

### AIR CONDITIONING CONDENSING UNIT SCHEDULE

SYMBOL	MANUF. AND MODEL	RELATED FAN	NOM. TONS	COOLING CAP. (MBH)	COOLING EFF. (SEER)	ELECTRICAL			MAX. WT. (LBS)	REMARKS	
						VOLT/PH	RLA	MCA			MOCP
CU-1	FUJITSU AOU24CL	FC-1	2	24.2	18	230/1	10.1	21.0	29	100	1

NOTES:  
1. SIZE AND INSTALL REFRIGERANT PIPING AND SUPPORTS PER MANUFACTURERS INSTRUCTIONS.

### AIR CONDITIONING FAN-COIL UNIT SCHEDULE

SYMBOL	MANUF. AND MODEL	NOM. TONS	COND UNIT	AIR FLOW (CFM)	EVAP FAN RPM	TOTAL COOLING (MBH)	ELECTRICAL			MAX. WT. (LBS)	REMARKS
							VOLT/PH	MCA	MOCP		
FC-1	FUJITSU ASU24CL	2	CU-1	650	--	24.2	--	--	--	35	1,2,3,4

NOTES:  
1. INSTALL BOTTOM OF UNIT APPROX. 7'-2" FEET AFF, AND MOUNT WITH WALL MOUNTING BRACKET.  
2. ROUTE CONDENSATE DRAIN TO APPROVED LOCATION.  
3. POWER IS PROVIDED FROM CONDENSING UNIT. SEE ELECTRICAL.  
4. PROVIDE WITH WIRED REMOTE CONTROL.

#### MECHANICAL MANDATORY MEASURES Part 1 of 2 MECH-MM

DESCRIPTION	Designer	Enforcement
<input checked="" type="checkbox"/> 111 Any appliance for which there is a California standard established by the Appliance Efficiency Regulations will comply with the applicable standard.		
<input checked="" type="checkbox"/> 115(a) Fan type central furnaces shall not have a pilot light.		
<input checked="" type="checkbox"/> 123 Piping, except that conveying fluids at temperatures between 10 and 105 degrees Fahrenheit, or within HVAC equipment, shall be installed in accordance with Standards Section 123.		
<input checked="" type="checkbox"/> 124 Air handling duct systems shall be installed and installed in compliance with Sections 901, 902, 903, 904, and 905 of the 2001 CMC Standards.		
<b>Controls</b>		
<input checked="" type="checkbox"/> 122(a) Each space conditioning system shall be installed with one of the following: 122(a)1 Each space conditioning system serving building types such as offices and manufacturing facilities (and all other occupancy exempt from the requirements of Section 112 (a)) 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 scheduling 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		
<input type="checkbox"/> 122(a)2 An occupancy sensor to control the operating period of the system; or		
<input type="checkbox"/> 122(a)3 A timer device that can be manually operated to control the operating period of the system.		
<input type="checkbox"/> 122(a)4 Each space conditioning system shall be installed with controls that temporarily reduce and temporarily operate the system as required to maintain a setback heating and/or cooling thermostat setpoint.		
<input type="checkbox"/> 122(a)5 Each space conditioning system serving multiple zones with a combined conditioned floor area more than 25,000 square feet shall be provided with load zone controls, such as valves or dampers, that allow the supply of heating or cooling to be setback or shut off independently of other load zone areas; and shall be controlled by a time control device as described above.		
<input checked="" type="checkbox"/> 122(a)6 Each space conditioning system shall be controlled by an individual thermostat that responds to temperature within the zone. Where used for 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 2 degrees F within which the supply of heating and cooling is shut off or reduced to a minimum.		
<input checked="" type="checkbox"/> 122(a)7 Thermostats shall have numeric controls in degrees Fahrenheit (F) and adjustable setback stages accessible only to authorized personnel.		
<input type="checkbox"/> 112(b) Heat pumps shall be installed with controls to prevent electric mechanical supplementary heater operation when the heating load can be met by the heat pump alone.		

#### CERTIFICATE OF COMPLIANCE (Part 1 of 2) MECH-1-C

PROJECT NAME: Flag City Pump Station - Control Room HVAC  
DATE: 2/21/2007

PRINCIPAL DESIGNER: MECHANICAL  
INTERFACE ENGINEERING  
TELEPHONE: (916) 288-6200

GENERAL INFORMATION  
DATE OF PLAN: BUILDING CONDITIONED FLOOR AREA: 175 sq ft CLIMATE ZONE: 12

BUILDING TYPE:  NONRESIDENTIAL  HIGH RISE RESIDENTIAL  HOTEL/MOTEL/GUEST ROOM

PHASE OF CONSTRUCTION:  NEW CONSTRUCTION  ADDITION  ALTERATION  UNCONDITIONED (IN ATTIC)

METHOD OF MECHANICAL:  PRESCRIPTIVE  PERFORMANCE

PROOF OF ENVELOPE COMPLIANCE:  PREVIOUS ENVELOPE PERMIT  ENVELOPE COMPLIANCE ATTACHED

STATEMENT OF COMPLIANCE  
This Certificate of Compliance lists the building features and performance specifications needed to comply with Title 24, Part 1 and 4 of the California Code of Regulations. This certificate applies only to building mechanical requirements.

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

DOCUMENTATION AUTHOR: Interface Engineering SIGNATURE: DATE: 2/21/2007

The Principal Mechanical 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 mechanical requirements contained in the applicable parts of Sections 900, 901, 902, 110 through 115, 120 through 125, 142, 144, and 160.

The plans & specifications meet the requirements of Part 1 (Sections 90-103a).

The installation certifies meet the requirements of Part 1 (90-103a).

The operation & maintenance information meets the requirements of Part 1 (10-103a).

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 the document as the person responsible for preparation; and that I am licensed in the State of California as a civil engineer, or mechanical engineer or I am a licensed contractor.

I affirm that I am eligible under the exemption to Division 3 of the Business and Professions Code by Section 8002.2 or 8727.3 to sign the document as the person responsible for its preparation; and that I am a licensed contractor performing the work.

I affirm that I am eligible under the exemption to Division 3 of the Business and Professions Code to sign this document because I partner to a structure or type of work described pursuant to Business and Professions Code sections 8002, 8008, and 8727.1.

PRINCIPAL MECHANICAL DESIGNER NAME: Interface Engineering SIGNATURE: DATE: 2/21/2007 LIC # M30569

INSTRUCTIONS TO APPLICANT:  
MECH-1-C: Certificate of Compliance. Part 1, 2, 3 of 3 are required on plans for all submittals.  
MECH-2-C: Air/Water/Service/Water Pools Requirements. Part 1 of 3, 2 of 3, 3 of 3 are required on all submittals, but may be on plans.  
MECH-3-C: Mechanical Ventilation and Exhaust is required for all submittals with mechanical ventilation, but may be on plans.  
MECH-4-C: HVAC Misc. Prescriptive Requirements is required for all prescriptive submittals, but may be on plans.  
MECH-5-C: Mechanical Equipment Details are required for all performance submittals.

#### MECHANICAL MANDATORY MEASURES Part 2 of 2 MECH-MM

DESCRIPTION	Designer	Enforcement
<b>Ventilation</b>		
<input type="checkbox"/> 121(a) Controls shall be provided to allow outside air dampers or devices to be operated at the ventilation rates as specified on these plans.		
<input type="checkbox"/> 122(a) 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.		
<input type="checkbox"/> 122(a) 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.		
<input type="checkbox"/> 121(a) Air Balancing: The system shall be balanced in accordance with the National Environmental Balancing Bureau (NEBB) Procedural Standards (1995), or Associated Air Balance Council (AABC) National Standards (1995), or		
<input checked="" type="checkbox"/> 121(a) Outdoor 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 licensed C-20 mechanical contractor, or (3) the person with overall responsibility for the design of the ventilation system; or		
<input type="checkbox"/> 121(a) Outdoor 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 device; or		
<input type="checkbox"/> 121(a) Another method approved by the Commission.		
<b>Service Water Heating Systems</b>		
<input checked="" type="checkbox"/> 113(a) If a circulating hot water system is installed, it shall have a control capable of automatically turning off the circulating pumps when hot water is not required.		
<input checked="" type="checkbox"/> 113(a) Lavatories in restrooms of public facilities shall be equipped with controls to limit the outlet temperature to 110 degrees F.		

#### CERTIFICATE OF COMPLIANCE (Part 2 of 2) MECH-1-C

PROJECT NAME: Flag City Pump Station - Control Room HVAC  
DATE: 2/21/2007

PRINCIPAL DESIGNER: MECHANICAL  
INTERFACE ENGINEERING  
TELEPHONE: (916) 288-6200

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. This designer is required to check the boxes by all acceptance tests that apply and list all equipment that requires an acceptance test. If an equipment of 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.

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:  
Not required on all New systems both New Construction and Retrofit.

MECH-3-A: Packaged HVAC Systems Acceptance Document  
Equipment requiring acceptance testing:  
Not required on all New systems both New Construction and Retrofit. Only with systems that are installed at the factory and tested at the manufacturer's test facility before shipment to the job site.

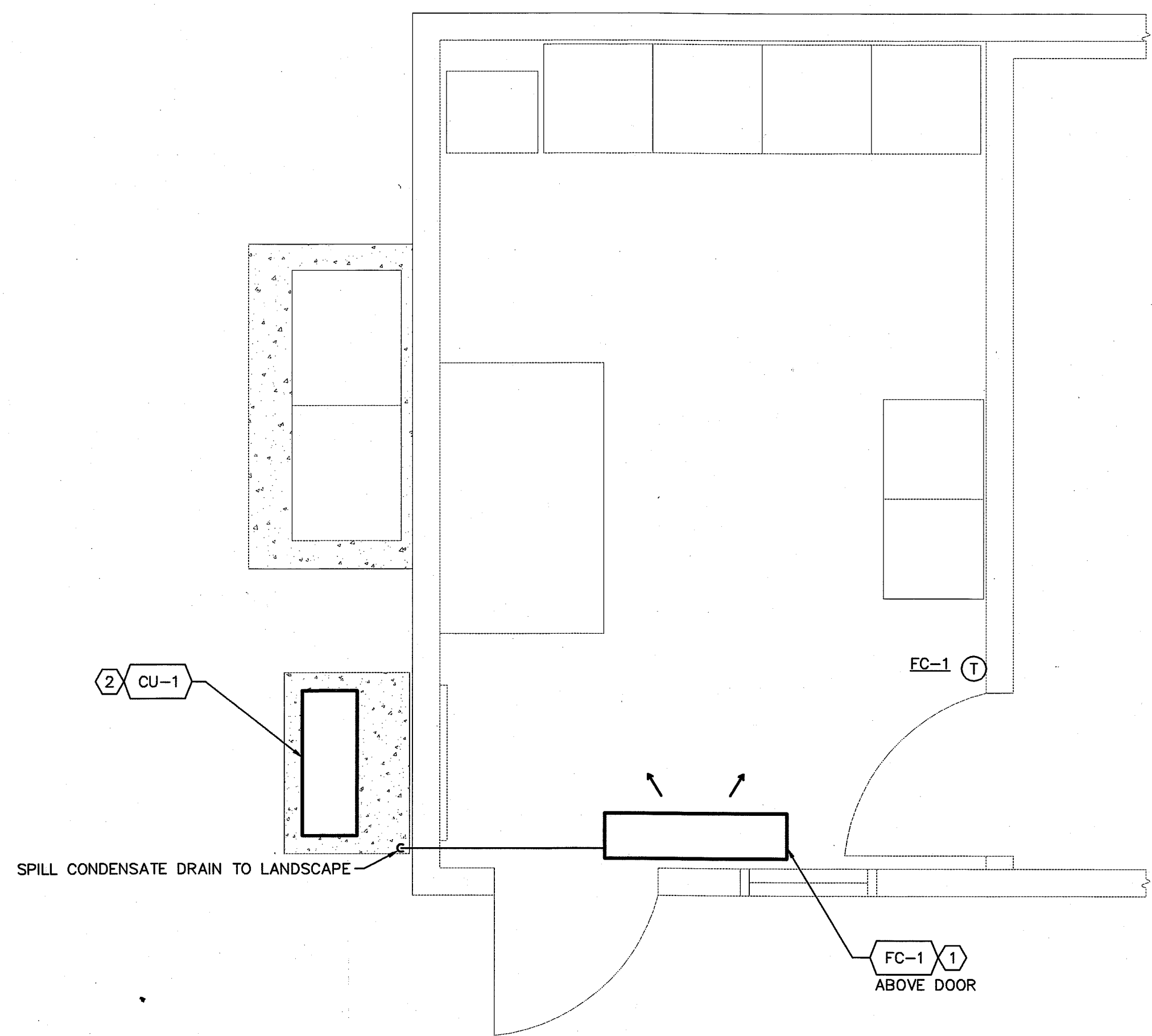
MECH-4-A: Air-Side Economizer Acceptance Document  
Equipment requiring acceptance testing:  
Not required on all New systems both New Construction and Retrofit.

MECH-5-A: Air Distribution Acceptance Document  
Equipment requiring acceptance testing:  
This test requires the wall serve 5,000 sq ft of space or less and 25% or more of the ductwork is non-ductboard construction.  
All new systems that meet the above requirements. Retrofit systems that meet the above requirements and/or retrofit ductwork, unless both are MECH-5C required.

MECH-6-A: Demand Control Ventilation Acceptance Document  
Equipment requiring acceptance testing:  
All new DCV control installed on new or retrofitted packages must be tested.

MECH-7-A: Supply Fan Variable Flow Control Acceptance Document  
Equipment requiring acceptance testing:  
All new VAV fan control installed on new or retrofit packages must be tested.

MECH-8-A: Hydraulic System Control Acceptance Document  
Variable Flow Control: Applies to chilled and hot water systems.  
Automatic Inlet/Outlet Control: Applies to new when valves and the primary pumps are connected to a common header.  
Supply Water Temperature Reset Control: Applies to new construction and retrofit systems that have a design temperature greater than 180.000.000.  
Water Loop Heat Pump Control:  
Applies to new construction and retrofit systems where the condenser pumps are greater than 5.0.  
Variable Frequency Control: Applies to all new electric motors on new variable speed systems.  
or constant speed systems where the motor is greater than 5.0.  
Equipment requiring acceptance testing:  
Design: Part 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.



**GENERAL SHEET NOTES:**

- MAINTAIN RECOMMENDED CLEARANCES, INSTALL AND ANCHOR EQUIPMENT PER MANUFACTURERS INSTRUCTIONS.
- SEAL BUILDING PENETRATIONS WEATHER-TIGHT.
- FOR EACH PIECE OF EQUIPMENT, PROVIDE NECESSARY APPURTENANCES FOR A COMPLETE INSTALLATION, INCLUDING MOUNTING HARDWARE, ANCHORS, FLASHING, AND SEISMIC SUPPORTS, IF REQUIRED.

**SHEET KEYNOTES:**

- INSTALL BOTTOM FAN COIL APPROX 7'-2" FEET ABOVE FLOOR.
- CONDENSING UNIT SHALL BE SUPPORTED ON A LEVEL CONCRETE SLAB OR OTHER APPROVED MATERIAL EXTENDING A MINIMUM OF 3 INCHES ABOVE GRADE, PER CMC 1106.2.

**CONTROL BUILDING**  
**1 PARTIAL FLOOR PLAN - MECHANICAL**  
0 1' 2' 4'  
SCALE: 1/2"=1'-0"

BAR IS ONE INCH ON ORIGINAL DRAWING  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY



SUBMITTED: \_\_\_\_\_  
DATE: \_\_\_\_\_  
APPROVED: \_\_\_\_\_  
DATE: \_\_\_\_\_

THIS LINE IS 1 INCH AT FULL SCALE IF NOT SCALE ACCORDINGLY

SCALE: AS SHOWN  
DRAWN BY: NN  
DESIGNED BY: LE  
PROJ. MGR.: \_\_\_\_\_

NO.	ZONE	REVISIONS	BY	DATE

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(530) 756-5905  
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Contact  
Larry A. Fross  
Project  
2006-0309

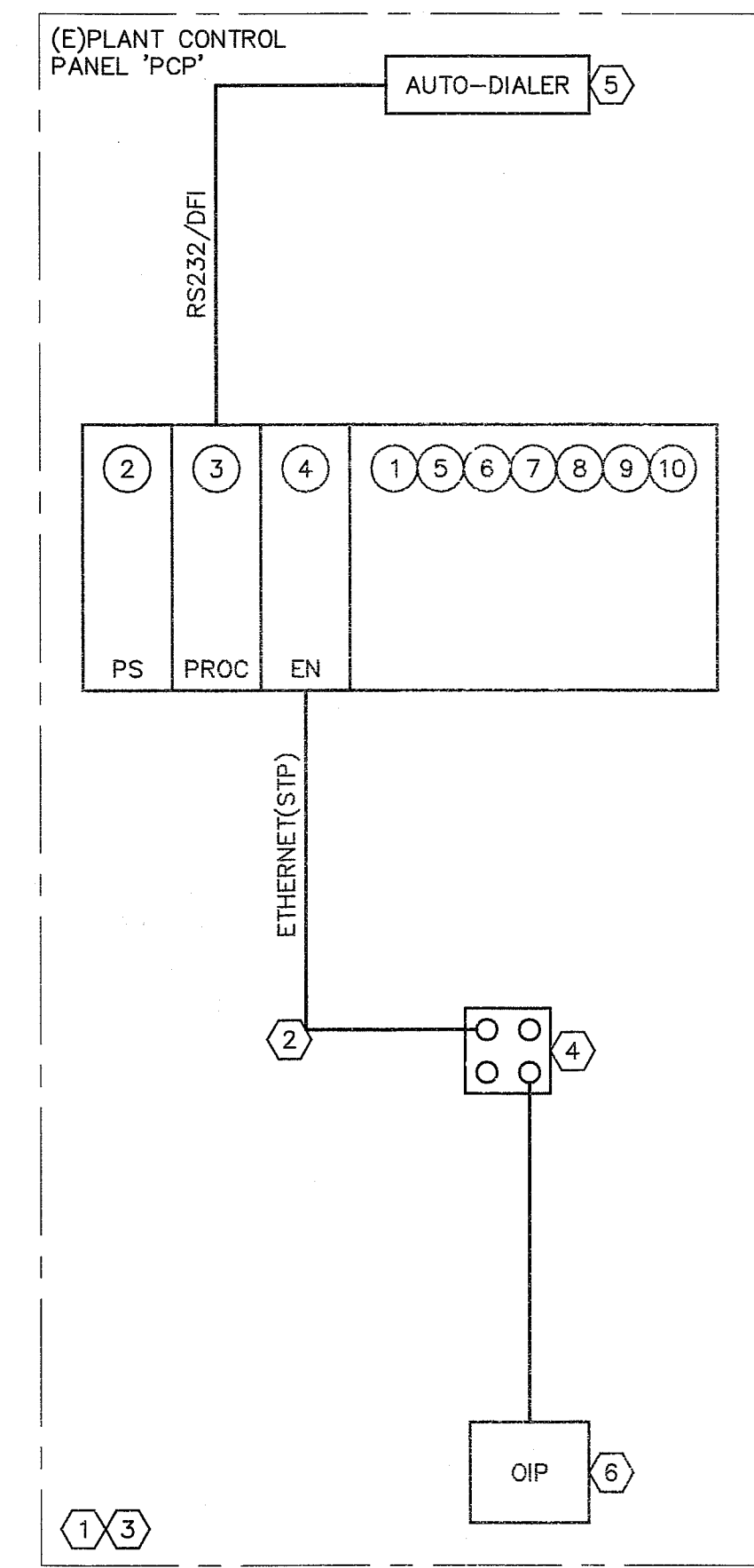
**INTERFACE ENGINEERING**  
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PHONE 916.288.6200 FAX 916.288.6250

County of San Joaquin  
**Flag City Pump Station & Force Main**  
EXISTING CONTROL BUILDING  
PARTIAL FLOOR PLAN  
**MECHANICAL**

JOB NUMBER  
010-00-07-18  
DRAWING NUMBER  
H 2  
SHEET NUMBER  
44 OF 44  
REVISION

SU 44518





**SHEET KEYNOTES**

- ① SUPPLIED BY SYSTEM INTEGRATOR.
- ② PROVIDE & INSTALL SHIELDED PATCH CORD, SIEMON PART #XC6-(XX)-B05, AS NEEDED. 'XX' DENOTES LENGTH OF PATCH CORD.
- ③ FIELD WIRING TERMINATIONS TO PANEL BY CONTRACTOR.
- ④ PROVIDE & INSTALL ONE (1) INDUSTRIAL COMMUNICATION JUNCTION BOX, SIEMON PART #X-1BOX-04. TERMINATE EACH COMMUNICATION CABLE TO ONE (1) 8-PIN CATEGORY 6 SCREENED CONNECTOR, SIEMON PART #X6S. PROVIDE BLANK FOR UNUSED PORTS.
- ⑤ AUTO-DIALER, RACO VERBATIM GATEWAY OR EQUAL.
- ⑥ GRAPHIC LCD OPERATOR INTERFACE TERMINAL, RED LION MODEL #G303, ALLEN BRADLEY PANELVIEW, OR EQUAL.

**PLC COMPONENTS**

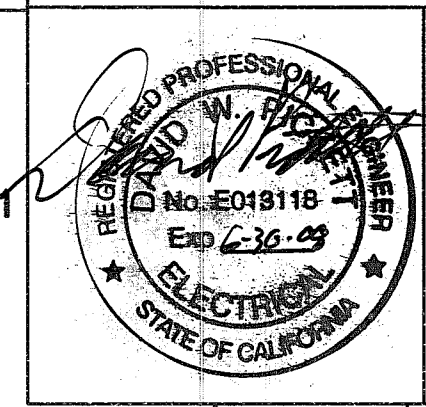
TAG	DESCRIPTION	MFGR & PART NUMBER
①	RACK, 7-SLOT	ALLEN-BRADLEY 1756-A7
②	POWER SUPPLY (PS)	ALLEN-BRADLEY 1756-PA72
③	CONTROLLOGIX CONTROLLER (PROC)	ALLEN-BRADLEY 1756-L61
④	ETHERNET COMMUNICATION (EN)	ALLEN-BRADLEY 1756-ENBT
⑤	DISCRETE INPUT MODULE 32-POINT 120VAC (DI)	ALLEN-BRADLEY 1756-IA32
⑥	DISCRETE OUTPUT MODULE 16-POINT 120VAC (DO)	ALLEN-BRADLEY 1756-OA16
⑦	DISCRETE ISOLATED OUTPUT MODULE 8-POINT (IDO)	ALLEN-BRADLEY 1756-OA16I
⑧	ANALOG ISOLATED INPUT MODULE 6-CHANNEL (AI)	ALLEN-BRADLEY 1756-IF16
⑨	ANALOG ISOLATED OUTPUT MODULE 6-CHANNEL (AO)	ALLEN-BRADLEY 1756-OF6CI
⑩	CARD SLOT FILLER	ALLEN-BRADLEY 1756-N2

**1 CONTROL SYSTEM BLOCK DIAGRAM**  
NO SCALE

**LEGEND**

- EN - ETHERNET
- PS - POWER SUPPLY
- OIP - OPERATOR INTERFACE PANEL
- DI - DIGITAL INPUT
- DO - DIGITAL OUTPUT
- AI - ANALOG INPUT
- AO - ANALOG OUTPUT
- F - FUTURE
- PROC - PROCESSOR

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APPROVED : \_\_\_\_\_ DATE : \_\_\_\_\_

THIS LINE IS 1 INCH AT FULL SCALE IF NOT SCALE ACCORDINGLY

SCALE : NONE  
DRAWN BY : JRL  
DESIGNED BY : AGB  
PROJ. MGR. : \_\_\_\_\_

NO.	ZONE	REVISIONS	BY	DATE

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Contact  
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Project  
2006-0309

**INTERFACE ENGINEERING**

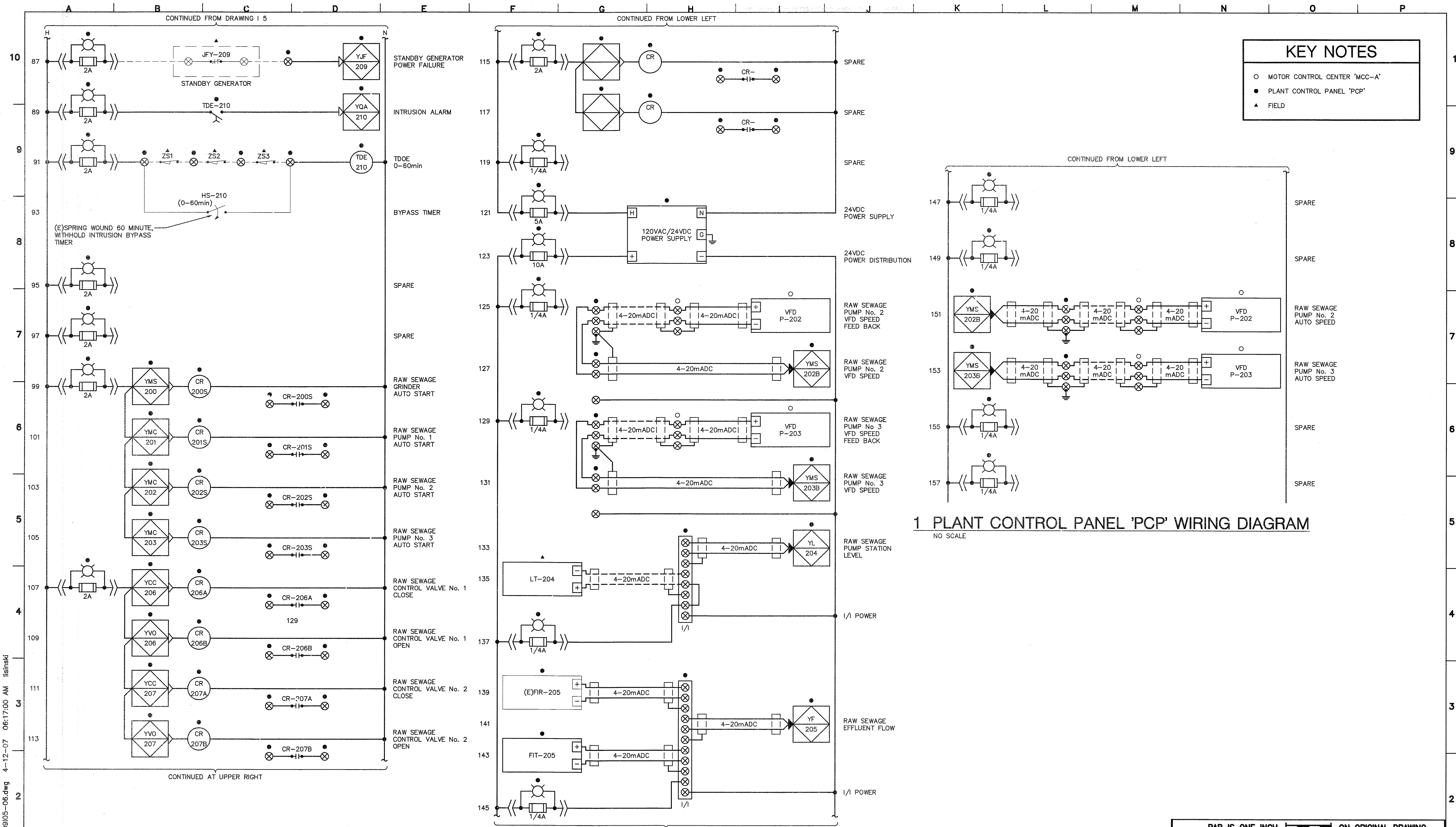
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County of San Joaquin  
**Flag City Pump Station & Force Main**  
CONTROL SYSTEM  
BLOCK DIAGRAM

JOB NUMBER 010-00-07-18
DRAWING NUMBER 17
SHEET NUMBER 42 OF 44
REVISION

SU 44160





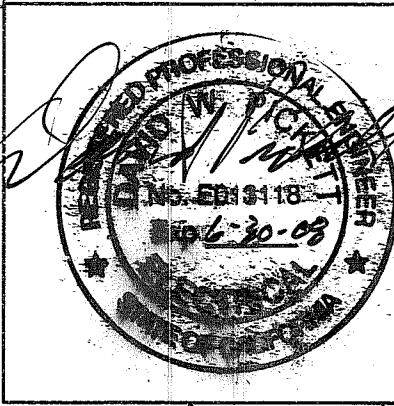
**KEY NOTES**

- MOTOR CONTROL CENTER 'MCC-A'
- PLANT CONTROL PANEL 'PCP'
- ▲ FIELD

**1 PLANT CONTROL PANEL 'PCP' WIRING DIAGRAM**  
NO SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING  
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SU 4461



SUBMITTED :	DATE :	APPROVED :	DATE :
<p>THIS LINE IS 1 INCH AT FULL SCALE IF NOT SCALE ACCORDINGLY</p> <p>SCALE : NONE          DRAWN BY : JRL          DESIGNED BY : DJA          PROJ. MGR. :</p>			
NO.	ZONE	REVISIONS	BY DATE

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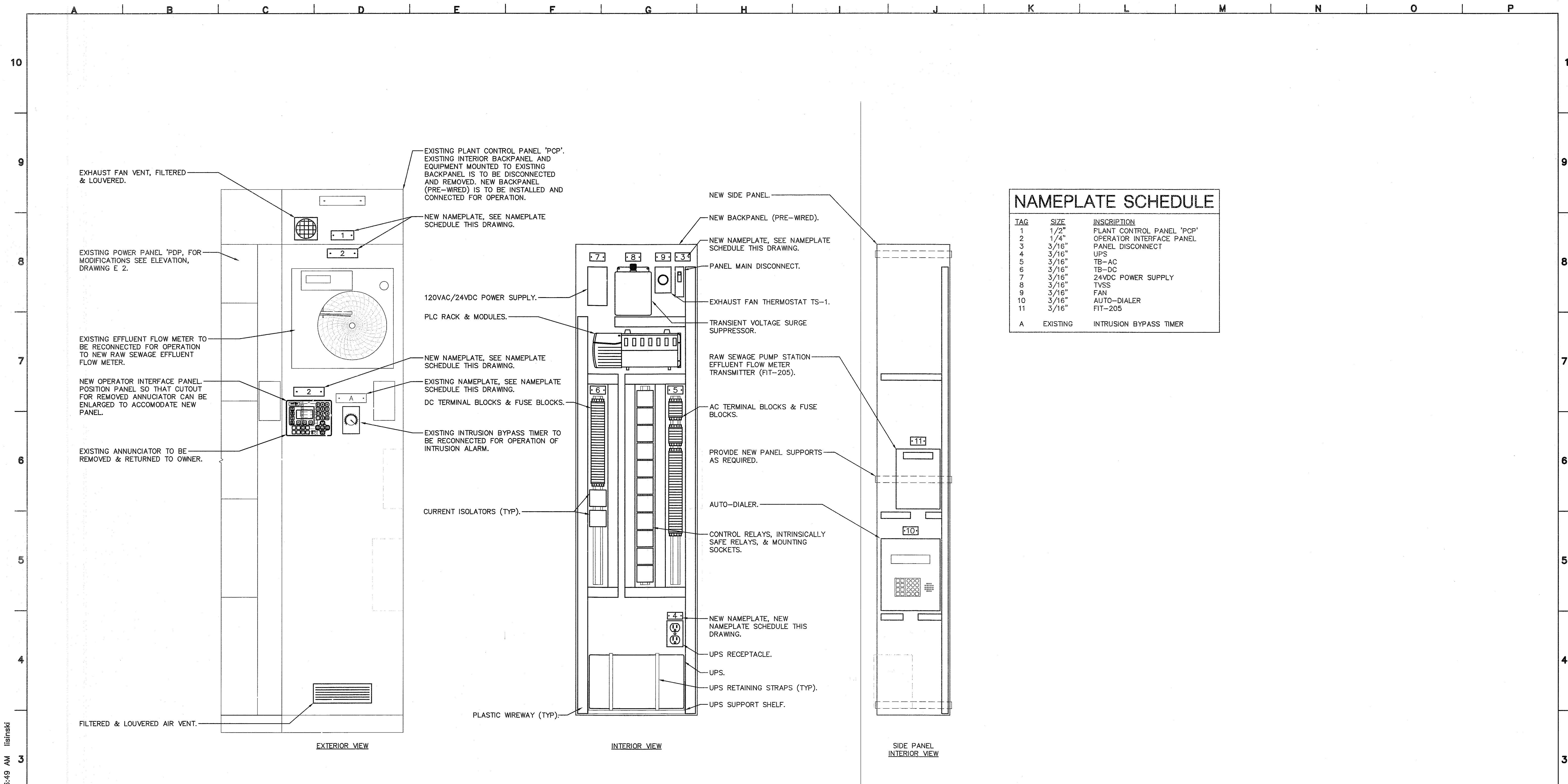
County of San Joaquin  
**Flag City Pump Station & Force Main**

PLANT CONTROL PANEL - 'PCP'  
 WIRING DIAGRAM #2

JOB NUMBER 010-00-07-18
DRAWING NUMBER 16
SHEET NUMBER 41 OF 44
REVISION







NAMEPLATE SCHEDULE		
TAG	SIZE	INSCRIPTION
1	1/2"	PLANT CONTROL PANEL 'PCP'
2	1/4"	OPERATOR INTERFACE PANEL
3	3/16"	PANEL DISCONNECT
4	3/16"	UPS
5	3/16"	TB-AC
6	3/16"	TB-DC
7	3/16"	24VDC POWER SUPPLY
8	3/16"	TVSS
9	3/16"	FAN
10	3/16"	AUTO-DIALER
11	3/16"	FIT-205
A	EXISTING	INTRUSION BYPASS TIMER

**1 EXISTING PLANT CONTROL PANEL - 'PCP' MODIFICATIONS**  
NO SCALE

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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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	DATE :	AT FULL SCALE							
	APPROVED :	IF NOT SCALE ACCORDINGLY	SCALE : NONE						
	DATE :		DRAWN BY : JRL						
		DESIGNED BY : DJA							
		PROJ. MGR. :							
			NO.	ZONE	REVISIONS	BY	DATE		

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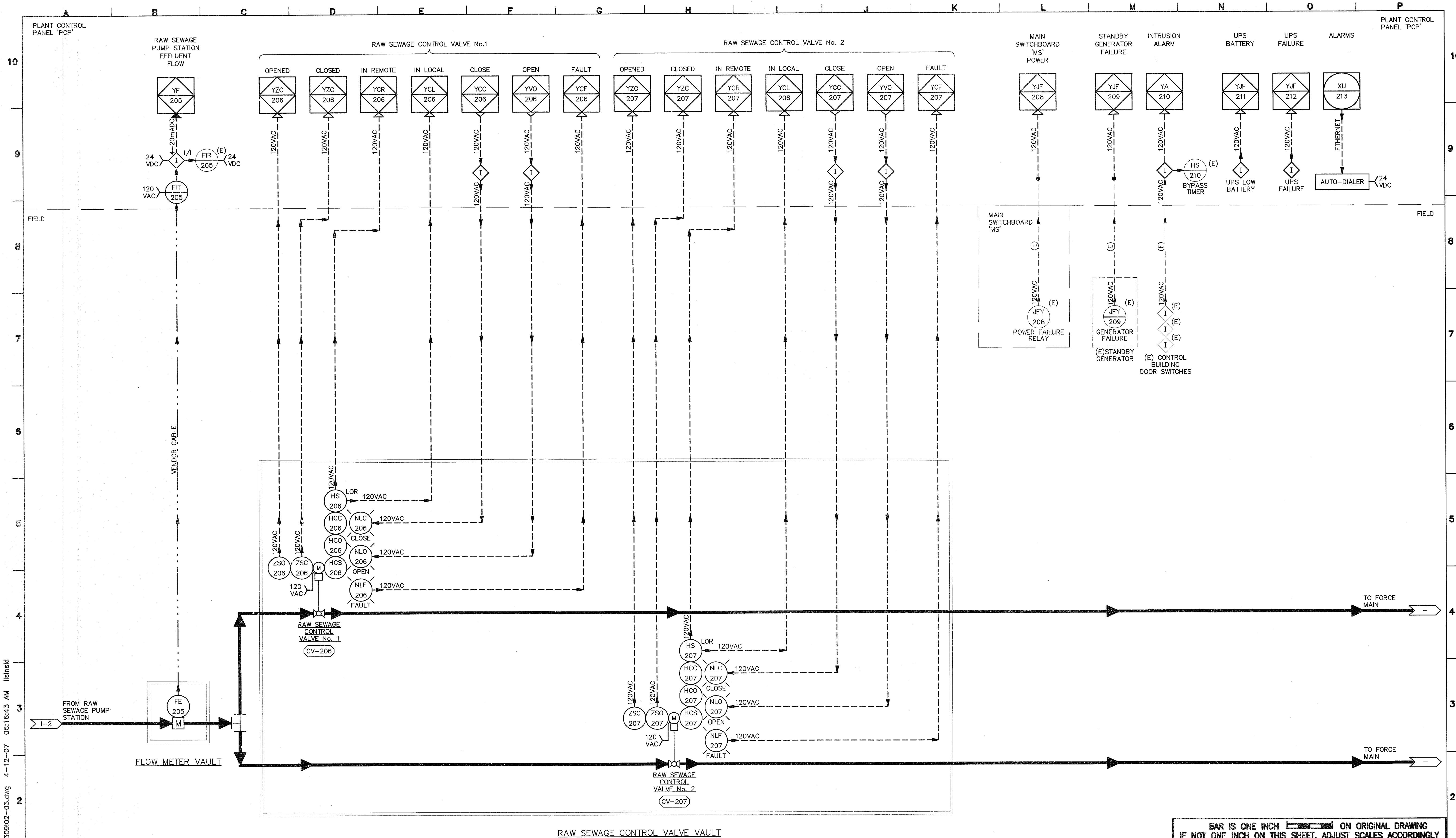
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County of San Joaquin  
**Flag City Pump Station & Force Main**  
EXISTING PLANT CONTROL PANEL - 'PCP'  
MODIFICATIONS  
ELEVATIONS & SCHEDULES

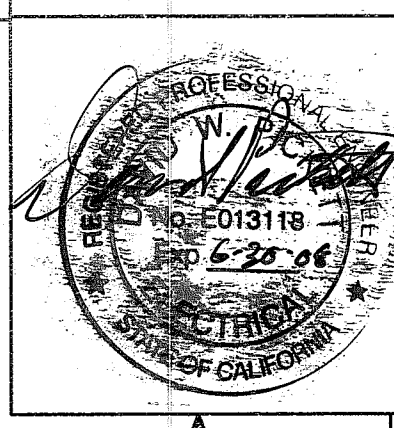
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DRAWING NUMBER 14
SHEET NUMBER 39 OF 44
REVISION

SU 4463



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BAR IS ONE INCH ON ORIGINAL DRAWING  
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 APPROVED : \_\_\_\_\_ DATE : \_\_\_\_\_  
 THIS LINE IS 1 INCH AT FULL SCALE IF NOT SCALE ACCORDINGLY  
 SCALE : NONE  
 DRAWN BY : JPL  
 DESIGNED BY : DJA  
 PROJ. MGR. : \_\_\_\_\_

