

DELAWARE COUNTY, OHIO LEATHERLIPS DEVELOPMENT SEWAGE PUMPING STATION 1989

GENERAL NOTES

SPECIFICATION: The County of Delaware requirements, together with the Specifications of the State of Ohio, Department of Transportation, including all supplements thereto, shall govern all construction items that are a part of this plan. The Contractor shall refer to the "Standard Plans and Specifications for Construction of Sanitary Facilities in Delaware County, Ohio" for all necessary construction details and specifications.

SEWER TRENCHES: Sewer trenches shall be de-watered to 2" below bell of pipe prior to installation of pipe.

FIELD TILE: Any field tile disturbed during construction shall be replaced as directed by the County.

ROOF DRAINS: Roof drains, foundation drains and other clean water connections to the Sanitary Sewer are prohibited on this project.

FORCE MAIN: The Force Main shall be tested in accordance with Section 5.2 of Specifications to a hydrostatic pressure of 125 lbs/sq ft. Contractor shall cooperate with Delaware County Engineer and provide all necessary equipment to perform sewer test.

SAFETY REQUIREMENTS: The Contractor and Sub-Contractor shall be solely responsible for complying with all federal, state and local requirements, together with exercising precautions at all times for protection of persons (including employees) and property. It is also the sole responsibility of the Contractor and Sub-Contractor to initiate, maintain and supervise all safety requirements, precautions and programs in connection with the work.

TREES: The Contractor shall include for payment under Clearing & Grubbing the cost of removal and disposal of all trees, brush and stumps within the limits of work of the excavation. No trees or brush shall be removed without prior approval of the Engineer.

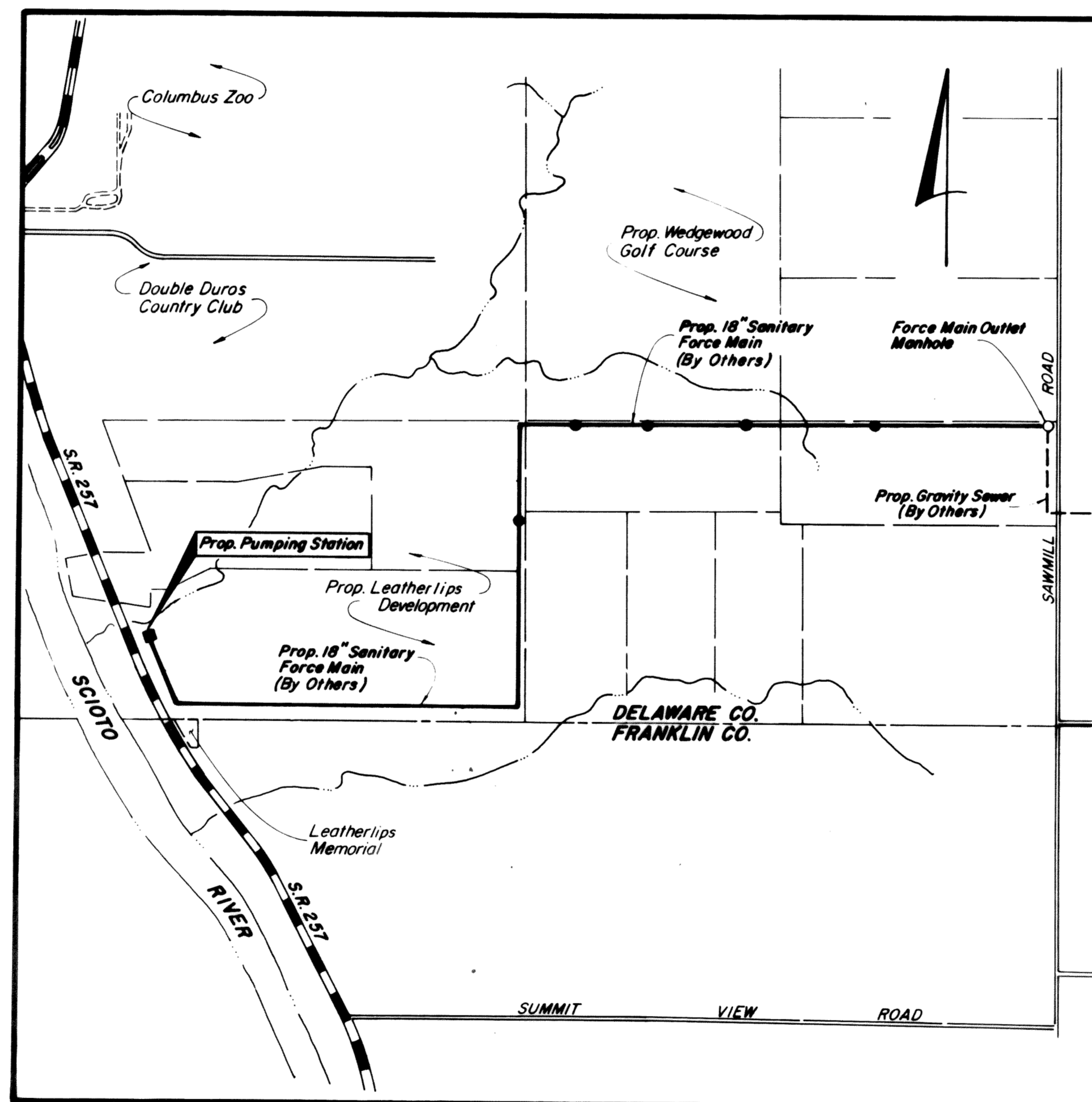
EXISTING UTILITIES: The identity and location of the existing underground utility facilities known to be located in the construction area have been shown on the plans as accurately as provided by the Owner of the underground utility. Delaware County and/or Engineer assumes no responsibility as to the accuracy or the depths of the underground facilities shown on the plans.

Support, protection and restoration of all existing utilities and appurtenances shall be the responsibility of the Contractor. The cost of this work shall be included in the price bid for the various items.

NOTICE: The Contractor shall cause notice to be given to the Ohio Utilities Protection Service, 1-800-362-2764 toll free and to the Owners of underground utility facilities shown on the plans who are not members of a registered underground protection service in accordance with Section 153.64 of the Revised Code. The above mentioned notice shall be given at least 48 hours prior to start of construction.

UTILITY OWNERSHIP: The following utilities are located within the work limits of this project, and the Owners do not subscribe to a registered underground utility protection service.

UTILITY	OWNER	TELEPHONE
Water Mains	Delco Water Co. 6773 Olentangy River Road Delaware, Ohio 43015	548-7746
Storm Sewers and Sanitary Sewers	Delaware County 50 Channing Street Delaware, Ohio 43015	548-7313



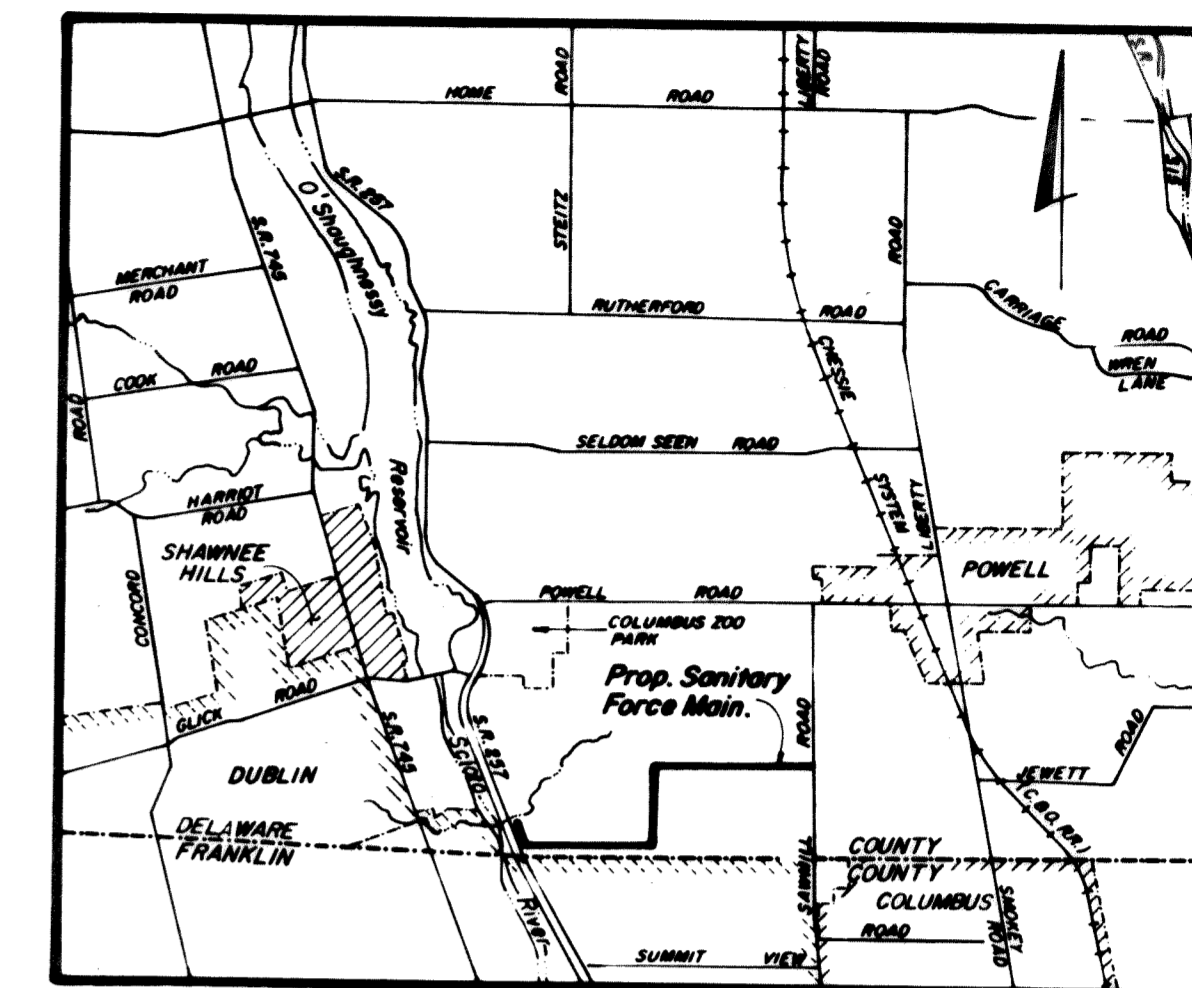
INDEX MAP
SCALE: 1" = 1,000'

STANDARD DRAWINGS

These standard drawings listed on this plan shall be considered a part thereof:

'Preliminary Standard Plan and Specifications for Construction of Sanitary Facilities in Delaware County, Ohio'

01
05
06



LOCATION MAP
(Scale: 1" = 1 Mile)

BENCH MARKS

- Northwest corner of Stone Pillar at Northwest corner of stone walls around 'Leatherlips' manumet, East side of State Route 257. Elev. 806.70
- Spike set in South side of triple 24" sycamore 100' ± North of South property line of Stafford Village and AT&T line, 550' ± East of State Route 257. Elev. 821.38

PREPARED BY
EVANS, MECHWART, HAMBLETON & TILTON, INC.
CONSULTING ENGINEERS & SURVEYORS

By _____ 8-25-89
Registered Engineer Date

Approved this _____ day of _____, 1989 _____
County Commissioner

Approved this _____ day of _____, 1989 _____
County Commissioner

Approved this _____ day of _____, 1989 _____
County Commissioner

Approved this 29 day of Sept. 1989 **Jack Smelker**
Delaware County Sanitary Engineer

AS BUILT H.P. Mechwart & Co.

100 YR. FLOOD-
ELEV. 797.0

APPROX. 35 L.F. OF 10' HIGH CEDAR STOCKADE FENCE (SOLID COVERING) + 3' WIDE GATE. POSTS TO BE 4X4 CEDAR BURIED 4' IN 8" ± HOLES FILLED W/CONCRETE. PAINT BOTH SIDES WITH BLDG. PAINT OF THE OWNER'S COLOR SELECTION.

CONSTRUCTION WORK LIMITS

NEW MANHOLE 18"(N)-INV. 797.25 18"(S)- 797.25 (SEWER BY OTHERS) 10" PLUGGED STUB (E)- INV. 797.90

CONSTRUCTION STAGING AREA

LANDSCAPE SCREEN - AREA LIMITS REFER TO SPEC. SECTION 02490 "LANDSCAPING" FOR REQUIREMENTS.

REFER TO SUPPLEMENTAL SPECS. FOR EXISTING DRIVE WORK REQUIRED WITH PUMPING STATION CONTRACT

APPROXIMATELY 500'

100' ± TO THE DEL. / FRA. COUNTY LINE

LAI D STONE WALL 2' WIDE AT 1' BELOW FIN. PAV'T. GD. & 1' WIDE AT FIN. SLOPED EARTH GRADE

3' ± LONG, WALL MOUNTED STOCKADE FENCE UNIT.

16" FORCE MAIN BY OTHERS

SURVEY BASELINE & BUILDING SET BACK LINE

EXISTING GRAVEL DRIVE

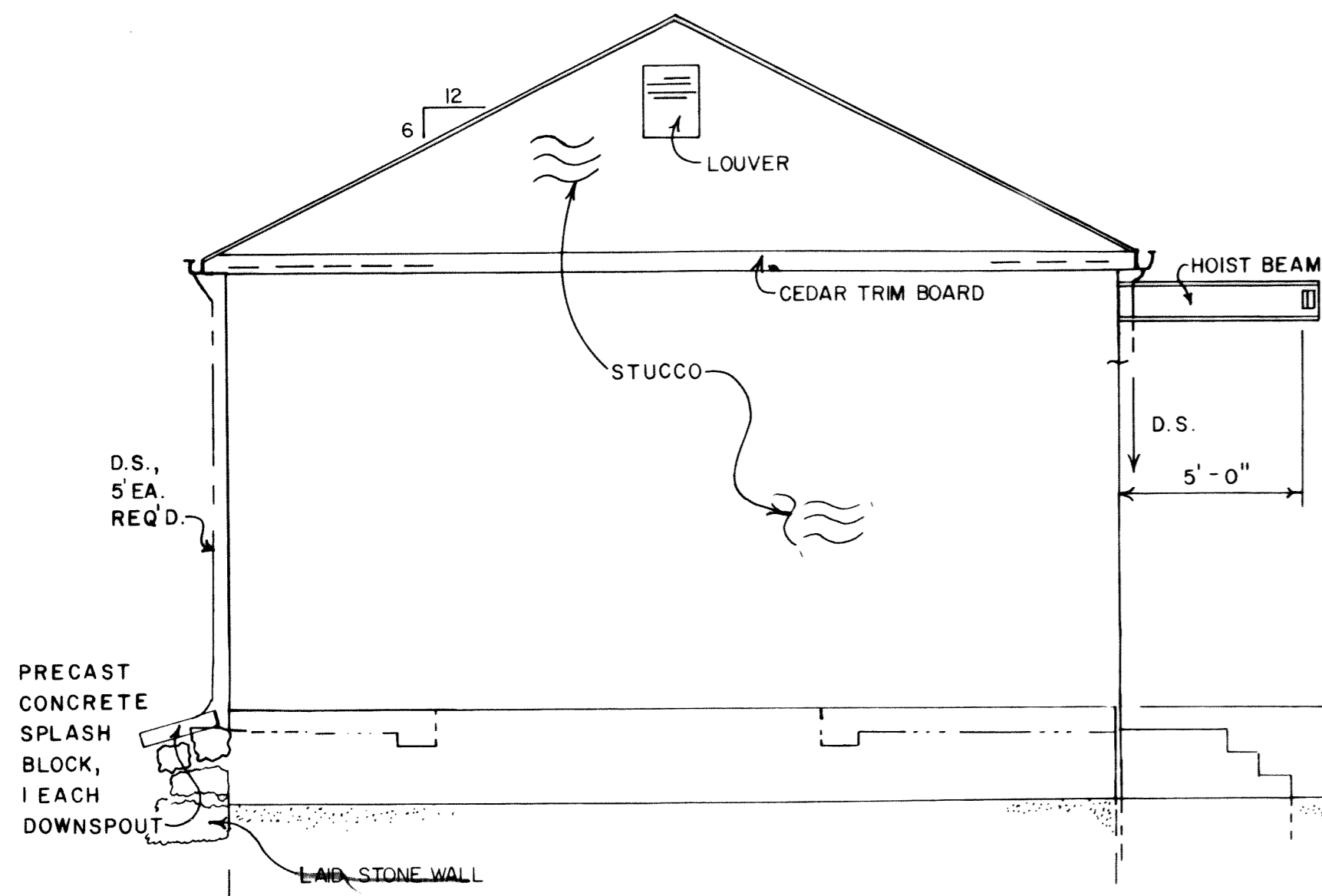
BENCHMARK: SPIKE IN EAST SIDE OF POLE - ELEV. 806.87

796X4 S.R. 257

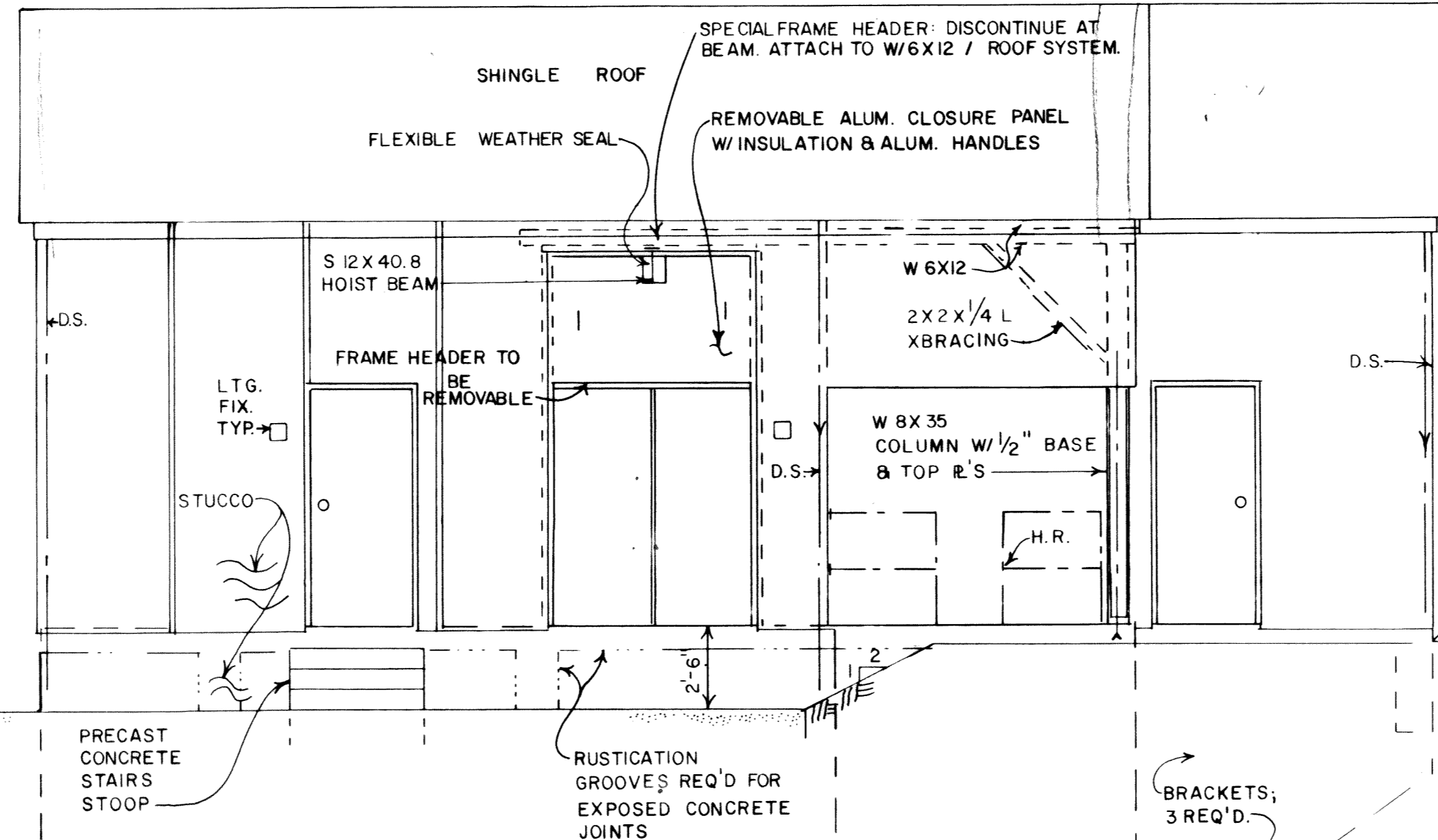
SCIOTO RIVER

SITE PLAN
SCALE: 1" = 20'

