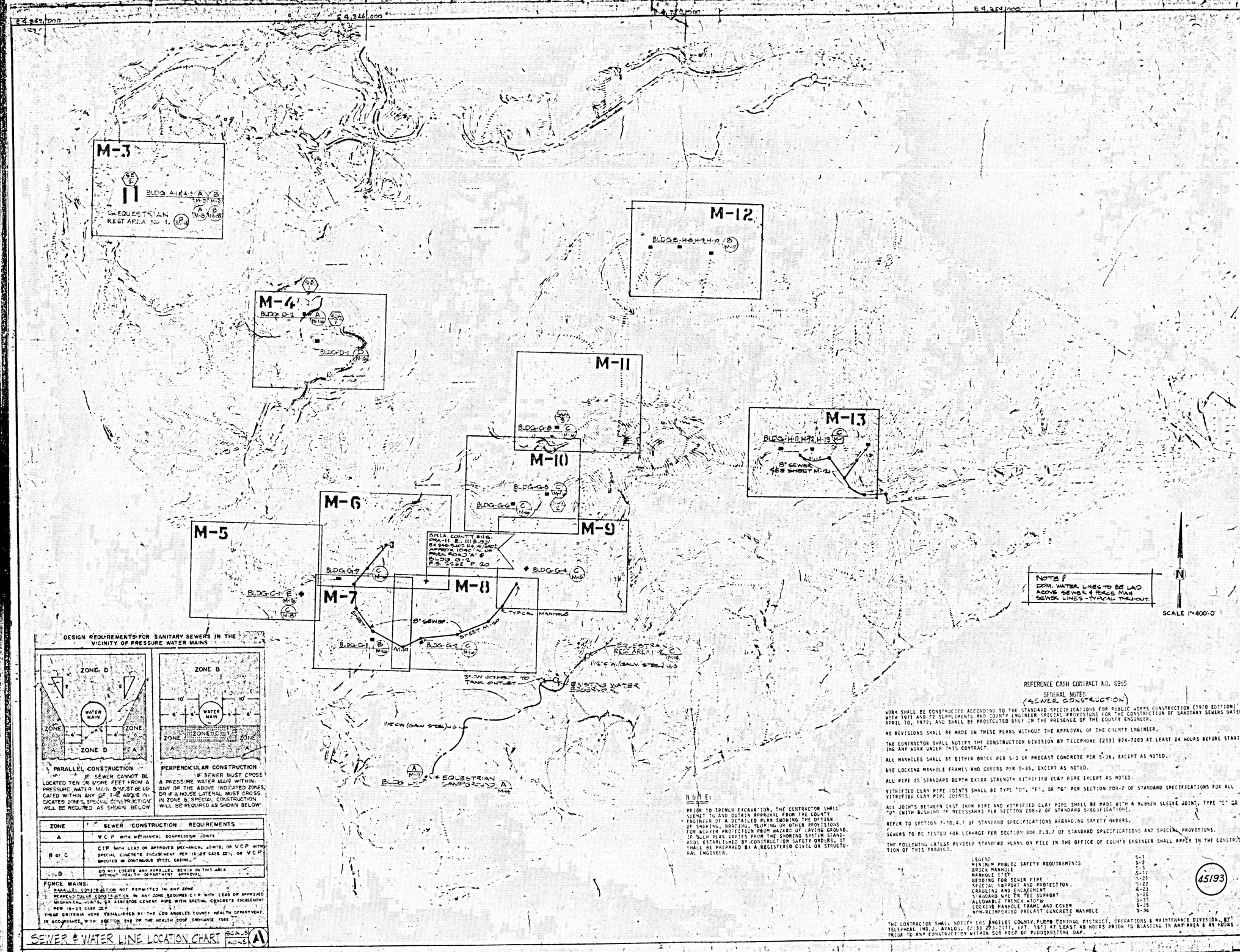


DESIGN REQUIREMENTS FOR SANITARY SEWERS IN THE VICINITY OF PRESSURE WATER MAINS

PARALLEL CONSTRUCTION

IF SEWER CANNOT BE LOCATED TEN OR MORE FEET FROM A PRESSURE WATER MAIN, IT MUST BE LOCATED WITHIN ANY OF THE ABOVE INDICATED ZONES, SPECIAL CONSTRUCTION WILL BE REQUIRED AS SHOWN BELOW

PERPENDICULAR CONSTRUCTION

IF SEWER MUST CROSS A PRESSURE WATER MAIN WITHIN ANY OF THE ABOVE INDICATED ZONES, OR IF A HOUSE LATERAL MUST CROSS IN ZONE B, SPECIAL CONSTRUCTION WILL BE REQUIRED AS SHOWN BELOW:

ZONE	SEWER CONSTRUCTION REQUIREMENTS
A	V.C.P. WITH MECHANICAL COMPRESSION JOINTS
B or C	C.I.P. WITH LEAD OR APPROVED MECHANICAL JOINTS, OR V.C.P. WITH SPECIAL CONCRETE ENCASEMENT PER 18-28 CASE 227, OR V.C.P. GROUTED IN CONTINUOUS STEEL CASING.
D	DO NOT LOCATE ANY PARALLEL SEWER IN THIS AREA WITHOUT HEALTH DEPARTMENT APPROVAL.

FORCE MAINS:
PARALLEL CONSTRUCTION NOT PERMITTED IN ANY ZONE
PERPENDICULAR CONSTRUCTION IN ANY ZONE REQUIRES C.I.P. WITH LEAD OR APPROVED MECHANICAL JOINTS, OR ASBESTOS CEMENT PIPE WITH SPECIAL CONCRETE ENCASEMENT PER 18-28 CASE 227.
THESE CRITERIA WERE ESTABLISHED BY THE LOS ANGELES COUNTY HEALTH DEPARTMENT, IN ACCORDANCE WITH SECTION 548 OF THE HEALTH CODE ORDINANCE 7583.

SEWER & WATER LINE LOCATION CHART | SCALE NONE | A1

NOTE:
PRIOR TO TRENCH EXCAVATION, THE CONTRACTOR SHALL SUBMIT TO AND OBTAIN APPROVAL FROM THE COUNTY ENGINEER OF A DETAILED PLAN SHOWING THE DESIGN OF SHORING, BRACING, SLOPING OR OTHER PROVISIONS FOR PROPER PROTECTION FROM HAZARD OF CAVING GROUND. IF SUCH PLAN VARIES FROM THE SHORING SYSTEM STANDARDS ESTABLISHED BY CONSTRUCTION SAFETY ORDERS, IT SHALL BE PREPARED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER.

REFERENCE CASH CONTRACT NO. 8895

GENERAL NOTES
(SEWER CONSTRUCTION)

WORK SHALL BE CONSTRUCTED ACCORDING TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (1970 EDITION) WITH 1971 AND 72 SUPPLEMENTS AND COUNTY ENGINEER "SPECIAL PROVISIONS FOR THE CONSTRUCTION OF SANITARY SEWERS DATED APRIL 10, 1972, AND SHALL BE PROTECTED ONLY IN THE PRESENCE OF THE COUNTY ENGINEER.

NO REVISIONS SHALL BE MADE IN THESE PLANS WITHOUT THE APPROVAL OF THE COUNTY ENGINEER.

THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION DIVISION BY TELEPHONE (213) 974-7283 AT LEAST 24 HOURS BEFORE STARTING ANY WORK UNDER THIS CONTRACT.

ALL MANHOLES SHALL BE EITHER BRICK PER S-3 OR PRECAST CONCRETE PER S-36, EXCEPT AS NOTED.

USE LOCKING MANHOLE FRAMES AND COVERS PER S-35, EXCEPT AS NOTED.

ALL PIPE IS STANDARD DEPTH EXTRA STRENGTH VITRIFIED CLAY PIPE EXCEPT AS NOTED.

VITRIFIED CLAY PIPE JOINTS SHALL BE TYPE "DA", "F", OR "G" PER SECTION 208-2 OF STANDARD SPECIFICATIONS FOR ALL VITRIFIED CLAY PIPE JOINTS.

ALL JOINTS BETWEEN CAST IRON PIPE AND VITRIFIED CLAY PIPE SHALL BE MADE WITH A RUBBER SLEEVE JOINT, TYPE "C" OR "D" (WITH BUSHING IF NECESSARY) PER SECTION 208-2 OF STANDARD SPECIFICATIONS.

REFER TO SECTION 7-10.4.1 OF STANDARD SPECIFICATIONS REGARDING SAFETY ORDERS.

SEWERS TO BE TESTED FOR LEAKAGE PER SECTION 306.2.3.7 OF STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

THE FOLLOWING LATEST REVISED STANDARD PLANS ON FILE IN THE OFFICE OF COUNTY ENGINEER SHALL APPLY IN THE CONSTRUCTION OF THIS PROJECT:

LEGEND	S-1
MINIMUM PUBLIC SAFETY REQUIREMENTS	S-2
BRICK MANHOLE	S-3
MANHOLE STEP	S-17
BEDDING FOR SEWER PIPE	S-21
SPECIAL SUPPORT AND PROTECTION	S-22
CRADLING AND ENCASEMENT	S-23
STANDARD WYE OR TEE SUPPORT	S-26
ALLOWABLE TRENCH WIDTH	S-33
LOCKING MANHOLE FRAME AND COVER	S-35
NON-REINFORCED PRECAST CONCRETE MANHOLE	S-36

45193

THE CONTRACTOR SHALL NOTIFY LOS ANGELES COUNTY FLOOD CONTROL DISTRICT, OPERATIONS & MAINTENANCE DIVISION, BY TELEPHONE (TRL - AVALON (213) 773-2111, EXT. 1517) AT LEAST 48 HOURS PRIOR TO BLASTING IN ANY AREA & 48 HOURS PRIOR TO ANY CONSTRUCTION WITHIN 500 FEET OF PUDDINGSTONE DAM.

WILLIAMSON, MORRIS & PAIGE
275 e 25th st. long beach, calif. 90806
telephone 213-426-3945

HUGH CARTER ENGINEERING CORP.
• ELECTRICAL ENGINEERING
• MECHANICAL ENGINEERING
• GARDEN GROVE, LA JOLLA, CALIFORNIA

FRANK G. BONELLI REGIONAL COUNTY PARK
(PUDDINGSTONE) PARK DEVELOPMENT
PHASE III
INDEX MAP - MECHANICAL

date	4-20-73
revised	
sheet no.	M-1
of sheets	

EXHAUST FANS

SYMBOL	CFM	S.P. IN WG.	HP	POWER	REMARKS
EF 1	250	0	1/80	115/1/60	ILG MODEL PV 63 WALL SWITCH CONTROL
EF 2	450	1/4	1/6	115/1/60	ILG MODEL [illegible] INTERLOCK W/FA-2
EF 3	93	1/8	1/70	115/1/60	ILG MODEL CCV100 LIGHT SWITCH CONTROL
EF 4	1000	0	1/7	115/1/60	ILG MODEL CRF100 INTERLOCK W/FA-1, ALONG WITH WALL SWITCH CONTROL
EF 5	326	0	1/20	115/1/60	ILG MODEL CRF 80 WALL SWITCH CONTROL
EF 6	258	1/8	1/20	115/1/60	ILG MODEL CRF 82 INTERLOCK W/FA-1
EF 7	258	1/8	1/20	115/1/60	ILG MODEL CRF 82 WALL SWITCH CONTROL
EF 8	258	1/8	1/20	115/1/60	ILG MODEL CRF 82 RUN CONTINUOUS
EF 9	350	--	ADM	115/1/60	ILG MODEL 1594 LIGHT SWITCH CONTROL
EF 10	800	1/4	1/4	115/1/60	ILG MODEL CRF CCH1000 INTERLOCK W/EC-1
EF 11	115	1/8	1/50	115/1/60	ILG MODEL CRF 67 WALL SWITCH CONTROL
EF 12	900	1/8	1/20	115/1/60	ILG MODEL CRF 122
EF 13	430	1/8	1/20	115/1/60	ILG MODEL CRF 92 WALL SWITCH CONTROL
EF 14	800	1/4	1/10	115/1/60	ILG MODEL CWF 100 WALL SWITCH CONTROL
EF 15	115	1/8	1/50	115/1/60	ILG MODEL CRF 67 STAT CONTROL
EF 16	45	1/0	1/70	115/1/60	ILG MODEL CCV100 WALL SWITCH CONTROL

EVAPORATIVE COOLERS

SYMBOL	CFM	HP	POWER	REMARKS
EC 1	2000/1200	1/4	115/1/60	WRIGHT MODEL MV-230-2P WITH PUMP, FLOAT VALVE, & 2-SPEED WALL SWITCH

* WITH VANDAL-PROOF SCREWS ON GRILLE.

FORCED AIR FURNACES

SYMBOL	CFM	ESP IN WG.	HP (FAN)	POWER	HEAT EXCHANGER HEIGHT INCH	HEAT EXCHANGER AREA SQ.FT.	ENT. DB	COIL COIL ENT. WB	COIL LVG. DB	COIL LVG. WB	COIL COOL CAP. MBH	REMARKS
FA 1	1000	.4	1/3	115/1/60	123	30	--	--	--	--	--	UPFLOW
FA 2	1500	.6	1	208/3/60	144	37.5	79.5	66	57	56	54	DOWNFLOW

