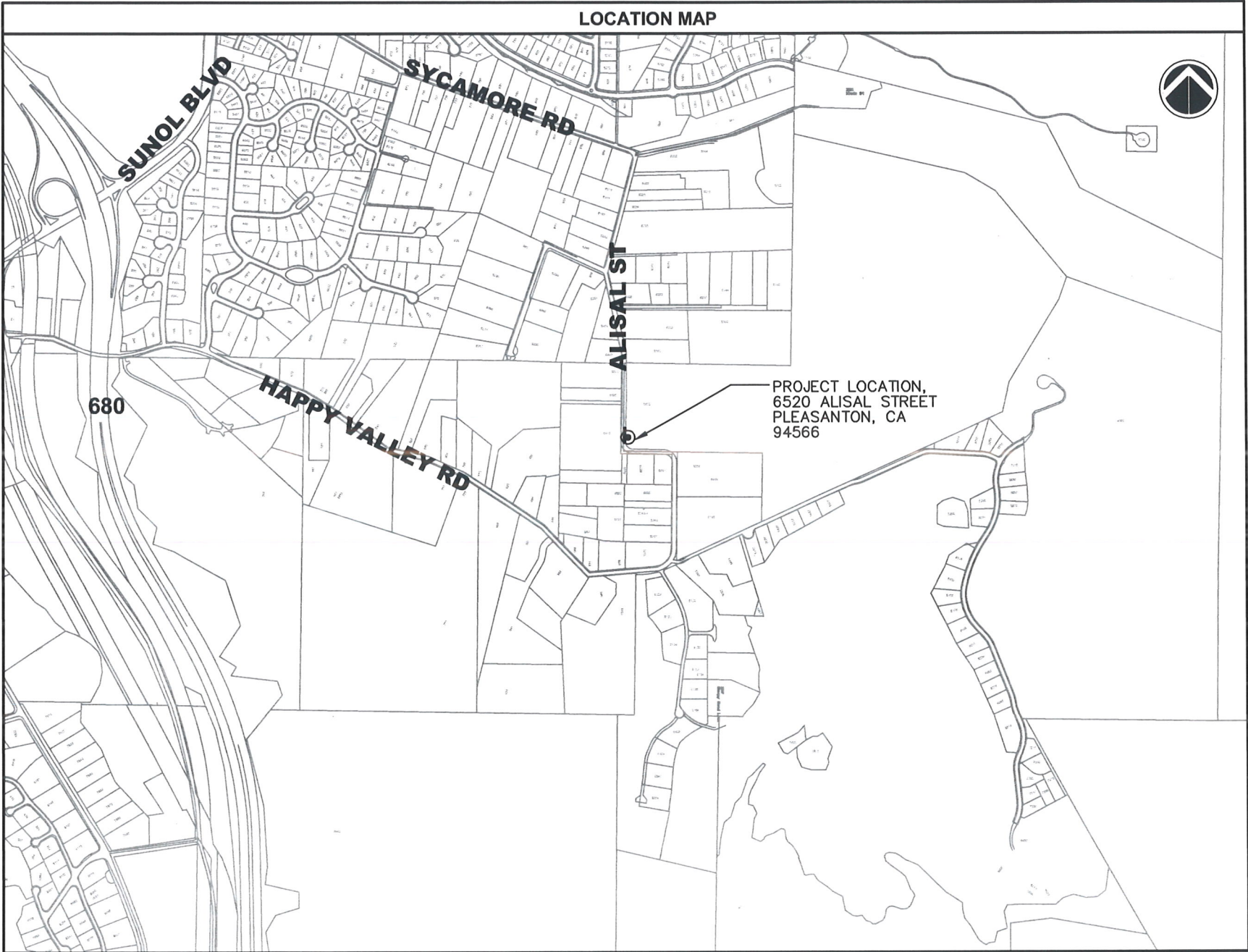


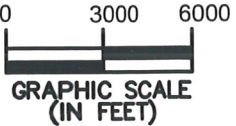
CITY OF PLEASANTON
PUBLIC WORKS DEPARTMENT, ENGINEERING DIVISION
SEWER LIFT STATION S-14 ELECTRICAL IMPROVEMENTS - CIP NO. 24265
DECEMBER 2024



SHEET INDEX		
SHEET NO.	DRAWING NO.	SHEET TITLE
1	G-1	PROJECT TITLE SHEET
2	E-1	ELECTRICAL SYMBOLS AND ABBREVIATIONS
3	E-2	ELECTRICAL ONE-LINE AND PEDESTAL ELEVATION
4	E-3	LOAD CALCULATION AND PANELBOARD SCHEDULE
5	E-4	PUMP ELEMENTARY DIAGRAM
6	E-5	BACKUP CONTROLS AND VAULT PHOTOS
7	E-6	PLC POWER DISTRIBUTION AND BACKPAN ELEVATION
8	E-7	EXAMPLE PLC WIRING DIAGRAMS - ANALOG I/O
9	E-8	EXAMPLE PLC WIRING DIAGRAMS - DIGITAL I/O
10	E-9	EXISTING LIFT STATION DEMOLITION PLAN
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16	I-2	LIFT STATION P&ID
17	S-1	GENERAL STRUCTURAL NOTES
18	S-2	STRUCTURAL PLAN AND SECTION
19	C-1	SITE GRADING PLAN

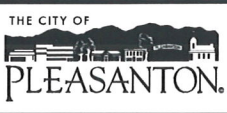
ACCEPTANCE OF PLAN

Adam Nelson 1/10/25
CITY ENGINEER DATE



FRISCH ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
13405 FOLSOM BLVD, UNIT 600
FOLSOM, CA 95630
PH 916 353 1025
WWW.FRISCHENGINEERING.COM
FILE: 24026-E00.DWG
DATE: DEC 11, 2024 TIME: 5:42:23PM

REV.	DATE	DESCRIPTION



CITY OF PLEASANTON
PUBLIC WORKS DEPARTMENT



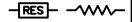
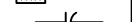
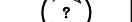
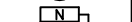
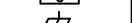
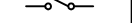
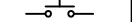
IMPROVEMENT PLANS FOR
SEWER LIFT STATION S-14
ELECTRICAL IMPROVEMENTS, CIP NO. 24265
PROJECT
TITLE SHEET

DESIGN: T. FRISCH
DRAWN: N. CONANT
CHECKED: T. FRISCH
ENGINEER: T. FRISCH

SCALE: AS SHOWN
PROJECT NO.:
DATE: 12/11/24

DWG NO.
G-1
1 OF 19

S:\FRISCH\ENGINEERING\JOBS\2024\JOBS\2402B PLEASANTON S-14 SLS DES 200A ATS SSS DRAWINGS\2402B-E01.DWG [12-11-24 05:42pm Administrator]

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
COMPONENTS		SWITCHES – PROCESS		DEVICES – RELAY		WIRING – CONNECTIONS	
	RESISTOR		FLOW SWITCH – CLOSSES UPON INCREASING FLOW		CONTACTOR OR STARTER M1		PANEL OR EQUIPMENT WRING
	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 ON ENERGIZATION		CONDUCTORS – CONNECTED
	DIODE		PRESSURE SWITCH – CLOSSES UPON INCREASING PRESSURE (DECREASING VACUUM)		TIME DELAY ON DE-ENERGIZATION		GROUND CONNECTION
	DIODE, ZENER		PRESSURE SWITCH – OPENS UPON INCREASING PRESSURE (DECREASING VACUUM)		REFERENCED RELAY WITH N.O. CONTACT ON LINE 107 N.C. CONTACT ON LINE 121		PLUG AND RECEPTACLE
	METAL OXIDE VARISTOR		TEMPERATURE SWITCH – CLOSSES UPON INCREASING TEMPERATURE		NORMALLY OPEN, RELAY CONTACT – ACTUATED BY RELAY CR1 COIL LOCATED ON LINE 105		INCOMING LINE
	AUDIBLE ALARM		TEMPERATURE SWITCH – OPENS UPON INCREASING TEMPERATURE		NORMALLY CLOSED, RELAY CONTACT – ACTUATED BY RELAY CR1		TERMINAL BLOCKS WITH TERMINAL NUMBER AS SHOWN OR AS DETERMINED BY SUBMITTAL
	MOTOR STARTER NEMA SIZE SHOWN		LIMIT SWITCH – CLOSSES AT SET LIMIT		NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS ENERGIZED		DISCONNECTING TERMINAL BLOCK
	3 PHASE MOTOR ? = MOTOR HP		TORQUE SWITCH – CLOSSES UPON INCREASING TORQUE		NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS ENERGIZED		FUSE
	3 PHASE MOTOR		TORQUE SWITCH – OPENS UPON INCREASING TORQUE		NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS DE-ENERGIZED		SHIELDED CABLE
	SINGLE PHASE MOTOR		LIMIT SWITCH – OPENS AT SET LIMIT		NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS DE-ENERGIZED	PLAN – SYMBOLS	
	TRANSFORMER SIZE AND VOLTAGE AS SHOWN		TORQUE SWITCH – OPENS UPON INCREASING TORQUE		NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS DE-ENERGIZED		CONDUIT, EXPOSED
	UTILITY POWER METER		TORQUE SWITCH – OPENS UPON INCREASING TORQUE		NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS DE-ENERGIZED		CONDUIT, IN SLAB OR BELOW GRADE
	NEUTRAL AND GROUND WITH DISCONNECT LINK		TORQUE SWITCH – OPENS UPON INCREASING TORQUE		NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS ENERGIZED		CONDUIT, CONCEALED IN WALL OR CEILING
	UFER GROUND		TORQUE SWITCH – OPENS UPON INCREASING TORQUE		NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS ENERGIZED		CONDUIT STUBBED OUT & CAPPED
	GROUND ROD OR SYSTEM		TORQUE SWITCH – OPENS UPON INCREASING TORQUE		NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS DE-ENERGIZED		CONDUIT BENDS TOWARD OBSERVER
	CURRENT TRANSFORMER RATIO AS NOTED		TORQUE SWITCH – OPENS UPON INCREASING TORQUE		NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS DE-ENERGIZED		CONDUIT BENDS AWAY FROM OBSERVER
	DISCONNECT SWITCH SIZED PER FEEDER		TORQUE SWITCH – OPENS UPON INCREASING TORQUE		NORMALLY OPEN, TIME DELAY RELAY CONTACT – CONTACT OPENS AFTER TR2 IS DE-ENERGIZED		CONDUIT ENDS
	POWER DISTRIBUTION BLOCK		TORQUE SWITCH – OPENS UPON INCREASING TORQUE		NORMALLY CLOSED, TIME DELAY RELAY CONTACT – CONTACT CLOSSES AFTER TR2 IS DE-ENERGIZED		FLEXIBLE CONDUIT CONNECTION FROM J-BOX TO EQUIPMENT
SWITCHES – OPERATOR		DEVICES – FRONT PANEL		DEVICES – PROTECTIVE			CONDUIT CHANGE IN ELEVATION
	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 PER SPECIFICATIONS y: BREAKER FEATURES / OPTIONS – SHUNT TRIP – KIRK-KEY INTERLOCK – MANUALLY CHARGED PUSHBUTTON OPERATION – ELECTRICALLY CHARGED PUSHBUTTON OPERATION		DISCONNECT SWITCH
	PUSHBUTTON – NORMALLY OPEN, MOMENTARY ACTION		INDICATING LIGHT, PUSH TO TEST		100% NO MARKINGS		FIELD MOUNTED DEVICE
	PUSHBUTTON – NORMALLY CLOSED, MOMENTARY UNLESS LOS (LOCK OUT STOP) WHERE MECHANICALLY HELD	DEVICES – PROTECTIVE			EYS SEAL		TELEPHONE/DATA RECEPTACLE
	PUSHBUTTON, MECHANICALLY CONNECTED, DOUBLE CIRCUIT – NORMALLY CLOSED AND NORMALLY OPEN		CT SHORTING TERMINAL BLOCK		JUNCTION BOX		2 PORT TA568A, 2 CAT 6 CABLES
	SELECTOR SWITCH, 3 POSITION – CONTACT STATUS SHOWN EXISTS I.E. AT POSITION OF HAND, OFF, OR AUTO		FUSED POTENTIAL TRANSFORMER, 208 / 120 V SECONDARY OR AS SHOWN		CONDUIT SEALING BUSHING		CONDUIT REFERENCE TO SCHEDULE
	SELECTOR SWITCH, 2 POSITION – MIDDLE POSITION IS DELETED		POWER MONITOR		PULL BOX OF SIZE SHOWN (CHRISTY BOX SIZE MINIMUM)		THERMOSTAT
	ALTERNATE METHOD: X00 = HAND 00X = AUTO, 0X0 = OFF		SURGE PROTECTION DEVICE		LIGHTING FIXTURE # – CIRCUIT BREAKER NUMBER A – FIXTURE SCHEDULE REF. a – CONTROL SWITCH REFERENCE		EYS SEAL
	POTENTIOMETER		VOLTAGE MONITORING RELAY		DUPLEX RECEPTACLE # – CIRCUIT BREAKER NUMBER WP – WEATHERPROOF (IF SHOWN) GFI – GROUND FAULT TYPE		JUNCTION BOX
			THERMAL OVERLOAD CONTACT		CONDUIT SEALING BUSHING		CONDUIT SEALING BUSHING
			THERMAL OVERLOAD ELEMENT		PULL BOX OF SIZE SHOWN (CHRISTY BOX SIZE MINIMUM)		CONDUIT SEALING BUSHING
			FUSE		LIGHTING FIXTURE # – CIRCUIT BREAKER NUMBER A – FIXTURE SCHEDULE REF. a – CONTROL SWITCH REFERENCE		CONDUIT SEALING BUSHING
			CONTACTOR, (NEMA) SIZE SHOWN		DUPLEX RECEPTACLE # – CIRCUIT BREAKER NUMBER WP – WEATHERPROOF (IF SHOWN) GFI – GROUND FAULT TYPE		CONDUIT SEALING BUSHING

MISCELLANEOUS ABBREVIATIONS			
&	AND	N	NEUTRAL
@	AT	NC	NORMALLY CLOSED
A	AMBER, AMPERES	NDL	NEUTRAL DISCONNECT LINK
AC	ALTERNATING CURRENT	NHC	NORMALLY HELD CLOSED
ACK	ACKNOWLEDGE	NHO	NORMALLY HELD OPEN
AFF	ABOVE FINISHED FLOOR	NIC	NOT IN CONTRACT
AH	AMP HOUR	NL	NIGHT LIGHT
AI	ANALOG INPUT	NO	NORMALLY OPEN
AIC	AMP INTERRUPTING CAPACITY SYMMETRICAL	NTS	NOT TO SCALE
AM	AMP METER	(N)	NEW
AO	ANALOG OUTPUT	OC	ON CENTER
AWG	AMERICAN WIRE GUAGE	OI, OIT	OPERATOR INTERFACE
ATS	AUTOMATIC TRANSFER SWITCH	OL	OVERLOAD
BATT	BATTERY	ORP	OXIDATION REDUCTION POTENTIAL
BFC	BELOW FINISHED CEILING	P	POLE
BOD	BIOCHEMICAL OXYGEN DEMAND	PB	PUSHBUTTON
BPF	BAND PASS FILTER	PBX	PULL BOX
BYP	BYPASS	PDB	POWER DISTRIBUTION BLOCK
C	CONDUIT	PE	POLYETHYLENE
CAP	CAPACITOR	PF	POWER FACTOR
CB	CIRCUIT BREAKER	PFR	POWER FAIL RELAY
CKT	CIRCUIT	PH	HYDROGEN ION CONCENTRATION
COAX	COAXIAL CABLE	PLC	PROGRAMMABLE LOGIC CONTROLLER
COMM	COMMUNICATION	PM	POWER MONITOR
CR	CONTROL RELAY	PNL	PANEL
CT	CURRENT TRANSFORMER	POT	POTENTIOMETER
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
FS	FULL SPEED, FLOW SWITCH	SECS	SECONDS
FVNR	FULL VOLTAGE NON-REVERSING	SEL	SELECTOR
FVR	FULL VOLTAGE REVERSING	SFA	SERVICE FACTOR AMPS
FWD	FORWARD	SPEC	SPECIFICATION
(F)	FUTURE	SPD	SURGE PROTECTIVE DEVICE
GALV	GALVANIZED	SS	STAINLESS STEEL
GFI	GROUND FAULT INTERRUPTER	SSRC	STAINLESS STEEL RIGID CONDUIT
GND	GROUND	SSS	SOLID STATE STARTER
GRS	GALVANIZED RIGID STEEL CONDUIT	STT	START
GRS-PVC	PVC COATED GRS CONDUIT	STP	STOP
HIGH	HIGH	SV	SOLENOID VALVE
HIM	HUMAN INTERFACE MODULE	SW	SWITCH
HOA	HAND OFF AUTO	SWBD	SWITCHBOARD
HP	HORSE POWER	SYM	SYMMETRICAL
HPS	HIGH PRESSURE SODIUM	TB	TERMINAL BLOCK
HS	HAND SWITCH	TC	TIME CLOCK
HTR	HEATER	TDOE	TIME DELAY ON DE-ENERGIZATION
HZ	HERTZ	TDOE	TIME DELAY ON ENERGIZATION
HZD	HAZARD	TELCO	TELEPHONE COMPANY
I	INTERLOCK	TM	THERMAL MAGNETIC
I/O	INPUT/OUTPUT	TEMP	TEMPERATURE
INST	INSTANTANEOUS	TR	TIME DELAY RELAY
ISR	INTRINSICALLY SAFE RELAY	TRIAD	TWISTED AND SHIELDED 3 CONDUCTOR
IS	INTRINSICALLY SAFE	TS	TEMPERATURE SWITCH
J	JUNCTION BOX	TSPR	TWISTED AND SHIELDED PAIR
K	KILO, PREFIX	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
LA	LIGHTNING ARRESTOR	TYP	TYPICAL
LC	LIGHTING CONTACTOR	UG	UNDERGROUND
LEL	LOWER EXPLOSION LIMIT	ULH	ULTRA LOW HARMONIC
LOS	LOCK OUT STOP	UON	UNLESS OTHERWISE NOTED
LP	LIGHTING PANELBOARD	UPS	UNINTERRUPTIBLE POWER SUPPLY
LS	LIMIT SWITCH	V	VOLTAGE
M	MOTOR CONTACTOR	VA	VOLT AMPS
MAG	MAGNETIC FLOWMETER	VAR	VOLT AMPS REACTIVE
MAX	MAXIMUM	VFD	VARIABLE FREQUENCY DRIVE
MCC	MOTOR CONTROL CENTER	VLV	VALVE
MCM	THOUSAND CIRCULAR MILS	VM	VOLTMETER
MCP	MOTOR CIRCUIT PROTECTOR	VMR	VOLTAGE MONITOR RELAY
MCS	MOLDED CASE SWITCH	VR	VOLTAGE RELAY
MH	MANHOLE	W	WATTS
MIN	MINIMUM, MINUTE	WP	WEATHER PROOF, NEMA 3R
MODEM	MODEM	WTP	WATER TREATMENT PLANT
MOV	MOTOR OPERATED VALVE	WWTP	WASTE WATER TREATMENT PLANT
MTR	MOTOR	XFMR	TRANSFORMER
MUX	MULTIPLEXER	Z	IMPEDANCE
MV	MERCURY VAPOR, MEDIUM VOLTAGE	ZS	LIMIT SWITCH

