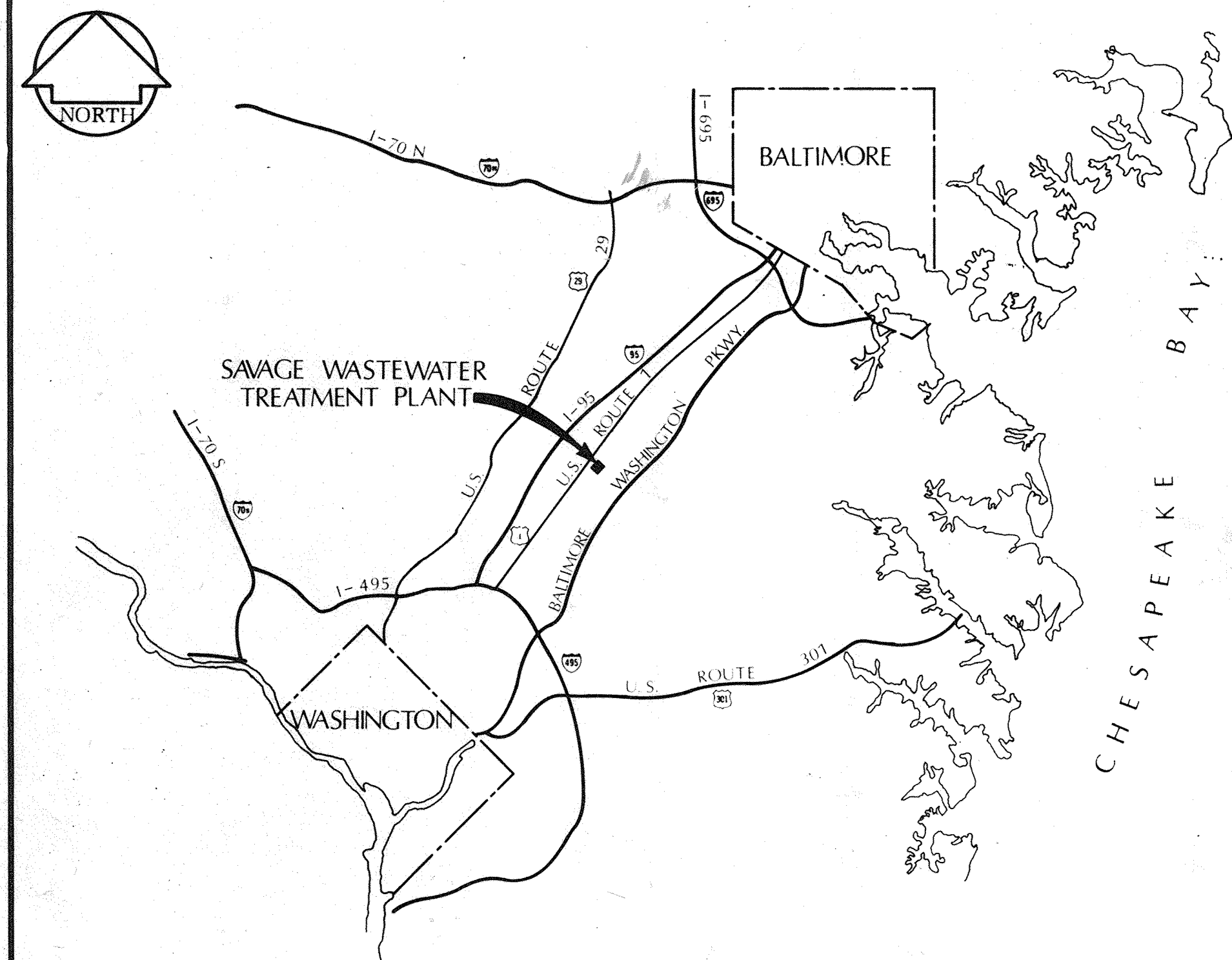
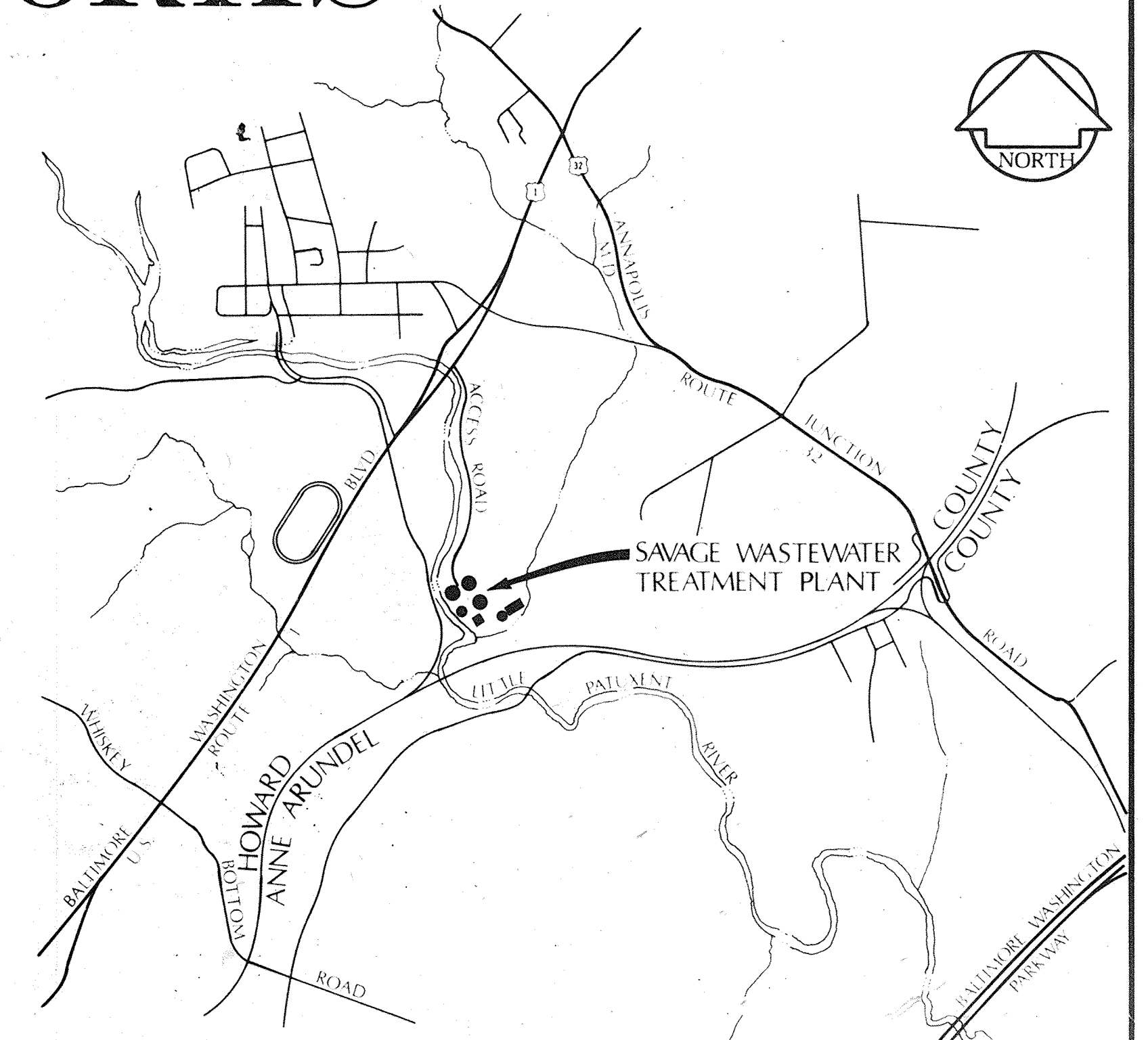
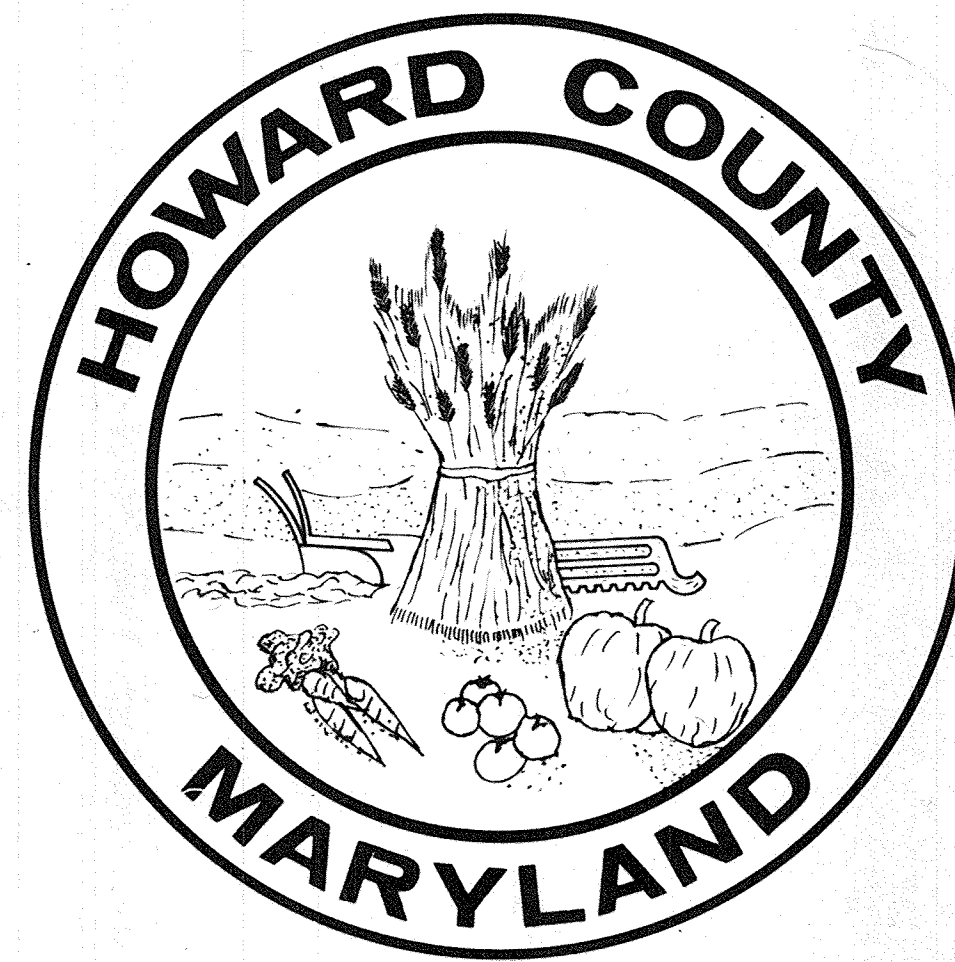


HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS



LOCATION MAP
SCALE: 1" = 6 MILES



VICINITY PLAN
SCALE: 1" = 2000'

SAVAGE WASTEWATER TREATMENT PLANT

ADDITION NO. 4
CONTRACT 501-S

HOWARD COUNTY

Thomas J. Regan Jr. 9-28-77
THOMAS J. REGAN JR. - DIRECTOR -
DEPARTMENT OF PUBLIC WORKS

William O. Filbert 9-28-77
WILLIAM O. FILBERT CHIEF BUREAU OF ENGINEERING

JAMES A. FEDERLINE INC.
AS-BUILT DRAWING

WHITMAN, REQUARDT & ASSOCIATES - ENGINEERS

Kenneth A. McCord
KENNETH A. McCORD

GENERAL			STRUCTURAL			MECHANICAL			ELECTRICAL		
DRAWING & SHEET NO.	DESCRIPTION		DRAWING & SHEET NO.	DESCRIPTION		DRAWING & SHEET NO.	DESCRIPTION		DRAWING & SHEET NO.	DESCRIPTION	
1	G-1	TITLE SHEET	34	S-1	NOTES & TYPICAL DETAILS	56	M-1	LEGEND, ABBREVIATIONS & GENERAL DETAILS	89	E-1	POWER-MASTER ONE LINE WIRING DIAGRAM
2	G-2	LIST OF DRAWINGS	35	S-2	TYPICAL DETAILS	57	M-2	SLUDGE PROCESS PIPING SCHEMATIC	90	E-2	GENERAL NOTES AND LEGEND
3	G-3	DESIGN CRITERIA, ABBREVIATIONS & LEGEND			FLOTATION THICKENERS	58	M-3	CHEMICAL PIPING SCHEMATIC	91	E-3	SITE PLAN
4	G-4	GENERAL NOTES, REFERENCES AND BASELINE PLAN	36	S-3	PLAN ELEV. 128.00 & 142.00	59	M-4	PLANT PLUMBING & DRAIN SCHEMATICS			FLOTATION THICKENERS
			37	S-4	ROOF FRAMING PLAN & BEAM SCHEDULE	60	M-5	PLANT SERVICE PIPING SCHEMATICS	92	E-4	PLAN AT ELEVATION 128.0 & DETAILS
			38	S-5	SECTIONS & DETAILS	61	M-6	METERING SYSTEMS SCHEMATICS	93	E-5	PLAN AT ELEVATION 142.0 & DETAILS
			39	S-6	COLUMN SCHEDULE & DETAILS			FLOTATION THICKENERS			DIGESTERS & GRAVITY THICKENERS
					DIGESTERS & GRAVITY THICKENERS	62	M-7	PLAN AT ELEVATION 128.0 NORTH	94	E-6	PLAN & DETAILS
5	C-1	LOCATION PLAN & EXISTING INTERCEPTORS				63	M-8	PLAN AT ELEVATION 128.0 SOUTH	95	E-7	PLAN & DETAILS
6	C-2	GRADING & UTILITY PLAN (20 SCALE)	40	S-7	PLAN ELEV. 128.00 - NORTH	64	M-9	PLAN AT ELEVATION 142.0 NORTH	96	E-8	MISC. - ALARM WIRING DIAGRAMS
7	C-3	REFUELING PLAN, SECTIONS AND PROFILES	41	S-8	PLAN ELEV. 128.00 - SOUTH	65	M-10	PLAN AT ELEVATION 142.0 SOUTH	97	E-9	DETAILS
8	C-4	PIPE PROFILES	42	S-9	PLAN ELEV. 146.33 - NORTH	66	M-11	SECTIONS & DETAILS	98	E-10	PLAN & DETAILS
9	C-5	PIPE PROFILES & DETAILS	43	S-10	PLAN ELEV. 146.33 - SOUTH	67	M-12	DETAILS	99	E-11	PLAN & DETAILS
10	C-6	PROFILE & TYPICAL SECTIONS	44	S-11	SECTIONS	68	M-13	SECTIONS & DETAILS	100	E-12	WEST PLAN & DETAILS
11	C-7	TYPICAL SECTIONS AND PROFILES	45	S-12	PLAN, SECTIONS & DETAILS			DIGESTERS & GRAVITY THICKENERS	101	E-13	EAST PLAN & DETAILS
12	C-8		46	S-13	PLAN, SECTIONS & DETAILS	69	M-14	DIGESTER PLAN			DEWATERING BUILDING
13	C-9	NOT INCLUDED IN THIS CONTRACT			DEWATERING BUILDING	70	M-15	LOWER PIPING PLAN WEST GALLERY	102	E-14	PLAN AT ELEVATION 130.0 & DETAILS
14	C-10		47	S-14	PLAN ELEV. 130.00 & ELEV 142.00	71	M-16	LOWER PIPING PLAN EAST GALLERY	103	E-15	PLAN AT ELEVATION 142.0 & 156.0
15	C-11		48	S-15	PLAN ELEV 156.00 & ROOF FRAMING PLAN	72	M-17	UPPER PIPING PLAN WEST GALLERY	104	E-16	SECTIONS
			49	S-16	SECTIONS & DETAILS	73	M-18	UPPER PIPING PLAN EAST GALLERY	105	E-17	DETAILS
16	A-1	PLANS AT ELEVATION 142.00	50	S-17	SECTIONS & DETAILS	74	M-19	PIPING PLAN AT ELEVATION 140.0	106	E-18	ONE LINE WIRING DIAGRAM "CC9A", "CC9B", "CC10A" & "CC10B"
17	A-2	PLANS AT ELEVATION 156.00	51	S-18	SECTIONS & DETAILS	75	M-20	GRAVITY THICKENER PLAN	107	E-19	ELEMENTARY WIRING DIAGRAMS
18	A-3	ROOF PLANS & DETAILS	52	S-19	SECTIONS & DETAILS	76	M-21	FUTURE EXPANSION PLAN	108	E-20	ELEMENTARY WIRING DIAGRAMS
19	A-4	TOILET ROOM PLANS & DETAILS	53	S-20	BEAM SCHEDULE			DEWATERING BUILDING	109	E-21	ELEMENTARY WIRING DIAGRAMS
20	A-5	CEILING PLAN & DETAILS	54	S-21	BEAM & COLUMN SCHEDULES	77	M-22	PLAN AT ELEVATION 130.0 NORTH	110	E-22	ELEMENTARY WIRING DIAGRAMS
21	A-6	ELEVATIONS			OUTDOOR PRIMARY SUBSTATION PS2	78	M-23	PLAN AT ELEVATION 130.0 SOUTH	111	E-23	"CC9A" MOTOR CONTROL CENTER-ELEV. & SCHEDULE
22	A-7	ELEVATIONS	55	S-22	PLAN, SECTIONS & DETAILS	79	M-24	PLAN AT ELEVATION 142.0 NORTH	112	E-24	"CC9B" MOTOR CONTROL CENTER-ELEV. & SCHEDULE
23	A-8	CROSS SECTIONS				80	M-25	PLAN AT ELEVATION 142.0 SOUTH	113	E-25	"CC10A" MOTOR CONTROL CENTER-ELEV. & SCHEDULE
24	A-9	WALL SECTIONS				81	M-26	PLAN AT ELEVATION 156.0 NORTH	114	E-26	"CC10B" MOTOR CONTROL CENTER-ELEV. & SCHEDULE
25	A-10	WALL SECTIONS				82	M-27	PLAN AT ELEVATION 156.0 SOUTH	115	E-27	ONE LINE & ELEMENTARY WIRING DIAGRAMS "PC 1" & "PC 2"
26	A-11	SECTIONS & DETAILS				83	M-28	SECTIONS	116	E-28	POWER CENTERS "PC 1" & "PC 2" - ELEV. & SCHEDULE
27	A-12	SECTIONS & DETAILS				84	M-29	SECTIONS			MISCELLANEOUS
28	A-13	MASONARY & EXPANSION JOINT DETAILS				85	M-30	SECTIONS & DETAILS	117	E-29	OUTDOOR PRIMARY SUBSTATION "PS 2" PLANS & DETAILS
29	A-14	MISCELLANEOUS DETAILS				86	M-31	SECTIONS & DETAILS	118	E-30	ONE LINE WIRING DIAGRAMS "PS 2"
30	A-15	MISCELLANEOUS DETAILS				87	M-32	SECTIONS & DETAILS	119	E-31	OUTDOOR PRIMARY SUBSTATION "PS 2" ELEV. & SCHEDULE
31	A-16	STAIR DETAILS				88	M-33	INSTRUMENTATION PANELBOARD	120	E-32	ELEMENTARY WIRING DIAGRAMS LIGHTING CONTROL
32	A-17	STAIR DETAILS							121	E-33	ELEMENTARY WIRING DIAGRAMS LIGHTING CONTROL
33	A-18	SCHEDULE & DETAILS							122	E-34	POWER RISER DIAGRAMS
									123	E-35	ONE LINE DIAGRAM FIRE ALARM SYSTEM
									124	E-36	METERS & INSTRUMENTATION
									125	E-37	UNDERGROUND DUCTBANK DETAILS
									126	E-38	DETAILS
									127	E-39	ANNUNCIATORS-SCHEDULES, & WIRING DIAGRAMS
									128	E-40	ANNUNCIATORS-SCHEDULES, & WIRING DIAGRAMS

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>W.O. Gilbert 9-28-77</i> CHIEF BUREAU OF ENGINEERING	CONTRACT NO. <u>501-S</u>	LIST OF DRAWINGS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. <u>2</u> OF <u>128</u>	SCALE NONE
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DRAWING 44-510-18392

SAVAGE WASTEWATER TREATMENT PLANT

DESIGN CRITERIA

DESIGN YEAR - 1985
 AVERAGE DAILY SEWAGE FLOW: JUNE 1974 - 4.0 MGD
 MID 1978 - 10.0 MGD (EXISTING CAPACITY)
 MID 1985 - 15.0 MGD (DESIGN CAPACITY - 4th ADDITION)
 YR. 2000 - 25.0 MGD (ULTIMATE CAPACITY)

SLUDGE QUANTITIES

PRIMARY

- a. SOLIDS PER DAY (DRY), INCLUDING 2500 LBS. OF FILTER SLUDGE 22,000 PPD
- b. AVERAGE SOLIDS THICKNESS 3.0 %
- c. LIQUID QUANTITY AT 3.0% SOLIDS 88,000 GPD

SECONDARY (1ST STAGE):

- a. SOLIDS PER DAY (DRY) OF BIOLOGICAL W.A.S. 6,300 PPD
- b. AVERAGE SOLIDS THICKNESS 0.50%
- c. LIQUID QUANTITY AT 0.50% SOLIDS 151,200 GPD

NITRIFICATION (2ND STAGE):

- a. SOLIDS PER DAY (DRY) OF NITRIFICATION SLUDGE (W.N.S.) 3,700 PPD
- b. AVERAGE SOLIDS THICKNESS 0.50%
- c. LIQUID QUANTITY AT 0.50% SOLIDS 88,800 GPD

PHOSPHOROUS SLUDGE

- a. SOLIDS PER DAY (DRY) OF PHOSPHOROUS SLUDGE (W.P.S.) 7,500 PPD
- b. AVERAGE SOLIDS THICKNESS 5.0%
- c. LIQUID QUANTITY AT 5.0% SOLIDS 18,000 GPD

TOTAL SOLIDS PER DAY (DRY)

39,500 PPD

FLOTATION THICKENERS (PRE) FOR SECONDARY & NITRIFICATION SLUDGES

- NUMBER OF UNITS 2
- SIZE OF EACH 40' Lg. x 12' W. x 11' SWD.
- SURFACE AREA OF EACH 480 Sq. Ft.
- SOLIDS LOADING OF EACH
 - a. DESIGN 20 PPD/Sq. Ft. = 9,600 PPD
 - b. PEAK 30 PPD/Sq. Ft. = 14,400 PPD

THICKENED SLUDGE WITHOUT CHEMICAL CONDITIONING

- a. MINIMUM SOLIDS 3.0 %
- b. LIQUID QUANTITY OF 10,000 PPD AT 3.0 % SOLIDS 40,000 GPD

AEROBIC DIGESTERS FOR ALL SLUDGES EXCEPT PHOSPHOROUS SLUDGE

- NUMBER OF UNITS 2
- EACH OF TWO
 - a. SIZE = 360' Lg. x 30' W. x 15' S.W.D. 1,210,000 Gals.
 - b. DETENTION TIME AT 1/2 (88,000 + 40,000 PPD) 18.9 DAYS
 - c. SOLIDS LOADING = 1/2 (22,000 + 10,000 PPD) 16,000 PPD (DRY)
 - d. SOLIDS LEAVING (AT 35 % REDUCTION) 10,400 PPD (DRY)
 - e. DIFFUSED AIR SUPPLY 10,000 SCFM
- BLOWERS = 4 AT 6,000 SCFM EACH (PLANT TOTAL) 24,000 SCFM

GRAVITY THICKENERS (POST) FOR DIGESTED & PHOSPHOROUS SLUDGES

- NUMBER OF UNITS 2
- EACH OF TWO
 - a. SIZE = 40' Dia. x 13' S.W.D. 130,000 Gals.
 - b. SURFACE AREA 1,260 Sq. Ft.
 - c. SOLIDS LOADING AT 10,400 + (1/2 x 7500) = 14,150 PPD 11.2 PPD/Sq. Ft.
 - d. HYDRAULIC LOADING
 - 1.) SLUDGE = 1/2 (88,000 + 40,000 + 1800) = 73,000 GPD
 - 2.) DILUTING WATER = 4 x SLUDGE = 292,000 GPD
 - e. DETENTION TIME 8.5 Hrs.
- AVERAGE SOLIDS IN THICKENED SLUDGE 4.0 %

VACUUM FILTERS

- NUMBER OF UNITS 2
- EACH OF TWO
 - a. SIZE 14' Lg. x 12' Dia.
 - b. FILTER AREA 525 Sq. Ft.
 - c. SLUDGE LOADING (DRY) 4.0 Lbs./Sq. Ft./Hr.
- HOURS OF OPERATION/WEEK, BOTH UNITS FOR 7,500 + (2 x 10,400) = 28,300 / DAY = 198,100 LBS./WEEK (DRY) 472 Hrs / Wk.

PIPELINE

- A AIR
- ABI AERATION BASIN INFLUENT
- CCBI CHLORINE CONTACT BASIN INFLUENT
- CL₂ CHLORINE
- CS CONTACT STABILIZATION
- D DRAIN
- DB DUCTBANK
- FM FORCE MAIN
- IS INCINERATOR SLUDGE
- OS OXIDIZED SLUDGE
- Pr. PROFILE
- S SEWER OR INTERCEPTOR
- TD TANK DRAIN
- TSE THICKENED SLUDGE EFFLUENT
- UD UNDER DRAIN
- PCI PRIMARY CLARIFIER INFLUENT
- W WATER (POTABLE)
- PS PRIMARY SLUDGE
- FW FLUSHING WATER (PROCESS WATER)
- DNS DENITRIFIED SLUDGE
- SC SCUM
- WAS WASTE ACTIVATED SLUDGE
- WNS WASTE NITRIFIED SLUDGE
- WPS WASTE PHOSPHOROUS SLUDGE
- SSD SECONDARY SANITARY DRAIN
- PSD PRIMARY SANITARY DRAIN
- POR PROCESS OVERFLOW RETURN

ABBREVIATIONS

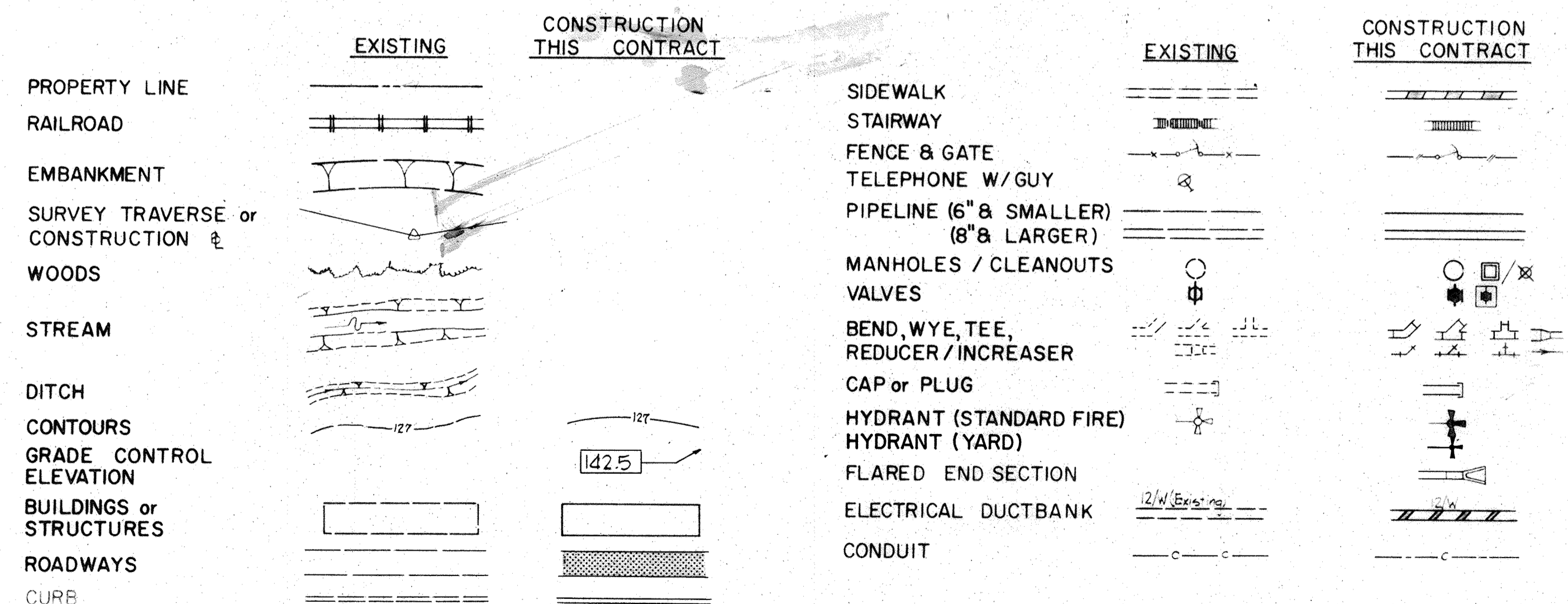
MISCELLANEOUS

- BL BASELINE
- CL CENTERLINE
- EX EXISTING
- FF FIRST FLOOR
- MH MANHOLE
- INV. INVERT ELEVATION
- PC POINT OF CURVATURE
- PI POINT OF INTERSECTION
- PT POINT OF TANGENCY
- R RADIUS
- N NORTH
- No. NUMBER
- E EAST
- S SOUTH
- W WEST
- WL WATER LEVEL
- SC SECONDARY CLARIFIER
- PS PUMPING STATION
- PC PRIMARY CLARIFIER
- CFM CUBIC FEET PER MINUTE
- FD FLOOR DRAIN
- F.C.O. FLUSH CLEAN OUT
- BLDG. BUILDING

APPURTENANCES

- C CROSS
- T TEE
- V VALVE
- Y WYE
- HB HORIZONTAL BEND
- P PLUG
- VB VERTICAL BEND
- R REDUCER / INCREASER (CONCENTRIC)
- ER REDUCER / INCREASER (ECCENTRIC)

LEGEND



(CONSTRUCTION BY OTHERS - SO NOTED & IDENTIFIED)

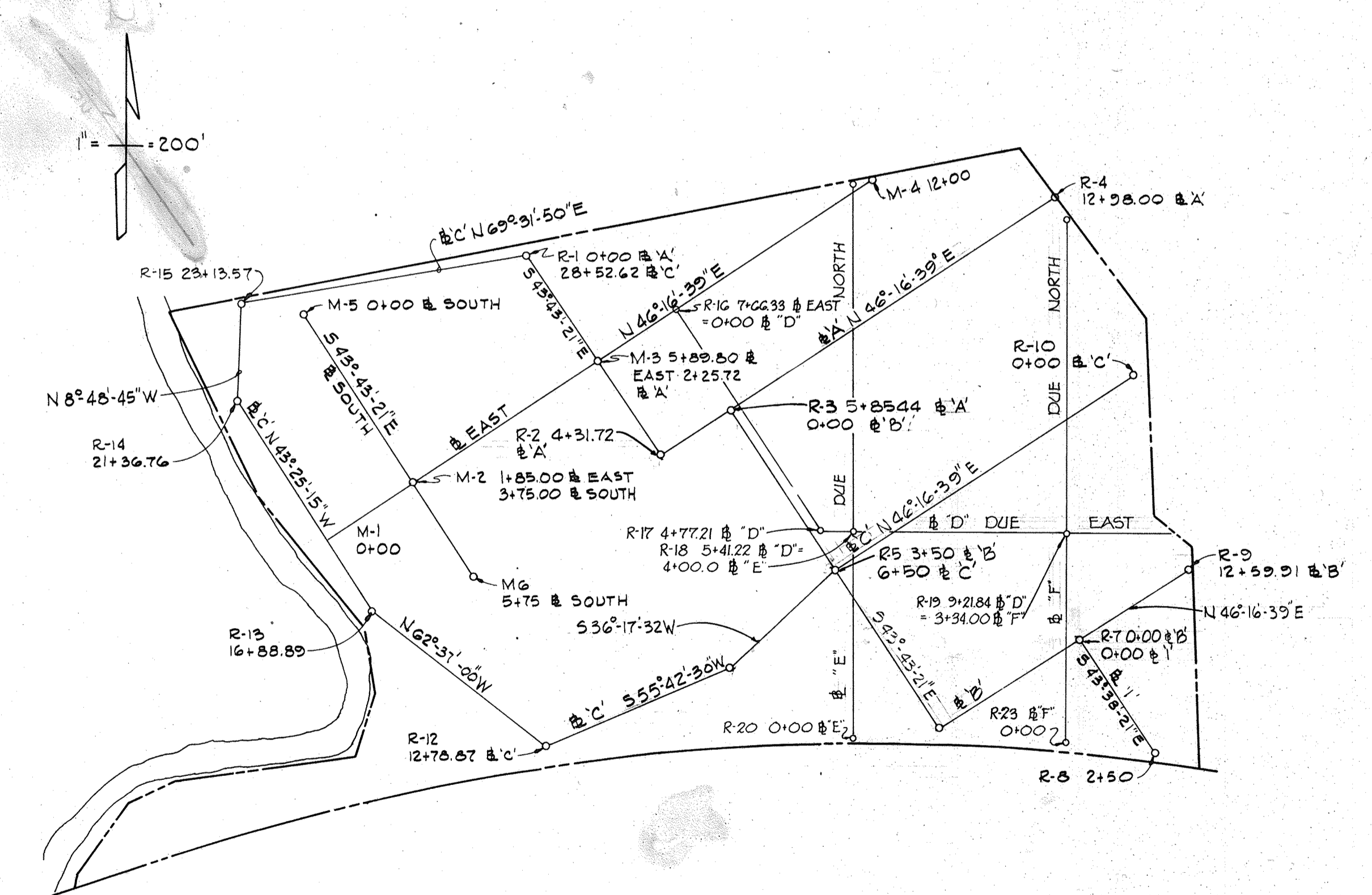
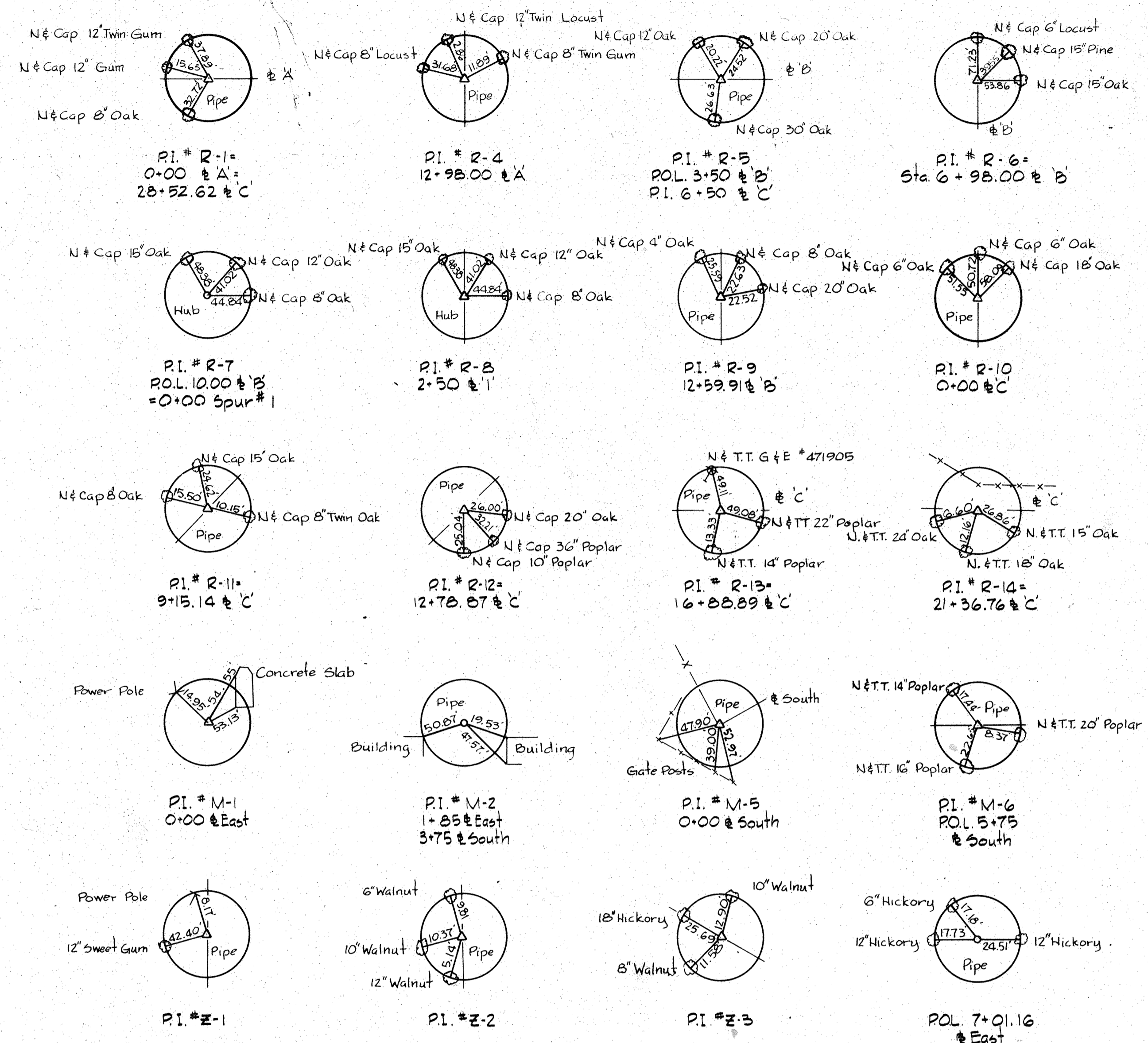
JAMES A. FEDERLINE INC.
AS BUILT DRAWING

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3/20/85 DATE	CONTRACT NO. 501-S	DESIGN CRITERIA, ABBREVIATIONS AND LEGEND	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 3 OF 128	SCALE NONE
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GENERAL NOTES

1. The location of existing pipelines and structures are approximate. The Contractor shall take all necessary precautions to protect existing lines and structures and maintain uninterrupted supply. Any damage incurred shall be repaired immediately.
2. The Contractor shall locate existing utilities by test pits a minimum of two weeks in advance of construction operations in the vicinity of the utilities.
3. All pipeline profile elevations are invert elevations.
4. The location of all valves, fittings etc. shall be located where shown on the drawings unless otherwise directed by the Engineer.
5. For standard details - See Specifications.
6. All fittings shall be buttressed or anchored with concrete or restrained with special approved devices - See Specifications.
7. Pipelines shall be of the material listed in the specifications. All pipelines shall have a minimum cover of 2 feet except sewer and water lines shall have a minimum cover of 3 feet unless otherwise shown by profiles or elevations on the plans.
8. Clear all utilities by a minimum of 6 inches vertically. All parallel pipe systems shall have 1.5 feet minimum horizontal clearance unless otherwise directed by the Engineer.
9. The Contractor shall provide a joint in all exterior loose jointed pipe systems within 2 feet of exterior walls.
10. All existing valve boxes, manhole frames and covers and similar appurtenances shall be adjusted to finished grade.
11. All outside valves in sewer lines up to and including 12 inch diameter shall be plug valves. All valves larger than 12 inches shall be gate valves, and shall be horizontal or vertical as indicated on profile drawings. All outside valves in water lines (potable and flushing) shall be gate valves. All buried valves shall have roadway boxes with concrete slabs in all areas other than paved areas. All valves shall be the same size as the pipeline unless otherwise indicated.
12. Elevations and grid coordinates are based on the Maryland State System. All structures, buildings, roadways, pipe, centerlines etc. are located by construction coordinates. Zero base for the construction coordinated system is as noted on Sheet C-1 @ the intersection of construction baseline.
13. For location of utilities entering buildings, see Mechanical & Electrical Drawings.
14. Connections to existing pipelines may be made by tapping existing pipelines under pressure or by use of sleeves and spacers with shut down of system. Attention is directed to the specifications for plant operational requirements while making connections.
15. All pipelines that are capped or plugged shall be flagged with striped 2x4's set 3 ft. into ground and 2 feet above grade identified with all weather markings.
16. All existing walkways paved areas that require removal for construction purposes or that are disturbed or damaged by construction activities shall be replaced.
17. All pipelines, conduits and utility systems including structures that are designated to be abandoned shall be removed by the Contractor to the degree necessary to complete construction as determined by the Engineer. Voids left by systems removed shall be backfilled with select material and compacted as per the specifications. Systems that are designed to be abandoned and allowed by the Engineer to be left in place, shall be permanently capped or sealed, watertight at each end. Materials and appurtenances removed shall be salvaged and become the property of the County unless otherwise directed by the Engineer. Then they shall become the property of the Contractor and removed from the site.
18. Major clearing and grubbing of the construction area is being completed by others, however select clearing and grubbing may be required under this contract in order to construct certain facilities on the extremity of the site.
19. Sediment Control Features as required by the Specifications will be constructed as directed by the Engineer.

P.I. REFERENCES

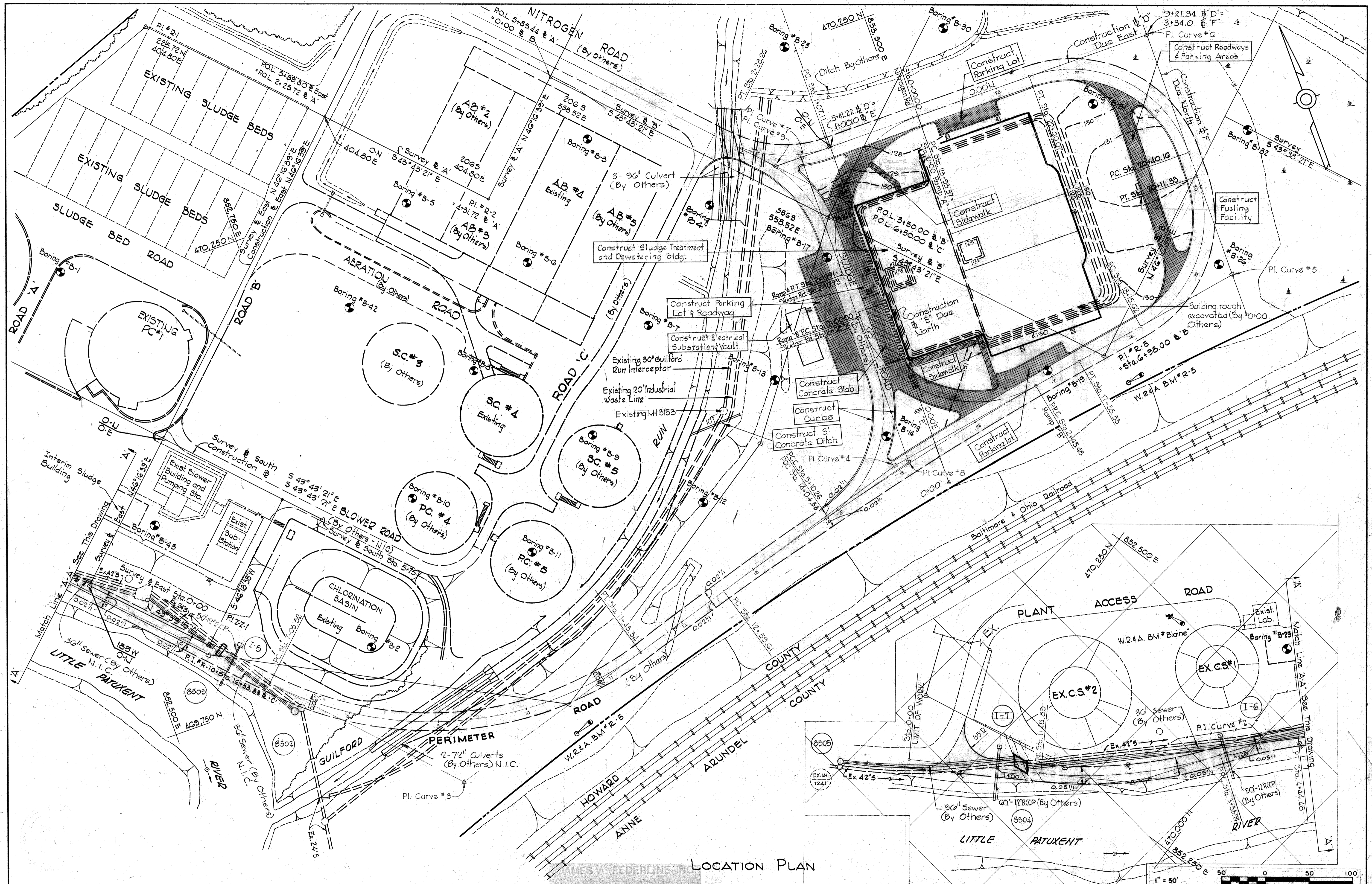


PLAN-CONSTRUCTION & SURVEY BASELINE
Scale 1" = 200'

BENCH MARKS

- | | |
|--|--|
| <p>W.R.#A. BM "Blaine" Elev. 139.26
X-Cut on flange bolt of fire hydrant
40± ft. of Sta. 2+35± South</p> <p>W.R.#A. BM "Rolly"-1 Elev. 130.388
RR Spike in 12" Oak 25± Lt. of
Sta. 12+50 East (Not shown on plan)</p> <p>W.R.#A. BM "Rolly"-2 Elev. 147.087
RR Spike in 8" Locust 4± from
P.I. # R-4 (Not shown on plan)</p> | <p>W.R.#A. BM "Rolly"-3 Elev. 132.162
RR Spike in 15" at foot of RR Fill
35± East of P.I. # R-6</p> <p>W.R.#A. BM "Rolly"-4 Elev. 137.222
RR Spike in 18" Oak 25± Rt. of P.I. # R-9
(Not shown on plan)</p> <p>W.R.#A. BM "Rolly"-5 Elev. 132.996
RR Spike in 36" Poplar-30 Lt. of
P.I. # R-12</p> |
|--|--|

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/20/75 W.D. Falbert CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 501-S	GENERAL NOTES REFERENCES & BASELINE PLAN	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 4 OF 128	SCALE NONE
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LOCATION PLAN

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3/20/15
DATE

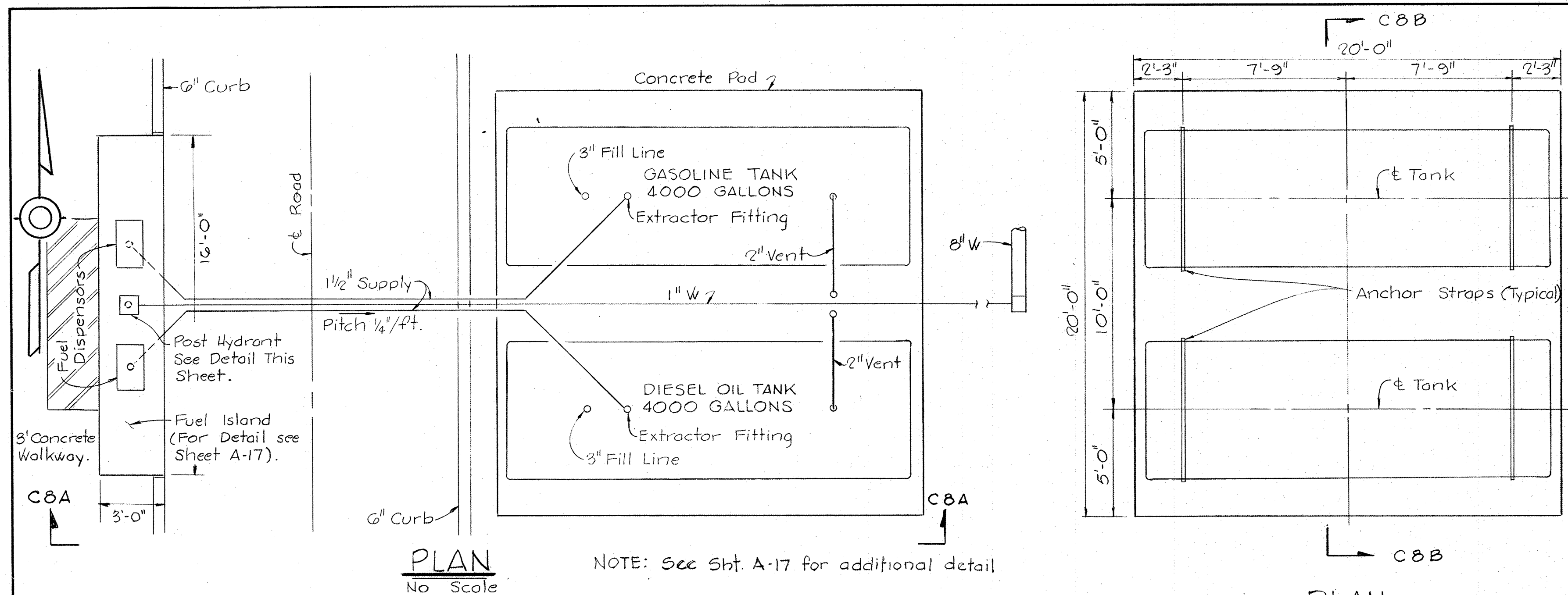
CONTRACT NO. 501-S

LOCATION PLAN
EXISTING INTERCEPTORS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

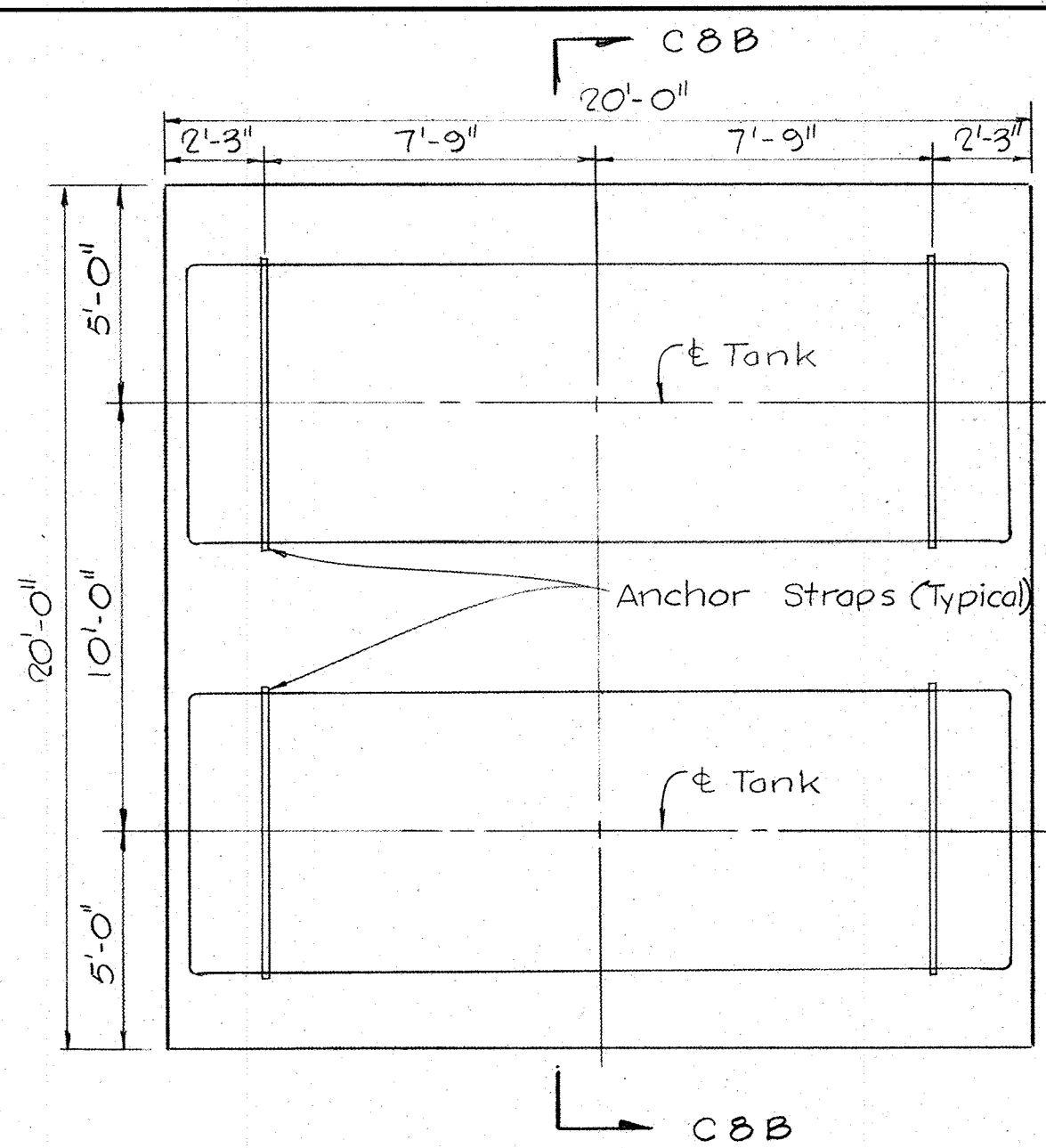
DRAWING
NO. 5
OF 128

SCALE
1" = 50'
470-(10)
470-(9)
469-(10)
469-(9)

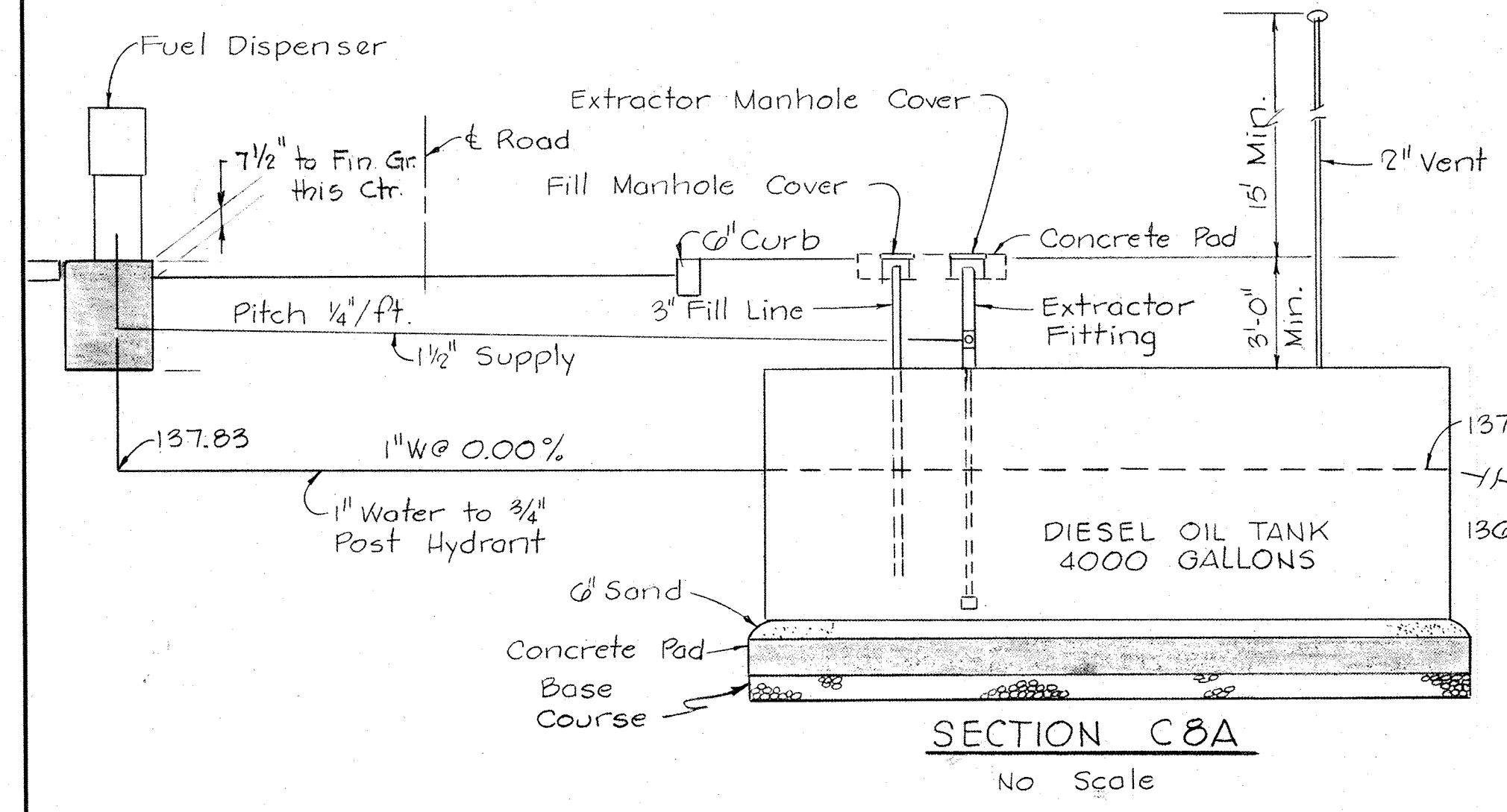


PLAN
No Scale

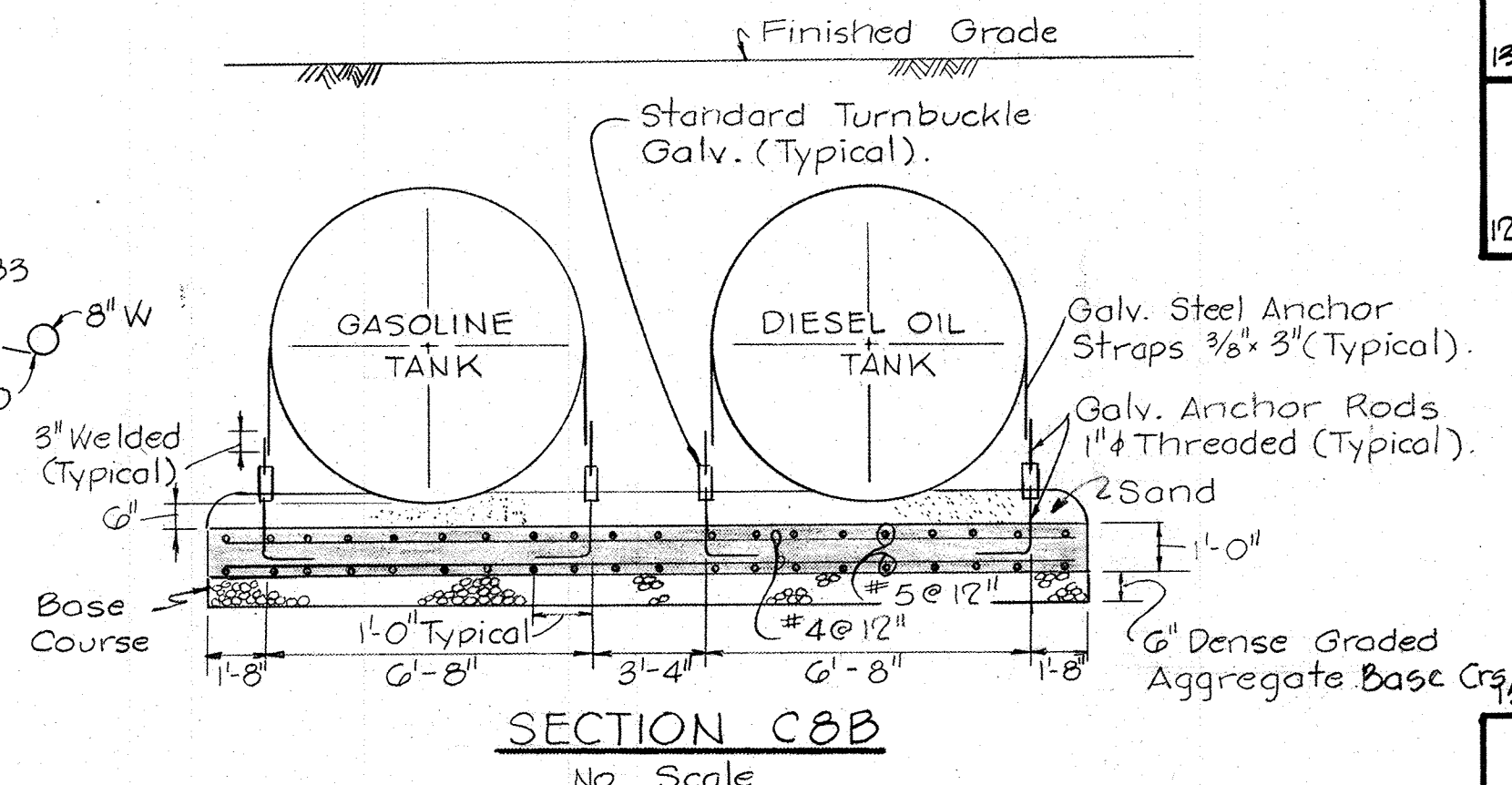
NOTE: See Sht. A-17 for additional detail



