Appendix K
PG&E Engineering Drawings Referenced in this Work Plan

(Drawing Scans on CD Only)

Part 1 of 2

APPENDIX K

PG&E Engineering Drawings Referenced in the Soil RCRA Facility Investigation/Remedial Investigation Work Plan

Soil RCRA Facility Investigation/Remedial Investigation Work Plan,

Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

No.	Section - Text	Engineer Drawing No.	Title	Date	Source
1	Appendix B - SubAppendix B2	485352	Location Plan of Tanks, Equipment & Piping, Waste Water Well Disposal System- Areas 13 & 14, Topock Compressor Station Gas Operations.	2001	PG&E
2	Appendix B - SubAppendix B3	485349	Piping Plan for Waste Water Well Disposal System Area No. 5, Topock Compressor Station, Gas Operations.	Febuary 25, 1970	PG&E
3	Appendix B - SubAppendix B3	485352	Location Plan of Tanks, Equipment & Piping, Waste Water Well Disposal System – Areas 13 & 14 Topock Compressor Station, Gas Operations.	No date	PG&E
4	Appendix B - SubAppendix B7	482629, Rev. 5	Sewers, Domestic, Utility & Fire Water System, Topock Compressor Station.	No date (original drawing dated, January 9, 1957)	PG&E
5	Appendix B - SubAppendix B8	482629, Rev. 5	Sewers, Domestic, Utility & Fire Water System, Topock Compressor Station.	No date (original drawing dated, January 9, 1957)	PG&E
6	Appendix B - SubAppendix B9	383318, Rev. 1	Floor Plan, Section and Details, Chemical Storage Building, Topock Compressor Station.	April 8, 1953	PG&E
7	Appendix B - SubAppendix B14	481785, Rev. 22	Sewers & Drains, Topock Compressor Station.	December 11, 1967	PG&E
8	Appendix B - SubAppendix B16	481878, Rev. 7	Foundation for Jacket Cooler, Auxiliary Cooler & Hot Well, Topock Compressor Station.	February 2, 1954	PG&E
9	Appendix B - SubAppendix B16	484387, Rev. 2	Foundation Plan and Piping Supports, 1967 Construction, Topock Compressor Station.	May 2, 1967	PG&E
10	Appendix B - SubAppendix B17	481785, Rev. 22	Sewers & Drains, Topock Compressor Station.	December 11, 1967	PG&E
11	Appendix B - SubAppendix B17	387706, Rev. 2	Elementary-Mechanical Drain and Sewer Systems, Topock Compressor Station, Gas Operations.	June 16, 1988	PG&E
12	Appendix B - SubAppendix B18	580855, Rev. 4	Topography Colorado River Crossing to Topock Compressor Station	January 17, 1957	PG&E
13	Appendix B - SubAppendix B20	482717	Plan and Details, Fdn. for Bulk Chemical Storage, Topock Compressor Station. (no revision number)	February 28, 1957	PG&E
14	Appendix B - SubAppendix B20	481775, Rev. 7	Piping Plan, Water Softening Area No.5, Topock Compressor Station.	March 1, 1960	PG&E
15	Appendix B - SubAppendix B20	481794, Rev. 5	Electrical Layout & Details, Water Softener Building, Topock Compressor Station.	Corrected July 28, 1970	PG&E

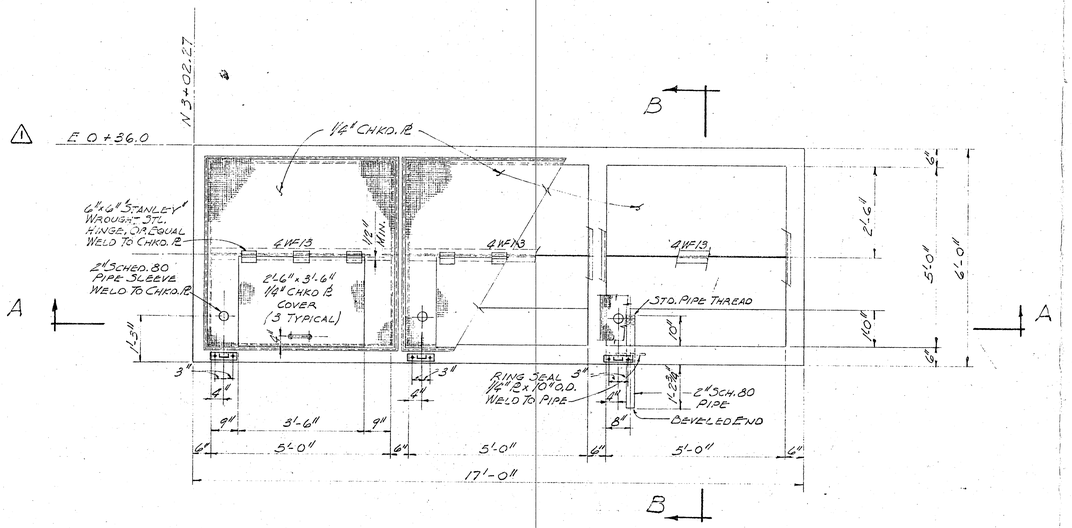
APPENDIX K

PG&E Engineering Drawings Referenced in the Soil RCRA Facility Investigation/Remedial Investigation Work Plan

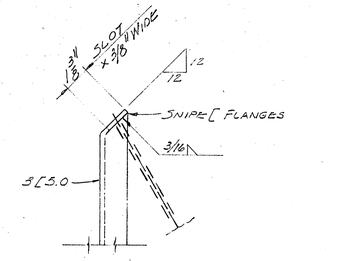
Soil RCRA Facility Investigation/Remedial Investigation Work Plan,

Pacific Gas and Electric Company, Topock Compressor Station, Needles, California

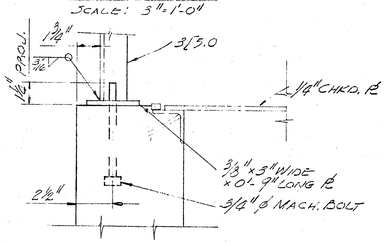
No.	Section - Text	Engineer Drawing No.	Title	Date	Source
16	Appendix B - SubAppendix B20	485349	Piping Plan for Waste Water Well Disposal System Area No. 5, Topock Compressor Station, Gas Operations.	February 25, 1970 (no revision number)	PG&E
17	Appendix B - SubAppendix B20	482629, Rev. 5	Sewers, Domestic, Utility & Fire Water System, Topock Compressor Station.	No revision date (original drawing dated January 9, 1957)	PG&E
18	Appendix B - SubAppendix B21	481785, Rev. 22	Sewers and Drains, Topock Compressor Station.	December 11, 1967	PG&E
19	Appendix B - SubAppendix B21	382956, Rev. 1	Plan and Details of Oil-Water Separator, Topock Compressor Station.	April 21, 1970	PG&E
20	Appendix B - SubAppendix B21	482429, Rev. 12	Piping Plan - Area No. 11, Scrubber Area, Topock Compressor Station.	June 5, 1993	PG&E
21	Appendix B - SubAppendix B22	482377, Rev. 1	Compressor Foundation Plan and Details, Compressor Building Expansion, Topock Compressor Station.	January 28, 1953	PG&E
22	Appendix B - SubAppendix B23	382914, Rev. 1	Scrubber Oil Sump, Topock Compressor Station.	March 13, 1951	PG&E
23	Appendix B - SubAppendix B23	481766, Rev. 21	Piping Plan at Scurbber (Typical) and Oil Sump – Area No. 2, Topock Compressor Station.	August 26, 1994	PG&E
24	Appendix B - SubAppendix B25	485353, Rev. 0 (As Built)	Elevations and Details of Tanks, Equipment and Piping for Waste Water Well Disposal System – Areas 13 & 14, Topock Compressor Station.	August 1, 1970	PG&E
25	Appendix B - SubAppendix B25	382956, Rev. 1	Plan & Details of Oil-Water Separator, Topock Compressor Station.	April 21, 1970	PG&E
26	Appendix B - SubAppendix B25	386121, Rev. 1	Flow Diagram, Waste Water Treatment and Disposal System, Topock Compressor Station.	October 1982 (original drawing dated April 9, 1970)	PG&E
27	Appendix B - SubAppendix B25	481785, Rev. 27	Sewers and Drains, Topock Compressor Station.	March 29, 1991	PG&E



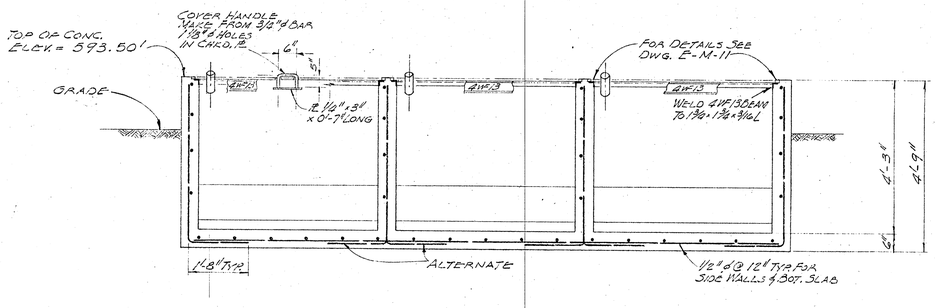
PLAN
SCALE: 1/2" = 1'-0"



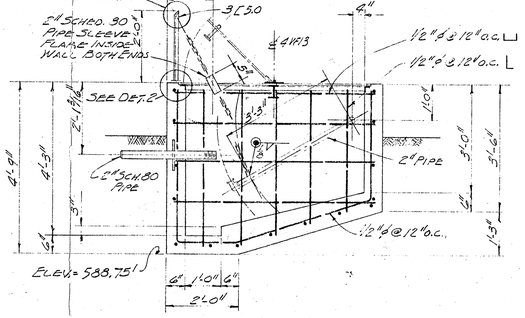
DETAIL 1
SCALE: 3" = 1'-0"



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



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



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

LIST OF MATERIAL

ITEM	QUAN.	DESCRIPTION		ORDER NO.
1	5	CU. YDS. CONCRETE	CEMENT	150-045
			AGGREGATE	150-046
2	1 LOT	REINFORCING STEEL		150-040
3	16	LIN. FT. 1/4" x 5'-2 1/2" WIDE CHKD. PL		150-049
4	63	LIN. FT. FABRICATED L 1 3/8" x 1 3/8" x 3/16" COMPLETE WITH ANCHORS & 3/16" x 1/2" DIA. PER DWG. E-M-11.		150-049
5	9	6"x6" "STANLEY" WROUGHT STEEL HINGE, OR EQUAL		150-048
6	24	LIN. FT. 3/16" COIL CHAIN		150-048
7	6	3/4" ø x 0'-8" (L) LONG MACH. BOLT WITH 1-C, 2.5 F HEX. NUT		150-048
8	4	LIN. FT. 2" SCHED. 80 PIPE		FIELD
9	15	LIN. FT. 4 WF 13		150-049
10	3	LIN. FT. 3/8" x 3" WIDE STL. PL.		150-049
11	7	LIN. FT. 3 [5.0		150-049
12	3	1/4" STL. SEALRING 2 1/2" I.D. x 10" O.D.		150-049

GENERAL NOTES

1. FOR DESIGN & CONSTRUCTION NOTES SEE DWG. # 081850.

REFERENCE DRAWINGS

PIPING PLAN AT SCRUBBER (TYPICAL) & OIL SUMP ARE: No.	481765
TYPICAL FLOOR PLATE DETAILS	E-M-11
PLOT PLAN	481751
DESIGN & CONSTRUCTION NOTES FOR CONC. DWGS.	081850

NO	DATE	DESCRIPTION	APPRD
2	3/12/51	CHANGED COORDINATE FROM "E. 0+32.00 TO E. 0+36.00"	
1	1/10/51	ISSUED FOR CONSTRUCTION	

TABLE OF CHANGES

APPROVED BY — GM 113755

DRAWING LIST

BY
DR. EMS
CH.
O.K. GPS
DATE 1-4-51

SCALES
AS SHOWN

SCRUBBER OIL SUMP
TOPOCK COMPRESSOR STATION

PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO CALIFORNIA

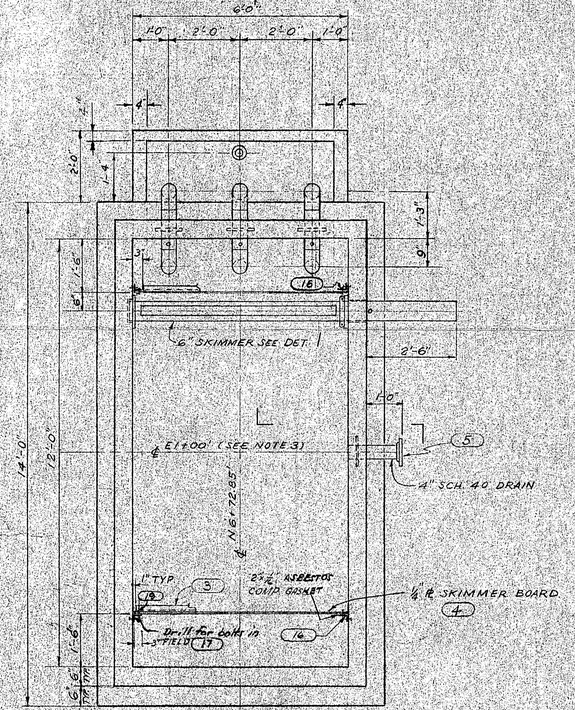
BILL OF MATERIAL

SUPERSEDES
SUPERSEDED BY

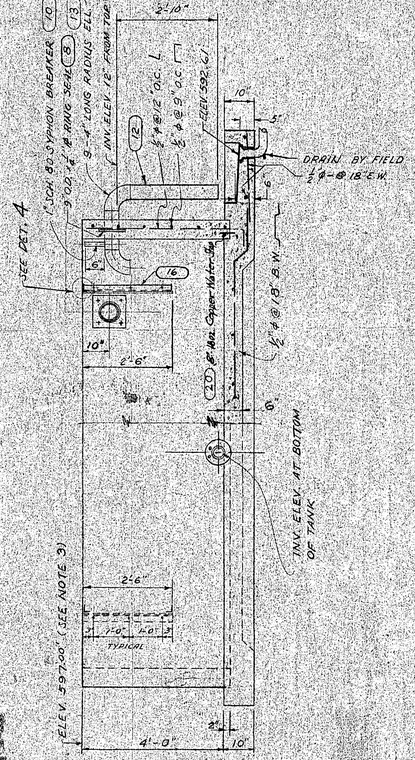
SHEET NO. — SHEETS

DRAWING NUMBER 382914 — CHANGE 1

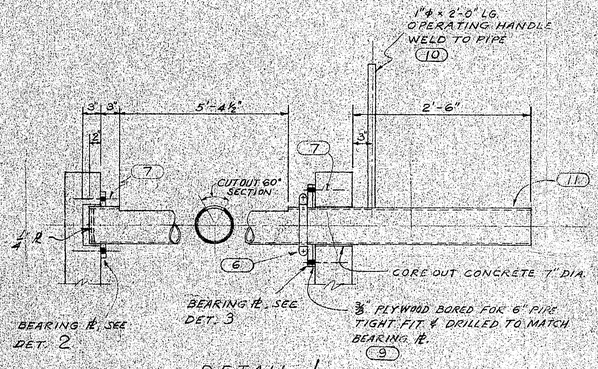
382914



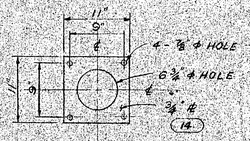
PLAN



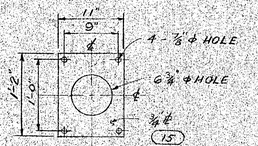
A-A



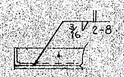
DETAIL 1
SKIM PIPE
SCALE 1" = 1'-0"



