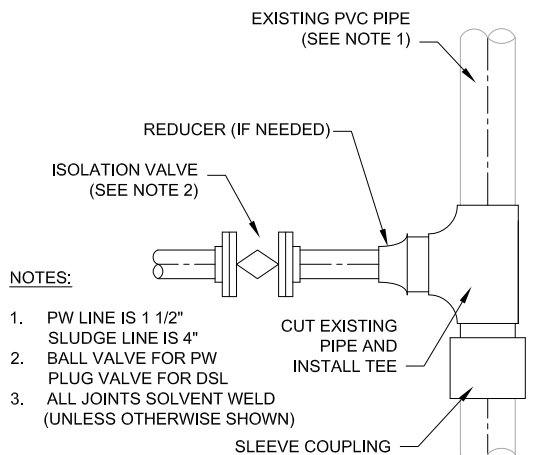
- A. MATERIAL OF CONSTRUCTION**
1. TRACK: 304 STAINLESS STEEL CEILING MOUNTED TRACK.
 2. TROLLEY: 304 STAINLESS STEEL "PULL ROPE" TROLLEY AT ENDS OF EACH SECTION.
 3. CURTAIN: 22 OUNCE VINYL COATED POLYESTER AND 20-MIL CLEAR PVC.
 4. CURTAIN PANEL DISTRIBUTION: 30" BLACK VCP ON TOP 52" CLEAR PVC IN THE MIDDLE 48" VCP ON THE BOTTOM CONTRACTOR SHALL FIELD VERIFY THE TOTAL HEIGHT SO THAT THE GAP BETWEEN THE BOTTOM OF THE CUTRAIN AND THE EXISTING GRADE IS NO MORE THAN 2".
 5. TWO (2) STRAIGHT SIDE SECTIONS AND FOUR (4) CORNER SECTIONS
 6. $\frac{1}{2}$ " STAINLESS STEEL GROMMETS AT TOP HEM, 12" SPACING
 7. $\frac{3}{4}$ " STAINLESS STEEL GROMMETS AT BOTTOM HEM, 36" SPACING
 8. 2" VELCRO, HOOK/LOOP FOR OVERLAP
 9. BOTTOM HEM REINFORCED WITH WEBBING
 10. $\frac{3}{8}$ " FLAT NYLON TIE-DOWN STRAP WITH LADDERLOCK TYPE QUICK RELEASE BUCKLES AT EACH TIE-DOWN GROMMET.
 11. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS BEFORE FABRICATION AND INSTALLATION.
 12. INDUSTRIAL CURTAIN SHALL BE BY ENGINEERED TEXTILE PRODUCTS (800) 222-8277 OR EQUAL.
- B. INSTALLATION**
1. CONTRACTOR TO PROVIDE AND INSTALL SUPPORTS FOR THE CURTAIN SYSTEM FROM THE BEAMS SHOWN ON S-3 AND S-4. THE SUPPORT SHALL EXTEND TO THE OUTER LIMIT OF THE TRACK. THE BEAMS SHALL ALSO BE USED FOR PLACING OF THE CORRUGATED OR FLAT COVER PANEL TO BE FURNISHED BY THE CONTRACTOR.
 2. CONTRACTOR SHALL "COUNTER-SINK" THE CAUSEWAY AND EMBED STAINLESS STEEL FASTENERS FOR THE CURTAIN TIE-DOWNS. THE LOCATIONS OF THE TIE-DOWN FASTENERS SHALL MATCH THE BOTTOM GROMMETS ON THE CURTAIN. THE TOP OF THE FASTENER SHALL BE APPROXIMATELY $\frac{1}{4}$ " BELOW THE EXISTING GRADE. THE FASTENERS SHALL BE GROUDED IN PLACE WITH NON-SHRINKING GROUT.
 3. CONTRACTOR SHALL PROVIDE COVERS ON TOP OF THE STRUCTURAL MEMBERS (W12x) FOR WEATHER PROTECTION OF THE ENCLOSED AREA. COVERS SHALL BE OF NON-METALLIC MATERIAL, $\frac{3}{8}$ " THICK MIN. COVERS SHALL SLOPE EASTWARD TOWARD COATED ALUMINUM GUTTERS AND DOWN-SPOUTS. THE DOWN-SPOUTS SHALL TERMINATE 2" ABOVE GRADE WITH 45° ELBOW EXITING TOWARD NEAREST AREA DRAIN. COVERS SHALL BE FASTENED TO THE STRUCTURAL MEMBERS WITH METAL TO PLASTIC ADHESIVE OR 316 SS CLIPS. INSTALL ADDITIONAL ALUMINUM SUPPORT MEMBERS SO THAT COVER CAN MAINTAIN SLOPE WITHOUT SAGGING. FASTEN COVER TO SUPPORTS SO COVER IS NOT UPLIFTED BY WIND.
 4. CONTRACTOR SHALL SEAL OFF THE VERTICAL SPACES BENEATH THE UNDERSIDE OF THE PLATFORM AND THE TOP OF THE STRUCTURAL MEMBER (W12x) WITH THE SAME MATERIAL AS THE COVERS. ALL OPENINGS BETWEEN THE COVERS AND THE STRUCTURAL MEMBERS SHALL BE WEATHER-TIGHT SEALED.
 5. CONTRACTOR SHALL FABRICATE AND INSTALL A CAKE DISCHARGE CHUTE EXTENSION (SEE SECTION 3) FROM THE SCREW PRESS CAKE DISCHARGE FLANGE TO THE SLUDGE CAKE CONTAINER. THE CHUTE EXTENSION SHALL BE FABRICATED OF $\frac{3}{8}$ " THICK 316 SS MATERIAL. THE CHUTE EXTENSION SHALL BE BOLTED TO THE SCREW PRESS CAKE DISCHARGE FLANGE WITH 316 SS FASTENERS AND A RUBBER GASKET. THE CHUTE EXTENSION SHALL HAVE THE SAME OPENING DIMENSIONS AS THE SCREW PRESS CAKE DISCHARGE FLANGE. THE CHUTE EXTENSION SHALL TERMINATE 4' BELOW THE UNDERSIDE OF THE PLATFORM AND HORIZONTALLY OFFSET TO ALIGN WITH THE CENTERLINE OF THE SLUDGE CAKE CONTAINER. CONTRACTOR SHALL SEAL ANY REMAINING OPENINGS IN THE EXISTING DISCHARGE CHUTE WITH THE SAME MATERIAL AS THE COVERS.

SECTION 3
1/2" = 1'-0"

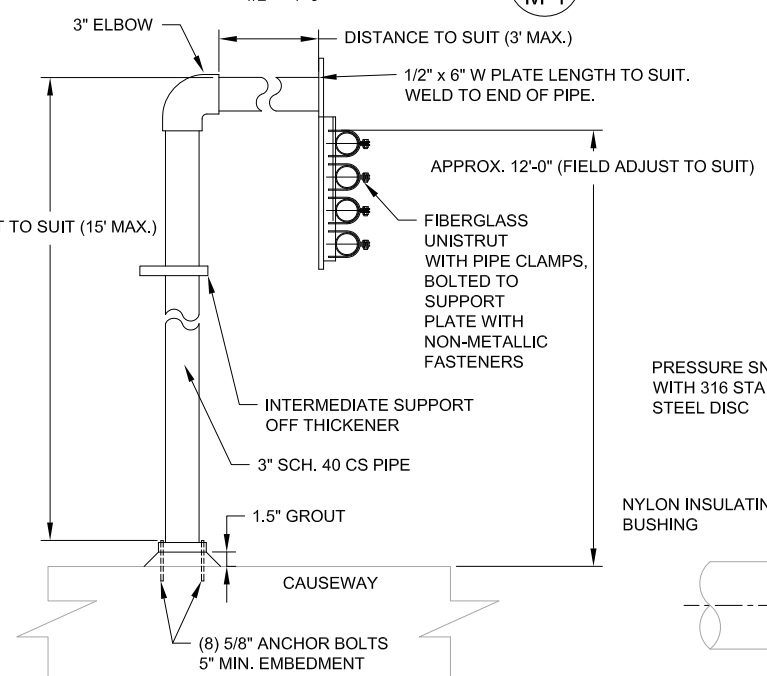
SECTION 2
1/2" = 1'-0"
M-1



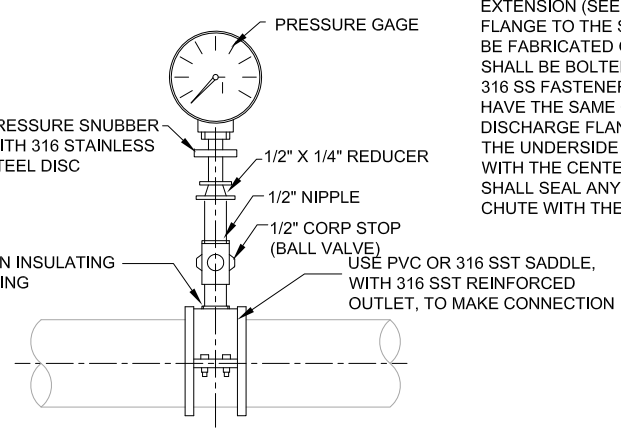
CONCRETE PENETRATION DETAIL
NOT TO SCALE
A VAR



PIPE CONNECTION DETAIL
NOT TO SCALE
B VAR

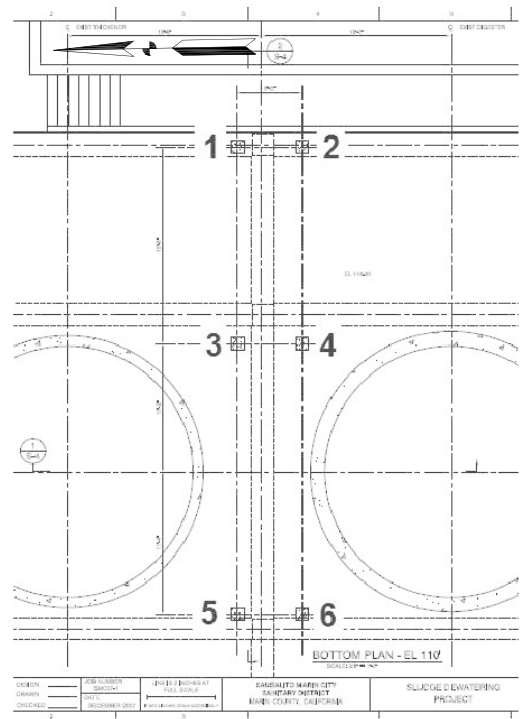


PIPE SUPPORT DETAIL
NOT TO SCALE
D M-1



PRESSURE GAGE DETAIL
NOT TO SCALE
C VAR





REVISIONS			
NO	DESCRIPTION	DATE	BY

HOSE BIB AND AIR AND WATER LINES (REROUTE TEMPORARILY AS NEEDED)

6" TRANSFER LINE (MUST REMAIN IN SERVICE)

SHEET NOTES:

- COMPLETE WORK SHOWN ON THIS SHEET TO CLEAR THE COLUMNS SO THAT THE FIBER REINFORCED POLYMER STRENGTHENING SYSTEM CAN BE INSTALLED PER SPECIFICATION SECTION 13900.



WHITLEY BURCHETT & ASSOCIATES
Walnut Creek, California
(925) 945-6850

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DATE FEBRUARY 2008

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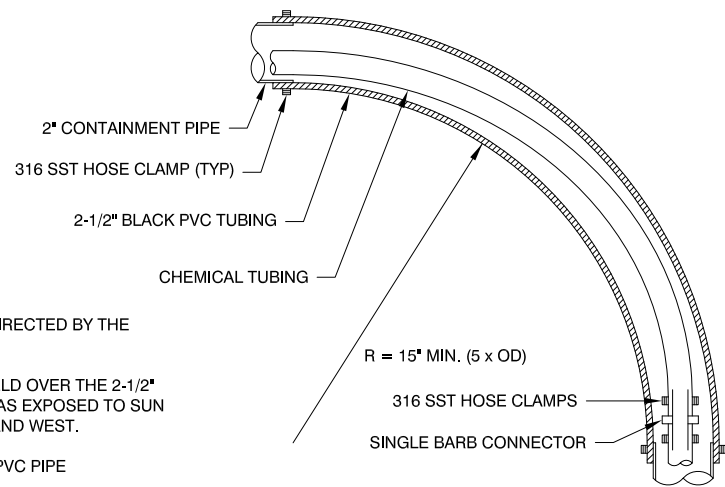
SAUSALITO MARIN COUNTY SANITARY DISTRICT
MARIN COUNTY, CALIFORNIA

SLUDGE DEWATERING PROJECT

MECHANICAL DETAILS - 2

REV. ---
DWG. NO. **M-6**
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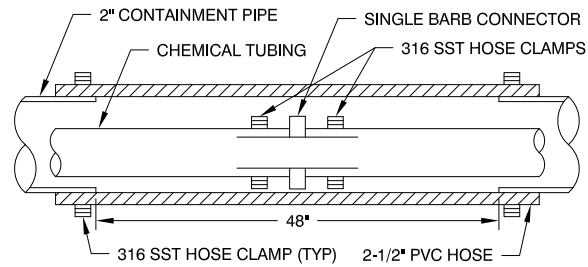
REVISIONS			
NO	DESCRIPTION	DATE	BY
1	CONFORMED DRAWING	6/02/08	CP



NOTES:

1. SUPPORT PIPE AS DIRECTED BY THE DISTRICT.
2. INSTALL A SUN SHIELD OVER THE 2-1/2" PVC TUBING IN AREAS EXPOSED TO SUN FROM THE SOUTH AND WEST.
3. PAINT TUBING PER PVC PIPE REQUIREMENTS.

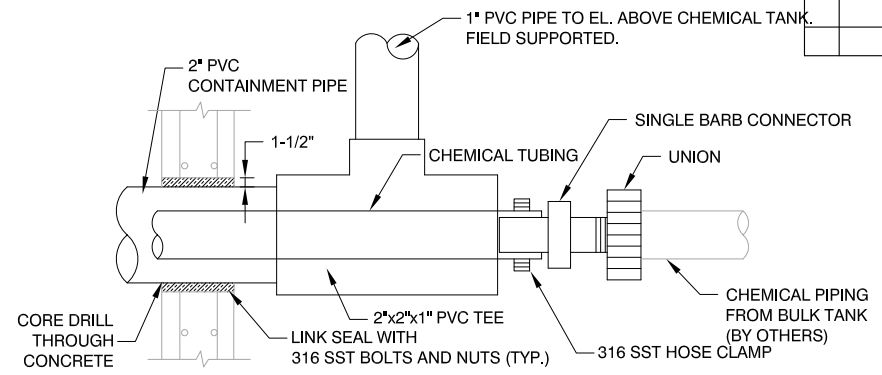
90 DEGREE DOUBLE CONTAINMENT CONNECTION
DETAIL NOT TO SCALE



NOTES:

1. USE CONNECTION AT EVERY 90-DEGREE BEND.
2. USE CONNECTION AT PULL STATION AS NEEDED. AS A MINIMUM, INSTALL EVERY 200 FEET OF STRAIGHT RUN.
3. INSTALL A SUN SHIELD OVER THE 2-1/2" PVC HOSE.
4. INSTALL PIPE SUPPORTS AT THE END OF EACH CONTAINMENT PIPE JUST PRIOR TO THE CONNECTION TO THE 2-1/2" PVC HOSE.

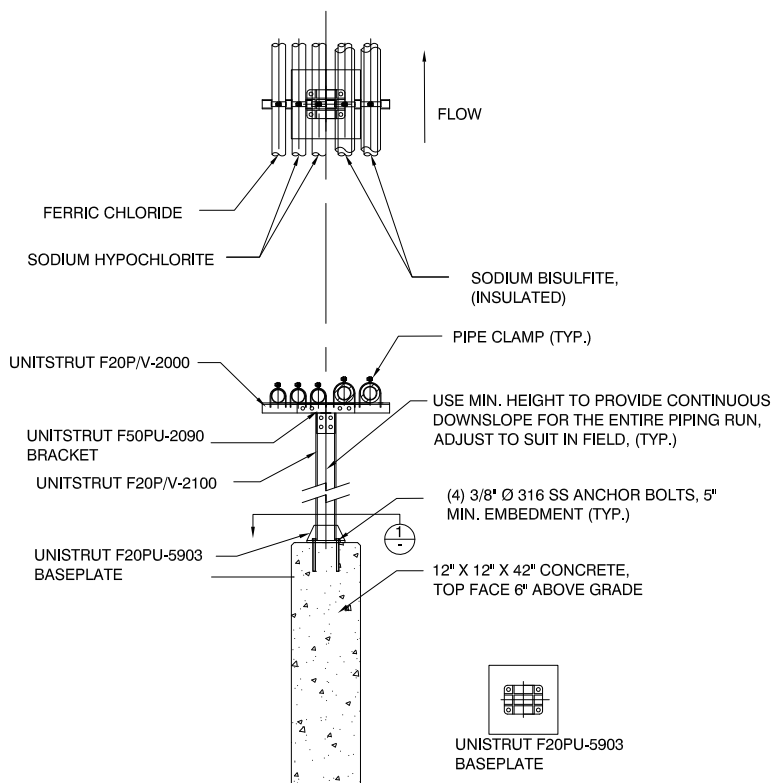
DOUBLE CONTAINMENT CONNECTION
DETAIL NOT TO SCALE



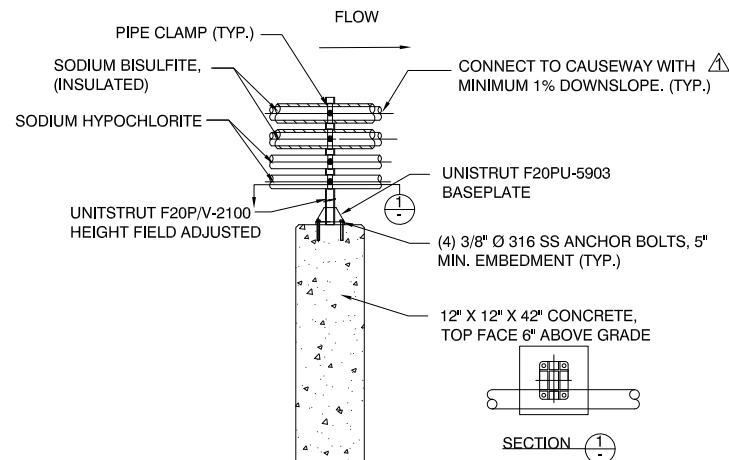
NOTES:

1. ROUTE CONTAINMENT PIPE TO EXTEND A MINIMUM OF 1 FEET INTO THE CONTAINMENT AREAS.
2. SEAL BETWEEN THE OPEN END OF TEE AND CHEMICAL TUBING WITH A SEALANT SUCH AS SIKAFLEX OR EQUAL.
3. CONTRACTOR SHALL INSTALL AND SUPPORT APPROXIMATELY 25 FEET OF PIPE TO THE TOP OF THE ADJACENT BULK STORAGE TANK FOR VENTING.

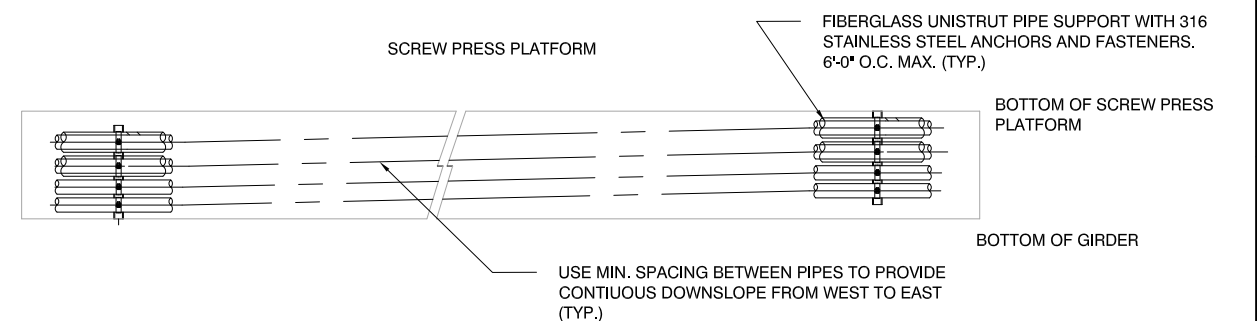
DOUBLE CONTAINMENT TRANSITION
DETAIL NOT TO SCALE



CHEMICAL PIPE SUPPORT "A"
DETAIL NOT TO SCALE



CHEMICAL PIPE SUPPORT "B"
DETAIL NOT TO SCALE



BELOW SCREW PRESS PLATFORM
DETAIL NOT TO SCALE



WHITLEY BURCHETT & ASSOCIATES
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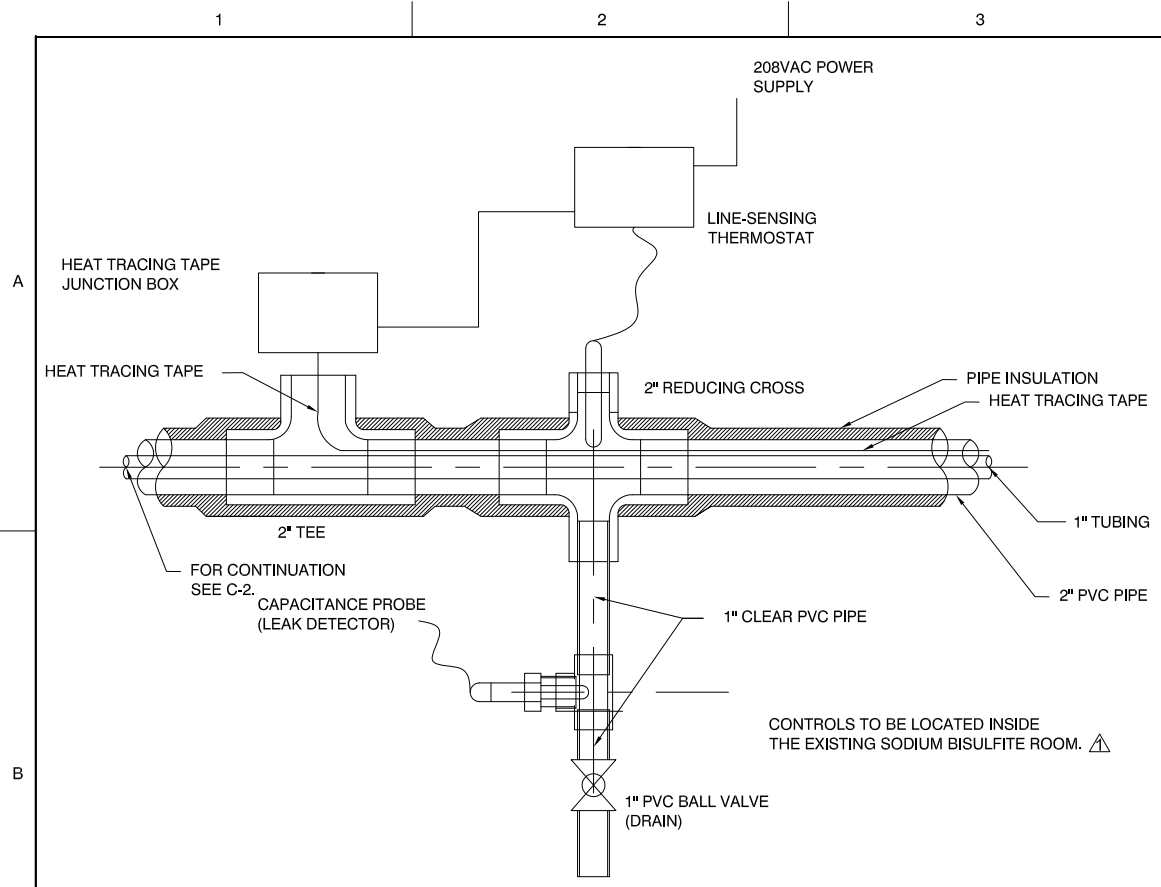
SAUSALITO MARIN COUNTY SANITARY DISTRICT
MARIN COUNTY, CALIFORNIA

SLUDGE DEWATERING PROJECT

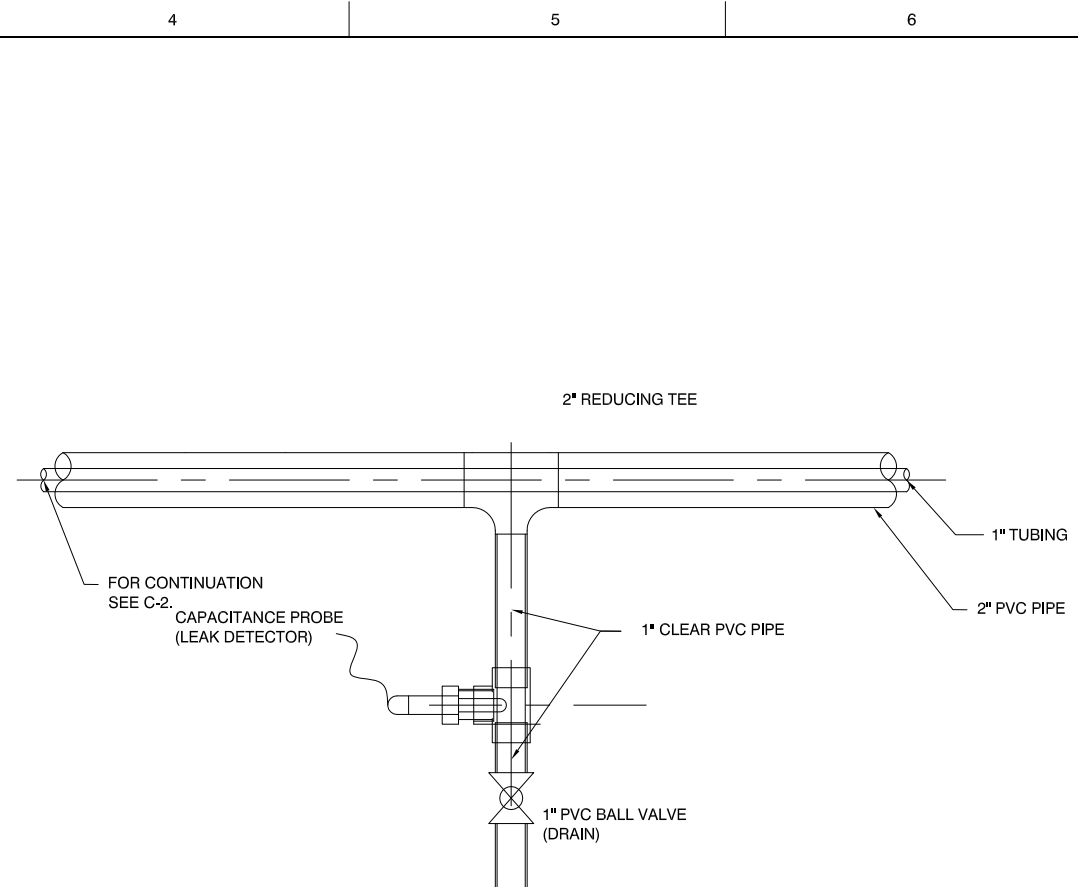
CHEMICAL PIPE - DETAILS

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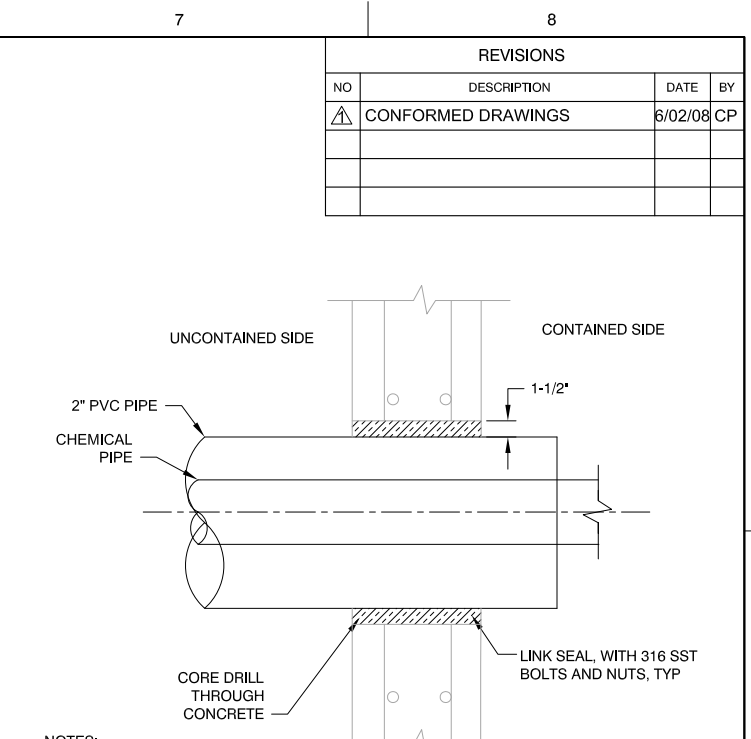
REVISIONS			
NO	DESCRIPTION	DATE	BY
1	CONFORMED DRAWINGS	6/02/08	CP