FRISCH ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
13405 FOLSOM BLVD., UNIT 600
FOLSOM, CA 95630
PH 916 353 1025
WWW.FRISCHENGINEERING.COM
FILE: 2402B-E01.DWG
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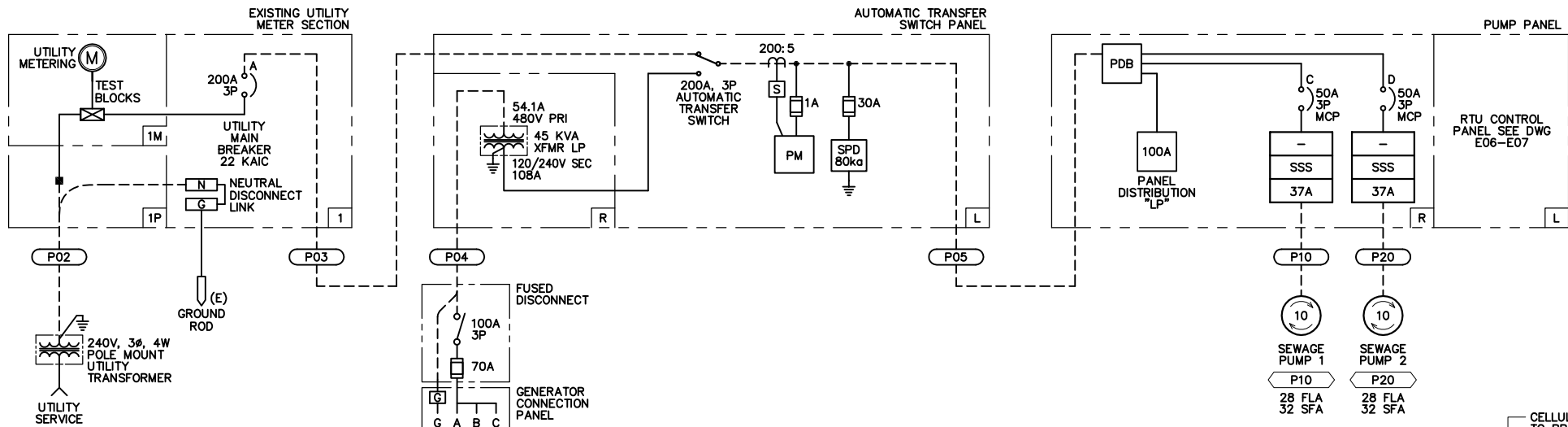


IMPROVEMENT PLANS FOR
SEWER LIFT STATION S-14
ELECTRICAL IMPROVEMENTS, CIP NO. 24265
ELECTRICAL
SYMBOLS AND ABBREVIATIONS

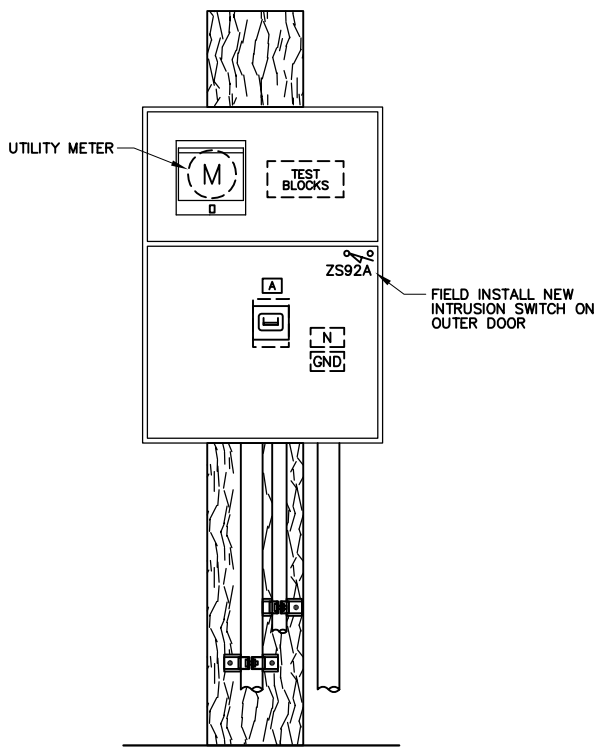
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CHECKED: T. FRISCH
ENGINEER: T. FRISCH

SCALE: AS SHOWN
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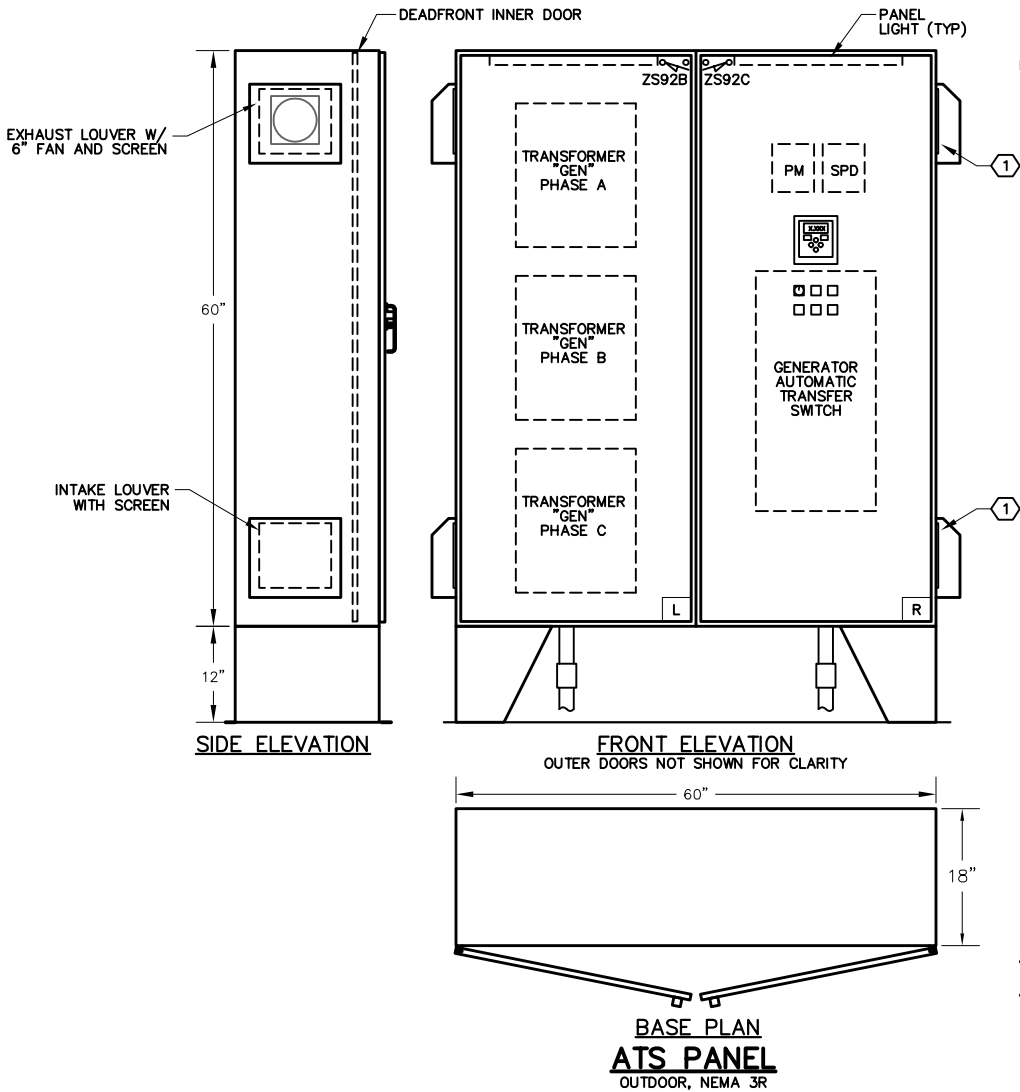
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E-1
2 OF 19



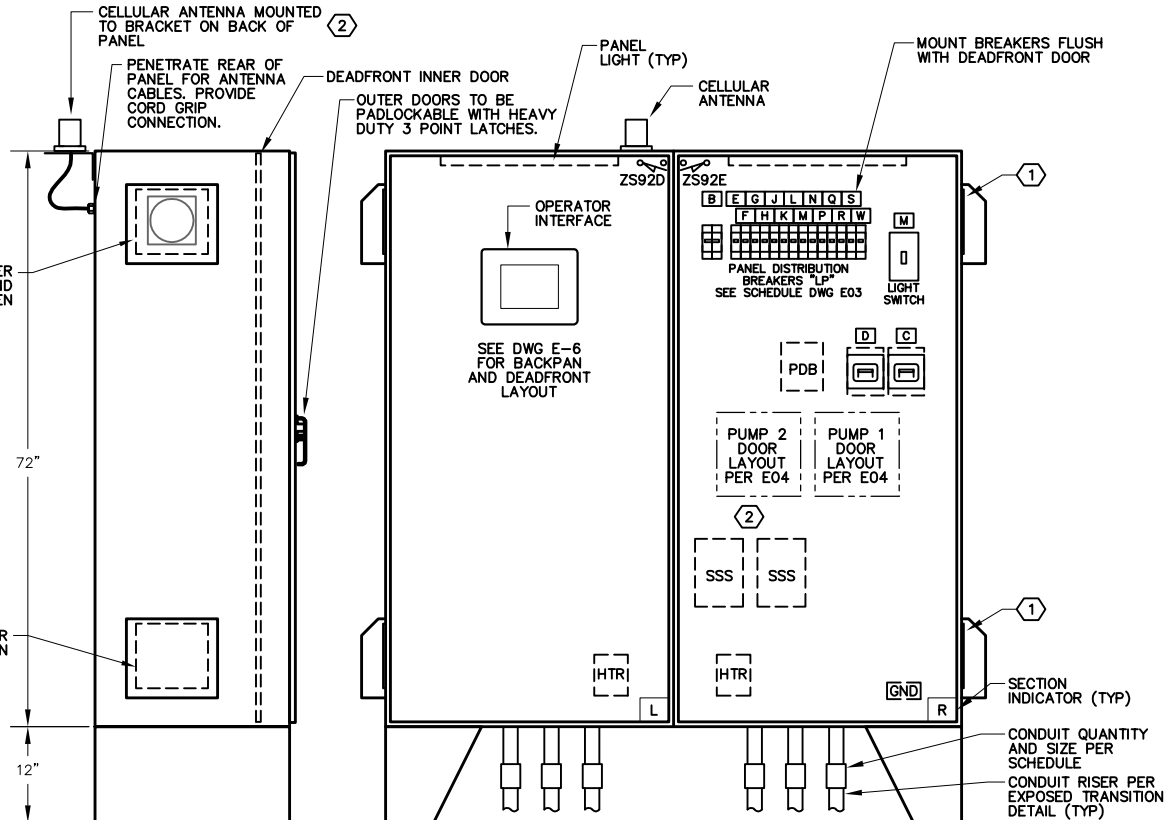
ONE-LINE DIAGRAM



EXISTING UTILITY METER
OUTDOOR, NEMA 3R
OUTER DOORS NOT SHOWN FOR CLARITY



BASE PLAN
ATS PANEL
OUTDOOR, NEMA 3R



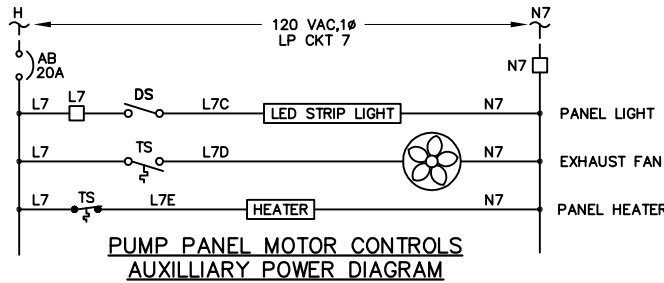
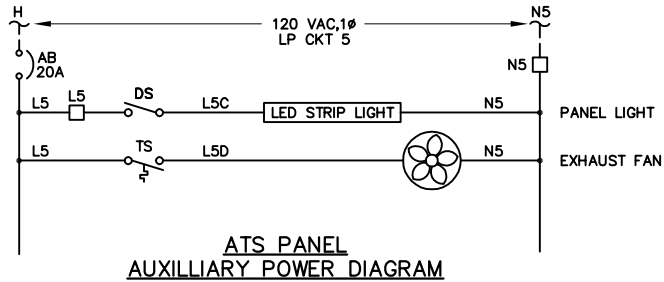
FRONT ELEVATION
OUTER DOORS NOT SHOWN FOR CLARITY

BASE PLAN
PUMP CONTROL PANEL
OUTDOOR, NEMA 3R

- GENERAL NOTES:
1. EACH BREAKER SHALL HAVE A PADLOCKABLE HASP TO LOCK BREAKER IN THE OFF POSITION.
 2. FURNISH AND APPLY ENGRAVED WHITE LETTERING ON BLACK PLASTIC NAMEPLATES FOR DEVICES AND BREAKERS WHERE NOTED, AT MINIMUM, WITH A LETTERED BOX. TEXT HEIGHT SHALL BE 1/4 INCH MINIMUM. REFERENCE ONE-LINE DIAGRAM FOR LABEL.
 3. ITEMS DRAWN IN DASHED LINES ARE TO BE LOCATED BEHIND DEADFRONT DOORS. OUTER DOORS ARE NOT SHOWN ON FRONT VIEWS FOR ELEVATION CLARITY.
 4. FURNISH UL AND CODE REQUIRED WARNING LABELS AND EQUIPMENT RATINGS LABELS.

- PUMP PANEL REFERENCED NOTES:
- 1 EXHAUST FAN AND INTAKE LOUVER TYPICAL OF BOTH SIDES OF PANEL.
 - 2 CUSTOM 1/8" ALUMINUM BRACKET FOR ANTENNA MOUNTING.