DETAIL 2
SCALE 1" = 1'-0"



DETAIL 3
SCALE 1" = 1'-0"



DETAIL 4
NO SCALE

LIST OF MATERIAL

ITEM	QUAN	DESCRIPTION	ORDER NO
1	6	CU. YD. CONCRETE	Field
2	1 LOT	REINF. STL AS SHOWN	150,040
3	24	LIN. FT. L 2 x 2 x ¼	150,119
4	19	LIN. FT. ℄ 30 x ½	150,119
5	1	4" 150# F.S. SO. FLANGE, F.F.	150,119
6	1	PIPE CLAMP CRANE #212G OR EQ.	150,119
7	8	⅜"ϕ x 6" LG. MACH. BOLT WITH 1 C.P.S.F. HEX NUT	150,047
8	4	3"ϕ x ½" ℄	150,119
9	1	PC. ⅜ PLYWOOD 11" x 1'-2"	Field
10	4	LIN. FT. 1" SCH. 80 STL. PIPE	150,119
11	10	LIN. FT. 6" SCH. 40 STL. PIPE	150,119
12	11	LIN. FT. 4" SCH. 40 STL. PIPE	150,119
13	6	4" STD. WT. F.S. WELD ELL. L.R.	150,119
14	1	PC. PLATE 11 x ⅜ x 0'-11" LG.	150,119
15	1	PC. PLATE 11 x ⅜ x 1'-2" LG.	150,119
16	10	LIN. FT. L 3 x 2 x ¼	150,119
17	12	½"ϕ x 6" LG. MACH. BOLT WITH 1 C.P.S.F. HEX NUT	150,047
18	4	2½ x ½" ASBESTOS COMP GASKET 2"C" ℄	150,119
19	12	⅝"ϕ x 1½ Mach. Bolt with 1 C.P.S.F. Hex Nut	150,047
20	40	lin ft 5" wide 18 ounce copper sheet	150,119

DESIGN & CONSTRUCTION NOTES

1. FOR DESIGN & CONSTRUCTION NOTES SEE DWG NO. 081850
2. REINF. STL ON ℄ OF WALLS & SLAB
3. EAST COORDINATE AND ELEVATION OF STRUCTURE SUBJECT TO CHANGE IN FIELD DEPENDING UPON GRADE ELEVATION. BOTTOM OF STRUCTURE MUST REST ON FIRM GROUND.

REFERENCE DRAWINGS

PLOT PLAN	481751
DESIGN & CONSTRUCTION NOTES FOR CONCRETE DWGS	081850
SEWERS & DRAINS	481785
LOCATION PLAN	485352

382956

⚠ NOTE:
This dwg. was not revised to meet construction changes required for Waste Water Disposal System installation on GM 172520.

BECHTEL

NO	DATE	DESCRIPTION	APPRD
1	4-21-70	Note & Reference added	RC
⚠	1/6/61	ISSUED FOR CONSTRUCTION	RC

TABLE OF CHANGES

APPROVED BY

GM 113785 DRAWING LIST

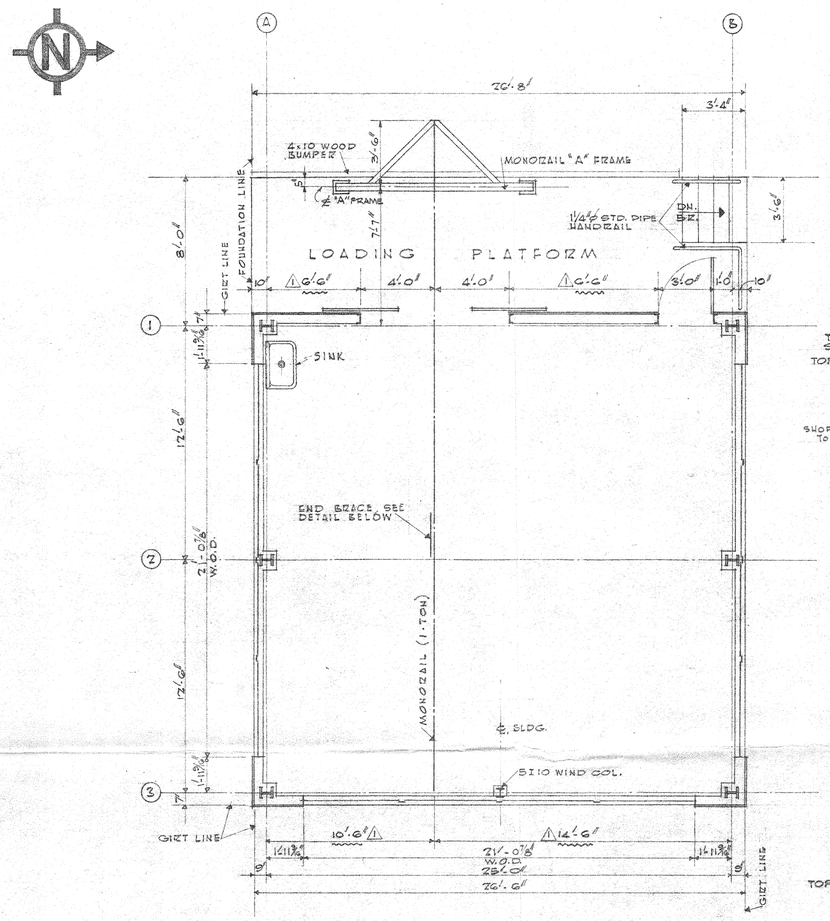
BY
DR. K. Lee-Fu
CH.
DA. C.P.S.
DATE 3-25-57
SCALES ½"=1'-0" & AS Noted

PLAN & DETAILS OF OIL-WATER SEPARATOR
TOPOCK COMPRESSOR STATION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

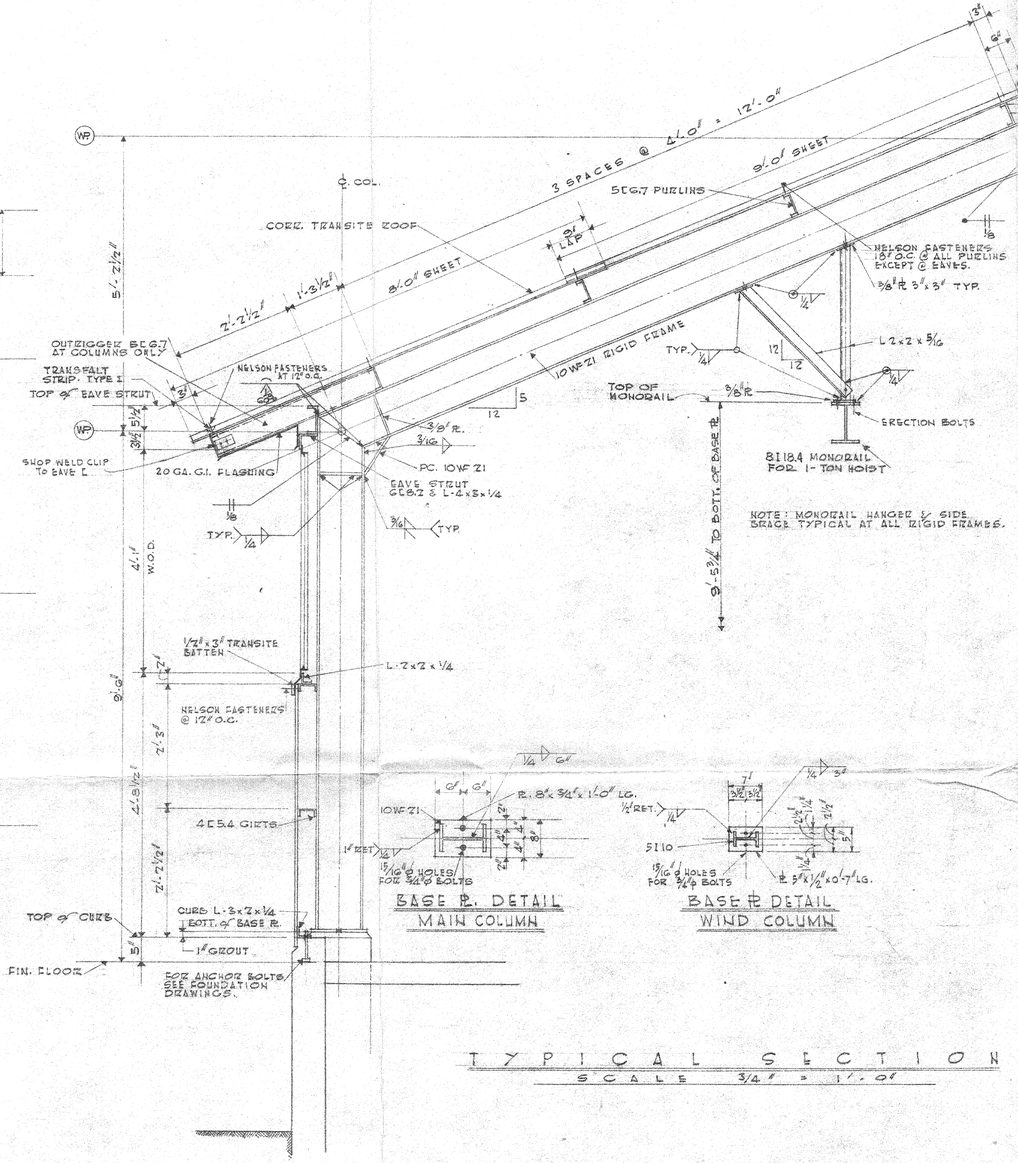
BILL OF MATERIAL

SUPERSEDES
SUPERSEDED BY

SHEET NO.	SHEETS
DRAWING NUMBER	CHANGE
382956	1 0

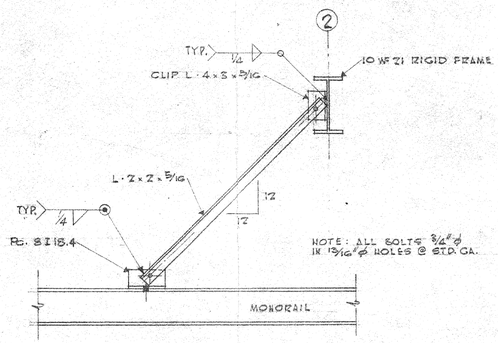


FLOOR PLAN
SCALE 1/4" = 1'-0"



TYPICAL SECTION
SCALE 3/4" = 1'-0"





DETAIL of MONORAIL END BRACE
NOTE: SIDE BRACE & HANGER NOT SHOWN, SEE TYPICAL SECTION
SCALE 3/4" = 1'-0"

LIST of MATERIAL

ITEM	QUANT.	DESCRIPTION	ORDER Nº
1	1 LOT	FABRICATE & DELIVER TO JOB SITE, 1 RIGID FRAME BUILDING, COMPLETE WITH ALL BOLTS, FASTENINGS & ACCESSORIES, AS SHOWN ON DRAWINGS 383318, 383319, 383321 & 383323, AND AS FOLLOWS: (a) STEEL FRAME INCL. MONORAIL & A-FRAME. (b) CEMENT-ASBESTOS ROOFING & SIDING INCL. ACCESSORIES & FASTENINGS. (c) DOORS & WINDOWS COMPLETE WITH HARDWARE. (d) ALL SHEET METAL WORK INCL. LOUVERS. (e) FLOOR GUIDE FOR SLIDING DOOR (TO BE INSTALLED BY OTHERS.) WORK NOT INCLUDED: (a) CONC. FOUNDATION & FLOOR SLAB INCLUDING ALL ANCHOR BOLTS IMBEDDED IN CONCRETE. (b) WOOD BUMPER AT PLATFORM. (c) PIPE HANDRAILS. (d) ONE TON HOIST. (e) GLASS & GLAZING.	TX-84
2	1 LOT	GLAZING FOR SASH & DOORS	TX-SUB-2

SPECIFICATIONS & GENERAL NOTES

NOTE: MANUFACTURERS LISTED BELOW INDICATE QUALITY. SUBSTITUTIONS SHALL BE SUBMITTED FOR APPROVAL.