SODIUM BISULFITE HEAT TRACING AND LEAK DETECTION DETAIL NOT TO SCALE M

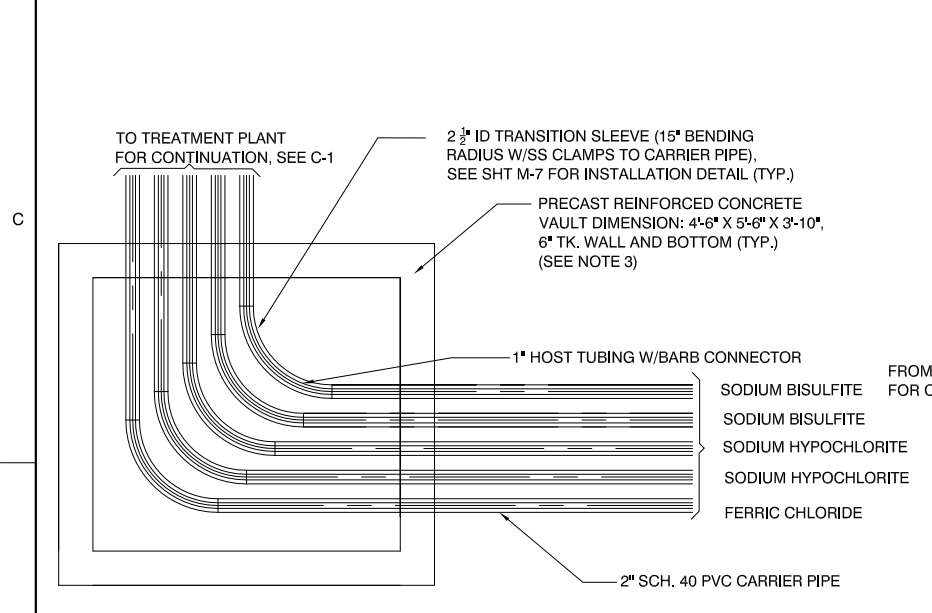


SODIUM HYPOCHLORITE LEAK DETECTION DETAIL NOT TO SCALE N

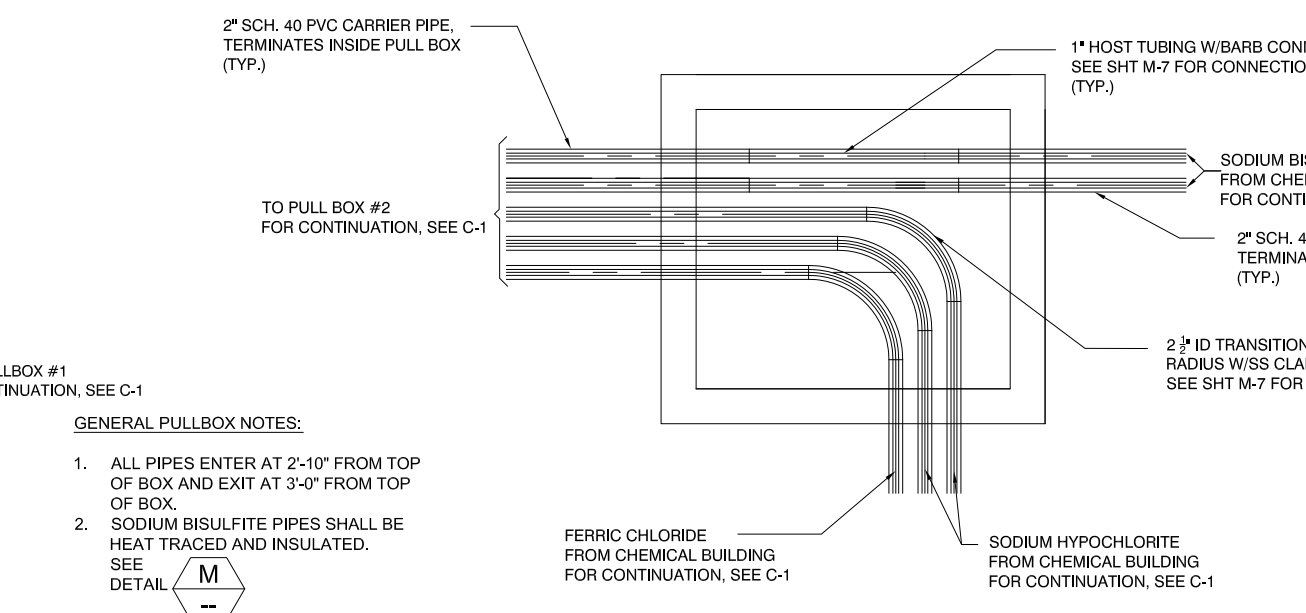


CONCRETE PENETRATION DETAIL NOT TO SCALE O

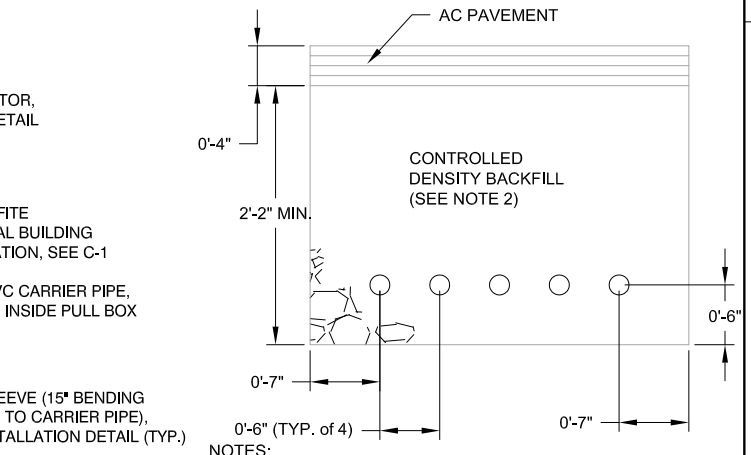
NOTES:
 1. ROUTE CONTAINMENT PIPE TO EXTEND A MINIMUM OF 1 FEET INTO THE CONTAINMENT AREAS.
 2. WHEN CONTAINMENT PIPE TERMINATES TO ATMOSPHERE, INSTALL SEALANT TO PREVENT WATER INTRUSION. SEALANT SHALL BE SIKAFLEX OR EQUAL.
 3. AFTER INSTALLATION OF LINK SEAL, FILL SPACE WITH NON-SHRINK GROUT AS SHOWN IN DETAIL A, M-5.



PULLBOX #2 DETAIL NOT TO SCALE P



PULLBOX #1 DETAIL NOT TO SCALE Q



TRENCH DETAIL NOT TO SCALE R
C-1

NOTES:
 1. FOR ALL BURIED PIPE: TRENCH WIDTH SHALL BE FIELD DETERMINED BY THE CONTRACTOR. MAKE SMOOTH BENDS, AS REQUIRED, AT THE PULL BOXES TO FACILITATE PULLING OF THE CHEMICAL PIPING. CONTRACTOR SHALL REPAIR AC PAVEMENT TO MATCH THE EXISTING AFTER BACKFILL.
 2. CONTROLLED DENSITY BACKFILL PER SPECIFICATION SECTION, 02210.

- GENERAL PULLBOX NOTES:**
- ALL PIPES ENTER AT 2'-10" FROM TOP OF BOX AND EXIT AT 3'-0" FROM TOP OF BOX.
 - SODIUM BISULFITE PIPES SHALL BE HEAT TRACED AND INSULATED. SEE DETAIL M
 - VALVE VAULTS SHALL BE PROVIDED WITH H₂O LOADING RATED AND GASKETED ALUMINUM ACCESS COVERS, HALLIDAY PRODUCTS, INC. SERIES H2W, OR APPROVED EQUAL.



REVISIONS			
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△	CONFORMED DRAWING	6/02/08	CP

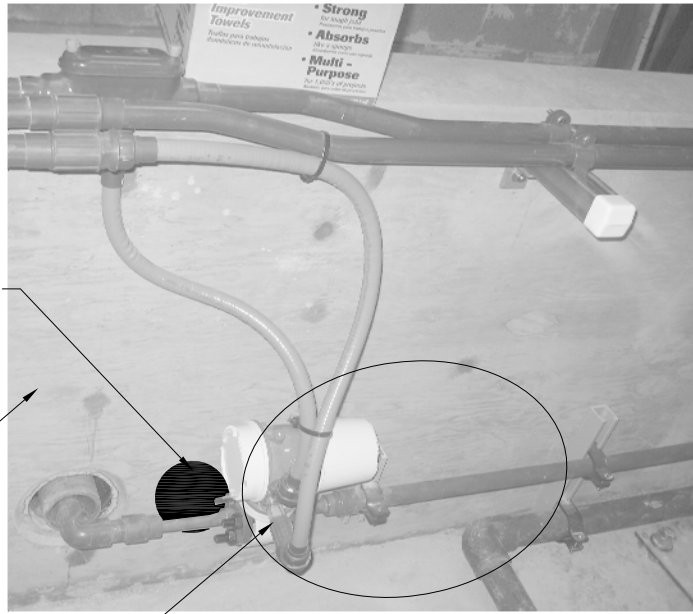


PHOTO 17
NOT TO SCALE

WALL PENETRATION
SEE
DETAIL **O**
M-8

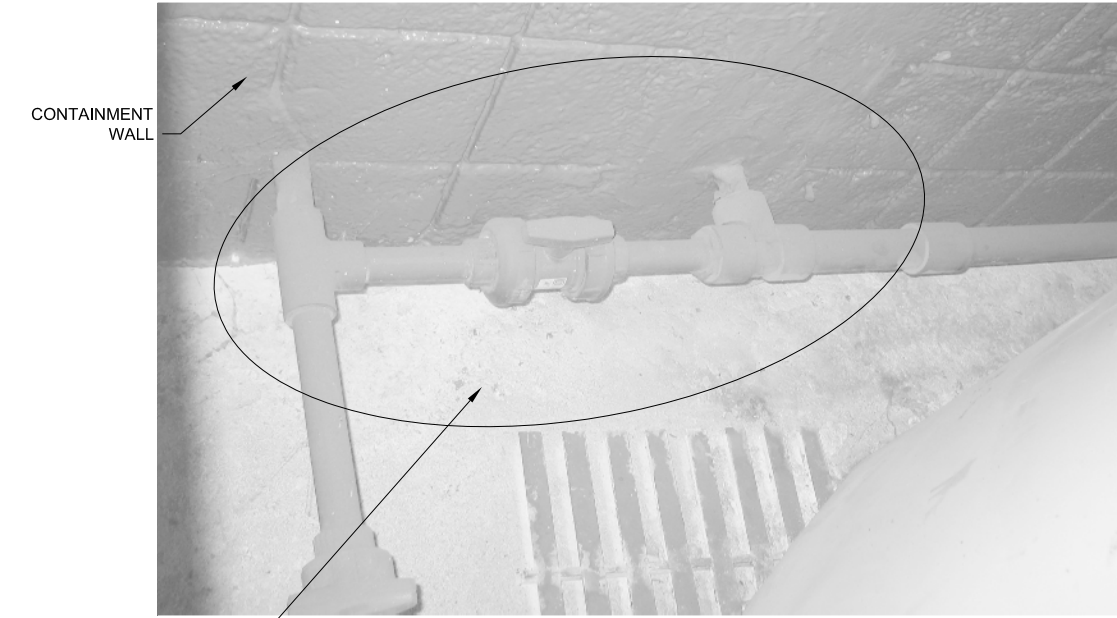
WALL PENETRATION
SEE
DETAIL **I**
M-7 △

CONTAINMENT
WALL



SODIUM HYPOCHLORITE
PIPING CONFIGURATION
SEE
DETAIL **S**

PHOTO 18
NOT TO SCALE



SODIUM BISULFITE
PIPING CONFIGURATION
SEE
DETAIL **S**

PHOTO 19
NOT TO SCALE

SHEET NOTES:

1. IN ALL LINES, MAINTAIN CONSTANT DOWNSLOPE OF 1%, MINIMUM, AT ALL TIMES.
2. CHEMICAL LINE LEGEND:
SODIUM HYPOCHLORITE
SODIUM BISULFITE
FERRIC CHLORIDE



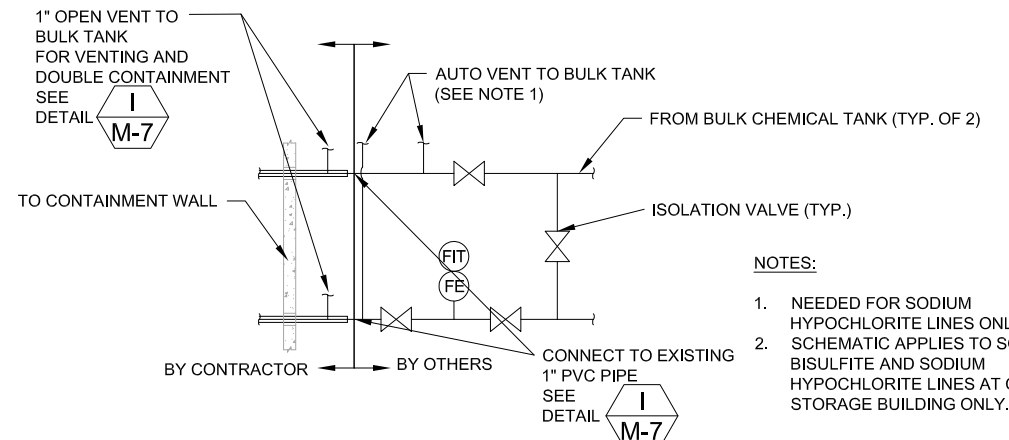
BURIED
SODIUM BISULFITE (TYP OF 2)
TO FIRST PULL BOX

PHOTO 20
NOT TO SCALE

PROVIDE TRENCH IN PAVEMENT FOR BOTH LINES TO PREVENT TRIPPING HAZARD. THE TRENCH SHALL BE PER DETAIL R, M-8, EXCEPT THAT ASPHALT PAVEMENT SHALL BE A MINIMUM OF 2-INCHES THICK, AND CLASS 2 AGGREGATE BASE MATERIAL, COMPACTED TO 95%, MAY BE USED INSTEAD OF CONTROLLED DENSITY BACKFILL.



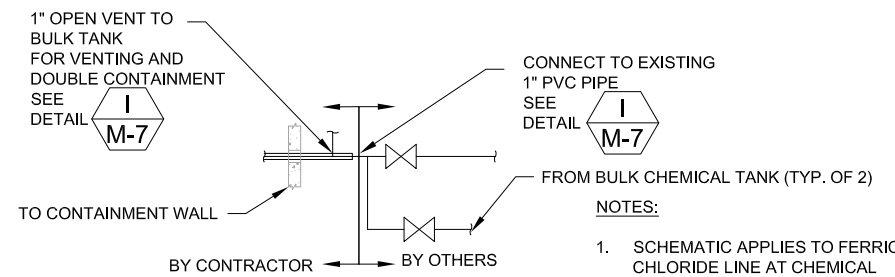
PHOTO 21
NOT TO SCALE



**PIPING SCHEMATIC
DETAIL** NOT TO SCALE

NOTES:

1. NEEDED FOR SODIUM HYPOCHLORITE LINES ONLY
2. SCHEMATIC APPLIES TO SODIUM BISULFITE AND SODIUM HYPOCHLORITE LINES AT CHEMICAL STORAGE BUILDING ONLY.



**PIPING SCHEMATIC
DETAIL** NOT TO SCALE

NOTES:

1. SCHEMATIC APPLIES TO FERRIC CHLORIDE LINE AT CHEMICAL STORAGE BUILDING ONLY.



**WHITLEY BURCHETT
& ASSOCIATES**
Walnut Creek, California
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DATE
MAY 2008

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**SAUSALITO MARIN COUNTY
SANITARY DISTRICT**
MARIN COUNTY, CALIFORNIA

**SLUDGE DEWATERING
PROJECT**

CHEMICAL PIPING - PHOTO DETAILS - 1

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DWG. NO. **M-9**
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1	CONFORMED DRAWING	6/02/08	CP

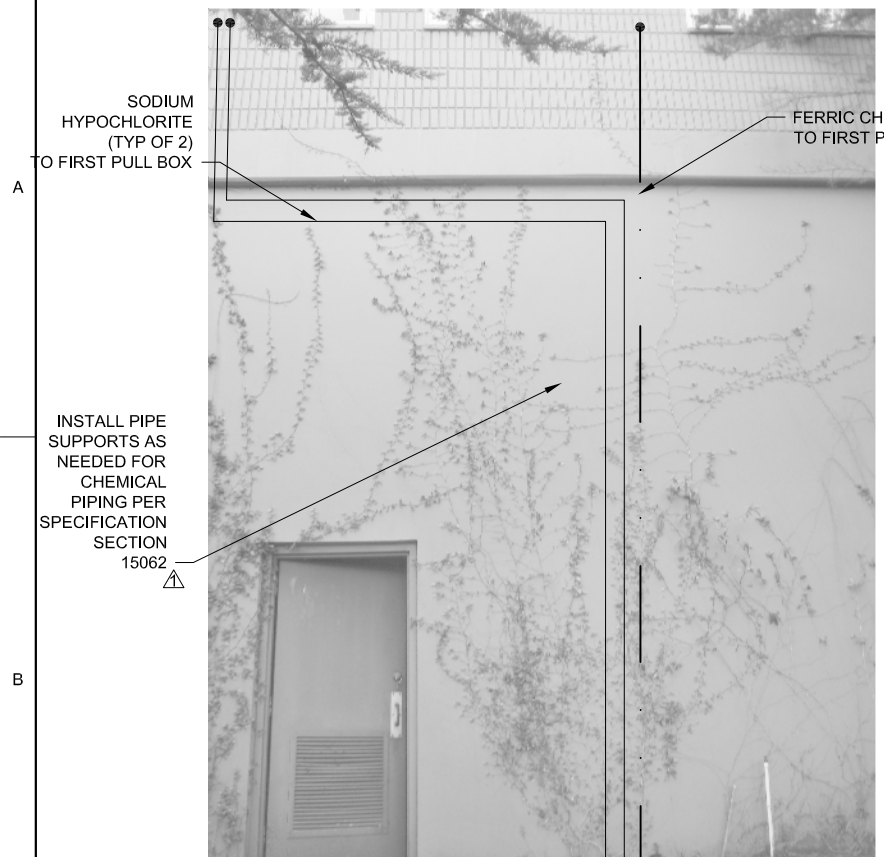


PHOTO 22
NOT TO SCALE



PHOTO 23
NOT TO SCALE

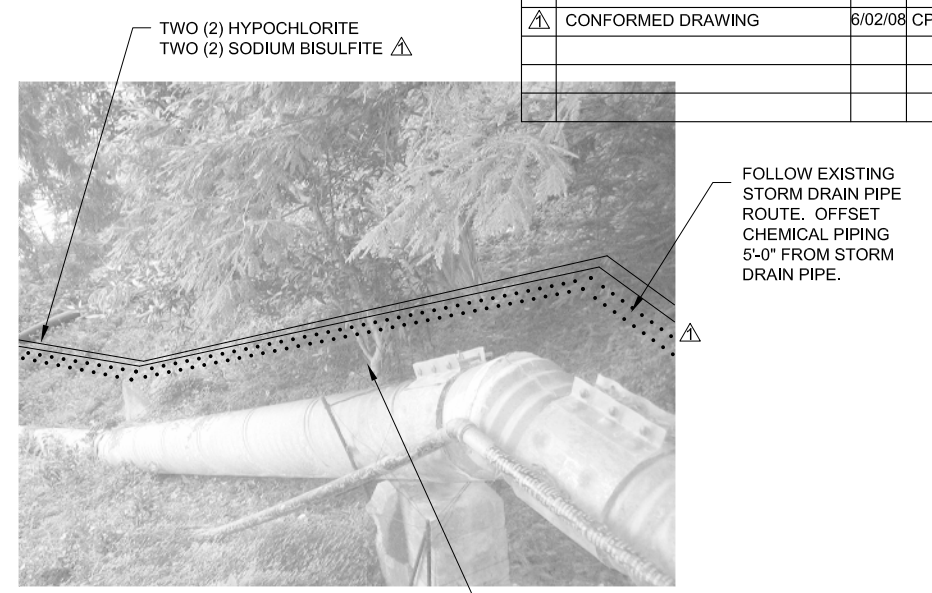


PHOTO 24
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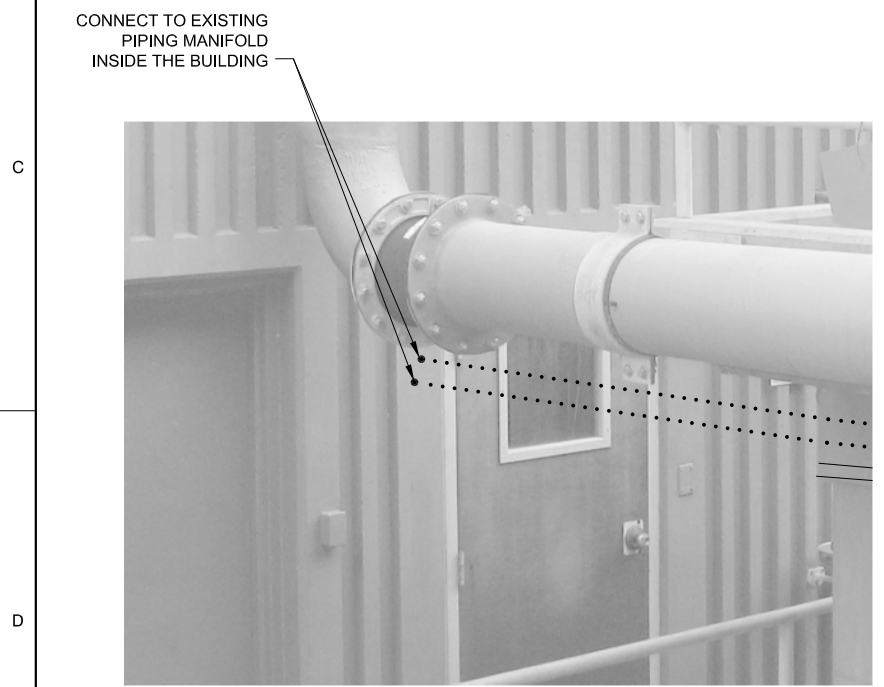


PHOTO 25
NOT TO SCALE



PHOTO 26
NOT TO SCALE



PHOTO 27
NOT TO SCALE

- SHEET NOTES:**
1. IN ALL LINES, MAINTAIN CONSTANT DOWNSLOPE OF 1%, MINIMUM, AT ALL TIMES.
 2. ALL CHEMICAL PIPING PENETRATIONS THROUGH CONCRETE SHALL BE IN ACCORDANCE WITH DETAIL O, M-8



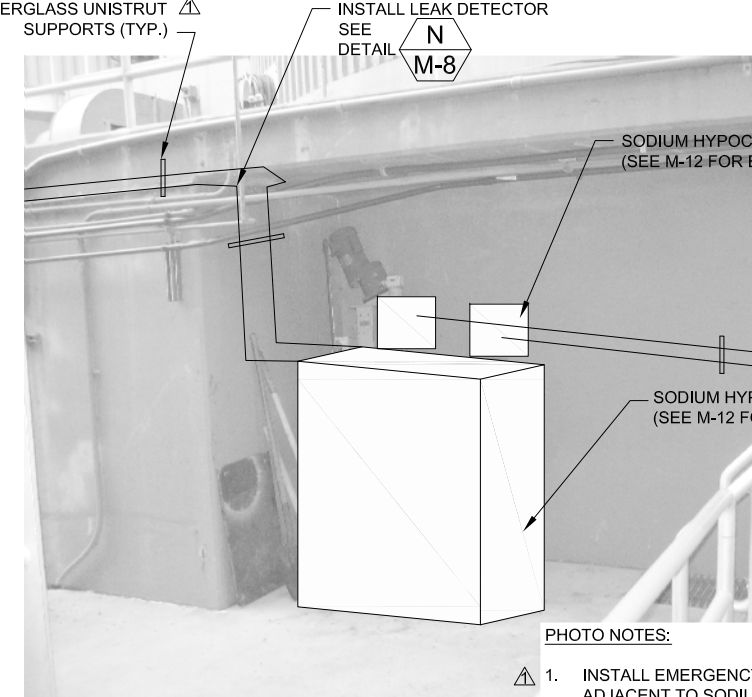
REVISIONS			
NO	DESCRIPTION	DATE	BY
1	CONFORMED DRAWING	6/02/08	CP



FIBERGLASS UNISTRUT SUPPORTS (TYP.)

