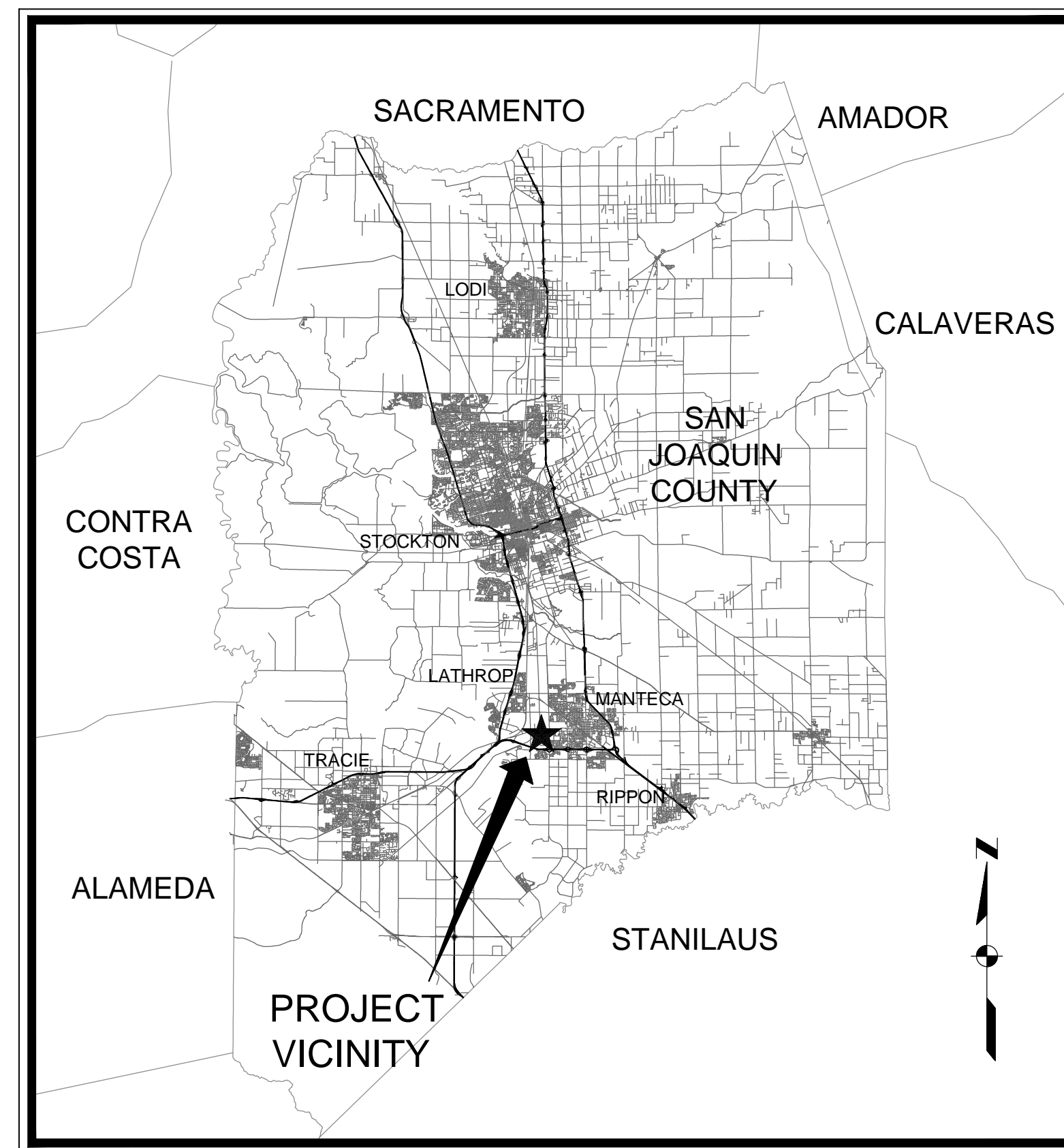


# MANTECA WASTEWATER QUALITY CONTROL FACILITY

## INFLUENT PUMP STATION REHABILITATION

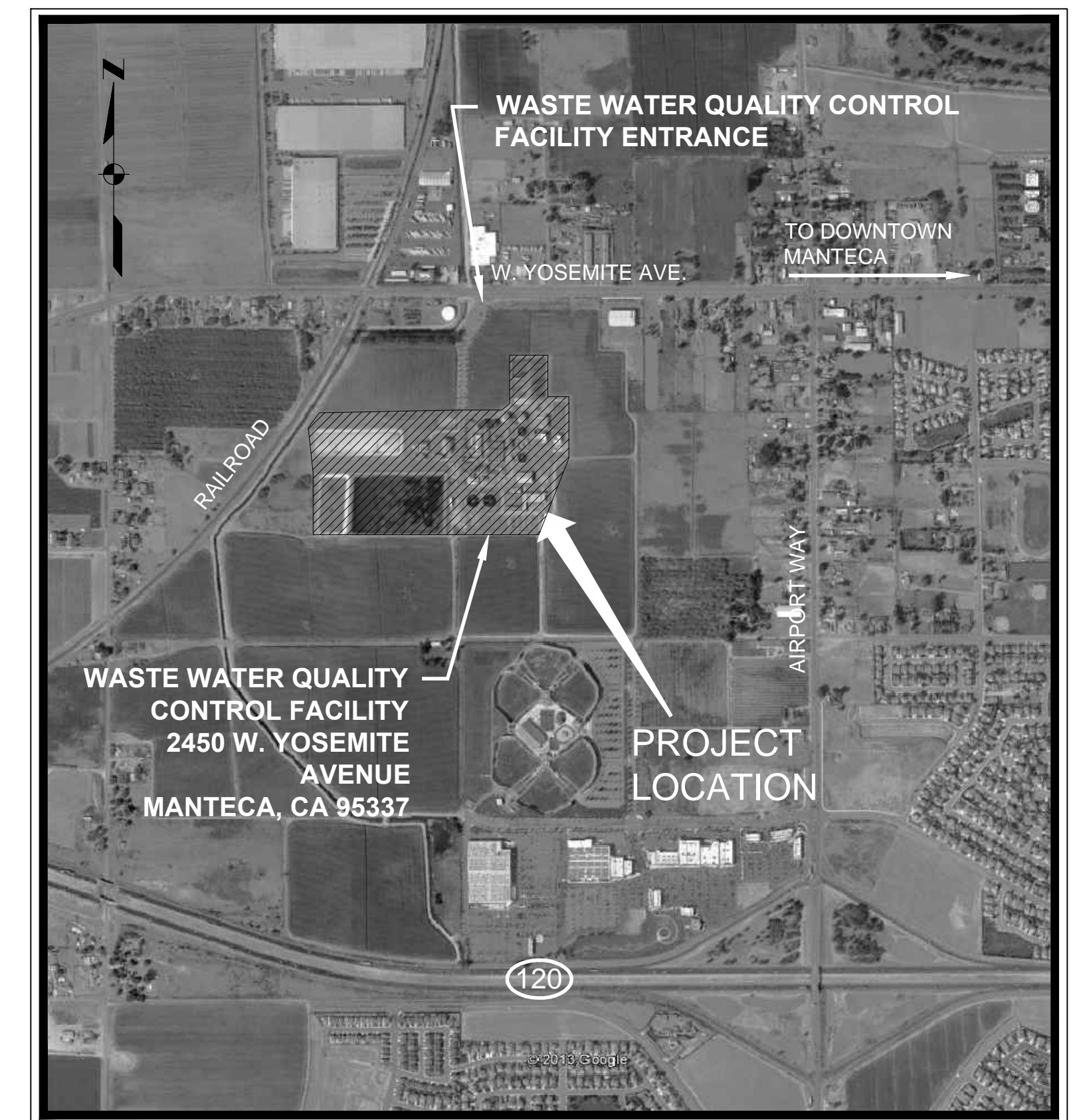
### SEPTEMBER 2013

#### DRAWING INDEX



NOT TO SCALE

DWG. NO.	DRAWING TITLE
<b>GENERAL</b>	
G1	TITLE SHEET
<b>CIVIL</b>	
C1	SITE PLAN
C2	SITE IMPROVEMENTS AND BYPASS PLAN INFORMATION
C3	BYPASS DISCHARGE LOCATION PLAN
C4	INFLUENT PUMP STATION, GROUND LEVEL
C5	CONCRETE REPAIR AND LINING PLAN
C6	CONCRETE REPAIR AND LINING SECTIONS
C7	CONCRETE REPAIR AND LINING DETAILS
C8	DETAILS
<b>MECHANICAL</b>	
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M2	ODOR CONTROL MODIFICATIONS
M3	HVAC MODIFICATIONS
M4	ENLARGED SITE PLAN
M5	GREASE FILTER DETAILS
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E1	SYMBOLS AND ABBREVIATIONS
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E3	EXHAUST FAN ELEMENTARY DIAGRAM
E4	IPS ELECTRICAL PLAN
E5	ELECTRICAL DETAILS



#### LOCATION MAP

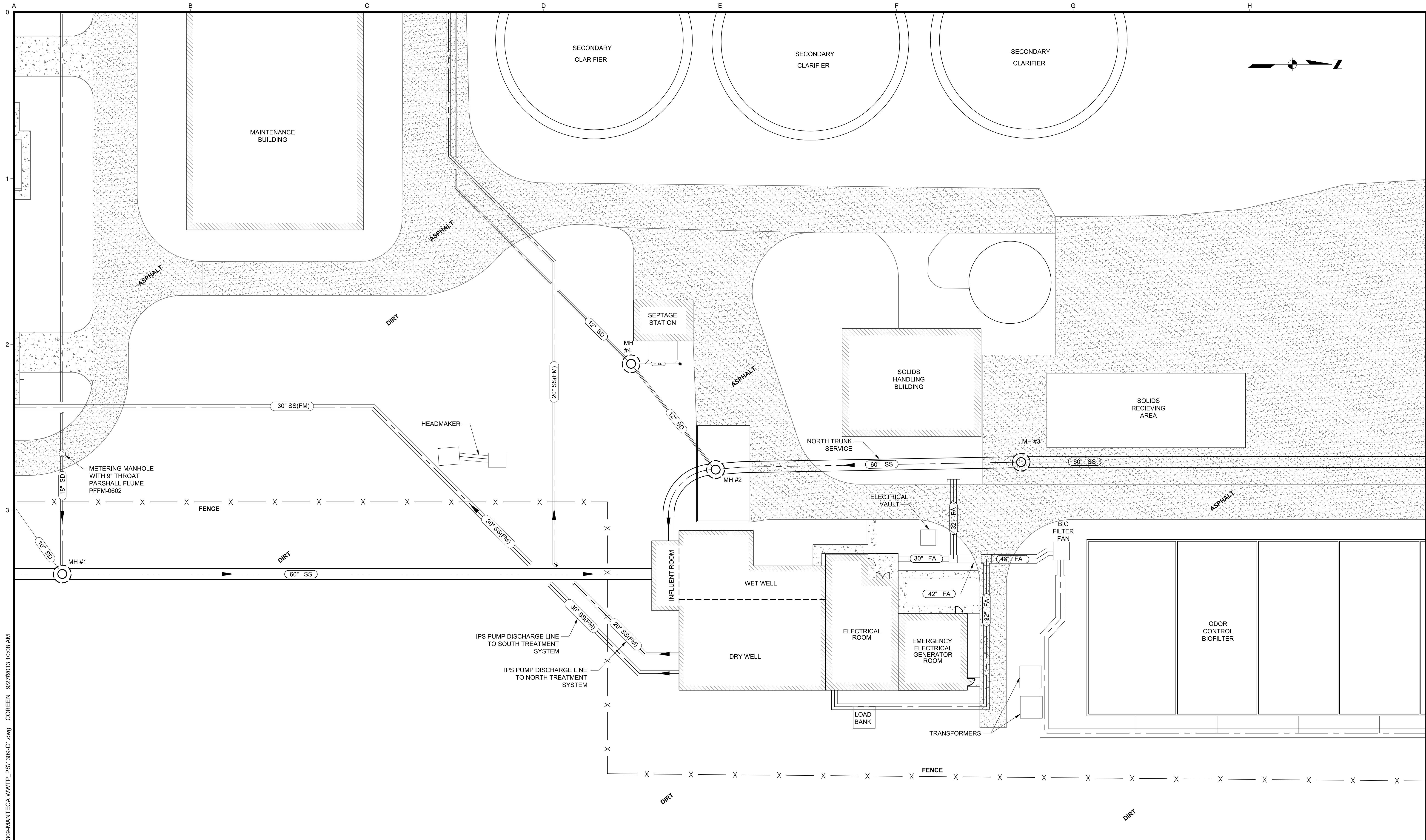
SCALE: 1" = 500'  
APPROXIMATE

**NOTE:**  
ALL VISITORS TO THE TREATMENT FACILITY  
MUST SIGN IN AT THE ADMINISTRATION  
BUILDING.

## BID SET

N:\CS\_PROJECTS\CM2013\1309-MANTECA WWTQ\_PS1309-G1.dwg WILLIE 9/25/2013 8:10 AM

NO.	REVISION	DATE	BY		DESIGNED	<b>ICM Group, Inc.</b> 21 Natoma Street, Suite 150, Folsom, CA 95630 916-984-7726	<b>MANTECA WASTEWATER QUALITY CONTROL FACILITY                  INFLUENT PUMP STATION REHABILITATION                  MANTECA, CA</b>	<b>TITLE SHEET</b>	FILE NAME
					DRAWN				1309-G1 JOB NO. 1309 DATE SEPTEMBER 2013 DRAWING <b>G1</b>



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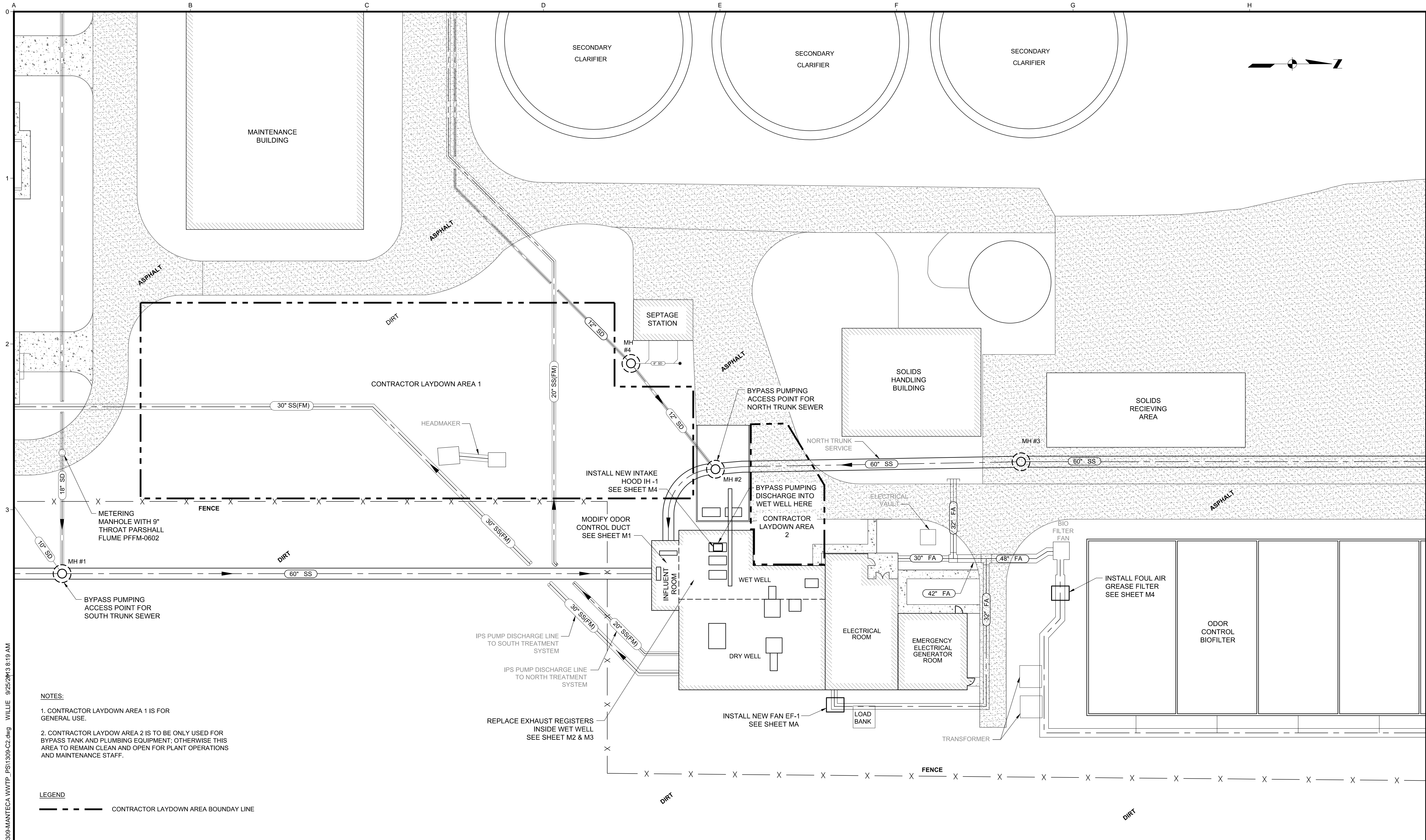
DESIGNED: JI  
 DRAWN: WH  
 CHECKED: JI

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**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
 INFLUENT PUMP STATION REHABILITATION  
 MANTECA, CA**

**SITE PLAN**

FILE NAME: 1309-C1  
 JOB NO.: 1309  
 DATE: SEPTEMBER 2013  
 DRAWING: **C1**



**NOTES:**

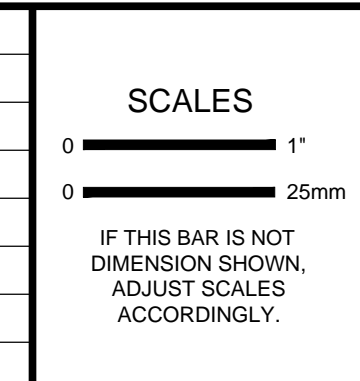
1. CONTRACTOR LAYDOWN AREA 1 IS FOR GENERAL USE.
2. CONTRACTOR LAYDOWN AREA 2 IS TO BE ONLY USED FOR BYPASS TANK AND PLUMBING EQUIPMENT; OTHERWISE THIS AREA TO REMAIN CLEAN AND OPEN FOR PLANT OPERATIONS AND MAINTENANCE STAFF.

**LEGEND**

--- CONTRACTOR LAYDOWN AREA BOUNDARY LINE

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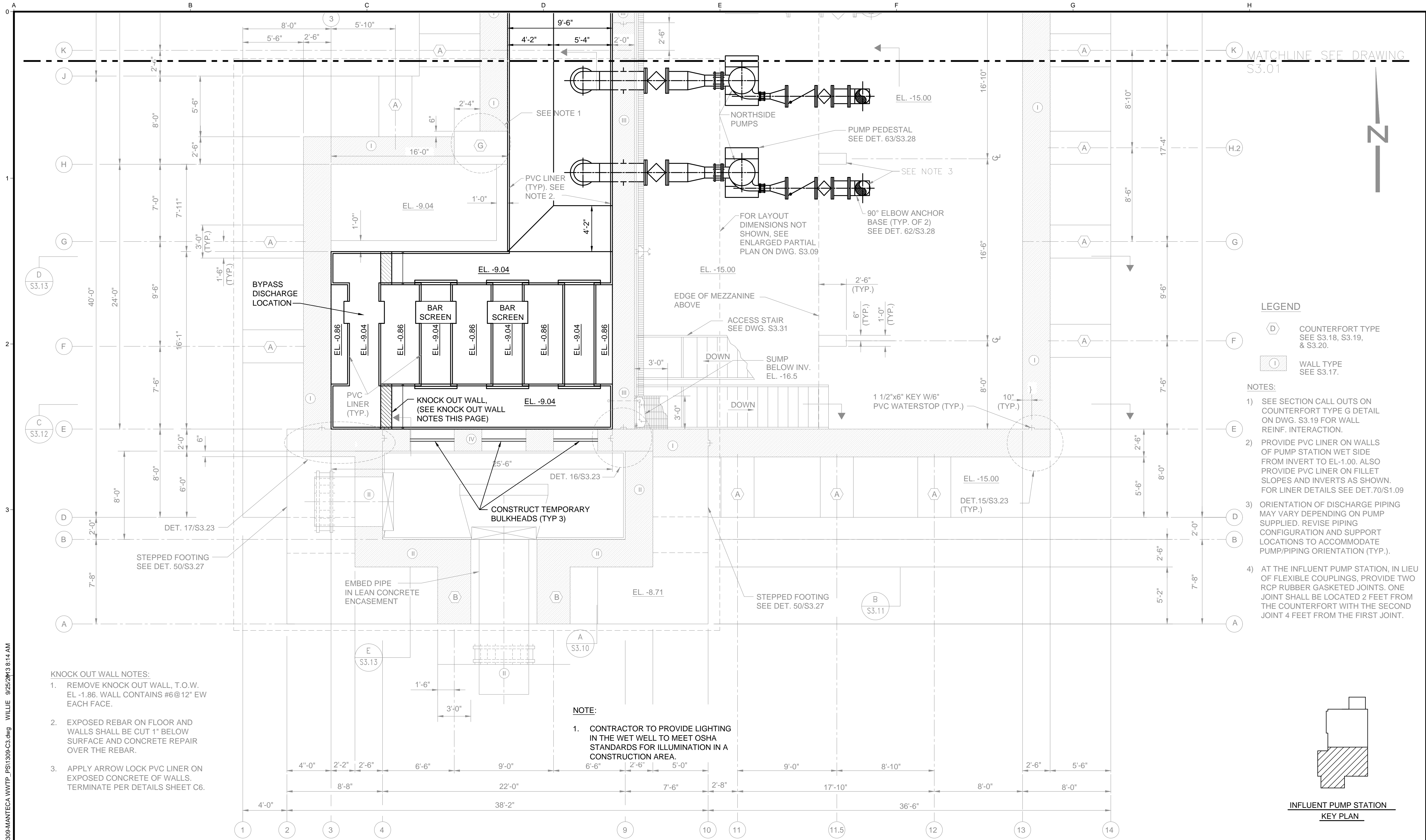
DESIGNED: JI  
 DRAWN: WH  
 CHECKED: JI

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**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
 INFLUENT PUMP STATION REHABILITATION  
 MANTECA, CA**

**SITE IMPROVEMENTS  
 AND BYPASS PLAN  
 INFORMATION**

FILE NAME: 1309-C2  
 JOB NO.: 1309  
 DATE: SEPTEMBER 2013  
 DRAWING: **C2**



MATCHLINE SEE DRAWING S3.01



**LEGEND**

- COUNTERFORT TYPE SEE S3.18, S3.19, & S3.20.
- WALL TYPE SEE S3.17.

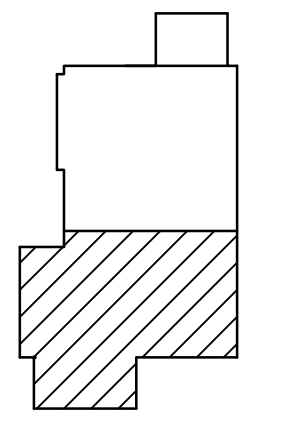
**NOTES:**

- 1) SEE SECTION CALL OUTS ON COUNTERFORT TYPE G DETAIL ON DWG. S3.19 FOR WALL REINF. INTERACTION.
- 2) PROVIDE PVC LINER ON WALLS OF PUMP STATION WET SIDE FROM INVERT TO EL.-1.00. ALSO PROVIDE PVC LINER ON FILLET SLOPES AND INVERTS AS SHOWN. FOR LINER DETAILS SEE DET.70/S1.09
- 3) ORIENTATION OF DISCHARGE PIPING MAY VARY DEPENDING ON PUMP SUPPLIED. REVISE PIPING CONFIGURATION AND SUPPORT LOCATIONS TO ACCOMMODATE PUMP/PIPING ORIENTATION (TYP.).
- 4) AT THE INFLUENT PUMP STATION, IN LIEU OF FLEXIBLE COUPLINGS, PROVIDE TWO RCP RUBBER GASKETED JOINTS. ONE JOINT SHALL BE LOCATED 2 FEET FROM THE COUNTERFORT WITH THE SECOND JOINT 4 FEET FROM THE FIRST JOINT.

- KNOCK OUT WALL NOTES:**
1. REMOVE KNOCK OUT WALL, T.O.W. EL. -1.86. WALL CONTAINS #6@12" EW EACH FACE.
  2. EXPOSED REBAR ON FLOOR AND WALLS SHALL BE CUT 1" BELOW SURFACE AND CONCRETE REPAIR OVER THE REBAR.
  3. APPLY ARROW LOCK PVC LINER ON EXPOSED CONCRETE OF WALLS. TERMINATE PER DETAILS SHEET C6.

**NOTE:**

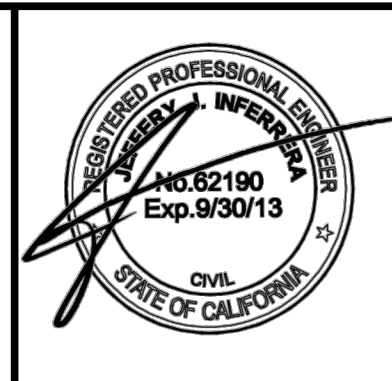
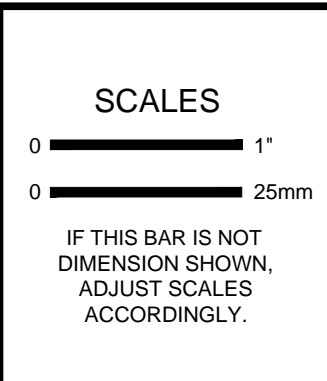
1. CONTRACTOR TO PROVIDE LIGHTING IN THE WET WELL TO MEET OSHA STANDARDS FOR ILLUMINATION IN A CONSTRUCTION AREA.



