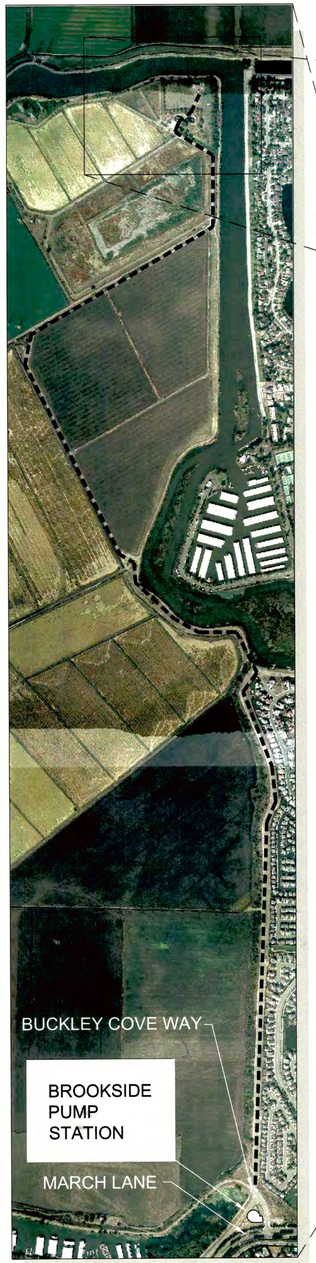
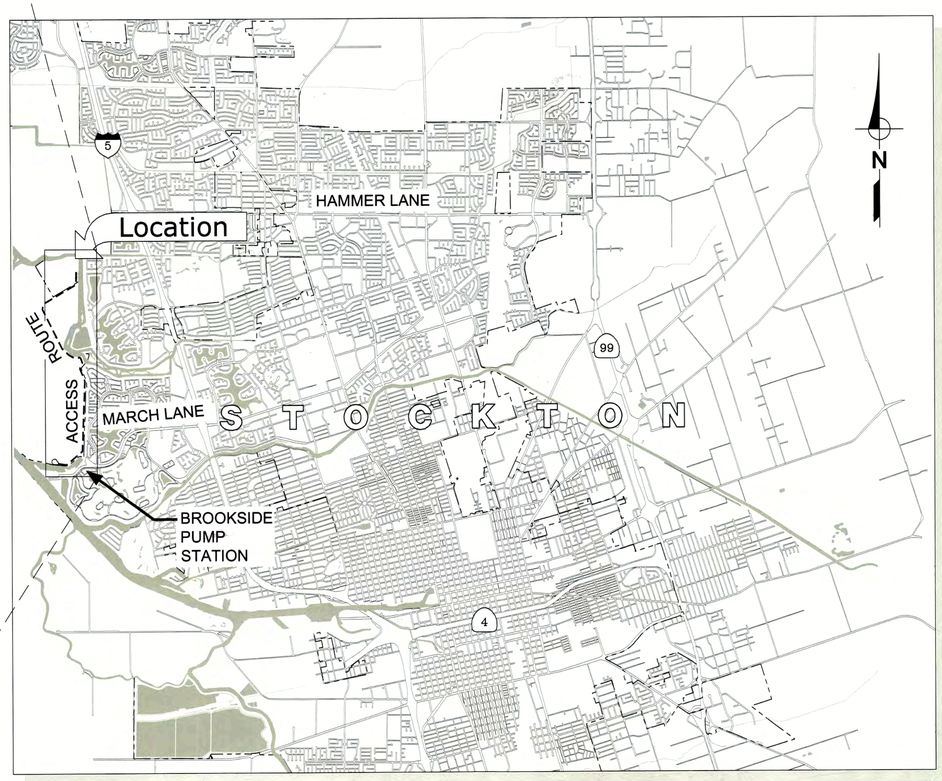
14 MILE SLOUGH PUMP STATION UPGRADES



ACCESS ROUTE LOCATION

PROJECT LOCATION



VICINITY MAP

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DIRECTOR, DEPARTMENT OF MUNICIPAL UTILITIES

REGISTERED PROFESSIONAL ENGINEER — GEORGE G. WHITLEY — No. 24118 — CIVIL — STATE OF CALIFORNIA

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1	ADDENDUM No. 3	5/25/06	TTT	PDF
2	RECORD DRAWINGS			
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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

TITLE SHEET, VICINITY MAP, SHEET INDEX

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: NONE	SHEET No. G1
DESIGNED BY: WYA	1 of 89 SHEETS
DRAWN BY: DTD	PROJECT No. 293-00-05-01
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LEGEND - CIVIL

- NATURAL GROUND OR GRADE
- COMPACTED MATERIAL
- GRANULAR MATERIAL SUCH AS CRUSHED ROCK OR GRAVEL
- ROAD W/CURB & GUTTER
- EXISTING FENCE
- NEW FENCE
- 110 — EXISTING GRADE CONTOURS
- EXISTING FACILITY
- NEW FACILITY
- FUTURE FACILITY
- CENTERLINE
- ABANDON IN PLACE
- DEMOLISH
- CONCRETE SECTION
- ROCK RIP RAP
- OFF-LIMITS BARRIER
- BSN-1001 — EQUIPMENT NUMBER
- SLOPE
- FLOW LINE OF DRAINAGE COURSE
- HV11 — TEMPORARY SURVEY MONUMENT
- 18" SS — EXISTING PIPELINE
- 12" FM — NEW PIPELINE
- 12" FM — NEW PIPELINE UNDER CONCRETE
- EXISTING ELECTRICAL
- PROPOSED ELECTRICAL
- X 34.8 — EXISTING SPOT ELEVATION
- x-2.0 — FINISH GRADE SPOT ELEVATION
- x EP:-0.5 — EDGE OF PAVEMENT
- x HP:-1.0 — HIGH POINT
- 0.5% — DEGREE OF SLOPE
- STREET LIGHT
- POWER POLE
- MANHOLE
- V — VALVE VAULT
- 4:1 — SIDE SLOPE HORIZONTAL:VERTICAL

LEGEND - PIPING

SINGLE LINE / DOUBLE LINE

- FLANGED JOINT
- PLAIN OR GROOVED END MECHANICAL COUPLING
- PUSH ON, MECHANICAL OR BALL & SOCKET JOINT
- WELDED JOINT
- SLEEVE TYPE MECHANICAL COUPLING
- RESTRAINED SLEEVE TYPE MECHANICAL COUPLING
- FLANGED COUPLING ADAPTER
- RESTRAINED FLANGED COUPLING ADAPTER
- GROOVED END ADAPTER FLANGE
- UNION
- ELASTOMER & FABRIC EXPANSION JOINT
- EXPANSION JOINT (SEE SPECS FOR TYPE)
- FLEXIBLE METAL HOSE
- ELBOW UP
- ELBOW DOWN
- TEE UP
- TEE DOWN
- LATERAL UP
- LATERAL DOWN
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER

- THREE WAY VALVE
- GATE VALVE (NORMALLY OPEN)
- GATE VALVE (NORMALLY CLOSED)
- PLUG VALVE (NORMALLY OPEN)
- PLUG VALVE (NORMALLY CLOSED)
- BALL VALVE (NORMALLY OPEN)
- BALL VALVE (NORMALLY CLOSED)
- GLOBE VALVE
- DIAPHRAGM VALVE
- ANGLE VALVE
- PINCH VALVE
- NEEDLE VALVE
- DOUBLE LEAF CHECK VALVE
- CHECK VALVE
- KNIFE GATE VALVE
- FLAP GATE
- BALANCING COCK
- PRESSURE & VACUUM RELIEF VALVE
- VACUUM RELIEF VALVE
- PRESSURE RELIEF VALVE
- STRAINER
- PRESSURE REGULATING VALVE
- BACK PRESSURE REGULATING VALVE
- S — SOLENOID VALVE
- DIAPHRAGM OPERATED VALVE
- M — MOTOR OPERATED VALVE
- WHARF HYDRANT
- FIRE HYDRANT
- U — UTILITY STATION
- HOSE BIBB VALVE

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
ADJ	ADJUSTED
AL, ALUM	ALUMINUM
AP	ANGLE POINT
APPROX.	APPROXIMATE
ASPH	ASPHALT
BC	BEGIN CURVE
BF	BLIND FLANGE
BLDG	BUILDING
BSS	BERM SIDE SLOPE
BVC	BEGIN VERTICAL CURVE
CL, ℄	CENTER LINE
CLR	CLEAR
CO	CLEAN OUT
CONC	CONCRETE
CONT	CONTINUOUS
COS	CITY OF STOCKTON
CMU	CONCRETE MASONRY UNIT
CV	CHECK VALVE
CY	CUBIC YARDS
DIA, ø	DIAMETER
DIP	DUCTILE IRON PIPE
DWG	DRAWING
E	EAST, EASTING
EC	END CURVE
EF	EACH FACE
EL, ELEV	ELEVATION
ELEC	ELECTRIC
EP	EDGE OF PAVEMENT
EQUIP	EQUIPMENT
EV	ELECTRICAL VAULT
EVC	END VERTICAL CURVE
EW	EACH WAY
EX, E	EXISTING
EXP	EXPANSION
FCA	FLANGED COUPLING ADAPTER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FF	FINISH FLOOR
℄, FL	FLOW LINE
FLG	FLANGE
FOC	FACE OF CURB
FRP	FIBERGLASS REINFORCED PLASTIC
GS	GROUND SURFACE
GSP	GROUND SURFACE PROFILE
GYP	GYPSUM
HP	HIGH POINT IN PAV'T
HSB	HIGH STRENGTH BOLTS
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INV	INVERT
IIPS	RON PIPE SIZE
MAX	MAXIMUM
MB	MOLLY BOLT
MEK	METHYL ETHYL KEYTONE
MIN	MINIMUM
MH	MANHOLE
MJ	MECHANICAL JOINT
MOV	MOTOR OPERATED VALVE
N	NORTH, NORTHING
NGVD29	NATIONAL GEODETIC VERTICAL DATUM OF 1929
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NW	NORTHWEST
OC	ON CENTER
OD	OUTSIDE DIAMETER
PAV'T	PAVEMENT
PG	PRESSURE GAUGE
PJF	PREFORMED JOINT FILLER
PL	PLATE, PROPERTY LINE
PV	PLUG VALVE
PVI	POINT OF VERTICAL INFLECTION
ℙ	POLYVINYL CHLORIDE
PVC	POLYVINYL CHLORIDE
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD2119	RECLAMATION DISTRICT 2119
REQ'D	REQUIRED
R&R	REMOVE & RELOCATE
R&S	REMOVE & SALVAGE
R/W	RIGHT OF WAY
S	SLOPE
SCH	SCHEDULE
SHT	SHEET
SQ	SQUARE
SS	STAINLESS STEEL
SSB	STAINLESS STEEL BOLT
SSPC	SOCIETY OF PROTECTIVE COATINGS
STA	STATION
STD	STANDARD
STL	STEEL
T&B	TOP & BOTTOM
TAN	TANGENT
TBM	TEMPORARY BENCHMARK
TEL	TELEPHONE
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL OR TOP OF STRUCTURAL FRAME
TS	TUBULAR STEEL
TYP	TYPICAL
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
VC	VERTICAL CURVE
VAR	VARIOUS
VERT	VERTICAL
VG	VALLEY GUTTER
W	WATER
W/	WITH
W/O	WITHOUT
WS	WATER SURFACE
WWF	WELDED WIRE FABRIC

SECTION & DETAIL DESIGNATIONS

SECTION CUT ON DWG 21 — 5 / 23 — SECTION NUMBER; DRAWING WHERE SECTION APPEARS

ON DWG 23 THIS SECTION IS IDENTIFIED AS: — 5 / 21 — SECTION NUMBER; DRAWING FROM WHICH SECTION WAS TAKEN

DETAILS ARE CROSS REFERENCED IN A SIMILAR MANNER, EXCEPT THAT DETAILS ARE IDENTIFIED BY LETTER RATHER THAN NUMBER

PIPING DESIGNATIONS

NEW PIPING
4" FM
PIPE SIZE — PIPING SYSTEM ABBREVIATION

EXISTING PIPING
4" FM

FUTURE PIPING
4" FM

PIPING SYSTEM ABBREVIATIONS

ABCMP	ASBESTOS BONDED CORRUGATED METAL PIPE
CD	CHEMICAL DRAIN
CMP	CORRUGATED METAL PIPE
CP	CONCRETE PIPE
D	DRAIN
EF	EFFLUENT
FM	FORCE MAIN
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
IN	INFLUENT
MgOH	MAGNESIUM HYDROXIDE
NPW	NON-POTABLE WATER
PD	PERFORATED DRAIN
PG	PROPANE GAS
RCP	REINFORCED CONCRETE PIPE
SA	SITE AIR
SD	STORM DRAIN
SS	SANITARY SEWER
SW	SITE WATER
V	VENT
2W	FORMER WWTP WELL WATER

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

LEGEND & ABBREVIATIONS

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DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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DESIGNED BY: TTT			2 of 89 SHEETS
DRAWN BY: DTD			
CHECKED BY: PDF	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES		PROJECT No. 293-00-05-01
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GENERAL NOTES

1. CITY OF STOCKTON STANDARD SPECIFICATIONS AND STANDARD DRAWINGS ARE ~~DEEMED TO BE~~ INCLUDED IN THE CONTRACT DOCUMENTS BY REFERENCE.
2. CONTRACTOR SHALL ARRANGE FOR ALL REQUIRED INSPECTION. PRESENCE OR ABSENCE OF AN INSPECTOR SHALL NOT RELIEVE CONTRACTOR OF FULL RESPONSIBILITY FOR PROPER PERFORMANCE OF THE WORK.
3. CONTRACTOR IS ADVISED OF THE HIGH GROUND WATER CONDITIONS AND SOFT ORGANIC SOILS IN THE PROJECT AREA. ~~CONTRACTORS ATTENTION IS BROUGHT~~ *REFER* TO THE GEOTECHNICAL ENGINEERING REPORT PREPARED FOR THIS PROJECT.
4. CONTRACTOR SHALL COMPLY WITH CONFINED SPACE ENTRY REQUIREMENTS OF CAL-OSHA AND CITY OF STOCKTON. CONTRACTOR SHALL SUBMIT SAFETY PLAN, COMPLY WITH ALL STATE AND COUNTY LAWS AND ORDINANCES RELATING TO SAFETY AND CHARACTER OF WORK, AND SUPPLY ALL EQUIPMENT AND LABOR PERSONNEL. THIS SHALL INCLUDE BUT NOT BE LIMITED TO, SHORING OF TRENCHES AND EXCAVATIONS AND VENTILATING CONFINED SPACES.
5. THE BASIS OF SURVEY IS CITY OF STOCKTON BENCHMARKS,
   HORIZONTAL CONTROL: NAD 83, CA SP ZONE III GRID COORDINATES
   VERTICAL CONTROL: CITY OF STOCKTON, NGVD29 (COS 1996 ADJUSTMENT)
   PROJECT BENCHMARKS INCLUDE THE FOLLOWING BENCHMARKS:

BM NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
COS BM 216	2192047.120	6312949.79	-2.23	TOP ⅜" IRON PIN IN MONUMENT BOX, CENTERLINE OF CUMBERLAND PLACE & 5-MILE DRIVE, COS "7N-3"
1000	2192538.460	6310657.179	-1.713	DRILL HOLE IN NW VAULT CORNER AT PUMP STATION
1112	2192386.084	6310591.343	-1.050	SPIKE 1112 IN DRIVEWAY TO PUMP STATION
1113	2192369.693	6310728.335	-1.370	SCRIBED 'X' 1113 IN VAULT CONCRETE

6. CONTRACTOR SHALL PROVIDE CONSTRUCTION STAKING NECESSARY FOR THE PROJECT. CONTRACTOR SHALL PRESERVE CONSTRUCTION STAKES, REFERENCE POINTS, AND OTHER SURVEY POINTS. ~~SET BY THE OWNER. OWNER WILL BACK CHARGE THE CONTRACTOR COSTS FOR RESTAKING.~~
7. SEE SPECIFICATIONS FOR CONSTRUCTION SEQUENCING REQUIREMENTS.
8. CONTRACTOR SHALL SELECT CONSTRUCTION EQUIPMENT TO MINIMIZE DAMAGE TO EXISTING PAVEMENT AT PROJECT SITE AND AT ALL ROADS USED TO MOVE MATERIAL AND EQUIPMENT TO AND FROM PROJECT. REPLACE DAMAGED ASPHALT CONCRETE PAVEMENT IN ACCORDANCE WITH CONTRACT DOCUMENTS. ALL PAVEMENT, INCLUDING ASPHALT CONCRETE (AC) AND PORTLAND CEMENT CONCRETE (PCC) PAVING, SHALL BE SAW CUT PRIOR TO INSTALLATION OF PAVEMENT PATCH.
9. ANY PAVEMENT DISTURBED MUST BE REMOVED, ALL SUBGRADE AND ANY UNDERLYING MATERIAL DISTURBED SHALL BE RECOMPACTED, AND ORIGINAL VERTICAL ALIGNMENT RESTORED.
10. CONTRACTOR SHALL PROVIDE PIPE BENDS OR FITTINGS AT HORIZONTAL ANGLE POINTS.
11. CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE OF ALL MATERIALS THAT ARE TO BE REMOVED FROM THE SITE INCLUDING, SURPLUS EXCAVATION MATERIALS AND DEBRIS. CONTRACTOR SHALL MAINTAIN THE SITE IN A NEAT AND ORDERLY CONDITION. THE CONTRACTOR SHALL DELIVER MATERIALS OR EQUIPMENT TO BE SALVAGED AND RETURNED TO THE OWNER AT THE LOCATION TO BE DETERMINED BY THE ENGINEER.
12. ALL PRESSURE PIPE ON THE PUMP STATION SITE SHALL HAVE RESTRAINED JOINTS.
13. NOTIFY UNDERGROUND SERVICES ALERT (USA) AT (800) 642-2444 AT LEAST 48 HOURS PRIOR TO ALL EXCAVATION.
14. MAINTAIN ACCESS ROADS TO ALL PROPERTIES ADJACENT TO WORK THROUGHOUT PERIOD OF CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATIONS.
15. TEMPORARY ACCESS ROADS CONSTRUCTED BY THE CONTRACTOR TO FACILITATE THE WORK AND NOT INDICATED AS PERMANENT ACCESS ROADS ON THE PLANS SHALL BE REMOVED AT THE COMPLETION OF THE WORK. ALL GRAVEL AND ROCK USED FOR TEMPORARY ACCESS ROADS SHALL BE REMOVED.
16. CONTRACTOR SHALL MAINTAIN ADEQUATE DUST CONTROL PER SECTION 10, CALTRANS STANDARD SPECIFICATIONS.
17. THE CONTRACTOR MAY USE GROUNDWATER FROM DEWATERING FOR DUST CONTROL.
18. ENGINEER ANTICIPATES THAT DEWATERING WATER AND OTHER WATER GENERATED BY THE CONSTRUCTION WILL BE IMPOUNDED ON SITE IN ONE OR MORE OF THE EXISTING BASINS. CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND OBTAIN APPROPRIATE FORMS FROM ~~SAN JOAQUIN COUNTY~~ *CITY OF STOCKTON*. CONTRACTOR SHALL ABIDE BY ALL REQUIREMENTS AND BMP'S IN THE APPROVED SWPPP.
19. THE TYPE, LOCATION, SIZE AND DEPTH OF EXISTING UNDERGROUND UTILITIES SHOWN ON THESE IMPROVEMENT PLANS WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. EFFORTS HAVE BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND FACILITIES. HOWEVER, THE ENGINEER ~~CANNOT~~ *DOES NOT* ASSUME RESPONSIBILITY FOR THE COMPLETENESS AND/OR ACCURACY OF THE DELINEATION OF SUCH UNDERGROUND FACILITIES, NOR FOR EXISTENCE OF OTHER BURIED OBJECTS AND/OR FACILITIES WHICH MAY BE ENCOUNTERED BUT ARE NOT SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL EXPOSE ALL UNDERGROUND FACILITIES THAT ARE TO BE CONNECTED TO, OR THAT ARE IN THE PATH OF, THE PROPOSED IMPROVEMENTS FOR VERIFICATION OF LOCATION AND ELEVATION PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTING THE WORK OF THE PROJECT PER THE IMPROVEMENT PLANS DESPITE BURIED OBJECTS OR FACILITIES WHICH WERE NOT EXPECTED TO BE ENCOUNTERED.
20. ~~A WRITTEN REQUEST TO REMOVE AND/OR TRIM ANY TREES NOT INDICATED FOR REMOVAL SHALL BE SUBMITTED IN WRITING TO THE ENGINEER; NO REMOVAL AND/OR TRIMMING SHALL TAKE PLACE WITHOUT WRITTEN RESPONSE BY THE ENGINEER.~~ *REMOVE AND DISPOSE OF TREES AS REQUIRED BY THE LEVEE IMPROVEMENTS SHOWN HEREIN. APPROXIMATELY 60 TREES, 24" TO 36" DBH, ARE EXPECTED TO BE REMOVED. FOR ALL OTHER TREES NOT INDICATED FOR REMOVAL, A WRITTEN REQUEST TO REMOVE AND/OR TRIM SHALL BE SUBMITTED IN WRITING TO THE ENGINEER. NO REMOVAL AND/OR TRIMMING SHALL TAKE PLACE WITHOUT WRITTEN RESPONSE FROM THE ENGINEER.*
21. ALL EXISTING DRAINAGE DITCHES SHALL BE GRADED TO DRAIN IN ORIGINAL DIRECTION AND PROTECTED FROM EROSION.
22. UNLESS OTHERWISE INDICATED, DRIVEWAYS AND CULVERTS ARE TO BE REPLACED IN KIND IF DAMAGED AT THE CONTRACTOR'S EXPENSE.
23. ANY AND ALL PIPELINES DAMAGED DURING CONSTRUCTION MUST BE SATISFACTORILY REPLACED AND/OR REPAIRED, AND INSPECTED BY THE ENGINEER.
24. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING MONUMENTS AND OTHER SURVEY MARKERS. MONUMENTS AND SURVEY MARKERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED OR REESTABLISHED AT THE CONTRACTOR'S EXPENSE.
25. UNLESS INDICATED OTHERWISE PROVIDE 12" MIN. VERTICAL CLEARANCE BETWEEN WATERLINE & SEWAGE FACILITIES.
26. 36" OF COVER IS A MINIMUM REQUIREMENT FOR PIPELINE INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE AMOUNT OF COVER NECESSARY FOR THE PROPER INSTALLATION OF APPURTENANCES.
27. TIE-IN DETAILS SHOWN ON THE PLANS ARE SCHEMATIC AND ARE INTENDED TO SHOW THE ESSENTIAL ELEMENTS REQUIRED OF THE CONNECTION, ACTUAL FIELD PIPING ANGLES MAY BE DIFFERENT. THE CONTRACTOR SHALL SUPPLY ALL LABOR, ANGLED FITTINGS AND APPURTENANCES REQUIRED FOR THE TIE-IN INSTALLATION WITH NO ADDITIONAL REIMBURSEMENT.
28. NO CONSTRUCTION SHALL BE DONE BETWEEN OCTOBER 15 AND MAY 1 WITHOUT A ~~COUNTY~~ *CITY OF STOCKTON* APPROVED SEDIMENT AND EROSION CONTROL PLAN TO PREVENT SOIL EROSION. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND RECOMMENDATIONS CONTAINED IN THE ~~"EROSION AND SEDIMENT CONTROL GUIDELINES FOR DEVELOPING AREAS OF THE SIERRAS, OCTOBER 1991"~~ *"CALIFORNIA STORM WATER BEST MANAGEMENT PRACTICES HANDBOOK (CSW-BMP)"*.
29. INSTALLATION AND MAINTENANCE OF EROSION CONTROL MEASURES ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREVENTION OF SIGNIFICANT EROSION AND SILTATION ENTERING THE STORM DRAIN SYSTEM, NATURAL DRAINAGE COURSES AND/OR INTRUDING UPON ADJACENT ROADWAYS AND PROPERTIES. WINTERIZATION AND EROSION CONTROL SHOWN ~~ON THESE PLANS~~ *IN THE CSW-BMP HANDBOOK* IS INTENDED AS A GUIDE. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER. THIS RESPONSIBILITY SHALL APPLY THROUGHOUT THE COURSE OF CONSTRUCTION AND UNTIL ALL DISTURBED AREAS HAVE BECOME STABILIZED AND SHALL NOT BE LIMITED TO WET WEATHER PERIODS.
30. AFTER STRIPPING THE DEBRIS, ~~ANY EXISTING LOOSE FILL, UNSUITABLE SOIL, SILTY SAND DEPOSITS, OR DISTURBED NATURAL SOILS~~ *ANY UNSUITABLE SOIL* SHALL BE EXCAVATED AND PROPERLY DISPOSED OF TO THE SATISFACTION OF THE ENGINEER.
31. THE OWNER OR THE ENGINEER MAY REQUIRE THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE TO UNCOVER ANY IMPROVEMENTS THAT HAVE BEEN COMPLETED WITHOUT PROPER INSPECTION AND/OR APPROVAL. IF THE INSTALLATION IS FOUND NOT TO MEET CONTRACT REQUIREMENTS OR PREVIOUSLY APPROVED ALTERNATIVES SHOWN ON THE PLANS, THE CONTRACTOR MAY BE REQUIRED TO REMOVE AND REPLACE SUCH IMPROVEMENTS AT HIS EXPENSE.
32. AREAS DISTURBED BY THE WORK AND NOT RECEIVING SURFACING SHALL BE HYDROSEEDED.
33. THE CONTRACTOR SHALL COOPERATE WITH THE ENGINEER IN IMPLEMENTING THE MITIGATION MEASURES IN ACCORDANCE WITH THE INITIAL STUDY/MITIGATED NEGATIVE DECLARATION ENVIRONMENTAL DOCUMENT PREPARED FOR THIS PROJECT: SEE SPECIFICATIONS.
34. CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE STARTING WORK AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
35. CONTRACTOR TO FIELD ~~CHECK ALL EX~~ *VERIFY ALL EXISTING* STRUCTURES FOR VERIFICATION OF DIMENSIONS WHERE EQUIPMENT IS TO BE INSTALLED.
36. CONTRACTOR SHALL REFER TO ALL RELATED DRAWINGS AND TO MANUFACTURER'S DRAWINGS FOR COMPLETE DETAILS OF A GIVEN FACILITY.
37. *THE EXISTING WESTSIDE INTERCEPTOR IS NOT VALVED. CONTRACTOR SHALL PREPARE PLAN TO SAFLEY MAKE THE MODIFICATIONS TO THE FORCEMAIN REQUIRED BY THE WORK. CONTRACTOR SHALL PREPARE BYPASS PLANS, STOPPAGE PLANS AND CONTROLS OF WASTE WATER FLOW FOR ENGINEERS REVIEW AND APPROVAL.*
38. *ENGINEERED FILLS AND SUBGRADES SHALL BE MOISTURE CONDITIONED AND COMPACTED. COMPACTED SOILS SHALL BE BETWEEN 3% AND 6% ABOVE OPTIMUM MOISTURE CONTENT.*
39. *REMOVE APPROX. 2,200 FEET OF FENCING ALONG THE EXISTING LEVEE. CONSTRUCT NEW FENCING 10 FEET AWAY FROM TOE OF NEW SLOPE OR AS DIRECTED IN THE FIELD BY THE ENGINEER. REPLACEMENT FENCING SHALL BE PER SHEET C202; WITH THE EXCEPTION THAT RAZOR WIRE IS NOT REQUIRED. EXISTING FENCING MAY BE REUSED AT THE DISCRETION OF THE ENGINEER.*
40. *EXTEND SIPHON PIPING THROUGH LEVEE IMPROVEMENTS. SEE KEYNOTE 4 ON SHEET C2 AND SKETCH A3-1 AND A3-2 FOR SIPHON PIPE PLAN AND DETAILS.*
41. *PROVIDE TIE-OFF BOLTS ON THE PUMP STATION TOP SLAB TO BE USED IN REMOVING PUMPS WITH THE BRIDGE CRANE. SEE SKETCH A3-3 AND A3-4 FOR PUMP TIE-OFF PLAN AND DETAILS.*

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

HYDRAULIC PROFILE, GENERAL NOTES

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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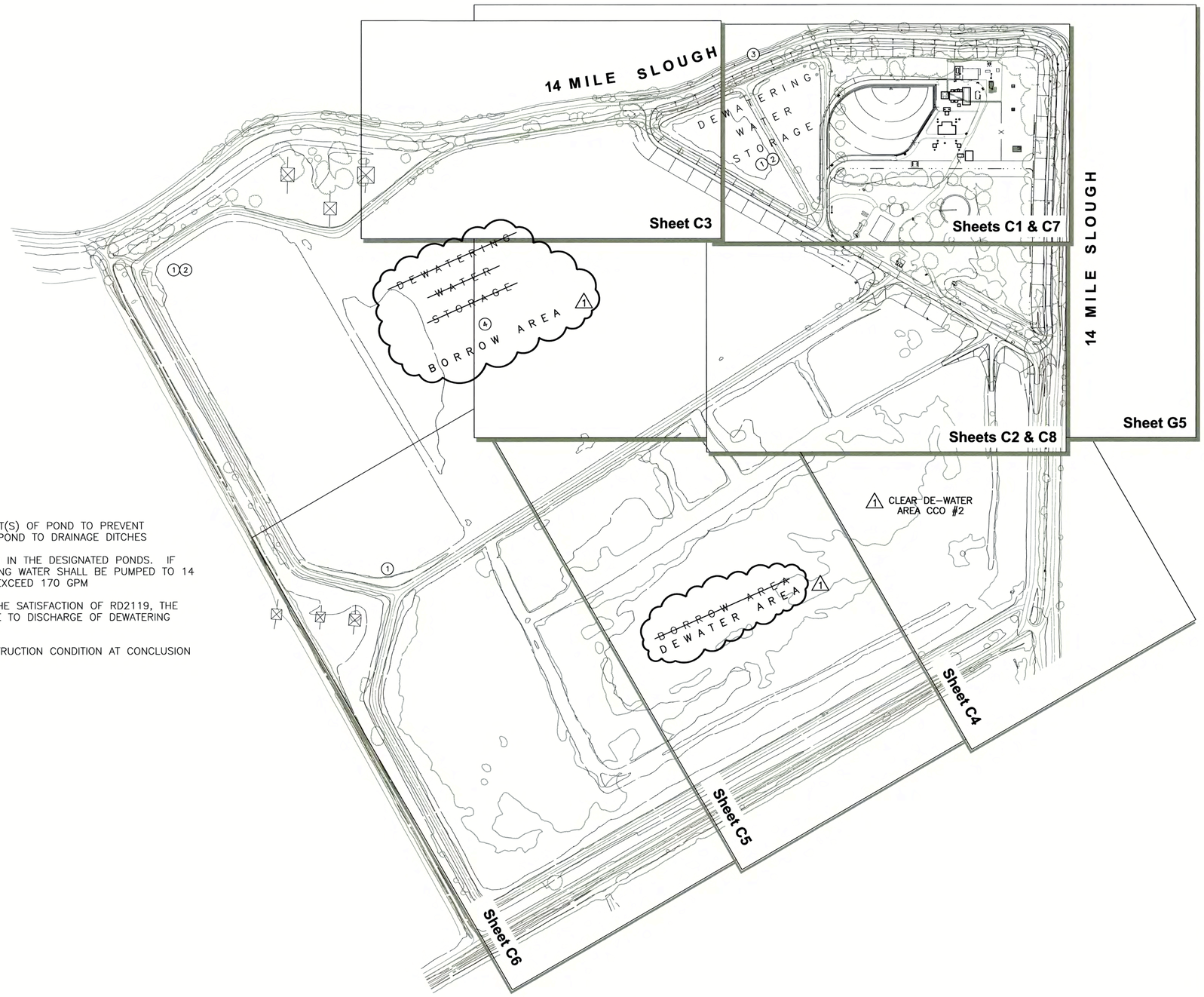

KEYNOTES:

(1) INSTALL TEMPORARY PLUG IN OUTLET(S) OF POND TO PREVENT DEWATERING WATER FROM EXITING POND TO DRAINAGE DITCHES

(2) DEWATERING WATER MAY BE STORED IN THE DESIGNATED PONDS. IF DISCHARGE IS REQUIRED, DEWATERING WATER SHALL BE PUMPED TO 14 MILE SLOUGH AT A RATE NOT TO EXCEED 170 GPM

(3) CONTRACTOR SHALL PROTECT, TO THE SATISFACTION OF RD2119, THE SLOUGH LEVEE FROM EROSION DUE TO DISCHARGE OF DEWATERING WATER

(4) RESTORE THIS AREA TO PRE-CONSTRUCTION CONDITION AT CONCLUSION OF THE WORK OF THIS CONTRACT

N

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

SITE PLAN
DRAWING REFERENCE SHEET

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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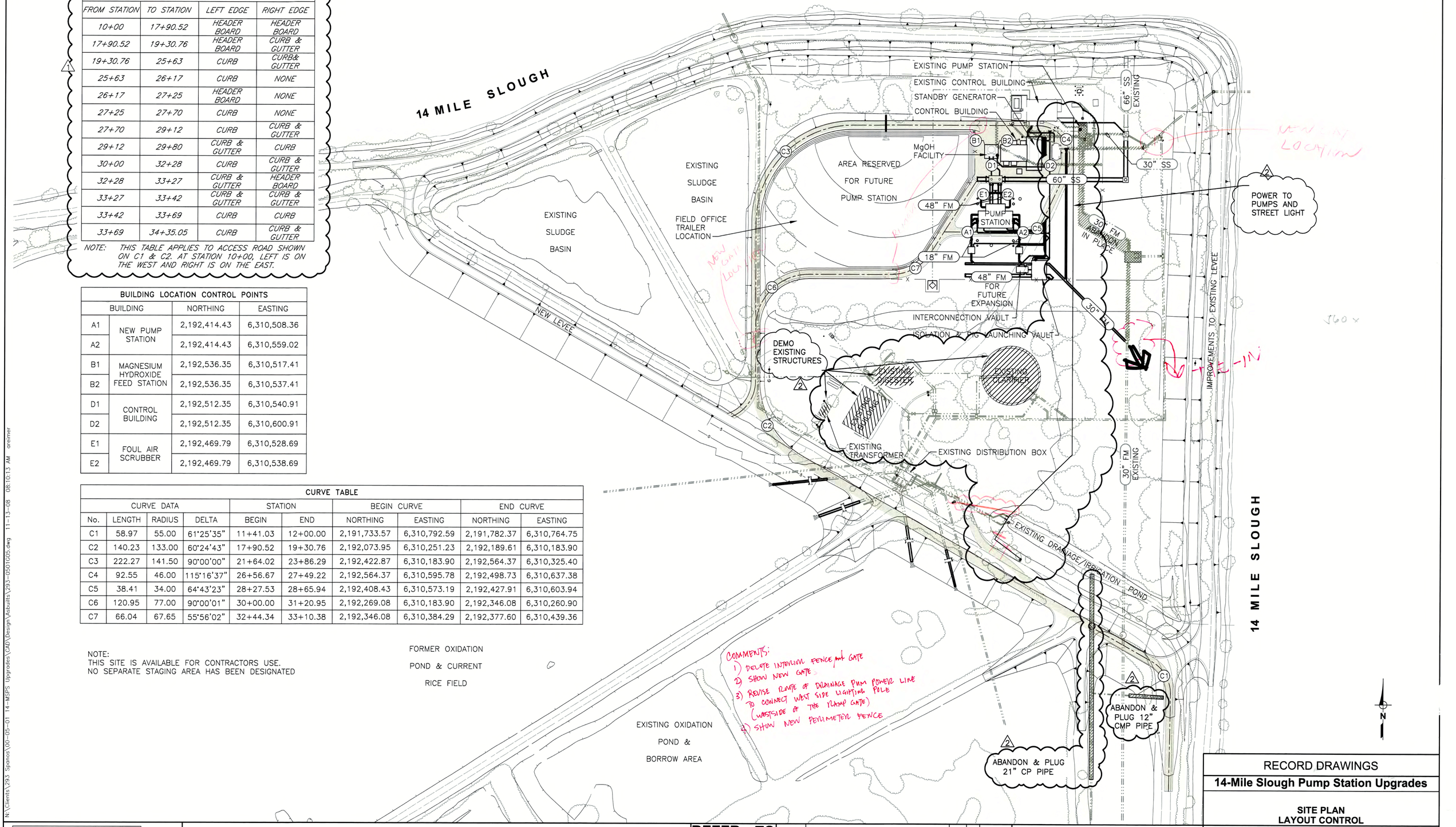
CURB AND GUTTER TABLE			
FROM STATION	TO STATION	LEFT EDGE	RIGHT EDGE
10+00	17+90.52	HEADER BOARD	HEADER BOARD
17+90.52	19+30.76	HEADER BOARD	CURB & GUTTER
19+30.76	25+63	CURB	CURB& GUTTER
25+63	26+17	CURB	NONE
26+17	27+25	HEADER BOARD	NONE
27+25	27+70	CURB	NONE
27+70	29+12	CURB	CURB & GUTTER
29+12	29+80	CURB & GUTTER	CURB
30+00	32+28	CURB	CURB & GUTTER
32+28	33+27	CURB & GUTTER	HEADER BOARD
33+27	33+42	CURB & GUTTER	CURB & GUTTER
33+42	33+69	CURB	CURB
33+69	34+35.05	CURB	CURB & GUTTER

NOTE: THIS TABLE APPLIES TO ACCESS ROAD SHOWN ON C1 & C2. AT STATION 10+00, LEFT IS ON THE WEST AND RIGHT IS ON THE EAST.

BUILDING LOCATION CONTROL POINTS			
BUILDING		NORTHING	EASTING
A1	NEW PUMP STATION	2,192,414.43	6,310,508.36
A2		2,192,414.43	6,310,559.02
B1	MAGNESIUM HYDROXIDE FEED STATION	2,192,536.35	6,310,517.41
B2		2,192,536.35	6,310,537.41
D1	CONTROL BUILDING	2,192,512.35	6,310,540.91
D2		2,192,512.35	6,310,600.91
E1	FOUL AIR SCRUBBER	2,192,469.79	6,310,528.69
E2		2,192,469.79	6,310,538.69

CURVE TABLE									
CURVE DATA				STATION		BEGIN CURVE		END CURVE	
No.	LENGTH	RADIUS	DELTA	BEGIN	END	NORTHING	EASTING	NORTHING	EASTING
C1	58.97	55.00	61°25'35"	11+41.03	12+00.00	2,191,733.57	6,310,792.59	2,191,782.37	6,310,764.75
C2	140.23	133.00	60°24'43"	17+90.52	19+30.76	2,192,073.95	6,310,251.23	2,192,189.61	6,310,183.90
C3	222.27	141.50	90°00'00"	21+64.02	23+86.29	2,192,422.87	6,310,183.90	2,192,564.37	6,310,325.40
C4	92.55	46.00	115°16'37"	26+56.67	27+49.22	2,192,564.37	6,310,595.78	2,192,498.73	6,310,637.38
C5	38.41	34.00	64°43'23"	28+27.53	28+65.94	2,192,408.43	6,310,573.19	2,192,427.91	6,310,603.94
C6	120.95	77.00	90°00'01"	30+00.00	31+20.95	2,192,269.08	6,310,183.90	2,192,346.08	6,310,260.90
C7	66.04	67.65	55°56'02"	32+44.34	33+10.38	2,192,346.08	6,310,384.29	2,192,377.60	6,310,439.36

NOTE:
THIS SITE IS AVAILABLE FOR CONTRACTORS USE.
NO SEPARATE STAGING AREA HAS BEEN DESIGNATED



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14-Mile Slough Pump Station Upgrades

SITE PLAN LAYOUT CONTROL

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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MATCHLINE, SEE C3

REMOVE 24" EF LINE

TRANSITION FROM NO BENCH TO 8' BENCH

NO 8' BENCH 157±

TRANSITION FROM 8' BENCH TO NO BENCH

NOT IN USE

RELOCATE FENCE AS REQ'D TO MAINTAIN 10' CLEAR BETWEEN TOE OF LEVEE & FENCE

REPLACE 57 FEET OF CHAINLINK FABRIC ON EX FENCE

NEW CORNER POST

STATION 35+63
R -1.10
L -0.98

16' GATE, SEE C202

MATCH EX GRADE ALONG EX CONTROL BLDG

BC STA:25+56.67

CB#2 RIM:-0.55

5 EX WET WELL, VALVE VAULT & METER VAULT

PG&E PAD

Remove after preliminary power!

14 MSPS CONTROL BLDG M401

MgOH FEED STATION

CONTROL BLDG

SURGE TANK

MH #2

CB#1, RIM-1.10

SEE B C201

CB#3, RIM:-1.26

FL:-1.10

VALLEY GUTTER, SEE H C201

FOUL AIR SCRUBBER, SEE A M108

EC STA: 23+86.29

REMOVE EX 12" DBH PECAN TREES, TYP OF 4

REMOVE GATE

AREA RESERVED FOR FUTURE PUMP STATION

PROTECT EX 12" DBH PECAN TREES, UNO

BC STA: 21+64.02

EC STA: 31+20.95

EC STA:33+10.38
BC STA:32+44.34

16' GATE, SEE B&C C202

FL:0.70

CB#4, RIM:-0.74

PUMP STATION SEE M101

SDMH#2 RIM:-1.75

CB#5 RIM:-0.53

EC STA: 27+49.22

TOC: 0.33
BOC:-0.17

BC STA:28+27.53

EC STA:28+65.94

FLOW METER VAULT, TYP, SEE A C205

CB#6 RIM: 0.80

SDMH#1 RIM:-1.45

CB#7, RIM:0.70

EP:-0.7

REMOVE EX FENCE TO LIMITS SHOWN

CONNECT TO EX FENCE AT EX POST

MH#1

"NO FENCE HERE"

SEE NOTE 3

CHAIN LINK FENCE, TYP A&C C202

5 EX VALVE VAULT

N:2,192,339.07
E:6,310,689.64

ISOLATION VAULT & INTERCONNECTION VAULT SEE B C205

RETAINING WALL AROUND EXISTING WELL, SEE A C201

WASTE GAS BURNER

NEW GATE LOCATION

CURB & GUTTER, TYP, SEE E C102

CURB, TYP, SEE F C102

EC STA:19+30.76

REMOVE SLUDGE LINE @ STA. 19+35

PROPANE TANKS

TRANSFORMER PAD

DIGESTER No. 1

CLARIFIER No.1
TANK BOTTOM
-4.7

PROTECT EXISTING UTILITY POLE, TYP

STA: 20+55.00
R FL:3.07
L FL:3.19

BC STA: 20+10.23
= 30+00

ACCESS ROAD TURN-OUT

14' WIDE WITH 10' WIDE GRAVEL SURFACE SIMILAR TO A C102

R=50'

MATCHLINE, SEE C2

KEY NOTES:
1. FILL AS REQUIRED TO ACHIEVE INDICATED GRADES. COMPACT FILL TO 85% MAX. DENSITY IN SWALE. CUT AS REQUIRED TO ACHIEVE INDICATED GRADES. TRANSFER SPOILS TO FILL AREAS
2. MATCH EXISTING GRADE AT TOP OF DRAINAGE SWALE
3. SWALE FILL DAYLIGHT LINE, LOCATION APPROXIMATE
4. GRAVEL SURFACE WITH HEADER BOARD, SEE
5. DEMOLISH & REMOVE, SEE SPEC SECTION 02230
6. SEE ROAD DETAIL C C102
7. REMOVABLE BOLLARDS AROUND TRANSFORMER, SEE E C201
8. REMOVE & DISPOSE OF 3" THICK AC PAVING PRIOR TO PLACING LEVEE FILL
9. PLACE JUTE NETTING ON NEW LEVEE SLOPE AND HYDROSEED

NOTE:
1. SLOPE VARIES INTO DRAINAGE SWALE. TOP OF SWALE TO BE EDGE OF ACCESS ROAD AND EXISTING GRADE AS SHOWN
2. CONTRACTOR SHALL PROTECT ALL TREES EXCEPT THOSE SHOWN FOR REMOVAL, OR OTHERWISE APPROVED BY THE ENGINEER
3. WHERE NEW LEVEE CONSTRUCTION FILLS EXISTING DRAINAGE COURSE, CONSTRUCT NEW DRAINAGE SWALE AT TOE OF LEVEE. MATCH EXISTING FLOW LINES
4. SEE SHEET G5 FOR ACCESS ROAD LINE AND CURVE TABLES
5. CROSS SLOPE ON ACCESS ROAD SHALL BE 1% UNO
6. SEE SHEET C103 FOR ACCESS ROAD PROFILE
7. ALL DISTURBED SURFACES SHALL BE HYDROSEEDED UNLESS NOTED OTHERWISE

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14-Mile Slough Pump Station Upgrades

PAVING & GRADING PLAN 1

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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MATCHLINE, SEE C1

KEY NOTES:
1. 25' TRANSITION TO CROWNED ROAD
2. SEE NOTE 3 ON SHEET C1. GRADE NEW DRAINAGE SWALE INTO EXISTING POND, AS REQUIRED
3. PROTECT EXISTING UTILITY POLE, TYP
4. EXTEND EXISTING STEEL SIPHON PIPE INTO POND. CUT EXISTING AND WELD NEW PIPE ONTO END
5. LEVEE SHALL MAINTAIN A CENTERLINE ELEVATION NOT LESS THAN ℄11.00 AT ALL LOCATIONS. ADJUST SLOPE OF CROWN TO DRAIN AT 1%, UNO, SEE B/C102
6. SEE B/C207
7. ADJUST EXISTING ARVR STATION, SEE F/C201
8. CONSTRUCT NEW ACCESS ROAD, SLOPE 7%
9. MATCH EXISTING GRADE
10. HEADER BOARD. SEE D/C201
11. CONSTRUCT 16' WIDE GATE AT BASE OF RAMP
12. REMOVE AND DISPOSE OF 3" THICK AC PAVING PRIOR TO PLACING LEVEE FILL
13. PLACE JUTE NETTING ON NEW LEVEE SLOPES AND HYDROSEED

NOTES:
1. ALL DISTURBED SURFACES SHALL BE HYDROSEEDED UNLESS NOTED OTHERWISE

CONSTRUCT 10' WIDE RAMP TO BASIN, MAX SLOPE: 10%

BORROW AREA

REMOVE EX. STANDPIPE SKIMMER

℄ N 2,191,934.82
E 6,310,274.41

℄ N 2,191,757.40
E 6,310,519.87

BORROW AREA, SEE SHEET C4 THRU C6

DEWATERING POND

℄ N 2,191,680.06
E 6,310,663.31

℄ N 2,191,592.56
E 6,310,790.09

EXISTING ROAD NEW ROAD

STORM WATER/IRRIGATION WATER PUMP STATION

DRAINAGE POND

PILE

BRUSH

186,000 ft²
129,000
41,000
322,000 ft²
7.5 acres

EXISTING AB ROAD

NEW PAVING
EXISTING PAVING

℄ 11.00
18+00 FL:10.44
BC STA: 17+90.52
EP:10.56
15+00
13+00
12+00
11+00
10+00
EP 10.56
EP:10.44
EC STA: 12+00.00
BC STA: 11+41.03
EP:10.56
FL:-6.5
3:1 TYP
10'

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PAVING & GRADING PLAN 2

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CITY OF STOCKTON, CALIFORNIA

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KEY NOTES:
1. (1) REMOVE AND DISPOSE OF 3" THICK AC PAVING PRIOR TO PLACING LEVEE FILL
2. (2) PLACE JUTE NETTING ON NEW LEVEE SLOPE AND HYDROSEED

NOTES:
1. ALL DISTURBED SURFACES SHALL BE HYDROSEEDED UNLESS NOTED OTHERWISE

℄ N 2,192,503.99
E 6,309,596.44

MATCH EXISTING GRADE

14' WIDE WITH 10' WIDE GRAVEL SURFACE SIMILAR TO A/C102

MATCHLINE, SEE C1

N

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PAVING & GRADING PLAN 3

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CITY OF STOCKTON, CALIFORNIA

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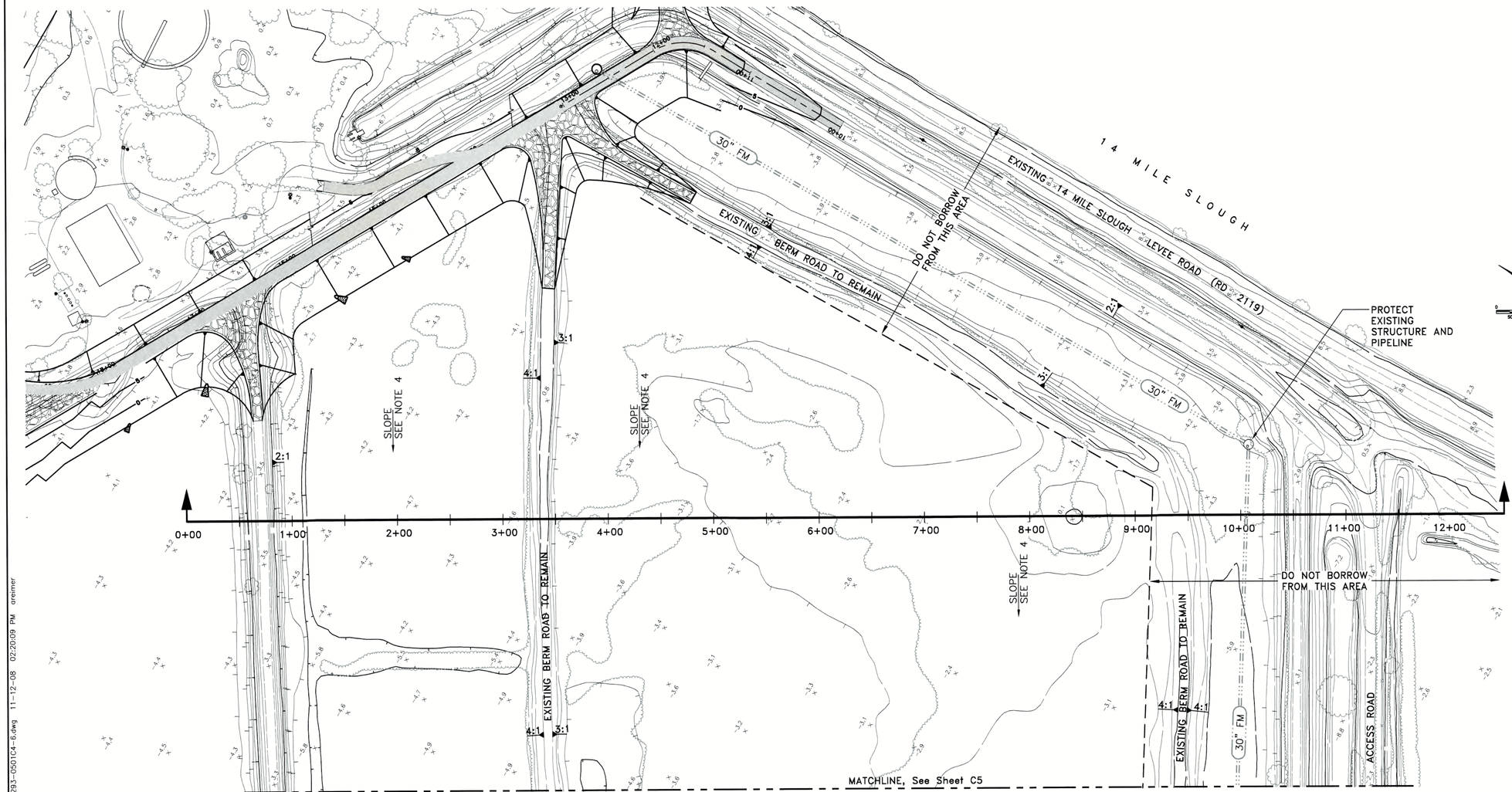
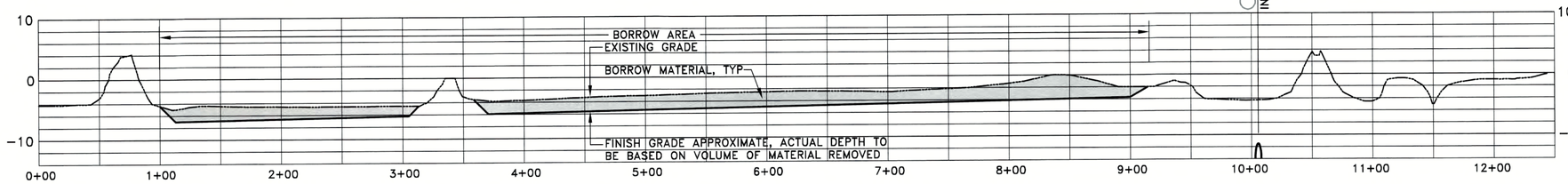


PLAN

SCALE: 1"=50'



SECTION

SCALE HORIZONTAL: 1"=50'
VERTICAL: 1"=10'

NOTES:

1. THE EXISTING BERMS WITHIN THE BORROW AREA SHALL NOT BE DISTURBED
2. EXCAVATIONS SHALL BE NO CLOSER THAN 3 FEET FROM THE TOE OF EXISTING AND NEW BERMS. EXCAVATIONS SHALL BE SLOPED AWAY FROM THE BERM AT THE SAME SLOPE AS THE EXISTING SIDE SLOPE, AS INDICATED
3. CONTRACTOR SHALL EXCAVATE NO MORE THAN 2 FEET BELOW ADJACENT GRADE AT A TIME
4. FOLLOWING EXCAVATION THE FINISHED GRADE SHALL BE SLOPED AT NO MORE THAN 2% (WITH THE EXCEPTION OF MATCHING THE EXISTING BERM SIDE SLOPES)
5. OWNER DOES NOT GUARANTEE DEPTH OF SUITABLE MATERIAL. CONTRACTOR SHALL CONDUCT INVESTIGATIONS AS NEEDED TO DETERMINE DEPTH OF SUITABLE MATERIAL. HANDLING OF UNSUITABLE MATERIAL AS REQUIRED SHALL BE INCLUDED IN THE BID PRICE
6. CONTRACTOR SHALL CONSTRUCT ACCESS AS REQUIRED INTO THE BORROW AREA
7. NO EXCAVATION IS ALLOWED WITHIN 25 FEET OF EXISTING 30" FM
8. FINISH GRADING SHALL MAINTAIN EXISTING DRAINAGE WITHIN THE BORROW AREA
9. *THE EXISTING PONDS ARE LINED WITH RIP-RAP. CONTRACTOR SHALL REMOVE EXISTING RIP-RAP AND STOCKPILE IN A LOCATION ON THE 14 MILE SLOUGH PUMP STATION SITE AS DIRECTED IN THE FIELD BY THE ENGINEER.* (1)

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BORROW AREA
PLAN & SECTION 1

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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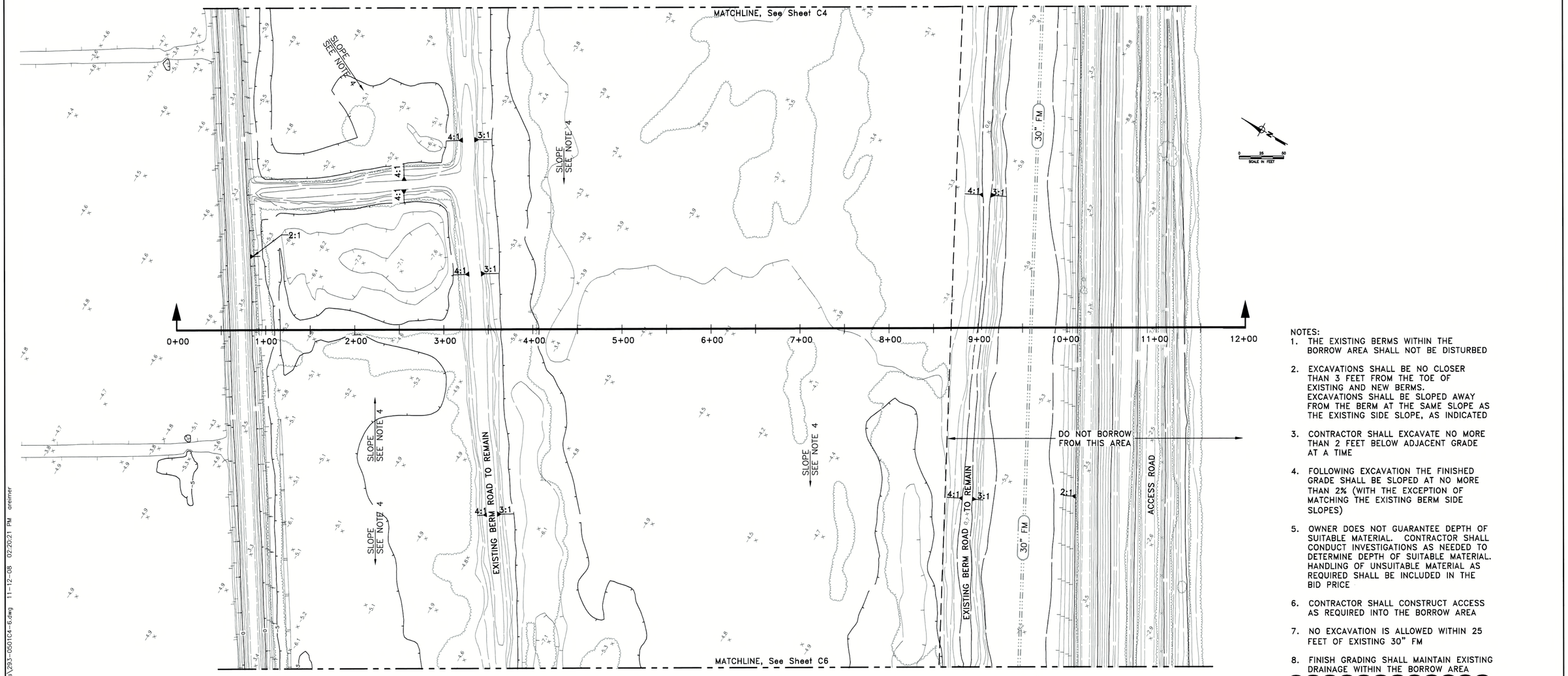
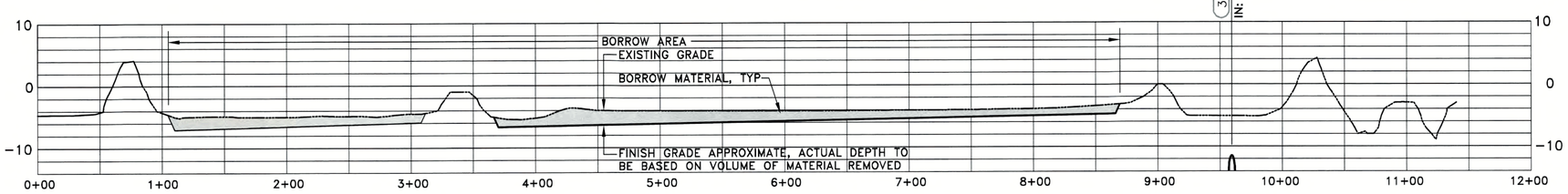


PLAN

SCALE: 1"=50'



SECTION

SCALE HORIZONTAL: 1"=50'
VERTICAL: 1"=10'

NOTES:

1. THE EXISTING BERMS WITHIN THE BORROW AREA SHALL NOT BE DISTURBED
2. EXCAVATIONS SHALL BE NO CLOSER THAN 3 FEET FROM THE TOE OF EXISTING AND NEW BERMS. EXCAVATIONS SHALL BE SLOPED AWAY FROM THE BERM AT THE SAME SLOPE AS THE EXISTING SIDE SLOPE, AS INDICATED
3. CONTRACTOR SHALL EXCAVATE NO MORE THAN 2 FEET BELOW ADJACENT GRADE AT A TIME
4. FOLLOWING EXCAVATION THE FINISHED GRADE SHALL BE SLOPED AT NO MORE THAN 2% (WITH THE EXCEPTION OF MATCHING THE EXISTING BERM SIDE SLOPES)
5. OWNER DOES NOT GUARANTEE DEPTH OF SUITABLE MATERIAL. CONTRACTOR SHALL CONDUCT INVESTIGATIONS AS NEEDED TO DETERMINE DEPTH OF SUITABLE MATERIAL. HANDLING OF UNSUITABLE MATERIAL AS REQUIRED SHALL BE INCLUDED IN THE BID PRICE
6. CONTRACTOR SHALL CONSTRUCT ACCESS AS REQUIRED INTO THE BORROW AREA
7. NO EXCAVATION IS ALLOWED WITHIN 25 FEET OF EXISTING 30" FM
8. FINISH GRADING SHALL MAINTAIN EXISTING DRAINAGE WITHIN THE BORROW AREA
9. *THE EXISTING PONDS ARE LINED WITH RIP-RAP. CONTRACTOR SHALL REMOVE EXISTING RIP-RAP AND STOCKPILE IN A LOCATION ON THE 14 MILE SLOUGH PUMP STATION SITE AS DIRECTED IN THE FIELD BY THE ENGINEER.*

1

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

BORROW AREA
PLAN & SECTION 2

Underground Service Alert
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REGISTERED PROFESSIONAL ENGINEER
PATRICK D. TOSS
No. 57272
CIVIL
STATE OF CALIFORNIA

REV. No.	DISCRIPTION	DATE	BY	Aprv'd By
1	ADDENDUM No. 3	5/25/06	TTT	PDF
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DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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RECORD Dwg.:			

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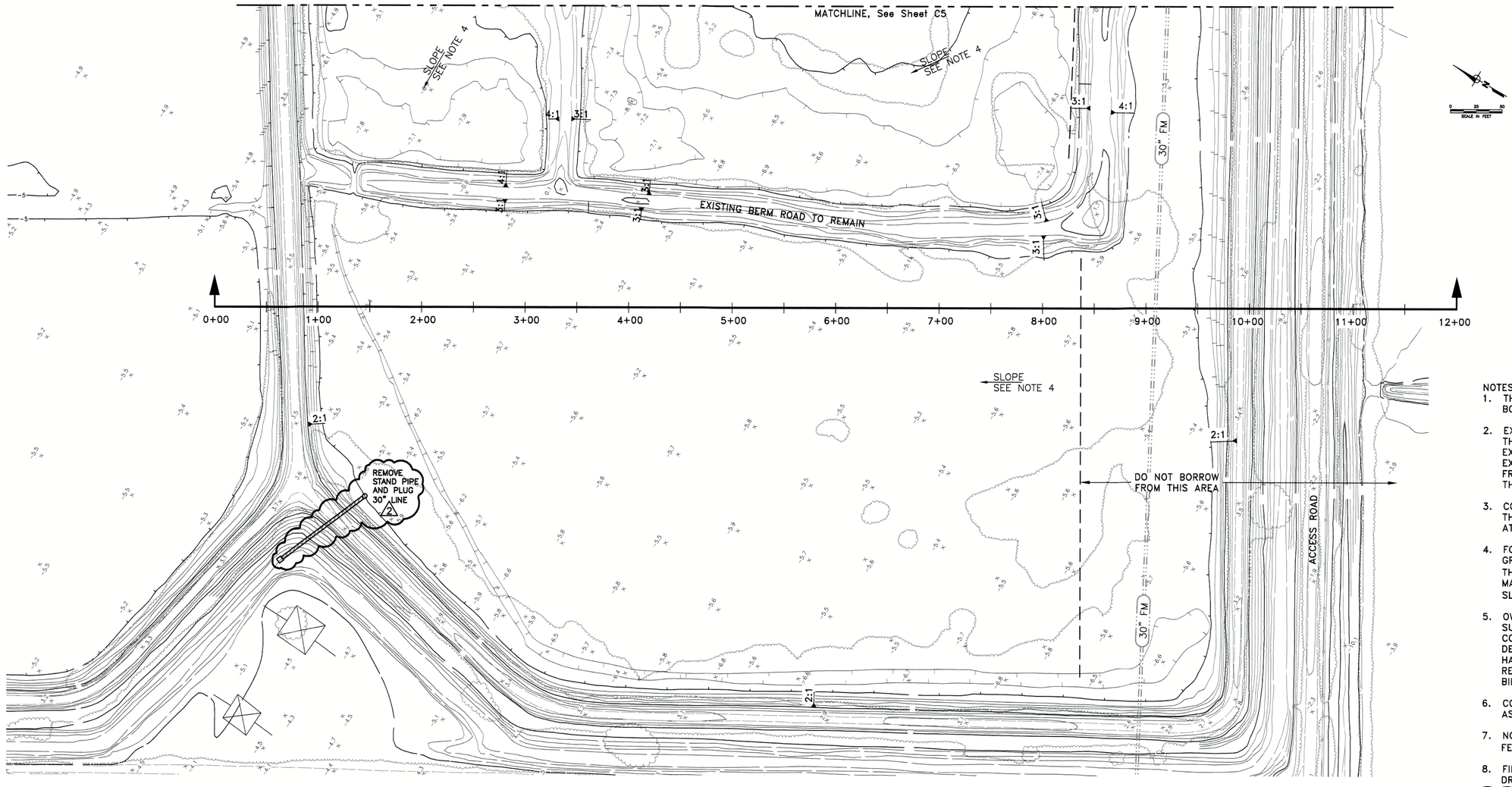
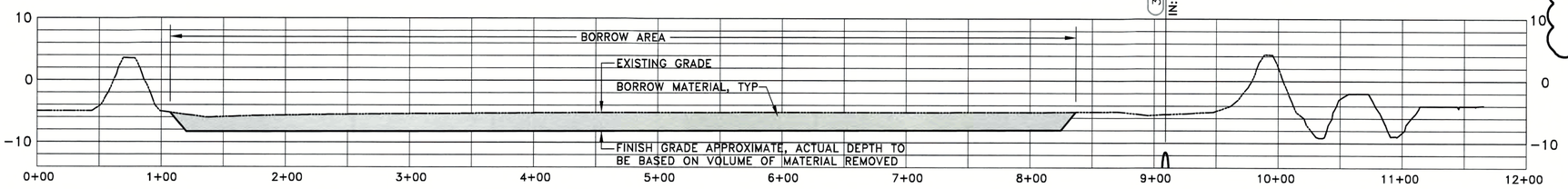


PLAN

SCALE: 1"=50'



SECTION

SCALE HORIZONTAL: 1"=50'
VERTICAL: 1"=10'

NOTES:

1. THE EXISTING BERMS WITHIN THE BORROW AREA SHALL NOT BE DISTURBED
2. EXCAVATIONS SHALL BE NO CLOSER THAN 3 FEET FROM THE TOE OF EXISTING AND NEW BERMS. EXCAVATIONS SHALL BE SLOPED AWAY FROM THE BERM AT THE SAME SLOPE AS THE EXISTING SIDE SLOPE, AS INDICATED
3. CONTRACTOR SHALL EXCAVATE NO MORE THAN 2 FEET BELOW ADJACENT GRADE AT A TIME
4. FOLLOWING EXCAVATION THE FINISHED GRADE SHALL BE SLOPED AT NO MORE THAN 2% (WITH THE EXCEPTION OF MATCHING THE EXISTING BERM SIDE SLOPES)
5. OWNER DOES NOT GUARANTEE DEPTH OF SUITABLE MATERIAL. CONTRACTOR SHALL CONDUCT INVESTIGATIONS AS NEEDED TO DETERMINE DEPTH OF SUITABLE MATERIAL. HANDLING OF UNSUITABLE MATERIAL AS REQUIRED SHALL BE INCLUDED IN THE BID PRICE
6. CONTRACTOR SHALL CONSTRUCT ACCESS AS REQUIRED INTO THE BORROW AREA
7. NO EXCAVATION IS ALLOWED WITHIN 25 FEET OF EXISTING 30" FM
8. FINISH GRADING SHALL MAINTAIN EXISTING DRAINAGE WITHIN THE BORROW AREA
9. *THE EXISTING PONDS ARE LINED WITH RIP-RAP. CONTRACTOR SHALL REMOVE EXISTING RIP-RAP AND STOCKPILE IN A LOCATION ON THE 14 MILE SLOUGH PUMP STATION SITE AS DIRECTED IN THE FIELD BY THE ENGINEER.* (1)

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

BORROW AREA
PLAN & SECTION 3

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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KEY NOTES:

1. ALL METALLIC PIPELINES TO BE ABANDONED SHALL BE REMOVED TO A LENGTH OF 3 FEET FROM ALL CONNECTIONS. THE ABANDONED PIPE SHALL BE FILLED WITH 3 SACK (MIN) SLURRY AND PLUGGED WITH CONCRETE 2 FEET INTO OPEN END OF PIPE.
2. EXISTING FORCE MAIN TO REMAIN ACTIVE UNTIL COMPLETE INSTALLATION AND START-UP OF NEW PUMP STATION AND SYSTEM.
3. – NOT USED –
4. PIPELINE CAN BE INSTALLED BY EITHER OPEN-CUT METHOD OR MICROTUNNELING. MICROTUNNELING IS AT CONTRACTORS OPTION, DETAILS FOR MICROTUNNELING ARE NOT PROVIDED AND WILL BE PROVIDED AS SUBMITTAL INFORMATION BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
5. REMOVE PLUG FROM EXISTING 66" SS AND CONNECT NEW 66" SS TO EXISTING SEWER.
6. SDMH SHALL BE PER CITY OF STOCKTON STANDARD DRAWING 55 WITH CATCH BASIN FRAME AND COVER BY NEENAH FOUNDRY COMPANY MODEL R-2556 OR EQUAL.
7. SEE C104 & C105 FOR PIPELINE PROFILE
8. IN 4" CASING
9. SLOPE TRAP PRIMING LINES TOWARD TRAPS. 1% MINIMUM. PROVIDE 3 FEET MINIMUM COVER

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

YARD PIPING PLAN 1

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: 1"=30'
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RECORD Dwg.:
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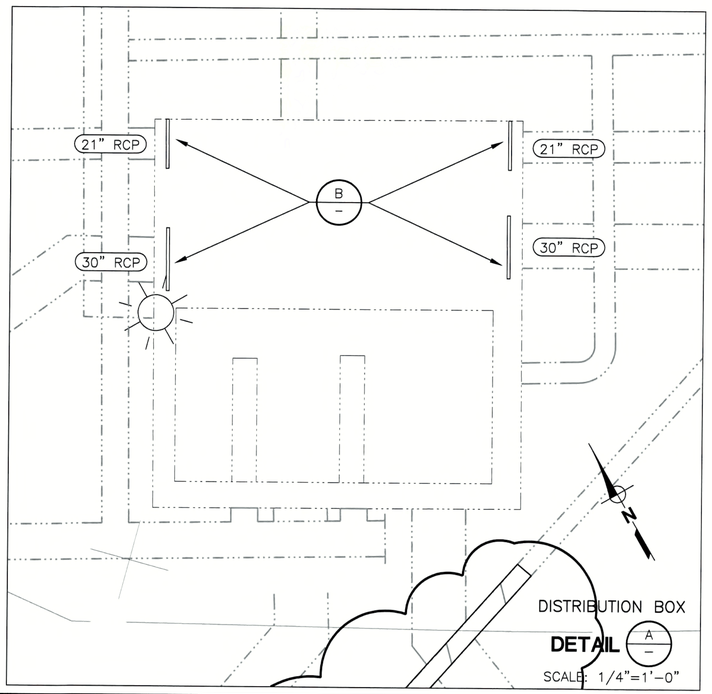
SHEET No. C7
12 of 89 SHEETS
PROJECT No. 293-00-05-01

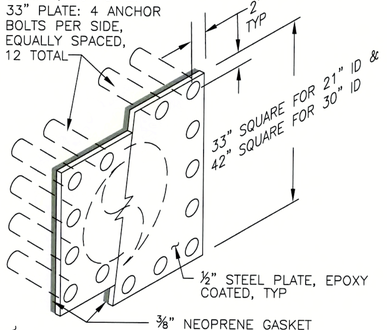
MATCHLINE, SEE C7

KEY NOTES:
1. PLUG EXISTING 30" & 21" CONNECTIONS IN DISTRIBUTION BOX WITH STEEL PLATES, SEE A –
2. ~~INSTALL NEW MANHOLE, SEE B C207~~ DELETE FROM CONTRACT
3. TRENCH DAM, SEE J C206
4. FIELD CLOSURE PIPE CONNECTION, SEE G C206
5. INSTALL TIDEFLEX CHECK VALVE ON ENDS OF PIPE & INSTALL RIP RAP AROUND PIPE OUTLET, TYP, SEE H C206
6. INSTALL FLARED END SECTION PER B C201 & RIP-RAP PER H C206

24" EF
PILE
4" D
2" 2W
18" IN
2" IN
12" ABCMP IE:-8±
24" RCP
ABANDON
30" SD
IE:-4±
30" RCP
36" RCP
12" ABCMP
IE:-5±
36" SD
REMOVE & PLUG 12" AB CMP
RCP
30" RCP
36" SD
30" SD
IE:-4±
ABANDON
STORM WATER/IRRIGATION WATER PUMP STATION
14" 15" ABCMP
EXISTING 21" CP INVERT: -14±
30" FM
ADJUST EXISTING ARVR STATION, SEE F C201
DELETE MH-B
IE:-5±
12" ABCMP 52'
REMOVE STANDPIPE
ABANDON AND PLUG CMP PIPES
ABANDON & PLUG 21" CP PIPE
21" CP
30" FM
BRUSH



DISTRIBUTION BOX
DETAIL A –
SCALE: 1/4"=1'-0"



STEEL PLATE
DETAIL B –
NTS

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

YARD PIPING PLAN 2

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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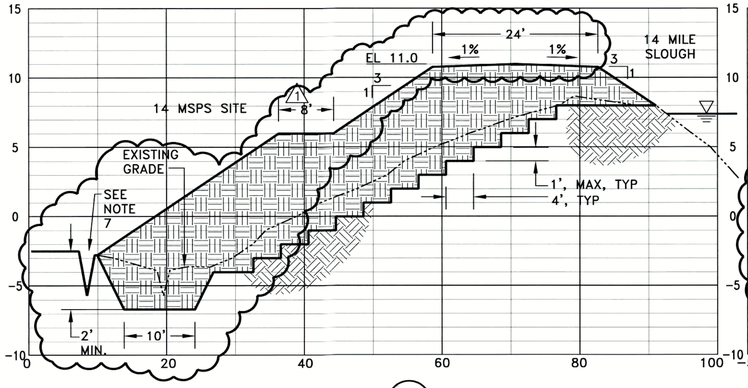
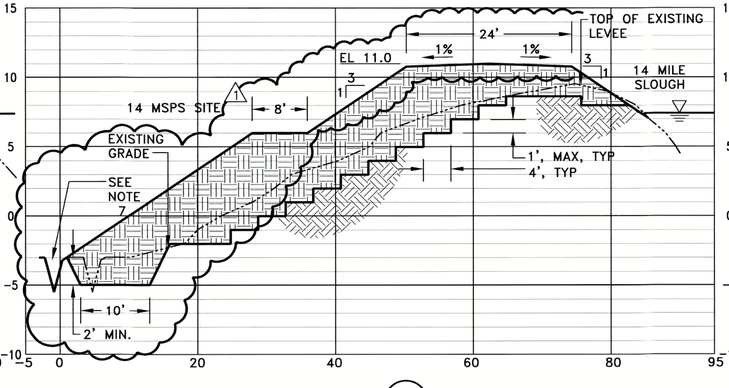


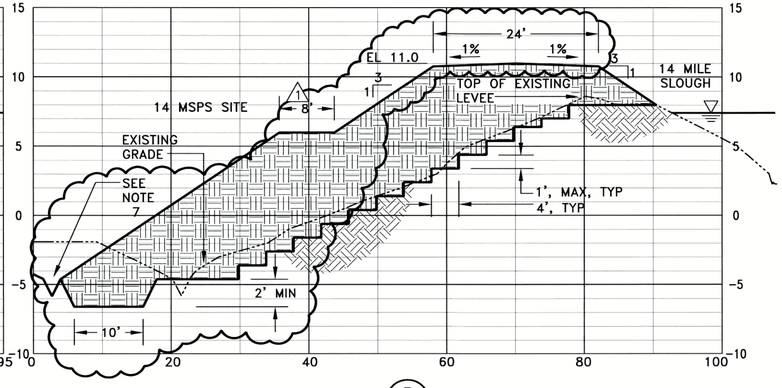
SECTION 1/C1

SCALE HORIZONTAL: 1"=10'
VERTICAL: 1"=5'



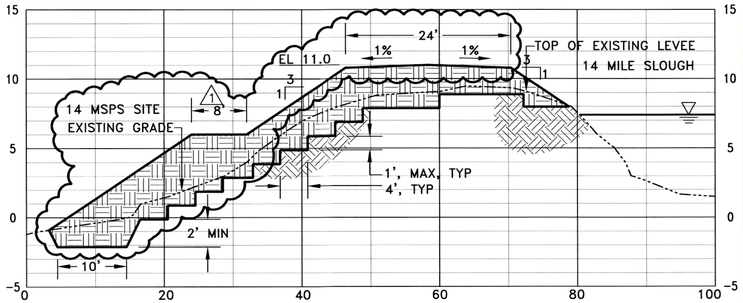
SECTION 4/C1

SCALE HORIZONTAL: 1"=10'
VERTICAL: 1"=5'



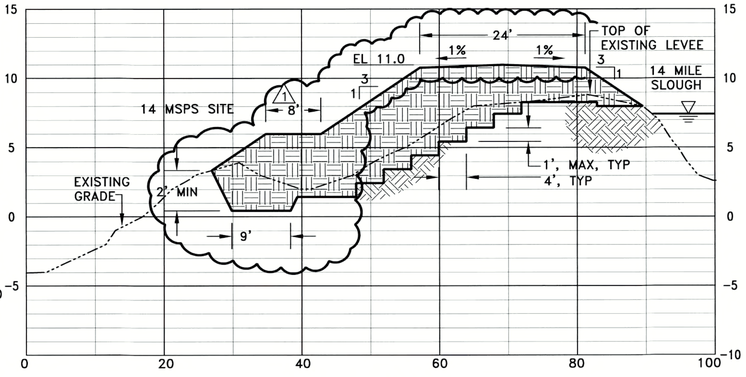
SECTION 7/C2

SCALE HORIZONTAL: 1"=10'
VERTICAL: 1"=5'



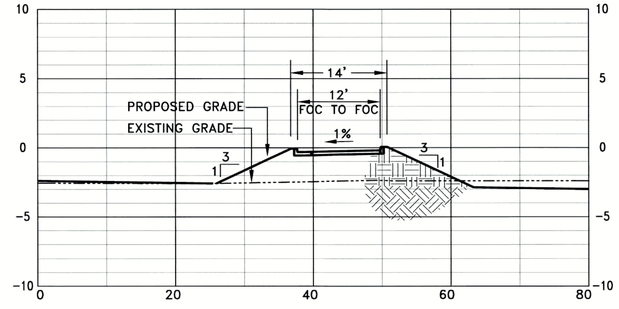
SECTION 2/C1

SCALE HORIZONTAL: 1"=10'
VERTICAL: 1"=5'



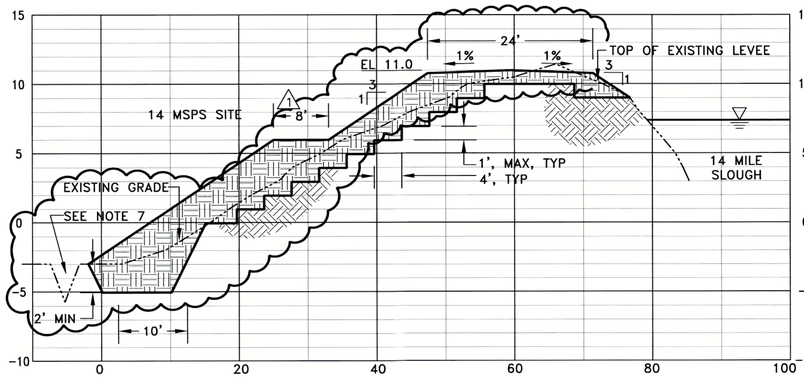
SECTION 5/C1

SCALE HORIZONTAL: 1"=10'
VERTICAL: 1"=5'



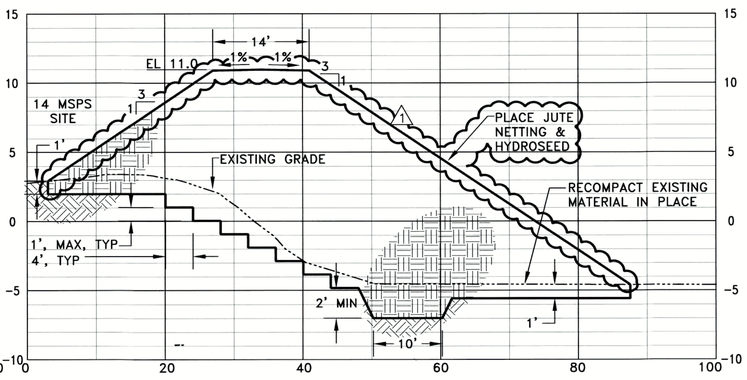
SECTION 8/C1

SCALE HORIZONTAL: 1"=10'
VERTICAL: 1"=5'



SECTION 3/C1

SCALE HORIZONTAL: 1"=10'
VERTICAL: 1"=5'



SECTION 6/C2

SCALE HORIZONTAL: 1"=10'
VERTICAL: 1"=5'

NOTES:

1. CONSTRUCTION ON SIDE SLOPE OF LEVEE SHALL CONSIST OF MINIMUM 4 FOOT HORIZONTAL AND MAXIMUM 1 FOOT DEEP BENCHES. BENCHING LIMITS MAY BE ALTERED IN THE FIELD WITH ENGINEER APPROVAL.
2. LEVEE CONSTRUCTION SHALL CONFORM TO SPECIAL PROVISIONS AND/OR SPECIFICATIONS
3. – NOT USED –
4. SEE A/C102 FOR TOP OF LEVEE DETAILS FOR SECTION 1–5&7
5. SEE B/C102 FOR TOP OF LEVEE DETAILS FOR SECTION 6
6. SEE C/C102 FOR TOP OF LEVEE DETAILS FOR SECTION 8
7. CUT AS NECESSARY TO MAINTAIN EXISTING DRAINAGE SWALE
8. EXISTING LEVEE HAS 6" GRAVEL ROAD. REMOVE GRAVEL PRIOR TO ADDING FILL. EXISTING GRAVEL MAY BE REUSED
9. NO WORK IS PERMITTED ON EXISTING LEVEE BETWEEN NOVEMBER 15 & APRIL 1

LEGEND:
100 YEAR HIGH WATER ELEVATION= 7.4 PER RD2119

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CIVIL SECTIONS 1

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DEPARTMENT OF MUNICIPAL UTILITIES
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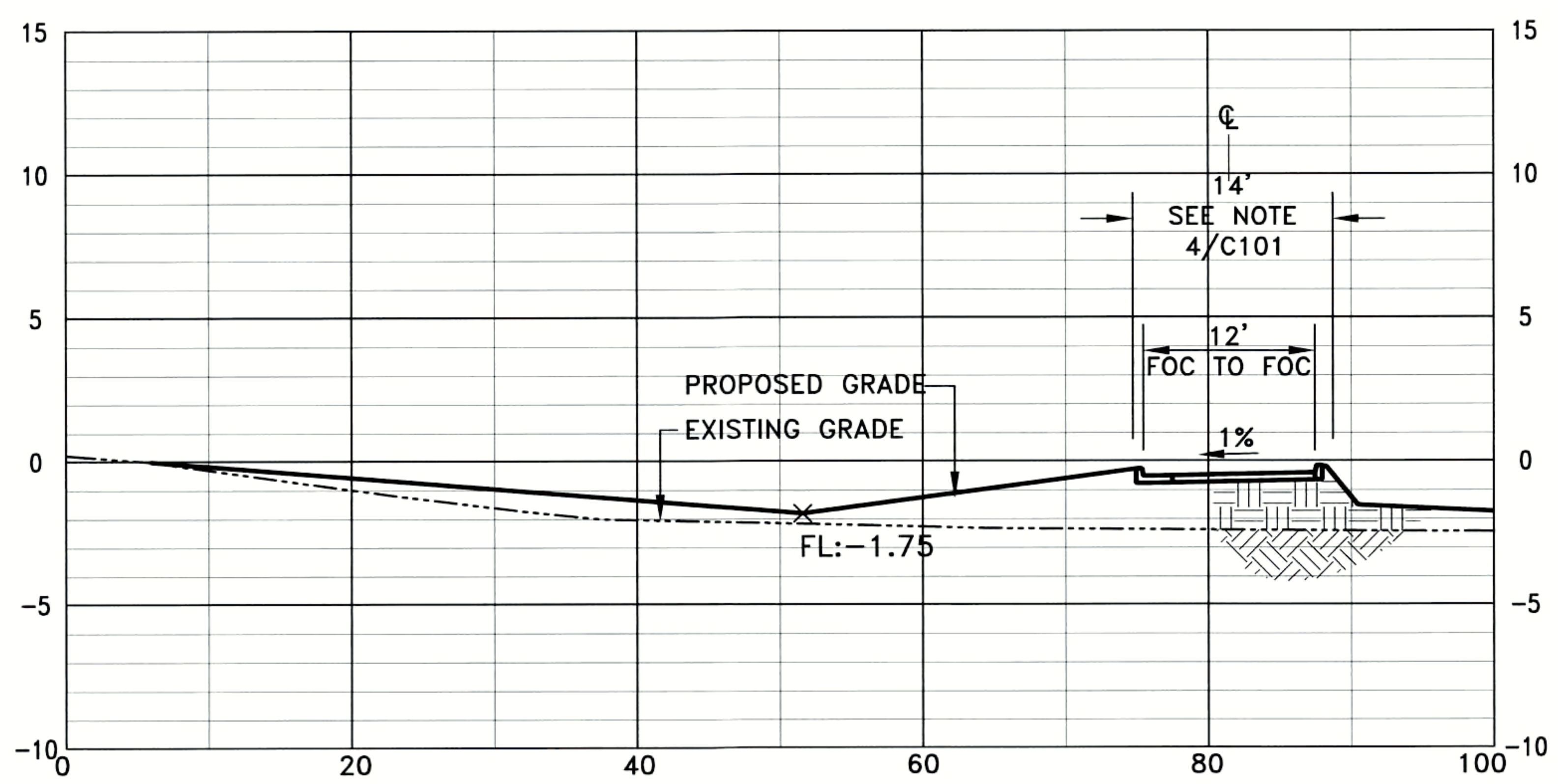
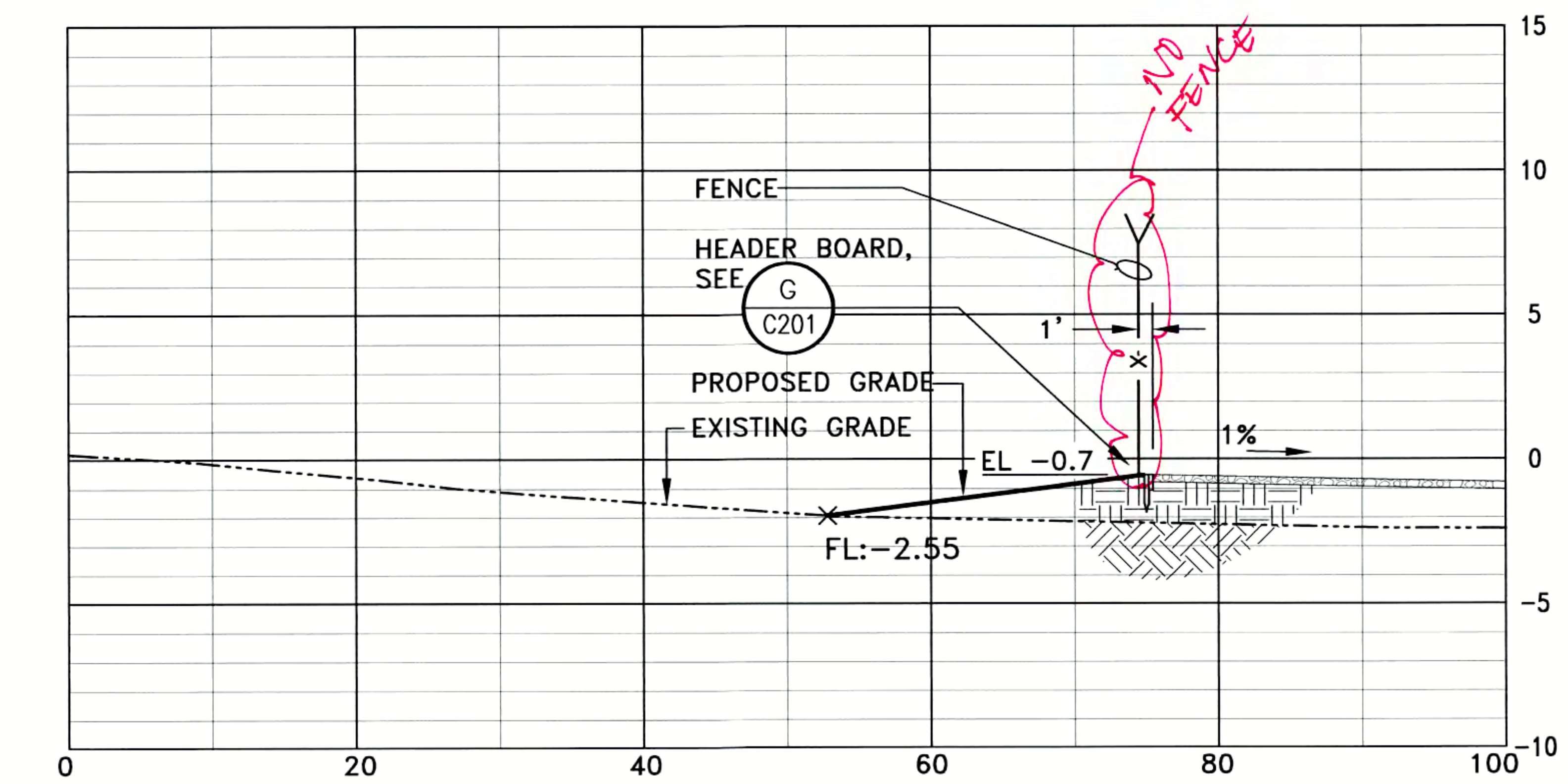


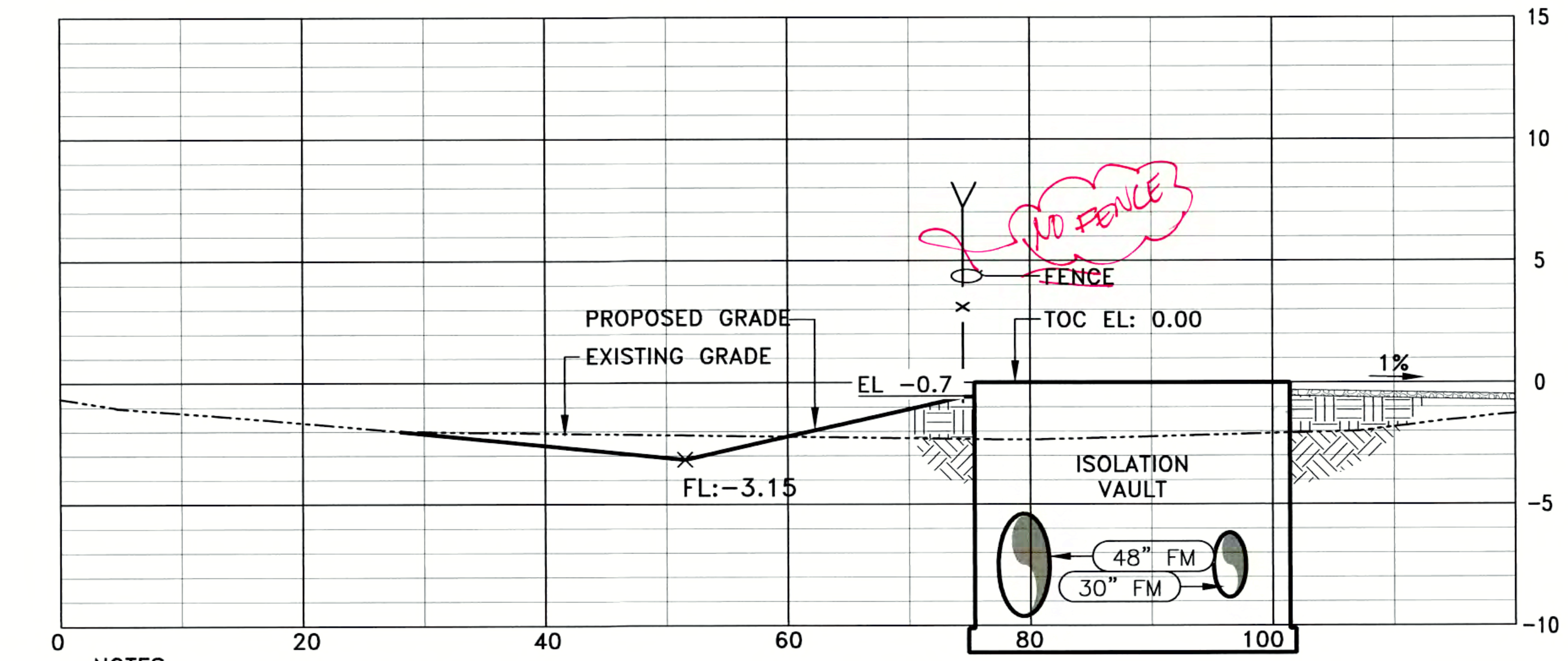
SECTION 9/C1

SCALE HORIZONTAL: 1"=10'
VERTICAL: 1"=5'



SECTION 10/C1

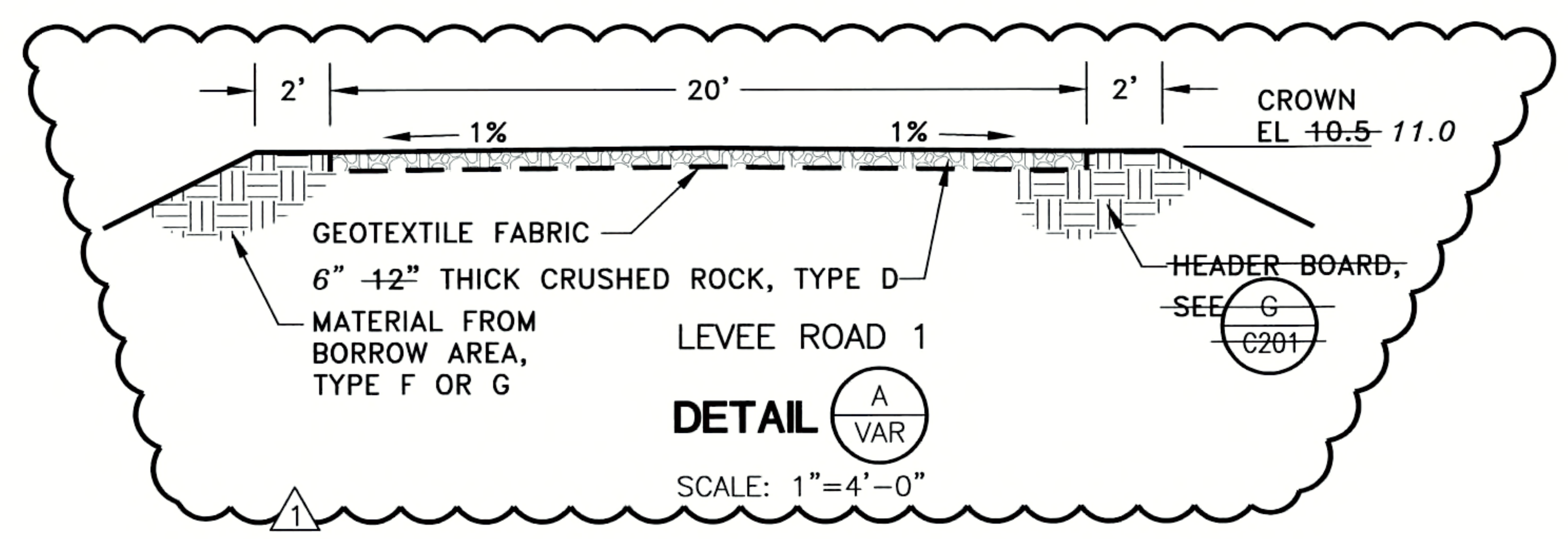
SCALE HORIZONTAL: 1"=10'
VERTICAL: 1"=5'



