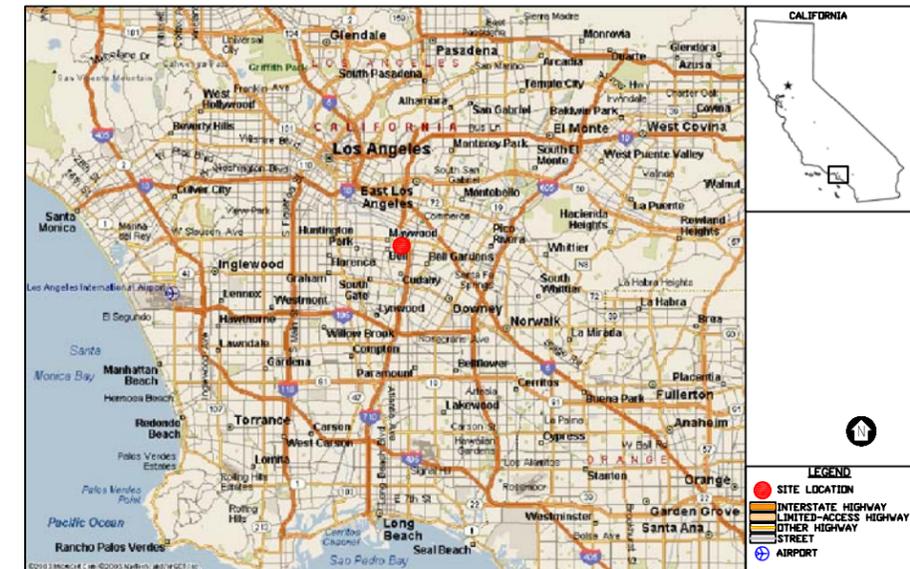


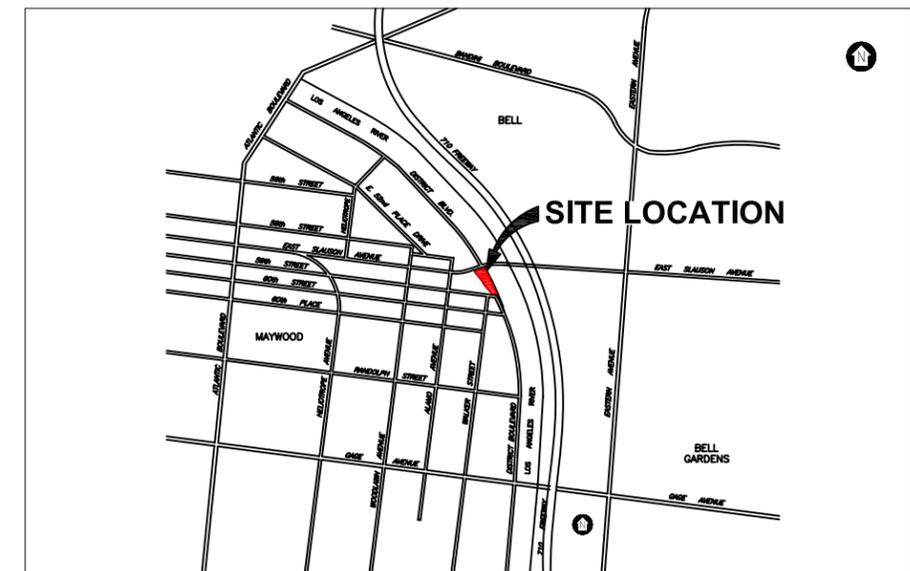
# REMEDIAL DESIGN

# PEMACO SUPERFUND SITE

5050 EAST SLAUSON AVENUE  
 MAYWOOD, CALIFORNIA



AREA MAP  
 NOT TO SCALE

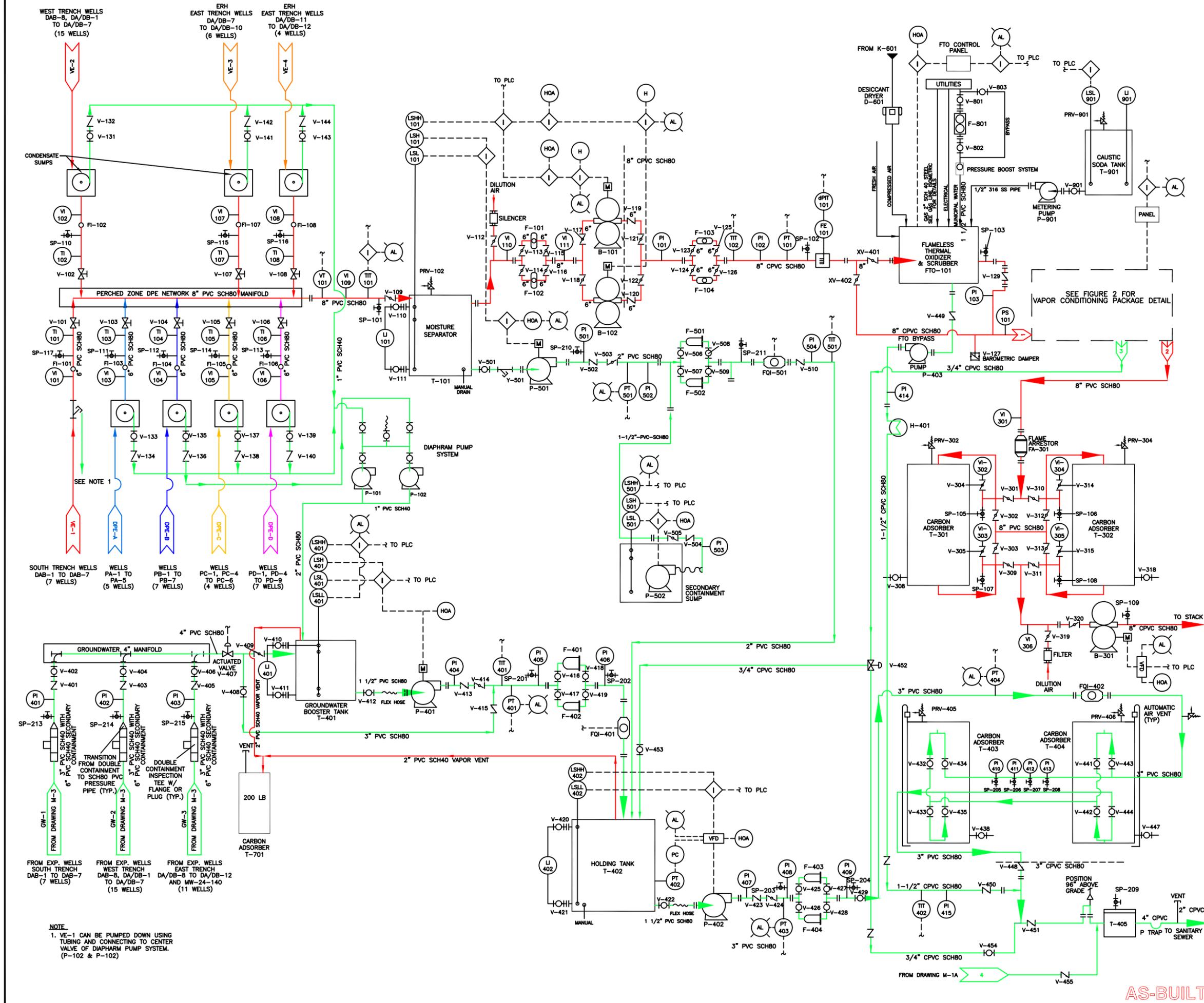


VICINITY MAP  
 NOT TO SCALE

DRAWING INDEX			
SHEET NO.	DRAWING NO.	REV. NO.	TITLE
1	G-1	AB	TITLE SHEET: DRAWING INDEX, AREA MAP, AND VICINITY
2	M-1	AB	GENERAL PIPING AND INSTRUMENTATION DIAGRAM
3	M-1A	AB	GENERAL PIPING AND INSTRUMENTATION DIAGRAM (VAPOR CONDITIONING PACKAGE & COMPRESSED AIR SYSTEM)
4	M-4	AB	TREATMENT COMPOUND PROCESS LAYOUT
5	C-2	AB	TRENCH LOCATION PLAN
6	C-5	AB	PIPE/TRENCH ELEVATION PROFILES
7	C-5A	AB	PIPE/TRENCH ELEVATION PROFILES - BRANCH LINES
8	C-8	AB	EXPOSITION ZONE WELL SECTION AND DETAILS
9	C-9	AB	MISCELLANEOUS PIPE DETAILS
10	C-10A	AB	CONDENSATE SUMP DETAIL
11	C-10C	AB	CONDENSATE SUMP MANIFOLD DETAIL
12	C-18	AB	REMOTE CONDENSATE SUMP DETAILS
13	E-1	AB	ELECTRICAL LEGEND
14	E-2	AB	ELECTRICAL SINGLE LINE DIAGRAM
15	E-3	AB	TREATMENT COMPOUND ELECTRICAL PLAN
16	E-4	AB	MISCELLANEOUS ELECTRICAL SECTIONS
17	E-5	AB	ELECTRICAL DETAILS

TITLE SHEET			
<b>PEMACO SUPERFUND SITE</b> 5050 EAST SLAUSON AVENUE MAYWOOD, CALIFORNIA			
PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California		PREPARED BY: 	
SCALE: AS SHOWN DESIGNED: JW DRAWN: CPL & JBP CHECKED: JW	APPROVED: <b>AS BUILT</b>	DATE: 08/23/2010 DRAWING	G-1

AS-BUILT



**LEGEND:**

- |  |                              |  |                                   |
|--|------------------------------|--|-----------------------------------|
|  | BUTTERFLY VALVE              |  | FLEX HOSE                         |
|  | BALL VALVE                   |  | AIR FILTER                        |
|  | CHECK VALVE                  |  | REGULATOR W/ PRESSURE GAUGE       |
|  | DIAPHRAGM VALVE              |  | ALARMS                            |
|  | VALVE WITH ACTUATOR          |  | HEATING COIL                      |
|  | VALVE WITH SOLENOID          |  | COOLING FANS                      |
|  | PRESSURE RELIEF VALVE        |  | FLANGE                            |
|  | VACUUM RELIEF VALVE          |  | UNION                             |
|  | VACUUM BREAKER (ANTI-SIPHON) |  | HEAT EXCHANGER                    |
|  | ELECTRIC MOTOR               |  | CAM AND GROOVE COUPLINGS-ALUMINUM |
|  | FLOW TOTALIZER & INDICATOR   |  | CLEAN-OUT WYE                     |
|  | VALVED SAMPLE PORT           |  | AVERAGING PITOT TUBE              |
|  | SYSTEM INTERLOCK/FAILSAFE    |  | FLAME ARRESTOR                    |
|  | ELECTRICAL REPORTING TO PLC  |  | AUTOMATIC AIR VENT                |
|  | VENT                         |  | MULTIPLE BAG FILTER HOUSING       |
|  | LONG TURN TEE WYE            |  | SINGLE BAG FILTER HOUSING         |
|  |                              |  | CALCIUM FILTER                    |

**ABBREVIATIONS:**

- |       |  |      |                                   |
|-------|--|------|-----------------------------------|
| AL    | ALARM  | LSHH | LEVEL SWITCH HIGH-HIGH            |
| CV    | CONTROL VALVE                                | LSL  | LEVEL SWITCH LOW-LOW              |
| dPIT  | DIFFERENTIAL PRESSURE INDICATING TRANSMITTER | PI   | PRESSURE INDICATOR                |
| FE    | FLOW ELEMENT                                 | PT   | PRESSURE TRANSMITTER              |
| FI    | FLOW INDICATOR                               | PS   | PRESSURE SWITCH                   |
| FM    | FLOW METER                                   | SP   | SAMPLE PORT                       |
| FQI   | FLOW TOTALIZER                               | SS   | STAINLESS STEEL                   |
| GALV  | GALVANIZED                                   | TI   | TEMPERATURE INDICATOR             |
| HAO   | HAND-OFF AUTO                                | TIT  | TEMPERATURE INDICATOR TRANSMITTER |
| LAH   | LEVEL ALARM HIGH                             | VI   | VACUUM INDICATOR                  |
| LACSD | LOS ANGELES COUNTY SANITATION DIVISION       | VT   | VACUUM TRANSMITTER                |
| LI    | LEVEL INDICATOR                              | VFD  | VARIABLE FREQUENCY DRIVE          |
| LSH   | LEVEL SWITCH HIGH                            |      |                                   |

**NOTES:**

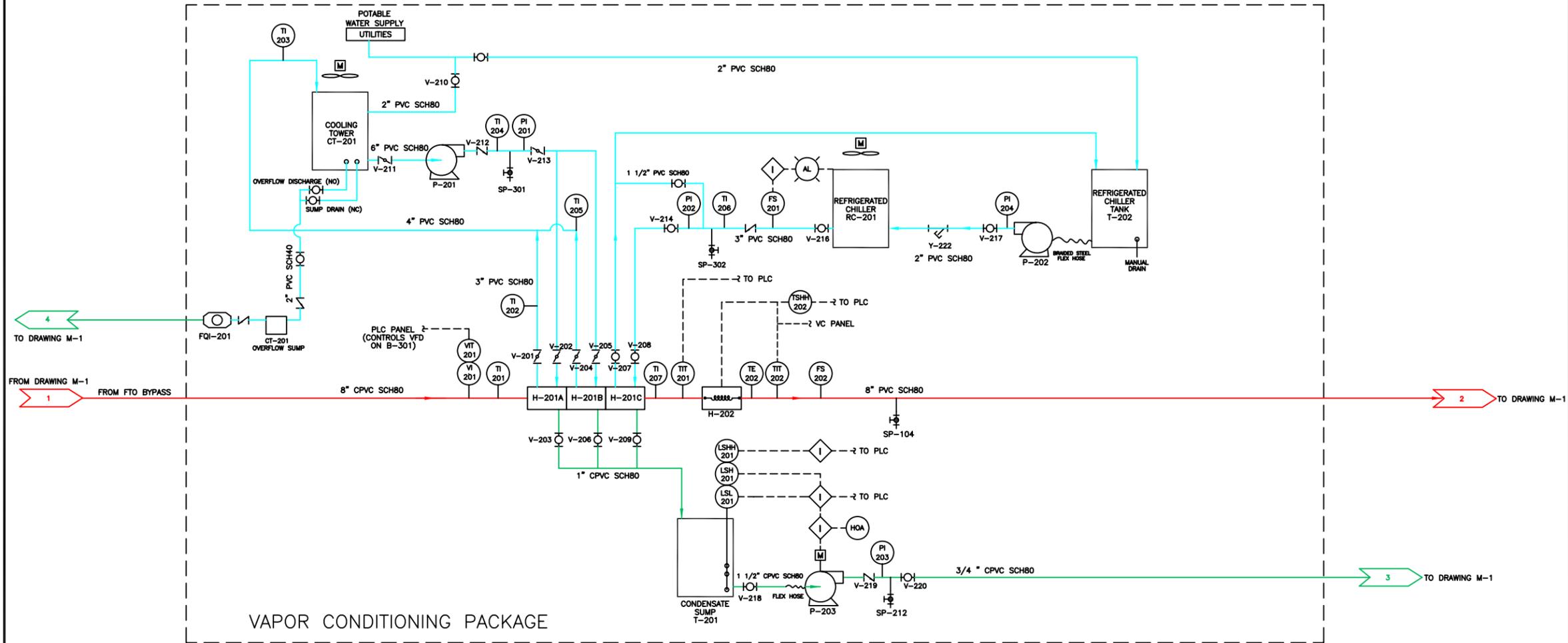
- A SUMMARY OF PROCESS EQUIPMENT DESCRIPTIONS AND SPECIFICATIONS ARE SHOWN ON THIS FIGURE. REFER TO TABLE 1- TREATMENT SYSTEM EQUIPMENT SUMMARY FOR MORE DETAILS ON FANS, BLOWERS, PUMPS, VAPOR-PHASE CARBON ADSORPTION UNITS, AND FILTRATION SYSTEMS.
- REFER TO FINAL REMEDIAL DESIGN REPORT, PEMACO SUPERFUND SITE (TNA& 2006) FOR JUSTIFICATION OF DESIGN PLANS AND SPECIFICATIONS FOR THE INSTALLATION AND IMPLEMENTATION OF SOIL VAPOR AND GROUNDWATER TREAT SYSTEMS.