**INFLUENT PUMP STATION KEY PLAN**

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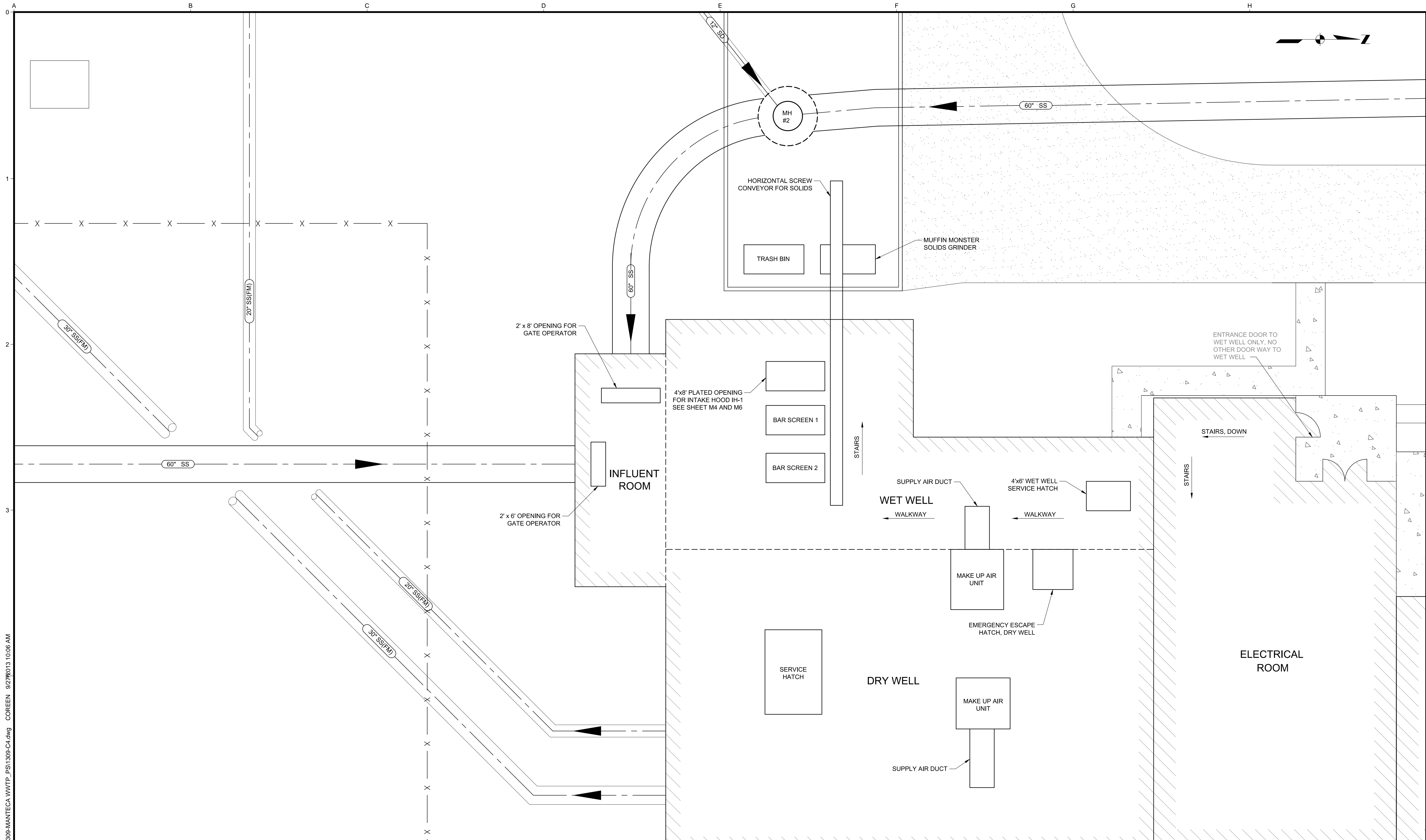
DESIGNED: JI  
 DRAWN: WH  
 CHECKED: JI

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**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
 INFLUENT PUMP STATION REHABILITATION  
 MANTECA, CA**

**BYPASS DISCHARGE  
 LOCATION PLAN**

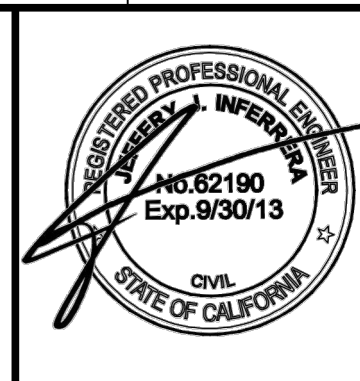
FILE NAME: 1309-C3  
 JOB NO.: 1309  
 DATE: SEPTEMBER 2013  
 DRAWING: **C3**



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**SCALES**  
 0" = 1"  
 0 = 25mm  
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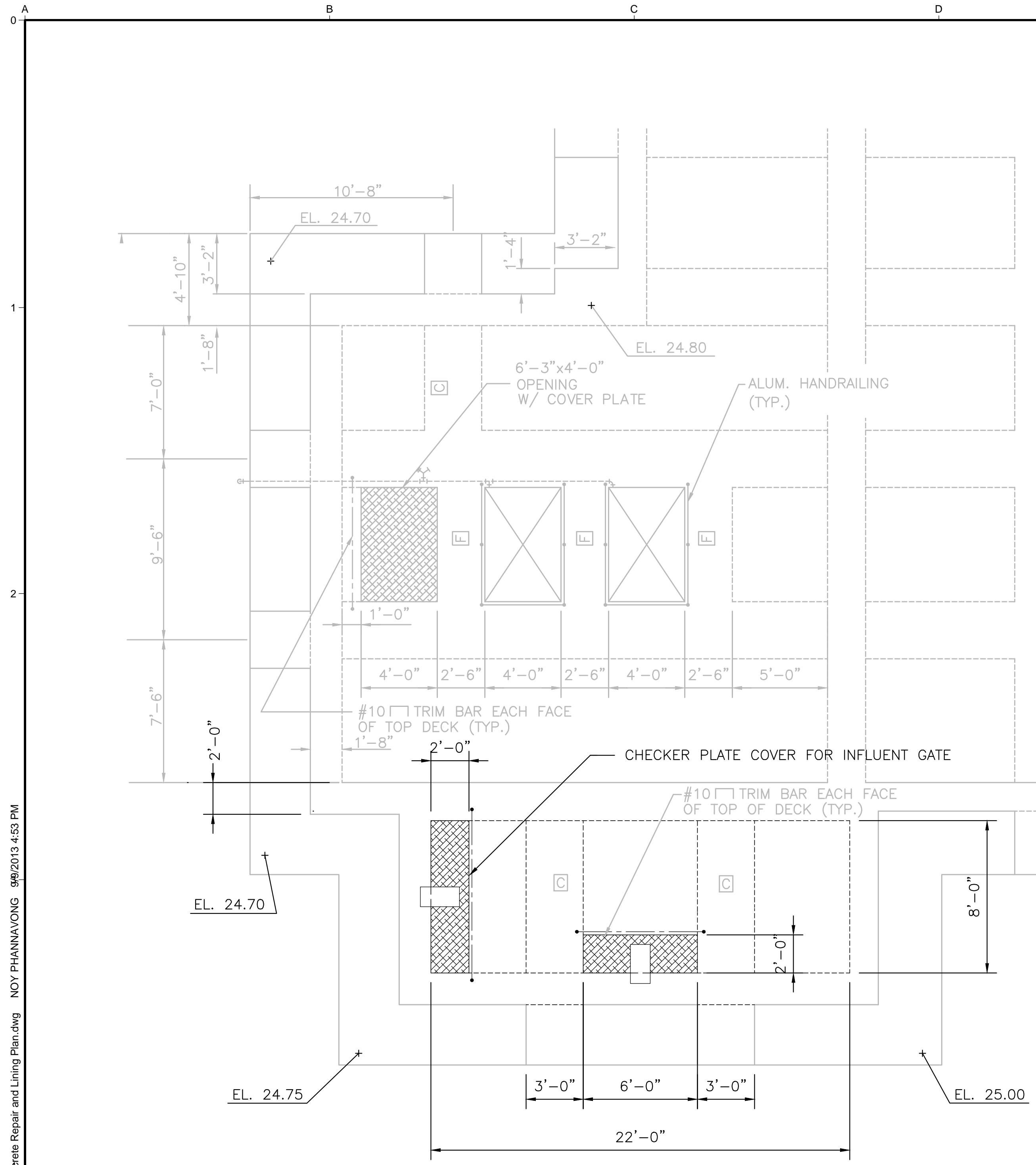
DESIGNED: JI  
 DRAWN: WH  
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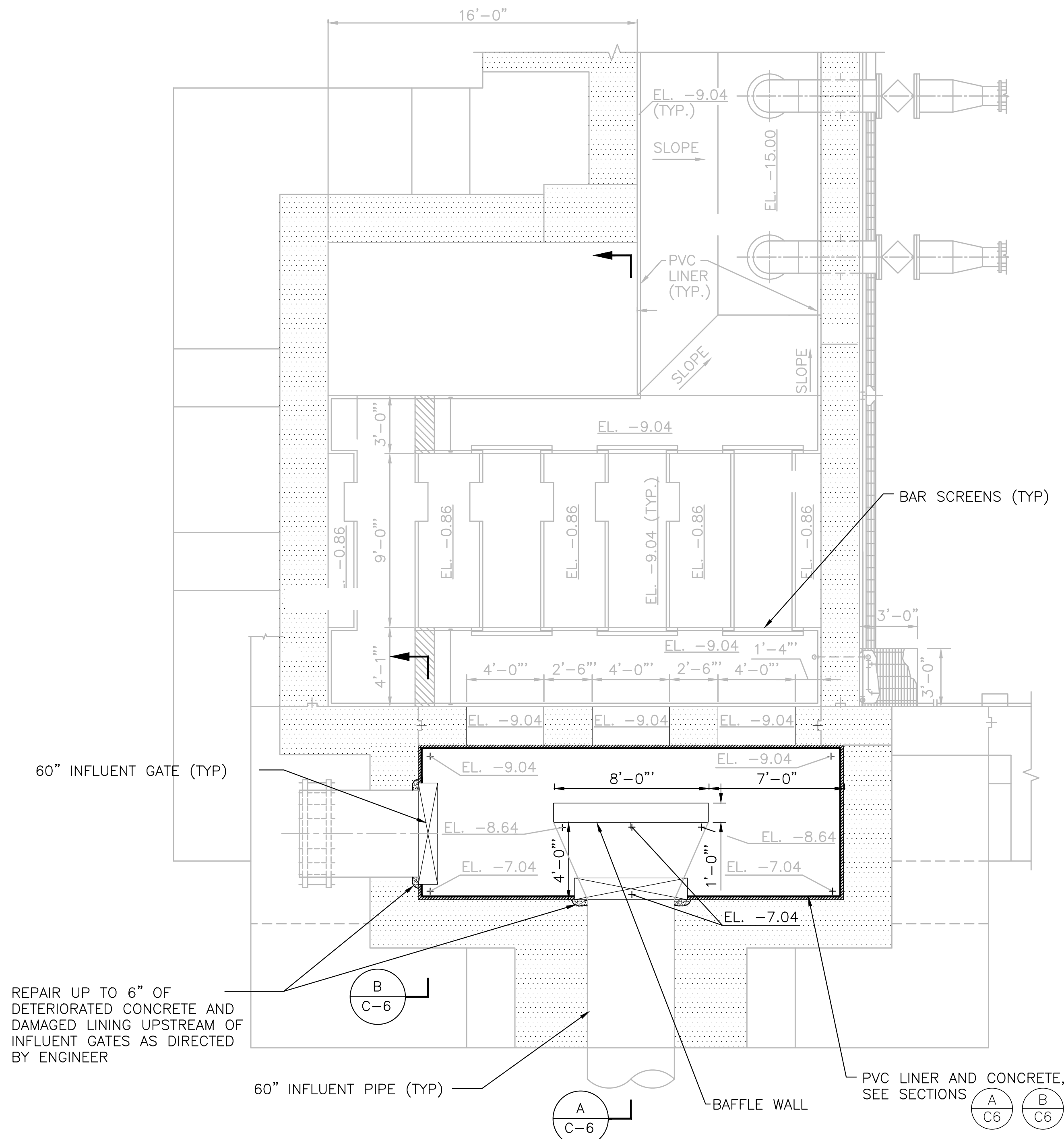
**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
 INFLUENT PUMP STATION REHABILITATION  
 MANTECA, CA**

**INFLUENT PUMP STATION,  
 GROUND LEVEL**

FILE NAME: 1309-C4  
 JOB NO.: 1309  
 DATE: SEPTEMBER 2013  
 DRAWING: **C4**



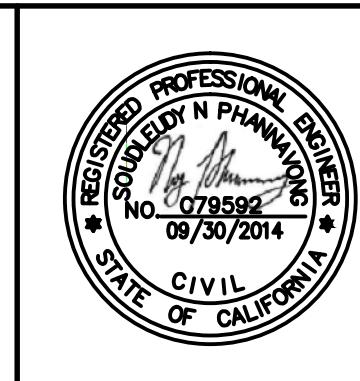
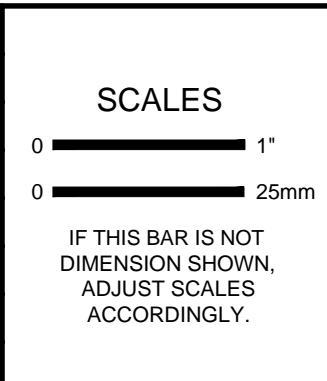
**TOP DECK PLAN - EL. 25.00**  
SCALE: 1/4" = 1'-0"



**PARTIAL PLAN - INFLUENT ROOM**  
SCALE: 1/4" = 1'-0"

F:\Projects\2012\2020-0298\12-0231 ICM ColManeca IPS Rehab Design\Drawings\C5-Concrete Repair and Lining Plan.dwg NOY PHANAVONG 9/20/2013 4:53 PM

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NP

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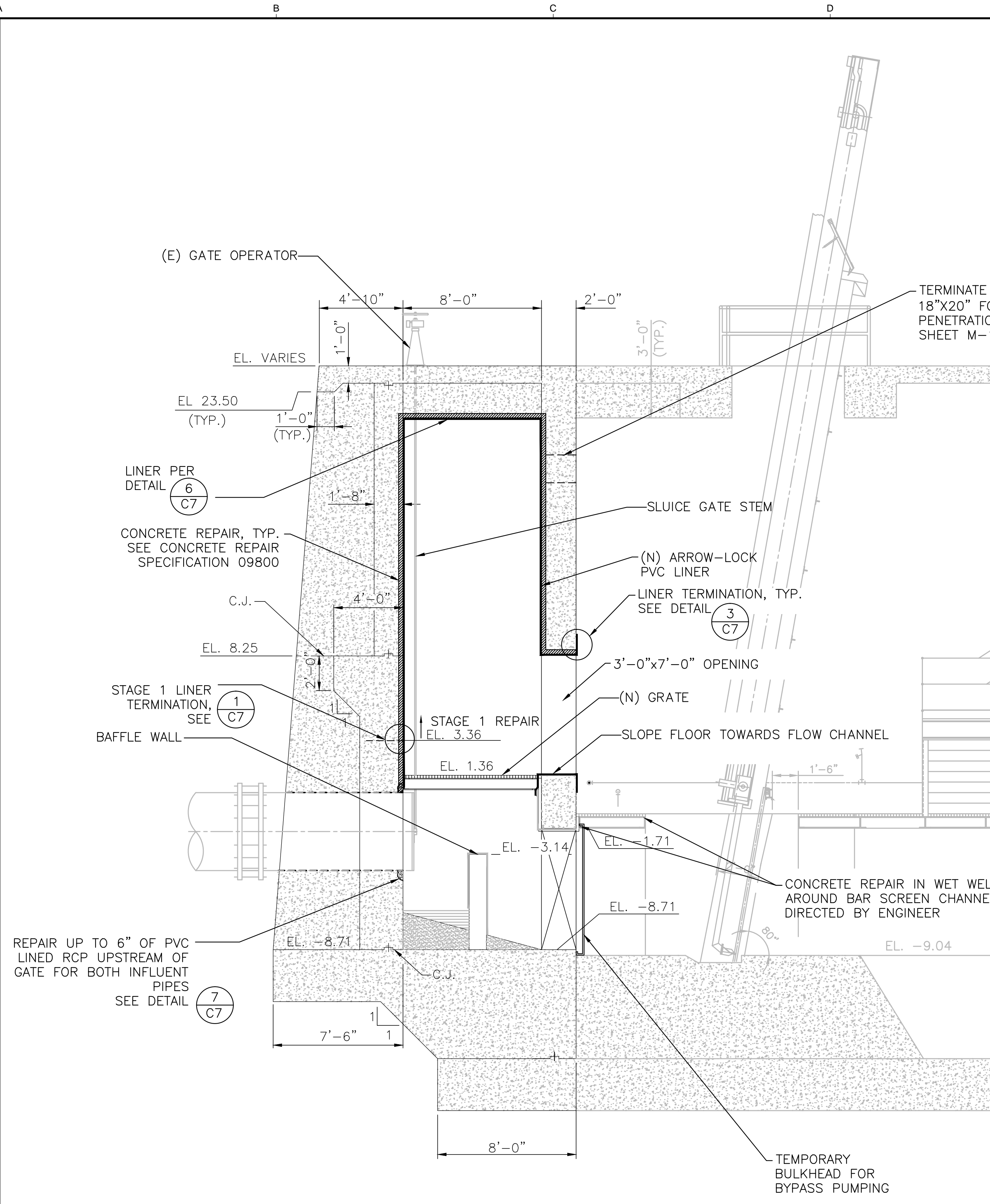
**V&A**  
155 Grand Avenue, Suite 700  
Oakland, CA 94612  
Tel. (510) 903-6600, Fax (510) 903-6601

**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
INFLUENT PUMP STATION REHABILITATION  
MANTECA, CA**

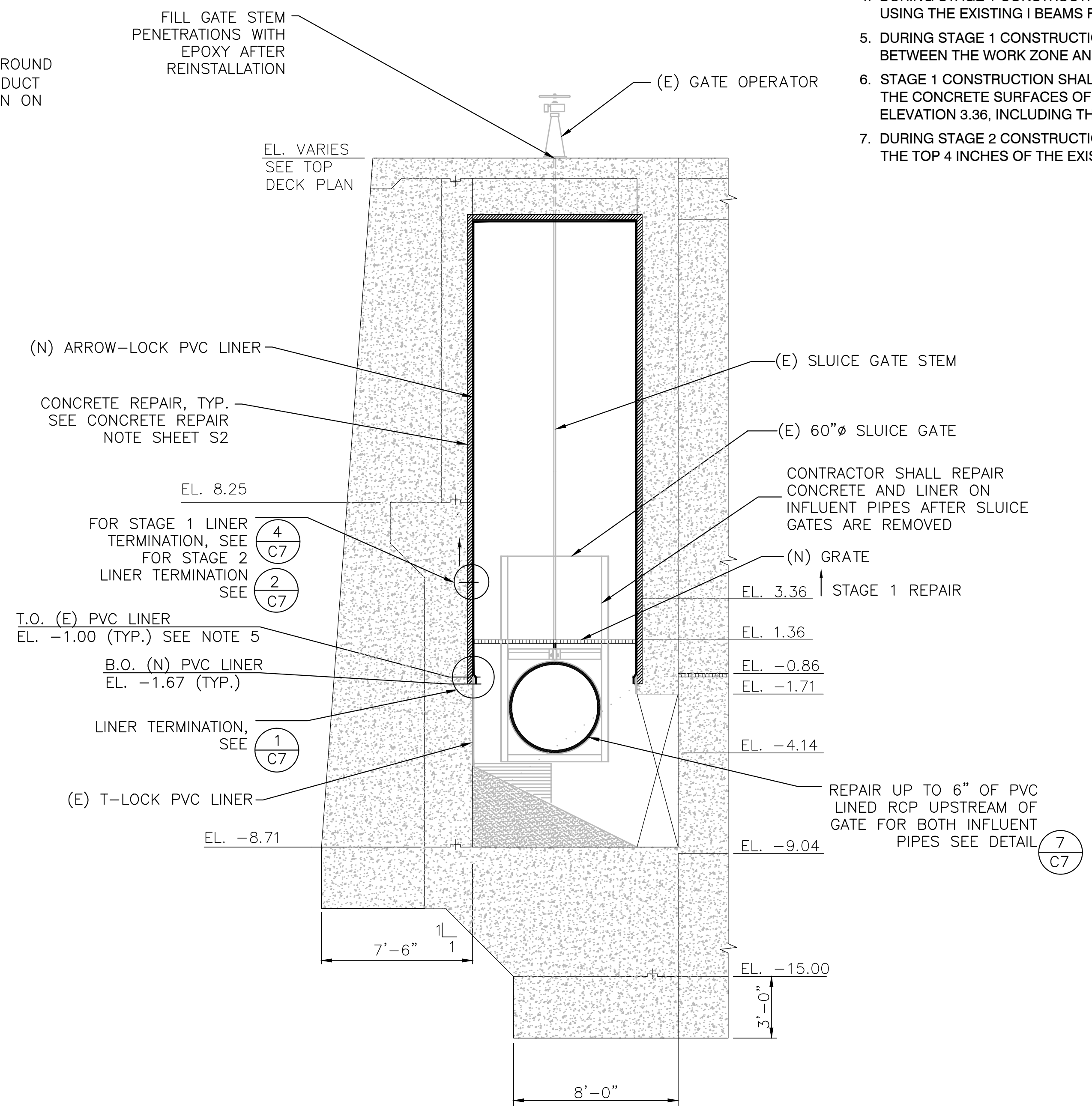
**CONCRETE REPAIR AND LINING  
PLAN**

FILE NAME	1309-C5
JOB NO.	1309
DATE	SEPTEMBER 2013
SHEET OF	C5 29

F:\Projects\2012\20120200-029812-0231 ICM ColManeca IPS Rehab Design\Drawings\C6-Concrete Repair and Lining Sections.dwg NOY PHANNAVONG 9/9/2013 4:56 PM



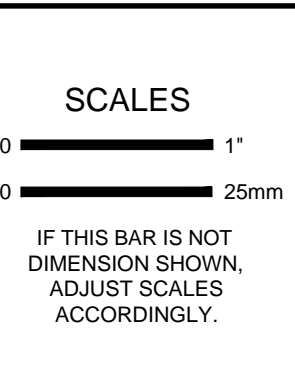
**SECTION A**  
SCALE: 1/4" = 1'



**SECTION B**  
SCALE: 1/4" = 1'

- NOTE:**
- CONTRACTOR SHALL RESTORE THE EXISTING MECHANICAL ITEMS TEMPORARILY REMOVED DURING CONSTRUCTION TO THE ORIGINAL CONDITION AFTER CONCRETE REPAIR AND LINER INSTALLATION ARE COMPLETE.
  - ANCHORS FOR EQUIPMENT SUPPORTS, TEMPORARILY REMOVED DURING CONSTRUCTION SHALL BE REPLACED WITH 316 STAINLESS STEEL ANCHOR BOLTS HAVING SAME SIZE AND EMBEDMENT OF EXISTING ANCHORS, HEX NUTS SHALL BE TRIPAC 2000 COATED.
  - DEMOLITION AND CONSTRUCTION DEBRIS ARE NOT ALLOWED TO ENTER THE WASTEWATER STREAM
  - DURING STAGE 1 CONSTRUCTION, BUILD A WORKING PLATFORM USING THE EXISTING I BEAMS FOR SUPPORT.
  - DURING STAGE 1 CONSTRUCTION, PROVIDE A VAPOR BARRIER BETWEEN THE WORK ZONE AND WASTEWATER FLOW BELOW.
  - STAGE 1 CONSTRUCTION SHALL CONSIST OF REPAIRING AND LINING THE CONCRETE SURFACES OF THE INFLUENT ROOM ABOVE ELEVATION 3.36, INCLUDING THE CEILING.
  - DURING STAGE 2 CONSTRUCTION, CONTRACTOR SHALL REMOVE THE TOP 4 INCHES OF THE EXISTING PVC LINING.