AIR COOLED CONDENSING UNIT

SYMBOL	SUCTION TEMP	AMBIENT TEMP	CAPACITY (TONS)	KW INPUT	POWER	REMARKS
CU 1	44	90	5	6.44	460/3/60	R-22

AIR CONDITIONER

SYMBOL	CFM	TOTAL COOL.	POWER	REMARKS
AC 1	300/250	9500	208/1/60	G.E. MODEL AGJC4100

INFRA-RED HEATERS

SYMBOL	CAPACITY	POWER	REMARKS
IH 1	12,000 BTUH	115/1/60	CEILING SUSPENDED
IH 2	1000W.	120/1/60	CEILING SUSPENDED

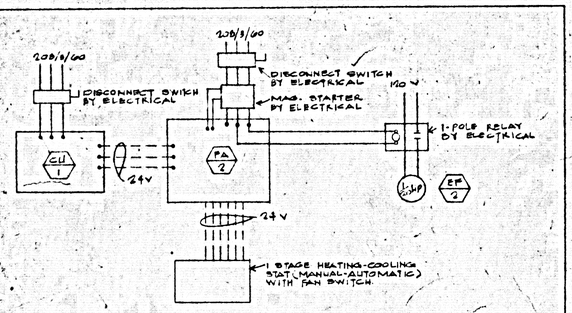
PLUMBING EQUIPMENT SCHEDULE

WH 1	GAS FIRED GLASS-LINED, WATER HEATER, 50 GAL STORAGE, 61,000 BTUH INPUT 46.2 GPH RECOVERY @ 100°F. RISE, THREE YEAR WARRANTY DAY & NIGHT 505-2.
WH 2	ELECTRIC, GLASS-LINED WATER HEATER, 30 GAL. STORAGE, DUAL ELEMENT 4500/4500 WATTS, 208V., 3 PH., THREE YEAR WARRANTY - DAY & NIGHT 30 SRO-1.
WH 3	ELECTRIC, GLASS-LINED WATER HEATER, 15 GAL. STORAGE, 1250 W., 120V., 1 PH, THREE YEAR WARRANTY - DAY & NIGHT 16 4PS-3.
CP 1	HOT WATER CIRCULATING PUMP, ALL BRONZE 3/4" IN-LINE CIRCULATOR, 1/6 HP, 120V, 1 PH, 10 GPM @ 10' TDH, THRUSH 3/4"HD.
SLS 1	SEWAGE LIFT STATION, DUPLEX, NON-CLOG PUMP IN 60" DIA. @ 6' DEEP CONCRETE MANHOLE PIPE WITH CONCRETE TOP AND BOTTOM. MANHOLE COVER. PUMP DISCHARGE, SUMP INLET AND VENT ORSIDE OF SUMP BELOW GRADE. 140 GPM @ 32' TDH. MAX. BHP=5.6 MIN. (2) 5 H.P. 208V., 3 PH. 1756 RPM. WEMCO MODEL 562 3" DISCH.
SLS 2	SAME AS SLS-1 EXCEPT 120 GPM @ 45' TDH. BHP= 6.75 MIN. (2) 7½ H.P. 208V., 3 PH. 1160 RPM. WEMCO MODEL 362 DUPLEX WITH 3" DISCHARGE. SUMP 8' DEEP
SLS 3	SAME AS SLS-1 EXCEPT 18' DEEP, 100 GPM @ 43.4 TDH MAX. BHP=5.26 MIN. (2) 5 H.P., 208V., 3 PH., 1755 RPM WEMCO MODEL 362 WITH 3" DISCHARGE.
SE 1	SEWAGE EJECTOR, DUPLEX NON-CLOG SUBMERSIBLE PUMP WITH 42" DIA.16'-0" STEEL SUMP COATED WITH FIBERGLASS INSIDE AND OUT. 40" DIA. GAS-TIGHT, STEEL COVER. SUMP TO HAVE INLET CONNECTION 4"S.D. DISCH & VENT ON TOP PROVIDE LUGS AT TOP OF SUMP FOR ANCHORING INTO CONCRETE SLAB DURING POUR. 70 GPM @ 65 TDH MAX. BHP=4.6. (2) 5 HP., 208V., 3 PH., 1170 RPM WEMCO MODEL 3X11SB WITH 3" DISCHARGE
SE 2	SAME AS SE-1 EXCEPT 42"DIA 8'DEEP C.I. SUMP 100GPM @ 110 TDH, BHP=12.9 (2) 15 H.P. 460 VOLT 60 CYCLE 3 PH. 1750 RPM WEMCO MODEL 3X11SB WITH 3" DISCHARGE
FP 1	FUEL PUMP, SUCTION TYPE, SINGLE HOSE, 1/3 HP., 120V., 1 PH., WAYNE C-710, WITH BUCKEYE A4111 UNDER-PUMP CHECK VALVE.
R 1	ISLAND HOSE REEL, BOX TYPE PIT WITH 25' 3/8" WATER, AND 35' 1/4" AIR HOSE, 18 GA. GALVANIZED BOX AND LID, DUAL FOOT TRUCK GAUGE AND RADIATOR FAUCET.
TK 1	UNDERGROUND STORAGE TANK 5,000 GALLON WITH EXTRACTOR FOOT VALVE ASSEMBLY, VENT FILL ASSEMBLY, GAUGE ASSEMBLY, 95" DIA.216" LONG ALL WITH U.L. APPROVAL.
C 1	AIR COMPRESSOR MOUNTED ON VERTICAL 60 GAL. ASME 200# W.C. TANK, 1-1/2 HP., 208V., 3 PH. MOTOR, 10.6 CFM DISPLACEMENT 5.3 CFM DELIVERY, 140-175 PSI RANGE, 2 CYLINDER, 2 STROKE, BOTTOM DRAIN, PRESSURE SWITCH, CHECK VALVE, SERVICE VALVE AIR GAUGE, EXHAUST PIPE, STARTER
	SAND AND GREASE INTERCEPTOR, PRECAST CONCRETE, 1250 GAL. WITH SAMPLE BOX ON DISCHARGE, RISERS TO BRING TO GRADE, TWO TRAFFIC MANHOLES ON INTERCEPTOR AND ONE ON SAMPLE BOX.
FP 1	REMOTE FUEL PUMP, SUBMERSIBLE TYPE WITH LEAK DETECTOR 1/3 HP, 120 V. 1 PH, WAYNE E-4-33F WITH MANHOLE FOR SERVICE.
D 2	FUEL DISPENSER WITH REMOTE PUMP, SINGLE HOSE, WAYNE C-710-1 WITH PUMP CONTROL SWITCH FOR REMOTE PUMP.

NOTES

1 MANUFACTURERS NAMES & TYPES ARE INCLUDED FOR INFORMATION ONLY TO ESTABLISH CLASS AND QUALITY OF EQUIPMENT. REFER TO SPECIFICATIONS FOR OTHER MANUFACTURERS.

2 CAPACITY REQUIREMENTS SET FORTH IN ABOVE SCHEDULE ARE MINIMUM - EXCEPT FOR RPM'S. RPM'S GIVEN ARE MAXIMUM.



CONTROL DIAGRAM FOR BUILDING C-1 — SCALE NONE

PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE	SOIL WASTE	TRAP	VENT	C.W.	H.W.	MOUNT HEIGHT	REMARKS
WC 1	WATER CLOSET	4"	INT.	2"DIA*	1"	--	15"	WALL HUNG 1" FLUSH VALVE
WC 2	CHEMICAL WATER CLOSET	3"	INT.	--	--	--	FLOOR	3" DRAIN TO U/G HOLDING TANK
U 1	URINAL	2"	INT.	1-1/2"	3/4"	--	24"	WALL HUNG FLUSH VALVE
L 1	LAVATORY	2"	1-1/2"	1-1/2"	1/2"	1/2"	31"	WALL HUNG
L 2	LAVATORY	2"	1-1/2"	1-1/2"	1/2"	--	31"	WALL HUNG COLD WATER ONLY
SS 1	SERVICE SINK	3"	2"	1/2"	1/2"	1/2"	--	"P" TRAP STAND
SS 2	SERVICE SINK	3"	3"	2"	1/2"	1/2"	--	FLOOR TYPE WITH APPROVED ATMOS. TYPE VACUUM BREAKER
S 1	SINK	2"	1-1/2"	1-1/2"	1/2"	1/2"	--	STAINLESS STEEL IN COUNTER TOP
S 2	SINK	2"	1-1/2"	1-1/2"	1/2"	1/2"	--	STAINLESS STEEL IN COM'D. TOP COLD WATER ONLY
DF 1	ELECTRIC DRINKING FOUNTAIN	2"	1-1/2"	1-1/2"	1/2"	--	40"	WALL HUNG
DF 2	DRINKING FOUNTAIN	2"	1-1/2"	1-1/2"	1/2"	--	--	WALL HUNG - SEE PLAN FOR MOUNTING HEIGHT
DF 3	DRINKING FOUNTAIN	2"	--	--	1/2"	--	--	FURNISHED AND P SECTION 22
FD 1	FLOOR DRAIN	2"	2"	1-1/2"	--	--	--	
FS 1	FLOOR SINK	2"	2"	1-1/2"	--	--	--	
SH 1	SHOWER	2"	2"	1-1/2"	1/2"	1/2"	--	
WHA 1	WATER HAMMER ARRESTER	--	--	--	3/4"	--	--	P.D.I. "A"
WHA 2	WATER HAMMER ARRESTER	--	--	--	1"	--	--	P.D.I. "B"
WHA 3	WATER HAMMER ARRESTER	--	--	--	1"	--	--	P.D.I. "C"

BLDG. D-2, KITCHEN EQUIPMENT CONNECTION SCHEDULE

ITEM NO.	W.	V.	C.W.	H.W.	DESCRIPTION	REMARKS
1	1-1/4"	--	1/2"	--	DRINK DISPENSER	DRAIN TO F.S.
5	3/4"	--	--	1/2"	HOT DOG & BUN STEAMER	PROVIDE VACUUM BREAKERS, DRAIN TO F.S.
9	--	--	1/2"	--	COFFEE MAKER	
14	3/4"	--	--	--	ICE CREAM BOX	DRAIN TO F.S.
17	2"	1-1/2"	1/2"	1/2"	DOUBLE COMPARTMENT S.S.SINK	
18	2"	1-1/2"	1/2"	1/2"	S.S. HAND SINK	
19	3/4"	--	--	--	REFRIG & FREEZER	DRAIN TO F.S.
20	3/4"	--	1/2"	--	ICE CUBER	DRAIN TO F.S.
21	2"	--	1/2"	1/2"	CUSTOM BAIT TANK	DRAIN TO F.S.

BLDG. C-1, KITCHEN EQUIPMENT SCHEDULE

ITEM NO.	W.	V.	C.W.	H.W.	DESCRIPTION	REMARKS
1	2"	1-1/2"	1/2"	1/2"	S.S. HAND SINK	
3	2"	1-1/2"	1/2"	1/2"	DOUBLE COMPARTMENT S.S. SINK	
5	3/4"	--	1/2"	--	ICE CUBER	DRAIN TO F.S.
6	3/4"	--	--	--	REFRIG. & FREEZER	DRAIN TO F.S.
7	--	--	1/2"	--	COFFEE MAKER	
12	3/4"	--	--	--	ICE CREAM BOX	DRAIN TO F.S.
13	--	--	--	1/2"	SOFT SERVE MACH.	
15	1-1/4"	--	1/2"	--	DRINK DISPENSER	DRAIN TO F.S.
19	3/4"	--		1/2"	HOT DOG & BUN STEAMER	PROVIDE VACUUM BREAKER, DRAIN TO F.S.

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	S OR W	SOIL OR WASTE
	SD	STORM DRAIN
	V	VENT
	CW	COLD WATER
	HW	HOT WATER
	HWR	HOT WATER RETURN
	G	NATURAL GAS
	A	COMPRESSED AIR
	FCO-COTG	FLOOR CLEANOUT - CLEANOUT TO GRADE
	CW-WCO	CLEANOUT-WALL CLEANOUT
	GV	GATE VALVE
	GC	GAS COCK
	HB	HOSE BIBB
	VTR	VENT THRU ROOF
	B/F	BELOW FLOOR
	A/C	ABOVE CEILING
	U/G	UNDERGROUND
	A.P.	ACCESS PANEL, C=CEILING, W=WALL
	T.E.	INVERT ELEVATION
	P.O.C.	POINT OF CONNECTION
	M.H.	MANHOLE
	CONN.	CONNECTION
	C.I.	CAST IRON
	VCP	VITRIFIED CLAY PIPE
	DN.	DOWN
	S.H.V.	SHUT OFF VALVE

HVAC LEGEND

SYMBOL	ABBREV.	DESCRIPTION
10x6		DUCT SIZE, WIDTH X DEPTH
		FLEXIBLE DUCTWORK
	SA	SUPPLY AIR RISER OR DIFFUSER
	RA	RETURN AIR RISER OR REGISTER
	EA	EXHAUST AIR RISER OR REGISTER
	MVD	MANUAL VOLUME DAMPER (OBD)
	OBD	OPPOSED BLADE DAMPER
4	CFM	CUBIC FEET OF AIR/MIN.
OSA	OSA	OUTSIDE AIR
	SWR	SIDEWALL REGISTER
	SA	SUPPLY AIR
	RA	RETURN AIR
	EA	EXHAUST AIR
	CR	CEILING REGISTER
T	STAT	THERMOSTAT
1		CONSTRUCTION NOTE DESIGNATION
A		EQUIPMENT DESIGNATION

PAIGE
WILLIAMSON, MORRIS & PAIGE
215 e. 25th st. long beach, calif. 90806
telephone 213-426-3945

HUGH CARTER ENGINEERING CORP.
s. electrical
e. mechanical
south grove ave. azusa, california
213-334-9761

FRANK G. BONELLI REGIONAL COUNTY PARK
(FUDDY-DUDDY STONE)
PHASE III
LEGENDS, & SCHEDULES - MECHANICAL

CAMP PEND. NO. 8804
APPROV. NO. 4731

date 9-20-73
revised
sheet no. M-2 of shts.

45194

REF. CC 8995

E 4 342 800 E 4 343 000 E 4 343 200 E 4 343 400 E 4 343 600 E 4 343 800 E 4 344 000

N 4 145 800 N 4 146 000 N 4 146 200

TYPICAL CONC. THRUST BLOCKS

(5) TYPICAL CONC. THRUST BLOCKS
FOR 6" WATER MAINS

BLDG A-5

TRAM ROAD

GAS METER BY UTILITY CO.

1½" CW

SERVICE BLDG A-1
FIN FLR ELEV 349.0
FIXTURE UNITS SW-12 - 27
WATER - 30

INVERT 345.0

B H-8

THRUST BLOCK
N 4 145 775.00
E 4 342 857.00

4" SW UP

BULK STORAGE A-3
FIN FLR ELEV 345.0
FIXTURE UNITS - SEWER - 66
WATER - 17

A H-5

6" C.I.P. F.M.

3-¾" CONDS

10' MIN. (TYPICAL)

2" CW

GAS SERVICE BY UTILITY CO.

N 4 145 583.80
E 4 342 859.00
THRUST BLOCK

3-FM

A H-4

4" S.

1" GALV CW TO REST AREA #1
SEE P H-14

LE 88+79.
N 45 558.80
E 345,110.46
ELEV 17 709.23

EXIST. GAS SERVICE

EXIST 6" FRE & 8" RCP/V DOM WATER & 8" SEWER FORCE MAIN

OW

G

S-FM

EXISTING PARK ROAD #1

PROFILE

SCALE HORIZ 1"=40'-0"
VERT. 1"=8'-0"

4.5195

NORTH 1"=40'

REF CC 8995

WILLIAMSON, MORRIS & PAIGE
275 e. 25th st. long beach, calif. 90806
telephone 213-426-3945

HUGH CARTER ENGINEERING CORP.
• ELECTRICAL ENGINEERING
• MECHANICAL ENGINEERING
• GARDEN GROVE, SAN DIEGO & CALIFORNIA

FRANK G. BONELLI REGIONAL COUNTY PARK
(PUDDINGSTONE)

BLDGS. A-1, A-3, A-5 MECHANICAL PLOT PLAN PHASE III

dwg. no. 10-73
revised
sheet no. M-3 of sheets

LAKE

FLOATING DOCK D-2

1½" GASO LVG LAKE BOTTOM

4" CW BREAKAWAY CONNECTION SEE DETAIL

PILING

5" S I/G LAKE BOTTOM N 4 144 575 E 4 345 400

THRUST BLOCK

FLEXIBLE HOSE BETWEEN PIER & WALKWAY

1½" CW LINE UP PLUNG RUN BELOW PIER

6" S LVG (FORCED MAIN) LINE "A"

SHORE LINE

4" CW I/G N 4 144 273 E 4 345 375

1½" GASOLINE I/G

1½" ZONE OF REDUCED PRESSURE BACKFLOW PREVENTER W/SAFETY APPROVED TYPE & MIN 12" ASH GR.

5000 GAL. I/G GAS TANK

VENT I/G

THRUST BLOCK N 4 144 073 E 4 345 455

N 4 144 078 E 4 345 460

CONCRETE STATION D-2 FUTURE BLDG. - SEWER - 6" WATER - 8"

FILL LINE FLUSH IN PAVEMENT

IE 985.5

2"CW

PARK ROAD #1

P.O.C.

4" S. (FORCED MAIN)

LINE "B"

2"CW

10' MIN. IN SEPARATE TRENCHES

PARKING

N 4 143 861 E 4 345 051

EXIST 4" CW

P.O.C. INV. ELEV. 995.48 EXIST. 4" STUB

EXISTING ROADWAY

EXIST 8" VCP & 6" DOM WATER & 10" FIRE & HYDRO.