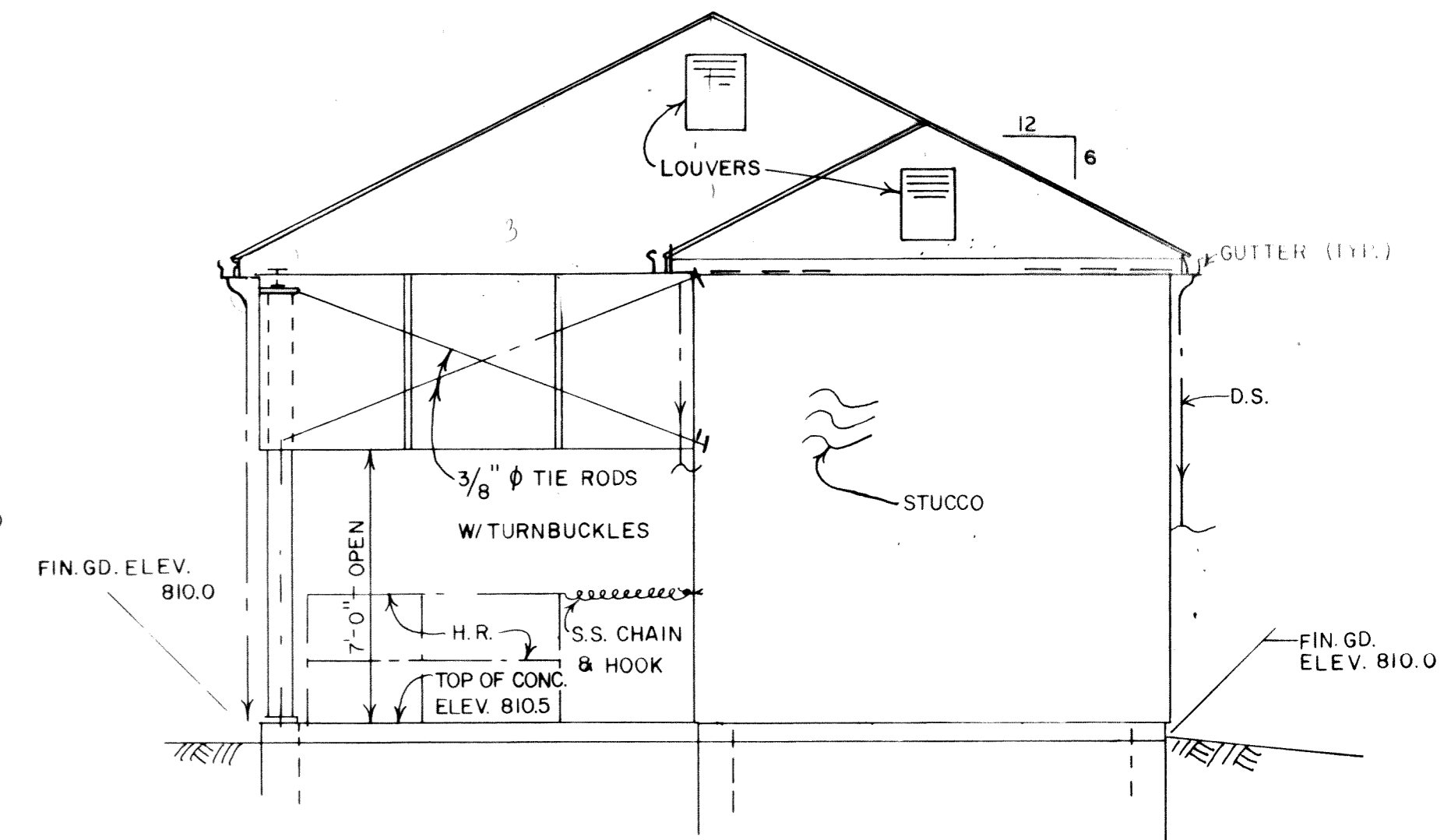
DATE	SYMBOL	DESCRIPTION	BY
REVISIONS			
EVANS, MECHWART, HAMBLETON, & TILTON, INC.			
CONSULTING ENGINEERS & SURVEYORS			
170 MILL STREET GAHANNA, OHIO			
DELAWARE COUNTY LEATHERLIPS DEVELOPMENT SEWAGE PUMPING STATION			
SITE PLAN			
DESIGNED <i>Full</i>	DRAWN FWC	TRACED NEH	CHECKED FWC
APPROVED NEK		APPROVED NEK	
PROJECT No S-2522		DATE 8-24-89	SHEET 2 OF 13



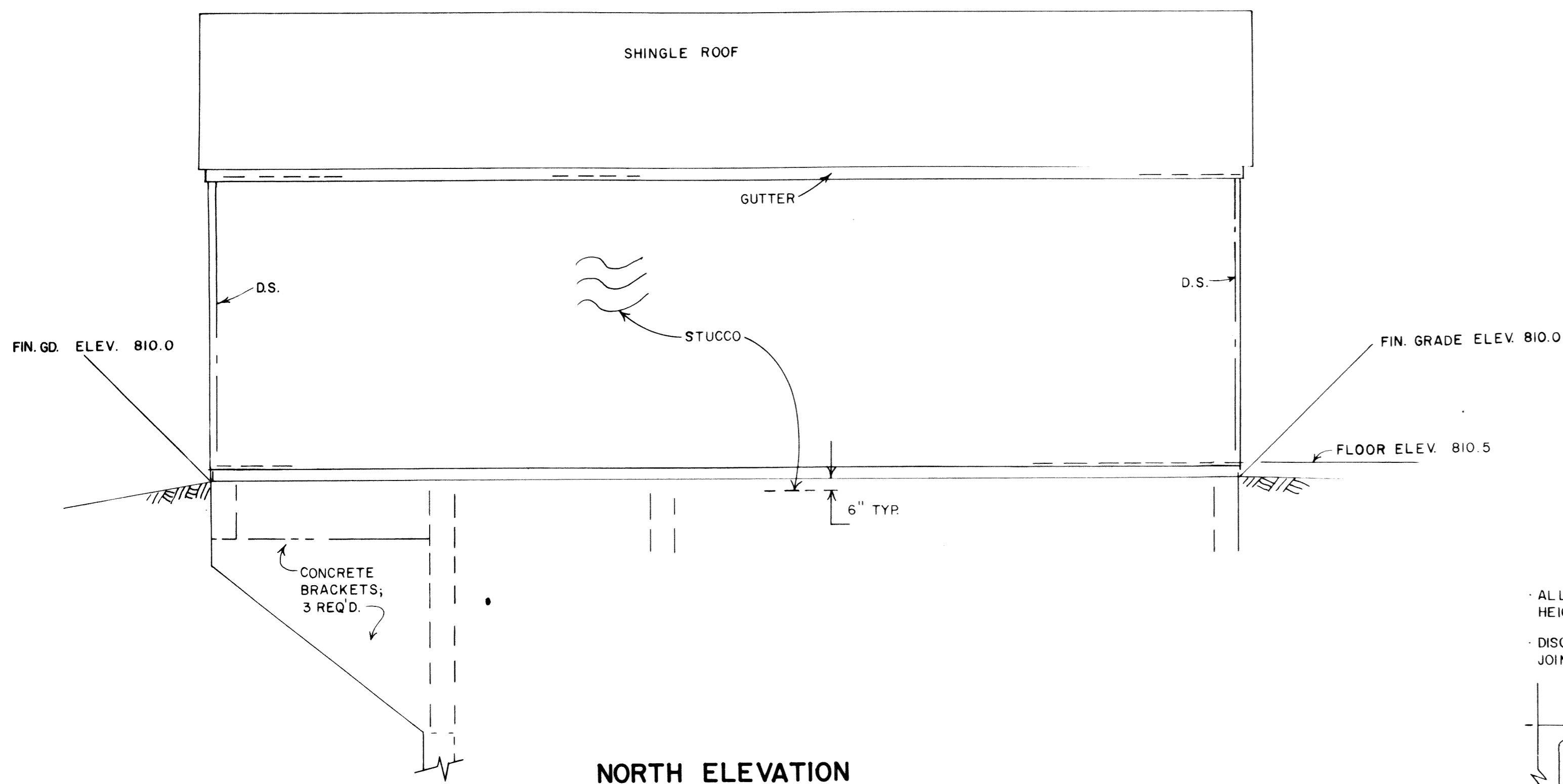
WEST ELEVATION
SCALE: 1/4" = 1'-0"



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



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



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

BUILDING USE AND OCCUPANCY DATA:

Building Description	Floors	Use Group	Fire Grading (Hours)	Occupancy Load (Persons)	Floor Live Load
Sewage Pumping Station	Ground	F-1	1	5	250 p.s.f.

NOTE: Owner to mount certificate, as issued by the State of Ohio, in a conspicuous location on inside wall near main entry.

STRUCTURAL DESIGN LOADINGS:

Wind Loading: All walls and roofs are designed for 90 mile per hour wind loadings applied normal to surfaces. Equivalent pressure loading used in the design is 20 lbs. per sq. ft.

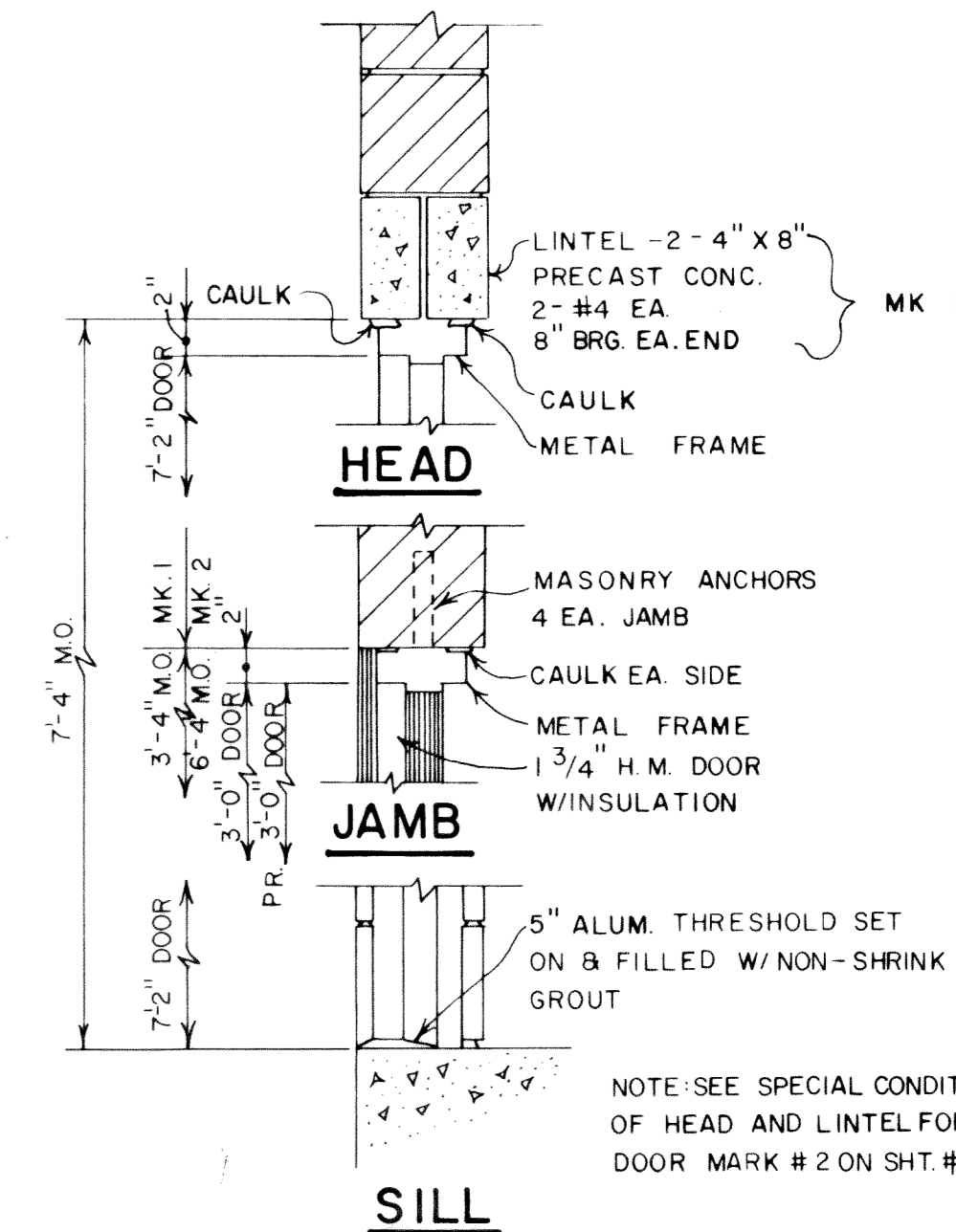
Floor Loading: 250 lbs. per sq. ft. live load.

Roof Loading: Dead Load = 10 lbs. per sq. ft.
Live Load = 25 lbs. per sq. ft.

The above loads are applied vertically

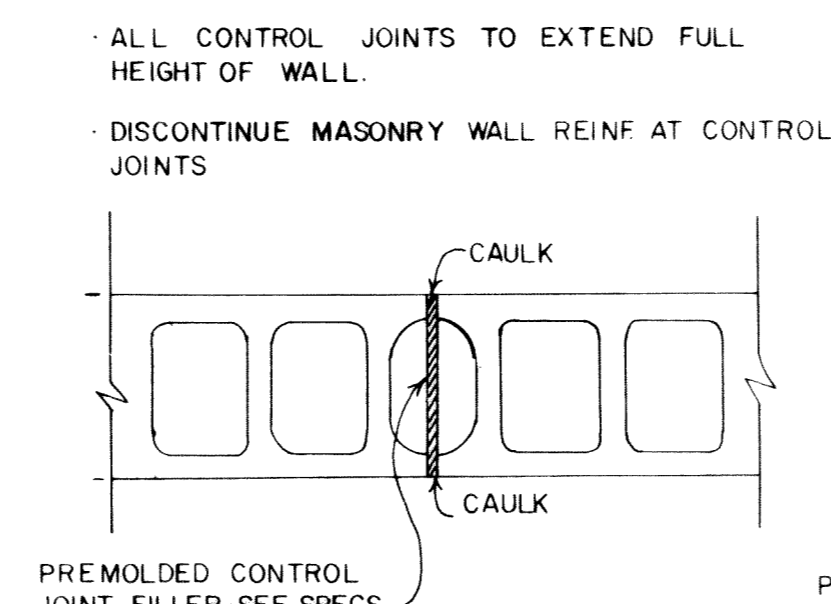
Wind Load = 20 lbs. per sq. ft.

Wind load applied normal to one roof side.

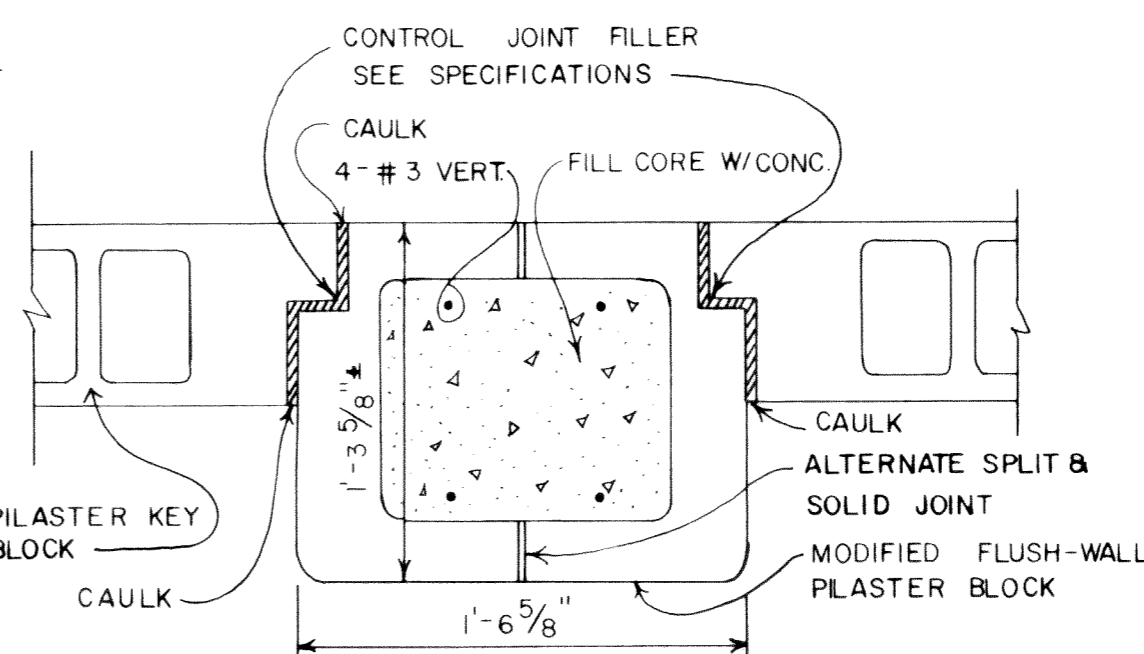


NOTE: SEE SPECIAL CONDITIONS OF HEAD AND LINTEL FOR DOOR MARK #2 ON SHT. # 3 & # 4.

DOOR DETAILS 9
NOT TO SCALE 4



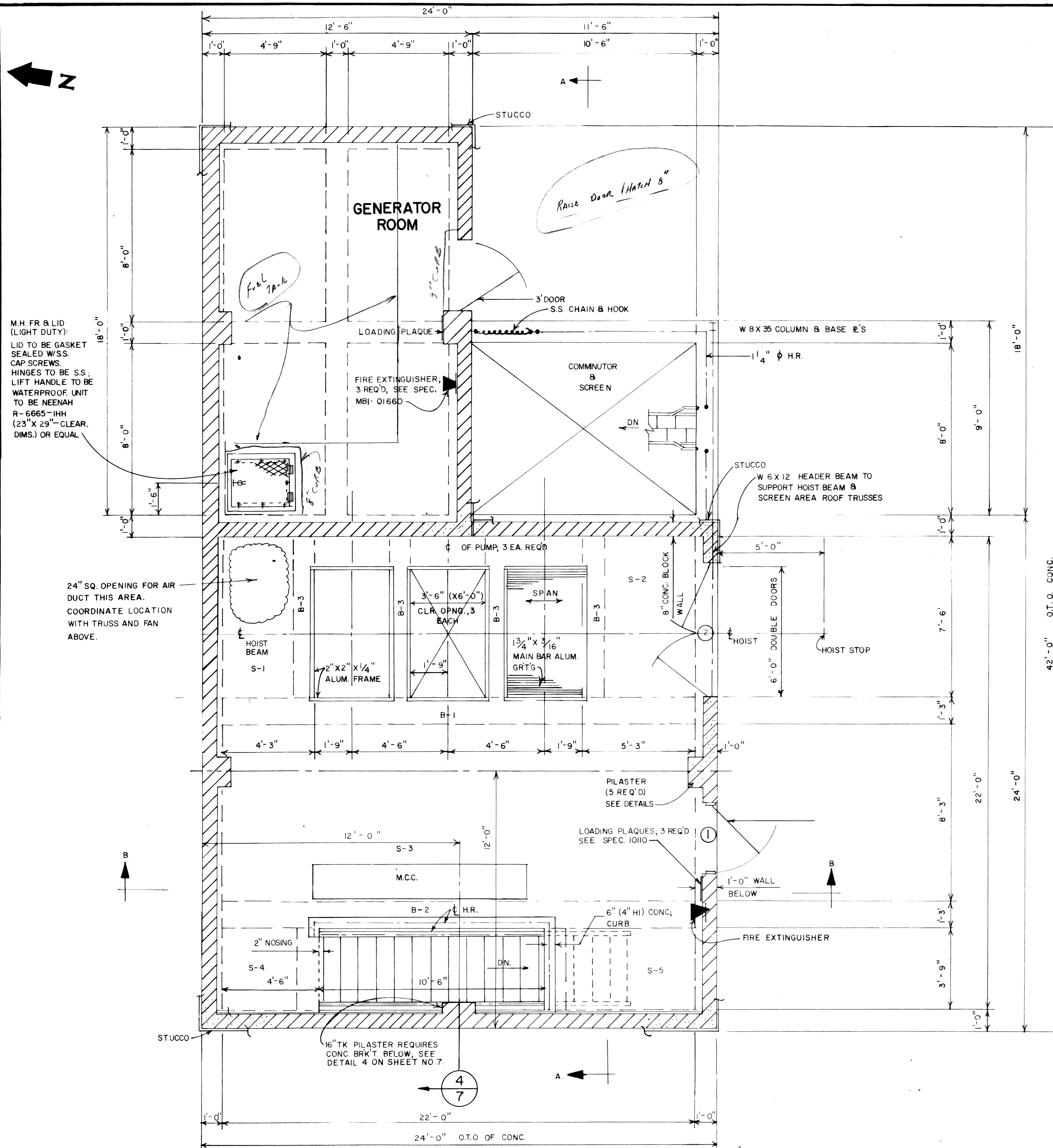
TYPICAL WALL CONTROL JOINT
NOT TO SCALE



CONTROL JOINT AT PILASTER
NOT TO SCALE

DATE	SYMBOL	DESCRIPTION	BY
REVISIONS			
EVANS, MECHWART, HAMBLETON, & TILTON, INC. CONSULTING ENGINEERS & SURVEYORS 170 MILL STREET GAHANNA, OHIO			
DELAWARE COUNTY LEATHERLIPS DEVELOPMENT SEWAGE PUMPING STATION			
ARCHITECTURAL DETAILS			
DESIGNED <i>Full</i>	DRAWN FWC	TRACED NEH	CHECKED FWC
PROJECT No. S-2522		DATE 8-24-89	SHEET 3 OF 13