PLAN
FUEL TANK PAD
No Scale

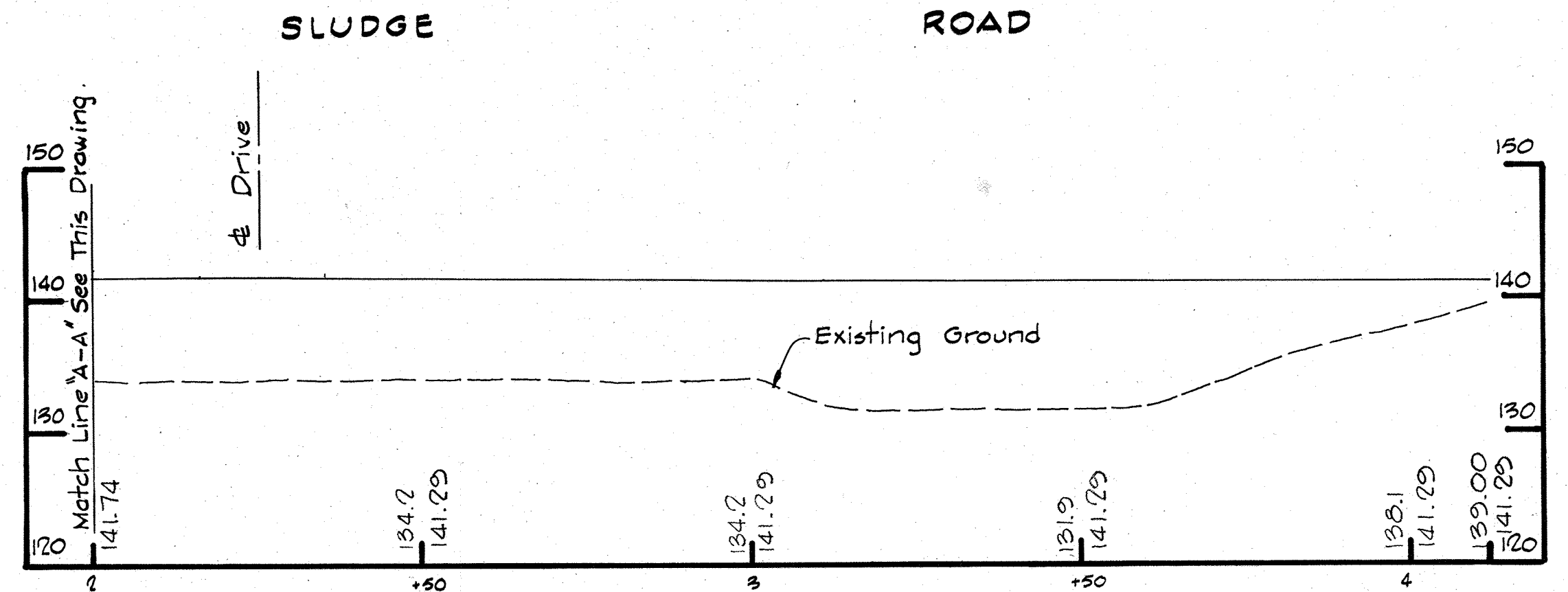
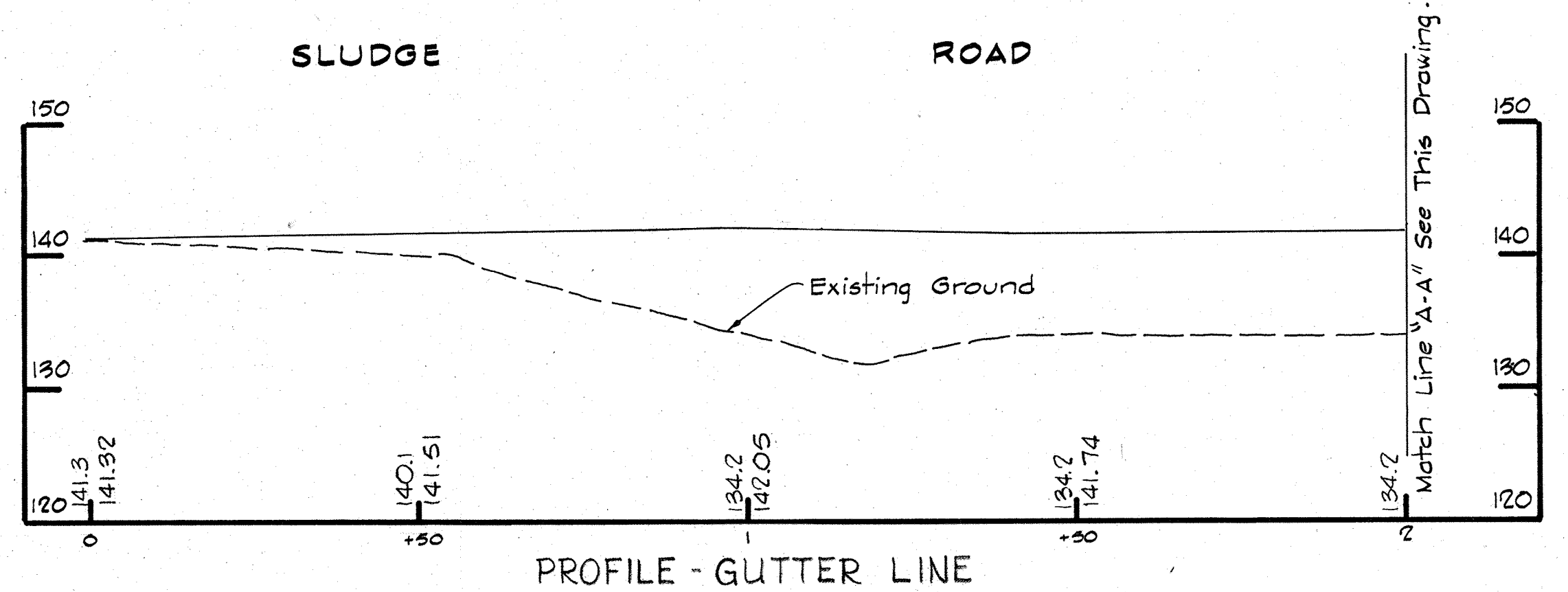


SECTION C8A
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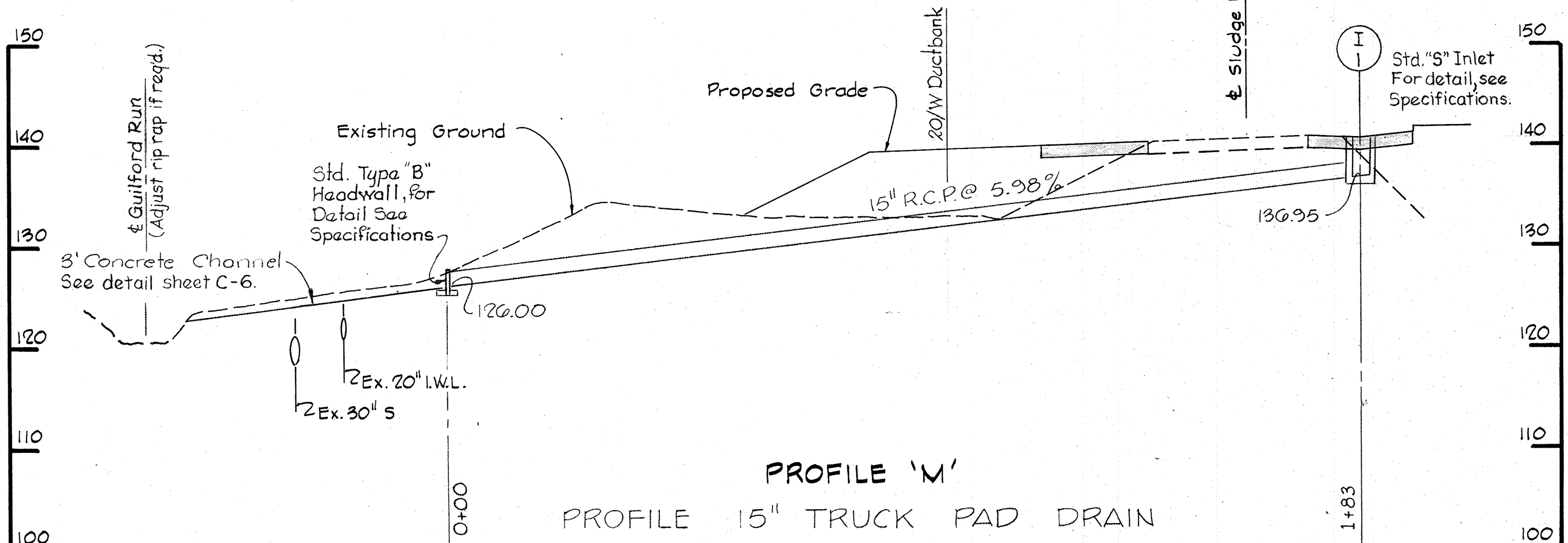


SECTION C8B
No Scale

REFUELING PLANS AND SECTIONS
No Scale

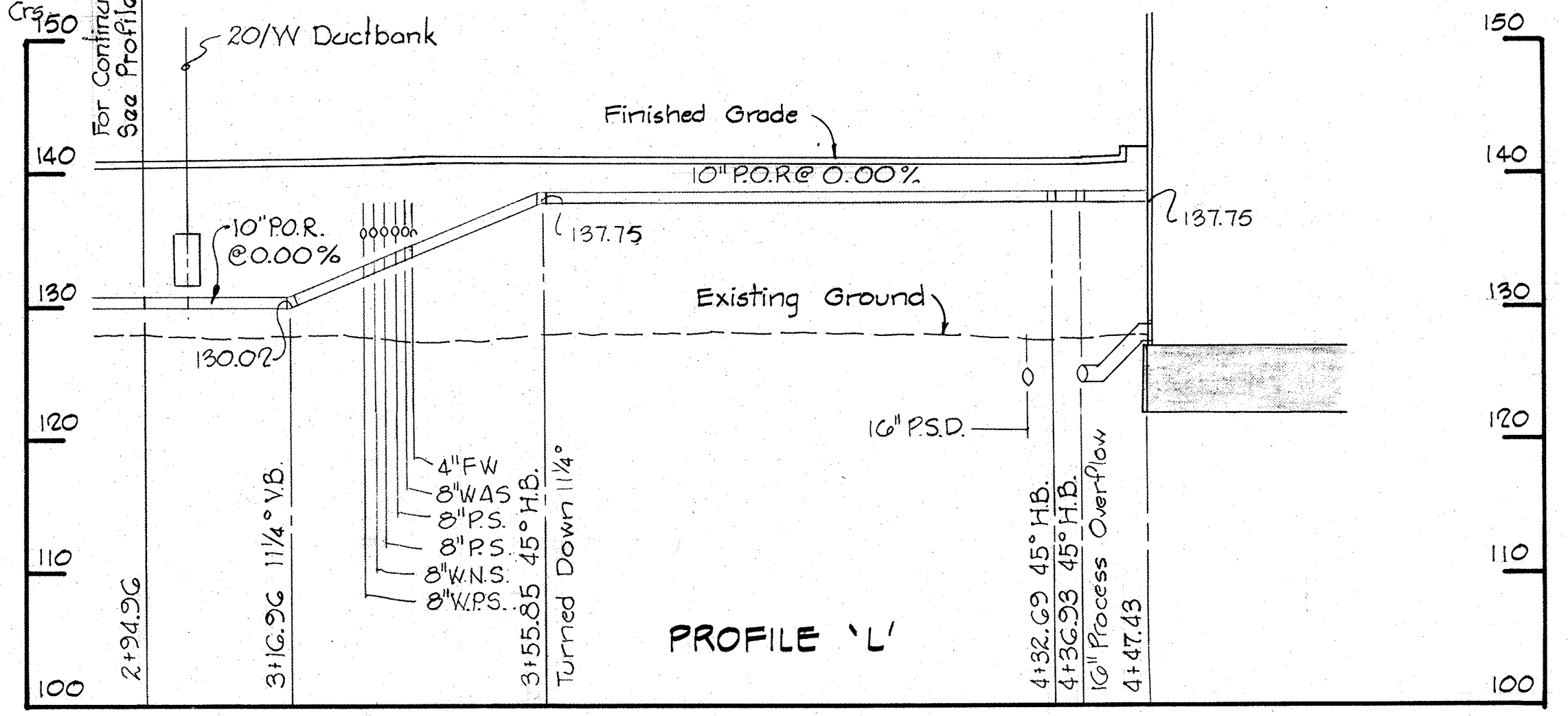


PROFILE - GUTTER LINE
Scale: Hor: 1" = 20'
Vert: 1" = 10'



PROFILE 'M'
PROFILE 15\"/>

Scale: Hor: 1" = 20'
Vert: 1" = 10'



PROFILE 'L'
Scale: Hor: 1" = 20'
Vert: 1" = 10'

JAMES A. FEDERLINE INC.
AS BUILT DRAWING

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
W.O. Hunt 7-28-77
DIRECTOR OF PUBLIC WORKS - DATE CHIEF-BUREAU OF ENGINEERING - DATE

CONTRACT NO. 501 - S

REFUELING PLAN, SECTIONS
AND PROFILES

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

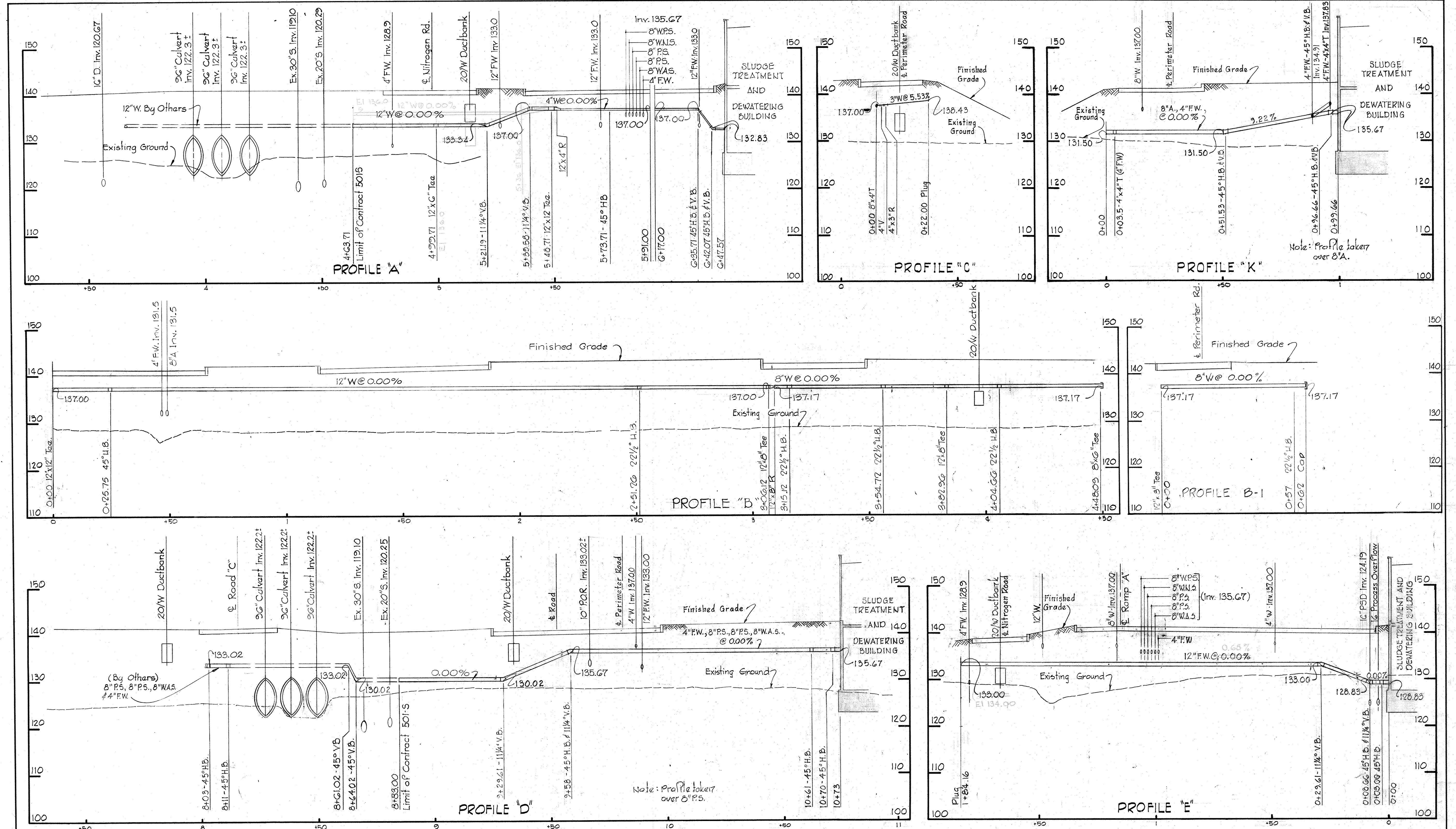
DRAWING
NO. 7
OF 128

SCALE
AS
SHOWN

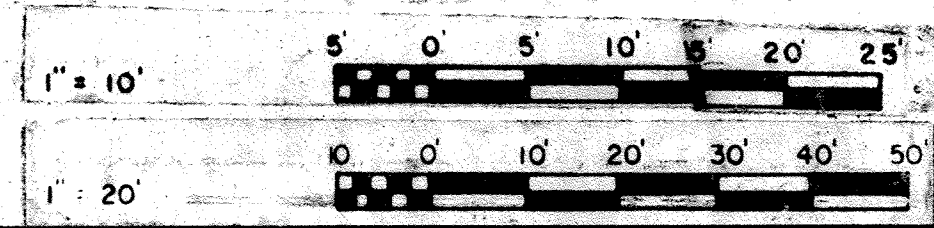
SHEET C-3

BRUNING 44510 18392

W. O.

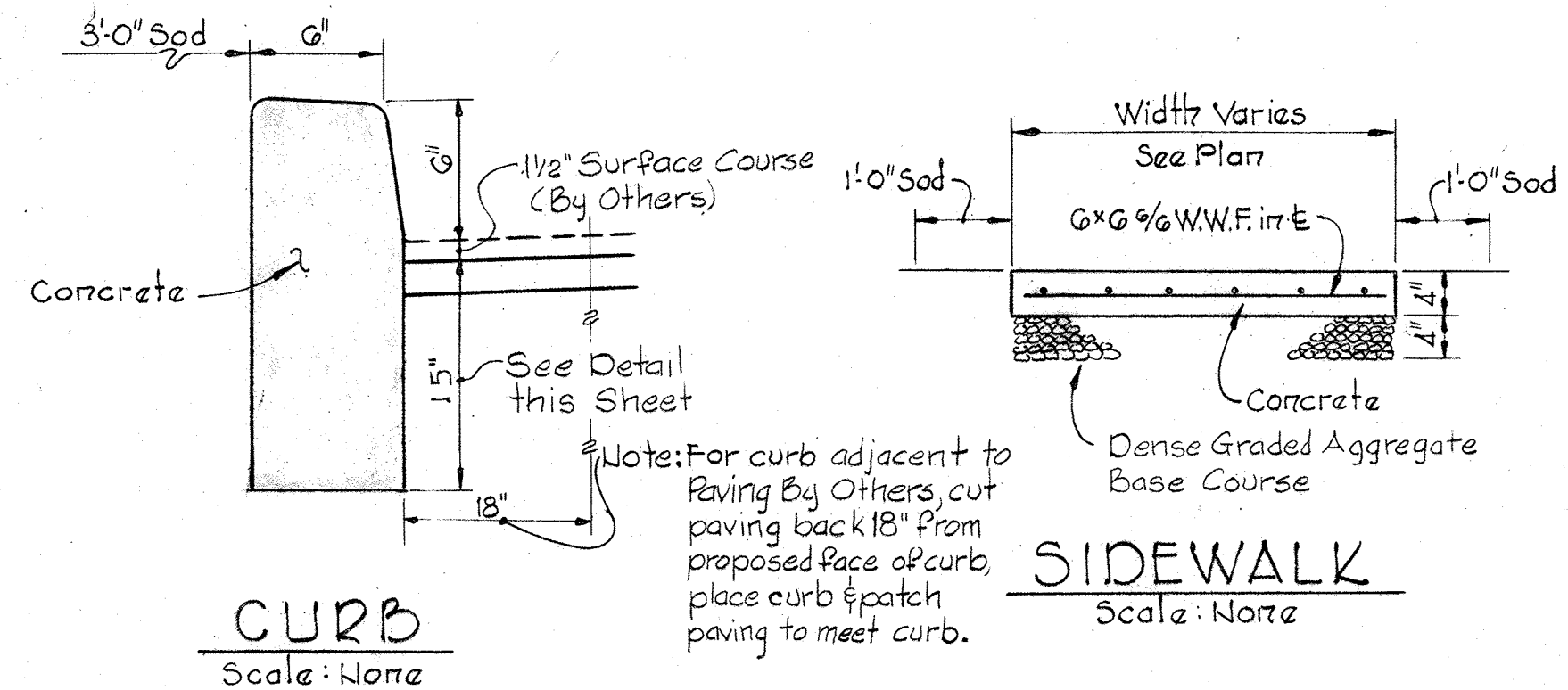


NOTE:
All utilities to be terminated with caps & temporary buttressing for testing unless utilities by others exist. Contractor will then make connection under this contract after testing times.

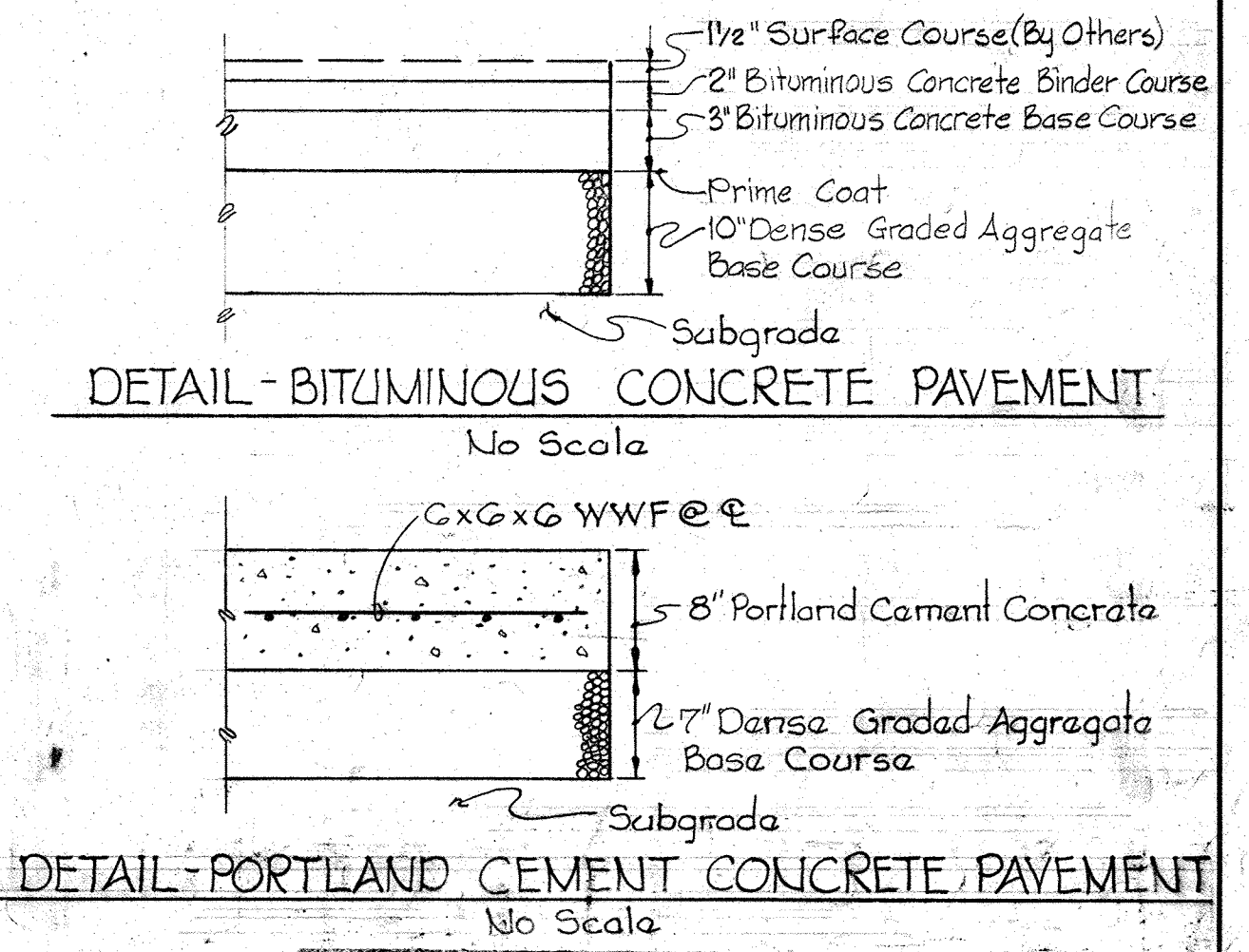
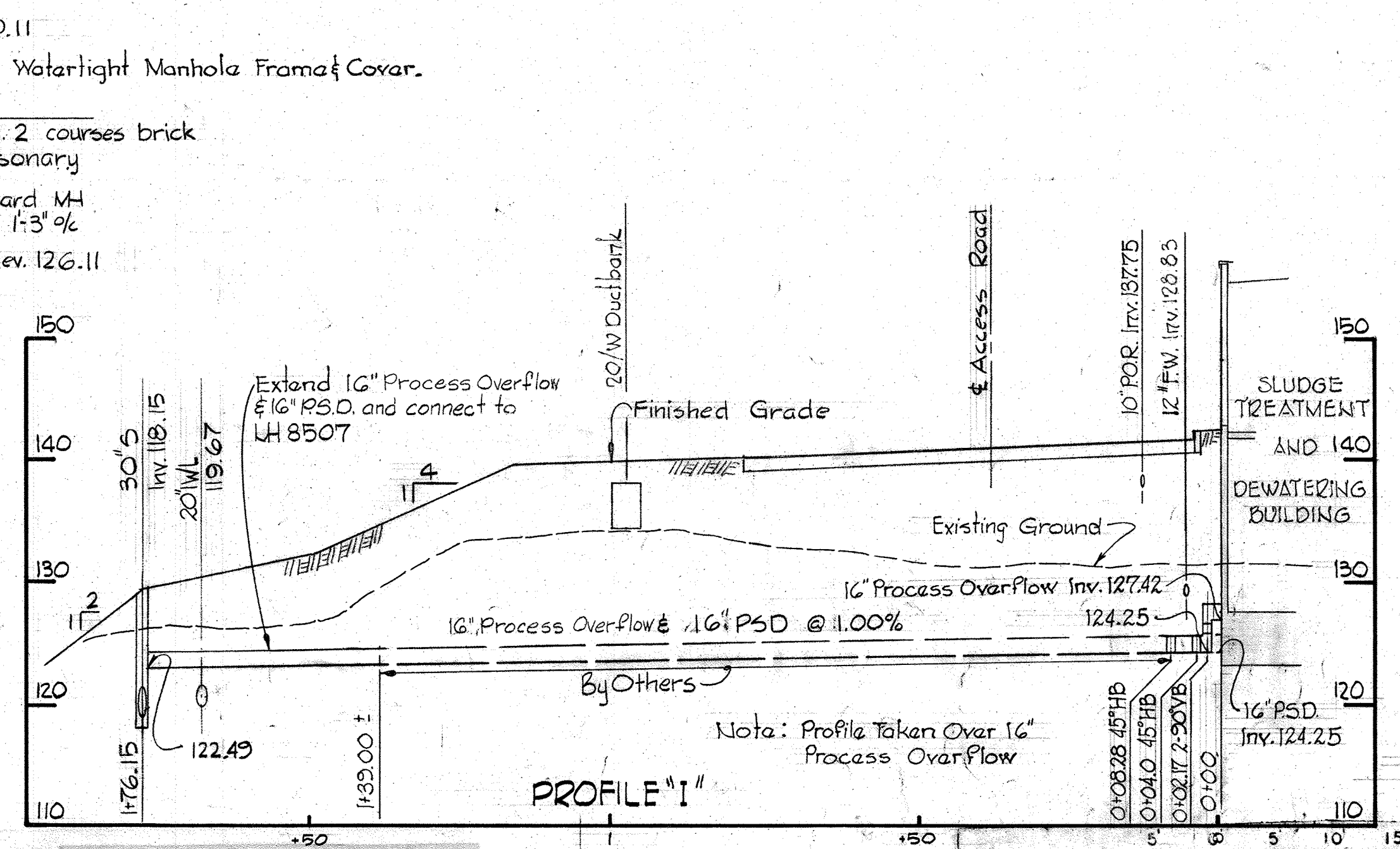
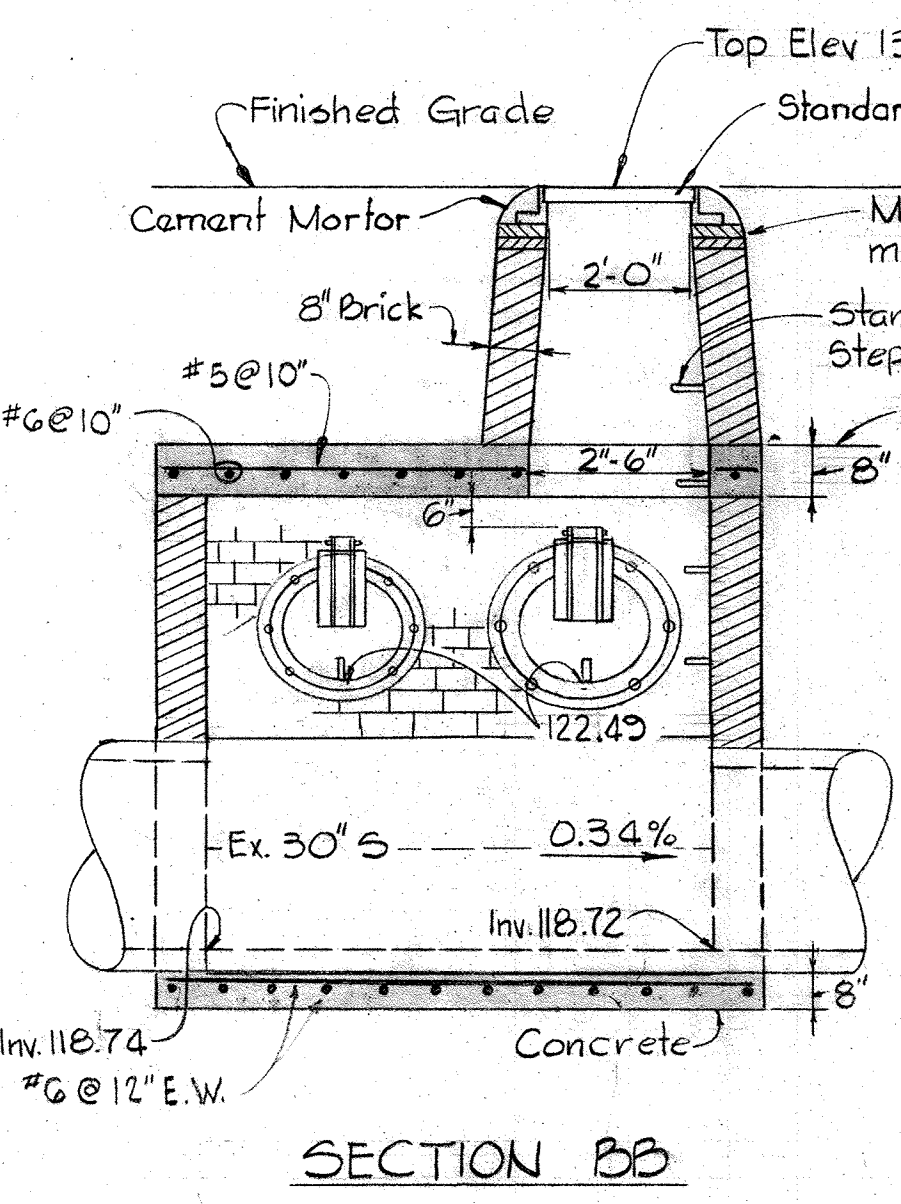
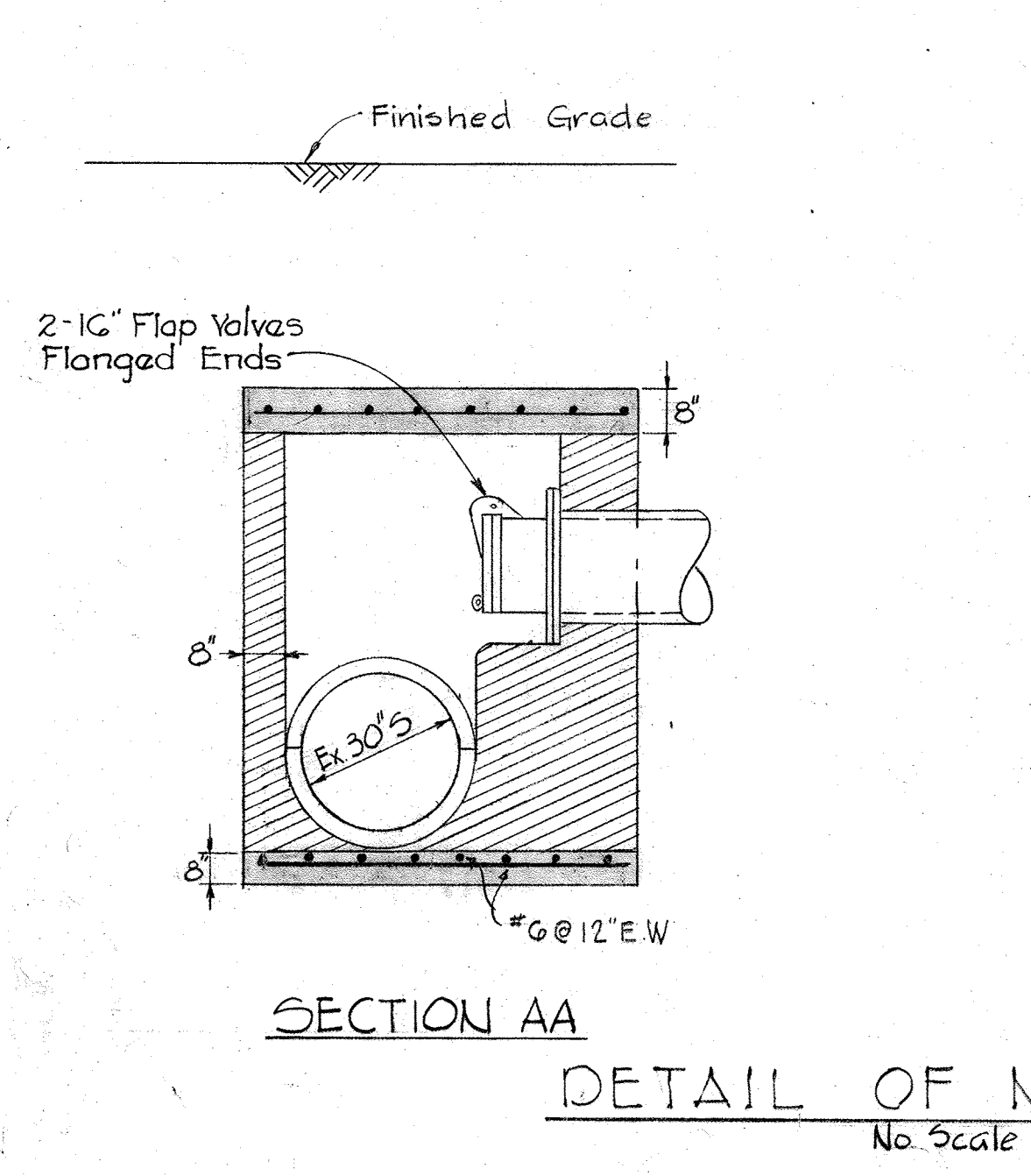
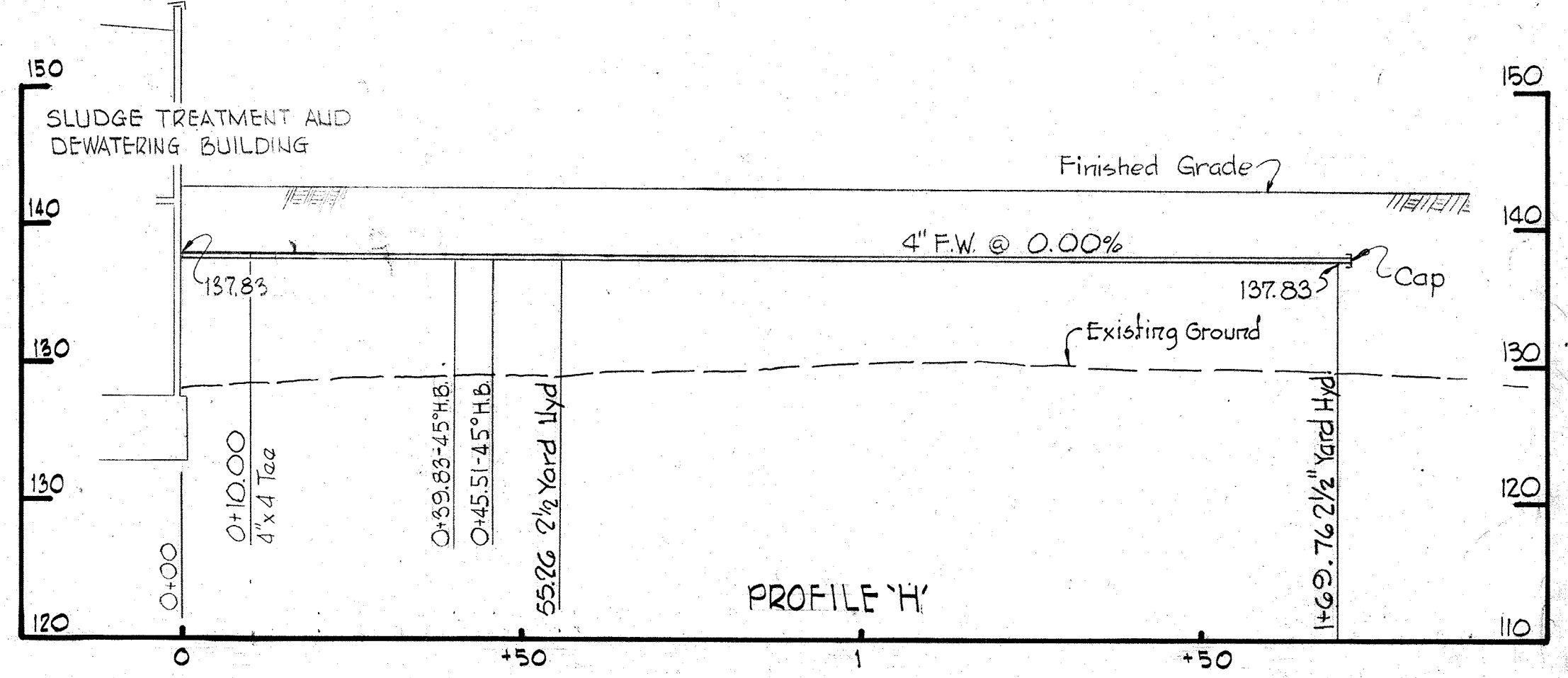
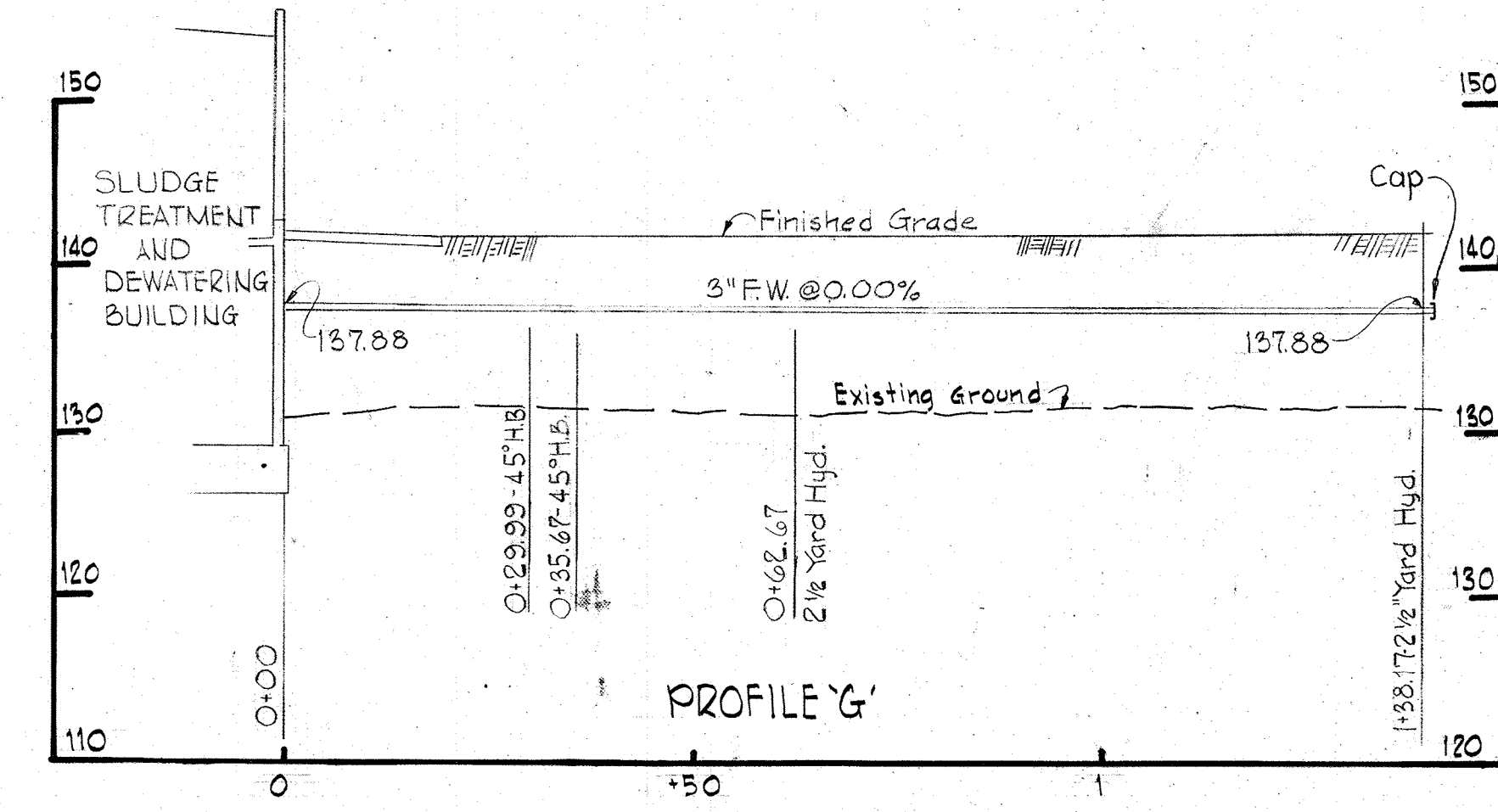
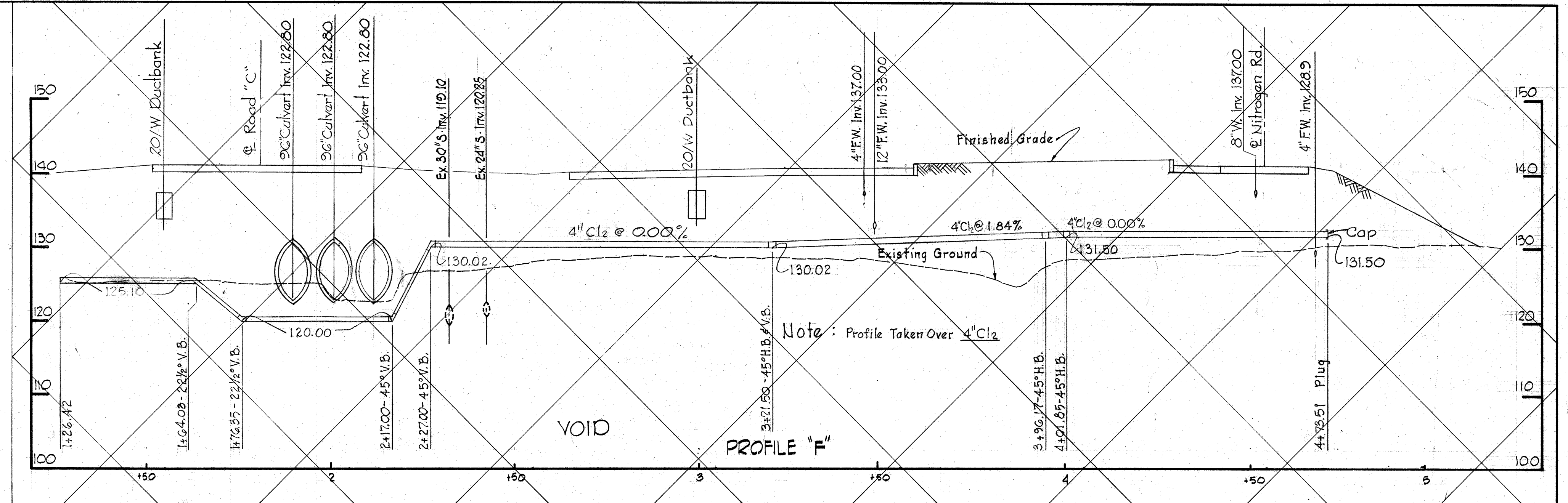
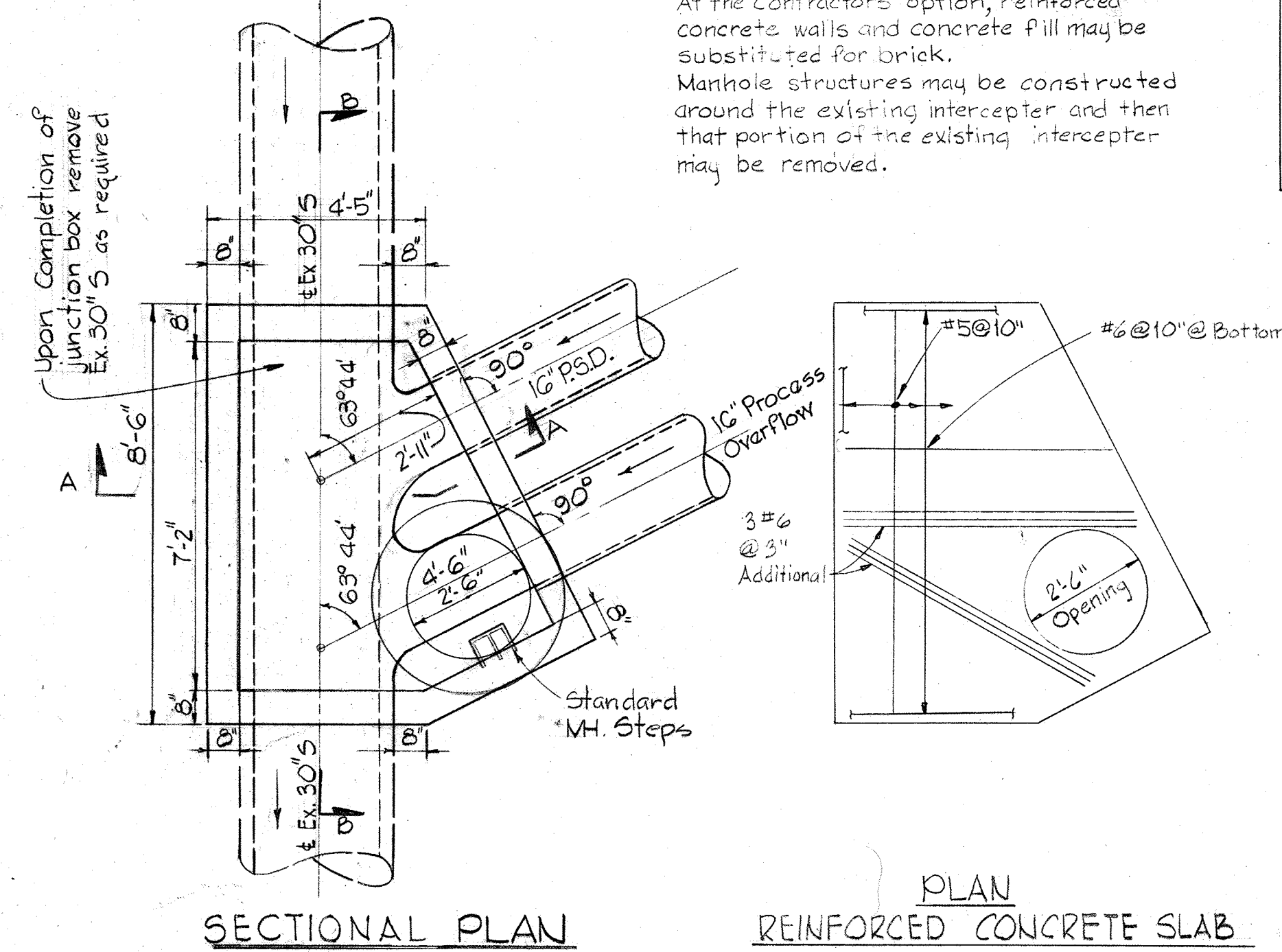


JAMES A. FEDERLINE INC.
AS BUILT DRAWING

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE 3/12/75	CONTRACT NO. 501-S	PIPE PROFILES	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 8	SCALE H:V = 20
					OF 128	V:1 = 10'



Note: Detail of MH 8507
At the Contractor's option, reinforced concrete walls and concrete fill may be substituted for brick. Manhole structures may be constructed around the existing interceptor and then that portion of the existing interceptor may be removed.



WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

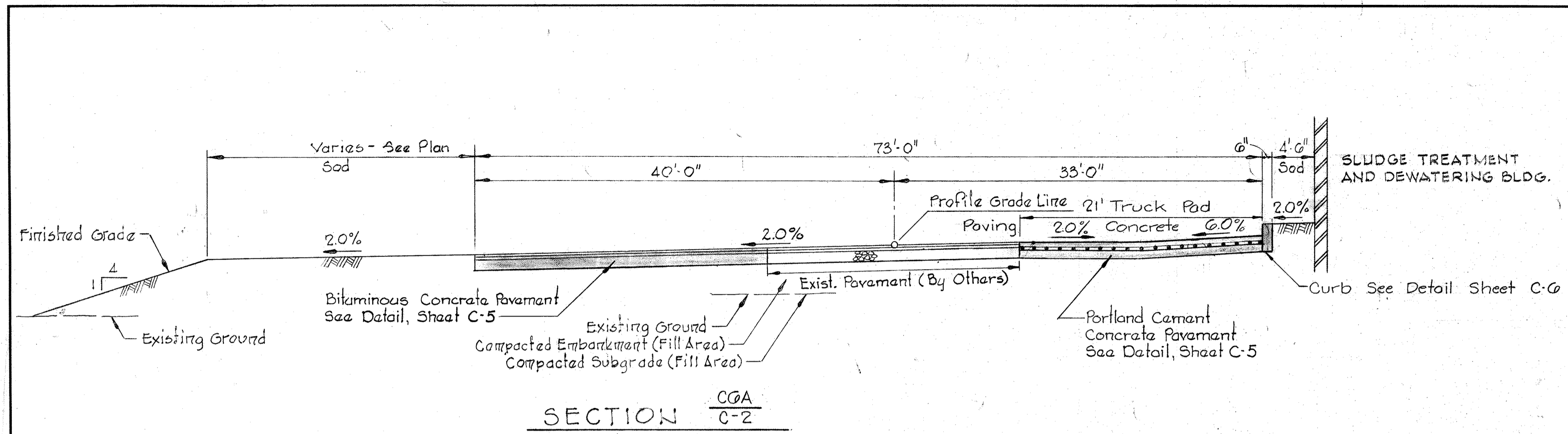
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE 3/30/75
W. O. Federline
CHIEF-BUREAU OF ENGINEERING

JAMES A. FEDERLINE, INC.
AS BUILT DRAWING
CONTRACT NO. 501-S

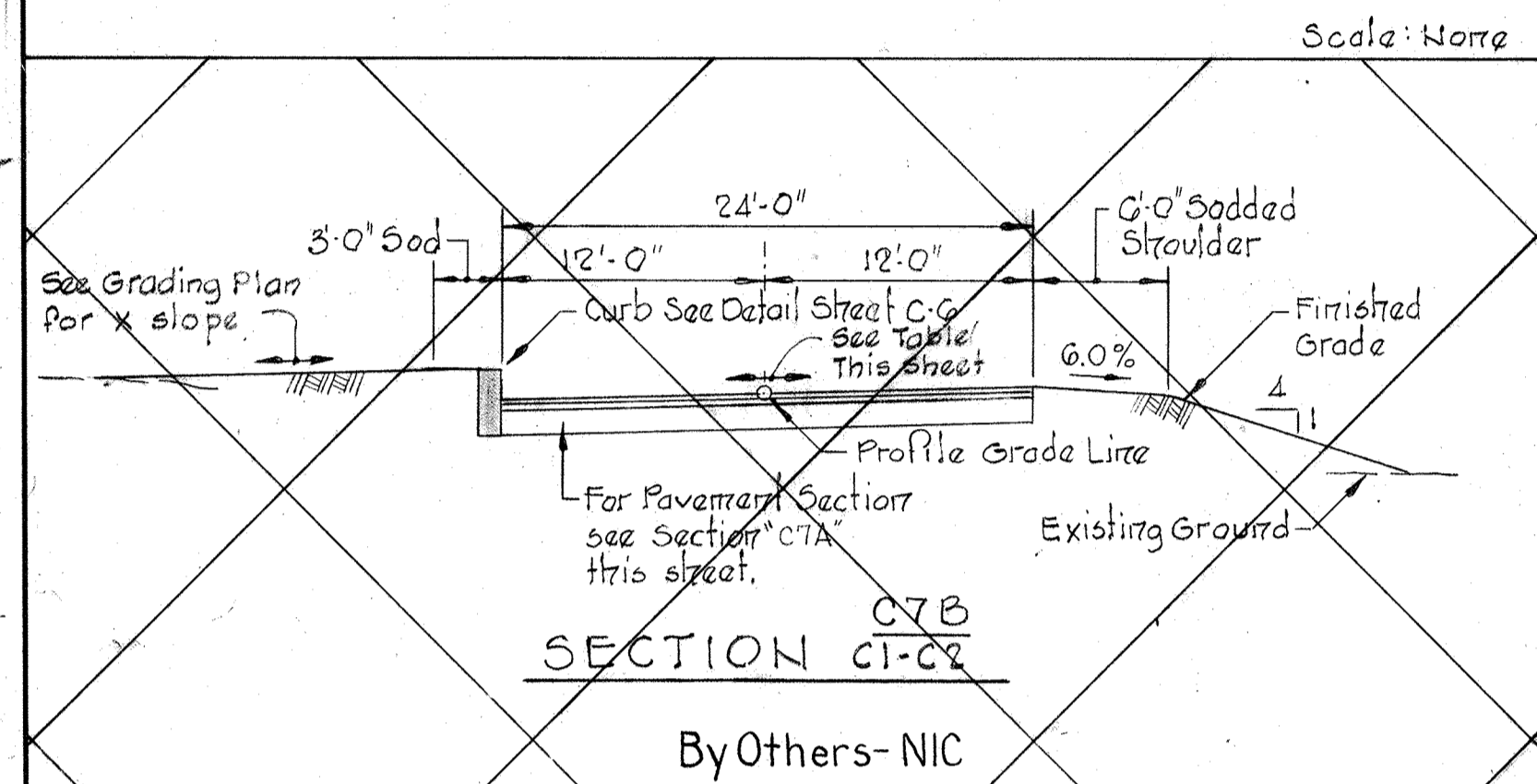
PIPE PROFILES
& DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

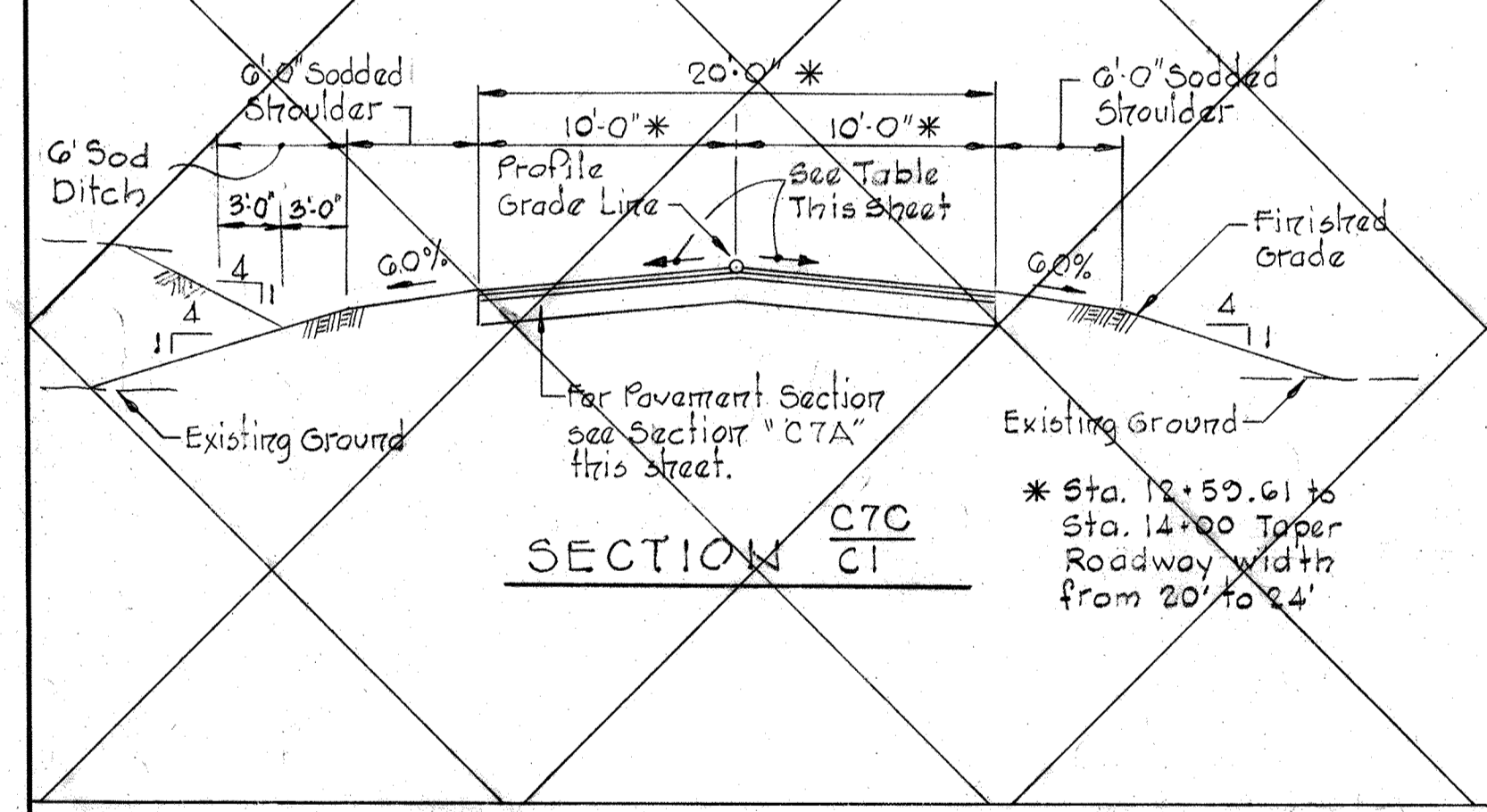
DRAWING NO. 9 OF 128
SCALE AS SHOWN



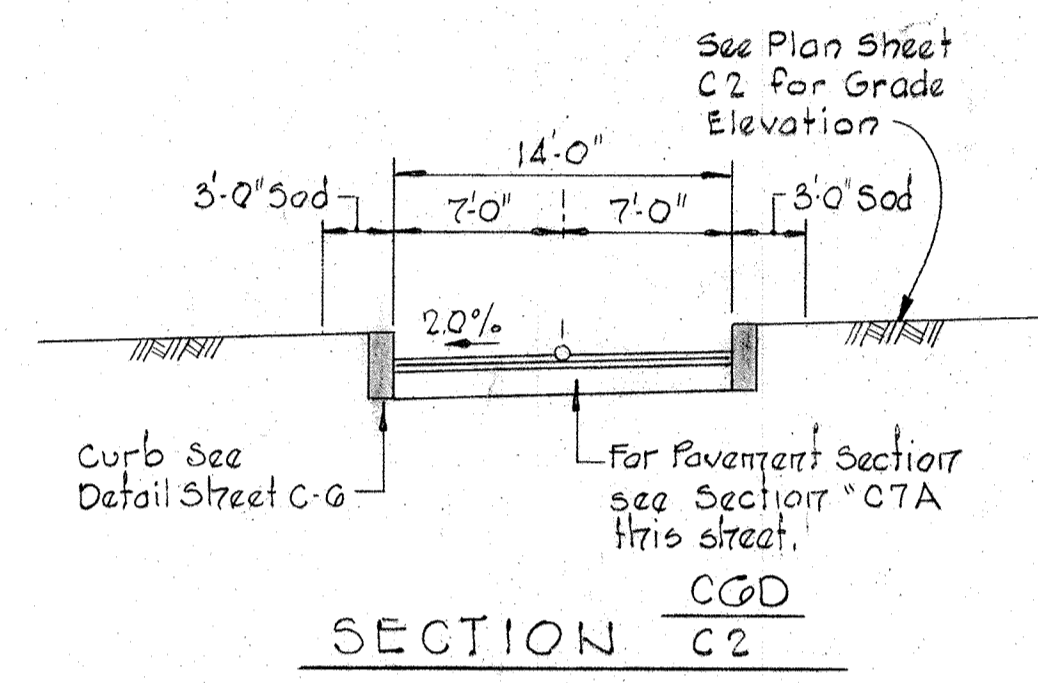
SECTION CGA C-2



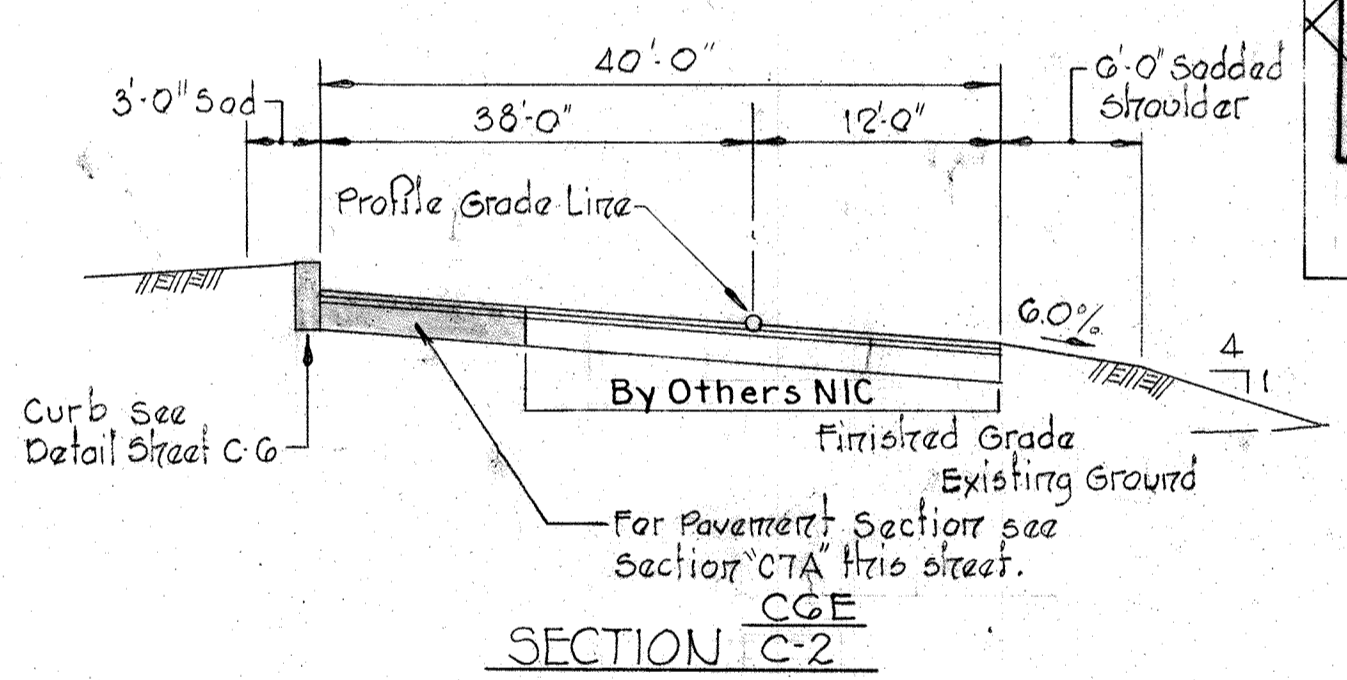
SECTION C7B C1-C2



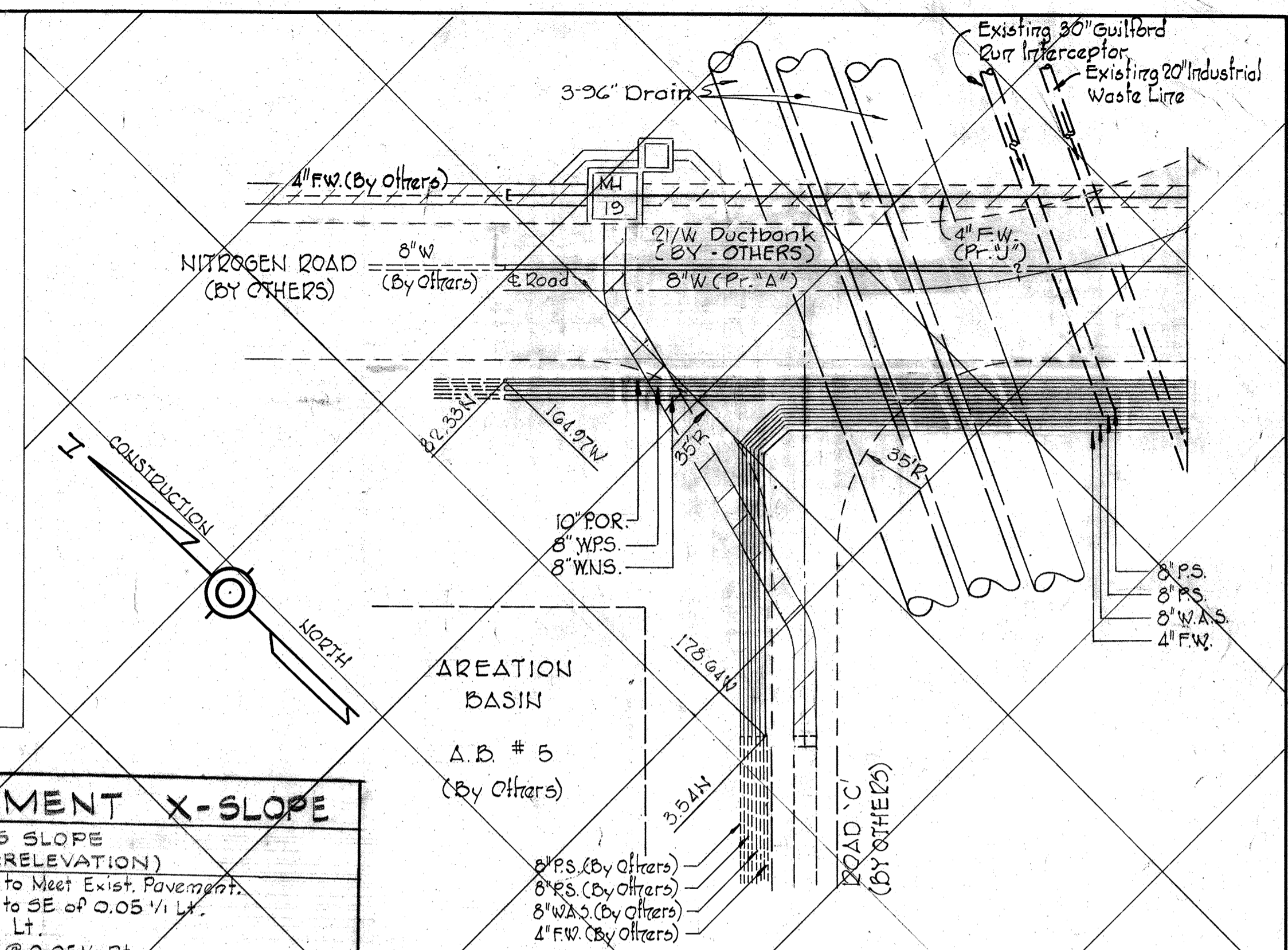
SECTION C7C C1



SECTION CGD C2



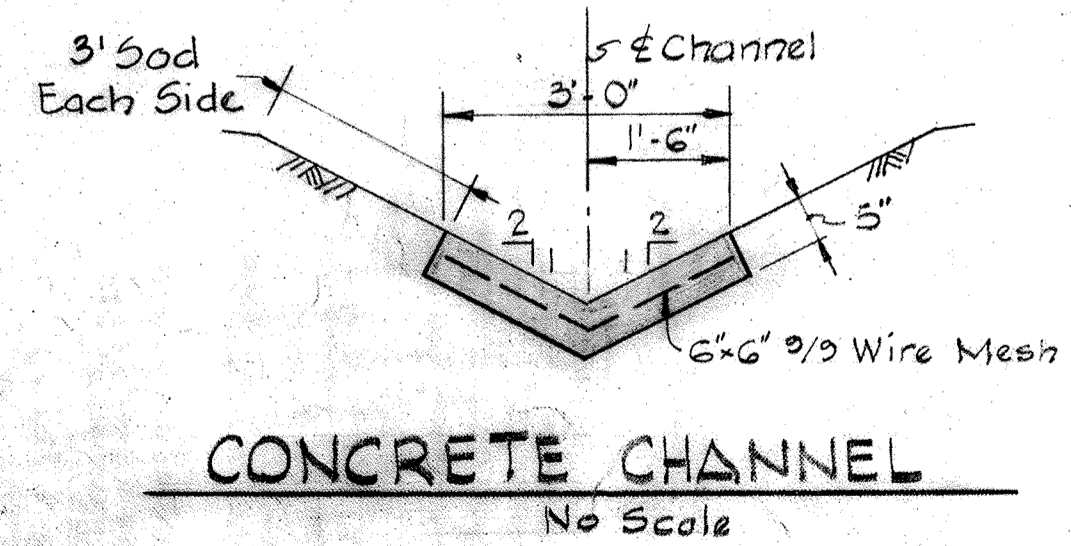
SECTION CGE C2



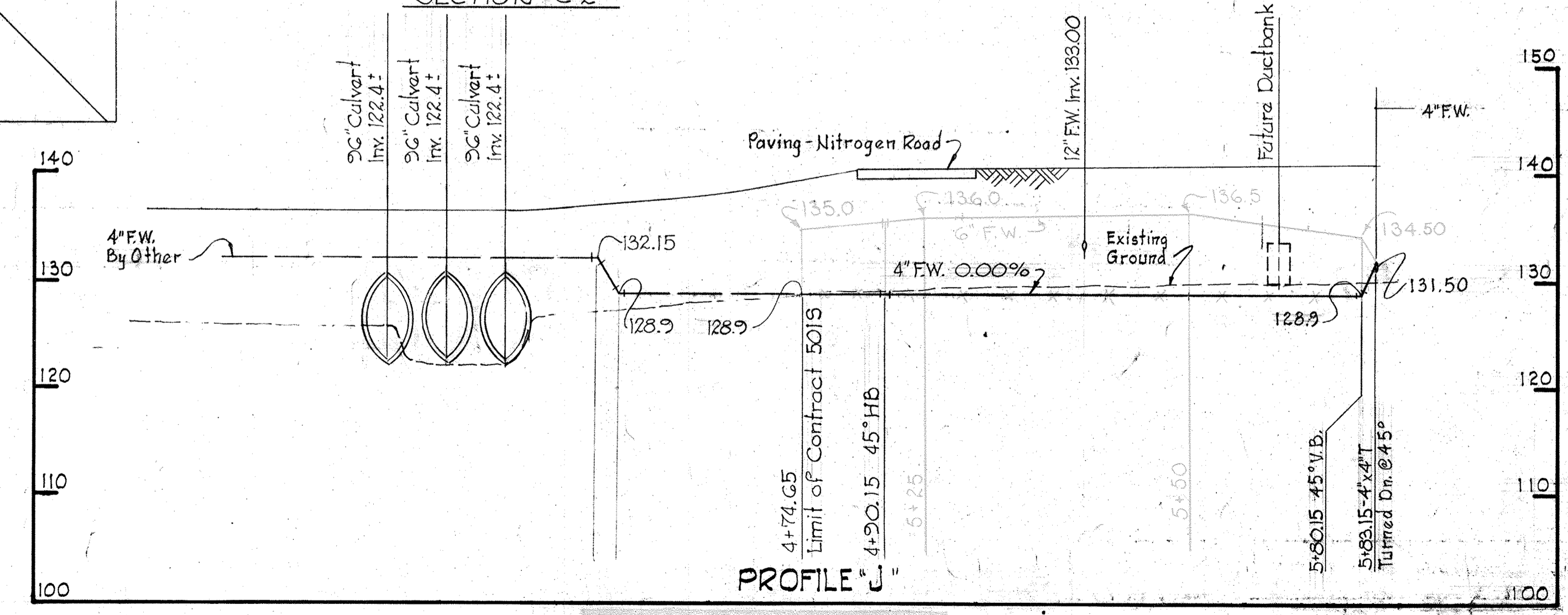
UTILITY PLAN Scale: 1" = 20'

STATIONING		CROSS SLOPE (SEE SUPERELEVATION)
FROM	TO	
0+00	0+98.89	Transition to Meet Exist. Pavement.
0+98.89	1+98.89	Transition to SE of 0.05 1/2 Lt.
1+98.89	3+03.24	SE @ 0.05 1/2 Lt.
3+03.24	3+99.21	Reverse SE @ 0.05 1/2 Rt.
3+99.21	4+99.21	Transition to Normal Crown @ 2% X-slope
4+99.21	6+03.52	Normal Crown @ 2% X-slope
6+03.52	7+53.52	Transition to SE of 0.02 1/2 Lt.
7+53.52	10+93.34	SE @ 0.02 1/2 Lt.
10+93.34	12+43.34	Transition to Normal Crown @ 2% X-slope
12+43.34	14+04	Normal Crown @ 2% X-slope
14+04	15+00	Transition to SE of 0.02 1/2 Rt. Ridge Line Left for Grade Break
15+00	17+48.95	SE @ 0.02 1/2 Lt.
17+48.95	18+48.95	Reverse SE @ 0.02 1/2 Lt.
18+48.95	22+26.74	SE @ 0.02 1/2 Lt.
22+26.74	23+26.74	Reverse SE @ 0.02 1/2 Rt.
23+26.74	29+13.02	SE @ 0.02 1/2 Rt.

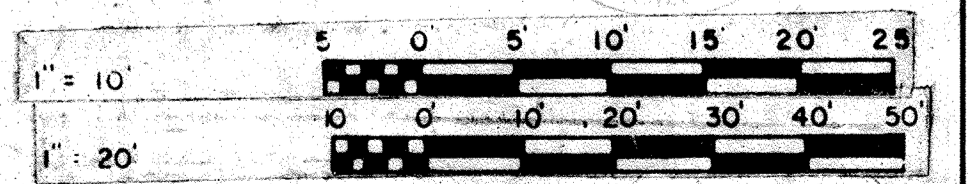
By Others

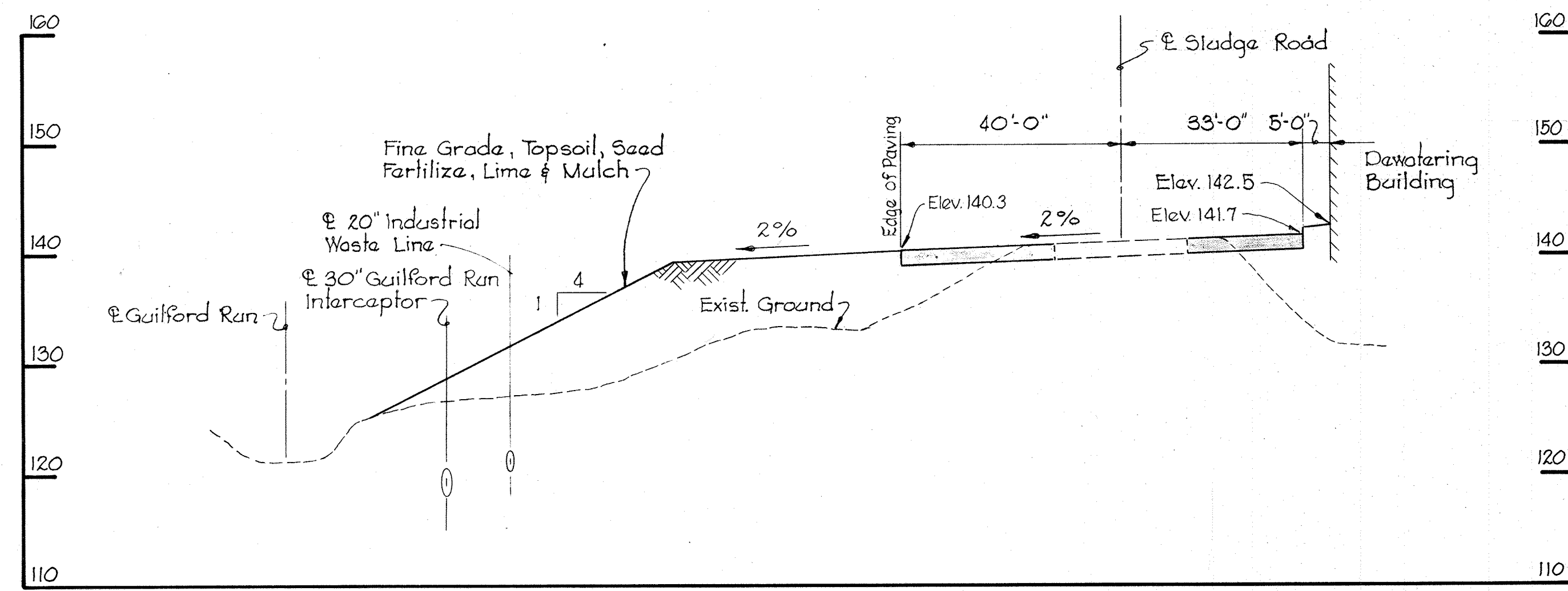


CONCRETE CHANNEL No Scale



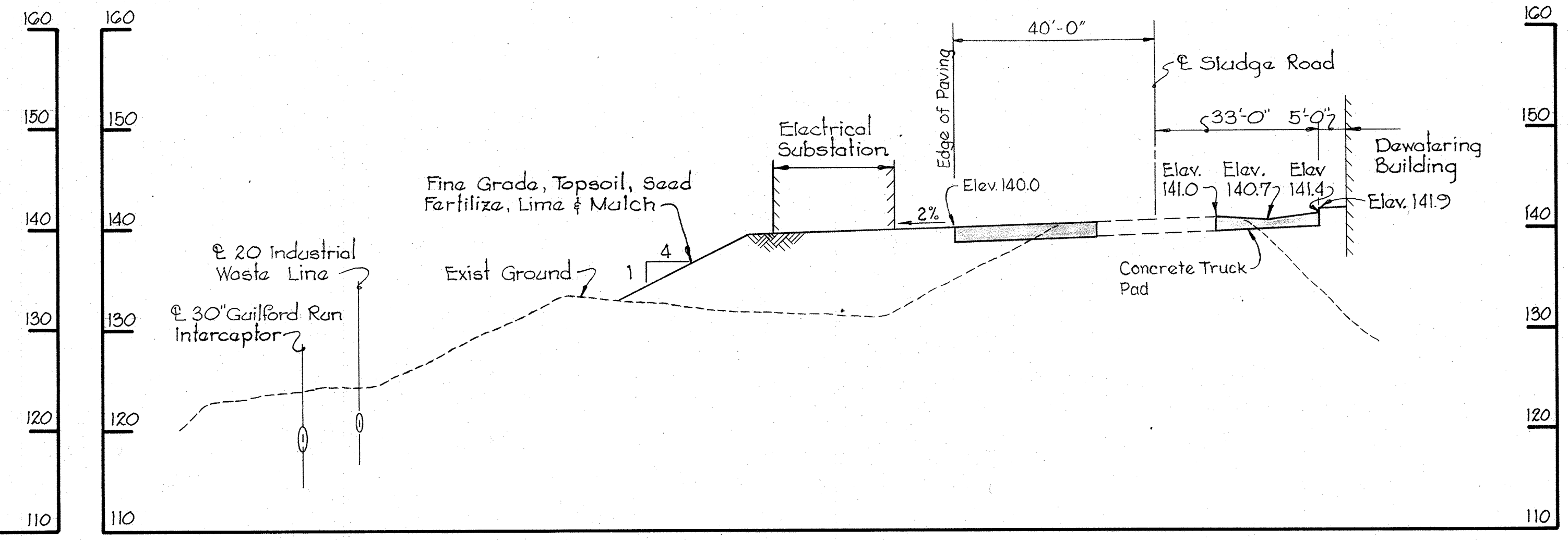
PROFILE "J"





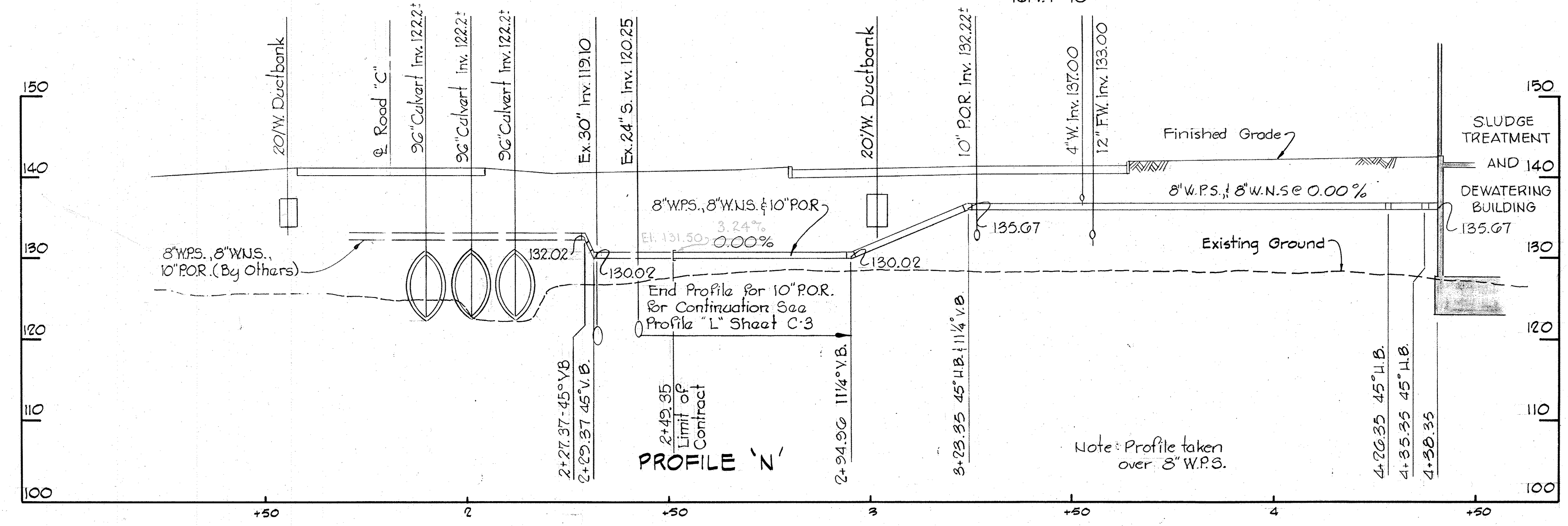
SECTION C-7A
C-2

Scale: Hor. 1"=20'
Vert. 1"=10'



SECTION C-7B
C-2

Scale: Hor. 1"=20'
Vert. 1"=10'



PROFILE 'N'

Note: Profile taken over 8" W.P.S.

JAMES A. FEDERLINE INC.
AS BUILT DRAWING

WHITMAN, REQUARDT & ASSOCIATES
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1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE _____
W. O. Federline 9-28-11
CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 501-S

TYPICAL SECTIONS
AND PROFILES

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

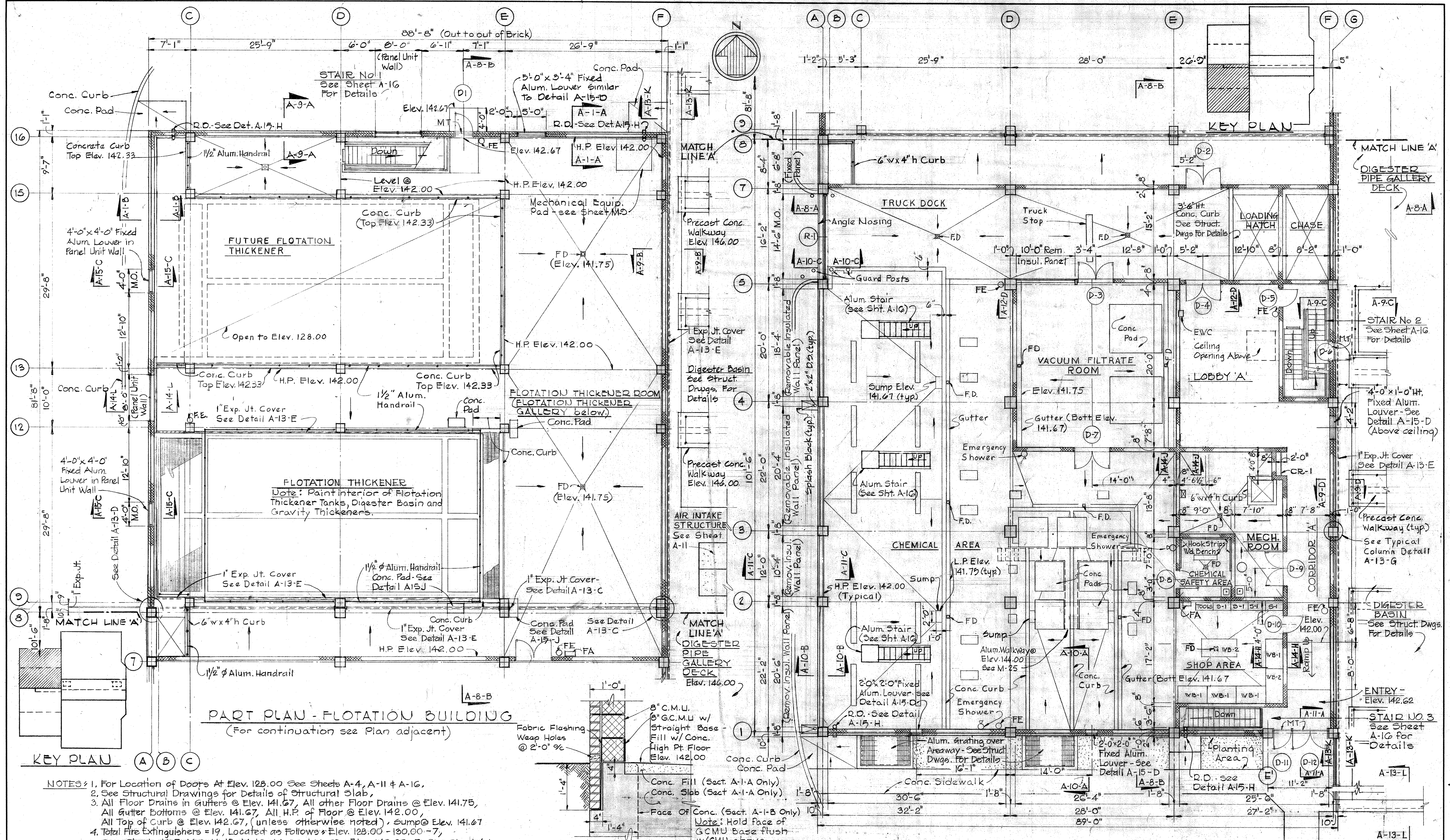
DRAWING
NO. 11
OF 128

SCALE
AS
SHOWN

SHEET C-7

BRUNING 44-10-28872

W. O.



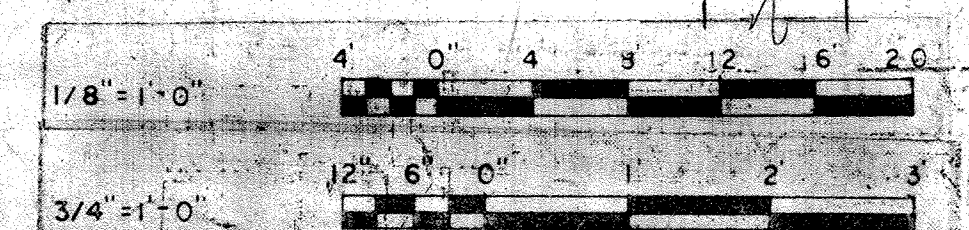
- NOTES**
1. For Location of Doors At Elev. 128.00 See Sheets A-4, A-11 & A-16.
 2. See Structural Drawings for Details of Structural Slab.
 3. All Floor Drains in Gutters @ Elev. 141.67. All other Floor Drains @ Elev. 141.75. All Gutter Bottoms @ Elev. 141.67. All H.P. of Floor @ Elev. 142.00. All Top of Curb @ Elev. 142.67. (unless otherwise noted). Sump @ Elev. 141.67.
 4. Total Fire Extinguishers = 19, Located as follows: Elev. 128.00 - 130.00 - 7, See Sheets M-7, M-8, M-15, M-16, M-22 & M-23. Elev. 142.00 - 7, See Sheet A-1. Elev. 156.00 - 5, See Sheet A-2. Mount Top of Fire Extinguishers 4'-0" Max. Above Floor.
 5. Provide 4 Industrial Size First Aid Kits - Wall Mounted 5'-0" Max. Above Floor. See Sheets A-1, A-2 & A-4 for Locations.
 6. For location of walkway @ Elev. 144.00 in Chemical Area; see Sheet M-25. For details see structural drawings.
 7. For location of wood stair & platform in Chemical Area, see Sheet M-25. For details see Sheet A-16.

**SECTION A-1-A/A1
SECTION A-1-B/A1 (SIMILAR)**

PLAN AT ELEV. 142.00
Scale: 1/8" = 1'-0"

PART PLAN - DEWATERING BUILDING

(For continuation see Plan adjacent)



WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3/20/75
DATE
W. O. Federline
CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 501-S

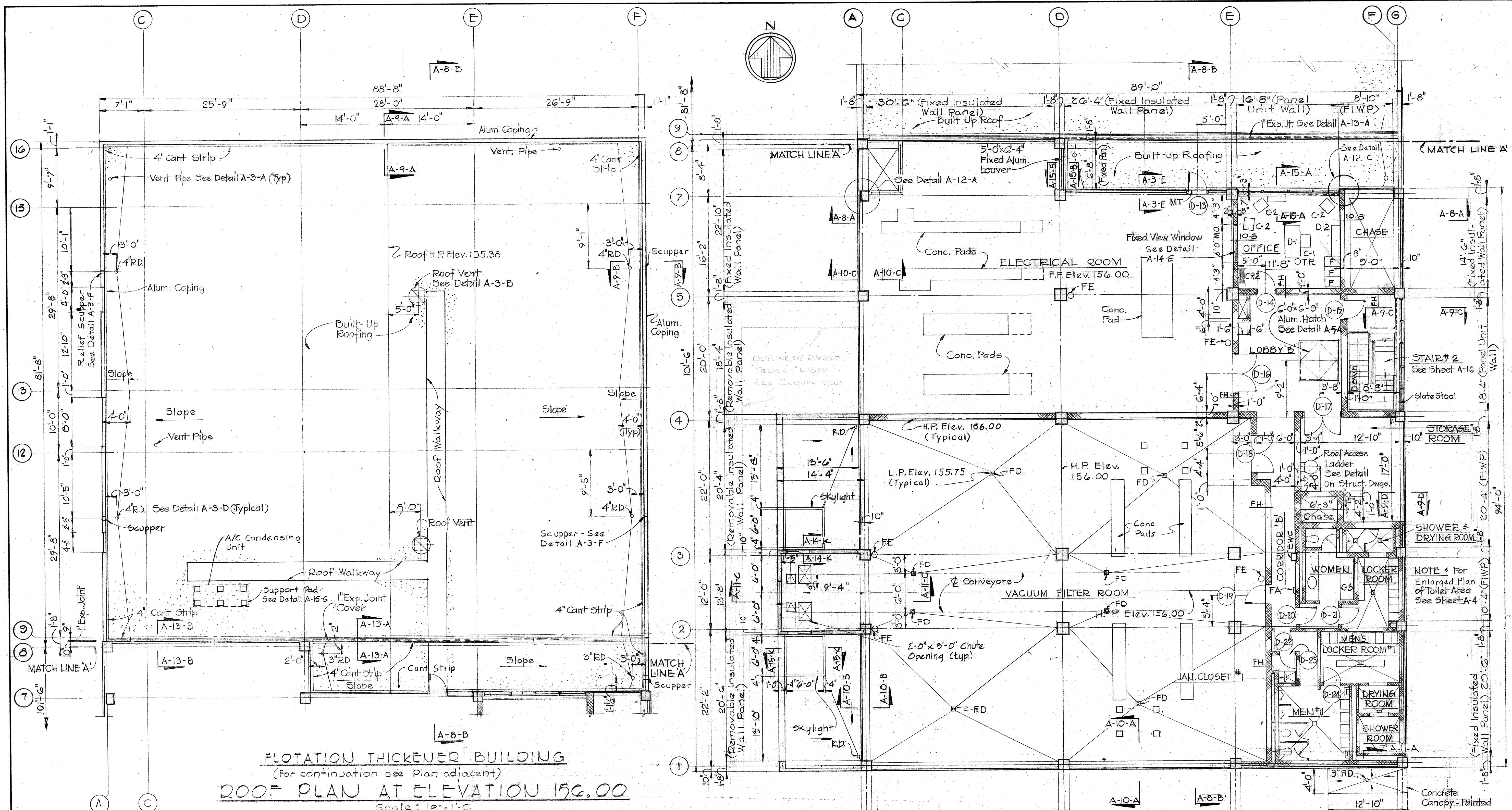
**ARCHITECTURAL
PLANS AT ELEVATION 142.00**

**SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4**

**DRAWING
NO. 16
OF 128**

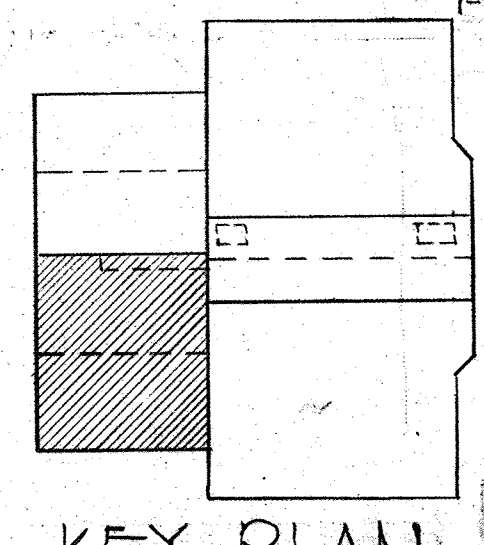
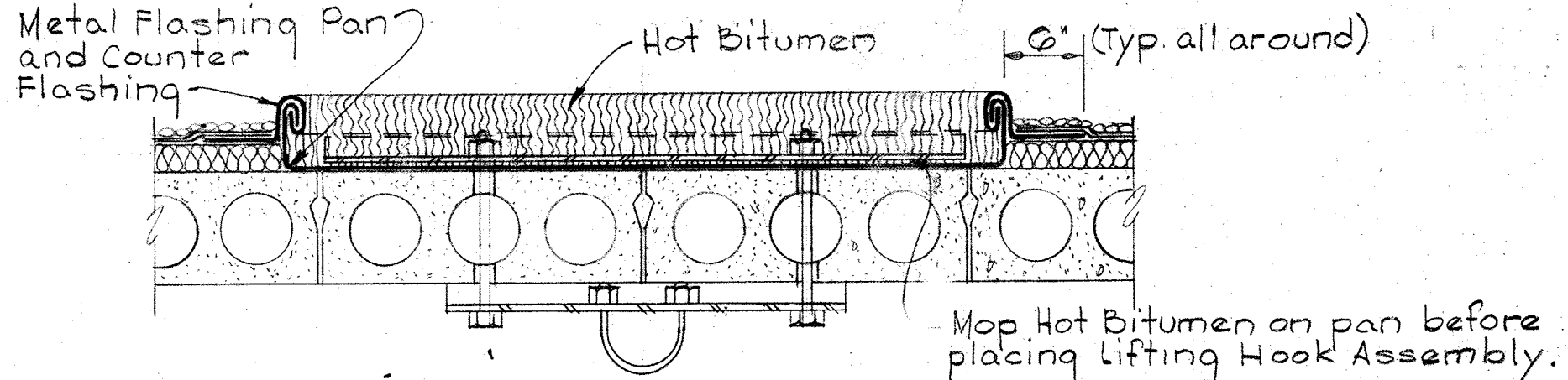
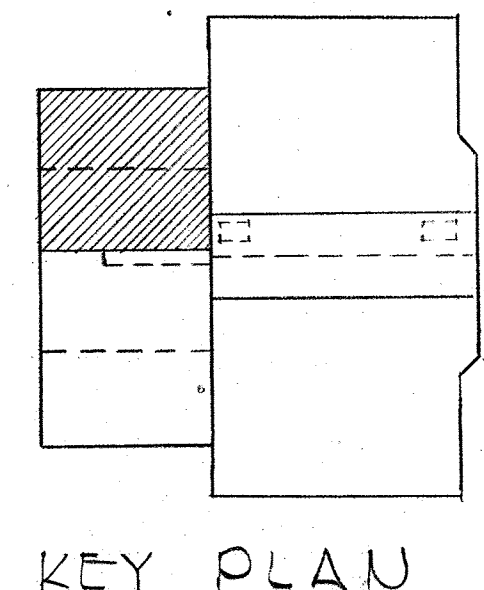
**SCALE
AS
NOTED**

BRUNING 44-510 18392



FLOTATION THICKENER BUILDING
 (For continuation see Plan adjacent)
ROOF PLAN AT ELEVATION 156.00
 Scale: 1/8" = 1'-0"

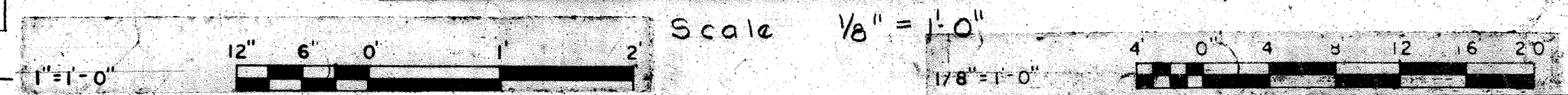
DEWATERING BUILDING
 NOTE: See Structural Drawings for Structural Slab.
PLAN AT ELEV. 156.00
 Scale: 1/8" = 1'-0"



KEY PLAN

Note: For Lifting Hook details and locations see Structural Drawings.
TYP. FLASHING DETAIL @ LIFTING HOOKS.
 Scale: 1" = 1'-0"

KEY PLAN



WHITMAN, REQUARDT & ASSOCIATES
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 BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
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 W.O. Gilbert
 CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 501-S
 JAMES A. FEDERLINE, INC.

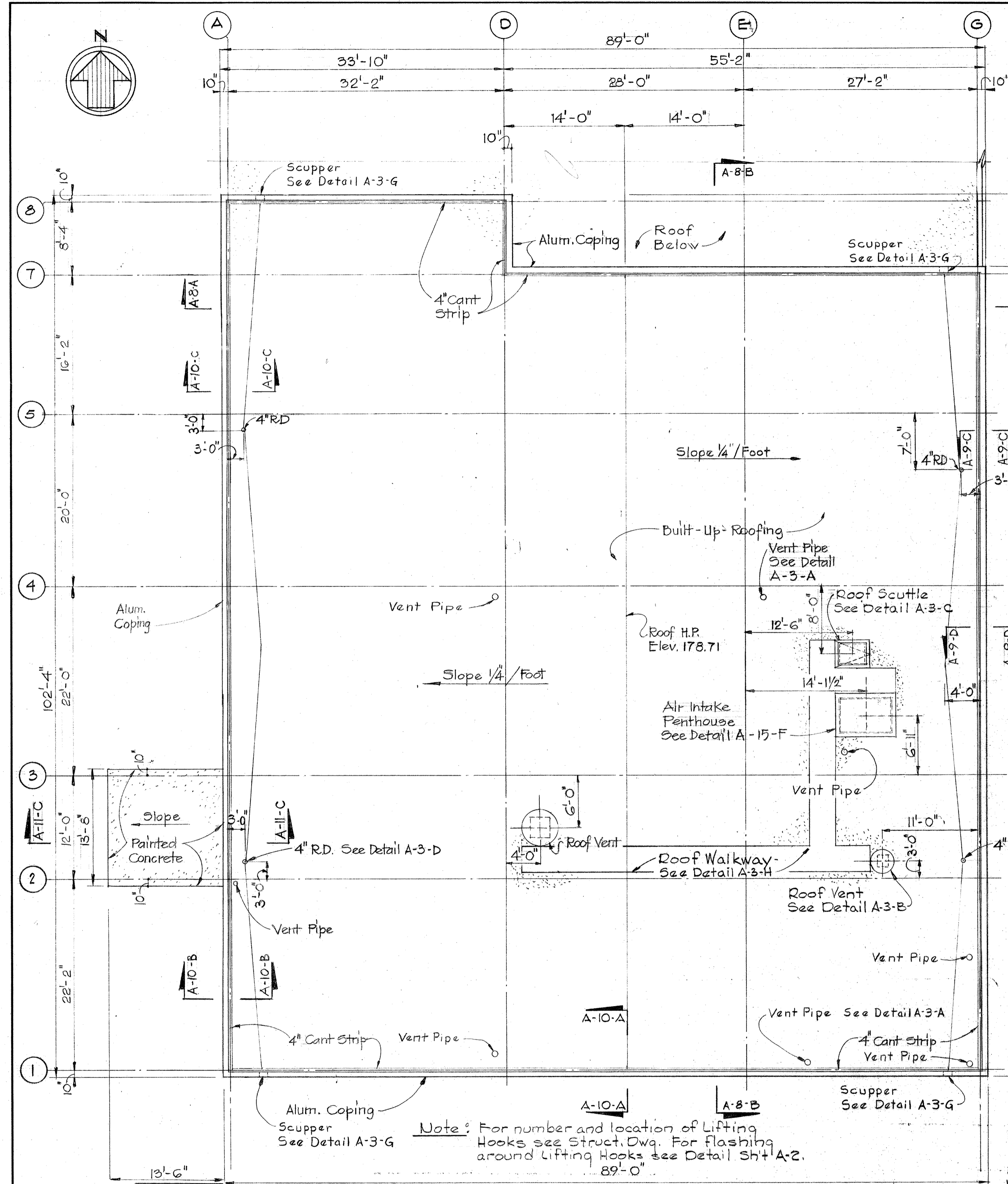
ARCHITECTURAL
PLANS AT ELEVATION 156.00

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

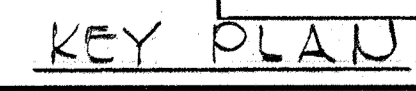
DRAWING NO. 17
OF 128

SCALE AS NOTED

BRUNING 44510 18392



**DEWATERING BUILDING
ROOF PLAN AT ELEV. 177.00**
Scale: 1/8" = 1'-0"



**WHITMAN, REQUARDT & ASSOCIATES
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1304 ST. PAUL ST.
BALTIMORE, MARYLAND

**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND**
3/20/78 DATE
W.O. Federline
CHIEF-BUREAU OF ENGINEERING

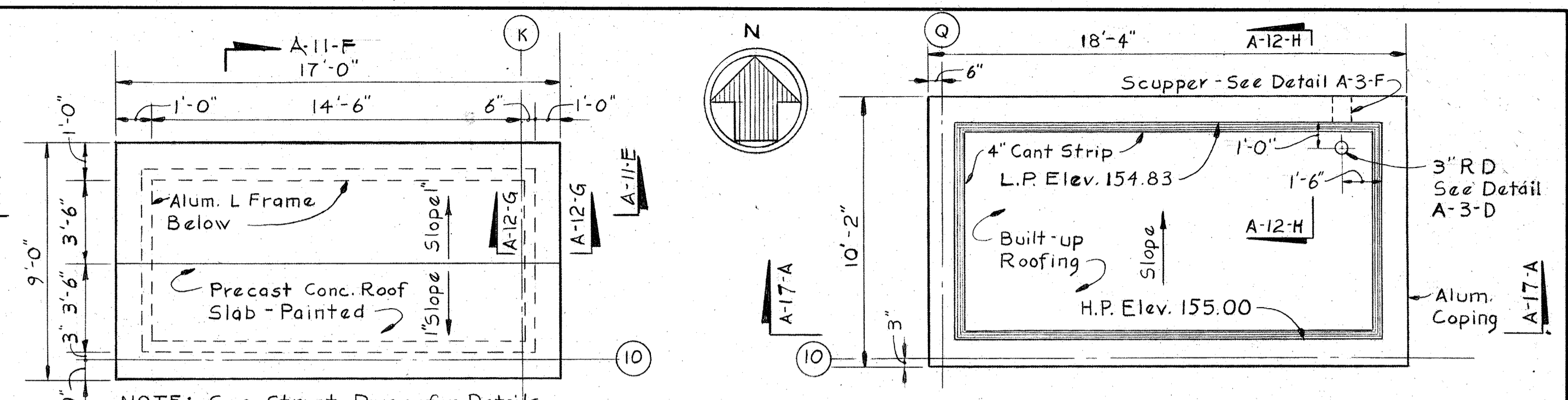
JAMES A. FEDERLINE INC.
AS BUILT DRAWING
CONTRACT NO. 501-S

**ARCHITECTURAL
ROOF PLANS AND DETAILS**

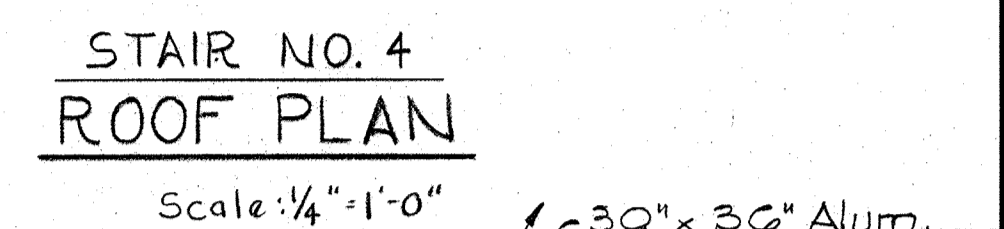
**SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4**

**DRAWING
NO. 18
OF 128**

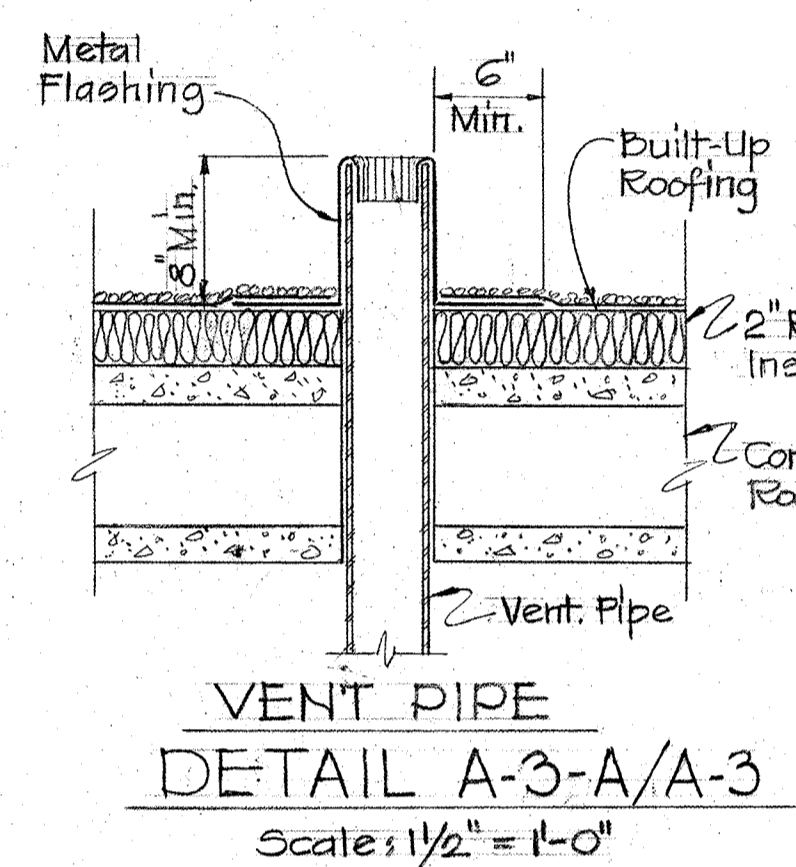
**SCALE
AS
NOTED**



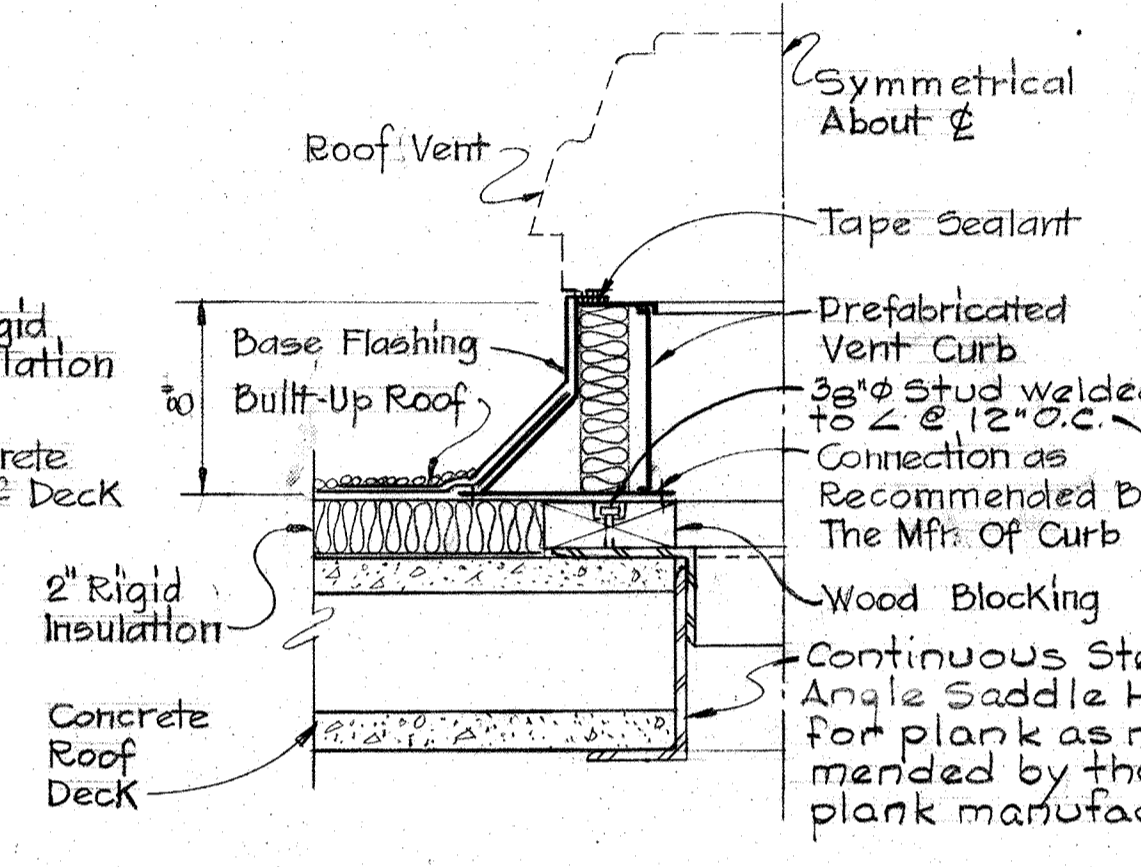
**AIR INTAKE STRUCTURE
ROOF PLAN**
Scale: 1/4" = 1'-0"



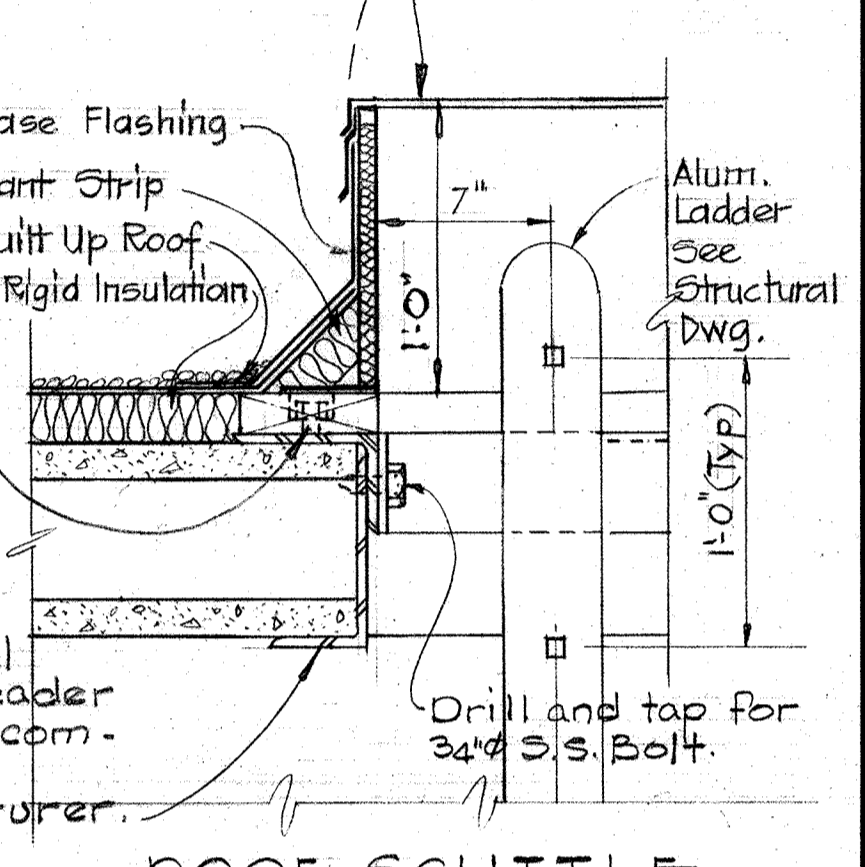
**STAIR NO. 4
ROOF PLAN**
Scale: 1/4" = 1'-0"