NO.	ZONE	REVISIONS	BY	DATE

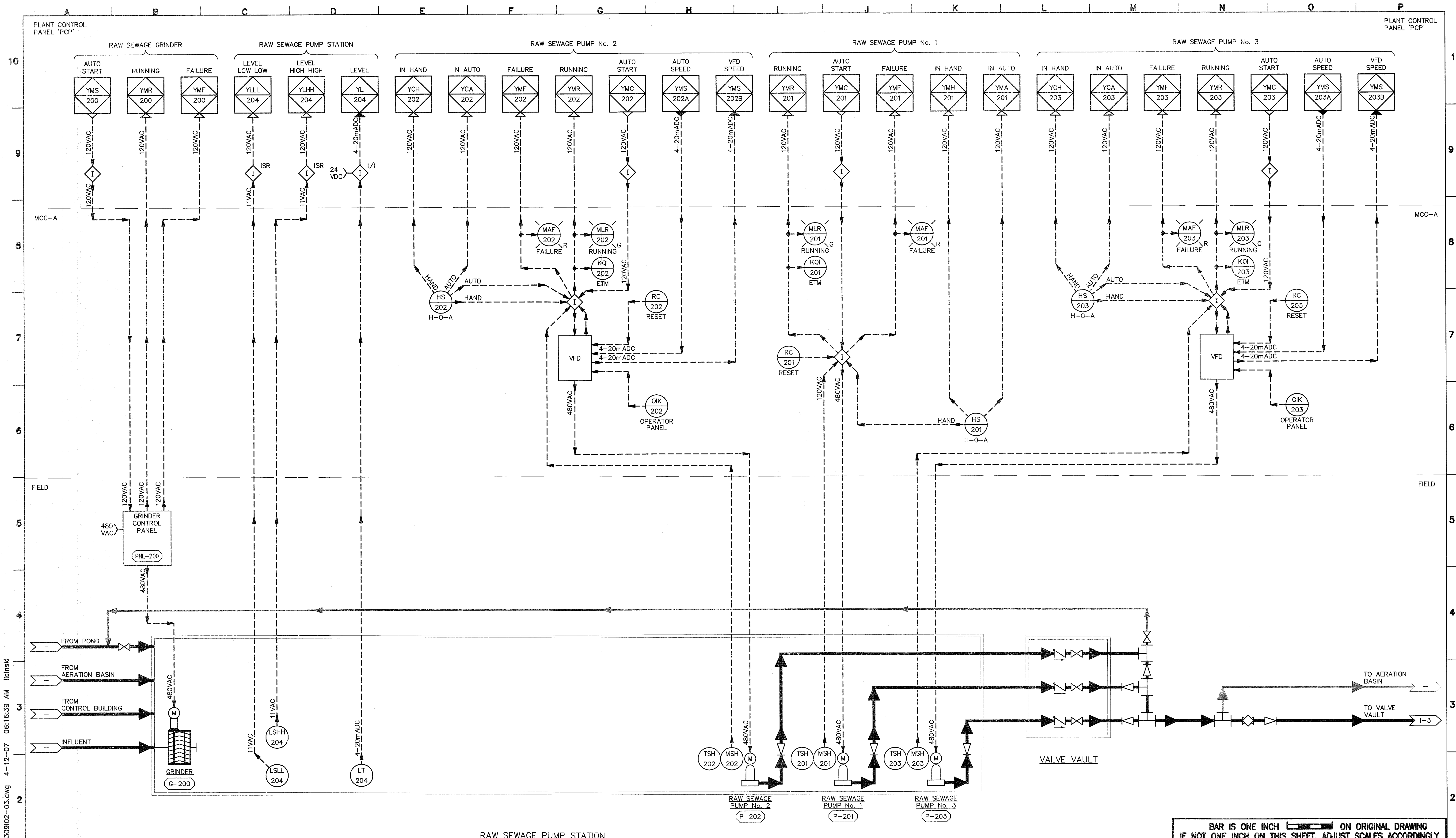
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Contact  
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County of San Joaquin  
**Flag City Pump Station & Force Main**  
 PROCESS & INSTRUMENTATION  
 DIAGRAM #2

JOB NUMBER 010-00-07-18
DRAWING NUMBER 13
SHEET NUMBER 38 OF 44
REVISION

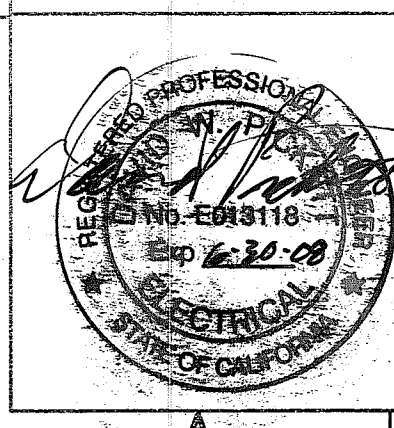




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RAW SEWAGE PUMP STATION

BAR IS ONE INCH ON ORIGINAL DRAWING  
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY



SUBMITTED : \_\_\_\_\_  
 DATE : \_\_\_\_\_  
 APPROVED : \_\_\_\_\_  
 DATE : \_\_\_\_\_

THIS LINE IS 1 INCH AT FULL SCALE IF NOT SCALE ACCORDINGLY	
SCALE : NONE	
DRAWN BY : JRL	
DESIGNED BY : DJA	
PROJ. MGR. : _____	
NO.	ZONE
REVISIONS	
BY	DATE

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 Contact: David J. Archangelo  
 Project: 2006-0309

County of San Joaquin  
**Flag City Pump Station & Force Main**  
 PROCESS & INSTRUMENTATION  
 DIAGRAM #1

JOB NUMBER 010-00-07-18
DRAWING NUMBER 12
SHEET NUMBER 37 of 44
REVISION

**SYMBOLS LIST**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	GROUND		EXISTING ELECTRIC SIGNAL		VALVE ACTUATOR
	SHEET NOTE TAG		ELECTRICAL SIGNAL		VALVE POSITIONER
	FIELD MOUNTED INSTRUMENT		ELECTRIC POWER/CONTROL		GLOBE VALVE
	FACE MOUNTED INSTRUMENT ON LOCAL PANEL, OPERATOR ACCESSIBLE		PNEUMATIC SIGNAL		GATE VALVE (NORMALLY OPEN)
	INSTRUMENT MOUNTED IN LOCAL PANEL, OPERATOR INACCESSIBLE		CAPILLARY TUBING (FILLED SYSTEM)		GATE VALVE (NORMALLY CLOSED)
	FACE MOUNTED INSTRUMENT ON FIELD PANEL, OPERATOR ACCESSIBLE		HYDRAULIC SIGNAL		PLUG VALVE (NORMALLY OPEN)
	INSTRUMENT MOUNTED IN FIELD PANEL, OPERATOR INACCESSIBLE		SONIC OR ELECTROMAGNETIC SIGNAL		PLUG VALVE (NORMALLY CLOSED)
	OPERATION PERFORMED WITH LOGIC OR HARDWIRED DEVICES DWG# - REFERENCE ELEMENTARY DWG. #		LOGIC OR DATA SIGNAL		BALL VALVE (NORMALLY OPEN)
	LAMP INDICATION (STATUS OR ALARM)		MAIN PROCESS LINE		BALL VALVE (NORMALLY CLOSED)
	ANNUNCIATOR WINDOW		MANUFACTURE'S WIRING		BALL CHECK VALVE
	COMMUNICATIONS POINT		SECONDARY PROCESS LINE		BUTTERFLY VALVE
	PLC/RTU OR COMPUTER PERFORMING INTERNAL OPERATION		AUXILIARY PROCESS LINE		CHECK VALVE
	INSTRUMENT PANEL MOUNTED WITH COMPUTING, CONVERTING, OR INTERFACE FUNCTION		DIRECTION OF FLOW		SLUICE GATE (NORMALLY OPEN)
<b>CONVERT</b>	E - VOLTAGE     H - HYDRAULIC I - CURRENT     O - ELECTROMAGNETIC, SONIC P - PNEUMATIC     R - RESISTANCE (ELECT.) A - ANALOG     D - DIGITAL B - BINARY		MOTOR		SLUICE GATE (NORMALLY CLOSED)
<b>COMPUTE</b>	SUMMING     AVERAGING SUBTRACTOR     RATIO MULTIPLYING     DIFFERENCE DIVIDING     HIGH SELECTING ROOT EXTRACTION     LOW SELECTING PROPORTIONAL     INTEGRAL DERIVATIVE     INTERLOCK		CENTRIFUGAL PUMP		SLIDE GATE (NORMALLY OPEN)
	COMMUNICATIONS POINT		BLOWER OR FAN		SLIDE GATE (NORMALLY CLOSED)
	PLC/RTU OR COMPUTER FUNCTION		COMPRESSOR		VACUUM RELIEF VALVE
	DIGITAL INPUT		SUMP PUMP		PRESSURE RELIEF VALVE
	ANALOG INPUT		VERTICAL PUMP		DIAPHRAGM SEAL
	DIGITAL OUTPUT		GEAR PUMP		PULSATION DAMPENER
	ANALOG OUTPUT		METERING PUMP		AIR RELEASE VALVE
			SOLENOID VALVE		
			AUDIBLE ALARM (BUZZER OR HORN)		
			DRAIN		
			PAGE THAT LINE IS CONTINUED ON		
			SMOKE DETECTOR		

**ABBREVIATIONS**

A	AMPERES, AMBER	N	NEUTRAL
AC	ALTERNATING CURRENT	NC	NORMALLY CLOSED
AI	ANALOG INPUT	NO	NORMALLY OPEN
AO	ANALOG OUTPUT	O	OPEN
B	BLUE	OCA	OPEN-CLOSE-AUTO
C	CLOSE, CONTROL	PB	PUSHBUTTON
CR	CONTROL RELAY	pH	HYDROGEN ION CONCENTRATION
DC	DIRECT CURRENT	PID	PROPORTIONAL - INTEGRAL - DERIVATIVE
DI	DIGITAL INPUT	PLC	PROGRAMMABLE LOGIC CONTROLLER
DO	DIGITAL OUTPUT	PMP	PUMP
DPDT	DOUBLE POLE DOUBLE THROW	PNL	PANEL
(E)	EXISTING	POT	POTENTIOMETER
ETM	ELAPSED TIME METER	PS	PRESSURE SWITCH
(F)	FUTURE	PRV	PRESSURE RELIEF VALVE
FC	FAIL CLOSED	PVT	PRESSURE VARIABLE
FLP	FAIL LAST POSITION	R	RED
FO	FAIL OPEN	(R)	EXISTING TO BE REMOVED OR RELOCATED
FS	FLOAT SWITCH	REF	REFERENCE
G	GREEN	S	SWITCH
G, GND	GROUND	SP	SET POINT
HOA	HAND OFF AUTO	SS	SURGE SUPPRESSOR
I	INTERLOCK	TDD, TDE	TIME DELAY RELAY
I/O	INPUT/OUTPUT	TWP	TWISTED PAIR
ISR	INTRINSICALLY SAFE RELAY	TWSP	TWISTED SHIELDED PAIR
LOS	LOCK-OUT STOP	TYP	TYPICAL
LPU	LINE PROTECTION UNIT	V	VOLTS, VOLTAGE
M	MOTOR	VFD	VARIABLE FREQUENCY DRIVE
MA	MANUAL-AUTO	VLV	VALVE
mA	MILLIAMPERES	W	WHITE
MIN	MINIMUM	WP	WEATHERPROOF
MOA	MANUAL-OFF-AUTO		
MOT	MOTOR OVERTEMP SENSOR		
MOV	MOTOR OPERATED VALVE		
MUX	MULTIPLEXER		

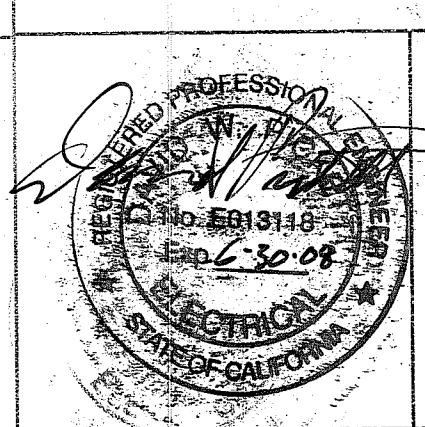
**P & I DIAGRAM INSTRUMENT FUNCTIONAL IDENTIFICATION**

CODE LETTER	FIRST LETTER(S)		SUCCEEDING LETTER(S)		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		AUTO
B	BURNER FLAME			CONTROL	CLOSE
C	CHLORINE				FAILURE
D	DENSITY	DIFFERENTIAL	ELEMENT, SENSOR		HIGH/HAND
E	VOLTAGE		FUEL		
F	FLOW	RATIO	VIEWING DEVICE		
G	GAGING				
H	HAND				
I	CURRENT		INDICATE		
J	POWER	SCAN		CONTROL STATION	
K	TIME	TIME RATE OF CHANGE			LOW/LOCAL
L	LEVEL		PILOT LIGHT		MIDDLE/MANUAL
M	MOISTURE/MOTOR	MOMENTARY	MOTOR		
N	STATUS				
O	OPERATOR		ORFICE		OPEN/OVERLOAD
P	PRESSURE		POINT		
Q	EVENT	TOTALIZE	TOTAL		
R	RESET		RECORD		RUNNING/REMOTE
S	SPEED	SAFETY	TEST	SWITCH	STOP/SPEED
T	TEMPERATURE		TEST	TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION		
V	VIBRATION			VALVE	
W	FORCE, WEIGHT		WELL		
X	TELEMETRY INTERFACE				
Y	COMPUTER INTERFACE			COMPUTE/RELAY/CONVERTER	
Z	POSITION			ACTUATE	POSITION

**EQUIPMENT ABBREVIATIONS**

'MCC-1' = MOTOR CONTROL CENTER 'MCC-1'  
'ICP' = INSTRUMENTATION CONTROL PANEL

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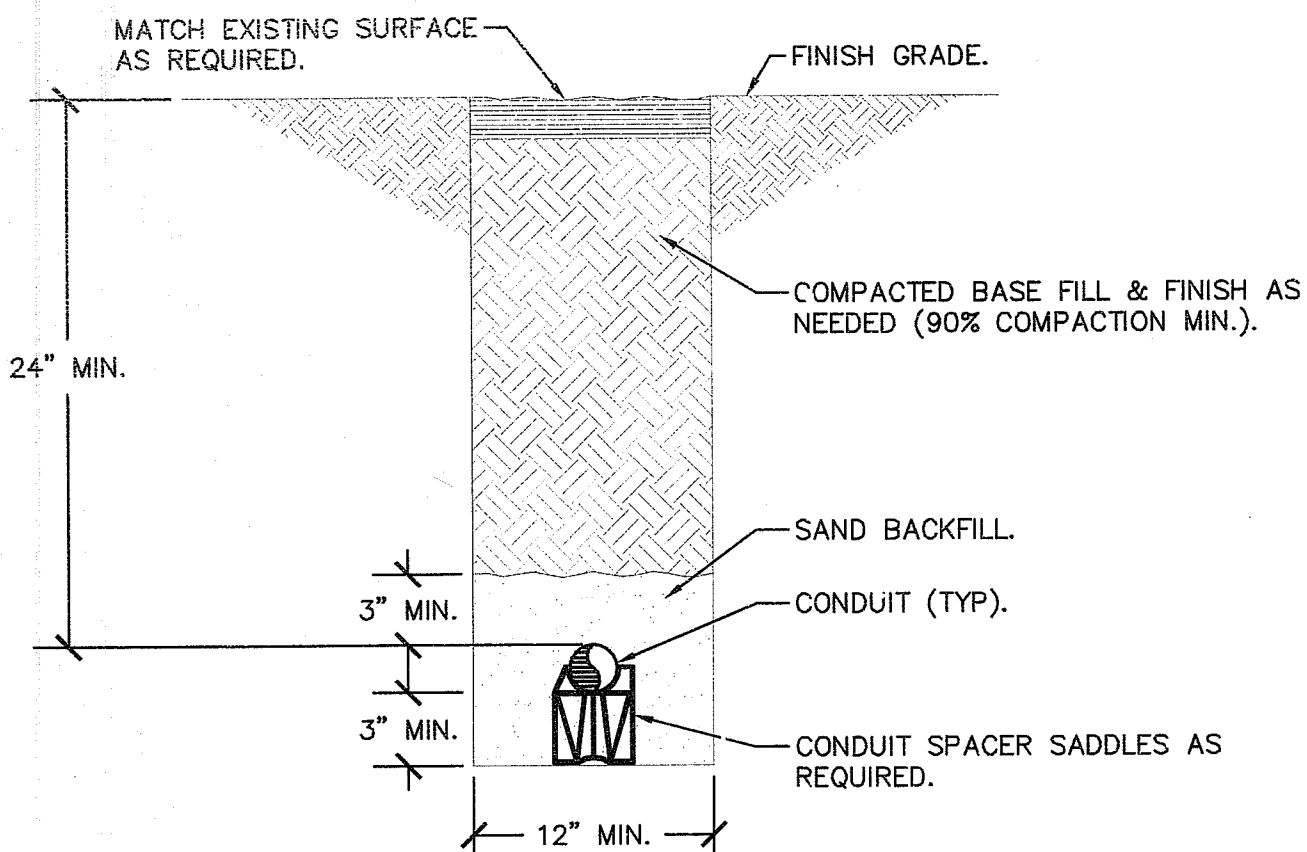
Contact David J. Archangelo  
Project 2006-0309  
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8950 CAL CENTER DR., SUITE 250, SACRAMENTO, CA 95826  
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County of San Joaquin  
**Flag City Pump Station & Force Main**  
INSTRUMENTATION SYMBOLS & ABBREVIATIONS

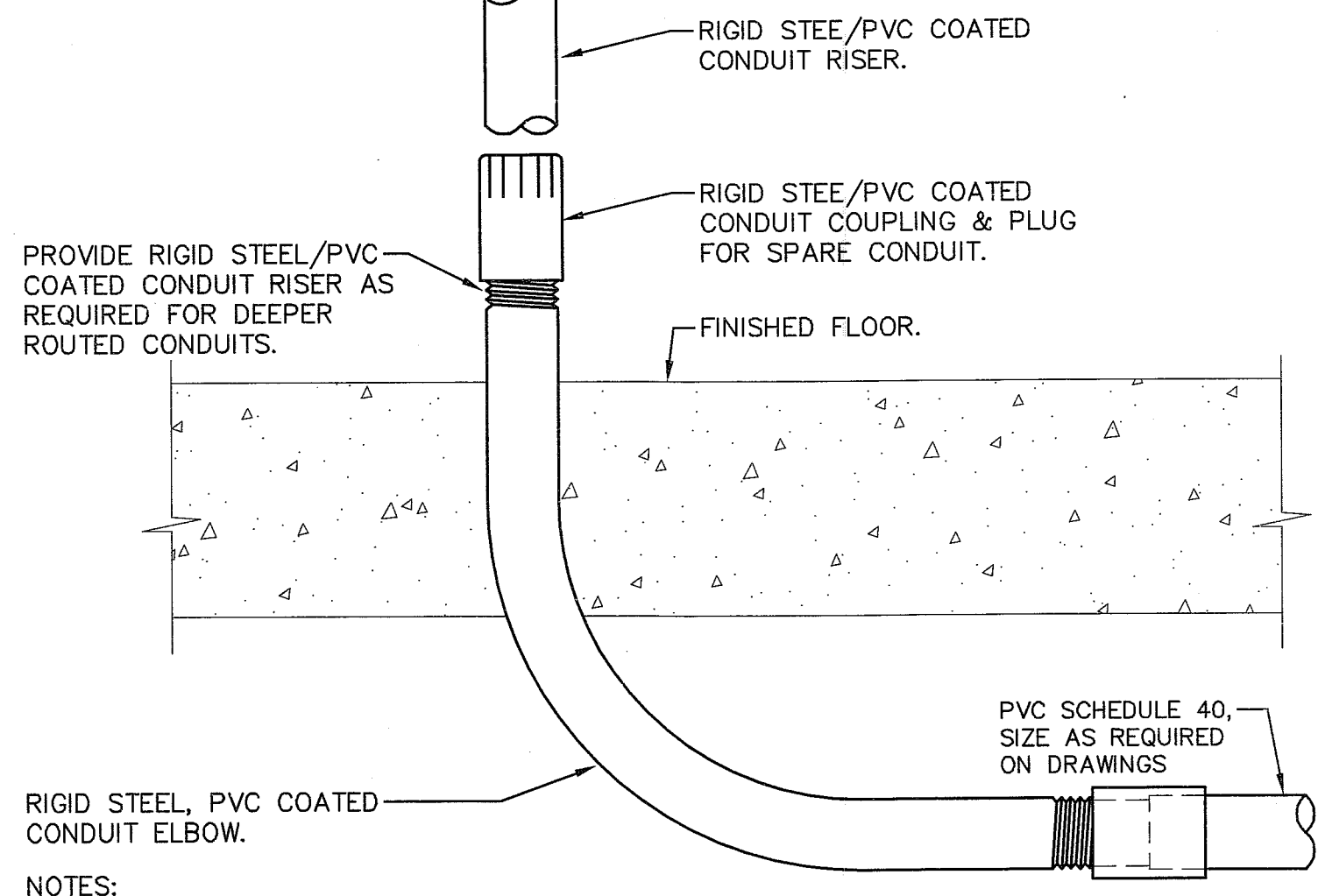
JOB NUMBER	010-00-07-18
DRAWING NUMBER	11
SHEET NUMBER	36 OF 44
REVISION	

SU 4466 MS

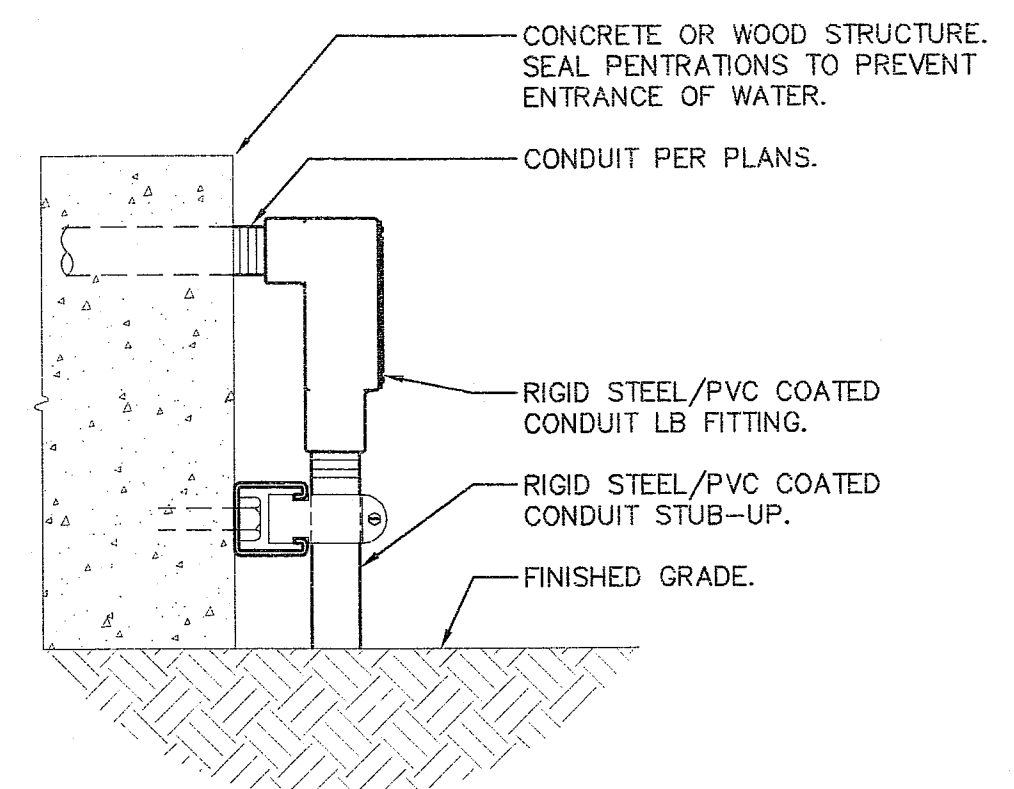




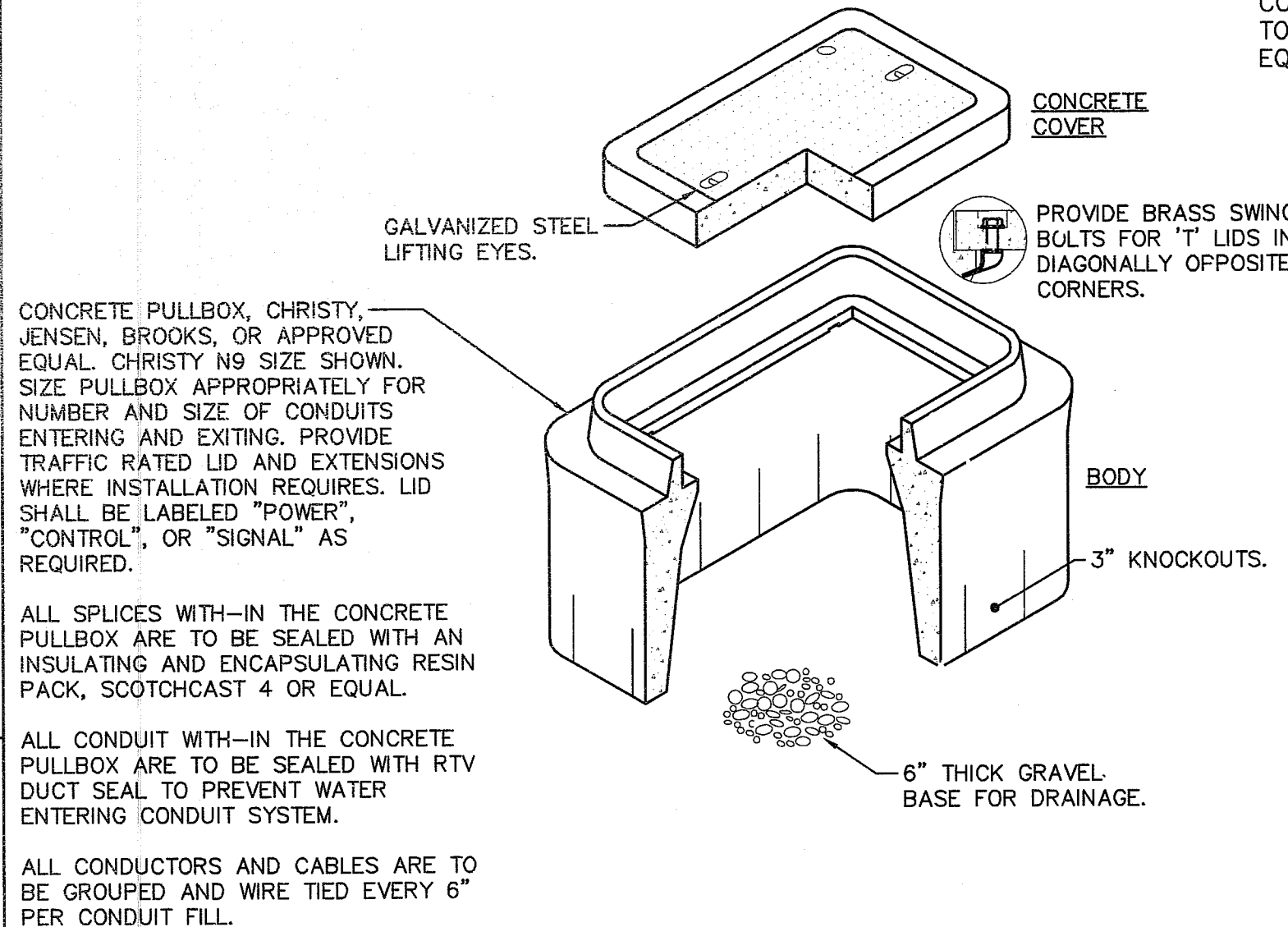
**1 TYPICAL TRENCH DETAIL**  
NO SCALE



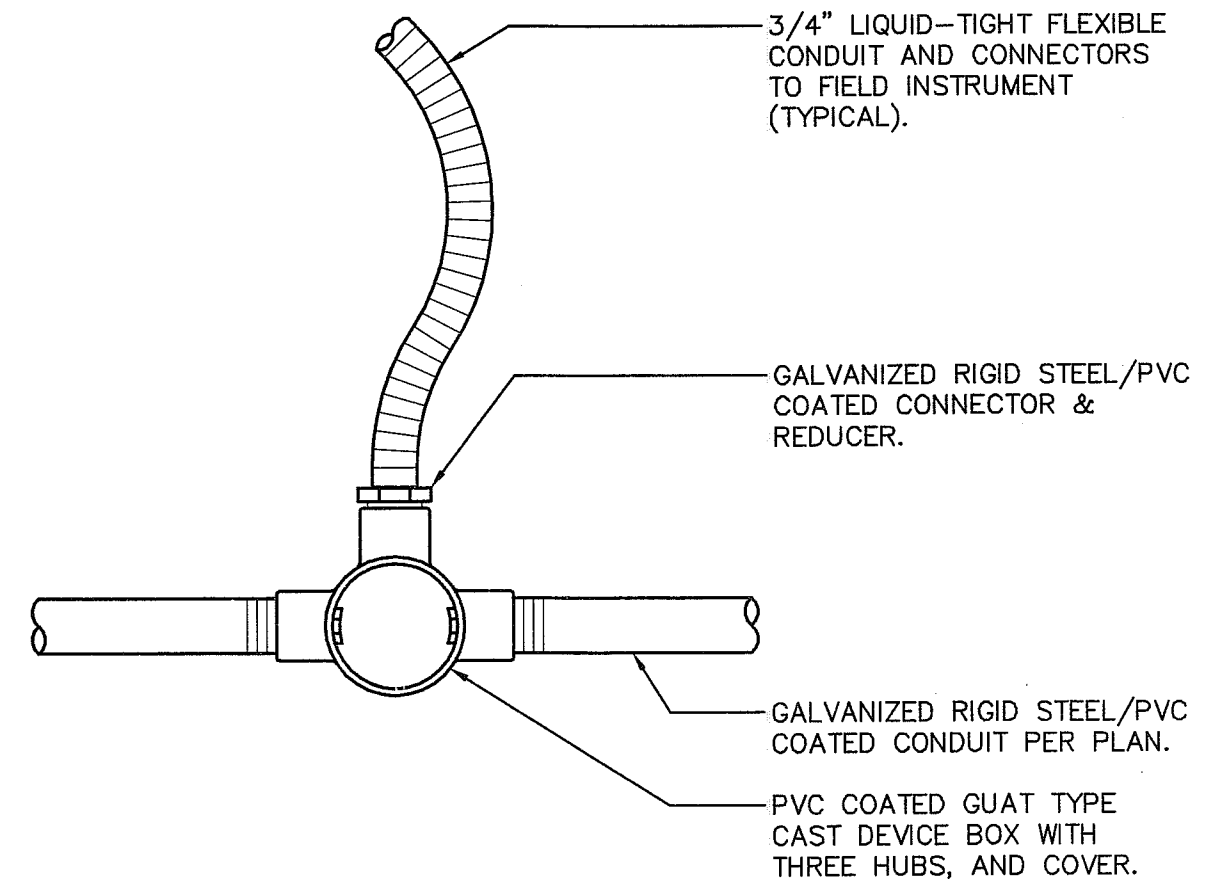
**4 PVC CONDUIT STUB-UP DETAIL**  
NO SCALE



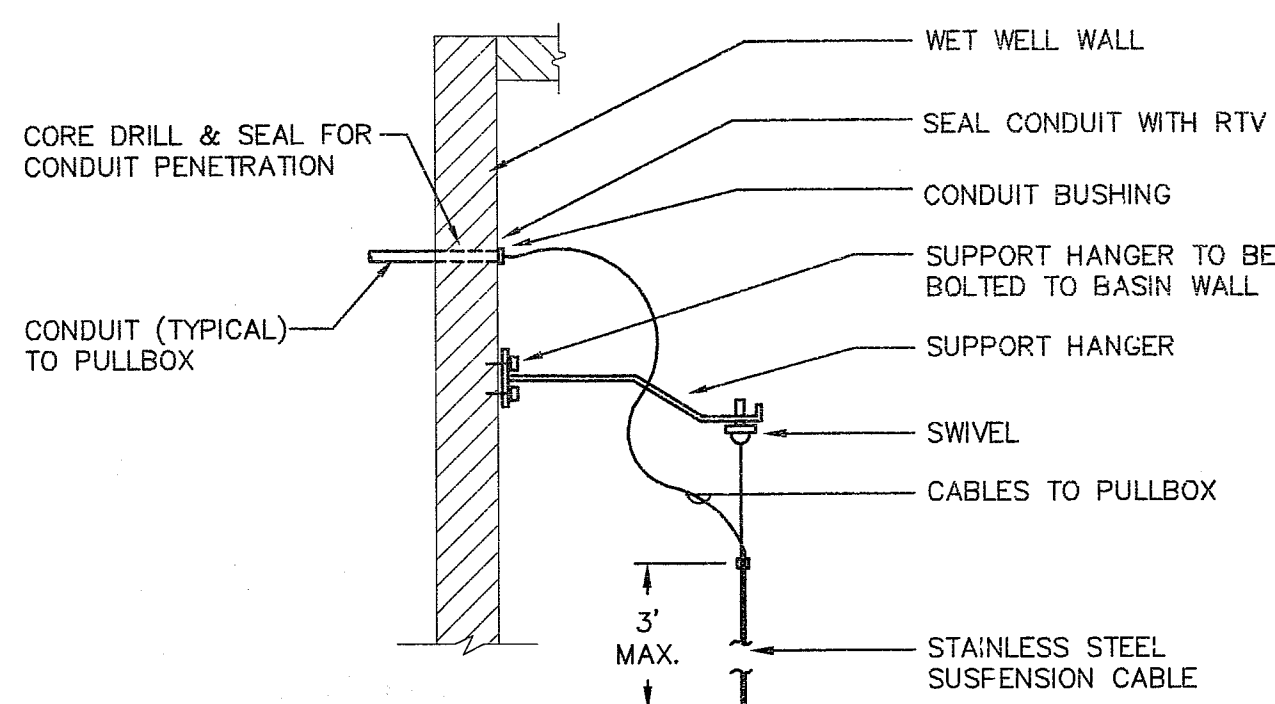
**7 CONDUIT STUB-UP DETAIL**  
NO SCALE



**2 TYPICAL CONCRETE PULLBOX DETAIL**  
NO SCALE

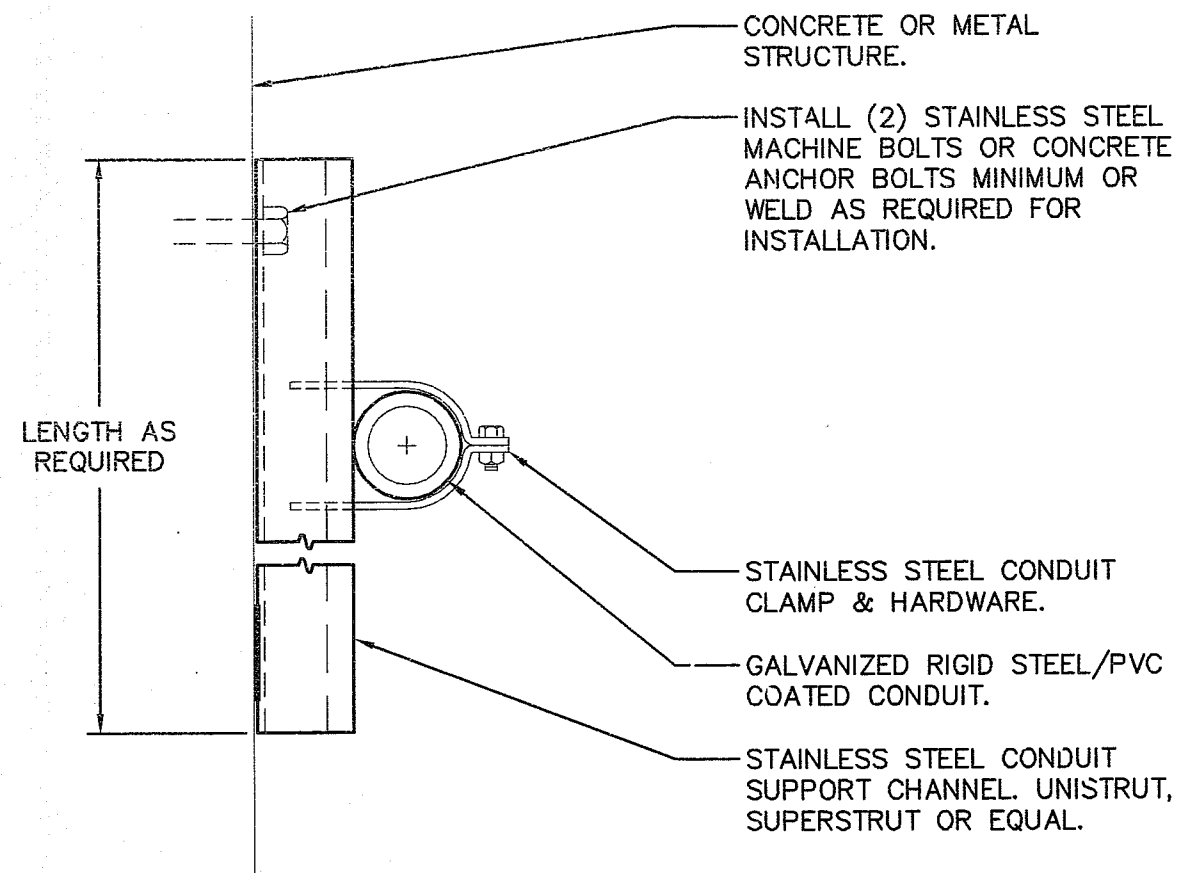


**5 CONDUIT CONNECTION DETAIL 'A'**  
NO SCALE

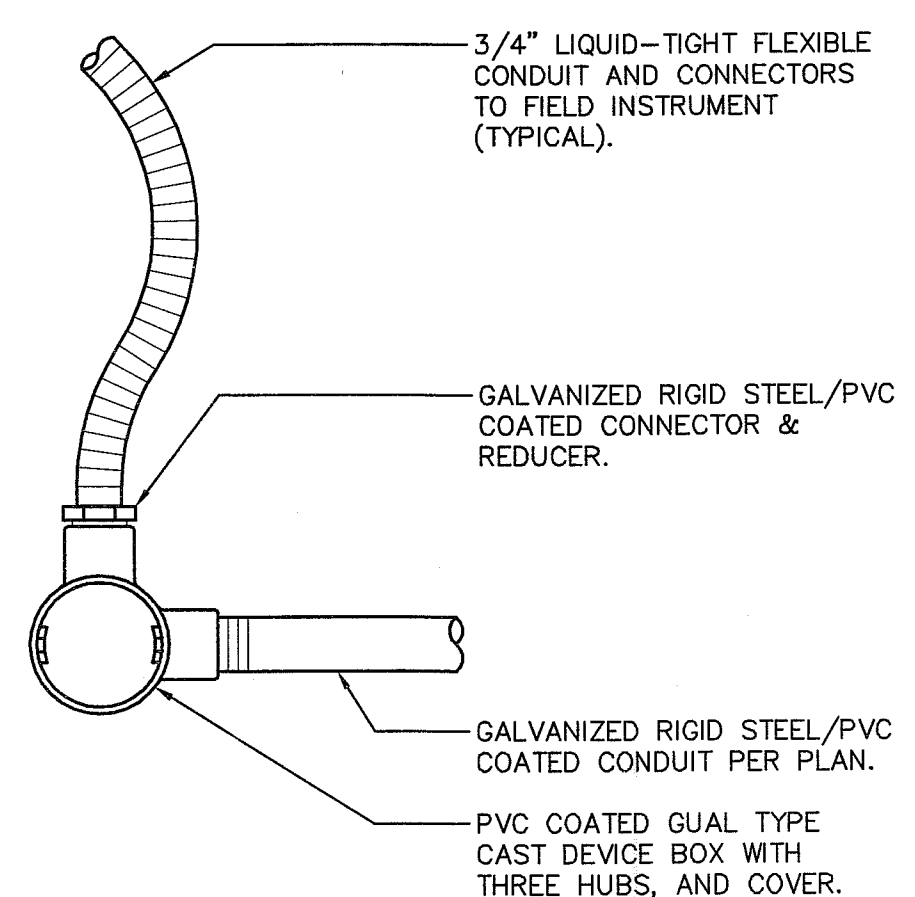


**LEVEL SWITCH and TRANSMITTER INSTALLATION DETAIL**  
NO SCALE

- DETAIL NOTES:**
1. ALL HARDWARE, CLAMPS & HANGER SHALL BE STAINLESS STEEL.
  2. SUPPORT HANGER SHALL BE LOCATED AT THE TOP OF THE BASIN.
  3. SUPPORT HANGER SHALL SUSPEND CABLE TO PROVIDE CLEARANCE FOR PROPER LEVEL SWITCH OPERATION.
  4. LEVEL SWITCHES SHALL BE POSITIONED AND ROTATED ON SUSPENSION CABLE IN ORDER THAT THE LEVEL SWITCHES DO NOT INTERFERE WITH EACH OTHER.
  5. LEVEL SWITCH CLAMPS SHALL HAVE FLEX BUSHINGS TO PREVENT DAMAGE TO THE CABLE.