**GENERAL PIPING AND INSTRUMENTATION DIAGRAM**

PEMACO SUPERFUND SITE  
5050 EAST SLAUSON AVENUE  
MATWOOD, CALIFORNIA

PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	PREPARED BY: OTIE Orange Total Remediation Enterprises
SCALE: AS SHOWN	APPROVED: <b>AS BUILT</b>
DESIGNED: MB, JW & LL	DATE: 08/23/2010
DRAWN: DC & JBP	DRAWING: M-1
CHECKED: JW	

AS-BUILT



**LEGEND:**

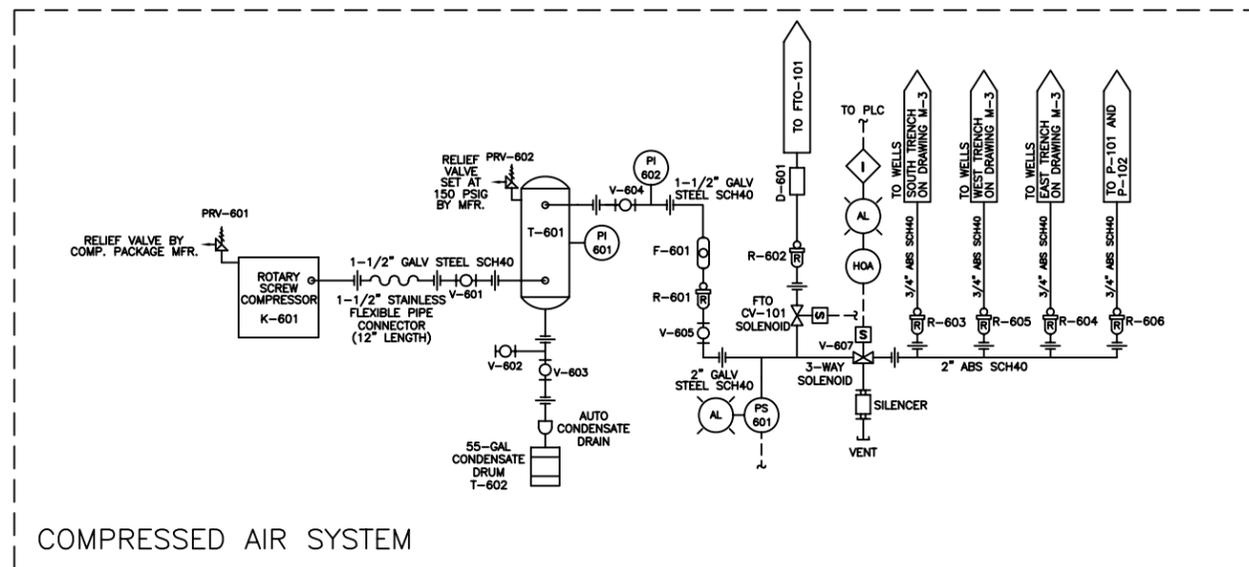
	BUTTERFLY VALVE		FLEX HOSE
	BALL VALVE		AIR FILTER
	CHECK VALVE		REGULATOR W/ PRESSURE GAUGE
	DIAPHRAGM VALVE		ALARMS
	VALVE WITH ACTUATOR		HEATING COIL
	VALVE WITH SOLENOID		COOLING FANS
	PRESSURE RELIEF VALVE		FLANGE
	VACUUM RELIEF VALVE		UNION
	VACUUM BREAKER (ANTI-SIPHON)		HEAT EXCHANGER
	ELECTRIC MOTOR		CAM AND GROOVE COUPLINGS-ALUMINUM
	FLOW TOTALIZER & INDICATOR		CLEAN-OUT WYE
	VALVED SAMPLE PORT		AVERAGING PITOT TUBE
	SYSTEM INTERLOCK/FAILSAFE		FLAME ARRESTOR
	ELECTRICAL		AUTOMATIC AIR VENT
	ELECTRICAL REPORTING TO PLC		MULTIPLE BAG FILTER HOUSING
	VENT		SINGLE BAG FILTER HOUSING
	LONG TURN TEE WYE		

**ABBREVIATIONS:**

AL	ALARM	LSHH	LEVEL SWITCH HIGH-HIGH
CV	CONTROL VALVE	LSL	LEVEL SWITCH LOW
dPIT	DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	LSLL	LEVEL SWITCH LOW-LOW
FE	FLOW ELEMENT	PI	PRESSURE INDICATOR
FI	FLOW INDICATOR	PT	PRESSURE TRANSMITTER
FM	FLOW METER	PS	PRESSURE SWITCH
FQI	FLOW TOTALIZER	SP	SAMPLE PORT
GALV	GALVANIZED	SS	STAINLESS STEEL
HOA	HAND-OFF AUTO	TI	TEMPERATURE INDICATOR
LAH	LEVEL ALARM HIGH	TIT	TEMPERATURE INDICATOR TRANSMITTER
LACSD	LOS ANGELES COUNTY SANITATION DIVISION	VI	VACUUM INDICATOR
U	LEVEL INDICATOR	VT	VACUUM TRANSMITTER
LSH	LEVEL SWITCH HIGH	VFD	VARIABLE FREQUENCY DRIVE

**NOTES:**

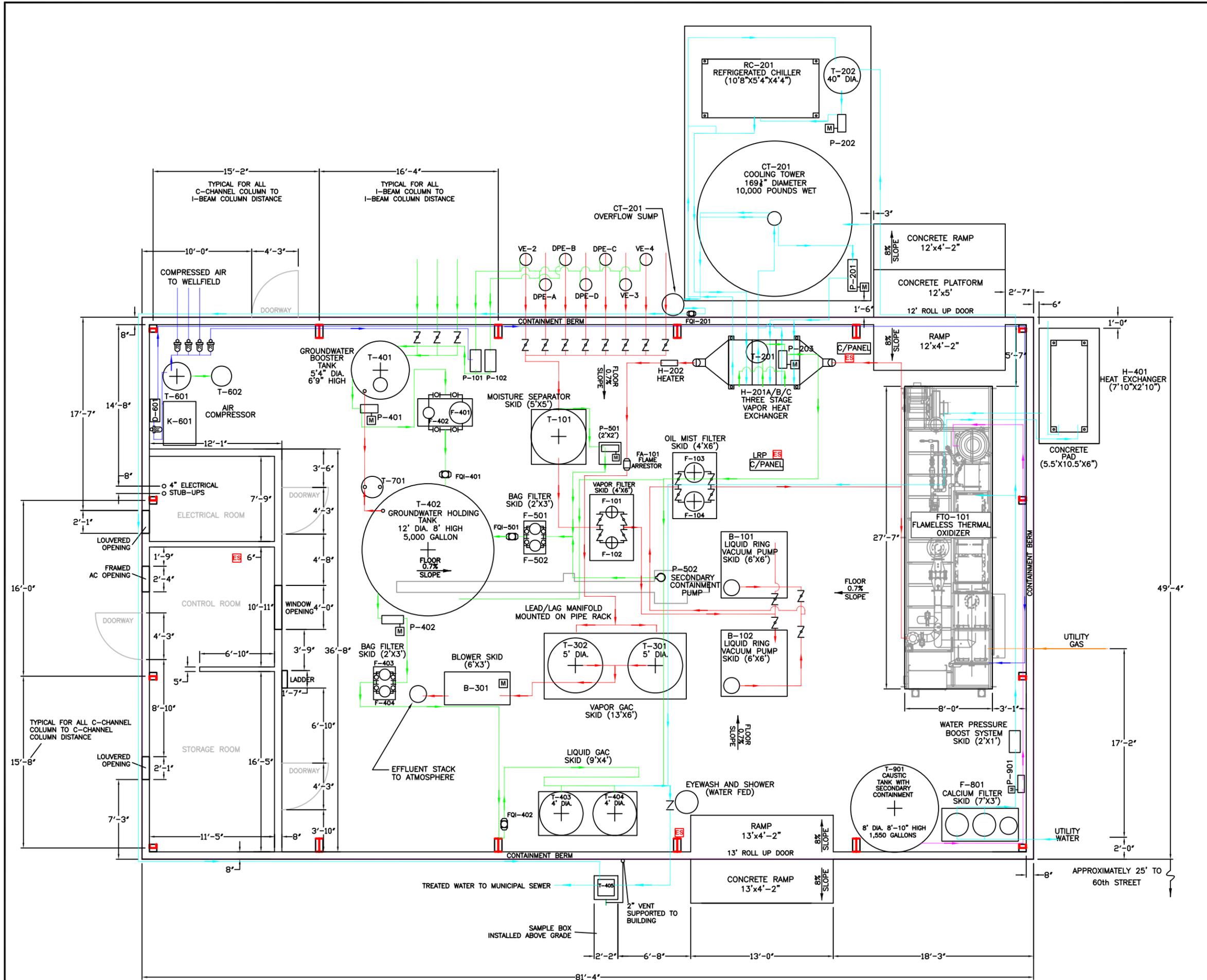
- A SUMMARY OF PROCESS EQUIPMENT DESCRIPTIONS AND SPECIFICATIONS ARE SHOWN ON THIS FIGURE. REFER TO TABLE 1 - TREATMENT SYSTEM EQUIPMENT SUMMARY FOR MORE DETAILS ON FANS, BLOWERS, PUMPS, VAPOR-PHASE CARBON ADSORPTION UNITS, AND FILTRATION SYSTEMS.
- REFER TO FINAL REMEDIAL DESIGN REPORT, PEMACO SUPERFUND SITE (TNA& 2006) FOR JUSTIFICATION OF DESIGN PLANS AND SPECIFICATIONS FOR THE INSTALLATION AND IMPLEMENTATION OF SOIL VAPOR AND GROUNDWATER TREAT SYSTEMS.



**GENERAL PIPING AND INSTRUMENTATION DIAGRAM  
VAPOR CONDITIONING PACKAGE & COMPRESSED AIR SYSTEM  
PEMACO SUPERFUND SITE  
5050 EAST SLAUSON AVENUE  
MAYWOOD, CALIFORNIA**

PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	PREPARED BY: 
SCALE: AS SHOWN	APPROVED: <b>AS BUILT</b>
DESIGNED: MB, JW & LL	DATE: 08/23/2010
DRAWN: DC & JBP	DRAWING: M-1A
CHECKED: JW	

AS-BUILT

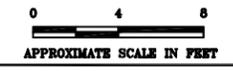


**LEGEND:**

- I-BEAM COLUMN
- C-CHANNEL COLUMN
- UTILITY GAS
- UTILITY WATER/DRAINAGES
- TREATED WATER
- EMERGENCY STOP

**NOTES:**

1. A SUMMARY OF PROCESS EQUIPMENT DESCRIPTIONS AND SPECIFICATIONS ARE SHOWN ON THIS FIGURE. REFER TO TABLE 1 - TREATMENT SYSTEM EQUIPMENT SUMMARY FOR MORE DETAILS ON FANS, BLOWERS, PUMPS, VAPOR-PHASE CARBON ADSORPTION UNITS, AND FILTRATION SYSTEMS.
2. REFER TO FINAL REMEDIAL DESIGN REPORT, PEMACO SUPERFUND SITE (TNSA 2006) FOR JUSTIFICATION OF DESIGN PLANS AND SPECIFICATIONS FOR THE INSTALLATION AND IMPLEMENTATION OF SOIL VAPOR AND GROUNDWATER TREAT SYSTEMS.

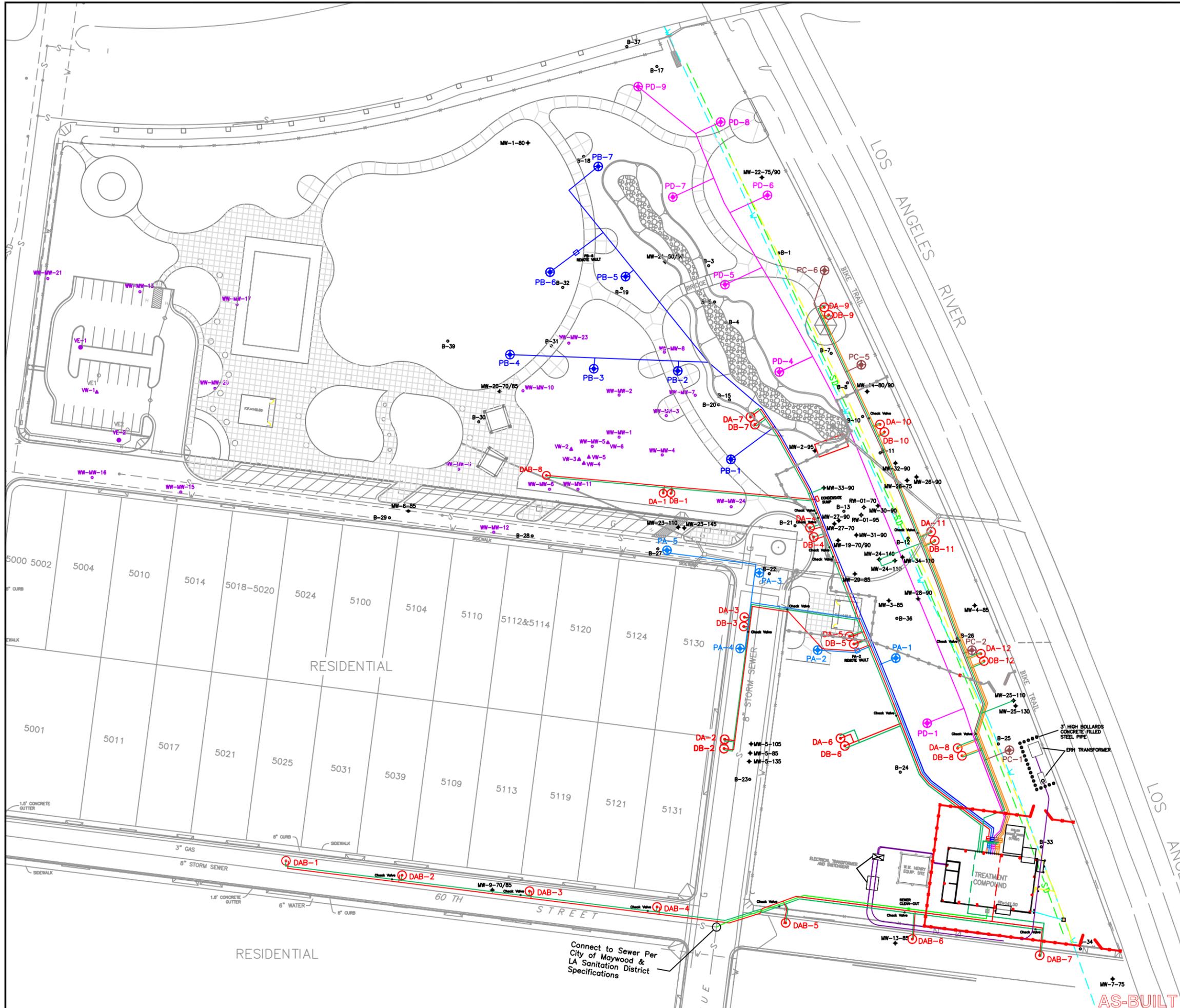


**TREATMENT COMPOUND PROCESS LAYOUT**

PEMACO SUPERFUND SITE  
5050 EAST SLOUSON AVENUE  
MAYWOOD, CALIFORNIA

PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	PREPARED BY: OTIE Onsite Total Remediation Enterprises
SCALE: AS SHOWN	APPROVED: <b>AS BUILT</b>
DESIGNED: JW & DC DRAWN: DC & JBP CHECKED: JW	DATE: 08/23/2010 DRAWING: M-4

AS-BUILT



- LEGEND:**
- EXTRACTION WELL SCREENED THROUGH BOTH 'A' AND 'B' ZONES
  - EXTRACTION WELL WITH INDIVIDUAL SCREENS FOR THE 'A' AND 'B' ZONES
  - PERCHED ZONE WELL
  - PEMACO WELL, MONITORING WELL, PERCHED ZONE (<35 FEET DEEP)
  - PEMACO WELL, MONITORING WELL, EXPOSITION AQUIFER
  - PEMACO WELL, RECOVERY WELL LOCATION
  - W.W. HENRY WELL, EXISTING GROUNDWATER MONITORING WELL
  - W.W. HENRY WELL, EXISTING DPE WELL - DEEP, INTERMEDIATE AND SHALLOW
  - W.W. HENRY WELL, EXISTING SVE WELL
  - CHECK VALVE LOCATION
  - ELECTRICITY LINE
  - SEWER DISCHARGE

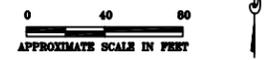
- EXISTING UTILITIES:**
- WATER LINE
  - SEWER LINE
  - GAS LINE

- PERCHED ZONE PIPING:**
- LIGHT BLUE DPE-A 5 WELLS (PA-1 TO PA-5) WEST TRENCH
  - DARK BLUE DPE-B 7 WELLS (PB-1 TO PB-7) WEST TRENCH
  - BROWN DPE-C 4 WELLS (PC-1, PC-4 TO PC-6) WEST TRENCH
  - PURPLE DPE-D 7 WELLS (PD-1, PD-4 TO PD-9) EAST TRENCH

- EXPOSITION ZONE PIPING:**
- GREEN 1 GW-1 7 WELLS (DAB-1 TO DAB-7) SOUTH TRENCH
  - GREEN 2 GW-2 16 WELLS (DAB-8, DA/DB-1 TO DA/DB-7, MW-33-90) WEST TRENCH
  - GREEN 3 GW-3 13 WELLS (DA/DB-8 TO DA/DB-12, MW-24-110/140, MW-25-110) EAST TRENCH
  - RED 1 VE-1 7 WELLS (DAB-1 TO DAB-7) SOUTH TRENCH
  - RED 2 VE-2 15 WELLS (DAB-8, DA/DB-1 TO DA/DB-7) WEST TRENCH

- ERH AREA PIPING:**
- ORANGE ERH, VE-3 EAST TRENCH 8 DEEP WELLS (DA/DB-8 TO DA/DB-10)
  - ORANGE ERH, VE-4 EAST TRENCH 4 DEEP WELLS (DA/DB-11 TO DA/DB-12)

- NOTES:**
- THE TRENCH NETWORK IS COMPRISED OF THREE MAIN TRENCHES REFERRED TO IN THE DRAWINGS AND SPECIFICATIONS AS THE EAST, WEST AND SOUTH TRENCHES. DRAWING C-5 SHOWS THE PIPE/TRENCH ELEVATION PROFILE.
  - HORIZONTAL CONTROL IS REFERENCED TO THE CALIFORNIA COORDINATE SYSTEM, ZONE 5, NAD83. VERTICAL CONTROL IS REFERENCED TO NAVD88. SEVERAL CONTROL POINT LOCATIONS HAVE BEEN ESTABLISHED FOR THE PARK CONSTRUCTION WHICH WILL BE ADOPTED FOR THE REMEDIAL ACTION. VERTICAL CONTROL SHALL BE ESTABLISHED TO AN ACCURACY OF 0.01 FEET. HORIZONTAL CONTROL SHALL BE ESTABLISHED TO AN ACCURACY OF 0.1 FEET.
  - ALL SUBSURFACE EXCAVATION LOCATIONS SHALL BE MARKED AND CLEARED BY UNDERGROUND SERVICE ALERT PRIOR TO EXCAVATION. A GEOPHYSICAL SURVEY SHALL BE PERFORMED TO BETTER IDENTIFY POTENTIAL UNDERGROUND UTILITIES AND OBSTACLES. TRENCHES AND PIPELINES SHALL BE MOVED TO ACCOMMODATE EXISTING LINES FOLLOWING APPROVAL FROM THE PROJECT ENGINEER.