PHOTO 28
NOT TO SCALE

P-28
C-1

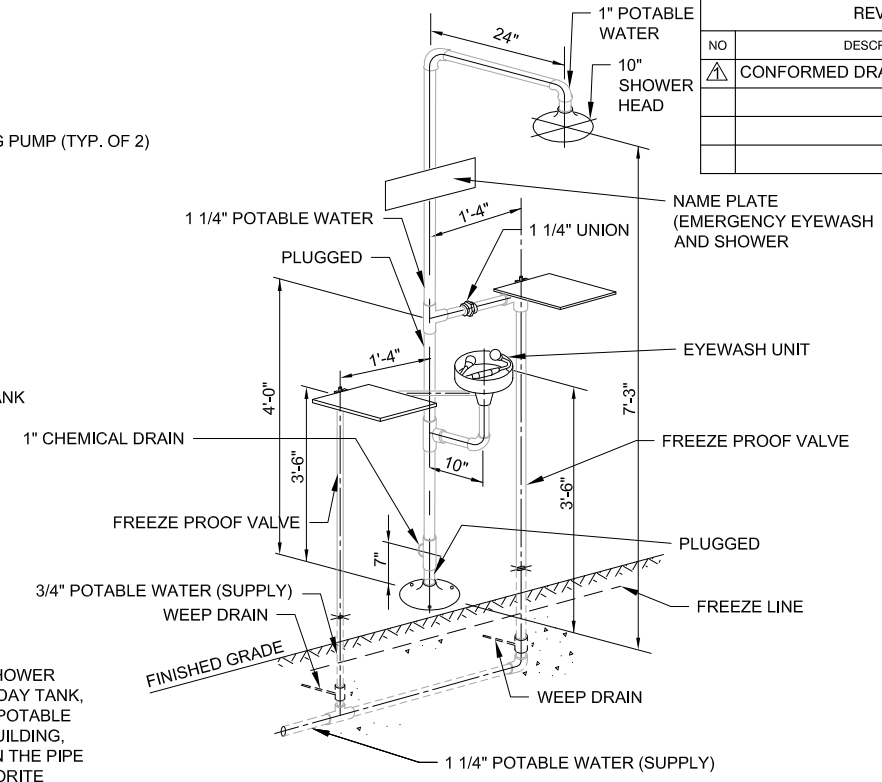


FIBERGLASS UNISTRUT SUPPORTS (TYP.)
INSTALL LEAK DETECTOR SEE DETAIL N M-8
SODIUM HYPOCHLORITE METERING PUMP (TYP. OF 2) (SEE M-12 FOR EQUIP DETAILS)
SODIUM HYPOCHLORITE DAYTANK (SEE M-12 FOR EQUIP DETAILS)

PHOTO 29
NOT TO SCALE

P-29
VAR

PHOTO NOTES:
1. INSTALL EMERGENCY EYEWASH AND SHOWER ADJACENT TO SODIUM HYPOCHLORITE DAY TANK, PER DETAIL LL. CONNECT TO NEAREST POTABLE WATER PIPING WITHIN THE CONTROL BUILDING, AND ROUTE POTABLE WATER PIPING ON THE PIPE SUPPORTS FOR THE SODIUM HYPOCHLORITE PIPING TO DAY TANK.



EMERGENCY EYE WASH AND SHOWER DETAIL
NOT TO SCALE

LL
-

SHEET NOTES:

1. IN ALL LINES, MAINTAIN CONSTANT DOWNSLOPE OF 1%, MINIMUM, AT ALL TIMES.
2. FOR SCHEMATIC REPRESENTATION OF HYPOCHLORITE PIPING SEE M-12.
3. CONTRACTOR SHALL SUBMIT AN ISOMETRIC LAYOUT OF PIPING AND SUPPORTS ADJACENT TO THE SODIUM HYPOCHLORITE DAY TANK FOR REVIEW PER SPECIFICATION SECTION 01300.
4. THE ELECTRICAL EQUIPMENT SHOWN IN DETAIL D, DRAWING E-13, SHALL BE RELOCATED TO MAINTAIN A MINIMUM CLEARANCE OF 36-INCHES IN FRONT OF ALL ELECTRICAL EQUIPMENT.



PHOTO 30
NOT TO SCALE

P-30
C-1

REMOVE EXISTING SODIUM HYPOCHLORITE LINES FROM STEPS TO NEW TIE-IN POINT



PHOTO 31
NOT TO SCALE

P-31
C-1



PHOTO 32
NOT TO SCALE

P-32
VAR



WHITLEY BURCHETT & ASSOCIATES
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SAUSALITO MARIN COUNTY SANITARY DISTRICT
MARIN COUNTY, CALIFORNIA

SLUDGE DEWATERING PROJECT

CHEMICAL PIPING - PHOTO DETAILS - 3

REV. ---
DWG. NO. **M-11**
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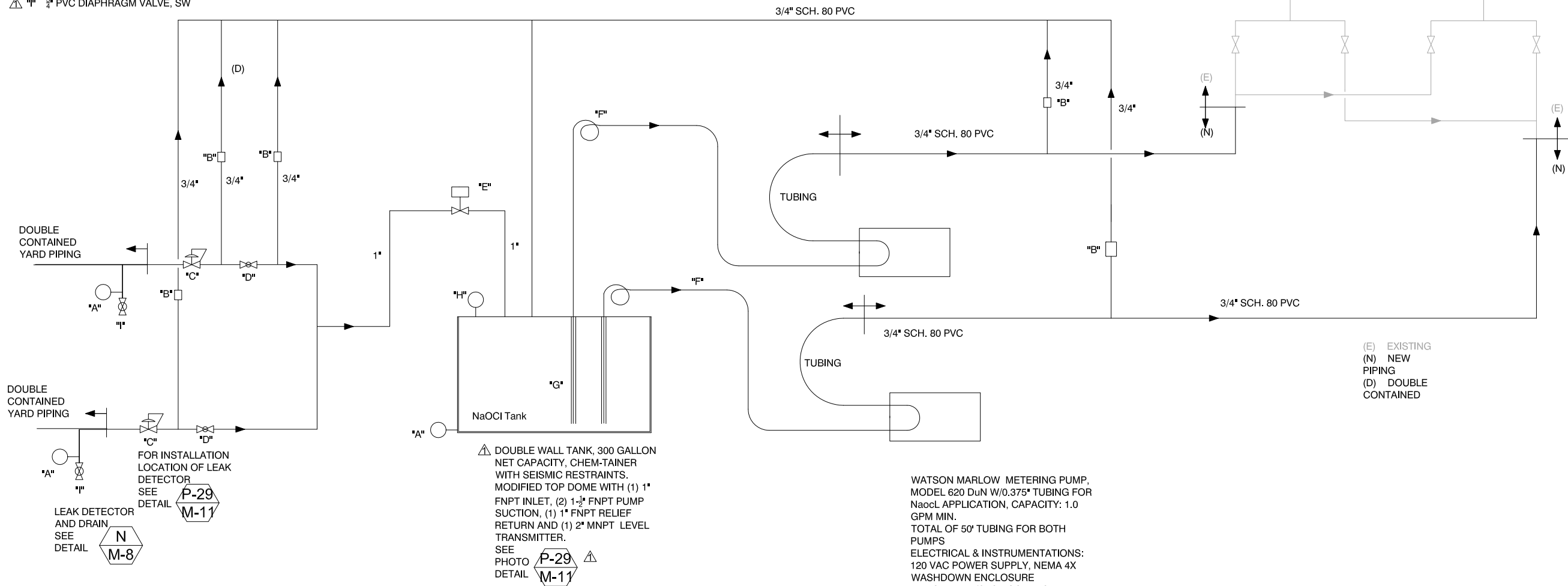
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NO	DESCRIPTION	DATE	BY
Δ	CONFORMED DRAWING	6/02/08	CP

- *A" LEAK DETECTOR PER SPECIFICATION SECTION 13000-2.07E CAPACITANCE LEVEL SWITCH
- *B" 3/4" ACCU-VENT AUTOMATIC DEGASSING VALVE
- *C" PRESSURE REGULATOR, 50 PSI INLET, 5-10 PSI OUTLE, W/PRESSURE INDICATOR
- *D" 1" DIAPHRAGM VALVE, TRU-UNION, SW
- *E" 1" MOTORIZED BALL VALVE, TRU-UNION, SW, 120 VAC, MANUAL OVERRIDE
- *F" 3/4" PUMP TUBING W/5' COIL AT PUMP SUCTION
- *G" 3/4" SUCTION GUIDE PIPE, SUSPENDED FROM COVER, W/(2) 3/4" VENT HOLES
- *H" LEVEL TRANSMITTER W/HI-LOW SWITCHES FOR FILL VALVE CONTROL AND HI-HI SWITCH FOR OVERFILL ALARM
- *I" 3/4" PVC DIAPHRAGM VALVE, SW

1. ALL COMPONENTS SHALL BE NON-METALLIC CONSTRUCTION, PIPING SHALL BE SHEDULE 80. ALL PIPING WILL BE FIELD RUN AND WALL SUPPORTED WITH NON-METALLIC UNISTRUCT AND FASTERNERS.
2. BE FIELD RUN AND WALL SUPPORTED WITH NON-METALLIC UNISTRUCT AND FASTERNERS.
3. HEAD TO FACILITATE PIPING ENTRIES AND LEVEL TRANSMITTER INSTALLATION. CONTRACTOR SHALL MODIFY TANK SIDEWALL FOR INSTALLATION OF LEAK DETECTOR. PUMPS SHALL BE TNAK-TOP MOUNTED OR WALL MOUNTED AS DIRECTED BY THE CONSTRUCTION MANAGER

FOR DOUBLE CONTAINED PIPING INTERFACE SEE DETAIL I, M-7.
FOR CONTAINMENT LEAK DETECTION AND DRAIN SEE DETAIL N, M-7.

FOR CONNECTION LOCATION SEE PHOTO DETAIL P-31 M-11



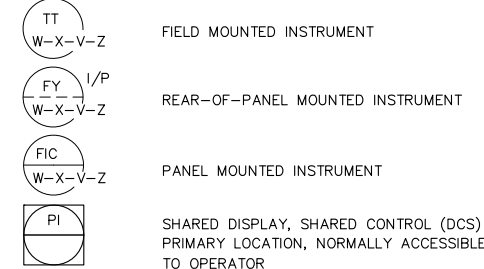
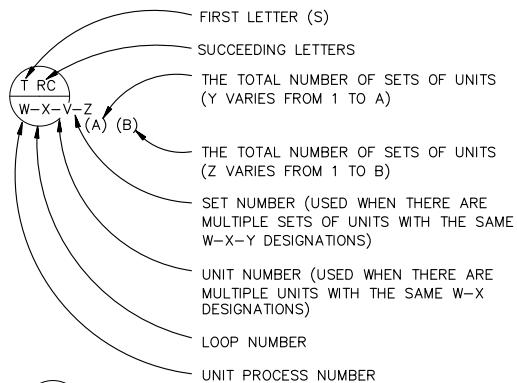
Δ DOUBLE WALL TANK, 300 GALLON NET CAPACITY, CHEM-TAINER WITH SEISMIC RESTRAINTS. MODIFIED TOP DOME WITH (1) 1" FNPT INLET, (2) 1-1/2" FNPT PUMP SUCTION, (1) 1" FNPT RELIEF RETURN AND (1) 2" MNPT LEVEL TRANSMITTER. SEE PHOTO DETAIL P-29 M-11

WATSON MARLOW METERING PUMP, MODEL 620 DuN W/0.375" TUBING FOR NaocL APPLICATION, CAPACITY: 1.0 GPM MIN. TOTAL OF 50' TUBING FOR BOTH PUMPS
ELECTRICAL & INSTRUMENTATIONS: 120 VAC POWER SUPPLY, NEMA 4X WASHDOWN ENCLOSURE REMOTE RUN/STOP CONTROL, REMOTE RUN/STOP INDICATION REMOTE SPEED CONTROL INPUT, LEAK DETECTION ALARM

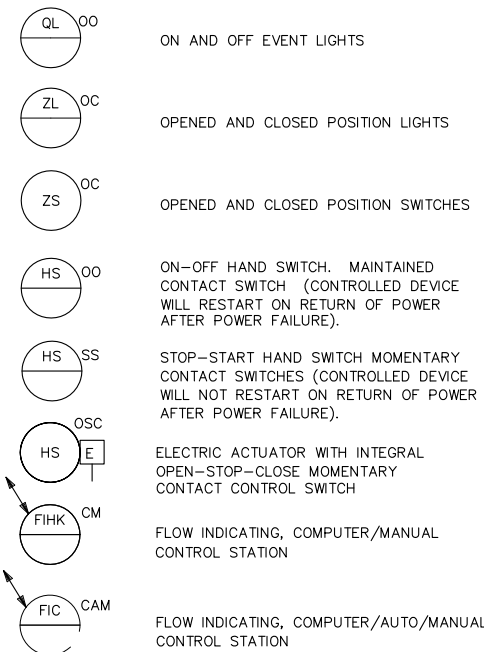


INSTRUMENT IDENTIFICATION

EXAMPLE SYMBOLS



SPECIAL CASES



INSTRUMENT SOCIETY OF AMERICA TABLE

LETTER	FIRST LETTER (S)		SUCCEEDING LETTERS		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (+)		ALARM		
B	BURNER FLAME		USERS CHOICE (+)	USERS CHOICE (+)	USERS CHOICE (+)
C	CONDUCTIVITY			CONTROL	
D	DENSITY (S.G)	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO			
G	GAUGE		GLASS	GATE	
H	HAND (MANUAL)				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME OR SCHEDULE			CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTION				MIDDLE
N	USERS CHOICE (+)		USERS CHOICE (+)	USERS CHOICE (+)	USERS CHOICE (+)
O	USERS CHOICE (+)		ORIFICE		
P	PRESSURE (OR VACUUM)		POINT (TEST CONNECTION)		
Q	QUANTITY OR EVENT(+)	INTEGRATE	INTEGRATE		
R			RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE (+)		MULTIFUNCTION (+)	MULTIFUNCTION (+)	MULTIFUNCTION (+)
V	VISCOSITY			VALVE OR DAMPER	
W	WEIGHT OR FORCE		WELL		
X	UNCLASSIFIED (+)		UNCLASSIFIED (+)	UNCLASSIFIED (+)	UNCLASSIFIED (+)
Y	USERS CHOICE (+)			RELAY OR COMPUTE (+)	
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

(+) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL. SEE ABBREVIATIONS AND LETTER SYMBOLS.

TRANSDUCERS

A	ANALOG	I	CURRENT
D	DIGITAL	P	PNEUMATIC
E	VOLTAGE	PF	PULSE FREQUENCY
F	FREQUENCY	PD	PULSE DURATION
H	HYDRAULIC	R	RESISTANCE

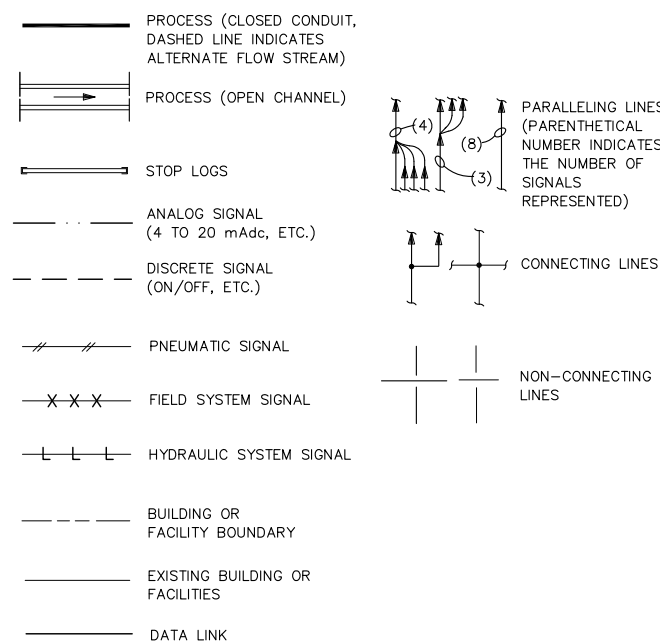
EXAMPLE:



SELF CONTAINED VALVE & EQUIPMENT TAG NUMBERS

- PA: PLANT ABBREVIATION
- W: UNIT PROCESS NUMBER
- D: ARV = AIR RELEASE VALVE
- AVRV = AIR AND VACUUM RELEASE VALVE
- E = EJECTOR
- FCV = FLOW CONTROL VALVE
- G = GATE
- LCV = LEVEL CONTROL VALVE
- M = MECHANICAL EQUIPMENT
- P = PUMP
- PCV = PRESSURE CONTROL VALVE
- VRV = VACUUM RELIEF VALVE
- PSV = PRESSURE RELIEF VALVE
- T = TANK
- TCV = TEMPERATURE CONTROL VALVE
- AHU = AIR HANDLING UNIT
- X: LOOP NUMBER
- Y: UNIT NUMBER

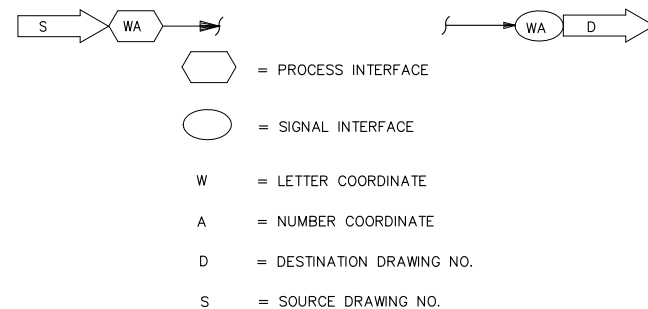
LINE LEGEND



ABBREVIATIONS & LETTER SYMBOLS

AI	ANALOG INPUT
AM	AUTO-MANUAL
AO	ANALOG OUTPUT
CAM	COMPUTER-AUTO-MANUAL
CM	COMPUTER-MANUAL
CP-X	CONTROL PANEL NO. X
CG	COMBUSTIBLE GAS
CO	CARBON MONOXIDE
CTEL	CONNECT TO EXISTING LINE
CP/DCS	CONTROL PANEL/DCS
DSRSD	DUBLIN SAN RAMON SERVICES DISTRICT
DCS	DISTRIBUTED CONTROL SYSTEM
DCU	DISTRIBUTED CONTROL UNIT
DI	DISCRETE INPUT
DO	DISCRETE OUTPUT
(E)	EXISTING
ES	EMERGENCY STOP
FLP	FAIL IN LAST POSITION
FBM	FIELD BUS MODULE
FM	FORCE MAIN
FOR	FORWARD-OFF-REVERSE
FP-W-X	FIELD PANEL NO. WX WHERE W = UNIT PROCESS NUMBER X = PANEL NUMBER
FR	FORWARD-REVERSE
FS	FAST - SLOW
GBT	GRAVITY BELT THICKENER
H ₂ S	HYDROGEN SULFIDE
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
LA	LOCAL-AUTO
LP/DCS	LOCAL PANEL-DISTRIBUTED CONTROL SYSTEM
LOC	LOCAL (AT FIELD DEVICE)
LOS	LOCKOUT STOP
LP	LOCAL PANEL
L/S	LEAD-STANDBY
LR	LOCAL-REMOTE
MA	MANUAL-AUTO
MCC-X	MOTOR CONTROL CENTER NO. X
MW	MOTOR WINDINGS
NS	NORTH-SOUTH
O ₂	OXYGEN
OC	OPEN-CLOSE (D)
OCA	OPEN-CLOSE-AUTO
OCR	OPEN-CLOSE-REMOTE
OCU	ODOR CONTROL UNIT
OO	ON-OFF - RTU REMOTE TERMINAL UNIT
OOA	ON-OFF-AUTO
OOR	ON-OFF-REMOTE
ORP	OXIDATION REDUCTION POTENTIAL
OSC	OPEN-STOP-CLOSE
REV	REVERSE
SBD	SODIUM BISULFITE DRAIN
SHD	SODIUM HYPOCHLORITE DRAIN
SLOS	START-LOCKOUT-STOP
S/D	SEDIMENTATION-DEWATERING
S/D/C	SEDIMENTATION-DEWATERING-CLOSED
SS	START-STOP
SSC	SUPERVISORY SET POINT CONTROL
VFD	VARIABLE FREQUENCY DRIVE
VHC	VOLATILE HYDROCARBON
*	PROVIDED AS PACKAGED EQUIPMENT

INTERFACE SYMBOLS



GENERAL NOTES

- P & ID'S ARE FOR INFORMATION ON CONTROL CONCEPTS AND INSTRUMENTATION ONLY. REFER TO PLANS AND SPECIFICATIONS FOR DETAILS: PIPING: VALVING: PACKAGED EQUIPMENT CONTROLS AND MISCELLANEOUS ITEMS.
- THIS IS A STANDARD LEGEND. THEREFORE, NOT ALL OF THE SYMBOLS ARE USED ON THIS PROJECT.

RTU TERMINATIONS

- △ DISCRETE INPUT
- ▽ DISCRETE OUTPUT
- ▲ ANALOG INPUT
- ▼ ANALOG OUTPUT

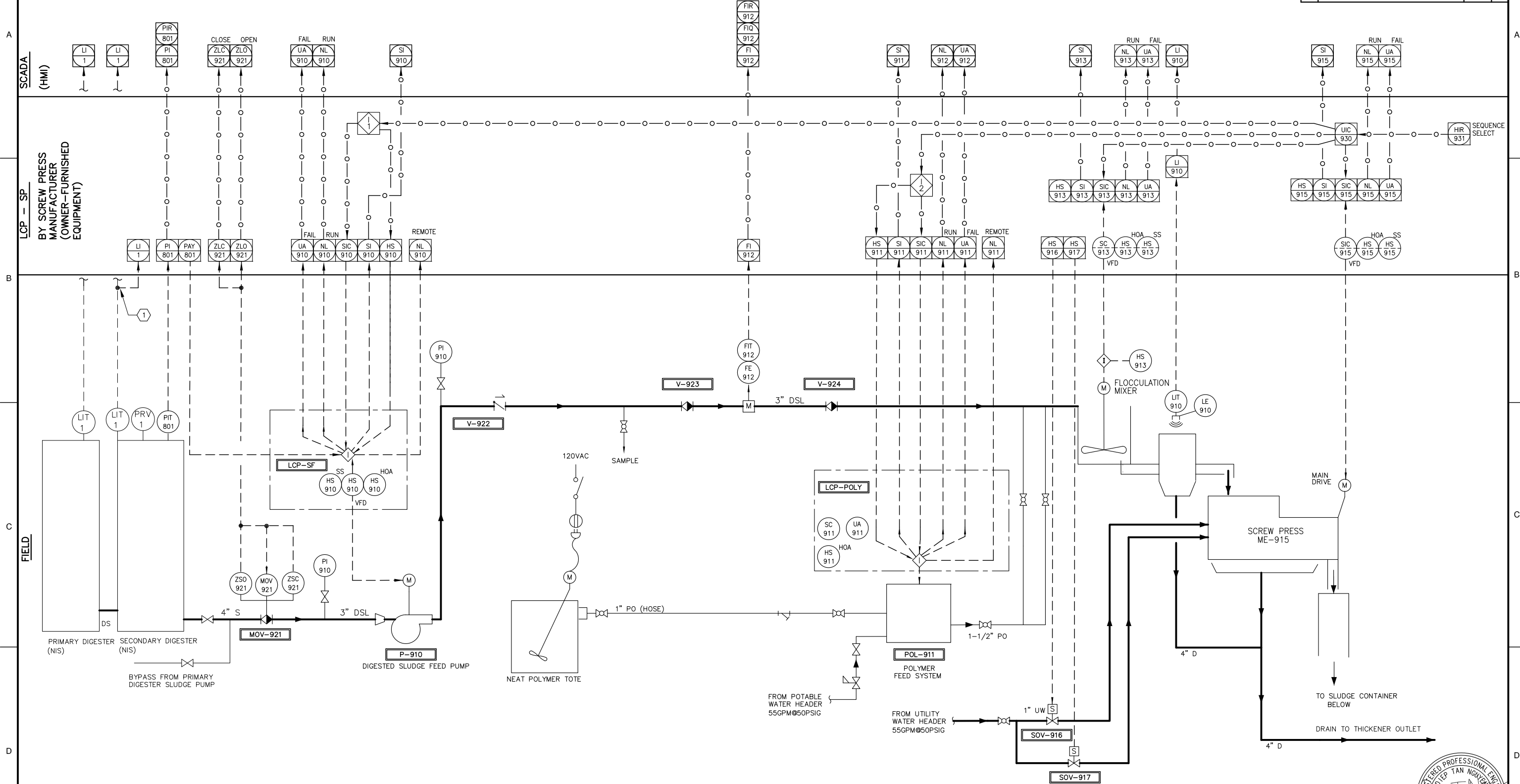
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SHEET NOTES:

- ① INTERCEPT EXISTING CIRCUIT AND ROUTED TO LCP-SP AS A COMPLETE LOOP.
- ② SCADA/PLC SOFTWARE IS PROVIDED BY OTHERS.

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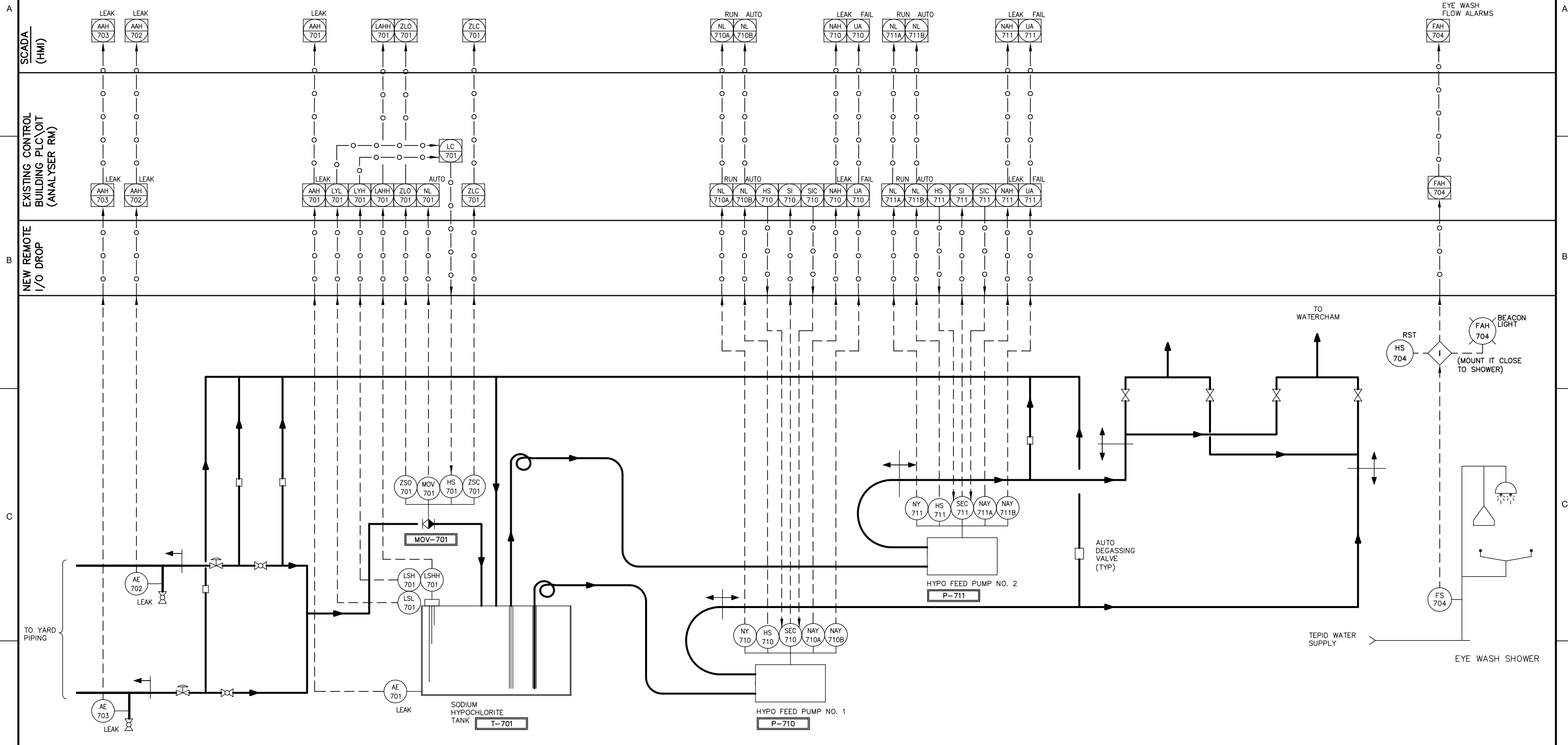


	WHITLEY BURCHETT & ASSOCIATES Walnut Creek, California (925) 945-6850	DESIGN <u>TP</u> DRAWN <u>EA</u> CHECKED <u>DN</u>	JOB NUMBER <u>SMC 07-1</u> DATE <u>FEBRUARY 2008</u>	LINE IS 2 INCHES AT FULL SCALE IF NOT 2 INCHES, SCALE ACCORDINGLY	SAUSALITO MARIN CITY SANITARY DISTRICT MARIN COUNTY, CALIFORNIA	SLUDGE DEWATERING PROJECT	PROCESS AND INSTRUMENTATION DIAGRAM SLUDGE DEWATERING SYSTEM	REV. <u>0</u> DWG. NO. 1-2 23 OF 37
	SAUSALITO MARIN CITY SANITARY DISTRICT MARIN COUNTY, CALIFORNIA							
	SLUDGE DEWATERING PROJECT							

SHEET NOTES:

- ① ALL SIGNALS ASSOCIATED WITH THE SODIUM HYPOCHLORITE SYSTEM SHALL BE PHYSICALLY ROUTED THROUGH NEW PLC REMOTE I/O DROP AS SHOWN.
- ② SCADA/PLC SOFTWARE IS PROVIDED BY OTHERS.