NOTES:
1. DETAIL A APPLIES TO SECTIONS 1-5, 7, SEE C101
2. DETAIL B APPLIES TO LEVEE ROAD STA 10+00 TO STA 17+90

SECTION 11/C1

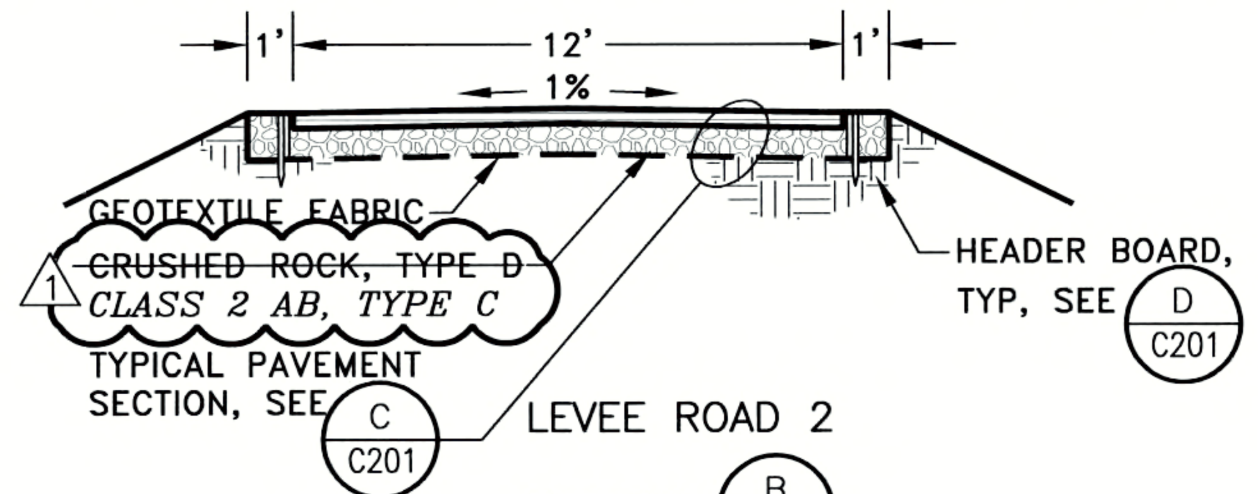
SCALE HORIZONTAL: 1"=10'
VERTICAL: 1"=5'



LEVEE ROAD 1

DETAIL A/VAR

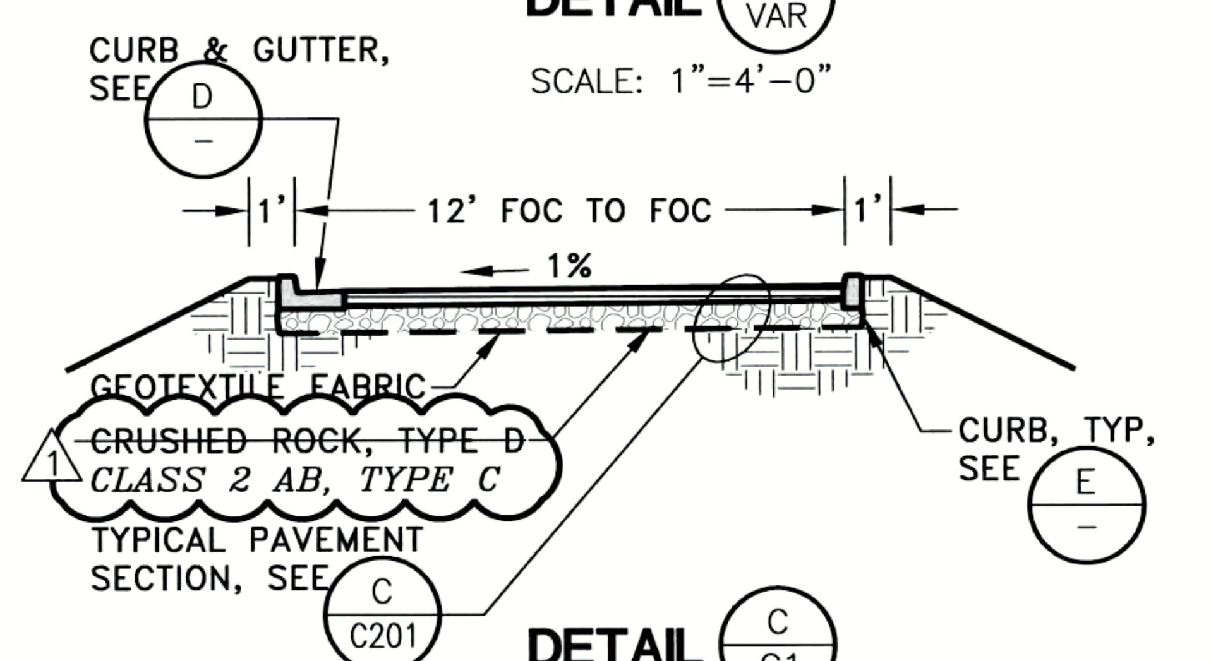
SCALE: 1"=4'-0"



LEVEE ROAD 2

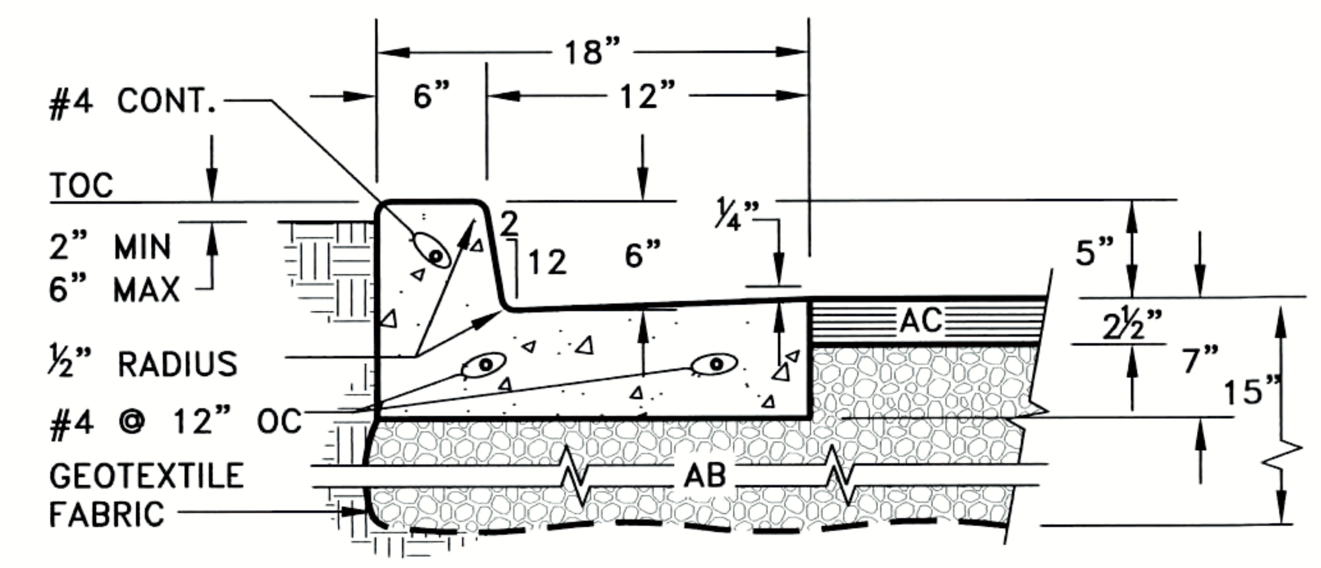
DETAIL B/VAR

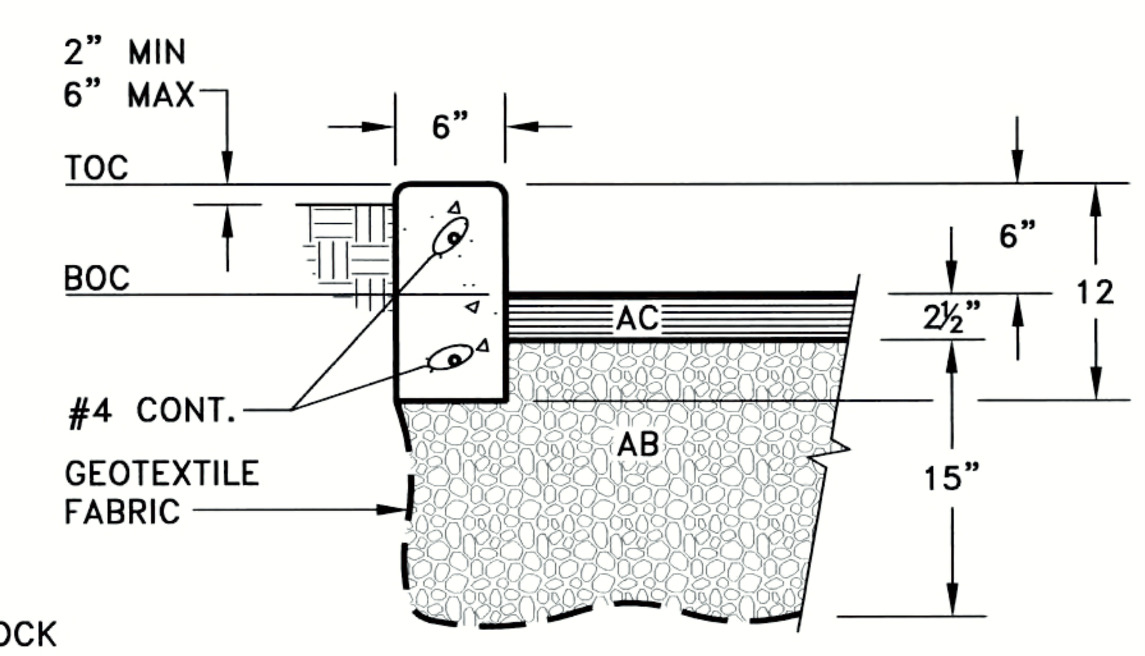
SCALE: 1"=4'-0"



DETAIL C/C1

SCALE: 1"=4'-0"





NOTES:
1. BOTTOM OF CURB TO BE SET ON COMPACTED AGGREGATE BASE ROCK
2. BROOM FINISH ALL EXPOSED CONCRETE SURFACES
3. PROVIDE ½" EXPANSION JOINTS @ 25'-0" OC MAX. AND AT CURVES, TANGENTS, AND CORNERS
4. CONTINUE RE-BAR THROUGH EXPANSION JOINTS
5. ROUND EXPOSED CORNERS WITH ½" RADIUS TOOL

CURB & GUTTER

DETAIL D/VAR

NTS

CURB

DETAIL E/VAR

NTS

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1	ADDENDUM No. 3	5/25/06	TTT	PDF
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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CIVIL SECTIONS 2

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CITY OF STOCKTON, CALIFORNIA

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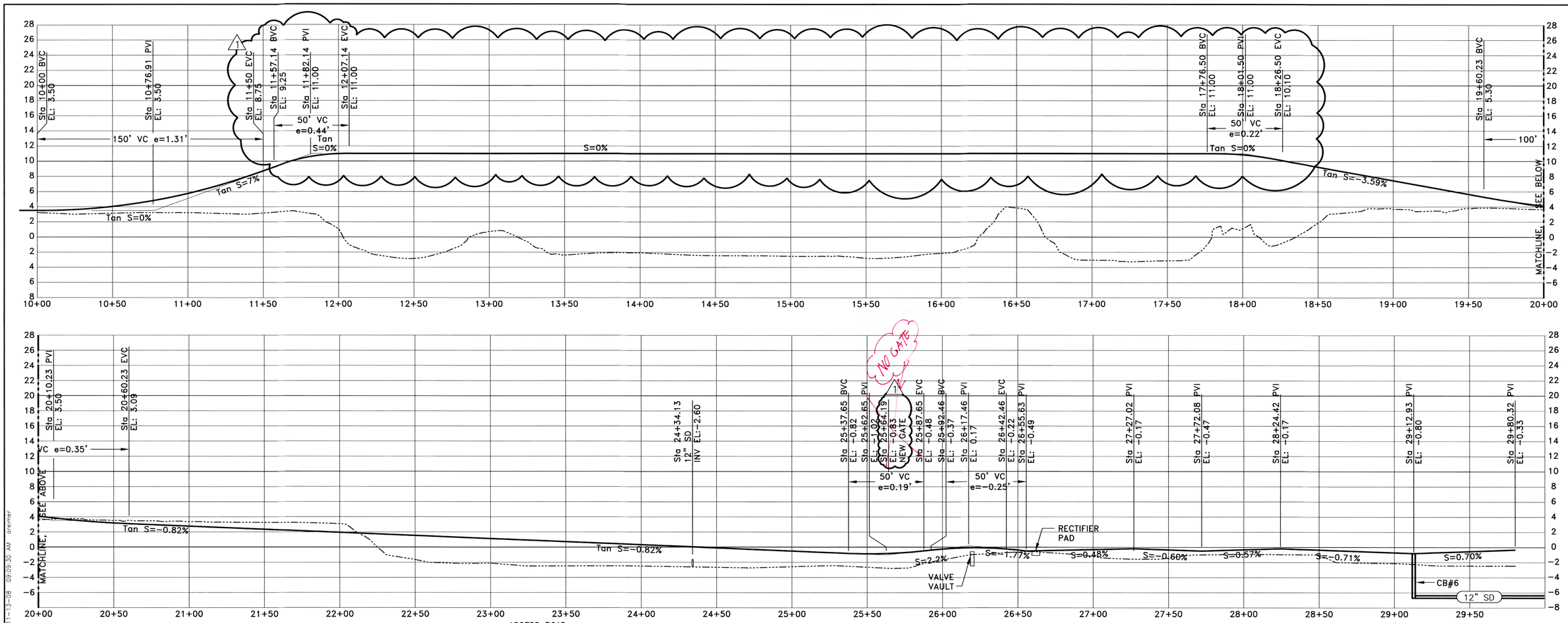
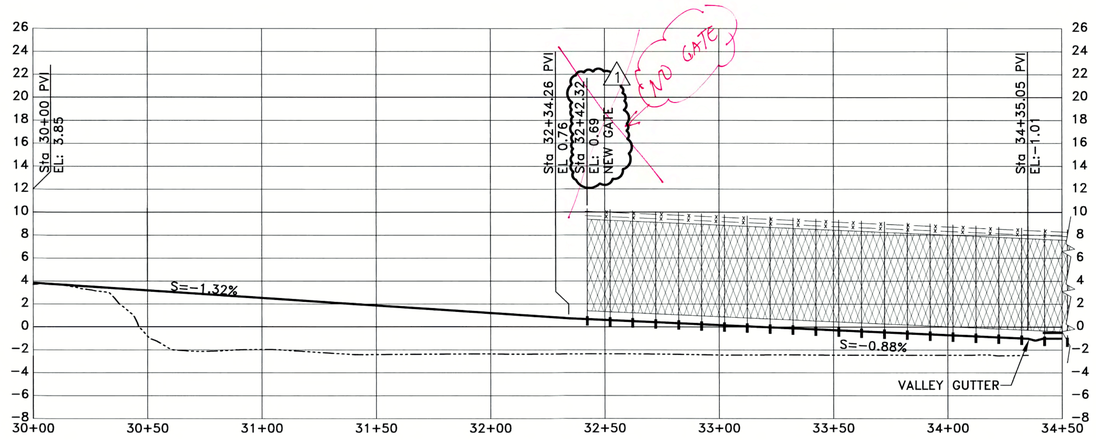


ACCESS ROAD

SECTION 1 / C1

SCALE HORIZONTAL: 1"=30'
VERTICAL: 1"=6'



ACCESS ROAD TURN-OUT

SECTION 2 / C1

SCALE HORIZONTAL: 1"=30'
VERTICAL: 1"=6'

Underground Service Alert

TWO DAYS BEFORE YOU DIG

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REFER TO BID SET FOR SIGNATURE

REGISTERED PROFESSIONAL ENGINEER — TIMOTHY T. ADASHI — No. C66147 — STATE OF CALIFORNIA

REV. No.	DISCRIPTION	DATE	BY	Aprv'd By
1	RFI 020-ADJUST ROAD ELEVATION	10/06	TTT	PDF
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14-Mile Slough Pump Station Upgrades

ACCESS ROAD PROFILE

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DESIGNED BY: TTT		C103.1
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CHECKED BY: GDH/PDF	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01
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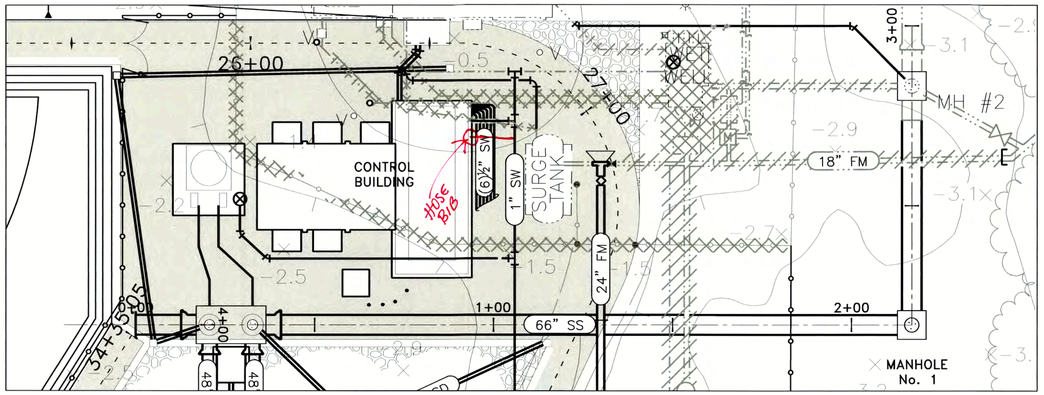
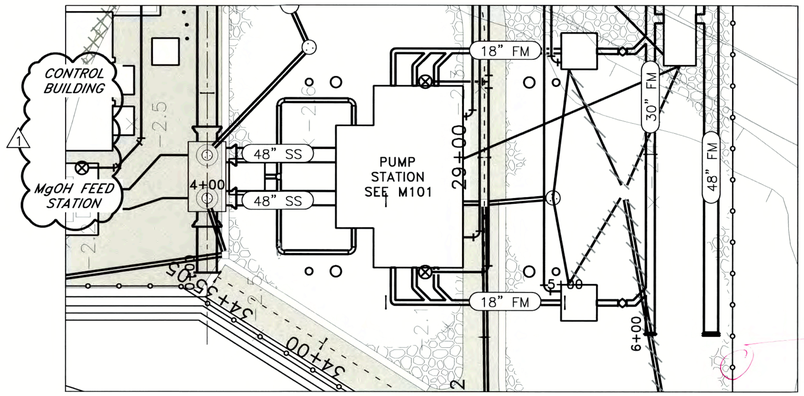


66" FM

PLAN

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=4'



48" SS

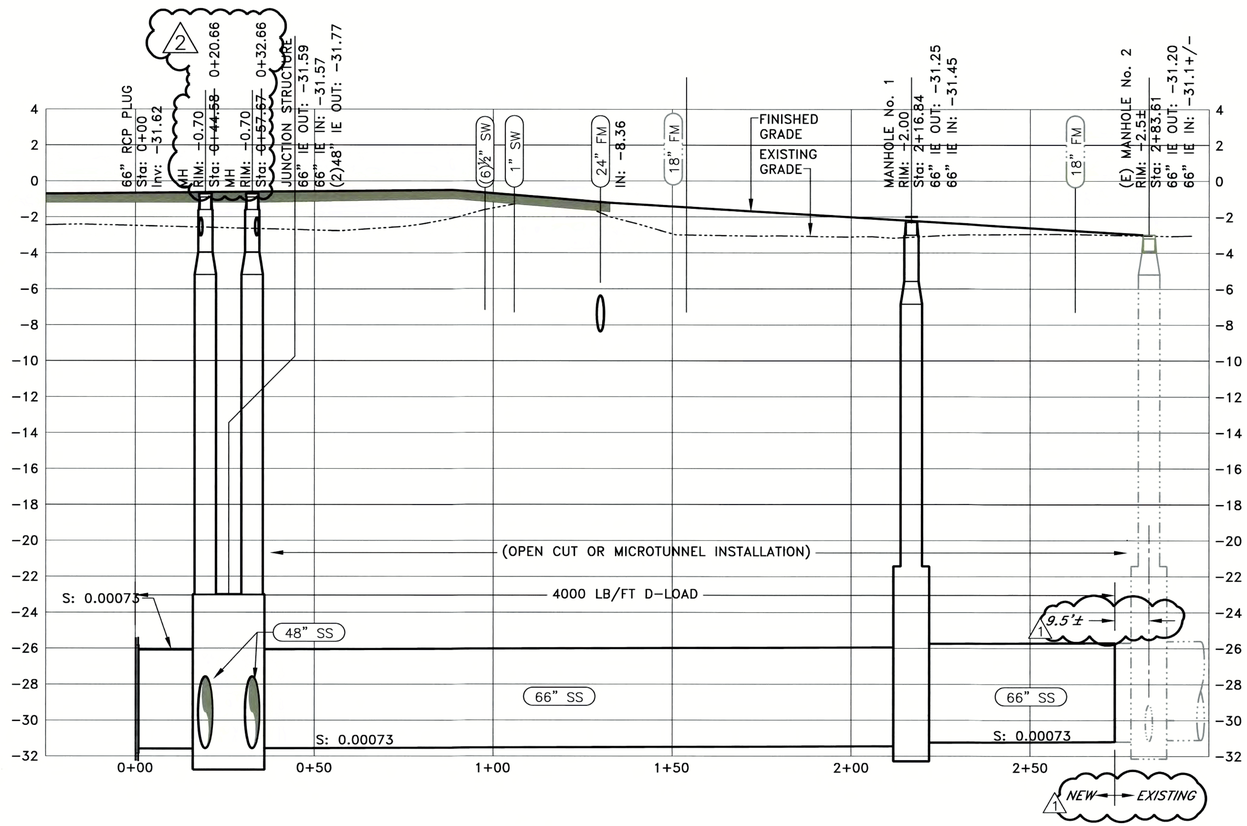
PLAN

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=4'

18" HEADER

PLAN

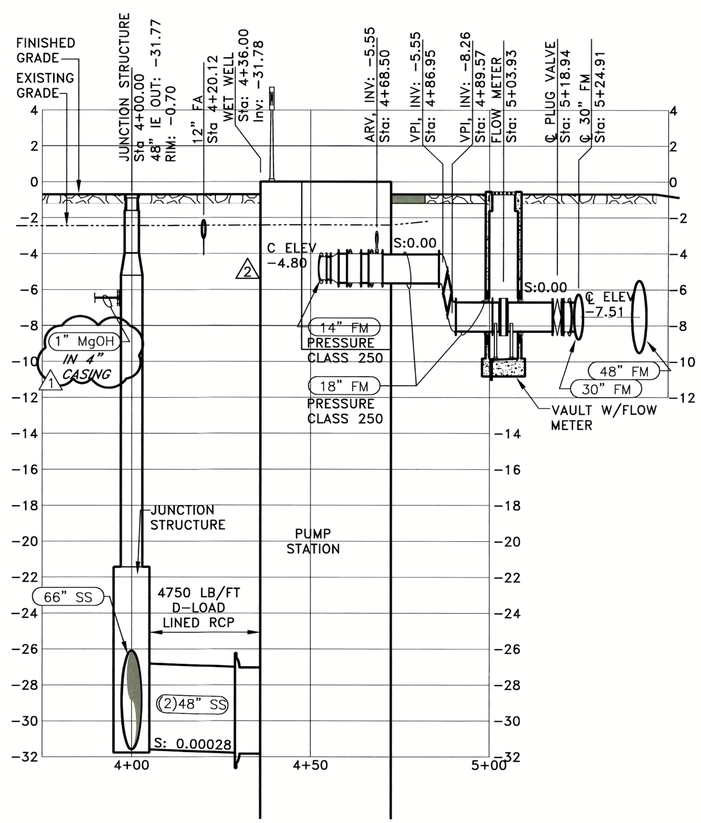
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=4'



66" FM

PROFILE

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=4'



48" SS

PROFILE

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=4'

18" FM HEADER

PROFILE

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=4'

N:\Clients\293 Sponos\00-05-01 14-MSPS Upgrades\CAD\Design\Asbuilts\293-05001C1044&105.dwg 11-13-08 09:25:59 AM dreimer

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CIVIL PLAN & PROFILES 1

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: AS SHOWN	APPROVED BY: DATE:	SHEET No. C104 of 89 SHEETS
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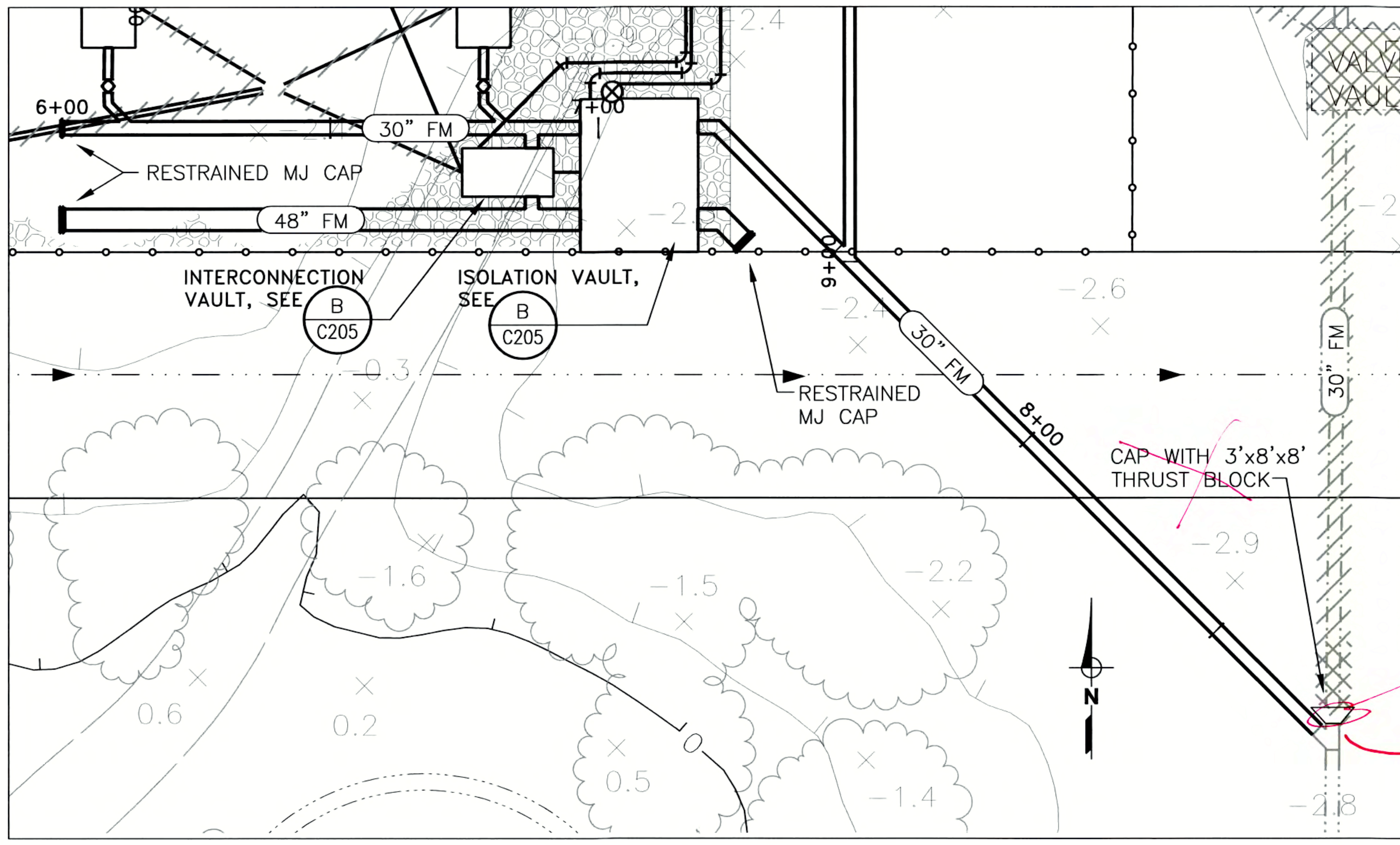
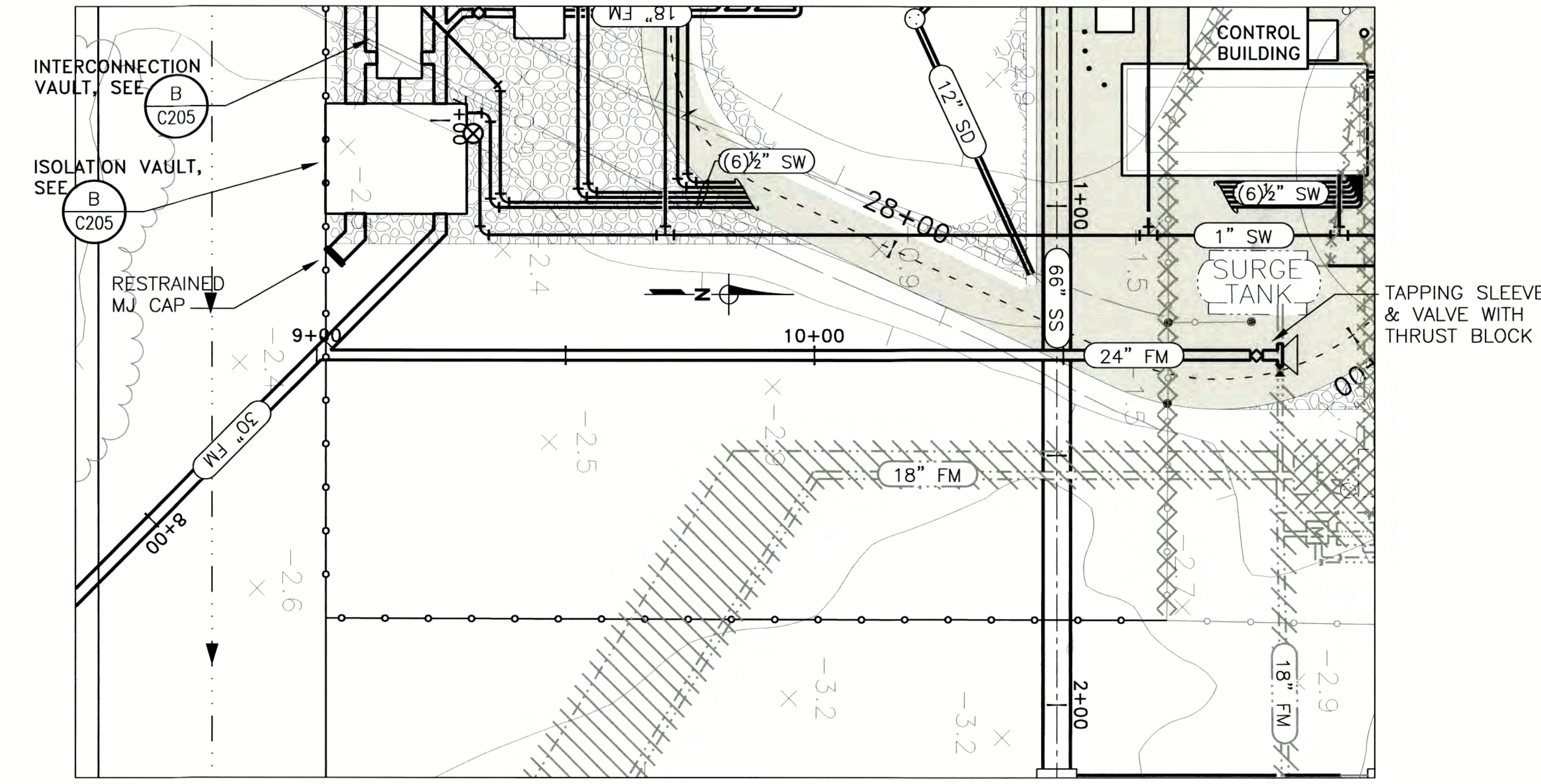


30" FM

PLAN

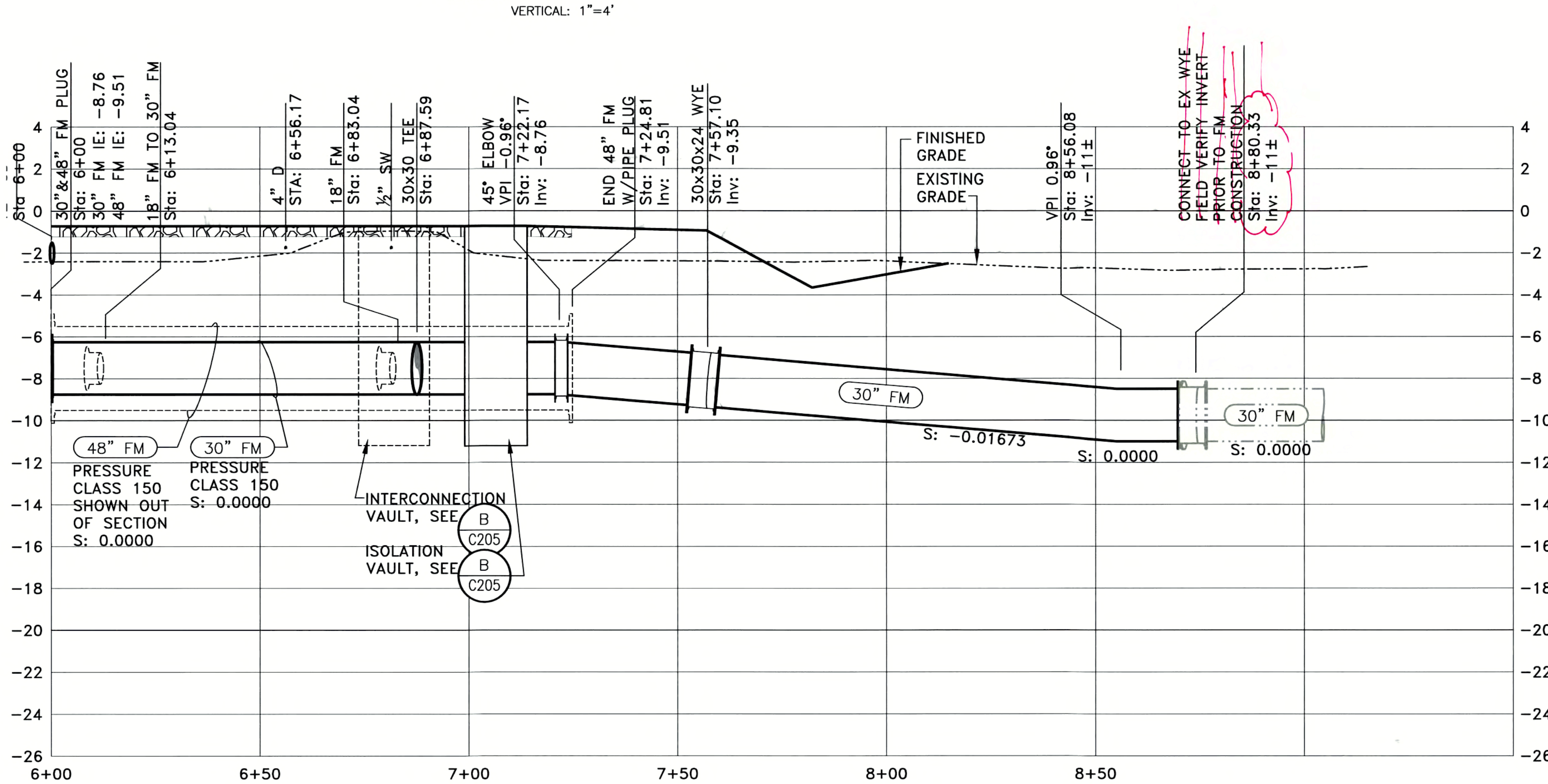
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=4'



24" FM

PLAN

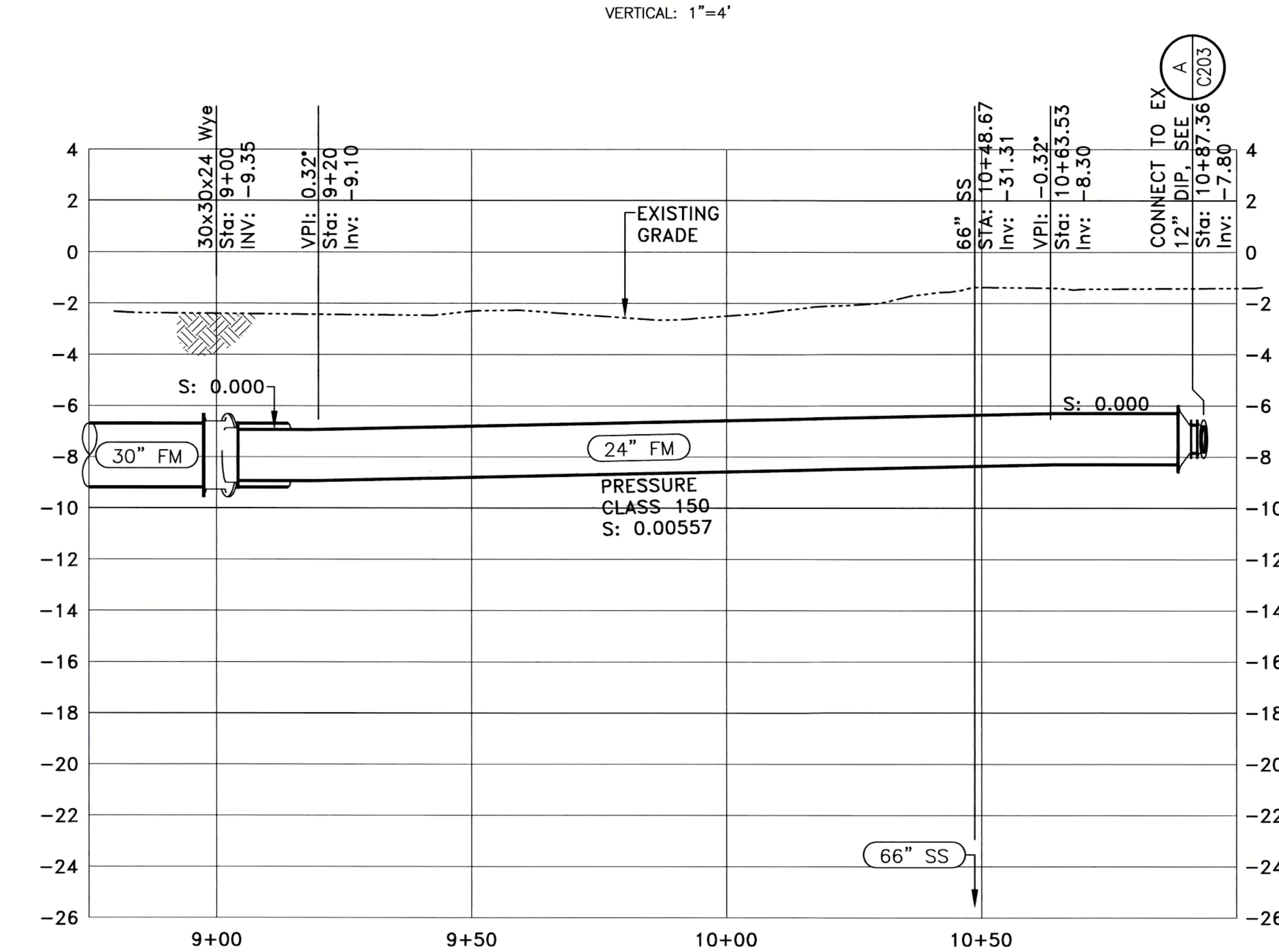
SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=4'



30" FM

PROFILE

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=4'



24" FM

PROFILE

SCALE HORIZONTAL: 1"=20'
VERTICAL: 1"=4'

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CIVIL PLAN & PROFILES 2

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CITY OF STOCKTON, CALIFORNIA

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APPROVED BY: DATE:
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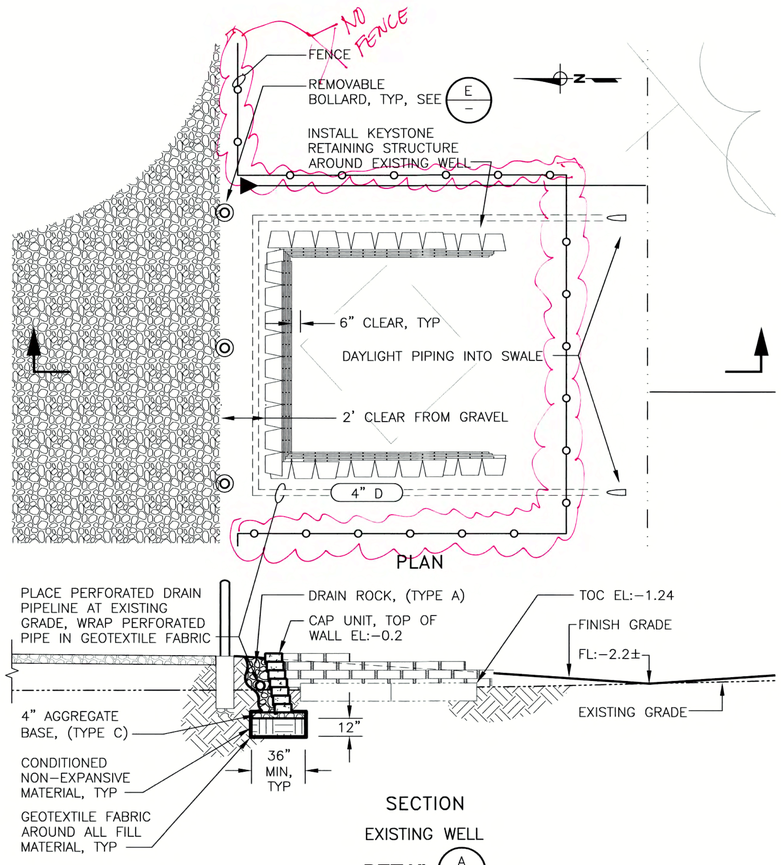
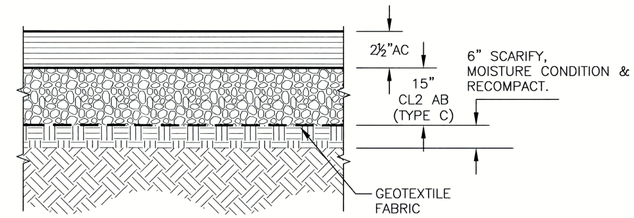
SHEET No. C105
of 89 SHEETS
PROJECT No. 293-00-05-01



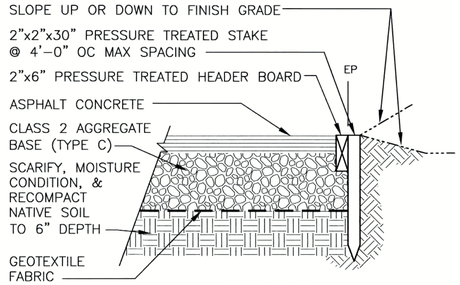


NOTE:
ALL PAVEMENT SHALL BE PLACED PER THIS DETAIL UNO

STANDARD PAVEMENT

DETAIL C / C7

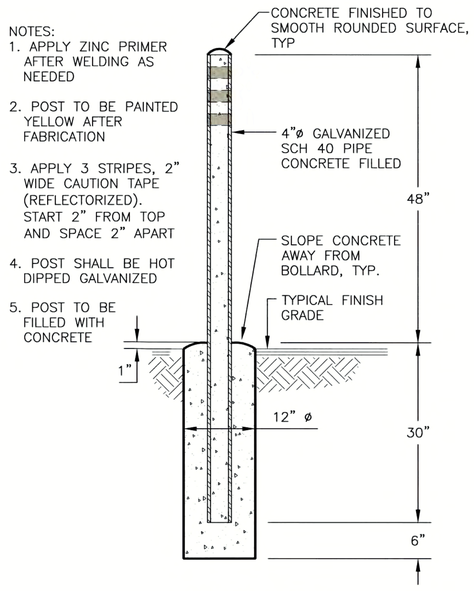
NOT TO SCALE



HEADER BOARD

DETAIL D / C7

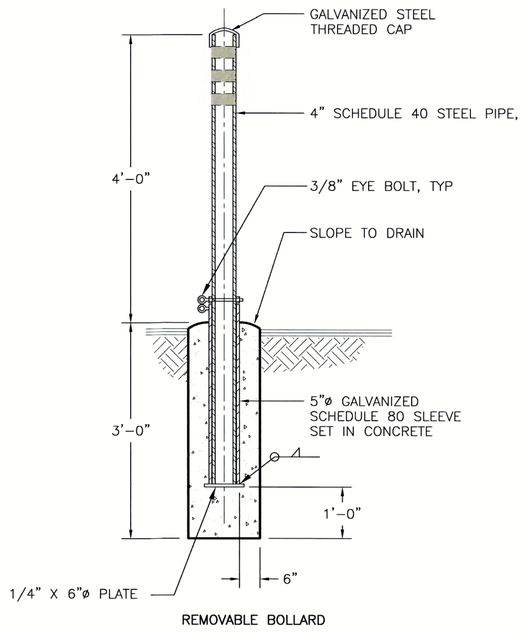
NOT TO SCALE



PERMANENT BOLLARD

DETAIL E / C7

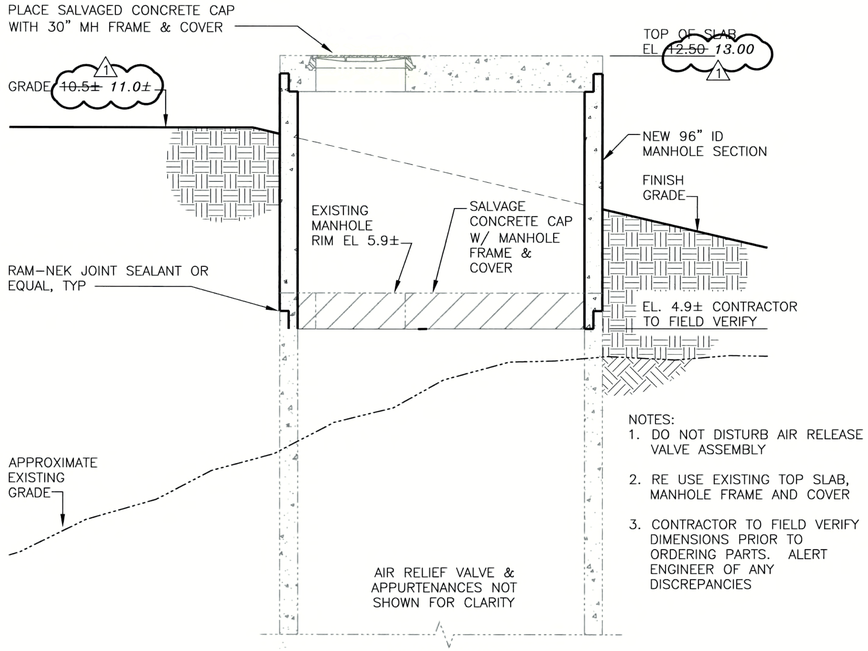
NOT TO SCALE



REMOVABLE BOLLARD

DETAIL B / C1 & C7

NOT TO SCALE

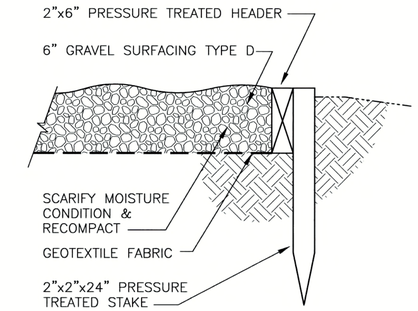


NOTES:
1. DO NOT DISTURB AIR RELEASE VALVE ASSEMBLY
2. RE USE EXISTING TOP SLAB, MANHOLE FRAME AND COVER
3. CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO ORDERING PARTS. ALERT ENGINEER OF ANY DISCREPANCIES

AIR RELEASE VALVE

DETAIL F / C8

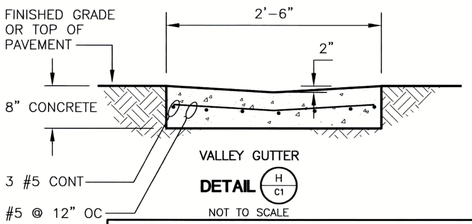
SCALE: 1/2"=1'-0"



GRAVEL SURFACING & HEADER BOARD

DETAIL G / VARIES

NOT TO SCALE



VALLEY GUTTER

DETAIL H / C1

NOT TO SCALE

Underground Service Alert

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REGISTERED PROFESSIONAL ENGINEER — No. C66147 — CIVIL — STATE OF CALIFORNIA

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1	ADDENDUM No. 3	5/25/06	TTT	PDF
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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CIVIL DETAILS 1

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: AS SHOWN	APPROVED BY: DATE:	SHEET No.	C201
DESIGNED BY: TTT			19 of 89 SHEETS
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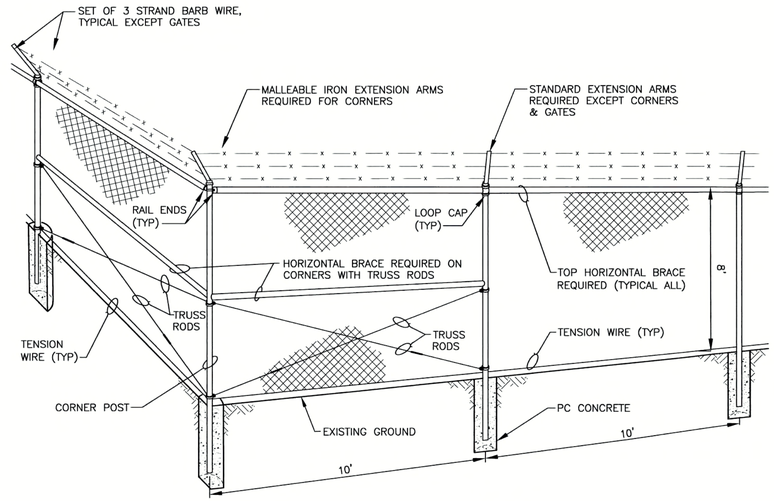


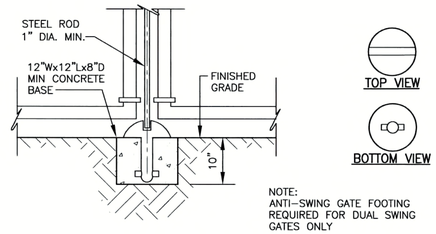
CORNER

DETAIL A / C1

NOT TO SCALE

NOTES:

1. GATE POST SIZE SHALL BE 5"ø
2. LINE POST SIZE SHALL BE 2"ø
3. END, LATCH AND CORNER POST SIZE SHALL BE 2.5"ø
4. HORIZONTAL BRACE AND TOP RAIL SIZE SHALL BE 1¼"ø
5. GATE KEEPERS ARE REQUIRED SEE SPECIFICATIONS
6. TOP RAIL SHALL BE 1¼"ø

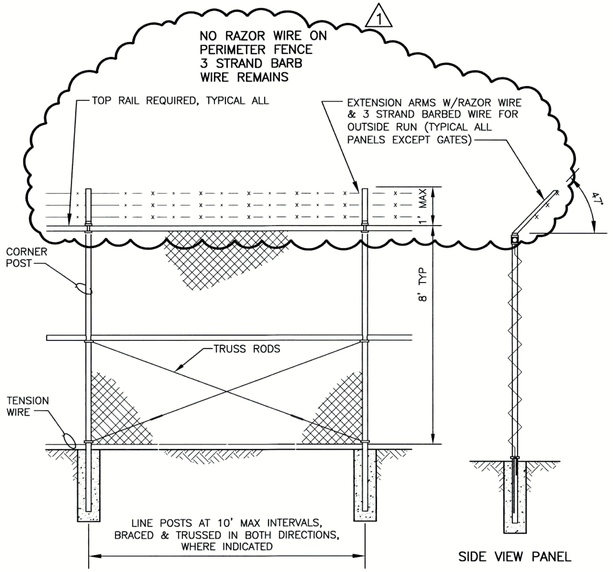


NOTE:
ANTI-SWING GATE FOOTING REQUIRED FOR DUAL SWING GATES ONLY

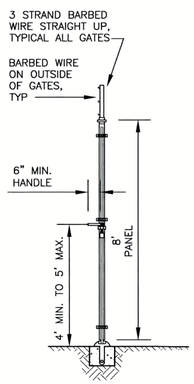
GATE ANTI-SWING FOOTING

DETAIL B / –

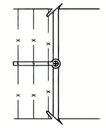
NOT TO SCALE



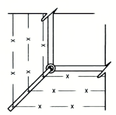
SIDE VIEW PANEL



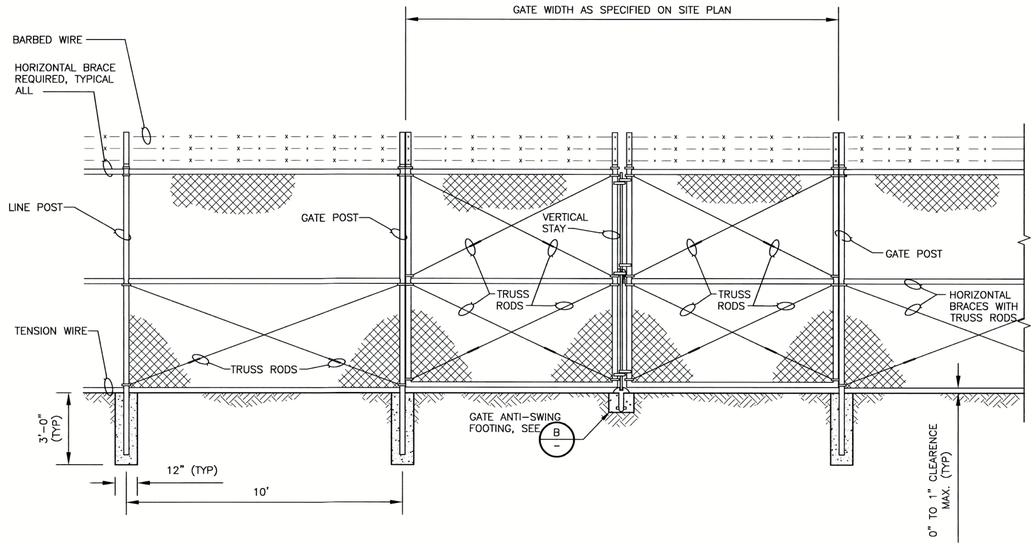
SIDE VIEW GATE



BARB WIRE TOP VIEW PANEL



BARB WIRE TOP VIEW CORNER



CHAINLINK FENCE

DETAIL C / C1

NOT TO SCALE

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REGISTERED PROFESSIONAL ENGINEER — TYRONE T. TADASHI — No. C66147 — CIVIL — STATE OF CALIFORNIA

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CIVIL DETAILS 2

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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DRAWN BY: DTD		20 of 89 SHEETS	
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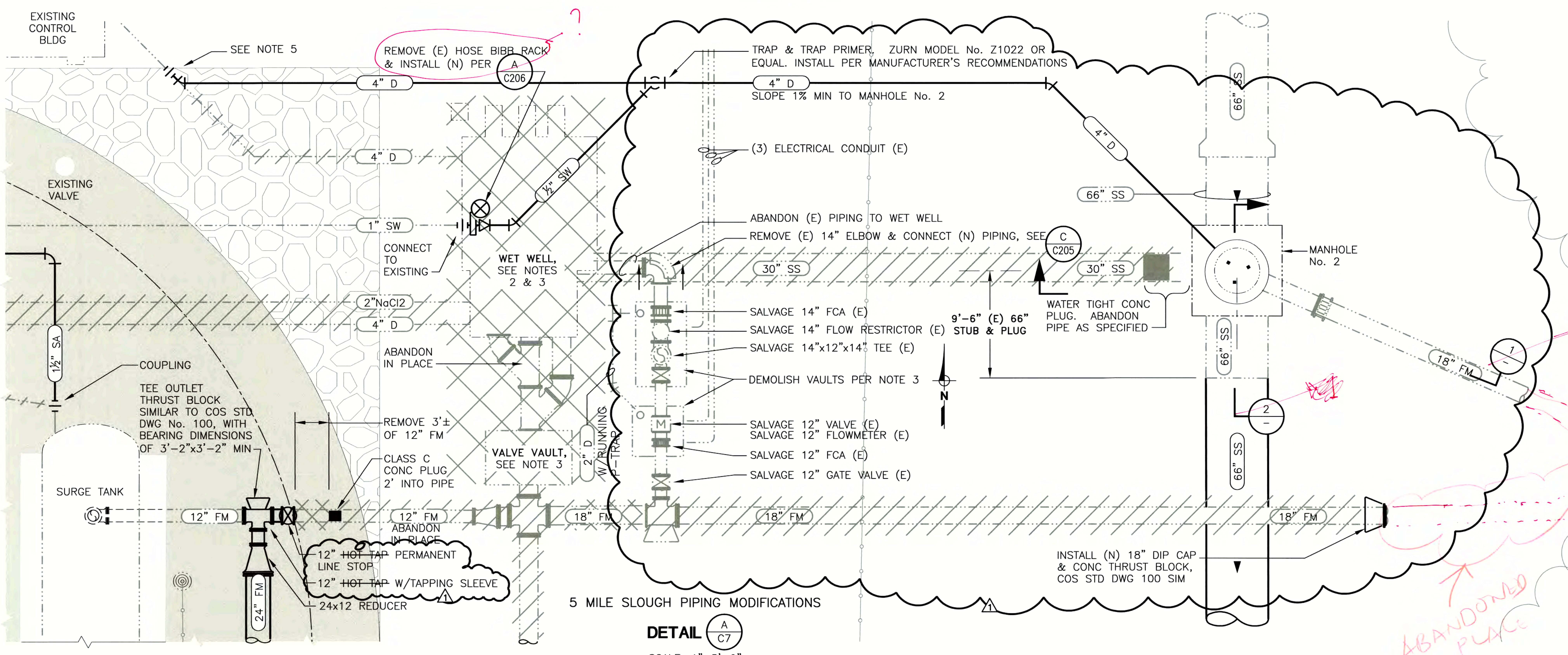


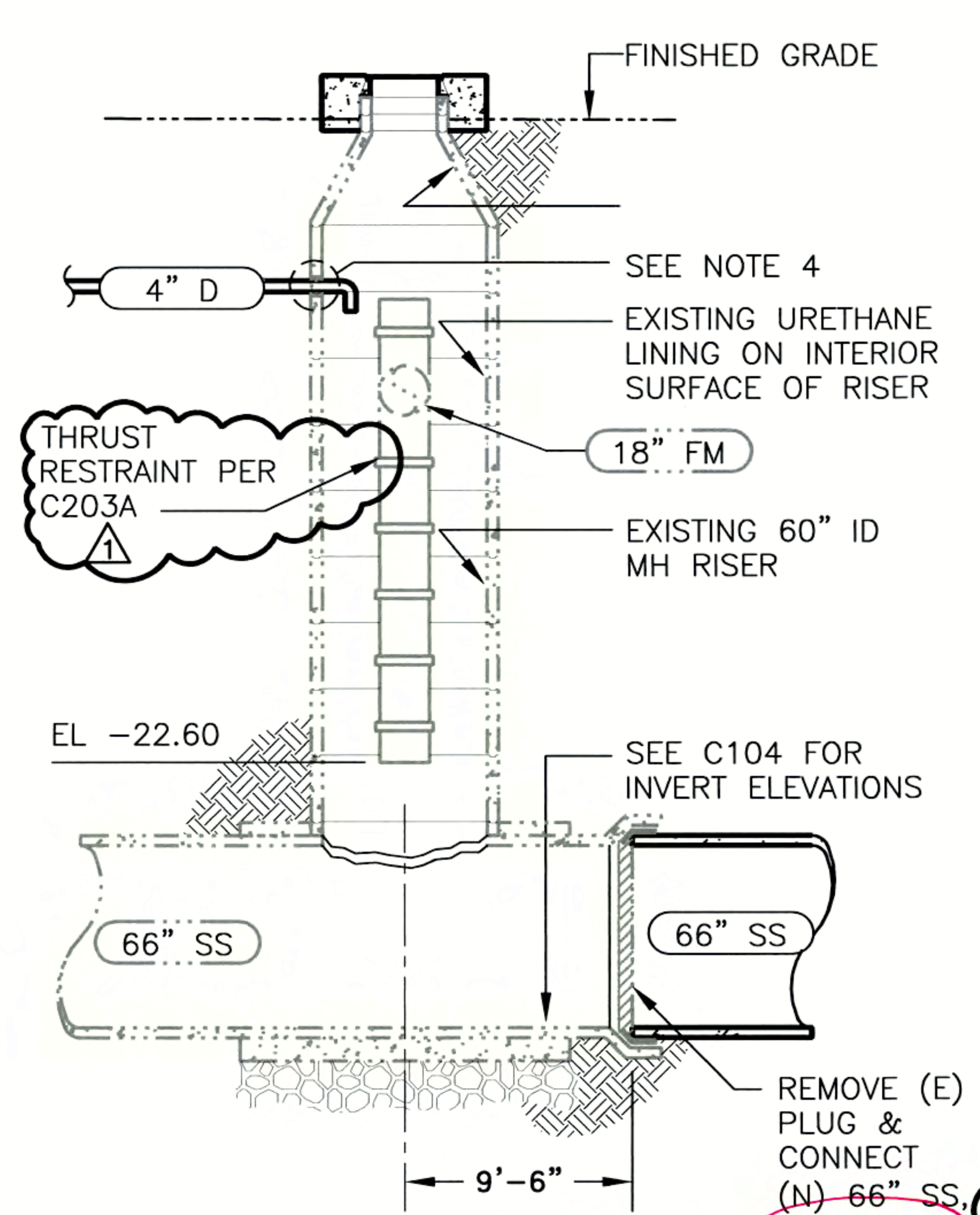
5 MILE SLOUGH PIPING MODIFICATIONS

DETAIL A/C7

SCALE: 1"=5'-0"

NOTES:

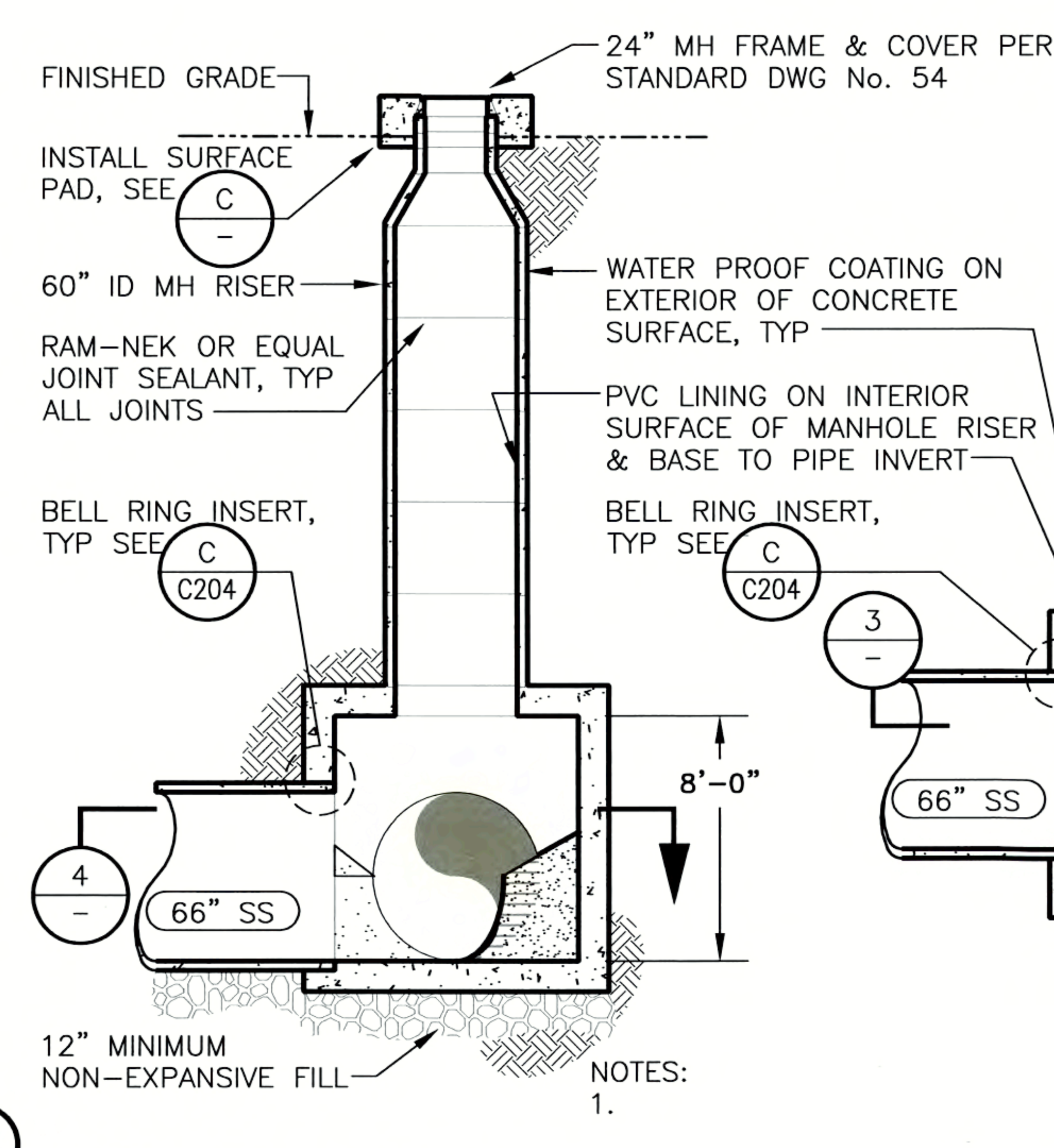
1. PRECAST MANHOLE SECTIONS SHALL CONFORM TO ASTM C478 AND SPECIFICATIONS, EXCEPT WHERE OTHERWISE NOTED. ALL PRECAST SECTIONS SHALL BE GASKETED AND GROUTED AS NOTED
2. REMOVE AND SALVAGE EXISTING 50HP PUMPS
3. DEMOLISH WET WELL & VALVE VAULT TO 3' BELOW FINISH GRADE. SALVAGE VALVES
4. EXISTING MANHOLE IS COATED WITH URETHANE. COAT GROUT PACKING WITH 5 MILS TNEMEC SERIES 66 PRIMER, 5 MILS TNEMEC 1074 TOP COAT. CLEAN EXISTING COATING WITH M.E.K. AND WIRE BRUSH ROUGHEN PRIOR TO COATING REPAIR
5. CONNECT TO EXISTING PIPE USING FERNCO COUPLING



MANHOLE No. 2

SECTION 1/–

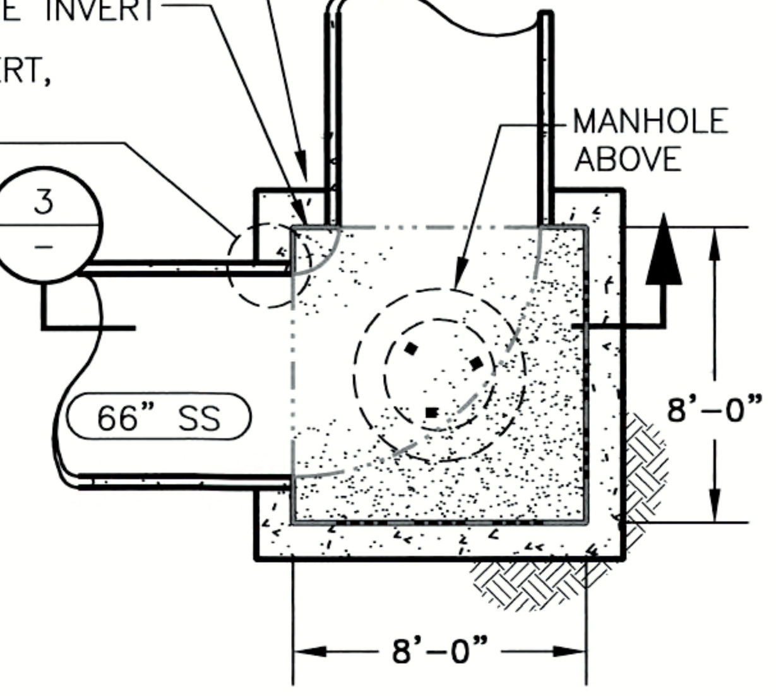
SCALE: 1"=5'



MANHOLE No. 1

SECTION 3/–

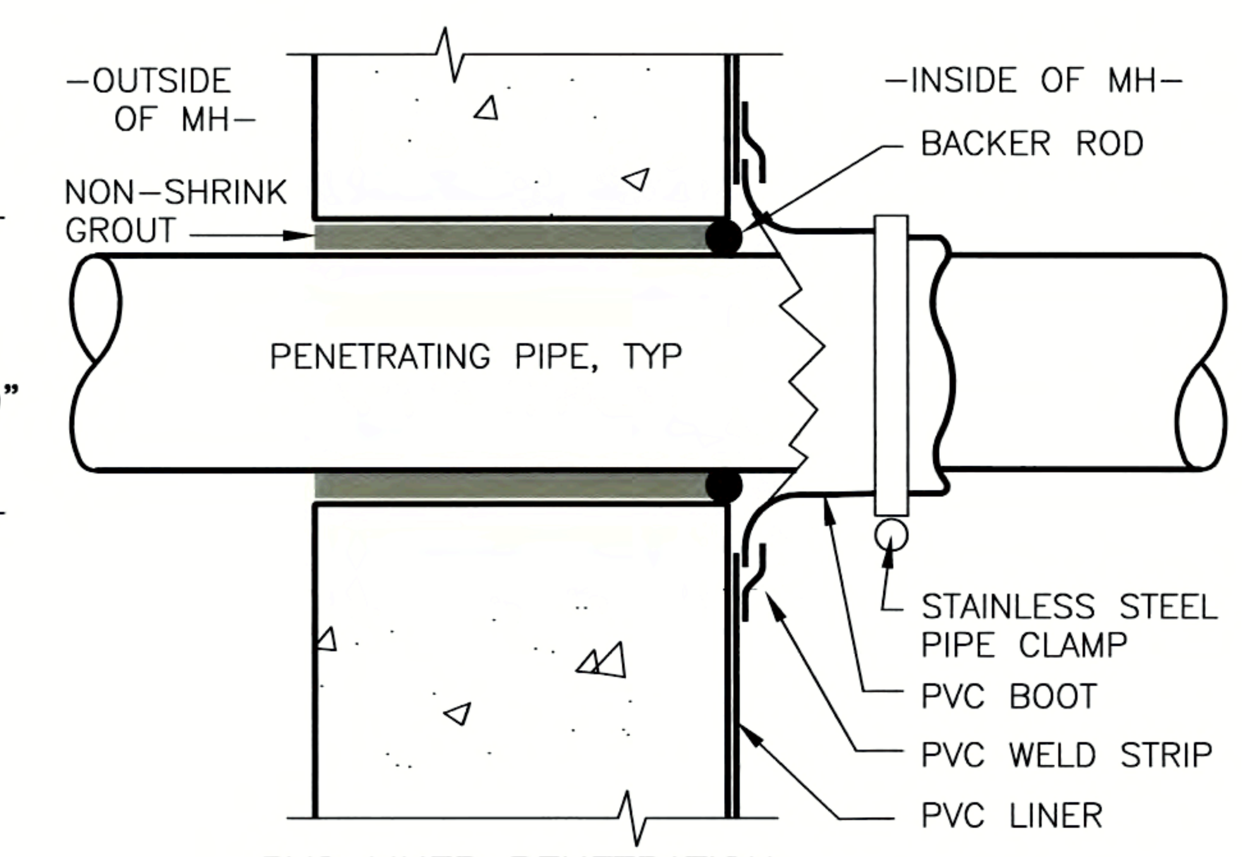
SCALE: 1"=5'



MANHOLE No. 1

SECTION 4/–

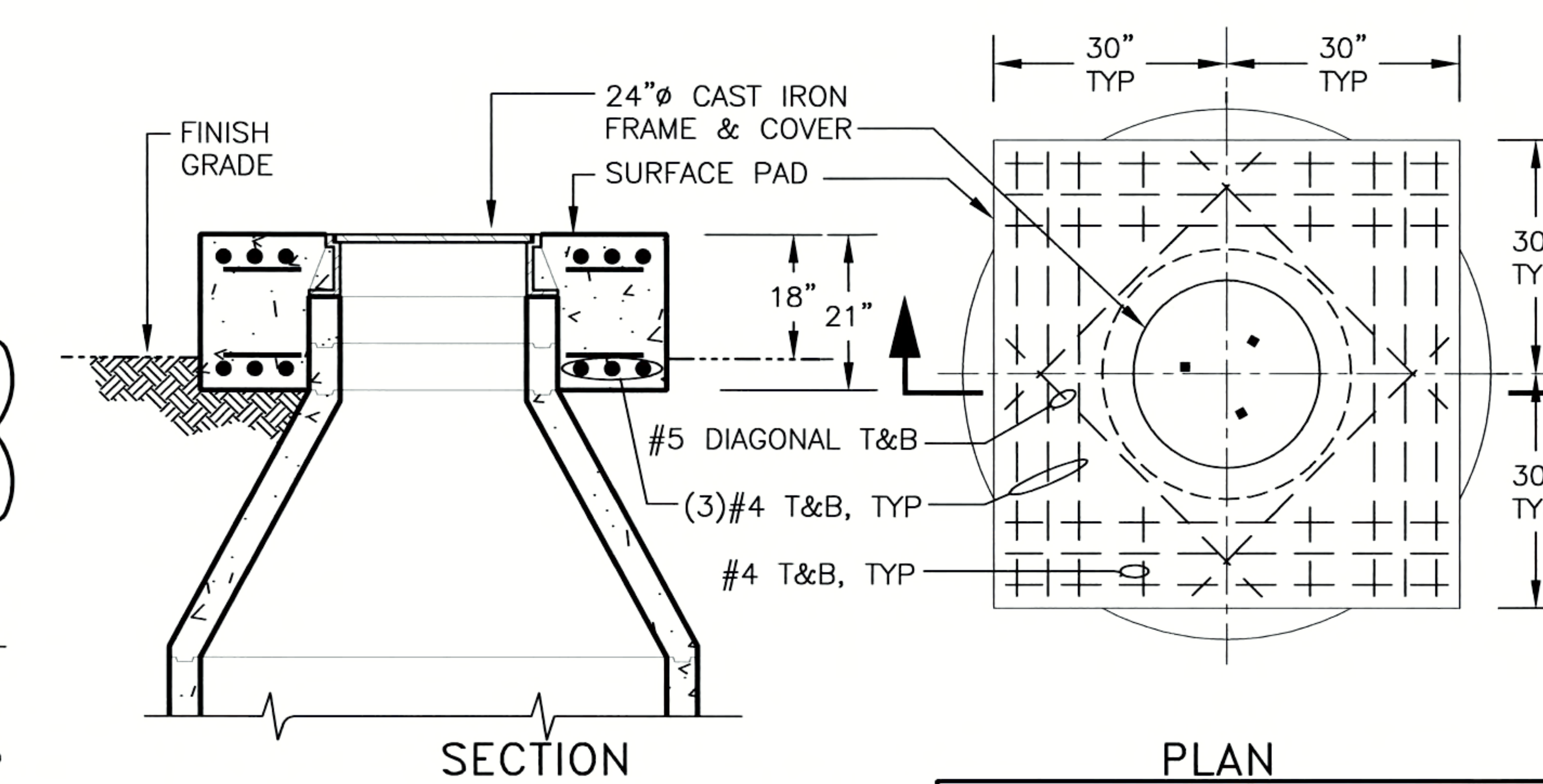
SCALE: 1"=5'



PVC LINER PENETRATION

DETAIL B/VAR

SCALE: NTS



SURFACE PAD

DETAIL C/–

NOT TO SCALE

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CIVIL DETAILS 3

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DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES

SHEET No. C203
21 of 89 SHEETS
PROJECT No. 293-00-05-01

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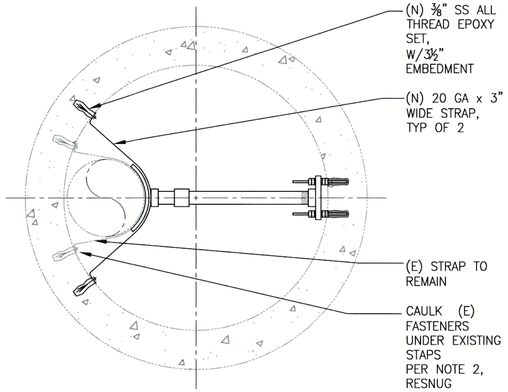
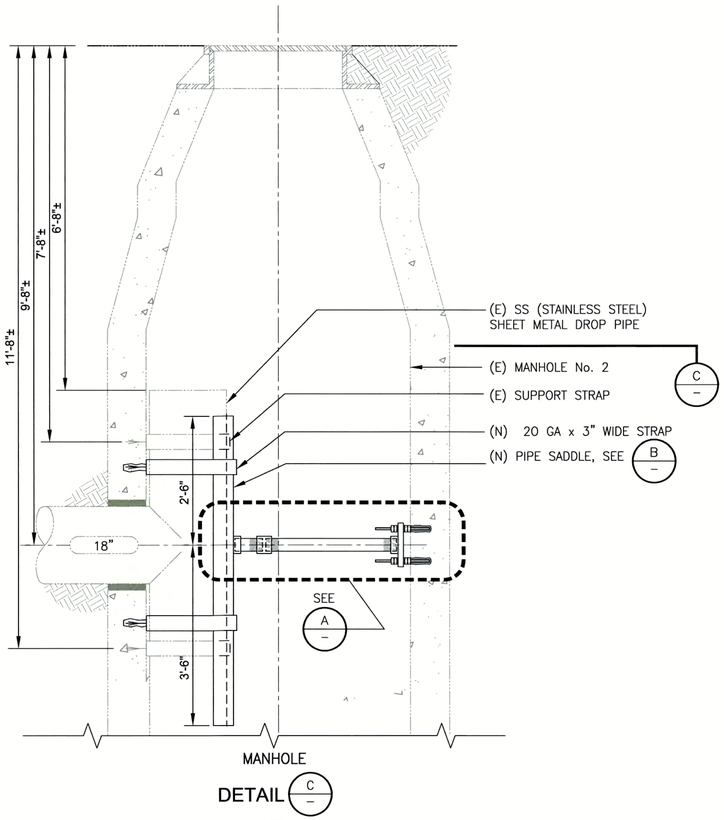




MANHOLE

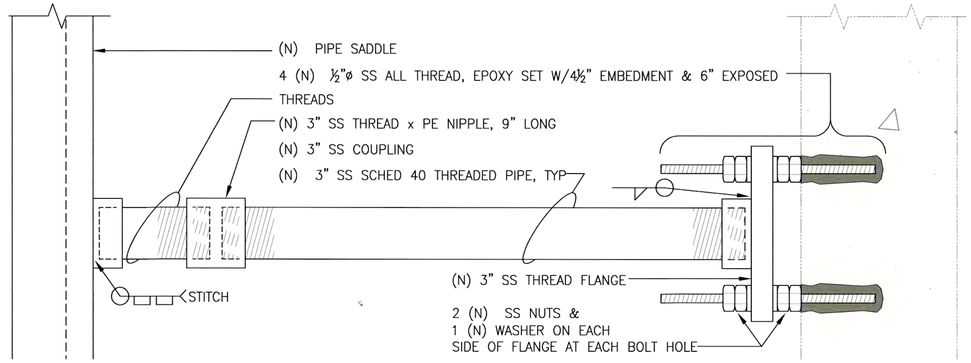
DETAIL C –

NTS

PIPE SADDLE

DETAIL B –

NTS



DETAIL A –

SCALE: NTS

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Underground Service Alert

TWO DAYS BEFORE YOU DIG

Call TOLL FREE: 1-800-642-2444

NOTES:
1. SET THREADED ROD WITH EPCON A7 ACRYLIC ADHESIVE.
2. SEAL EXPOSED EPOXY SURFACE WITH SIKA FLEX 1A SEALANT.
3. SUGGESTED ASSEMBLY SEQUENCE:
   A. SET PIPE BRACE ASSEMBLY SNUG TO EXISTING DROP PIPE WITH FLANGE AS CLOSE TO MANHOLE WALL AS POSSIBLE
   B. EXTEND NIPPLE FROM COUPLING ±¼ TURN
   C. EXTEND LOWER FLANGE NUTS ±¼ TURN
   D. SET LOCKING NUTS SNUG TO FLANGE NUTS
4. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATING PIPE BRACE ASSEMBLY

REFER TO BID SET

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RECORD DRAWINGS

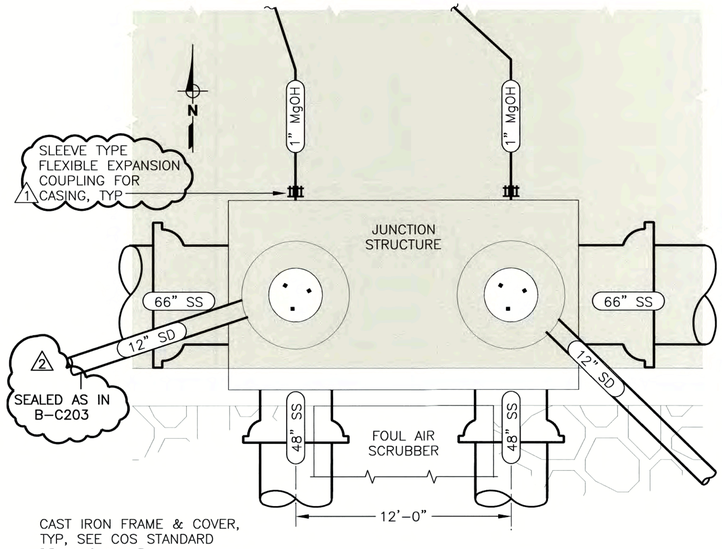
14-Mile Slough Pump Station Upgrades

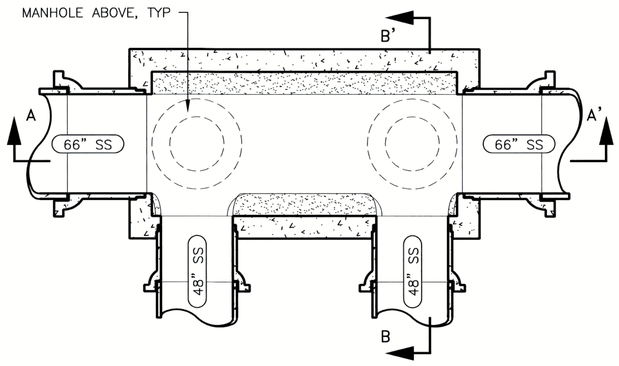
MANHOLE No. 2
5 MSFM THRUST RESTRAINT

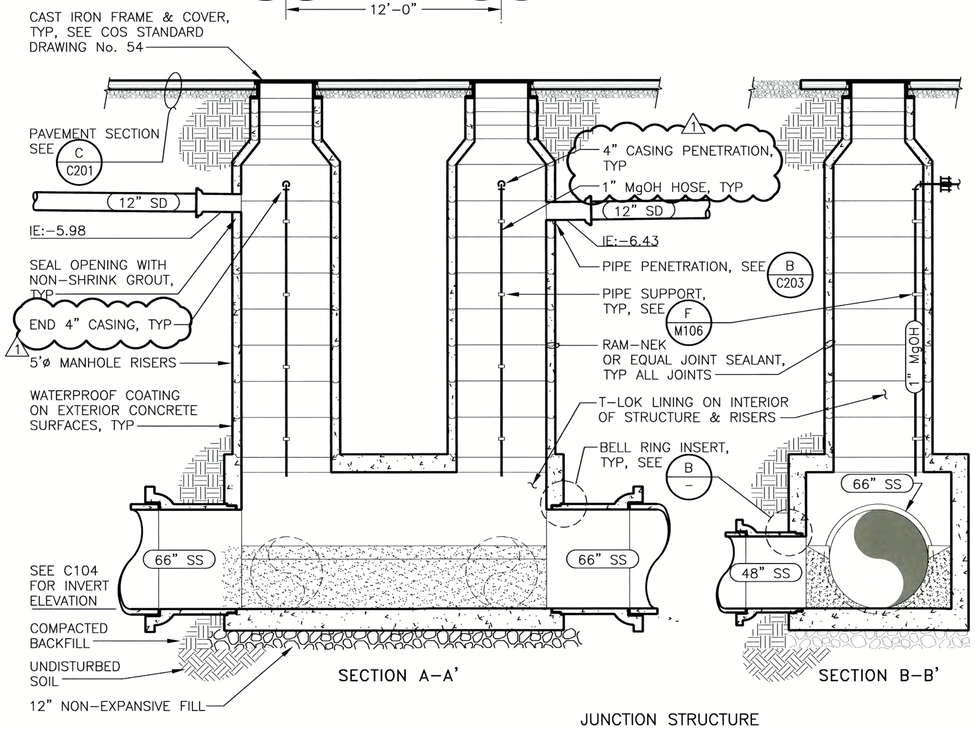
DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: AS SHOWN	APPROVED BY: DATE:	SHEET No. C203A of 89 SHEETS
DESIGNED BY:		
DRAWN BY: DTD		
CHECKED BY: PDF		
RECORD Dwg.:	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01

NOTES:
1. CONSTRUCT BOTTOM OF CHANNEL WITH SAME RADIUS AS OUTLET SEWER AND VERTICAL WALLS ABOVE CENTERLINE
2. ALL RISER JOINTS SHALL HAVE WATERTIGHT RUBBER GASKET, RAM–NECK OR EQUAL
3. PRECAST MANHOLE SECTIONS SHALL CONFORM TO ASTM C–478 AND THE SPECIFICATIONS, EXCEPT WHERE OTHERWISE NOTED
4. ALL RISER JOINTS SHALL BE MORTER FILLED PRIOR TO INSTALLATION OF PVC LINER WELD STRIP
5. PROVIDE BELL JOINT 2'–6" MAXIMUM FROM STRUCTURE





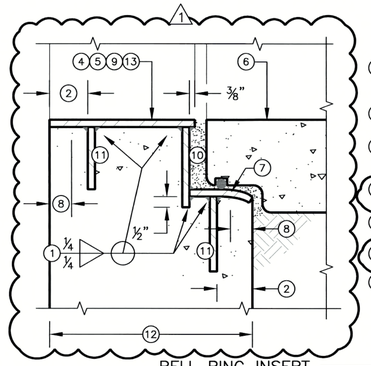


JUNCTION STRUCTURE

DETAIL A / C8

SCALE: 1/4"=1'–0"

KEYNOTES:
1. WELD ALL CUT REINFORCING BARS TO ANNULAR RING FOR PIPES GREATER THAN 48"ø. USE LOW HYDROGEN WELDING
2. REINFORCING STEEL CLEAR COVER PLUS DIAMETER OF OUTSIDE BARS
3. GRIND SMOOTH ALL METAL EDGES IN AREAS TO BE COATED & ALL SURFACES IN PIPE SEATING AREA
4. RING SHALL HAVE SPIDER BRACING INSTALLED AT POINT OF MANUFACTURER
5. RING SHALL BE EPOXY COATED AFTER FABRICATION
6. SHAPE & SIZE OF PIPE SPIGOT SHALL BE VERIFIED BY CONTRACTOR PRIOR TO FABRICATION OF BELL RING



BELL RING INSERT

DETAIL B / –

NTS

7. ¼" PLATE RING, CUT FROM MANUFACTURER STANDARD BELL RING
8. LAP COATING 1" UNDER INSERT
9. ⅜"PLATE RING, SAME ID AS PIPE, COAT PER SPEC'S
10. FILL WITH CEMENT MORTAR 1
11. ⅜"x3" ANNULAR RING
12. WALL THICKNESS PER STRUCTURAL PLANS 1
13. ID OF PIPE

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CIVIL DETAILS 4

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1	ADDENDUM No. 3	5/25/06	TTT	PDF
2	RECORD DRAWINGS	6/08	CLB	PDF
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DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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DRAWN BY: DTD			22 of 89 SHEETS
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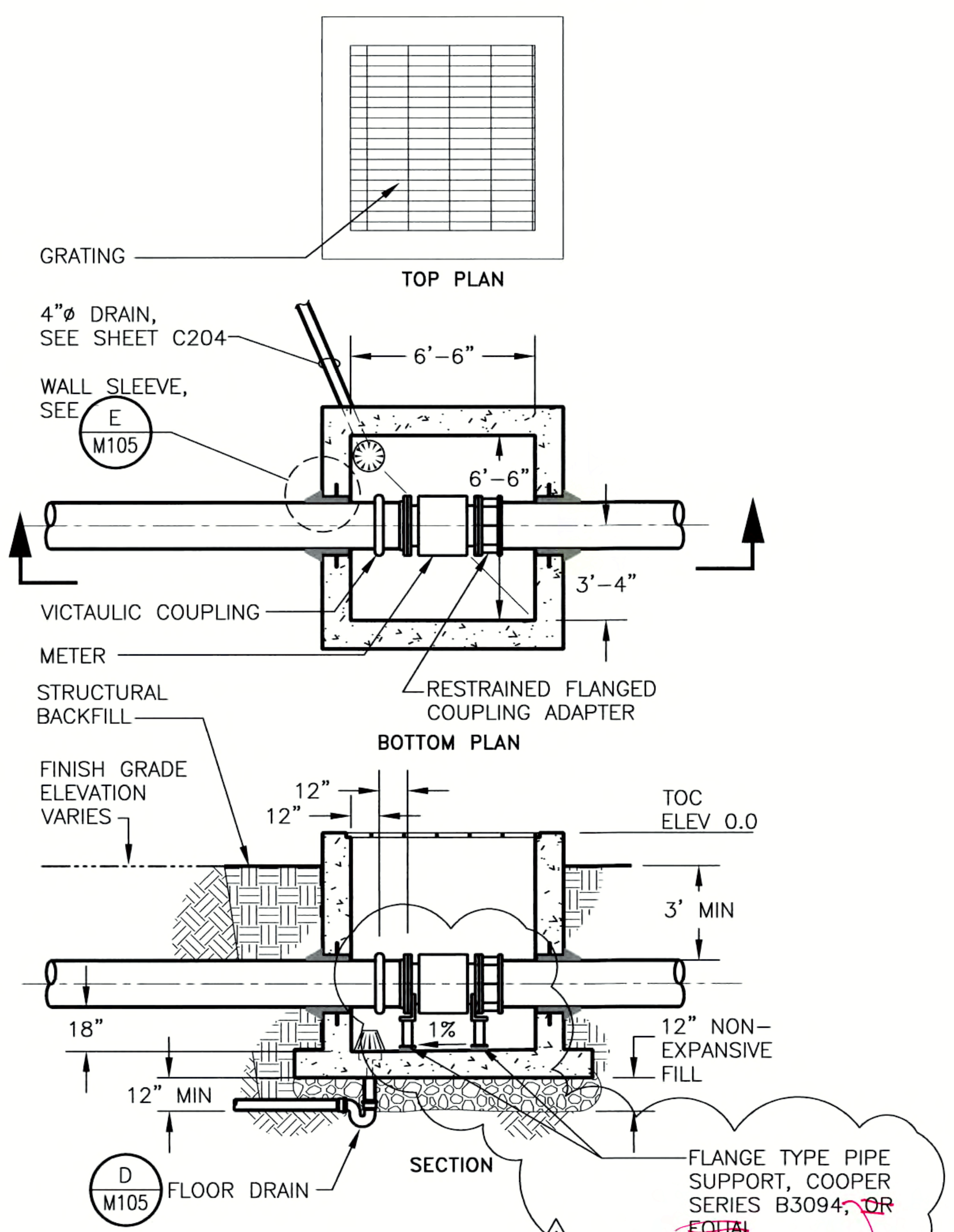
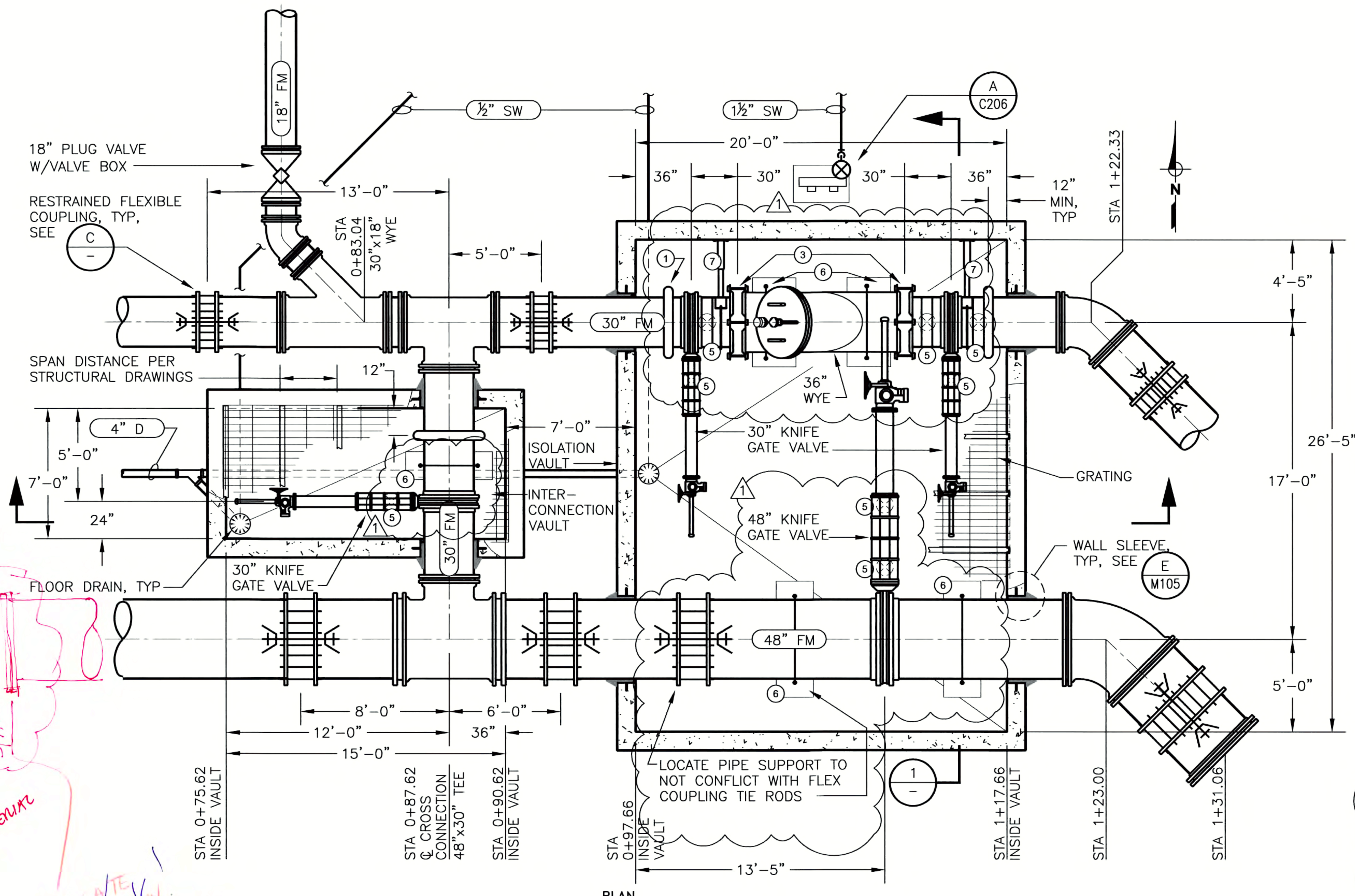
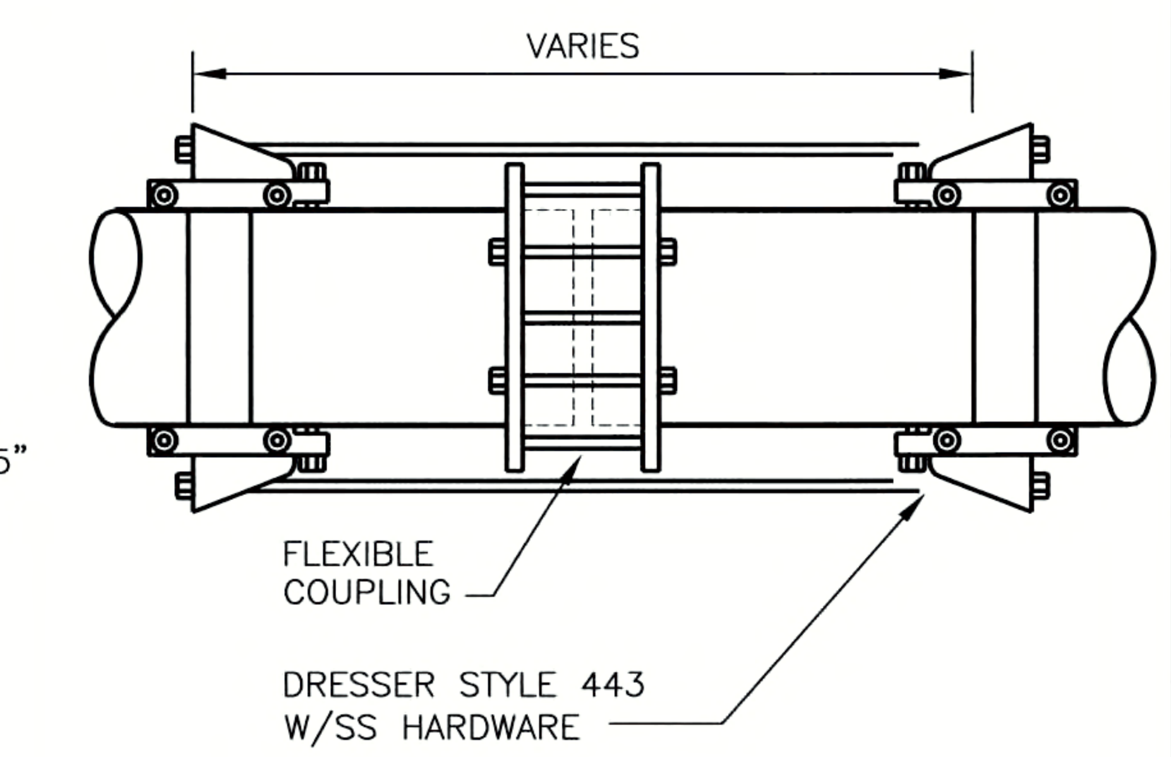
RECORD Dwg.:	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES		PROJECT No. 293–00–05–01



NOTES:
1. METER DIMENSION PER METER MANUFACTURER.
2. SEE PLAN & PROFILE SHEET C104 FOR PIPING CONTINUATIONS.
3. PROVIDE 3/16" THICK NEOPRENE PAD BETWEEN ~~FLOW METER~~ PIPING AND SUPPORT.