LOAD CALCULATIONS						
LOAD DESCRIPTION	CONNECTED LOAD			DEMAND LOAD		
	LOAD	QTY	TOTAL	LOAD	QTY	TOTAL
10HP SEWAGE PUMP	28.00 A	2	23278.8 VA	28.00 A	2	23278.8 VA
PEDESTAL DIST. BREAKERS 120/240	9.91 A	1	4120.0 VA	7.93 A	1	3296.0 VA
TOTAL LOAD =	65.91 A	<	27398.8 VA	63.93 A	<	26574.8 VA
LOAD CORRECTION FACTORS						
LARGEST MOTOR LOAD x 25%:						
10HP HP => 0.25 x 11639.4 VA	=	7.00 A	2909.8 VA	7.00 A		2909.8 VA
80% BREAKER DERATING = TOTAL x 0.25 =	18.23 A		7577.2 VA	17.73 A		7371.2 VA
FOR CONTINUOUS LOADS NEC 210-20						
SERVICE SIZE (MIN) =	91.14 AMP		37885.8VA	88.66 A		36855.8VA
UTILITY SERVICE =	200 AMP					
240V, 3 PHASE, 4 WIRE						



PANEL DISTRIBUTION BREAKERS

LOCATION: PANEL DIST. 120 / 240 VOLTS, 1 PHASE, 3 WIRE

AIC RATING: 10 KAIC

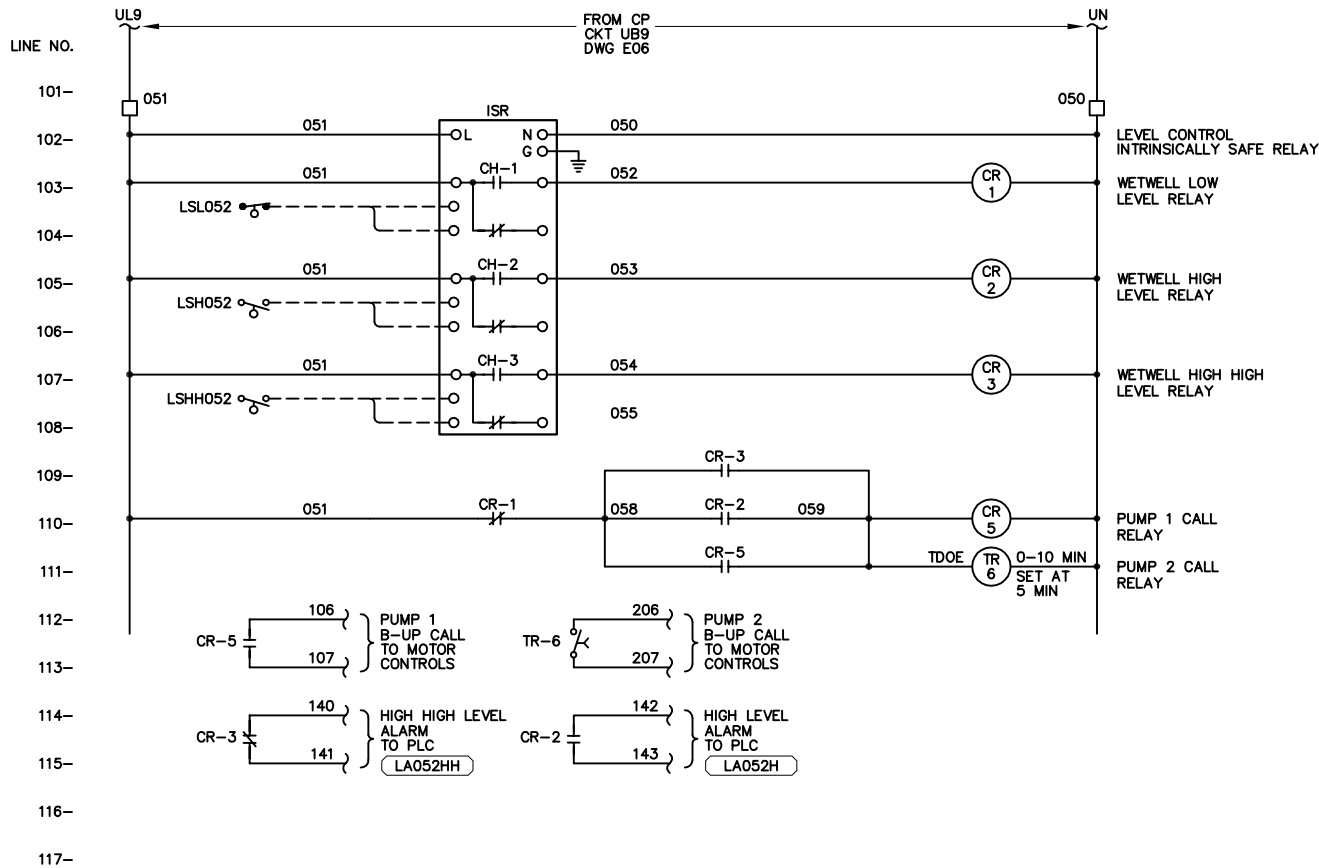
NAMEPLATE REFERENCE	NAMEPLATE LABEL	LOAD VA	LINE AMPS	AMPS/POLE	BKR NO.
B	DISTRIBUTION MAIN BREAKER	0	0.0	40/2	1
		0	0.0		2
E	RTU SECTION	800	6.7	20/1	3
F	RTU SECTION AUXILIARY	300	2.5	20/1	4
G	ATS PANEL AUXILIARY	300	2.5	20/1	5
H	SPARE	0	0.0	20/1	6
J	PUMP PANEL MOTOR CONTROL AUX.	300	2.5	20/1	7
K	PUMP 1 MOTOR CONTROL POWER	200	1.7	20/1	8
L	PUMP 2 MOTOR CONTROL POWER	200	1.7	20/1	9
M	AREA LIGHTS	120	1.0	20/1	10
N	GENERATOR BATTERY CHARGER	600	5.0	20/1	11
P	GENERATOR HEATER	1000	8.3	20/1	12
Q	AREA RECEPTACLES	300	2.5	20/1	13
R	VAULT RECEPTACLES	300	2.5	20/1	14
S	SPARE	0	0.0	20/1	15
W	SPACE	0	0.0	20/1	16

PHASE	A	B
TOTAL PHASE AMPS	20.83	16.00
TOTAL PHASE KVA	2.50	1.92
% OF AVERAGE	113	87
TOTAL KVA	4.42	
TOTAL AMPS @ 240V, 1P	18.42	
DIVERSITY FACTOR	0.80	
LOAD KVA	3.54	

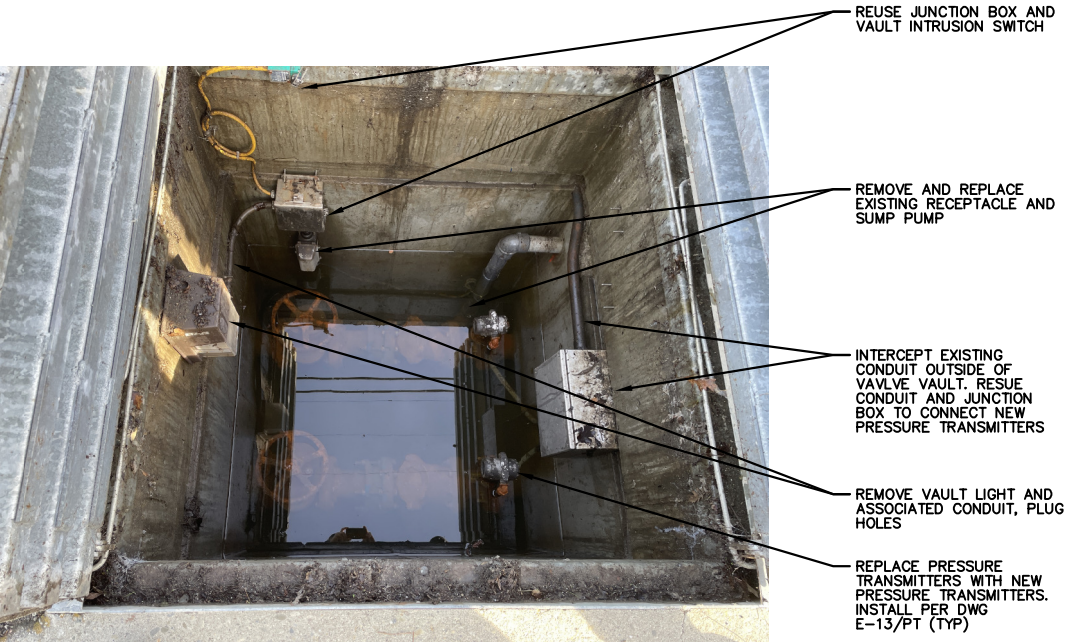
NEUTRAL

GROUND

- NOTES:
- 1 MEANS OF WIRE COLOR CODING SHALL BE POSTED ON PANELBOARD PER NEC 210 (4)
 - 2 NAMEPLATES SHALL BE ENGRAVED WHITE LETTERING ON BLACK PLASTIC FOR BREAKERS AS NOTED. TEXT HEIGHT SHALL BE 3/16 INCH MINIMUM.



PUMP BACK-UP CONTROLS



VALVE VAULT PHOTO ①



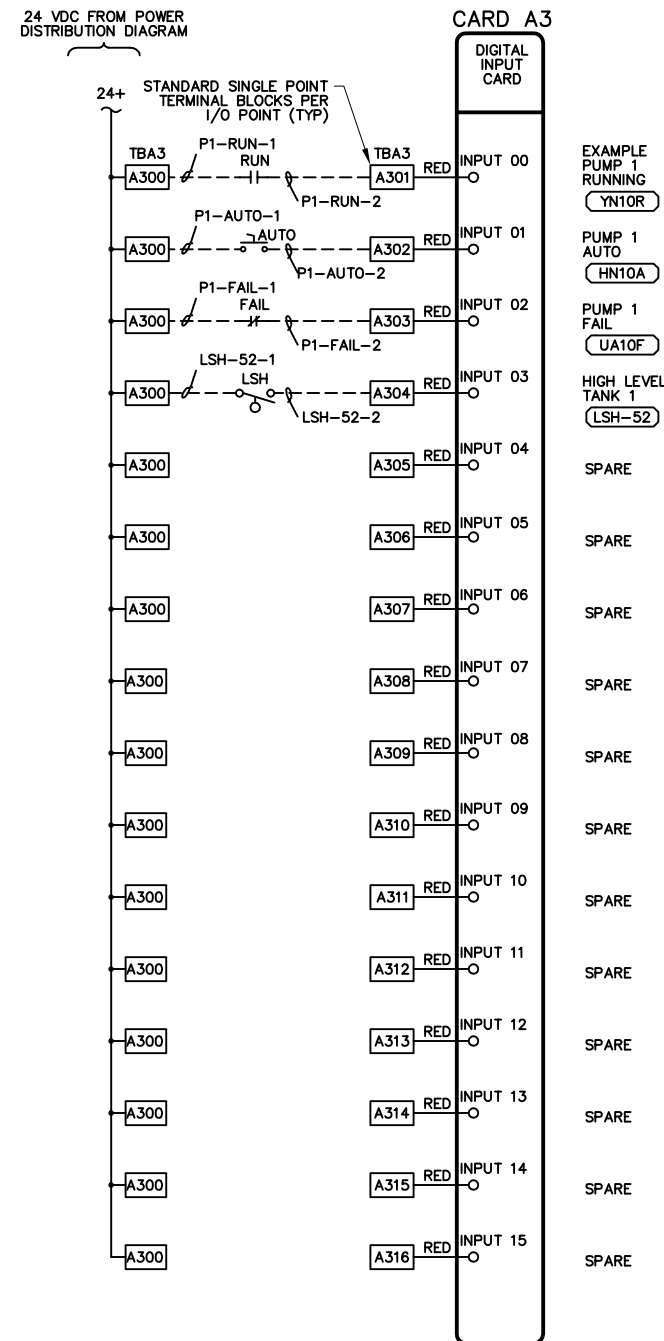
FLOWMETER VAULT PHOTO ①

DRAWING REFERENCED NOTES:
① CLEAN ALL CONDUIT AND BOXES TO BE REUSED.

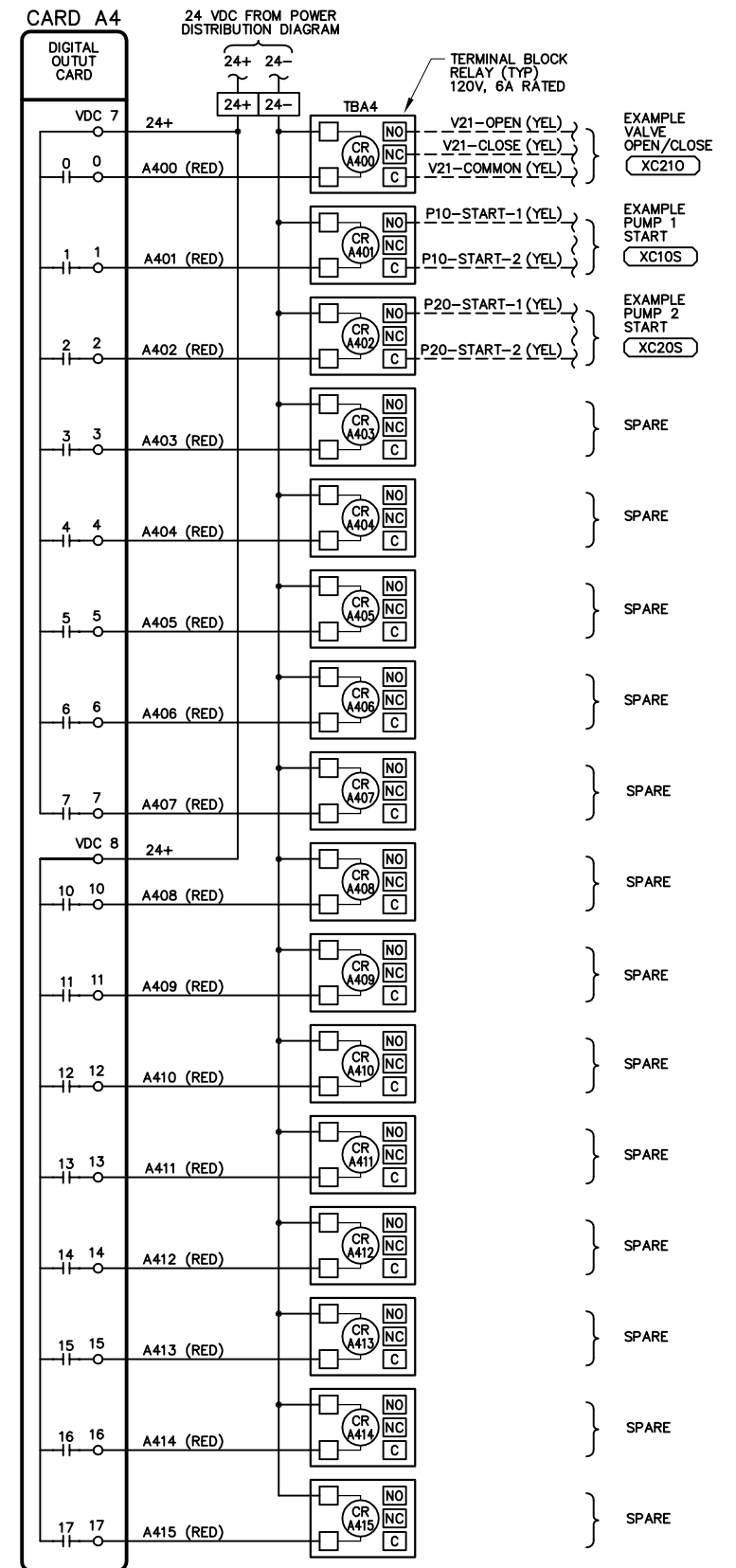
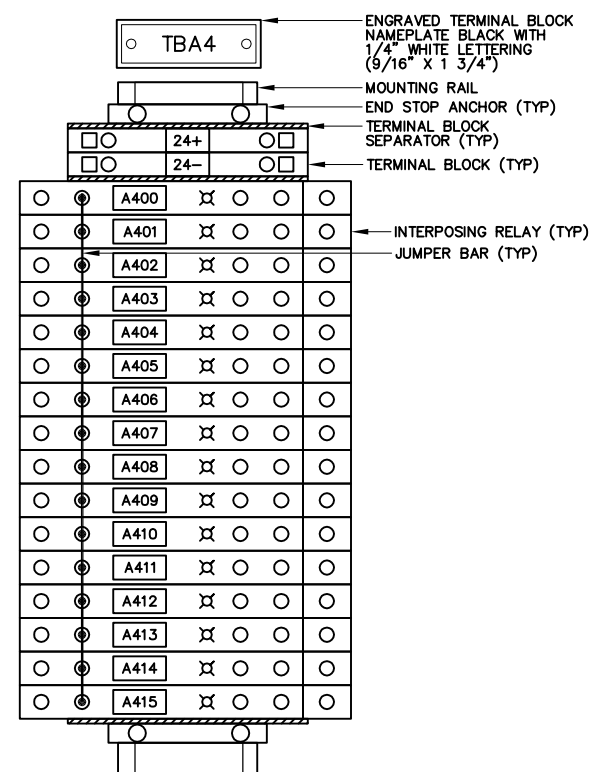
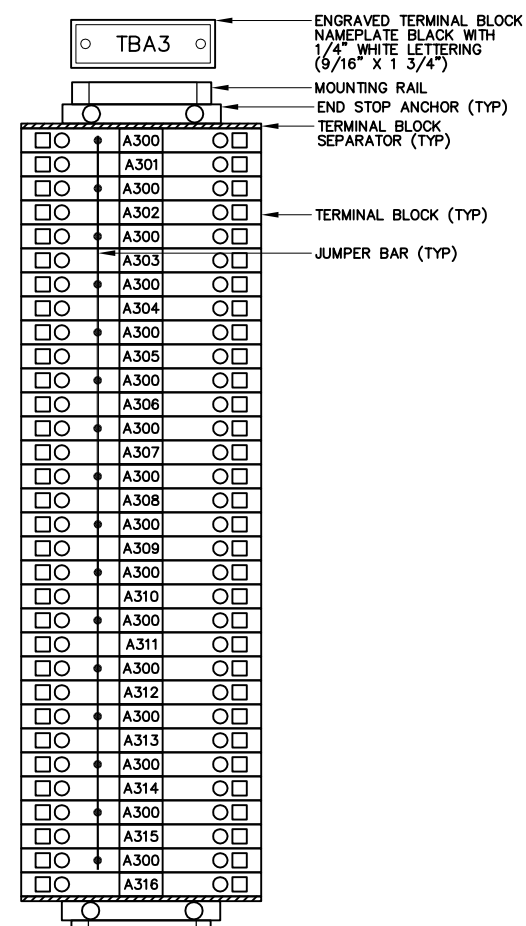
FRISCH ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
13405 FOLSOM BLVD., UNIT 600
FOLSOM, CA 95630
PH 916 353 1025
WWW.FRISCHENGINEERING.COM

FILE: 2402B-E05.DWG
DATE: DEC 11, 2024 TIME: 5:42:59PM

REV.	DATE	DESCRIPTION	THE CITY OF PLEASANTON	CITY OF PLEASANTON PUBLIC WORKS DEPARTMENT		IMPROVEMENT PLANS FOR SEWER LIFT STATION S-14 ELECTRICAL IMPROVEMENTS, CIP NO. 24265 BACKUP CONTROLS AND VAULT PHOTOS	DESIGN: T. FRISCH	SCALE: AS SHOWN	DWG NO. E-5
							DRAWN: N. CONANT	PROJECT NO.:	
							CHECKED: T. FRISCH	DATE: 12/11/24	6 OF 19
							ENGINEER: T. FRISCH		

DI CARD

NOTES: 1. TWO CARDS PER DRAWING MAXIMUM.