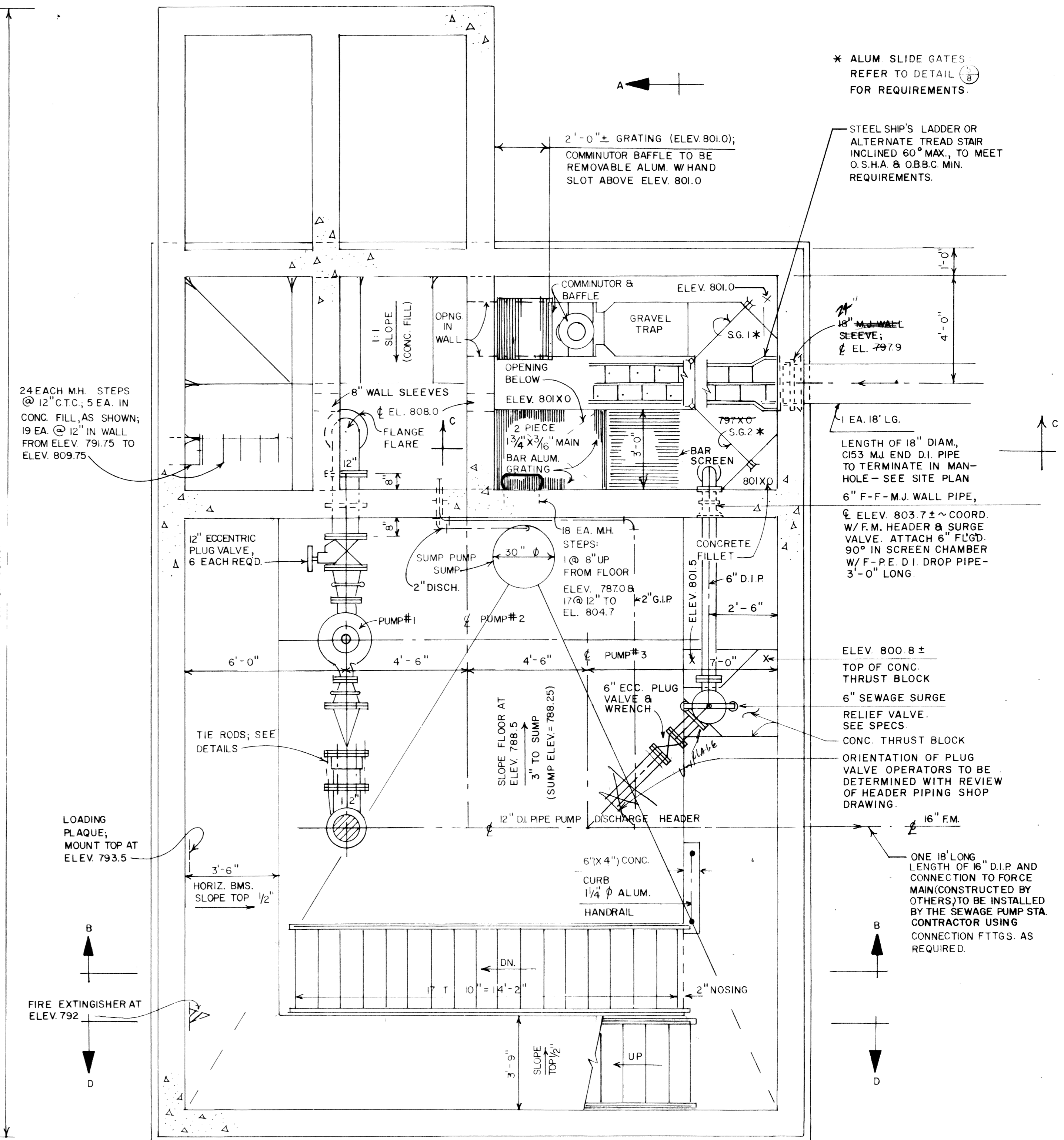




FLOOR PLAN-ELEV. 810.5

SCALE: 3/8" = 1'-0"

*17' x 16'-0" Low Trusses
 8' x 11'-0" Low Trusses
 4' x 11'-0" Low Trusses*

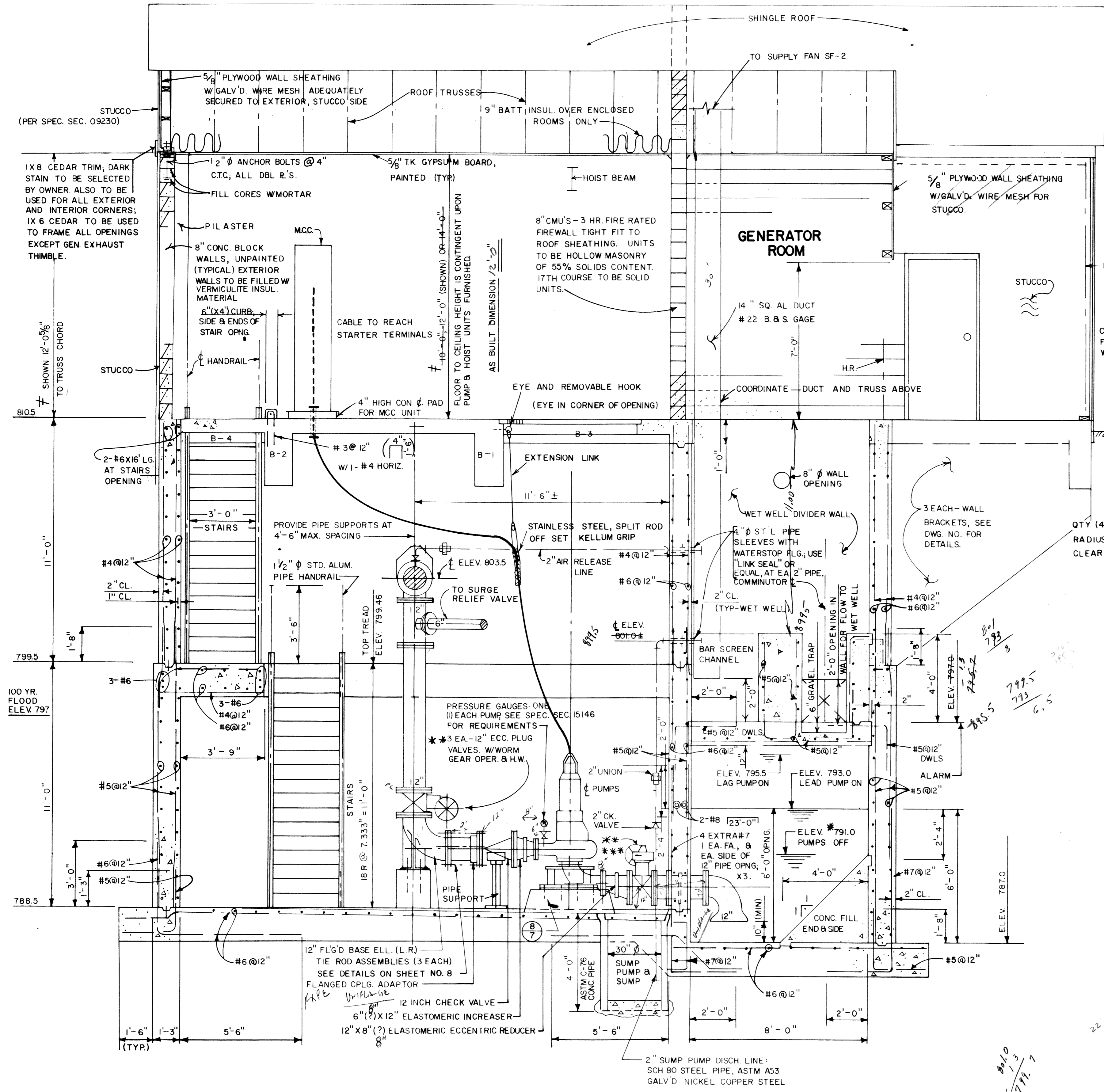


SECTIONAL PLAN SHOWING FLOOR
 ELEV. 788.5 LAYOUT AND DETAILS

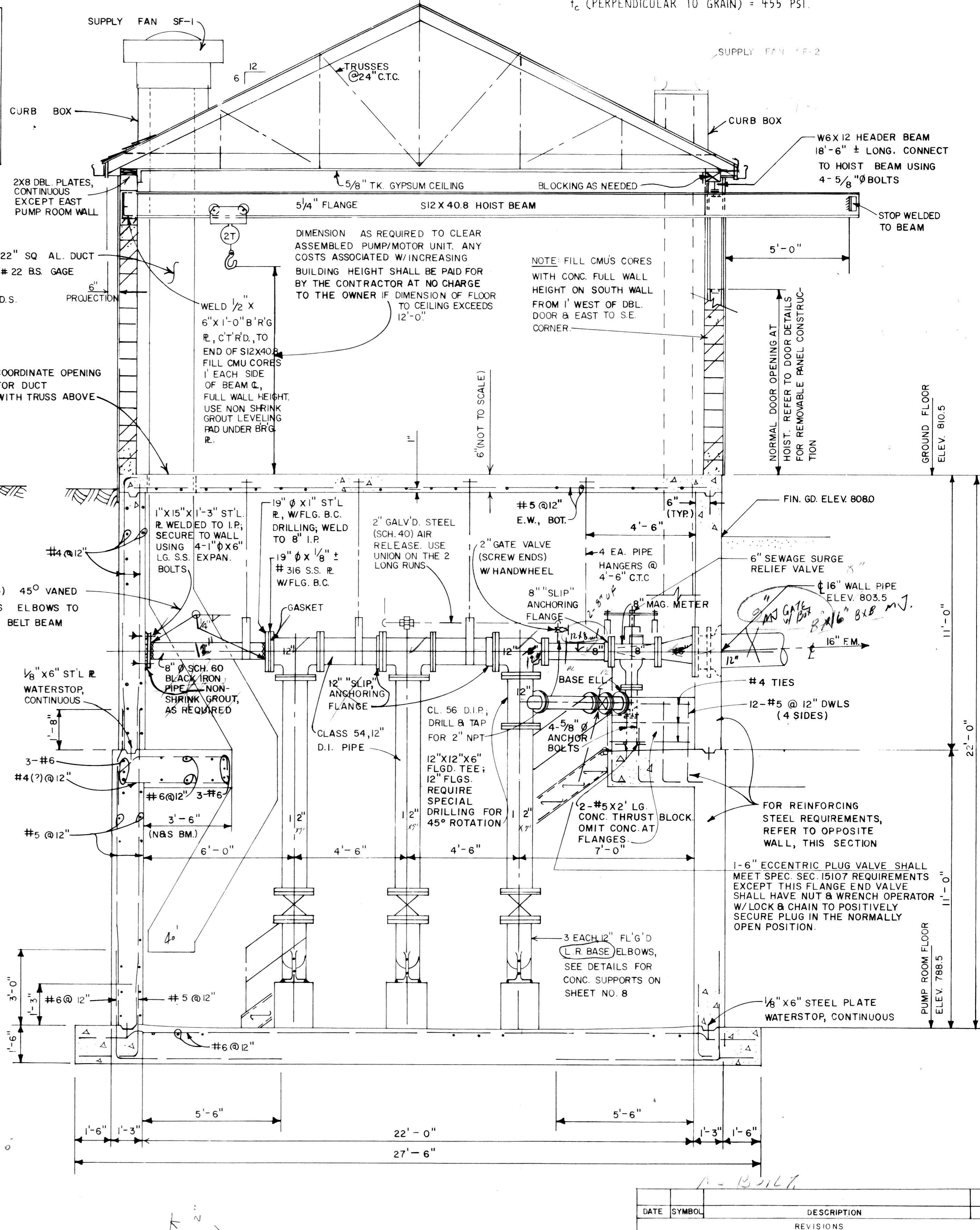
SCALE: 3/8" = 1'-0"

DATE	SYMBOL	DESCRIPTION	BY
REVISIONS			
EVANS, MECHWART, HAMBLETON & TILTON, INC. CONSULTING ENGINEERS & SURVEYORS 170 MILL STREET GAHANNA, OHIO			
DELAWARE COUNTY LEATHERLIPS DEVELOPMENT SEWAGE PUMPING STATION			
PLAN VIEWS			
DESIGNED <i>FWC</i>	DRAWN <i>FWC</i>	TRACED <i>NEH</i>	CHECKED <i>FWC</i>
PROJECT NO. S-2522		DATE 8-24-89	SHEET 4 OF 13

◇ PLATE, JOIST & RAFTER LUMBER
 TO BE CONSTRUCTION GRADE DOUGLAS FIR OR NO. 1 SOUTHERN YELLOW PINE (PER SPEC SEC. 06100, PG. 1) HAVING MINIMUM STRESS GRADE REQUIREMENTS OF THE FOLLOWING: $f_b = 1,700$ PSI, $f_v = 120$ PSI, f_c (PARALLEL TO GRAIN) = 1,200 PSI, f_c (PERPENDICULAR TO GRAIN) = 455 PSI.



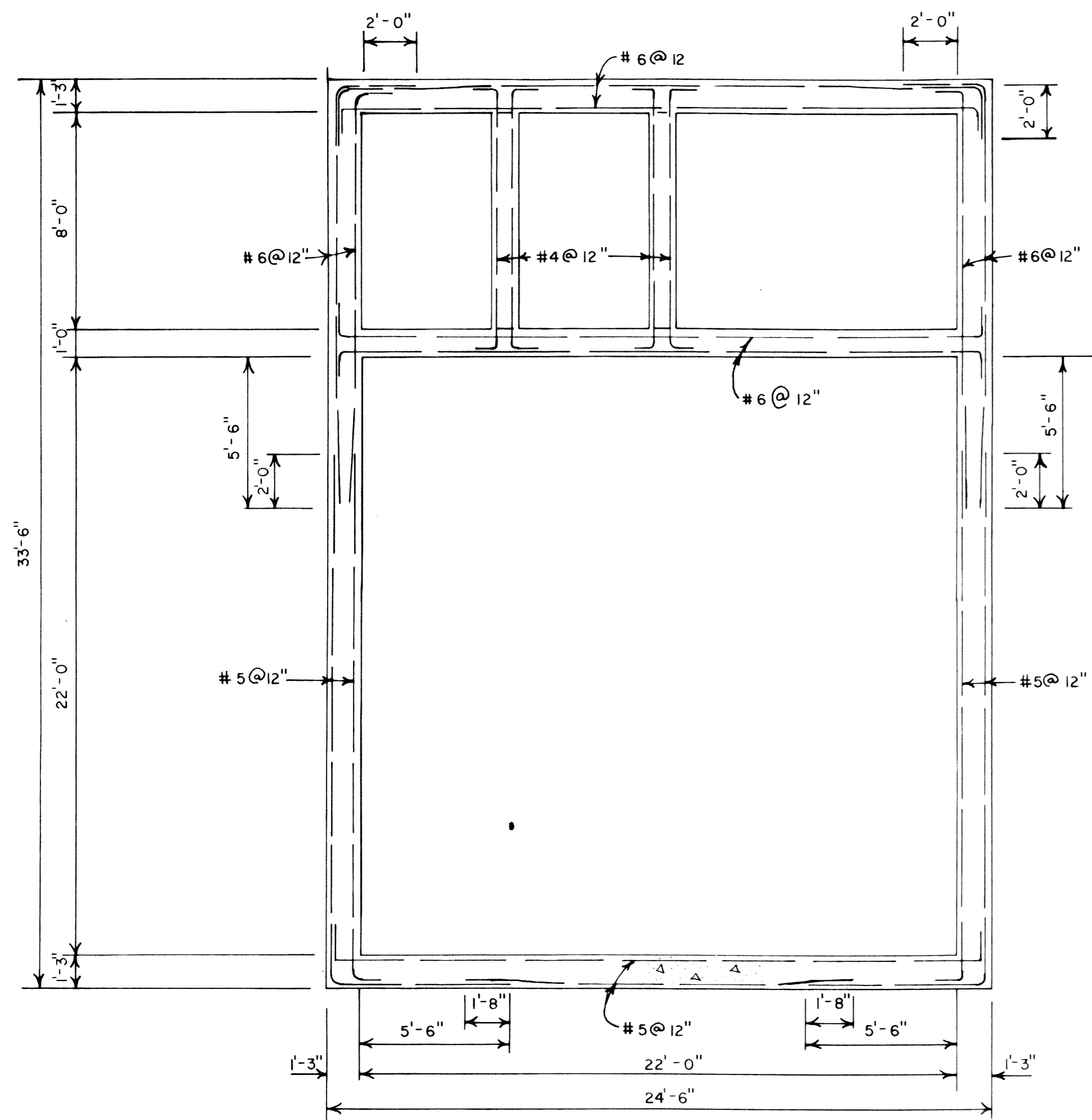
SECTION A-A
 SCALE: 3/8" = 1'-0"



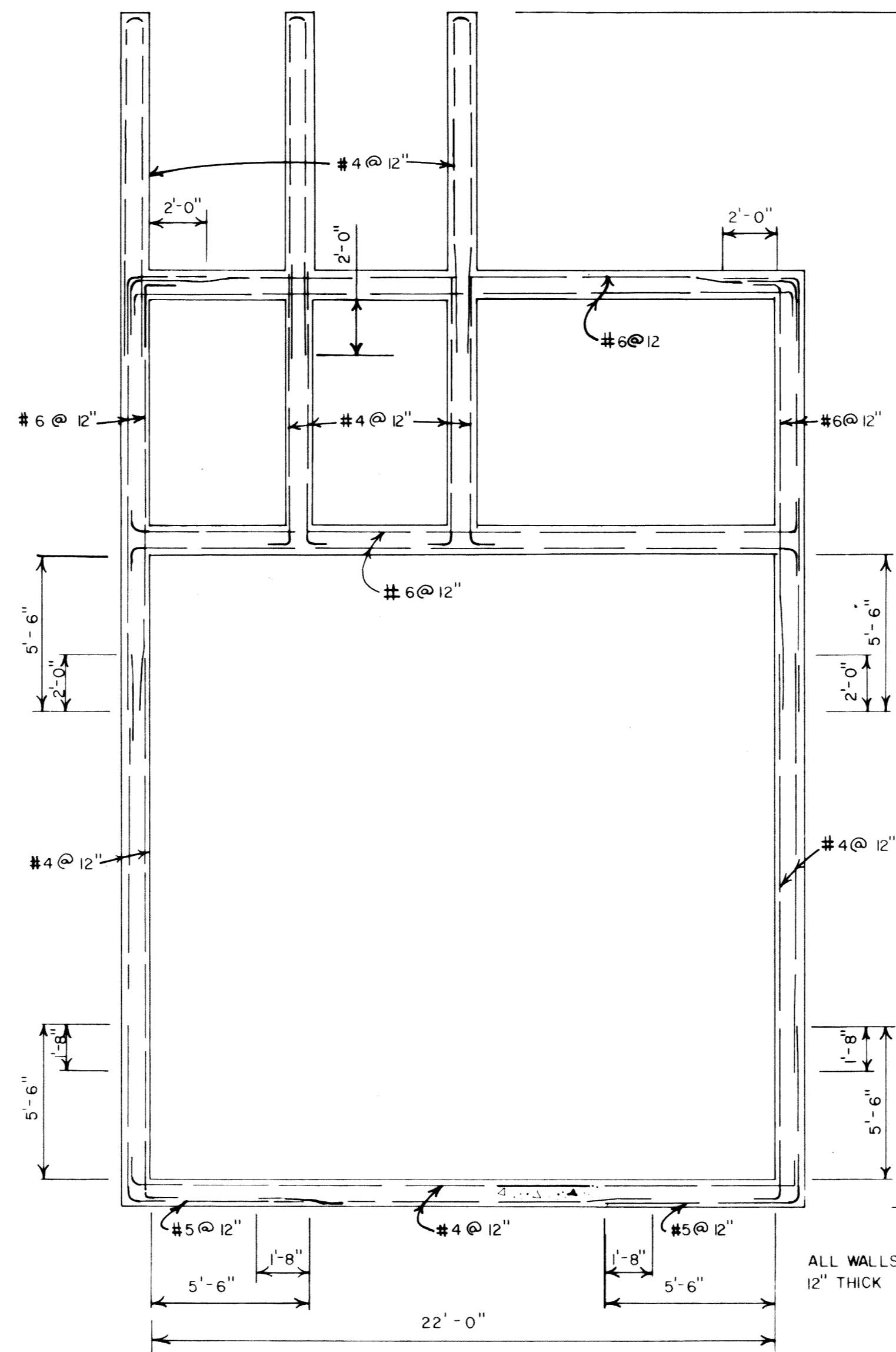
SECTION B-B
 SCALE: 3/8" = 1'-0"

* MAX. LWL ELEV.; LOWER ELEV. IS CONTINGENT ON NPSH OF PUMPS FURNISHED.
 ** PLUG VALVE SEATS TO SEAT IN DIRECTION TOWARDS EACH PUMP.
 *** THE THREE (3) PUMP SUCTION SIDE VALVES MAY BE 12" SOLID WEDGE FL'G'D. GATE VALVES WITH Q.S. & Y. AND H.W. IN LIEU OF PLUG VALVES (SHOWN) WITH WORM GEAR ACTUATORS: THIS TO BE AT THE CONTRACTOR'S OPTION.