PROFILE LINE "B"

SCALE HORIZ 1"=40'-0" VERT. 1"=8'-0"

PROFILE LINE "A"

STATIONING BEGINS AT PLUNG IN LAKE SEE (D/M17) PLAN THIS SH'T

SCALE HORIZ 1"=40'-0" VERT 1"=8'-0"

EXIST GROUND

FINISH GRADE

BLACK TOP

SUBGRADE

EXIST. 8" CW

EXIST. 6" DOM

EXIST. 10" FIRE & HYDRO

6" SEWER

8" CW

1½" VENT

CONC. RAMPS

PARKING

LAKE

PUDDINGSTONE RESERVOIR

45196

NORTH

REF. CC 8995

WILLIAMSON, MORRIS & PAIGE
275 e. 25th st., long beach, calif. 90806
telephone 213-426-3945

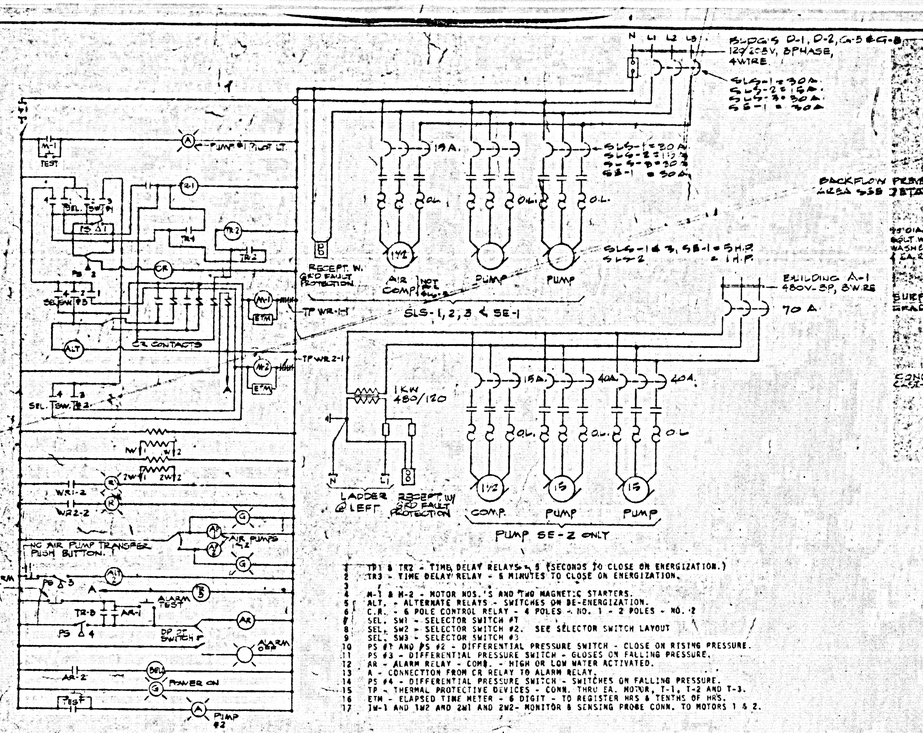
HUGH CARTER ENGINEERING CORP
• ELECTRICAL ENGINEERING
• MECHANICAL ENGINEERING
• MARIN GROVE OF AVILA & CALIFORNIA

FRANK G. BONELLI REGIONAL COUNTY PARK
(PUDDINGSTONE)

PHASE III

BLDGS D-1 & D-2 MECHANICAL PLOT PLAN

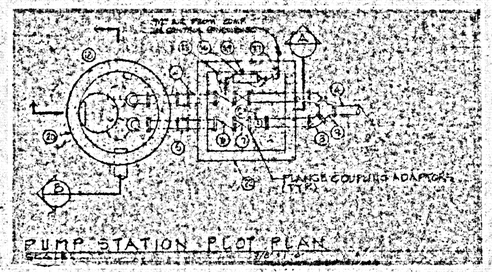
date	6-20-75
revised	
sheet, no.	M-4 of sheets



1 TD1 & TR2 - TIME DELAY RELAYS - 5 SECONDS TO CLOSE ON ENERGIZATION.)
2 TR3 - TIME DELAY RELAY - 5 MINUTES TO CLOSE ON ENERGIZATION.
3
4 M-1 & M-2 - MOTOR NOS. 1 AND TWO MAGNETIC STARTERS.
5 ALT. - ALTERNATE RELAYS - SWITCHES ON RE-ENERGIZATION.
6 C.R. - 6 POLE CONTROL RELAY - 4 POLES - NO. 1 - 2 POLES - NO. 2
7 SEL. SW1 - SELECTOR SWITCH #1
8 SEL. SW2 - SELECTOR SWITCH #2. SEE SELECTOR SWITCH LAYOUT
9 SEL. SW3 - SELECTOR SWITCH #3.
10 PS #1 AND PS #2 - DIFFERENTIAL PRESSURE SWITCH - CLOSE ON RISING PRESSURE.
11 PS #3 - DIFFERENTIAL PRESSURE SWITCH - CLOSES ON FALLING PRESSURE.
12 AR - ALARM RELAY - COMP. - HIGH OR LOW WATER ACTIVATED.
13 A - CONNECTION FROM CR RELAY TO ALARM RELAY.
14 PS #4 - DIFFERENTIAL PRESSURE SWITCH - SWITCHES ON FALLING PRESSURE.
15 TP - THERMAL PROTECTIVE DEVICES - CONN. THRU EA. MOTOR, T-1, T-2 AND T-3.
16 ETM - ELAPSED TIME METER - 6 DIGIT - TO REGISTER HRS & TENTHS OF HRS.
17 1W-1 AND 1W2 AND 2W1 AND 2W2 - MONITOR & SENSING PROBE CONN. TO MOTORS 1 & 2.

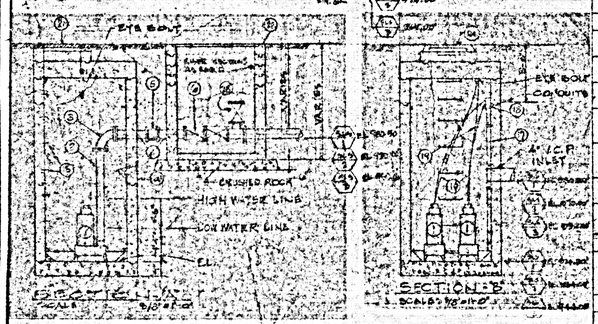
SEWAGE PUMP SCHEMATIC ELECTRICAL DIAGRM

ALL WIRING IN WET WELL TO BE IN CONTROL ENCLOSURE



NO.		ITEM - DESCRIPTION
1		SUBMERSIBLE PUMP AND MOTOR - "WEMCO" TORQUE FLOW, NON-CLOG, 7CUS RECESS IMPELLER RELIANCE DOUBLE SEAL, OIL BUFFER ZONE, MOTOR WITH WARNING DEVICE, OR EQUAL.
2		MERCER AMPEX WS ACID RESISTANT 4-PLY FLEXIBLE HOSE (100 PSI) WITH MALE STAINLESS STEEL BONDED CONNECTIONS (INSTALLED TAUT).
3		4"x3" LONG RADIUS CAST IRON FLANGED ELBOW WITH 1/2" GALV. NIPPLE AND ELBOW AS PER DETAIL ON SHEET.
4		4" FLANGED CAST IRON PIPE, FLG x P.E.
5		4" DRESSER COUPLINGS STYLE 38.
6		4" LEVER AND SPRING CHECK VALVE FULL OPENING BRONZE MOUNTED. DRILL & TAP FOR AIR LINE, CONN. AS SHOWN.
7		4" HOMESTEAD BALLCENTRIC PLUG VALVE, FIG. 1522
8		4" FLANGED 45° CAST IRON BEND.
9		4" FLANGED CAST IRON TRUE WYE.
10		POWER SUPPLY ASSEMBLY FURNISHED WITH PUMP, 30' CABLE, 4 POWER LEADS, 2 PROTECTOR WIRES AND 2 WARNING WIRES.
11		ALTERNATING RELAY, 120V. 1 POT.
12		COMBINATION CIRCUIT BREAKER, SIZE 1 STARTER WITH 3 QUICK-TRIP OVERLOADS, 120V. COIL AND EXTERNAL RESET BUTTON.
13		ELECTRODE-TYPE RELAYS, 120V. PRIMARY COIL AND ONE CONTACT/ MARRICK "TF" S/W OR APPROVED EQUAL.
14		CUMPRESSOR, DIAPHRAGM-TYPE, 120V., 10 WATT, ESSCO.
15		CAST IN M.H. STEPS PER L.A. COUNTY ENGINEER STD. S-17.
16		PRESSURE SWITCH - RANGE AND DIFFERENTIAL ADJUSTABLE PRESSURE SWITCHES.
17		3/8" P.V.C. AIR LINE WITH STAINLESS STEEL BRACKETS AND NYLON HARNESS TIES.
18		HEAVY DUTY JUNCTION BOX 6"x7"x4" DEEP (NOMINAL INSIDE DIA-METER) CROUSE-HINDS TYPE TEKP GUBOL OR APPROVED EQUAL.
19		STAINLESS STEEL CABLE MACKENSACK 1/4"x6/16" NYLON COVERED 630# TENSILE STRENGTH WITH 1/2"x6" CADMIUM PLATED EYE BOLT AND STAINLESS STEEL HOOK.
20		60" I.D. PRECAST MANHOLE WITH FLAT TOP AND ECCENTRIC 24" OPENING, ASSOCIATED CONCRETE PRODUCTS, INC., OR EQUAL, WITH STEPS. COAT ALL INTERIOR SURFACES WITH TAR EMULSION PAINT.
21		LOCKING MANHOLE FRAME AND COVER PER L.A. COUNTY ENGINEER STD. S-36 PLACED ON 6" TOP RING. EXCEPT SHALL BE SOLID
22		4'-0"x4'-0"x VARIABLE DEPTH (INTERIOR DIMENSIONS) "BROOKS" UTILITY BOX, MODEL W-304 WITH TRAFFIC COVER, MODEL 309.20, OR APPROVED EQUAL.
23		1/2" DIAMETER STD. GALV. IRON PIPE PVC COATED UNDERGROUND.
24		"BELL & GOSSETT" SINGLE-STAGE AIR COMPRESSOR 1/3 H.P., 63 R.P.M., 60 CYCLE, 6 B WITH CENTRIFUGAL UNLOADER AND CHECK VALVE. RATED TO SUPPLY 2 C.F.M. FREE AIR / 1" OF DIA OF SEWER PUMP DISCH. LINE. SE-2 = 4 PSI
25		1/2" DIAMETER GALV. GATE VALVE 150# MWD.
26		1/2" DIAMETER GALV. IRON CHECK VALVE # MWD.
27		1/2" DIAMETER GALV. IRON UNION 150# MWD.
28		4"x4"x4" FLANGED TEE WITH GATE VALVE & B.F.
29		4" x 12" LENGTH OF SCH. 40 PIPE W/ AIR COMP. BUFFER.

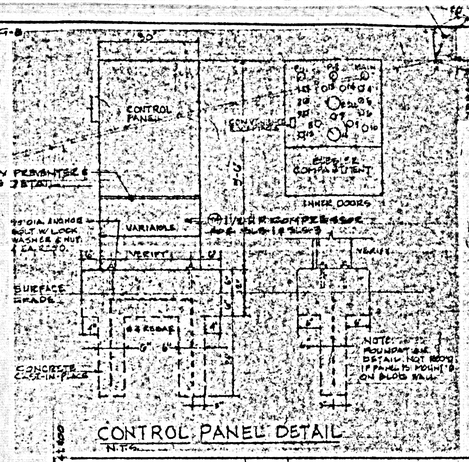
NOTE: APCD APPROVAL & CERTIFICATION REQUIRED FOR ALL AIR COMPONENTS & INSTALLATIONS.



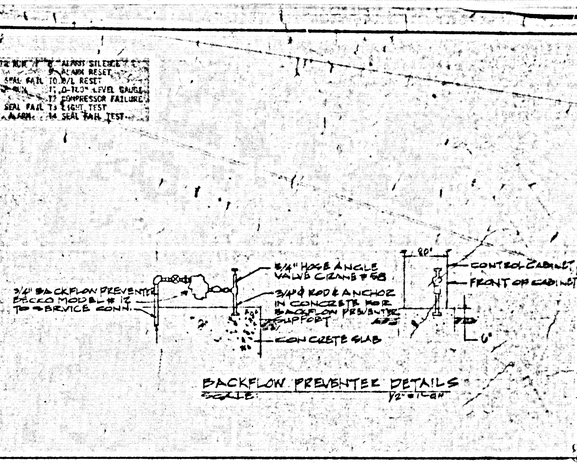
ALL JOINTS IN SUMP & VALVE BOX TO BE SEALED WATERTIGHT WITH APPROVED MATERIAL.

SEWAGE LIFT STATION DETAILS SLS-1, 2, 3 & SE-1 & SE-2

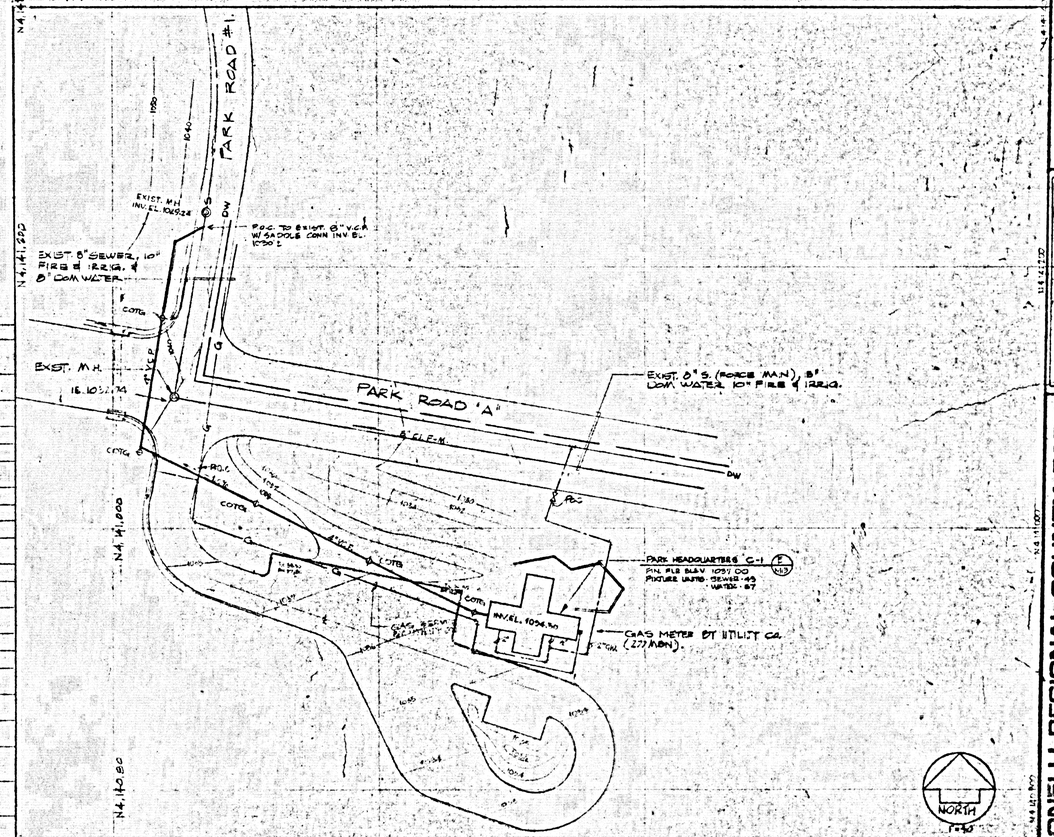
SCALE NOTED



CONTROL PANEL DETAIL



BACKFLOW PREVENTER DETAILS



REF CC-8995

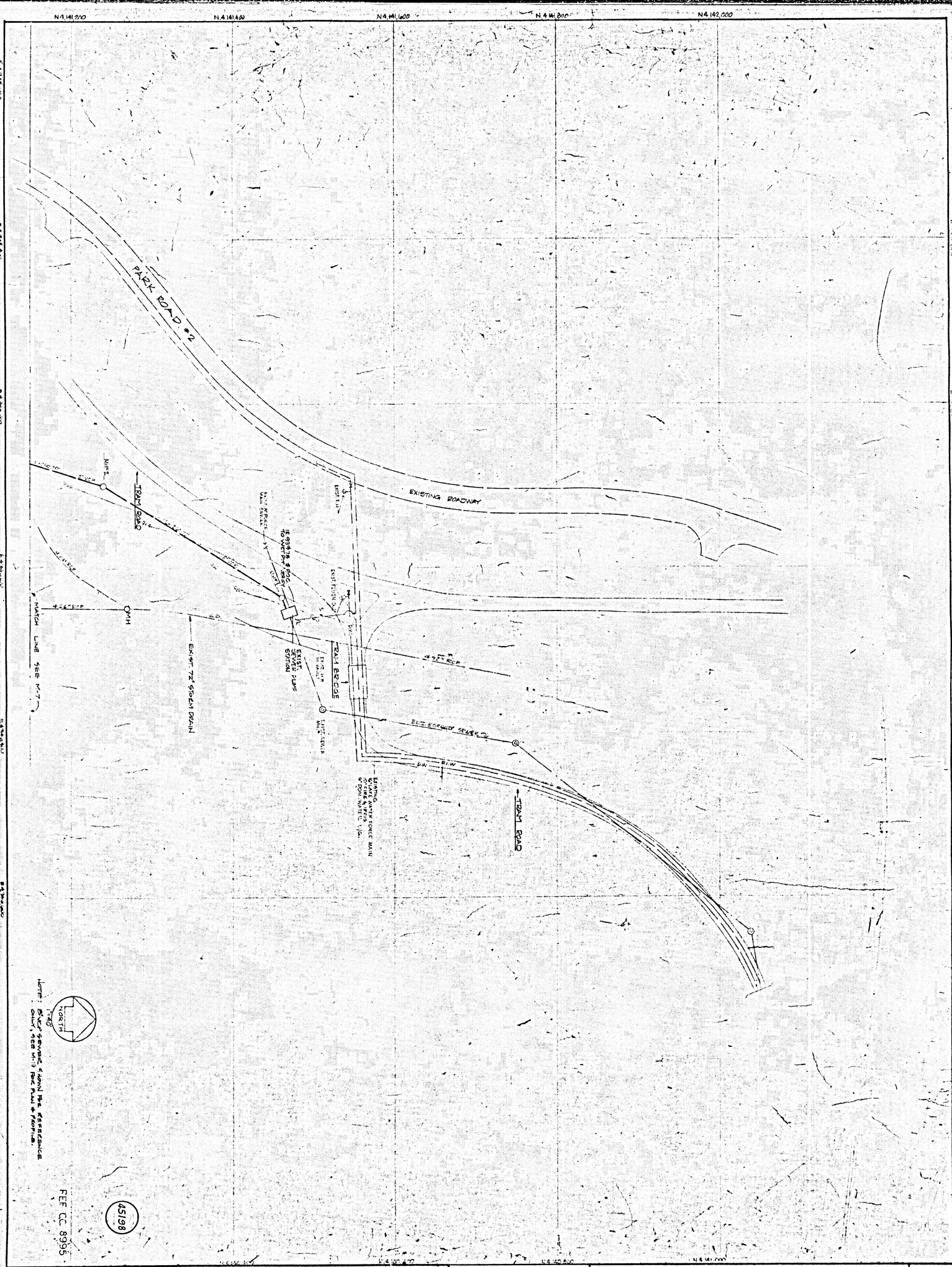
45/197

WILLIAMSON, MORRIS & PAIGE
215 e. 25th st. long beach, calif. 90806
telephone 213-426-3845