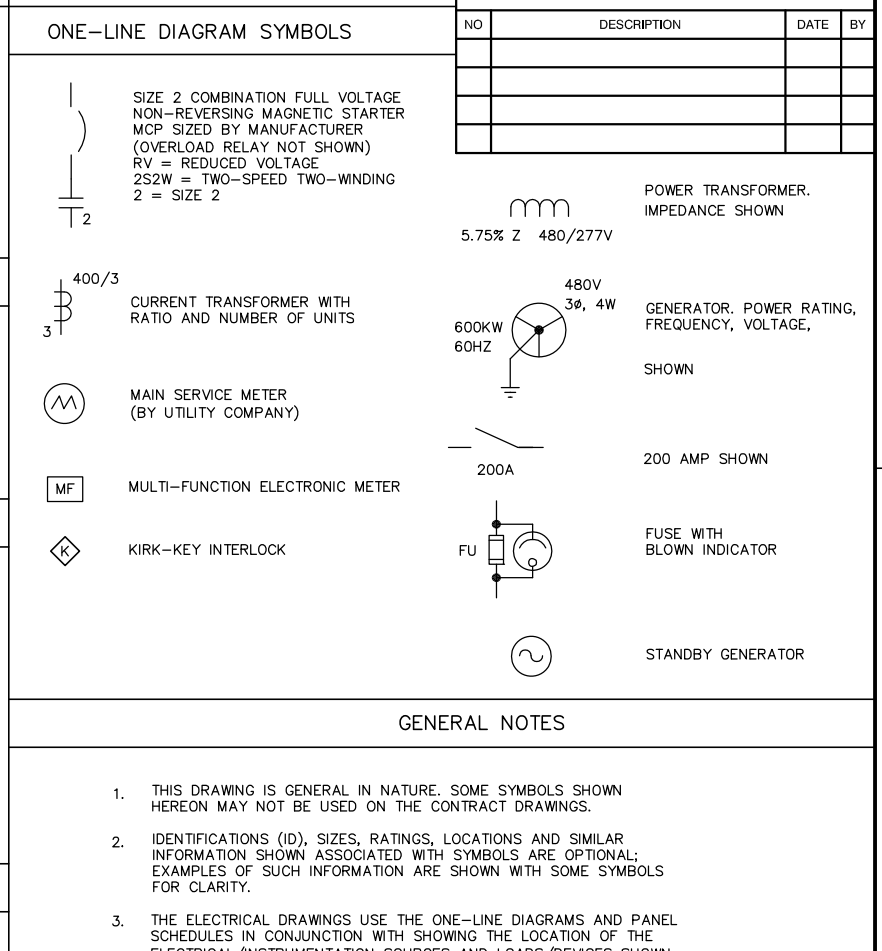
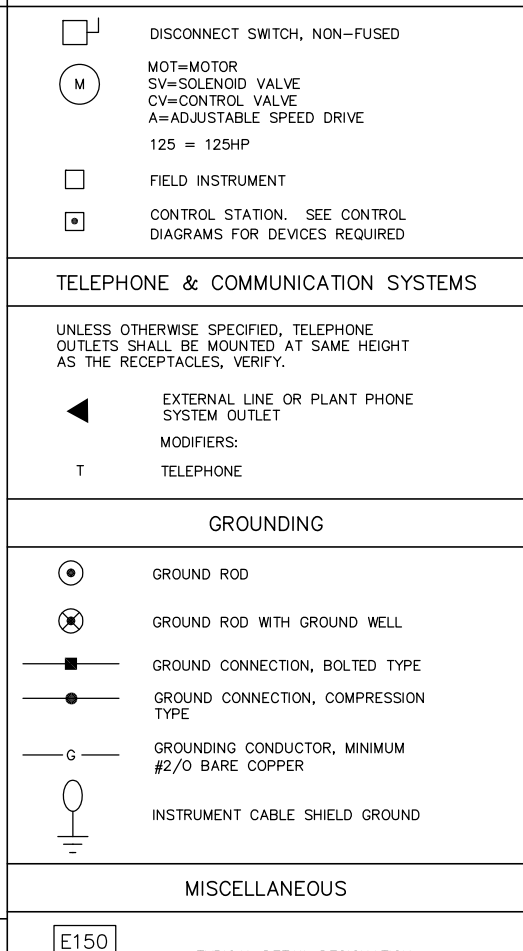
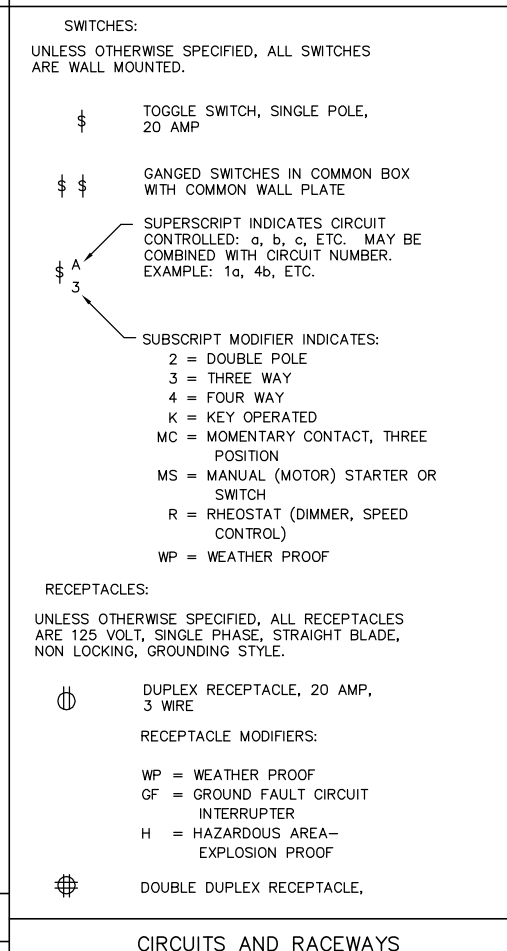
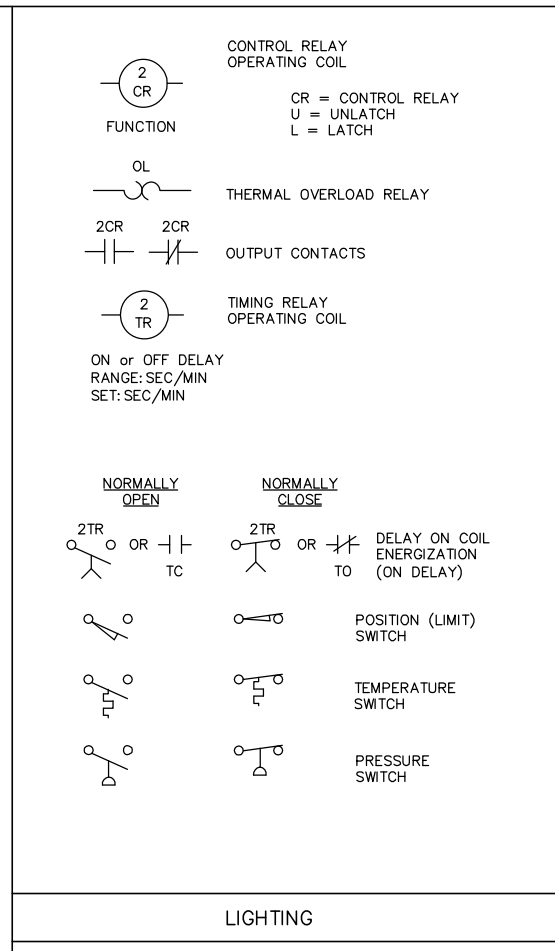
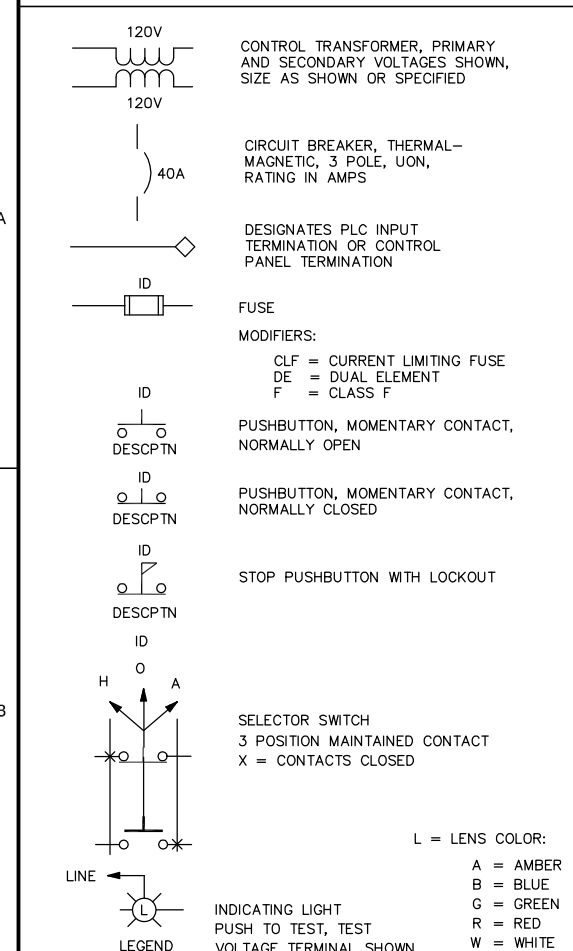
REVISIONS			
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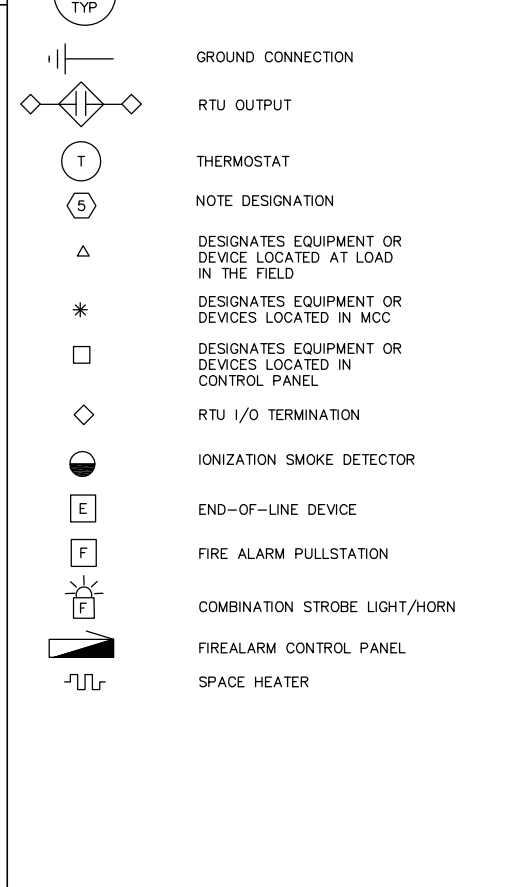
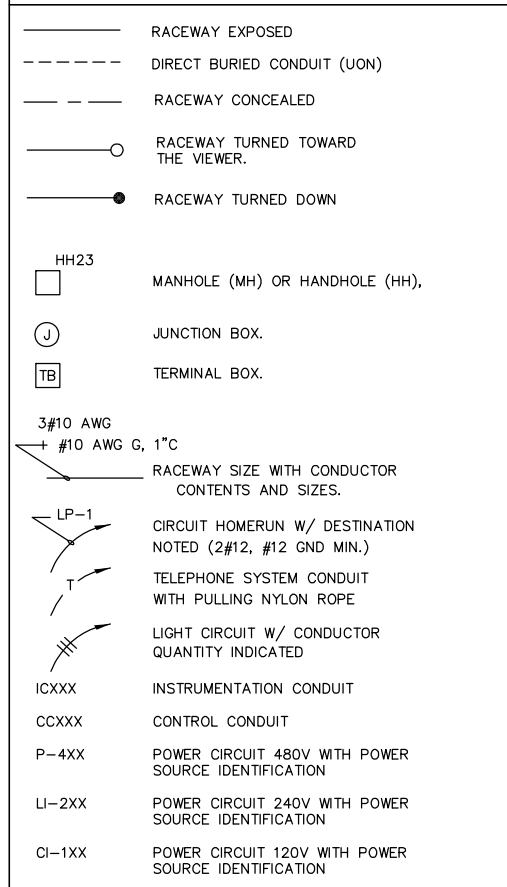
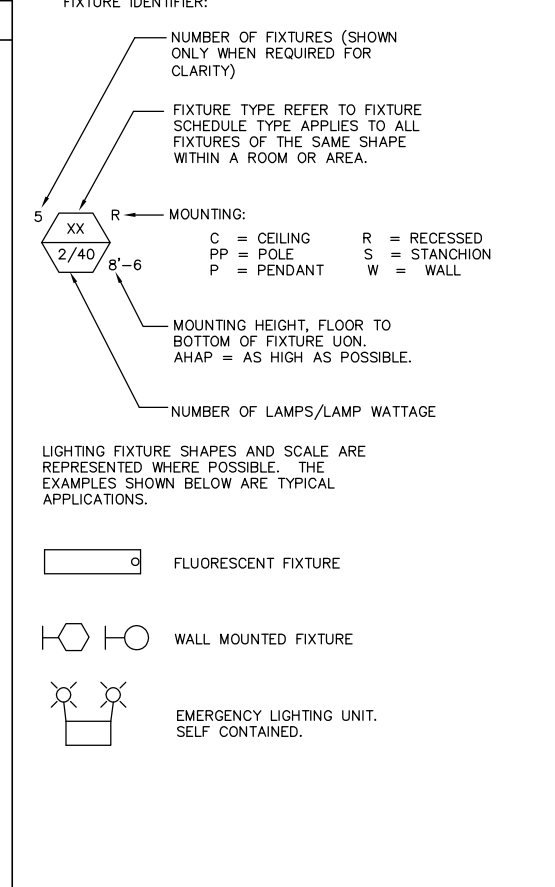


<p>WHITLEY BURCHETT & ASSOCIATES Walnut Creek, California (925) 945-6850</p>	DESIGN	TP	JOB NUMBER	SMC 07-1	LINE IS 2 INCHES AT FULL SCALE IF NOT 2 INCHES, SCALE ACCORDINGLY	SAUSALITO MARIN CITY SANITARY DISTRICT MARIN COUNTY, CALIFORNIA	SLUDGE DEWATERING PROJECT	PROCESS AND INSTRUMENTATION DIAGRAM SODIUM HYPOCHLORITE SYSTEM	REV.	0
	DRAWN	EA	DATE	FEBRUARY 2008					DWG. NO.	1-3
	CHECKED	DN								24 OF 37



STANDARD ABBREVIATIONS

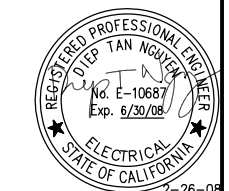
A	AMMETER
ATS	AUTOMATIC TRANSFER SWITCH
BCW	BARE COPPER WIRE
C	CONDUIT
C.O.	CONDUIT ONLY (EMPTY CONDUIT)
CP	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CS	CONTROL SWITCH
CT	CONTACTOR (HEAVY DUTY)
FS	FLOAT SWITCH
G	GROUND
HZ	HERTZ
KVAR	REACTIVE POWER
KW	KILOWATT
KWHR	KILOWATTHOUR
I/O	INPUT/OUTPUT
LOS	LOCKOUT STOP
MTS	MANUAL TRANSFER SWITCH
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MF	MULTI-FUNCTION METER DISPLAY
MIN	MINIMUM
MSGR	MAIN SWITCHGEAR
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
PAIR OR PR	TWISTED, SHIELDED PAIRS
PB	PULL BOX
PLC	PROGRAMMABLE LOGIC CONTROLLER
QUAD	TWISTED, SHIELDED 4-CONDUCTOR CABLE
PP	POWER POLE
RTD	RESISTANCE THERMAL DETECTOR
RTU	REMOTE TERMINAL UNIT
SCADA	SUPERVISORY CONTROL & DATA ACQUISITION
SSRS	SOLID STATE REDUCED VOLTAGE STARTER
SWGR	SWITCHGEAR
THD	HARMONIC DISTORTION
TS	TEMPERATURE SWITCH
UON	UNLESS OTHERWISE NOTED
V	VOLTMETER
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHER PROOF (NEMA 4X)
XFMR	TRANSFORMER



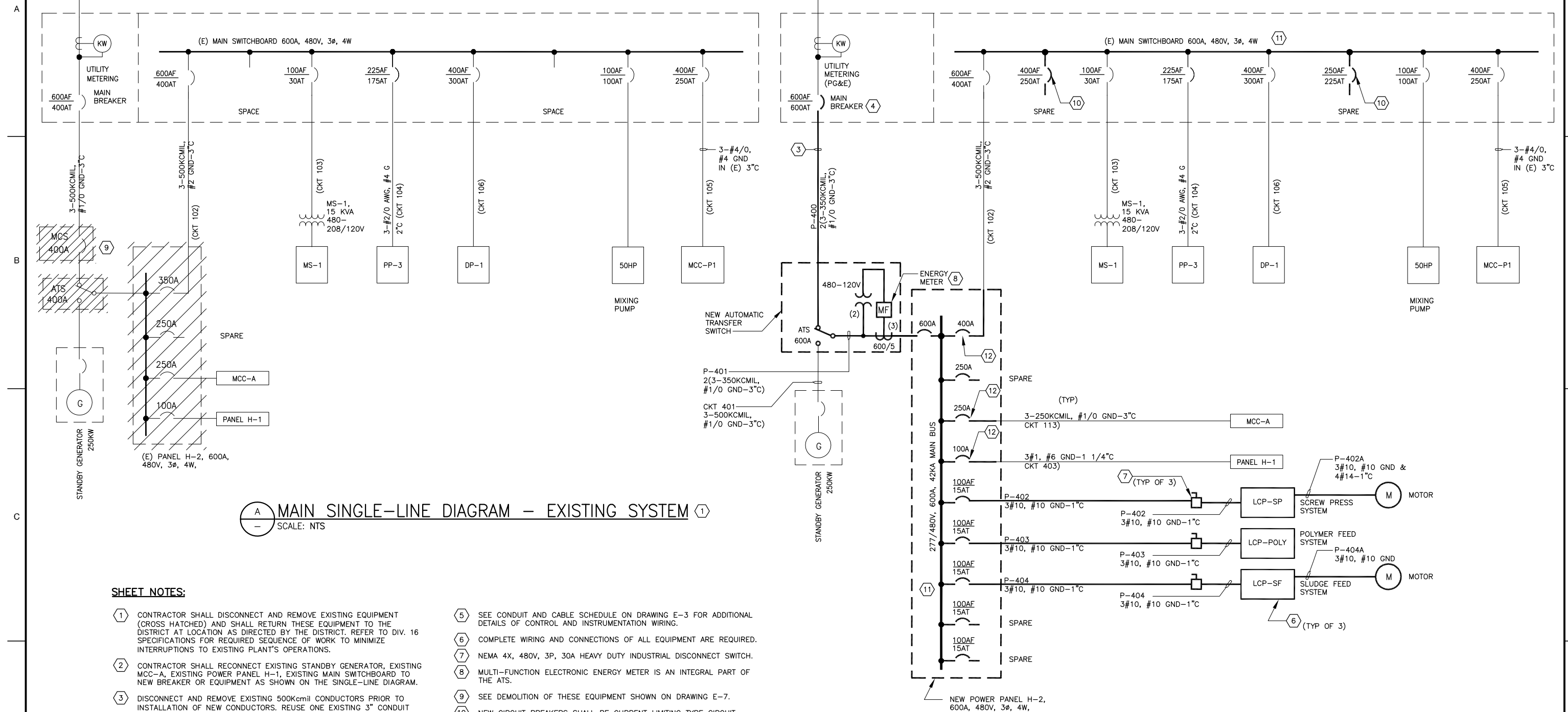
GENERAL NOTES

- THIS DRAWING IS GENERAL IN NATURE. SOME SYMBOLS SHOWN HEREON MAY NOT BE USED ON THE CONTRACT DRAWINGS.
- IDENTIFICATIONS (ID), SIZES, RATINGS, LOCATIONS AND SIMILAR INFORMATION SHOWN ASSOCIATED WITH SYMBOLS ARE OPTIONAL; EXAMPLES OF SUCH INFORMATION ARE SHOWN WITH SOME SYMBOLS FOR CLARITY.
- THE ELECTRICAL DRAWINGS USE THE ONE-LINE DIAGRAMS AND PANEL SCHEDULES IN CONJUNCTION WITH SHOWING THE LOCATION OF THE ELECTRICAL/INSTRUMENTATION SOURCES AND LOADS/DEVICES SHOWN ON THE PLAN DRAWINGS TO DEPICT THE WORK. THE CONTRACTOR SHALL USE THESE DOCUMENTS TO DETERMINE AND PROVIDE THE NECESSARY RACEWAY AND WIRING SYSTEM FOR EACH CIRCUIT. ALL INDOOR RACEWAY SHALL BE RUN EXPOSED, AND ROUTED BY THE CONTRACTOR, UNLESS OTHERWISE NOTED. THE TYPE OF RACEWAY AND WIRE USED SHALL BE AS SPECIFIED IN THE SPECIFICATIONS UNLESS OTHERWISE NOTED.
- THE LOCATION OF THE CONTROL STATIONS SHOWN ON THE PLAN DRAWINGS ARE DIAGRAMMATIC AND THE ACTUAL LOCATION SHALL BE COORDINATED IN THE FIELD WITH THE CONSTRUCTION MANAGER.
- THE EXACT LOCATION OF THE MOTORS AND ACCESSORIES ARE NOT SHOWN. THE CONTRACTOR SHALL COORDINATE THE STRUCTURAL AND MECHANICAL DRAWINGS FOR CONDUIT STUBOUT AND TERMINATION LOCATIONS.
- ALL EQUIPMENT SHALL BE LABELED WITH NAMEPLATES. DESCRIPTION OF EQUIPMENT SHALL BE IN ACCORDANCE WITH THE ONE-LINE DIAGRAM DESCRIPTION. A LIST OF THE NAMEPLATES SHALL BE SUBMITTED TO THE CONSTRUCTION MANAGER PRIOR TO ENGRAVING.
- UNLESS OTHERWISE NOTED, ALL CONVENIENCE OUTLETS SHALL BE MOUNTED AT 48-INCHES ABOVE FINISHED FLOOR. ALL LIGHT SWITCHES SHALL BE MOUNTED AT 54-INCHES ABOVE FINISHED FLOOR.
- EACH CONVENIENCE OUTLET AND LIGHTING CIRCUIT SHALL BE PROVIDED WITH A #12AWG GREEN GROUNDING CONDUCTOR
- FOR SPARE CONDUCTORS, AT EACH END, TAPE & COIL UP AND PROVIDE ENGRAVED TAG IDENTIFYING "FROM AND TO" DESTINATION.
- ALL EXTERIOR CONDUITS SHALL BE PVC COATED RIGID GALVANIZED STEEL. ALL OUTDOOR ENCLOSURES SHALL BE NEMA 4X.
- CONDUIT ENTERING OR LEAVING CLASSIFIED HAZARDOUS LOCATION SHALL BE PROVIDED WITH "EYS" SEALS PER NEC.
- ELECTRICAL DRAWINGS DO NOT SHOW ALL REQUIRED DEMOLITION. SEE MECHANICAL DRAWINGS FOR ADDITIONAL DEMOLITION.