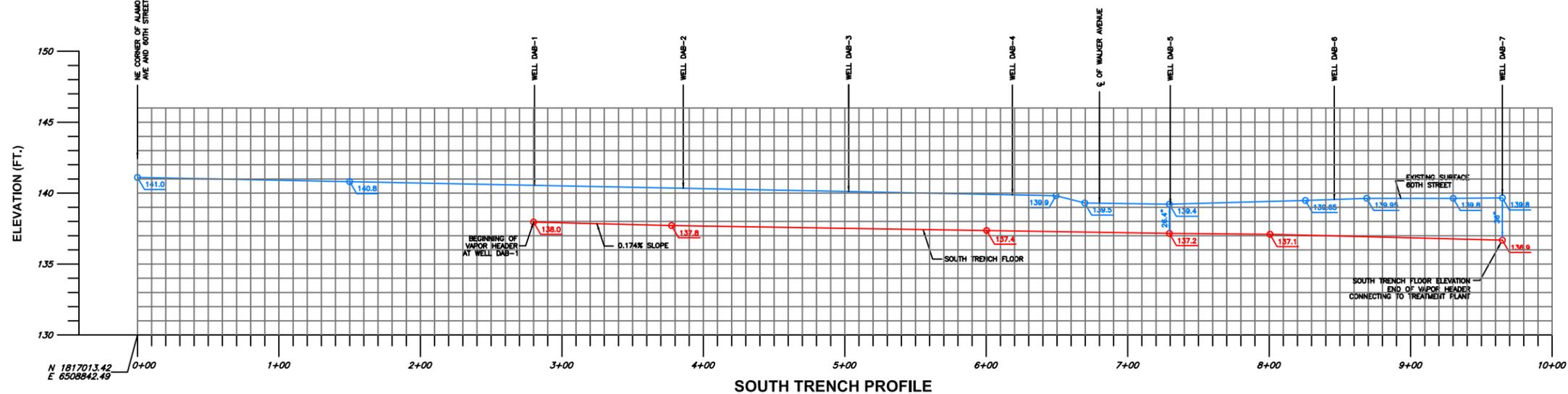
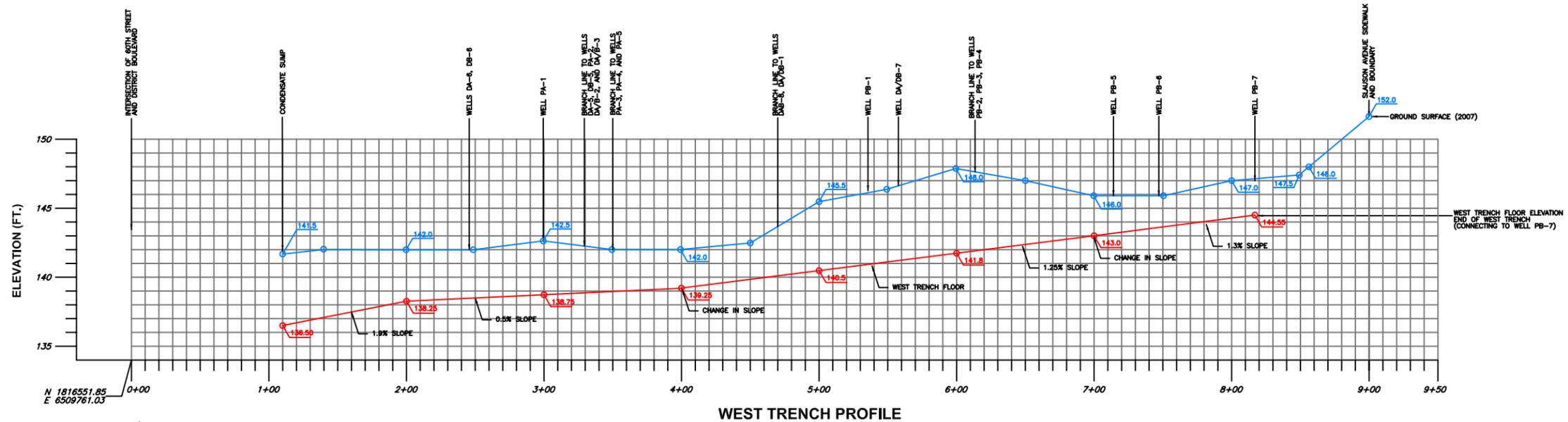
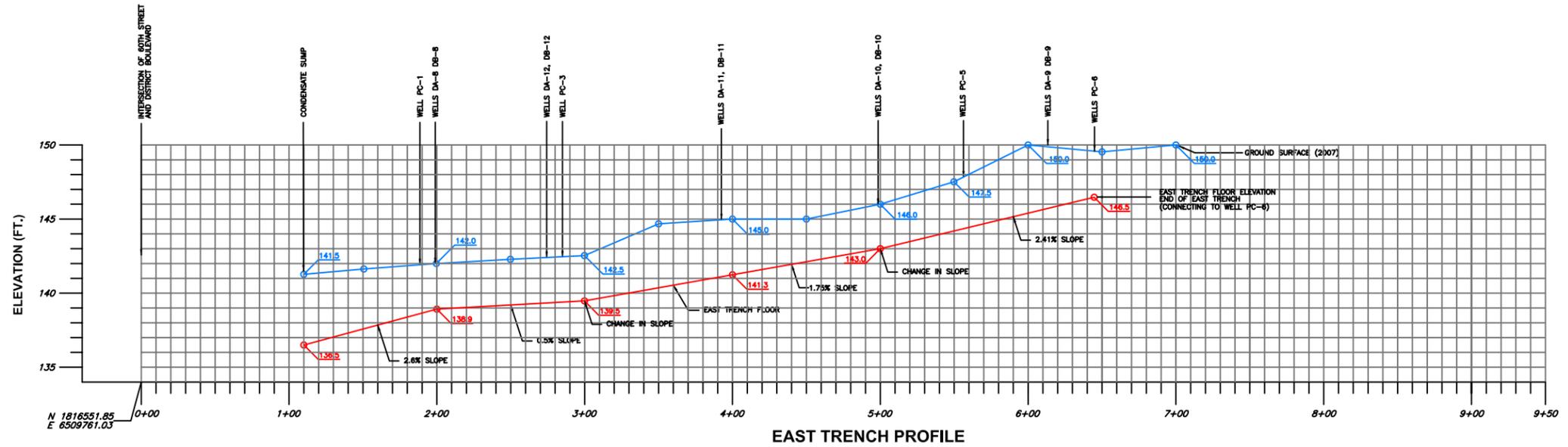
**TRENCH LOCATION PLAN**

PEMACO SUPERFUND SITE  
5050 EAST SLAUSON AVENUE  
MAYWOOD, CALIFORNIA

PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	APPROVED: AS BUILT	DATE: 08/23/10
SCALE: AS SHOWN	DESIGNED: JW & GN	DRAWING
DRAWN: DC	CHECKED: JW	C-2

Connect to Sewer Per City of Maywood & LA Sanitation District Specifications

AS-BUILT



**LEGEND:**

- GROUND SURFACE (2007)
- TRENCH FLOOR PROFILE
- N 1816551.85  
E 6509761.03  
1+00
- COORDINATE OF ORIGIN
- STATION MARK (=100 FEET)

**NOTES:**

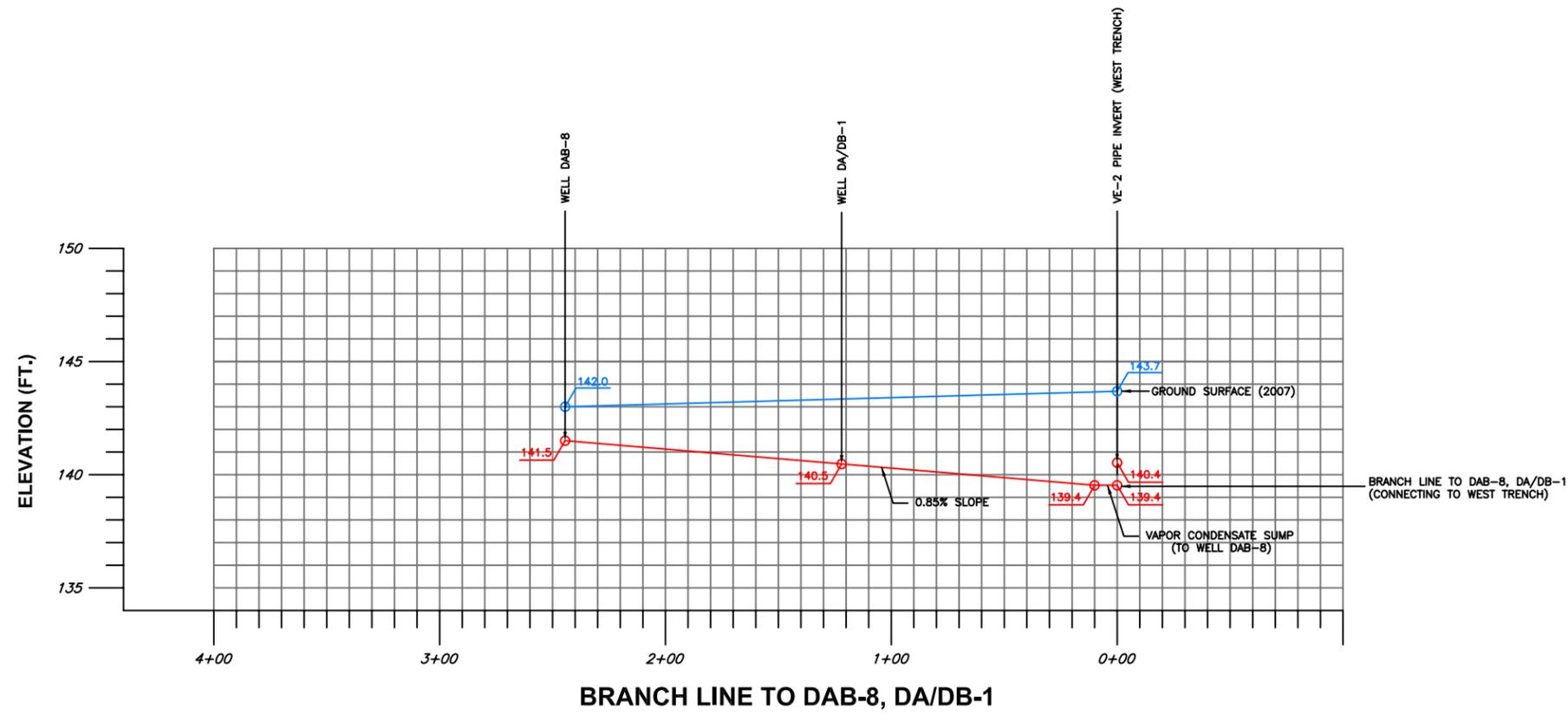
1. THE PIPE/TRENCH PLAN VIEW IS SHOWN ON DRAWING C-2.
2. THE INTENT OF THE PROFILE IS TO PROVIDE THE PIPELINE ELEVATIONS FOR THE MAIN TRENCH FLOOR (EAST, WEST AND SOUTH) AND THE FINAL GRADE OF THE MAYWOOD RIVERFRONT PARK IN 2007 (TREATMENT PLANT COMPLETED).
3. SLOPES ARE SHOWN ON TRENCH PROFILE DETAILS.
4. TRENCH AND WELL LOCATIONS HAVE BEEN POSITIONED SO AS TO NOT INTERFERE WITH MAYWOOD PARK CONSTRUCTION LINES, GRADES AND DRAINAGE STRUCTURES. REPOSITIONING OF WELLS, PIPES OR TRENCHES SHALL BE COORDINATED WITH THE CITY OF MAYWOOD AND THE PARK CONTRACTOR. REFER TO "CITY OF MAYWOOD, CALIFORNIA CONSTRUCTION PLANS FOR RIVERFRONT PARK" (DATED 12-20-2004), FOR ADDITIONAL SUBSURFACE STRUCTURE DETAILS.

**PIPE/TRENCH ELEVATION PROFILES**

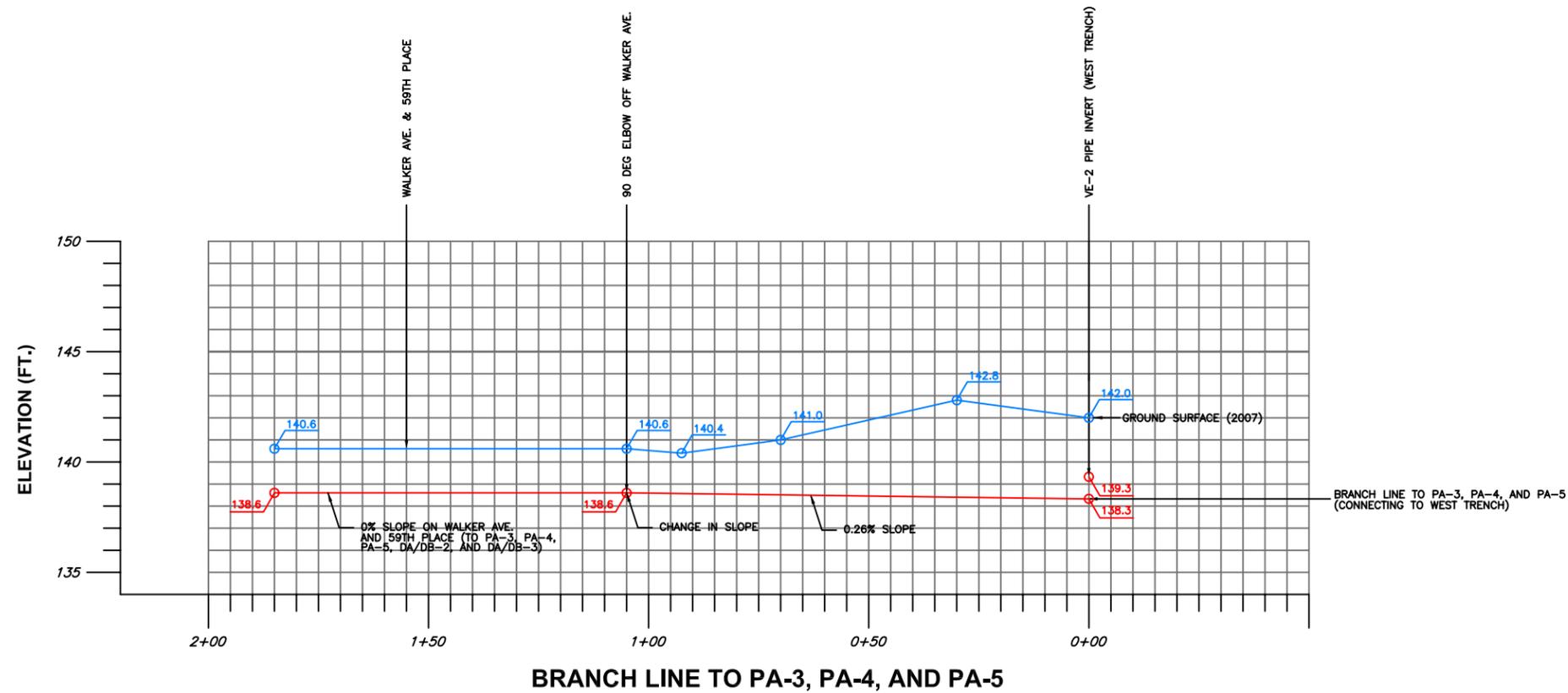
PEMACO SUPERFUND SITE  
5050 EAST SLAUSON AVENUE  
MAYWOOD, CALIFORNIA

PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	APPROVED <b>AS BUILT</b>	DATE: 10/12/10
DESIGNED: JW & GN	DRAWN: DC	CHECKED: JW
DRAWING		REV
C-5		7

**AS-BUILT**



BRANCH LINE TO DAB-8, DA/DB-1



BRANCH LINE TO PA-3, PA-4, AND PA-5

**LEGEND:**

- GROUND SURFACE (2007)
- TRENCH FLOOR PROFILE
- N 1816551.85** COORDINATE OF ORIGIN
- E 6509761.03**
- 1+00** STATION MARK (=100 FEET)

**NOTES:**

1. THE PIPE/TRENCH PLAN VIEW IS SHOWN ON DRAWING C-2.
2. THE INTENT OF THE PROFILE IS TO PROVIDE THE PIPELINE ELEVATIONS FOR THE MAIN TRENCH FLOOR (EAST, WEST AND SOUTH) AND THE FINAL GRADE OF THE MAYWOOD RIVERFRONT PARK IN 2007 (TREATMENT PLANT COMPLETED).
3. SLOPES ARE SHOWN ON TRENCH PROFILE DETAILS.
4. TRENCH AND WELL LOCATIONS HAVE BEEN POSITIONED SO AS TO NOT INTERFERE WITH MAYWOOD PARK CONSTRUCTION LINES, GRADES AND DRAINAGE STRUCTURES. REPOSITIONING OF WELLS, PIPES OR TRENCHES SHALL BE COORDINATED WITH THE CITY OF MAYWOOD AND THE PARK CONTRACTOR. REFER TO "CITY OF MAYWOOD, CALIFORNIA CONSTRUCTION PLANS FOR RIVERFRONT PARK" (DATED 12-20-2004), FOR ADDITIONAL SUBSURFACE STRUCTURE DETAILS.

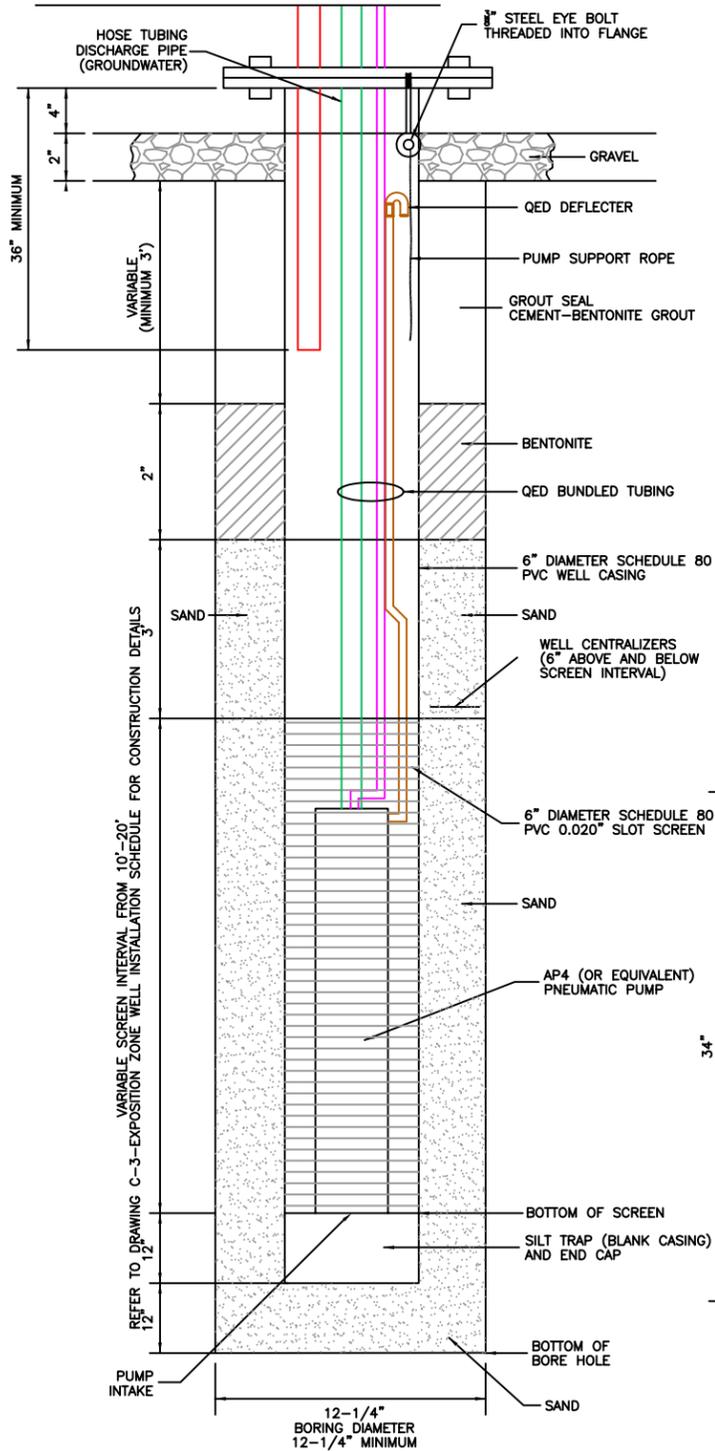
**PIPE/TRENCH ELEVATION PROFILES - BRANCH LINES**

PEMACO SUPERFUND SITE  
5050 EAST SLAUSON AVENUE  
MAYWOOD, CALIFORNIA

PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California		PREPARED BY: OTIE On-Time Project Management	
SCALE: AS SHOWN	APPROVED	DATE: 10/12/10	
DESIGNED: JW & GN	<b>AS BUILT</b>	DRAWING	REV
DRAWN: DC		C-5A	0
CHECKED: JW			

