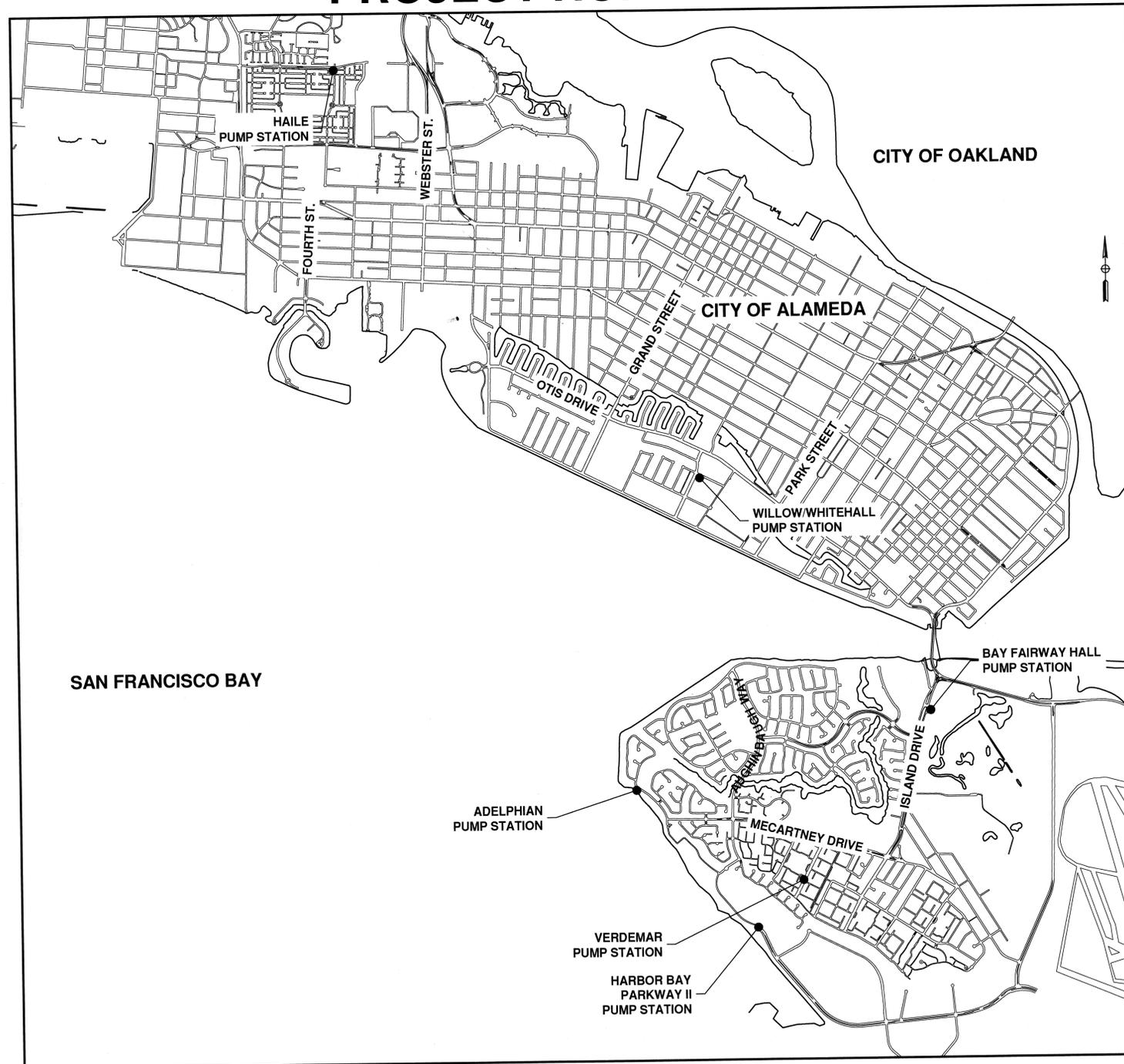


# CITY OF ALAMEDA

## GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS FOR RELIABILITY AND SAFETY IMPROVEMENTS

### ALAMEDA, CALIFORNIA

#### PROJECT NO. PW 03-14-10



**VICINITY MAP**  
SCALE: 1" = 1,500'

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NOTE: SHEETS 31 THROUGH 46 HAVE BEEN REMOVED FROM THE PROJECT AND PLAN SET. THERE ARE A TOTAL OF 49 SHEETS IN THE BID SET OF PLANS.

#### PUMP STATION ADDRESS AND PLAN CHECK NUMBERS

CITY PUMP STATION #	PUMP STATION NAME	ADDRESS	CITY PLAN CHECK NUMBER
1	ADELPHIAN	103 ADELPHIAN WAY	CB14-0825
9	VERDEMAR	3049 FLORA VISTA	CB14-0828
11	HARBOR BAY PARKWAY 2	2507 HARBOR BAY PARKWAY	CB14-0826
18	WILLOW-WHITEHALL	435 WILLOW STREET	CB14-0827
42	HAILE	2470 HAILE STREET	CB14-0829
13	BAY FAIRWAY HALL	300 ISLAND DRIVE	CB14-0830

#### CITY OF ALAMEDA BUILDING DEPARTMENT DEFERRED SUBMITTALS:

THE CONTRACTOR SHALL SUBMIT THE FOLLOWING ITEMS TO THE CITY'S BUILDING DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION OF THE EQUIPMENT:

1. PROVIDE DETAILS AND CALCULATIONS FOR THE ANCHORAGE OF GENERATORS TO THE CONCRETE SUPPORT PADS; PROVIDE A CONTINUOUS LOAD PATH WITH ADEQUATE STRENGTH AND STIFFNESS AS REQUIRED TO TRANSFER ALL FORCES FROM THE POINT OF APPLICATION TO THE FINAL POINT OF RESISTANCE (ASCE 7 12.1.3). DETAILS AND CALCULATIONS SHALL BE STAMPED AND SIGNED BY A CIVIL OR STRUCTURAL ENGINEER LICENSED IN THE STATE OF CALIFORNIA.

#### SUBMITTED

*B.S.* 5/26/15  
SCHAAF & WHEELER  
BENJAMIN L. SHICK, RCE 68813  
EXP. 9/30/2015

#### APPROVED

*Mark Obergfell* 6/17/15  
MARK OBERGFELL, PE  
CITY ENGINEER

DATE	APPR								
REVISIONS									
NO	DATE	BY	REVISION	NO	DATE	BY	REVISION	NO	DATE
1				1				1	
<b>Schaaf &amp; Wheeler</b> CONSULTING CIVIL ENGINEERS 1171 HOMESTEAD RD, STE. 255 SANTA CLARA, CA 95050 (408) 246-4848									
<b>CITY OF ALAMEDA</b> GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS FOR RELIABILITY AND SAFETY IMPROVEMENTS <b>TITLE SHEET</b>									
DATE:	5/13/15	SCALE:	AS SHOWN	DESIGN:	GMA	DRAWN:	GMA	CHECKED:	BLS
DWG 9370 CASE 95									
<b>SHEET</b>									
1 OF 65									

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**GENERAL NOTES**

- ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE GENERAL AND SPECIFIC PROVISIONS, STANDARD DRAWINGS, AND REQUIREMENTS OF THE CITY OF ALAMEDA.
- NO CHANGE TO THE PROJECT IMPROVEMENT PLANS SHALL BE PERMITTED WITHOUT PRIOR APPROVAL BY THE DIRECTOR OF PUBLIC WORKS/CITY ENGINEER.
- CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE CITY AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT TO THE EXTENT ARISING FROM THE SOLE NEGLIGENCE OF THE CITY OR ENGINEER.
- CONTRACTOR SHALL CONFORM TO THE RULES AND REGULATIONS OF THE STATE CONSTRUCTION SAFETY ORDERS.
- INFORMATION CONCERNING EXISTING UTILITIES IS NOT GUARANTEED; LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE ONLY. CONTRACTOR SHALL REQUEST THAT UNDERGROUND FACILITIES BE LOCATED AND MARKED IN THE FIELD A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION BY CALLING UNDERGROUND SERVICE ALERT (U.S.A.) AT 800-227-2600. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY POTENTIAL CONFLICT WITH EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL NOTIFY THE CITY OF ALAMEDA DEPARTMENT OF PUBLIC WORKS AT LEAST 48 HOURS IN ADVANCE OF THE START OF ANY CONSTRUCTION ACTIVITY. ALL UTILITY SHUTDOWNS ARE TO BE COORDINATED THROUGH THE CITY. ANY TEMPORARY SUSPENSION OF THE WORK OR SUBSEQUENT RESUMPTION OF WORK REQUIRES THE NOTIFICATION OF THE CITY AND THE ENGINEER.
- ALL EXISTING UTILITIES SHALL BE ADEQUATELY SUPPORTED AND PROTECTED TO THE SATISFACTION OF THE CITY. IN THE EVENT OF DAMAGE TO ANY UTILITY OCCASIONED BY THE CONTRACTOR OPERATIONS, THE CONTRACTOR, AT HIS SOLE COST AND EXPENSE, WILL IMMEDIATELY CAUSE REPAIRS TO BE MADE TO THE SATISFACTION OF THE AFFECTED UTILITY. NOTIFY THE ENGINEER OF ANY ADJUSTMENTS NECESSITATED BY WAY OF CONFLICT WITH EXISTING UTILITIES.
- CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAG MEN, CONES OR OTHER DEVICES NECESSARY TO PROVIDE FOR PUBLIC SAFETY IN ACCORDANCE WITH THE SPECIFICATIONS. CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN IN CONFORMANCE WITH THE SPECIFICATIONS.
- CONTRACTOR SHALL REPLACE, AT HIS EXPENSE, ALL TREES, SHRUBS, LAWNS, FENCES AND IMPROVEMENTS WHICH ARE TO REMAIN INTACT BUT HAVE BEEN REMOVED OR DAMAGED DURING CONSTRUCTION. CONTRACTOR SHALL NOT REMOVE OR DAMAGE IMPROVEMENTS LOCATED WITHIN CITY PROPERTY WITHOUT WRITTEN PERMISSION FROM THE CITY.
- WRITTEN PERMISSION FROM APPROPRIATE PROPERTY OWNERS MUST BE OBTAINED PRIOR TO REMOVING ANY EXISTING FENCES, SHEDS, OR OTHER PROPERTY OUTSIDE OF THE PUBLIC RIGHT-OF-WAY OR CITY PROPERTY.
- ALL PERMANENT IMPROVEMENTS REMOVED OR DAMAGED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL LOCATION AND CONDITION BY THE CONTRACTOR USING NEW MATERIALS AS DIRECTED BY THE ENGINEER. ALL INFRASTRUCTURE, INCLUDING BUT NOT LIMITED TO CURBS AND GUTTERS, SIDEWALKS, DRIVEWAYS, PAVEMENT RESTORATION, ETC. SHALL BE REPLACED PER THE CITY'S STANDARD PLANS.
- CONTRACTOR TO PROVIDE TEMPORARY FENCING AND GATES WHENEVER AND WHEREVER EXISTING FENCING OR GATES ARE REMOVED FOR CONSTRUCTION PURPOSES.
- CONTRACTOR TO MAINTAIN A MEANS OF ACCESS TO PROPERTIES, DRIVEWAYS, AND DWELLINGS AT ALL TIMES AS DETERMINED BY THE ENGINEER.
- THE CONTRACTOR SHALL NOTIFY, BY CIRCULAR, AS DIRECTED BY THE ENGINEER, ALL BUSINESS ESTABLISHMENTS AND RESIDENCES AFFECTED BY THE WORK, AT LEAST 48 HOURS PRIOR TO START OF CONSTRUCTION. CIRCULAR SHALL BE SUBJECT TO APPROVAL BY THE DIRECTOR OF PUBLIC WORKS/CITY ENGINEER.
- ALL SURPLUS AND UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE AND PUBLIC RIGHT-OF-WAY.
- CONTRACTOR SHALL PERFORM HIS CONSTRUCTION AND OPERATION IN A MANNER WHICH WILL NOT ALLOW HARMFUL POLLUTANTS TO ENTER THE STORM DRAIN SYSTEM OR OAKLAND ESTUARY. THE CONTRACTOR SHALL PRESENT HIS PROPOSED POLLUTION PREVENTION BMP'S AT THE PRE-CONSTRUCTION MEETING FOR DISCUSSION AND APPROVAL.
- THE CONTRACTOR SHALL NEITHER WASTE NOR DEPOSIT ANY HAZARDOUS MATERIALS WITHIN THE AREAS OF THIS PROJECT, INCLUDING BUT NOT LIMITED TO GASOLINE OR DIESEL FUELS, MOTOR OILS OR TRANSMISSION FLUIDS, ANTIFREEZE, HYDRAULIC FLUIDS, LUBRICANTS, STARTING FLUIDS AND FILTERS, AND/OR CONTAINERS FOR THESE PRODUCTS. HAZARDOUS MATERIAL SPILLS THAT OCCUR AS A RESULT OF EITHER EQUIPMENT FAILURES OR VANDALISM, INCLUDING ALL ADJACENT CONTAMINATED SOILS, SHALL BE REMOVED AND TRANSPORTED TO AN ENVIRONMENTALLY APPROVED DISPOSAL SITE. ALL REMOVAL, TRANSPORTATION AND DISPOSAL COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR HIS SUBCONTRACTORS.
- OVERNIGHT PARKING OF CONSTRUCTION EQUIPMENT IN THE STREET RIGHT-OF-WAY OR ADJACENT PARKING LOT SHALL NOT BE PERMITTED, EXCEPT AT LOCATION(S) APPROVED BY THE CITY.
- FIRM CAPACITY OF A PUMP STATION SHALL BE DEFINED AS THE STATION PUMPING CAPACITY WITH THE LARGEST (HIGHEST FLOW) PUMP TAKEN OUT OF SERVICE.
- ALL PIPING CONNECTIONS SHALL BE MECHANICALLY RESTRAINED. MJ CONNECTIONS SHALL BE RESTRAINED USING EBAA MEGALUGS OR APPROVED EQUAL.
- STREET ADDRESS SIGN SHALL BE POSTED AT EACH PUMP STATION. APPROXIMATE LOCATION OF SIGN IS SHOWN ON THE SITE PLANS. THE SIGN SHALL BE PLACED IN A LOCATION THAT IS CLEARLY VISIBLE FROM THE STREET. SIGN SHALL BE 3/4" THICK ALUMINUM WITH 1-INCH RADIUS CORNERS. SIGN SHALL BE COVERED WITH GREEN ENGINEER-GRADE REFLECTIVE SHEETING AND SHALL HAVE WHITE HORIZONTAL LETTERING. LETTERING SHALL BE 4 INCHES IN HEIGHT AND STENCILS SHALL HAVE 3/4" THICK STROKE. PENETRATIONS THROUGH NEW PANELS SHALL MEET THE REQUIREMENTS WITHIN THE ASSOCIATED SPECIFICATIONS.
- ALL STATIONS NEW FENCING SHALL BE PROVIDED WITH A KNOX KEY-LOCK BOX. APPLICATION FOR THE KNOX KEY-LOCK BOX IS AVAILABLE FROM THE FIRE INSPECTOR KEN JEFFREY, WHO MAY BE REACHED AT 510-337-2126. CONTRACTOR SHALL ALSO COORDINATE KNOX KEY-LOCK BOX LOCATION WITH THE FIRE INSPECTOR.
- THE CONTRACTOR MUST CONTACT ALAMEDA MUNICIPAL POWER (AMP) TO GAIN ACCESS TO THE ELECTRIC UTILITY BOXES AND FOR AMP TO INSPECT THE SERVICE CONDUIT INSTALLATION. THE CONTRACTOR SHALL CONTACT LONNIE HASTY AT 510-715-6111 OR AT 510-748-3964 TO COORDINATE UTILITY BOX ACCESS AND INSPECTIONS.

**TREE PRESERVATION GUIDELINES**

THESE GUIDELINES PROVIDE FOR THE CARE AND MAINTENANCE OF TREES BEFORE, DURING AND AFTER CONSTRUCTION. THE GOAL OF TREE PROTECTION AND PRESERVATION GUIDELINES IS TO PROVIDE FOR A SUCCESSFUL TRANSITION FOR THE TREE(S) WITHIN THE MODIFIED SITE.

**PRE-CONSTRUCTION ACTIVITIES**

THESE ACTIVITIES SHOULD BE UNDERTAKEN PRIOR TO INITIATION OF CONSTRUCTION ACTIVITY. IN ADDITION TO MODIFICATIONS TO THE PROJECT DESIGN TO REDUCE TREE IMPACTS, ALL STEPS THAT IMPROVE THE HEALTH OF TREES PRIOR TO CONSTRUCTION WILL GREATLY IMPROVE THE CHANCE OF SURVIVAL.

- TIMING OF ROOT LOSS** ROOT LOSS THAT OCCURS IN LATE FALL SEASON IS PREFERABLE TO CUTTING TREE ROOTS IN THE SPRING. PRUNING ACTIVITIES ARE BEST UNDERTAKEN IN MID TO LATE SUMMER OR WINTER. PRUNING BOTH THE CANOPY AND ROOTS AT THE SAME TIME SHOULD BE AVOIDED IF POSSIBLE.

- DESIGNATE TREE ROOT PROTECTION ZONE (RPZ)** THE TREE PROTECTION ZONE DESIGNATES AN AREA SURROUNDING A TREE OR GROUPING OF TREES THAT IS TO BE FENCED OFF FROM ALL ACCESS UNTIL DESIGNATED BY A CERTIFIED ARBORIST. THE RPZ IS COMMONLY DEFINED AS ONE (1) FOOT RADIAL DISTANCE FOR EVERY ONE (1) INCH IN TREE DIAMETER (DBH). EXAMPLE: A SINGLE STEM TREE MEASURING 30 INCHES IN DIAMETER, (MEASURED AT 54 INCHES OR 4.5 FEET ABOVE GRADE) WOULD HAVE A CRITICAL ROOT ZONE WITH A RADIUS OF 30 FEET. THIS IS ROUGHLY EQUIVALENT TO THE AREA COMMONLY REFERRED TO AS THE DRIP ZONE.

ARBORIST CAN MODIFY THE RPZ DISTANCE FROM THE BASE OF THE TREE BASED UPON SITE CONDITIONS AND THE LEVEL OF ROOT PRESENCE. IT SHOULD BE UNDERSTOOD THAT TREE ROOTS OFTEN EXTEND OUT FROM THE BASE TO MORE THAN THREE TIMES THE DISTANCE DEFINED BY THE CRITICAL ROOT ZONE. AN ARBORIST SHOULD MONITOR ALL GRADING AND TRENCHING ACTIVITY THAT IS WITHIN TWICE THE DISTANCE OF THE RPZ. THE LARGER THE PROTECTION ZONE THAT IS PROVIDED, THE GREATER THE LIKELIHOOD OF LONG-TERM TREE SURVIVAL.

- TREE ROOT PROTECTION ZONE FENCING** TREE PROTECTION FENCING SHALL BE 60" TALL CHAIN LINK TYPE, MOUNTED TO STEEL POSTS DRIVEN FIRMLY INTO THE GROUND.

- ROOT PROTECTION AND ROOT PRUNING** ROOT PROTECTION MEASURES MUST BE IN PLACE PRIOR TO THE BEGINNING OF CONSTRUCTION ACTIVITIES. NECESSARY ROOT PRUNING IS BEST ACCOMPLISHED PRIOR TO THE BEGINNING OF CONSTRUCTION ACTIVITIES WHEN EXCAVATION EQUIPMENT WILL BE USED. AFTER BEING EXPOSED BY HAND OR AIR EXCAVATION, ROOTS ARE PRUNED UNDER ARBORIST SUPERVISION. CONSTRUCTION ACTIVITIES ARE THEN FREE TO OCCUR OUTSIDE OF THE ROOT PRUNING BOUNDARY. SUPPLEMENTAL IRRIGATION - ARBORIST WILL DESIGNATE SUPPLEMENTAL IRRIGATION BASED UPON THE LEVEL OF ROOT LOSS, SOIL CONDITIONS, TREE HEALTH AND TIME OF YEAR.

- MULCHING** - USE OF FOUR TO SIX INCHES OF ORGANIC MULCH (WOOD CHIPS ARE BEST) ON SOIL SURFACE WILL REDUCE SOIL COMPACTION AND EVAPORATIVE SOIL MOISTURE LOSS. RECOMMENDED MATERIAL IS WOOD CHIPS GENERATED FROM TREE TRIMMING, FRESH REDWOOD, INCENSE CEDAR AND WALNUT CHIPS ARE NOT ACCEPTABLE, NOR IS PALM GENERATED MULCH.

- COMPOST** COMPOST IS OFTEN RECOMMENDED FOR PLACEMENT IMMEDIATELY UNDER THE MULCH. GOOD QUALITY COMPOST PROVIDES NUTRIENT VALUE. COMPOST MUST BE REPRESENTED BY A RECENT LABORATORY ANALYSIS TO CONFIRM QUALITY.

- PRUNING** ALL PRUNING MUST COMPLY WITH ANSI A300 PRUNING STANDARDS. PRUNING MUST BE MINIMIZED, PARTICULARLY WHEN ROOT LOSS OCCURS. PRUNING PRIOR TO CONSTRUCTION SHOULD INCLUDE: NECESSARY CLEARANCE PRUNING, DEADWOOD REMOVAL AND SAFETY PRUNING.

**TREE PROTECTION DURING CONSTRUCTION**

THE LEVEL OF ARBORIST MONITORING OF THE PROJECT CAN BE QUITE VARIABLE, DEPENDING UPON THE DEGREE OF ENCRoACHMENT INTO ROOT SYSTEMS AND THE EARLY LEVELS OF CONTRACTOR COMPLIANCE WITH THE TREE PROTECTION GUIDELINES.

**ABBREVIATIONS**

AB	AGGREGATE BASE	KW	KILOWATT
AC	ASPHALTIC CONCRETE OR ASBESTOS CEMENT	LF	LINEAL FEET
		MAX	MAXIMUM
AMP	ALAMEDA MUNICIPAL POWER	MIN	MINIMUM
ATS	AUTOMATIC TRANSFER SWITCH	MJ	MECHANICAL JOINT
BFP	BACK FLOW PREVENTER	MCC	MOTOR CONTROL CENTER
BM	BENCH MARK	MFRG	MANUFACTURER
BOC	BACK OF CURB	(N)	NEW
C.	CONDUIT	NTS	NOT TO SCALE
CL	CENTERLINE	PE	PLAIN END
CLR	CLEAR	POC	POINT OF CONNECTION
C.O.	CONDUCTOR	PUE	PUBLIC UTILITY EASEMENT
CONC	CONCRETE	PVC	POLY VINYL CHLORIDE
DEG	DEGREE	RCP	REINFORCED CONCRETE PIPE
DIA	DIAMETER	REQD	REQUIRED
DIP	DUCTILE IRON PIPE	RFCa	RESTRAINED FLANGED COUPLING ADAPTER
DWY	DRIVEWAY	ROW	RIGHT OF WAY
EA	EACH	SCH	SCHEDULE
ELEC	ELECTRICAL	SDMH	STORM DRAIN MANHOLE
ELECT	ELECTRICAL	SPECS	SPECIFICATIONS
EL, ELEV	ELEVATION	SS	STAINLESS STEEL, SANITARY SEWER
EG	ENGINE-GENERATOR	SSCO	SANITARY SEWER CLEAN OUT
EQ	EQUAL	SSFM	SANITARY SEWER FORCE MAIN
ESMT	EASEMENT	SSMH	SANITARY SEWER MANHOLE
(E)	EXISTING	STA	STATION
FCA	FLANGED COUPLING ADAPTER	SD	STORM DRAIN
FDR	FEEDER	SDCB	STORM DRAIN CATCH BASIN
FG	FINISH GRADE	TC	TOP OF CURB
FL	FLANGE	TSB	TRAFFIC SIGNAL BOX
FM	FORCE MAIN	TW	TOP OF WALL
FRP	FIBERGLASS REINFORCED PLASTIC	TYP	TYPICAL
GALV	GALVANIZED	UG	UNDERGROUND
GND	GROUND	UON	UNLESS OTHERWISE NOTED
GRV	GROOVE	VCP	VITRIFIED CLAY PIPE
HV	HIGH VOLTAGE	W/	WITH
HP	HORSEPOWER	WM	WATER METER
ID	INSIDE DIAMETER	WV	WATER VALVE
INV	INVERT	XFMR	TRANSFORMER

**LEGEND**

EXISTING	PROPOSED	
		CURB, GUTTER AND SIDEWALK
		EASEMENT / PROPERTY LINE
		SANITARY SEWER FORCE MAIN
		SANITARY SEWER
		STORM DRAIN
		WATER MAIN
		UNDERGROUND ELECTRIC
		UNDERGROUND TELEVISION LINE
		UNDERGROUND TELEPHONE LINE
		CENTER LINE
		CHAIN LINK FENCE
		LANDSCAPING
		POWER POLE
		SPOT ELEVATION
		BOLLARD
		DETAIL OR SECTION DESIGNATION
		SHEET NO. WHERE DETAIL OR SECTION IS DRAWN
		WATER VALVE
		WATER METER
		MONUMENT DISC
		CONCRETE
		GRAVEL

**TREE PRESERVATION GUIDELINES (CONT.)**

- PRE-CONSTRUCTION MEETING WITH ALL CONSTRUCTION PERSONNEL** - IT IS IMPORTANT THAT CONSTRUCTION CREW UNDERSTANDS THE TREE PROTECTION REQUIREMENTS. ALL PERSONNEL WORKING ON SITE SHOULD BE PROVIDED AN ORIENTATION TO TREE PRESERVATION MEASURES AND RULES BY THE ARBORIST ASSIGNED TO MONITOR TREE PRESERVATION.

- OBSERVE FENCED RPZ** THIS AREA IS OFF LIMITS TO ALL PERSONNEL, EQUIPMENT, MATERIALS STORAGE, OR ANY OTHER ACTIVITIES. FENCING MAY BE RELOCATED ONLY UNDER ARBORIST SUPERVISION.

**WORK ACTIVITIES OCCURRING WITHIN THE DESIGNATED RPZ**

- ROOT PROTECTION** - AREAS WHERE ROOTS CANNOT BE FENCED REQUIRE PROTECTION FROM CONTAMINANTS AND COMPACTION. THE EFFECTS OF FOOT TRAFFIC CAN BE MITIGATED THROUGH THE USE OF SIX (6) INCHES OF WOOD CHIP MULCH AND 3/4 INCH PLYWOOD PLACED ON TOP.

WHEN EQUIPMENT IS TO BE USED INSIDE OF THE DESIGNATED RPZ, SOIL MUST BE COVERED WITH 12 INCHES OF WOOD CHIPS AND TWO LAYERS OF 3/4 INCH PLYWOOD OR ONE LAYER OF 1 1/8 INCH PLYWOOD OR METAL TRENCH PLATES.

- TRUNK AND SCAFFOLD PROTECTION** WHENEVER CONSTRUCTION ACTIVITY MUST OCCUR INSIDE THE TREE PROTECTION ZONE, THE BASE OF THE TREE AND THE FIRST EIGHT-FEET OF THE TRUNK MUST BE PROTECTED. PROTECTION IS GENERALLY PROVIDED BY WRAPPING THE TRUNK UP TO THE FIRST BRANCH WITH 10 WRAPS OF ORANGE PLASTIC CONSTRUCTION FENCING OR USE OF STRAW WADDLES WRAPPED AROUND THE TREE. ADDITIONAL PROTECTION CAN BE PROVIDED BY EITHER STRAW BALES OR USE OF VERTICAL 2X4 BOARDS STRAPPED TO THE TREE. ARBORIST MAY REQUIRE ANY OR ALL OF THE TRUNK PROTECTION MEASURES DEPENDING UPON THE SITUATION.

- SOIL MOISTURE CONTROL** - WATER STRESS IS DETRIMENTAL TO TREE HEALTH, PARTICULARLY DURING THE SPRING. SUPPLEMENTAL IRRIGATION IS REQUIRED WHENEVER TREE ROOTS ARE UNCOVERED OR SEVERED DUE TO TRENCHING OR GRADING. OPEN TRENCHES WITH EXPOSED ROOTS REQUIRE MINIMUM TWO LAYERS OF DAMP BURLAP OR OTHER ACCEPTABLE COVERING AT ALL TIMES. AN ARBORIST WILL DETERMINE THE AMOUNT OF SUPPLEMENTAL WATERING REQUIRED BASED UPON SOIL MOISTURE INVESTIGATION AND WEATHER CONDITIONS.

- REQUIRED METHOD OF TRENCHING WITHIN CRITICAL ROOT ZONE** - CAREFULLY HAND EXCAVATION OR TUNNELING SHALL BE THE ACCEPTED METHOD FOR INSTALLING UNDERGROUND UTILITIES. THE AIR SPADE CAN ALSO BE USED MUCH MORE EFFICIENTLY WHEN A LARGE AMOUNT OF SUCH TRENCHING MUST BE UNDERTAKEN. ARBORIST IS TO SUPERVISE ANY SUCH ACTIVITY.

**POST CONSTRUCTION MITIGATION**

ALL VALUABLE TREES WHICH HAVE BEEN IMPACTED IN ANY MANNER (ROOT LOSS, SOIL MOISTURE CHANGES, OR NECESSARY PRUNING) WILL REQUIRE MITIGATION TO OFFSET THE ADVERSE IMPACT AND MAINTAIN THE LEVEL OF VIGOR IN THE TREE PRIOR TO BEING IMPACTED IMPACT. TREES THAT WERE NOT VIGOROUS PRIOR TO CONSTRUCTION WILL REQUIRE EXTRA CARE.

- MONITORING TREE HEALTH** - REGULAR VISUAL INSPECTION OF TREES WILL AID IN ASSESSING WHERE FURTHER MITIGATION IS REQUIRED. TREE DECLINE SHOULD BE RECORDED AND REFERENCED AGAINST PRE-CONSTRUCTION HEALTH ASSESSMENT. LEAF AND STEM INSECTS AND FUNGAL PATHOGENS ARE A SIGN OF POOR TREE HEALTH (LOW ENERGY RESERVES).

- MONITORING OF SOIL MOISTURE** - IT IS IMPORTANT THAT SIGNIFICANT CHANGES IN SOIL MOISTURE LEVELS WITHIN TREE ROOT ZONES BE IDENTIFIED EARLY, PRIOR TO VISIBLE EVIDENCE OF TREE DECLINE. MOISTURE SHOULD BE MONITORED BY VISUAL INSPECTION USING A SOIL PROBE OR THROUGH THE USE OF TENSIOMETERS PLACED AT KEY LOCATIONS. SUPPLEMENTAL IRRIGATION IS BEST PROVIDED DURING MIDDLE AND LATE SPRING. IN CASES WHERE TREES HAVE SUFFERED ROOT LOSS, SUPPLEMENTAL IRRIGATION WILL BE REQUIRED FOR A NUMBER OF YEARS IN THE AREA WHERE ROOTS WERE SEVERED.

**TREE PRESERVATION GUIDELINES (CONT.)**

- MITIGATION OF SOIL COMPACTION** - THE LEVEL AND DEPTH OF SOIL COMPACTION MUST BE ASSESSED AND MITIGATED AS NECESSARY. MITIGATION OF SOIL COMPACTION IN AREAS WHERE ROOTS ARE PRESENT MUST MINIMIZE ROOT LOSS. TOOLS MOST SUITABLE TO MITIGATE SOIL COMPACTION ARE THE WATER JET OR AIR SPADE.

- LANDSCAPING** - ALL LANDSCAPING PLANNING MUST TAKE PRECAUTIONS WHEN PLANTING WITHIN THE DESIGNATED RPZ. ALL PLANT MATERIALS SHOULD BE SELECTED FOR COMPATIBILITY WITH THE FAVORED MOISTURE REGIME OF THE TREES. WITH NATIVE OAK TREES, THIS IS PARTICULARLY CRITICAL. IRRIGATION MUST BE DESIGNED TO COMPLY WITH THE REQUIREMENTS OF THE TREE SPECIES AND SOIL CONDITIONS. IRRIGATION LINES MUST MINIMIZE ROOT LOSS AND PASS UNDER ROOTS WHEN POSSIBLE. AIR SPADE IS RECOMMENDED FOR EXCAVATION WITHIN THE DESIGNATED RPZ.

