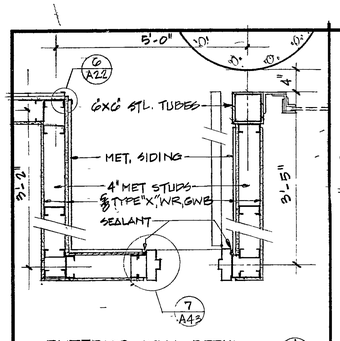
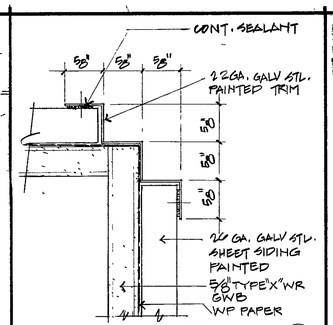
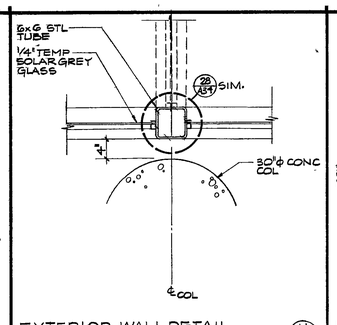


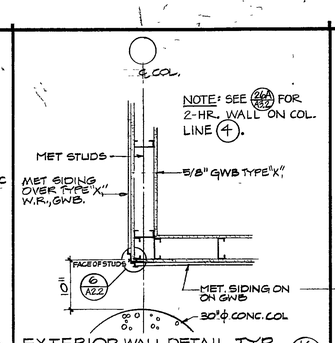
EXTERIOR WALL DETAIL (1/A22)
1" = 1'-0"



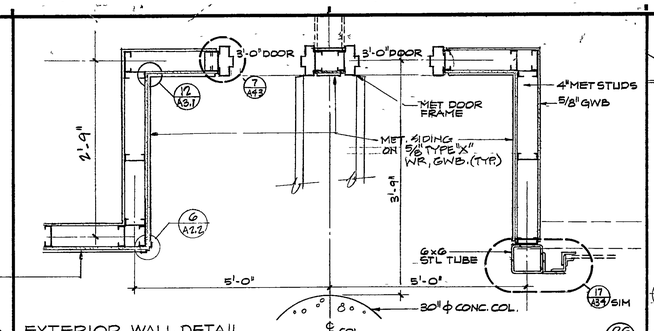
TYP. MET SIDING DET. (6/A22)
FULL SIZE



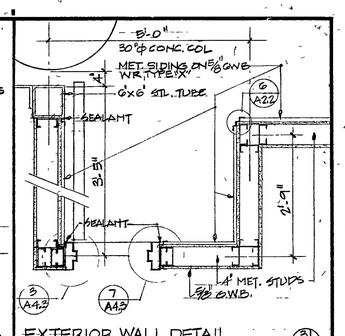
EXTERIOR WALL DETAIL (11/A22)
SCALE 1" = 1'-0"



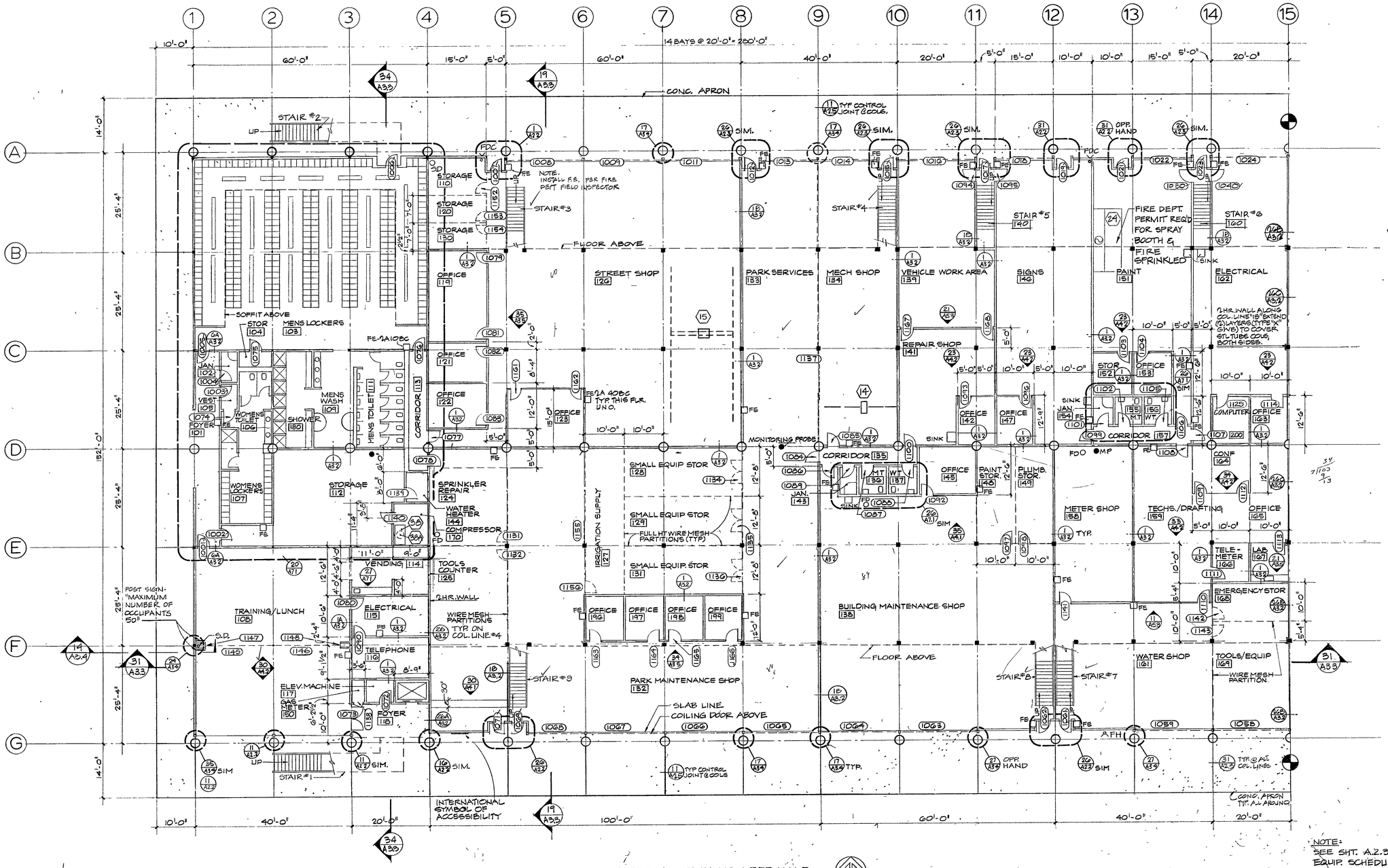
EXTERIOR WALL DETAIL TYP. (16/A22)
SCALE 1" = 1'-0"



EXTERIOR WALL DETAIL (26/A22)
SCALE 1" = 1'-0"



EXTERIOR WALL DETAIL (31/A22)
SCALE 1" = 1'-0"



FIRST FLOOR PLAN - LEFT HALF
SCALE 3/32" = 1'-0"

NOTE:
SEE SHT. A2.3 FOR EQUIP. SCHEDULE.

REGISTERED ARCHITECT DONALD GIBBS No. C-3457 STATE OF CALIFORNIA

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard Long Beach California

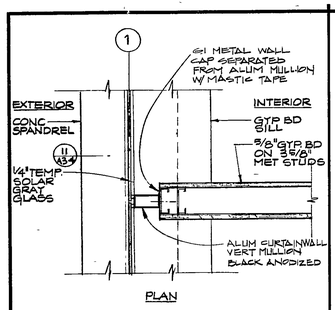
DRAWN FR/KA	DATE 12-16-88
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

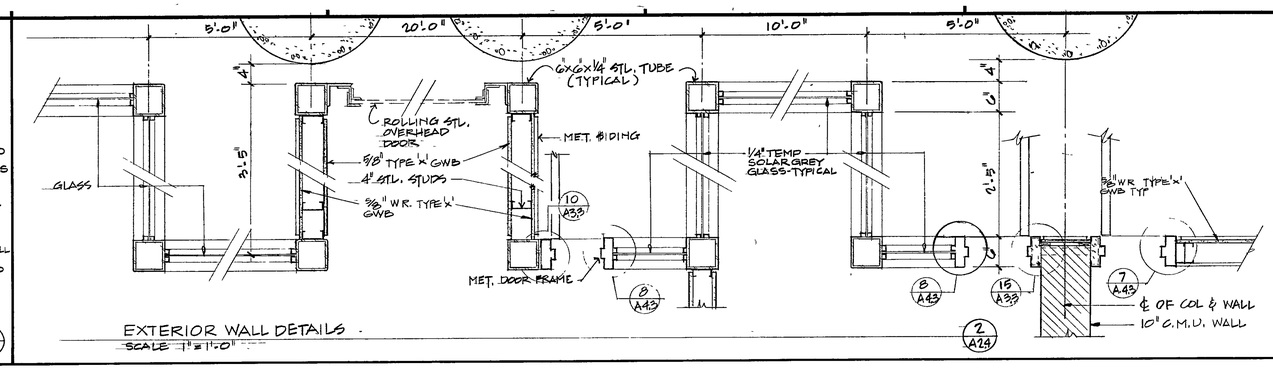
TORRANCE CALIFORNIA

FIRST FLOOR PLAN LEFT HALF DETAILS

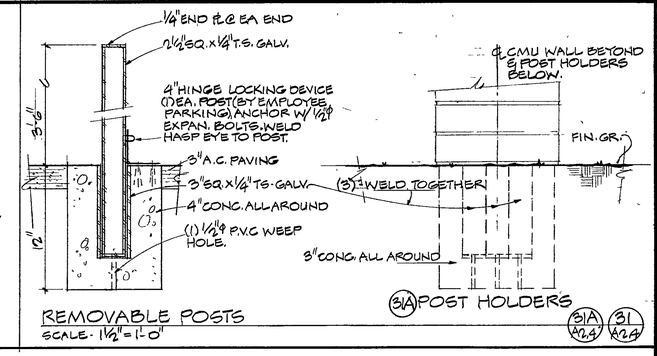
SHEET A22



GLASS DETAIL
SCALE: 1 1/2" = 1'-0"

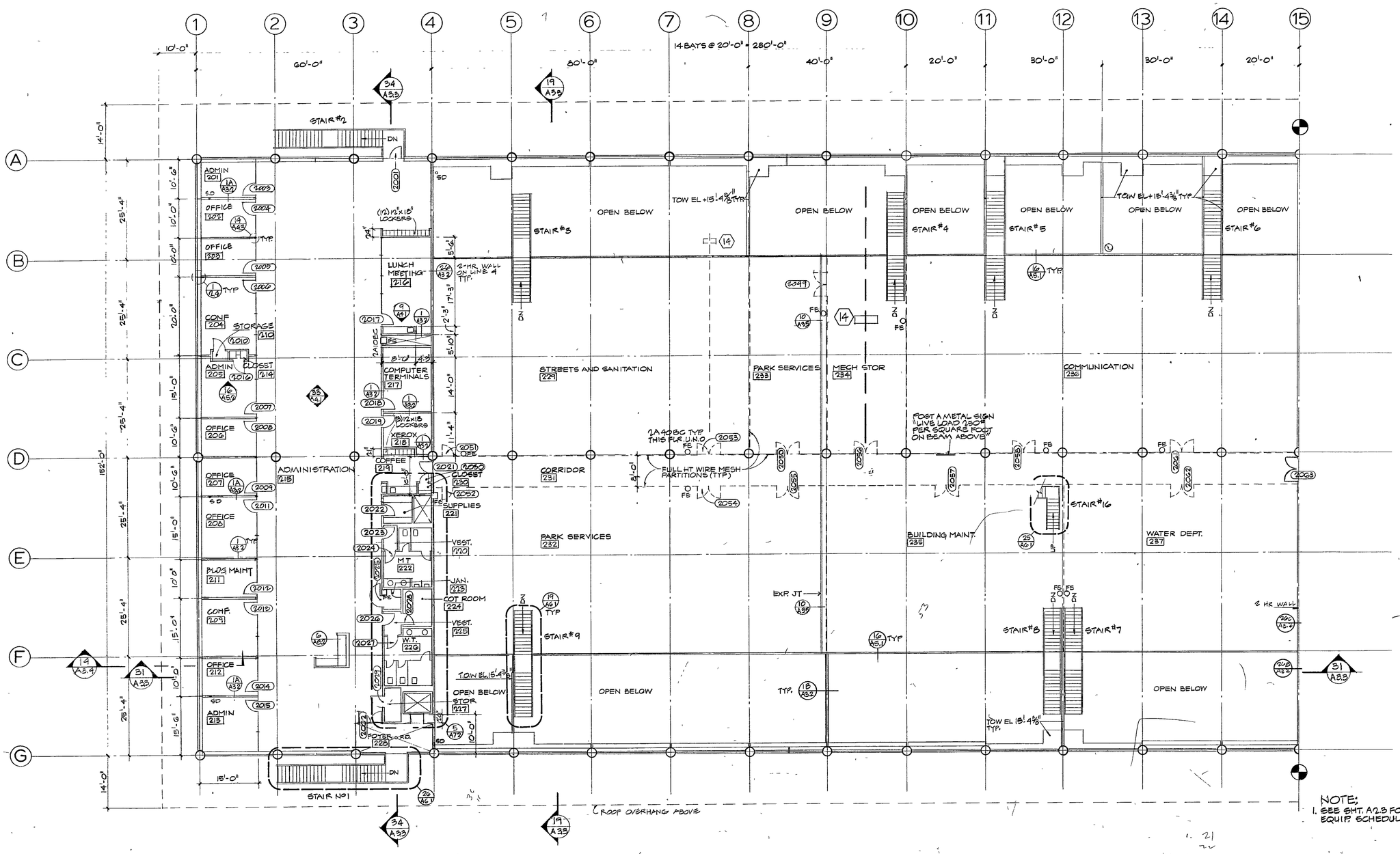


EXTERIOR WALL DETAILS
SCALE: 1" = 1'-0"



REMOVABLE POSTS
SCALE: 1 1/2" = 1'-0"

3/A POST HOLDERS



NOTE:
1. SEE SHT. A2.3 FOR EQUIP SCHEDULE.

SECOND FLOOR PLAN · LEFT HALF
SCALE: 3/32" = 1'-0"

REGISTERED ARCHITECT
DONALD GIBBS
No. C-3467
STATE OF CALIFORNIA

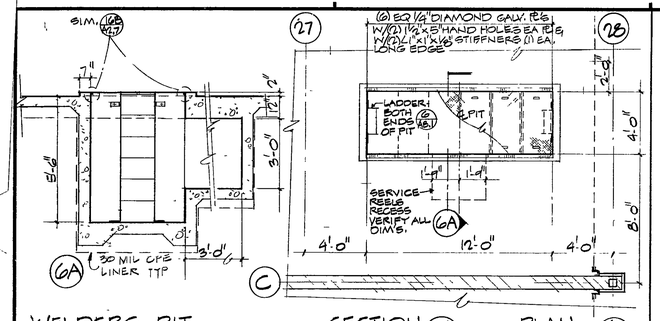
HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A
3375 Long Beach Boulevard Long Beach, California

DRAWN FR/KA	DATE 12-16-88
CHECKED	JOB 1806

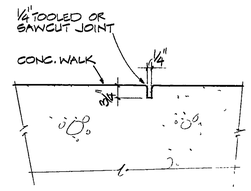
TORRANCE CITY SERVICE FACILITY
TORRANCE, CALIFORNIA

SECOND FLOOR PLAN-LEFT HALF DETAILS

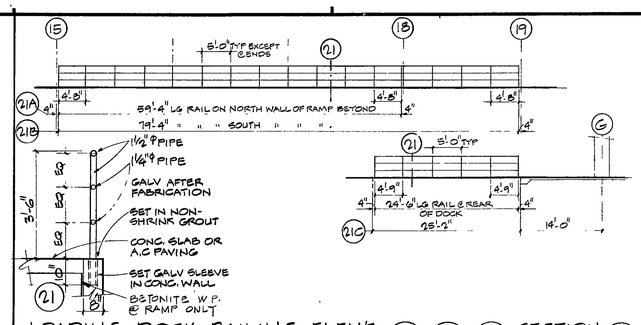
SHEET A2.4



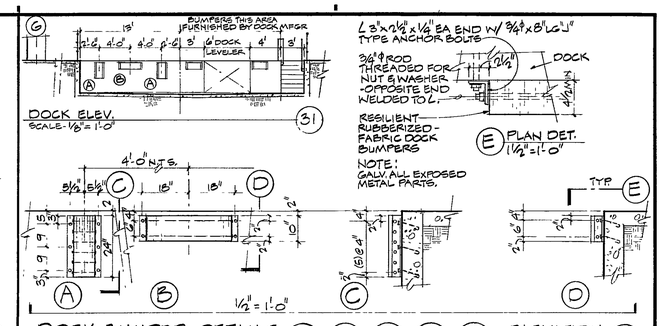
WELDERS PIT - SECTION (6A) A2.5 PLAN (6) A2.5
SCALE - AS NOTED 3/8" = 1'-0" 1/4" = 1'-0"



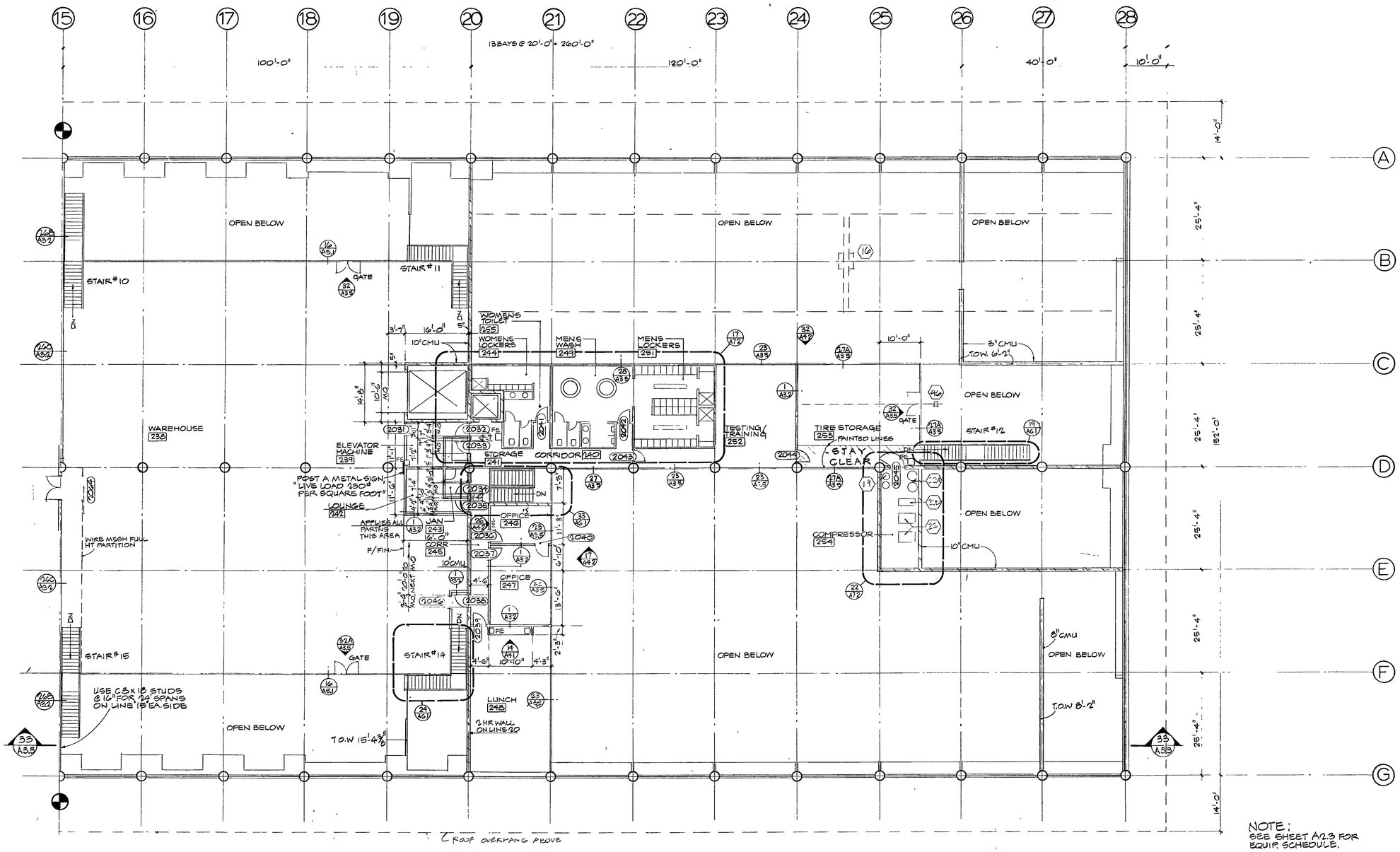
CONTROL JOINT (11) A2.5
SCALE - 3" = 1'-0"



LOADING DOCK RAILING ELEV'S. (21C) A2.5 (21B) A2.5 (21A) A2.5 SECTION (21) A2.5
SCALE AS NOTED 3/32" = 1'-0" 1/2" = 1'-0"



DOCK BUMPER DETAILS (31E) (31D) (31C) (31B) (31A) ELEVATION (31) A2.5
SCALE - AS NOTED 1 1/2" & 1 1/2" = 1'-0" 1/8" = 1'-0"



NOTE:
SEE SHEET A2.3 FOR EQUIP. SCHEDULE.

SECOND FLOOR PLAN - RIGHT HALF
SCALE: 3/32" = 1'-0"

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A
3575 Long Beach Boulevard Long Beach California

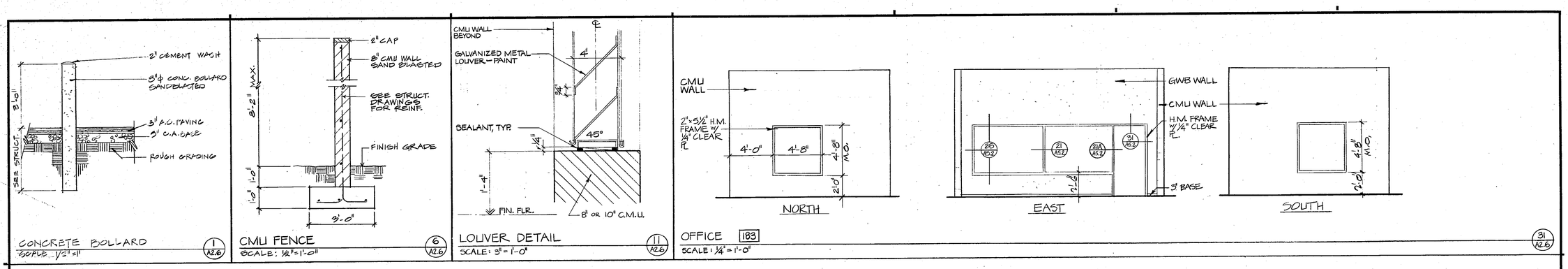
DRAWN PR/KA	DATE 12/16/88
CHECKED	JOB 1806

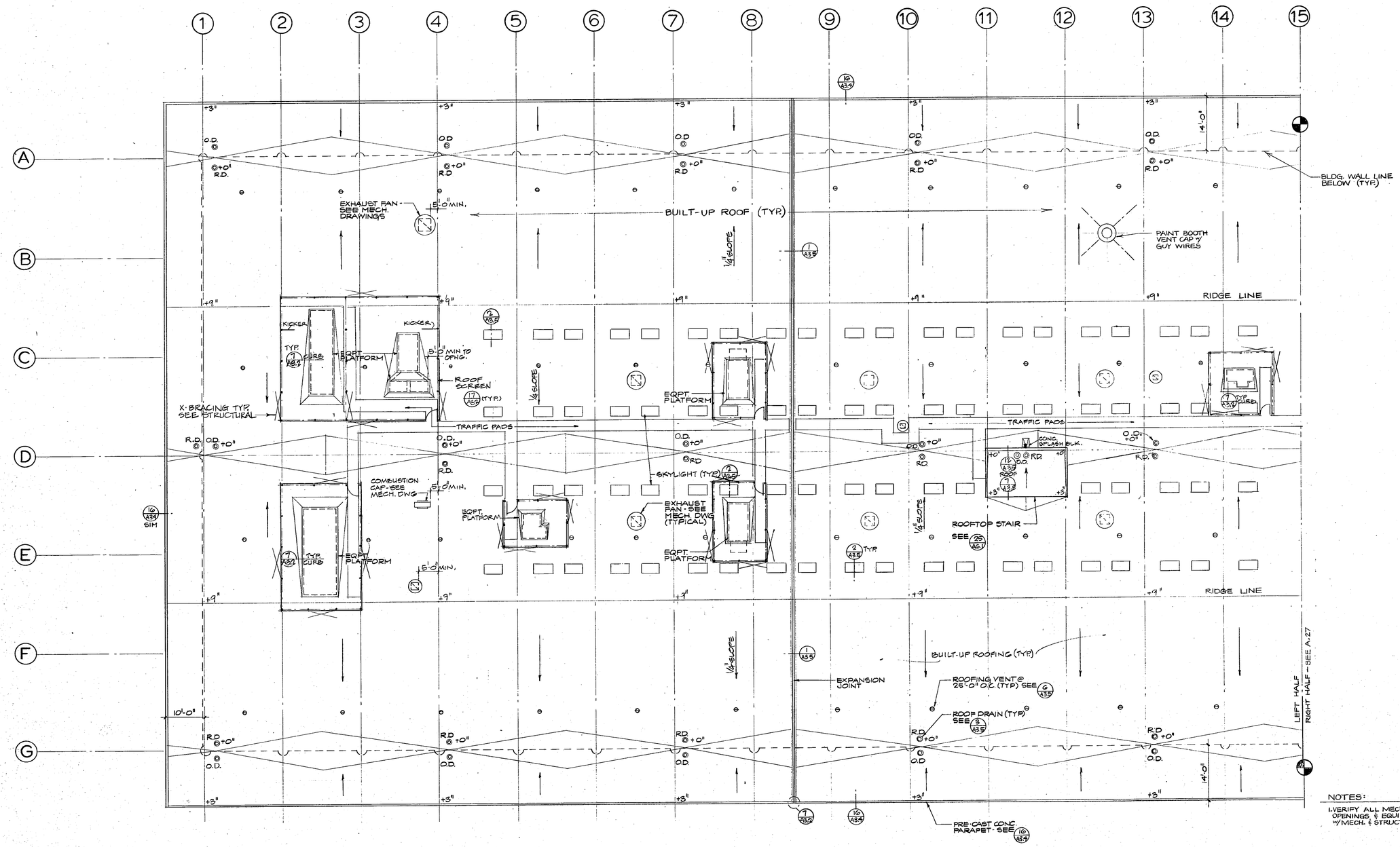
TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

SECOND FLOOR PLAN - RIGHT HALF DETAILS

SHEET A2.5





ROOF PLAN - LEFT HALF
SCALE: 3/32" = 1'-0"

NOTES:
1. VERIFY ALL MECH. ROOF OPENINGS & EQUIPMENT W/ MECH. & STRUCT. DWGS.

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

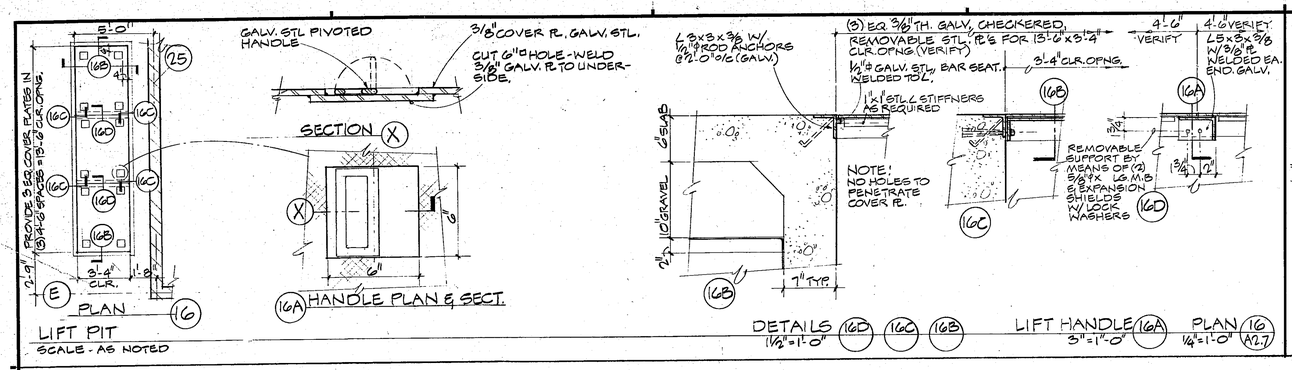
DRAWN PR/KA	DATE 12-16-83
CHECKED	JOB 1806

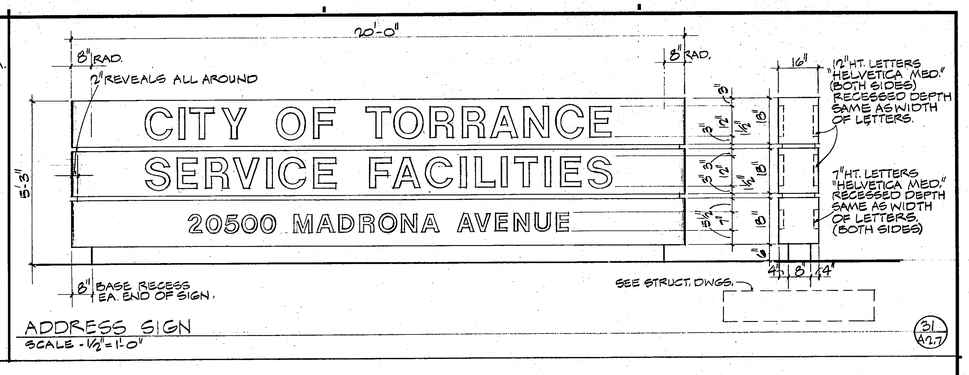
TORRANCE CITY SERVICE FACILITY

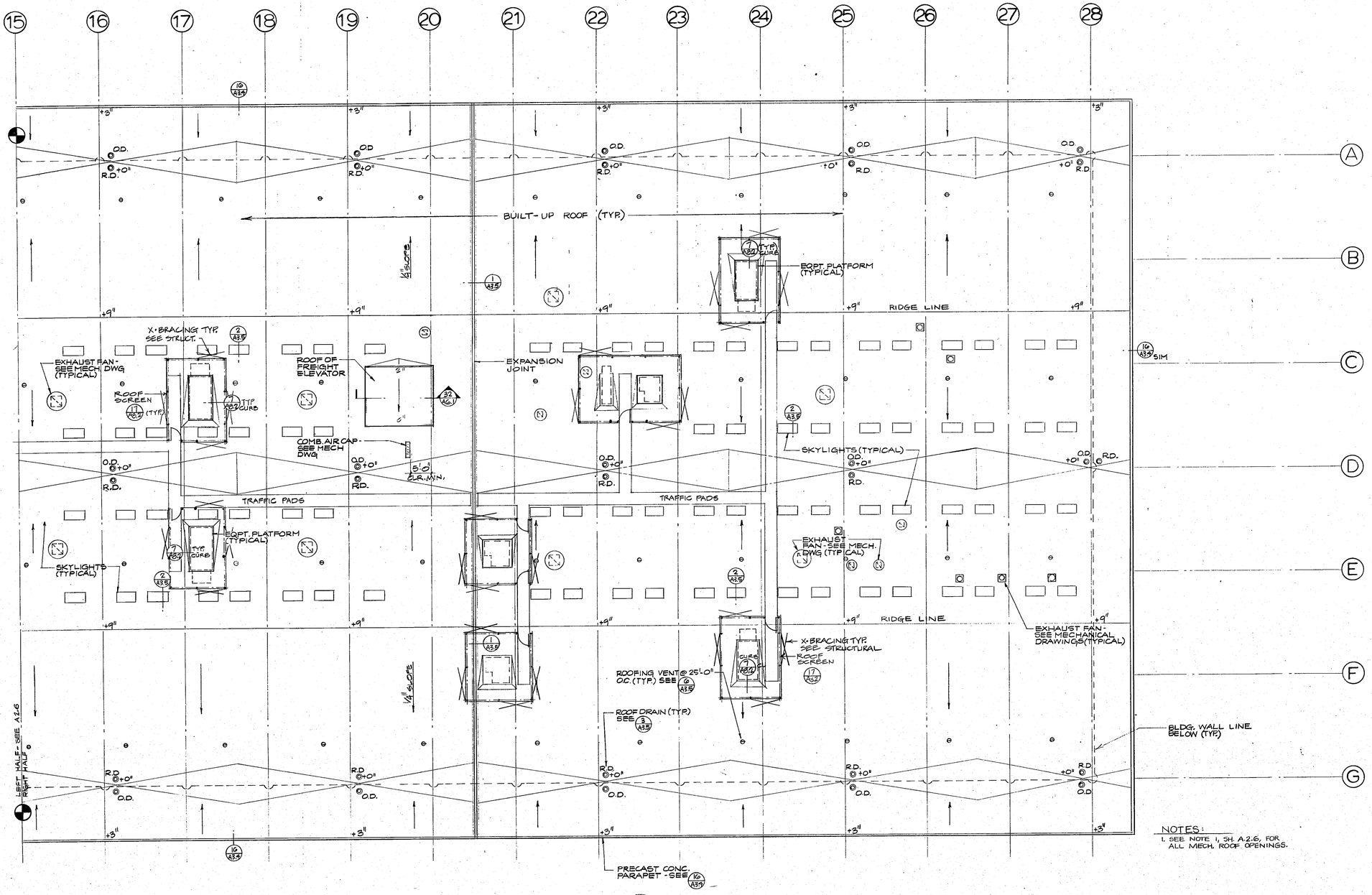
TORRANCE CALIFORNIA

ROOF PLAN - LEFT HALF

SHEET **A2.6**







NOTES:
1. SEE NOTE 1, SH. A2.6, FOR ALL MECH. ROOF OPENINGS.

ROOF PLAN - RIGHT HALF
SCALE: 3/32" = 1'-0"

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

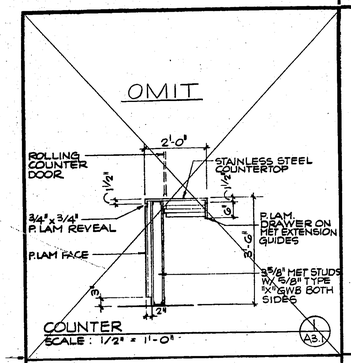
DRAWN PR/KP	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

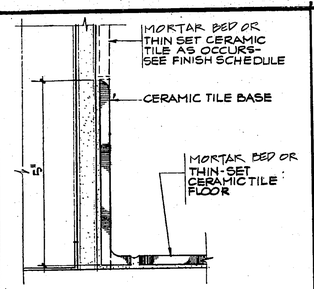
TORRANCE CALIFORNIA

ROOF PLAN - RIGHT HALF

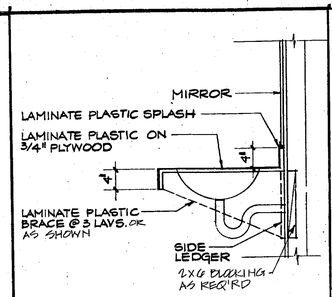
SHEET **A2.7**



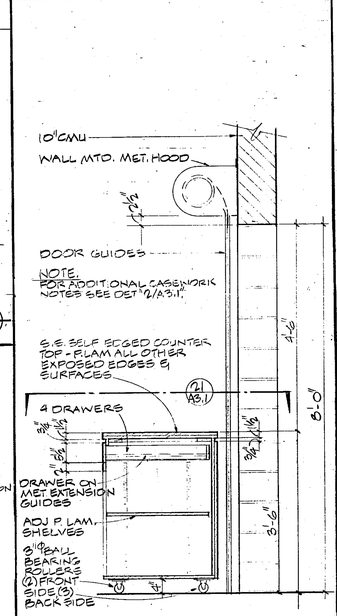
COUNTER
SCALE: 1/2" = 1'-0"
1 / A3.1



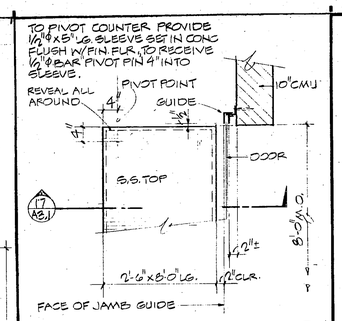
CERAMIC TILE BASE
SCALE: 1/2 FULL SCALE
6 / A3.1



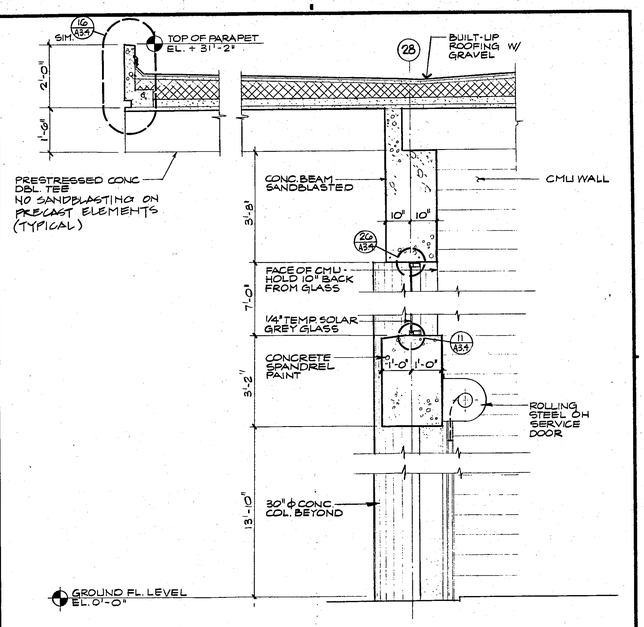
COUNTER @ TOILET
1" = 1'-0"
11 / A3.1



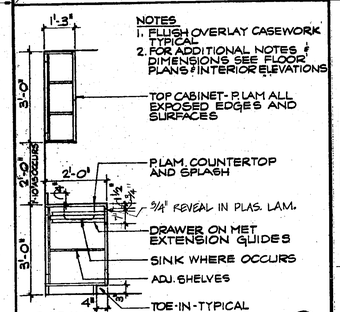
PIVOTED COUNTER & HEAD OF ROLL-UP FIRE DOOR
3/4" = 1'-0"
17 / A3.1



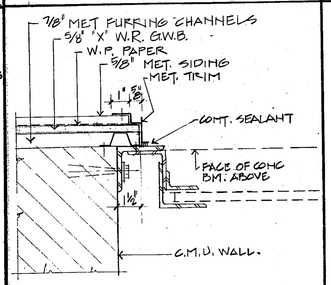
JAMB & COUNTER TOP
SCALE: 3/4" = 1'-0"
21 / A3.1



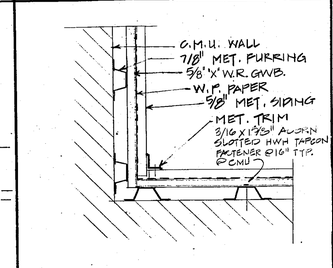
WALL SECTION
SCALE: 1/2" = 1'-0"
32 / A3.1



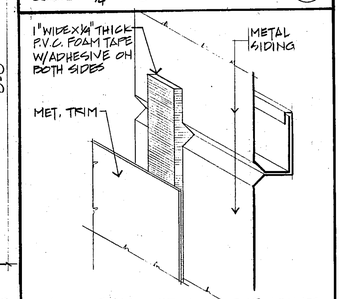
CABINET
SCALE: 1/2" = 1'-0"
2 / A3.1



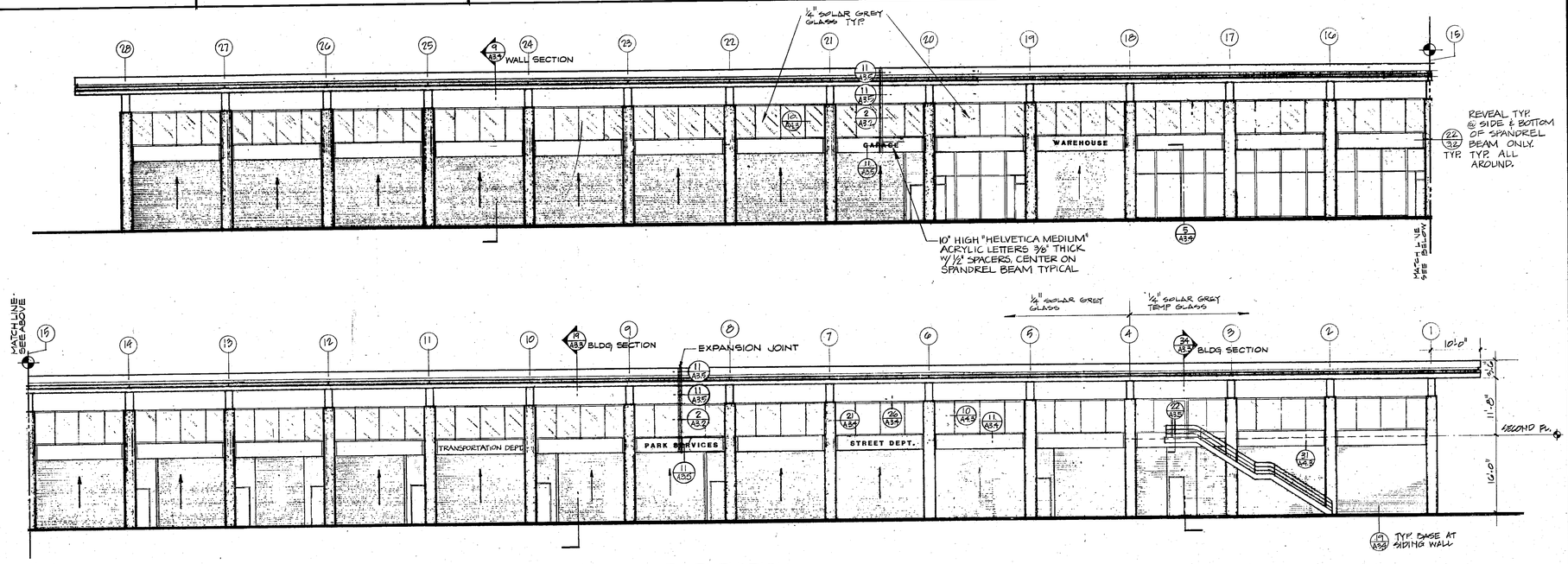
JAMB DETAIL
3" = 1'-0"
7 / A3.1



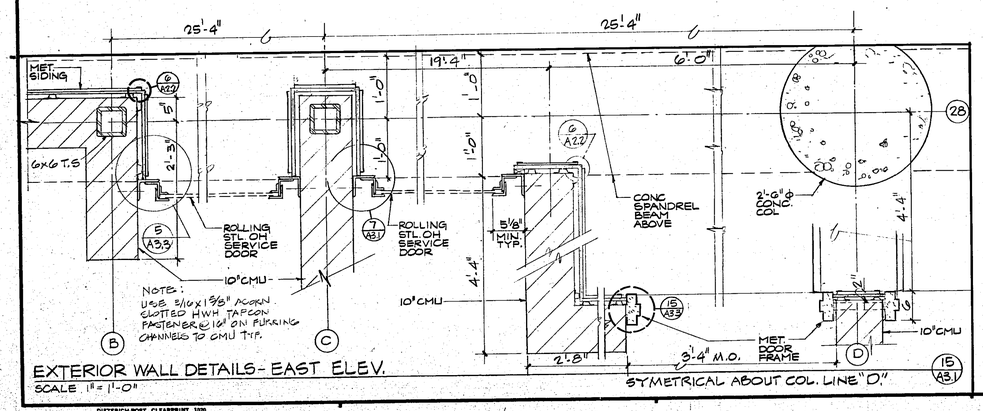
SIDING DETAIL
3" = 1'-0"
12 / A3.1



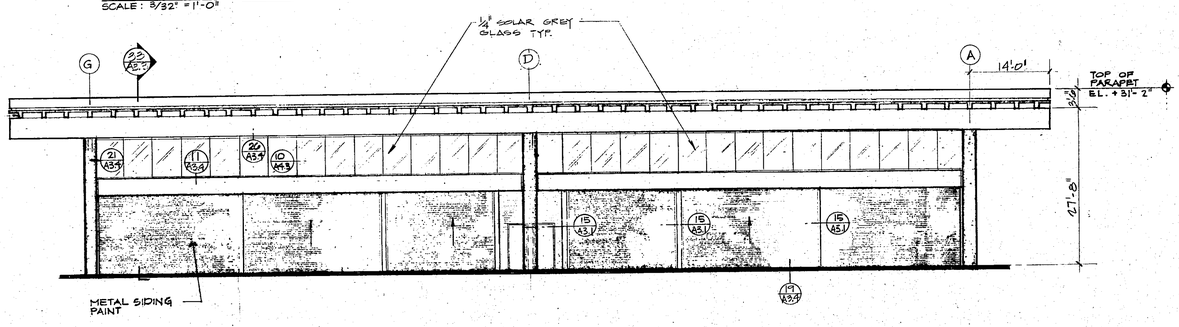
ISOMETRIC VIEW OF TYP. JOINT BETWEEN MET. SIDING & TRIM
22 / A3.1



NORTH ELEVATION
SCALE: 3/32" = 1'-0"



EXTERIOR WALL DETAILS - EAST ELEV.
SCALE: 1" = 1'-0"



EAST ELEVATION
SCALE: 3/32" = 1'-0"

REVISIONS		
NO.	DATE	DESCRIPTION

REGISTERED ARCHITECT
DONALD GIBBS
No. C-3467
STATE OF CALIFORNIA

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3571 Long Beach Boulevard Long Beach, California

DRAWN PR/KA	DATE 2-16-52
CHECKED	JOB 1006

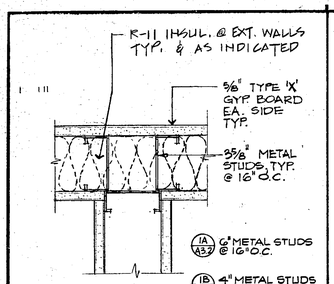
TORRANCE CITY SERVICE FACILITY

TORRANCE
CALIFORNIA

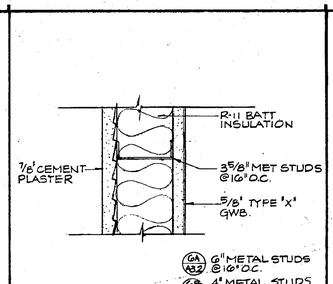
NORTH & EAST EXTERIOR ELEVATIONS DETAILS

SHEET A3.1

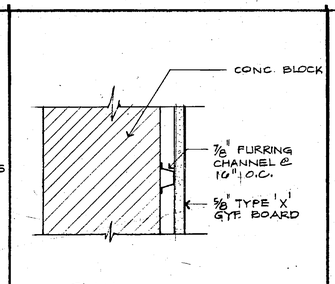
DIETERICH-POST CLEARPRINT 1020



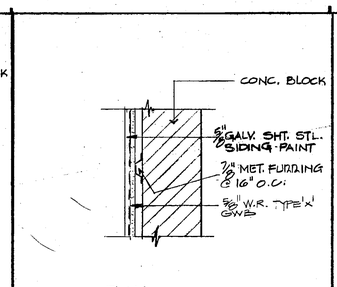
TYP INTERIOR PARTN. (1 / A3.2)
SCALE: 3" = 1'-0"