DATE	SYMBOL	DESCRIPTION	BY
REVISIONS			
EVANS, MECHWART, HAMBLETON, & TILTON, INC.			
CONSULTING ENGINEERS & SURVEYORS			
170 MILL STREET		GAHANNA, OHIO	
DELAWARE COUNTY LEATHERLIPS DEVELOPMENT SEWAGE PUMPING STATION			
SECTIONS			
DESIGNED	DRAWN	TRACED	CHECKED
APPROVED	FWC	NEH	FWC
PROJECT NO. S-2522		DATE 8-24-89	
		SHEET 5 OF 13	

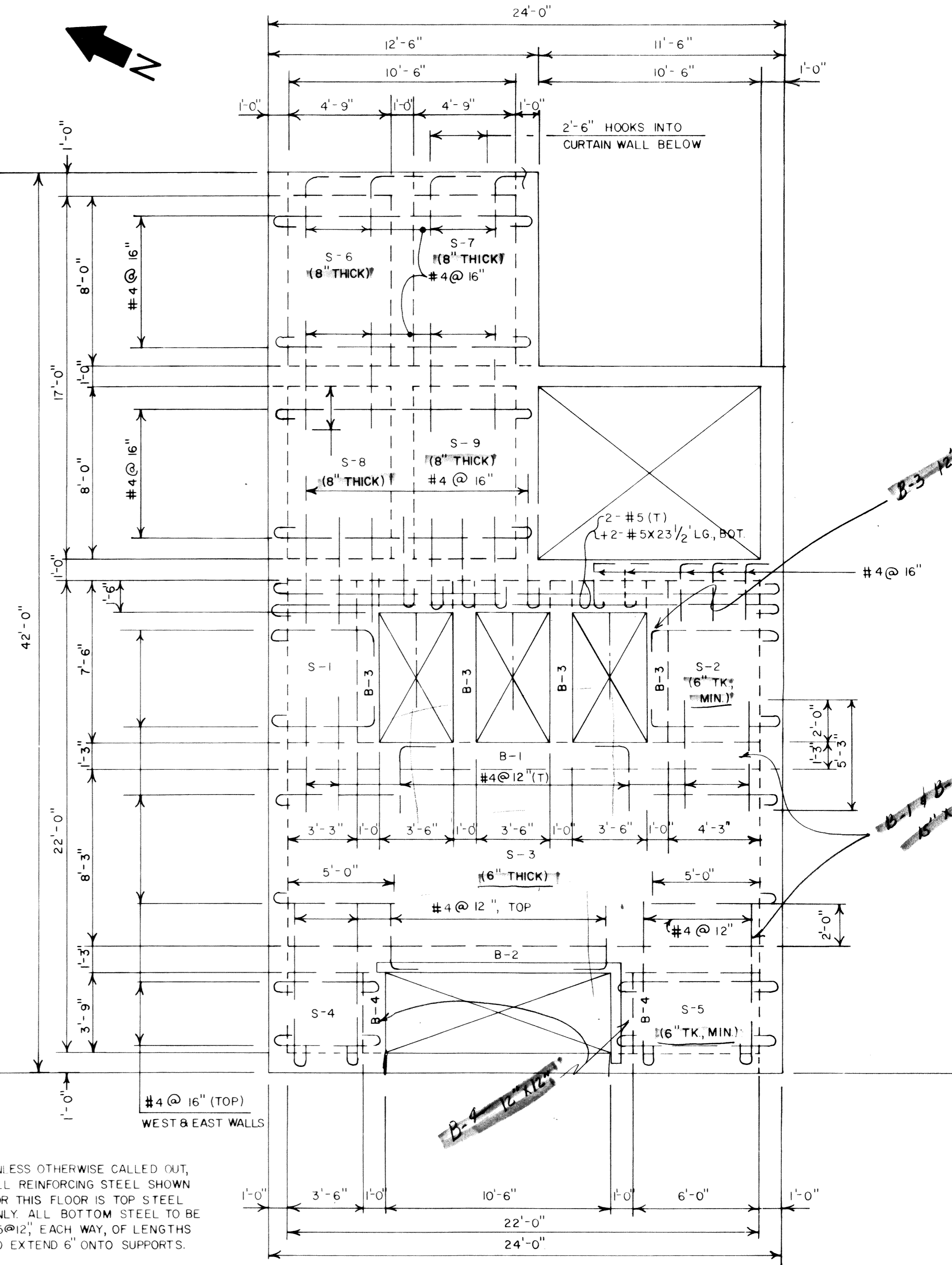


WALLS - ELEV. 787.0 TO 799.5



WALLS - ELEV. 799.5 TO 810.5

UNLESS OTHERWISE CALLED OUT, ALL REINFORCING STEEL SHOWN FOR THIS FLOOR IS TOP STEEL ONLY. ALL BOTTOM STEEL TO BE #5 @ 12", EACH WAY, OF LENGTHS TO EXTEND 6" ONTO SUPPORTS.



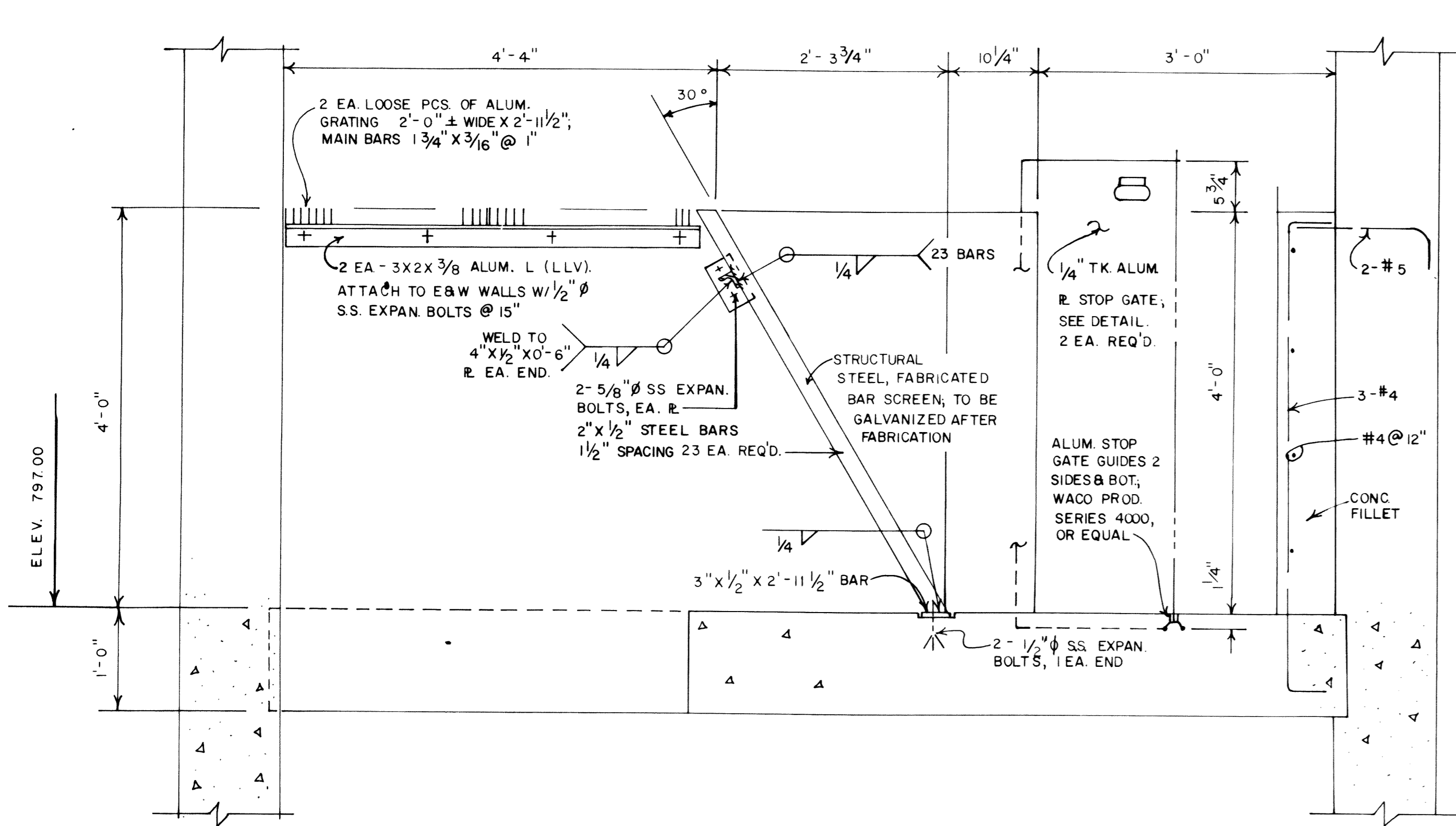
FLOOR PLAN ELEV. 810.5 SHOWING TOP SLAB REINFORCING STEEL

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

SECTIONAL PLANS SHOWING WALL HORIZONTAL REINFORCING STEEL DETAILS

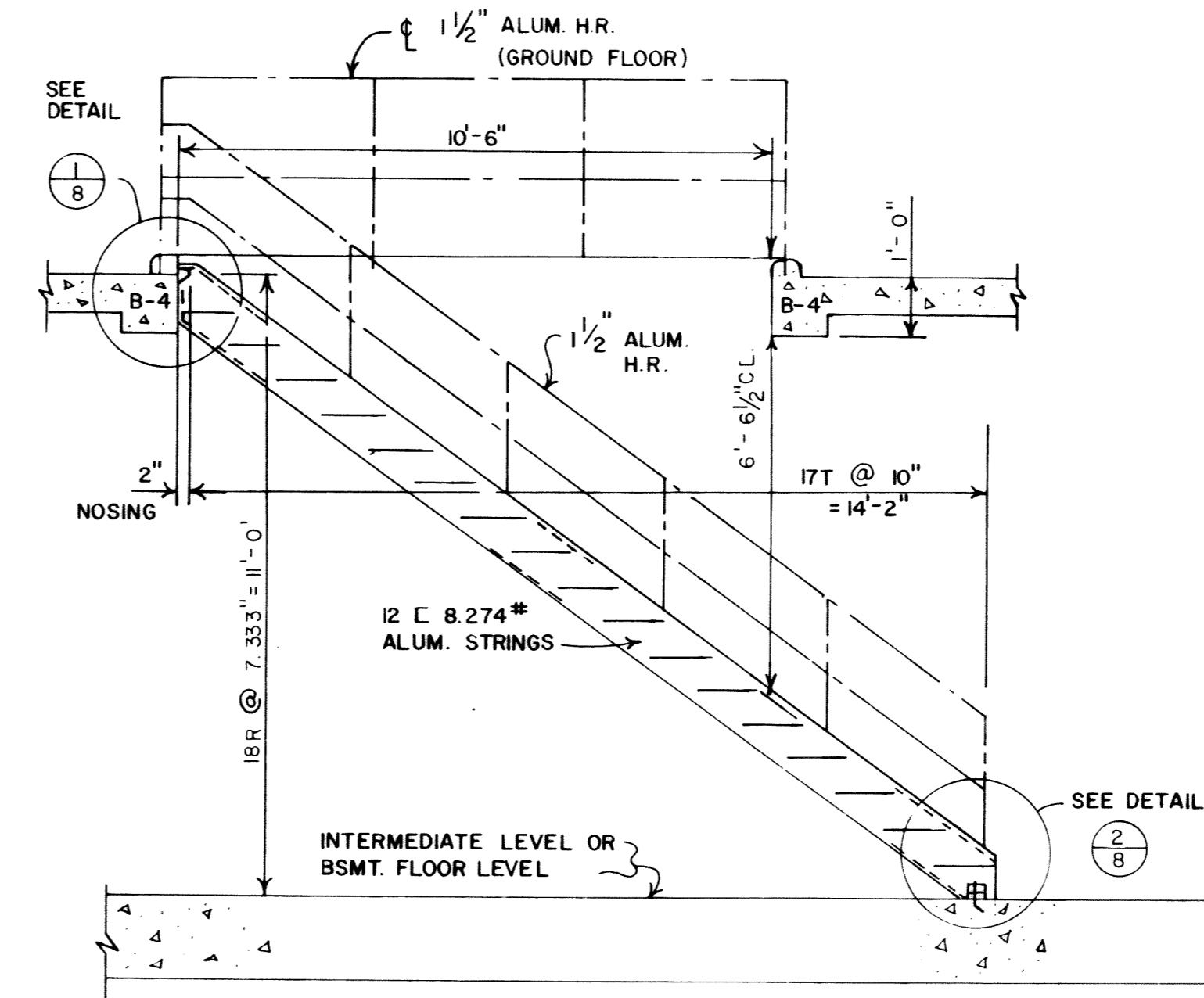
SCALE: 1/4" = 1'-0"

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REVISIONS			
EVANS, MECHWART, HAMBLETON, & TILTON, INC.			
CONSULTING ENGINEERS & SURVEYORS			
170 MILL STREET		GAHANNA, OHIO	
DELAWARE COUNTY LEATHERLIPS DEVELOPMENT SEWAGE PUMPING STATION			
STRUCTURAL			
DESIGNED <i>JWC</i>	DRAWN FWC	TRACED NEH	CHECKED FWC
PROJECT No. S-2522		DATE 8-24-89	APPROVED NEK
		SHEET 6 OF 13	



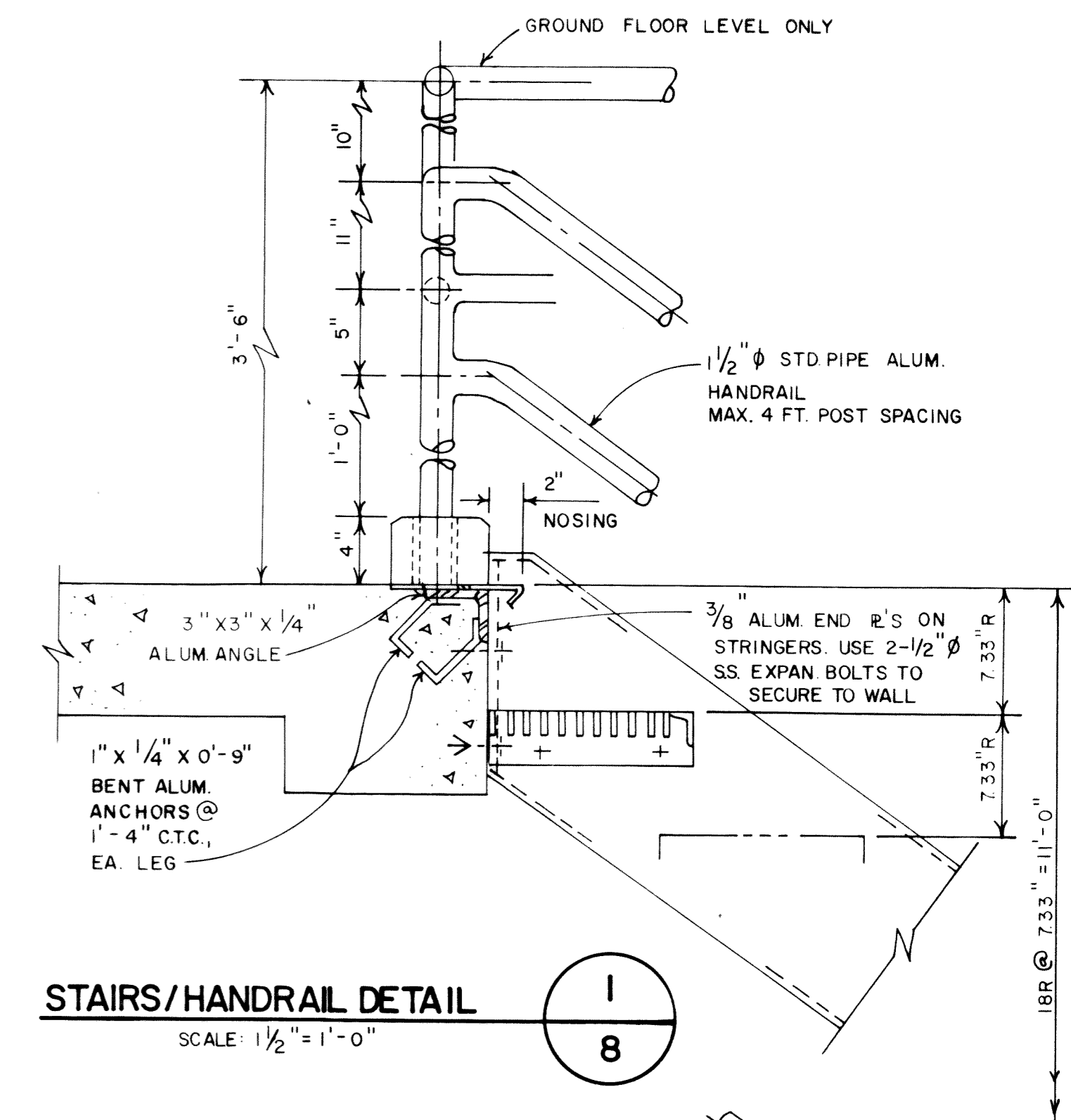
SECTION C-C THROUGH BAR SCREEN

SCALE: 1"=1'-0"



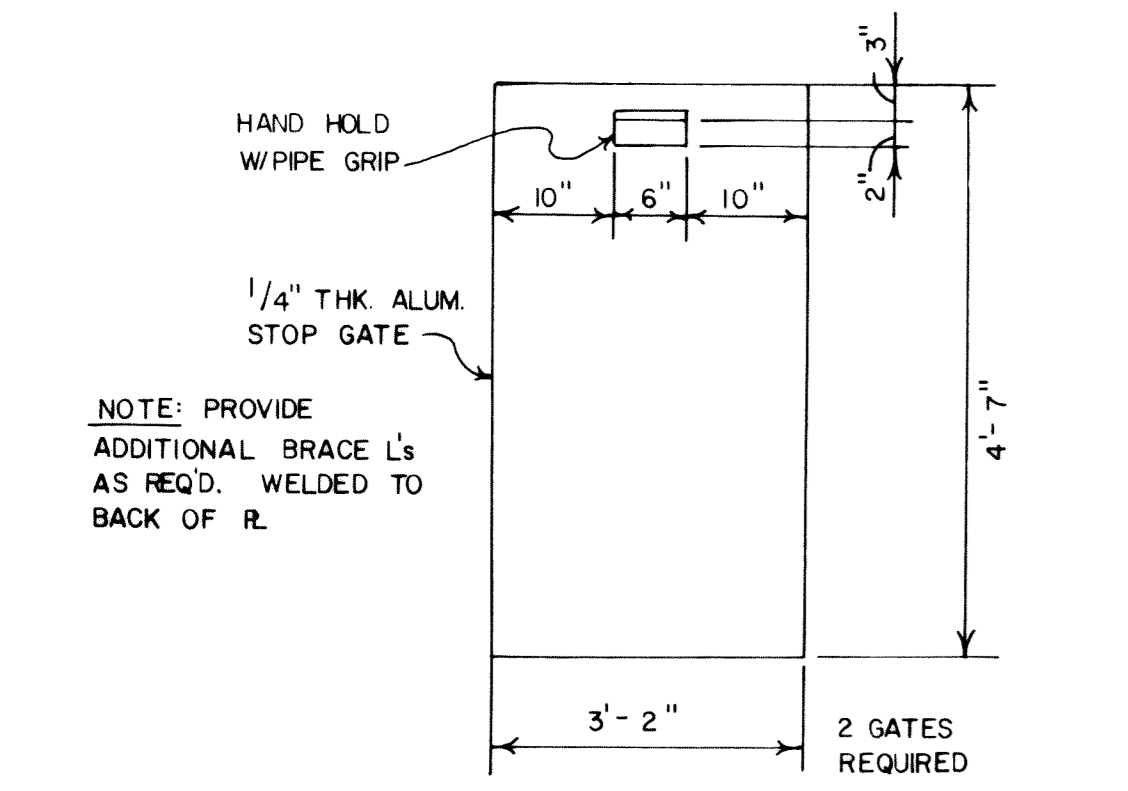
SECTION D-D

SCALE: 3/8"=1'-0"