- CONTINUED MULCHING** - MULCH IS EXTREMELY BENEFICIAL IN CREATING A HEALTHY ROOT ENVIRONMENT. A REGULAR PROGRAM OF MULCH APPLICATION IS RECOMMENDED TO HELP RETAIN SOIL MOISTURE, PROVIDE A SOURCE OF NUTRIENTS, AND HELP CONTROL WEEDS. THE CONTINUED USE OF GOOD QUALITY COMPOST AS A MULCH IS BENEFICIAL AS A SOURCE OF NUTRITION.

- FERTILIZATION** - PRIOR TO FERTILIZATION, SOIL ANALYSIS AND POSSIBLY LEAF TISSUE ANALYSIS MUST BE UNDERTAKEN. TREES SHOULD BE FERTILIZED ONLY WHEN THE NUTRITIONAL LIMITATIONS HAVE BEEN IDENTIFIED. LEAF TISSUE ANALYSIS IS ANOTHER EXCELLENT TOOL FOR THIS DETERMINATION. EXCESSIVE NITROGEN FERTILIZATION IS KNOWN TO DRAW SUCKING INSECTS (APHID, SCALE, ETC.) TO THE PLANTS AND PROVIDE NUTRITION TO FUNGAL PATHOGENS IN THE SOIL.

- PEST MANAGEMENT PROGRAM** - HEALTHY TREES DO NOT GENERALLY HAVE SERIOUS PEST PROBLEMS. STRESSED TREES ARE ATTRACTIVE HOSTS TO PATHOGENS, WHICH CAN CONTRIBUTE TO DECLINE AND EVENTUAL DEATH. PEST MANAGEMENT IS PRESCRIBED WHEN MONITORING INDICATES A NEED AND TREE HEALTH IS MARGINAL.

**IRRIGATION NOTES**

- ALL DISTURBED IRRIGATION SHALL BE REPLACED IN KIND.
- ALL IRRIGATION HEADS SURROUNDING THE PROPOSED IMPROVEMENTS SHALL BE REPLACED OR ADJUSTED SO THAT SPRAY IS LIMITED TO THE LANDSCAPED AREAS AND DOES NOT HIT THE PROPOSED IMPROVEMENTS.
- EXISTING IRRIGATION IRRIGATION EQUIPMENT (PIPES, HEADS, CONDUIT, WIRES, ETC.) LOCATED UNDER PROPOSED IMPROVEMENTS SHALL BE RE-ROUTED AROUND CONCRETE PADS. A ONE FOOT MINIMUM CLEARANCE SHALL BE PROVIDED FROM IMPROVEMENTS (CONCRETE PADS, FENCES, ETC.) TO IRRIGATION EQUIPMENT. ALL IRRIGATION LINES REQUIRED TO BE UNDER CONCRETE SHALL BE SLEEVED WITH 2" SCH 40 CONDUIT.
- NEW IRRIGATION HEADS MAY BE REQUIRED TO PROVIDE COVERAGE FOR IRRIGATION HEADS REMOVED FOR IMPROVEMENTS.

DATE	APPR

REVISIONS

NO	DATE	BY



**Schaaaf & Wheeler**  
CONSULTING CIVIL ENGINEERS  
1171 HOMESTEAD RD, STE. 255  
SANTA CLARA, CA 95050  
(408) 246-4848

**CITY OF ALAMEDA**  
**GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS**  
**FOR RELIABILITY AND SAFETY IMPROVEMENTS**  
**NOTES, LEGEND & ABBREVIATIONS**

DATE:	5/13/15
SCALE:	AS SHOWN
DESIGN:	GMA
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DWG 9370 CASE 95

**SHEET**  
**2 OF 65**

File: M:\11697-01 Alameda Pumps \S\_Alameda\_Phase-1\_Group-2\3\_01E00.dwg, 5/12/2015 3:01 PM, Last saved: Vuong, PlotDate: 5/12/2015 3:07 PM, By: Vuong Mai, Plot scale: 1:2.5849, Plot Size: ANSI A (8.50 x 11.00 inches)  
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**GENERAL SYMBOLS AND LEGEND**

(E)	EXISTING
(N)	NEW
(R)	RELOCATED
Δ	DELTA CONNECTIONS OR DELTA CONNECTED WINDINGS
△	OPEN DELTA CONNECTIONS
Y	WYE CONNECTIONS OR WYE CONNECTED WINDINGS
⊥	GROUND, GROUND CONNECTION
②	SHEET NOTE IDENTIFICATION, REFER TO SHEET NOTE NUMBER 2
(K)	KEY INTERLOCK
(M)	MECHANICAL INTERLOCK
⊕	DISCONNECTING MEANS
-X-X-X-	FENCE
±	APPROXIMATE DIMENSION
⊙	POLE MOUNTED ANTENNA
<b>ELECTRICAL SYMBOLS</b>	
⊞	POWER TRANSFORMER, TWO WINDING
⊞	SWITCH
⊞	SWITCH, FUSED
⊞	TEMPERATURE SWITCH, CLOSED AT LOW TEMPERATURE
⊞	TEMPERATURE SWITCH, OPEN AT LOW TEMPERATURE
⊞	FLOAT SWITCH, CLOSED AT LOW WATER LEVEL
⊞	FLOAT SWITCH, OPEN AT LOW WATER LEVEL
⊞	OVERLOAD ELEMENT
⊞	LOW VOLTAGE MOLDED CASE CIRCUIT BREAKER
⊞	CAPACITOR, STARTING
⊞	NORMALLY OPEN CONTACT
⊞	NORMALLY CLOSED CONTACT
⊞	FUSE
⊞	RESISTOR, IN CONTROL CIRCUIT
⊞	SOLENOID VALVE OPERATING COIL
⊞	INDICATING LIGHT, G-GREEN, R-RED, W-WHITE, A-AMBER
⊞	CONTROL RELAY
⊞	STARTING RELAY
⊞	BATTERY BANK
⊞	UNDERVOLTAGE RELAY
⊞	AMP REVENUE METER
⊞	GENERATOR RECEPTACLE
⊞	POLE MOUNTED LIGHT FIXTURE
⊞	CLASS 1, DIV 2 WALL MOUNTED LIGHT FIXTURE
⊞	4 FOOT FLUORESCENT LIGHT FIXTURE
⊞	SINGLE POLE LIGHT SWITCH, 20A, 120V
⊞	CLASS 1, DIV 2 LIGHT SWITCH
⊞	3 - INDICATES 3-WAY SWITCH
⊞	CLASS 1, DIV 2 20A, 120V RECEPTACLE
⊞	CLASS 1, DIV 2 WALL MOUNTED JUNCTION BOX
⊞	DUPLEX RECEPTACLE, SURFACE MOUNTED, NEMA 5-20R, 20 AMP, 125 VOLT, +15" MIN. UON. SUBSCRIPT "GFI" DENOTES WITH GROUND FAULT INTERRUPTER WHERE INDICATED ON PLAN. ALL OUTDOOR RECEPTACLES SHALL BE WEATHERPROOF (WP) WITH LOCKABLE COVER.
---	CENTERLINE, STRUCTURE OR EQUIPMENT
---	LOW VOLTAGE WIRING SYSTEM
---	CONDUIT STUB-DOWN
---	FLEXIBLE WIRING AND EQUIPMENT CONNECTION.
---	EXISTING EQUIPMENT TO BE REMOVED

**UNDERGROUND DISTRIBUTION AND GROUNDING**

---	UNDERGROUND CONDUITS
-G-	GROUND GRID, BURIED OR IN MH/VAULT
---	UNDERGROUND CONDUIT, CAPPED
---	GROUNDING PIGTAILS
---	UNDERGROUND THERMO-WELD CONNECTIONS
⊙	3/4" DIA X 10' LONG COPPERCLAD GROUND ROD
⊙	3/4" DIA X 10' LONG COPPERCLAD GROUND ROD IN ACCESSIBLE CONCRETE GROUND ROD BOX
ooo	CONDUIT STUB-UPS

**ABBREVIATIONS**

A	A	AMPERE
A.C.	ALTERNATING CURRENT	
AI	ANALOG INPUT	
AIC	AMPS INTERRUPTING CURRENT	
AMP	ALAMEDA MUNICIPAL POWER	
ANN	ANNUNCIATOR	
AO	ANALOG OUTPUT	
AS	AMMETER SWITCH	
ATS	AUTOMATIC TRANSFER SWITCH	
AUX.	AUXILIARY	
AWG	AMERICAN WIRE GAUGE	
B	BAL	BALANCE
BATT.	BATTERY	
BCW	BARE COPPER WIRE	
BKR	BREAKER	
BLDG.	BUILDING	
BOT	BOTTOM	
C	C	CONDUIT
CB	CIRCUIT BREAKER	
CAB	CABINET	
CAP	CAPACITOR	
CHGR.	CHARGER	
CKT	CIRCUIT	
CL.CLE	CURRENT LIMITING, CURRENT LIMITING "E" FUSE	
COL	COLUMN	
COMP	COMPARTMENT	
CONT.	CONTROL	
CNTR	CONTROLLER	
CO	CONDUIT ONLY	
CONC	CONCRETE	
COND.	CONDUCTOR	
CP	CONTROL PANEL	
CPT	CONTROL POWER TRANSFORMER	
C.S.	CONTROL SWITCH	
CT	CURRENT TRANSFORMER	
CU	COPPER	
CUB	CUBICLE	
D	D	DEEP
DB	DUCT BANK	
DC	DIRECT CURRENT	
D.E.	DEAD END	
DI	DIGITAL INPUT	
DIA	DIAMETER	
DIM	DIMENSION	
DISC	DISCONNECT	
DIST.	DISTRIBUTION	
DN	DOWN	
DO	DIGITAL OUTPUT	
DP	DISTRIBUTION PANEL	
DW	DRY WEATHER	
DWG	DRAWING	
E	EA	EACH
EF	EXHAUST FAN	
EO	ELECTRICALLY OPERATED	
ELEC	ELECTRICAL	
ELEV	ELEVATION	
EPR	ETHYLENE PROPYLENE RUBBER	
EQPMNT	EQUIPMENT	
ETM	ELAPSED TIME METER	

**ABBREVIATIONS (CONTINUED)**

F	FDR	FEEDER
F.FU	FUSE	
FLD	FIELD	
FLC	FULL LOAD CURRENT	
FLS	FLOAT SWITCH	
FT	FOOT, FEET	
FUT.	FUTURE	
FVR	FULL VOLTAGE REVERSING	
FVNR	FULL VOLTAGE NON-REVERSING	
G	GAL	GALLONS
GALV	GALVANIZED	
GC	GROUND CHECK	
GFI, GFCI	GROUND FAULT CIRCUIT INTERRUPTER	
G.L.	GRADE LEVEL	
GND	GROUND	
H	HI	HIGH
HT	HEIGHT	
HH	HANDHOLE	
HTR	HEATER	
HOA	HAND-OFF-AUTO	
HV	HIGH VOLTAGE	
I	IC	INTERRUPTING CAPACITY
INC	INCOMING	
IND	INDICATION	
INS	INSULATOR	
IRR	IRRIGATION	
ISR	INTRINSICALLY SAFE RELAY	
J	JB	JUNCTION BOX
K	KCM	THOUSAND CIRCULAR MILS
KV	KILOVOLT	
KVA	KILOVOLT AMPERE	
KVAR	KILOVOLT AMPERE REACTIVE	
KW	KILOWATT	
L	L	LONG, LENGTH
L.A.	LIGHTNING ARRESTER	
LBS	POUNDS	
LCP	LIGHTING CONTROL PANEL	
L-L	LINE TO LINE	
L-N	LINE TO NEUTRAL	
LTG	LIGHTING	
LO	LOW	
LVL	LEVEL	
LxWxH	LENGTH, WIDTH AND HEIGHT	
LPS	LOW PRESSURE SODIUM	
LV	LOW VOLTAGE	
M	MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER	
MCCB	MOLDED CASE CIRCUIT BREAKER	
MCP	MOTOR CIRCUIT PROTECTOR	
MCS	MOLDED CASE SWITCH	
MED	MEDIUM	
MFR.	MANUFACTURER	
MH	MANHOLE	
MI	MECHANICAL INTERLOCK	
MIN	MINIMUM	
MISC	MISCELLANEOUS	
MO	MANUALLY OPERATED	
MR	MULTI-RATIO	
MTD	MOUNTED	
MV	MEDIUM VOLTAGE	
N	N.C.	NORMALLY CLOSED
N.I.C.	NOT IN CONTRACT	
N.O.	NORMALLY OPEN	
NTS	NOT TO SCALE	
NP	NAMEPLATE	
O	OC	ON CENTER
O/C	OVERCURRENT	
O.H.	OVERHEAD	
OL	OVERLOAD	
OPER.	OPERATING	

**ABBREVIATIONS (CONTINUED)**

P	PB	PULL BOX
PCB	POLYCHLORINATED BIPHENYLS	
PCC	PORTLAND CEMENT CONCRETE	
PF	POWER FACTOR	
PFR	POWER FAIL RELAY	
PH	PHASE	
PLC	PROGRAMMABLE LOGIC CONTROLLER	
PMP	PUMP	
PNL.	PANEL	
PT	POTENTIAL TRANSFORMER	
PTT	PUSH-TO-TEST	
PVC	POLYVINYL CHLORIDE	
PWR	POWER	
R	R	RADIUS
REM	REMOTE	
RSC, RSG	RIGID STEEL CONDUIT, GALVANIZED	
REQ'D	REQUIRED	
RTU	REMOTE TERMINAL UNIT	
S	S.A.	SURGE ARRESTERS
SB	SHORTING BLOCK	
SBC	SBC COMMUNICATIONS, INC.	
SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION	
SCH	SCHEDULE	
SCTB	SHORT CIRCUITING TERMINAL BLOCK	
SEC	SECONDARY	
SHLD.	SHIELDED	
SHT	SHEET	
SPR	SPARE	
SPD	SURGE PROTECTION DEVICE	
SS	STAINLESS STEEL	
SSRVS	SOLID STATE REDUCED VOLTAGE STARTER	
STA.	STATION	
STD	STANDARD	
SUB	SUBSTATION	
SVCE	SERVICE	
SV	SOLENOID VALVE	
SW	SWITCH	
SWBD	SWITCHBOARD	
SWGR	SWITCHGEAR	
SYM	SYMMETRICAL	
T	TEL	TELEPHONE
TELEM	TELEMETERING	
TEMP	TEMPORARY	
TERM	TERMINAL	
TOC	TOP OF CONCRETE	
TS	TEST SWITCH	
TSP	TWISTED SHIELDED PAIR	
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR	
TYP.	TYPICAL	
U	UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED	
UL	UNDERWRITER LABORATORIES	
UPS	UNINTERRUPTIBLE POWER SUPPLY	
UV	UNDERVOLTAGE	
V	V	VOLT
V.C.B.	VACUUM CIRCUIT BREAKER	
VF	VENTILATING FAN	
VFD	VARIABLE FREQUENCY DRIVE	
VS	VOLTMETER SWITCH	
V.T.	VOLTAGE TRANSFORMER	
W	W/	WITH
WT	WEIGHT	
WP	WEATHERPROOF	
X	XDCR	TRANSDUCER
XFMR	TRANSFORMER	
XFR	TRANSFER	
XMTR	TRANSMITTER	

SYMBOLS AND ABBREVIATIONS ARE FOR GENERAL USE. DISREGARD THOSE WHICH ARE NOT USED ON THE DRAWINGS.

**GENERAL NOTES:**

1. THE COMPLETE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF NATIONAL ELECTRICAL CODE, THE LATEST RULES AND REGULATIONS OF THE SAFETY ORDERS ISSUED BY THE DIVISION OF INDUSTRIAL SAFETY, THE NATIONAL FIRE PROTECTION ASSOCIATION AND ALL APPLICABLE STATE AND LOCAL CODES ISSUED BY AUTHORITIES HAVING JURISDICTION.
2. LOCATION(S) OF CONTROLLERS, CONDUIT, PULL BOXES AND OTHER EQUIPMENT AS SHOWN ON THE PLAN IS APPROXIMATE AND MAY BE CHANGED TO SUIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.
3. PULL ROPE SHALL BE PROVIDED IN ALL EMPTY CONDUITS.
4. ELECTRICAL EQUIPMENT AND FEEDER SHALL BE SUPPORTED AND/OR ANCHORED IN ACCORDANCE WITH 2010 CBC SEISMIC REQUIREMENTS.
5. ALL CONDUCTORS SHALL BE 600 VOLT, STRANDED COPPER, WITH TYPE XHHW INSULATION, UNLESS OTHERWISE NOTED. THE MINIMUM SIZE CONDUCTORS SHALL BE #12 AWG UNLESS OTHERWISE NOTED.

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**engineers, inc.**  
 3350 scott blvd., bldg. 11  
 santa clara, ca 95054  
 (408) 986-8558  
 (408) 986-9627  
 PROJECT NO. 11697-01

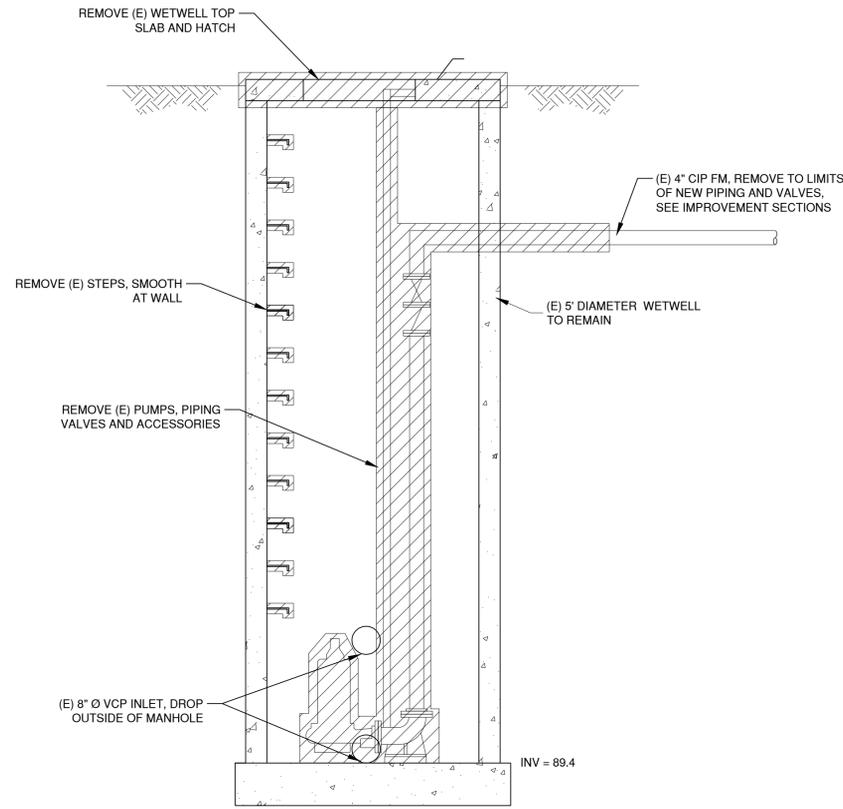
**CITY OF ALAMEDA**  
**GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS**  
**FOR RELIABILITY AND SAFETY IMPROVEMENTS**  
**ELECTRICAL**  
**SYMBOLS, ABBREVIATIONS AND GENERAL NOTES**

DATE: 05/13/15	SCALE: NONE	DESIGN: KM	DRAWN: VM	CHECKED: JH
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**E0.0**  
3 OF 65



**#1 ADELPHIAN PUMP STATION**



**DEMOLITION SECTION A**  
SCALE: 1/2" = 1'  
5

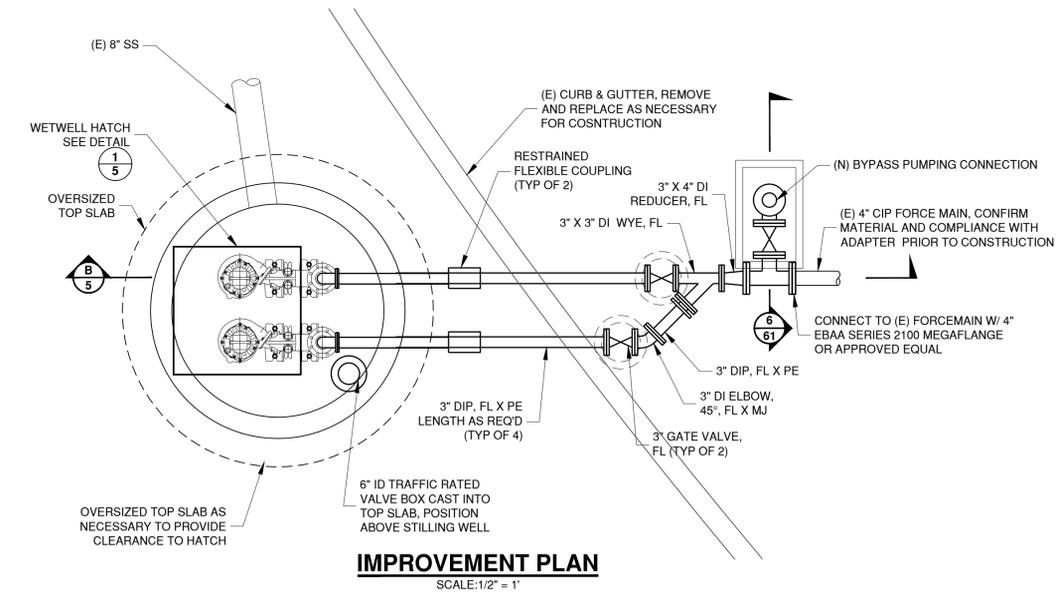
- NOTES:**
- REMOVE ALL LADDERS, CONDUIT, AND CONNECTORS FROM WETWELL. TRIM FLUSH WITH WETWELL WALL/CEILING.
  - WHERE EQUIPMENT REMOVAL LEAVES VOIDS, HOLES OR CRACKS IN WETWELL STRUCTURE, FILL WITH NON-SHRINK GROUT.
  - REMOVE EXISTING ROOTS AND GROUT JOINTS BETWEEN EXISTING PRECAST SECTIONS.

**ADELPHIAN PUMP NOTES:**  
PUMP SHALL BE AN INDUSTRIAL SEWAGE PUMP, RATED FOR USE IN CLASS 1, DIVISION 1, GROUP D LOCATIONS. PUMP SHALL BE SUPPLIED WITH INTEGRAL MOISTURE AND TEMPERATURE SENSORS. PUMP SHALL BE FLYGT MODEL NP 3085 MT WITH THE FOLLOWING CHARACTERISTICS (SEE THE TECHNICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS):

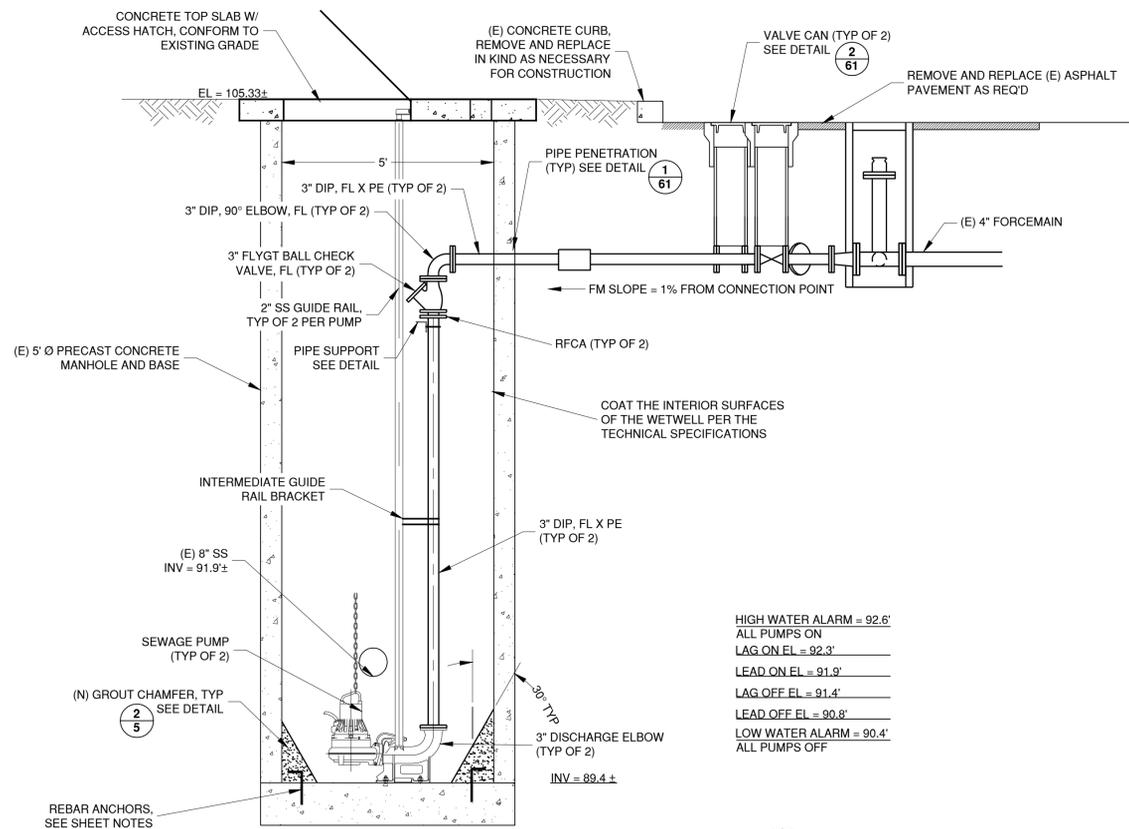
VOLTAGE: 230V, AC, 60 HZ  
PHASES: THREE (3)  
HORSEPOWER: 3  
IMPELLER DIAMETER: 5.31 INCHES (135 MM)  
IMPELLER TYPE: ADAPTIVE N-IMPELLER  
RATING POINT: 197 GPM AT 19 FEET OF HEAD  
DISCHARGE SIZE: 3 INCHES

THE CITY HAS STANDARDIZED THE PUMP MANUFACTURER, NO SUBSTITUTIONS WILL BE ACCEPTED.

- WETWELL COATING:**
- THE INTERIOR SURFACES OF THE WETWELL SHALL BE COATED. SEE THE TECHNICAL SPECIFICATIONS FOR COATING REQUIREMENTS.
  - EXISTING WETWELL WAS CONSTRUCTED IN APPROXIMATELY 1998, IS IN RELATIVELY GOOD CONDITION, AND HAS ROOT INTRUSION AT THE SECTION JOINTS

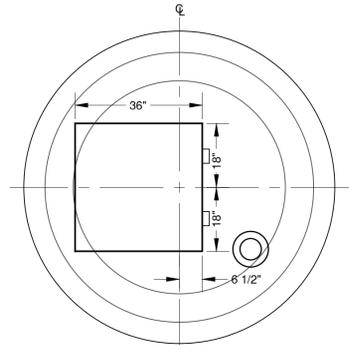


**IMPROVEMENT PLAN**  
SCALE: 1/2" = 1'



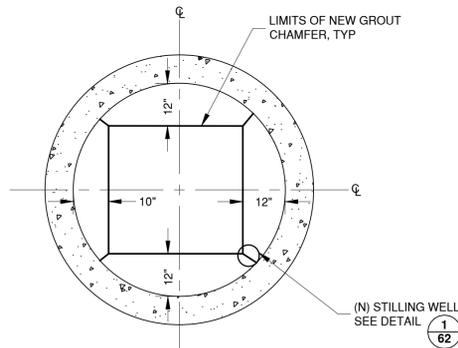
**IMPROVEMENT SECTION B**  
SCALE: 1/2" = 1'  
5

HIGH WATER ALARM = 92.6'  
ALL PUMPS ON  
LAG ON EL = 92.3'  
LEAD ON EL = 91.9'  
LAG OFF EL = 91.4'  
LEAD OFF EL = 90.8'  
LOW WATER ALARM = 90.4'  
ALL PUMPS OFF



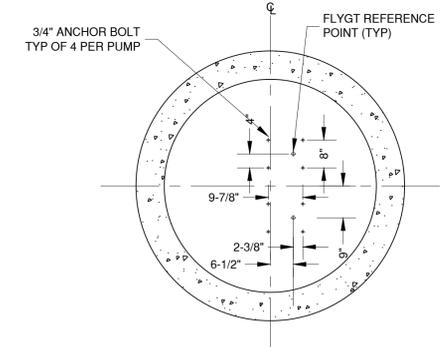
- WETWELL HATCH NOTES:**
- ACCESS HATCH DIMENSIONS SHOWN ARE CLEAR OPENINGS.
  - ACCESS HATCH SHALL BE EQUIPPED WITH INTEGRAL FALL PROTECTION. CONTRACTOR SHALL COORDINATE INSTALLATION WITH WETWELL COATING AND ENSURE PROPER INSTALLATION.
  - WETWELL ACCESS HATCH SHALL BE RATED FOR 300 PSF.
  - HATCH SHALL BE SYRACUSE CASTINGS MODEL DT-AOSG, OR APPROVED EQUAL.
  - HATCH SHALL HAVE A CHANNEL FRAME WITH A 1-1/2" DRAIN COUPLER THAT DRAINS TO WETWELL.
  - HATCH TOP SHALL BE 1/4" DIAMOND PLATE.
  - HATCH SHALL BE EQUIPPED WITH HYDRAULIC LIFT SPRINGS TO ASSIST WITH OPENING.
  - HATCH SHALL HAVE A RECESSED PADLOCK CLIP FOR LOCKING
  - ALL HARDWARE AND HINGES SHALL BE SS

**WETWELL HATCH DETAIL 1**  
NO SCALE  
5



- DETAIL NOTES:**
- ALL NEW CHAMFERS SHALL BE ANCHORED WITH REBAR. SEE SHEET NOTES AND SECTION B/5.