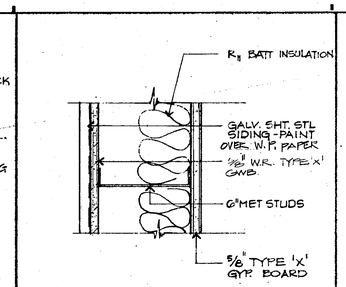
WALL TYPE (6 / A3.2)
SCALE: 3" = 1'-0"



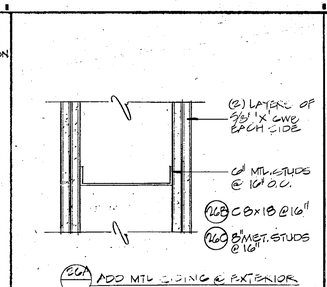
INTERIOR WALL (11 / A3.2)
SCALE: 3" = 1'-0"



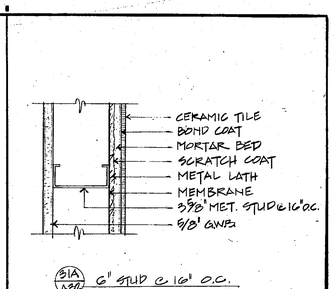
CMU @ EXT. WALL (16 / A3.2)
SCALE: 1 1/2" = 1'-0"



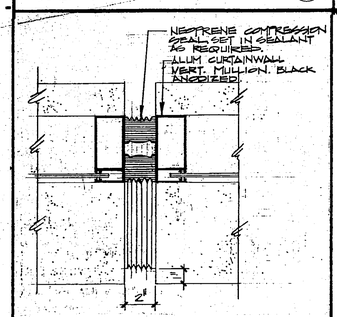
EXT. WALL (21 / A3.2)
SCALE: 3" = 1'-0"



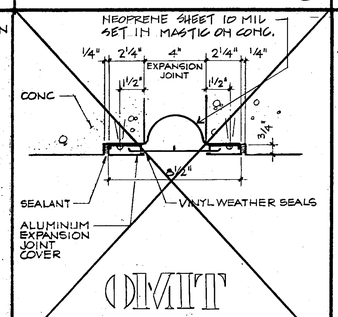
2-HOUR WALL (26 / A3.2)
SCALE: 3" = 1'



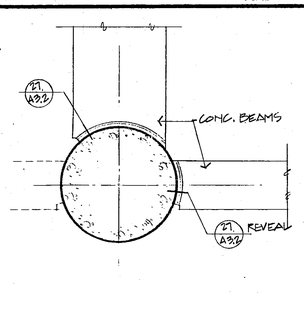
SHOWER WALL (31 / A3.2)
SCALE 3" = 1'-0"



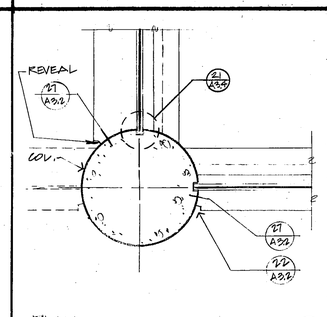
EXPANSION JT @ GLASS (2 / A3.2)
SCALE: 1/2 FULL SCALE



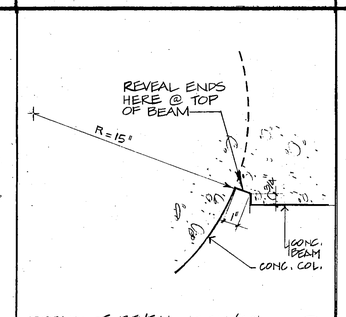
EXPANSION JOINT (3 / A3.2)
SCALE 3" = 1'-0"



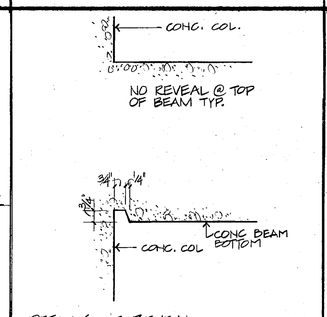
REFLECTED PLAN (12 / A3.2)
3/4" = 1'-0"



PLAN (17 / A3.2)
3/4" = 1'-0"

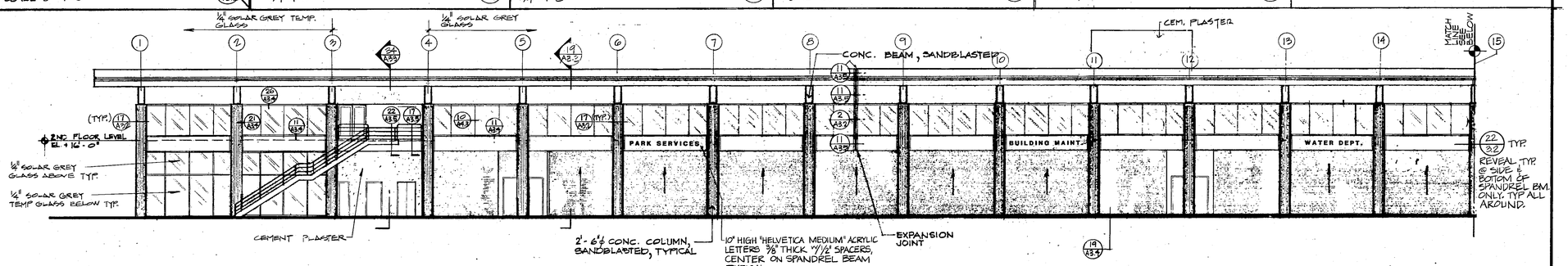


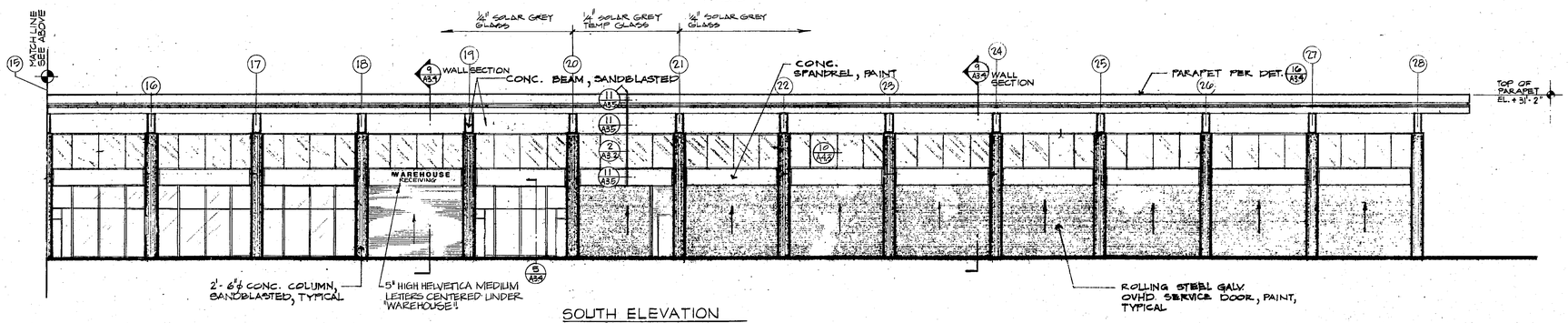
DETAIL OF REVEAL AT BM/COL. (22 / A3.2)
3" = 1'-0"



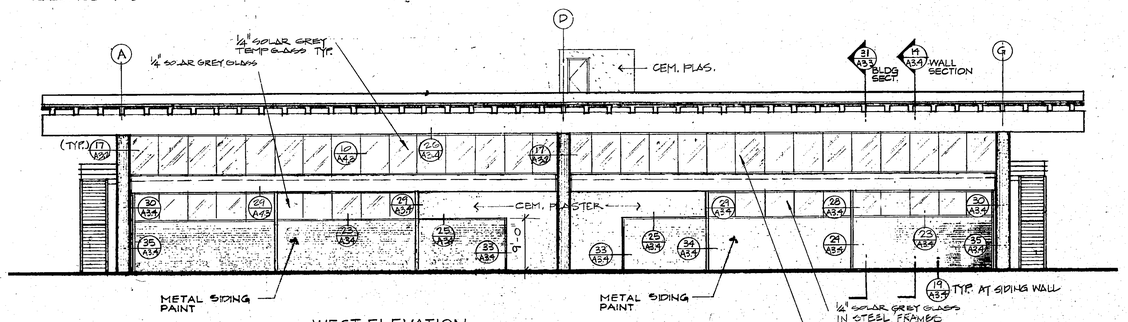
DETAILS OF REVEAL (27 / A3.2)
3" = 1'-0"

REVISIONS		
NO.	DATE	DESCRIPTION





SOUTH ELEVATION
SCALE: 3/32" = 1'-0"



WEST ELEVATION
SCALE: 3/32" = 1'-0"

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3373 Long Beach Boulevard. Long Beach, California

DRAWN PR/KA	DATE 12-16-83
CHECKED	JOB 1806

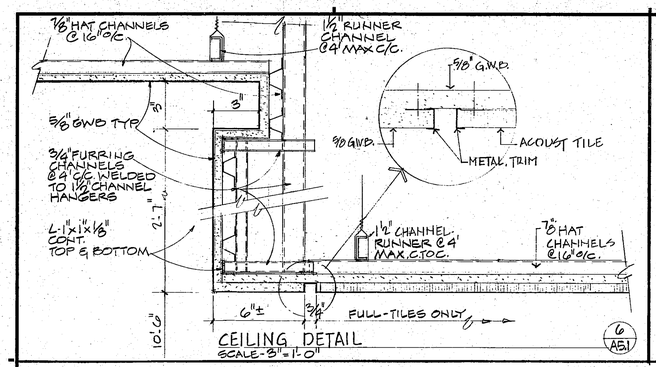
TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

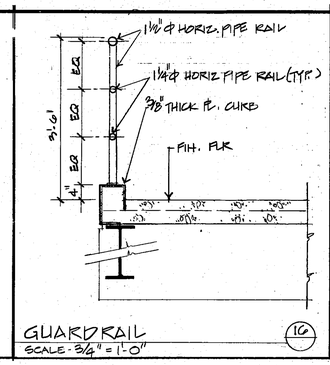
SOUTH & WEST EXTERIOR ELEVATIONS DETAILS

SHEET A3.2

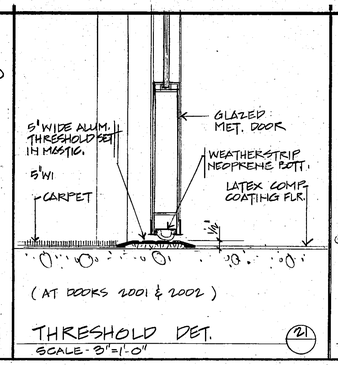
DIETERICH-POST CLEARPRINT 1020



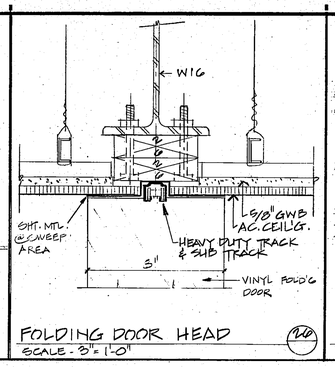
CEILING DETAIL
SCALE - 3" = 1'-0"
6 / A5.1



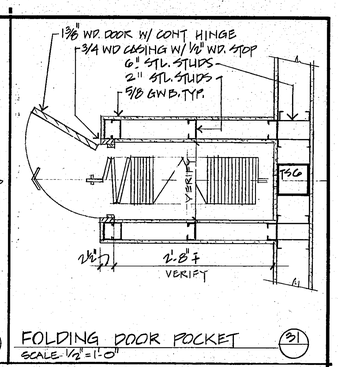
GUARDRAIL
SCALE - 3/4" = 1'-0"
16



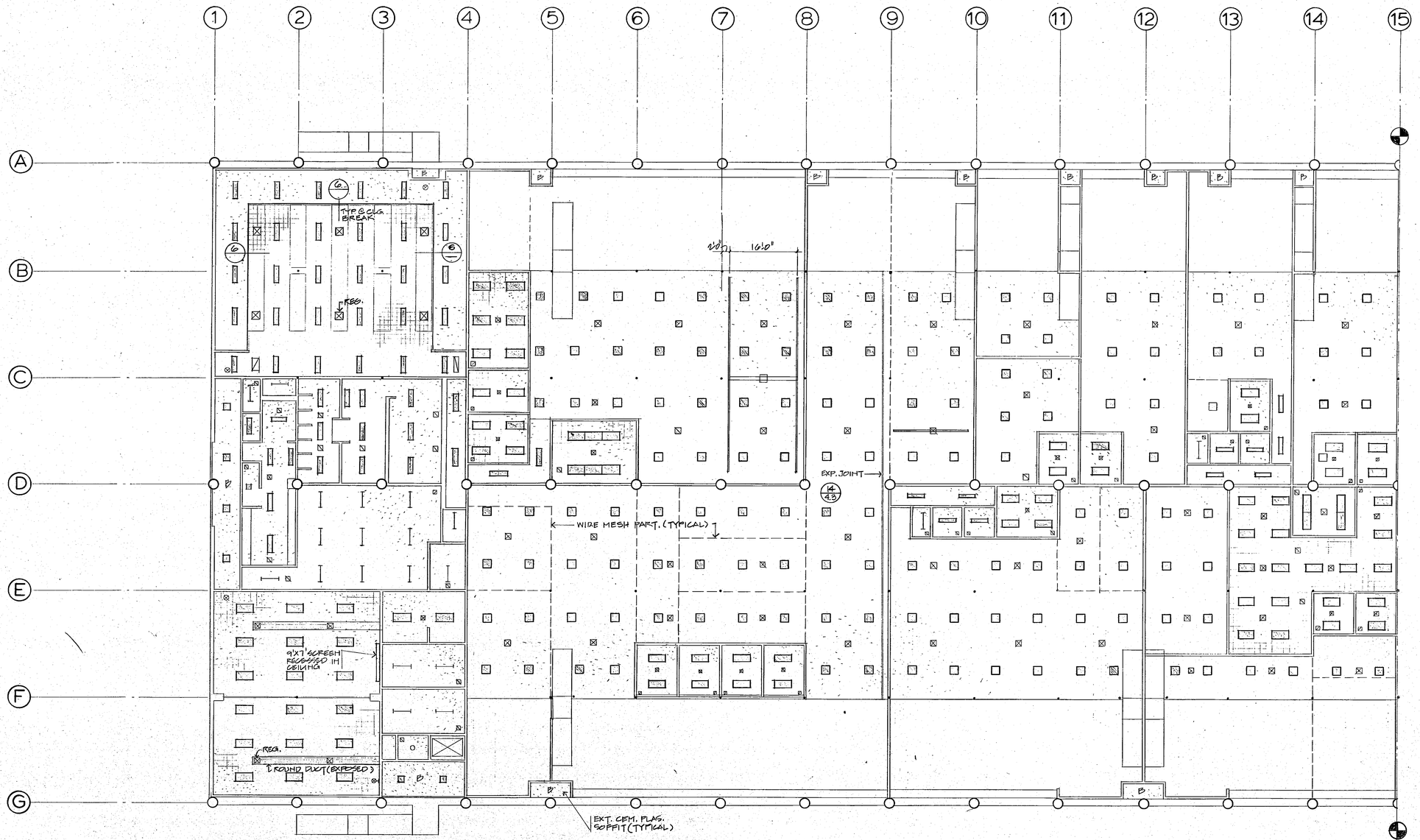
THRESHOLD DET.
SCALE - 3" = 1'-0"
21



FOLDING DOOR HEAD
SCALE - 3" = 1'-0"
20



FOLDING DOOR POCKET
SCALE 1/2" = 1'-0"
21



NOTE:
ALL SUSPENDED CEILINGS TO HAVE SEISMIC BRACING.

LEGEND

- RETURN GRILLE
- SUPPLY GRILLE
- EXIT LIGHT
- LIGHT FIXTURE
- EXTERIOR CEMENT PLASTER
- SUSPENDED GYPSUM BOARD
- ACOUST. TILE GLUED TO GYP. BOARD
- ACCESS PANELS

REGISTERED ARCHITECT DONALD GIBBS No. C-9467

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

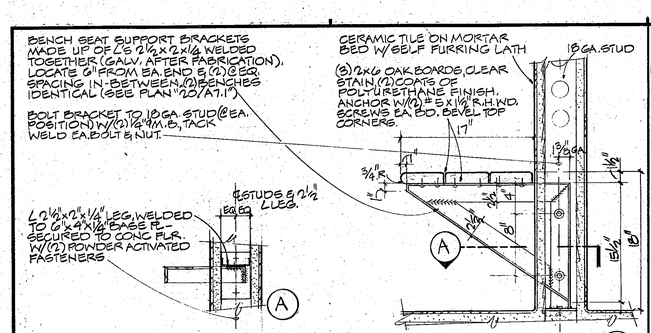
DRAWN PR/KA	DATE 12-16-88
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

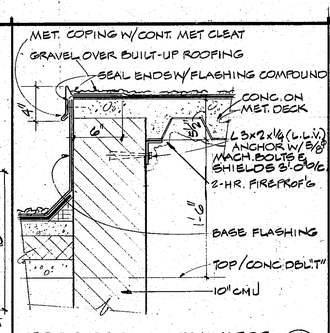
TORRANCE CALIFORNIA

FIRST FLOOR LEFT HALF REFLECTED CELING PLAN

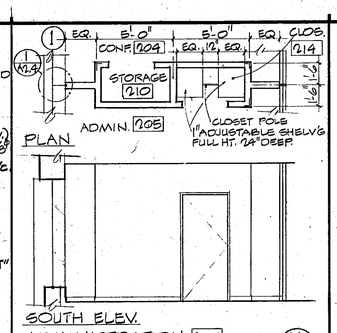
SHEET A 5.1



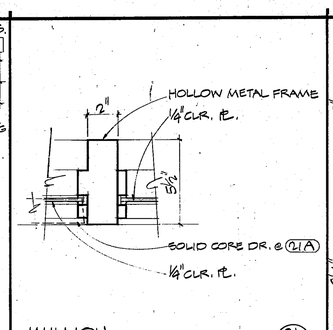
SHOWER BENCH - SECTION & DETAIL (6 / A5.2)
SCALE - 1½" = 1'-0"



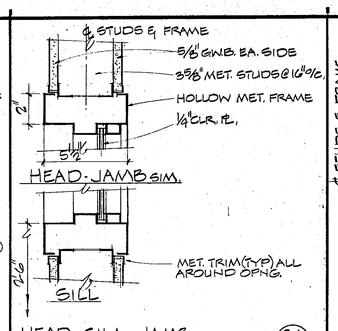
ROOF COPING @ ELEVATOR (11 / A5.2)
SCALE - 1½" = 1'-0"



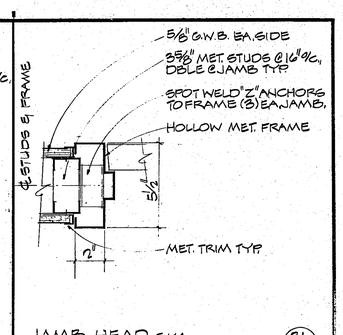
ADMINISTRATION 205 (16 / A5.2)
SCALE - ¼" = 1'-0"



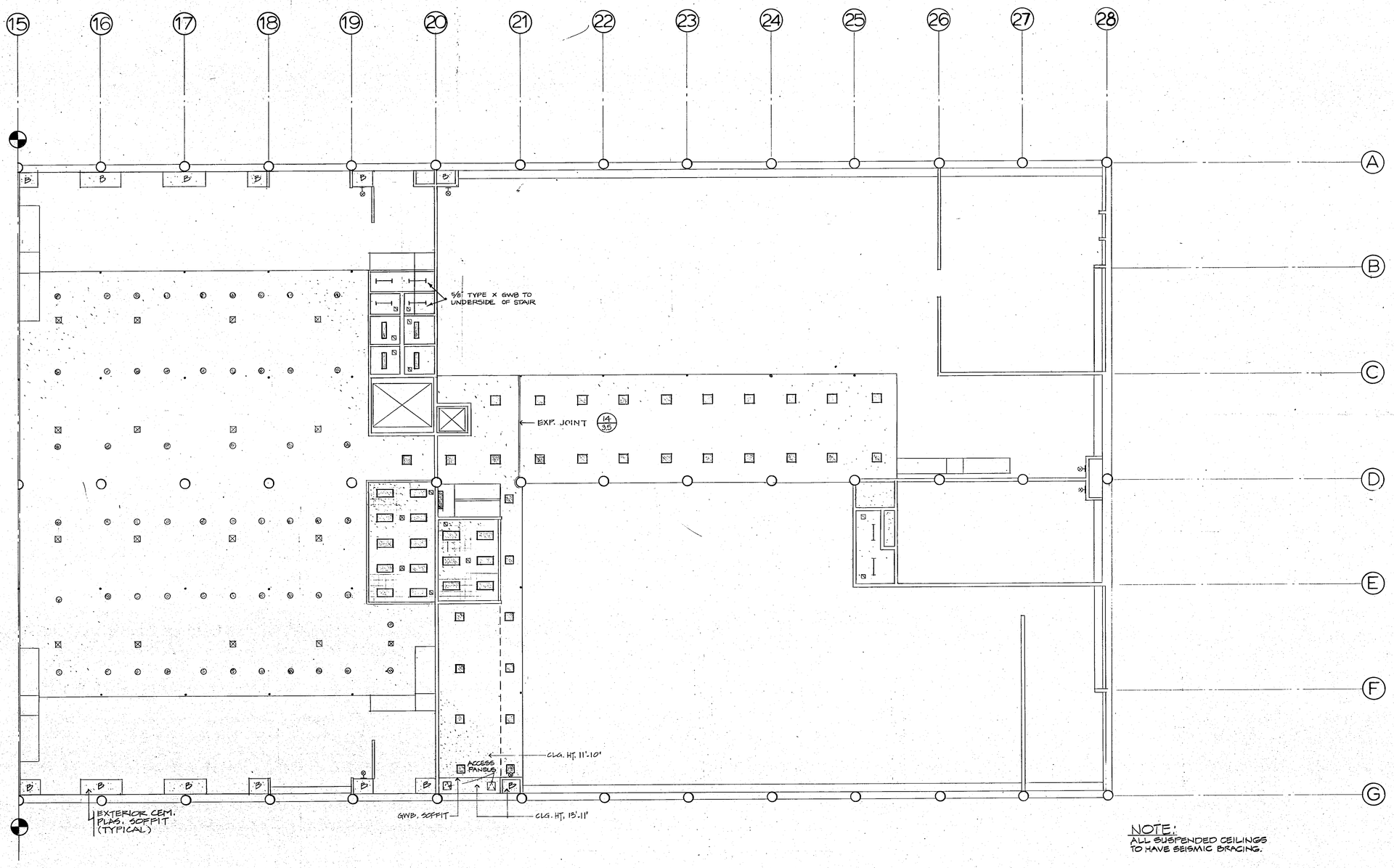
MULLION (21 / A5.2)
SCALE - 3" = 1'-0"



HEAD-SILL-JAMB (26 / A5.2)
SCALE 3" = 1'-0"



JAMB-HEAD SIM. (31 / A5.2)
SCALE - 3" = 1'-0"



NOTE:
ALL SUSPENDED CEILINGS TO HAVE SEISMIC BRACING.

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

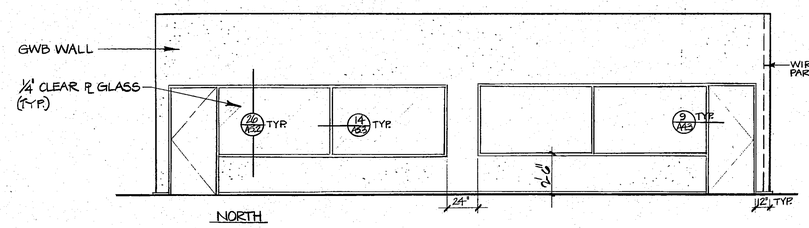
DRAWN PR/KA	DATE 8-16-88
CHECKED	JOB 1306

TORRANCE CITY SERVICE FACILITY

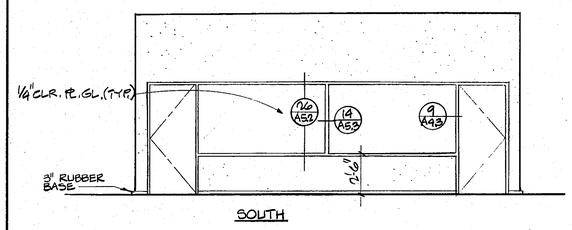
TORRANCE CALIFORNIA

FIRST FLOOR RIGHT HALF REFLECTED CELING PLAN

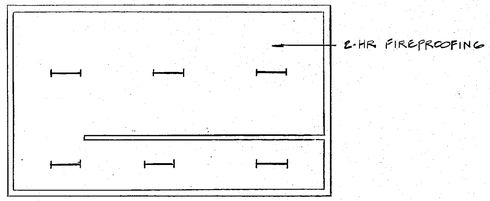
SHEET A5.2



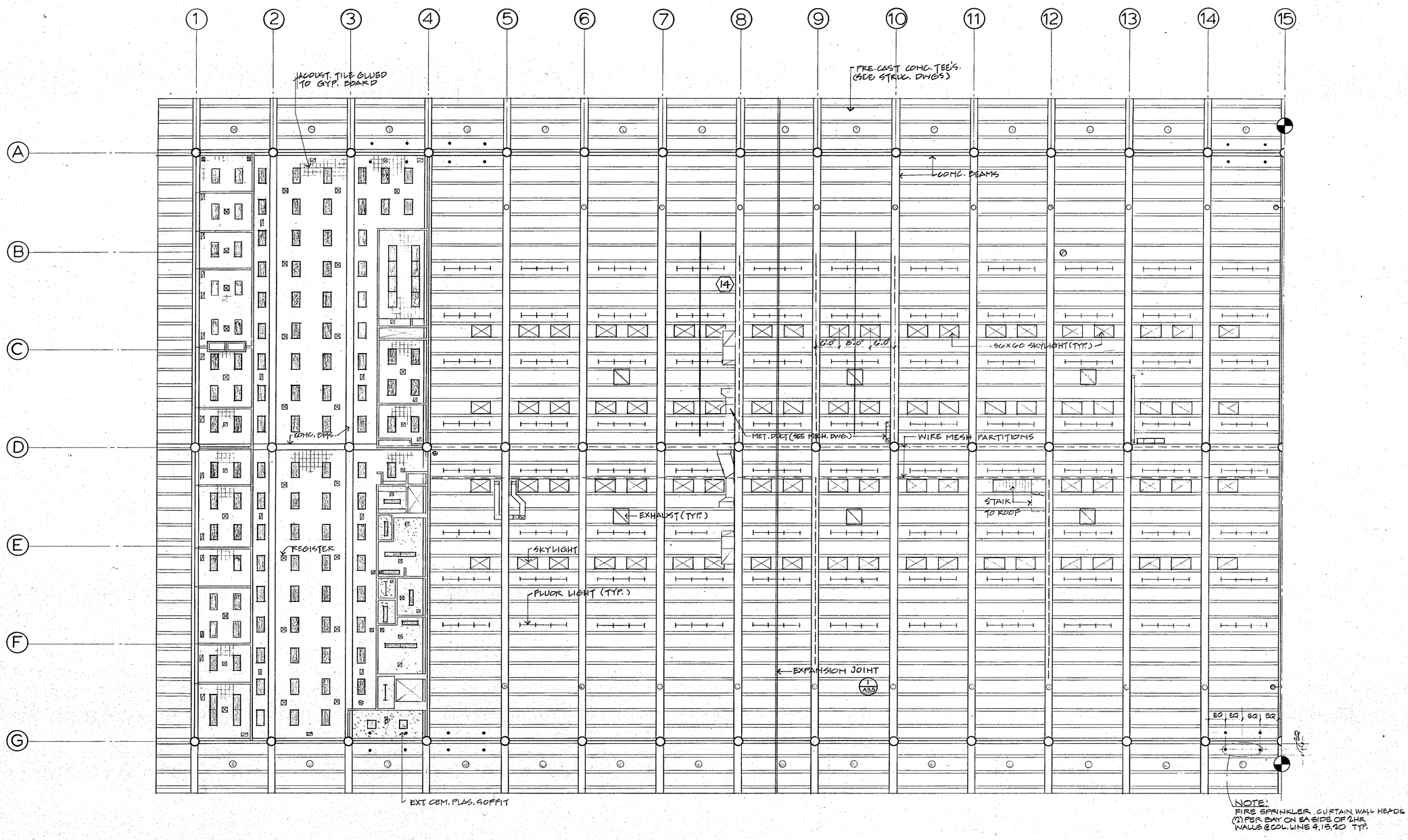
WATER SHOP 161
SCALE: 1/4" = 1'-0"
11 A5.3



VEHICLE WORK AREA 139
SCALE: 1/4" = 1'-0"
21 A5.3



ROOF STAIR REFLECTED CEILING PLAN 301
SCALE: 1/4" = 1'-0"
31 A5.3



REGISTERED ARCHITECT DONALD GIBBS No C3807 STATE OF CALIFORNIA

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

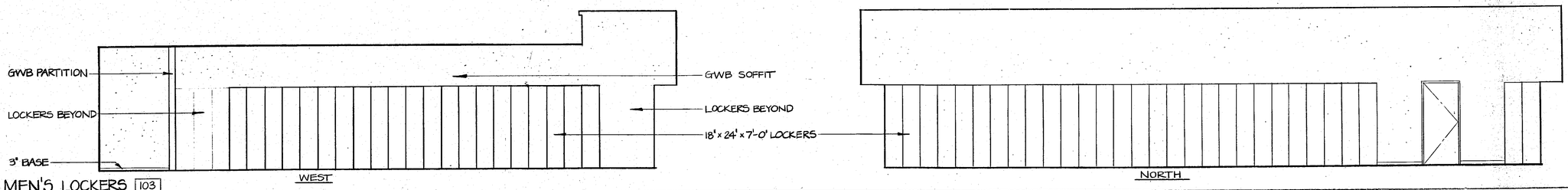
DRAWN PR/KA	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

SECOND FLOOR LEFT HALF REFLECTED CELING PLAN

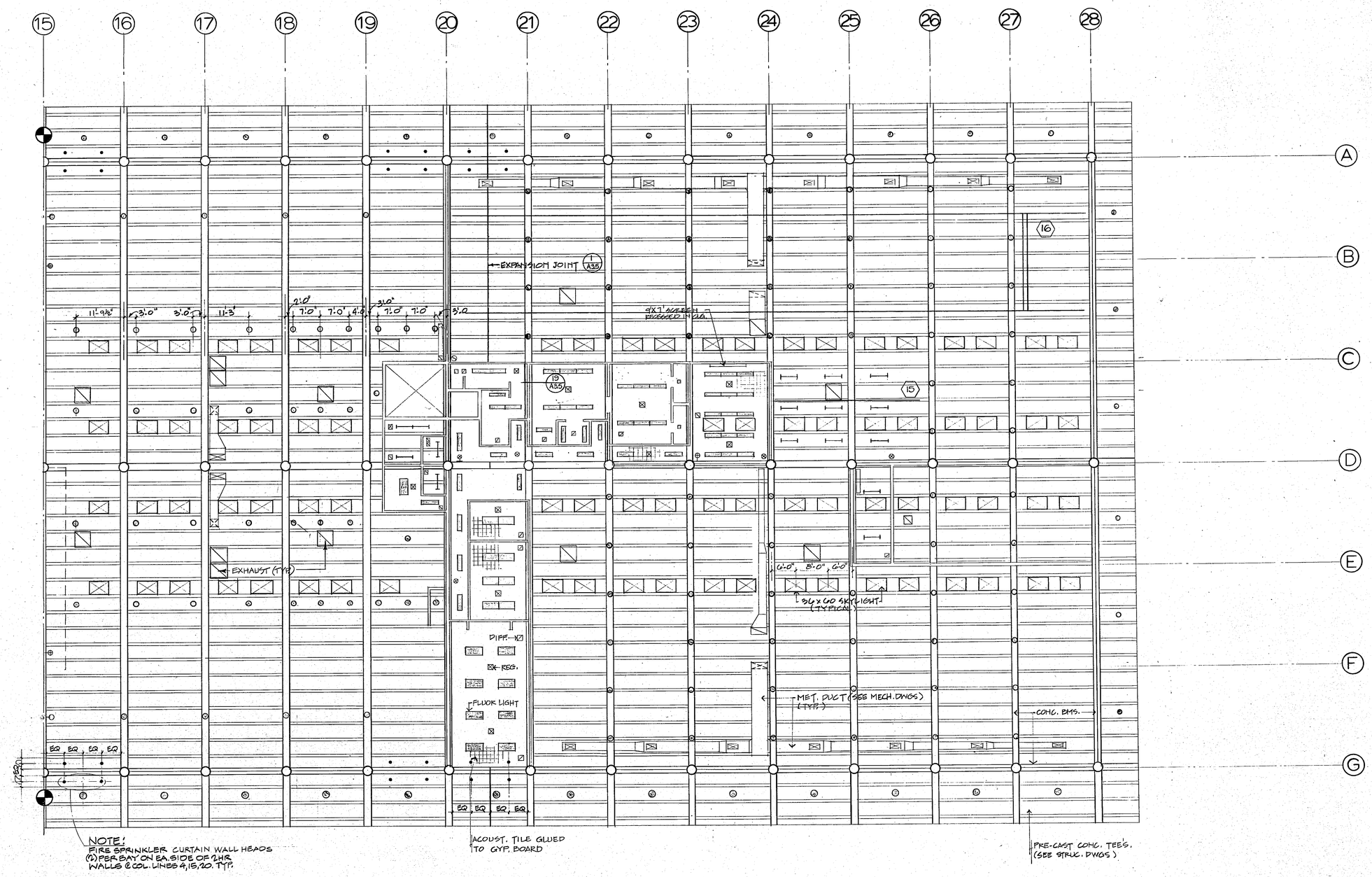
SHEET A5.3



MEN'S LOCKERS 103

SCALE: 1/4" = 1'-0"

31/A54



REGISTERED ARCHITECT
DONALD GIBBS
No. C2467
STATE OF CALIFORNIA

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

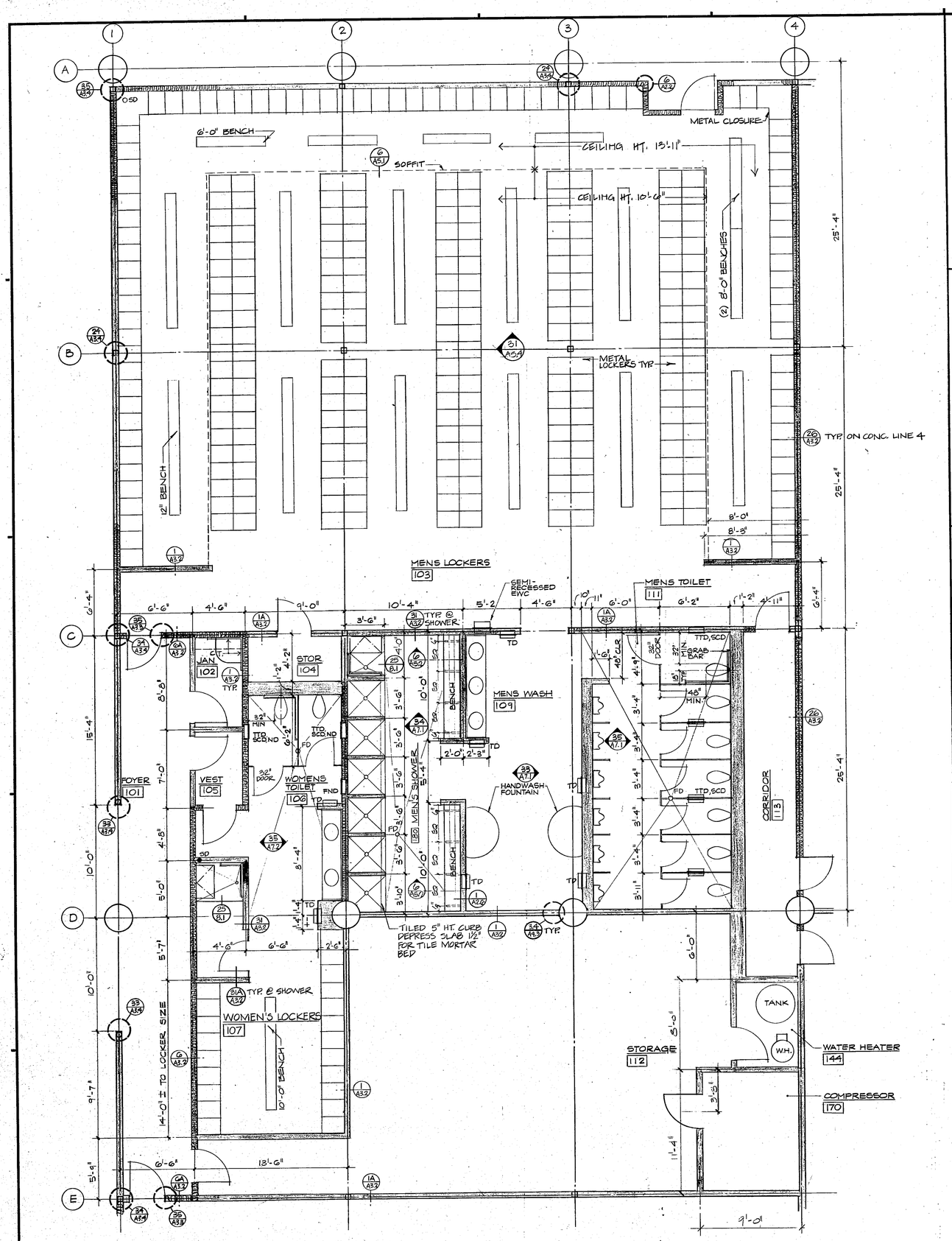
DRAWN	PS/KA	DATE	12-16-83
CHECKED		JOB	1806

TORRANCE CITY SERVICE FACILITY

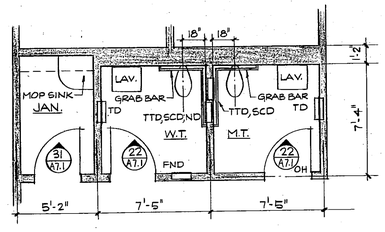
TORRANCE
CALIFORNIA

SECOND FLOOR
RIGHT HALF
REFLECTED
CELING PLAN

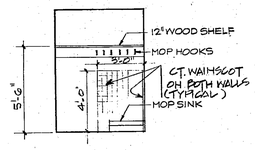
SHEET A5.4



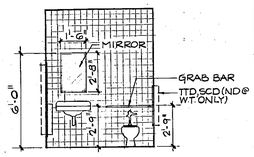
ENLARGED LOCKER ROOM AREA PLAN (20 / A7.1)
SCALE: 1/4" = 1'-0"



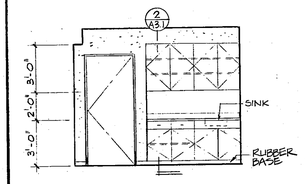
TYP. TOILETS & JANITOR CLOSET (2G / A7.1)
SCALE: 1/4" = 1'-0"



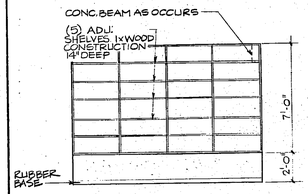
TYP. JANITOR CLOSET (31 / A7.1)
SCALE: 1/4" = 1'-0"



TYP. SMALL TOILET (22 / A7.1)
SCALE: 1/4" = 1'-0"

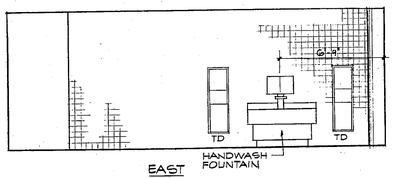


COFFEE 219 (27 / A7.1)
SCALE: 1/4" = 1'-0"

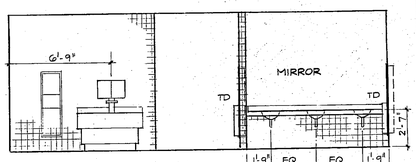


NOTE: NORTH AND SOUTH ELEVATIONS IDENTICAL

SUPPLY 221 (32 / A7.1)
SCALE: 1/4" = 1'-0"

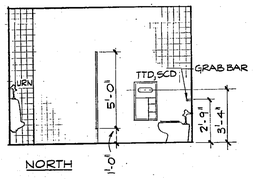


EAST

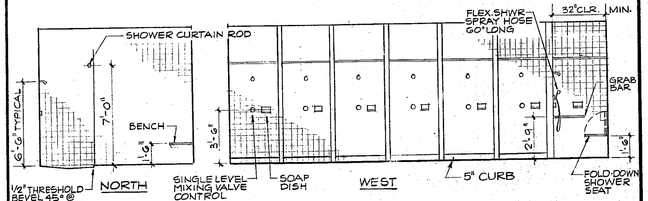


WEST

MENS WASH 109 (33 / A7.1)
SCALE: 1/4" = 1'-0"

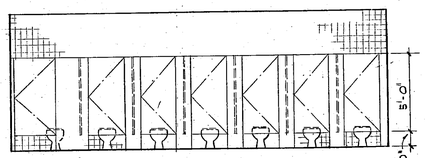


NORTH

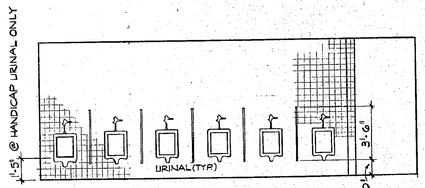


NORTH WEST

MENS SHOWER 180 (34 / A7.1)
SCALE: 1/4" = 1'-0"



EAST



WEST

MENS TOILET 111 (35 / A7.1)
SCALE: 1/4" = 1'-0"

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

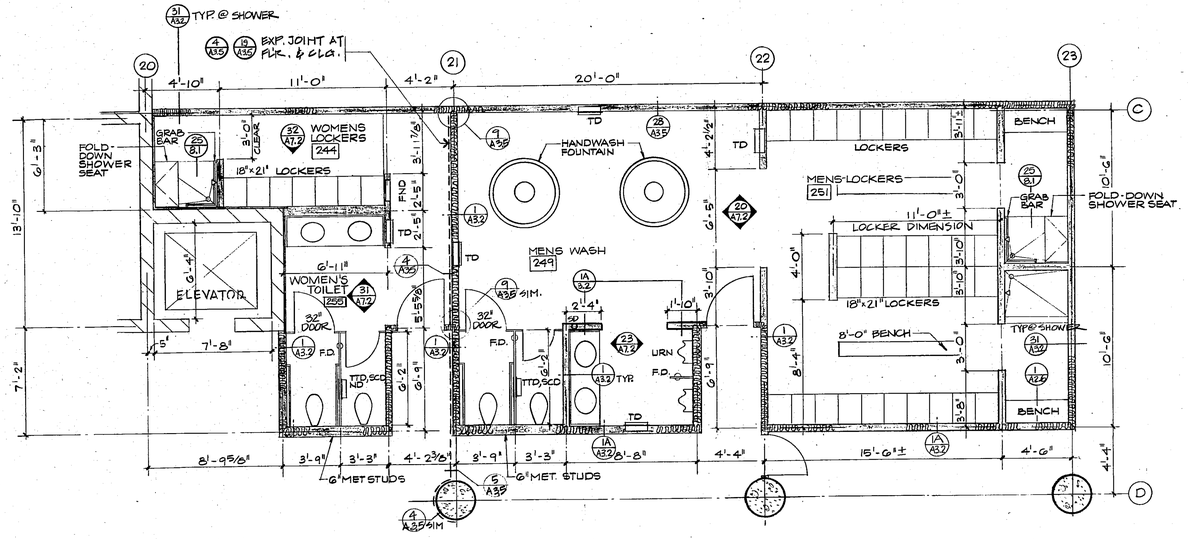
DRAWN FR/FA	DATE 2-16-88
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

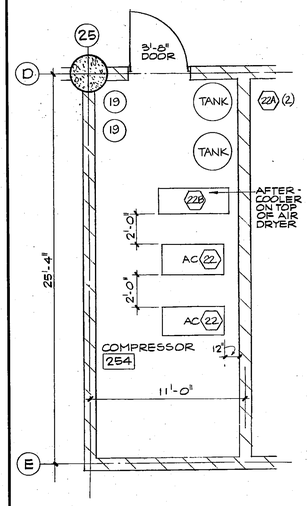
TORRANCE CALIFORNIA

TOILET/LOCKER ROOM PLANS ELEVATIONS

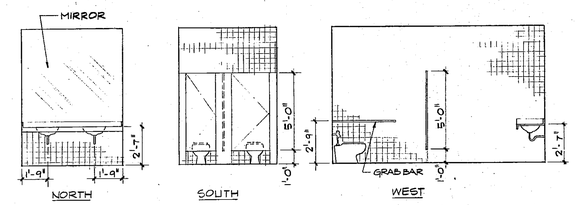
SHEET A 7.1



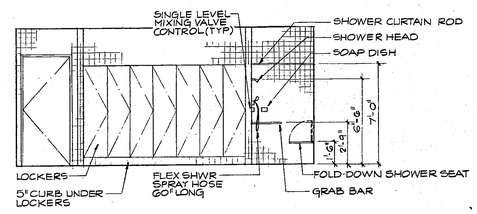
ENLARGED MECHANICS LOCKER AREA PLAN (17 / A7.2)
SCALE: 1/4" = 1'-0"



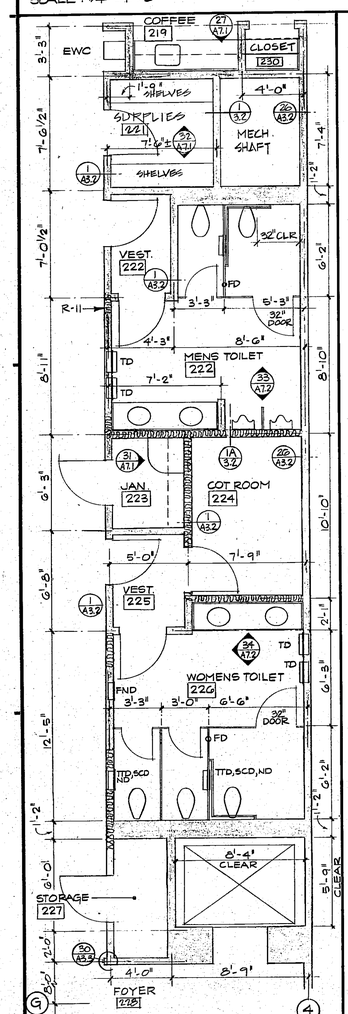
COMPRESSOR ROOM 254 (22 / A7.2)
SCALE: 1/4" = 1'-0"



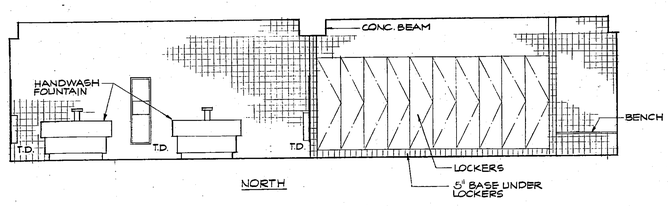
WOMENS LOCKERS 107 (31 / A7.2)
SCALE: 1/4" = 1'-0"

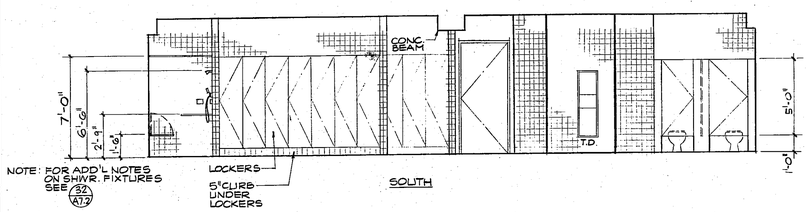


WOMENS LOCKERS 244 (32 / A7.2)
SCALE: 1/4" = 1'-0"

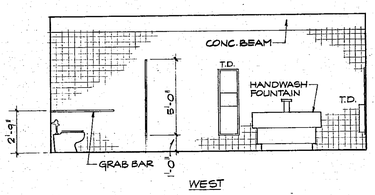


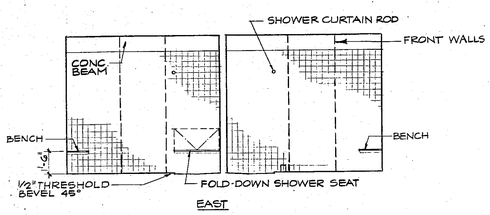
ENLARGED TOIL AREA PLAN (4 / 5 / A7.2)
SCALE: 1/4" = 1'-0"



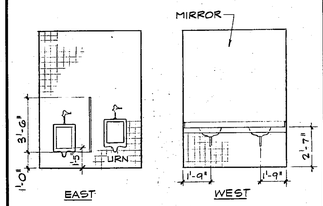


NOTE: FOR ADD'L NOTES ON SHWR. FIXTURES SEE 32 / A7.2

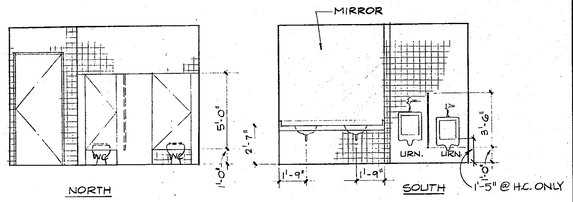




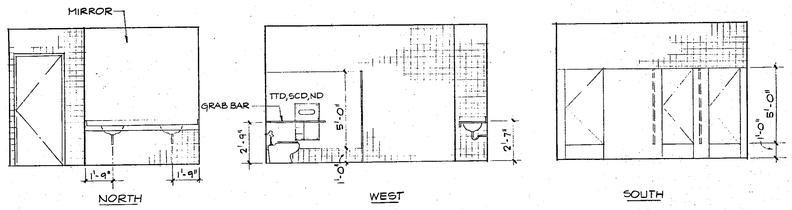
MENS WASH/LOCKERS 249 251 (20 / A7.2)
SCALE: 1/4" = 1'-0"



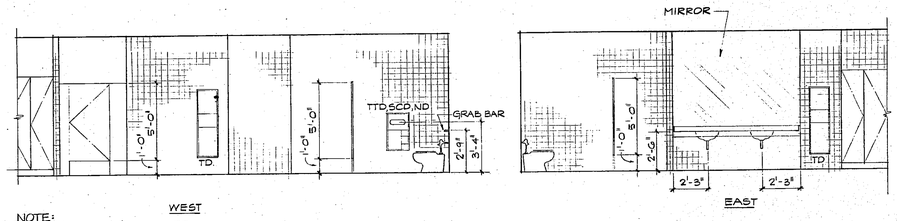
MENS WASH 249 (23 / A7.2)
SCALE: 1/4" = 1'-0"



MENS TOILET 222 (33 / A7.2)
SCALE: 1/4" = 1'-0"



WOMENS TOILET 226 (34 / A7.2)
SCALE: 1/4" = 1'-0"



NOTE: INSTALL WOMEN'S SHOWER HEAD @ 5'-8" HT.