HUGH CARTER ENGINEERING CORP.
(A) ELECTRICAL ENGINEERING
(B) MECHANICAL ENGINEERING
(C) CIVIL ENGINEERING

FRANK G. BONELLI REGIONAL COUNTY PARK
(PUDDINGSTONE)
PHASE IV
BLDG. C-1 MECHANICAL PLOT PLAN

date	8-30-78
revision	
sheet no.	M-5 of 5 sheets



M-6	FRANK G. BONELLI REGIONAL COUNTY PARK (PUDDINGSTONE)	HUGH CARTER ENGINEERING CORP. ELECTRICAL ENGINEERING MECHANICAL ENGINEERING GARDEN GROVE • LA JOLLA • CALIFORNIA	WILLIAMSON, MORRIS & PAICE 275 e. 25th st., long beach, calif. 90806 telephone 213-426-3945
	PICNIC VALLEY, SEWER PUMP STATION, MECHANICAL PHASE IV	cap. proj. no. 8804 spec. no. 3231	

E 4,345,800 E 4,345,800 E 4,346,000 E 4,346,200 E 4,346,400 E 4,346,600 E 4,346,800

COMFORT STATION G-7 (C) M-10
F.H. FLR. ELEV. 971.0
FIXTURE UNITS - SEWER - 64
- WATER - 81

MATCH LINE SEE M-6

LE 968.6

45°

P.O.C. INV. EL. 956.20

12" C.M.P.

SD.

976 ± L

2 C.Y. U/G

PARK ROAD #2

8" V.C.P.

LE 958.30

MH #3

960

P.O.C. TO EXIST 2" STUB & S.O.V.

N 4,140,000

N 4,139,800

8" V.C.P.

MH #4

970

6.0

970

970

4-EXIST. FLUSH OUT TO EXIST. F.H.

970

8" V.C.P.

TRAM ROAD

DW F.W.M.

MH # 5

EXISTING ROADWAY

P.O.C. LE 961.30

LE 958.9

4" C.O.T.G.

COMFORT STATION G-11 (B) M-10
F.H. FLR. ELEV. 971.0
FIXTURE UNITS - SEWER - 65
WATER - 102

8" V.C.P.

MH # 6

970

1227.72'

8" V.C.P.

NORTH

NOTE: 8" VCP SEWER SHOWN FOR REFERENCE ONLY. SEE M-19 FOR PLAN & PROFILE.

EXISTING 8" CAST IRON WATER MAIN
EXISTING 6" PIPE IN PLACE

2 C.Y. U/G

P.O.C. TO EXIST 2" STUB & S.O.V.

DW 12" CON. 16" F.W.M.

45/99

PARK ROAD "A"

REF CC 8995

N 4,140,800 N 4,140,600 N 4,140,400 N 4,140,200 N 4,140,000 N 4,139,800

E 4,345,800 E 4,346,000 E 4,346,200 E 4,346,400 E 4,346,600 E 4,346,800 E 4,347,000

WILLIAMSON, MORRIS & PAIGE
275 e. 25th st. long beach, calif. 90806
telephone 213 · 426-3945

HUGH CARTER ENGINEERING CORP.
• ELECTRICAL ENGINEERING
• MECHANICAL ENGINEERING
• AMERICAN SOCIETY OF HEATING, REFRIGERATING & AIR CONDITIONING ENGINEERS

FRANK G. BONELLI REGIONAL COUNTY PARK
(PUDDINGSTONE)

BLDGS. G-1 & G-7 MECHANICAL PLOT PLAN

cap. proj. no. 2800

date 8-20-79
revised

sheet no. M-7

E 4,346,800 E 4,347,000 E 4,347,200 E 4,347,400 E 4,347,600 E 4,347,800 E 4,348,000 E 4,348,200

N 4,141,200 N 4,141,000 N 4,140,800 N 4,140,600 N 4,140,400

MATCH LINE SEE M-9

TRAM ROAD

10 MIN. TYPICAL

EXISTING ROADWAY

PARK ROAD "A"

COMFORT STATION G-2
FF: 991.2 ELEV. 977.0
WATER - 91

L.E. 975.60

P.O.C. L.E. 972.11

P.O.C. TO EXIST. 2" STUB-IN

MATCH LINE SEE M-7

10" D.I.P. W. FROM LIFT STATION

EXIST. 10" D.W. FROM PEG.

NOTE: 8" VCP SEWER SHOWN FOR REFERENCE ONLY, SEE M-20 FOR PLAN & PROFILE.

NORTH

45200

REF. CC 8995

WILLIAMSON, MORRIS & PAIGE
275 e 25th st. long beach, calif. 90806
telephone 213 - 426-3645

HUGH CARTER ENGINEERING CORP.
• ELECTRICAL ENGINEERING
• MECHANICAL ENGINEERING
• SANITARY AND PUBLIC WORKS ENGINEERING

FRANK G. BONELLI REGIONAL COUNTY PARK
(PUDDINGSTONE)

BLDG. G-2 - MECHANICAL PLOT PLAN

PM 458 32'

CORP. PROJ. NO. 8804
SPEC. PROJ. 523

date 4-20-73
revised

sheet no. M-8 of shts.

E 4 348,000 E 4 348,200 E 4 348,400 E 4 348,600 E 4 348,800 E 4 349,000 E 4 349,200

N 4 141,800
N 4 141,600
N 4 141,400
N 4 141,200
N 4 141,000

TRAM ROAD

COMFORT STATION G-4
FIRE FLOW @ 20 P.S.I. 1000 G.P.M.
FIXTURE UNITS - SEWER - 44
- WATER - 91

I.E. 1004.04
C.O.T.G

8" CON U/G

4" S.
C.O.T.G

I.E. 1005.00
MH #11
8" VCP

PROP. 8" VCP

PROP. TO EXIST. 8" STUB @ S.D.V.

MATCH LINE SEE M-5

EXIST. 16" FIRE & IRRIGATION & 6" DOM. WATER

PARK ROAD "A"

EXISTING ROADWAY

4" DW F.W.

P.O.C. TO EXIST. 2" STUB @ S.D.W.

1" W.C.W.W.

3/4" H.B.B.S. W/ ASW-GR SECURE TO BLDG W/ DROP CAN ELBOW

F.F. 998.0

BLDG - G-5

NORTH
1"=40'

NOTE: 8" VCP & SEWER SHOWN FOR REFERENCE ONLY SEE M-20 FOR PLAN & PROFILE.

45201

REF. CC ROOF

N 4 141,800
N 4 141,600
N 4 141,400
N 4 141,200
N 4 141,000

E 4 348,000 E 4 348,200 E 4 348,400 E 4 348,600 E 4 348,800 E 4 349,000 E 4 349,200

HUGH CARTER ENGINEERING CORP.
CIVIL ELECTRICAL ENGINEERING
MECHANICAL ENGINEERING
1 Corporate Center Plaza, Suite 200, Monterey Park, California 91754 (213) 265-2531

HCE
WILLIAMSON, MORRIS & PAIGE
275 e. 25th st. long beach, calif. 90806
telephone 213-426-3945

FRANK G. BONELLI REGIONAL COUNTY PARK
(PUDDINGSTONE)

BLDG. G-4 MECHANICAL PLOT PLAN

Phase IIC

Corp. proj. no. 8229

date 9-20-78
revised

sheet no. M-6 of sheets

E 4346,400 E 4347,600 E 4348,800 E 4350,000 E 4351,200 E 4352,400

N 4142,800 N 4142,200 N 4141,600 N 4141,000

EXIST. 10" F.I.W. & 6" DOM. WATER

EXIST. 8"

MH

MH

MATCH LINE TO COORDINATE N 4141,820
THIS SHEET

MATCH LINE TO COORDINATE E 4347,600
THIS SHEET

EXIST. 6" DOM. WATER & 10" FIRE & IRRIGATION

EXIST. MH

TRAM ROAD

S - EXIST. 8" VCP

DW

GW

S

RIM 10'
DW 6'

P.O.C. TO EXIST. 8" STUB & G.V.

8" C.W. U/G

EXIST. MH

N 4142,300

P.O.C. W/ SADDLE & 45 W/ 8" COMM. TO EXIST. 8" VCP
INV. E.L. 1 958.91

LE 964.4

COMFORT STATION G-6
FINISH FLOOR ELEV. 977.0
FIXTURE UNITS - SEWER - 24
WATER - 91

FISH CLEANING STATION SEE E/C1

N 4142,780
E 4348,250

P.O.C. TO EXIST. 2" STUB & G.V.

2" C.W.

FISH CLEANING STATION SEE E/C1

LE 969.0

COMFORT STATION G-5
FINISH FLOOR ELEV. 977.0
FIXTURE UNITS - SEWER - 24
WATER - 91

FLAT SLOPE

8" C.W. INV. ELEV. 976.30
TO 4" PLUG

EXIST. M.H.
N 4142,208
E 4348,520
4" C.I.P.M.

REF. SHEET M-2

EXIST. MAIN ROAD

PARK ROAD #6

PARK ROAD #5

EXIST. GRADE

8" PVC SEWER

VALVE BOX

STA. 0+00
INVEL. 960.00

STA. 0+00+00
INVEL. 960.00

STA. 0+00+00
INVEL. 960.00

4" FORCE MAIN
PROFILE

HORIZ 1" = 40'-0"
SCALE
VERT 1" = 5'-0"

NORTH

45202

REF. C.C. #995

WILLIAMSON, MORRIS & PAIGE
275 e. 23th st., long beach, calif. 90806
telephone 213-426-3345

HUGH CARTER ENGINEERING CORP
• ELECTRICAL ENGINEERING
• MECHANICAL ENGINEERING
• CIVIL ENGINEERING
SANTA ANA, CALIFORNIA

FRANK G. BONELLI REGIONAL COUNTY PARK
(PUDDINGSTONE)

BLDG. G-5 & G-6 MECHANICAL PLOT PLAN

cap. proj. no. 8604
spec. no. 525-1

date 4-2075
revised

sheet no. M-10 of sets

N 4,143,640
N 4,143,560
N 4,143,480
N 4,143,400
N 4,143,320
N 4,143,240
N 4,143,160
N 4,143,080
N 4,143,000

E 6,348,240
E 6,348,400
E 6,348,560
E 6,348,720
E 6,348,880
E 6,349,040
E 6,349,200
E 6,349,360

EXIST. 6" DOM. WATER & 4" FIRE C.I. MAINS.

FISH CLEANING STATION SEE M-17

EQTG.

4"CW. U/G

COMFORT STATION G-B
FIN. F.F. ELEV. 971.0
FIXTURE UNITS - SEWER - 56
- WATER - 81

2"CW. U/G

P.O.C. TO EXIST 2" PVC & 2"CW

12"SS

LE 960.0

1"CW. U/G

EQTG.

TRAM ROAD

2" VENT UP TO 10'-0" ABV. GRADE AT CLIFF. TO 12'-0" ABV. STEEL PIPE ANCHORED IN CONC. BASE.

N 4,143,099
E 6,348,627

EXIST. F.H.

THRUST BLOCK

P.O.C. INVERT EL. 958.60 TO EXIST. 4" FORCE MAIN

PUMP CONTROL PANEL

N 4,143,057.16
E 6,348,648.96

EXIST 4" FORCEMAIN

PARK ROAD #2

4" FORCE MAIN PROFILE

SCALE HORIZ. 1"=40'-0"
VERT. 1"=8'-0"

EXIST. GRADE

4"CI. F.M.

VALVE BOX

EXIST. 6" C.I. FORCE MAIN

P.O.C. CONNECT TO EXIST. 4" F.M. INVERT EL. 958.60

960

950

940

0+00

0+00

NORTH

1"=80'

45203

REF. C.C. 8995

WILLIAMSON, MORRIS & PAIGE
215 e. 23th st., long beach, calif. 90806
telephone 213 426-3945

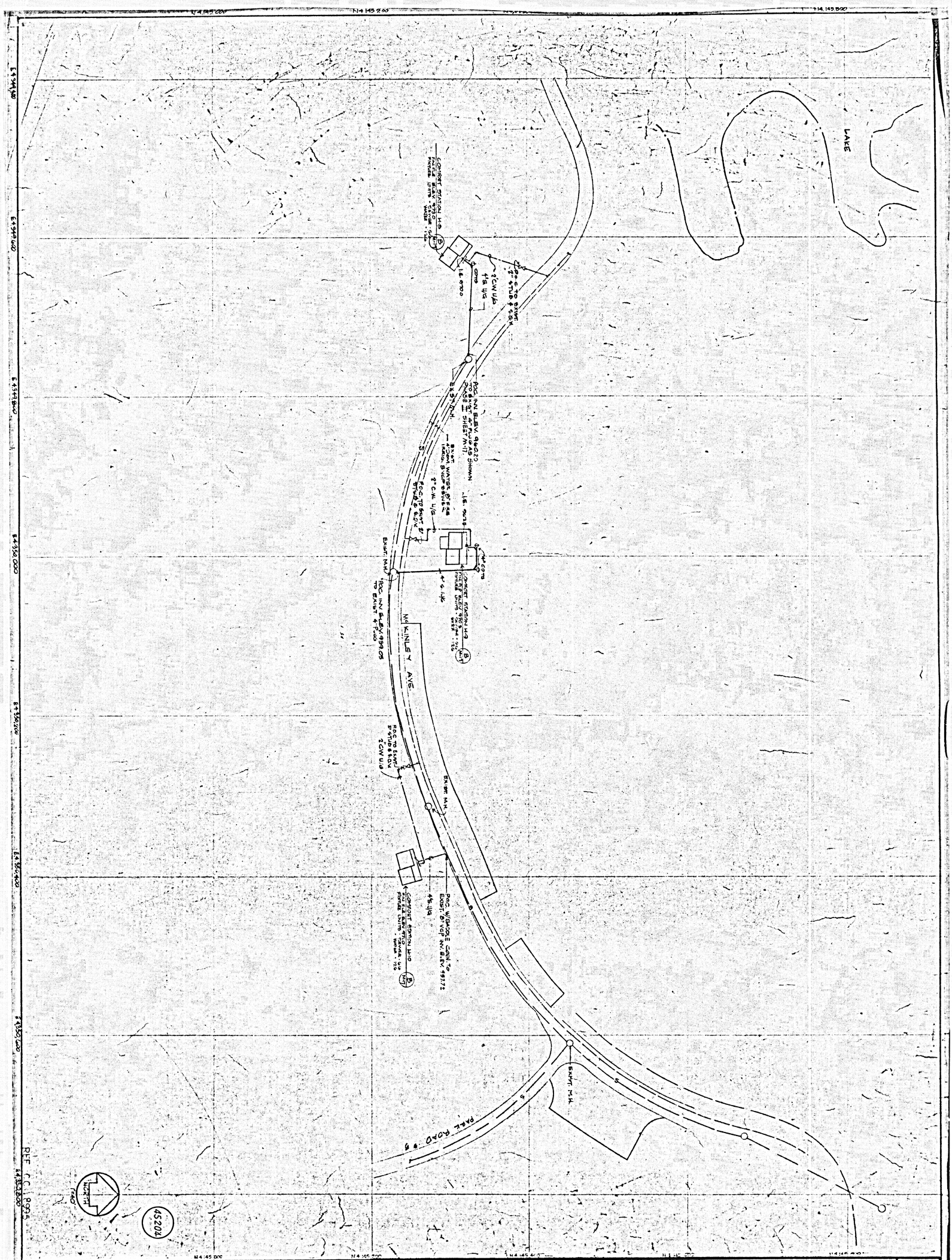
HUGH CARTER ENGINEERING CORP.
civil, electrical, mechanical engineering
consultants