**LIMITS OF CHAMFER DETAIL 2**  
SCALE: 1/2" = 1'  
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**PUMP MOUNTING DETAIL 3**  
SCALE: 1/2" = 1'  
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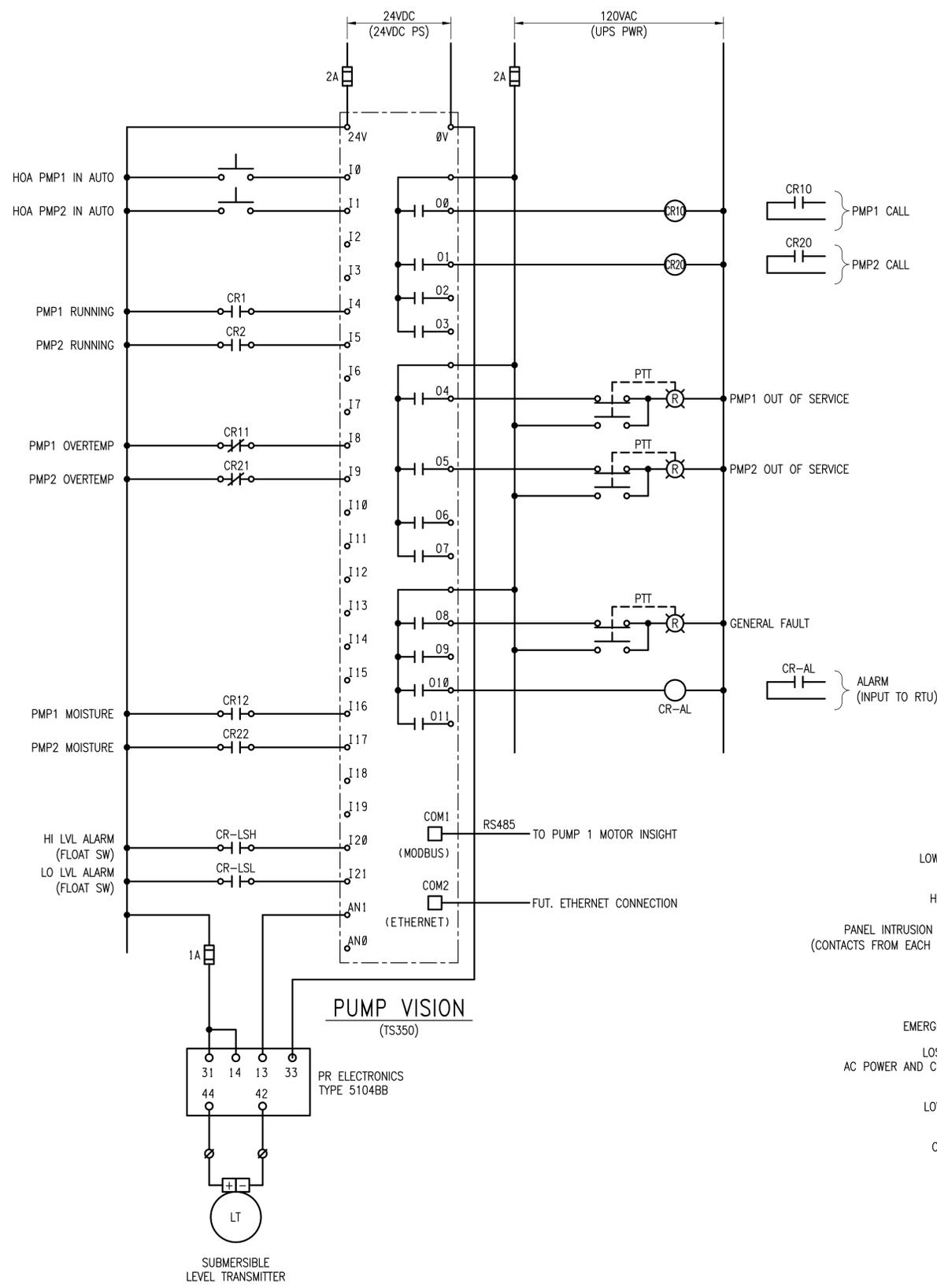
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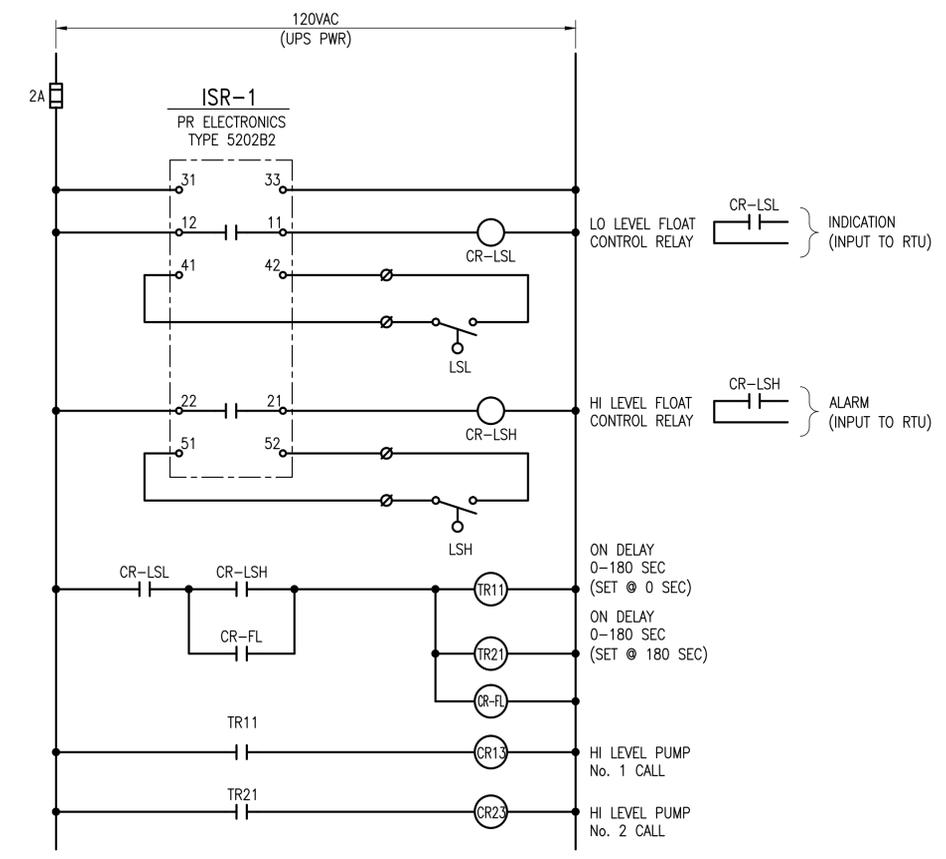




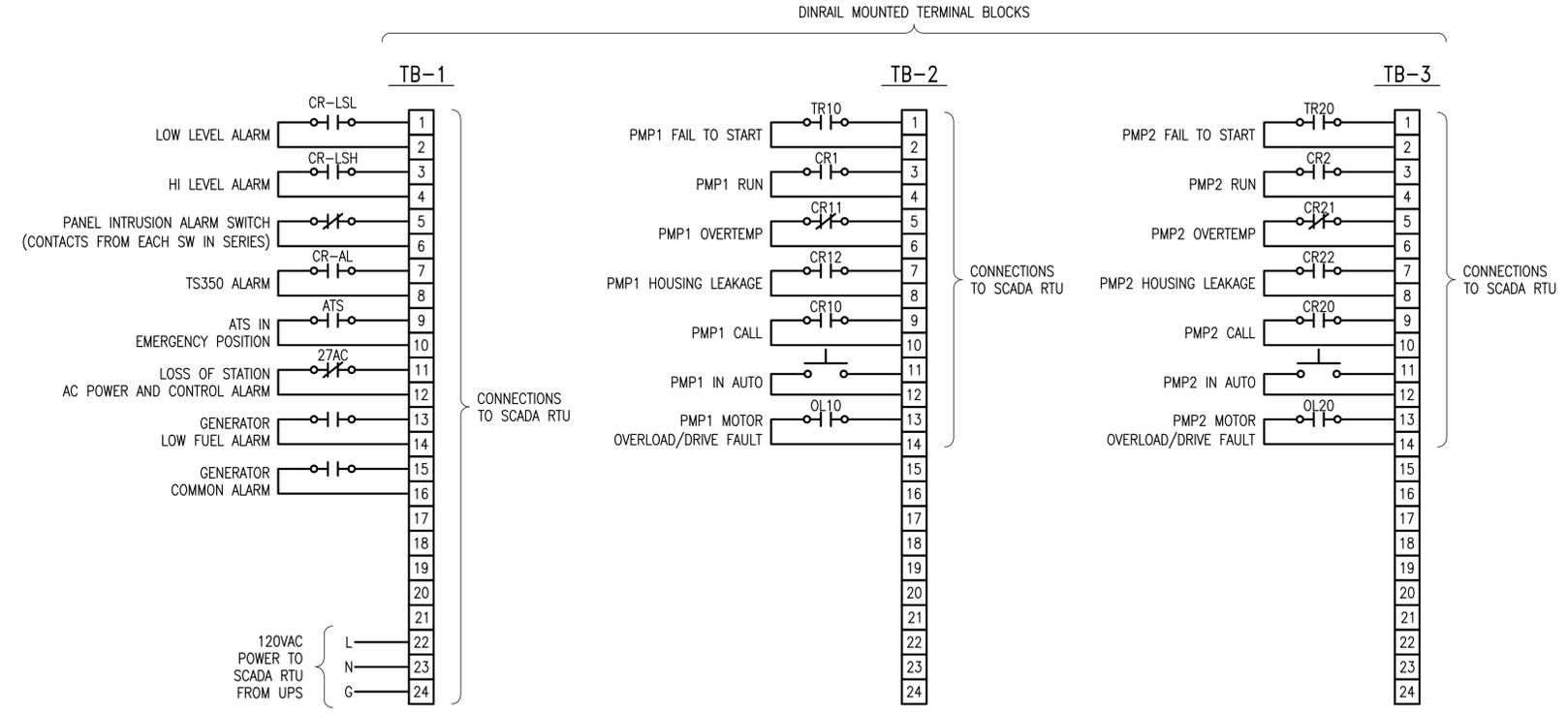
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**PRIMARY LEVEL CONTROLLER**



**BACKUP LEVEL CONTROL**



**SCADA RTU TERMINATION POINTS**

DATE	05/13/15	SCALE	NONE	DESIGN	KM	DRAWN	VM	CHECKED	JH	
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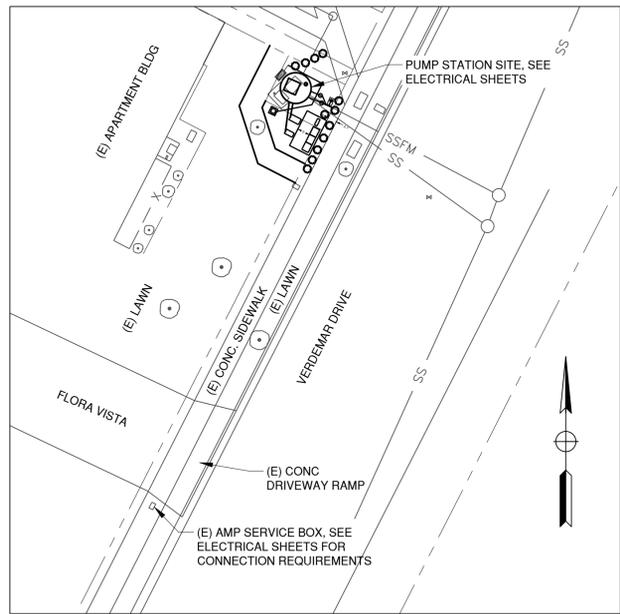
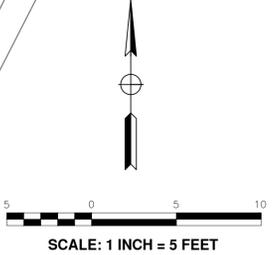
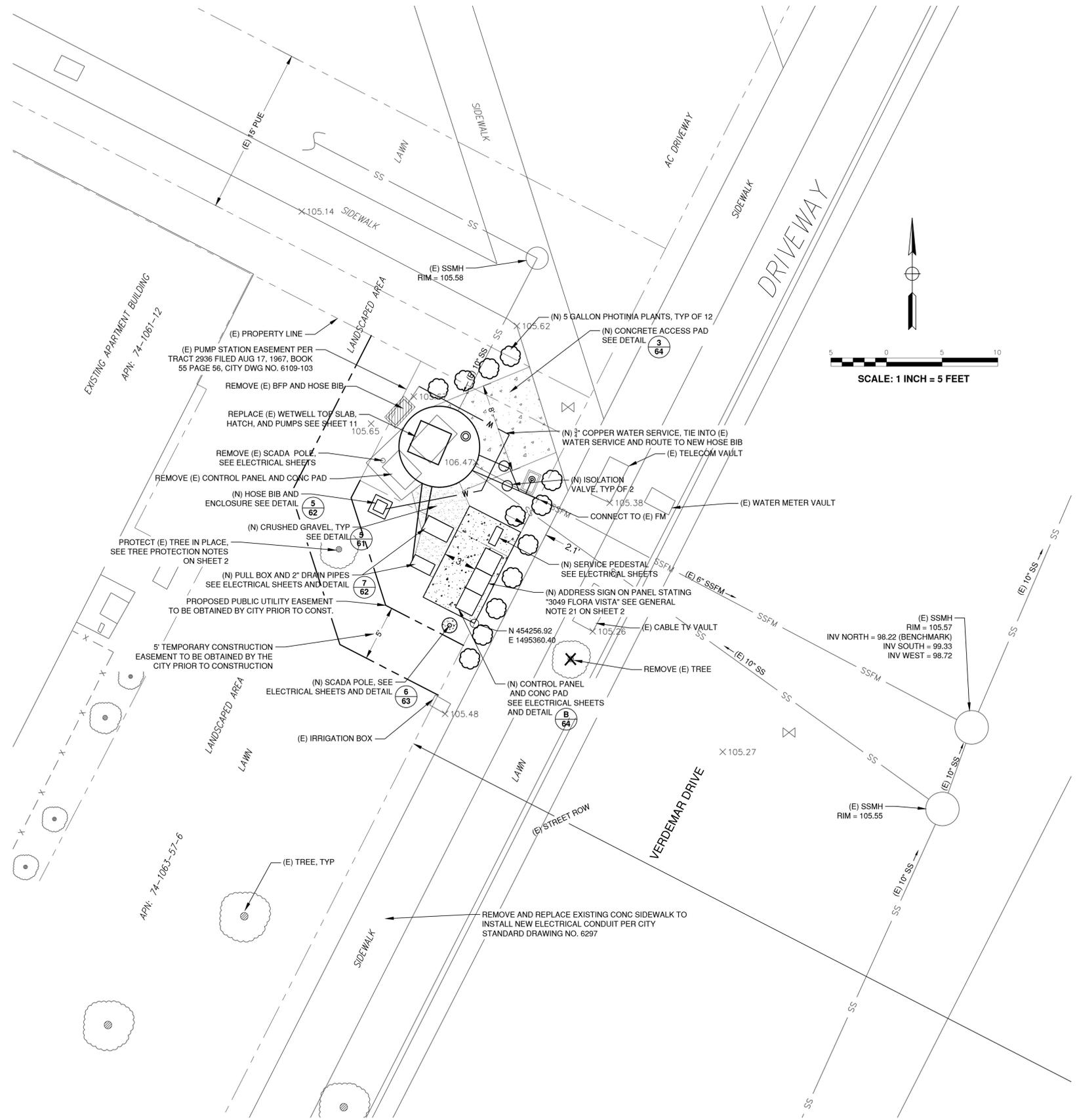
NO	DATE	APPR	REVISIONS

**engineers, inc.**  
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 santa clara, ca 95054  
 (408) 986-8558  
 FAX (408) 986-9627  
 PROJECT NO. 11697-01

**CITY OF ALAMEDA**  
**GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS**  
**FOR RELIABILITY AND SAFETY IMPROVEMENTS**  
**ADELPHIAN PUMP STATION**  
**SCHEMATIC DIAGRAM**

**#9 VERDEMAR PUMP STATION**



**POWER SERVICE LOCATION PLAN**  
SCALE: 1" = 20'

**SCOPE OF WORK - VERDEMAR PUMP STATION:**  
THE WORK AT THE VERDEMAR PUMP STATION GENERALLY CONSISTS OF REMOVING EXISTING PUMP STATION EQUIPMENT AND INSTALLING NEW PUMPS, PIPING, VALVES, CONTROL PANEL, MISCELLANEOUS ELECTRICAL EQUIPMENT, WATER SERVICE, REHABILITATING THE EXISTING WETWELL, LANDSCAPING, AND OTHER ITEMS SHOWN TO BE CONSTRUCTED ON THESE DRAWINGS AND THE PROJECT SPECIFICATIONS, INCLUDING REPAIR, AND RECONSTRUCTION OF EXISTING IMPROVEMENTS AFFECTED BY THE WORK, AND INCIDENTALS FOR COMPLETE AND USABLE FACILITY.

**PUMP STATION ADDRESS:**  
3049 FLORA VISTA

- NOTES:**
1. ESTIMATED PEAK WET WEATHER FLOW RATE IS 139 GPM. SEE SPECIFICATIONS FOR BYPASS PUMPING REQUIREMENTS.
  2. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AT ALL TIMES WHEN WORK IS TAKING PLACE IN THE ROADWAY.
  3. WHERE DEMOLITION OR REMOVAL OF EQUIPMENT LEAVES VOIDS IN THE CONCRETE STRUCTURE, FILL VOIDS WITH NON-SHRINK GROUT.
  4. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING IRRIGATION SYSTEMS PRIOR TO CONSTRUCTION AND NOTIFY THE CITY OF ANY POTENTIAL CONFLICTS.
  5. SEE ELECTRICAL SHEETS FOR ADDITIONAL PUMP STATION IMPROVEMENTS.

**HOA CONTACT INFORMATION:**  
JEFF FRAHM (510) 521-8484

**PROPERTY MANAGEMENT CO. CONTACT INFORMATION:**  
SANDRA JENSON (415) 345-4451

**VERDEMAR BASIS OF BEARING**  
BEARINGS AND COORDINATES PER TRACT 2936, BOOK 55, PAGE 56.  
MONUMENT LINE BETWEEN FOUND MONUMENTS ON VERDEMAR DR.  
N 27° 06' 02" E, 496.62' MONUMENT TO MONUMENT

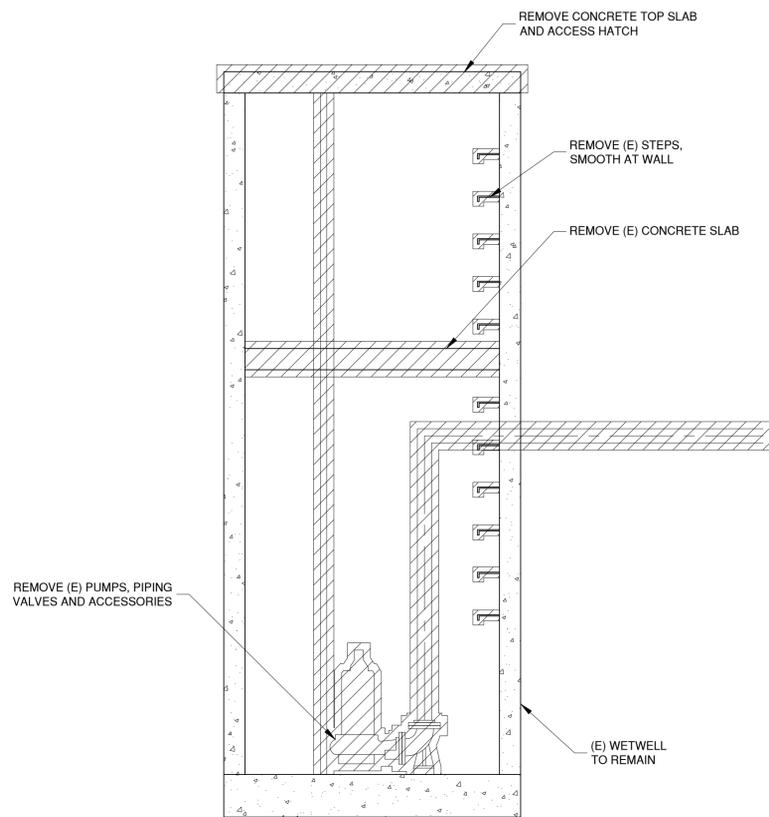
**VERDEMAR BENCHMARK**  
HELD SSMH 619 NORTH INVERT AS SHOWN ON SYSTEM MAP ELEV. = 98.22

**PLAN**  
SCALE: 1" = 5'

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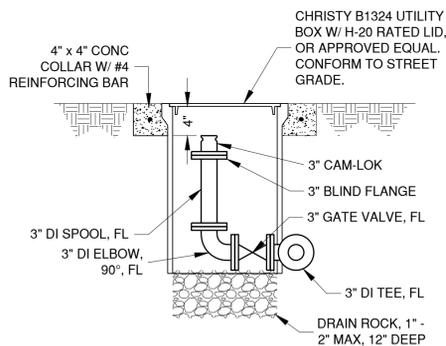
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DWG:	9370	CASE:	95	<b>SHEET</b>																				
<b>10</b>						<b>OF 65</b>																		
<p><b>CITY OF ALAMEDA</b> GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS FOR RELIABILITY AND SAFETY IMPROVEMENTS <b>VERDEMAR SITE PLAN</b></p>																								
<p><b>Schaaf &amp; Wheeler</b> CONSULTING CIVIL ENGINEERS 1171 HOMESTEAD RD, STE. 255 SANTA CLARA, CA 95050 (408) 246-4848</p>																								
<p>PROFESSIONAL ENGINEER STATE OF CALIFORNIA CIVIL 513115</p>																								
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#9 VERDEMAR PUMP STATION

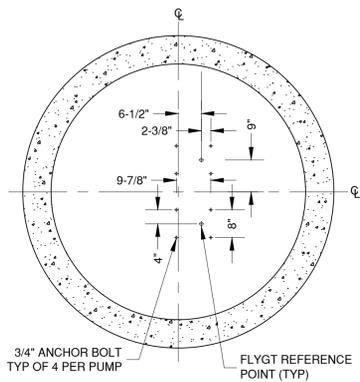


- NOTES:
- REMOVE ALL LADDERS, CONDUIT, CONNECTORS, FANS AND DUCTING FROM WETWELL.
  - WHERE EQUIPMENT REMOVAL LEAVES VOIDS, HOLES OR CRACKS IN WETWELL STRUCTURE, FILL WITH NON-SHRINK GROUT.

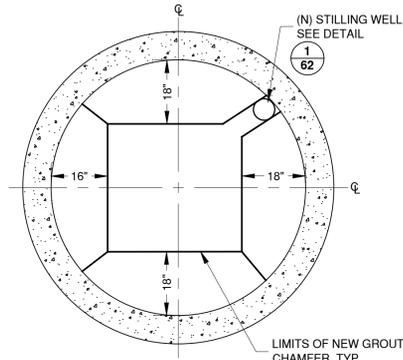
**DEMOLITION SECTION 1**  
SCALE: 1/2" = 1'  
11



**BYPASS CONNECTION DETAIL 5**  
NO SCALE  
11

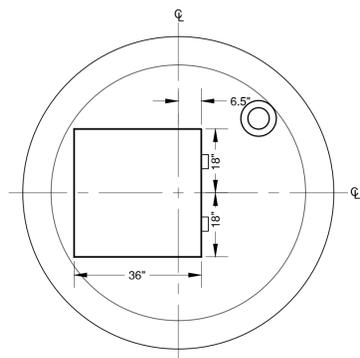


**PUMP MOUNTING DETAIL 2**  
SCALE: 1/2" = 1'  
11



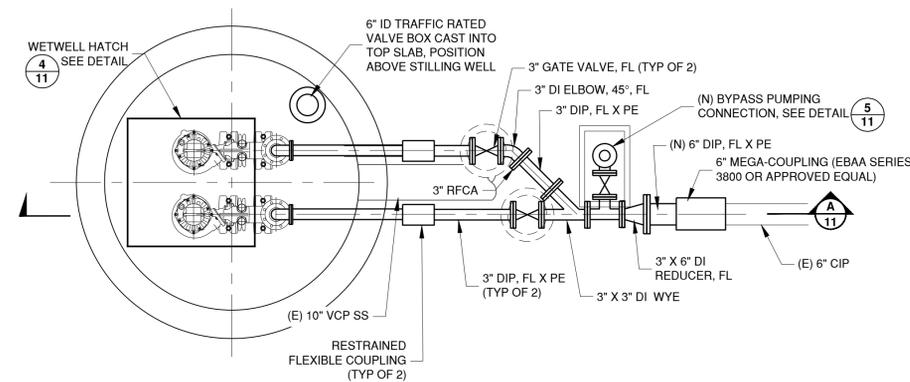
- DETAIL NOTES:
- ALL NEW CHAMFERS SHALL BE ANCHORED WITH REBAR. SEE SHEET NOTES AND SECTION A/11

**LIMITS OF CHAMFER DETAIL 3**  
SCALE: 1/2" = 1'  
11

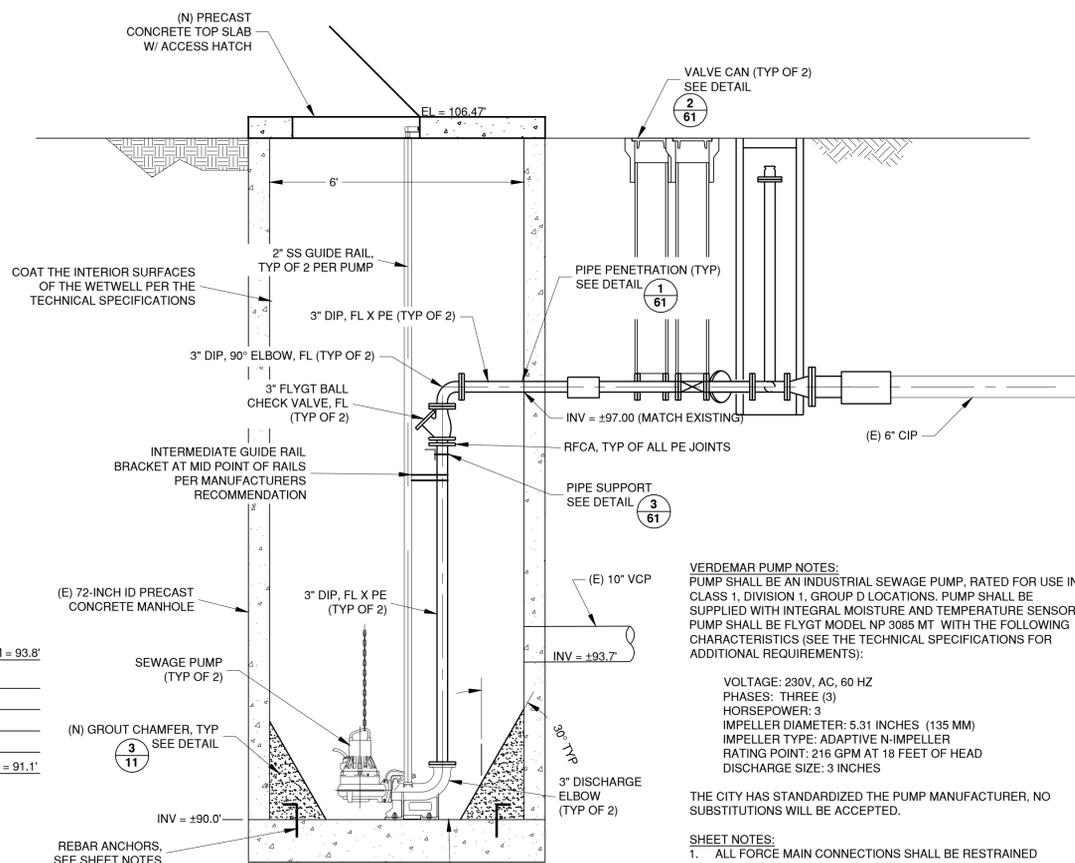


- WETWELL HATCH NOTES:
- ACCESS HATCH DIMENSIONS SHOWN ARE CLEAR OPENINGS.
  - ACCESS HATCH SHALL BE EQUIPPED WITH INTEGRAL FALL PROTECTION. CONTRACTOR SHALL COORDINATE INSTALLATION WITH WETWELL COATING AND ENSURE PROPER INSTALLATION.
  - WETWELL ACCESS HATCH SHALL BE RATED FOR 300 PSF. HATCH SHALL BE SYRACUSE CASTINGS MODEL DT-AOSG, OR APPROVED EQUAL.
  - HATCH SHALL HAVE A CHANNEL FRAME WITH A 1-1/2\"/>

**WETWELL HATCH DETAIL 4**  
NO SCALE  
11



**IMPROVEMENT PLAN**  
SCALE: 1/2" = 1'



- HIGH WATER ALARM = 93.8'  
ALL PUMPS ON  
LAG ON EL = 93.1'  
LEAD ON EL = 92.6'  
LAG OFF EL = 92.1'  
LEAD OFF EL = 91.6'  
LOW WATER ALARM = 91.1'  
ALL PUMPS OFF

VERDEMAR PUMP NOTES:  
PUMP SHALL BE AN INDUSTRIAL SEWAGE PUMP, RATED FOR USE IN CLASS 1, DIVISION 1, GROUP D LOCATIONS. PUMP SHALL BE SUPPLIED WITH INTEGRAL MOISTURE AND TEMPERATURE SENSORS. PUMP SHALL BE FLYGT MODEL NP 3085 MT WITH THE FOLLOWING CHARACTERISTICS (SEE THE TECHNICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS):

VOLTAGE: 230V, AC, 60 HZ  
PHASES: THREE (3)  
HORSEPOWER: 3  
IMPELLER DIAMETER: 5.31 INCHES (135 MM)  
IMPELLER TYPE: ADAPTIVE N-IMPELLER  
RATING POINT: 216 GPM AT 18 FEET OF HEAD  
DISCHARGE SIZE: 3 INCHES

THE CITY HAS STANDARDIZED THE PUMP MANUFACTURER, NO SUBSTITUTIONS WILL BE ACCEPTED.

- SHEET NOTES:
- ALL FORCE MAIN CONNECTIONS SHALL BE RESTRAINED AGAINST THRUST.
  - INSTALL REBAR ANCHORS FOR ALL GROUT CHAMFERS. REBAR ANCHORS SHALL BE #5 BARS 12\"/>

- WETWELL COATING:
- THE INTERIOR SURFACES OF THE WETWELL SHALL BE COATED. SEE THE TECHNICAL SPECIFICATIONS FOR COATING REQUIREMENTS.
  - EXISTING WETWELL WAS CONSTRUCTED IN APPROXIMATELY 1967 AND HAS A PAINT COATING THAT NEEDS TO BE REMOVED.