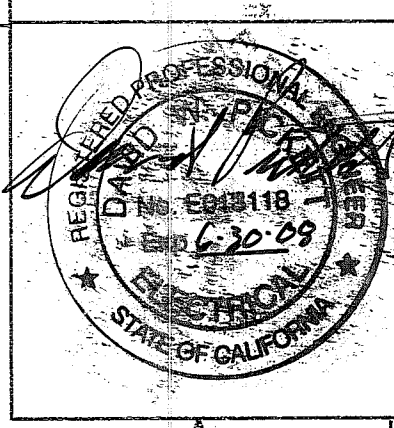


**3 WALL MOUNTED CONDUIT SUPPORT CHANNEL DETAIL**  
NO SCALE



**6 CONDUIT CONNECTION DETAIL 'B'**  
NO SCALE

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County of San Joaquin  
Flag City Pump Station & Force Main

**ELECTRICAL DETAILS**

JOB NUMBER 010-00-07-18
DRAWING NUMBER E 11
SHEET NUMBER 35 OF 44
REVISION

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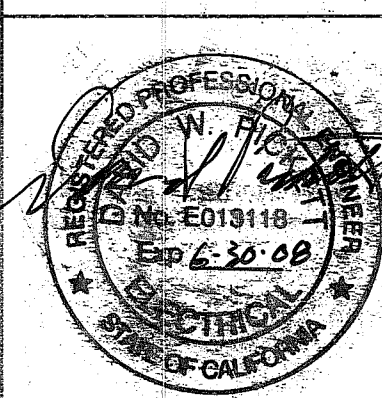
POWER CONDUIT AND WIRE ROUTING SCHEDULE					
ID	CONDUIT NO AND SIZE	CONDUCTORS PER CONDUIT NO AND SIZE	FROM	TO	REMARKS
P20	1 1-1/2" EMT	3 #1/0 PWR 1 #6 GND	EXISTING POWER PANEL 'PDP'	NEW MOTOR CONTROL CENTER 'MCC-A'	PWR: 480VAC
P200A	1 3/4" PVC	3 #10 PWR 1 #10 GND	EXISTING POWER PANEL 'PDP'	NEW RAW SEWAGE GRINDER CONTROL PANEL	PWR: 480VAC PNL-200
P200B	1 1-1/2" RSC/PVC	1 VENDOR CABLE	NEW RAW SEWAGE GRINDER CONTROL PANEL	NEW RAW SEWAGE GRINDER	PWR: 480VAC G-200
P201A	1 3/4" PVC	3 #10 PWR 1 #10 GND 2 #14 CNTL	NEW MOTOR CONTROL CENTER 'MCC-A'	PULLBOX (POWER)	PWR: 480VAC PNL-201 CNTL: TSH-201, MSH-201
P201B	1 1-1/2" RSC/PVC	1 VENDOR CABLE	PULLBOX (POWER)	NEW RAW SEWAGE PUMP #1	PWR: 480VAC PNL-201 CNTL: TSH-201, MSH-201
P202A	1 3/4" PVC	3 #8 PWR 1 #10 GND	NEW MOTOR CONTROL CENTER 'MCC-A'	PULLBOX (POWER)	PWR: 480VAC PNL-202
P202B	1 1-1/2" RSC/PVC	1 VENDOR CABLE	PULLBOX (POWER)	NEW RAW SEWAGE PUMP #2	PWR: 480VAC PNL-202 CNTL: TSH-202, MSH-202
P203A	1 3/4" PVC	3 #8 PWR 1 #10 GND	NEW MOTOR CONTROL CENTER 'MCC-A'	PULLBOX (POWER)	PWR: 480VAC PNL-203
P203B	1 1-1/2" RSC/PVC	1 VENDOR CABLE	PULLBOX (POWER)	NEW RAW SEWAGE PUMP #3	PWR: 480VAC PNL-203 CNTL: TSH-203, MSH-203
P204A	1 3/4" EMT	2 #10 PWR 1 #12 GND	EXISTING POWER PANEL 'PDP'	DISCONNECT SWITCH	PWR: 240VAC 'LPA'-27/29
P204B	1 3/4" WP FLEX	2 #10 PWR 1 #12 GND	DISCONNECT SWITCH	AC UNIT (OUTDOOR)	PWR: 240VAC 'LPA'-27/29
P204C	1 3/4" WP FLEX	3 #12 PWR 1 #12 GND	AC UNIT (OUTDOOR)	FIELD J-BOX	
P204D	1 3/4" EMT	3 #12 PWR 1 #12 GND	FIELD J-BOX	AC UNIT (INDOOR)	
P205A	1 3/4" PVC	4 #12 PWR 1 #12 GND	EXISTING POWER PANEL 'PDP'	FIELD J-BOX	PWR: 120VAC 'LPA'-10, 30
P205B	1 3/4" WP FLEX	2 #12 PWR 1 #12 GND	FIELD J-BOX	NEW RAW SEWAGE EFFLUENT CONTROL VALVE #1	PWR: 120VAC 'LPA'-10
P205C	1 3/4" RSC/PVC	2 #12 PWR 1 #12 GND	FIELD J-BOX	FIELD J-BOX	PWR: 120VAC 'LPA'-30
P205D	1 3/4" WP FLEX	2 #12 PWR 1 #12 GND	FIELD J-BOX	NEW RAW SEWAGE EFFLUENT CONTROL VALVE #2	PWR: 120VAC 'LPA'-30
P206	1 1" PVC	1 PULLROPE	PULLBOX (POWER)	PULLBOX (POWER)	SPARE: CAP ALL ENDS

SIGNAL CONDUIT AND WIRE ROUTING SCHEDULE					
ID	CONDUIT NO AND SIZE	CONDUCTORS PER CONDUIT NO AND SIZE	FROM	TO	REMARKS
S200	1 1" RSC/PVC	1 VENDOR CABLE	PULLBOX (SIGNAL)	RAW SEWAGE PUMP STATION WET WELL	INST: LT-204
S201	1 1" RSC/PVC	1 (1) #16 TWSP	PULLBOX (SIGNAL)	PULLBOX (SIGNAL)	INST: LT-204
S202	1 1" RSC/PVC	1 (1) #16 TWSP	PULLBOX (SIGNAL)	EXISTING PLANT CONTROL PANEL	INST: LT-204
S203	1 1-1/4" EMT	4 (1) #16 TWSP	EXISTING PLANT CONTROL PANEL 'PCP'	NEW MOTOR CONTROL CENTER 'MCC-A'	INST: P-202, P-203
S204A	1 3/4" RSV/PVC	1 VENDOR CABLE	EXISTING PLANT CONTROL PANEL 'PCP'	FIELD J-BOX	INST: FE-
S204B	1 3/4" WF FLEX	1 VENDOR CABLE	FIELD J-BOX	NEW RAW SEWAGE EFFLUENT FLOW METER	INST: FE-
S205	1 1" PULLROPE	1 VENDOR CABLE	PULLBOX (SIGNAL)	PULLBOX (SIGNAL)	SPARE: CAP ALL ENDS

CONTROL CONDUIT AND WIRE ROUTING SCHEDULE					
ID	CONDUIT NO AND SIZE	CONDUCTORS PER CONDUIT NO AND SIZE	FROM	TO	REMARKS
C200	1 3/4" PVC	6 #14 CNTL 1 #14 GND	NEW RAW SEWAGE GRINDER CONTROL PANEL	PULLBOX (CONTROL)	CNTL: RUNNING, FAILURE, CALL
C201	1 3/4" PVC	4 #14 CNTL	PULLBOX (POWER)	PULLBOX (CONTROL)	CNTL: TSH-202, MSH-202, TSH-203, MSH-203 CONDUIT: P202B, P203B
C202	1 1-1/4" RSC/PVC	2 VENDOR CABLES	PULLBOX (CONTROL)	RAW SEWAGE PUMP STATION WET WELL	CNTL: LSHH-204, LSL-204
C203	1 1" PVC	14 #14 CNTL 1 #14 GND	PULLBOX (CONTROL)	PULLBOX (CONTROL)	CONDUIT: C200, C201, C202
C204	1 3/4" EMT	14 #14 CNTL 1 #14 GND	PULLBOX (CONTROL)	EXISTING PLANT CONTROL PANEL 'PCP'	CNTL: CONDUIT: C203
C205	1 1" EMT	28 #14 CNTL 1 #14 GND	EXISTING PLANT CONTROL PANEL 'PCP'	NEW MOTOR CONTROL CENTER 'MCC-A'	CNTL: TSH-202, MSH-202, TSH-203, MSH-203, P-202, P-203 CONDUIT: C204
C206A	1 1" PVC	18 #14 CNTL 1 #14 GND	EXISTING PLANT CONTROL PANEL 'PCP'	FIELD J-BOX	CNTL:
C206B	1 3/4" WP FLEX	9 #14 CNTL 1 #14 GND	FIELD J-BOX	NEW RAW SEWAGE EFFLUENT CONTROL VALVE #1	CNTL: CV-
C206C	1 3/4" RSC/PVC	9 #14 CNTL 1 #14 GND	FIELD J-BOX	FIELD J-BOX	CNTL: CV-
C206D	1 3/4" WP FLEX	9 #14 CNTL 1 #14 GND	FIELD J-BOX	NEW RAW SEWAGE EFFLUENT CONTROL VALVE #2	CNTL: CV-
C207	1 1" PVC	1 PULLROPE	PULLBOX (CONTROL)	PULLBOX (CONTROL)	SPARE: CAP ALL ENDS

NOTES:

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DATE : \_\_\_\_\_

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IF NOT SCALE ACCORDINGLY

SCALE : NONE  
DRAWN BY : NN  
DESIGNED BY : DJA  
PROJ. MGR. : \_\_\_\_\_

NO.	ZONE	REVISIONS	BY	DATE

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County of San Joaquin  
Flag City Pump Station & Force Main  
CONDUIT & WIRE ROUTING SCHEDULES

JOB NUMBER  
010-00-07-18  
DRAWING NUMBER  
E 10  
SHEET NUMBER  
34 OF 44  
REVISION

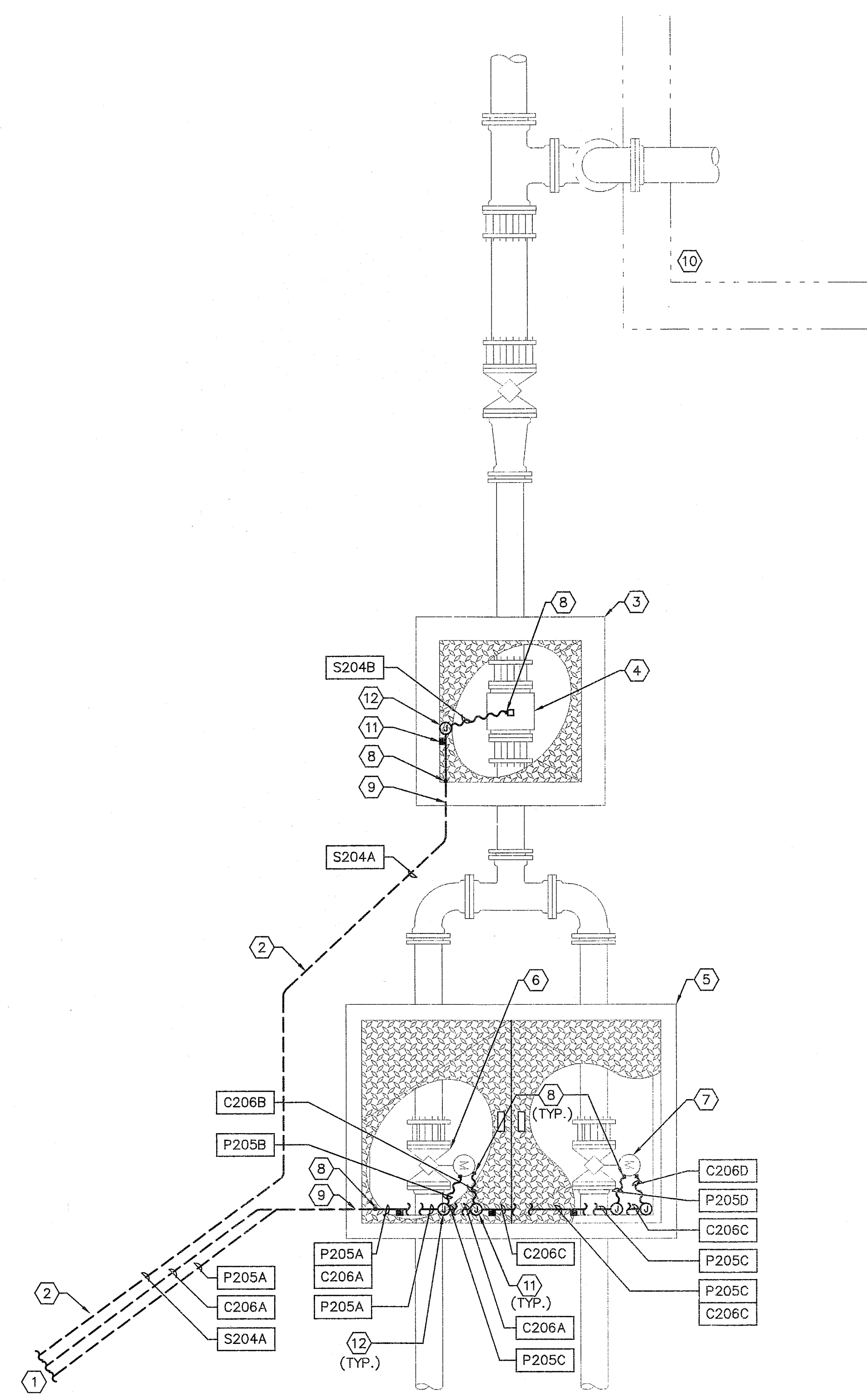
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**GENERAL SHEET NOTES**

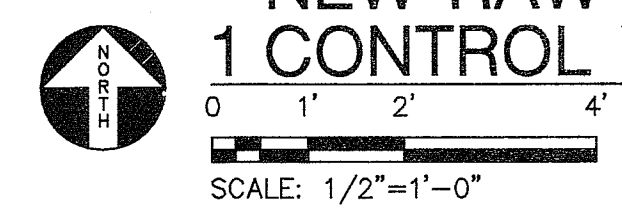
A. ALL EXPOSED CONDUITS TO BE RIGID STEEL/PVC COATED, FOR TRANSITION FROM PVC CONDUIT TO RIGID STEEL/PVC COATED CONDUIT SEE DETAIL, DRAWING E 11.

**SHEET KEYNOTES**

- ① FOR CONTINUATION OF UNDERGROUND CONDUIT ROUTING, SEE OVERALL SITE PLAN - ELECTRICAL, DRAWING E 6.
- ② UNDERGROUND CONDUIT, FOR INSTALLATION SEE TYPICAL TRENCH DETAIL, DRAWING E 11.
- ③ NEW RAW SEWAGE EFFLUENT FLOW METER VAULT.
- ④ NEW RAW SEWAGE EFFLUENT FLOW METER (FE-205).
- ⑤ NEW RAW SEWAGE EFFLUENT CONTROL VALVES VAULT.
- ⑥ NEW RAW SEWAGE EFFLUENT CONTROL VALVE #1 (CV-206).
- ⑦ NEW RAW SEWAGE EFFLUENT CONTROL VALVE #2 (CV-207).
- ⑧ PROVIDE AND INSTALL CONDUIT SEAL-OFF FITTING.
- ⑨ CORE DRILL THROUGH CONCRETE VAULT FOR CONDUIT ROUTING, SEAL AROUND CONDUIT WITH NON-SHRINK GROUT.
- ⑩ EXISTING AERATION BASIN, CLARIFIER, SURGE BASIN AND AEROBIC DIGESTER.
- ⑪ WALL MOUNTED CONDUIT SUPPORT CHANNEL, FOR INSTALLATION SEE DETAIL, DRAWING E 11.
- ⑫ CONDUIT CONNECTION, FOR INSTALLATION SEE DETAIL, DRAWING E 11.



**NEW RAW SEWAGE PUMP STATION EFFLUENT FLOW METER & 1 CONTROL VALVES ENLARGED AREA PLAN - POWER & SIGNAL**



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	DATE : _____							
	APPROVED : _____							
	DATE : _____							

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**County of San Joaquin**  
**Flag City Pump Station & Force Main**  
 NEW RAW SEWAGE PUMP STATION  
 EFFLUENT FLOW METER AND CONTROL VALVES  
 ENLARGED AREA PLAN - POWER & SIGNAL

JOB NUMBER 010-00-07-18
DRAWING NUMBER E 9
SHEET NUMBER 33 OF 44
REVISION

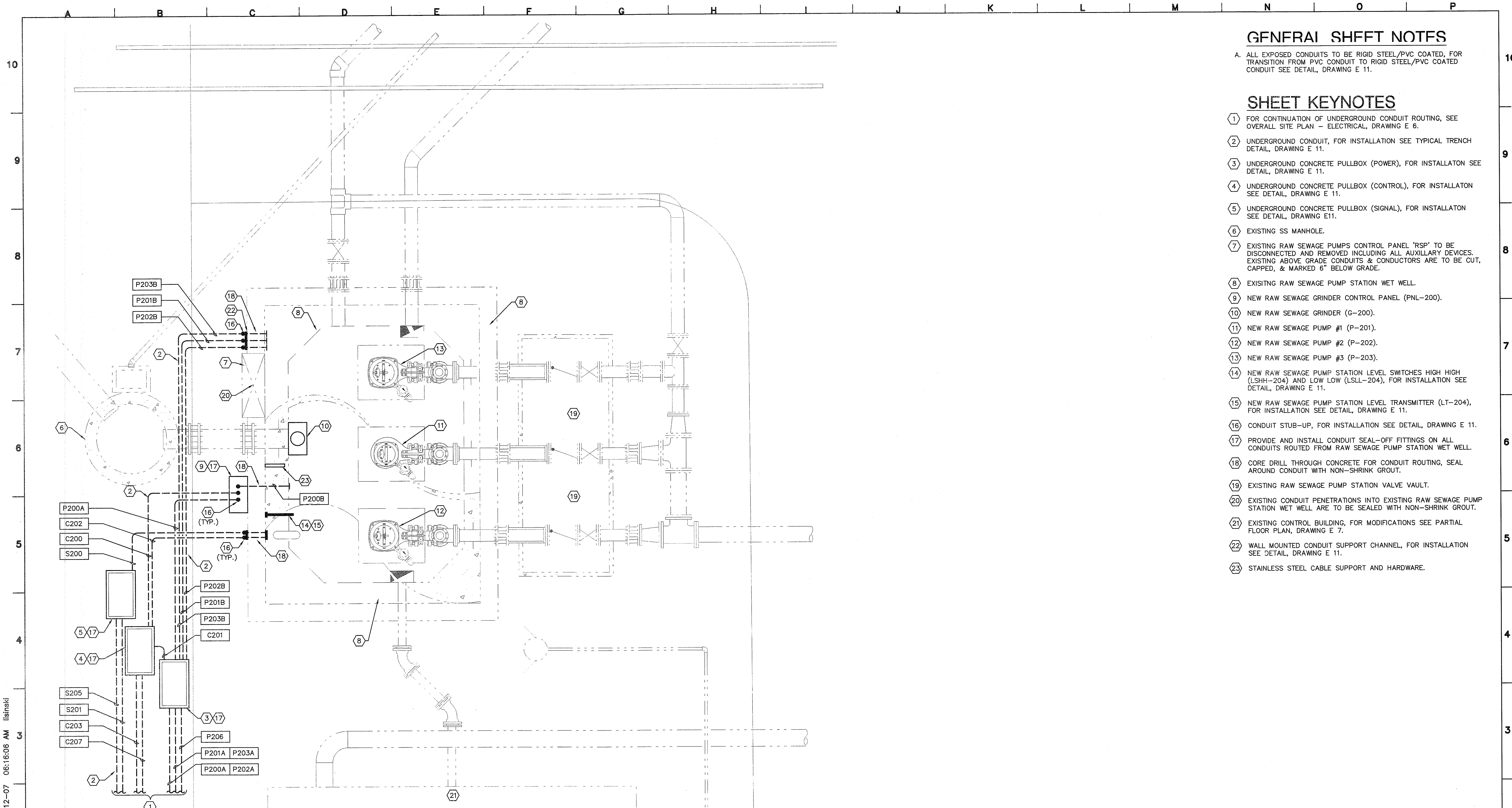
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**GENFRAI SHEET NOTES**

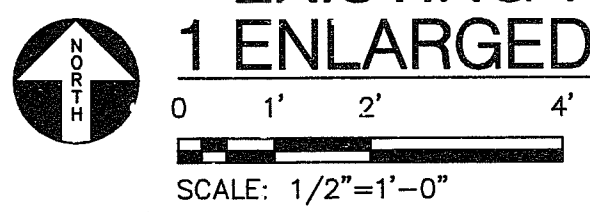
A. ALL EXPOSED CONDUITS TO BE RIGID STEEL/PVC COATED, FOR TRANSITION FROM PVC CONDUIT TO RIGID STEEL/PVC COATED CONDUIT SEE DETAIL, DRAWING E 11.

**SHEET KEYNOTES**

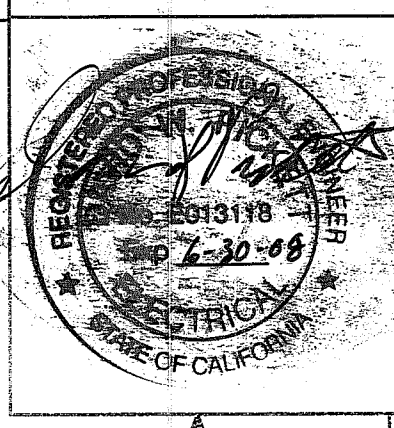
- ① FOR CONTINUATION OF UNDERGROUND CONDUIT ROUTING, SEE OVERALL SITE PLAN - ELECTRICAL, DRAWING E 6.
- ② UNDERGROUND CONDUIT, FOR INSTALLATION SEE TYPICAL TRENCH DETAIL, DRAWING E 11.
- ③ UNDERGROUND CONCRETE PULLBOX (POWER), FOR INSTALLATION SEE DETAIL, DRAWING E 11.
- ④ UNDERGROUND CONCRETE PULLBOX (CONTROL), FOR INSTALLATION SEE DETAIL, DRAWING E 11.
- ⑤ UNDERGROUND CONCRETE PULLBOX (SIGNAL), FOR INSTALLATION SEE DETAIL, DRAWING E 11.
- ⑥ EXISTING SS MANHOLE.
- ⑦ EXISTING RAW SEWAGE PUMPS CONTROL PANEL 'RSP' TO BE DISCONNECTED AND REMOVED INCLUDING ALL AUXILIARY DEVICES. EXISTING ABOVE GRADE CONDUITS & CONDUCTORS ARE TO BE CUT, CAPPED, & MARKED 6" BELOW GRADE.
- ⑧ EXISTING RAW SEWAGE PUMP STATION WET WELL.
- ⑨ NEW RAW SEWAGE GRINDER CONTROL PANEL (PNL-200).
- ⑩ NEW RAW SEWAGE GRINDER (G-200).
- ⑪ NEW RAW SEWAGE PUMP #1 (P-201).
- ⑫ NEW RAW SEWAGE PUMP #2 (P-202).
- ⑬ NEW RAW SEWAGE PUMP #3 (P-203).
- ⑭ NEW RAW SEWAGE PUMP STATION LEVEL SWITCHES HIGH HIGH (LSHH-204) AND LOW LOW (LSLL-204), FOR INSTALLATION SEE DETAIL, DRAWING E 11.
- ⑮ NEW RAW SEWAGE PUMP STATION LEVEL TRANSMITTER (LT-204), FOR INSTALLATION SEE DETAIL, DRAWING E 11.
- ⑯ CONDUIT STUB-UP, FOR INSTALLATION SEE DETAIL, DRAWING E 11.
- ⑰ PROVIDE AND INSTALL CONDUIT SEAL-OFF FITTINGS ON ALL CONDUITS ROUTED FROM RAW SEWAGE PUMP STATION WET WELL.
- ⑱ CORE DRILL THROUGH CONCRETE FOR CONDUIT ROUTING. SEAL AROUND CONDUIT WITH NON-SHRINK GROUT.
- ⑲ EXISTING RAW SEWAGE PUMP STATION VALVE VAULT.
- ⑳ EXISTING CONDUIT PENETRATIONS INTO EXISTING RAW SEWAGE PUMP STATION WET WELL ARE TO BE SEALED WITH NON-SHRINK GROUT.
- ㉑ EXISTING CONTROL BUILDING, FOR MODIFICATIONS SEE PARTIAL FLOOR PLAN, DRAWING E 7.
- ㉒ WALL MOUNTED CONDUIT SUPPORT CHANNEL, FOR INSTALLATION SEE DETAIL, DRAWING E 11.
- ㉓ STAINLESS STEEL CABLE SUPPORT AND HARDWARE.



**EXISTING RAW SEWAGE PUMP STATION  
1 ENLARGED AREA PLAN - POWER & SIGNAL**



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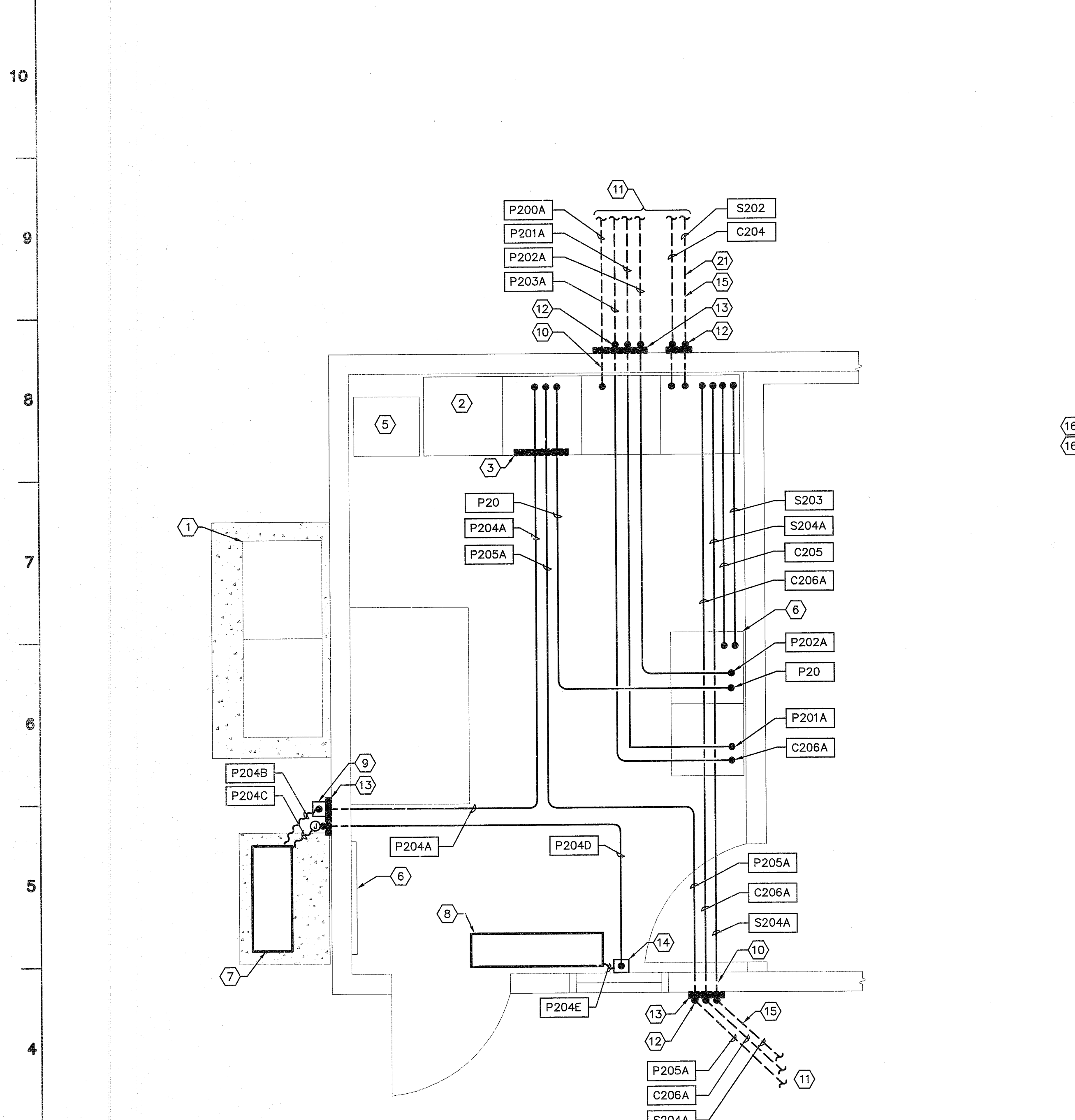
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**County of San Joaquin  
 Flag City Pump Station & Force Main  
 EXISTING RAW SEWAGE PUMP STATION  
 ENLARGED AREA PLAN  
 POWER & SIGNAL**

JOB NUMBER 010-00-07-18
DRAWING NUMBER E 8
SHEET NUMBER 32 OF 44
REVISION

SU 4470





PANEL		LPA		VOLTAGE		MOUNTING		CONNECTION		BUS SIZE		AIC		NEMA	
NEW <input type="checkbox"/> EXISTING <input checked="" type="checkbox"/>		CONTROL BUILDING		120/240		FLUSH <input type="checkbox"/> SURFACE <input type="checkbox"/> SWBRD <input checked="" type="checkbox"/>		MLO <input type="checkbox"/> MCB <input type="checkbox"/> SIZE: _____		60A <input type="checkbox"/> 100A <input type="checkbox"/> 225A <input type="checkbox"/> 400A <input type="checkbox"/> 600A <input type="checkbox"/>		10k <input checked="" type="checkbox"/> 14k <input type="checkbox"/> 22k <input type="checkbox"/> 25k <input type="checkbox"/>		1 <input checked="" type="checkbox"/> 3R <input type="checkbox"/> 4X <input type="checkbox"/> 12 <input type="checkbox"/>	
CKT #	OPT I O N #	DESCRIPTION	PHASE (VA)		PHASE (VA)		A M P P O L E	DESCRIPTION	C K T #						
			A	C	A	C									
1		AC/HEAT	2400		4500		50 2	WATER HEATER	2						
3		AC/HEAT	2400		4500			WATER HEATER	4						
5		FUME HOOD	250		250		20 1	INCUBATOR	6						
7		SURGE RETURN PUMP CP "SRP"	2500		400		20 1	ALARM PANEL CP "AM"	8						
9		SURGE RETURN PUMP CP "SRP"	2500		600		20 1	CONTROL VALVE #1	10						
11		CONTROL ROOM LIGHTS	399		532		15 1	LAB/WORKSHOP LIGHTS	12						
13		BLOWER RM/RESTROOM LIGHTS	450		200		15 1	DOOR ENTRY LIGHTS	14						
15		CONTROL RM. RECEPT.	540		800		20 1	DRYING OVEN RECEPT.	16						
17		LAB PLUG STRIP	800		180		20 1	RESTROOM RECEPT.	18						
19		MUFFLE FURNACE RECEPT.	1200		360		20 1	LAB RECEPT.	20						
21		WORKSHOP PLUG STRIP	800		540		20 1	BLOWER ROOM RECEPT.	22						
23		VACUUM PUMP RECEPT.	500		180		20 1	TELEPHONE BOARD RECEPT.	24						
25		AREA LIGHTS	500		500		20 1	GENERATOR JACKET HEATER	26						
27		AC UNIT (OUTDOOR)	2880		1200		20 1	GENERATOR BATTERY CHARGER	28						
29		AC UNIT (OUTDOOR)	2880		600		20 1	CONTROL VALVE #2	30						
			PHASE A		PHASE C		TOTAL VA		TOTAL AMPS						

OPTIONS LEGEND:  
 N NONE  
 H HANDLE LOCK OUT  
 G GROUND FAULT INTERRUPTER  
 S SHUNT TRIP

FEATURES:  
 FEED THROUGH BUS     INTEGRAL TVSS     BUS CONTACTOR (225A MAX)  
 DOUBLE SIZED NEUTRAL     ISOLATED GROUND BUS     OTHER, SPECIFY: \_\_\_\_\_

REMARKS:

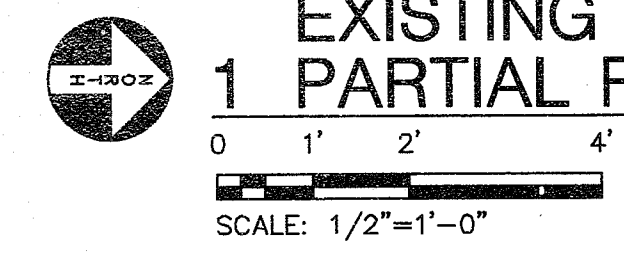
**GENERAL SHEET NOTES**

- A. ALL NEW EXTERIOR EXPOSED CONDUITS TO BE RIGID STEEL/PVC COATED, FOR TRANSITION FROM PVC CONDUIT TO RIGID STEEL/PVC COATED CONDUIT SEE DETAIL, DRAWING E .
- B. ALL NEW INTERIOR CONDUITS TO BE EMT.
- C. ALL NEW INTERIOR CONDUITS TO BE ROUTED IN BUILDING ATTIC AREA. SEAL AROUND CONDUIT PENETRATIONS THROUGH CEILING AND PAINT TO MATCH EXISTING CEILING COLOR. PROVIDE AND INSTALL NEW CONDUIT SUPPORTS AS REQUIRED FOR INSTALLATION.

**SHEET KEYNOTES**

- 1 EXISTING UTILITY SERVICE MAIN SWITCHBOARD 'MS', FOR CONNECTIONS SEE SINGLE LINE DIAGRAM, DRAWING E 2.
- 2 EXISTING POWER PANEL 'PDP', FOR MODIFICATIONS TO CONNECTIONS SEE SINGLE LINE DIAGRAM, DRAWING E 2, FOR MODIFICATIONS TO LAYOUT SEE ELEVATION, DRAWING E 2.
- 3 EXISTING PANEL 'LPA', FOR MODIFICATIONS TO CONNECTIONS SEE PANEL SCHEDULE, THIS DRAWING.
- 4 EXISTING PLANT CONTROL PANEL 'PCP', FOR MODIFICATIONS SEE DRAWING I 4.
- 5 EXISTING TRANSFORMER 'A', FOR CONNECTIONS SEE SINGLE LINE DIAGRAM, DRAWING E 2.
- 6 EXISTING TELEPHONE TERMINAL BACKBOARD 'TTB'.
- 7 NEW SPLIT SYSTEM AC OUTDOOR UNIT (CONDENSER).
- 8 NEW SPLIT SYSTEM AC INDOOR UNIT (FAN COIL).
- 9 NEW NEMA 3R, 30 AMP, 240 VOLT, 1 PHASE FUSIBLE DISCONNECT SWITCH WITH 29 AMP FUSES.
- 10 DRILL HOLE THROUGH BUILDING WALL FOR CONDUIT PENETRATION, SEAL AROUND PENETRATION TO PREVENT ENTRANCE OF WATER.
- 11 FOR CONTINUATION OF CONDUIT ROUTING, SEE OVERALL SITE PLAN - ELECTRICAL, DRAWING E 6.
- 12 CONDUIT STUB-UP, FOR INSTALLATION SEE DETAIL, DRAWING E 11.
- 13 WALL MOUNTED CONDUIT SUPPORT CHANNEL, FOR INSTALLATION SEE DETAIL, DRAWING E 11.
- 14 NEW NEMA 1, 30 AMP, 240 VOLT, 1 PHASE FUSIBLE DISCONNECT SWITCH WITH 20 AMP FUSES.
- 15 UNDERGROUND CONDUIT, FOR INSTALLATION SEE TYPICAL TRENCH DETAIL, DRAWING E 11.
- 16 FIELD VERIFY EXISTING CIRCUIT EQUIPMENT IS TO BE ABANDONED FOR NEW PROCESS. DISCONNECT, CUT AND TAPE EXISTING CONDUCTORS IN PANEL.
- 17 EXISTING CIRCUIT IDENTIFIED AS - CLARIFIER CP "CPCP".
- 18 EXISTING CIRCUIT IDENTIFIED AS - SAMPLER AT CL2 CONTACT BASIN.
- 19 EXISTING CIRCUIT IDENTIFIED AS - CHEMICAL STRG AREA RECEPTACLE.
- 20 EXISTING CIRCUIT IDENTIFIED AS - SPARE.
- 21 COORDINATE INSTALLATION OF NEW UNDERGROUND CONDUITS WITH EXISTING CONDUITS.

**EXISTING CONTROL BUILDING  
 1 PARTIAL FLOOR PLAN - POWER & SIGNAL**



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SU 4471

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	DATE: _____							

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 2006-0309

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**County of San Joaquin  
 Flag City Pump Station & Force Main  
 EXISTING CONTROL BUILDING  
 PARTIAL FLOOR PLAN  
 POWER & SIGNAL**

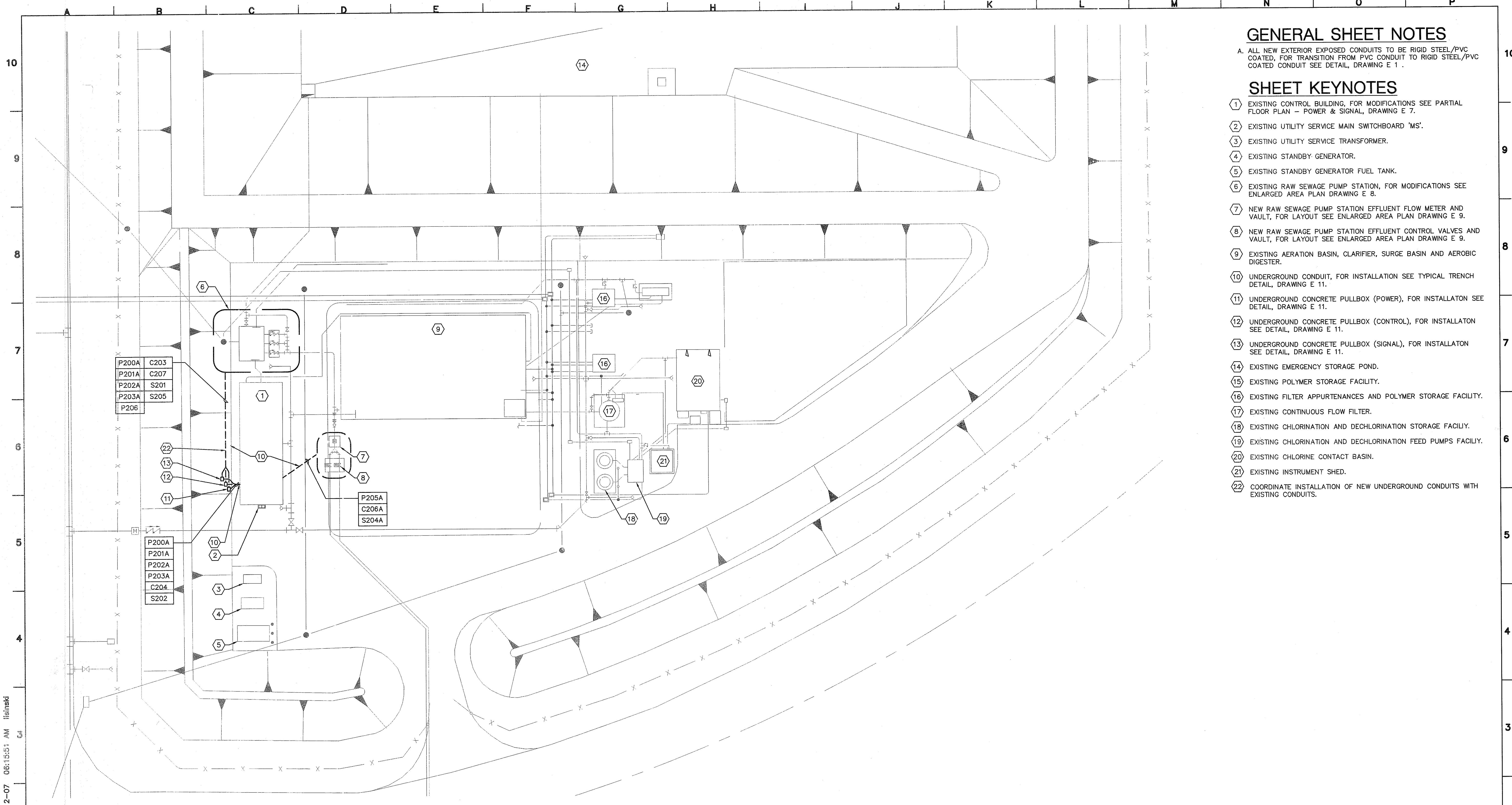
JOB NUMBER 010-00-07-18
DRAWING NUMBER E 7
SHEET NUMBER 31 OF 44
REVISION

**GENERAL SHEET NOTES**

A. ALL NEW EXTERIOR EXPOSED CONDUITS TO BE RIGID STEEL/PVC COATED, FOR TRANSITION FROM PVC CONDUIT TO RIGID STEEL/PVC COATED CONDUIT SEE DETAIL, DRAWING E 1.