METER VAULT
DETAIL A C7
SCALE: 1/4"=1'-0"



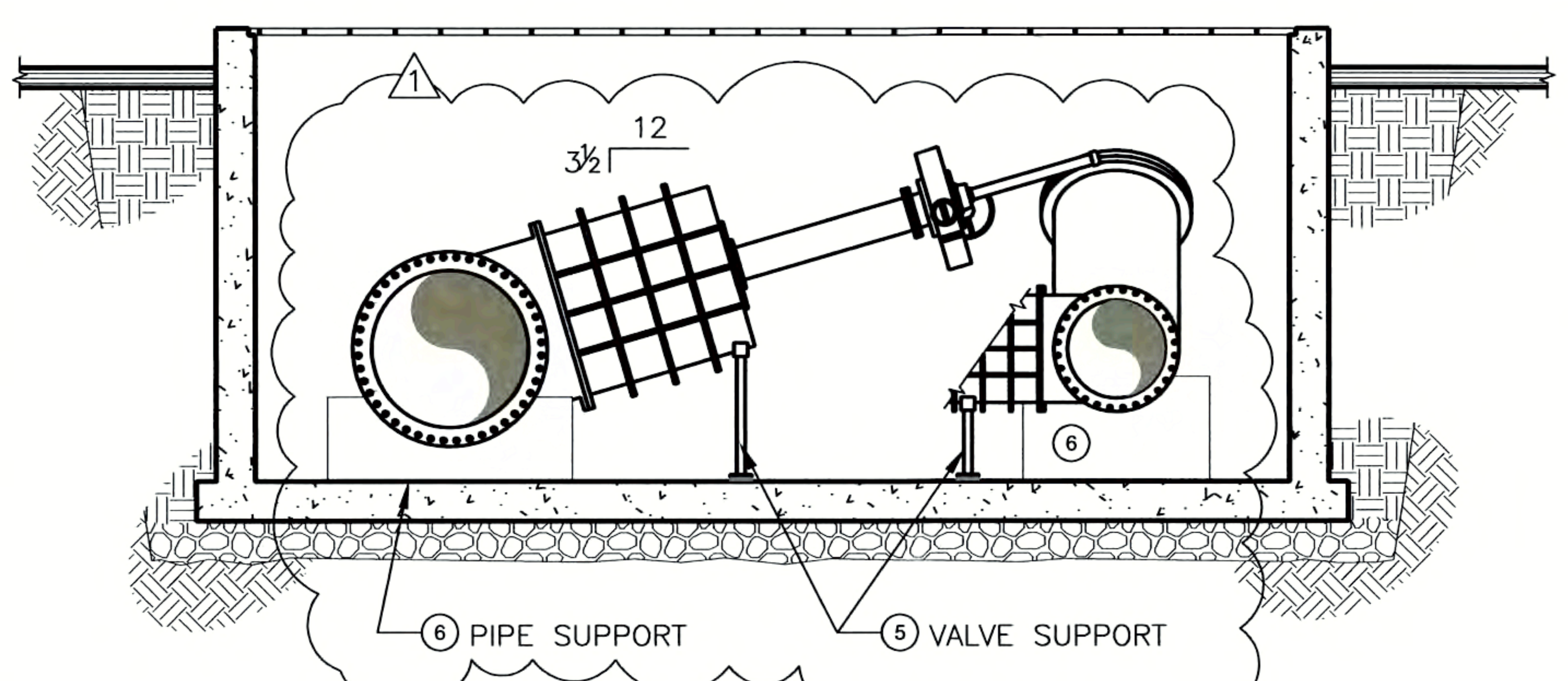


TYPICAL HARNESS FLEX COUPLING
DETAIL C VAR
NOT TO SCALE

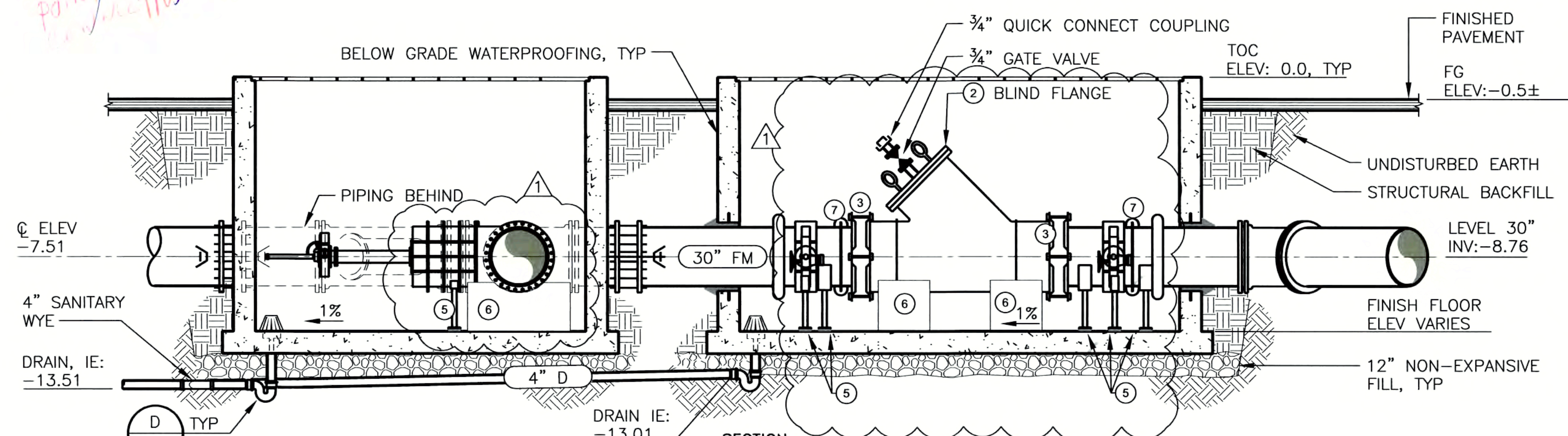
NOTES:
1. VICTAULIC TYPE COUPLING
2. DRILL AND TAP ¾"NPT PIPE CONNECTION AND THREE 1" ID EYE BOLTS WITH NUTS. PIPE, GATE VALVE, AND ACCESSORIES SHALL BE STAINLESS STEEL. EYE BOLTS SHALL BE EQUALLY SPACED AND ORIENTED AS SHOWN IN PLAN
3. 36"x30" REDUCING COUPLING W/LOCK-PINS, TYP. COUPLING SHALL BE DRESSER STYLE 62, ~~OR EQUAL~~, WITH EPOXY COATING AND LINING AND SEWAGE RATED GASKETS
4. SEE PLAN & PROFILE SHEET C105 FOR PIPING CONTINUATIONS
5. PIPE SUPPORT, SEE A M106 TYP. FOR SUPPORTS

UNDER KNIFE GATE BONNET, USE PIPE SUPPORTS FOR 14" PIPES OR LARGER

6. PIPE SUPPORT, SEE B M106 TYP, W/ ¼" THICK X 2" WIDE SS BAR, FORM TO MATCH PIPE, SECURE W/ ½" X 9" (6" MIN EMBED) SS EPOXY ANCHOR
7. PIPE SUPPORT, ANVIL FIG 265, ~~OR EQUAL~~. MOUNT TO WALL W/½" SS EPOXY ANCHOR BOLTS, 6" MIN EMBED



ISOLATION VAULT
SECTION 1 —
1/4"=1'-0"



ISOLATION & INTERCONNECTION VAULT
DETAIL B C7
SCALE: 1/4"=1'-0"

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CIVIL DETAIL 5

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DRAWN BY: DTD			23 of 89 SHEETS
CHECKED BY: GDH	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES		PROJECT No. 293-00-05-01
RECORD Dwg.:			

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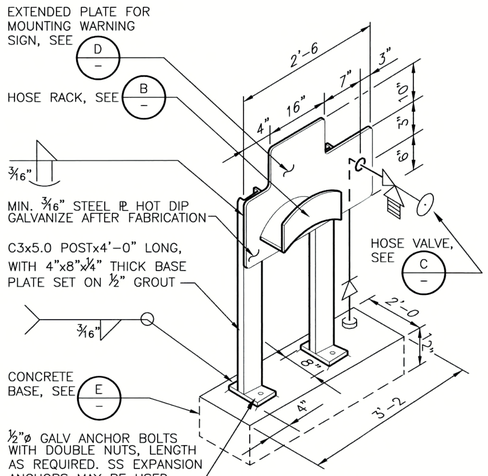
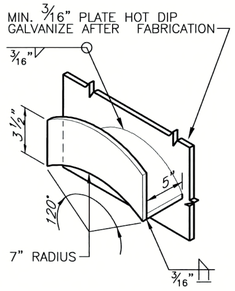


POST MOUNTED HOSE RACK

DETAIL A VAR

SCALE: NONE



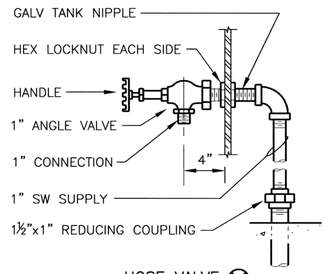
NOTE: PROVIDE 50 FT. OF 1" DIAMETER BLACK HORIZON HOSE WITH DIXON BS808 COUPLINGS WITH STAINLESS STEEL CLAMPS AND UNITED FIRE SAFETY NOZZLE #1030, ~~OR EQUAL.~~ COORDINATE COUPLING THREAD WITH VALVE AND NOZZLE THREAD.

ACTUAL ?

HOSE RACK

DETAIL B VAR

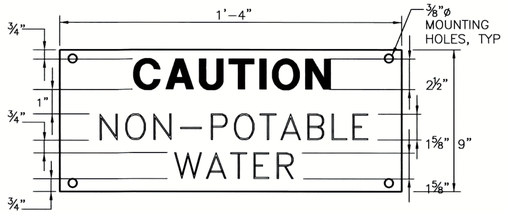
SCALE: NONE



HOSE VALVE

DETAIL C VAR

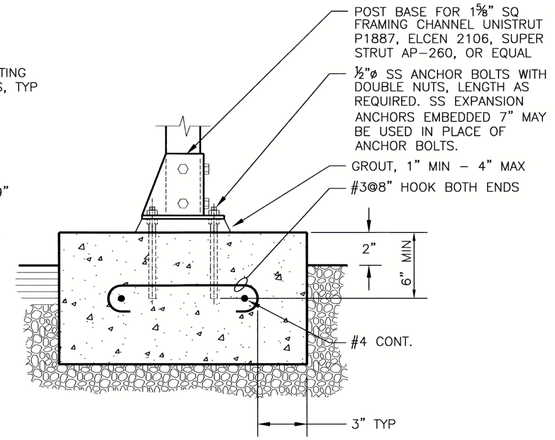
SCALE: NONE



TYPICAL WARNING SIGN DETAIL

DETAIL D VAR

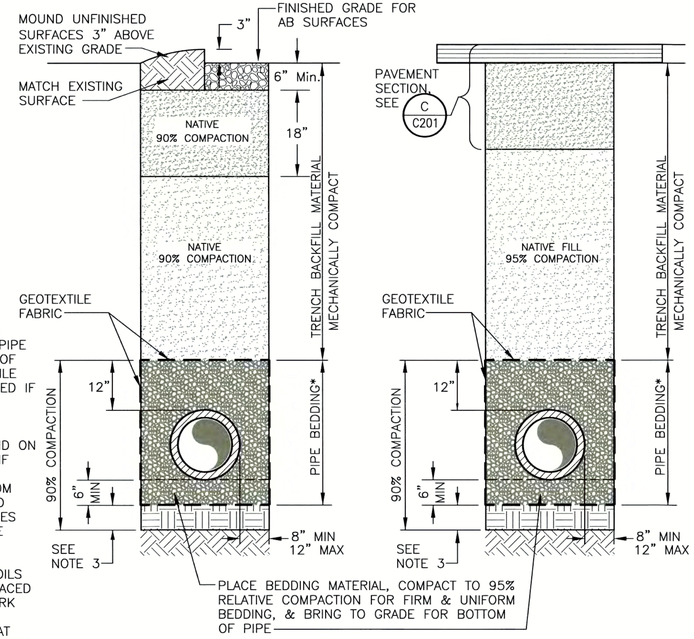
SCALE: NONE



FRAMING CHANNEL POST BASE

DETAIL E VAR

SCALE: NONE



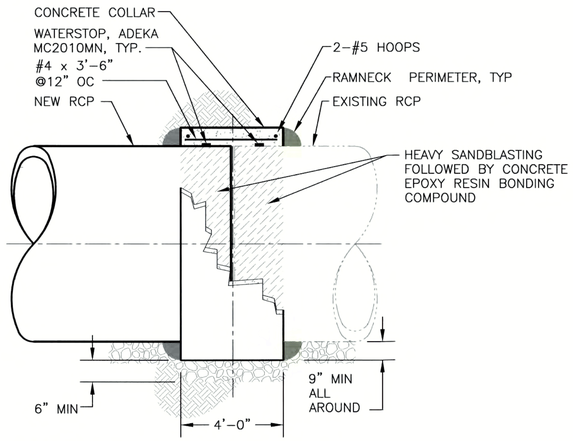
NOTES:
1. * SHALL BE TYPE H (½" CRUSHED ROCK)
2. CONTROLLED LOW STRENGTH BACKFILL MAY BE USED AS PIPE BACKFILL MATERIAL INSTEAD OF TYPE H MATERIAL. GEOTEXTILE FABRIC WILL NOT BE REQUIRED IF CONTROLED LOW STRENGTH BACKFILL IS USED
3. PIPE BEDDING SHALL BE LAID ON STABLE, COMPACTED SOILS. IF UNSTABLE SOILS ARE ENCOUNTERED AT THE BOTTOM OF EXCAVATION, SCARIFY AND MOISTURE CONDITION 8 INCHES BELOW THE BEDDING OR THE DEPTH OF UNSTABLE SOILS, WHICH EVER IS GREATER. ALTERNATIVELY, UNSTABLE SOILS MAY BE REMOVED AND REPLACED WITH BEDDING MATERIAL. WORK PERFORMED TO RECTIFY UNSTABLE SOILS SHALL BE AT THE DIRECTION OF THE ENGINEER

UNPAVED OR AB/ROCK AREAS — AC PAVEMENT AREAS

PIPE BEDDING, TRENCH SURFACING & BACKFILL

DETAIL F VAR

SCALE: NONE

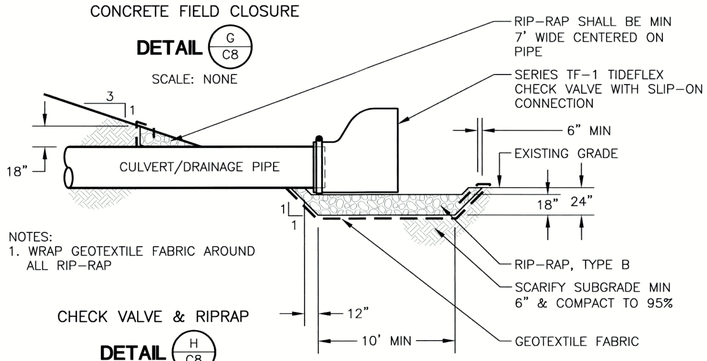


NOTES:
1. FIELD VERIFY PLAIN END ON EXISTING RCP
2. COLLAR SHALL BE CENTERED ON JOINT
3. PROVIDE MIN 3" CLEAR DISTANCE BETWEEN REBAR AND PIPE AND/OR SOIL

CONCRETE FIELD CLOSURE

DETAIL G C8

SCALE: NONE

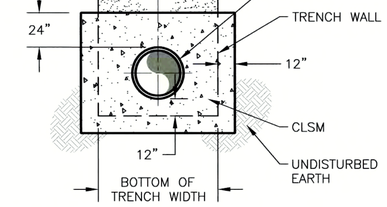


NOTES:
1. WRAP GEOTEXTILE FABRIC AROUND ALL RIP-RAP

CHECK VALVE & RIPRAP

DETAIL H C8

SCALE: 1"=5'



NOTES:
1. TOP OF DAM TO EXTEND TO EL -5 OR FINISH GRADE WHICHEVER IS LESS.
2. THICKNESS OF DAM IS 3 FEET.
3. PROVIDE 10 FOOT MINIMUM SPACING BETWEEN DAMS

CLSM TRENCH DAM

DETAIL J C8

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

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CIVIL DETAILS 6

DEPARTMENT OF MUNICIPAL UTILITIES
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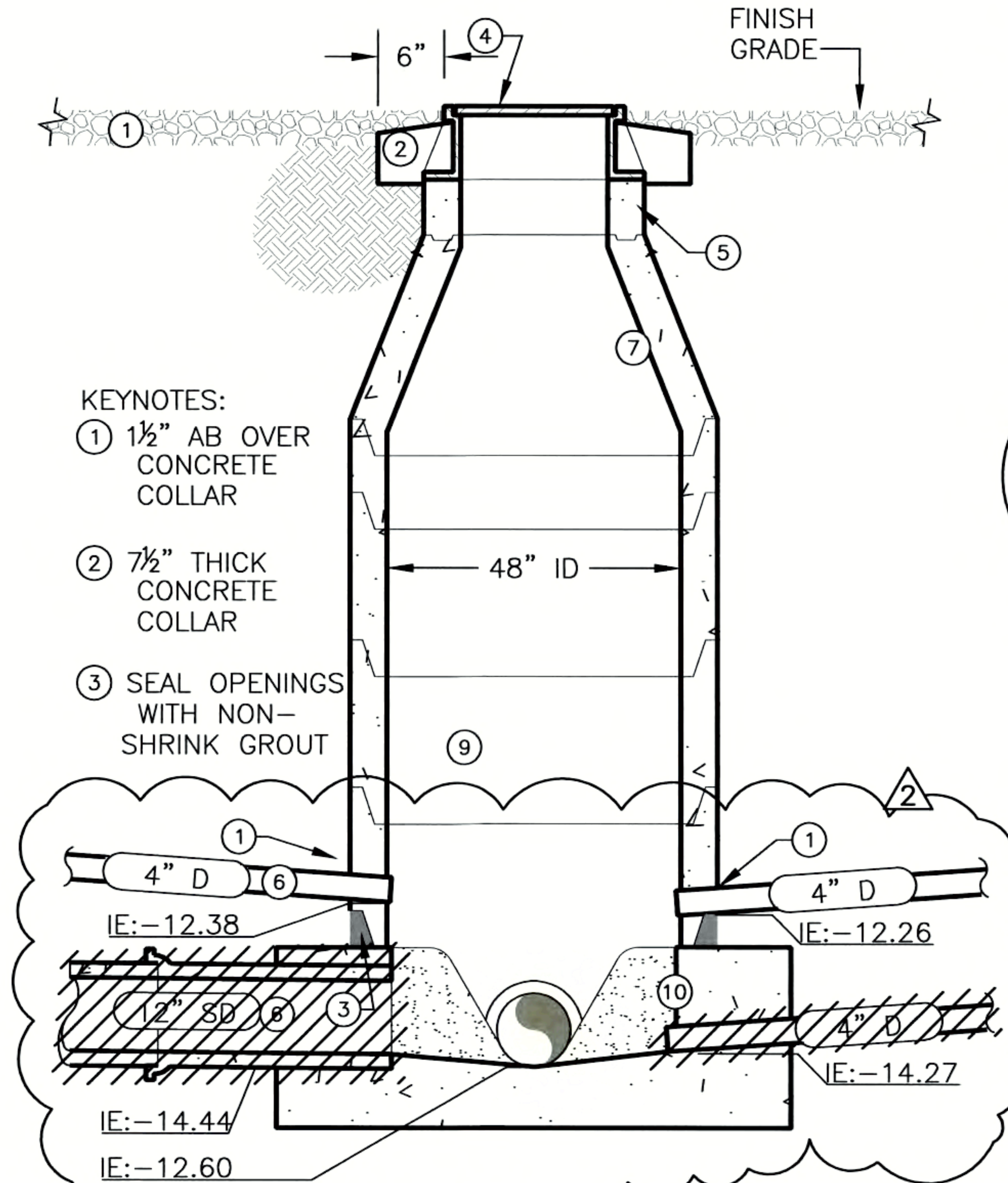
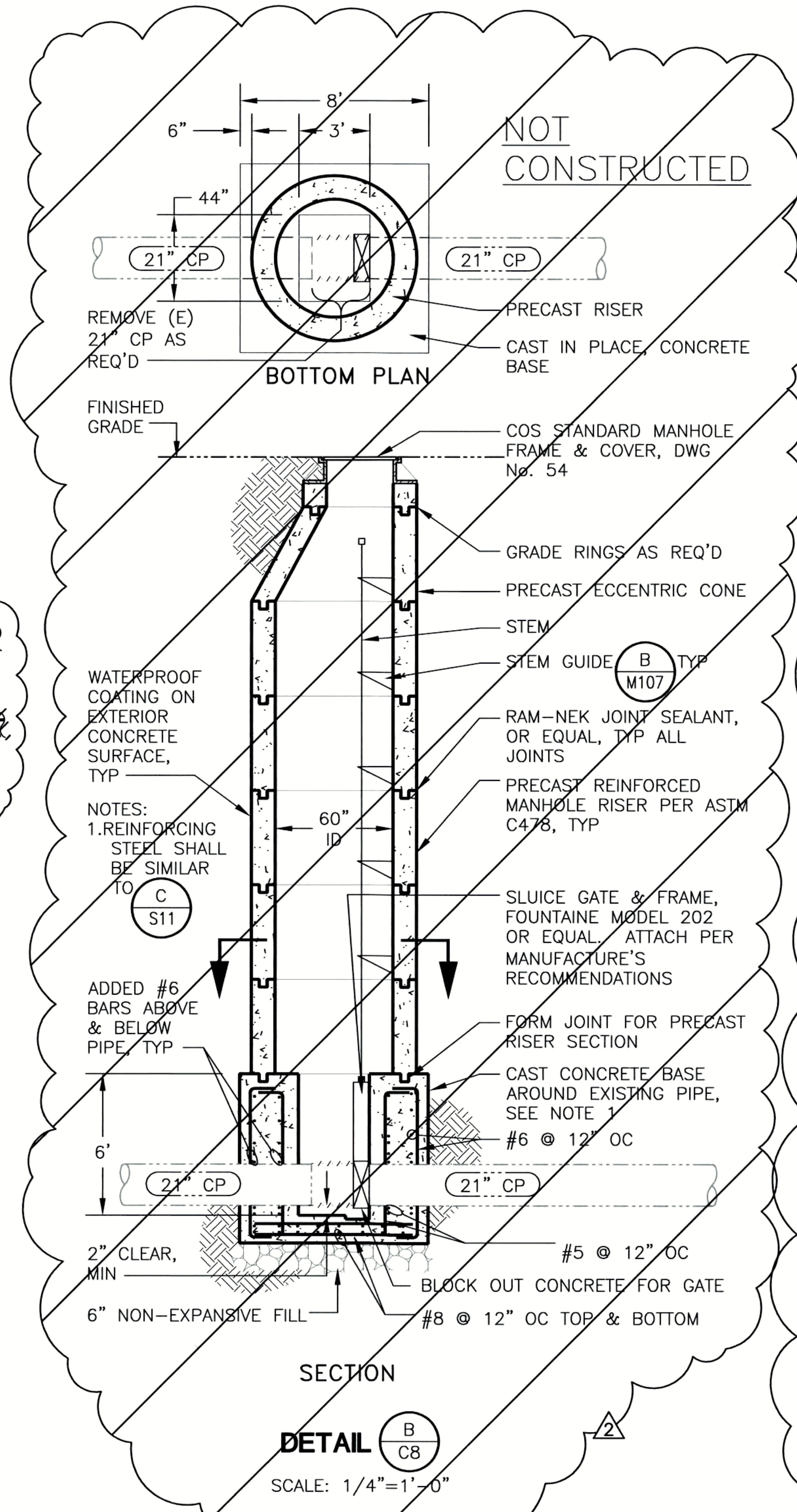
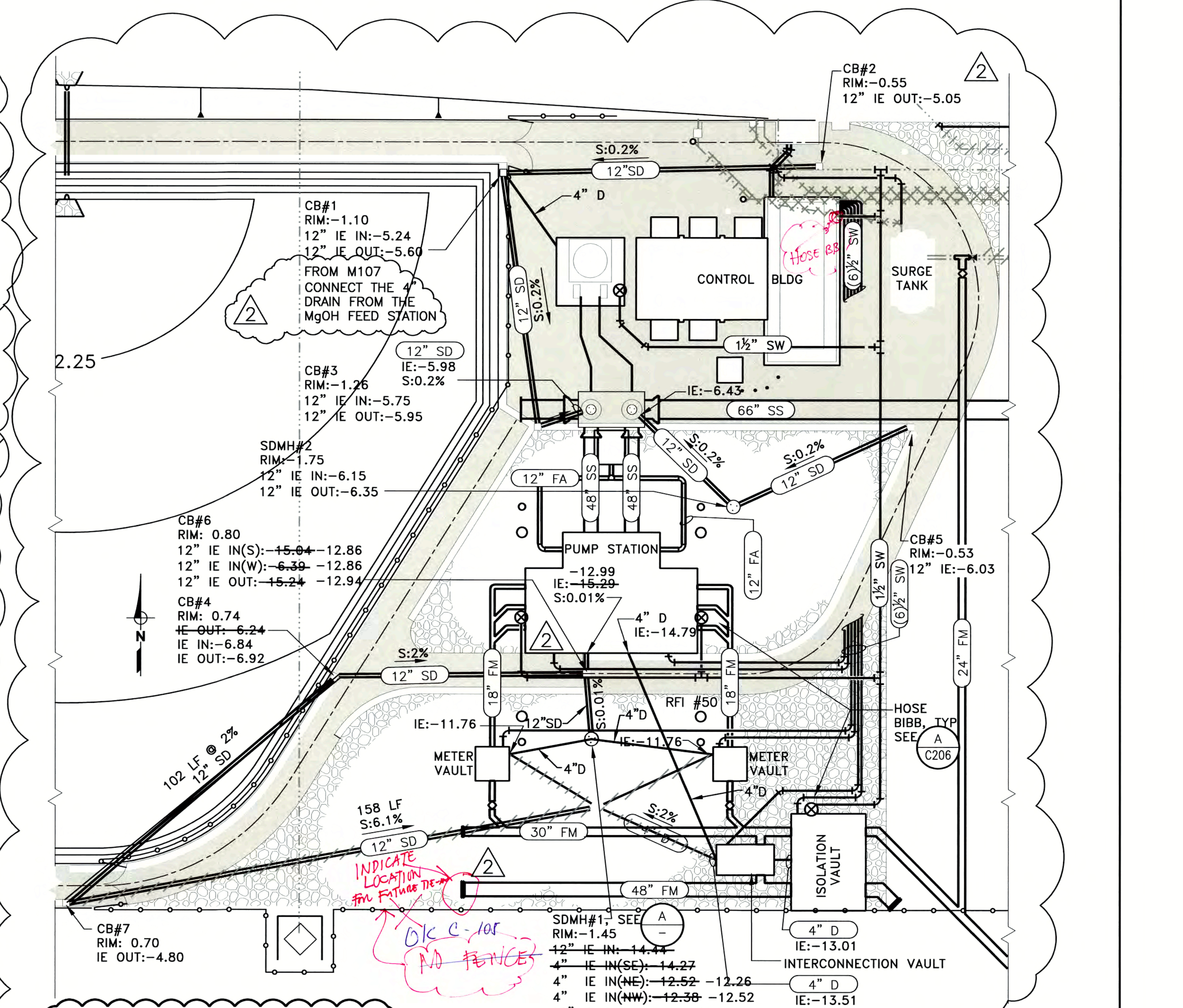


KEYNOTES:
1. 1½" AB OVER CONCRETE COLLAR
2. 7½" THICK CONCRETE COLLAR
3. SEAL OPENINGS WITH NON-SHRINK GROUT
4. CAST IRON FRAME & COVER, TYP, SEE COS STD DWG No. 54. RIM EL:-1.45. GROUT FRAME TO GRADE RING. SLOPE TO MATCH GRADE. COVER SHALL BE NEENAH FOUNDARY CO. MODEL R-2556 OR EQUAL
5. 3"-6" PRECAST REINFORCED CONCRETE GRADE RINGS AS REQ'D. SHALL CONFORM TO ASTM C-178. PRIOR APPROVAL FROM CITY ENGINEER MUST BE OBTAINED BEFORE INSTALLING MORE THAT 12" OF GRADE RINGS
6. CONSTRUCT PIPE STUB JOINT, 24" MIN TO 12'-0" MAX FOR PVC PIPE & 24" MAX FOR RIGID PIPE FROM BASE OF MH OR WET WELL
7. 30" TALL PRECAST REINFORCED CONCENTRIC MH CONE
8. FOR TYP PIPE INTERSECTION DETAIL SEE COS STD DWG No. 78
9. COAT INTERIOR OF MH AS PER COS SPEC SECTION 71-1.09
10. BASE SHALL CONFORM TO COS STD DWG No. 55

SDMH#1
DETAIL A/–
SCALE: 1/2"=1'-0"



SECTION
DETAIL B/C8
SCALE: 1/4"=1'-0"



NOTES:
1. *STORM DRAIN MANHOLES #1 AND #2 SHALL HAVE A WATERPROOF EXTERIOR COATING AND INTERIOR COATINGS PER CITY OF STOCKTON STANDARD SPECIFICATION 71-1.09*

4" DRAINS
DETAIL C/C7
SCALE: 1"=20'

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RECORD DRAWINGS
14-Mile Slough Pump Station Upgrades
CIVIL DETAILS 7

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CITY OF STOCKTON, CALIFORNIA

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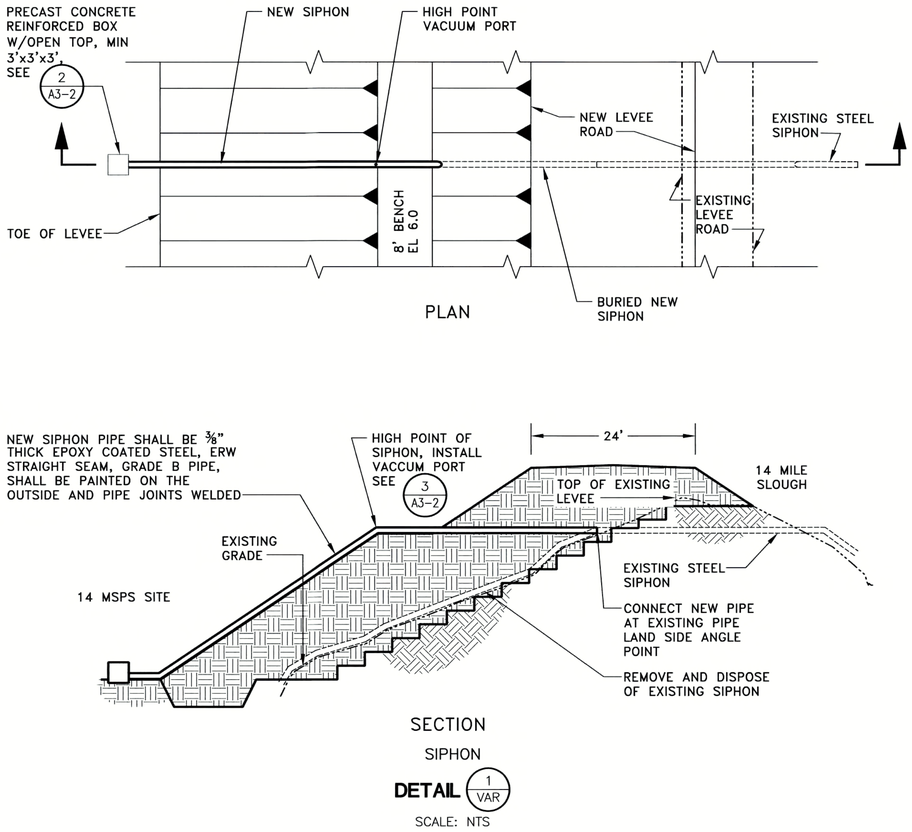
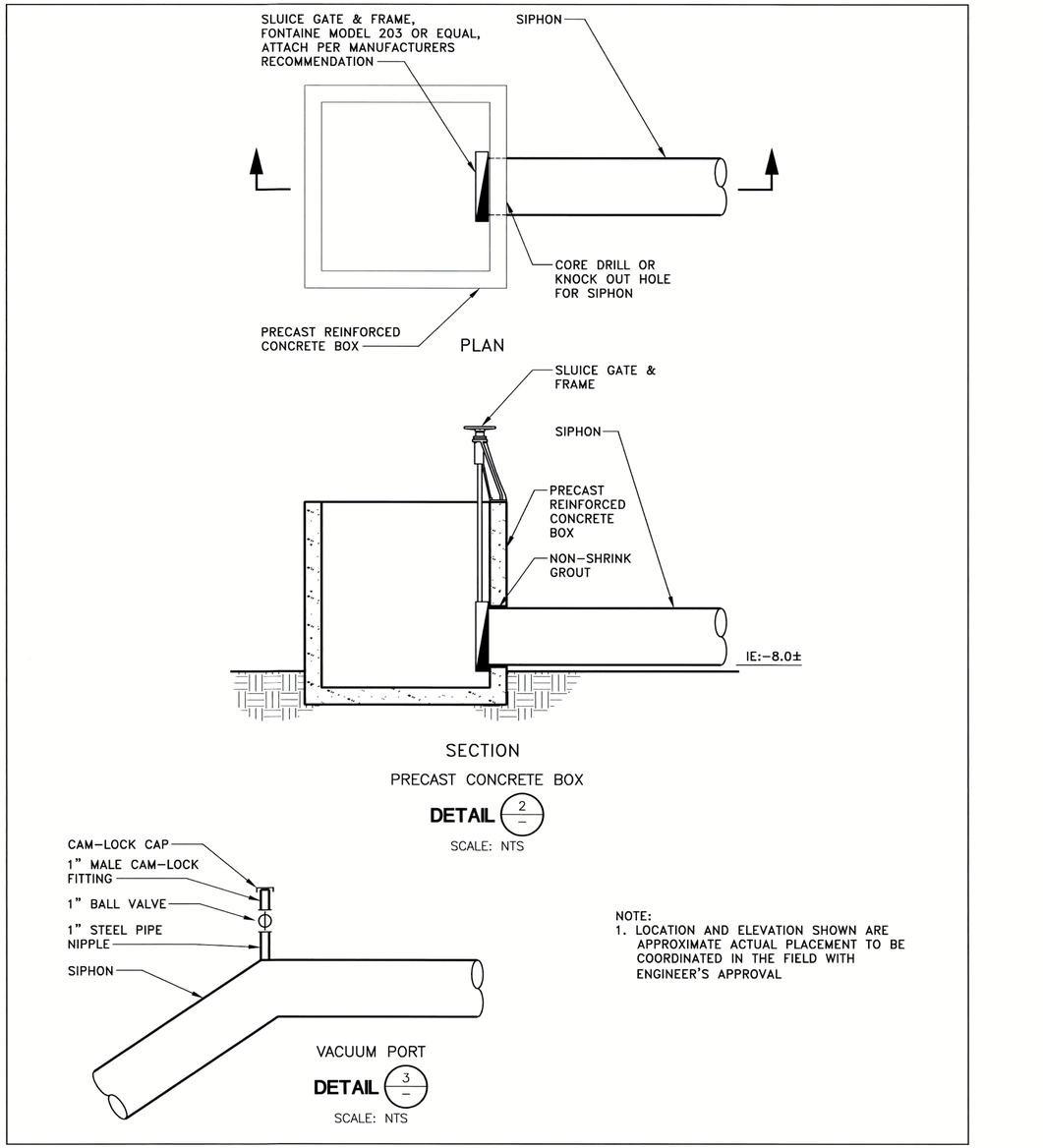


SKETCH A3-1



NOTE:
1. LOCATION AND ELEVATION SHOWN ARE APPROXIMATE ACTUAL PLACEMENT TO BE COORDINATED IN THE FIELD WITH ENGINEER'S APPROVAL

SKETCH A3-2

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

ADDENDUM SKETCHES
A3-1 & A3-2

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CITY OF STOCKTON, CALIFORNIA

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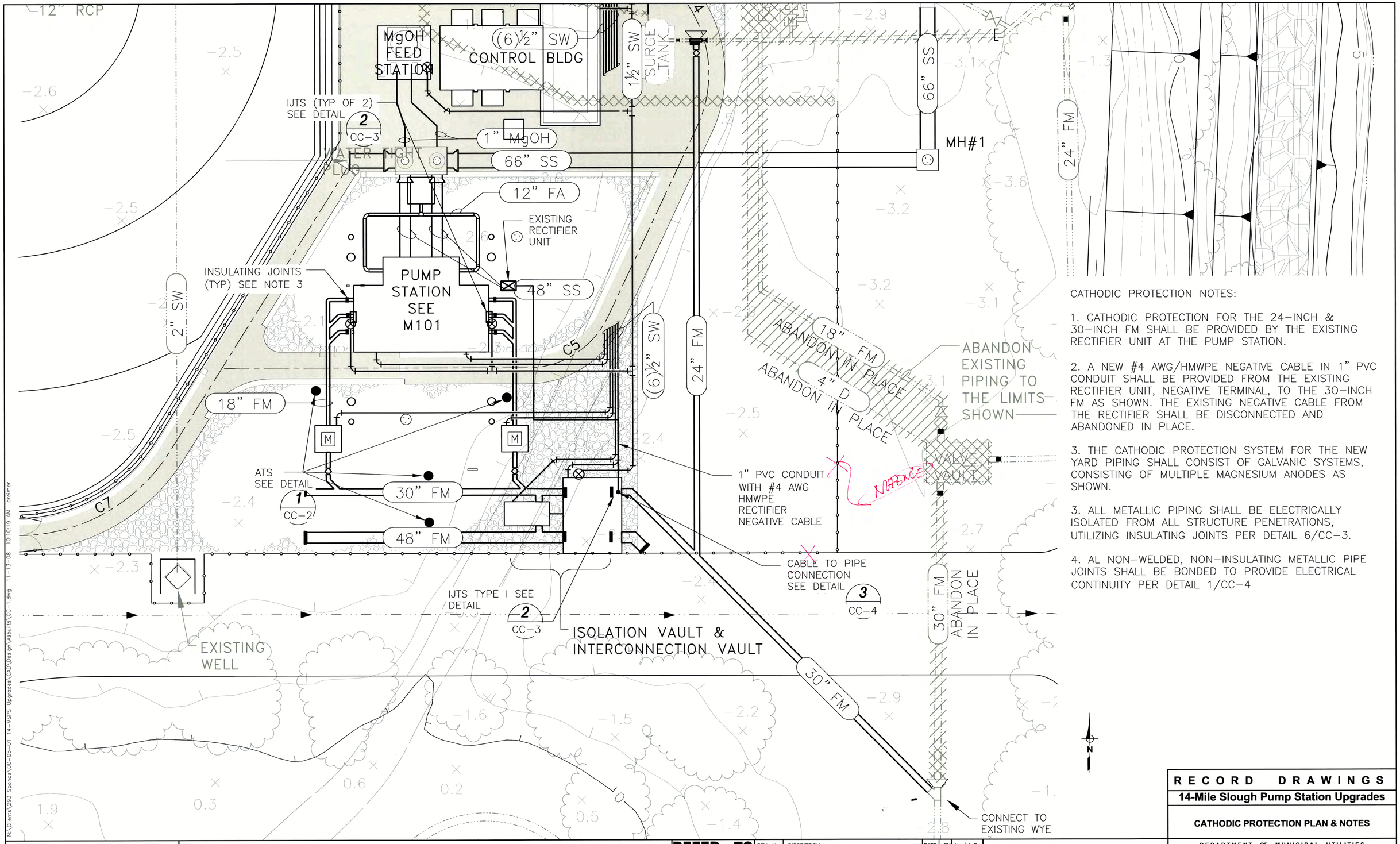

CATHODIC PROTECTION NOTES:

1. CATHODIC PROTECTION FOR THE 24–INCH & 30–INCH FM SHALL BE PROVIDED BY THE EXISTING RECTIFIER UNIT AT THE PUMP STATION.

2. A NEW #4 AWG/HMWPE NEGATIVE CABLE IN 1" PVC CONDUIT SHALL BE PROVIDED FROM THE EXISTING RECTIFIER UNIT, NEGATIVE TERMINAL, TO THE 30–INCH FM AS SHOWN. THE EXISTING NEGATIVE CABLE FROM THE RECTIFIER SHALL BE DISCONNECTED AND ABANDONED IN PLACE.

3. THE CATHODIC PROTECTION SYSTEM FOR THE NEW YARD PIPING SHALL CONSIST OF GALVANIC SYSTEMS, CONSISTING OF MULTIPLE MAGNESIUM ANODES AS SHOWN.

3. ALL METALLIC PIPING SHALL BE ELECTRICALLY ISOLATED FROM ALL STRUCTURE PENETRATIONS, UTILIZING INSULATING JOINTS PER DETAIL 6/CC–3.

4. AL NON–WELDED, NON–INSULATING METALLIC PIPE JOINTS SHALL BE BONDED TO PROVIDE ELECTRICAL CONTINUITY PER DETAIL 1/CC–4

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JDH Corrosion Consultants Incorporated

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CATHODIC PROTECTION PLAN & NOTES

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE:	1"=30'	APPROVED BY: DATE:	SHEET No. CC-1
DESIGNED BY:			27 of 89 SHEETS
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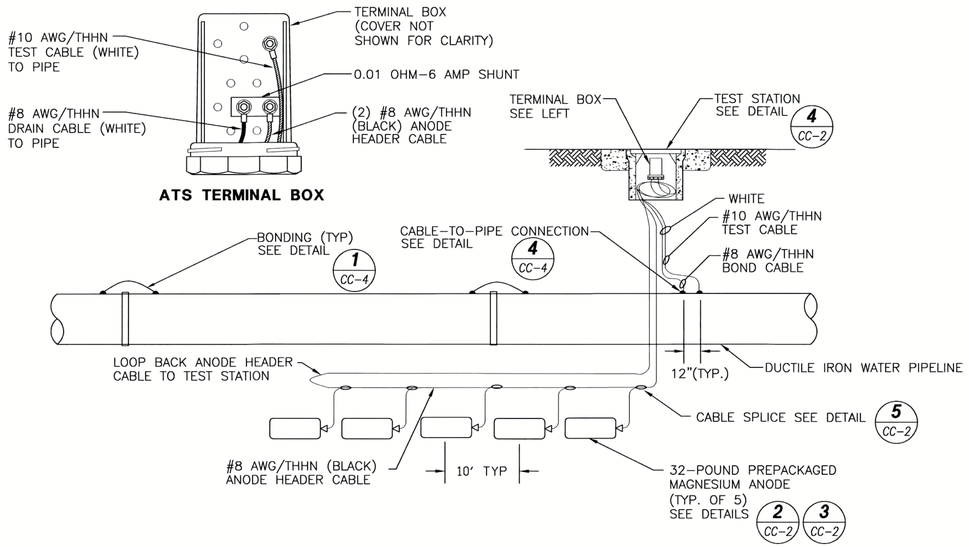
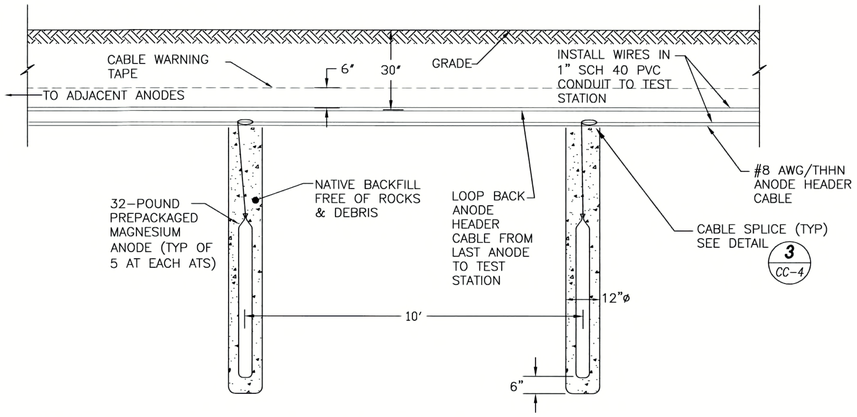
CHECKED BY:			
RECORD Dwg.:		ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293–00–05–01



NOTES:

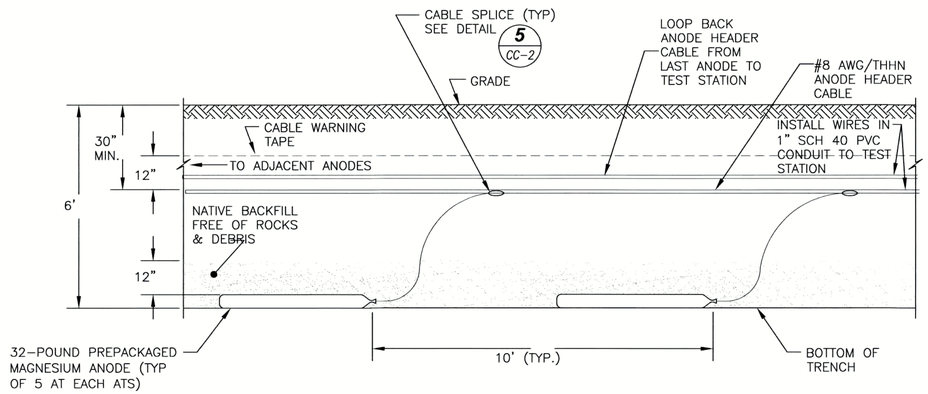
1. INSTALL 5, 32-POUND HIGH POTENTIAL MAGNESIUM ANODES AT EACH ANODE TEST STATION (ATS).
2. THE ANODES SHALL BE INSTALLED A MINIMUM OF 5 FT. OFF THE CENTERLINE OF THE WATER PIPELINE.
3. IDENTIFY ALL CABLES PER DETAIL 5, SHEET CC-4.

1 CC-2 ATS - ANODE TEST STATION ON DI PIPE
NOT TO SCALE



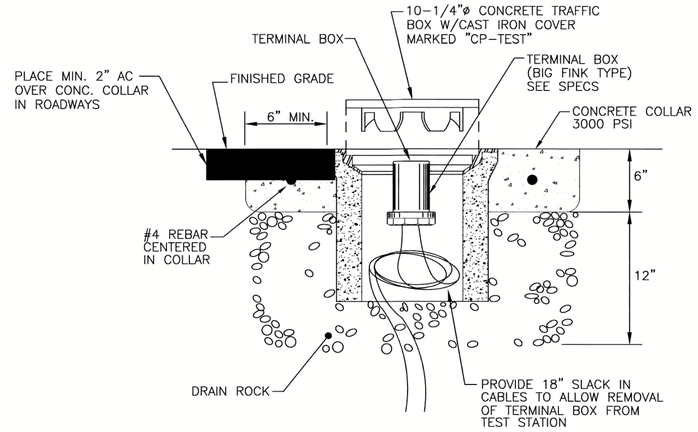
NOTES:
1. INSTALL ANODES PARALLEL TO THE PIPELINE AND 5 FT. OFF THE PIPE.
2. THE ANODES MAY BE INSTALLED HORIZONTALLY OR VERTICALLY UPON DISCRETION OF THE CONTRACTOR

2 CC-2 PROFILE - VERTICAL ANODE INSTALLATION
NOT TO SCALE



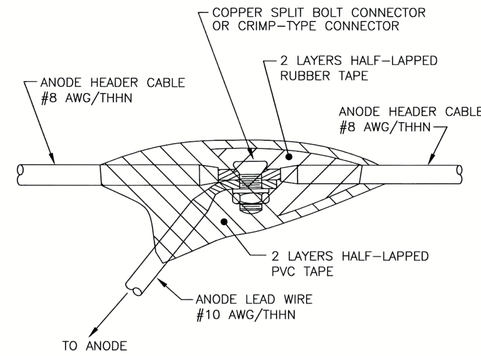
NOTES:
1. INSTALL ANODES PARALLEL TO THE PIPELINE AND 5 FT. OFF THE PIPE.
2. THE ANODES MAY BE INSTALLED HORIZONTALLY OR VERTICALLY UPON DISCRETION OF THE CONTRACTOR

3 CC-2 PROFILE - HORIZONTAL ANODE INSTALLATION
NOT TO SCALE



NOTE:
SET LID ¼" BELOW PAVEMENT OR SHOULDER IN ROADWAYS AND 2" ABOVE FINISHED GRADE ELSEWHERE

4 CC-2 FLUSH MOUNTED TEST STATION CONCRETE BOX
NOT TO SCALE FINISHED GRADE



5 CC-2 SPLICE CONNECTION
NOT TO SCALE

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RECORD DRAWINGS
14-Mile Slough Pump Station Upgrades
CATHODIC PROTECTION DETAILS - 2

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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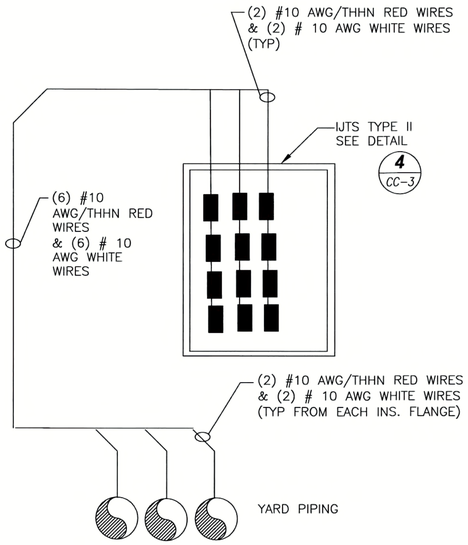
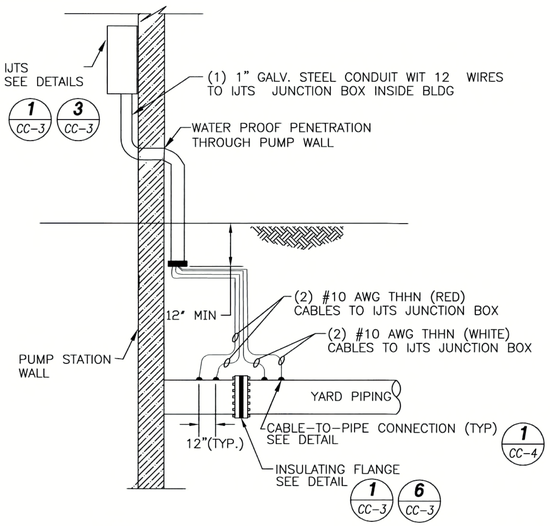
DESIGNED BY: MA		CC-2
DRAWN BY: SC		28 of 89 SHEETS
CHECKED BY: JDH		
RECORD Dwg.:	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01

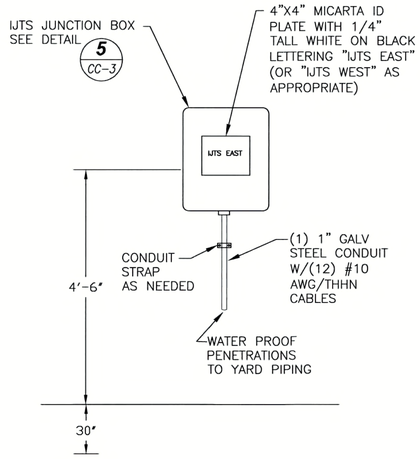


1 CC-3 SCHEMATIC - IJTS
NOT TO SCALE



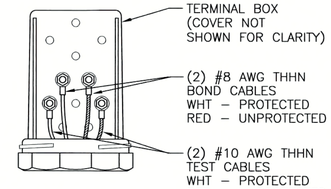
NOTES:
1. 3 YARD PIPE INSULATING FLANGES PENETRATING THE EAST WALL OF THE PUMP STATION SHALL BE CONNECTED TO THE IJTS-EAST.
2. 3 YARD PIPE INSULATING FLANGES PENETRATING THE WEST WALL OF THE PUMP STATION SHALL BE CONNECTED TO THE IJTS- WEST.
3. (2) #10 AWG/THHN RED WIRES AND (2) #10 AWG/THHN WHITE WIRES SHALL BE CONNECTED TO EACH INSULATING FLANGE AND THE WIRES TERMINATED IN THE RESPECTIVE IJTS JUNCTION BOXES.

2 CC-3 IJTS - INSULATING JOINT TEST STATION
NOT TO SCALE

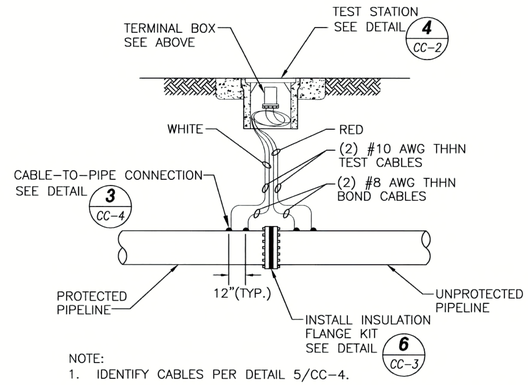


NOTE:
ALL UNDERGROUND CONDUIT SHALL BE PRIMED & TAPE WRAPPED WITH HALF-LAP 10-MIL POLYETHYLENE TAPE.

3 CC-3 WALL MOUNTED IJTS TEST STATION
NOT TO SCALE

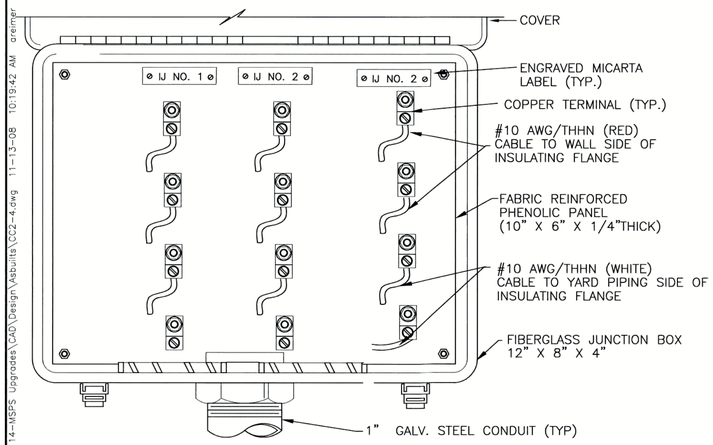


IJTS TERMINAL BOX

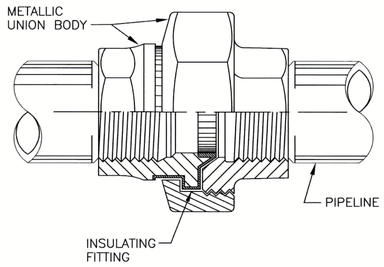


NOTE:
1. IDENTIFY CABLES PER DETAIL 5/CC-4.

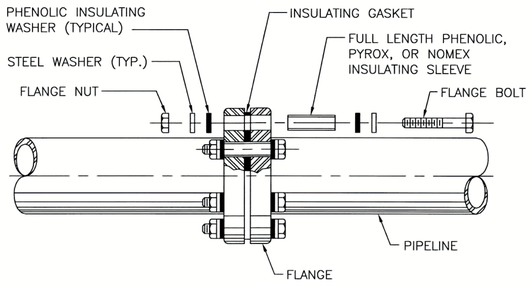
4 CC-3 IJTS TYPE I - INSULATING JOINT TEST STATION
NOT TO SCALE



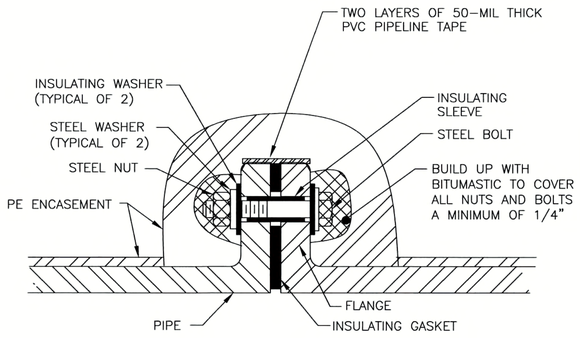
5 CC-3 IJTS TYPE II JUNCTION BOX
NOT TO SCALE



INSULATING UNION



ABOVE GRADE INSULATING JOINT



BELOW GRADE INSULATING JOINT COATING

NOTES:
1. GASKET SHALL BE FOR WATER SERVICE AND BE OF SAME PRESSURE RATING AS THE FLANGE.
2. DELETE COATING IF FLANGE IS LOCATED ABOVE GRADE OR IN VAULTS.
3. FOR BURIED IJs ON DI PIPE, COAT NUTS & BOLT WITH BITUMASTIC AND ENCASE IN POLYETHYLENE.

6 CC-3 DIELECTRIC INSULATING JOINT (IJ)
NOT TO SCALE

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CATHODIC PROTECTION DETAILS - 2

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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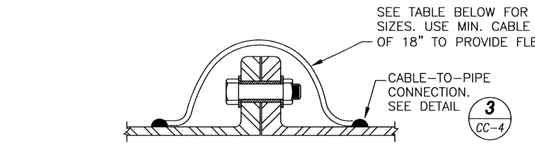
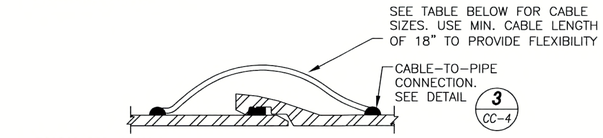
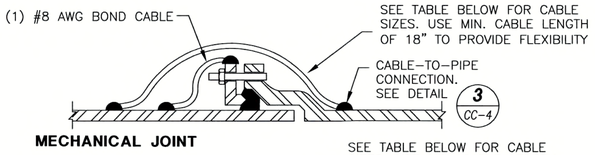
RECORD Dwg.:		



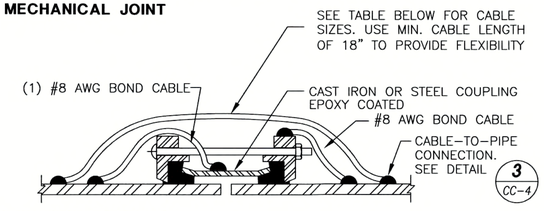
FLANGED JOINT



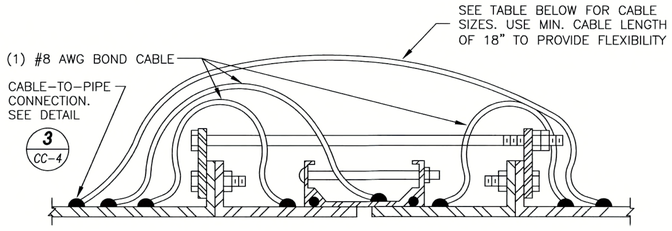
PUSH-ON JOINT



MECHANICAL JOINT



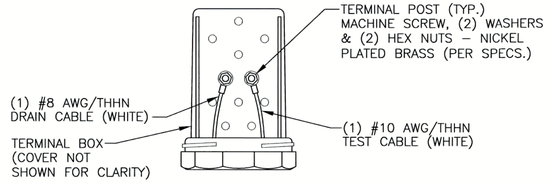
FLEXIBLE COUPLING



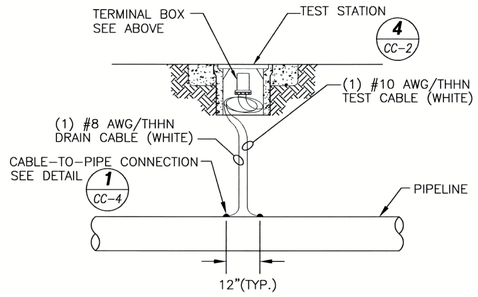
DUCTILE IRON PIPE FLEXIBLE COUPLING RESTRAINING RODS

BOND CABLE SIZES	
PIPE DIAMETER	**BOND NO. & SIZE**
48" - 30"	TWO #2 AWG
24" - 20"	TWO #4 AWG
18" - 8"	ONE # 4 AWG
8" OR LESS	ONE # 8 AWG

1/CC–4 BOND CABLES - METALLIC PIPE JOINTS FOR DI WATER MAIN
NOT TO SCALE

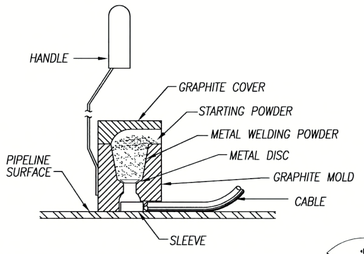


CTS TERMINAL BOX



NOTE:
1. IDENTIFY CABLES PER DETAIL 5/CC–4.

2/CC–4 CTS - CORROSION TEST STATION
NOT TO SCALE



STEP 1. FILE STRUCTURE CONNECTION AREA TO BARE SHINY METAL AND CLEAN.

STEP 2. STRIP INSULATION FROM WIRE. ATTACH SLEEVE REQUIRED ON #6 AWG WIRE OR SMALLER

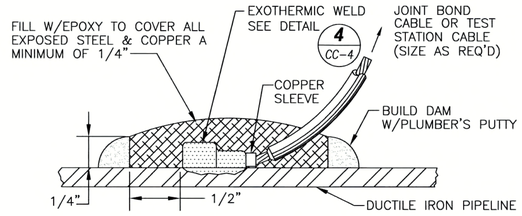
STEP 3. HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR AND IGNITE WITH FLINT GUN.

STEP 4. REMOVE SLAG FROM CONNECTION AND PEEN WELD FOR SOUNDNESS.

STEP 5. COVER CONNECTION AND EXPOSED STRUCTURE SURFACE WITH EPOXY COATING COMPOUND PER DETAIL 3/CC–4

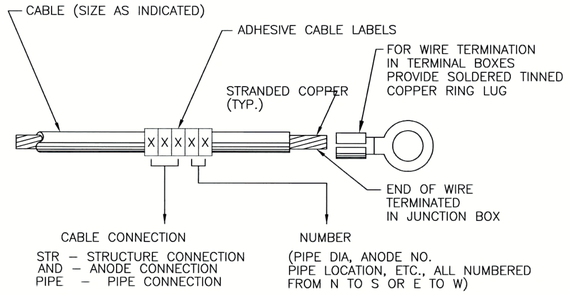
NOTE:
PROCEDURE SHOWN ABOVE IS TO BE USED AS A GENERAL GUIDE ONLY.
CONSULT MANUFACTURER'S LITERATURE FOR SPECIFIC INSTALLATION INSTRUCTIONS.

4/CC–4 EXOTHERMIC WELD PROCEDURE
NOT TO SCALE



DUCTILE IRON PIPE

3/CC–4 CABLE-TO PIPE CONNECTION
NOT TO SCALE



5/CC–4 CABLE IDENTIFICATION
NOT TO SCALE

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CATHODIC PROTECTION DETAILS - 2

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: NONE	APPROVED BY: DATE:	SHEET No.
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RECORD Dwg.:	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01

GENERAL

1. BASIS OF DESIGN: 2001 CALIFORNIA BUILDING CODE.
2. THESE DRAWINGS SHALL BE USED IN CONJUCTION WITH THE SEPARATELY BOUND PROJECT SPECIFICATIONS.
3. ALL MATERIALS, WORKMANSHIP, TESTING AND INSPECTION SHALL CONFORM TO THE CALIFORNIA BUILDING CODE, 2001 EDITION, AND LOCAL BUILDING CODES.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS ON THE JOBSITE WITH A COMPLETE SET OF THE LATEST DRAWINGS. OMISSIONS OR DISCREPANCIES BETWEEN THE VARIOUS ELEMENTS OF THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH WORK.
5. DETAILS SHOWN ARE TYPICAL, AND APPLY TO SIMILAR CONDITIONS, UNLESS NOTED OTHERWISE.
6. REFER TO CIVIL DRAWINGS FOR FINISHED FLOOR ELEVATIONS, OPENINGS, SLOPES, DRAINS, CURBS, PADS, EMBEDDED ITEMS, ETC. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR SLEEVES, OPENINGS, AND HANGERS FOR PIPES, DUCTS AND EQUIPMENT.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR JOBSITE SAFETY, INCLUDING SAFETY OF THE BUILDING. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING, AND GUYS IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL ORDINANCES.
8. DESIGN LOADS
   BUILDING DESIGN VERTICAL LOADS
   A. ROOF DEAD LOADS 15 PSF
   B. ROOF LIVE LOADS 20 PSF (REDUCIBLE)

   BUILDING DESIGN LATERAL LOADS
   A. SEISMIC: PER 2001 CBC — Z = 0.3 FOR SEISMIC ZONE 3; R = 4.5 FOR MASONRY WALLS; I = 1.25 FOR ESSENTIAL FACILITY; SOIL PROFILE TYPE: S_D
   B. WIND: PER 2001 CBC — 80 MPH WIND SPEED; EXPOSURE C; I = 1.15 FOR ESSENTIAL OCCUPANCY

   PUMP STATION/VAULT VERTICAL LOADS
   A. TOP SLAB DEAD LOADS (SELF-WEIGHT)
   B. TOP SLAB LIVE LOADS 100 PSF
9. DRAWINGS SHALL NOT BE SCALED OR MEASURED FOR DIMENSIONS.

FOUNDATION

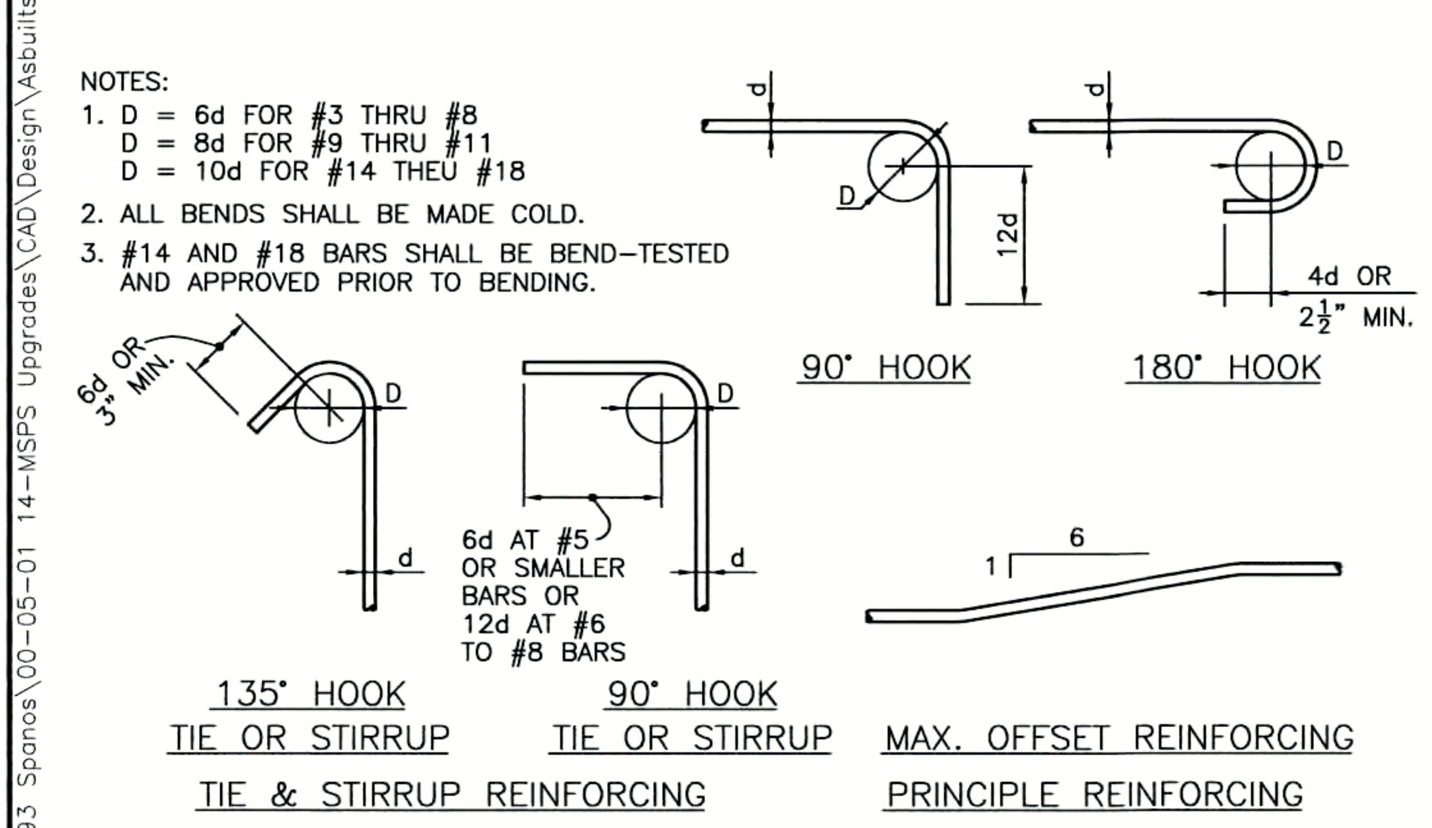
1. FOUNDATION DESIGN IS BASED ON GEOTECHNICAL INVESTIGATION PREPARED BY KLEINFELDER, INC., DATED AUGUST 23, 2005, KLEINFELDER JOB NO. 47465.G01.
2. OWNER SHALL RETAIN THE GEOTECHNICAL ENGINEER TO OBSERVE CONSTRUCTION, INCLUDING SITE GRADING, EVALUATION OF THE PROPOSED ENGINEERED FILL, COMPACTION OF FILL, ALL FOUNDATION EXCAVATION, AND TO PERFORM APPROPRIATE LABORATORY TESTING.
3. THE GEOTECHNICAL ENGINEER SHALL PROVIDE TO THE OWNER AND THE CITY OF STOCKTON A LETTER OF ACCEPTANCE FOR ALL FOUNDATION PREPARATION, BACKFILL, COMPACTION, ETC., PRIOR TO THE PLACEMENT OF ANY FOUNDATION CONCRETE. THE GEOTECHNICAL ENGINEER SHALL ALSO PREPARE A FINAL COMPREHENSIVE REPORT THAT STATES THAT ALL WORK WAS DONE IN COMPLIANCE WITH THE RECOMMENDATIONS MADE IN THE GEOTECHNICAL REPORT, AND THAT ITEMIZES ALL CHANGES MADE DURING FOUNDATION CONSTRUCTION THAT WERE DIFFERENT FROM THE REVIEWED GEOTECHNICAL REPORT.
4. BUILDING FOOTING DESIGN CAPACITIES:
   DEAD + LIVE LOAD BEARING PRESSURE: 1,000 PSF
   DEAD + WIND / SEISMIC BEARING PRESSURE: 1,333 PSF

   MANHOLE/VAULT DESIGN CAPACITY:
   DEAD + LIVE LOAD BEARING PRESSURE: 1,500 PSF

   PUMP STATION DESIGN CAPACITY:
   DEAD + LIVE LOAD BEARING PRESSURE: 3,000 PSF
5. SIDES OF FOOTINGS SHOWN STRAIGHT ARE FORMED. IF SITE CONDITION ALLOWS AND GEOTECHNICAL ENGINEER CONCURS, SIDES OF FOOTINGS MAY BE FORMED OR NOT FORMED AT CONTRACTOR'S OPTION. FOOTINGS CAST DIRECTLY AGAINST EARTH REQUIRE THE FOLLOWING PRECAUTIONS; A) SLOPE SIDES OF EXCAVATIONS AS APPROVED BY THE GEOTECHNICAL ENGINEER, B) CLEAN UP OF SLOUGHING BEFORE, DURING AND AFTER PLACING CONCRETE, C) ADEQUATE COVER MUST BE PROVIDED FOR ALL REBAR. ADD 1" TO ALL SIDES OF FOOTING DIMENSIONS WHICH ARE CAST AGAINST EARTH.

CONCRETE

1. ALL CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH ACI 318. USE MIXES WITH MAXIMUM AGGREGATE SIZE APPROPRIATE FOR FORM REBAR CLEARANCES TO BE ENCOUNTERED (SEE A.C.I.)
2. THE PROPOSED MATERIALS AND MIX DESIGN SHALL BE FULLY DOCUMENTED AND REVIEWED BY THE OWNER'S TESTING LABORATORY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE REQUIRED STRENGTH. SUBMITTAL DATA FROM 30 PREVIOUS COMPRESSION TESTS ON EACH PROPOSED MIX WILL BE REQUIRED FOR REVIEW BEFORE MIX CAN BE APPROVED.
3. ALL CONCRETE SHALL HAVE THE FOLLOWING MINIMUM 28-DAY STRENGTHS, U.N.O.
   FOOTINGS AND BUILDING SLAB, WALLS, TOP SLABS 4,000 PSI
   MISCELLANEOUS SITE CONCRETE 2,500 PSI
4. SCHEDULING OF WORK MAY REQUIRE DESIGN STRENGTH TO BE ACHIEVED IN LESS THAN 28 DAYS. CONTRACTOR SHALL COORDINATE MIX DESIGN AND CONCRETE CYLINDER BREAKS WITH THE OWNER'S TESTING LABORATORY.
5. CONSTRUCTION JOINTS SHALL BE INTENTIONALLY ROUGHENED BY SAND BLASTING OR MECHANICAL MEANS AND CLEANED BEFORE NEW POUR. LOCATION TO BE APPROVED BY THE STRUCTURAL ENGINEER.
6. BACKFILLING OF PUMP STATION, VAULTS, MANHOLE, OR JUNCTION STRUCTURE WALLS AND TOP SLABS SHALL NOT OCCUR UNTIL CONCRETE HAS ATTAINED DESIGN STRENGTH.



DETAIL 1/S1
NTS

CONCRETE UNIT MASONRY

1. ALL CONCRETE UNIT MASONRY SHALL BE GROUTED SOLID.
2. MASONRY UNIT DESIGN STRENGTH f'm = 1,500 PSI.
3. THE PROPOSED MATERIALS GROUT AND MORTAR MIX DESIGNS SHALL BE FULLY DOCUMENTED AND REVIEWED BY THE OWNER'S TESTING LABORATORY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE REQUIRED STRENGTH.

REINFORCING STEEL

1. REINFORCING STEEL SHALL BE ASTM A615, GRADE 60 DEFORMED BARS, U.N.O. REINFORCING STEEL TO BE WELDED SHALL BE ASTM A706.
2. ALL REINFORCING STEEL AND EMBEDMENTS TO BE HELD SECURELY IN PLACE PRIOR TO PLACING CONCRETE. PROVIDE SUFFICIENT SUPPORTS TO ALLOW WALKING ON REINFORCEMENT.
3. WELDING OF REINFORCING IS PROHIBITED UNLESS EXPLICITLY SHOWN ON THE DRAWINGS OR APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.
4. PROVIDE CONTINUOUS REINFORCEMENT WHEREVER POSSIBLE, PLACE ONLY AS SHOWN OR APPROVED, STAGGER SPLICES WHERE POSSIBLE.

STRUCTURAL STEEL

1. MATERIAL SPECIFICATIONS:
   WIDE FLANGE BEAMS: ASTM A992, Fy = 50 KSI
   ALL OTHER ROLLED SHAPES AND PLATES: ASTM A36, Fy = 36 KSI
   ALL BASE PLATES, ANGLES AND MISCELLANEOUS STEEL: ASTM A36, Fy = 36 KSI U.N.O.
   MACHINE BOLTS: ASTM A307, U.N.O.
   HIGH STRENGTH BOLTS: ASTM A325SC, U.N.O.
   HEADED ANCHOR STUDS: ASTM A108
2. ALL STRUCTURAL STEEL TO BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS
3. ALL WELDING TO CONFORM TO AWS D1.1 AND TO BE PERFORMED BY CERTIFIED WELDERS.
4. ALL GROOVE AND BUTT WELDS TO BE COMPLETE PENETRATION U.N.O.
5. BOLT HOLES SHALL BE NO MORE THAN 1/16" OVERSIZE, U.N.O.
6. CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS PER SPECIFICATIONS TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.

METAL DECKING

1. METAL DECKING SHALL BE 1½" DEEP x 18 GA. HSB-36 AS MANUFACTURED BY VERCO MANUFACTURING CO., PHOENIX, ARIZONA. DECK PANELS ARE TO BE THREE-SPAN CONTINUOUS WHEREVER POSSIBLE, ONE-SPAN ONLY WHERE UNAVOIDABLE. DECKING AND ALL ACCESSORIES SHALL BE FORMED FROM STEEL SHEETS HAVING A MINIMUM YIELD STRENGTH OF 38,000 PSI AND CONFORMING TO ASTM A446, GRADE A. THE STEEL SHALL HAVE A METAL PROTECTIVE COATING OF ZINC CONFORMING TO LIGHT COMMERCIAL DECKING.
2. WELD METAL DECK TO SUPPORTS AT ROOF AS FOLLOWS:
   A. WHERE SUPPORTS ARE PERPENDICULAR TO FLUTES:
   PLUG WELDS WITH AN EFFECTIVE FUSION DIAMETER OF 1/2" AT EACH FLUTE AT EACH INTERMEDIATE SUPPORT AND EACH SHEET END (MIN. OF 4-SPOT WELDS PER 3'-0" SHEET.)
   B. WHERE SUPPORTS ARE PARALLEL TO FLUTES:
   PLUG WELDS WITH AN EFFECTIVE FUSION DIAMETER OF 1/2" AT EACH FLUTE AT 12" O.C. WHERE FLUTES DO NOT LAND ON SIDE SUPPORTS, CUT SHEET AND PROVIDE CLOSURE PLATES.
   C. ALL SIDE SEAMS SHALL BE BUTTON-PUNCHED AT 24" O.C., MAX.
3. MINIMUM BEARING OF DECKING SHALL BE 2".

GRATING

GRATING SHALL BE EITHER ALUMINUM OR GALVANIZED STEEL AS NOTED IN THESE DRAWINGS. SEE DRAWINGS & PROJECT SPECS. FOR GRATING SIZES & OTHER REQUIREMENTS. GRATING IS TO SAFELY SUSTAIN A UNIFORMLY DISTRIBUTED LOAD OF 100 POUNDS PER SQUARE FOOT AND DEFLECT LESS THAN 0.25 INCHES. GRATING SHALL HAVE BANDING AT ALL EDGES AND SSHALL BE MADE UP OF MULTIPLE GRATING PANELS. EACH PANEL SHALL BE FASTENED WITH A MINIMUM OF 4 CLIPS.

DEFERRED SUBMITTALS/SHOP DRAWINGS

THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW:
1. CONCRETE MIX DESIGNS.
2. UNIT MASONRY SHOP DRAWINGS, GROUT MIX DESIGNS AND CERTIFICATIONS OF COMPLIANCE.
3. BAR REINFORCING STEEL SHOP DRAWINGS.
4. STRUCTURAL STEEL & ALUMINUM SHOP DRAWINGS.
5. WELDING PROCEDURE SPECIFICATIONS, WELDING ELECTRODE DATA, & WELDER QUALIFICATIONS.
6. METAL DECKING SHOP DRAWINGS.

SPECIAL INSPECTIONS

SPECIAL INSPECTIONS
THE OWNER SHALL EMPLOY A SPECIAL INSPECTOR DURING CONSTRUCTION ON THE FOLLOWING PHASES OF WORK:

EXPANSION BOLTS (WHERE NOTED ON THE PLANS)
– DURING INSTALLATION OF EXPANSION BOLTS, INCLUDING DIAMETER OF HOLE, DEPTH OF EMBEDMENT AND TORQUING OF BOLT.

CONCRETE
– DURING THE TAKING OF TEST SPECIMENS AND PLACING OF ALL REINFORCED CONCRETE.

EXCEPTIONS:
1. SITE WORK CONCRETE FULLY SUPPORTED ON EARTH WHERE NO SPECIAL HAZARD EXISTS.

BOLTS INSTALLED IN CONCRETE
– DURING INSTALLATION OF ANCHOR BOLTS AND EMBEDDED PLATES PLACING OF CONCRETE AROUND SUCH BOLTS AND EMBEDDED PLATES.

REINFORCING STEEL
PERIODICALLY, DURING THE PLACING OF REINFORCING STEEL FOR ALL CONCRETE REQUIRED TO HAVE SPECIAL INSPECTION.

HIGH STRENGTH BOLTING
– DURING ALL BOLT INSTALLATIONS AND TIGHTENING OPERATIONS.
EXCEPTIONS:
1. THE SPECIAL INSPECTOR NEED NOT BE PRESENT DURING THE ENTIRE INSTALLATION AND TIGHTENING OPERATION, PROVIDED HE HAS:
   i) INSPECTED THE SURFACES AND BOLT TYPE FOR CONFORMANCE TO PLANS AND SPECIFICATIONS PRIOR TO START OF BOLTING.
   ii) AND WILL, UPON COMPLETION OF ALL BOLTING, VERIFY THE MINIMUM SPECIFIED BOLT TENSION FOR 10 PERCENT OF THE BOLTS FOR EACH CONNECTION WITH A MINIMUM OF TWO BOLTS PER CONNECTION.
2. IN BEARING-TYPE CONNECTIONS WHEN THREADS ARE NOT REQUIRED BY DESIGN TO BE EXCLUDED FROM THE SHEAR PLANE, INSPECTION PRIOR TO OR DURING INSTALLATION WILL NOT BE REQUIRED.

WELDING
– ALL STRUCTURAL WELDING, INCLUDING WELDING OF REINFORCING STEEL.

NOTES:
1. THE SPECIAL INSPECTOR NEED NOT BE CONTINUOUSLY PRESENT DURING WELDING OF THE FOLLOWING ITEMS, PROVIDED THE MATERIALS, QUALIFICATIONS OF WELDING PROCEDURES AND WELDERS ARE VERIFIED PRIOR TO THE START OF WORK; PERIODIC INSPECTIONS ARE MADE OF WORK IN PROGRESS; AND A VISUAL INSPECTION OF ALL WELDS IS MADE PRIOR TO THE COMPLETION OR PRIOR TO THE SHIPMENT OF SHOP WELDING:
   – SINGLE PASS FILLET WELDS NOT EXCEEDING 5/16 INCH (7.9mm) IN SIZE.
   – FLOOR AND ROOF DECK WELDING
   – WELDED STUD WHEN USED FOR STRUCTURAL DIAPHRAGM OR COMPOSITE SYSTEMS.
   – WELDED SHEET STEEL FOR COLD-FORMED STEEL FRAMING MEMBERS SUCH AS STUDS AND JOISTS.
   – WELDING OF STAIR AND RAILING SYSTEMS.

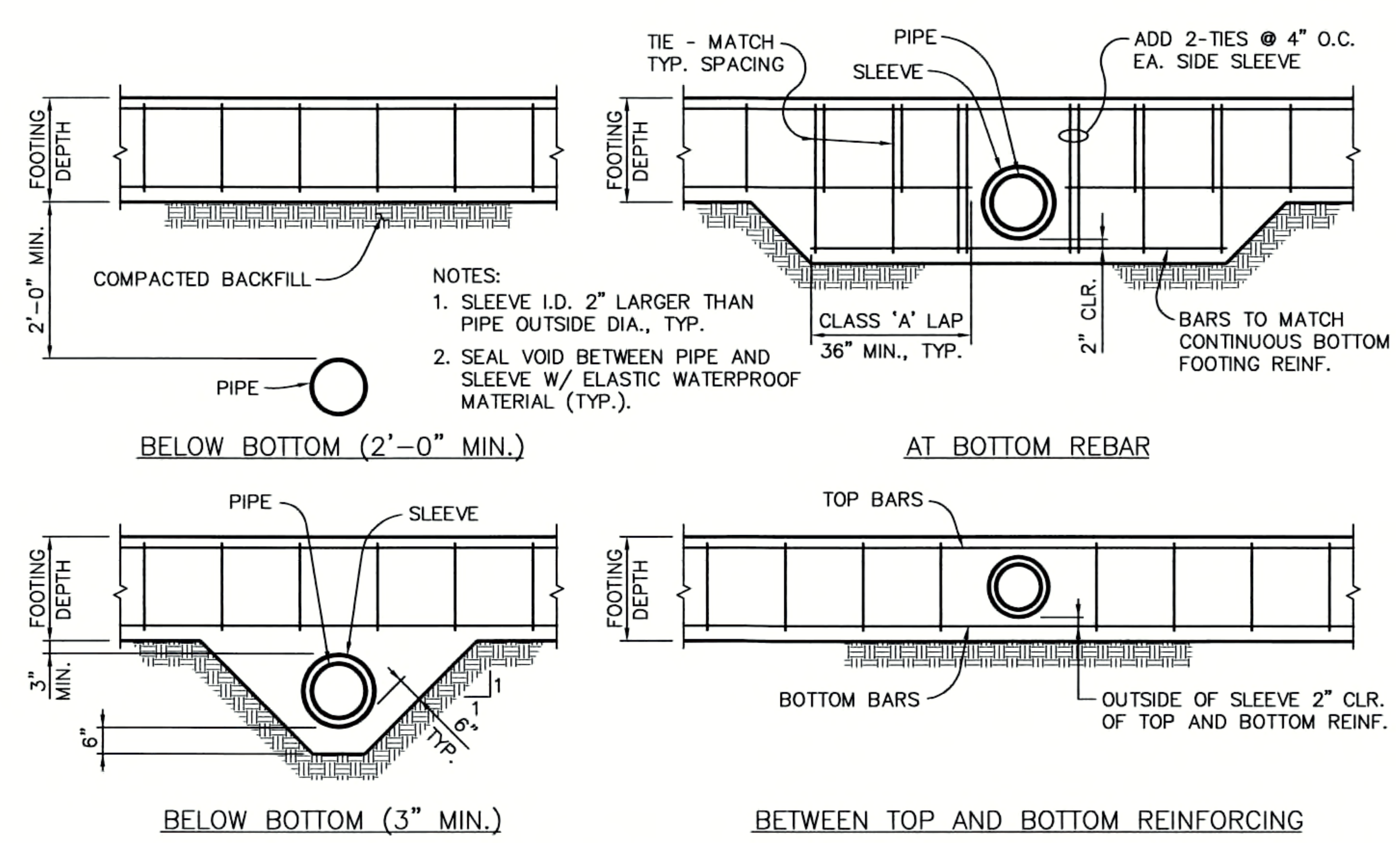
EPOXY ANCHORS AND DOWELS
– DURING ALL ANCHOR AND DOWEL INSTALLATIONS, U.N.O. ON THE DRAWINGS. SPECIAL INSPECTOR SHALL VERIFY THE FOLLOWING:
– HOLE DIAMETER AND DEPTH;
– CLEANLINESS OF HOLE AND ANCHOR;
– ADHESIVE TYPE AND APPLICATION;
– ANCHOR DIAMETER, EMBEDMENT AND GRADE OF STEEL;
– OTHER REQUIREMENTS SPECIFIED IN THE APPROPRIATE I.C.B.O. REPORT, IN THE MANUFACTURER'S LITERATURE AND ON THE DRAWINGS.

STRUCTURAL MASONRY
1. FOR MASONRY, OTHER THAN FULLY GROUTED OPEN-END HOLLOW-UNIT MASONRY, DURING PREPARATION AND TAKING OF ANY REQUIRED PRISMS OR TEST SPECIMENS, DURING THE PLACEMENT OF MASONRY UNITS, DURING THE PLACEMENT OF REINFORCING STEEL, IMMEDIATELY PRIOR TO CLOSING OF CLEANOUTS, PRIOR TO EACH GROUTING OPERATION, AND DURING ALL GROUTING OPERATIONS.

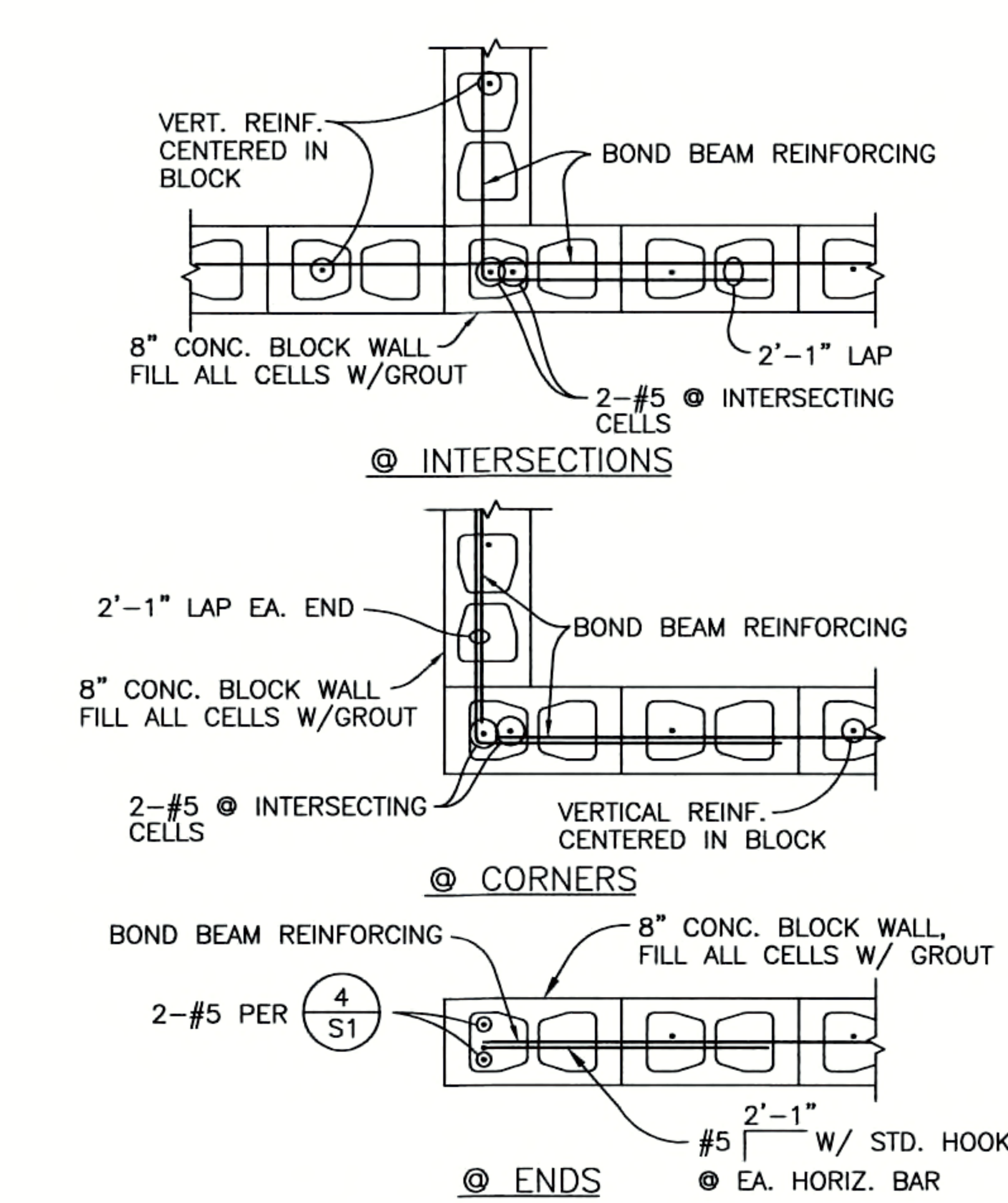
   EXCEPTION: FOR HOLLOW-UNIT MASONRY WHERE THE f'm IS NO MORE THAN 1,500 PSI, SPECIAL INSPECTION MAY BE PERFORMED AS REQUIRED FOR FULLY GROUTED OPEN-END HOLLOW-UNIT MASONRY SPECIFIED IN ITEM 2 BELOW.
2. FOR FULLY GROUTED OPEN-END HOLLOW-UNIT MASONRY, DURING PREPARATION AND TAKING OF ANY REQUIRED PRISMS OR TEST SPECIMENS, AT THE START OF LAYING UNITS, AFTER THE PLACEMENT OF REINFORCING STEEL, PRIOR TO EACH GROUTING OPERATION, AND DURING ALL GROUTING OPERATIONS.
3. DESIGN IS BASED ON f'm = 1500 psi, FULL ALLOWABLE STRESSES.
4. VERIFICATION OF f'm SHALL BE BY MEANS OF THE UNIT STRENGTH METHOD AS OUTLINED IN CBC SECTION 2105.3.4.
5. THE SPECIAL INSPECTOR SHALL VERIFY THE FOLLOWING:
   – STORAGE OF MATERIALS
   – CERTIFICATES FOR MASONRY UNITS AND GROUT
   – TYPE OF MORTAR
   – BLOCK LAYOUT (DIMENSIONS)
   – REINFORCING GRADE, SIZE, AND PLACEMENT
   – ANCHOR AND REINFORCING DOWEL LOCATIONS AND EMBEDMENTS
   – PREPARATION OF CONTROL JOINTS AND CONSTRUCTION JOINTS
   – MORTAR JOINT TOOLING
   – CLEANLINESS OF CELLS
   – VIBRATION EQUIPMENT AND OPERATIONS
   – GROUTING LIMITATIONS IN ACCORDANCE WITH UBC TABLE 21-C

SPECIAL INSPECTOR
– THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE HIS COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR INSPECTION OF A PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

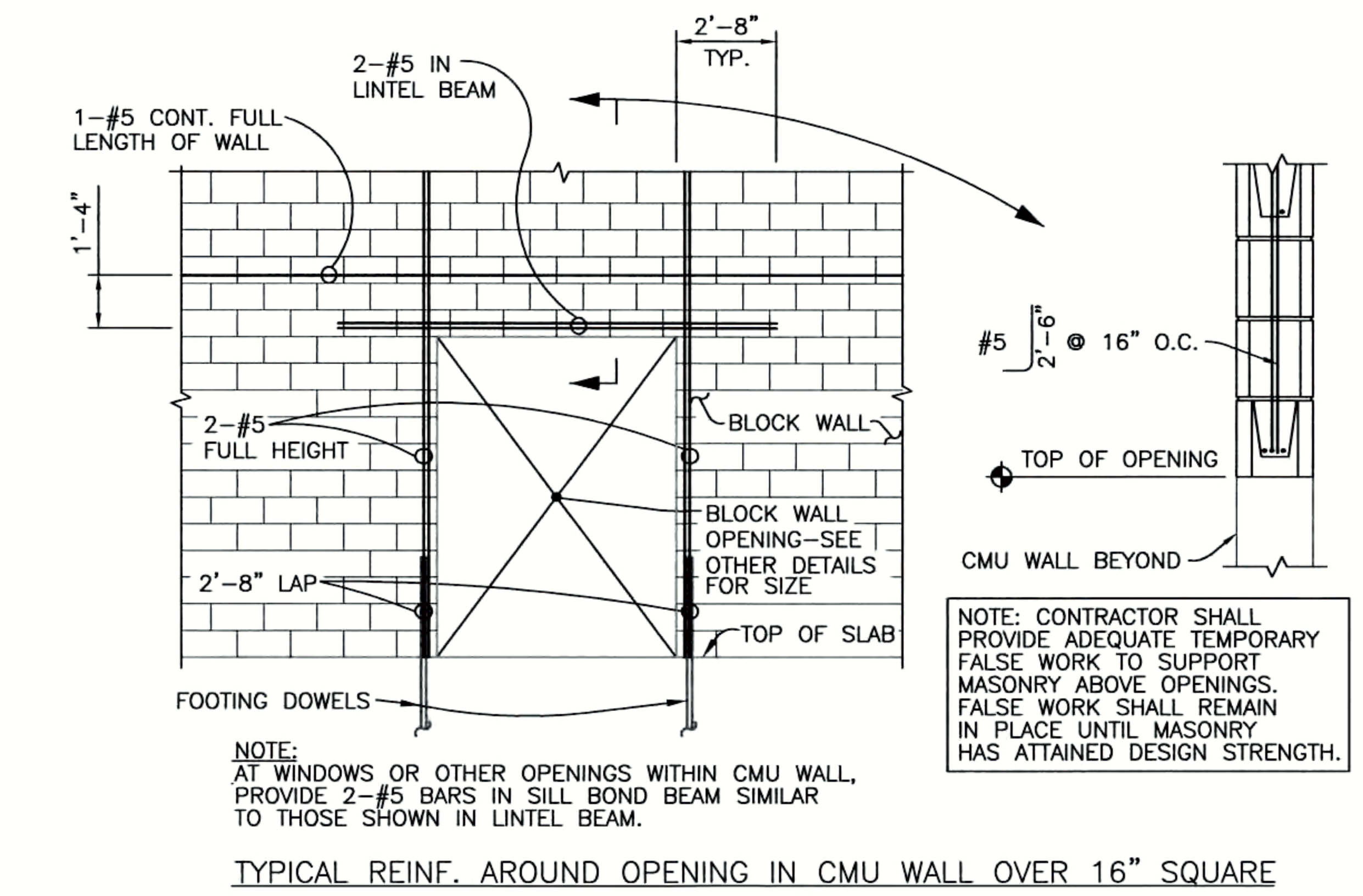
DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR
– THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS.
– THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OR ARCHITECT OF RECORD, AND OTHER DESIGNATED PERSONS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL.
– THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.