FRANK G. BONELLI REGIONAL COUNTY PARK
(PUDDINGSTONE)

BLDG G-B MECHANICAL PLOT PLAN PHASE II

date 3-30-78
revised

sheet no.
M-11
of sheets



M-12	FRANK G. BONELLI REGIONAL COUNTY PARK (PUDDINGSTONE)	HUGH CARTER ENGINEERING CORP. ELECTRICAL ENGINEERING MECHANICAL ENGINEERING GARDEN GROVE, LA JOLLA, CALIFORNIA	WILLIAMSON, MORRIS & PAICE 275 e. 25th st., long beach, calif. 90806 telephone 213-426-3945
	BLDGS. H-8, H-9, H-10 MECHANICAL PLOT PLAN PHASE IV	cap. proj. no. 5804 spec. no. 32311	

PARK ROAD

N 4,143,200

N 4,143,000

N 4,142,800

N 4,142,600

N 4,142,400

N 4,142,200

N 4,142,000

N 4,141,800

E 4,351,200

E 4,351,400

E 4,351,600

E 4,351,800

E 4,352,000

E 4,352,200

E 4,352,400

E 4,352,600

E 4,352,800

E 4,353,000

E 4,353,200

E 4,353,400

E 4,353,600

E 4,353,800

E 4,354,000

E 4,354,200

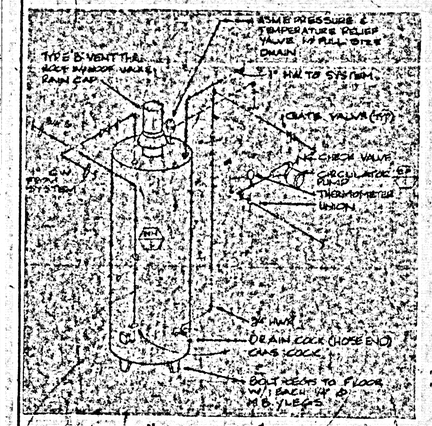
E 4,354,400

E 4,354,600

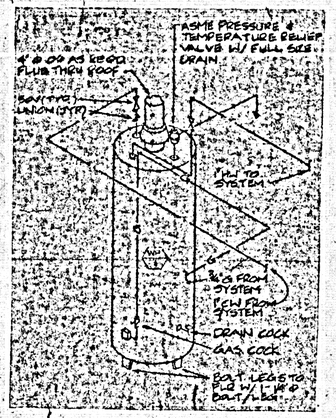
E 4,354,800

E 4,355,000

E



BUILDING A-1

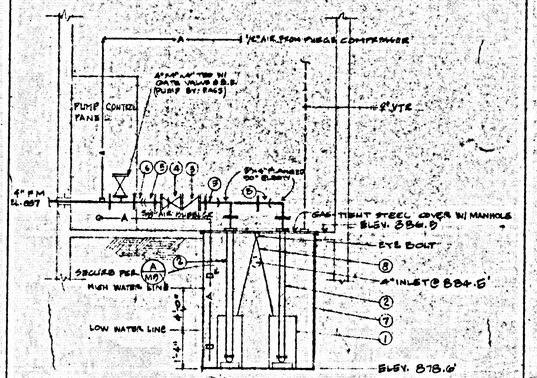


BUILDING C-1

WATER HEATER DETAIL

SCALE NONE (H)

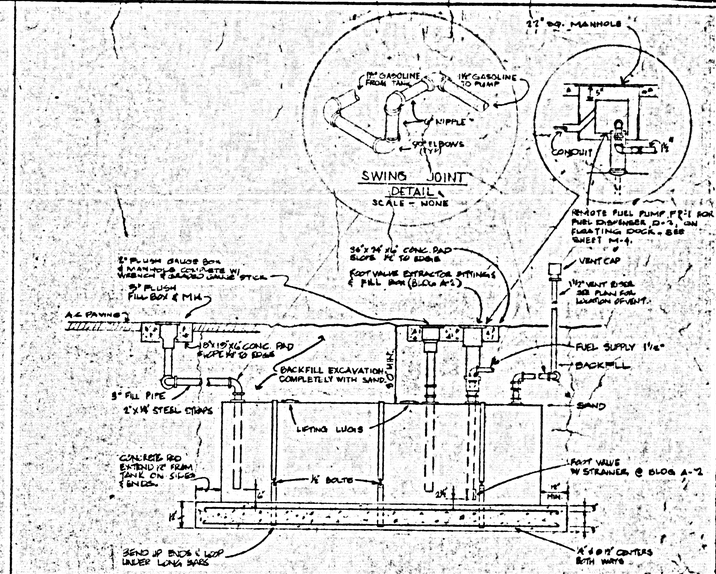
1. SUBMERSIBLE PUMP AND MOTOR - "WEMCO" TORQUE FLOW, NON-CLOG, 100% RECESS IMPELLER RELIANCE DOUBLE SEAL, OIL BUFFER ZONE, MOTOR WITH WARNING DEVICE OR EQUAL.
2. 3" MERCER AMPEX MS ACID RESISTANT 4-PLY FLEXIBLE HOSE (100 PSI) WITH MALE STAINLESS STEEL BONDED CONNECTIONS (INSTALLED TAUT).
3. 4" LEVER AND SPRING CHECK VALVE FULL OPENING BRONZE MOUNTED.
4. 4" HOMESTEAD BALLCENTRIC PLUG VALVE, FIG. 3522
5. 4" FLANGED 45° CAST IRON BEND.
6. 4" FLANGED CAST IRON TRUE WYE.
7. 42" DIA X 8' DEEP C.I. BASIN.
8. STAINLESS STEEL CABLE YACHERSACK 7/8" x 5/16" NYLON COVERED 83000 TENSILE STRENGTH WITH 7/8" x 6" CADMIUM PLATED EYE BOLT AND STAINLESS STEEL HOOK.



568 A/M9 FOR WIRING DIAGRAM

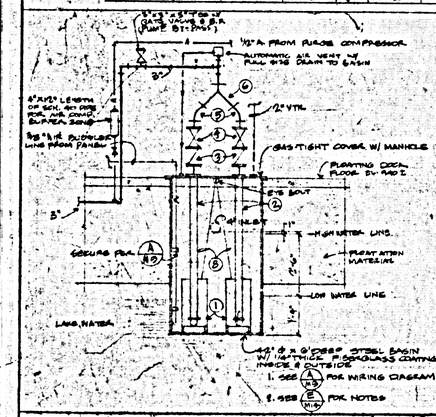
BUILDING A-1 SEWAGE EJECTOR (SS/2)

SCALE NONE (E)



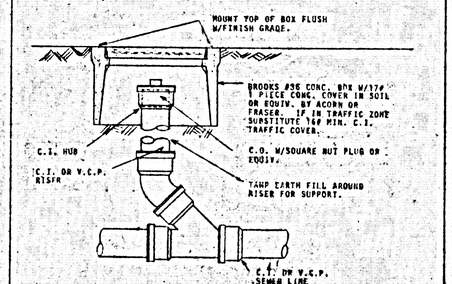
FUEL TANK DETAIL

SCALE NONE (B)



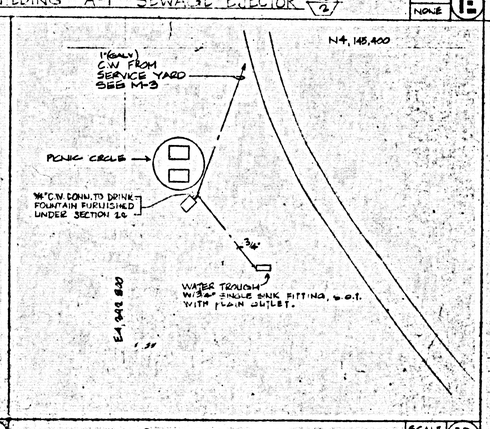
SEWAGE EJECTOR—DETAIL (SS/1)

SCALE NONE (J)



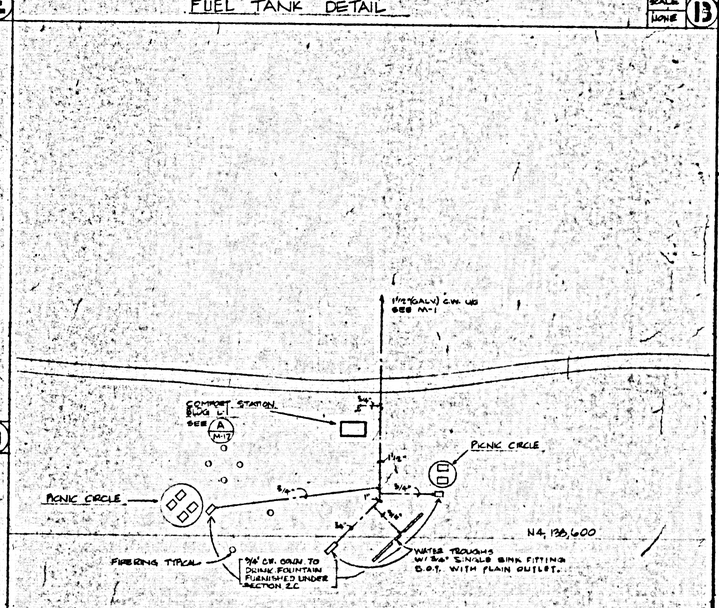
SEWER CLEANOUT TO GRADE - DETAIL

SCALE NONE (G)



REST AREA NO.1

SCALE 1"=20' (D)



EQUESTRIAN CAMPGROUND

SCALE 1"=40' (A)

TANK INSPECTION PIT / DETAIL

SCALE NONE (I)

ELECTRIC WATER HEATER PIPING DIAGRAM

SCALE NONE (F)

REST AREA NO.2

SCALE 1"=20' (C)

WILLIAMSON, MORRIS & PAIGE
275 e. 25th st., long beach, calif. 90806
telephone 213 426-3945

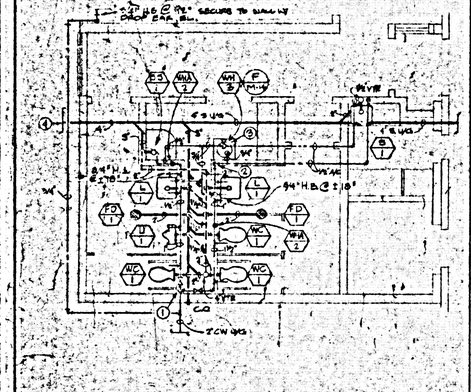
HUGH CARTER ENGINEERING CORP.
- ELECTRICAL ENGINEERING
- MECHANICAL ENGINEERING
- CIVIL ENGINEERING

FRANK G. BONELLI REGIONAL COUNTY PARK
(PUDDINGSTONE)
EQUESTRIAN CAMPGROUND PLANS & MISC. DETAILS

date 9-20-73
revised
sheet no. M-14 of sheets

NOTES

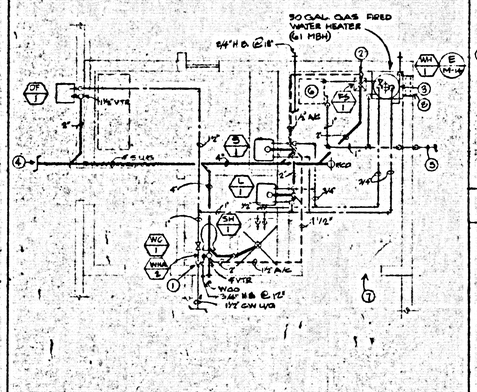
1. 2" C.W. UP TO 1-1/2" FIXTURE HEADER W/S.O.V. ON EACH.
2. 2" C.W. UP TO A/C.
3. 3/4" H. & C.W. DN W/S.O.V. & UNION ON EACH, ASME PAT RELIEF VALVE PIPED TO JANITOR, MOUNT WATER HEATER ON ANGLE IRON BRACKET AT CEILING.
4. 3"ø S.V.P. W/G FOR CONT. SEE DETAIL F, THIS SHEET.



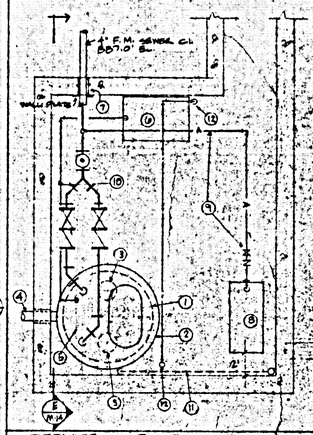
TOILET ROOM BLDG. C-1 — SCALE 1/4" — G

NOTES

1. 1-1/2" C.W. UP TO A/C. 1" C.W. TO WC-1.
2. 1-1/2" C.W. UP TO A/C.
3. 3/4" H. & C.W. DN W/S.O.V. & UNION EACH. 3/4" H. DN & CONN. W/E.D.V. AND FLEX. CONN., 3" DIA. FLUE THRU ROOF, ASME PAT RELIEF VALVE PIPED TO FS-1.
4. 4" SOIL W/G FOR CONT. SEE DETAIL B, THIS SHEET.
5. 1" GAS FROM METER UP TO ABOVE FLOOR THROUGH WALL AND UP TO A/C.
6. 1" GAS DN. TO FORCED AIR FURNACE & CONN. W/S.O.V. & FLEX. CONN. 3/4" CONDENSATE DRAIN TO FS-1. (166 MBH)
7. 12x16 LOUVER IN DOOR WORK, LOCATED WITHIN 12" FROM FLOOR.
8. 16x14 LOUVER IN DOOR WORK, LOCATED WITHIN 12" FROM CEILING.



TOILET ROOM BLDG. C-1 — SCALE 1/4" — F

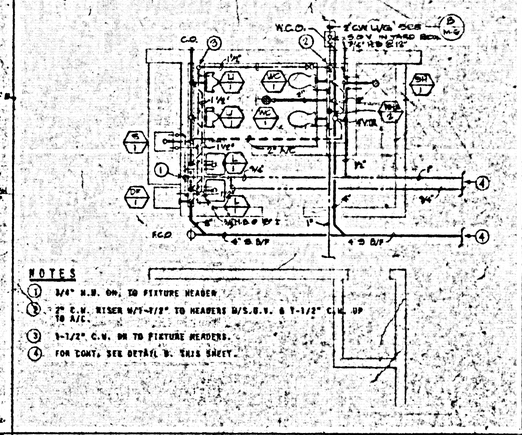


SERVICE BUILDING SEWAGE EJECTOR PLAN — SCALE 1/2" — D

NOTES

1. 42" DIA. x 6' DEEP P.T. SUMP.
2. 48" DIA. GAS TIGHT STEEL COVER WITH P.S.
3. SUBMERSIBLE PUMP.
4. 4" S. INLET TO SUMP, EL. 884.2
5. 3" PUMP DISCHARGE UP TO 2'-0" ABOVE F.F. W/ 3/4" B. CHECK & GATE VALVES AS DESCRIBED IN DETAIL B/M-19.
6. PUMP CONTROL PANEL SEE ENGEET W/R WEATHER HOUSING.
7. 4" W. SLEEVE THRU WALL, MAKE WATERTIGHT WITH PLASTIC PIPE.
8. AIR COMPRESSOR FOR LINE AERATION WITH SPRING VIBRATION ISOLATOR MOUNTING, RUN 3/4" GALV. AIR LINE TO BOTTOM OF SUMP.
9. 3/4" H. TO 55-2 DISCH. LINE WITH UNION, CHECK VALVE & GATE VALVE.
10. 3/4" BUBBLER AIR TUBE.
11. 6" V. UP THRU ROOF.
12. 3/4" C.W. DOWN FROM 1ST FLOOR TO R.P. BACKFLOW PREVENTER & S.S. IN PANEL.