**SHEET KEYNOTES**

- 1 EXISTING CONTROL BUILDING, FOR MODIFICATIONS SEE PARTIAL FLOOR PLAN - POWER & SIGNAL, DRAWING E 7.
- 2 EXISTING UTILITY SERVICE MAIN SWITCHBOARD 'MS'.
- 3 EXISTING UTILITY SERVICE TRANSFORMER.
- 4 EXISTING STANDBY GENERATOR.
- 5 EXISTING STANDBY GENERATOR FUEL TANK.
- 6 EXISTING RAW SEWAGE PUMP STATION, FOR MODIFICATIONS SEE ENLARGED AREA PLAN DRAWING E 8.
- 7 NEW RAW SEWAGE PUMP STATION EFFLUENT FLOW METER AND VAULT, FOR LAYOUT SEE ENLARGED AREA PLAN DRAWING E 9.
- 8 NEW RAW SEWAGE PUMP STATION EFFLUENT CONTROL VALVES AND VAULT, FOR LAYOUT SEE ENLARGED AREA PLAN DRAWING E 9.
- 9 EXISTING AERATION BASIN, CLARIFIER, SURGE BASIN AND AEROBIC DIGESTER.
- 10 UNDERGROUND CONDUIT, FOR INSTALLATION SEE TYPICAL TRENCH DETAIL, DRAWING E 11.
- 11 UNDERGROUND CONCRETE PULLBOX (POWER), FOR INSTALLATION SEE DETAIL, DRAWING E 11.
- 12 UNDERGROUND CONCRETE PULLBOX (CONTROL), FOR INSTALLATION SEE DETAIL, DRAWING E 11.
- 13 UNDERGROUND CONCRETE PULLBOX (SIGNAL), FOR INSTALLATION SEE DETAIL, DRAWING E 11.
- 14 EXISTING EMERGENCY STORAGE POND.
- 15 EXISTING POLYMER STORAGE FACILITY.
- 16 EXISTING FILTER APPURTENANCES AND POLYMER STORAGE FACILITY.
- 17 EXISTING CONTINUOUS FLOW FILTER.
- 18 EXISTING CHLORINATION AND DECHLORINATION STORAGE FACILITY.
- 19 EXISTING CHLORINATION AND DECHLORINATION FEED PUMPS FACILITY.
- 20 EXISTING CHLORINE CONTACT BASIN.
- 21 EXISTING INSTRUMENT SHED.
- 22 COORDINATE INSTALLATION OF NEW UNDERGROUND CONDUITS WITH EXISTING CONDUITS.

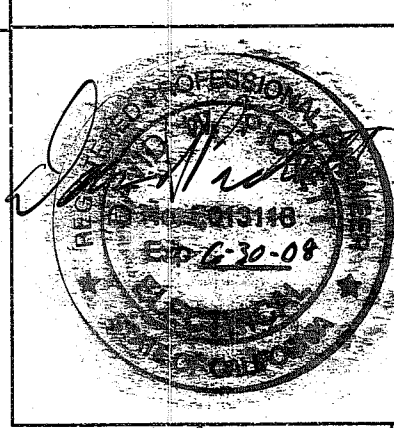


**1 OVERALL SITE PLAN - ELECTRICAL**  
 0 20' 40'  
 SCALE: 1"=20'-0"

BAR IS ONE INCH ON ORIGINAL DRAWING  
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SU 4472

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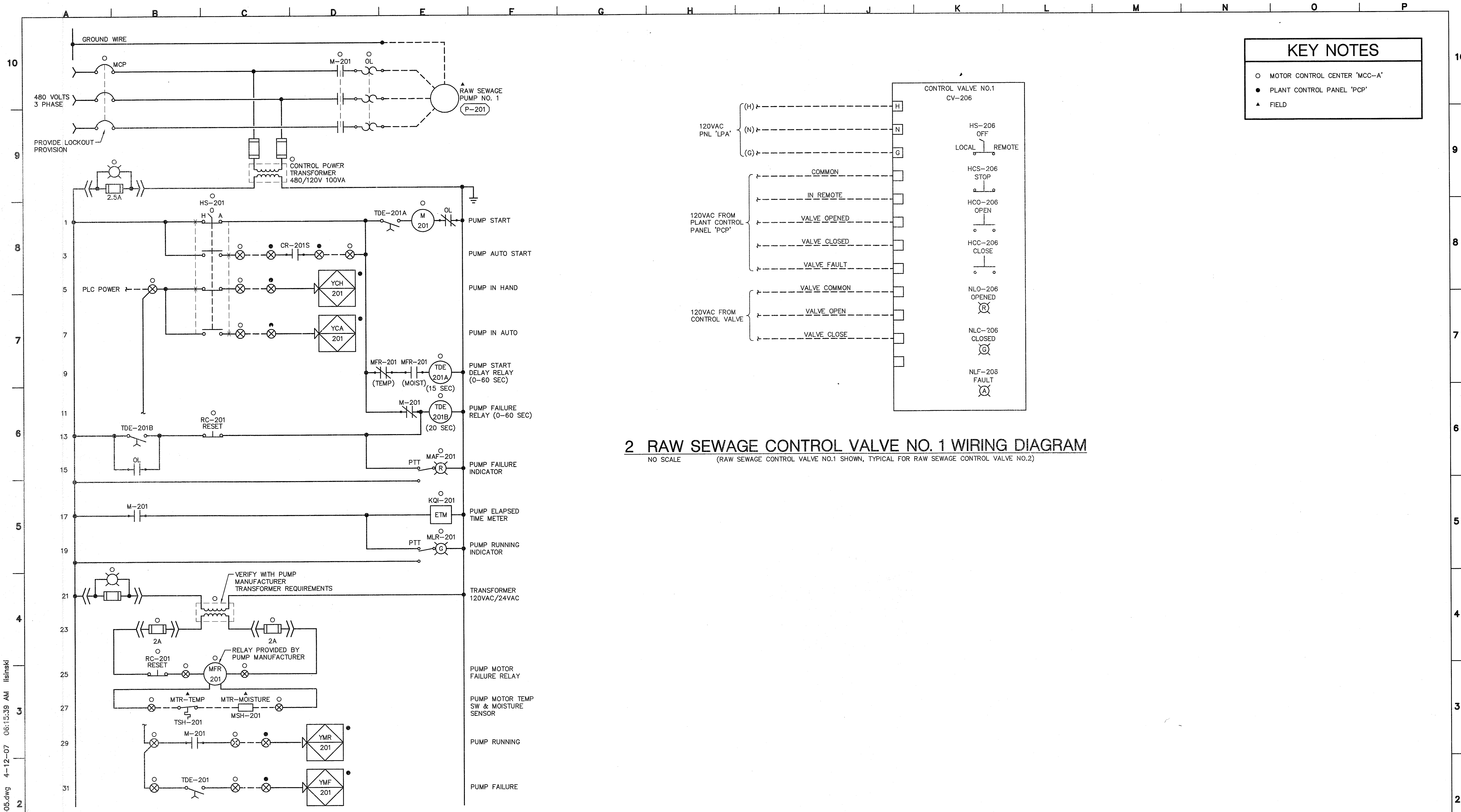
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County of San Joaquin  
**Flag City Pump Station & Force Main**  
 OVERALL SITE PLAN  
 ELECTRICAL

JOB NUMBER 010-00-07-18
DRAWING NUMBER E6
SHEET NUMBER 30 OF 44
REVISION





KEY NOTES	
○	MOTOR CONTROL CENTER 'MCC-A'
●	PLANT CONTROL PANEL 'PCP'
▲	FIELD

**2 RAW SEWAGE CONTROL VALVE NO. 1 WIRING DIAGRAM**  
 NO SCALE (RAW SEWAGE CONTROL VALVE NO.1 SHOWN, TYPICAL FOR RAW SEWAGE CONTROL VALVE NO.2)

**1 RAW SEWAGE PUMP NO. 1 CONTROL WIRING DIAGRAM**  
 NO SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING  
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SUBMITTED : \_\_\_\_\_  
 DATE : \_\_\_\_\_  
 APPROVED : \_\_\_\_\_  
 DATE : \_\_\_\_\_

THIS LINE IS 1 INCH  
 AT FULL SCALE  
 IF NOT SCALE ACCORDINGLY

SCALE : NONE  
 DRAWN BY : JRL  
 DESIGNED BY : DJA  
 PROJ. MGR. : \_\_\_\_\_

NO.	ZONE	REVISIONS	BY	DATE

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County of San Joaquin  
 Flag City Pump Station & Force Main

NEW MOTOR CONTROL CENTER - 'MCC-A'  
 WIRING DIAGRAM #2

JOB NUMBER  
 010-00-07-18

DRAWING NUMBER  
 E 5

SHEET NUMBER  
 29 OF 44

REVISION

SU 4473

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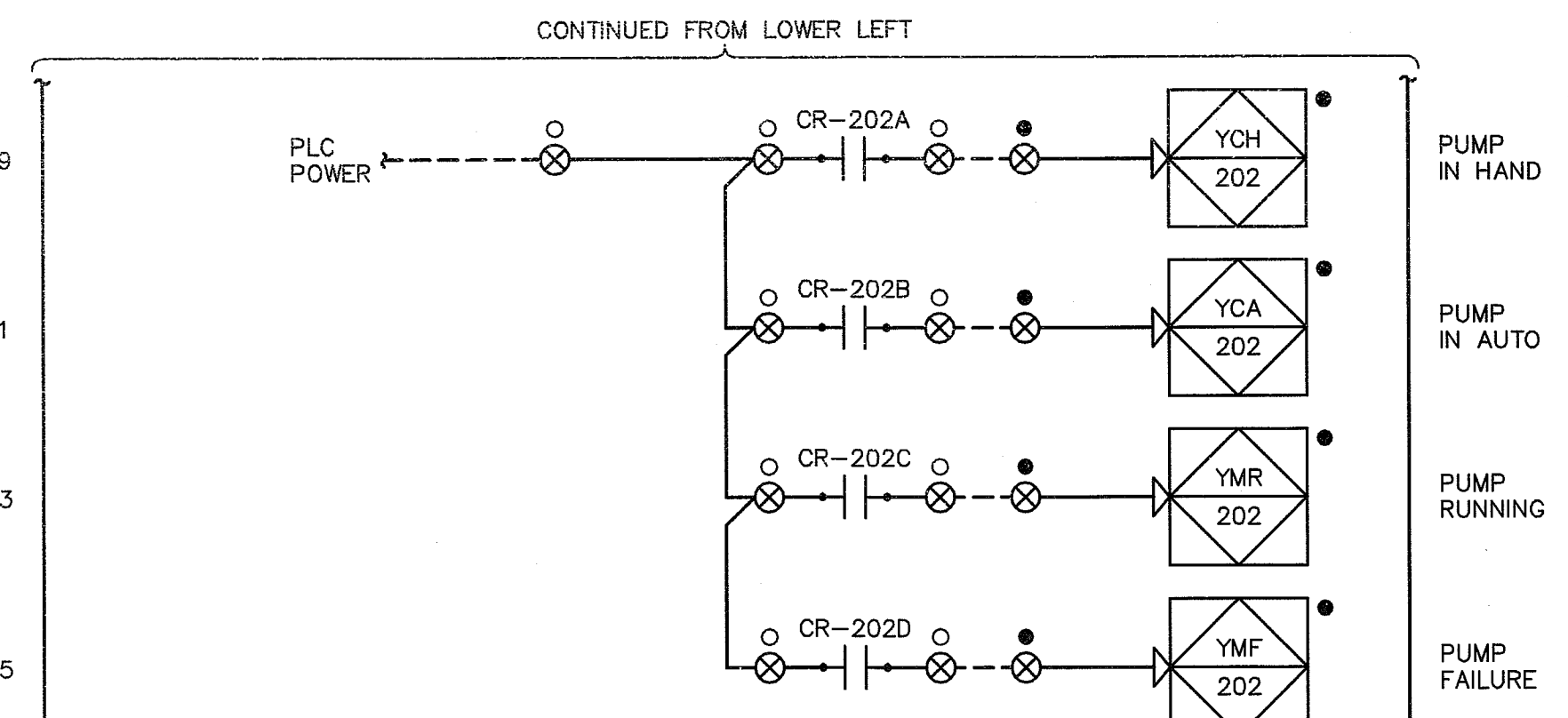
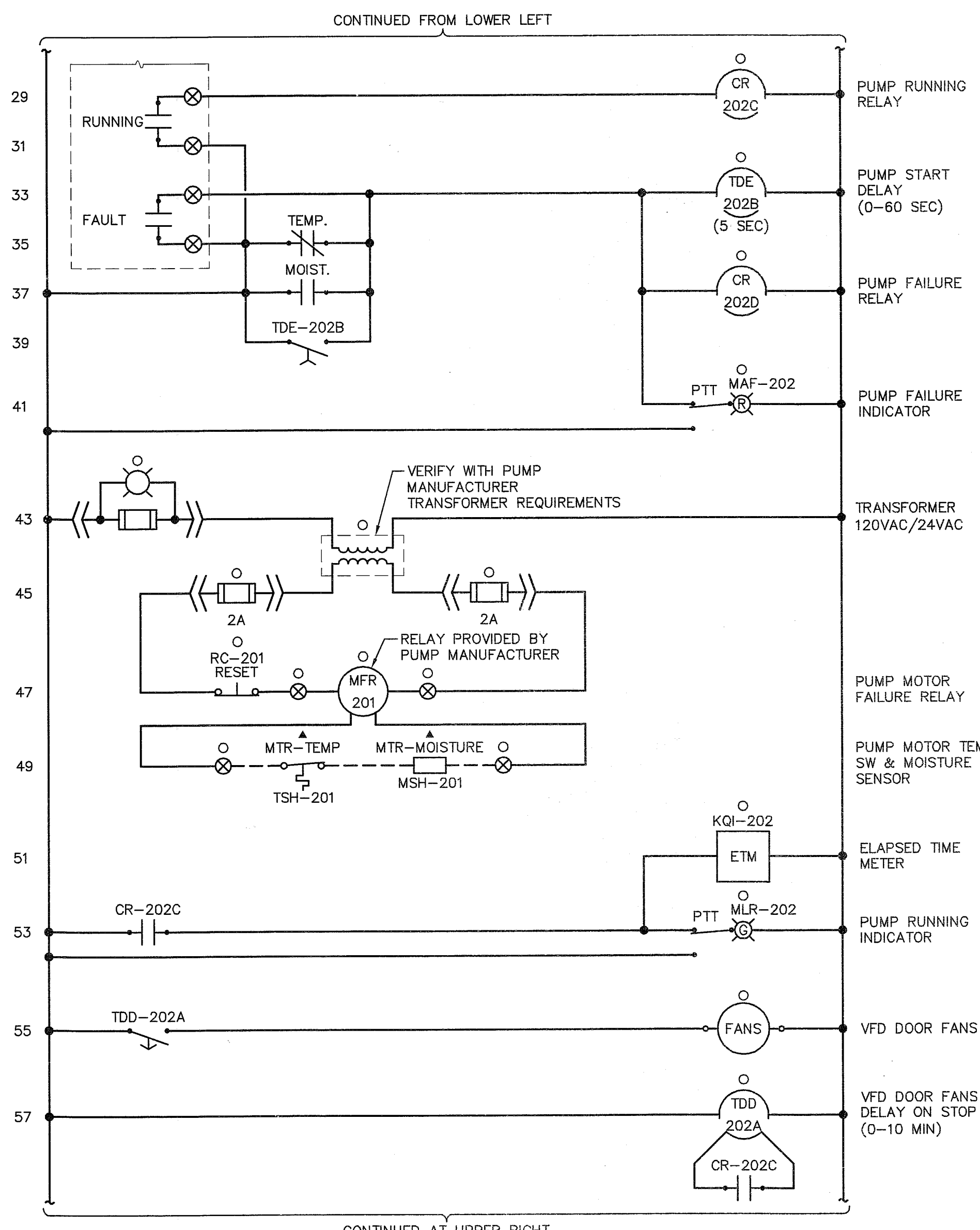
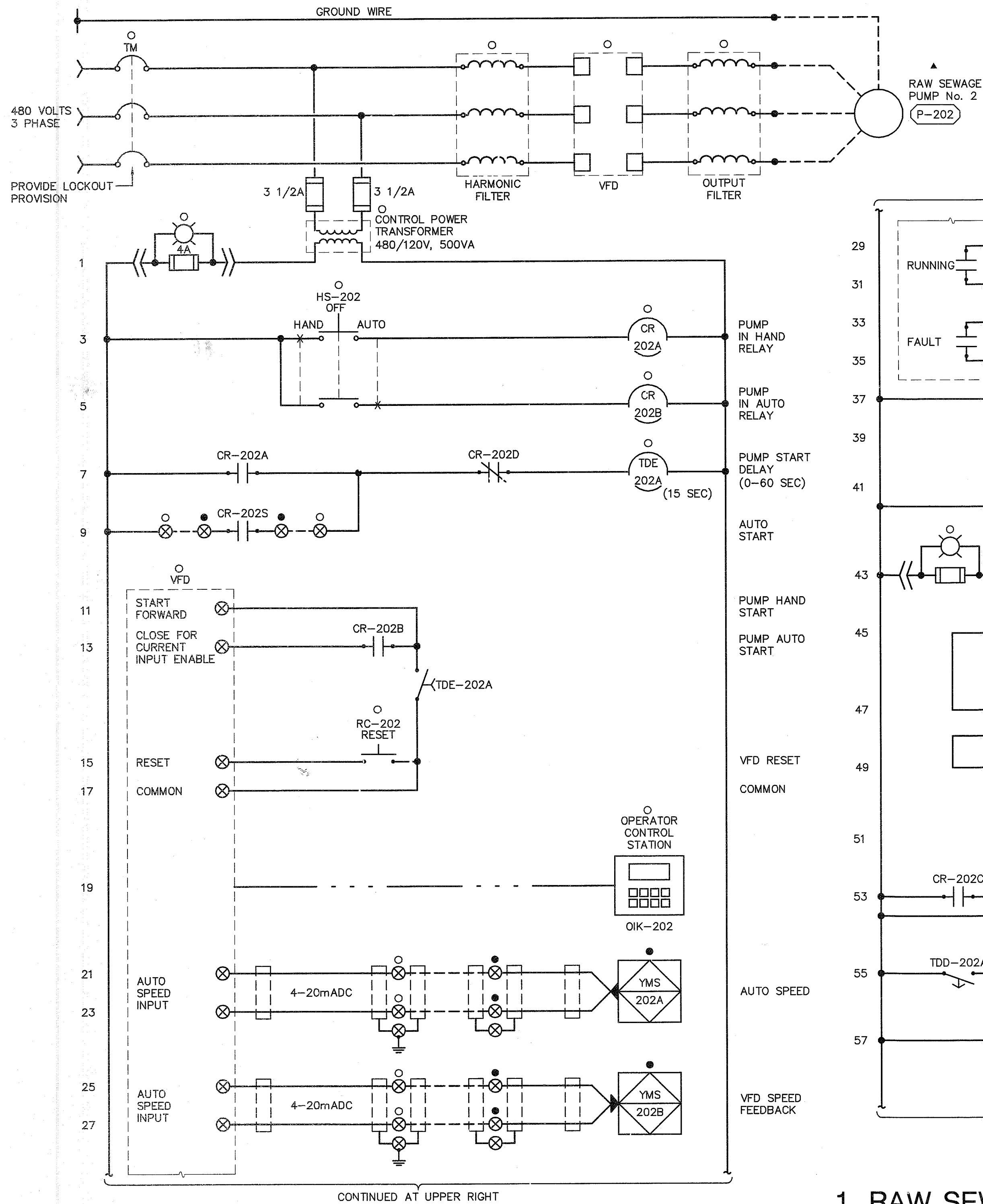


# RAW SEWAGE PUMPS DEVICE IDENTIFICATION SCHEDULE

DEVICE	H-O-A	ELAPSED TIME METER	OPERATOR CONTROL STATION	AUTO START	RESET PUSHBUTTON	RUNNING INDICATOR	FAILURE INDICATOR
▲ RAW SEWAGE PUMP No. 2 (P-202)	○ HS-202	○ KQI-202	○ OIK-202	● CR-202S	○ RC-202	○ MLR-202	○ MAF-202
▲ RAW SEWAGE PUMP No. 3 (P-203)	○ HS-203	○ KQI-203	○ OIK-203	● CR-203S	○ RC-203	○ MLR-203	○ MAF-203

## KEY NOTES

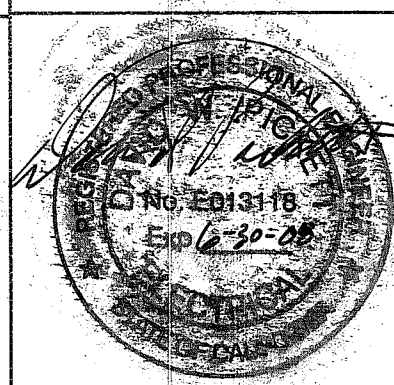
- MOTOR CONTROL CENTER 'MCC-A'
- PLANT CONTROL PANEL 'PCP'
- ▲ FIELD



# 1 RAW SEWAGE PUMP No. 2 CONTROL WIRING DIAGRAM

NO SCALE (RAW SEWAGE PUMP No. 2 SHOWN, TYPICAL FOR RAW SEWAGE PUMP No. 3)

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DESIGNED BY :	DJA		
PROJ. MGR. :			
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2006-0309

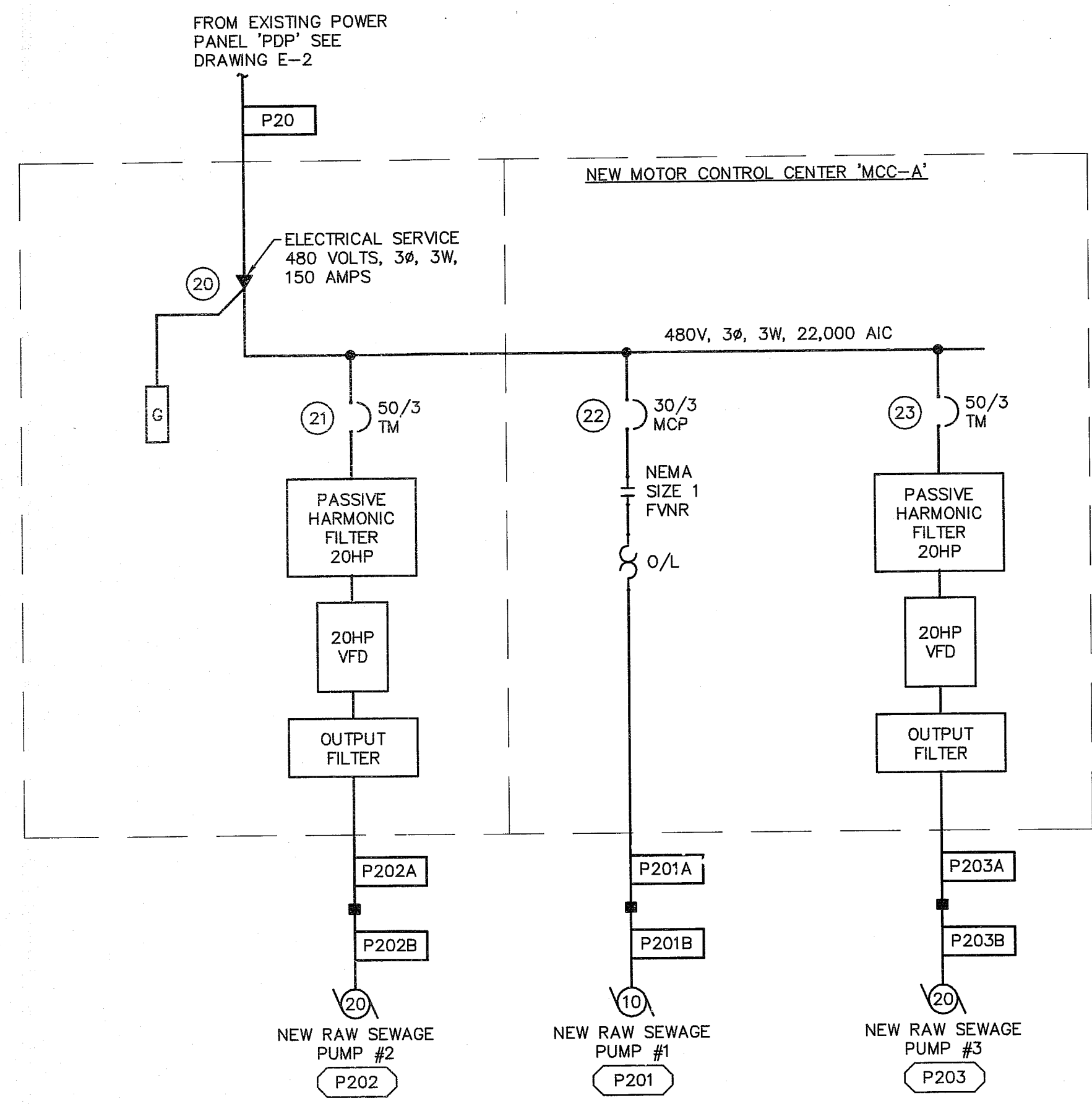
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Flag City Pump Station & Force Main

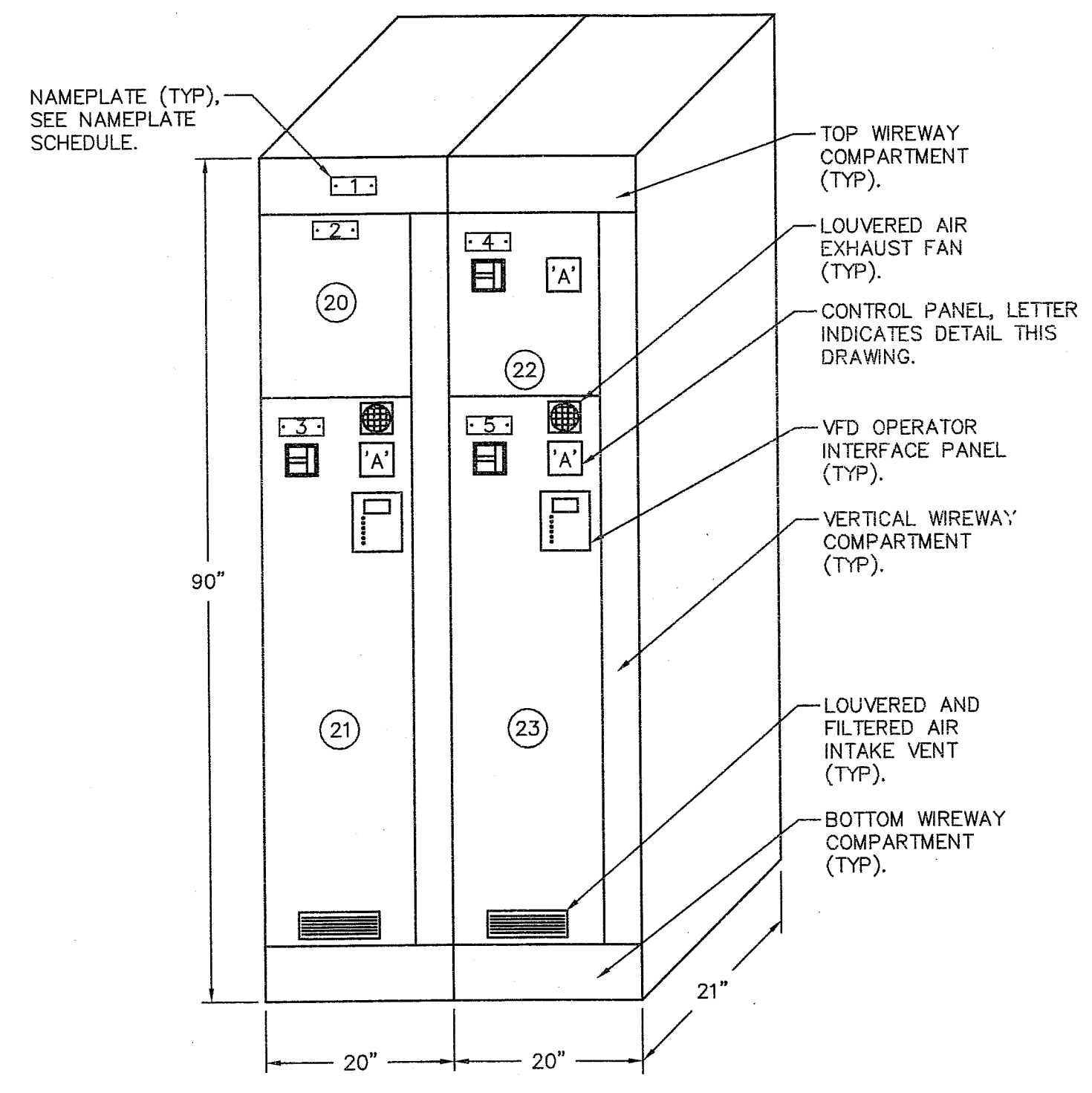
NEW MOTOR CONTROL CENTER - 'MCC-A'  
WIRING DIAGRAM #1

JOB NUMBER 010-00-07-18
DRAWING NUMBER E 4
SHEET NUMBER 28 OF 44
REVISION

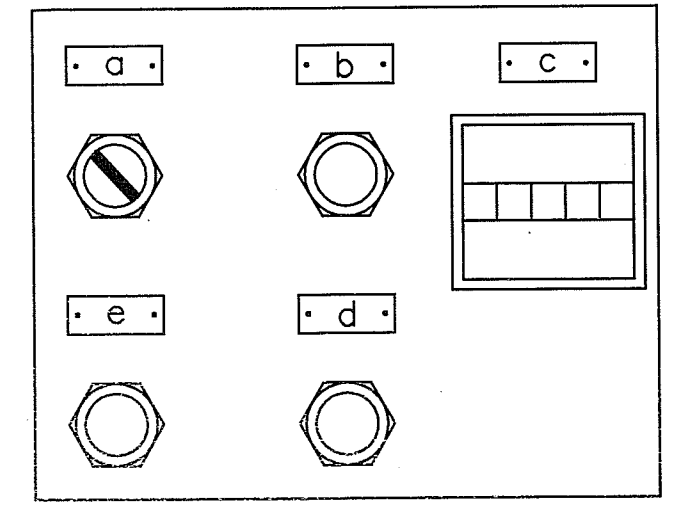
SU 4474



**1 SINGLE LINE DIAGRAM -  
NEW MOTOR CONTROL CENTER 'MCC-A'**  
NO SCALE



**2 NEW MOTOR CONTROL CENTER 'MCC-A' - ELEVATION**  
NO SCALE



**3 CONTROL PANEL DETAIL 'A'**  
NO SCALE

**MOTOR CONTROL CENTER 'MCC-A'  
LOAD CALCULATIONS**

RAW SEWAGE PUMP #1	10HP	=	10.8 kVA
RAW SEWAGE PUMP #2	20HP	=	21.6 kVA
*RAW SEWAGE PUMP #3	20HP	=	0.0 kVA
SUB-TOTAL		=	32.4 kVA
+25% CONTINUOUS		=	5.4 kVA
+25% LARGEST MOTOR LOAD		=	5.4 kVA
TOTAL		=	43.2 kVA

UTILITY SERVICE:  
480/277V, 3Ø, 4W  
43.2 kVA / 8313 = 51.9 AMPS

\* STANDBY LOAD

**NAMEPLATE SCHEDULE - 'MCC-A'**

NO.	LETTER SIZE	INSCRIPTION
1.	1/2"	MCC-A
2.	1/4"	INCOMING LUGS
3.	1/4"	RAW SEWAGE PUMP #2
4.	1/4"	RAW SEWAGE PUMP #1
5.	1/4"	RAW SEWAGE PUMP #3
a.	3/16"	HAND-OFF-AUTO
b.	3/16"	RUNNING
c.	3/16"	ELAPSED TIME METER
d.	3/16"	FAILURE
e.	3/16"	RESET

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THIS LINE IS 1 INCH AT FULL SCALE IF NOT SCALE ACCORDINGLY

SCALE: NONE  
DRAWN BY: GS/JRL  
DESIGNED BY: DJA  
PROJ. MGR.:

NO.	ZONE	REVISIONS	BY	DATE

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Project  
2006-0309

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County of San Joaquin  
Flag City Pump Station & Force Main  
NEW MOTOR CONTROL CENTER - 'MCC-A'  
SINGLE LINE DIAGRAM,  
LOAD CALCULATIONS & SCHEDULES

JOB NUMBER 010-00-07-18
DRAWING NUMBER E 3
SHEET NUMBER 27 OF 44
REVISION

SU-4475

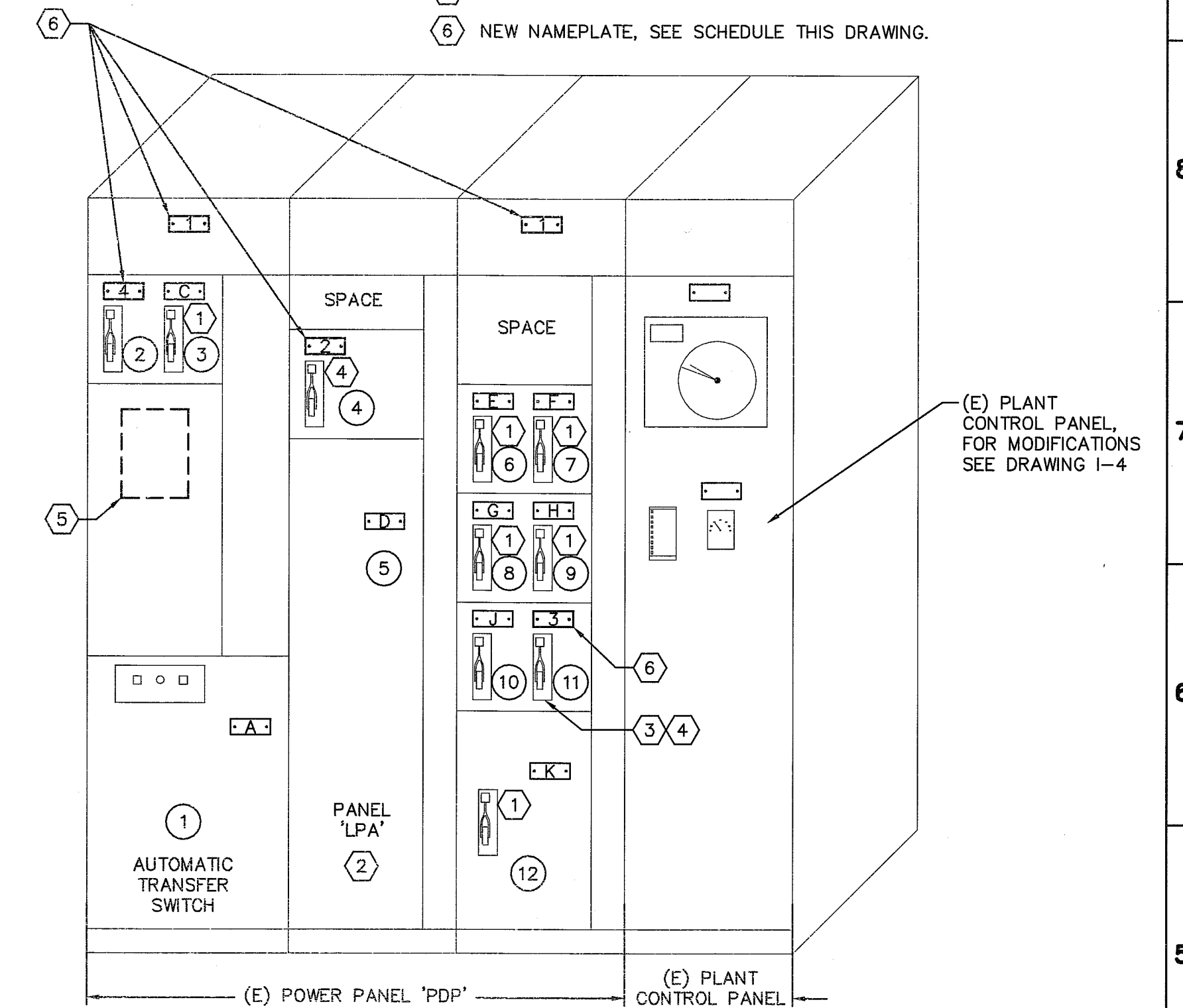


### GENERAL NOTES

A. CONTRACTOR TO PROVIDE NEW PAD LOCKS REQUIRED TO LOCK OUT CIRCUIT PROTECTOR. ALL PAD LOCKS ARE TO BE KEYPED IDENTICAL AND (4) KEYS PROVIDED TO THE COUNTY.

### SHEET KEYNOTES

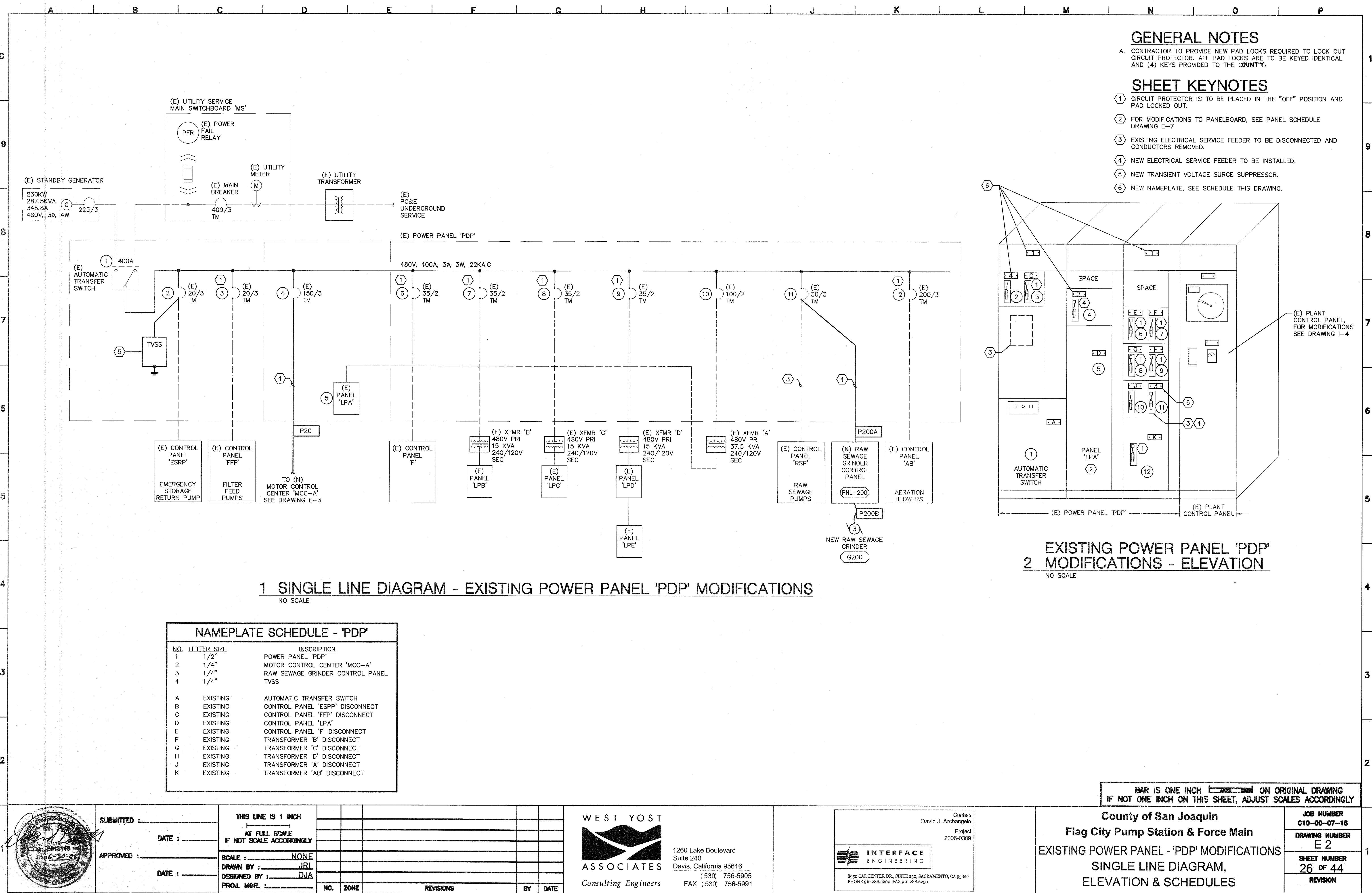
- 1 CIRCUIT PROTECTOR IS TO BE PLACED IN THE "OFF" POSITION AND PAD LOCKED OUT.
- 2 FOR MODIFICATIONS TO PANELBOARD, SEE PANEL SCHEDULE DRAWING E-7
- 3 EXISTING ELECTRICAL SERVICE FEEDER TO BE DISCONNECTED AND CONDUCTORS REMOVED.
- 4 NEW ELECTRICAL SERVICE FEEDER TO BE INSTALLED.
- 5 NEW TRANSIENT VOLTAGE SURGE SUPPRESSOR.
- 6 NEW NAMEPLATE, SEE SCHEDULE THIS DRAWING.