WOMENS TOILET 106 (35 / A7.2)
SCALE: 1/4" = 1'-0"

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3375 Long Beach Boulevard, Long Beach, California

DRAWN PR/KA	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

TOILET/LOCKER ROOM PLANS ELEVATIONS

SHEET A7.2

SYMBOL LIST (AS APPLICABLE)

CEIL | WALL | FLOOR

- LIGHTING FIXTURE, INC. OR HID
- RECESSED LIGHTING FIXTURE, INC OR HID
- SURFACE MOUNTED FLUORESCENT FIXTURE
- RECESSED FLUORESCENT FIXTURE
- FLUORESCENT FIXTURE, SPECIAL SHAPE
- LETTER IN OR AT SYMBOL INDICATES FIXTURE TYPE AND WATTAGE
- EXIT LIGHT FACE SHADED WITH DIRECTIONAL ARROW
- ADJUSTABLE FIXTURE, AIMING DIRECTION INDICATED
- SHADED SYMBOL - NIGHT OR EMERGENCY LIGHT
- POLE MOUNTED FIXTURE, TWO LIGHT SHOWN SEE DETAIL
- LIGHTING TRACK, LENGTH AS INDICATED
- PROVIDE 3#12, 1/2" FLEX - TYPICAL
- SIGN OUTLET, VERIFY LOCATION WITH SIGN SUPPLIER
- JUNCTION BOX SIZE, AS NOTED OR REQUIRED
- SINGLE CONVENIENCE OUTLET
- DUPLEX CONVENIENCE OUTLET — FLOOR OUTLETS STUB MOUNTED IN CAST BOX
- DOUBLE DUPLEX IN 2 GANG BOX
- SPECIAL OUTLET, TYPE AS NOTED
- DUPLEX OUTLET, BOTTOM HALF SWITCHED
- FLOOR BOX
- DUPLEX OUTLET ON FLOOR BOX
- DUPLEX OUTLET IN FLOOR BOX
- SPECIAL OUTLET ON FLOOR BOX
- SPECIAL OUTLET IN FLOOR BOX
- CLOCK OUTLET
- SPEAKER OUTLET FOR SURFACE SPEAKER
- MICROPHONE OUTLET IN FLOOR BOX
- SPEAKER BACK BOX (SOUNDOLIER #95-8) WITH GRILL (SOUNDOLIER # 51-8) FOR PAGING
- SPEAKER VOLUME CONTROL
- T.V. ANTENNA OUTLET
- SURFACE MOUNTED CABINET OR EQUIPMENT
- RECESSED MOUNTED CABINET OR EQUIPMENT
- LIGHTING PANEL 208 VOLT, 4 WIRE
- LIGHTING OR POWER PANEL 480 VOLT, 3 OR 4 WIRE
- SIGNAL TERMINAL CABINET
- TELEPHONE OUTLET, FLOOR UNIT ON FLOOR BOX
- INTERCOM OUTLET, FLOOR UNIT ON FLOOR BOX
- RECESSED TELEPHONE
- FIRE TREATED PLYWOOD BACKBOARD 3/4" X 8' HIGH, LENGTH AS SHOWN
- JUNCTION BOX FOR CCTV CAMERA (ON ROOF, PROVIDE ASSEMBLY AS DETAILED)
- CRT TERMINAL OUTLET
- MOTOR OUTLET WITH WP FLEX CONNECTION
- RELAY OR CONTACTOR, RATING AS NOTED
- 3 POLE MAGNETIC STARTER, SIZE 1 OR AS NOTED
- 3 POLE HP RATED DISCONNECT SWITCH 30A OR AS NOTED
- FUSED DISCONNECT SWITCH, RATING AS NOTED
- CIRCUIT BREAKER, RATING AS NOTED
- TOGGLE SWITCH, SUBSCRIPTS AS FOLLOW:
  - 2 - 2 POLE
  - 3 - 3-WAY
  - 4 - 4-WAY
  - M - MANUAL MOTOR STARTER HP RATED
  - K - KEY OPERATED
  - P - WITH PILOT LIGHT IN 2 GANG BOX
  - R - DOUBLE THROW, MOMENTARY CONTACT, RELAY CONTROL
- THREE SWS IN GANGED BOX CONTROLLING DESIGNATED FIXTURES PROVIDE BARRIERS AS REQUIRED
- INC DIMMER WITH INTEGRAL SWITCH
- TIME SWITCH
- EMERGENCY BATTERY LIGHT, SEE FIXTURE SCHEDULE
- PUSHBUTTON STATION +4'-6" (W.P. WHEN OUTDOORS)
- FIRE ALARM BELL, PROVIDED UNDER MECHANICAL SECTION OF THE SPECIFICATIONS & INSTALLED BY ELECTRICAL CONTRACTOR
- WATER FLOW SWITCH OUTLET WITH WP FLEX CONNECTION. PROVIDED UNDER MECHANICAL SECTION OF THE SPECIFICATIONS & INSTALLED BY ELECTRICAL CONTRACTOR.
- OS&Y VALVE WITH TAMPER SWITCH OUTLET WITH WP FLEX CONNECTION.

1/2" C - 2 NO. 12	1/2" C - 2 NO. 10	3/4" C - 2 NO. 8
1/2" C - 3 NO. 12	1/2" C - 3 NO. 10	3/4" C - 3 NO. 8
1/2" C - 4 NO. 12	3/4" C - 4 NO. 10	3/4" C - 4 NO. 8
3/4" C - 5 NO. 12	3/4" C - 5 NO. 10	1" C - 5 NO. 8
3/4" C - 6 NO. 12	1" C - 6 NO. 10	1" C - 6 NO. 8
3/4" C - 7 NO. 12	1" C - 7 NO. 10	1¼" C - 7 NO. 8
1" C - 8 NO. 12	1" C - 8 NO. 10	1¼" C - 8 NO. 8

4#1, 3-5 (3 WIRE CIR 1, 3-2 WIRE CIR 5) HOMERUN TO PANEL "A" "G" INDICATES GROUND WIRE (TO MCC OR SWBD) SEE SINGLE LINE DIAGRAM

- DOWN — UP CONDUIT RISER
- CONDUIT TERMINATING IN FLUSH COUPLING
- FLEXIBLE CONDUIT CONNECTION
- (CLG OR WALLS) — (IN FLOOR OR GROUND) CONCEALED CONDUIT RUN
- CONDUIT SEAL

- T — 3/4" C.O. — T — 1" C.O. — T — 1¼" C.O. TELEPHONE SYSTEM
- A — 1/2" C.O. — A — 3/4" C.O. — A — 1" C.O. PAGING SYSTEM
- CCTV — CLOSED CIRCUIT T.V. CONDUIT (1" MIN. OR AS NOTED)

SURFACE MOUNTED CONDUIT

- 5A — EQUIPMENT DESIGNATION
- 1 — SPECIAL REFERENCE NOTE
- EQUIPMENT REFERENCE NOTE

ABBREVIATIONS

A, AMP	AMPERES	KW	KILOWATTS	RM	ROOM
AC	ALTERNATING CURRENT	KWH	KILOWATT HOURS	RMS	ROOT MEAN SQUARE
AL	ALUMINUM	LTG	LIGHTING	SEC	SECONDARY
AWG	AMERICAN WIRE GAUGE	LV	LOW VOLTAGE	SN	SOLID NEUTRAL
BIL	BASIC IMPULSE LEVEL	MCC	MOTOR CONTROL CENTER	SP	SINGLE POLE
CB	CIRCUIT BREAKER	MCM	1,000 CIRCULAR MILS	STD	STANDARD
C, CDT	CONDUIT	MG	MOTOR GENERATOR	SUR	SURFACE
CIR, CKT	CIRCUIT	MH	MOUNTING HEIGHT	SW	SWITCH
CLG	CEILING	MIN	MINIMUM	SWBD	SWITCHBOARD
CO	CONDUIT ONLY	MOM	MOMENTARY	T	THROW
CT	CURRENT TRANSFORMER	MTD	MOUNTED	TP	TWISTED PAIR
CU	COPPER	NC	NORMALLY CLOSED	TPS	TWISTED PAIR SHIELDED
CX	COAXIAL CABLE	NIC	NOT IN CONTRACT	TRAN	TRANSFORMER
DWG	DRAWING	NF	NON-FUSED	TYP	TYPICAL
FLEX	FLEXIBLE CONDUIT	NL	NIGHT LIGHT	UF	UNDERFLOOR
FLUOR	FLUORESCENT	NO	NORMALLY OPEN	UG	UNDERGROUND
GD	GROUND	NTS	NOT TO SCALE	V	VOLTS
HOA	HAND-OFF-AUTOMATIC	P	POLE	VA	VOLT AMPERES
HP	HORSEPOWER	PAN	PANEL	UON	UNLESS OTHERWISE NOTED
HV	HIGH VOLTAGE	PB	PULL BOX	W	WATTS
HZ	HERTZ	PEN	PENDANT	WP	WEATHERPROOF
INC	INCANDESCENT	PF	POWER FACTOR	WT	WATERTIGHT
JB	JUNCTION BOX	PH Ø	PHASE	XP	EXPLOSION PROOF
KV	KILOVOLT	PRI	PRIMARY	FF	FINISHED FLOOR
KVA	KILOVOLT AMPERES	PT	POTENTIAL TRANSFORMER		
KVAR	REACTIVE KVA	PVC	POLYVINYL CHLORIDE		
EDF	ELECTRIC DRINKING FOUNTAIN	REQ	REQUIRED		

GENERAL NOTES

A. M.H. INDICATES MOUNTING HEIGHT FROM FINISHED FLOOR TO BOTTOM OF FIXTURE OR DEVICE. +4'-0" INDICATES MOUNTING HEIGHT FROM FINISHED FLOOR TO CENTER LINE OF FIXTURE OR DEVICE.

B. MOUNT WALL OUTLETS AND RECEPTACLES AT +18" VERTICALLY, UNLESS OTHERWISE NOTED, OR AS REQUIRED TO CLEAR COUNTERTOPS AND SPLASHES.

C. MOUNT SWITCHES, THERMOSTATS AND DEVICES REQUIRING OBSERVATION OR OPERATION AT +4'-0" OR AS NOTED.

D. CONCEAL CONDUIT UNLESS OTHERWISE DIRECTED.

E. MOUNT OUTLETS FLUSH WITH BUILDING SURFACES UNLESS OTHERWISE DIRECTED.

F. MINIMUM LINE VOLTAGE WIRING TO BE #12 AWG THW OR THWN.

G. CONNECT TO MOTOR LEADS WITH BOLTED CONNECTORS TAPED.

H. FROM RECESSED PANELS, STUB FOUR 3/4" CONDUITS EACH UP INTO ACCESSIBLE CEILING SPACE AND CAP ON GRADE LEVELS, AND THREE EACH UP AND DOWN ON SUSPENDED LEVELS.

I. USE HIGH TEMPERATURE WIRE FOR RUNS ON ROOF EXCEPT FOR SHORT EXTENSIONS OF CIRCUITS RUN IN CEILING BELOW.

J. LIGHTING FIXTURE CATALOG NUMBERS ARE FOR GUIDANCE. REFER TO DESCRIPTIONS ON SCHEDULE AND IN SPECIFICATIONS.

K. PROVIDE RECESSED FIXTURES COMPATIBLE WITH CEILING FINISH INCLUDING ALL NECESSARY FRAMES AND HARDWARE. MAINTAIN THE CEILING FIRE RATING.

L. PROVIDE UL LABELLED WET LOCATION FIXTURES ON EXTERIOR AND IN WET LOCATIONS.

M. WHERE FLUORESCENT LIGHT FIXTURES ARE SWITCHED BY TWO SWITCHES, CONNECT OUTER LAMPS TO ONE BALLAST AND INNER LAMP(S) TO SECOND BALLAST. GROUP OUTER AND INNER LAMPS ON SAME SWITCH RESPECTIVELY.

N. LOCATE ALL ELECTRICAL CEILING ELEMENT (LIGHT FIXTURES E.T.C) AS INDICATED ON ARCHITECTURAL REFLECTED CEILING PLANS.

O. PROVIDE CPE BOOT WITH A SEAL OFF FOR EACH CONDUIT WHICH PENETRATES THE CPE LINER - SEE CPE BOOT DETAIL ON SHEET E-9 REFER TO GAS REMOVAL SYSTEM DRAWINGS FOR LOCATION OF CPE LINER.

P. THE ELECTRICAL CONTRACTOR SHALL HAVE A PRE-JOB MEETING WITH THE ARCHITECT PRIOR TO RUNNING ANY EXPOSED CONDUITS.

EQUIPMENT DESIGNATION

ITEM	DESCRIPTION	KW/HP	VOLT	CONNECTION	REMARKS
5	OIL RESERVOIR PUMP	7-1/2 HP & 10 HP	480, 3 PH	AS SHOWN	CONNECT AS REQUIRED BY MFGR.
7	SERVICE REELS		120	RECEPTACLE	CONNECT AS REQUIRED BY MFGR.
8	SERVICE REELS		120	RECEPTACLE	CONNECT AS REQUIRED BY MFGR.
9	SERVICE REELS		120	RECEPTACLE	CONNECT AS REQUIRED BY MFGR.
10	SERVICE REELS		120	RECEPTACLE	CONNECT AS REQUIRED BY MFGR.
11	SERVICE REELS		120	RECEPTACLE	CONNECT AS REQUIRED BY MFGR.
12	SERVICE REELS		120	RECEPTACLE	CONNECT AS REQUIRED BY MFGR.
14	1 TON HOIST/TROLLEY	1 HP, 1/6 HP	480, 3 PH	HARD WIRED	CONNECT AS REQUIRED BY MFGR.
15	1 TON HOIST	1 HP	480, 3 PH	HARD WIRED	CONNECT AS REQUIRED BY MFGR.
16	6 TON CRANE/TROLLEY	7-1/2 HP, 1-1/2 HP	480, 3 PH	HARD WIRED	CONNECT AS REQUIRED BY MFGR.
21	STEAM CLEANER	5 HP	208, 3 PH	DISC SW & RECEPTACLE	22" AFF
22	AIR COMPRESSOR	2-15 HP	480, 3 PH	AS SHOWN	21" AFF
22B	AIR DRYER	2-1 HP	208, 3 PH	AS SHOWN	21"/+36" AFF
23B	DYNAMOMETER				
24	PAINT BOOTH	5HP	480, 3 PH	AS SHOWN	42" AFF
26	BATTERY CHARGER	2-1.5 KW	120, 1 PH 208, 3 PH	RECEPTACLE	72" CONNECTING CORD
34	DIESEL TANK	2-3/4 HP	208, 1 PH	AS REQUIRED BY MFGR.	CONNECT AS REQUIRED BY MFGR.
35	UNLEADED GASOLINE TANK	3/4 HP	208, 1 PH	AS REQUIRED BY MFGR.	CONNECT AS REQUIRED BY MFGR.
36	REGULAR GASOLINE TANK	3/4 HP	208, 1 PH	AS REQUIRED BY MFGR.	CONNECT AS REQUIRED BY MFGR.
37A	AIR COMPRESSOR	15 HP	480, 3 PH	AS REQUIRED BY MFGR.	CONNECT AS REQUIRED BY MFGR.
38B	AIR DRYER WITH COOLER	1 HP, 1 HP	208, 1 PH	AS REQUIRED BY MFGR.	CONNECT AS REQUIRED BY MFGR.
44	FUEL DISPENSER	3/4 HP	208, 1 PH	AS REQUIRED BY MFGR.	CONNECT AS REQUIRED BY MFGR.

SPECIAL RECEPTACLE, LETTER AT RECEPTACLE SYMBOL INDICATES TYPE, PROVIDE MATCHING PLUG.

- A — DUPLEX RECEPTACLE, 20 AMP, 208V, 1Φ 3W. NEMA 6-20R.
- B — SINGLE RECEPTACLE, 20 AMP, 120/208V, 1Φ 4W, GRD NEMA 14-20R
- C — DUPLEX RECEPTACLE, 30 AMP, 208V, 1Φ 3W NEMA 6-30R
- D — CEILING MOUNTED, 20 AMP, 120V, 1Φ, 3W TWISTLOCK NEMA L5-20R
- E — NOT USED.
- F — SINGLE RECEPTACLE, 20 AMP, 480V, 3Φ 4W, GRD NEMA-L16-20R
- H — SINGLE RECEPTACLE, 30 AMP, 480V, 3Φ 4W, GRD NEMA-L16-30R
- K — SINGLE RECEPTACLE, 20 AMP, 208V, 3Φ 4W, GRD NEMA- 15 -20R

GROUNDING SYSTEM

- BURIED GROUND CONDUCTOR, SIZE AS INDICATED
- GROUND ROD
- EXOTHERMIC GROUND CONNECTION
- GROUND PLATE, FLAT, TAPPED SIDE FLUSH WITH SURFACE

LIGHTING FIXTURE SCHEDULE

(SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS)

TYPE	VOLTS	LAMPS	BALLASTS	MOUNTING	DESCRIPTION	MANUFACTURER	USE	REMARKS
AA	277	400W HPS		SURFACE	PROVIDED WITH ALUMINUM CYLINDRICAL SHADE, FUSE DISCONNECT, QUICK DISCONNECT FEATURE.	HOLOPHANE SINGLE PRISM-PACK II SERIES	SERVICE BAYS	
AA1	277	400W HPS		SURFACE	SAME AS TYPE "AA" WITH EMERGENCY TRANSFER SWITCH AND 250W T-4 LAMP.	SAME	SAME	
BB	277	150W HPS		SURFACE	PROVIDED WITH ENCLOSED GASKETED HOUSING, FUSE DISCONNECT, AND ALUMINUM CYLINDRICAL SHADE	HOLOPHANE PETROLUX SERIES SERIES	OUTSIDE CANOPY	
CC	277	250W HPS		RECESSED	2' X 2' WITH REGRESSED ALUMINUM DOOR AND FUSE.	HOLOPHANE MULTILUME II	SHOP AREA	
CC1	277	250W HPS		RECESSED	SAME AS TYPE "CC" WITH EMERGENCY TRANSFER SWITCH AND 100W T-4 LAMP.	SAME	SAME	
DD	277	100W HPS		SURFACE	12" X 12" HOUSING WITH BLACK FINISH, POLY-CARBONATE REFRACTOR AND QUICK DISCONNECT FEATURE.	HOLOPHANE PARKPAK SERIES	WAREHOUSE AREA	
DD1	277	100W HPS		PENDANT	SAME AS TYPE "DD."	SAME	SAME	
DD2	277	100W HPS		PENDANT	SAME AS TYPE "DD."	SAME	SAME	
DD3	277	100W HPS		SURFACE	SAME AS TYPE "DD" WITH EMERGENCY TRANSFER SWITCH AND 75W T-4 LAMP.	SAME	SAME	
EE	277	(3)F40	(1)2L (1)1L	RECESSED	24"W X 48"L FLUORESCENT FIXTURE WITH HINGED AND LATCH DOOR AND PRISMATIC ACRYLIC LENS.	PRUDENTIAL P8500 SERIES	OFFICE	INSIDE AND OUTSIDE LAMPS TO BE SWITCHED SEPARATELY.
FF	277	(2)F40		SURFACE	2 LAMP STRIP.	PRUDENTIAL P102 SERIES	STORAGE	
GG	277	(2)F40		RECESSED	1' X 4' FLUORESCENT FIXTURE WITH HINGED AND LATCH DOOR AND PRISMATIC ACRYLIC LENS.	PRUDENTIAL P-8500 SERIES	TOILET	
GG1	277	(4)F40		RECESSED	1' X 8' FLUORESCENT FIXTURE WITH HINGED AND LATCH DOOR AND PRISMATIC ACRYLIC LENS.	SAME	SAME	
HH	277	(2)F40		PENDANT	48" L FLUORESCENT STRIP.	PRUDENTIAL P102 SERIES	ELECT CLO STORAGE	
JJ	277	(2)F40		PENDANT	2 LAMP 4'-0" INDUSTRIAL WITH 12% UPLIGHT.	COLUMBIA MODEL I7	MAINTENANCE AREA	
JJ2	277	(6)F40		SURFACE	SAME AS TYPE "JJ" WITH 6 LAMPS AND 12'-0" BODY.	SAME	SAME	
KK	277	100W HPS		POLE	31" SPHERICAL ONE-PIECE ALUMINUM HOUSING WITH BUILT-IN GLARE CONTROLLED LOUVER ASSEMBLY.	INFRANOR 575 SERIES	PARKING LOT	
LL	277	100W HPS		RECESSED		MARCO	ENTRY	
MM	277	150W HPS		WALL	13" ALUMINUM HOUSING WITH BRACKET MOUNTS.	MARCO MAXI-CYLINDER	SUPPLY AREA	
XX1	277	(2)25W		UNIVERSAL	ALUMINUM BODY WITH DOWNLIGHT.	MOLDCAST 400 SERIES	EXIT SIGN	
XX2	277	(2)25W		SAME	SAME AS TYPE "XX1" EXCEPT DOUBLE FACED.	SAME	SAME	
A	120	150		RECESSED	WEATHERPROOF WITH GLASS LENS.	MOLDCAST V-50 SERIES	SHOWER AREA	
B	120	100		WALL	INCANDESCENT SOCKET.	BRYANT 5228 SERIES	STORAGE	
C	120	150		WALL	DIECAST ALUMINUM BODY WITH POLYCARBONATE LENS, WEATHERPROOF.	PRESCOLITE 9300 SERIES	TRASH & GENERATOR	
D	120	(2)F40		SURFACE	ALUMINUM BODY WITH CLEAR PRISMATIC LENS.	PRUDENTIAL 1600 SERIES	CONTROL BUILDING	
E	120	(2)F40		WALL	EXPLOSION-PROOF FLUORESCENT LIGHT.	APPLETON EFU-SERIES	LUB PIT	
F	120	100 HPS		RECESSED	WEATHERPROOF WITH FLAT PRISMATIC DIFFUSER.	MARCO HN632403	CONTROL BUILDING	
G	120	(2)F40		SURFACE	PARABOLIC CONTOUR EXTRUDED ALUMINUM REFLECTOR WATERTIGHT WITH LENS.	COLUMBIA 500 SERIES	SIGN	
H	120	100		WALL	INCANDESCENT EXPLOSION-PROOF.	CROUSE-HINDS VAS SERIES	ELEVATOR PIT	
J	120	70 HPS		SURFACE	ENCLOSED AND GASKETED FIXTURE WITH INTEGRAL BALLAST AND POLYCARBONATE REFRACTOR.	HOLOPHANE PARKPAK SERIES	FUEL STATION	
K	120	150		RECESSED				
UN	277	(2)F40		SURFACE	4' FLUORESCENT FIXTURE WITH SMOOTH TRANSLUCENT WHITE ACRYLIC DIFFUSER	PRUDENTIAL		

STATEMENT OF DESIGN COMPLIANCE

Divisions One, Eight and Nine of the California Energy Conservation standards for non-residential buildings have been reviewed and the building design described on this page (these pages) is (are) in substantial conformance.

ELECTRICAL ENGINEER: Samuel Tulchinsky — CERTIFICATE NO.: E5768 — DATE: 12-19-83

REGISTERED PROFESSIONAL ENGINEER SAMUEL TULCHINSKY ELECTRICAL ENGINEERING STATE OF CALIFORNIA

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1180 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3375 Long Beach Boulevard, Long Beach, California

DRAWN	DATE
S.W.	
CHECKED	JOB
J.B.	1806

TORRANCE CITY SERVICE FACILITY

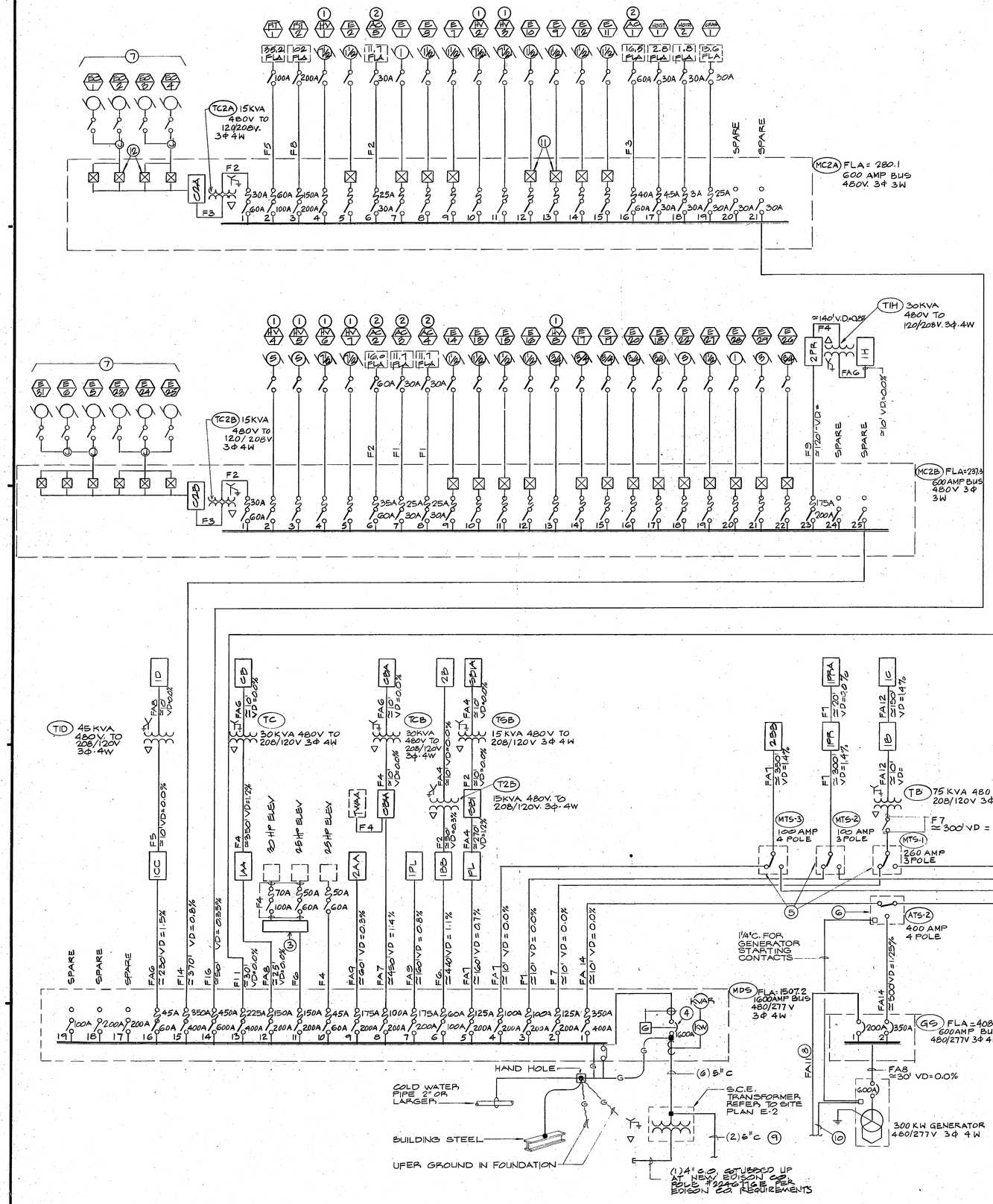
TORRANCE CALIFORNIA

SYMBOL LIST, GENERAL NOTES & DETAILS

SHEET E-1

NOTES:

1. PACKAGE UNIT INCLUDES STARTER.
2. PACKAGE AIR CONDITIONING UNIT. ELECTRICAL CONTRACTOR TO PROVIDE SINGLE POINT CONNECTION
3. 6"x6" x 36" GUTTER.
4. FULLY RATED CIRCUIT BREAKER.
5. MANUAL TRANSFER SWITCH.
6. AUTOMATIC TRANSFER SWITCH.
7. SEE PLANS FOR CONDUIT, WIRE, DISCONNECT SWITCH AND MOTOR SIZES.
8. EMERGENCY FEEDER TO TRANSIT FACILITY. THE CIRCUIT BREAKER & A PORTION OF FEEDER ARE INSTALLED UNDER THIS CONTRACT, REFER TO SITE PLAN E-2.
9. NORMAL FEEDER TO TRANSIT FACILITY, A PORTION OF THE FEEDER IS INSTALLED UNDER THIS CONTRACT. REFER TO SITE PLAN E-2.
10. 1 1/4" C. FOR TRANSIT FACILITY. TRANSFER SWITCH, GENERATOR STARTING CONTACTS & A PORTION OF THIS CONDUIT IS INSTALLED UNDER THIS CONTRACT. REFER TO SITE PLAN E-2.
11. REFER TO SHEET "S/E7" FOR 480V MOTOR CONTROL
12. REFER TO SHEET "1/E7" FOR 120V MOTOR CONTROL



REFER TO E-4A FOR LOAD SCHEDULES

MOTOR CONTROL CENTER SCHEDULE, 480V, 3 Φ, 60 HZ

HP	FLA	FUSED SWITCH FUSE(DE)	FUSED SWITCH FRAME	STR SIZE	TWO SPD STR	BRANCH CIRCUIT COND	BRANCH CIRCUIT CU WIRE AWG	BRANCH CIRCUIT GRD	DISC SW AMPS
15 KVA TRANS	18	30	60	-		-	3/8	8	-
1/2	1.0	1.25	30	1		1/2"	3#12	12	30
3/4	1.4	2.5	30	1		1/2"	3#12	12	30
1	1.8	3.0	30	1		1/2"	3#12	12	30
1½	2.6	4.5	30	1		1/2"	3#12	12	30
2	3.4	5.6	30	1		1/2"	3#12	12	30
3	4.8	8	30	1		1/2"	3#12	12	30
5	7.6	12	30	1		1/2"	3#12	12	30
7½	11	20	30	1		1/2"	3#12	12	30
10	14	25	30	1		1/2"	3#12	12	30
15	21	35	60	2		1/2"	3#10	10	30
20	27	45	60	2		3/4"	3#8	10	30
25	34	50	60	2		1"	3#6	8	60
30	40	70	100	3		1"	3#6	8	60
30					3	(2) 1"	6#6	2#8	60 *
40	52	80	100	3		1¼"	3#4	6	60
40					3	(2) 1¼"	6#4	2#6	60 *
50	65	110	200	4		1¼"	3#4	6	100
50					4	(2) 1¼"	6#4	2#6	100 *
60	77	125	200	4		1¼"	3#2	6	100
60					4	(2) 1¼"	6#2	2#6	100 *
75	96	150	200	4		1½"	3#1	6	200
75					4	(2) 1½"	6#1	2#6	200 *
100	124	200	200	4		2"	3#2/0	2	200
100					4	(2) 2"	6#2/0	2#2	200 *

* 6 pole disconnects for 2 speed starters.

FEEDER TABLE - COPPER CONDUCTORS

(See Specification for Insulation Type)

3 WIRE FDR NO	WIRE AWG-MCM	GRD WIRE AWG	CONDUIT W/GRD INCHES
F1	(3)12	12	3/4
F2	(3)10	10	3/4
F3	(3)8	10	1
F4	(3)6	10	1
F5	(3)4	8	1-1/4
F6	(3)2	8	1-1/4
F7	(3)1	6	1-1/2
F8	(3)1/0	6	1-1/2
F9	(3)2/0	6	2
F10	(3)3/0	6	2
F11	(3)4/0	2	2
F12	(3)250	2	2-1/2
F13	(3)350	2	3
F14	(3)500	2	3
F15	(6)3/0	(2)2	(2)2
F16	(6)4/0	(2)1	(2)2-1/2
F17	(6)250	(2)1	(2)2-1/2
F18	(6)350	(2)1	(2)3
F19	(6)500	(2)1/0	(2)3
F20	(9)350	(3)1/0	(3)3
F21	(9)500	(3)2/0	(3)3
F22	(12)350	(4)3/0	(4)3
F23	(15)500	(5)4/0	(5)3

4 WIRE FDR NO	WIRE AWG-MCM	GRD WIRE AWG	CONDUIT W/GRD INCHES
FA1	(4)12	12	3/4
FA2	(4)10	10	3/4
FA3	(4)8	10	1
FA4	(4)6	10	1-1/4
FA5	(4)4	8	1-1/4
FA6	(4)2	8	1-1/2
FA7	(4)1	6	2
FA8	(4)1/0	6	2
FA9	(4)2/0	6	2
FA10	(4)3/0	6	2-1/2
FA11	(4)4/0	2	2-1/2
FA12	(4)250	2	3
FA13	(4)350	2	3
FA14	(4)500	2	3-1/2
FA15	(8)3/0	(2)2	(2)2-1/2
FA16	(8)4/0	(2)1	(2)2-1/2
FA17	(8)250	(2)1	(2)3
FA18	(8)350	(2)1	(2)3
FA19	(8)500	(2)1/0	(2)3-1/2
FA20	(12)350	(3)1/0	(3)3
FA21	(12)500	(3)2/0	(3)3-1/2
FA22	(16)350	(4)3/0	(4)3
FA23	(20)500	(5)4/0	(5)3-1/2

2 WIRE FDR NO	WIRE AWG MCM	GRD WIRE AWG	CONDUIT W/GRD INCHES
FB1	(2)12	12	3/4
FB2	(2)10	10	3/4
FB3	(2)8	10	3/4
FB4	(2)6	10	1
FB5	(2)4	8	1
FB6	(2)2	8	1
FB7	(2)1	6	1-1/4
FB8	(2)1/0	6	1-1/4
FB9	(2)2/0	6	1-1/2
FB10	(2)3/0	6	1-1/2
FB11	(2)4/0	2	2
FB12	(2)250	2	2
FB13	(2)350	2	2-1/2
FB14	(2)500	2	3

NOTES:

1. Conduit sizes are minimum. Increase for long or difficult runs.
2. Above 86 degrees F ambient, increase wire size per NEC.

REGISTERED PROFESSIONAL ENGINEER SAMUEL TUCHMAN E-8709 ELECTRICAL ENGINEER STATE OF CALIFORNIA

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1180 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

DRAWN	DATE
CHECKED	JOB

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

SINGLE LINE DIAGRAM

SHEET E-3

1ST FLR - WEST HALF

PANEL "1AA" SCHEDULE 277/480V - 3Ø - 4W
200 A (DOUBLE LUGS) ___ A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1	6		EXTERIOR	600			1	20	(3)
2			SPARE	—					
3					—				
4					—				
5						—			
6			↓			—			
7	18		LUNCH/TRAINING	2450					
8	12		OFFICE	1800					
9	10		OFFICE, VENDING		1500				
10	16		CORRIDOR, OFFICE		1760				
11	20		TOILET, LOCKER			2000			
12	23		LOCKER			2260			
13	11		SHOPS	3080					
14	8			2240					
15	14				3920				
16	8		↓		2240				
17			SPARE			—			
18	9		SHOPS			2520			
19	5			1145					
20	7			1960					
21	4				1120				
22	10		↓		2800				
23			SPARE			—			
24	7					1960	↓	↓	
25			1HP COMP. "CA-1"	500			3	20	
26	4			1120			1	20	
27			———		500		—	—	
28			SPARE		—		1	20	
29			———			500	—	—	
30			SPARE			—	1	20	
31			PANEL "CB" STC	5830			3	80	
32			ITEM #38a	5850			3	40	
33			———		5310		-	-	
34			———		5850		—	—	
35			———			4690	-	-	
36			———			5850	—	—	
37			SPACE	—					
42			↓						
TOTAL VA 71335				26575	24990	19770			

(NORMAL LOAD) 35.5 KVA + (LCL LOAD) 35.0 KVA x 1.25
+ (SPARE LOAD) 8.9 KVA + (SPARE LCL LOAD) 3.5 KVA x 1.25
= DESIGN LOAD 98.8 KVA 118.5 AMPS.

(3) TIME CLOCK CONTROL - REFER TO DETAIL 3 ON SHT. E-17

PANEL "1BB" SCHEDULE 277/480V - 3Ø - 4W
___ A (LUGS ONLY) 60 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1	16		OFFICE	2160			1	20	
2	25		STORAGE	3125					
3	6		TOILET		600				
4	15		STORAGE		1875				
5			SPARE			—			
6	4		STORAGE			1750			
7	10		SHOP	2800					
8			SPARE	—					
9	11		SHOP		3080				
10			SPARE		—				
11	9		SHOP			2520			
12			SPARE			—			
13			PANEL "2B"	2520					
14				—					
15					2980				
16					—				
17						2340			
18			↓			—	↓	↓	
19			SPACE						
24			↓						
TOTAL VA 25750				10605	8535	6610			

(NORMAL LOAD) 7.8 KVA + (LCL LOAD) 17.9 KVA x 1.25
+ (SPARE LOAD) 2.0 KVA + (SPARE LCL LOAD) 4.5 KVA x 1.25
DESIGN LOAD=37.8 KVA 45.4 AMPS.

1ST FLR - WEST HALF

PANEL "1CC" SCHEDULE 277/480V - 3Ø - 4W
60 A. (LUGS ONLY) ___ A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1	13		TOILET, OFFICE	1700			1	20	
2			SPARE	—					
3	11		TOILET, OFFICE		1300				
4	9		SHOP AREA		2520				
5	10					2800			
6	10					2800			
7	10		↓	2800					
8	10		SHOP OFFICE	2280					
9			SPARE		—				
10	10		SHOP OFFICE		2280				
11			SPARE			—			
12	12		SHOP OFFICE			1800			
13			SPARE	—					
14				—					
15					—				
16					—				
17						—			
18			↓			—	↓	↓	
19			PANEL "1D"	14740			3	80	
20			SPARE						
21					13140		—	—	
22			SPARE						
23						10540	—	—	
24			SPARE						
TOTAL VA 58700				21520	19240	17940			

(NORMAL LOAD) 38.4 KVA + (LCL LOAD) 20.2 KVA x 1.25
+ (SPARE LOAD) 9.6 KVA + (SPARE LCL LOAD) 5.1 KVA x 1.25
DESIGN LOAD=79.6 KVA 95.6 AMPS.

2ND FLR WEST

PANEL "2AA" SCHEDULE 277/480V - 3Ø - 4W
200 A. (LUGS ONLY) ___ A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1	10		EXTERIOR	1900			1	20	O (3)
2	10			1900					
3	10				1900				
4	10				1900				
5	10					1900			
6	10		↓			1900			
7	18		OFFICE	2700					
8	21			3150					
9	17				2450				
10	16				2400				
11	17					2650			
12	16					2400			
13	15		LUNCH/COMPUTER	1890					
15	16		TOILET, OFFICE		1880				
16	10		STORAGE		3000				
18	10					3000			
19	12			3600					
20	10			3000					
21	12				3600				
22	11				3300				
23	11					2100			
24	12		↓			3600			
25			SPARE	—					
26	5		SHOP	2200					
27			SPARE		—				
28	5		SHOP		2200				
29			SPARE			—			
30	5		SHOP			2200			
31	5			2200					
32			SPARE	—					
33	5		SHOP		2200				
34			SPARE		—				
35	5		SHOP			2200			
36			SPARE			—	↓	↓	
37			SPACE						
42			↓						
TOTAL VA 69820				22740	25030	22050			

(NORMAL LOAD) — KVA + (LCL LOAD) 69.9 KVA x 1.25
+ (SPARE LOAD) — KVA + (SPARE LCL LOAD) 17.5 KVA x 1.25
DESIGN LOAD=109.5 KVA 131.6 AMPS.

(3) TIME CLOCK CONTROL - REFER TO DETAIL 3 ON SHT NO E-17

2ND FLR EAST

PANEL "2BB" SCHEDULE 277/480V - 3Ø - 4W
___ A. (LUGS ONLY) 100 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1	35		CORRIDOR, TEST	3250			1	20	
3	35		TOILET, LOCKER		3450				
5	16		LUNCH, OFFICE			2400			
7	19		STORAGE	2035					(5)
8	6		SHOP	2760					
9	17		STORAGE		1925				(5)
10	5		SHOP		2300				
11	8					3680			
12	6					2760			
13	4			1840					
14	8			3680					
15	4				1840				
16	3				1380				
17	8					3680			
18	4		↓			1840			
19	3			1380					
20	6		PENTHOUSE	600					
21	4		SHOP		1840				
22			SPARE		—				
23						—			
24			↓			—	↓	↓	
25			SPACE						
30			↓						
TOTAL VA 43240				16145	12785	14360			

(NORMAL LOAD) — KVA + (LCL LOAD) 43.2 KVA x 1.25
+ (SPARE LOAD) — KVA + (SPARE LCL LOAD) 10.8 KVA x 1.25
DESIGN LOAD= 67.5 KVA 81.3 AMPS

(5) CONTROLLED BY 1 POLE 20 AMP MECHANICALLY HELD RELAY ACTIVATED BY REMOTE RELAY SWITCHES PROVIDE ADDITIONAL CONDUCTOR FOR EXIT SIGN AS INDICATED ON PLAN

MOUNTED IN "MC2A"

PANEL "C2A" SCHEDULE 120/208V - 3Ø - 4W
___ A. (LUGS ONLY) 60 A. (MAIN BKR.) ☐ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1			EC-1 1/15	500			1	20	
2		5	ROOF OUTLETS	900					
3			EC-2 1/15		500				
4			E-3 1/6HP		500				
5		5	ROOF OUTLETS			900			
6			E-4 1/6HP			500			
7		5	ROOF OUTLETS	900					
18							↓	↓	
TOTAL VA 3700				2300	1000	1400			

(NORMAL LOAD) 3.7 KVA + (LCL LOAD) ___ KVA x 1.25
+ (SPARE LOAD) ___ KVA + (SPARE LCL LOAD) ___ KVA x 1.25
DESIGN LOAD = 15 KVA. 41.6 AMPS

1ST FLR. - WEST HALF

PANEL "1A" SCHEDULE 120/208V - 3Ø - 4W
100 A. (LUGS ONLY) ___ A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1			SPARE	—			1	20	
2		1	MASTER CLK TRANS.	1500			1	30	
3	3		ELEV MACH RM		350		1	20	
4			TV-2		180				
5			1/6HP AIR DRYER			520			
6		4	TEL BKBD "MTB"			720			
7		5	OFFICE	900					
8	1		ELEV. PIT	180					
9		5	OFFICE		900				
10		6	OFFICE, TOOL		1080				
11		5	OFFICE			900			
12		6	OFFICE, TOOL			1080			
13		6	LOCKER, TOILET	1080					
14		2	VEND'G MACHINE	1000					
15		6	LOCKER, TOILET		1080				
16		2	VEND'G MACHINE		1000				
17		2	VEND'G MACHINE			1500			
18		2	VEND'G MACHINE			1000			
19		4	LUNCH 2-CLK	1080					
20			SPARE	—					
21			SPARE		—				
22		8	OFFICE		1440				
23			WATER HEATER			500			
24		8	OFFICE			1440	↓	↓	
25		1	EQUIP. OUTLET	500			2	20	
26		1	EQUIP. OUTLET	500			2	20	
27			———		500		—	—	
28			———		500		—	—	
29		1	EQUIP. OUTLET			500	2	20	
30			SPARE			—	1	20	
31			———	500			—	—	
32			SPARE	—			1	20	
33			D.E.T. SYSTEM		500		2	20	
34	1		TRANSFORMER BLDG		200		1	20	
35			D.E.T. SYSTEM			500	—	—	
36						—			
37				—					
38				—					
39					—				
40					—				
41						—			
42			↓				↓	↓	
TOTAL VA 23440				7240	7530	8670			

(NORMAL LOAD) 23.2 KVA + (LCL LOAD) 0.2 KVA x 1.25
+ (SPARE LOAD) 5.5 KVA + (SPARE LCL LOAD) — KVA x 1.25
DESIGN LOAD=27.5 KVA 76. AMPS.