**IMPROVEMENT SECTION A**  
SCALE: 1/2" = 1'  
11

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<p><b>CITY OF ALAMEDA</b> GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS FOR RELIABILITY AND SAFETY IMPROVEMENTS <b>VERDEMAR SECTIONS</b></p>									
<p><b>SHEET 11 OF 65</b></p>									



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SANTA CLARA, CA 95050  
(408) 246-4848

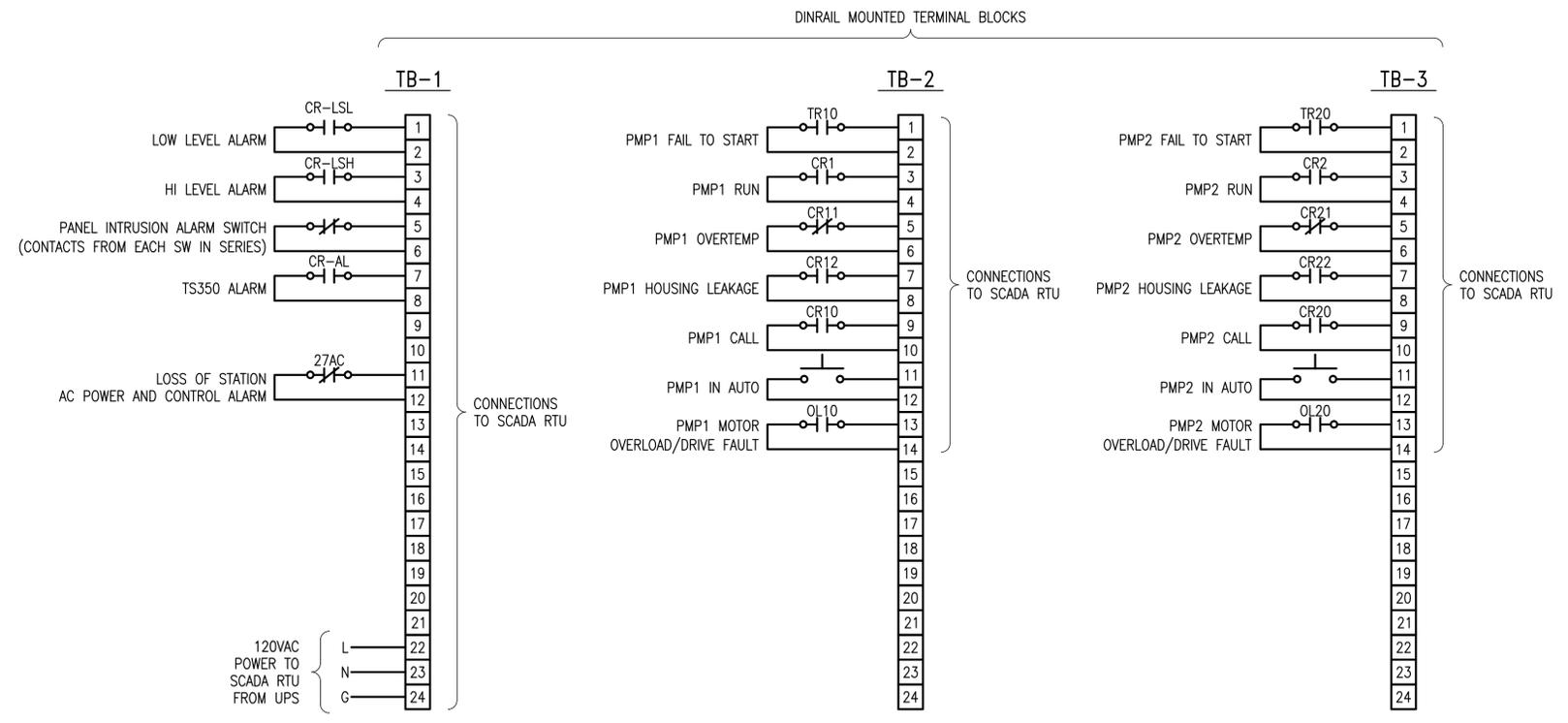
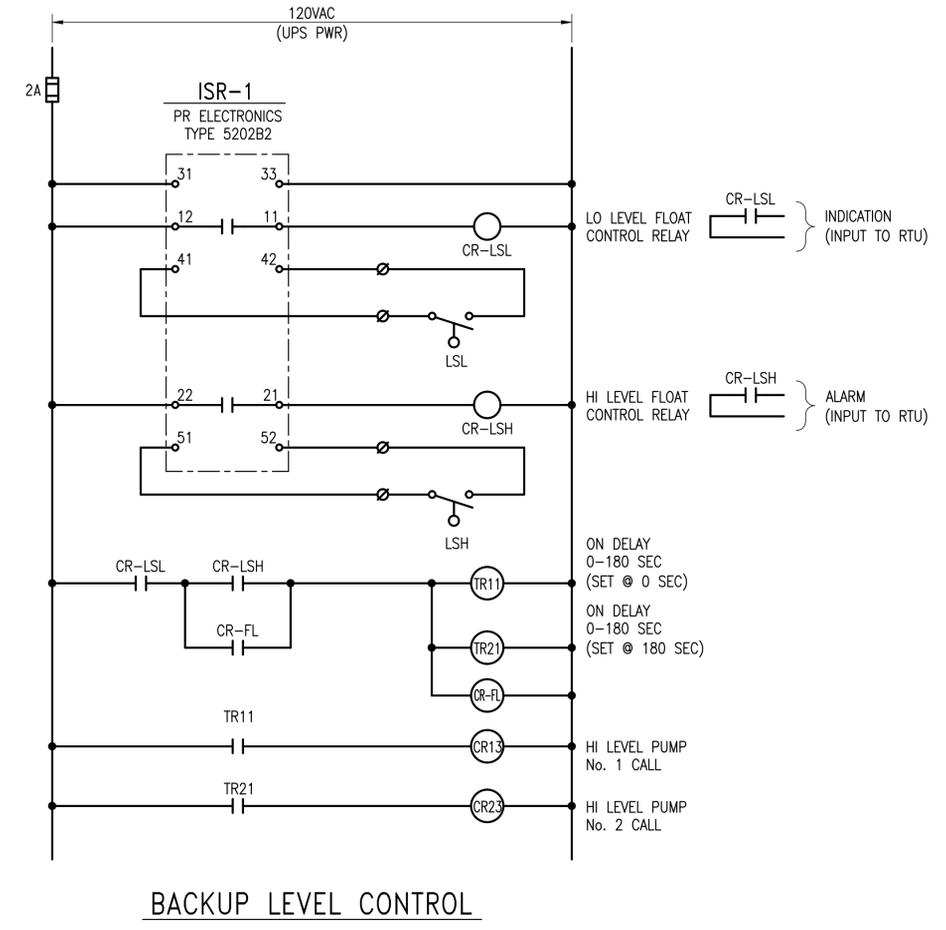
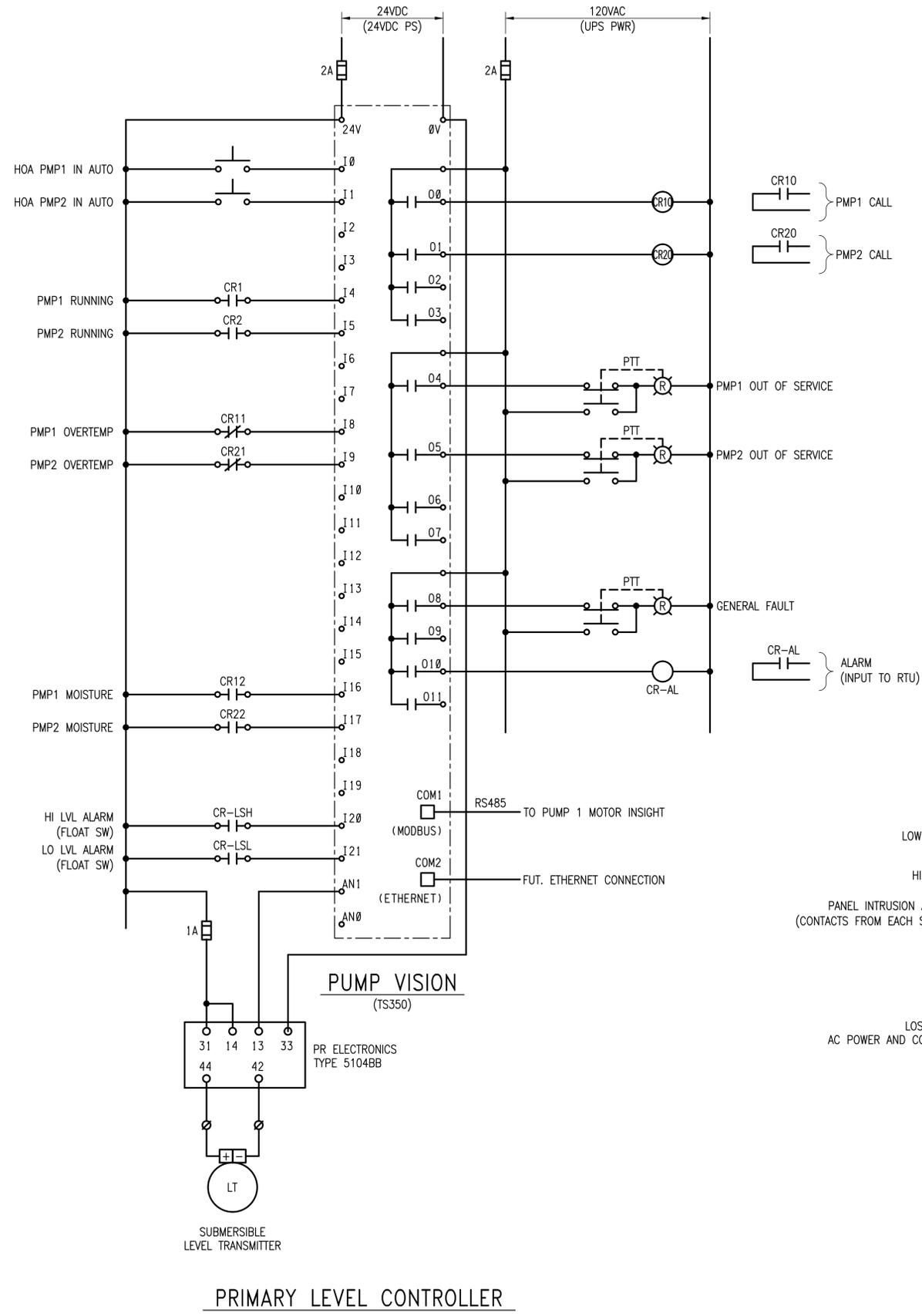
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NO	REVISIONS	DATE	APPR

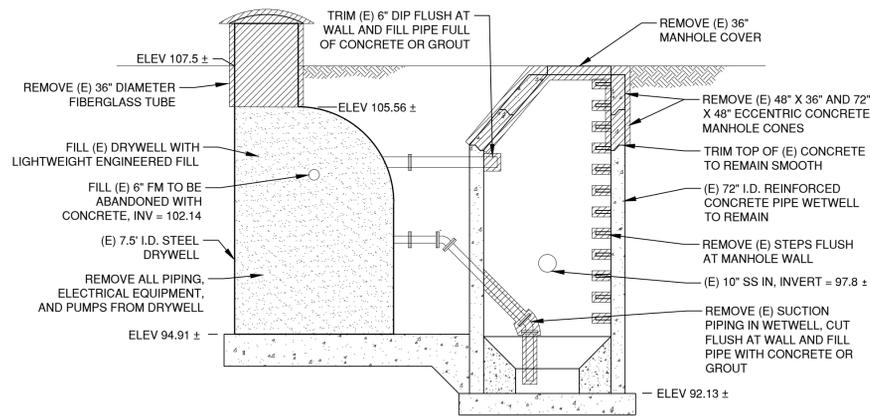
  

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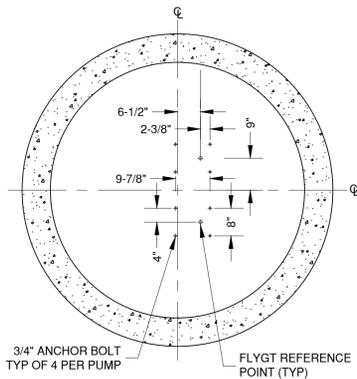
**CITY OF ALAMEDA  
 GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS  
 FOR RELIABILITY AND SAFETY IMPROVEMENTS  
 VERDEMAR PUMP STATION  
 SCHEMATIC DIAGRAM**



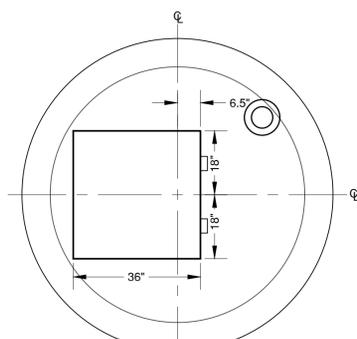
#11 HARBOR BAY PARKWAY 2



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



**PUMP MOUNTING DETAIL 1**  
SCALE: 1/2" = 1'



**WETWELL HATCH DETAIL 2**  
NO SCALE

- WETWELL HATCH NOTES:**
- ACCESS HATCH DIMENSIONS SHOWN ARE CLEAR OPENINGS.
  - ACCESS HATCH SHALL BE EQUIPPED WITH INTEGRAL FALL PROTECTION. CONTRACTOR SHALL COORDINATE INSTALLATION WITH WETWELL COATING AND ENSURE PROPER INSTALLATION.
  - WETWELL ACCESS HATCH SHALL BE RATED FOR H20 LOADING.
  - HATCH SHALL BE SYRACUSE CASTINGS MODEL DT-HD-AOSG, OR APPROVED EQUAL.
  - HATCH SHALL HAVE A CHANNEL FRAME WITH A 1-1/2" DRAIN COUPLER THAT DRAINS TO WETWELL.
  - HATCH TOP SHALL BE 1/4" DIAMOND PLATE.
  - HATCH SHALL BE EQUIPPED WITH HYDRAULIC LIFT SPRINGS TO ASSIST WITH OPENING.
  - HATCH SHALL HAVE A RECESSED PADLOCK CLIP FOR LOCKING.
  - ALL HARDWARE AND HINGES SHALL BE SS.

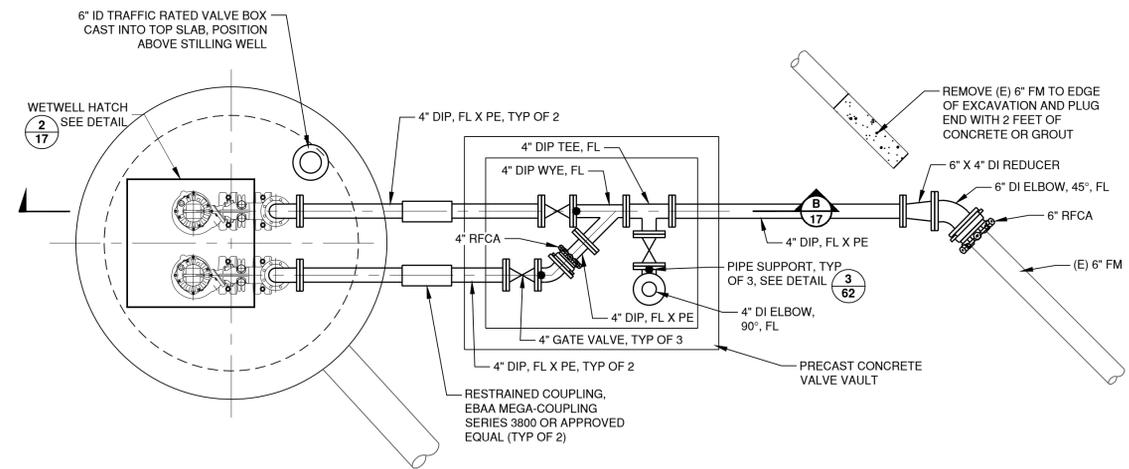
- VALVE VAULT HATCH NOTES:**
- ACCESS HATCH DIMENSIONS SHOWN ARE CLEAR OPENINGS.
  - VALVE VAULT ACCESS HATCH SHALL BE RATED FOR H20 LOADING.
  - HATCH SHALL BE SYRACUSE CASTINGS MODEL DTD-HD-AOSG, OR APPROVED EQUAL.
  - HATCH SHALL BE CAST INTO PRECAST CONCRETE VAULT.
  - HATCH SHALL HAVE A CHANNEL FRAME WITH A 1-1/2" DRAIN COUPLER THAT DRAINS TO VAULT.
  - HATCH TOP SHALL BE 1/4" DIAMOND PLATE.
  - HATCH SHALL BE EQUIPPED WITH HYDRAULIC LIFT SPRINGS TO ASSIST WITH OPENING.
  - HATCH SHALL HAVE A RECESSED PADLOCK CLIP FOR LOCKING.
  - ALL HARDWARE AND HINGES SHALL BE SS.

**HARBOR BAY PARKWAY 2 PUMP NOTES:**  
PUMP SHALL BE AN INDUSTRIAL SEWAGE PUMP, RATED FOR USE IN CLASS 1, DIVISION 1, GROUP D LOCATIONS. PUMP SHALL BE SUPPLIED WITH INTEGRAL MOISTURE AND TEMPERATURE SENSORS. PUMP SHALL BE FLYGT MODEL NP 3085 MT WITH THE FOLLOWING CHARACTERISTICS (SEE THE TECHNICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS):

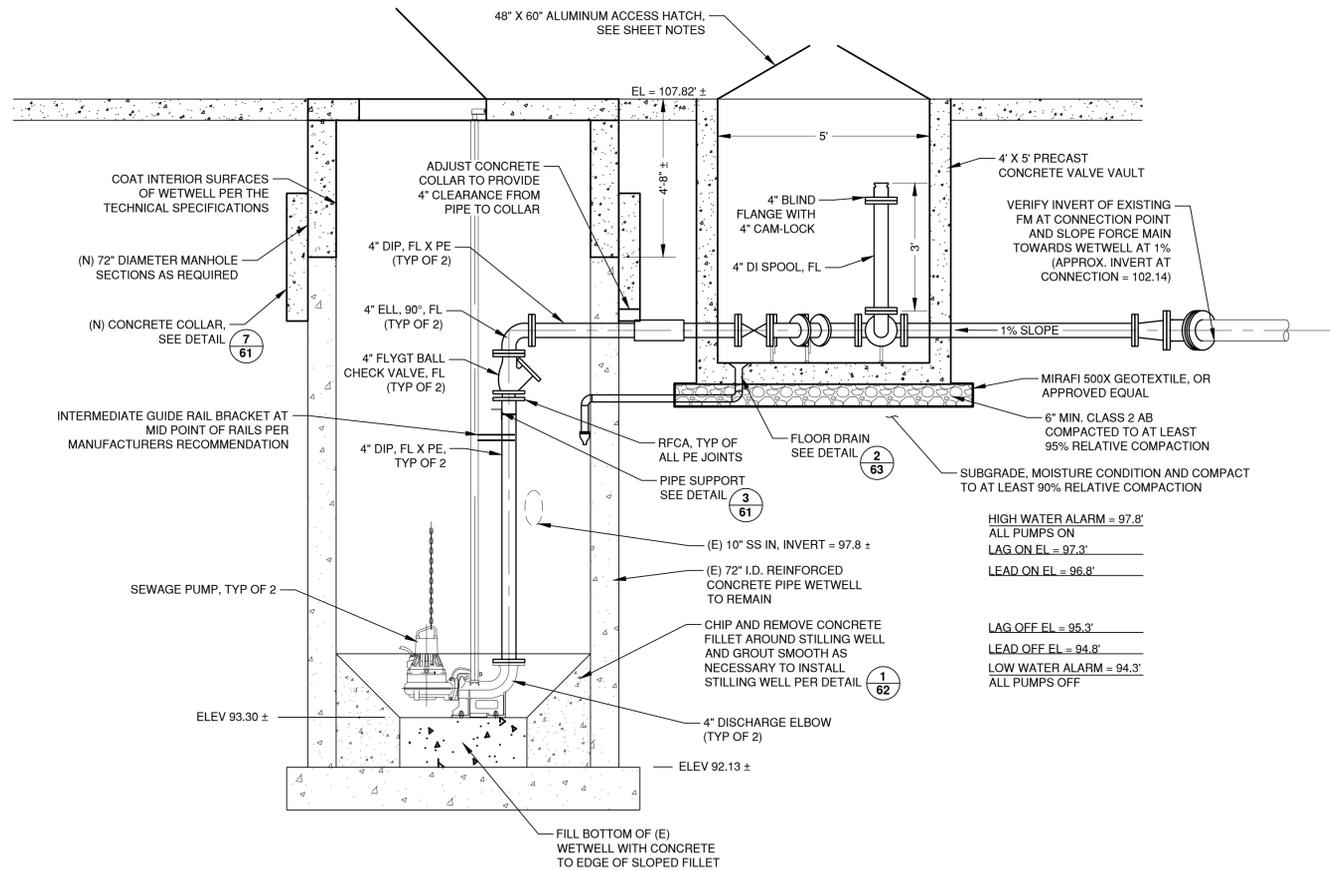
VOLTAGE: 200V, AC, 60 HZ  
PHASES: THREE (3)  
HORSEPOWER: 3  
IMPELLER DIAMETER: 5.31 INCHES (135 MM)  
IMPELLER TYPE: ADAPTIVE N-IMPELLER  
RATING POINT: 263 GPM AT 16.5 FEET OF HEAD  
DISCHARGE SIZE: 4 INCHES

THE CITY HAS STANDARDIZED THE PUMP MANUFACTURER, NO SUBSTITUTIONS WILL BE ACCEPTED.

- WETWELL COATING:**
- THE INTERIOR SURFACES OF THE WETWELL SHALL BE COATED. SEE THE TECHNICAL SPECIFICATIONS FOR COATING REQUIREMENTS.
  - THE EXISTING WETWELL WAS CONSTRUCTED IN APPROXIMATELY 1984.



**IMPROVEMENT PLAN**  
SCALE: 1/2" = 1'



**IMPROVEMENT SECTION B**  
SCALE: 1/2" = 1'

NO.	REVISIONS	DATE	APPR.



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**CITY OF ALAMEDA**  
GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS  
FOR RELIABILITY AND SAFETY IMPROVEMENTS  
**HARBOR BAY PARKWAY 2 SECTIONS**

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SCALE:	AS SHOWN
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CHECKED:	BLS

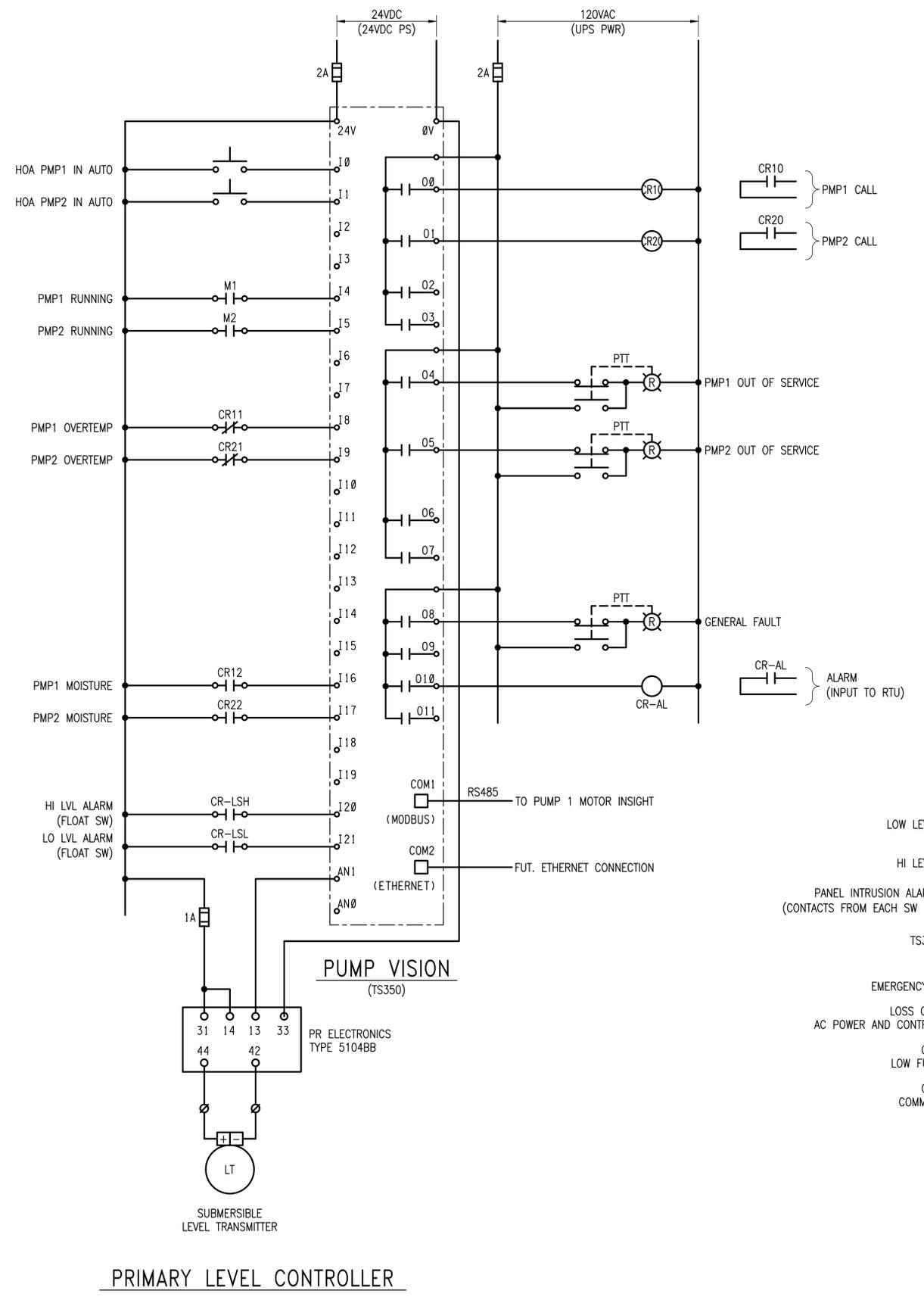
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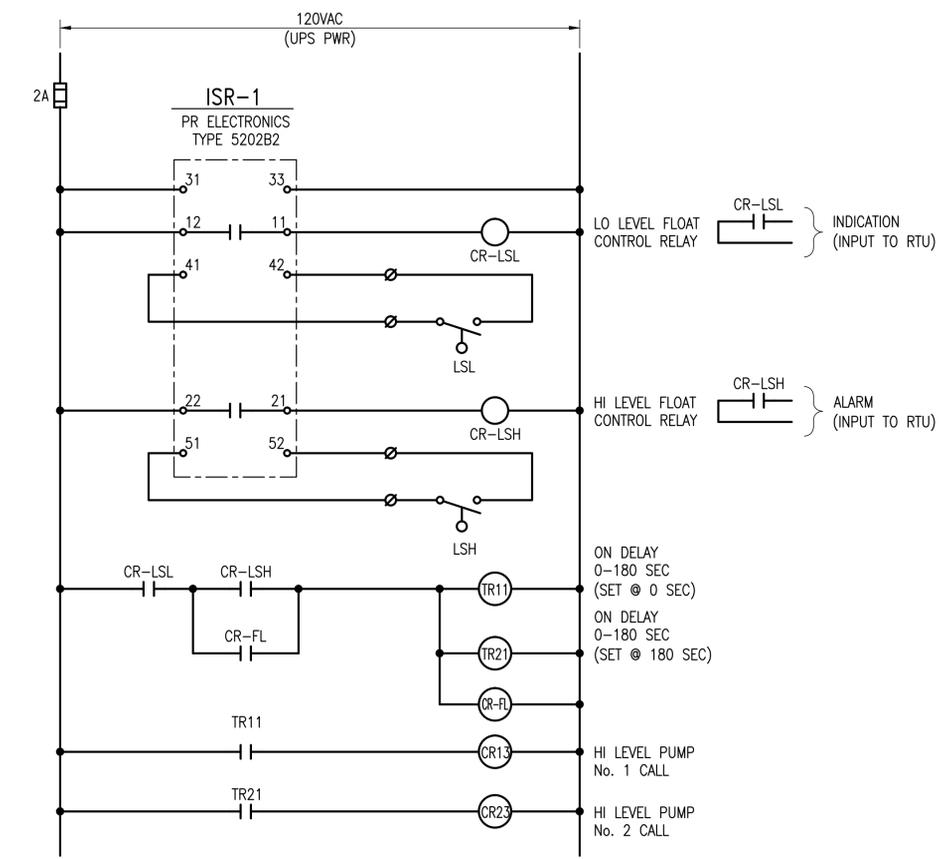




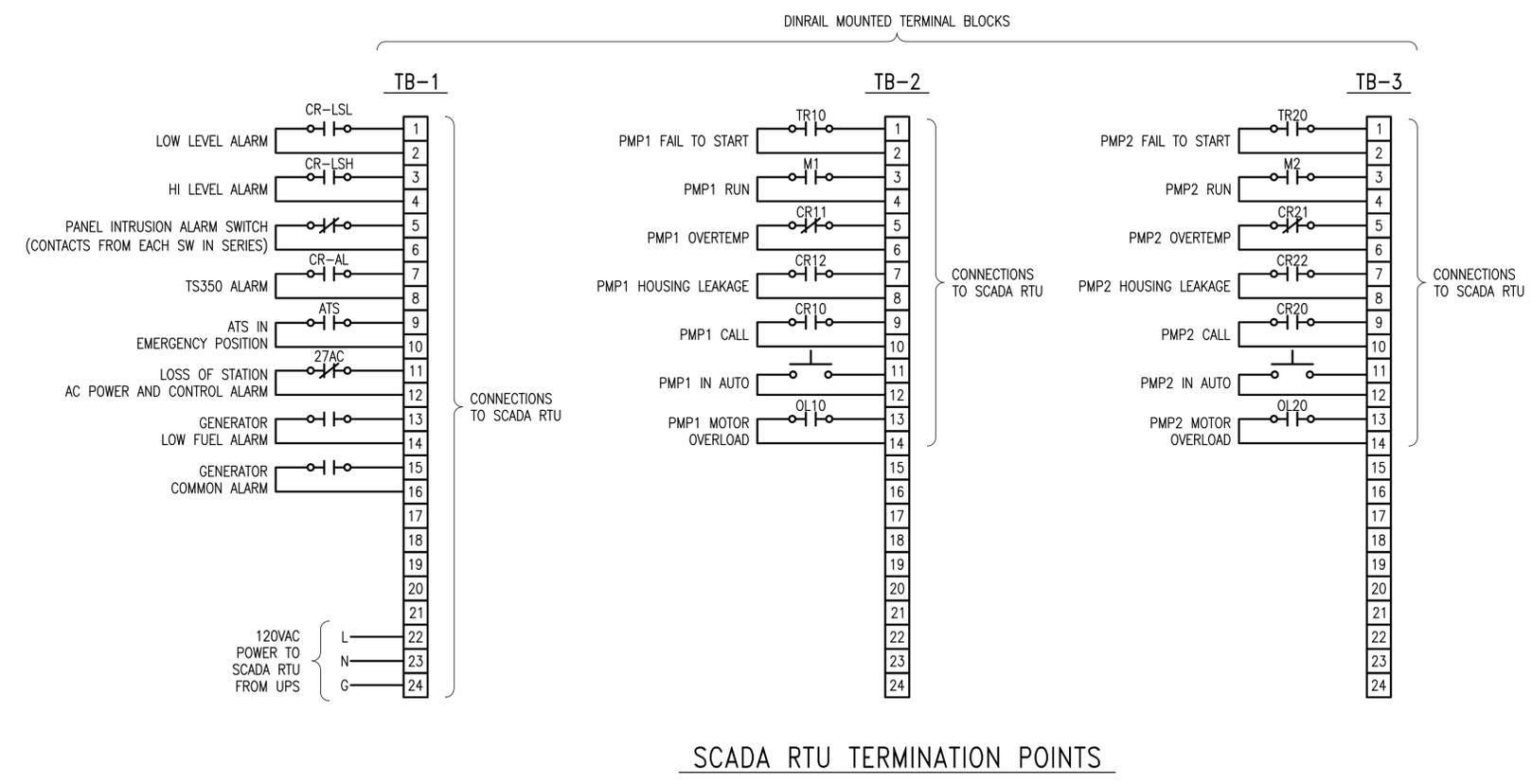
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**PRIMARY LEVEL CONTROLLER**



**BACKUP LEVEL CONTROL**



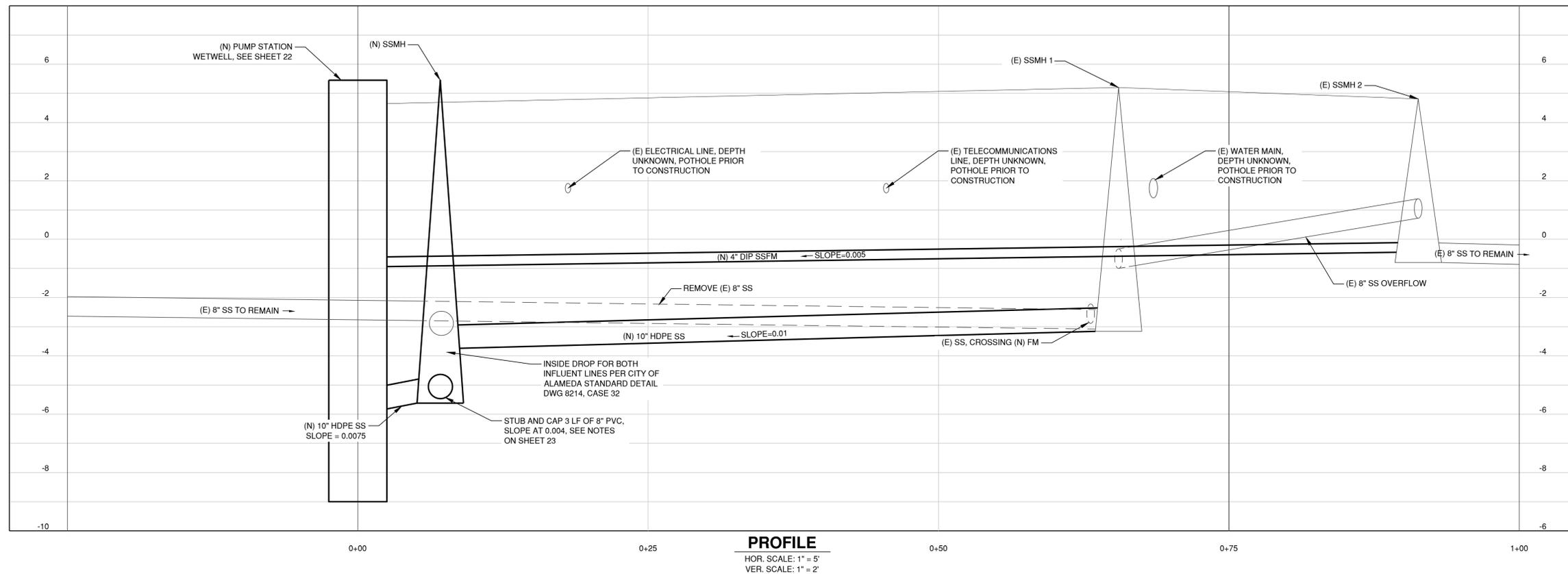
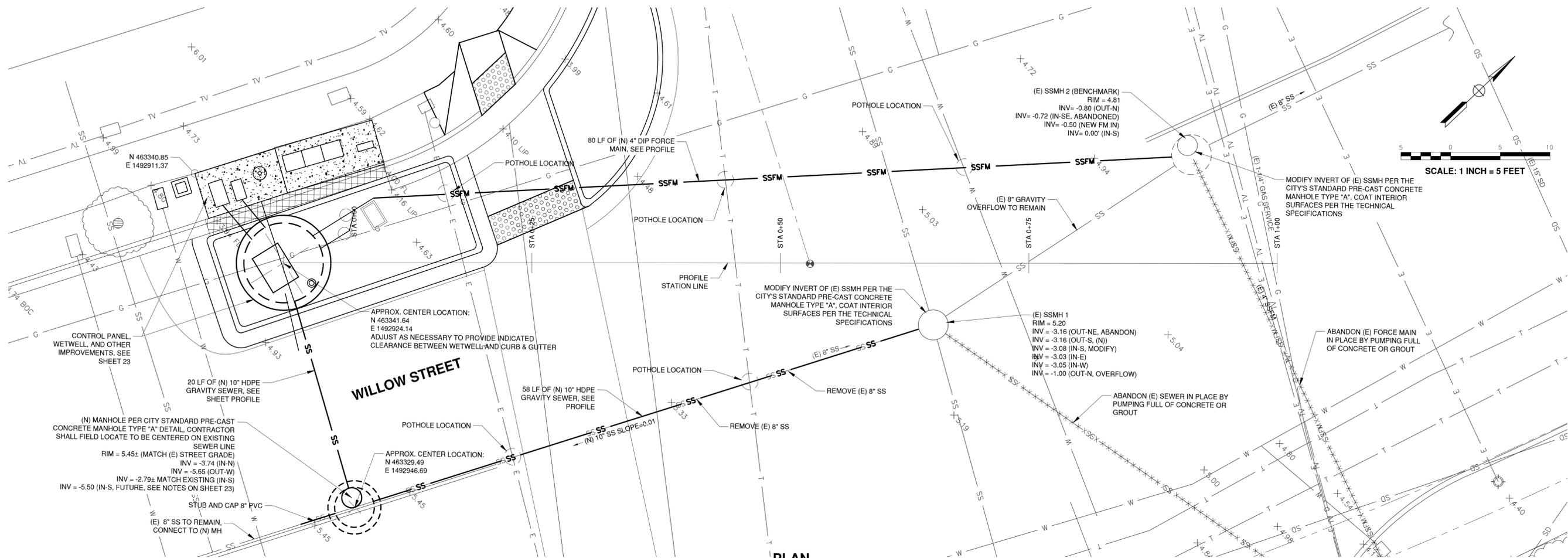
**SCADA RTU TERMINATION POINTS**

DATE	05/13/15	SCALE	NONE	DESIGN	KM	DRAWN	VM	CHECKED	JH
<b>CITY OF ALAMEDA</b> <b>GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS</b> <b>FOR RELIABILITY AND SAFETY IMPROVEMENTS</b> <b>HARBOR BAY PARKWAY 2 PUMP STATION</b> <b>SCHEMATIC DIAGRAM</b>									
<b>engineers, inc.</b> 3350 scott blvd., bldg. 11 santa clara, ca 95054 (408) 986-8558 FAX (408) 986-9627 PROJECT NO. 11697-01									
DWG 9370 CASE 95 <b>E2.2</b> <b>21 OF 65</b>									



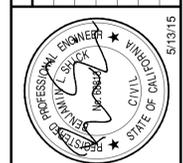


#18 WILLOW-WHITEHALL PUMP STATION



SHEET NOTES:  
1. SEE NOTES ON SHEETS 22 AND 23.  
2. REFERENCE DETAIL 6 ON SHEET 62 FOR TRENCH DETAIL.