1. EXTERIOR WALL COVERING & BATTENS SHALL BE 1/2ø THICK FLAT TRANSITE ASBESTOS SHEETS, JOHNS-MANVILLE, OR EQUAL. INSTALLATION & FASTENERS SPACING TO CONFORM TO JOHNS-MANVILLE RECOMMENDATIONS.
2. ROOF COVERING SHALL BE 4.2ø CORRUGATED TRANSITE, JOHNS-MANVILLE, OR EQUAL. INSTALLATION & FASTENER SPACING TO CONFORM TO JOHNS-MANVILLE RECOMMENDATIONS.
3. SIDE WALL FASTENINGS SHALL BE NELSON WELDING STUDS, WHERE INDICATED ON DRAWINGS.
   a. SINGLE THICKNESS TRANSITE TO TAKE STUDS ½-20 (1ø LG.) CADMIUM PLATED, SLUG LOADED, TYPE KD, GROOVED & THREADED, 5ø THREADS, WITH NELSON NUT SP 20 F & 7/8ø O.D. FLAT LEAD WASHER.
   b. DOUBLE THICKNESS TRANSITE TO TAKE STUDS ½-20 (1ø LG.) CADMIUM PLATED, SLUG LOADED, WITH NELSON F.H. ROOF NUTS SP 21 F & 7/8ø O.D. FLAT LEAD WASHERS.
4. ROOF FASTENINGS. CORRUGATED TRANSITE ROOF SHEETS SHALL BE SECURED TO PURLINS WITH ½-20 (1¾ø LG.) CADMIUM PLATED NELSON WELDING STUDS, SLUG LOADED, WITH NELSON ZINC ROOF NUTS, LEAD COATED, HEX. HEAD, AS FOLLOWS.
   a. SINGLE LAP SP-20
   b. DOUBLE LAP SP-21
   c. TRIPLE LAP SP-22
   SIDE LAP FASTENINGS BETWEEN PURLINS, SHALL BE ½-20 (1½ø LG.) CADMIUM PLATED BOLTS & NELSON ZINC ROOF NUTS, LEAD COATED HEX. HEAD, SP-20, W/ SMOOTH ROLLED ROOFING WASHERS, 24-ST-S @ UNDERSIDE OF TRANSITE.
5. SLIDING DOOR SHALL BE SHOP FABRICATED, ALL STEEL, WELDED DOOR AS DETAILED, DWG. 383321, TO BE INSTALLED BY OTHERS. DOOR TO BE COMPLETE WITH FOLLOWING HARDWARE, FURNISHED BY WILCOX, OR EQUAL.
   a. BALL BEARING HANGERS Nº 29½ S, WITH RIGID FRAME TRUCKS, NO APRON REQUIRED.
   b. TROLLEY TRACK Nº 23Z COMPLETE WITH OVERHEAD BRACKETS
   c. FLOOR DOOR GUIDE Nº 73G
   d. WEATHERSTRIPPED WITH PARKER (OR EQUAL) Nº 123 DOUBLE HEMMED SPRING BRONZE AS PER DETAILS.
   e. FABRICATOR SHALL PROVIDE JUNIOR BOLTING DEVICE.
6. SWING DOOR SHALL BE TRUSCON (OR EQUAL) INDUSTRIAL STEEL DOOR SERIES 31, Nº 3070 WITH UPPER PANEL FITTED FOR GLAZING AND COMPLETE WITH FOLLOWING HARDWARE.
   a. 1½ PR. HINGES, P-2986
   b. LEVER LATCH, P-3578
7. WINDOWS SHALL BE COMMERCIAL PROJECTED STEEL WINDOWS, TRUSCON OR EQUAL, Nº A3316I COMPLETE WITH CLIPS, ACCESSORIES, ETC. INSTALLED IN ACCORDANCE WITH MANUFACTURER'S STANDARD PRACTICE.

DESIGN & CONSTRUCTION NOTES

1. DESIGN OF STEEL STRUCTURE IS IN ACCORDANCE WITH THE UNIFORM BUILDING CODE, 1952 EDITION.
2. FABRICATION & ERECTION SHALL BE IN ACCORDANCE WITH U.B.C. 1952 ED.
3. ALL FIELD CONNECTIONS SHALL BE BOLTED WITH ¾ø UNFINISHED BOLTS EXCEPT AS SHOWN OR NOTED.
4. SHOP CONNECTIONS MAY BE RIVETED OR WELDED, EXC. AS SHOWN OR NOTED.
5. ALL GUSSETS SHALL BE ⅜ø THICK, EXCEPT AS SHOWN OR NOTED.
6. ALL SURFACES SHALL BE SHOP PAINTED WITH 1 COAT OF APPROVED PRIMER, EXCEPT SURFACES TO BE FIELD WELDED WHICH SHALL BE FIELD PAINTED ONE COAT OF APPROVED PRIMER AFTER WELDING.
7. USE A.I.S.C. STD. B. SERIES CONNECTIONS, EXCEPT AS SHOWN OR NOTED.
8. WIND DESIGN LOAD = 30 P.S.F.

APPROVED FOR CONSTRUCTION

REFERENCE DRAWINGS		REFERENCE DRAWINGS	
		PAVING & GRADING	481784
		PLOT PLAN	481751
		DESIGN & CONST. NOTES FOR CONCRETE	081850
		ANCHOR BOLTS	D-Q-504
		ARCHITECTURAL ELEVATIONS	383319
		MISCELLANEOUS DETAILS	383321
DETAILS OF PLUMBING FOR SINK	181378	FOUNDATION PLAN & DETAILS	383323

NO.	DATE	DESCRIPTION	APPRD.
1	4/8/53	REVISED DIMENSIONS	

TABLE OF CHANGES

APPROVED BY

GM 1.6053 DRAWING LIST

BY
DR. L.H.R.S.
CH. G.L.S.
O.K. [illegible]
DATE 2-8-53

SCALE: 1/2"=1'-0" & 3/4"=1'-0"

FLOOR PLAN, SECTION & DETAILS CHEMICAL STORAGE BLDG. TOPOCK COMPRESSOR STATION

PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATERIAL
SUPERSEDES
SUPERSEDED BY
SHEET NO. | SHEETS
DRAWING NUMBER 383318 | CHANGE 1

121982

FRESH WATER
2" 2"
1"
(POWER PERMANENTLY DISCONNECTED)
EVAPORATION PONDS
MOTOR STARTER
INJECTION PUMPS
NC NC
1¼"
AIR RELEASE VALVE
2" 1" STEEL PIPE
MOTOR STARTER
PUMP RUNNING SEQUENCE SWITCH
HLA LLA
2" 1" STEEL PIPE
1/2" VENT 1/2" VENT
2" STEEL PIPE
FILL LINE
1/2" STEEL PIPE
2" STEEL PIPE
GRAVITY FLOW 3" PVC
UNIT #8A UNIT #8B
LIQUID FILTERS
COOLING WATER BLOWDOWN 3" PVC PIPE
COMP. JACKET COOLING WATER
LUBE OIL COOLING WATER
FLOOR DRAIN
PVC PIPE
6"ϕ X 14' STR.
PS
STEEL PIPE GRAVITY FLOW 3"
UNIT #1
3000 GAL. HOLDING TANK
GRAVITY FLOW 3"
UNIT #2
OIL SEPARATOR (EXISTING)
PVC PIPE
3" PUMP
PH 2.9-3.1
PLASTIC COATED ALUMINUM PIPE "IPM"
UNIT #3
CHROME REDUCTION TANK
1/2" PVC
SV *
* PRESSURE REGULATOR
ONE TON * SO_2 TANKS
SAMPLE STREAM
PH SENSOR*
PH CONTROLLER*
UNIT #9
EXISTING WASTE WATER DISPOSAL WELL
WOODEN COVER
4" STEEL PIPE
EFFLUENT
3" 2" DRAIN 4"
UNIT #11
1500 GAL. HOLDING TANK
1/2" FILTER DRAIN & RINSE
1/2" PVC
SAMPLE STREAM
PH SENSOR
PUMP
PH CONTROLLER *
CAUSTIC SODA PUMP
LIQUID CAUSTIC SODA
PLASTIC COATED ALUMINUM PIPE
PH 6.5
SLUDGE COLLECTION SYSTEM
3"
UNIT #5
PRECIPITATOR
1/2" PUMP PRIMING WATER
16" SLUDGE
PUMP RUNNING SEQUENCE SWITCH
HLA LLA
CC
2" PVC
MOTOR STARTER
MOTOR STARTER
2"
SS
SS
PROCESS PUMPS
PSS
2" PVC
LC
MH
SUB PUMP
PLASTIC COATED ALUMINUM PIPE "IPM"
2" PLASTIC FOOT VALVE W/ STRAINER
6" 6"
3" WEIR
GRAVITY FLOW
2" PVC
UNIT #6A
SLUDGE BED (EXISTING)
UNIT #6B
SLUDGE BED
UNIT #4
SEPTIC TANK

LEGEND

SYMBOLS	
	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	CONTROL VALVE DIRECT OPERATED
	CONTROL VALVE
	INSTRUMENT BOARD MOUNTED
	INSTRUMENT LOCALLY MOUNTED
	SOLENOID VALVE, CLOSES ON AIR FAILURE
	INSTRUMENT AIR CONTROL LINE
	ELECTRIC CONTROL LINE
	PRESSURE REGULATOR SELF CONTAINED
	NEEDLE VALVE
	PRESSURE INDICATOR

INSTRUMENTS	
LC	LEVEL CONTROLLER
LLA	LOW LEVEL ALARM
PI	PRESSURE INDICATOR
SV	SOLENOID VALVE
LCV	LEVEL CONTROL VALVE
PS	PRESSURE SWITCH
CC	CONTACT CELL CLOSES PUMP CIRCUIT WHEN WET
HLA	HIGH LEVEL ALARM
PSS	PUMP SUCTION SWITCH

NOTE:
* -INDICATES EQUIPMENT SUPPLIED by LAKEWOOD INSTRUMENTS.

REFERENCE DWGS:
485352 - PIPING - PLAN, AREA 13 & 14
485349 - PIPING - PLAN, AREA 5
485350 - PIPING - SECTIONS & DETAILS, AREA 5
386122 - PIPING - ARRGT, PUMPS & FILTERS

NO	DATE	DESCRIPTION	GM	BY	CH	APPD
1	10-82	FIELD CORRECTED		RDD	MM	

TABLE OF CHANGES

NO	DATE	DESCRIPTION	GM	BY	CH	APPD

TABLE OF CHANGES

APPROVED BY: JK 11/73
GM 172520
SUPV. BY
DSGN.
DR. M. Lehocka
CH.
D.K.
DATE 4-9-70
SCALES

FLOW DIAGRAM
WASTE WATER TREATMENT & DISPOSAL SYSTEM
TOPOCK COMPRESSOR STATION
GAS OPERATIONS
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATERIAL —#—
DRAWING LIST 082272
SUPERSEDES
SUPERSEDED BY
SHEET NO. SHEETS
DRAWING NUMBER 386121 CHANGE 1

PRINTED ON DIEPO NO. 1000H-6 CLEARPRINT FADE-OUT

386121-1

387706 SH.1

SYMBOLS & ABBREVIATIONS
(FOR THIS DRAWING ONLY)

◍ ---	CLEAN OUT
▢ ---	CATCH BASIN/DRAIN BOX
▣ ---	FLOOR DRAIN
◒ ---	HUB DRAIN
⊠ ---	SUMP PIT
C.I. ---	CAST IRON
C.S. ---	CARBON STEEL
V.C. ---	VITRIFIED CLAY
P.V.C. ---	POLY VINYL CHLORIDE
HDPE ---	HIGH DENSITY POLYETHYLENE

EVAPORATION PONDS

POND 4 | POND 3 | POND 2 | POND 1

LI 110 B2

D-222

3000 GAL. HOLDING TANK

1½" C.S. | 3" C.S. | 3" P.V.C. | 3" | 2" P.V.C.

SEE DETAIL B ON SHEET 2

OILY WATER SEPARATOR

HOLDING TANK

TRANSFER SUMP

SEE DETAIL C ON SHEET 2

3" P.V.C.

E/M(3C2)

E/M(3B2)

8"V.C.

10"V.C.

TO OUTFALL

"A" SCRUBBERS

"B" SCRUBBERS

3" P.V.C. DRAIN LINE

8" V.C.

FROM "A" COOLING TOWER 387707 SH.2 (C-1) (BLOWDOWN LINE) — 1½"

FROM RAW WATER TANK 387710 SH.1 (E-1) (WATER DRAIN) — 103-6"-E

* "A" COOLING TOWER

MAIN COMPRESSOR BUILDING

RESTROOM

K-1 | K-2 | K-3 | K-4 | K-5 | K-6 | K-7 | K-8 | K-9 | K-10

*DRAIN #2 | *DRAIN #3 | *DRAIN #4 | *DRAIN #5 | *DRAIN #6 | *DRAIN #7 | *DRAIN #8 | *DRAIN #9 | *DRAIN #10 | *DRAIN #11

OPEN DRAIN

FROM "B" COOLING TOWER 387707 SH.8 (C-1) (BLOWDOWN LINE) — 1½"

* "B" COOLING TOWER

TO OUTFALL

FROM COMPRESSOR K-1 387707 SH.3 (D-1) (JACKET WATER DRAIN) — 1½"

FROM FIRE WATER PUMPS 387710 SH.1 (D-10) (WATER DRAIN) — ½"

FROM RAW WATER PUMPS 387711 SH.1 (E-1) (WATER DRAIN) — 1"

WATER SOFTENER BLDG.