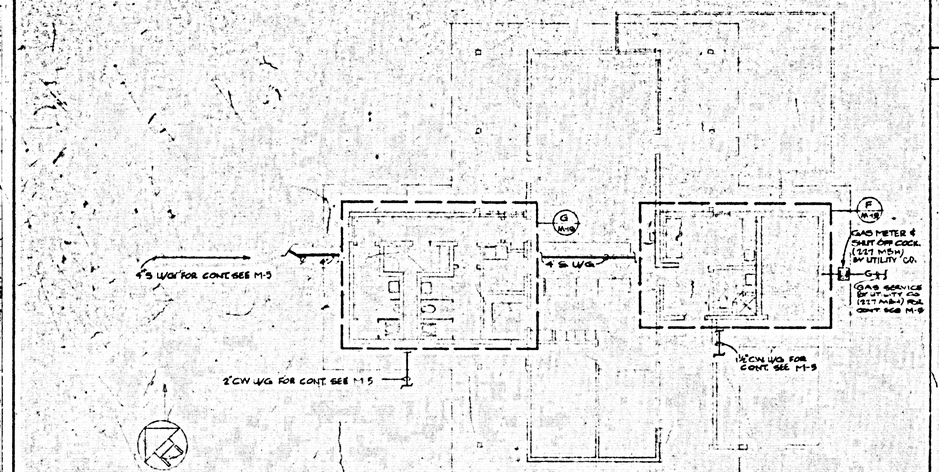
NOTE: APCD APPROVAL / CERTIFICATION REQUIRED FOR SEWAGE AERATION BLOWER(S) AND MOTOR(S).



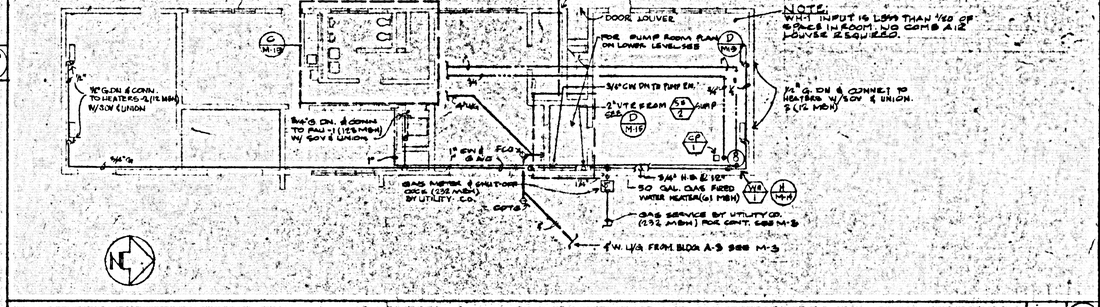
NOTES

1. 3/4" H.B. ON TO FIXTURE HEADER.
2. 2" C.W. RISER W/T-1/2" TO HEADERS W/S.O.V. & 1-1/2" C.W. UP TO A/C.
3. 1-1/2" C.W. DN TO FIXTURE HEADERS.
4. FOR CONT. SEE DETAIL B, THIS SHEET.

TOILET ROOM BLDG. A-1 — SCALE 1/4" — C



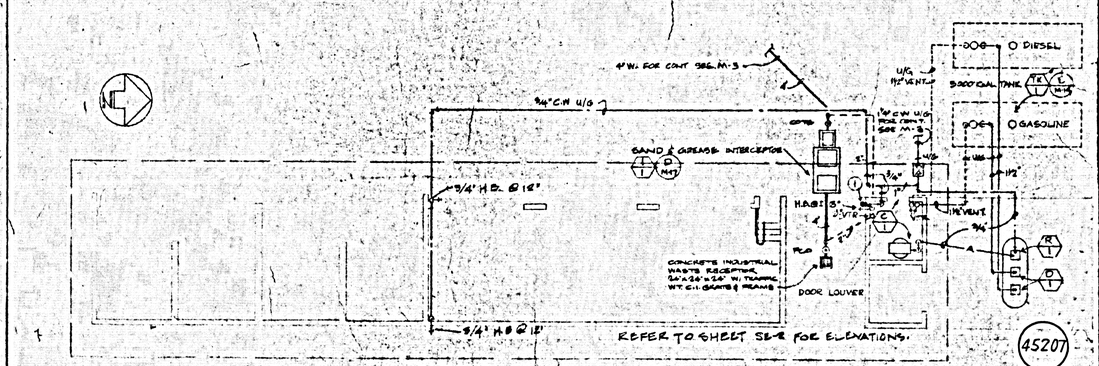
PARK HEADQUARTERS BUILDING C-1 — SCALE 1/8" — E



SERVICE BUILDING A-1 — SCALE 1/8" — B

NOTES

1. 3/4" HOSE BIBB WITH PRESSURE TYPE VACUUM BREAKER EXPOSED ON WALL @ 2'-7" ABOVE FLOOR.



REF CC 8995

MAINTENANCE SERVICE YARD & BULK STORAGE BLDG. A-3 — SCALE 1/8" — A

WILLIAMSON, MORRIS & PAIGE
215 e. 25th st. los angeles, calif. 90806
telephone 213-426-3845

HUGH CARTER ENGINEERING CORP
/ ELECTRICAL ENGINEERING
ENGINEERING
ENGINEERING
ROOM / SANITARIA

FRANK G. BONELLI REGIONAL COUNTY PARK
(PUDDINGSTONE)
BLDGS. A-1 A-3 & C-1 PLUMBING PLANS

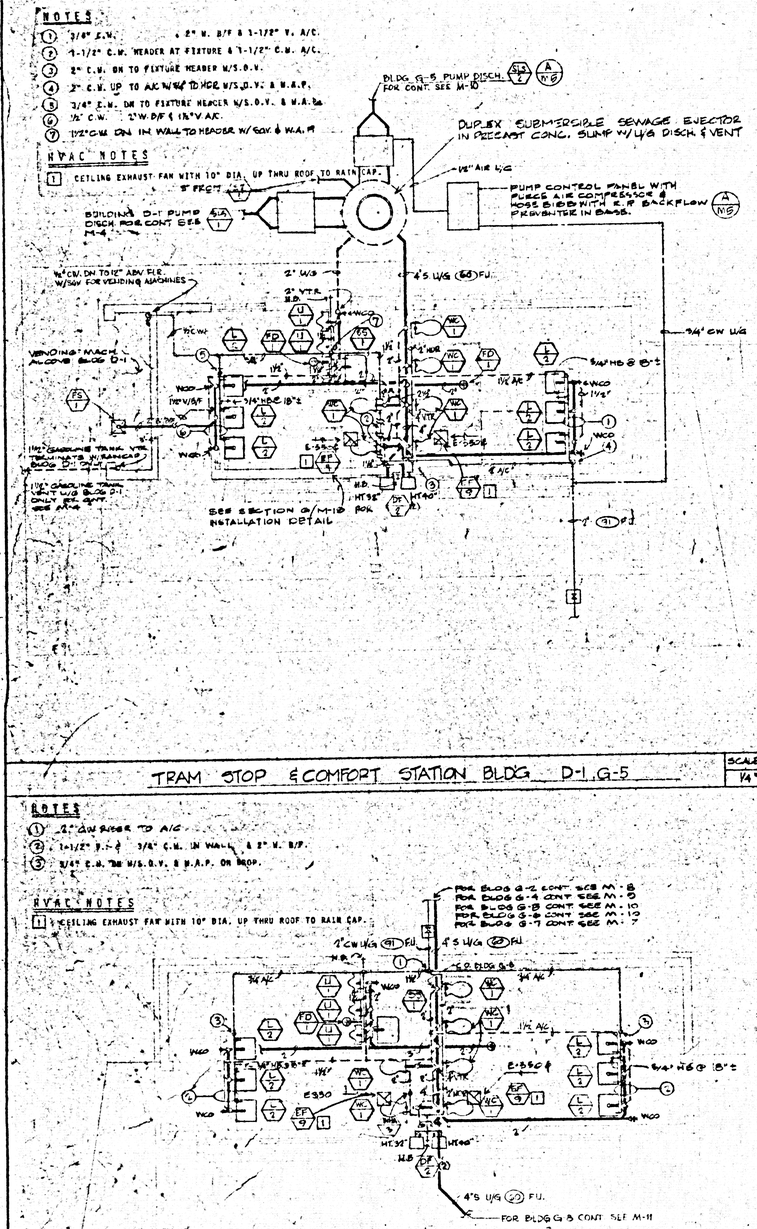
date 4-20-73
revised
sheet no. M-15 of 21 sheets

NOTES

1. 3/4" C.W. + 2" W. B/F & 1-1/2" V. A/C.
2. 1-1/2" C.W. HEADER AT FIXTURE & 1-1/2" C.W. A/C.
3. 2" C.W. DN TO FIXTURE HEADER W/S.O.V.
4. 2" C.W. UP TO A/C W/(2) 1" HDR TO HDR W/S.O.V. & M.A.P.
5. 3/4" C.W. DN TO FIXTURE HEADER W/S.O.V. & M.A.P.
6. 1/2" C.W. 2"W. B/F & 1½"V A/C.
7. 1½" C.W. DN IN WALL TO HEADER W/ GOV. & M.A.P.

HVAC NOTES

1. CEILING EXHAUST FAN WITH 10" DIA. UP THRU ROOF TO RAIN CAP.



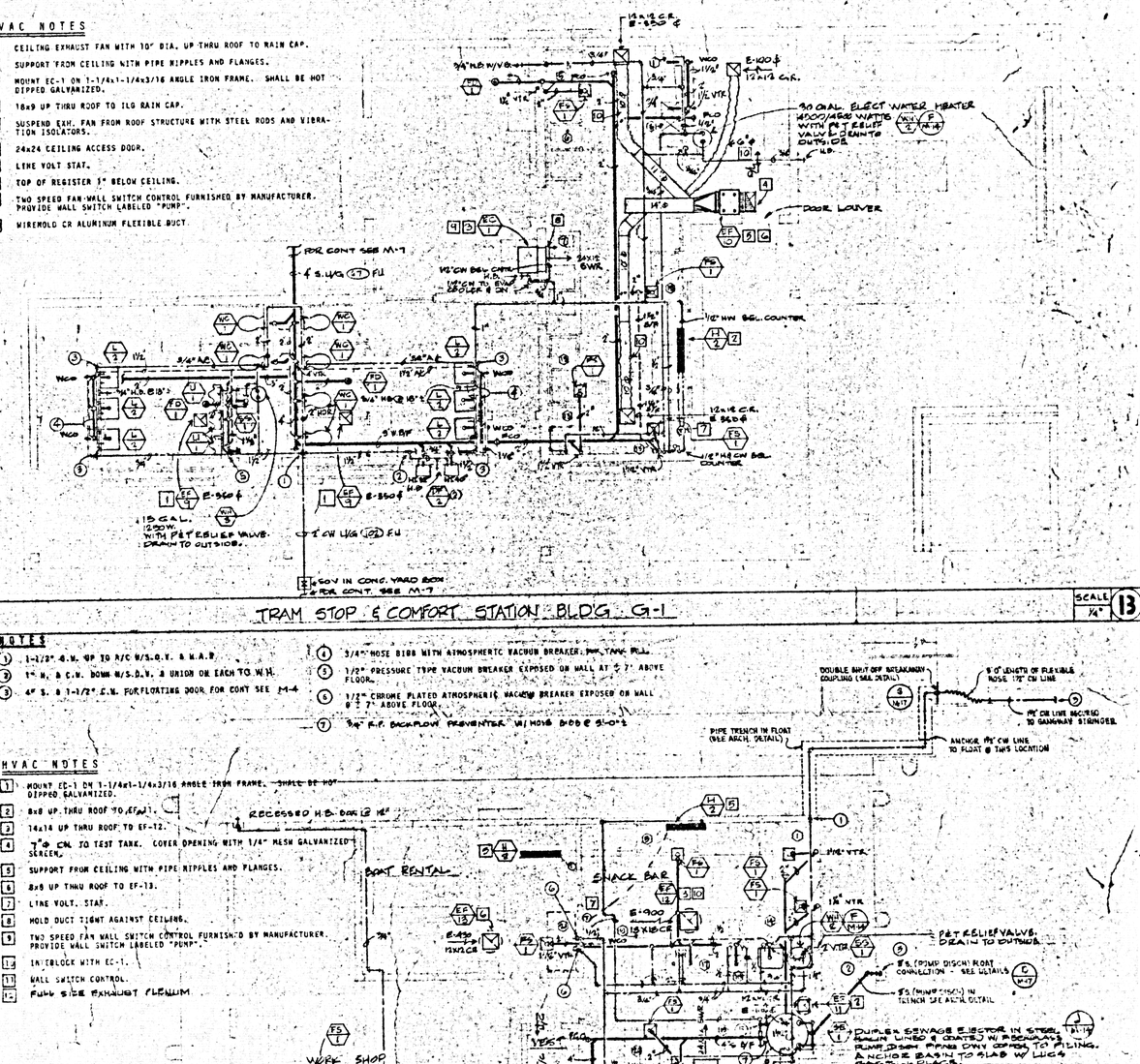
TRAM STOP & COMFORT STATION BLDG D-1, G-5 — SCALE 1/4" (D)

NOTES

1. 2" C.W. UP TO A/C W/(2) 1" C.W. A/C.
2. 9/4" C.W. DN. TO DRINKING FOUNTAINS & H.B.
3. 3/4" C.W. DN. TO FIXTURE HEADER W/S.O.V. & M.A.P.
4. 3/4" H. & C.W., 2"W B/F & 1½" V.A/C.
5. 1-1/2" C.W. DN. W/S.O.V. & M.A.P. OR DROP.
6. 1/2" PRESSURE TYPE VACUUM BREAKER CHROME PLATED EXPOSED ON WALL Ø 7" ABOVE FLOOR.

HVAC NOTES

1. CEILING EXHAUST FAN WITH 10" DIA. UP THRU ROOF TO RAIN CAP.
2. SUPPORT FROM CEILING WITH PIPE NIPPLES AND FLANGES.
3. MOUNT EC-1 ON 1-1/4x1-1/4x3/16 ANGLE IRON FRAME. SHALL BE HOT DIPPED GALVANIZED.
4. 18x9 UP THRU ROOF TO ILG RAIN CAP.
5. SUSPEND EXH. FAN FROM ROOF STRUCTURE WITH STEEL RODS AND VIBRATION ISOLATORS.
6. 24x24 CEILING ACCESS DOOR.
7. LINE VOLT STAT.
8. TOP OF REGISTER 3" BELOW CEILING.
9. TWO SPEED FAN-WALL SWITCH CONTROL FURNISHED BY MANUFACTURER. PROVIDE WALL SWITCH LABELED "PUMP".
10. MIREMOLD OR ALUMINUM FLEXIBLE DUCT.



TRAM STOP & COMFORT STATION BLDG G-1 — SCALE 1/4" (B)

NOTES

1. 1-1/2" C.W. UP TO A/C W/S.O.V. & M.A.P.
2. 1" H. & C.W. DOWN W/S.O.V. & UNION OR EACH TO W.H.
3. 4" S. & 1-1/2" C.W. FOR FLOATING DOOR FOR CONT SEE M-4
4. 3/4" HOSE BIBB WITH ATMOSPHERIC VACUUM BREAKER. FOR TANK FILL.
5. 1/2" PRESSURE TYPE VACUUM BREAKER EXPOSED ON WALL AT ± 7' ABOVE FLOOR.
6. 1/2" CHROME PLATED ATMOSPHERIC VACUUM BREAKER EXPOSED ON WALL Ø ± 7' ABOVE FLOOR.
7. 3/4" R.P. BACKFLOW PREVENTER W/ HOSE BIBB @ 21'-0" ±

HVAC NOTES

1. MOUNT EC-1 ON 1-1/4x1-1/4x3/16 ANGLE IRON FRAME. SHALL BE HOT DIPPED GALVANIZED.
2. 8x8 UP THRU ROOF TO EF-11.
3. 14x14 UP THRU ROOF TO EF-12.
4. 7"Ø CW. TO TEST TANK. COVER OPENING WITH 1/4" MESH GALVANIZED SCREEN.
5. SUPPORT FROM CEILING WITH PIPE NIPPLES AND FLANGES.
6. 8x8 UP THRU ROOF TO EF-13.
7. LINE VOLT. STAT.
8. HOLD DUCT TIGHT AGAINST CEILING.
9. TWO SPEED FAN WALL SWITCH CONTROL FURNISHED BY MANUFACTURER. PROVIDE WALL SWITCH LABELED "PUMP".
10. INTERLOCK WITH EC-1.
11. WALL SWITCH CONTROL.
12. FULL SIZE EXHAUST PLENUM.