NO.	REVISIONS	DATE	APPR.



**Schaaf & Wheeler**  
CONSULTING CIVIL ENGINEERS  
1171 HOMESTEAD RD. STE. 255  
SANTA CLARA, CA 95050  
(408) 246-4848

**CITY OF ALAMEDA**  
GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS  
FOR RELIABILITY AND SAFETY IMPROVEMENTS  
**WILLOW-WHITEHALL**  
**PLAN AND PROFILE**

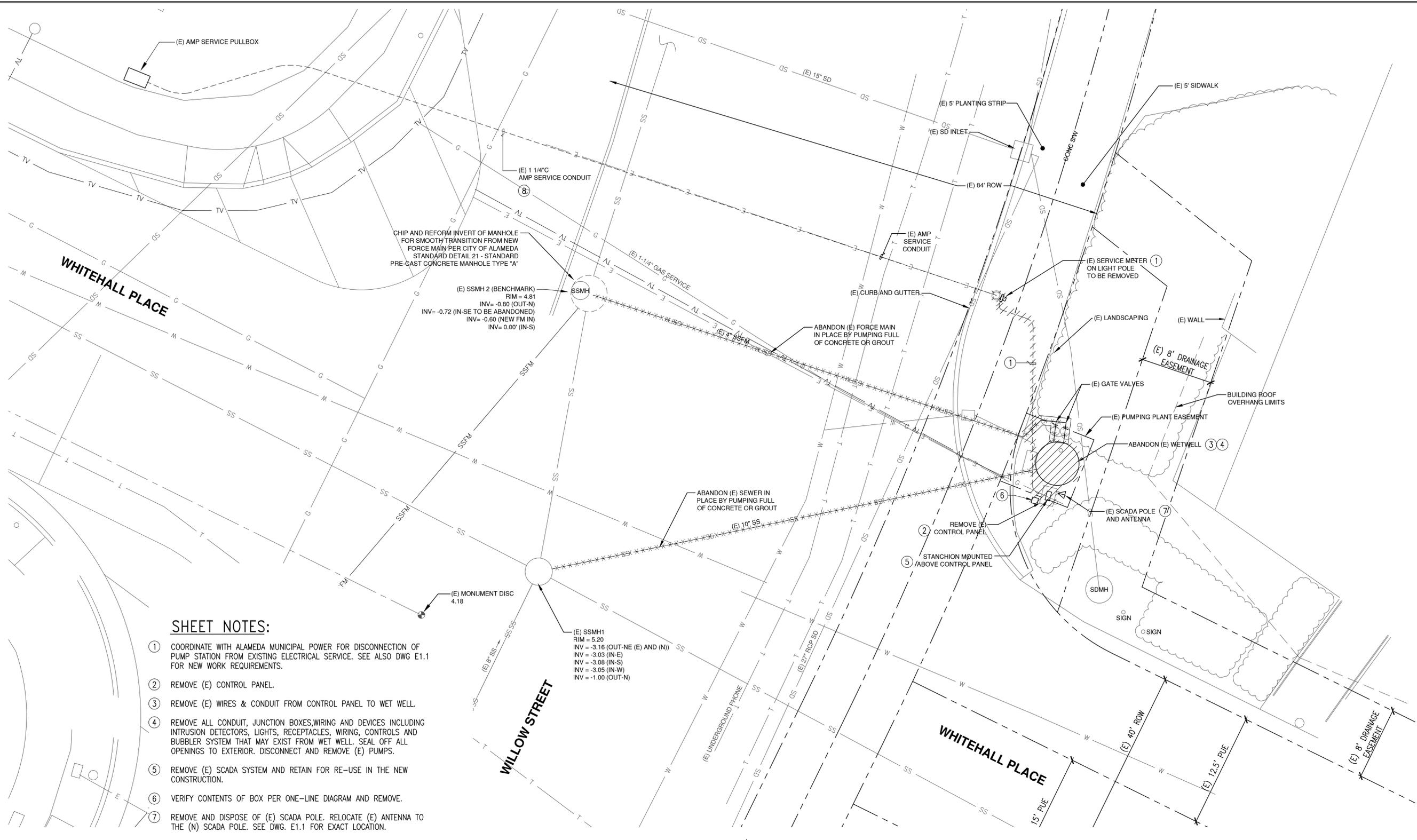
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DRAWN: GMA  
CHECKED: BLS

DWG 9370 CASE 95

**SHEET**  
24 OF 65

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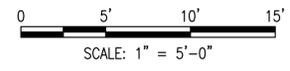
**SHEET NOTES:**

- ① COORDINATE WITH ALAMEDA MUNICIPAL POWER FOR DISCONNECTION OF PUMP STATION FROM EXISTING ELECTRICAL SERVICE. SEE ALSO DWG E1.1 FOR NEW WORK REQUIREMENTS.
- ② REMOVE (E) CONTROL PANEL.
- ③ REMOVE (E) WIRES & CONDUIT FROM CONTROL PANEL TO WET WELL.
- ④ REMOVE ALL CONDUIT, JUNCTION BOXES, WIRING AND DEVICES INCLUDING INTRUSION DETECTORS, LIGHTS, RECEPTACLES, WIRING, CONTROLS AND BUBBLER SYSTEM THAT MAY EXIST FROM WET WELL. SEAL OFF ALL OPENINGS TO EXTERIOR. DISCONNECT AND REMOVE (E) PUMPS.
- ⑤ REMOVE (E) SCADA SYSTEM AND RETAIN FOR RE-USE IN THE NEW CONSTRUCTION.
- ⑥ VERIFY CONTENTS OF BOX PER ONE-LINE DIAGRAM AND REMOVE.
- ⑦ REMOVE AND DISPOSE OF (E) SCADA POLE. RELOCATE (E) ANTENNA TO THE (N) SCADA POLE. SEE DWG. E1.1 FOR EXACT LOCATION.
- ⑧ (E) 1 1/4" TO REMAIN. SEE ALSO DWG. E1.1 FOR NEW WORK REQUIREMENTS.

(E) SSMH1  
 RIM = 5.20  
 INV = -3.16 (OUT-NE (E) AND (N))  
 INV = -3.03 (IN-E)  
 INV = -3.08 (IN-S)  
 INV = -3.05 (IN-W)  
 INV = -1.00 (OUT-N)

1  
 -

**WILLOW/WHITEHALL SITE PLAN**  
 SCALE: 1" = 5'-0"



**GENERAL NOTES:**

1. IT IS THE INTENTION OF THIS PROJECT TO LEAVE THE EXISTING WET WELL COMPLETELY CLEAR AND FREE OF ANY AND ALL EXISTING ELECTRICAL APPARATUS THAT IS NOT IN USE OR THAT IS BEING REPLACED BY THIS PROJECT. THIS INCLUDES DEVICES, CONDUIT, BOXES, IN GROUND BOXES SERVING THE WELL BUT LOCATED OUTSIDE THE WELL, AND ANY OTHER SYSTEMS THAT EXIST BUT WILL NOT BE USED OR REPLACED AT THE COMPLETION OF THIS PROJECT WHETHER SHOWN SPECIFICALLY ON THESE PLANS FOR REMOVAL OR NOT.
2. CITY RESERVES THE RIGHT OF REFUSAL ON ANY OF THE EXISTING EQUIPMENT AND DEVICES BEING REMOVED IN THIS PROJECT. ANY EQUIPMENT OR DEVICES NOT WANTED BY THE CITY SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT SITE.

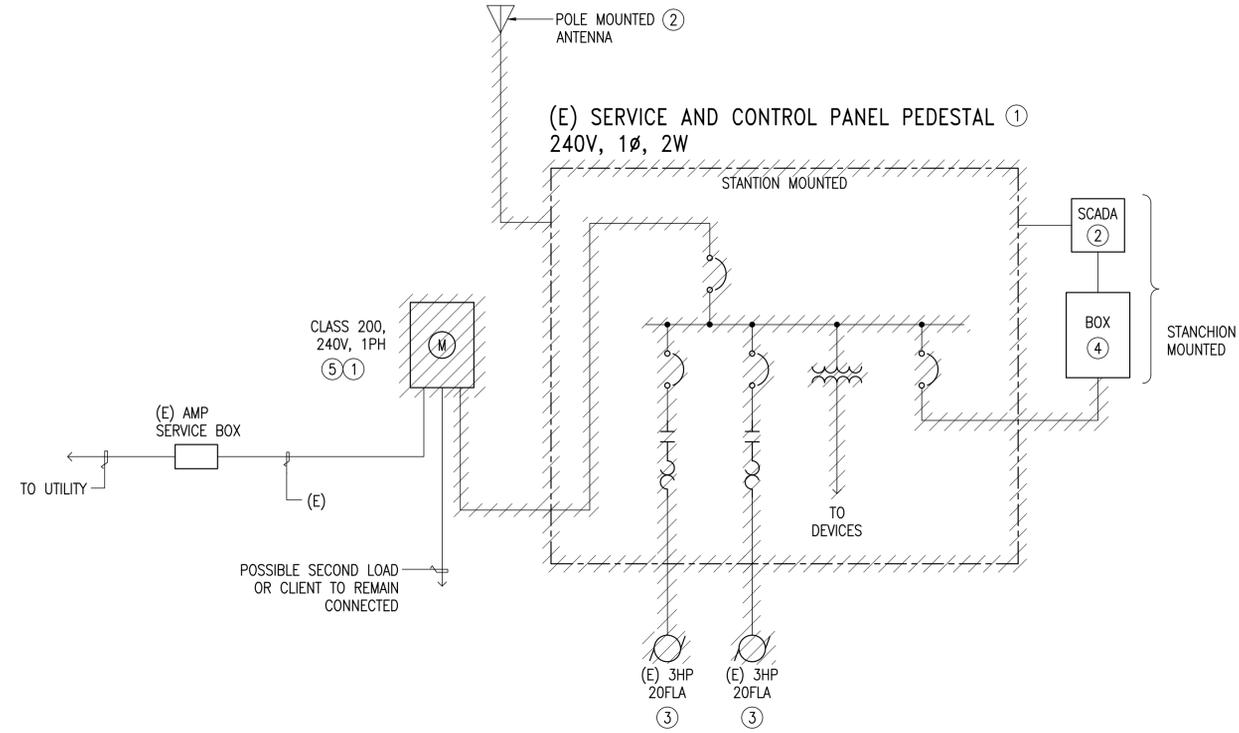
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DWG 9370 CASE 95					<b>E1.1R</b>
					<b>25 OF 65</b>

**MTH** engineers, inc.  
 3350 scott blvd., bldg. 11  
 santa clara, ca 95054  
 (408) 986-8558  
 FAX (408) 986-9627

**CITY OF ALAMEDA**  
 GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS  
 FOR RELIABILITY AND SAFETY IMPROVEMENTS  
**WILLOW-WHITE HALL PUMP STATION**  
**SITE PLAN - REMOVAL WORK**

NO	REVISIONS	DATE	APPR

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**SHEET NOTES:**

- ① REMOVE (E) SERVICE BOX AND CONTROL PANEL, INCLUDING ALL ENCLOSED EQUIPMENT AND DEVICES. VERIFY CONNECTIONS AND EXISTING CONDITIONS TO THE EXTENT REQUIRED TO SAFELY REMOVE EQUIPMENT.
- ② DISCONNECT AND RETAIN ANTENNA AND SCADA SYSTEM FOR RE-USE.
- ③ DISCONNECT AND REMOVE (E) PUMPS.
- ④ BOX IS BELIEVED TO CONTAIN ONLY SCADA WIRES. FIELD VERIFY CONTENTS OF PANEL AND WIRING CONNECTIONS AND REMOVE. REPORT ALTERNATE FINDINGS, IF ANY, TO THE CITY.
- ⑤ COORDINATE WITH ALAMEDA MUNICIPAL POWER (AMP) FOR DISCONNECTION OF PUMP STATION ELECTRICAL SERVICE.

1 WILLOW/WHITEWALL ONE-LINE DIAGRAM  
 SCHEMATIC

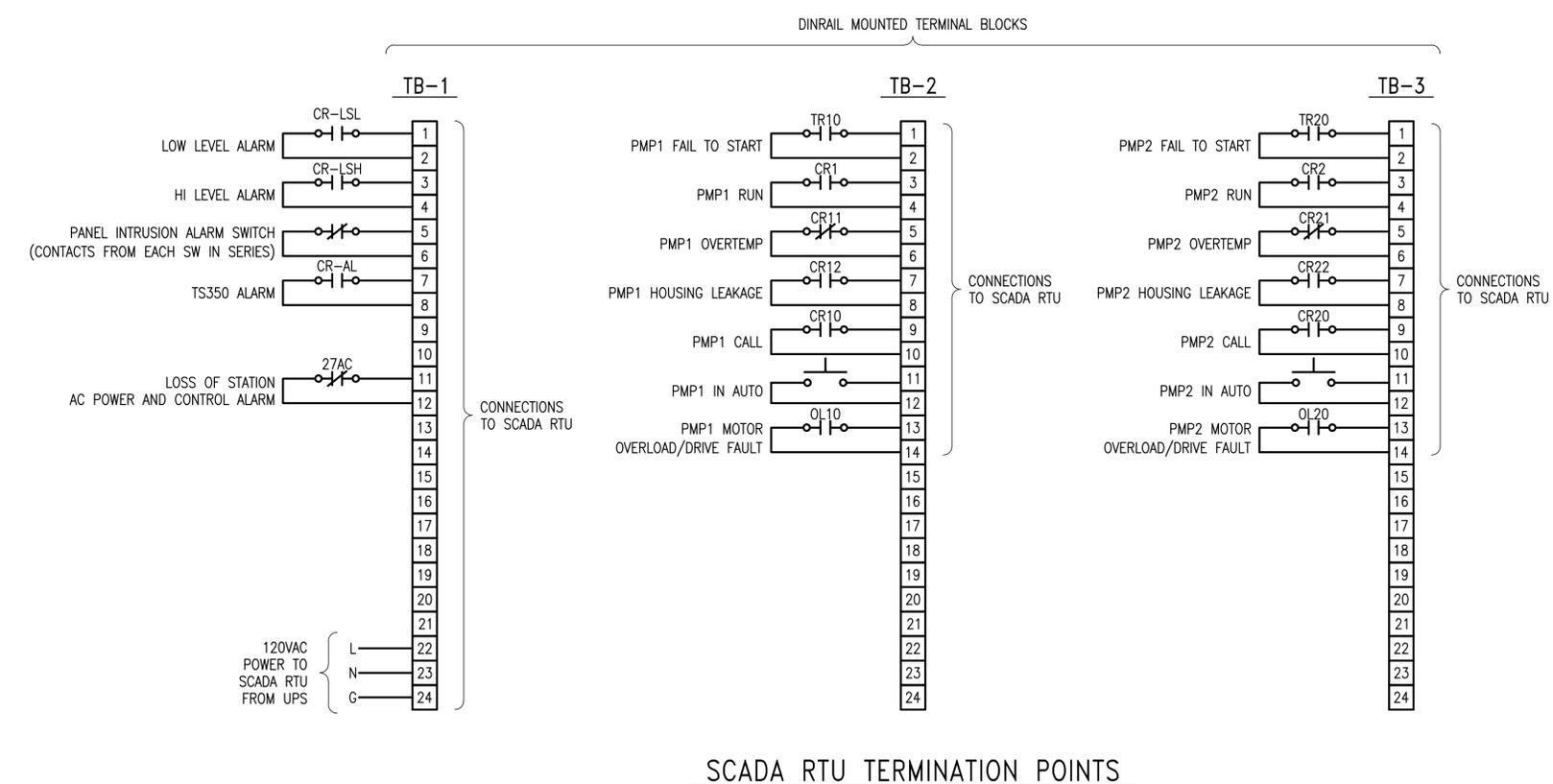
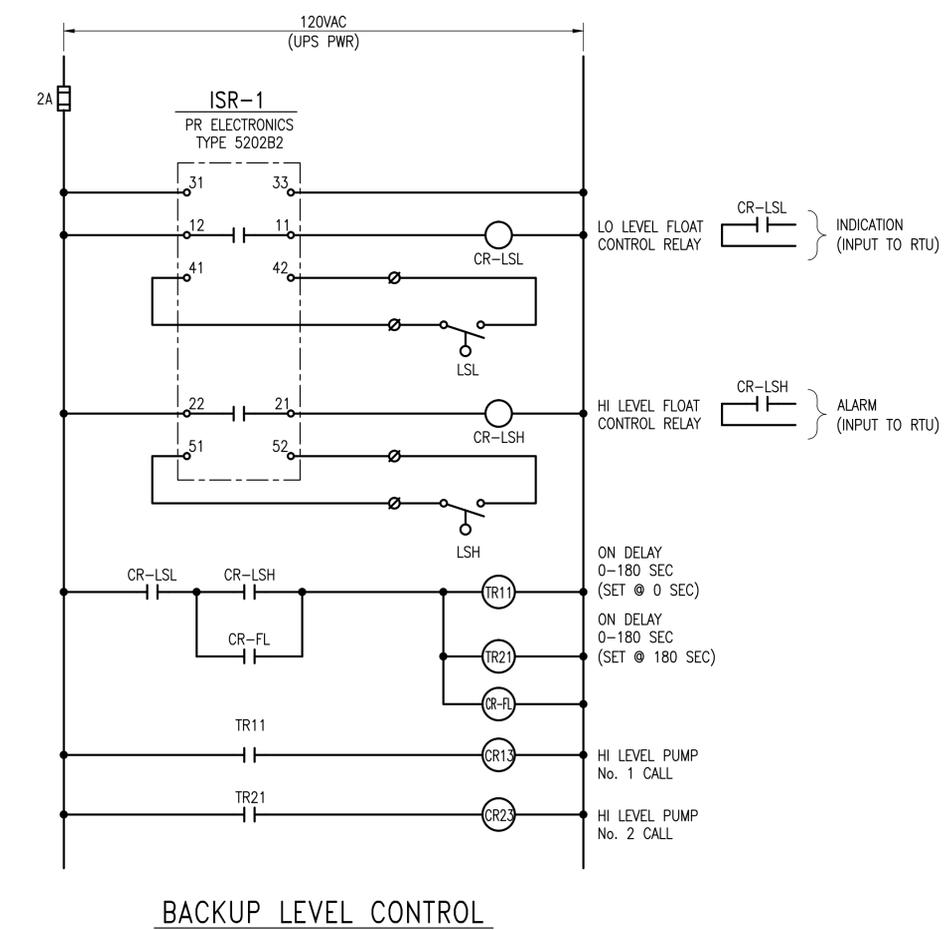
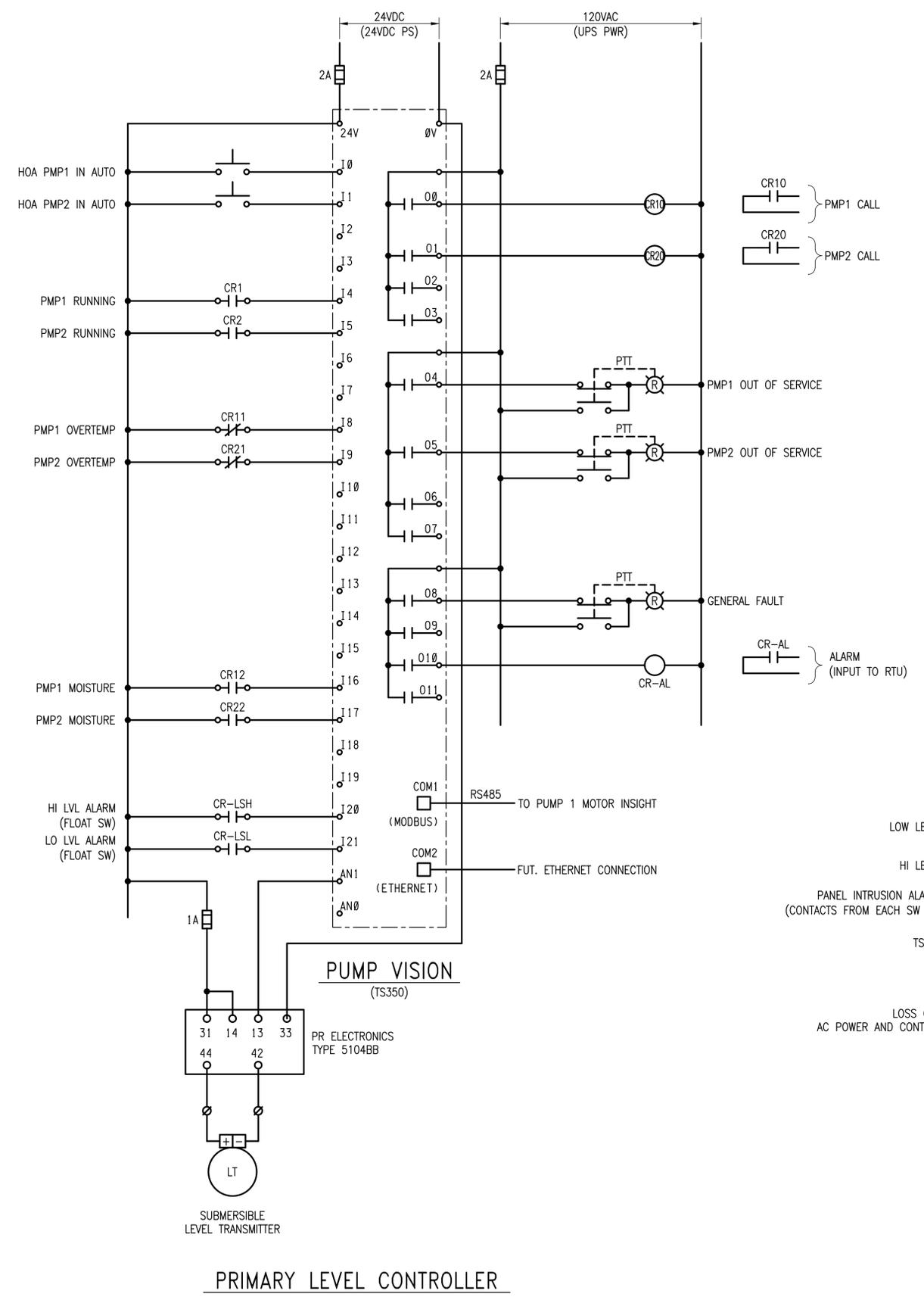
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CHECKED:	JH	NO.	5
DWG:	9370	NO.	6
CASE:	95	NO.	7
E1.2R		NO.	8
26 OF 65		NO.	9
CITY OF ALAMEDA		NO.	10
GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS		NO.	11
FOR RELIABILITY AND SAFETY IMPROVEMENTS		NO.	12
WILLOW-WHITE HALL PUMP STATION		NO.	13
ONE-LINE - REMOVAL WORK		NO.	14
MTH engineers, inc.		NO.	15
3350 scott blvd., bldg. 11		NO.	16
santa clara, ca 95054		NO.	17
(408) 986-8558		NO.	18
FAX (408) 986-9627		NO.	19
PROJECT NO. 11697-01		NO.	20
REGISTERED PROFESSIONAL ENGINEER		NO.	21
JULIO C. HERDOLTA		NO.	22
No. 9580		NO.	23
Exp. 9/30/16		NO.	24
ELECTRICAL		NO.	25
STATE OF CALIFORNIA		NO.	26
REVISIONS		NO.	27
DATE		NO.	28
APPR		NO.	29





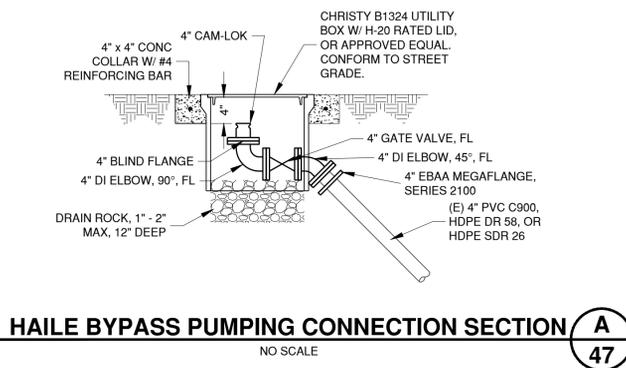
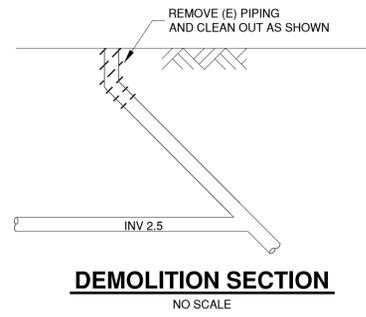
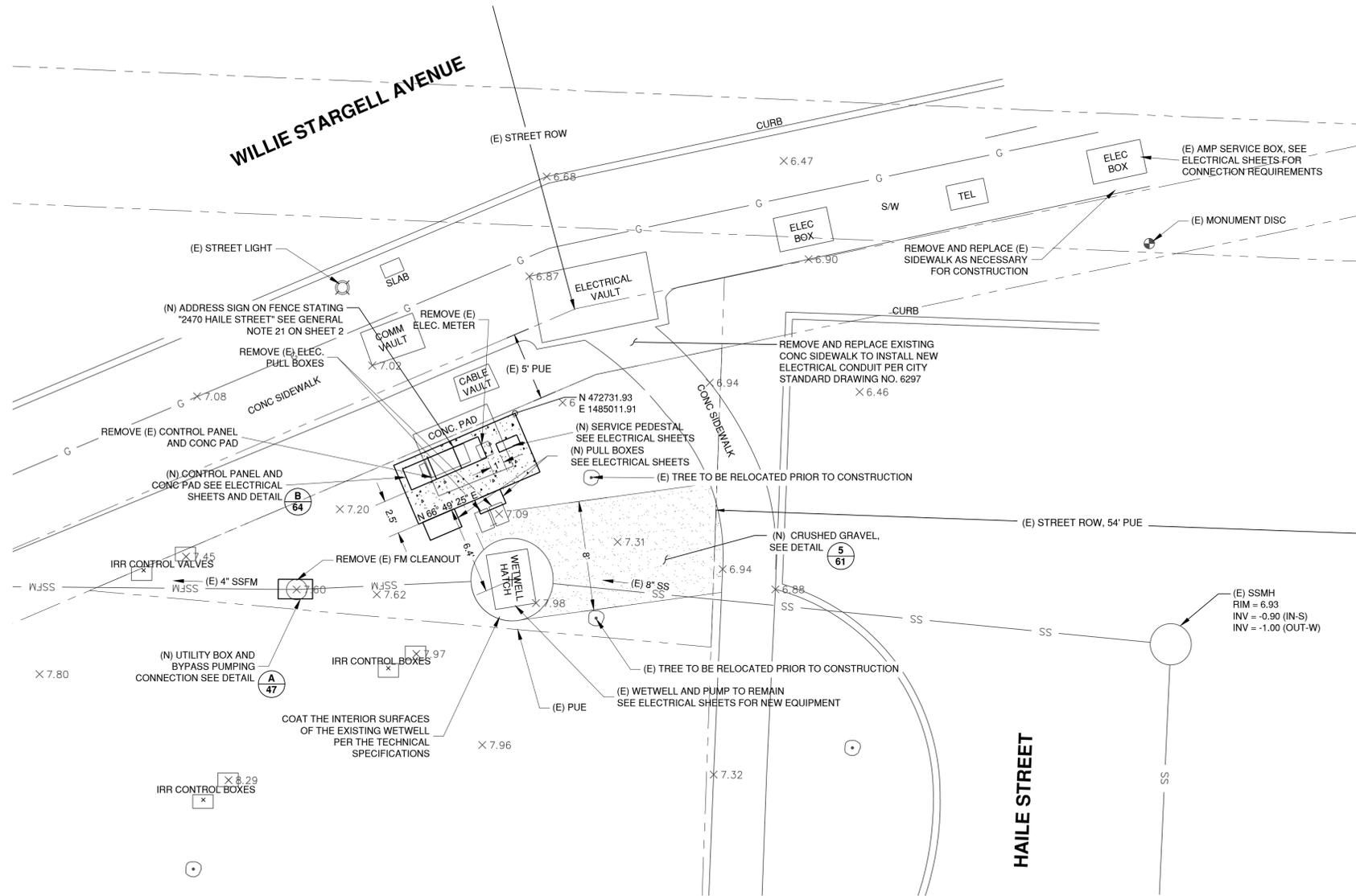


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DATE	05/13/15	SCALE	NONE	DESIGN	KM	DRAWN	VM	CHECKED	JH
<b>CITY OF ALAMEDA</b>									
<b>GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS</b>									
<b>FOR RELIABILITY AND SAFETY IMPROVEMENTS</b>									
<b>WILLOW-WHITE HALL PUMP STATION</b>									
<b>SCHEMATIC DIAGRAM</b>									
<b>engineers, inc.</b> 3350 scott blvd., bldg. 11 santa clara, ca 95054 (408) 986-8558 FAX (408) 986-9627 PROJECT NO. 11697-01									
DWG 9370 CASE 95 <b>E2.2</b> 30 OF 65									

**#42 HAILE PUMP STATION**



**PUMP ON, OFF, AND ALARM LEVELS  
(DISTANCE FROM INVERT OF WETWELL):**  
 HIGH WATER ALARM = 3.5'  
 PUMP ON = 3.0'  
 PUMP OFF = 1.3'  
 LOW WATER ALARM = 1.0'

**PUMP STATION ADDRESS:**  
 2470 HAILE STREET

**NOTES:**

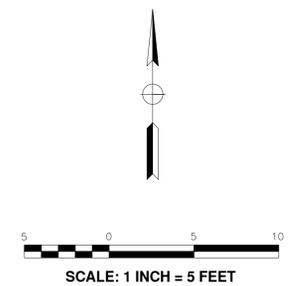
- EXISTING PUMP IS TO REMAIN
- ESTIMATED PEAK WET WEATHER FLOW RATE IS 28 GPM. SEE SPECIFICATIONS FOR BYPASS PUMPING REQUIREMENTS.
- CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AT ALL TIMES WHEN WORK IS TAKING PLACE IN THE ROADWAY.
- WHERE DEMOLITION OR REMOVAL OF EQUIPMENT LEAVES Voids IN THE CONCRETE STRUCTURE, FILL Voids WITH NON-SHRINK GROUT.
- CONTRACTOR SHALL VERIFY LOCATION OF EXISTING IRRIGATION SYSTEMS PRIOR TO CONSTRUCTION AND NOTIFY THE CITY OF ANY POTENTIAL CONFLICTS.
- SEE ELECTRICAL SHEETS FOR ADDITIONAL PUMP STATION IMPROVEMENTS.