AUXILIARY BLDG. — RESTROOM | SHOP

† DRAIN #1

FROM AUX. GENERATORS 387707 SH.9 (D-10) (DRAIN LINE) — 1½"

FROM DIRTY OIL SUMP 387708 SH.2 (A-1) (DRAIN LINE) — 2"

SEPTIC TANK

LEACH FIELD

TO OUTFALL

SEE DETAIL A ON SHEET 2

DIRTY OIL SUMP

OIL STORAGE TANKS

683-4"-E

AUX. JW PUMPS | AUX. LOCW PUMPS

AUX. COOLER

* DRAIN #12 | * DRAIN #13 | * DRAIN #14 | * DRAIN #15 | * DRAIN #16 | * DRAIN #17 | * DRAIN #18 | * DRAIN #19

2" C.S.

J.W. COOLER

MAIN JACKET WATER SURGE TANKS

* DRAIN #20 | * DRAIN #21 | * DRAIN #22 | * DRAIN #23

FROM JW SURGE TANKS 387707 SH.13 (B-1) (JACKET WATER DRAIN) — 1½"

* DRAIN #24 | * DRAIN #25 | * DRAIN #26 | * DRAIN #27 | * DRAIN #28 | * DRAIN #29 | * DRAIN #30 | * DRAIN #31

MAIN JACKET WATER PUMPS

OFFICE

SEPTIC TANK

LEACH PITS

REFERENCE DRAWINGS

DWG. NO.	TITLE
481750	PIPING SPECIFICATIONS
† 387708	ELEMENTARY MECHANICAL; UTILITY WATER SYSTEM
* 387707	ELEMENTARY MECHANICAL; COOLING WATER SYSTEM
387701	ELEMENTARY MECHANICAL; USE OF SYMBOLS & NOMENCLATURE
387700	ELEMENTARY MECHANICAL; DRAWING LIST
183296	GENERAL EQUIPMENT LIST

NO.	DATE	DESCRIPTION	GM/SPEC	DWN.	CHKD.	SUPV.	APVD. BY
2	6-16-88	REVISED WASTEWATER MANAGEMENT SYSTEM	194721	I.P.	#		
1	1-5-87	ISSUED FOR USE/AS-BUILT	4530762	KC			

REVISIONS

THIS DRAWING MUST BE UPDATED ON AN AUTOCAD T.M. CAD (COMPUTER AIDED DRAFTING) SYSTEM OR SIMILAR MINI-BASED CAD SYSTEM. FAILURE TO DO SO WILL RESULT IN THE PERMANENT LOSS OF EQUIPMENT INFORMATION. SEE DRAWING NOS. 088784 and 088785 FOR INSTRUCTIONS.

APPROVED BY: GM 4530762 | SUPV. | DSGN. TA ENGR | DWN. KOL/KC | CHKD. | O.K. | DATE 9/12/86 | SCALES NONE

TA ENGINEERING CO., INC.
920 COUNTRY CLUB DRIVE
MORAGA, CALIFORNIA

PIPE LINE OPERATIONS

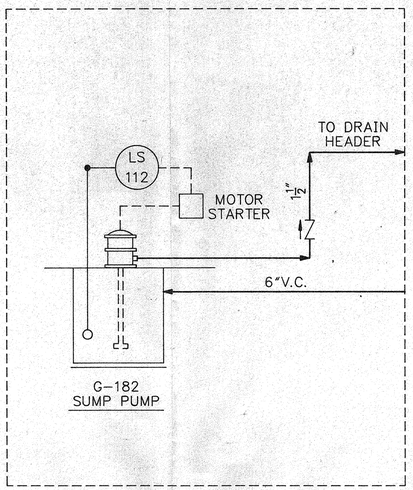
ELEMENTARY-MECHANICAL
DRAIN & SEWER SYSTEMS
TOPOCK COMPRESSOR STATION
GAS OPERATIONS
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

MICROFILM
BILL OF MATL
DWG LIST 387700
SUPSDS
SUPSD BY
SHEET NO. 1 OF 3 SHEETS
387706 REV. 2

387706-1.

387706 SH.2

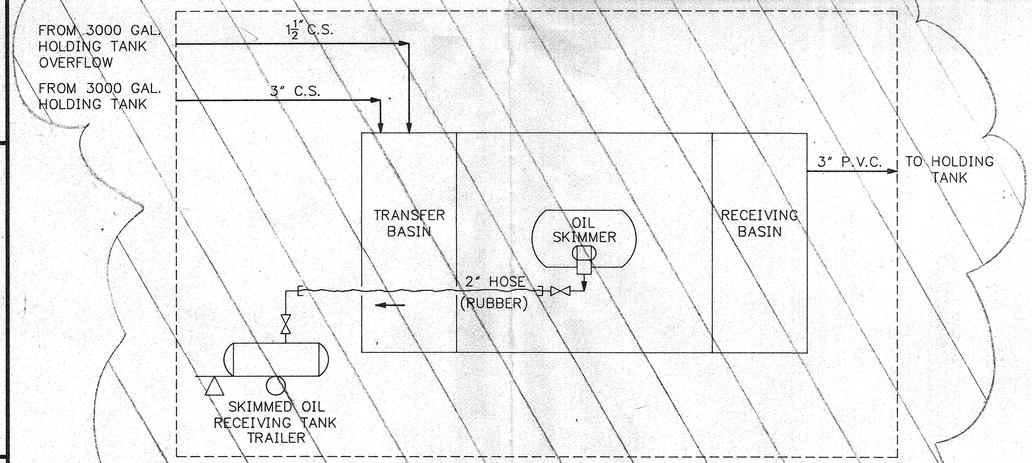
WASHING AREA SUMP PIT



DETAIL A

REFERENCE 387706
SHEET 1, ZONE (A-4)

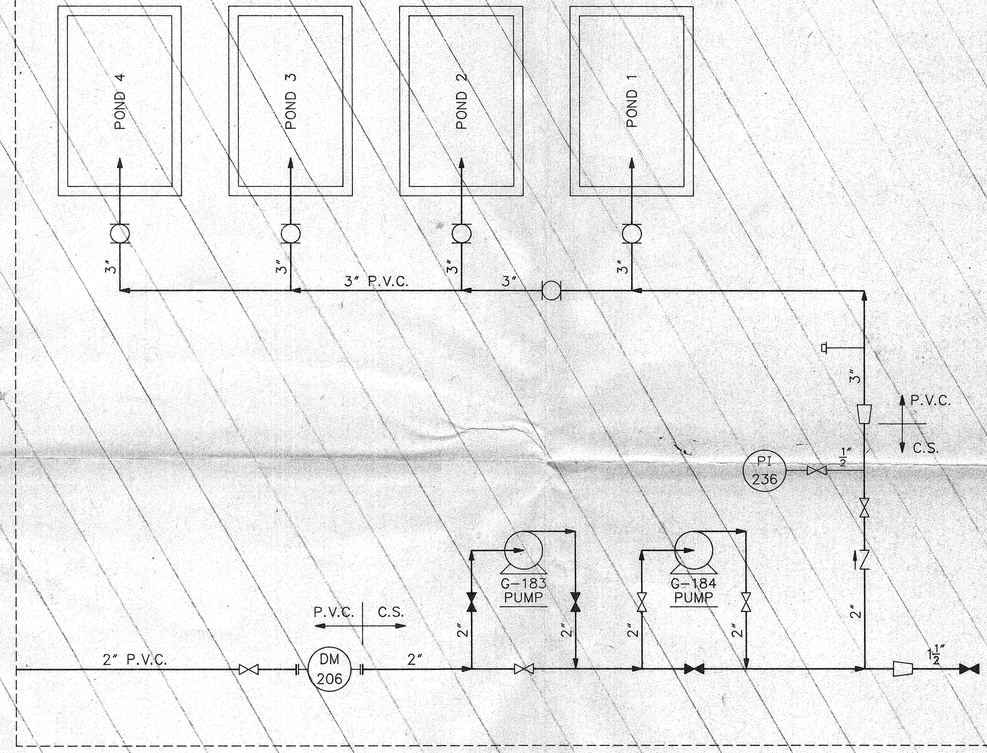
OILY WATER SEPARATOR



DETAIL B

REFERENCE 387706
SHEET 1, ZONE (E-4)

EVAPORATION PONDS



DETAIL C

REFERENCE 387706
SHEET 1, ZONE (E-5)

THIS DRAWING MUST BE UPDATED ON AN AUTOCAD T.R. CAD (COMPUTER AIDED DRAFTING) SYSTEM OR SIMILAR MINI-BASED CAD SYSTEM. FAILURE TO DO SO WILL RESULT IN THE PERMANENT LOSS OF EQUIPMENT INFORMATION. SEE DRAWING NOS. 008784 and 008785 FOR INSTRUCTIONS.

TA ENGINEERING CO., INC.
920 COUNTRY CLUB DRIVE
MORAGA, CALIFORNIA

PIPE LINE OPERATIONS

MICROFILM

387700	ELEMENTARY MECHANICAL; DRAWING LIST
DWG. NO.	TITLE

REFERENCE DRAWINGS

NO.	DATE	DESCRIPTION	GM/SPEC	DWN.	CHKD.	SUPV.	APVD. BY
2	6/16/88	REVISED WASTEWATER MANAGEMENT SYSTEM	1947217	I.P.	M	GM	SJC RSR
1	1-5-87	ISSUED FOR USE/AS-BUILT	4530762	KC	mch	GM	SJC

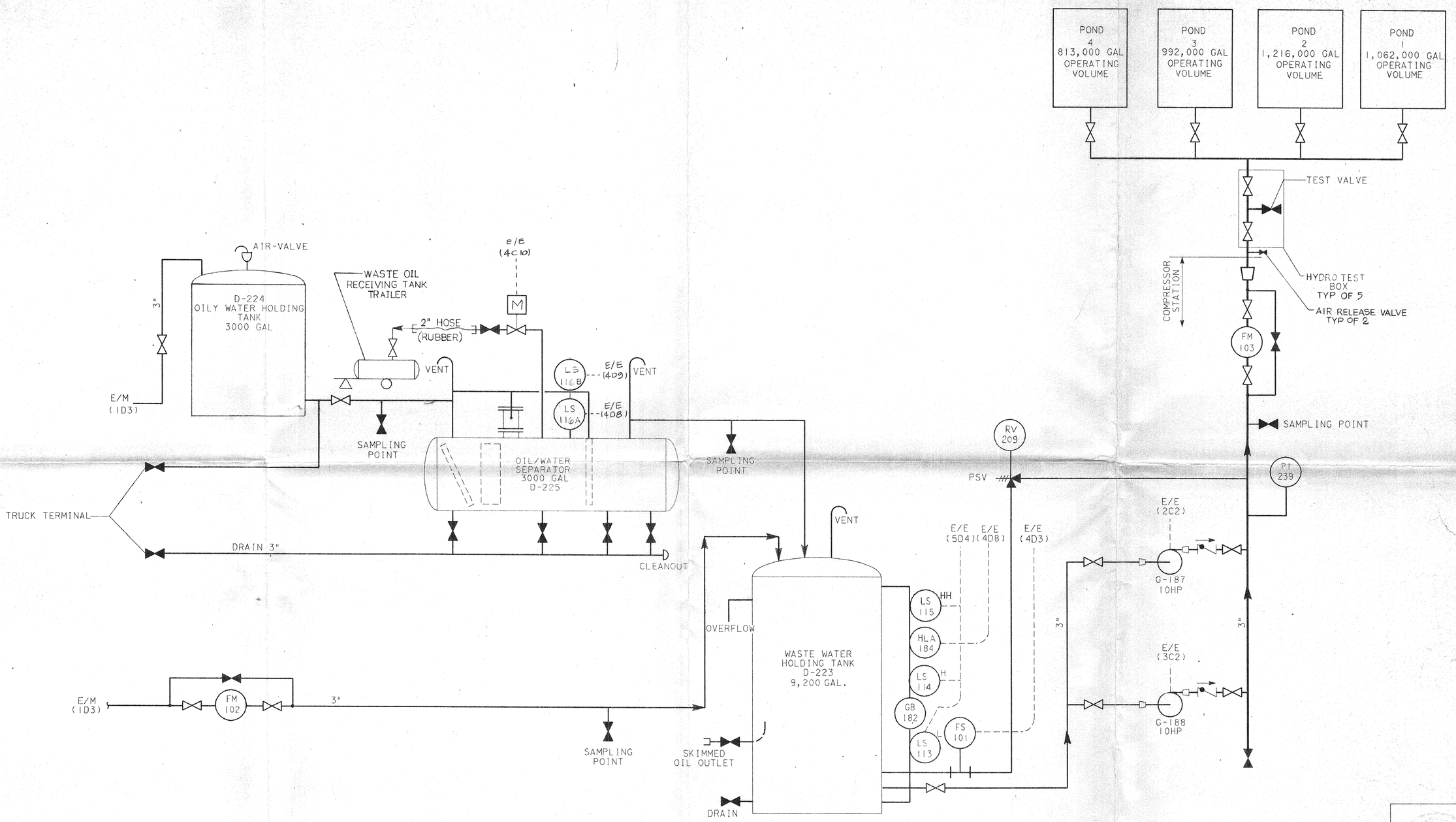
REVISIONS

APPROVED BY: GM 4530762; SUPV. RE; DSGN. TA ENGR; DWN. KOL/KC; CHKD. mch; O.K. ; DATE 9/12/86; SCALES NONE

ELEMENTARY-MECHANICAL
DRAIN & SEWER SYSTEMS, DETAILS
TOPOCK COMPRESSOR STATION
GAS OPERATIONS
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATL
DWG LIST 387700
SUPSDS
SUPSD BY
SHEET NO. 2 OF 3 SHEETS
387706 REV. 2