DETAIL 2/S1
NTS

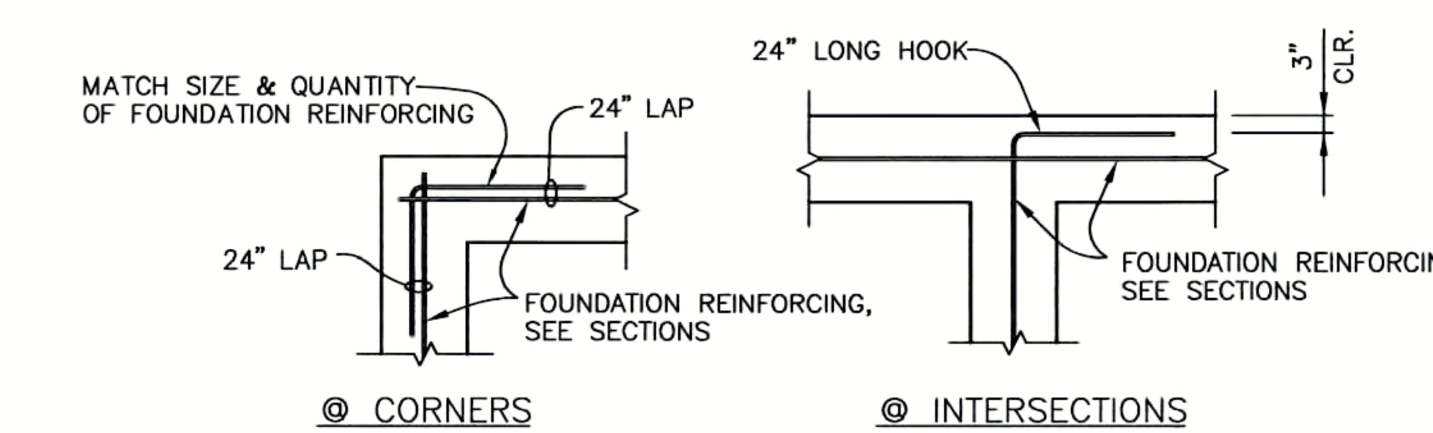


DETAIL 3/S1
3/4" = 1'-0"



TYPICAL REINF. AROUND OPENING IN CMU WALL OVER 16" SQUARE

DETAIL 4/S1
NTS



DETAIL 5/S1
NTS

REINFORCING LAP SPLICES		
CONCRETE STRENGTH	f'_c = 4000 PSI	
BAR SIZE	TOP BARS	OTHER BARS
#3	1'-4"	1'-4"
#4	1'-8"	1'-4"
#5	2'-1"	1'-7"
#6	2'-5"	1'-11"
#7	3'-7"	2'-9"
#8	4'-1"	3'-1"
#9	4'-7"	3'-6"
#10	5'-2"	3'-11"
#11	5'-8"	4'-5"

NOTES:
1. LAP SPLICE LENGTHS SHALL BE INCREASED BY 50% WHERE BAR CLEAR COVER IS LESS THAN 2 BAR DIAMETERS OR WHERE SPACING BETWEEN BARS BEING SPLICED IS LESS THAN 5 BAR DIAMETERS.
2. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.

DETAIL 6/S1
NTS

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

GENERAL NOTES, SPECIFICATIONS & TYPICAL DETAILS

DEPARTMENT OF MUNICIPAL UTILITIES
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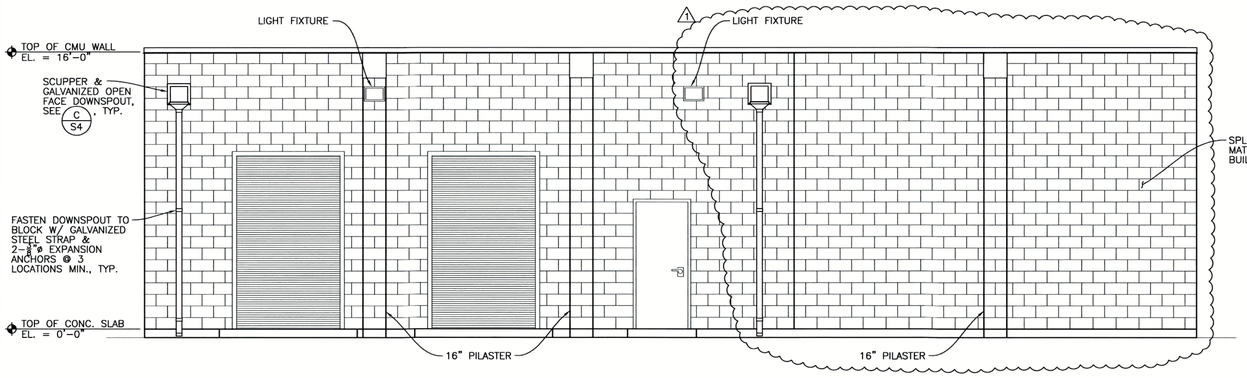
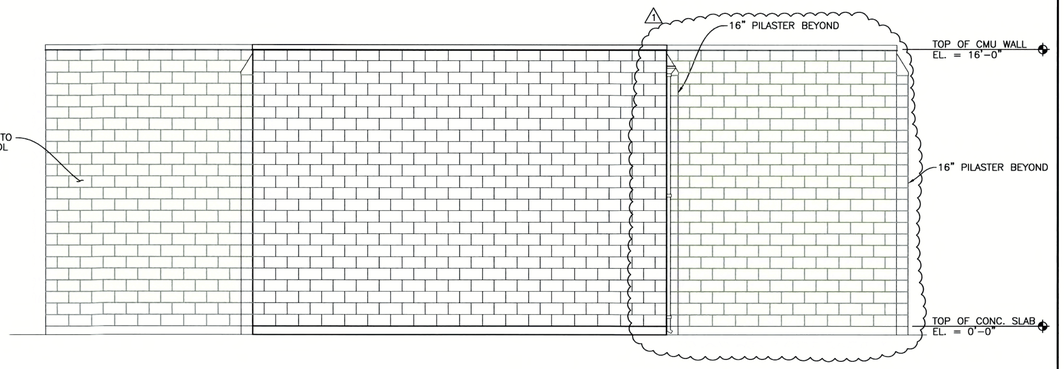
31 of 89 SHEETS
PROJECT No. 293-00-05-01



SOUTH ELEVATION
1/4" = 1'-0"



WEST ELEVATION
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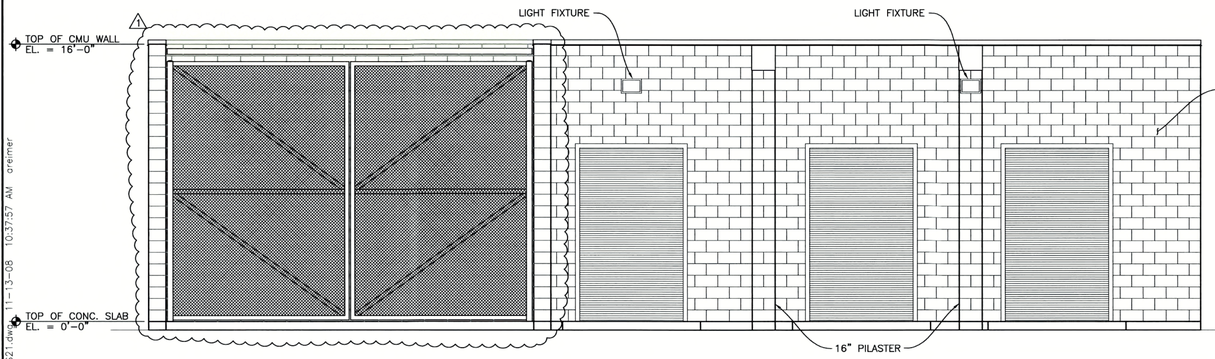
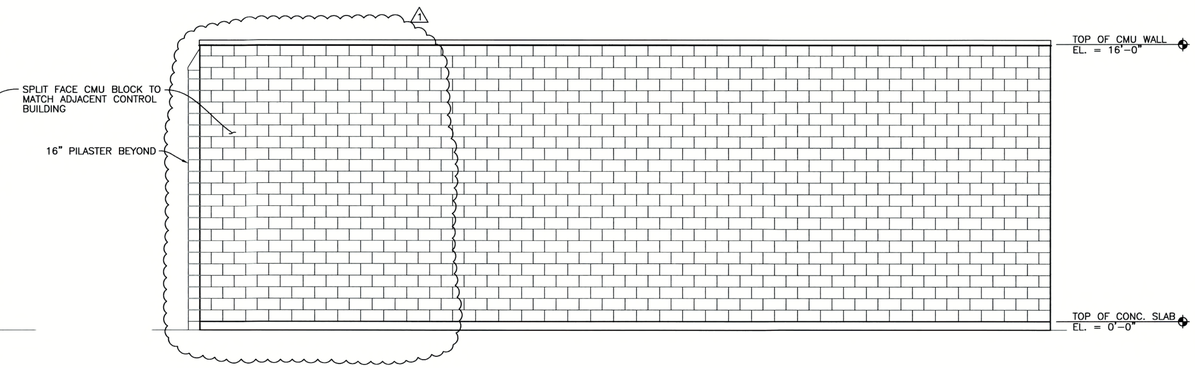


NORTH ELEVATION
1/4" = 1'-0"



EAST ELEVATION
1/4" = 1'-0"

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14-Mile Slough Pump Station Upgrades

BUILDING ELEVATIONS

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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S2.1
32 of 89 SHEETS

PROJECT No.
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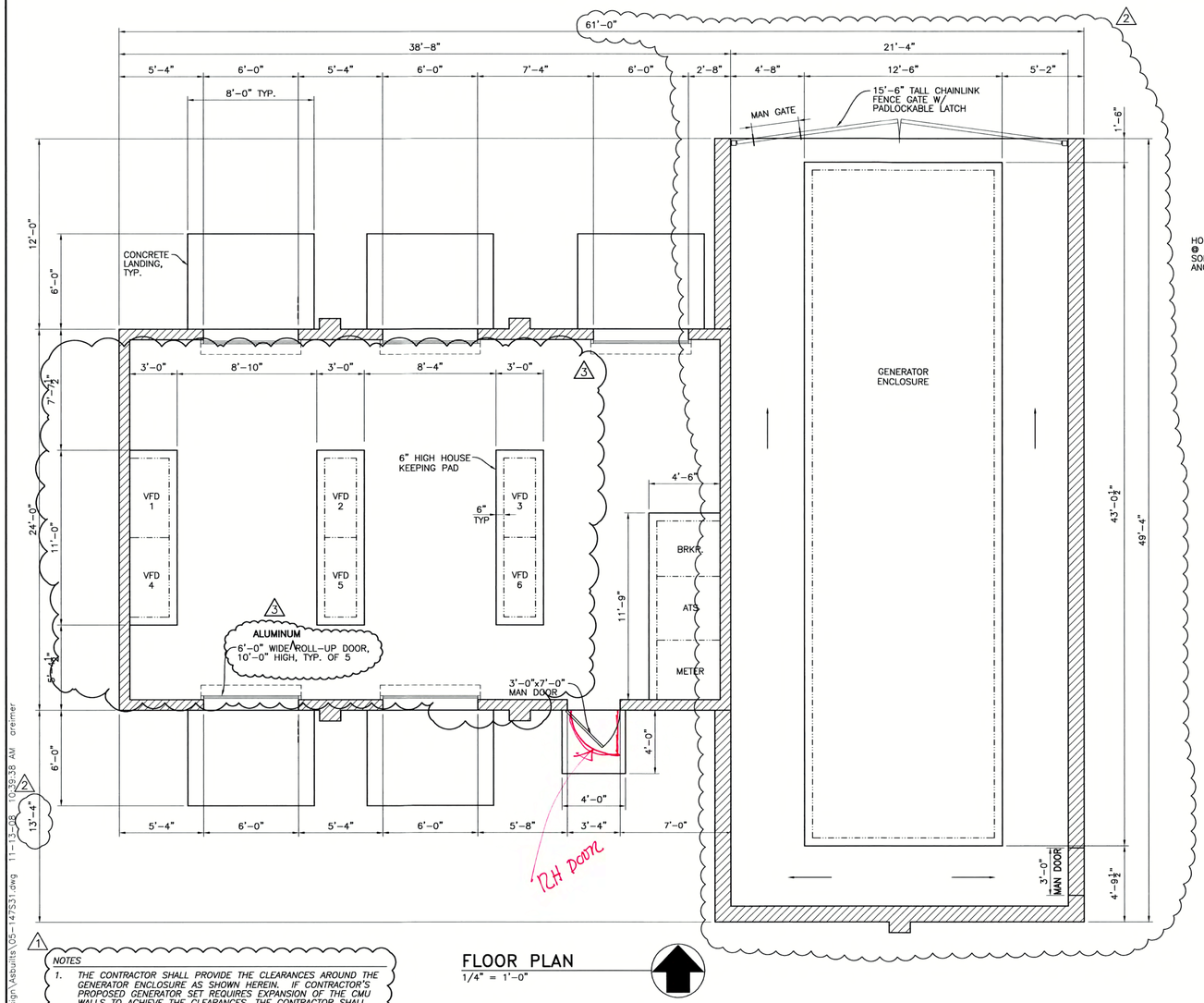
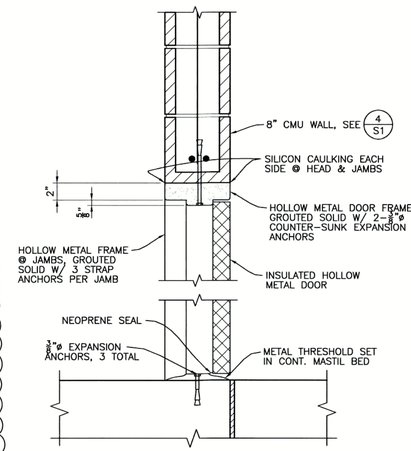


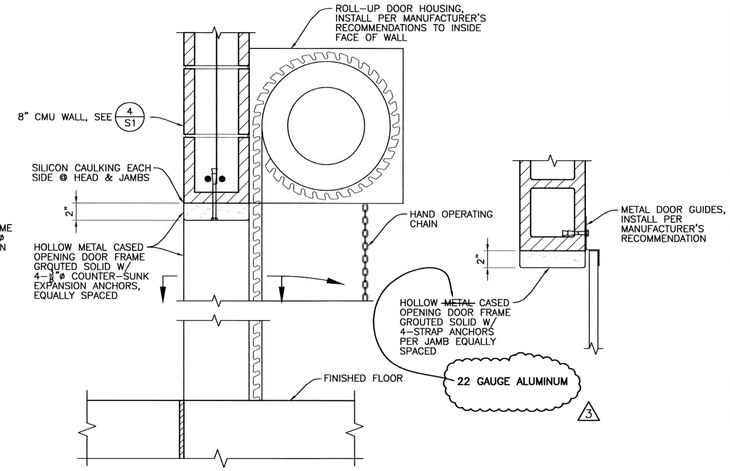
NOTES

1. THE CONTRACTOR SHALL PROVIDE THE CLEARANCES AROUND THE GENERATOR ENCLOSURE AS SHOWN HEREIN. IF CONTRACTOR'S PROPOSED GENERATOR SET REQUIRES EXPANSION OF THE CMU WALLS TO ACHIEVE THE CLEARANCES, THE CONTRACTOR SHALL INCLUDE ALL ADDITIONAL COSTS, INCLUDING BUT NOT LIMITED TO, ENGINEERING, DESIGN, CONSTRUCTION MATERIALS, AND LABOR IN THEIR BID PRICE.

FLOOR PLAN
1/4" = 1'-0"



MAN-DOOR DETAIL
DETAIL 1 / S3.1
1 1/2" = 1'-0"



ROLL-UP-DOOR DETAIL
DETAIL 2 / S3.1
1 1/2" = 1'-0"

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14-Mile Slough Pump Station Upgrades

FLOOR PLAN

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CHECKED BY:	JAF	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01
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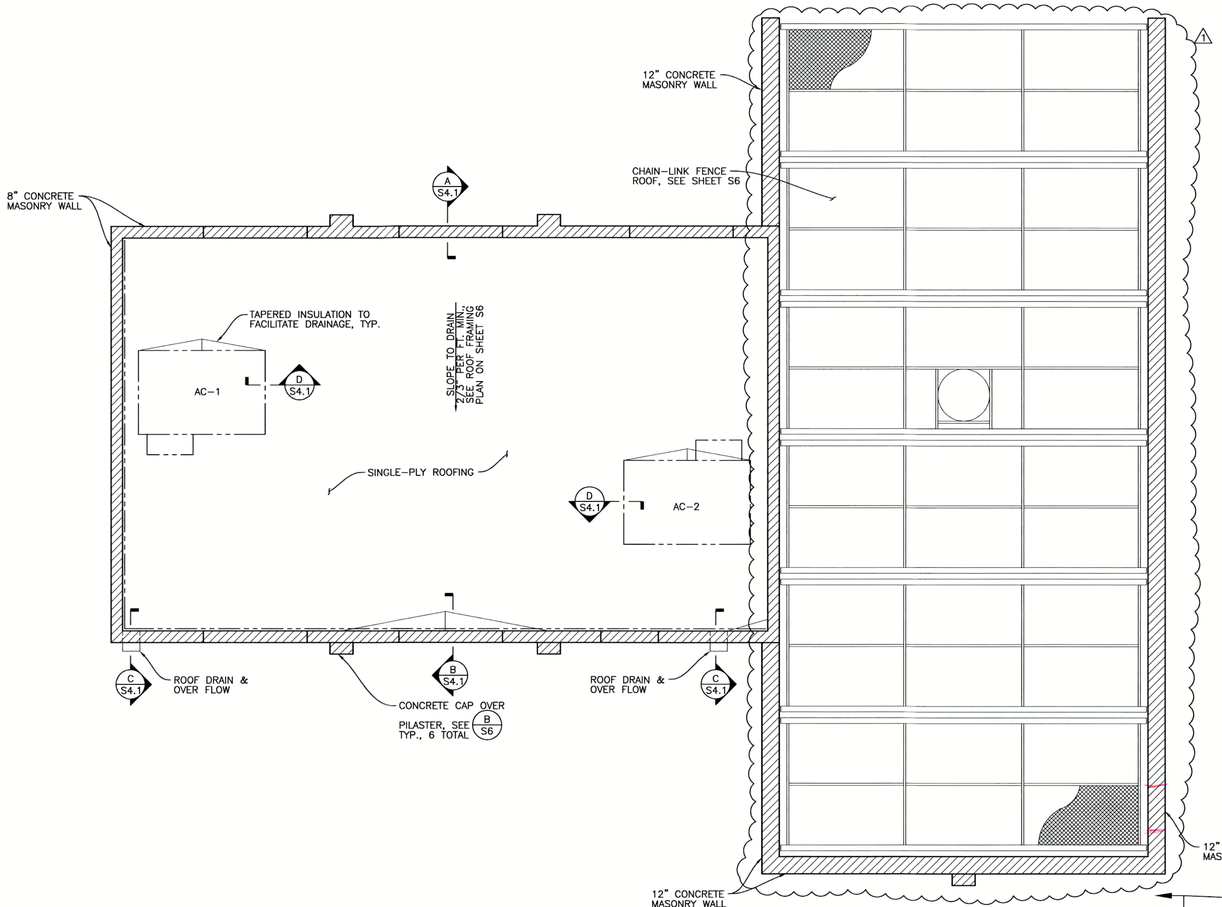
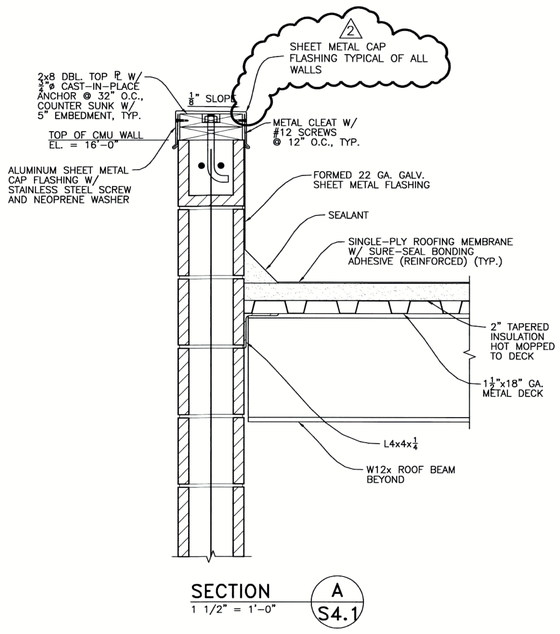
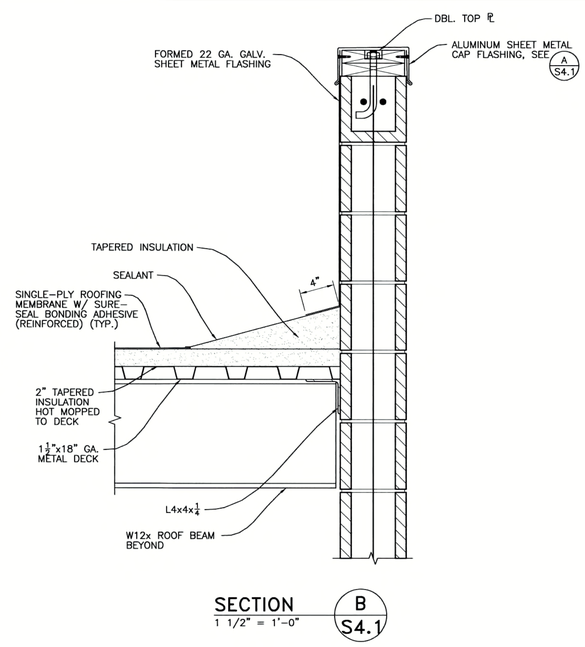


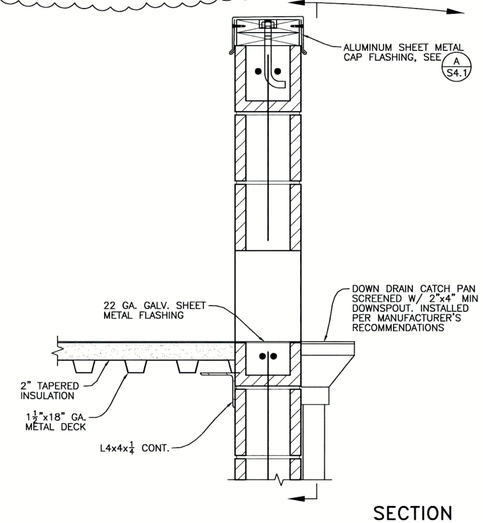
ROOF PLAN
1/4" = 1'-0"

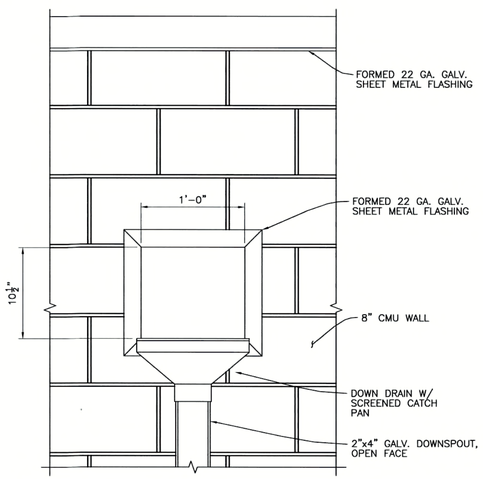


SECTION A
1 1/2" = 1'-0"

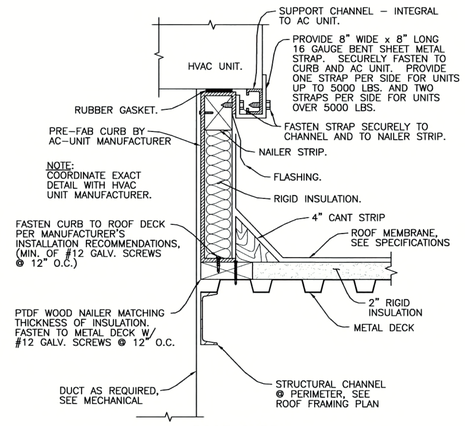


SECTION B
1 1/2" = 1'-0"





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



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

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ROOF PLAN, SECTIONS & DETAILS

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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S4.1
34 of 89 SHEETS

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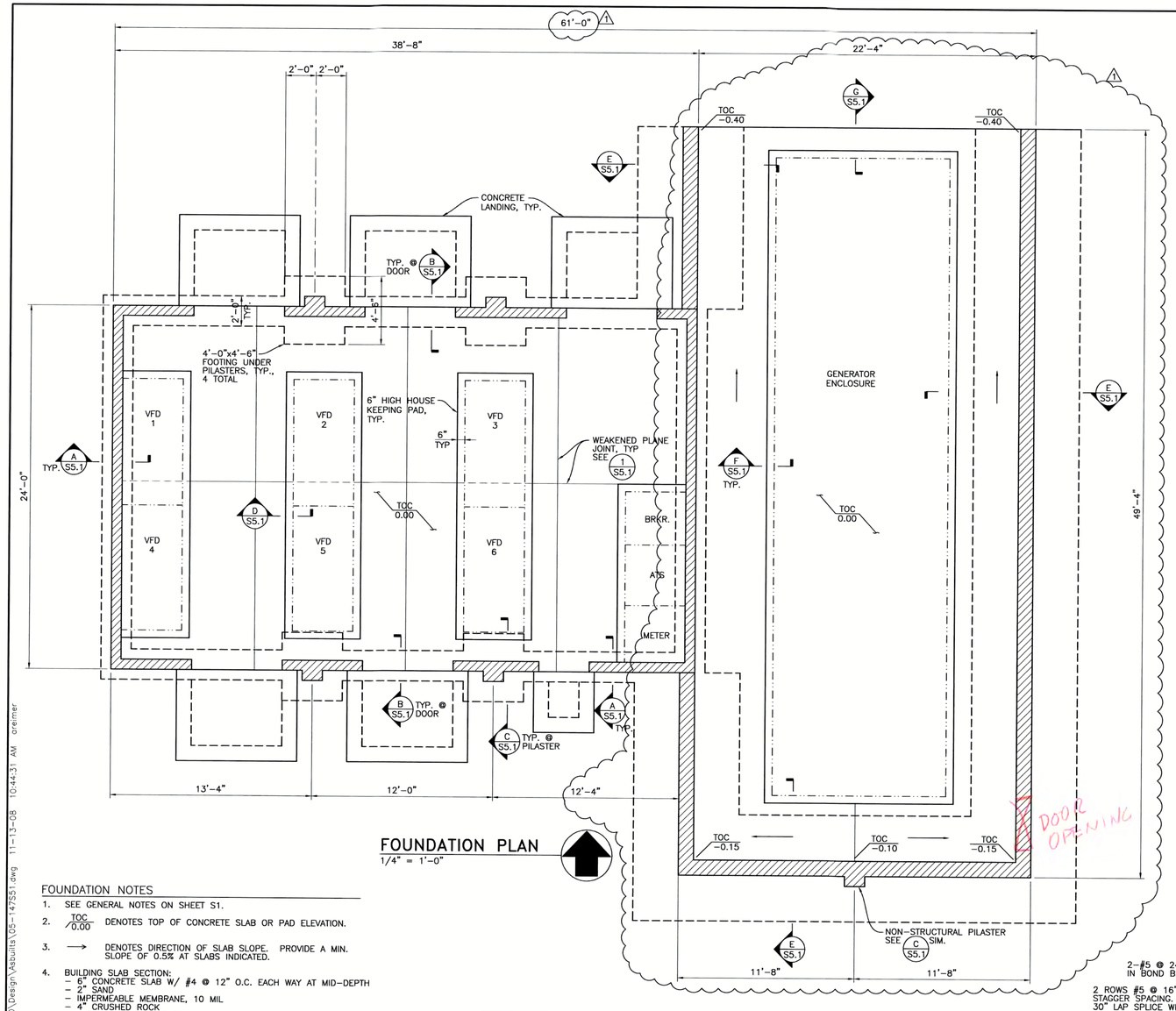
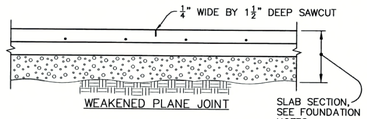


FOUNDATION PLAN
1/4" = 1'-0"

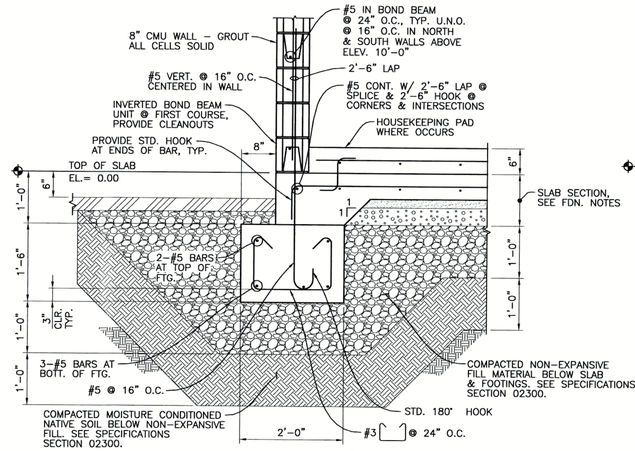
FOUNDATION NOTES

1. SEE GENERAL NOTES ON SHEET S1.
2. TOC 0.00 DENOTES TOP OF CONCRETE SLAB OR PAD ELEVATION.
3. → DENOTES DIRECTION OF SLAB SLOPE. PROVIDE A MIN. SLOPE OF 0.5% AT SLABS INDICATED.
4. BUILDING SLAB SECTION:
   - 6" CONCRETE SLAB W/ #4 @ 12" O.C. EACH WAY AT MID-DEPTH
   - 2" SAND
   - IMPERMEABLE MEMBRANE, 10 MIL
   - 4" CRUSHED ROCK
   - 12" NON-EXPANSIVE FILL
   - 12" CONDITIONED NATIVE SUBGRADE
   (SEE SPECIFICATIONS SECTION 02300 FOR COMPACTION REQUIREMENTS)
5. DENOTES CONCRETE BLOCK WALL. GROUT ALL CELLS SOLID.
6. ANCHORAGE OF EQUIPMENT SHALL BE BY THE MANUFACTURER. MANUFACTURER SHALL SUBMIT DRAWINGS AND CALCULATIONS FOR THE EQUIPMENT ANCHORAGE FOR REVIEW. SEE PROJECT SPECIFICATIONS.
7. SEE SHEET S3 FOR DIMENSIONS NOT SHOWN.
8. SEE 3/S1 FOR TYPICAL CMU REINFORCEMENT AT WALL CORNERS & INTERSECTIONS AND ENDS.
9. SEE 4/S1 FOR TYPICAL CMU REINFORCEMENT AT OPENINGS.
10. SEE 2/S1 FOR FOUNDATION REINFORCEMENT AT PIPES/CONDUITS PASSING UNDER OR THROUGH FOOTINGS.

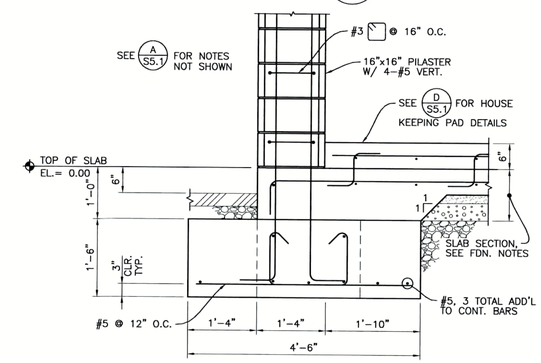
NOTES:
1. SAW CUTTING SHALL BE COMPLETED NO MORE THAN 12 HOURS AFTER PLACING CONCRETE SLAB. PLACING CONCRETE SLAB.
2. JOINTS SHALL BE LOCATED AT 15'-0" O.C. MAX.
3. AT CONTRACTOR'S OPTION, IN LIEU OF SAWCUTTING, CONTRACTOR MAY INSTALL A 1½" DEEP PREFORMED ZIP STRIP.



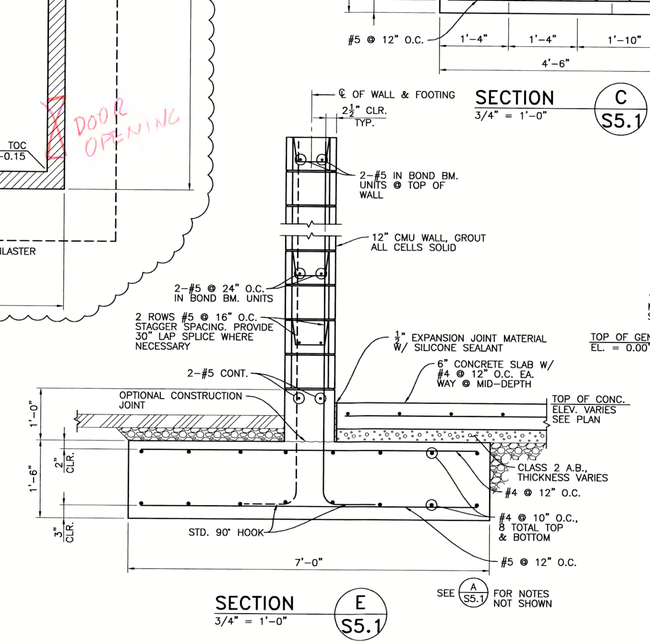
DETAIL 1
3/4" = 1'-0" — S5.1



SECTION A
3/4" = 1'-0" — S5.1

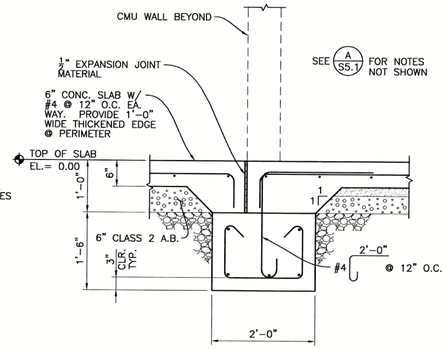


SECTION C
3/4" = 1'-0" — S5.1

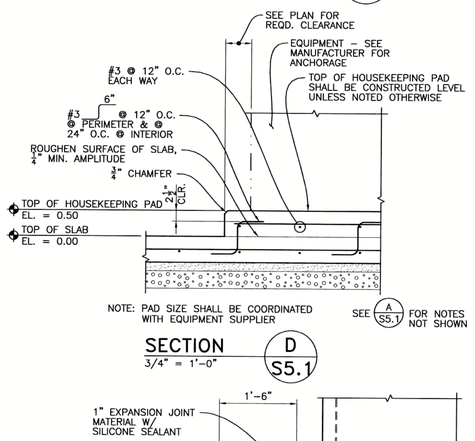


SECTION E
3/4" = 1'-0" — S5.1

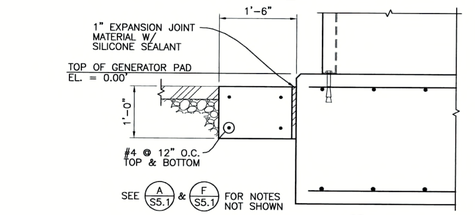
SEE A S5.1 FOR NOTES NOT SHOWN



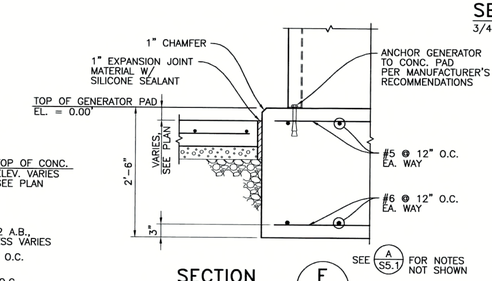
SECTION B
3/4" = 1'-0" — S5.1



SECTION D
3/4" = 1'-0" — S5.1



SECTION G
3/4" = 1'-0" — S5.1



SECTION F
3/4" = 1'-0" — S5.1

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FOUNDATION PLAN, SECTIONS & DETAILS

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CITY OF STOCKTON, CALIFORNIA

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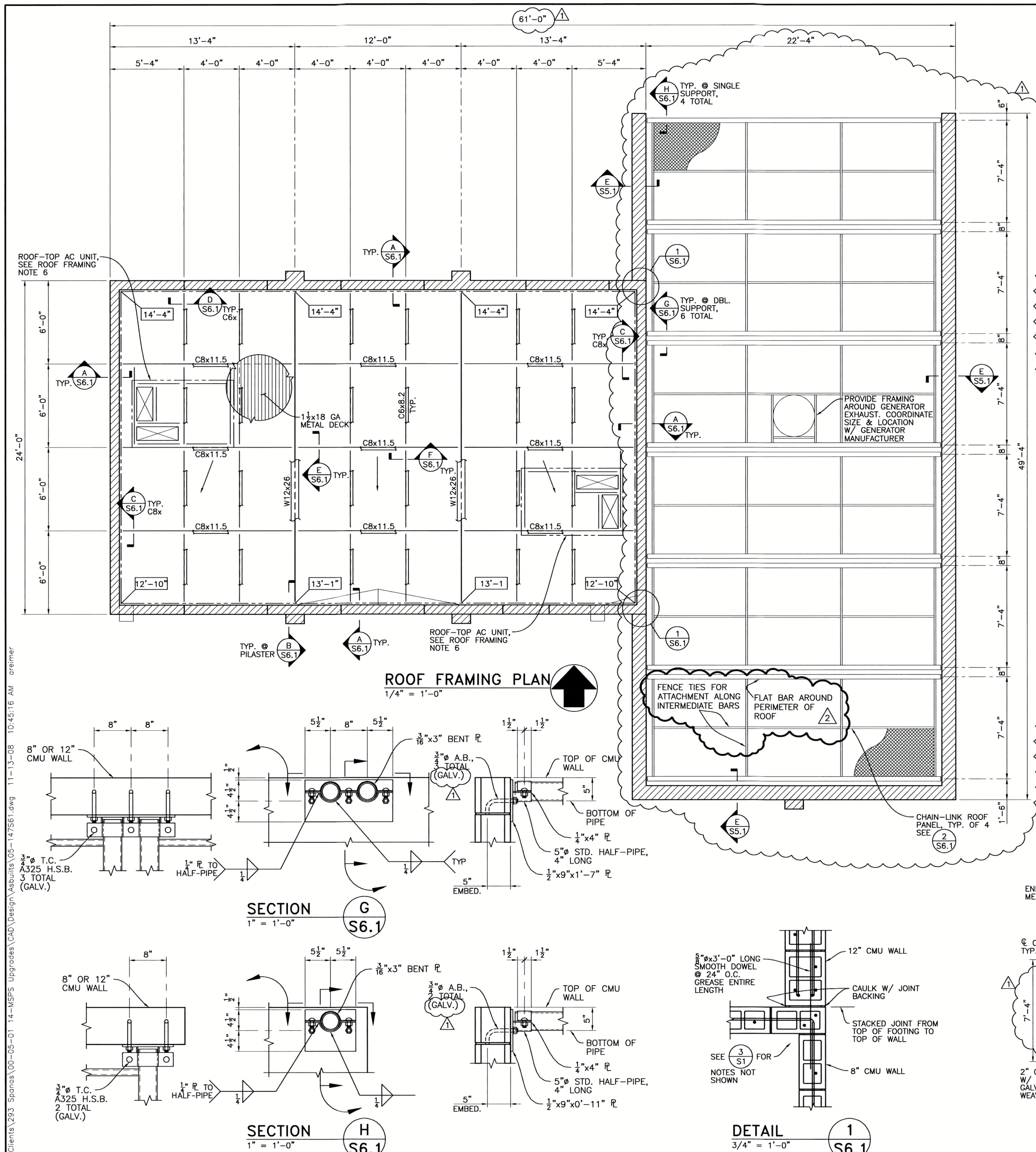

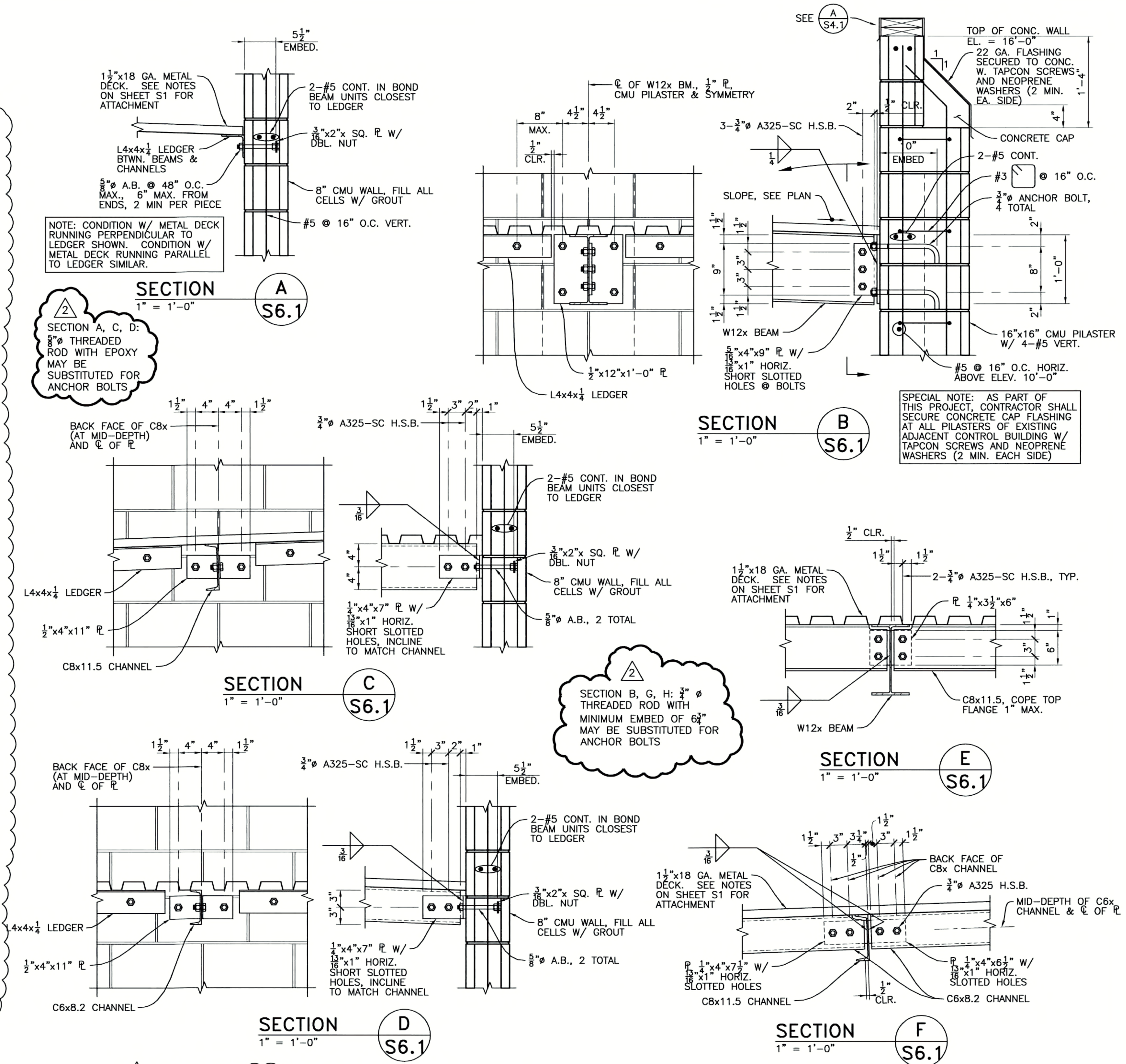

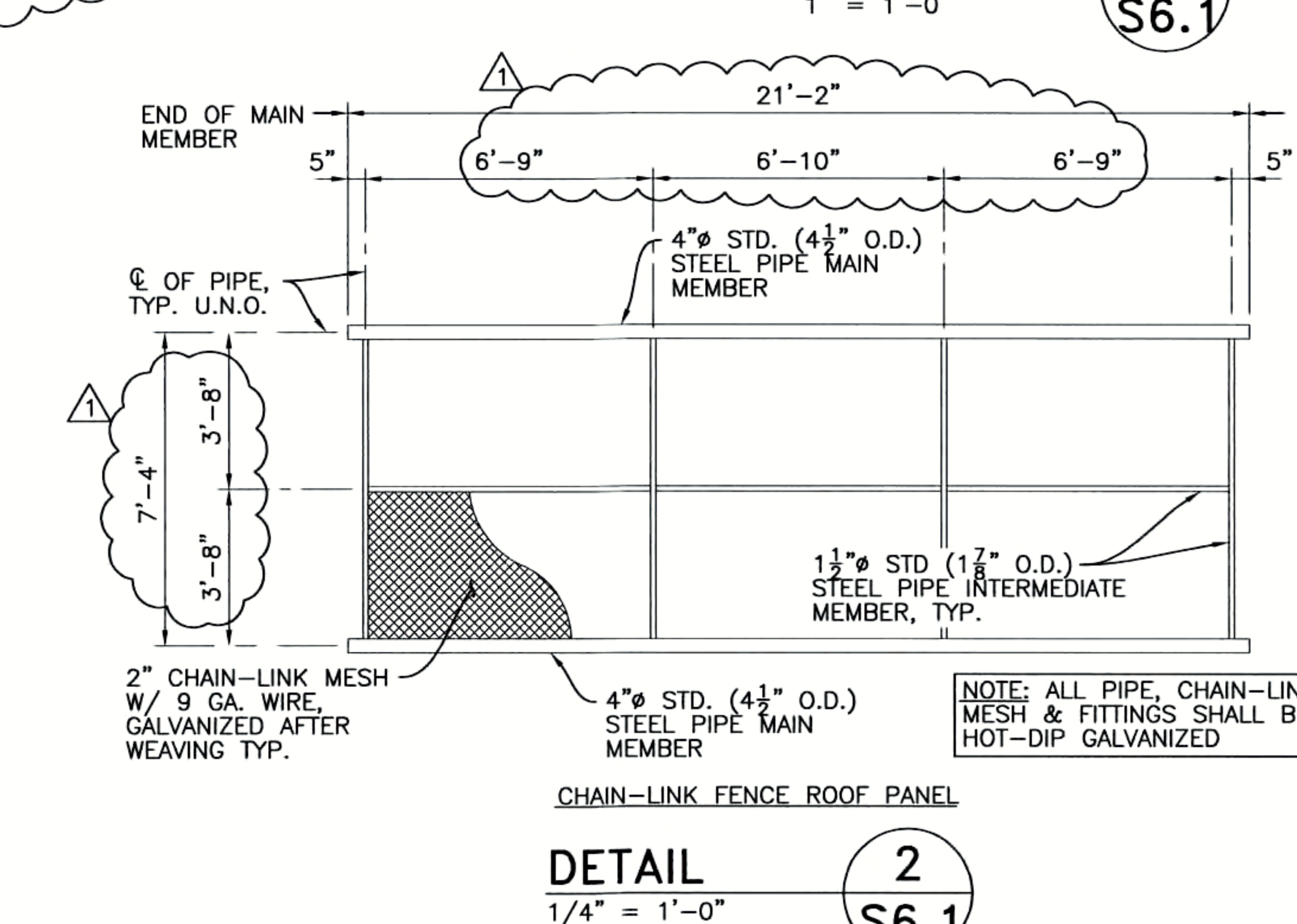

ROOF FRAMING NOTES:

1. SEE GENERAL NOTES ON SHEET S1.
2. [13'-1] DENOTES TOP OF STEEL BEAM/LEDGER ELEVATION.
3. ——— DENOTES DIRECTION OF ROOF SLOPE.
4. [hatched] DENOTES CONCRETE BLOCK WALL. GROUT ALL CELLS SOLID.
5. SEE SHEET S3 FOR DIMENSIONS NOT SHOWN.
6. ROOF-TOP AC UNITS SHALL BE LOCATED PER THE MECHANICAL DWGS. SEE FLASHING DETAIL ON SHEET S4. C6x8.2 CHANNELS SHALL BE PROVIDED BENEATH PERIMETER OF UNIT AND AROUND PERIMETER OF ALL OPENINGS IN METAL DECK. SEE F/S6.1

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

ROOF FRAMING PLAN, SECTIONS & DETAILS

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DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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CHECKED BY: JAF	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES		PROJECT No. 293-00-05-01
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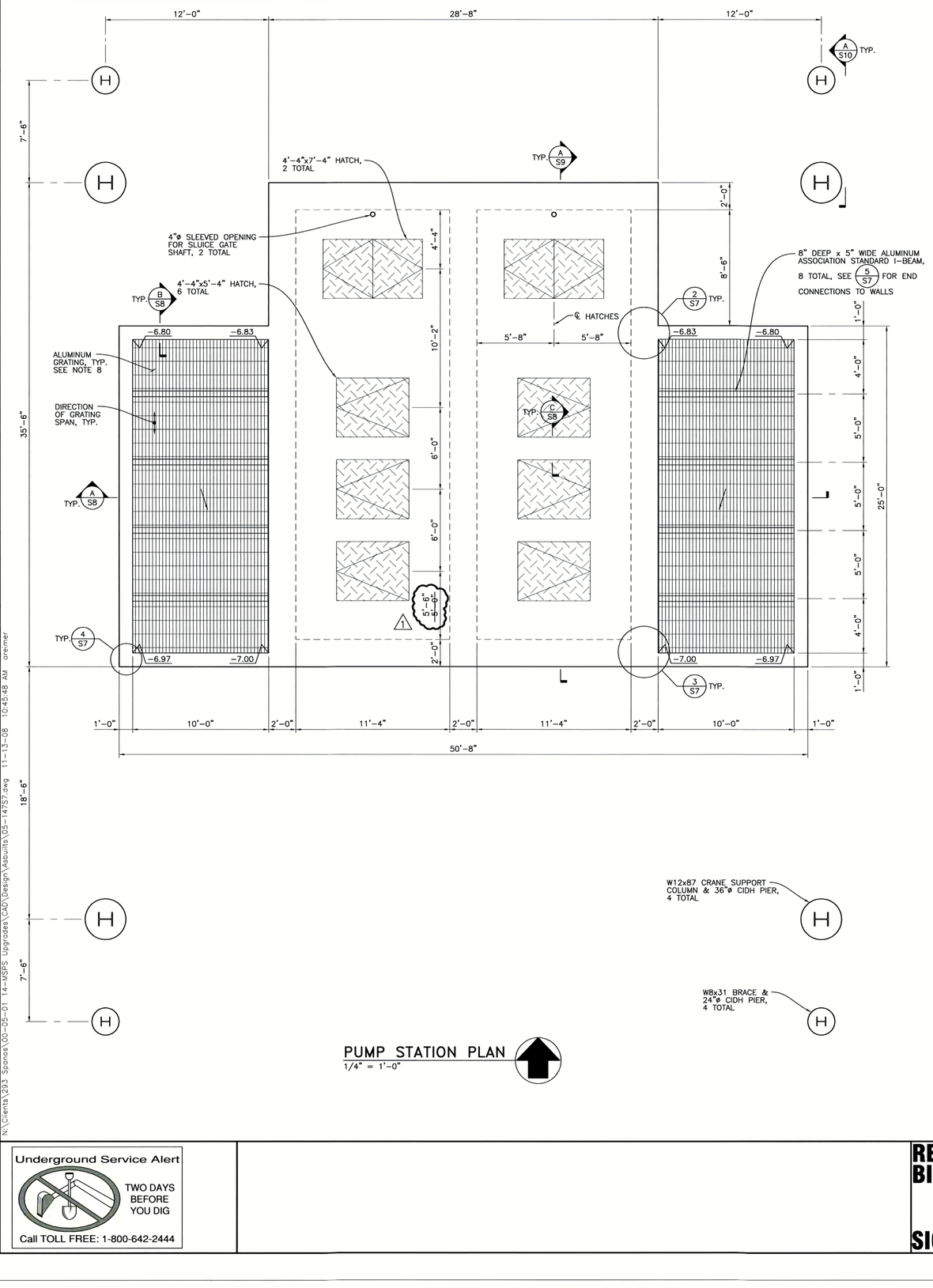
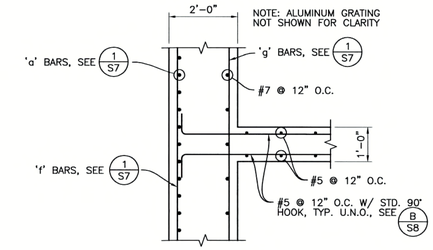


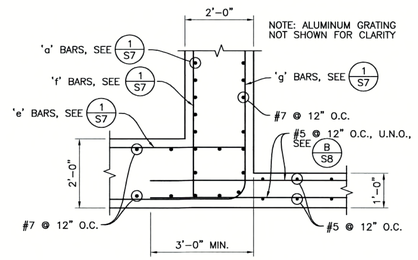
PUMP STATION PLAN
1/4" = 1'-0"

PUMP STATION NOTES:

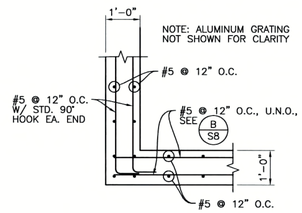
1. SEE GENERAL NOTES ON SHEET S1.
2. -8.00 DENOTES TOP OF VALVE VAULT CONC. BOTTOM SLAB
3. ——→ DENOTES DIRECTION OF CONC. SLAB SLOPE. PROVIDE A MIN. SLOPE OF 0.5%.
4. SEE MECH. DWGS. FOR PROFILE & ELEVATIONS OF MASS CONC. FILL. SEE PROJECT SPECIFICATIONS FOR MATERIAL REQUIREMENTS FOR MASS CONC. FILL.
5. ALL INTERIOR EXPOSED CONC. SURFACES ABOVE FLOOR OF PUMP STATION STRUCTURE SHALL BE PROTECTED WITH CORROSION PROTECTION LINER. ALL EXTERIOR SURFACES OF PUMP STATION CONC. WALLS SHALL BE MOISTURE-PROOFED.
6. THE MAXIMUM EXPECTED ELEVATION OF THE WATER TABLE IS 2'-0" BELOW GRADE. THE CONTRACTOR SHALL PROVIDE FOR THE COMPLETE DEWATERING OF THE EXCAVATION AS REQUIRED BY THE PROJECT SPECIFICATIONS & PROJECT SOILS REPORT.
7. REINFORCING TIES IN CONC. WALLS SHALL HOOK AROUND HORIZONTAL & VERTICAL BARS AND SHALL ALTERNATE DIRECTION & ORIENTATION AS SHOWN.
8. ALUMINUM GRATING SHALL BE 1 1/2" DEEP W/ 3/16" WIDE MAIN BARS @ 1 3/16" O.C. AND 3/16" WIDE CROSS BARS @ 4" O.C. MAX. SPAN SHALL BE 5'-0". SEE PROJECT SPECIFICATIONS FOR FURTHER REQUIREMENTS.



DETAIL 2 S7
1/2" = 1'-0"



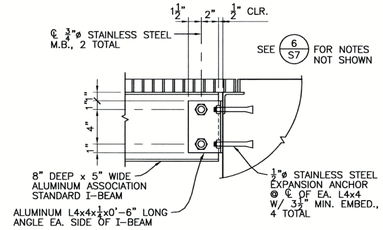
DETAIL 3 S7
1/2" = 1'-0"



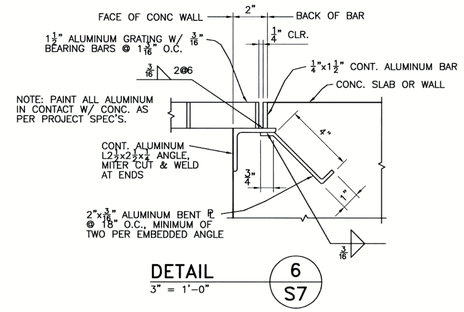
DETAIL 4 S7
1/2" = 1'-0"

PUMP STATION REINFORCEMENT SCHEDULE				
MARK	ZONE	BAR SIZE	SPACING	NOTES
'a' BARS	A	#9	12" O.C.	
	B	#9	6" O.C.	
	C	#8	6" O.C.	
'b' BARS	A	#7	12" O.C.	
	B	#7	6" O.C.	
	C	#9	6" O.C.	
'c' BARS	A	#9	12" O.C.	'c' BARS & EVERY OTHER 'd' BAR SHALL BE CONTINUOUS BARS
	B	#8	6" O.C.	
	C	#9	12" O.C.	
'd' BARS	A	#9	6" O.C.	SEE NOTE FOR 'c' BARS.
	B	#8	3" O.C.	
	C	#9	6" O.C.	
'e' BARS	A	#7	6" O.C.	LAP W/ EVERY OTHER 'g' BAR
	B	#8	6" O.C.	
	C	#7	6" O.C.	
'f' BARS	A	#8	6" O.C.	
	B	#9	6" O.C.	
	C	#7	6" O.C.	
'g' BARS	A	#7	3" O.C.	2'-0" BARS @ 6" O.C. & 8'-2" BARS @ 6" O.C., SEE B S9
	B	#8	3" O.C.	
	C	#7	3" O.C.	

DETAIL 1 S7
N.T.S.



DETAIL 5 S7
1 1/2" = 1'-0"



DETAIL 6 S7
3" = 1'-0"

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

PUMP STATION PLAN, NOTES & DETAILS

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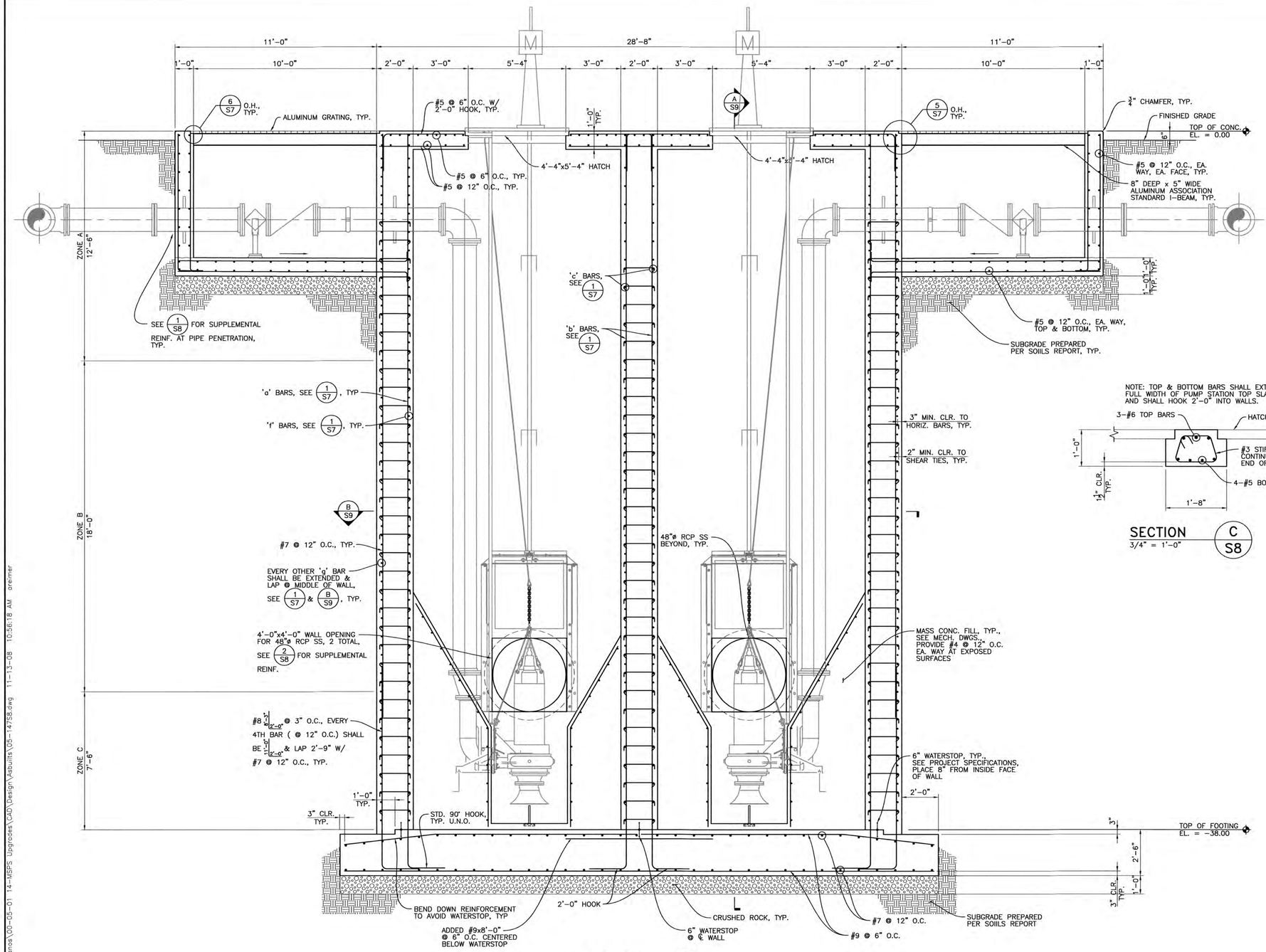
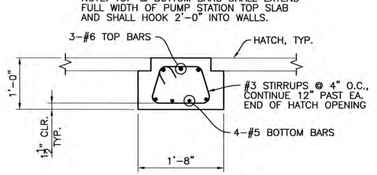
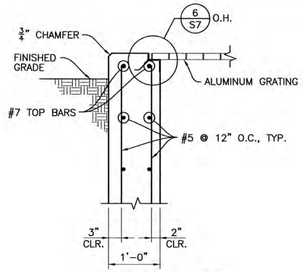


SECTION A
3/8" = 1'-0"
S8

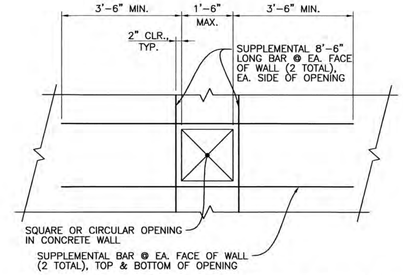
NOTE: TOP & BOTTOM BARS SHALL EXTEND FULL WIDTH OF PUMP STATION TOP SLAB AND SHALL HOOK 2'-0" INTO WALLS.



SECTION C
3/4" = 1'-0"
S8

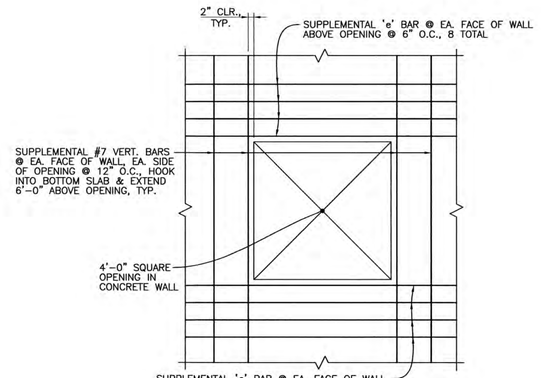


SECTION B
3/4" = 1'-0"
S8



NOTE: WHERE SIZE OF OPENING IS 6" OR LESS IN MAX. DIMENSION AND NO TYP. REINFORCING IS INTERRUPTED, NO SUPPLEMENTAL REINFORCING IS REQUIRED.

DETAIL 1
1/2" = 1'-0"
S8



NOTE: TYP. REINF. NOT SHOWN, SUPPLEMENTAL REINF. IS IN ADDITION TO TYP. REINF.

DETAIL 2
1/2" = 1'-0"
S8

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

PUMP STATION
SECTIONS & DETAILS

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CITY OF STOCKTON, CALIFORNIA

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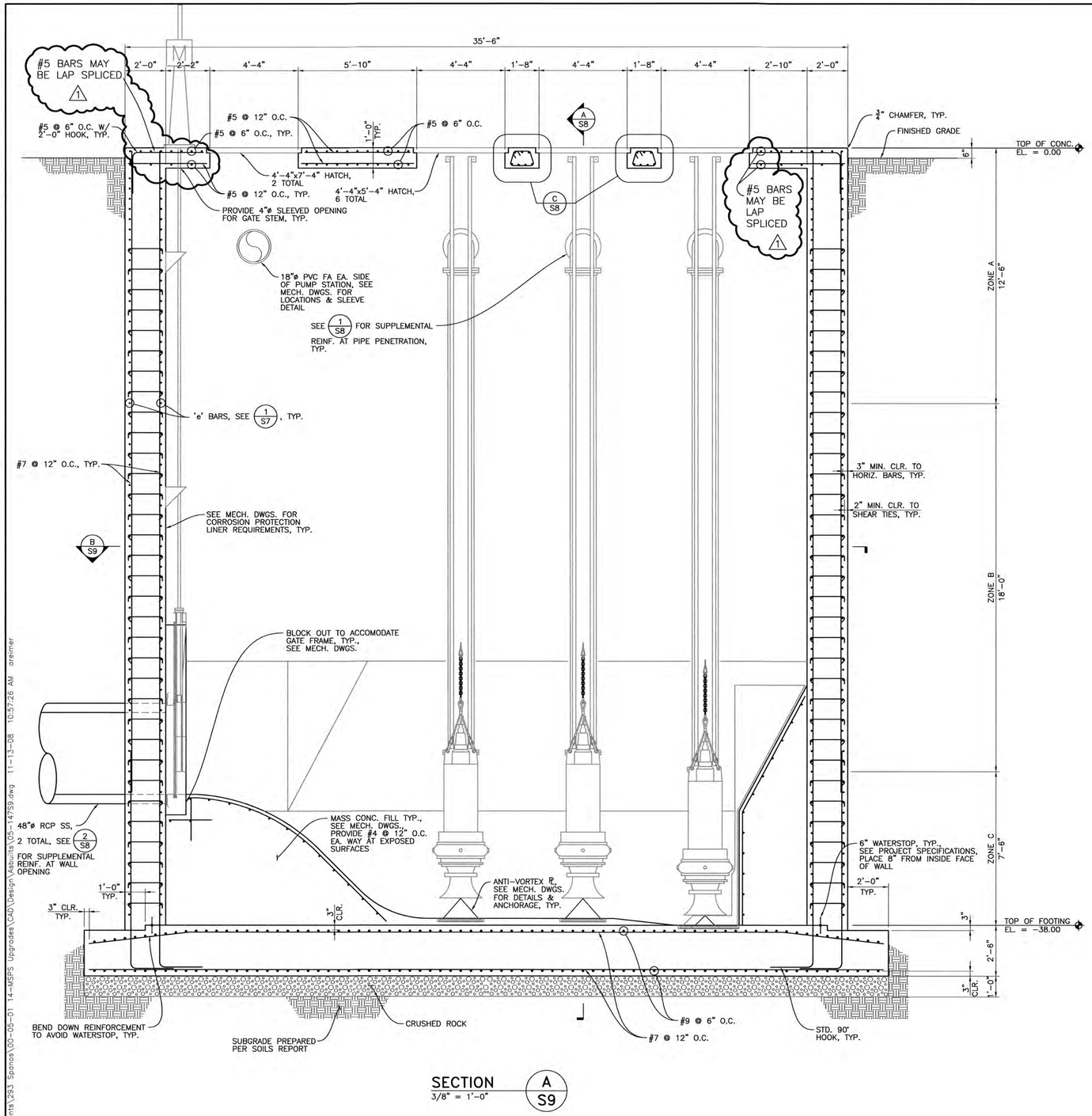
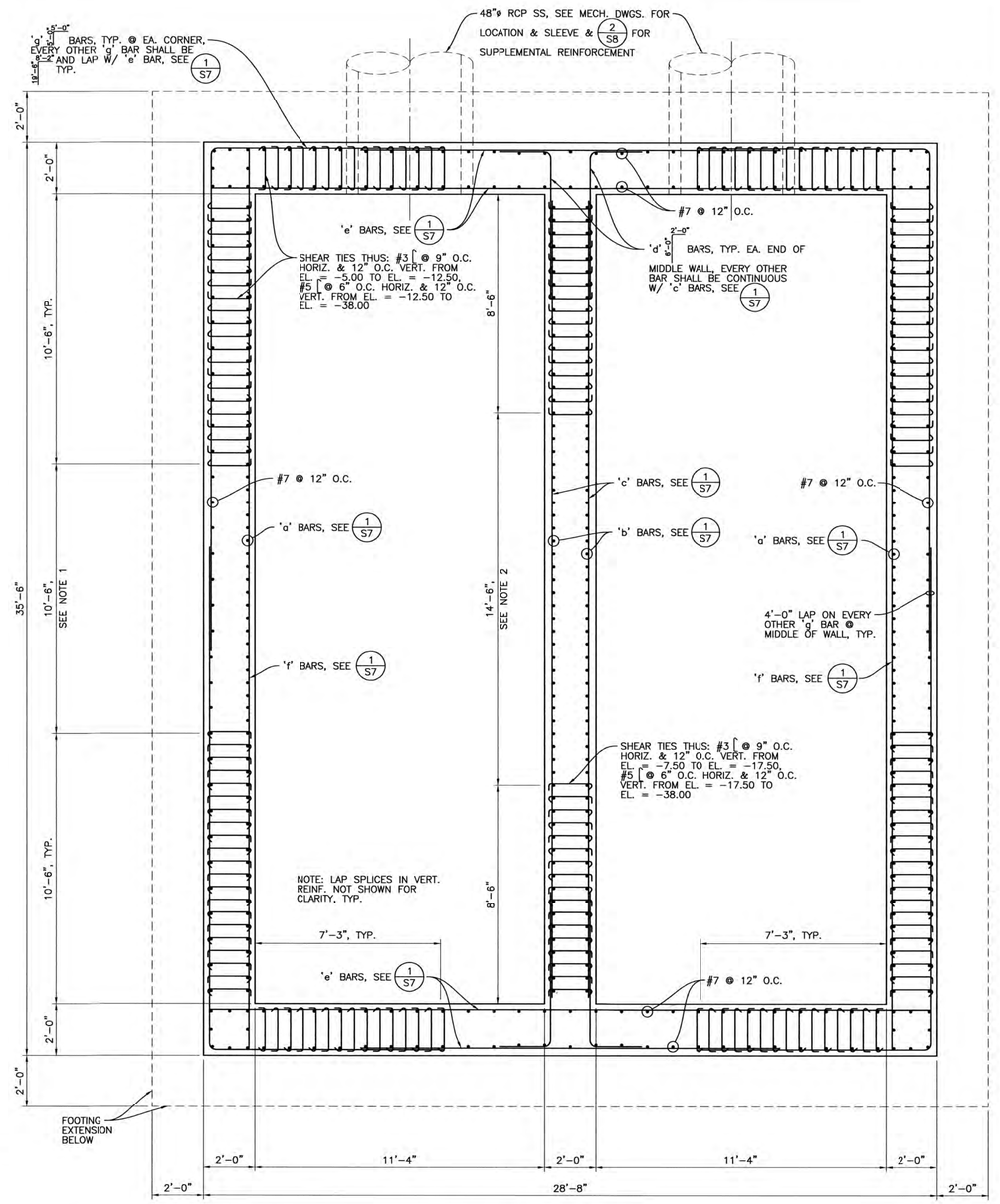


SECTION A S9
3/8" = 1'-0"



NOTES:
1. AT MIDDLE OF LONG EXTERIOR WALLS, PROVIDE #5 [SHEAR TIES @ 6" O.C. HORIZ. & 12" O.C. VERT. FROM EL. = -27.50 TO EL. = -38.00.
2. AT MIDDLE OF INTERIOR WALL, PROVIDE #5 [SHEAR TIES @ 6" O.C. HORIZ. & 12" O.C. VERT. FROM EL. = -29.50 TO EL. = -38.00.

SECTION B S9
3/8" = 1'-0"

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

PUMP STATIONS SECTIONS

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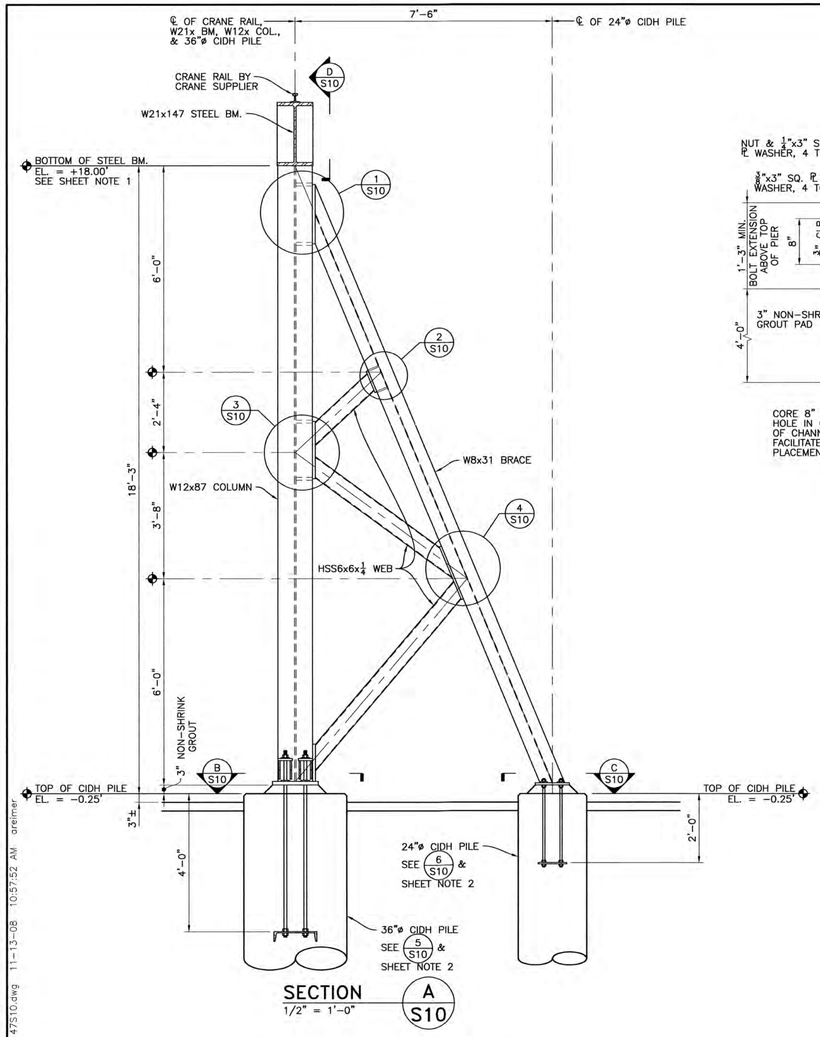
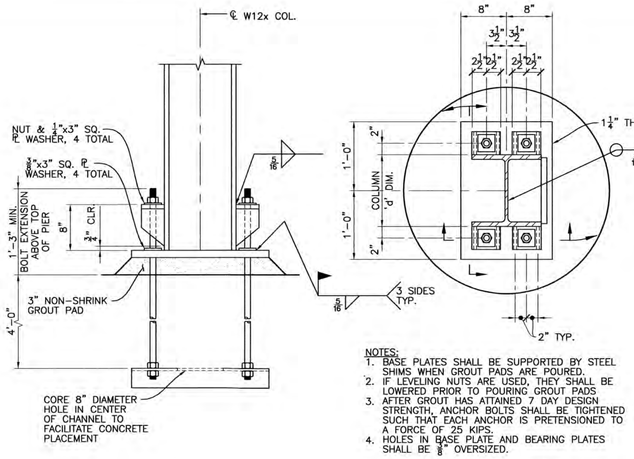
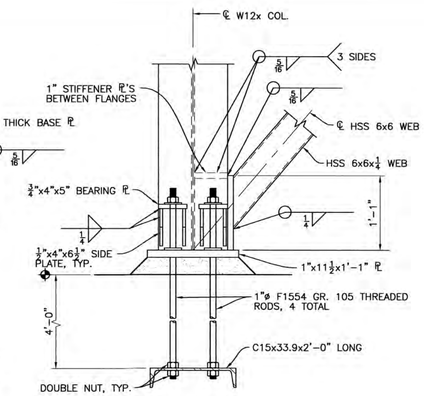


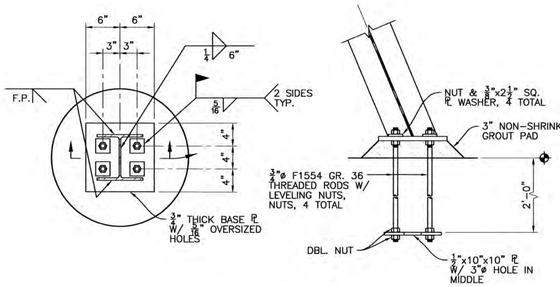
SECTION A 1/2" = 1'-0" S10



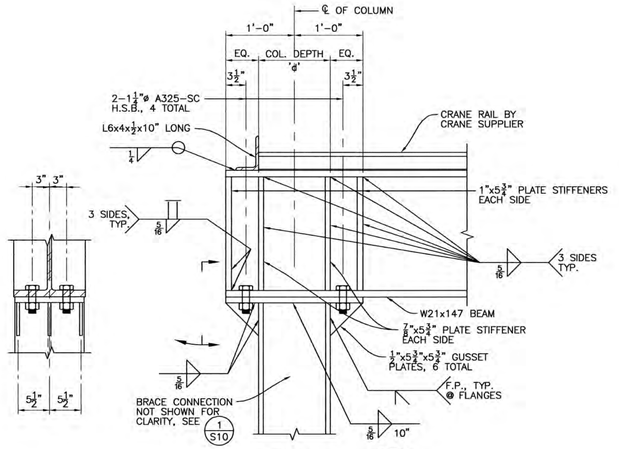
NOTES:
1. BASE PLATES SHALL BE SUPPORTED BY STEEL SHIMS WHEN GROUT PADS ARE POURED.
2. IF LEVELING NUTS ARE USED, THEY SHALL BE LOWERED PRIOR TO POURING GROUT PADS
3. AFTER GROUT HAS ATTAINED 7 DAY DESIGN STRENGTH, ANCHOR BOLTS SHALL BE TIGHTENED SUCH THAT EACH ANCHOR IS PRETENSIONED TO A FORCE OF 25 KIPS.
4. HOLES IN BASE PLATE AND BEARING PLATES SHALL BE ⅛" OVERSIZED.

SECTION B 1" = 1'-0" S10

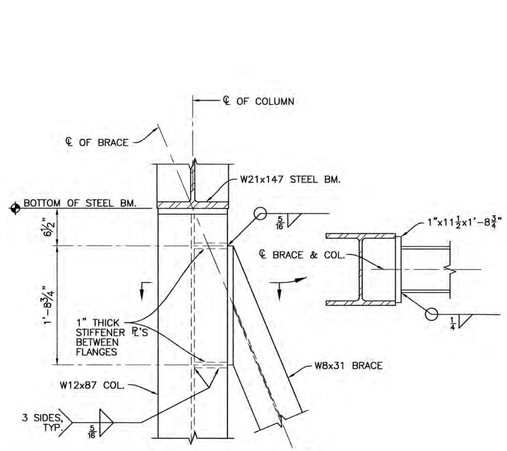




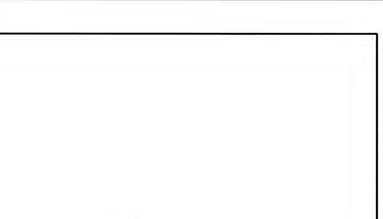
SECTION C 1" = 1'-0" S10



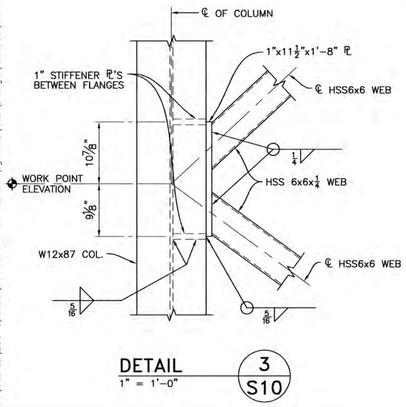
SECTION D 1" = 1'-0" S10



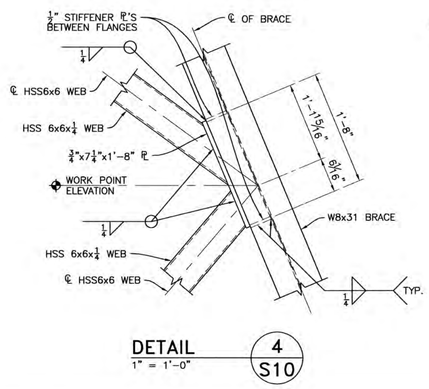
DETAIL 1 1" = 1'-0" S10



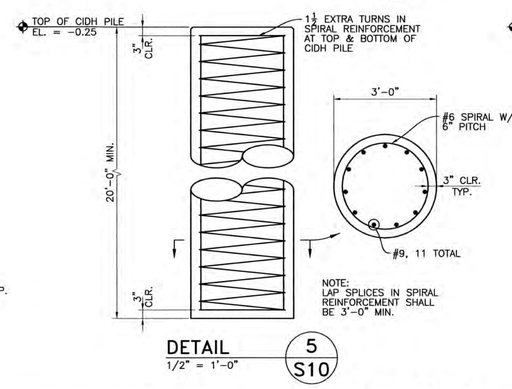
DETAIL 2 1" = 1'-0" S10



DETAIL 3 1" = 1'-0" S10

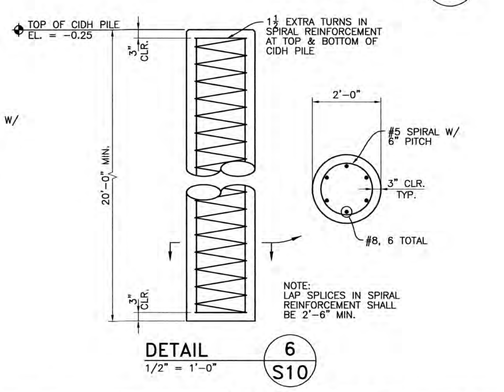


DETAIL 4 1" = 1'-0" S10



NOTE:
LAP SPLICES IN SPIRAL REINFORCEMENT SHALL BE 3'-0" MIN.

DETAIL 5 1/2" = 1'-0" S10



NOTE:
LAP SPLICES IN SPIRAL REINFORCEMENT SHALL BE 2'-6" MIN.

DETAIL 6 1/2" = 1'-0" S10

SHEET NOTES:
1. CRANE SUPPLIER SHALL PROVIDE A BOTTOM OF HOOK ELEV. OF +18.00' MIN. IF ELEV. OF W21x147 BM. SHOWN DOES NOT ALLOW THIS, CRANE SUPPLIER SHALL CONTACT ENGINEER.
2. CIDH PILES SHALL BE DRILLED & CAST AFTER SOIL AROUND PUMP STATION HAS BEEN BACKFILLED & COMPACTED. TOP 2'-0" MAX. OF CIDH PILES MAY BE FORMED W/ SONOTUBES.

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14-Mile Slough Pump Station Upgrades

PUMP STATION BRIDGE CRANE SECTIONS & DETAILS

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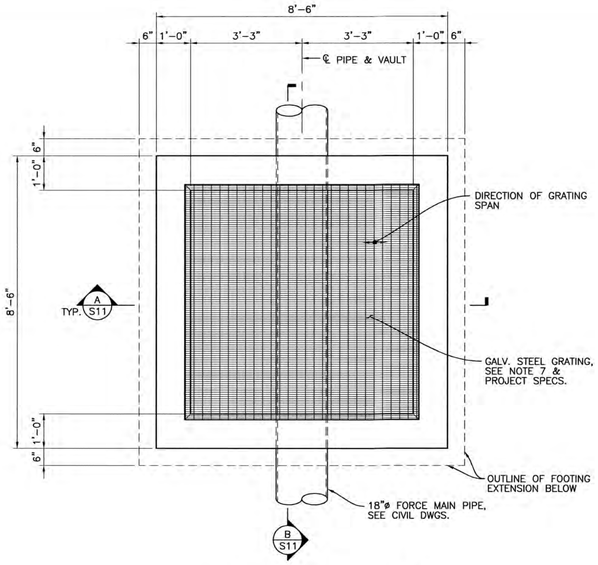
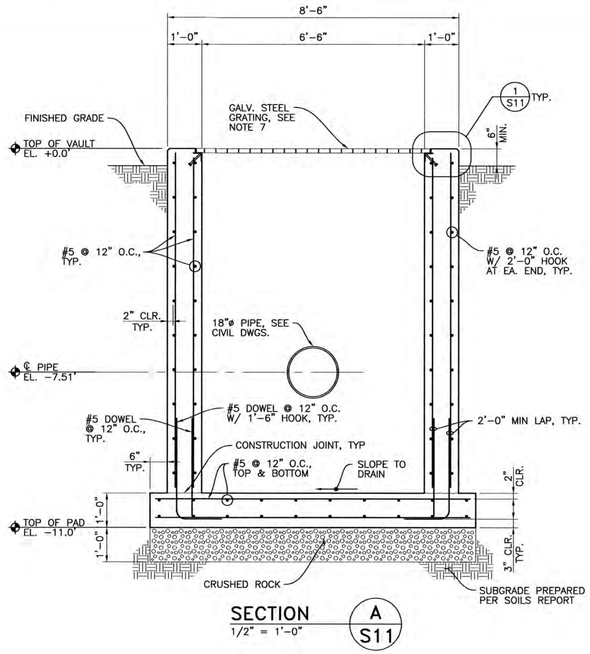
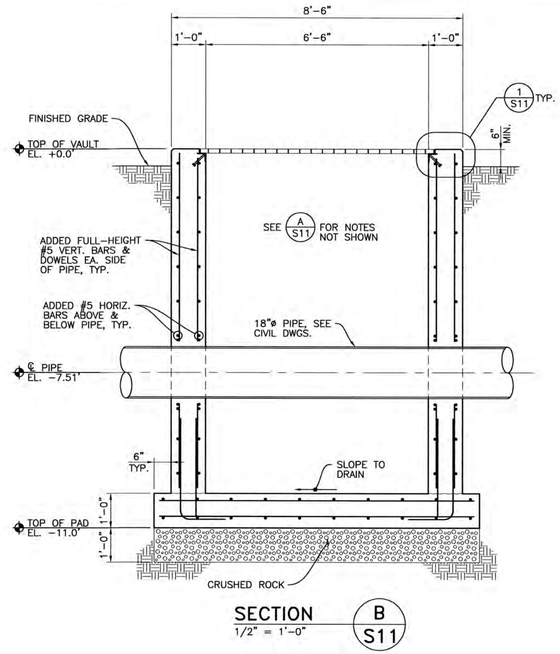


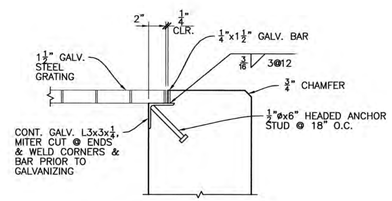
METER VAULT PLAN
1/2" = 1'-0"



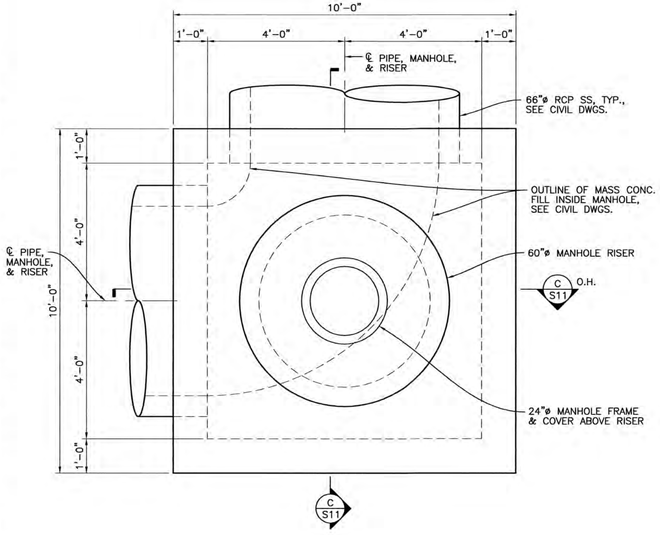
SECTION A
1/2" = 1'-0" — S11



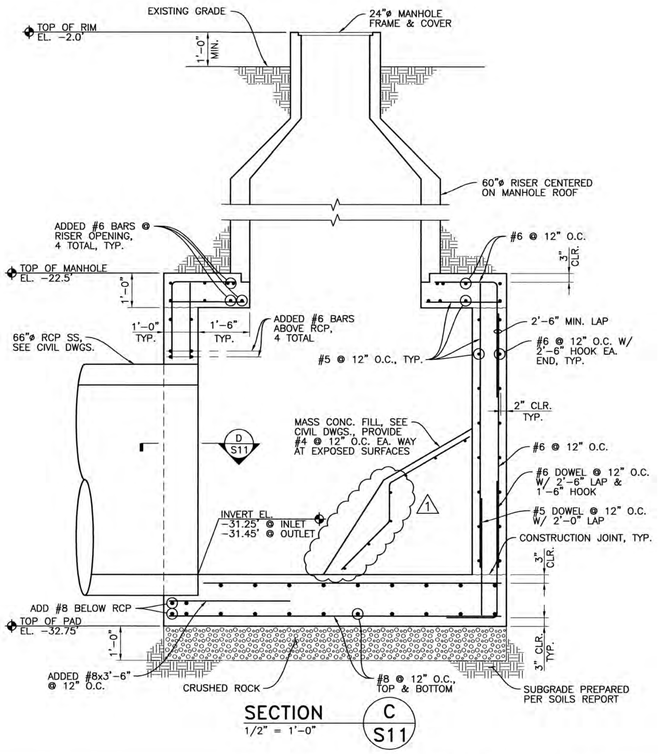
SECTION B
1/2" = 1'-0" — S11



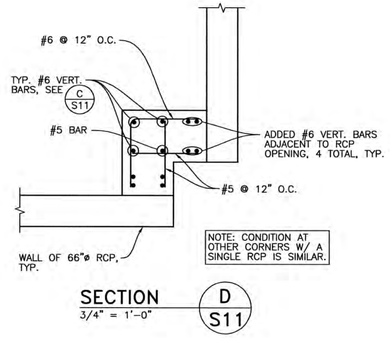
DETAIL 1
1 1/2" = 1'-0" — S11



MANHOLE NO. 1 PLAN
1/2" = 1'-0"



SECTION C
1/2" = 1'-0" — S11



SECTION D
3/4" = 1'-0" — S11

METER VAULT & MANHOLE NO. 1 NOTES:

1. SEE GENERAL NOTES ON SHEET S1.
2. -8.00 DENOTES TOP OF CONC. SLAB
3. → DENOTES DIRECTION OF CONC. SLAB SLOPE. PROVIDE A MIN. SLOPE OF 1%.
4. SEE CIVIL DWGS. FOR PROFILE & ELEVATIONS OF MASS CONC. FILL. SEE PROJECT SPECIFICATIONS FOR MATERIAL REQUIREMENTS FOR MASS CONC. FILL.
5. ALL INTERIOR EXPOSED CONC. SURFACES OF MANHOLE NO. 1 SHALL BE PROTECTED WITH CORROSION PROTECTION LINER. ALL EXTERIOR SURFACES OF METER VAULT & MANHOLE NO. 1 CONC. WALLS SHALL BE MOISTURE-PROOFED.
6. THE MAXIMUM EXPECTED ELEVATION OF THE WATER TABLE IS 2'-0" BELOW GRADE. THE CONTRACTOR SHALL PROVIDE FOR THE COMPLETE DEWATERING OF THE EXCAVATION AS REQUIRED BY THE PROJECT SPECIFICATIONS & PROJECT SOILS REPORT.
7. GALV. STEEL GRATING SHALL BE 1 1/2" DEEP W/ 3/16" WIDE MAIN BARS @ 1 3/16" O.C. AND 3/16" WIDE CROSS BARS @ 4" O.C. MAX. SPAN SHALL BE 6'-6". SEE PROJECT SPECIFICATIONS FOR FURTHER REQUIREMENTS.