PANEL "1B" SCHEDULE 120/208V - 3Ø - 4W
200 A. (DOUBLE LUGS) 100 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1		1	TEL BKBD "ITB"	180			1	20	
2	2		ELEV PIT	360					
3		3	TV-1, P.A.-RACK		540				
4		4	ORDER DESK, TOILET		720				
5			SPARE			—			
6		5	ELEV. PIT, TOILET			720			
7		1	FLARE IGNITOR	180					
8		6	OFFICE, COUNTER	1080					
9		2	CCTV-PA		360				
10		5	OFFICE		900				
11			SPARE			—			
12		5	OFFICE			900			
13		5	WAREHOUSE	900					
14		3	GARAGE	540					
15		4	WAREHOUSE		720				
16		4	GARAGE		720				
17			SPARE			—			
18		4	GARAGE			720			
19		4	DROP LT. (7)(8)(9)	720					
20		1	DROP CORD	1050					
21		4	DROP LT. (7)(8)(9)		720				
22		1	DROP CORD		300				
23		5	DROP LT. (7)(8)(9)			900			
24		1	DROP CORD			1050	↓	↓	
25		1	DROP CORD	1500			2	20	
26			SPARE	—			1	20	
27			———		1500		—	—	
28		1	DROP CORD		1500		1	20	
29			EQUIP. OUTLET			500	2	20	
30		1	DROP CORD			1800	1	20	
31			———	500			—	—	
32			SPARE	—			1	20	
33					—				
34					—				
35						—			
36						—			
37				—					
38				—					
39					—				
40					—				
41						—			
42			↓			—	↓	↓	
TOTAL VA 21280				7010	7980	6290			

(NORMAL LOAD) 20.8 KVA + (LCL LOAD) 0.5 KVA x 1.25
+ (SPARE LOAD) 5.0 KVA + (SPARE LCL LOAD) — KVA x 1.25
DESIGN LOAD= 26.4 KVA 73.2 AMPS.

LIGHT VEHICLE GARAGE

PANEL "1C" SCHEDULE 120/208V - 3Ø - 4W
___ A. (LUGS ONLY) 100 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1			SPARE	—			1	20	
2	2		BATTERY ROOM	200					
3					—				
4		1	EQUIP. OUTLET		500		2	20	
5			SPARE			—	1	20	
6			———			500	—	—	
7		5	GARAGE, DYNO	900				20	
8		3	GARAGE, TIRE	540					
9		5	GARAGE, DYNO		900				
10		3	GARAGE, TIRE		540				
11		6	GARAGE, DYNO			1080			
12		4	LUB. PIT (12)			720			
13		1	CCTV CAMERA	500					
14		4	LUB PIT (12)	720					
15		3	DROP LTS. (7)(8)		540				
16		1	ITEM (22)		180				
17		3	DROP LTS. (7)(8)			540			
18		3	CCTV CAMERA			1500			
19		4	DROP LTS. (7)(8)	720					
20	8		LUB. PIT	300					
21		2	DROP LTS. (10)		360				
22	9		LUB PIT		900		↓	↓	
23		1	DROP CORD			1800	2	20	
24		1	DROP CORD			500	2	20	
25			———	1800			—	—	
26			———	500			—	—	
27		1	DROP CORD		1000		2	20	
28		1	DROP CORD		1000		2	20	
29			———			1800	—	—	
30			———			1000	—	—	
31		1	DROP CORD	1800			2	30	
32			SPARE	—			1	20	
33			———		1800		—	—	(4)
34		1	ITEM (22)		500		2	20	
35			SPARE			—	1	20	
36			———			500	—	—	(4)
37			SPACE						
42			↓						
TOTAL VA 25840				8480	8220	9140			

(NORMAL LOAD) 23.7 KVA + (LCL LOAD) 2.1 KVA x 1.25
+ (SPARE LOAD) 5.4 KVA + (SPARE LCL LOAD) — KVA x 1.25
DESIGN LOAD = 31.7 KVA 87.9 AMPS.

(4) CONTROLLED BY 4 POLE 20 AMP ELECTRICAL "HELD" CONTACTOR ACTIVATED BY AIR SWITCH IN BATTERY ROOM SEE DIAGRAM.

PANEL "2A" SCHEDULE 120/208V - 3Ø - 4W
___ A. (LUGS ONLY) 100 A. (MAIN BKR.) ☐ SURF ☑ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1		7	ADMN OFFICE	1260			1	20	
2		8	OFFICE	1440					
3		7	ADMN OFFICE		1260				
4		8	OFFICE		1440				
5		7	OFFICE			1260			
6		8	OFFICE			1440			
7		6	OFFICE	1080					
8		8		1440					
9		4			720				
10		8			1440				
11		5				900			
12		8	↓			1440			
13		5	STREET & SANITATION	900					
14		5	MENS TOILET	900					
15		5	LUNCH/MEETING		900				
16		4	WOMENS TOILET		720				
17		2	KITCHEN UNIT			500			
18		1	EDF			600	↓	↓	
19		1	XEROX MACHINE	2400			1	30	
20		2	CCTV ON ROOF	360			1	20	
21		2	CORRIDOR		360				
22		1	MASTER T.C.		500				
23		2	CORRIDOR			360			
24	3		SHOWER			450			
25		1	CRT	500					
26			SPARE	—					
27		1	CRT		500				
28			SPARE		—				
29		1	CRT			500			
30			SPARE			—			
31				—					
32				—					
33					—				
34					—				
35						—			
36						—	↓	↓	
37			SPACE						
42			↓						
TOTAL VA 25570				10680	7840	7450			

(NORMAL LOAD) 25.6 KVA + (LCL LOAD) — KVA x 1.25
+ (SPARE LOAD) 6.3 KVA + (SPARE LCL LOAD) — KVA x 1.25
DESIGN LOAD=31.9 KVA 87.2 AMPS.

PANEL "2B" SCHEDULE 120/208V - 3Ø - 4W
___ A. (LUGS ONLY) 60 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1			SPARE	—			1	20	
2				—					
3					—				
4					—				
5			↓			—			
6		2	CCTV CAMERA			360			
7			SPARE	—					
8		3	EQUIP. RM., LUNCH 1-CK	720					
9		2	KIT. COUNTER		1000				
10		5	OFFICE		900				
11		2	LUNCH RM., REF.			360			
12		5	OFFICE, LUNCH			900			
13		5	TOILET	900					
14		2	CCTV, TV-3	360					
15		4	TEST/TRAINING		720				
16			SPARE		—				
17		4	TEST/TRAINING			720			
18			SPARE			—			
19			"	—					
20		3	STORAGE-P.H.	540					
21			SPARE		—				
22		1	ANTENNA EQUIP.		360				
23						—			
24			↓			—	↓	↓	
25			SPACE						
30			↓						
TOTAL VA 7840				2520	2980	2340			

(NORMAL LOAD) 7.8 KVA + (LCL LOAD) — KVA x 1.25
+ (SPARE LOAD) 1.8 KVA + (SPARE LCL LOAD) — KVA x 1.25
DESIGN LOAD=9.6 KVA 26.6 AMPS.

MOUNTED IN "MC2B"

PANEL "C2B" SCHEDULE 120/208V - 3Ø - 4W
___ A. (LUGS ONLY) 60 A. (MAIN BKR.) ☐ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1			E-5 1/6 HP	500			1	20	
2			E-23 1/3HP	850					
3			E-6 1/3HP		850				
4			E-24 1/6HP		500				
5			E-31 1/6HP			500			
6			E-25 1/6HP			500			
7		7	ROOF	1260					
9		7	ROOF		1260				
11		6	ROOF			1080			
18							↓	↓	
TOTAL VA 7300				2610	2610	2080			

(NORMAL LOAD) 7.3 KVA + (LCL LOAD) ___ KVA x 1.25
+ (SPARE LOAD) ___ KVA + (SPARE LCL LOAD) ___ KVA x 1.25
DESIGN LOAD = 15 KVA. 41.6 AMPS

STORAGE BLDG. #1

PANEL "SB1A" SCHEDULE 120/208V - 3Ø - 4W
100 A. (LUGS ONLY) ___ A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1		4	BLDG. #2	720			1	20	
2		4	#1	720					
3		3	#2		540				
4		3	#1		540				
5		3	#2 E-31			1070			
6		3	#1			540			
7		1	CCTV	100					
8			SPARE	—					
9					—				
10					—				
11						—			
12			↓			—	↓	↓	
13			SPACE						
24			↓						
TOTAL VA 4230				1540	1030	1610			

(NORMAL LOAD) 4.2 KVA + (LCL LOAD) — KVA x 1.25
+ (SPARE LOAD) 1.1 KVA + (SPARE LCL LOAD) — KVA x 1.25
DESIGN LOAD= 5.3 KVA 14.7 AMPS.

PANEL "CB" SCHEDULE 120/208V - 3Ø - 4W
___ A. (LUGS ONLY) 100 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1	5		BOOTH	900			1	20	
2		2	"	1000					
3			1/60 HP E-30		530				
4		3	BOOTH		540				
5			WATER HEATER			1000			
6		1	TEL TERM "TCB"			200			
7			CARD CONTROL	1800					
8			SIGN	1200			↓	↓	(4)
9			HP-1		1740		2	30	
10			TRAFFIC GATE		1000		1	20	
11			———			1740	—	—	
12			TRAFFIC GATE			1000	1	20	
13			GATE #2	750					
14		1	CCTV ON POLE	180					
15			GATE #2		750				
16			" #3		750				
17			IRRIG			180			
18			GATE #3			750			
19			SPARE	—					
20				—					
21					—				
22					—				
23						—			
24			↓			—	↓	↓	
TOTAL VA 16010				5830	5310	4870			

(NORMAL LOAD) 14.9 KVA + (LCL LOAD) 0.9 KVA x 1.25
+ (SPARE LOAD) 3.7 KVA + (SPARE LCL LOAD) — KVA x 1.25
DESIGN LOAD= 19.7 KVA 54.8 AMPS

(4) TIME CLOCK CONTROL - REFER TO DETAIL 3 ON SHT E-17

PANEL "CBA" SCHEDULE 120/208V - 3Ø - 4W
— A. (LUGS ONLY) 100 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1	4		GEN/TRASH AREA	720			1	20	
3		2	GEN/TRASH AREA		360				
4			OIL PUMP		500				
5		3	COMPRESSOR BLDG			540			
6			CRANK CASE HTR			1300			
7		3	COMPRESSOR BLDG	540					
8			BATT CHGR.	1000					
9			TRUCK WASH #1(2)(1HP)		2400			50	
10								20	
11			TRUCK WASH #2 (1HP)			1900		40	
12						—		20	
13		1	TRUCK WASH #2	180					
14			CONTROLS	100			↓	↓	
15			ITEM #38		750		2	20	
16			SPARE		—		1	20	
17			———			750	—	—	
18			SPARE			—	1	20	
19			'ITEM #38'	750			2	20	
20			SPARE	—			1	20	
21			———		750		—	—	
22			SPARE		—		1	20	
23						—			
24			↓			—	↓	↓	
TOTAL VA 12,740				3290	4760	4690			

(NORMAL LOAD) 12.0 KVA + (LCL LOAD) 0.7 KVA x 1.25
+ (SPARE LOAD) 9.2 KVA + (SPARE LCL LOAD) — KVA x 1.25
DESIGN LOAD=21.9 KVA 60.7 AMPS

STORAGE BLDG. #1

PANEL "SB1" SCHEDULE 277/480V - 3Ø - 4W
___ A. (LUGS ONLY) 50 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1	8		BLDG #1	2400			1	20	
2			PNL SB1A	1540			3	30	
3	8		BLDG #2		2400		1	20	
4			———		1080		—	—	
5			———				1	20	
6			———			1610	—	—	
7			1 1/2 HP ROLL-UP (4)	700			3	15	
8			1 1/2 HP ROLL-UP (4)	700			3	15	
9			———		700		—	—	
10			———		700		—	—	
11			———			700	—	—	
12			———			700	—	—	
13			1 1/2 HP ROLL-UP (4)	700			3	15	
14			1 1/2 HP ROLL-UP (4)	700			3	15	
15			———		700		—	—	
16			———		700		—	—	
17			———			700	—	—	
18			———			700	—	—	
19			SPARE	—			1	20	
20				—					
21					—				
22					—				
23						—			
24			↓			—			
TOTAL VA 17430				6740	6280	4410			

(NORMAL LOAD) 17.4 KVA + (LCL LOAD) 4.8 KVA x 1.25
+ (SPARE LOAD) 4.4 KVA + (SPARE LCL LOAD) 1.2 KVA x 1.25
DESIGN LOAD=21.8 KVA 26.2 AMPS.

COMPRESSOR BLDG.

PANEL "CBAA" SCHEDULE 277/480V - 3Ø - 4W
100 A. (LUGS ONLY) ___ A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1	3		COMMPRESSOR BLDG	600			1	20	
2			ITEM #38a	5850			3	40	
3			SPARE		—		1	20	
4			———		5850		—	—	
5			SPARE			—	1	20	
6			———			5850	—	—	
7			PANEL "CBA"	3290			3	30	
8			SPARE	—			1	20	
9			———		4760		—	—	
10			SPARE		—		1	20	
11			———			4690	—	—	
12			SPARE			—	1	20	
13			TRUCK WASH #1	6600			3	50	
14			———				3	100	
15			———		6600		—	—	
16			———				—	—	
17			———			6600	—	—	
18			———				—	—	
19			SPARE	—			1	20	
20				—					
21					—				
22					—				
23						—			
24			↓			—	↓	↓	
TOTAL VA 50690				16340	17210	17140			

(NORMAL LOAD) 50.1 KVA + (LCL LOAD) 0.6 KVA x 1.25
+ (SPARE LOAD) 19.4 KVA + (SPARE LCL LOAD) — KVA x 1.25
DESIGN LOAD 70.1 KVA 94 1 AMPS

"SITE LIGHTING"

PANEL "PL" SCHEDULE 277/480V - 3Ø - 4W
200 A. (LUGS ONLY) ___ A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	BKR. P	BKR. A	LOCKOUT X / TS OR SETTING
1	4		PARK LTG	4000			1	20	(1)
2			SPARE	—					
3	3		PARKING LTG		3000				(2)
4	4				4000				(1)
5	3					3000			(1)
6	3		↓			3000			(2)
7	3			3000					(2)
8			SPARE	—					
9	3		PARKING LTG		3000				(1)
10			SPARE		—				
12	3		PARKING LTG			3000	↓	↓	(1)
13			PANEL "SB1"	6740			3	50	
14	3		PARKING LTG	3000			1	20	(2)
15			———		6280		—	—	
16			SPARE				1	20	
17			———			4410	—	—	
18			SPARE				1	20	
19			SPACE						
24			↓						
TOTAL VA 46430				16740	16280	13410			

(NORMAL LOAD) 17.5 KVA + (LCL LOAD) 29.0 KVA x 1.25
+ (SPARE LOAD) 4.4 KVA + (SPARE LCL LOAD) 7.2 KVA x 1.25
= DESIGN LOAD 67.2 KVA 80.6 AMPS.

(1) TIME CLOCK CONTROL - REFER TO DETAIL 3 ON SHT NO. E-17
(2) TIME CLOCK CONTROL - REFER TO DETAIL 3 ON SHT NO E 17

REGISTERED PROFESSIONAL ENGINEER SAMUEL TULCHINSKY E-5768 ELECTRICAL ENGINEER STATE OF CALIFORNIA

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879 4477
1180 SO BEVERLY DR LOS ANGELES CALIF 90035

HUGH GIBBS & DONALD GIBBS
Architects FAIA
3575 Long Beach Boulevard Long Beach California

DRAWN SW | DATE | CHECKED J.B. | JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

PANEL SCHEDULES

SHEET E-4

PANEL " " SCHEDULE 120/208V - 3Ø - 4W

___ A. (LUGS ONLY) ___ A. (MAIN BKR.) ☐ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	P	A	LOCKOUT X	TS OR SETTING
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42										
TOTAL VA										

(NORMAL LOAD) ___ KVA + (LCL LOAD) ___ KVA x 1.25

+ (SPARE LOAD) ___ KVA + (SPARE LCL LOAD) ___ KVA x 1.25

PANEL "1D" SCHEDULE 120/208V - 3Ø - 4W

___ A. (LUGS ONLY) 175 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	P	A	LOCKOUT X	TS OR SETTING
1		5	TECHS/DRAFTING	900			1	20		
2		6	TECHS/DRAFTING	1080						
3		5	TECHS/DRAFTING		900					
4		5	TECHS/DRAFTING		900					
5		5	TECHS/DRAFTING			1080				
6			SPARE			—				
7		7	SIGN, PAINT	1200						
8		1	EQUIP. OUTLET	1500						
9		7	PAINT, ELECT.		1200					
10		1	EQUIP. OUTLET		1500					
11		7	TOILET, SIGN			1200				
12		1	EQUIP. OUTLET			1500				
13			SPARE	—						
14		1	EQUIP. OUTLET	1500						
15			SPARE		—					
16		1	EQUIP.		1080					
17			SPARE			—				
18			SPARE			—	↓	↓		
19		1	EQUIP. OUTLET	2300			2	30		
20		1	EQUIP. OUTLET	2700			3	30		
21					2300		—	—		
22					2700					
23		1	EQUIP. OUTLET			1500	2	20		
24						2700	—	—		
25				1500			—	—		
26		1	EQUIP. OUTLET	500			2	20		
27		1	EQUIP. OUTLET		1500		2	20		
28					500		—	—		
29						1500	—	—		
30		1	EQUIP. OUTLET			500	2	20		
31		1	EQUIP. OUTLET	500			2	20		
32				500			—	—		
33					500		—	—		
34			SPARE		—		1	20		
35		1	EQUIP. OUTLET			500	2	20		
36			SPARE			—	1	20		
37				900			—	—		
38		1	EQUIP OUTLET	700			2	20		
39		1	EQUIP. OUTLET		500		2	20		
40					700		—	—		
41						500	—	—		
42			SPARE				1	20		
TOTAL VA			40820	15440	14340	11040				

(NORMAL LOAD) 40.8 KVA + (LCL LOAD) — KVA x 1.25

+ (SPARE LOAD) 4.2 KVA + (SPARE LCL LOAD) — KVA x 1.25

DESIGN LOAD = 45.0 KVA 132.7 AMPS

PANEL "1F" SCHEDULE 120/208V - 3Ø - 4W

___ A. (LUGS ONLY) 150 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	P	A	LOCKOUT X	TS OR SETTING
1			SPARE	—			1	20		
2		7	OFFICE, TOILET	1260						
3			SPARE		—					
4		8	SHOP, TOILET		1440					
5			SPARE							
6		7	OFFICE, SHOP			1260				
7		8	OFFICE, SIGN	1440						
8			SPARE	—						
9		8	OFFICE, SIGN		1440					
10			SPARE		—					
11			WTR. HTR. WH-2			1500				
12			SPARE			—				
13		1	EQUIP. OUTLET	500						
14		1	EQUIP. OUTLET	500						
15		1	EQUIP. OUTLET		500					
16		1	EQUIP. OUTLET		500					
17			SPARE			—				
18		1	EQUIP. OUTLET			500	↓	↓		
19		1	10A EQUIP.	1050			2	20		
20		1	10A EQUIP.	1050			2	20		
21					1050		—	—		
22					1050		—	—		
23		1	10A EQUIP.			1050	2	20		
24		1	10A EQUIP.			1050	2	20		
25				1050			—	—		
26				1050			—	—		
27		1	10A EQUIP.		1050		2	20		
28		1	10A EQUIP.		1050		2	20		
29						1050	—	—		
30						1050	—	—		
31		1	EQUIP. OUTLET	750			2	20		
32		1	EQUIP. OUTLET	750			2	20		
33					750		—	—		
34					750		—	—		
35		1	EQUIP. OUTLET			750	2	20		
36		1	EQUIP. OUTLET			750	2	20		
37				750			—	—		
38				750			—	—		
39		1	EQUIP. OUTLET		750		2	20		
40		1	EQUIP. OUTLET		750		2	20		
41						750	—	—		
42						750	—	—		
TOTAL VA			32440	10900	11080	10460				

(NORMAL LOAD) 32.5 KVA + (LCL LOAD) — KVA x 1.25

+ (SPARE LOAD) 7.8 KVA + (SPARE LCL LOAD) — KVA x 1.25

DESIGN LOAD = 40.3 KVA 111.6 AMPS

PANEL "1G" SCHEDULE 120/208V - 3Ø - 4W

___ A. (LUGS ONLY) 150 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	P	A	LOCKOUT X	TS OR SETTING
1		1	EQUIP. OUTLET	750			2	20		
2		1	EQUIP. OUTLET	750			2	20		
3					750		—	—		
4					750		—	—		
5		1	EQUIP. OUTLET			750	2	20		
6		1	EQUIP. OUTLET			750	2	20		
7				750			—	—		
8				750			—	—		
9		1	EQUIP. OUTLET		750		2	20		
10		1	10A EQUIP. OUTLET		1000		2	20		
11						750	—	—		
12						1000	—	—		
13		1	EQUIP OUTLET	1500			2	20		
14		1	10A EQUIP. OUTLET	1000			2	20		
15					1500		—	—		
16					1000		—	—		
17						1500	—	—		
18		1	10A EQUIP. OUTLET			1000	2	20		
19		1	10A EQUIP. OUTLET	1000			2	20		
20				1000			—	—		
21					1000		—	—		
22		1	10A EQUIP. OUTLET		1000		2	20		
23		1	10A EQUIP. OUTLET			1000	2	20		
24						1000	—	—		
25				1000			—	—		
26		1	10A EQUIP. OUTLET	1000			2	20		
27		1	10A EQUIP. OUTLET		1000		2	20		
28					1000		—	—		
29						1000	—	—		
30		1	10A EQUIP. OUTLET			1000	2	20		
31		1	10A EQUIP. OUTLET	1000			2	20		
32				1000			—	—		
33					1000		—	—		
34		1	10A EQUIP. OUTLET		1000		2	20		
35		1	10A EQUIP. OUTLET			1000	2	20		
36						1000	—	—		
37				1000			—	—		
38			SPARE	—			1	20		
39					—					
40					—					
41						—				
42			↓			—	↓	↓		
TOTAL VA			36000	12500	11750	11750				

(NORMAL LOAD) 36.0 KVA + (LCL LOAD) — KVA x 1.25

+ (SPARE LOAD) 9 KVA + (SPARE LCL LOAD) — KVA x 1.25

DESIGN LOAD = 45 KVA 124.7 AMPS.

WELDING AREA

PANEL "1H" SCHEDULE 120/208V - 3Ø - 4W

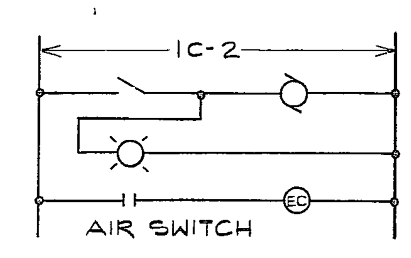
___ A. (LUGS ONLY) 100 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	P	A	LOCKOUT X	TS OR SETTING
1		1	WELDING	1000			2	20		
2		1	"	1000			2	20		
3					1000		—	—		
4					1000		—	—		
5		1	WELDING			1000	2	20		
6		1	"			1000	2	20		
7				1000			—	—		
8				1000			—	—		
9		1	WELDING		1000		2	20		
10		1	"		1000		2	20		
11						1000	—	—		
12						1000	—	—		
13		1	WELDING	1000			2	20		
14		2	2-DUPLEX	360			1	20		
15					1000		—	—		
16		2	2-DUPLEX		360		1	20		
17		2				360				
18		2				360				
19		2	↓	360						
20										
21		2	2-DUPLEX		360					
22										
23		2	2-DUPLEX			360				
24			SPARE			—				
25				—						
26				—						
27					—					
28					—					
29						—				
30			↓			—	↓	↓		
31			SPACE							
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42			↓							
TOTAL VA			16520	5720	5720	5080				

(NORMAL LOAD) 16.5 KVA + (LCL LOAD) — KVA x 1.25

+ (SPARE LOAD) 4.1 KVA + (SPARE LCL LOAD) — KVA x 1.25

DESIGN LOAD = 20.6 KVA 57.2 AMPS



BATTERY ROOM CONTROL WIRING DIAGRAM

NO SCALE

PANEL "1PL" SCHEDULE 277/480V - 3Ø - 3W

___ A. (LUGS ONLY) 150 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	P	A	LOCKOUT X	TS OR SETTING
1			ITEM 14-7 1/2+1/6	3000			3	30		
2			5-1/2HP GATE	750			3	20		
3					3000		—	—		
4					750		—	—		
5						3000	—	—		
6						750	—	—		
7			3-1/2HP GATE	750			3	20		
8			4-1/2HP GATE	750			3	20		
9					750		—	—		
10					750		—	—		
11						750	—	—		
12						750	—	—		
13			5-1/2HP GATE	750			3	20		
14		1	EQUIP. OUTLET	3500			3	60		
15					750		—	—		
16					3500		—	—		
17						750	—	—		
18						3500	—	—		
19		1	EQUIP. OUTLET	3000			3	40		
20			WH-3	4000			3	30		
21					3000		—	—		
22					4000		—	—		
23						3000	—	—		
24						4000	—	—		
25		1	EQUIP OUTLET	500			3	20		
26			SPARE				3	20		
27					500		—	—		
28							—	—		
29						500	—	—		
30							—	—		
31			SPARE				3	20		
32			ITEM #24	2100			3	20		
33							—	—		
34					2100		—	—		
35							—	—		
36						2100	—	—		
37			ITEM #15	500			3	20		
38							—	—		
39					500		—	—		
40							—	—		
41						500	—	—		
42			↓				—	—		
TOTAL VA			87300	29100	29100	29100				

(NORMAL LOAD) 87.3 KVA + (LCL LOAD) — KVA x 1.25

+ (SPARE LOAD) 25.7 KVA + (SPARE LCL LOAD) — KVA x 1.25

DESIGN LOAD = 113.0 KVA 136.1 AMPS.

GARAGE AREA PROVIDE DOUBLE LUGS.

PANEL "1PR" SCHEDULE 480V - 3Ø - 3W

200 A. (DOUBLE LUG) 125 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	P	A	LOCKOUT X	TS OR SETTING
1			4-1/2HP GATE	750			3	20		
2			3-1/2HP GATE	750			3	20		
3					750		—	—		
4					750		—	—		
5						750	—	—		
6						750	—	—		
7			5-1/2HP GATE	750			3	20		
8			4-1/2HP GATE	750			3	20		
9					750		—	—		
10					750		—	—		
11						750	—	—		
12						750	—	—		
13			4-1/2HP GATE	750			3	20		
14			4-1/2HP GATE	750			3	20		
15					750		—	—		
16					750		—	—		
17						750	—	—		
18						750	—	—		
19			1/2HP PUMP DW.P-1	700			3	20		
20		1	EQUIP. OUTLET	2000			3	20		
21					700		—	—		
22					2000		—	—		
23						700	—	—		
24						2000	—	—		
25		1	EQUIP. OUTLET	2000			3	20		
26		1	EQUIP. OUTLET	2000			3	20		
27					2000		—	—		
28					2000		—	—		
29						2000	—	—		
30						2000	—	—		
31		1	EQUIP. OUTLET	2000			3	20		
32		1	CLG. OUTLET	1350			3	20		
33					2000		—	—		
34					1350		—	—		
35						2000	—	—		
36						1350	—	—		
37		1	EQUIP. OUTLET	3500			3	20		
38			SPARE	—			3	30		
39					3500		—	—		
40					—		—	—		
41						3500	—	—		
42						—	—	—		
TOTAL VA			54150	18050	18050	18050				

(NORMAL LOAD) 54.2 KVA + (LCL LOAD) — KVA x 1.25

+ (SPARE LOAD) 13.6 KVA + (SPARE LCL LOAD) — KVA x 1.25

DESIGN LOAD = 67.8 KVA 81.7 AMPS

PANEL "1PRA" SCHEDULE 480V - 3Ø - 3W

200 A. (LUGS) 125 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	P	A	LOCKOUT X	TS OR SETTING
1		1	WELDING	1000			3	20		
2		1	"	1000			3	20		
3					1000		—	—		
4					1000		—	—		
5						1000	—	—		
6						1000	—	—		
7		1	WELDING	1000			3	20		
8		1	"	1000			3	20		
9					1000		—	—		
10					1000		—	—		
11						1000	—	—		
12						1000	—	—		
13			ITEM (21) 3HP.	2100			3	20		
14				—			3	20		
15					2100		—	—		
16					—		—	—		
17						2100	—	—		
18			SPARE			—	—	—		
19							3	20		
20							3	20		
21							—	—		
22							—	—		
23							—	—		
24			↓				—	—		
25			ITEM # 5	3900			3	40		
26			ITEM # 5	3900			3	40		
27					3900		—	—		
28					3900		—	—		
29						3900	—	—		
30						3900	—	—		
31			ITEM # 5	3900			3	40		
32										
33					3900		—	—		
34										
35						3900	—	—		
36										
37										
38										
39										
40										
41										
42			↓							
TOTAL VA			53400	17800	17800	17800				

(NORMAL LOAD) 53.4 KVA + (LCL LOAD) — KVA x 1.25

+ (SPARE LOAD) 13.4 KVA + (SPARE LCL LOAD) — KVA x 1.25

DESIGN LOAD = 66.8 KVA 80.2 AMPS.

COMPR. RM. #254

PANEL "2PR" SCHEDULE 277/480V - 3Ø - 3W

___ A. (LUGS ONLY) 150 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	P	A	LOCKOUT X	TS OR SETTING
1			ITEM 15 1HP	700			3	20		
2							3	40		
3					700		—	—		
4							—	—		
5						700	—	—		
6							—	—		
7			ITEM 22 15HP	5800			3	40		
8			" 22b 2-1HP	950			3	20		
9					5800		—	—		
10					950		—	—		
11						5800	—	—		
12						950	—	—		
13			ITEM 15 1HP+1/6HP	700			3	20		
14			" 16 7 1/2HP+1/2HP	3000			3	40		
15					700		—	—		
16					3000		—	—		
17						700	—	—		
18						3000	—	—		
19			ITEM 22 15HP	5800			3	40		
20			SPARE	—			3	20		
21					5800		—	—		
22					—		—	—		
23						5800	—	—		
24						—	—	—		
25			SPARE	—			3	20		
26				—			3	20		
27					—		—	—		
28					—		—	—		
29						—	—	—		
30			↓			—	—	—		
31			SPACE							
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42			↓							
TOTAL VA			69450	23150	23150	23150				

(NORMAL LOAD) 69.5 KVA + (LCL LOAD) — KVA x 1.25

+ (SPARE LOAD) 17.4 KVA + (SPARE LCL LOAD) — KVA x 1.25

DESIGN LOAD = 86.9 KVA 104.7 AMPS

PANEL "1EA" SCHEDULE 120/208V - 3Ø - 4W

___ A. (LUGS ONLY) 100 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	P	A	LOCKOUT X	TS OR SETTING
1			DISPENSERS	720			1	20		
2			ELEV 1/2 TRAVEL	1000						
3	10		FUEL STATION		900					
4										
5	10		FUEL STATION			900				
6			SPARE			—	↓	↓		
7			SUB PUMP	1150			2	20		
8			SUB PUMP	1150			2	20		
9					1150		—	—		
10					1150		—	—		
11			SUB PUMP			1150	2	20		
12			SUB PUMP			1150	2	20		
13				1150			—	—		
14				1150			—	—		
15			SPARE		—		1	20		
16					—					
17						—				
18		3	ELECT. ROOM			540	↓	↓		
19			SPACE							
20										
21										
22										
23										
24			↓							
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42										
TOTAL VA			13260	6320	3200	3740				

(NORMAL LOAD) 13.3 KVA + (LCL LOAD) — KVA x 1.25

+ (SPARE LOAD) 3.3 KVA + (SPARE LCL LOAD) — KVA x 1.25

DESIGN LOAD = 16.6 KVA 46 AMPS

ELECT. RM. #178

PANEL "1EB" SCHEDULE 120/208V - 3Ø - 4W

___ A. (LUGS ONLY) 160 A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	P	A	LOCKOUT X	TS OR SETTING
1		1	1/2HP "SP-1"	1200			1	20		
2			SPARE	—						
3	4		LUB PIT		400					
4			ELEV. 1/2 TRAVEL		1000					
5						—				
6			ELEVATOR 1/2 TRAV			1000				
7										
8										
9										
10										
11										
12			↓				↓	↓		
13			SPACE							
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24			↓							
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42										
TOTAL VA			3600	1200	1400	1000				

(NORMAL LOAD) 3.6 KVA + (LCL LOAD) 0.4 KVA x 1.25

+ (SPARE LOAD) 7.3 KVA + (SPARE LCL LOAD) — KVA x 1.25

DESIGN LOAD = 11.4 KVA 31.6 AMPS

PANEL "1EAA" SCHEDULE 277/480V - 3Ø - 4W

100 A. (LUGS ONLY) ___ A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	P	A	LOCKOUT X	TS OR SETTING
1	13		1ST FLR. LEFT-4 EXIT	1500			1	20		
2			SPARE	—						
3	5		2ND FLR. LEFT-2 EXIT		300					
4			SPARE		—					
5	4		2ND FLR. LEFT-1 EXIT			425				
6			SPARE			—				
7				—						
8				—						
9					—					
10					—					
11						—				
12						—				
13				—						
14				—						
15					—					
16					—					
17						—				
18			↓			—	↓	↓		
19			PNL. 1EA	6320			3	60		
20			SPACE							
21					3200		—	—		
22			SPACE							
23						3740	—	—		
24			SPACE							
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42										
TOTAL VA			15985	7820	4000	4165				

(NORMAL LOAD) 13.2 KVA + (LCL LOAD) 2.7 KVA x 1.25

+ (SPARE LOAD) 3.2 KVA + (SPARE LCL LOAD) 1.0 KVA x 1.25

DESIGN LOAD = 21.1 KVA 25.3 AMPS

PANEL "2EBB" SCHEDULE 277/480V - 3Ø - 4W

___ A. (LUGS ONLY) ___ A. (MAIN BKR.) ☑ SURF ☐ REC

CIR. NO.	O	⊘	DESCRIPTION	ØA	ØB	ØC	P	A	LOCKOUT X	TS OR SETTING
1	5		GARAGE	2800			1	20		
2	5		1ST FLR WAREHOUSE	1290						
3	1		WAREHOUSE, 2 EXIT		1100					
4	4		SHOP AREA		1840					
5	6		STAIR, CORRIDOR			700				
6	4		SHOP AREA			1840				
7			SPARE	—						
8				—						
9					—					
10					—					
11						—				
12			↓			—	↓	↓		
13			PANEL 1EB	1200			3	30		
14			SPARE	—			1	20		
15					1400		—	—		
16			SPARE		—		1	20		
17						1000	—	—		
18			SPARE			—	1	20		
19										
20										
21										
22										
23										
24			↓				↓	↓		
25										
26										
27										
28										
29										
30										
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										
41										
42										
TOTAL VA			14670	5790	5340	3540				

(NORMAL LOAD) 5.6 KVA + (LCL LOAD) 9.1 KVA x 1.25

+ (SPARE LOAD) 1.4 KVA + (SPARE LCL LOAD) 2.3 KVA x 1.25

DESIGN LOAD = 21.3 KVA 25.5 AMPS.

MOTOR CONTROL CENTER "MC2A" (480V, 3 PHASE, 3W)

CKT	DESCRIPTION	KVA	HP	AMP
1	PANEL "C2A"	15 0		18 0
2	RT-1			35 2
3	RT-2			102.0
4	HV-1		7 5	11.0
5	E-2		1 5	2.6
6	AC-5			11.7
7	E-1		1 0	1.8
8	E-8		1 5	2.6
9	E-7		1 5	2 6
10	HV-2		7.5	11.0
11	HV-3		7 5	11.0
12	E-10		1.5	2 6
13	E-9		1 5	2 6
14	E-12		1.5	2.6
15	E-11		1 5	2 6
16	AC-1			16.5
17	HOIST-1			2 8
18	HOIST-2			1 8
19	CRANE-1			13.6
20	SPARE			
21	SPARE			
	SUB TOTAL			254 6 AMP
	25% L M L			25.5 AMP
	TOTAL FLA			280 1

MOTOR CONTROL CENTER "MC2B" (480V, 3 PHASE, 3W)

CKT	DESCRIPTION	KVA	HP	AMP
1	PANEL "C2B"	15 0		18 0
2	HV-4		5 0	7 6
3	HV-5		5 0	7 6
4	HV-6		7 5	11 0
5	HV-7		7 5	11 0
6	AC-2			16.0
7	AC-3			11.7
8	AC-4			11.7
9	E-14		1 5	2 6
10	E-13		1 5	2 6
11	E-15		1 5	2.6
12	E-16		1 5	2.6
13	HV-8		75	1 4
14	E-17		75	1 4
15	E-19		75	1.4
16	E-20		.75	1 4
17	E-18		75	1 4
18	E-22		5 0	7 5
19	E-27		1 5	2.6
20	E-28		1 0	1.8
21	E-29		3 0	4.8
22	E-26		75	1.4
23	"2PR"/"1H"	85 9		103.1
24	SPARE			
25	SPARE			
	SUB TOTAL			233 3 AMP
	25% L M L			4 0 AMP
	TOTAL FLA			237 3

DISTRIBUTION SWITCHBOARD "DSA" (208/120V, 3 PHASE, 4W)

CKT	DESCRIPTION	KVA	HP	AMP**
1	PANEL "1A"	22 9		76.0
2	PANEL "2A"	25 6		87 2
3	PANEL "1F"	32 5		111 6
4	PANEL "1G"	36 0		124 7
5	SPARE			

TOTAL 117.0 KVA AT 208/120V = 324 AMP

EMERGENCY DISTRIBUTION BOARD "EDS" (480/277V, 3 PHASE, 4W)

CKT	DESCRIPTION	KVA	HP	AMP**
1	PANELS "1EAA"/"1EA"	16 0		23 3
2	PANELS "2EBB"/"1EB"	14 7		25 5
3	"MTS-1"/"1B"/"1C"	47 1		69 7
4	"MTS-2"/"1PR"/"1PRA"	107 6		161 9
5	"MTS-3"/"2BB"	43 3		81.3
6	SPARE			

TOTAL 228.7 KVA AT 480/277V = 274.5 AMP

EMERGENCY DISTRIBUTION BOARD "GS" (480/277V, 3 PHASE, 4W)

CKT	DESCRIPTION	KVA	HP	AMP**
1	"ATS-1"/"EE"	111.7***		167.6***
2	"ATS-2"/"EDS"	228.7		274 5

TOTAL 340.4 KVA AT 480/277V = 408 5 AMP

MAIN DISTRIBUTION SWITCHBOARD "MDS" (480/277V, 3 PHASE, 4W)

CKT	DESCRIPTION	KVA	HP	AMP
1	"ATS-2"/"EDS"	228.7		274 5
2	"MTS-1"/"1B"/"1C"	47 1*		*
3	"MTS-2"/"1PR"/"1PRA"	107 6*		*
4	"MTS-3"/"2BB"	43 3*		*
5	"PL"/"SB1"/"SB1A"	46 4		80 6**
6	"1BB"/"2B"	25 8		45.4**
7	"1PL"	90 9		136 1**
8	"CBAA"/"CBA"	50 7		84.1**
9	"2AA"	69 8		131.6**
10	ELEVATOR	28.4		34.0
11	ELEVATORS	61 7		74.0
12	"1AA"/"CB"	71 3		118 5**
13	"DSA"	117.0		140 4
14	"MC2A"	212.2		254 6
15	"MC2B"	194.4		233 3
16	"1CC"/"1D"	58.7		95.6**
17	SPARE			
18	SPARE			
19	SPARE			

TOTAL 1256 KVA AT 480/277V = 1507.2 AMP

* THESE LOADS ARE INCLUDED IN FEEDER (MDS-1).

** FLA INCLUDES SPARE CAPACITY AND/OR LONG CONTINUOUS LOADS REFER TO PANEL SCHEDULES FOR LOAD BREAKDOWN

*** ATS-1 AND EE ARE THE EMERGENCY FEEDER FOR THE TORRANCE TRANSIT FACILITY THE CIRCUIT BREAKER AND A PORTION OF THE FEEDER ARE INSTALLED UNDER THIS CONTRACT.

REGISTERED PROFESSIONAL ENGINEER SAMUEL TULCHINSKY E-5768 ELECTRICAL ENGINEER STATE OF CALIFORNIA

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879 4477
1180 SO BEVERLY DR LOS ANGELES CALIF 90035

HUGH GIBBS & DONALD GIBBS
Architects FAIA
3575 Long Beach Boulevard Long Beach California

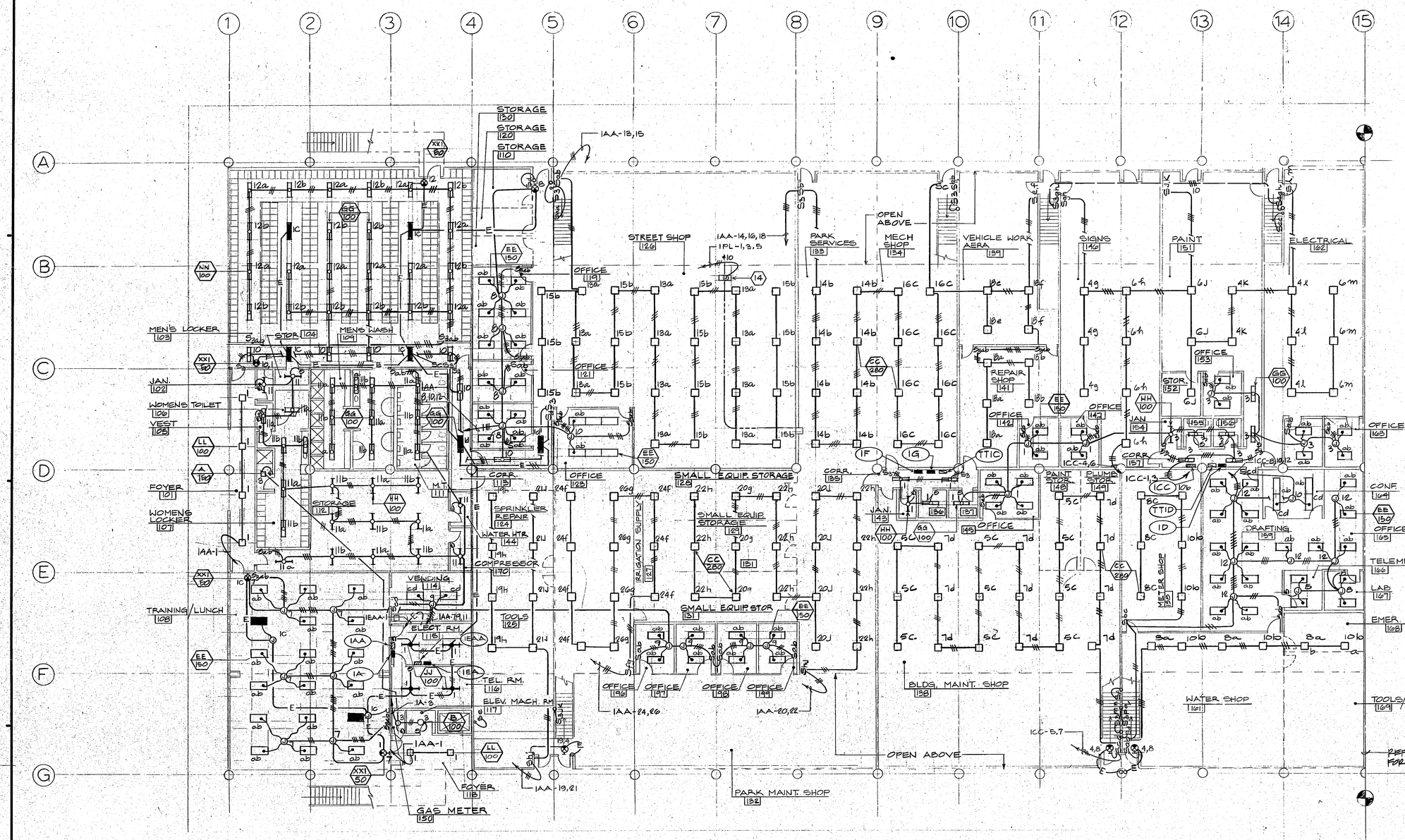
DRAWN	DATE
P.P.	
CHECKED J.B.	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

PANEL SCHEDULE

SHEET E-4A



FIRST FLOOR LIGHTING PLAN - LEFT HALF

SCALE: 3/32" = 1'-0"

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 878-4477
1180 SO. BEVERLY DR., LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3375 Long Beach Boulevard, Long Beach, California

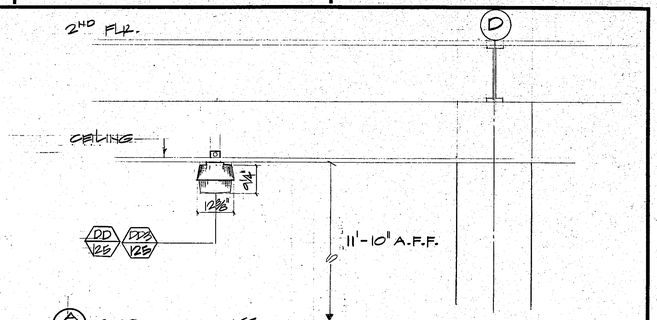
DRAWN S.W.	DATE
CHECKED J.B.	JOB 1806

TORRANCE CITY SERVICE FACILITY

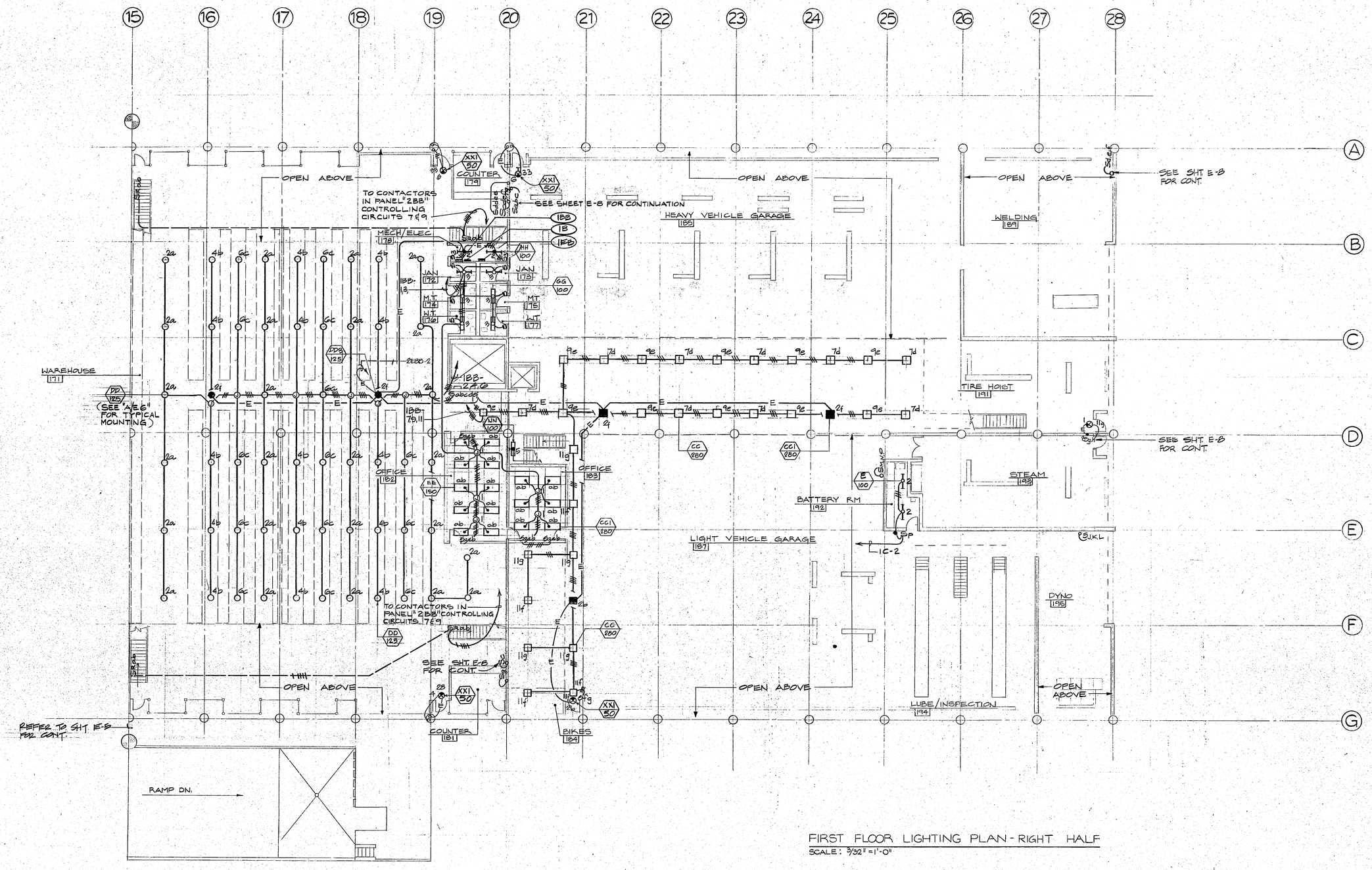
TORRANCE CALIFORNIA

FIRST FLOOR LIGHTING PLAN LEFT HALF

SHEET E-5



A/E-6 TYPICAL 1ST FLR. MTG. DETAIL
WAREHOUSE AREA NO SCALE



FIRST FLOOR LIGHTING PLAN - RIGHT HALF
SCALE: 3/32" = 1'-0"