**EXISTING POWER PANEL 'PDP'  
2 MODIFICATIONS - ELEVATION**  
NO SCALE

**1 SINGLE LINE DIAGRAM - EXISTING POWER PANEL 'PDP' MODIFICATIONS**  
NO SCALE

NAMEPLATE SCHEDULE - 'PDP'		
NO.	LETTER SIZE	INSCRIPTION
1	1/2"	POWER PANEL 'PDP'
2	1/4"	MOTOR CONTROL CENTER 'MCC-A'
3	1/4"	RAW SEWAGE GRINDER CONTROL PANEL
4	1/4"	TVSS
A	EXISTING	AUTOMATIC TRANSFER SWITCH
B	EXISTING	CONTROL PANEL 'ESPP' DISCONNECT
C	EXISTING	CONTROL PANEL 'FFP' DISCONNECT
D	EXISTING	CONTROL PANEL 'LPA'
E	EXISTING	CONTROL PANEL 'F' DISCONNECT
F	EXISTING	TRANSFORMER 'B' DISCONNECT
G	EXISTING	TRANSFORMER 'C' DISCONNECT
H	EXISTING	TRANSFORMER 'D' DISCONNECT
J	EXISTING	TRANSFORMER 'A' DISCONNECT
K	EXISTING	TRANSFORMER 'AB' DISCONNECT



SU 4476

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	DATE : _____							
	APPROVED : _____							
	DATE : _____							

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**County of San Joaquin**  
**Flag City Pump Station & Force Main**  
 EXISTING POWER PANEL - 'PDP' MODIFICATIONS  
 SINGLE LINE DIAGRAM,  
 ELEVATION & SCHEDULES

JOB NUMBER 010-00-07-18
DRAWING NUMBER E 2
SHEET NUMBER 26 OF 44
REVISION

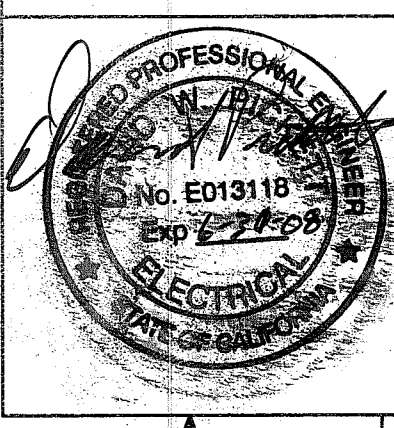
**SYMBOLS LIST**

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	LIGHTING FIXTURE SYMBOL - TYPE & QUANTITY		FOURPLEX CONVENIENCE RECEPTACLE OUTLET 20A, 125V		WELDER OUTLET, 30 AMP, 3Ø, 4W, 480V WITH ONE MATCHING CAP.
	PANELBOARD		DUPLEX CONVENIENCE OUTLET, HALF SWITCHED		TELEPHONE OUTLET, ROUTE 3/4" CONDUIT WITH PULLROPE TO TELEPHONE TERMINAL CABINET.
	CONTROL PANEL		PLUGMOLD, SINGLE RECEPTACLE OUTLET STRIP 20A, 125V, WALL MOUNTED AT +12" UON		JUNCTION BOX
	SWITCHBOARD		MOUNT OUTLET OR SWITCH ABOVE COUNTER OR BACKSPASH		FIELD CONNECTION TERMINAL BLOCK
	AMMETER 250 DEGREE SCALE		ALARM HORN		SPRING WOUND TIMER
	VOLT METER 250 DEGREE SCALE		THERMOSTAT		SOLENOID VALVE
	WATT HOUR METER AND SOCKET		HEATER, ELECTRIC		CIRCUIT BREAKER SHUNT TRIP
	PHASE FAILURE RELAY		CIRCUIT BREAKER OPERATING HANDLE		CONTACT NORMALLY OPEN
	ELAPSED TIME METER		MOTOR, HORSEPOWER SIZE NOTED		CONTACT NORMALLY CLOSED
	HAND-OFF-AUTO SELECTOR SWITCH		MOTOR STARTER CONTACTOR COIL		OVERLOAD DEVICE CONTACT
	HAND-OFF-REMOTE SELECTOR SWITCH		MANUAL MOTOR STARTER		OVERLOAD DEVICE HEAT ELEMENT
	LOCK-OFF-STOP SELECTOR SWITCH		SAFETY DISCONNECT SWITCH - NON FUSED		PRESSURE TRANSDUCER
	VOLT METER SWITCH, 4 POSITION		SAFETY DISCONNECT SWITCH - FUSED		PUSHBUTTON
	AMMETER POSITION, 4 POSITION		SAFETY DISCONNECT SWITCH WITH LOS & AUX CONTACT		FLOW INDICATING METER
	TRANSFORMER		SAFETY DISCONNECT SWITCH WITH START BUTTON, LOS & AUX CONTACT		FLOW INDICATING TOTALIZER
	CONTROL POWER TRANSFORMER		CIRCUIT BREAKER		LIMIT SWITCH, NORMALLY OPEN
	CURRENT TRANSFORMER		INDICATION FUSE HOLDER AMPERE SIZE SHOWN		LIMIT SWITCH, NORMALLY CLOSED
	METER & CURRENT TRANSFORMER		FUSE, AMPERE SIZE SHOWN		TIME DELAY CONTACT, NORMALLY CLOSED TIME OPEN
	SELECTOR SWITCH		CONDUIT RUN EXPOSED ON OR IN WALL OR EXPOSED BELOW CEILING		TIME DELAY CONTACT, NORMALLY OPEN TIME CLOSE
	TIME DELAY RELAY (DELAY ON DE-ENERGIZATION)		CONDUIT RUN EXPOSED IN ATTIC AREA		TIME DELAY CONTACT, NORMALLY OPEN TIME OPEN
	TIME DELAY RELAY (DELAY ON ENERGIZATION)		CONDUIT RUN UNDERFLOOR OR UNDERGROUND		TIME DELAY CONTACT, NORMALLY CLOSED TIME CLOSED
	LATCHING RELAY		DENOTES NUMBER OF #12 WIRES. NO MARKS = 3/4" C, 2 #12		FLOAT SWITCH CLOSE ON HIGH LEVEL
	CONTROL RELAY		DENOTES WIRE FOR GROUND FAULT CIRCUIT INTERRUPTER OR GROUND WIRE		FLOAT SWITCH CLOSE ON LOW LEVEL
	INDUSTRIAL RELAY (MACHINE TOOL)		CIRCUIT RUN DIRECT TO DESTINATION SEAL-OFF FITTING, CROUSE HINDS EYS OR EQ		PRESSURE SWITCH CLOSE HIGH PRESSURE
	LIMIT SWITCH		GROUND BUS		PRESSURE SWITCH CLOSE LOW PRESSURE
	INTRINSICALLY SAFE RELAY		NEUTRAL BUS		DISCONNECT SWITCH
	INDUCTION CONTROL RELAY		PULL BOX		PUSH BUTTON, NORMALLY OPEN OR MOMENTARILY CLOSED
	CEILING LIGHT FIXTURE		NAMEPLATE		PUSH BUTTON, NORMALLY CLOSED OR MOMENTARILY OPEN
	BRACKET LIGHT FIXTURE		WIRES CONNECTED		TEMPERATURE SWITCH, NORMALLY CLOSED OPEN ON HIGH TEMP (CUT OUT)
	WARNING LIGHT		WIRES NOT CONNECTED		TEMPERATURE SWITCH, NORMALLY OPEN CLOSE ON HIGH TEMP
	POLE MOUNTED LIGHT FIXTURE		CONDUIT CROSSING NOT CONNECTED		WHITE PILOT LIGHT, PUSH TO TEST
	FLUORESCENT LIGHT FIXTURE, SEE FIXTURE SCHEDULE FOR MOUNTING		GROUND		GREEN PILOT LIGHT, PUSH TO TEST
	FLOOD LIGHT		LIGHTNING ARRESTER		RED PILOT LIGHT, PUSH TO TEST
	EMERGENCY LIGHT PACK		CONDUIT & WIRE IDENTIFICATION TAG		
	SMOKE DETECTOR		SHEET NOTE TAG		
	SINGLE POLE TOGGLE SWITCH, SWITCHING FIXTURES DENOTED		TYPICAL MOTOR CONTROL CENTER/ SWITCHBOARD/ PEDESTAL IDENTIFICATION TAG		
	THREE WAY TOGGLE SWITCH		Ø, PH PHASE		
	THERMAL MANUAL STARTER, 1 POLE				
	THERMAL, MANUAL STARTER, 2 POLE				
	DUPLEX CONVENIENCE OUTLET, 20A				
	20A, RECEPTACLE OUTLET				
	PHOTOCELL				

**ABBREVIATIONS**

A	AMPERES	N.I.C.	NOT IN CONTRACT
AIC	AMPS INTERRUPTING CAPACITY	NP	NAMEPLATE
BC	BARE COPPER	OL	OVERLOAD DEVICE
C	CONDUIT	PB	PULLBOX
CB	CIRCUIT BREAKER	PB-1	PUSHBUTTON 1
CNTL	CONTROL	PC	PROGRAMMABLE CONTROLLER
COM	COMMUNICATION	PL-1	PILOT LIGHT 1
CPT	CONTROL POWER TRANSFORMER	PNL	PANEL
CR	CONTROL RELAY	POT	POTENTIOMETER
CT	CURRENT TRANSFORMER	PR	SHIELDED, PAIR CABLE
CU	COPPER	PS	PRESSURE SWITCH
(E)	EXISTING	PT	POTENTIAL TRANSFORMER
EF	EXHAUST FAN	PIT	PUSH TO TEST
EMT	ELECTRICAL METALLIC TUBING	PVC	POLYVINYL CHLORIDE
EYS	CATALOG NUMBER OF TYPICAL GAS TIGHT CONDUIT SEAL	PWR	POWER
EM	EMERGENCY LIGHT BALLAST	(R)	EXISTING TO BE REMOVED OR RELEASED
ETM	ELAPSED TIME METER	MT	EMPTY CONDUIT WITH NYLON PULL CORD
F	FUSE	N	NEUTRAL
(F)	FUTURE	NA	NON AUTOMATIC
FS	FLOAT SWITCH	NL	NIGHT LIGHT CONTINUOUSLY ON
FVC	FULL VOLTAGE CONTACTOR	(N)	NEW
FNVR	FULL VOLTAGE NON REVERSING	VS	VOLTMETER SWITCH
FVR	FULL VOLTAGE REVERSING	WP	WEATHERPROOF
G, GND	GROUND	XFMR	TRANSFORMER
GFI	GROUND FAULT CIRCUIT INTERRUPTER	XP	EXPLOSION PROOF
HPS	HIGH PRESSURE SODIUM	UG	UNDERGROUND
ICP	INSTRUMENTATION CONTROL PANEL	UON	UNLESS OTHERWISE NOTED
ISO	ISOLATION	V	VOLTS, VOLTAGE
ISR	INTRINSICALLY SAFE RELAY	VFD	VARIABLE FREQUENCY DRIVE
INST	INSTANTANEOUS	VM	VOLTMETER
KV	KILOVOLT	RSC	RIGID STEEL CONDUIT
KVA	KILOVOLT AMPERES	RSC/PVC	RIGID STEEL PVC COATED
KW	KILOWATT	RVAT	REDUCED VOLTAGE AUTOTRANSFORMER
LA	LIGHTNING ARRESTER	2SPD	TWO SPEED STARTER
LOS	LOCK OFF STOP PUSH BUTTON	SS-1	SELECTOR SWITCH 1
mA	MILLIAMPERES	SWBD	SWITCHBOARD
MCC	MOTOR CONTROL CENTER	TDD, TDE	TIME DELAY RELAY
MCP	MOTOR CIRCUIT PROTECTOR	TM	THERMAL MAGNETIC
MH	MANHOLE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
MOD	MODULE	TWSP	TWISTED SHIELDED PAIR
MOT	MOTOR OVERTEMPERATURE SENSOR	TWST	TWISTED SHIELDED TRIAD
MMS	MOTOR MOISTURE SENSOR	TWP	TWISTED PAIR
MSB	MAIN SWITCHBOARD	TYP	TYPICAL

BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY



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 APPROVED : \_\_\_\_\_ DATE : \_\_\_\_\_  
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 SCALE : NONE  
 DRAWN BY : JRL  
 DESIGNED BY : DJA  
 PROJ. MGR. : \_\_\_\_\_  
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**County of San Joaquin**  
**Flag City Pump Station & Force Main**  
**ELECTRICAL**  
**SYMBOLS & ABBREVIATIONS**

JOB NUMBER	010-00-07-18
DRAWING NUMBER	E1
SHEET NUMBER	25 OF 44
REVISION	

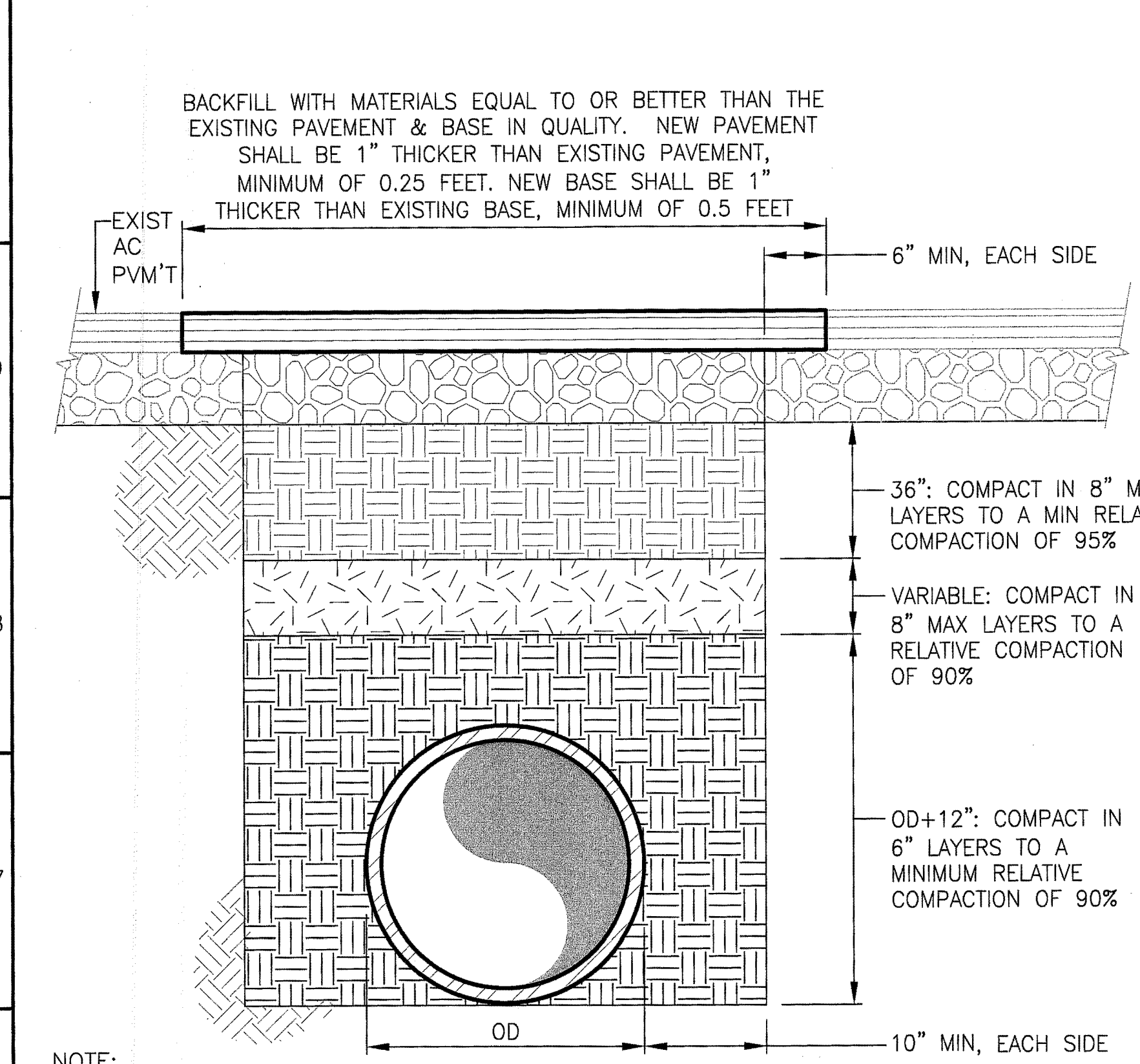
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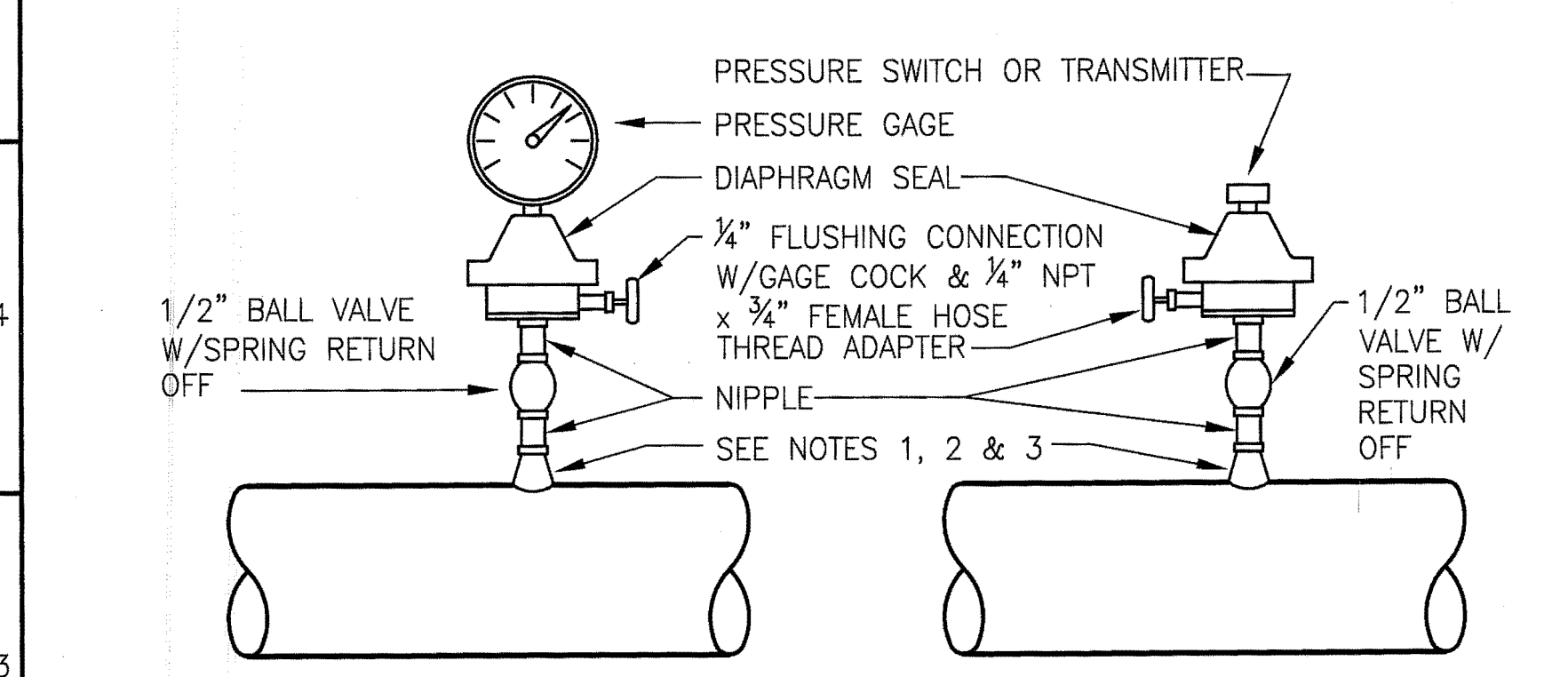
SU 4479

A B C D E F G H I J K L M N O P



- NOTE:
- FOR DUAL PIPE TRENCH, SEE PP13
  - BACKFILL MATERIALS MAY BE NATIVE PROVIDED THERE ARE NO ORGANICS, DEBRIS, OR OTHER DELETERIOUS MATERIALS
  - SCARIFY, MOISTURE CONDITION, AND COMPACT SUBGRADE TO A MINIMUM OF 90% RELATIVE COMPACTION

TRENCH  
DETAIL 1  
NTS



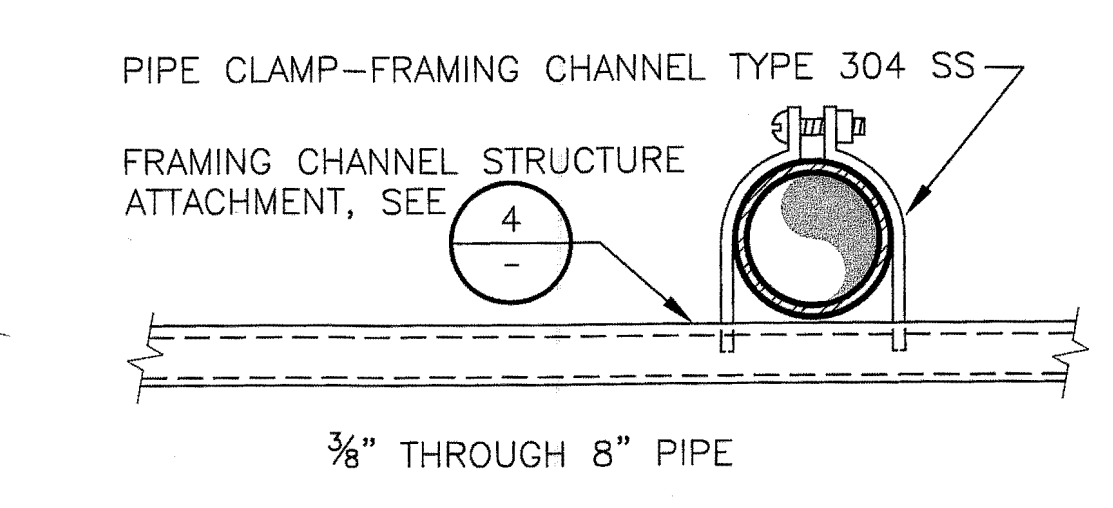
NOTES:

- USE PIPE SADDLE W/BUSHING DIAPHRAGM SEAL, PRESSURE GAGE ASSEMBLY TO BE FACTORY ASSEMBLED

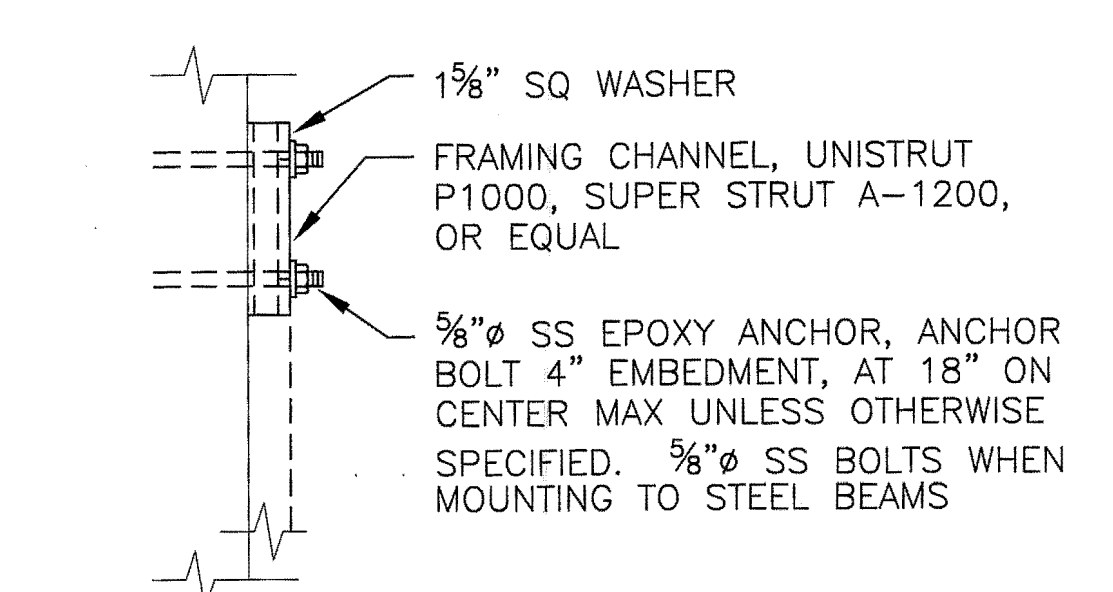
PRESSURE GAGE PG-1

PRESSURE SWITCH/TRANSMITTER PSG-2

DETAIL 2  
NTS

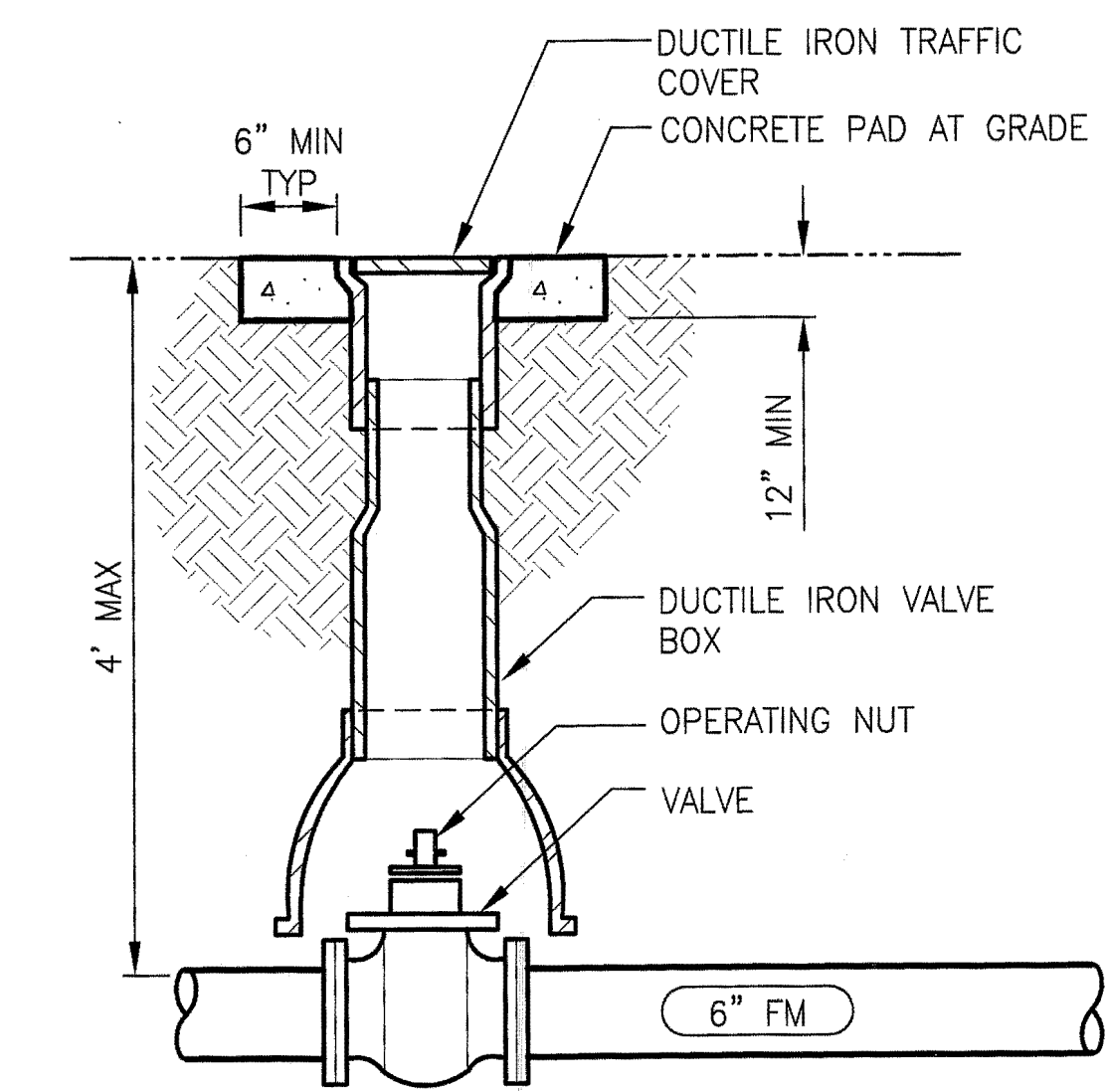


PIPE HANGER  
DETAIL 3  
VAR  
NOT TO SCALE

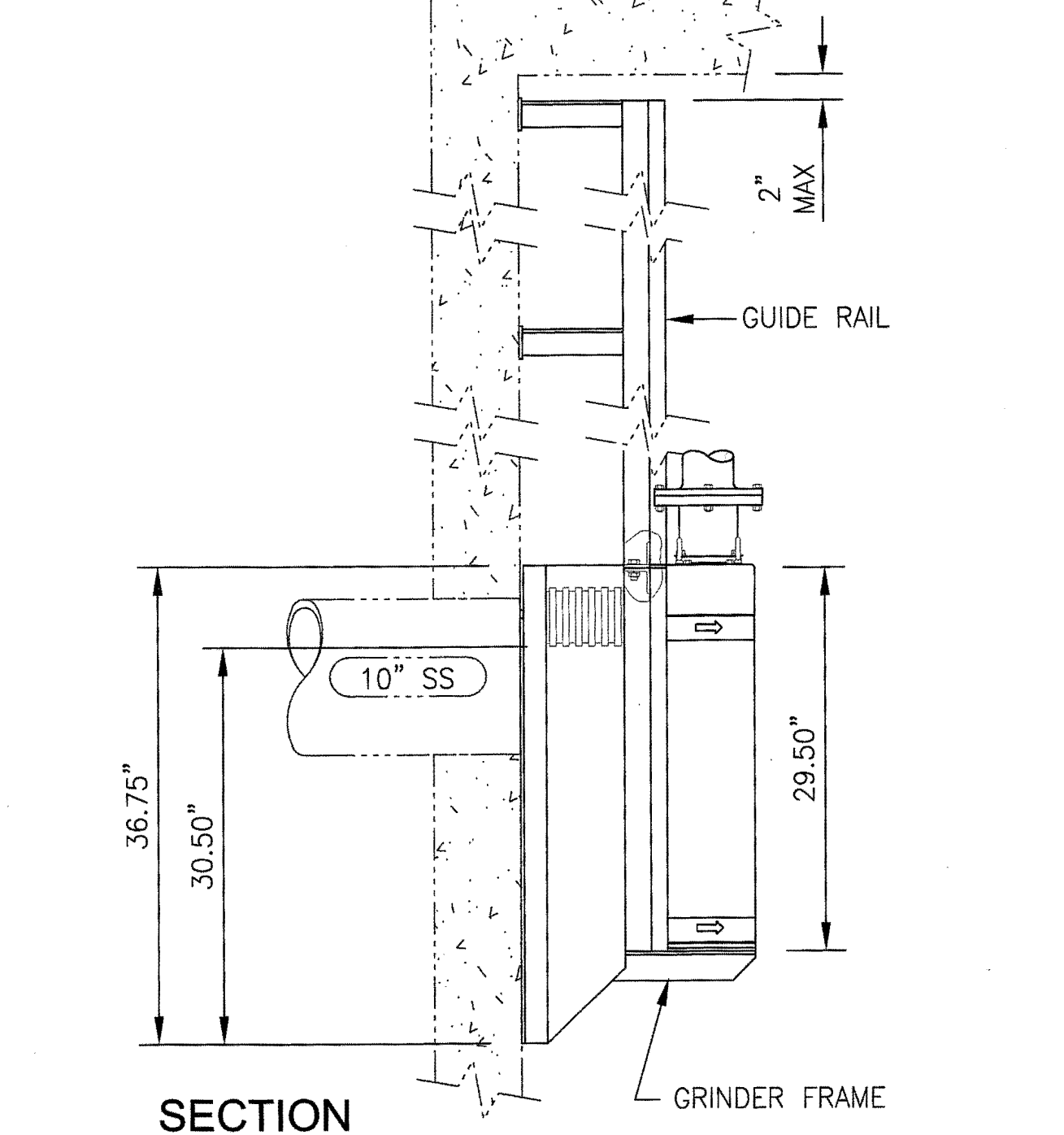
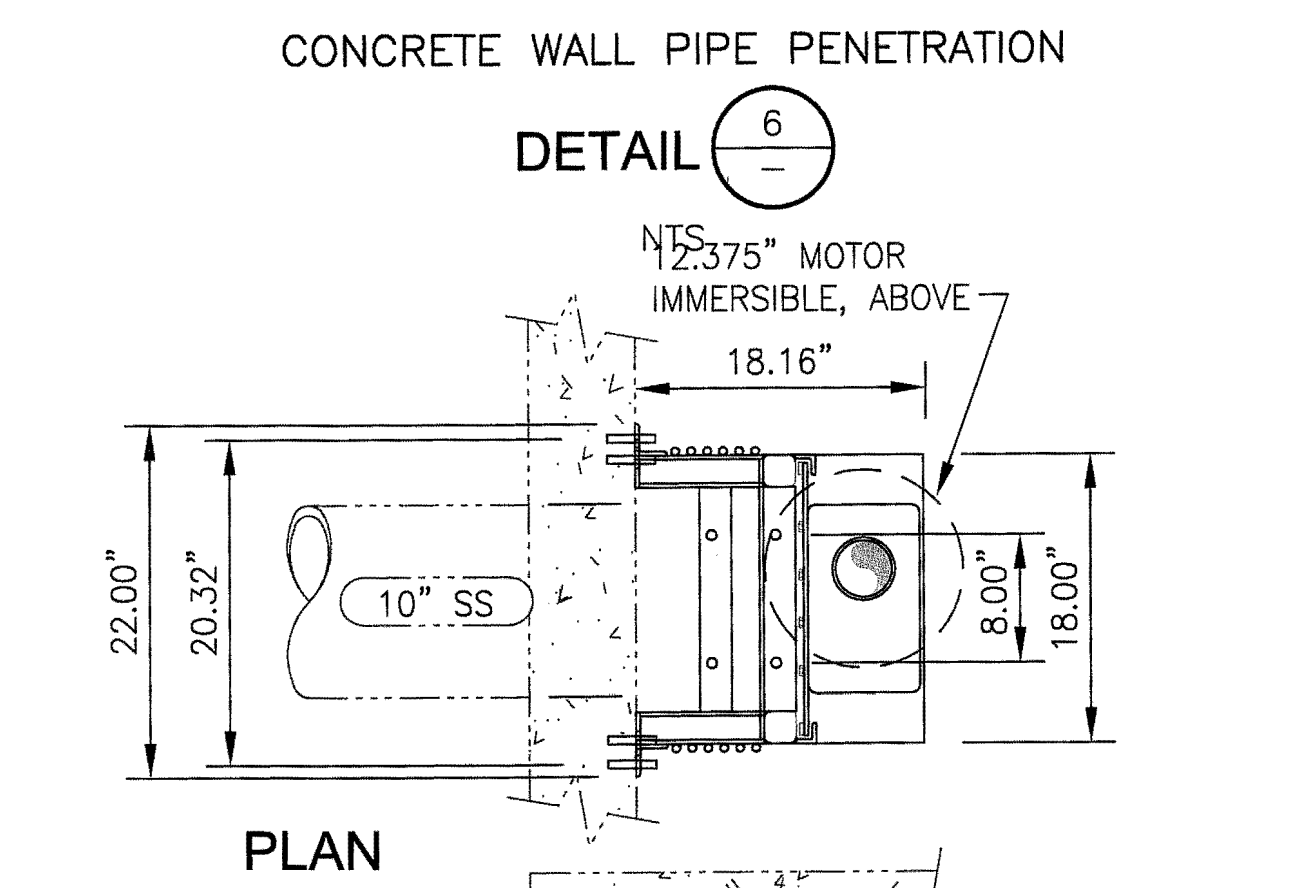
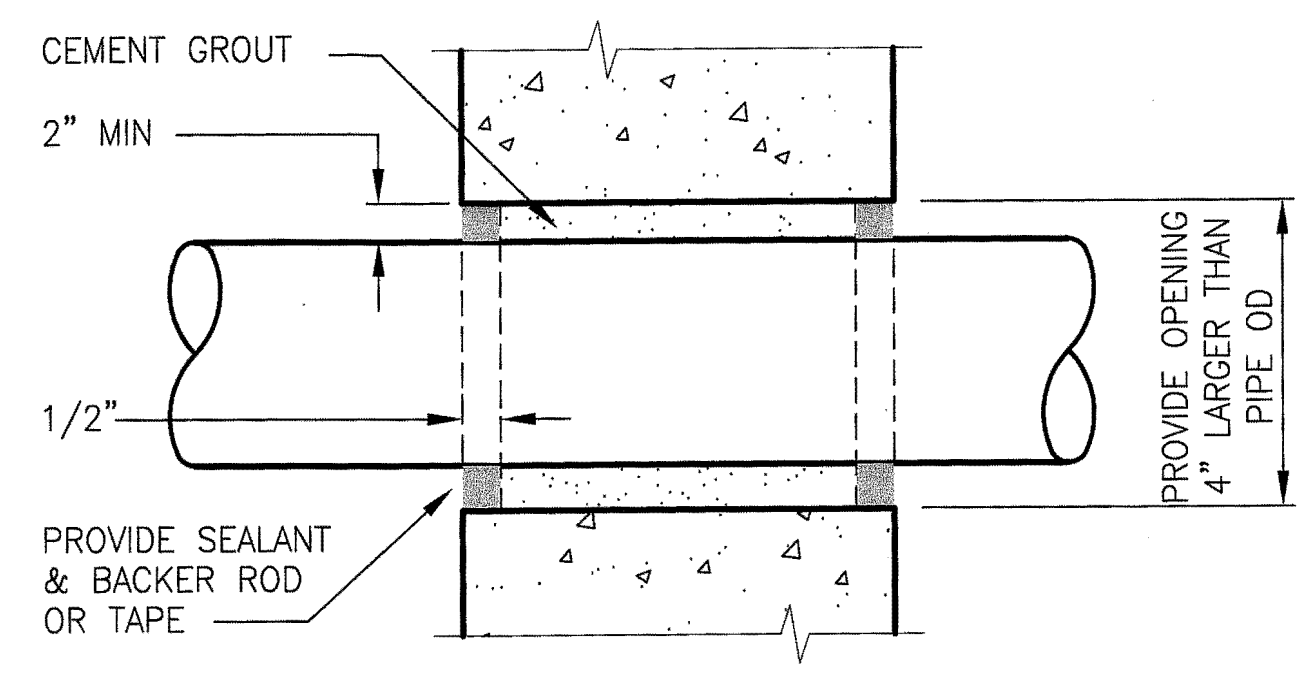