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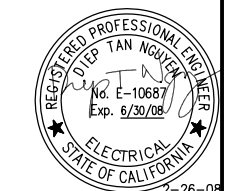
A MAIN SINGLE-LINE DIAGRAM - EXISTING SYSTEM (1)
SCALE: NTS

B MAIN SINGLE-LINE DIAGRAM - MODIFICATIONS (5)
SCALE: NTS

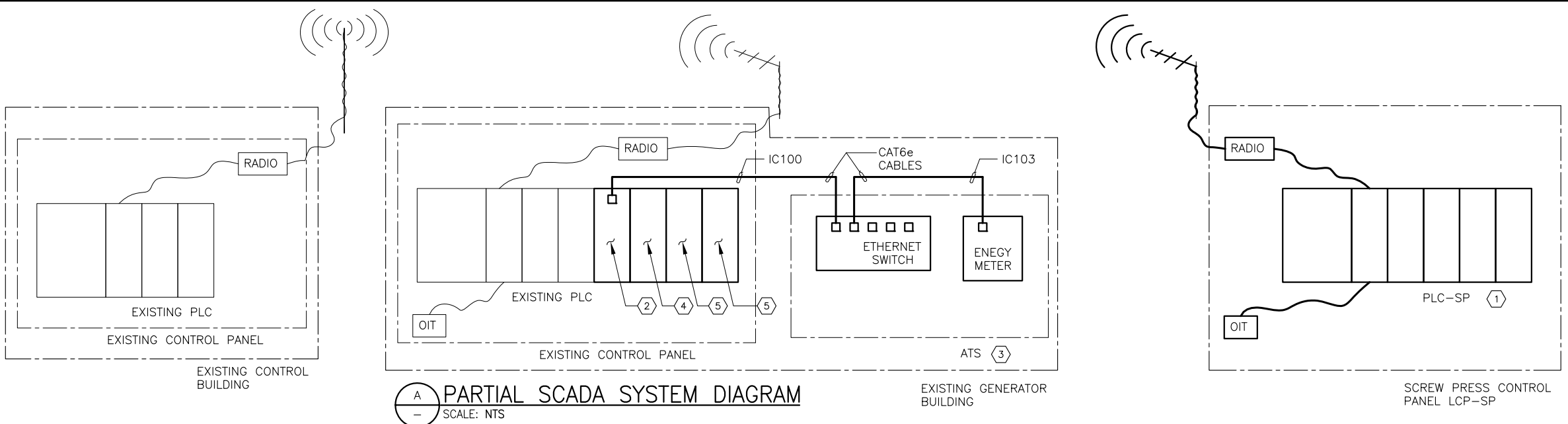
SHEET NOTES:

- (1) CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING EQUIPMENT (CROSS HATCHED) AND SHALL RETURN THESE EQUIPMENT TO THE DISTRICT AT LOCATION AS DIRECTED BY THE DISTRICT. REFER TO DIV. 16 SPECIFICATIONS FOR REQUIRED SEQUENCE OF WORK TO MINIMIZE INTERRUPTIONS TO EXISTING PLANT'S OPERATIONS.
- (2) CONTRACTOR SHALL RECONNECT EXISTING STANDBY GENERATOR, EXISTING MCC-A, EXISTING POWER PANEL H-1, EXISTING MAIN SWITCHBOARD TO NEW BREAKER OR EQUIPMENT AS SHOWN ON THE SINGLE-LINE DIAGRAM.
- (3) DISCONNECT AND REMOVE EXISTING 500Kcmil CONDUCTORS PRIOR TO INSTALLATION OF NEW CONDUCTORS. REUSE ONE EXISTING 3" CONDUIT AND INSTALL ONE NEW 3"C.
- (4) REMOVE EXISTING 400A TRIP ELEMENT OF THE EXISTING MAIN BREAKER (600A FRAME) AND REPLACE WITH A NEW 600A TRIP ELEMENT. BREAKER'S AUXILIARIES SHALL BE CUTLER-HAMMER TO MATCH EXISTING INSTALLATION.
- (5) SEE CONDUIT AND CABLE SCHEDULE ON DRAWING E-3 FOR ADDITIONAL DETAILS OF CONTROL AND INSTRUMENTATION WIRING.
- (6) COMPLETE WIRING AND CONNECTIONS OF ALL EQUIPMENT ARE REQUIRED.
- (7) NEMA 4X, 480V, 3P, 30A HEAVY DUTY INDUSTRIAL DISCONNECT SWITCH.
- (8) MULTI-FUNCTION ELECTRONIC ENERGY METER IS AN INTEGRAL PART OF THE ATS.
- (9) SEE DEMOLITION OF THESE EQUIPMENT SHOWN ON DRAWING E-7.
- (10) NEW CIRCUIT BREAKERS SHALL BE CURRENT LIMITING TYPE CIRCUIT BREAKERS MANUFACTURED BY GENERAL ELECTRIC (SPECTRA RMS SERIES) TO MATCH EXISTING INSTALLATION. NO SUBSTITUTIONS.
- (11) ALL CIRCUIT BREAKERS ARE 480VAC THREE-POLE.
- (12) THIS BREAKER SHALL BE PROVIDED WITH A 120VAC SHUNT TRIP COIL FOR USE AS A COMPONENT OF THE AUTOMATIC LOAD SHEDDING SYSTEM.

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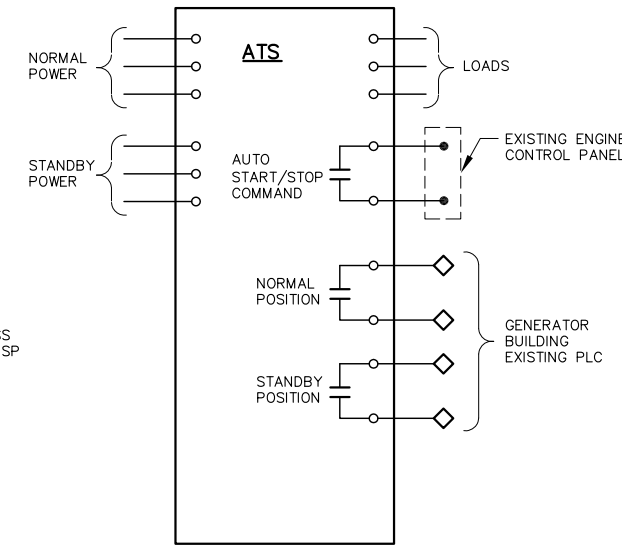
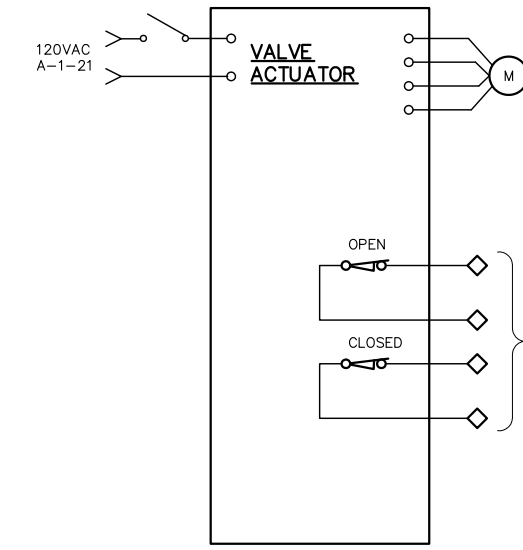


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1	CONFORMED DRAWING	6/02/08	DTN



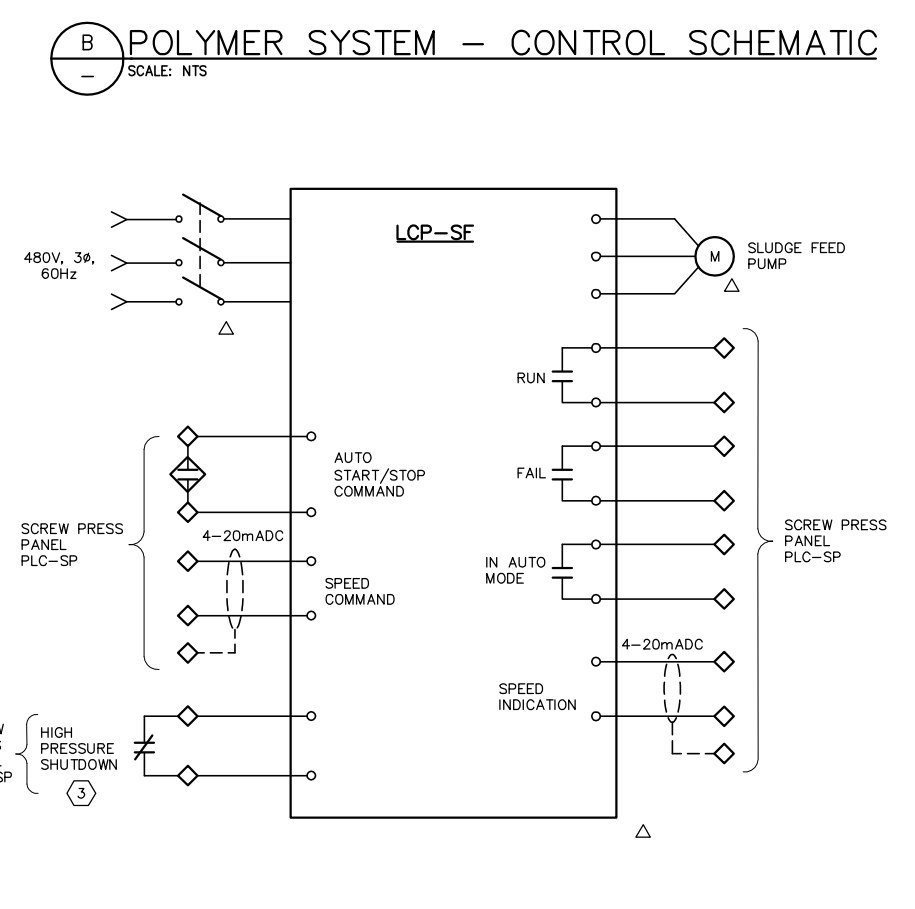
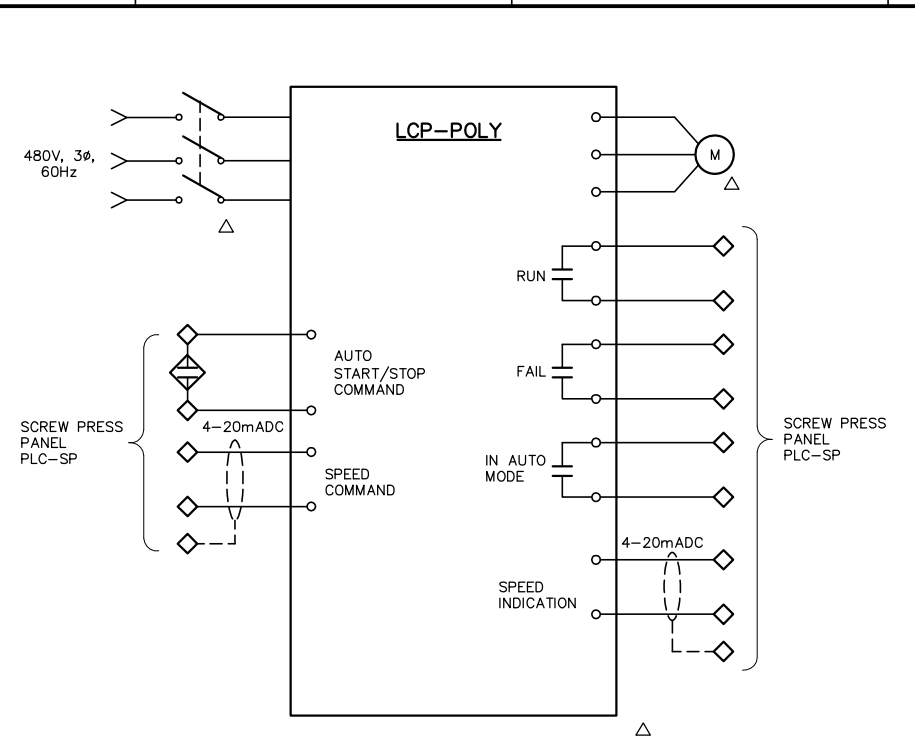
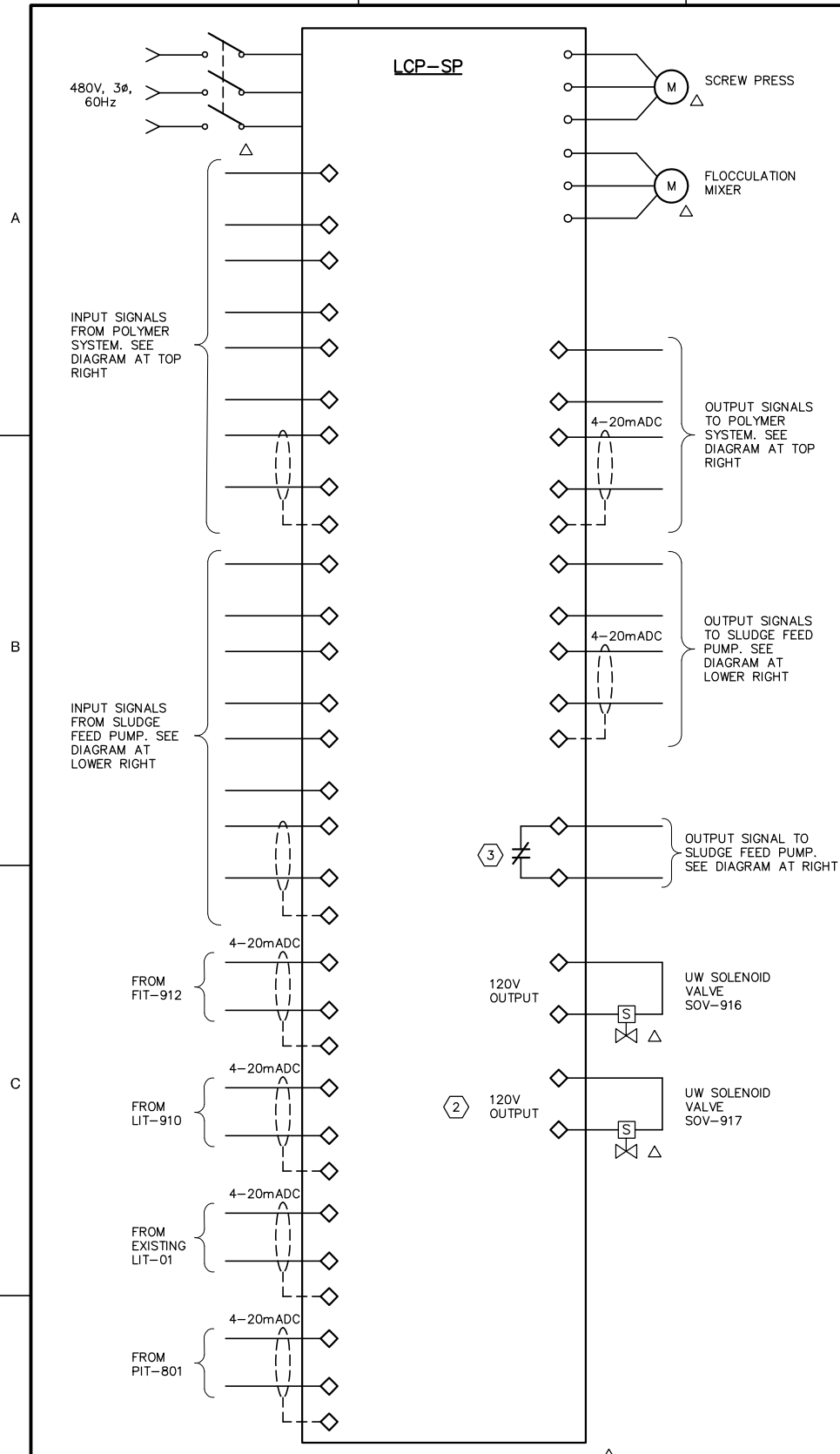
- SHEET NOTES:**
- REFER TO SECTION 11247 OF DIV. 11 OF THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING INTERNAL COMPONENTS OF THIS SCREW PRESS CONTROL PANEL.
 - FURNISH AND INSTALL IN EXISTING AVAILABLE SPARE SLOT A NEW ETHERNET COMMUNICATION MODULE AUTOMATIC DIRECT MODEL NO. H2-ECOM FOR COMMUNICATION WITH THE ENERGY METER AS SHOWN.
 - REFER TO DIV. 16 OF THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING INTERNAL COMPONENTS OF THIS AUTOMATIC TRANSFER SWITCH. ETHERNET SWITCH AND ENERGY METER SHALL BE POWERED BY INTERNAL CONTROL POWER SOURCES (NORMAL POWER AND STANDBY POWER). ETHERNET SWITCH SHALL HAVE SIX COMMUNICATION PORTS MINIMUM (SPARE PORTS ARE FOR FUTURE USE).
 - FURNISH AND INSTALL A NEW RELAY OUTPUT CARD.
 - FURNISH AND INSTALL A D2 FILLER CAP TO COVER SPARE SLOT.
 - FOR NEMA 4X AREAS AND AREAS DESIGNATED AS OUTDOORS, CONDUITS SHALL BE PVC-COATED RGS.

CONDUIT SCHEDULE						
CONDUIT NO.	CONDUIT SIZE	TYPE	FROM	TO	CABLES	NOTES
P-400	2-3"	RGS	NEW MAIN SERVICE BREAKER	NEW ATS	2(350Kcmil, #1/0 GND)	ONE 3"C IS EXISTING TO BE REUSED
P-401	2-3"	RGS	NEW ATS	NEW POWER PANEL H-2	2(350Kcmil, #1/0 GND)	
P-402	1"	RGS	NEW POWER PANEL H-2	SCREW PRESS CONTROL PANEL	3#10, #10 GND	
P-402A	1"	RGS	SCREW PRESS CONTROL PANEL	SCREW PRESS MOTOR	3#10, #10 GND & 4#14 (SPARE)	
P-403	1"	RGS	NEW POWER PANEL H-2	POLYMER FEED CONTROL	3#10, #10 GND	
P-404	1"	RGS	NEW POWER PANEL H-2	SLUDGE FEED SYS. CONTROL PANEL	3#10, #10 GND	
P-404A	1"	RGS	SLUDGE FEED PUMP CONTROL PANEL	SLUDGE FEED PUMP MOTOR	3#10, #10 GND	
CC100	1"	RGS	POLYMER SYSTEM CONTROL PANEL	SCREW PRESS CONTROL PANEL	14#14 (4 SPARES)	
CC101	1"	RGS	SLUDGE FEED PUMP CONTROL PANEL	SCREW PRESS CONTROL PANEL	12#14 (4 SPARES)	
CC102	3/4"	RGS	SOV-916 & SOV-917	SCREW PRESS CONTROL PANEL	4#12, #12 GND	
CC103	3/4"	RGS	MOV-921	SCREW PRESS CONTROL PANEL	8#14 (4 SPARES)	
CC104	3/4"	RGS	POWER PANEL H-2	EXISTING GENERATOR BLDG PANEL	8#14 (2 SPARES)	LOAD SHEDDING CONTROLS
CC105	3/4"	RGS	MOV-701	REMOTE I/O DROP	10#14	
CC106A	1"	RGS	CHEMICAL PUMP CONTROLLER NO. 1	REMOTE I/O DROP	12#14	
CC106B	1"	RGS	CHEMICAL PUMP CONTROLLER NO. 2	REMOTE I/O DROP	12 #14	
CC107	3/4"	RGS	CHEMICAL TANK LEVEL SWITCHES	REMOTE I/O DROP	8#14	DC POWER FROM REMOTE I/O DROP
CC108	3/4"	RGS	CHEMICAL SYSTEM ALARM PANEL	REMOTE I/O DROP	4#14	
CC109	3/4"	RGS	LEAK DETECTOR AE-701	REMOTE I/O DROP	4#14	DC POWER FROM REMOTE I/O DROP
CC110	3/4"	RGS	LEAK DETECTOR AE-702	REMOTE I/O DROP	4#14	DC POWER FROM REMOTE I/O DROP
CC111	3/4"	RGS	LEAK DETECTOR AE-703	REMOTE I/O DROP	4#14	DC POWER FROM REMOTE I/O DROP
IC100	1"	RGS	NEW ATS	EXISTING GENERATOR BUILDING PLC	CAT6e CABLE	
IC101	1"	RGS	POLYMER SYSTEM CONTROL PANEL	SCREW PRESS CONTROL PANEL	2 PAIRS	
IC102	1"	RGS	SLUDGE FEED PUMP CONTROL PANEL	SCREW PRESS CONTROL PANEL	2 PAIRS	
IC103			ENERGY METER (GEN BLDG)	ETHERNET SWITCH	CAT6e CABLE	INTERNAL WIRING
IC104	3/4"	RGS	FLOW METER FIT-912	SCREW PRESS CONTROL PANEL	1 PAIR	
IC105	3/4"	RGS	LEVEL METER LIT-910	SCREW PRESS CONTROL PANEL	1 PAIR	
IC106	3/4"	RGS	PRESSURE TRANSMITTER PIT-801	SCREW PRESS CONTROL PANEL	1 PAIR	
IC107	3/4"	RGS	(E) LIT-01	SCREW PRESS CONTROL PANEL	1 PAIR	
IC108A	3/4"	RGS	CHEMICAL PUMP CONTROLLER NO. 1	REMOTE I/O DROP	2 PAIRS	
IC108B	3/4"	RGS	CHEMICAL PUMP CONTROLLER NO. 2	REMOTE I/O DROP	2 PAIRS	
IC109	3/4"	RGS	REMOTE I/O DROP	(E) PLC IN CONTROL BLDG ANALYSER RM	LOW CAPACITANCE RS485 CABLE	PLC REMOTE DROP DATALINK
IC110	3/4"	RGS	LIT-912	SCREW PRESS CONTROL PANEL	1 PAIR	

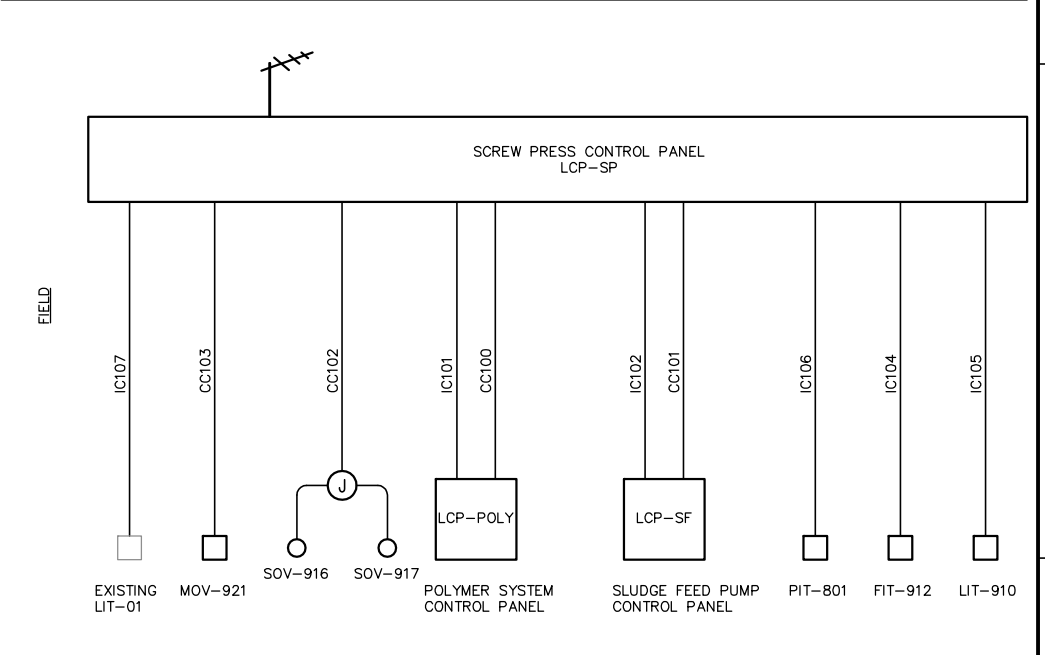
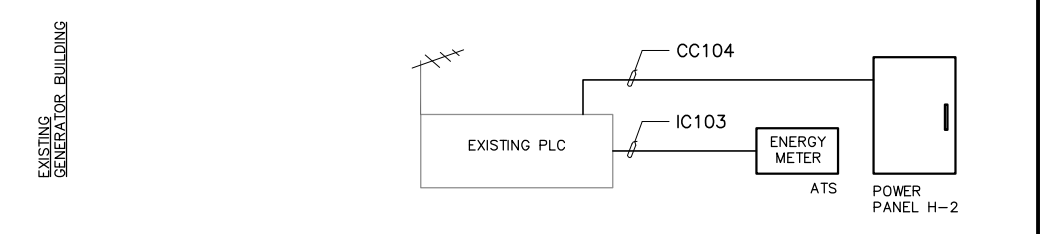


B CONDUIT SCHEDULE
SCALE: NTS

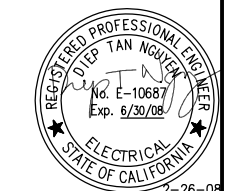
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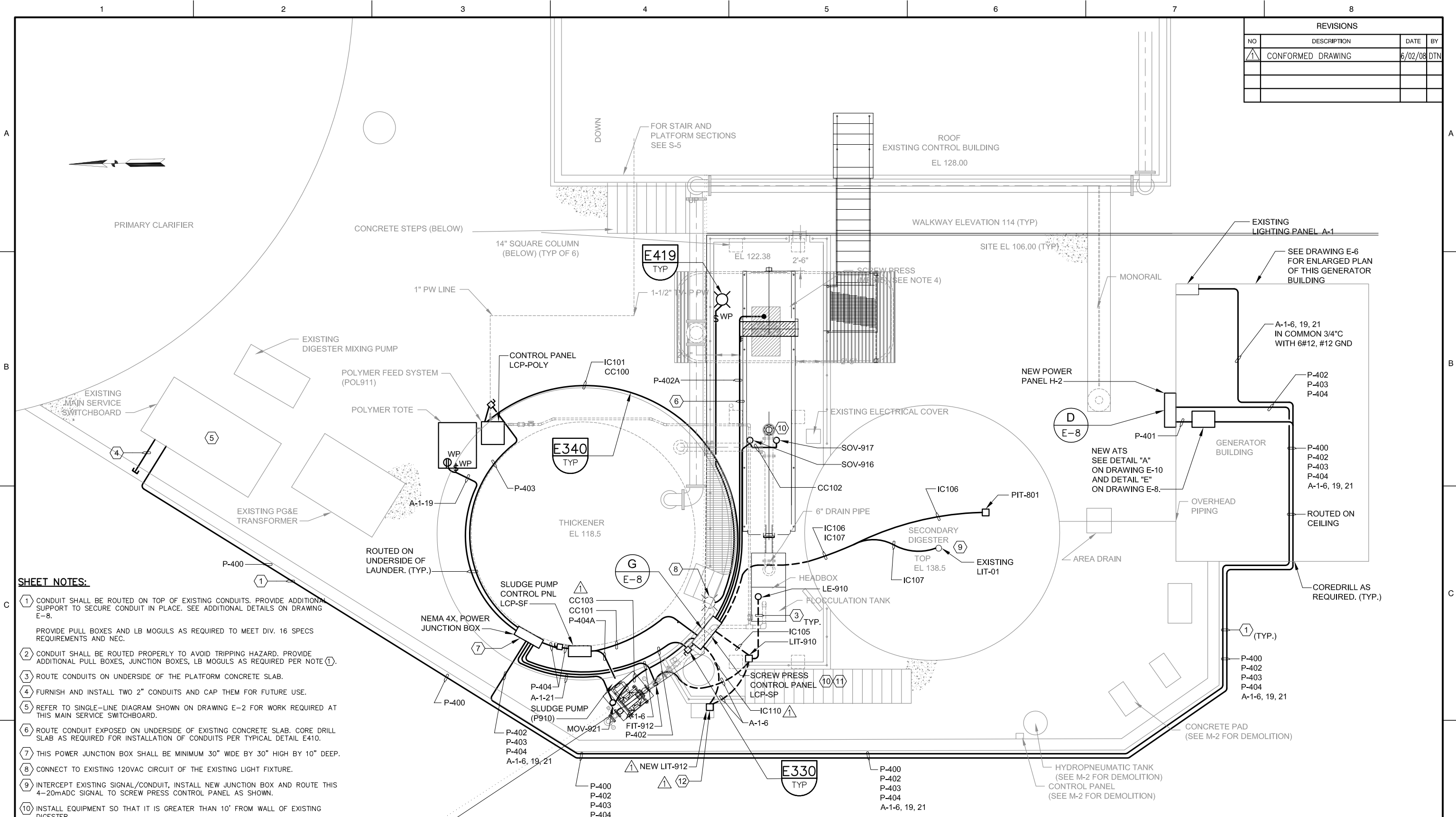
- SHEET NOTES:**
- SEE CONDUIT SCHEDULE SHOWN ON DRAWING E-3 FOR REQUIRED CONDUIT AND CABLE QUANTITY.
 - THIS SCREW PRESS CONTROL PANEL CONTAINS PLC-SP AND A LOCAL OIT. REFER TO DIV. 11 SECTION 11247 OF THE SPECIFICATIONS FOR INTERNAL COMPONENTS OF THIS PANEL.
 - THIS SET POINT RELAY CONTACT IS HARDWIRED FOR SHUTDOWN OF SLUDGE PUMP IN CASE OF HIGH DIGESTER PRESSURE.