DO CARD

1. TWO CARDS PER DRAWING MAXIMUM.

NOTES: 1. WIRE SPARE PLC I/O POINTS TO TERMINAL BLOCKS.
2. EXAMPLE I/O POINTS SHOWN. THIS DRAWING INTENDED TO SHOW I/O WIRING ONLY.
3. I/O TYPE AND NUMBER OF POINTS AND CARDS REQUIRED IS DETERMINED BY P&ID DRAWINGS.
4. MINIMUM 20% SPARE I/O POINTS PER I/O TYPE.
5. INTERNAL PANEL PLC I/O CARD WIRE NUMBERS SHALL BE BUILT AS SHOWN IN EXAMPLE BELOW.

3. INTERNAL PANEL PLC I/O

RACK LETTER
SLOT NUMBER
INPUT NUMBER

A101

6. FIELD WIRES SHALL BE LABELED WITH ACRONYM OF CONTROL PANEL ID (NOT SHOWN) AND DEVICE: SEE EXAMPLES.

TRANSITION TO TEMPORARY SYSTEM NOTES:

- 1. CORD CONNECT EXISTING EQUIPMENT SHOWN TO MAKE ROOM FOR NEW EQUIPMENT.
- 2. RELOCATE EQUIPMENT, RECONNECT, AND RE-START EXISTING PUMP CONTROL PANEL WITHIN ONE 8 HOUR WORK DAY.
- 3. TEMPORALLY RELOCATE PANELS; CONTRACTOR SHALL PROVIDE TEMPORARY WOOD SUPPORTS FOR PANELS. CONNECT TO UTILITY MAIN BREAK VIA CORD CONNECTION.

DEMOLITION NOTES:

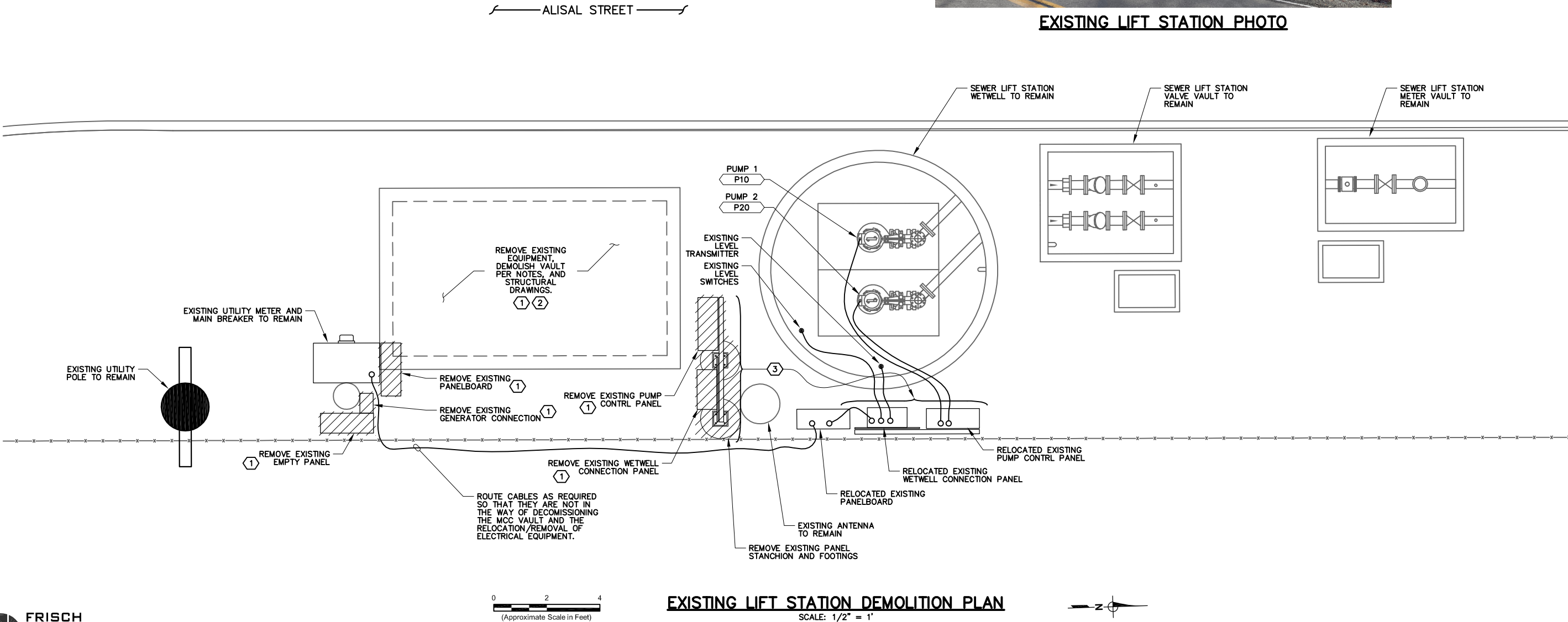
- 1. REMOVE AND WASTE 5 SECTION MOTOR CONTROL CENTER, 45KVA TRANSFORMER, AND ALL OTHER ELECTRICAL EQUIPMENT AND CONDUIT FROM VAULT.
- 2. REMOVE AND WASTE SUMP PUMP, CONTROLS, AND PIPING.
- 3. REMOVE AND WASTE VENTILATION EQUIPMENT.
- 4. REMOVE AND WASTE VAULT LID AND CUT DOWN WALLS MINIMUM 24" BELOW GRADE.
- 5. SEE STRUCTURAL DRAWINGS FOR FURTHER INFORMATION.

DRAWING REFERENCED NOTES:

- ① CITY TO HAVE FIRST RIGHT OF REFUSAL FOR DEMOLISHED EQUIPMENT, WASTE REMAINING.
- ② EXISTING EQUIPMENT CONSISTS OF: 5 SECTION MCC, 45KVA TRANSFORMER, CONTROL PANEL, LIGHTS, PLUGS CONDUIT, VENTILATION, AND SUMP PUMP.
- ③ DISCONNECT PUMP CONTROL PANEL AND WETWELL CONNECTION PANEL FROM CONDUIT AND FOOTINGS, MOVE PUMP CONTROL PANEL AND WETWELL CONNECTION PANEL AS A UNIT TO NEW TEMPORARY LOCATION. REMOVE PUMP CABLES AND LEVEL CABLES FROM CONDUIT. ROUTE CABLES THROUGH WETWELL HATCH AND RECONNECT TO PANELS IN NEW TEMPORARY LOCATION.



EXISTING LIFT STATION PHOTO



EXISTING LIFT STATION DEMOLITION PLAN

SCALE: 1/2" = 1'

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REV.	DATE	DESCRIPTION



CITY OF PLEASANTON
PUBLIC WORKS DEPARTMENT



IMPROVEMENT PLANS FOR
SEWER LIFT STATION S-14
ELECTRICAL IMPROVEMENTS, CIP NO. 24265
EXISTING LIFT STATION DEMOLITION PLAN

DESIGN:	T. FRISCH
DRAWN:	N. CONANT
CHECKED:	T. FRISCH
ENGINEER:	T. FRISCH

SCALE:	AS SHOWN
PROJECT NO.:	
DATE:	12/11/24

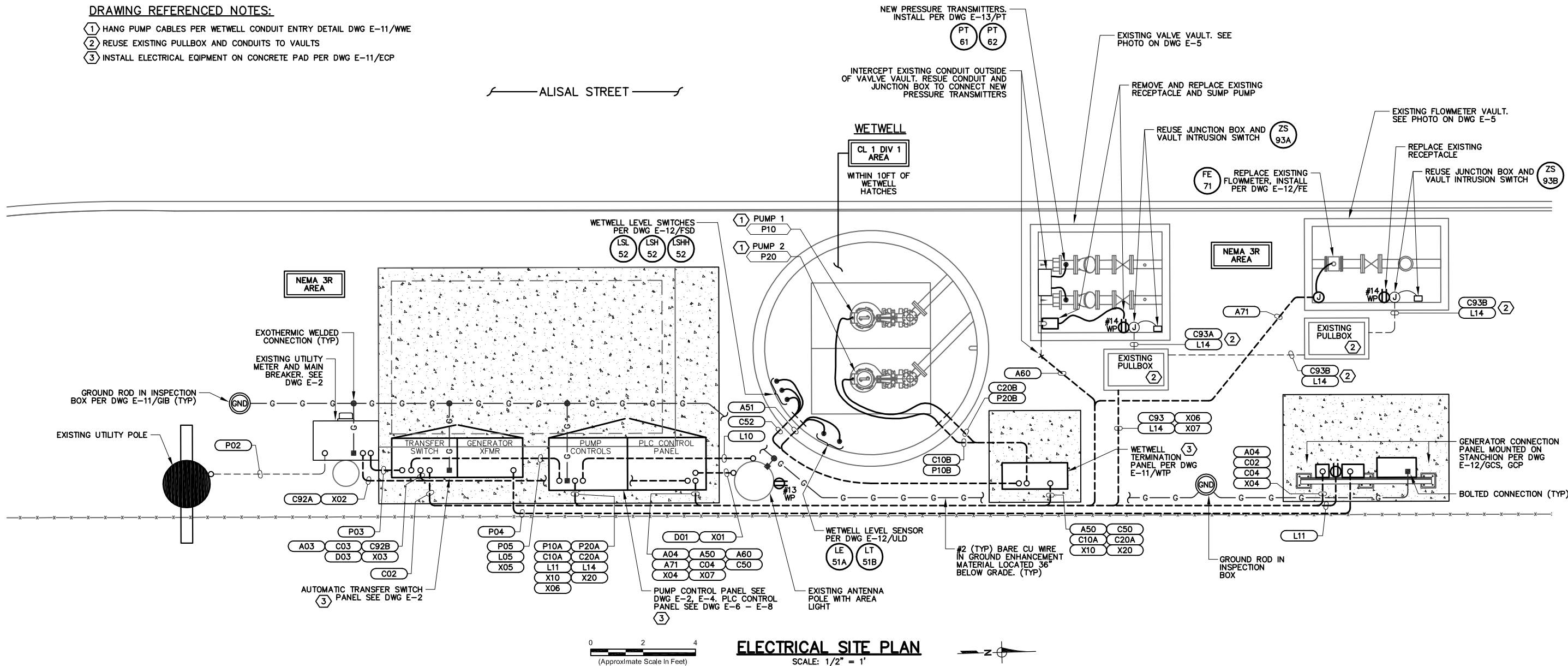
DWG NO.	E-9
	10 OF 19

ELECTRICAL PLAN NOTES:

1. SEE ELECTRICAL SYMBOLS AND ABBREVIATIONS DRAWING FOR SYMBOL DEFINITION.
2. ALL WORK SHALL CONFORM TO LOCAL CODES AND NATIONAL ELECTRIC CODE.
3. SITEPLAN ACCURATE FOR ELECTRICAL WORK ONLY. COORDINATE WITH OTHER DISCIPLINES.
4. CONFIRM HOOKUP REQUIREMENTS FOR ELECTRICAL AND MECHANICAL EQUIPMENT PRIOR TO INSTALLING UNDERGROUND CONDUIT AND STUB-UPS. MISSING CONDUITS, INCORRECT SIZING, OR OTHER ISSUES MUST BE BROUGHT TO THE ATTENTION OF ENGINEER PRIOR TO BACKFILL.
5. CONDUIT ROUTING IS SHOWN GENERALLY DIAGRAMATIC AND DOES NOT INDICATE TRENCH WIDTH OR TRENCH LAYOUT. FOR CONDUITS OUTSIDE BUILDINGS, IF CONTRACTOR WANTS TO RUN CONDUITS IN ROUTES OTHER THAN THOSE SHOWN FOR ANY REASON, THEN HE SHALL SUBMIT THE PLAN FOR APPROVAL PRIOR TO INSTALLATION. SPECIFY REASON FOR CHANGE.
6. INSTALL NON-UTILITY CONDUITS PER DRAWING DETAILS AND SPECIFICATIONS SECTION 16110.
7. CONDUITS SIZE, TYPE AND FILL DEFINED BY TAG NAME IN CONDUIT AND WIRE ROUTING SCHEDULE.
8. INSTALL UNDERGROUND NON-DUCTBANK CONDUITS PER ELECTRICAL DETAIL LVC.
9. CONDUIT TRANSITIONS SHALL BE PER EXPOSED CONDUIT TRANSITION DETAIL ECT.
10. EXPOSED CONDUIT TYPE AND FITTINGS TO BE USED ABOVE TRANSITION SHALL BE PER AREA CLASSIFICATION DEFINED IN CONDUIT SPECIFICATIONS AND EQUIPMENT SPECIFIC DETAIL.
11. REPAIR SURFACE TO PREVIOUS CONDITION FOR ALL UNDERGROUND CONDUIT ROUTES. GROUT, CAULK, AND PAINT ANY PENETRATIONS INTO STRUCTURES FOR WATERTIGHT SEAL.
12. USE SS EXPANSION WEDGE ANCHORS OR EPOXY ANCHORS AS NECESSARY FOR EQUIPMENT MOUNTING.
13. RECEPTACLES TO BE GROUND FAULT INTERRUPTER (GFI) TYPE AND WEATHERPROOF (WP) OUTDOORS AND WHERE SHOWN.
14. REGRADE AROUND EXISTING COBLE AND V-DITCH AS REQUIRED FOR THE INSTALLATION OF NEW PAD AND EQUIPMENT.

DRAWING REFERENCED NOTES:

- 1 HANG PUMP CABLES PER WETWELL CONDUIT ENTRY DETAIL DWG E-11/WWE
- 2 REUSE EXISTING PULLBOX AND CONDUITS TO VAULTS
- 3 INSTALL ELECTRICAL EQUIPMENT ON CONCRETE PAD PER DWG E-11/ECF



ELECTRICAL SITE PLAN

SCALE: 1/2" = 1'

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PH 916 353 1025
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REV.	DATE	DESCRIPTION



CITY OF PLEASANTON
PUBLIC WORKS DEPARTMENT



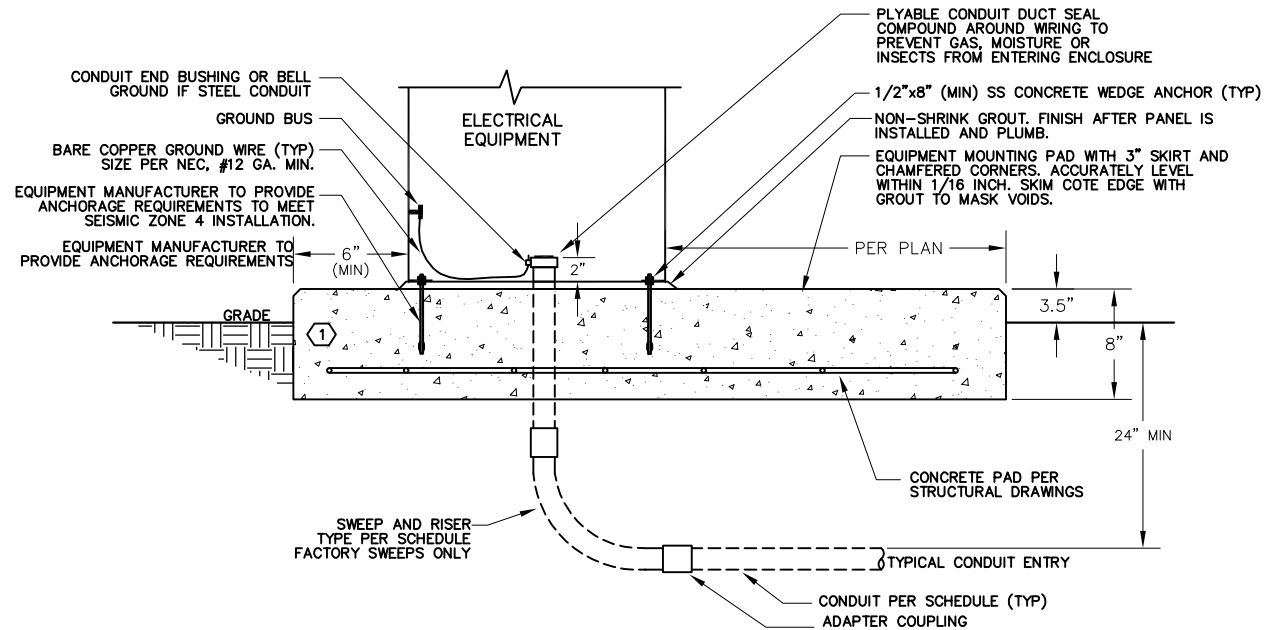
IMPROVEMENT PLANS FOR
SEWER LIFT STATION S-14
ELECTRICAL IMPROVEMENTS, CIP NO. 24265
ELECTRICAL SITE PLAN