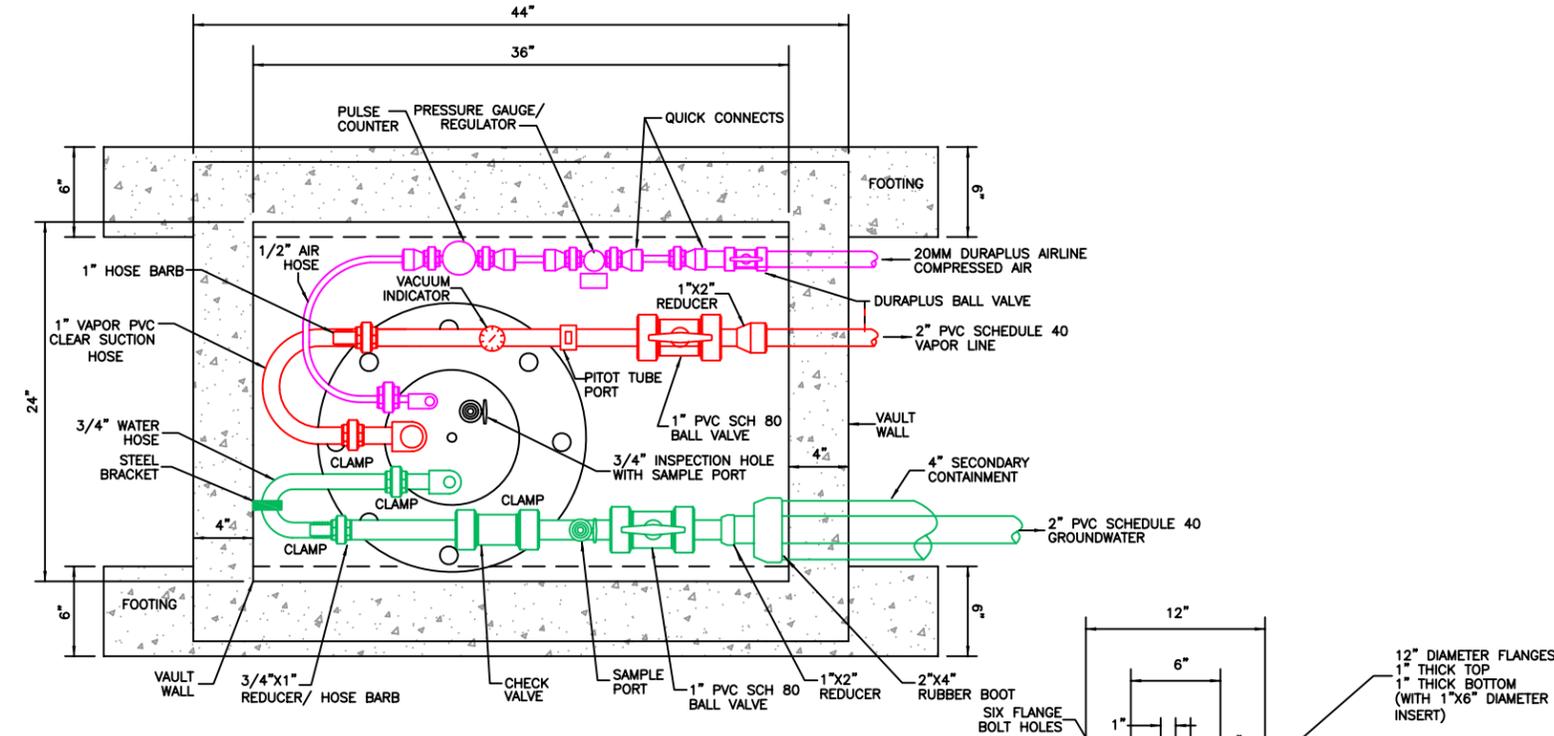
AS-BUILT

SEE WELL HEAD PROFILE FOR PIPING INSIDE VAULT



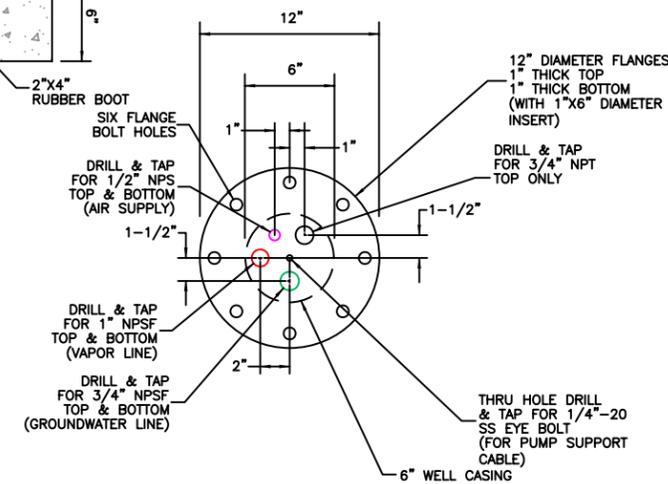
**TYPICAL EXPOSITION ZONE EXTRACTION WELL**

NOT TO SCALE



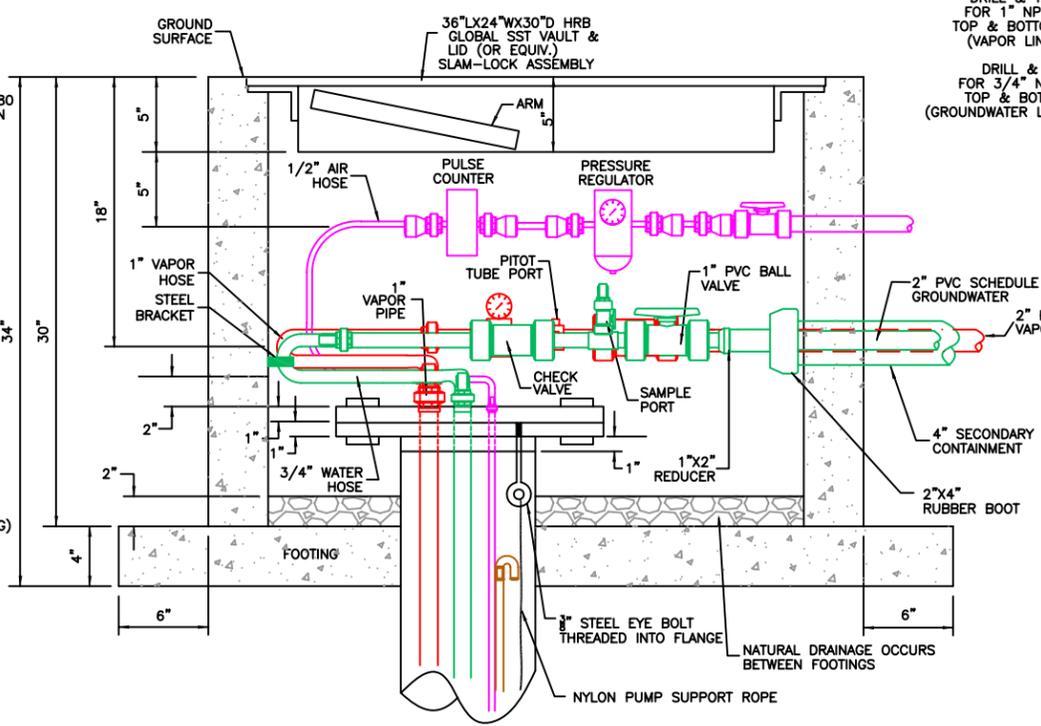
**WELL HEAD PLAN VIEW**

0 6" 12" APPROXIMATE SCALE IN INCHES



**FLANGE DETAIL**

0 6" 12" APPROXIMATE SCALE IN INCHES



**WELL HEAD PROFILE**

0 6" 12" APPROXIMATE SCALE IN INCHES

**LEGEND:**

- RED VAPOR LINE
- GREEN GROUNDWATER
- PURPLE COMPRESSED AIR
- BROWN DISCHARGE AIR

**NOTES:**

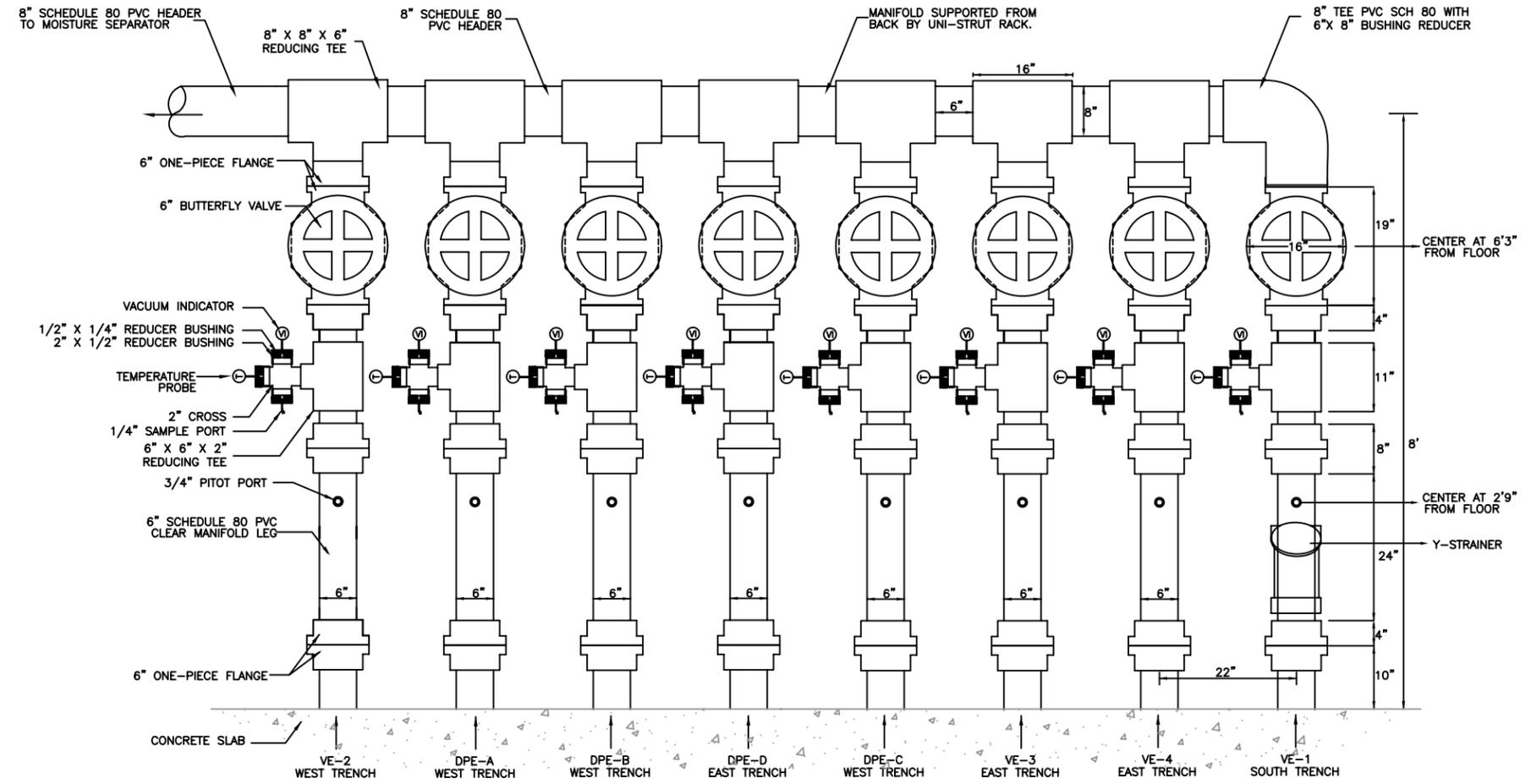
1. THE EXPOSITION WELLS, WELLHEADS, VAULTS AND APPURTENANCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATION DIVISION 1-GENERAL REQUIREMENTS, DIVISION 2-SITE WORK AND DIVISION 3-CONCRETE.
2. REFER TO DRAWING C-3 FOR THE EXPOSITION ZONE WELL INSTALLATION SCHEDULE, WHICH DETAILS MATERIALS AND DIMENSIONS.
3. WELL VAULTS SHALL BE CONSTRUCTED TO H-10 AND H-20 LOADING REQUIREMENTS IN THE PARK AREA AND IN THE ROADWAYS, RESPECTIVELY.
4. WELL VAULTS MAY BE CONSTRUCTED OF CONCRETE OR METAL. WELL VAULT LIDS SHALL BE CONSTRUCTED OF METAL, BE FLUSH TO GRADE AND BE SPRING OR GAS SHOCK ASSISTED. WELL VAULT FOOTINGS SHALL BE CONSTRUCTED OF CONCRETE AND ARE ONLY REQUIRED BENEATH ROADWAYS.
5. EXCAVATION AND BACKFILL OF VAULTS SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02211-EARTHWORK AND SECTION 02205-SOIL MATERIALS.
6. WELLHEAD PLUMBING MAY BE CONSTRUCTED AS DESIGN/BUILD IN ORDER TO REDUCE VAULT SIZE REQUIREMENTS, IMPROVE WORKING AREA/ACCESS OR ACCOMMODATE IMPROVED MATERIALS OR EQUIPMENT; WITH APPROVAL FROM THE PROJECT ENGINEER.
7. PIPE SUPPORTS AND BRACKETS (NOT SHOWN) SHALL BE USED ACCORDING TO PIPE MANUFACTURER'S RECOMMENDATIONS.

**EXPOSITION ZONE WELL SECTION AND DETAILS**

PEMACO SUPERFUND SITE  
5050 EAST SLAUSON AVENUE  
MAYWOOD, CALIFORNIA

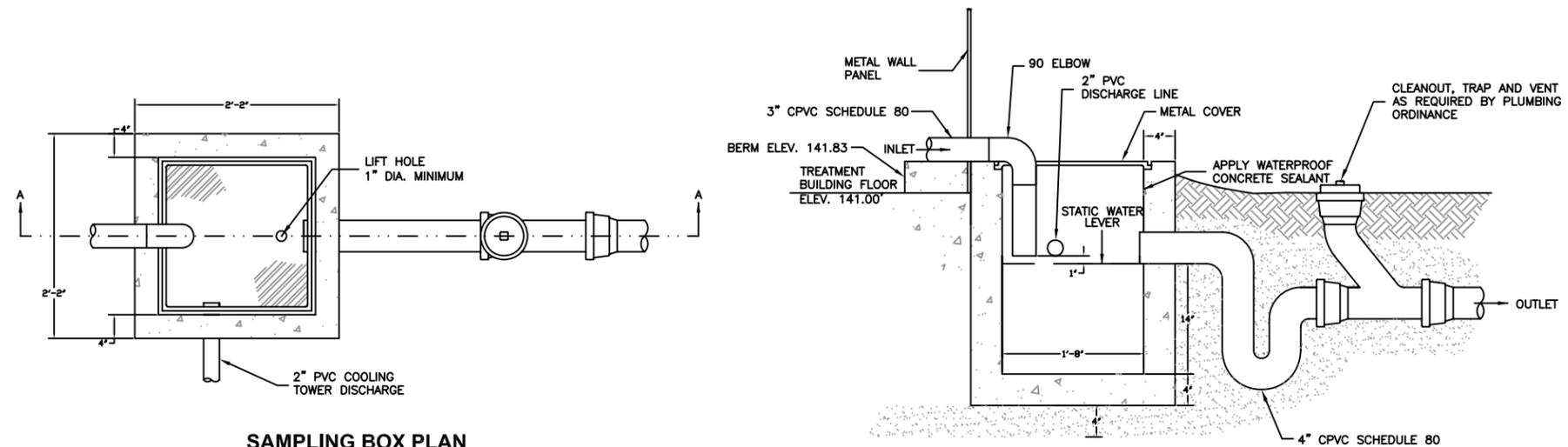
PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	APPROVED: <b>AS BUILT</b>	DATE: 08/23/2010	PREPARED BY: <b>OTIE</b> Orange Total Integrated Environmental
SCALE: AS SHOWN	DESIGNED: JW & GN	DRAWN: CBG & JBP	CHECKED: JW
			DRAWING C-8

AS-BUILT



**DUAL PHASE AND VAPOR EXTRACTION MANIFOLD DETAIL**

0 0.5' 1.0'  
APPROXIMATE SCALE IN FEET



**SAMPLING BOX PLAN**  
NOT TO SCALE

**SECTION A - A**  
NOT TO SCALE

**LEGEND:**

- PROPOSED CONCRETE SLAB AND FOOTINGS
- PROPOSED SAND BACKFILL OR APPROVED NATIVE MATERIAL
- PROPOSED SURFACE COMPLETION PER DRAWING C-15A AND C-16