NO.	REVISION	DATE	BY



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CHECKED	LT

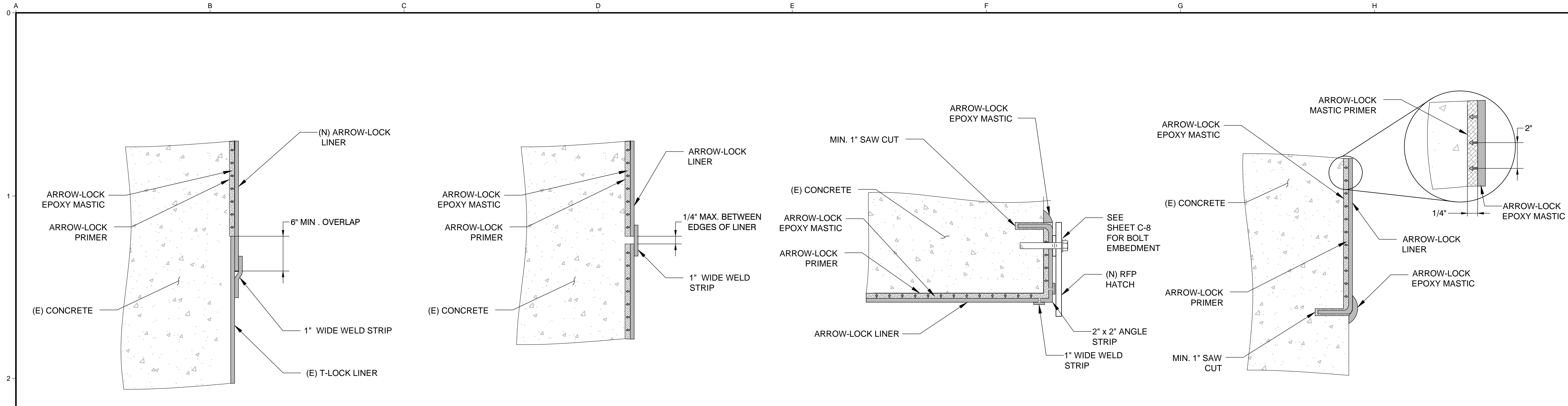
**ICM Group, Inc.**  
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**V&A**  
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Oakland, CA 94612  
Tel. (510) 903-6600, Fax (510) 903-6601

**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
INFLUENT PUMP STATION REHABILITATION  
MANTECA, CA**

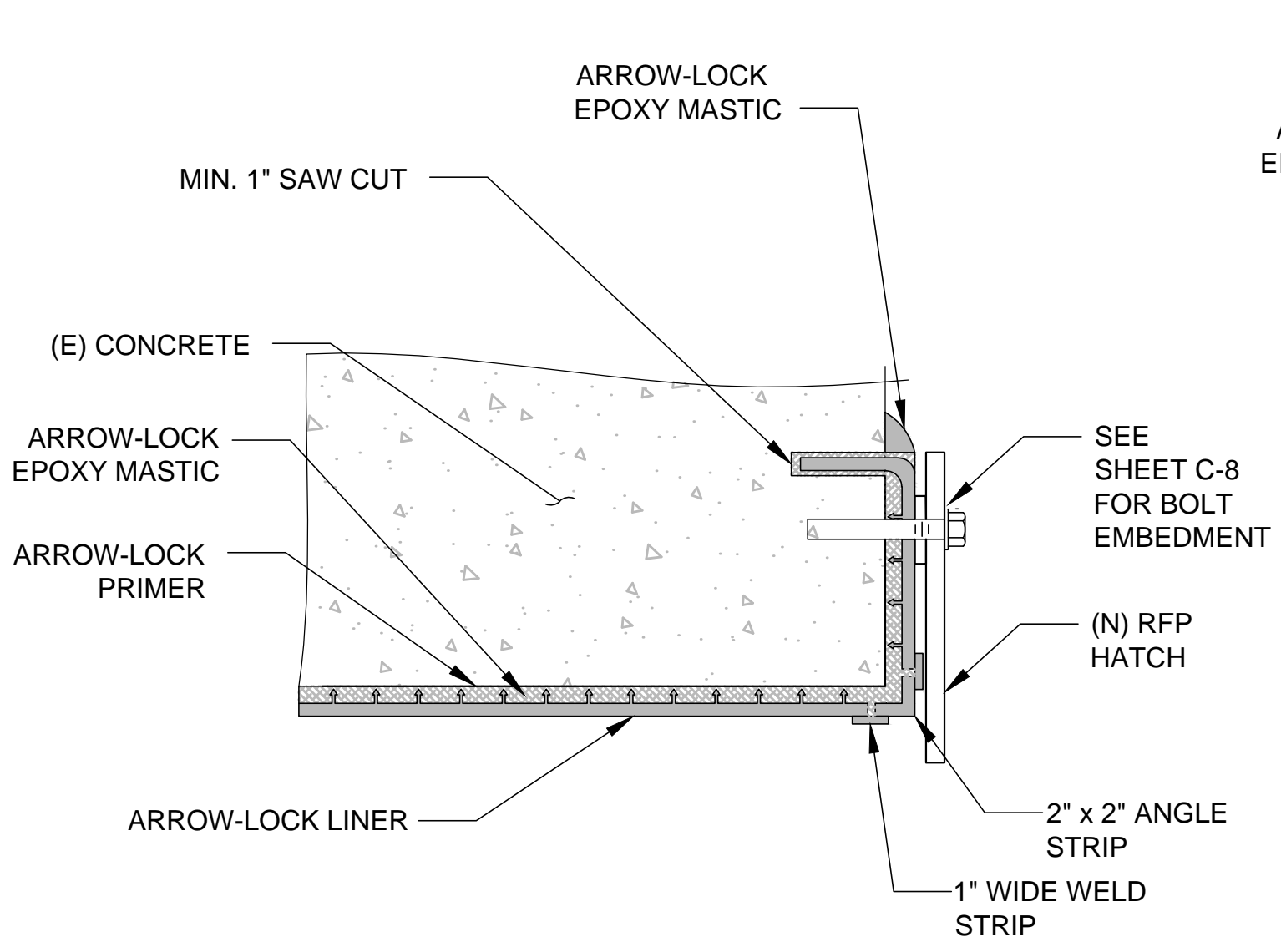
**CONCRETE REPAIR AND LINING  
SECTIONS**

FILE NAME	1309-C6
JOB NO.	1309
DATE	SEPTEMBER 2013
SHEET OF	C6 29

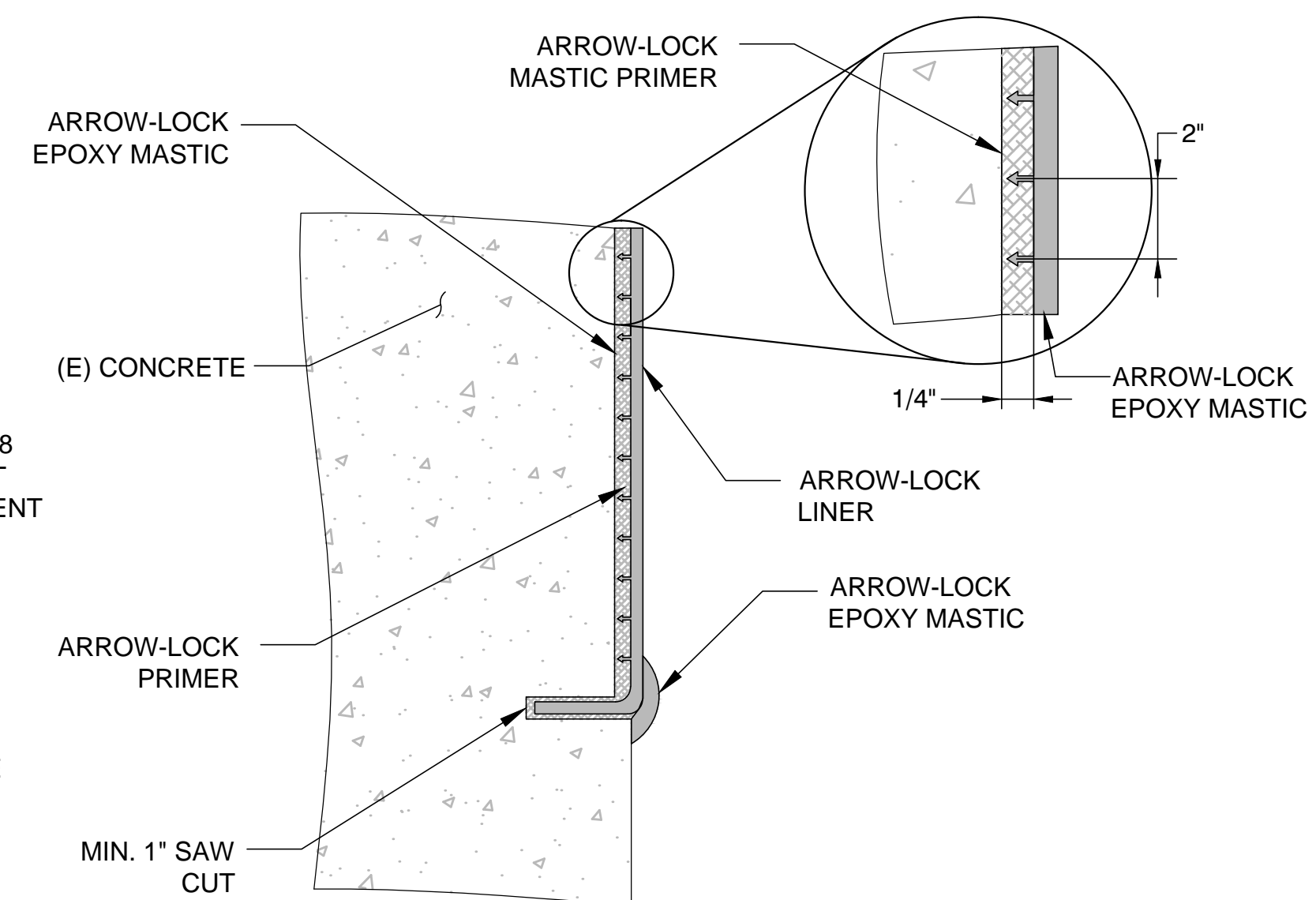


**1**  
TERMINATION OF EXISTING LINER  
NTS

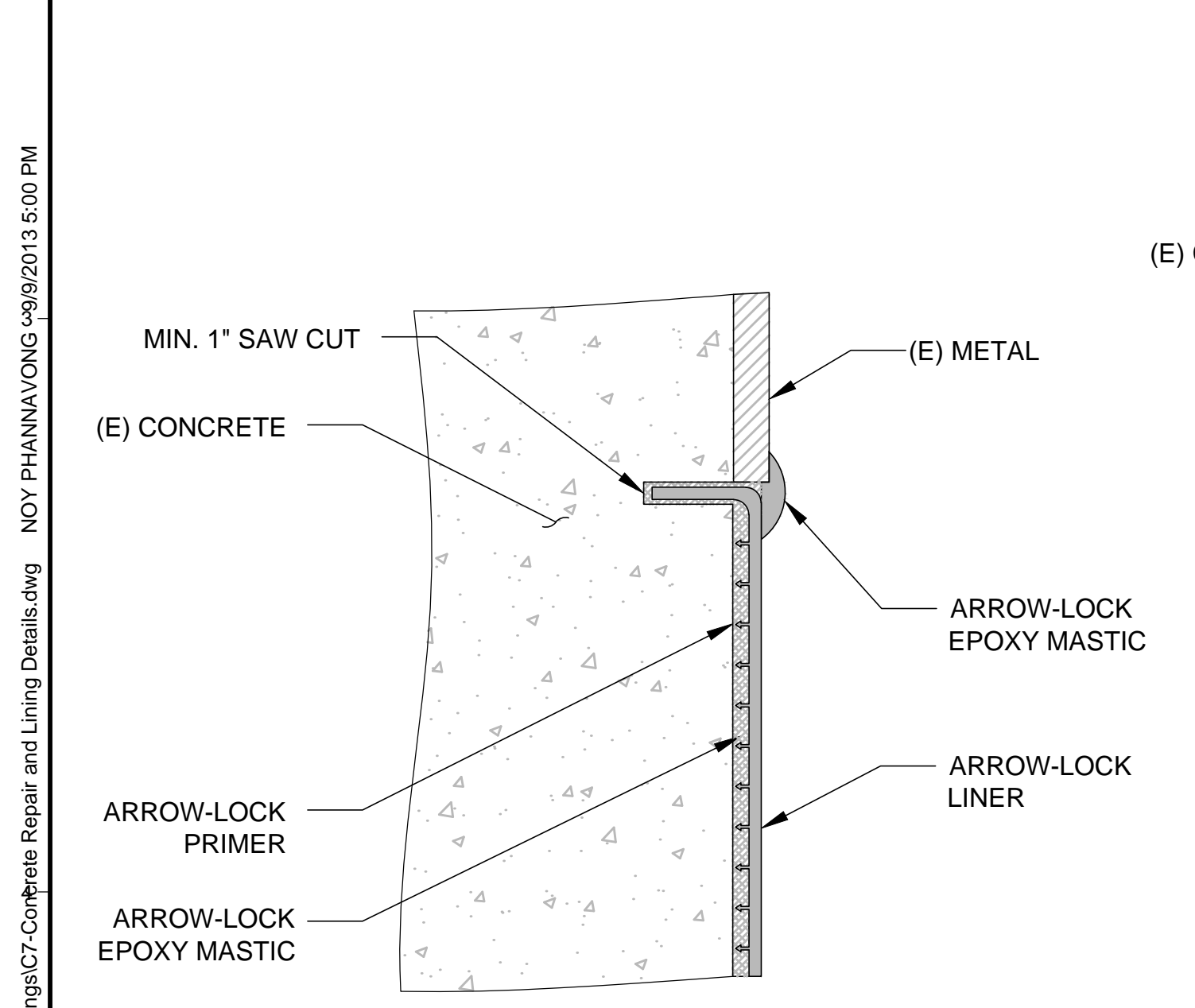
**2**  
TERMINATION AT JOINT  
NTS



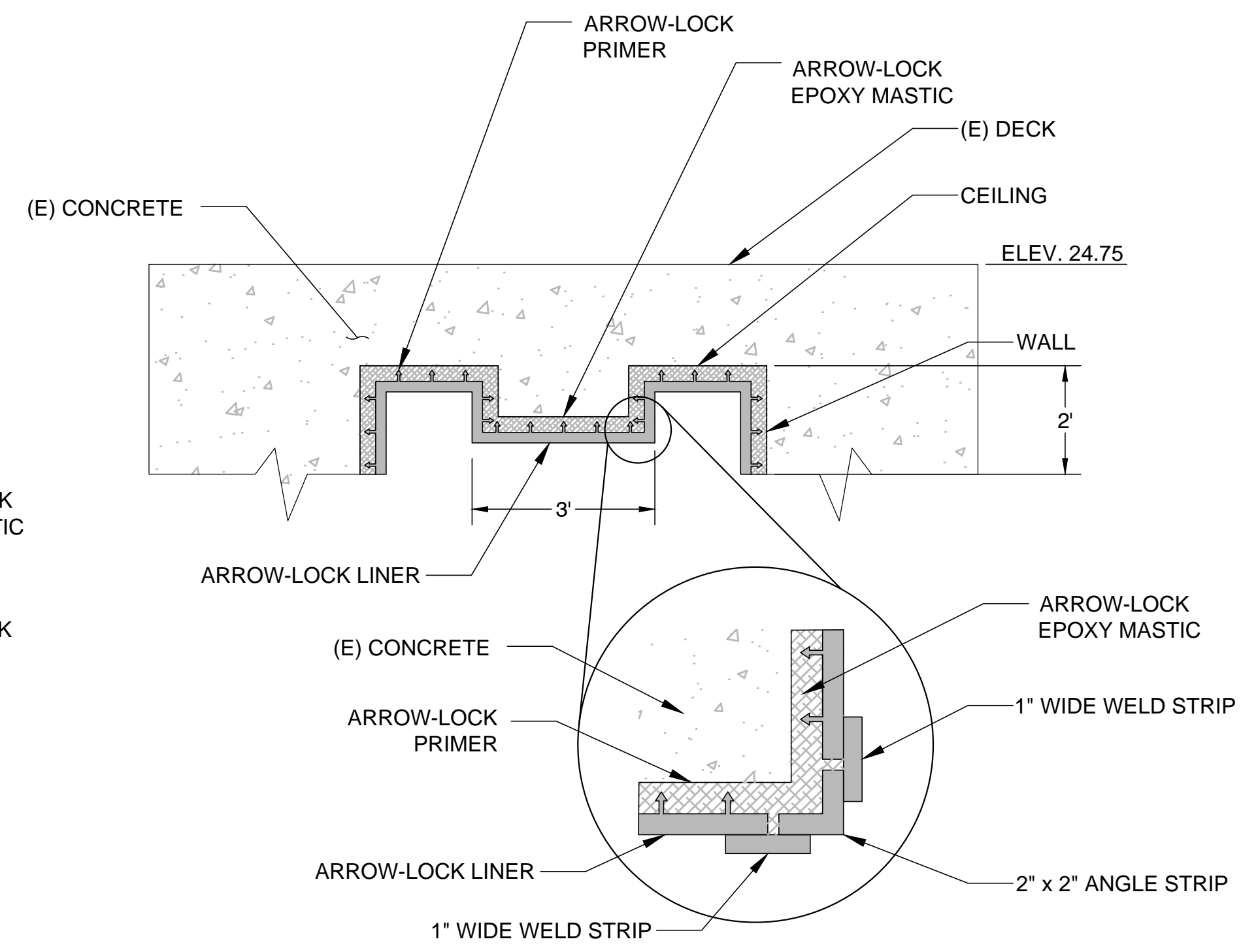
**3**  
RFP HATCH TERMINATION DETAIL  
NTS



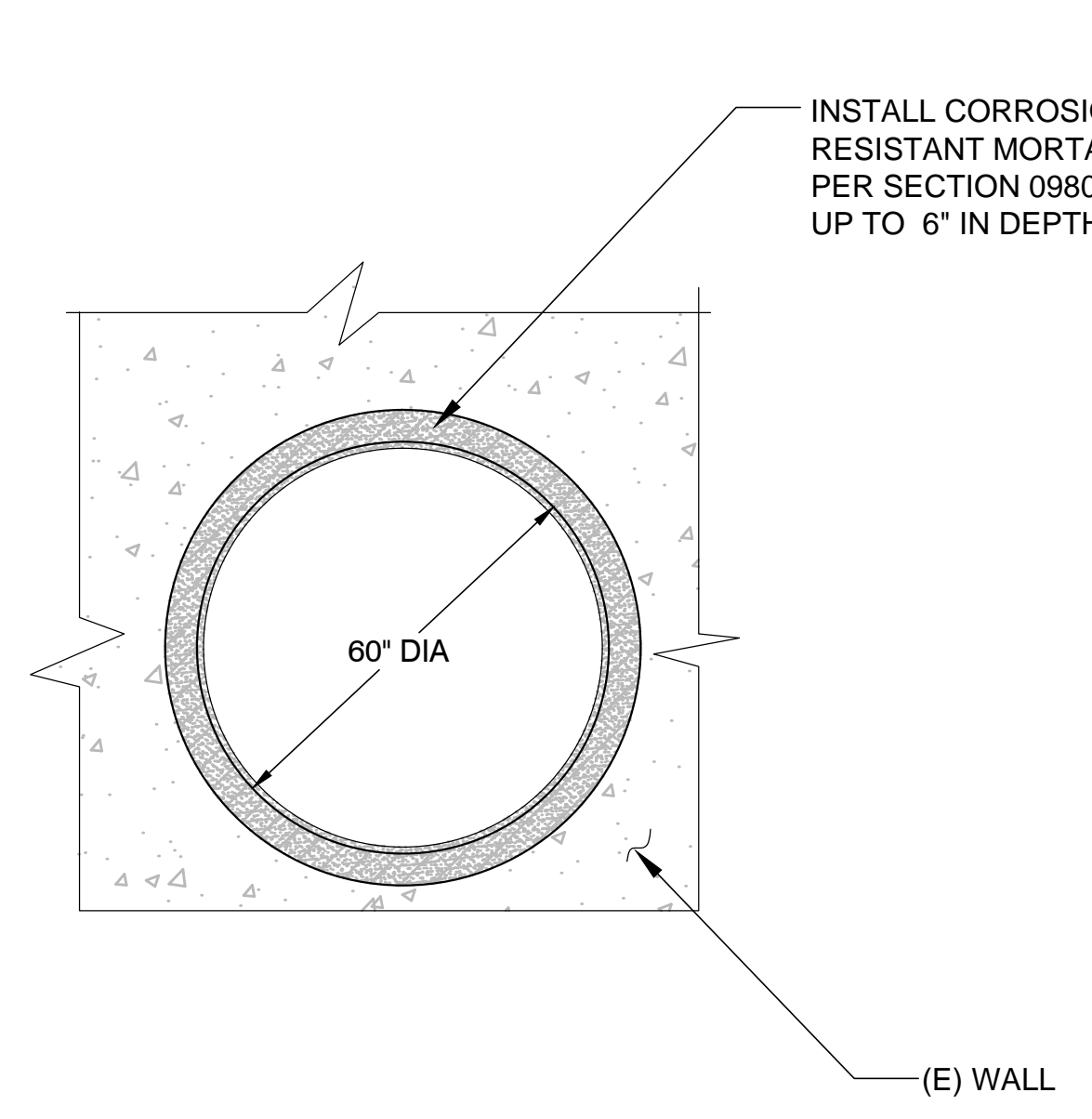
**4**  
LOWER EMBEDDED  
TERMINATION DETAIL  
NTS



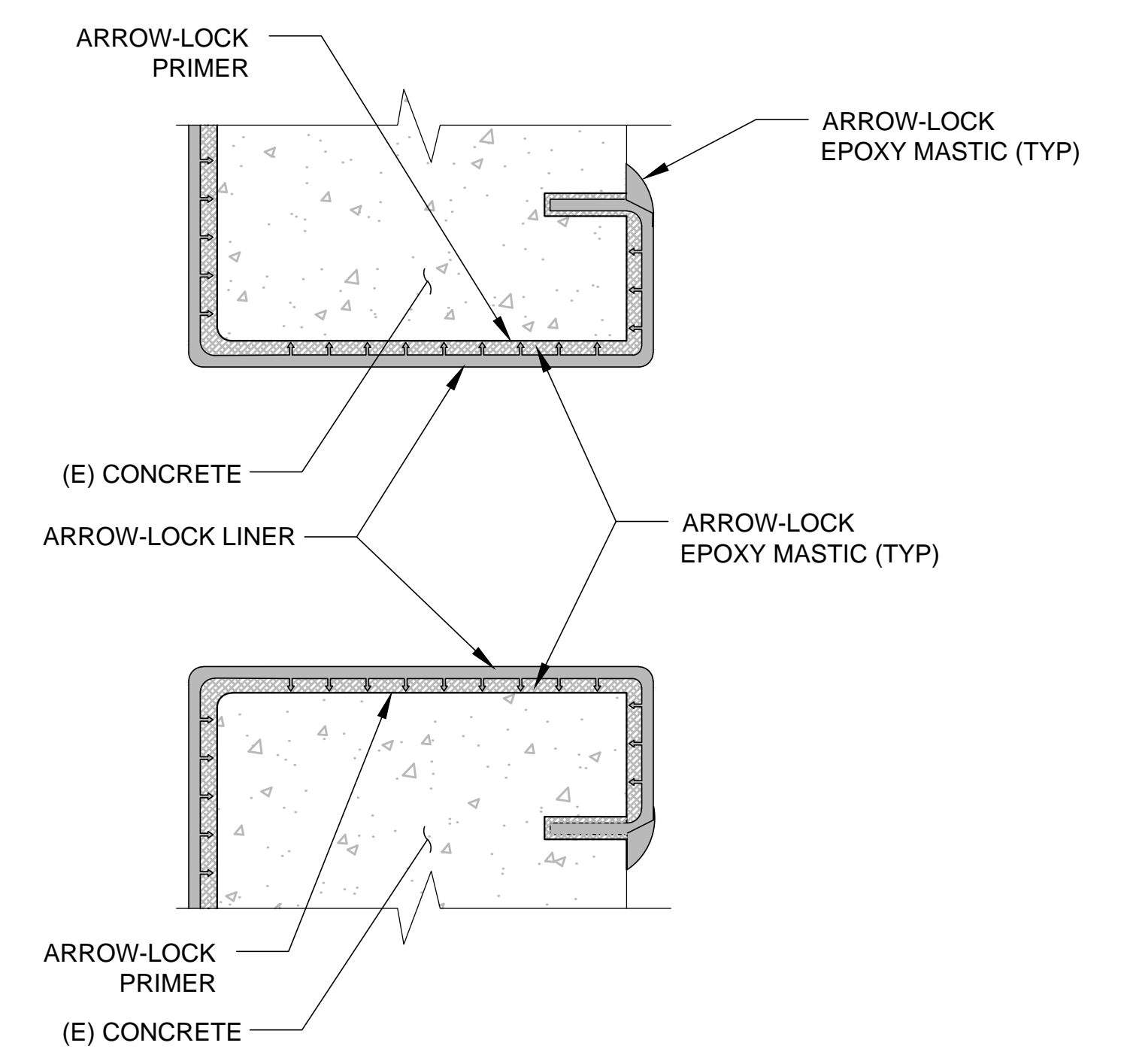
**5**  
TERMINATION AT EXISTING  
METAL PARTS THAT CANNOT BE REMOVED  
NTS



**6**  
CEILING DETAIL  
NTS



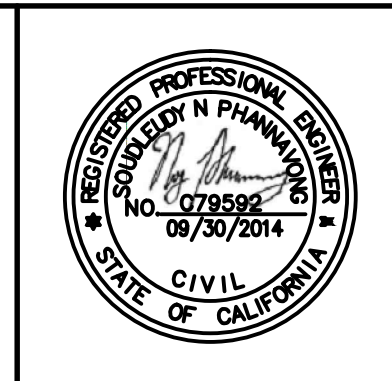
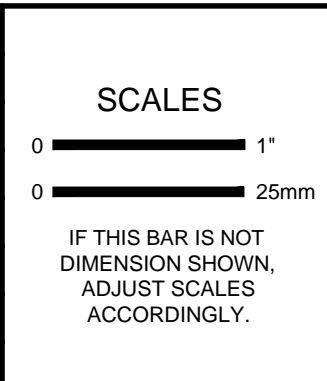
**7**  
CONCRETE REPAIR AT INFLUENT  
PIPE DETAIL  
NTS



**8**  
HVAC VENT LINING TERMINATION DETAIL  
NTS

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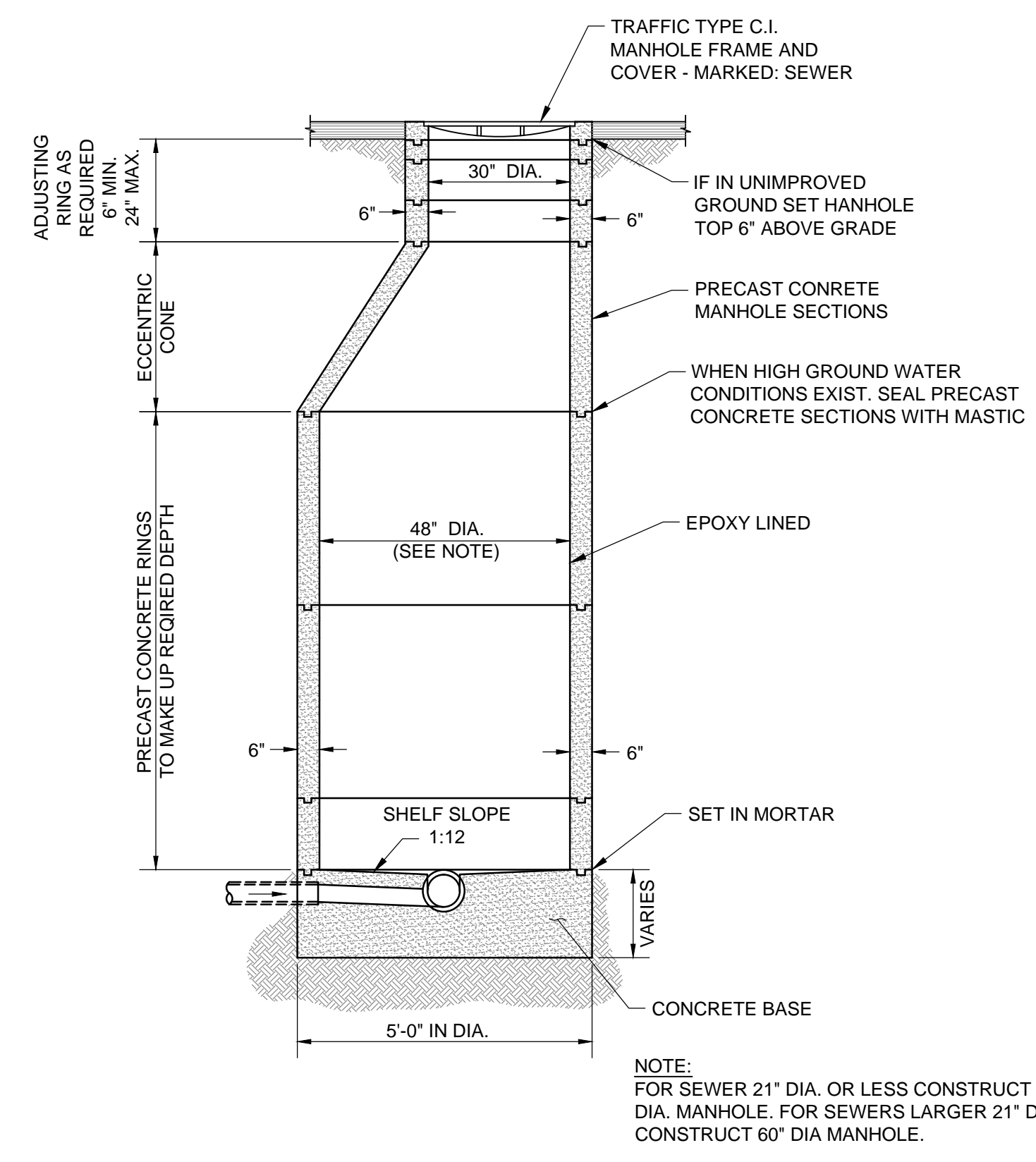
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**V&A**  
155 Grand Avenue, Suite 700  
Oakland, CA 94612  
Tel. (510) 903-6600, Fax (510) 903-6601