NOTE: MAXIMUM LOAD CAPACITY SHALL BE AS RECOMMENDED BY THE CHANNEL MANUFACTURER

FRAMING CHANNEL STRUCTURAL ATTACHMENT  
DETAIL 4  
NOT TO SCALE



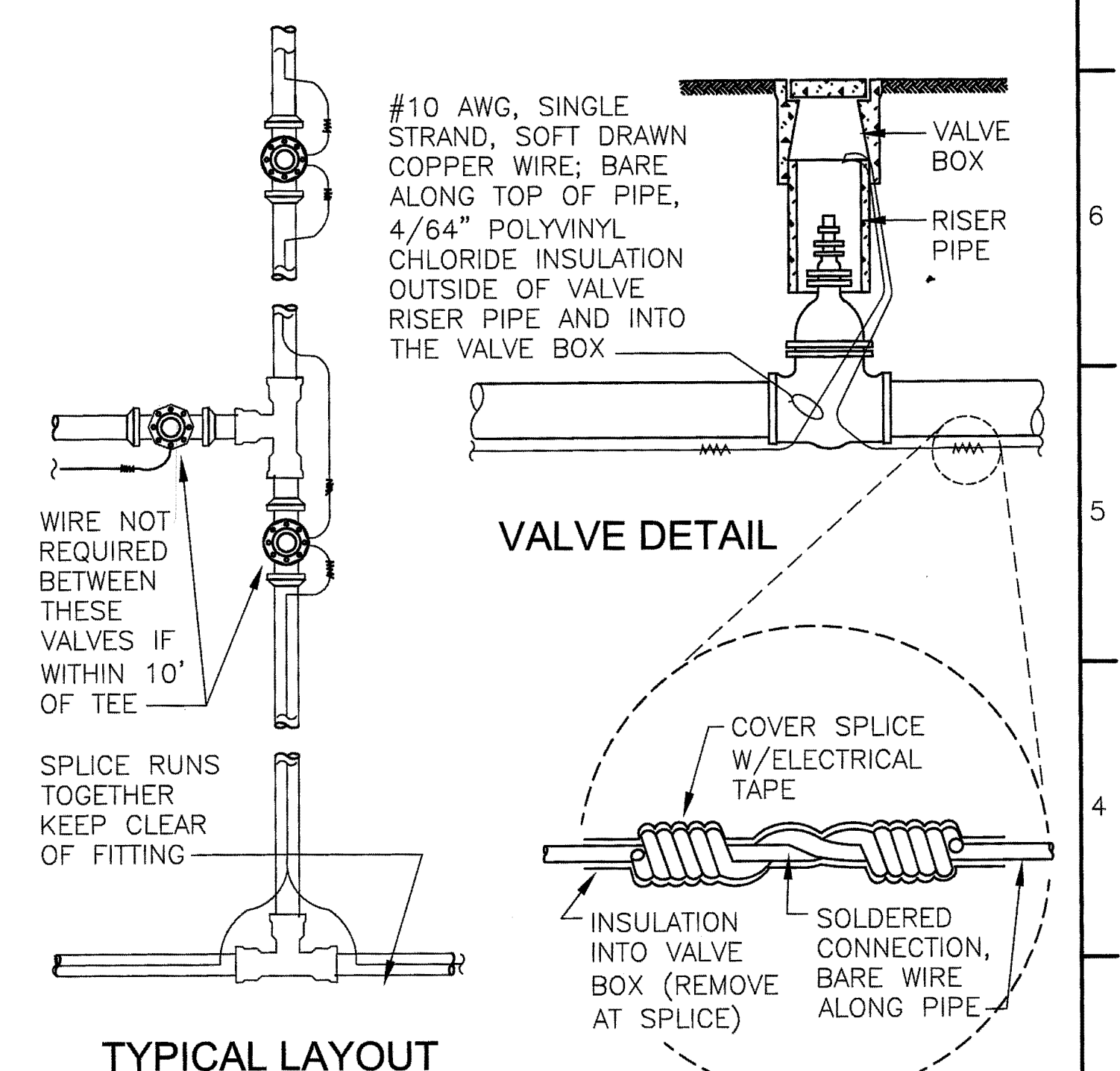
SHALLOW BURIED VALVE  
DETAIL 5  
NTS



GRINDER  
DETAIL 7  
C3  
SCALE: 1"=1'-0"

NOTES:

- ANCHOR BOLTS SHALL BE 1/2"x3-3/4" MIN



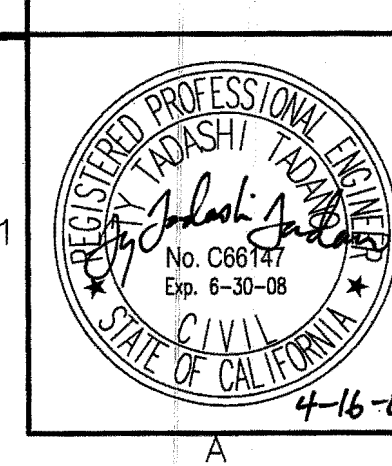
VALVE DETAIL

TYPICAL LAYOUT

NOTES:

- WIRE TO BE CONTINUOUS BETWEEN VALVE BOXES, EXCEPT AS NOTED
- BARE WIRE NOT TO TOUCH VALVES OR FITTINGS
- LOCATING WIRE TO BE HELD IN PLACE WITH TAPE UNTIL BACKFILLED

LOCATOR WIRE INSTALLATION  
DETAIL 8  
VAR  
NTS



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DESIGNED BY : TII

PROJ. MGR. : GJF

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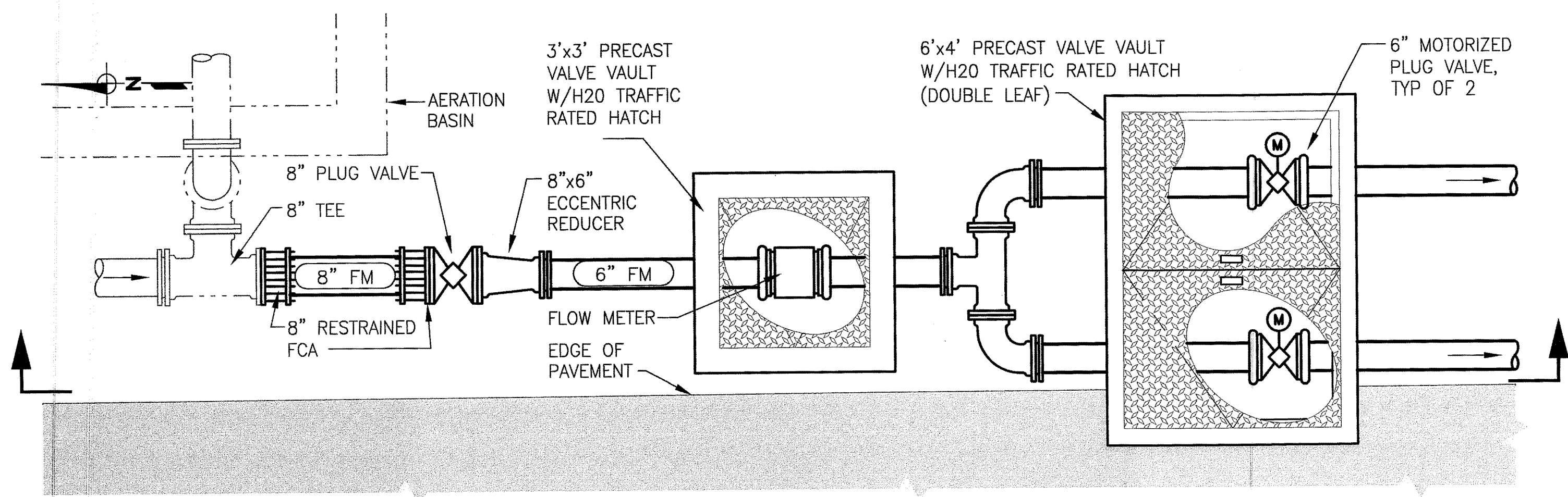
PUMP STATION  
DETAILS 2

JOB NUMBER 010-00-07-18  
DRAWING NUMBER C5  
SHEET NUMBER 23 OF 44  
REVISION

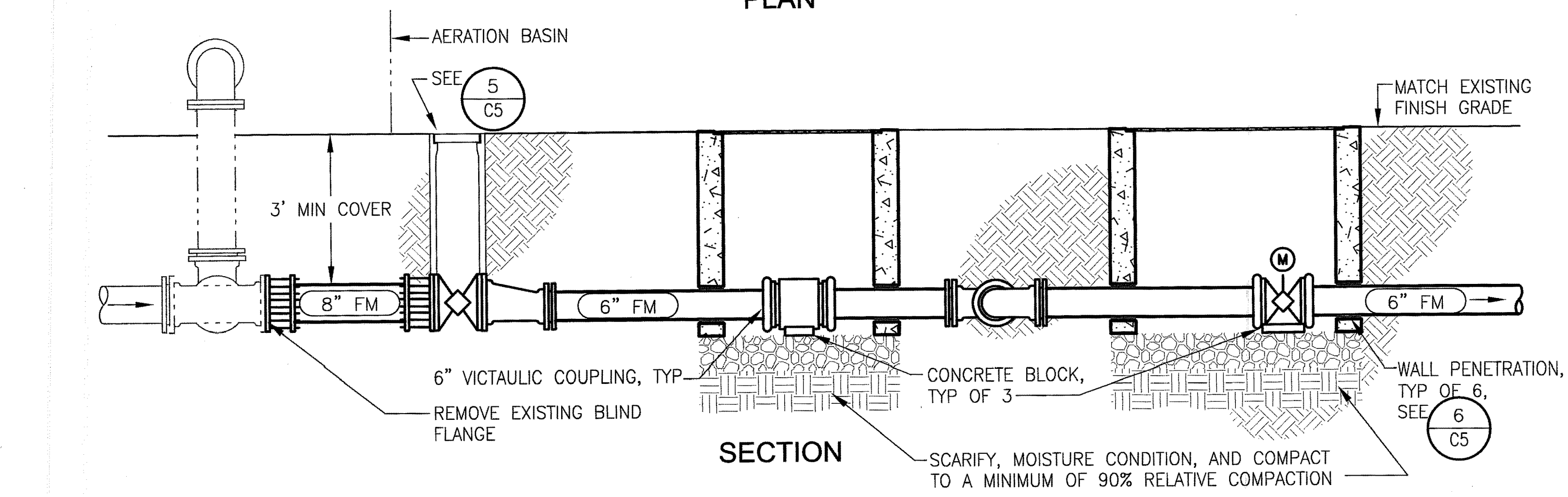


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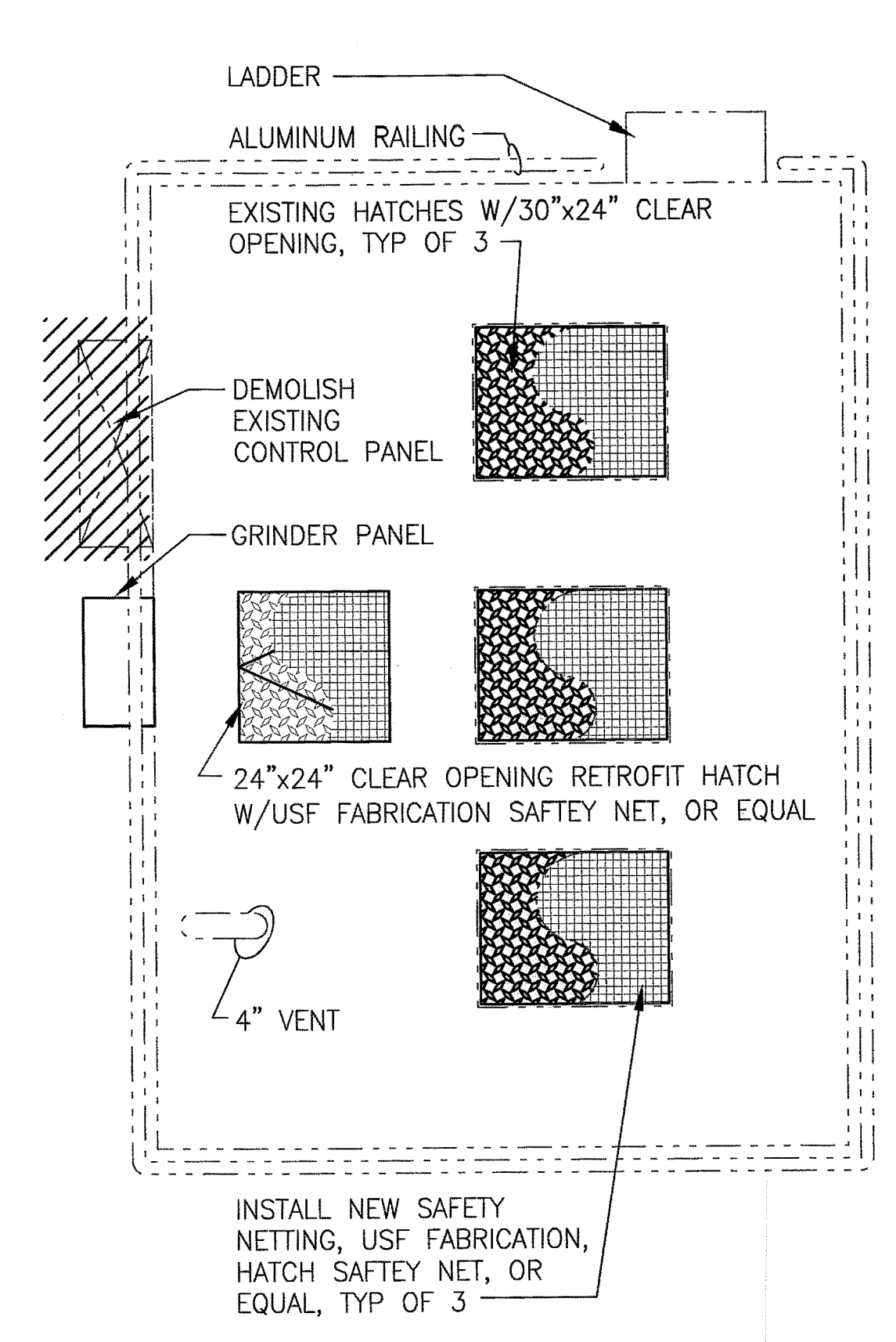


PLAN



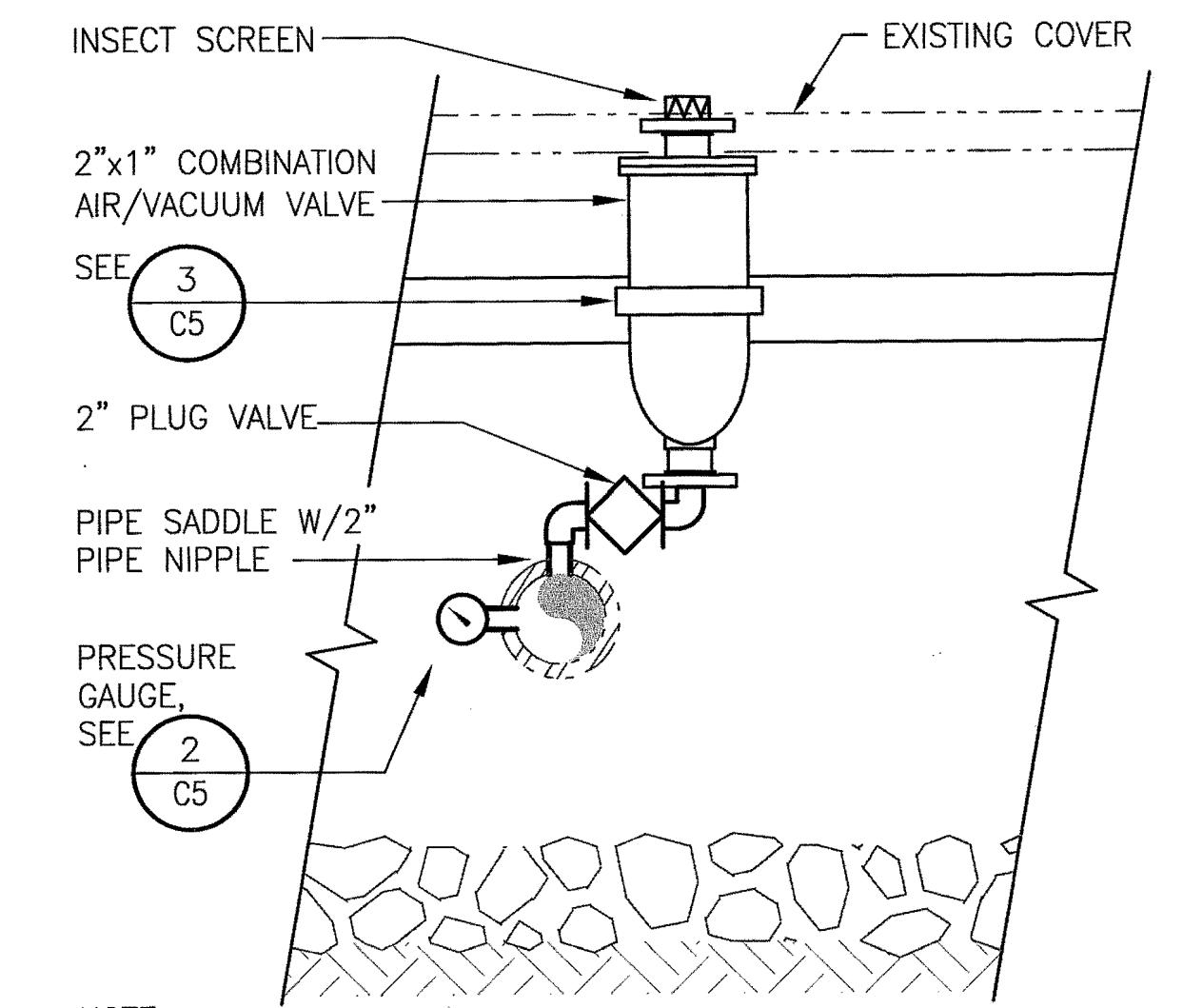
SECTION

INTER-TIE  
DETAIL 1  
SCALE: 1/2"=1'-0"



RAW SEWAGE PUMP STATION TOP PLAN

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

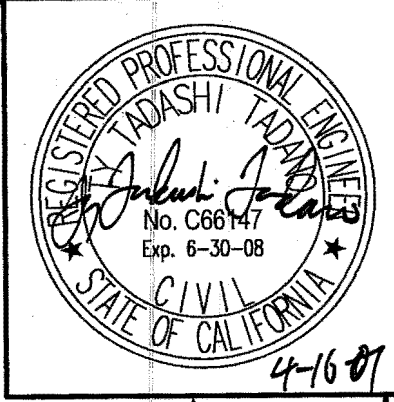


AIR/VACUUM VALVE

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

NOTES:  
1. INSTALL HATCH NET SUPPORT ANGLES SUCH THAT EQUIPMENT CAN BE REMOVED WITHOUT INTERFERENCE

NOTE:  
1. MODIFY STEEL COVERS TO FIT CARV



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DATE : \_\_\_\_\_

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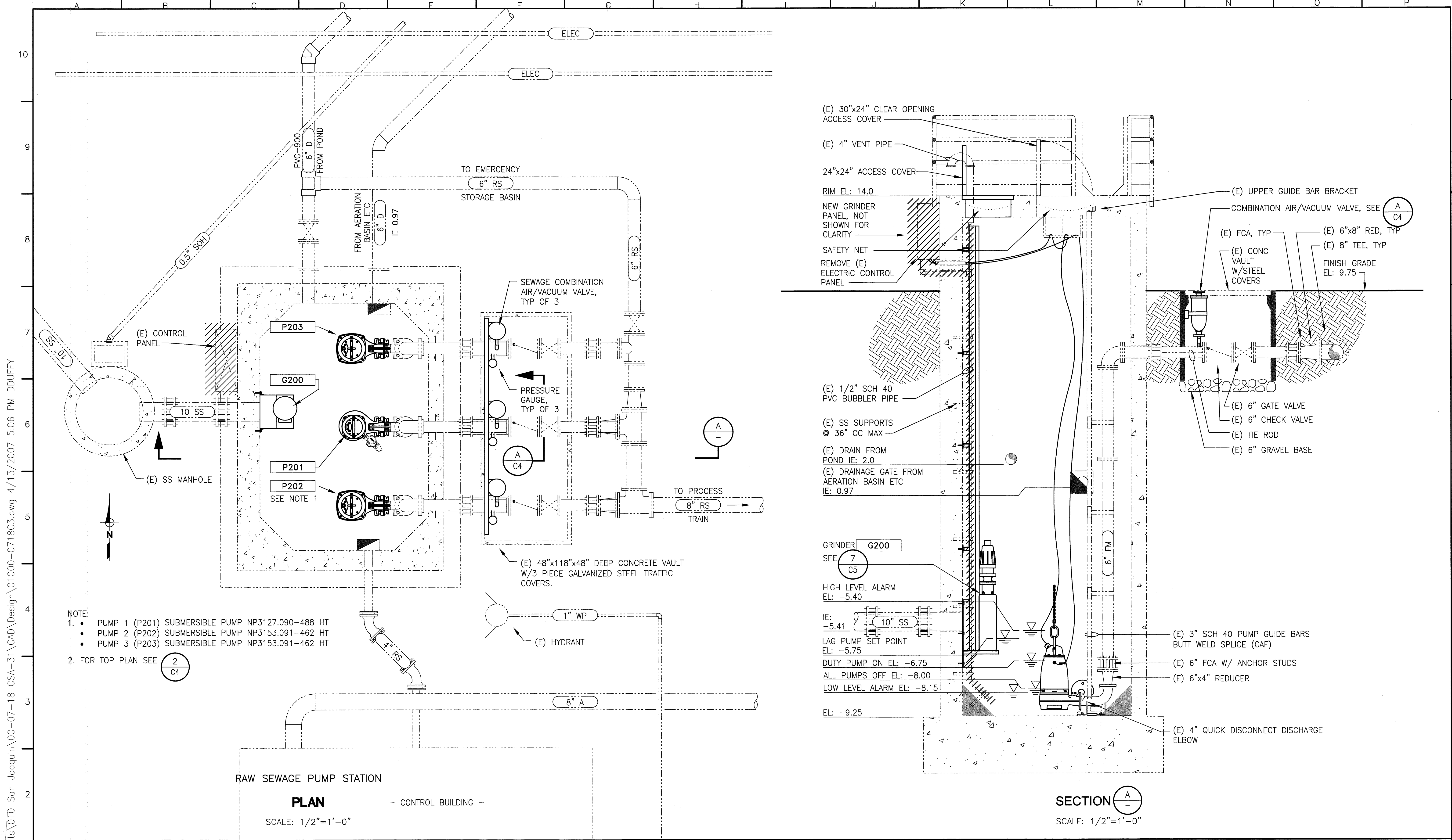
**PUMP STATION**  
**DETAILS 1**

JOB NUMBER  
010-00-07-18

DRAWING NUMBER  
**C4**

SHEET NUMBER  
**22 OF 44**

REVISION



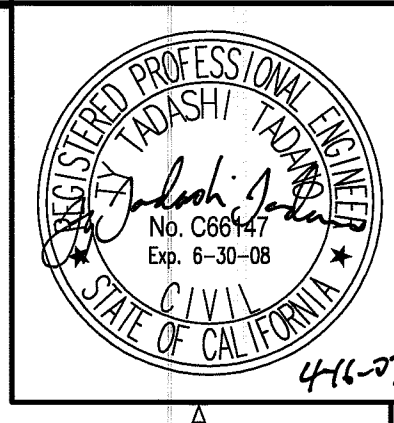
- NOTE:
- PUMP 1 (P201) SUBMERSIBLE PUMP NP3127.090-488 HT
    - PUMP 2 (P202) SUBMERSIBLE PUMP NP3153.091-462 HT
    - PUMP 3 (P203) SUBMERSIBLE PUMP NP3153.091-462 HT
  - FOR TOP PLAN SEE 2  
C4

**RAW SEWAGE PUMP STATION**  
**PLAN** - CONTROL BUILDING -  
 SCALE: 1/2"=1'-0"

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

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DATE : _____	DRAWN BY : DTD						
	DESIGNED BY : TTT						
	PROJ. MGR. : GJF						
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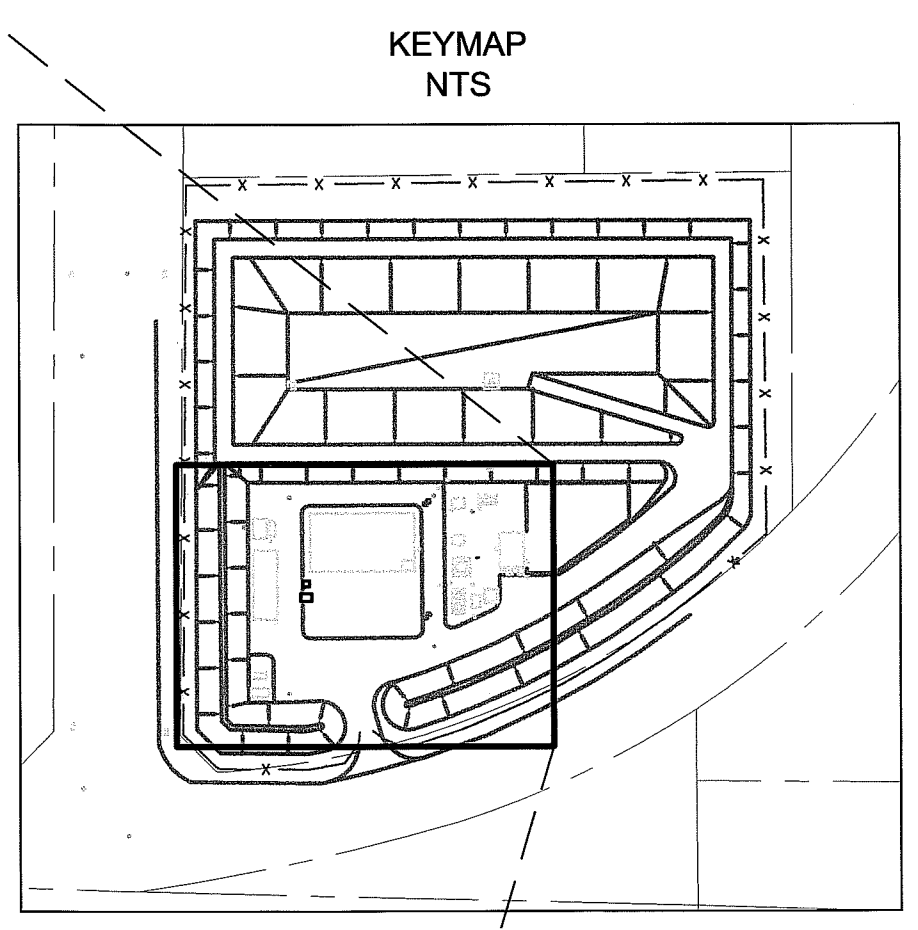
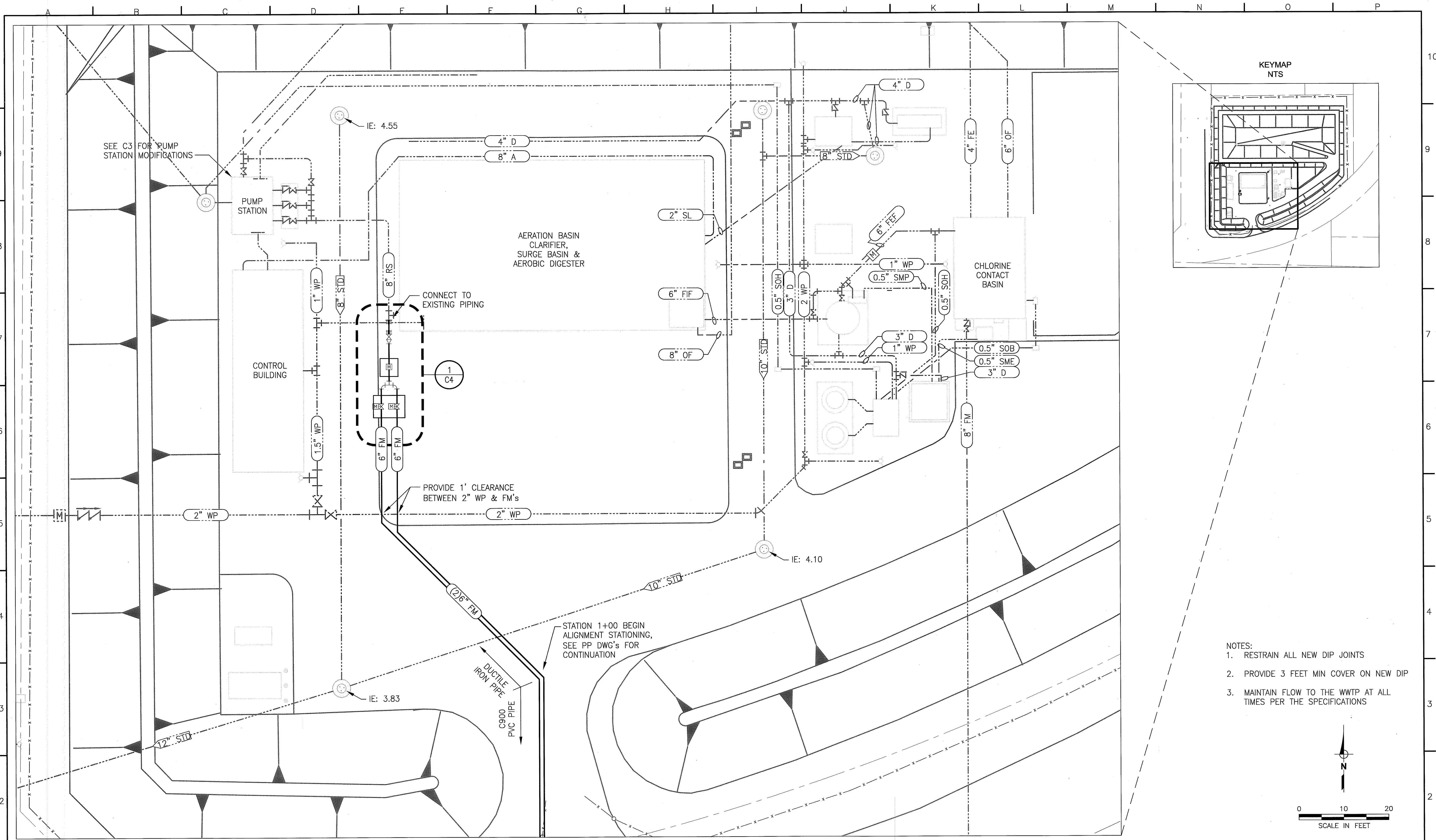
**County of San Joaquin**  
**Flag City Pump Station & Force Main**  
**PUMP STATION**  
**PLAN & SECTION**

JOB NUMBER 010-00-07-18
DRAWING NUMBER <b>C3</b>
SHEET NUMBER <b>21 OF 44</b>
REVISION

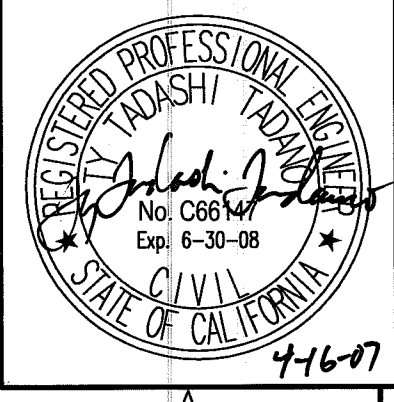
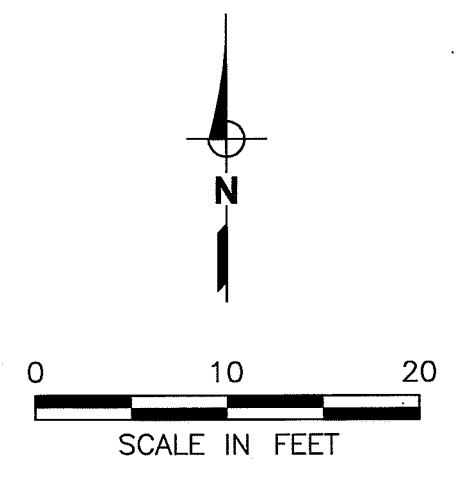


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- NOTES:
1. RESTRAIN ALL NEW DIP JOINTS
  2. PROVIDE 3 FEET MIN COVER ON NEW DIP
  3. MAINTAIN FLOW TO THE WWTP AT ALL TIMES PER THE SPECIFICATIONS



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DATE :	SCALE : 1"=10'
APPROVED :	DRAWN BY : DTD
DATE :	DESIGNED BY : TTI
	PROJ. MGR. : GJF
	NO. ZONE REVISIONS BY DATE

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**Flag City Pump Station & Force Main**

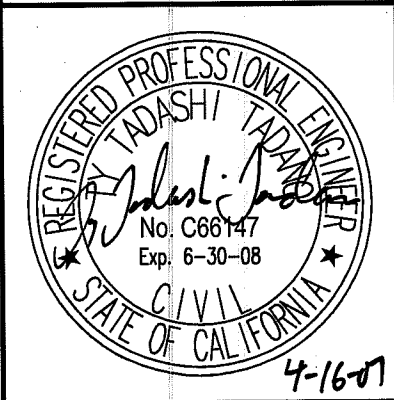
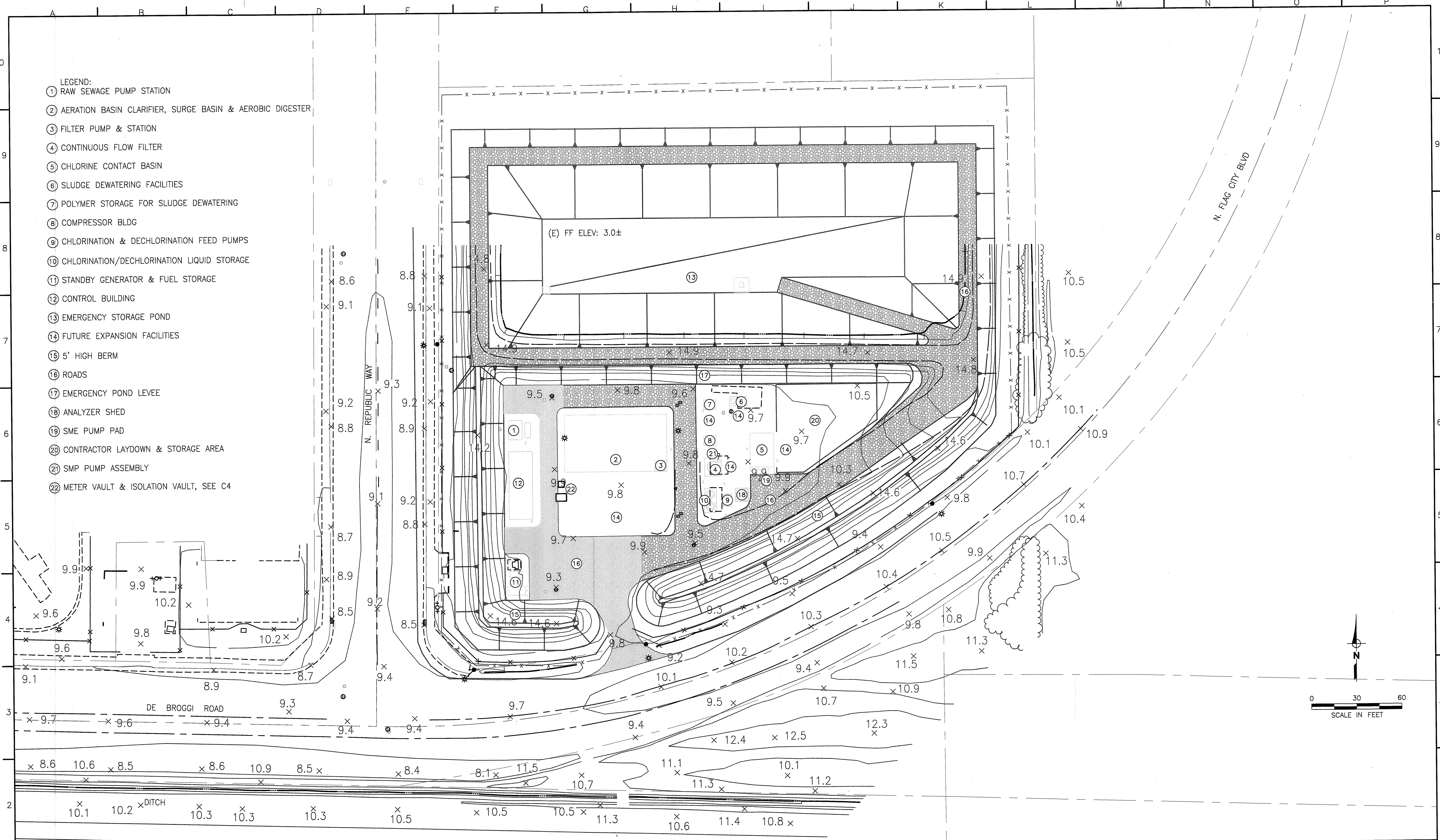
**PUMP STATION**  
**SITE PIPING PLAN**

JOB NUMBER	010-00-07-18
DRAWING NUMBER	C2
SHEET NUMBER	20 OF 44
REVISION	

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SM 4483

- LEGEND:**
- ① RAW SEWAGE PUMP STATION
  - ② AERATION BASIN CLARIFIER, SURGE BASIN & AEROBIC DIGESTER
  - ③ FILTER PUMP & STATION
  - ④ CONTINUOUS FLOW FILTER
  - ⑤ CHLORINE CONTACT BASIN
  - ⑥ SLUDGE DEWATERING FACILITIES
  - ⑦ POLYMER STORAGE FOR SLUDGE DEWATERING
  - ⑧ COMPRESSOR BLDG
  - ⑨ CHLORINATION & DECHLORINATION FEED PUMPS
  - ⑩ CHLORINATION/DECHLORINATION LIQUID STORAGE
  - ⑪ STANDBY GENERATOR & FUEL STORAGE
  - ⑫ CONTROL BUILDING
  - ⑬ EMERGENCY STORAGE POND
  - ⑭ FUTURE EXPANSION FACILITIES
  - ⑮ 5' HIGH BERM
  - ⑯ ROADS
  - ⑰ EMERGENCY POND LEVEE
  - ⑱ ANALYZER SHED
  - ⑲ SME PUMP PAD
  - ⑳ CONTRACTOR LAYDOWN & STORAGE AREA
  - ㉑ SMP PUMP ASSEMBLY
  - ㉒ METER VAULT & ISOLATION VAULT, SEE C4



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 APPROVED : \_\_\_\_\_  
 DATE : \_\_\_\_\_

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SCALE : 1" = 30'  
 DRAWN BY : DID  
 DESIGNED BY : TTT  
 PROJ. MGR. : CJF

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**County of San Joaquin**  
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**OVERALL PUMP STATION**  
**SITE PLAN**

JOB NUMBER  
 010-00-07-18

DRAWING NUMBER  
**C1**

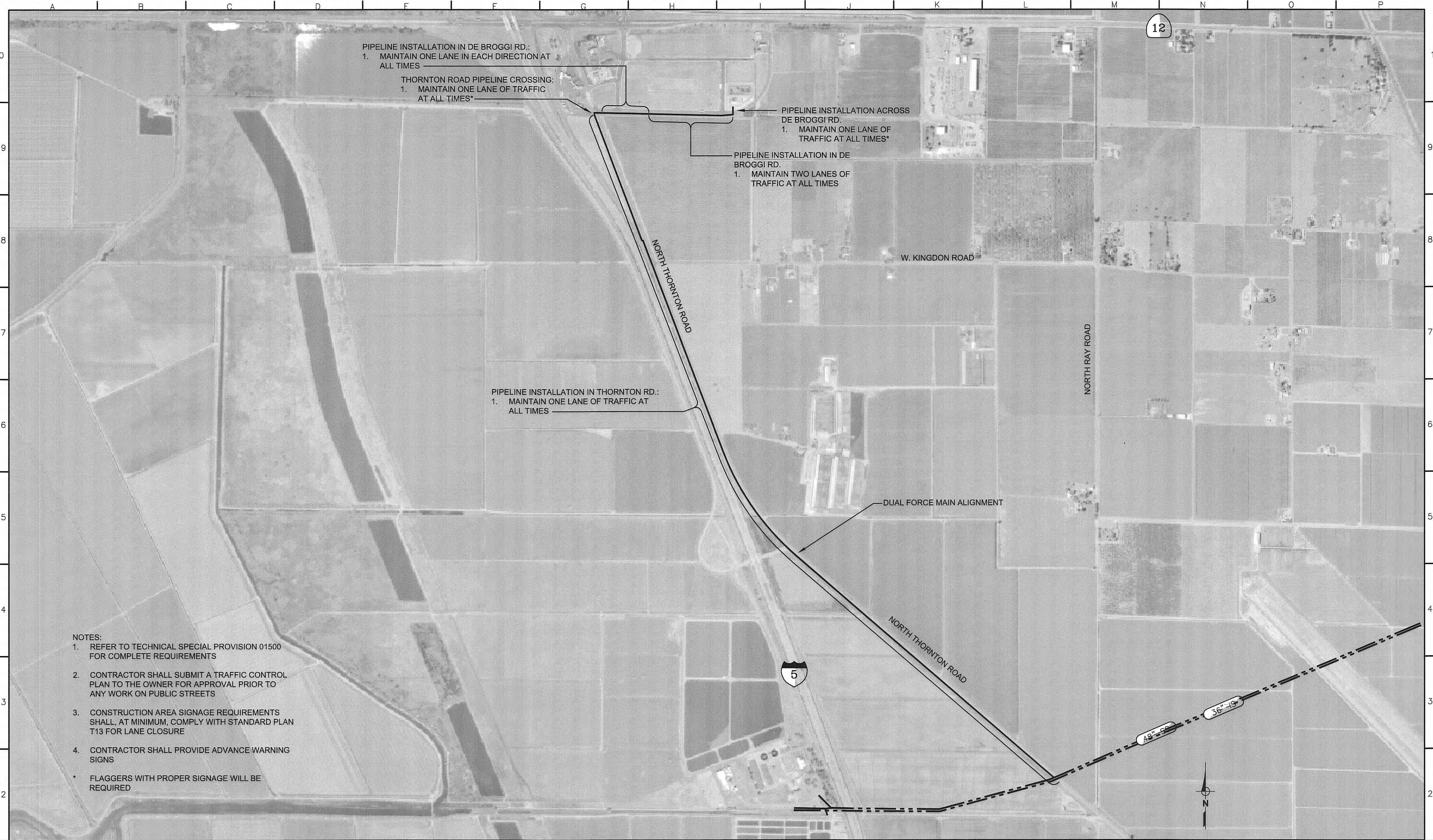
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REVISION