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 873-4472
1160 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3375 Long Beach Boulevard, Long Beach, California

DRAWN S.W.	DATE
CHECKED J.B.	JOB 1806

TORRANCE CITY SERVICE FACILITY

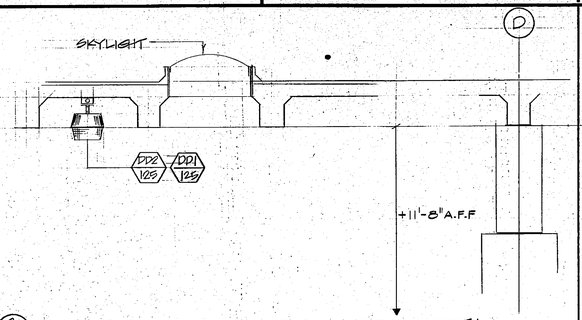
TORRANCE CALIFORNIA

FIRST FLOOR LIGHTING PLAN RIGHT HALF

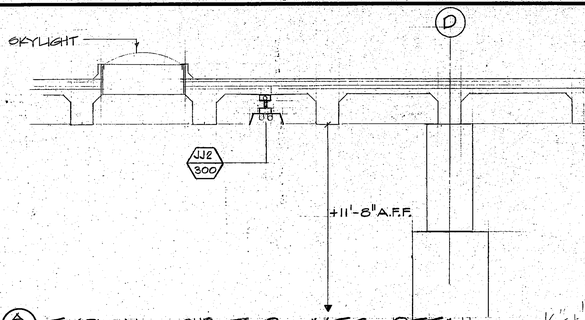
SHEET E-6

NOTES:

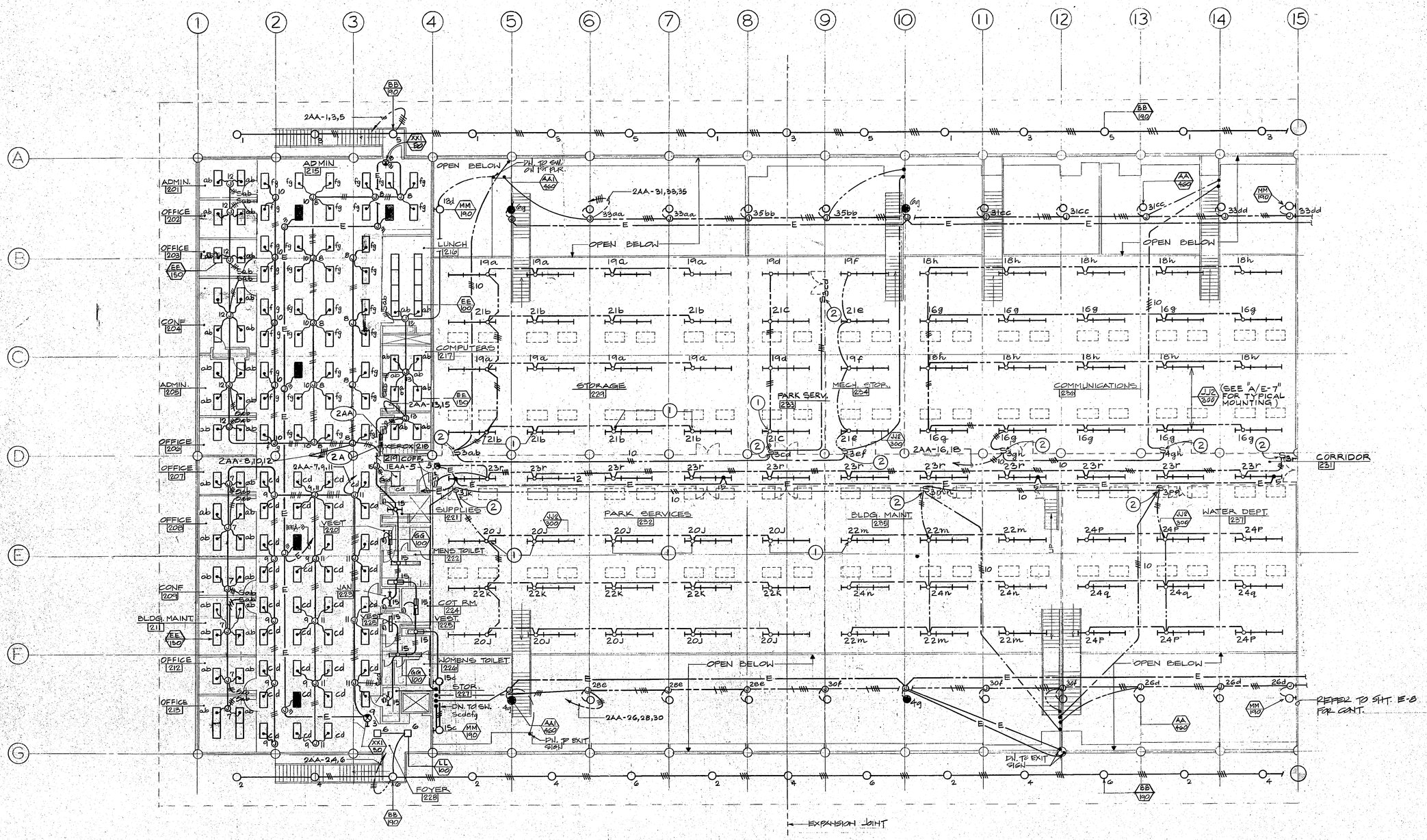
1. PROVIDE J-BOX 4 11/16" x 2 1/8" SQUARE MINIMUM.
2. TACK WELD CONDUIT AND OUTLET BOX TO WIRE MESH FRAME



B/E-7 TYPICAL 2ND FLR. MTG. DETAIL
WAREHOUSE AREA NO SCALE



A/E-7 TYPICAL 2ND FLR. MTG. DETAIL
STORAGE AREA NO SCALE



SECOND FLOOR LIGHTING PLAN - LEFT HALF
SCALE: 3/32" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER SAMUEL TOLCHINSKY E-27607 ELECTRICAL ENGINEER STATE OF CALIFORNIA

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-0477
1180 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

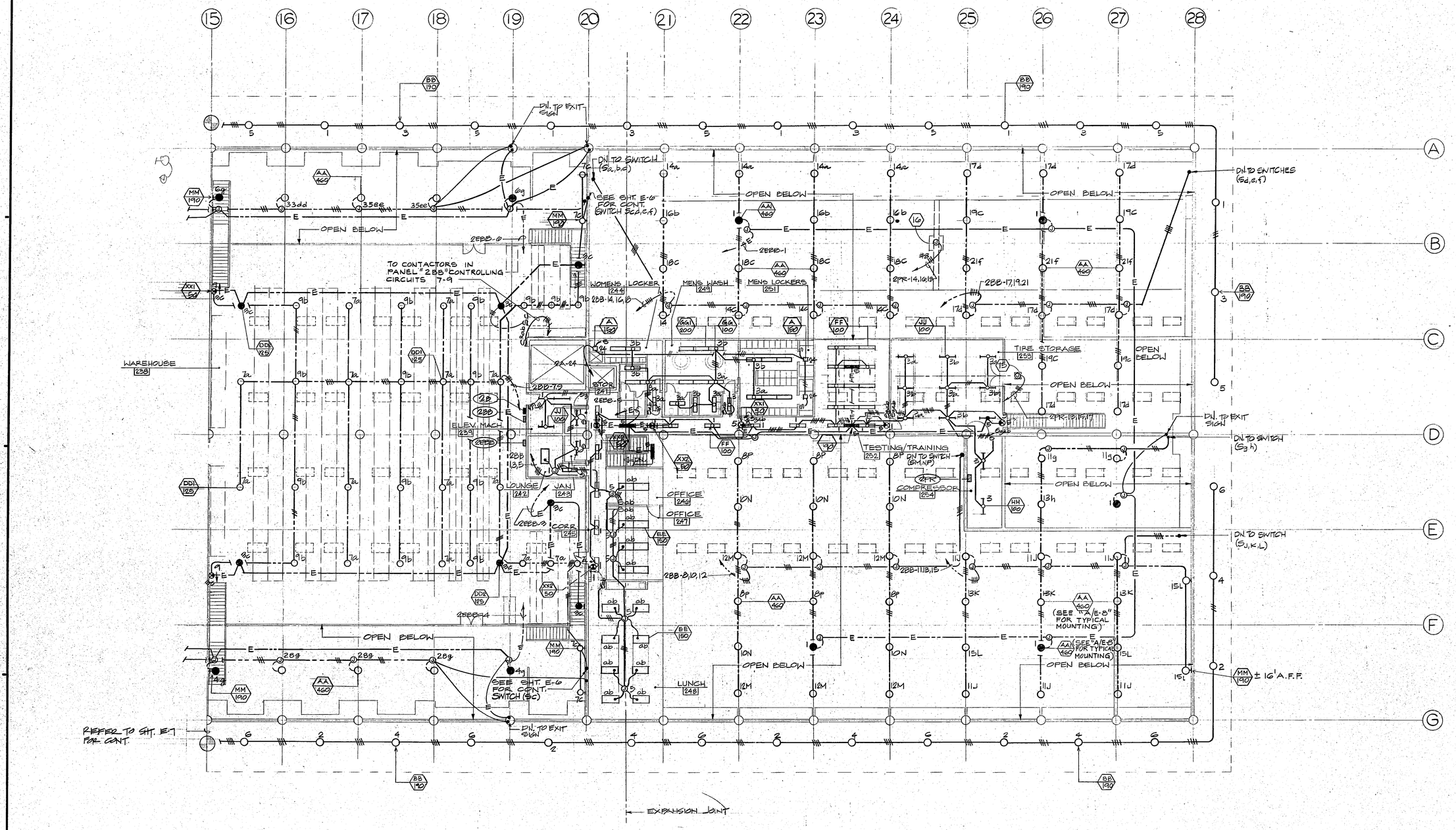
DRAWN S.W.	DATE
CHECKED J.B	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

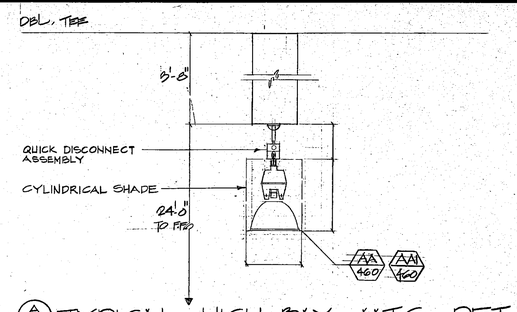
SECOND FLOOR LIGHTING PLAN LEFT HALF

SHEET E-7



SECOND FLOOR LIGHTING PLAN - RIGHT HALF

SCALE: 3/32" = 1'-0"



A/EB TYPICAL HIGH BAY MTG. DET.

HIGH CEILING GARAGE AREA — NO SCALE

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1180 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

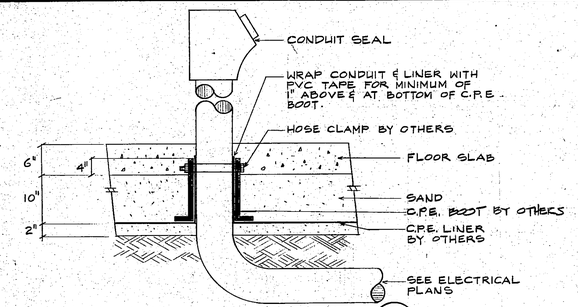
DRAWN S.W.	DATE
CHECKED J.B.	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

SECOND FLOOR LIGHTING PLAN RIGHT HALF

SHEET E-8

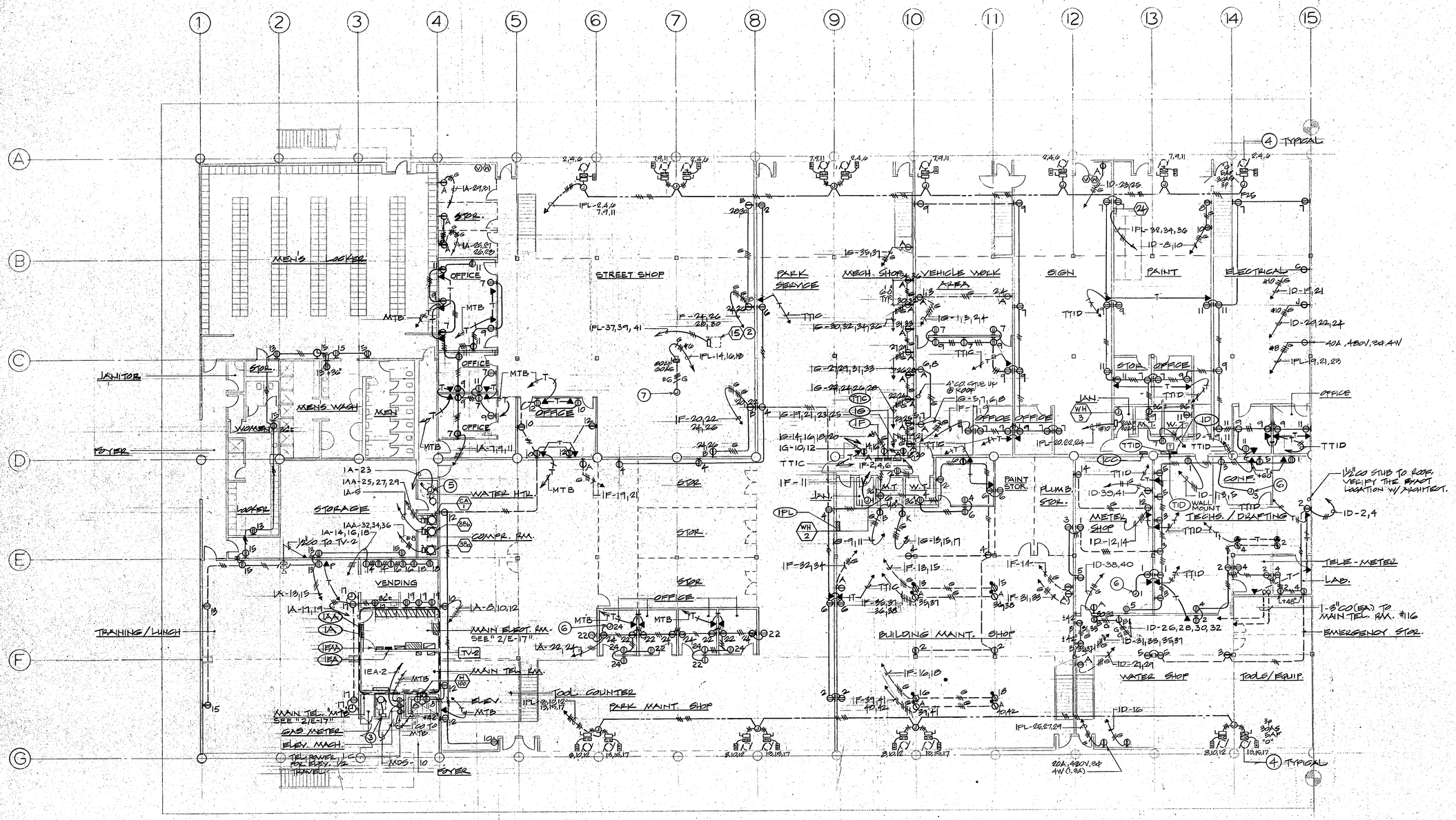


C.P.E. BOOT DETAIL 2/E-9

NOT TO SCALE

NOTES:

1. ALL OUTLETS IN SERVICE AND INSPECTION AREAS SHALL BE MOUNTED AT +14'-0" UNLESS NOTED OTHERWISE.
2. VERIFY EXACT LOCATION OF ALL EQUIPMENT AND ROUGH-IN REQUIREMENTS PRIOR TO DOING THE WORK.
3. ELEVATOR CONTROLLER. MAKE CONNECTIONS AS REQUIRED BY ELEVATOR INSTALLER.
4. MOTORIZED DOOR OPERATOR PACKAGE COMPLETE WITH 1/2HP, 480V, 3Ø MOTOR, MOTOR CONTROLLER AND PUSH BUTTONS ASSEMBLY ARE FURNISHED WITH DOOR. INSTALL AND CONNECT AS REQUIRED BY MANUFACTURER'S SHOP DRAWINGS. PROVIDE FUSED DISCONNECT IN GFI ENCLOSURE. SIZE FUSES PER MANUFACTURER'S RECOMMENDATION.
5. CONNECT TO ELECTRONIC IGNITION AND CIRCULATION PUMP FOR GAS FIRED WATER HEATER.
6. J-BOX FOR MECHANICAL CONTROLS VERIFY LOCATION IN FIELD.
7. TWO GANG OUTLET BOX MOUNTED FLUSH WITH FINISHED CEILING PROVIDE TWO GANG EXTENSION RING AND BLANK COVER PLATE.



FIRST FLOOR POWER PLAN - LEFT HALF

SCALE: 3/32" = 1'-0"

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
100 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3373 Long Beach Boulevard, Long Beach, California

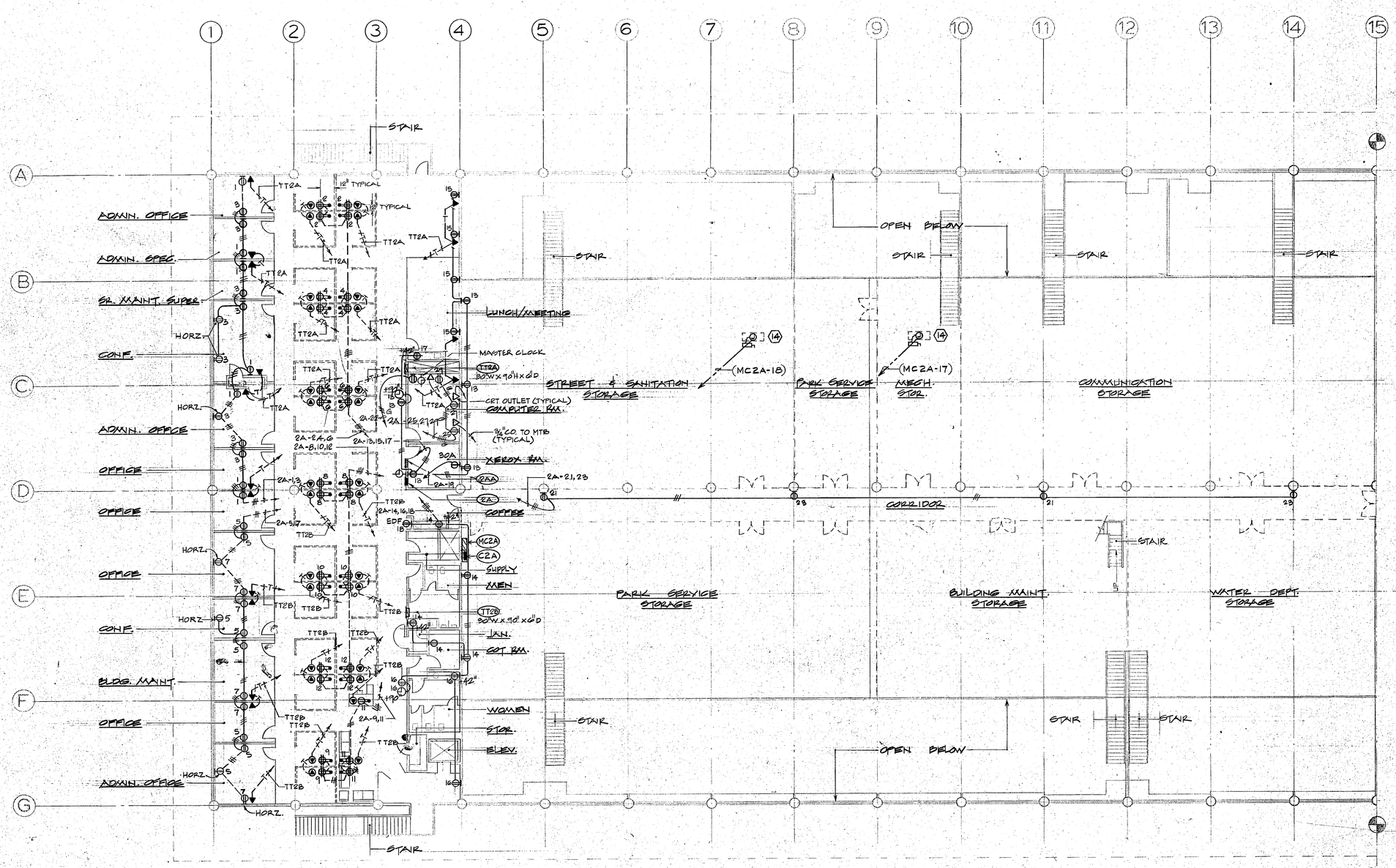
DRAWN S.W.	DATE
CHECKED J.B.	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

FIRST FLOOR POWER PLAN LEFT HALF

SHEET E-9



SECOND FLOOR POWER PLAN - LEFT HALF

SCALE: 3/32" = 1'-0"

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

DRAWN S.W.	DATE
CHECKED J.B.	JOB 1806

TORRANCE CITY SERVICE FACILITY

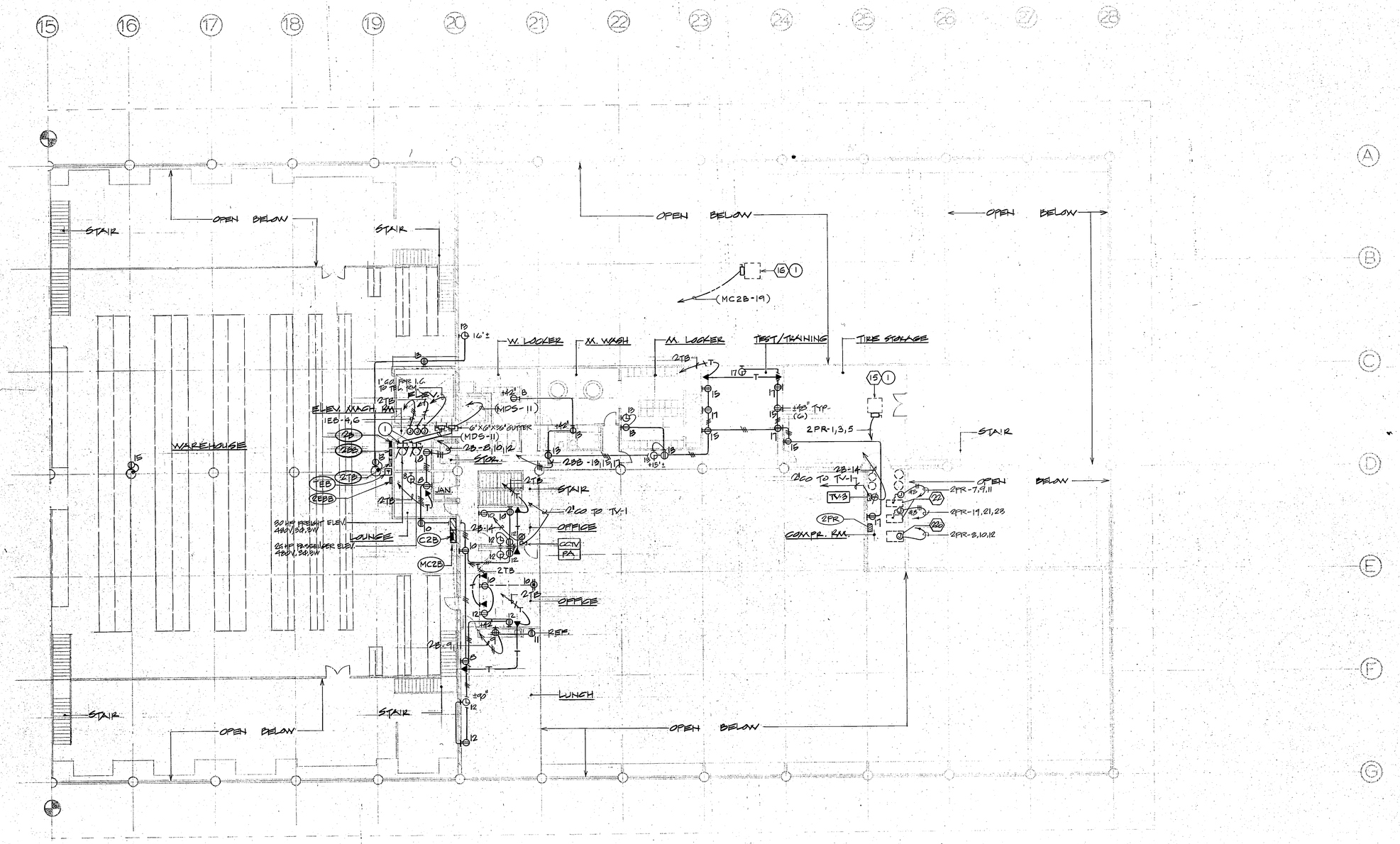
TORRANCE CALIFORNIA

SECOND FLOOR POWER PLAN LEFT HALF

SHEET E-11

NOTES:

1. VERIFY EXACT LOCATION OF ALL EQUIPMENT AND ROUGHYN REQUIREMENTS PRIOR TO DOING THE WORK



SECOND FLOOR POWER PLAN - RIGHT HALF

SCALE: 3/32" = 1'-0"

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1180 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

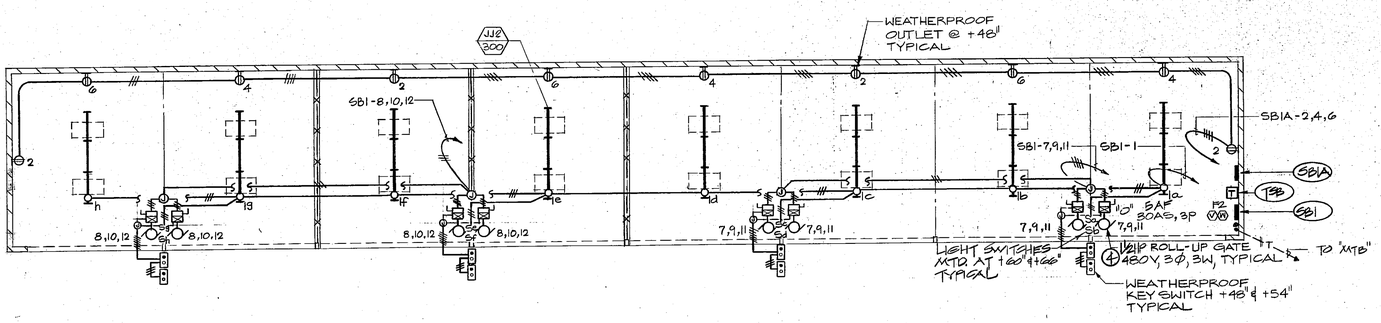
DRAWN S.W.	DATE
CHECKED J.B.	JOB 1806

TORRANCE CITY SERVICE FACILITY

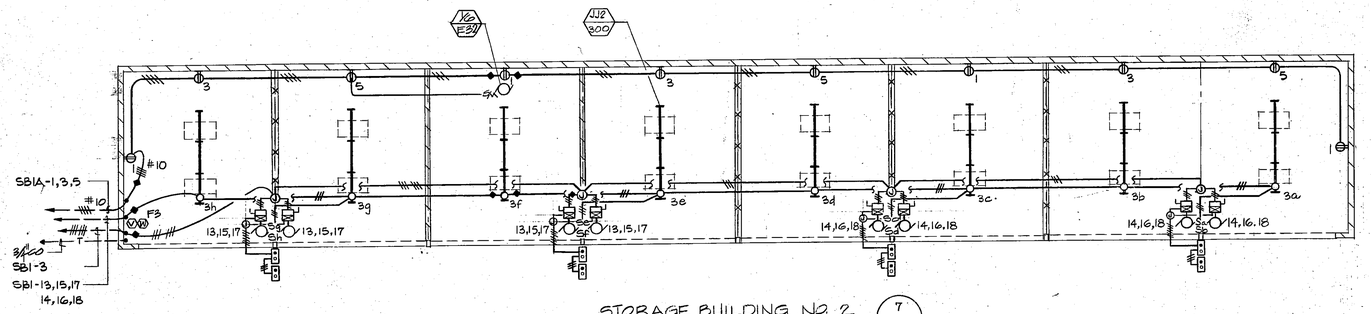
TORRANCE CALIFORNIA

SECOND FLOOR POWER PLAN - RIGHT HALF

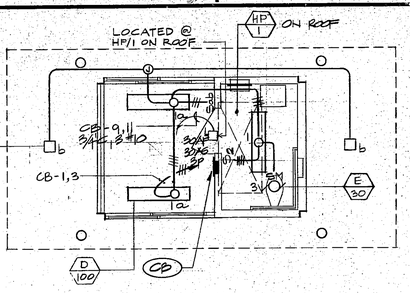
SHEET E-12



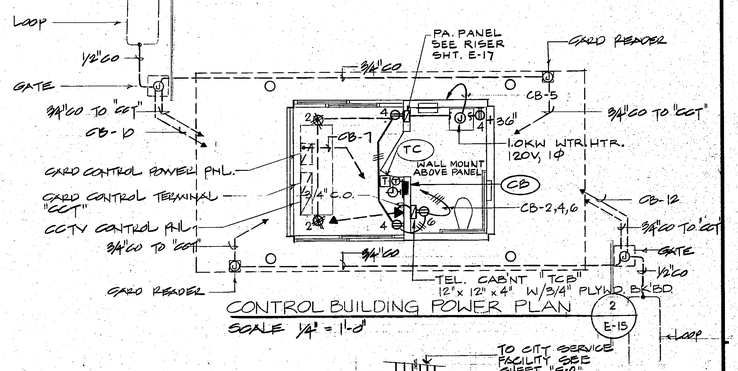
STORAGE BUILDING NO. 1 — 8 / E-15
SCALE 1/8" = 1'-0"



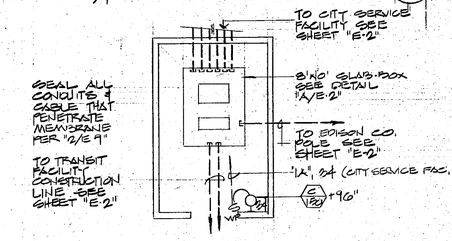
STORAGE BUILDING NO. 2 — 7 / E-15
SCALE 1/8" = 1'-0"



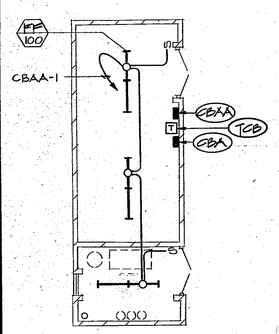
CONTROL BUILDING LIGHTING PLAN — 3 / E-15
SCALE 1/4" = 1'-0"



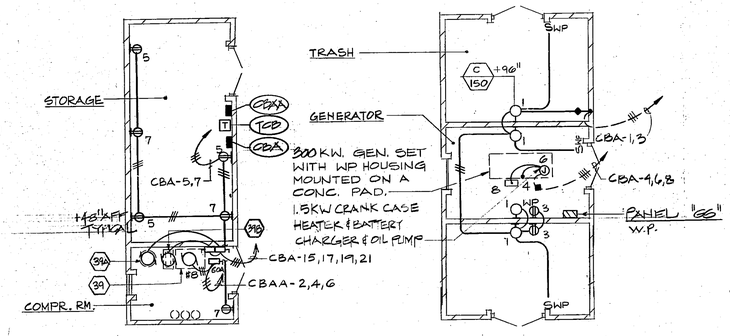
CONTROL BUILDING POWER PLAN — 2 / E-15
SCALE 1/4" = 1'-0"



TRANSFORMER BUILDING — 9 / E-15
SCALE: 1/8" = 1'-0"

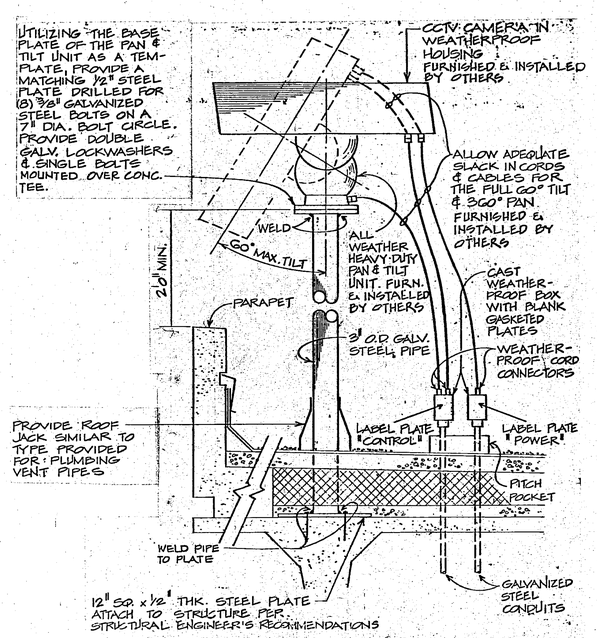


COMPR. BLDG.- LTG. PLAN — 6 / E-15
SCALE: 1/8" = 1'-0"

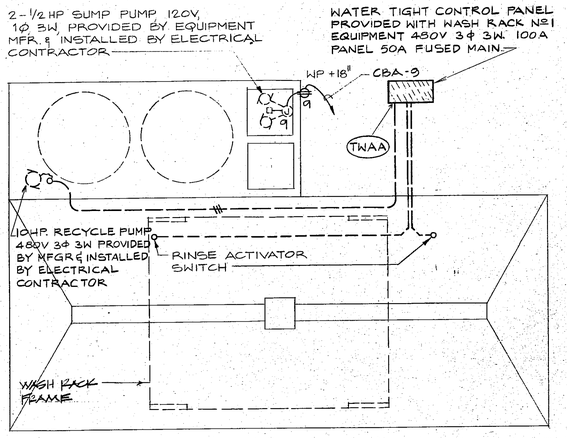


GENERATOR/TRASH ENCLOSURE — 4 / E-15
SCALE: 1/8" = 1'-0" (NO ROOF)

COMPR. BLDG. - PWR. PLAN — 5 / E-15
SCALE: 1/8" = 1'-0"



DETAIL - CAMERA MOUNTING — 9 / E-15



NOTE:

1. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS WITH THE TRUCK WASH EQUIPMENT MANUFACTURER.
2. TRUCK WASH EQUIPMENT TO BE PROVIDED BY MANUFACTURER WITH FINAL HOOK-UP BY THE ELECTRICAL CONTRACTOR:
   - 1- 10 HP RECYCLE PUMP — AS SHOWN
   - 2- 2 HP WASH BRUSH — MTD. ON FRAME WORK
   - 1- 2 HP OSCILLATING CURTAIN — " " " "
   - 2. 1/2 HP DUPLEX SUMP PUMP — AS SHOWN
   - CONTROLS - LOW VOLTAGE - MTD. IN CONTROL PANEL.

TRUCK WASH NO. 1 — 1 / E-15
SCALE: 1/4" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER — DANIEL TULCHINSKY — E-7739 — ELECTRICAL ENGINEERING — STATE OF CALIFORNIA

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
180 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

DRAWN S.W.	DATE
CHECKED J.B.	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

STORAGE AND CONTROL BLDG. PLANS, AND DETAILS

SHEET E-15

ROOF TOP UNITS

NO.	TYPE & MODEL NO.	SERVICE	SUPPLY FAN CFM	SUPPLY FAN WHEEL DIA. IN.	SUPPLY FAN BLADE TYPE	SUPPLY FAN E SP IN. WC	SUPPLY FAN RPM	SUPPLY FAN HP	RETURN FAN CFM	RETURN FAN WHEEL DIA. IN.	RETURN FAN BLADE TYPE	RETURN FAN ESP IN. WC	RETURN FAN RPM	RETURN FAN HP	COOLING COIL TOTAL CAPACITY MBH	COOLING COIL SENSIBLE CAPACITY MBH	COOLING COIL ENT. AIR °F DB	COOLING COIL ENT. AIR °F WB	COOLING COIL LVG. AIR °F DB	COOLING COIL LVG. AIR °F WB	COOLING COIL NO. OF ROWS	COOLING COIL MAX FACE VEL.	COOLING COIL FINS/INCH.	COMPRESSOR NO-HP	COMPRESSOR UNLOAD'G	CONDENSER FAN NO-FLA	CONDENSER FACE AREA SQ.FT.	CONDENSER FAN NO.-DIA	HEATING SECTION (GAS) INPUT MBH	HEATING SECTION (GAS) OUTPUT MBH	HEATING SECTION (GAS) NO. OF STAGES	EER	POWER SUPPLY F.L.A.	POWER SUPPLY VOLTAGE	FILTERS TYPE	FILTERS NO.	FILTERS SIZE	FILTERS INITIAL P.D. IN. WC	REMARKS * SEE NOTES BELOW
RT-1	AIR FAN LPS-10D	WEST OFFICES	4,000	15	FC	2.5	1050	3	—	—	—	—	—	—	113.5	94.6	75	63	53.1	52.7	3	500	10	1-10	100/33/0	2-1.9	29.13	2-24	300	225	2	11.5	35.2	460-3-60	STANDARD 2"	9	25x16x2	0.3	NOTE 1, NOTE 3
RT-2	AIR FAN LPV-40D	WEST OFFICES	13,400	24	AF	3	1300	10	9510	24	AF	1	900	3	437.5	355	77.5	64.1	53.1	52.8	4	500	10	1-40	100/66/33/0	3-2.5	57.23	3-24	—	—	—	9.7	102.2	460-3-60	STANDARD 2"	16	25x20x2	↓	NOTE 2, NOTE 3
AC-1	CARRIER 48LD-006	CENTER OFFICES	1920	10	B1	0.95	1050	1	—	—	—	—	—	—	65	44	86	68	55	—	3	400	14	(10.4RLA)	—	1-1.8	9.73	1-22	75	60	1	8.0	16.5	460-3-60	THROW AWAY	1 1	16x25x1 20x25x1	↓	NOTE 4
AC-2	CARRIER 48GL024	EAST OFFICE	750	—	—	0.4	—	1/3	—	—	—	—	—	—	25	18	86	68	55	—	3	300	14	(13.3RLA)	—	1-1.0	8.0	—	40	30	1	8.4	16.0	208-1-60	↓	1	20x20x1	↓	NOTE 5
AC-3	CARRIER 48GL048	EAST OFFICES	1690	—	—	0.6	—	3/4	—	—	—	—	—	—	47	35	86	68	55	—	3	400	14	(7.2RLA)	—	1-1.2	11.5	—	80	60	1	8.9	11.7	460-3-60	↓	2	20x20x1	↓	↓
AC-4	CARRIER 48GL048	EAST OFFICES LUNCH ROOM	1400	—	—	0.6	—	3/4	—	—	—	—	—	—	47	33	86	68	55	—	3	400	14	(7.2RLA)	—	1-1.2	11.5	—	80	60	1	8.9	11.7	460-3-60	↓	2	20x25x1	0.3	↓
AC-5	CARRIER 48GL048	WAREHOUSE OFFICES	1430	—	—	0.8	—	3/4	—	—	—	—	—	—	47	33	86	68	55	—	3	200	14	(7.2RLA)	—	1-1.2	11.5	—	80	60	1	8.9	11.7	460-3-60	↓	2	20x25x1	0.3	↓

HEATING AND VENTILATING UNITS (REZNOR)

NO.	TYPE & MODEL NO.	SERVICE	LOCATION	SUPPLY FAN CFM	SUPPLY FAN RPM	SUPPLY FAN BLOWER SIZE	SUPPLY FAN ESP IN W.C.	MOTOR HP	MOTOR RPM	MOTOR VOLTAGE	HEATING SECTION INPUT MBH	HEATING SECTION OUTPUT MBH	HEATING SECTION TEMP. RISE	FILTERS TYPE	FILTERS NO.	FILTERS SIZE	FILTERS INITIAL P.D. IN. W.C	SUPPORT ISOLATOR	SUPPORT STATIC DEFL. IN.	REMARKS
HV-1	RPAK-1-300D *	MEN'S LOCKER MAKE UP	ROOF - WEST	9750	1040	TWIN 15x12	2.0"	7 1/2	1750	460/3/60	300	237	28	2" THROW AWAY	2 2	16x16x2 16x20x2 20x20x2	0.17	INTERNAL ISOLATORS ON FAN & MTR	2"	FURNISHED W/ CODE-B SYSTEM, PRE-FAB CURB, AND DOWNTURN PLENUM FIELD SUPPLY TRANSITION.
HV-2	↓	WAREHOUSE AREA	↓	8000	1000	↓	2.4"	7 1/2	1750	460/3/60	300	237	35	↓	↓	↓	↓	↓	↓	FURNISHED W/ CODE-P SYSTEM, PRE-FAB CURB, AND DOWNTURN PLENUM.
HV-3	↓	↓	↓	8000	1050	↓	2.4"	7 1/2	1750	460/3/60	300	237	35	↓	↓	↓	↓	↓	↓	↓
HV-4	↓	↓	- EAST	7000	1000	↓	2.0"	5	1750	460/3/60	300	237	40	↓	↓	↓	↓	↓	↓	↓
HV-5	↓	↓	↓	7000	1000	↓	2.0"	5	1750	460/3/60	300	237	40	↓	↓	↓	↓	↓	↓	↓
HV-6	↓	GARAGE AREA	↓	9000	1115	↓	2.4"	7 1/2	1750	460/3/60	300	237	31	↓	↓	↓	↓	↓	↓	↓
HV-7	↓	↓	↓	9000	1115	↓	2.4"	7 1/2	1750	460/3/60	300	237	31	↓	↓	↓	↓	↓	↓	↓
HV-8	HRXE-100	TOILETS, LOCKERS	ROOF - EAST	1850	950	—	0.5	3/4	1750	460/3/60	100	77	38	1" THROW AWAY	2	20x20x1	0.14	—	—	W/ J OPTION (AGA RATING)

* HV-1 FURNISHED W/ EVAPORATIVE COOLERS. SEE SCHEDULE SHT. M-2

NOTES:

1. ROOF TOP DOWN DISCHARGE UNIT COMPLETE W/ PRE-FAB CURB, AND MORNING WARM UP CYCLE.
2. ROOF TOP DOWN DISCHARGE UNIT COMPLETE W/ PRE-FAB CURB, INLET VANES, ECONOMY CYCLE, LOW LEAKAGE DAMPER AND MORNING WARM UP CYCLE.
3. SUPPLY FANS, RETURN FANS & COMPRESSORS SHALL BE INTERNALLY ISOLATED W/ 2" DEFLECTION SPRING ISOLATOR.
4. FURNISHED W/ PRE-FAB CURB, 2-POSITION OSA DAMPER, HOOD & FILTER.
5. FURNISHED W/ CURB, PLENUM W/ OSA INTAKE & FILTER

FANS

NO.	MANUFACTURER TYPE & MODEL NO.	SERVICE	LOCATION	CFM	RPM	WHEEL DIAM. INCHES	S.P. IN INCH W.C.	O.V. OR T.S. FPM	BLADE TYPE	MOTOR HP	MOTOR RPM	MOTOR VOLTAGE	REMARKS * SEE NOTES
E-1	ACME CENTRI MASTER P 300 J	WEST OFFICE TOILET EXHAUST	ROOF WEST	4780	640	30	3/4	4850	AF	1	1750	460/3/60	1
E-2	ACME CENTRI MASTER P 365 K	LOCKER ROOM EXHAUST	↓	7500	475	36 1/2	1/2	5200	AF	1 1/2	↓	460/3/60	↓
E-3	ACME CENTRI MASTER P135 D3	TOILET EXHAUST	↓	250	1050	13 1/2	1/2	3750	AF	1/6	↓	120/1/60	↓
E-4	↓	↓	↓	250	1050	13 1/2	1/2	3750	AF	1/6	↓	120/1/60	↓
E-5	↓	↓	EAST	500	1100	13 1/2	1/2	3800	AF	1/6	↓	120/1/60	↓
E-6	ACME CENTRI MASTER P163 F	LOCKER & WASH ROOM EXHAUST	EAST	1860	1150	16 1/4	1/2	4700	AF	1/3	↓	120/1/60	↓
E-7	ACME CENTRI MASTER P 330 K	WAREHOUSE EXHAUST	WEST	7500	580	33	3/8	5000	AF	1 1/2	↓	460/3/60	↓
E-8	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
E-9	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
E-10	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
E-11	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
E-12	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
E-13	↓	↓	EAST	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
E-14	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
E-15	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
E-16	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
E-17	↓	GARAGE EXHAUST	↓	5000	450	↓	↓	3888	↓	3/4	1750	↓	↓
E-18	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
E-19	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
E-20	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
E-21	NEW YORK BLOWER IN-LINE T-159	ENGINE EXHAUST 185	↓	2800	2750	15	4	1250	AF	5	↓	↓	2 3 4
E-22	NEW YORK BLOWER IN-LINE T-189	ENGINE EXHAUST 187	↓	3600	2036	18 1/4	4	1100	AF	5	↓	↓	2 3 4
E-23	ACME CENTRI MASTER P163F	STEAM 193	↓	2300	1150	16 1/4	1/4	5000	AF	1/3	↓	120/1/60	1
E-24	ACME CENTRI MASTER P135 D2	BATTERY RM. 192	↓	200	900	13 1/2	3/8	3200	AF	1/6	↓	↓	1 2 4
E-25	ACME CENTRI MASTER P135 D2	COMPRESSOR 254	↓	200	700	↓	1/4	2750	AF	↓	↓	↓	1
E-26	NEW YORK BLOWER IN-LINE T-129	WELDING 189	↓	1000	2216	12 1/4	2	700	AF	3/4	↓	460/3/60	2 3 4
E-27	NEW YORK BLOWER IN-LINE T-129	ENGINE EXH. 194	↓	800	3012	12 1/4	4	600	AF	1 1/2	↓	↓	2 3 4
E-28	NEW YORK BLOWER IN-LINE T-129	LUBE PIT 194	↓	1800	2663	12 1/4	1 1/2	1200	AF	1	↓	↓	2 3
E-29	NEW YORK BLOWER IN-LINE T-129	DYNO 195	↓	2000	3448	12 1/4	4	1320	AF	3	1750	↓	2 3 4
E-30	THERMADOR'S TRADE WIND VQT 90	TOILET EXHAUST	CONTROL BLDG.	90	1000	—	0.1	—	AF	1/6	1000	120/1/60	1
E-31	ACME CENTRIMASTER P155 D2	ELEV MACH. 239	ROOF EAST	700	750	13 1/2	.125	2600	AF	1/6	1750	120/1/60	1
E-32	ACME CENTRIMASTER P135 D1	PAINT STORAGE	ROOF STR BLD #2	300	580	13 1/2	.125	2000	AF	1/6	1750	120/1/60	1 2
S-1	COOK CENTRI-VANE BCV17D	DYNO PIT	DYNO 195	50	1725	10 1/4	5/8	150	AF	1/12	1750	120/1/60	

* NOTES: 1 FURNISHED W/ PRE-FAB CURB, BIRD SCREEN & BACK DRAFT DAMPER.
2 FURNISHED W/ SPARK & EXPLOSION PROOF TYPE
3 FURNISHED W/ PRE-FAB CURB, WEATHER COVER & STACK HOOD.
4 COATED

GENERAL NOTES

1. ALL DUCT WORK CONSTRUCTION SHALL CONFORM TO LOCAL CODES.
2. ALL WIRING TO CONFORM WITH LOCAL CODES.
3. ALL DUCTS SHALL BE WRAPPED WITH 1-½" THICK, 3/4 POUND DENSITY FIBERGLASS INSULATION, OR LINED WITH 1" THICK, 3 POUND FIBERGLASS INSULATION AS NOTED.
4. CONTROLS SHALL BE PNEUMATIC IN ADMINISTRATION OFFICES, AND BE ELECTRIC IN OTHER AREAS.
5. ALL CEILING DIFFUSERS, RESISTERS, GRILLES, AND THERMOSTATS LOCATIONS TO BE APPROVED BY THE ARCHITECT.
6. MANUAL VOLUME DAMPERS ARE NOT SHOWN ON THE DRAWINGS. INSTALL MANUAL VOLUME DAMPERS AT ALL SUPPLY, RETURN, AND EXHAUST DUCT BRANCH TAKE-OFFS.
7. FLEXIBLE DUCT LENGTH SHALL NOT EXCEED 7'-0".
8. VERIFY EXACT LOCATON OF P.O.C. FOR THE VEHICLE GARAGE EQUIPMENT AT THE SITE.
9. PROVIDE CPE BOOT AT ALL DUCTS & PIPES THAT PENETRATE FLOOR. SEE DETAIL 2/M-5
10. CORROSIVE AIR EXHAUST SYSTEMS ARE ENGINE EXHAUST, DYNO EXHAUST & BATTERY ROOM EXHAUST SYSTEMS.
11. MECHANICAL VENTILATION TO BE CAPABLE OF SUPPLYING 3 FT³/MIN/OCC. IN AIR CONDITIONED AREAS. (SYSTEM IS DESIGNED TO THIS CRITERIA)

STATEMENT OF DESIGN COMPLIANCE

Divisions 4, 5 & 6 of the California Energy Conservation Standards for non-residential buildings in Title 24 of the California Administrative Code have been reviewed and the design described herein is in substantial conformance.