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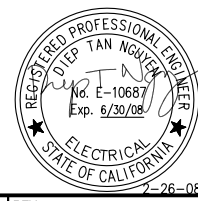
REVISIONS			
NO	DESCRIPTION	DATE	BY
1	CONFORMED DRAWING	6/02/08	DTN



SHEET NOTES:

- 1 CONDUIT SHALL BE ROUTED ON TOP OF EXISTING CONDUITS. PROVIDE ADDITIONAL SUPPORT TO SECURE CONDUIT IN PLACE. SEE ADDITIONAL DETAILS ON DRAWING E-8.
PROVIDE PULL BOXES AND LB MOGULS AS REQUIRED TO MEET DIV. 16 SPECS REQUIREMENTS AND NEC.
- 2 CONDUIT SHALL BE ROUTED PROPERLY TO AVOID TRIPPING HAZARD. PROVIDE ADDITIONAL PULL BOXES, JUNCTION BOXES, LB MOGULS AS REQUIRED PER NOTE 1.
- 3 ROUTE CONDUITS ON UNDERSIDE OF THE PLATFORM CONCRETE SLAB.
- 4 FURNISH AND INSTALL TWO 2" CONDUITS AND CAP THEM FOR FUTURE USE.
- 5 REFER TO SINGLE-LINE DIAGRAM SHOWN ON DRAWING E-2 FOR WORK REQUIRED AT THIS MAIN SERVICE SWITCHBOARD.
- 6 ROUTE CONDUIT EXPOSED ON UNDERSIDE OF EXISTING CONCRETE SLAB. CORE DRILL SLAB AS REQUIRED FOR INSTALLATION OF CONDUITS PER TYPICAL DETAIL E410.
- 7 THIS POWER JUNCTION BOX SHALL BE MINIMUM 30" WIDE BY 30" HIGH BY 10" DEEP.
- 8 CONNECT TO EXISTING 120VAC CIRCUIT OF THE EXISTING LIGHT FIXTURE.
- 9 INTERCEPT EXISTING SIGNAL/CONDUIT, INSTALL NEW JUNCTION BOX AND ROUTE THIS 4-20mADC SIGNAL TO SCREW PRESS CONTROL PANEL AS SHOWN.
- 10 INSTALL EQUIPMENT SO THAT IT IS GREATER THAN 10' FROM WALL OF EXISTING DIGESTER.
- 11 FURNISHED BY SCREW PRESS MANUFACTURER.
- 12 REMOVE EXISTING BUBBLER PER NOTE 4 ON DWG M-2, FURNISH AND INSTALL NEW ULTRASONIC LEVEL TRANSMITTER LIT-912 AT SAME LOCATION. POWER CONNECTION FOR THIS METER SHALL BE 2#12, #12 GND-3/4"C FROM LIT-910 (CIRCUIT A-1-6). INSTRUMENT CONDUIT FROM THIS LIT-912 TO SCREW PRESS PANEL SHALL BE IC110.

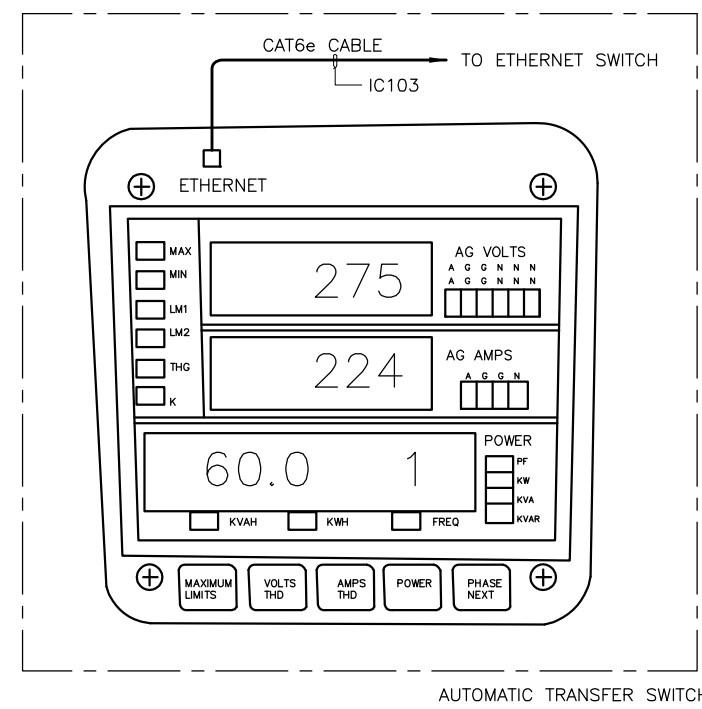
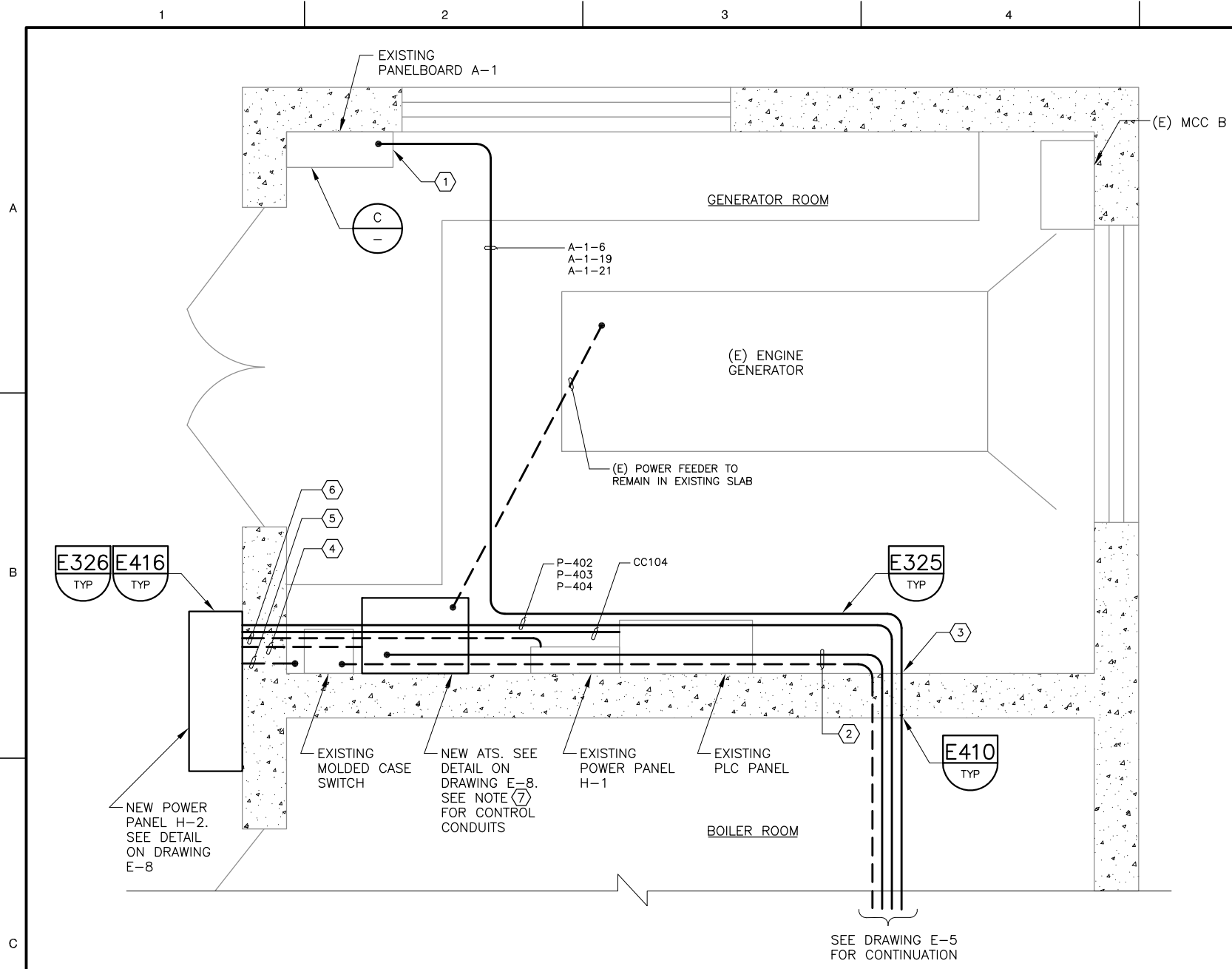
A PARTIAL SITE PLAN (2)
SCALE: 1/4" = 1'-0"



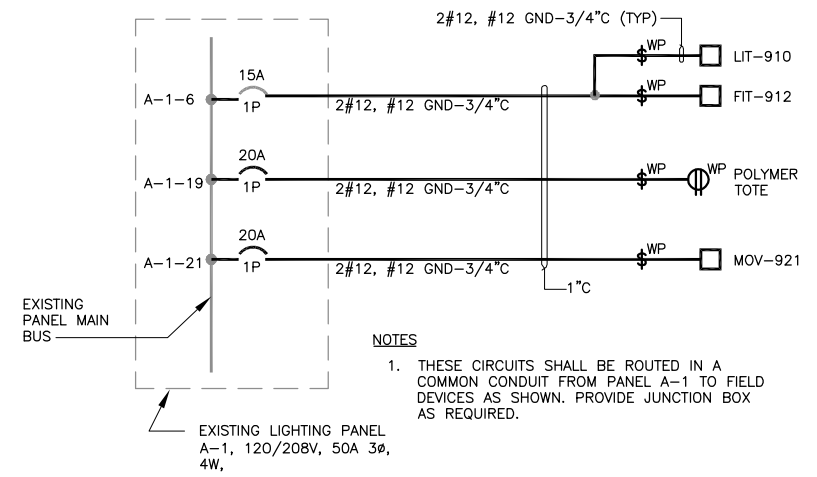
DTN ENGINEERS, INC.

WB	DESIGN	TP	JOB NUMBER	LINE IS 2 INCHES AT FULL SCALE	SAUSALITO MARIN CITY SANITARY DISTRICT MARIN COUNTY, CALIFORNIA	SLUDGE DEWATERING PROJECT	PARTIAL POWER AND LIGHTING PLAN	REV.	0
	DRAWN	EA	DATE	IF NOT 2 INCHES, SCALE ACCORDINGLY				DWG. NO.	E-5
	CHECKED	DN	FEBRUARY 2008					29 OF 37	

REVISIONS			
NO	DESCRIPTION	DATE	BY



B ENERGY METER
SCALE: NTS (LOCATED IN ATS)



C (E) LIGHTING PANEL A-1 MODIFICATIONS
SCALE: NTS

SHEET NOTES:

- 1 FURNISH AND INSTALL IN THIS PANEL TWO NEW 20A, IP 120VAC CIRCUIT BREAKER TO BE USED TO FEED NEAT POLYMER TOTE AND MOV-921. NEW BREAKERS SHALL MATCH EXISTING MAKE AND MODEL.
- 2 REVISE CIRCUIT DIRECTORY TO SHOW NEW LOADS.
- 3 P-400, SEE NOTE 3 SHOWN ON SINGLE-LINE DIAGRAM OF DRAWING E-2.
- 4 CORE DRILL WALL AS REQUIRED.
- 5 P-401 (REUSE TWO EXISTING 3" CONDUITS).
- 6 FEEDER CABLES TO EXISTING MCC-A IN EXISTING 3" CONDUIT.
- 7 FEEDER CABLES TO EXISTING POWER PANEL H-1 IN EXISTING 1 1/2" C.
- 8 A. RECONNECT REMOTE AUTO START/STOP SIGNAL FROM EXISTING STANDBY GENERATOR CONTROL PANEL.
B. PROVIDE AND INSTALL NEW 4#14-3/4" C FROM ATS TO EXISTING RTU PANEL.
- 9 FURNISHED BY SCREW PRESS MANUFACTURER.

A PARTIAL EXISTING GENERATOR BUILDING
SCALE: 3/4"=1'-0"

DN ENGINEERS, INC.

W3 WHITLEY BURCHETT & ASSOCIATES
Walnut Creek, California
(925) 945-6850

DESIGN TP
DRAWN EA
CHECKED DN

JOB NUMBER SMC 07-1
DATE FEBRUARY 2008

LINE IS 2 INCHES AT FULL SCALE
IF NOT 2 INCHES, SCALE ACCORDINGLY

SAUSALITO MARIN CITY SANITARY DISTRICT
MARIN COUNTY, CALIFORNIA

SLUDGE DEWATERING PROJECT

EXISTING GEN. BLDG AND DETAILS

REV. 0
DWG. NO. **E-6**
30 OF 37



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SHEET NOTES:

- ① DISCONNECT AND REMOVE THIS EXISTING POWER PANEL H-2 PRIOR TO INSTALLATION OF NEW POWER PANEL AT SAME LOCATION. EXISTING FEEDER CONDUCTORS FOR EQUIPMENT TO BE RECONNECTED TO NEW PANEL H-2 SHALL BE RETAINED FOR RECONNECTIONS.
 - ② DISCONNECT AND REMOVE EXISTING ATS AND MOLDED CASE DISCONNECT SWITCH PRIOR TO INSTALLATION OF NEW ATS AT SAME LOCATION. ENCLOSURE OF THE MOLDED CASE SWITCH SHALL REMAIN. SEE NOTE ⑧ ON DRAWING E-8.
 - ③ EXISTING PLC SHALL BE MODIFIED TO COMMUNICATE WITH NEW PLC AND OTHER DEVICES. SEE DETAILS ON DRAWING E-3.
 - ④ REMOVE EXISTING 400AT ELEMENT OF THE EXISTING MAIN BREAKER (600A FRAME) AND REPLACE WITH NEW 600AT UNIT. SEE SINGLE-LINE DIAGRAM ON DRAWING E-2 FOR ADDITIONAL, REQUIRED WORK REGARDING NEW FEEDER FROM THIS NEW MAIN.
- ALSO INSTALL TWO NEW CIRCUIT BREAKERS (250A AND 225A) FOR FUTURE USE.



Ⓐ (E) POWER PANEL H-2 ①
SCALE: NTS



Ⓑ EXISTING ATS & MCS ②
SCALE: NTS



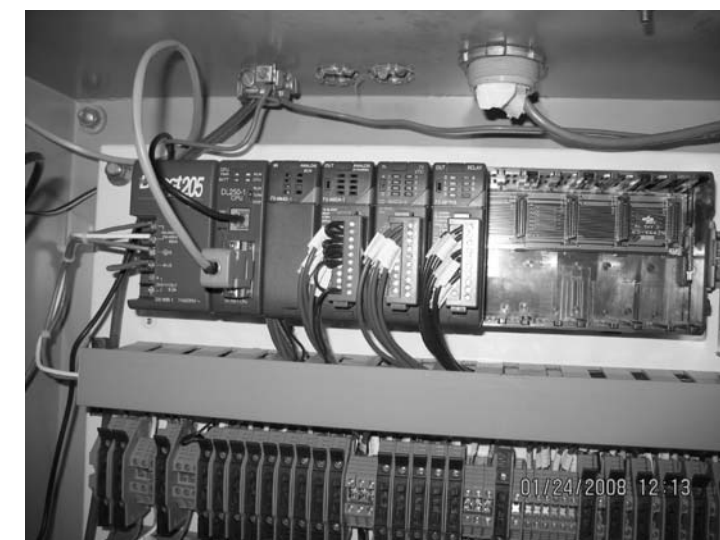
Ⓒ (E) MAIN SWITCHBOARD ④
SCALE: NTS



Ⓓ SCREW PRESS AREA LIGHT
SCALE: NTS

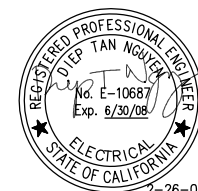


Ⓔ EXISTING SCADA HMI
SCALE: NTS (FOR INFORMATION ONLY)



Ⓕ (E) PLC (GENERATOR BUILDING) ③
SCALE: NTS

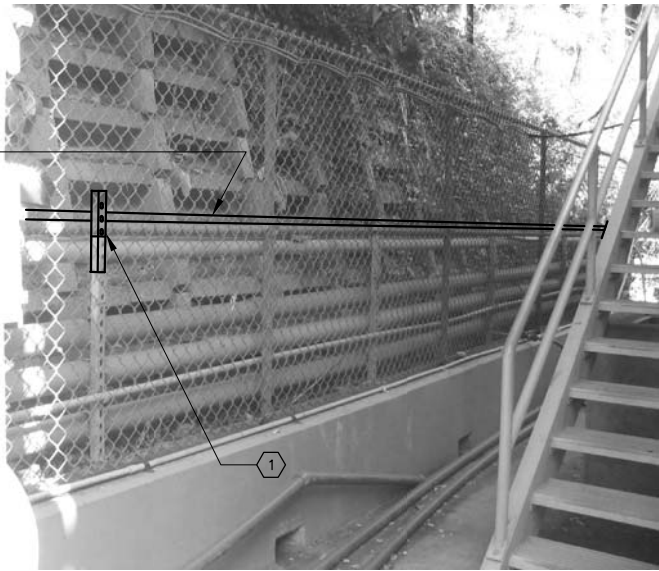
DN ENGINEERS, INC.



WB	WHITLEY BURCHETT & ASSOCIATES Walnut Creek, California (925) 945-6850	DESIGN TP	JOB NUMBER SMC 07-1	LINE IS 2 INCHES AT FULL SCALE	SAUSALITO MARIN CITY SANITARY DISTRICT MARIN COUNTY, CALIFORNIA	SLUDGE DEWATERING PROJECT	CONSTRUCTION DETAILS	REV. 0
	DRAWN EA	DATE FEBRUARY 2008	IF NOT 2 INCHES, SCALE ACCORDINGLY	DWG. NO. E-7				
		CHECKED DN						31 OF 37

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NO	DESCRIPTION	DATE	BY

NEW CONDUITS
(BEHIND FENCE)
SEE DRAWING E-5
FOR REQUIRED
QUANTITY



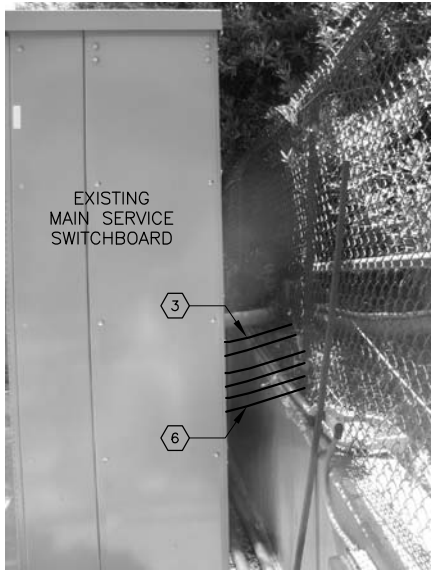
A NEW CONDUIT DETAIL 1
SCALE: NTS

NEW CONDUITS
(BEHIND FENCE)
SEE DRAWING E-5
FOR REQUIRED
QUANTITY



B NEW CONDUIT DETAIL 2
SCALE: NTS

EXISTING
MAIN SERVICE
SWITCHBOARD

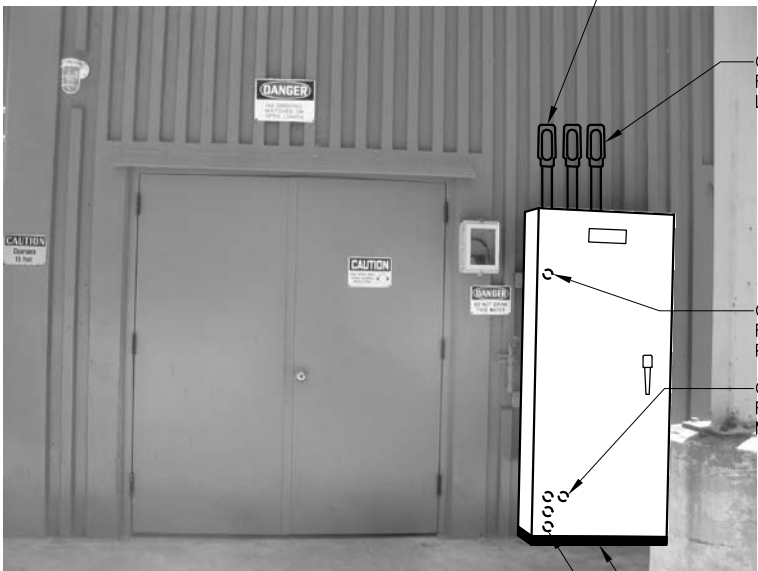


C NEW CONDUIT DETAIL 3
SCALE: NTS

SHEET NOTES:

- 1 PROVIDE AND INSTALL ADDITIONAL SUPPORTS AS REQUIRED. SUPPORTS SHALL BE HEAVY DUTY RGS UNISTRUT CHANNELS AND GALVANIZED STEEL ACCESSORIES.
- 2 REPLACE EXISTING TRIP UNIT WITH NEW. SEE NOTE 4 ON DRAWING E-7.
- 3 NEW 3" CONDUIT FOR POWER FEEDER P-400.
- 4 PROVIDE NEW HOUSEKEEPING PAD 5" HIGH.
- 5 REFER TO DIV. 16 SPECIFICATIONS FOR FRONT PANEL MOUNTED DEVICES INCLUDING MULTI-FUNCTION ELECTRONIC ENERGY METER. NEW ATS SHALL NOT EXCEED THE FOLLOWING MAXIMUM DIMENSIONS: WIDTH=24", DEPTH=17.11" AND HEIGHT=63".
- 6 NEW SPARE 2"C FOR FUTURE USE. TYPICAL FOR 2.
- 7 FURNISH AND INSTALL NEW SPARE 3" CONDUIT AS SHOWN.
- 8 DISCONNECT AND REMOVE EXISTING MOLDED CASE SWITCH AND CONVERT IT INTO A JUNCTION BOX. PROVIDE NEW BLANK DOOR AND REPAINT IT WITH ANSI GRAY 70 FINISH TO MATCH FINISH OF NEW ATS.
- 9 FURNISHED BY SCREW PRESS MANUFACTURER.

COREDRILL WALL
AS REQUIRED. SEE
DETAIL
E410
TYP

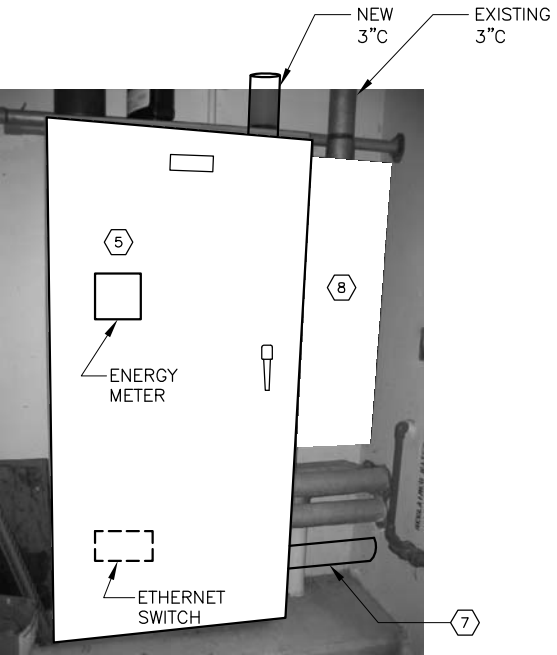


D NEW POWER PANEL H-2
SCALE: NTS

CONDUIT TO
FEED NEW
LOADS. TYPICAL

CONDUIT FOR
FEEDING EXISTING
PANEL H-1

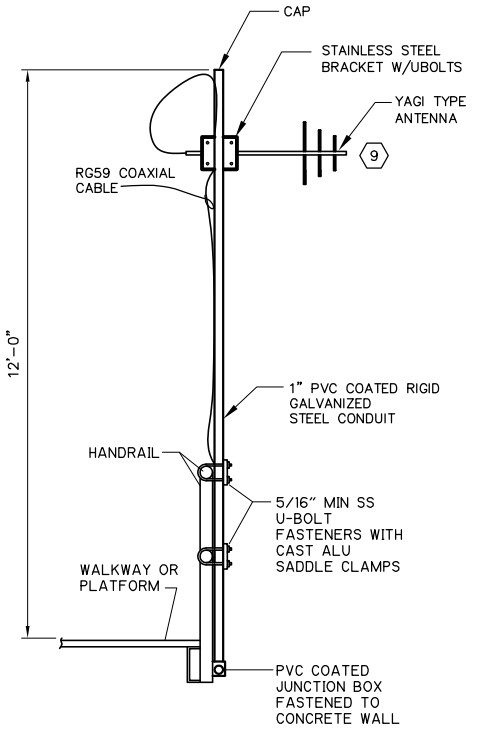
CONDUIT FOR
FEEDING EXISTING
MCC-A



E NEW ATS
SCALE: NTS



F NEW MAIN SERVICE BREAKER
SCALE: NTS



G ANTENNA MOUNTING DETAIL
SCALE: NTS

DN ENGINEERS, INC.