**WETWELL COATING:**

- THE INTERIOR SURFACES OF THE WETWELL SHALL BE COATED. SEE THE TECHNICAL SPECIFICATIONS FOR COATING REQUIREMENTS.
- THE WETWELL WAS CONSTRUCTED WITH A 5-FOOT DIAMETER PRECAST CONCRETE MANHOLE AND IS APPROXIMATELY 10 FEET DEEP. EXISTING WETWELL WAS CONSTRUCTED IN APPROXIMATELY 2006.

**PUMP NOTES:**

- THE HAILE PUMP STATION HAS ONE PUMP THAT IS TO REMAIN.
- THE PUMP TO REMAIN IS FLYGT DP 3068.MT, 2.3 HP, 230 VOLT, 3 PHASE, IMPELLER NO. 473.



DATE	5/13/15
SCALE	AS SHOWN
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DRAWN	GMA
CHECKED	BLS
DWG NO	9370
CASE NO	95
<b>SHEET</b>	
<b>47 OF 65</b>	

NO	DATE	APPR

**Schaaf & Wheeler**  
 CONSULTING CIVIL ENGINEERS  
 1171 HOMESTEAD RD, STE. 255  
 SANTA CLARA, CA 95050  
 (408) 246-4848

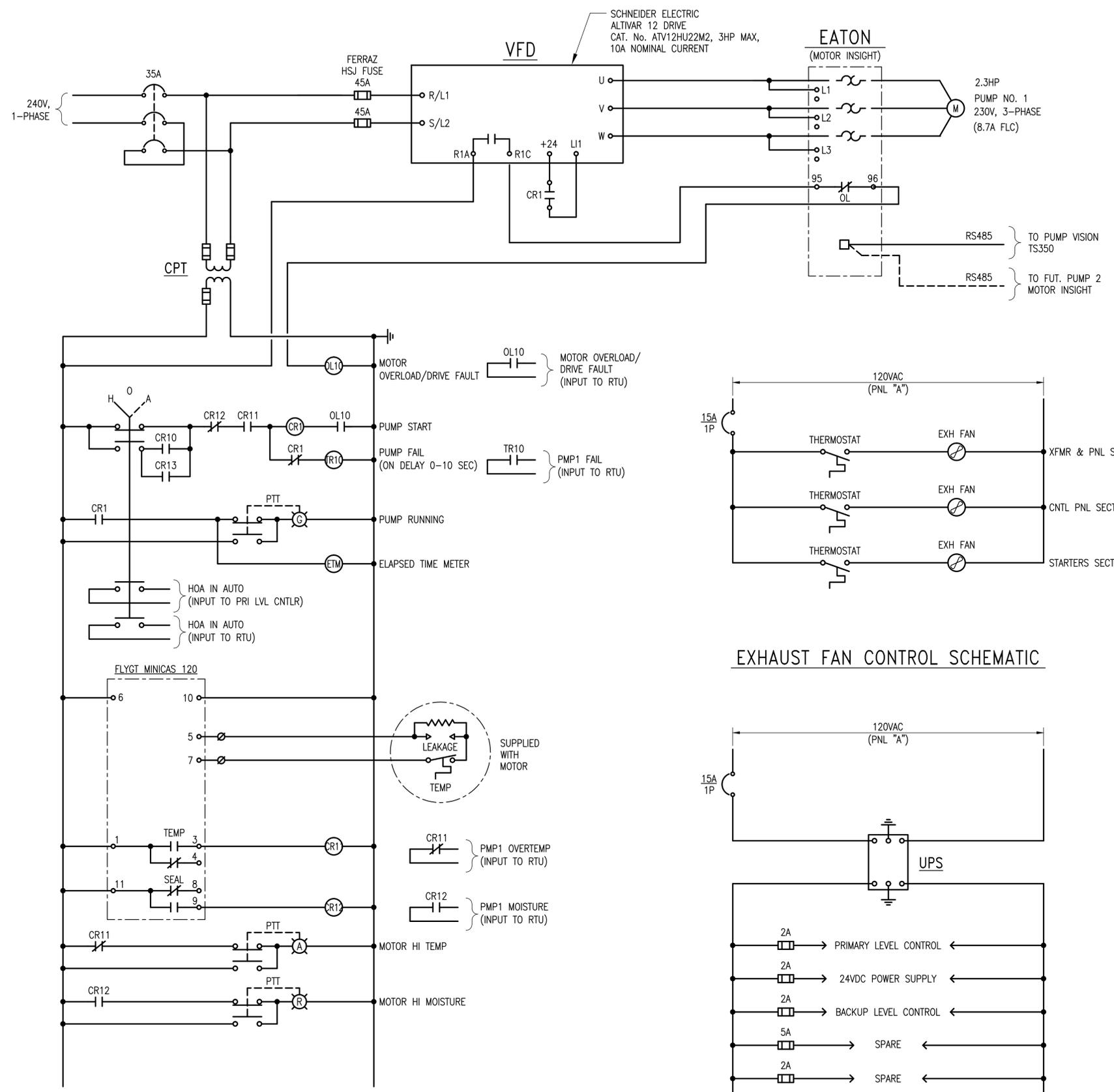
**CITY OF ALAMEDA**  
**GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS**  
**FOR RELIABILITY AND SAFETY IMPROVEMENTS**  
**HAILE SITE PLAN**

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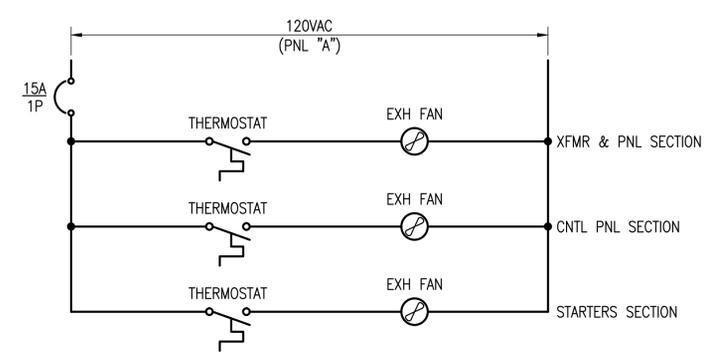




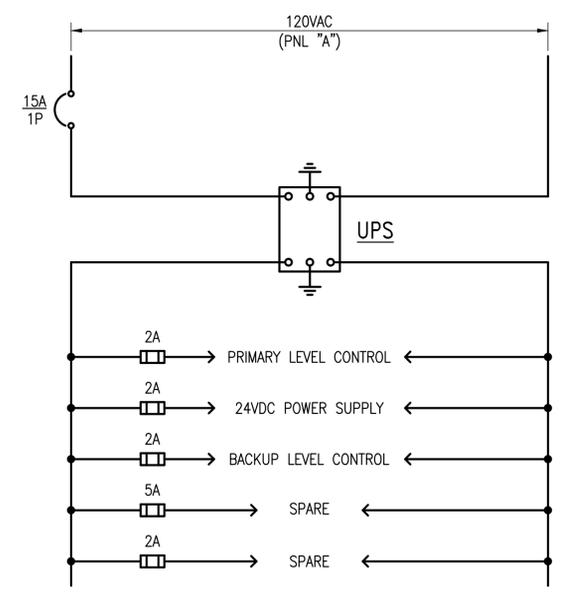
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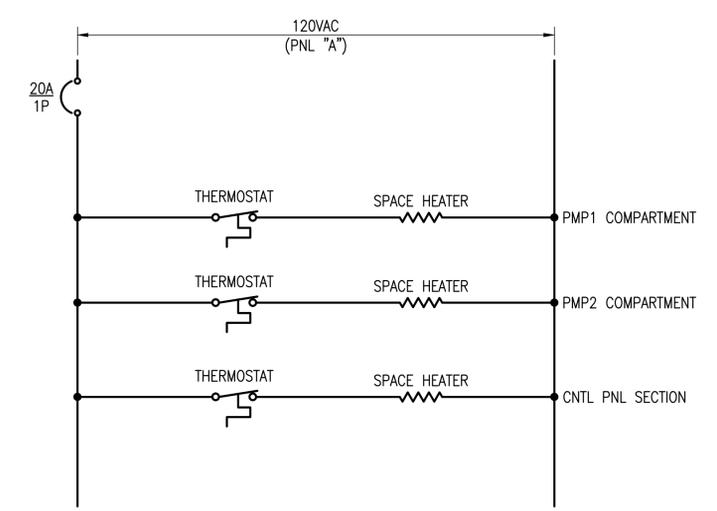
PUMP No. 1 VFD CONTROL SCHEMATIC DIAGRAM



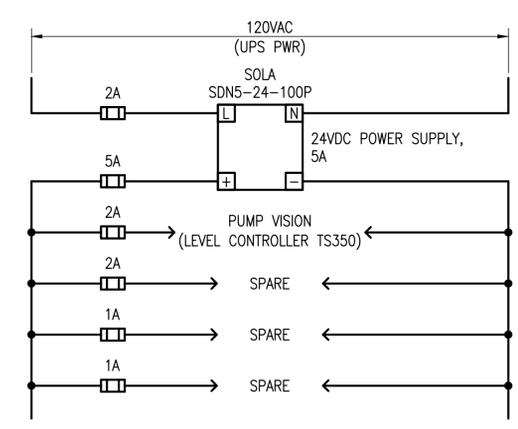
EXHAUST FAN CONTROL SCHEMATIC



120V UPS SYSTEM SCHEMATIC



SPACE HEATER CONTROL SCHEMATIC



24VDC SYSTEM SCHEMATIC

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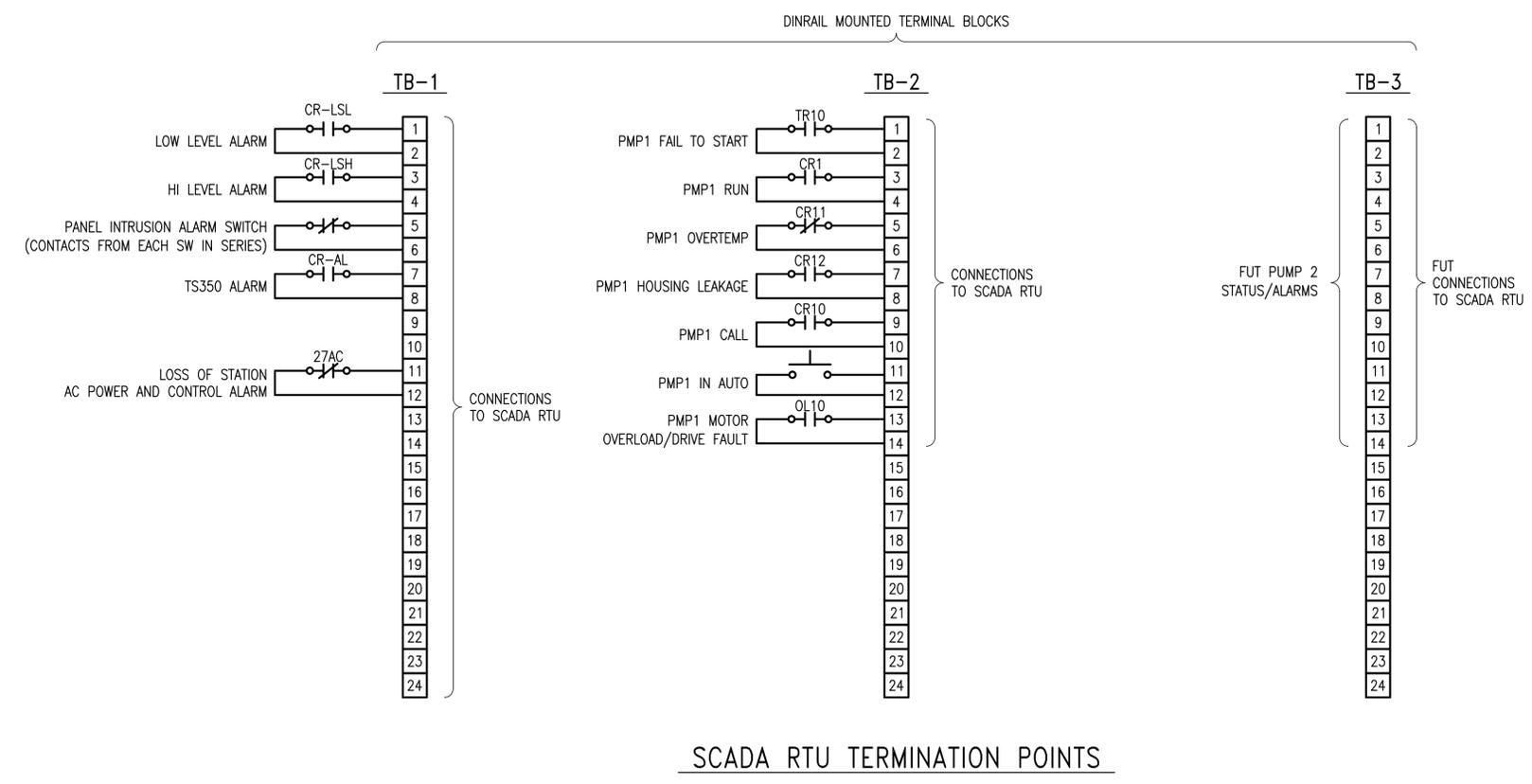
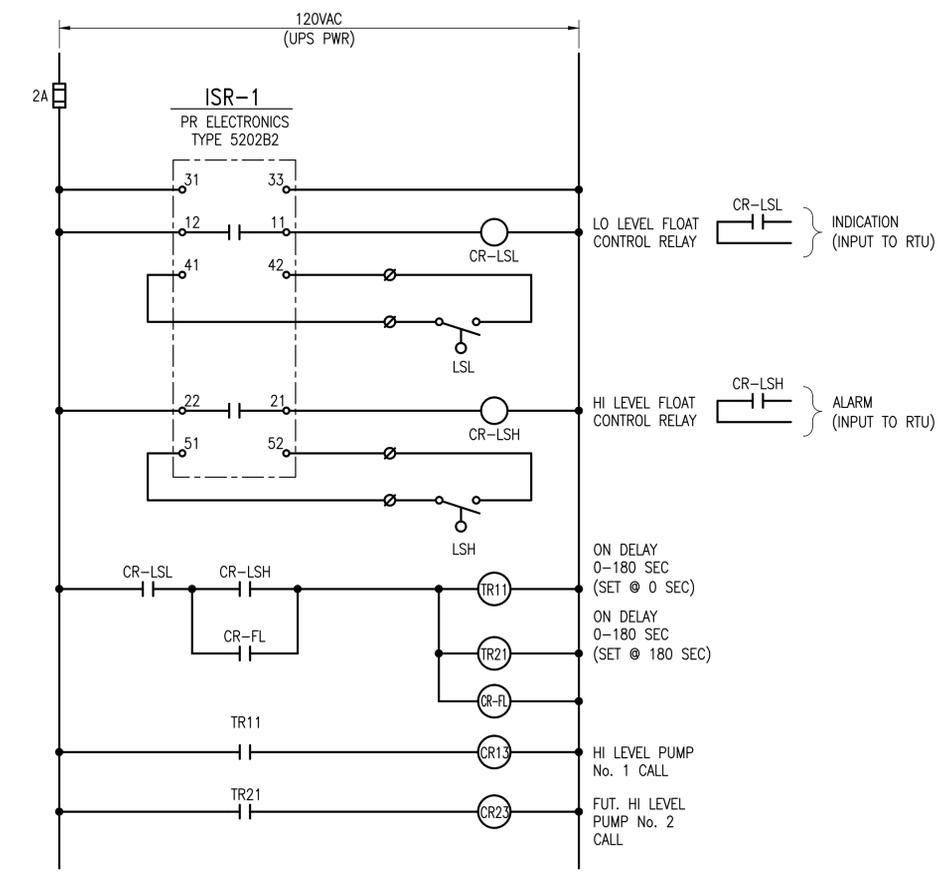
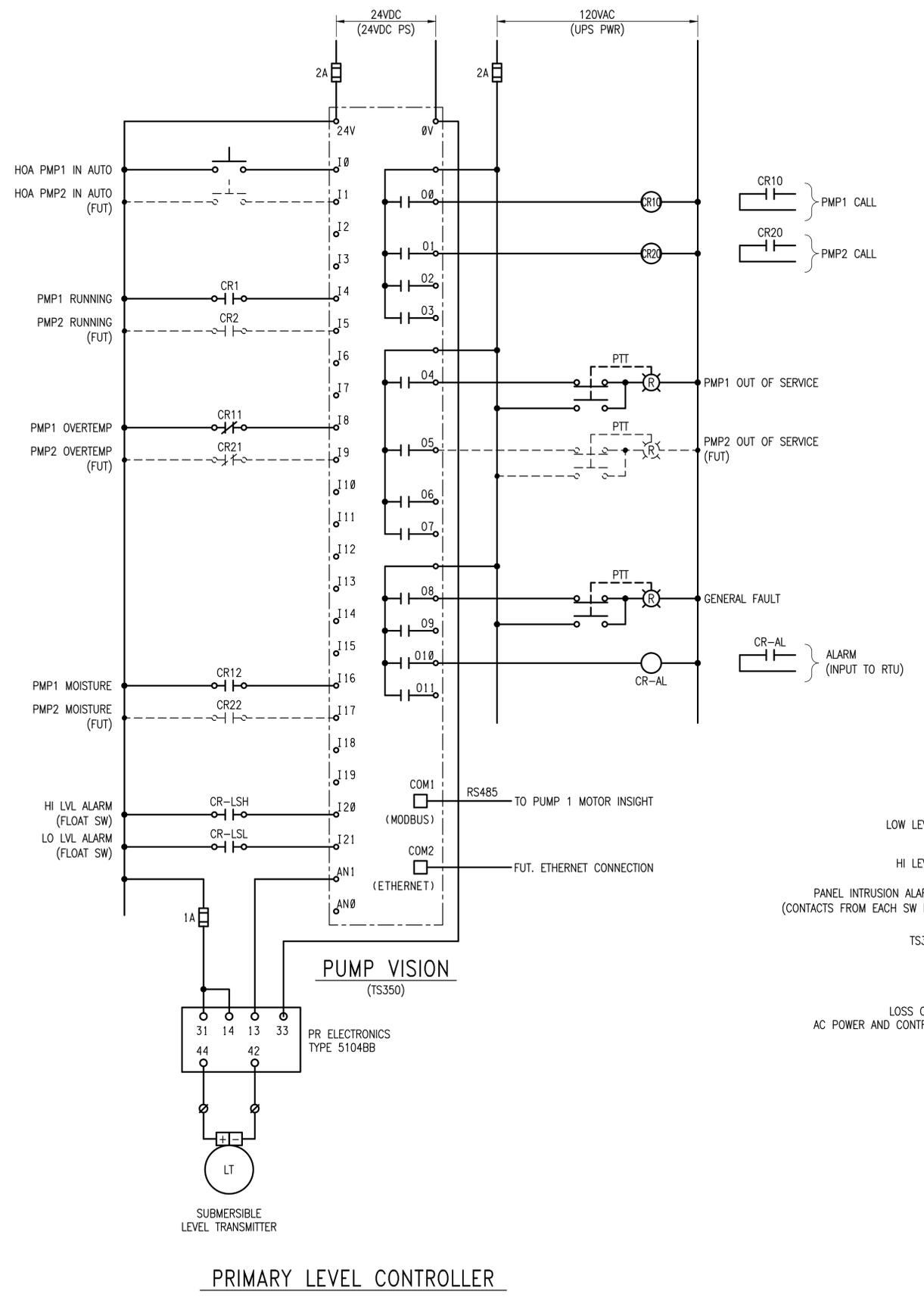
  

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DWG 9370 CASE 95				
<b>E2.1</b>				
<b>50 OF 65</b>				

	<b>engineers, inc.</b> 3350 scott blvd., bldg. 11 santa clara, ca 95054 (408) 986-8558 FAX (408) 986-9627	PROJECT NO. 11697-01
<b>CITY OF ALAMEDA</b> <b>GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS</b> <b>FOR RELIABILITY AND SAFETY IMPROVEMENTS</b> <b>HAILE PUMP STATION</b> <b>CONTROL SCHEMATIC DIAGRAM</b>		

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DWG	9370	CASE	95	<b>E2.2</b>						
									<b>51</b> OF <b>65</b>	

NO	REVISIONS	DATE	APPR

**REGISTERED PROFESSIONAL ENGINEER**  
 JULIO C. HERDOLTA  
 No. 9580  
 Exp. 9/30/16  
 STATE OF CALIFORNIA

**engineers, inc.**  
 3350 scott blvd., bldg. 11  
 santa clara, ca 95054  
 (408) 986-8558  
 (408) 986-9627  
 PROJECT NO. 11697-01

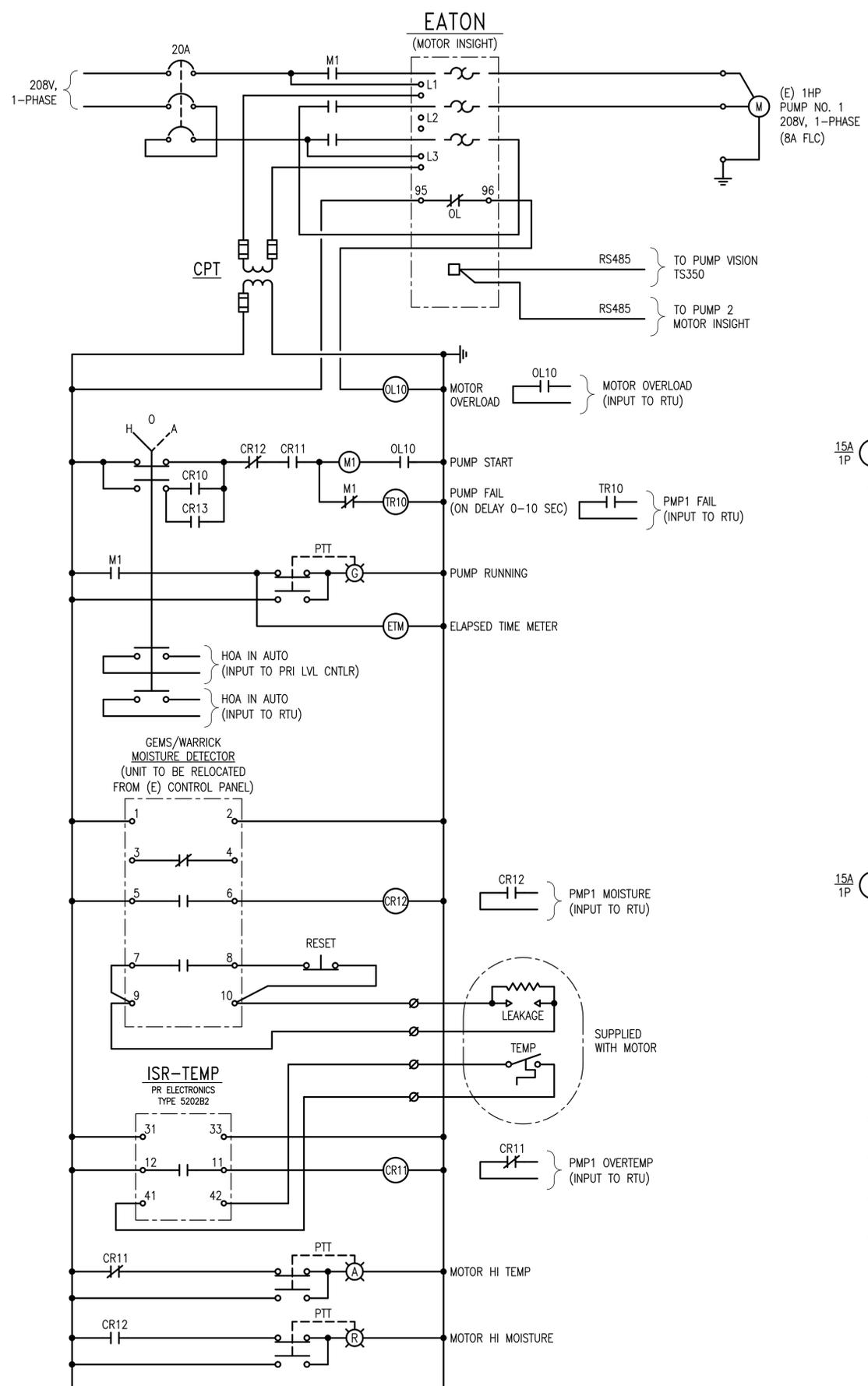
**CITY OF ALAMEDA**  
 GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS  
 FOR RELIABILITY AND SAFETY IMPROVEMENTS  
 HAILE PUMP STATION  
 SCHEMATIC DIAGRAM





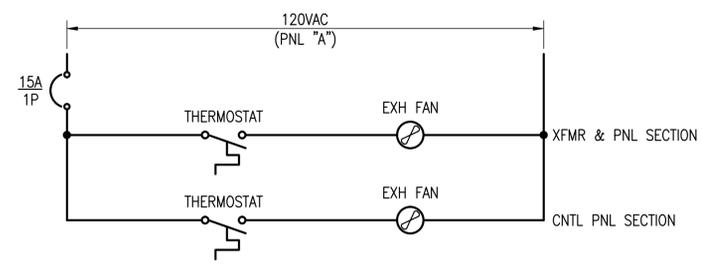


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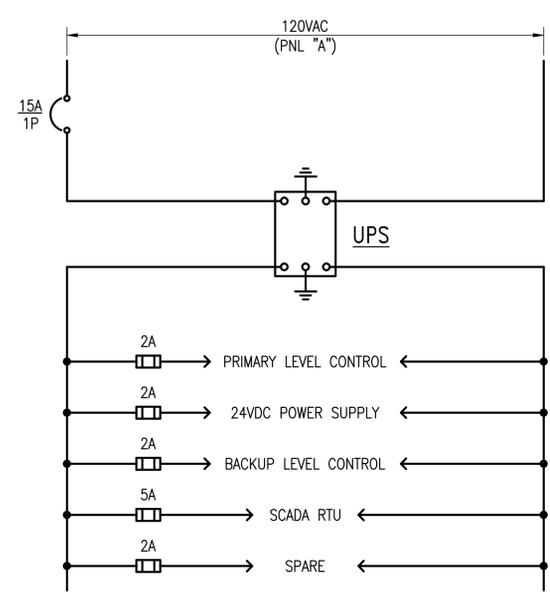


**FVNR PUMP No. 1 CONTROL SCHEMATIC DIAGRAM**  
(SIMILAR FOR PUMP No. 2)

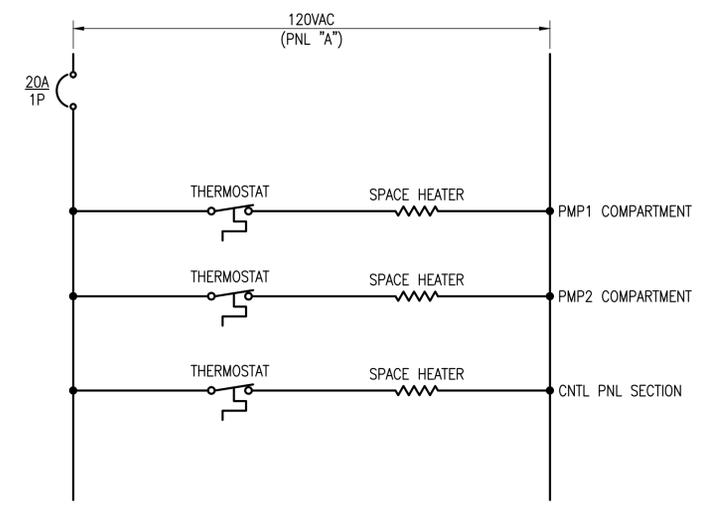
- NOTES:**
- CONTRACTOR TO RECONNECT (E) PUMP MOTOR THE SAME WAY AS FOUND IN (E) CONTROL PANEL.
  - CONTRACTOR TO PROVIDE SAME TYPE AND SIZE OF POWER CABLE AND CONTROL CABLE AS FOUND FOR (E) PUMPS.
  - STARTING CAPACITORS WERE NOT FOUND IN CONTROL PANEL. CONTRACTOR SHALL INVESTIGATE INSTALLATION AND PROVIDE RECORD OF CAPACITY AND VOLTAGE OF ANY EXISTING STARTING CAPACITORS OR INDICATE IF THE PUMP MOTOR IS INDUCTION START/INDUCTION RUN (SPLIT PHASE).