**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
INFLUENT PUMP STATION REHABILITATION  
MANTECA, CA**

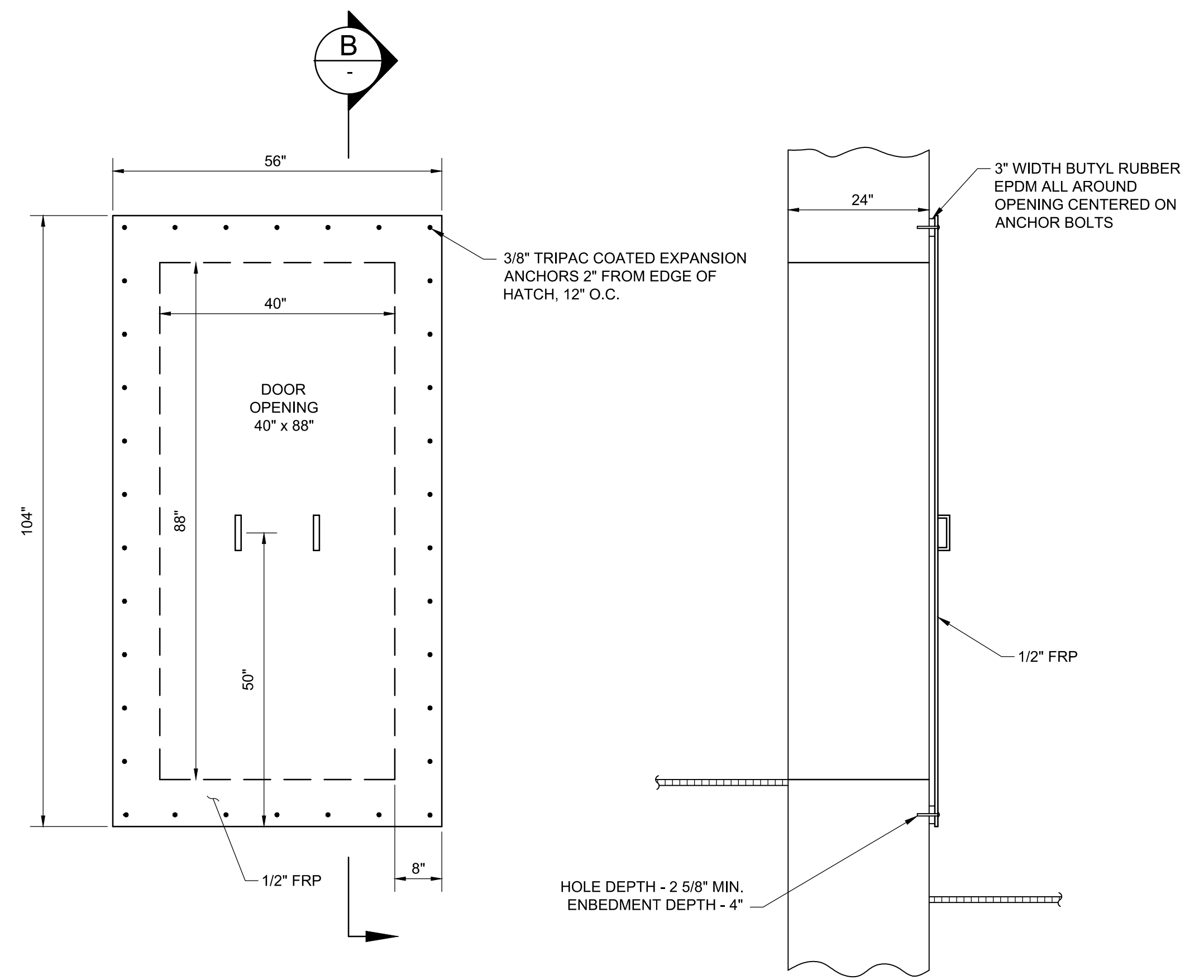
**CONCRETE REPAIR AND LINING  
DETAILS**

FILE NAME	1309-C7
JOB NO.	1309
DATE	SEPTEMBER 2013
SHEET OF	C7 29



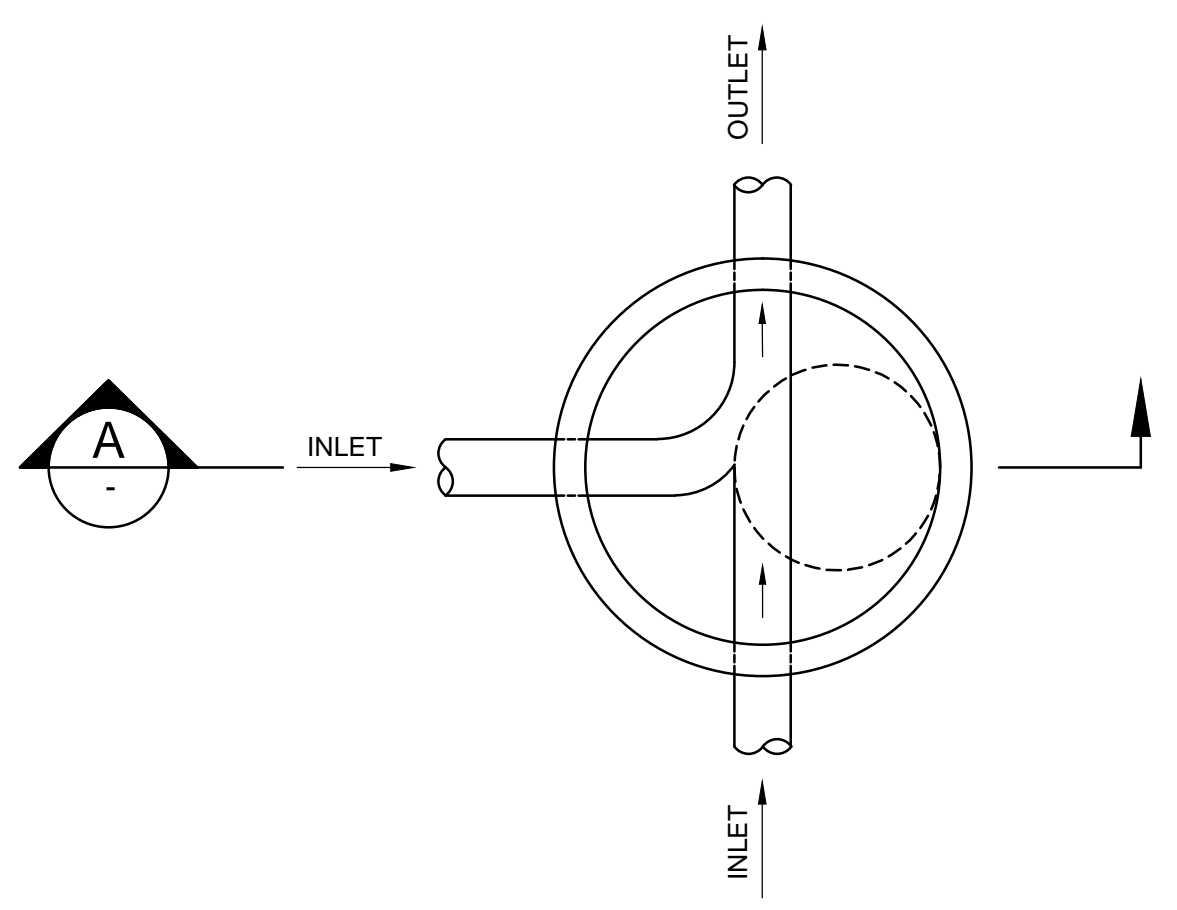
SECTION A

NOTE:  
FOR SEWER 21" DIA. OR LESS CONSTRUCT 48" DIA. MANHOLE. FOR SEWERS LARGER 21" DIA. CONSTRUCT 60" DIA MANHOLE.



SECTION B

INFLUENT ROOM REMOVABLE HATCH  
SCALE: NTS

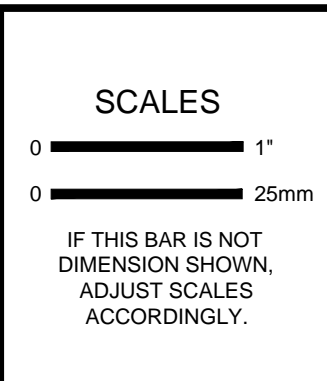


STANDARD SEWER MANHOLE WITH  
ECCENTRIC CONE FROM 2003  
SCHEDULE B DRAWINGS  
SCALE: NTS

NOTE:  
THE SEWER MANHOLES INSTALLED ON  
THE 60" TRUNK SEWERS ARE SADDLE  
MANHOLES.

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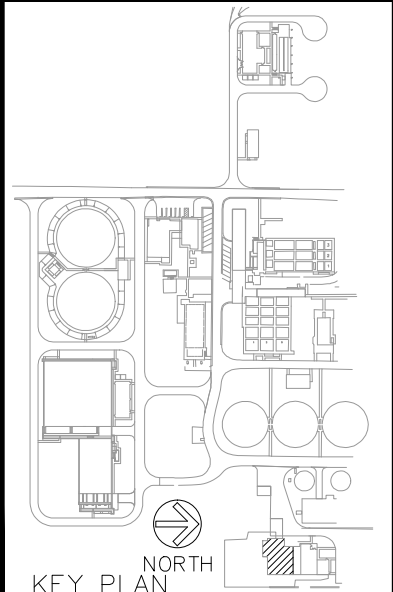
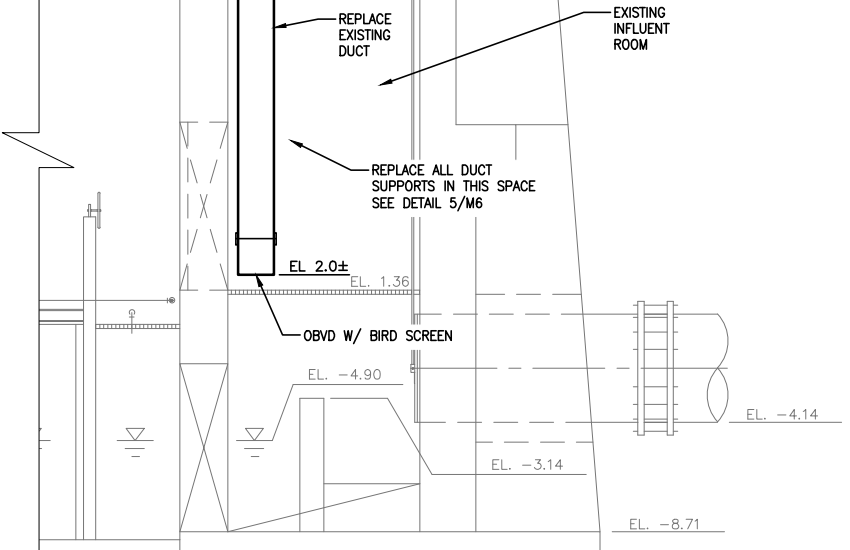
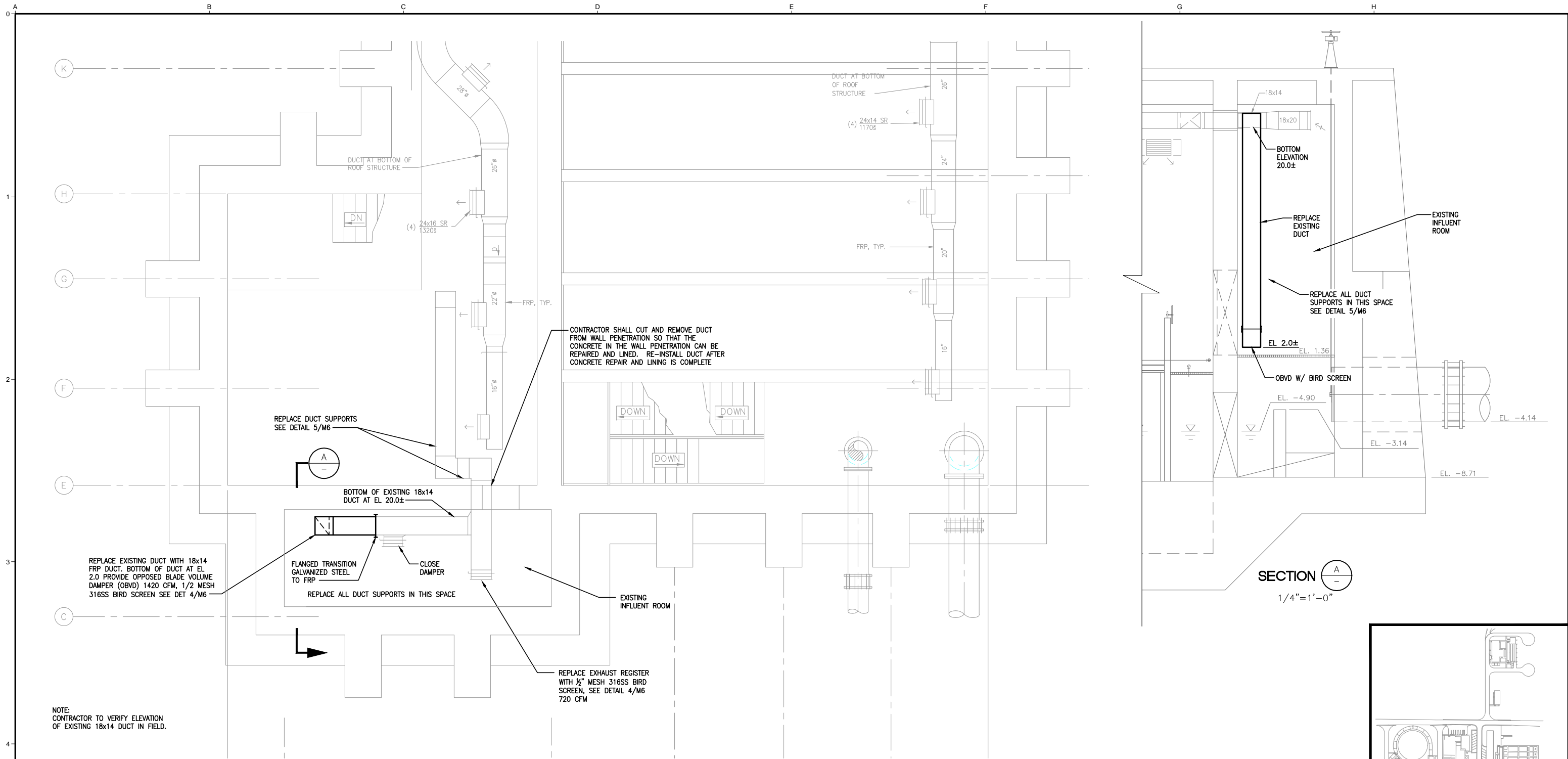
DESIGNED	JJ
DRAWN	WH
CHECKED	JJ

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**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
INFLUENT PUMP STATION REHABILITATION  
MANTECA, CA**

**DETAILS**

FILE NAME	1309-C8
JOB NO.	1309
DATE	SEPTEMBER 2013
DRAWING	<b>C8</b>



**ODOR CONTROL MODIFICATIONS**  
1/4" = 1'-0"

NOTE:  
CONTRACTOR TO VERIFY ELEVATION  
OF EXISTING 18x14 DUCT IN FIELD.

REPLACE DUCT SUPPORTS  
SEE DETAIL 5/M6

BOTTOM OF EXISTING 18x14  
DUCT AT EL. 20.0±

REPLACE EXISTING DUCT WITH 18x14  
FRP DUCT. BOTTOM OF DUCT AT EL.  
2.0 PROVIDE OPPOSED BLADE VOLUME  
DAMPER (OBVD) 1420 CFM, 1/2 MESH  
316SS BIRD SCREEN SEE DET 4/M6

FLANGED TRANSITION  
GALVANIZED STEEL  
TO FRP

CLOSE DAMPER

REPLACE ALL DUCT SUPPORTS IN THIS SPACE

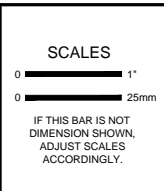
CONTRACTOR SHALL CUT AND REMOVE DUCT  
FROM WALL PENETRATION SO THAT THE  
CONCRETE IN THE WALL PENETRATION CAN BE  
REPAIRED AND LINED. RE-INSTALL DUCT AFTER  
CONCRETE REPAIR AND LINING IS COMPLETE

EXISTING  
INFLUENT ROOM

REPLACE EXHAUST REGISTER  
WITH 1/2" MESH 316SS BIRD  
SCREEN, SEE DETAIL 4/M6  
720 CFM

C:\WORK\DEA13\MANTECA\_IPSM1.dwg MARY 9/5/2013 3:42 PM

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**EL DORADO  
ENGINEERING AND  
ARCHITECTURE, INC.**

**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
INFLUENT PUMP STATION REHABILITATION  
MANTECA, CA**

**MECHANICAL**

**ODOR CONTROL MODIFICATIONS**

INFLUENT PUMP STATION  
INTERMEDIATE PLAN AT EL. +15.0

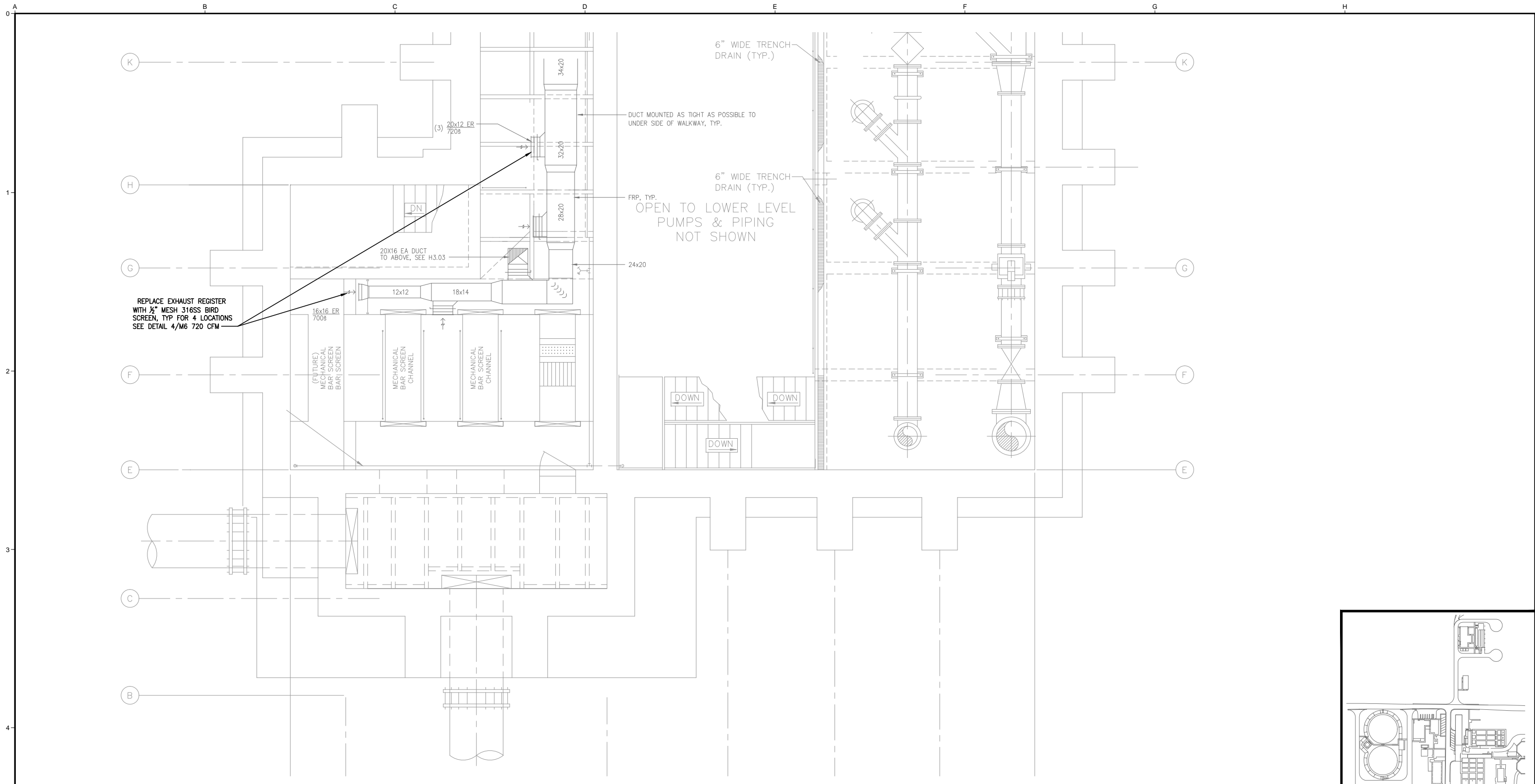
FILE NAME  
M1

JOB NO.  
1309

DATE  
SEPTEMBER 2013

DRAWING  
**M1**





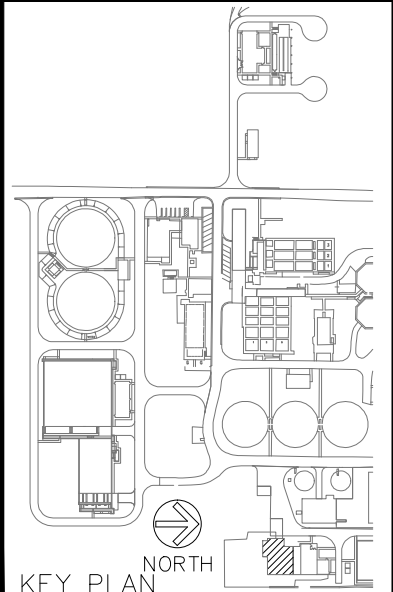
REPLACE EXHAUST REGISTER WITH 1/2" MESH 316SS BIRD SCREEN, TYP FOR 4 LOCATIONS SEE DETAIL 4/M6 720 CFM

DUCT MOUNTED AS TIGHT AS POSSIBLE TO UNDER SIDE OF WALKWAY, TYP.