DESIGN:	T. FRISCH
DRAWN:	N. CONANT
CHECKED:	T. FRISCH
ENGINEER:	T. FRISCH

SCALE:	AS SHOWN
PROJECT NO.:	
DATE:	12/11/24

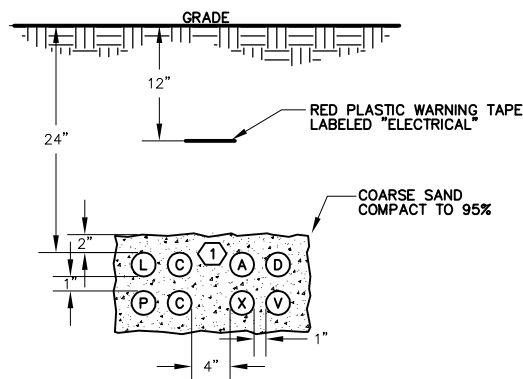
DWG NO.	E-10
11 OF 19	

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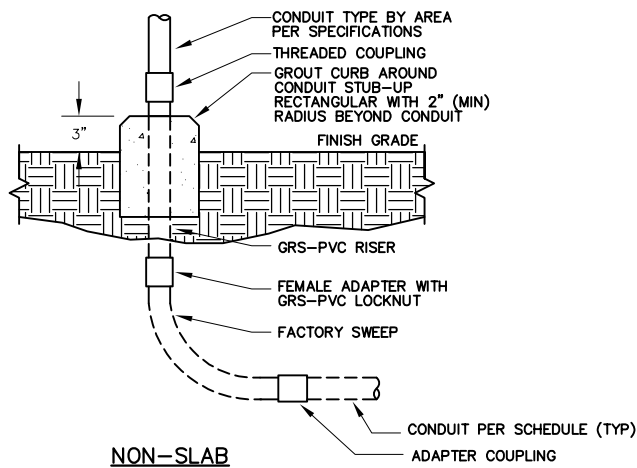
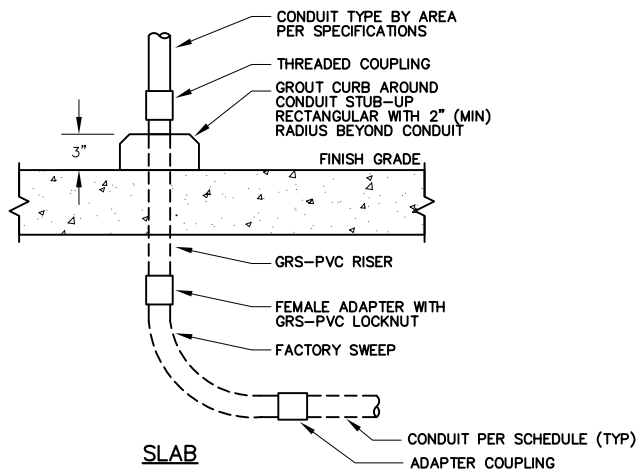
ECP EQUIPMENT CONCRETE PAD DETAIL
NOT TO SCALE

NOTES: ① MCC PAD SIZE PER SITE PLANS

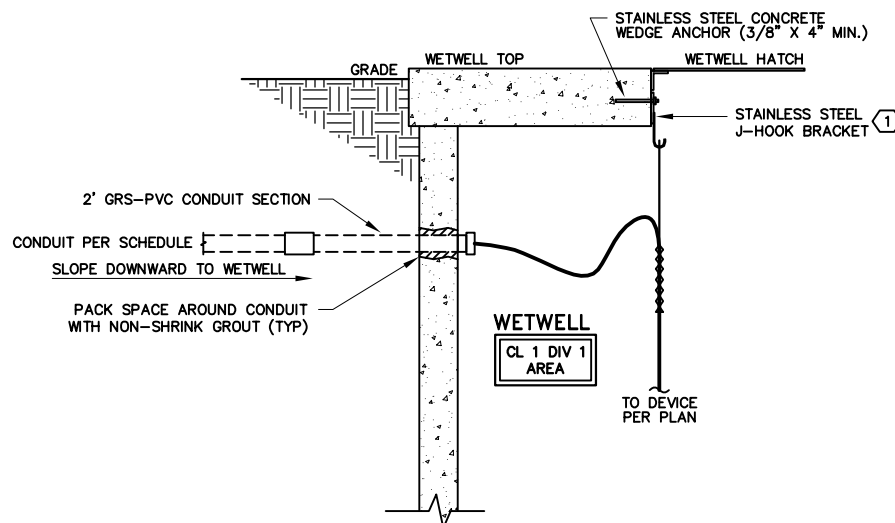


LVC LOW VOLTAGE NON-DUCT BANK SECTION
NOT TO SCALE

- NOTES:
- ① 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.
 - ② P, L, OR C DESIGNATION FOR POWER OR CONTROL CONDUITS.
 - ③ A, D, V, OR X DESIGNATION FOR COMMUNICATION (TELEPHONE, DATA, VIDEO, OR INSTRUMENTATION) CONDUITS.
 - ④ USE CONDUIT SPACERS TO SUPPORT CONDUITS AND MAINTAIN SPACING (3" INTERVALS)

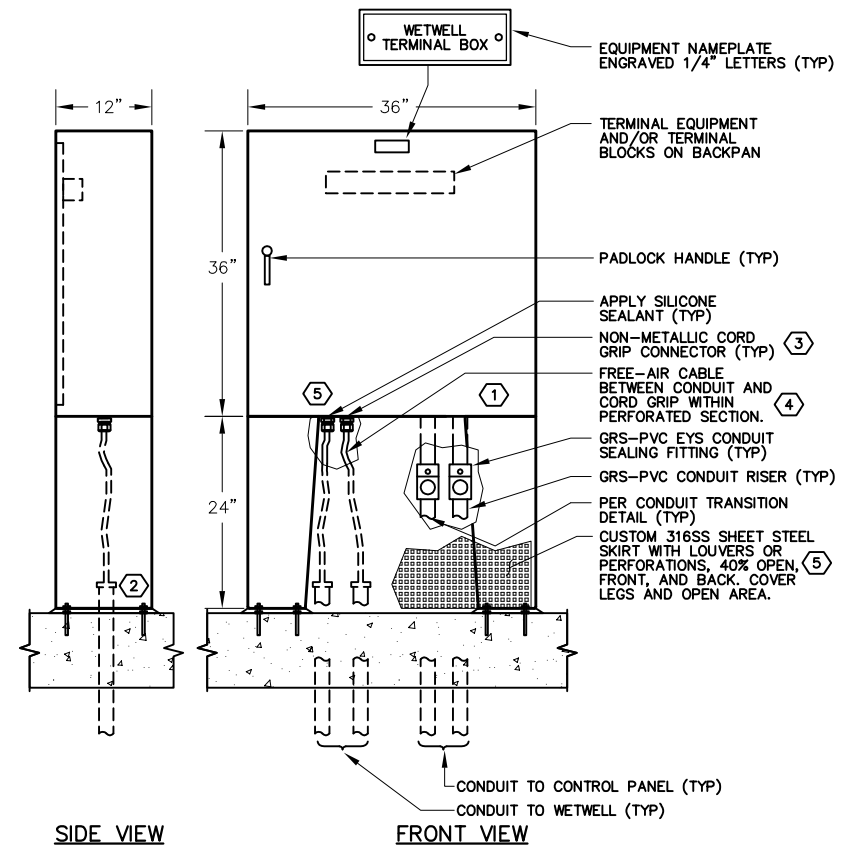


ECT EXPOSED CONDUIT TRANSITION DETAIL
NOT TO SCALE



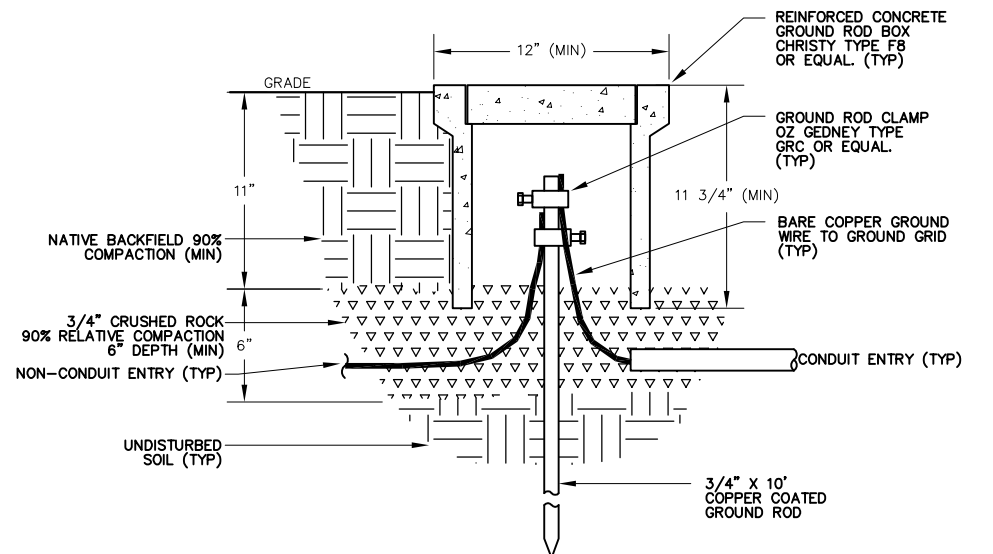
WWE WETWELL ENTRY DETAIL
NOT TO SCALE

- NOTES:
- ① CUSTOM MANUFACTURED J-HOOK ASSEMBLY CONSISTING OF STAINLESS STEEL PLATE WITH STAINLESS STEEL J-HOOKS WELDED TO PLATE. PROVIDE ONE HOOK PER WETWELL CABLE.



- NOTES:
- ① USE ALL STAINLESS STEEL HARDWARE. SEAL BOX PENETRATIONS WITH SILICONE GLUE.
 - ② MOUNT PANEL ON 3/8" SS EPOXY ANCHORS WITH DOUBLE NUT LEVELING. GROUT SPACE BELOW PANEL LEGS.
 - ③ WIRE ENTRY IS ONLY THROUGH BOTTOM OF PANEL. NO ADDITIONAL PANEL PENETRATIONS.
 - ④ CONDUIT ENTRY TO PANEL SKIRT AREA ONLY. FREE AIR WIRE TO PANEL.
 - ⑤ NO PENETRATIONS OF PANEL OR SKIRT, ALL CONDUITS SHALL BE UNDERGROUND ENTRY, UNLESS SPECIFICALLY SHOWN ON PLAN.

WTP WETWELL TERMINATION PANEL
NEMA 4X, 316SS, NOT TO SCALE



GIB GROUND INSPECTION BOX DETAIL
NOT TO SCALE

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13405 FOLSOM BLVD, UNIT 600
FOLSOM, CA 95630
PH 916 353 1025
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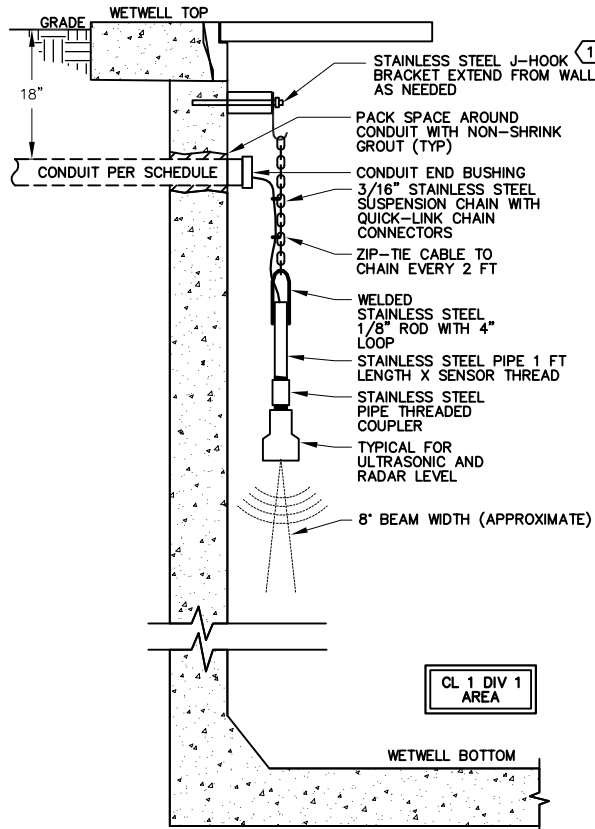


CITY OF PLEASANTON
PUBLIC WORKS DEPARTMENT



IMPROVEMENT PLANS FOR
SEWER LIFT STATION S-14
ELECTRICAL IMPROVEMENTS, CIP NO. 24265
ELECTRICAL DETAILS 1

DESIGN:	T. FRISCH	SCALE: AS SHOWN	DWG NO. E-11 12 OF 19
DRAWN:	N. CONANT	PROJECT NO.:	
CHECKED:	T. FRISCH	DATE:12/11/24	
ENGINEER:	T. FRISCH		

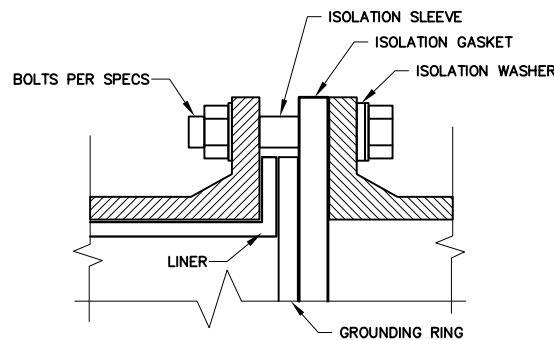


SECTION VIEW

LEVEL ELEMENT DETAIL

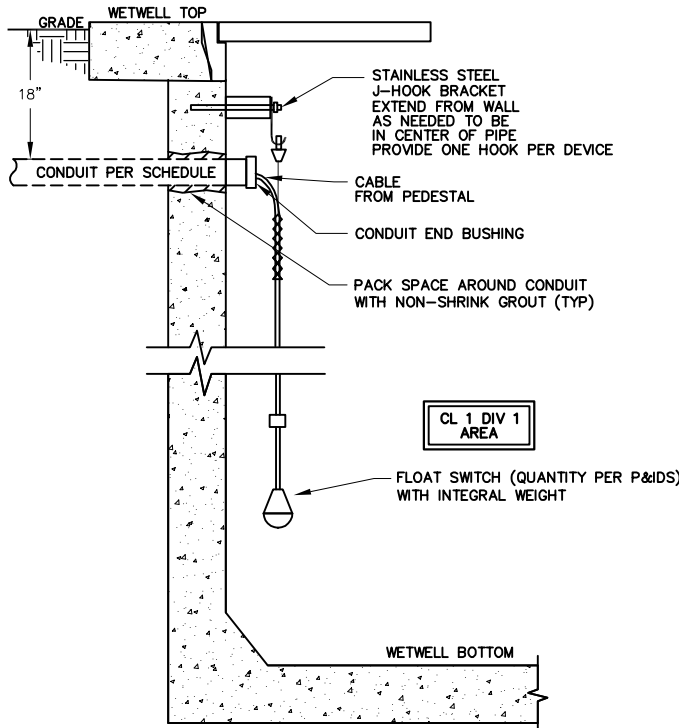
NOT TO SCALE

- NOTES: (1) LENGTH OF BRACKET EXTENSION AS REQUIRED PER MANUFACTURER INSTALLATION INSTRUCTIONS BASED ON MEASURED DEPTH.



FLOWMETER FLANGE ASSEMBLY

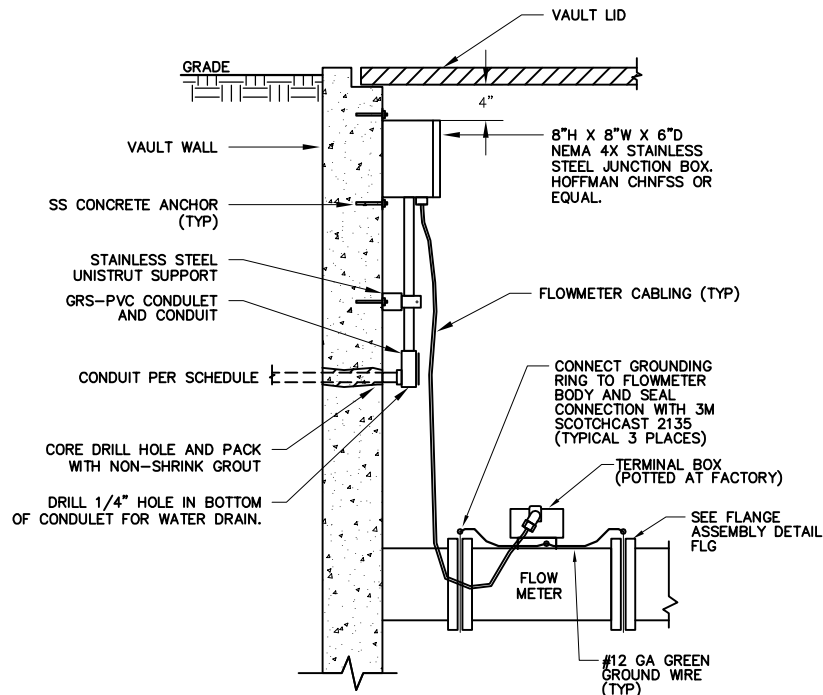
NOT TO SCALE



SECTION VIEW

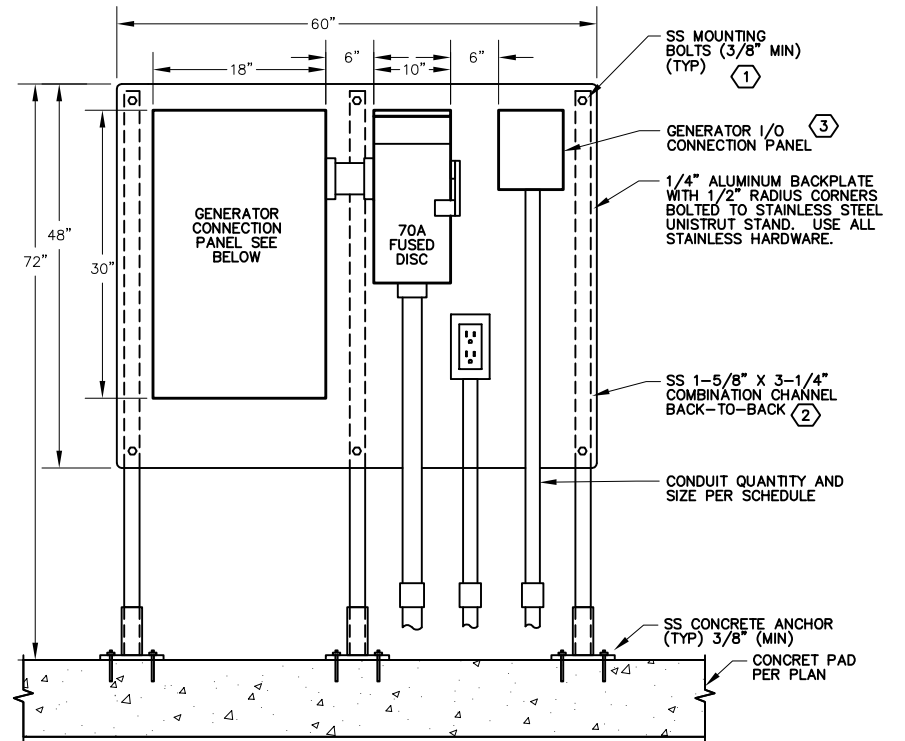
FLOAT SWITCH DETAIL

NOT TO SCALE



FLOWMETER VAULT DETAIL

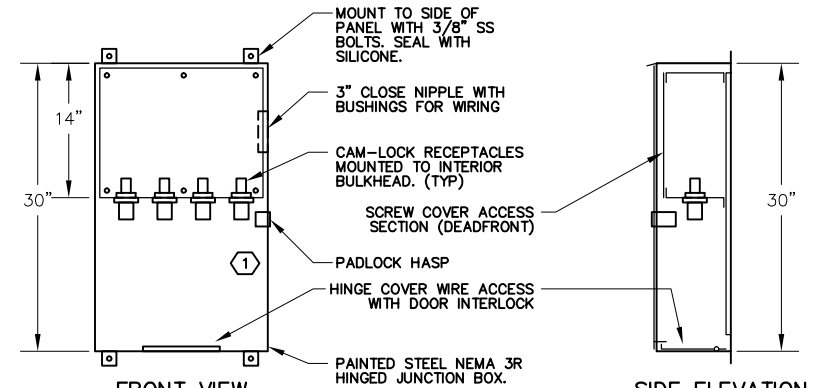
NOT TO SCALE



GENERATOR CONNECTION STANCHION DETAIL

NOT TO SCALE

- NOTES: (1) MOUNT ALL DEVICES TO BACKPAN USING ALL STAINLESS STEEL HARDWARE.
(2) NUMBER OF VERTICAL UNISTRUT SUPPORTS TO BE DETERMINED BY CONTRACTOR.
(3) I/O CONNECTION PANEL SHALL BE HOFFMAN A10086CHNF OR EQUAL. LOCATE FEMALE CONTROL CORD END INSIDE.