**NOTES:**

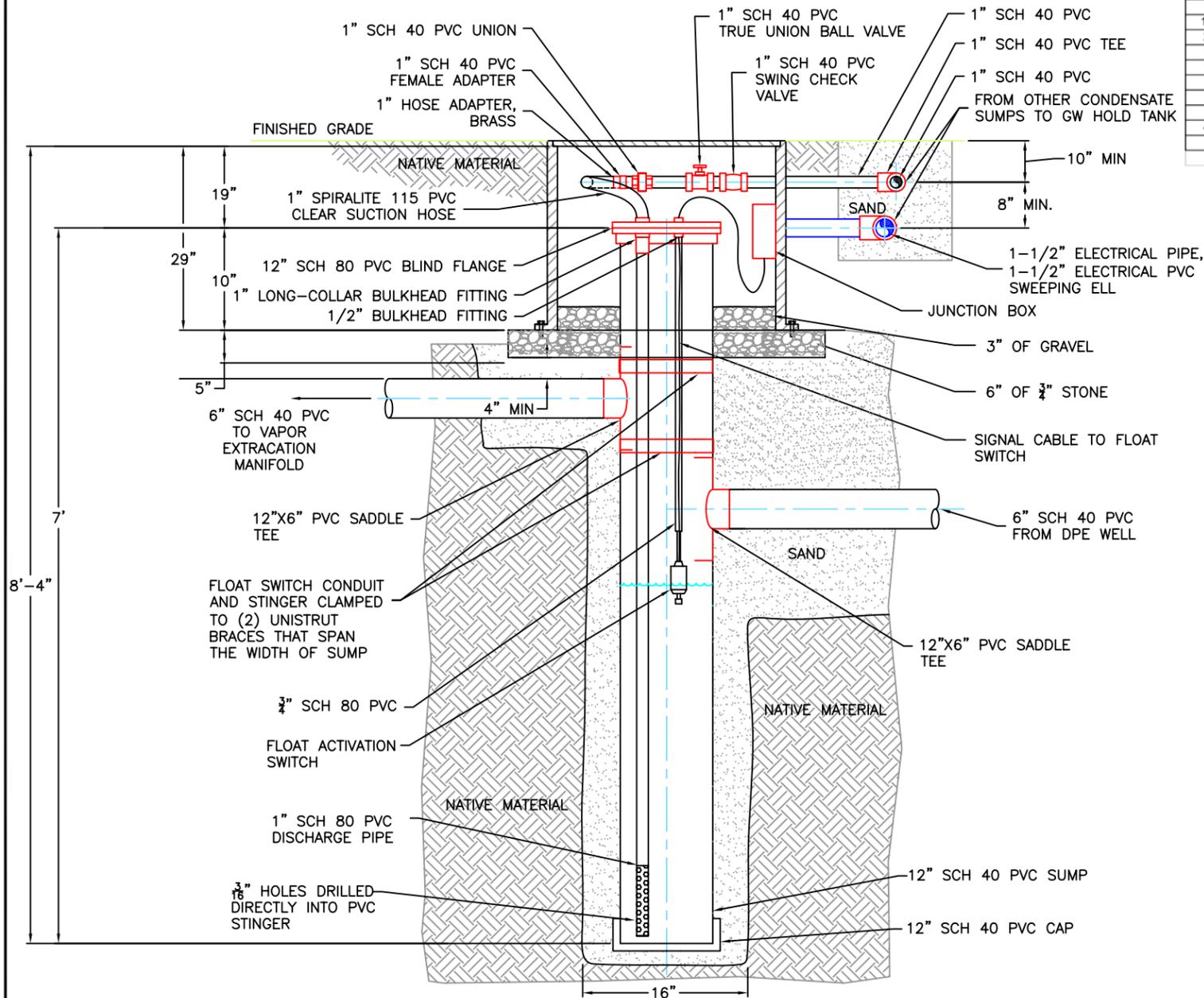
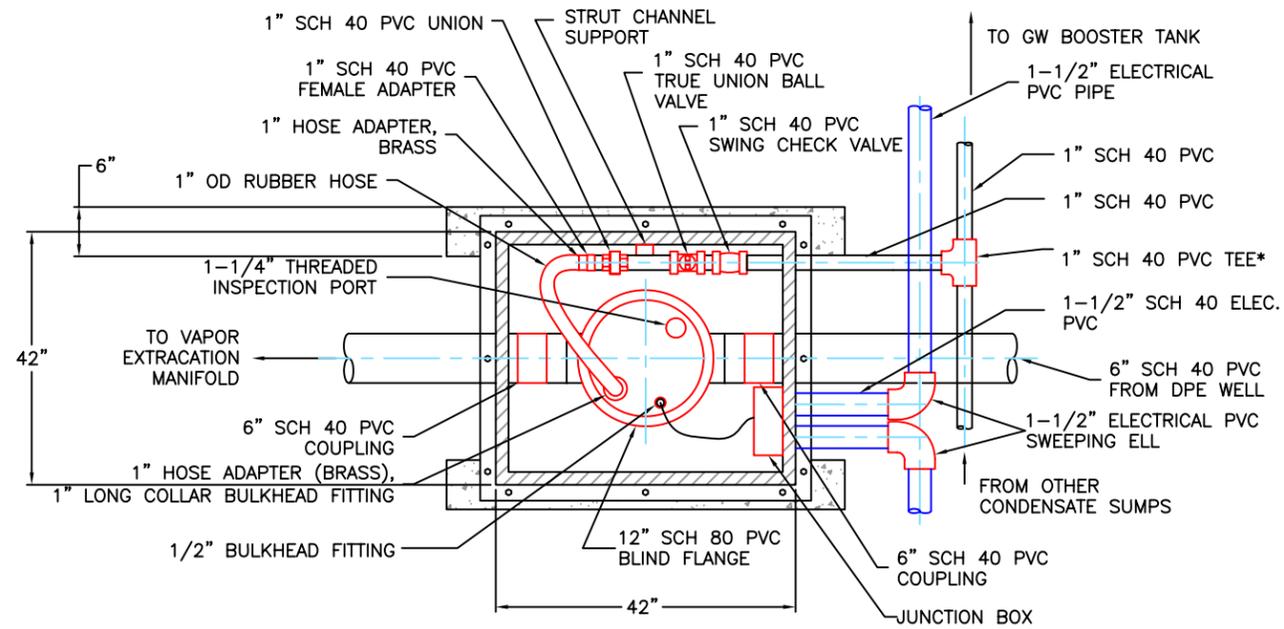
1. THE MANIFOLD SYSTEM SHALL BE SUPPORTED BY A UNI-STRUT RACK SYSTEM THAT IS BRACED TO THE BUILDING COLUMNS. THE RACK SYSTEM SHALL BE INSPECTED IN ACCORDANCE WITH SPECIFICATION SECTION 13080-SEISMIC PROTECTION FOR MISCELLANEOUS EQUIPMENT.
2. THE ENTIRE MANIFOLD SYSTEM SHALL BE CONSTRUCTED FROM SCHEDULE 80 PVC TO WITHSTAND HIGH VACUUM AND HIGH CONTAMINANT CONCENTRATION EXTRACTED FROM ERH TREATMENT AREA.
3. PIPE SUPPORTS AND BRACKETS (NOT SHOWN) SHALL BE USED ACCORDING TO PIPE MANUFACTURER'S RECOMMENDATIONS.
4. PITOT PORT TO CONSIST OF A 3/4" NPT SWAGE LOCK BORE THROUGH CLEAR MANIFOLD LEG AND PLUG.
5. THE APPROVAL OF THE COUNTY ENGINEER FOR SAMPLING BOX MUST BE OBTAINED BEFORE INSTALLATION. ELEVATE THE SIDE WALLS ABOVE THE SURROUNDING GROUND SURFACE TO EXCLUDE STORM WATER.

**MISCELLANEOUS PIPE DETAILS**

**PEMACO SUPERFUND SITE**  
5050 EAST SLOUSON AVENUE  
MAYWOOD, CALIFORNIA

PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	PREPARED BY: 
SCALE: AS SHOWN DESIGNED: JW & PV DRAWN: CBG & JBP CHECKED: JW	APPROVED <b>AS BUILT</b> DATE: 08/23/2010 DRAWING C-9

AS-BUILT



UNIT	EA	ITEM DESCRIPTION	MATERIAL/SCHEDULE	CONNECTIONS
7	EA	42x42x29-IN VAULT BOX WITH COVER	STEEL	--
80	FT	12-IN PIPE	SCH40 PVC	--
30	FT	6-IN PIPE	SCH40 PVC	--
60	FT	1-1/2-IN PIPE	SCH40 PVC	--
60	FT	1-IN PIPE	SCH40 PVC	--
80	FT	1-IN DISCHARGE PIPE	SCH80 PVC	--
16	EA	12x6-IN SADDLE	SCH80 PVC	SxSxS
8	EA	12-IN VAN STONE FLANGE	SCH80 PVC	--
8	EA	12-IN BLIND FLANGE	SCH80 PVC	--
32	EA	6-IN VAN STONE FLANGE	SCH80 PVC	--
24	EA	FLANGE BOLT PACK KITS WITH GASKET	ZINC BOLTS, VITON GASKET	--
7	EA	1-IN FEMALE ADAPTER	SCH40 PVC	SxFT
7	EA	1-IN LONG-COLLAR BULKHEAD FITTING	SCH80 PVC	FTxFT
7	EA	1/2-IN BULKHEAD FITTING	SCH80 PVC	FTxFT
7	EA	1-IN UNION (VITON O-RINGS)	SCH40PVC	S
7	EA	1-IN TRUE UNION BALL VALVE (VITON O-RINGS)	SCH80 PVC	S
8	EA	1-IN SWING CHECK VALVE	SCH40 PVC	S
7	EA	1-1/2x1-1/2x1-1/2-IN REDUCING TEE	SCH40 PVC	SxSxS
2	EA	1-1/2-IN 90 DEGREE ELBOW	SCH40 PVC	S
1	EA	1-1/2x1-1/2-IN REDUCER BUSHING	SCH40 PVC	S
7	EA	1-1/4-IN THREADED INSPECTION PORT	--	--
1	EA	QUART OF SCH40 PVC PRIMER	--	--
1	EA	QUART OF SCH40 PVC CEMENT	--	--
1	EA	PINT OF SCH80 PVC PRIMER	--	--
1	EA	PINT OF SCH80 PVC CEMENT	--	--
100	FT	1-1/2-IN ELECTRICAL PVC PIPE	SCH40 PVC	--
15	EA	1-1/2-IN ELECTRICAL SWEEPING ELL	SCH40 PVC	SxS
7	EA	ELECTRICAL JUNCTION BOX	--	--
7	EA	5-FT LENGTH, 1-IN OD COMPRESSED AIR RUBBER HOSE	EPDM	SOCKET QUICK-CONNECT x SWIVEL MT
21	EA	1-IN HOSE ADAPTER	BRASS	HOSExMT
21	EA	1-IN HOSE BARB ADAPTER	BRASS	MT x HOSE BARB
7	EA	FLOAT SWITCH	--	--
100	FT	2 OR 3 CONDUCTOR 16 AWG WIRE	SJOW OIL RESISTANT CPE	--
20	FT	1-5/8-IN STRUT CHANNEL	STEEL	--
14	EA	1-IN PIPE CLAMP	STEEL	--
14	EA	PLASTIC WHITE END CAP	--	--
5	CF	GRAVEL	2-IN BASE AGGREGATE	--
7	EA	1-1/2-IN STABILIZING SLEEVE	SCH40 PVC	--
1	EA	WELD ON 810 A&B ADHESIVE	--	--
42	EA	ANCHOR BOLT	1/2"x2.5" EXPANSION BOLT	--
6	CF	3/4" CRUSHED ROCK	6" BASE BELOW GRAVEL	--

NOTE:  
\* DPE-B HAS A DEDICATED LINE TO DIAPHRAM PUMP, P-102.

**NOTES:**

- THE INTENT OF THE CONDENSATE SUMPS IS TO COLLECT LIQUID CONDENSATE FROM "DESIGNED" LOW ELEVATION POINTS WITHIN THE DUAL PHASE EXTRACTION AND VAPOR EXTRACTION PROCESS PIPING.
- DESIGNED PIPING LOW POINTS FOR ALL MAIN TRENCHES OCCUR JUST PRIOR TO ENTRY TO THE TREATMENT COMPOUND. ONE CONDENSATE SUMP IS LOCATED IN THE FIELD TO COLLECT CONDENSATE FROM THE BRANCH LINE TO DAB-8.
- INSTALLATION OF ALL PIPING SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 15400-PROCESS PIPING.
- CONDENSATE SUMP VAULTS SHALL BE CONSTRUCTED TO H-10 AND H-20 LOADING REQUIREMENTS IN THE PARK AREA AND IN THE ROADWAYS, RESPECTIVELY.
- CONDENSATE SUMP VAULTS MAY BE CONSTRUCTED OF CONCRETE OR METAL. CONDENSATE SUMP VAULT LIDS SHALL BE CONSTRUCTED OF METAL, BE FLUSH TO GRADE AND BE SPRING OR GAS SHOCK ASSISTED. CONDENSATE SUMP VAULT FITTINGS SHALL BE CONSTRUCTED OF CONCRETE AND ARE ONLY REQUIRED BENEATH ROADWAYS.
- EXCAVATION AND BACKFILL OF VAULTS SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02211-EARTHWORK AND SECTION 02205-SOIL MATERIALS.
- PIPE SUPPORTS AND BRACKETS SHALL BE USED ACCORDING TO PIPE MANUFACTURER'S RECOMMENDATIONS.
- FLANGE SEAL AND FLANGE PENETRATION MUST BE RATED FOR 25 IN HG VACUUM.
- PLUMBING AND ELECTRICAL INSIDE VAULT MUST BE CONFIGURED FOR "QUICK REMOVAL AND MAINTENANCE OF DROP TUBE AND LEVEL SENSOR.

**CONDENSATE SUMP DETAIL**

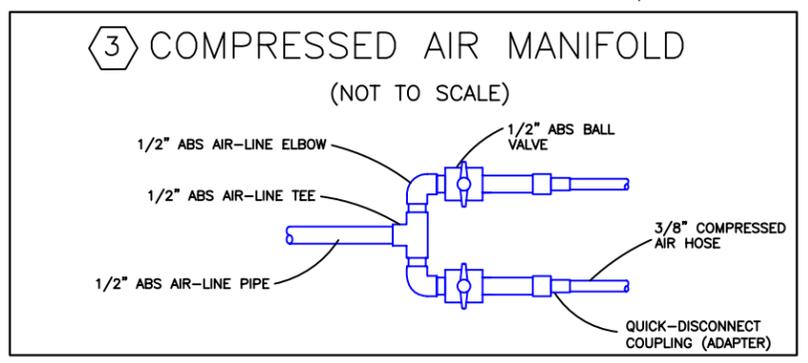
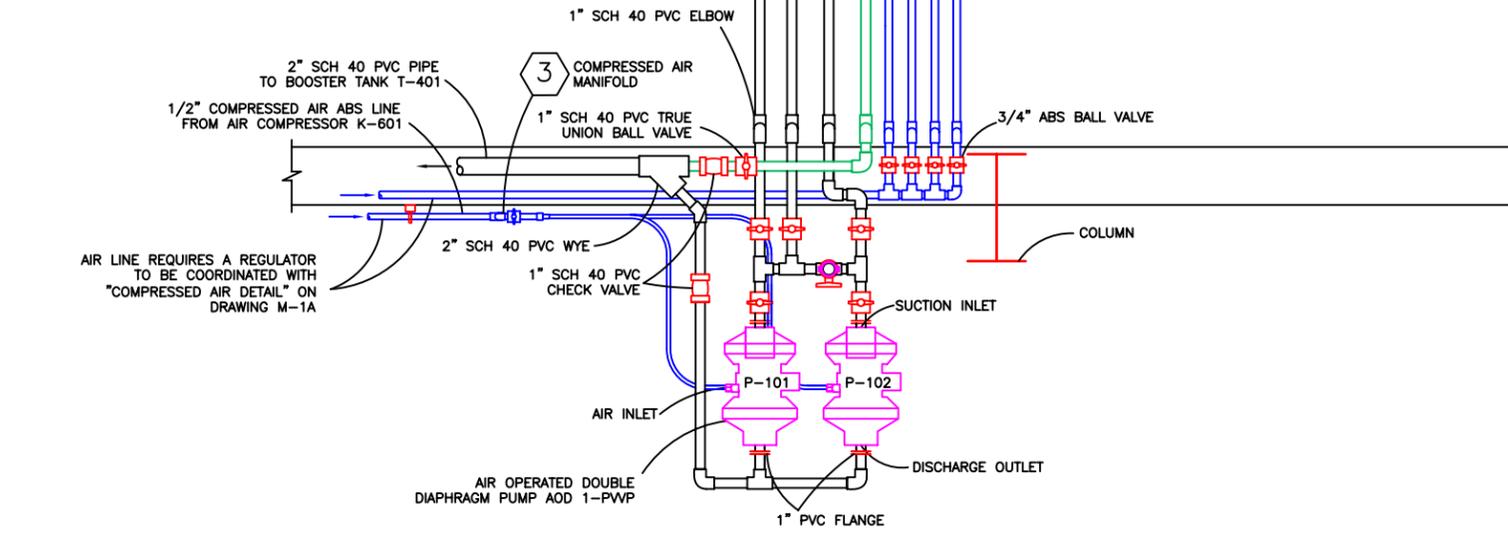
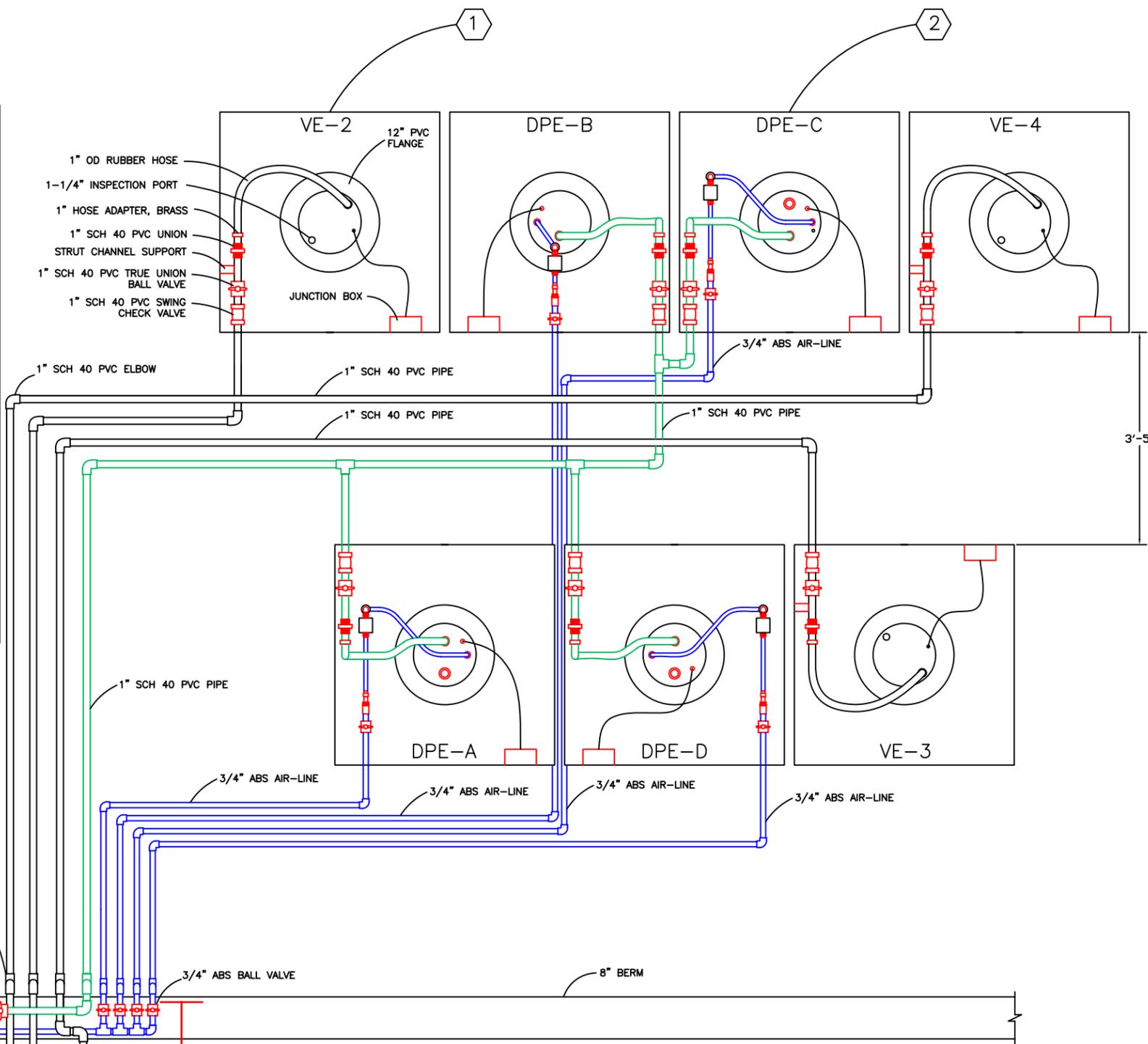
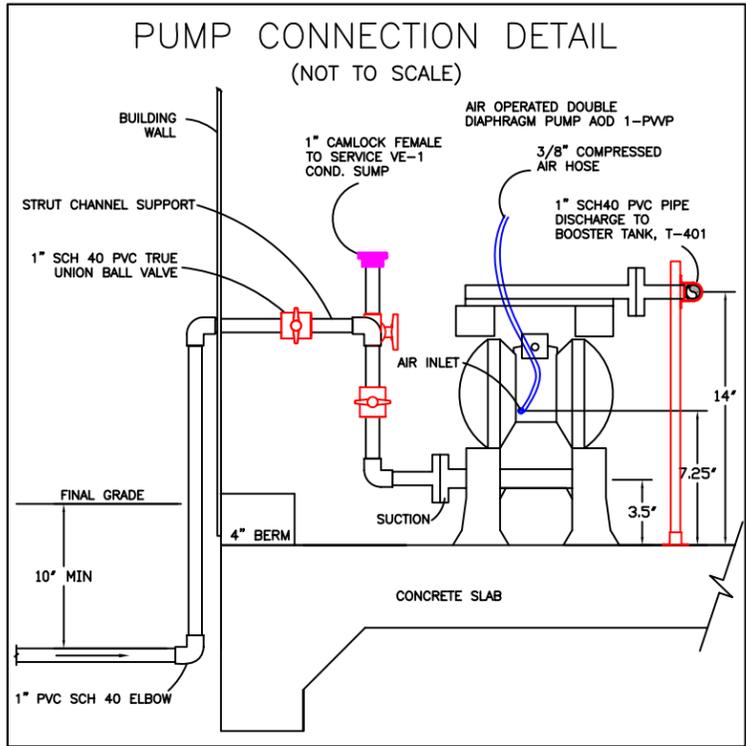
PEMACO SUPERFUND SITE  
5050 EAST SLAUSON AVENUE  
MAYWOOD, CALIFORNIA

PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	PREPARED BY: 
SCALE: AS SHOWN	APPROVED: <b>AS BUILT</b>
DESIGNED: JW & DC	DATE: 08/23/2010
DRAWN: DC & JBP	DRAWING
CHECKED: JW	C-10A

AS-BUILT

**NOTES:**

- 1 PLEASE REFER TO C-10A FOR CONDENSATE SUMP DETAIL, TYPICAL FOR VE-2, VE-3, AND VE-4 CONDENSATE SUMPS.
- 2 PLEASE REFER TO C-10D FOR CONDENSATE SUMP RETROFIT DETAIL, TYPICAL FOR DPE-A, DPE-B, DPE-C, AND DPE-D CONDENSATE SUMPS.