FRP, TYP.  
OPEN TO LOWER LEVEL PUMPS & PIPING NOT SHOWN

**ODOR CONTROL MODIFICATIONS**

1/4" = 1'-0"



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NO.	REVISION	DATE	BY

**SCALES**  
0 1"  
0 25mm  
IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.



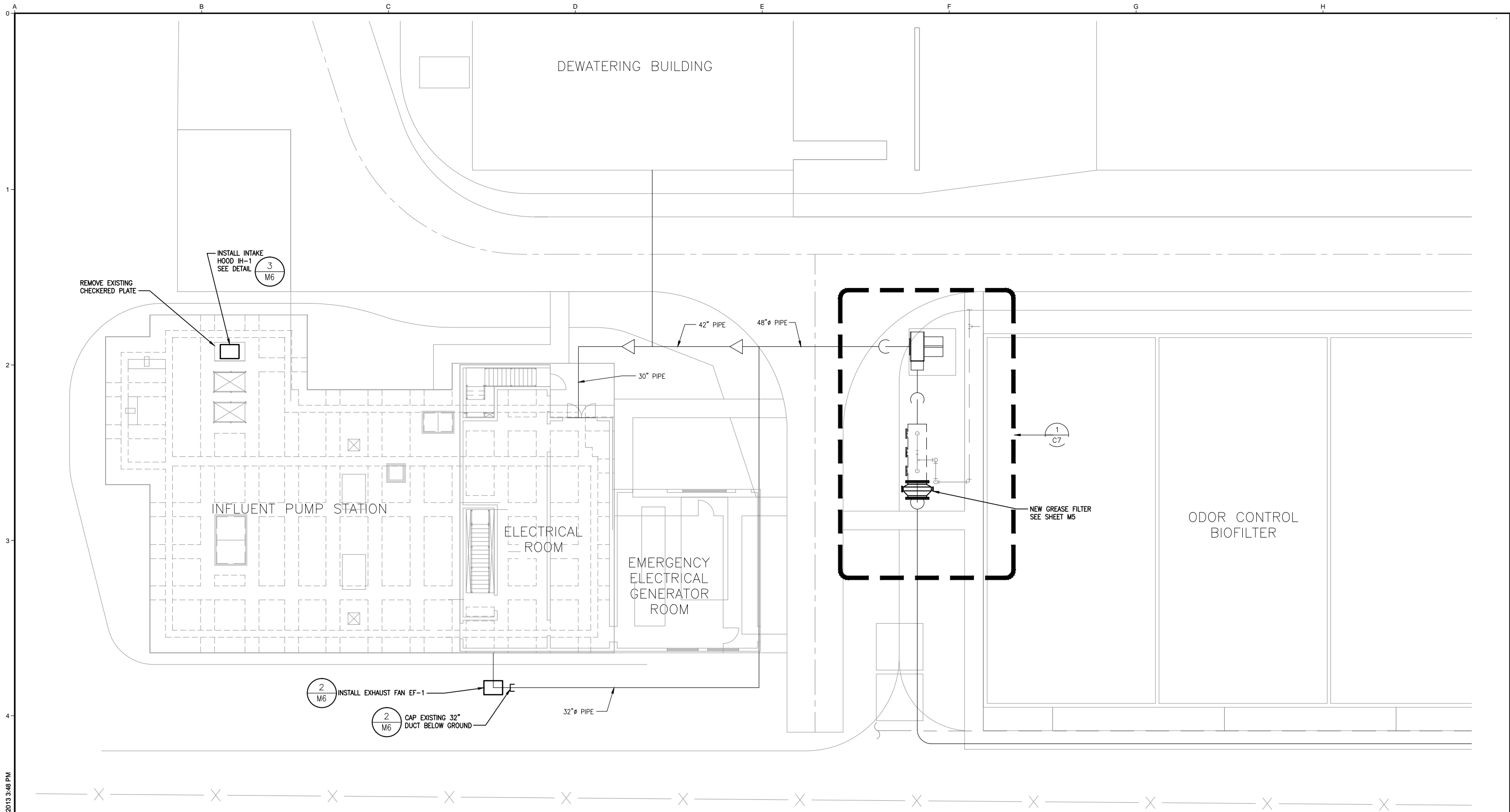
DESIGNED DP  
DRAWN MH  
CHECKED PC

**ICM Group, Inc.**  
21 Natoma Street, Suite 150, Folsom, CA 95630 916-984-7726  
**EL DORADO ENGINEERING AND ARCHITECTURE, INC.**

**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
INFLUENT PUMP STATION REHABILITATION  
MANTECA, CA**

**MECHANICAL**  
**ODOR CONTROL MODIFICATIONS**  
INFLUENT PUMP STATION  
INTERMEDIATE PLAN AT EL. +1.0  
HVAC

FILE NAME M3  
JOB NO. 1309  
DATE SEPTEMBER 2013  
DRAWING **M3**

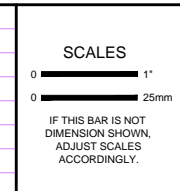


**ENLARGED PLAN**

SCALE : 1" = 10'

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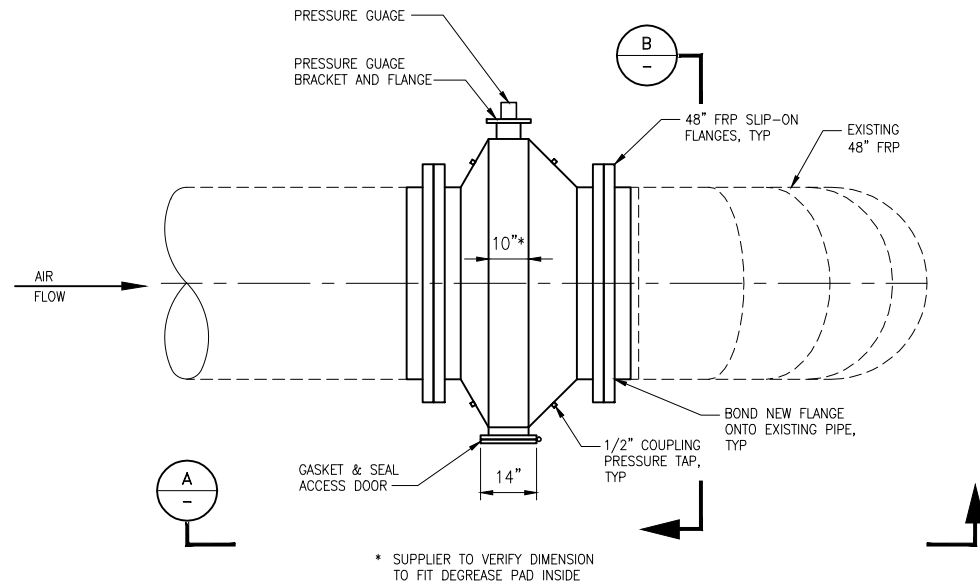
**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
 INFLUENT PUMP STATION REHABILITATION  
 MANTECA, CA**

**MECHANICAL**

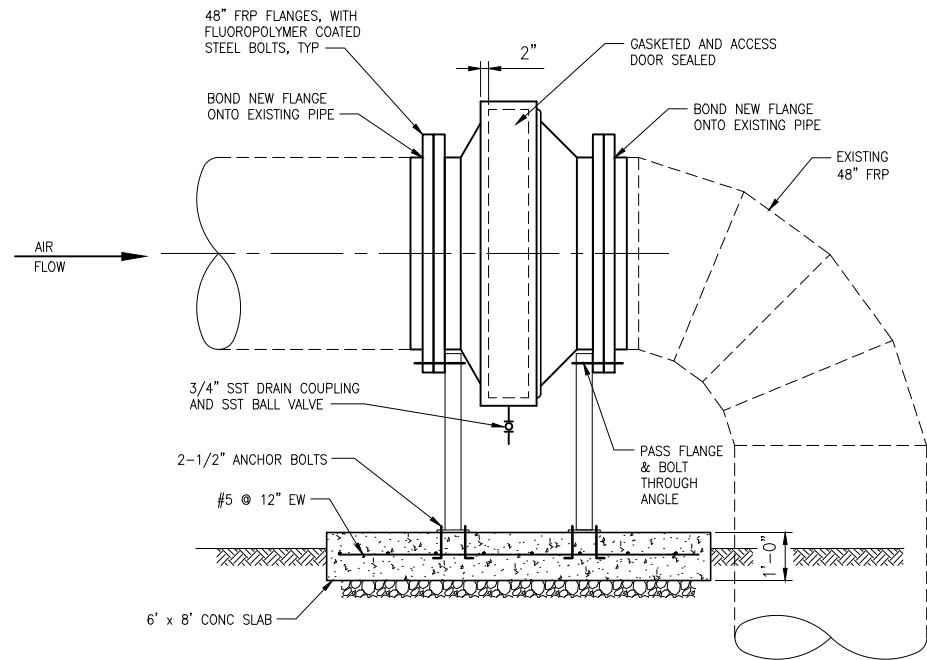
**ENLARGED SITE PLAN**

INFLUENT PUMP STATION

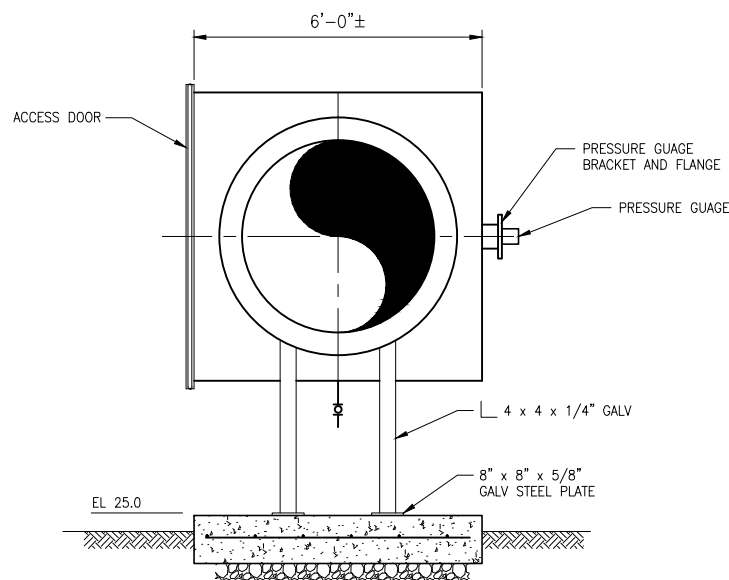
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 JOB NO. 1309  
 DATE SEPTEMBER 2013  
 DRAWING **M4**



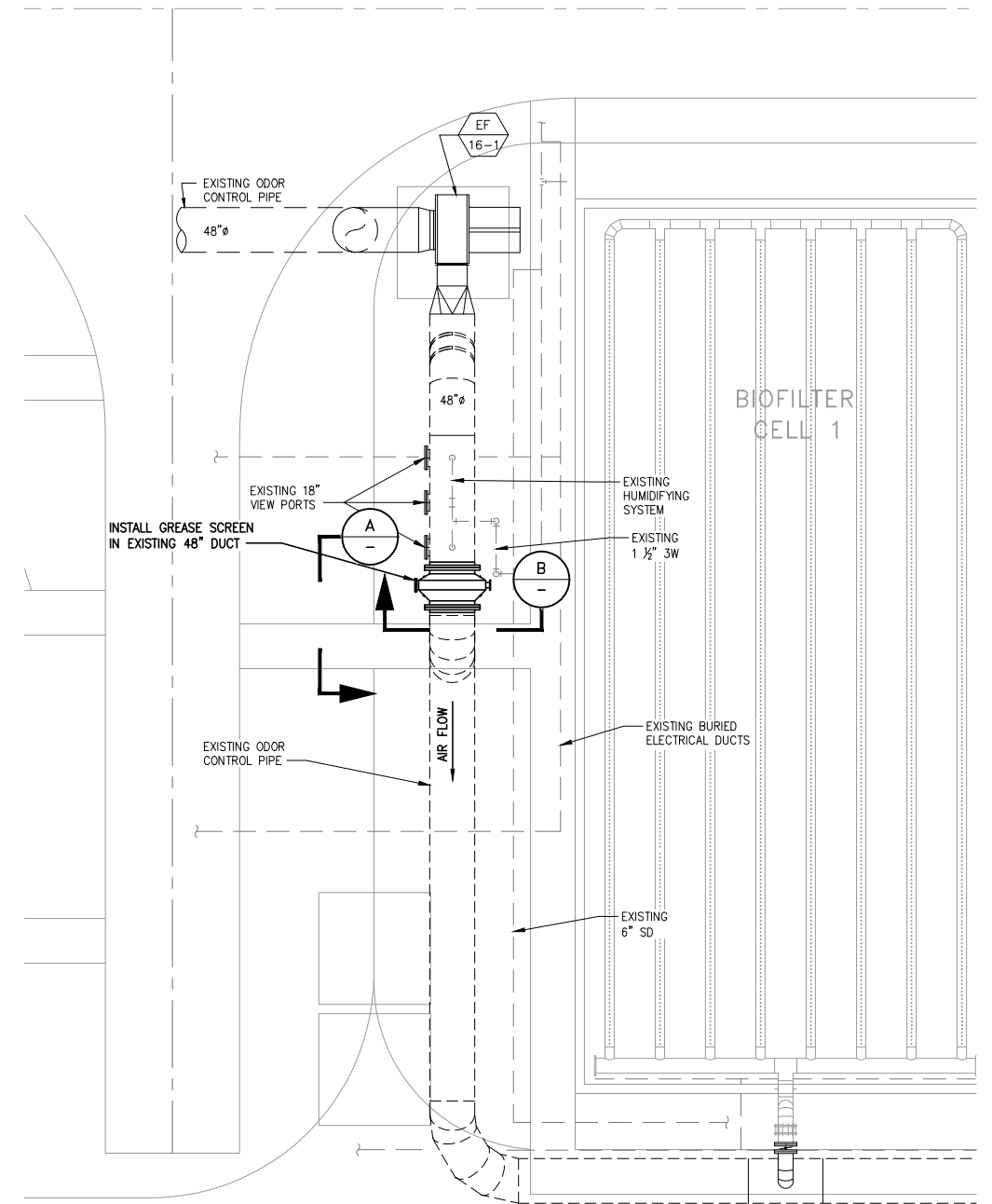
**GREASE FILTER PLAN**  
1/2" = 1'-0"



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



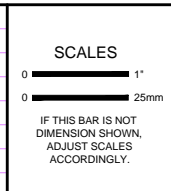
**SECTION**  
1/2" = 1'-0"



**ENLARGED PLAN - BIOFILTER AREA**  
SCALE : 1/8" = 1'-0"

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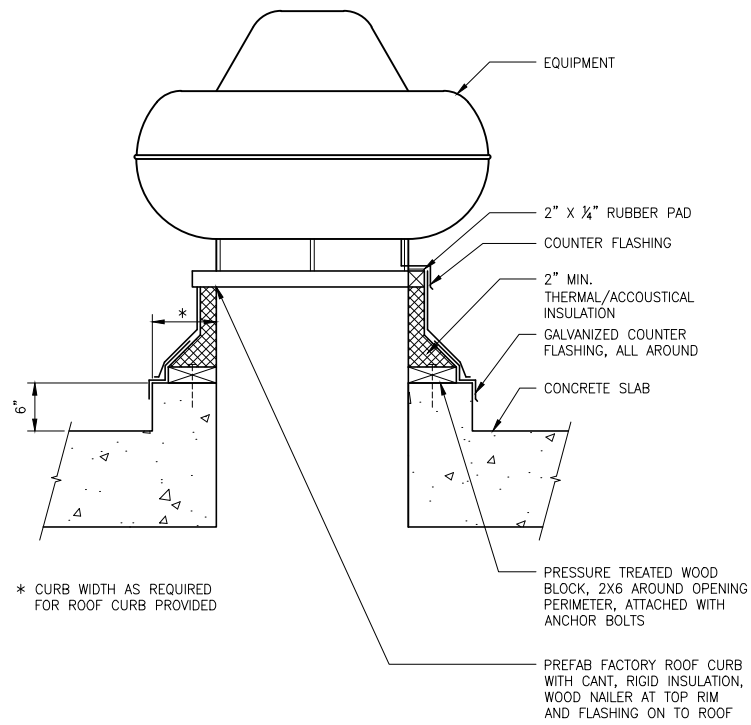
**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
INFLUENT PUMP STATION REHABILITATION  
MANTECA, CA**

**MECHANICAL**

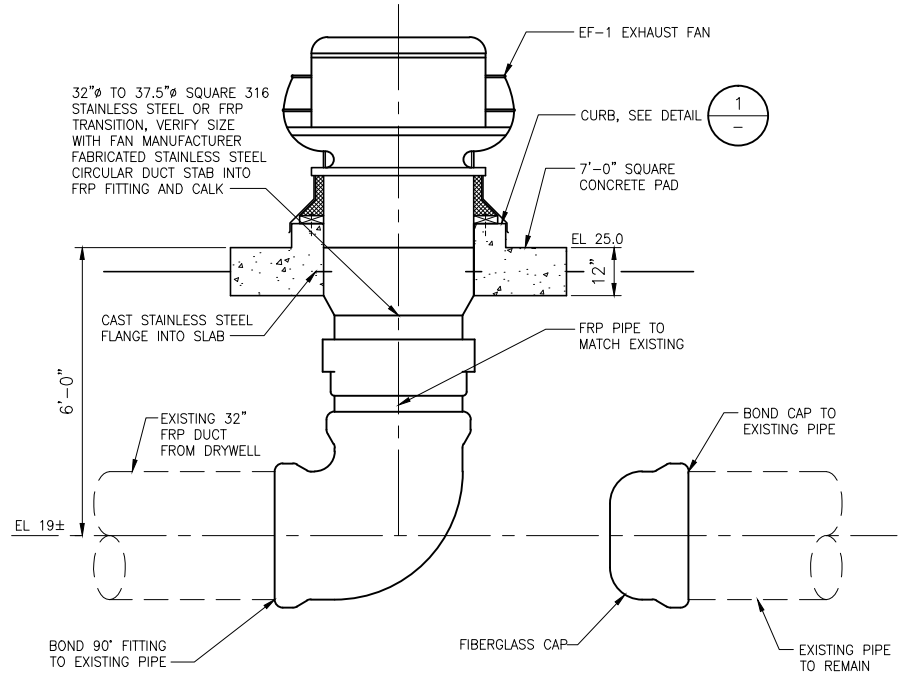
**GREASE FILTER DETAILS**

INFLUENT PUMP STATION

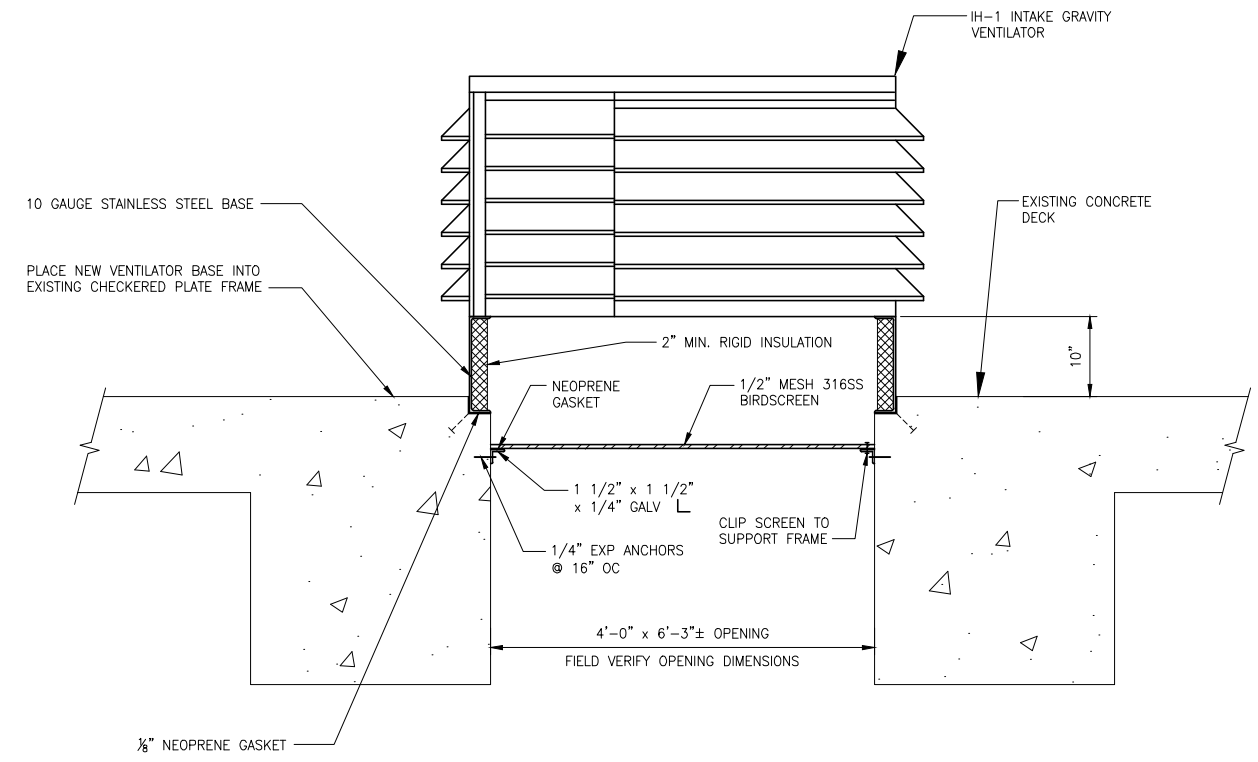
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JOB NO. 1309  
DATE SEPTEMBER 2013  
DRAWING **M5**



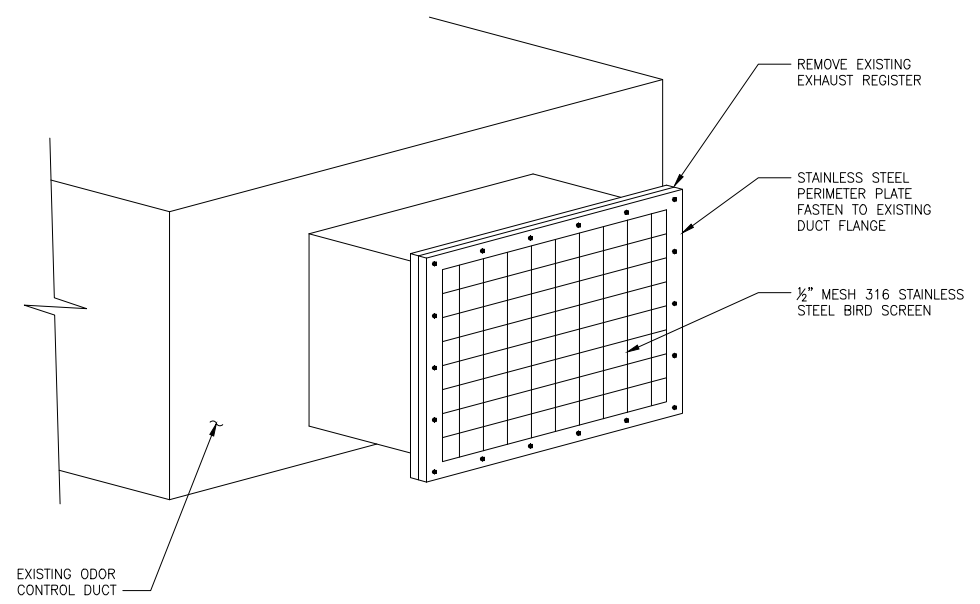
**EQUIPMENT CURB DETAIL** 1  
1" = 1'-0"



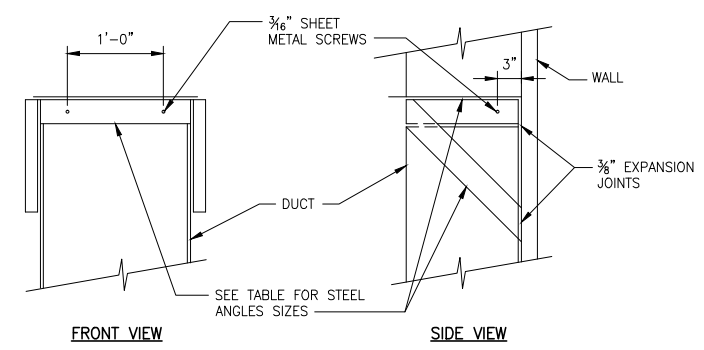
**EXHAUST FAN DETAIL** 2  
1/2" = 1'-0"



**INTAKE HOOD DETAIL** 3  
1" = 1'-0"

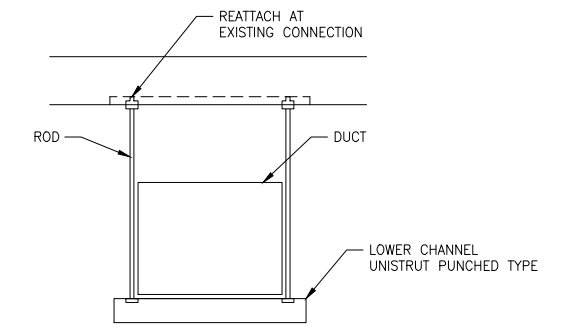


**DETAIL** 4  
M1, M2, M3  
NTS



NOTE: ALL 316 STAINLESS STEEL ANGLES IN INFLUENT ROOM

ANGLE SIZING (N)	
MAX RECTANGULAR DUCT DIMENSION	ANGLE SIZE
UP TO 18	1 1/2" x 1 1/2" x 1/8"
UP TO 24	1 1/2" x 1 1/2" x 1/8"
UP TO 30	1 1/2" x 1 1/2" x 1/8"
OVER 30	2"x2"x 1/8"



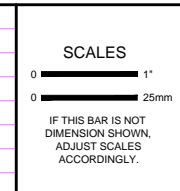
NOTE: ALL 316 STAINLESS STEEL IN INFLUENT ROOM

MAX RECTANGULAR DUCT DIMENSION	ROD & EXP BOLT SIZE	LOWER CHANNEL	HANGER SPACING
UP TO 12"	1/4"	1 3/8" x 1 3/8" x 14G	8'-0"
UP TO 30"	3/8"	1 5/8" x 1 5/8" x 12G	6'-0"
ABOVE 30"	3/8"	1 5/8" x 1 5/8" x 12G	4'-0"

**DUCT SUPPORTS DETAILS** 5  
M1  
NTS

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**EL DORADO ENGINEERING AND ARCHITECTURE, INC.**

**MANTECA WASTEWATER QUALITY CONTROL FACILITY INFLUENT PUMP STATION REHABILITATION MANTECA, CA**

**MECHANICAL DETAILS**

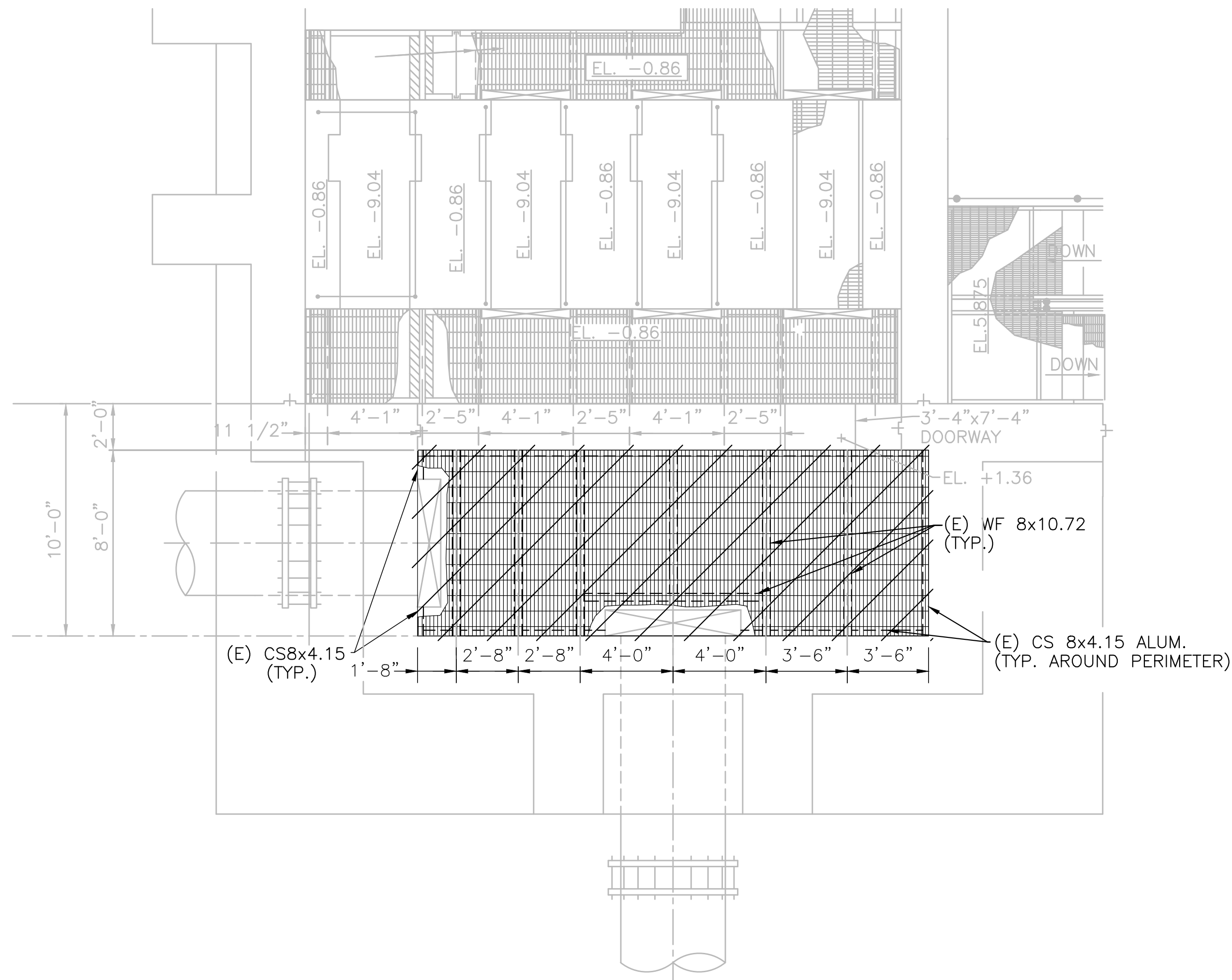
FILE NAME M6  
JOB NO. 1309  
DATE SEPTEMBER 2013  
DRAWING **M6**