ENGINEER _____ CERT. NO. M10826 DATE 9-2-83

REGISTERED PROFESSIONAL ENGINEER — TAKAO B. HAYAKAWA — No. M 10826 — MECHANICAL — STATE OF CALIFORNIA

AIR CONDITIONING LEGEND

SYMBOL DOUBLE LINE	SYMBOL SINGLE LINE	ABBREV.	DESCRIPTION
			SUPPLY AIR DUCT
	—R—		RETURN AIR DUCT
	—E—		EXHAUST AIR DUCT
	—OA—		OUTSIDE AIR DUCT
			TRANSITION
			ELBOW W/ TURNING VANES
			SUPPLY AIR DUCT
			RETURN, EXHAUST OR OUTSIDE AIR DUCT
			STACK, VENT OR ROUND DUCT
			FLEXIBLE DUCT
	(L)		LINED DUCT
R	R		RISE IN DIRECTION OF AIR FLOW
D	D		DROP IN DIRECTION OF AIR FLOW
T=6	T=6		SPLIT Y BRANCH
			TAP-IN OR CONICAL BRANCH
			45° LATERAL BRANCH
P	P	MD	MOTORIZED DAMPER
		VD	MANUAL VOLUME DAMPER
		BD	BACKDRAFT DAMPER
		FD	FIRE DAMPER
		12x12-500	12"x12" NECK CEILING DIFFUSER, 500CFM ARROWS INDICATE THROW PATTERN
		12x12R-500 12x12G	12"x12" CEILING REGISTER, 500CFM 12"x12" CEILING GRILLE
		12x12R-500	12"x12" SUPPLY REGISTER, 500CFM
		12x12R-500 12x12G	12"x12" REGISTER, 500CFM 12"x12" GRILLE
			FLEXIBLE CONNECTION
T			THERMOSTAT
H			HUMIDISTAT
		AD	ACCESS DOOR
		AP	ACCESS PANEL
U/C			UNDERCUT DOOR 1"
D/L			DOOR LOUVER
		OA	OUTSIDE AIR
		RA	RETURN AIR
		VAV	VARIABLE AIR VOLUME BOX
		CV	CONSTANT AIR VOLUME BOX
		(S)	SWITCH, SEE ELECTRICAL DRAWINGS
L/D			LOUVER DOOR, SEE ARCH. DWGS.

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 870-4477
1180 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3375 Long Beach Boulevard, Long Beach, California

DRAWN	Y.D	DATE	12-16-83
CHECKED		JOB	1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

SCHEDULES & LEGEND

SHEET M-1

VAV & CV SCHEDULE (MITCO)

NO.	SIZE	LOCATION	DESIGNED MAX.CFM	REMARKS
1	VV-7	STRG. 112	2050	
2			2660	
3	VV-1		130	
4	CV-4		770	
5	VV-3	ADMIN. SPEC. 202	320	
6	VV-6	ADMIN. 215	1360	
7	CV-3		290	
8	VV-4	SR. MAINT SUPERVISOR 203	610	
9	CV-3	ADMIN. 215	370	
10	CV-3	ADMIN. SPEC. 202	280	
11	CV-2	ADMIN. 215	140	
12	CV-1	LUNCH/MEETING 216	50	
13	VV-4		470	
14	CV-3	SR. MAINT SUPERVISOR 203	230	
15	VV-4	CONFERENCE 204	680	
16	CV-3	ADMIN. 205	240	
17	VV-4		760	
18	CV-3	OFFICE 206	290	
19	VV-4	COMPUTER TERMINALS 217	380	
20	CV-1	XEROX 218	50	
21	VV-4	OFFICE 208	760	
22	CV-3		290	
23	CV-1	MENS TOILET 222	60	
24	CV-2	CONFERENCE 209	180	
25	VV-4	MENS TOILET 222	380	
26	VV-4	CONFERENCE 209	560	
27	VV-4	BLDG. MAINT 211	610	
28	CV-3		230	
29	VV-6	ADMIN. 215	1360	
30	CV-2		140	
31	VV-4	OFFICE 212	480	
32	CV-3		340	
33	CV-3	ADMIN. 215	340	
34	VV-4		560	

VOLUME REGULATORS (MITCO)

SIZE SYMBOL	MODEL NO.	CFM RANGE	MIN. S.P. IN H_2O	CONN. SIZE INCH.	MAX. N.C. IN DB	REMARKS
VV-1	VV-5	20 - 130	0.4	5"φ	20	
VV-2	VV-6	30 - 200		6"φ	20	
VV-3	VV-8	40 - 370		8"φ	24	
VV-4	VV-10	100 - 800		10"φ	30	
VV-5	VV-12	200 - 1200		12"φ	30	
VV-6	2-VV-10	200 - 1600		20x12	30	
VV-7	2-VV-12	400 - 2700		24x12	30	
CV-1	CV-5	20 - 130		5"φ	20	
CV-2	CV-6	30 - 200		6"φ	20	
CV-3	CV-8	40 - 370		8"φ	24	
CV-4	CV-10	100 - 800		10"φ	30	

INFRA-RED HEATERS (PERFECTION)

NO.	TYPE & MODEL NO.	SERVICE	FUEL	INPUT BTU/HR	REMARKS
H-1	JK-25-SSAN	PARTS COUNTER (N)	GAS	25,000	PROVIDE MANUAL ON-OFF SWITCH
H-2	JK-25-SSAN	PARTS COUNTER (S)	GAS	25,000	PROVIDE MANUAL ON-OFF SWITCH

AIR COMPRESSOR (HONEYWELL)

NO.	TYPE & MODEL NO.	SERVICE	LOCATION	TANK CAPACITY		DELIVER CFM @ 80 PSI	NO OF STAGES	OPER. PRESS. PSIG.	MOTOR HP	MOTOR RPM	MOTOR VOLTAGE	SUPPORT VIBR. ISOL TYPE	REMARKS
CA-1	DAUL COMPESSOR, WP-241E	CONTROL AIR	COMP. RM 170	80 GAL.		3.9	1	20	1	1750	460-3-60	PN (4-PL)	W/PREWIRED ALTERNATOR *

* WITH REFRIGERATED AIR DRYER, HANKISON MODEL 8010, 10 SCFM, 1/6 HP 115V-1φ-60HZ

GRAVITY VENT (EXITAIRE)

NO.	TYPE & MODEL NO.	SERVICE	LOCATION	CFM	NECK AREA, FT^2	REMARKS
RV-1	GRAVITY RCX-12	COMPR. & BATT. RMS	ROOF EAST	400	0.85	W/PREFAB CURB & BIRD SCREEN
RV-2	RCX-18	STRG. BLD. NO. 1	STRG. BLD. #1	—	1.89	(4-REQD)
RV-3	RCX-18	STRG. BLD. NO. 2	STRG. BLD. #2	—	1.89	(4-REQD)
RV-4	RCX-12	JAN 243	EAST	—	0.85	
RV-5	RCX-18	GARDNERS 415	COMPR. BLDG.	—	1.89	
RV-6	RCX-15	COMPRESSOR 170	WEST	800	1.23	
RV-7	RCX-18	ELEV. MACH 239	EAST	700	1.89	
RV-8	GRAVITY RCX-8	DYNO 195	ROOF EAST	50	0.39	W/PREFAB CURB & BIRD SCREEN

HEAT PUMP UNIT (PAYNE)

NO.	MANUFACTURER TYPE & MODEL NO.	SERVICE	COOLING CAPACITY BTU/HR	HEATING CAPACITY BTU/HR	CFM	ESP IN. WC	INDOOR COIL & BLOWER FACE AREA, FT^2	INDOOR ROWS/FINS/IN	INDOOR BLOWER DIA, IN.	OUTDOOR COIL & FAN FACE AREA, FT^2	OUTDOOR ROWS/FINS/IN	OUTDOOR DIA, IN	UNIT VOLT	TOTAL UNIT AMP	REMARKS
HP-1	542EJ024	CONTROL BUILDING	24,200	25,400	780	0.4	3.67	3/14	10	10.57	1.41/20	18	208/1/60	16.7	WITH PLEN. PP-24, CURB & PLATFORM CP-24, CONCENTRIC DUCT PACKAGE DP-24, BASE PLATE & COMBINATION SUPPLY & RETURN AIR DIFFUSER G-24

EVAPORATIVE COOLER (REZNOR)

NO.	MODEL NO.	QUANITY	LOCATION	CFM EA.	AIR ENT. DB°F	AIR ENT. WB°F	AIR LVG. DB°F	FILTERS NO. & SIZE INCH.	FILTER S.P. IN. H_2O	PUMP HP	PUMP VOLTAGE	REMARKS
EC-1 & EC-2	RAM-55	2	ROOF-LEFT	4875	86	68	69.6	4-25x32½	0.08	1/15	120/1/60	

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1180 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

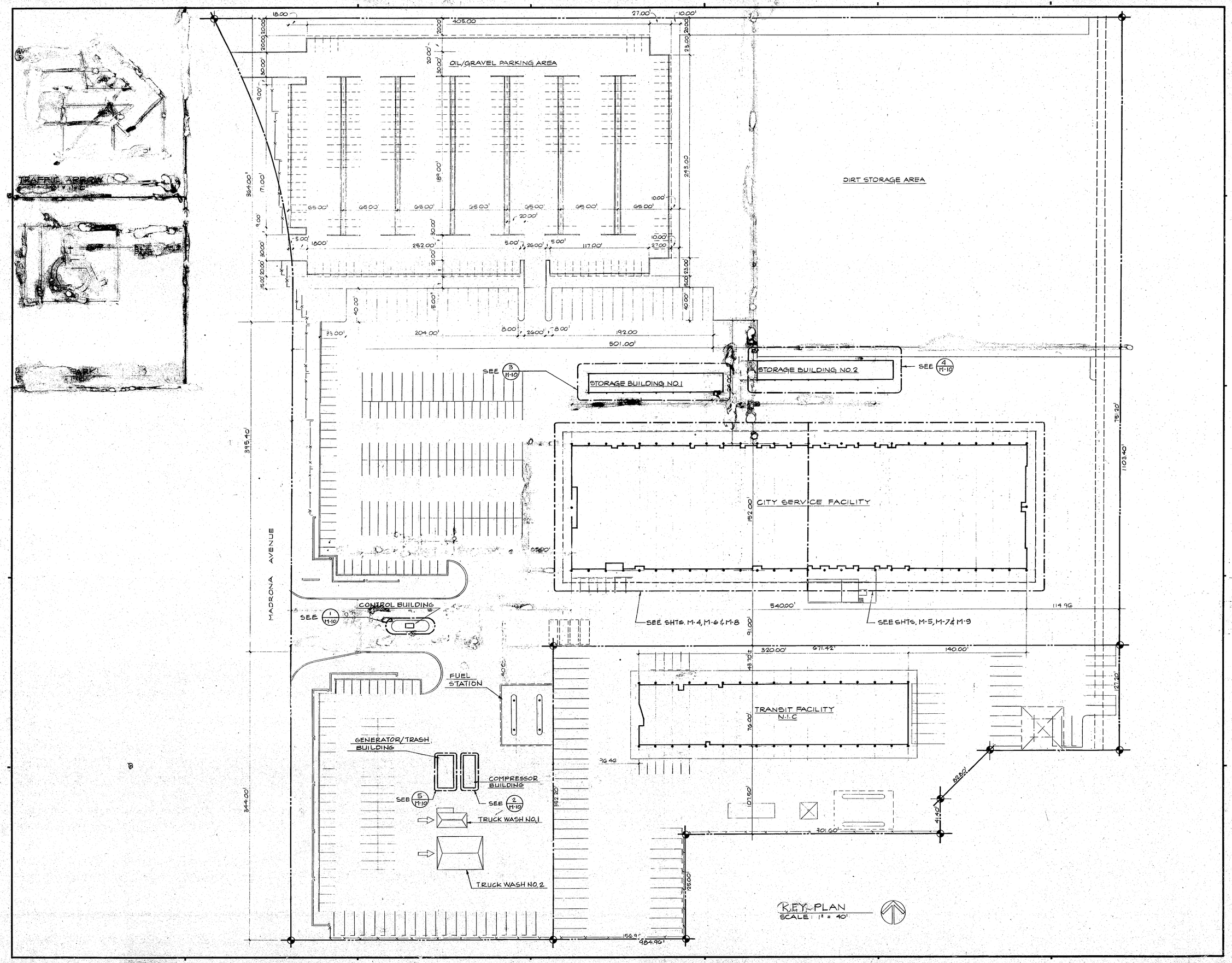
DRAWN Y.D	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

SCHEDULES

SHEET **M-2**



HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1180 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A
3375 Long Beach Boulevard, Long Beach, California

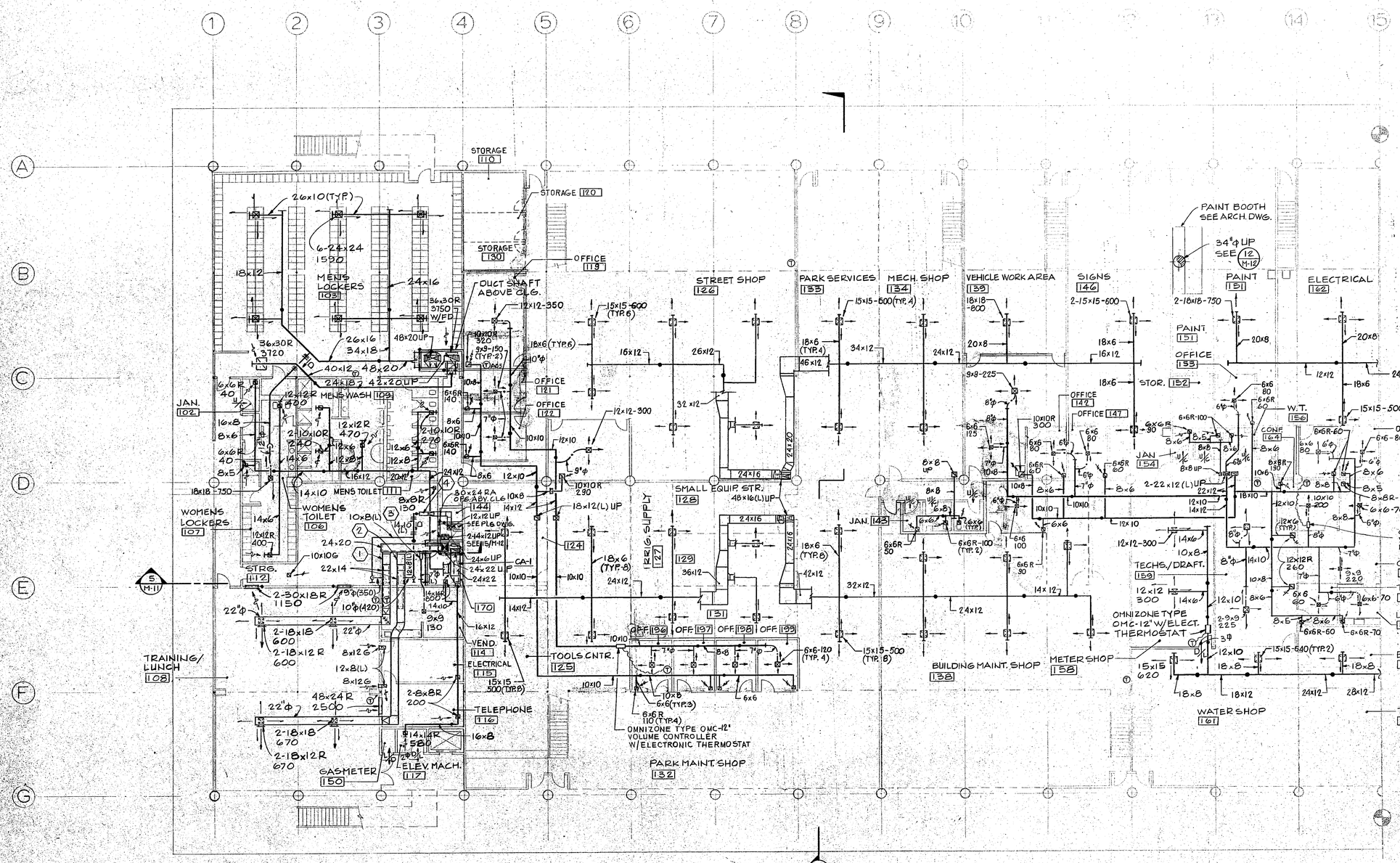
DRAWN T.D	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE
CALIFORNIA

KEY PLAN

SHEET M-3



FIRST FLOOR PLAN LEFT-HALF

SCALE: 3/32" = 1'-0"

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4475
1180 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3375 Long Beach Boulevard, Long Beach, California

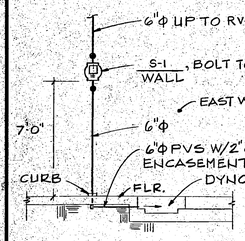
DRAWN T.D., Y.D.	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

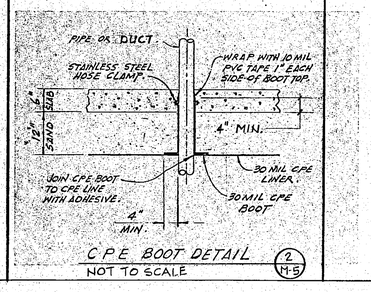
TORRANCE CALIFORNIA

FIRST FLOOR PLAN-LEFT HALF

SHEET M-4



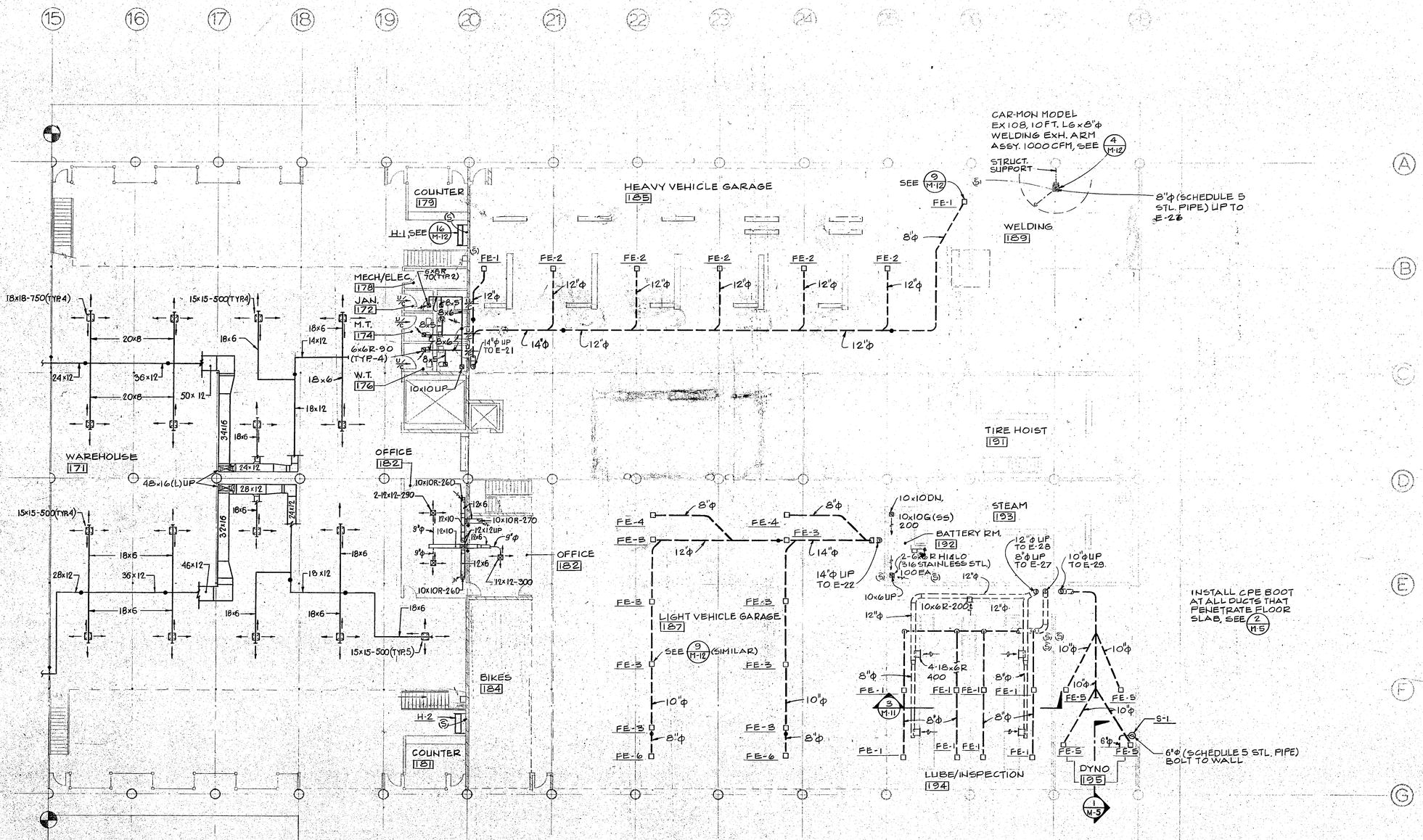
SECTION (1 / M-5)
SCALE: 1/4"=1'-0"



CPE BOOT DETAIL (2 / M-5)
NOT TO SCALE

VEHICLE EXHAUST ADAPTORS (CARMON)

NO.	MODEL NO.	CFM	FLEX SIZE	FLEX LENGTH	REMARKS
FE-1	64TR	400	4"Φ	15 FT.	
FE-2	66TRD	2-400	2-4"Φ	15 FT	
FE-3	65TRD	2-300	2-3"Φ	15 FT	
FE-4	64TR	300	3"Φ	15 FT	
FE-5	66TRS	1500	6"Φ	15 FT	
FE-6	64TR	300	3"Φ	8FT	



FIRST FLOOR PLAN - RIGHT HALF
SCALE: 3/32"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
SEISHO G. HAYAKAWA
No. M 10626
MECHANICAL
STATE OF CALIFORNIA

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1180 SO. BEVERLY DR., LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

DRAWN T.D., Y.D	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

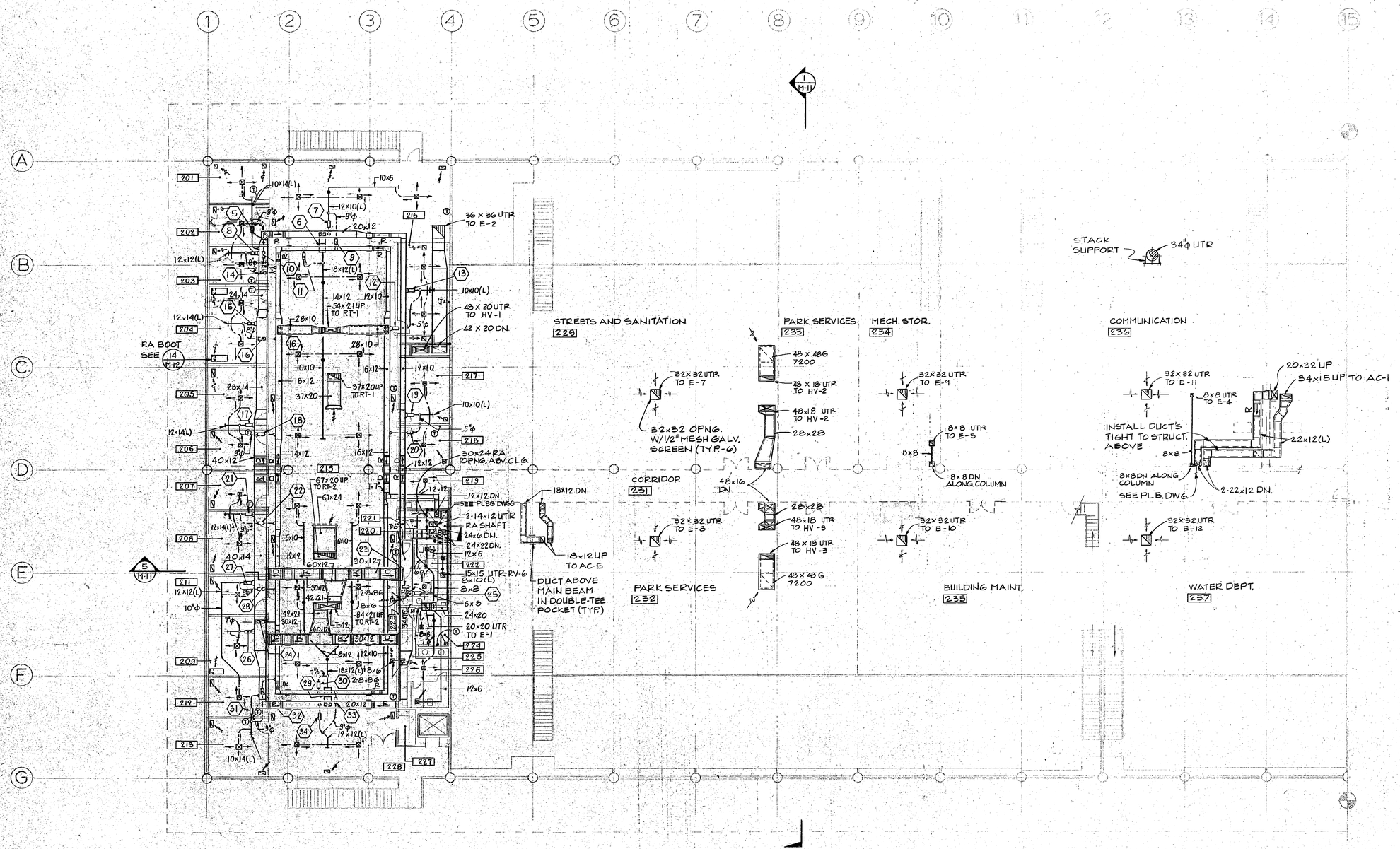
FIRST FLOOR PLAN-RIGHT HALF

SHEET M-5

ROOM NO.	ROOM TITLE	SUPPLY AIR DIFFUSER NO. OF DIFF.	SUPPLY AIR DIFFUSER NECK SIZE IN.	SUPPLY AIR DIFFUSER CFM EA.	SUPPLY AIR DIFFUSER FLEX. DUCT DIA. IN.	RETURN OR EXHAUST REGISTER NO. OF REGIST.	RETURN OR EXHAUST REGISTER NECK SIZE IN.	RETURN OR EXHAUST REGISTER CFM EA	VOLUME DAMPER IN.
201	ADMIN.	1	15x15	600	12	2	12x12	290	12
202	ADMIN. SPEC.	1	12x12	420	10	1	18x12	400	10
203	SR. MAINT. SUPERVISOR	1	12x12	420	10	1	18x12	400	10
204	CONFERENCE	2	12x12	460	10	2	18x12	450	10
205	ADMIN.	1	15x15	630	12	1	24x12	600	12
206	OFFICE	1	12x12	420	10	1	18x12	400	10
207		1	12x12	420	10	1	18x12	400	10
208		1	15x15	630	12	1	24x12	600	12
209	CONFERENCE	1	18x18	740	12	1	30x12	720	12
211	BLDG. MAINT.	1	12x12	420	10	1	18x12	400	10

ROOM NO.	ROOM TITLE	SUPPLY AIR DIFFUSER NO. OF DIFF.	SUPPLY AIR DIFFUSER NECK SIZE IN.	SUPPLY AIR DIFFUSER CFM EA.	SUPPLY AIR DIFFUSER FLEX. DUCT DIA. IN.	RETURN OR EXHAUST REGISTER NO. OF REGIST.	RETURN OR EXHAUST REGISTER NECK SIZE IN	RETURN OR EXHAUST REGISTER CFM EA.	VOLUME DAMPER IN.
212	OFFICE	1	12x12	420	10	1	18x12	400	10
213	ADMIN.	1	18x18	820	12	2	18x12	400	12
215 N.		3	9x9	220	8	2	18x12	420	8
215		12	9x9	250	8	7	18x12	420	8
215 S.		2	12x12	450	10	1	18x12	420	10
216	LUNCH/MEETING	2	9x9	260	8	2	12x12	260	8
217	COMPUTER TERMINALS	1	12x12	330	9	1	12x12	330	9
218	XEROX	1	6x6	100	6	1	6x6	100	6
219	COFFEE	1	6x6	80	6	—	—	—	6
220	VESTIBULE	—	—	—	—	—	—	—	—

ROOM NO.	ROOM TITLE	SUPPLY AIR DIFFUSER NO. OF DIFF.	SUPPLY AIR DIFFUSER NECK SIZE IN.	SUPPLY AIR DIFFUSER CFM EA.	SUPPLY AIR DIFFUSER FLEX. DUCT DIA. IN	RETURN OR EXHAUST REGISTER NO. OF REGIST.	RETURN OR EXHAUST REGISTER NECK SIZE IN.	RETURN OR EXHAUST REGISTER CFM EA.	VOLUME DAMPER IN.
221	SUPPLIES	1	6x6	40	6	—	—	—	6
222	MENS TOILET	1	6x6	130	7	1	10x10	280	7
223	JANITOR	—	—	—	—	1	6x6	40	—
224	COT. ROOM	1	6x6	60	5	1	8x8	60	5
225	VESTIBULE	—	—	—	—	—	—	—	—
226	WOMENS TOILET	1	6x6	130	7	1	10x10	280	7
227	STORAGE	—	—	—	—	—	—	—	—
228	FOYER	—	—	—	—	—	—	—	—



NOTE:

1. FOR SA DIFFUSERS; RETURN OR EXHAUST REGISTERS CFM & FLEX DUCT SIZES, SEE TABLE ABOVE.
2. WHEN MORE THAN 1-DIFFUSER IS CONNECTED TO VAV. TERMINAL, CV TERMINAL DUCT MUST BE CONNECTED TO TOP OR BOTTOM OF SA DUCT.

SECOND FLOOR PLAN - LEFT HALF

SCALE: 3/32"=1'-0"

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1150 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

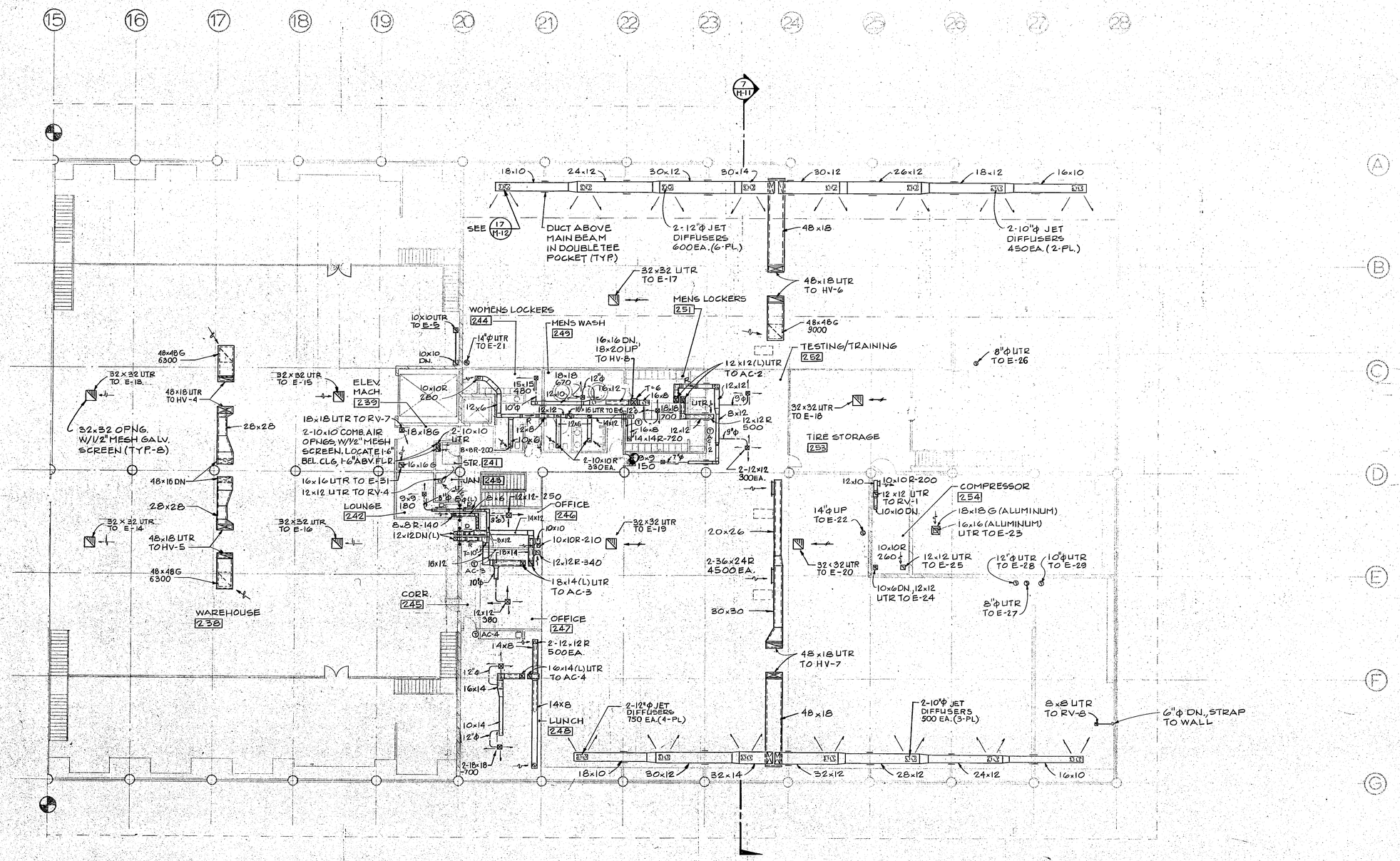
DRAWN T.D	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

SECOND FLOOR PLAN - LEFT HALF

SHEET M-6



SECOND FLOOR PLAN-RIGHT HALF
SCALE: 3/32"=1'-0"

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 878-4477
1180 SO. BEVERLY DR., LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

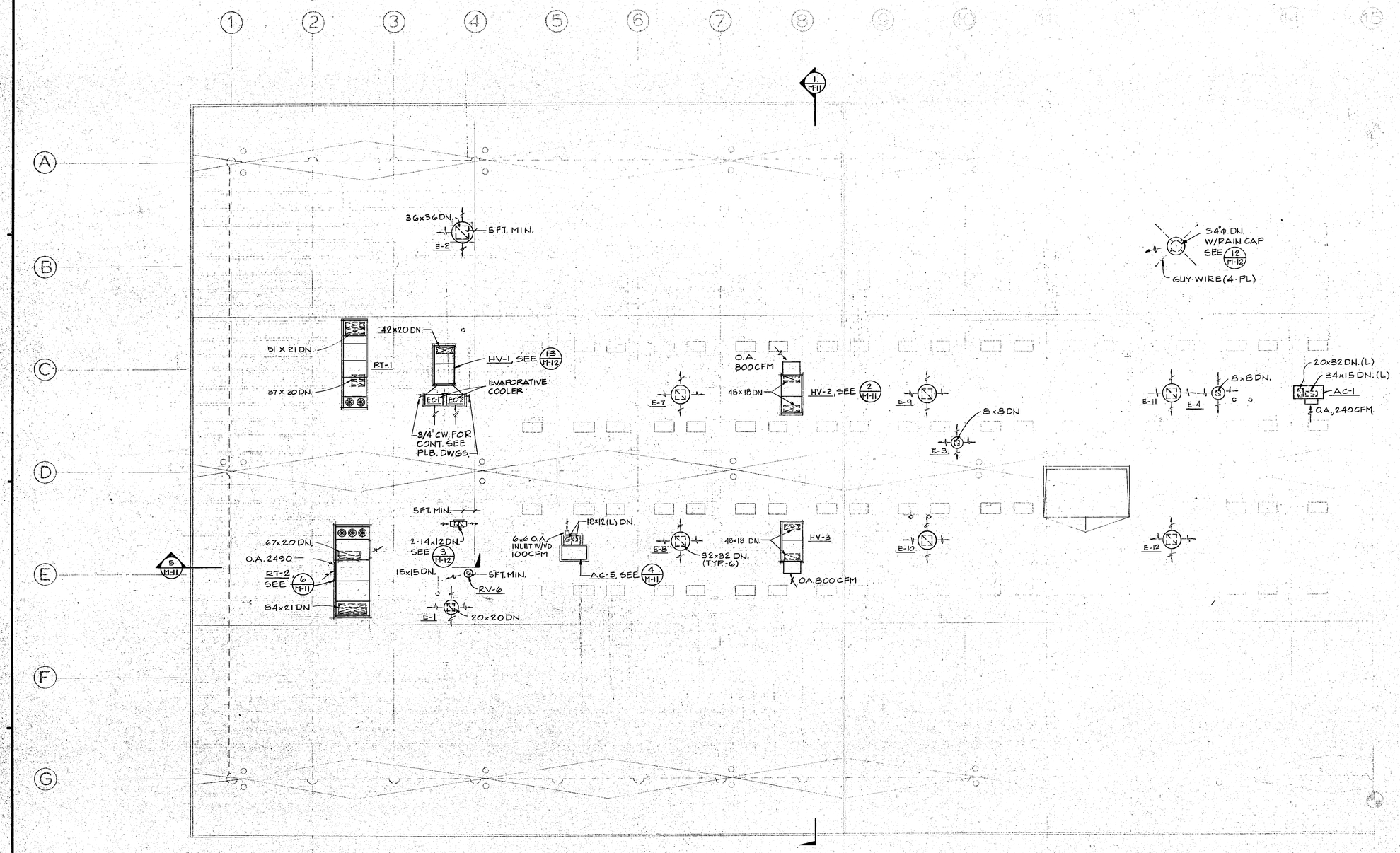
DRAWN	DATE
T.D	12-16-83
CHECKED	JOB
	1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

SECOND FLOOR PLAN-RIGHT HALF

SHEET
M-7



NOTES:

1. LOCATE DUCTS THRU ROOF A MINIMUM OF 5FT. FROM RATED WALLS RUNNING NORTH & SOUTH AT COLUMN LINES 4-15 & 20.
2. SEE STRUCTURAL DWGS FOR DUCT OPENINGS IN ROOF.

ROOF PLAN - LEFT HALF

SCALE: 3/32" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER
ALFRED G. HAYAKAWA
No. M 10820
MECHANICAL
STATE OF CALIFORNIA

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1180 SO. BEVERLY DR., LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3379 Long Beach Boulevard, Long Beach, California

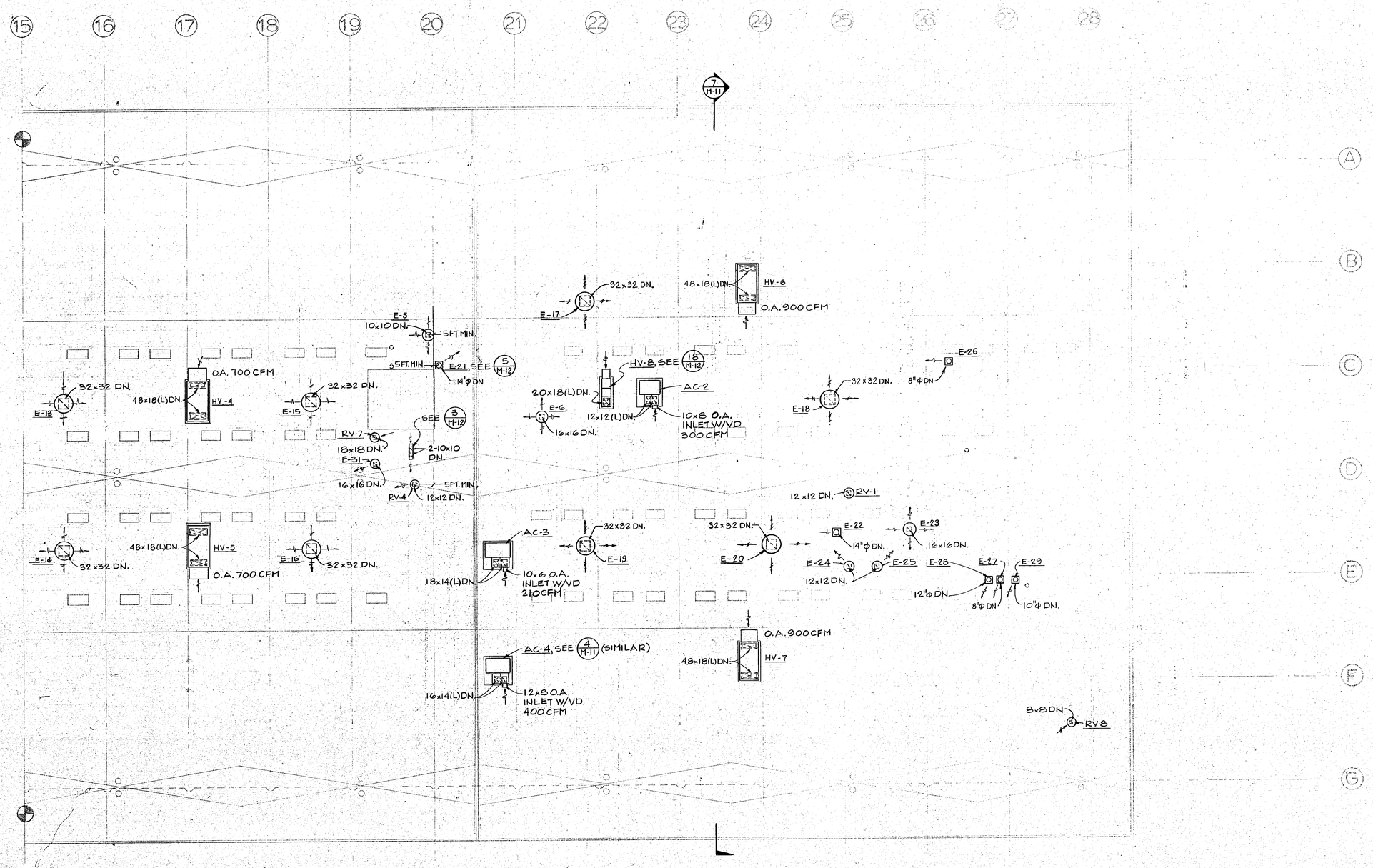
DRAWN T.D., Y.D	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

ROOF PLAN LEFT HALF

SHEET M-8



NOTES:

1. LOCATE DUCTS THRU ROOF A MINIMUM OF 5 FT. FROM RATED WALLS RUNNING NORTH & SOUTH AT COLUMN LINES 4-15 & 20.
2. SEE STRUCTURAL DWGS. FOR DUCT OPENINGS IN ROOF.