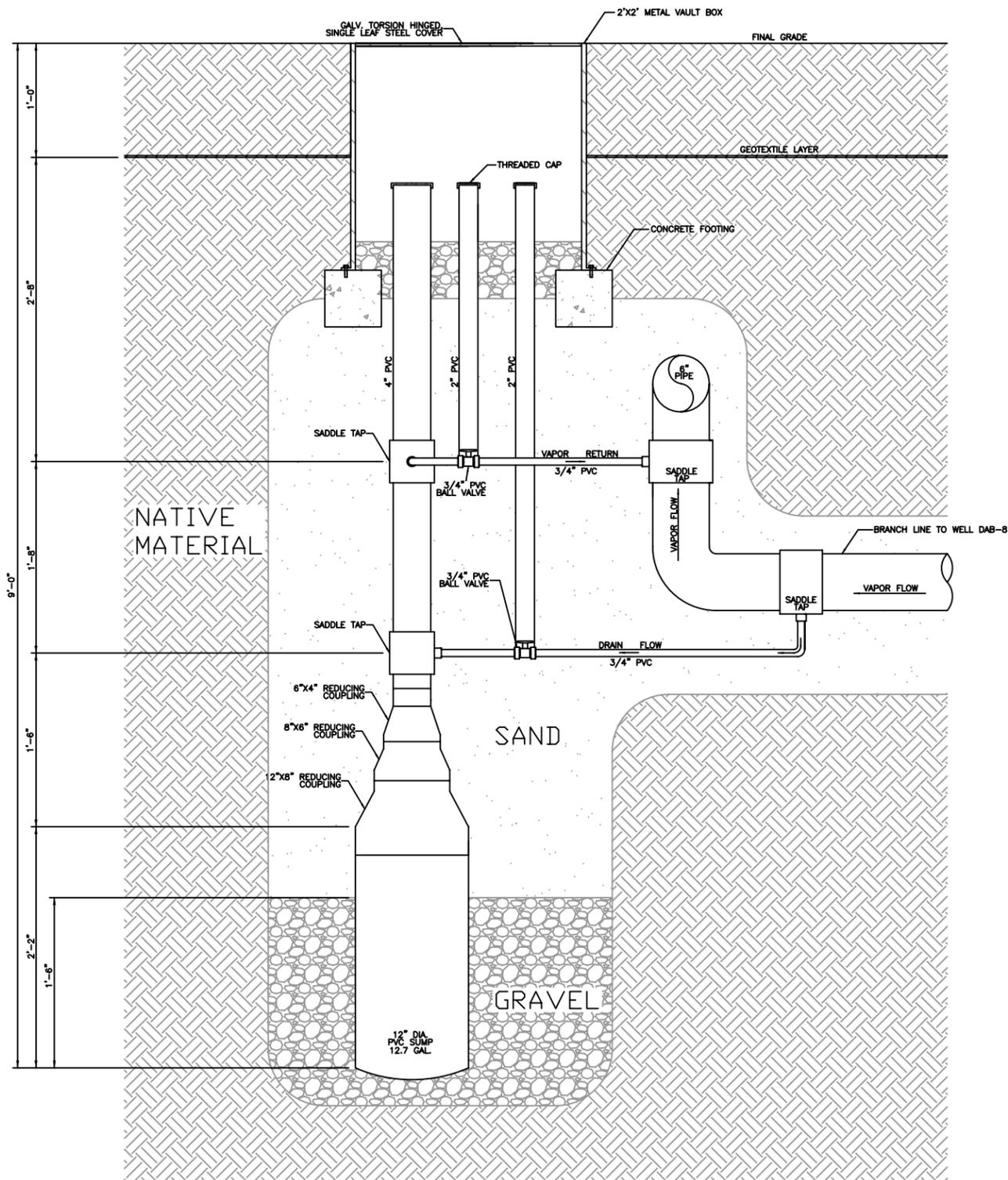


AS-BUILT

**CONDENSATE SUMP MANIFOLD DETAIL**

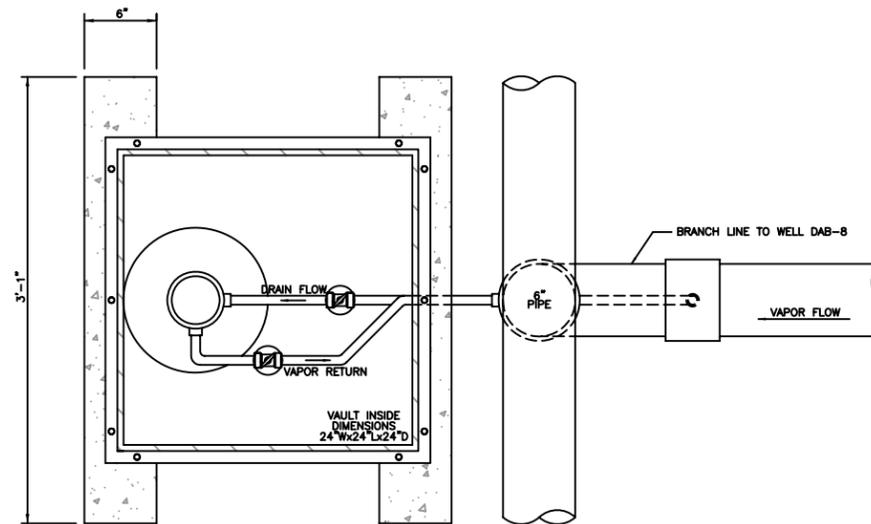
PEMACO SUPERFUND SITE  
5050 EAST SLAUSON AVENUE  
MAYWOOD, CALIFORNIA

PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	PREPARED BY: 
SCALE: AS SHOWN	APPROVED: AS-BUILT
DESIGNED: JW & DC	DATE: 08/23/10
DRAWN: DC	DRAWING
CHECKED: JW	C-10C



PROFILE VIEW  
VAPOR EXTRACTION CONDENSATE SUMP  
(to WELL DAB-8)

0 1/2' 1' 2'  
APPROXIMATE SCALE IN FEET



PLAN VIEW  
VAPOR EXTRACTION CONDENSATE SUMP  
(to WELL DAB-8)

0 1/2' 1' 2'  
APPROXIMATE SCALE IN FEET

**NOTES:**

1. THE INTENT OF THE CONDENSATE SUMPS IS TO COLLECT LIQUID CONDENSATE FROM "DESIGNED" LOW ELEVATION POINTS WITHIN THE DUAL PHASE EXTRACTION AND VAPOR EXTRACTION PROCESS PIPING.
2. DESIGNED PIPING LOW POINTS FOR ALL MAIN TRENCHES OCCUR JUST PRIOR TO ENTRY TO THE TREATMENT COMPOUND. ONE CONDENSATE SUMP IS LOCATED IN THE FIELD TO COLLECT CONDENSATE FROM THE BRANCH LINE TO DAB-8.
3. ADDITIONAL CONDENSATE SUMPS SHALL BE INSTALLED AT DPE OR VE PIPELINE LOW POINTS AS DESIGN/BUILD ITEMS AT THE DISCRETION OF THE PROJECT ENGINEER, BASED ON THE CONTRACTOR'S ABILITY TO MEET THE DESIRED SLOPES, SHOWN IN DRAWING C-12.
4. INSTALLATION OF ALL PIPING SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 15400-PROCESS PIPING.
5. CONDENSATE SUMP VAULTS SHALL BE CONSTRUCTED TO H-10 AND H-20 LOADING REQUIREMENTS IN THE PARK AREA AND IN THE ROADWAYS, RESPECTIVELY.
6. CONDENSATE SUMP VAULTS MAY BE CONSTRUCTED OF CONCRETE OR METAL. CONDENSATE SUMP VAULT LIDS SHALL BE CONSTRUCTED OF METAL, BE FLUSH TO GRADE AND BE SPRING OR GAS SHOCK ASSISTED. CONDENSATE SUMP VAULT FOOTINGS SHALL BE CONSTRUCTED OF CONCRETE AND ARE ONLY REQUIRED BENEATH ROADWAYS.
7. EXCAVATION AND BACKFILL OF VAULTS SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION SECTION 02211-EARTHWORK AND SECTION 02205-SOIL MATERIALS.
8. CONDENSATE SUMP PLUMBING MAY BE CONSTRUCTED AS DESIGN/BUILD IN ORDER TO REDUCE VAULT SIZE REQUIREMENTS, IMPROVE WORKING AREA/ACCESS OR ACCOMMODATE IMPROVED MATERIALS OR EQUIPMENT; WITH APPROVAL FROM THE PROJECT ENGINEER.
9. PIPE SUPPORTS AND BRACKETS (NOT SHOWN) SHALL BE USED ACCORDING TO PIPE MANUFACTURER'S RECOMMENDATIONS.

**REMOTE CONDENSATE SUMP DETAILS**

**PEMACO SUPERFUND SITE**  
5050 EAST SLAUSON AVENUE  
MAYWOOD, CALIFORNIA

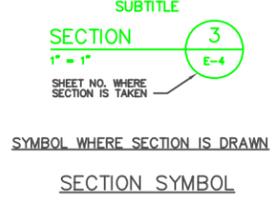
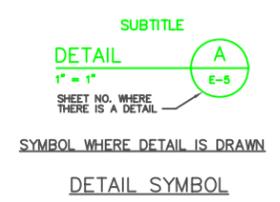
PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	PREPARED BY: 
SCALE: AS SHOWN	APPROVED: AS-BUILT
DESIGNED: JW & PV	DATE: 03/14/2005
DRAWN: CBG	DRAWING: C-18
CHECKED: JW	REV: 7

AS-BUILT

SYMBOL	DESCRIPTION
	CEILING OUTLET AND INCANDESCENT OR H.I.D. TYPE LUMINAIRE 3" INDICATES BRANCH CIRCUIT NUMBER, "0" INDICATES CONTROLLING SWITCH
	CEILING FIXTURE, OUTLET AND FLUORESCENT LUMINAIRE, NOTATIONS SAME AS ABOVE.
	WALL OUTLET AND INCANDESCENT OR H.I.D. LIGHTING FIXTURE.
	EMERGENCY LIGHTING BATTERY UNIT WITH TWO LAMP HEADS
	REMOTE ADJUSTABLE EMERGENCY LAMP HEAD
	HID OR INCANDESCENT LUMINAIRE ON EMERGENCY CIRCUIT
	WALL OUTLET AND EXIT SIGN, DIRECTIONAL ARROWS AS NOTED
	SHORT DASH FOR EACH PHASE CONDUCTOR, LONG DASH FOR NEUTRAL CONDUCTOR, NO. 12 AWG, 3/4" UNLESS OTHERWISE NOTED. EQUIPMENT GROUNDING CONDUCTOR IS SHOWN. NOTE: DASH MARKS ARE OMITTED FOR CIRCUITS CONSISTING OF 2#12, 1#12G, 3/4".
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	CONDUIT STUBBED OUT AND CAPPED
	CONDUIT RUN EXPOSED, (2#12, 1#12G, 3/4" UNLESS OTHERWISE NOTED)
	CONDUIT RUN CONCEALED, (2#12, 1#12G, 3/4" UNLESS OTHERWISE NOTED)
	LIQUIDTIGHT FLEXIBLE CONDUIT
	"1" FITTING IN CONDUIT
	HOMERUN TO LIGHTING PANEL LP-1 SHALL BE #12, 2#12, 1#12G UNLESS OTHERWISE NOTED
	HOMERUN TO BATTERY UNIT BU-1 SHALL BE #12, 2#12, 1#12G UNLESS OTHERWISE NOTED
	HOMERUN TO MOTOR CONTROL CENTER MCC SHALL BE #12, 2#12, 1#12G UNLESS OTHERWISE NOTED
	JUNCTION BOX
	DISTRIBUTION PANELBOARD
	LIGHTING PANELBOARD
	CONDUIT, SIZE AND FILL AS NOTED.
	THREE (3) NO.12 AWG CONDUCTORS AND ONE (1) NO.12 EQUIPMENT GROUNDING CONDUCTOR
	MULTI-CONDUCTOR, JACKETED POWER OR CONTROL CABLE, NUMBER AND SIZE OF CORE CONDUCTORS AS NOTED, QUANTITY AS NOTED IF MORE THAN ONE.
	INSTRUMENT CABLE, TWISTED PAIR OR TRIPLEX AS NOTED WITH OVERALL SHIELD AND JACKET, CONDUCTOR SIZE AND QUANTITY AS NOTED
	SINGLE POLE SWITCH, "0" INDICATES CONTROL OF LIGHTS "0" THREE WAY SWITCH, "0" INDICATES CONTROL OF LIGHTS "0"
	DUPLEX RECEPTACLE, 120V, 3W, SINGLE PHASE # C - MOUNTED ABOVE COUNTER TOP # G - GROUND FAULT INTERRUPTER TYPE # WP - WEATHERPROOF 3 - BRANCH CIRCUIT NUMBER
	SINGLE RECEPTACLE, 240V, 3W, SINGLE PHASE, AMPERE RATING AS NOTED # L - LOCKING TYPE # WP - WEATHERPROOF
	DUPLEX RECEPTACLE AND FLOOR BOX
	ANALOG TERMINAL BOX PROVIDED BY DIVISION 11
	DISCRETE TERMINAL BOX PROVIDED BY DIVISION 11
	POWER (480 VOLT) TERMINAL BOX PROVIDED BY DIVISION 11
	TELEPHONE CABINET OR BACKBOARD AS SPECIFIED
	LIGHTING CONTACTOR, MECHANICALLY HELD TYPE
	ELECTRIC HEAT TRACE CONNECTION NOT REFER TO DETAIL
	PHOTOCELL
	MANUAL FIRE ALARM STATION
	HEAT ACTUATED FIRE DETECTOR (* INDICATES TEMPERATURE RATING)
	SMOKE DETECTOR
	FIRE ALARM HORN
	FIRE ALARM HORN AND LIGHT COMBINATION
	SPRINKLER FLOW ALARM SWITCH
	VALVE SUPERVISORY SWITCH
	WEATHER PROOF HI-INTENSITY FIRE ALARM STROBE LIGHT
	DOOR SWITCH
	ELECTRIC DOOR STROKE
	SECURITY MOTION DETECTOR
	SOLID STATE METERING & PROTECTION MODULE

ONE LINE OR ELEMENTARY DIA.	PLAN	DESCRIPTION
		LOW VOLTAGE CIRCUIT BREAKER, THREE POLE UNLESS NOTED OTHERWISE
		COMBINATION MOTOR CIRCUIT PROTECTOR AND MAGNETIC MOTOR STARTER, FULL VOLTAGE NON-REVERSING UNLESS NOTED OTHERWISE. # FVR - FULL VOLTAGE REVERSING # FVRW - REDUCED VOLTAGE NON-REVERSING # 2S1W - TWO SPEED, ONE WINDING # 2S2W - TWO SPEED, TWO WINDING NUMERICAL INDICATES STARTER SIZE IF OTHER THAN SIZE 1
		NON-FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE # AMPERE RATING NOTED IF OTHER THAN 30A
		FUSIBLE DISCONNECT SWITCH, 600 VOLT, 3 POLE # AMPERE RATING AND FUSE SIZE AS NOTED
		MANUAL MOTOR STARTER WITH THERMAL OVERLOAD HEATER "R" INDICATES RED RUNNING LIGHT
		TRANSFORMER, RATING AND CONNECTIONS AS NOTED
		CURRENT TRANSFORMER # QUANTITY AND CURRENT RATIO
		POTENTIAL TRANSFORMER # QUANTITY AND VOLTAGE RATIO
		LIGHTNING ARRESTER
		CAPACITOR
		GROUND OR GROUND ROD
		FUSE, AMPERE RATING AS NOTED
		MOTOR, NUMERICAL INDICATES HORSEPOWER
		GENERATOR, RATINGS AND CONNECTIONS AS NOTED
		TACHOMETER GENERATOR
		VOLTMETER WITH SWITCH, 3 PHASE # RANGE AS NOTED
		AMMETER WITH SWITCH, 3 PHASE # RANGE AS NOTED
		METER - INDICATING/RECORDING TYPE # WM - WATTMETER # WH - WATTHOUR METER # WHD - WATTHOUR DEMAND METER # PF - POWER FACTOR METER # RT - RUNNING TIME METER TRANS-DUCER # AX - CURRENT TRANS-DUCER # W - WATT TRANS-DUCER # WHX - WATT/WATTHOUR TRANS-DUCER
		PROTECTIVE RELAY, NO. AS INDICATED: 22 - UNDERVOLTAGE RELAY 38 - BEARING PROTECTIVE DEVICE 42 - RUNNING CIRCUIT BREAKER OR CONTACTOR 46 - REVERSE PHASE, OR PHASE BALANCE, CURRENT RELAY 47 - PHASE SEQUENCE VOLTAGE RELAY 49 - MACHINE OR TRANSFORMER THERMAL RELAY 50 - INSTANTANEOUS OVERCURRENT, OR RATE-OF-RISE RELAY 50G - INSTANTANEOUS GROUND RELAY, ZERO SEQUENCE 51 - AC TIME OVERCURRENT RELAY 51N - AC TIME OVERCURRENT RELAY, NEUTRAL GROUND 55 - LOCKING-OUT RELAY 57 - DIFFERENTIAL PROTECTIVE RELAY
		UNIT HEATER - ELECTRIC HEATING COIL AND FAN
		UNIT HEATER - STEAM OR WATER HEATING COIL AND FAN
		KEY RESET STATION
		VOLTAGE OR CURRENT TEST BLOCK
		MECHANICAL CONNECTION OR INTERLOCK
		CONDUCTORS OR CONDUITS CROSSING PATHS BUT NOT CONNECTED
		CONDUCTORS ELECTRICALLY CONNECTED
		INDICATES LIMITS OF EQUIPMENT OR WIRING ENCLOSURE
		PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN, NORMALLY CLOSED
		PUSHBUTTON, MOMENTARY CONTACT, SPRING RETURN NORMALLY OPEN
		EMERGENCY STOP PUSHBUTTON WITH RED MUSHROOM HEAD OPERATOR - MAINTAINED CONTACT, PUSH-TO-STOP PULL TO RESET.
		START-STOP PUSHBUTTON CONTROL STATION
		START-STOP PUSHBUTTON CONTROL STATION WITH LOCKOUT DEVICE ON STOP
		START-STOP PUSHBUTTON CONTROL STATION, MAINTAINED CONTACT WITH LOCKOUT DEVICE ON STOP
		TWO POSITION SELECTOR SWITCH, MAINTAINED CONTACT POSITION 1-CONTACT 2-CONTACT X-CLOSED A X 0 B 0 X C 0 X
		THREE POSITION SELECTOR SWITCH, MAINTAINED CONTACT POSITION 1-CONTACT 2-CONTACT 3-CONTACT X-CLOSED A X 0 B 0 0 C 0 X
		NAMEPLATE (A/B/C) HOA - HAND/OFF/AUTO LOR - LOCAL/OFF/REMOTE LSL - RAISE/STOP/LOWER