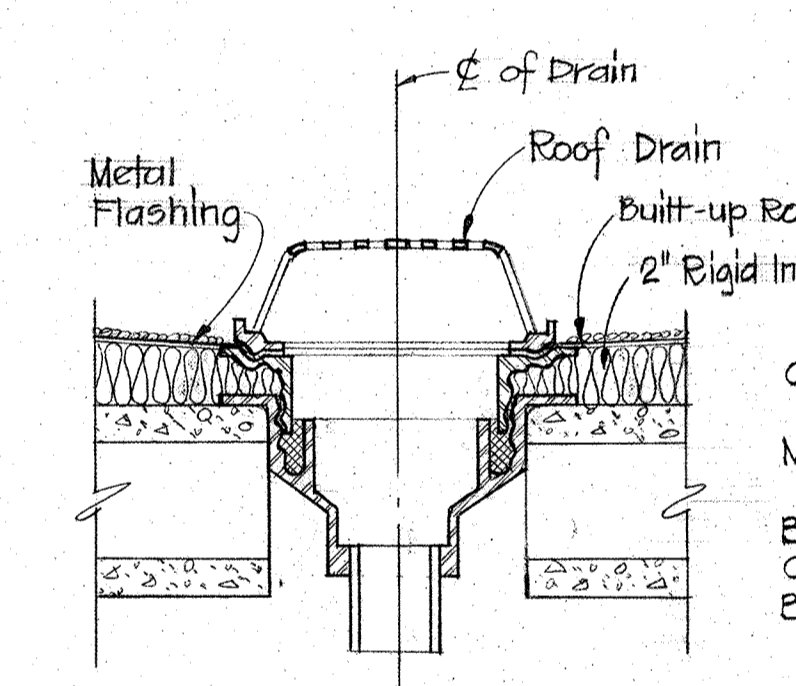
**VENT PIPE
DETAIL A-3-A/A-3**
Scale: 1/2" = 1'-0"



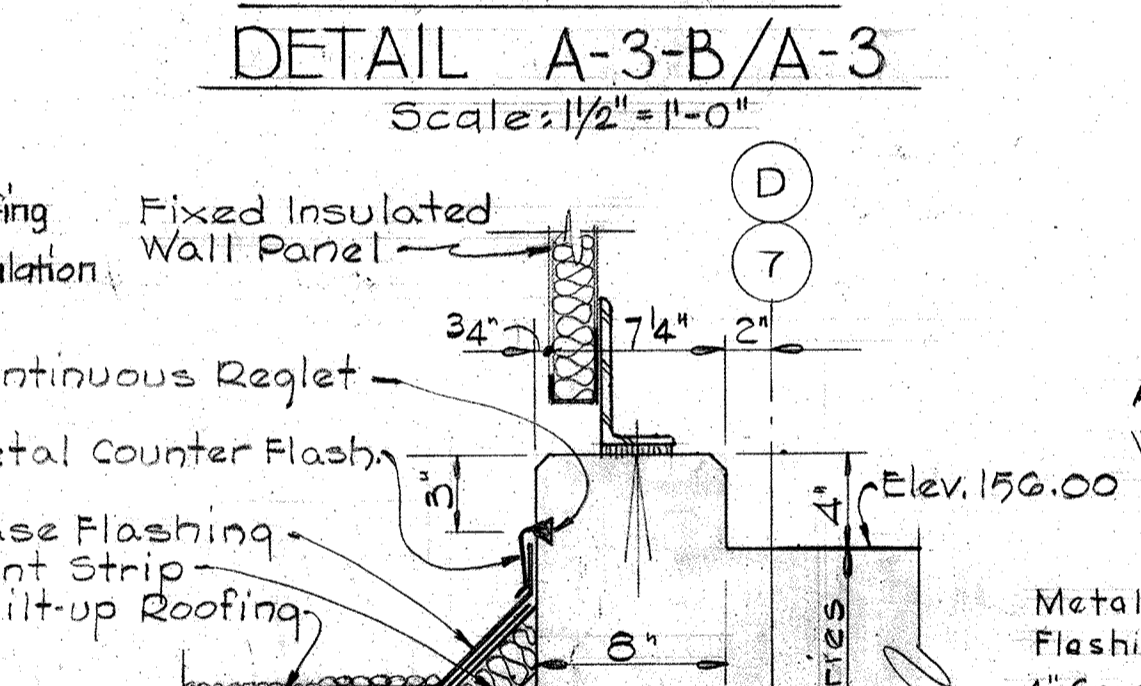
**ROOF VENT CURB
DETAIL A-3-B/A-3**
Scale: 1/2" = 1'-0"



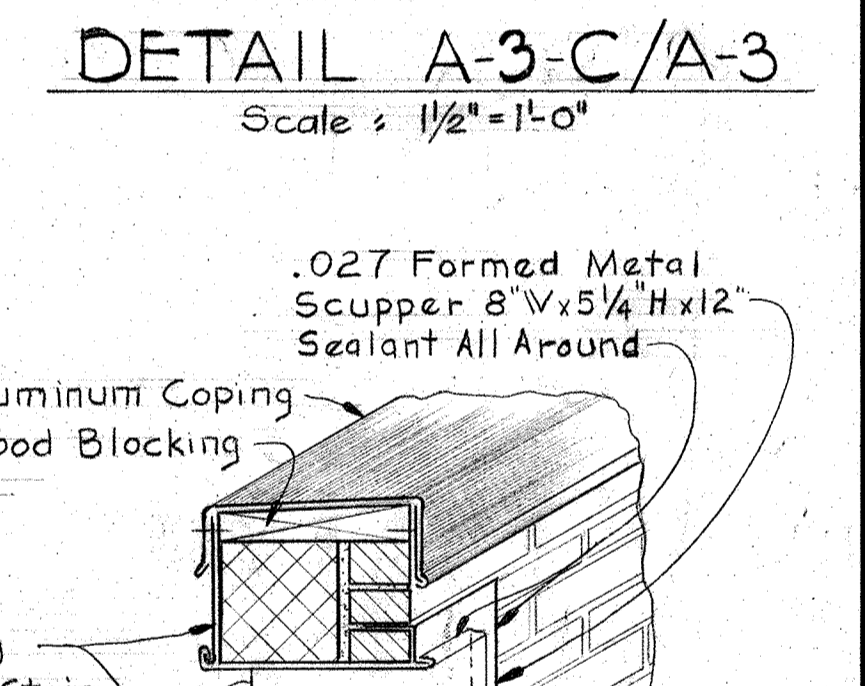
**ROOF SCUTTLE
DETAIL A-3-C/A-3**
Scale: 1/2" = 1'-0"



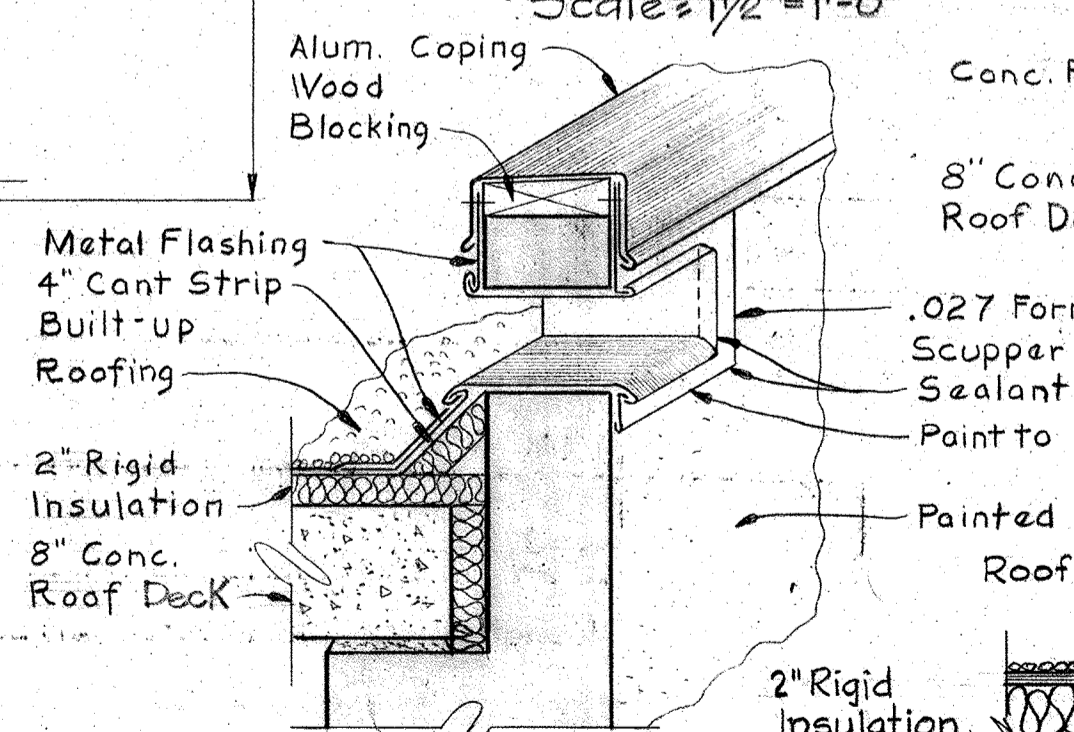
**TYPICAL ROOF DRAIN
DETAIL A-3-D/A-3**
Scale: 1/2" = 1'-0"



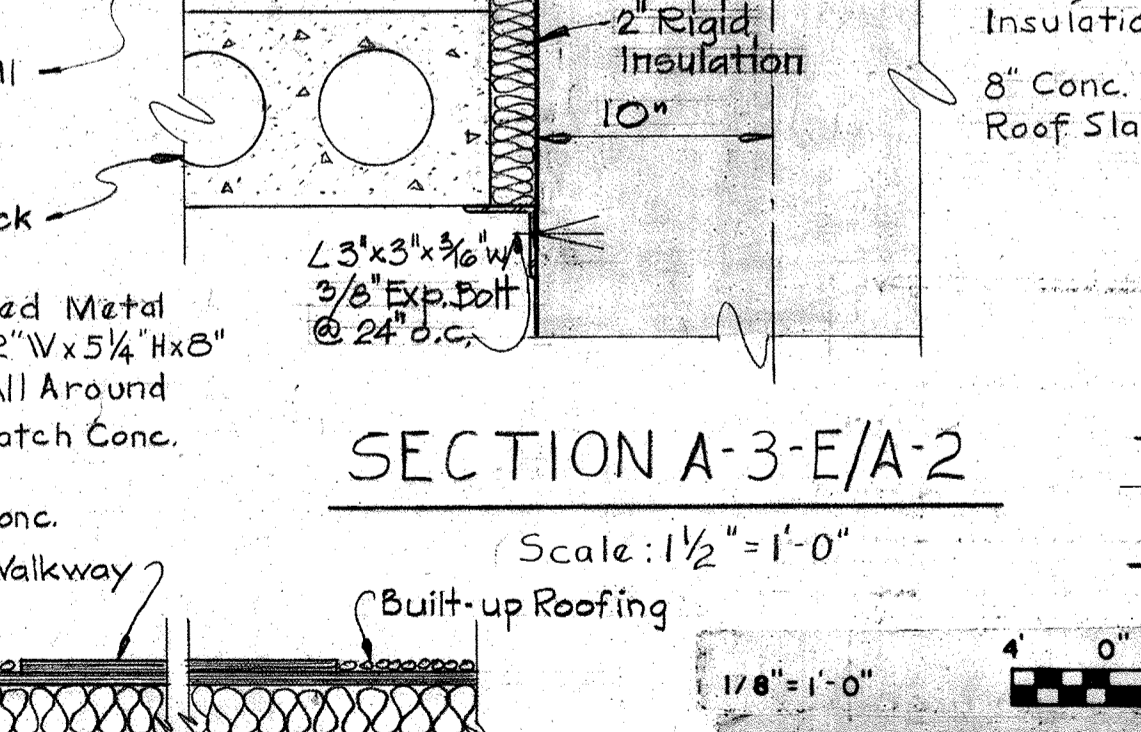
SECTION A-3-E/A-2
Scale: 1/2" = 1'-0"



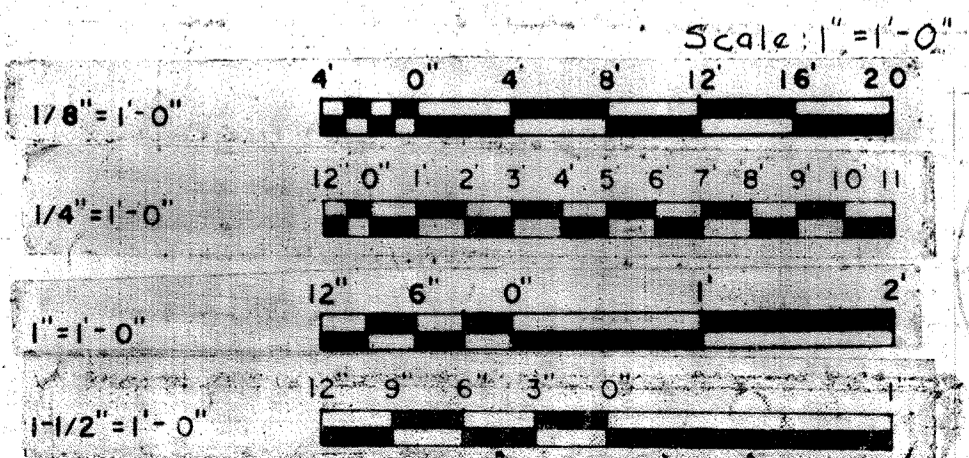
**TYPICAL RELIEF SCUPPER
DETAIL A-3-F/A-2A-3**
Scale: 1" = 1'-0"

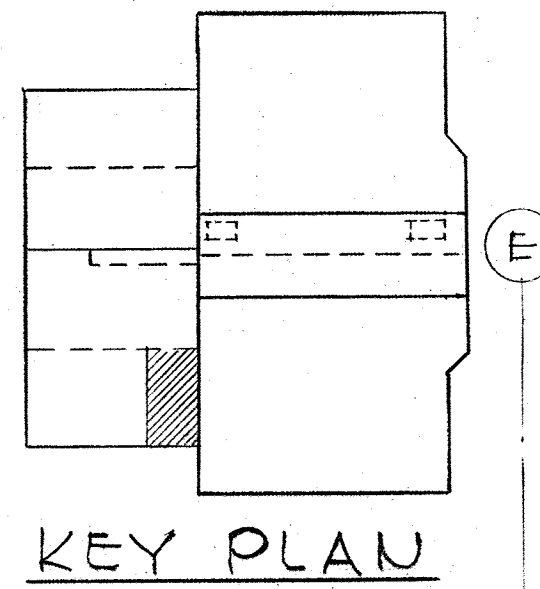


**DEWATERING BUILDING
RELIEF SCUPPER
DETAIL A-3-G/A-3**
Scale: 1" = 1'-0"

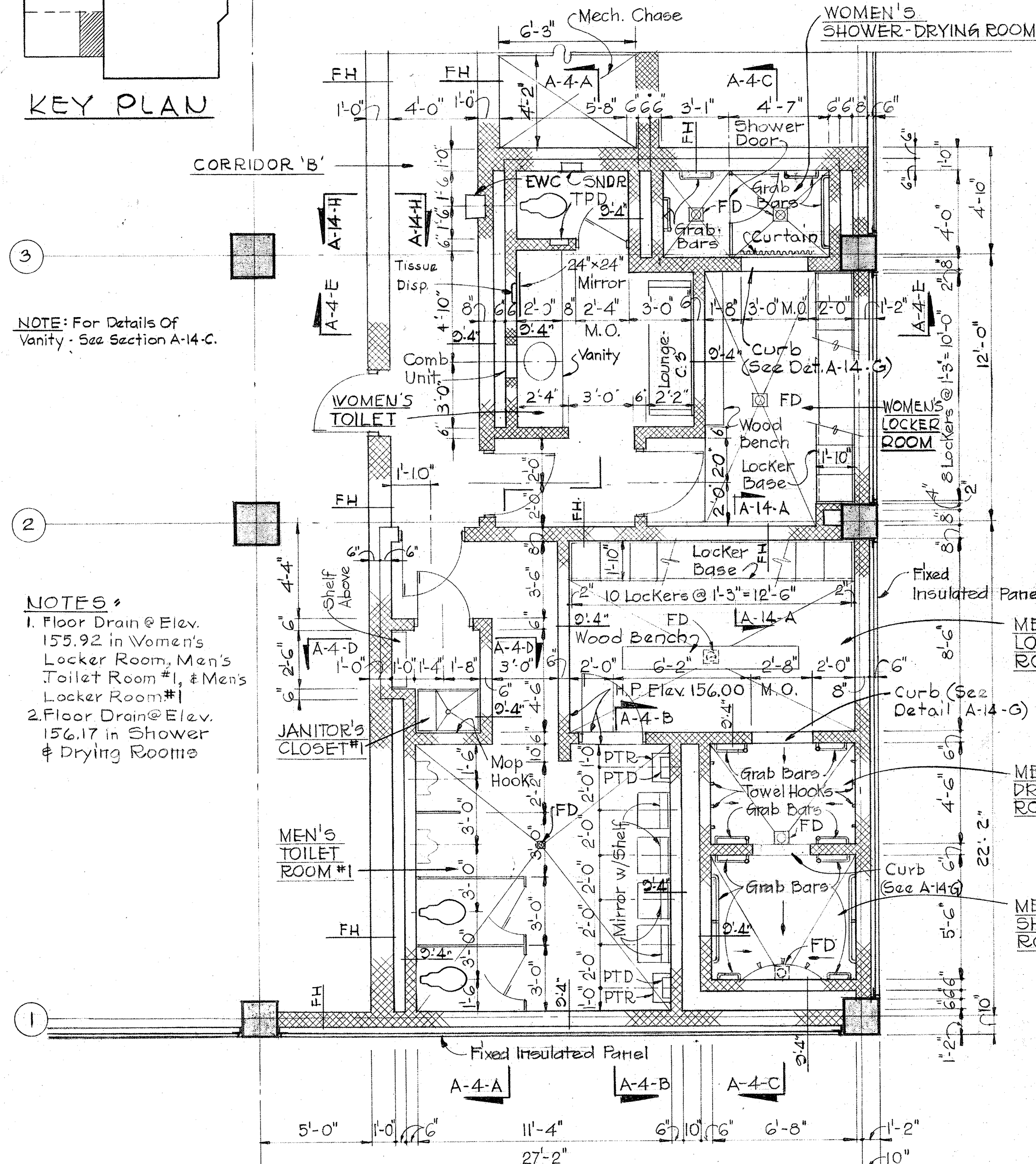


**ROOF WALKWAY
DETAIL A-3-H/A-2A-3**
Scale: 1/2" = 1'-0"





DEWATERING BUILDING



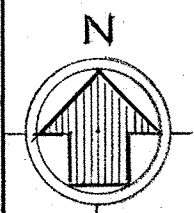
NOTE: For Details Of Vanity - See Section A-14-C.

- NOTES:**
1. Floor Drain @ Elev. 155.92 in Women's Locker Room, Men's Toilet Room #1, & Mens Locker Room #1
 2. Floor Drain @ Elev. 156.17 in Shower & Drying Rooms

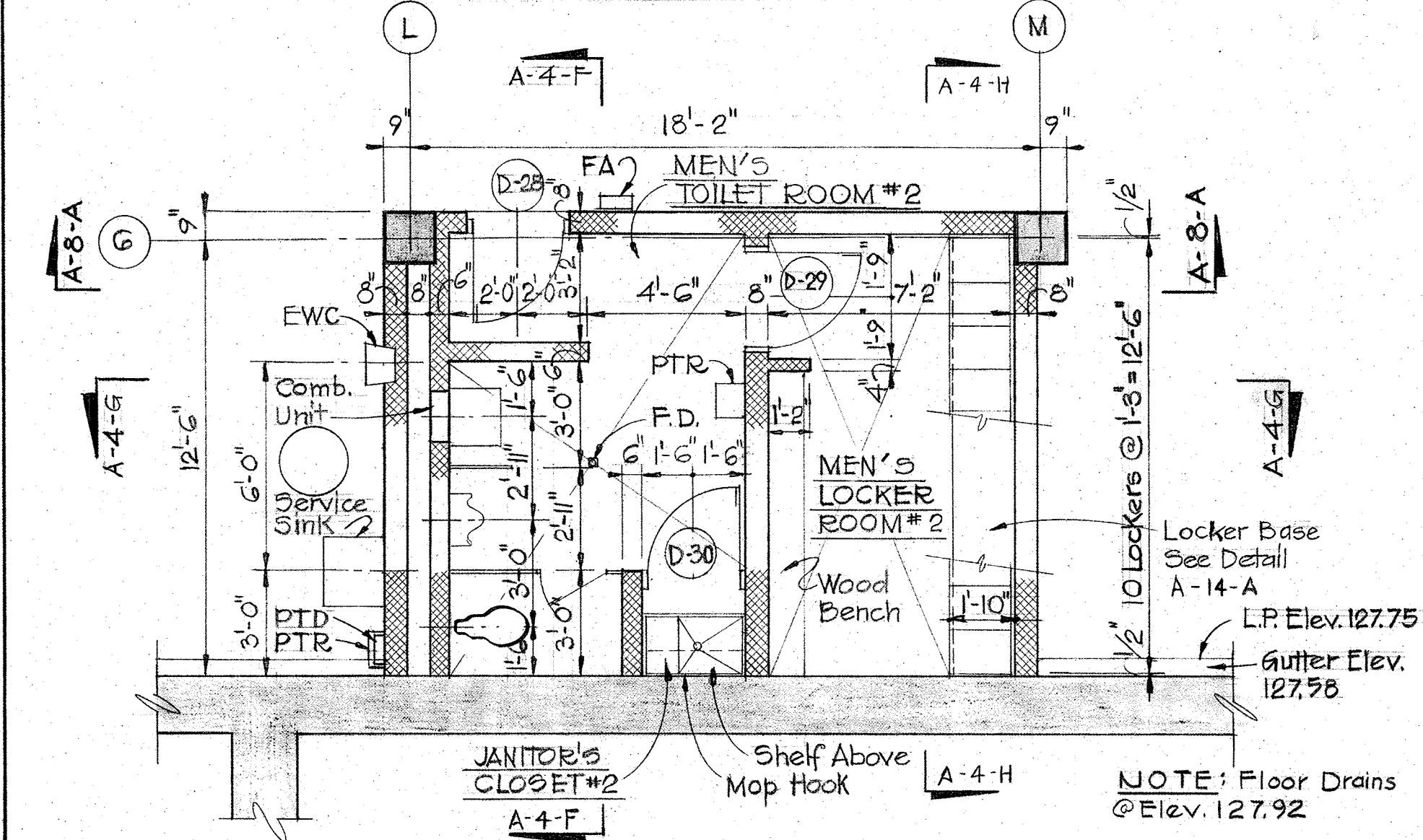
Note: For Ceiling Plan see Sheet A-5.
PLAN TOILETS @ ELEV. 156.00
 Scale: 1/4" = 1'-0"

MOUNTING NOTES:

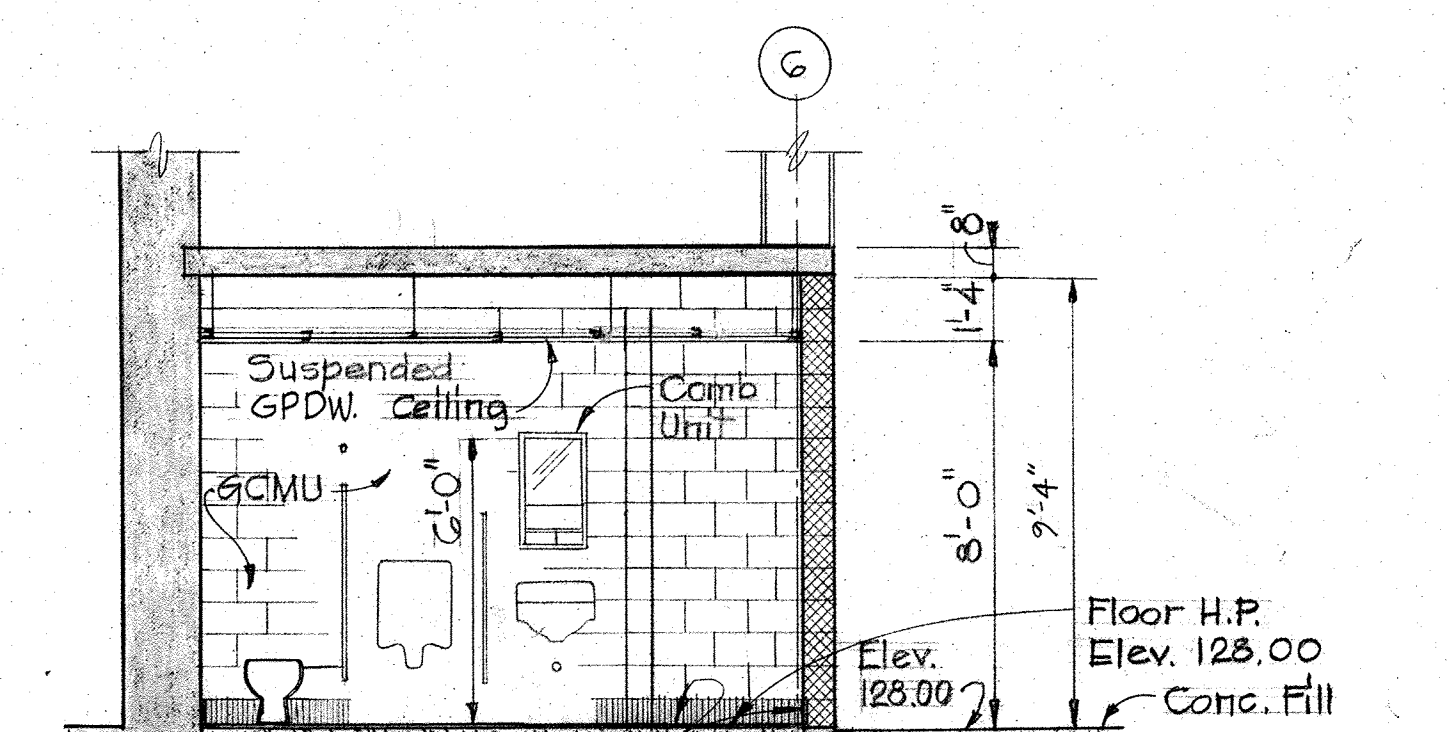
1. Top of Combination Units 6'-0" above floor on ϕ of Sink.
2. Top of Mirror in Women's Toilet 6'-0" above floor.
3. Bottom of Tissue Dispenser 3'-4" above floor on ϕ of Mirror.
4. Top of Sanitary Napkin Dispenser & Receptor 6'-0" above floor.
5. Top of Recessed Toilet Paper Dispenser 3'-0" above floor.
6. Bottom of Paper Towel Receptacles 8" above floor.
7. ϕ of Grab Bars 2'-8" above floor. - Locate as shown.
8. ϕ of Towel Pins 5'-4" above floor. - Located @ 1'-0" o.c.
9. Bottom of Mirror & Shelf in Men's Toilet 4'-8" above floor.
10. Bottom of Paper Towel Dispensers 4'-8" above floor.
11. Top of SST Shelf 6'-0" above floor.
12. ϕ of Mop Hooks 5'-4" above floor.
13. ϕ of Curtain Rod 7'-4" above floor.
14. ϕ of Soap Dispenser 3'-6" above floor.



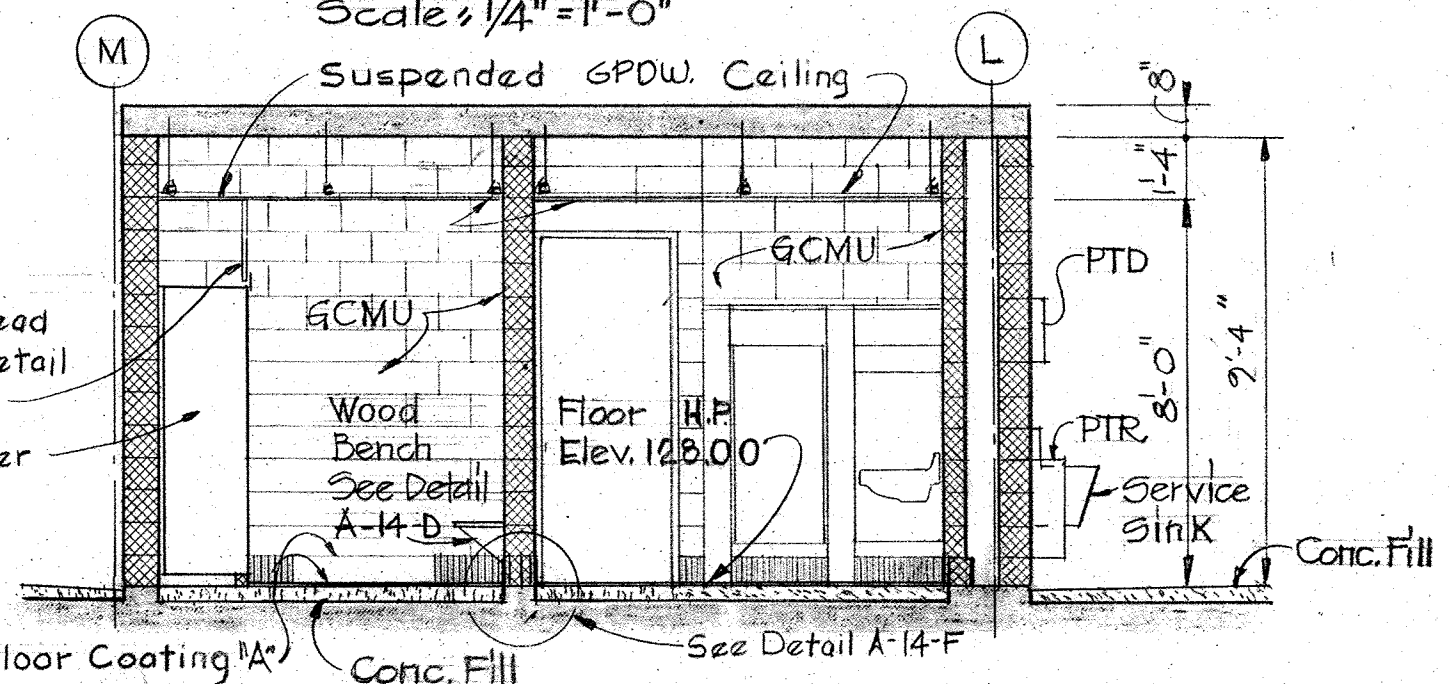
DIGESTER PIPE GALLERY



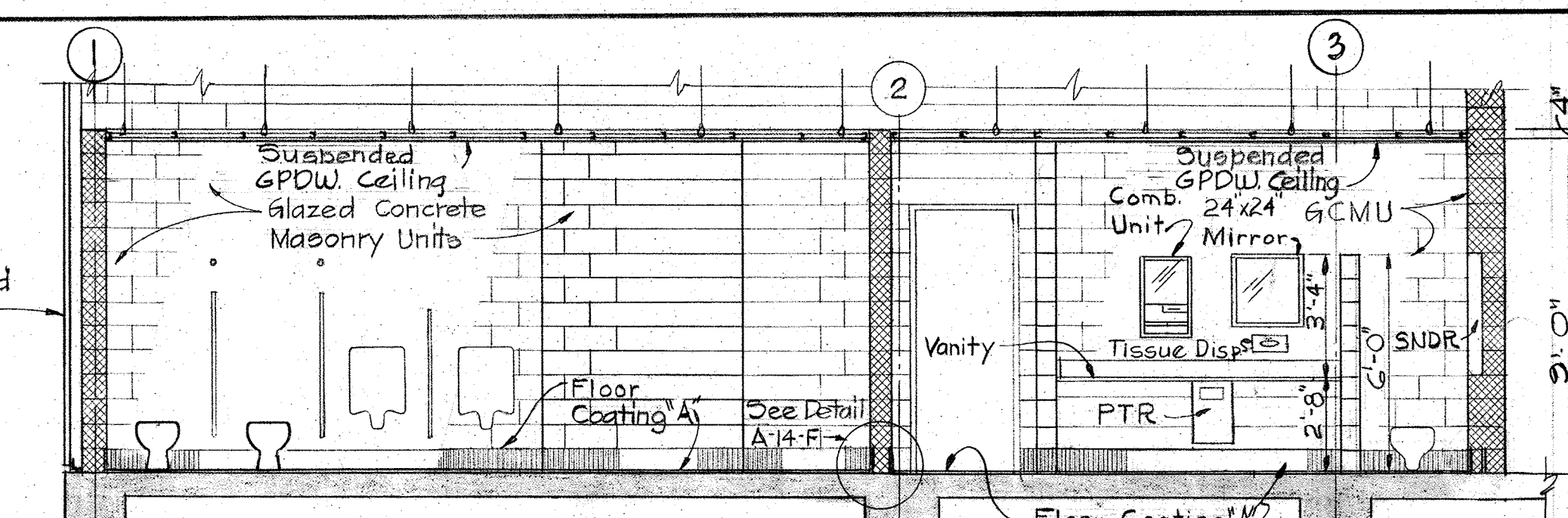
PLAN MEN'S TOILET & LOCKER ROOM NO. 2



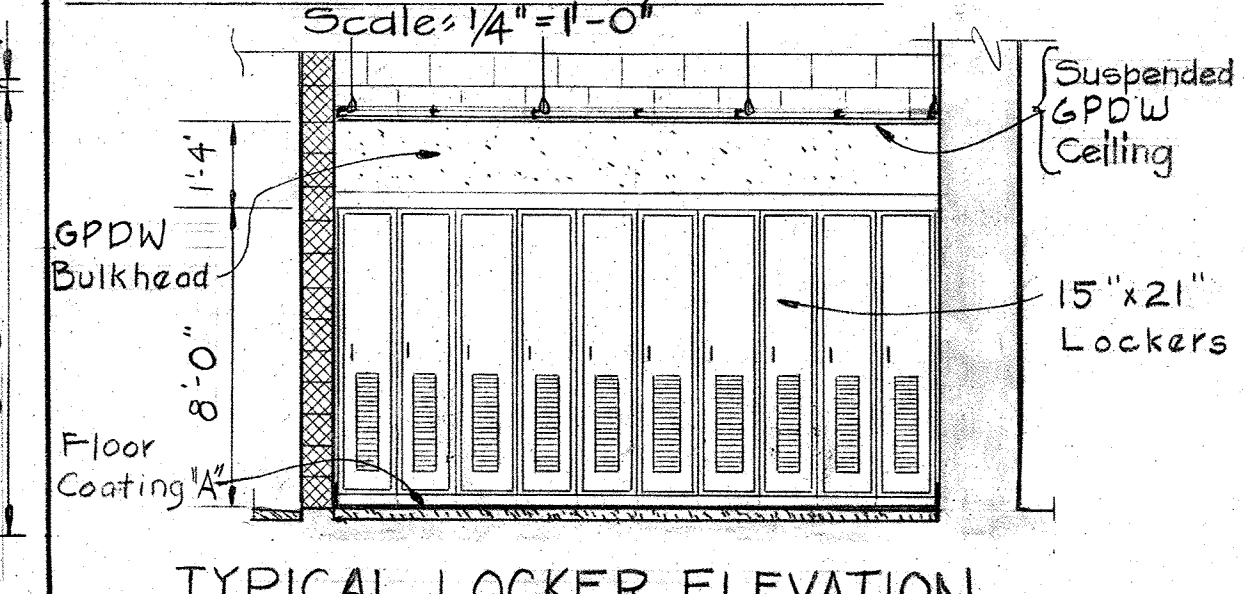
SECTION A-4-F/A-4
 Scale: 1/4" = 1'-0"



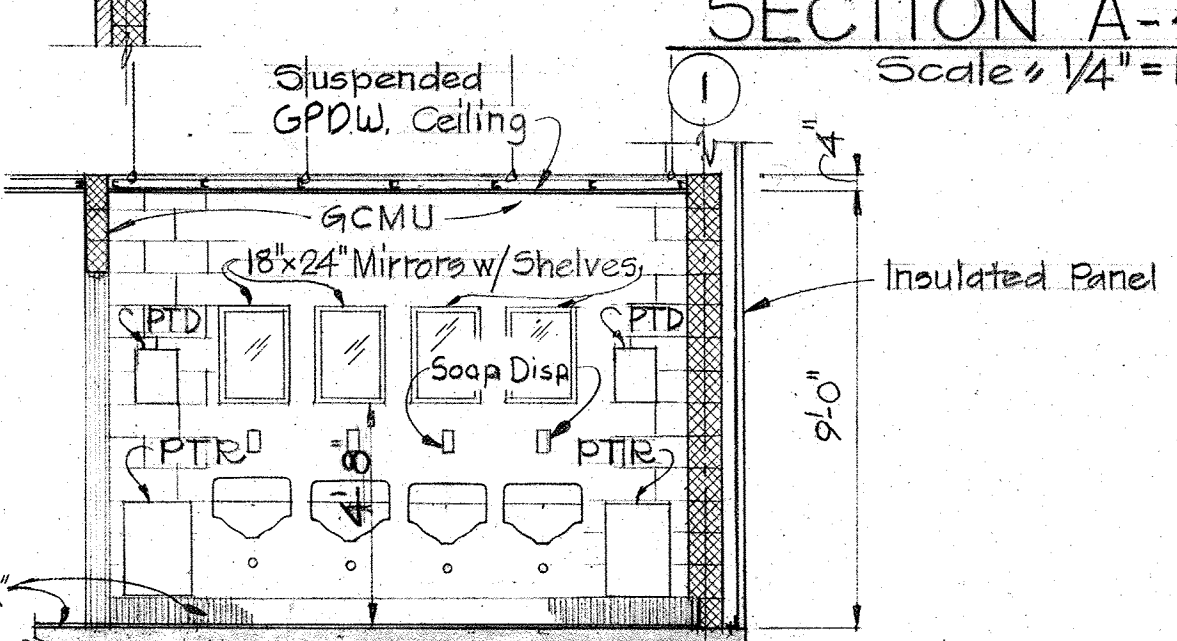
SECTION A-4-G/A-4
 Scale: 1/4" = 1'-0"



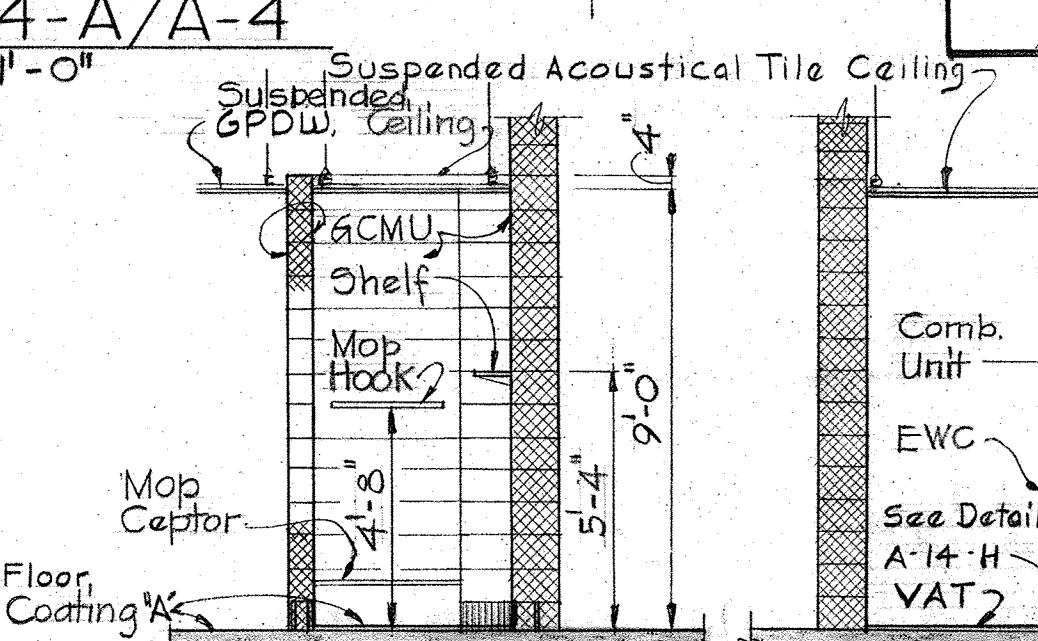
SECTION A-4-A/A-4
 Scale: 1/4" = 1'-0"



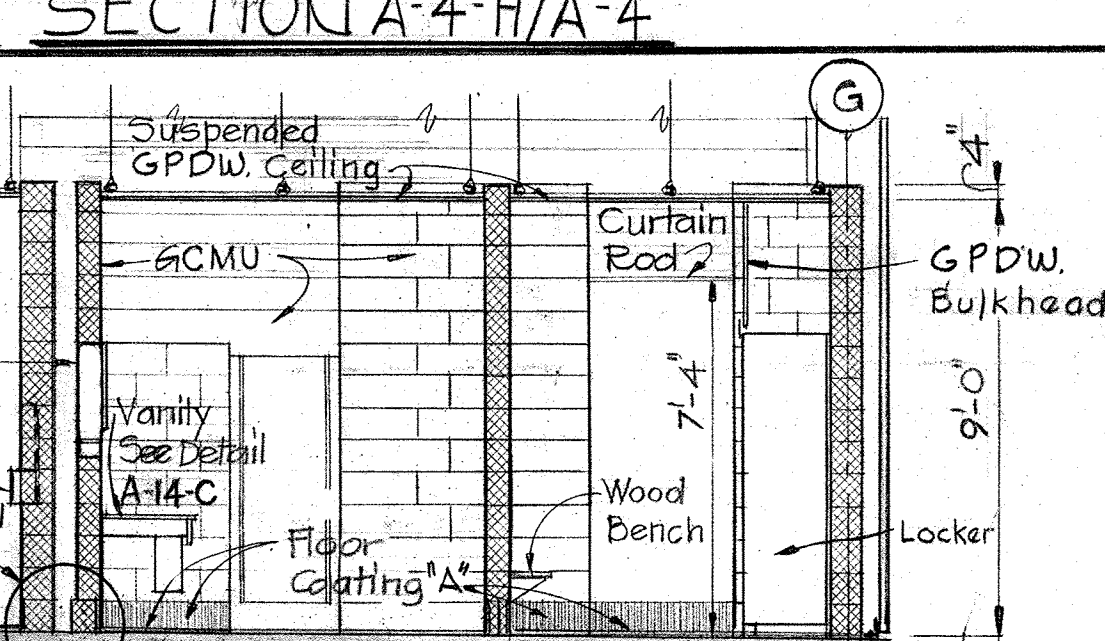
TYPICAL LOCKER ELEVATION SECTION A-4-H/A-4
 Scale: 1/4" = 1'-0"



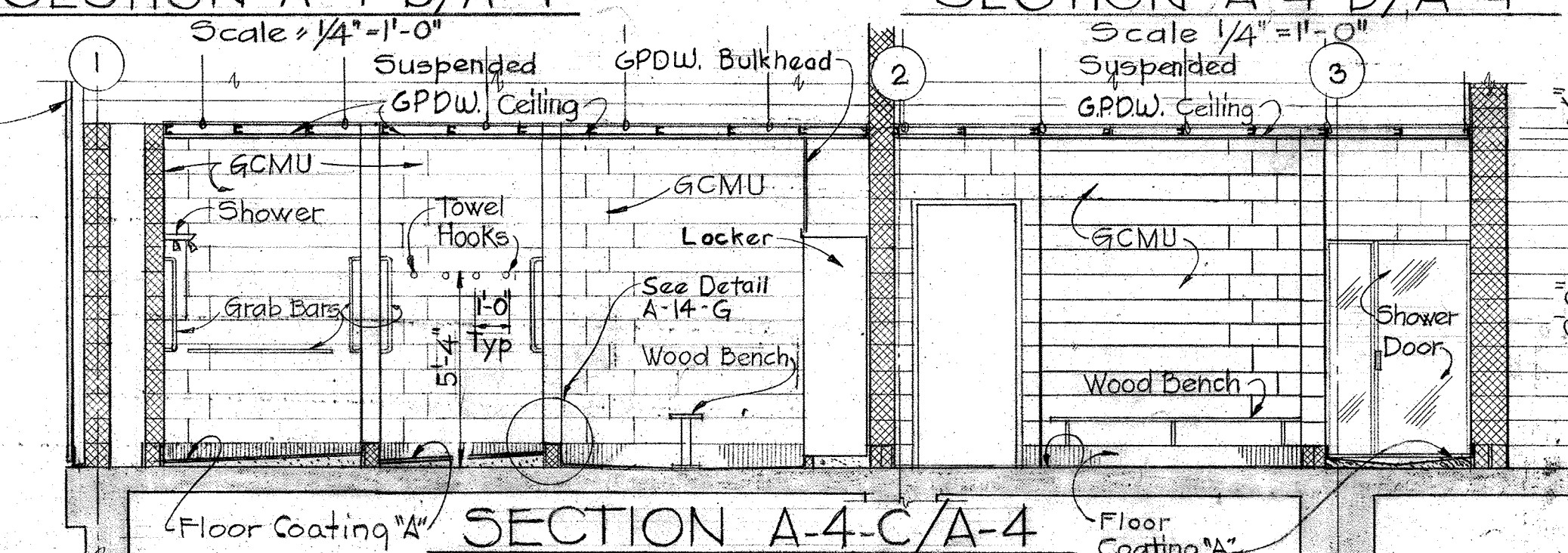
SECTION A-4-B/A-4
 Scale: 1/4" = 1'-0"



SECTION A-4-D/A-4
 Scale: 1/4" = 1'-0"



SECTION A-4-E/A-4
 Scale: 1/4" = 1'-0"



SECTION A-4-C/A-4
 Scale: 1/4" = 1'-0"

JAMES A. FEDERLINE INC.

WHITMAN, REQUARDT & ASSOCIATES
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 1304 ST. PAUL ST.
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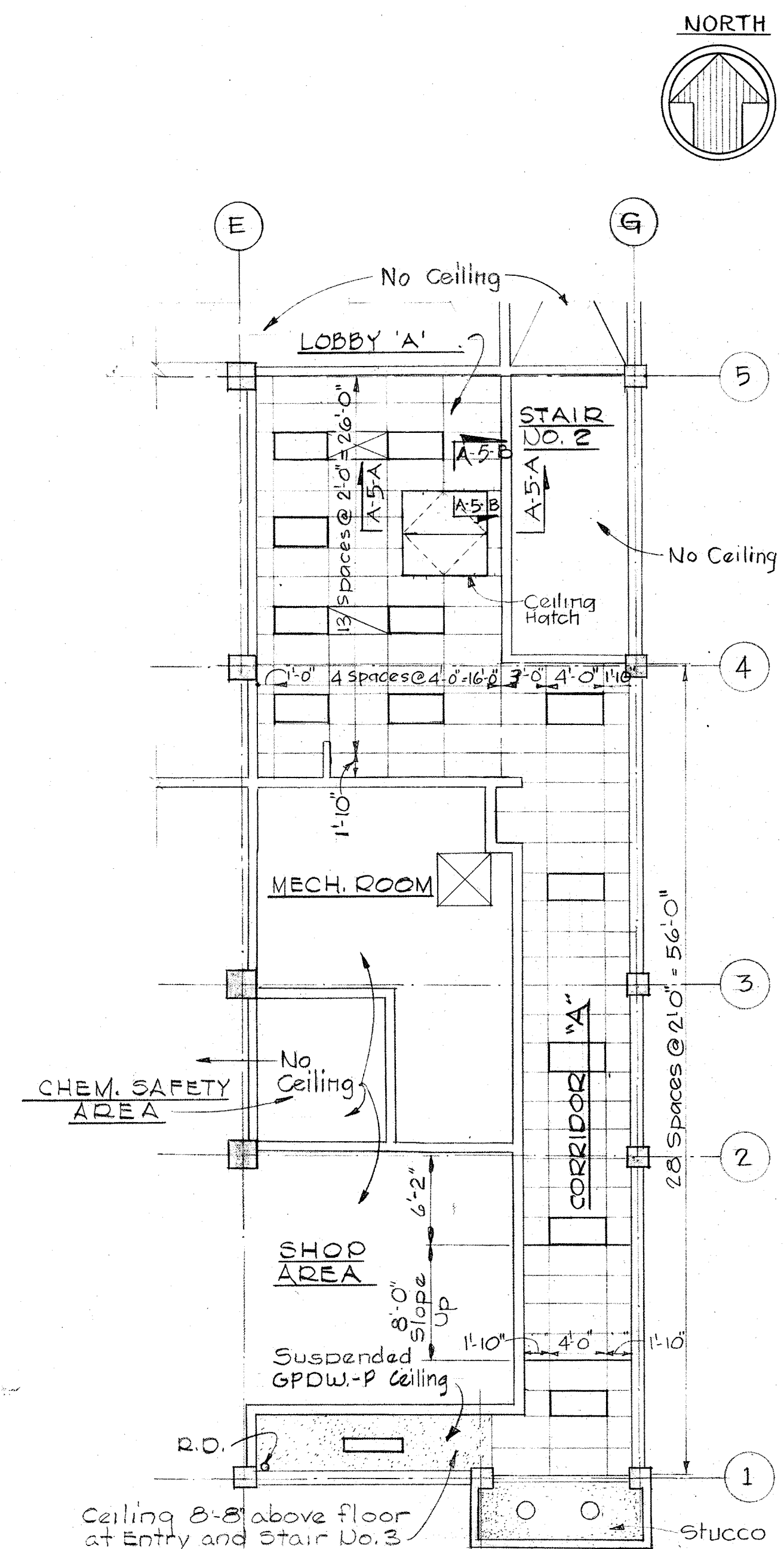
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE: 3/20/75
 W. J. Gilbert
 CHIEF-BUREAU OF ENGINEERING

AS BUILT DRAWING
 CONTRACT NO. 501-S

ARCHITECTURAL
 TOILET ROOM PLANS
 & DETAILS

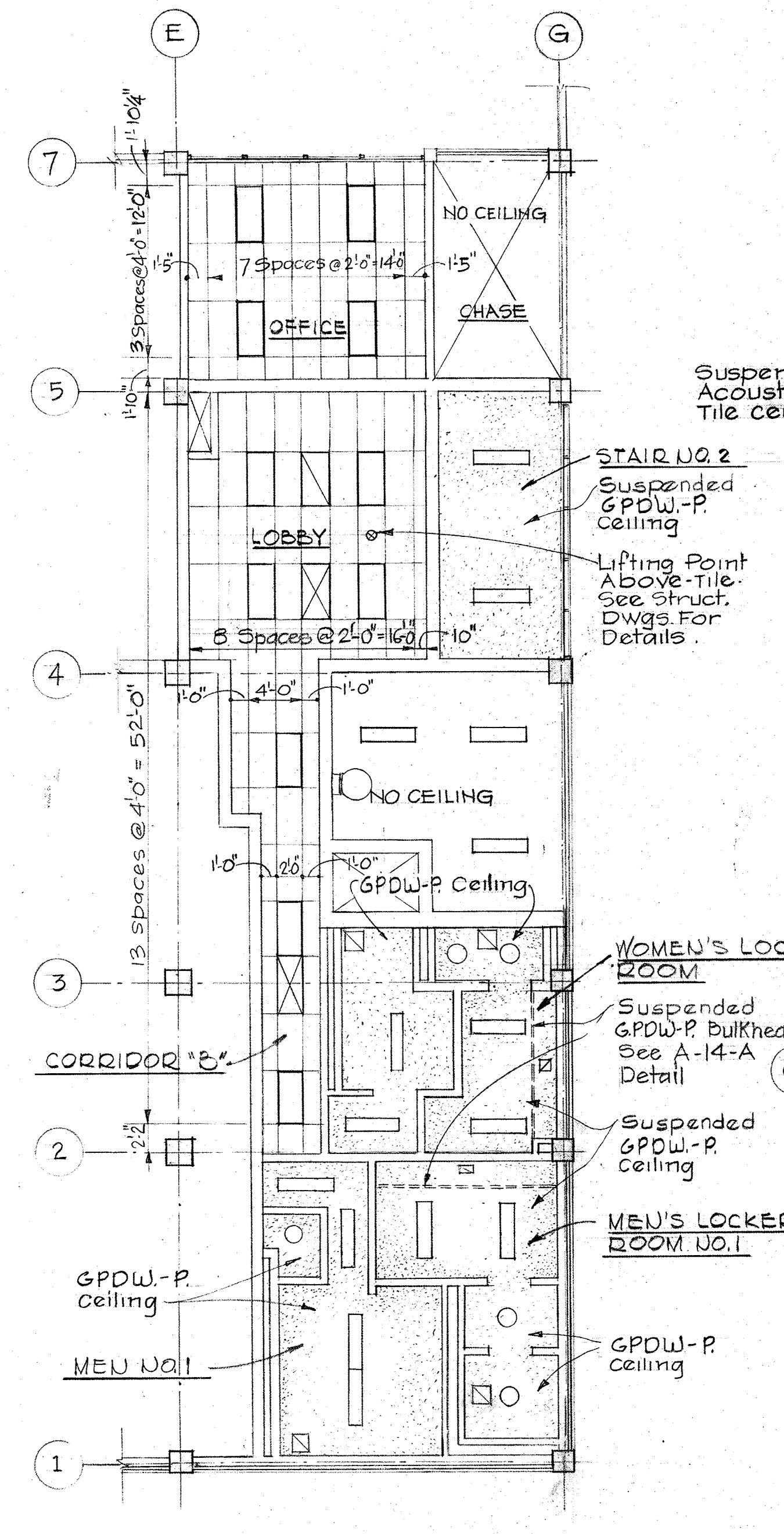
SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 19
 OF 128
 SCALE AS NOTED

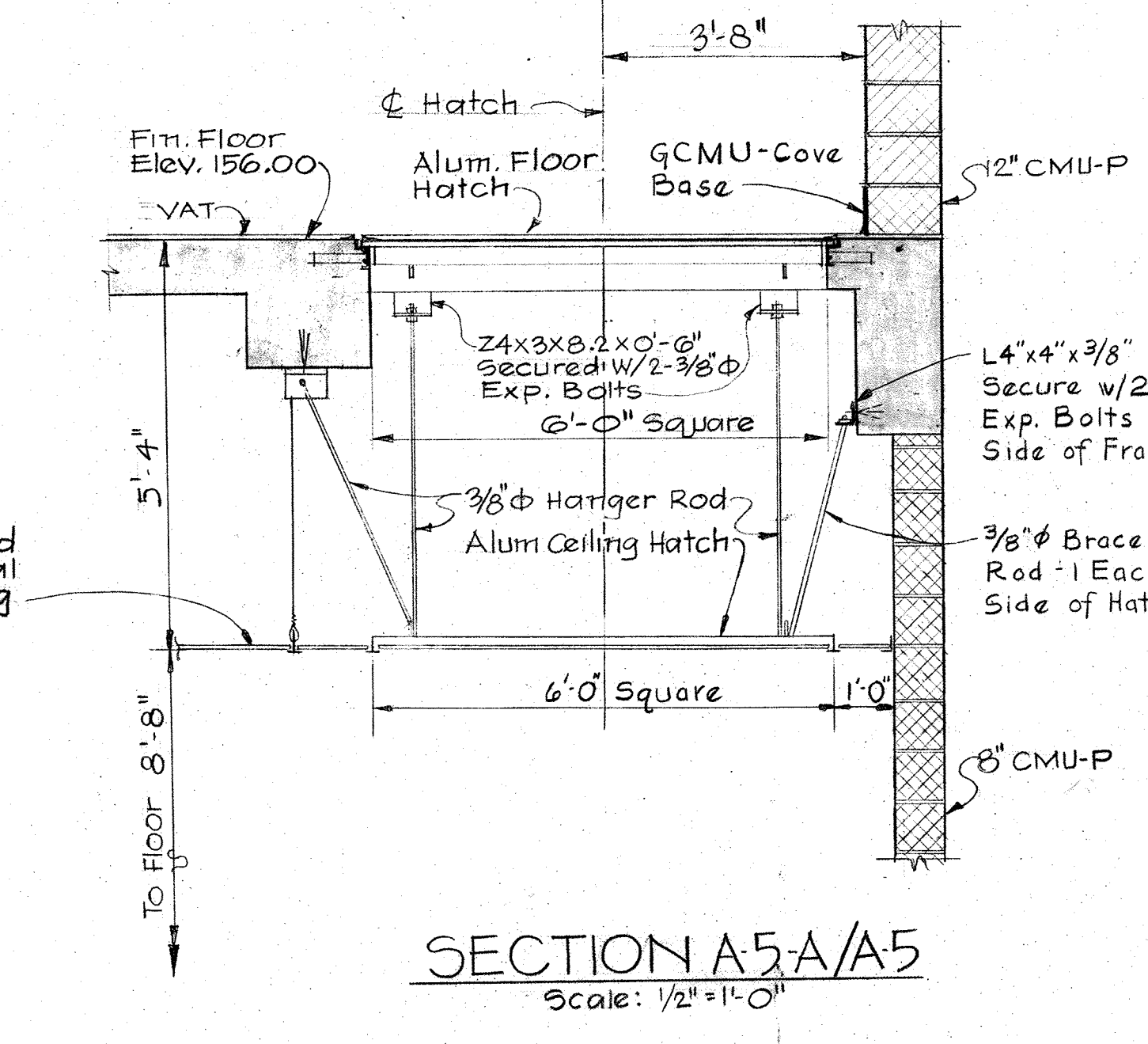


DEWATERING BUILDING
FIRST FLOOR CEILING PLAN
 Scale: 1/8"=1'-0"