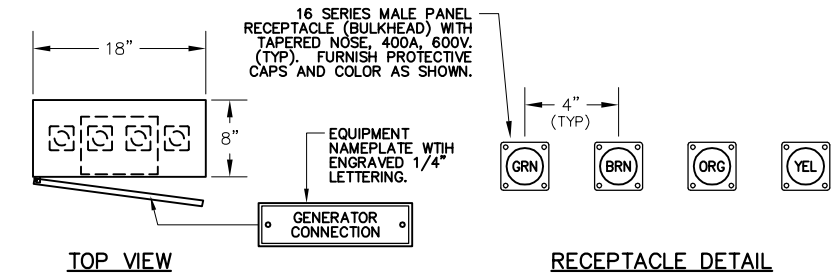


FRONT VIEW

DOOR NOT SHOWN

SIDE ELEVATION

SIDE NOT SHOWN



TOP VIEW

RECEPTACLE DETAIL

GENERATOR CONNECTION PANEL DETAIL

NOT TO SCALE, OUTDOOR, NEMA 3R

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FOLSOM, CA 95630
PH 916 353 1025
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REV.	DATE	DESCRIPTION



CITY OF PLEASANTON
PUBLIC WORKS DEPARTMENT



IMPROVEMENT PLANS FOR
SEWER LIFT STATION S-14
ELECTRICAL IMPROVEMENTS, CIP NO. 24265
ELECTRICAL DETAILS 2

DESIGN:	T. FRISCH
DRAWN:	N. CONANT
CHECKED:	T. FRISCH
ENGINEER:	T. FRISCH

SCALE:	AS SHOWN
PROJECT NO.:	
DATE:	12/11/24

DWG NO.	E-12
13 OF 19	

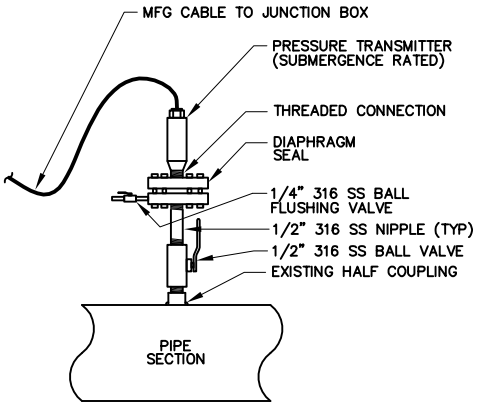
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CONDUIT & WIRE ROUTING SCHEDULE												
REV	CONDUIT DETAILS						POWER WIRE		CONTROL WIRE		GROUND	NOTES
	TAG NO.	FROM	TO	QTY	SIZE	TYPE	QTY	SIZE	QTY	SIZE		
	A03	PLC CONTROL PANEL	AUTOMATIC TRANSFER SWITCH	1	3/4"	SPEC	—	—	—	—	—	
	A04	PLC CONTROL PANEL	GENERATOR CONNECTION PANEL	1	3/4"	SPEC	—	—	1	#18 TSPR	#12	FUEL TANK LEVEL
	A50	PLC CONTROL PANEL	WETWELL TERMINATION PANEL	1	3/4"	SPEC	—	—	2	#18 TSPR	#12	
	A51	WETWELL TERMINATION PANEL	LEVEL TRANSMITTERS	1	2"	SPEC	—	—	2	MFG CABLE	—	LE-51A, LT-51B
	A60	PLC CONTROL PANEL	PRESSURE TRANSMITTERS	1	1"	SPEC	—	—	2	MFG CABLE	—	PT-61, PT-62
	A71	PLC CONTROL PANEL	FLOWMETER	1	3/4"	SPEC	—	—	1	#18 TSPR	#12	FE-71
	C02	AUTOMATIC TRANSFER SWITCH	GENERATOR CONNECTION PANEL	1	3/4"	SPEC	—	—	2	#14	#14	START
	C03	PLC CONTROL PANEL	AUTOMATIC TRANSFER SWITCH	1	3/4"	SPEC	—	—	8	#14	#14	
	C04	PLC CONTROL PANEL	GENERATOR CONNECTION PANEL	1	3/4"	SPEC	—	—	4	#14	#14	ALARM, RUN
	C10A	PUMP CONTROL PANEL	WETWELL TERMINATION PANEL	1	3/4"	SPEC	—	—	4	#14	#14	
	C10B	PUMP CONTROL PANEL	WETWELL	1	3/4"	SPEC	—	—	—	—	—	PULL ROPE
	C20A	PUMP CONTROL PANEL	WETWELL TERMINATION PANEL	1	3/4"	SPEC	—	—	4	#14	#14	
	C20B	PUMP CONTROL PANEL	WETWELL	1	3/4"	SPEC	—	—	—	—	—	PULL ROPE
	C50	PLC CONTROL PANEL	WETWELL TERMINATION PANEL	1	3/4"	SPEC	—	—	6	#14	#14	
	C52	WETWELL TERMINATION PANEL	LEVEL SWITCHES	1	2"	SPEC	—	—	3	MFG CABLE	—	LSL-52, LSH-52, LSHH-52
	C92A	PLC CONTROL PANEL	UTILITY METER PANEL	1	3/4"	SPEC	—	—	2	#14	#14	INTRUSION SWITCH
	C92B	PLC CONTROL PANEL	AUTOMATIC TRANSFER SWITCH	1	3/4"	SPEC	—	—	4	#14	#14	PANEL INTRUSION SWITCHES
	C93	PLC CONTROL PANEL	(E) PULLBOX	1	3/4"	SPEC	—	—	4	#14	#14	VAULT INTRUSION SWITCHES
	C93A	(E) PULLBOX	VALVE VAULT INTRUSION SWITCH	1	3/4"	SPEC	—	—	2	#14	#14	ZS-93A
	C93B	(E) PULLBOX	FLOWMETER VAULT INTRUSION SWITCH	1	3/4"	SPEC	—	—	2	#14	#14	ZS-93B
	D01	PLC CONTROL PANEL	(E) ANTENNA POLE	1	2"	SPEC	—	—	1	ANT CABLE	—	
	D03	PLC CONTROL PANEL	AUTOMATIC TRANSFER SWITCH	1	3/4"	SPEC	—	—	1	CAT 5E	—	BELDEN 7919A, POWER MONITOR
	L05	PUMP CONTROL PANEL	AUTOMATIC TRANSFER SWITCH	1	3/4"	SPEC	2	#12	—	—	#12	CKT, 5
	L10	PUMP CONTROL PANEL	EXISTING ANTENNA	1	3/4"	SPEC	4	#12	—	—	#12	CKT 10, 13
	L11	PUMP CONTROL PANEL	GENERATOR CONNECTION PANEL	1	3/4"	SPEC	4	#12	—	—	#12	CKT 11, 12
	L14	PUMP CONTROL PANEL	VUALT RECEPTACLES	1	3/4"	SPEC	2	#12	—	—	#12	CKT, 14 VIA (E) PULLBOX
	P02	UTILITY POLE	UTILITY METER PANEL	1	3"	(E)	—	—	—	—	—	PER UTILITY REQUIREMENTS
	P03	UTILITY METER PANEL	AUTOMATIC TRANSFER SWITCH	1	3"	SPEC	3	#3/0	—	—	#6	
	P04	GENERATOR CONNECTION PANEL	GENERATOR TRANSFORMER	1	1-1/2"	SPEC	3	#4	—	—	#10	
	P05	AUTOMATIC TRANSFER SWITCH	PUMP CONTROL PANEL	1	3"	SPEC	3	#3/0	—	—	#6	
	P10A	PUMP CONTROL PANEL	WETWELL TERMINATION PANEL	1	1"	SPEC	3	#8	—	—	#10	
	P10B	WETWELL TERMINATION PANEL	PUMP 1	1	3"	SPEC	1	MFG CABLE	—	—	—	
	P20A	PUMP CONTROL PANEL	WETWELL TERMINATION PANEL	1	1"	SPEC	3	#8	—	—	#10	
	P20B	WETWELL TERMINATION PANEL	PUMP 2	1	3"	SPEC	1	MFG CABLE	—	—	—	
	X01	PLC CONTROL PANEL	(E) ANTENNA POLE	1	3/4"	SPEC	—	—	—	—	—	PULL ROPE
	X03	PLC CONTROL PANEL	AUTOMATIC TRANSFER SWITCH	1	3/4"	SPEC	—	—	—	—	—	PULL ROPE
	X04	PLC CONTROL PANEL	GENERATOR CONNECTION PANEL	1	3/4"	SPEC	—	—	—	—	—	PULL ROPE
	X05	PUMP CONTROL PANEL	AUTOMATIC TRANSFER SWITCH	1	3/4"	SPEC	—	—	—	—	—	PULL ROPE
	X06	PUMP CONTROL PANEL	(E) PULLBOX	1	3/4"	SPEC	—	—	—	—	—	PULL ROPE
	X07	PLC CONTROL PANEL	(E) PULLBOX	1	3/4"	SPEC	—	—	—	—	—	PULL ROPE
	X10	PUMP CONTROL PANEL	WETWELL TERMINATION PANEL	1	3/4"	SPEC	—	—	—	—	—	PULL ROPE
	X20	PUMP CONTROL PANEL	WETWELL TERMINATION PANEL	1	3/4"	SPEC	—	—	—	—	—	PULL ROPE

NOTES PERTAINING TO CONDUIT SCHEDULE:

- CONDUIT TYPE "SPEC" IS AS DEFINED IN SPECIFICATIONS SECTION [CONDUIT AND BOXES] FOR NON-EXPOSED AND EXPOSED PORTIONS OF CONDUIT RUN.
- SEE SPECIFICATIONS AND EXPOSED TRANSITION DETAIL OR EQUIPMENT SPECIFIC DETAIL FOR CONDUIT TRANSITION MATERIALS AND METHODS FROM BELOW GROUND TO EXPOSED PORTIONS OF RUN.
- CONDUITS OVER 15 FT LENGTH (EITHER EMPTY OR WITH CONDUCTORS SIZED LESS THAN #8 AWG), SHALL INCLUDE A POLY PULL STRING. STRING SHALL BE TIED OFF AT EACH END.
- FITTINGS, CONDULETS, BOXES AND COVERS SHALL MATCH DUTY OF ADJACENT PIPE. SEE SPECIFICATIONS [CONDUIT AND BOXES.]
- WIRE SIZING IN TABLE IS BASED ON COPPER CONDUCTORS, THHN INSULATION, WITH TYPE C STRANDING. OTHER CONDUCTOR TYPES, IF ALLOWED OR REQUIRED PER SPECIFICATION, MAY REQUIRE CONDUITS TO BE UPSIZED BY CONTRACTOR AND SUBMITTED FOR APPROVAL.
- SEE GENERAL NOTES ON LIGHTING AND RECEPTACLE PLAN FOR CONDUIT REQUIREMENTS FOR ELECTRICAL DEVICES WITHOUT CONDUITS SHOWN, CONDUIT NUMBERS, OR NOT LISTED IN SCHEDULE.



PT
-
PRESSURE TRANSMITTER DETAIL
NOT TO SCALE



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ENGINEERING, INC.

CONSULTING ELECTRICAL ENGINEERS
13405 FOLSOM BLVD., UNIT 600
FOLSOM, CA 95630
PH 916 353 1025
WWW.FRISCHENGINEERING.COM

FILE: 2402B-E13.DWG

DATE: DEC 11, 2024 TIME: 5:45:27PM

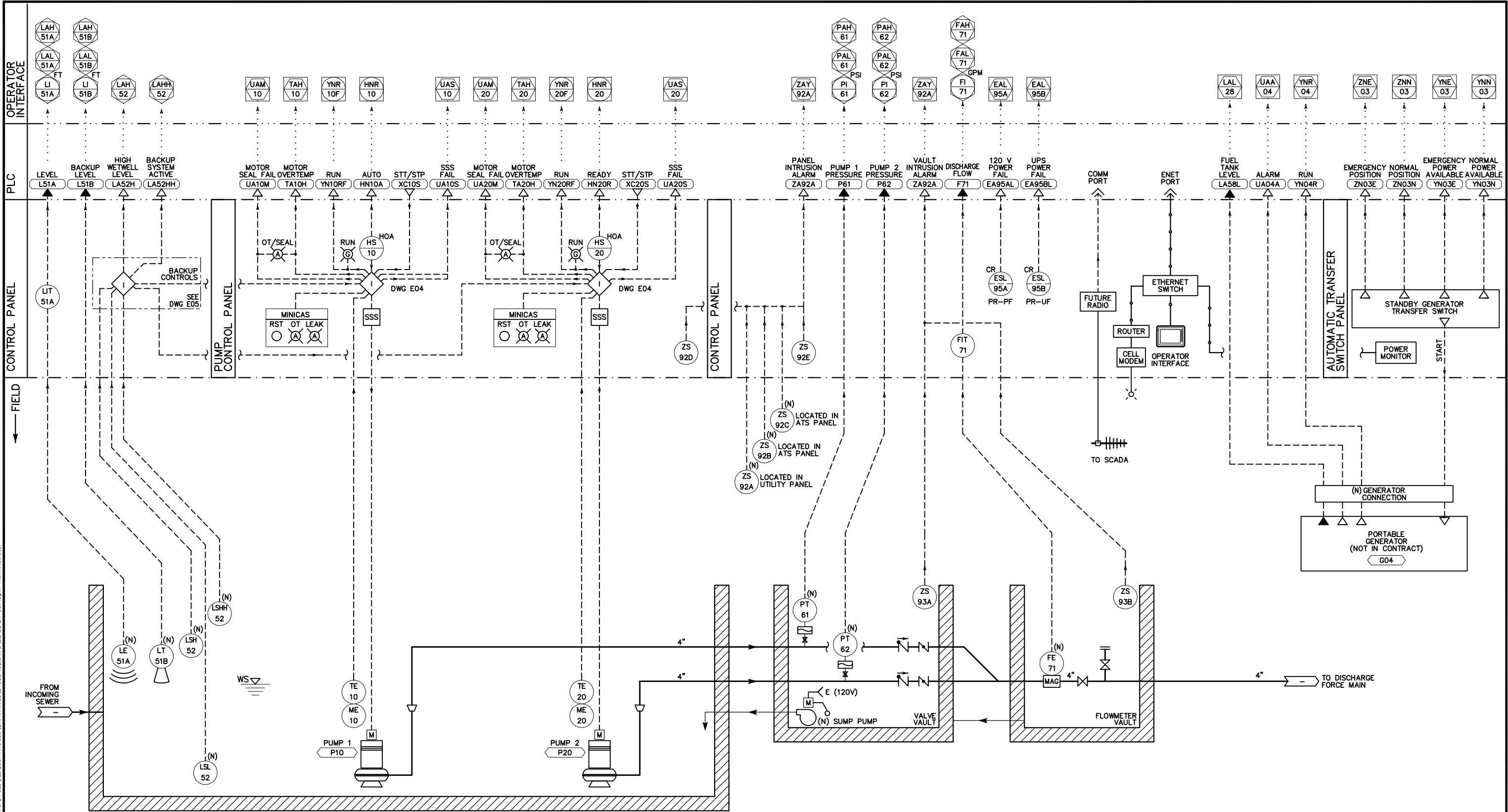
REV.	DATE	DESCRIPTION		CITY OF PLEASANTON PUBLIC WORKS DEPARTMENT		IMPROVEMENT PLANS FOR SEWER LIFT STATION S-14 ELECTRICAL IMPROVEMENTS, CIP NO. 24265 ELECTRICAL CONDUIT SCHEDULE AND DETAILS 3	DESIGN:	T. FRISCH	SCALE: AS SHOWN	DWG NO. E-13
							DRAWN:	N. CONANT		
							CHECKED:	T. FRISCH	PROJECT NO.:	
							ENGINEER:	T. FRISCH	DATE:12/11/24	14 OF 19