ONE LINE OR ELEMENTARY DIA.	PLAN	DESCRIPTION
		LIQUID LEVEL (FLOAT) SWITCH NORMALLY OPEN, CLOSING ON RISING LEVEL NORMALLY CLOSED, OPENS ON RISING LEVEL
		PRESSURE OR VACUUM SWITCH NORMALLY OPEN, CLOSING ON LOW PRESSURE SET POINT NORMALLY CLOSED, OPENS ON RISING PRESSURE
		TEMPERATURE ACTUATED SWITCH (THERMOSTAT) NORMALLY OPEN, CLOSING ON RISING TEMPERATURE NORMALLY CLOSED, OPENS ON RISING TEMPERATURE
		FLOW SWITCH (AIR, WATER, ETC.) NORMALLY OPEN, CLOSING ON INCREASED FLOW NORMALLY CLOSED, OPENS ON INCREASED FLOW
		POSITION (LIMIT) SWITCH NORMALLY OPEN NORMALLY OPEN - HELD CLOSED NORMALLY CLOSED NORMALLY CLOSED - HELD OPEN
		SOLENOID OPERATED VALVE
		STRIP HEATER OR HEATING ELEMENT
		SURGE CONTROL VALVE
		PILOT LIGHT, COLOR AS NOTED # R - RED # G - GREEN # A - AMBER # B - BLUE # W - WHITE
		PILOT LIGHT, PUSH TO TEST TYPE # COLOR AS NOTED ABOVE
		RELAY COIL, NUMBER AS INDICATED
		MOTOR STARTER COIL, NUMBER AS INDICATED
		CONTACT, NORMALLY OPEN (NO)
		CONTACT, NORMALLY CLOSED (NC)
		OVERLOAD RELAY HEATER (OL)
		TIME DELAY RELAY, RANGE AS NOTED NTOC - NORMALLY OPEN, TIMED CLOSE WHEN ENERGIZED NCTO - NORMALLY CLOSED, TIMED OPEN WHEN ENERGIZED NTO - NORMALLY CLOSED, TIMED OPEN WHEN DE-ENERGIZED NCTO - NORMALLY CLOSED, TIMED CLOSE WHEN DE-ENERGIZED
		RESISTANCE TEMPERATURE DETECTOR
		MOTOR OPERATED VALVE, SERIAL LOOP CONNECTED
		FIELD INSTRUMENT, TAG NO. AS INDICATED # - INDICATES LOOP NO. # - INDICATES INSTRUMENT TYPE AE - ANALYZING ELEMENT (PH, ORP, DO, ETC.) AT - ANALYZING TRANSMITTER DT - DENSITY TRANSMITTER FE - FLOW ELEMENT FS - FLOW SWITCH FT - FLOW TRANSMITTER FY - FLOW TRANSDUCER LE - LEVEL ELEMENT LS - LEVEL SWITCH LT - LEVEL TRANSMITTER PDS - PRESSURE DIFFERENTIAL SWITCH PT - PRESSURE TRANSMITTER SI - SPEED INDICATOR TE - TEMPERATURE ELEMENT TS - TEMPERATURE SWITCH TT - TEMPERATURE TRANSMITTER ZS - POSITION SWITCH HS - HAND SWITCH
		DAMPER MOTOR
		INDICATES THAT ALL LUMINAIRES WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE TYPE "A" UNLESS OTHERWISE NOTED
		INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 12 CONSTRUCTION AND SUITABLE FOR USE IN A DAMP OR WET LOCATION
		INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4X CONSTRUCTION SUITABLE FOR USE IN A WET LOCATION, UNLESS NOTED OTHERWISE
		INDICATES THAT ALL ELECTRICAL EQUIPMENT AND MATERIALS INSTALLED WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL BE OF NEMA 4X CORROSION RESISTANT CONSTRUCTION SUITABLE FOR USE IN A WET LOCATION, UNLESS NOTED OTHERWISE
		INDICATES THAT ALL ELECTRICAL EQUIPMENT AND INSTALLATION WITHIN THE ROOM OR AREA IN WHICH THIS NOTATION APPEARS SHALL CONFORM TO I.E.C. REQUIREMENTS FOR THE HAZARDOUS AREA CLASSIFICATION SHOWN



### ABBREVIATIONS

AC	ALTERNATING CURRENT
ATF	ABOVE FINISHED FLOOR
AG	ABOVE GRADE
ALUM	ALUMINUM
AMP	AMPERE
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CS	CONTROL SWITCH
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DI	DOOR INTERLOCK
DN	DOWN
EC	EMPTY CONDUIT
ELEC	ELECTRICAL
ELEV	ELEVATION
EM	EMERGENCY
EO	ELECTRICALLY OPERATED
FBO	FURNISHED BY OTHERS
FOP	FIBERGLASS REINFORCED POLYESTER
FU	FUSE
GCP	GENERATOR CONTROL PANEL
GEN	GENERATOR
G, GRD	GROUND
GF	GROUND FAULT INTERRUPTER
GRS	GALVANIZED RIGID STEEL
HH	HANDHOLE
HT	HEIGHT
HZ	HERTZ
INST	INSTANTANEOUS
INSTR	INSTRUMENT
LA	LIGHTNING ARRESTER
LGTS	LIGHTS
LP	LIGHTING PANEL
MCC	MOTOR CONTROL CENTER
MFR	MANUFACTURER
MFM	MULTIFUNCTION METER
MH	MANHOLE
MTG	MOUNTING
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
NC	NORMALLY CLOSED
NO	NORMALLY OPEN OR NUMBER
NTS	NOT TO SCALE
OL	OVERLOAD
PFC	POWER FACTOR CORRECTION CAPACITOR
PH	PHASE
PR	PAIR
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RACK	RACK
SC	SURGE CAPACITOR
SEC	SECONDS OR SECONDARY
SH	SHIELDED OR SHEET
SN	SOLID NEUTRAL
SS	STAINLESS STEEL
SV	SOLENOID VALVE
SW	SWITCH
SWGR	SWITCHGEAR
TC	TIME DELAY ON CLOSING
TEL	TELEPHONE
TO	TIME DELAY ON OPENING
TW	TWISTED
TYP	TYPICAL
UG	UNDERGROUND
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE
WP	WEATHERPROOF
XP	EXPLOSION PROOF
XFMR	TRANSFORMER

### NOTES:

- THIS IS A STANDARD LEGEND. SOME SYMBOLS AND ABBREVIATIONS MAY NOT APPEAR ON THE DRAWINGS.
- THE WIRING DIAGRAMS, QUANTITY AND SIZES OF WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS AND/OR SPECIFICATIONS
- SWITCHGEAR AND MCC COMPARTMENT DESIGNATIONS AS INDICATED BELOW:  
BLANK: NOT INTENDED FOR USE. PLATE ONLY  
SPACE: CONTAINS NECESSARY BUS AND HARDWARE FOR FUTURE ADDITION OF BREAKERS OR STARTERS WITHIN SIZE RANGE SHOWN  
SPARE: CONTAINS A COMPLETE BREAKER OR STARTER INSTALLED, SIZE AS INDICATED FOR FUTURE USE

### ELECTRICAL LEGEND

PEMACO SUPERFUND SITE  
5050 EAST SLOUSON AVENUE  
MAYWOOD, CALIFORNIA

PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	PREPARED BY:  OTIE Quality Total Engineering & Construction
SCALE: AS SHOWN	APPROVED: AS BUILT
DESIGNED: JS	DATE: 08/23/2010
DRAWN: CPL	DRAWING
CHECKED: JW	E-1

AS-BUILT

LOAD CENTER LC-1 SCHEDULE LOCATION - POWER & CONTROL ROOM

100 AMP BUS RATING 150 AMP MAIN C/B		10,000 A.I.C.		10 SURFACE MOUNTED	
120/240 VOLTS 1PH. 3 WIRE 60 HZ.					
DESCRIPTION	C/B AMP POLES	A	B	C/B AMP POLES	DESCRIPTION
RECEPTACLES GFCI	20/1	1	2	20/1	OUTDOOR LIGHTS
RECEPTACLES GFCI	20/1	3	4	20/1	OFFICE LIGHTS
RECEPTACLES GFCI	20/1	5	6	20/1	SUMP LEVEL CONTROL
OFFICE RECEPTACLES	20/1	7	8	20/2	AIR CONDITIONER
OFFICE RECEPTACLES	20/1	9	10		AIR CONDITIONER
OFFICE RECEPTACLES	20/1	11	12	20/1	MCP
OFFICE FANS	20/1	13	14	20/1	RECEPTACLES
LIGHTS	20/1	15	16	20/1	RECEPTACLES
SPARE	20/1	17	18	20/1	EMERGENCY LIGHTS
SOLAR	20/2	19	20	20/1	SPACE
SOLAR		21			

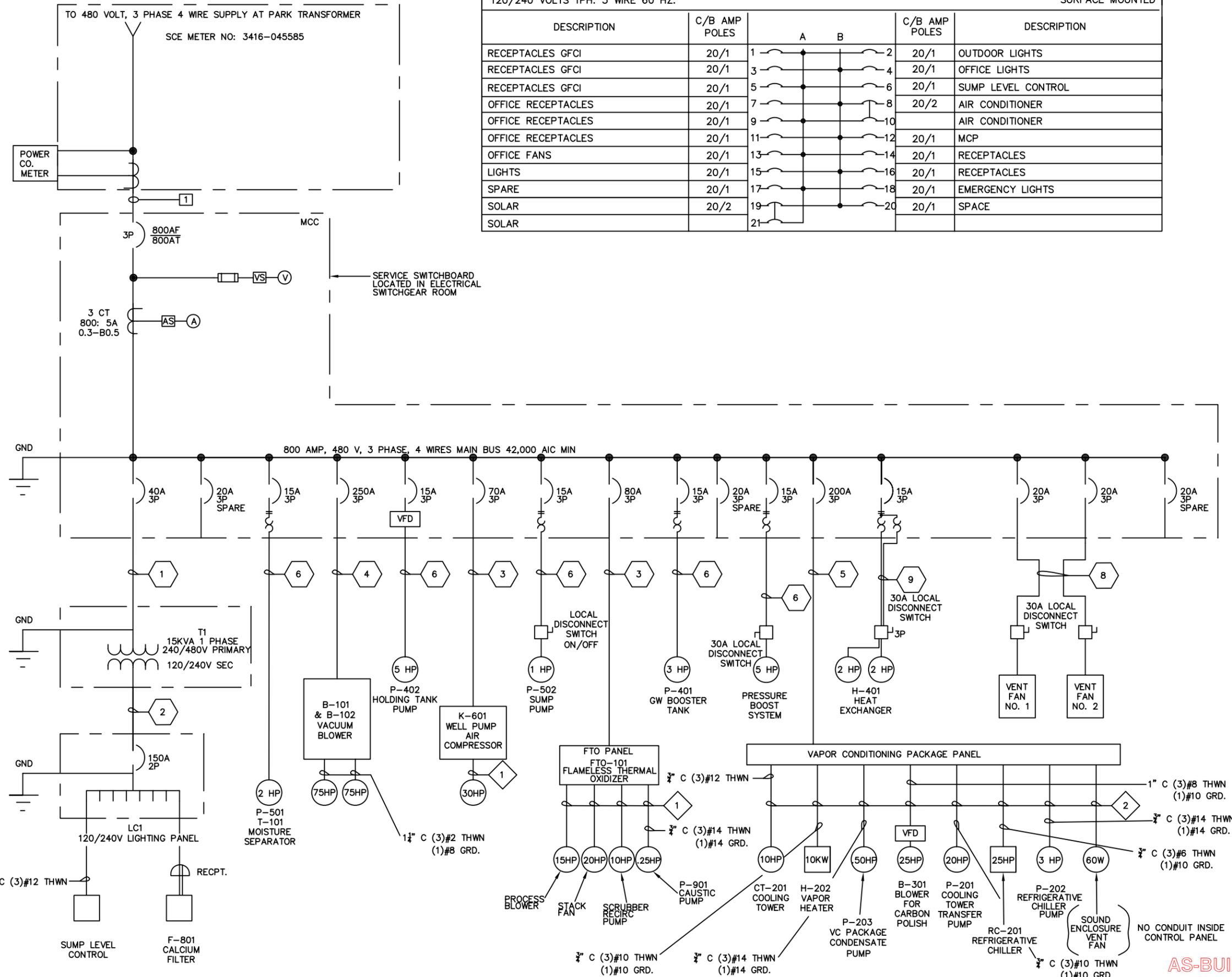
**LEGEND**

CONDUIT AND WIRE  
(NUMBERS REFERENCE THIS SHEET ONLY)

NO.	DESCRIPTION
①	1" C, 2#8 + #10 GRD
②	2" C, 3#1/0 + #6 GRD
③	1 1/2" C, 3#4 + #8 GRD
④	2-1/2" C, 3# 250 KCMIL + #4 GRD
⑤	2" C, 3#3/0 + #6 GRD
⑥	1" C, 3#12 + #12 GRD
⑦	1" C, 3#8 + #10 GRD
⑧	1" C, 6#12 + 2#12 GRD
⑨	3/4" C, 6#14 + 1#14 GRD
1	1 4" C, 2 SETS OF 3 600 KCMIL + #1/0 GRD (TYPE SE OR USE)

- NOTES:**
- CONTRACTOR TO ACQUIRE A METER THROUGH SOUTHERN CALIFORNIA EDISON.
  - CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY EQUIPMENT FOR ELECTRICAL SERVICE.
  - THE ELECTRICAL SERVICE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF OSHA AND THE LATEST VERSION OF THE NEC, NESC, AND SOUTHERN CALIFORNIA EDISON.
  - ELECTRICAL EQUIPMENT AND MATERIALS SUPPLIED BY THE CONTRACTOR SHALL BE NEW AND IN ACCORDANCE WITH IEEE, ANSI, AND NEMA STANDARDS; AND WHERE APPLICABLE, HAVE THE UNDERWRITERS LABORATORIES SEAL OF APPROVAL.
  - ELECTRICAL WIRING AND CONDUIT SHALL BE APPROPRIATELY IDENTIFIED AND PERMANENTLY MARKED.
  - CONTRACTOR IS TO INSTALL PHONE SERVICE, AUTO DIALER, AND PROCESS LOGIC CONTROL AS DESIGN/BUILD FEATURES.
  - ALL ERH EQUIPMENT WILL BE SEPARATELY POWERED, BY OTHERS, AS DISCUSSED IN THE ERH REMEDIAL DESIGN WORK PLAN.
  - MOTOR STARTERS TO BE CONTROLLED BY PLC. CONTRACTOR TO PROVIDE INTERFACE BETWEEN PLC AND MCC. FINAL DESIGN/BUILD SPECIFICATIONS TO BE PROVIDED TO AND APPROVED BY THE ENGINEER PRIOR TO INSTALL.
  - FINAL DESIGN OF VAPOR CONDITIONING PACKAGE AND ELECTRICAL DEMAND SHALL BE DETERMINED BY TREATMENT SYSTEM CONTRACTOR.

- PLAN NOTES:**
- THESE CONNECTIONS ARE INCLUDED AS PART OF THE RESPECTIVE SKIDS.
  - THESE CONNECTIONS ARE INCLUDED BY THE VAPOR CONDITIONING PACKAGE PROVIDER.