387706-2



NO.	DATE	DESCRIPTION	GM/SPEC	DWN	CHKD	SUPV	APVD BY
2	6-16-88	ISSUED FOR USE	1947217	GLN			BJC RSR

REVISIONS

APPROVED BY	BJC, RSR
GM	1947217
SUPVC.	FORMOSO
DSGNG.	SLUTSKY
DWN	G. NORRIS
CHKD	
OK	
DATE	5-10-88
SCALES	NONE

PIPE LINE OPERATIONS

ELEMENTARY-MECHANICAL
WASTEWATER MANAGEMENT SYSTEM
TOPOCK COMPRESSOR STATION

GAS OPERATIONS
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

MICROFILM	
BILL OF MATL	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO.	3 OF 3 SHEETS

387706 REV 2

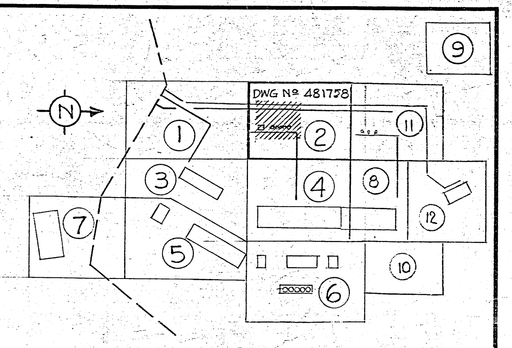
C100,160J387706SH3 .G11 05-5-88 GLN

STD08

BILL OF MATERIAL DET. 1

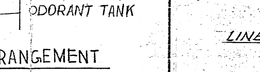
ITEM	QUAN.	DESCRIPTION	REMARKS
1	3	VALVE, CHAPMAN #960, SCRWD. GATE	3/4"
2	1	THREADOLET, OUTLET, BONNEY FORGE	3/4"x12"
3	4	UNION, STL. SCRWD, FEM.	3/4"
4	9	ELBOW, 90°, E.H. SCRWED.	3/4"
5	1	CAP, WELD, E.H.	12"
6	2	TEE, SCRWED, E.H.	1 1/2"
7	3	BUSHING, STL. HEX.	1 1/2" x 3/4"
8	4	BOLT, J" ANCHOR	5/8" x 12"
9	1	PLATE, STL.	2'x3'x 1/2"
10	240 FT.	PIPE, STL. GAS LINE X-H, BLACK	3/4"
11	4 FT.	" " " " "	4"
12	4 FT.	" " " " "	12"
13	1 FT.	" " " " " [CASING]	12"
14	70 SUR.	CONCRETE	

KEY PIPING PLAN



GENERAL NOTES

1. ALL FLANGES (EXCEPT WHERE NOTED) ARE WELD NECK WITH BORE SAME AS I.D. OF CONNECTING PIPE AND FACING SAME AS THAT OF ADJOINING FLANGE.
2. ALL WELDELLS (EXCEPT WHERE NOTED) ARE 90° STD. WT. LONG RADIUS.
3. SCREWED FITTINGS (EXCEPT WHERE NOTED) ARE:
   3000# F.S. IN SPECIFICATIONS A, B, C, D.
   150# M.I. " " " E.
   3000# F.S. " " " F - FOR UTILITY AIR.
   150# M.I. " " " F - FOR INSTRUMENT AIR.
4. SCREWED UNIONS (EXCEPT WHERE NOTED) ARE:
   3000# F.S. FEMALE, STL. TO STL. SEAT, IN SPECS. A, B, C, D.
   300# M.I. MALE, BRASS TO IRON SEAT, IN SPEC. E.
   3000# F.S. FEMALE, STL. TO STL. SEAT, IN SPECS. F-FOR UTILITY AIR.
   300# M.I. MALE, BRASS TO IRON SEAT, IN SPECS. F-FOR INST. AIR.
5. BALLOON LEGEND



6. PROVIDE PLUGS FOR ALL VENT & DRAIN VALVES ITEM NO (10) UNLESS NOTED OTHERWISE.
7. -x- INDICATES FIELD WELD.
8. 30 3/8" PIPE & FITTINGS ARE 30 1/8" O.D.
9. ALL BURIED LINES SHALL BE WRAPPED IN ACCORDANCE WITH SPECS. 131920-S-2 WHERE LINES PENETRATE GRADE WRAPPING SHALL BE EXTENDED 6" ABOVE GRADE.
10. BACK WELD ALL SCREWED JOINTS IN SPEC. A AND SCREWED LUBE OIL LINES IN SPEC. B.
11. LINES SHOWN THUS ——— INDICATE BURIED PIPING.

REVISION NOTES:

1989 CONSTRUCTION, GM #92
ADDED P/I ET-105A & 105B, TI-105 WITH SCADA TRANSMITTER ENCLOSURE AND FT-100a TO PR/FR-101a

1991 CONSTRUCTION - GM 4965588
REPLACED PLUG VALVES WITH BALL VALVES, REPLACED MOV-113V, PCV-114 & ADDED TIMING CIRCUIT ON ESD.

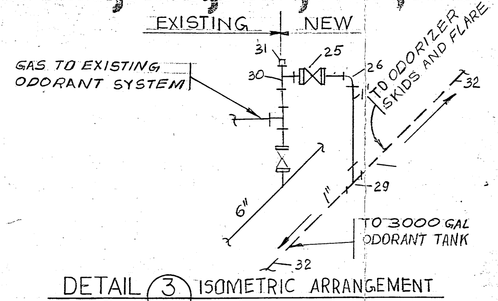
NOTE:
FOR COMPLETE LIST OF REFERENCE DWGS. REFER TO DWG NO 481758 & 482804

REFERENCE DRAWINGS

PIPING PLAN - AREA NO 2, SCRUBBER AREA	481758
PIPING SECTIONS AA, B-B, C-C, D-D & DETAILS	481767
PIPING LIST OF MATERIAL	38 2912
DETAIL OF WELDING COUPLING (BECHTEL)	E-L-509
PIPING LIST OF MATERIAL FOR FIELD [GM 116053]	383282
PIPING LIST OF MATERIAL [GM-121920]	383346
POWER GAS TO BLOCK VALVE GAS OPERATORS	385648
BILL OF MATERIAL FOR DWG 385648, GM 163079	084477
SCADA TRANSMITTER ENCLOSURE	388667
ELEMENTARY - MECHANICAL, FUEL GAS SYSTEM	387705 SH 2
PIPING ARRANGEMENT, TRENCHES & PIPE SUPPORT	489551

C-101

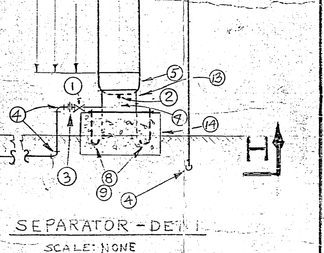
C-182 ONLY
C-101, 102, 103, 104, 105



DETAIL (3) 150 METRIC ARRANGEMENT
NTS

SEE DETAIL 2

SEE DETAIL 1



SEPARATOR - DET 1
SCALE: NONE

REVISION NOTES:

"AS-BUILT" PER FIELD INFORMATION:
ADDED 3/4" LINE FROM GAS CHROMATOGRAPH SPEED LOOP - GM 1960574 & REVISED MISC. PIPINGS - GM 4065330.

(20) ADDED 3/4" LINES TO 3000 GAL ODORANT TANK, ODORIZER SKIDS AND DET. 3 REVISED MISC. PIPINGS. GM. 4163275.

ADDED LINE 288A-3/4"-E-1S UTILITY WATER TO SLUDE DRYING BED.

ADD DIMENSIONAL REQUIREMENTS FOR SCRUBBER C-182., MATERIAL LIST NO. 082564 ADDED NOTE.

ADDED SEPARATOR & ASSOCIATED PIPING & MATERIAL AS PER W.O. 4187-C, 1955. (PLAN, SEC. H-H & BILL OF MAT.)
INSTALLED 2" BLOW DOWN ON G.M. 109395.
1" WATER LINE & GAS LINE ABANDONED IN PLACE ON W.O. 4410-E-1967.
2" BLOWDOWN PARTLY REMOVED, REST OF PIPING CHANGED TO POWER GAS TO BLOCK VALVE GAS OPERATORS ON G.M. 163079.
INSTALLED VALVES & REGULATORS FOR 2" POWER GAS TO BLOCK VALVE GAS OPERATORS AND INSTALLED 750A-14"-D-1S LINE & 1/2" LINE TO (HAND) VALVE ON G.M. 163079 (SEE DWG. 385648)

Rev'd for GM 135863
Rev'd for GM-121920
Rev'd for GM 116053

NO	DATE	DESCRIPTION	APPRD
17	10/11/93	ADDED PIPING PER	
19	12-11-91	SEE REVISION NOTE 16	
21	9-26-91	AS-BUILT PER FIELD INFO GM 4187-C	
20	3-26-91	SEE REVISION NOTE 20	
19	11-21-89	SEE REVISION NOTE 19	
18	11-1-91	SEE REVISION NOTE 18	

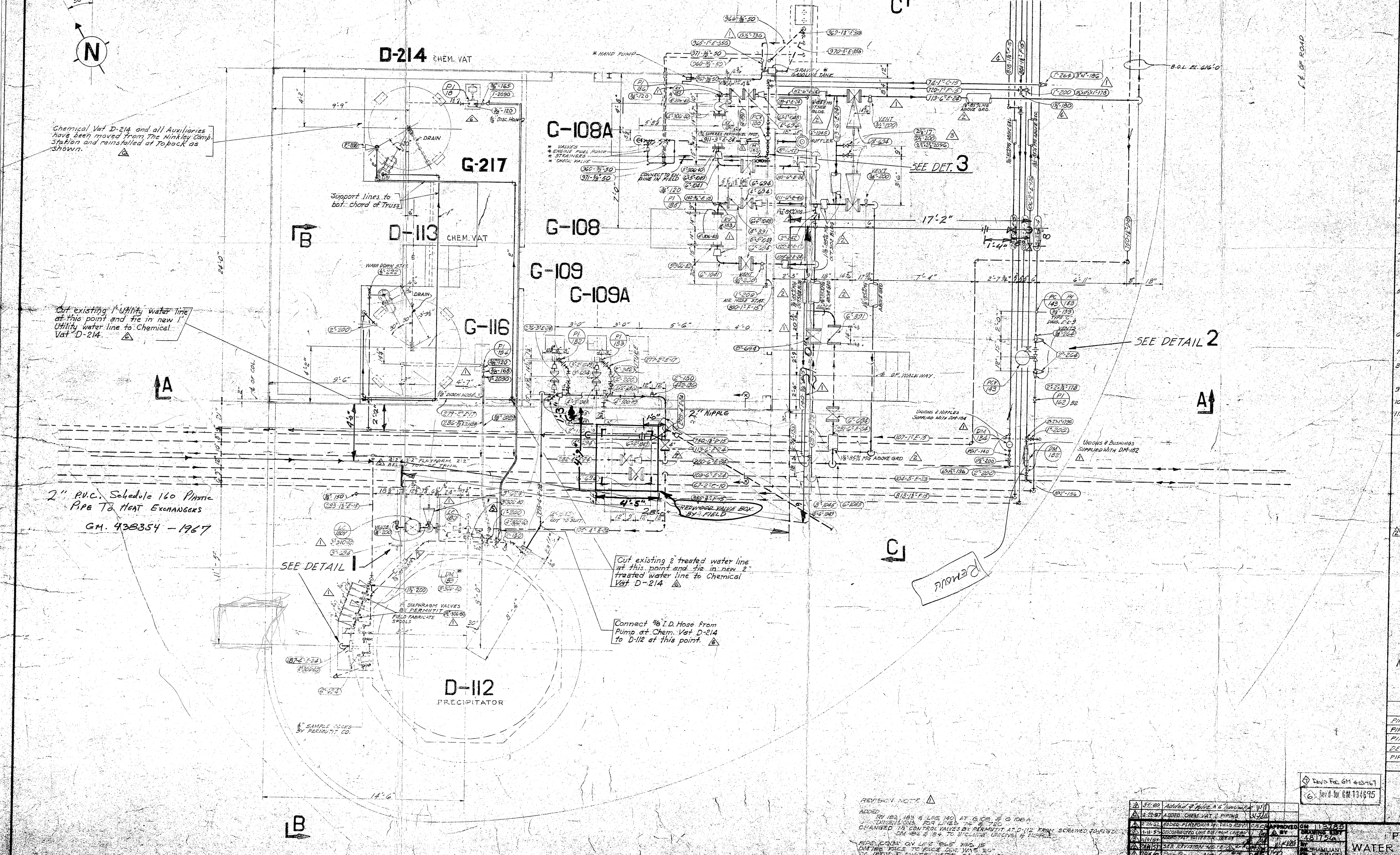
TABLE OF CHANGES

APPROVED BY GM 113732
DRAWING LIST 082272
BY Yeang KR
DR. SHAVDIAN
CH. H. GIUSTI
Q.K.
DATE 5-10-57
SCALES 3/8" = 1'-0"

PIPING PLAN AT SCRUBBER (TYPICAL) AND OIL SUMP - AREA NO 2.
TOPOCK COMPRESSOR STATION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO CALIFORNIA

BILL OF MATERIAL 383346 & 084805
SUPERSEDES
SUPERSEDED BY
SHEET NO. SHEETS
DRAWING NUMBER 481766 CHANGE 21

481766-1-1-88



GENERAL NOTES

1. ALL FLANGES (EXCEPT WHERE NOTED) ARE WELD NECK WITH BORE SAME AS I.D. OF CONNECTING PIPE AND FACING SAME AS THAT OF ADJOINING FLANGE.
2. ALL WELD ELLS (EXCEPT WHERE NOTED) ARE 90° STD. WT. LONG RADIUS.
3. SCREWED FITTINGS (EXCEPT WHERE NOTED) ARE:
   3000# F.S. IN SPECIFICATIONS A, B, C, D
   150# M.I. " " E
   3000# F.S. " " F - FOR UTILITY AIR.
   150# M.I. " " F - FOR INSTRUMENT AIR.
4. SCREWED UNIONS (EXCEPT WHERE NOTED) ARE:
   3000# F.S. FEMALE, STL. TO STL. SEAT IN SPECS. A, B & D
   300# M.I. FEMALE, BRASS TO IRON SEAT IN SPEC. E
   3000# F.S. FEMALE, STL. TO STL. SEAT IN SPEC. F - FOR UTILITY AIR
   300# M.I. FEMALE, BRASS TO IRON SEAT IN SPEC. F - FOR INST. AIR
5. BALLOON LEGEND
   LINE NO. — SIZE — SPEC. — PIPE ITEM NO.
6. PROVIDE PLUGS FOR ALL VENT & DRAIN VALVES ITEM NO. 180
7. ——x—— INDICATES FIELD WELD.
8. ALL BURIED LINES SHALL BE WRAPPED IN ACCORDANCE WITH SPEC. 120.1-3-4 WHERE LINES PENETRATE SLAB WRAPPING SHALL BE EXTENDED 2" ABOVE SLAB.
9. LINES SHOWN THUS - - - - INDICATES BURIED LINES.
10. * FURNISHED BY OTHERS.
11. LOCATION & ROUTING OF BRANCH LINES FROM INSTRUMENT AIR HEADERS TO BE DONE BY FIELD.