WB WHITLEY BURCHETT & ASSOCIATES
Walnut Creek, California
(925) 945-6850

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CHECKED DN

JOB NUMBER SMC 07-1
DATE FEBRUARY 2008

LINE IS 2 INCHES AT FULL SCALE
IF NOT 2 INCHES, SCALE ACCORDINGLY

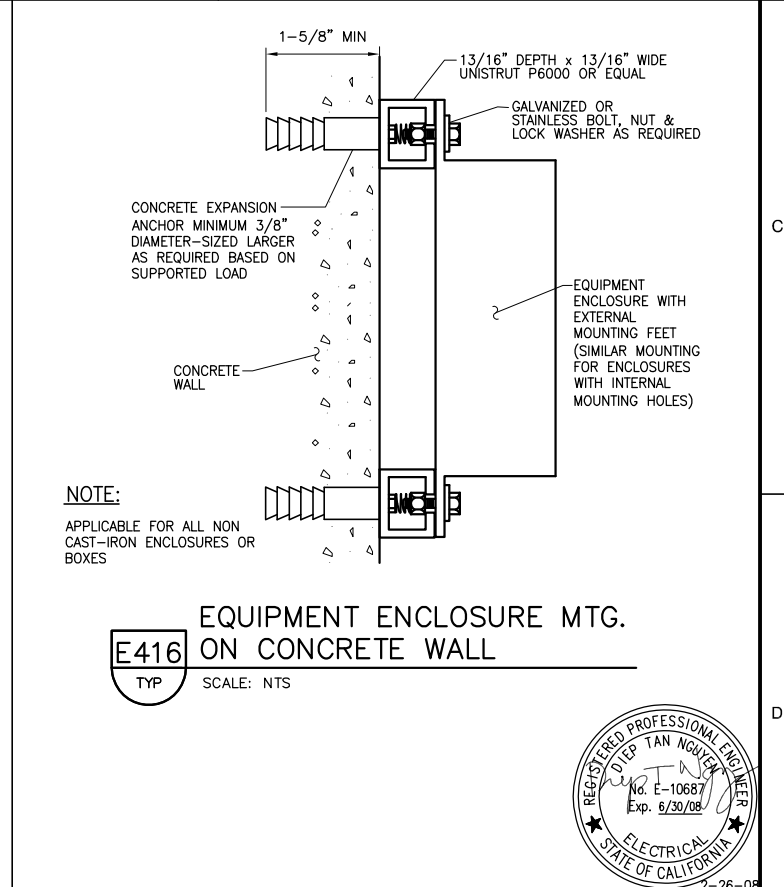
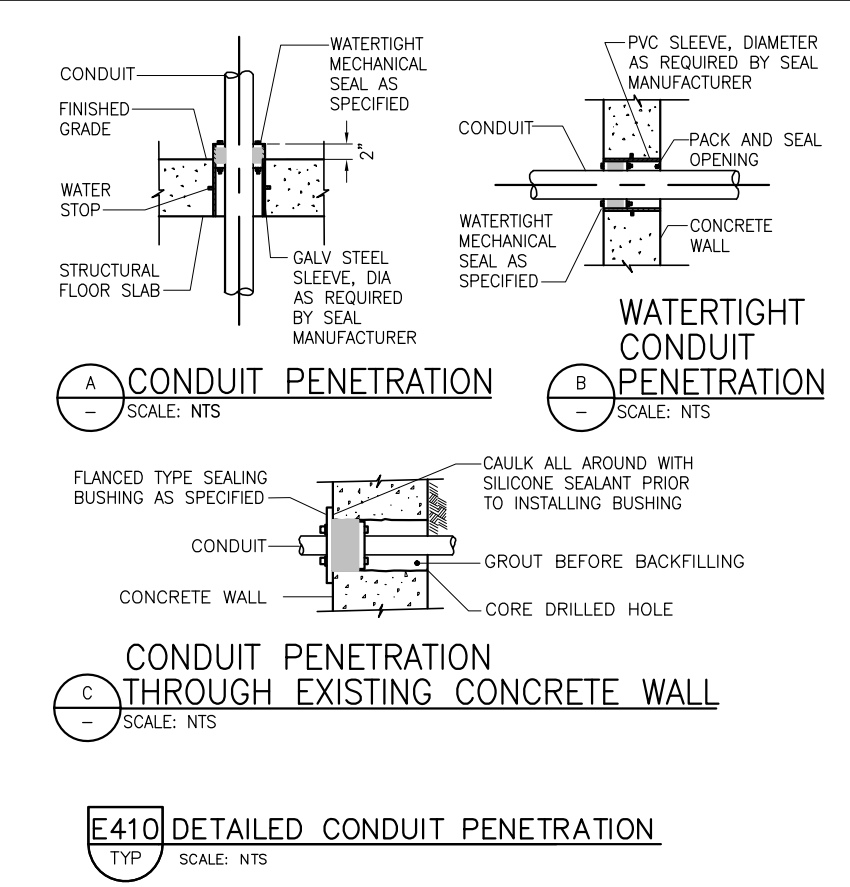
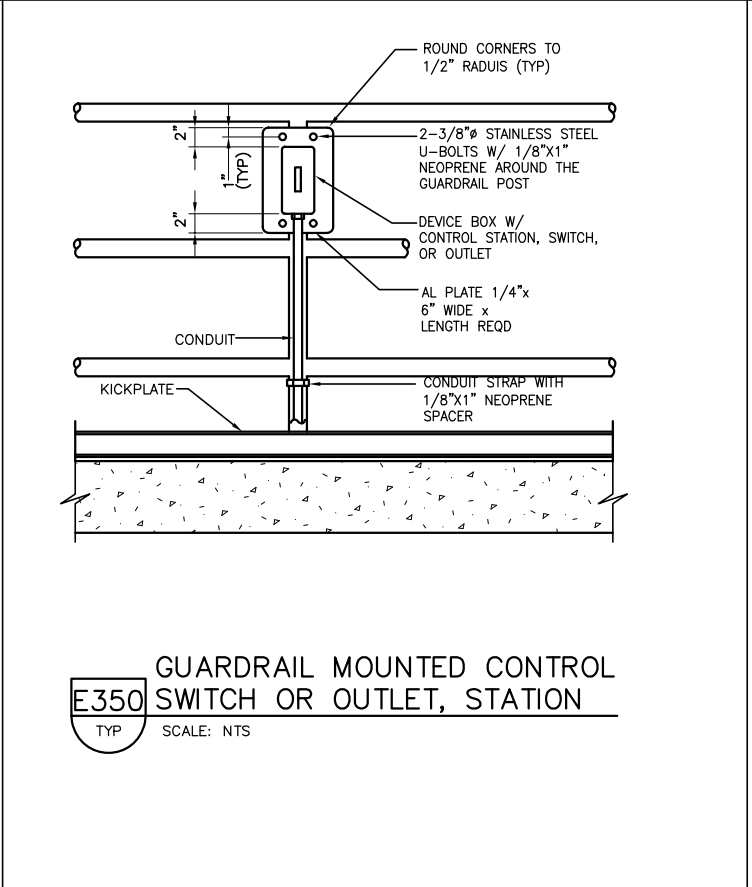
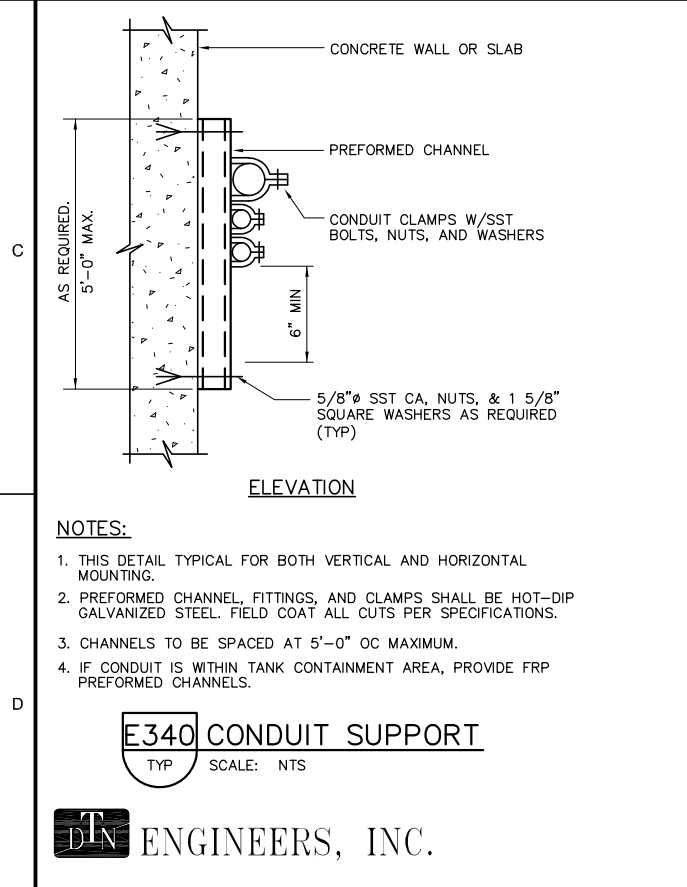
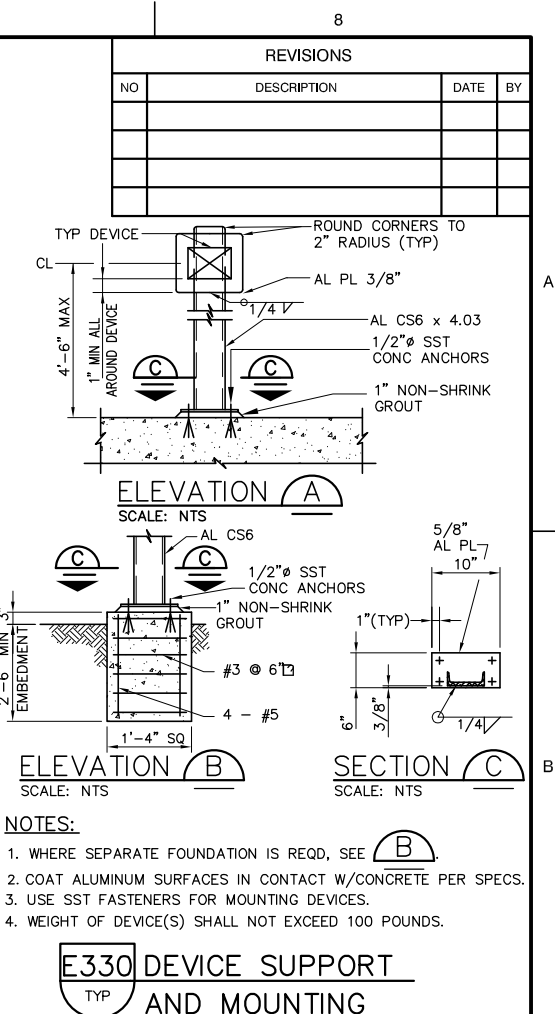
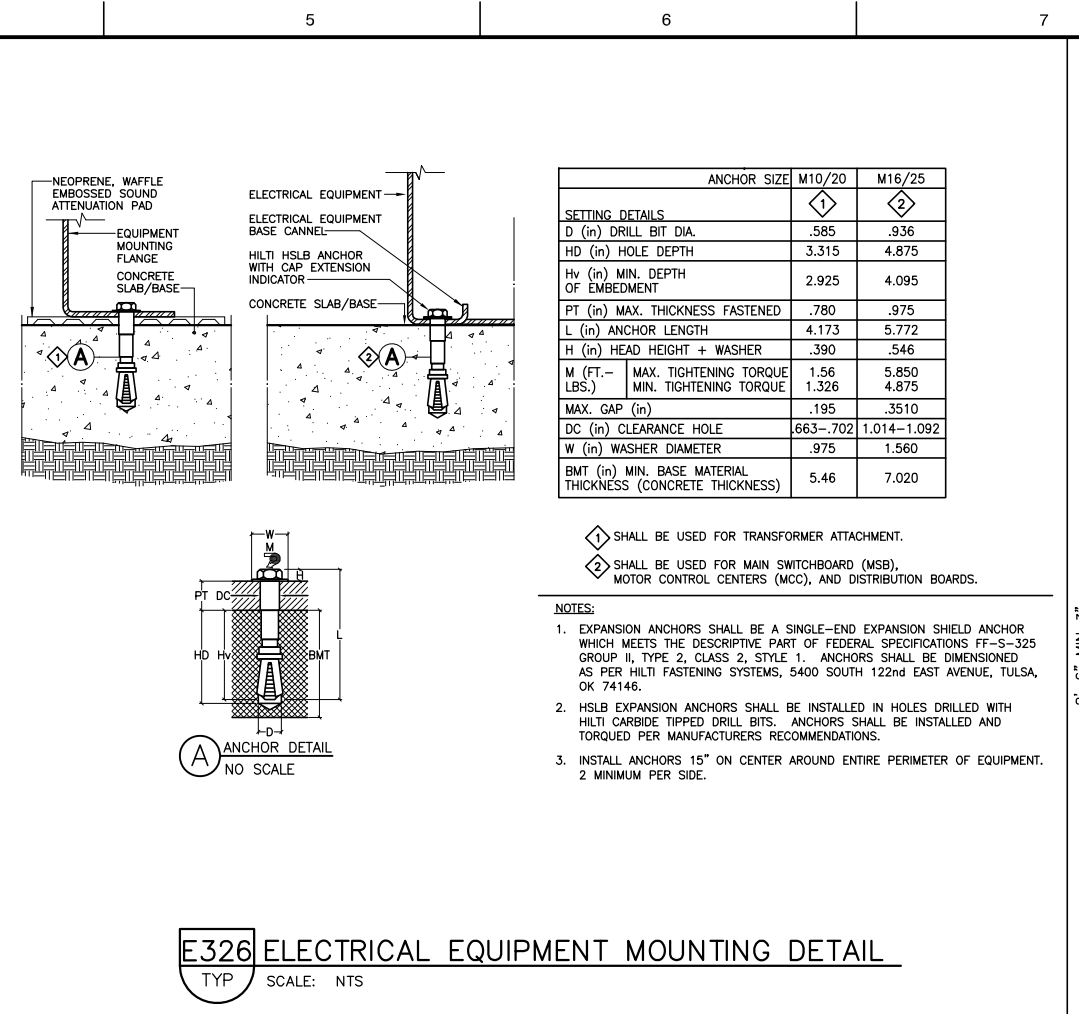
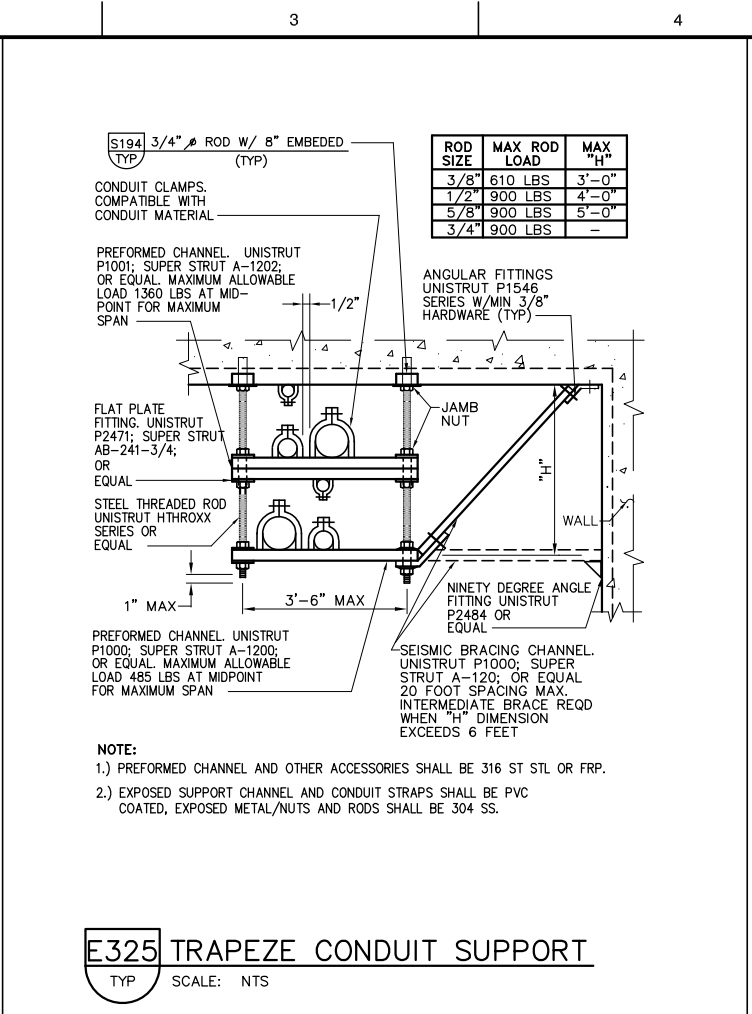
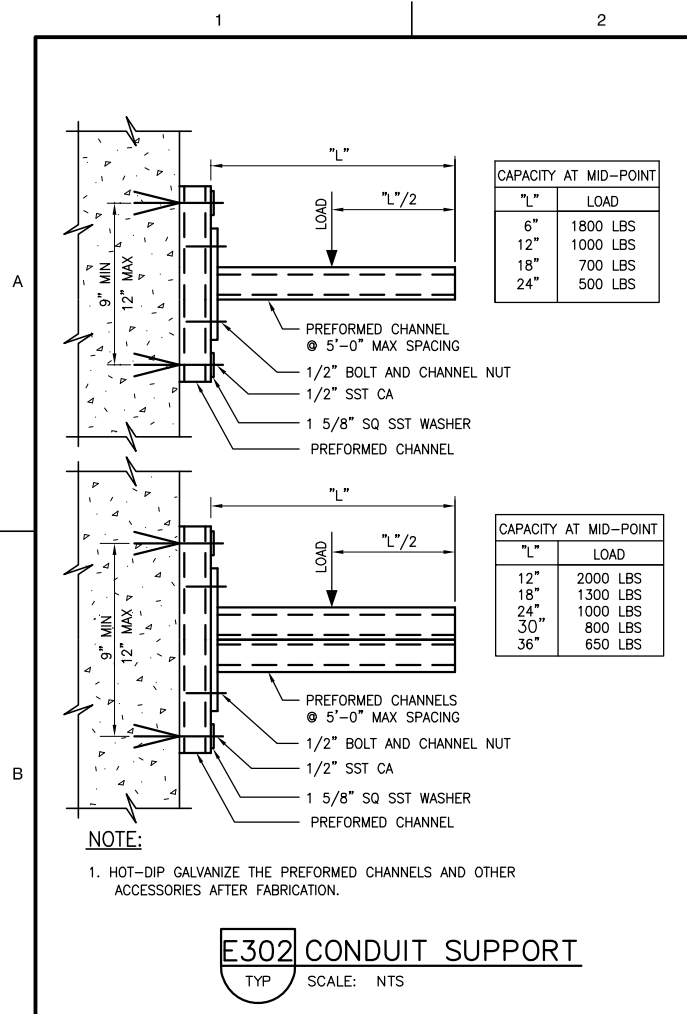
SAUSALITO MARIN CITY
SANITARY DISTRICT
MARIN COUNTY, CALIFORNIA

SLUDGE DEWATERING PROJECT

CONSTRUCTION DETAILS

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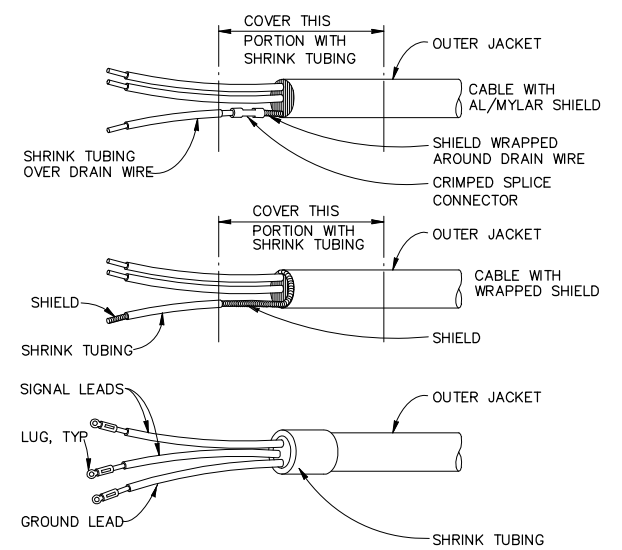




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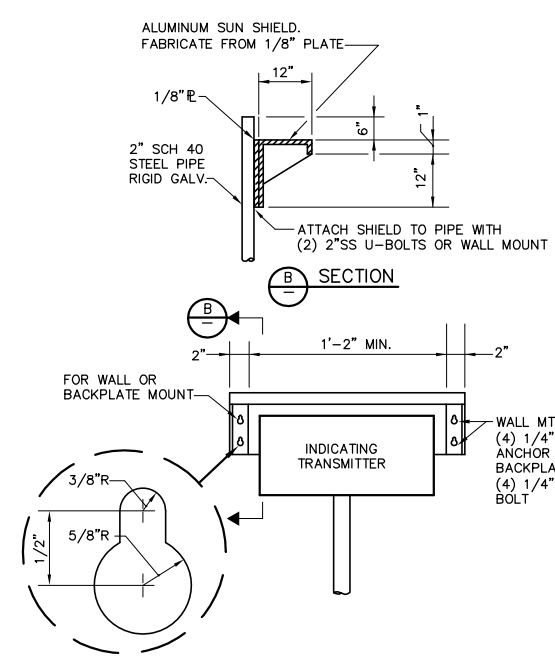


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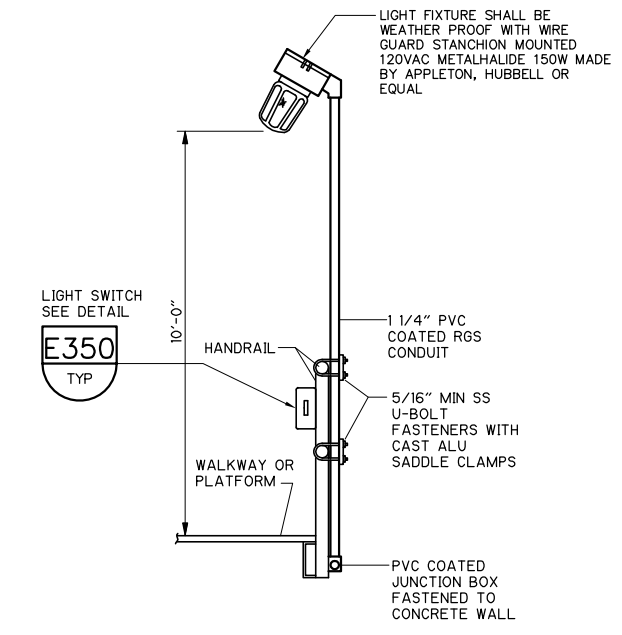


- NOTES:**
- SHIELD GROUNDED AT TERMINATION CABLES MAY BE MULTIPLE PAIRS.
 - FOR USE WHENEVER SHIELDED CONTROL CABLES ARE USED, APPLIES AT TERMINATIONS WHERE SHIELD IS TO BE GROUNDED. SEE OTHER DETAILS FOR GROUNDING SHIELD. GROUND ONE END OF CABLE ONLY.

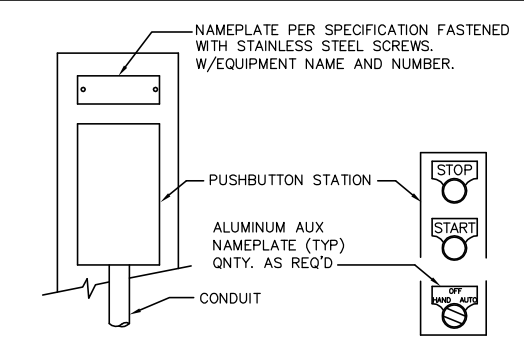
E417 TERMINATION OF SHIELDED CABLE
TYP SCALE: NTS



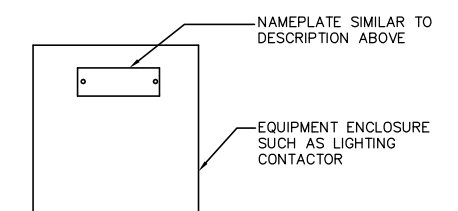
E418 SUN SHIELD FOR TRANSMITTER
TYP SCALE: NTS



E419 WALKWAY LIGHTING FIXTURE MOUNTING DETAIL
TYP SCALE: NTS

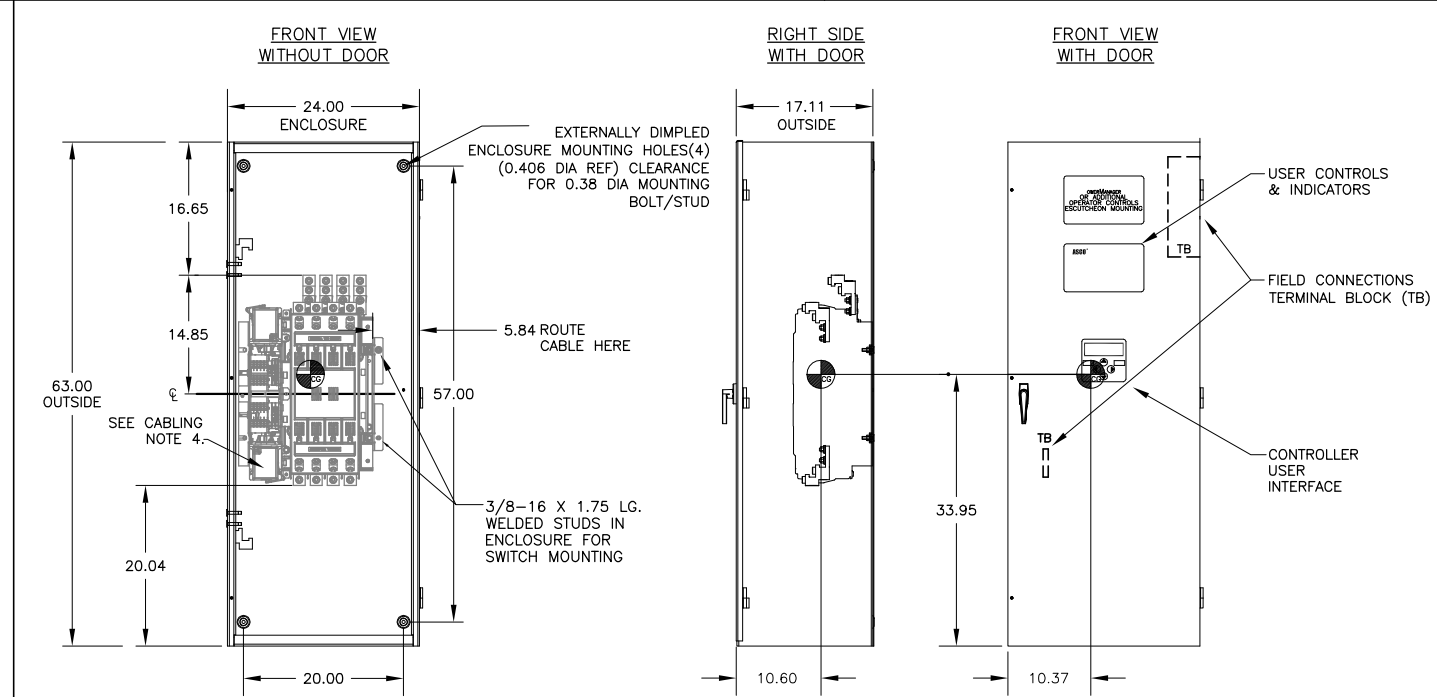


A PUSHBUTTON STATION
SCALE: NTS

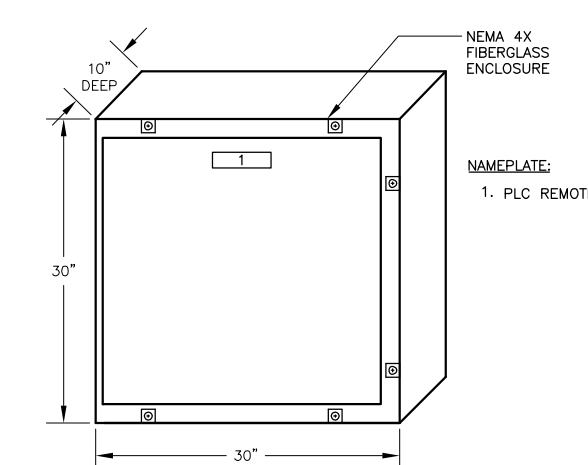


B ENCLOSURE
SCALE: NTS

E525 DEVICE NAMEPLATE INSTALLATION
TYP SCALE: NTS

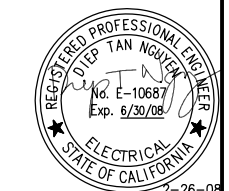


A NEW 600A, 480V ATS DETAIL
SCALE: NTS



- NOTES:**
- THIS PANEL IS FURNISHED AND INSTALLED BY CONTRACTOR.
 - SEE DIV. 13 FOR REQUIREMENTS REGARDING INTERNAL COMPONENTS.