S:\FRISCH\ENGINEERING\0\0085\2402B PLEASANTON S-14 SLS DES 200A.ATS SSS DRAWINGS\2402B-101.DWG\12-11-24 05:45pm Administrator

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

P&ID ABBREVIATIONS			
SWITCH IDENTIFIER			
F/R	FORWARD/REVERSE	OPN	OPEN
HOA	HAND-OFF-AUTO	CLS	CLOSE
HOR	HAND-OFF-REMOTE	SEL	SELECTOR
LOS	LOCK OUT STOP	S/S	START / STOP
L/R	LOCAL / REMOTE	%	PERCENT ADJUSTMENT
MOA	MANUAL-OFF-AUTO		
OCA	OPEN-CLOSE-AUTO		
O/C	OPEN / CLOSE		
O/O	ON / OFF		

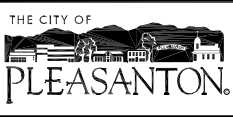
P&ID SYMBOLS							
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
ISA SYMBOLS		VALVES		PUMPS		SENSORS	
	FIELD MOUNTED INSTRUMENT		GATE VALVE		CENTRIFUGAL PUMP OR BLOWER		MAGNETIC FLOWMETER
	INSTRUMENT MOUNTED ON DOOR OF LOCAL PANEL, OPERATOR ACCESSIBLE		CHECK VALVE		SUBMERSIBLE SEWAGE PUMP		DENSITY METER
	INSTRUMENT MOUNTED ON DOOR OF FIELD PANEL, OPERATOR ACCESSIBLE		PLUG VALVE		VERTICAL TURBINE PUMP OR WELL PUMP		ULTRASONIC FLOWMETER
	INSTRUMENT MOUNTED WITHIN PANEL, OPERATOR INACCESSIBLE		BALL VALVE		SUBMERSIBLE WELL PUMP		TURBINE OR PROPELLER METER
	INSTRUMENT MOUNTED WITHIN FIELD PANEL, OPERATOR INACCESSIBLE		BALL CHECK VALVE		GEAR PUMP		VENTURI TUBE
	OPERATION PERFORMED WITH LOGIC OR HARDWIRED DEVICES		BUTTERFLY VALVE		POSITIVE DISPLACEMENT PUMP OR BLOWER		THERMAL DISPERSION FLOWMETER OR SWITCH
	ASSOCIATED MOTOR CONTROL ELEMENTARY IF APPLICABLE		ANGLE VALVE		DIAPHRAGM PUMP		PADDLE WHEEL FLOWMETER
	VISUAL DISPLAY OF PLC ANALOG REGISTER SCALE TO UNITS AS SHOWN		NEEDLE VALVE		PERISTALTIC PUMP		CORIOLIS FLOWMETER
	VISUAL DISPLAY OF PLC ANALOG ALARM REGISTER		RELIEF VALVE		MOTOR	MISCELLANEOUS MECHANICAL ITEMS	
	VISUAL DISPLAY OF PLC DIGITAL REGISTER		DIAPHRAGM VALVE				PIPE REDUCER
	VISUAL DISPLAY OF PLC DIGITAL ALARM REGISTER		3-WAY VALVE				RUPTURE DISC
	TAG DESCRIPTION		FLOW CONTROL VALVE				PRESSURE OR VACUUM RELIEF VALVE
	PLC I/O TAG		PINCH VALVE				DIAPHRAGM SEAL
	PLC DIGITAL INPUT		CONE VALVE				ANNUAL SEAL
	PLC DIGITAL OUTPUT		ANTISIPHON/BACKPRESSURE VALVE				DRAIN TO WASTE
	ANALOG INPUT		SOLENOID VALVE (2-WAY) (S → M FOR MOTORIZED VALVE)				MIXER
	ANALOG OUTPUT		SOLENOID VALVE (3-WAY) (S → M FOR MOTORIZED VALVE)				FILTER
	AUDIBLE ALARM (BUZZER OR HORN)		SOLENOID VALVE (4-WAY) (S → M FOR MOTORIZED VALVE)				VENT W/CAP OR SCREEN
	LAMP INDICATION COLOR DENOTED BY "X" RED, BLU, GRN, WHT, AMBER		PNEUMATIC DIAPHRAGM CONTROL VALVE				FLEXIBLE HOSE OR TUBING
	CONTINUATION TAG FROM ONE AREA TO ANOTHER AREA OF DIFFERENT DRAWINGS "a" TAG IDENTIFIER TO POINT ON DRAWING NUMBER XXXX.		PRESSURE SUSTAINING VALVE		ORIFICE PLATE		SPRAY NOZZLE SYSTEM
	CONTINUED ON DWG I-X		PRESSURE REGULATING VALVE		ULTRASONIC LEVEL TRANSMITTER (FLOW IF OVER FLUME OR WEIR)		EXPANSION JOINT
			MULTIFUNCTION VALVE		CONDUCTANCE TYPE LEVEL ELEMENTS		STATIC MIXER
			SLUICE GATE (SG) OR SLIDE GATE (SLG)		RADAR TYPE LEVEL TRANSMITTER		EJECTOR / EDUCTOR
LINE TYPES			AIR RELIEF VALVE (ARV)		GUIDED OPTION		HOSE COUPLING
	PRIMARY PROCESS LINE		FLOAT VALVE		CAPACITANCE TYPE LEVEL TRANSMITTER		PULSATION DAMPENER
	SECONDARY PROCESS LINE		STRAINER				OMNI ANTENNA NON-DIRECTIONAL
	ELECTRICAL SIGNAL LINE (DIGITAL OR ANALOG)		BACKFLOW PREVENTER				YAGI ANTENNA DIRECTIONAL
	SOFTWARE OR DATA LINK		CALIBRATION VALVE				
	BOUNDARY OF EQUIPMENT PACKAGE SYSTEM		CALIBRATION COLUMN				
	COMMUNICATION CONNECTION		ROTAMETER				
			UNION				
		ACTUATORS					
			MOTORIZED SOLENOID				
			PNEUMATIC OPERATOR S- SOLENOID - OPEN/CLOSE A- POSITIONER - MODULATING				



SEWER LIFT STATION P&ID
FIELD EQUIPMENT EXISTING EXCEPT WHERE NOTED AS NEW (N)

FRISCH ENGINEERING, INC.
CONSULTING ELECTRICAL ENGINEERS
13405 FOLSOM BLVD., UNIT 600
FOLSOM, CA 95630
PH 916 353 1025
WWW.FRISCHENGINEERING.COM
FILE: 2402B-102.DWG
DATE: DEC 11, 2024 TIME: 5:45:42PM

REV.	DATE	DESCRIPTION



CITY OF PLEASANTON
PUBLIC WORKS DEPARTMENT



IMPROVEMENT PLANS FOR
SEWER LIFT STATION S-14
ELECTRICAL IMPROVEMENTS, CIP NO. 24265
LIFT STATION P&ID

DESIGN:	T. FRISCH	SCALE:	AS SHOWN	DWG NO.	I-2
DRAWN:	N. CONANT	PROJECT NO.:			
CHECKED:	T. FRISCH	DATE:	12/11/24		
ENGINEER:	T. FRISCH				16 OF 19

Z:\24000 jobs\24000\24006 Pleasanton S14 LS Rehab\CAD\24006 01 General.dwg\4-29-24 06:42pm Brad Friedrichs

GENERAL:

1. INTERPRETATION OF DRAWINGS & SPECIFICATIONS
- 1.1 WHERE APPLICABLE, SPECIFICATIONS HAVE BEEN PREPARED FOR THIS PROJECT AND ARE ARRANGED IN SEVERAL SECTIONS, BUT SUCH SEPARATION SHALL NOT BE CONSIDERED AS THE LIMITS OF THE WORK REQUIRED BY ANY SEPARATE TRADE. THE TERMS AND CONDITIONS OF SUCH LIMITATIONS ARE WHOLLY BETWEEN THE CONTRACTOR AND SUBCONTRACTORS.

1.2 IN GENERAL, THE WORKING DETAILS WILL INDICATE DIMENSIONS, POSITIONS AND KIND OF CONSTRUCTION, AND THE SPECIFICATIONS WILL INDICATE QUALITIES AND METHODS. ANY WORK INDICATED ON THE WORKING DETAILS MENTIONED BUT NOT IN THE SPECIFICATIONS, OR VICE VERSA, SHALL BE FURNISHED AS THOUGH FULLY SET FORTH IN BOTH. WORK NOT PARTICULARLY DETAILED, MARKED OR SPECIFIED, SHALL BE THE SAME AS SIMILAR PARTS THAT ARE DETAILED, MARKED OR SPECIFIED. IF CONFLICTS OCCUR BETWEEN DRAWINGS AND SPECIFICATIONS, THE MOST EXPENSIVE MATERIALS OR METHODS WILL PREVAIL.

1.3 SHOULD AN ERROR APPEAR IN THE WORKING DETAILS OR SPECIFICATIONS OR IN WORK DONE BY OTHERS AFFECTING THIS WORK, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT ONCE AND IN WRITING. IF THE CONTRACTOR PROCEEDS WITH THE WORK SO AFFECTED WITHOUT HAVING GIVEN SUCH WRITTEN NOTICE AND WITHOUT RECEIVING THE NECESSARY APPROVAL, DECISION OR INSTRUCTION IN WRITING FROM THE OWNER, THEN THEY SHALL HAVE NO VALID CLAIM AGAINST THE OWNER, FOR THE COST OF SO PROCEEDING AND SHALL MAKE GOOD ANY RESULTING DAMAGE OR DEFECT. NO VERBAL APPROVAL, DECISION, OR INSTRUCTION SHALL BE VALID OR BE THE BASIS FOR ANY CLAIM AGAINST THE OWNER, ITS OFFICERS, EMPLOYEES, OR AGENTS. THE FOREGOING INCLUDES TYPICAL ERRORS IN THE SPECIFICATIONS OR NOTATIONAL ERRORS IN THE WORKING DETAILS WHERE THE INTERPRETATION IS DOUBTFUL OR WHERE THE ERROR IS SUFFICIENTLY APPARENT AS TO PLACE A REASONABLY PRUDENT CONTRACTOR ON NOTICE THAT, SHOULD THEY ELECT TO PROCEED, THEY ARE DOING SO AT THEIR OWN RISK.
2. CONSTRUCTION SHALL CONFORM TO THE 2022 CBC AND ALL APPLICABLE CODES AND REGULATIONS.
3. SHOP DRAWING NOTE:

3.1 SHOP DRAWINGS SHALL BE SUBMITTED ELECTRONICALLY IN PDF FORMAT AT FULL SCALE.

3.2 THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE STRUCTURAL ENGINEER THAT THEY UNDERSTAND THE DESIGN CONCEPT BY INDICATING WHICH MATERIALS THEY INTEND TO FURNISH AND INSTALL, AND BY DETAILING THE FABRICATION AND INSTALLATION METHODS THEY INTEND TO USE.

3.3 PRIOR TO FABRICATION, SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW TO THE STRUCTURAL ENGINEER. SHOP DRAWING SUBMITTALS SHALL INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO CONCRETE MIX DESIGNS, STRUCTURAL STEEL, REINFORCING STEEL, MASONRY UNITS, GROUT MIX DESIGNS, GLUED LAMINATED BEAMS, AND PRE-FABRICATED WOOD ROOF DRAINING ITEMS SUCH AS I-JOISTS AND TRUSSES WHERE THESE ELEMENTS ARE INDICATED ON THE DRAWINGS.

3.4 PRIOR TO SUBMISSION THE CONTRACTOR SHALL REVIEW ALL SUBMITTALS FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SHALL STAMP SUBMITTALS AS BEING "REVIEWED FOR CONFORMANCE"

3.5 SHOP DRAWING SUBMITTALS PROCESSED BY THE STRUCTURAL ENGINEER ARE NOT CHANGE ORDERS.

3.6 ANY DETAIL ON THE SHOP DRAWING THAT DEVIATES FROM THE CONTRACT DOCUMENTS SHALL CLEARLY BE MARKED WITH THE NOTE "THIS IS A CHANGE".

3.7 SHOP DRAWINGS OR CALCULATIONS SUBMITTED FOR REVIEW THAT REQUIRE RESUBMITTAL FOR RE-REVIEW SHALL BE BILLED HOURLY FOR SUCH TIME TO THE GENERAL CONTRACTOR. RE-REVIEW WILL NOT PROCEED WITHOUT WRITTEN APPROVAL FROM THE GENERAL CONTRACTOR FOR ADDITIONAL ENGINEERING REVIEW SERVICES.
4. SAFETY NOTE:

4.1 IT IS THE CONTRACTORS RESPONSIBILITY TO COMPLY WITH THE PERTINENT SECTIONS, AS THEY APPLY TO THIS PROJECT, OF THE "CONSTRUCTION SAFETY ORDERS" ISSUED BY THE STATE OF CALIFORNIA LATEST EDITION, AND ALL OSHA REQUIREMENTS.

4.2 THE OWNER AND THE STRUCTURAL ENGINEER DO NOT ACCEPT ANY RESPONSIBILITY FOR THE CONTRACTOR'S FAILURE TO COMPLY WITH THESE REQUIREMENTS.

4.3 THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE DESIGN AND CONSTRUCTION OF ALL FORMS AND SHORING REQUIRED.

5. THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER WHERE A CONFLICT OR A DISCREPANCY OCCURS BETWEEN THE STRUCTURAL DRAWINGS AND ANY OTHER PORTION OF THE CONTRACT DOCUMENTS OR EXISTING FIELD CONDITIONS. SUCH NOTIFICATION SHALL BE GIVEN IN DUE TIME SO AS NOT TO AFFECT THE CONSTRUCTION SCHEDULE. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH STRUCTURAL DRAWINGS PRIOR TO COMMENCING ANY WORK.

6. WHERE NO SPECIFIC DETAIL IS SHOWN, THE CONSTRUCTION SHALL BE IDENTICAL OR SIMILAR TO THAT INDICATED FOR LIKE CASES OF CONSTRUCTION ON THIS PROJECT. SHOULD THERE BE ANY QUESTION, CONTACT THE STRUCTURAL ENGINEER PRIOR TO PROCEEDING.

7. WHEN CONSTRUCTION ATTACHES TO AN EXISTING BUILDING, A COMPLETE SET OF DRAWINGS OF THE EXISTING BUILDING SHALL BE KEPT ON THE JOB SITE. CONTRACTOR TO OBTAIN THESE DRAWINGS FROM THE OWNER.

8. ANY SUBSTITUTIONS FOR STRUCTURAL MEMBERS, HARDWARE, OR DETAILS SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER. SUCH REVIEW WILL BE BILLED ON A TIME AND MATERIALS BASIS TO THE GENERAL CONTRACTOR WITH NO GUARANTEE THAT THE SUBSTITUTION WILL BE ALLOWED.

9. DO NOT SCALE DRAWINGS. CONTACT THE STRUCTURAL ENGINEER FOR ANY DIMENSIONS NOT SHOWN.

10. THESE DRAWINGS ARE NOT COMPLETE UNTIL REVIEWED AND ACCEPTED BY THE LOCAL BUILDING OFFICIAL AND SIGNED BY THE OWNER AND THE STRUCTURAL ENGINEER.

11. ALL DRAWINGS AND WRITTEN MATERIAL APPEARING HEREIN CONSTITUTES THE ORIGINAL AND UNPUBLISHED WORK OF THE STRUCTURAL ENGINEER AND THE SAME MAY NOT BE DUPLICATED, USED OR DISCLOSED WITHOUT WRITTEN CONSENT OF THE STRUCTURAL ENGINEER.

12. THE STRUCTURE SHOWN ON THESE DRAWINGS IS STRUCTURALLY SOUND ONLY IN ITS COMPLETED FORM. THE STABILITY OF THIS STRUCTURE DEPENDS ON THE DIAPHRAGMS AND THE BRACING MEMBERS SHOWN. THE CONTRACTOR IS TO PROVIDE FOR THE DESIGN AND CONSTRUCTION OF SHORING FOR ALL EARTH, FORMS, CONCRETE, STEEL, WOOD, AND MASONRY TO RESIST GRAVITY, EARTH, WIND, SEISMIC, AND CONSTRUCTION LOADS. SHORING SHALL REMAIN IN PLACE UNTIL ALL DIAPHRAGMS AND LATERAL RESISTING ELEMENTS ARE IN PLACE IN THEIR ENTIRETY.