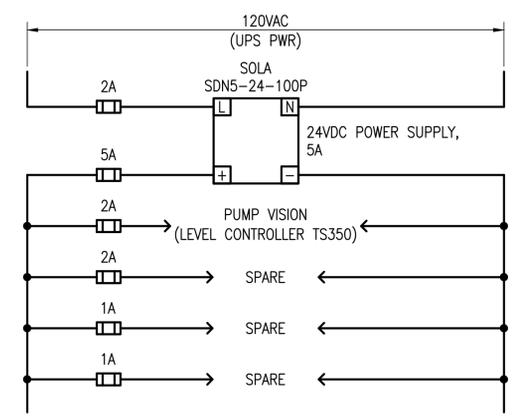
**EXHAUST FAN CONTROL SCHEMATIC**



**120V UPS SYSTEM SCHEMATIC**



**SPACE HEATER CONTROL SCHEMATIC**



**24VDC SYSTEM SCHEMATIC**

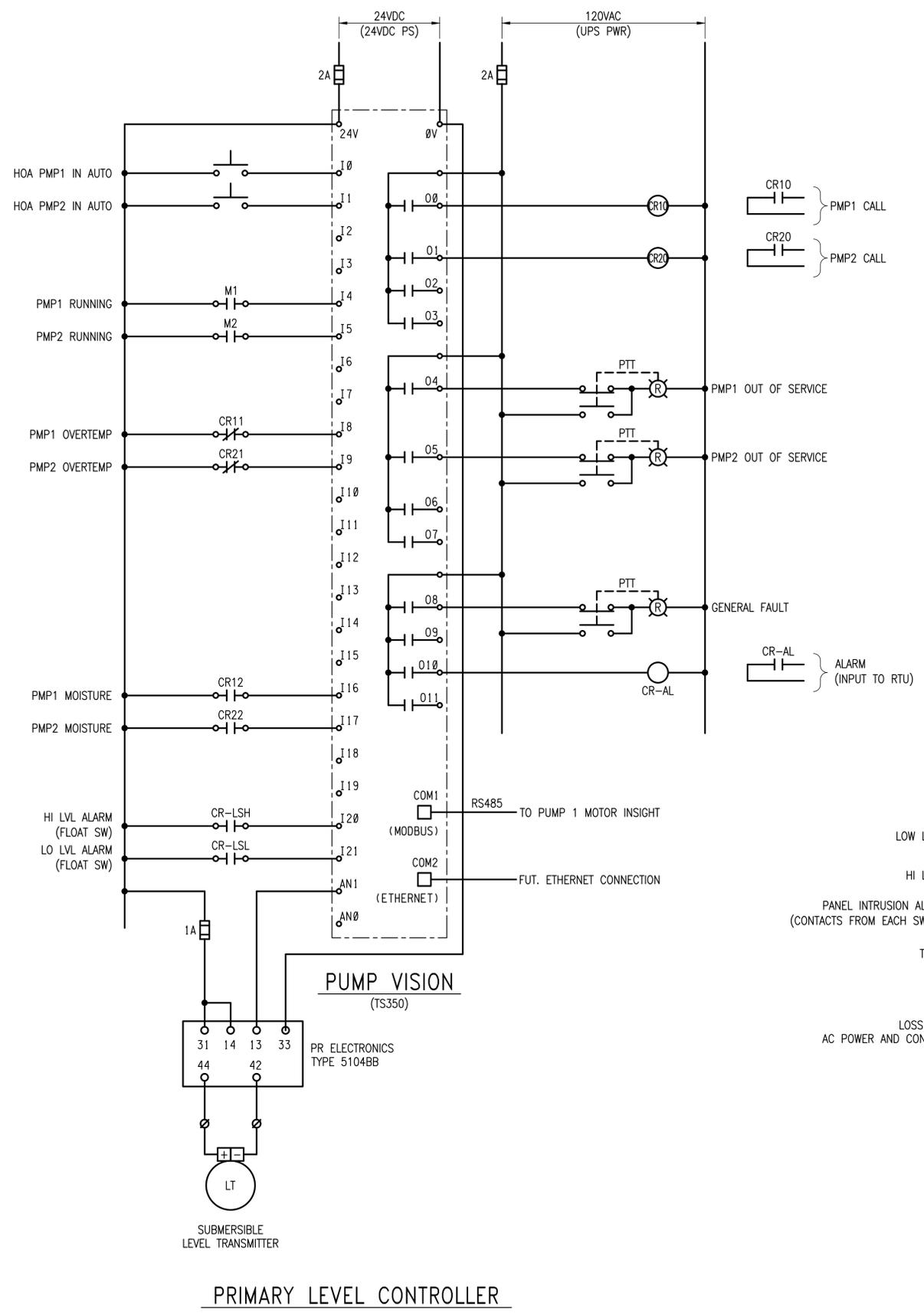
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**engineers, inc.**  
 3350 scott blvd., bldg. 11  
 santa clara, ca 95054  
 (408) 986-8558  
 FAX (408) 986-9627  
 PROJECT NO. 11697-01

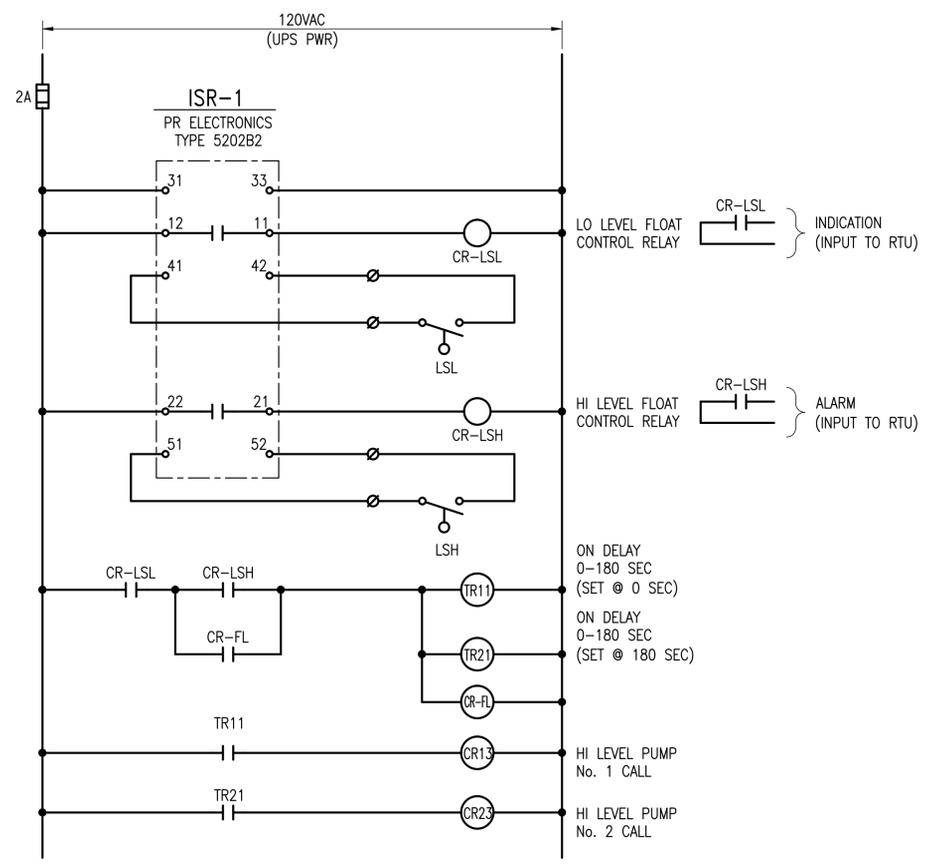
**CITY OF ALAMEDA**  
 GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS  
 FOR RELIABILITY AND SAFETY IMPROVEMENTS  
 BAY FAIRWAY HALL PUMP STATION  
 CONTROL SCHEMATIC DIAGRAM

DATE: 05/13/15	SCALE: NO SCALE	DESIGN: KM	DRAWN: VM	CHECKED: JH
DWG 9370		CASE 95		
<b>E2.1</b>				
<b>55 OF 65</b>				

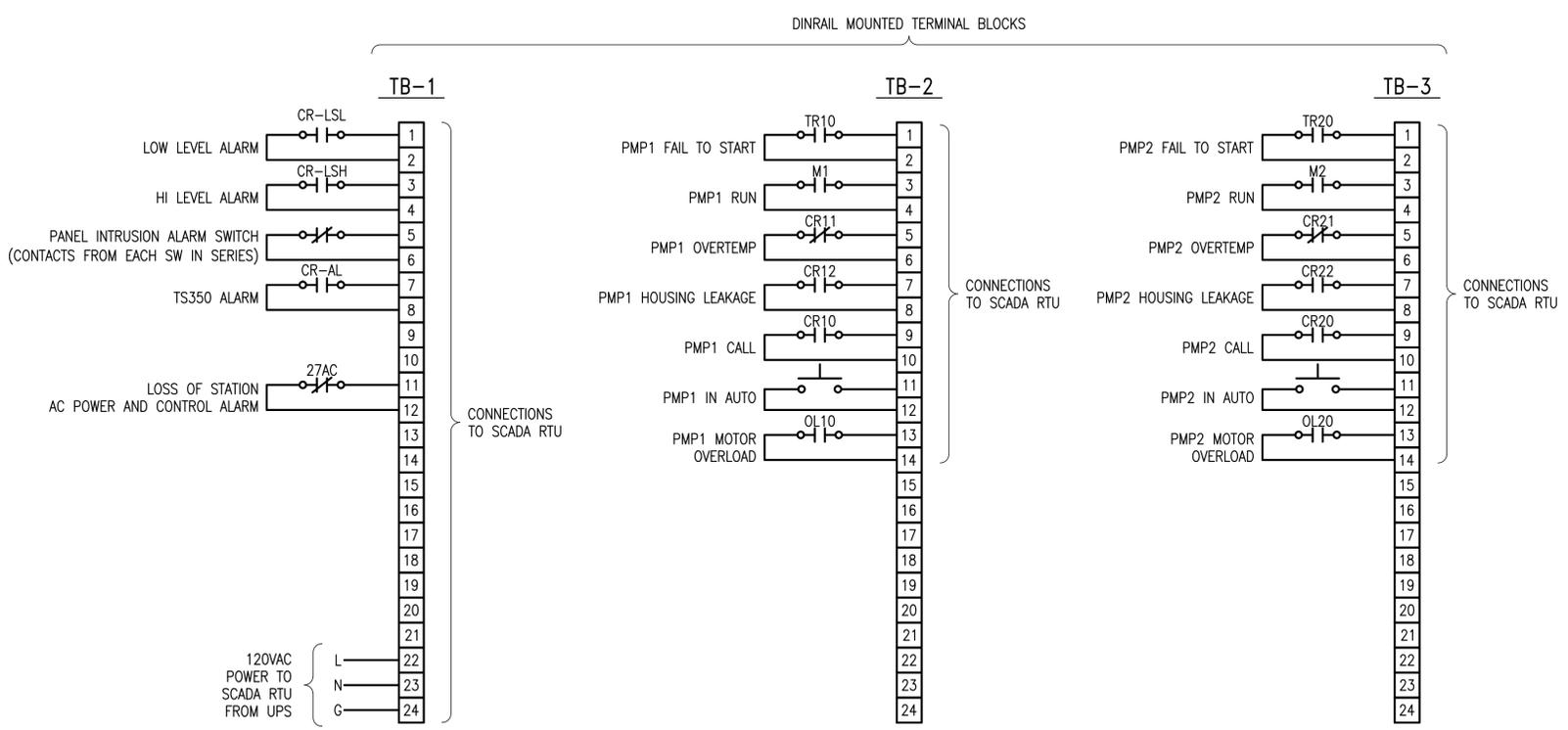
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**PRIMARY LEVEL CONTROLLER**



**BACKUP LEVEL CONTROL**



**SCADA RTU TERMINATION POINTS**

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NO	REVISIONS	NO	DATE	BY	APPR	NO	DATE	BY	APPR
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21		21				21			
22		22				22			
23		23				23			
24		24				24			

**REGISTERED PROFESSIONAL ENGINEER**  
 JULIO C. HERDOLTA  
 No. 9580  
 Exp. 9/30/16  
 ELECTRICAL  
 STATE OF CALIFORNIA

**engineers, inc.**  
 3350 scott blvd., bldg. 11  
 santa clara, ca 95054  
 (408) 986-8558  
 FAX (408) 986-9627  
 PROJECT NO. 11697-01

**CITY OF ALAMEDA**  
 GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS  
 FOR RELIABILITY AND SAFETY IMPROVEMENTS  
 BAY FAIRWAY PUMP STATION  
**SCHEMATIC DIAGRAM**

DATE: 05/13/15	SCALE: NO SCALE	DESIGN: KM	DRAWN: VM	CHECKED: JH
DWG 9370		CASE 95		

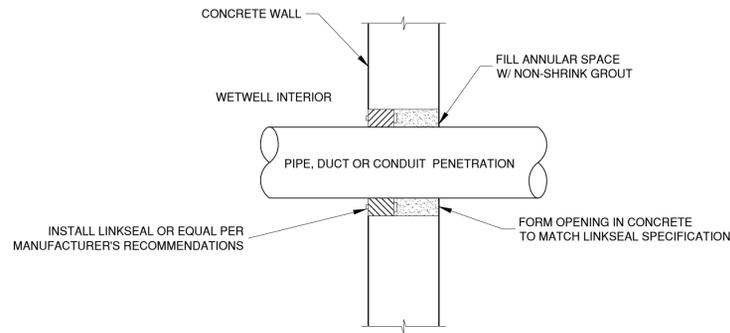
**E2.2**  
 56 OF 65



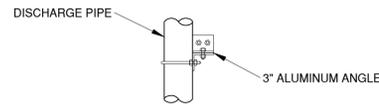




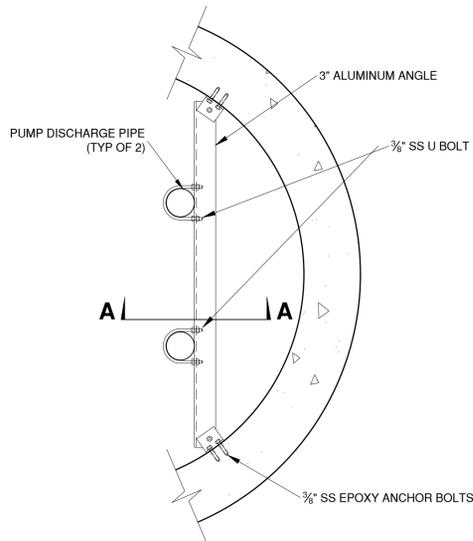




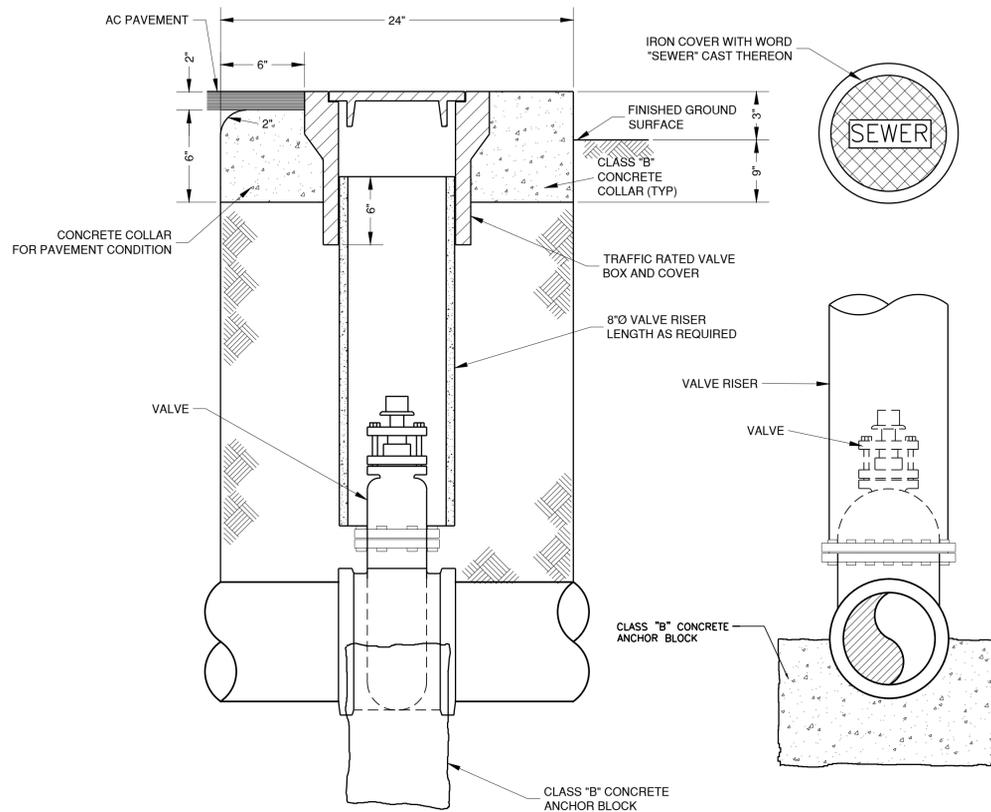
**PIPE PENETRATION DETAIL 1**  
NO SCALE 61



**SECTION A-A**

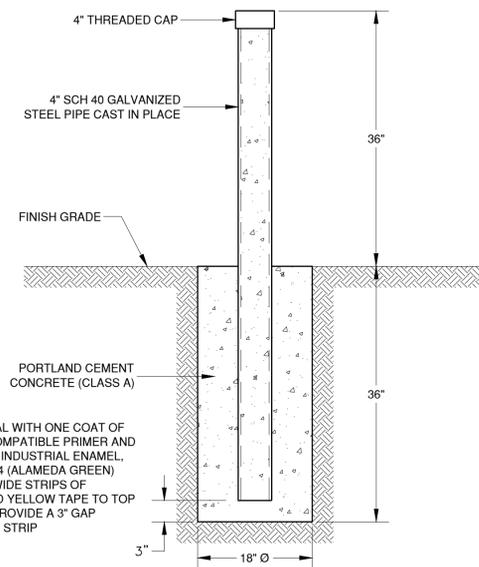


**PIPE SUPPORT DETAIL 3**  
NO SCALE 61



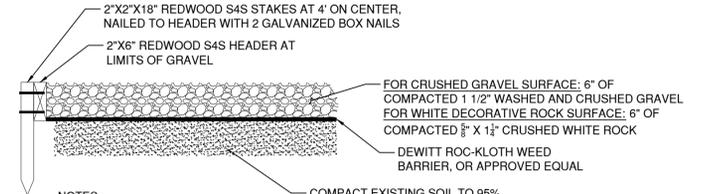
- NOTES:**
1. PROVIDE VALVE STEM EXTENSION IF DEPTH TO VALVE EXCEEDS FOUR (4) FEET.
  2. SECURE CONCRETE ANCHOR BLOCKS TO VALVE BODY USING TWO (2) #4 REBAR SADDLES.
  3. VALVES BOLTED TO FITTINGS WILL NOT REQUIRE ANCHOR BLOCKS.

**VALVE BOX DETAIL 2**  
NO SCALE 61



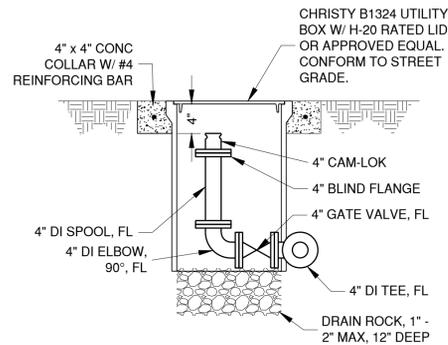
- DETAIL NOTES:**
1. PRIME ALL METAL WITH ONE COAT OF GALVANIZED COMPATIBLE PRIMER AND TWO COATS OF INDUSTRIAL ENAMEL, COLOR RAL 6004 (ALAMEDA GREEN)
  2. APPLY TWO 3" WIDE STRIPS OF REFLECTORIZED YELLOW TAPE TO TOP OF BOLLARD. PROVIDE A 3" GAP BETWEEN EACH STRIP

**BOLLARD DETAIL 4**  
NTS 61

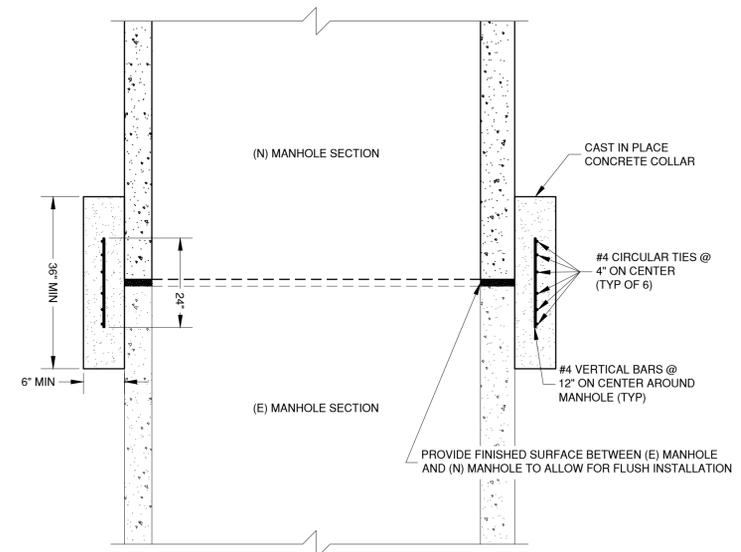


- NOTES:**
1. ALL EXISTING ROOTS FROM LANDSCAPING SHALL BE REMOVED FROM EXCAVATION. THIS MAY REQUIRE DEEPER EXCAVATION AND COMPACTION.
  2. 1-1/2 INCH WASHED ROCK SHALL BE PLACED, GRADED, AND COMPACTION AS SHOWN AND DETAILED IN THE PLANS. ROCK SHALL MEET THE FOLLOWING SIEVE GRADATION:
- | SIEVE SIZE    | PERCENT PASSING |
|---------------|-----------------|
| 1-1/2" SQUARE | 100             |
| 1-1/4" SQUARE | 90-100          |
| 3/4" SQUARE   | 0-20            |
| 3/8" SQUARE   | 0-2             |

**GRAVEL DETAIL 5**  
NTS 61



**BYPASS CONNECTION DETAIL 6**  
NO SCALE 61



**CONCRETE COLLAR DETAIL 7**  
NO SCALE 61

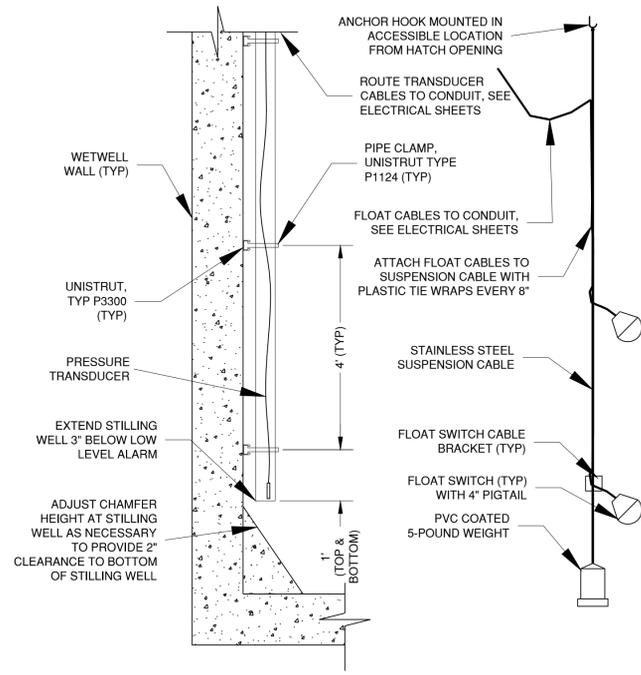
DATE	APPR	REVISIONS	NO	DATE	BY	CHKD
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			2			
			3			
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			5			
			6			
			7			

**CITY OF ALAMEDA**  
**GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS**  
**FOR RELIABILITY AND SAFETY IMPROVEMENTS**

**Schaaf & Wheeler**  
 CONSULTING CIVIL ENGINEERS  
 1171 HOMESTEAD RD, STE. 255  
 SANTA CLARA, CA 95050  
 (408) 246-4848

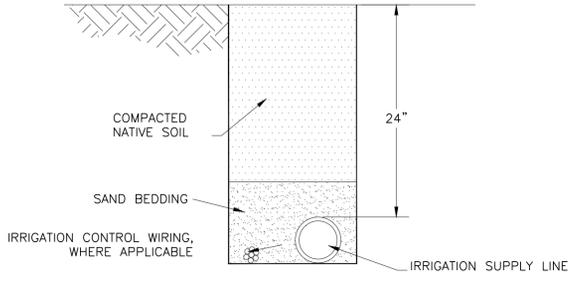
**DETAILS**

DATE:	5/13/15	CHECKED:	BLS
SCALE:	AS SHOWN	DRAWN:	GMA
DESIGN:	GMA	CASE:	95
<b>DWG 9370</b>		<b>SHEET 61 OF 65</b>	



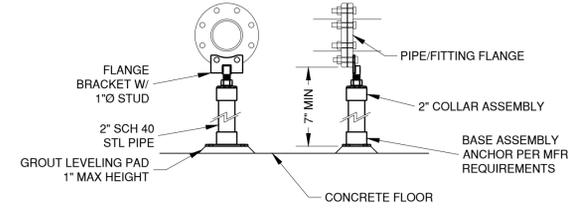
- NOTES:
1. LOCATE STILLING TUBE AS SHOWN ON PUMP STATION PLANS.
  2. SUPPORT STILLING WELL AS SHOWN.
  3. STILLING WELL SHALL BE 6" DIAMETER SCHEDULE 80 PVC.
  4. ALL MOUNTING HARDWARE SHALL BE TYPE 316 STAINLESS STEEL.
  5. EXTEND STILLING TUBE TO ONE (1) FOOT BELOW WETWELL CEILING.
  6. ANCHOR UNISTRUT TO CONCRETE WALLS W/ 1/2" X 5" EPOXY ANCHORS.
  7. PERFORATE BOTTOM 2 FEET OF STILLING TUBE WITH 1/2" HOLES 2" APART.
  8. SEE ELECTRICAL SHEETS AND SPECIFICATIONS FOR TRANSDUCER AND FLOAT SWITCH REQUIREMENTS AND CABLE ROUTING

**STILLING WELL AND FLOAT SWITCH MOUNTING DETAIL** 1  
NO SCALE 62

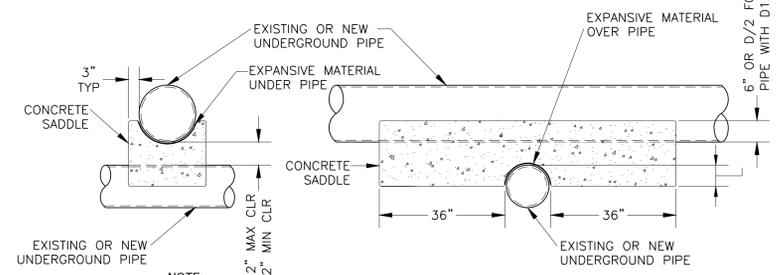


- NOTES:
1. WIRE AND PIPE SHALL MATCH EXISTING TYPE AND SIZE
  2. BUNDLE AND TAPE WIRE EVERY TEN FEET

**IRRIGATION TRENCH DETAIL** 2  
NO SCALE 62

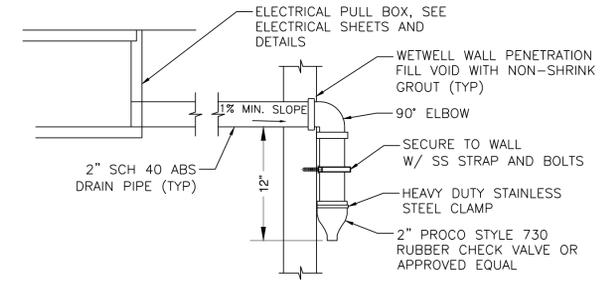


**FLANGE PIPE SUPPORT DETAIL** 3  
NO SCALE 62



NOTE:  
INSTALL CONCRETE SADDLE AT EACH LOCATION WHERE A NEW UNDERGROUND UTILITY CROSSES IN EXISTING UNDERGROUND UTILITY WITH LESS THAN 12" CLEARANCE. MINIMUM ALLOWABLE CLEARANCE IS 2". A 6-SACKS MIX SHALL BE REQUIRED FOR CONCRETE.

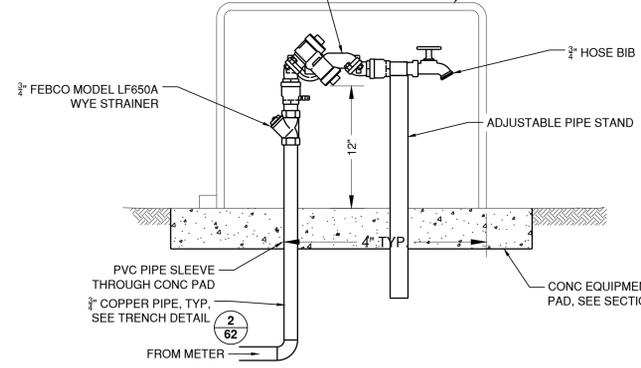
**CONCRETE SADDLE DETAIL** 4  
NO SCALE 62



**ELECTRICAL PULL BOX DRAIN DETAIL** 7  
NO SCALE 62

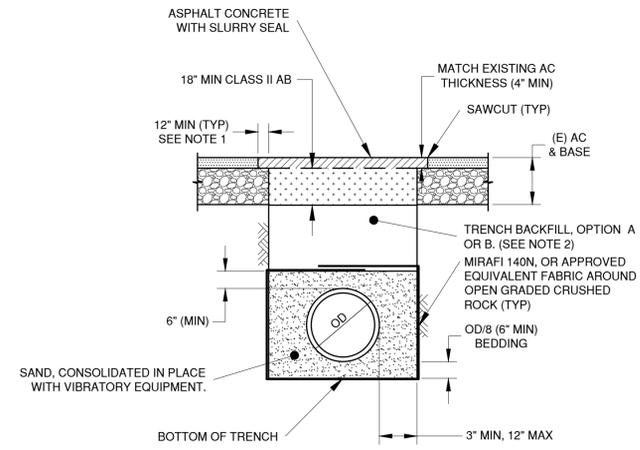
3/4" FEBCO MODEL LF825YA DOUBLE CHECK VALVE ASSEMBLY, OR APPROVED EQUAL (MUST ALSO BE ON THE EBMUD LIST OF APPROVED BACKFLOW PREVENTER ASSEMBLIES)

VANDEL BUSTER ENCLOSURE BY ALLSPEC ENCLOSURES INC., PART NO. VB-1218, LIFT-OFF STYLE, OR APPROVED EQUAL (12" L X 12" W X 18" H). INSTALL PER MANUFACTURERS RECOMMENDATIONS



- DETAIL NOTES:
1. ALL PIPE AND FITTINGS SHALL BE COPPER
  2. LOCATIONS WHERE A BFP IS NOT NECESSARY REPLACE DOUBLE CHECK VALVE ASSEMBLY WITH A 90-DEGREE ELBOW

**BACKFLOW DEVICE AND ENCLOSURE DETAIL** 5  
NO SCALE 62



OPTION	DESCRIPTION
A	NATIVE MATERIAL WITH LESS THAN 3% ORGANIC CONTENT BY WEIGHT MEETING THE SPECIFICATION REQUIREMENTS. PLACED IN MAX 8" LIFTS. COMPACTED TO 90% MAX DRY DENSITY TO NEAR OPTIMUM MOISTURE CONTENT. UNDERLYING BAY MUD MAY NOT BE USED FOR FILL, AND MUST BE REMOVED FROM PROJECT SITE, IF ENCOUNTERED.
B	INORGANIC IMPORTED MATERIAL MEETING THE SPECIFICATION REQUIREMENTS. IMPORT MATERIALS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO ACCEPTANCE.

- NOTES:
- 1- THE 12" BENCH SECTION FOR A.C. SHALL BE CUT AND REMOVED IMMEDIATELY PRIOR TO FINISH PAVING OPERATIONS.
  - 2- UPPER 6" OF SOIL SUBGRADE MUST BE COMPACTED TO AT LEAST 95% OF MAX DRY DENSITY AND NEAR OPTIMUM MOISTURE CONTENT IN ACCORDANCE TO ASTM D1557.