REVISION NOTES

△2 ADDED INSULATION ON LINES 108, 284, 1008, 281, 180, 181, 110, 111, 112, 113, 129 & 911-2. SAMPLE LINES ARE UNINS.

481775

NOTE: FOR COMPLETE LIST OF REFERENCE DRAWINGS SEE DWG No 481761.

REFERENCE DRAWINGS

PIPING PLAN-AREA No 5 & ADJACENT AREA	481761
PIPING SECTIONS & DETAILS	481775
PIPING LIST OF MATERIAL	382912
DETAIL OF WELDING COUPLING 1" (RECTAL)	C-1-3
PIPING INDEX DRAWING	481756

△1 DWG FOR GM 438367
△6 Rev'd for GM 134695

REVISION NOTE △

ADDED:
TEE 180, 180 & LINE 140 AT G-108 & G-108A
UNIONS FOR LINES 108 & 1008
CHANGED 1/2" CONTROL VALVES BY PERMITT AT D-112 FROM SCREWED TO FLG'D.
DM 182 & 184 TO 3" CLOSE UNIONS & THDS.

PIPE CROSS OV 1/2 "BLE" WAS 1/2" DIM TIES FACE TO FACE OF VALVES
CC TO FLY FLANGES) REDUCE 3" SCH 80 TO 2" SCH 80 ON LINE 108 WAS 2'0"
G-108 WAS 1'-0" FROM G-109.

△	BY	DESCRIPTION
△1	6-00	Added 2" Valve & 6" Line (Insul.)
△2	11-15-67	ADDED CHEM. VAT & PIPING
△3	2-26-68	ADDED PLATFORM & FIELD REVISIONS
△4	4-11-68	DISCONNECTED LINE 83 FROM CHEM. VAT
△5	10-18-68	ADDED VAT TRUCK & CRANE
△6	2-18-69	SEE REVISION NO. 6
△7	7-24-69	Rev'd Piping per Rev'd Dwg. No.
△8	10-15-69	ADDED P.P. FOR PRECIPITATOR
NO.	DATE	REVISED BY

TABLE OF CHANGES

APPROVED BY: W.H. WILLIAMS, CH. H. GIUSTI
CH. E.
DATE: 6-8-61
SCALES: 1/8" = 1'-0"

PIPING PLAN
WATER SOFTENER AREA No 5
TOPOCK COMPRESSOR STATION
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

BILL OF MATERIAL 382912
DRAWING BY
SUPERVISED BY
APPROVED BY
481761

NOTE: PROVIDE CONCRETE LINED BASIN WITH CATCH BASIN & 6" DRAIN TO OPEN GROUND. (LOCATE IN FIELD.)

SLUDGE DRYING BED — FIELD TO CHECK CONTINUATION BY PG&E

CB SEE DET. 9

GM-IW-7-15 (38A-24"-E-13) for CONTINUATION OF THIS LINE, SEE DWG. No 481757

ROAD EL. 618.82

6" BELL & SPG C.I. PIPE - 7'-0" LONG, 8'-2.5° SLIP ON ADJ.

6" V.C. PIECE AT TRANSITION TO BE PLAIN END.

2'-0" x 6'-0" LONG CONC. BLOCK

I.E. 613.82

6" SCHED 80 PIPE INSTALL BY FIELD

LIGHTS & SIGNS AS CLOSE TO BANK AS IS PRACTICABLE

SECTION A-A

SEPARATOR SEE DWG. 380E96

SLOPE 17%

MITRE

PIPE SUPPORTS

E.O.T. 7.0

27'-0" FROM OUTSIDE SOUTH WALL (FOR DETAILS SEE # 4 & 13)

EL. 627.1" WATER OUTLET EL. 623.1"

PITCH TO LOW INLET

2'-9"

2'-9"

2 OUTLETS SEE DWG. 481881 & 482440

EL. 620.75 - DET. 4

EL. 623.25

EL. 620.50 - DET. 4

EL. 623.00

DET 13

PROVIDE SUPPORTS BEND POINT DRAINS

NOTE: INSERT STRAIGHT PIECE OF C.I. PIPE BETWEEN C.I. BEND & V.C. "Y" AS REQUIRED FOR DET. 13 ONLY.

18"ø

2'-0"

1-9 7/8

2-9 5/8

6" C.I. 1/8 BEND

6" V.C. "Y"

V.C. STOPPER

I.E. 616.68 (DET. 4)

I.E. - DET. 13 - SEE PLAN

DETAIL 4 AS SHOWN & NOTED

DETAIL 13 SIMILAR.

RAMP BY FIELD FIN. GRADE

BRIDGE EL. 623.88

PIPE TRENCH

B.O.L. 618.50

TRENCH DRAIN EL. 617.75

4"x 8" FLAT BAR GRATING

8" V.C. PIPE

8" C.I. 1/8 BEND

8" V.C. "Y" BR.

8" V.C. PLUG

3 SOCK

I.E. 615.81

DETAIL 2 NO SCALE

23'-0" FROM COMPRESSOR BLDG. COL. LINE

SEE DRWG. 281918 FOR ELEV. AT DRAIN

LUBE OIL FNDN. SLAB

2" C.I. 1/8 BEND

2" V.C. PIPE TO 8" SEWER

DETAIL 7

4" V.C. 1/8 BEND

6"x 4" V.C. "Y"

DETAIL 14

UPHILL SIDE OF TRENCH

SET L FRAME @ SAME SLOPE AS GRATING

INV. EL. 620.0

ROAD PAVEMENT

FOR DETAIL NOT SHOWN SEE DETAIL 11

B-B

DETAIL 5

3'-3" ST. PIPE

3'-3 1/8" ST. CONC. REDUCER

3' LAP JOINT SLIP ON

4" V.C. 1/8 BEND

8"x 4" V.C. "Y"

V.C.

PLATE COVER

FIN. GRADE

CONC. COLLAR

I.B. FERRULE WITH BBA23 MUG

C.I. PIPE

V.C. "Y" BRANCH

6" OR 8" V.C.

6" OR 8" V.C.

V.C. PLUG AT END OF LINES

DETAIL 3 TYPICAL CLEANOUT NO SCALE

DRAINAGE TRENCH DETAIL 11

B

B

8" V.C.

DETAIL 4

I.E. 616.68

COOLING TOWER

48'-0"

6"x 4" V.C.

8" V.C.

I.E. 615.16

DETAIL 8

I.E. 620.00

RECIRCULATOR

WATER SOFTENING EQUIPMENT (SEE DWG. 281915)

4" V.C. 1/8 BEND

4" V.C. "Y"

4" V.C. PIPE

4'-6" North 25° East

DETAIL 5

BULK ACID & CAUSTIC TANK

EL. 622.00

6" C.I. PIPE

6" C.I. 1/8 BEND AWWA STD.

I.E. 620.00

Relocate 4" V.C. from Septic Tank to Point Shown

CHEMICAL STORAGE BLDG.

SEE DWG. 281915 FOR WATER SOFTENING EQUIPMENT

SEE DWG. 481881 FOR WATER PIPING

SHOP & GARAGE

STORES

DRUM STORAGE

TRENCH DRAIN S-940 - EL 620.60 (SEE DWG. 481778 & 481779)

6" V.C. 1/8 BEND CUT TO SUIT

4" V.C. PIPE

4" P TRAP

CAST IN SLAB (IF REQUIRED)

2'-9" CAST IRON

EDGE OF ROAD

REF. ELEV. DWG. 481784

DETAIL 1 NO SCALE

BRIDGE DECKING, IRVING, OR EQ. DUPLEX TYPE IV

L 3-2½"x3½"

6" ROAD PAVEMENT

3/4" ø BAR WELD TO 2½"x3½" @ 2'-0" O.C.

½" ø @ 12" O.C.

½" ø @ 6" O.C.

SLOPE BOTTOM OF TRENCH TO DRAIN.

DETAIL 11

NOTE: LENGTH OF TRENCH AS SHOWN IN PLAN. END WALLS SAME AS SIDE WALLS.

C.I. GRATING & CURB

ROAD PAVEMENT

16"

6" V.C.

INV. EL. SEE PLAN

6'-6"

7'-6"x 2'-4" INSIDE

DETAIL 9

EL. 617.60 4" V.C. PIPE

4" P TRAP

DETAIL 12 NO SCALE

TRENCH DRAIN S-940 EL. 620.60 (SEE DWG. 481778 & 481779)

EQUIP. FOUNDATION

EL. 620.00

6" C.I. PIPE

SEE DWG. 281915

6" C.I. 1/8 BEND AWWA STD.

V.C.

EQUIP. FOUNDATION

EL. 622.00

6" C.I. PIPE

6" C.I. 1/8 BEND AWWA STD.

V.C.

N.C.P. 19.63

N.C.P. 19.94

N.C.P. 19.27

10" V.C. S.004

E.O.T. 3.67

C.B.

I.E. 586.30

4" V.C. ACTUATOR

WATER HOUSE

I.E. 584.20

E.O.T. 4

OUTFALL TO STREAM BY FIELD

I.E. 586.30

E.O.T. 7.6

4" SEPARATOR OUTFALL & TROUGH SEE DET. 10

SEPARATOR

TROUGH SEE DETAIL 10

8"-150# S.O. FLANGE

8"-150# BLIND FLANGE

DETAIL 11 DRAINAGE TRENCH

OUTFALL BY FIELD

TOE OF SLOPE

8"-150# S.O. FLANGE

8"-150# BLIND FLANGE

CONC. ANCHOR

15' ROAD

8" V.C.

C.B. SEE DETAIL 9

I.E. 614.80

20' ROAD

GUTTER

I.E. 614.10

C.B.

6" C.O.

I.E. 618.25

8" C.O.

8" V.C. OILY WATER SEWER

DETAIL 3

3'-0"

6" C.O.

DETAIL 12

N.C.P. 47.85

BAY #10 WEST SIDE ONLY

I.E. 615.18

MAIN COMPRESSOR BUILDING

TRENCH DRAINS - DETAIL 1 EXCEPT AS NOTED

FLOOR DRAIN SEE DRWG. 481317 FOR TYPICAL DRAIN DETAIL

I.E. 613.33

FUTURE

8" C.O.

8" V.C. OILY WATER SEWER

6" DRAIN

I.E. 612.81

I.E. 612.42

I.E. 612.68

N.C.P. 47.85

LUBE OIL COOLER FOUND.

CURB

I.E. 619.00 CATCHBASIN SEE DWG. 281915

TRENCH DRAIN DETAIL 2 DETAIL 7

25' ROAD

I.E. 617.74

4" V.C.

CURB

(SEE W.O. 4113-D)

JACKET WATER AIR COOLER EXCHANGER

U.N.C.

FUTURE

4" DRAIN (TRANSITE PIPE)

CURB

GUTTER

TANKS

PUMPS

LUBE OIL

600 MINIMUM SLOPE 1% V. PIPE TO EXISTING SEWER

SEPTIC TANK

E.O.T. 7.7

SUMP

CATCHBASIN GRATING SD. 614.73

DETAIL 6 SEE DRWG. 481779

6" DRAIN

E.C.O. to Bend & 6" V.C. as in Detail 2

6" V.C.

T.E. SD. 614.40

I.E. 612.73

LEACHING FIELD 1100 SQ. FT.

DRAINAGE TRENCH

DETAIL 11

LOCATE FOR CONNECTION BY FIELD

EXTEND TO OPEN GROUND.

E.C.O.

TRENCH DRAIN S-940 EL. 620.60 (SEE DWG. 481778 & 481779)

EL. 617.60 4" V.C. PIPE

4" P TRAP

DETAIL 12 NO SCALE

OFFICE & WAREHOUSE

6" V.C.

GARAGE

New Office Bldg.

E.O.T. 2.2

SECTION

WOOD TROUGH TO CARRY OUTFALL OVER FACE OF WALL

DETAIL 10

TIES @ 5'-0" O.C.