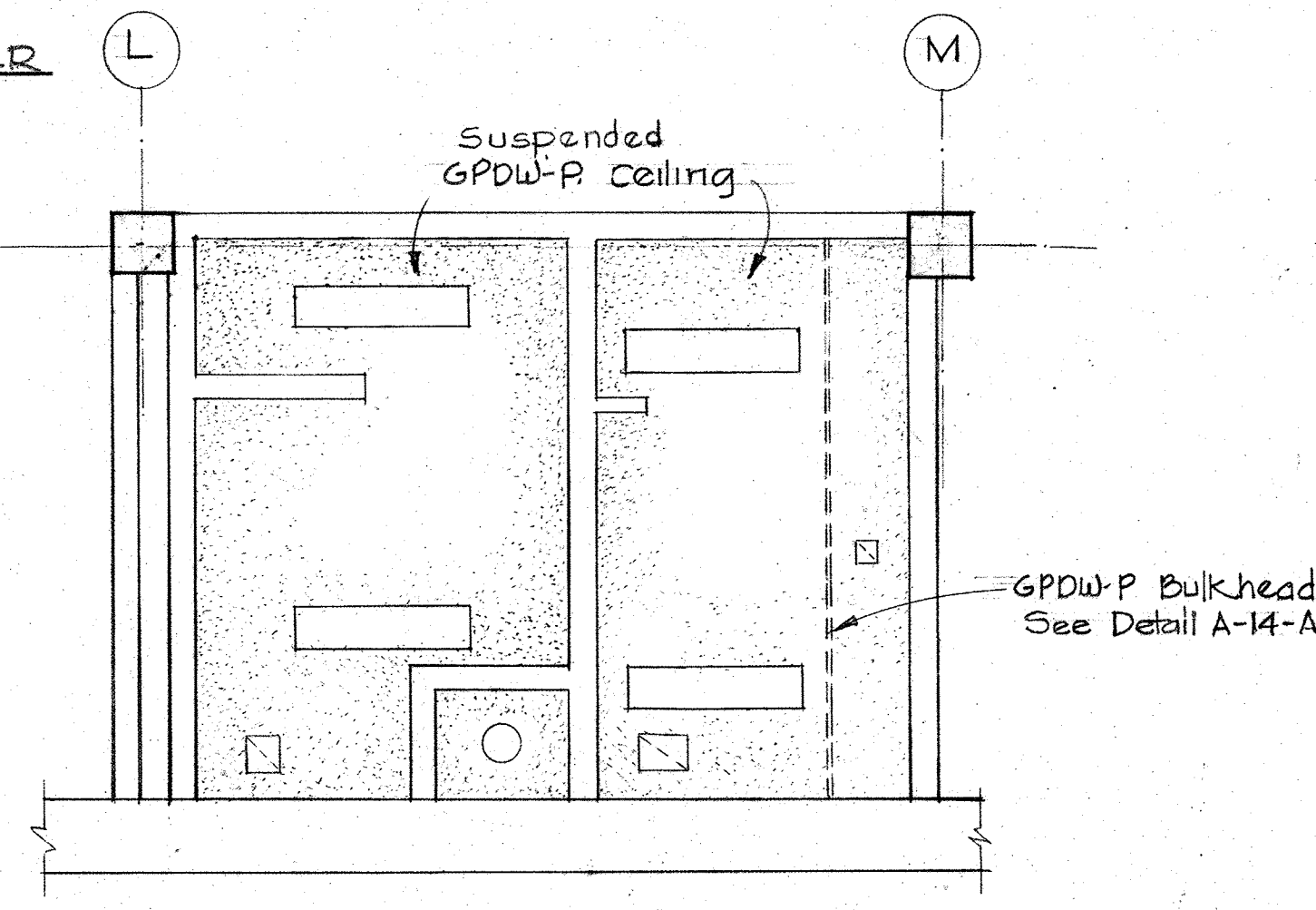
Note: See Sheets A-2 & A-4 for Floor Plans



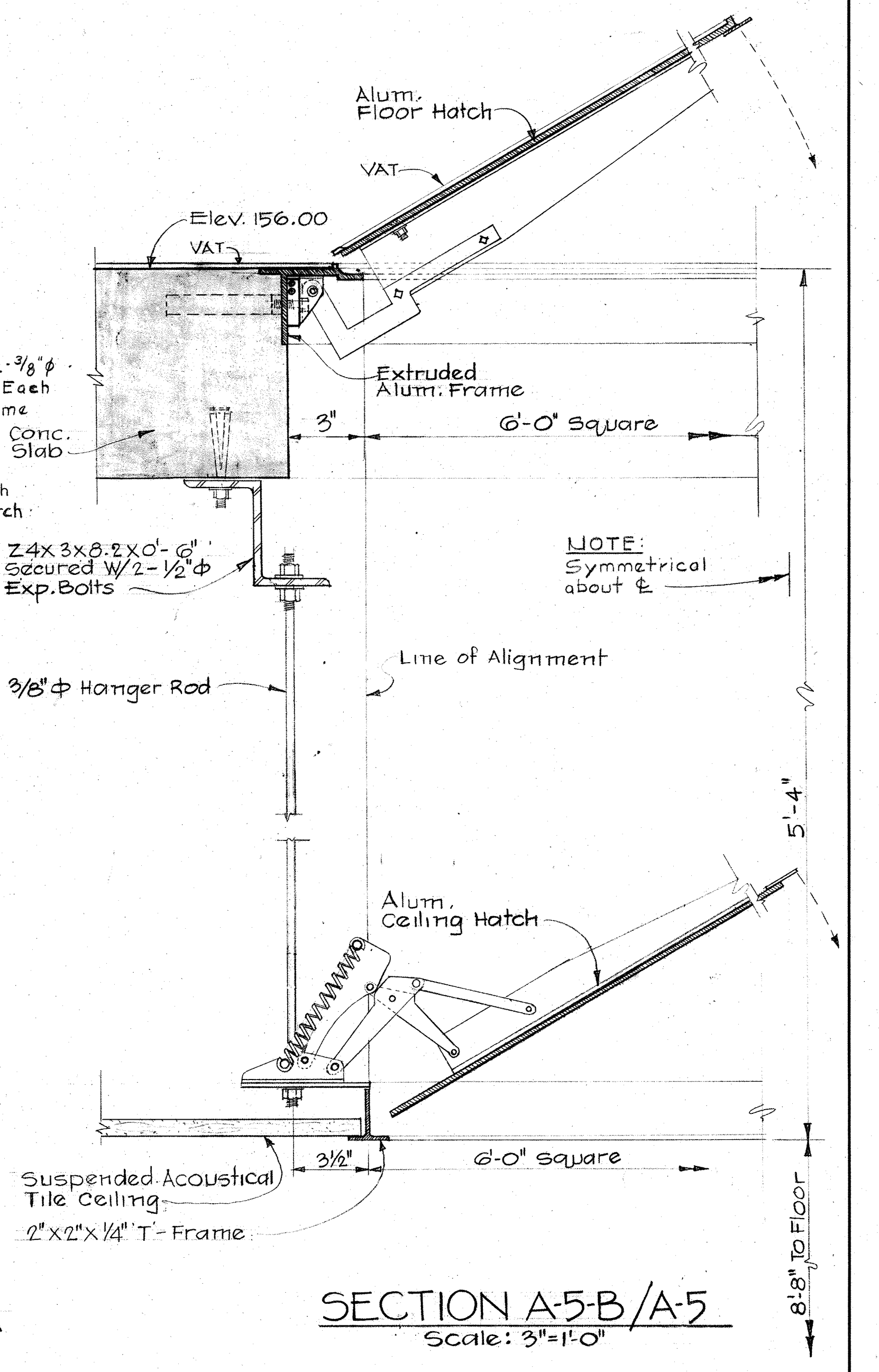
DEWATERING BUILDING (Elev. 156.00)
SECOND FLOOR CEILING PLAN
 Scale: 1/8"=1'-0"



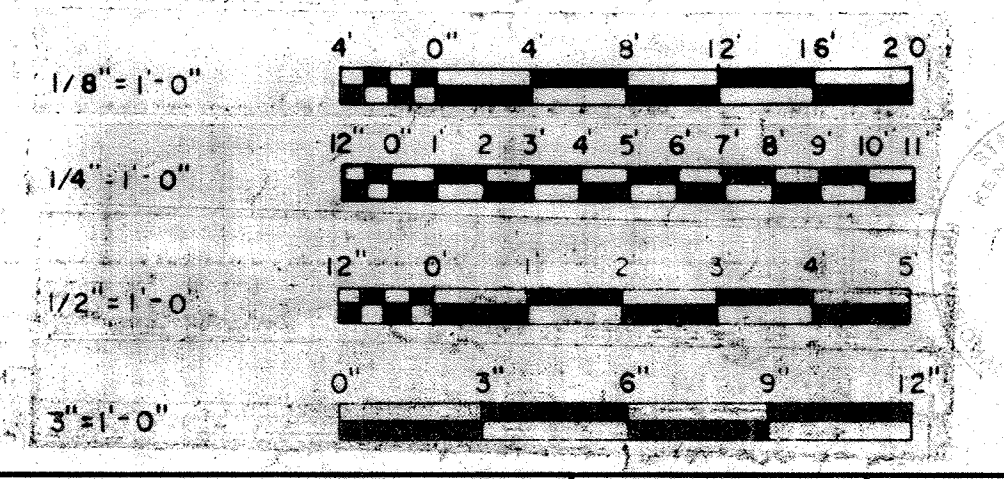
SECTION A5-A/A5
 Scale: 1/2"=1'-0"



DIGESTED PIPE GALLERY
MEN'S TOILET ROOM NO. 2
CEILING PLAN
 Scale: 1/4"=1'-0"



SECTION A5-B/A-5
 Scale: 3/8"=1'-0"



WHITMAN, REQUARDT & ASSOCIATES
 ENGINEERS
 1304 ST. PAUL ST.
 BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 3/20/15
 DATE

JAMES A. FEDERLINE INC.
 AS-BUILT DRAWING

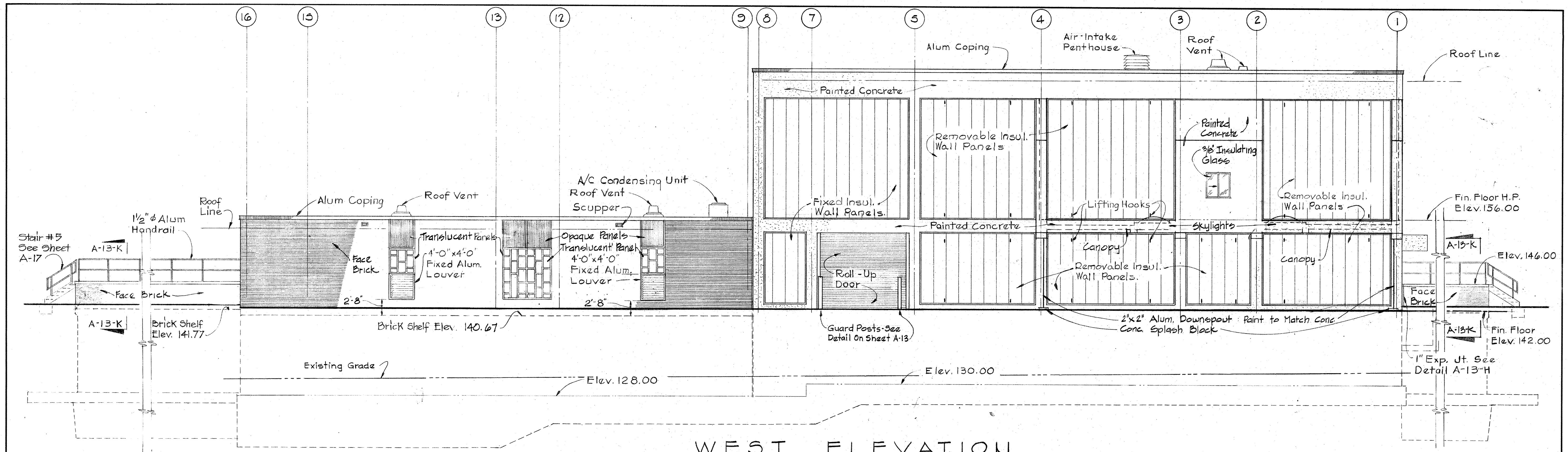
CONTRACT NO. 501-S

ARCHITECTURAL
 CEILING PLANS AND DETAILS

SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 4

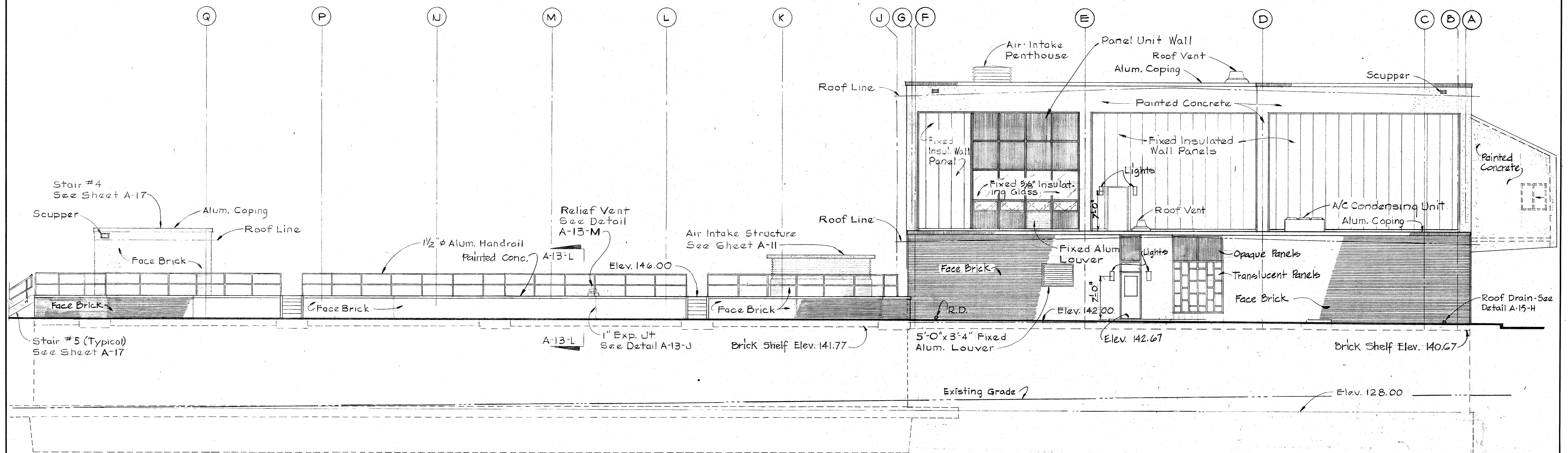
DRAWING
 NO. 20
 OF 128

SCALE
 AS
 NOTED



WEST ELEVATION

Scale 1/8" = 1'-0"

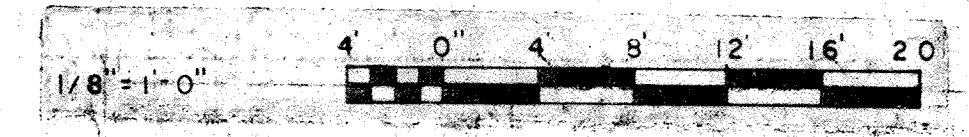


NORTH ELEVATION

Scale 1/8" = 1'-0"

JAMES A. FEDERLINE INC.

AS BUILT DRAWING

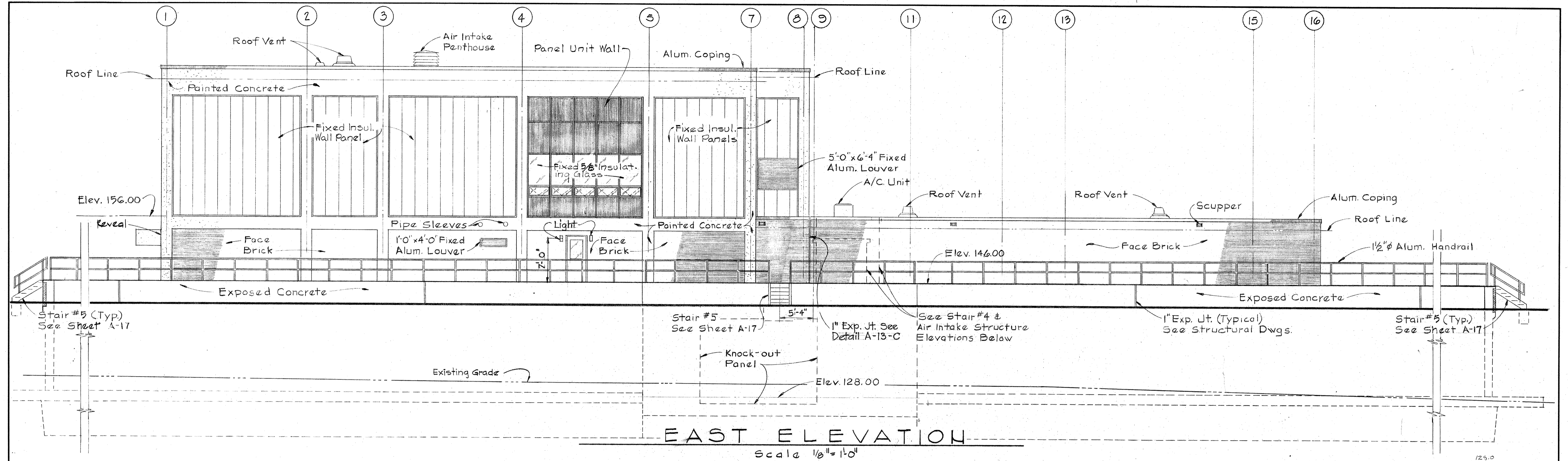


<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE 3/20/75 CHIEF-BUREAU OF ENGINEERING</p>	<p>CONTRACT NO. 501-S</p>	<p>ARCHITECTURAL ELEVATIONS</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 21 OF 128 SCALE AS NOTED</p>
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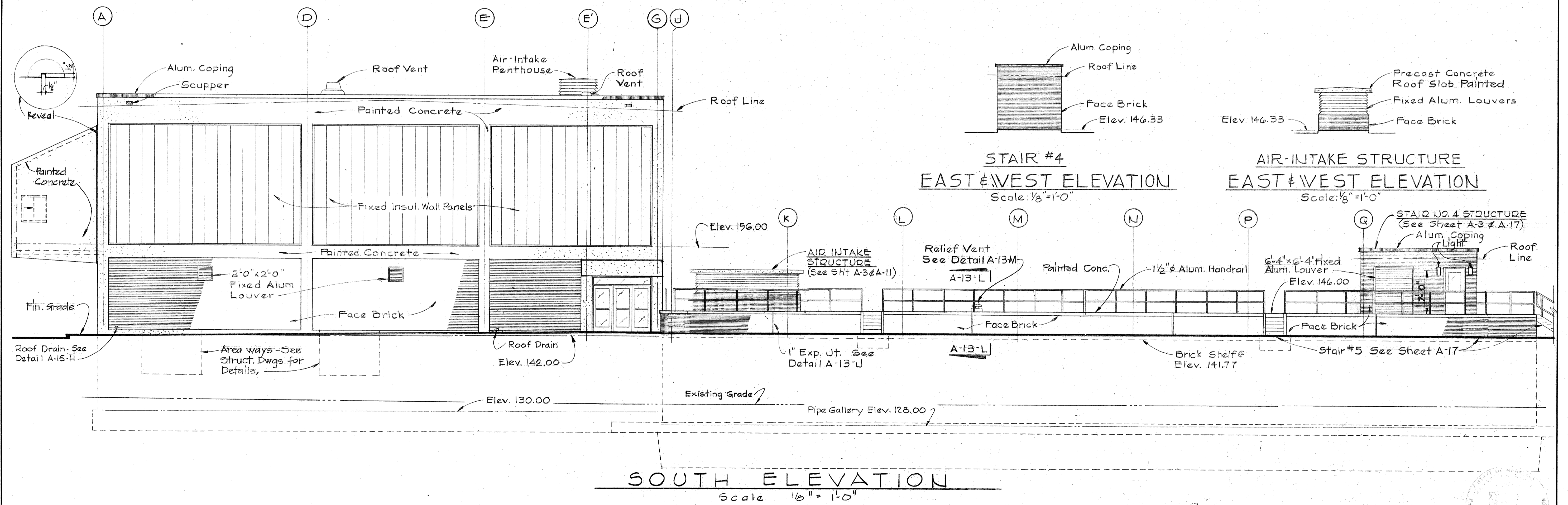
W.O. 6887-2

SHEET A-6

BRUNING 44-510 18392



EAST ELEVATION
Scale 1/8" = 1'-0"

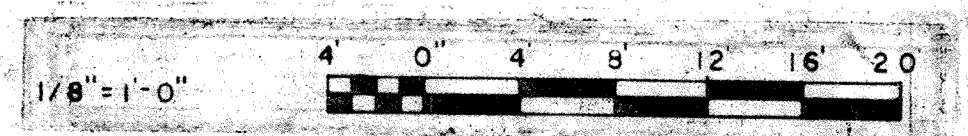


SOUTH ELEVATION
Scale 1/8" = 1'-0"

STAIR #4
EAST & WEST ELEVATION
Scale: 1/8" = 1'-0"

AIR-INTAKE STRUCTURE
EAST & WEST ELEVATION
Scale: 1/8" = 1'-0"

JAMES A. FEDERLINE INC.
AS BUILT DRAWING

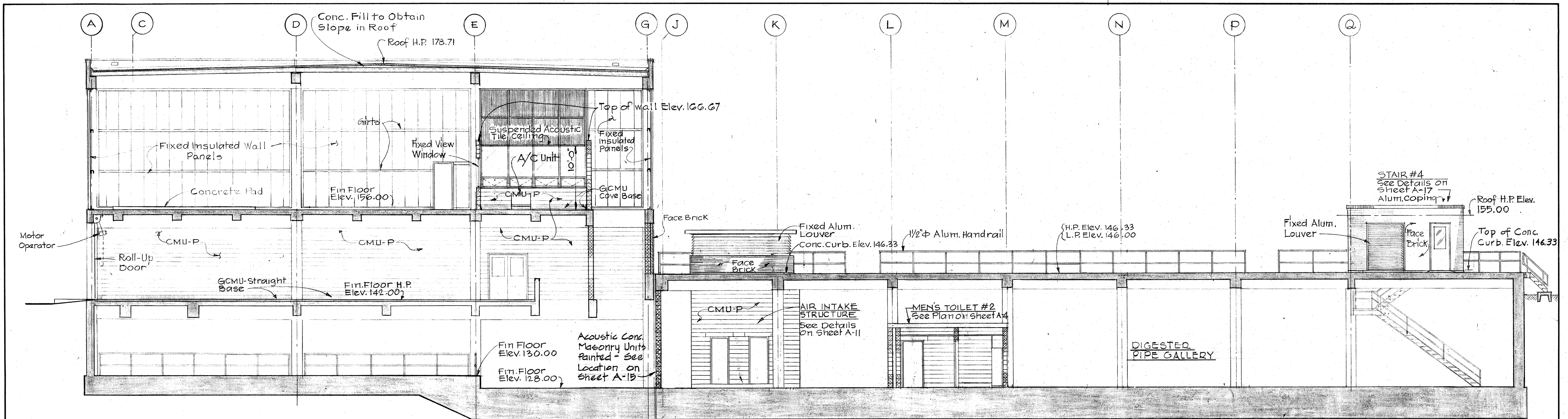


<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>3/20/18</i> DATE <i>W.O. Schubert</i> CHIEF-BUREAU OF ENGINEERING</p>	<p>CONTRACT NO. 501-S</p>	<p>ARCHITECTURAL ELEVATIONS</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 22 OF 128 SCALE AS NOTED</p>
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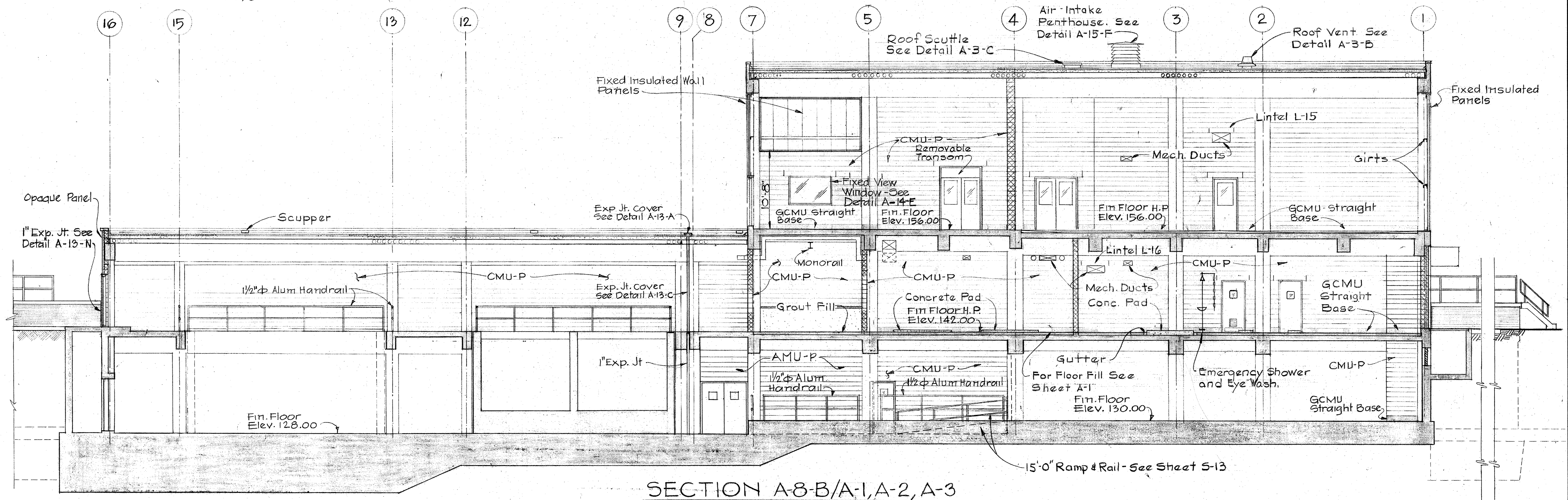
W.O. 6887-2

SHEET A-7

DRAWING 44-510 18392

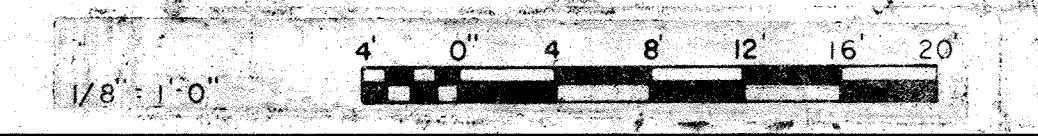


SECTION A-8-A/A-1, A-2, A-3
Scale: 1/8" = 1'-0"



SECTION A-8-B/A-1, A-2, A-3
Scale: 1/8" = 1'-0"

JAMES A. FEDERLINE INC.
AS BUILT DRAWING

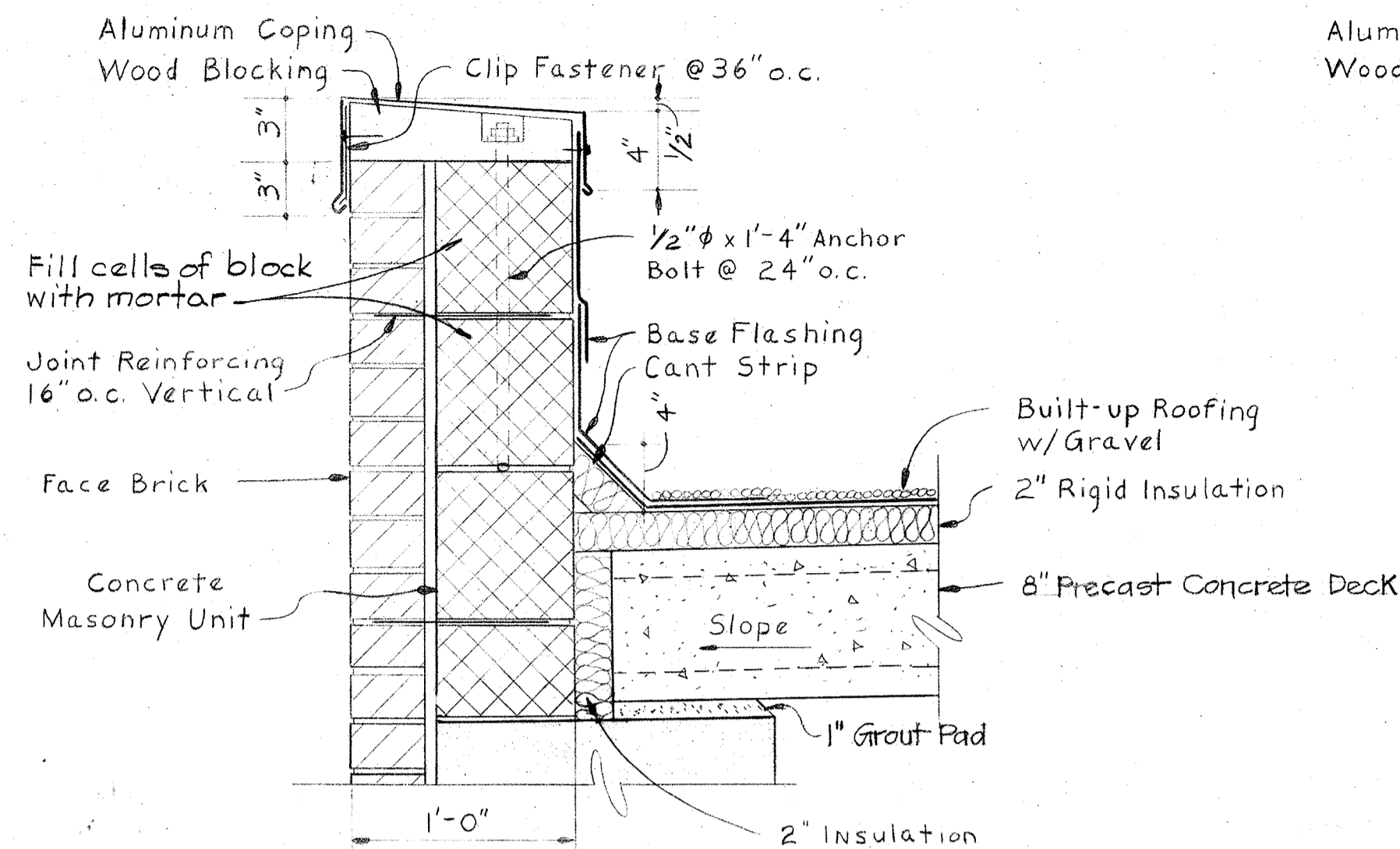


WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE 3/20/75 W. O. Federline CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 501-S	ARCHITECTURAL CROSS SECTIONS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 23 OF 128 SCALE AS NOTED
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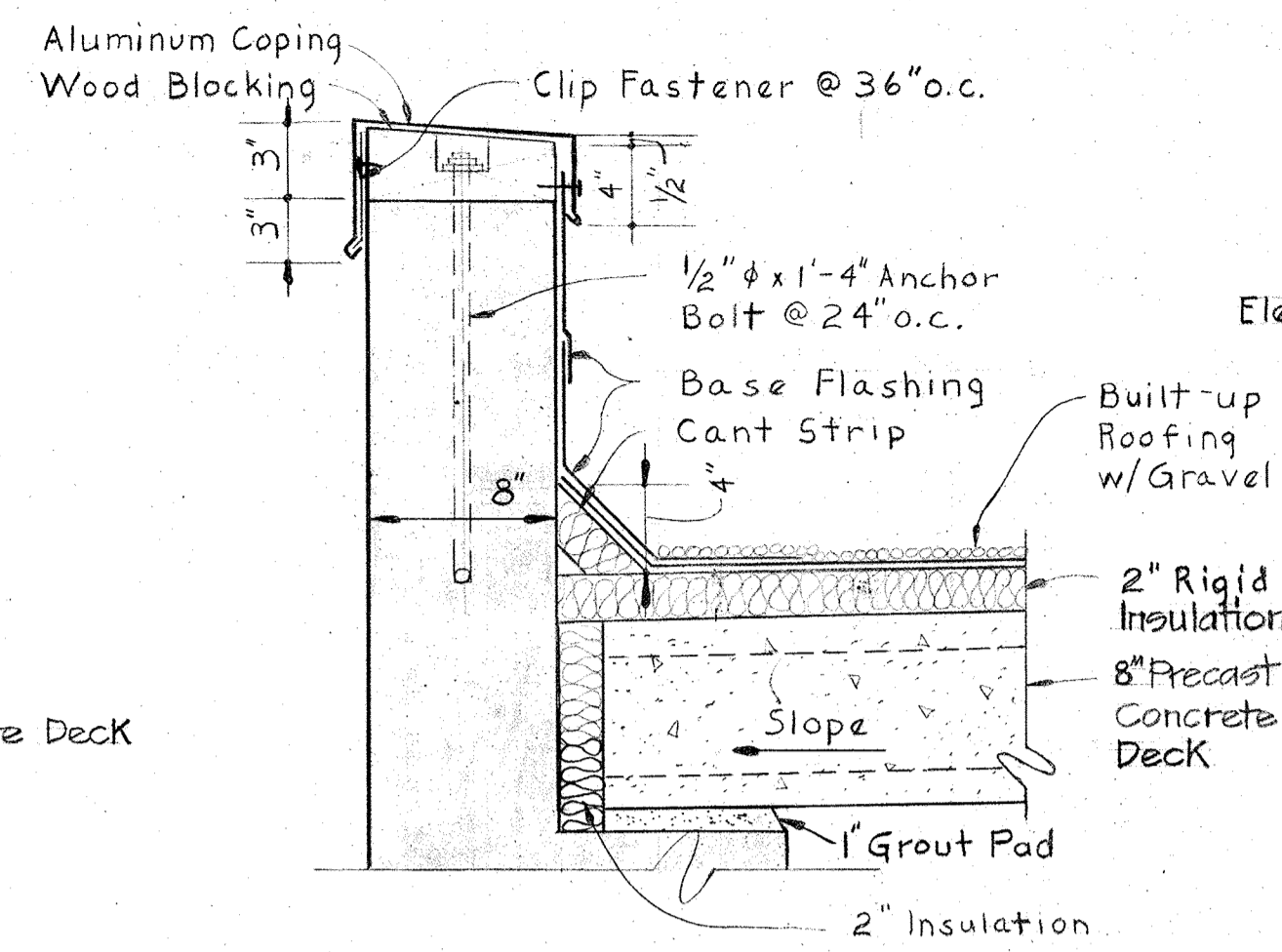
W.O. 6887-2

SHEET A-8

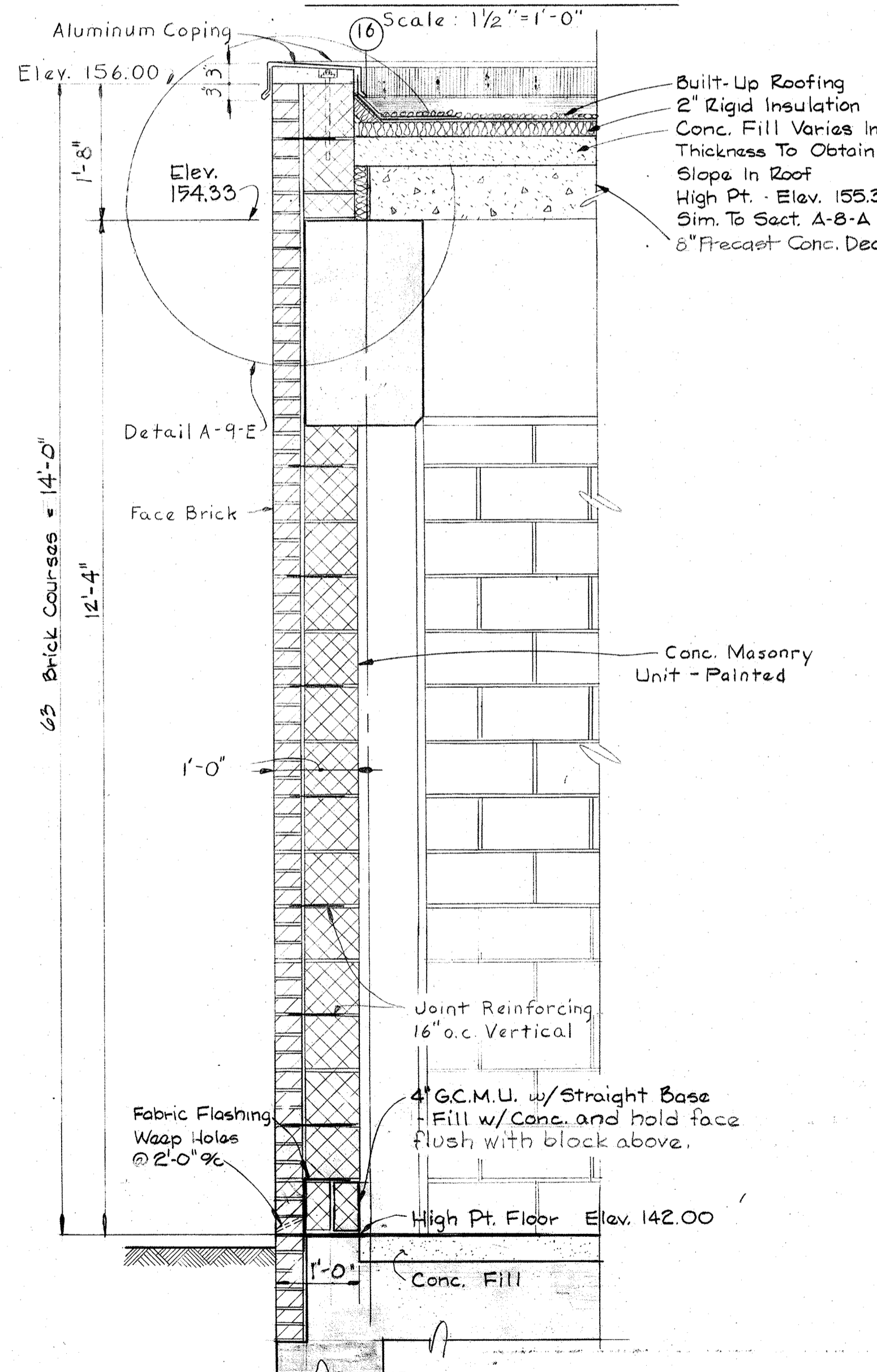
BRUNING 44-510 18392



DETAIL A-9-E/A-9

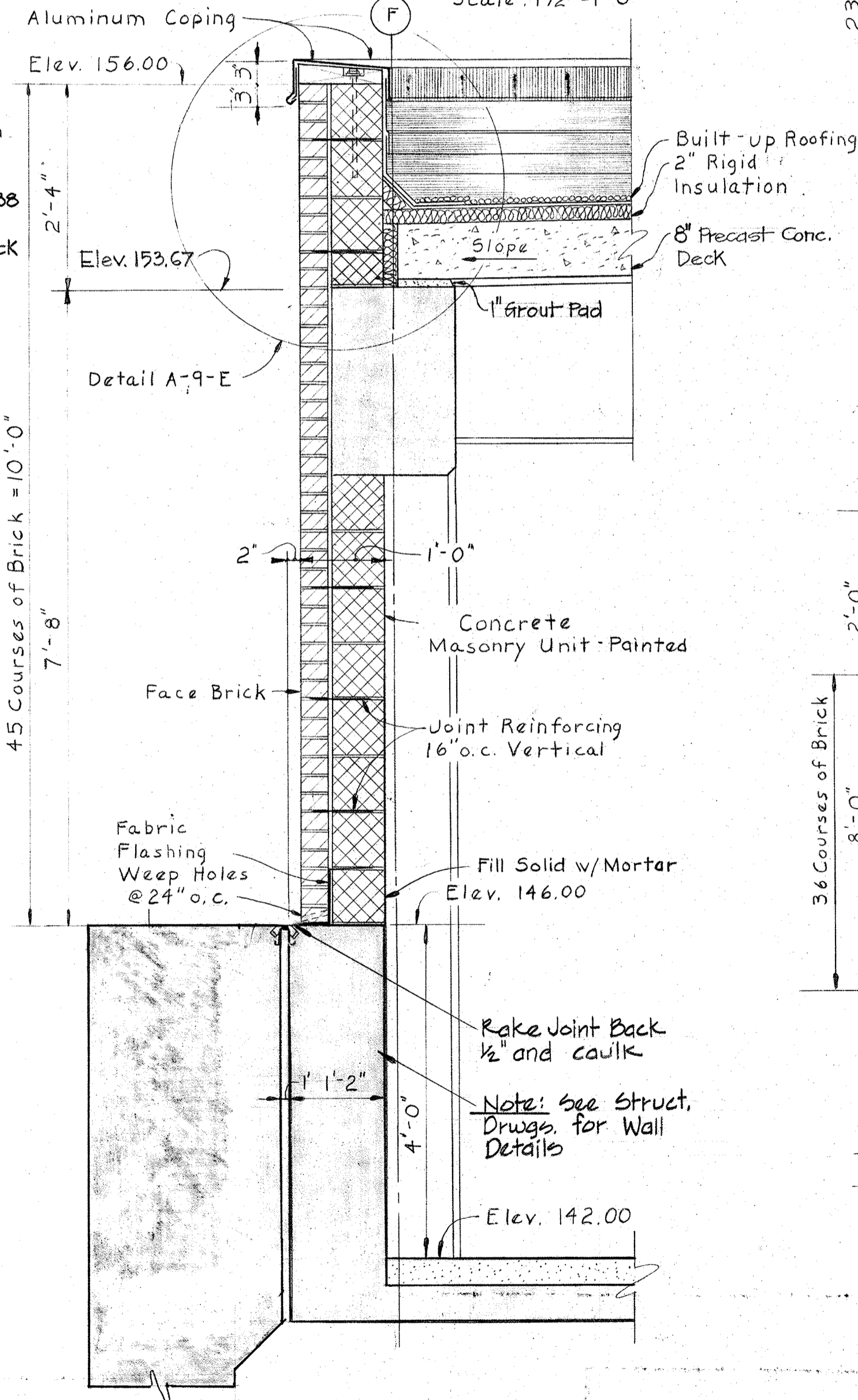


DETAIL A-9-F/A-9&A-10



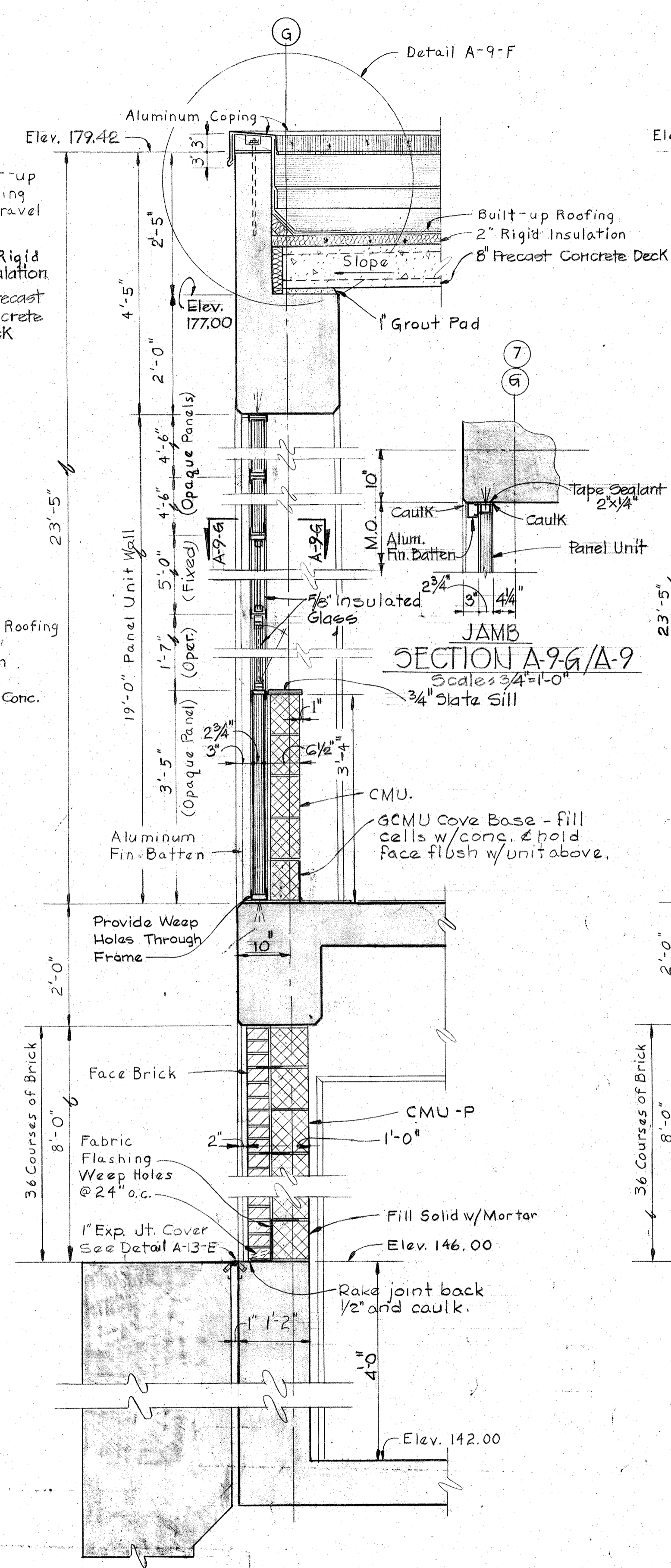
SECTION A-9-A/A-1&A-2

Scale: 3/4" = 1'-0"



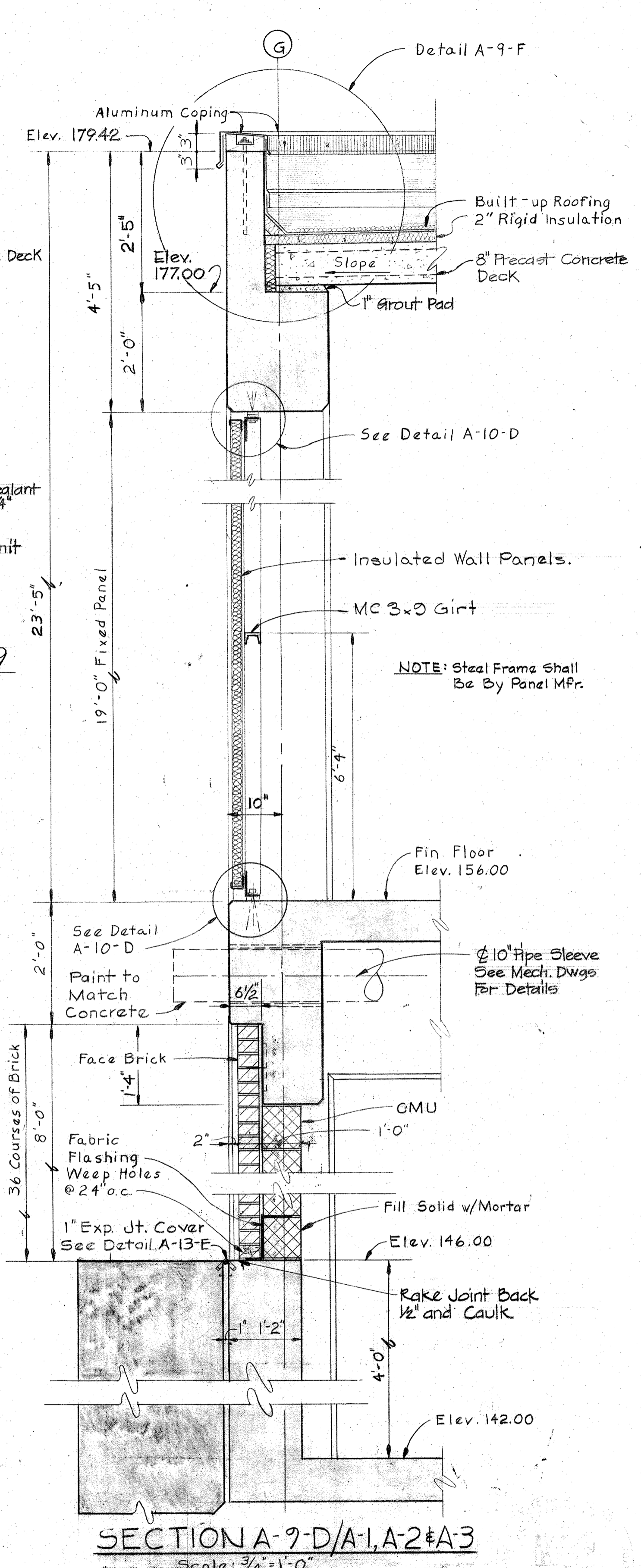
SECTION A-9-B/A-1&A-2

Scale: 3/4" = 1'-0"

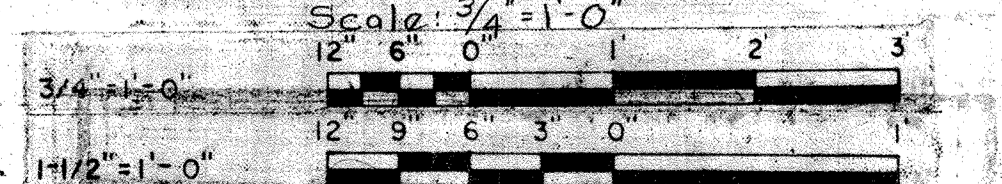


SECTION A-9-C/A-1, A-2&A-3

Scale: 3/4" = 1'-0"



SECTION A-9-D/A-1, A-2&A-3



Scale: 3/4" = 1'-0"

WHITMAN, REQUARDT & ASSOCIATES
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HOWARD COUNTY, MARYLAND
3/20/75
DATE
W. O. Lambert
CHIEF-BUREAU OF ENGINEERING

AS BUILT DRAWING
CONTRACT NO. 501-S

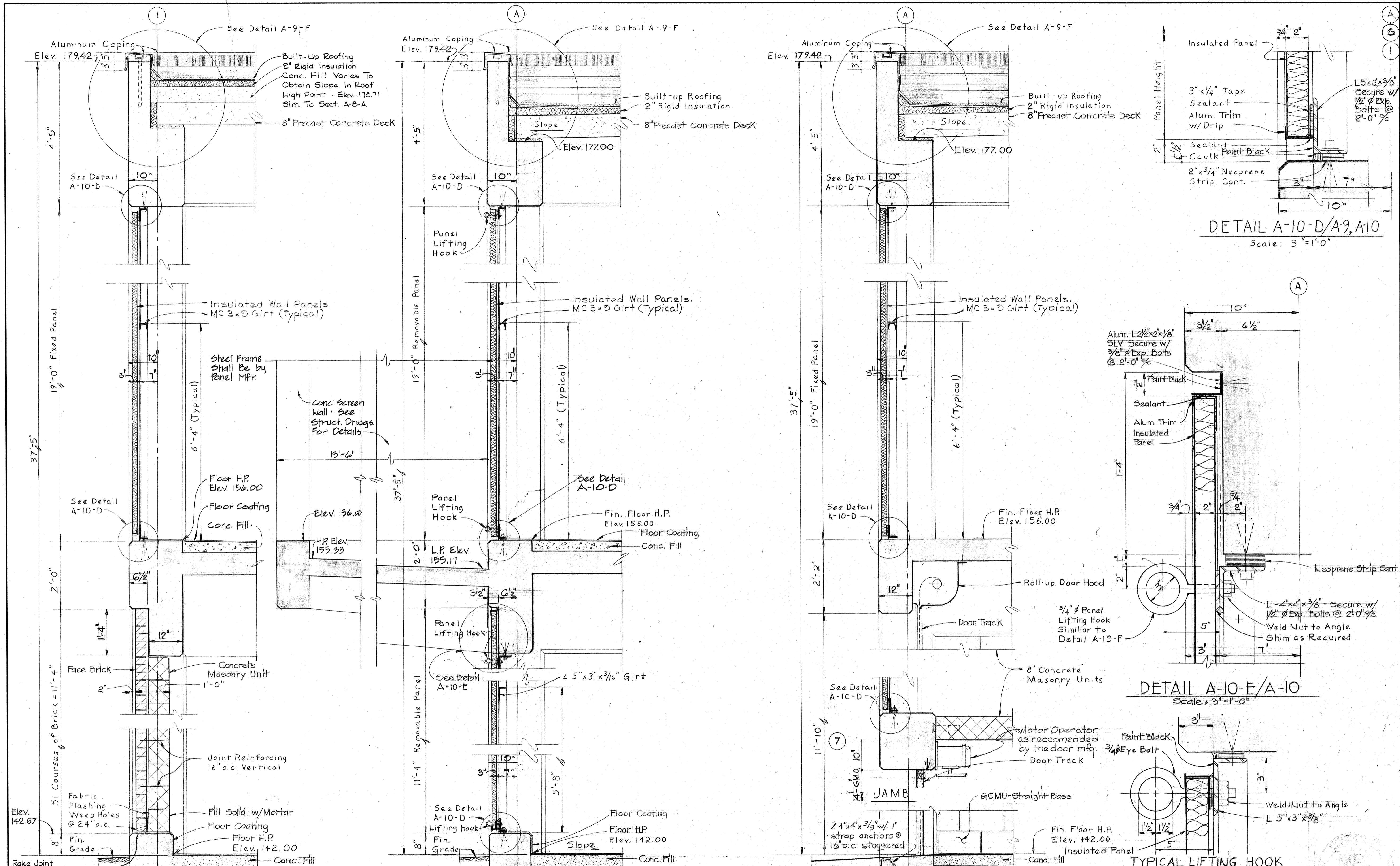
ARCHITECTURAL
WALL SECTIONS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 24
OF 128

SCALE
AS
NOTED

BRUNING 44-510 18392



WHITMAN, REQUARDT & ASSOCIATES
 ENGINEERS
 1304 ST. PAUL ST.
 BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE 3/20/15
 W.O. Federline
 CHIEF-BUREAU OF ENGINEERING

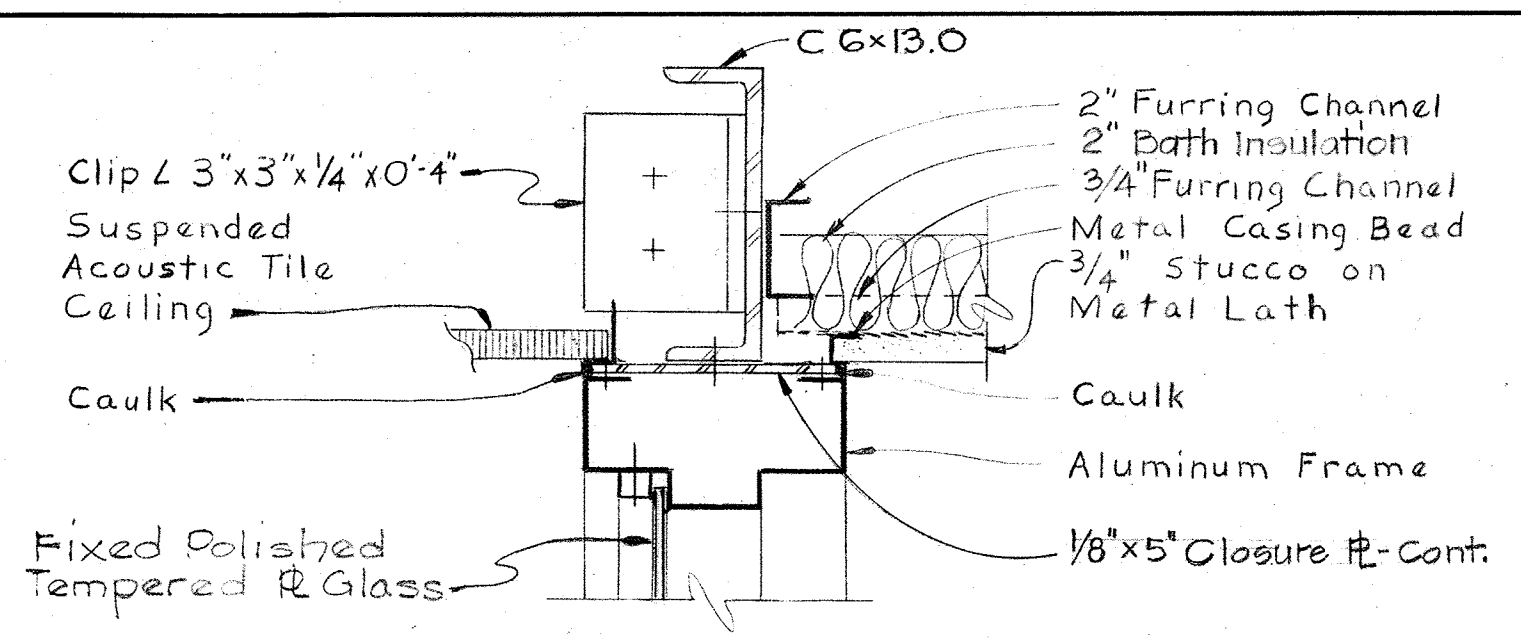
CONTRACT NO. 501-S
 JAMES A. FEDERLINE INC.