**TRENCH BACKFILL AND PAVEMENT REPLACEMENT DETAIL** 6  
NO SCALE 62

DATE	5/13/15	SCALE	AS SHOWN	DESIGN	GMA	DRAWN	GMA	CHECKED	BLS
NO	1	2	3	4	5	6	7	8	9
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DATE	APPR								

**CITY OF ALAMEDA**  
GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS  
FOR RELIABILITY AND SAFETY IMPROVEMENTS

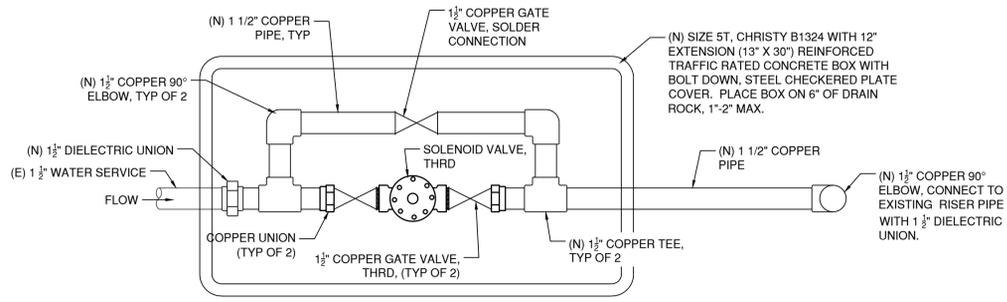
**Schaaf & Wheeler**  
CONSULTING CIVIL ENGINEERS  
1171 HOMESTEAD RD, STE. 255  
SANTA CLARA, CA 95050  
(408) 246-4848

**DETAILS**

DWG 9370 CASE 95

**SHEET**  
62 OF 65

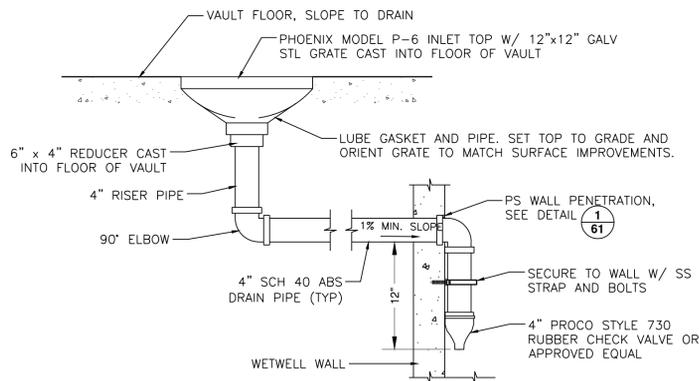
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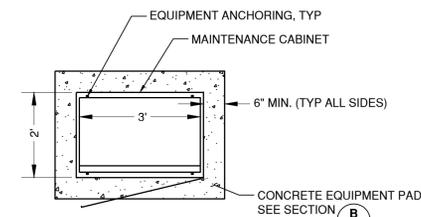
DETAIL NOTES:

- CUT AND REMOVE EXISTING COLD WATER SUPPLY LINE AS REQUIRED TO FACILITATE INSTALLATION OF NEW SOLENOID VALVE.
- ALL COPPER JOINTS SHALL BE INSTALLED AND SOLDERED IN ACCORDANCE WITH APPLICABLE SECTIONS OF THE CALIFORNIA PLUMBING CODE.
- SOLENOID VALVE SHALL BE CLA-VAL MODEL 136-01 BRONZE, OR APPROVED EQUAL. SOLENOID VALVE SHALL BE NORMALLY CLOSED (ENERGIZED SOLENOID TO OPEN).
- SEE ELECTRICAL SHEETS FOR WIRING AND CONTROL REQUIREMENTS. SOLENOID VALVE SHALL CLOSE UPON LOSS OF POWER OR WHEN A HIGH LEVEL ALARM OCCURS.
- CONTRACTOR SHALL COORDINATE WATER SHUTOFF WITH THE CITY AND BUILDING TENNANT TO AVOID SERVICE INTERRUPTIONS DURING EVENTS.

**SOLENOID VALVE DETAIL** 1  
NO SCALE 63

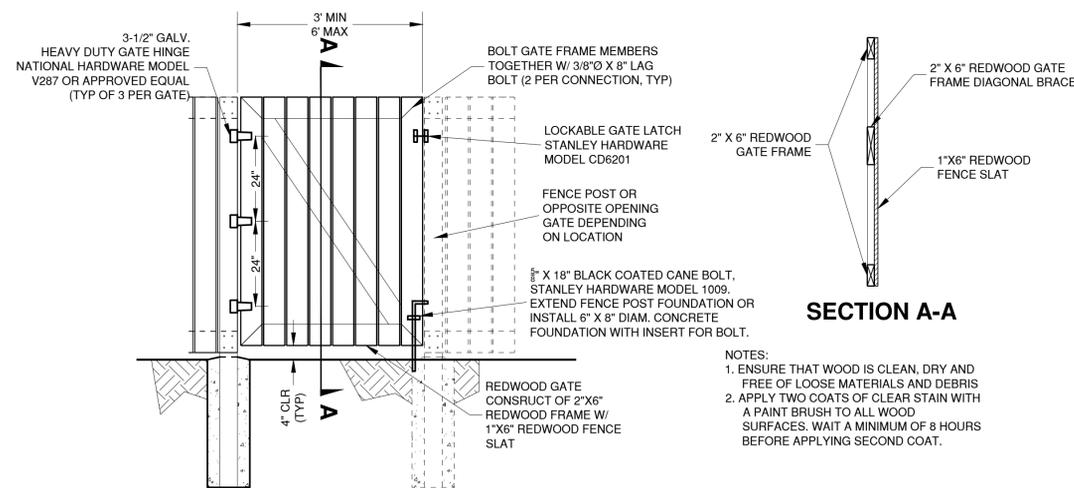


**FLOOR DRAIN DETAIL** 2  
NO SCALE 63

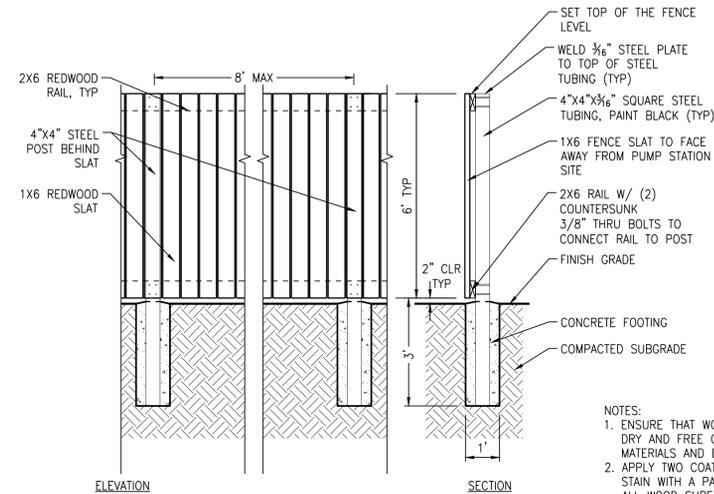


- NOTES:
- MAINTENANCE CABINET SHALL BE 3 FEET TALL.
  - MAINTENANCE CABINET SHALL MEET THE SPECIFICATIONS OF THE CONTROL PANEL AS DESCRIBED IN SPECIFICATION SECTION 16901.
  - ANCHORAGE OF THE CABINET SHALL BE DESIGNED BY THE MANUFACTURER. MANUFACTURER SHALL SUBMIT DRAWINGS AND CALCULATIONS FOR THE EQUIPMENT ANCHORAGE FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO INSTALLATION OF THE EQUIPMENT. SEE PROJECT SPECIFICATIONS FOR SEISMIC DESIGN CRITERIA.

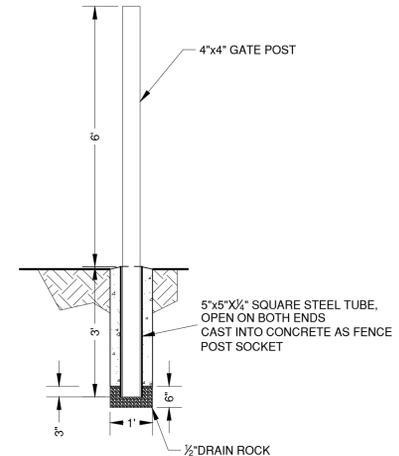
**MAINTENANCE CABINET DETAIL** 3  
NO SCALE 63



**REDWOOD SWING GATE DETAIL** 5  
NO SCALE 63



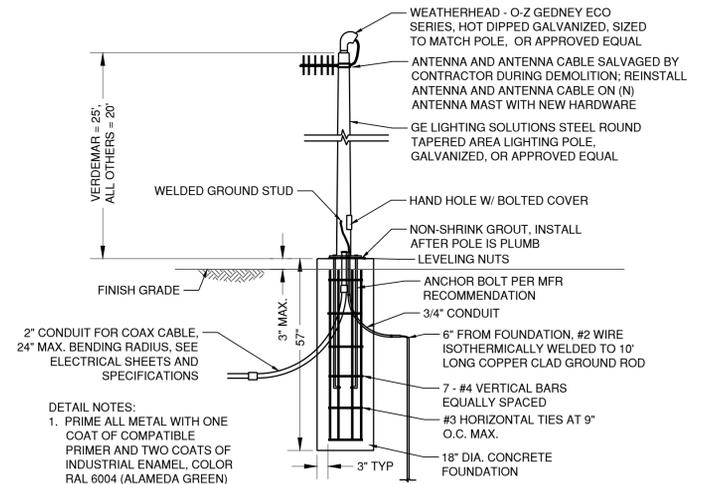
**REDWOOD FENCE DETAIL** 4  
NO SCALE 63



**REMOVABLE FENCE POST BASE**  
(WHERE NOTED ON PLANS)

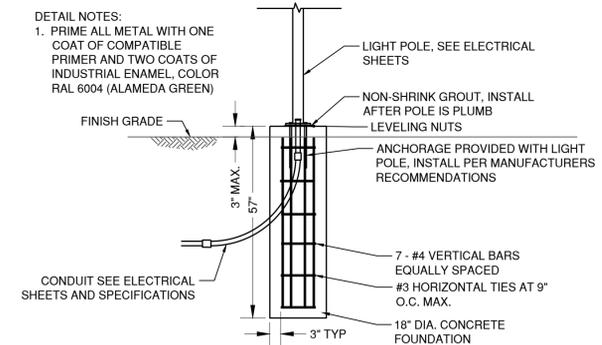
- NOTES:
- ENSURE THAT WOOD IS CLEAN, DRY AND FREE OF LOOSE MATERIALS AND DEBRIS
  - APPLY TWO COATS OF CLEAR STAIN WITH A PAINT BRUSH TO ALL WOOD SURFACES. WAIT A MINIMUM OF 8 HOURS BEFORE APPLYING SECOND COAT.

**4**  
63



- DETAIL NOTES:
- PRIME ALL METAL WITH ONE COAT OF COMPATIBLE PRIMER AND TWO COATS OF INDUSTRIAL ENAMEL, COLOR RAL 6004 (ALAMEDA GREEN)

**SCADA POLE DETAIL** 6  
NO SCALE 63



**LIGHT POLE FOUNDATION DETAIL** 7  
NO SCALE 63

DATE	5/13/15	SCALE	AS SHOWN	DESIGN	GMA	DRAWN	GMA	CHECKED	BLS
DWG	9370	CASE	95						
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63 OF 65									

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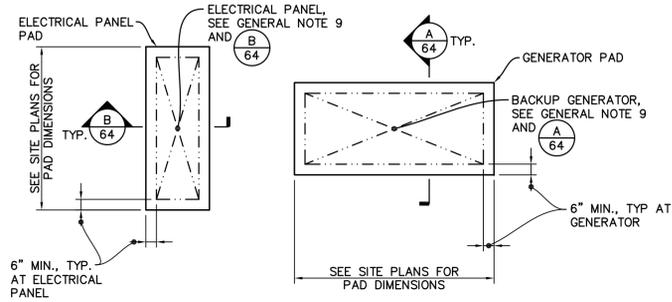
**Schaaf & Wheeler**  
CONSULTING CIVIL ENGINEERS  
1171 HOMESTEAD RD, STE. 255  
SANTA CLARA, CA 95050  
(408) 246-4848

**CITY OF ALAMEDA**  
GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS  
FOR RELIABILITY AND SAFETY IMPROVEMENTS

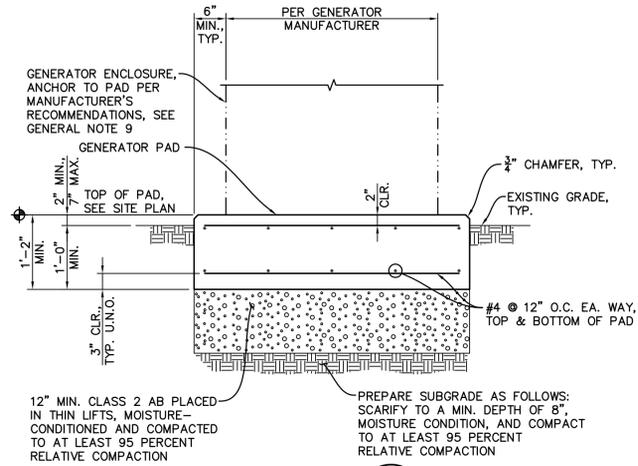
**DETAILS**

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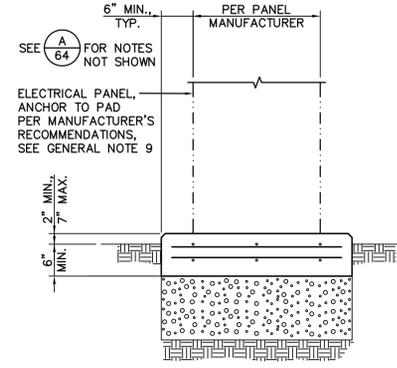
- NOTES:
- SEE SITE PLANS FOR PAD LOCATIONS, ORIENTATIONS, SIZES, ELEVATIONS, AND EQUIPMENT LAYOUT.
  - SEE (3/64) FOR ACCESS PAD DETAIL WHERE REQUIRED.



TYPICAL EQUIPMENT PAD PLAN  
1/4" = 1'-0"



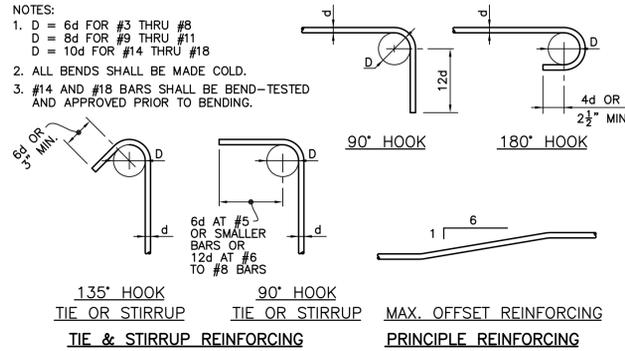
SECTION A  
3/4" = 1'-0"



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

GENERAL NOTES:

- BASIS OF DESIGN: 2013 CALIFORNIA BUILDING CODE.
- THESE DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE SEPARATELY BOUND PROJECT SPECIFICATIONS.
- ALL MATERIALS, WORKMANSHIP, TESTING AND INSPECTION SHALL CONFORM TO THE CALIFORNIA BUILDING CODE, 2013 EDITION, AND LOCAL BUILDING CODES.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS ON THE JOBSITE WITH A COMPLETE SET OF THE LATEST DRAWINGS. OMISSIONS OR DISCREPANCIES BETWEEN THE VARIOUS ELEMENTS OF THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH WORK.
- DETAILS SHOWN ARE TYPICAL, AND APPLY TO SIMILAR CONDITIONS, UNLESS NOTED OTHERWISE.
- REFER TO SITE PLANS FOR SPECIFIC INFORMATION ON EACH PUMP STATION SITE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR JOBSITE SAFETY, INCLUDING SAFETY OF THE EXISTING STRUCTURES AND UTILITIES. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING, AND GUYS IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL ORDINANCES.
- DRAWINGS SHALL NOT BE SCALED OR MEASURED FOR DIMENSIONS.
- ANCHORAGE OF EQUIPMENT SHALL BE BY THE MANUFACTURER. MANUFACTURER SHALL SUBMIT DRAWINGS AND CALCULATIONS FOR THE EQUIPMENT ANCHORAGE FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO INSTALLATION OF THE EQUIPMENT. SEE PROJECT SPECIFICATIONS FOR SEISMIC DESIGN CRITERIA.
- WHERE REQUIRED, EXISTING CONC. PUMP PADS SHALL BE REMOVED PRIOR TO INSTALLATION OF NEW PUMPS. PADS SHALL BE REMOVED FLUSH WITH EXISTING CONC. BASE SLABS WITHOUT DAMAGING BASE SLABS. IF BASE SLABS ARE DAMAGED, BASE SLABS SHALL BE REPAIRED WITH EITHER NON-SHRINK GROUT OR NON-SHRINK EPOXY GROUT. MIN. DEPTH OF REPAIR SHALL BE 1" FOR NON-SHRINK GROUT OR 1/2" FOR NON-SHRINK EPOXY GROUT. SURFACE PREPARATION, MIXING, APPLICATION, AND CURING OF GROUT SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- MATERIAL SPECIFICATIONS:
  - CONCRETE: MIN. 28 DAY STRENGTH = 4,000 PSI.
  - REINFORCING STEEL: ASTM A615, GRADE 60.
  - EPOXY ADHESIVE ANCHOR BOLTS AND DOWELS: SIMPSON STRONG-TIE "SET-XP" EPOXY, HILTI "HIT-RE 500-SD" EPOXY OR APPROVED EQUAL. SEE PROJECT SPECIFICATIONS.
  - EXPANSION ANCHORS: SIMPSON STRONG-TIE "STRONG-BOLT 2", HILTI "KWIK BOLT T2" OR APPROVED EQUAL. SEE PROJECT SPECIFICATIONS.
- DEFERRED SUBMITTALS/SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:
  - CONCRETE MIX DESIGNS.
  - BAR REINFORCING STEEL SHOP DRAWINGS.
  - ANCHORAGE OF EQUIPMENT (DRAWINGS & CALCULATIONS).
- SPECIAL INSPECTIONS SHALL BE PERFORMED FOR THE FOLLOWING ITEMS:
  - PLACEMENT OF REINFORCING STEEL.
  - INSTALLATION OF CAST-IN-PLACE BOLTS AND EMBEDDED ITEMS.
  - PLACEMENT OF REINFORCED CONCRETE.
  - INSTALLATION OF POST-INSTALLED ANCHORS.
- CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT ALL EXISTING UTILITIES. CONTRACTOR SHALL DO NO DEMOLITION OR START ANY OTHER CONSTRUCTION UNTIL ALL EXISTING UTILITIES HAVE BEEN LOCATED AND MARKED IN THE FIELD. CONTRACTOR SHALL CALL UNDERGROUND SERVICES ALERT (U.S.A.) AT (800) 227-2600 AT LEAST 48 HOURS IN ADVANCE OF THE START OF DEMOLITION OR ANY OTHER CONSTRUCTION FOR THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES IN THE WORK AREA.
- SEE THE PROJECT SPECIAL PROVISIONS FOR EROSION CONTROL REQUIREMENTS.
- SEE SECTION 02300 OF THE PROJECT SPECIFICATIONS FOR SUBGRADE PREPARATION REQUIREMENTS.

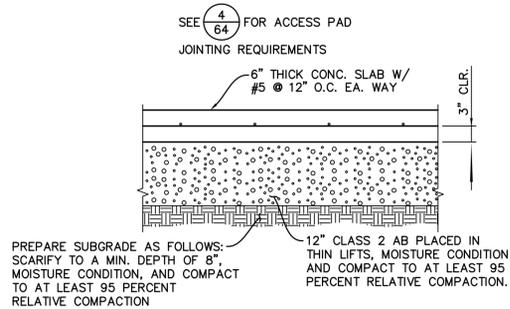


DETAIL 1  
NTS (3/64)

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

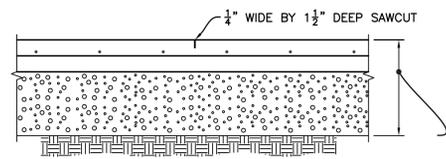
- NOTES:
- LAP SPLICE LENGTHS SHALL BE INCREASED BY 50% WHERE BAR CLEAR COVER IS LESS THAN 2 BAR DIAMETERS OR WHERE SPACING BETWEEN BARS BEING SPLICED IS LESS THAN 5 BAR DIAMETERS.
  - TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW THE BARS.

DETAIL 2  
NTS (3/64)



TYPICAL ACCESS PAD SECTION  
DETAIL 3  
3/4" = 1'-0" (3/64)

- NOTES:
- SAW-CUTTING SHALL BE COMPLETED NO MORE THAN 12 HOURS AFTER PLACING CONCRETE SLAB.
  - JOINTS SHALL BE LOCATED AT 10'-0" O.C. MAX.
  - IN LIEU OF SAW-CUTTING, CONTRACTOR MAY EMBED A 1/2" DEEP ZIP STRIP IN SLAB.



WEAKENED PLANE JOINT  
DETAIL 4  
3/4" = 1'-0" (3/64)

DATE:	5/13/15	SCALE:	AS SHOWN	DESIGN:	TEE	DRAWN:	REM	CHECKED:	JAF
DWG	9370	CASE	95	SHEET					
64						OF 65			

NO. REVISIONS

DATE APPR

5/13/15

REGISTERED PROFESSIONAL ENGINEER  
L. ELIOTT  
C 43280  
S 49416  
Exp. 6/30/16  
CALIFORNIA  
REGISTERED PROFESSIONAL CIVIL ENGINEER

Finn Design Group, Inc.  
Structural Engineers  
5000 Hopyard Road, Suite 300  
Pleasanton, CA 94588  
OFFICE (925) 737-1600  
FAX (925) 737-1601

CITY OF ALAMEDA  
GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS  
FOR RELIABILITY AND SAFETY IMPROVEMENTS

STRUCTURAL DETAILS

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**GENERAL REQUIREMENTS**



Project Requirements Checklist  
General Requirements  
Questions? Contact the AMP Engineering  
Department at 510-748-3996, FAX: 510-748-3993

**SUMMARY OF GENERAL REQUIREMENTS**

Customer/Contractor is responsible for ensuring that final installations meet all City of Alameda and Alameda Municipal Power (AMP) requirements.

1. To ensure that all substructure contract work is done per AMP standards, AMP will assign an inspector during construction.
2. The owner/developer's electrical consultant shall coordinate power requirements with AMP. Failure to do so may delay project implementation.
3. AMP will charge the owner/developer for the actual cost of all expenses associated with the utility duct system engineering design, plan review, and construction inspection. An estimate of this cost for this project is \$ 0. To initiate a work order, AMP will require a check or a purchase order from the developer/customer.
4. Per AMP's Rules and Regulations, the owner/developer shall be responsible for 60% of the installed costs of the required primary trunk cables and pad-mounted switches.
5. AMP will require a Transformer Capacity Utilization Agreement and deposit from the customer when the new service request requires a 750 kVA or larger capacity transformer, prior to purchase of the transformer. The service size indicated will require a \_\_\_\_\_ kVA transformer and a \$ 00 deposit. (For projects requiring large transformers and/or switches, developer/customer must allow for a 4 to 6-month leadtime).
6. Developer's contractor shall obtain an electrical permit from the City's Permit Center. The City of Alameda's Combination Inspector must approve electrical installation before any service will be energized.
7. Streetlight system on public streets shall be subject to AMP's review and approval. Developer may enter into an agreement with AMP regarding maintenance and future replacement of private streetlights.
8. AMP is presently the telephone service provider at Alameda Point. Please contact the Telecom Operations Supervisor at (510)-814-5631 for inquiries.
9. Other Comments: \_\_\_\_\_

**#13 BAY FAIRWAY HALL PUMP STATION**



Project Requirements Checklist  
Service Equipment Requirements  
Questions? Contact the AMP Engineering  
Department at 510-748-3996, FAX: 510-748-3993

**SUMMARY OF SERVICE EQUIPMENT REQUIREMENTS**

Customer/Contractor is responsible for ensuring that final installations meet all City of Alameda and Alameda Municipal Power (AMP) requirements.

AMP will furnish and install the necessary metering CT's, PT's, and test switch. For service equipment approval, contractor/vendor must comply with all AMP and City of Alameda requirements, including those summarized below. All Service Equipment will have provisions for sealing the Meter per EUSERC requirements.

Customer/Contractor should provide Service Equipment shop drawings to AMP for review, prior to manufacture, to avoid delays due to field modifications. Final Service Equipment Submittals must be provided to, and approved by, the City of Alameda Permit Center and AMP prior to installation and connection to AMP's electrical system.

1. Service Equipment:  Indoor (NEMA 1 or better)  Outdoor (NEMA 3R or better)
2. Service Rating: 200 Amperes 208 Volts 1 Phase 3 Wires
3. Bus Bar Dimensions: Phase - \_\_\_\_\_; Neutral - \_\_\_\_\_  
(Current density shall be based on 1000 A/sq. inch for copper bus and 750 A/sq. inch for aluminum bus. The minimum required current density shall apply to the main bus upstream of the meter(s) including up to the first disconnect after each meter).
4. Main Disconnect:  Circuit Breaker  Fused Switch
5. Interrupting or Short Circuit Rating: 25,000 Amperes, RMS Sym.
6. CT Compartment (per EUSERC #320 or #322, whichever is applicable)
7. Meter Plate (per EUSERC #332)
8. Pull Section (per EUSERC #345)
9. Line Termination (per EUSERC #347)
10. Copper Ground Bus
11. Factory-installed bolt-type test by-pass/disconnect block (for self contained meters only)
12. Meter Socket with \_\_\_\_\_ Jaws
13. Remote Metering Required:  Yes;  No

NOTE: Please contact the Electrical Equipment Supervisor, at (510) 814-5692 as soon as the equipment arrives at the job site to schedule the installation of AMP-furnished instrument transformers and other metering devices.

The service equipment will also have to be inspected and approved by the City of Alameda's Electrical Inspector, (510) 747-6830, before it can be energized. **For projects under Federal, State, or County inspection jurisdiction, a City inspection of service equipment up to and including the main disconnect, at a minimum, is required before the service can be energized.**

**#1 ADELPHIAN, #9 VERDEMAR  
#18 WILLOW-WHITEHALL, AND #42 HAILE PUMP STATIONS**



Project Requirements Checklist  
Service Equipment Requirements  
Questions? Contact the AMP Engineering  
Department at 510-748-3996, FAX: 510-748-3993

**SUMMARY OF SERVICE EQUIPMENT REQUIREMENTS**

Customer/Contractor is responsible for ensuring that final installations meet all City of Alameda and Alameda Municipal Power (AMP) requirements.

AMP will furnish and install the necessary metering CT's, PT's, and test switch. For service equipment approval, contractor/vendor must comply with all AMP and City of Alameda requirements, including those summarized below. All Service Equipment will have provisions for sealing the Meter per EUSERC requirements.

Customer/Contractor should provide Service Equipment shop drawings to AMP for review, prior to manufacture, to avoid delays due to field modifications. Final Service Equipment Submittals must be provided to, and approved by, the City of Alameda Permit Center and AMP prior to installation and connection to AMP's electrical system.

1. Service Equipment:  Indoor (NEMA 1 or better)  Outdoor (NEMA 3R or better)
2. Service Rating: 200 Amperes 240 Volts 1 Phase 3 Wires
3. Bus Bar Dimensions: Phase - \_\_\_\_\_; Neutral - \_\_\_\_\_  
(Current density shall be based on 1000 A/sq. inch for copper bus and 750 A/sq. inch for aluminum bus. The minimum required current density shall apply to the main bus upstream of the meter(s) including up to the first disconnect after each meter).
4. Main Disconnect:  Circuit Breaker  Fused Switch
5. Interrupting or Short Circuit Rating: 25,000 Amperes, RMS Sym.
6. CT Compartment (per EUSERC #320 or #322, whichever is applicable)
7. Meter Plate (per EUSERC #332)
8. Pull Section (per EUSERC #345)
9. Line Termination (per EUSERC #347)
10. Copper Ground Bus
11. Factory-installed bolt-type test by-pass/disconnect block (for self contained meters only)
12. Meter Socket with \_\_\_\_\_ Jaws
13. Remote Metering Required:  Yes;  No

NOTE: Please contact the Electrical Equipment Supervisor, at (510) 814-5692 as soon as the equipment arrives at the job site to schedule the installation of AMP-furnished instrument transformers and other metering devices.

The service equipment will also have to be inspected and approved by the City of Alameda's Electrical Inspector, (510) 747-6830, before it can be energized. **For projects under Federal, State, or County inspection jurisdiction, a City inspection of service equipment up to and including the main disconnect, at a minimum, is required before the service can be energized.**

**#11 HARBOR BAY PARKWAY 2 PUMP STATION**



Project Requirements Checklist  
Service Equipment Requirements  
Questions? Contact the AMP Engineering  
Department at 510-748-3996, FAX: 510-748-3993

**SUMMARY OF SERVICE EQUIPMENT REQUIREMENTS**

Customer/Contractor is responsible for ensuring that final installations meet all City of Alameda and Alameda Municipal Power (AMP) requirements.

AMP will furnish and install the necessary metering CT's, PT's, and test switch. For service equipment approval, contractor/vendor must comply with all AMP and City of Alameda requirements, including those summarized below. All Service Equipment will have provisions for sealing the Meter per EUSERC requirements.

Customer/Contractor should provide Service Equipment shop drawings to AMP for review, prior to manufacture, to avoid delays due to field modifications. Final Service Equipment Submittals must be provided to, and approved by, the City of Alameda Permit Center and AMP prior to installation and connection to AMP's electrical system.

1. Service Equipment:  Indoor (NEMA 1 or better)  Outdoor (NEMA 3R or better)
2. Service Rating: 200 Amperes 208 Volts 3 Phase 4 Wires
3. Bus Bar Dimensions: Phase - \_\_\_\_\_; Neutral - \_\_\_\_\_  
(Current density shall be based on 1000 A/sq. inch for copper bus and 750 A/sq. inch for aluminum bus. The minimum required current density shall apply to the main bus upstream of the meter(s) including up to the first disconnect after each meter).
4. Main Disconnect:  Circuit Breaker  Fused Switch
5. Interrupting or Short Circuit Rating: 25,000 Amperes, RMS Sym.
6. CT Compartment (per EUSERC #320 or #322, whichever is applicable)
7. Meter Plate (per EUSERC #332)
8. Pull Section (per EUSERC #345)
9. Line Termination (per EUSERC #347)
10. Copper Ground Bus
11. Factory-installed bolt-type test by-pass/disconnect block (for self contained meters only)
12. Meter Socket with \_\_\_\_\_ Jaws
13. Remote Metering Required:  Yes;  No

NOTE: Please contact the Electrical Equipment Supervisor, at (510) 814-5692 as soon as the equipment arrives at the job site to schedule the installation of AMP-furnished instrument transformers and other metering devices.

The service equipment will also have to be inspected and approved by the City of Alameda's Electrical Inspector, (510) 747-6830, before it can be energized. **For projects under Federal, State, or County inspection jurisdiction, a City inspection of service equipment up to and including the main disconnect, at a minimum, is required before the service can be energized.**

DATE										
REVISIONS										
NO	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
<b>Schaaf &amp; Wheeler</b> CONSULTING CIVIL ENGINEERS 1171 HOMESTEAD RD, STE. 255 SANTA CLARA, CA 95050 (408) 246-4848										
<b>CITY OF ALAMEDA</b> GROUP 2 - SEWERAGE PUMP STATION RENOVATIONS FOR RELIABILITY AND SAFETY IMPROVEMENTS <b>ALAMEDA POWER SERVICE REQ.</b>										
DATE:	5/13/15	SCALE:	AS SHOWN	DESIGN:	GMA	DRAWN:	GMA	CHECKED:	BLS	
DWG 9370		CASE 95								
<b>SHEET</b>										
<b>65 OF 65</b>										