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

METER VAULT & MANHOLE NO. 1 PLANS, SECTIONS, DETAILS & NOTES

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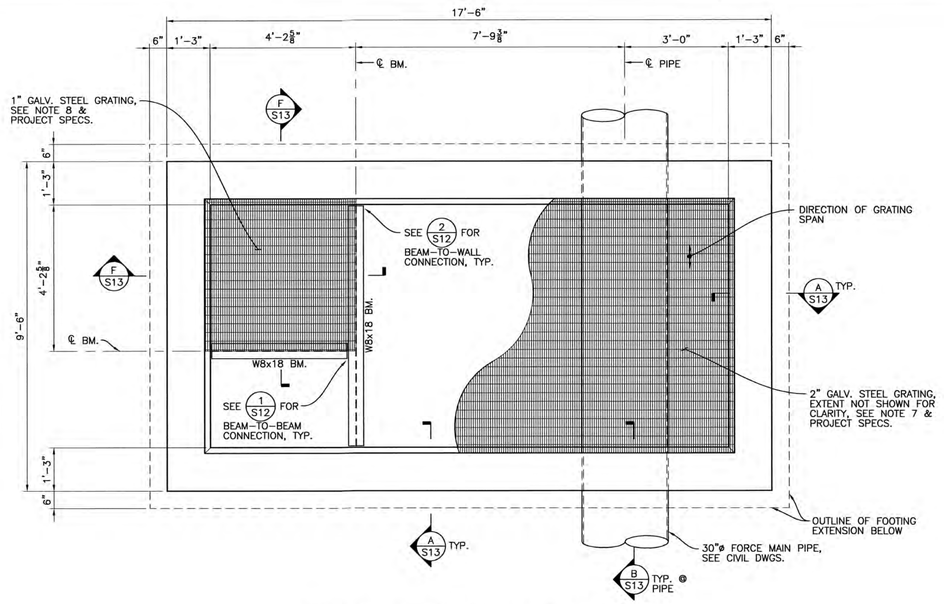
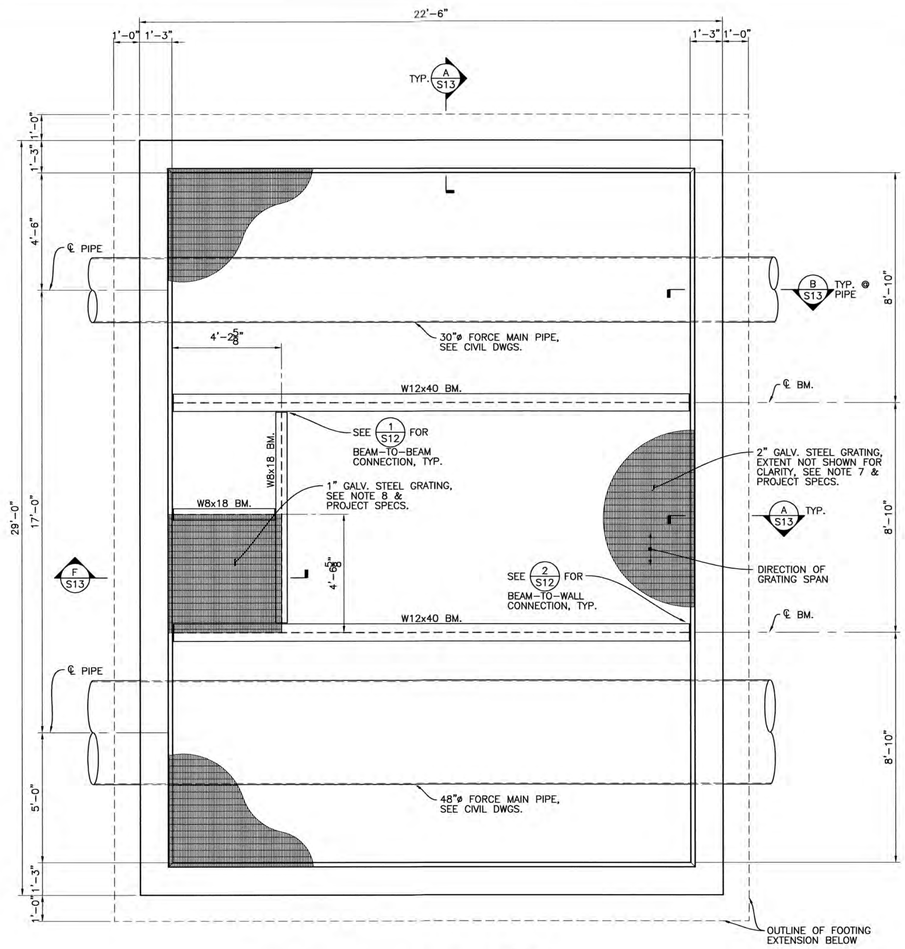
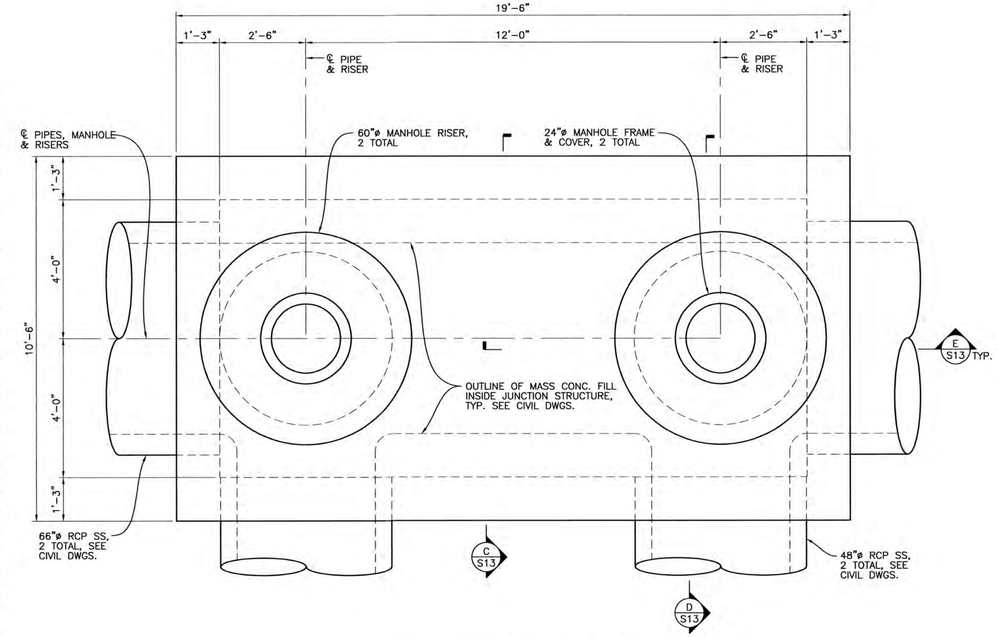


INTERCONNECTION VAULT PLAN
1/2" = 1'-0"



ISOLATION VAULT PLAN
3/8" = 1'-0"

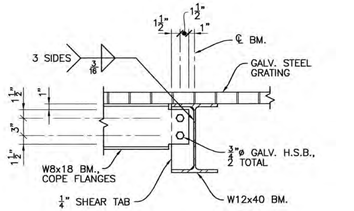


JUNNCTION STRUCTURE PLAN
1/2" = 1'-0"

INTERCONNECTION VAULT, ISOLATION VAULT & JUNCTION STRUCTURE NOTES:

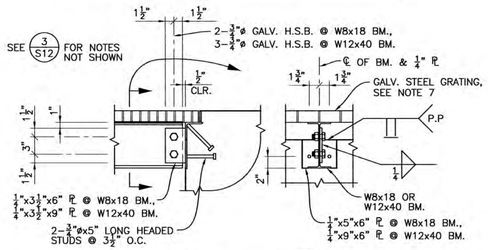
1. SEE GENERAL NOTES ON SHEET S1.
2. —8.00 DENOTES TOP OF CONC. SLAB
3. → DENOTES DIRECTION OF CONC. SLAB SLOPE. PROVIDE A MIN. SLOPE OF 0.5%.
4. SEE CIVIL DWGS. FOR PROFILE & ELEVATIONS OF MASS CONC. FILL. SEE PROJECT SPECIFICATIONS FOR MATERIAL REQUIREMENTS FOR MASS CONC. FILL.
5. ALL INTERIOR EXPOSED CONC. SURFACES OF JUNCTION STRUCTURE SHALL BE PROTECTED WITH CORROSION PROTECTION LINER. ALL EXTERIOR SURFACES OF INTERCONNECTION VAULT, ISOLATION VAULT & JUNCTION STRUCTURE CONC. WALLS SHALL BE MOISTURE-PROOFED.
6. THE MAXIMUM EXPECTED ELEVATION OF THE WATER TABLE IS 2'-0" BELOW GRADE. THE CONTRACTOR SHALL PROVIDE FOR THE COMPLETE DEWATERING OF THE EXCAVATION AS REQUIRED BY THE PROJECT SPECIFICATIONS & PROJECT SOILS REPORT.
7. 2" GALV. STEEL GRATING SHALL BE 2" DEEP W/ ⅜" WIDE MAIN BARS @ 1 13/16" O.C. AND ⅜" WIDE CROSS BARS @ 4" O.C. MAX. SPAN SHALL BE 8'-10". SEE PROJECT SPECIFICATIONS FOR FURTHER REQUIREMENTS.
8. 1" GALV. STEEL GRATING SHALL BE 1" DEEP W/ ⅛" WIDE MAIN BARS @ 1 3/16" O.C. AND ⅛" WIDE CROSS BARS @ 4" O.C. MAX. SPAN SHALL BE 4'-0". SEE PROJECT SPECIFICATIONS FOR FURTHER REQUIREMENTS.

NOTES:
1. CONDITION W/ W8x18 CARRYING BEAM IS SIMILAR.
2. BEAMS SHALL BE GALVANIZED AFTER FABRICATION IS COMPLETE.

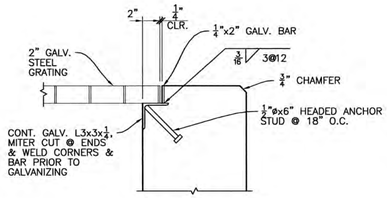


DETAIL 1 / S12
1" = 1'-0"

NOTES:
1. CONDITION W/ W8x18 BM. SHOWN. CONDITION W/ W12x40 BM. IS SIMILAR.
2. BEAM & ℄'s SHALL BE GALVANIZED AFTER FABRICATION IS COMPLETE.



DETAIL 2 / S12
1" = 1'-0"



DETAIL 3 / S12
1 1/2" = 1'-0"

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

INTERCONNECTION VAULT, ISOLATION VAULT & JUNCTION STRUCTURE PLANS, DETAILS & NOTES

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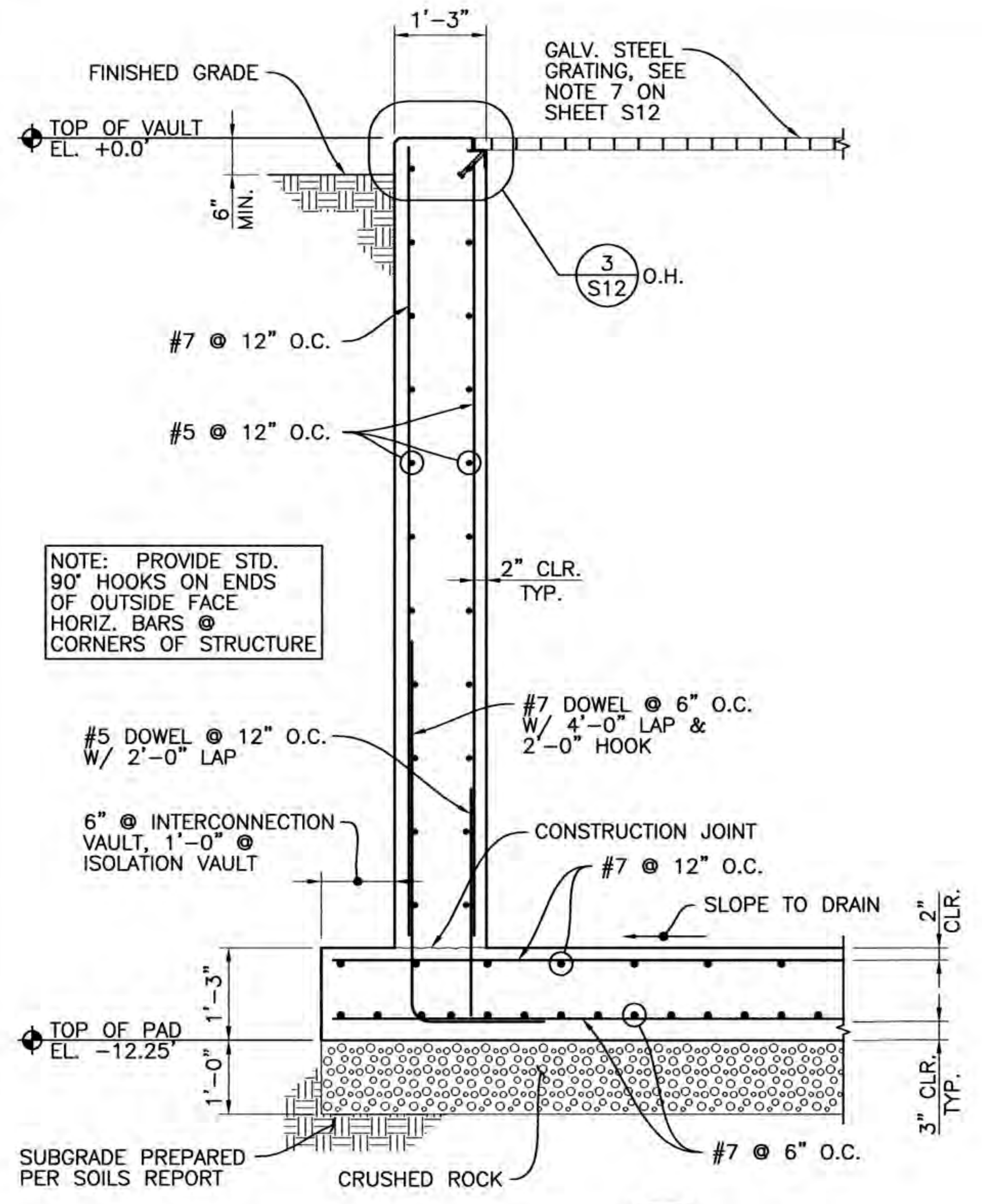
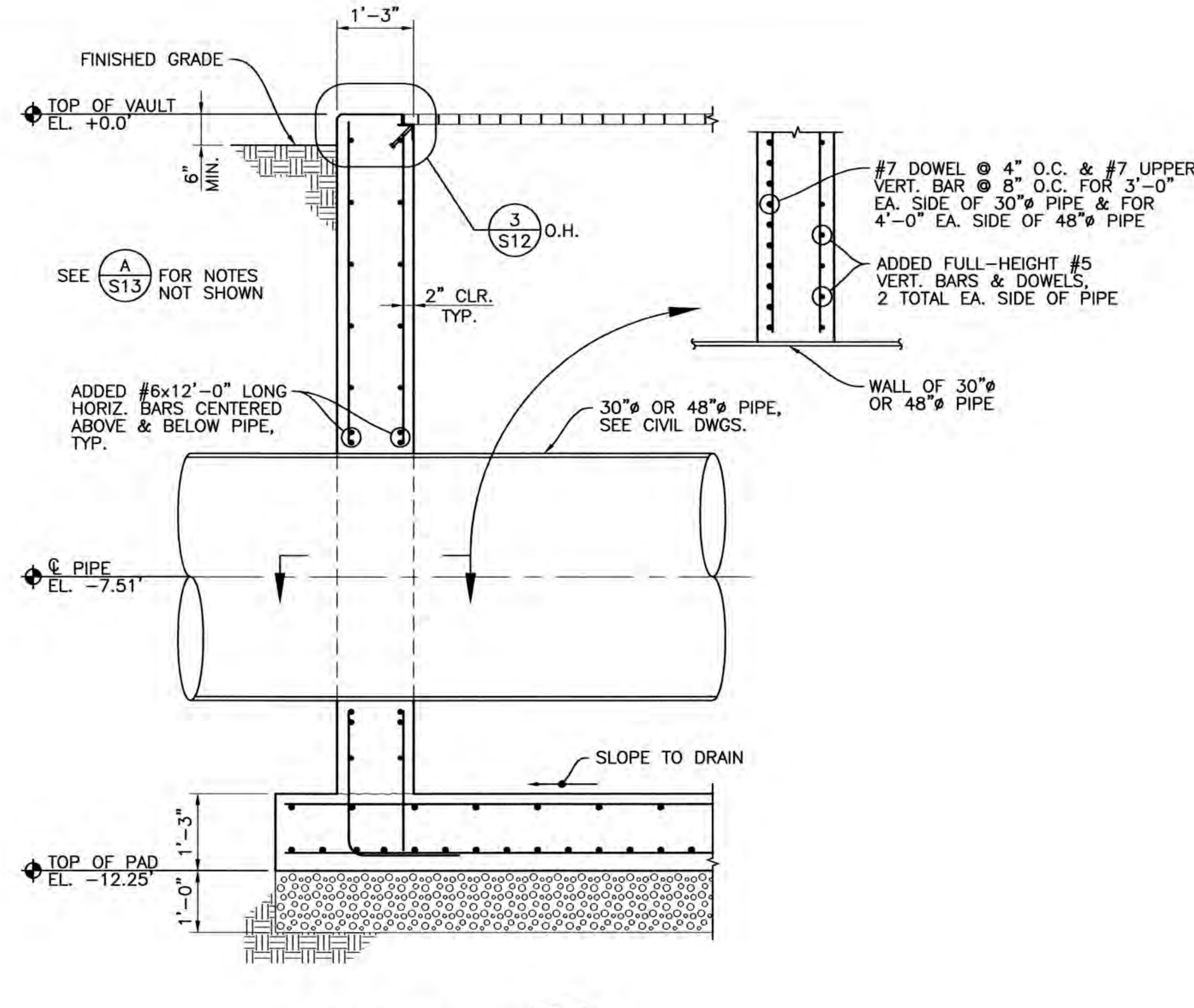
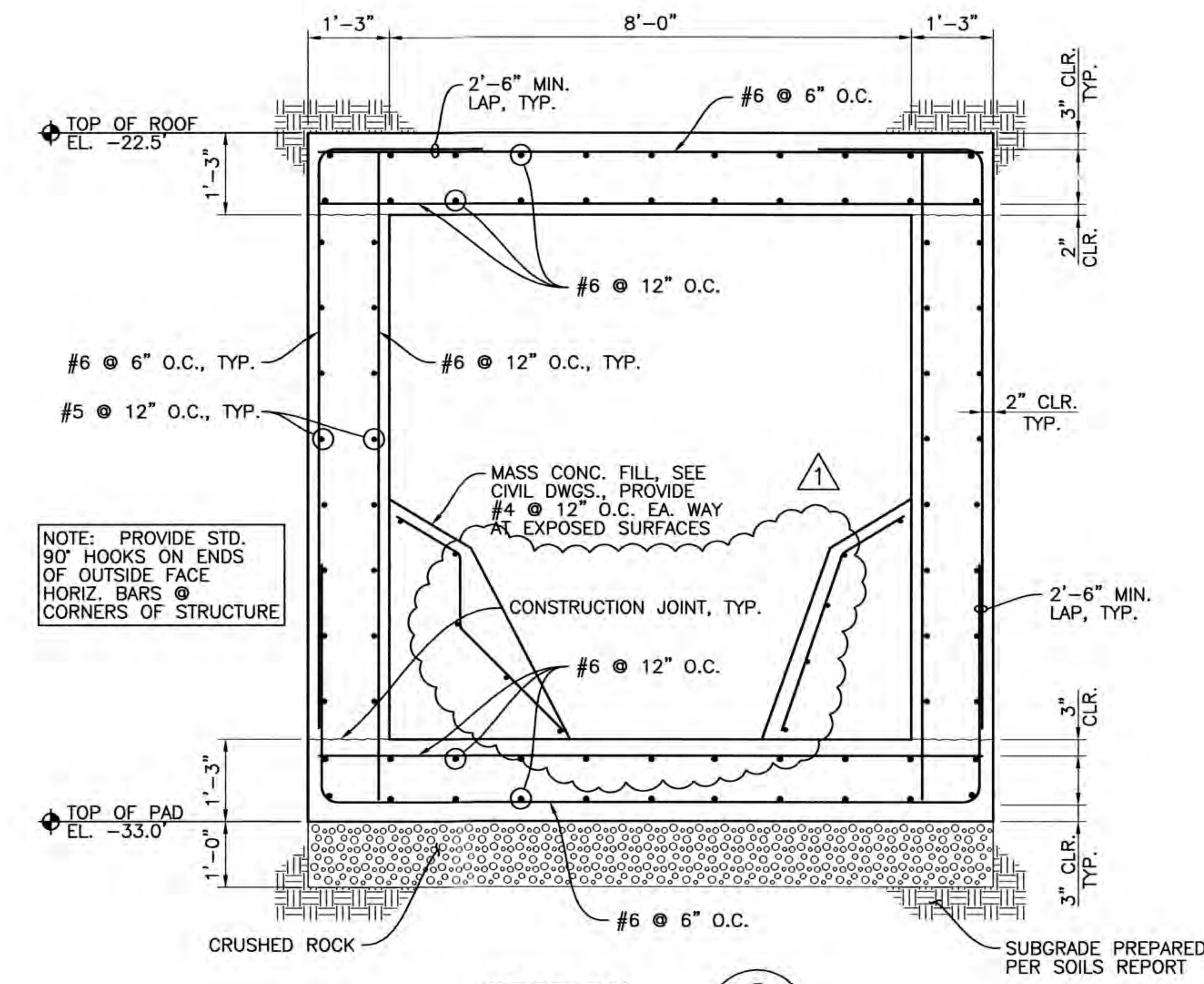


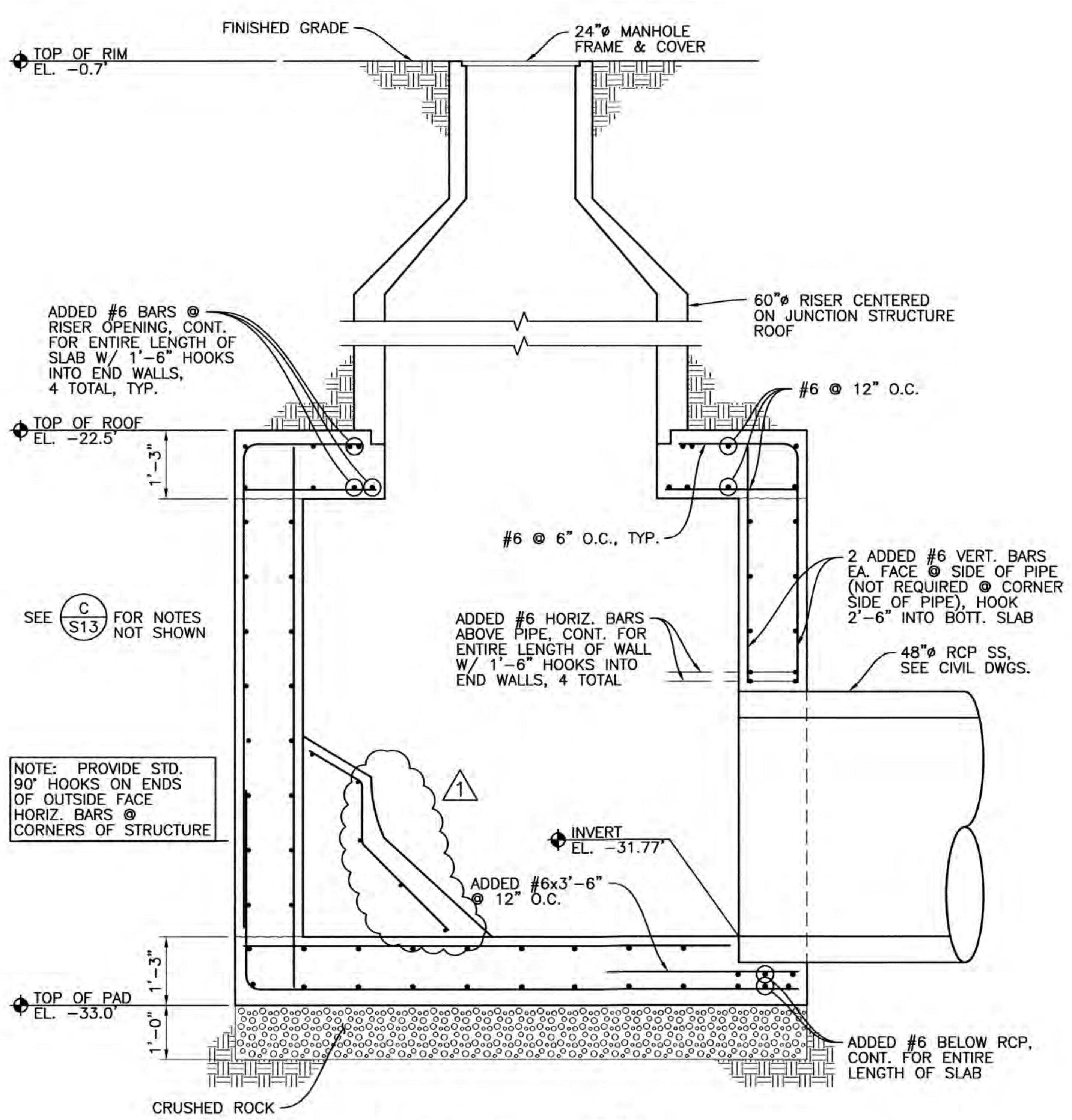
SECTION A S13
1/2" = 1'-0"



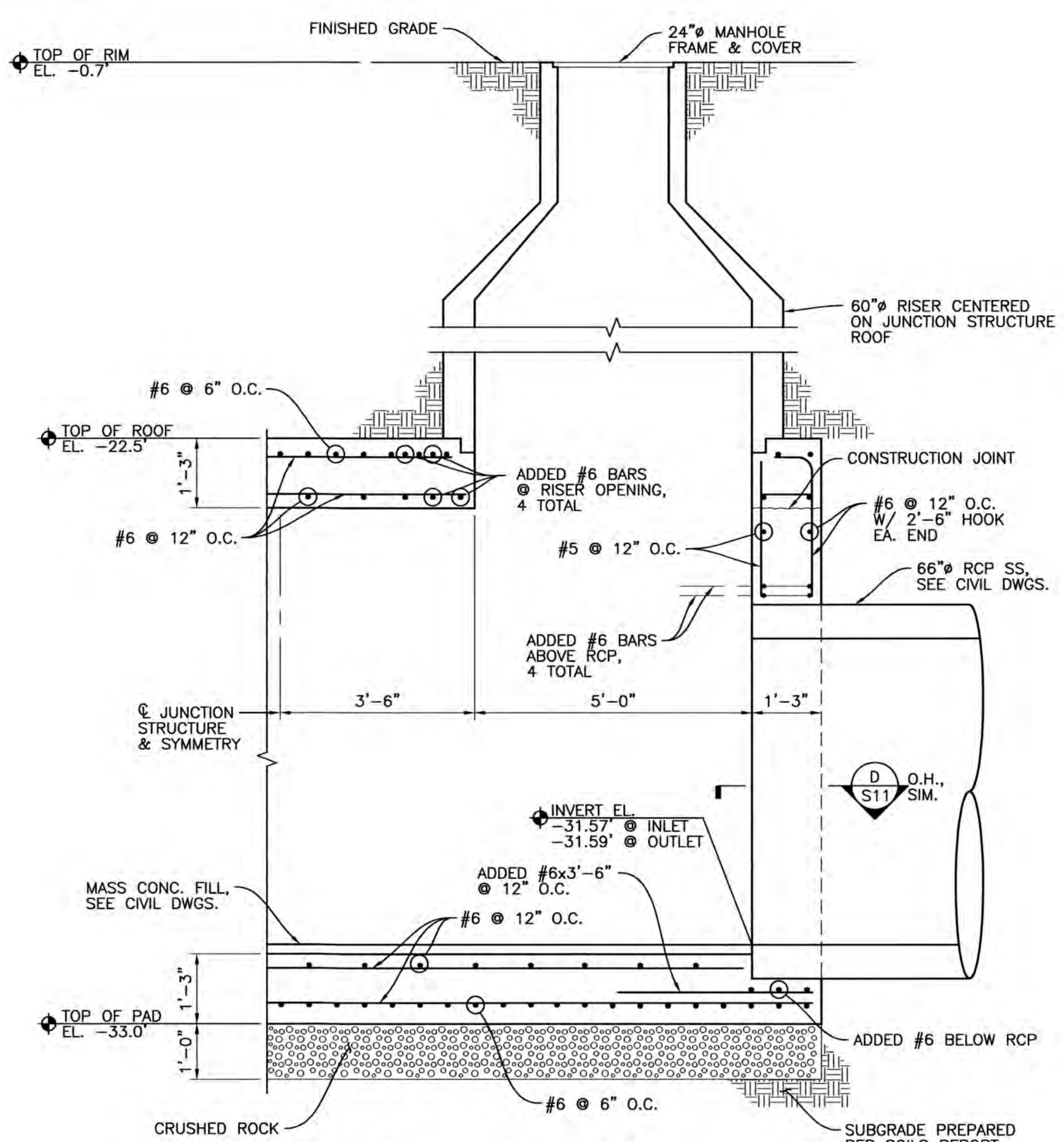
SECTION B S13
1/2" = 1'-0"



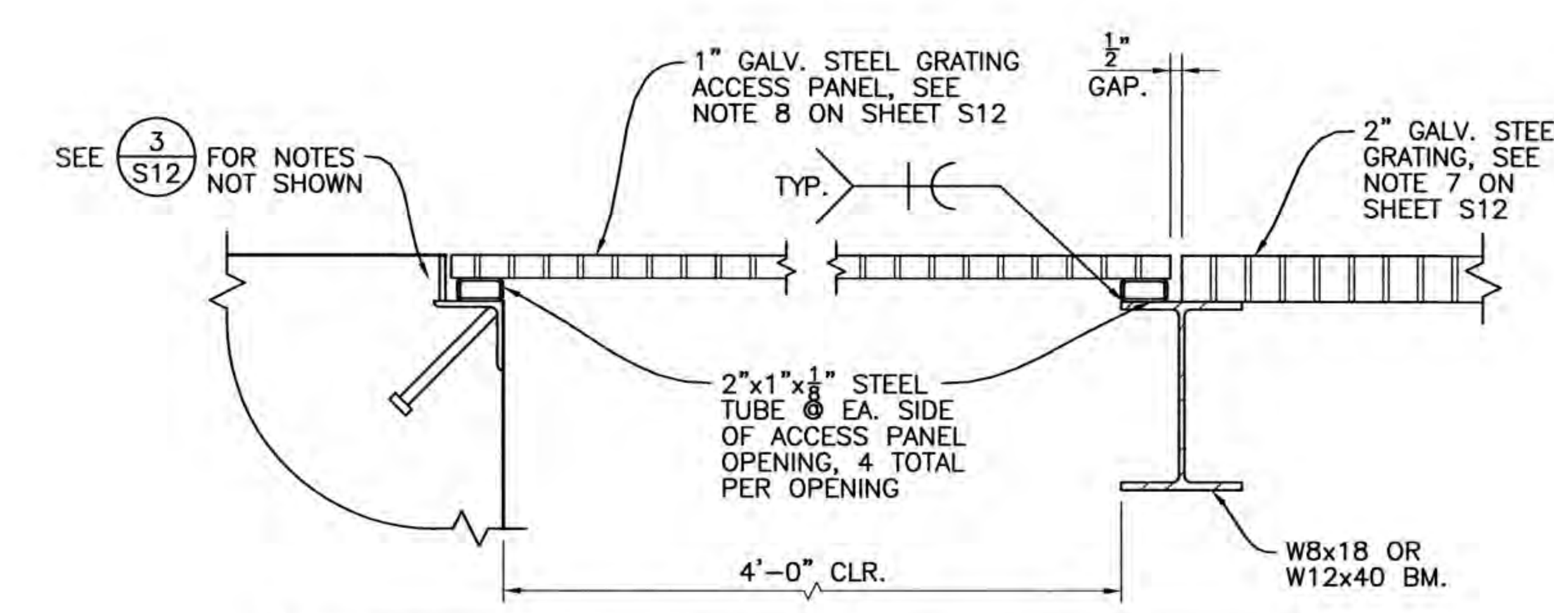
SECTION C S13
1/2" = 1'-0"



SECTION D S13
1/2" = 1'-0"



SECTION E S13
1/2" = 1'-0"



NOTES:
1. 2"x1" STEEL TUBES SHALL NOT BE MITERED & WELDED @ CORNERS. PROVIDE 1/8" WELDED END CAPS ON TUBES AND 1/2" GAP @ CORNERS BETWEEN ADJACENT TUBES.
2. BEAM & GRATING SUPPORT ASSEMBLY (INCLUDING 2"x1" STEEL TUBES) SHALL BE GALVANIZED AFTER FABRICATION IS COMPLETE.

SECTION F S13
1 1/2" = 1'-0"

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14-Mile Slough Pump Station Upgrades

INTERCONNECTION VAULT, ISOLATION VAULT & JUNCTION STRUCTURE SECTIONS & DETAILS

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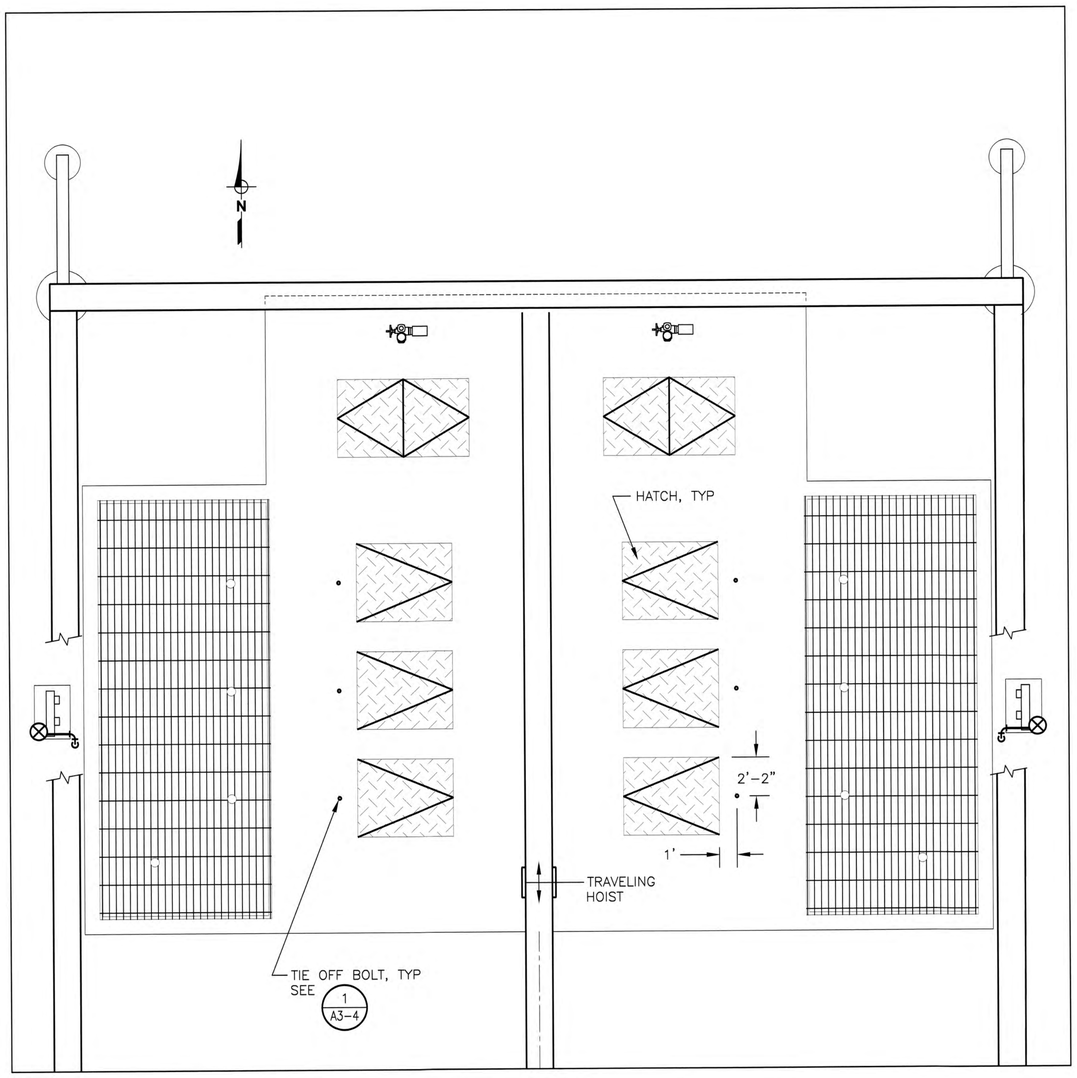
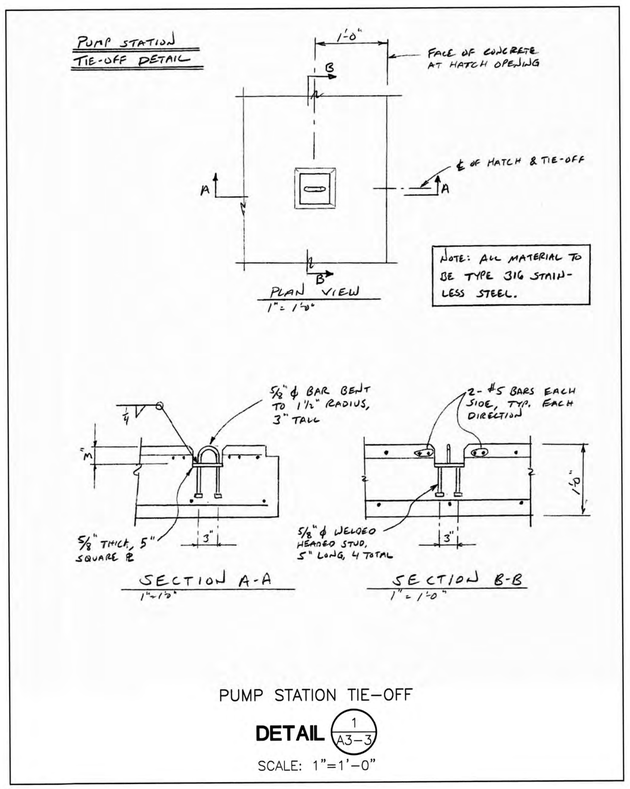


PUMP STATION

PLAN

SCALE: 1/4"=1'

SKETCH A3-3



PUMP STATION TIE-OFF

DETAIL 1/A3-3

SCALE: 1"=1'-0"

SKETCH A3-4

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

ADDENDUM SKETCHES
A3-3 & A3-4

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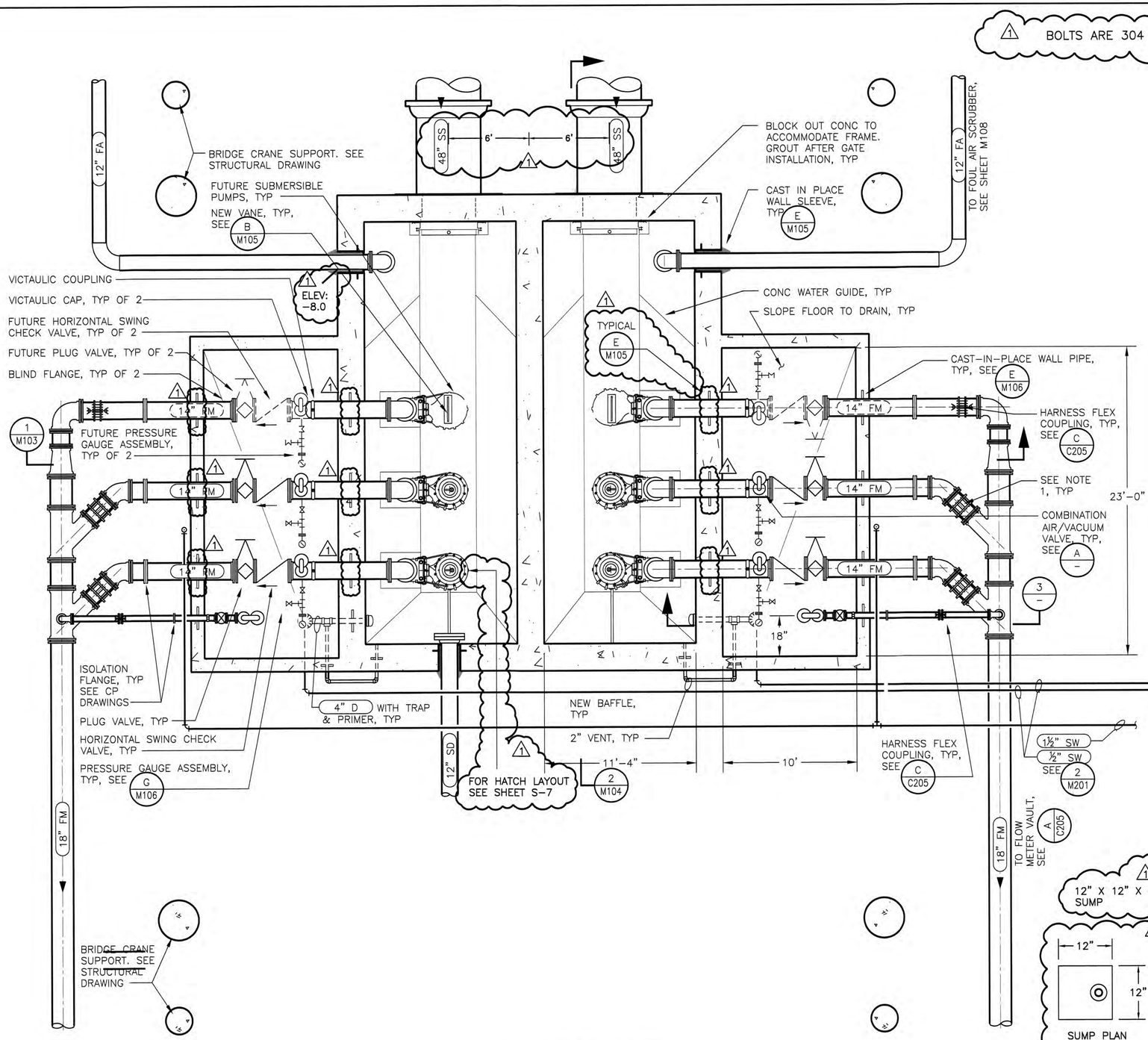
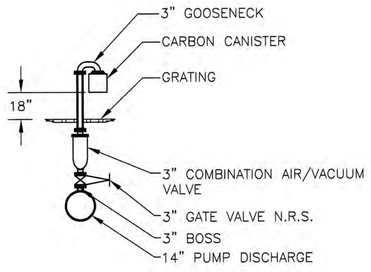
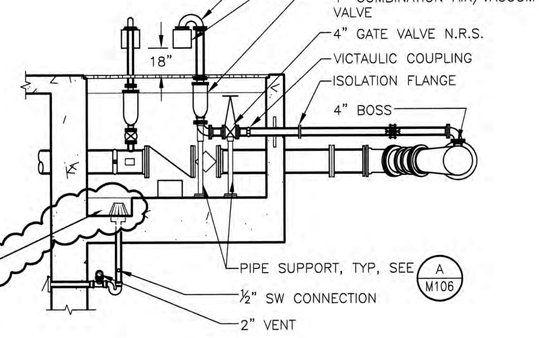
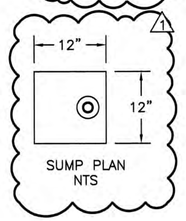




DETAIL A –
1/4"=1'-0"

NOTE:
1. PROVIDE FLEXIBLE COUPLING WITH FOUR (4) ¾" SS TIE RODS EQUALLY SPACED. PROVIDE NUTS ON BOTH SIDES OF BOTH JOINTS





SEE DRAWING S7 PUMP STATION PLAN FOR CORNER ELEVATIONS OF THE SUMP 1

SECTION 3 –
1/4"=1'-0"

PUMP STATION – BOTTOM

PLAN

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

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PUMP STATION BOTTOM PLAN
DEPARTMENT OF MUNICIPAL UTILITIES
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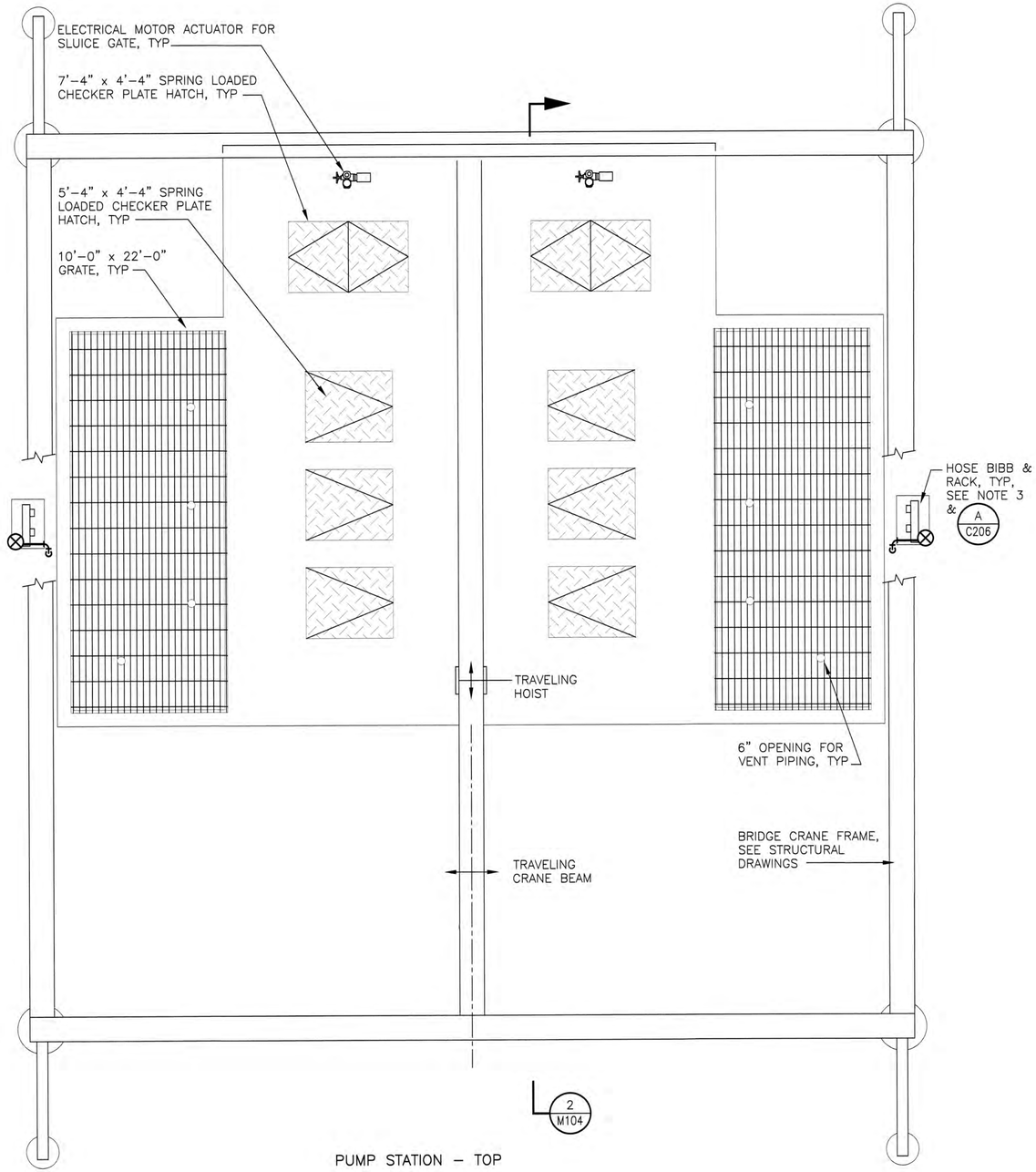

PUMP STATION – TOP

PLAN

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

NOTES:
1. OPENINGS IN GRATINGS SHALL BE CENTERED ON SEAMS BETWEEN GRATING PANELS
2. VENT PIPING AND CARBON CANISTERS NOT SHOWN FOR CLARITY
3. HOSE BIBB & RACK SHALL BE CENTERED ON VALVE VAULT AND FACE AWAY FROM STATION. CONCRETE PAD FOR HOSE RACK SHALL BE ADJACENT TO VALVE VAULT CONCRETE

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14-Mile Slough Pump Station Upgrades

PUMP STATION
TOP PLAN

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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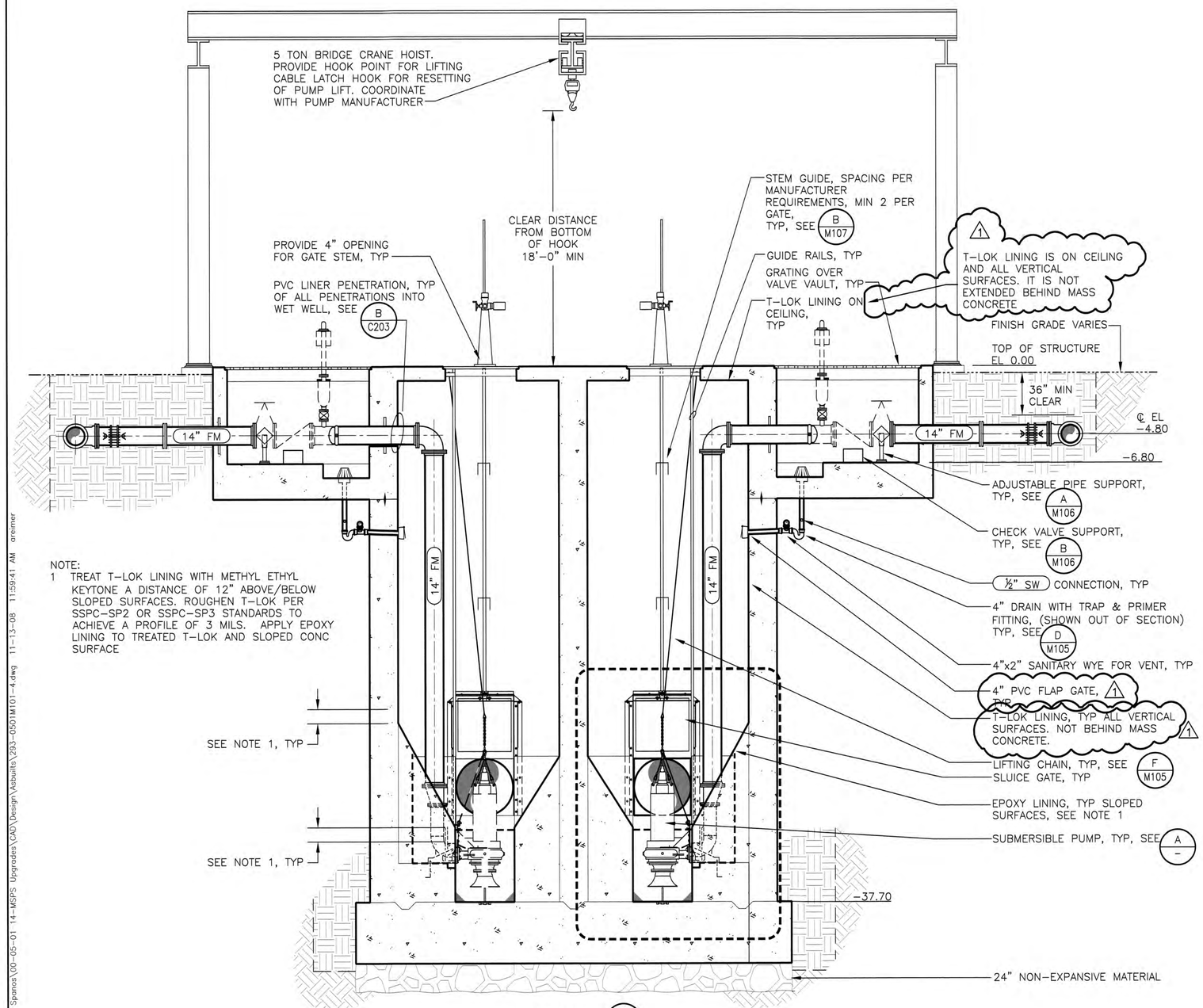
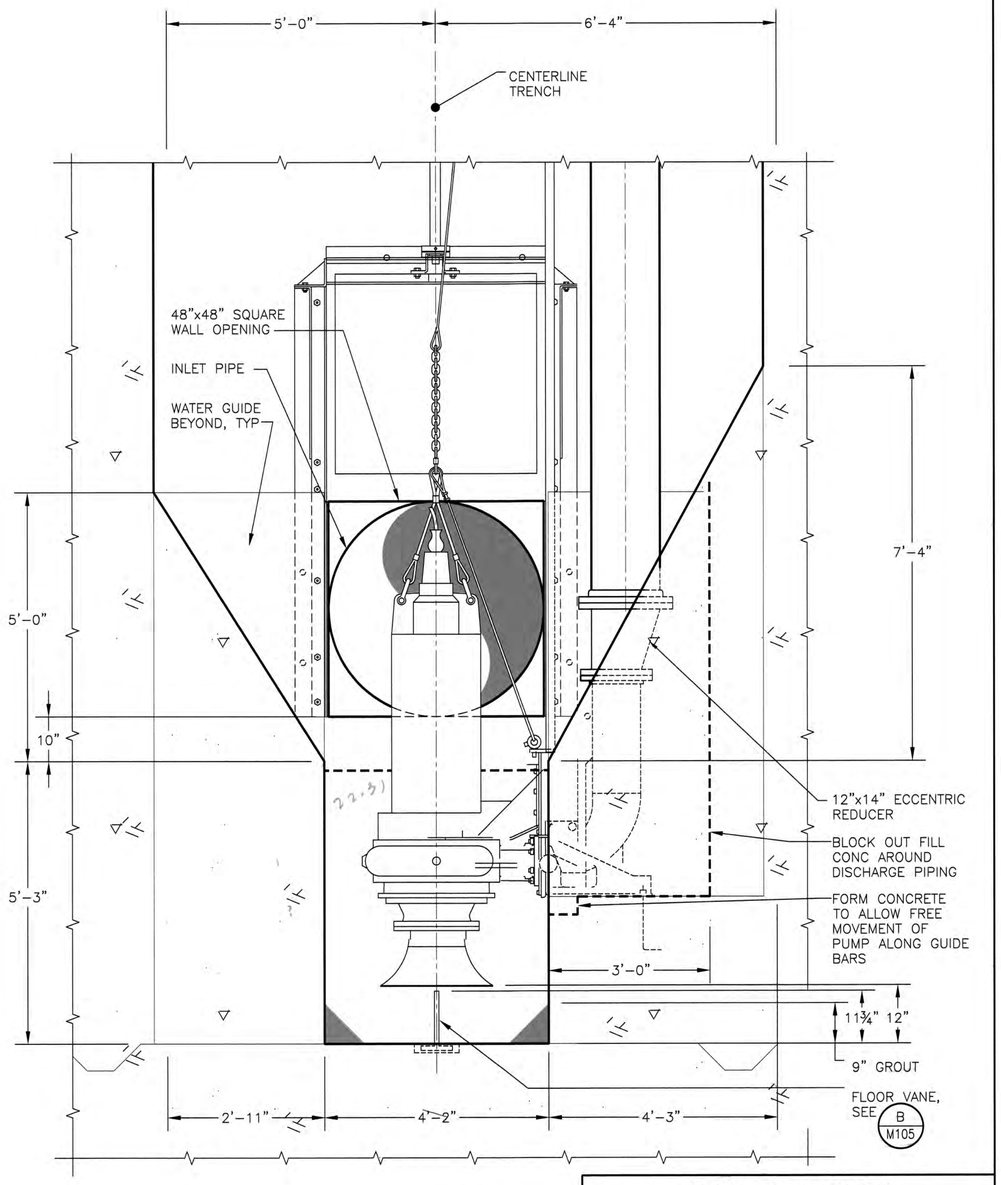


NOTE:
1 TREAT T-LOK LINING WITH METHYL ETHYL KEYTONE A DISTANCE OF 12" ABOVE/BELOW SLOPED SURFACES. ROUGHEN T-LOK PER SSPC-SP2 OR SSPC-SP3 STANDARDS TO ACHIEVE A PROFILE OF 3 MILS. APPLY EPOXY LINING TO TREATED T-LOK AND SLOPED CONC SURFACE

SECTION 1 / M101

SCALE; 1/4"=1'-0"



DETAIL A / –

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

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PUMP STATION SECTIONS 1

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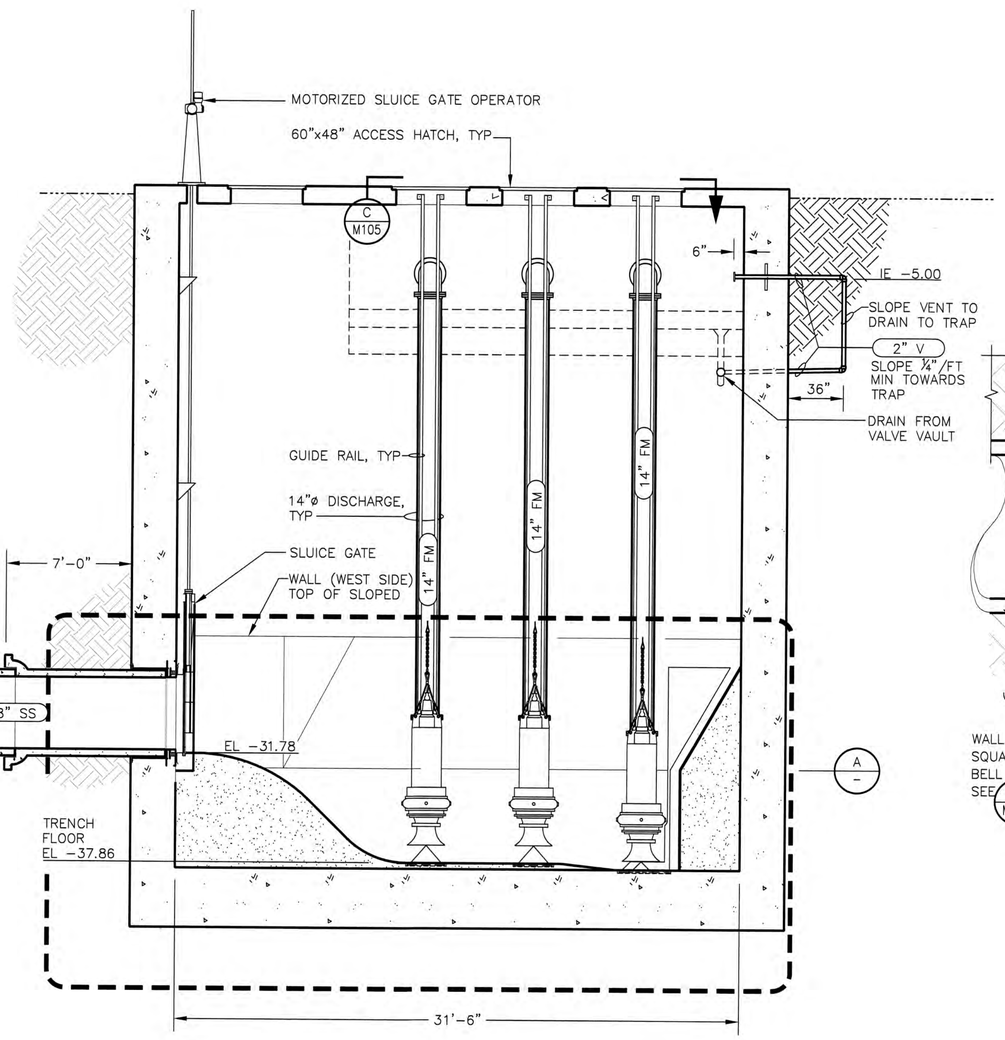
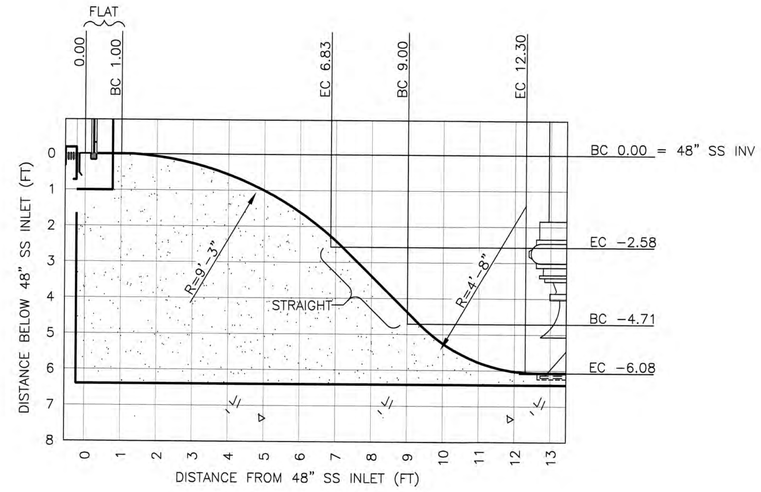


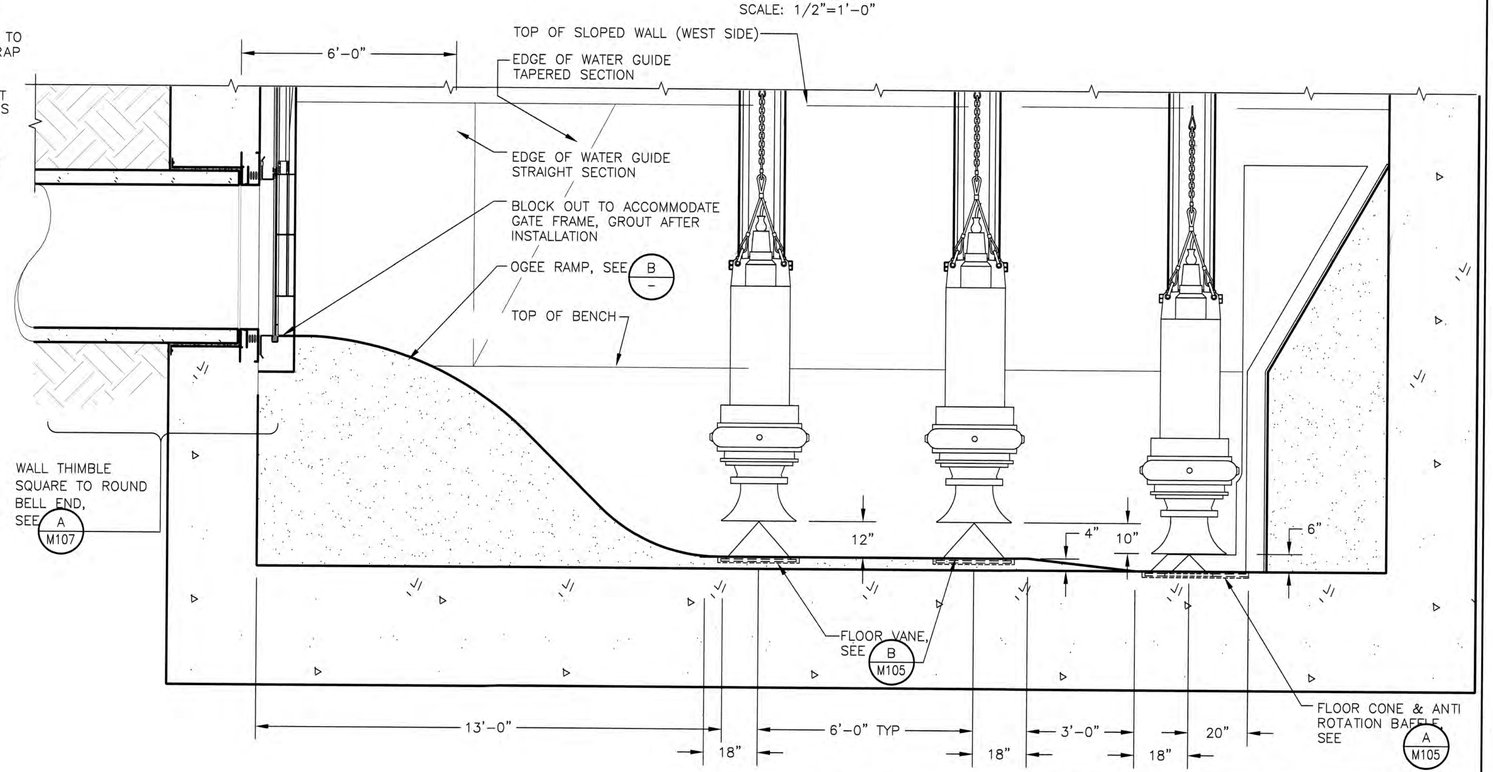
SECTION 2 / M101

SCALE: 1/4"=1'−0"



DETAIL B / −

SCALE: 1/2"=1'−0"



DETAIL A / −

SCALE: 1/2"=1'−0"

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PUMP STATION SECTIONS 2

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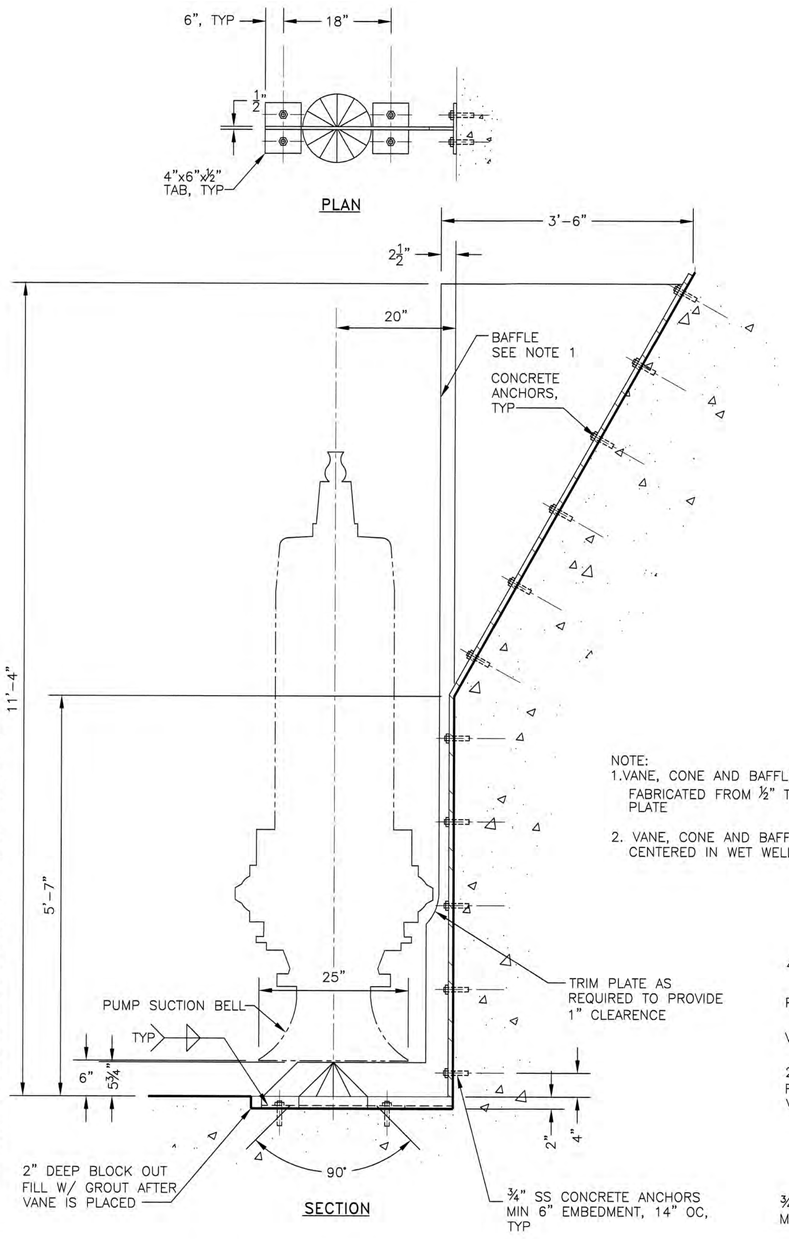
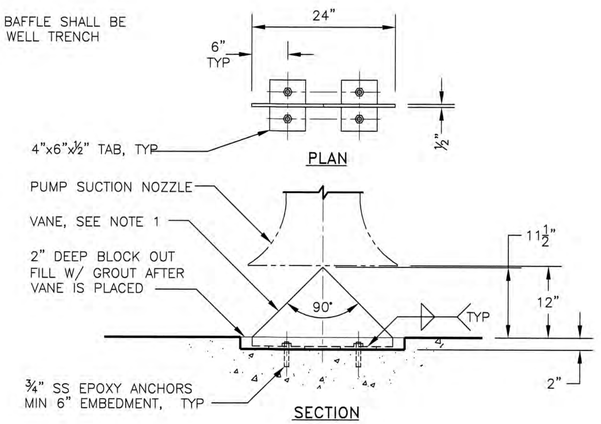


NOTE:
1. VANE, CONE AND BAFFLE SHALL BE FABRICATED FROM ½" TYPE 316 SS PLATE
2. VANE, CONE AND BAFFLE SHALL BE CENTERED IN WET WELL TRENCH

CONE & ANTI-ROTATION BAFFLE

DETAIL (A / M104)

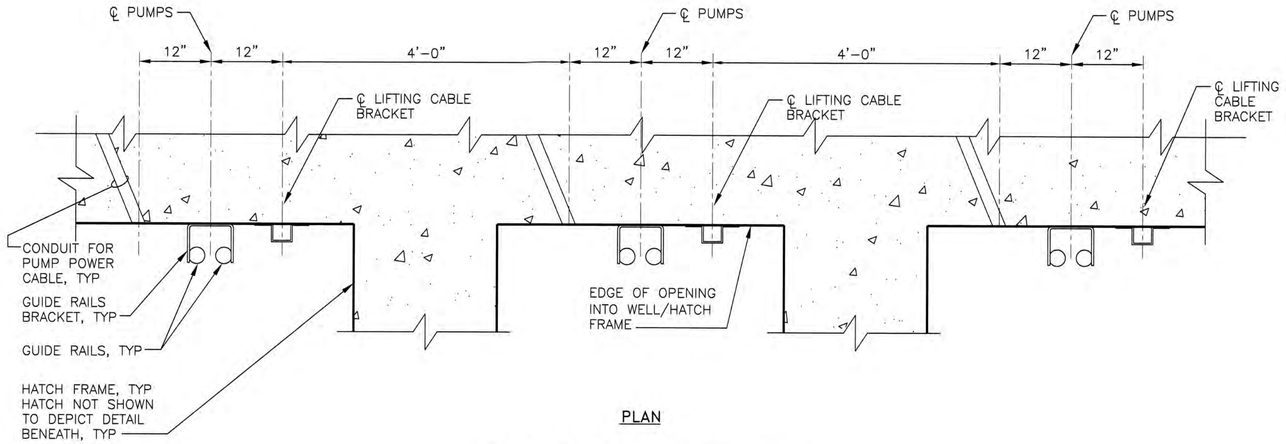
1"=1'-0"



FLOOR VANE

DETAIL (B / M104)

1"=1'-0"

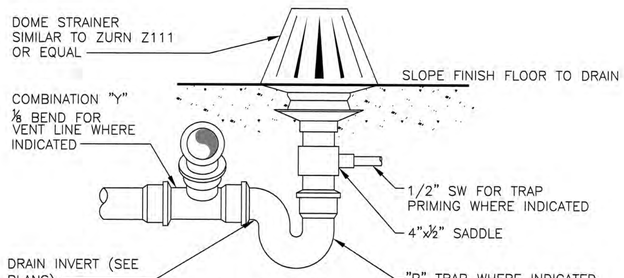


PLAN

TYPICAL DETAIL @ ACCESS HATCHES

DETAIL (C / M104)

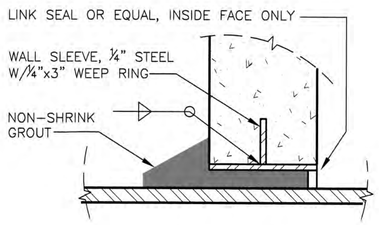
1"=1'-0



FLOOR DRAIN

DETAIL (D / VAR)

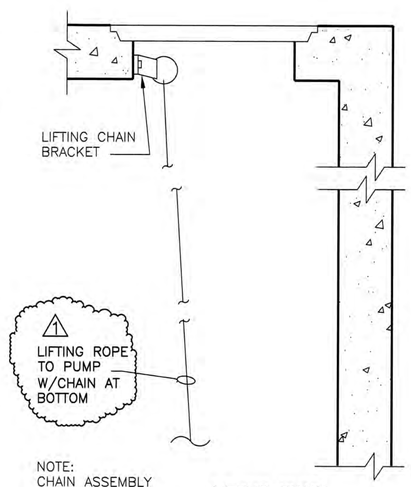
SCALE: NONE



WALL SLEEVE

DETAIL (E / —)

NOT TO SCALE



NOTE:
CHAIN ASSEMBLY SHALL HAVE 5 TON CAPACITY, MIN

LIFTING CHAIN

DETAIL (F / M103)

SCALE: NONE

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

PUMP STATION DETAILS 1

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: AS SHOWN	APPROVED BY: DATE:	SHEET No.	M105
DESIGNED BY: RCB		49 of 89 SHEETS	
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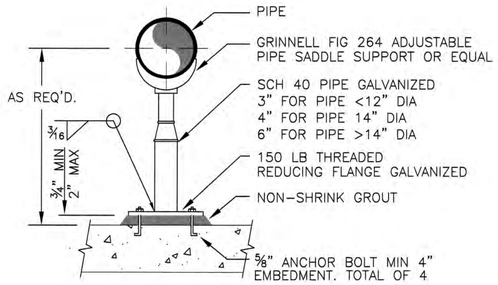
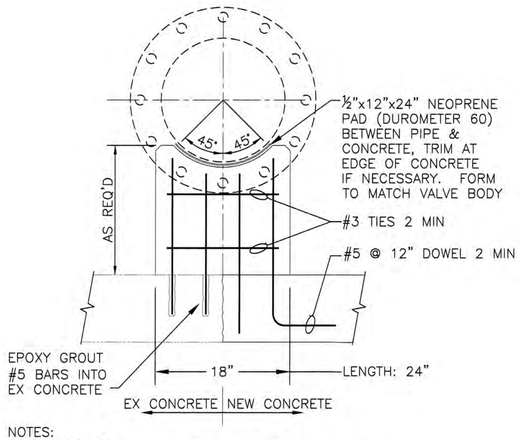


ADJUSTABLE PIPE SUPPORT

DETAIL A / VAR

NOT TO SCALE

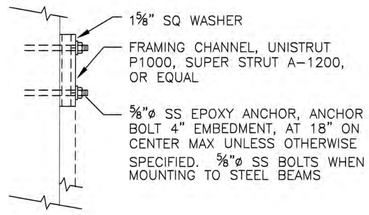


NOTES:
1. SUPPORT FOR KNIFE VALVES SHALL BE CENTERED UNDER THE BONNET

PIPE & VALVE SUPPORT

DETAIL B / VAR

NOT TO SCALE

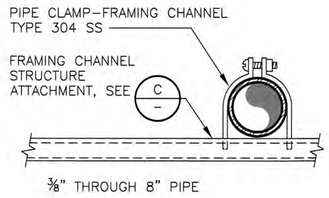


MAXIMUM LOAD CAPACITY SHALL BE AS RECOMMENDED BY THE CHANNEL MANUFACTURER

FRAMING CHANNEL STRUCTURAL ATTACHMENT

DETAIL C / –

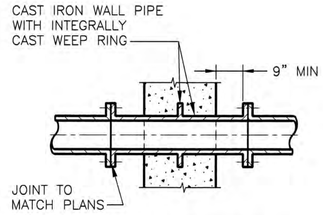
NOT TO SCALE



PIPE HANGER

DETAIL D / VAR

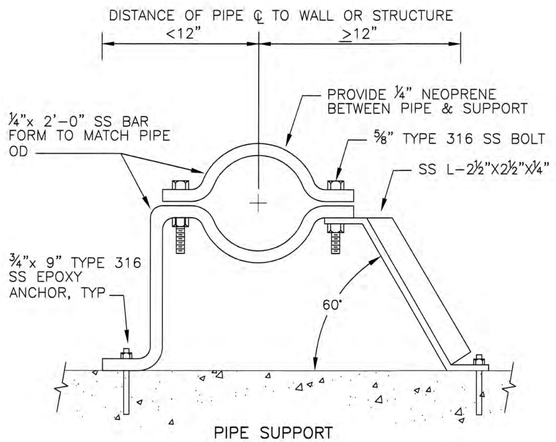
NOT TO SCALE



CAST IN PLACE WALL PIPE

DETAIL E / VAR

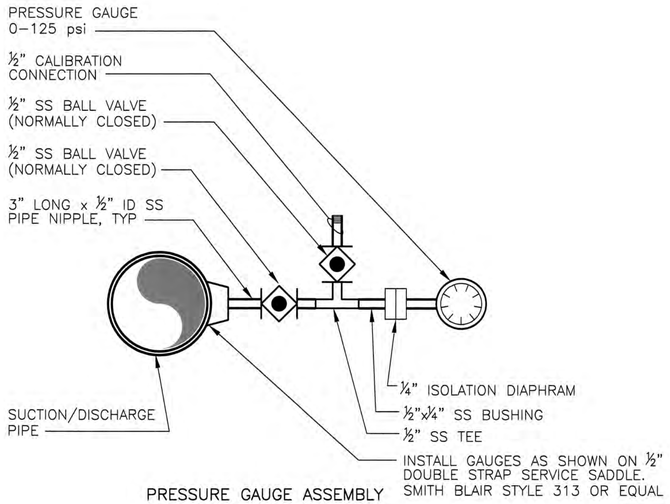
NOT TO SCALE



PIPE SUPPORT

DETAIL F / VAR

NOT TO SCALE



PRESSURE GAUGE ASSEMBLY

DETAIL G / M101

NOT TO SCALE

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14-Mile Slough Pump Station Upgrades

PUMP STATION DETAILS 2

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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CHECKED BY:	GDH	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01
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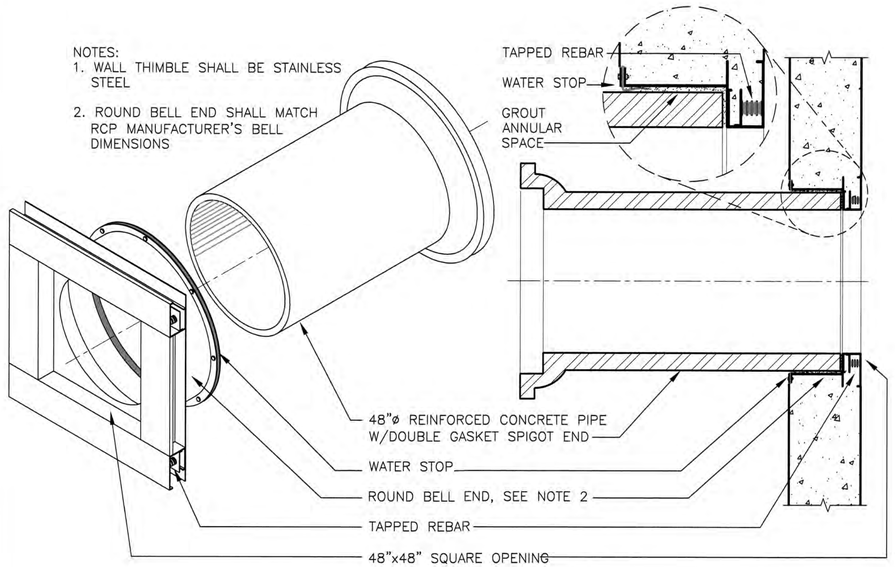
NOTES:
1. WALL THIMBLE SHALL BE STAINLESS STEEL
2. ROUND BELL END SHALL MATCH RCP MANUFACTURER'S BELL DIMENSIONS

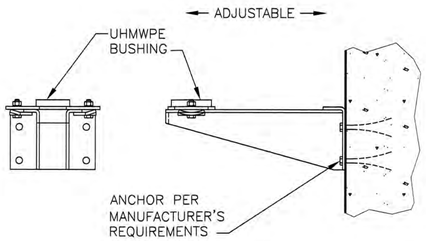


WALL THIMBLE – 48"ø TO 48" SQUARE

DETAIL A / M104

NOT TO SCALE

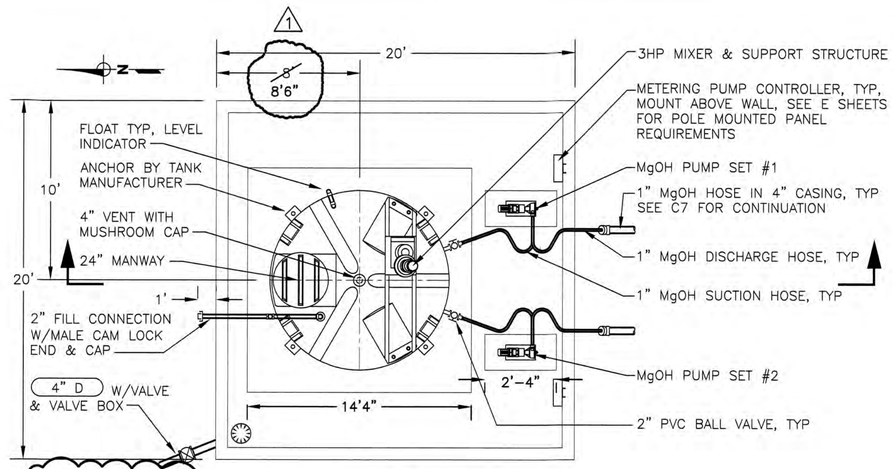
USE BLOCKOUT IN LIEU OF CASTING IN WALL THIMBLE ⚠1



STEM GUIDE

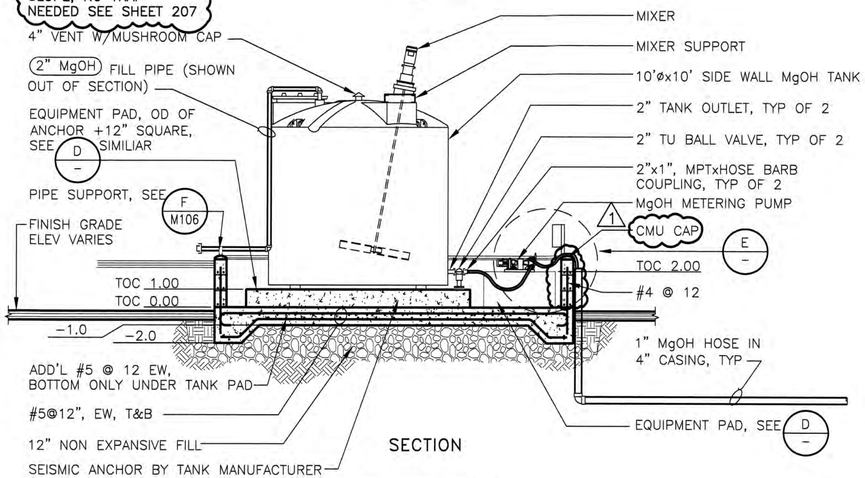
DETAIL B / VAR

NOT TO SCALE



PLAN

CONNECT TO CB #1 2% SLOPE, NO TRAP NEEDED SEE SHEET 207



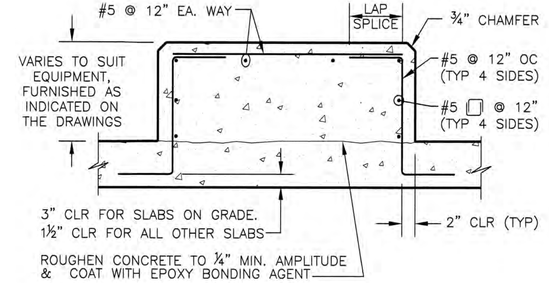
SECTION

NOTE:
MOUNT MgOH PUMPS PER MANUFACTURER'S INSTRUCTIONS. SET SKID ON 1" TO 3" OF NON-SHRINK GROUT.

MgOH FEED STATION

DETAIL C / C1&C7

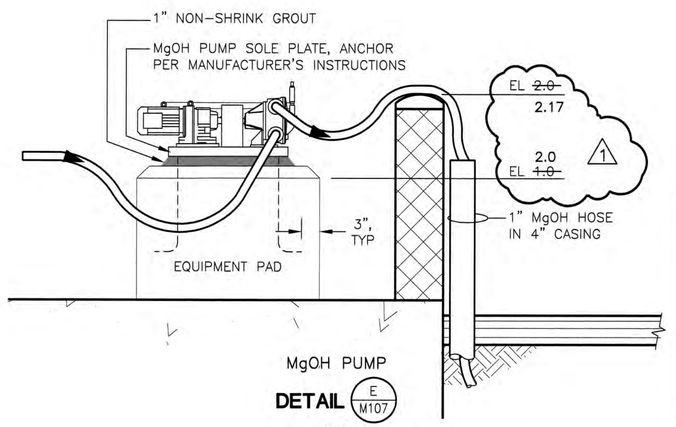
SCALE: 1/4"=1'-0"



NOTES:
1. THE MINIMUM PAD SIZE SHALL BE AS INDICATED OR AS SHOWN ON THE DRAWINGS OR AS DETERMINED BY THE EQUIPMENT MANUFACTURER.
2. THE SIZE, NUMBER, TYPE, LOCATION AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER. HOLD CONCRETE ANCHOR BOLTS IN POSITION WITH A TEMPLATE WHILE PAD IS BEING PLACED.
3. USE ANCHOR BOLT SLEEVES TO PROVIDE THE ANCHOR BOLT A MINIMUM MOVEMENT OF ½" IN ALL DIRECTIONS. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT.
4. ANCHOR BOLT SLEEVES SHALL HAVE A MINIMUM INTERNAL DIAMETER 1" GREATER AND A MAXIMUM INTERNAL DIAMETER 3" GREATER THAN ANCHOR BOLT DIAMETER.
5. EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNO
6. PROVIDE WEDGES OR SHIMS TO SUPPORT THE BASE WHILE THE NON-SHRINK GROUT IS PLACED. TEMPORARY LEVELING NUTS SHALL BE BACKED OFF. THE WEDGES OR SHIMS THAT REMAIN IN PLACE SHALL NOT BE EXPOSED TO VIEW.
7. WHERE CONCRETE SLAB OR BEAM THICKNESS WILL NOT ACCOMMODATE THE ANCHOR BOLT, PROVIDE EXTRA THICKNESS OF SLAB OR BEAM.
8. CONTRACTOR TO PROVIDE STRUCTURAL CALCULATIONS FOR EQUIPMENT ANCHORS STAMPED BY A CALIFORNIA REGISTERED ENGINEER. ANCHORS SHALL BE STAINLESS STEEL.

DETAIL D / –

NOT TO SCALE



MgOH PUMP

DETAIL E / M107

NTS

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

PUMP STATION DETAILS 3

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CITY OF STOCKTON, CALIFORNIA

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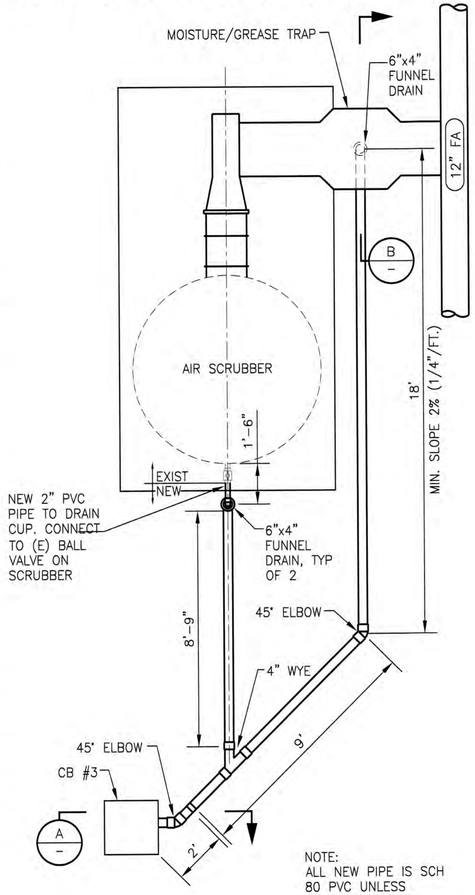
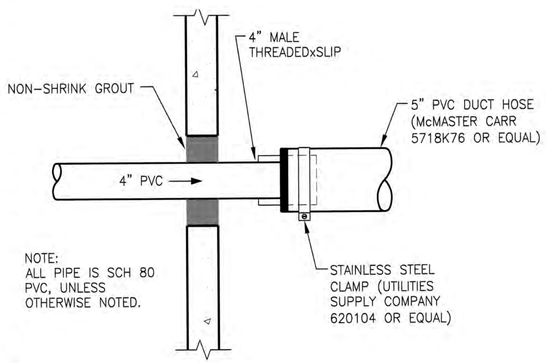


NOTE:
ALL NEW PIPE IS SCH 80 PVC UNLESS OTHERWISE NOTED.

PLAN

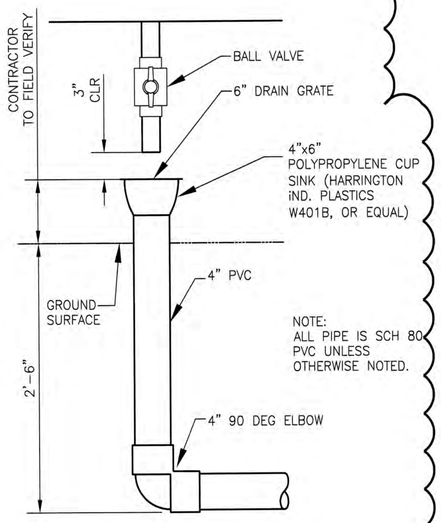
SCALE: 3/8"=1'-0"



NOTE:
ALL PIPE IS SCH 80 PVC, UNLESS OTHERWISE NOTED.

SECTION A

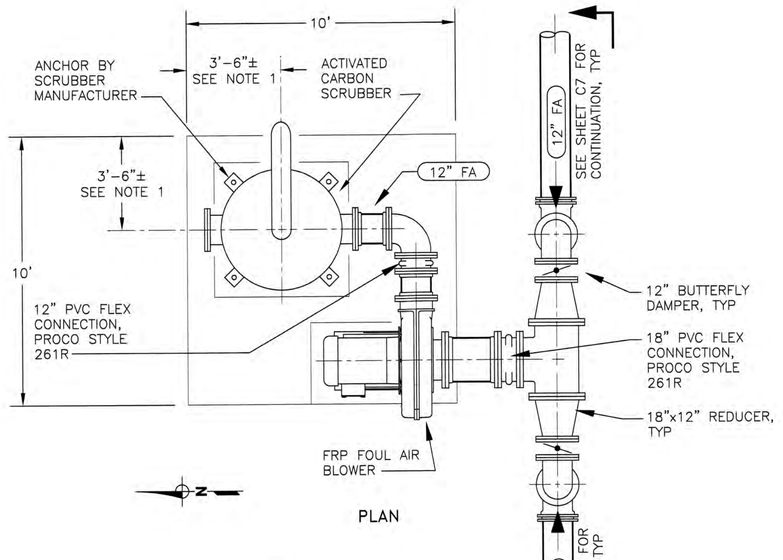
SCALE: 1-1/2"=1'-0"



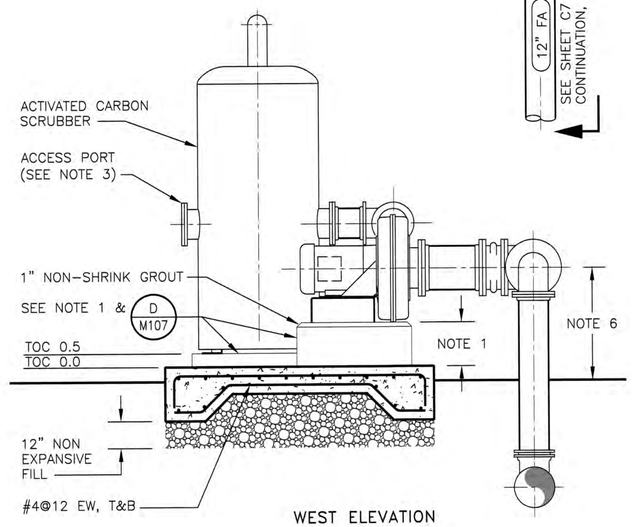
NOTE:
ALL PIPE IS SCH 80 PVC UNLESS OTHERWISE NOTED.