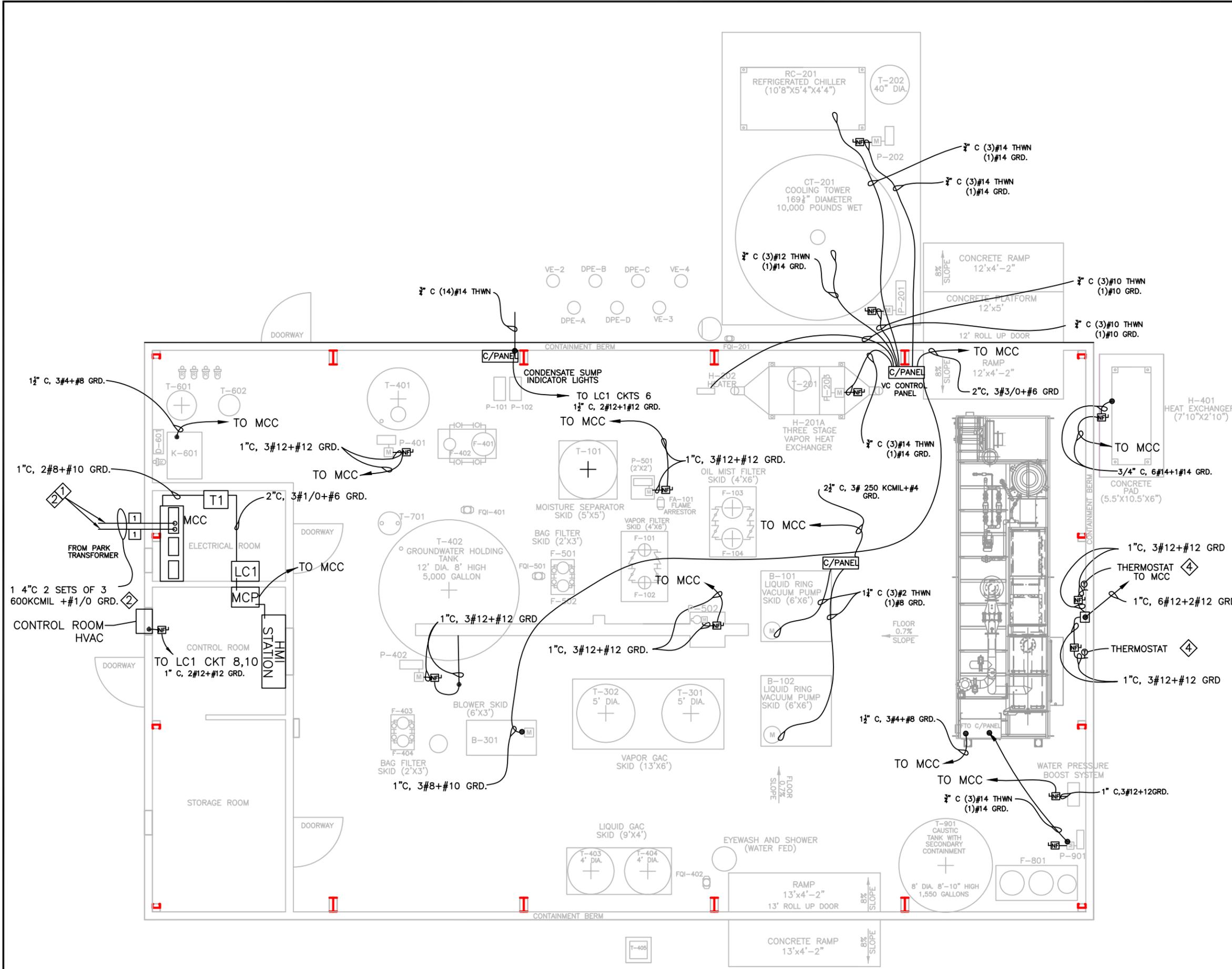


**ELECTRICAL SINGLE LINE DIAGRAM**

PEMACO SUPERFUND SITE  
5050 EAST SLAUSON AVENUE  
MAYWOOD, CALIFORNIA

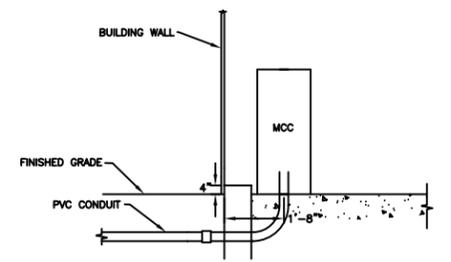
PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	PREPARED BY: OTE CONSULTING ENGINEERS
SCALE: DESIGNED: J.S. DRAWN: C.P.L. & J.B.P. CHECKED: J.S. & J.W.	APPROVED: <b>AS BUILT</b> DATE: 08/23/2010 DRAWING: E-2

AS-BUILT

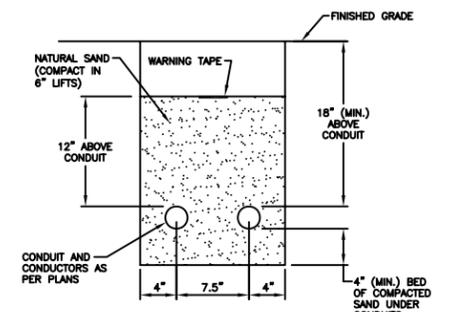


**PLAN NOTES:**

1. SEE DETAIL (E-3)
2. SEE DETAIL (E-3)
3. CONNECTION IS TO BE MADE DIRECTLY TO THE DISCONNECT SWITCH AT EACH SUMP. SEE DWG C-10.
4. INSTALL THERMOSTAT SWITCH WITH ADJUSTABLE SET POINT BETWEEN 80 AND 110°F



(E-3) POWER CONNECTION AT MCC



(E-3) TRENCH DETAIL

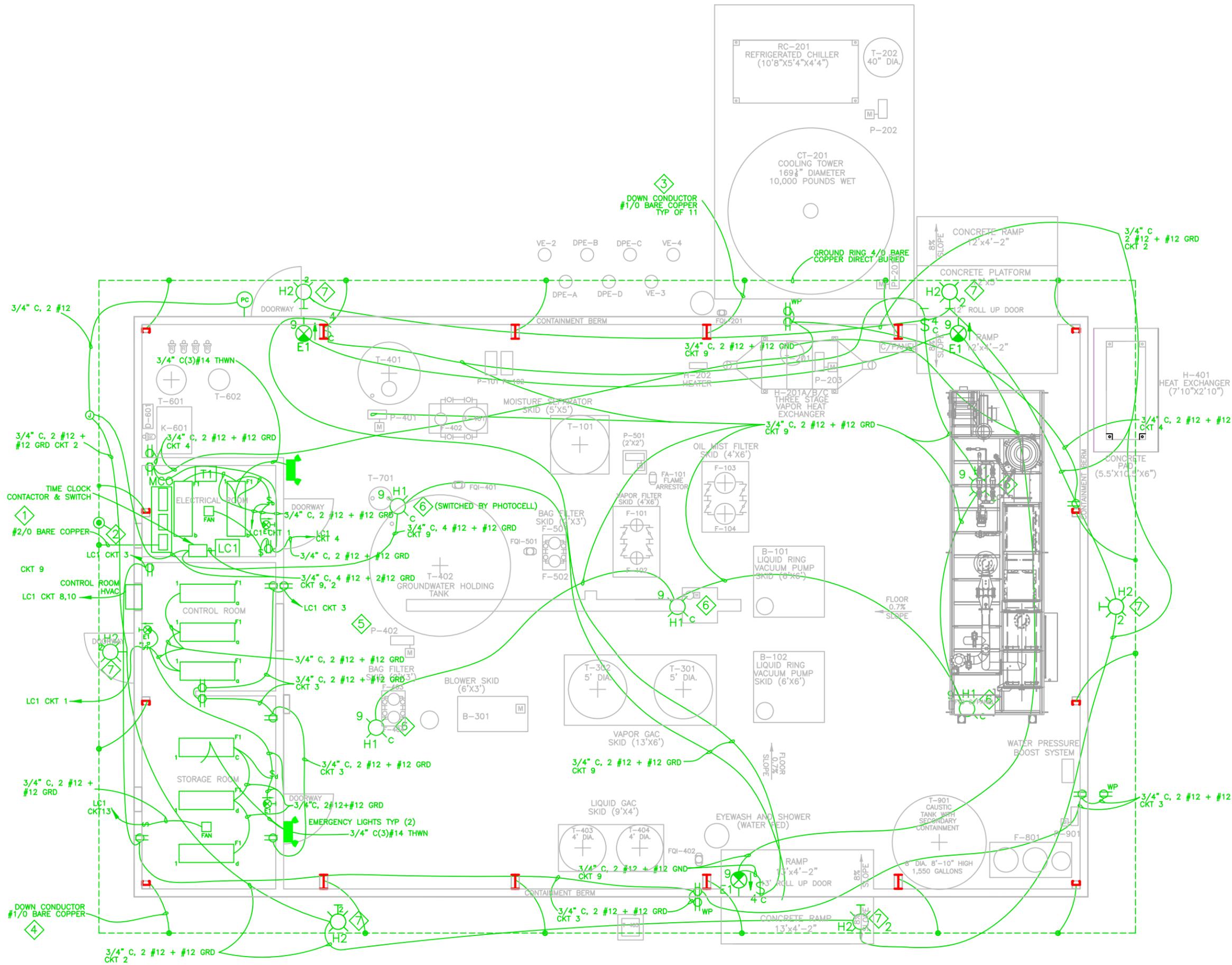


**TREATMENT COMPOUND ELECTRICAL PLAN**

**PEMACO SUPERFUND SITE**  
5050 EAST SLAUSON AVENUE  
MAYWOOD, CALIFORNIA

PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	PREPARED BY: <b>OTIE</b> ONLINE TREATMENT INTEGRATED ELECTRICITY
SCALE: AS SHOWN	APPROVED <b>AS BUILT</b>
DESIGNED: J.S.	DATE: 08/23/2010
DRAWN: CPL	DRAWING
CHECKED: J.W.	E-3

AS-BUILT

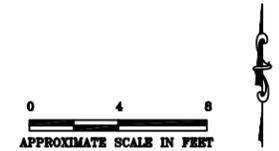


**GENERAL NOTES:**

1. FIXTURES F1 ARE TO BE MOUNTED 8' AFF.
2. FIXTURES H1 ARE TO BE MOUNTED 12' AFF.
3. LOCATE EXIT LIGHTS AT AN ELEVATION OF 8' ABOVE CURB.
4. CONTRACTOR TO PROVIDE FOR SEISMIC PROTECTION OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH SPECIFICATION SECTION 16070A.
5. THE DOOR TO THE ELECTRICAL AND CONTROL ROOM SHOULD BE PROVIDED WITH LOUVERS OR CUT FOR A 1" GAP AT THE BOTTOM.
6. CONNECTIONS MADE TO THE GROUND RING AND ALL OTHER CONNECTIONS, BONDS, AND SPLICER SHALL BE DONE BY EXOTHERMIC WELDS OR BY HIGH COMPRESSION FITTINGS THAT ARE LISTED FOR THE PURPOSE. REFER TO SPECIFICATION SECTION 13100 FOR MORE DETAIL.

**PLAN NOTES:**

1. CONNECTION TO MCC GROUND BUS TO BE PROTECTED IN CONDUIT WHILE THE CONDUCTOR IS ABOVE GRADE. ROUTE VIA SHORTEST PATH OVER THE CONTAINMENT BERM. SEE DETAIL.
2. GROUNDING ELECTRODE AND TEST STATION SEE DETAIL.
3. SEE DETAIL.
4. SEE DETAIL.
5. SEE DETAIL.
6. SEE DETAIL.
7. LOCATE OUTDOOR FIXTURES AT AN ELEVATION OF 8' ABOVE CURB SEE DETAIL.
8. CONTRACTOR TO PROVIDE 2 SPEED EXHAUST FAN, DAYTON MODEL 2D067 OR APPROVED EQUAL.
9. CONTRACTOR TO PROVIDE THERMOSTAT, TS, HONEYWELL MODEL T4039M1004 OR APPROVED EQUAL. SET THE FAN FOR LOW SPEED OPERATION IN THE ELECTRICAL ROOM AND IN THE STORAGE ROOM.



**MISCELLANEOUS ELECTRICAL SECTIONS**

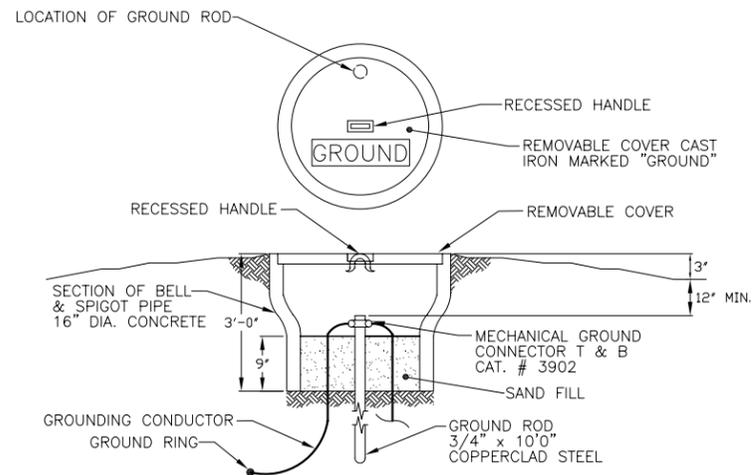
**PEMACO SUPERFUND SITE**  
 5050 EAST SLAUSON AVENUE  
 MAYWOOD, CALIFORNIA

PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	PREPARED BY: <b>OTIE</b> ON-TRAC INTEGRATED TECHNOLOGICAL ENGINEERS
SCALE: AS SHOWN	APPROVED: <b>AS BUILT</b>
DESIGNED: J.S.	DATE: 08/23/2010
DRAWN: C.P.I.	DRAWING
CHECKED: J.W.	E-4

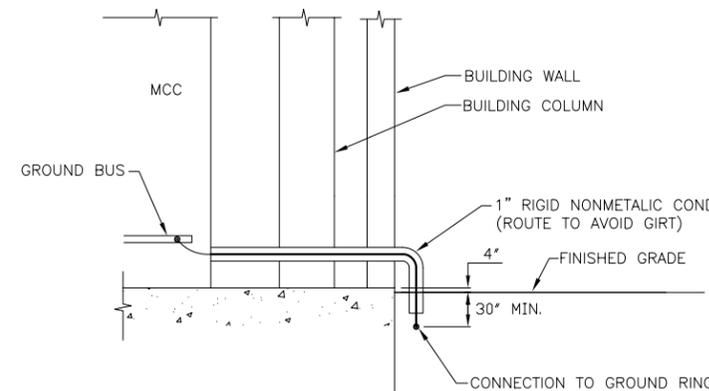
**AS-BUILT**

**NOTES:**

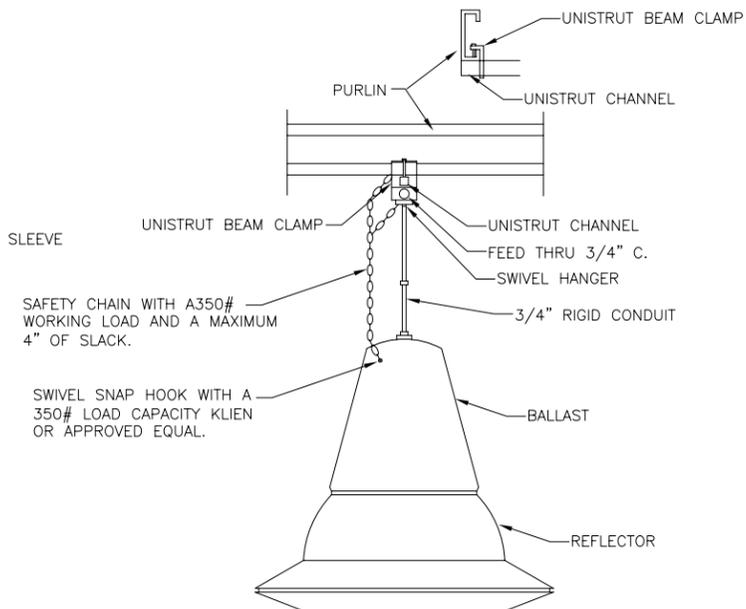
1. SPECIFIC NOTES ARE CALLED OUT ON INDIVIDUAL DRAWING DETAILS.



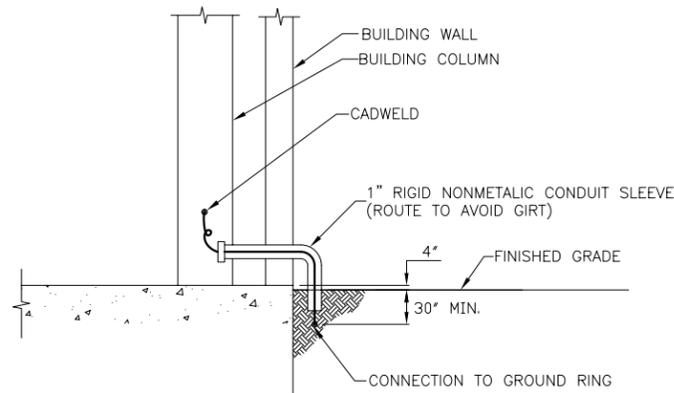
1  
E-5  
GROUNDING TEST STATION DETAIL



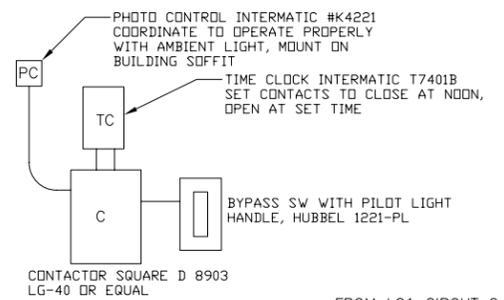
4  
E-5  
MCC OR EQUIPMENT  
GROUND CONNECTION



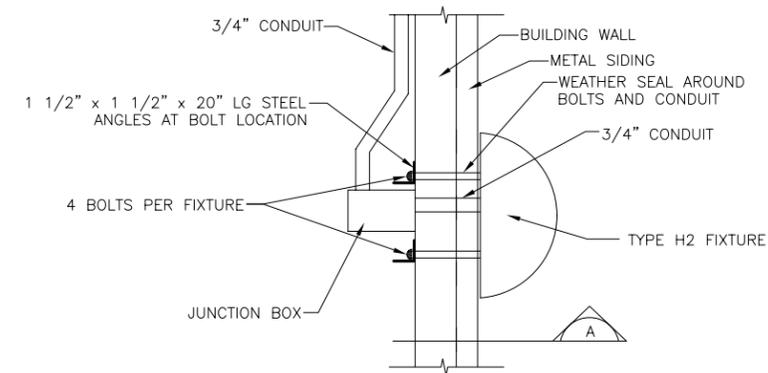
6  
E-5  
FIXTURE TYPE H1 MOUNTING DETAIL



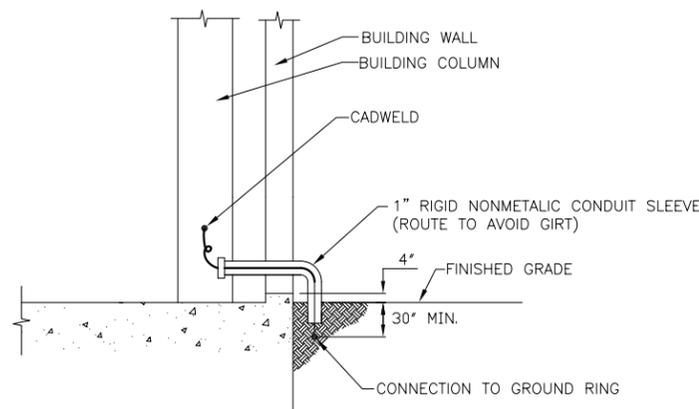
2  
E-5  
STEEL COLUMN OR METAL BUILDING  
GROUND CONNECTION



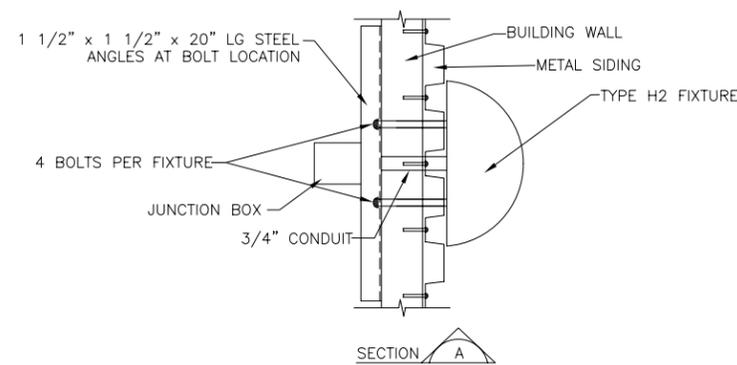
5  
E-5  
PHOTO/TIME CLOCK LIGHTING  
CONTROL WIRING DIAGRAM



7  
E-5  
FIXTURE TYPE H2 MOUNTING DETAIL



3  
E-5  
STEEL COLUMN OR METAL BUILDING  
GROUND CONNECTION



**ELECTRICAL DETAILS**

**PEMACO SUPERFUND SITE**  
5050 EAST SLAUSON AVENUE  
MAYWOOD, CALIFORNIA

PREPARED FOR: U.S. Environmental Protection Agency Region IX San Francisco, California	PREPARED BY: 
SCALE: AS SHOWN	APPROVED <b>AS BUILT</b>
DESIGNED: DRAWN: DC #CRBP CHECKED: J.W.	DATE: 08/23/2010 DRAWING E-5

AS-BUILT