ARCHITECTURAL
 WALL SECTIONS

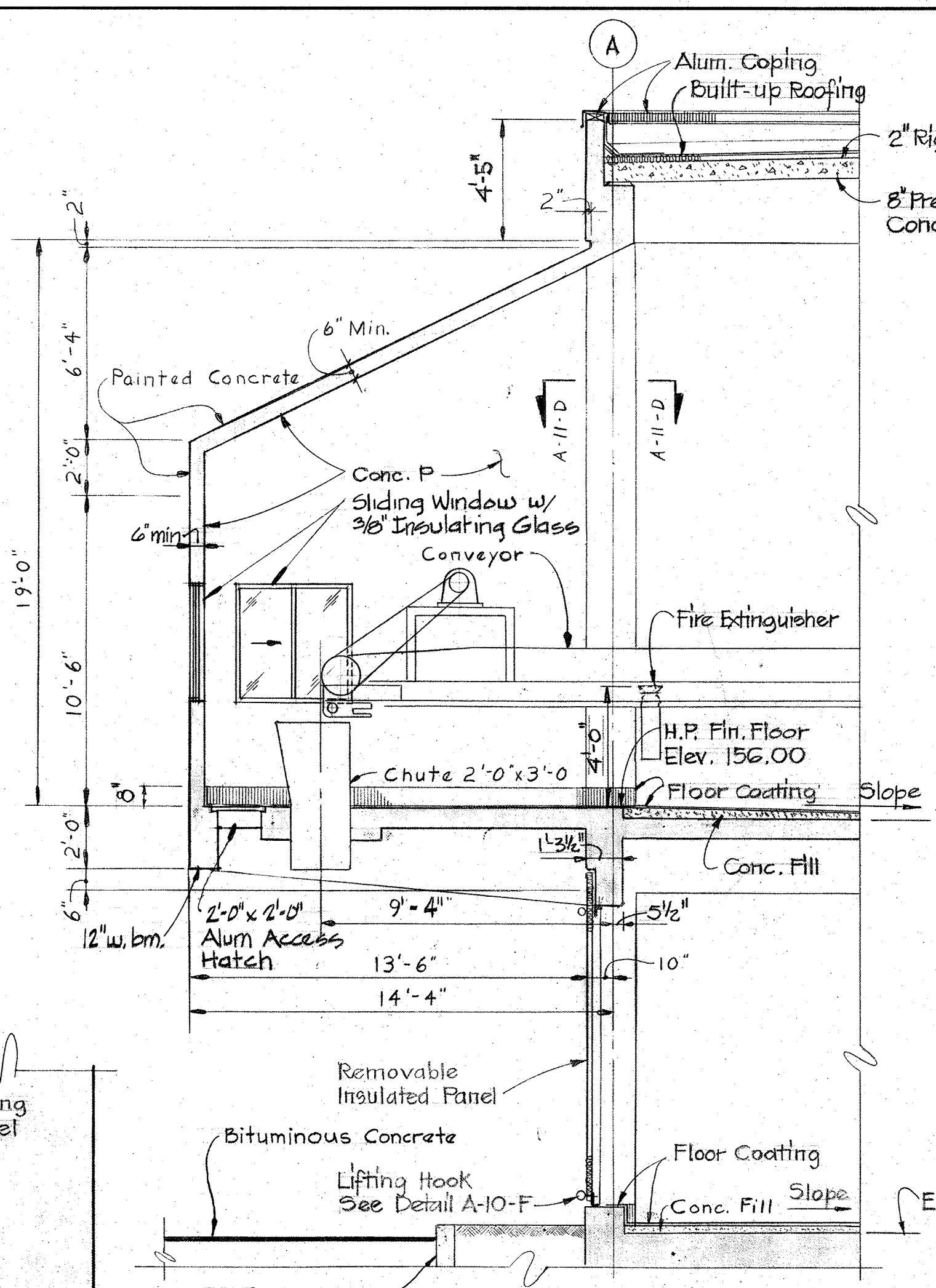
SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 4

DRAWING
 NO. 25
 OF 128

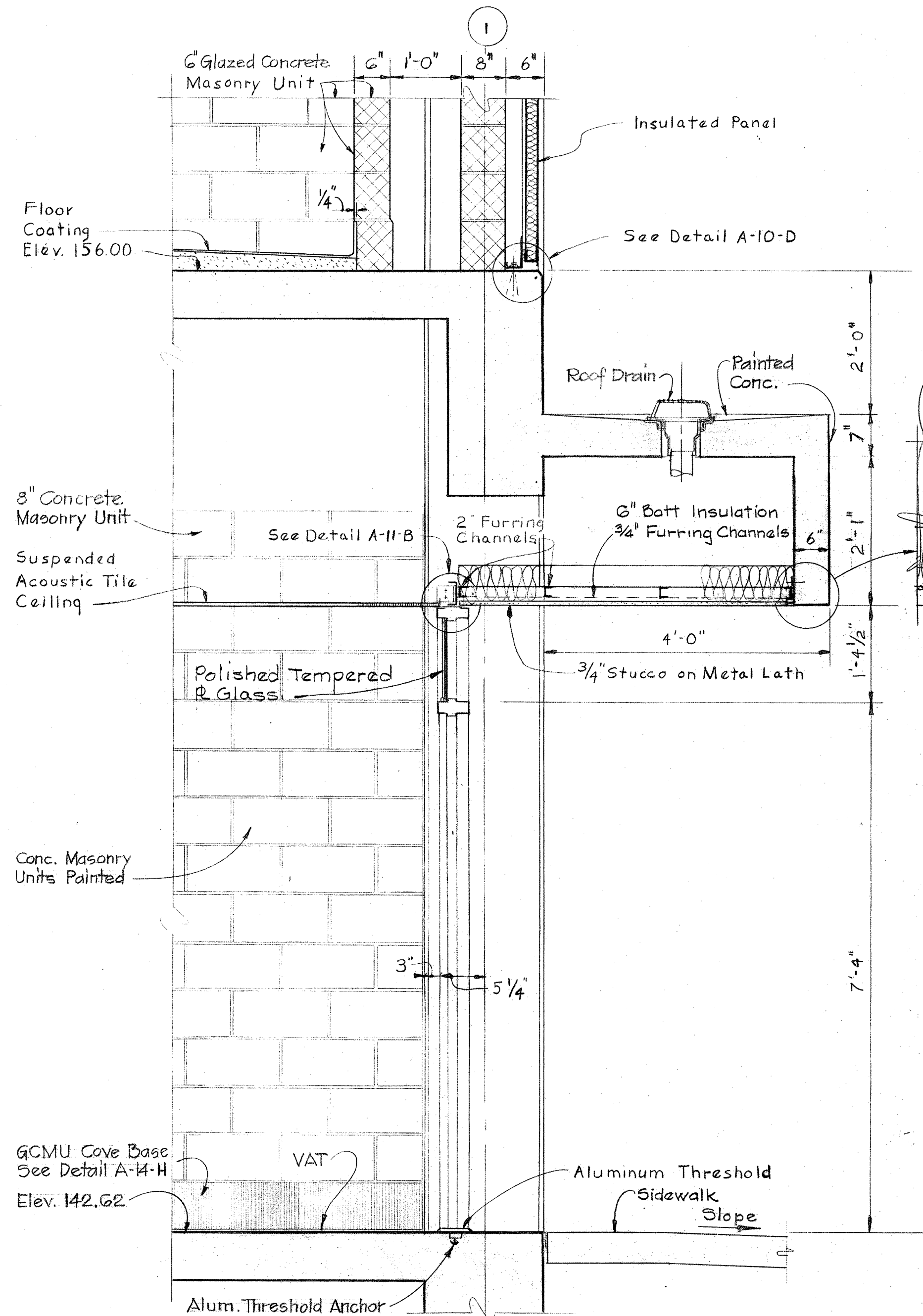
SCALE
 AS
 NOTED



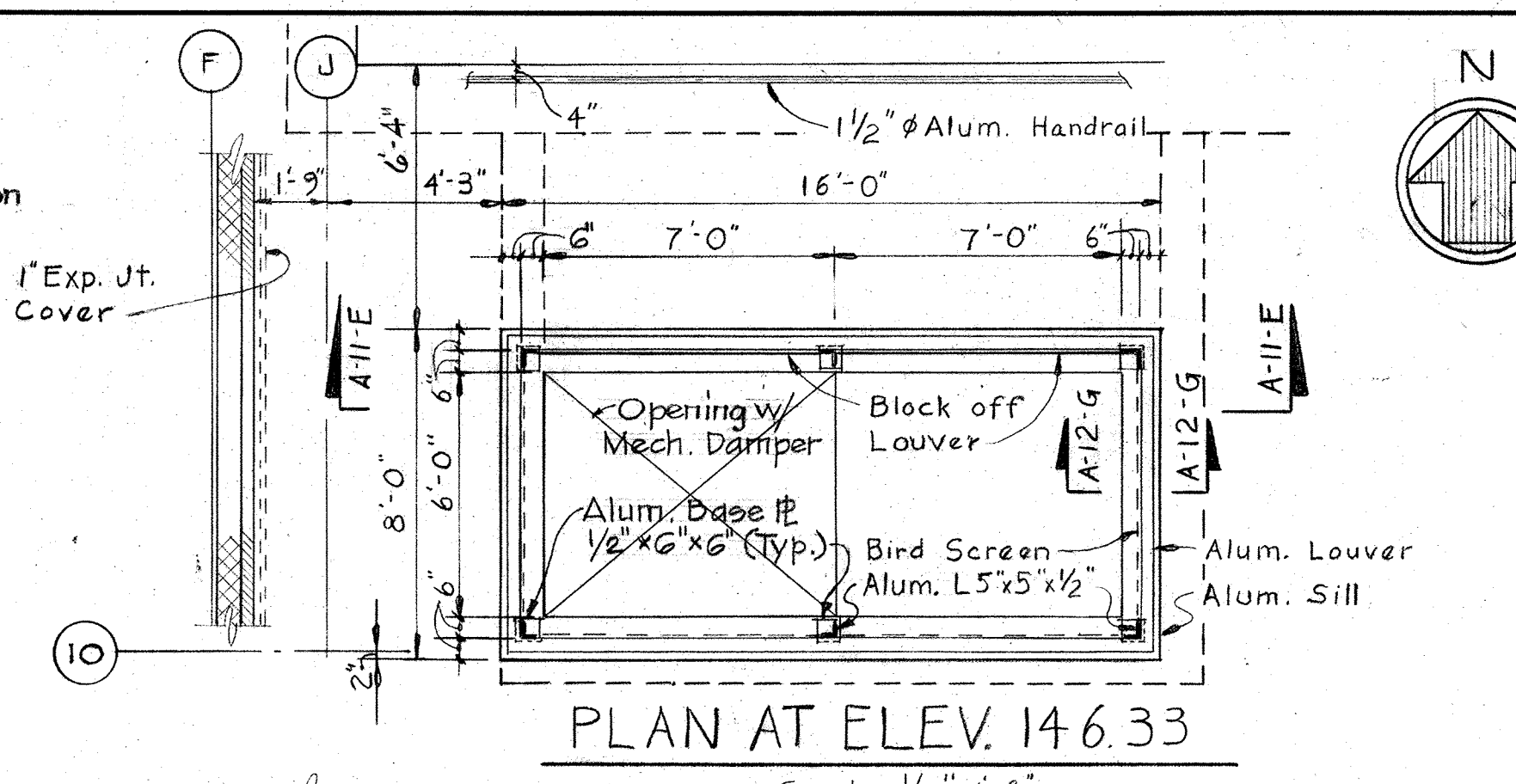
DETAIL A-II-B/A-II
Scale: 3/4" = 1'-0"



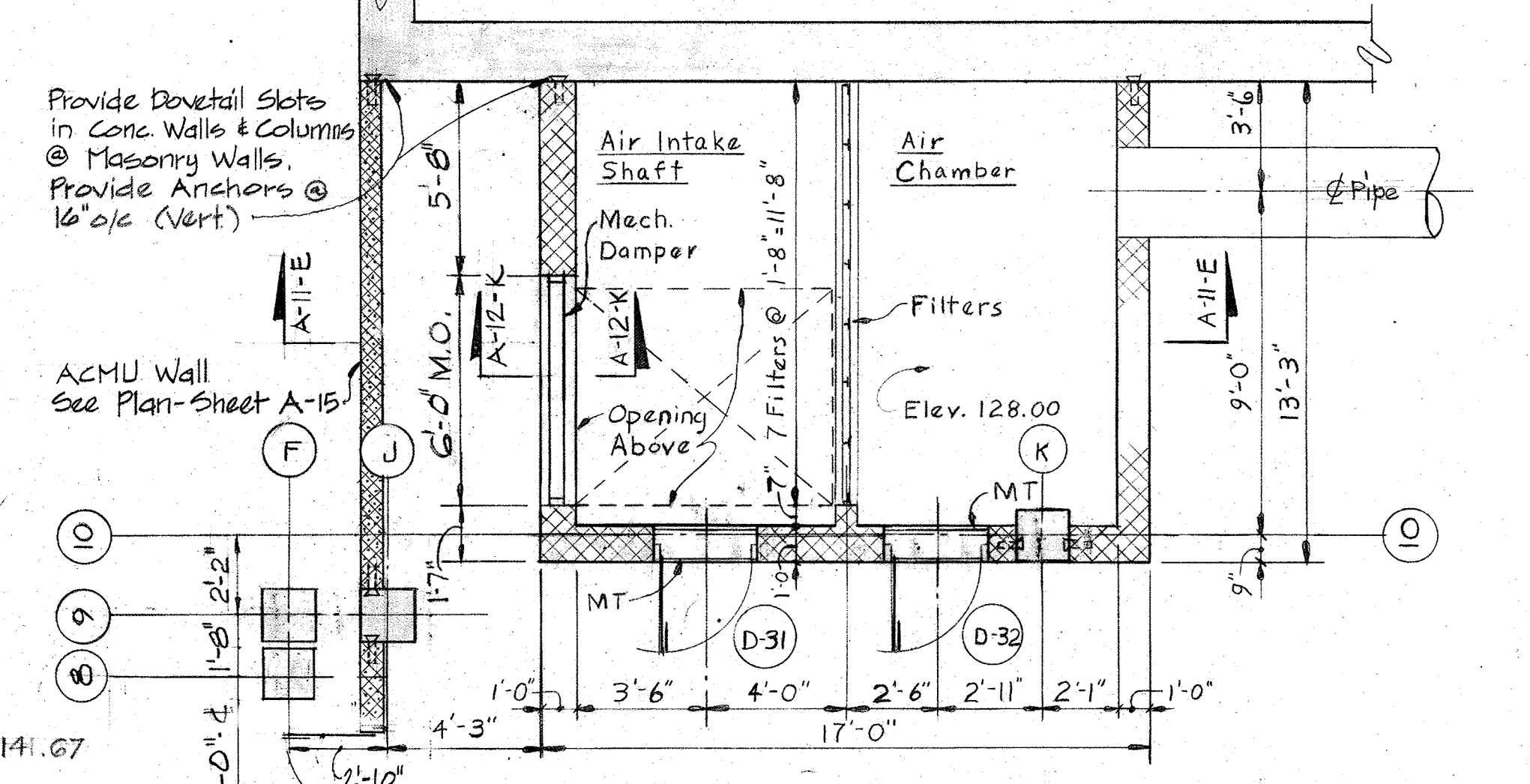
SECTION A-II-C/A-1, A-2, A-3
Scale: 1/4" = 1'-0"



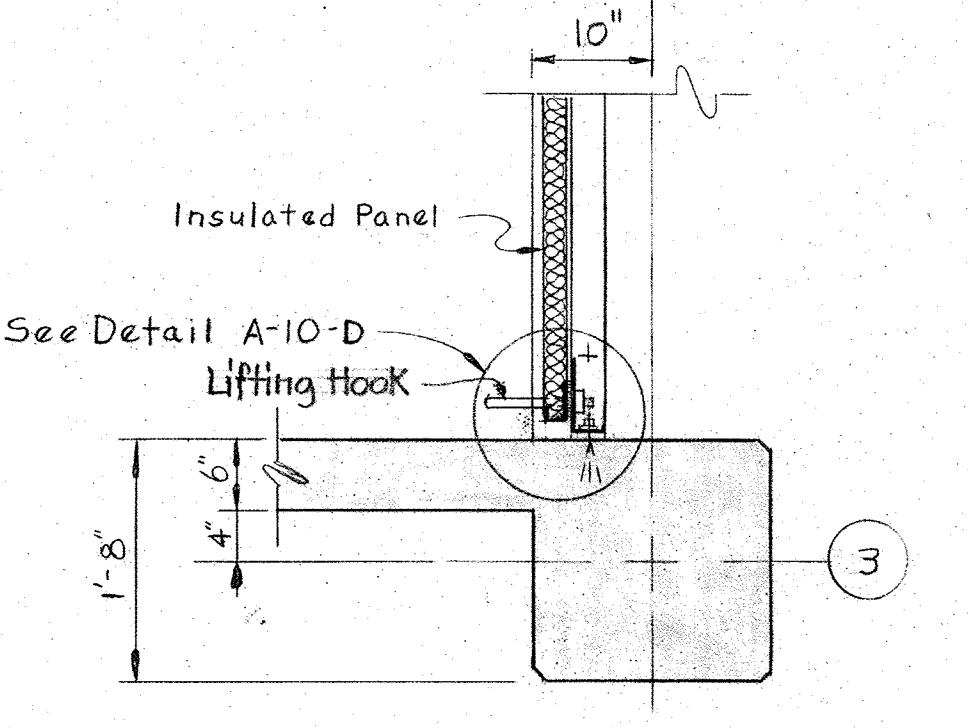
SECTION A-II-A/A-1
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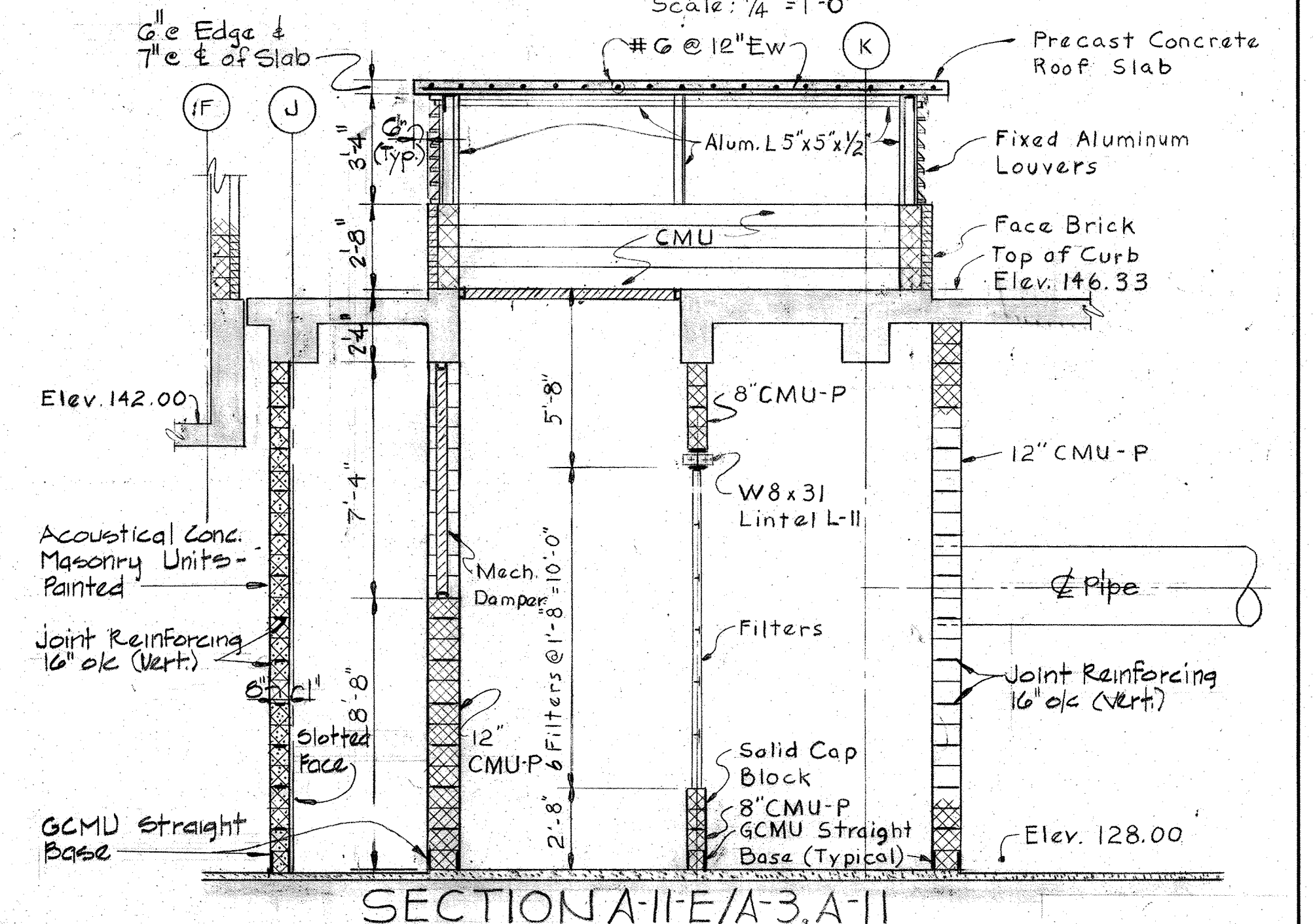
PLAN AT ELEV. 146.33
Scale: 1/4" = 1'-0"



PLAN AT ELEV. 128.00
Scale: 1/4" = 1'-0"

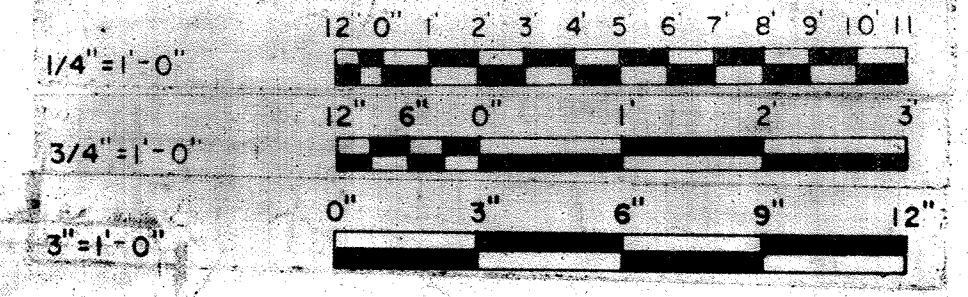


PLAN SECTION A-II-D/A-II
Scale: 3/4" = 1'-0"



SECTION A-II-E/A-3, A-II
Scale: 1/4" = 1'-0"

AIR INTAKE STRUCTURE



WHITMAN, REQUARDT & ASSOCIATES
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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3/20/75
W. O. Federline
CHIEF-BUREAU OF ENGINEERING

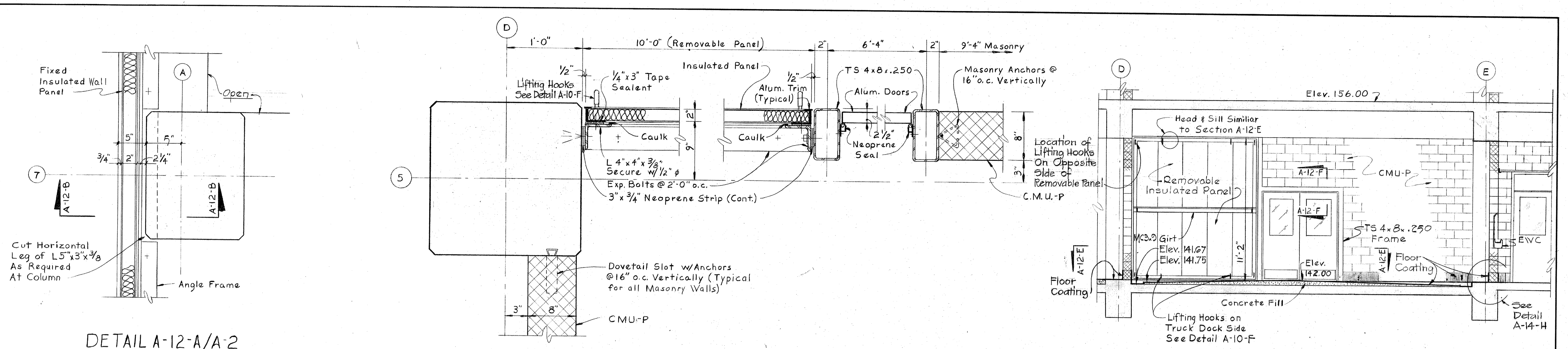
JAMES A. FEDERLINE INC.
AS BUILT DRAWING
CONTRACT NO. 50I-S

ARCHITECTURAL
SECTIONS & DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 26
OF 128

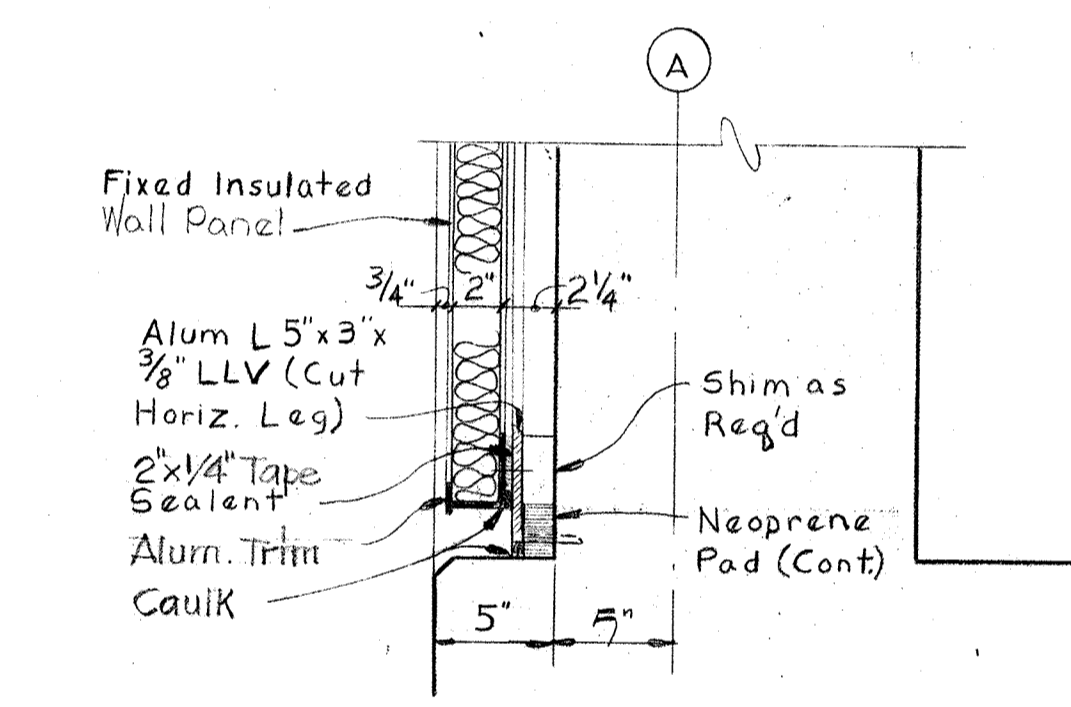
SCALE
AS
NOTED



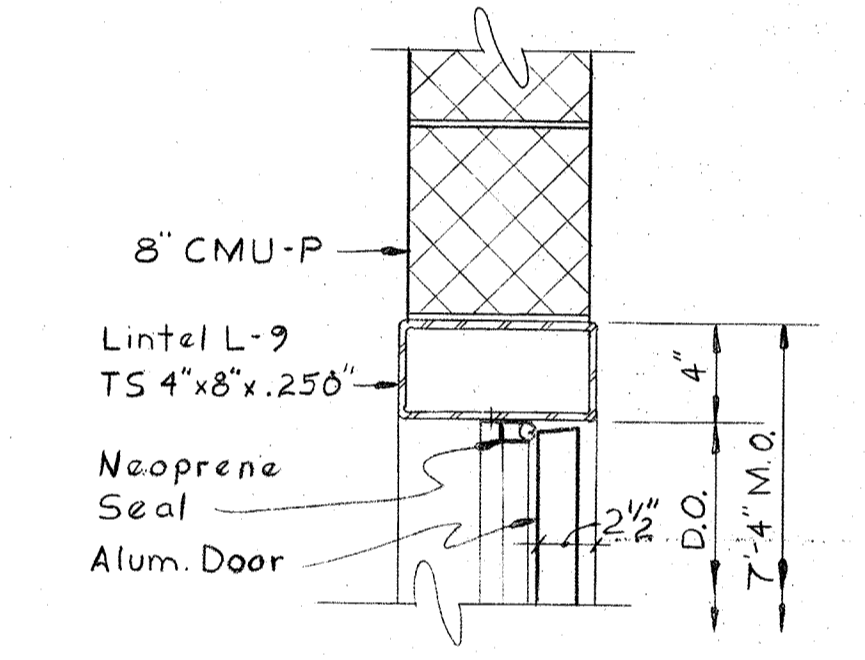
DETAIL A-12-A/A-2
Scale: 1/2" = 1'-0"

SECTION A-12-E/A-12
Scale: 1/2" = 1'-0"

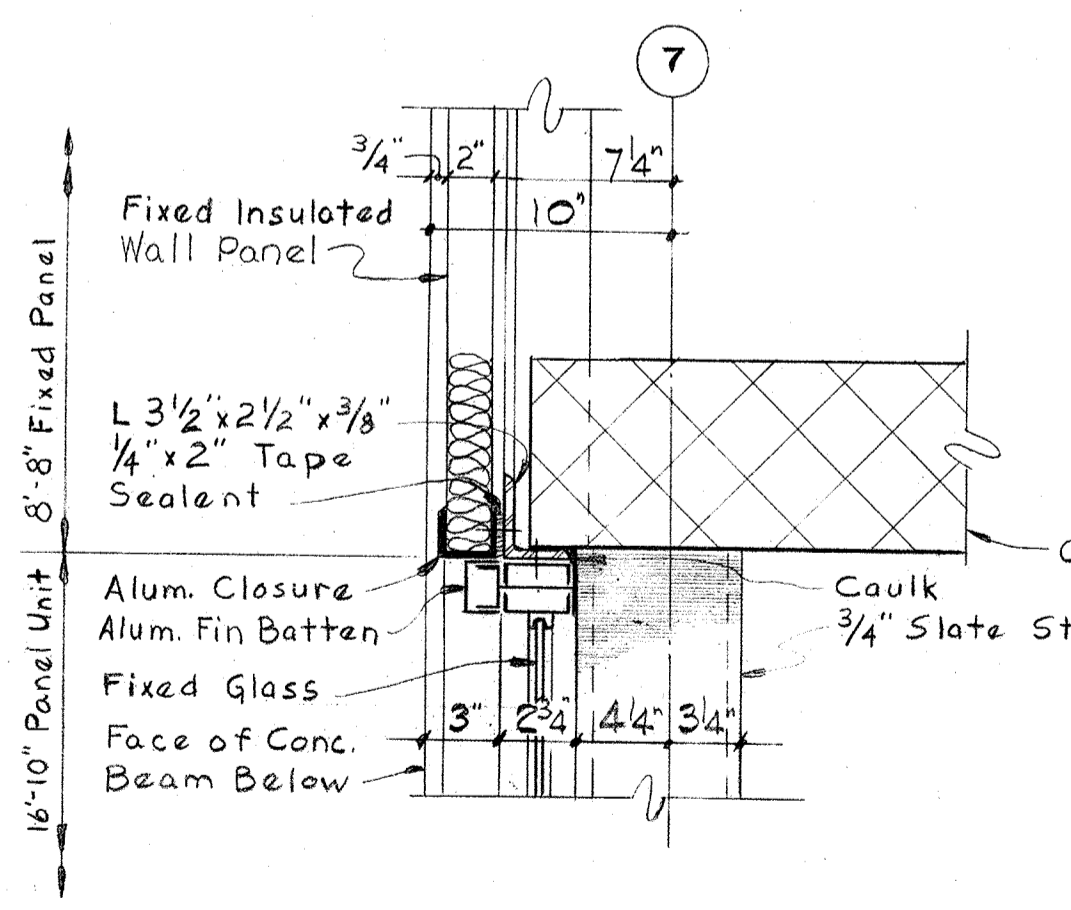
VACUUM FILTRATE ROOM
SECTION A-12-D/A-1
Scale: 1/4" = 1'-0"



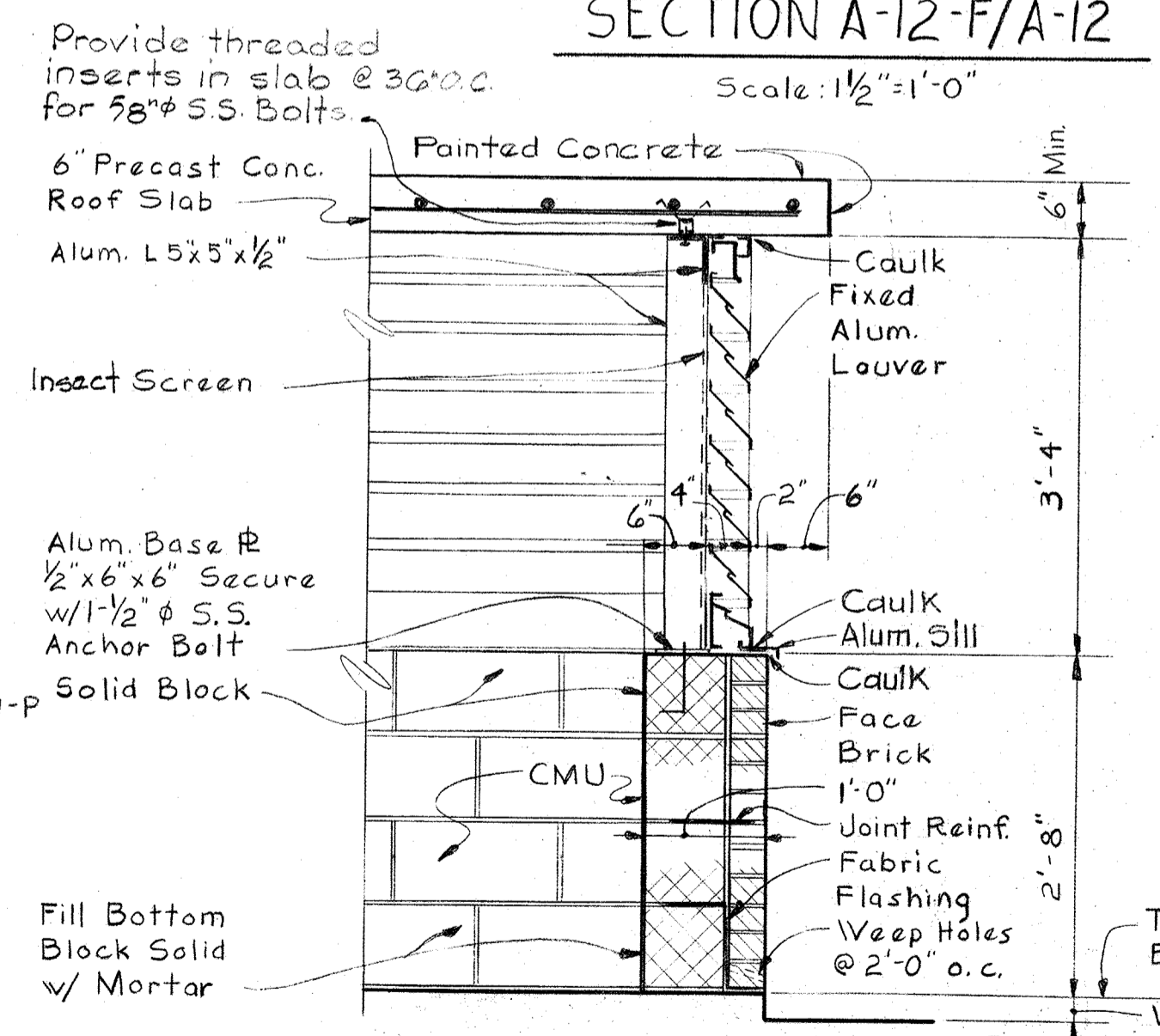
SECTION A-12-B/A-12
Scale: 1/2" = 1'-0"



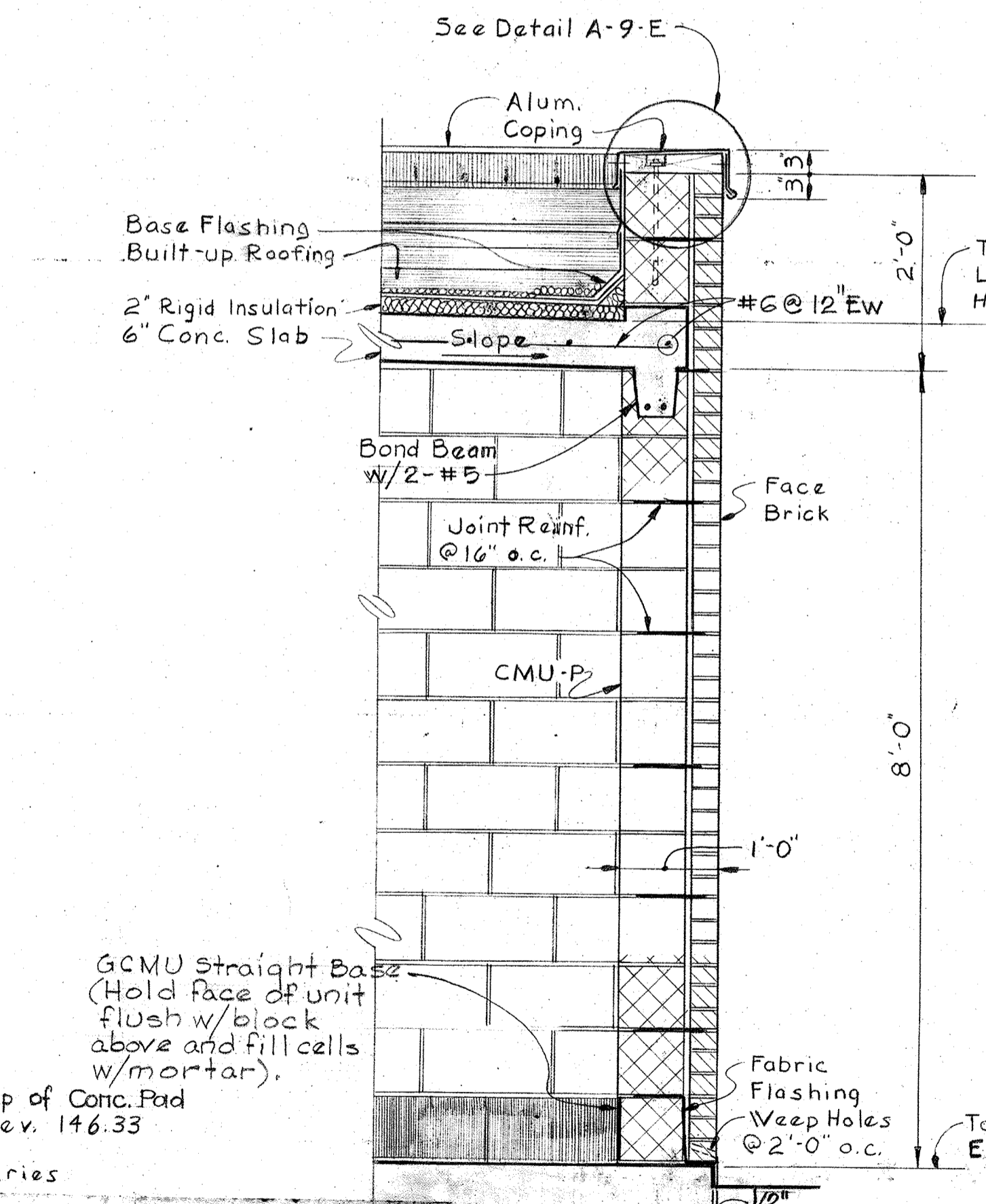
SECTION A-12-F/A-12
Scale: 1/2" = 1'-0"



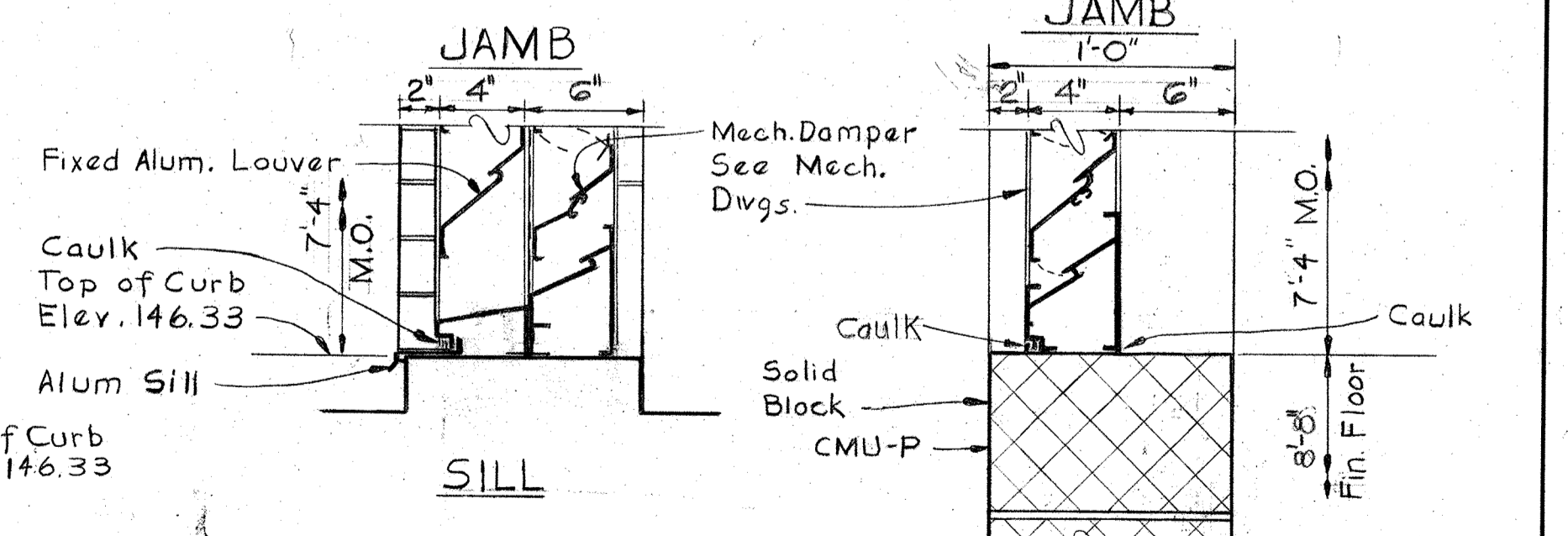
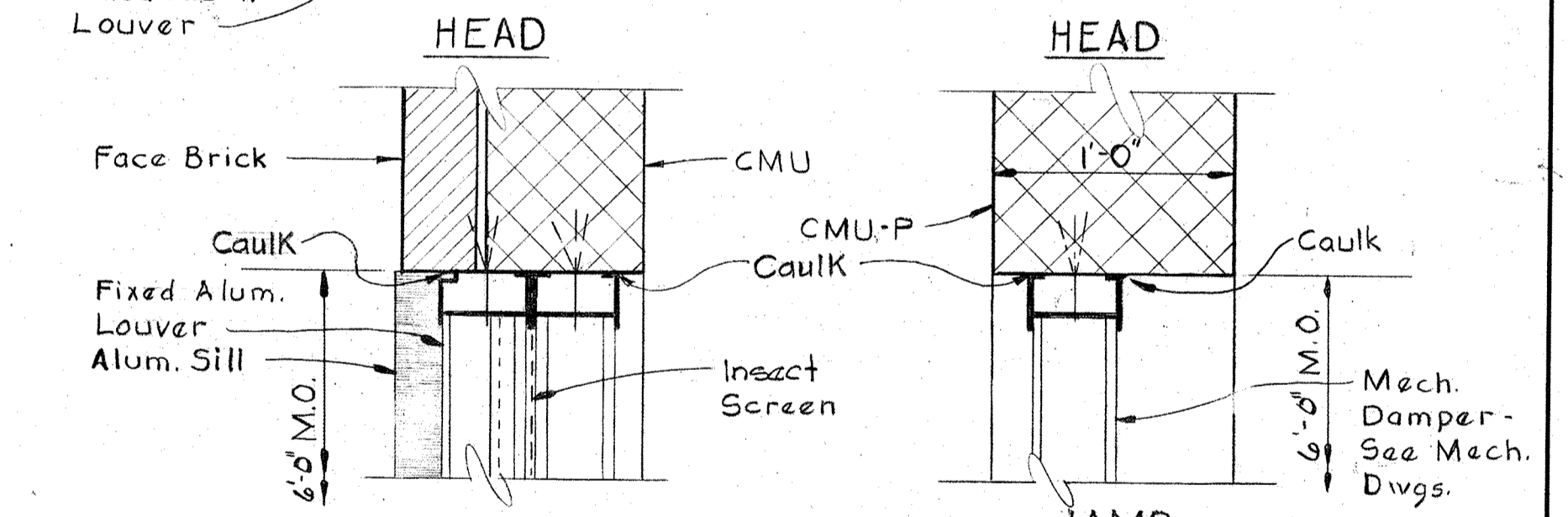
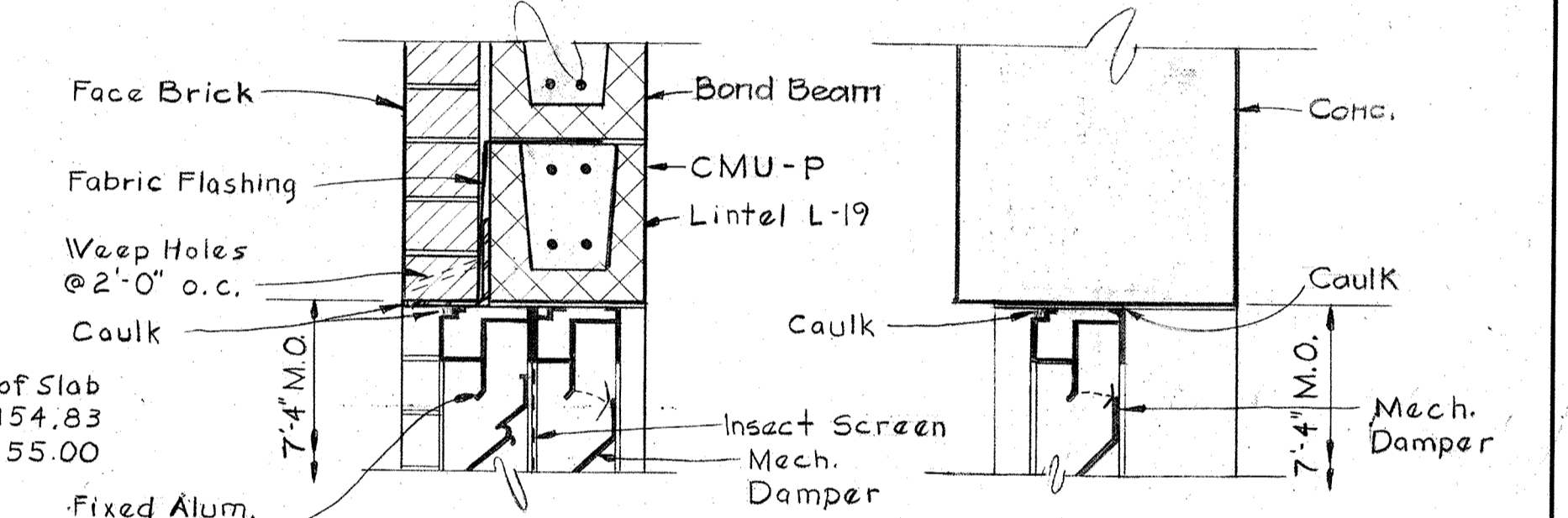
DETAIL A-12-C/A-2
Scale: 1/2" = 1'-0"



AIR INTAKE STRUCTURE
SECTION A-12-G/A-11
Scale: 3/4" = 1'-0"



STAIR #4
SECTION A-12-H/A-17
Scale: 3/4" = 1'-0"



SECTION A-12-J/A-17
Scale: 1/2" = 1'-0"

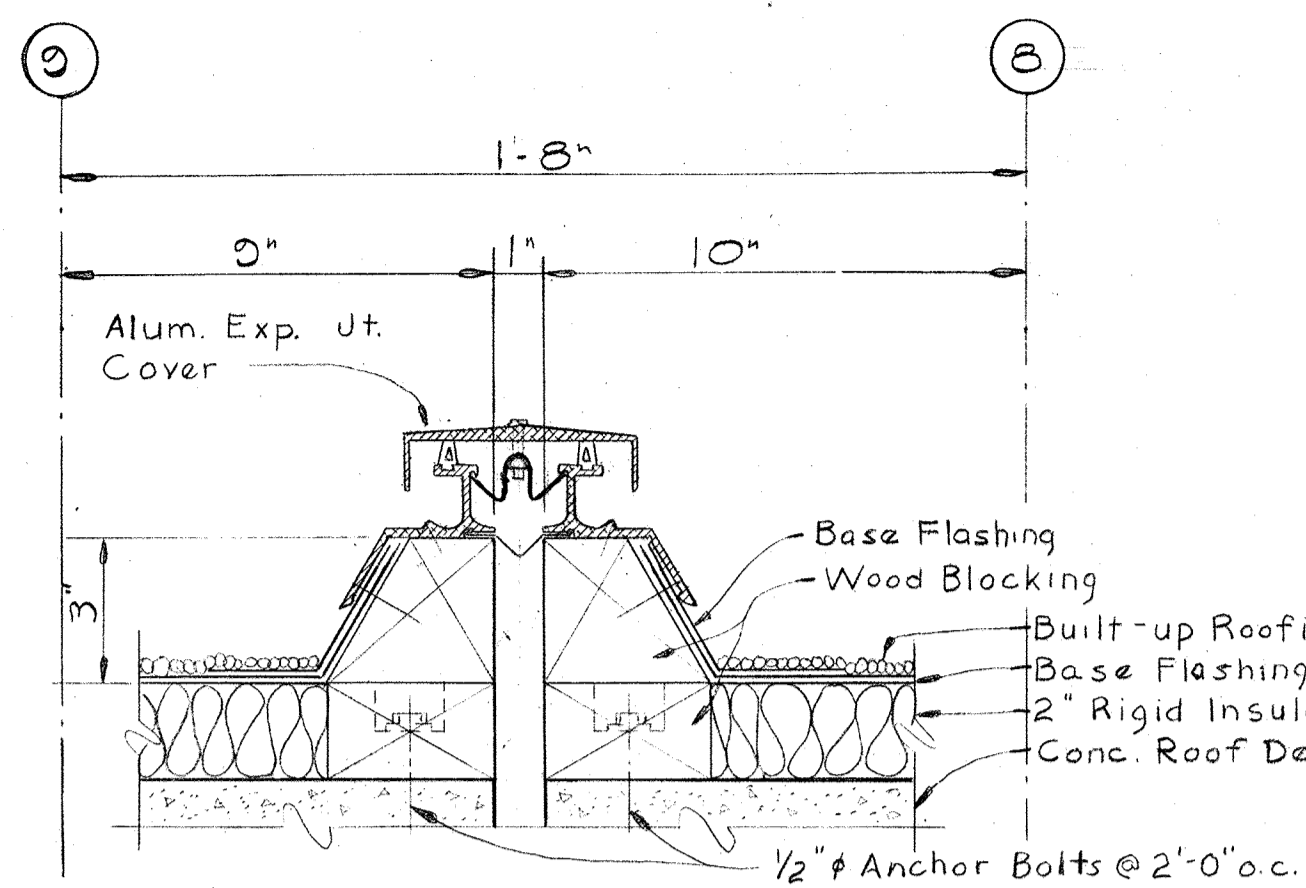
SECTION A-12-K/A-11
Scale: 1/2" = 1'-0"

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/20/15 W.O. Federline CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 501-S JAMES A. FEDERLINE INC.	ARCHITECTURAL SECTIONS & DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 27	SCALE AS NOTED
					OF 128	

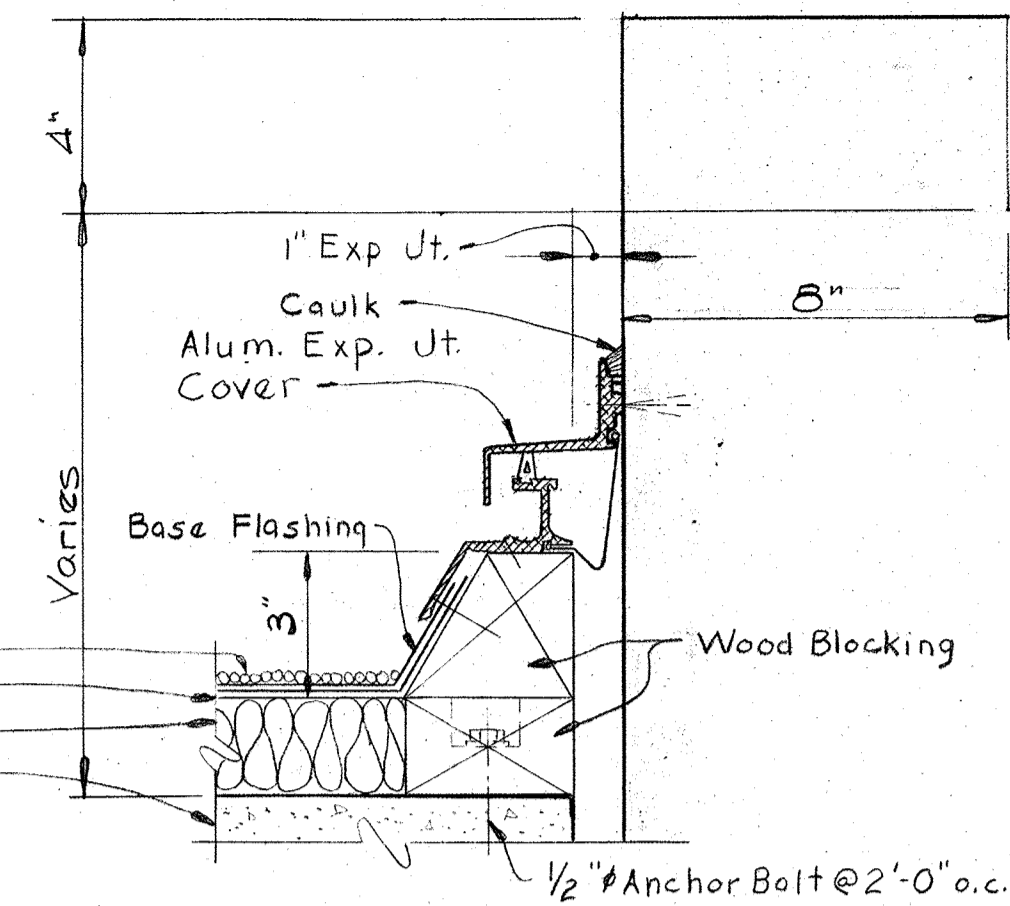
W.O. 6887-2

AS BUILT DRAWING

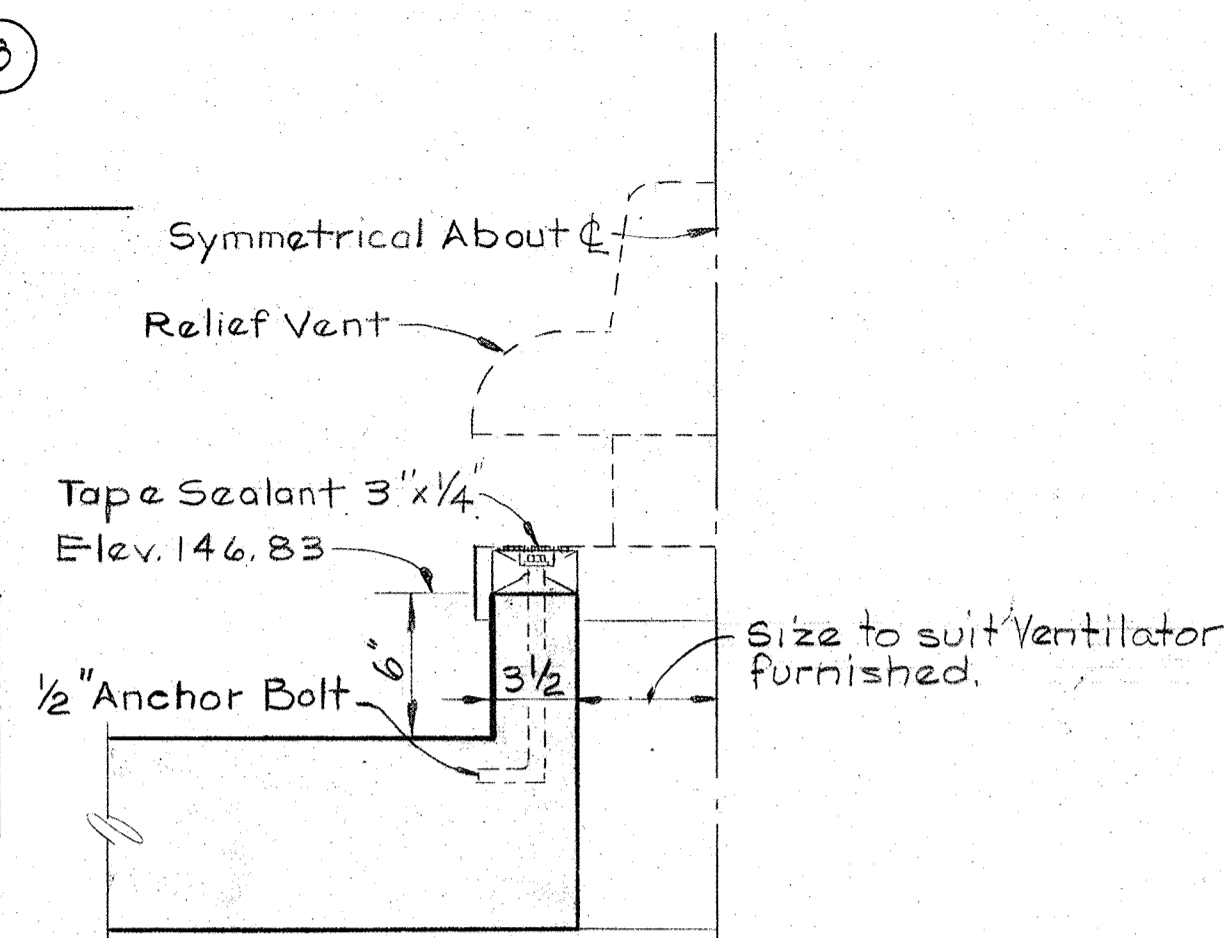
SHEET A-12



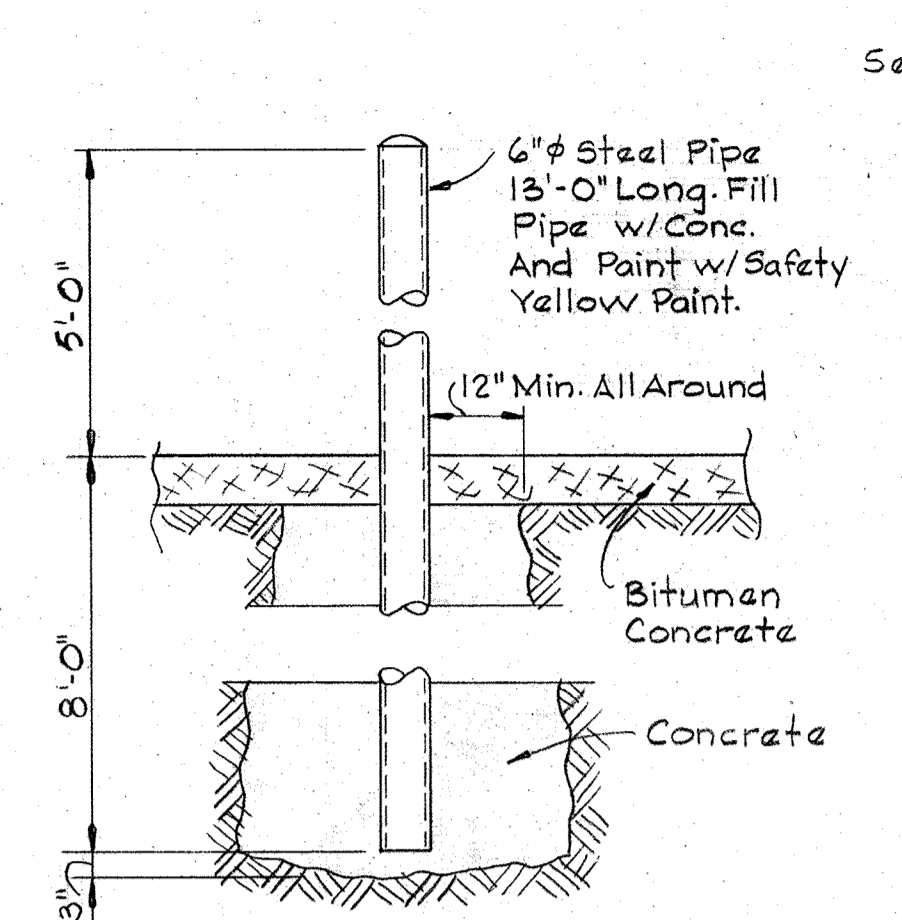
ROOF EXPANSION JOINT COVER
SECTION A-13-A/A-2
Scale: 3"=1'-0"