CONCRETE AND REINFORCING STEEL:

1. CONCRETE CONSTRUCTION SHALL CONFORM TO ACI 318-19 & ACI 350.
2. THE MINIMUM 28 DAY STRENGTH AND TYPE OF CONCRETE SHALL BE AS FOLLOWS:

CONCRETE

145 PCF

F'c= 3,000 PSI (MINIMUM 5.5 SACKS CEMENT PER CU. YD.).
3. ALL CONCRETE SHALL BE READY-MIX IN ACCORDANCE WITH ASTM-C94.
4. CONCRETE MIX DESIGN SHALL BE REVIEWED BY THE OWNER'S TESTING LABORATORY AND SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL. SELECTION OF CONCRETE MIX PROPORTIONS SHALL BE PER 2019 CBC SECTION 1903.
5. CEMENT SHALL CONFORM TO ASTM C-150 TYPE V.
6. CONCRETE AGGREGATES: NATURAL SAND AND ROCK AGGREGATES CONFORMING TO ASTM C-33.
7. REINFORCING SHALL CONFORM TO ASTM A706 GRADE 60.
8. WELDING OF REINFORCING STEEL SHALL CONFORM TO AWS D1.4 USING PROPER LOW HYDROGEN ELECTRODES. TACK WELDING TO REBAR IS STRICTLY PROHIBITED. SEE "REBAR WELDING".
9. REINFORCING STEEL SHALL BE DETAILED, FABRICATED, AND INSTALLED ACCORDING TO "MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION" BY CRSI.
10. WIRE FABRIC SHALL CONFORM TO ASTM A-1064.
11. DIMENSIONS SHOWN FOR LOCATION OF REINFORCING ARE TO THE FACE OF MAIN BARS AND DENOTE CLEAR COVERAGE. UNLESS OTHERWISE NOTED, CONCRETE COVERAGE SHALL BE AS FOLLOWS:

CONCRETE DEPOSITED DIRECTLY AGAINST GROUND (EXCEPT SLABS)

3"

FORMED CONCRETE EXPOSED TO WEATHER OR GROUND OR LIQUID

#6 AND LARGER 2"

#5 AND SMALLER 2"

BEAMS (TOP BARS) 1½"

BEAMS (ALL OTHER MAIN REINFORCING) 2"

COLUMN MAIN REINFORCING 2"

WALLS AND SLABS (INTERIOR DRY FACES) ¾"

SLABS ON GROUND WITH ONE LAYER OF REINFORCEMENT POSITION IN CENTER OF SLAB
12. REINFORCING STEEL PLACEMENT:

12.1 ALL BARS SHOWN WITH LAPS OR SPLICES SHALL HAVE MIN LAP LENGTH UNLESS OTHERWISE NOTED.

12.2 DOWEL ALL VERTICAL REBAR IN WALLS AND COLUMNS FROM FOUNDATION WITH SAME SIZE AND SPACING AS VERTICAL BARS.

12.3 SPLICES IN ADJACENT BARS SHALL BE NOT LESS THAN 5'-0" APART.

12.4 SPLICE CONTINUOUS BARS IN SOIL-BEARING GRADE BEAMS AS FOLLOWS: BOTTOM BARS AT MID-SPAN, TOP BARS AT CENTERLINE OF SUPPORT, UNLESS NOTED OTHERWISE.

12.5 SPLICE CONTINUOUS BARS IN BEAMS, SPANDRELS, WALL BEAMS ETC. AS FOLLOWS: BOTTOM BARS AT CENTERLINE OF SUPPORT, TOP BARS AT MIDSPAN, UNLESS NOTED OTHERWISE.

12.6 REINFORCING BARS SHALL BE RUN IN A MANNER THAT FORMS A CONTINUOUS SYSTEM OF BARS TYING ALL PARTS OF THE STRUCTURE TOGETHER. EXTEND ALL REINFORCING BARS AS FAR AS POSSIBLE IN EACH CONCRETE MEMBER AND TERMINATE BAR TO PROVIDE 2" OF CONCRETE COVER END OF BAR OR FACE OR BEND.

12.7 BEAM STIRRUPS AND COLUMN TIES SHALL HOOK 135 DEGREES AROUND A CORNER BAR UNLESS NOTED OTHERWISE.
13. GENERAL:

13.1 NO PIPES OR DUCTS SHALL BE PLACED IN CONCRETE SLABS, BEAMS, WALLS OR GRADE BEAMS UNLESS SPECIFICALLY DETAILED.

13.2 REFER TO ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND MECHANICAL DRAWINGS FOR ALL OPENINGS, FLANGES, MOULDS, GROOVES, CLIPS AND GROUNDS TO BE CAST IN CONCRETE.
14. CONSTRUCTION JOINTS SHALL BE MADE ROUGH AND ALL LAITANCE REMOVED FROM THE SURFACE. CONCRETE MAY BE ROUGHENED BY CHIPPING THE ENTIRE SURFACE, SANDBLASTING, OR HOSING THE SURFACE 4 TO 6 HOURS AFTER THE POUR WITH A FINE SPRAY.
15. REMOVE ALL DEBRIS FROM THE FORMS BEFORE PLACING ANY CONCRETE.
16. REINFORCING, DOWELS, BOLTS, ANCHORS, SLEEVES, ETC. TO BE EMBEDDED IN CONCRETE SHALL BE SECURELY POSITIONED BEFORE PLACING CONCRETE. OBTAIN APPROVAL OF ALL AFFECTED TRADES PRIOR TO PLACING CONCRETE.
17. MAXIMUM FREE FALL OF CONCRETE SHALL BE 3'-0".
18. WALLS SHALL BE PLACED IN HORIZONTAL LAYERS OF 2'-0" MAX DEPTH.
19. CONCRETE IN WALLS, PIERS, OR COLUMNS SHALL SET AT LEAST 2 HOURS BEFORE PLACING CONCRETE IF IT SUPPORTS BEAMS, SPANDRELS, OR SLABS.
20. REINFORCE ALL SLABS ON GRADE AS SHOWN ON DRAWINGS.
21. HORIZONTAL WALL BARS IN DOUBLE LAYER WALLS SHALL BE STAGGERED. USE #2 SPREADERS APPROXIMATELY EVERY THIRD INTERSECTION EACH DIRECTION FOR ALL DOUBLE LAYER WALLS. PLACE SPREADERS IN VERTICAL LINES WITH FORM TIES.
22. NO WOOD SPREADERS ARE ALLOWED. NO WOOD STAKES ARE ALLOWED IN AREAS TO BE CONCRETED.
23. MINIMUM WALL REINFORCING FOR TEMPERATURE AND SHRINKAGE CONTROL ARE:

WALL THICKNESS

SINGLE LAYER

DOUBLE LAYER

7" OR LESS #4 @ 12" CC EW

8" #4 @ 10" CC EW

9" AND 10" #4 @ 12" CC EW

11" AND 12" #4 @ 12" CC EW

18" #5 @ 12" CC EW

24" #6 @ 12" CC EW

#4 @ 16" CC EW

#4 @ 12" CC EW

#5 @ 12" CC EW

#6 @ 12" CC EW
24. NOTIFY THE ENGINEER 48 HOURS PRIOR TO PLACING CONCRETE.
25. REINFORCEMENT LAP SPLICE LENGTHS ARE:

3,000 PSI

3,500 PSI

4,000 PSI

#6 AND SMALLER 57db 53db 49db

#7 AND LARGER 72db 66db 62db

25.1 SPLICE LENGTHS SHOWN APPLY TO LAP CLASS B NORMAL WEIGHT CONCRETE FOR THE STRENGTHS SHOWN. THE REINFORCING IS UNCOATED GRADE 60 REINFORCING.

25.2 INCREASE LAP SPLICE LENGTHS BY 30% FOR TOP REINFORCING. TOP REINFORCING IS HORIZONTAL REINFORCING WITH MORE THAN 12" OF CONCRETE BELOW THE SPLICE.

25.3 INCREASE LAP LENGTHS BY 30% IF LIGHTWEIGHT CONCRETE IS USED.

25.4 WHERE CLEAR SPACING OF BARS IS LESS THAN 2 db OR WHERE CLEAR COVER IS LESS THAN 1 db INCREASE LAP LENGTHS BY 50%, UNO.
26. MAXIMUM SPACING OF WALL CONST. JOINTS IS 30ft.

DESIGN CRITERIA:

1. CODE: 2022 CALIFORNIA BUILDING CODE (CBC)
2. DESIGN LIVE LOADS:

AREA

LIVE LOAD

FLOOR L= 100 PSF
3. WIND DESIGN PARAMETERS:

BASIC WIND SPEED (3-SEC GUST)

RISK CATEGORY

EXPOSURE CATEGORY

V= 103 MPH

IV

C
4. EARTHQUAKE DESIGN PARAMETERS:

SEISMIC IMPORTANCE FACTOR, I_e

COMPONENT IMPORTANCE FACTOR, I_p

RISK CATEGORY

SITE CLASS

SEISMIC DESIGN CATEGORY

DESIGN SPECTRAL RESPONSE PARAMETERS:

1.5

1.54

TABLE 1705.3 REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION				
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	IBC REFERENCE
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT		X	ACI 318 CH. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. REINFORCING BAR WELDING: A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706 B. INSPECT SINGLE-PASS FILLET WELDS, ⅝" MAX C. INSPECT ALL OTHER WELDS			AWS D1.4 ACI 318: 26.6.4	
3. INSPECT ANCHORS CAST IN CONCRETE		X	ACI 318: 17.8.2	
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED 4.c	X		ACI 318: 17.8.2.4 ACI 318: 17.8.2	
5. VERIFY USE OF REQUIRED DESIGN MIX		X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X		ASTM C172 ASTM C31 ACI 318: 26.4, 26.12	1908.10
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X		ACI 318: 26.5	1908.6, 1908.7, 1908.8
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X	ACI 318: 26.5.3-26.5.5	1908.9
9. INSPECT PRESTRESSED CONCRETE FOR: A. APPLICATION OF PRESTRESSING FORCES; AND B. GROUTING OF BONDED PRESTRESSING TENDONS			ACI 318: 26.10	
10.INSPECT ERECTION OF PRECAST CONCRETE MEMBERS			ACI 318: CH. 26.8	
11.VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS			ACI 318: 26.11.2	
12.INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED		X	ACI 318: 26.11.1.2(b)	
A. WHERE APPLICABLE, SEE ALSO SECTION 1705.12, SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE. B. SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF THE WORK.				



VE SOLUTIONS
Incorporated

777 Greenback Lane, Suite 104
Citrus Heights, CA 95610
PH. (916) 505-0519
Fax. (916) 514-9102
E-mail: brad@vesolutions.net



CITY OF PLEASANTON
PUBLIC WORKS DEPARTMENT



IMPROVEMENT PLANS FOR
SEWER LIFT STATION S-14
ELECTRICAL IMPROVEMENTS, CIP NO. 24265
GENERAL STRUCTURAL
NOTES

DESIGN:	B. FRIEDERICHS
DRAWN:	D. GARROTT
CHECKED:	B. FRIEDERICHS
ENGINEER:	B. FRIEDERICHS

SCALE: AS SHOWN
PROJECT NO.:
DATE: 4/30/24

DWG NO.
S-1
17 OF 18

V:\Engineering\24000 jobs\24000\24006 Pleasanton S14 LS Rehab\CAD\24006 02 Plan Section.dwg\10-24-24 01:35pm Daniel Garrott



VE SOLUTIONS
Incorporated
777 Greenback Lane, Suite 104
Citrus Heights, CA 95610
PH. (916) 505-0519
Fax. (916) 514-9102
E-mail: brad@vesolutions.net



CITY OF PLEASANTON
PUBLIC WORKS DEPARTMENT

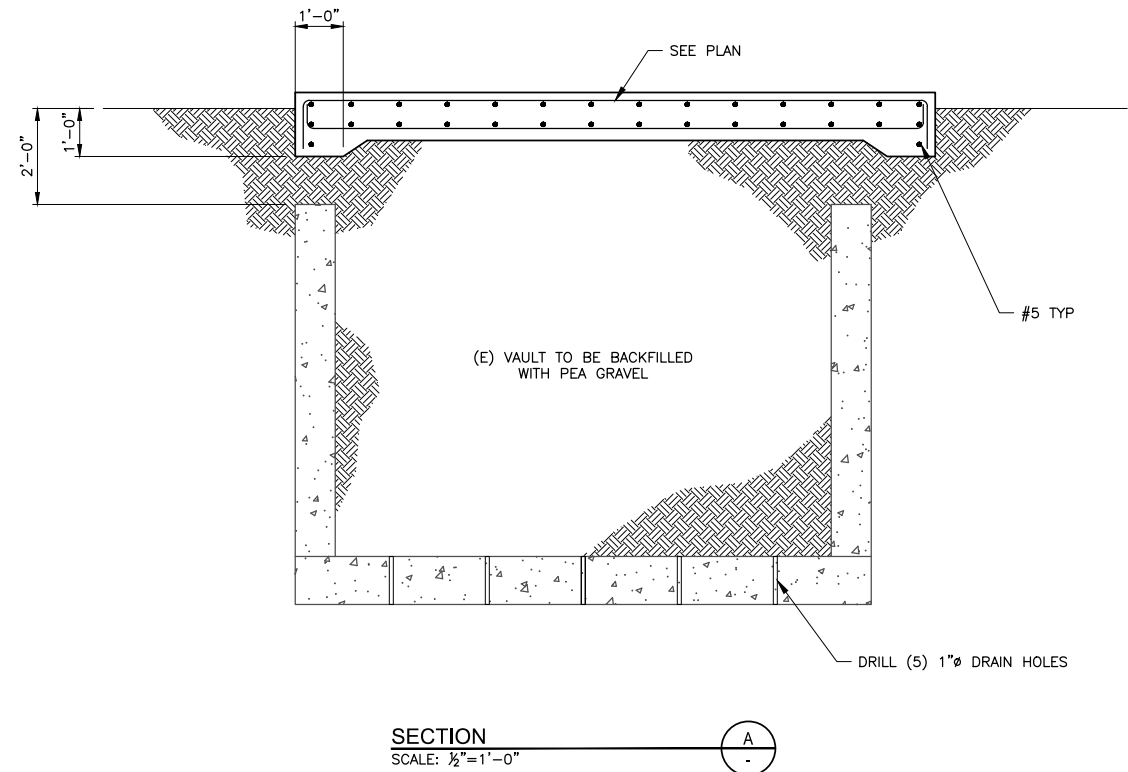
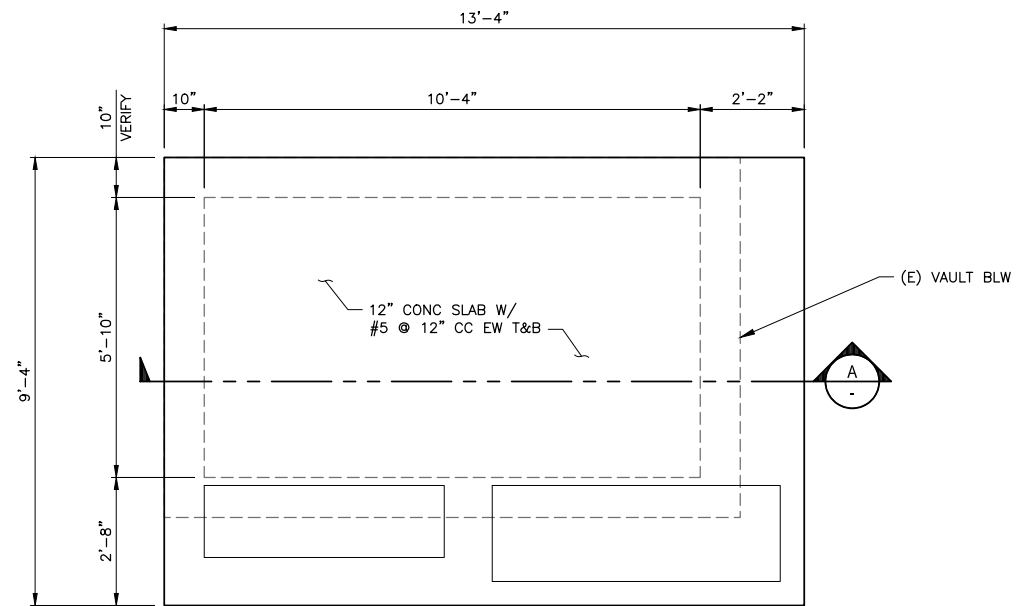
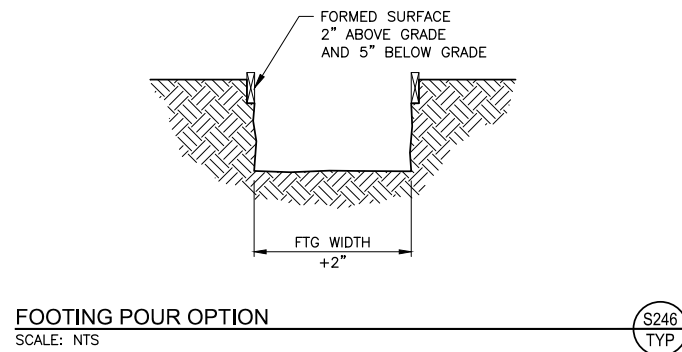
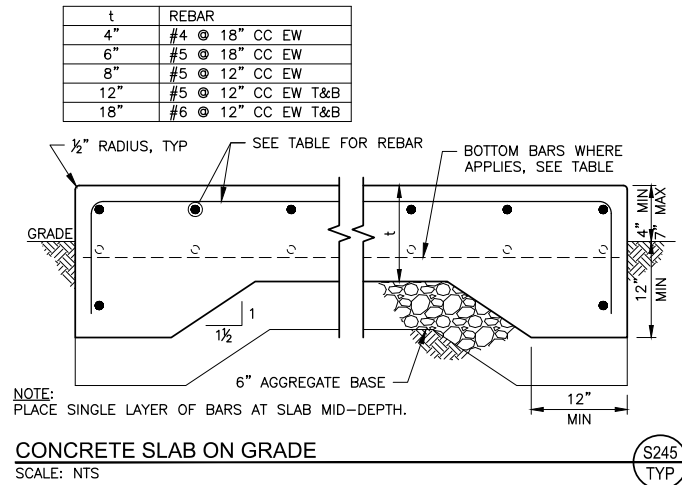


IMPROVEMENT PLANS FOR
SEWER LIFT STATION S-14
ELECTRICAL IMPROVEMENTS, CIP NO. 24265
STRUCTURAL
PLAN AND SECTION

DESIGN: B. FRIEDERICHS
DRAWN: D. GARROTT
CHECKED: B. FRIEDERICHS
ENGINEER: B. FRIEDERICHS

SCALE: AS SHOWN
PROJECT NO.:
DATE: 4/30/24

DWG NO.
S-2
18 OF 18



X:\Engineering\Sewer\SS Lift station (S14) MCC Replacement\Design\Drawings\CAD\S14 Topo Site Plan - C1.dwg 11-13-25 05:16pm skallaen