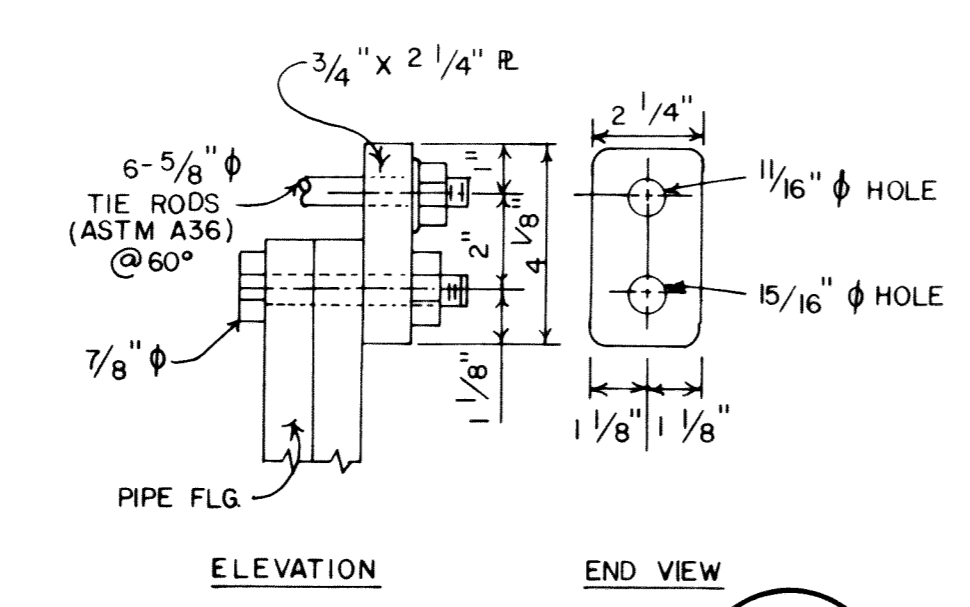
STAIRS/HANDRAIL DETAIL 1

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



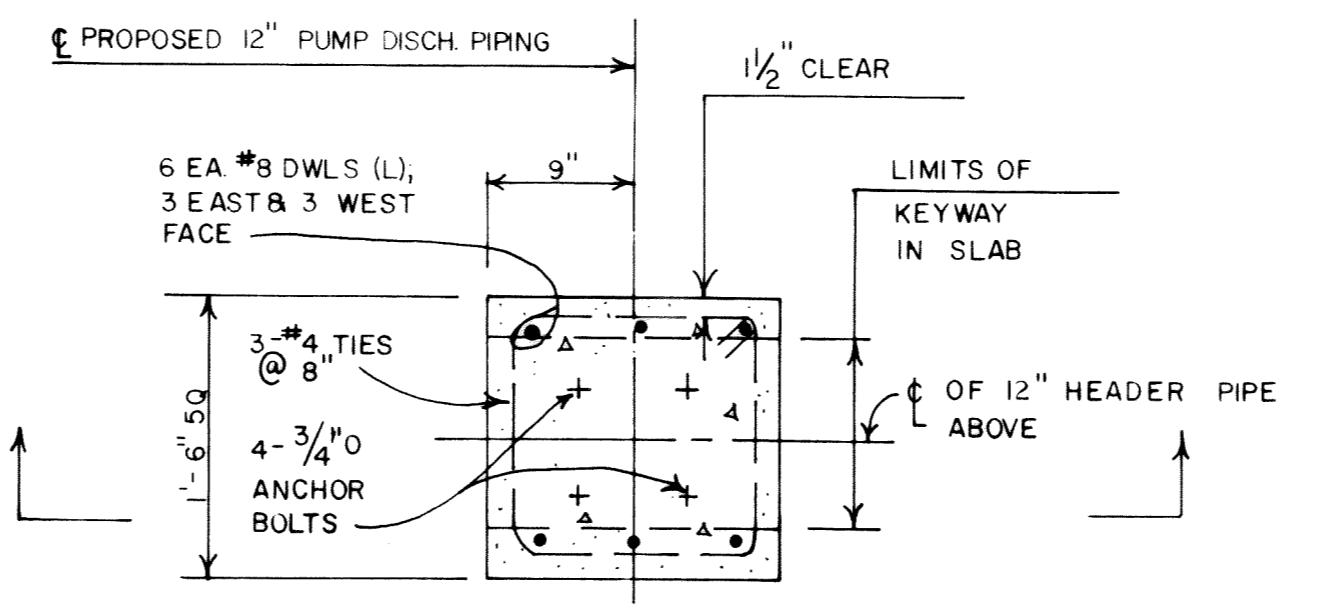
STOP GATE DETAIL 5

NOT TO SCALE



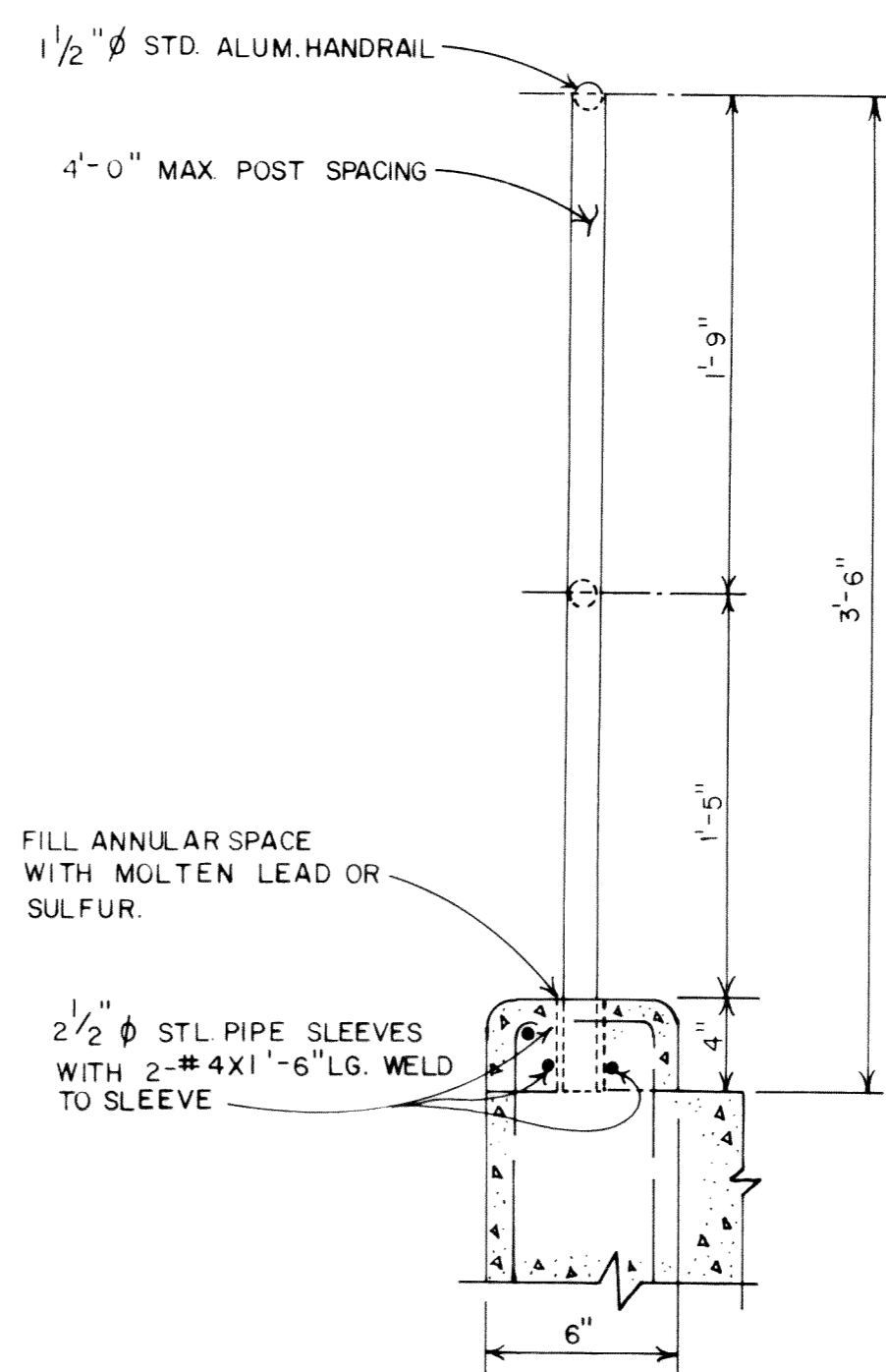
TIE RODS DETAIL 6

NOT TO SCALE



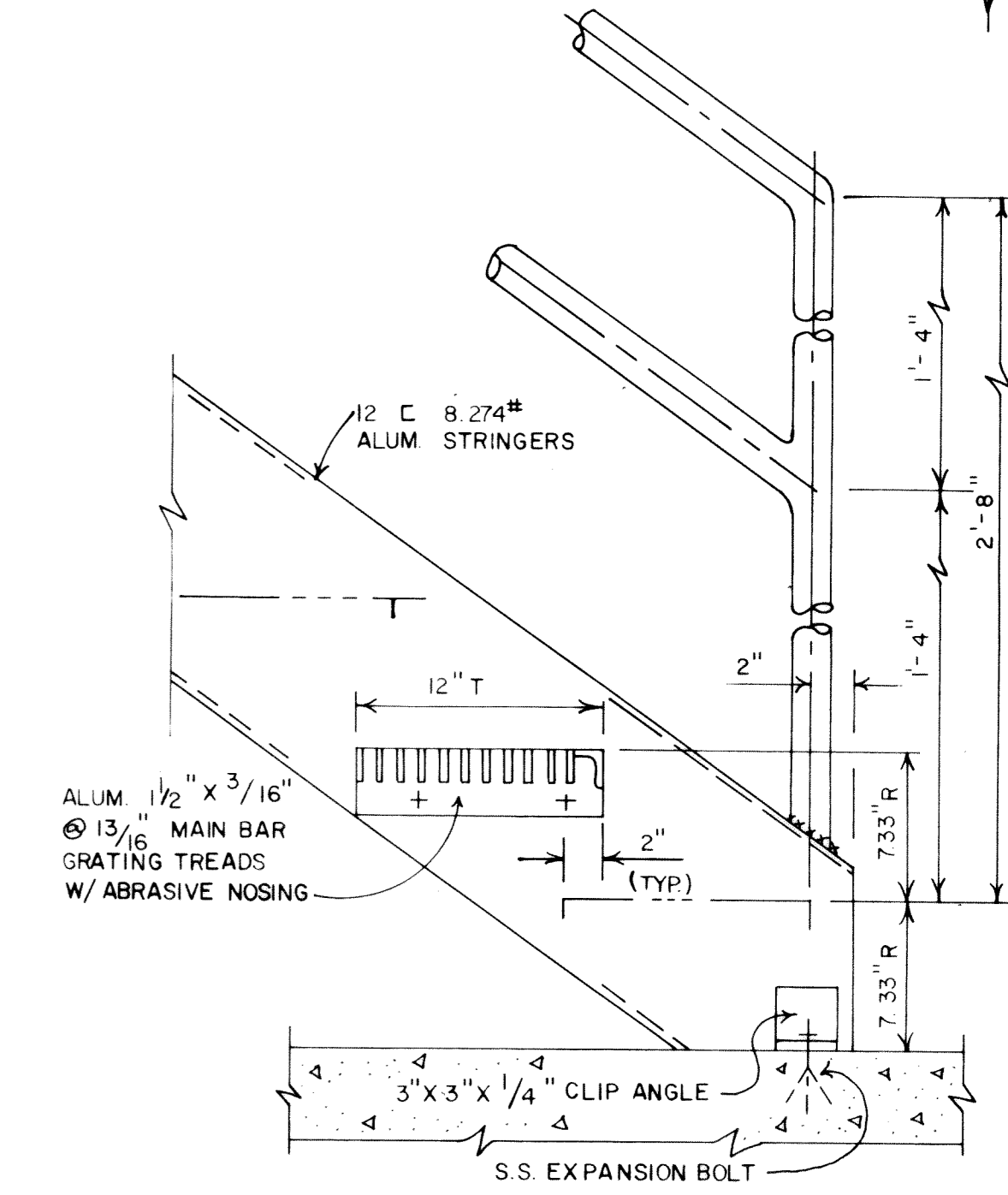
SECTIONAL PLAN

SCALE: 1"=1'-0"



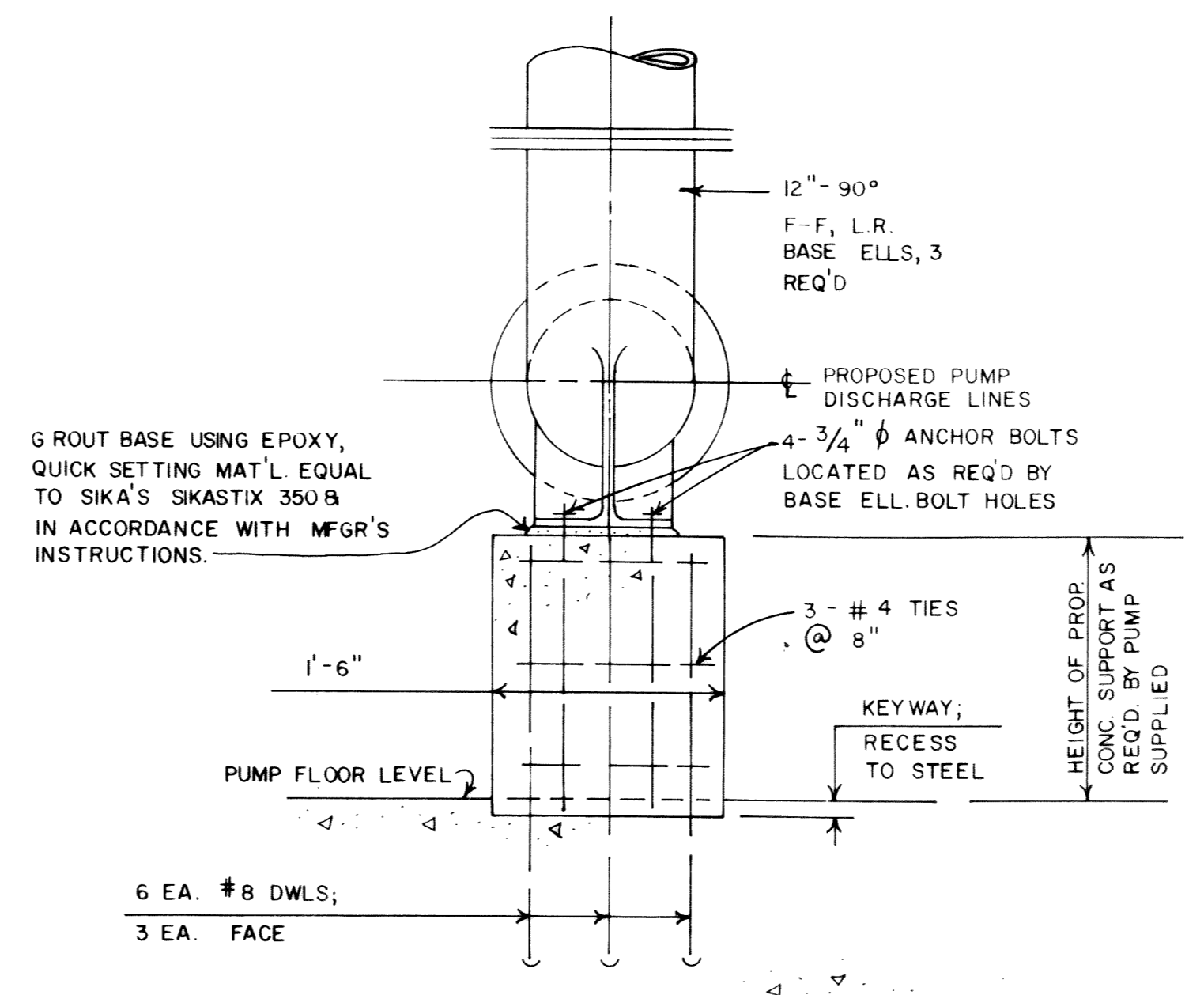
HANDRAIL DETAIL 3

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



STAIRS/HANDRAIL DETAIL 2

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

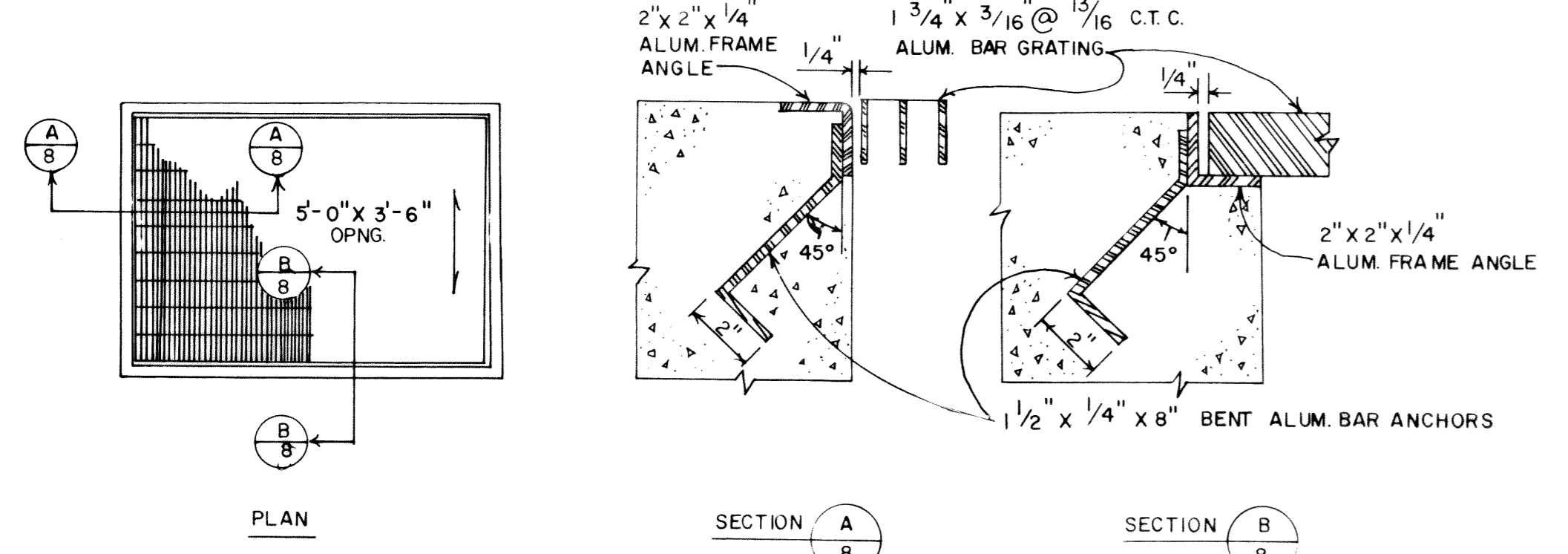


SECTION DETAILS OF 90° BASE ELL SUPPORTS (3 REQUIRED)

SCALE: 1"=1'-0"

GENERAL NOTES:

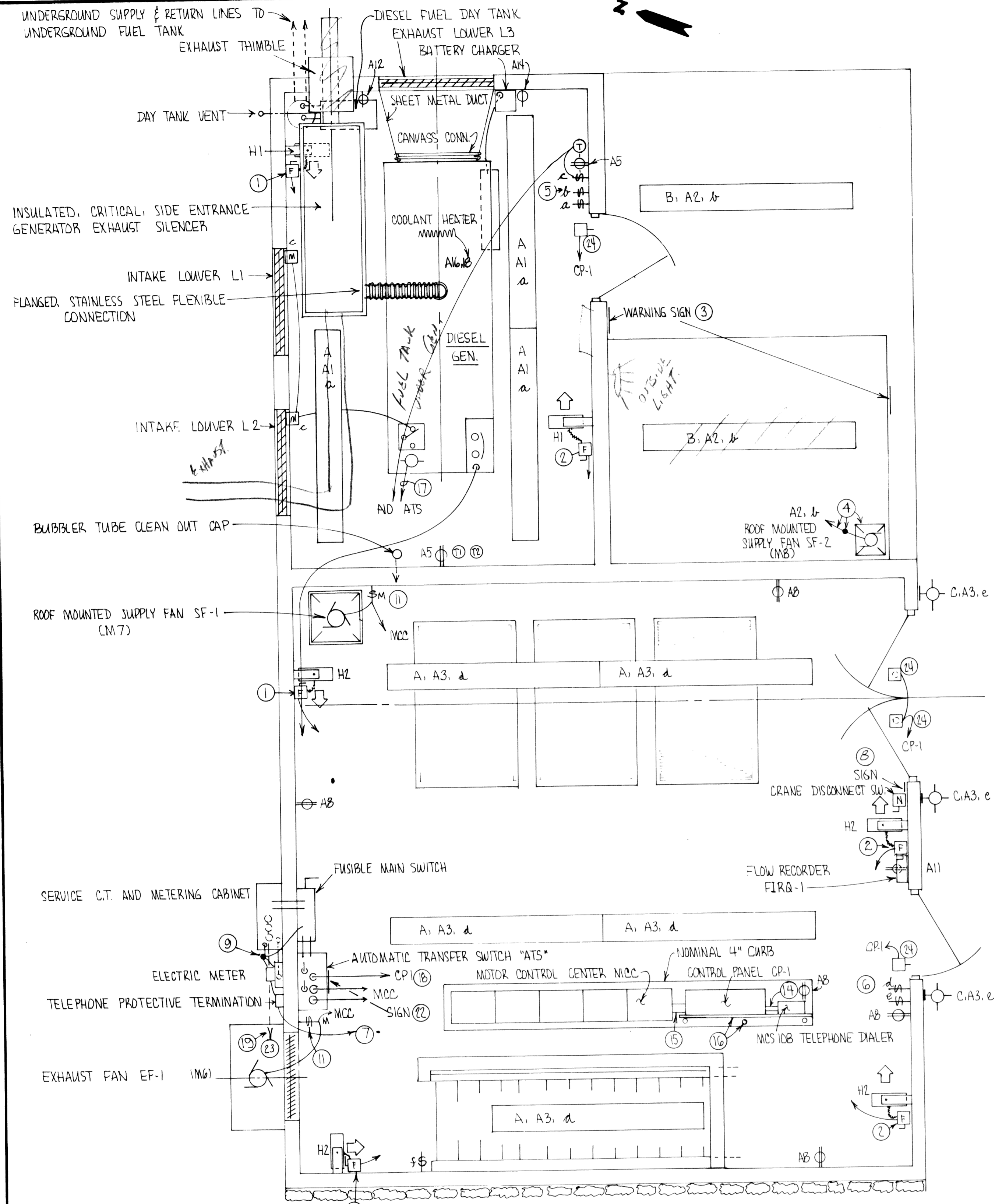
1. ALL ALUMINUM ITEMS TO BE EMBEDDED IN OR ATTACHED TO CONCRETE SHALL BE ADEQUATELY COATED WITH BITUMASTIC MATERIAL & AIR DRIED PRIOR TO INSTALLATION.