45208

REF CC 8995

BOAT RENTAL CONCESSION BLDG D-2 PLAN (ON FLOAT) — SCALE 1/4" (A)

TRAM STOP & COMFORT STATION BLDGS C-2, C-4, G-3, G-6, G-7 & G-8 PLANS — SCALE 1/4" (C)

WILLIAMSON, MORRIS & PAICE
219 E. 20th St. Long Beach, Calif. 90806
Telephone 213 - 426 - 3945

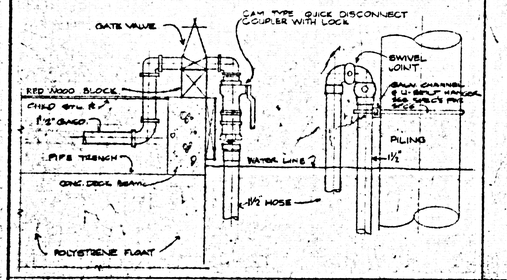
HUGH CARTER ENGINEERING CORP
ELECTRICAL ENGINEERING
MECHANICAL ENGINEERING
BARRIGA GROVE • LA JOLLA • CALIFORNIA

FRANK G. BONELLI REGIONAL COUNTY PARK
(FUDDINGSTONE)

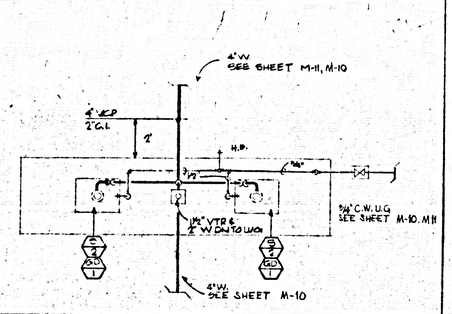
BLDGS. D-1 & D-2, G-1 THRU G-8 PLUMBING & VENTILATING

cap. proj. no. 6800
spec. no. 75191
check #

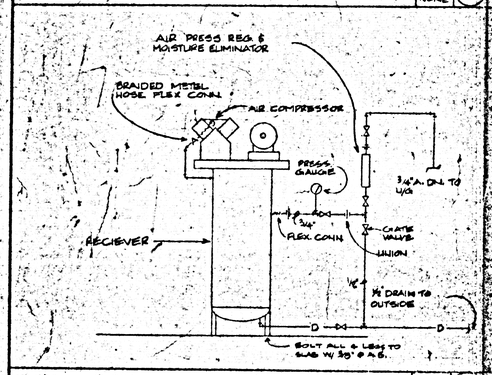
date 9-30-75
revised
sheet no. M-16 of 21 sheets



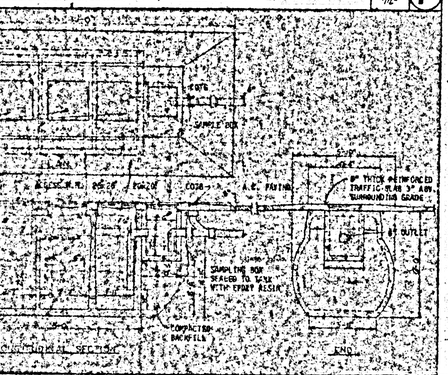
GASOLINE LINE FITTING DETAIL — SCALE NONE — (1)



FISH CLEANING TABLE — SCALE 1/2" — (15)



AIR COMPRESSOR DETAIL — SCALE NONE — (14)



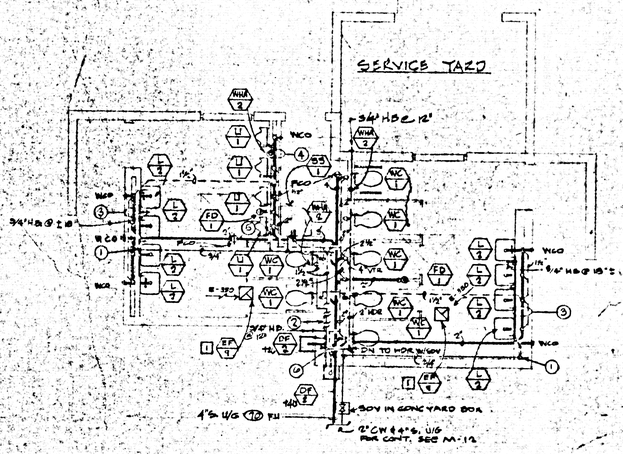
INDUSTRIAL WASTE RECEPTOR & GREASE INTERCEPTOR DETAIL BLDG A-3 — SCALE NONE — (12)

NOTES

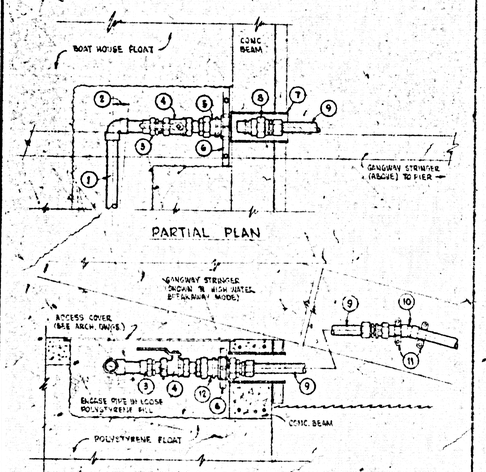
(1) 3/4" C.W. DN. W/S.O.V. & M.A.P. TO FIXTURE HEADER.
(2) 1-1/4" C.W. DN TO HEADER, & 1-1/2" C.W. A/C.
(3) 3/4" C.W., 1-1/2" V. A/C, 2" W. B/F.
(4) 1-1/2" C.W., 2" V.A/C, & 2" W. B/F.
(5) 1-½"C.W. DN TO HEADER W/ SOV. & W.A.P.
(6) 1-1/2" C.W. DN, 1/2" C.W. TO DF-1 & 1-1/2" C.W. A/C.

HVAC NOTES

(1) CEILING EXHAUST FAN WITH 10" DIA. UP THRU ROOF TO RAIN CAP.



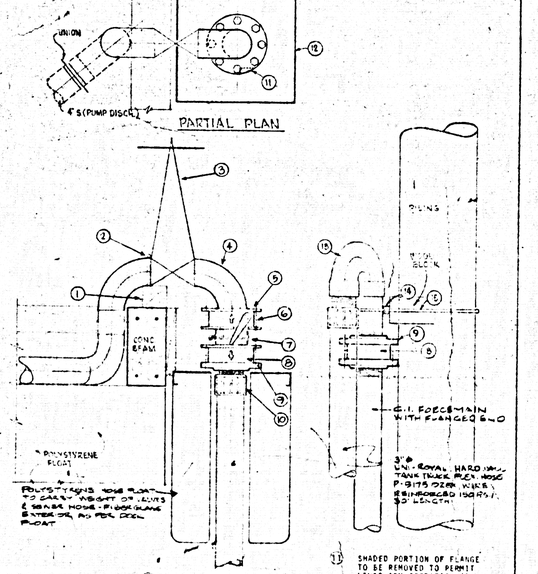
COMFORT STATIONS BLDGS H-8, H-9, H-10 — SCALE 1/4" — (13)



NOTES

(1) 1-1/2" CW LINE IN PIPE TRENCH W/ACCESS COVER.
(2) PIPE MUST BE FREE TO MOVE THRU THIS ARC TO PERMIT UNCOUPLING.
(3) UNION
(4) BALL VALVE
(5) PARKER SERIES 60 HYDRAULIC COUPLER W/ SLIDING SLEEVE (FEMALE)
(6) HALF MOON CLAMPS TO ENGAGE SLIDING SLEEVE OF COUPLER.
(7) PIPE SLEEVE THRU BEAM & WOOD TRIM BOARD.
(8) PARKER SERIES 60 HYDRAULIC COUPLER (MALE).
(9) 5'-0" LENGTH OF FLEXIBLE HOSE W/FITTINGS.
(10) 11-1/4" ELBOW
(11) PIPE CLAMPS (MUST BE RIGID TO WITHSTAND SEPARATION FORCES).
(12) HYDRAULIC COUPLER SHOWN IN COUPLED MODE.

BREAKAWAY CW SERVICE CONNECTIONS — SCALE 1"=1'-0" — (6)



(1) REDWOOD BLOCK
(2) SECURE VALVES TO DOCK WITH U-BOLTS
(3) NIBCO 150# SWP BRONZE GATE VALVE (SWEAT JOINT)
(4) 8" COPPER ELBOW
(5) COMPANION FLANGE 150# 77/NIBCO
(6) 8" K-F WAFER CHECK VALVE WITH LEVER ARM (FIELD ADJUSTABLE) TO HOLD IN OPEN POSITION.
(7) HQ HUB COUPLING
(8) 2" K-F (DEMCO) WAFER CHECK VALVE STD. SPRING LOADED.
(9) 3" SCREWED FLANGE
(10) 3" HOSE'A COUPLING
(11) SHADED PORTION OF FLANGE TO BE REMOVED TO PERMIT LEVER ARM OPERATION (FLANGE ONLY SLE ELEVATION FOR CLARIFICATION)
(12) 16 GAUGE STAINLESS STEEL BEARING PLATE AND NOSE FLOAT COVER.
(13) SHORT RADIUS RETURN BENDS
(14) UNI-STRUT CHANNEL
(15) U-BOLTS

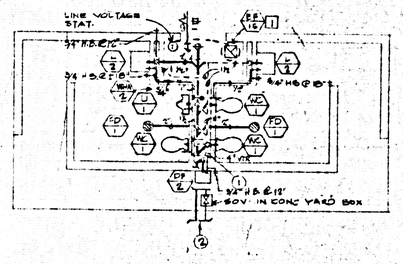
OTHER SERVICE BREAKAWAY CONNECTIONS — SCALE 1"=1'-0" — (5)

NOTES

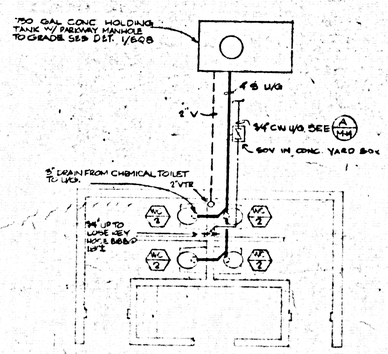
(1) 1-1/2" C.W. UP TO 1-1/2" HEADER W/S.O.V.
(2) 4" S. U/G. & 1-1/2" C.W. U/G. FOR CONT. SEE M-13.

HVAC NOTES

(1) 8x8 UP THRU ROOF TO EF-15. PROVIDE 1/8" RESINSCREEN GALVANIZED @ DUCT OPENING INSIDE ROOM.



COMFORT STATION BLDGS H-11, H-12, H-13 — SCALE 1/4" — (4)



TOILET RMS. EQUESTRIAN TRAIL & BLDG L-1 — SCALE 1/2" — (A)

45209

RECEIVED 8995

HUGH CARTER ENGINEERING CORP.
• ELECTRICAL ENGINEERING
• MECHANICAL ENGINEERING
• CIVIL ENGINEERING
• GARDEN GROVE, LA JOLLA & SAN DIEGO

WILLIAMSON, MORRIS & PAIGE
275 e 25th st. long beach, calif. 90806
telephone 213 426-3645

FRANK G. BONELLI REGIONAL COUNTY PARK
(PUDDINGSTONE)

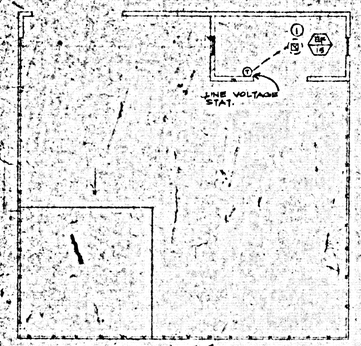
BLDGS H-8 THRU H-13 MECHANICAL PLANS & MISC. DETAILS

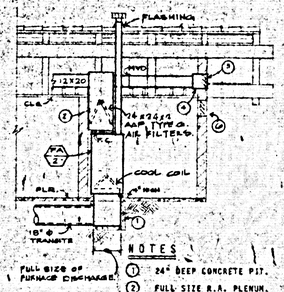
CORP. PROJ. NO. 7804
BDGS. NO. 2551

date 3-22-74
revised
sheet no.
M-17

NOTE

① PVC UP THRU ROOF TO EF-15. PROVIDE 1/4" MESH GALVANIZED SCREEN @ DUCT OPENING INSIDE ROOF.





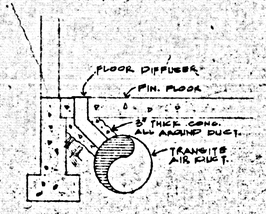
FULL SIZE OF FURNACE DISCHARGE

NOTES

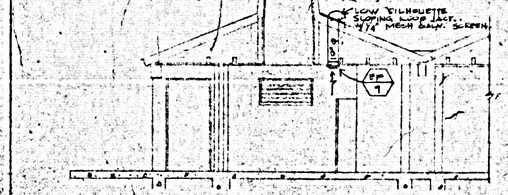
① 24" DEEP CONCRETE PIT.
② FULL SIZE R.A. PLENUM.
③ 16x12 LOUVERS IN GEN. WORK.
④ 12" DEEP PLENUM.
⑤ 6" OVAL FLUE UP THRU ROOF TO APPROVED VENT CAP.
⑥ 16x16 COMBUSTION AIR LOUVER WITH 12" FROM CEILING

BUILDING G-3 — SCALE 1/8"-1'-0" — E

SECTION — SCALE 1/4"-1'-0" — D



FLOOR DIFFUSER DETAIL — SCALE NONE — F

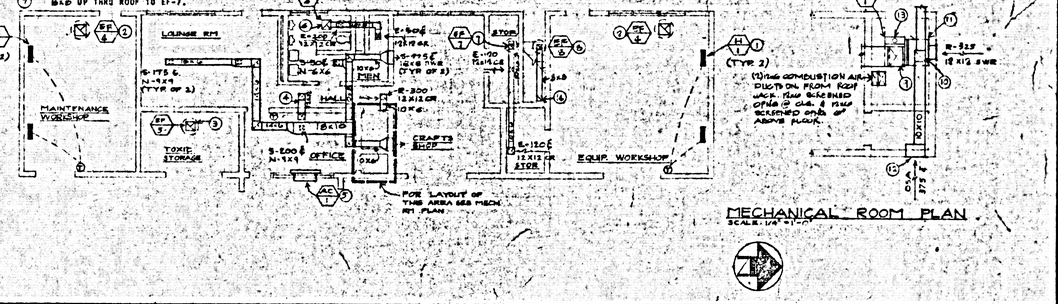


SECTION THRU BLDG G-2, G-4 THRU G-6
SIMILAR FOR BLDG G-1 AND G-3

SECTION — SCALE 1/4" — G

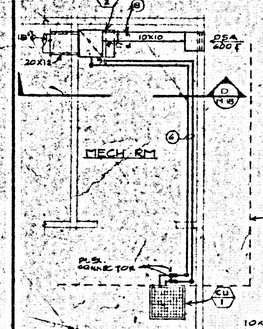
NOTES

① GAS INFRA-RED HEATER, SUSPEND FROM ROOF STRUCTURE WITH 3/8" STEEL PIPE @ 10'-0" ABOVE FLOOR.
② 8x8 SCREENED ROOF OPENING UP TO EF-4 (1/4" GALV. MESH SCREEN)
③ 8x8 SCREENED ROOF OPENING UP TO EF-5 (1/4" GALV. MESH SCREEN)
④ 12x12 LINED TRANSFER DUCT WITH TWO KRUEGER EGC-6.
⑤ THRU THE WALL AIR CONDITIONER.
⑥ 8x8 UP THRU ROOF TO EF-6.
⑦ 8x8 UP THRU ROOF TO EF-7.
⑧ 8x8 UP THRU ROOF TO EF-8.
⑨ 18x10 DR. TO FA-1.
⑩ 12x12 MIXED AIR DUCT DN. TO FULL SIZE MIXED AIR PLENUM.
⑪ FULL SIZE MIXED AIR PLENUM.
⑫ 18x12 LOUVERS IN GEN. WORK.
⑬ 6" OVAL FLUE UP THRU ROOF TO APPROVED VENT CAP.
⑭ 8x8 DN TO SPACE ABOVE R.M.