**DEMOLITION NOTES:**

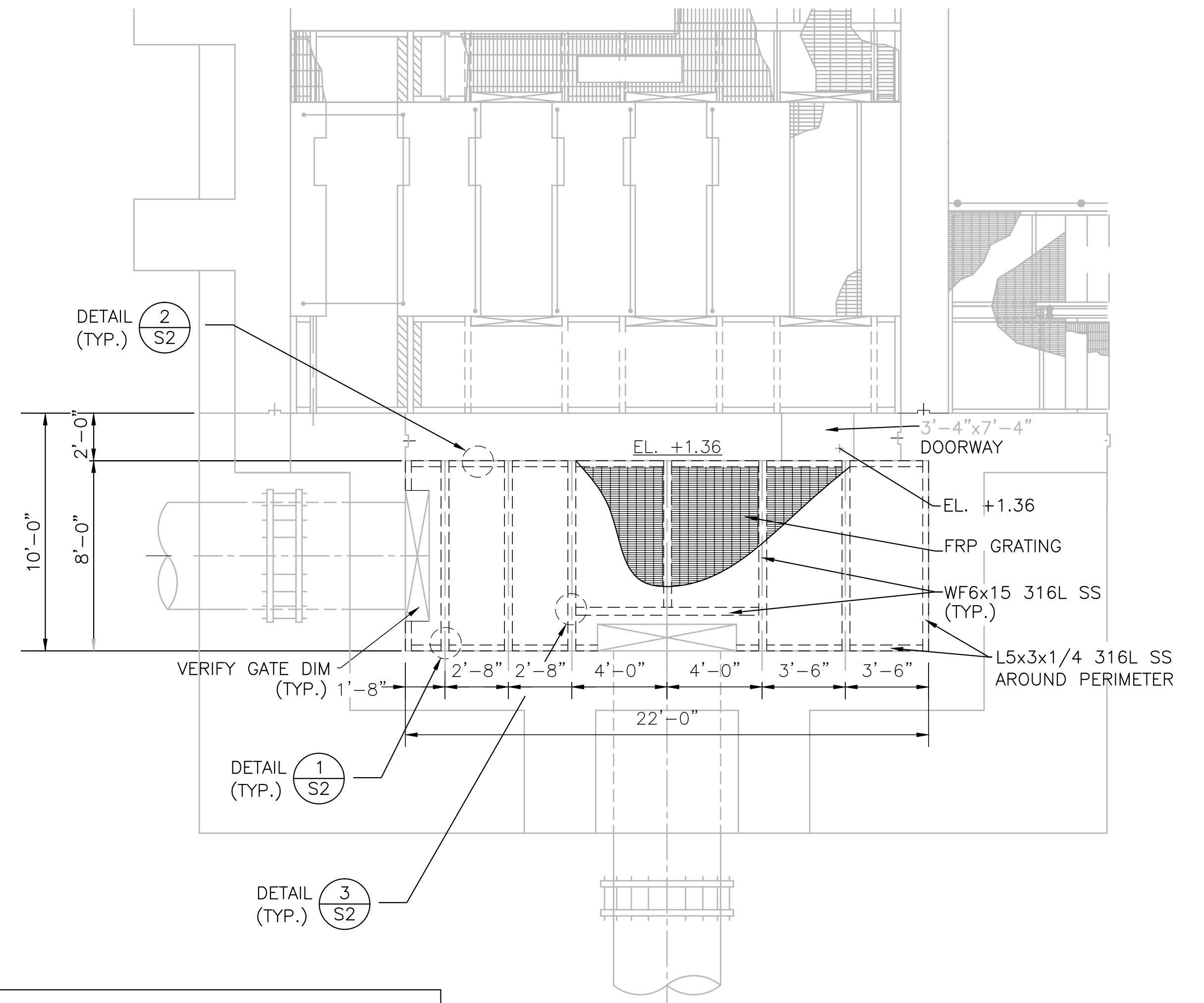
1. CONTRACTOR SHALL VERIFY THE DIMENSIONS AND OTHER EXISTING CONDITIONS ASSOCIATED WITH THE GRATING SYSTEM PRIOR TO PROCEEDING WITH WORK.
2. THE EXISTING ALUMINUM GRATING, SUPPORT BEAMS AND LEDGERS IN THE INFLUENT ROOM SHALL BE DEMOLISHED.
3. EXISTING STAINLESS STEEL ANCHOR BOLTS SHALL BE CUT SUCH THAT THE BOLTS WILL HAVE A MINIMUM COVER OF 2" WHEN CONCRETE SURFACE IS FINISHED.

**GRATING INSTALLATION NOTES:**

1. CONTRACTOR SHALL VERIFY THE DIMENSIONS AND OTHER EXISTING CONDITIONS ASSOCIATED WITH THE GRATING SYSTEM PRIOR TO PROCEEDING WITH WORK.
2. CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING ANCHOR BOLTS PRIOR TO FABRICATING ANGLES THAT CONNECT TO THE CONCRETE WALL.
3. THE TOP OF THE NEW GRATING SHALL REMAIN AT ELEVATION +1.36 AND BE FLUSH WITH THE INVERT OF THE DOORWAY.
4. INSTALL GRATING HOLD DOWN CLIPS PER DETAIL  $\frac{4}{S2}$ .



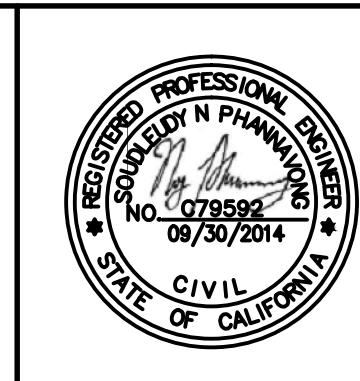
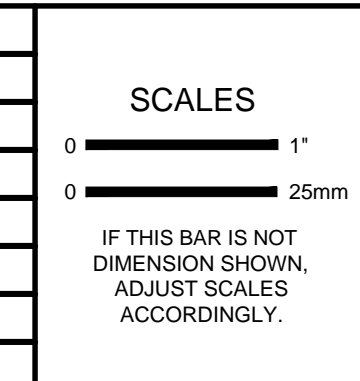
**(E) GRATING DEMOLITION PLAN**  
SCALE: 1/4"=1'-0"



**NEW GRATING PLAN**  
SCALE: 1/4"=1'-0"

F:\Projects\2012\2020-0298\12-0231 ICM ColManeca IPS Rehab Design\Drawings\SI-Grating Plan.dwg NOY PHANNAVONG 9/9/2013 5:01 PM

NO.	REVISION	DATE	BY



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CHECKED	LT

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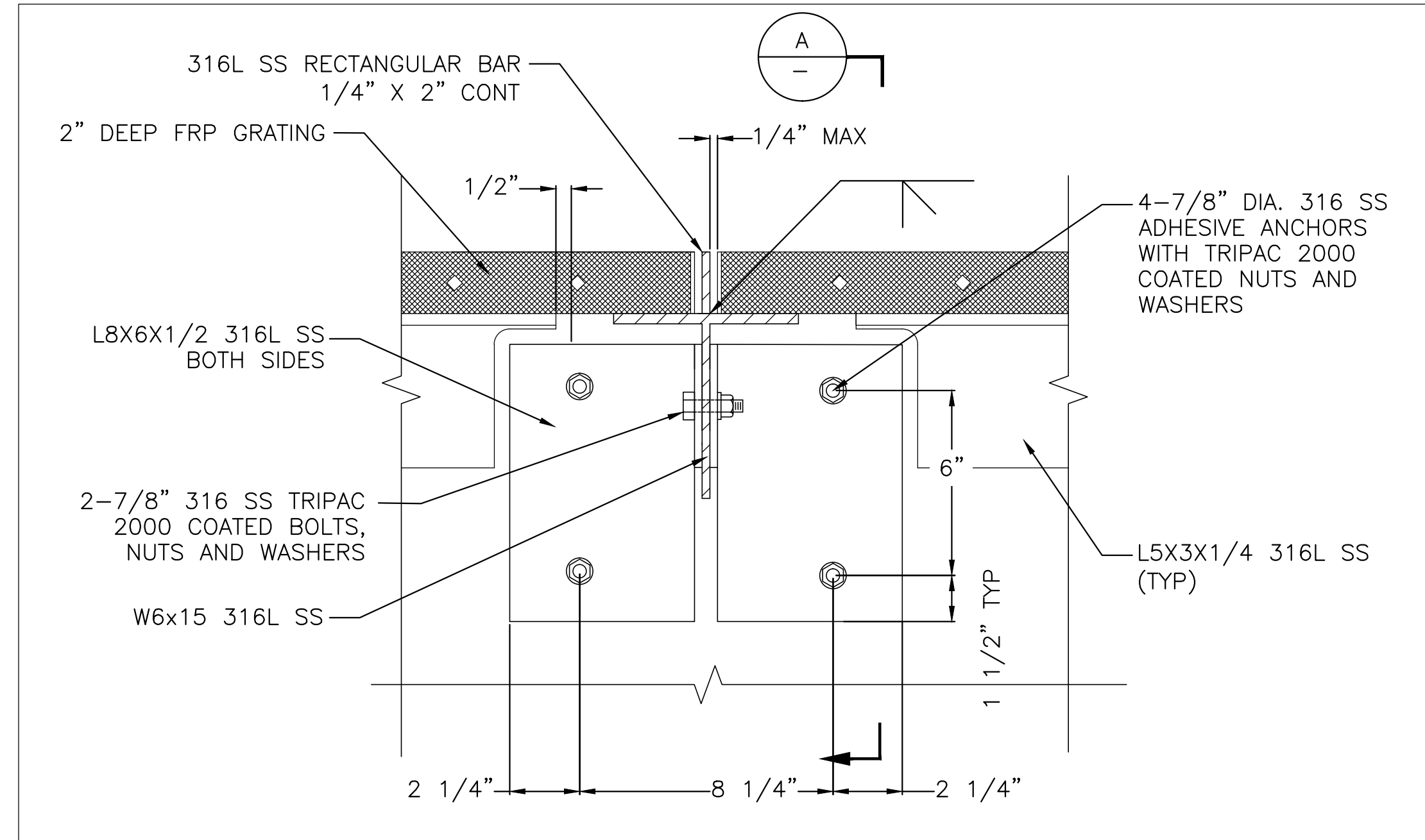
155 Grand Avenue, Suite 700  
Oakland, CA 94612  
Tel. (510) 903-6600, Fax (510) 903-6601

**MANTECA WASTEWATER QUALITY CONTROL FACILITY**  
**INFLUENT PUMP STATION REHABILITATION**  
**MANTECA, CA**

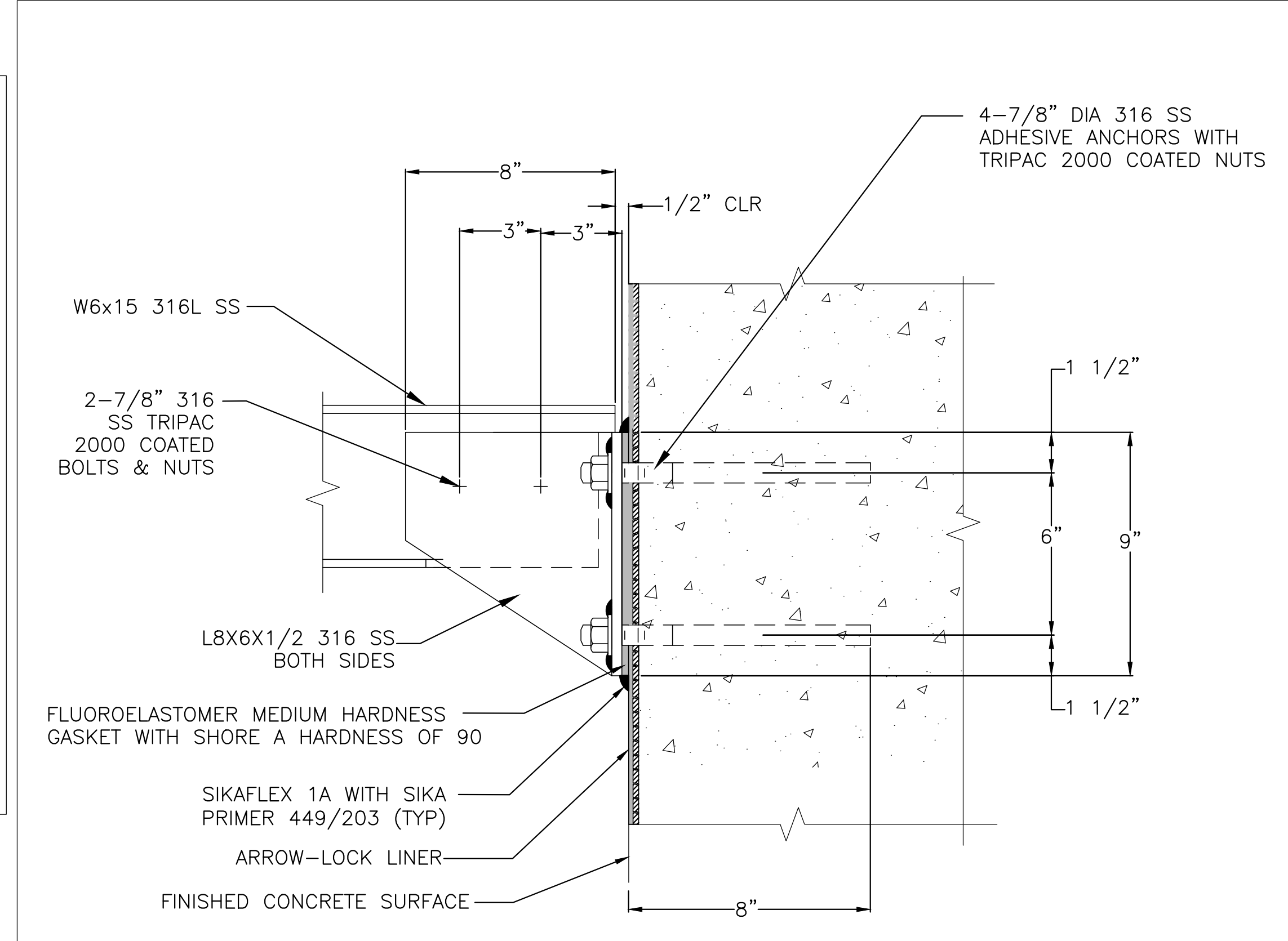
**INFLUENT PUMP STATION-HEADWORKS**  
**GRATING DEMO AND NEW**  
**GRATING PLANS**

FILE NAME	1309-S1
JOB NO.	1309
DATE	SEPTEMBER 2013
SHEET OF	S1 29

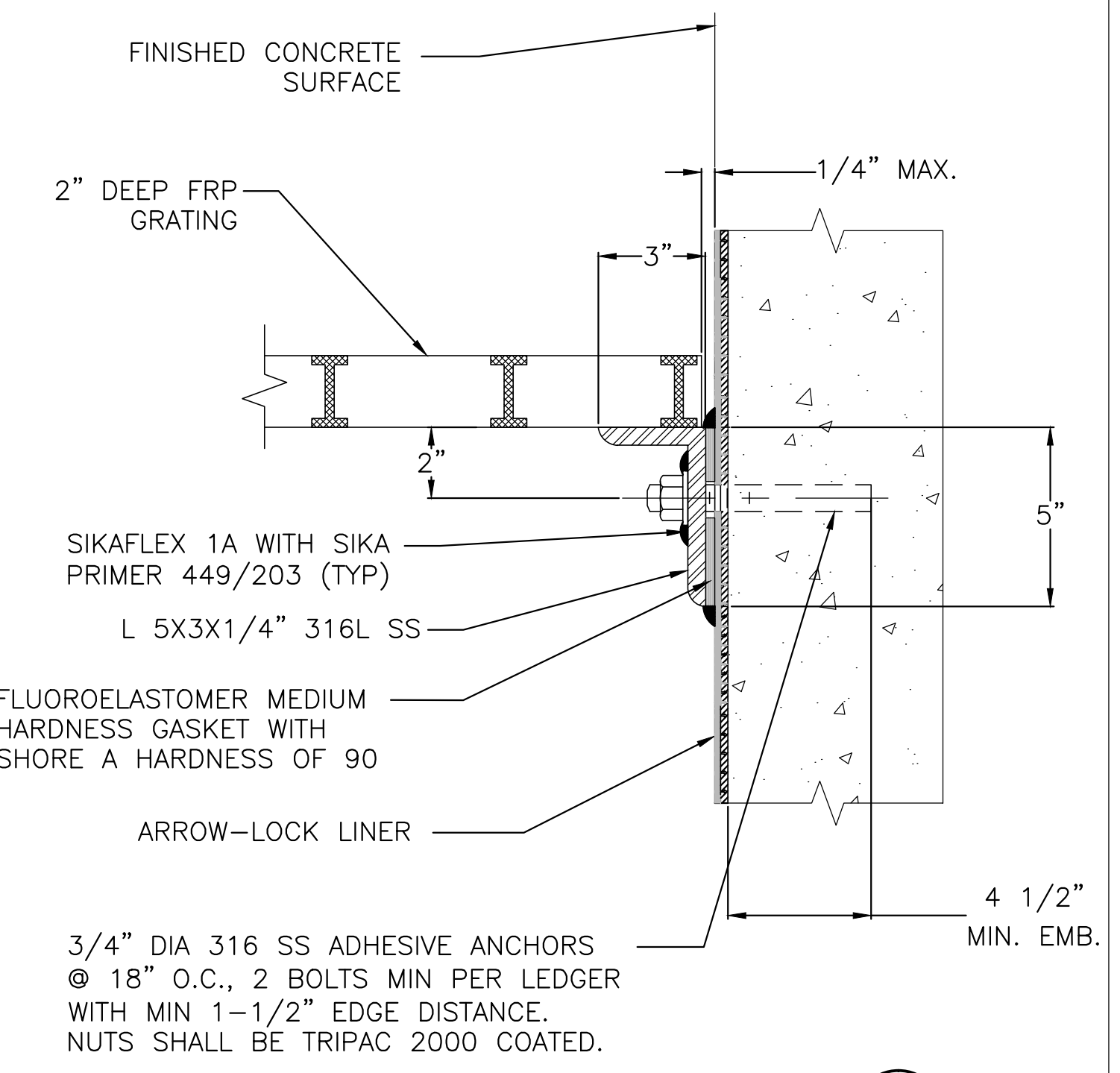
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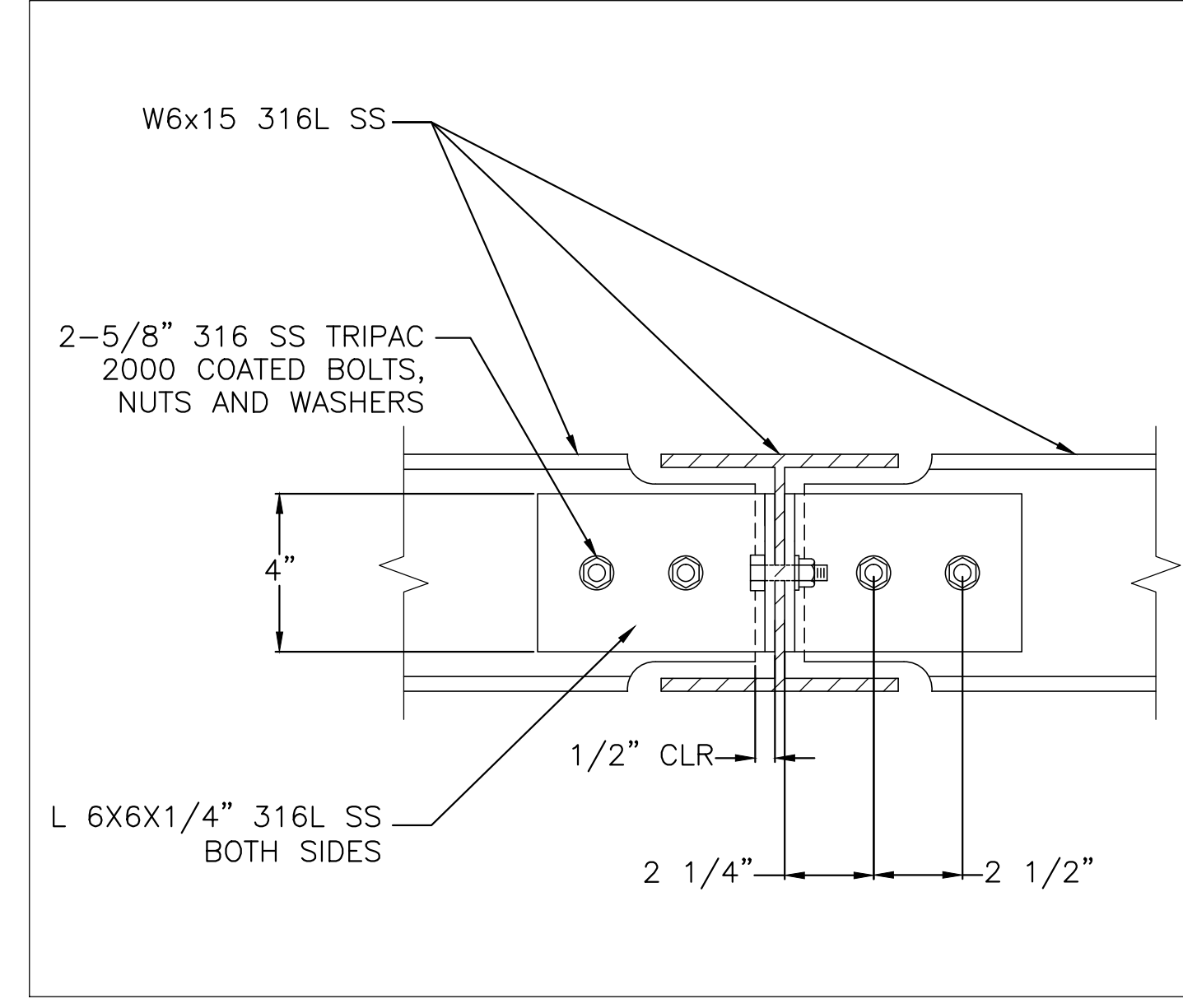
**DETAIL 1**  
SCALE: 3"=1'-0"



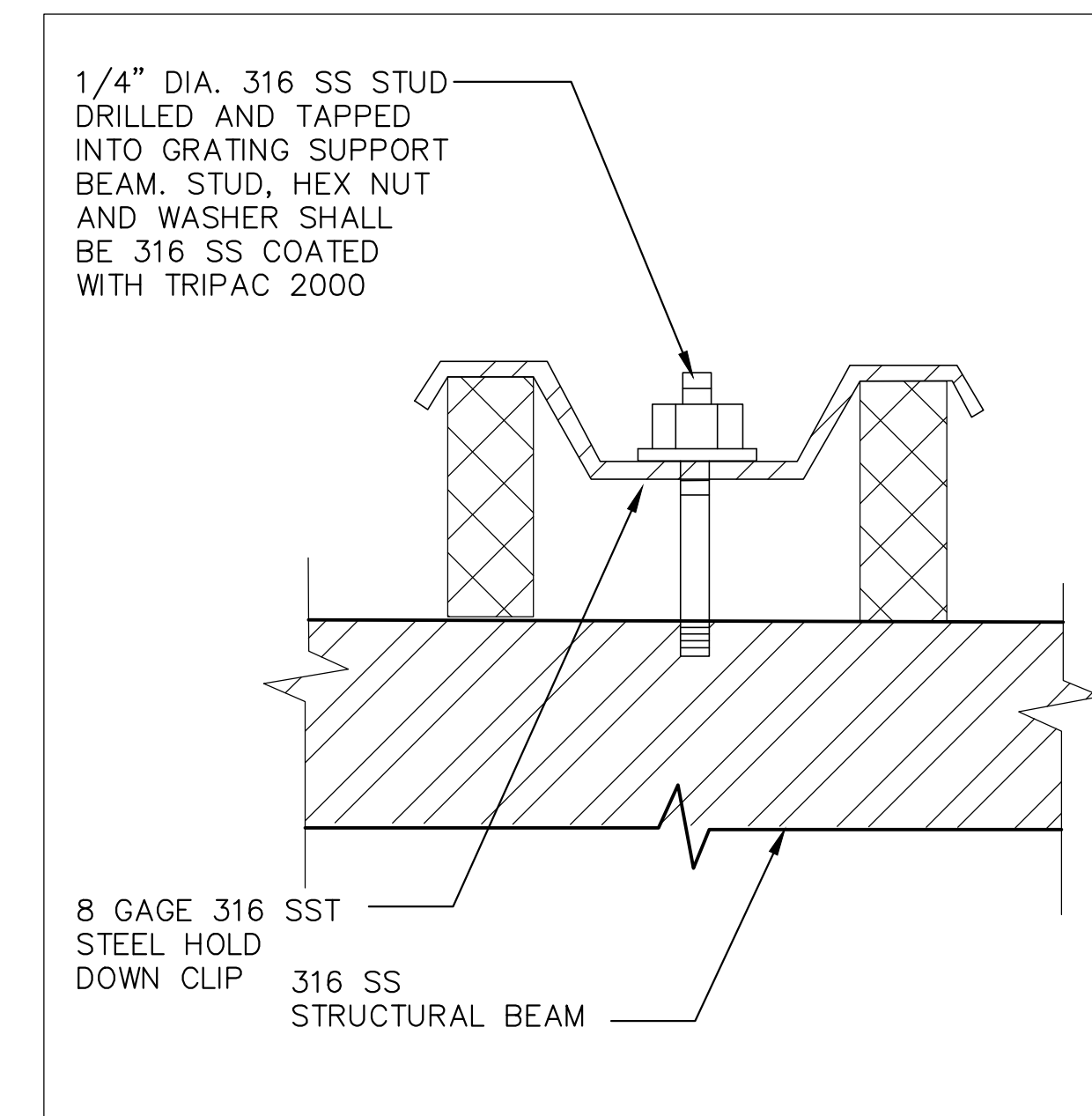
**SECTION A**  
SCALE: 3"=1'-0"