ROOF PLAN- RIGHT HALF

SCALE: 3/32"=1'-0"

REGISTERED PROFESSIONAL ENGINEER
M. M. HAYAKAWA
M.E. 10025
MECHANICAL
STATE OF CALIFORNIA

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-6477
1100 SO. BEVERLY DR., LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

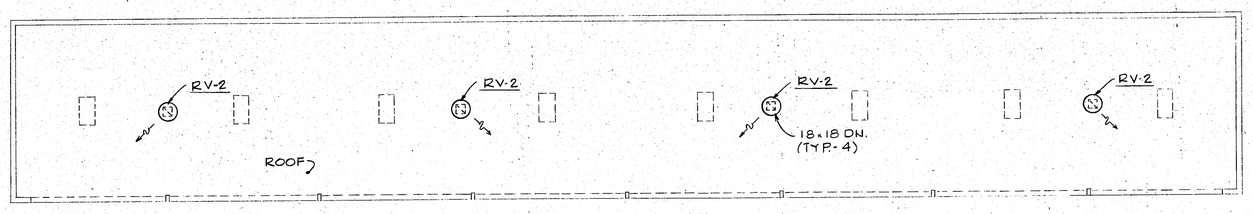
DRAWN T.D	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

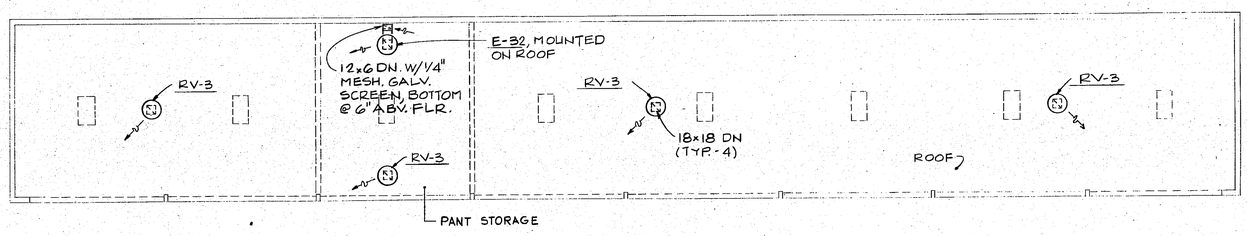
TORRANCE CALIFORNIA

ROOF PLAN RIGHT-HALF

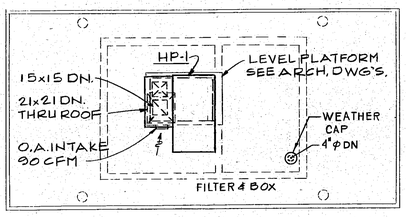
SHEET M-9



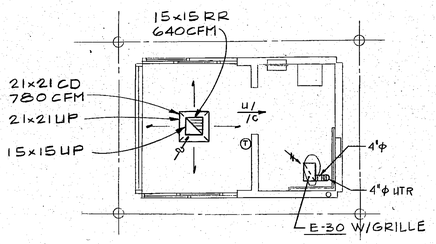
STORAGE BUILDING NO. 1 PLAN (3 / M-10)
SCALE: 1/8"=1'-0"



STORAGE BUILDING NO. 2 PLAN (4 / M-10)
SCALE: 1/8"=1'-0"

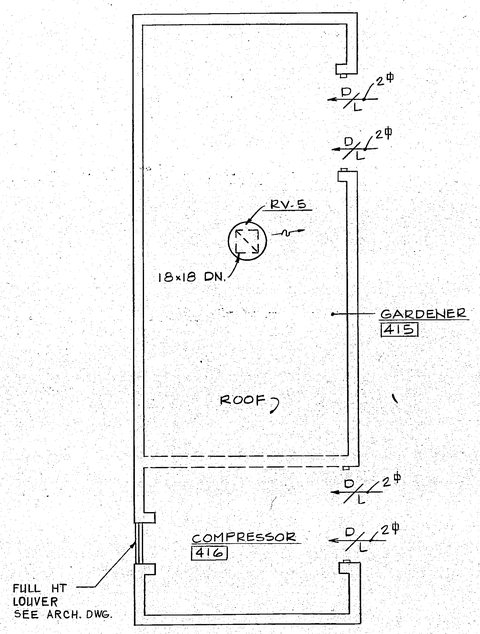


ROOF PLAN

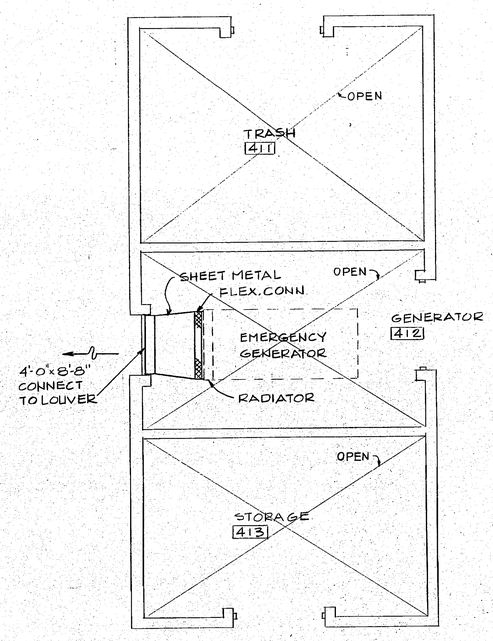


PLAN

CONTROL BLDG. (1 / M-10)
SCALE: 1/4"=1'-0"



COMPRESSOR BLDG. (2 / M-10)
SCALE: 1/4"=1'-0"



GENERATOR/TRASH BLDG. (5 / M-10)

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 878-4477
1180 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS &
DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

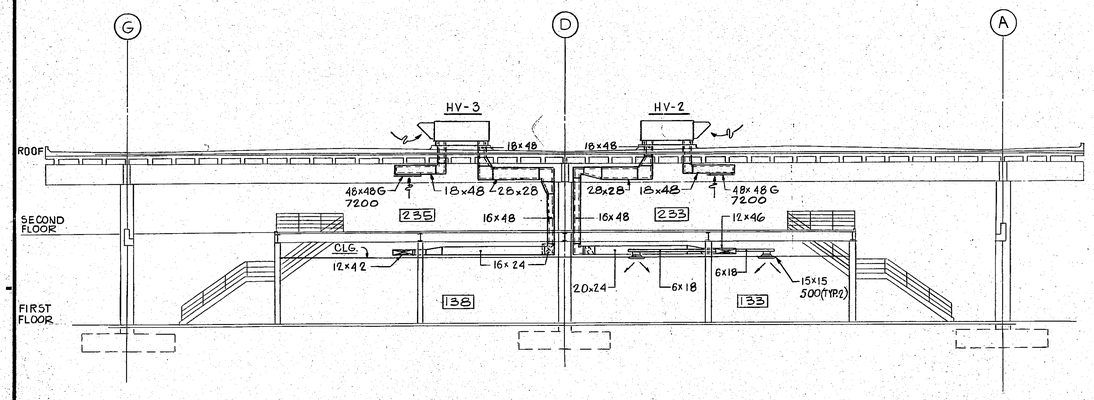
DRAWN T.D.	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

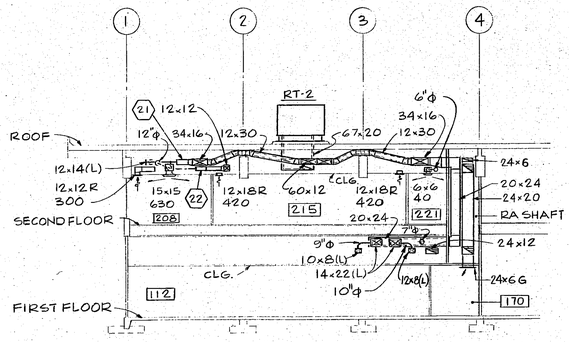
TORRANCE CALIFORNIA

FLOOR PLANS

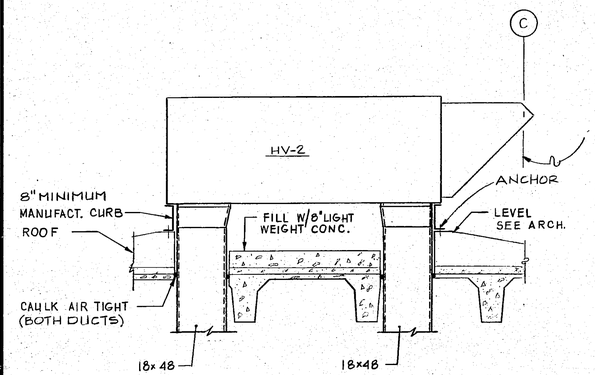
SHEET **M-10**



SECTION 1/M-11
SCALE: 3/32"=1'-0"

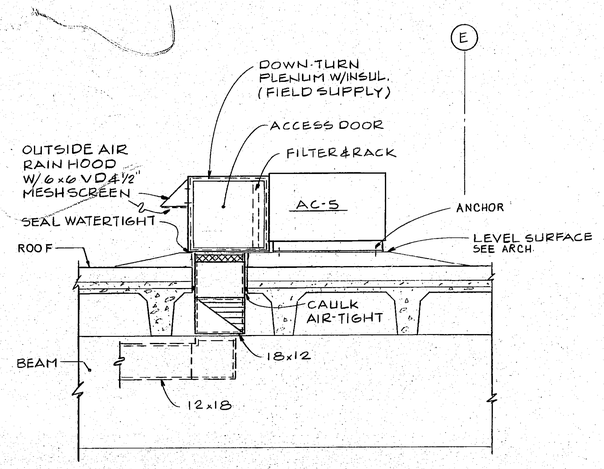


SECTION 5/M-11
SCALE: 3/32"=1'-0"



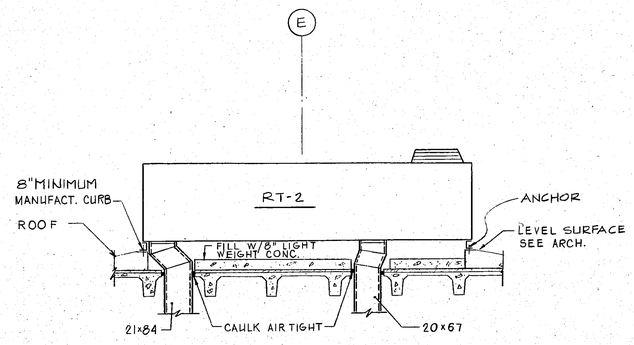
SECTION 2/M-11
SCALE: 1/2"=1'-0"

SIMILAR FOR HV-3 THRU HV-7

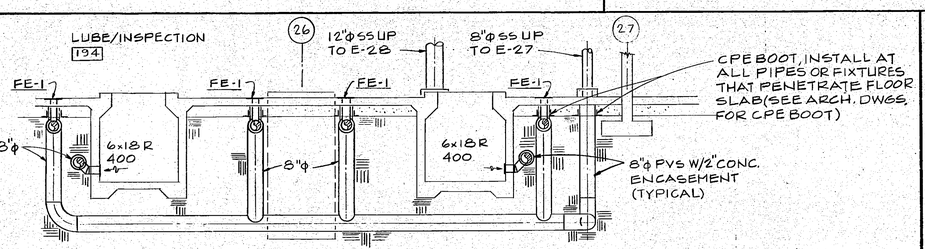


SECTION 4/M-11
SCALE: 1/2"=1'-0"

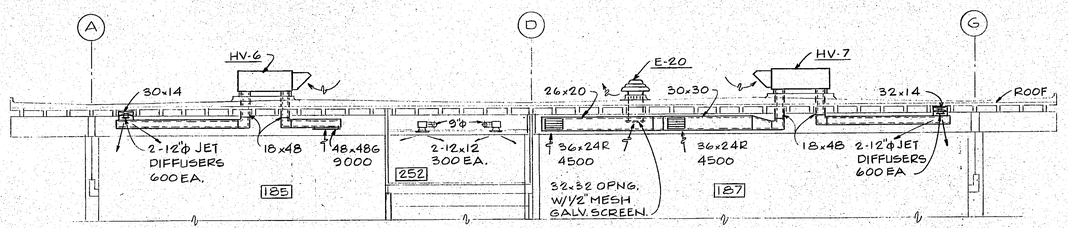
SIMILAR FOR AC-1 THRU AC-4



SECTION 6/M-11
SCALE: 1/4"=1'-0"
(SIMILAR FOR RT-1)



SECTION 3/M-11
SCALE: 1/4"=1'-0"



SECTION 7/M-11
SCALE: 3/32"=1'-0"

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1180 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

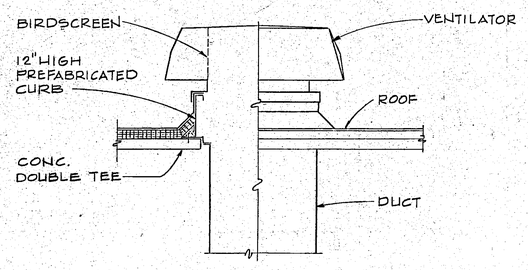
HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

DRAWN	DATE
T.D	12-16-83
CHECKED	JOB 1806

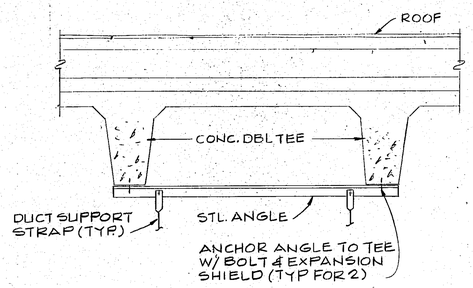
TORRANCE CITY SERVICE FACILITY
TORRANCE CALIFORNIA

SECTIONS

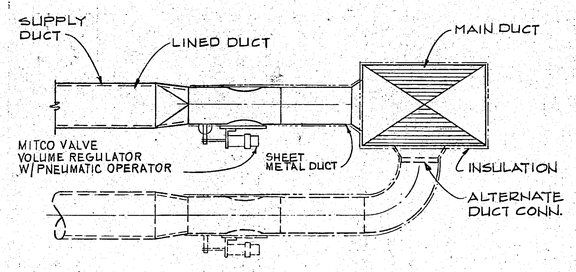
SHEET **M-11**



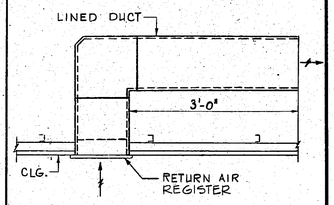
INTAKE OR RELIEF VENTILATOR (1 / M-12)



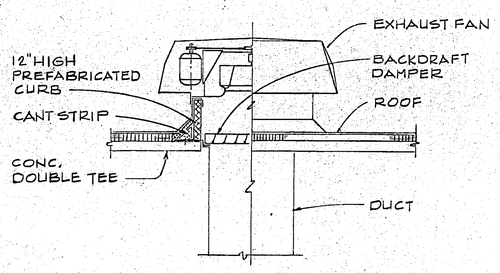
DUCT SUPPORT (6 / M-12)



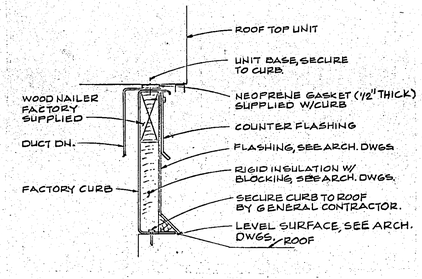
VOLUME REGULATOR (10 / M-12)



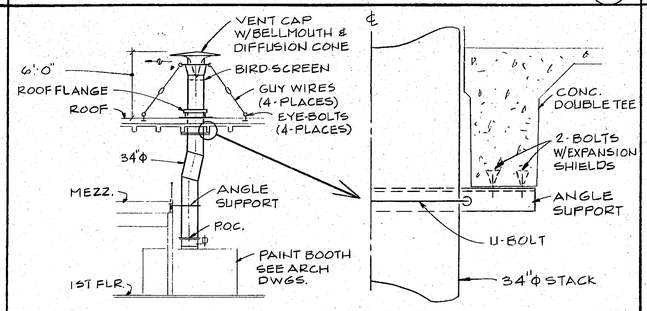
RETURN AIR BOOT (14 / M-12)



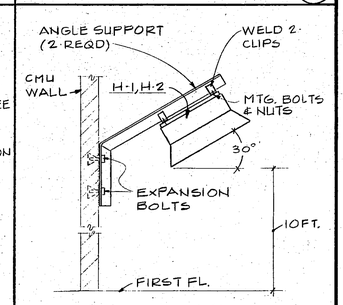
ROOF EXHAUST FAN (2 / M-12)



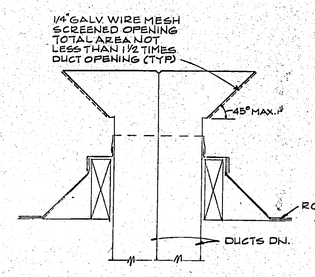
FACTORY CURB INSTALLATION (7 / M-12)



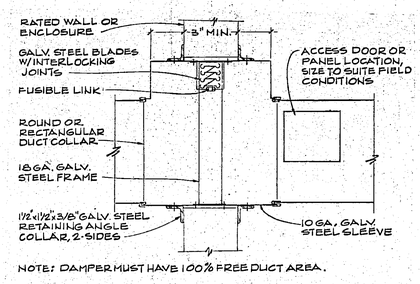
CEILING DIFFUSER CONNECTION (11 / M-12)



COMBUSTION AIR (15 / M-12)

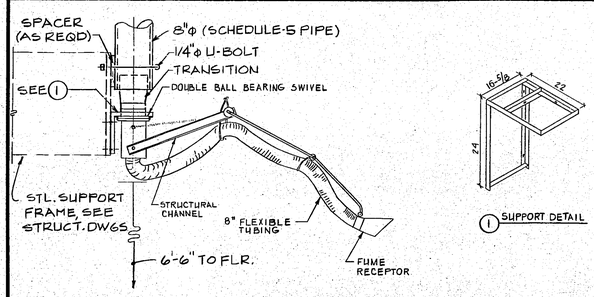


COMBUSTION AIR CAP (3 / M-12)

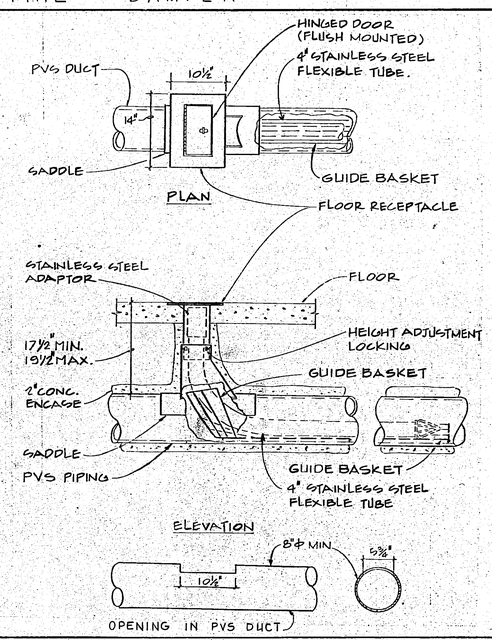


NOTE: DAMPER MUST HAVE 100% FREE DUCT AREA.

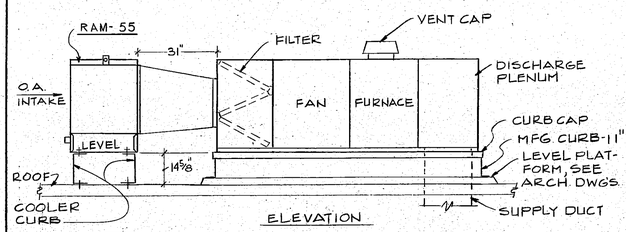
FIRE DAMPER (8 / M-12)

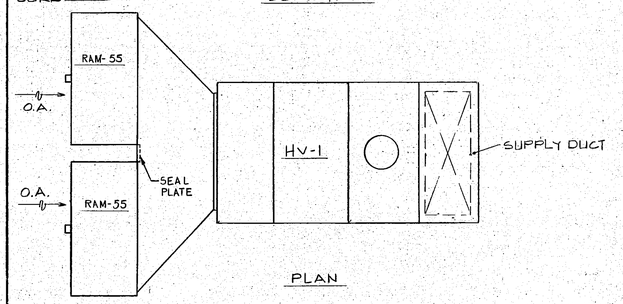


WELDING EXHAUST ARM (4 / M-12)

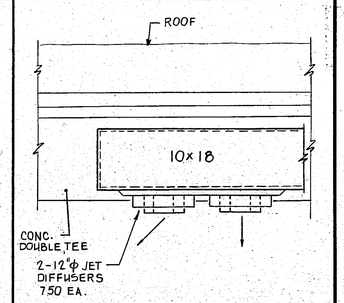


TRUCK EXHAUST AIR ADAPTOR (9 / M-12)

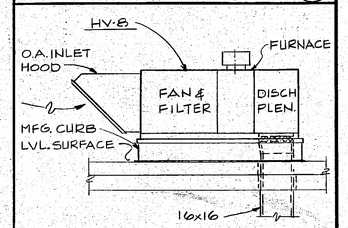




TRANSITION DUCT DUAL RAM TO HV-1 (13 / M-12)



JET DIFFUSERS (17 / M-12)



HV-8 INSTALLATION (18 / M-12)

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-2477
1180 SO. BEVERLY DR., LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

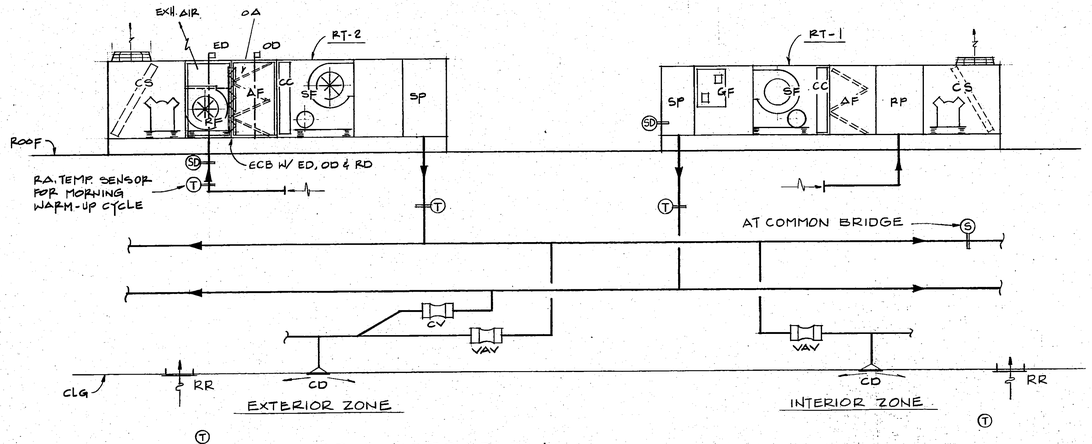
DRAWN T.D., Y.D.	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

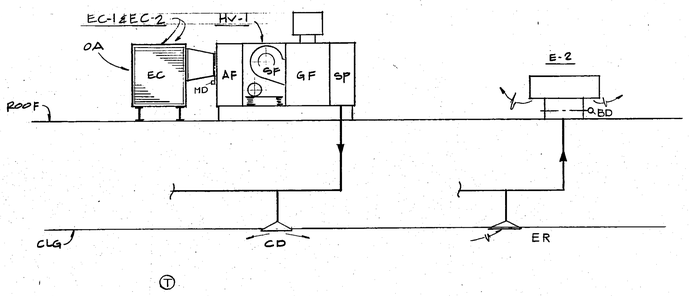
TORRANCE CALIFORNIA

DETAILS

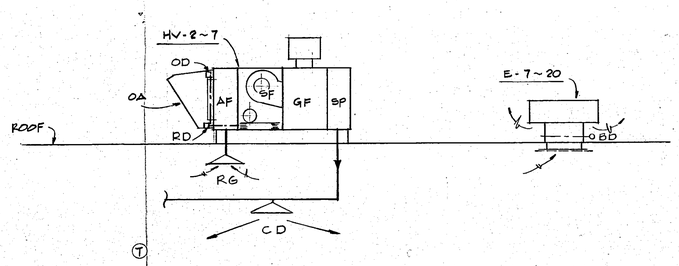
SHEET M-12



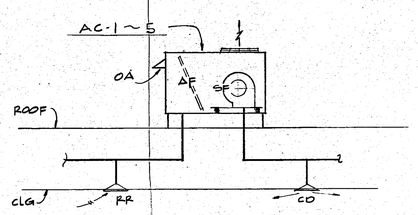
ADMINISTRATION



MEN'S LOCKER RM.



WAREHOUSE & GARAGE



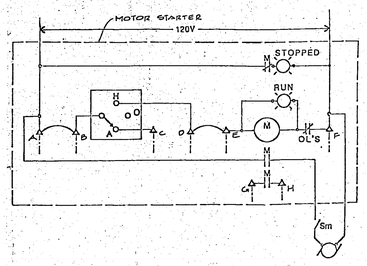
WAREHOUSE OFFICE

ABBREVIATION

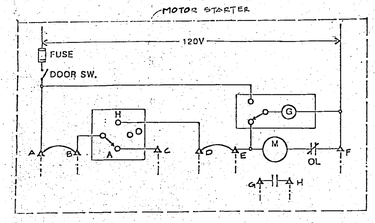
AF	AIR FILTER
CC	COOLING COIL
CD	CEILING AIR DIFFUSER
CV	CONSTANT AIR VOLUME BOX
ECB	ECONOMIC CYCLE DAMPER BOX
ED	EXHAUST AIR DAMPER
BD	BACKDRAFT DAMPER
MD	MOTORIZED DAMPER
MP	MIXING AIR PLENUM
OD	OUTSIDE AIR DAMPER
RD	RETURN AIR DAMPER
RF	RETURN AIR FAN
RR	RETURN AIR REGISTER
RP	RETURN AIR PLENUM
SF	SUPPLY AIR FAN
CS	CONDENSING UNIT
SP	SUPPLY AIR PLENUM
VAV	VARIABLE AIR VOLUME BOX
RG	RETURN AIR GRILLE
EC	EVAPORATIVE COOLER
ER	EXHAUST AIR REGISTER
GF	GAS FIRED FURNACE
OA	OUTSIDE AIR

LEGEND

- (SD) = DUCT MOUNTED SMOKE DETECTOR
- (T) = DUCT MOUNTED TEMPERATURE SENSOR
- (S) = STATIC PRESSURE SENSOR
- (T) ROOM THERMOSTAT



120 VOLT MOTOR



480 VOLT MOTORS

—— WIRING AND MOTOR STARTER UNDER ELECTRICAL SECTION.

—·— CONTROL WIRING EXCEPT WIRING FOR MANUAL SWITCHES AND LINE VOLTAGE ROOM THERMOSTATS.

EQUIPMENT	MOTOR STARTER TERMINAL		REMARKS
	A - B	C - D	
E-1	—	FROM RT-1	
E-2	—	FROM HV-1	
E-3	—	FROM HV-2	
E-4	—	FROM AC-1	
E-5	—	FROM AC-2	
E-6	—	FROM AC-2	
E-7	—	FROM HV-2 & HV-2 R.A. DAMPER END SWITCH IN SERIES	
E-8	—	"	
E-9	—	FROM HV-3 & HV-3 R.A. DAMPER END SWITCH IN SERIES	
E-10	—	"	
E-11	—	FROM HV-4 & HV-4 R.A. DAMPER END SWITCH IN SERIES	
E-12	—	"	
E-13	—	"	
E-14	—	FROM HV-5 & HV-5 R.A. DAMPER END SWITCH IN SERIES	
E-15	—	"	
E-16	—	"	
E-17	—	FROM HV-6 & HV-6 R.A. DAMPER END SWITCH IN SERIES	
E-18	—	"	
E-19	—	FROM HV-7 & HV-7 R.A. DAMPER END SWITCH IN SERIES	
E-20	—	"	
E-31		FROM HV-4	
H-1		TIME CLOCK	
H-2		"	

MANUAL OVERRIDE CONTROL

1 TIMER SWITCH (12 HOUR) LOCATED IN XEROX ROOM #218 SHALL OVERRIDE A 7 DAY TIME CLOCK CONTROL FOR RT-1 AND RT-2.

2 TIMER SWITCHES (12 HOUR) LOCATED IN ELEVATOR ROOM #115 SHALL OVERRIDE INDIVIDUAL 7 DAY TIME CLOCK FOR HV-1 THROUGH HV-3. (ONE TIMER SWITCH FOR EACH UNIT).

3 TIMER SWITCHES (12 HOUR) LOCATED IN OFFICE #246 SHALL OVERRIDE INDIVIDUAL 7 DAY TIME CLOCK FOR HV-6 THROUGH HV-8. (ONE TIMER SWITCH FOR EACH UNIT).

EXHAUST FAN (CONTINUED)

17 E-26 SHALL BE PROVIDED WITH AN AIR FLOW SWITCH IN THE DUCT FOR AN ELECTRICAL INTERLOCK TO BE WIRED UNDER DIVISION 16.

ROOFTOP UNITS

1. ROOFTOP UNITS SHALL BE STARTED AND STOPPED BY A 7 DAY TIME CLOCK, MOUNTED NEXT TO REMOTE INDICATOR PANEL IN ELECTRICAL ROOM 115.
2. STARTING ROOFTOP UNIT SHALL ENERGIZE THE PNEUMATIC CONTROL SYSTEM.
3. PROVIDE REMOTE INDICATOR PANELS.
4. EXTERIOR SYSTEM RT-1 (CV).
   A. DISCHARGE AIR THERMOSTAT SHALL CONTROL THE GAS FURNACE FOR HEATING AND CONTROL FOR THE DX COOLING COIL TO MAINTAIN A SET DISCHARGE AIR TEMPERATURE (ADJUSTABLE).
   B. DISCHARGE AIR TEMPERATURE SHALL BE RESET BY OUTSIDE AIR TEMPERATURE AS FOLLOWS:

OUTSIDE AIR	SUPPLY AIR
37° F	127°
61° F	75°
62° F - 75° F	LOCKOUT HEATING AND COOLING (RETURN AIR TEMPERATURE)
ABOVE 76° F	55°

   C. SMOKE DETECTOR AT DOWNSTREAM OF AIR FILTER SHALL STOP THE SUPPLY FAN.
5. INTERIOR SYSTEM RT-2 (VAV):
   A. STATIC PRESSURE CONTROLLER, WITH ITS SENSING ELEMENT LOCATED AT THE END OF THE SUPPLY MAIN DUCT, SHALL MODULATE THE SUPPLY AND RETURN FAN INLET VANES TO MAINTAIN A SET SUPPLY AIR PRESSURE, WHEN REQUIRED AIR QUANTITY DROPS BELOW THE 40% OF DESIGNED MAXIMUM SUPPLY AIR QUANTITY. RESET THE DISCHARGE AIR TEMPERATURE TO 60° F (ADJUSTABLE).
   B. AIR TEMPERATURE CONTROLLER WITH SENSOR AT AIR DISCHARGE DUCT SHALL CONTROL THE DX COOLING COIL TO MAINTAIN A SET DISCHARGE AIR TEMPERATURE.
   C. PROVIDE ECONOMY CYCLE CONTROL.
   D. PROVIDE MORNING WARM-UP CYCLE.
   E. ROOM THERMOSTAT SHALL OPERATE THE PNEUMATIC MOTOR ON VOLUME CONTROL BOX TO MODULATE SUPPLY AIR VOLUME TO MAINTAIN A SET SPACE TEMPERATURE.
   F. SMOKE DETECTOR AT RETURN MAIN (UPSTREAM OF FILTER) SHALL STOP THE SUPPLY FAN, START RETURN AIR FAN, OPEN OUTSIDE AIR DAMPER AND RELIEF AIR DAMPER AND CLOSE RETURN AIR DAMPER.
6. ECONOMY CYCLE CONTROL: DISCHARGE AIR THERMOSTAT OPERATES A CONTROLLER FOR ECONOMIZER DAMPER MOTORS AND COOLING COIL CONTROL IN SEQUENCE. ENTHALPY CONTROLLER WITH ITS SENSING ELEMENT IN OUTSIDE AIR OVERRIDES DISCHARGE AIR TEMPERATURE CONTROLLER AND LOCKS OUT MECHANICAL COOLING WHEN OUTSIDE AIR ENTHALPY DROPS BELOW DISCHARGE ENTHALPY.
7. REMOTE INDICATOR PANEL FOR ROOFTOP UNITS SHALL INCLUDE HEAT-AUTO-COOL SYSTEM SWITCH (RT-1), FAN-ON-OFF SWITCH, FAN OPERATION LIGHTS, MECHANICAL COOLING MALFUNCTION INDICATOR LIGHTS AND FILTER INDICATION LIGHT.
8. MORNING WARM-UP CYCLE: DURING THE MORNING WARM-UP PERIOD, THE LOGIC PANEL REMAINS DEENERGIZED, THE SYSTEM BLOWERS START AND THE ECONOMIZER REMAINS CLOSED. IF THE RETURN AIR IS BELOW RETURN AIR SET POINT, HEATING (RT-1) IS ENERGIZED. THE SYSTEM REMAINS IN THE MORNING WARM-UP MODE UNTIL THE RETURN AIR RISES ABOVE THE SET POINT OF THE RETURN AIR CONTROL. AT THIS POINT, THE SYSTEM RETURNS TO THE DAY MODE OF OPERATION. AT THE START OF THE DAY MODE, THE LOGIC PANEL IS ENERGIZED, AND THE ECONOMIZER IS ALLOWED TO MODULATE. THE SYSTEM CANNOT RE-ENTER THE MORNING WARM-UP MODE OF OPERATION UNTIL THE NEXT MORNING CYCLE.

HEATING AND VENTILATING UNITS

HV-1 (MEN'S LOCKER ROOM)

1. UNIT SHALL BE STARTED AND STOPPED BY A 7 DAY TIME CLOCK IN THE ELECTRICAL ROOM 115.
2. ROOM THERMOSTAT OPERATES PREWIRED COOLING (EVAP. COOLER), VENTILATING AND HEATING.
3. SUPPLY FAN SHALL BE ACTIVATED BY OA DAMPER END SWITCH (WIDE OPEN POSITION).

HV-2 THROUGH 8

1. EACH UNIT SHALL BE STARTED AND STOPPED BY INDIVIDUAL 7 DAY TIME CLOCK LOCATED NEXT TO THE ELECTRICAL PANEL.
2. ROOM THERMOSTAT OPERATES PREWIRED, VENTILATING AND HEATING.
3. NORMALLY OPEN OSA DAMPER WILL CLOSE TO MINIMUM POSITION AND NORMALLY CLOSE RA DAMPER WILL OPEN WHEN HEAT IS ENERGIZED.
4. WHEN RA DAMPER OPENS, ASSOCIATED EXHAUST FAN SHALL BE STOPPED.
5. OA DAMPER SHALL BE CLOSED WHEN SUPPLY FAN STOPPED.

PACKAGED AIR CONDITIONING UNITS

AC-1 THROUGH 5

1. EACH UNIT SHALL BE STARTED AND STOPPED BY INDIVIDUAL 7 DAY TIME CLOCK LOCATED NEXT TO THE ELECTRICAL PANEL.
2. AN AUTOMATIC CHANGED OVER TYPE THERMOSTAT OPERATES A PREWIRED AIR CONDITIONING UNIT.

HEAT PUMP UNIT

HP-1

1. UNIT SHALL BE STARTED AND STOPPED BY INDIVIDUAL 7 DAY TIME CLOCK LOCATED NEXT TO THE ELECTRICAL PANEL.
2. AN AUTOMATIC CHANGEOVER TYPE THERMOSTAT OPERATES A PREWIRED HEAT PUMP UNIT.

EXHAUST FANS

1. E-1 SHALL BE INTERLOCKED WITH ROOFTOP UNIT RT-1.
2. E-2 SHALL BE INTERLOCKED WITH HV-1.
3. E-3 SHALL BE INTERLOCKED WITH HV-2.
4. E-4 SHALL BE INTERLOCKED WITH AC-1.
5. E-5 AND E-6 SHALL BE INTERLOCKED WITH AC-2.
6. E-7 AND E-8 SHALL BE INTERLOCKED WITH HV-2 AND INTERLOCKED WITH A HV-2 RETURN DAMPER END SWITCH.
7. E-9 AND E-10 SHALL BE INTERLOCKED WITH HV-3 AND INTERLOCKED WITH A HV-3 RETURN DAMPER END SWITCH.
8. E-11, E-12 AND E-13 SHALL BE INTERLOCKED WITH HV-4 AND INTERLOCKED WITH A HV-4 RETURN DAMPER END SWITCH.
9. E-14, E-15 AND E-16 SHALL BE INTERLOCKED WITH HV-5 AND INTERLOCKED WITH A HV-5 RETURN DAMPER END SWITCH.
10. E-17 AND E-18 SHALL BE INTERLOCKED WITH HV-6 AND INTERLOCKED WITH A HV-6 RETURN DAMPER END SWITCH.
11. E-19 AND E-20 SHALL BE INTERLOCKED WITH HV-7 AND INTERLOCKED WITH A HV-7 RETURN DAMPER END SWITCH.
12. E-21 THROUGH E-29 SHALL BE OPERATED BY AN INDIVIDUAL MANUAL SWITCH UNDER ELECT. SECTION.
13. E-30 SHALL BE OPERATED BY A LIGHT SWITCH UNDER ELECT. SECTION.
14. E-31 SHALL BE INTERLOCKED WITH HV-4.
15. E-32 SHALL BE OPERATED BY A LOCAL MANUAL SWITCH (24 HOUR OPERATION) UNDER ELECT. SECTION.
16. S-1 SHALL BE OPERATED BY A LOCAL MANUAL SWITCH UNDER ELECT. SECTION.

INFRARED HEATER: H-1 AND H-2 SHALL BE CONTROLLED BY A LOCAL MANUAL SWITCH WITH TIME CLOCK.

REGISTERED PROFESSIONAL ENGINEER
TATSUO S. HAYAKAWA
No. M 10825
MECHANICAL
STATE OF CALIFORNIA

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1180 SO. BEVERLY DR., LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3375 Long Beach Boulevard, Long Beach, California

DRAWN	DATE
T.D., Y.D	12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

CONTROL DIAGRAMS & SEQUENCE OF CONTROL

SHEET M-13

ROUGH - IN SCHEDULE

SYMBOL	DESCRIPTION	SERVICES	REMARKS
8	SERVICE REELS	1/2" C, 1/2" MO, 1/2" ATF, 1/2" GO, 1/2" CL, 1/2" HO, & TWO 1/2" A REELS	IN MAINTENANCE FAC.
9	" "	1/2" A	" " "
10	" "	1/2" A	" " "
12	" "	1/2" A, 1/2" CL	" " "
13	" "	3/4" S.	" " "
20	" "	1/2" ATF, 1/2" CW, 1/2" A, 1/2" MO, & 1/2" HO	IN FUEL STATION
47	" "	1/2" A.	
18	PUMPS	ATF, S, GO, MO, C, HO	
19	PUMP	CL	MOUNTED ON BARREL
21	STEAM CLEANER/HIGH PRESS. WASH.	2" G, 10" & FLUE VENT, 1" CW	
22	AIR COMPRESSOR		SEE DETAIL SHT. P-11
22A	AIR COMPRESSOR TANK		"
22B	AIR DRYER W/AFTER COOLER		"
23	DYNAMOMETER	1 1/2" CW, 1/2" A, & DR. TO F.D.	
23A	DYNAMOMETER WATER TANK	2" CW MAKE-UP	
27	SOLVENT STORAGE TANK		550 GAL
28	A.T.F. " "		550 GAL
29	GEAR OIL " "		550 GAL
30	MOTOR OIL " "		1000 GAL
31	COOLANT " "		550 GAL
32	WASTE OIL " "		2000 GAL
33	HYDRAULIC OIL " "		1000 GAL
34	DIESEL FUEL " " (2)		20,000 GAL EA.
35	UNLEADED GASOLINE STOR. TANK		20,000 GAL
36	REGULAR GASOLINE " "		20,000 GAL.
36 39	AIR COMPRESSOR		
38A 39A	AIR COMPRESSOR TANK		
38B 39B	AIR DRYER W/AFTER COOLER		
40	PUMPS	ATF, MO, HO	
41	A.T.F. STORAGE TANK		280 GAL
42	MOTOR OIL " "		550 GAL
43	HYDRAULIC OIL " "		280 GAL

PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	CONNECTION SIZE W	V	CW	HW	REMARKS
WC-1	WATER CLOSET	4"	2"	1"	—	FLR. MTD. FLUSHOMETER
WC-2	WATER CLOSET	4"	2"	1"	—	HANDICAP FLR. MTD. FLUSHOMETER
SH-1	SHOWER	2"	1 1/2"	1/2"	1/2"	
U-1	URINAL	3"	2"	1"	—	
L-1	LAVATORY	2"	1 1/2"	1/2"	1/2"	WALL HUNG
L-2	LAVATORY	2"	1 1/2"	1/2"	1/2"	COUNTER TYPE
S-1	SINK					W/ GARBAGE DISPOSAL UNIT
S-2	SINK	2"	1 1/2"	1/2"	1/2"	
S-3	SINK	2"	1 1/2"	1/2"	—	LAB SINK - COUNTER TYPE
S-4	SINK	2"	1 1/2"	1/2"	1/2"	DBL. COMPARTMENT
ES-1	EMERGENCY SHOWER	—	—	1 1/4"	—	
SS-1	SERVICE SINK	3"	2"	1/2"	1/2"	
EWC-1	ELECT. WATER COOLER	2"	1 1/2"	1/2"	—	HANDICAP
EWC-2	ELECT. WATER COOLER	2"	1 1/2"	1/2"	—	SEMI-RECESSED
HB-1	HOSE BIBB	—	—	3/4"	—	W/ VACUUM BREAKER
HB-2	HOSE BIBB	—	—	3/4"	—	
WF-1	WASH FOUNTAIN	2"	1 1/2"	1"	1"	SEMI-CIRCLE
WF-2	WASH FOUNTAIN	2"	1 1/2"	1"	1"	CIRCULAR
FD-1	FLOOR DRAIN (W/T.P. CONN.)	—	—	—	—	SEE PLANS FOR SIZES
FD-2	FLOOR DRAIN (GARAGE AREA)	—	—	—	—	" " " "
FD-3	FLOOR DRAIN (ACID RESIST.)	—	—	—	—	" " " "
AD-1	AREA DRAIN	—	—	—	—	" " " "
RD-1	ROOF DRAIN	—	—	—	—	" " " "
ORD-1	OVERFLOW ROOF DRAIN	—	—	—	—	" " " "
TD-1	TRENCH DRAIN	4"	2"	—	—	
CDR-1	CONDENSATE DRAIN RECEIVER	3"	2"			ON ROOF
FS-1	FLOOR SINK	2"	1 1/2"			
SS-2	SERVICE SINK	3"	2"	3/4"	3/4"	

PLUMBING LEGEND

SYMBOL	ABBREV	DESCRIPTION
	S.P. OR W.P.	SOIL OR WASTE PIPE ABOVE GRADE
	SP OR WP	" " " " BELOW "
S.D.	S.D.	STORM DRAIN ABOVE GRADE
S.D.	S.D.	" " BELOW "
	C.W.	COLD WATER
	H.W.	HOT WATER
	H.W.R	HOT WATER RETURN
D.	D.	INDIRECT DRAIN
F.	F.	FIRE SPRINKLER LINE
A	A.	COMPRESSED AIR
G.O.	G.O.	GEAR OIL
C.L.	C.L.	CHASSIS LUBE
M.O.	M.O.	MOTOR OIL
A.T.F.	A.T.F.	AUTOMATIC TRANSMISSION FLUID
W.O.	W.O.	WASTE OIL
D.F.	D.F.	DIESEL FUEL
	V.	VENT PIPE
G	G	FUEL GAS (NATURAL)
C	C	COOLANT
S	S	SOLVENT
H.O	H.O.	HYDRAULIC OIL
	G.V. OR S.O.V.	GATE VALVE OR "SHUT-OFF VALVE"
	C.V.	CHECK VALVE
	B.C.	BALANCING COCK
	OS&Y. G.V.	OUTSIDE SCREW & YOKE GATE VALVE
	P.G.	PRESSURE GAUGE W/ PLUG COCK.
	TH.	THERMOMETER.
	P.C.	PLUG COCK
	R.V.	RELIEF VALVE
	U.	UNION
	FCO/COTG	FLOOR CLEANOUT / CLEANOUT TO GRADE
	CO/WCO	CLEANOUT / WALL CLEANOUT
	W.H.A.	WATER HAMMER ARRESTOR
	P.O.C	POINT OF CONNECTION
	T.P.	TRAP PRIMER
	FLR	FLOOR
	ABV	ABOVE
	BEL	BELOW
	IE	INVERT ELEVATION
	A.P.	ACCESS PANEL
	W/	WITH
	N.C.	NORMALLY CLOSED
	FDC	FIRE DEPARTMENT CONN.
	F.H.	FIRE HYDRANT
	M.H.	MANHOLE
	FIN FLR.	FINISH FLOOR
	ELEV/EL	ELEVATION
	VTR	VENT THRU ROOF
	F.S	FLOW SWITCH
R	R	REGULAR GASOLINE
UL	UL	UNLEADED GASOLINE
VR	VR	VAPOR RECOVERY
	F.U.	FIXTURE UNIT
	HB	HOSE BIBB
	R.P.B.P.	REDUCED PRESSURE BACKFLOW PREVENTOR
F.O.S.	F.O.S.	FUEL OIL SUPPLY
F.O.R	F.O.R	FUEL OIL RETURN
	O.D	OIL DRAIN

WATER HEATER SCHEDULE

SYMBOL	MAKE & MODEL NO.	TYPE	BTUH INPUT	REHEAT CAPACITY	STORAGE	REMARKS
WH-1	"A.O. SMITH" #BC-300-TJV350	GAS FIRED	300,000	300 GPH @ 100° RISE	350 GAL.	W/ AQUA-HOT PKG. #78503 TANK TEMP CONTROL #99058 & CIRCULATING PUMP #89297 (1/12 H.P., 115V, 1Φ)
WH-2	"A.O. SMITH" #ELJ-15	ELECTRIC	—	20 GPH @ 100° RISE	15 GAL.	1500 WATT ELEMENT, 120 V, 1Φ
WH-3	"A.O. SMITH" #DSE-30	ELECTRIC	—		30 GAL.	(1) IMMERSION, (3) ELEMENTS - 12,000 WATTS TOTAL 480 V, 3Φ
WH-4	A.O. SMITH" #BTP-125-199	GAS FIRED	199,000	191 GPH @ 100° RISE	129 GAL.	