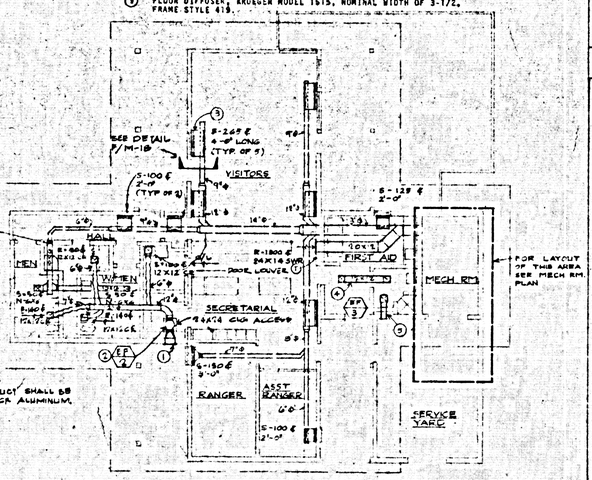


MECHANICAL ROOM PLAN
SCALE: 1/4"=1'-0"

SERVICE BUILDING A-1 — SCALE 1/8"-1' — B

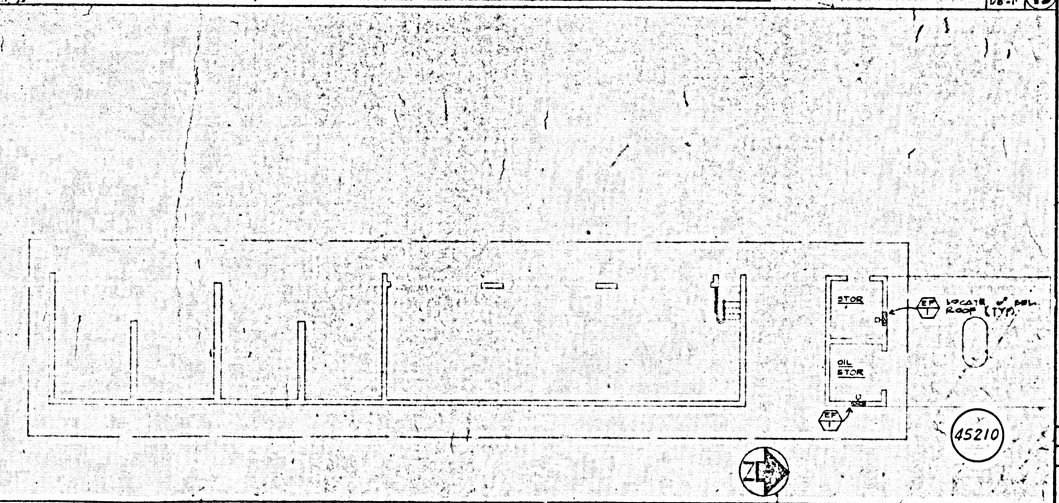


MECHANICAL ROOM PLAN
SCALE: 1/4"=1'-0"



NOTE
FLEXIBLE DUCT SHALL BE WEEHOULD OR ALUMINUM.

PARK HEADQUARTERS BUILDING C-1 — SCALE 1/8"-1' — C



45210

BULK STORAGE BUILDING A-3 — SCALE 1/8"-1' — A

WILLIAMSON, MORRIS & PAIGE
275 e. 25th st. long beach, calif. 90806
telephone 213-426-3945

HUGH CARTER ENGINEERING CORP
• ELECTRICAL • ENGINEERING
• MECHANICAL • ENGINEERING

FRANK G. BONELLI REGIONAL COUNTY PARK
(FUDDINGSTONE)

BLDGS A-1, C-1 & G-3 H.V.A.C. PLANS

PHASE IV

dsgn. prod. no. 8806
spec. no. 5531

date 8-23-72
revised
sheet no. M-18
of sheets

WILLIAMSON, MORRIS & PAIGE
275 e 25th st, long beach, calif. 90806
telephone 213-426-3945

HUGH CARTER ENGINEERING CORP.
• GEOTECHNICAL ENGINEERING
• MECHANICAL ENGINEERING
• LAGUNA BEACH • LA JOLLA • CALIFORNIA

FRANK G. BONELLI REGIONAL COUNTY PARK
(FUDDINGSTONE)

PICNIC VALLEY GRAVITY SEWER - PLAN & PROFILE - PHASE IV
SYSTEM A

date
revised
sheet no. M-19
of sheets

DOUBLE SCALE

EXIST. GRADE
PROPOSED GRADE
EXTRA DEPTH
SPECIAL CRADLE AS NOTED BELOW
207.87'
250.74'
347.50'
PUMP STATION
STA 0+00.00
MH #1
RIM 1146.00
5.96' MIN.
2' of Cover
E 346,200.00
N 141,400.00
ENCASE 10' OF 8" VCP PER S-23 CASS I
MH #2
RIM 1142.57
5.96' MIN.
2175.87' E of Cover
8"Ø VCP
SPECIAL CRADLE 10' OF 8" VCP PER S-29 CASS III
MH #3
RIM 1142.18
5.96' MIN.
2' of Cover
TO MH'S SHOWN BELOW
N 140,600.00
N 140,400.00
N 140,200.00
E 346,000.00
E 345,800.00
E 345,600.00
E 345,400.00
E 345,200.00
E 345,000.00
BV-3.68
BV-4.17
BV-4.75
8"Ø VCP
MH #4
RIM 1142.15
5.96' MIN.
3168.66' E of Cover

PROFILE
SCALE HORIZ 1"=40'-0"
VERT 1"= 8'-0"

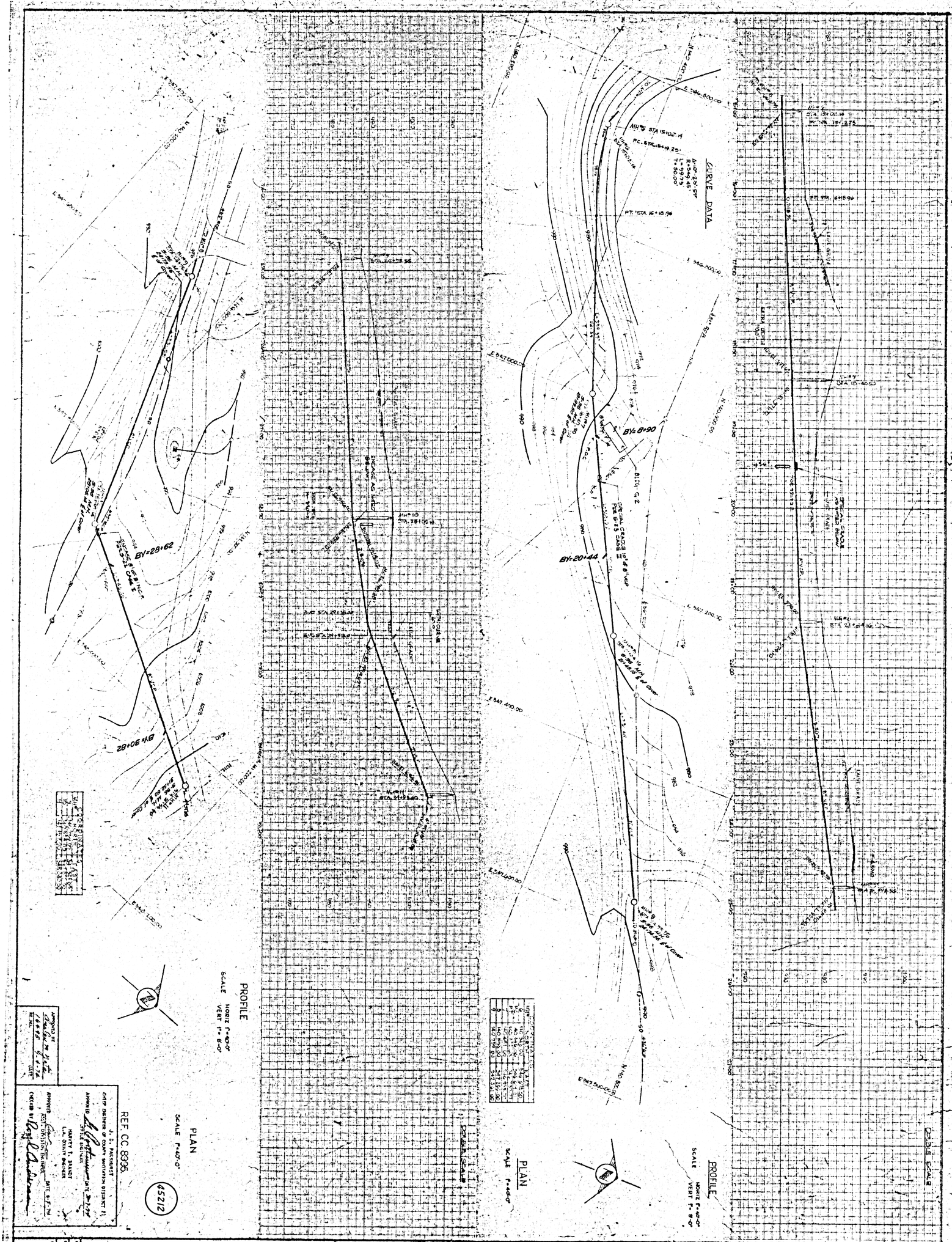
PLAN
SCALE 1"=40'-0"

COORDINATES		
MH #	NORTH	EAST
STA 0+00	141,400.57	346,200.43
1	141,140.78	346,246.38
2	141,140.78	346,246.38
3	141,140.78	346,246.38
4	141,140.78	346,246.38

M.L.A. COUNTY ENG. PRA-11, EL. 1133.93'
E 346,004.43' N 141,400.57
APPROX. 1095' N PARK ROAD A @ BLOCK 2
S-2263 P.20

DOUBLE SCALE

EXIST. GRADE
PROPOSED GRADE
SPECIAL CRADLE AS NOTED BELOW
TOP OF SLOPE
TOE OF SLOPE
EXTRA DEPTH
308.85'
STA 1+00
E 344,800.00
E 344,600.00
E 344,400.00
E 344,200.00
E 344,000.00
N 140,800.00
N 140,600.00
N 140,400.00
SHOWN ABOVE
MH #5
RIM 1142.18
5.96' MIN.
2' of Cover
SPECIAL CRADLE 10' OF 8" VCP PER S-23 CASS III
8"Ø VCP
MH #6
RIM 1142.15
5.96' MIN.
1170.01' E of Cover
8"Ø VCP
8"Ø VCP
8"Ø VCP



FRANK G. BONELLI REGIONAL COUNTY PARK
(PUDDINGSTONE)

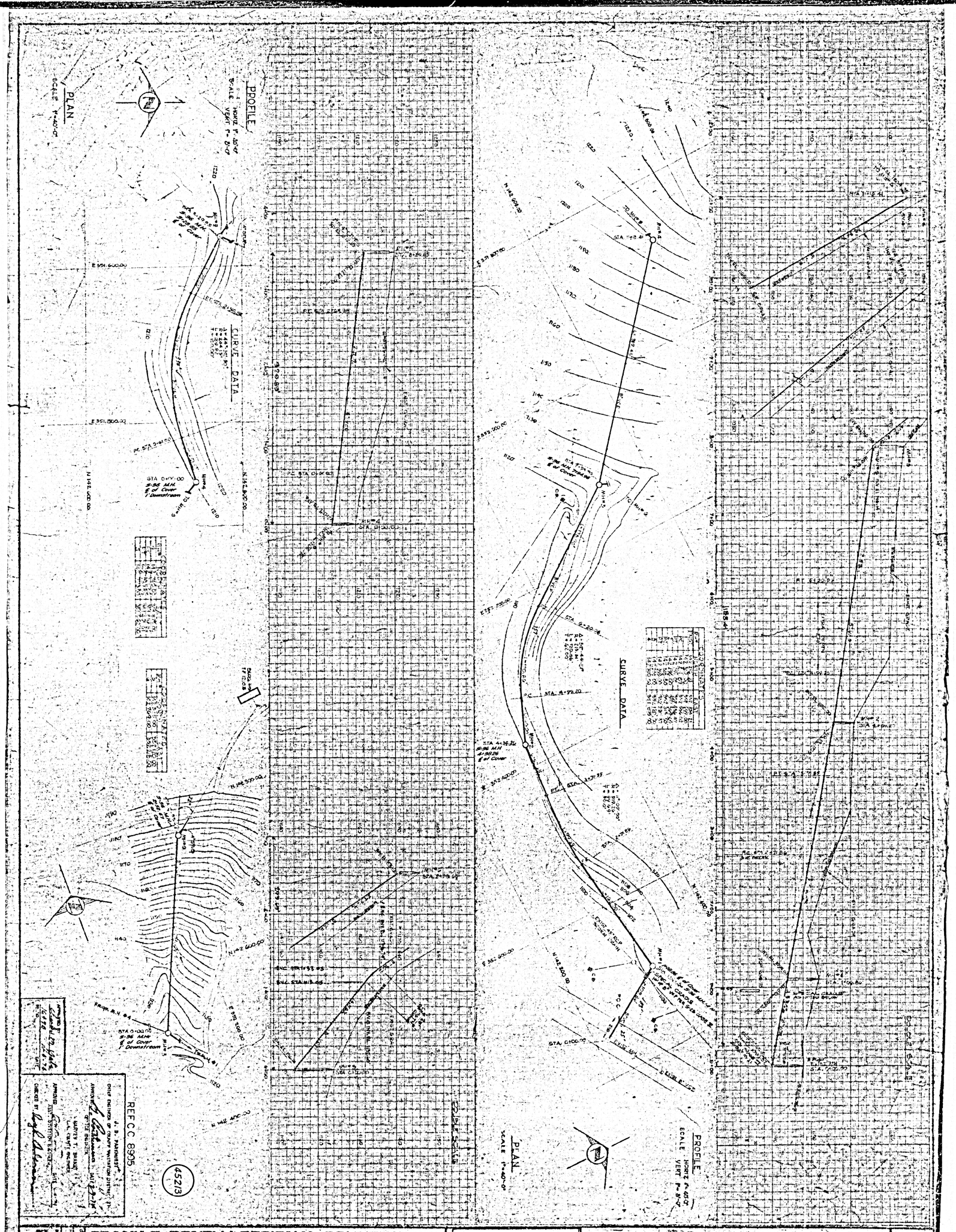
PICNIC VALLEY GRAVITY SEWER PLAN & PROFILE PHASE IV
SYSTEM "A"

cap. proj. no. 6804
spec. no.

HUGH CARTER ENGINEERING CORP.
• ELECTRICAL ENGINEERING
• MECHANICAL ENGINEERING
• GARDEN GROVE • LA JOLLA • CALIFORNIA

WMP
WILLIAMSON, MORRIS & PAICE
275 e. 25th st., long beach, calif. 90806
telephone 213 · 426-3945

Ref. CRC-8995



FRANK G. BONELLI REGIONAL COUNTY PARK
(PUDDINGSTONE)

HIKE-IN CAMPGROUND GRAVITY SEWER PLAN & PROFILE
SYSTEM "5"

HUGH CARTER ENGINEERING CORP.
ELECTRICAL ENGINEERING
MECHANICAL ENGINEERING
GARDEN GROVE • LA JOLLA • CALIFORNIA

WMP
WILLIAMSON, MORRIS & PAIGE
275 e. 25th st., long beach, calif. 90806
telephone 213-426-3945

C.C. 8995