**DETAIL 2**  
SCALE: 3"=1'-0"



**DETAIL 3**  
SCALE: 3"=1'-0"

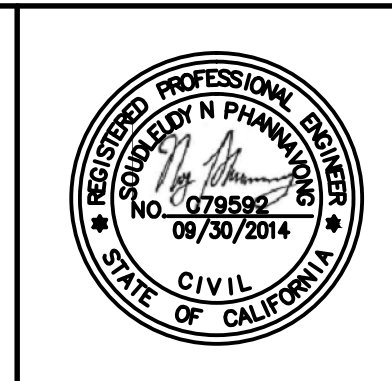
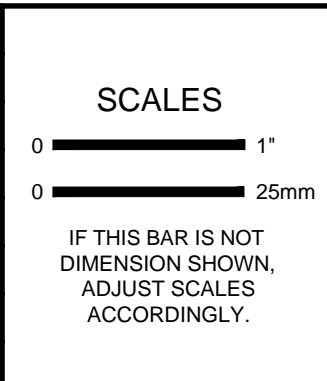


**DETAIL 4**  
N.T.S.

**STRUCTURAL NOTES**

- STAINLESS STEEL**
1. STAINLESS STEEL MEMBERS SHALL BE TYPE 316L, WITH  $F_y=25$  KSI MIN AND  $F_u=75$  KSI MIN.
  2. STAINLESS STEEL BOLTS SHALL BE TYPE 316, WITH  $F_y=45$  KSI MIN AND  $F_u=85$  KSI MIN.
- ADHESIVE ANCHORING SYSTEM**
1. ADHESIVE ANCHORING SYSTEM SHALL MEET 2009 IBC REQUIREMENTS AND ICC-ES EVALUATION REPORT AND SUPPLEMENT. ADHESIVE SHALL BE HILTI HIT-HY150 MAX-SD, OR APPROVED EQUAL.
  2. THE INSTALLATION OF THE ADHESIVE ANCHORING SYSTEM SHALL BE PERFORMED STRICTLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- CLIPS ON FRP GRATING**
1. CLIPS SHALL BE TYPE M 5020
  2. MAXIMUM SPACING 4 FT ON CENTER
  3. MINIMUM FOUR CLIPS PER PANEL
- SUBMITTALS**
1. CONTRACTOR SHALL SUBMIT THE FOLLOWING FOR REVIEW PRIOR TO FABRICATION.
    - A. PRODUCT DATA FOR
      - a. ADHESIVE ANCHORING SYSTEM
      - b. MISCELLANEOUS STEEL
      - c. FRP GRATING
    - B. SHOP DRAWINGS
- SPECIAL INSPECTION AND TESTING**
1. CONSTRUCTION IS SUBJECT TO INSPECTION AND TESTING PER 2010 CBC, CHAPTER 17.
  2. CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING LABORATORY TO PERFORM SPECIAL INSPECTIONS AND TESTING OF ADHESIVE ANCHORS DURING CONSTRUCTION.
  3. SPECIAL INSPECTOR SHALL PERIODICALLY INSPECT THE WORK FOR CONFORMANCE WITH THE SPECIFICATIONS AND DRAWINGS, AND SHALL RECORD AND REPORT TO THE ENGINEER THE FOLLOWING:
    - A. PRODUCT DESCRIPTION INCLUDING PRODUCT NAME, EXPIRATION DATE, NOMINAL SIZE AND GRADE OF ANCHORS AND DOWELS, AND EMBEDMENT DEPTH.
    - B. HOLE DESCRIPTION INCLUDING VERIFICATION OF DRILL BIT COMPLIANCE WITH ANSI B212.15-1994, HOLE DEPTH, AND CLEANLINESS.
    - C. INSTALLATION DESCRIPTION, INCLUDING VERIFICATION OF CONCRETE TYPE AND COMPRESSIVE STRENGTH, AND VERIFICATION OF ANCHOR INSTALLATION AND LOCATION (SPACING AND EDGE DISTANCE) IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS AND ICC-ES REPORT.
  4. FIELD TENSION TESTS FOR ADHESIVE ANCHORS BY AN INDEPENDENT TESTING LABORATORY.
    - A. FIELD TEST ADHESIVE SYSTEM ANCHORS AFTER ADHESIVE HAS CURED. FIELD TEST ANCHORS IN TENSION (PROOF LOAD) AS FOLLOWS:
      - 1) 7/8" RODS: 7,400 LBS
      - 2) 3/4" RODS: 4,000 LBS
    - B. TEST 5% OF EACH TYPE AND SIZE OF ANCHORS, BUT NO LESS THAN ONE (1) TEST OF EACH ANCHOR IN EACH DISTINCT AREA OF WORK.
    - C. LOADS SHALL BE APPLIED WITH A CALIBRATED HYDRAULIC RAM FOR A MINIMUM OF 10 MINUTES.
    - D. DISPLACEMENT OF ADHESIVE ANCHORS SHALL NOT EXCEED  $D/10$ , WHERE D IS NOMINAL ANCHORS' DIAMETER.
    - E. IF ANY ANCHOR OR DOWEL FAILS TO HOLD THE TEST LOAD OR MEET THE ABOVE CRITERIA, TEST ADDITIONAL 10% OF EACH TYPE AND SIZE OF ANCHOR THAT FAILED. IF ANY ADDITIONAL FAILURES OCCUR, TEST ALL ANCHORS OF THE TYPE AND SIZE THAT FAILED.
    - F. REINSTALL ALL FAILED ANCHORS AND TEST THEM AS DIRECTED BY THE ENGINEER.
    - G. COST OF SPECIAL INSPECTIONS, TESTING, SAMPLE DOWELS AND REINSTALLED ANCHORS, DUE TO FAILURE, SHALL BE BORNE BY THE CONTRACTOR.
  5. REPAIR OF DEFECTIVE WORK
    - A. ANCHORS THAT FAIL TO MEET INSTALLATION TOUQUE REQUIREMENTS OR PROOF LOAD TEST SHALL BE REGARDED AS MALFUNCTIONING. REMOVE AND REPLACE MISPLACED OR MALFUNCTIONING ANCHORS. FILL EMPTY ANCHOR HOLES AND PATCH FAILED ANCHOR LOCATIONS WITH NON-SHRINK EPOXY GROUT.

NO.	REVISION	DATE	BY



DESIGNED: NP  
DRAWN: GG  
CHECKED: LT

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**V&A**  
155 Grand Avenue, Suite 700  
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**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
INFLUENT PUMP STATION REHABILITATION  
MANTECA, CA**

**NEW GRATING SYSTEM  
DETAILS**

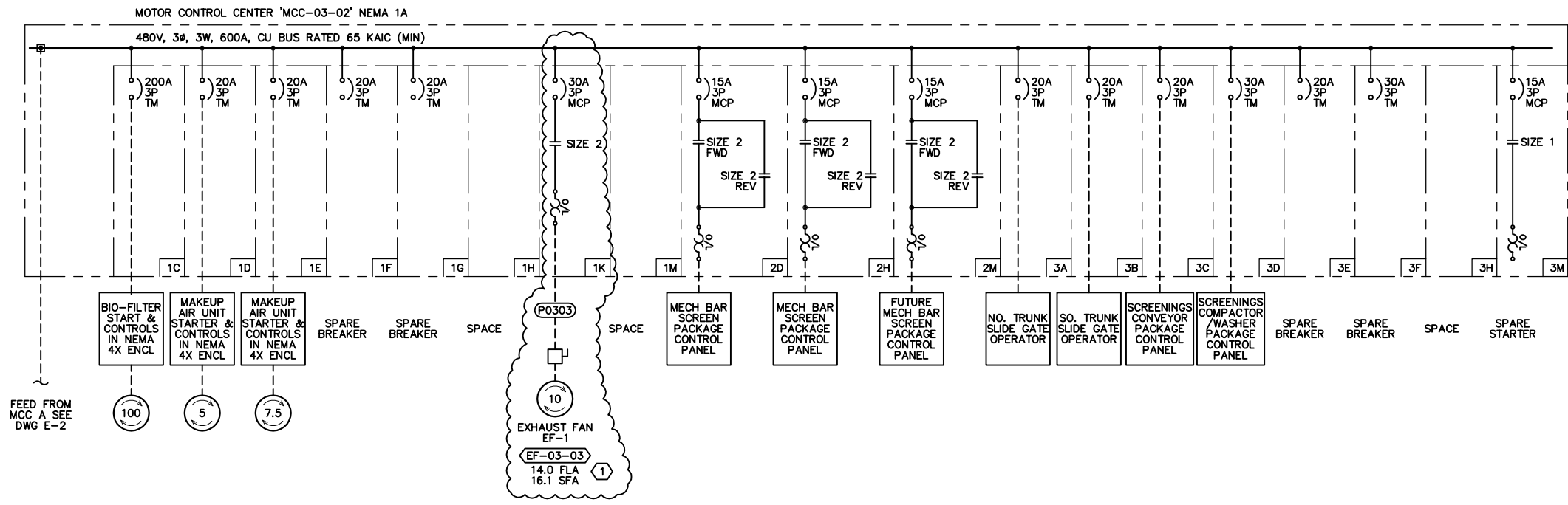
FILE NAME	1309-S2
JOB NO.	1309
DATE	SEPTEMBER 2013
SHEET OF	S2 29

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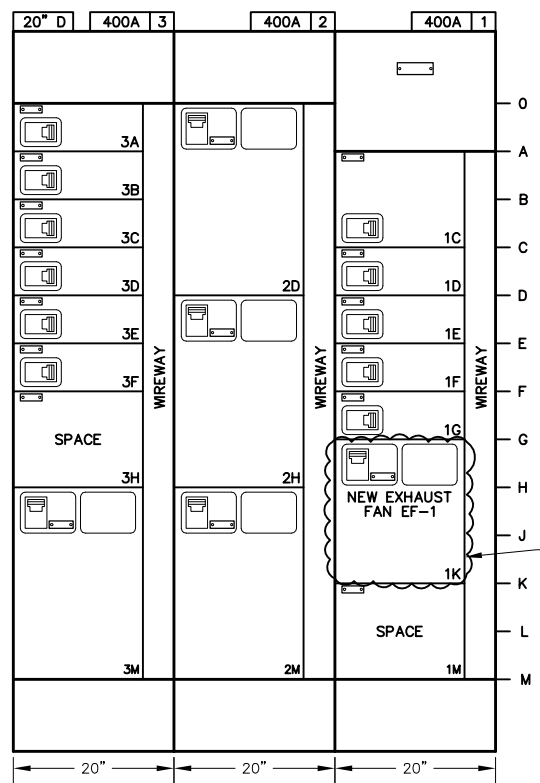
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
<b>COMPONENTS</b>		<b>SWITCHES - PROCESS</b>		<b>DEVICES - RELAY</b>		<b>WIRING - CONNECTIONS</b>	
	RESISTOR		FLOW SWITCH - CLOSSES UPON INCREASING FLOW		CONTACTOR OR STARTER M1		PANEL OR EQUIPMENT WIRING
	SOLENOID COIL		FLOW SWITCH - OPENS UPON INCREASING FLOW		CONTROL RELAY CR1		FIELD WIRING
	HEATER		LEVEL SWITCH - CLOSSES UPON INCREASING LEVEL		TIME DELAY RELAY TR2 - ADJUSTABLE TIME DELAY RANGE & SETTING AS SHOWN		CONDUCTORS - NOT CONNECTED
	CAPACITOR		LEVEL SWITCH - OPENS UPON INCREASING LEVEL		TIME DELAY RELAY TR2 - ADJUSTABLE TIME DELAY RANGE & SETTING AS SHOWN		CONDUCTORS - CONNECTED
	DIODE		LEVEL SWITCH - OPENS UPON INCREASING LEVEL		TIME DELAY ON ENERGIZATION		GROUND CONNECTION
	DIODE, ZENER		LEVEL SWITCH - OPENS UPON INCREASING LEVEL		TIME DELAY ON DE-ENERGIZATION		PLUG AND RECEPTACLE
	METAL OXIDE VARISTOR		PRESSURE SWITCH - CLOSSES UPON INCREASING PRESSURE (DECREASING VACUUM)		107, 121 REFERENCED RELAY WITH N.O. CONTACT ON LINE 107 N.C. CONTACT ON LINE 121		INCOMING LINE
	AUDIBLE ALARM		PRESSURE SWITCH - OPENS UPON INCREASING PRESSURE (DECREASING VACUUM)		107, 121 REFERENCED RELAY WITH N.O. CONTACT ON LINE 107 N.C. CONTACT ON LINE 121		TERMINAL BLOCKS WITH TERMINAL NUMBER AS SHOWN
	3 PHASE MOTOR ? = MOTOR HP		PRESSURE SWITCH - OPENS UPON INCREASING PRESSURE (DECREASING VACUUM)		CR1 NORMALLY OPEN, RELAY CONTACT - ACTUATED BY RELAY CR1 COIL LOCATED ON LINE 105		TERMINAL BLOCKS WITH TERMINAL NUMBER DETERMINED BY SUBMITTAL
	3 PHASE MOTOR		TEMPERATURE SWITCH - CLOSSES UPON INCREASING TEMPERATURE		CR1 NORMALLY CLOSED, RELAY CONTACT - ACTUATED BY RELAY CR1		SHIELDED CABLE
	SINGLE PHASE MOTOR		TEMPERATURE SWITCH - OPENS UPON INCREASING TEMPERATURE		TR2 NORMALLY OPEN, TIME DELAY RELAY CONTACT - CONTACT CLOSSES AFTER TR2 IS ENERGIZED	<b>PLAN - SYMBOLS</b>	
	TRANSFORMER SIZE AND VOLTAGE AS SHOWN		LIMIT SWITCH - CLOSSES AT SET LIMIT		TR2 NORMALLY CLOSED, TIME DELAY RELAY CONTACT - CONTACT OPENS AFTER TR2 IS ENERGIZED		CONDUIT, EXPOSED CONDUIT, IN SLAB OR BELOW GRADE CONDUIT, CONCEALED IN WALL OR CEILING CONDUIT STUBBED OUT & CAPPED CONDUIT BENDS TOWARD OBSERVER CONDUIT BENDS AWAY FROM OBSERVER CONDUIT ENDS
	UTILITY POWER METER		LIMIT SWITCH - OPENS AT SET LIMIT		TR2 NORMALLY OPEN, TIME DELAY RELAY CONTACT - CONTACT OPENS AFTER TR2 IS DE-ENERGIZED		BARE COPPER GROUND WIRE GROUND CONNECTION BOLTED TYPE GROUND CONNECTION EXOTHERMIC WELD TYPE
	UFER GROUND		TORQUE SWITCH - CLOSSES UPON INCREASING TORQUE		TR2 NORMALLY CLOSED, TIME DELAY RELAY CONTACT - CONTACT CLOSSES AFTER TR2 IS DE-ENERGIZED		DISCONNECT SWITCH
	GROUND ROD		TORQUE SWITCH - OPENS UPON INCREASING TORQUE		TR2 CONTACT OPENS AND CLOSSES IN A TIMED REPEAT CYCLE		FIELD MOUNTED DEVICE
	CURRENT TRANSFORMER RATIO AS NOTED						SPECIAL RECEPTACLE
	DISCONNECT SWITCH SIZED PER FEEDER						TELEPHONE/DATA RECEPTACLE 2 PORT TA568A, 2 CAT 6 CABLES
<b>SWITCHES - OPERATOR</b>		<b>DEVICES - FRONT PANEL</b>		<b>DEVICES - PROTECTIVE</b>			
	TOGGLE OR DISCONNECT SWITCH		INDICATING LIGHT, LETTER "X" INDICATES COLOR: R=RED G=GREEN, A=AMBER, W=WHITE Y=YELLOW, B=BLUE		LOW VOLTAGE MOLDED CASE, INSULATED CASE OR POWER CIRCUIT BREAKER. RATINGS AS SHOWN IN DRAWINGS AND AS DEFINED BELOW: xA: CIRCUIT BREAKER AMERAGE xAT: AMPERAGE TRIP xAF: AMPERAGE FRAME xP: NUMBER OF POLES xT: TRIP PROTECTION MCP: MOTOR CIRCUIT PROTECTION TM: THERMAL MAGNETIC L: LONG TIME DELAY S: SHORT TIME DELAY I: INSTANTANEOUS TRIP G: GROUND FAULT A: ARC FLASH PROTECTION 100% DUTY RATED y: BREAKER FEATURES / OPTIONS - SHUNT TRIP - KIRK-KEY INTERLOCK - MANUALLY CHARGED PUSHBUTTON OPERATION - ELECTRICALLY CHARGED PUSHBUTTON OPERATION		CONDUIT REFERENCE TO SCHEDULE
	PUSHBUTTON - NORMALLY OPEN, MOMENTARY ACTION		INDICATING LIGHT, PUSH TO TEST		THERMAL OVERLOAD CONTACT		THERMOSTAT
	PUSHBUTTON - NORMALLY CLOSED, MOMENTARY UNLESS LOS (LOCK OUT STOP) WHERE MECHANICALLY HELD		ELAPSED TIME METER		THERMAL OVERLOAD ELEMENT		EYS SEAL
	PUSHBUTTON, MECHANICALLY CONNECTED, DOUBLE CIRCUIT - NORMALLY CLOSED AND NORMALLY OPEN				FUSE		JUNCTION BOX
	SELECTOR SWITCH, 3 POSITION - CONTACT STATUS SHOWN EXISTS I.E. AT POSITION OF HAND, OFF, OR AUTO				MEDIUM VOLTAGE CIRCUIT BREAKER		PULL BOX OF SIZE SHOWN (CHRISTY BOX SIZE MINIMUM)
	SELECTOR SWITCH, 2 POSITION - MIDDLE POSITION IS DELETED				TRIP FUNCTIONS PER DRAWINGS AND SPECIFICATIONS		LIGHTING FIXTURE
	POTENTIOMETER				MULTIFUNCTION RELAY PER SPECIFICATIONS		LOWER EXPLOSION LIMIT

MISCELLANEOUS ABBREVIATIONS			
&	AND	MTR	MOTOR
⊕	AT	MUX	MULTIPLEXER
A	AMBER, AMPERES	MV	MERCURY VAPOR, MEDIUM VOLTAGE
AC	ALTERNATING CURRENT	N	NEUTRAL
ACK	ACKNOWLEDGE	NC	NORMALLY CLOSED
AFF	ABOVE FINISHED FLOOR	NHC	NORMALLY HELD CLOSED
AH	AMP HOUR	NHO	NORMALLY HELD OPEN
AI	ANALOG INPUT	NIC	NOT IN CONTRACT
AIC	AMP INTERRUPTING CAPACITY SYMMETRICAL	NL	NIGHT LIGHT
AM	AMP METER	NO	NORMALLY OPEN
AO	ANALOG OUTPUT	NTS	NOT TO SCALE
AWG	AMERICAN WIRE GAUGE	(N)	NEW
ATS	AUTOMATIC TRANSFER SWITCH	OC	ON CENTER
BATT	BATTERY	OI	OPERATOR INTERFACE
(B)	PROVIDED BY OWNER - INSTALLED BY CONTRACTOR	OL	OVERLOAD
BFC	BELOW FINISHED CEILING	ORP	OXIDATION REDUCTION POTENTIAL
BOD	BIOCHEMICAL OXYGEN DEMAND	P	POLE
BPF	BAND PASS FILTER	PB	PUSHBUTTON
BYP	BYPASS	PBX	PULL BOX
C	CONDUIT	PF	POWER FACTOR
CAP	CAPACITOR	PFR	POWER FAIL RELAY
CB	CIRCUIT BREAKER	PH	HYDROGEN ION CONCENTRATION
CKT	CIRCUIT	PLC	PROGRAMMABLE LOGIC CONTROLLER
COAX	COAXIAL CABLE	PM	POWER MONITOR
COMM	COMMUNICATION	PNL	PANEL
CR	CONTROL RELAY	POT	POTENTIOMETER
CT	CURRENT TRANSFORMER	PRESS	PRESSURE
CS	CONSTANT SPEED	PR	PAIR, TWISTED AND SHIELDED
CU	COPPER	PRI	PRIMARY
DC	DIRECT CURRENT	PROVIDE	FURNISH, INSTALL, AND CONNECT
DET	DETAIL	PS	PRESSURE SWITCH
DI	DIGITAL INPUT	PT	POTENTIAL TRANSFORMER
DISC	DISCONNECT	PTT	PUSH TO TEST
DO	DIGITAL OUTPUT	PVC	POLYVINYLCHLORIDE
DPDT	DOUBLE POLE DOUBLE THROW	PWR	POWER
DWG	DRAWING	REF	REFERENCE
E-DTL	ELECTRICAL DRAWING DETAIL	RFI	RADIO FREQUENCY INTERFERENCE
ELEV	ELEVATION	RMS	ROOT MEAN SQUARE
ENET	ETHERNET	RTD	RESISTANCE TEMPERATURE DETECTOR
ETM	ELAPSED TIME METER	RST	RESET
ESW	ETHERNET SWITCH	RVAT	REDUCE VOLTAGE AUTO TRANSFORMER
(E)	EXISTING	RTU	REMOTE TERMINAL UNIT
FCS	FIELD CONTROL STATION	(R)	REWIRE, RELOCATE, REVISE, REUSE
FLA	FULL LOAD AMPS	SCH	SCHEDULE
FLEX	FLEXIBLE LIQUID TIGHT CONDUIT	SEC	SECONDARY, SECOND
FRP	FIBERGLASS REINFORCED PLASTIC	SECS	SECONDS
FS	FULL SPEED	SEL	SELECTOR
FVNR	FULL VOLTAGE NON-REVERSING	SFA	SERVICE FACTOR AMPS
FVR	FULL VOLTAGE REVERSING	SPEC	SPECIFICATION
FWD	FORWARD	SS	STAINLESS STEEL
(F)	FUTURE	SSRC	STAINLESS STEEL RIGID CONDUIT
GALV	GALVANIZED	SSS	SOLID STATE STARTER
GFI	GROUND FAULT INTERRUPTER	STT	START
GND	GROUND	STP	STOP
GRS	GALVANIZED RIGID STEEL CONDUIT	SV	SOLENOID VALVE
GRS-PVC	PVC COATED GRS CONDUIT	SW	SWITCH
HI	HIGH	SWBD	SWITCHBOARD
HIM	HUMAN INTERFACE MODULE	SYMM	SYMMETRICAL
HOA	HAND OFF AUTO	TB	TERMINAL BLOCK
HP	HORSE POWER	TC	TIME CLOCK
HPS	HIGH PRESSURE SODIUM	TDOD	TIME DELAY ON DE-ENERGIZATION
HS	HAND SWITCH	TDOE	TIME DELAY ON ENERGIZATION
HTR	HEATER	TELCO	TELEPHONE COMPANY
HZ	HERTZ	TM	THERMAL MAGNETIC
HZD	HAZARD	TEMP	TEMPERATURE
I	INTERLOCK	TR	TIME DELAY RELAY
I-DTL	INSTRUMENTATION DRAWING DETAIL	TRIAD	TWISTED AND SHIELDED 3 CONDUCTOR
I/O	INPUT/OUTPUT	TS	TEMPERATURE SWITCH
INST	INSTANTANEOUS	TSPR	TWISTED AND SHIELDED PAIR
ISR	INTRINSICALLY SAFE RELAY	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
IS	INTRINSICALLY SAFE	TYP	TYPICAL
J	JUNCTION BOX	UG	UNDERGROUND
K	KILO, PREFIX	ULH	ULTRA LOW HARMONIC
LA	LIGHTNING ARRESTOR	UON	UNLESS OTHERWISE NOTED
LC	LIGHTING CONTACTOR	UPS	UNINTERRUPTIBLE POWER SUPPLY
LEL	LOWER EXPLOSION LIMIT	V	VOLTAGE
LO	LOW	VA	VOLT AMPS
LOS	LOCK OUT STOP	VAR	VOLT AMPS REACTIVE
LR	LATCHING RELAY	VFD	VARIABLE FREQUENCY DRIVE
LS	LIMIT SWITCH	VLV	VALVE
M	MOTOR CONTACTOR	VM	VOLTMETER
MAG	MAGNETIC FLOWMETER	VMR	VOLTAGE MONITOR RELAY
MAX	MAXIMUM	VR	VOLTAGE RELAY
MCM	THOUSAND CIRCULAR MILS	W	WATTS
MCP	MOTOR CIRCUIT PROTECTOR	WP	WEATHER PROOF, NEMA 3R
MCS	MOLDED CASE SWITCH	WTP	WATER TREATMENT PLANT
MH	MANHOLE	WWT	WASTE WATER TREATMENT PLANT
MIN	MINIMUM, MINUTE	XFMR	TRANSFORMER
MODEM	MODEM	Z	IMPEDANCE
MOV	MOTOR OPERATED VALVE	ZS	LIMIT SWITCH

<p>DESIGNED T. FRISCH</p> <p>DRAWN N. CONANT</p> <p>CHECKED T. FRISCH</p>		<p>ICM Group, Inc.</p> <p>21 Natoma Street, Suite 150, Folsom, CA 95630 916-984-7726</p> <p><b>FRISCH ENGINEERING, INC.</b> CONSULTING ELECTRICAL ENGINEERS 13405 FOLSOM BLVD, UNIT 600 FOLSOM, CA 95630 PH 916 353 1025 FX 916 353 1028</p>		<p>MANTECA WASTEWATER QUALITY CONTROL FACILITY INFLUENT PUMP STATION REHABILITATION MANTECA, CA</p>		<p><b>ELECTRICAL EXHAUST FAN UPGRADE</b></p> <p><b>SYMBOLS AND ABBREVIATIONS</b></p>		<p>FILE NAME 1306a-E1.dwg</p> <p>JOB NO. ####</p> <p>DATE September, 2013</p> <p>DRAWING <b>E1</b></p>
<p>NO. REVISION</p>		<p>DATE</p>		<p>BY</p>		<p>SCALES</p> <p>0 1" = 25mm</p> <p>IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.</p>		



**EXISTING MCC-03-02 ONE-LINE DIAGRAM** ①



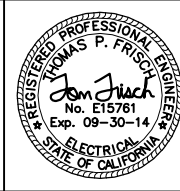
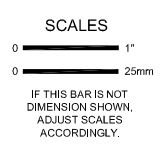
INSTALL NEW BUCKET AND DOOR PER THIS DRAWING AND DWG E3. EMPTY SPACE AS IS.