SECTION B

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



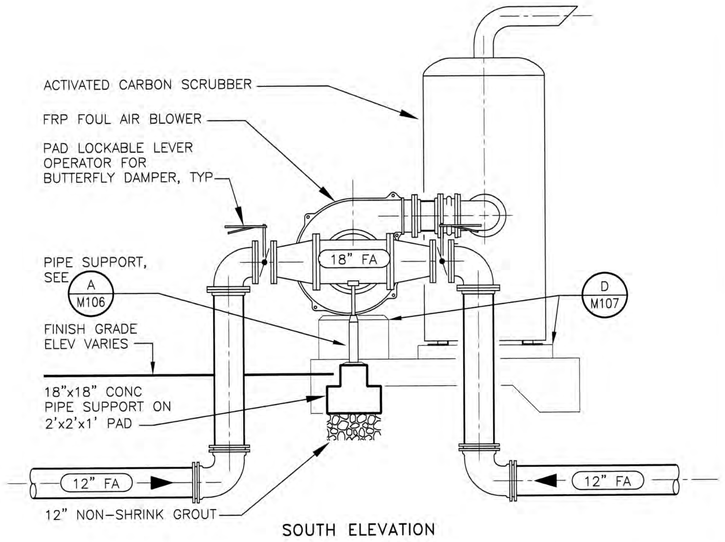
PLAN



WEST ELEVATION FOUL AIR SCRUBBER

DETAIL A

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



SOUTH ELEVATION

NOTES:
1. COORDINATE BLOWER AND SCRUBBER PAD DIMENSIONS/LOCATION WITH EQUIPMENT FURNISHED AND INSTALLED. SIZE TO SUITE BLOWER/SCRUBBER PLUS 3" ALL AROUND
2. ANCHOR BLOWER AND SCRUBBER PER MANUFACTURER'S RECOMMENDATION. ANCHORAGE CALCULATIONS SHALL BE PREPARED BY A PROFESSIONAL ENGINEER
3. ALL FITTINGS AND APPURTENANCES ON SCRUBBER (REGENERATION PORTS, MEDIA REMOVAL PORTS, ETC.) ARE NOT SHOWN AND SHALL BE DESIGNED BY SCRUBBER MANUFACTURER
4. FA PIPING SHALL BE C900 PVC, VALVES AND APPURTENANCES SHALL BE PVC, FASTENERS SHALL BE TYPE 316 STAINLESS STEEL UNLESS OTHERWISE NOTED
5. BLOWER SHALL BE EQUIPPED WITH VIBRATION ISOLATION PER MANUFACTURER'S REQUIREMENTS
6. BLOWER/SCRUBBER CONNECTIONS SHALL BE DESIGNED BY SCRUBBER SUPPLIER
7. FOUL AIR PIPING SHALL BE FLANGED ABOVE GROUND, BELL & SPIGOT BELOW GROUND
8. ALL FASTENERS, ANCHORS METALLIC HARDWARE SHALL BE TYPE 316 STAINLESS STEEL

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14-Mile Slough Pump Station Upgrades

PUMP STATION DETAILS 4

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CITY OF STOCKTON, CALIFORNIA

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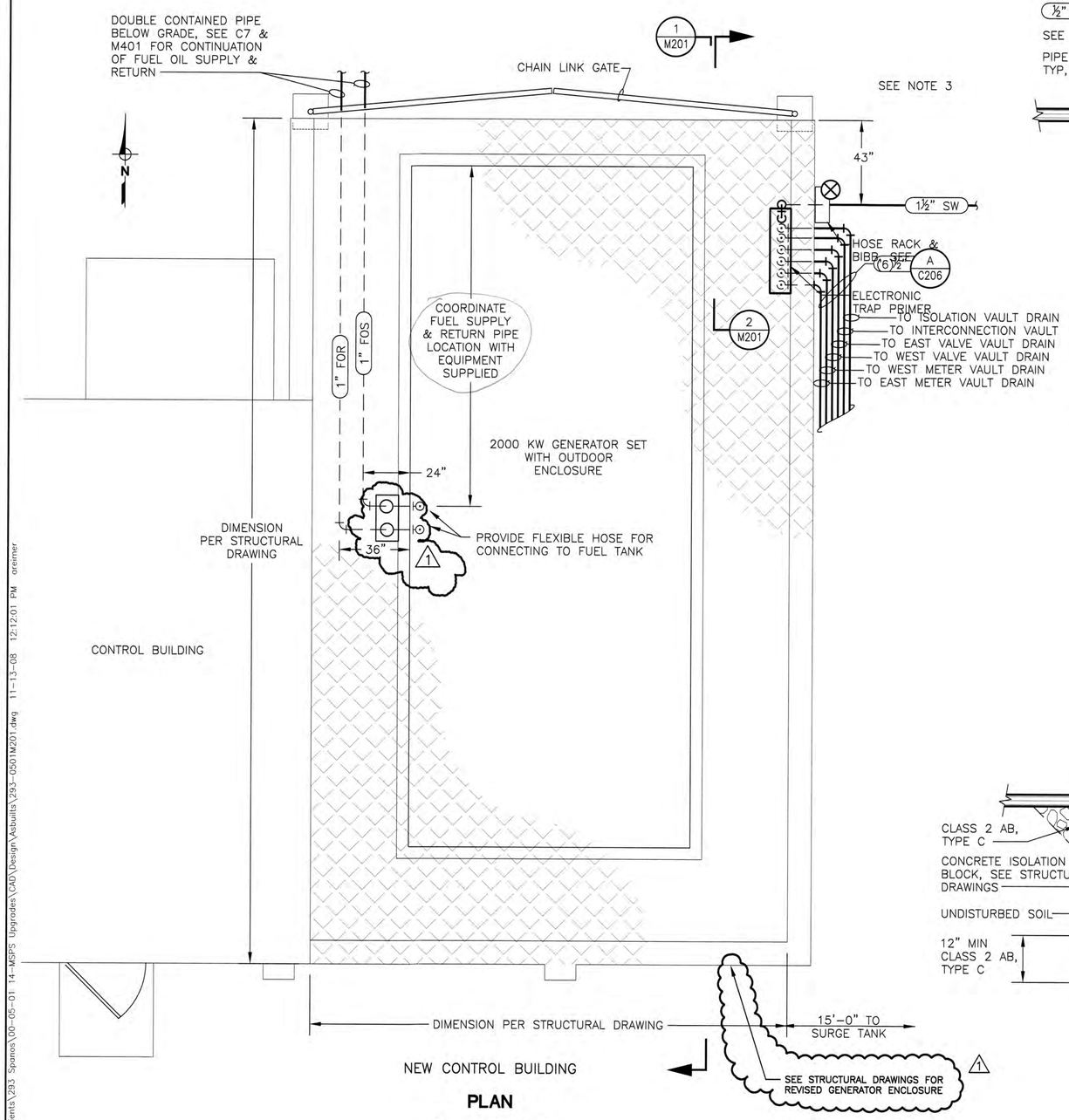
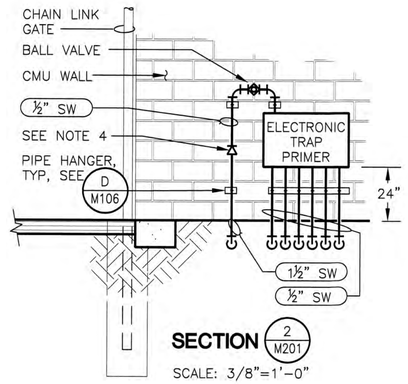
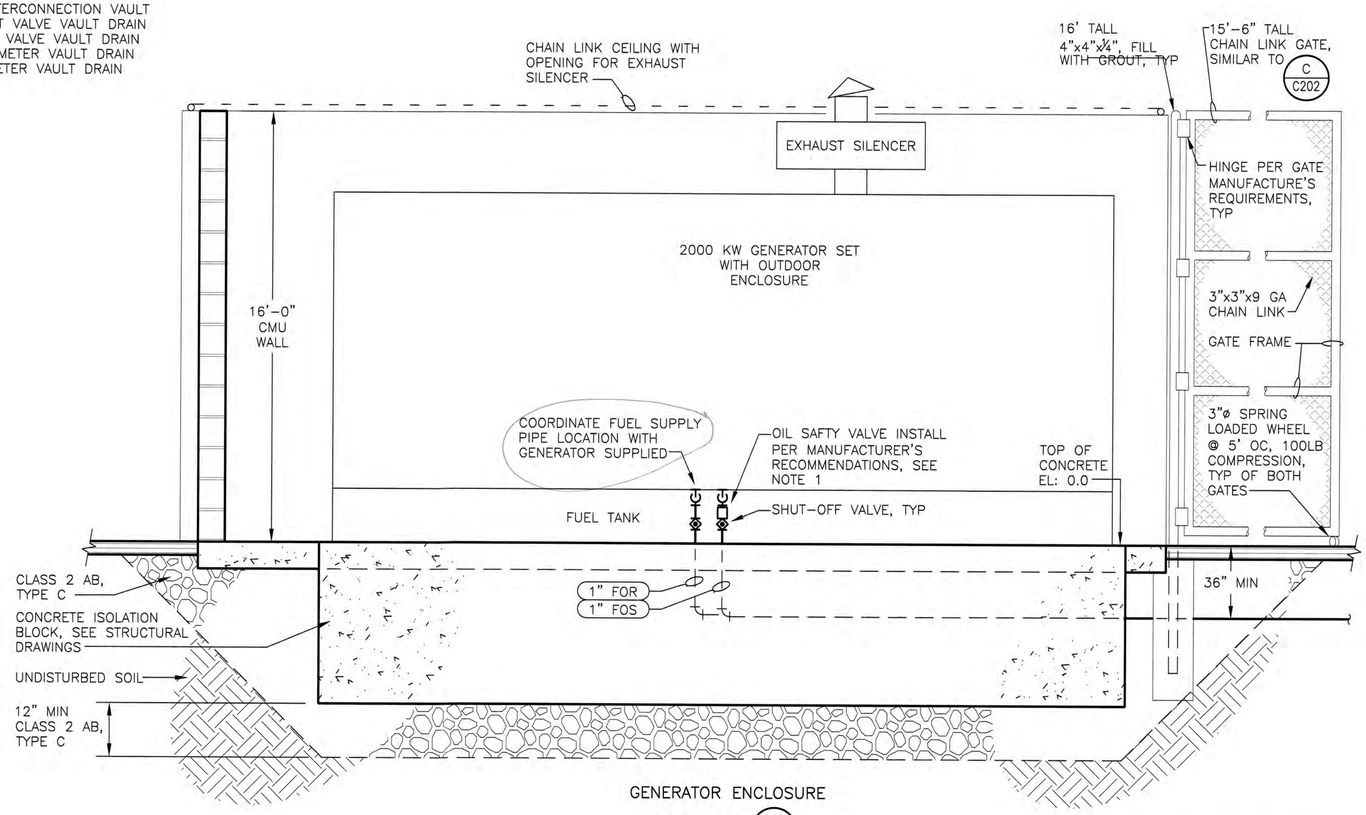




NOTES:
1. REDUCE FOS & FOR PIPING SIZE AS REQUIRED FOR CONNECTION TO GENERATOR & OIL SAFETY VALVE
2. MOUNT FOS & FOR PIPING TO INSIDE FACE OF GENERATOR ENCLOSURE
3. FOR CONTINUATION SEE YARD PIPING PLAN, SHEET C7
4. PROVIDE REDUCING COUPLING TO MATCH PIPE MATERIAL AS REQUIRED BY ELECTRONIC TRAP PRIMER. EXPOSED PVC SHALL BE COATED PER SPECS
5. IRRIGATION CONTROLLER CLOSE TO TRAP PRIMER
6. FOS & FOR CARRIER PIPES TO BE BLACK STEEL, ASTM A53 GRADE B
7. FOS & FOR PUMPS SUPPLIED BY 2000KW GENERATOR SUPPLIER 1



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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CONTROL BUILDING
GENERATOR ENCLOSURE

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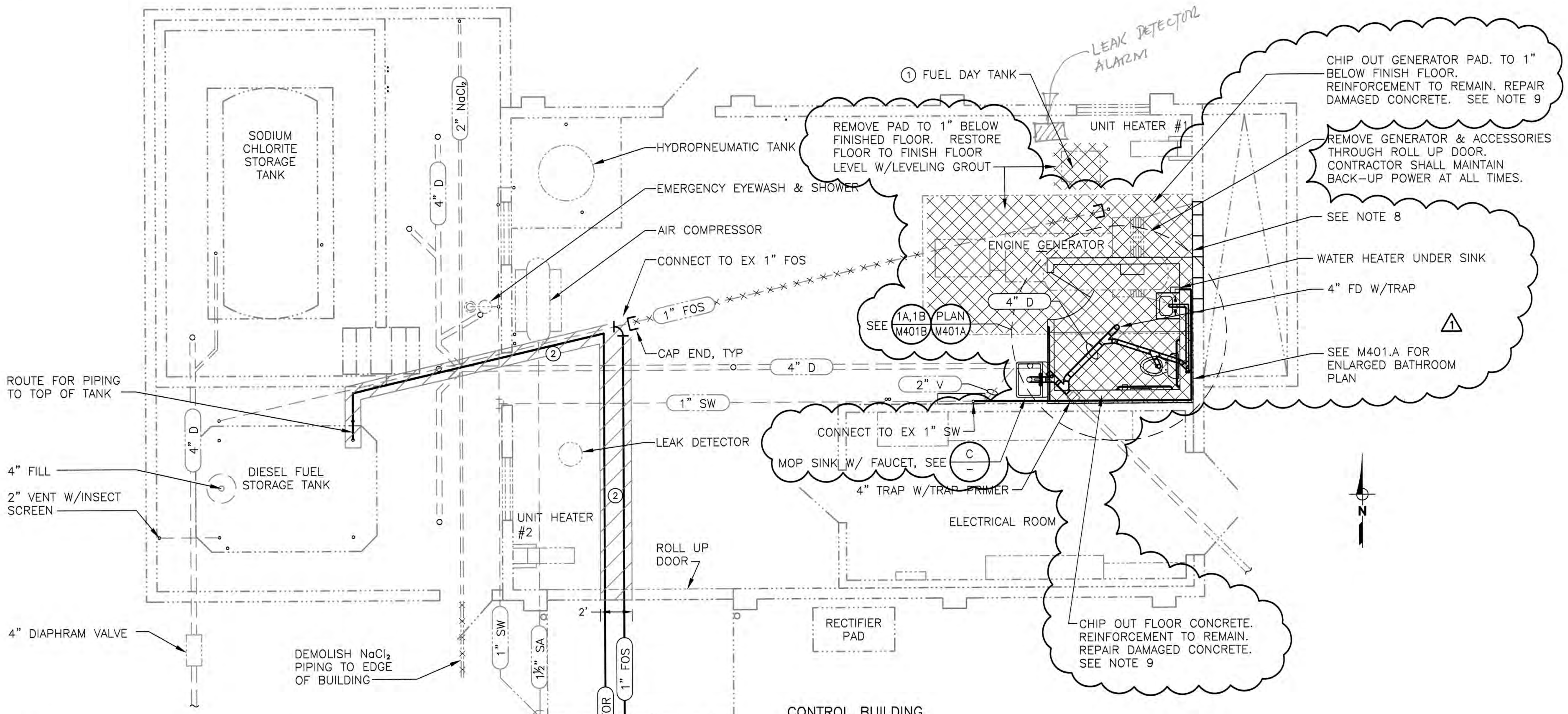
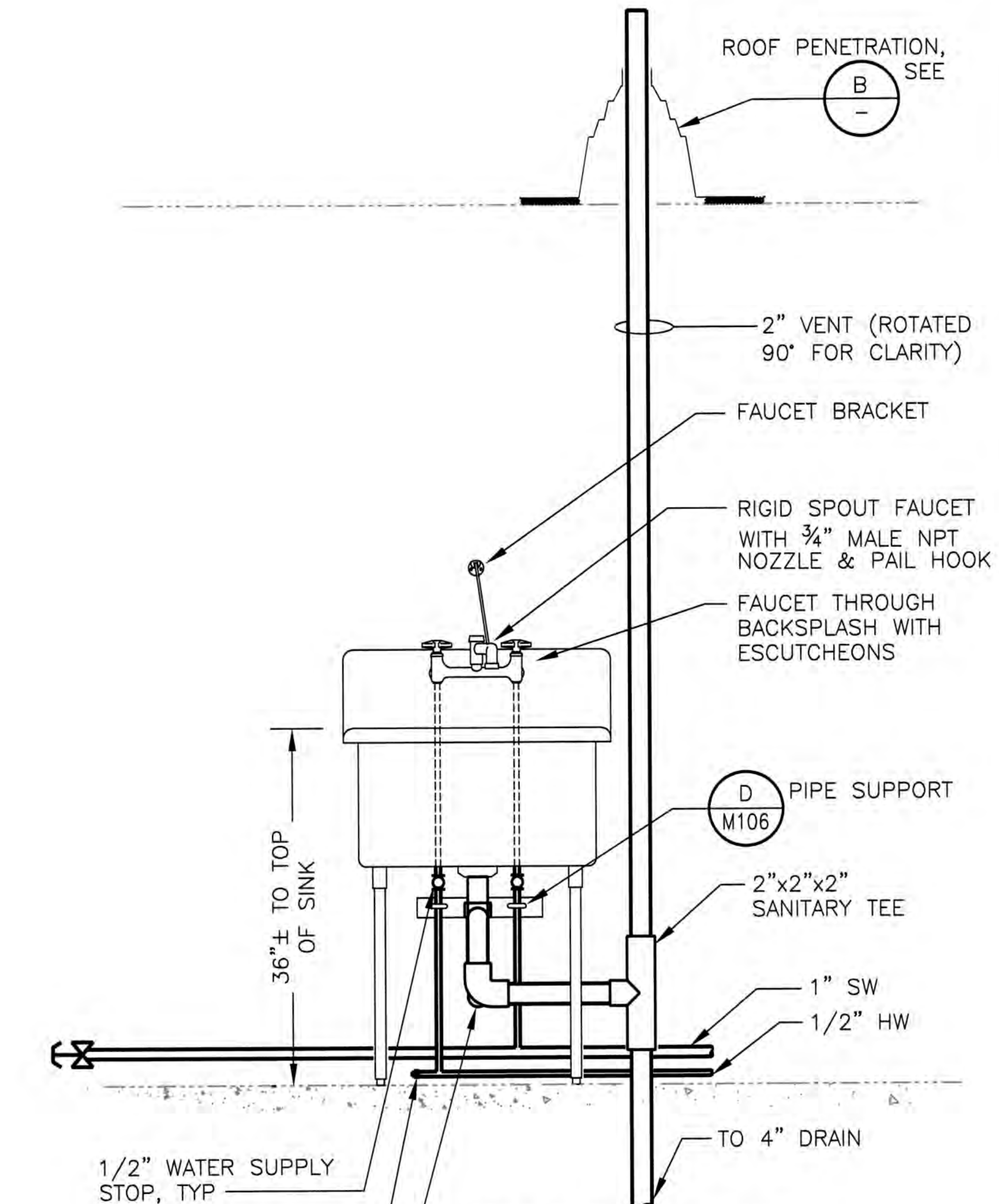


CONTROL BUILDING

PLAN

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



MOP SINK

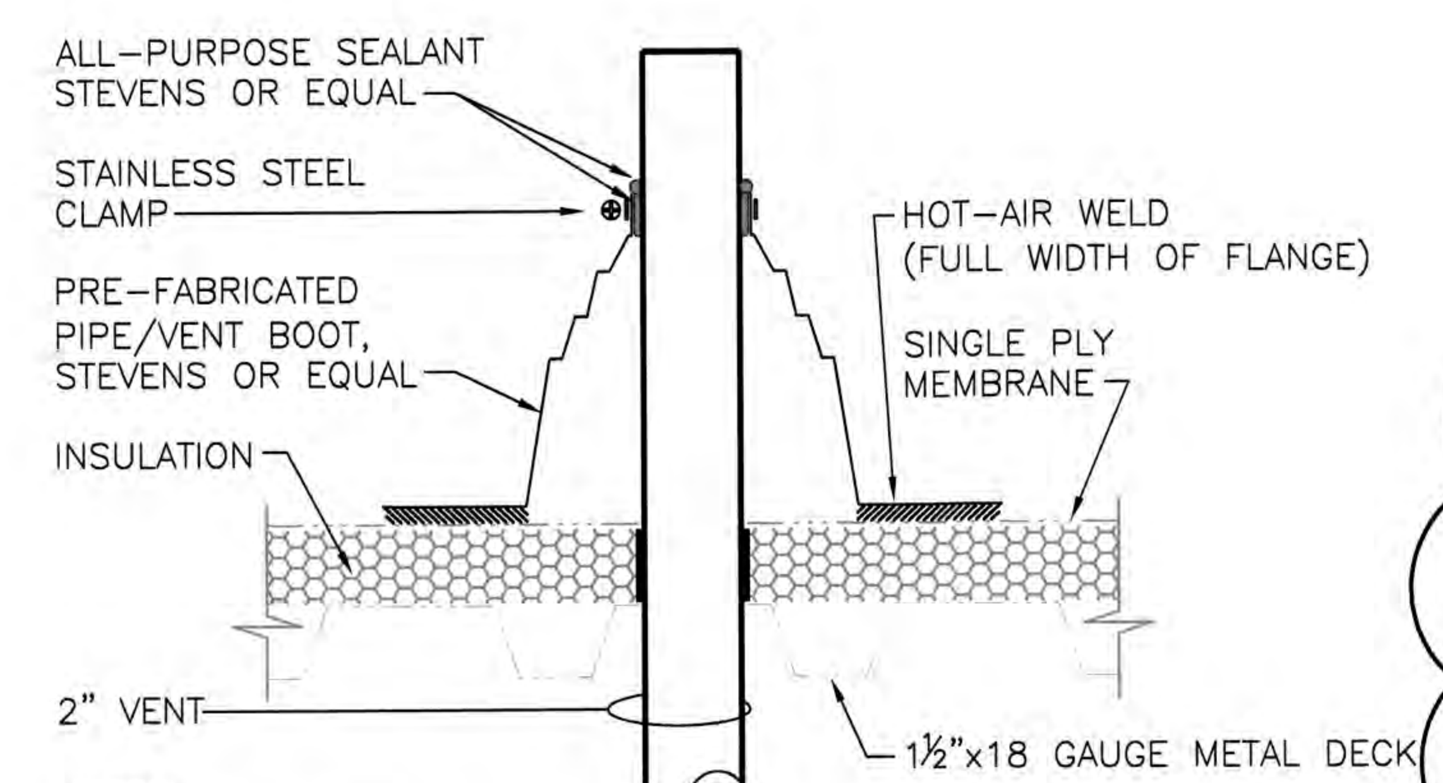
DETAIL C

SCALE: 1"=1'-0"

NOTES:
1. BOLT SINK TO FLOOR
2. PLUMB BOTH FAUCET VALVES W/½" SW

NOTES:
1. CUTS IN CONCRETE SHALL BE STRAIGHT AND SMOOTH. WIDTH OF EXCAVATION SHALL BE TWO FEET OR LESS. ANY WATER USED IN THE BUILDING SHALL BE CONTAINED TO PREVENT DAMAGE TO EXISTING FACILITIES
2. THE EXISTING FOOTING SHALL NOT BE DISTURBED. HAND DIG AS REQUIRED TO COMPLETE WORK AROUND THE FOOTING
3. MATCH EXISTING FOUNDATION MATERIALS AND DIMENSIONS WHEN INSTALLING & BACKFILLING UNDER EXISTING CONCRETE. REPAIR REBAR AS DIRECTED BY THE ENGINEER
4. CONCRETE SHALL BE FINISHED TO MATCH EXISTING SURFACES AND SLOPES
5. PIPING CONTINUES ON C7
6. THE EXISTING LEAK DECTECTION SYSTEM SHALL BE PRESERVED AND NEW FOS AND FOR PIPING SHALL BE INCORPORATED
7. NEW FOS AND FOR PIPING MAY BE INSTALLED IN THE SAME TRENCH
8. REMOVE LOUVER & EXISTING FRAME. CONTRACTOR TO DELIVER LOUVER TO CITY. LOUVER OPENING APPROXIMATELY 7' WIDE X 8' HIGH (CONTRACTOR TO FIELD VERIFY). FILL IN LOUVER OPENING W/CMU BLOCK TO MATCH EXISTING. SEE B/M401A
9. REPLACE REMOVED CONCRETE TO ±1 INCH BELOW FINISH FLOOR WITH CONCRETE. DAMAGED CONCRETE FROM ±1 INCH BELOW FINISH FLOOR TO TOP OF FLOOR, SHALL BE REPAIRED WITH FLOOR LEVELING GROUT. SLOPE FLOOR IN BATHROOM TO 4" FD.

KEYNOTES:
(1) REMOVE & SALVAGE
(2) SAWCUT & REMOVE EXISTING CONCRETE SLAB. REPAIR TO SAME DEPTH & FINISH UPON COMPLETION



NOTES:
1. PRIOR TO HOT-AIR WELDING, CLEAN AND PREPARE THE WELD AREA OF THE BOOT AND ROOFING MEMBRANE USING PROCEDURES OUTLINED IN THE BOOT MANUFACTURERS SPECIFICATION
2. INSULATION AND FIELD MEMBRANE MUST BE CUT TIGHTLY AROUND VENT PIPE BASE

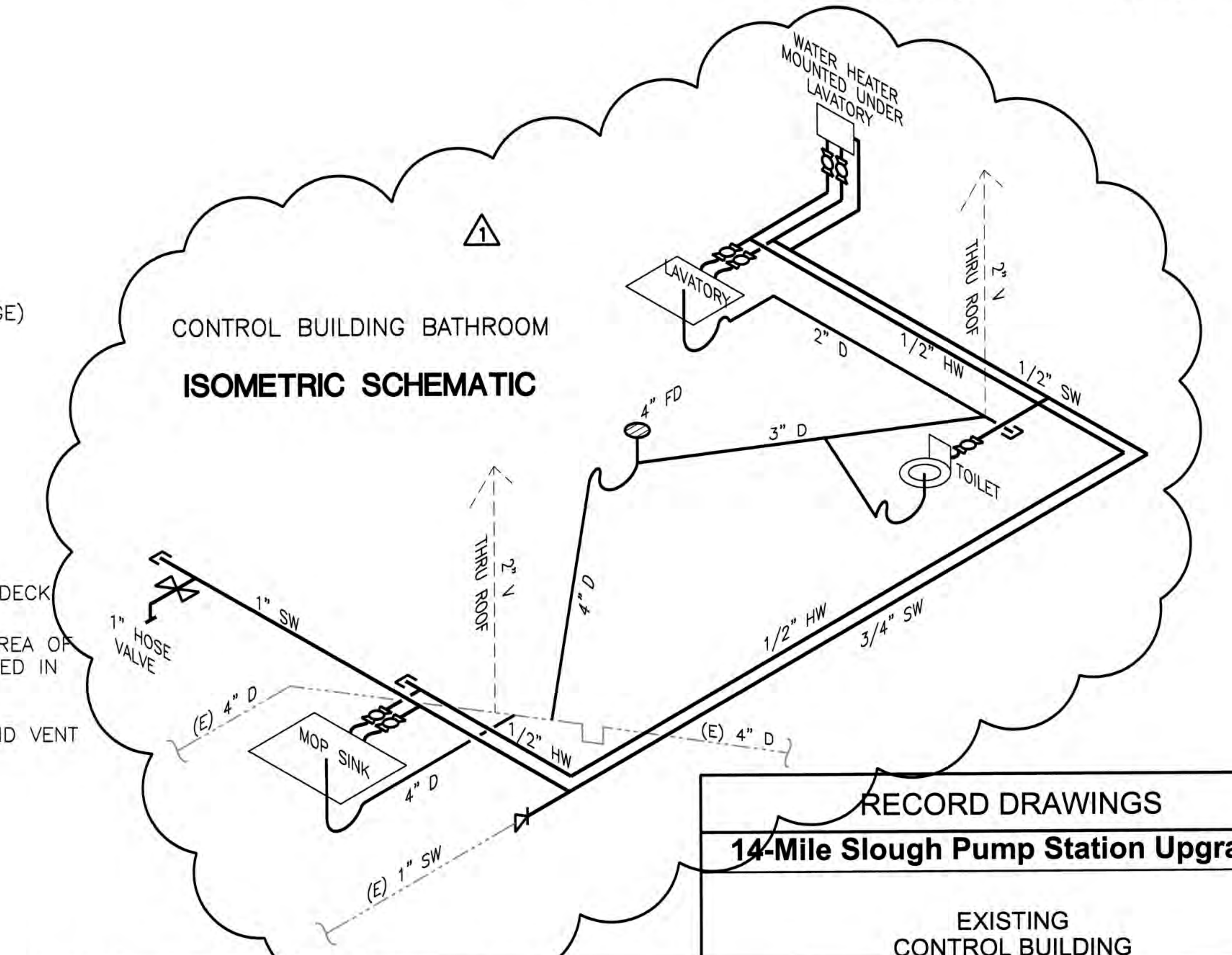
VENT PENETRATION

DETAIL B

NOT TO SCALE

CONTROL BUILDING BATHROOM

ISOMETRIC SCHEMATIC



RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

EXISTING CONTROL BUILDING

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CITY OF STOCKTON, CALIFORNIA

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1	BATHROOM DETAILS	7/5	OS	
2	RECORD DRAWINGS	8/08	MAH	PDF
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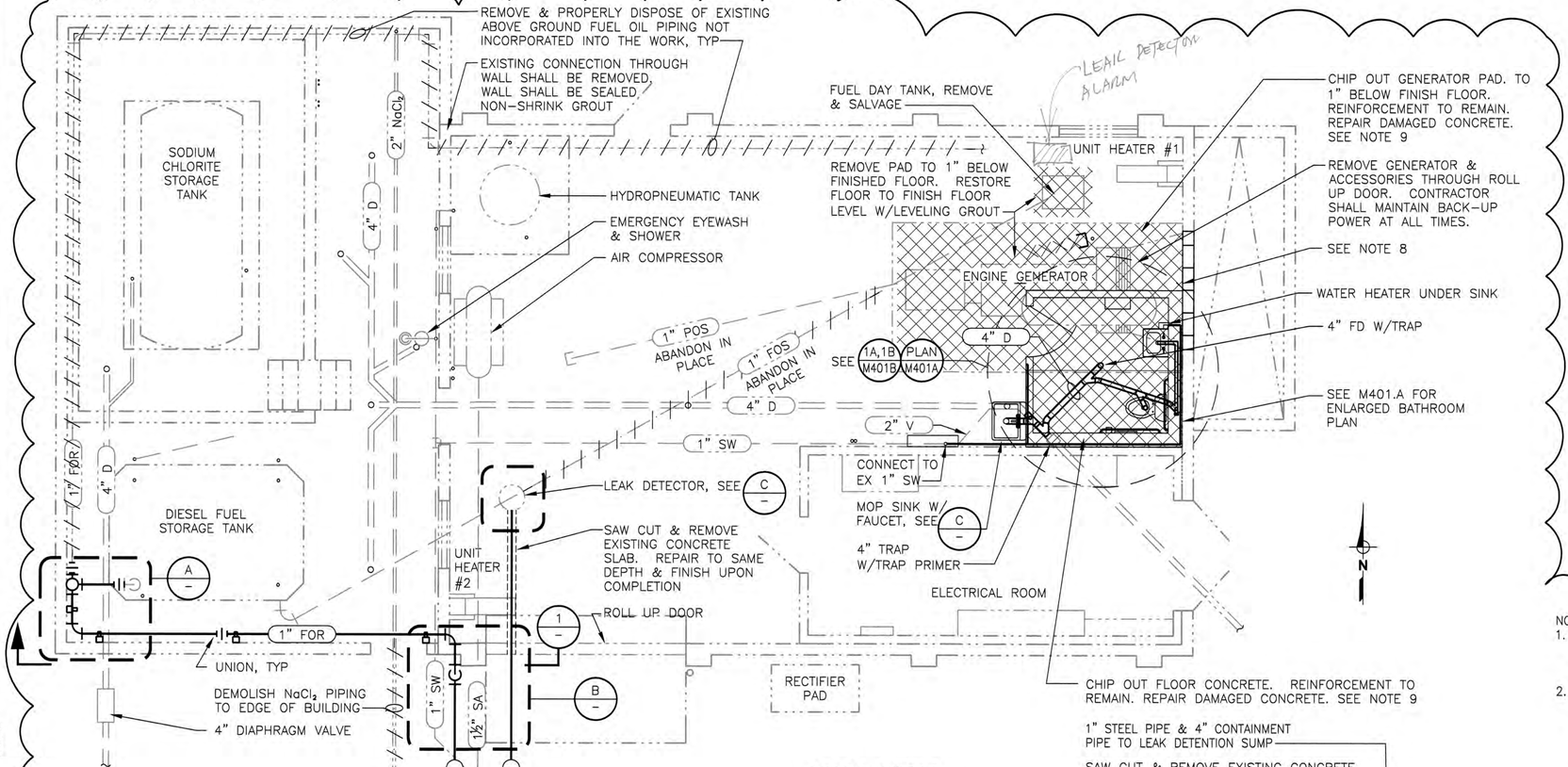
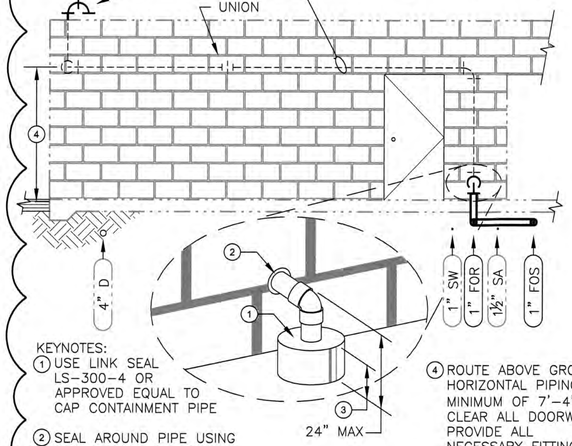


NOTES:
1. CUTS IN CONCRETE SHALL BE STRAIGHT AND SMOOTH. WIDTH OF EXCAVATION SHALL BE TWO FEET OR LESS. ANY WATER USED IN THE BUILDING SHALL BE CONTAINED TO PREVENT DAMAGE TO EXISTING FACILITIES
2. THE EXISTING FOOTING SHALL NOT BE DISTURBED. HAND DIG AS REQUIRED TO COMPLETE WORK AROUND THE FOOTING
3. MATCH EXISTING FOUNDATION MATERIALS AND DIMENSIONS WHEN INSTALLING & BACKFILLING UNDER EXISTING CONCRETE. REPAIR REBAR AS DIRECTED BY THE ENGINEER
4. CONCRETE SHALL BE FINISHED TO MATCH EXISTING SURFACES AND SLOPES
5. PIPING CONTINUES ON C7
6. THE EXISTING LEAK DETECTOR SYSTEM SHALL BE PRESERVED AND NEW FOS AND FOR PIPING SHALL BE INCORPORATED
6. THE EXISTING LEAK DETECTOR SYSTEM SHALL BE PRESERVED AND NEW FOS AND FOR PIPING SHALL BE INCORPORATED
7. NEW FOS AND FOR PIPING MAY BE INSTALLED IN THE SAME TRENCH
8. REMOVE LOUVER & EXISTING FRAME. CONTRACTOR TO DELIVER LOUVER TO CITY. LOUVER OPENING APPROXIMATELY 7' WIDE x 8' HIGH (CONTRACTOR TO FIELD VERIFY). FILL IN LOUVER OPENING W/CMU BLOCK TO MATCH EXISTING. SEE B M401A
9. REPLACE REMOVED CONCRETE TO ± INCH BELOW FINISH FLOOR WITH CONCRETE. DAMAGED CONCRETE FROM ±1 INCH BELOW FINISH FLOOR TO TOP OF FLOOR, SHALL BE REPAIRED WITH FLOOR LEVELING GROUT. SLOPE FLOOR IN BATHROOM TO 4" FD

CONTROL BUILDING

PLAN

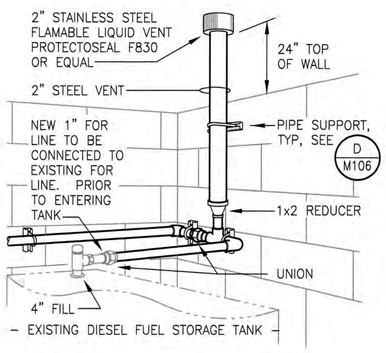
SCALE: 1/4"=1'-0"



KEYNOTES:
1. USE LINK SEAL LS-300-4 OR APPROVED EQUAL TO CAP CONTAINMENT PIPE
2. SEAL AROUND PIPE USING NON-SHRINK GROUT
3. MINIMUM 6" EXPOSURE OF SECONDARY CONTAINMENT PIPE
4. ROUTE ABOVE GROUND HORIZONTAL PIPING A MINIMUM OF 7'-4" TO CLEAR ALL DOORWAYS. PROVIDE ALL NECESSARY FITTINGS TO CONNECT NEW PIPE TO EXISTING PIPE

SECTION 1

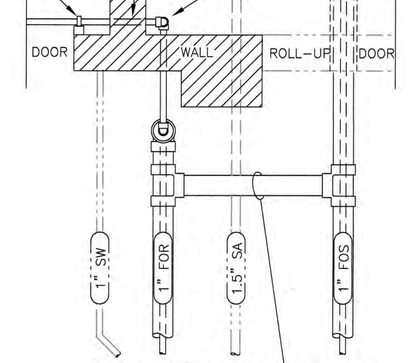
SCALE: 1/4"=1'-0"



CONNECTION TO FUEL TANK

DETAIL A

NTS



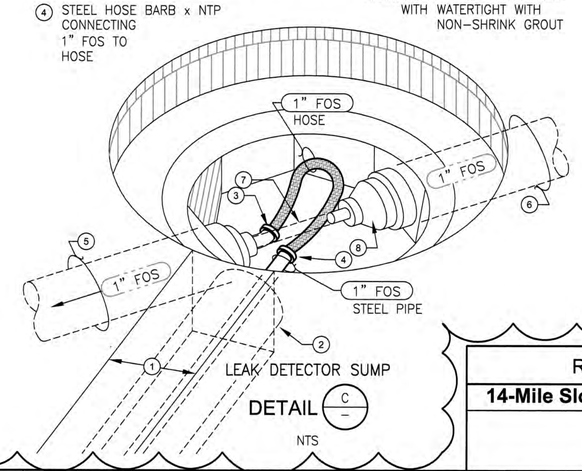
4" DOUBLE CONTAINMENT

DETAIL B

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

NOTES:
1. VERIFY ALL EXISTING MATERIALS & DIAMETERS PRIOR TO PURCHASE NEW MATERIALS
2. CONTRACTOR SHALL PURCHASE SUFFICIENT HOSE LENGTH TO MAKE REQUIRED CONNECTIONS
3. HOSE SHALL BE GENERAL PURPOSE BUNA-N RUBBER PETROLEUM HOSE WITH STEEL WIRE SPIRAL REINFORCEMENT. HOSE AVAILABLE FROM McMASTER CARR, PHONE: (330)995-550
4. WRAP MALE PIPE THREADS WITH TEFLON TAPE. TAPE SHALL BE WRAPPED TO ALLOW ½ WIDTH OVERLAP

KEYNOTES:
1. CUT HERE IN LEAK DETECTOR SUMP FOR CONTAINMENT PIPE. SEAL SUMP/PIPE OPENING WATER-TIGHT WITH NON-SHRINK GROUT
2. 4" CONTAINMENT PIPE
3. STEEL HOSE BARB x HOSE BARB COUPLING USED TO CONNECT EXISTING HOSE TO NEW HOSE
4. STEEL HOSE BARB x NTP CONNECTING 1" FOS TO HOSE
5. EXISTING 1" FUEL SUPPLY LINE TO EXISTING CON VAULT TANK
6. EXISTING 1" LINE TO BE ABANDONED
7. EXISTING HOSE. CUT AS CLOSE TO ABANDONED LINE AS POSSIBLE AND ATTACH TO NEW HOSE
8. REMOVE EXISTING FITTINGS SEAL ABANDONED 1" FOS LINE PLUG WITH WATERTIGHT WITH NON-SHRINK GROUT



LEAK DETECTOR SUMP

DETAIL C

NTS

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1	BATHROOM DETAILS	7/8	OS	
2	FUEL/OIL FOR DETAILS	9/12	HP	
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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

EXISTING CONTROL BUILDING

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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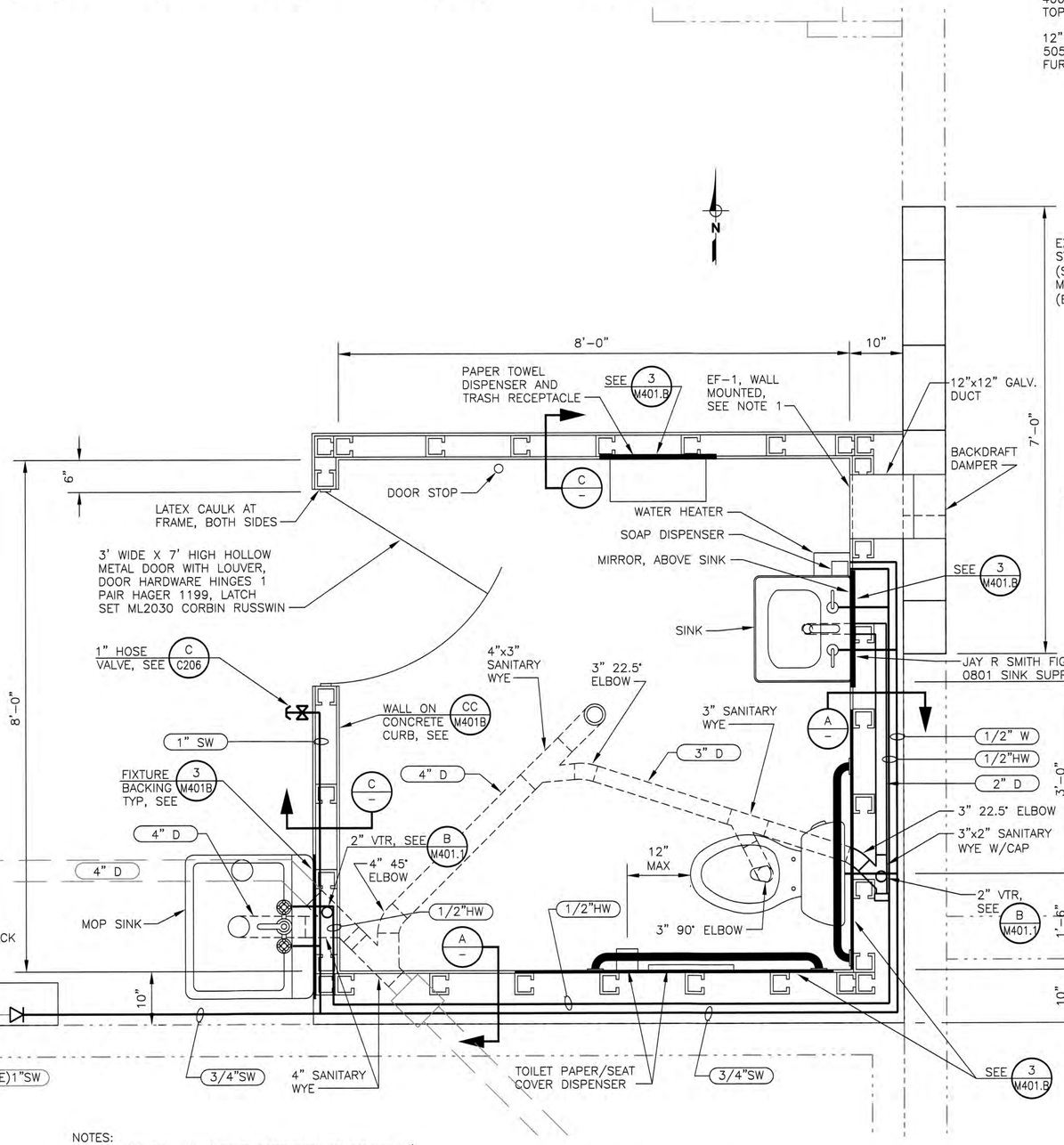
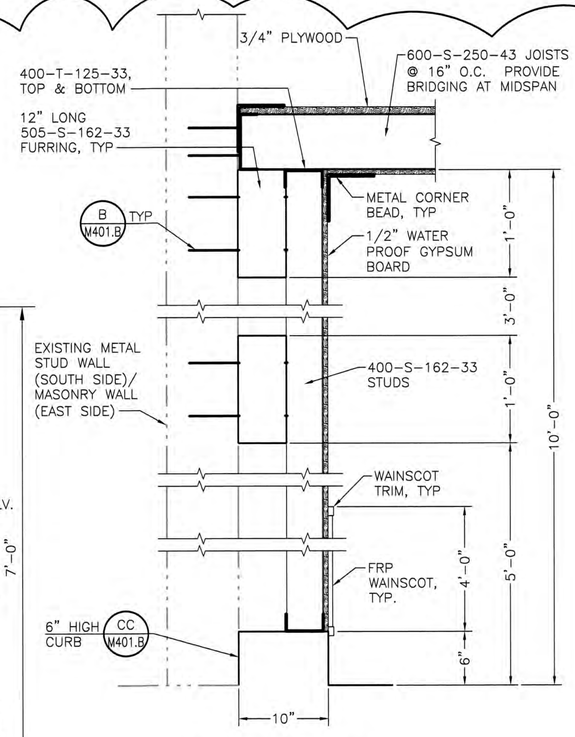


NOTES:
1. EXHAUST FAN (McMASTER CARR 2089K6 OR EQUAL) 220 CFM MIN, WITH WALL SWITCH CONTROL, COORDINATE SWITCHING WITH ELECTRICAL. TOP OF EXHAUST FAN 8'–0" AFF.
2. ANCHOR WATER PIPES AGAINST WALL EVERY 2'–0".
3. SLOPE DRAINS 1/4"/FT.
4. STEEL STUD SCREWS SHALL BE NO. 10 SCREWS.
5. PROVIDE U–CHANNEL DIAGONAL BRACING ON ALL WALLS.

CONTROL BUILDING BATHROOM

PLAN 1

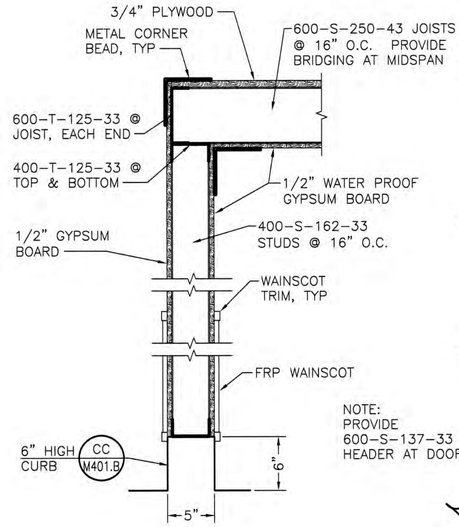
SCALE: 1"=1'–0"



SOUTH AND EAST WALL

DETAIL A –

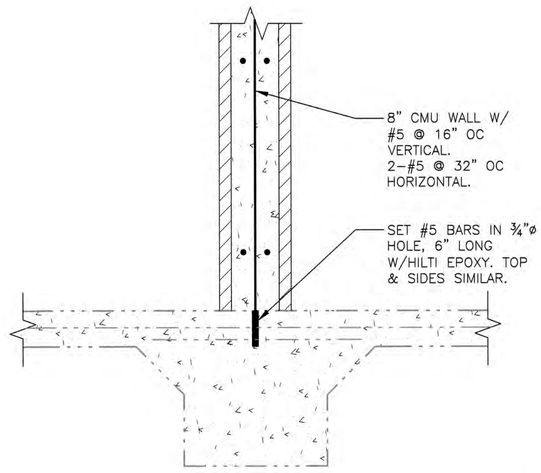
SCALE: 1/8"=1'–0"



NORTH AND WEST WALL

DETAIL C –

SCALE: 1/8"=1'–0"



DETAIL B –

SCALE: 1"=1'–0"

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CONTROL BUILDING BATHROOM DETAIL

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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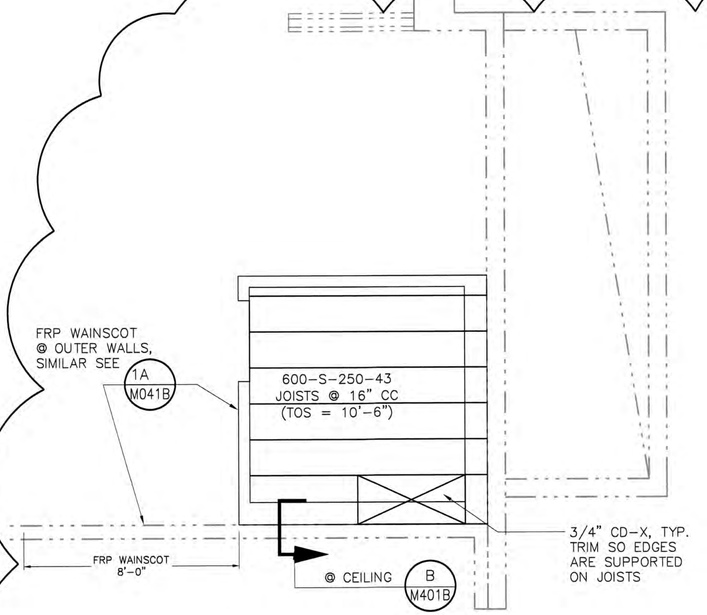
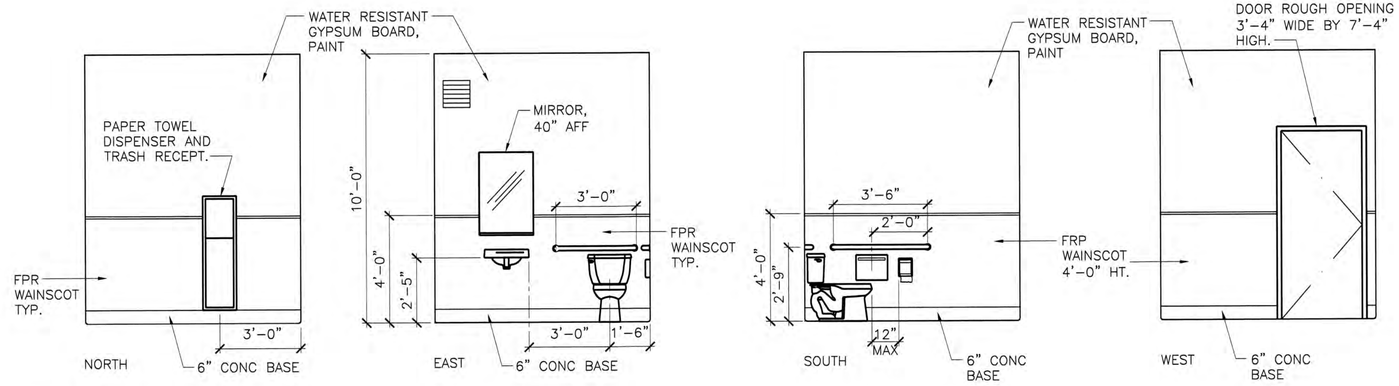


TOILET CEILING FRAMING

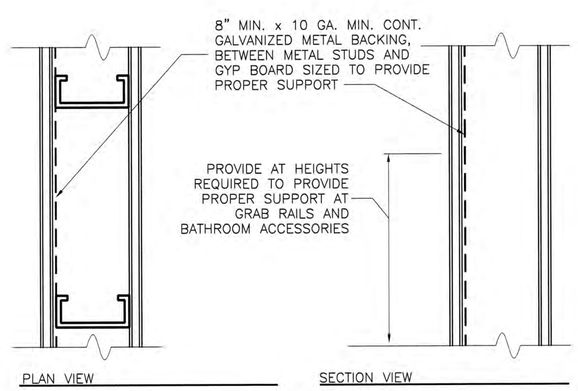
1B M401 SCALE: 3/8"=1'-0"



RESTROOM ELEVATIONS (INSULATE WATER LINES AND WASTE LINES AT LAVATORY)

1A M401 SCALE: 3/8"=1'-0"

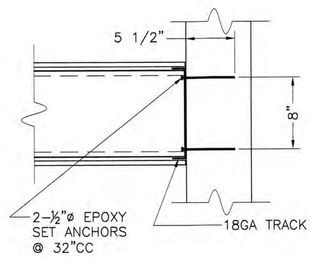
NOTE:
1. FINISH EXPOSED GYP BOARD WITH COATING SYSTEM L-1, ENAMEL SHEEN, ORANGE PEEL TEXTURE PER SECTION 09020 OF THE SPECIFICATIONS PRIOR TO PLACING WAINSCOT.



BACKING @ METAL STUDS

DETAIL 3 M401B

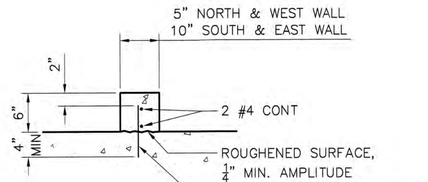
SCALE: 1 1/2"=1'-0"



SECTION – METAL JOIST TO WALL

DETAIL B M401B

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



LOW CURB

CONCRETE CURB

SCALE: NONE

C C TYP

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

RESTROOM INTERIOR ELEVATIONS

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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MECHANICAL SYMBOL LIST

DUCTWORK

- SUPPLY AIR
- RETURN OR EXHAUST AIR
- OUTSIDE AIR
- ROOM THERMOSTAT (AC-1)
- EQUIPMENT IDENTIFICATION (AC-1)
- DIFFUSER OR GRILLE IDENTIFICATION (12x12 / 100 CD-1)

DAMPERS

- VOLUME DAMPER
- FIRE DAMPER (FD)
- FIRE/SMOKE DAMPER (FSD)
- SMOKE DAMPER (SD)
- MOTORIZED DAMPER (MD)

DUCTWORK FITTINGS

- MITERED ELBOW WITH TURNING VANES
- RADIUSED ELBOW
- RECTANGULAR MAIN WITH ROUND BRANCH
- RECTANGULAR MAIN WITH RECTANGULAR BRANCH
- CONCENTRIC SQUARE TO ROUND
- ECCENTRIC TRANSITION, RECTANGULAR OR ROUND
- NON-SYMMETRICAL WYE
- SYMMETRICAL WYE
- RECTANGULAR DUCT RISER
- ROUND DUCT RISER
- RECTANGULAR DUCT DROP
- ROUND DUCT DROP
- RECTANGULAR OFFSET LESS THAN 15°
- RECTANGULAR OFFSET MORE THAN 15°
- ROUND WYE
- EXTRACTOR (EX)
- BELLMOUTH
- ROUND DUCT WITH ROUND BRANCH
- CONCENTRIC TRANSITION, RECTANGULAR OR ROUND
- ACCOUSTICALLY LINED DUCT (SIZES SHOWN ARE NET INSIDE)
- FLEXIBLE CONNECTION

PIPING VALVES

- VALVE, GENERAL
- CHECK VALVE
- QUARTER TURN VALVE
- GLOBE VALVE

PIPING FITTINGS

- PIPE RISE
- PIPE DROP
- TEE UP ON PIPE
- TEE DOWN ON PIPE
- CONTINUATION
- CAP
- UNION
- PIPE BELOW GRADE
- HOSE BIBB

ABBREVIATIONS

A/C	AIR CONDITION(ED)
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
BDD	BACKDRAFT DAMPER
BFP	BACKFLOW PREVENTER
BFF	BELOW FINISHED FLOOR
BHP	BRAKE HORSEPOWER
CD	CEILING DIFFUSER
CD	CONDENSATE DRAIN
CV	CHECK VALVE
COP	COEFFICIENT OF PERFORMANCE
CONT.	CONTINUATION
CU	CONDENSING UNIT
CW	COLD WATER
D	DROP
DB	DECIBEL
DB	DRY BULB
DIA	DIAMETER
DX	DIRECT EXPANSION
EAT	ENTERING AIR TEMPERATURE
EER	ENERGY EFFICIENCY RATING
EF	EXHAUST FAN
EEF	EFFICIENT
ELECT	ELECTRICAL
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
F	FAHRENHEIT
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FT	FEET
GAL	GALLONS
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HD	HEAD
HP	HORSEPOWER
HTG	HEATING
HTR	HEATER
HWC	HOT WATER COIL
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCHES
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBS.	POUNDS
LH	LATENT HEAT
MA	MIXED AIR
MAX	MAXIMUM
MBH	THOUSAND BTU'S PER HOUR
MD	MOTORIZED DAMPER
MIN	MINIMUM
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO.	NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DIAMETER
PD	PRESSURE DROP
PH	PHASE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
QTY	QUANTITY
R	RISE
RA	RETURN AIR
RET	RETURN
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SEER	SEASONAL ENERGY EFFICIENCY RATING
SF	SQUARE FEET
SH	SENSIBLE HEAT
SOV	SHUT OFF VALVE
SP	STATIC PRESSURE
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TH	TOTAL HEAT
TP	TOTAL PRESSURE
V	VOLT
W	WATT
W/	WITH
WB	WET BULB
WC	WATER COLUMN

ROOFTOP AIR CONDITIONING UNIT SCHEDULE

SYMBOL	AREA SERVED	AIR FLOW (CFM)	MIN OSA (CFM)	FAN E.S.P. (IN.H20)	COOLING TOTAL (MBH)	COOLING SENS. (MBH)	COOLING EER	HEATING INPUT (MBH)	HEATING OUTPUT (MBH)	HEATING MIN. EFF.	BASIS OF DESIGN	MAX WT (LBS)	ELECTRICAL VOLT/PH	ELECTRICAL MCA	ELECTRICAL MOCP	REMARKS
AC-1	ELECTRICAL ROOM	4,000	150	0.80	125.8	91.5	11.0	NONE	–	–	CARRIER 50HJ012---6-1	1,400	460/3	27.6	30	1,2,3
AC-2	ELECTRICAL ROOM	4,000	150	0.80	125.8	91.5	11.0	NONE	–	–	CARRIER 50HJ012---6-1	1,400	460/3	27.6	30	1,2,3

NOTES:

1. PROVIDE FACTORY INSULATED ROOF CURB.
2. PROVIDE 100% MODULATING ECONOMIZER WITH MODULATING POWER EXHAUST (MICROMETL 4682-0303)
3. WEIGHT LISTED ABOVE INCLUDES WEIGHT OF CURB AND ECONOMIZER.

DIFFUSER, REGISTER AND GRILLE SCHEDULE

SYMBOL	TYPE	FACE	FRAME	DAMPER	FINISH	BASIS OF DESIGN	REMARKS
CD-1	CEILING DIFFUSER	ROUND ADJUSTABLE	SURFACE	NONE	WHITE	TITUS XC-310	1
CRG-1	CEILING RETURN GRILLE	EGGCRATE	SURFACE	NONE	WHITE	TITUS 50R	

NOTES:

1. PROVIDE WITH TITUS AG-65 ADJUSTABLE DAMPER WITH GRID.

DRAWING INDEX

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

HVAC SYMBOLS, ABBREVIATIONS & EQUIPMENT SCHEDULES

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Contact
Larry Froess
Project
2006-0012

INTERFACE ENGINEERING
8950 CAL CENTER DR., SUITE 250, SACRAMENTO, CA 95826
PHONE 916.288.6200 FAX 916.288.6250

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REGISTERED PROFESSIONAL ENGINEER LARRY A. FROESS No. M30569 Exp. 06-30-2010 STATE OF CALIFORNIA

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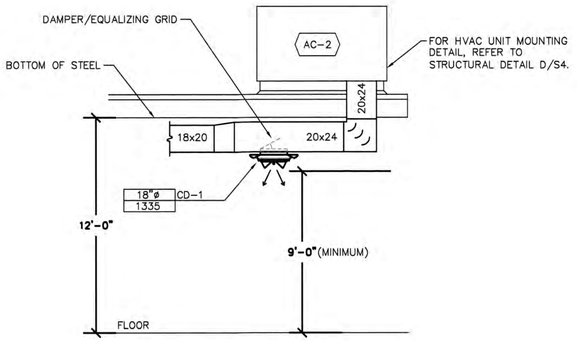
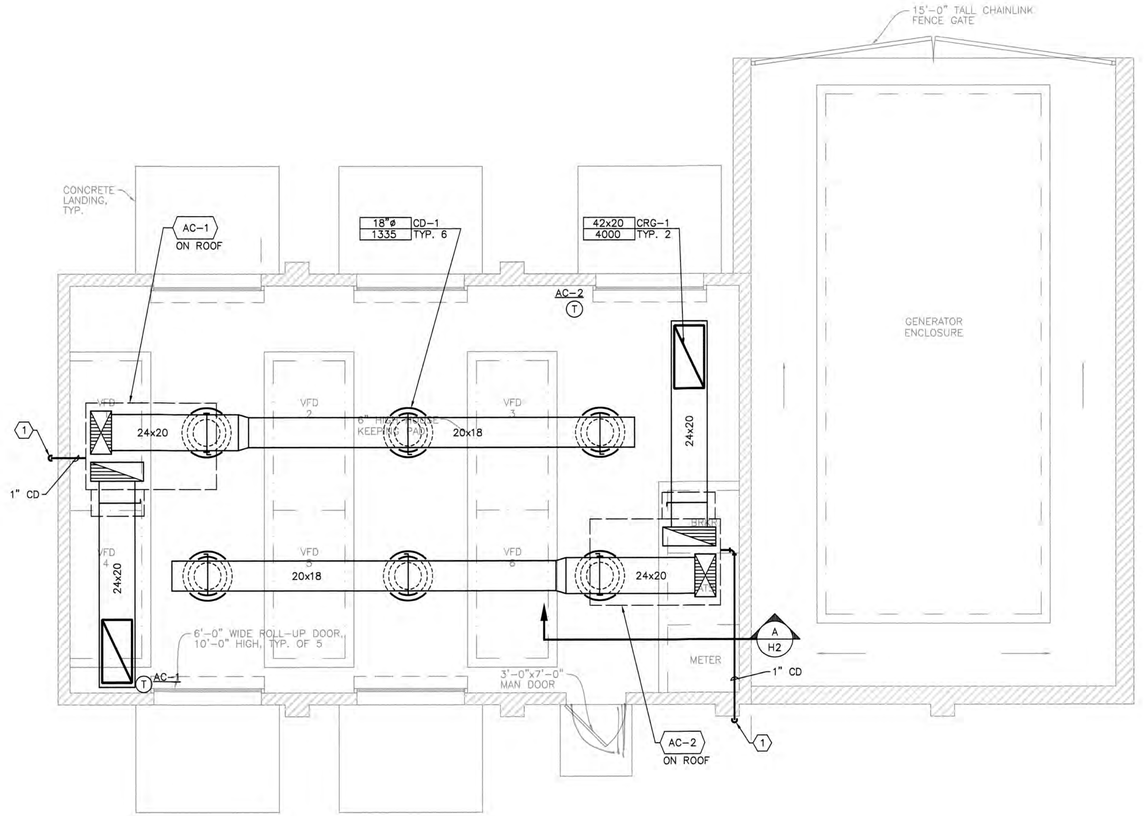


A-A SECTION
1/4" = 1'-0"



FLOOR PLAN
1/4" = 1'-0"

GENERAL NOTES

A. COORDINATE EXACT LOCATION OF DIFFUSERS AND GRILLES WITH ARCHITECT BEFORE INSTALLING.

B. EQUIPMENT SHALL BE SEISMICALLY RESTRAINED, IF REQUIRED.

C. INSTALL EQUIPMENT PER MANUFACTURERS INSTRUCTIONS. DO NOT INSTALL OR MODIFY EQUIPMENT IN A WAY THAT WOULD VOID THE WARRANTY.

D. CONDENSATE SHALL NOT ULTIMATELY DRAIN TO AN IMPERMEABLE SURFACE.

E. MOUNT THERMOSTATS 48" AFF.

F. PROVIDE APPROPRIATE TRANSITIONS AND FITTINGS AT THE DUCT CONNECTION TO EACH DIFFUSER AND GRILLE.

G. PROVIDE SUPPORTS AND BRACING FOR EQUIPMENT, PIPING AND DUCTWORK, PER LATEST CMC, SMACNA, AND LOCAL ORDINANCES.

H. PROVIDE FLEXIBLE CONNECTIONS AT CONNECTIONS TO AC UNITS.

I. FRESH AIR INTAKES SHALL BE AT LEAST 10 FEET AWAY FROM OR 3 FEET BELOW ANY EXHAUST OUTLET OR PLUMBING VENT.

J. ADJUST DIFFUSERS TO DISCHARGE SUPPLY AIR IN AN EVENLY DISTRIBUTED PATTERN.

K. HEIGHT OF DIFFUSERS AND DUCTS (INCLUDING FLANGES AND SUPPORTS) SHALL NOT BE LOWER THAN 9'-0" A.F.F.

L. DIFFUSERS ATTACHED TO THE UNDERSIDE OF THE DUCTWORK SHALL BE INSTALLED WITH A 'DAMPER WITH EQUALIZING GRID', TITUS MODEL AG-65 OR EQUAL.

M. AIR-MOVING SYSTEMS SUPPLYING IN EXCESS OF 2000 CUBIC FEET PER MINUTE TO ENCLOSED SPACES WITHIN BUILDINGS SHALL BE EQUIPPED WITH AN AUTOMATIC SHUTOFF. SHUTOFFS SHALL STOP THE AIR-MOVING EQUIPMENT WHEN SMOKE IS DETECTED IN A SUPPLY AIR DUCT OR WHEN SMOKE IS DETECTED IN ROOMS SERVED BY THE SYSTEM. EXCEPTIONS: (1) ROOMS HAVE A DIRECT EXIT TO THE EXTERIOR OF THE BUILDING, OR (2) SYSTEMS ARE DESIGNED FOR SMOKE CONTROL (SEC. 608, CMC). IN-DUCT SMOKE DETECTORS SHALL HAVE A UL-268A LISTING COMPLYING WITH ALL AMBIENT CONDITIONS, FROM 0 CFM TO MAXIMUM ANTICIPATED CFM. (NOTE: THIS PROJECT FALLS UNDER EXCEPTION #1).

NOTES THIS SHEET

(1) ROUTE CONDENSATE LINE DOWN FROM ROOF AND SPILL TO LANDSCAPE.

SEQUENCE OF OPERATION

AC-1 SHALL BE PRIMARY UNIT FOR THE ROOM TO PROVIDE COOLING AT ALL TIMES. ADJUST AC-1 THERMOSTAT SETPOINT TO 80°F.

AC-2 IS FOR BACKUP AND COMPENSATION PURPOSES. ADJUST AC-2 THERMOSTAT SETPOINT TO 90°F.

AC-1 & AC-2 CAN BE MANUALLY SET FOR LEAD-LAG BY SWAPPING THE THERMOSTAT SETPOINTS ON A REGULAR INTERVAL.

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

HVAC FLOOR PLAN

Underground Service Alert
TWO DAYS BEFORE YOU DIG
Call TOLL FREE: 1-800-642-2444

Contact
Larry Froess
Project
2006-0012

INTERFACE ENGINEERING
8950 CAL CENTER DR., SUITE 250, SACRAMENTO, CA 95826
PHONE 916.288.6200 FAX 916.288.6250

REFER TO BID SET FOR SIGNATURE

REGISTERED PROFESSIONAL ENGINEER LARRY A. FROESS No. M30569 Exp. 06-30-2010 STATE OF CALIFORNIA

REV. No.	DISCRIPTION	DATE	BY	Aprv'd By
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WEST YOST ASSOCIATES
Consulting Engineers
1260 Lake Boulevard
Suite 240
Davis, California 95616
(530) 756-5905
FAX (530) 756-5991

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: AS SHOWN	APPROVED BY: DATE:	SHEET No.	
DESIGNED BY: LAF		H2	
DRAWN BY: LAF		56 of 89 SHEETS	
CHECKED BY: LAF	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01	
RECORD Dwg.:			

FILE: 0012H2.DWG - LAYOUT1 | EDIT: 11/6/2008 1:15 PM BY AREIMER | PLOT: 11/13/2008 12:27 PM BY ANNA REIMER

PERFORMANCE CERTIFICATE OF COMPLIANCE Part 1 of 3 PERF-1

PROJECT NAME: 14-Mile Slough Pump Station Upgrades — DATE: 1/30/2006
PROJECT ADDRESS: Stockton — Building Permit #
PRINCIPAL DESIGNER - ENVELOPE: West Yost & Associates — TELEPHONE: (530) 756-5905 — Checked by/Date
DOCUMENTATION AUTHOR: INTERFACE ENGINEERING — TELEPHONE: (916) 288-6200 — Enforcement Agency Use

GENERAL INFORMATION

DATE OF PLANS — BUILDING CONDITIONED FLOOR AREA: 840 Sq.Ft. — CLIMATE ZONE: 12
BUILDING TYPE: [X] NONRESIDENTIAL [ ] HIGH RISE RESIDENTIAL [ ] HOTEL/MOTEL GUEST ROOM
PHASE OF CONSTRUCTION: [X] NEW CONSTRUCTION [ ] ADDITION [ ] ALTERATION [ ] EXISTING + ADDITION

STATEMENT OF COMPLIANCE

This Certificate of Compliance lists the building features and performance specifications needed to comply with Title 24, Parts 1 and 6 of the California Code of Regulations. This certificate applies only to a Building using the performance compliance approach.

The documentation preparer hereby certifies that the documentation is accurate and complete.
DOCUMENTATION AUTHOR: Interface Engineering — SIGNATURE — DATE: 1/30/2006

The Principal Designer hereby certifys that the proposed building design represented in this set of construction documents is consistent with the other compliance forms and worksheets, with the specifications, and with any other calculations submitted with this permit application. The proposed building as designed meets the energy efficiency requirements contained in sections 110, 116, through 118, and 140, 142, 143 or 149 of Title 24, Part 6.

ENV. LTG. MECH.

[ ] [ ] [X] 1. I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am licensed in the State of California as a civil engineer, mechanical engineer, or I am a licensed architect.

[ ] [ ] [ ] 2. I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code Section 5537.2 or 6737.3 to sign this document as the person responsible for its preparation; and that I am a licensed contractor performing this work.

[ ] [ ] [ ] 3. I affirm that I am eligible under Division 3 of the Business and Professions Code to sign this document because it pertains to a structure or type of work described as exempt pusuant to Business and Professions Code Sections 5537, 5538, and 6737.1. (These sections of the Business and Professions Code are printed in full in the Nonresidential Manual.)

ENVELOPE COMPLIANCE
Indicate location on plans of Note Block for Mandatory Measures
Required Forms: ENV-1
PRINCIPAL ENVELOPE DESIGNER - NAME: West Yost & Associates — SIGNATURE — LIC. NO. — DATE

LIGHTING COMPLIANCE
Indicate location on plans of Note Block for Mandatory Measures: Lighting Compliance Not In The Scope Of This Submittal
Required Forms
PRINCIPAL LIGHTING DESIGNER - NAME — SIGNATURE — LIC. NO. — DATE

MECHANICAL COMPLIANCE
Indicate location on plans of Note Block for Mandatory Measures
Required Forms: MECH-1, MECH-2, MECH-3, MECH-5
PRINCIPAL MECHANICAL DESIGNER - NAME: Interface Engineering — SIGNATURE — LIC. NO.: M30569 — DATE: 1/30/2006

Run Initiation Time: 01/30/06 14:13:32 Run Code: 1138659212
EnergyPro 4.0 by EnergySoft User Number: 4822 Job Number: Page:2 of 12

PERFORMANCE CERTIFICATE OF COMPLIANCE Part 2 of 3 PERF-1

PROJECT NAME: 14-Mile Slough Pump Station Upgrades — DATE: 1/30/2006

ANNUAL TDV ENERGY USE SUMMARY (kBtu/sqft-yr)

ENERGY COMPONENT	Standard Design	Proposed Design	Compliance Margin
Space Heating	0.00	0.00	0.00
Space Cooling	679.50	615.49	64.01
Indoor Fans	459.03	461.79	-2.76
Heat Rejection	0.00	0.00	0.00
Pumps & Misc.	0.00	0.00	0.00
Domestic Hot Water	0.00	0.00	0.00
Lighting	40.81	40.81	0.00
Receptacle	10.74	10.74	0.00
Process	3,223.53	3,223.53	0.00
TOTALS:	4,413.62	4,352.37	61.25

Percent better than Standard: 1.4% (5.1% excluding process)

BUILDING COMPLIES

GENERAL INFORMATION

Building Orientation	(N) 0 deg	Conditioned Floor Area	840 sqft
Number of Stories	1	Unconditioned Floor Area	0 sqft
Number of Systems	2	Conditioned Footprint Area	840 sqft
Number of Zones	1	Fuel Type	Natural Gas

	Orientation	Gross Area	Glazing Area	Glazing Ratio
Front Elevation	(N)	380 sqft.	0 sqft.	0.0%
Left Elevation	(E)	220 sqft.	0 sqft.	0.0%
Rear Elevation	(S)	380 sqft.	0 sqft.	0.0%
Right Elevation	(W)	220 sqft.	0 sqft.	0.0%
Total		1,200 sqft.	0 sqft.	0.0%
Roof		840 sqft.	0 sqft.	0.0%

	Standard	Proposed
Lighting Power Density	0.700 W/sqft.	0.700 W/sqft.
Prescriptive Env. Heat Loss	589 Btu/h	599 Btu/h
Prescriptive Env. Heat Gain	21,635 Btu/h-F	25,135 Btu/h-F

Remarks:

Run Initiation Time: 01/30/06 14:13:32 Run Code: 1138659212
EnergyPro 4.0 by EnergySoft User Number: 4822 Job Number: Page:3 of 12

PERFORMANCE CERTIFICATE OF COMPLIANCE Part 3 of 3 PERF-1

PROJECT NAME: 14-Mile Slough Pump Station Upgrades — DATE: 1/30/2006

ZONE INFORMATION

System Name	Zone Name	Occupancy Type	Floor Area (sqft.)	Inst. LPD (W/sf)[1]	Ctrl. Credits (W/sf)[2]	Allowed LPD Area (W/sf)[3]	Allowed LPD Tailored (W/sf)[4]	Proc. Loads (W/sf)
AC-1 & 2	Elec Room	Electrical, Mechanical Room	840	*0.700				60.000

Notes: 1. See LTG-2-C (items marked with asterisk, see LTG-2-C by others) 2. See LTG-4-C 3. See LTG-5-C (by others) 4. See LTG-6-C — Items above require special documentation

EXCEPTIONAL CONDITIONS COMPLIANCE CHECKLIST

The local enforcement agency should pay special attention to the items specified in this checklist. These items require special written justification and documentation, and special verification to be used with the performance approach. The local enforcement agency determines the adequacy of the justification, and may reject a building or design that otherwise complies based on the adequacy of the special justification and documentation submitted.

The Room "Elec Room" has a Cooling Indoor Design Temperature of 80 degrees F.

The exceptional features listed in this performance approach application have specifically been reviewed. Adequate written justification and documentation for their use have been provided by the applicant.

Authorized Signature or Stamp

Run Initiation Time: 01/30/06 14:13:32 Run Code: 1138659212
EnergyPro 4.0 by EnergySoft User Number: 4822 Job Number: Page:4 of 12

CERTIFICATE OF COMPLIANCE ENV-1-C

PROJECT NAME: 14-Mile Slough Pump Station Upgrades — DATE: 1/30/2006

OPAQUE SURFACES

#	Surface Type	Area	U-Fac.	Insulation Cav.	Insulation Cont.	Act. Azm.	Tilt	Cond. Status	Joint Appendix IV Reference	Location / Comments
1	Roof	840	0.063	None	R-14.0	0	0	New	06-A5	Elec Room
2	Wall	200	0.650	None	R-0.0	0	90	New	12-A9	Elec Room
3	Door	180	1.450	None	R-0.0	0	90	New	28-A1	Elec Room
4	Wall	220	0.650	None	R-0.0	90	90	New	12-A9	Elec Room
5	Wall	200	0.650	None	R-0.0	180	90	New	12-A9	Elec Room
6	Door	180	1.450	None	R-0.0	180	90	New	28-A1	Elec Room
7	Wall	220	0.650	None	R-0.0	270	90	New	12-A9	Elec Room

* N, E, A, R (New, Existing, Altered, Removed)

FENESTRATION SURFACES

[ ] More than or equal to 10,000 sq.ft. of site-built fenestration area must include a label certificate either issued by NFRC or provide a CEC Default Label Certificate using the default U-factors from Standards Table 116-A and B. Certificate shall be filed in the contractor's project office during construction and in the building manager's office after construction.

#	Type	Area	U-Fac[1]	SHGC[2]	Act. Azm.	Cond. Stat.	Glazing Type	Location/ Comments

(1) U-factor Type: 116-A Default Table from Standards, Table NI-1 Default Table from the ACM Manual Appendix, NFRC Labeled value.
(2) SHGC Type: 116-B Default Table from Standards, COG Center of Glass, NFRC Labeled Value

EXTERIOR SHADING

#	Exterior Shade Type	SHGC	Window Hgt. Wd.	Overhang Len. Hgt. LExt. RExt.	Left Fin Dist. Len. Hgt.	Right Fin Dist. Len. Hgt.

MINIMUM SKYLIGHT AREA FOR LARGE ENCLOSED SPACES

[ ] The proposed building contains an enclosed space with floor area greater than 25,000 sq.ft, a ceiling height greater than 15 feet and a LPD for general lighting of at least 0.5 W/sq.ft. If this box is checked, ENV-4-C must be filled out when submitting under the Prescriptive Compliance Approach.

Run Initiation Time: 01/30/06 14:13:32 Run Code: 1138659212
EnergyPro 4.0 by EnergySoft User Number: 4822 Job Number: Page:5 of 12

CERTIFICATE OF COMPLIANCE MECH-1-C

PROJECT NAME: 14-Mile Slough Pump Station Upgrades — DATE: 1/30/2006

Designer:

This form is to be used by the designer and attached to the plans. Listed below are all the acceptance tests for mechanical systems. The designer is required to check the boxes by all acceptance tests that apply and list all equipment that requires an acceptance test. If all equipment of a certain type requires a test, list the equipment description and the number of systems to be tested in parentheses. The NJ number designates the Section in the Appendix of the Nonresidential ACM Manual that describes the test. Also indicate the person responsible for performing the tests (i.e. the installing contractor, design professional or an agent selected by the owner). Since this form will be part of the plans, completion of this section will allow the responsible party to budget for the scope of work appropriately.

Building Departments:

SYSTEM ACCEPTANCE. Before an occupancy permit is granted for a newly constructed building or space, or a new space-conditioning system serving a building or space is operated for normal use, all control devices serving the building or space shall be certified as meeting the Acceptance Requirements for Code Compliance.

In addition a Certificate of Acceptance, MECH-1-A Form shall be submitted to the building department that certifies plans, specifications, installation certificates, and operating and maintenance information meet the requiements of Section 10-103(b) and Title 24 Part 6.

STATEMENT OF COMPLIANCE

[ ] MECH-2-A: Ventilation System Acceptance Document
-Variable Air Volume Systems Outdoor Air Acceptance
-Constant Air Volume Systems Outdoor Air Acceptance
Equipment requiring acceptance testing

[ ] MECH-3-A: Packaged HVAC Systems Acceptance Document
Equipment requiring acceptance testing

[ ] MECH-4-A: Air Distribution Acceptance Document
Equipment requiring acceptance testing

[ ] MECH-5-A: Air-Side Economizer Acceptance Document
Equipment requiring acceptance testing

[ ] MECH-6-A: Demand Control Ventilation Acceptance Document
Equipment requiring acceptance testing

[ ] MECH-7-A: Supply Fan Variable Flow Control Acceptance Document
Equipment requiring acceptance testing

[ ] MECH-8-A: -Hydronic System Control Acceptance Document
-Variable Flow Controls
-Automatic Isolation Con-trols
-Water-loop Heat Pump Controls
-Variable Frequency Controls
Equipment requiring acceptance testing

EnergyPro 4.0 by EnergySoft User Number: 4822 Job Number: Page:6 of 12

ENVELOPE MANDATORY MEASURES ENV-MM

PROJECT NAME: 14-Mile Slough Pump Station Upgrades — DATE: 1/30/2006

DESCRIPTION	Designer	Enforcement
[X] 118(a) Installed Insulating Material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20, Chapter 4, Article 3.		
[X] 118(c) All Insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.		
[X] 117(a) All Exterior Joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.		
[X] 116(b) Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).		
[X] 116(a)1 Manufactured Doors and Windows installed shall have air infiltration rates not exceeding those shown in Table Number 1-E. of the Standards. Manufactured fenestration products must be labeled for U-value according to NFRC procedures.		
[X] 118(e) Demising Walls in Nonresidential Buildings: The opaque portions of framed demising walls in nonresidential buildings shall have insulation with an installed R-value of no less than R-11 between framing members.		

EnergyPro By EnergySoft User Number: User Job Number: Page:10 of 12

MECHANICAL MANDATORY MEASURES Part 1 of 2 MECH-MM

PROJECT NAME: 14-Mile Slough Pump Station Upgrades — DATE: 1/30/2006

DESCRIPTION	Designer	Enforcement
Equipment and Systems Efficiencies		
[X] 111 Any appliance for which there is a California standard established in the Appliance Efficiency Regulations will comply with the applicable standard.		
[ ] 115(a) Fan type central furnaces shall not have a pilot light.		
[X] 123 Piping, except that conveying fluids at temperatures between 60 and 105 degrees Fahrenheit, or within HVAC equipment, shall be insulated in accordance with Standards Section 123.		
[X] 124 Air handling duct systems shall be installed and insulated in compliance with Sections 601, 603 and 604 of the Uniform Mechanical Code.		
Controls		
122(e) Each space conditioning system shall be installed with one of the following:		
[X] 122(e)1A Each space conditioning system serving building types such as offices and manufacturing facilities (and all others not explicitly exempt from the requirements of Section 112 (d)) shall be installed with an automatic time switch with an accessible manual override that allows operation of the system during off-hours for up to 4 hours. The time switch shall be capable of programming different schedules for weekdays and weekends and have program backup capabilities that prevent the loss of the device's program and time setting for at least 10 hours if power is interrupted; or		
[ ] 122(e)1B An occupancy sensor to control the operating period of the system; or		
[ ] 122(e)1C A 4-hour timer that can be manually operated to control the operating period of the system.		
[ ] 122(e)2 Each space conditioning system shall be installed with controls that temporarily restart and temporarily operate the system as required to maintain a setback heating and/or a setup cooling thermostat setpoint.		
[ ] 122(g) Each space conditioning system serving multiple zones with a combined conditioned floor area more than 25,000 square feet shall be provided with isolation zones. Each zone: shall not exceed 25,000 square feet; shall be provided with isolation devices, such as valves or dampers, that allow the supply of heating or cooling to be setback or shut off independently of other isolation areas; and shall be controlled by a time control device as described above.		
[X] 122(a&b) Each space conditioning system shall be controlled by an individual thermostat that responds to temperature within the zone. Where used to control heating, the control shall be adjustable down to 55 degrees F or lower. For cooling, the control shall be adjustable up to 85 degrees F or higher. Where used for both heating and cooling, the control shall be capable of providing a deadband of at least 5 degrees F within which the supply of heating and cooling is shut off or reduced to a minimum.		
[X] 122(c) Thermostats shall have numeric setpoints in degrees Fahrenheit (F) and adjustable setpoint stops accessible only to authorized personnel.		
[X] 112(b) Heat pumps shall be installed with controls to prevent electric resistance supplementary heater operation when the heating load can be met by the heat pump alone.		

EnergyPro By EnergySoft User Number: User Job Number: Page:11 of 12

MECHANICAL MANDATORY MEASURES Part 2 of 2 MECH-MM

PROJECT NAME: 14-Mile Slough Pump Station Upgrades — DATE: 1/30/2006

Description	Designer	Enforcement
Ventilation		
[X] 121(e) Controls shall be provided to allow outside air dampers or devices to be operated at the ventilation rates as specified on these plans.		
[ ] 122(f) Gravity or automatic dampers interlocked and closed on fan shutdown shall be provided on the outside air intakes and discharges of all space conditioning and exhaust systems.		
[ ] 122(f) All gravity ventilating systems shall be provided with automatic or readily accessible manually operated dampers in all openings to the outside, except for combustion air openings.		
[X] 121(f)1 Air Balancing: The system shall be balanced in accordance with the National Environmental Balancing Bureau (NEBB) Procedural Standards (1983), or Associated Air Balance Council (AABC) National Standards (1989); or		
[ ] 121(f)2 Outside Air Certification: The system shall provide the minimum outside air as shown on the mechanical drawings, and shall be measured and certified by the installing licensed C-20 mechanical contractor and certified by (1) the design mechanical engineer, (2) the installing licenced C-20 mechanical contractor, or (3) the person with overall responsibility for the design of the ventilation system; or		
[ ] 121(f)3 Outside Air Measurement: The system shall be equipped with a calibrated local or remote device capable of measuring the quantity of outside air on a continuous basis and displaying that quantity on a readily accessible display divice; or		
[ ] 121(f)4 Another method approved by the Commission.		
Service Water Heating Systems		
[ ] 113(b)2 If a circulating hot water system is installed, it shall have a control capable of automatically turning off the circulating pump(s) when hot water is not required.		
[ ] 113(b)3B Lavatories in restrooms of public facilities shall be equipped with controls to limit the outlet temperature to 110 degrees F.		
[ ] 113(b)3C Lavatories in restrooms of public facilities shall be equipped with one of the following: Outlet devices that limit the flow of hot water to a maximum of 0.5 gallons per minute. Foot actuated control valves, and outlet devices that limit the flow of hot water to a maximum of 0.75 gallons per minute. Proximity sensor actuated control valves, and outlet devices that limit the flow of hot water to a maximum of 0.75 gallons per minute. Self-closing valves, and outlet devices that limit the flow of hot water to a maximum of 2.5 gallons per minute, and 0.25 gallons/cycle (circulating system). Self-closing valves, and outlet devices that limit the flow of hot water to a maximum of 2.5 gallons per minute, and 0.50 gallons/cycle (non-circulating system). Self-closing valves, and outlet devices that limit the flow of hot water to a maximum of 2.5 gallons per minute, and 0.75 gallons/cycle (foot switches and proximity sensor controls).		

EnergyPro By EnergySoft User Number: User Job Number: Page:12 of 12

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RECORD DRAWINGS
14-Mile Slough Pump Station Upgrades
HVAC TITLE 24

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: AS SHOWN
DESIGNED BY: LAF
DRAWN BY: LAF
CHECKED BY: LAF
RECORD Dwg.:
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ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES
SHEET No. H3
57 of 89 SHEETS
PROJECT No. 293-00-05-01

FILE: 0012H3.DWG – LAYOUT1 | EDIT: 11/6/2008 1:15 PM BY AREIMER | PLOT: 11/13/2008 12:27 PM BY ANNA REIMER

MISCELLANEOUS ELECTRICAL & INSTRUMENTATION ABBREVIATIONS

&	AND	MTR	MOTOR
@	AT	MUX	MULTIPLEXER
A	AMBER, AMPERES	MV	MERCURY VAPOR
AC	ALTERNATING CURRENT	N	NEUTRAL
AFF	ABOVE FINISHED FLOOR	NC	NORMALLY CLOSED
AI	ANALOG INPUT	NIC	NOT IN CONTRACT
AIC	AMP INTERRUPTING CAPACITY SYMMETRICAL	NL	NIGHT LIGHT
ALT	ALTERNATOR	NO	NORMALLY OPEN
AM	AMMETER	NP	NAMEPLATE
AO	ANALOG OUTPUT	NTS	NOT TO SCALE
AWG	AMERICAN WIRE GAUGE	(N)	NEW
B	BLUE	OC	ON CENTER
BC	BARE COPPER	OL	OVERLOAD
BFC	BELOW FINISHED CEILING	ORP	OXIDATION REDUCTION POTENTIAL
BOD	BIOCHEMICAL OXYGEN DEMAND	P	PHASE, POLE
C	CONDUIT	PB	PUSHBUTTON
CAP	CAPACITOR	PBX	PULL BOX
CB	CIRCUIT BREAKER	PC	PERSONAL COMPUTER
CKT	CIRCUIT	PF	POWER FAIL
COAX	COAXIAL CABLE	PFR	POWER (PHASE) FAIL RELAY
COMM	COMMUNICATION PORT	PH	HYDROGEN ION CONCENTRATION
CPT	CONTROL POWER TRANSFORMER	PI	PULSE INPUT
CR	CONTROL RELAY	PLC	PROGRAMMABLE LOGIC CONTROLLER
CT	CURRENT TRANSFORMER	PMP	PUMP
CTQ	CONSTANT TORQUE	PNL	PANEL
CTR	CYCLE COUNTER	POT	POTENTIOMETER
CU	COPPER	PR	PAIR, TWISTED & SHIELDED CABLE
DC	DIRECT CURRENT	PRESS	PRESSURE
DET	DETAIL	PRI	PRIMARY
DI	DIGITAL INPUT	PROVIDE	FURNISH, INSTALL & CONNECT
DIAG	DIAGRAM	PRR	POWER RELAY
DISC	DISCONNECT	PS	PRESSURE SWITCH
DO	DIGITAL OUTPUT	PT	POTENTIAL TRANSFORMER
DPDT	DOUBLE POLE DOUBLE THROW	PTT	PUSH TO TEST
DWG	DRAWING	PV	PROCESS VARIABLE
ELEV	ELEVATION	PVC	POLY VINYL CHLORIDE
EMT	ELECTRICAL METALLIC TUBING	PWR	POWER
ETM	ELAPSED TIME METER	R	RED
(E)	EXISTING	RCT	REPEAT CYCLE TIMER
F	FRAME	REF	REFERENCE
FC	FAIL CLOSED	RIO	REMOTE I/O
FCS	FIELD CONTROL STATION	RMS	ROOT MEAN SQUARED
FLA	FULL LOAD AMPS	RT	RESET TIMER
FLP	FAIL LAST POSITION	RTD	RESISTANCE TEMPERATURE DETECTOR
FO	FAIL OPEN	RTM	RUN TIME METER
FLR	FLASHER RELAY	RTU	REMOTE TELEMETRY UNIT
FLUOR	FLUORESCENT	RVNR	REDUCED VOLTAGE NON-REVERSING
FLEX	FLEXIBLE, METAL LIQUID TIGHT CONDUIT	(R)	REWIRE, RELOCATE, REVISE, REUSE
FS	FLOW SWITCH OR FULL SPEED	S	SWITCH
FV, FVNR	FULL VOLTAGE NON-REVERSING	SCH	SCHEDULE
FVR	FULL VOLTAGE REVERSING	SEC	SECONDARY
FWD	FORWARD	SECS	SECONDS
(F)	FUTURE	SEL	SELECTOR
G	GREEN	SFA	SERVICE FACTOR AMPS
GALV	GALVANIZED	SP	SET POINT
GFI	GROUND FAULT CIRCUIT INTERRUPTER	SPEC	SPECIFICATION
GND	GROUND	SR	SENSING RELAY
GRS	GALVANIZED RIGID STEEL CONDUIT	SS	STAINLESS STEEL
GRS-PVC	PVC COATED GRS CONDUIT	SSS	SOLID SOFT STARTER
GS	GALVANIZED STEEL	STT	START
HI	HIGH	STP	STOP
HID	HIGH INTENSITY DISCHARGE	SV	SOLENOID VALVE
HIM	HUMAN INTERFACE MODULE	SW	SWITCH
HOA	HAND-OFF-AUTO	SWBD	SWITCHBOARD
HP	HORSEPOWER	SYMM	SYMMETRICAL
HPS	HIGH PRESSURE SODIUM	T	TRIP
HS	HAND SWITCH	TB	TERMINAL BLOCK
HTR	HEATER	TC	TIME CLOCK
HZ	HERTZ (CYCLES PER SECOND)	TDOD	TIME DELAY ON DE-ENERGIZATION
HZD	HAZARDOUS AREA, EXPLOSION PROOF	TDOE	TIME DELAY ON ENERGIZATION
I	INTERLOCK	TEL	TELEMETRY
I/O	INPUT/OUTPUT	TELCO	TELEPHONE COMPANY
ICR	INSTRUMENTATION CONTROL RELAY	TM	THERMAL MAGNETIC
INCAN	INCANDESCENT	TEMP	TEMPERATURE
INST	INSTANTANEOUS	TOC	TOTAL ORGANIC CARBON
ISC	SHORT CKT INTERRUPTING CURRENT (SYMM)	TR	TIME DELAY RELAY
ISR	INTRINSICALLY SAFE RELAY	TRIAD	TWISTED & SHIELDED 3 CONDUCTOR
J	JUNCTION BOX	TS	TEMPERATURE SWITCH
K	KILO, PREFIX	TSPR	TWISTED & SHIELDED PAIR
LA	LIGHTNING ARRESTOR	TYP	TYPICAL
LC	LIGHTING CONTACTOR	UG	UNDERGROUND
LEL	LOWER EXPLOSIVE LIMIT	UON	UNLESS OTHERWISE NOTED
LO	LOW	V	VOLTAGE
LOS	LOCK-OUT STOP SWITCH	VA	VOLT AMPS
LPU	LINE PROTECTION UNIT	VAR	VOLT AMP REACTIVE
LR	LATCHING RELAY	VFD	VARIABLE FREQUENCY DRIVE
LS	LEVEL SWITCH	VLV	VALVE
M	MOTOR CONTACTOR	VM	VOLTMETER
MAX	MAXIMUM	VTQ	VARIABLE TORQUE
MCC	MOTOR CONTROL CENTER	W	WHITE, WATTS
MCM	THOUSAND CIRCULAR MILS	WHM	WATT-HOUR METER
MCP	MOTOR CIRCUIT PROTECTOR	WM	WATTMETER
MD	MOISTURE DETECTION	WP	WATERPROOF, WEATHER PROOF
MH	MANHOLE	WS	TORQUE SWITCH
MHD	METAL HALIDE	XFMR	TRANSFORMER
MIN	MINIMUM	XS	MISCELLANEOUS SWITCH
MINS	MINUTES	Y	YELLOW
MODEM	MODULATOR/DEMODULATOR	Z	IMPEDANCE
MOV	MOTOR OPERATED VALVE	ZS	LIMIT SWITCH

SWITCHES – PROCESS

SYMBOL	DESCRIPTION
FS	FLOW SWITCH – CLOSES UPON INCREASING FLOW
FS	FLOW SWITCH – OPENS UPON INCREASING FLOW
LS	LEVEL SWITCH – CLOSES UPON INCREASING LEVEL
LS	LEVEL SWITCH – OPENS UPON INCREASING LEVEL
PS	PRESSURE SWITCH – CLOSES UPON INCREASING PRESSURE (INCREASING VACUUM)
PS	PRESSURE SWITCH – OPENS UPON INCREASING PRESSURE (INCREASING VACUUM)
TS	TEMPERATURE SWITCH – CLOSES UPON INCREASING TEMPERATURE
TS	TEMPERATURE SWITCH – OPENS UPON INCREASING TEMPERATURE
ZS	LIMIT SWITCH – CLOSES AT SET LIMIT
ZS	LIMIT SWITCH – OPENS AT SET LIMIT
ZS	PROXIMITY SWITCH – CLOSES UPON DECREASING DISTANCE
ZS	PROXIMITY SWITCH – OPENS UPON DECREASING DISTANCE
WS	TORQUE SWITCH – CLOSES UPON INCREASING TORQUE
WS	TORQUE SWITCH – OPENS UPON INCREASING TORQUE

DEVICES – RELAY

SYMBOL	DESCRIPTION
CR1 28, 111	CONTROL RELAY CR1 WITH NORMALLY OPEN CONTACT ON LINE 28 & NORMALLY CLOSED CONTACT ON LINE 111
TR2	TIME DELAY RELAY TR2 – ADJUSTABLE TIME DELAY RANGE & SETTING AS SHOWN
TDOE TDOD	TIME DELAY ON ENERGIZATION TIME DELAY ON DE-ENERGIZATION
M1	CONTACTOR OR STARTER M1
SV	SOLENOID
CR1 (105)	NORMALLY OPEN, RELAY CONTACT – ACTUATED BY RELAY CR1 COIL LOCATED ON LINE 105
CR1	NORMALLY CLOSED, RELAY CONTACT – ACTUATED BY RELAY CR1
TR2	NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT CLOSES AFTER TR2 IS ENERGIZED
TR2	NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS ENERGIZED
TR2	NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS DE-ENERGIZED
TR2	NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT CLOSES AFTER TR2 IS DE-ENERGIZED
TR2	CONTACT OPENS AND CLOSES IN A TIMED REPEAT CYCLE

COMPONENTS

SYMBOL	DESCRIPTION
RES	RESISTOR
	POTENTIOMETER
	CAPACITOR, FIXED
	CAPACITOR, ADJUSTABLE
	DIODE
	DIODE, ZENER
	VARISTOR TRANSIENT VOLTAGE SUPPRESSOR
	VOLTAGE SURGE SUPPRESSOR, AC
	LIGHT EMITTING DIODE
	TRANSISTOR
	RESISTANCE TEMPERATURE DETECTOR (RTD)
	THERMOCOUPLE (T/C)
	THERMISTOR

DEVICES – MISCELLANEOUS

SYMBOL	DESCRIPTION
	AUDIBLE ALARM
TG	TACHOMETER GENERATOR
	BATTERY
HTR	HEATER
	3 PHASE HEATER
# HP	3 PHASE MOTOR # = MOTOR HP
# HP	SINGLE PHASE MOTOR
	TRANSFORMER

WIRING – CONNECTIONS

SYMBOL	DESCRIPTION
	PANEL OR EQUIPMENT WIRING
	FIELD WIRING
	CONDUCTORS – NOT CONNECTED
	CONDUCTORS – CONNECTED
	GROUND
	CHASSIS OR FRAME GROUND
	PLUG AND RECEPTACLE
	INCOMING LINE
	TERMINAL BLOCKS
	TERMINALS
SHIELD CONDUCTOR	SHIELDED CABLE

PLAN – SYMBOLS

SYMBOL	DESCRIPTION
	CONDUIT, EXPOSED
	CONDUIT, IN SLAB OR BELOW GRADE
	CONDUIT STUBBED OUT & CAPPED
	CONDUIT BENDS TOWARD OBSERVER
	CONDUIT BENDS AWAY FROM OBSERVER
	CONDUIT ENDS
	CONDUIT CHANGE IN ELEVATION
G	BARE COPPER GROUND WIRE
	GROUND CONNECTION BOLTED TYPE
	GROUND CONNECTION EXOTHERMIC WELD TYPE
	DISCONNECT SWITCH
	FIELD CONTROL STATION WITH JUNCTION BOX
#A	FIELD CONTROL STATION WITH #AMP DISCONNECT SWITCH
	FIELD MOUNTED DEVICE
	SPECIAL RECEPTACLE
J	JUNCTION BOX
T	THERMOSTAT
# A a	LIGHTING, FANS, HEATERS # – CIRCUIT BREAKER NUMBER A – FIXTURE SCHEDULE REF. a – CONTROL SWITCH REFERENCE
#	DUPLEX RECEPTACLE # – CIRCUIT BREAKER NUMBER
# $ 2 a	TOGGLE SWITCH # – CIRCUIT BREAKER NUMBER SUBSCRIPT – CIRCUIT CONTROLLED SUPERSCRIPT – BLANK = 1 POLE 2 = 2 POLE 3 = 3 WAY
#	CONDUIT #

SWITCHES – OPERATOR

SYMBOL	DESCRIPTION
SW	TOGGLE OR DISCONNECT SWITCH
PB	PUSHBUTTON – NORMALLY OPEN, MOMENTARY ACTION
PB	PUSHBUTTON – NORMALLY CLOSED, MOMENTARY ACTION
PB	PUSHBUTTON, MECHANICALLY INTERLOCKED, DOUBLE CIRCUIT – NORMALLY CLOSED AND NORMALLY OPEN, MAINTAINED ACTION
H O A	SELECTOR SWITCH, 3 POSITION – CONTACT STATUS SHOWN EXISTS AT POSITION OF H-HAND, O-OFF, OR A-AUTO
2-1 1-2	SELECTOR SWITCH, 2 POSITION – CONTACT STATUS SHOWN EXISTS AT POSITION AS SHOWN

DEVICES – FRONT PANEL

SYMBOL	DESCRIPTION
X	INDICATING LIGHT, LETTER "X" INDICATES COLOR: R=RED G=GREEN, A=AMBER, W=WHITE Y=YELLOW, B=BLUE
PTT X	INDICATING LIGHT, PUSH TO TEST
AMP	AMP METER
VM	VOLT METER
ETM	ELAPSED TIME METER
RTM	RUN TIME METER
XS	MULTI-POSITION SWITCH WHERE LETTER "X" IS FUNCTION: A=AMP, V=VOLT

DEVICES – PROTECTIVE

SYMBOL	DESCRIPTION
	DISCONNECT, 3 POLE
	CIRCUIT BREAKER, 3 POLE THERMAL MAGNETIC (TM) OR MOTOR CIRCUIT PROTECT (MCP)
OL	THERMAL OVERLOAD CONTACT
	THERMAL OVERLOAD ELEMENT
	FUSE WITH BLOWN FUSE INDICATING LIGHT
	FUSE

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

ELECTRICAL SYMBOLS AND ABBREVIATIONS

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE:	APPROVED BY: DATE:	SHEET No.
DESIGNED BY: SMK		E1
DRAWN BY: ZK		58 of 89 SHEETS
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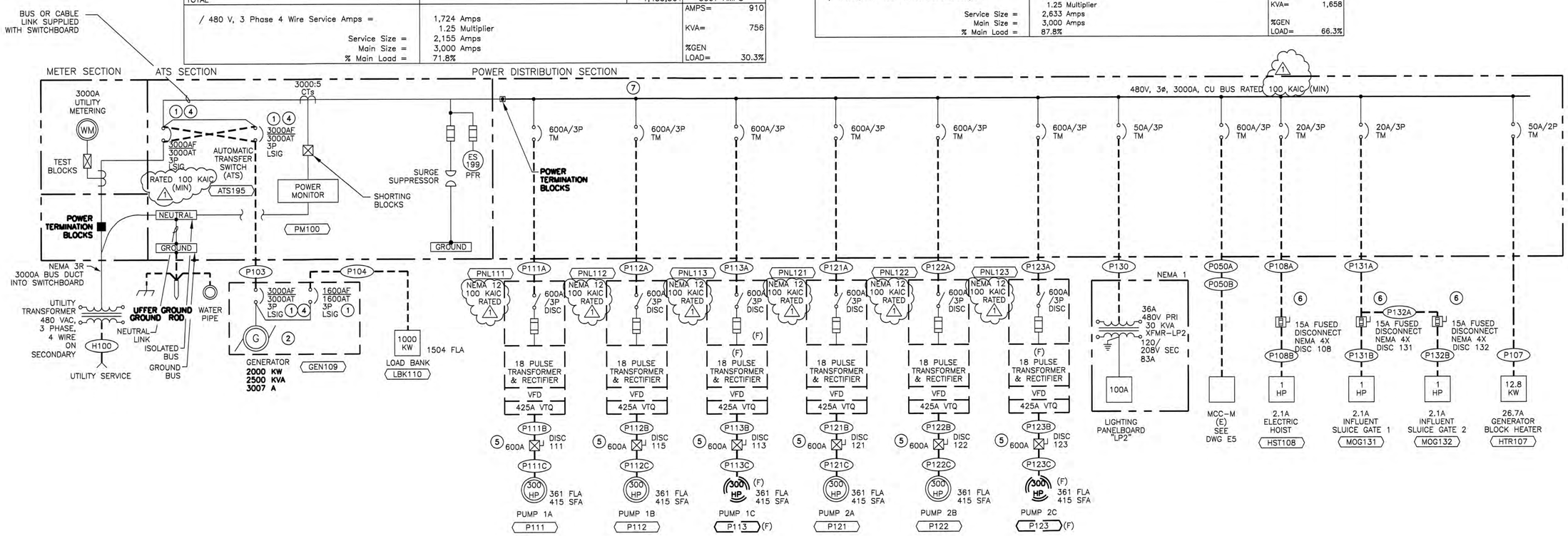
INITIAL LOAD CALCULATIONS	UTILITY SERVICE						GENERATOR SERVICE	
HP DESCRIPTION	LOAD AMPS	QTY LOAD	LOAD VA	RUN AMPS	QTY RUN	RUN VA	QTY RUN	RUN VA
300 PUMP	361	4	1,200,519		4	1,200,519	2	600,260
1 GATE	2.1	2	3,492		2	3,492	1	1,746
1 HOIST	2.1	1	1,746		1	1,746	1	1,746
MCC–M (E)	158	1	131,715		1	131,715	1	131,715
BLOCK HEATER	15.4	1	12,800		1	12,800	0	12,800
PANELBOARD "LP"	9.7		8,058			8,058		8,058
SUBTOTAL	1,634		1,358,329	1,634		1,358,329		756,324
DIVERSITY FACTOR			100 %					
300 HP Largest motor @ 25% additional				300,130	0.25	75,032	GEN SIZE	2,000 KW 2,500 KVA 3007 AMPS
TOTAL						1,433,361		
							AMPS=	910
/ 480 V, 3 Phase 4 Wire Service Amps =	1,724 Amps						KVA=	756
1.25 Multiplier								
Service Size =	2,155 Amps						%GEN	
Main Size =	3,000 Amps						LOAD=	30.3%
% Main Load =	71.8%							

ULTIMATE LOAD CALCULATIONS	UTILITY SERVICE						GENERATOR SERVICE	
HP DESCRIPTION	LOAD AMPS	QTY LOAD	LOAD VA	RUN AMPS	QTY RUN	RUN VA	QTY RUN	RUN VA
300 PUMP	361	6	1,800,779		5	1,500,649	5	1,500,649
1 VALVE	2.1	2	3,492		2	3,492	2	3,492
1 HOIST	2.1	1	1,746		11	19,205	1	1,746
MCC–M (E)	158	1	131,715		1	131,715	1	131,715
BLOCK HEATER	15.4	1	12,800		1	12,800	0	12,800
PANELBOARD "LP"	9.7		8,058			8,058		8,058
SUBTOTAL	2,356		1,958,589	2,016		1,675,918		1,658,459
DIVERSITY FACTOR			86 %					
300 HP Largest motor @ 25% additional				300,130	0.25	75,032	GEN SIZE	2,000 KW 2,500 KVA 3007 AMPS
TOTAL						1,750,950		
							AMPS=	1,995
/ 480 V, 3 Phase 4 Wire Service Amps =	2,106 Amps						KVA=	1,658
1.25 Multiplier								
Service Size =	2,633 Amps						%GEN	
Main Size =	3,000 Amps						LOAD=	66.3%
% Main Load =	87.8%							



METER/MAIN SWITCHBOARD SWBD–2 (3)

NOTES:

1. BREAKER SHALL HAVE ADJUSTABLE LONG, SHORT, INSTANTANEOUS & GROUND (LSIG) TRIP SETTINGS.
2. GROUND NEUTRAL PER GENERATOR MANUFACTURER'S RECOMMENDATION.
3. ALL LUGS SHALL BE COPPER SIZE FOR WIRES LISTED IN "CONDUIT & WIRE ROUTING SCHEDULE".
4. 100% RATED BREAKERS.
5. NEMA 4X SS DISCONNECT SWITCH WITH MINIMUM AMP RATING SHOWN TO BE LOCATED BELOW FCS. MOUNT VFD TERMINATOR TO BACK OF FCS SUPPORT.
6. PROVIDE & INSTALL FUSES SIZED TO PROTECT EQUIPMENT.
7. SEE DWG E3 FOR ELEVATION DIAGRAM OF BREAKERS POSITION.