Revised for GM 134612

Revised for GM 121903

Revised for GM 116063

Revised for GM 113795

APPROVED	BY	DRAWING LIST
22 11-11-67 changed as built	F.D.U.	
21 6-6-67 INSTALL TANKS & PUMPS	DWB	MA
20 CONFORMING TO BASICS		BY
19 10-10-66 CONCRETE SLAB & DRAIN ADDED	M.A.T.	DR.
18 SEE REVISED PLAN & NOTES	M.A.T.	CH.
NO. DESCRIPTION	APPD.	DWG.
TABLE OF CHANGES		SCALE

REFERENCE DRAWINGS

NORTH COOLING TOWER BASIN	380E90
PIPING PLAN AT N. COOLING TOWER	380E96
PIPING PLAN AREA No 1	481455
PIPE SUPPORTS & DRAIN PIT	282201
DETAIL OF FLOOR DRAIN: COMPRESSOR BLDG.	281317
PIPING PLAN AT OIL STORAGE	281
WATER SOFTENER BLDG.	281
RECIPITATOR FOUNDATION	281
AUXIL. BLDG. PLUMBING	281
PLOT PLAN	281781
PAVING & GRADING	281782
ELEVATION SLAB COMPRESSOR BLDG.	281778
COOLING TOWER BASIN	481881
PIPING PLAN AT COOLING TOWER	380E96
ELEV. OF SUCTION FOR TOWER	281915
8" - CLIP NO. 1 ENGINE JACKET WATER PIPING TYP.	481782
SEWERS, DOMESTIC SANITARY & STORM	481783
SEWERS, DETAILS FOR MANHOLES	481779

SEWERS & DRAINS

TOPOCK COMPRESSOR STATION

BILL OF MATERIAL

SUPERSEDES

SUPERSEDED BY

SHEET NO. SHEET

DRAWING NUMBER 481785

PACIFIC GAS AND ELECTRIC COMPANY SAN FRANCISCO, CALIFORNIA

C8/1847

NOTE: PROVIDE CONCRETE LINED BASIN WITH CATCH BASIN & 8" DRAIN TO ONSITE GROUND. (LOCATE IN FIELD.)

4" V.C. 1/8 BEND
6"x4" V.C. "Y"

DETAIL 14

FOR ENLARGED PLAN OF THIS AREA SEE DET. 15 488766

1/2" STL. PIPE CONC. FENCE POST
3"x3"x3/8" STL. ANGLE STUB END
3" AIR VENT
6" V.C. 1/4 BEND
6"x4" V.C. "Y"
V.C.

UPHILL SIDE OF TRENCH
SET L FRAME & TANK SLOPE AS GRATING
INV. EL. 620.0
ROAD PAVEMENT
FOR DETAILS NOT SHOWN SEE DET. 11

B-B

DETAIL 5

PLATE COVER
FIN. GRADE
CONC. COLLAR
I.B. FERRULE WITH BRASS PLUG
C.I. PIPE
V.C. "Y" BRANCH
6" OR 8" V.C.
6" OR 8" V.C.
V.C. PLUG AT END OF LINES

DETAIL 3
TYPICAL CLEANOUT
NO SCALE

DEMISTER-FLOCCULATOR
1500 Gal. Holding Tank
SEE DWG. 281912
6" C.I. PIPE
6" C.I. 90 BEND
V.C.

DETAIL 8

231'-0" FROM COMPRESSOR BUILDING CONC. LINE
FIN. GRADE
SEE DRWG. 281916 FOR ELEV. AT DRAIN
LUBE OIL RNDR. TANK
4" C.I. 1/8 BEND
4" V.C. PIPE
To 8" SEWER

DETAIL 7

4" V.C. 1/8 BEND
CAP TO SUIT
4" V.C. PIPE
2'-5" CAST IRON
CAST IN SLAB (IF REQUIRED)
4" C.I. P TRAP

BRIDGE DECKING SEWING OR BOX
CONC. FILL
3/4" ø BAR HOOD @ 8'-0" O.C.
#4 @ 12" O.C.
#4 @ 12" O.C.
SLOPE BOTTOM OF TRENCH TO DRAIN
ROAD PAVEMENT

DETAIL 11

NOTE: LENGTH OF TRENCH AS SHOWN, OR FIND END WALLS SAME WIDTH AS TRENCH

DETAIL 1
NO SCALE

EDGE OF ROAD
C.I. GRATING
C.I. GRATING BASE
REINF. ELEV. DWG. 487088
ROAD PAVEMENT
16" C.I. GRATING
INSIDE
S.W.C.

DETAIL 9

NOTE: PROVIDE CONCRETE LINED BASIN WITH CATCH BASIN & 8" DRAIN TO ONSITE GROUND. (LOCATE IN FIELD.)

C.B. SEE DET. 9

WASTE WELL SEE DWG. 481353

ROAD EL. 619.85

8" BITUMINOUS C.I. PIPE 3.0" LONG. 3.5" SLOPE IN FILL

3" V.C.

V.C. PIECE AT TRANSITION TO BE PLAIN END.

2'-0" x 5'-0" LONG CONC. BLOCK

I.E. 616.28

WASTE PIPE AS CLOSE TO BANK AS IS PRACTICABLE

10" SCHED. 80 PIPE INSTALL BY FIELD

3" DISCHARGE LINE FOR CONTINUATION & TIE-IN DETAIL SEE DWG 488544

SECTION A-A

WASTEWATER TRANSFER PUMPS

DET 16

OIL-WATER SEPARATOR

OIL WATER HOLDING TANK

WASTE OIL TANK

WASTE OIL PUMP

WASTE WATER HOLDING TANK

3" BLOW OFF LINE FROM COOLING TOWERS

3" DRAIN LINE

FIELD TO VERIFY LOCATION OF DRAIN LINE & BLOW OFF PIPE

NEW 3" DISCHARGE LINE TO TIE-IN TO EXISTING WASTE OIL LINE

EXISTING 2" WASTE OIL LINE TO DIRTY OIL SUMP

DRAINAGE TRENCH DETAIL 11

B

B

8" V.C.

DETAIL 4
RE. DWG. 68

2'-0" COOLING TOWER

48'-0"

16" V.C.

DETAIL 5

I.E. 615.16

I.E. 614.80

C.B. SEE DETAIL 9

8" V.C.

W.O. #08

10" V.C. S.006

C.B. SEE DETAIL 2

I.E. 586.00

I.E. 586.00

I.E. 589.80

E.O. 11.7

A.C.C. DETAIL 3

WASTE WATER HOLDING TANK

OUTFALL TO STREAM BY FIELD

I.E. 586.00

SCRUBBER OIL SUMP (EXISTING)

330'-0"

DRAIN LINE 3" PVC

8" V.C.

N 44527

W 47627.68

8" V.C.

DETAIL 11

DRAINAGE TRENCH

15' ROAD

SEPARATOR RELOCATED

TROUGH SEE DETAIL 10

OUTFALL BY FIELD

RED IKER 8"x8"

8'-150° S.O. FLANGE

8'-150° BLIND FLANGE

CONC. ANCHOR

TOE OF SLOPE

SLOPE TO TROUGH 1/4" PER FT.

EXPANSION JOINT SEE DETAIL

C.J. SEE DETAIL

DETAIL 4 AS SHOWN

DETAIL 13 SIMILAR

20' ROAD

GUTTER

I.E. 614.10

C.B.

DETAIL 9

DETAIL 8

EL. 629.00

I.E. 619.30

BULK ASTC STORAGE TANK

DETAIL 5

25' ROAD

I.E. 617.44

I.E. 617.74

C.I.P.

C.B.

DETAIL 9

MAIN COMPRESSOR BUILDING

JACKET WATER DRAIN LINE 1 1/2" STEEL GM-488601-1508

TRENCH DRAIN SEE DRWG. 181817 FOR DETAILS

FLOOR DRAIN SEE DRWG. 181817

FUTURE

I.E. 613.93

I.E. 613.00

I.E. 613.00

I.E. 619.00

DETAIL 2

DETAIL 7

TRENCH DRAIN DETAIL

6" STEEL DRAIN LINE INSTALLED ON 488606

6" STEEL DRAIN LINE INSTALLED ON 488555

OUTFALL

JACKET WATER AIR COOLER EXCHANGER

SURGE TANK DRAINS

TANKS

PUMPS

CURB

CONC.

FUTURE

CONC. OUT

SEPTIC TANK

EA. UNIT

SUMP

CATCHBASIN GRATING EL. 619.79

DETAIL 6

SEE DRWG. 487778

DRAINAGE TRENCH

LEACHING FIELD 100 LIN. FT.

LOCATE TIE CONNECTION BY FIELD

DETAIL 11

EXTEND TO OPEN GROUND.

EL. 617.00

6" C.I. P.

TOP OF DRAIN S-240 EL. 620.10 SEE DWG. 487778 FOR CONCRETE DETAILS

6" V.C. P TRAP

DETAIL 12

DETAIL 10

TROUGH SEE DETAIL 10

OUTFALL FOR FACE OF BANK

New Office Bldg.

SEE SECTION

WOOD TROUGH TO CONC. TROUGH

2"x12"

2"x10"

16' Rem'd for GM 134612

Rem'd for GM 121970

Rem'd for GM 119624

NO.	DATE	DESCRIPTION	APPD.
26	9-10-70	SEE REVISION NOTE	
25	1-26-70	Added Cont. vol. to Separators	
24	11-18-69	CORRECTIONS FOR GM-121970	
23	11-14-69	ADDED V.A. DRAIN LINE	
22	9-29-69	ADDED WASTE OIL CONNECTION	
21	9-24-69	REMOVED OLD WASTE OIL TANK	
20	7-21-69	ADDED BAFFLES	
19	7-1-69	ADDED WASTE OIL CONNECTION	
NO.	DATE	TABLE OF CHANGES	APPD.

APPROVED GM ENGINEER
BY
DRAWING LIST
BY
CH.
DATE
SCALE

SEWERS & DRAINS
NORTH COOLING TOWER

PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

ALL OF MATERIAL
SUPERSEDES
SUPERSEDED BY
SHEET NO.
DRAWING NUMBER
281805

RAMP BY FIELD FIN. GRADE

BRIDGE EL. 623.88

PIPE TRENCH

B.B.L. 618.50

TRENCH DRAIN EL. 617.70

6"x6" FLAT BAR GRATING

8" C.I. 1/8 BEND

8" V.C. "Y" BR.

8" V.C. FIRE

8" V.C. PLUG

I.E. 615.81

DETAIL 2

4'-0" FROM OUTSIDE SOUTH WALL (FOR DETAILS SEE # 4 & 13)

EL. 592.81 HW OR OUTLET

EL. 593.11

RETAIN TO SEW. MANHOLE

2'-9"

2'-9"

4" V.C. 1/8 BEND

4" V.C. GATE VALVE DRAIN 47.5%

SLOPE

TROUGH TO DRAIN

8" OUTLETS SEE DWG. 481881 & 482440

EL. 620.75 — DET. 4

EL. 620.50 — DET. 4

FL. 623.00

DET 13

NOTE: INSERT STRAIGHT PIECE OF C.I. PIPE BETWEEN C.I. BEND & V.C. "Y" AS REQUIRED FOR DET. 13 ONLY

1'-3"

1'-3"

2'-3"

2'-0"

6" C.I. 1/8 BEND

6" V.C. "Y"

V.C. STOPPER

I.E. 614.68 (DET. 4)

I.E. - DET. 13 - SEE PLAN

A

DETAIL 4 AS SHOWN

DETAIL 13 SIMILAR

PROPOSED NEW 3" PVC SCH 80 PIPE (DRAIN LINE) - TO OILY WATER HOLDING TANK.

FLANGED ELBOW 45° 3" DIA. PVC. SCH 80 (FOR DRAIN LINE ONLY)

PROPOSED NEW 3" PVC SCH 80 PIPE (BLOW OFF LINE) - TO WASTEWATER HOLDING TANK

FLANGE GASKET SET CONSISTING BOLTS, NUTS & NEOPRENE GASKET. "HARRINGTON PLASTIC CO" PART # 159A-030 TOTAL NUMBER: 10 SETS

PRECAST CONCRETE UTILITY BOX 30"x60". CHRISTY CO" B52 WITH COVER B52-62D (TYP OF 2)

6" MIN

6" MIN

EXISTING 3" PVC PIPE (DRAIN LINE OR BLOW OFF LINE FROM COOLING TOWERS) TO BE ABANDONED.

MALE END FLANGE PVC SCH 80 "HARRINGTON PLASTIC CO" PART # 854-030 TOTAL NUMBER REQ'D: 4

GATE VALVE, PVC, FLANGED "HARRINGTON PLASTIC CO" PART # 203FG-1030, 3" DIA TOTAL NUMBER REQ'D: 4

FLANGED TEE 3" DIA PVC SCH 80

PVC COMPRESSION FITTING WORKING PRESSURE 200 PSI "HARRINGTON PLASTIC CO" PART # 110-30 TOTAL NUMBER REQ'D: 4

EXISTING 3" PVC PIPE (DRAIN LINE OR BLOW OFF LINE FROM COOLING TOWERS) TO REMAIN.

DETAIL 16 TIE-IN — TWO LOCATIONS
N.T.S.