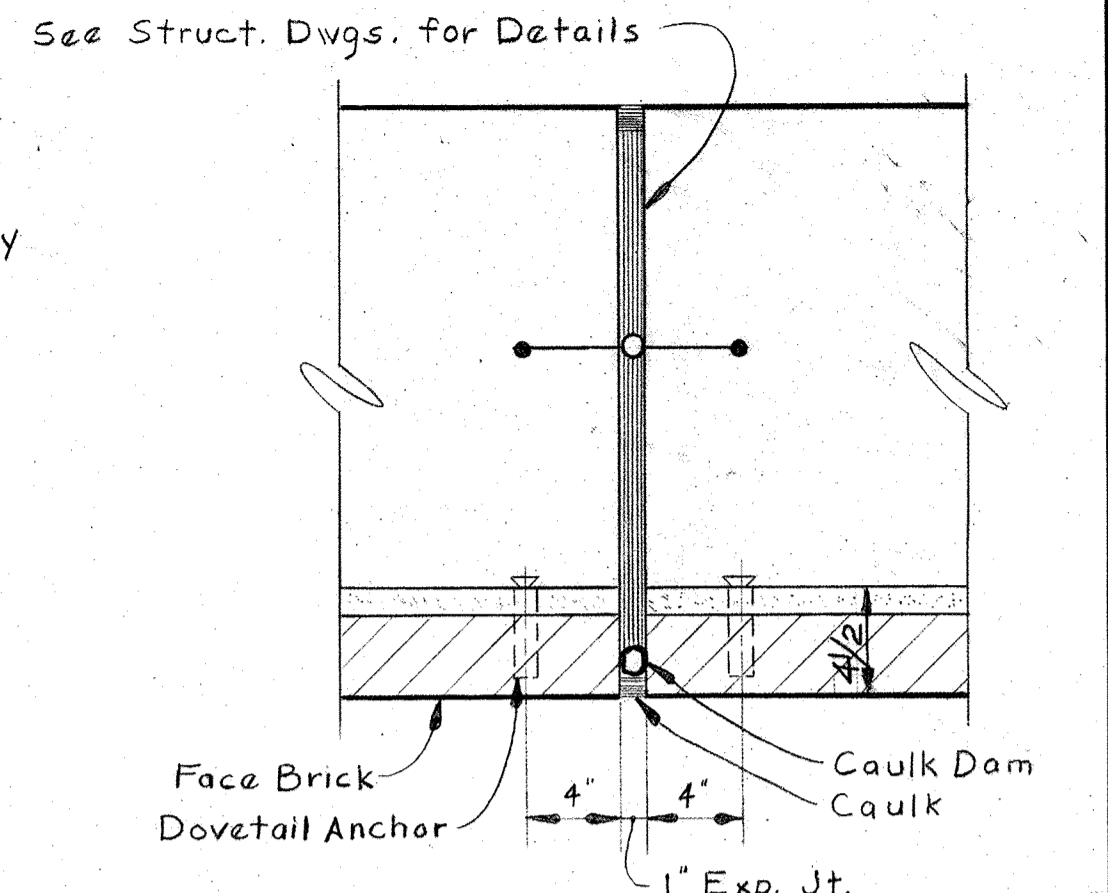
ROOF EXPANSION JOINT COVER
SECTION A-13-B/A-2
Scale: 3"=1'-0"



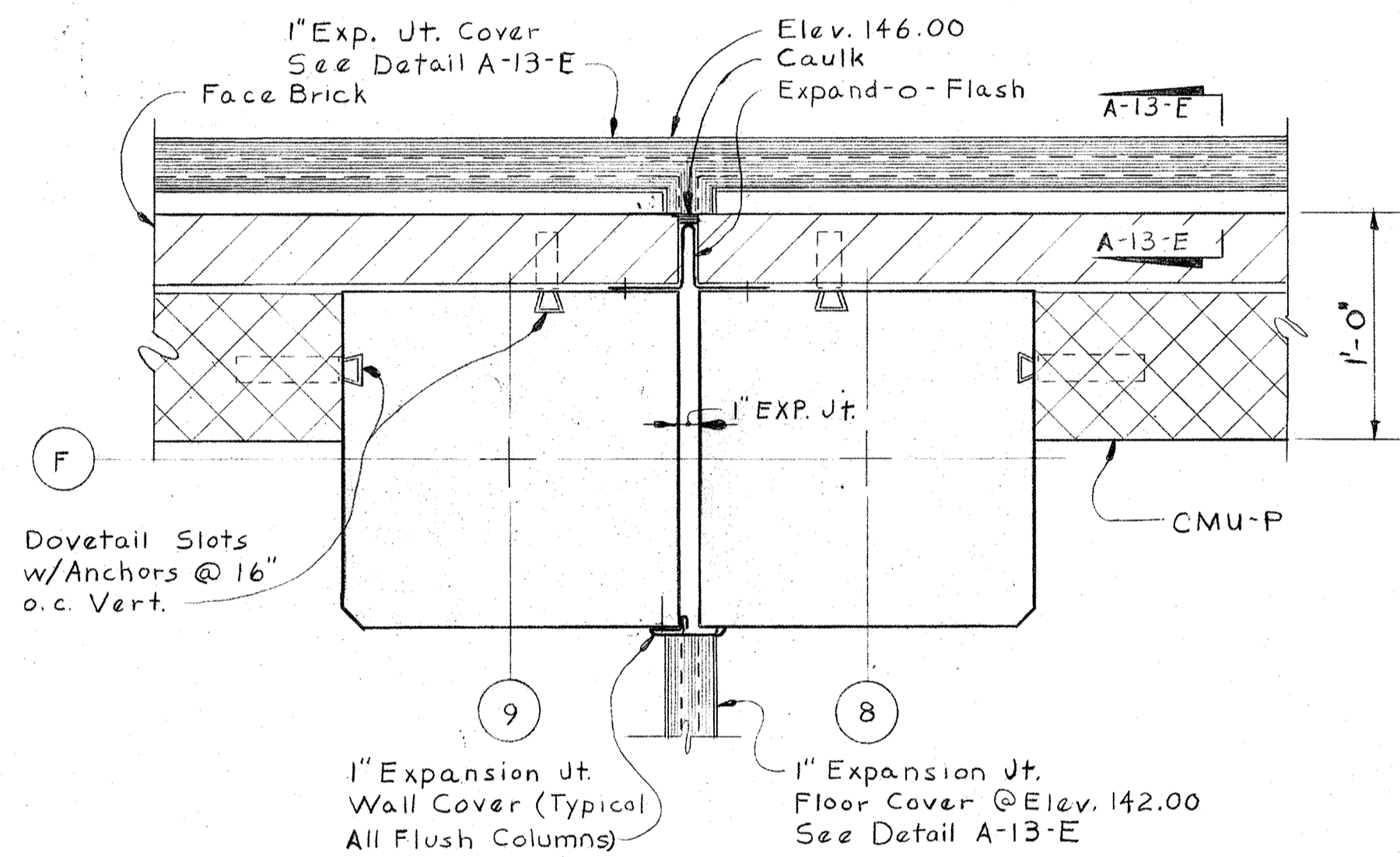
RELIEF VENT CURB
DETAIL A-13-M/A-6, A-7
Scale: 1 1/2"=1'-0"



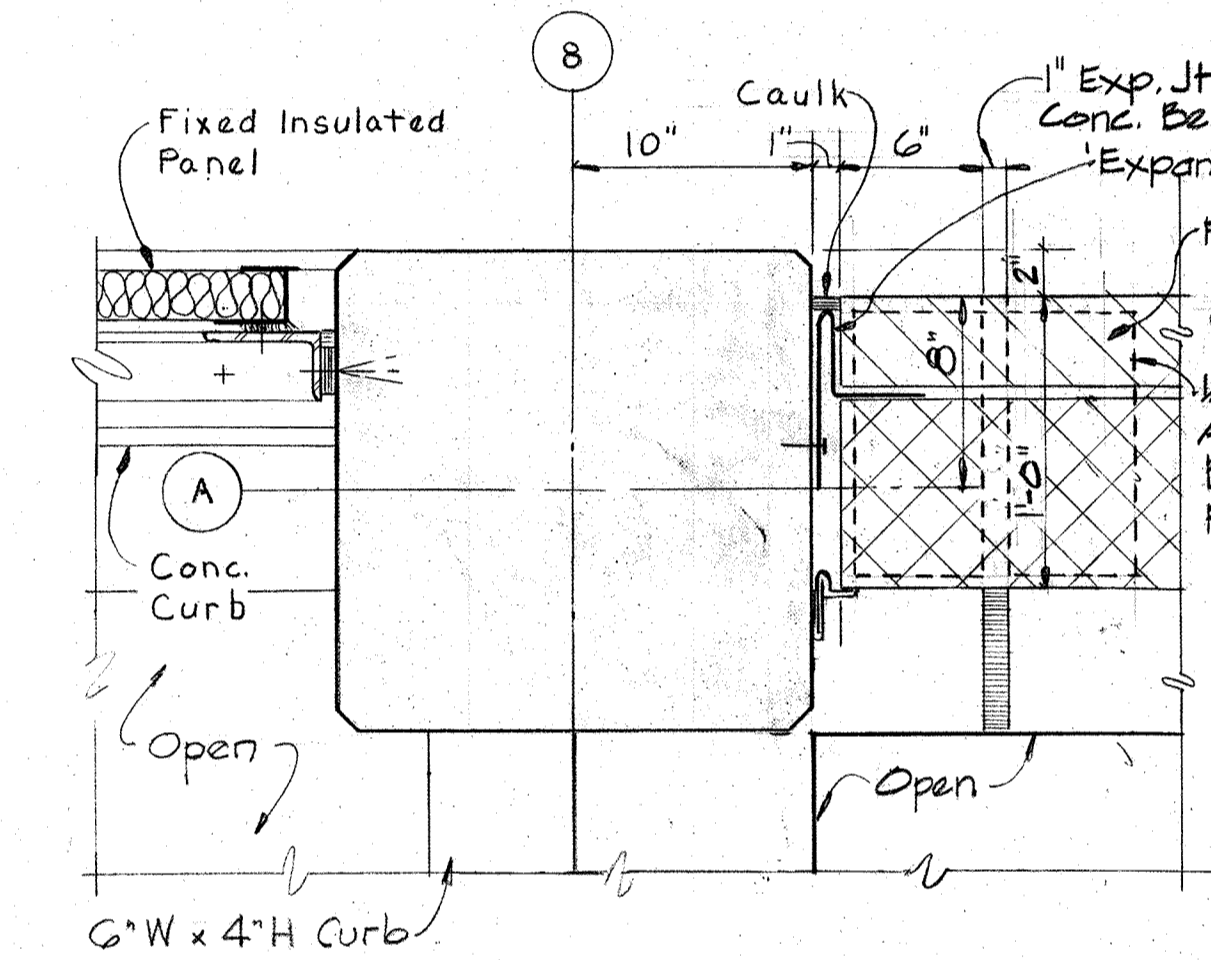
GUARD POST DETAIL
Scale: 1/2"=1'-0"



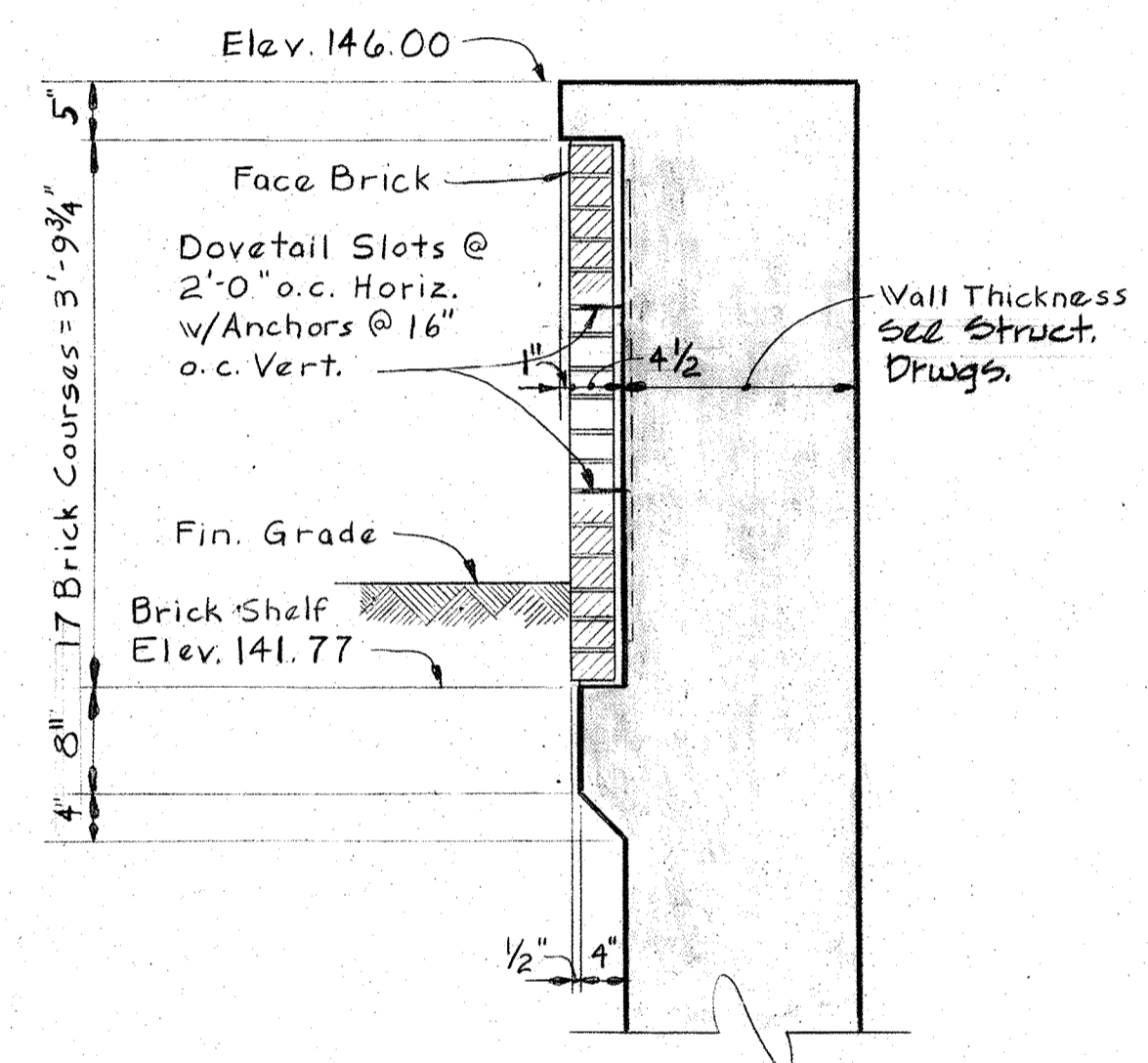
EXPANSION JOINT
DETAIL A-13-J/A-6, A-7
Scale: 1 1/2"=1'-0"



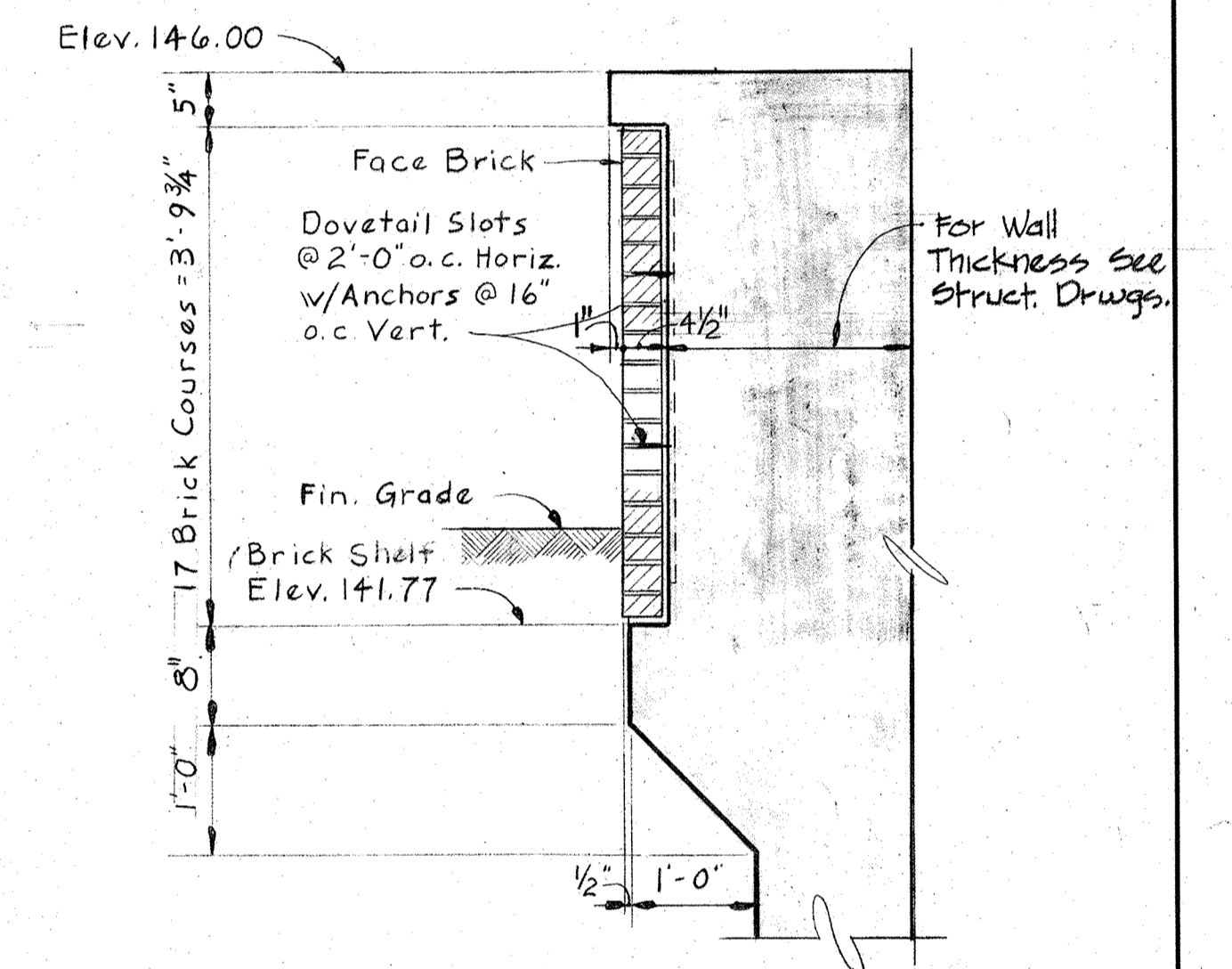
EXPANSION JOINT
DETAIL A-13-C/A-1
Scale: 1 1/2"=1'-0"



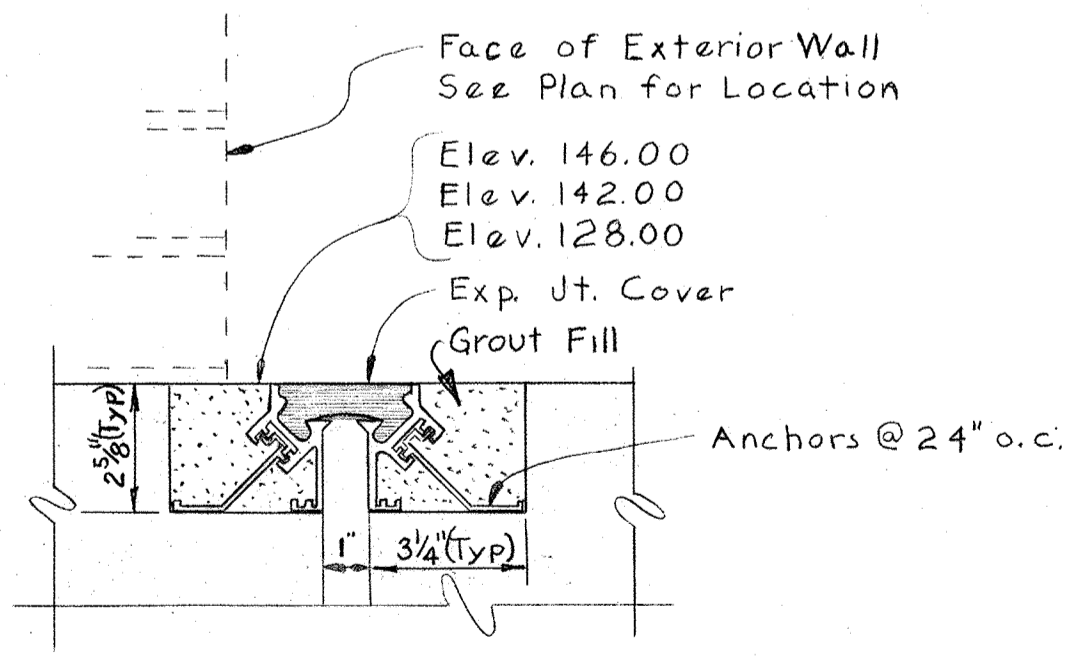
EXPANSION JOINT
DETAIL A-13-D/A-1
Scale: 1 1/2"=1'-0"



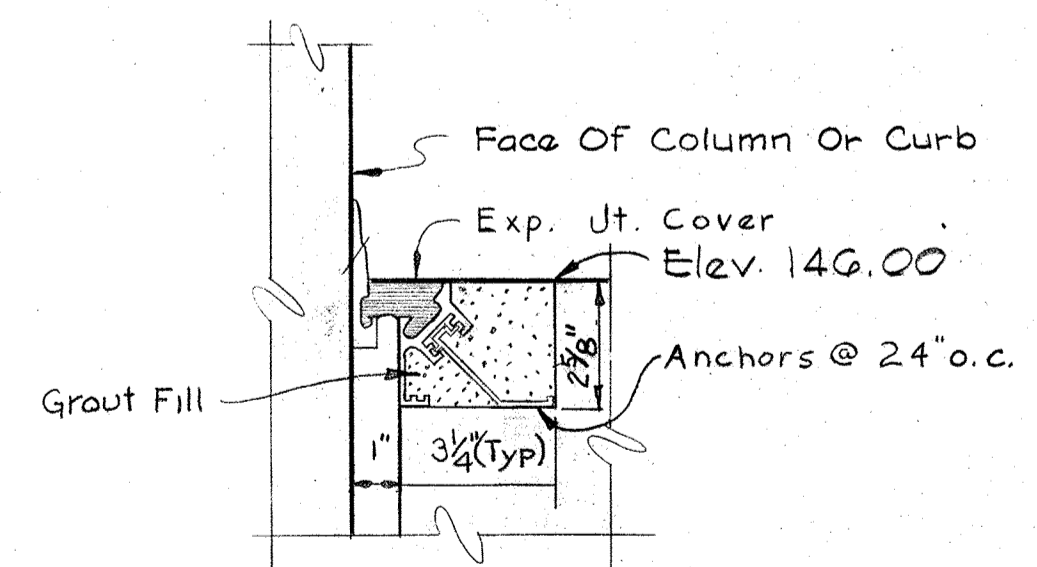
TYPICAL END WALL
SECTION A-13-L/A-1, A-6 & A-7
Scale: 3/4"=1'-0"



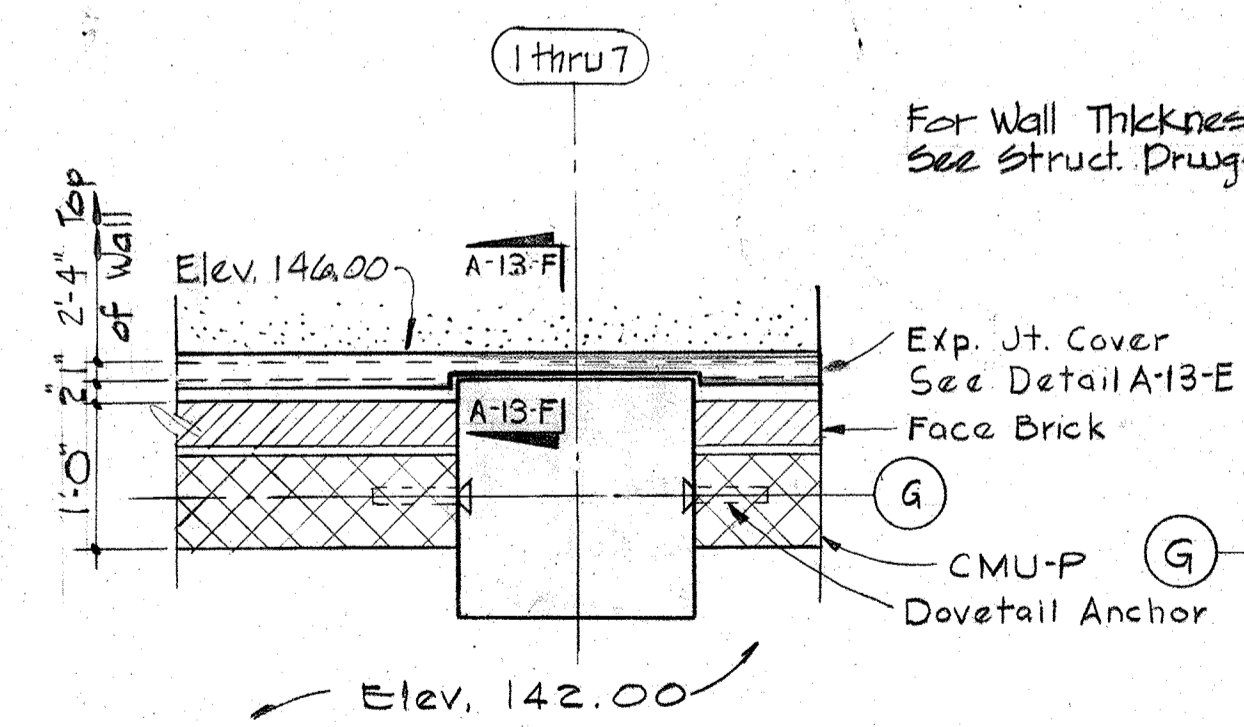
TYPICAL WEST WALL
SECTION A-13-K/A-1, A-6
Scale: 3/4"=1'-0"



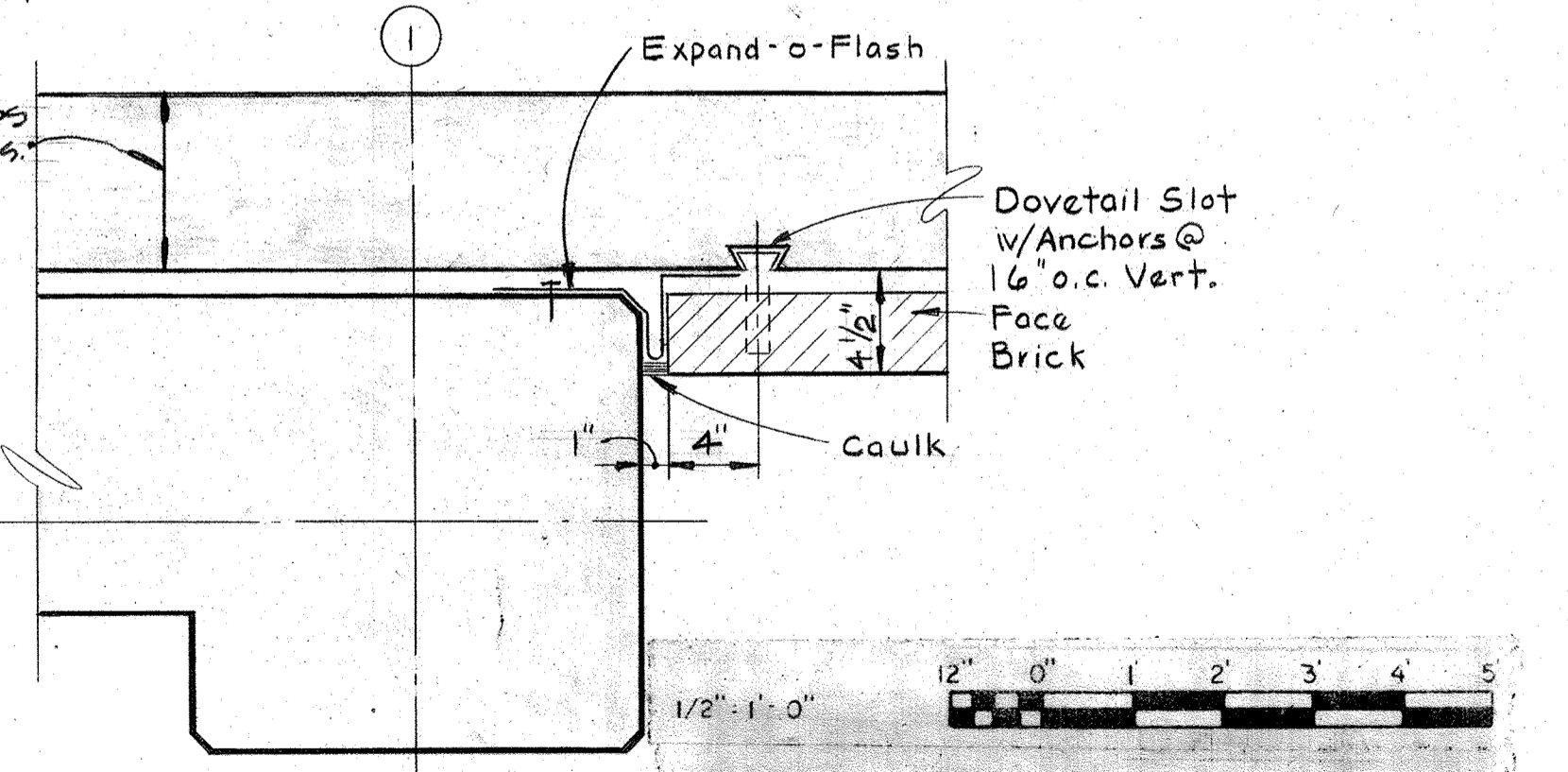
TYPICAL FLOOR JT. COVER
DETAIL A-13-E/A-1, A-13
Scale: 3"=1'-0"



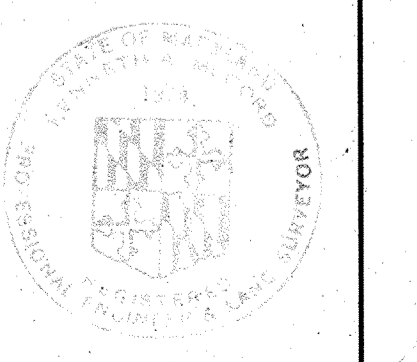
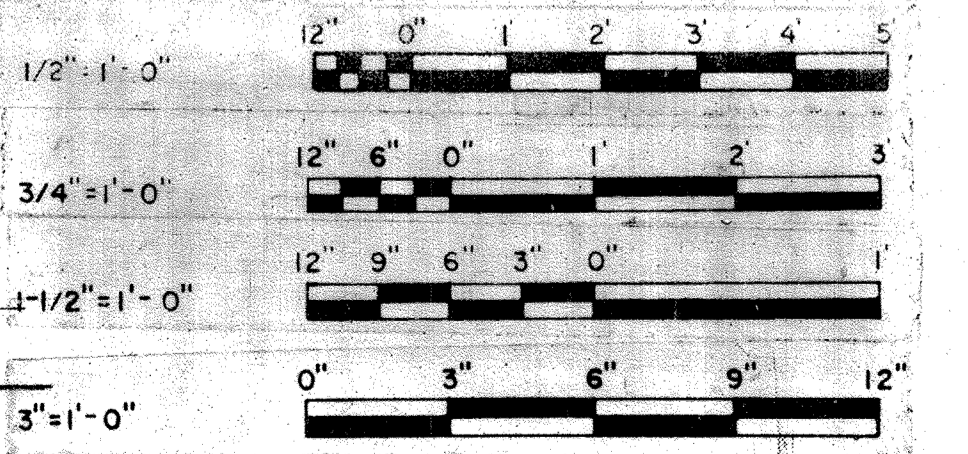
FLOOR-WALL JT. COVER
DETAIL A-13-F/A-13, A-15
Scale: 3"=1'-0"



EXPANSION JOINT
DETAIL A-13-G/A-1
Scale: 3/4"=1'-0"



EXPANSION JOINT
DETAIL A-13-H/A-1, A-16
Scale: 1 1/2"=1'-0"



WHITMAN, REQUARDT & ASSOCIATES
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BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3/20/75
W. O. Federline
CHIEF, BUREAU OF ENGINEERING

JAMES A. FEDERLINE, INC.
AS BUILT DRAWING
CONTRACT NO. 501-S

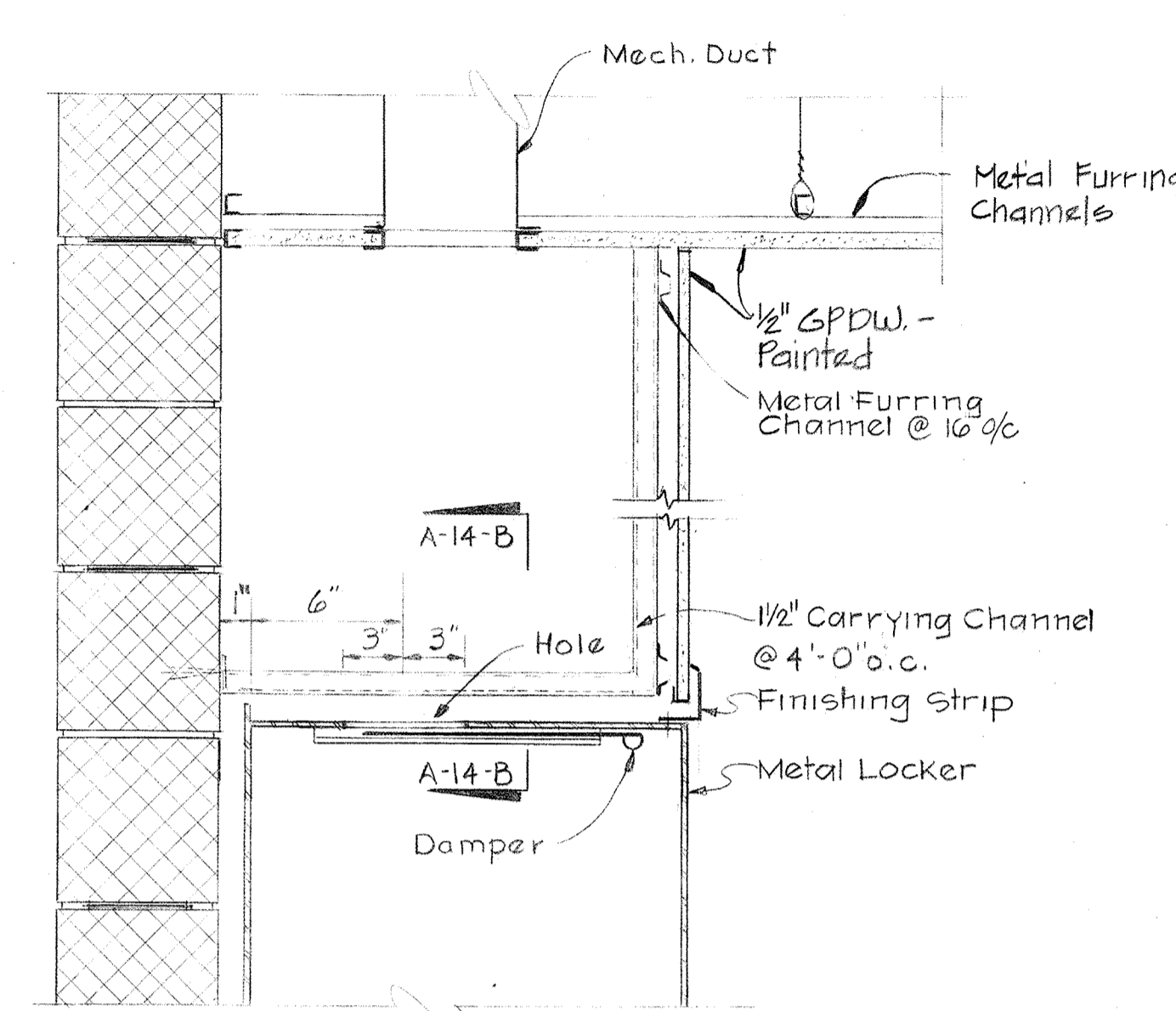
ARCHITECTURAL
MASONRY AND EXPANSION
JOINT DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

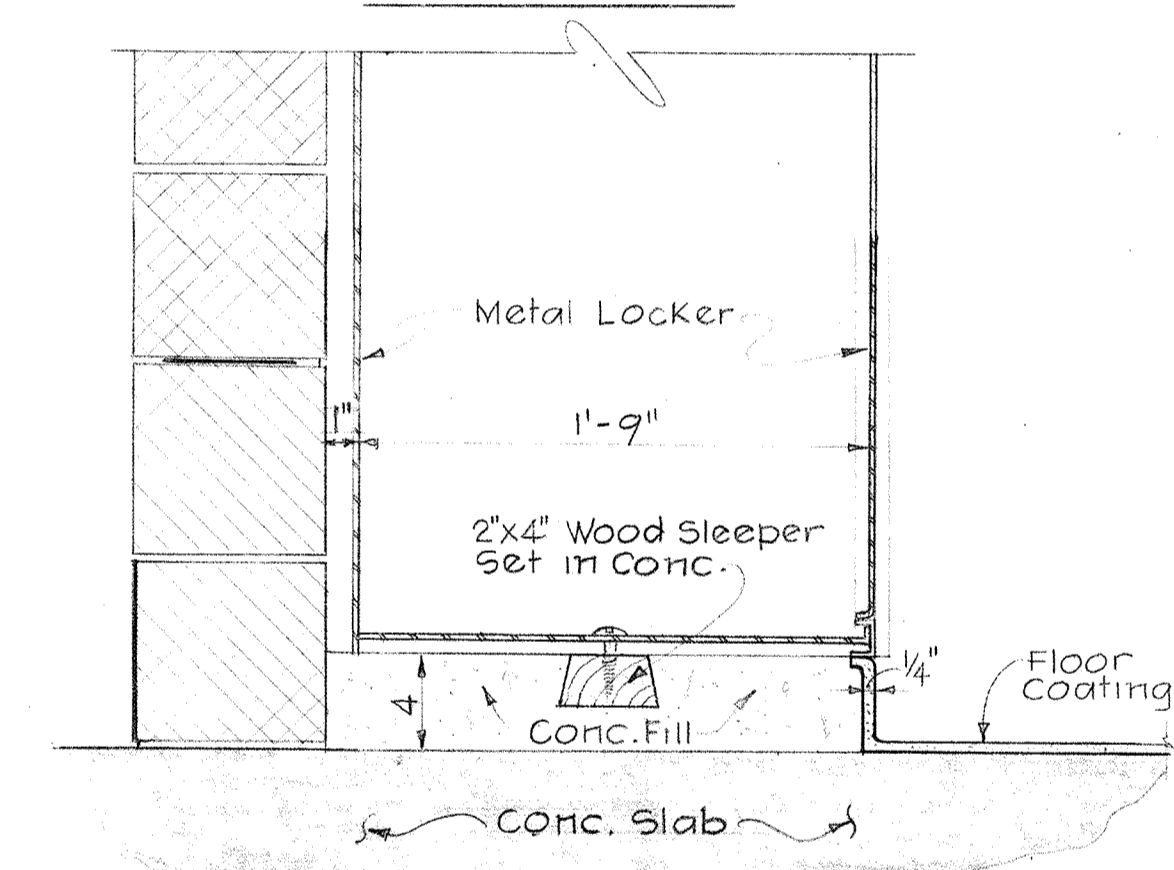
DRAWING
NO. 28
OF 128

SCALE
AS
NOTED

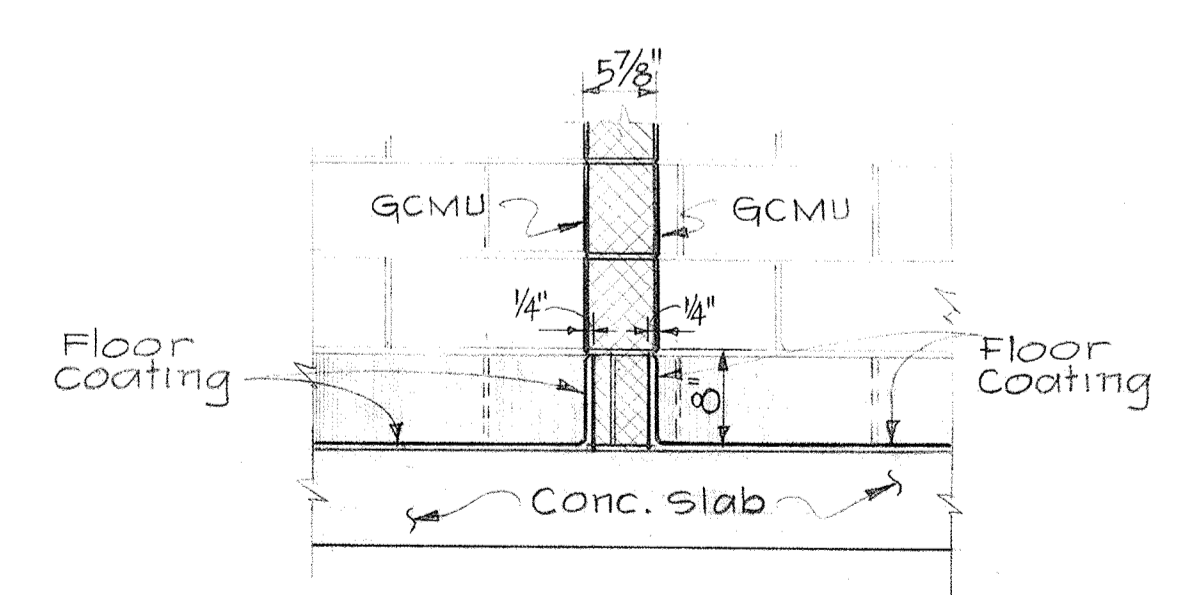
BRUNING 44-510 18392



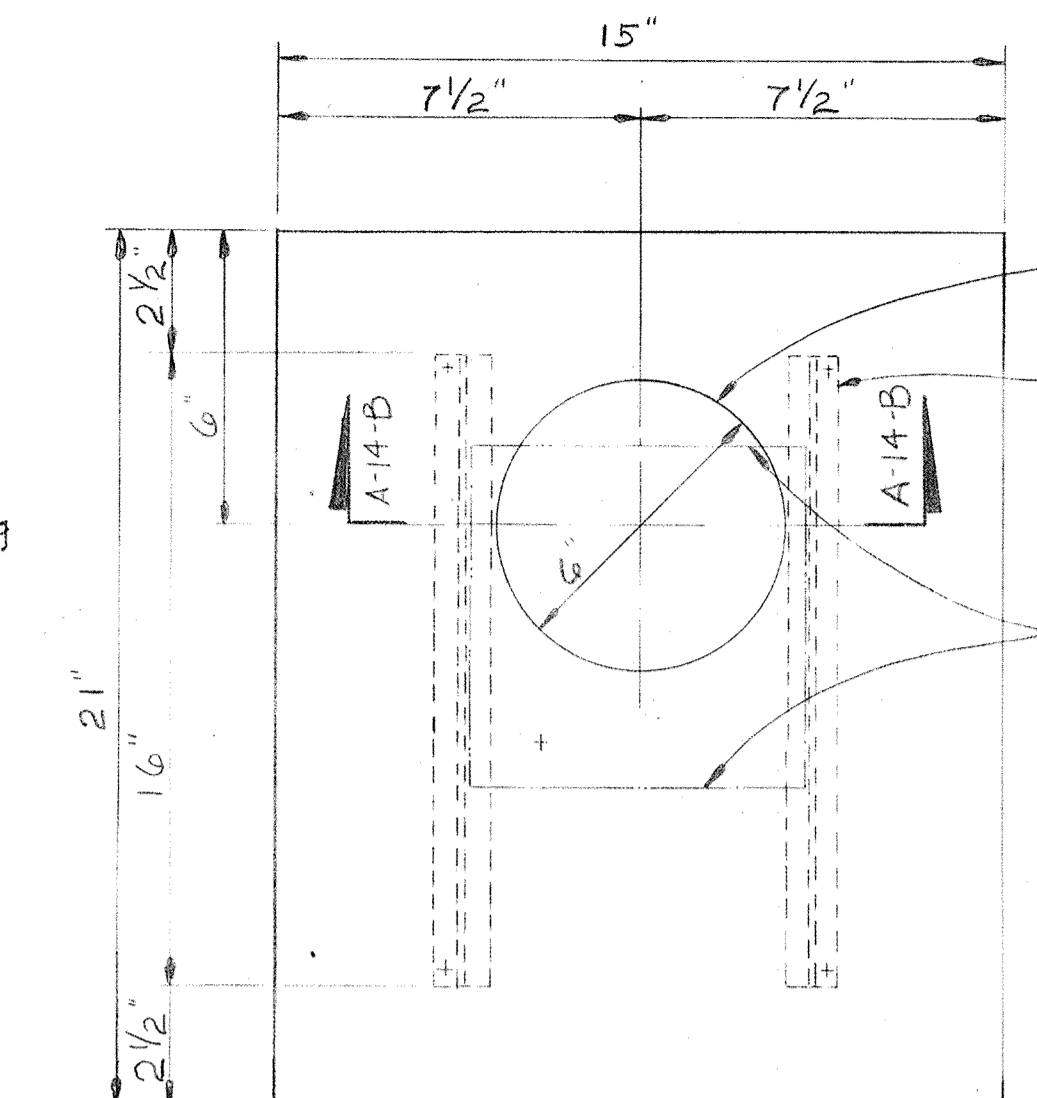
LOCKER TOP
Scale: 3/4" = 1'-0"



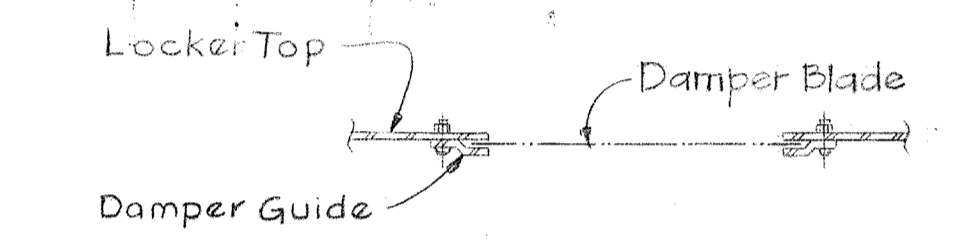
LOCKER BASE
DETAIL A-14-A/A-4
Scale: 1/2" = 1'-0"



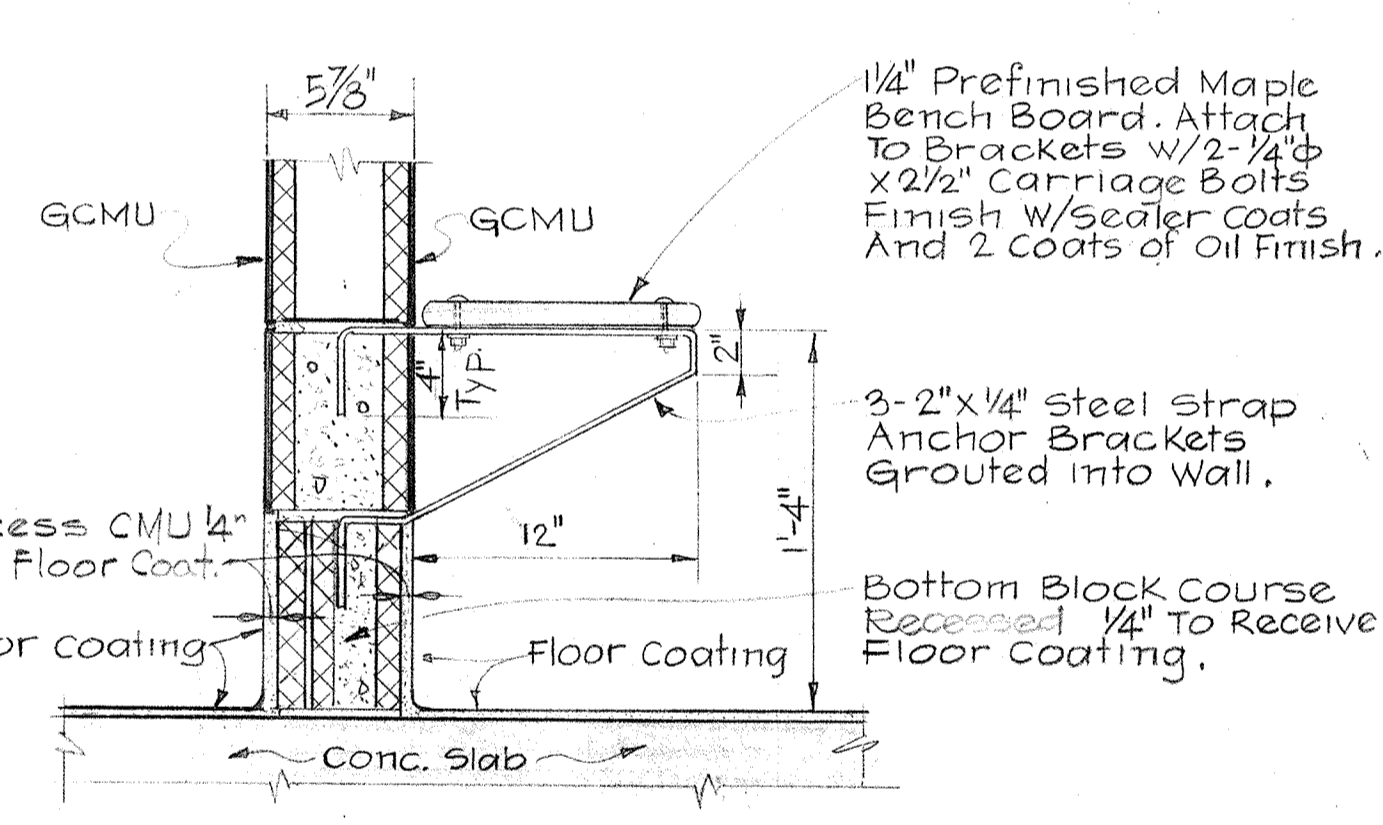
DETAIL A-14-F/A-4
Scale: 3/4" = 1'-0"



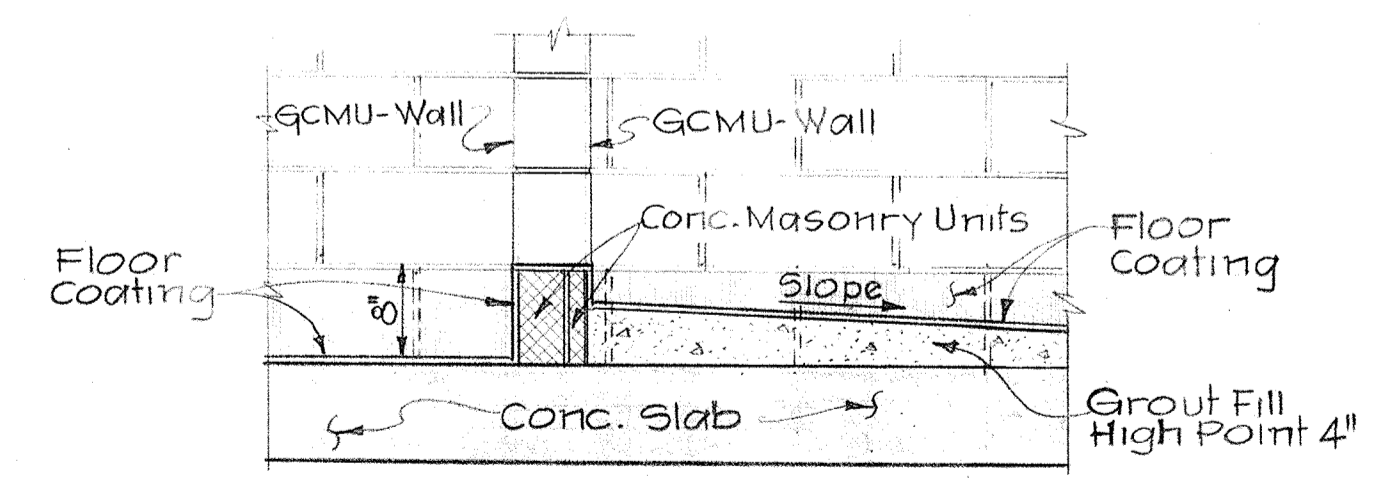
PLAN OF LOCKER TOP
Scale: 3/4" = 1'-0"



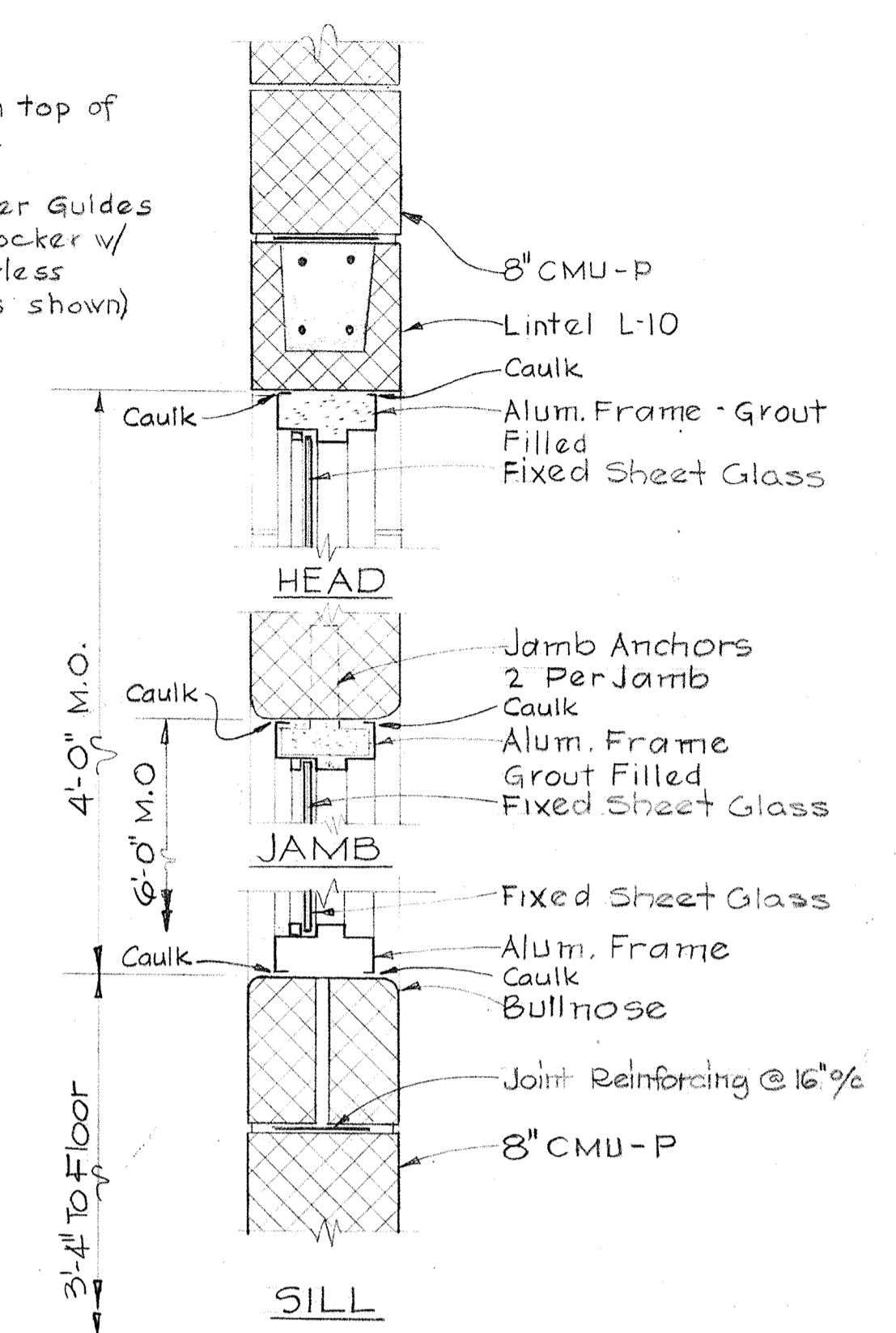
SECTION A-14-B/A-14
Scale: 3/4" = 1'-0"