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14-Mile Slough Pump Station Upgrades

METER/MAIN SWITCHBOARD SWBD-2 ONE LINE DIAGRAM

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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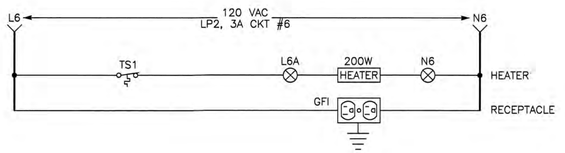
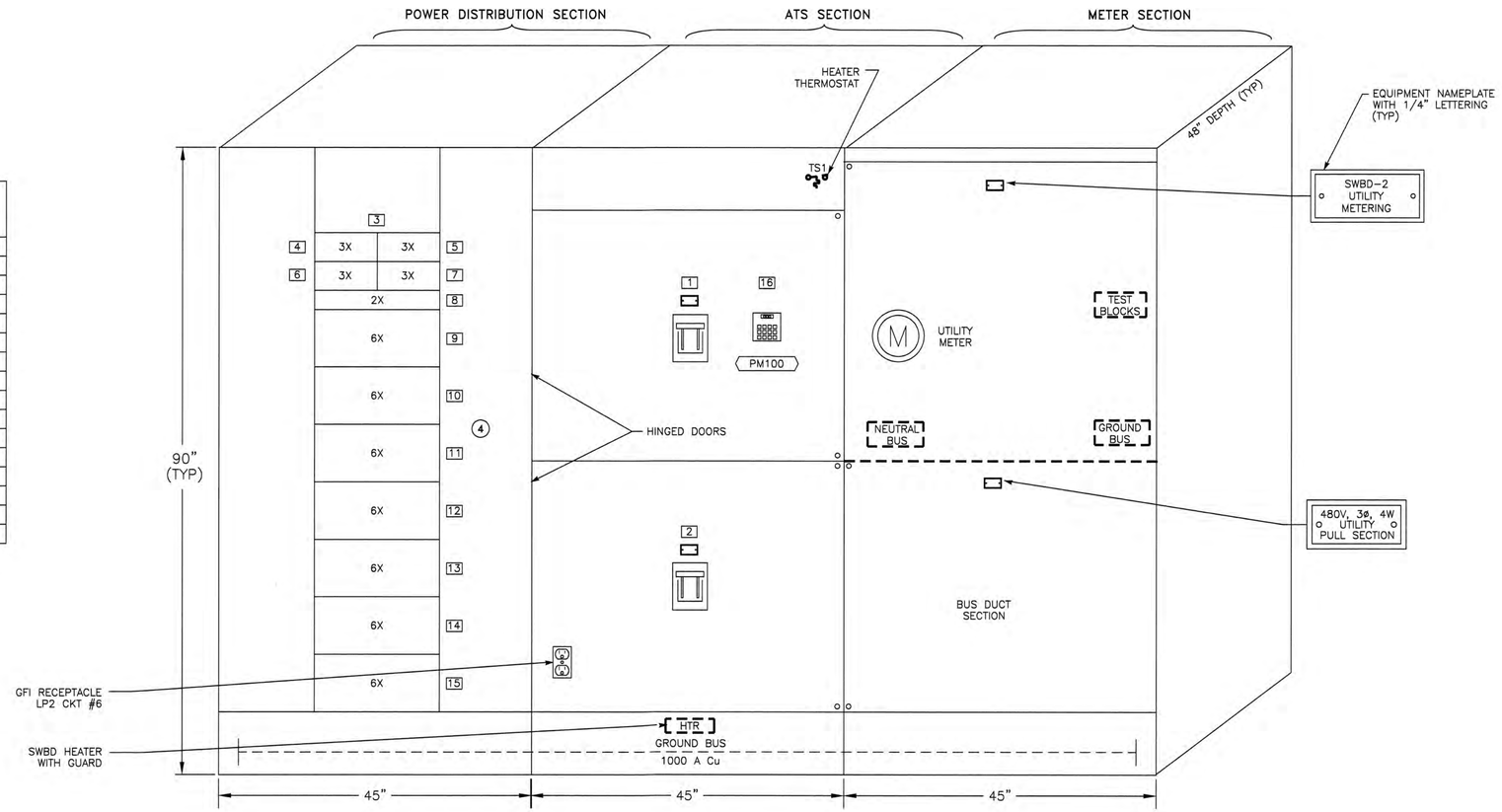
NAMEPLATE SCHEDULE

KEY	DEVICE	ENGRAVING	LETTER SIZE
1	BREAKER	MAIN BREAKER	1/4"
2	BREAKER	GENERATOR BREAKER	1/4"
3	ENCLOSURE	POWER DISTRIBUTION SECTION (PDS)	1/2"
4	BREAKER	PANEL "LP2" TRANSFORMER	1/4"
5	BREAKER	ELECTRIC HOIST HST108	1/4"
6	BREAKER	INFLUENT SLUICE GATE 1 & 2 MOG131/132	1/4"
7	BREAKER	GENERATOR BLOCK HEATER	1/4"
8	SPACE	(BLANK)	1/4"
9	BREAKER	MCC-M	1/4"
10	BREAKER	SEWER PUMP 1A	1/4"
11	BREAKER	SEWER PUMP 1B	1/4"
12	BREAKER	SEWER PUMP 1C	1/4"
13	BREAKER	SEWER PUMP 2A	1/4"
14	BREAKER	SEWER PUMP 2B	1/4"
15	BREAKER	SEWER PUMP 2C	1/4"
16	POWER MONITOR	POWER MONITOR	1/4"



SWITCHBOARD ELEMENTARY DIAGRAM (A / E3)



NEW METER/MAIN SWITCHBOARD SWBD-2 ① ② ③

NOT TO SCALE

NOTES:
1. REAR ACCESS SHALL NOT BE REQUIRED TO SERVICE OR REPLACE AND MAIN SWITCHBOARD COMPONENTS.
2. EACH BREAKER SHALL HAVE A PADLOCKABLE HASP TO LOCK BREAKER IN THE OFF POSITION.
3. PROVIDE COPPER LUGS FOR POWER CABLES FOR WIRE SIZES LISTED IN THE CONDUIT & WIRE ROUTING SCHEDULE.
4. HEIGHT "X" =1-3/8".

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14-Mile Slough Pump Station Upgrades

METER/MAIN SWITCHBOARD
SWBD-2
ELEVATION

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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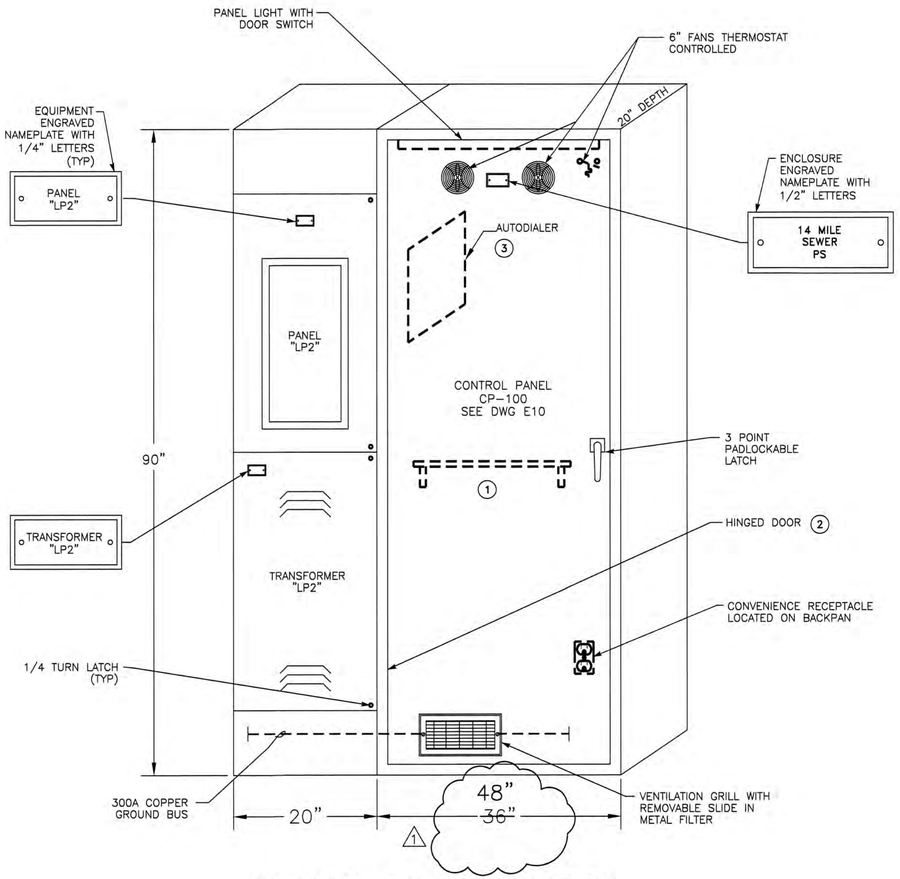

CONTROL PANEL ELEVATION

NOTES:
1. FOLD DOWN SHELF, 18" x 18" MOUNTED INSIDE DOOR, HOFFMAN ACSHELF 18 OR EQUAL.
2. PROVIDE ADDITIONAL DOOR BRACING OR USE A TWO DOOR ENCLOSURE.
3. MOUNT AUTODIALER AND TELCO JACK TO FULL HEIGHT SIDE PAN.

VOLTS 120 208 | PHASE 3 | WIRE 4 | PANEL "LP2" | BUS AMPS 100A | MAIN BKR 100A | LOCATION ELECTRICAL ROOM | ENCLOSURE FLUSH | AIC RATING 14,000 | NEMA 1 | TVSS YES

BKR NO.	DESCRIPTION	LOAD VA	LINE AMPS A	LINE AMPS B	LINE AMPS C	AMPS/ POLE	BKR NO.	PHASE
1	LIGHTING – INSIDE BLDG	192	2			20/1	1	A
3	LIGHTING – INSIDE BLDG	384		3		20/1	3	B
5	RECEPT – OUTDOOR GEN	720			6	20/1	5	C
7	LIGHTING OUTDOOR GEN	420	4			20/1	7	A
9	RECEPT – INSIDE BLDG	720		6		20/1	9	B
11	RECEPT – OUTDOOR	900			8	20/1	11	C
13	LIGHTS–AREA POLE	600	5			20/1	13	A
15	RECEPT–AREA POLE	720		6		20/1	15	B
17	RECEPT – HVAC 1	180			2	20/1	17	C
19	RECEPT – HVAC 2	180	2			20/1	19	A
21	IRRIGATION CONTROLLER	30		0		20/1	21	B
23	RECEPT – FLOWMETER VAULT 1	500			4	20/1 (G)	23	C
25	SPARE	0	0			40/2	25	A
27		0		0			27	B
29	SPARE	0			0	20/1	29	C
31	SPARE	0	0			20/1	31	A
33	SPARE	0		0		30/2	33	B
35		0			0		35	C
37	SPARE	0	0			20/1(G)	37	A
39	SPARE	0		0		20/1	39	B
41	SPARE	0			0	20/1	41	C

BKR NO.	AMPS/ POLE	LINE AMPS A	LINE AMPS B	LINE AMPS C	LOAD VA	DESCRIPTION	BKR NO.
2	20/1	3			350	LIGHTING – OUTSIDE BLDG	2
4	20/1		6		720	RECEPT – INSIDE BLDG	4
6	20/1			3	380	SWITCHBOARD – 120V POWER	6
8	20/1	2			220	CONTROL PANEL – MISC	8
10	20/1		8		1,000	CONTROL PANEL – UPS	10
12	20/1(L)			4	528	P141	12
14	20/1(L)	4			528	P142	14
16	20/1		2		200	FSL173/4	16
18	30/2			0	0	SPARE	18
20		0			0		20
22	20/1		1		100	GENERATOR BATTERY CHARGER	22
24	20/1(G)			4	500	RECEPT – FLOWMETER VAULT 2	24
26	20/1	0			0	SPARE	26
28	20/1		0		0	SPARE	28
30	20/1(H)			0	0	SPARE	30
32	30/3	0			0	SPARE	32
34			0		0		34
36				0	0		36
38	100/3					MAIN	38
40							40
42							42

PHASE	A	B	C
LEFT SIDE AMPS	12	15	19
LEFT SIDE KVA	1.39	1.85	2.30
TOTAL KVA			10.07
TOTAL AMPS @ 208V, 3P			27.96
DIVERSITY FACTOR			0.80
LOAD KVA			8.06

NEUTRAL

GROUND

A	B	C	PHASE
9	17	12	RIGHT SIDE AMPS
1.10	2	1	RIGHT SIDE KVA
1.39	2	2	LEFT SIDE KVA
2.49	4	4	TOTAL PHASE KVA
21	32	31	TOTAL PHASE AMPS
74	115	110	% OF AVERAGE

NOTES:
1. MEANS OF WIRE COLOR CODING SHALL BE POSTED ON PANELBOARD PER NEC 210 (4)
2. (G) INDICATES GFI BREAKER REQUIRED WITH 30 MA SENSITIVITY
3. (H) INDICATES HACR RATED BREAKER.
4. (L) PROVIDE PADLOCKING PROVISION IN ORDER TO LOCK BREAKER IN THE OFF POSITION.

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14-Mile Slough Pump Station Upgrades

CONTROL PANEL ELEVATION

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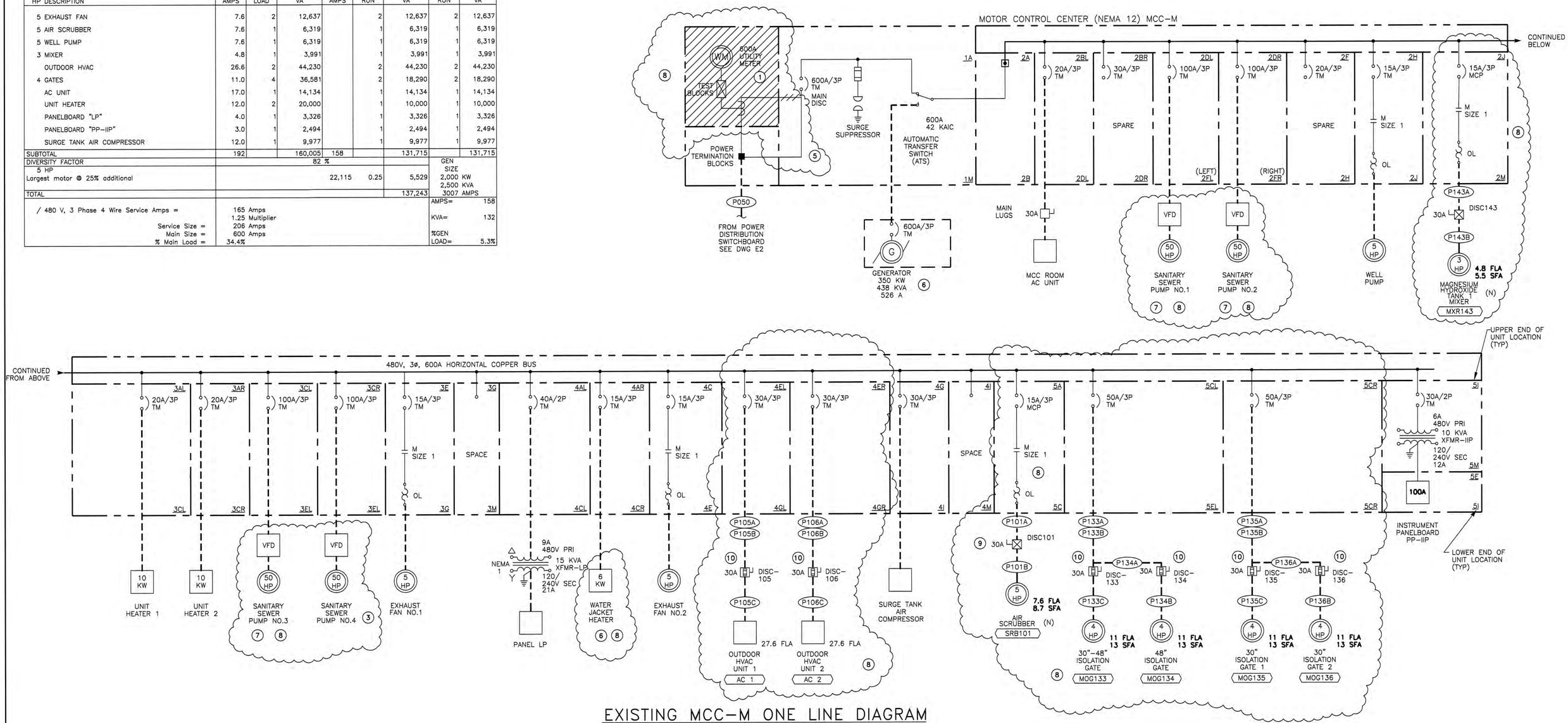
REVISED MCC–M LOAD CALCULATIONS	UTILITY SERVICE						GENERATOR SERVICE	
HP DESCRIPTION	LOAD AMPS	QTY LOAD	LOAD VA	RUN AMPS	QTY RUN	RUN VA	QTY RUN	RUN VA
5 EXHAUST FAN	7.6	2	12,637		2	12,637	2	12,637
5 AIR SCRUBBER	7.6	1	6,319		1	6,319	1	6,319
5 WELL PUMP	7.6	1	6,319		1	6,319	1	6,319
3 MIXER	4.8	1	3,991		1	3,991	1	3,991
OUTDOOR HVAC	26.6	2	44,230		2	44,230	2	44,230
4 GATES	11.0	4	36,581		2	18,290	2	18,290
AC UNIT	17.0	1	14,134		1	14,134	1	14,134
UNIT HEATER	12.0	2	20,000		1	10,000	1	10,000
PANELBOARD "LP"	4.0	1	3,326		1	3,326	1	3,326
PANELBOARD "PP–IIP"	3.0	1	2,494		1	2,494	1	2,494
SURGE TANK AIR COMPRESSOR	12.0	1	9,977		1	9,977	1	9,977
SUBTOTAL	192		160,005	158		131,715		131,715
DIVERSITY FACTOR			82 %				GEN SIZE	
5 HP Largest motor @ 25% additional				22,115	0.25	5,529	2,000 KW 2,500 KVA	
TOTAL						137,243	3007 AMPS	
/ 480 V, 3 Phase 4 Wire Service Amps =	165 Amps						AMPS=	158
1.25 Multiplier							KVA=	132
Service Size =	206 Amps							
Main Size =	600 Amps						%GEN LOAD=	5.3%
% Main Load =	34.4%							



EXISTING MCC–M ONE LINE DIAGRAM

NOTES:
1. SPARE – NO LOAD CONNECTED.
2. EXISTING MCC IS SQUARE D SERIES 6.
3. NOT INSTALLED.
4. METERING TO BE REMOVED BY PG&E.
5. INSTALL 600A JUMPER.
6. GENERATOR TO REMAIN IN SERVICE UNTIL NEW POWER SERVICE TO MCC–M HAS BEEN COMPLETED & TESTED.
7. PUMPS & VFD DRIVES TO REMAIN IN SERVICE UNTIL CUT OVER TO NEW PUMP STATION HAS BEEN COMPLETED & TESTED. REMOVE & TURN OVER VFD DRIVES & PUMPS TO OWNER. EXISTING BREAKERS TO BE SPARE.
8. NEW WORK SHOWN IN BUBBLES.
9. NEMA 4X SS DISCONNECT SWITCH WITH MINIMUM AMP RATING.
10. NEMA 4X DISCONNECT SWITCH WITH MINIMUM AMP RATED SHOWN AND FUSES SIZED TO PROTECT EQUIPMENT.
11. FEEDERS FROM LOAD SIDE OF ATS TO MCC–M TO BE PARALLEL 350'S RATED AT 600A

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

EXISTING MCC-M ONE LINE DIAGRAM

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CITY OF STOCKTON, CALIFORNIA

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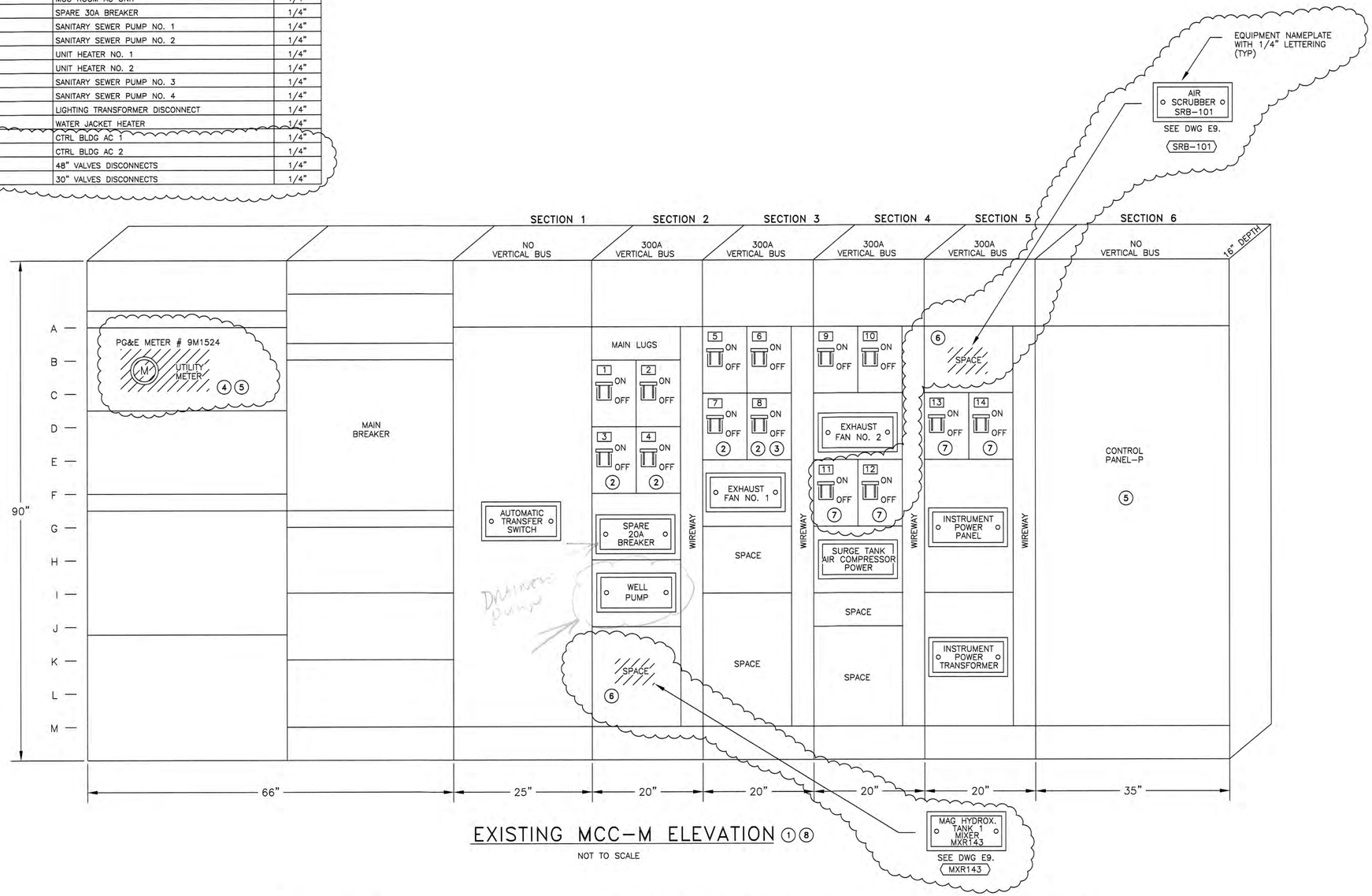
NAMEPLATE SCHEDULE			
KEY	DEVICE	ENGRAVING	LETTER SIZE
1	BREAKER	MCC ROOM AC UNIT	1/4"
2	BREAKER	SPARE 30A BREAKER	1/4"
3	BREAKER	SANITARY SEWER PUMP NO. 1	1/4"
4	BREAKER	SANITARY SEWER PUMP NO. 2	1/4"
5	BREAKER	UNIT HEATER NO. 1	1/4"
6	BREAKER	UNIT HEATER NO. 2	1/4"
7	BREAKER	SANITARY SEWER PUMP NO. 3	1/4"
8	BREAKER	SANITARY SEWER PUMP NO. 4	1/4"
9	BREAKER	LIGHTING TRANSFORMER DISCONNECT	1/4"
10	BREAKER	WATER JACKET HEATER	1/4"
11	BREAKER	CTRL BLDG AC 1	1/4"
12	BREAKER	CTRL BLDG AC 2	1/4"
13	BREAKER	48" VALVES DISCONNECTS	1/4"
14	BREAKER	30" VALVES DISCONNECTS	1/4"



EXISTING MCC-M ELEVATION ① ⑧

NOT TO SCALE

NOTES:
1. EXISTING SQUARE D MCC.
2. PUMPS SHALL REMAIN IN SERVICE UNTIL CUT OVER TO NEW PUMPS, REPLACE NAMEPLATE WITH "100A SPARE BREAKER".
3. SPARE – NO LOAD CONNECTED.
4. AFTER NEW POWER SERVICE FEED FROM MCC-M HAS BEEN CONNECTED TO AND TESTED, CONTRACTOR TO HAVE PG&E REMOVE THEIR METER SOCKET & ASSOCIATED DEVICES. REMOVE & WASTE ALL OTHER EXISTING METERING DEVICES & WIRING.
5. REPLACE DOOR WITH NEW DOOR PAINTED TO MATCH EXISTING DOOR.
6. NEW MOTOR CONTROLS.
7. NEW BREAKER WITH NAMEPLATE.
8. NEW WORK SHOWN IN BUBBLES.

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FILE: 0507C E006

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

EXISTING MCC-M ELEVATION

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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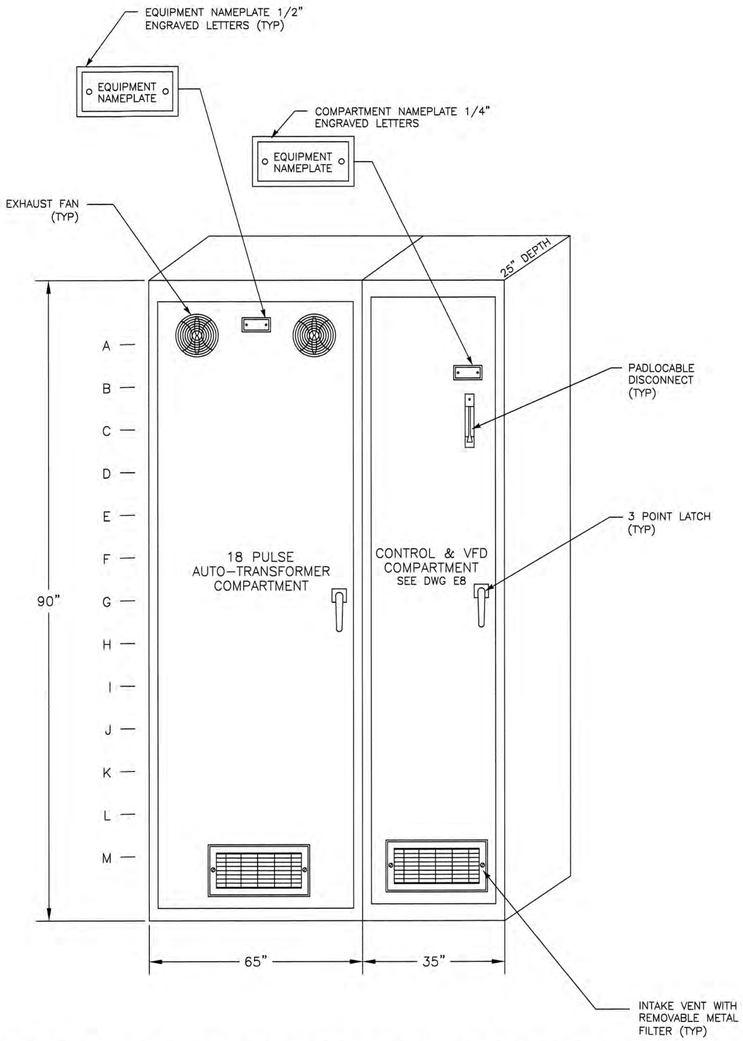
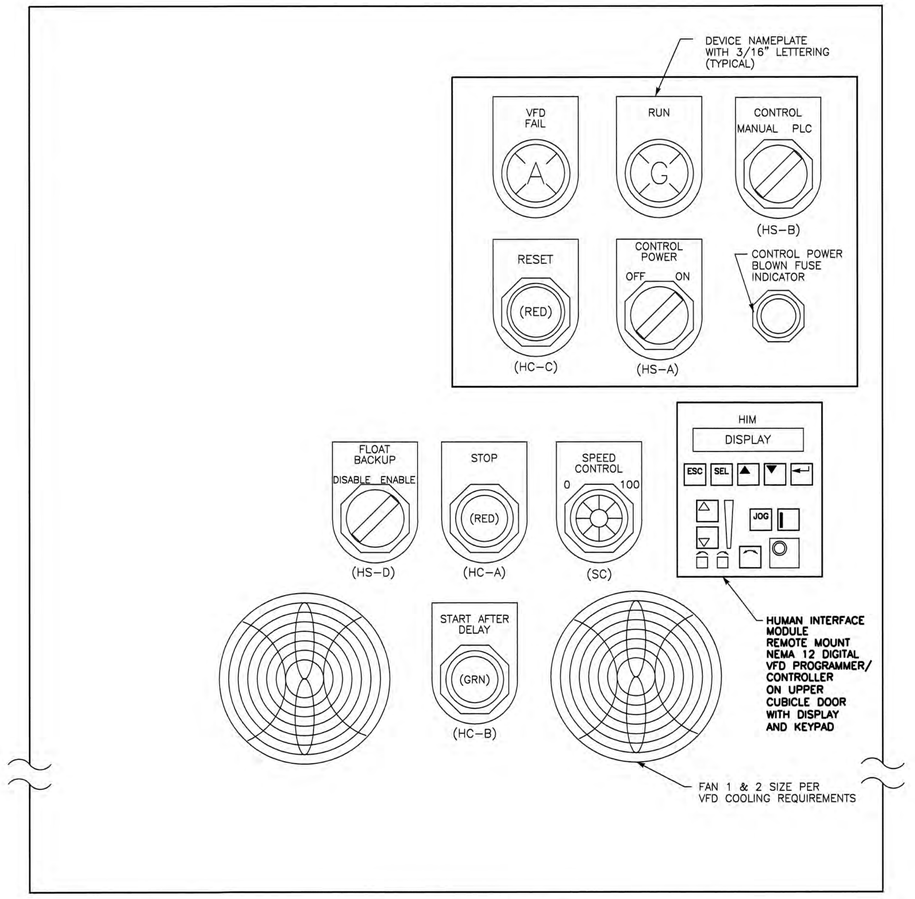
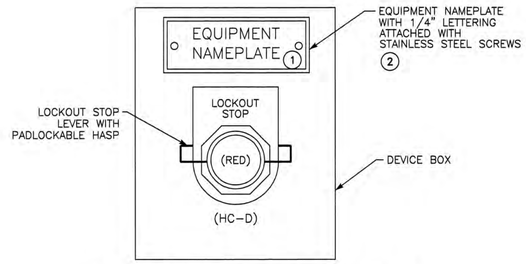


TYPICAL 18 PULSE VFD PANEL ELEVATIONS

NOTES:
1. EQUIPMENT NAMEPLATE TO CONTAIN EQUIPMENT DESCRIPTION AND EQUIPMENT NUMBER PER ELEVATION DIAGRAM MOUNT ON OR ABOVE DEVICE BOX ON FCS.
2. INSTALL MOISTURE RELAY & ASSOCIATED DEVICES SUPPLIED WITH PUMP AND WIRING INSIDE FCS WHEN INDICATED ON P&ID.



VFD PANEL LAYOUT



FIELD CONTROL STATION (FCS)

T.E.E.m.
(916) 457-8144
FILE: 0507C E007

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

TYPICAL
18 PULSE VFD PANEL
ELEVATION

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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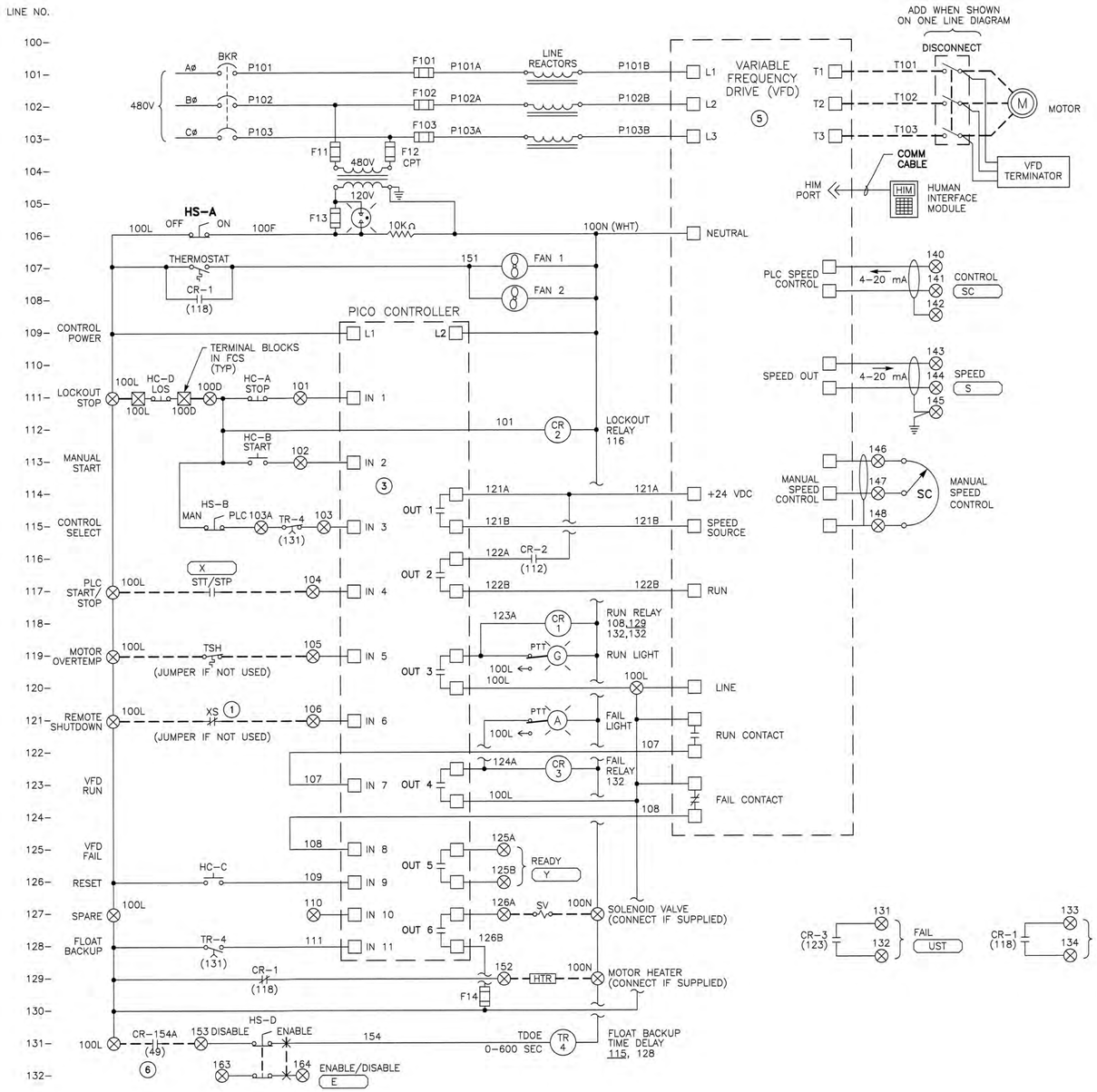

NOTES:

1. REMOTE SHUTDOWN XS => LSLL, ZSHH, PSHH, ETC., PER P&ID, JUMPER IF NOT USED. THESE ARE TO BE CONTACTS OFF OF AUXILIARY RELAY CONTACTS LOCATED IN MCC CONTROL PANEL DRIVEN FROM FIELD DEVICE.
2. USE 100 SERIES WIRES & TERMINAL #s FOR PNL 111, 200 #s FOR PNL 112 SERIES, ETC.
3. PLACE 30K ohm, 5 WATT RESISTOR BETWEEN IN# AND 100N ON ANY PICO INPUT THAT HAS FIELD WIRING LENGTHS OVER 130 FEET, (AND DOES NOT FEED A RELAY COIL).
4. INSTALL MOISTURE RELAY AND ASSOCIATED DEVICES SUPPLIED WITH PUMP AND WIRING INSIDE FCS WHEN INDICATED ON P&ID.
5. VFD WITH ELECTRONIC OVERLOAD & BUILT–IN RFI FILTER.
6. FLOAT BACKUP CONTROL PER DWG E11, DETAIL "A".

VARIABLE FREQUENCY DRIVE MCC START/STOP ELEMENTARY DIAGRAM (2)

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

VFD DRIVE MCC START/STOP ELEMENTARY DIAGRAM

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CITY OF STOCKTON, CALIFORNIA

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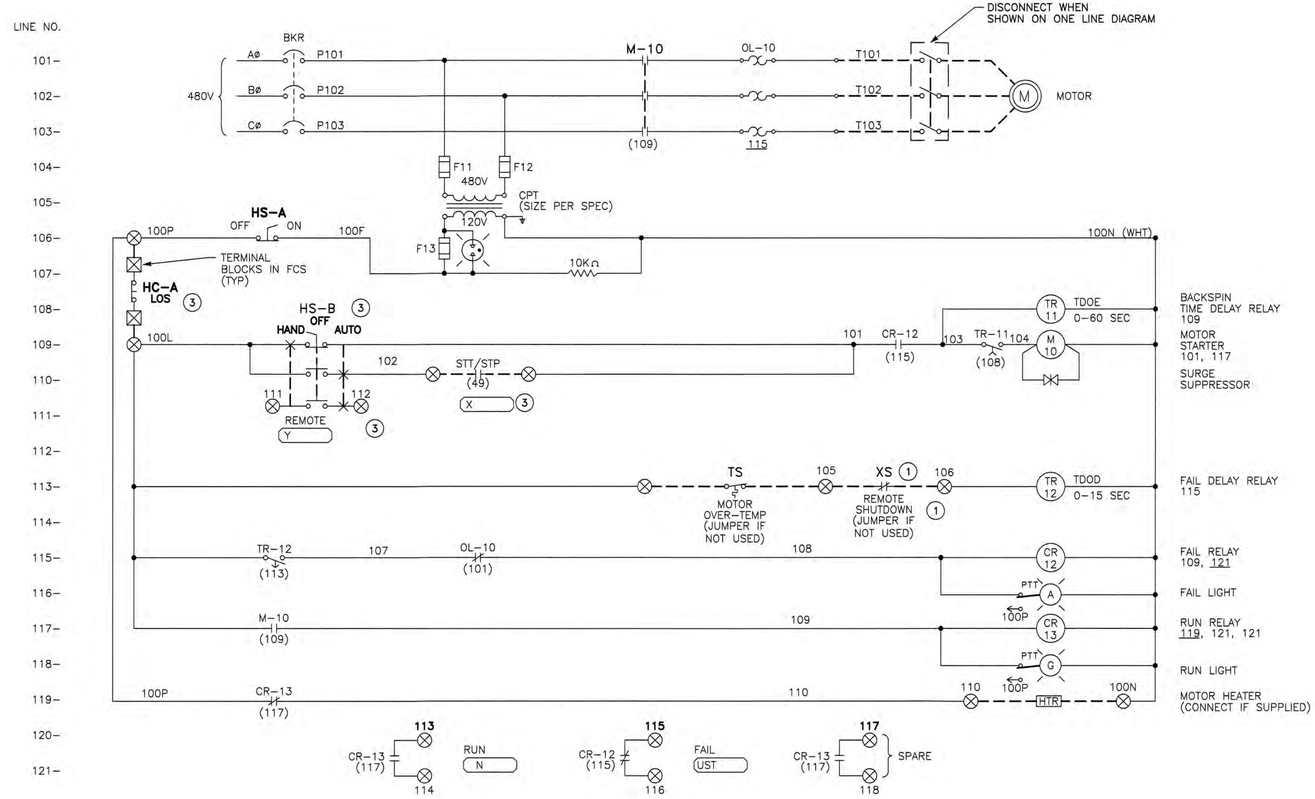
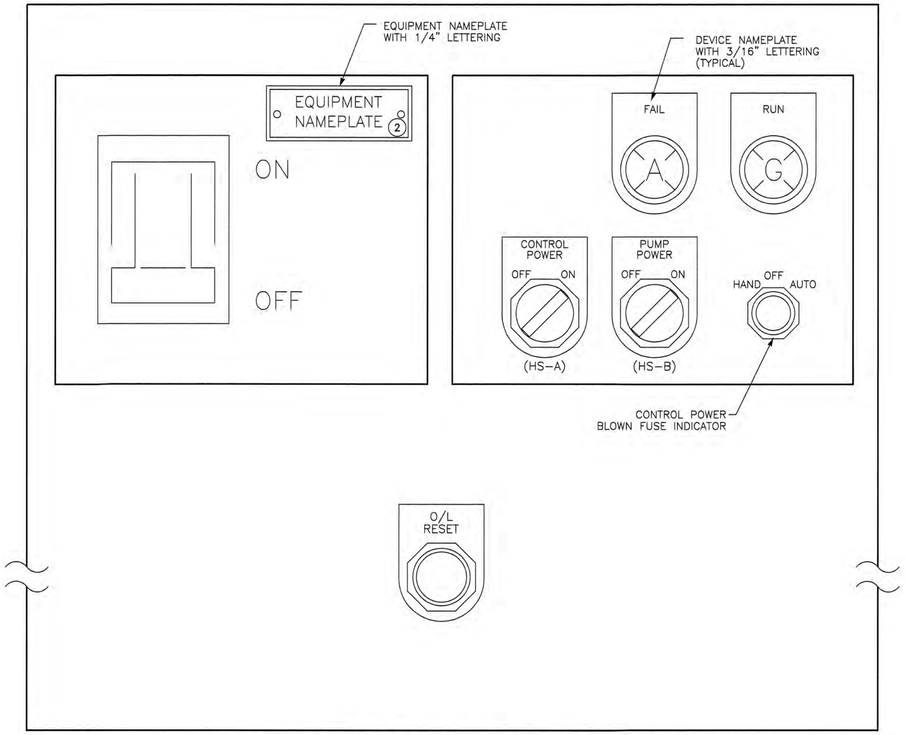
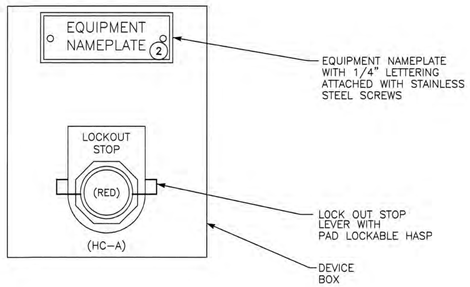


FULL SPEED ELEMENTARY DIAGRAM

NOTE:
1. REMOTE SHUTDOWN XS => LSLL, ZSHH, PSHH, ETC., PER P&ID, JUMPER IF NOT USED. THESE ARE TO BE CONTACTS OFF OF AUXILIARY RELAY CONTACTS LOCATED IN CONTROL PANEL DRIVEN FROM FIELD DEVICE.
2. EQUIPMENT NAMEPLATE TO CONTAIN EQUIPMENT DESCRIPTION & EQUIPMENT NUMBER PER ELEVATION DIAGRAM. MOUNT ON OR ABOVE DEVICE BOX ON FCS.
3. INSTALL WHEN INDICATED ON P & ID.



MCC CUBICLE LAYOUT



FIELD CONTROL STATION (FCS) 3

LOCATED AT EQUIPMENT

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FILE: 0507C E009

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

FULL SPEED
ELEMENTARY DIAGRAM

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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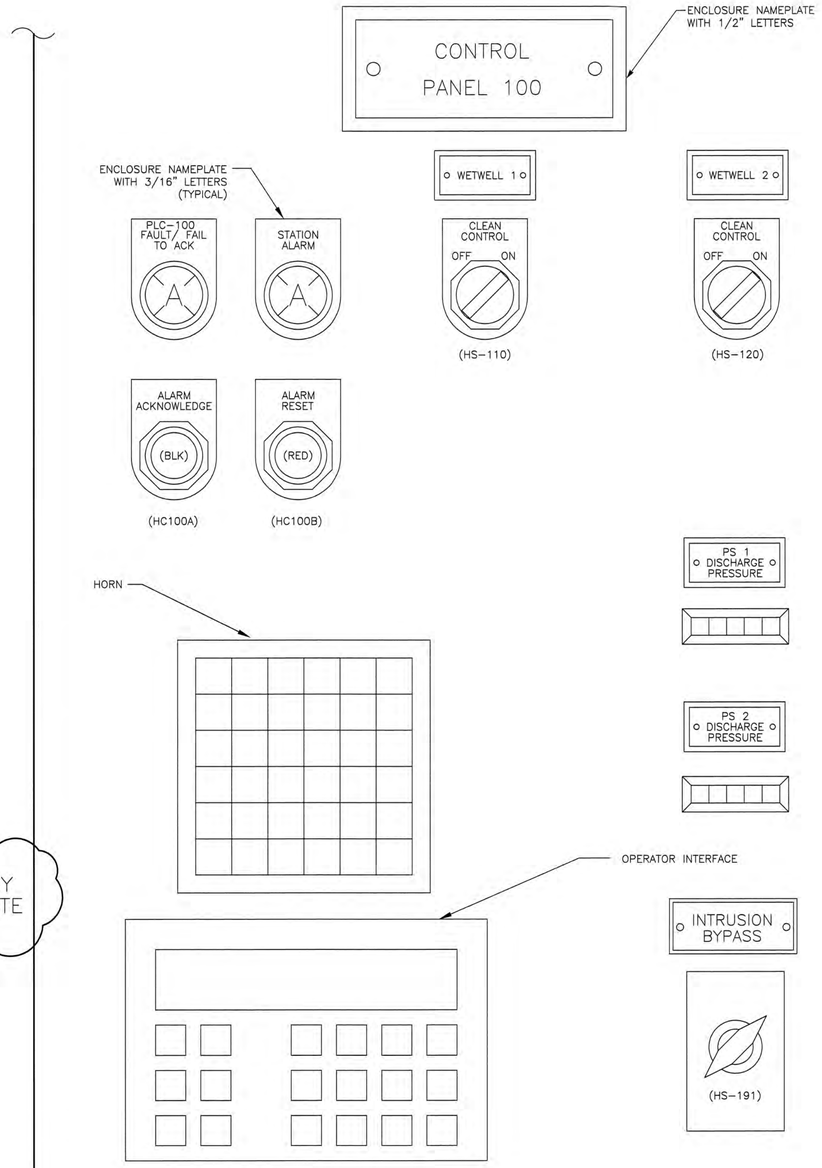
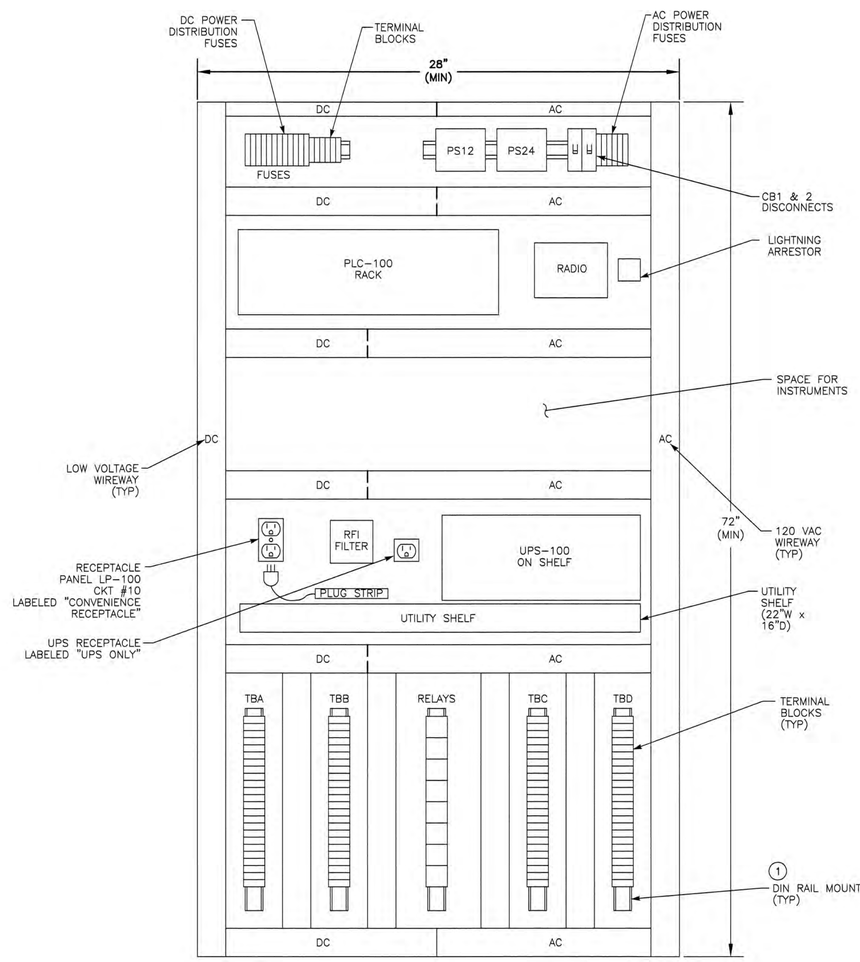


CONTROL PANEL 100 ELEVATION



CP-100 BACKPAN LAYOUT (2)

NOT TO SCALE

NOTES:
1. PROVIDE ADDITIONAL DIN RAIL TO ADD A MINIMUM OF EIGHT TERMINAL BLOCKS TO EACH TERMINAL STRIP.
2. PROVIDE SIDEPANS ON BOTH SIDES OF ENCLOSURE FOR ADDITIONAL MOUNTING SPACE.
3. CONTROL PANEL SHALL BE CONSTRUCTED BY AN U.L. APPROVED PANEL SHOP AND BEAR A U.L. LABEL.

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CONTROL PANEL 100
ELEVATION & BACKPAN LAYOUT

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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DRAWN BY:	ZK		67 of 89 SHEETS
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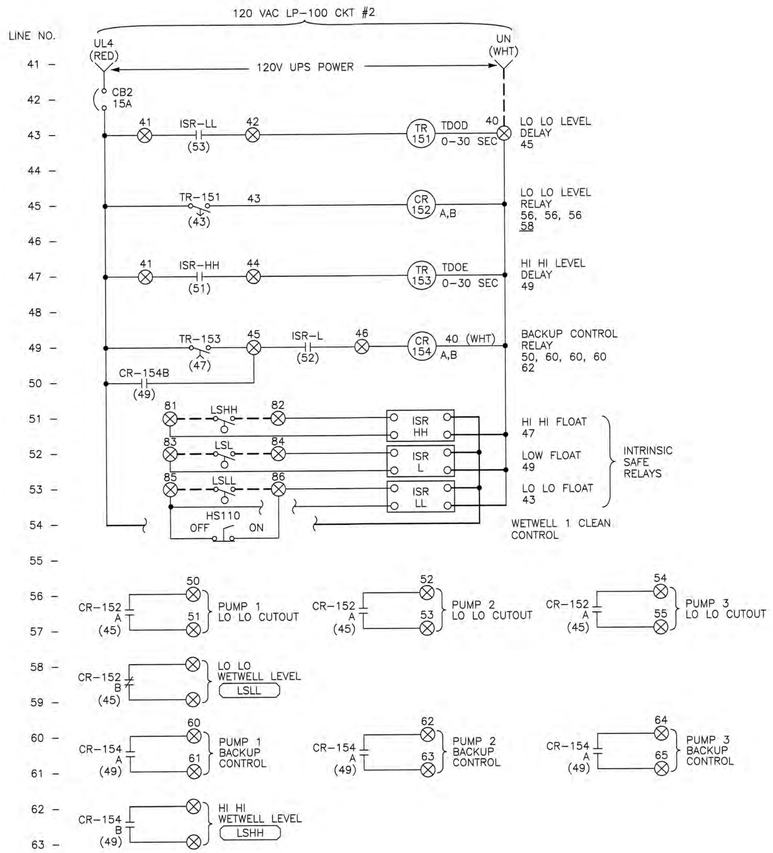
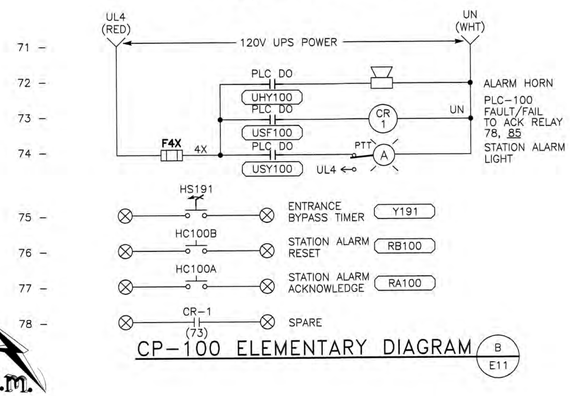
RECORD Dwg.:			

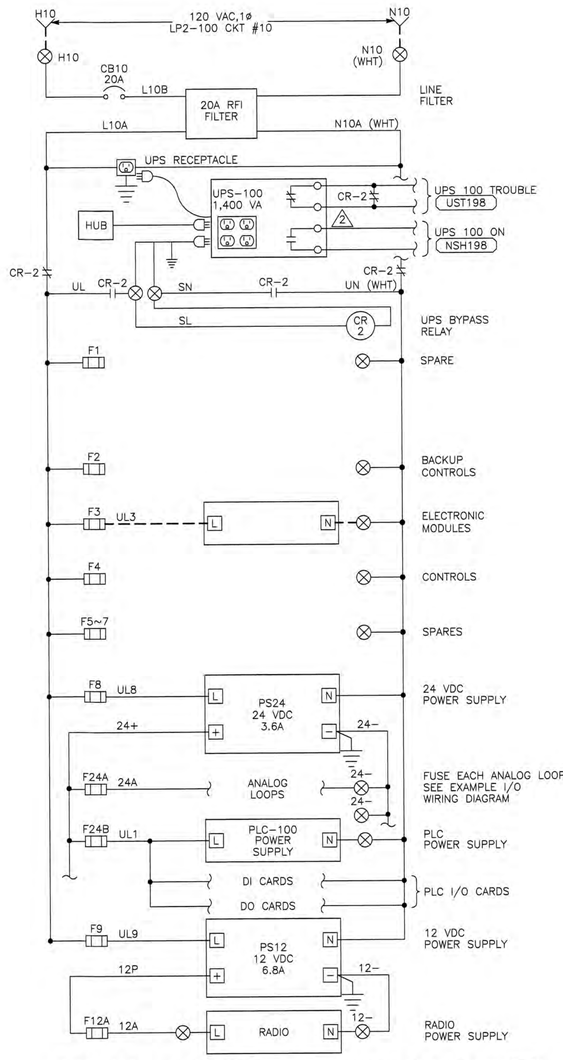


TYPICAL BACKUP CONTROLS ELEMENTARY DIAGRAM (A / E11)

NOTES: (1) TYPICAL FOR WETWELL 1 & 2.



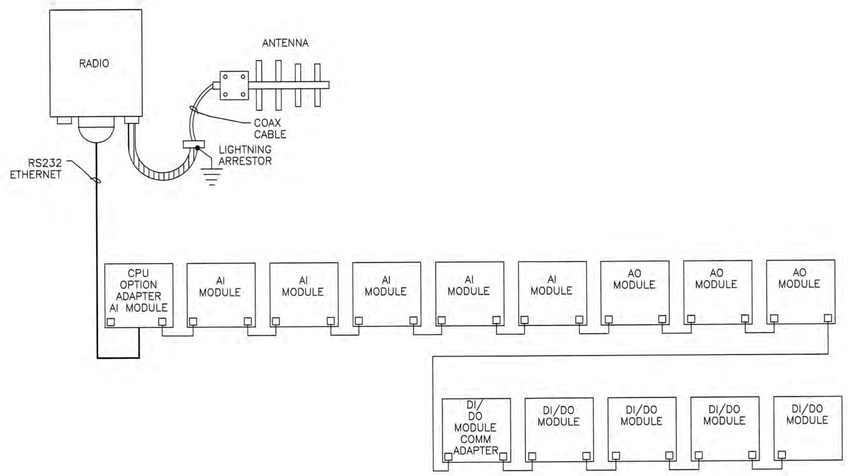
CP-100 ELEMENTARY DIAGRAM (B / E11)



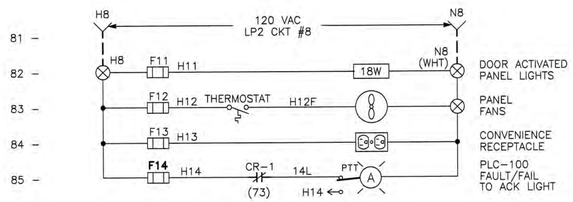
120 VAC POWER DISTRIBUTION DIAGRAM (C / E11) (1)

NOTES: (1) DISTRIBUTION DIAGRAM REPRESENTATIVE OF MAJOR COMPONENTS ONLY. ADDITIONAL FUSES, CIRCUITS AND COMPONENT CONNECTIONS MAY BE REQUIRED FOR A FUNCTIONAL SYSTEM.

(2) PROVIDE & INSTALL INTERFACE RELAYS IF REQUIRED.



PLC-100 BLOCK DIAGRAM (D / E11)



CP-100 UTILITY ELEMENTARY DIAGRAM (D / E11)

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FILE: 0507C E011

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14-Mile Slough Pump Station Upgrades

CP-100
ELEMENTARY DIAGRAM

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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CHECKED BY:	XML	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01
RECORD Dwg.:			

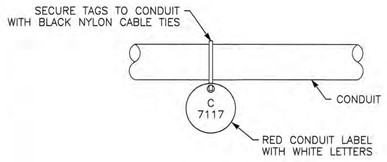
NOTES:

1. CONDUIT SIZE & TYPE; WIRE FILL FOR CONDUITS TO BE DESIGNATED NEXT TO CONDUIT NUMBER ELLIPSE.
2. THESE ARE THE CONTRACTOR DESIGNATED DRAWING NUMBERS.
3. NOT MORE THAN TWO WIRES PER TERMINAL BLOCK.
4. ALL TERMINAL BLOCKS TO BE PLACED IN NUMERICAL ORDER.
5. ALL NEUTRALS SHALL BE WHITE WIRE COLOR.
6. #12 GND TO DEVICES SHALL BE BONDED TO #8 GND LUG.

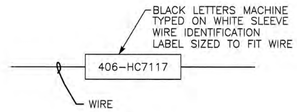
REFERENCE DOCUMENTS

DRAWING #	DESCRIPTION	MANUFACTURER
P712	P&ID DIAGRAM	DESIGN
E717	ELECTRICAL SITE PLAN	DESIGN
PAGE 32, 36	CONDUIT AND CABLE SCHEDULE	DESIGN
(2) 1354-11	LOOP DIAGRAM	CONTRACTOR
(2) 1354-68	ELEMENTARY DIAGRAM	CONTRACTOR

TYPICAL CONDUIT MARKING SYSTEM



TYPICAL WIRE LABEL

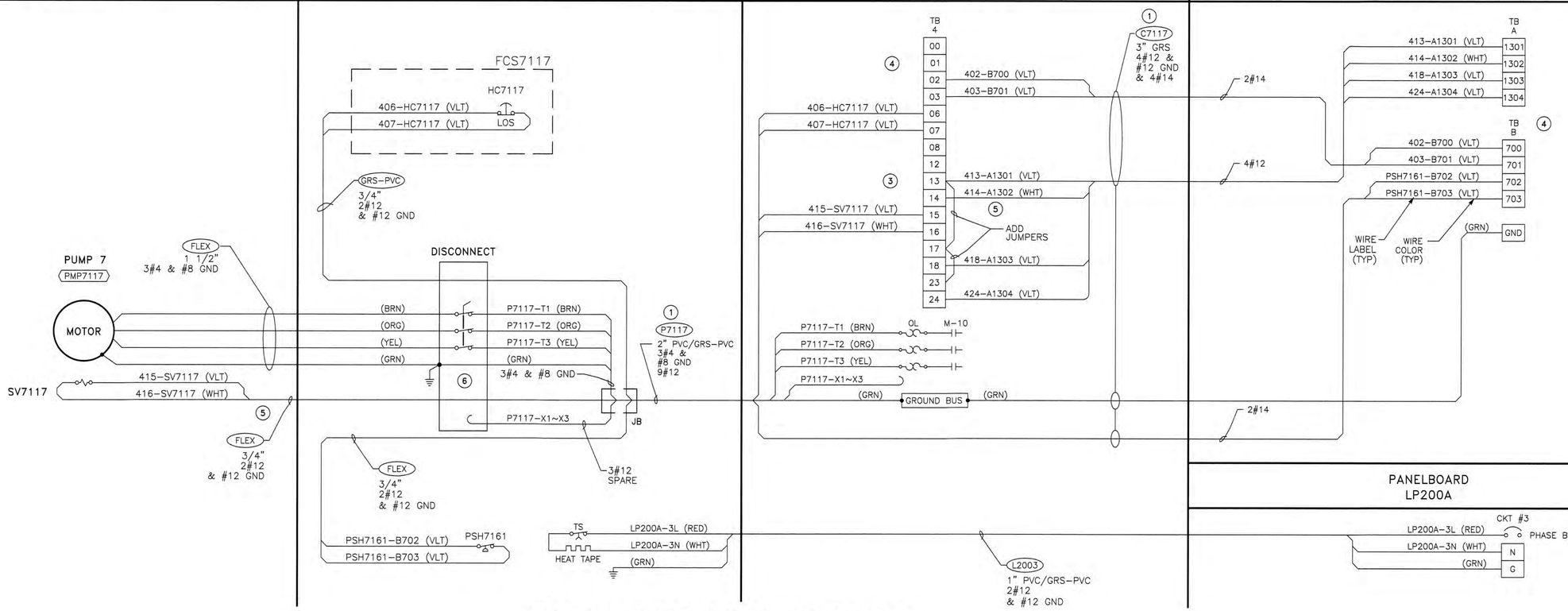


EQUIPMENT

FIELD

MCC-4 SECTION 1 CUBICLE A~E

CONTROL PANEL NO.2



EXAMPLE INTERCONNECTION DIAGRAM

(THIS DRAWING ILLUSTATES THE FORMAT THAT SHALL BE FOLLOWED IN PREPARATION OF ALL INTERCONNECT DWGS)

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14-Mile Slough Pump Station Upgrades

EXAMPLE INTERCONNECTION DIAGRAM

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

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SCALE: 3/8" = 1'

NEMA 4X AREA

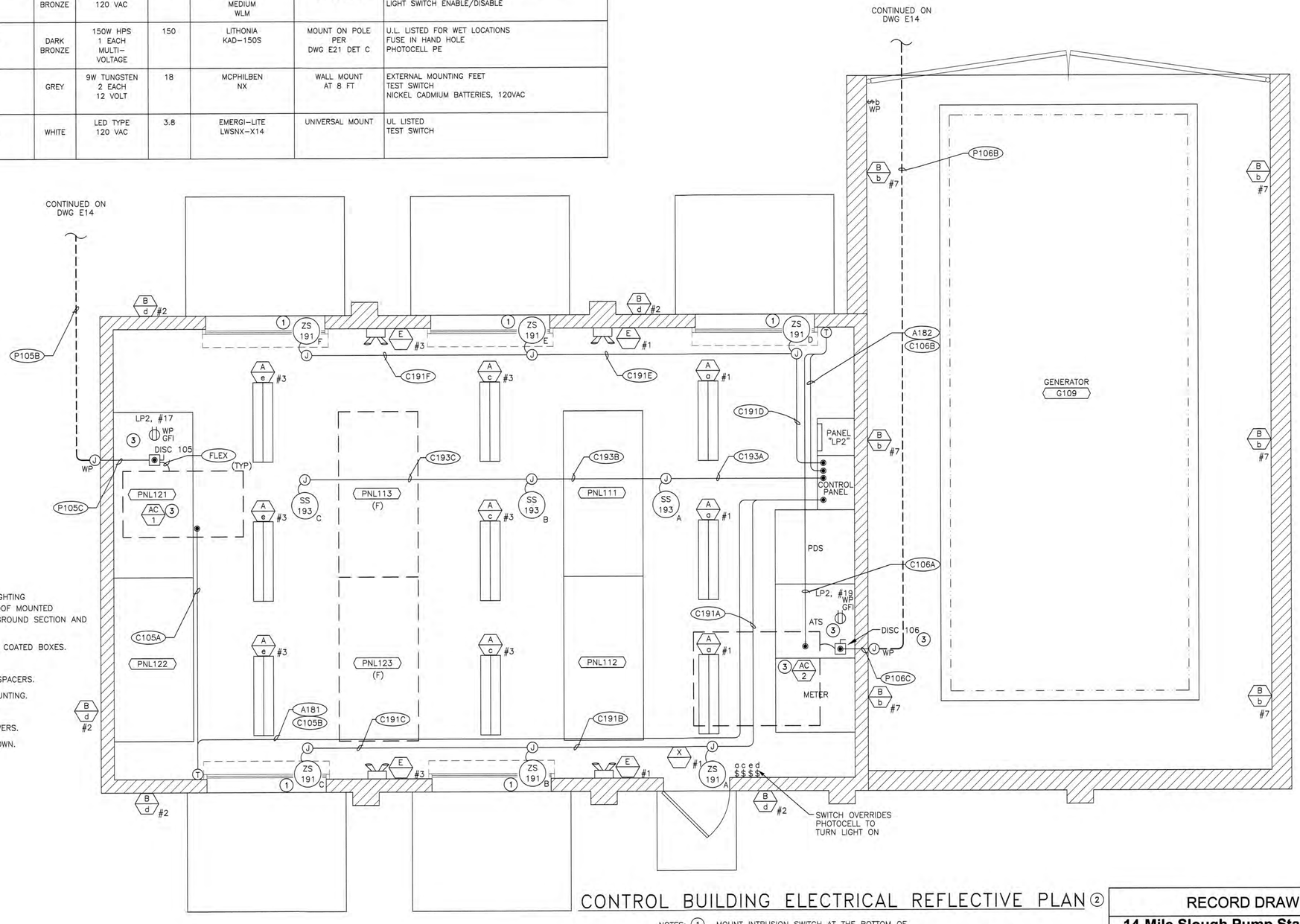
OUTSIDE BUILDING

NEMA 12 AREA

INSIDE BUILDING

FIXTURE SCHEDULE

CODE LETTER	FIXTURE TYPE	FINISH	FIXTURE LAMPS	WATTS/ FIXTURE	MANUFACTURER OR APPROVED EQUAL	MOUNTING ARRANGEMENT	NOTES
A	FLUORESCENT LUMINAIRE, 4 FT MOLDED FIBERGLASS POLYESTER BODY HIGH IMPACT ACRYLIC LENS	WHITE	32W T8 2 EACH 120 VAC	64	DAY-BRITE VAPORLUME V2HW	SWIVEL CANOPY AND STEMS 10 FT FROM FLOOR	UL LISTED FOR WET LOCATIONS 130° AMBIENT LOW TEMP ELECTRONIC BALLAST
B	SECURITY LIGHT HEAVY DUTY, WEATHERPROOF POWDER COAT FINISH, ALUMINUM CASE	DARK BRONZE	70W HPS 1 EACH 120 VAC	70	DAY-BRITE WALL LIGHT MEDIUM WLM	WALL MOUNT ON BUILDING	WITH PHOTOCELL CONTROL PE (WHERE SHOWN) U.L. LISTED FOR WET LOCATIONS LIGHT SWITCH ENABLE/DISABLE
C	AREA LIGHT RECTANGULAR SHAPE WITH WIRE GUARD SQUARE POLE ARM MOUNTED FIXTURE TYPE 3 DISTRIBUTION	DARK BRONZE	150W HPS 1 EACH MULTI- VOLTAGE	150	LITHONIA KAD-150S	MOUNT ON POLE PER DWG E21 DET C	U.L. LISTED FOR WET LOCATIONS FUSE IN HAND HOLE PHOTOCELL PE
E	EMERGENCY LIGHT PACK WITH INTEGRAL BATTERY CHARGER NEMA 4X ENCLOSURE	GREY	9W TUNGSTEN 2 EACH 12 VOLT	18	MCPHILBEN NX	WALL MOUNT AT 8 FT	EXTERNAL MOUNTING FEET TEST SWITCH NICKEL CADMIUM BATTERIES, 120VAC
X	EXIT LIGHTING WITH NICAD BATTERY STEEL HOUSING, DIRECTION KNOCKOUTS SELF POWERED, GREEN LETTERS	WHITE	LED TYPE 120 VAC	3.8	EMERGI-LITE LWSNX-X14	UNIVERSAL MOUNT	UL LISTED TEST SWITCH



GENERAL NOTES THAT APPLY TO LIGHTING AND RECEPTACLE PLAN

1. PROVIDE AND INSTALL NECESSARY WIRES IN SURFACE MOUNT 3/4" (MIN) EMT CONDUIT FOR LIGHTING AND RECEPTACLE ARRANGEMENT AS SHOWN IN NEMA 12 AREAS. IN NEMA 4X AREAS & FOR ROOF MOUNTED RECEPTACLES USE GRS-PVC CONDUITS. IF CONDUITS ARE ROUTED UNDERGROUND, THE UNDERGROUND SECTION AND CONCEALED RISER TO FIRST DEVICE BOX MAY BE PVC-40.
2. DEVICE BOXES AND CONDUIT BODIES SHALL BE METALLIC. IN NEMA 4X AREAS USE SS OR PVC COATED BOXES.
3. CONDUCTORS SHALL BE COPPER TYPE THHN, #12 AWG (MINIMUM).
4. MOUNT INDIVIDUAL CONDUITS USING SINGLE BOLT GALVANIZED PIPE STRAPS AND CLAMP BACK SPACERS.
5. USE SS EXPANSION WEDGE ANCHORS OR EPOXY ANCHORS AS NECESSARY FOR EQUIPMENT MOUNTING.
6. PROVIDE AND INSTALL FIXTURES PER SCHEDULE THIS PAGE, QUANTITY AS SHOWN IN DRAWING.
7. PROVIDE AND INSTALL ALL DEVICE BOXES, JUNCTION BOXES, RECEPTACLES, SWITCHES, AND COVERS.
8. DEVICES TO BE GROUND FAULT INTERRUPTER (GFI) TYPE AND WEATHERPROOF (WP) WHERE SHOWN.
9. SEE ELECTRICAL SYMBOLS AND ABBREVIATIONS DRAWING FOR SYMBOL DEFINITION.
10. ALL WORK SHALL CONFORM TO LOCAL CODES AND 2005 NATIONAL ELECTRIC CODE.
11 PAINT CONDUITS TO MATCH COLOR OF SURFACE ATTACHED TO.

CONTROL BUILDING ELECTRICAL REFLECTIVE PLAN ②

NOTES: (1) MOUNT INTRUSION SWITCH AT THE BOTTOM OF ROLL-UP DOOR.
(2) CIRCUITS SHOWN ARE POWERED FROM PANEL "LP2".
(3) LOCATED ON ROOF.

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14-Mile Slough Pump Station Upgrades

CONTROL BUILDING
ELECTRICAL REFLECTIVE PLAN

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: 3/8" = 1'	APPROVED BY: DATE:	SHEET No.	E13A
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CHECKED BY: XML	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No.	293-00-05-01
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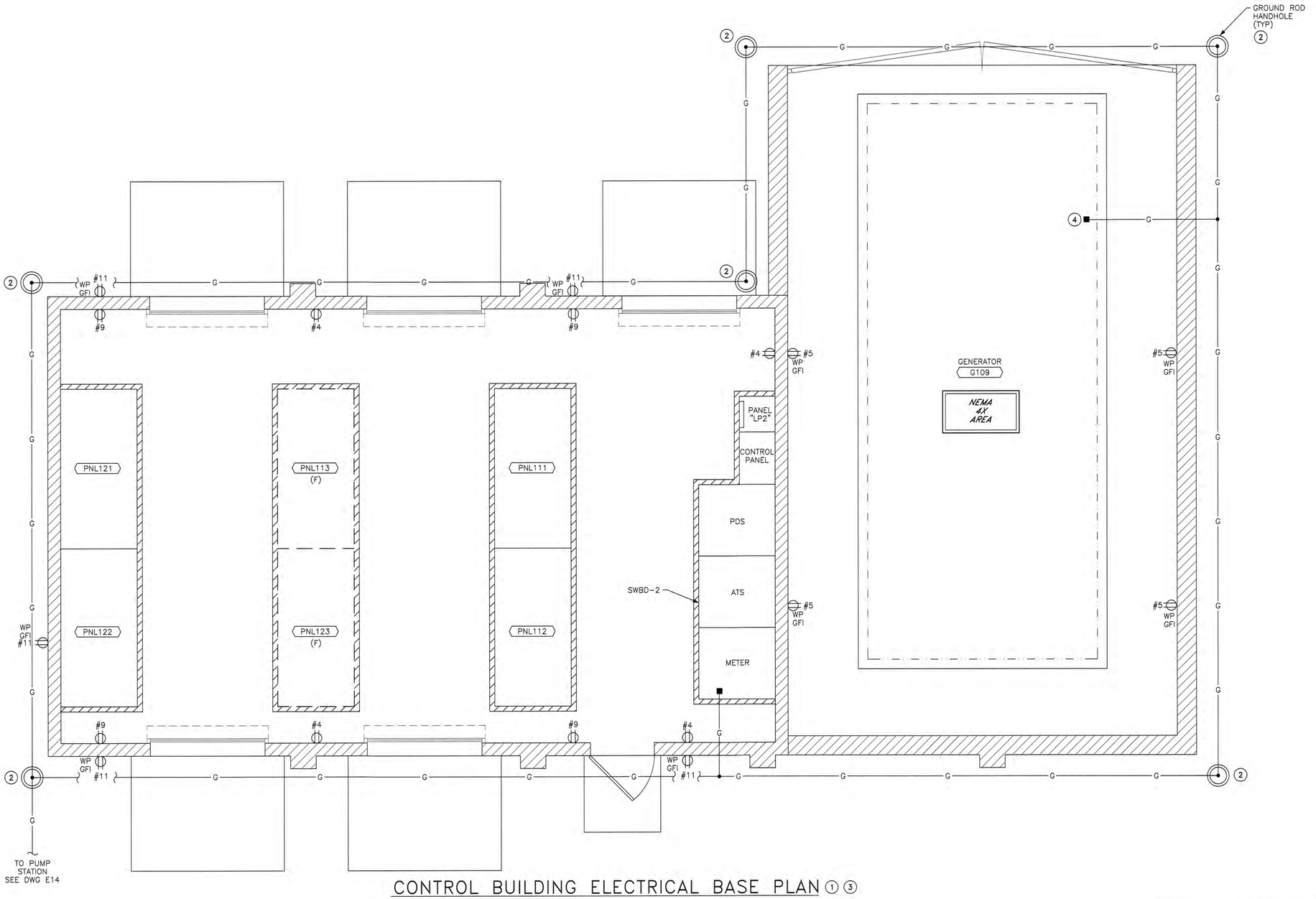
SCALE: 3/8" = 1'

NEMA 4X AREA
OUTSIDE BUILDING

NEMA 12 AREA
INSIDE BUILDING



CONTROL BUILDING ELECTRICAL BASE PLAN ① ③

NOTES:
1. SEE DWG E13A FOR CONDUIT & WIRE INSTALLATION REQUIREMENTS CIRCUITS SHOWN ARE FED FROM PANEL "LP2".
2. GROUND RING & GROUND BONDS TO CONSIST OF #2/0 BARE COPPER WITH 30" MINIMUM COVER. INSTALL GROUND ROD HANDHOLE PER DWG E23, DETAIL "E".
3. HOUSEKEEPING CONCRETE PAD PER DWG E21, DETAIL "A".
4. BOLT GROUND TO EQUIPMENT METAL FRAME WITH U.L. APPROVED GROUND CLAMPS.

T.E.E.m.
(916) 457-8144

FILE: 0507C E001

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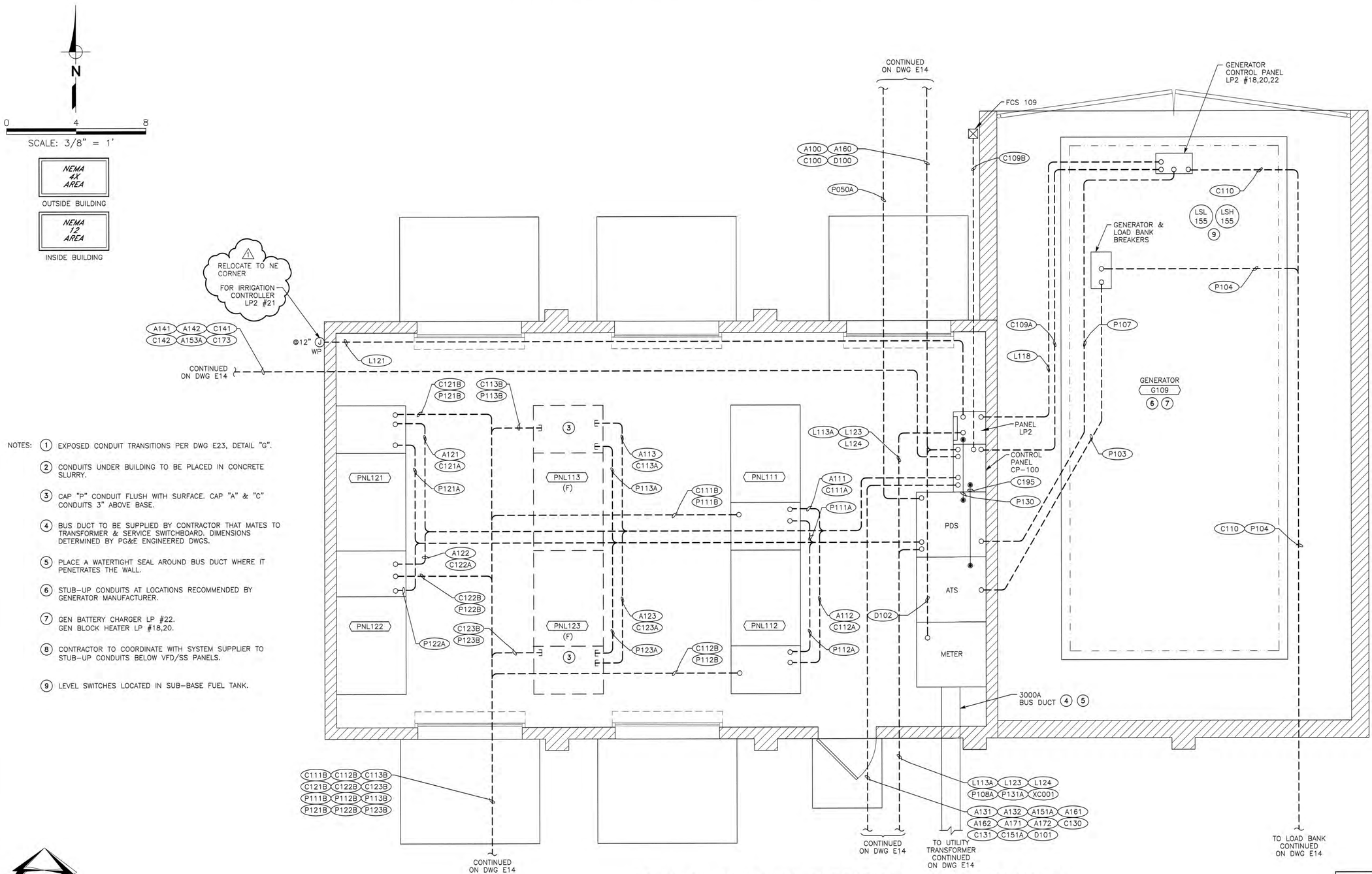
RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CONTROL BUILDING
ELECTRICAL BASE PLAN

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: 3/8" = 1'	APPROVED BY: DATE:	SHEET No.	E13B
DESIGNED BY: SMK		71 of 89 SHEETS	
DRAWN BY: ZK			
CHECKED BY: XML	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No.	293-00-05-01
RECORD Dwg.:			



NOTES:

1. EXPOSED CONDUIT TRANSITIONS PER DWG E23, DETAIL "G".
2. CONDUITS UNDER BUILDING TO BE PLACED IN CONCRETE SLURRY.
3. CAP "P" CONDUIT FLUSH WITH SURFACE. CAP "A" & "C" CONDUITS 3" ABOVE BASE.
4. BUS DUCT TO BE SUPPLIED BY CONTRACTOR THAT MATES TO TRANSFORMER & SERVICE SWITCHBOARD. DIMENSIONS DETERMINED BY PG&E ENGINEERED DWGS.
5. PLACE A WATERTIGHT SEAL AROUND BUS DUCT WHERE IT PENETRATES THE WALL.
6. STUB-UP CONDUITS AT LOCATIONS RECOMMENDED BY GENERATOR MANUFACTURER.
7. GEN BATTERY CHARGER LP #22.
   GEN BLOCK HEATER LP #18,20.
8. CONTRACTOR TO COORDINATE WITH SYSTEM SUPPLIER TO STUB-UP CONDUITS BELOW VFD/SS PANELS.
9. LEVEL SWITCHES LOCATED IN SUB-BASE FUEL TANK.

CONTROL BUILDING ELECTRICAL POWER PLAN ① ②

T.E.E.m.
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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CONTROL BUILDING
ELECTRICAL POWER PLAN

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: NONE	APPROVED BY: DATE:	SHEET No.	E13C
DESIGNED BY: SMK		72 of 89 SHEETS	
DRAWN BY: ZK			
CHECKED BY: XML	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No.	293-00-05-01
RECORD Dwg.:			

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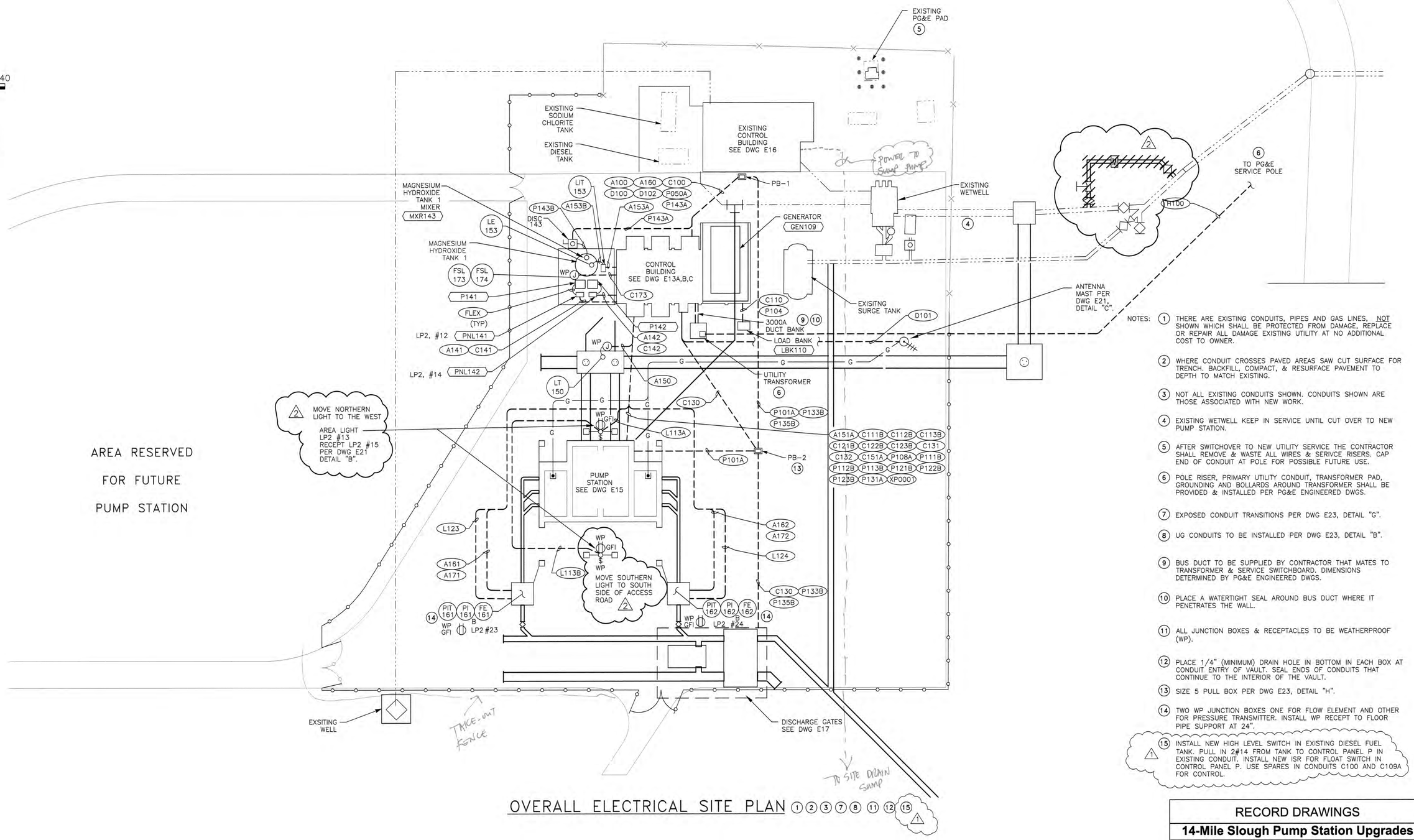
SCALE: 1" = 20'

NEMA 4X AREA

OUTSIDE BUILDING



AREA RESERVED

FOR FUTURE

PUMP STATION

OVERALL ELECTRICAL SITE PLAN ① ② ③ ⑦ ⑧ ⑪ ⑫ ⑮ △1

NOTES:

① THERE ARE EXISTING CONDUITS, PIPES AND GAS LINES, NOT SHOWN WHICH SHALL BE PROTECTED FROM DAMAGE, REPLACE OR REPAIR ALL DAMAGE EXISTING UTILITY AT NO ADDITIONAL COST TO OWNER.

② WHERE CONDUIT CROSSES PAVED AREAS SAW CUT SURFACE FOR TRENCH. BACKFILL, COMPACT, & RESURFACE PAVEMENT TO DEPTH TO MATCH EXISTING.

③ NOT ALL EXISTING CONDUITS SHOWN. CONDUITS SHOWN ARE THOSE ASSOCIATED WITH NEW WORK.

④ EXISTING WETWELL KEEP IN SERVICE UNTIL CUT OVER TO NEW PUMP STATION.

⑤ AFTER SWITCHOVER TO NEW UTILITY SERVICE THE CONTRACTOR SHALL REMOVE & WASTE ALL WIRES & SERIVCE RISERS. CAP END OF CONDUIT AT POLE FOR POSSIBLE FUTURE USE.

⑥ POLE RISER, PRIMARY UTILITY CONDUIT, TRANSFORMER PAD, GROUNDING AND BOLLARDS AROUND TRANSFORMER SHALL BE PROVIDED & INSTALLED PER PG&E ENGINEERED DWGS.

⑦ EXPOSED CONDUIT TRANSITIONS PER DWG E23, DETAIL "G".

⑧ UG CONDUITS TO BE INSTALLED PER DWG E23, DETAIL "B".

⑨ BUS DUCT TO BE SUPPLIED BY CONTRACTOR THAT MATES TO TRANSFORMER & SERVICE SWITCHBOARD. DIMENSIONS DETERMINED BY PG&E ENGINEERED DWGS.

⑩ PLACE A WATERTIGHT SEAL AROUND BUS DUCT WHERE IT PENETRATES THE WALL.

⑪ ALL JUNCTION BOXES & RECEPTACLES TO BE WEATHERPROOF (WP).

⑫ PLACE 1/4" (MINIMUM) DRAIN HOLE IN BOTTOM IN EACH BOX AT CONDUIT ENTRY OF VAULT. SEAL ENDS OF CONDUITS THAT CONTINUE TO THE INTERIOR OF THE VAULT.

⑬ SIZE 5 PULL BOX PER DWG E23, DETAIL "H".

⑭ TWO WP JUNCTION BOXES ONE FOR FLOW ELEMENT AND OTHER FOR PRESSURE TRANSMITTER. INSTALL WP RECEPT TO FLOOR PIPE SUPPORT AT 24".

△1 ⑮ INSTALL NEW HIGH LEVEL SWITCH IN EXISTING DIESEL FUEL TANK. PULL IN 2#14 FROM TANK TO CONTROL PANEL P IN EXISTING CONDUIT. INSTALL NEW ISR FOR FLOAT SWITCH IN CONTROL PANEL P. USE SPARES IN CONDUITS C100 AND C109A FOR CONTROL.