EL. 619.50

EL. 617.40

SCALE

NORTH COOLING TOWER

EL. 617.00

I.E. 617.40

SEE DETAIL 13

SEE DET. 14

I.E. 615.35

BLOWDOWN

MUD TANK

SCALE

BULK ASTC STORAGE TANK

I.E. 617.00

SEE DETAIL 13

SOUTH COOLING TOWER

EL. 617.40

SCALE

BLOWDOWN

MUD TANK

I.E. 615.35

SEE DET. 14

BULK ASTC STORAGE TANK

8" TOE OF SLOPE

NOTE: FILL TO MANHOLE WARNING TAPE 6" BELOW VALVE BOX

CROWOOD VALVE BOX 3'-6"

GRADE EL. 619.50

6" FLG. 6 SPIDER GLOW NATIONAL FP1800

DETAIL 6

FOR DETAILS SEE DRWG. 282955

I.E. 619.78

I.E. 619.78

PLAN

DETAIL OF CATCHBASIN

ELEVATION

1'-6"x1'-9" C.I. GRATING

ROAD PAVEMENT

BASE

1/4" ELASTITE

6" OR 8" STD. AS SHOWN ON PLAN

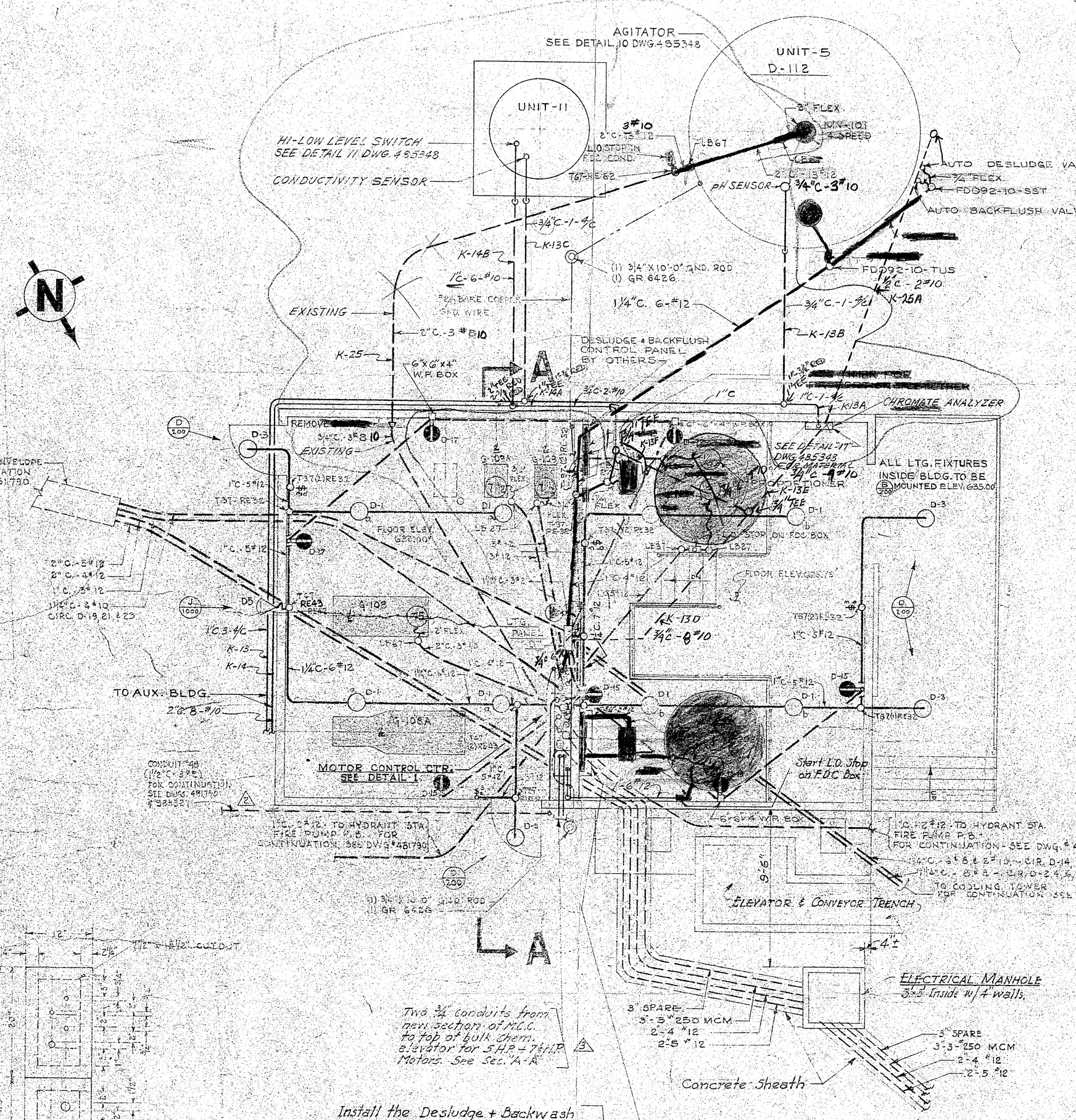
REVISION NOTE
REVISED PLAN, GM-119624 ADDED WASTE COMPRESSOR AT NORTH COOLING TOWER

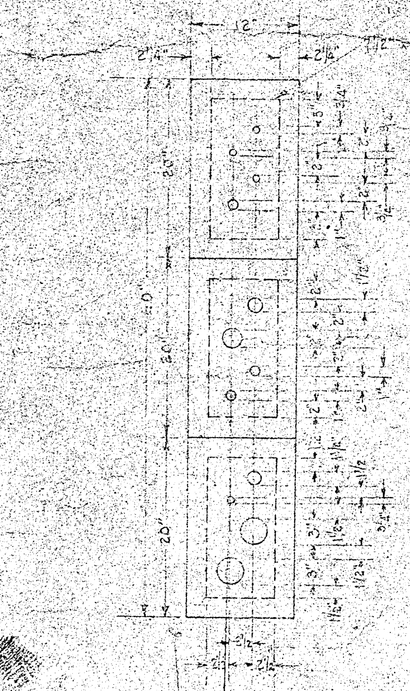
REVISION NOTES
REVISED & ADDED CONNECTIONS AT NORTH COOLING TOWER

REVISED RUNS OF DRAIN PIPES, ADDED WASTEWATER EQUIPMENT, DETAIL 6 & REFERENCE DWG. per GM-119624

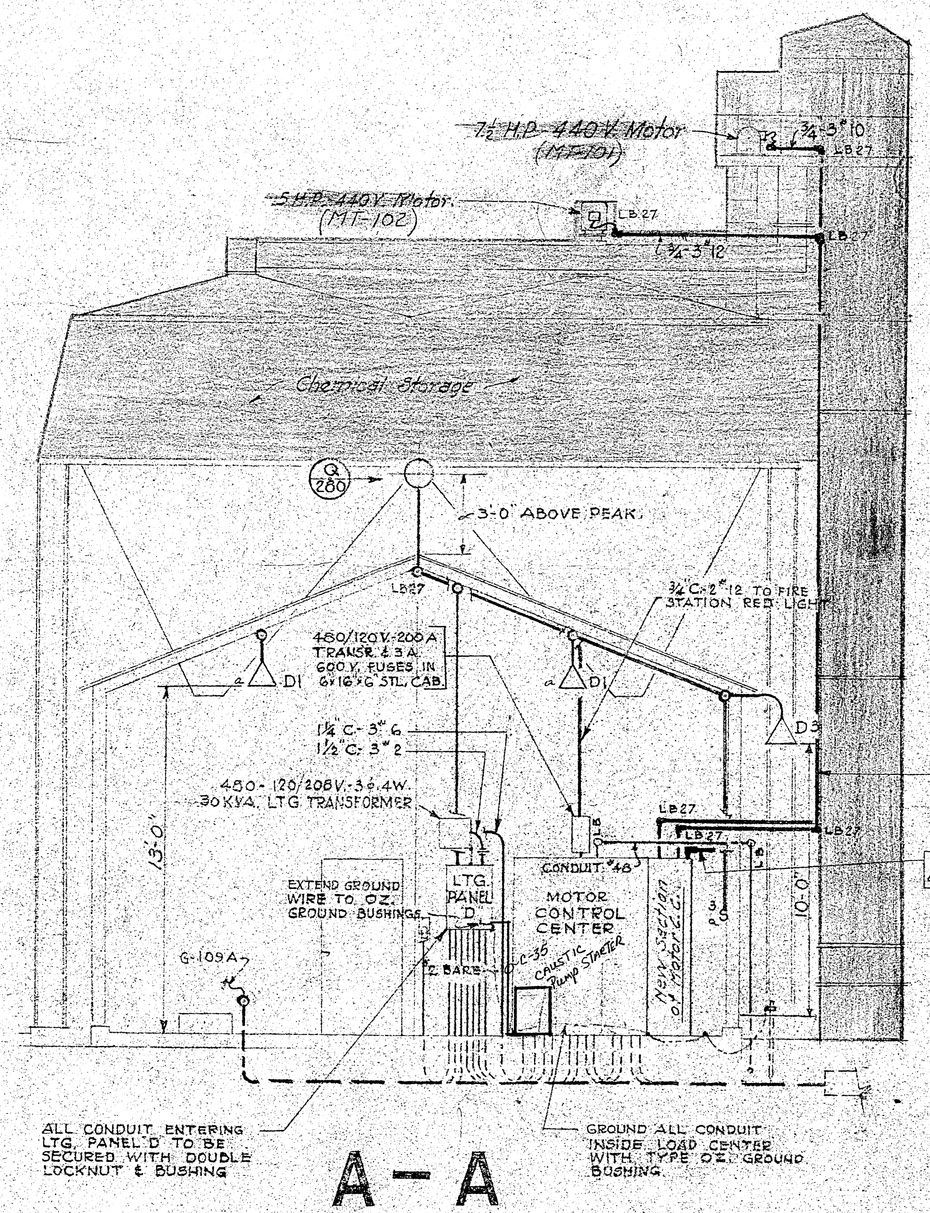
REFERENCE DRAWINGS

NORTH COOLING TOWER BASIN	488766
PIPING PLAN AT N. COOLING TOWER	488544
PIPING PLAN AREA No. 1	488555
PIPE SUPPORTS & DETAILS	488606
DETAIL OF WATER DRAIN COMPRESSOR BLDG.	181817
PIPING PLAN AT OIL STORAGE TANKS	488601
WATER, GAS & AIR LINE PLAN	487778
EXCAVATION & FOUNDATION	487088
ANCH. BLDG. PLUMBING	487087
PLOT PLAN	487085
PAVING & GRADING	487086
FOUNDATION PLAN COMPRESSOR BLDG.	487080
COOLING TOWER BASIN	487081
PIPING PLAN AT COOLING TOWER	487082
LUBE OIL COOLER FOUNDATION	487083
INSTALL OF NO. 2 ENG. WATER PUMP & SERVICE	487084
WASTEWATER TREATMENT PIPING ARRANGEMENT	488764
PLUMBING & HEATING FOR SHOPS	487089

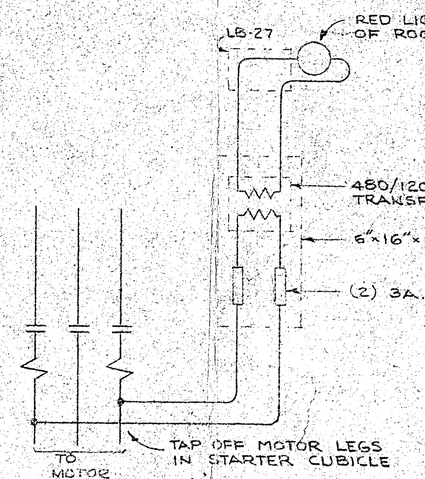




DETAIL
BOTTOM VIEW OF SWITCH GEAR SHOWING CONDUIT PENETRATIONS
SCALE - 1" = 1'-0"



A-A



WIRING DIAGRAM
FIRE PUMP MOTOR RUNNING INDICATOR LIGHT CIRCUIT

PANEL SCHEDULE D

CIR. NO.	TRIP	POLES	OUTLETS NO.	OUTLETS WATTS	AREA SERVED	LOAD IN WATTS L-A	L-B	L-C
1	20A	1	8	200	INSIDE WATER SOFTNER BLDG.	1000		
2		2	7	200	GROUND LEVEL - COOLING TWR. & WELL SIDE - TEES	1700		
3			4	200	OUTSIDE WATER SOFTENER BLDG.		800	
4			2	500	ANGLE N. CORNER COOLING TWR.		1000	
5			1	1000	FLDLTS WATER SOFTENER BLDG.			1000
6			2	500	ANGLE S. CORNER COOLING TWR.			1000
7			1	100	CROMATE OR ANALYZER ROOM		100	
8			1	1000	FLDLTS N. CORNER COOLING TWR.	1000		
9			1	100	NEW LOUVER & BACKFLUSH FAN		100	
10			6	200	N.W. SIDE TOP - COOLING TWR.		1200	
11			1	500	G-116 & PROPORTIONER			500
12			1	1000	FLDLTG. N. CORNER COOLING TWR.			1000
13			1	500	G-217 & NEW PROPORTIONER		500	
14			2	500	ANGLE S. CORNER COOLING TWR.	1000		
15			4	200	RECPT. WATER SOFTENER BLDG.		800	
16			6	200	S.E. SIDE - TOP - COOLING TOWER		1200	
17			3	200	RECPT. WATER SOFTENER BLDG.			600
18			2	500	ANGLE E. CORNER - COOLING TWR.			1000
19			1	500	FLDLT. WATER TANK AREA	500		
20			1	1000	FLDLTS S. CORNER COOLING TOWER	1000		
21			1	500	FLDLGT. WATER TANK AREA		500	
22					SPARE			
23		2	2	200	TOP OF WATER TANK - SOUTH SIDE			400
24		3	5	200	RECEPTACLES COOLING TOWER & RADIO SIDE - TEES			1000
					TOTAL	4500	6200	6500

NOTE
Red - Items Added
Green - Items Removed

Field Corrections
By J. Popeney
Date: 7-28-70
GM 172520

481794

REFERENCE DRAWINGS

ELECTRICAL DISTRIBUTION PLAN	481790	CONDUIT DETS. WASTE WATER TREATMENT	485348
ELECTRICAL DETAILS & GENERAL NOTES	481789	DIAGRAM OF CONN. FOR SEWAGE TREATMENT EQUIP.	485362
ELECTRICAL SINGLE LINE DIAGRAM	481785		
MISC. LAYOUT & DETS. - COOL. STORAGE BLDG.	383327		

3 Revised for GM 134695 | 2 Revised for GM 116053

NO.	DATE	DESCRIPTION	APPRD
8	5/15/70	ADDED UNIT 11 & CONDUITS	
7	4/29/70	CORR. REVISION, NOTE 4	
6	3/25/70	ELECTRICAL CONDUCT. PLAN	

APPROVED BY: GM 1016 RE
DRAWING LIST
BY RFP
DR. RFP 4/26/66
CH. ARC
DATE 7/1/70
SCALES: 1/8" = 1'-0"

ELECTRICAL LAYOUT & DETAILS
WATER SOFTENER BUILDING
TOPOCK COMPRESSOR STATION
PACIFIC GAS AND ELECTRIC COMPANY

BILL OF MATERIAL
SUPERSEDES
SUPERSEDED BY
SHEET NO. 37 SHEET NO.
DRAWING NUMBER 481794