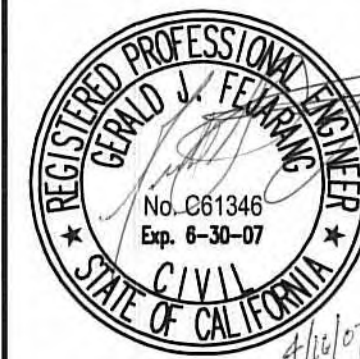


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- NOTES:
- REFER TO TECHNICAL SPECIAL PROVISION 01500 FOR COMPLETE REQUIREMENTS
  - CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE OWNER FOR APPROVAL PRIOR TO ANY WORK ON PUBLIC STREETS
  - CONSTRUCTION AREA SIGNAGE REQUIREMENTS SHALL, AT MINIMUM, COMPLY WITH STANDARD PLAN T13 FOR LANE CLOSURE
  - CONTRACTOR SHALL PROVIDE ADVANCE WARNING SIGNS
- \* FLAGGERS WITH PROPER SIGNAGE WILL BE REQUIRED



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 APPROVED : \_\_\_\_\_  
 DATE : \_\_\_\_\_

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 IF NOT SCALE ACCORDINGLY

SCALE : \_\_\_\_\_ NTS  
 DRAWN BY : \_\_\_\_\_ DTD  
 PROJ. MGR. : \_\_\_\_\_ GJF

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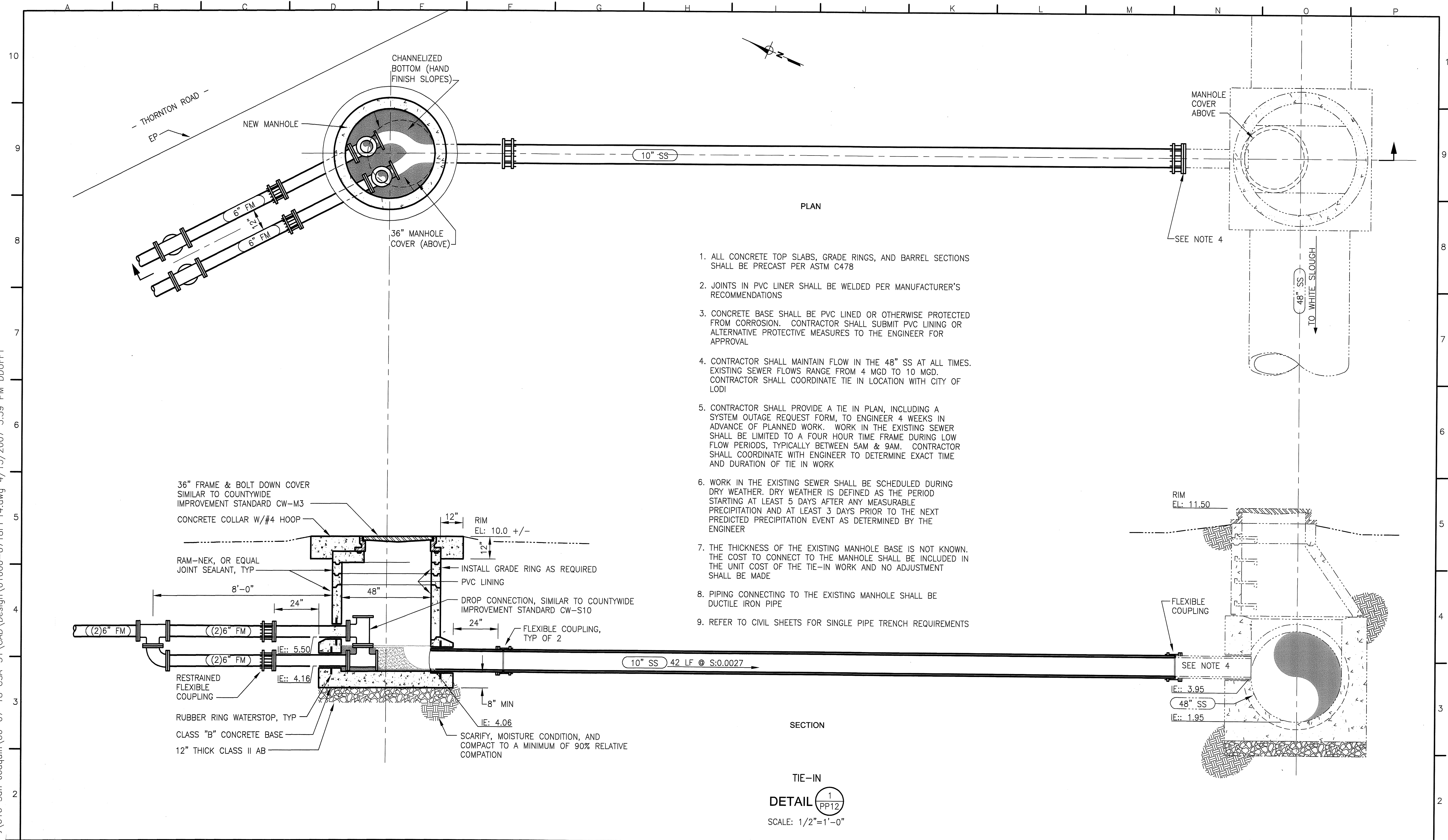
**County of San Joaquin**  
**Flag City Pump Station & Force Main**  
**TRAFFIC CONTROL REQUIREMENTS**

JOB NUMBER 010-00-07-18
DRAWING NUMBER T1
SHEET NUMBER 18 OF 44
REVISION



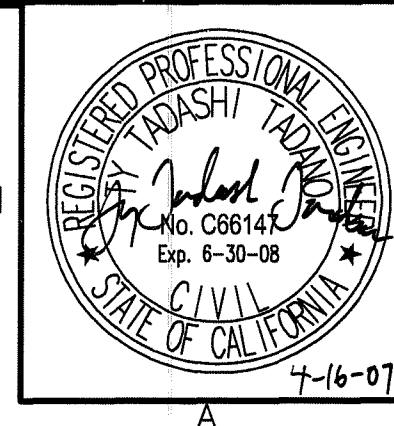
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SU 4485



1. ALL CONCRETE TOP SLABS, GRADE RINGS, AND BARREL SECTIONS SHALL BE PRECAST PER ASTM C478
2. JOINTS IN PVC LINER SHALL BE WELDED PER MANUFACTURER'S RECOMMENDATIONS
3. CONCRETE BASE SHALL BE PVC LINED OR OTHERWISE PROTECTED FROM CORROSION. CONTRACTOR SHALL SUBMIT PVC LINING OR ALTERNATIVE PROTECTIVE MEASURES TO THE ENGINEER FOR APPROVAL
4. CONTRACTOR SHALL MAINTAIN FLOW IN THE 48" SS AT ALL TIMES. EXISTING SEWER FLOWS RANGE FROM 4 MGD TO 10 MGD. CONTRACTOR SHALL COORDINATE TIE IN LOCATION WITH CITY OF LODI
5. CONTRACTOR SHALL PROVIDE A TIE IN PLAN, INCLUDING A SYSTEM OUTAGE REQUEST FORM, TO ENGINEER 4 WEEKS IN ADVANCE OF PLANNED WORK. WORK IN THE EXISTING SEWER SHALL BE LIMITED TO A FOUR HOUR TIME FRAME DURING LOW FLOW PERIODS, TYPICALLY BETWEEN 5AM & 9AM. CONTRACTOR SHALL COORDINATE WITH ENGINEER TO DETERMINE EXACT TIME AND DURATION OF TIE IN WORK
6. WORK IN THE EXISTING SEWER SHALL BE SCHEDULED DURING DRY WEATHER. DRY WEATHER IS DEFINED AS THE PERIOD STARTING AT LEAST 5 DAYS AFTER ANY MEASURABLE PRECIPITATION AND AT LEAST 3 DAYS PRIOR TO THE NEXT PREDICTED PRECIPITATION EVENT AS DETERMINED BY THE ENGINEER
7. THE THICKNESS OF THE EXISTING MANHOLE BASE IS NOT KNOWN. THE COST TO CONNECT TO THE MANHOLE SHALL BE INCLUDED IN THE UNIT COST OF THE TIE-IN WORK AND NO ADJUSTMENT SHALL BE MADE
8. PIPING CONNECTING TO THE EXISTING MANHOLE SHALL BE DUCTILE IRON PIPE
9. REFER TO CIVIL SHEETS FOR SINGLE PIPE TRENCH REQUIREMENTS

TIE-IN  
 DETAIL 1  
 PP12  
 SCALE: 1/2"=1'-0"



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		DRAWN BY : DTD
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		PROJ. MGR. : GJF

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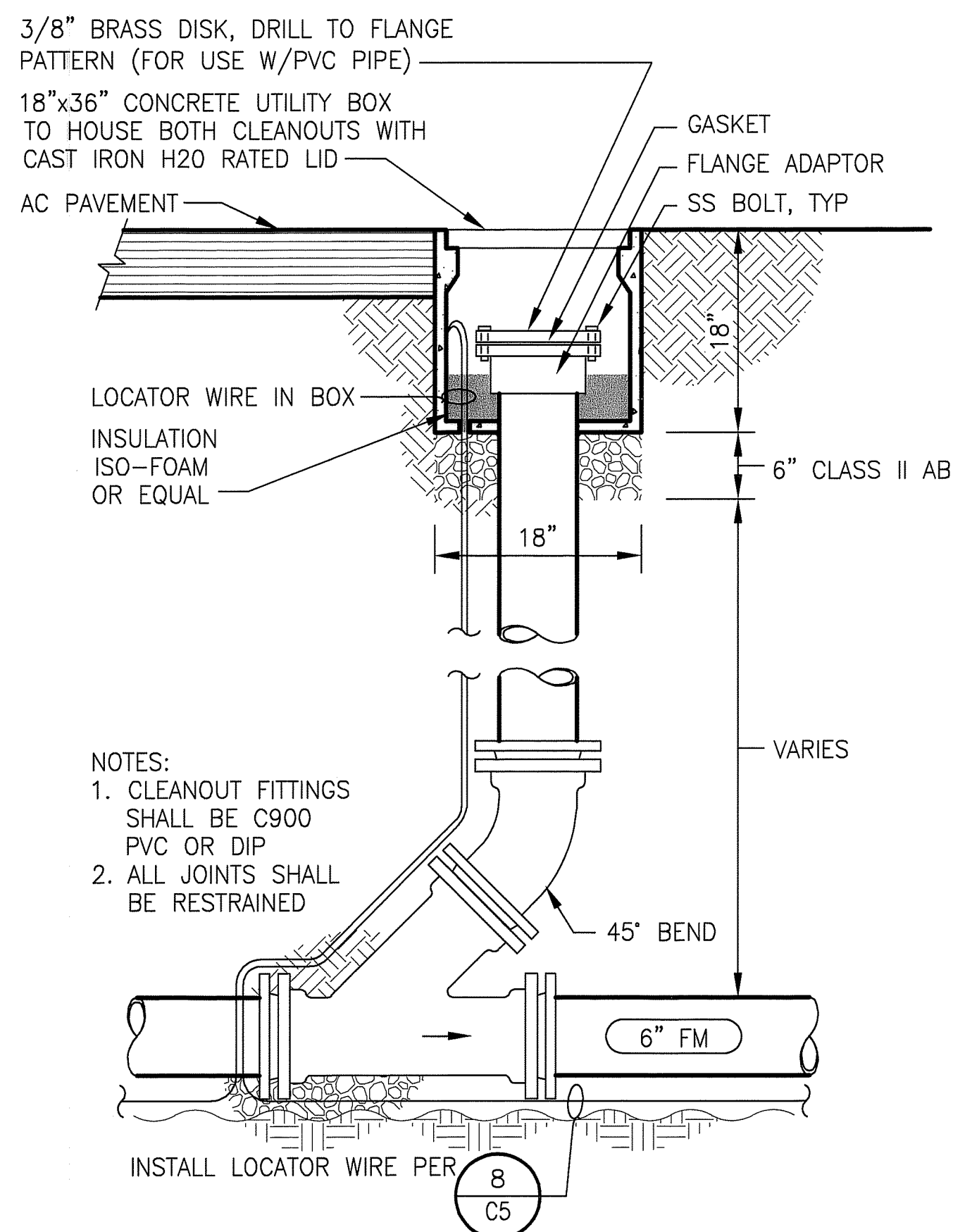
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County of San Joaquin  
 Flag City Pump Station & Force Main

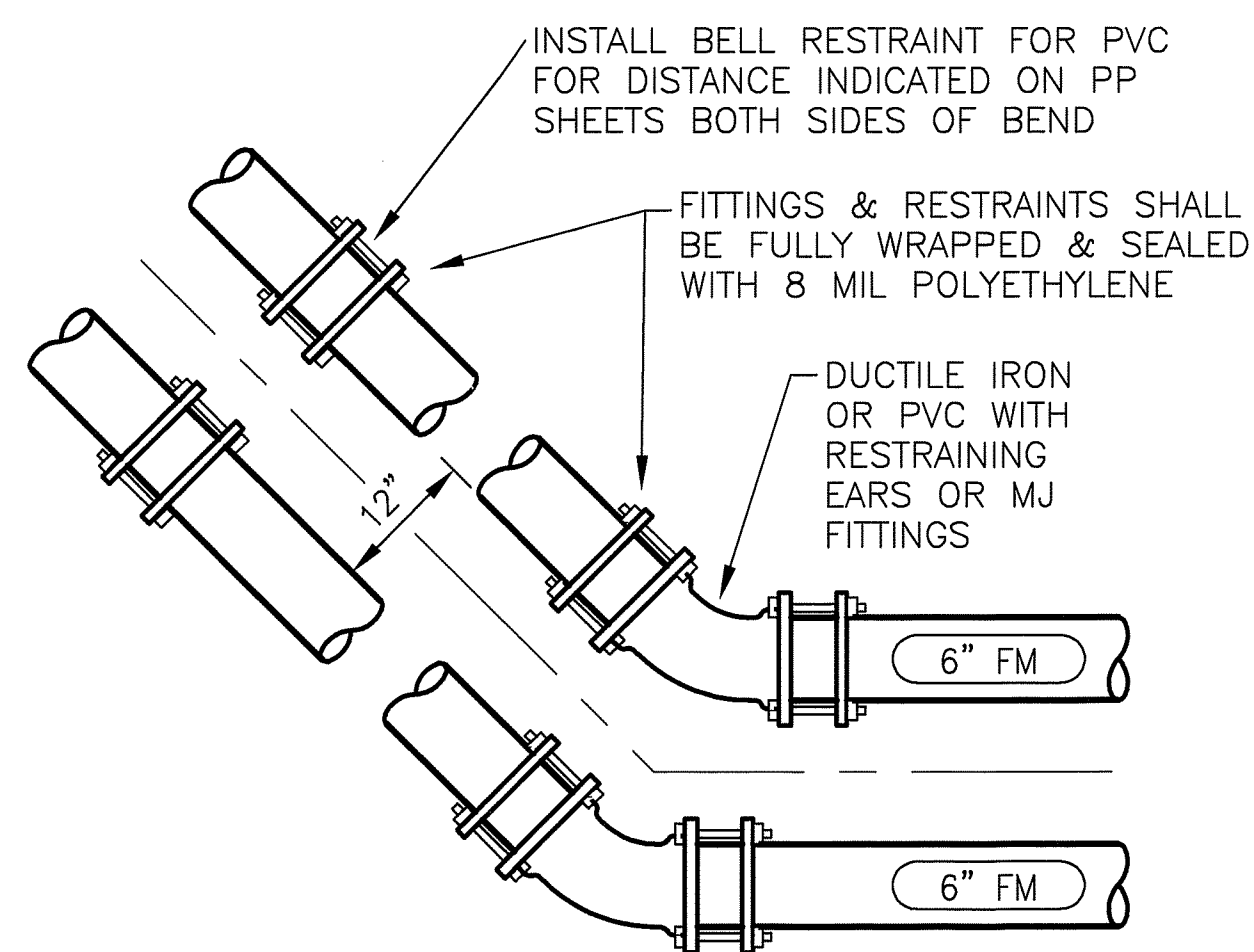
TIE-IN  
 EXISTING MANHOLE

JOB NUMBER 010-00-07-18
DRAWING NUMBER PP14
SHEET NUMBER 17 OF 44
REVISION

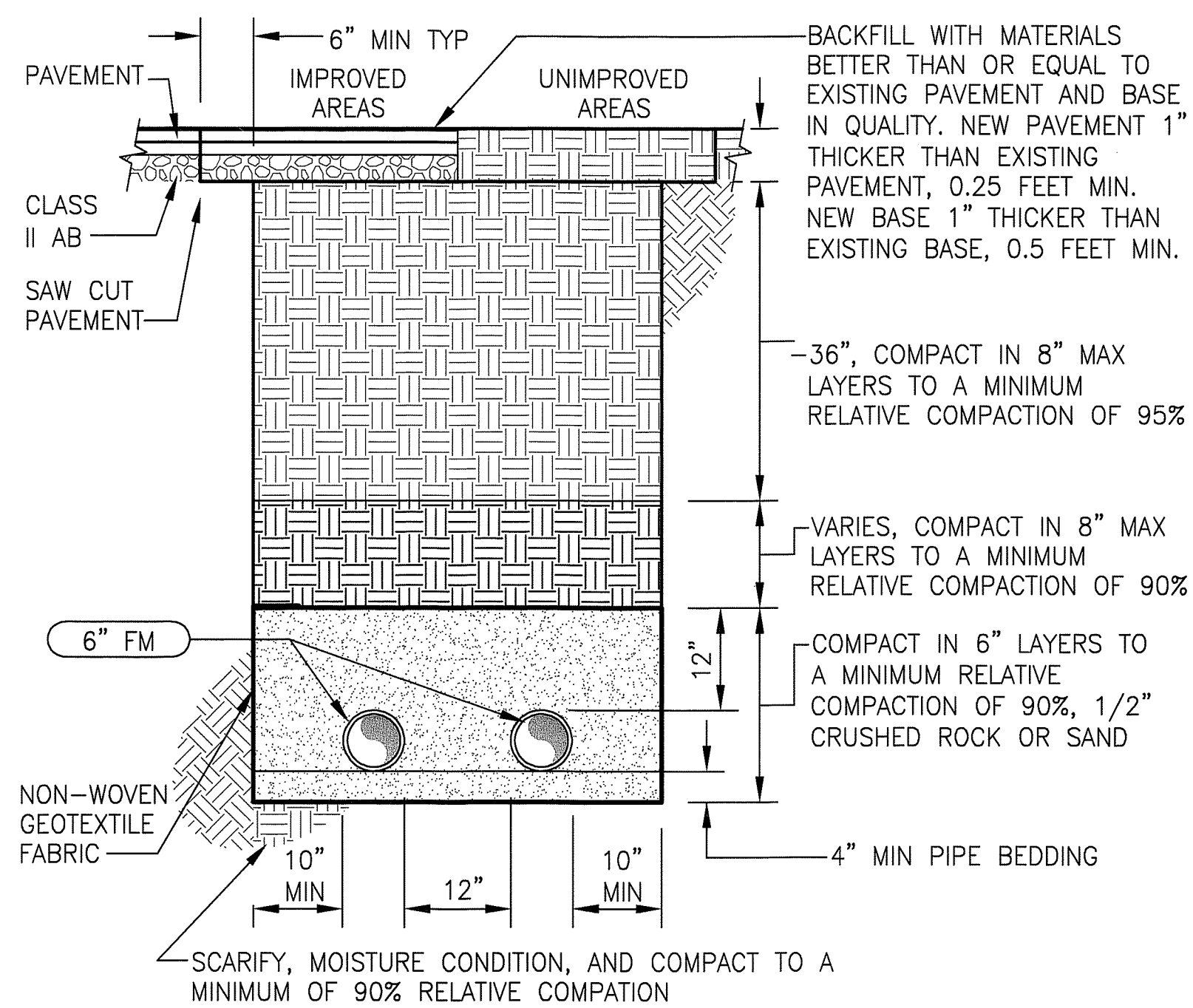
NO.	ZONE	REVISIONS	BY	DATE



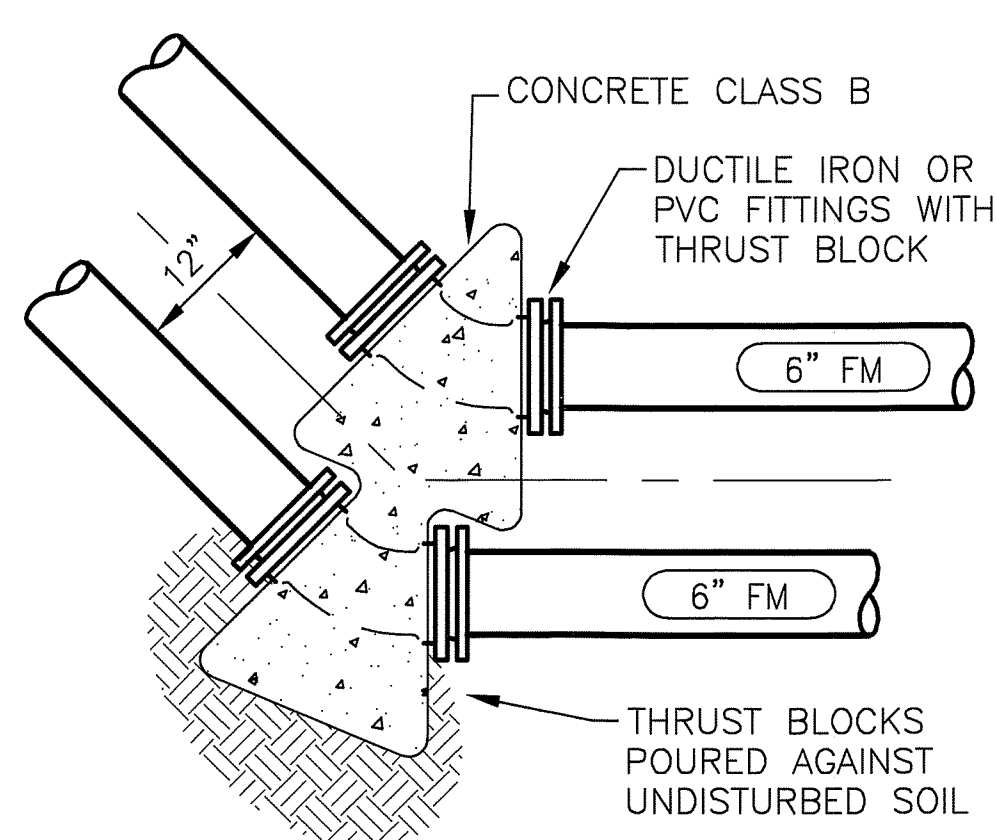
CLEANOUT  
 DETAIL 1 VAR  
 SCALE: 1"=1'-0"



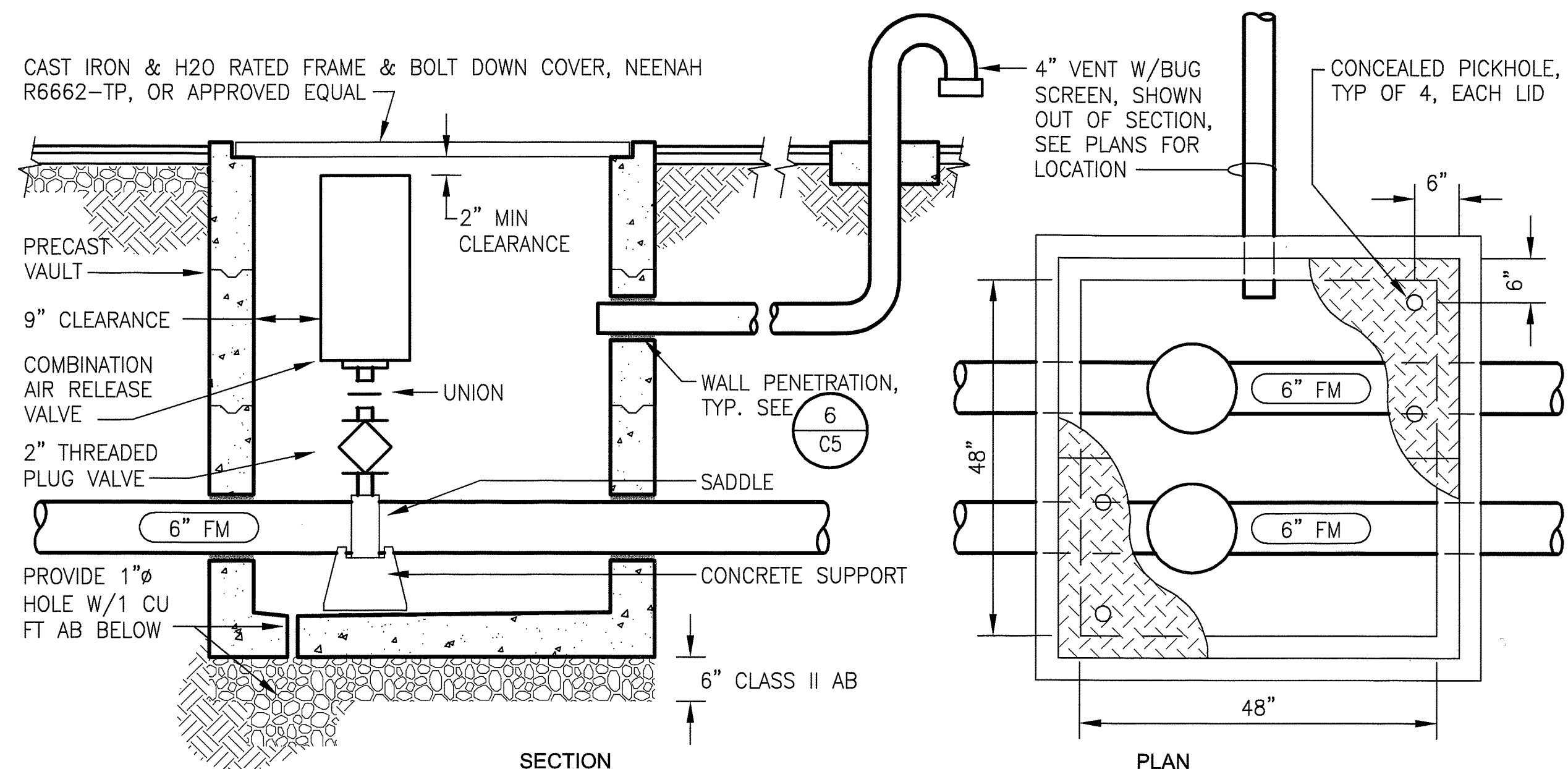
6" PIPE RESTRAINT - JOINT TRENCH  
 DETAIL 4 VAR  
 SCALE: 3/4"=1'-0"



FORCE MAIN TRENCH  
 DETAIL 2 VAR  
 SCALE: 3/4"=1'-0"

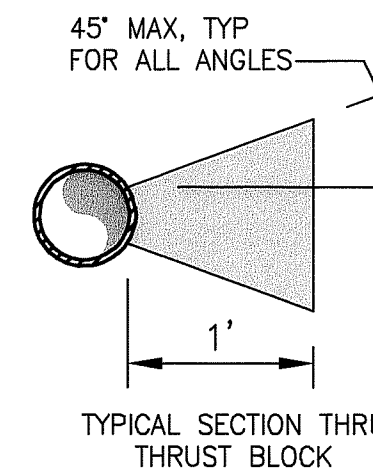
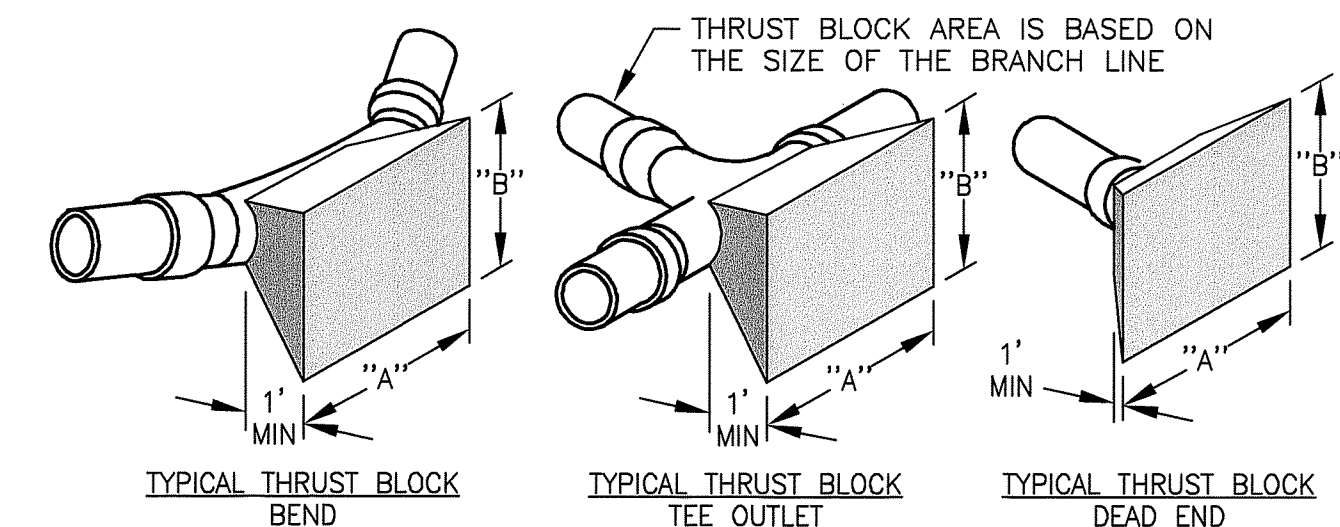


THRUST BLOCK FOR HORIZONTAL BENDS  
 DETAIL 5 VAR  
 SCALE: 3/4"=1'-0"



- NOTES:  
 1. CONTRACTOR SHALL PROVIDE SUPPORT FOR AIR VALVE  
 2. CAST IRON COVER SHALL HAVE BITUMINOUS COATING PER AWWA C203  
 3. CAST IRON SHALL BE PER ASTM A-48-CLASS 30  
 4. PROVIDE MACHINED SEATING SURFACES FOR FRAME & COVER  
 5. PROVIDE FLEXIBLE EXPANSION JOINTS APPROXIMATELY 3 FEET FROM CARV VAULT ON BOTH PIPELINES ON BOTH SIDES  
 6. SCARIFY, MOISTURE CONDITION, AND COMPACT SUBGRADE TO A MINIMUM OF 90% RELATIVE COMPACTION

COMBINATION AIR RELEASE VALVE  
 DETAIL 3 VAR  
 SCALE: 3/4"=1'-0"



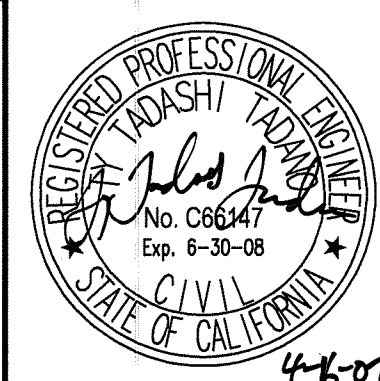
- NOTES:  
 1. ALL THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL  
 2. CONCRETE SHALL BE CLASS B

FITTINGS	THRUST BLOCK AREA REQUIRED	
	ALLOWABLE SOIL BEARING 1000 LBS PER SQ. FT.	
	"A"	"B"
6" LINE OR SMALLER		
22 1/2'	1'-6"	1'-6"
45'	2'-0"	2'-0"
90'	3'-0"	2'-6"
TEE OUTLET DEAD END	2'-6"	2'-0"
8" LINE		
22 1/2'	2'-0"	2'-0"
45'	3'-0"	2'-6"
90'	4'-0"	3'-0"
TEE OUTLET DEAD END	3'-0"	3'-0"

TYPICAL THRUST BLOCK  
 DETAIL 7 VAR  
 NTS

PIPE SIZE & TYPE	MINIMUM REQUIRED LENGTH OF PIPE TO BE RESTRAINED EACH SIDE OF BEND				
	90 BENDS	78.75 BENDS	45 BENDS	22.5 BENDS	11.25 BENDS
6" C900 (MECHANICALLY RESTRAINED JOINTS)	44'	36'	18'	9'	4'

6" PIPE RESTRAINT - MIN. LENGTH  
 DETAIL 6 VAR  
 NTS



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 DATE : \_\_\_\_\_

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 PROJ. MGR. : GJF

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 PIPELINE DETAILS

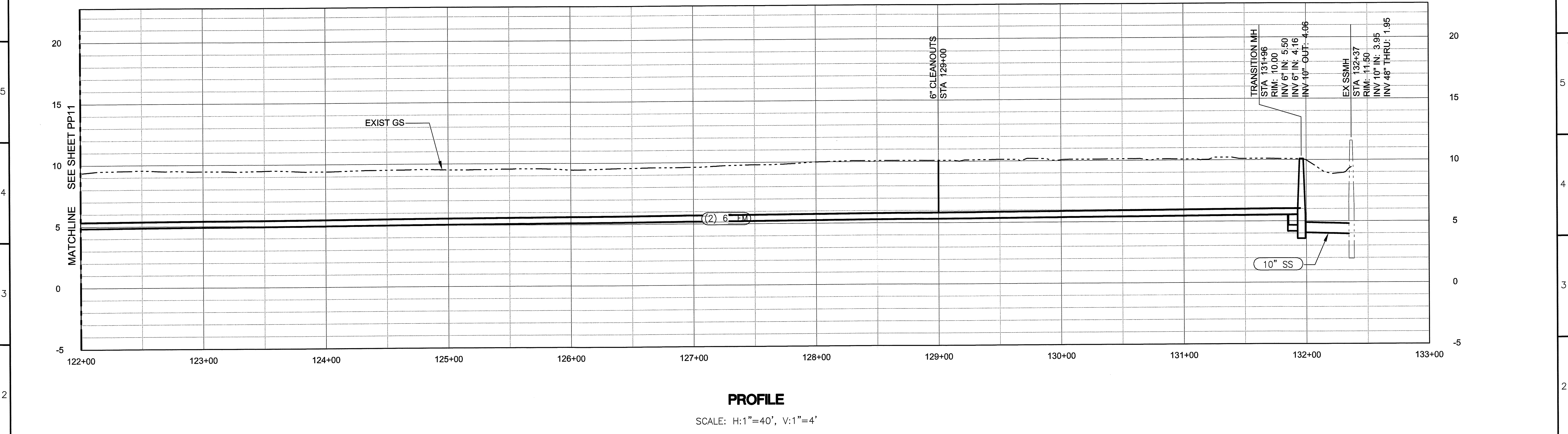
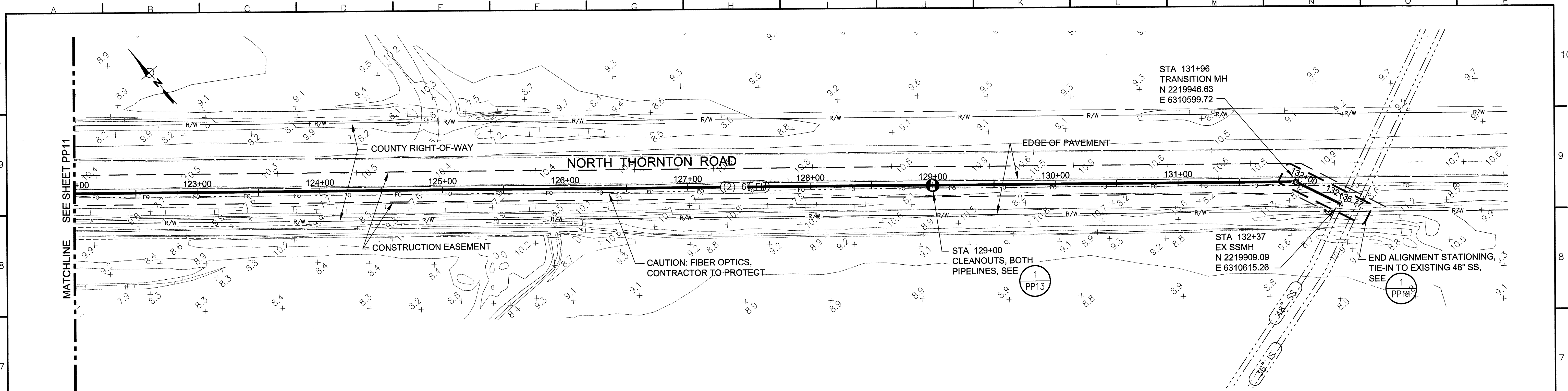
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 DRAWING NUMBER PP13  
 SHEET NUMBER 16 OF 44  
 REVISION

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SU 4486

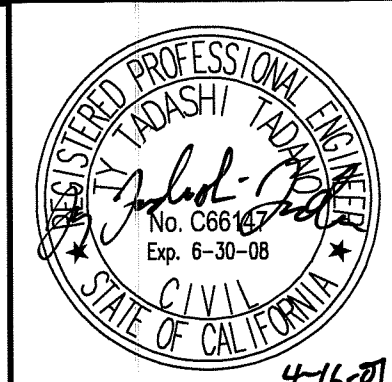


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**PROFILE**  
SCALE: H:1"=40', V:1"=4'

SU 4487



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APPROVED : \_\_\_\_\_  
DATE : \_\_\_\_\_

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DESIGNED BY : MKT  
PROJ. MGR. : GJE