T.E.E.M.
(916) 457-8144
FILE: 0507C E014

RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

OVERALL ELECTRICAL SITE PLAN

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DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: 1" = 20'	APPROVED BY: DATE:	SHEET No.	
DESIGNED BY: SMK		E14	
DRAWN BY: ZK		73 of 89 SHEETS	
CHECKED BY: XML	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01	
RECORD Dwg.:			

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0 4 8

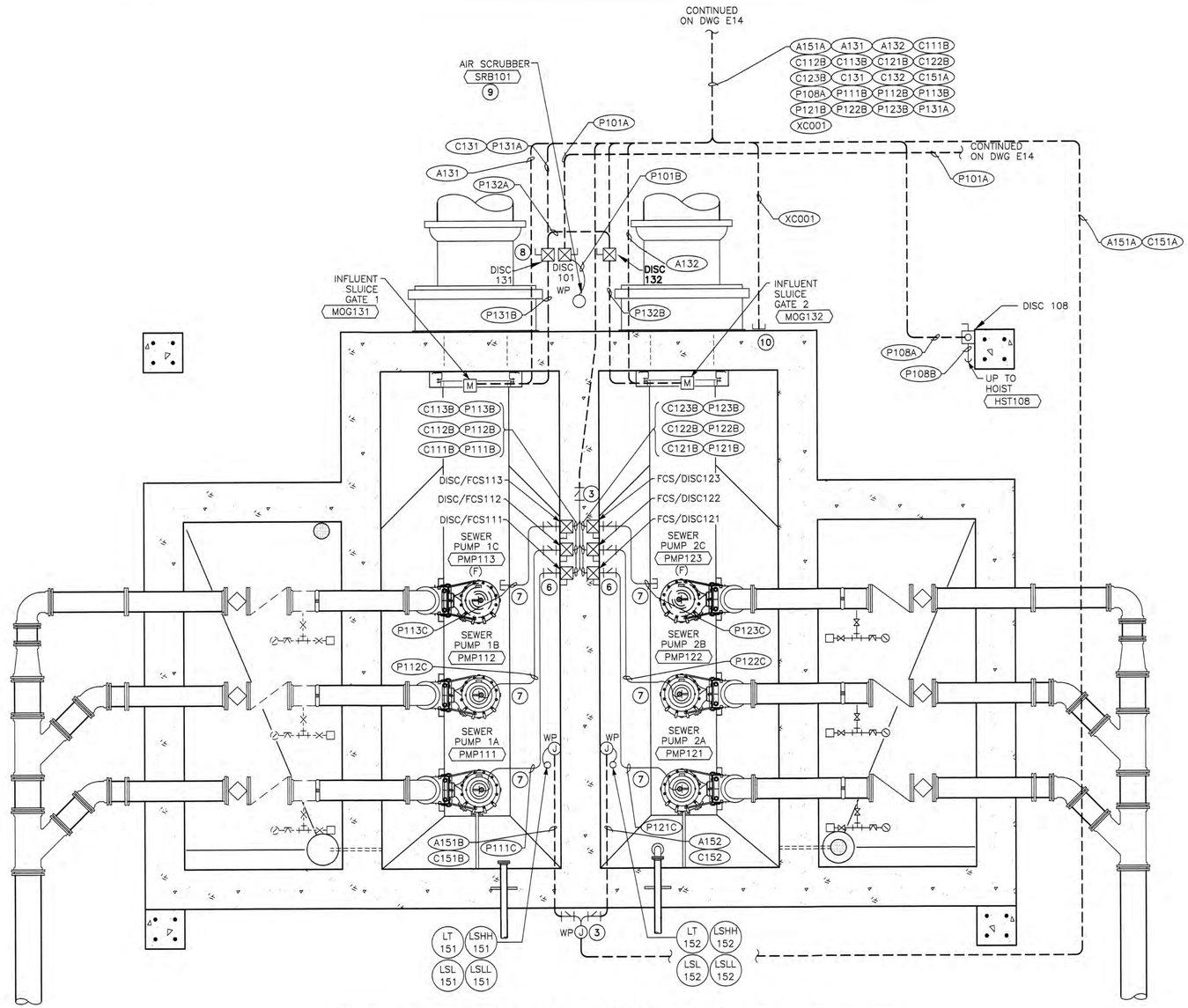
SCALE: 1" = 4'

NEMA 4X AREA

OUTSIDE CLASS 1 DIV 1 AREA

CLASS 1 DIV 1 AREA

INSIDE WETWELL



PUMP STATION ELECTRICAL SITE PLAN ①②④⑤

NOTES:

1. UG CONDUITS TO BE INSTALLED PER DWG E23, DETAIL "B".
2. EXPOSED CONDUIT TRANSITIONS PER DWG E23, DETAIL "G".
3. PLACE "EYS" TYPE EXPLOSION–PROOF BARRIER AT EACH TRANSITION OF DISCONNECT UG THAT GOES TO MCC. FILL WITH CHICO COMPOUND CROUSE–HINDS SERIES EYS OR EQUAL. LOCATE "EYS" BELOW DISCONNECT SWITCH.
4. ALL JUNCTION BOXES, SWITCHES, RECEPTACLES, DISCONNECT, & FIELD CONTROL STATIONS SHALL BE MOUNTED 18" ABOVE FLOOR AND HAVE EYS FITTING COMPLYING WITH ALL CLASS 1, DIV 1 REQUIREMENTS.
5. ALL JUNCTION BOXES IN CLASS 1, DIV 1 AREA SHALL BE EXPLOSION RATED.
6. PLACE "EYS" TYPE BARRIER AT TRANSITION FROM PUMP TO DISCONNECT. FILL WITH EXPANSION TYPE FOAM. LOCATE "EYS" BELOW DISCONNECT SWITCH.
7. STAINLESS STEEL KELLUM GROUP PER DWG E21 DETAIL "E" SIZED FOR PUMP MANUFACTURER CABLE.
8. INSTALL DISCONNECTS DISC 101,131 & 132 PER DWG E22 DETAIL "G".
9. COORDINATE FINAL LOCATION IN FIELD.
10. STUB OUT 6" ABOVE GRADE AND CAP CONDUITS.

T.E.E.M.
(916) 457–8144

FILE: 0507C E001

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

PUMP STATION
ELECTRICAL SITE PLAN

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE:	1/4" = 1'	APPROVED BY: DATE:	SHEET No.
DESIGNED BY:	SMK		E15
DRAWN BY:	ZK		74 of 89 SHEETS
CHECKED BY:	XML	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01
RECORD Dwg.:			

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0 4 8

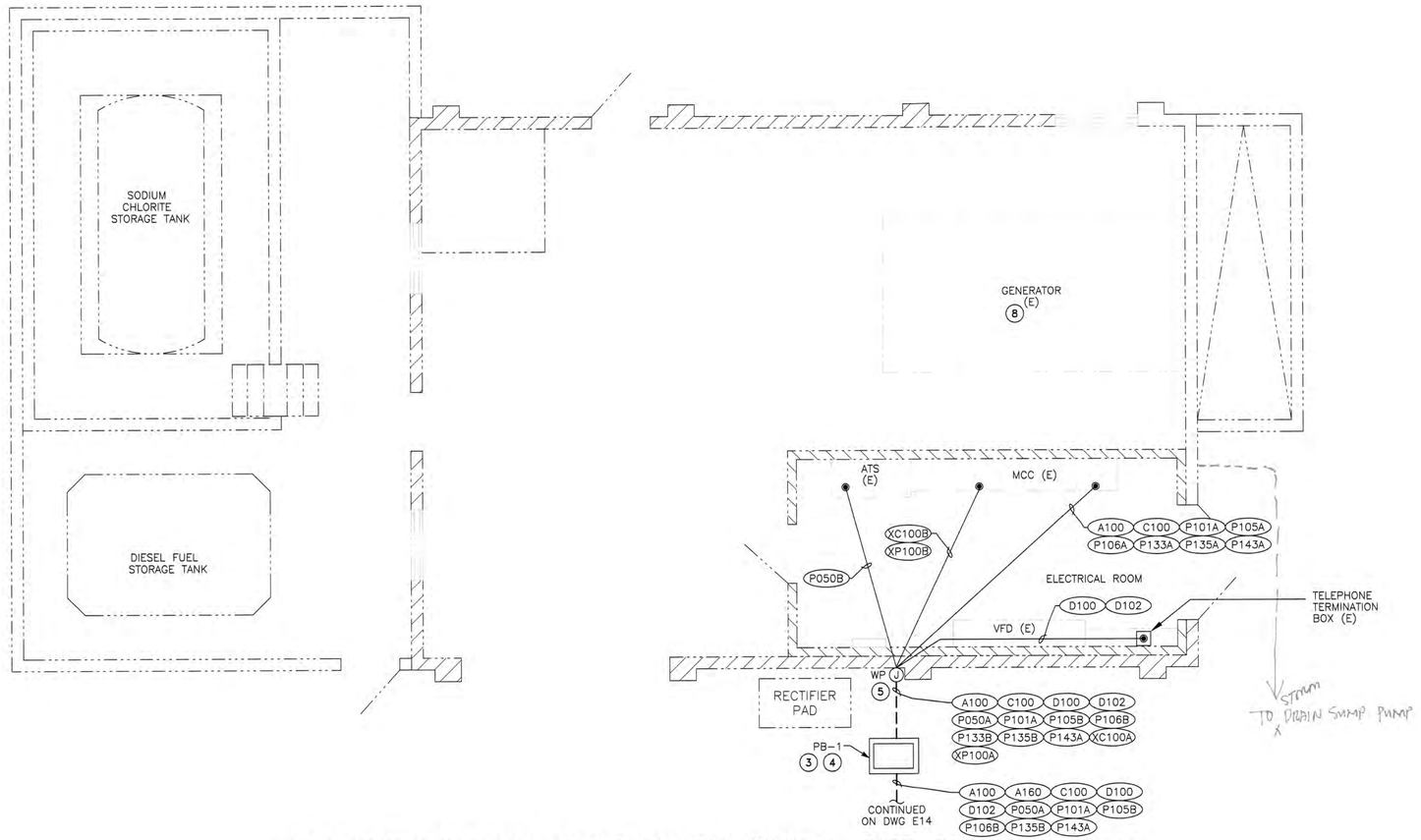
SCALE: 1" = 4'

NEMA 4X AREA

OUTSIDE CLASS 1 DIV 1 AREA

CLASS 1 DIV 1 AREA

INSIDE WETWELL



EXISTING CONTROL BUILDING ELECTRICAL SITE PLAN (1)(2)(6)(7)(9)(10)

NOTES:

(1) UG CONDUITS TO BE INSTALLED PER DWG E23, DETAIL "B".

(2) EXPOSED CONDUIT TRANSITIONS PER DWG E23, DETAIL "G".

(3) INSTALL 17" x 30" PULL BOX PER DWG E23, DETAIL "H".

(4) A & C CONDUITS SHALL BE IN ONE SIDE AND P CONDUITS IN THE OTHER SIDE.

(5) INSTALL WEATHERPROOF TRANSITION JUNCTION BOX AT ALL TRANSITIONS. CONTRACTOR SHALL CUT HOLES FOR ALL WALL PENETRATIONS. SEAL AROUND CONDUITS AND PAINT TO MATCH EXISTING SURFACE COLOR. CONDUITS TO TERMINATE INTO SIDE OR BOTTOM OF PANELS.

(6) SUPPORT ALL OVERHEAD CONDUITS PER DWG E23, DETAIL "A".

(7) PUMPS & VFD DRIVES TO REMAIN IN SERVICE UNTIL CUT OVER TO NEW PUMP STATION HAS BEEN COMPLETED & TESTED. REMOVE & TURN OVER VFD DRIVES & PUMPS TO OWNER. EXISTING BREAKERS TO BE SPARE.

(8) TURN OVER GENERATOR & DAY TANK TO CITY AFTER NEW POWER SERVICE HAS BEEN COMPLETED AND TESTED. "SAFETY" CONDUITS TO GENERATOR.

(9) NOT ALL EXISITNG CONDUITS SHOWN. CONDUITS SHOWN ARE THOSE ASSOCIATE WITH NEW WORK.

(10) THESE ARE EXISTING CONDUITS, PIPES AND GAS LINES, NOT SHOWN WHICH SHALL BE PROTECTED FROM DAMAGE. REPLACE OR REPAIR ALL DAMAGE EXISTING UTILITY AT NO ADDITIONAL COST TO OWNER.

T.E.E.M.
(916) 457-8144

FILE: 0507C E016

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

EXISTING CONTROL BUILDING ELECTRICAL SITE PLAN

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

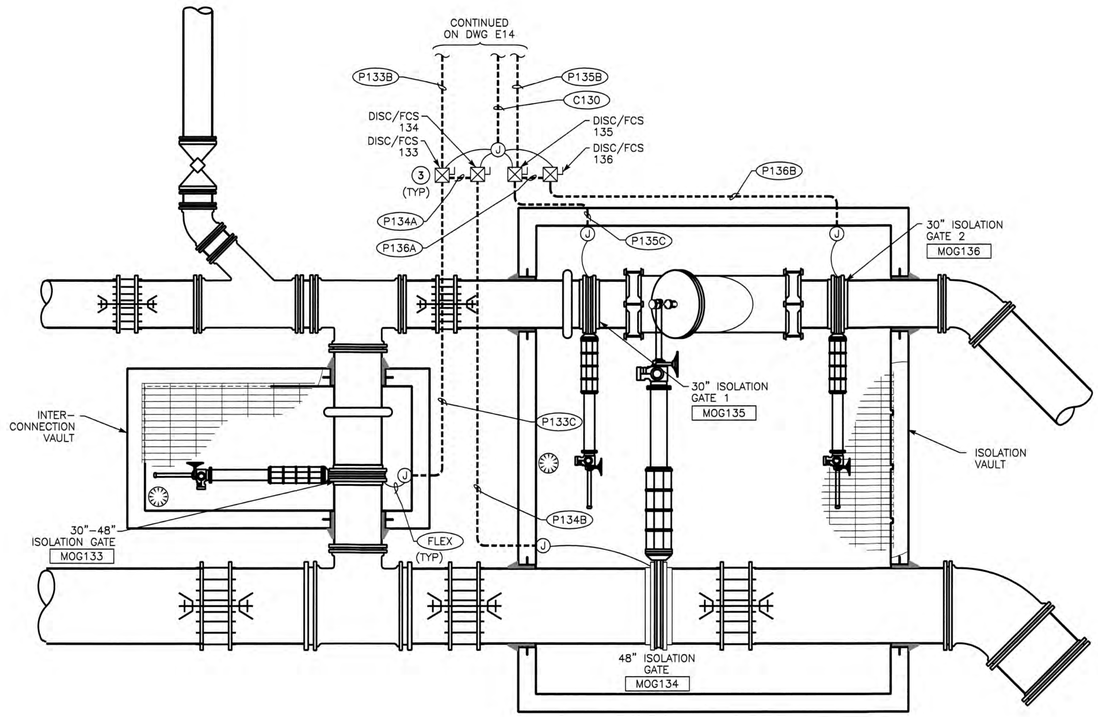
SCALE:	1/4" = 1'	APPROVED BY: DATE:	SHEET No.
DESIGNED BY:	SMK		E16
DRAWN BY:	ZK		75 of 89 SHEETS
CHECKED BY:	XML	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01
RECORD Dwg.:			

N

0 4 8

SCALE: 1" = 4'

NEMA 4X AREA



DISCHARGE GATE ELECTRICAL SITE PLAN ①②④

NOTES:
① UG CONDUITS TO BE INSTALLED PER DWG E23, DETAIL "B".
② EXPOSED CONDUIT TRANSITIONS PER DWG E23, DETAIL "G".
③ 30A NEMA 4X SS FUSED DISCONNECT SWITCH WITH FUSES SIZED TO PROTECT EQUIPMENT. LOCATE DISCONNECT BELOW VALVE CONTROLLER.
④ ALL JUNCTION BOXES TO BE WEATHERPROOF (WP).

T.E.E.m.
(916) 457-8144

FILE: 0507C E017

Underground Service Alert
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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

DISCHARGE GATE
ELECTRICAL SITE PLAN

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE:	1"=4'	APPROVED BY: DATE:	SHEET No.
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DRAWN BY:	ZK		76 of 89 SHEETS
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CONDUIT & WIRE ROUTING SCHEDULE

REF DWG	CONDUIT NO.	FROM	TO	CONDUIT QTY	CONDUIT SIZE	CONDUIT TYPE	POWER WIRE QTY	POWER WIRE SIZE	GND SIZE	CONTROL WIRE QTY	CONTROL WIRE SIZE	SIGNAL WIRE QTY	SIGNAL WIRE SIZE	NOTES
E15	A 100	CP-100	MCC-M (E)	1	1-1/2"	GRS-PVC	–	–	#12	–	–	6	#16 TSPR	
E13C	A 111	CP-100	PNL111	1	1"	GRS-PVC	–	–	#12	–	–	3	#16 TSPR	
E13C	A 112	CP-100	PNL112	1	1"	GRS-PVC	–	–	#12	–	–	3	#16 TSPR	
E13C	A 113	CP-100	PNL113 (F)	1	1"	GRS-PVC	–	–	–	–	–	–	–	PULL ROPE
E13C	A 121	CP-100	PNL121	1	1"	GRS-PVC	–	–	#12	–	–	3	#16 TSPR	
E13C	A 122	CP-100	PNL122	1	1"	GRS-PVC	–	–	#12	–	–	3	#16 TSPR	
E13C	A 123	CP-100	PNL123 (F)	1	1"	GRS-PVC	–	–	–	–	–	–	–	PULL ROPE
E15	A 131	CP-100	MOG131	1	1"	GRS-PVC	–	–	#12	–	–	3	#16 TSPR	
E15	A 132	CP-100	MOG132	1	1"	GRS-PVC	–	–	#12	–	–	3	#16 TSPR	
E14	A 141	CP-100	PNL141	1	1"	GRS-PVC	–	–	#12	–	–	2	#16 TSPR	
E14	A 142	CP-100	PNL142	1	1"	GRS-PVC	–	–	#12			2	#16 TSPR	
E14	A 150	CP-100	LT150	1	1"	GRS-PVC	–	–	#12	2	#14	2	#16 TSPR	
E15	A 151 A	CP-100	LT151/2 JB	1	1-1/2"	GRS-PVC	–	–	#12	6	#14	3	#16 TSPR	
E15	A 151 B	LT151/2 JB	LT151	1	1"	GRS-PVC	–	–	–	–	–	MNFR CBL		
E15	A 152	LT151/2 JB	LT152	1	1"	GRS-PVC	–	–	–	–	–	MNFR CBL		
E14	A 153 A	CP-100	LIT153	1	1"	GRS-PVC	–	–	#12	2	#14	1	#16 TSPR	
E14	A 153 B	LIT153	LE153	1	1"	GRS-PVC	–	–	–	–	–	MNFR CBL		
E14	A 160	CP-100	PIT160	1	1"	GRS-PVC	–	–	#12	2	#14	2	#16 TSPR	
E14	A 161	CP-100	PIT161	1	1"	GRS-PVC	–	–	#12	2	#14	2	#16 TSPR	
E14	A 162	CP-100	PIT162	1	1"	GRS-PVC	–	–	#12	2	#14	2	#16 TSPR	
E14	A 171	CP-100	FE171	1	1"	GRS-PVC	–	–	#8	–	–	MNFR CBL		
E14	A 172	CP-100	FE172	1	1"	GRS-PVC	–	–	#8	–	–	MNFR CBL		
E13A	A 181	CP-100	T-STAT 1	1	1"	GRS	–	–	#12	–	–	2	#16 TSPR	
E13A	A 182	CP-100	T-STAT 2	1	1"	GRS	–	–	#12	–	–	2	#16 TSPR	
E16	C 100	CP-100	MCC-M (E)	1	2"	PVC-40	–	–	#12	40	#14	–	–	GRS INSIDE BLDG
E13A	C 105 A	AC1	T-STAT 1	1	1"	GRS-PVC	–	–	#12	4	#14	–	–	
E13A	C 105 B	T-STAT 1	CP-100	1	1"	GRS	–	–	#12	4	#14	–	–	
E13A	C 106 A	AC2	T-STAT 2	1	1"	GRS-PVC	–	–	#12	4	#14	–	–	
E13A	C 106 B	T-STAT 2	CP-100	1	1"	GRS	–	–	#12	4	#14	–	–	
E13C	C 109 A	CP-100	GEN109	1	1"	GRS-PVC	–	–	#12	12	#14	–	–	
E13C	C 109 B	CP-100	FCS109	1	1"	GRS-PVC	–	–	#12	6	#14	–	–	
E14	C 110	GEN109	LBK110	1	1"	GRS-PVC	–	–	#12	6	#14	–	–	
E13C	C 111 A	CP-100	PNL111	1	1"	GRS-PVC	–	–	#12	16	#14	–	–	
E15	C 111 B	PNL111	FCS111	1	1"	GRS-PVC	–	–	#12	10	#14	–	–	
E13C	C 112 A	CP-100	PNL112	1	1"	GRS-PVC	–	–	#12	16	#14	–	–	
E15	C 112 B	PNL112	FCS112	1	1"	GRS-PVC	–	–	#12	10	#14	–	–	
E13C	C 113 A	CP-100	PNL113 (F)	1	1"	GRS-PVC	–	–	–	–	–	–	–	PULL ROPE
E15	C 113 B	PNL113 (F)	FCS113	1	1"	GRS-PVC	–	–	–	–	–	–	–	PULL ROPE
E13C	C 121 A	CP-100	PNL121	1	1"	GRS-PVC	–	–	#12	16	#14	–	–	
E15	C 121 B	PNL121	FCS121	1	1"	GRS-PVC	–	–	#12	10	#14	–	–	
E13C	C 122 A	CP-100	PNL122	1	1"	GRS-PVC	–	–	#12	16	#14	–	–	
E15	C 122 B	PNL122	FCS122	1	1"	GRS-PVC	–	–	#12	10	#14	–	–	
E13C	C 123 A	CP-100	PNL123 (F)	1	1"	GRS-PVC	–	–	–	–	–	–	–	PULL ROPE
E15	C 123 B	PNL123 (F)	FCS123	1	1"	GRS-PVC	–	–	–	–	–	–	–	PULL ROPE
E17	C 130	CP-100	VALVE J-BOX	1	1-1/2"	GRS-PVC	–	–	#12	50	#14	–	–	
E15	C 131	CP-100	DICS131	1	1"	PVC-40	–	–	#12	8	#14	–	–	
E14	C 141	CP-100	PNL141	1	1"	GRS-PVC	2	#12	#12	8	#14	–	–	LP2 #12
E14	C 142	CP-100	PNL142	1	1"	GRS-PVC	2	#12	#12	8	#14	–	–	LP2 #14
E15	C 151 A	CP-100	LIT151/2 JB	1	1"	PVC-40	–	–	#12	16	#14	–	–	
E15	C 151 B	LIT151/2 JB	LSL/LSLL/LSHH151	1	1"	GRS-PVC	–	–	#12	8	#14	–	–	
E15	C 152	LIT151/2 JB	LSL/LSLL/LSHH152	1	1"	GRS-PVC	–	–	#12	8	#14	–	–	
E14	C 173	CP-100	FSL173/4 JB	1	1"	GRS-PVC	2	#12	#12	10	#14	–	–	LP2 #16
E13A	C 191 A	CP-100	ZS191A JB	1	1"	GRS	–	–	#12	8	#14	–	–	
E13A	C 191 B	ZS191A JB	ZS191B JB	1	1"	GRS	–	–	#12	6	#14	–	–	
E13A	C 191 C	ZS191B JB	ZS191C JB	1	1"	GRS	–	–	#12	4	#14	–	–	
E13A	C 191 D	CP-100	ZS191D JB	1	1"	GRS	–	–	#12	8	#14	–	–	
E13A	C 191 E	ZS1191D JB	ZS191E JB	1	1"	GRS	–	–	#12	6	#14	–	–	
E13A	C 191 F	ZS1191E JB	ZS191F	1	1"	GRS	–	–	#12	4	#14	–	–	
E13A	C 193 A	CP-100	ZS193A	1	1"	GRS	2	#12	#14	8	#14	–	–	
E13A	C 193 B	ZS193A	ZS193B	1	1"	GRS	2	#12	#14	6	#14	–	–	
E13A	C 193 C	ZS193B	ZS193C	1	1"	GRS	2	#12	#14	4	#14	–	–	
E13C	C 195	CP-100	ATS195	1	1"	GRS	–	–	#12	8	#14	–	–	
E15	D 100	CP-100	TELCO PANEL (E)	1	1"	GRS-PVC	–	–	#12	–	–	3	4PR CAT 5	
E14	D 101	CP-100	ANTENNA	1	2"	GRS-PVC	–	–	#8	–	–	1	1/2"COAX	

CONDUIT & WIRE ROUTING SCHEDULE

REF DWG	CONDUIT NO.	FROM	TO	CONDUIT QTY	CONDUIT SIZE	CONDUIT TYPE	POWER WIRE QTY	POWER WIRE SIZE	GND SIZE	CONTROL WIRE QTY	CONTROL WIRE SIZE	SIGNAL WIRE QTY	SIGNAL WIRE SIZE	NOTES
E16	D 102	SWBD-2	TELCO PANEL (E)	1	1"	GRS-PVC	–	–	#12	–	–	1	4PR CAT 5	
E14	H 100	UTILITY	UTILITY XFMR	2	5"	PVC-40	–	–	–	–	–	–	–	PULL ROPE
E14	L 113 A	LP2	AREA LIGHT	1	1"	PVC-40	4	#10	#10	–	–	–	–	
E14	L 113 B	AREA LIGHT	AREA LIGHT	1	1"	PVC-40	4	#10	#10	–	–	–	–	
E13C	L 118	LP2	GEN109	1	1"	PVC-40	6	#10	#10	–	–	–	–	
E13C	L 121	LP2	IRRIGATION CONTROLLER	1	1"	GRS-PVC	–	–	–	–	–	–	–	PULL ROPE
E14	L 123	LP2	FLOWMETER VAULT 1 RECEPT	1	1"	PVC-40	2	#10	#10	–	–	–	–	
E14	L 124	LP2	FLOWMETER VAULT 2 RECEPT	1	1"	PVC-40	2	#10	#10	–	–	–	–	
E14	P 050 A	SWBD-2	J-BOX	2	3"	PVC-40	3	#350 MCM	#1/0	–	–	–	–	
E16	P 050 B	J-BOX	MCC-M (E)	2	3"	GRS	3	#350 MCM	#1/0	–	–	–	–	
E15	P 101 A	MCC-M (E)	DISC101	1	1"	PVC-40	3	#10	#10	–	–	–	–	GRS INSIDE BLDG
E15	P 101 B	DISC101	SRB101	1	1"	GRS-PVC	3	#10	#10	–	–	–	–	
E13C	P 103	SWBD-2	GEN109	8	4"	PVC-40	3	#500 MCM	#500 MCM	–	–	–	–	
E14	P 104	GEN109	LBK110	4	4"	PVC-40	3	#500 MCM	#250 MCM	–	–	–	–	
E16	P 105 A	MCC-M (E)	J-BOX	1	1"	GRS	3	#10	#10	–	–	–	–	
E16	P 105 B	J-BOX	J-BOX	1	1"	PVC-40	3	#10	#10	–	–	–	–	
E13A	P 105 C	J-BOX	AC1	1	1"	GRS-PVC	3	#10	#10	–	–	–	–	
E16	P 106 A	MCC-M (E)	J-BOX	1	1"	GRS	3	#10	#10	–	–	–	–	
E13A	P 106 B	J-BOX	J-BOX	1	1"	PVC-40	3	#10	#10	–	–	–	–	
E13A	P 106 C	J-BOX	AC2	1	1"	GRS-PVC	3	#10	#10	–	–	–	–	
E14	P 107	SWBD-2	HTR106	1	1"	PVC-40	2	#6	#8	–	–	–	–	
E15	P 108 A	SWBD-2	DISC108	1	1"	PVC-40	3	#10	#10	–	–	–	–	
E15	P 108 B	DISC108	HST108	1	1"	GRS-PVC	3	#10	#10	–	–	–	–	
E13C	P 111 A	SWBD-2	PNL111	2	3"	PVC-40	3	#350 MCM	#1/0	–	–	–	–	
E15	P 111 B	PNL111	DISC111	2	4"	PVC-40	3	#350 MCM	#1/0	–	–	–	–	VFD RATED CABLE
E15	P 111 C	DISC111	P111	2	4"	GRS-PVC	MNFR CBL			–	–	–	–	
E13C	P 112 A	SWBD-2	PNL112	2	3"	PVC-40	3	#350 MCM	#1/0	–	–	–	–	
E15	P 112 B	PNL112	DISC112	2	4"	PVC-40	3	#350 MCM	#1/0	–	–	–	–	VFD RATED CABLE
E15	P 112 C	DISC112	P112	2	4"	GRS-PVC	MNFR CBL			–	–	–	–	
E13C	P 113 A	SWBD-2	PNL113 (F)	2	3"	PVC-40	–	–		–	–	–	–	PULL ROPE
E15	P 113 B	PNL113 (F)	DISC113	2	4"	PVC-40	–	–		–	–	–	–	PULL ROPE
E15	P 113 C	DISC113	P113 (F)	2	4"	GRS-PVC	–	–		–	–	–	–	PULL ROPE
E13C	P 121 A	SWBD-2	PNL121	2	3"	PVC-40	3	#350 MCM	#1/0	–	–	–	–	
E15	P 121 B	PNL121	DISC121	2	4"	PVC-40	3	#350 MCM	#1/0	–	–	–	–	VFD RATED CABLE
E15	P 121 C	DISC121	P121	2	4"	GRS-PVC	MNFR CBL			–	–	–	–	
E13C	P 122 A	SWBD-2	PNL122	2	3"	PVC-40	3	#350 MCM	#1/0	–	–	–	–	
E15	P 122 B	PNL122	DISC122	2	4"	PVC-40	3	#350 MCM	#1/0	–	–	–	–	VFD RATED CABLE
E15	P 122 C	FCS122	P122	2	4"	GRS-PVC	MNFR CBL			–	–	–	–	
E13C	P 123 A	SWBD-2	PNL123 (F)	2	3"	PVC-40	–	–		–	–	–	–	PULL ROPE
E15	P 123 B	PNL123 (F)	FCS123	2	4"	PVC-40	–	–		–	–	–	–	PULL ROPE
E15	P 123 C	FCS123	P123 (F)	2	4"	GRS-PVC	–	–		–	–	–	–	PULL ROPE
E13C	P 130	SWBD-2	XFMR-LP2	1	1-1/2"	GRS	3	#8	#8	–	–	–	–	
E15	P 131 A	SWBD-2	DISC131	1	1"	PVC-40	3	#8	#8	–	–	–	–	
E15	P 131 B	DISC131	MOG131	1	1"	GRS-PVC	3	#10	#10	4	#14	–	–	
E15	P 132 A	DISC131	DISC132	1	1"	GRS-PVC	3	#10	#10	4	#14	–	–	
E15	P 132 B	DISC132	MOG132	1	1"	GRS-PVC	3	#10	#10	4	#14	–	–	
E16	P 133 A	MCC-M (E)	J-BOX	1	1-1/2"	GRS	3	#8	#8	–	–	–	–	
E18	P 133 B	J-BOX	DISC135	1	1-1/2"	PVC-40	3	#8	#8	–	–	–	–	
E18	P 133 C	DISC135	MOG135	1	1"	GRS-PVC	3	#10	#10	10	#14	–	–	
E16	P 134 A	DISC135	DISC136	1	1"	GRS-PVC	3	#10	#10	–	–	–	–	
E18	P 134 B	DISC136	MOG136	1	1"	GRS-PVC	3	#10	#10	10	#14	–	–	
E16	P 135 A	MCC-M (E)	J-BOX	1	1-1/2"	GRS	3	#8	#8	–	–	–	–	GRS INSIDE BLDG
E18	P 135 B	J-BOX	DISC135	1	1-1/2"	PVC-40	3	#8	#8	–	–	–	–	
E18	P 135 C	DISC135	MOG135	1	1"	GRS-PVC	3	#10	#10	10	#14	–	–	
E16	P 136 A	DISC135	DISC136	1	1"	GRS-PVC	3	#10	#10	–	–	–	–	
E18	P 136 B	DISC136	MOG136	1	1"	GRS-PVC	3	#10	#10	10	#14	–	–	
E14	P 143 A	MCC-M (E)	DISC143	1	1"	PVC-40	3	#10	#10	–	–	–	–	
E14	P 143 B	DISC143	MXR143	1	1"	GRS-PVC	3	#10	#10	–	–	–	–	
E15	XC 001	CP-100	PUMP STATION	2	1"	GRS-PVC	–	–		–	–	–	–	PULL ROPE
E16	XC 100 A	MCC-M (E)	J-BOX	2	1"	GRS	–	–		–	–	–	–	PULL ROPE
E16	XC 100 B	J-BOX	PB-1	2	1"	GRS-PVC	–	–		–	–	–	–	PULL ROPE
E15	XP 100 A	MCC-M (E)	J-BOX	2	2"	GRS	–	–		–	–	–	–	PULL ROPE
E15	XP 100 B	J-BOX	PB-1	2	2"	PVC-40	–	–		–	–	–	–	PULL ROPE

2 CHANGE CONDUITS IN THE EXISTING CONTROL BLDG. TO GRS-PVC.

NOTE: ADD CONDUIT FOR STORM SUMP PUMP

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FILE: 0507C E018

1 ENTIRE SHEET

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REV. No.	DISCRIPTION	DATE	BY	Aprv'd By
1	ADDENDUM NO.6	5/06	SK	PF
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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CONDUIT SCHEDULE

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE:
DESIGNED BY: SMK
DRAWN BY: ZK
CHECKED BY: XML
RECORD Dwg.:

APPROVED BY: DATE: _____
ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES

SHEET No. E18
77 of 89 SHEETS
PROJECT No. 293-00-05-01

CERTIFICATE OF COMPLIANCE (Part 1 of 4) LTG-1-C

PROJECT NAME: 14 MILE SLOUGH PUMP STATION		DATE: 03/20/2006
PROJECT ADDRESS: STOCKTON		Building Permit #
PRINCIPAL DESIGNER - LIGHTING	TELEPHONE	
DOCUMENTATION AUTHOR: Connerly & Associates, Inc.	TELEPHONE: (916) 456-4784	Checked by/Date Enforcement Agency Use

GENERAL INFORMATION

DATE OF PLANS	BUILDING CONDITIONED FLOOR AREA: 912 Sq.Ft.		CLIMATE ZONE: 12	
BUILDING TYPE	[X] NONRESIDENTIAL	[ ] HIGH RISE RESIDENTIAL	[ ] HOTEL/MOTEL GUEST ROOM	
	[X] CONDITIONED SPACES	[ ] UNCONDITIONED SPACES	[ ] INDOOR & OUTDOOR SIGNS	
PHASE OF CONSTRUCTION	[ ] NEW CONSTRUCTION	[ ] ADDITION	[ ] ALTERATION	
METHOD OF LIGHTING COMPLIANCE	[ ] COMPLETE BUILDING	[X] AREA CATEGORY	[ ] TAILORED	[ ] PERFORMANCE
	[ ] COMMON LIGHTING			

STATEMENT OF COMPLIANCE

This Certificate of Compliance lists the building features and performance specifications needed to comply with Title 24, Parts 1 and 6 of the California Code of Regulations. This certificate applies only to building lighting requirements.

The documentation preparer hereby certifies that the documentation is accurate and complete.

DOCUMENTATION AUTHOR	SIGNATURE	DATE
Kirk Clark		3-20-06

The Principal Lighting Designer hereby certifies that the proposed building design represented in this set of construction documents is consistent with the other compliance forms and worksheets, with the specifications, and with any other calculations submitted with this permit application. The proposed building has been designed to meet the lighting requirements contained in Sections 110, 119, 130 through 132, and 146, 148 and 149 of Title 24, Part 6.

Please Check One: (These sections of the Business and Professions Code are printed in full in the Nonresidential Manual.)

[ ] I hereby affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code to sign this document as the person responsible for its preparation; and that I am licensed in the State of California as a civil engineer or electrical engineer, or I am a licensed architect.

[ ] I affirm that I am eligible under the provisions of Division 3 of the Business and Professions Code by Section 5537.2 or 6737.3 to sign this document as the person responsible for its preparation; and that I am a licensed contractor performing this work.

[ ] I affirm that I am eligible under the exemption to Division 3 of the Business and Professions Code to sign this document because it pertains to a structure or type of work described as exempt pursuant to Business and Professions Code Sections 5537, 5538 and 6737.1.

PRINCIPAL LIGHTING DESIGNER - NAME	SIGNATURE	DATE	LIC. #

LIGHTING MANDATORY MEASURES

Indicate location on plans of Note Block for Mandatory Measures

LIGHTING COMPLIANCE FORMS & WORKSHEETS (Check box if worksheet is included)

- [X] LTG-1-C, Parts 1 of 4 and 2 of 4: Certificate of Compliance. Part 1 of 4 and 2 of 4 are required for all submittals
- [X] LTG-1-C, Part 3 of 4: Certificate of Compliance. Part 3 of 4 submittal is required only if Control Credits are claimed
- [X] LTG-1-C, Part 4 of 4: Certificate of Compliance. Part 4 of 4 submittal is required when lighting controls are installed
- [X] LTG-2-C: Interior Lighting Schedule
- [ ] LTG-3-C: Portable Lighting Worksheet
- [ ] LTG-4-C: Lighting Controls Credit Worksheet
- [X] LTG-5-C: Interior Lighting Power Allowance
- [ ] LTG-6-C: Tailored Method Worksheet
- [ ] LTG-7-C: Room Cavity Ratio Worksheet
- [ ] LTG-8-C: Common Lighting Systems Method Worksheet
- [ ] LTG-9-C: Line Voltage Track Lighting Worksheet

CERTIFICATE OF COMPLIANCE (Part 2 of 4) LTG-1-C

PROJECT NAME: 14 MILE SLOUGH PUMP STATION	DATE: 03/20/2006

INSTALLED INTERIOR LIGHTING POWER FOR CONDITIONED AND UNCONDITIONED SPACES

	INSTALLED WATTS
INSTALLED LIGHTING, CONDITIONED SPACES (From LTG-2-C)	558
PORTABLE LIGHTING (From LTG-3-C)	0
LIGHTING CONTROL CREDIT, CONDITIONED SPACES (From LTG-4-C)	0
CONDITIONED SPACE ADJUSTED INSTALLED LIGHTING POWER	558
INSTALLED LIGHTING, UNCONDITIONED SPACES (From LTG-2-C)	0
LIGHTING CONTROL CREDIT, UNCONDITIONED SPACES (From LTG-4-C)	0
UNCONDITIONED SPACE ADJUSTED INSTALLED LIGHTING POWER	0

ALLOWED INTERIOR LIGHTING POWER FOR CONDITIONED SPACES

- [ ] COMPLETE BUILDING METHOD (From LTG-5-C)
- [X] AREA CATEGORY METHOD (From LTG-5-C)
- [ ] TAILORED METHOD (From LTG-5-C)

	ALLOWED WATTS
ALLOWED LIGHTING POWER	638

ALTERNATE COMPLIANCE

- [ ] PERFORMANCE METHOD
- [ ] COMMMON LIGHTING SYSTEM (From LTG-8-C)

ALLOWED INTERIOR LIGHTING POWER FOR UNCONDITIONED SPACES (From LTG-5-C)	0

MANDATORY INTERIOR AND DAYLIGHTING AUTOMATIC CONTROLS

CONTROL LOCATION (Room #)	CONTROL IDENTIFICATION	CONTROL TYPE (Auto Time Switch, Dimming, etc.)	SPACE CONTROLLED	Check if Daylighting	NOTE TO FIELD

NOTES TO FIELD - For Building Department Use Only

LIGHTING MANDATORY MEASURES LTG-MM

PROJECT NAME: 14 MILE SLOUGH PUMP STATION	DATE: 03/20/2006

	DESCRIPTION	Designer	Enforcement
[ ]	§ 131(d)1 For every floor, all interior lighting systems shall be equipped with a separate automatic control to shut off the lighting. This automatic control shall meet the requirements of Section 119 and may be an occupancy sensor, automatic time switch, or other device capable of automatically shutting off the lighting.	N/A	
[ ]	§ 131(d)2 Override for Building Lighting Shut-off: The automatic building shut-off system is provided with a manual, accessible override switch in sight of the lights. The area of override is not to exceed 5,000 square feet.	N/A	
[ ]	§ 119(h) Automatic Control Devices Certified: All automatic control devices specified are certified, all alternate equipment shall be certified and installed as directed by the manufacturer.	N/A	
[ ]	§ 111 Fluorescent Ballast and Luminaires Certified: All fluorescent fixtures specified for the project are certified and listed in the Directory. All installed fixtures shall be certified.	✓	
[ ]	§ 132 Tandem Wiring for One and Three Lamp Fluorescent Fixtures: All one and three lamp fluorescent fixtures are tandem wired with two lamp ballasts where required by Standards Section 132; or all one and three lamp fluorescent fixtures are specified with electronic high-frequency ballasts and are exempt from tandem wiring requirements.	N/A	
[ ]	§ 131(a) Individual Room/Area Controls: Each room and area in this building is equipped with a separate switch or occupancy sensor device for each area with floor-to-ceiling walls.	✓	
[ ]	§ 131(b) Uniform Reduction for Individual Rooms: All rooms and areas greater than 100 square feet and more than 0.8 watts per square foot of lighting load shall be controlled with bi-level switching for uniform reduction of lighting within the room.	N/A	
[ ]	§ 131(c) Daylight Area Control: All rooms with windows and skylights that are greater than 250 square feet and that allow for the effective use of daylight in the area shall have 50% of the lamps in each daylit area controlled by a separate switch; or the effective use of daylight cannot be accomplished because the windows are continuously shaded by a building on the adjacent lot. Diagram of shading during different times of the year is included on plans.	N/A	
[ ]	§ 131(e) Display Lighting. Display lighting shall be separately switched on circuits that are 20 amps or less.	N/A	

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FILE: 0507C E018

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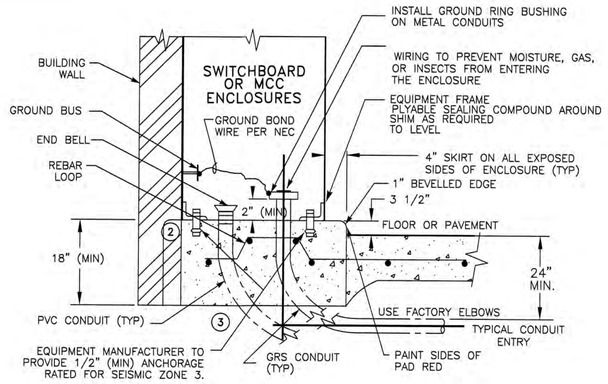
RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

TITLE 24
LIGHTING
CALCULATIONS

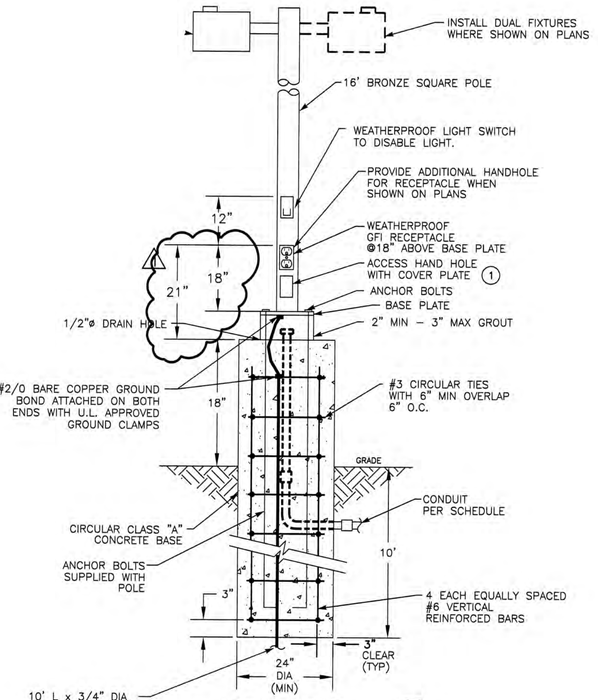
DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE:	APPROVED BY: DATE:	SHEET No.
DESIGNED BY: SMK		E19
DRAWN BY: ZK		78 of 89 SHEETS
CHECKED BY: XML	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01
RECORD Dwg.:		



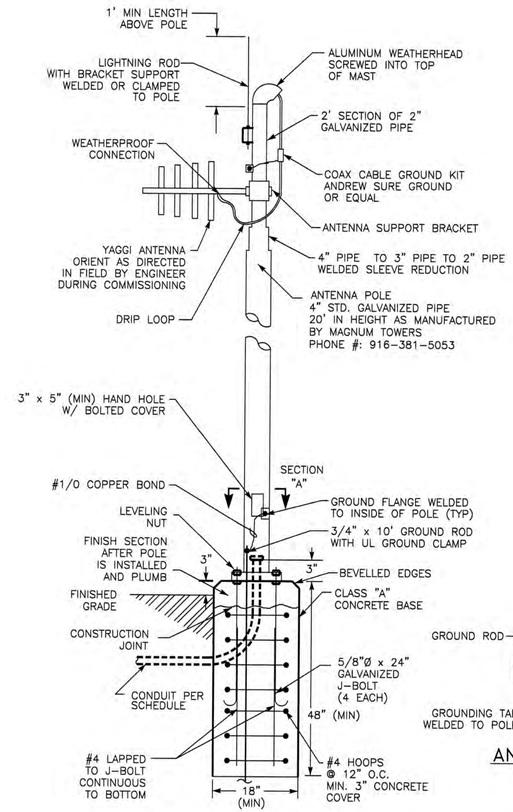
EQUIPMENT CONCRETE PAD DETAIL (A / E21)
NOT TO SCALE

NOTES:
1. CONCRETE PAD ABOVE FLOOR TO BE POURED AFTER MAIN PAD HAD BEEN POURED. PAD ABOVE FLOOR TO BE CLASS "A" CONCRETE COMPOSITION ACCURATELY LEVELED WITHIN 1/16 INCH. REBAR TO BE #4 @ 12" CROSSWAYS & VERTICAL EVERY 6" (MINIMUM) OR AS CALLED OUT IN STRUCTURAL DRAWINGS.
2. IF NO BUILDING WALL EXTEND PAD 4" BEYOND ENCLOSURE ON BACK & SIDES.
3. CONCRETE DUCT BANKS SHALL EXTEND & CONNECT INTO EQUIPMENT CONCRETE PAD.

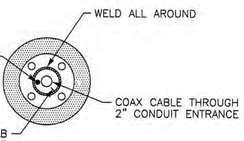


AREA LIGHT DETAIL (B / E21)
NOT TO SCALE

NOTES:
1. PROVIDE 2 POLE FUSE HOLDER WITH FUSES & RUBBER BOOTS ON LIGHT WIRING FEED INSIDE HANDHOLE.



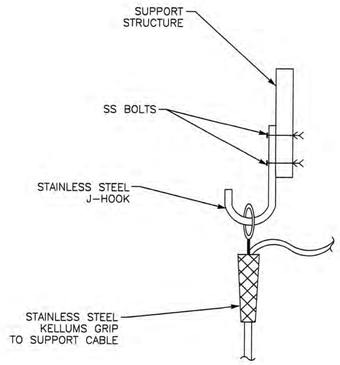
ANTENNA MAST INSTALLATION DETAIL (C / E21)
NOT TO SCALE



ANTENNA BASE
SECTION "A"
NOT TO SCALE

PUMP CABLE ISOLATION DETAIL (D / E21)
NOT TO SCALE

NOTES:
1. PLACE SS TRANSITION BOX BELOW DISCONNECT IF DISCONNECT SWITCH DOES NOT HAVE ENTRY AREA FOR ALL CONDUITS.



CABLE SUPPORT DETAIL (E / E21)
NOT TO SCALE

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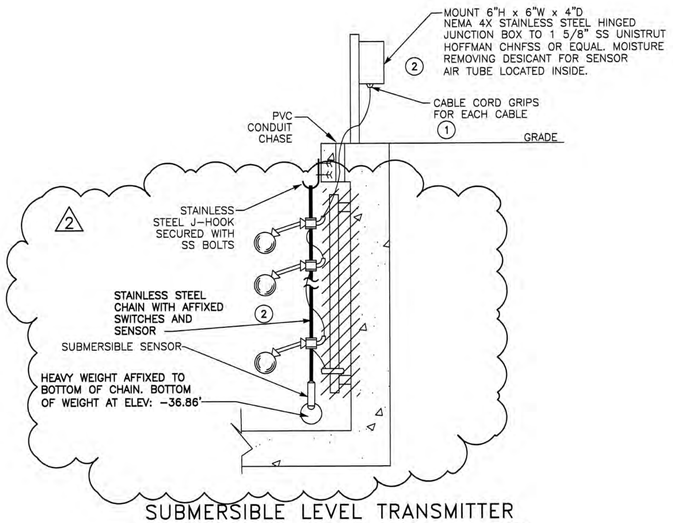
RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

TYPICAL ELECTRICAL DETAILS NO.1

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

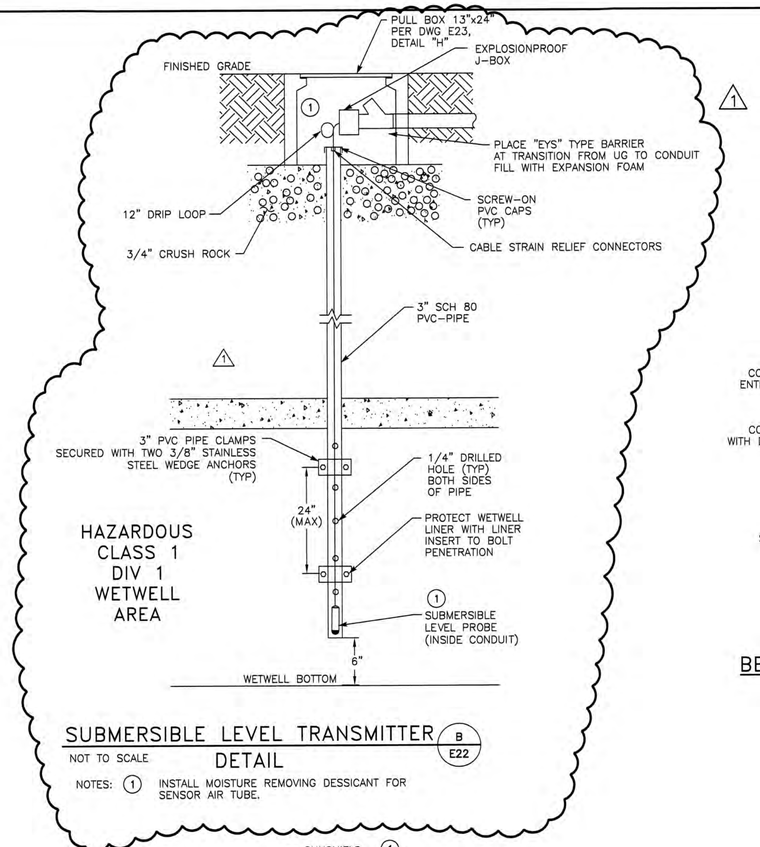
SCALE: NONE	APPROVED BY: DATE:	SHEET No.	
DESIGNED BY: SMK		E21	
DRAWN BY: ZK		79 of 89 SHEETS	
CHECKED BY: XML			
RECORD Dwg.:	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01	



SUBMERSIBLE LEVEL TRANSMITTER & FLOAT SWITCH CABLE DETAIL

NOT TO SCALE — A / E22

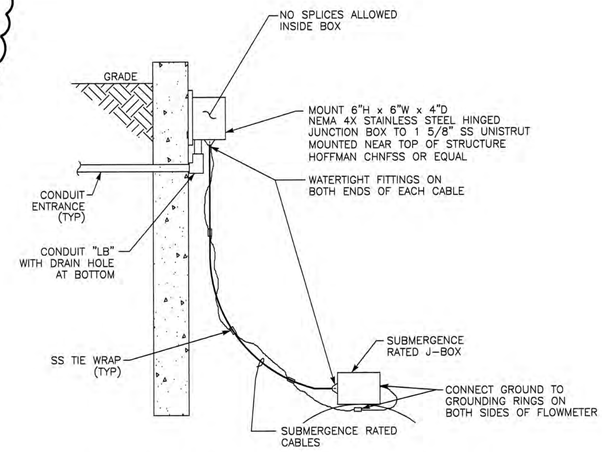
NOTES:
1. ATTACH CABLE TO JUNCTION BOX WITH NYLON FITTING, STAINLESS STEEL CORD GRIP: HUBBELL/ KELLEMS SERIES 74 OR EQUAL.
2. LEVEL SWITCHES TO BE SUSPENDED WITH STAINLESS STEEL CABLE MOUNTING KIT. CONSOLIDATED ELECTRIC OR APPROVED EQUAL.



SUBMERSIBLE LEVEL TRANSMITTER DETAIL

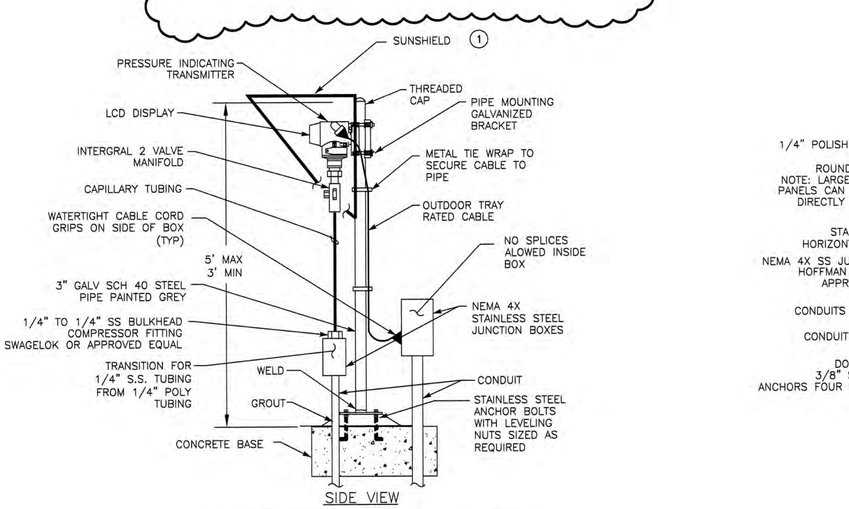
NOT TO SCALE — B / E22

NOTES: 1. INSTALL MOISTURE REMOVING DESSICANT FOR SENSOR AIR TUBE.



BELOW GRADE FLOWMETER INSTALLATION DETAIL

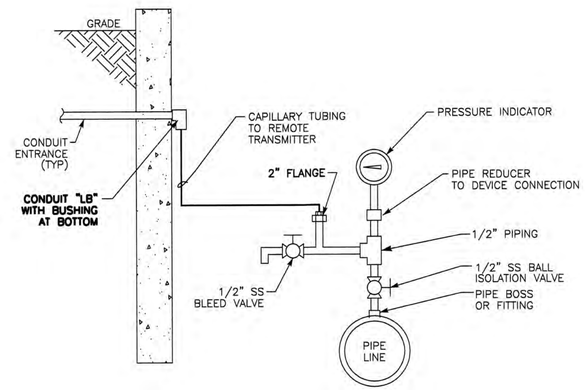
NOT TO SCALE — C / E22



FLOOR PIPE SUPPORT DETAIL

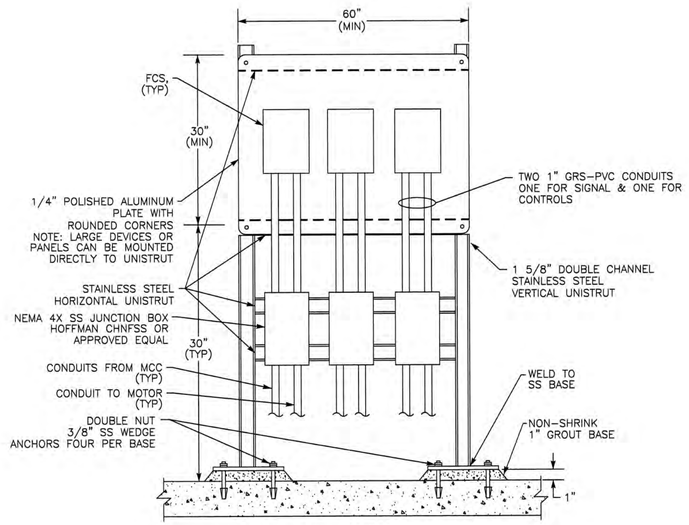
NOT TO SCALE — E / E22

NOTES: 1. USA BLUEBOOK SUNSHIELD OR EQUAL.



PRESSURE INDICATOR DETAIL

NOT TO SCALE — D / E22



FCS SUPPORT DETAIL

NOT TO SCALE — G / E22

T.E.E.m.
(916) 457-8144
FILE: 0507C E022

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1	LP150 ON SHEET E14	2/07	SK	PDF
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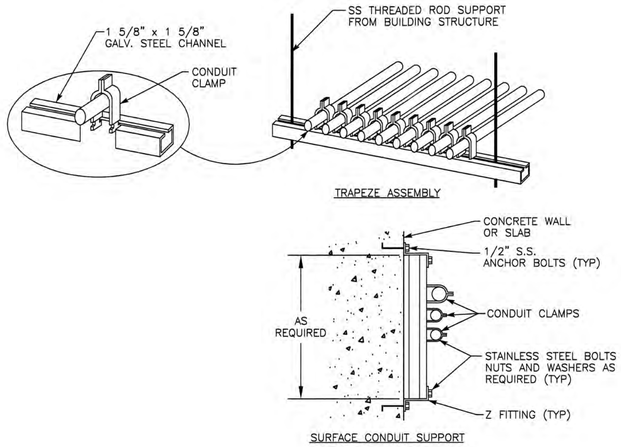
RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

TYPICAL
ELECTRICAL DETAILS NO.2

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

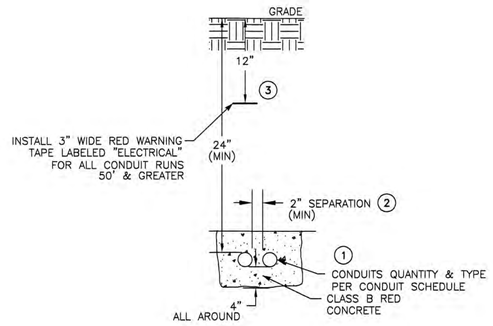
SCALE:	APPROVED BY: DATE:	SHEET No.
DESIGNED BY: SMK		E22
DRAWN BY: ZK		80 of 89 SHEETS
CHECKED BY: XML		PROJECT No. 293-00-05-01
RECORD Dwg.:	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	



CONDUIT STRAP MOUNTING DETAIL (A / E23)

NOT TO SCALE

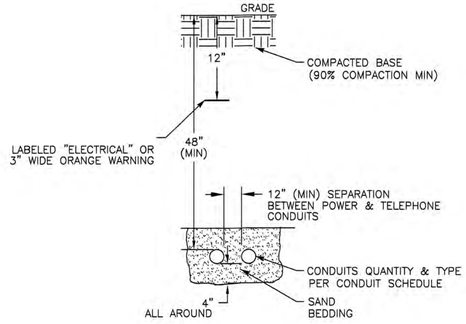
NOTES:
1. THIS DETAIL TYPICAL FOR BOTH VERTICAL AND HORIZONTAL MOUNTING.
2. CHANNEL AND ALL SUPPORT DEVICES TO BE HOT DIP GALVANIZED STEEL. FIELD COAT ALL CUTS, ETC. TO MATCH.
3. CHANNELS TO BE SPACED 5' MAXIMUM.



ENCASED CONDUITS DETAIL (B / E23)

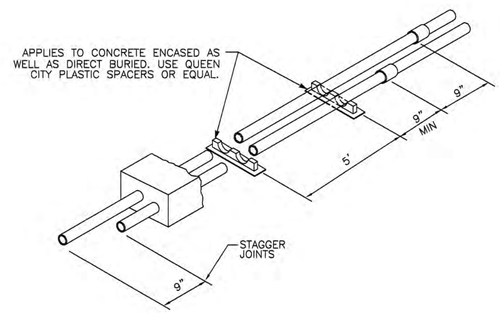
NOT TO SCALE

NOTES:
1. PLACE CONDUIT RUNS OF 4 CONDUITS OR GREATER IN PLASTIC SPACERS (RATED FOR DIRECT BURIAL) EVERY 5' ALONG LENGTH OF RUN.
2. PROVIDE 12" (MIN) SEPARATION BETWEEN "A, C & D" TYPE GROUP AND "L & P" TYPE GROUP CONDUITS.
3. TRENCHING & COMPACTED BACKFILL PER SPECIFICATIONS SECTION 02300–EARTHWORK.



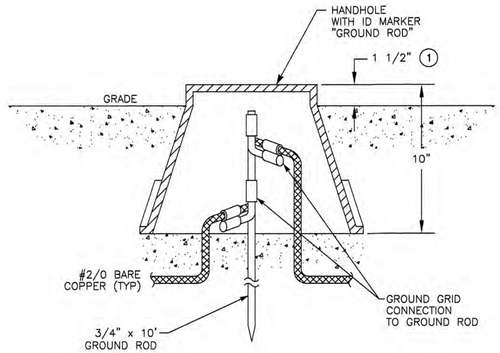
UTILITY CONDUITS DETAIL (C / E23)

NOT TO SCALE



SPACERS AND JOINTS INSTALLATION DETAIL (D / E23)

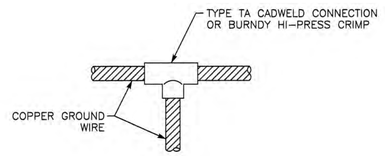
NOT TO SCALE



HANDHOLE GROUNDING DETAIL (E / E23)

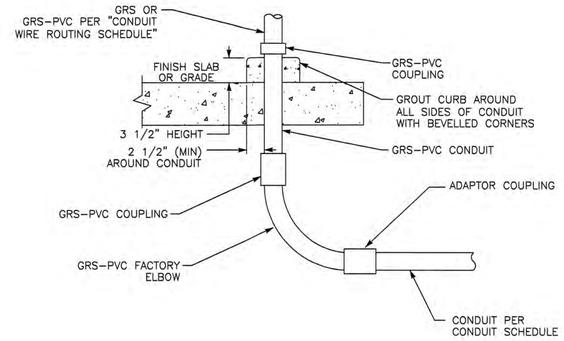
NOT TO SCALE

NOTES:
1. FLUSH IN PAVED AREAS.



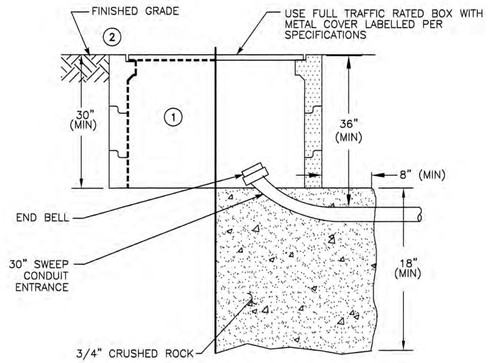
GROUND CABLE CONNECTION DETAIL (F / E23)

NOT TO SCALE



EXPOSED CONDUIT TRANSITION DETAIL (G / E23)

NOT TO SCALE



PULL BOX DETAIL (H / E23)

NOT TO SCALE

NOTES:
1. FULL TRAFFIC RATED CHRISTY B BOX OR EQUAL.
2. ADD EXTENSIONS WHERE NECESSARY TO RAISE COVER TO FINISHED GRADE.

T.E.E.m.
(916) 457–8144

FILE: 0507C E023

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

TYPICAL ELECTRICAL
DETAILS NO.3

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: NONE	APPROVED BY: DATE:		SHEET No.
DESIGNED BY: SMK			E23
DRAWN BY: ZK			81 of 89 SHEETS
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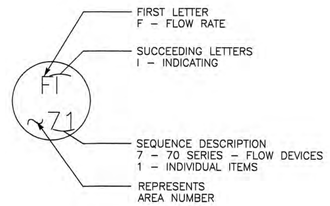
SYMBOL	DESCRIPTION
P & I DIAGRAM SYMBOLS	
XXX / XXX	FIELD MOUNTED INSTRUMENT
XXX / XXX	FACE MOUNTED INSTUMENT ON LOCAL PANEL, OPERATOR ACCESSIBLE
XXX / XXX	FACE MOUNTED INSTRUMENT ON FIELD PANEL, OPERATOR ACCESSIBLE
XXX / XXX	INSTRUMENT MOUNTED IN LOCAL PANEL, OPERATOR INACCESSIBLE
XXX / XXX	INSTRUMENT MOUNTED IN FIELD PANEL, OPERATOR INACESSIBLE
I	OPERATION PERFORMED WITH LOGIC OR HARDWIRED DEVICES
DWG #	– REFERENCE ELEMENTARY DWG. #
XXX / XXX	PLC OR COMPUTER FUNCTION PERFORMING OPERATION WITH VISUAL INDICATION
XXX / XXX	PLC OR COMPUTER FUNCTION PERFORMING OPERATION WITH VISUAL ALARM INDICATION
XXX / XXX	PLC OR COMPUTER PERFORMING INTERNAL OPERATION
XXX / XXX	PLC OR COMPUTER PERFORMING INTERNAL ALARM OPERATION
$\propto \int \frac{\partial}{\partial t}$	PROPORTIONAL, INTEGRAL, AND DIFFERENTIAL PARAMETERS
% +/–	RATIO AND BIAS PARAMETERS
	AUDIBLE ALARM (BUZZER OR HORN)
R#–C#	ANNUNCIATOR WINDOW R – ROW # C – COLUMN #
X	LAMP INDICATION (STATUS OR ALARM)
XXXXX	DISCRETE INPUT
	DISCRETE OUTPUT
	ANALOG INPUT
	ANALOG OUTPUT
a XXXX	JUMP TAG FROM ONE AREA TO ANOTHER AREA OF DRAWING "a" TAG CONNECT POINT ON EACH DRAWING
XXXX a	
P–X	CONTINUED ON DWG P–X
P–X	
#	AUTODIALER PRIORITY # PC BASED SOFTWARE

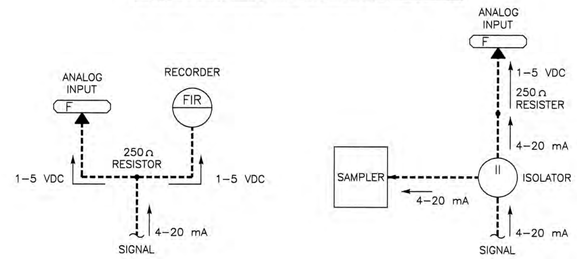
SYMBOL	DESCRIPTION
P & I DIAGRAM SYMBOLS	
OPEN / CLOSED	VALVE (GENERAL)
	GATE (GENERAL)
	CHECK VALVE (GENERAL)
	PUMP (GENERAL)
	BLOWER (GENERAL)
XXXX	VALVE/GATE NUMBER
XXXXX	EQUIPMENT NUMBER
	ELECTRIC SIGNAL
	LOGIC OR DATA SIGNAL
	PNEUMATIC SIGNAL
	CAPILLARY TUBING (FILLED SYSTEM)
	HYDRAULIC SIGNAL
ES / AS	SONIC OR ELECTROMAGNETIC SIGNAL
E	ELECTRIC SUPPLY FROM PANELBOARD CKT
SA	SERVICE AIR
IA	INSTRUMENT AIR

INSTRUMENT IDENTIFICATION LETTERS

	FIRST – LETTER	SUCCEEDING – LETTER			
	MEASURED OF INITIATING VARIABLE	MODIFIER	READOUT PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY			CONTROLLER	
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE		SENSOR, PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	GENERAL		GLASS VIEWING DEVICE		
H	HAND				HIGH, OPENED
I	CURRENT (ELEC.)		INDICATING, INDICATOR		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW, CLOSED
M	MOISTURE	MOMENTARY			MIDDLE
N	STATUS		STATUS	USER'S CHOICE	USER'S CHOICE
O	OPERATOR		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTERGRATE, TOTALIZE			
R	RESET		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMITTER	TEST
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECH. ANALYSIS			VALVE, DAMPER LOUVER	
W	WEIGHT, FORCE		WELL		
X	SWITCH	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTER, CONVERTOR	
Z	POSITION DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSEIFIED FINAL CONTROL ELEMENT	



P&ID INSTRUMENT IDENTIFICATION EXAMPLE



TYPICAL SIGNAL FLOWS

NUMBERING SEQUENCE

SEQUENCE NUMBER	DESCRIPTION
00	COMMON ALARM
01–09	INDIVIDUAL ITEMS
10	MECHANICAL
20	MECHANICAL
30	MECHANICAL
40	MECHANICAL
50	LEVEL DEVICES
60	PRESSURE DEVICES
70	FLOW DEVICES
80	ANALYTICAL DEVICES
90	SAFETY & SECURITY DEVICES

T.E.E.m.
(916) 457–8144

FILE: 0507C I001

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

INSTRUMENTATION SYMBOLS & ABBREVIATIONS

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE:	NONE	APPROVED BY: DATE:	SHEET No.
DESIGNED BY:	SMK		I1
DRAWN BY:	ZK		82 of 89 SHEETS
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RECORD Dwg.:			

CENTRAL/ AUTODIALER

SCADA OPERATOR INTERFACE OI DISPLAY

PROGRAMMABLE LOGIC CONTROLLER PLC-100

CONTROL PANEL CP-100 (N)

CONTROL PANEL-P (E)

FIELD CONTROL STATION FCS

FIELD

PSI

PAH ~60 | PI ~60 | PAL ~60

MGAL MGD

FIQ ~70 | FI ~70

ZIC ~30

FT

LAH ~50 | LT ~50 | LAL ~50

OFF RUN ZIC ~31

OFF RUN ZIC ~32

BACK PRESSURE VALVE NO.130 (R) (1)

INFLUENT FLOW (R) F170

VALVE POSITION Z130 | POSITION CONTROL ZC130

INFLUENT JUNCTION LEVEL L150

INFLUENT SLUICE GATE SG131

RUN N131 | GATE POSITION Z131A | POSITION CONTROL ZC131

INFLUENT SLUICE GATE SG132

RUN N132 | GATE POSITION Z132 | POSITION CONTROL ZC132

(E) VALVE OPERATOR

OPN G | CLS R

L/O/R | O/C/S

HS ~30 A | HS ~30 | ZT ~30 B | ZS ~30 O | ZS ~30 C

GATE OPERATOR MOG131

CLS R | OPN G

L/O/R | O/C/S

HS ~31 A | HS ~31 | ZT ~31 B | ZS ~31 D | ZS ~31 U

GATE OPERATOR MOG132

CLS R | OPN G

L/O/R | O/C/S

HS ~32 A | HS ~32 | ZT ~32 B | ZS ~32 D | ZS ~32 U

FIT ~70

FE ~70 (E)

MAG

FROM 24" INTERCEPTOR

FROM 66" INTERCEPTOR

BACK PRESSURE VALVE (E) MOV130

14"

LT 150

JUNCTION STRUCTURE

INFLUENT SLUICE GATE 1 SG131

INFLUENT SLUICE GATE 2 SG132

I3 TO WETWELL 1

I4 TO WETWELL 2

I5 FROM MAGNESIUM HYDROXIDE PUMP NO.1

I5 FROM MAGNESIUM HYDROXIDE PUMP NO.2

HEADWORKS

NOTES: (1) ROUTE EXISTING I/O TO NEW PLC. PROVIDE AND INSTALL ISOLATORS AS REQUIRED.

AREA PREFIX 1~

T.E.E.m.
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FILE: 0507C I002

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

HEADWORKS
P & ID

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: NONE
DESIGNED BY: SMK
DRAWN BY: ZK
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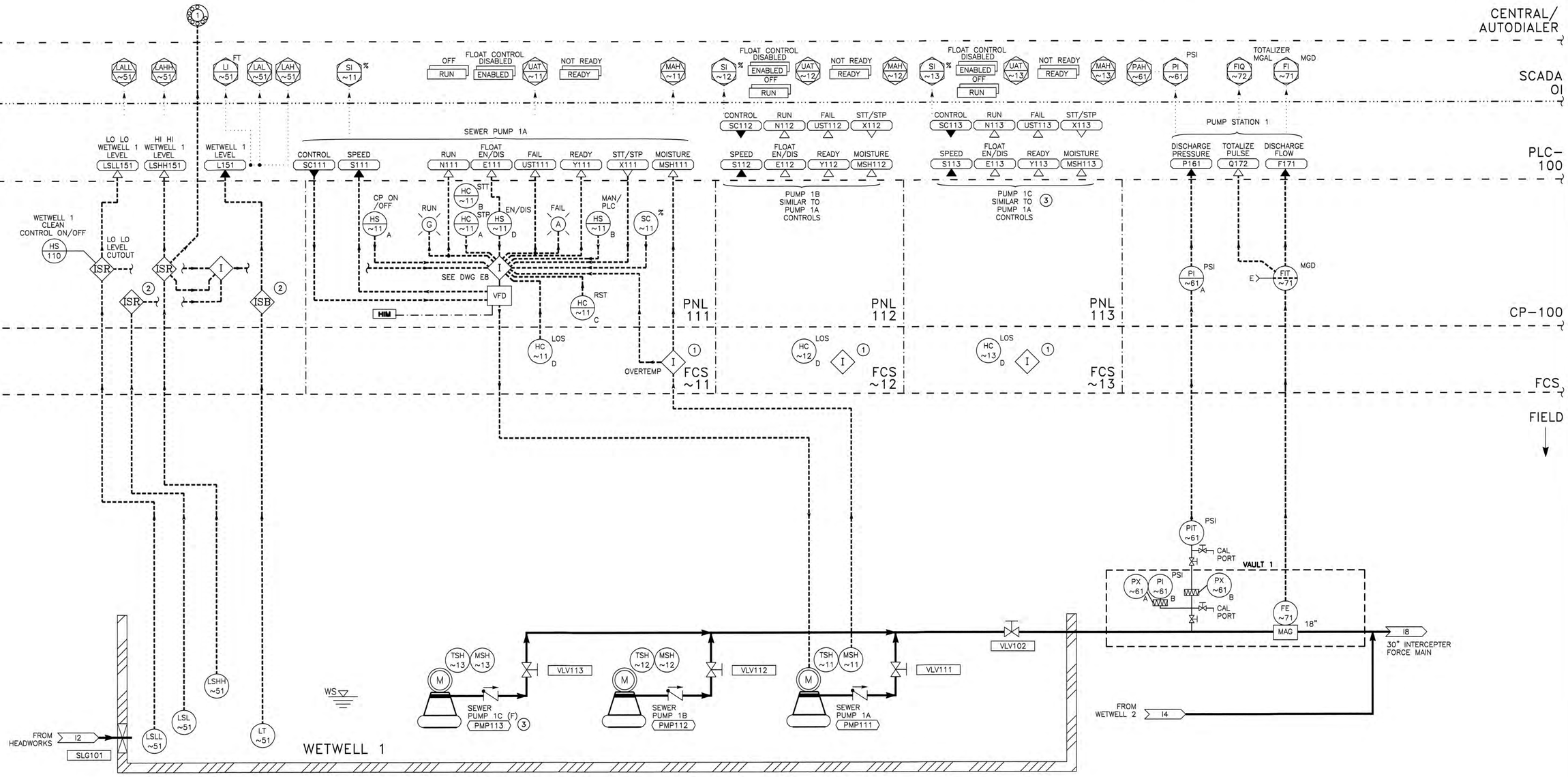
RECORD Dwg.:

APPROVED BY: DATE: _____

ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES

SHEET No. 12
83 of 89 SHEETS

PROJECT No. 293-00-05-01



PUMP STATION 1

NOTES:
1. 120 VAC MOISTURE/OVERTEMP RELAY SUPPLIED BY PUMP SUPPLIER AND INSTALLED IN FCS MCC SYSTEM SUPPLIER.
2. ISB=> INTRINSIC SAFE BARRIER. ISR=> INTRINSIC SAFE RELAY.
3. PUMPS & ASSOCIATED CONTROLS SHOWN ARE FUTURE, PLC I/O SHALL BE PROVIDED & WIRED TO TERMINAL BLOCKS.

AREA PREFIX 1~

T.E.E.m.
(916) 457-8144
FILE: 0507C I003

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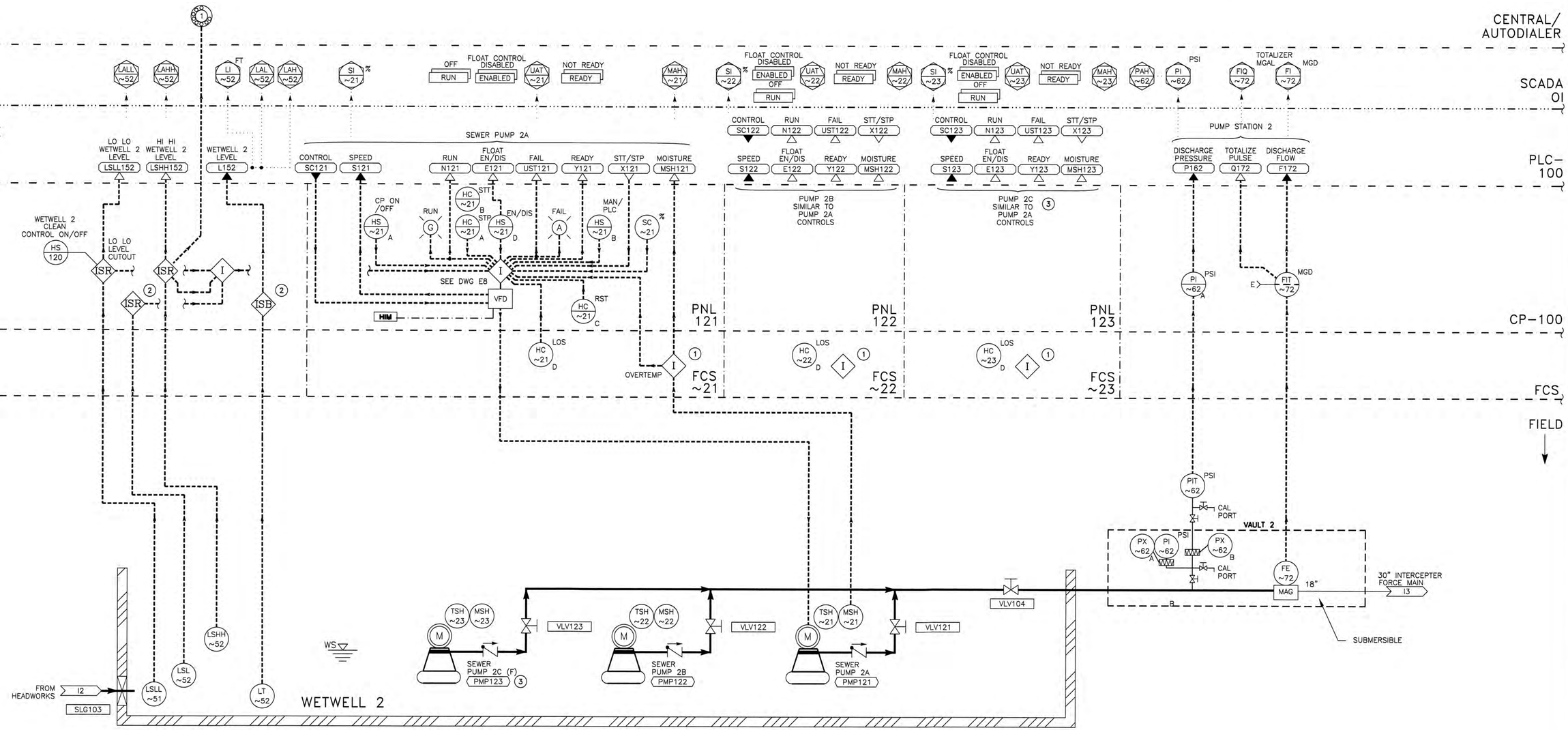
RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

PUMP STATION 1
P & ID

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE:	NONE	APPROVED BY: DATE:	SHEET No.
DESIGNED BY:	SMK		I3
DRAWN BY:	ZK		84 of 89 SHEETS
CHECKED BY:	XML	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01
RECORD Dwg.:			



PUMP STATION 2

NOTES:
1. MOISTURE/OVERTEMP RELAY SUPPLIED BY PUMP SUPPLIER AND INSTALLED IN FCS MCC SYSTEM SUPPLIER.
2. ISB=> INTRINSIC SAFE BARRIER. ISR=> INTRINSIC SAFE RELAY.
3. PUMPS & ASSOCIATED CONTROLS SHOWN ARE FUTURE, PLC I/O SHALL BE PROVIDED & WIRED TO TERMINAL BLOCKS.

AREA PREFIX 1~

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(916) 457-8144

FILE: 0507C I004

Underground Service Alert
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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

PUMP STATION 2
P & ID

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CITY OF STOCKTON, CALIFORNIA

SCALE: NONE	APPROVED BY: DATE:	SHEET No.
DESIGNED BY: SMK		I4
DRAWN BY: ZK		85 of 89 SHEETS
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CENTRAL/ AUTODIALER

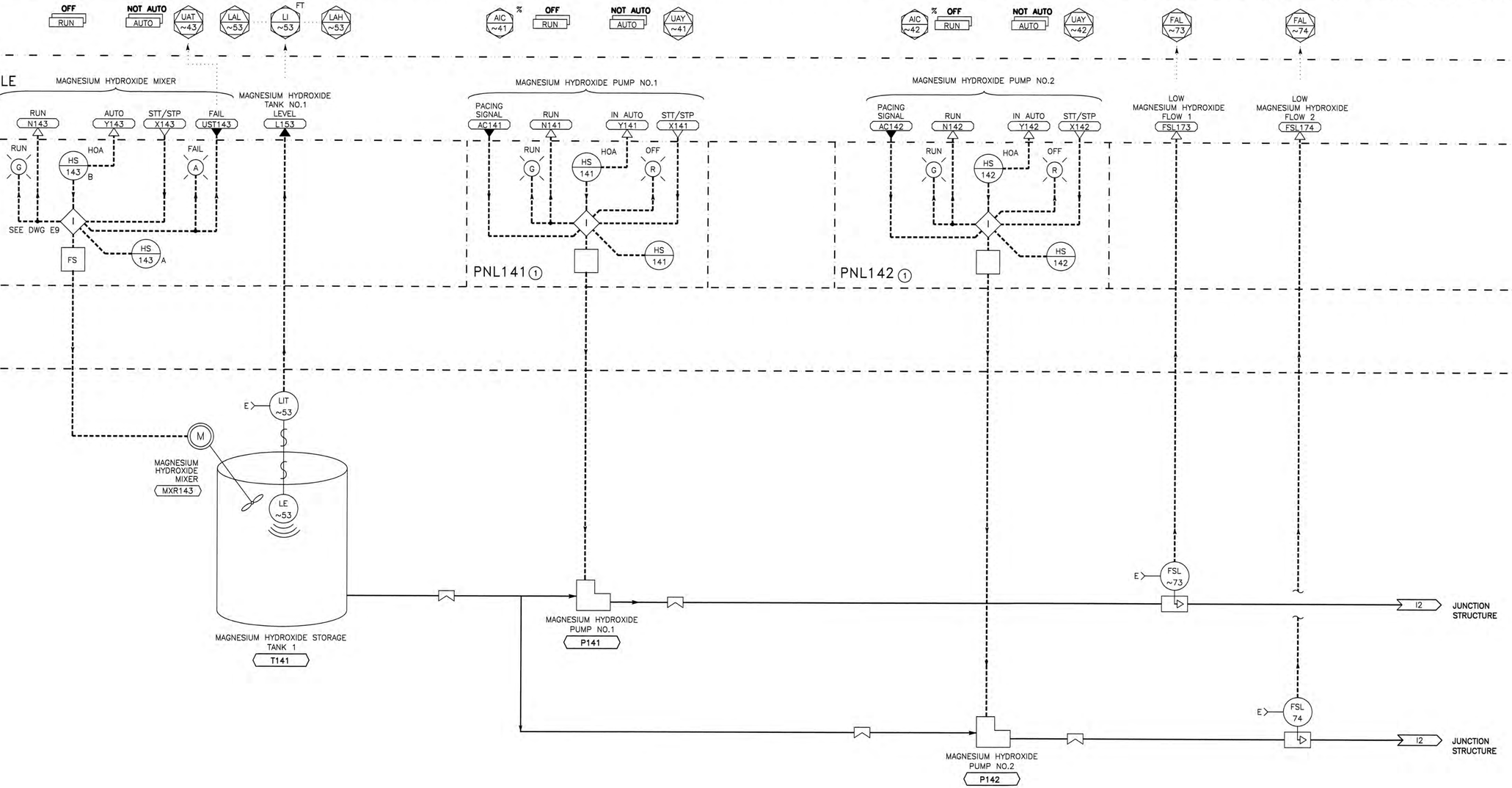
SCADA OPERATOR INTERFACE OI DISPLAY

PROGRAMMABLE LOGIC CONTROLLER PLC–100

MOTOR CONTROL CENTER MCC–M

FIELD CONTROL STATION FCS

FIELD



CENTRAL/ AUTODIALER

SCADA OI

PLC–100

CP–100

FCS

FIELD

MAGNESIUM HYDROXIDE SYSTEM

NOTES: (1) SEE MAGNESIUM HYDROXIDE SPEC FOR CONTROL PANEL OPERATOR CONTROLS.

AREA PREFIX 1~

T.E.E.m.
(916) 457–8144
FILE: 0507C I005

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14-Mile Slough Pump Station Upgrades

MAGNESIUM HYDROXIDE SYSTEM
P & ID

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DRAWN BY: ZK		86 of 89 SHEETS	
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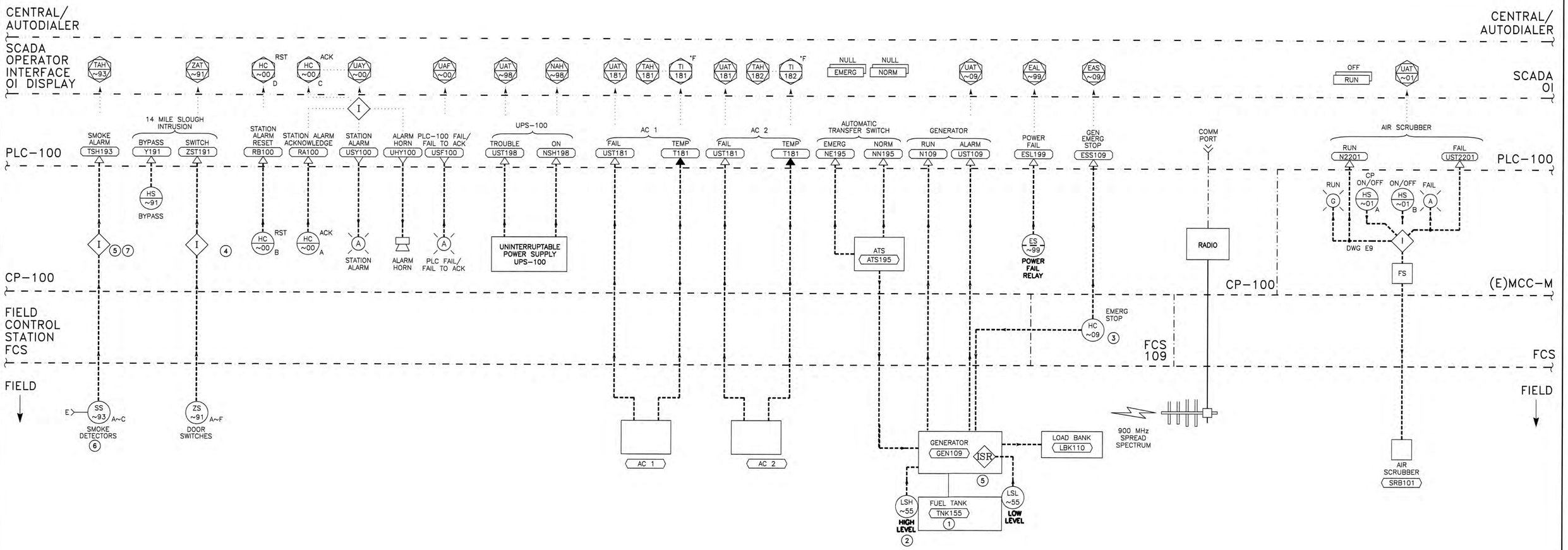

CP-100 AUXILIARY SYSTEMS

NOTES:

1. DOUBLE WALLED SUB-BASE FUEL TANK WITH HIGH & LOW LEVEL SWITCHES.
2. RED HIGH TANK ALARM LIGHT & AUDIBLE NOTIFICATION AT TANK SHALL OCCUR UPON FUEL LEVEL REACHING 90% CAPACITY.
3. LOCATED OUTSIDE BY GENERATOR.
4. WIRE SWITCHES IN SERIES ON TERMINAL BLOCKS.
5. PLACE INTRINSIC SAFE RELAYS (ISR) INSIDE PANELS TO ISOLATE SIGNALS.
6. POWERED FROM UPS-100.
7. 24VDC INTERPOSING RELAYS.

AREA PREFIX 1~

T.E.E.m.
(916) 457-8144
FILE: 0507C I006

Underground Service Alert
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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

CP-100 AUXILARY SYSTEMS P & ID

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE:	NONE	APPROVED BY: DATE:	SHEET No. 16
DESIGNED BY:	SMK		87 of 89 SHEETS
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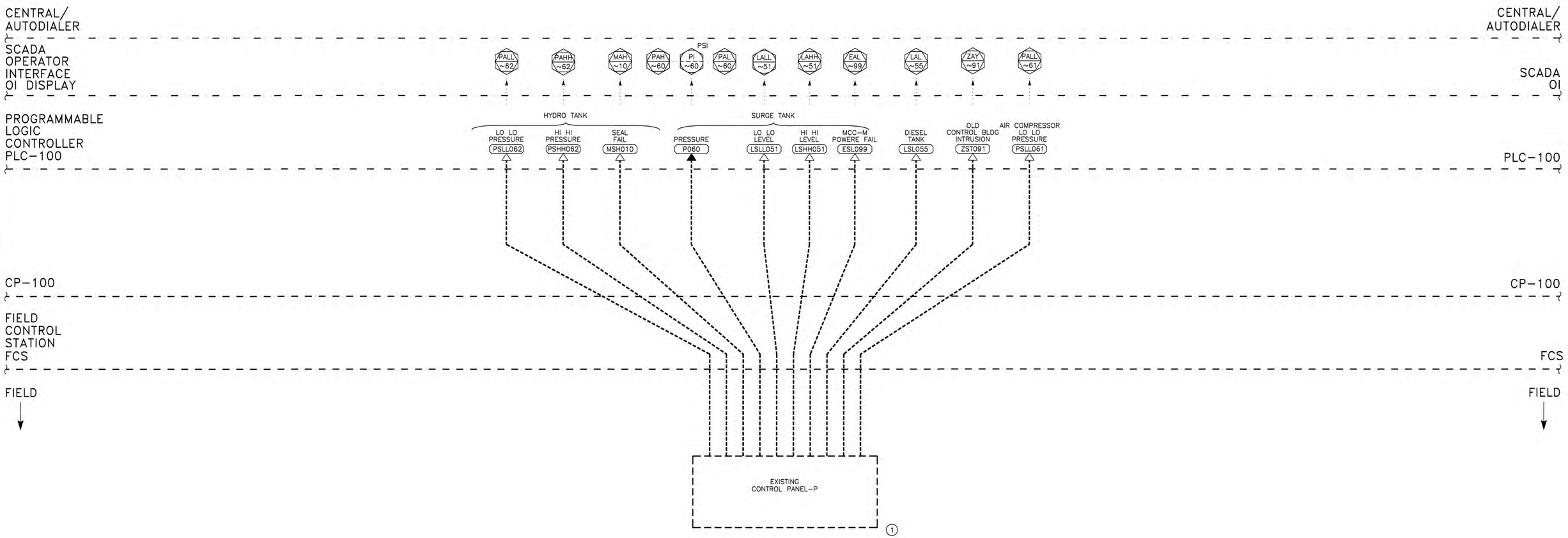
CHECKED BY:	XML	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01
RECORD Dwg.:			



REMOTE MONITORING SYSTEM

NOTES: (1) PROVIDE & INSTALL INTERPOSING RELAYS AND ISOLATORS TO EXTEND EXISTING POINTS TO NEW PLC.

AREA PREFIX 0~

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

REMOTE MONITORING SYSTEM P & ID

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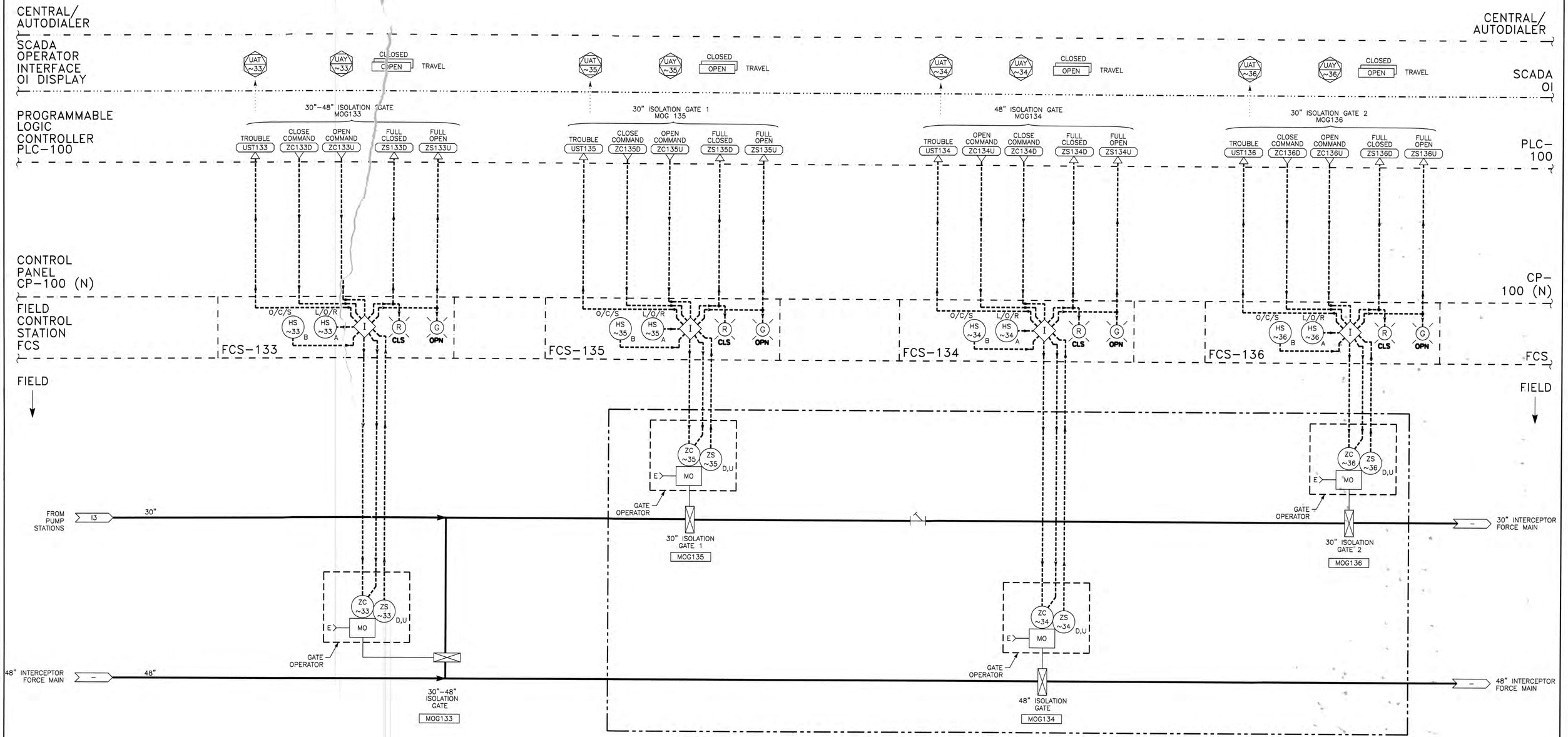
WEST YOST ASSOCIATES
Consulting Engineers
1260 Lake Boulevard
Suite 240
Davis, California 95616
(530) 756-5905
FAX (530) 756-5991

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE:	NONE	APPROVED BY: DATE:	SHEET No.
DESIGNED BY:	SMK		17
DRAWN BY:	ZK		88 of 89 SHEETS
CHECKED BY:	XML	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01
RECORD Dwg.:			



DISCHARGE GATE CONTROL

AREA PREFIX 1~

T.E.E.m.
(916) 457-8144
FILE: 0507C I008

Underground Service Alert
TWO DAYS BEFORE YOU DIG
Call TOLL FREE: 1-800-642-2444

REFER TO BID SET FOR SIGNATURE

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RECORD DRAWINGS

14-Mile Slough Pump Station Upgrades

DISCHARGE GATE CONTROL P & ID

DEPARTMENT OF MUNICIPAL UTILITIES
CITY OF STOCKTON, CALIFORNIA

SCALE: NONE	APPROVED BY: DATE:	SHEET No.	
DESIGNED BY: SMK		I8	
DRAWN BY: ZK		89 of 89 SHEETS	
CHECKED BY: XML	ASSISTANT DIRECTOR, DEPT. OF MUNICIPAL UTILITIES	PROJECT No. 293-00-05-01	
RECORD Dwg.:			