ACCESS HOLE GRATINGS DETAIL 7

NOT TO SCALE

DATE	SYMBOL	DESCRIPTION	BY
REVISIONS			
EVANS, MECHWART, HAMBLETON, & TILTON, INC.			
CONSULTING ENGINEERS & SURVEYORS			
170 MILL STREET		GAHANNA, OHIO	
DELAWARE COUNTY LEATHERLIPS DEVELOPMENT SEWAGE PUMPING STATION			
DETAILS			
DESIGNED <i>Full</i>	DRAWN FWC	TRACED NEH	CHECKED FWC
PROJECT No. S-2522		DATE 8-24-89	SHEET 8 OF 13

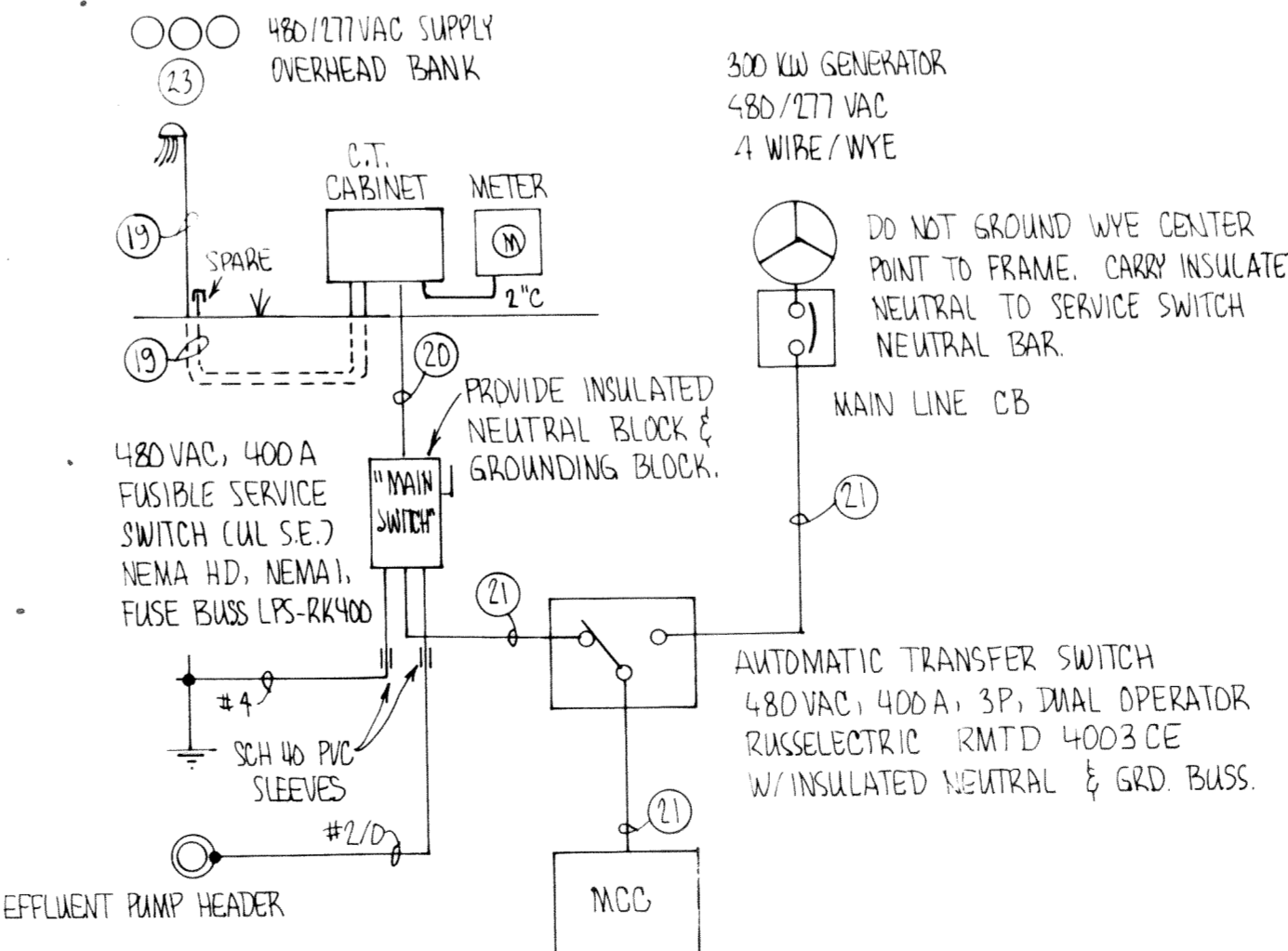


GRADE LEVEL ELECTRICAL FLOOR PLAN

SCALE: 3/8" = 1'-0"

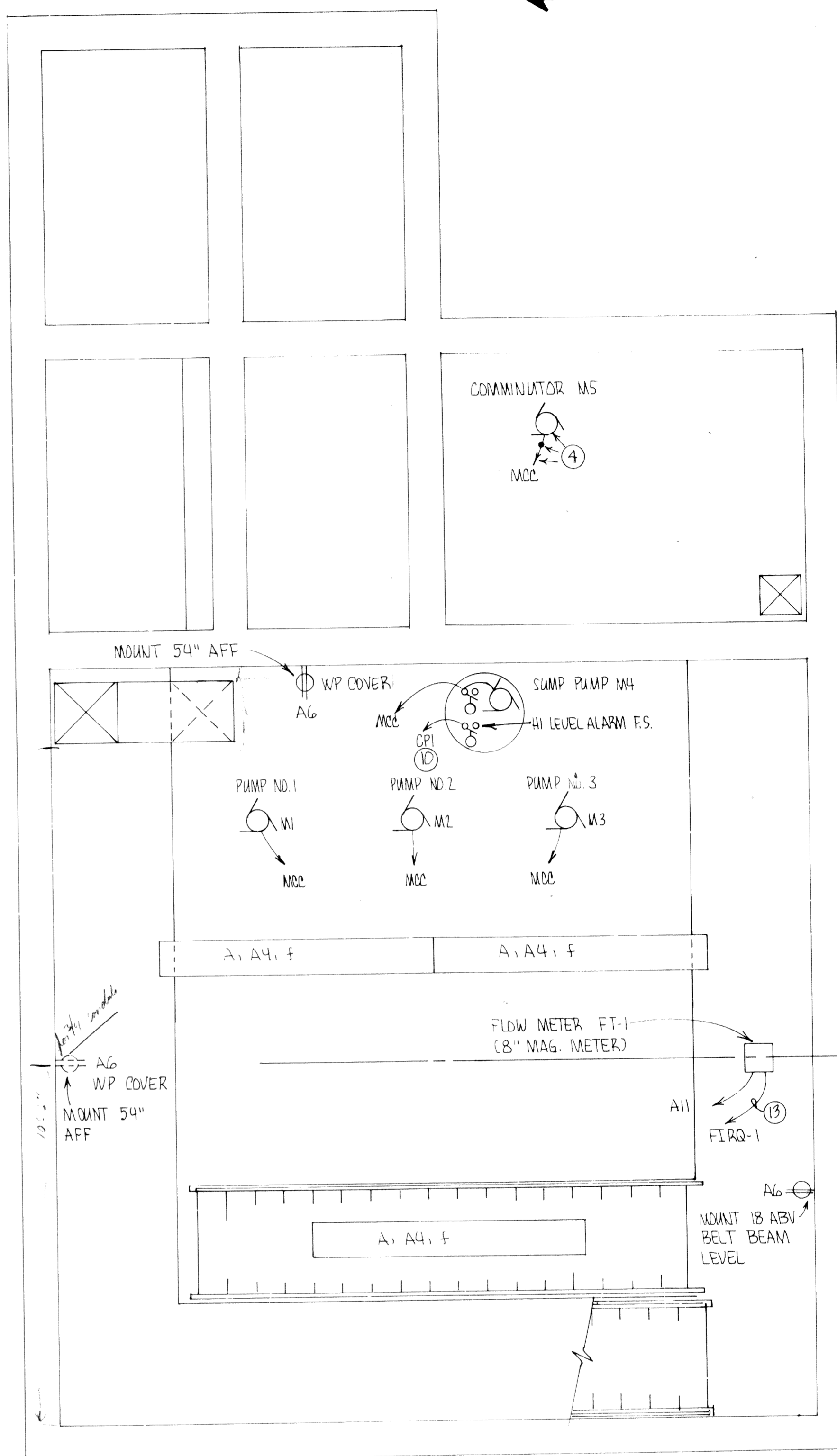
NOTES:

1. HEATER CIRCUIT NO.1, FUSE HTR. DISCONNECT AT 1.25 HTR. CURRENT.
2. HEATER CIRCUIT NO.2, FUSE HTR. DISCONNECT AT 1.25 HTR. CURRENT.
3. SIGN 12" SQ., YELLOW BACKGROUND, BLACK LETTERS READING:
DANGER
HAZARDOUS GASES MAY ACCUMULATE IN WET WELL.
VENTILATE WET WELL 2 MINUTES BEFORE ENTERING. FAN SWITCH IN GENERATOR ROOM. LIGHTS AND FAN OPERATE TOGETHER.
4. EXPLOSION PROOF SEAL, EXPLOSION PROOF EQUIPMENT AND EXP. PROOF WIRING METHODS SHALL BE USED.
5. HUBBEL 1222 1 POLE FOR LTS, 1 POLE FOR MOTOR, SAME PANEL CB SUPPLY
6. HUBBEL 1222 1 POLE FOR LTS, 1 POLE FOR MCC STARTER 2 WIRE CONTROL
7. 3/4" C W/ TELEPHONE CABLE TO CP-1
8. SIGN 12" SQ., YELLOW BACKGROUND, BLACK LETTERS READING:
DANGER
CRANE DISCONNECT SWITCH
DE-ENERGIZE CRANE BEFORE WORKING ON TRAILING CABLE, COLLECTORS, OR CRANE.
9. 3/4" x 10' GROUND ROD WITH SEPARATE GRD CLAMP & #4 BC TO SERVICE SWITCH. C.T. CABINET, METER, TELEPHONE INTERFACE PANEL.
10. ROUTE TO CP-1 VIA MCC
11. A+B 609T-AAW MANUAL MOTOR STARTER. EF-1 & SF-1 ARE ON COMMON STARTER IN MCC WITH INDIVIDUAL RUNNING O.L. PROTECTION.
12. BUBBLER LINE TO CP-1
13. 2-#12 IN 3/4" C
14. 1" C W/ CONTROL WIRES & PWR. WIRES PER CP-1 DWG.
15. 2- 2" C W/ CONTROL WIRES & PWR WIRES PER CP-1 DWG.
16. RACK MADE FROM 3, 3" STEEL PIPES, FLOOR FLANGES, UNISTRUT P-1000, 1" THICK PLYWOOD PAINTED TWO COATS WHITE PAINT ALL SIDES. EXTEND PIPE TO TRUSS.
17. 2-#12 IN 3/4" C TO ATS GENERATOR "START-RUN" CONTROL RELAY
18. 2-#14 IN 3/4" C TO CP-1 GENERATOR ATS POSITION REPORT BACK
19. 2-4" C TO UTILITY POLE. 1-4" C IS A SPARE. INSTALL 3-500MCM PHASE AND 1-#2/0 NEUTRAL IN 4" C. PROVIDE RISER CONDUITS, MASTHEADS, MISC. FITTINGS TO POWER CO. REQUIREMENTS. ELBOWS, RISERS - RIGID METAL. HORIZONTAL RUNS SCH. 40 NON-METALLIC, 3" CONCRETE EMBELEMMENT ALL SIDES.
20. 3-500MCM PHASE & 1-#2/0 NEUTRAL IN 4" C.
21. 3-500MCM PH., #2/0 NEUT., #2/0 GRD. IN 4" C.
22. SIGN 8" SQ., RED BACKGROUND, WHITE LETTERS READING:
DANGER
MULTIPLE ENERGIZING SOURCES.
TURN OFF MAIN SERVICE SWITCH,
GENERATOR MAIN LINE CIRCUIT
BREAKER AND GENERATOR BATTERY
BEFORE SERVICING.
23. SEE SITE PLAN FOR LOCATION OF PROPOSED TRANSFORMER POLE. CONFIRM WITH POWER CO.
24. DOOR DETECTOR OR LIMIT SWITCH CHOSEN AS APPROPRIATE FOR DOOR, SWING AND DOOR FRAME CONTACTS RATED 120VAC, 5A. PILOT DUTY. CONTACTS SHALL CLOSE UPON DOOR OPENING. 2-#14 IN 1/2" C TO CP-1.



ONE LINE ELECTRICAL DIAGRAM

NOT TO SCALE

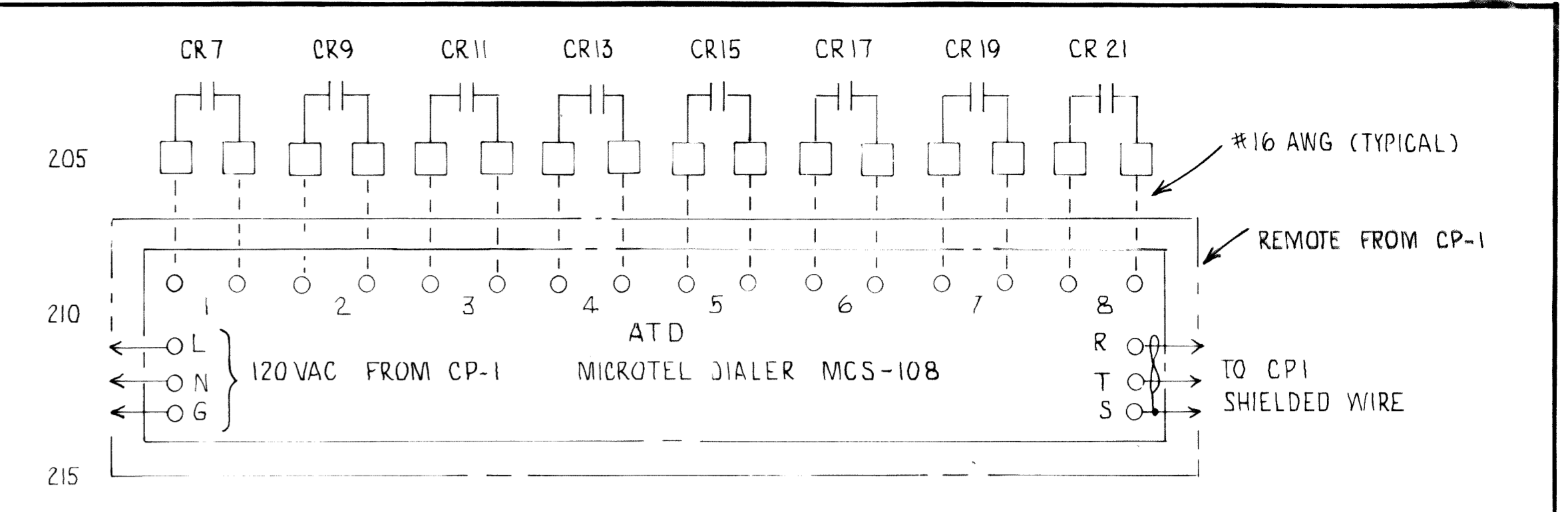
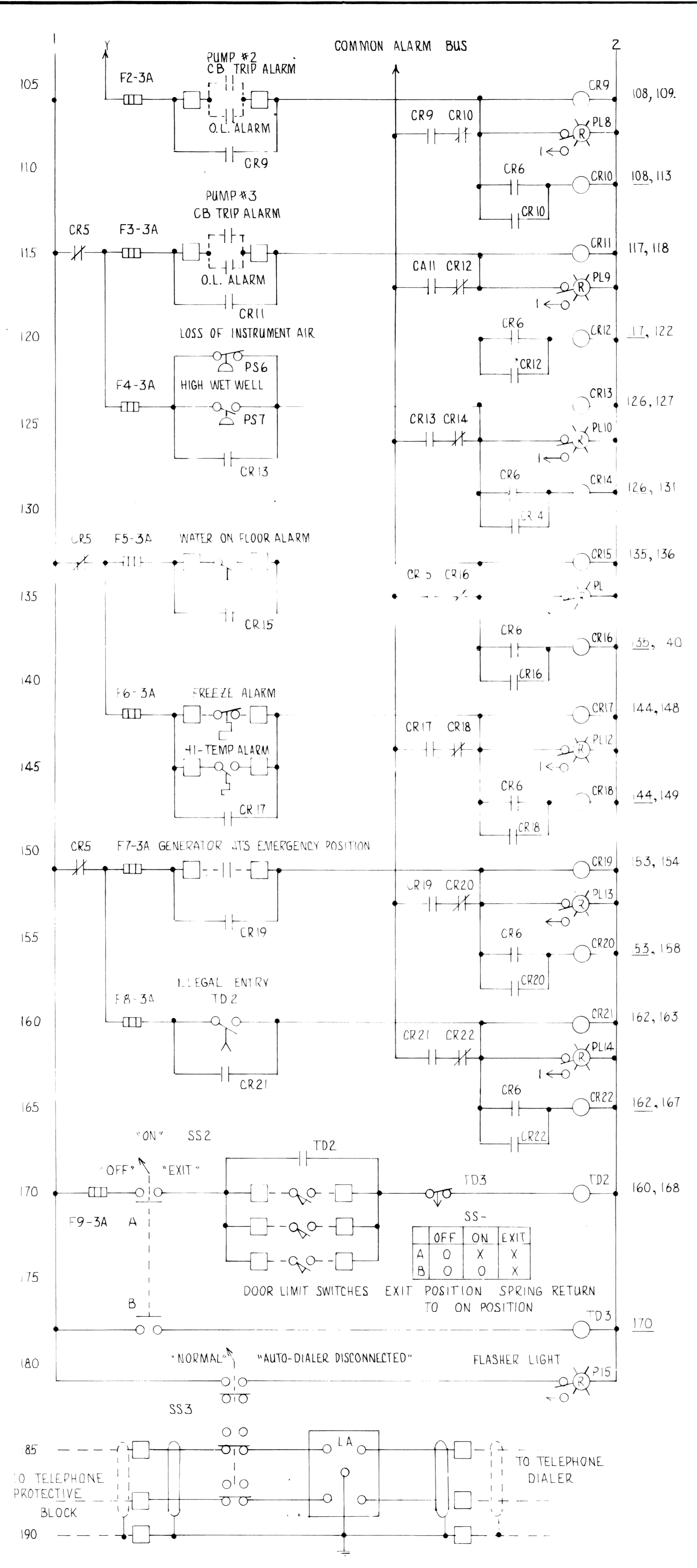
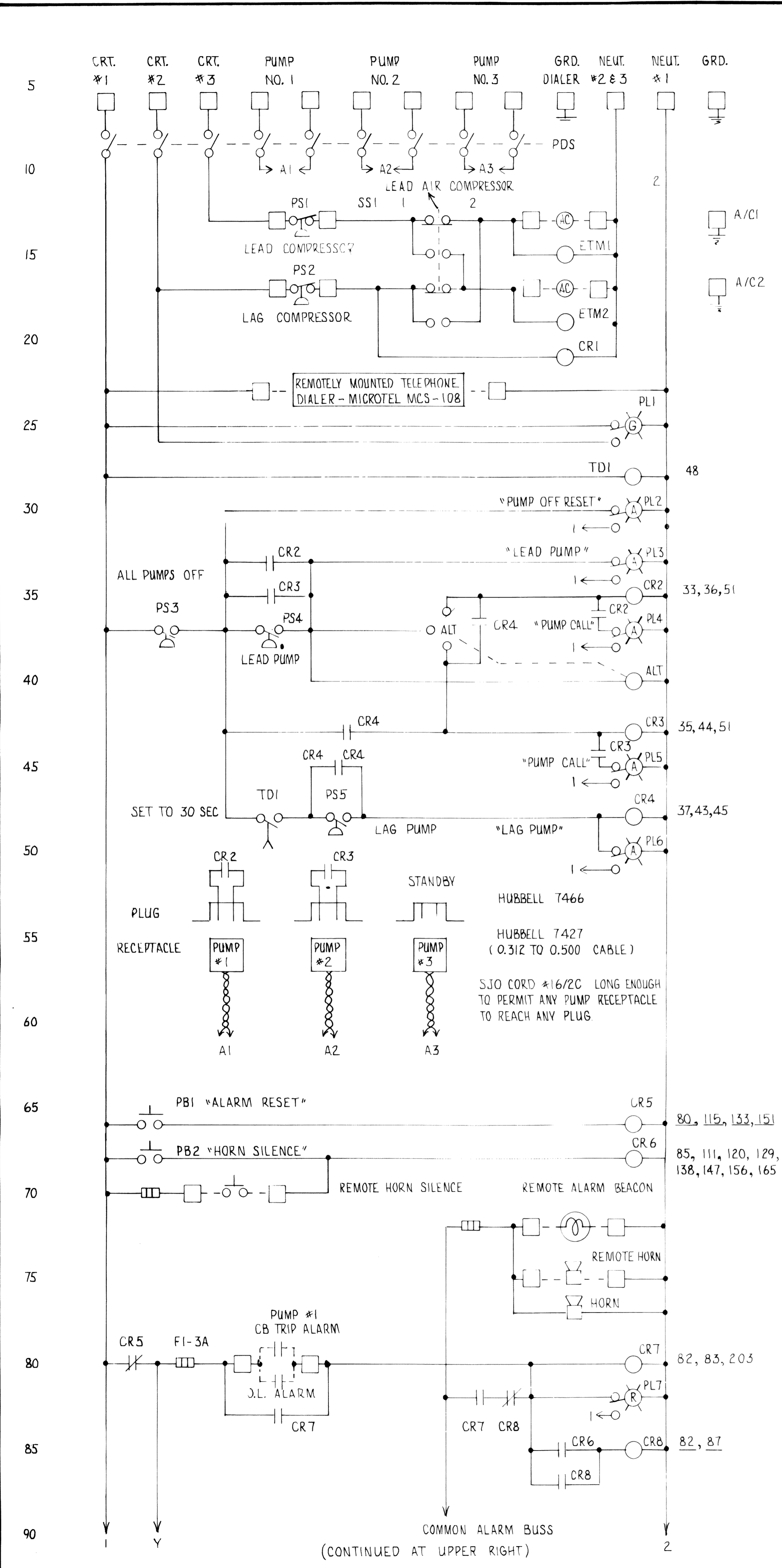