**EXISTING MCC-03-02 ELEVATION** ①

**NOTES REFERENCED IN DRAWING:**

- ① MODIFICATIONS TO MCC SHOWN IN CLOUDS.
- ② EXISTING MCC IS GE EVOLUTION SERIES E9000

S:\Frisch Engineering\Jobs\2013 Jobs\1306a Manteca WWTP Blower\From Client\130601 EDH drawings\X-1309-ICM-TTLB-22a34.dwg ADMINISTRATOR 6/9/2005 11:21 AM



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FILE: 1306A-E2.DWG DATE: SEP 09, 2013 TIME: 10:16:42AM

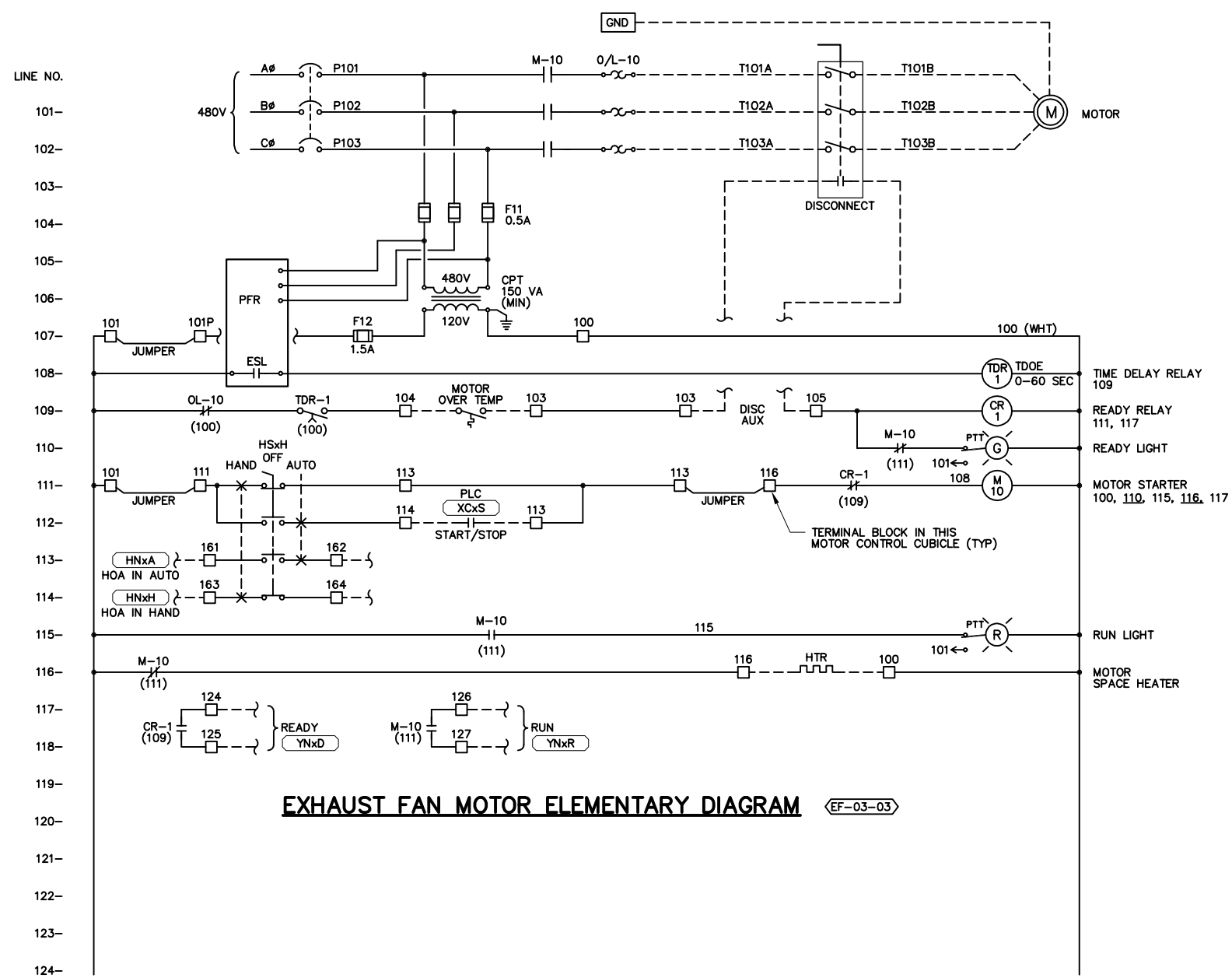
**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
INFLUENT PUMP STATION REHABILITATION  
MANTECA, CA**

**ELECTRICAL  
EXHAUST FAN UPGRADE  
EXISTING MCC-03-02  
ONE-LINE AND ELEVATION  
MODIFICATIONS**

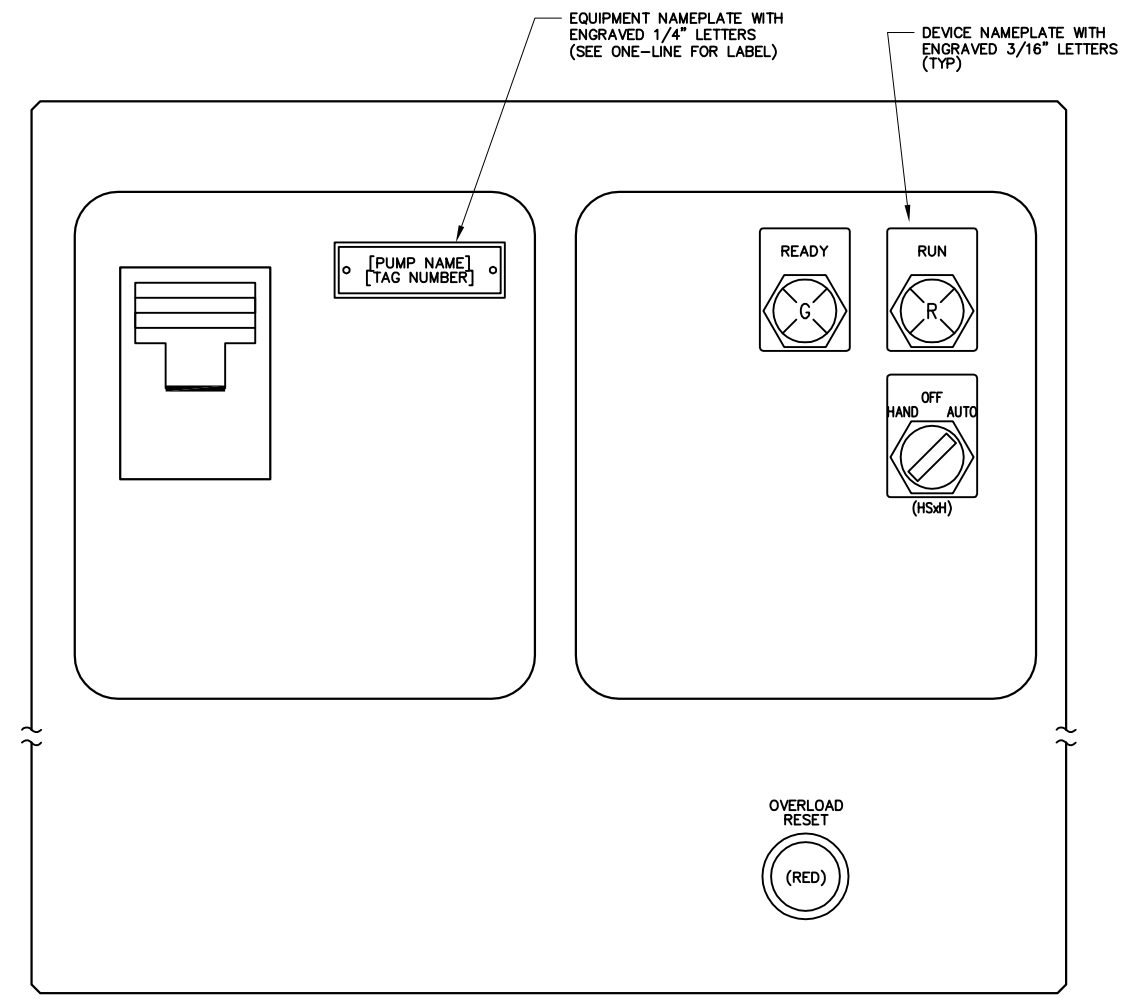
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JOB NO.  
####  
DATE  
September, 2013  
DRAWING  
**E2**

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**EXHAUST FAN MOTOR ELEMENTARY DIAGRAM** (EF-03-03)



**CUBICLE DOOR LAYOUT**

**GENERAL NOTES:**

- FURNISH NEW MOTOR CONTROL CUBICLE AND DOOR TO MATCH EXISTING GE EVOLUTION E9000 SERIES MCC. CUBICLE SIZE TO BE 18X TO MATCH EXISTING SPARE CUBICLE LOCATION.
- TERMINAL BLOCKS AND WIRES SHALL BE LABELED SAME. EXCEPTION: WIRES TO PLC SHALL BE NUMBERED PER CONTROL PANEL TERMINAL BLOCK NUMBER.
- ALL WIRING VIOLET COLOR EXCEPT FOR NEUTRAL AND 480 VOLT POWER. NEUTRALS SHALL BE WHITE, 480 VOLT SHALL BE BROWN, ORANGE, YELLOW.

<p>DESIGNED: T. FRISCH</p> <p>DRAWN: N. CONANT</p> <p>CHECKED: T. FRISCH</p>		<p><b>ICM Group, Inc.</b></p> <p>21 Natoma Street, Suite 150, Folsom, CA 95630 916-984-7726</p> <p><b>FRISCH ENGINEERING, INC.</b> CONSULTING ELECTRICAL ENGINEERS 13405 FOLSOM BLVD, UNIT 600 FOLSOM, CA 95630 PH 916 353 1025 FX 916 353 1028</p>		<p><b>ELECTRICAL EXHAUST FAN UPGRADE</b></p> <p><b>EXHAUST FAN ELEMENTARY DIAGRAM</b></p>		<p>FILE NAME: 1306a-E3.dwg</p> <p>JOB NO. ###</p> <p>DATE: September, 2013</p> <p>DRAWING: <b>E3</b></p>
<p>NO. REVISION</p>		<p>DATE BY</p>		<p>SCALES</p> <p>0 1" = 25mm</p> <p>IF THIS BAR IS NOT DIMENSION SHOWN, ADJUST SCALES ACCORDINGLY.</p>		<p>REGISTERED PROFESSIONAL ENGINEER THOMAS P. FRISCH No. E15761 Exp. 09-30-14 ELECTRICAL ENGINEER STATE OF CALIFORNIA</p>

CONDUIT & WIRE ROUTING SCHEDULE											
REV	CONDUIT DETAILS			POWER WIRE		CONTROL WIRE		GROUND	NOTES		
	TAG NO.	FROM	TO	QTY	SIZE	TYPE	QTY	SIZE			QTY
C0303	MCC-03-02		CONTROL PANEL	1	1"	GRS	-	-	10	#14	#14
P0303	MCC-03-02		EXHAUST FAN	1	1"	PVC-40	3	#10	6	#14	#10
											GRS ABOVE GRADE OR EXPOSED

**ELECTRICAL PLAN NOTES:**

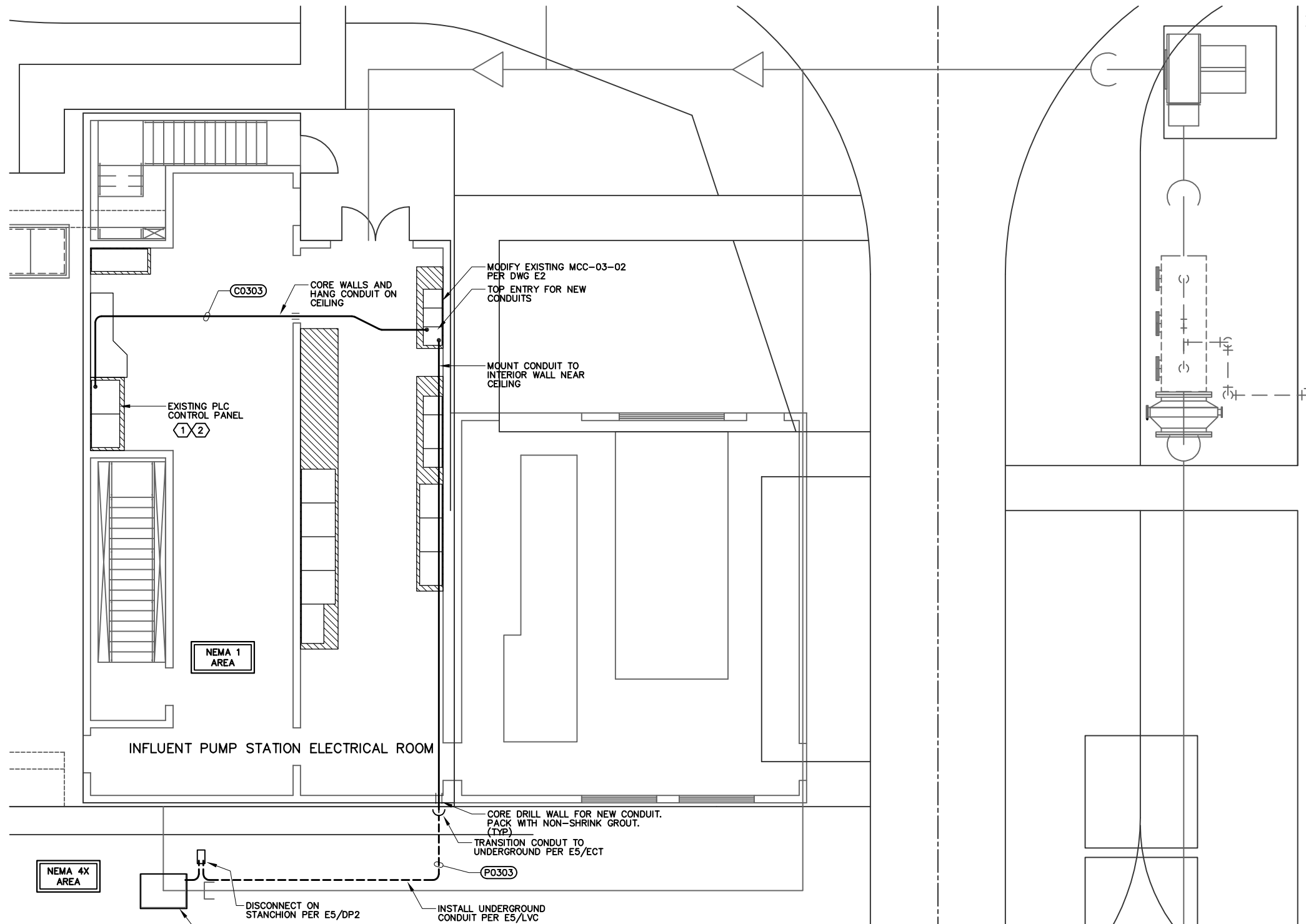
- REPAIR SURFACE TO PREVIOUS CONDITION FOR ALL UNDERGROUND CONDUIT ROUTES. GROUT, CAULK, AND PAINT ANY PENETRATIONS INTO STRUCTURES FOR WATERTIGHT SEAL.
- SITEPLAN ACCURATE FOR ELECTRICAL WORK ONLY. COORDINATE ALL WORK WITH CIVIL/MECH PLANS.
- CONDUITS SIZE, TYPE AND FILL DEFINED BY TAG NAME IN CONDUIT SCHEDULE, THIS PAGE.
- INSTALL NON-UTILITY CONDUITS PER DRAWING DETAILS AND SPECIFICATIONS SECTION 16110.
- CONDUIT TYPE IN CONDUIT SCHEDULE IS TYPICAL FOR UNDERGROUND HORIZONTAL PORTIONS OF RUN. IF ENTIRE RUN OF CONDUIT IS EXPOSED, THEN TYPE SHALL BE PER AREA CLASSIFICATION AS DEFINED IN 16110.
- CONDUIT TRANSITIONS SHALL BE PER EXPOSED CONDUIT TRANSITION DETAIL E05/ECT.
- EXPOSED CONDUIT TYPE TO BE USED ABOVE TRANSITION SHALL BE PER AREA CLASSIFICATION DEFINED IN CONDUIT SPECIFICATIONS AND EQUIPMENT SPECIFIC DETAIL.
- FITTINGS, CONDULETS, BOXES AND COVERS SHALL MATCH DUTY OF ADJACENT PIPE, SEE CONDUIT SPECIFICATIONS.
- USE SS EXPANSION WEDGE ANCHORS OR EPOXY ANCHORS AS NECESSARY FOR EQUIPMENT MOUNTING.
- RECEPTACLES TO BE GROUND FAULT INTERRUPTER (GFI) TYPE AND WEATHERPROOF (WP) WHERE SHOWN.
- SEE ELECTRICAL SYMBOLS AND ABBREVIATIONS DRAWING FOR SYMBOL DEFINITION.
- ALL WORK SHALL CONFORM TO LOCAL CODES AND NATIONAL ELECTRIC CODE.

**NOTES REFERENCED IN DRAWING:**

- CONNECT TO EXISTING PLC PANEL FOR START CONTROL, AUTO, HAND, AND RUNNING STATUS INDICATION AND CONTROL TO EXISTING SCADA FOR NEW EXHAUST SYSTEM.
- MODIFY SCADA AND PLC TO ADD SCADA AUTOMATIC FAN OPERATION TO EXISTING SCADA SYSTEM AND PLC LOAD SHED ALGORITHM. IN AUTO, THE PLC SHALL CALL THE SYSTEM TO RESTART AFTER DELAY AFTER POWER RESTORATION. IF ON GENERATOR, THE FAN SHALL BE INTERLOCKED WITH GENERATION IF SELECTED BY OPERATOR VIA SCADA.

**NOTES PERTAINING TO CONDUIT SCHEDULE:**

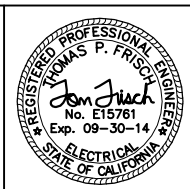
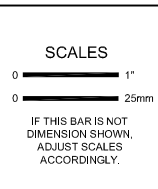
- CONDUIT TYPE IS TYPICAL FOR UNDERGROUND HORIZONTAL PORTIONS OF RUN. IF ENTIRE RUN OF CONDUIT IS EXPOSED, THEN TYPE IS AS SHOWN.
- SEE EXPOSED TRANSITION DETAIL OR EQUIPMENT SPECIFIC DETAIL FOR ABOVE GROUND OR EXPOSED PORTIONS OF RUN.
- FITTINGS, CONDULETS, BOXES AND COVERS SHALL MATCH DUTY OF ADJACENT PIPE, SEE SPECIFICATIONS 16110.



**INFLUENT PUMP STATION ELECTRICAL PLAN**  
SCALE: 3/16" = 1'

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FILE: 1306A-E4.DWG DATE: SEP 09, 2013 TIME: 10:16:52AM

**MANTECA WASTEWATER QUALITY CONTROL FACILITY**  
**INFLUENT PUMP STATION REHABILITATION**  
**MANTECA, CA**

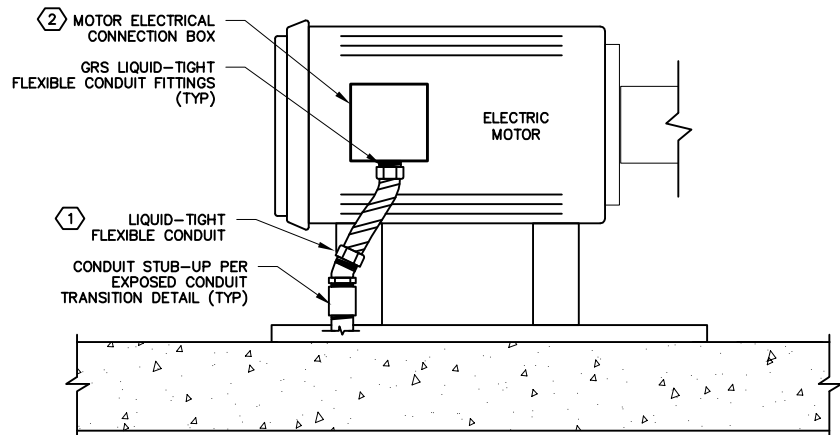
**ELECTRICAL**  
**EXHAUST FAN UPGRADE**  
**INFLUENT PUMP STATION**  
**ELECTRICAL PLAN**

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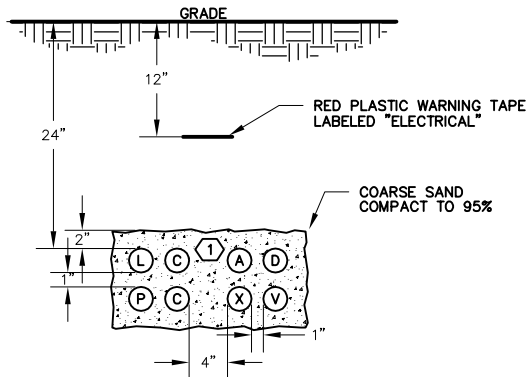
DATE  
September, 2013

DRAWING  
**E4**



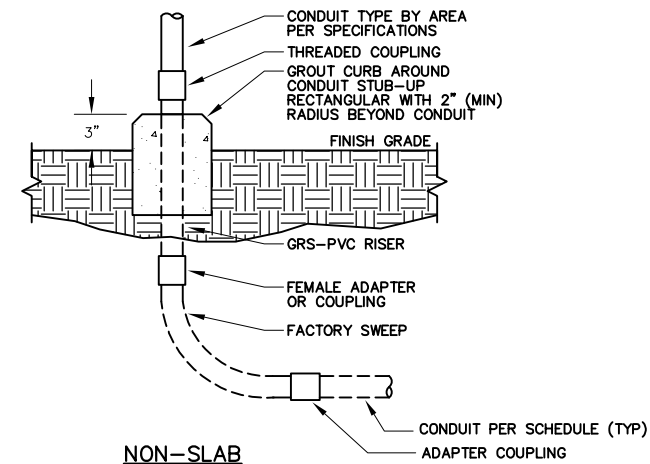
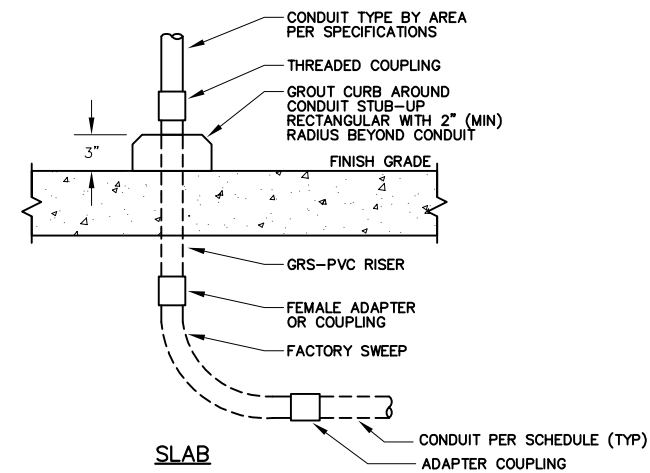
**FAN MOTOR CONNECTION DETAIL**  
NOT TO SCALE

- NOTES:
- 36" MAXIMUM LENGTH FOR SIZES UP TO 3" DIAMETER MAY BE REDUCED IF MOTOR CONNECTION BOX WILL NOT ACCEPT SIZE PER CONDUIT SCHEDULE. DO NOT EXCEED MINIMUM DIAMETER PER NEC.
  - ELECTRICAL CONNECTIONS SHALL BE AS FOLLOWS: USE COMPRESSION RING TERMINALS WITH NUT/BOLT COMBINATION. COVER EACH TERMINATION WITH 3 LAYERS RUBBER ELECTRICAL TAPE AND 5 LAYERS VINYL ELECTRICAL TAPE HALF LAPPED.

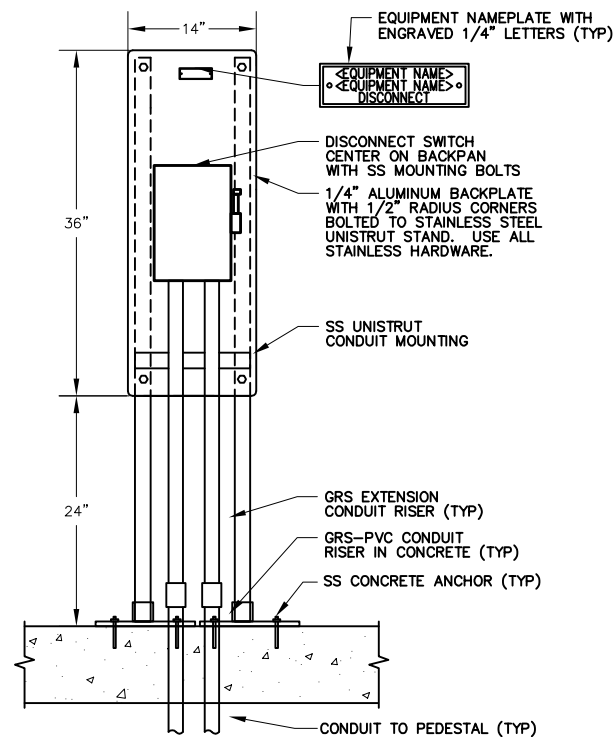


**LOW VOLTAGE NON-DUCT BANK SECTION**  
NOT TO SCALE

- NOTES:
- NUMBER OF CONDUITS PER PLANS AND SCHEDULE. MAXIMUM DEPTH OF TRENCH SHALL BE 42". DESIGN TRENCH DESIGN AND INSTALL TRENCH TO MAINTAIN 6" VERTICAL CLEARANCE AND 12" HORIZONTAL CLEARANCE FROM PIPES.
  - P, L, OR C DESIGNATION FOR POWER OR CONTROL CONDUITS.
  - A, D, V, OR X DESIGNATION FOR COMMUNICATION (TELEPHONE, DATA, VIDEO, OR INSTRUMENTATION) CONDUITS.
  - USE CONDUIT SPACERS TO SUPPORT CONDUITS AND MAINTAIN SPACING (3" INTERVALS)

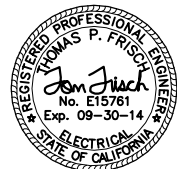
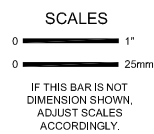


**EXPOSED CONDUIT TRANSITION DETAIL**  
NOT TO SCALE



**DISCONNECTION PANEL DETAIL**  
NOT TO SCALE

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FX 916 353 1028

FILE: 1306A-E5.DWG DATE: SEP 09, 2013 TIME: 10:16:36AM

**MANTECA WASTEWATER QUALITY CONTROL FACILITY  
INFLUENT PUMP STATION REHABILITATION  
MANTECA, CA**

**ELECTRICAL  
EXHAUST FAN UPGRADE  
DETAILS**

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September, 2013  
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**E5**

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