B PLC REMOTE I/O DROP
SCALE: NTS



DN ENGINEERS, INC.

WB WHITLEY BURCHETT & ASSOCIATES
Walnut Creek, California
(925) 945-6850

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JOB NUMBER SMC 07-1
DATE FEBRUARY 2008

LINE IS 2 INCHES AT FULL SCALE
IF NOT 2 INCHES, SCALE ACCORDINGLY

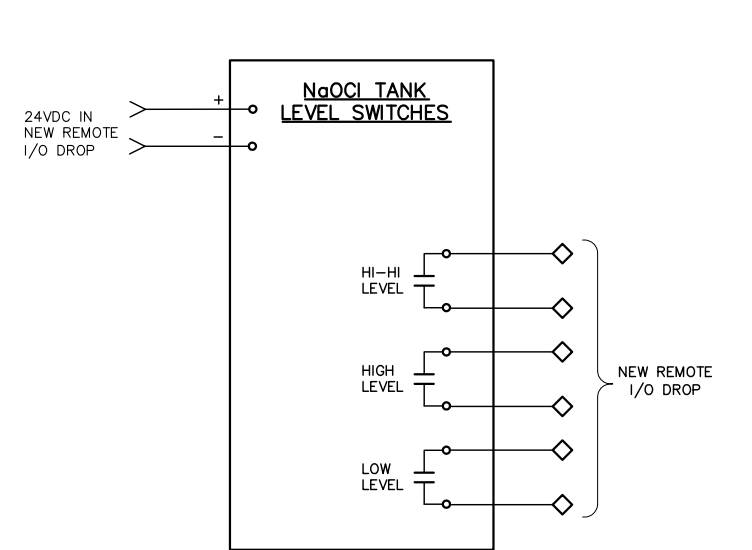
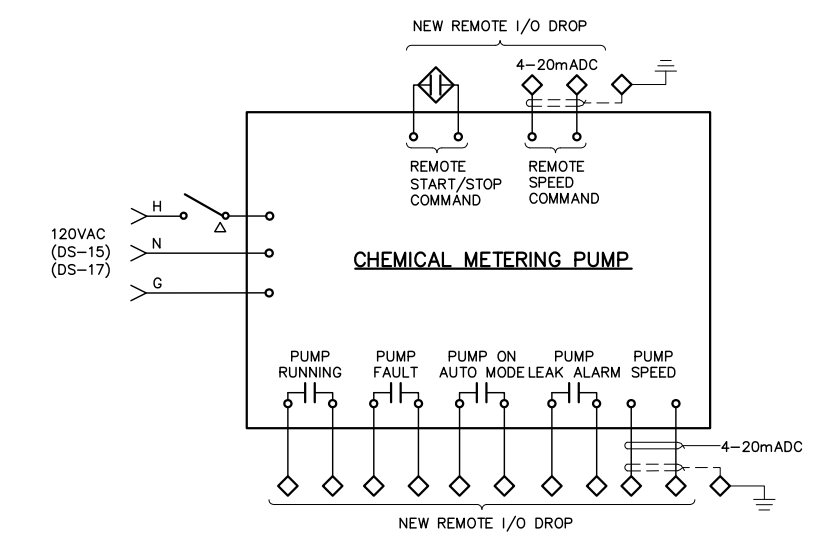
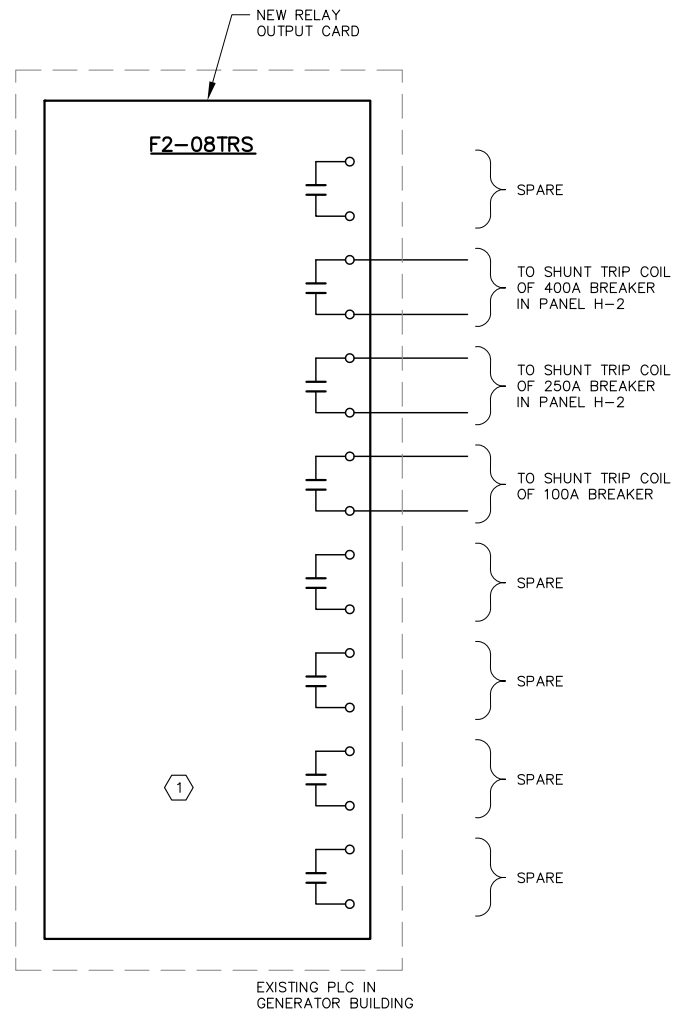
SAUSALITO MARIN CITY SANITARY DISTRICT
MARIN COUNTY, CALIFORNIA

SLUDGE DEWATERING PROJECT

TYPICAL DETAILS AND CONSTRUCTION DETAILS

REV. 0
DWG. NO. E-10
34 OF 37

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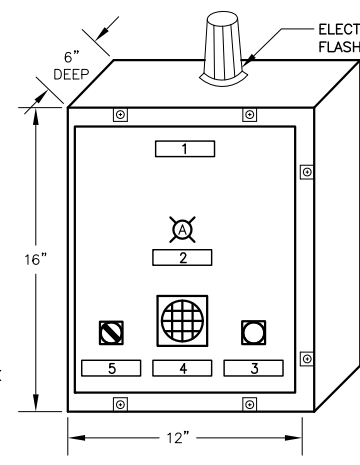
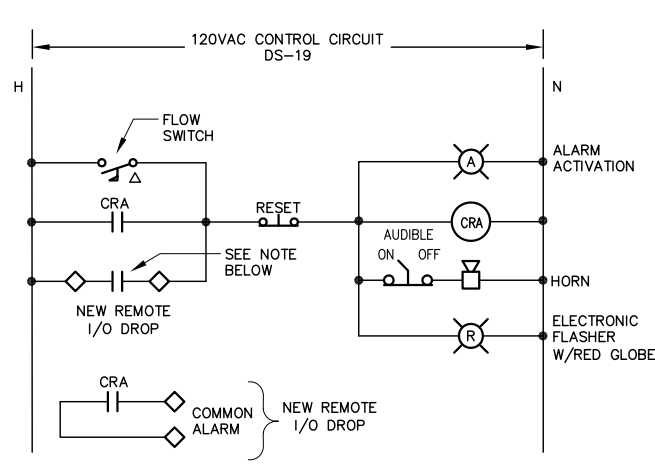
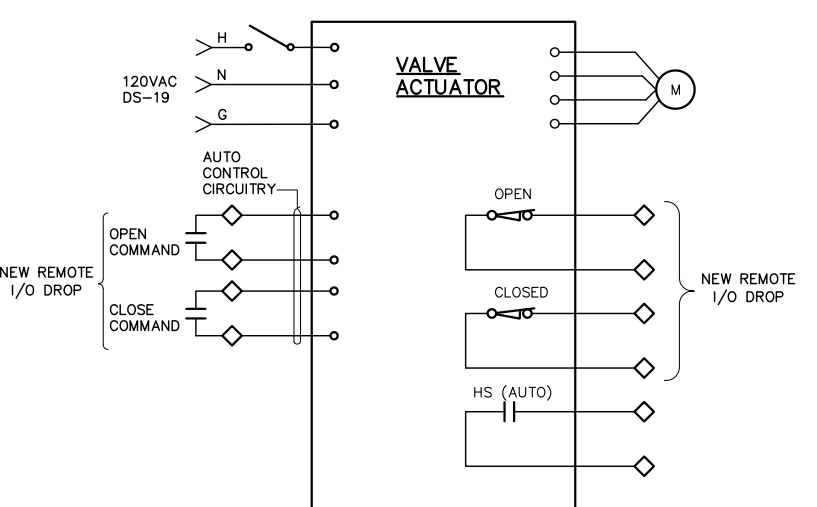


SHEET NOTES:
 ① SEE DETAIL "A" ON DRAWING E-3 FOR EXACT LOCATION OF THIS CARD INSTALLED IN EXISTING PLC RACK.

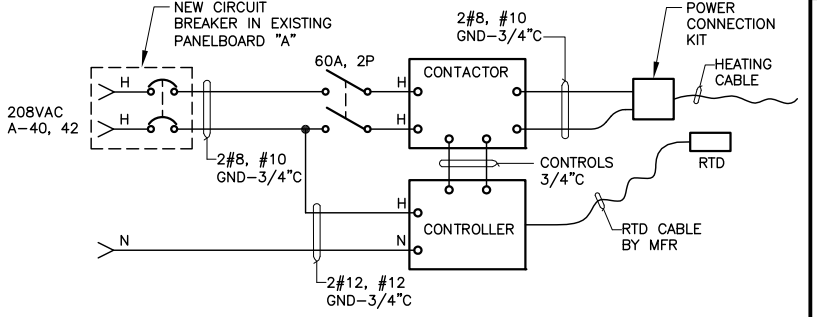
C CHEMICAL FEED PUMP CONTROL SCHEMATIC
 SCALE: NTS (TYPICAL FOR 2 PUMPS)

E NaOCl TANK LEVEL SWITCHES
 SCALE: NTS

A LOAD SHEDDING CONTROL SCHEMATIC
 SCALE: NTS



- NAMEPLATE**
- CHEMICAL SYSTEM ALARM PANEL
 - SYSTEM ALARM ACTIVATED
 - RESET
 - HORN (WEATHER PROOF)
 - AUDIBLE (ON-OFF)
- NOTES:**
- PANEL SHALL BE NEMA 4X FIBERGLASS COMPRESSION MOLDED.
 - HORN SHALL BE NEMA 4X WEATHER PROOF, CORROSION RESISTANCE 90 DBA MIN.

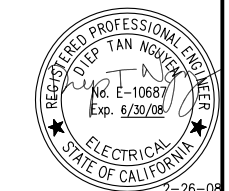


F HEATING CABLE CONTROL SCHEMATIC
 SCALE: NTS

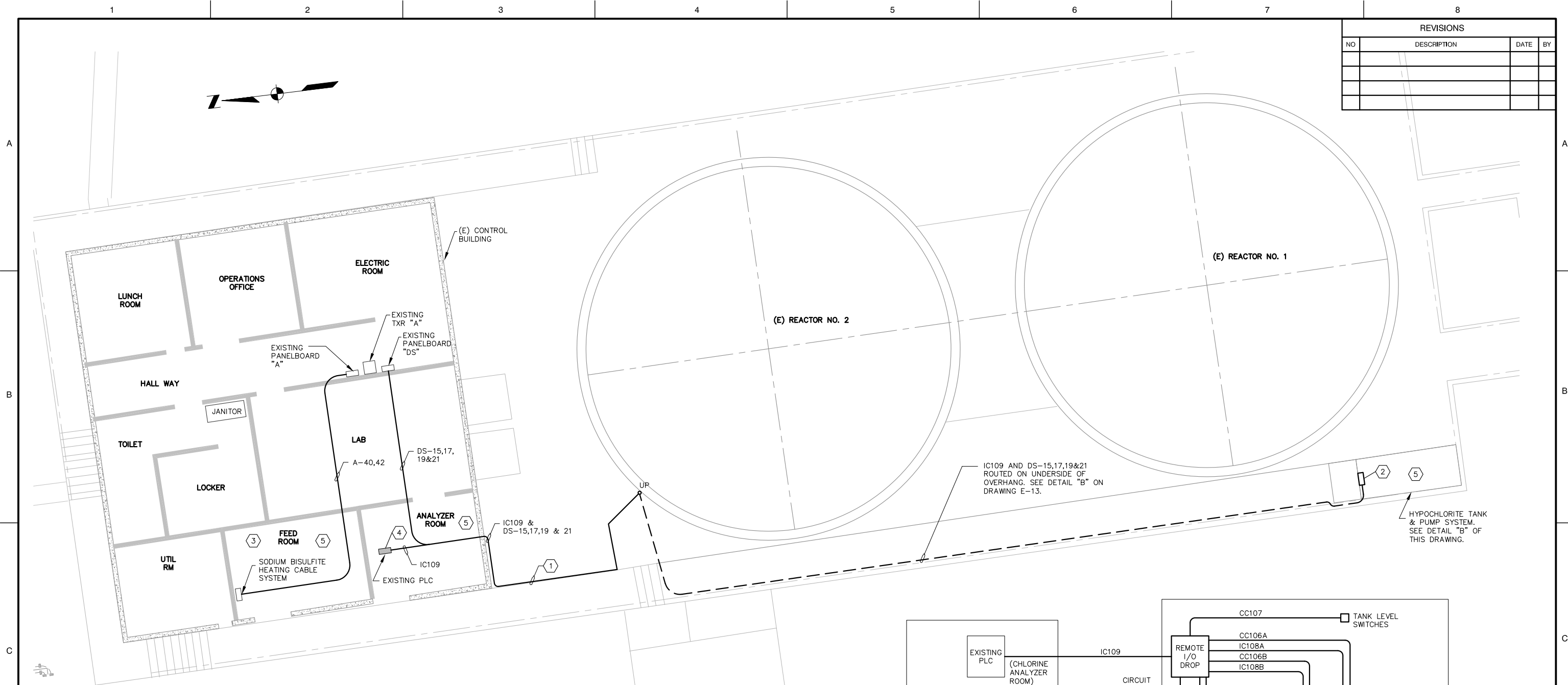
B VALVE MOV-701 SCHEMATIC DIAGRAM
 SCALE: NTS

D CHEMICAL SYSTEM ALARM SCHEMATIC
 SCALE: NTS

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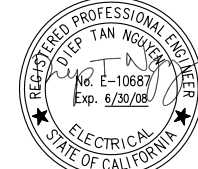
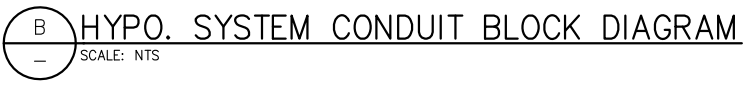
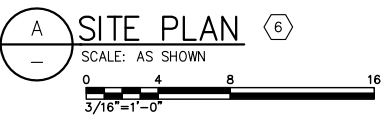
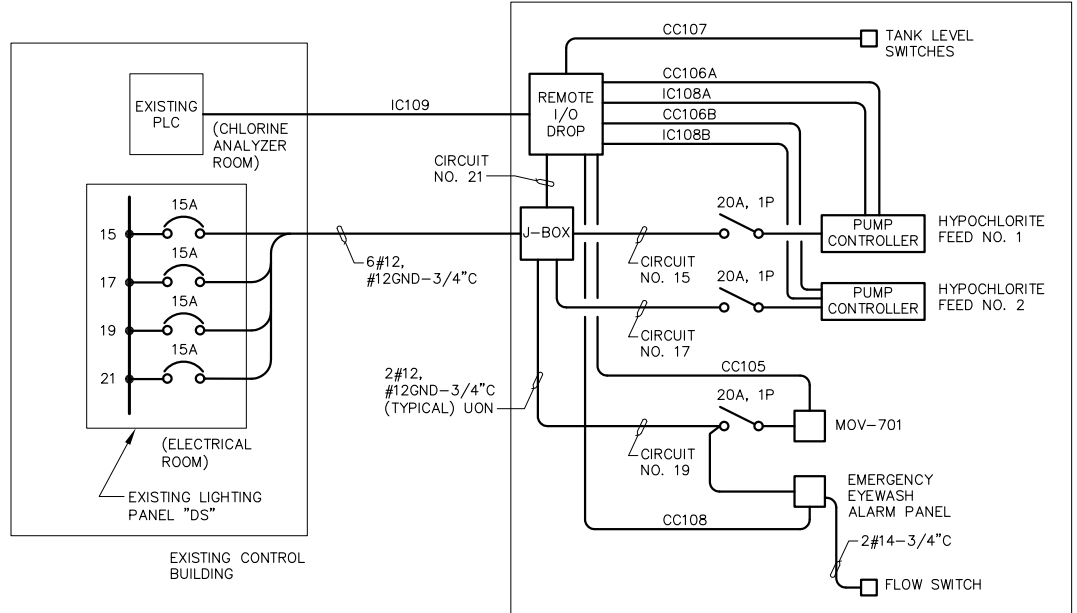


REVISIONS			
NO	DESCRIPTION	DATE	BY



SHEET NOTES:

- ① CONTRACTOR SHALL FIELD VERIFY EXACT ROUTING OF THESE NEW CONDUITS INTO EXISTING CONTROL BUILDING. CORE DRILL WALLS AS REQUIRED. CONDUITS ROUTED IN LAB AND OFFICE AREA SHALL BE CONCEALED IN FALSE CEILING. PVC COATED RGS CONDUITS INSTALLED IN FEED ROOM AND ANALYZER ROOM SHALL BE EXPOSED.
- ② EXACT LOCATION OF THE HYPO. SYSTEM EQUIPMENT SHALL BE AS DIRECTED BY THE DISTRICT DURING CONSTRUCTION.
- ③ EXACT LOCATION OF THE SODIUM BISULFITE, HEATING CABLE EQUIPMENT SHALL BE AS DIRECTED BY THE DISTRICT DURING INSTRUCTION.
- ④ EXACT LOCATION OF EXISTING PLC SHALL BE FIELD VERIFIED BY THE CONTRACTOR. SEE SPECS (DIV 13) FOR REQUIRED MODIFICATIONS.
- ⑤ THIS AREA IS CLASSIFIED AS NEMA 4X, CORROSIVE ENVIRONMENT. EQUIPMENT AND INSTALLATION MATERIALS SHALL BE SUITABLE FOR SUCH LOCATION AS SPECIFIED IN THE SPECIFICATIONS.
- ⑥ CONDUITS SHOWN ARE GENERALLY DIAGRAMATIC. JUNCTION BOXES, FITTINGS, CONDUIT SUPPORTS ETC SHALL BE PROVIDED AS PER DIVISION 16 OF THE SPECIFICATIONS.



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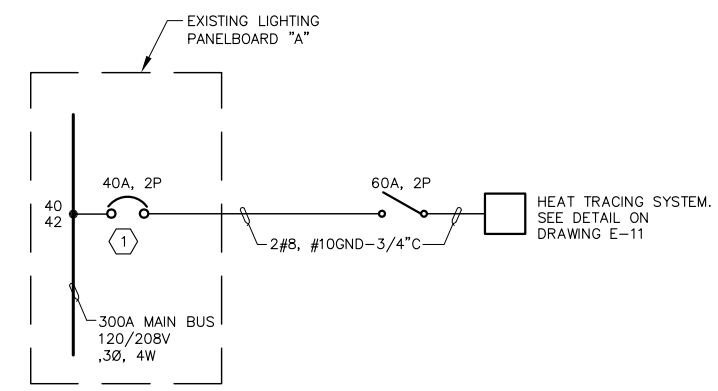
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NO	DESCRIPTION	DATE	BY



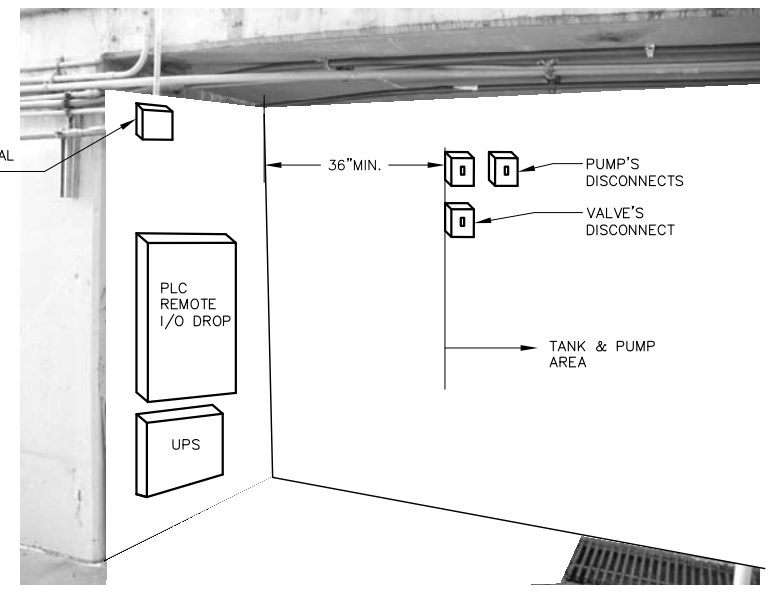
(A) EXISTING LIGHTING PANELBOARD "A" IN EXISTING CONTROL BUILDING
SCALE: NTS



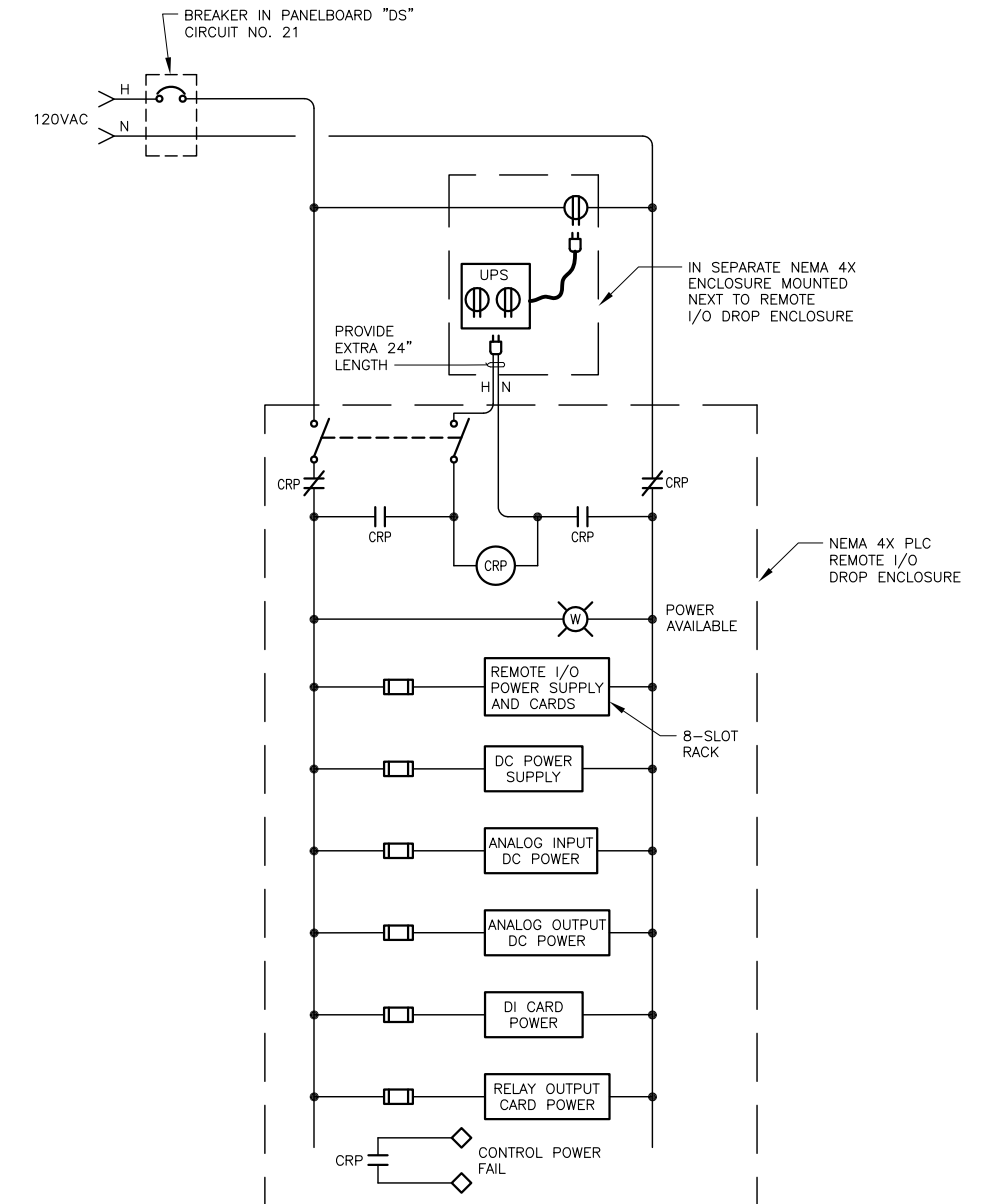
(B) CONDUIT INSTALLATION DETAIL
SCALE: NTS



(C) (E) PANELBOARD "A" MODIFICATION
SCALE: NTS



(D) HYPO. EQUIPMENT AREA DETAIL
SCALE: NTS



(E) PLC REMOTE I/O DROP SCHEMATIC
SCALE: NTS

- SHEET NOTES:**
- REMOVE EXISTING SPARE SINGLE POLE BREAKERS IN CIRCUIT NO. 40 AND NO. 42 AND REPLACE WITH A NEW 40A, 2P CIRCUIT BREAKER TO FEED SODIUM BISULFITE HEAT TRACING SYSTEM. NEW BREAKER SHALL BE CUTLER HAMMER (FORMERLY WESTINGHOUSE ELECTRIC) EB SERIES TO MATCH EXISTING INSTALLATION.
 - SUPPORT AND ROUTE NEW CONDUITS TO SODIUM HYPOCHLORITE TANK/PUMP AREA. SEE FLOOR PLAN ON DRAWING E-12 FOR CONTINUATION. ALSO SEE DETAIL "B" ON DRAWING E-13 FOR QUANTITY OF REQUIRED CONDUITS.
 - SEE DETAIL E-12 FOR EXISTING CIRCUIT BREAKERS TO BE USED FOR FEEDING HYPO. SYSTEM EQUIPMENT.

DN ENGINEERS, INC.