BASEMENT LEVEL ELECTRICAL FLOOR PLAN

SCALE: 3/8" = 1'-0"



DATE		SYMBOL		DESCRIPTION		BY	
REVISIONS							
EVANS, MECHWART, HAMBLETON, & TILTON, INC. CONSULTING ENGINEERS & SURVEYORS 170 MILL STREET GAHANNA, OHIO							
DELAWARE COUNTY LEATHERLIPS DEVELOPMENT SEWAGE PUMPING STATION							
ELECTRICAL FLOOR PLANS							
DESIGNED	DRAWN	TRACED	CHECKED	APPROVED			
REH	RBH		RBH				
PROJECT NO. S-2522		DATE 8-24-89		SHEET 9 OF 13			



PARTIAL BILL OF MATERIAL CONTROL PANEL CP-1

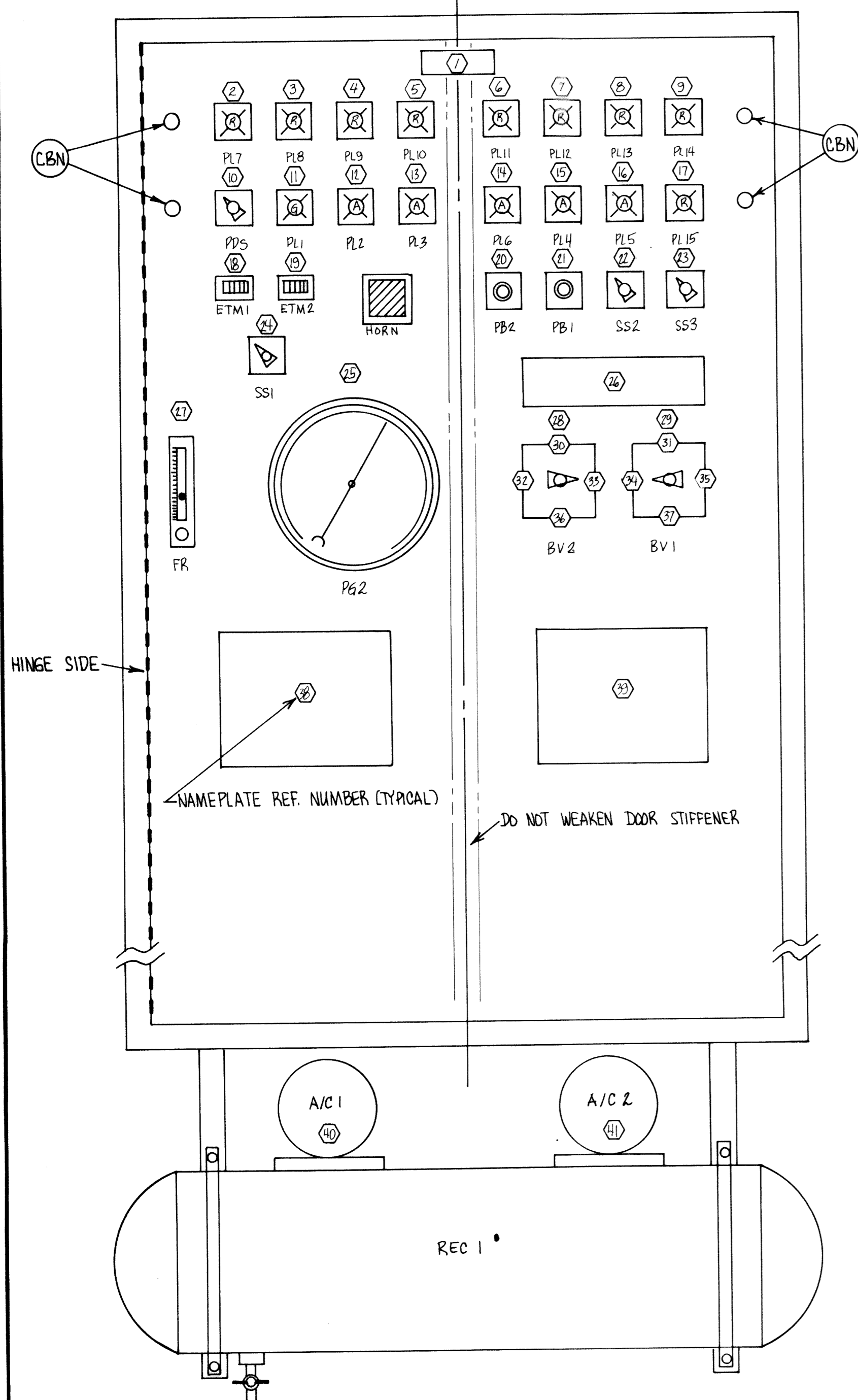
SYMBOL	QUANTITY	DESCRIPTION	MFG. & CATALOG NUMBER
PL8	1	#16, 16A, DISCONNECT SWITCH	ELECTROSWITCH PR16-1108A4
T1	1	NAMEPLATE "OFF-ON" FOR ABOVE SWITCH	ELECTROSWITCH
T2	1	THERMOSTAT, HIGH TEMP ALARM	HONEYWELL T631A1022
T3	1	THERMOSTAT, LOW TEMP ALARM	HONEYWELL T631A1030
TD1, TD2	2	RELAY, TIME DELAY	AB 70CPT400-A1
AD1	1	AUTOMATIC TELEPHONE DIALER	MICROTEL MCS108
TD3	1	RELAY, TIME DELAY	AGASTAT 7022AH
PL1	1	PILOT LIGHT, TRANSFORMER, PTT, GREEN	AB 800T-PT16G
PL2-6	5	PILOT LIGHT, TRANSFORMER, PTT, AMBER	AB 800T-PT16A
PL7-14	8	PILOT LIGHT, TRANSFORMER, PTT, RED	AB 800T-PT16R
PL15	1	PILOT LIGHT, TRANSFORMER, PTT, FLASHER, RED	AB 800T-PT16F
ALT	1	ELECTROMECHANICAL ALTERNATOR	FURNAS 47A510AF
PLUG	3	PLUG	HUBBELL 7466
RECEPTACLE	3	RECEPTACLE	HUBBELL 7427
PB1, PB2	2	FUSH BUTTON	AB 800T-A2U1
SS2	1	SELECTOR SWITCH	AB 800T-J5-K17B
F1-F5	5	FUSE TERMINAL BLOCK HOLDER	AB 1492-H4
F1-F9	20	FUSE + SPARES 1/4 X 1-1/4 TIME DELAY	BUS: MDA-3
	90	TERMINAL BLOCKS, RAIL, END BARRIERS, MARKING STRIP	AB 1492-CA1
SD1	1	SELECTOR SWITCH	ELECTROSWITCH PR16-2252D4
EN2L	1	NAMEPLATE "1-2" FOR ABOVE SWITCH	ELECTROSWITCH
EN2L	1	ENCLOSURE, SIZED AS REQUIRED TO HOUSE ALL COMPONENTS BUT NOT SMALLER THAN 60H X 36W X 10D	HOFFMAN A-60P36
	1	PANEL, TO MATCH ENCLOSURE BUT NO SMALLER THAN 60 X 36	
PS1, PS2	2	PRESSURE SWITCH (FURNAS 69MB6)	GRAINGER 3x681
PS3, 4, 5, 7	4	PRESSURE SWITCH	AB 836-C2A
PS6	1	PRESSURE SWITCH	A: 836-C4A
SS3	1	SELECTOR SWITCH	AB 800T-H2H
LA	1	SURGE PROTECTOR, 3MOV'S, 3 GASTUBES ASSEM.	TELE-LINE PD200
CBN	4	CLOSING BUTTON & PRE-DRILLED HOLE	AB 800T-N1
LS1, 2, 3, 4, 5	5	LIMIT SWITCH, DOOR	MICRO SWITCH B2V6-2RN

PANEL BUILDER SHALL MAKE AN ALLOWANCE OF \$500 IN HIS QUOTATION FOR PANEL MODIFICATIONS AS MAY BE REQUIRED FOR ACCOMMODATING A PARTICULAR PUMP MFG. LEAK DETECTOR AND O.T. DETECTORS.

B-2-89 E-3

DATE	SYMBOL	DESCRIPTION	BY
REVISIONS			
EVANS, MECHWART, HAMBLETON & TILTON, INC. CONSULTING ENGINEERS & SURVEYORS 170 MILL STREET GAHANNA, OHIO			
DELAWARE COUNTY LEATHERLIPS DEVELOPMENT SEWAGE PUMPING STATION			
CONTROL PANEL CP-1			
DESIGNED	DRAWN	TRACED	CHECKED
RBA	RBA	RBA	RBA
NO. 5-2522	DATE 8-24-89	SHEET 11	OF 13





CONTROL PANEL CP-1
NOT TO SCALE

NAMEPLATE LIST (PARTIAL), CONTROL PANEL CP-1

NUMBER	FIRST LINE	SECOND LINE	THIRD LINE
1	CONTROL PANEL CP-1	(SEE NOTE 1 BELOW FOR ADDITIONAL INSTRUCTIONS)	
2	PUMP NO. 1	CB TRIP OR	O.L. RELAY TRIP
3	PUMP NO. 2	CB TRIP OR	O.L. RELAY TRIP
4	PUMP NO. 3	CB TRIP OR	O.L. RELAY TRIP
5	HIGH WET WELL LEVEL OR	LOSS OF INSTRUMENT AIR	SYSTEM PRESSURE
6	WATER ON FLOOR ALARM	IN DRY WELL	
7	HIGH TEMPERATURE OR	LOW TEMPERATURE CONDITION	IN GENERATOR ROOM POSITION
8	GENERATOR TRANSFER SWITCH	IN EMERGENCY GENERATOR	
9	ILLEGAL ENTRY CONDITION		
10	CONTROL PANEL POWER	DISCONNECT SWITCH	
11	CONTROL POWER NORMAL		
12	ALL PUMPS OFF RESET		
13	LEAD PUMP CALL		
14	LAG PUMP CALL		
15	PLUG NO. 1 ACTIVE		
16	PLUG NO. 2 ACTIVE		
17	AUTOMATIC TELEPHONE DIALER	DISABLED	
18	AIR COMPRESSOR NO. 1	RUNNING TIME	
19	AIR COMPRESSOR NO. 2	RUNNING TIME	
20	PUSH TO SILENCE HORN		
21	PUSH TO RESET ALARMS		
22	ENTRY ACKNOWLEDGEMENT	OFF - ON - EXIT	
23	AUTOMATIC TELEPHONE DIALER	NORMAL -- DISCONNECTED	
24	LEAD AIR COMPRESSOR	NO. 1 -- NO. 2	
25	WET WELL LEVEL IN INCHES		
26	(SEE NOTE 2 BELOW FOR WORDING OF EXTENDED NAMEPLATE)		
27	BUBBLER FLOW RATE	SET TO 1.5 SCFH	
28	BLOW DOWN VALVE (BV2)		
29	GAUGE PROTECT VALVE (BV1)		
30	VENT		
31	OFF		
32	BLOW DOWN		
33	NORMAL		
34	NORMAL		
35	VENT AND PROTECT GAUGE		
36	VENT		
37	OFF		
38	(SEE NOTE 3 BELOW FOR WORDING OF EXTENDED NAMEPLATE)		
39	(SEE NOTE 4 BELOW FOR WORDING OF EXTENDED NAMEPLATE)		
40	AIR COMPRESSOR NO. 1		
41	AIR COMPRESSOR NO. 2		

GENERAL REMARK: NAMEPLATES SHALL BE USED TO IDENTIFY COMPONENTS INSIDE PANEL. HOWEVER, SUCH PLATES SHALL BE PREPARED BY PANELBUILDER TO REFLECT FINAL PANEL COMPONENT NUMBERS. INCLUDE FUSE AMPERE RATING OR FUSE HOLDER IDENTIFICATION.

- NAME PLATE NOTES:
1. NAMEPLATE LETTER SIZE TO BE APPROXIMATELY 3 TIMES OTHER NAMEPLATE LETTERING SIZE.
 2. NAMEPLATE 26 SHALL READ:

BUBBLER LINE BLOW DOWN PROCEDURE

1. PLACE "GAUGE PROTECT VALVE" IN "VENT AND PROTECT GAUGE" POSITION
2. PLACE "BLOW DOWN VALVE" IN "IN" POSITION FOR 10 TO 15 SECONDS
3. PLACE "BLOW DOWN VALVE" IN EITHER "VENT" POSITIONS FOR 10 TO 15 SECONDS.
4. PLACE "BLOW DOWN VALVE" IN "NORMAL" POSITION
5. PLACE "GAUGE PROTECT VALVE" IN "NORMAL" POSITION

3. NAMEPLATE 38 SHALL READ:

DANGER

THIS CONTROL PANEL HAS EXPOSED ELECTRICAL CIRCUITS WITHIN. CONTACT WITH ELECTRICAL CIRCUITS MAY CAUSE BODILY INJURY INCLUDING DEATH, AND PROPERTY DAMAGE. ONLY FULLY TRAINED AND QUALIFIED ELECTRICIANS SHOULD OPEN THIS ENCLOSURE AND WORK ON THE CIRCUITS THEREIN. IMPROPER ADJUSTMENT OR DAMAGE TO THE CONTROLS WITHIN THIS PANEL MAY CAUSE DAMAGE TO OTHER EQUIPMENT IN THE STATION AND MAY CAUSE BACKING UP OF SEWERS WITH POSSIBLE CONSEQUENTIAL BODILY INJURY TO OTHER PERSONS AND PROPERTY DAMAGE TO OTHER BUILDINGS IN THE DEVELOPMENT. REFER ALL SERVICE WORK TO QUALIFIED INDIVIDUALS. IF YOU ARE NOT QUALIFIED TO BE RESPONSIBLE FOR THE POSSIBLE CONSEQUENCES OF YOUR ACTS, STAY OUT OF THIS EQUIPMENT.

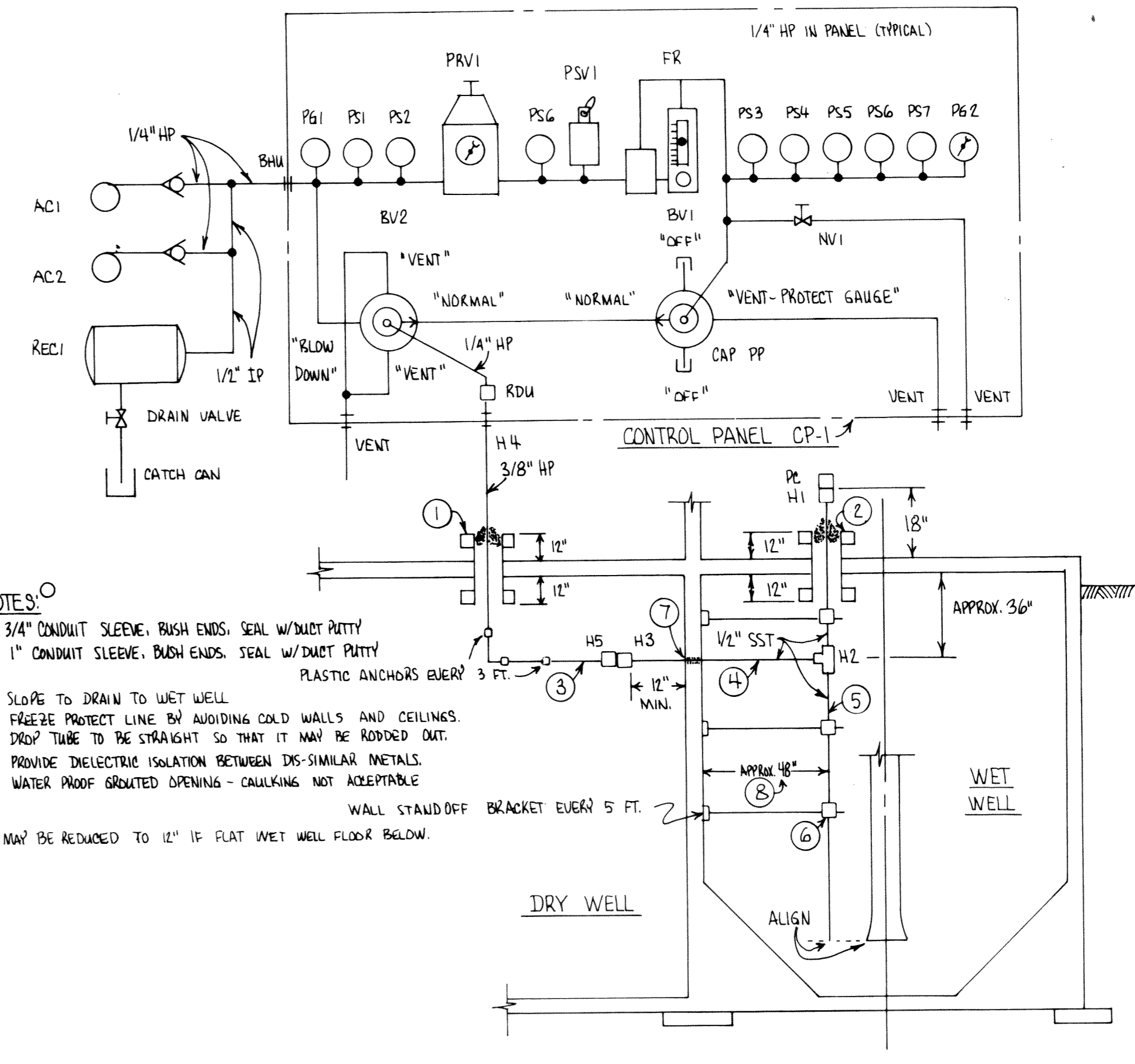
4. NAMEPLATE 39 SHALL READ:

PUMP MOTOR RUNNING CURRENT IS _____ AMPERES
 LEAD AIR COMPRESSOR SWITCH SETTING: _____ PSIG
 LAG AIR COMPRESSOR SWITCH SETTING: _____ PSIG
 LOW INSTRUMENT AIR ALARM SETTING: _____ PSIG
 HIGH LEVEL ALARM LEVEL: _____ INCHES W.C.
 LAG PUMP CALL LEVEL: _____ INCHES W.C.
 LEAD PUMP CALL LEVEL: _____ INCHES W.C.
 ALL PUMPS OFF LEVEL: _____ INCHES W.C.