PUMP SCHEDULE

SYMBOL	MAKE & MODEL NO.	SERVICE	GPM	TDH	MOTOR HP	RPM	V	PH	Hz	REMARKS
SP-1	"WEIL" SERIES 1300	SUMP PUMP FOR SERVICE TUNNEL DRAINAGE - RM. 194	30	15'	1/4	1150	115	1	60	
DWP-1	"AURORA" SERIES 320	DYNAMOMETER WATER PUMP - GARAGE	25	115'	2	3500	480	3	60	3/4" x 1" x 7A END SUCTION, SINGLE STAGE

REGISTERED PROFESSIONAL ENGINEER
HUGO G. HAYAKAWA
No. M 10826
MECHANICAL
STATE OF CALIFORNIA

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1150 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3375 Long Beach Boulevard, Long Beach, California

DRAWN	DATE
CH	12-16-83
CHECKED	JOB
	1806

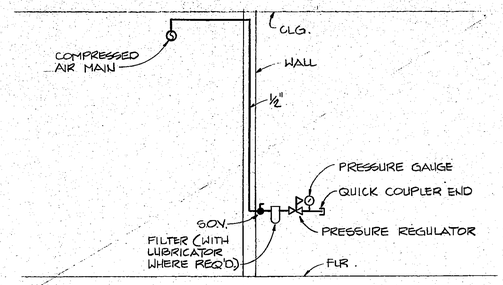
TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

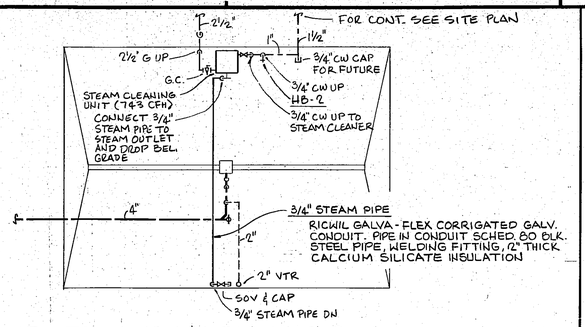
PLUMBING SCHEDULES AND LEGEND

SHEET

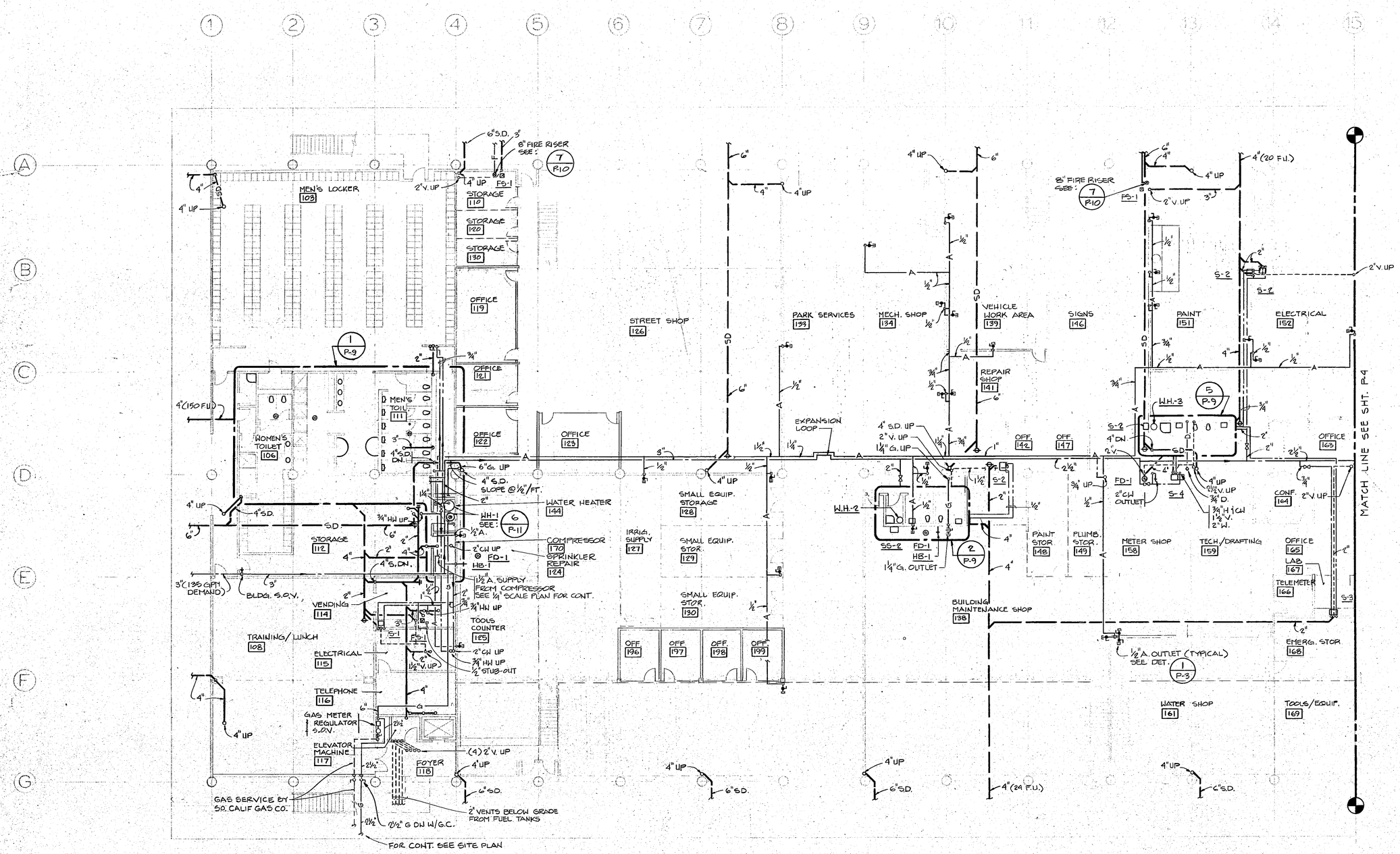
P-1



1 / P-3 TYPICAL AIR OUTLET DETAIL



2 / P-3 TRUCK WASH No 2
SCALE: 3/32" = 1'-0"



FIRST FLOOR PLAN LEFT HALF
SCALE: 3/32" = 1'-0"

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1180 SO. BEVERLY DR., LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3375 Long Beach Boulevard, Long Beach, California

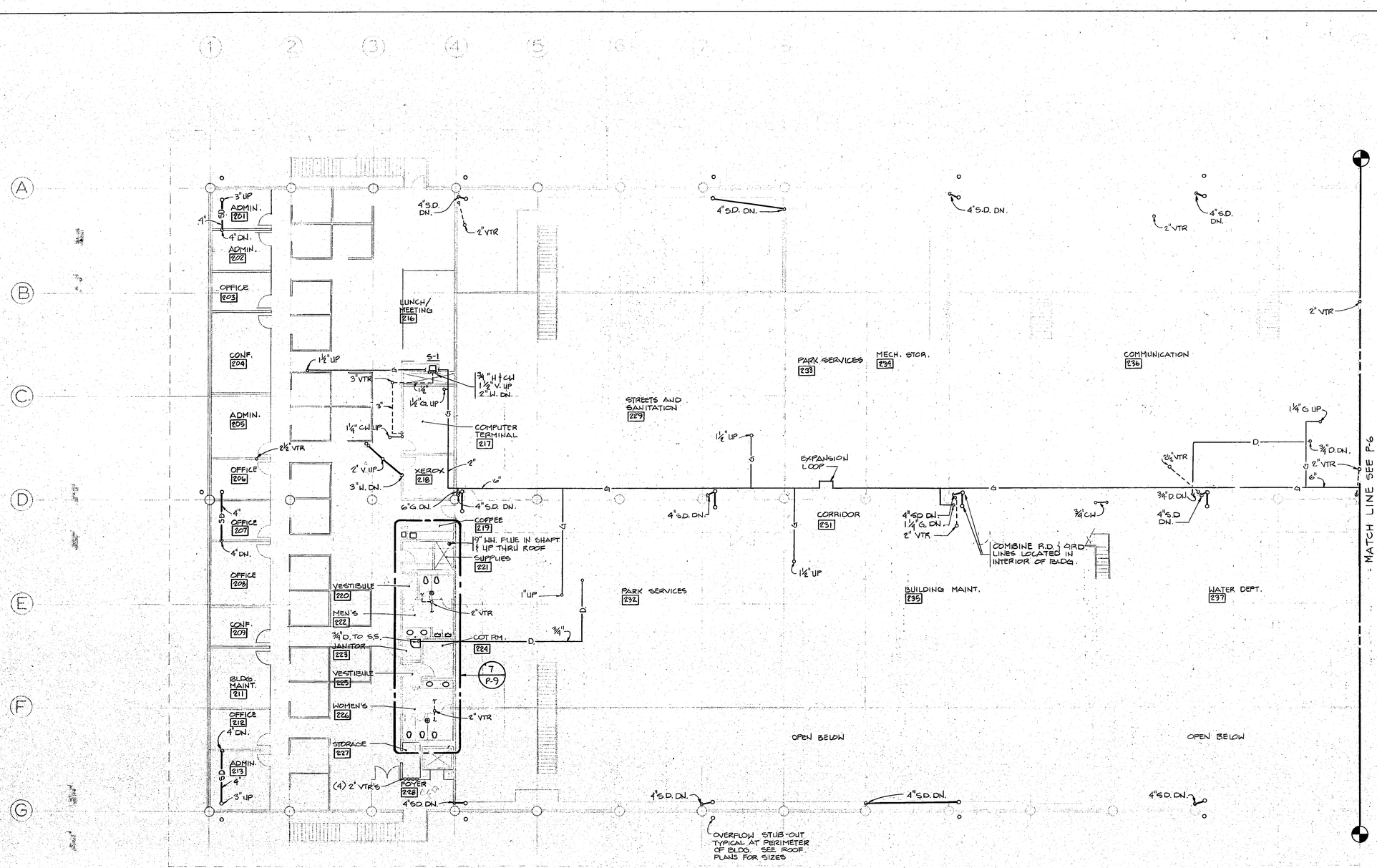
DRAWN J.O.	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

FIRST FLOOR PLAN LEFT HALF - PLUMBING

SHEET P-3



SECOND FLOOR PLAN LEFT HALF

SCALE: 3/32" = 1'-0"

HAYAKAWA ASSOCIATES, CONSULTING ENGINEERS
PHONE (213) 879-4477
1160 SO. BEVERLY DR., LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3375 Long Beach Boulevard, Long Beach, California

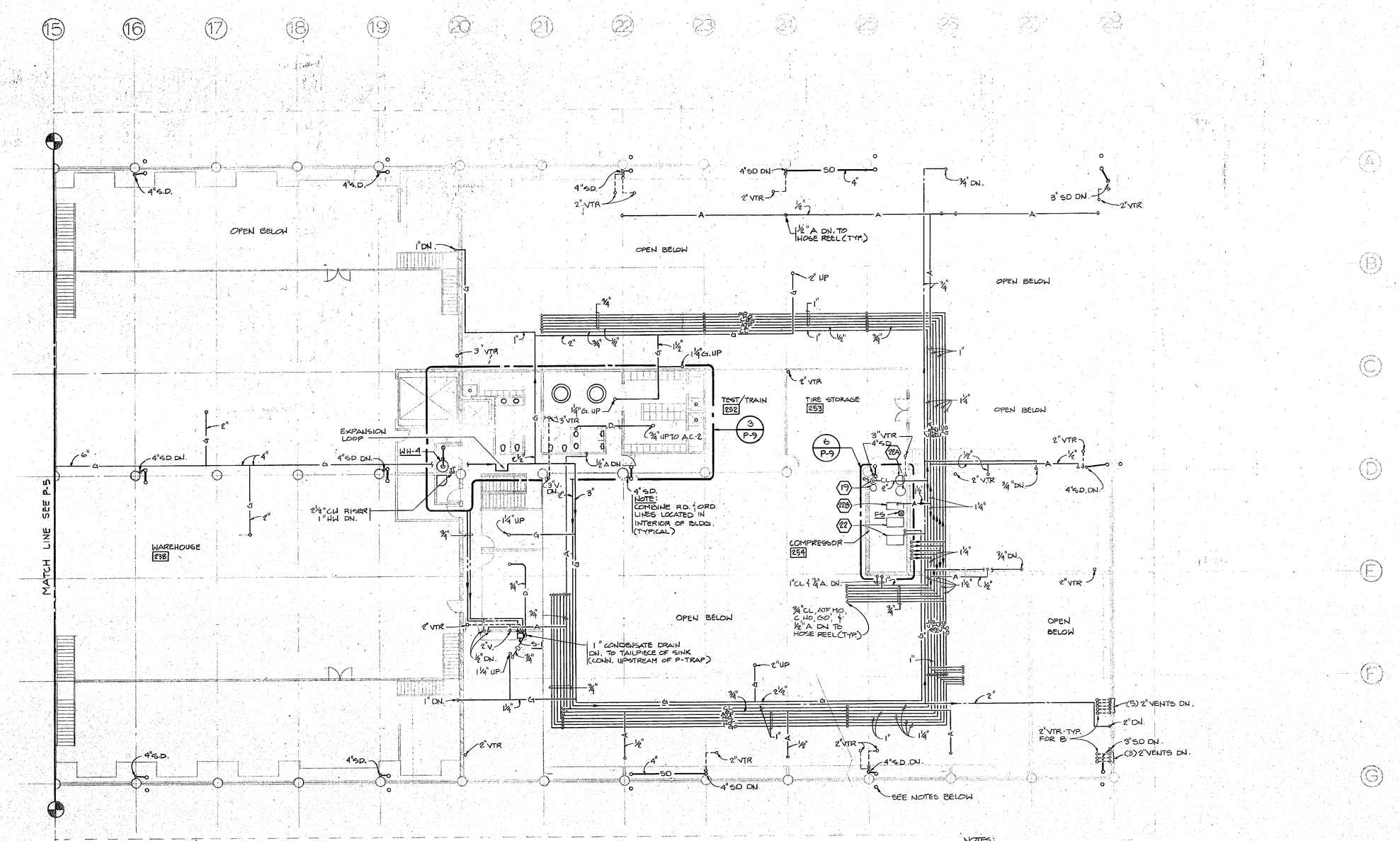
DRAWN J.O.	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

SECOND FLOOR PLAN LEFT HALF PLUMBING

SHEET P-5



NOTES:

1. OVERFLOW STUB-OUT TYPICAL AT PERIMETER OF BLDG. SEE ARCH. PLANS FOR DETAIL
2. PLUMBER TO MEET WITH ARCHITECT BEFORE RUNNING EXPOSED LINES
3. SEE PLUMBING ROOF PLANS FOR O.R.D. PIPE SIZES

SECOND FLOOR PLAN RIGHT HALF

SCALE: 1/32" = 1'-0"

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1180 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3375 Long Beach Boulevard, Long Beach, California

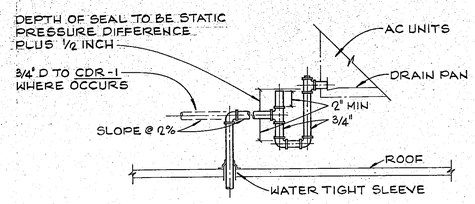
DRAWN J.O.	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

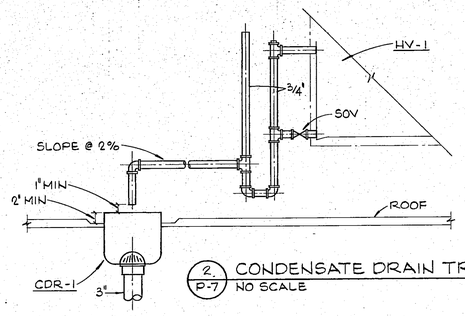
TORRANCE
CALIFORNIA

SECOND FLOOR PLAN
RIGHT HALF
PLUMBING

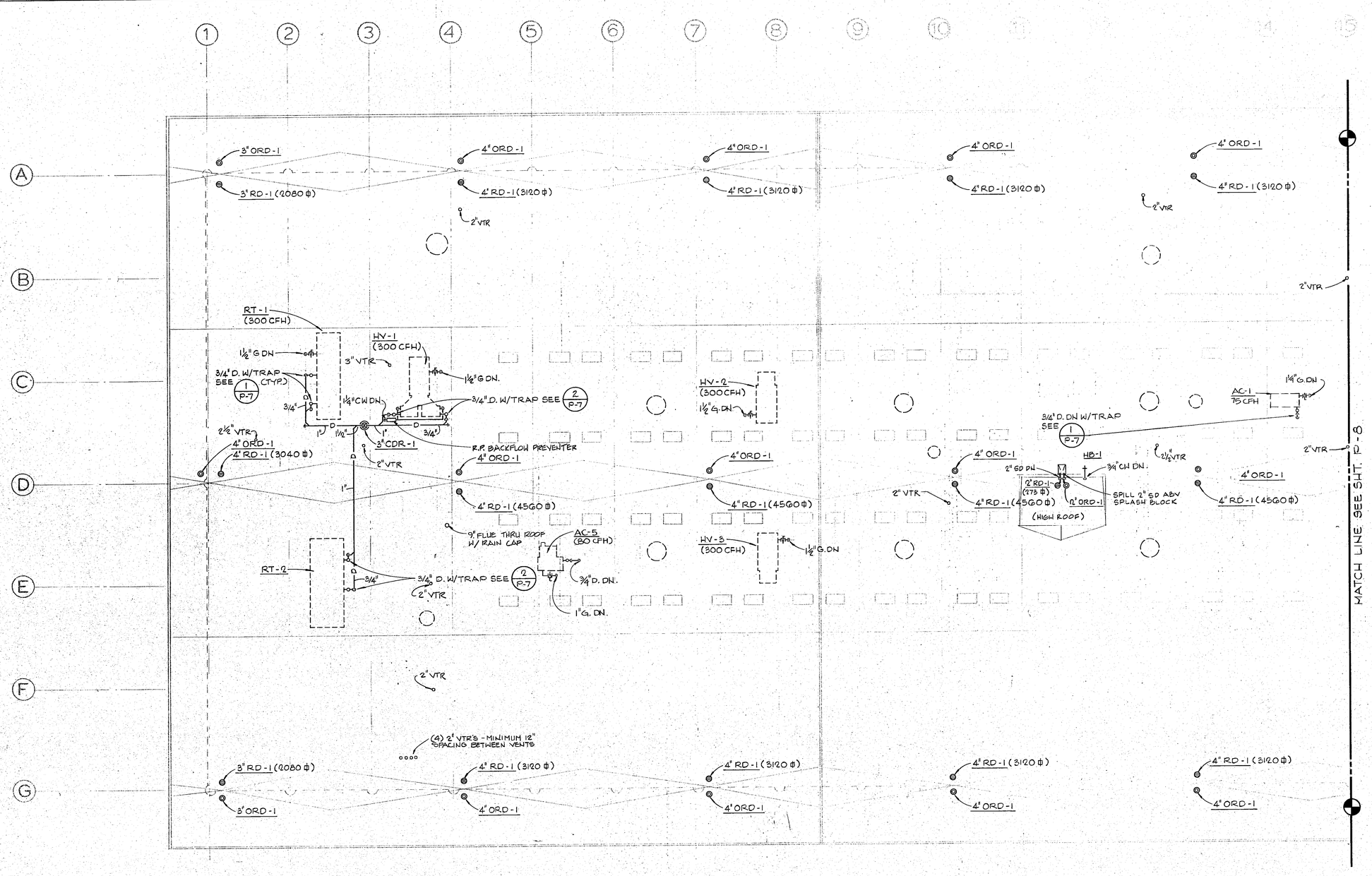
SHEET P-6



1 / P-7 CONDENSATE DRAIN TRAP
NO SCALE



2 / P-7 CONDENSATE DRAIN TRAP
NO SCALE



ROOF PLAN LEFT HALF
SCALE: 3/32" = 1'-0"

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1160 SO BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
375 Long Beach Boulevard, Long Beach, California

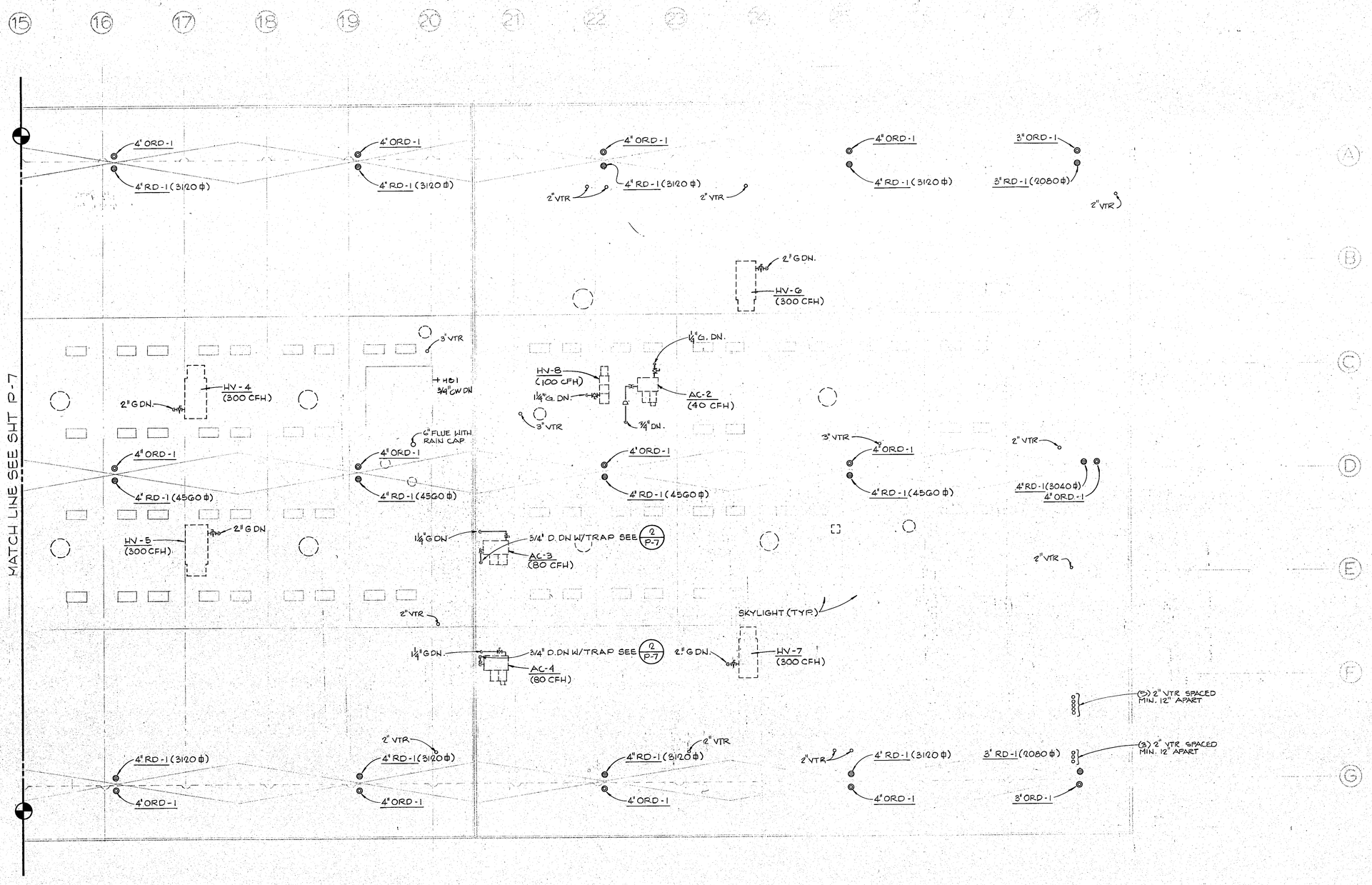
DRAWN C.H.	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

ROOF PLAN
LEFT HALF
PLUMBING

SHEET P-7



ROOF PLAN RIGHT HALF

SCALE: 3/32" = 1'-0"

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 873-4477
1180 SO. BEVERLY DR. LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3373 Long Beach Boulevard, Long Beach, California

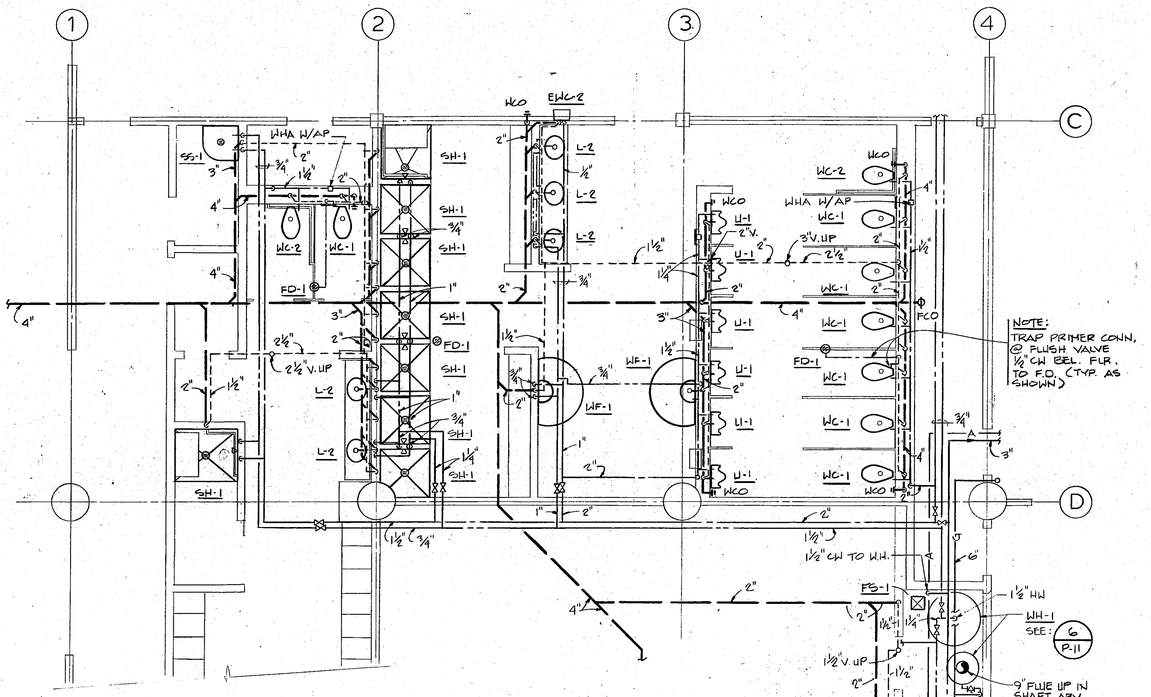
DRAWN CH	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

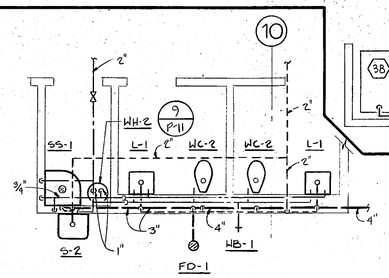
TORRANCE
CALIFORNIA

ROOF PLAN
RIGHT HALF-
PLUMBING

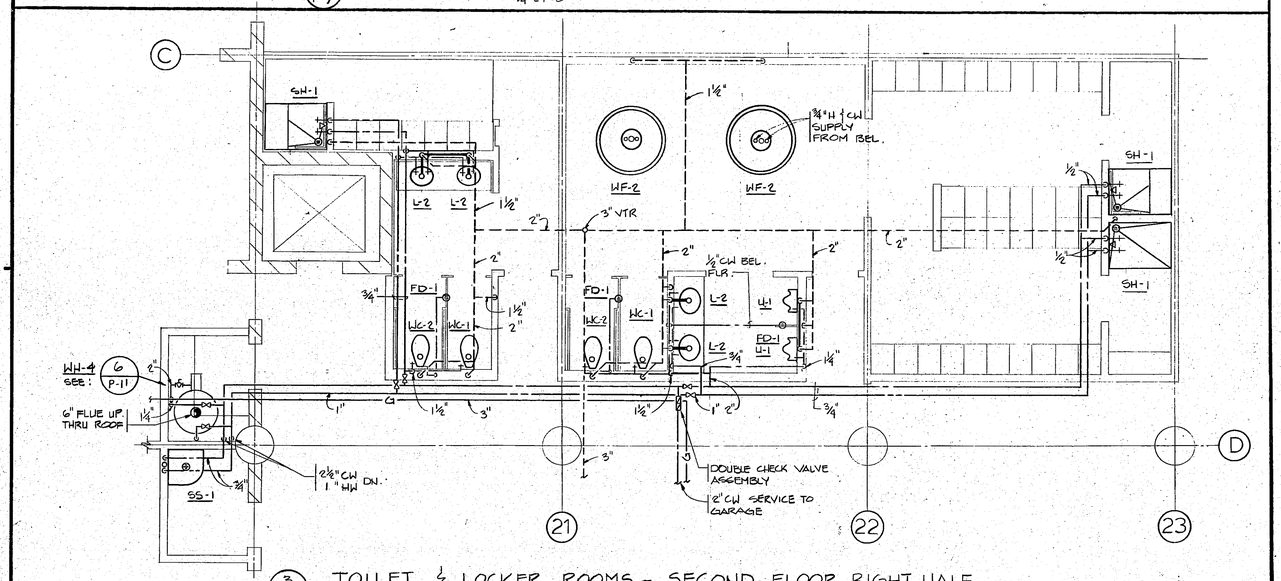
SHEET P-8



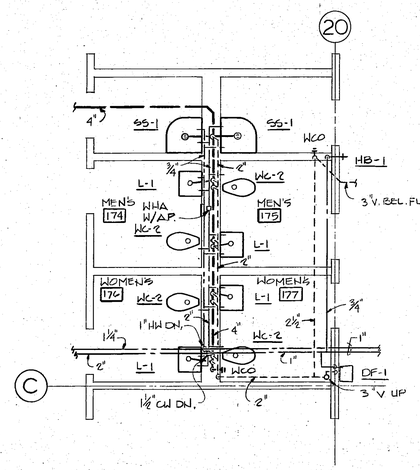
1 P-9 TOILET & LOCKER ROOMS - FIRST FLOOR LEFT HALF
¼" = 1'-0"



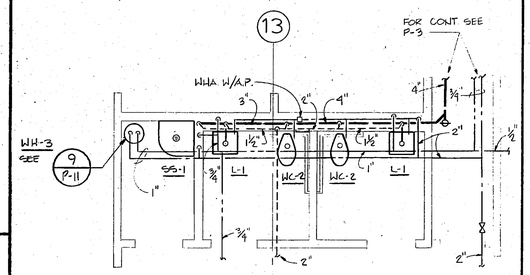
2 P-9 TOILET & JANITOR ROOMS - FIRST FLOOR LEFT HALF
¼" = 1'-0"



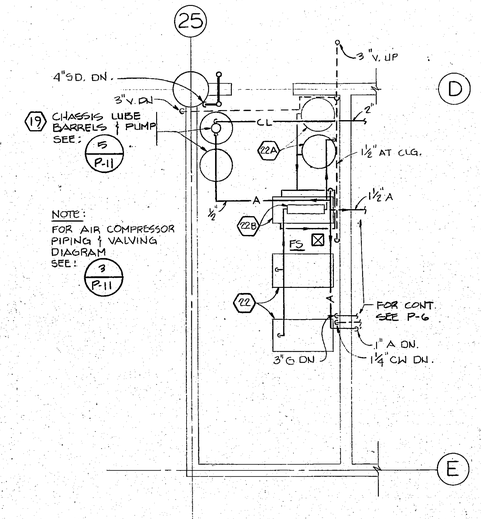
3 P-9 TOILET & LOCKER ROOMS - SECOND FLOOR RIGHT HALF
¼" = 1'-0"



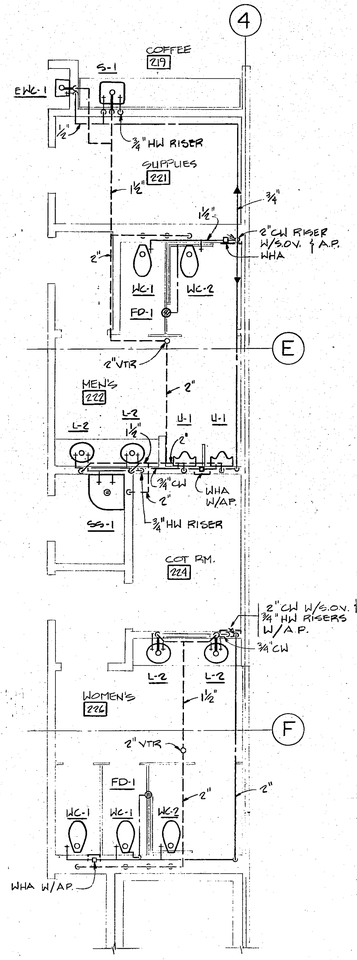
4 P-9 TOILET & JANITOR ROOMS - FIRST FLOOR RIGHT HALF
¼" = 1'-0"



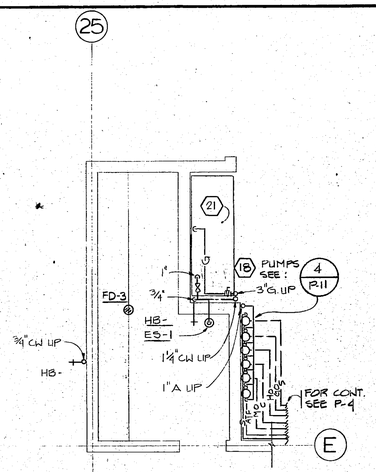
5 P-9 TOILET & JANITOR ROOMS - FIRST FLOOR LEFT HALF
¼" = 1'-0"



6 P-9 COMPRESSOR ROOM
¼" = 1'-0"



7 P-9 TOILET & JANITOR ROOMS - SECOND FLOOR LEFT HALF
¼" = 1'-0"



8 P-9 BATTERY ROOM
¼" = 1'-0"

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1180 SO. BEVERLY DR., LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3375 Long Beach Boulevard, Long Beach, California

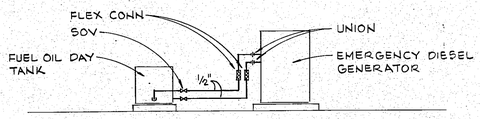
DRAWN J.O.	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

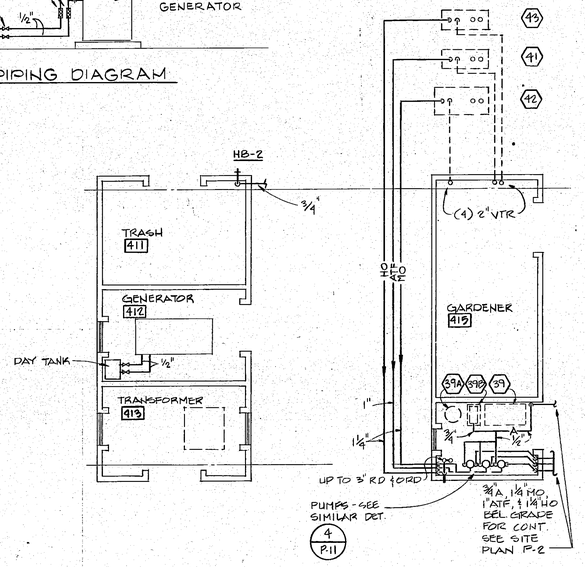
TORRANCE CALIFORNIA

PARTIAL FLOOR PLANS

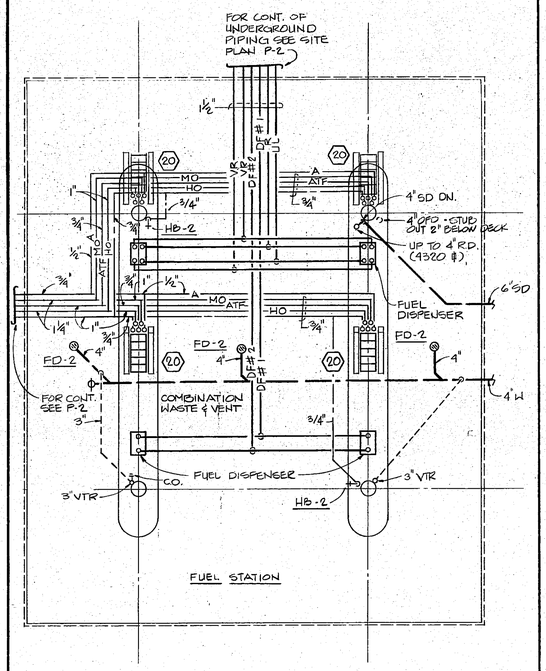
SHEET P-9



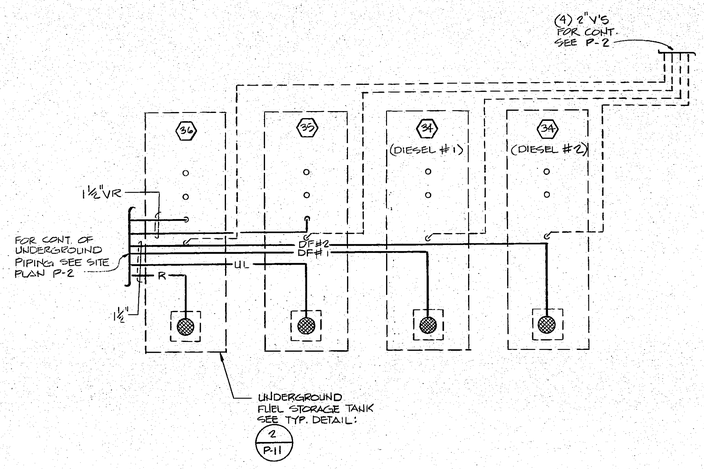
FUEL OIL PIPING DIAGRAM
NO SCALE



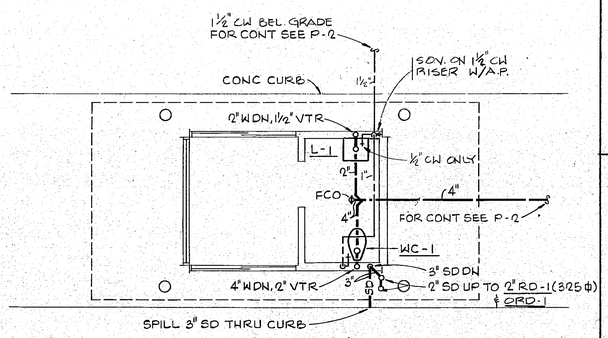
1 P-10 GENERATOR/TRASH AND COMPRESSOR BLDG.
SCALE: 1/8" = 1'-0"



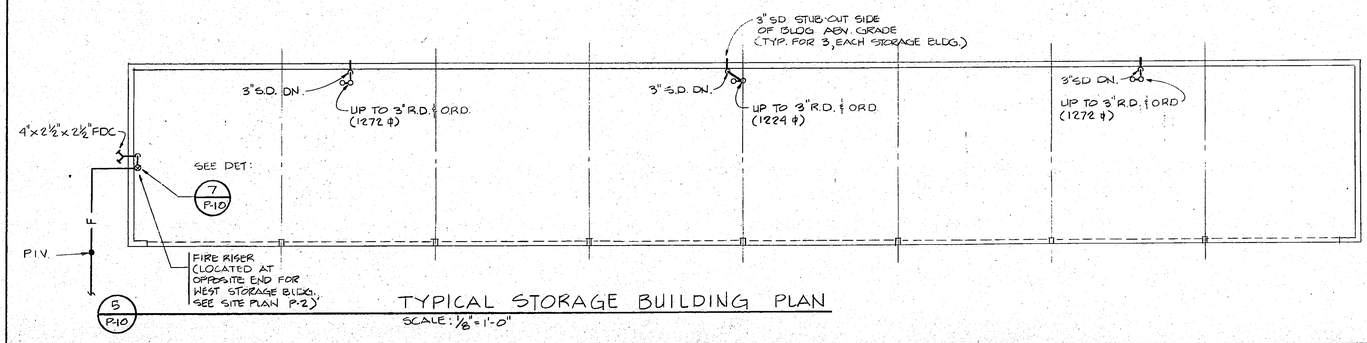
2 P-10 FUEL STATION PLAN
SCALE: 1/8" = 1'-0"



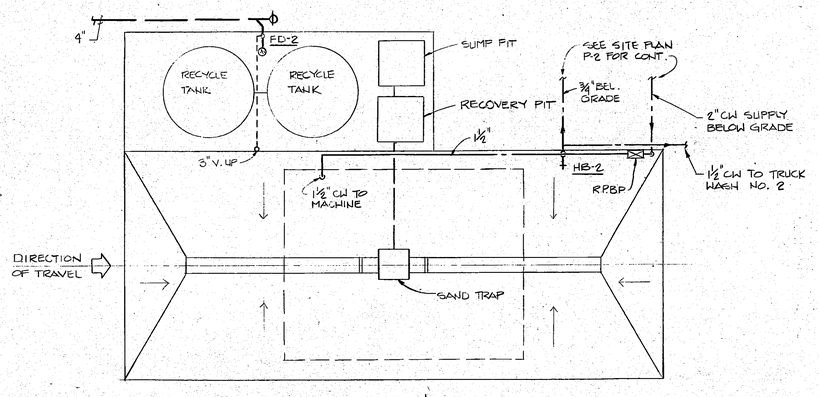
3 P-10 UNDERGROUND FUEL TANKS PLAN
SCALE: 1/8" = 1'-0"



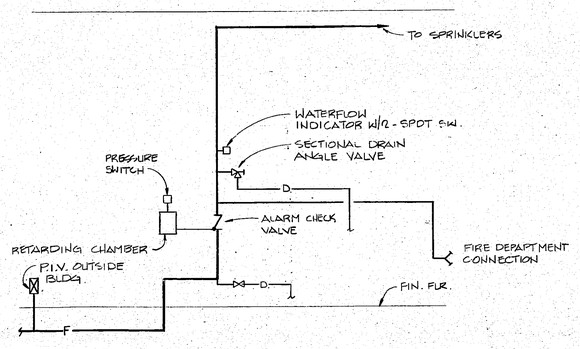
4 P-10 CONTROL BUILDING PLAN
SCALE: 1/4" = 1'-0"



5 P-10 TYPICAL STORAGE BUILDING PLAN
SCALE: 1/8" = 1'-0"



6 P-10 TRUCK WASH PLAN #1
SCALE: 1/4" = 1'-0"



7 P-10 AUTO. FIRE SPRINKLER RISER
NO SCALE

HAYAKAWA ASSOCIATES
CONSULTING ENGINEERS
PHONE (213) 879-4477
1180 SO. BEVERLY DR., LOS ANGELES, CALIF. 90035

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

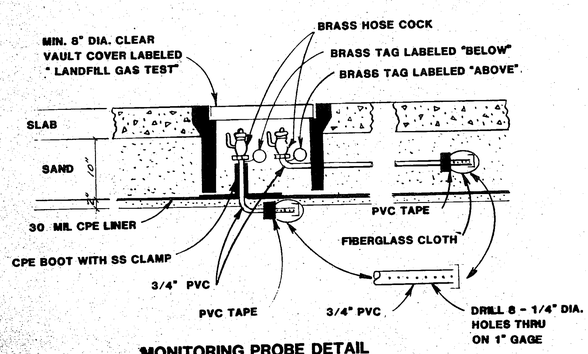
DRAWN JO & CH	DATE 12-16-83
CHECKED	JOB 1806

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

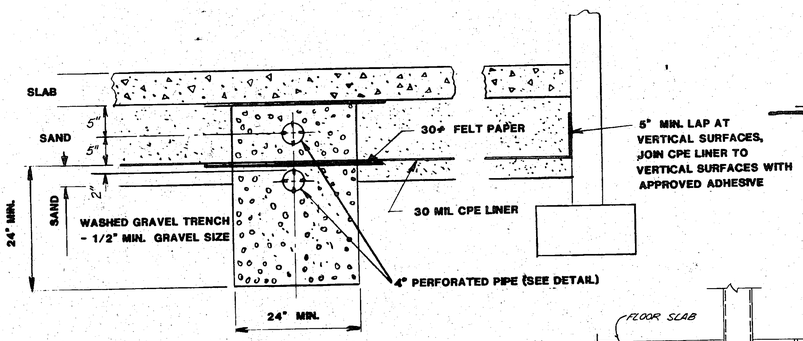
PARTIAL PLANS AND DETAILS - PLUMBING

SHEET P-10



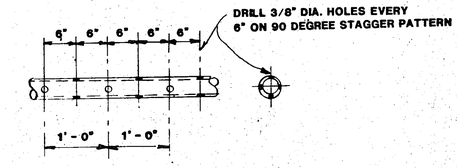
MONITORING PROBE DETAIL

1" : 1' - 0"



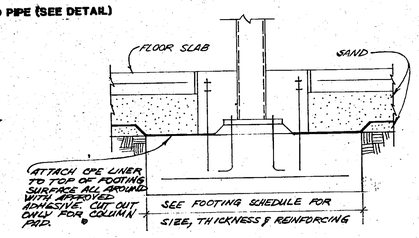
TYPICAL DETAIL AT PERFORATED PIPE

1" : 1' - 0"

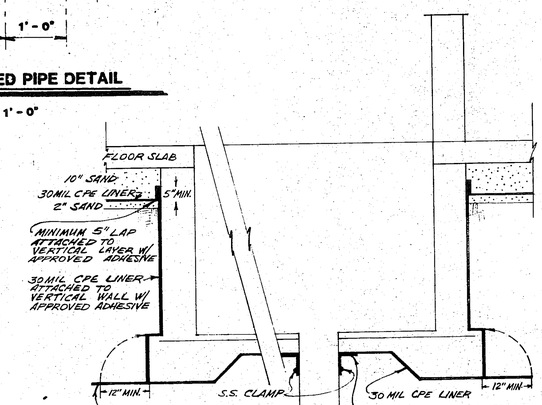


PERFORATED PIPE DETAIL

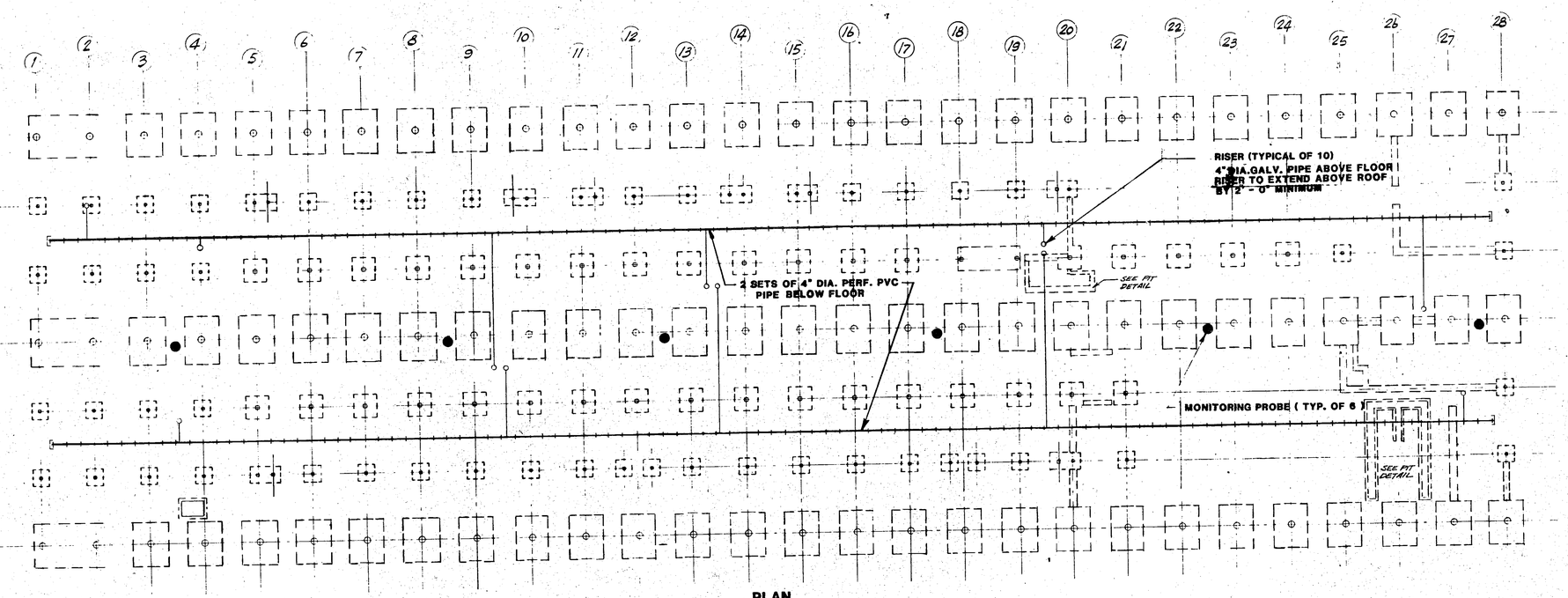
1" : 1' - 0"



TYPICAL DETAIL FOR LINER ATTACHMENT AT FOOTINGS
SCALE: 1"=1'-0"

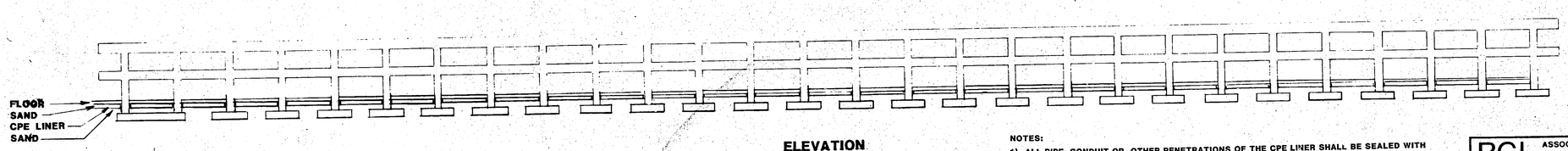


TYPICAL PIT DETAIL
NO SCALE



PLAN

LFG CONTROL SYSTEM FOR THE CITY SERVICE FACILITY



ELEVATION

NOTES:

1) ALL PIPE, CONDUIT OR OTHER PENETRATIONS OF THE CPE LINER SHALL BE SEALED WITH A CPE BOOT AS DETAILED. DO NOT DRIVE STAKES OR OTHER VERTICAL SUPPORTS FOR REINFORCING BAR, ETC. USE SUPPORTS WHICH REST AT THE SURFACE OF THE SAND LINER.
2) SEE ARCHITECT DRAWINGS FOR EXACT LOCATION OF MONITORING PROBES AND RISERS.
3) COORDINATE ALL PIPING WITH OTHER TRADES.

REGISTERED PROFESSIONAL ENGINEER ROBERT LEROY LITZENBERG No. 31245 CIVIL STATE OF CALIFORNIA

BCL ASSOCIATES INCORPORATED 444 W. Ocean Blvd. Long Beach, CA 90802

SCALE SHOWN	APPROVED BY RLL	DRAWN BY CCS
DATE 9/6/83		REVISED 4/3/84

LANDFILL GAS CONTROL SYSTEM FOR THE CITY SERVICE FACILITY

DRAWING NUMBER LG 4

HUGH GIBBS & DONALD GIBBS
Architects F.A.I.A.
3575 Long Beach Boulevard, Long Beach, California

DRAWN	DATE
CHECKED	JOB

TORRANCE CITY SERVICE FACILITY

TORRANCE CALIFORNIA

FLOOR

SHEET

LG