NO.	ZONE	REVISIONS	BY	DATE

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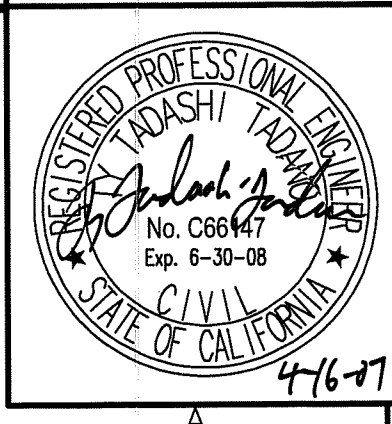
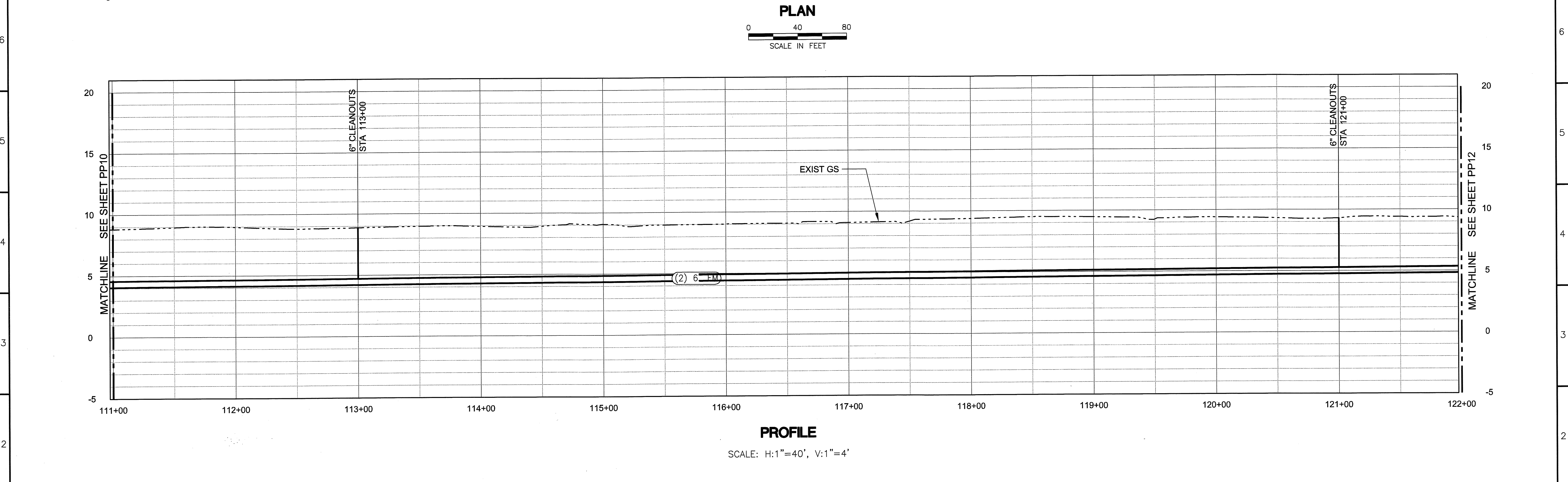
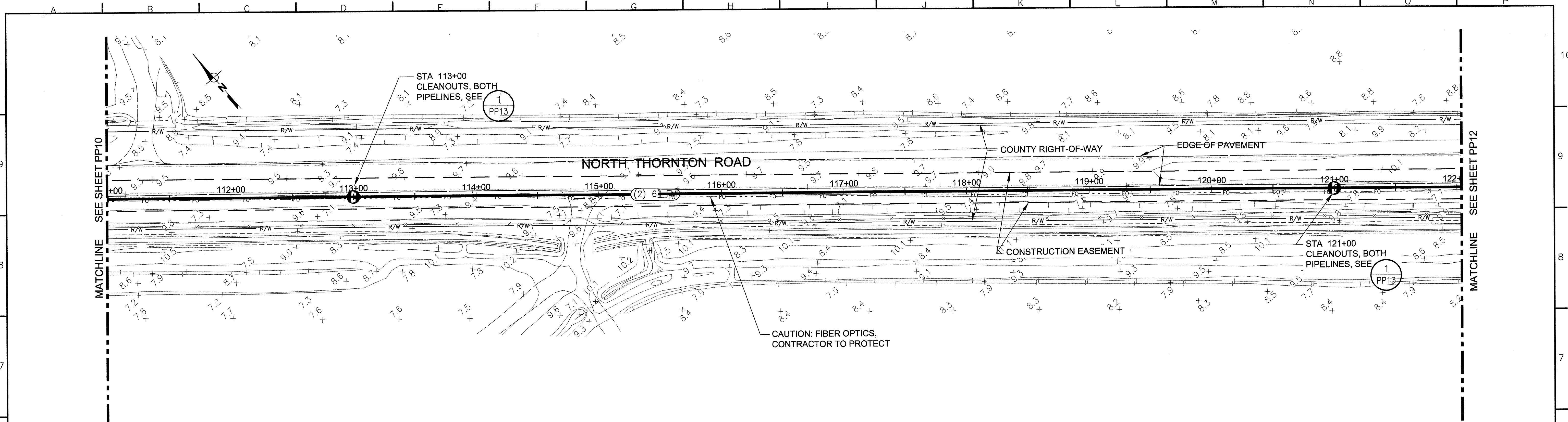
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**PLAN & PROFILE 12**  
**STA 122+00 TO STA 132+37**

JOB NUMBER  
010-00-07-18  
DRAWING NUMBER  
**PP12**  
SHEET NUMBER  
**15 OF 44**  
REVISION

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SK 4488



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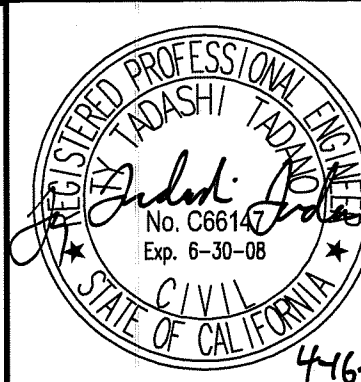
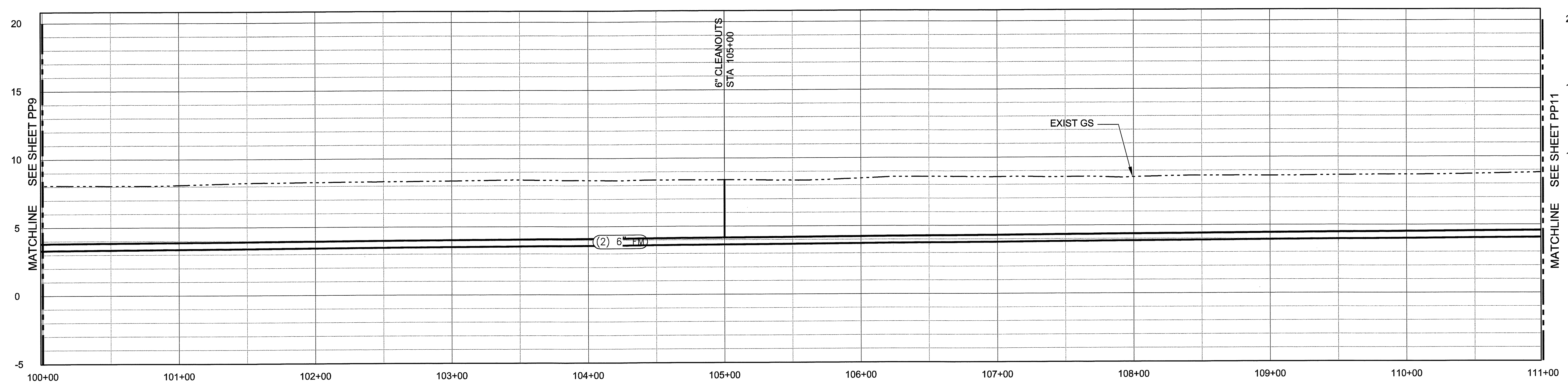
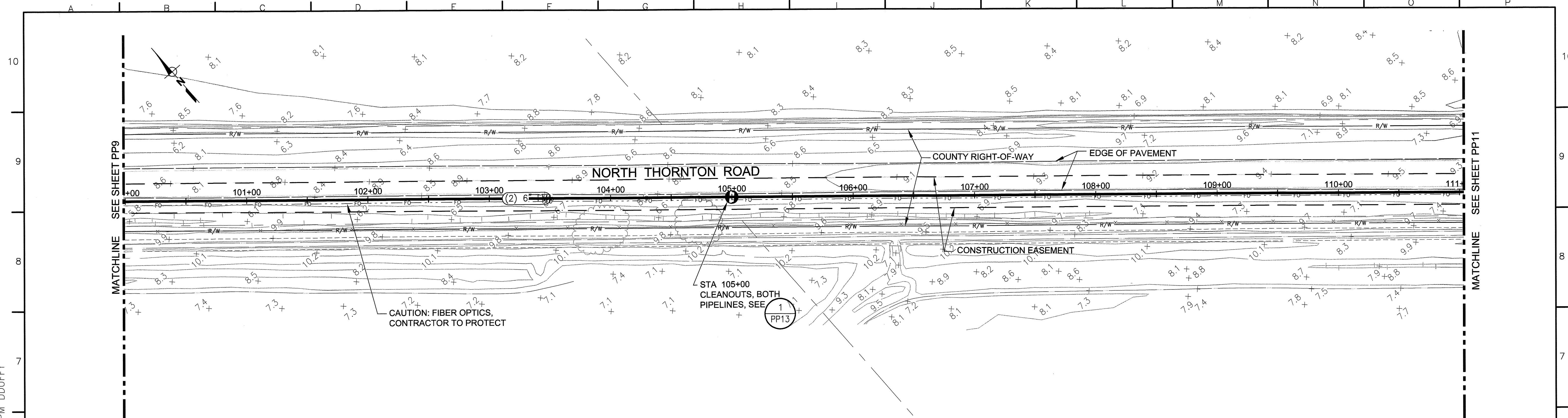
**County of San Joaquin**  
**Flag City Pump Station & Force Main**  
**PLAN & PROFILE 11**  
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JOB NUMBER 010-00-07-18
DRAWING NUMBER PP11
SHEET NUMBER 14 OF 44
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SU 4489



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**Flag City Pump Station & Force Main**  
**PLAN & PROFILE 10**  
**STA 100+00 TO STA 111+00**

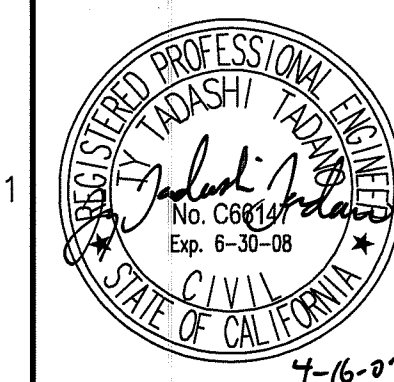
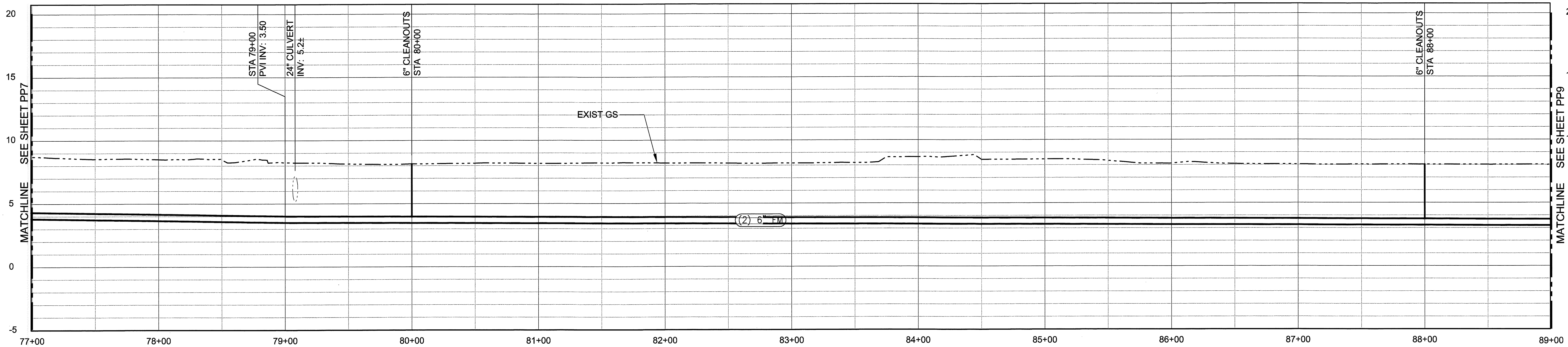
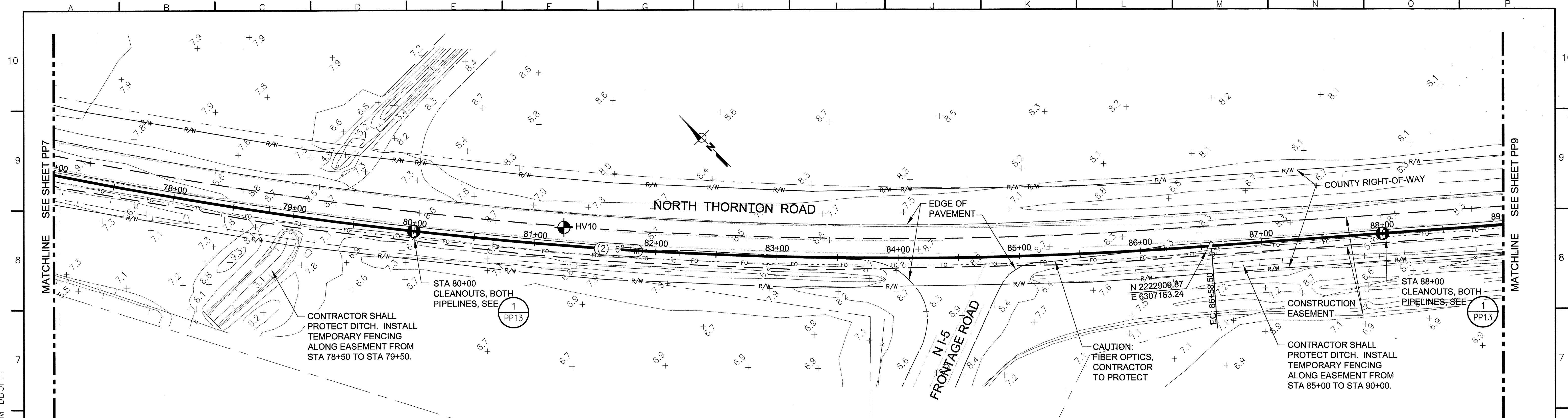
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REVISION





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SU 4491



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**PLAN & PROFILE 8**  
**STA 77+00 TO STA 89+00**

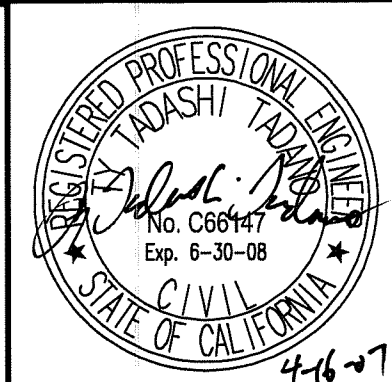
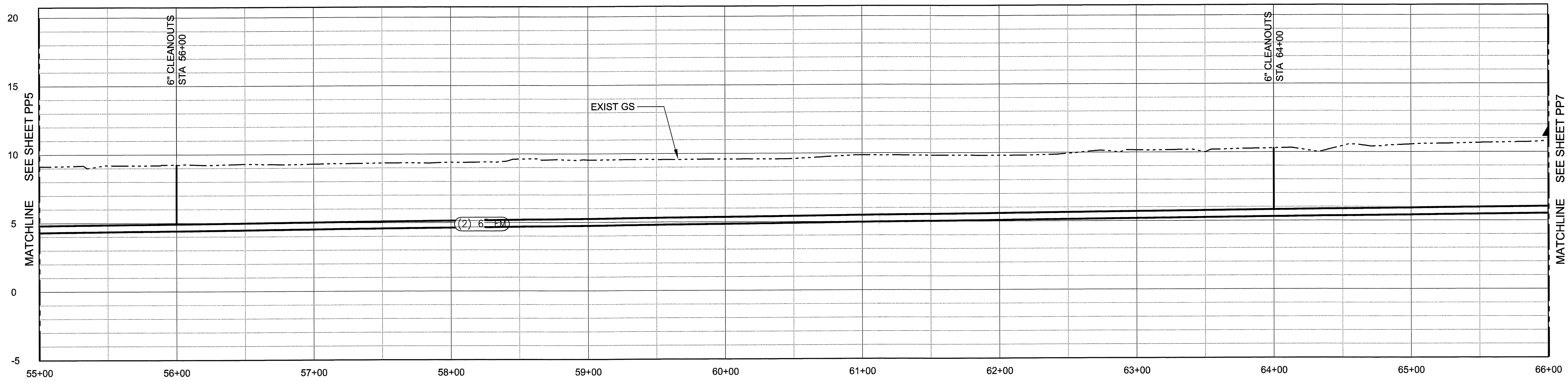
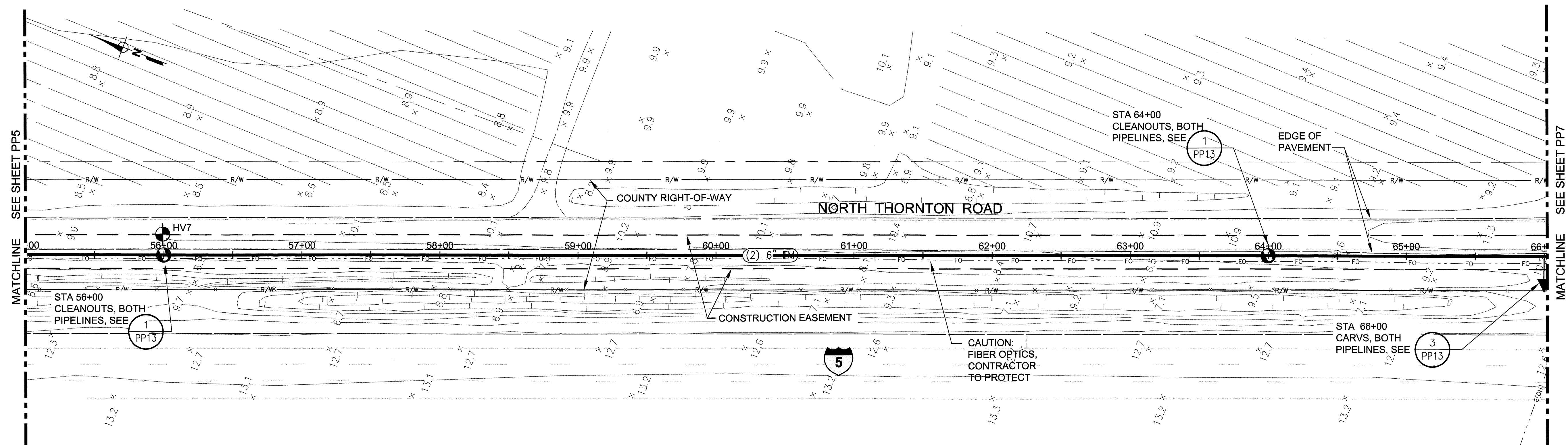
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REVISION





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SU 4493



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**PLAN & PROFILE 6**  
**STA 55+00 TO STA 66+00**

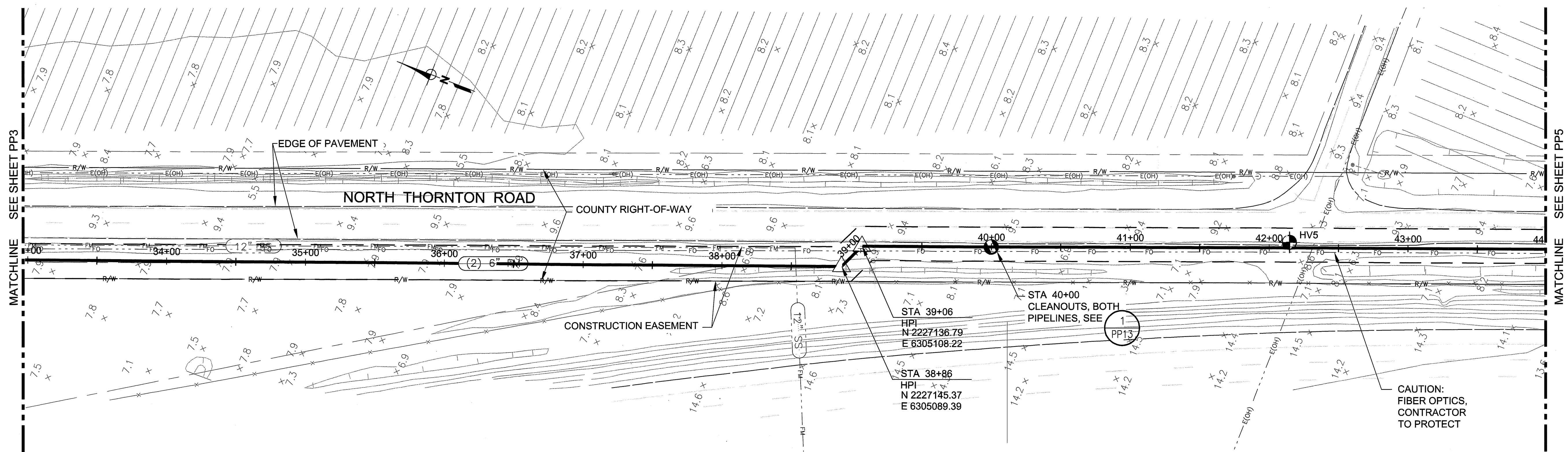
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SHEET NUMBER	9 OF 44
REVISION	



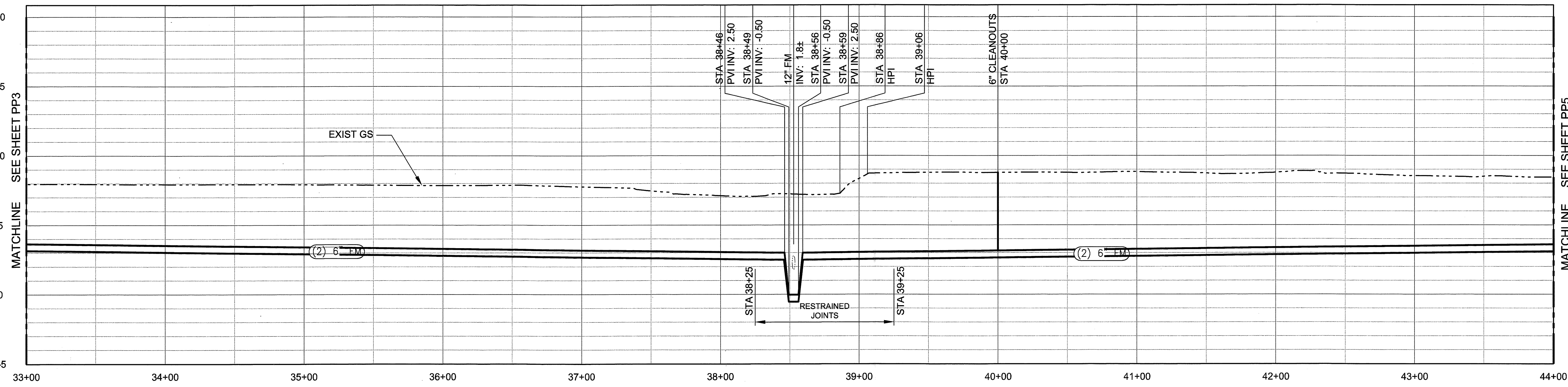


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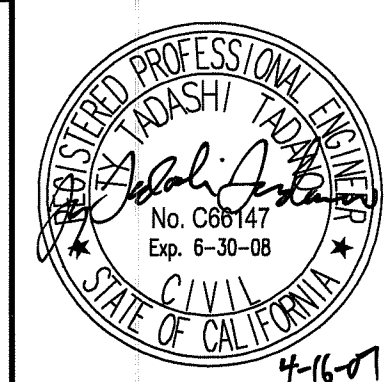
SU 4495



**PLAN**  
0 40 80  
SCALE IN FEET



**PROFILE**  
SCALE: H:1"=40', V:1"=4'



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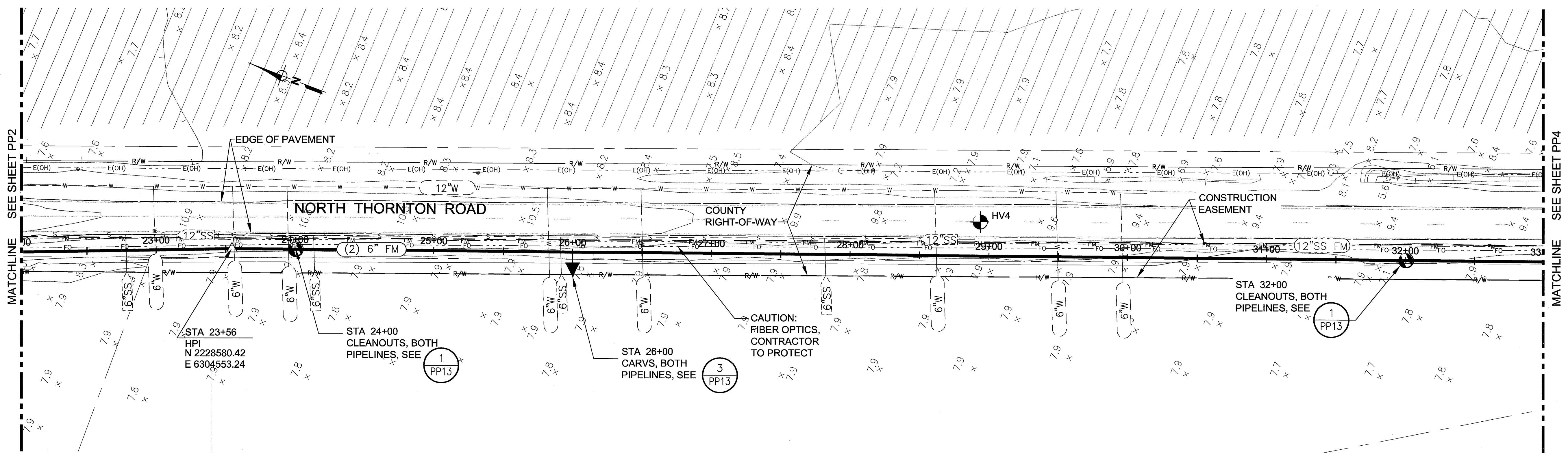
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**PLAN & PROFILE 4**  
**STA 33+00 TO STA 44+00**

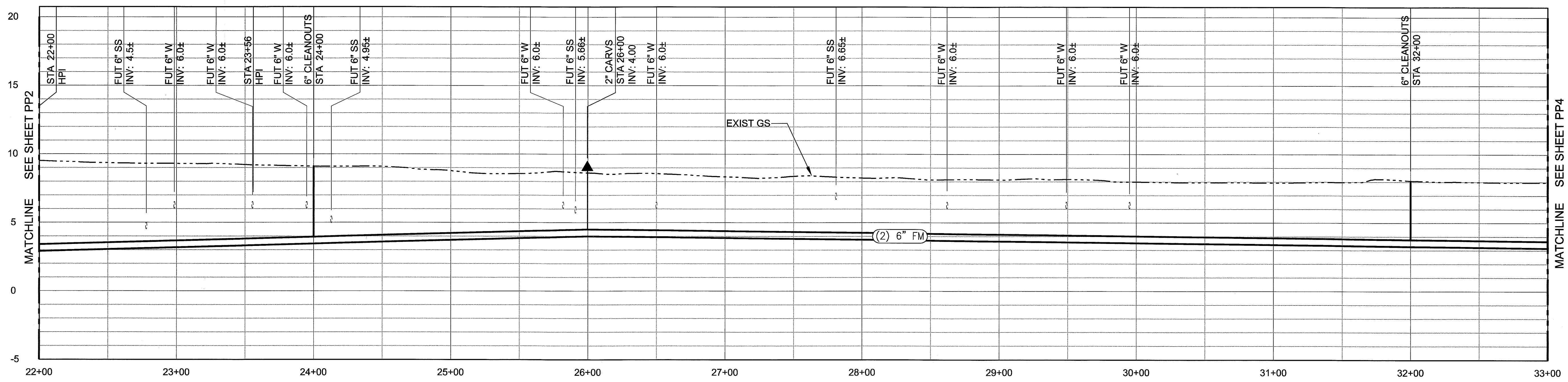
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DRAWING NUMBER <b>PP4</b>
SHEET NUMBER <b>7 OF 44</b>
REVISION

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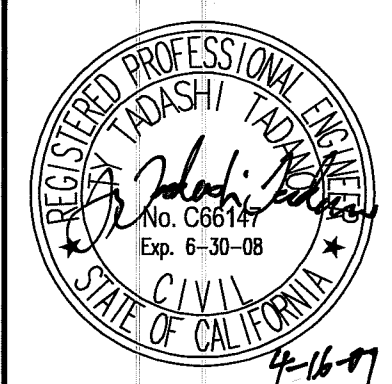
SU 4496



**PLAN**  
0 40 80  
SCALE IN FEET



**PROFILE**  
SCALE: H:1"=40', V:1"=4'



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PROJ. MGR. : **GJF**

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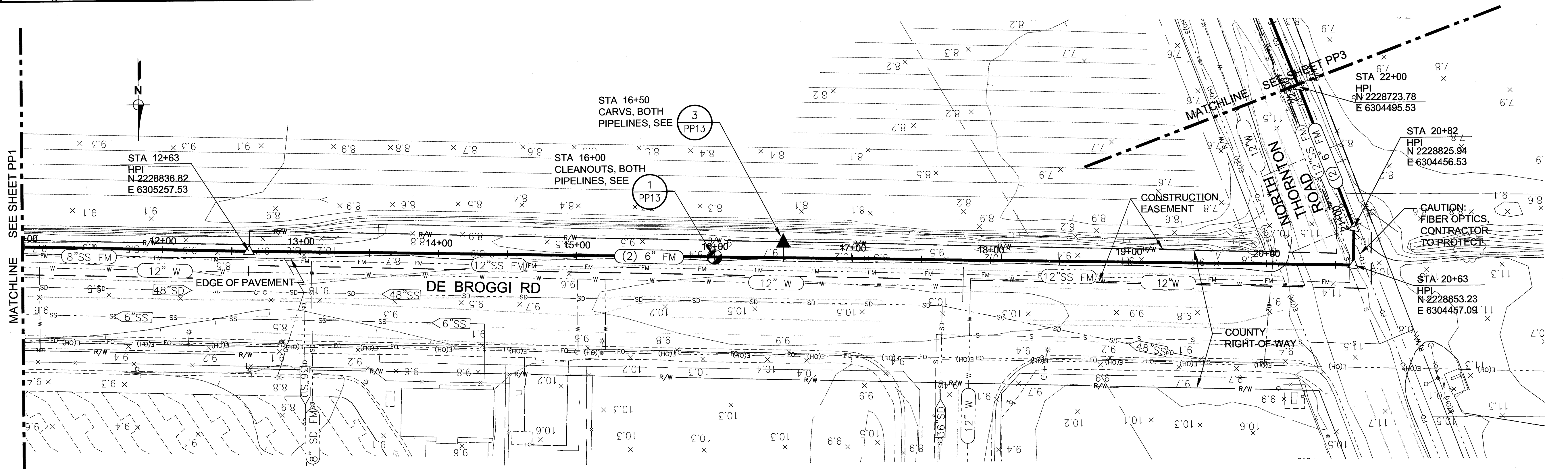
**County of San Joaquin**  
**Flag City Pump Station & Force Main**  
**PLAN & PROFILE 3**  
**STA 22+00 TO STA 33+00**

JOB NUMBER  
010-00-07-18  
DRAWING NUMBER  
**PP3**  
SHEET NUMBER  
**6 OF 44**  
REVISION

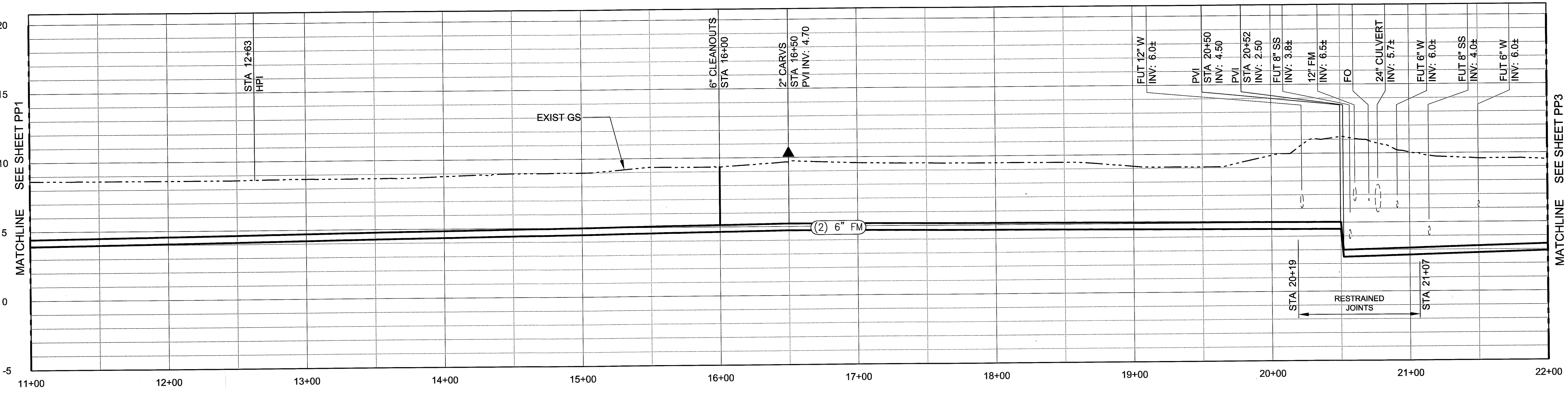


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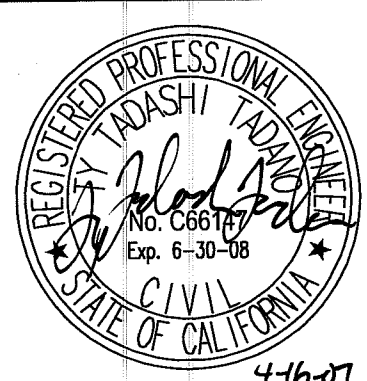
SU 4497



**PLAN**  
0 40 80  
SCALE IN FEET



**PROFILE**  
SCALE: H:1"=40', V:1"=4'

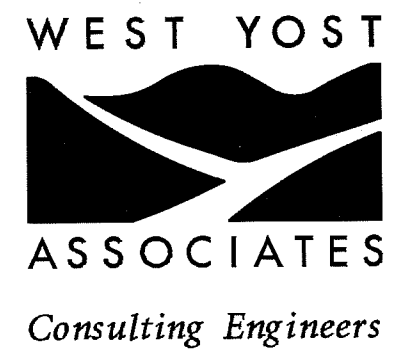


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DATE : \_\_\_\_\_

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DESIGNED BY : MKT  
PROJ. MGR. : GJF

NO.	ZONE	REVISIONS	BY	DATE



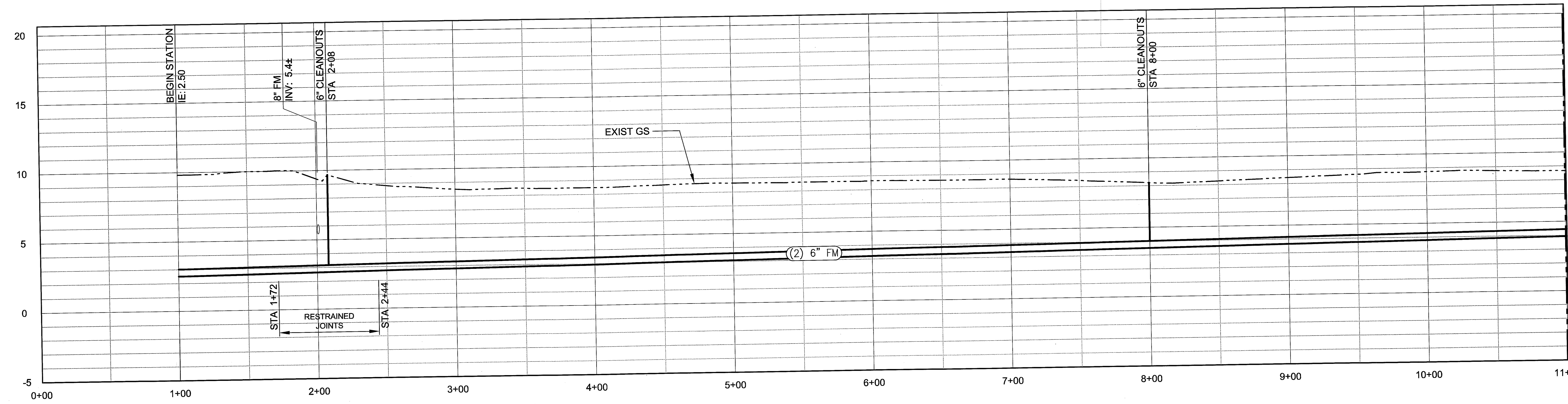
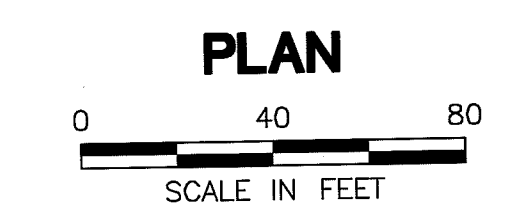
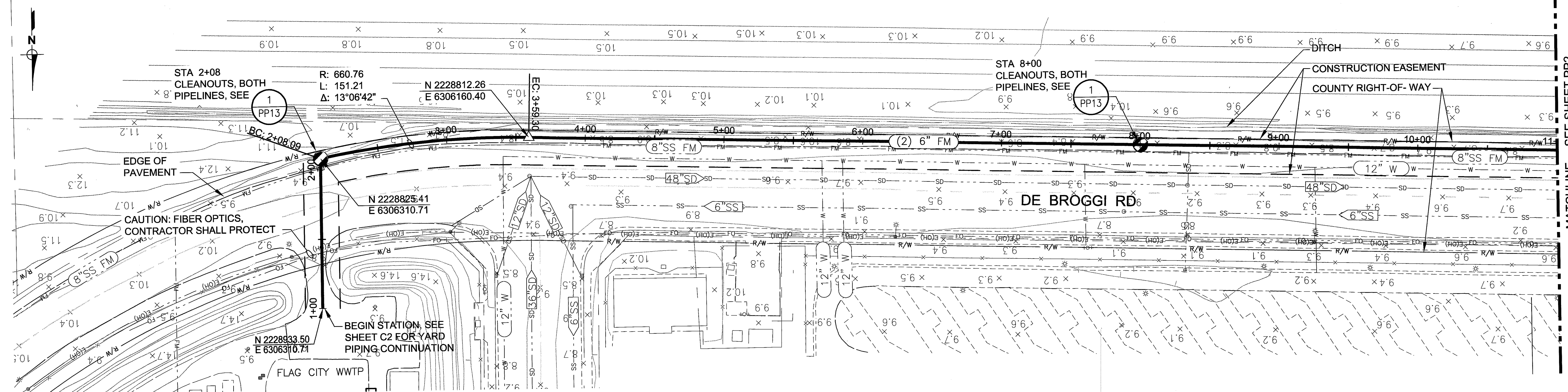
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**Flag City Pump Station & Force Main**  
**PLAN & PROFILE 2**  
**STA 11+00 TO STA 22+00**

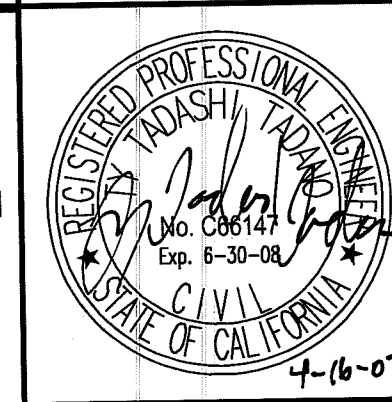
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DRAWING NUMBER PP2
SHEET NUMBER 5 OF 44
REVISION

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SW 4498



PROFILE  
SCALE: H:1"=40', V:1"=4'



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APPROVED : _____	DRAWN BY : DTD
DATE : _____	DESIGNED BY : MKT
	PROJ. MGR. : GJE

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**County of San Joaquin**  
**Flag City Pump Station & Force Main**  
 PLAN & PROFILE 1  
 STA 0+00 TO STA 11+00

JOB NUMBER 010-00-07-18
DRAWING NUMBER PP1
SHEET NUMBER 4 OF 44
REVISION

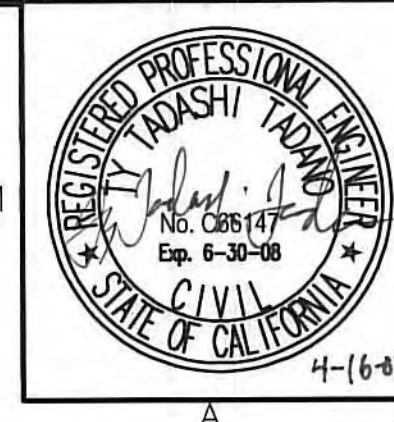


SURVEY CONTROL POINTS			
POINT*	NORTHING	EASTING	ELEVATION
HV4	2228083.90	6304765.04	9.56
HV5	2226850.56	6305221.45	9.00
HV7	2225559.67	6305722.25	10.01
HV8	2224540.41	6306555.58	10.13
HV10	2223298.73	6306797.42	8.80
HV11	2222112.47	6307358.21	9.10
HV15	2219454.15	6309085.51	8.60

\*MAGNAIL SET IN PAVEMENT AT CENTER OF AERIAL PREMARK



SU 4499  
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SUBMITTED : _____	THIS LINE IS 1 INCH AT FULL SCALE IF NOT SCALE ACCORDINGLY						
DATE : _____	SCALE : _____ NTS						
APPROVED : _____	DRAWN BY : _____ DTD						
DATE : _____	DESIGNED BY : _____ TTT						
	PROJ. MGR. : _____ GJF						
		NO.	ZONE	REVISIONS	BY	DATE	

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


County of San Joaquin  
**Flag City Pump Station & Force Main**  
 PIPE ALIGNMENT  
 DRAWING INDEX

JOB NUMBER 010-00-07-18
DRAWING NUMBER <b>G3</b>
SHEET NUMBER <b>3 OF 44</b>
REVISION