(----- INDICATES SPACE TO BE LEFT IN NAMEPLATE SO THAT 1/2" DYNAMO TAPE MARKING MAY BE ADDED TO INDICATE PRESENT SETTINGS OF PRESSURE SWITCHES)

PARTIAL BILL OF MATERIAL

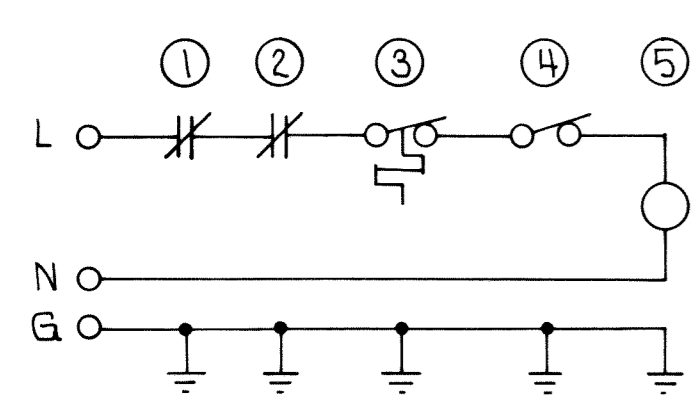
SYMBOL	QUANTITY	DESCRIPTION	MFG. & CATALOG NUMBER
H1	1	TEE, ALL TUBE, 1/2", 316SS	HOKE 8TTT-316
H3	1	CONNECTOR, FEMALE, 1/2" TUBE, 3/8" PIPE	HOKE 8CF6-316
H5	1	CONNECTOR, MALE, 3/8" TUBE, 3/8" PIPE	DEKORON EZ 1400-1166
1/4 HP	LOT	3/8" O.D. HIGH DENSITY POLYETHYLENE	DEKORON HP 1204-66203
1/4 HP	LOT	1/4" O.D. HIGH DENSITY POLYETHYLENE	DEKORON HP 1204-44003
H4	1	BULKHEAD UNION	DEKORON EZ 1400-036
RDU	1	REDUCING UNION 3/8 TO 1/4"	DEKORON EZ 1400-1064
N/A	LOT	MALE CONNECTOR, 1/4"	DEKORON EZ 1400-1144
VENT	3	BULKHEAD UNION, STRAIGHT THRU, 1/4"	DEKORON EZ 1400-064
AC1, AC2	2	AIR COMPRESSOR, 1/6 HP, 115 VAC	GRAINGER STOCK # 22867
RECI	1	AIR RECEIVER, 15 GAL., ASME CODE STAMP	GRAINGER STOCK # 12984
		PROVIDE BOTTOM DRAIN VALVE	
BV1, BV2	2	BALL VALVE, 1/4", CV=0.66, 5 WAY	HOKE 7931F4Y
NV1	1	NEEDLE VALVE, CV=0.07	HOKE D3732M4Y
PSV1	1	SAFETY RELIEF VALVE, 10 PSI	WATTS 159-02R
FR1	1	ROTMETER WITH DIFFERENTIAL PRESSURE REG.	DWYER RMA-3-BV-RKA
PRV1	1	REGULATOR, FILTER, GAUGE	GRAINGER STOCK # 72553
PG1	1	GAUGE, PRESSURE 0-100 PSI	GRAINGER STOCK # 4X512
SST	LOT	TUBING, STAINLESS STEEL, 1/2"X0.049" WALL	RYLSON
		TYPE 304, SEAMLESS	
PC	1	PIPE CAP, FEMALE, 1/2" NPT	N/A
H1	1	CONNECTOR, SS	HOKE 8CM8-316
CV1, CV2	2	VALVE, CHECK, 1/4"	GRAINGER STOCK # 5X780
PG2	1	PRESSURE GAUGE, SENSITIVE, 0-150" WC	ASHCROFT 6-1187-S-1/4-
		6" DIAL, SS-BELLOWS, 1/4 NPT, BACK CONN.	BACK-0.031-0/150 IN. H2O
		0.031 ORIFICE SCREW	
BHU	1	BULKHEAD UNION	DEKORON EZ 1400-034
T		TEE, ALL TUBE, 1/4"	DEKORON EZ 1400-154



NOTES:

1. 3/4" CONDUIT SLEEVE. BUSH ENDS. SEAL W/DUST PUTTY
2. 1" CONDUIT SLEEVE. BUSH ENDS. SEAL W/DUST PUTTY
3. SLOPE TO DRAIN TO WET WELL
4. FREEZE PROTECT LINE BY AVOIDING COLD WALLS AND CEILING.
5. DRY TUBE TO BE STRAIGHT SO THAT IT MAY BE RODDED OUT.
6. PROVIDE DIELECTRIC ISOLATION BETWEEN DIS-SIMILAR METALS.
7. WATER PROOF GROUTED OPENING - CALLKING NOT ACCEPTABLE
8. MAY BE REDUCED TO 12" IF PLAT WET WELL FLOOR BELOW.

BUBBLER LEVEL CONTROL SYSTEM
NOT TO SCALE



NOTES:

1. AUX. CONTACT ON "ATS" START-RUN RELAY. CONTACTS TO OPEN WHEN EVER GENERATOR IS COMMANDED TO RUN
2. GENERATOR LOUVER CONTROL RELAY. CONTACTS TO OPEN WHEN- EVER GENERATOR IS RUNNING.
3. THERMOSTAT "LCT", HONEYWELL T631C10ZD. OPEN ON RISE. MOUNT 8' ABV. FINISHED FLOOR. SET TO 85°F.
4. HUBBEL 1221 IN FS BOX NEAR INLET LOUVER.
5. REVERSE ACTING INLET LOUVER MOTORS. (MULTIPLE MOTORS ON LARGE LOUVERS) POWERED TO CLOSE, SPRING TO OPEN.

GENERATOR INTAKE LOUVER CONTROL DETAIL

8-2-89 E4

DATE	SYMBOL	DESCRIPTION	BY
REVISIONS			
EVANS, MECHWART, HAMBLETON & TILTON, INC. CONSULTING ENGINEERS & SURVEYORS 170 MILL STREET GAHANNA, OHIO			
DELAWARE COUNTY LEATHERLIPS DEVELOPMENT SEWAGE PUMPING STATION			
CONTROL PANEL CP-1 BUBBLER LEVEL CONTROL SYSTEM			
DESIGNED RBH	DRAWN RBH	TRACED RBH	CHECKED RBH
PROJECT NO. S-2522	DATE 8-24-89	SHEET 12	OF 13

RALPH B. HOFFMAN
REGISTERED PROFESSIONAL ENGINEER
STATE OF OHIO

ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
	CEILING OUTLET, INCANDESCENT LIGHTING FIXTURE
	WALL OUTLET, INCANDESCENT LIGHTING FIXTURE
NOTE: INSCRIBED LETTER DENOTES FIXTURE TYPE. (SEE FIXTURE SCH.) NUMBER DENOTES CRT. BKR. NO., LOWER CASE LETTER DENOTES SW.	
	CONVENIENCE OUTLET, SINGLE (GFI=GROUND FAULT INTERRUPTER)
	CONVENIENCE OUTLET, DUPLEX (GFI=GROUND FAULT INTERRUPTER)
NOTE: NUMBER DENOTES CRT. BKR. NO. LOWER CASE LETTER DENOTES CONTROLLING SW. T=MEANS MOUNT ABOVE TABLE OR LAB BENCH SURFACE HEIGHT. COORDINATE HEIGHT W/ OTHER TRADES.	
	WIRED JUNCTION BOX
	BLANK OUTLET BOX (MAY HAVE PULLED WIRE FOR FUTURE LOAD)
	CLOCK OUTLET
	SPECIAL OUTLET, AS REQUIRED
	CEILING MOUNTED EXIT LIGHT (WITH ARROWS AS INDICATED) WIRE AHEAD OF AREA LTG. SW.
	WALL MOUNTED EXIT LIGHT (WITH ARROWS AS INDICATED) WIRE AHEAD OF AREA LTG. SW.
	THERMOSTAT
	TELEPHONE OUTLET (T=TABLE HEIGHT, SEE NOTE ①)
	SWITCH LOCATION 3=THREE WAY 4=FOUR WAY, ECT. a,b,c ECT. CORRESPONDS TO CONTROLLED OUTLETS
	MANUAL MOTOR STARTER (MP=WITH PILOT LIGHT)
	SWITCH LOCATION K=KEY OPERATED P=PLOT LIGHT 3,4 ECT. a,b,c ECT. AS ABOVE.
	ELECTRIC PANEL SURFACE MOUNTED FLUSH MOUNTED
	NON-FUSED SAFETY DISCONNECT SW. INDOOR=NEMA 1, OUTDOOR=NEMA 4X-3S HORSEPOWER, VOLTAGE, & NO. OF POLES RATED FOR LOAD CONCERNED, HEAVY DUTY. (SEE BELOW FOR RATING CONVENTION)
	FUSED SAFETY SWITCH. INDOOR=NEMA 1, OUTDOOR=NEMA 4X-3S NEMA HEAVY DUTY FUSE RATING (XX=NON FUSED) NO. OF FUSES 3 20 S/N. SOLID NEUTRAL FUSE CLIPS 30
	SINGLE PHASE MOTOR OUTLET. INCLUDES LIQUID TIGHT FLEXIBLE METAL CONDUIT AND WIRED GROUND. NUMBER INDICATES MOTOR H.P.
	POLYPHASE MOTOR OUTLET. INCLUDES LIQUID TIGHT FLEXIBLE METAL CONDUIT AND WIRED GROUND. NUMBER INDICATES MOTOR H.P.
	CEILING OUTLET, FLEX. FLUORESCENT LIGHTING FIXTURE. INSCRIBED LETTER DENOTES FIXTURE TYPE. NUMBER DENOTES CRT. BKR. NO. LOWER CASE LETTER DENOTES CONTROLLING SWITCH.
	CONTROL STATION. NEMA HEAVY DUTY. NEMA 4 ENCLOSURE.
	WALL OR CEILING CONDUIT (EXPOSED OR CONCEALED BASED UPON ARCHITECTURAL TREATMENT OF ROOM CONCERNED) UNDERGROUND OR UNDER SLAB CONDUIT
	DUAL HEAD BATTERY POWERED EMERGENCY EGRESS LTG. WITH INTEGRAL CHARGER. WIRE AHEAD OF AREA LTG. SW.
	COMBINATION MOTOR STR. NEMA 1 INDOOR, NEMA 4X-3S OUTDOORS. 2 HV FUSES, CPT, 11V FUSE, 12 O CONTROL, PUSH TO TEST TRANSFORMER, AMBER PL., OTHER CONTROL DEVICES BY NCTE.
NOTE: ANY SYMBOL MAY BE MODIFIED BY WP=WEATHER PROOF ANY SYMBOL USED IN A CLASSIFIED LOCATION SHALL BE MADE NEMA 1 CLASS I DIV. I. GRP.D AND LISTED FOR WP USE IF LOCATED OUTDOORS	

PANEL DESIGNATION "A"		LOCATION MCC					
NO. OF PHASES	NO. OF WIRES	VOLTAGE	AMPS I.C. SYM. TO KAMP				
1	3	120/240	100				
MAIN C.B. AMPS. N/A MAIN LUGS. ONLY AMPS. 100 MAIN BUS A. 100 NEUT. A. 100							
MOUNTING MCC CABLE ENTRY W.W. BRANCH TOTAL SPACES 18							
FEEDER CABLE #3 FEEDER CONDUIT N/A N.E.C. FEEDER AMPS. 54							
NA= NOT APPLICABLE, T=TOP, B=BOTTOM, F=FLUSH, S=SURFACE, X=PROVIDE							
GFI= GROUND FAULT BREAKER							
CIRCUIT NUMBER	DIRECTORY ENTRY / COMMENT	LOAD	CONDUIT SIZE	BR. WIRE	BKR. AMPS	NO. OF POLES	NOTES
1	GEN. RM. LTS.	780	3/4	12	20	1	
3	PUMP RM. LTS.	1340	"	"	20	1	
5	GEN. RM. RECEPT.	360	"	"	20	1	GFI
7	SPARE	---	---	---	20	1	
9	SPARE	---	---	---	20	1	
11	RECORDER, FLOW TRANSMITTER	180	3/4	12	20	1	
13	CP-1	100	"	"	20	1	
15	CP-1 A/C 1	720	"	"	20	1	
17	CP-1 A/C 2	720	"	"	20	1	
19							
21							
23							
25							
27							
29							
31							
35							
37							
39							
41							
2	WET WELL LTS. SF-2	520	3/4	12	20	1	
4	PUMP RM. BASEMENT LTS.	780	"	"	20	1	
6	PUMP RM. BASEMENT RECEPT.	540	"	"	20	1	GFI
8	PUMP RM. RECEPT.	900	"	"	20	1	GFI
10	GENERATOR LOWER OPERATORS	100	"	"	20	1	
12	DAY TANK	720	"	"	20	1	
14	BATTERY CHARGER	100	"	"	20	1	
16	GENERATOR COOLANT HEATER	2500	3/4	"	20	2P	
18	GENERATOR COOLANT HEATER	---	---	---	---	---	
20							
22							
24							
26							
28							
30							
32							
34							
36							
38							
40							
42							

U/L SERVICE ENTRANCE LABEL, GROUND BAR KIT, BOLT ON BKRS
 CRT BKRS. "SWD" RATED, SUB FEED LUGS, HANDLE LOCKS ON 10,11,12,13,14,15,16,17,18

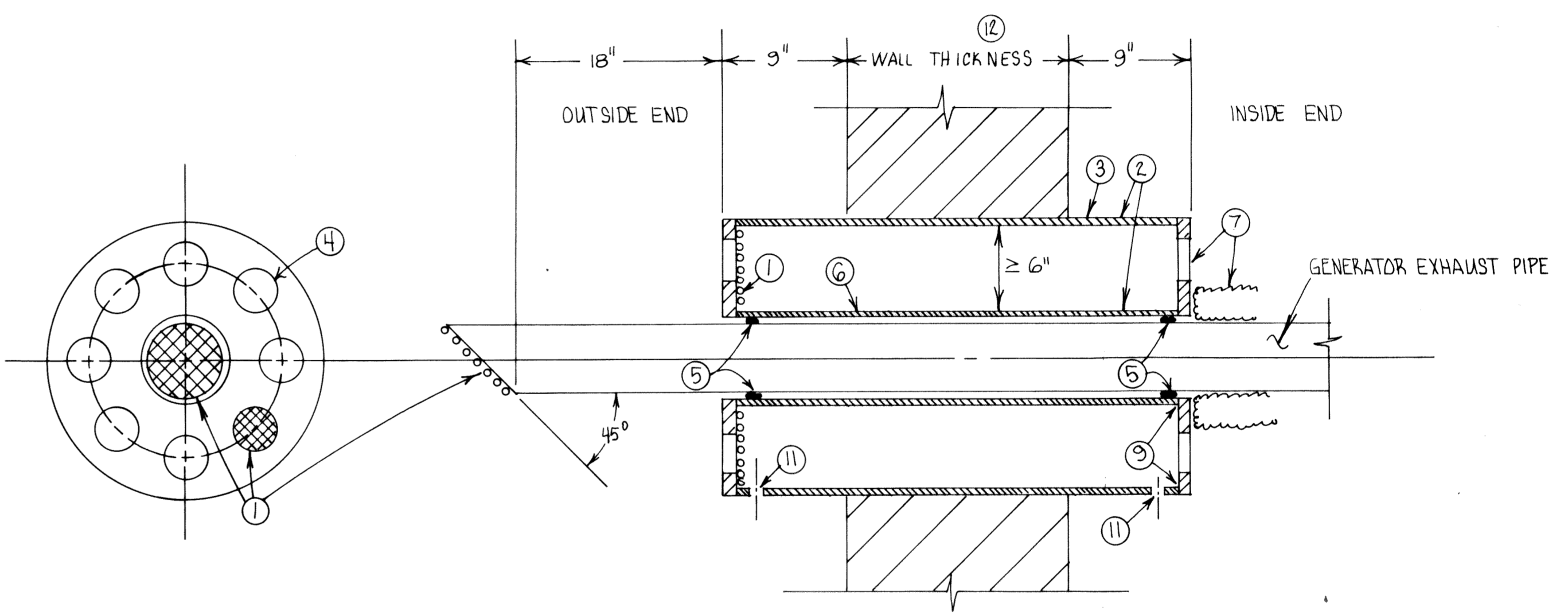
ELECTRIC HEATER SCHEDULE			
SYMBOL	KW	VOLTS/PH.	DESCRIPTION
H1	3	480/3	EMERSON CAT. NO. MHH-03-4, 350 CFM, 800 FPM, 12" THROW MT-1 THERMOSTAT, MCFS FAN SWITCH, MMB-5 BRACKET
H2	5	480/3	EMERSON CAT. NO. MHH-05-4, 350 CFM, 800 FPM, 12" THROW MT-1 THERMOSTAT, MCFS FAN SWITCH, MMB-5 BRACKET

FAN SCHEDULE				
SYMBOL	CFM	SP("WG)	VOLTS/PH.	DESCRIPTION
EF-1	5080	0.125	460V/3 PH 1/2 HP	ACME CENTRIMASTER PWB 223K, 1 1/2 HP, WITH BACK DRAFT DAMPER, BELT DRIVE, BIRDSCREEN, ALUMINUM HOUSING & MOTOR COMPARTMENT. NON-OVERLOADING.
SF-1	5140	0.125	460V/3 PH 1/2 HP	ACME SKYMASTER SUPPLY VENTILATOR, MODEL ECH 246-S BELT DRIVE, AL. HOUSING, BIRD SCREEN, NON-OVERLOADING, BACKDRAFT DAMPER, WITH SPECIAL MATING CURB BOX FOR SLOPING ROOM. SUBMIT SHOP DWG. ON CURB BOX DESIGN AND DUCT ATTACHMENT DETAIL.
SF-2	1460	0.125	120V/1 PH 1/4 HP	ACME ROOFMASTER SUPPLY VENTILATOR, MODEL LA14E4-S ENHANCED AS REQUIRED TO BE RATED: EXPLOSION PROOF FOR NEC CLASS I, DIV. 1, GRP. D LOCATION! PROVIDE SPECIAL MATING CURB BOX FOR SLOPED ROOF. PROVIDE SHOP DWG. ON CURB BOX DESIGN. NO BACKDRAFT DAMPER.

LOUVER AND DAMPER SCHEDULE			
SYMBOL	WIDTH(")	HEIGHT(")	DESCRIPTION
L1, L2	48" EA.	28" EA.	AIROLITE KB306 WITH REVERSE ACTING MOTOR OPERATOR (HIGH TORQUE-HONEYWELL) (POWER TO CLOSE, SPRING TO OPEN), ALUM. 1/2" MESH BIRD SCREEN, BLADE EDGE SEALING TIPS, 215-R1 ANODIC FINISH PER AA-MIDC22A41
L3	52"	24"	AIROLITE KX827 WITH ALUM. 1/2" MESH BIRD SCREEN, BLADE EDGE SEAL, 215-R1 ANODIC FINISH PER AA-MIDC22A41. SCREEN LOCATED ON INSIDE.
PROVIDE INSIDE ANGLE FLANGE TOP, BOTTOM AND SIDES, ALL LOUVERS (L1, L2, L3)			

LIGHTING FIXTURE SCHEDULE							
SYM-BOL	MANUFACTURER AND CATALOG NUMBER	LAMP(S)			VOL-TAGE	MOUNTING TYPE/HT.	REMARKS/ OPTIONS
		NO.	TYPE	WATT			
A	BENJAMIN-THOMAS FL-1025-BU	2	F96T12/CW/HO	110	120	STEM	-20°F STARTING. MOUNT 6" FROM CEILING PER LISTING
B	BENJAMIN-THOMAS PAD-2425-B	2	F96T12/CW/HO	110	120	STEM	-20°F STARTING. MOUNT 6" FROM CEILING PER LISTING
C	KENALL 3636	1	100W. INCAND.	100	120	WALL	MOUNT ON KENALL 9050 CAST BOX

NOTES:



- NOTES:
- 1/2" MESH SCREEN ON EXHAUST PIPE AND THIMBLE OUT SIDE END ONLY.
 - CONCENTRIC SCHEDULE 40 STEEL PIPE
 - OUTER PIPE 20" NOMINAL FOR EXHAUST PIPE SIZES 6" AND SMALLER
 - 8 HOLES, 3" DIAMETER ON 7" RADIUS CIRCLE, EACH END (FOR 6" AND SMALLER EXHAUST PIPES)
 - FIRE PROOF PACKING ROPE, NON-ASBESTOS
 - INNER PIPE SIZE TO BE CHOSEN TO FIT OVER EXHAUST PIPE. CONTRACTOR TO CONFIRM SIZE
 - INSULATE EXHAUST PIPE WITHIN BUILDING BUT DO NOT OBSTRUCT COOLING HOLES IN THIMBLE.
 - END PLATES NOMINAL 1/8" STEEL
 - CONTINUOUS WELD END PLATES TO STEEL PIPE BOTH ENDS.
 - HOT DIP GALVANIZE THIMBLE AFTER COMPLETE FABRICATION AND DRILLING PER SPECIFICATION D5910 "GALVANIZING"
 - 1/2" WEEP HOLES, BOTH ENDS. INSTALL WEEP HOLES DOWN SO AS TO DRAIN.
 - CONTRACTOR TO CONFIRM WALL THICKNESS AND ADJUST TOTAL THIMBLE LENGTH TO BE W.T. + 18".

GENERATOR EXHAUST PIPE THIMBLE DETAIL

AS BUILT NO CHA-62

8-2-89 E5

DATE	SYMBOL	DESCRIPTION	BY
REVISIONS			
EVANS, MECHWART, HAMBLETON & TILTON, INC. CONSULTING ENGINEERS & SURVEYORS 170 MILL STREET GAHANNA, OHIO			
DELAWARE COUNTY LEATHERLIPS DEVELOPMENT SEWAGE PUMPING STATION			
MECHANICAL & ELECTRICAL SCHEDULES & DETAILS			
DESIGNED RBH	DRAWN RBH	TRACED	CHECKED RBH
PROJECT NO. S-2522		DATE 8-24-89	SHEET 13 OF 13