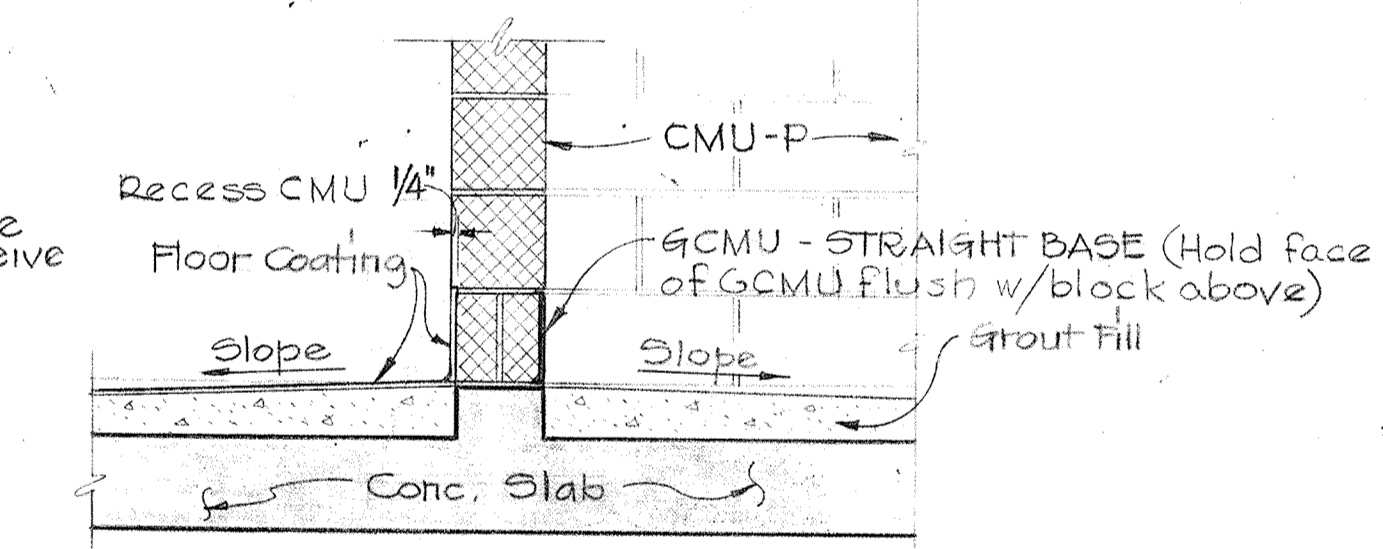
WALL HUNG BENCH
DETAIL A-14-D/A-4
Scale: 1/2" = 1'-0"



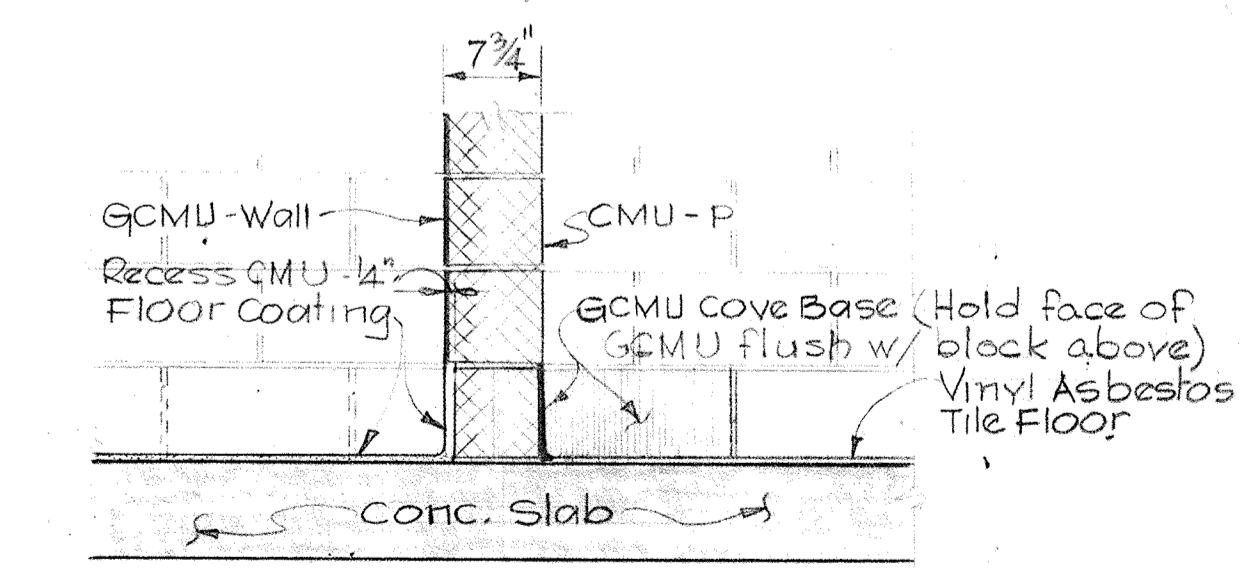
TYPICAL CURB
DETAIL A-14-G/A-4
Scale: 3/4" = 1'-0"



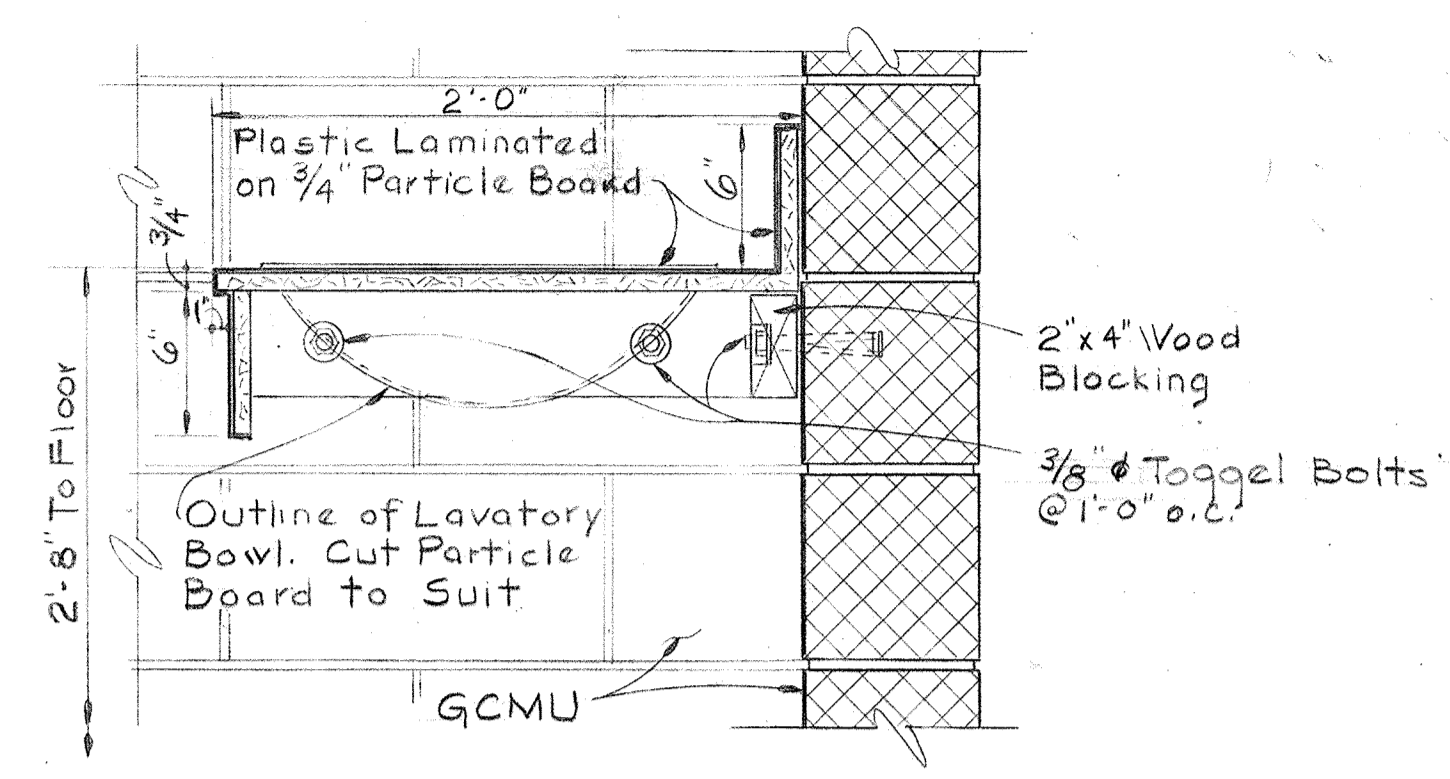
FIXED VIEW WINDOW
SECTION A-14-E/A-2, A-8
Scale: 1/2" = 1'-0"



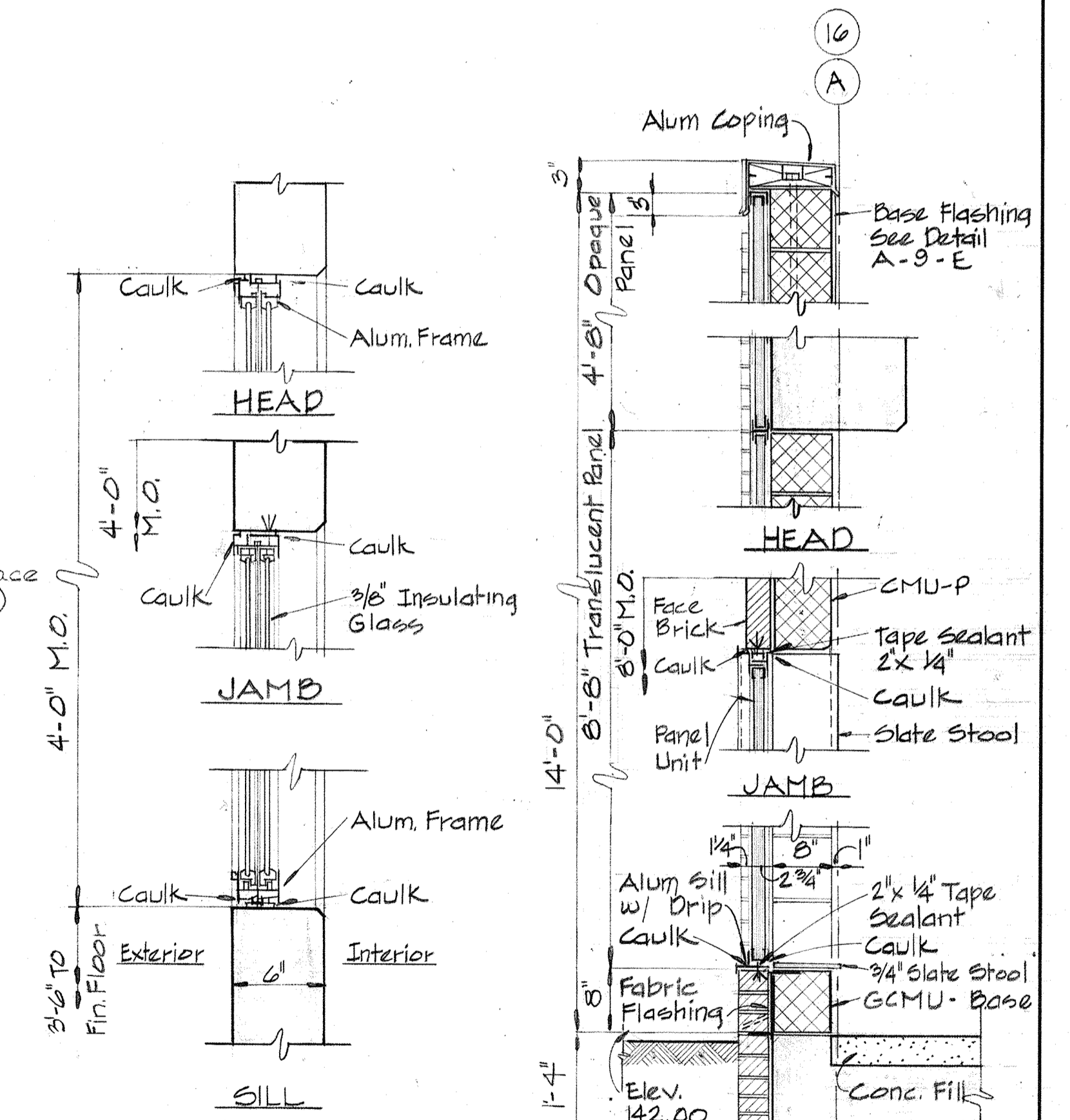
TYPICAL DETAIL
DETAIL A-14-J/A-1
Scale: 3/4" = 1'-0"



TYPICAL DETAIL
DETAIL A-14-H/A-1,A-4
Scale: 3/4" = 1'-0"

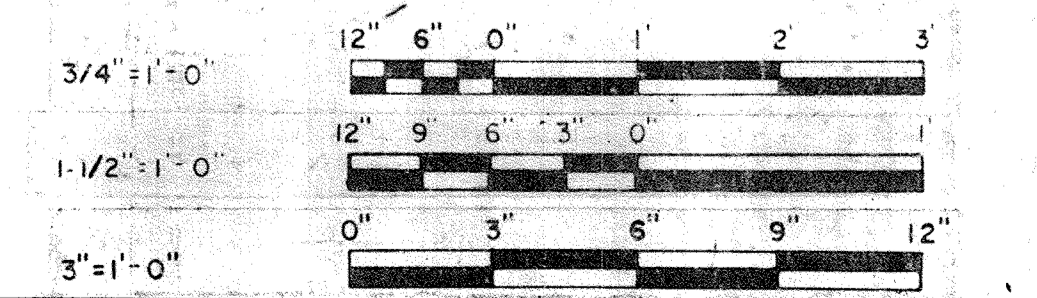


VANITY
SECTION A-14-C/A-4
Scale: 1/2" = 1'-0"

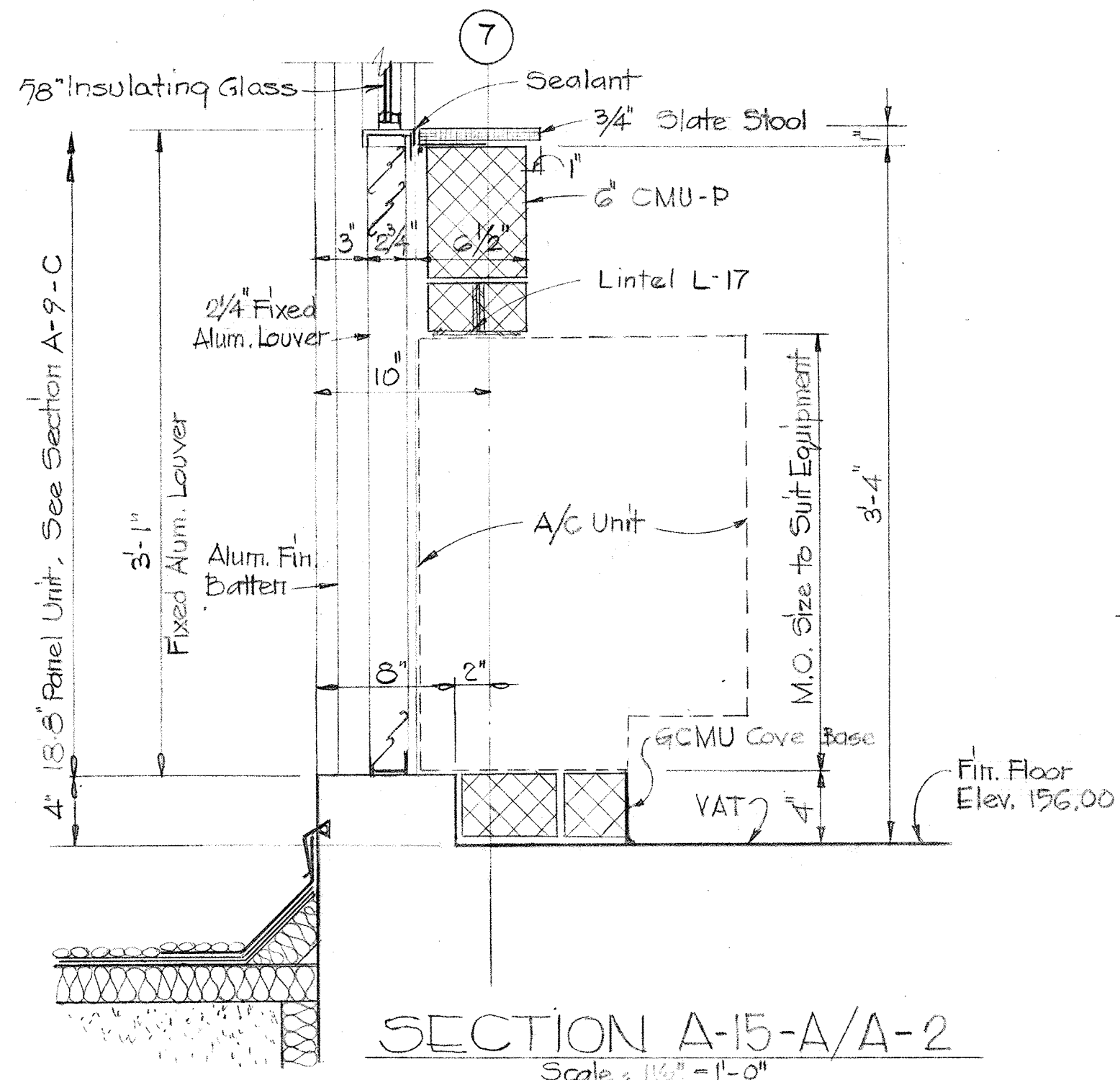


SLIDING WINDOW
SECTION A-14-K/A-2
Scale: 1/2" = 1'-0"

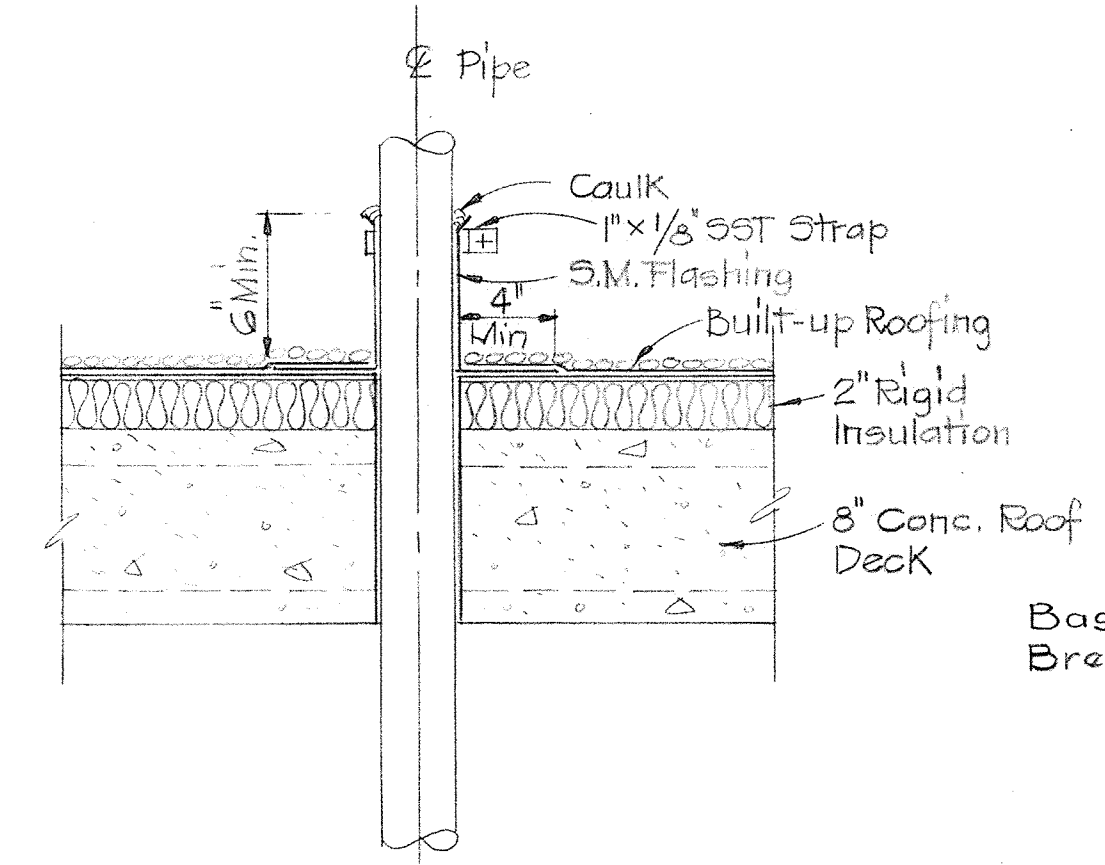
SECTION A-14-L/A-1,A-2
Scale: 3/4" = 1'-0"



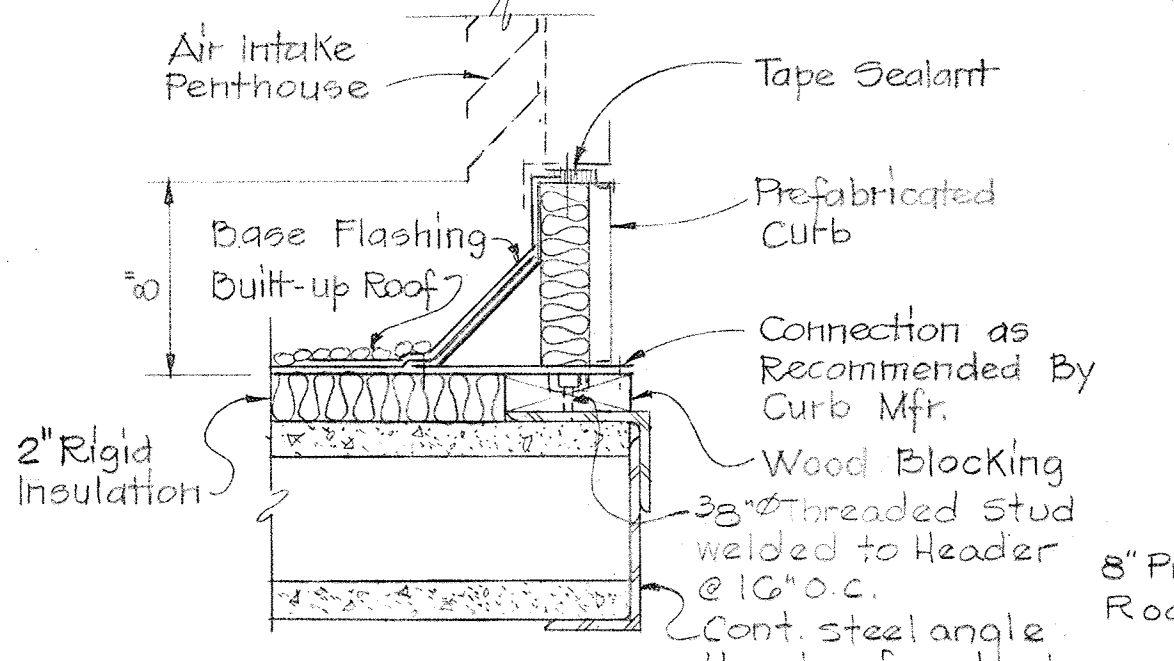
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>3/20/15</i> DATE	JAMES A. FEDERLINE, INC. AS BUILT DRAWING CONTRACT NO. 501-S	ARCHITECTURAL MISCELLANEOUS DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 29	SCALE AS NOTED
					OF 128	



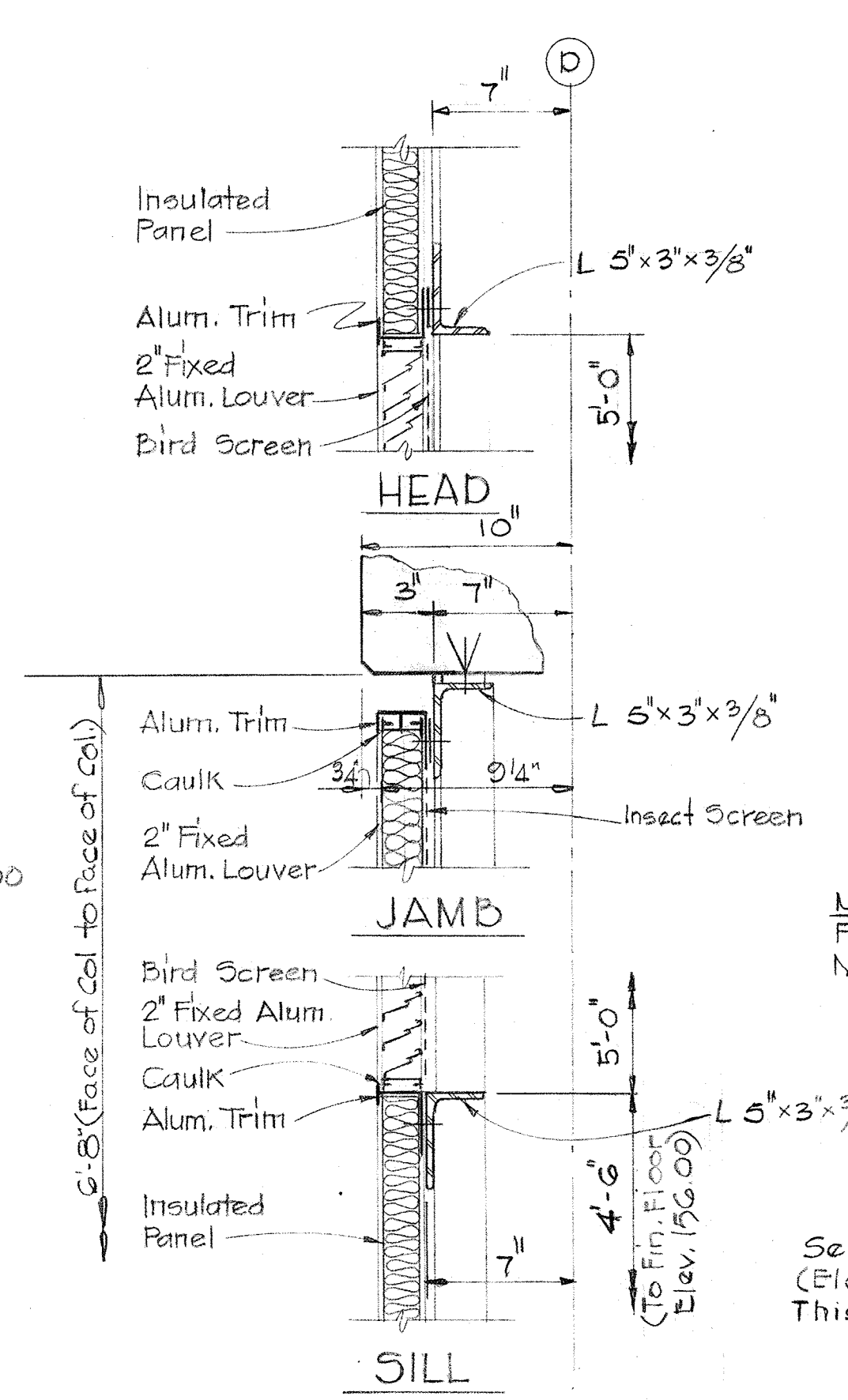
SECTION A-15-A/A-2
Scale: 1/2" = 1'-0"



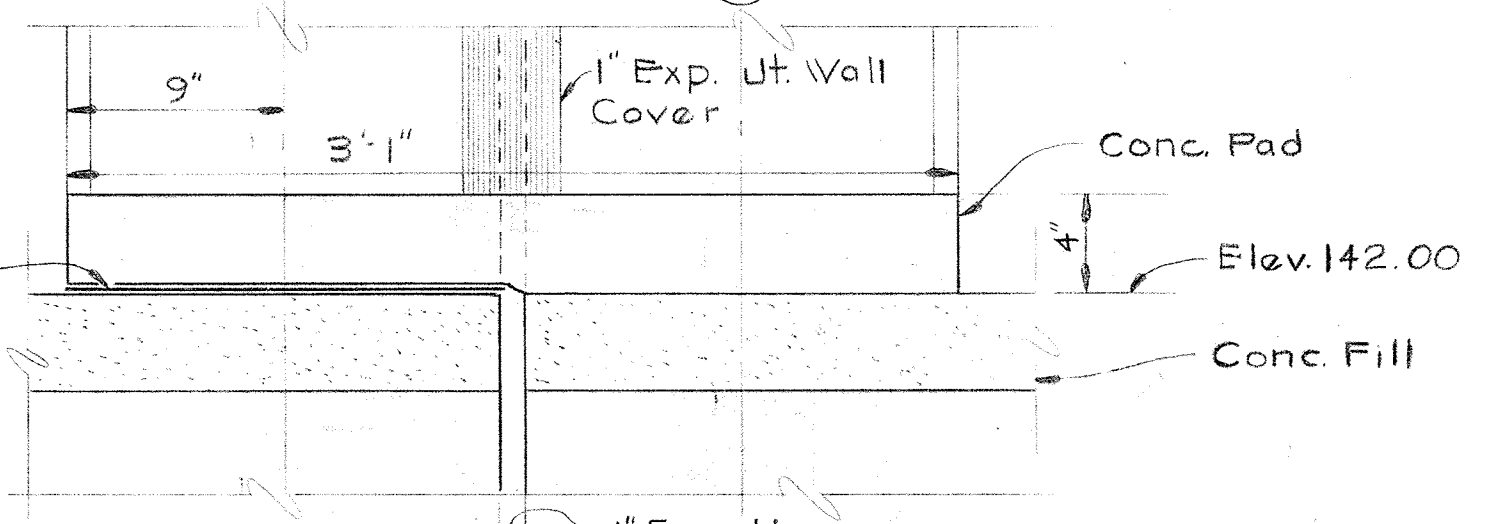
TYPICAL A/C PIPE
DETAIL A-15-E/A-2
Scale: 1/2" = 1'-0"



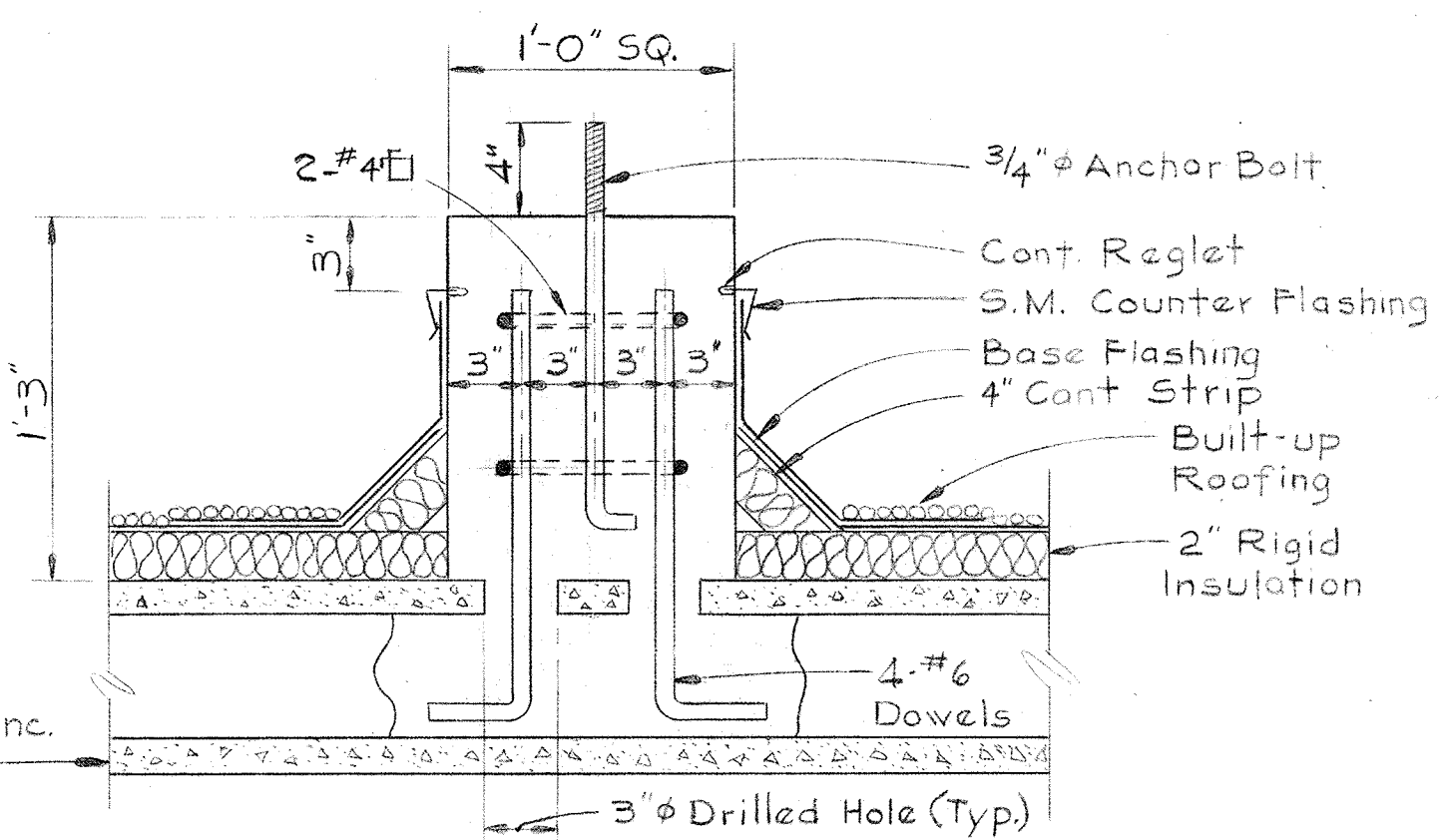
PENTHOUSE CURB
DETAIL A-15-F/A-3
Scale: 1/2" = 1'-0"



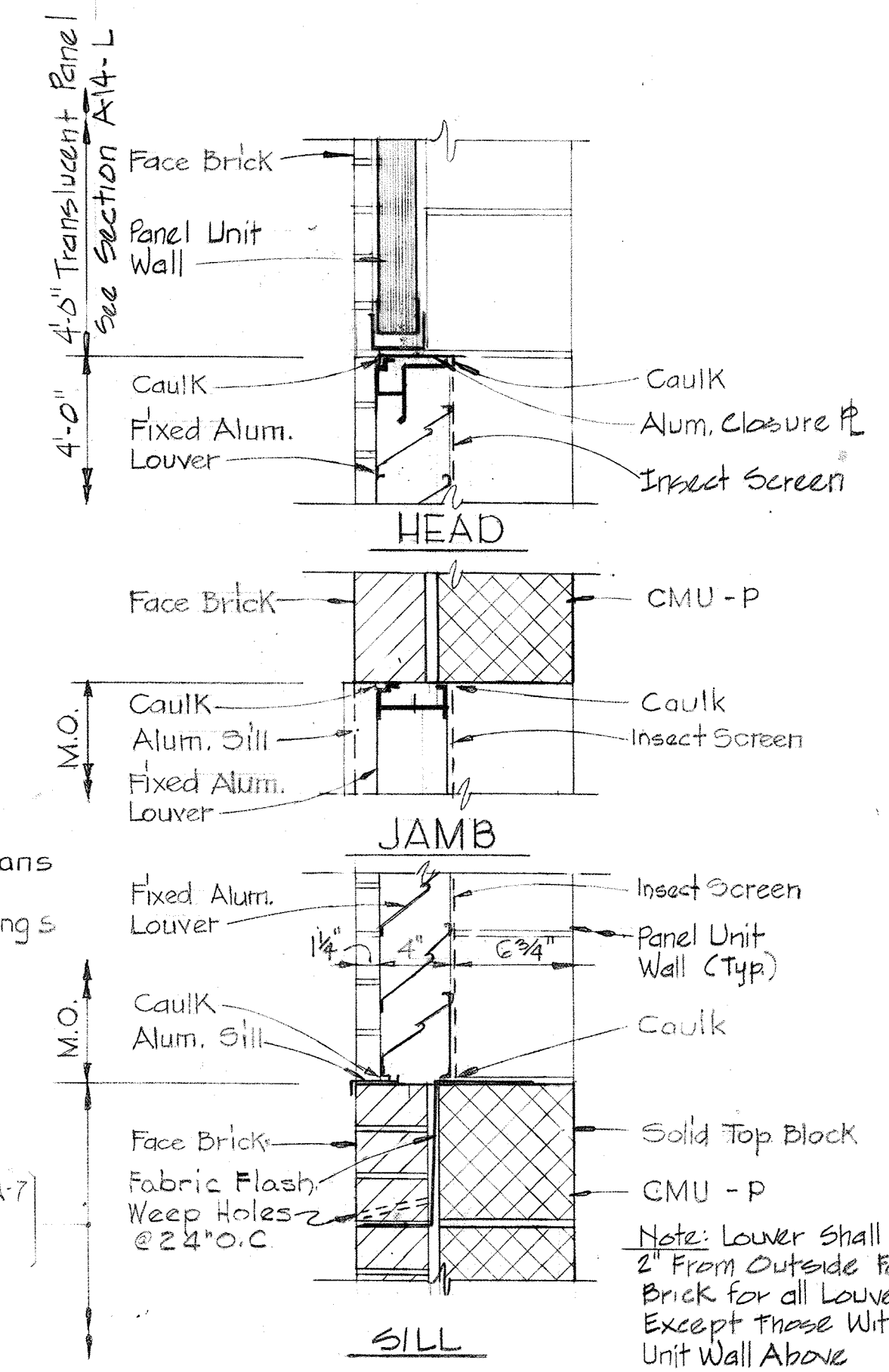
SECTION A-15-B/A-2
Scale: 1/2" = 1'-0"



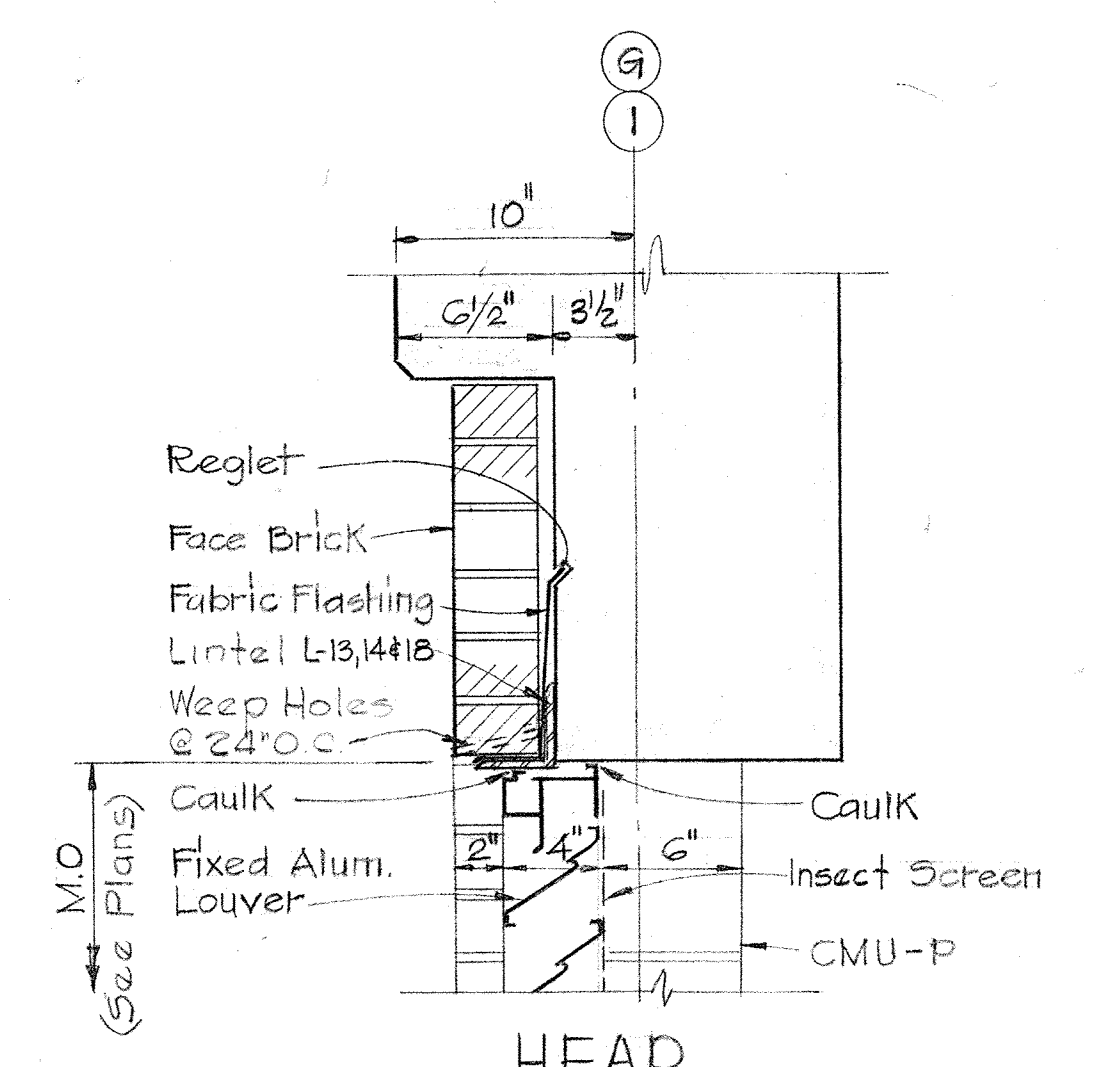
DETAIL A-15-J/A-1
Scale: 1/2" = 1'-0"



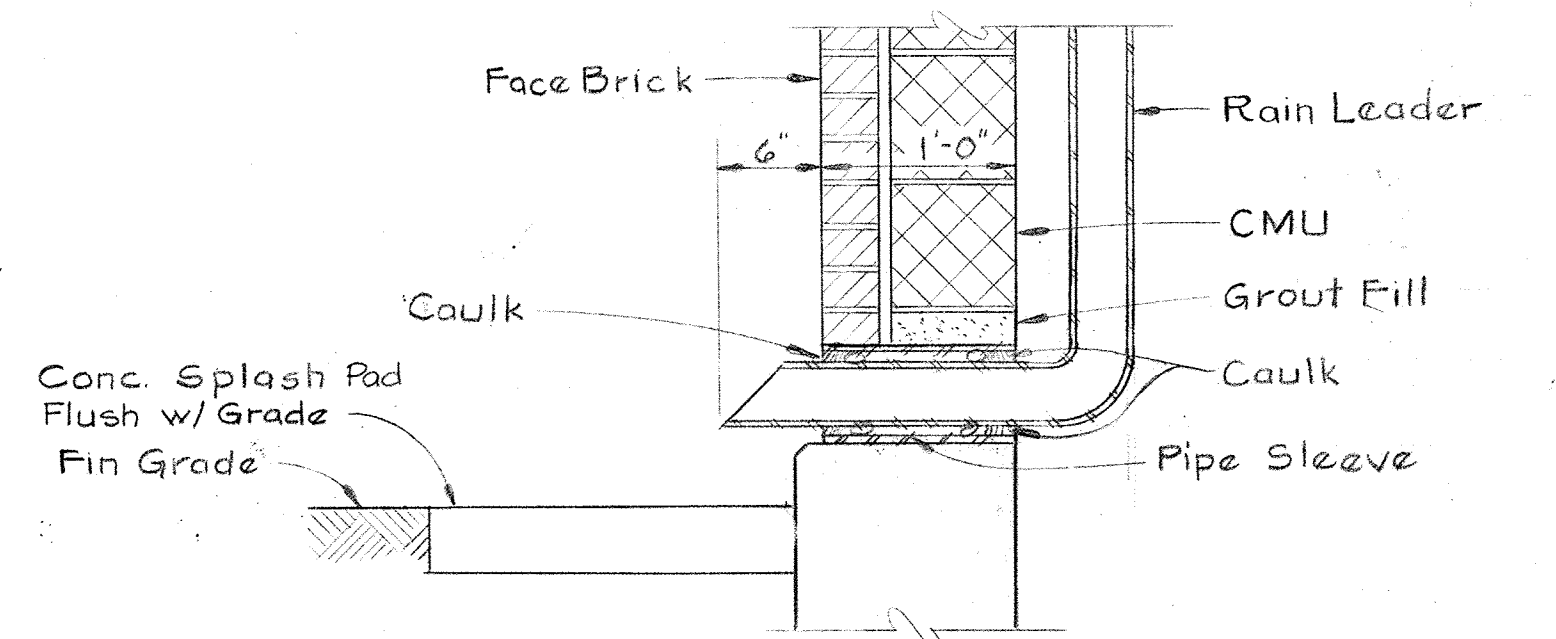
A/C SUPPORT PAD
DETAIL A-15-G/A-2
Scale: 1/2" = 1'-0"



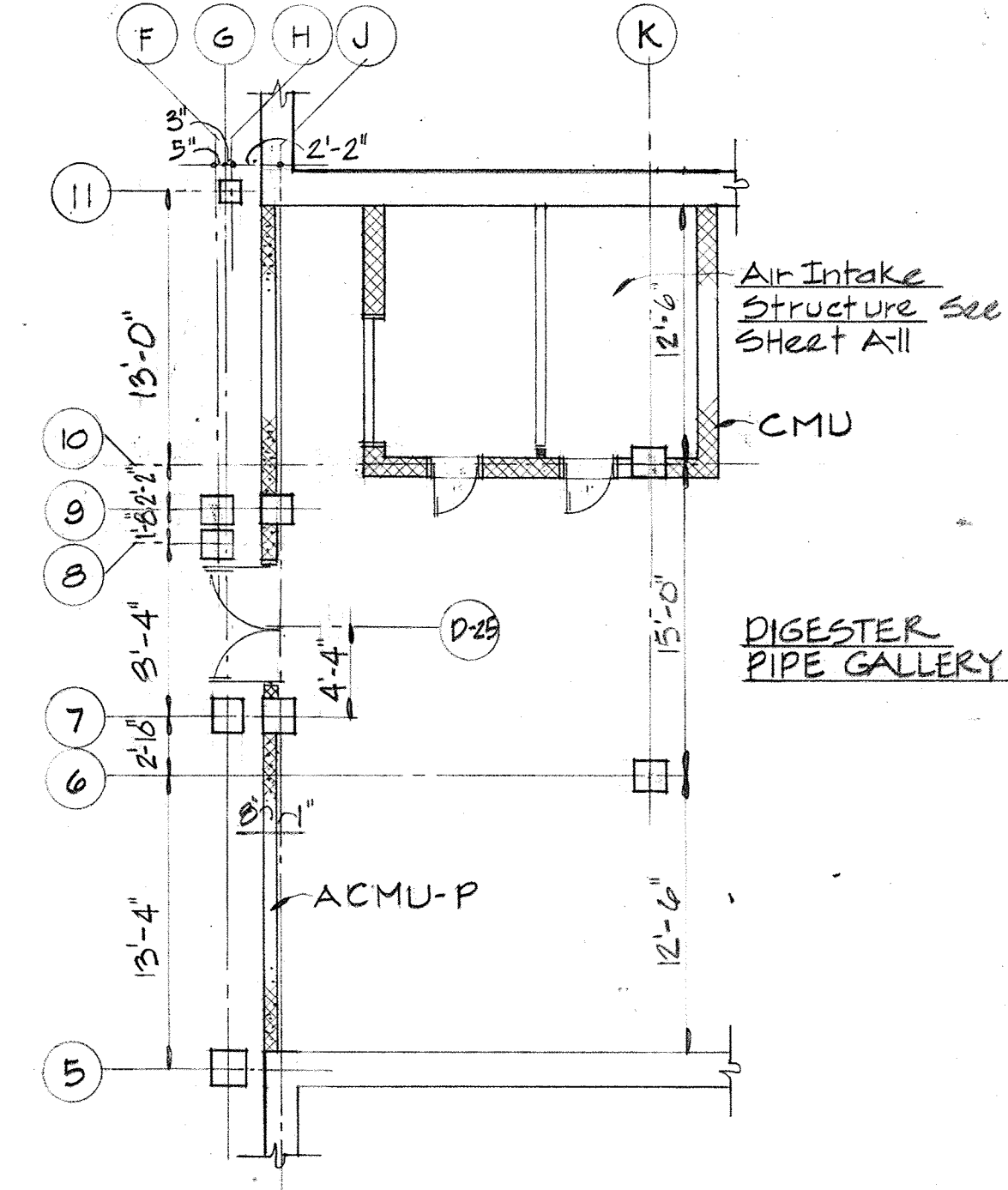
SECTION A-15-C/A-1
Scale: 1/2" = 1'-0"



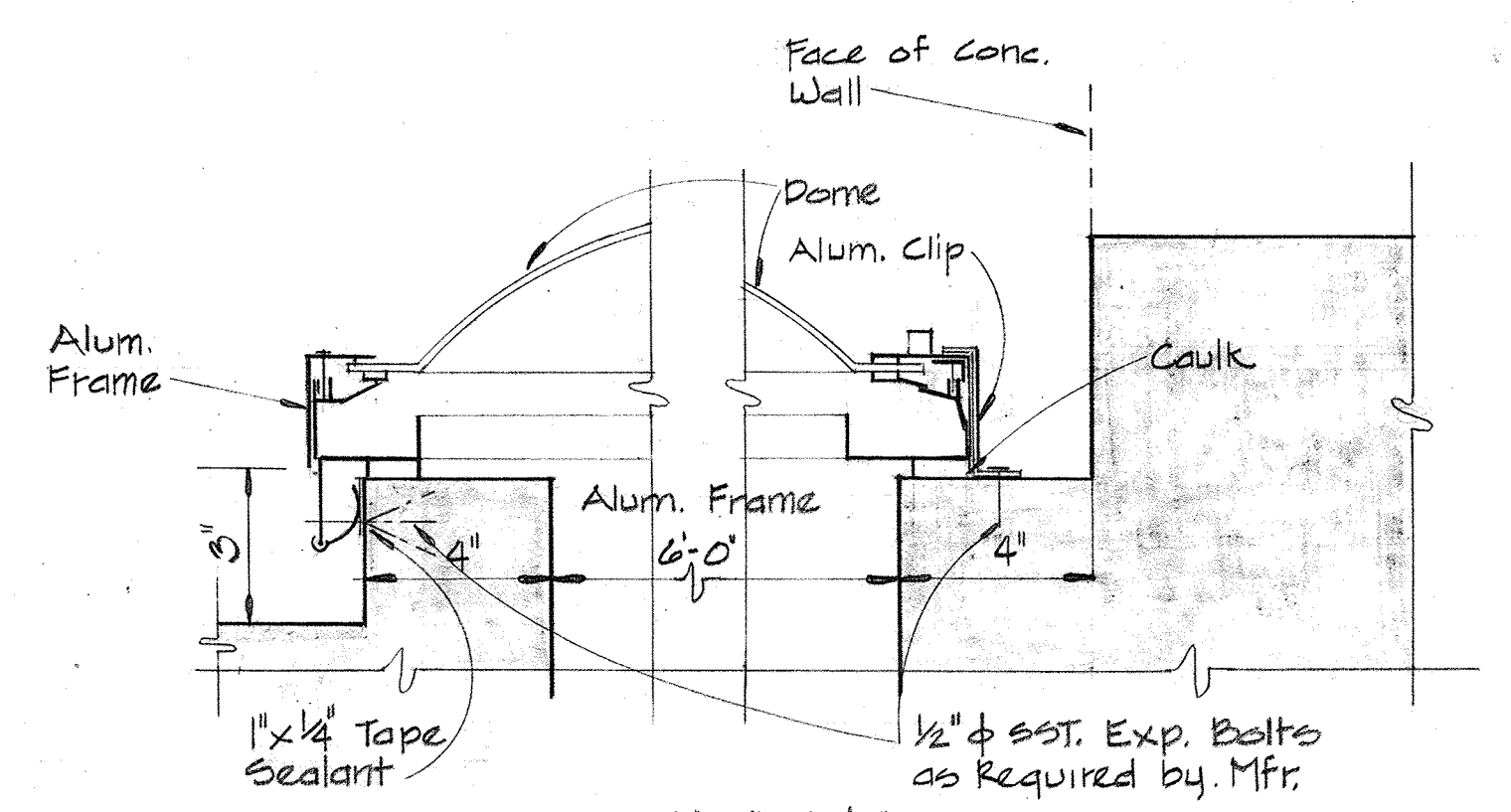
DETAIL A-15-D/A-1
Scale: 1/2" = 1'-0"



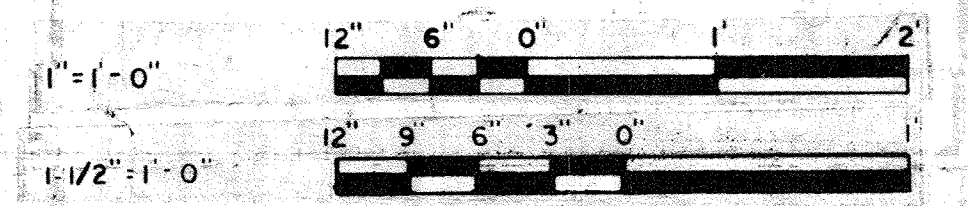
DETAIL A-15-H/A-16
Scale: 1" = 1'-0"



SOUND PARTITION PLAN
Scale: 1/8" = 1'-0"



SKYLIGHT
SECTION A-15-K/A-2
Scale: 3/8" = 1'-0"



NOTE: Location & Number of Pads to suit eqpt. being installed.

JAMES A. FEDERLINE INC.

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3/20/75
CHIEF-BUREAU OF ENGINEERING

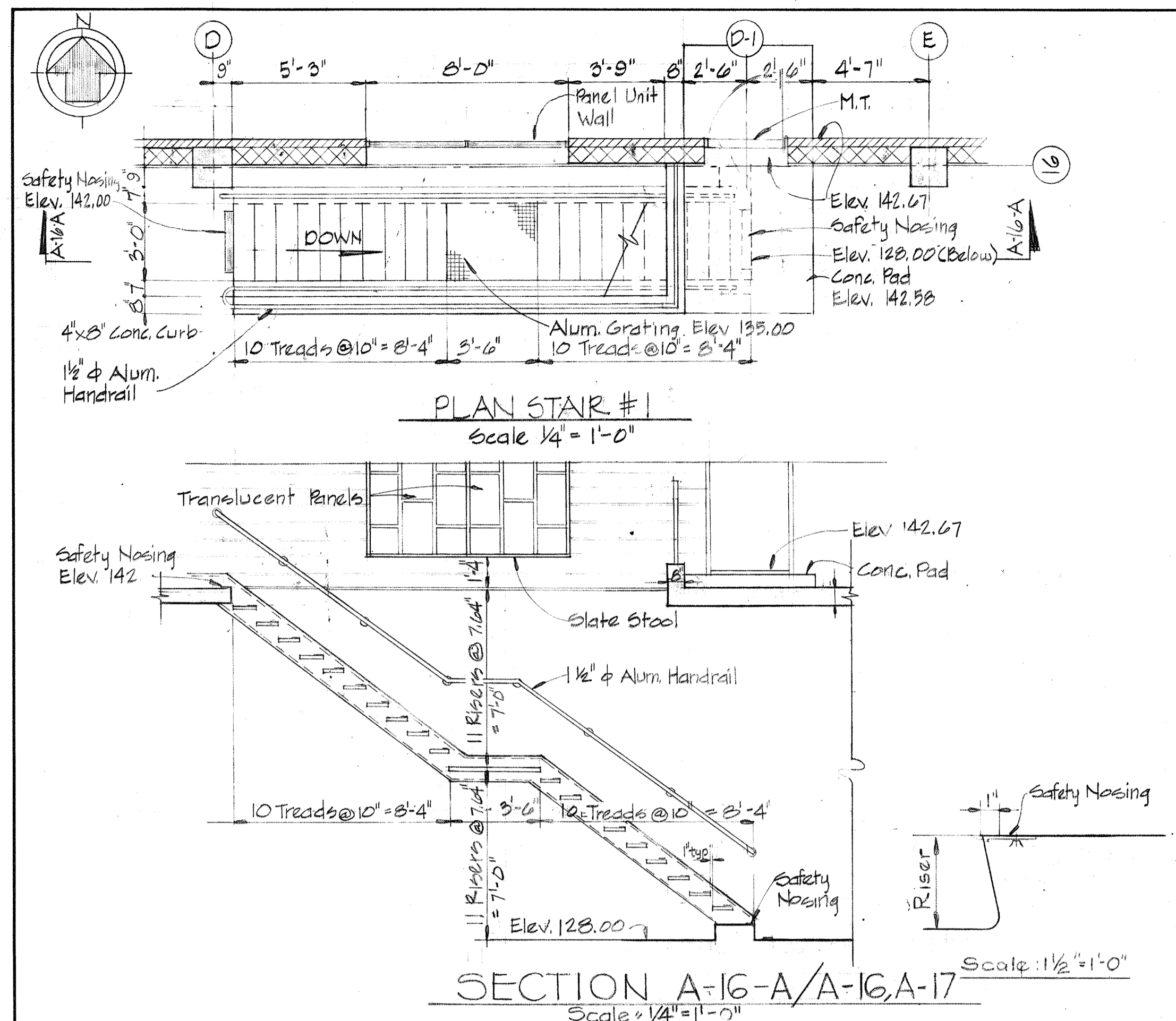
AS BUILT DRAWING
CONTRACT NO. 501 - S

ARCHITECTURAL
MISCELLANEOUS DETAILS

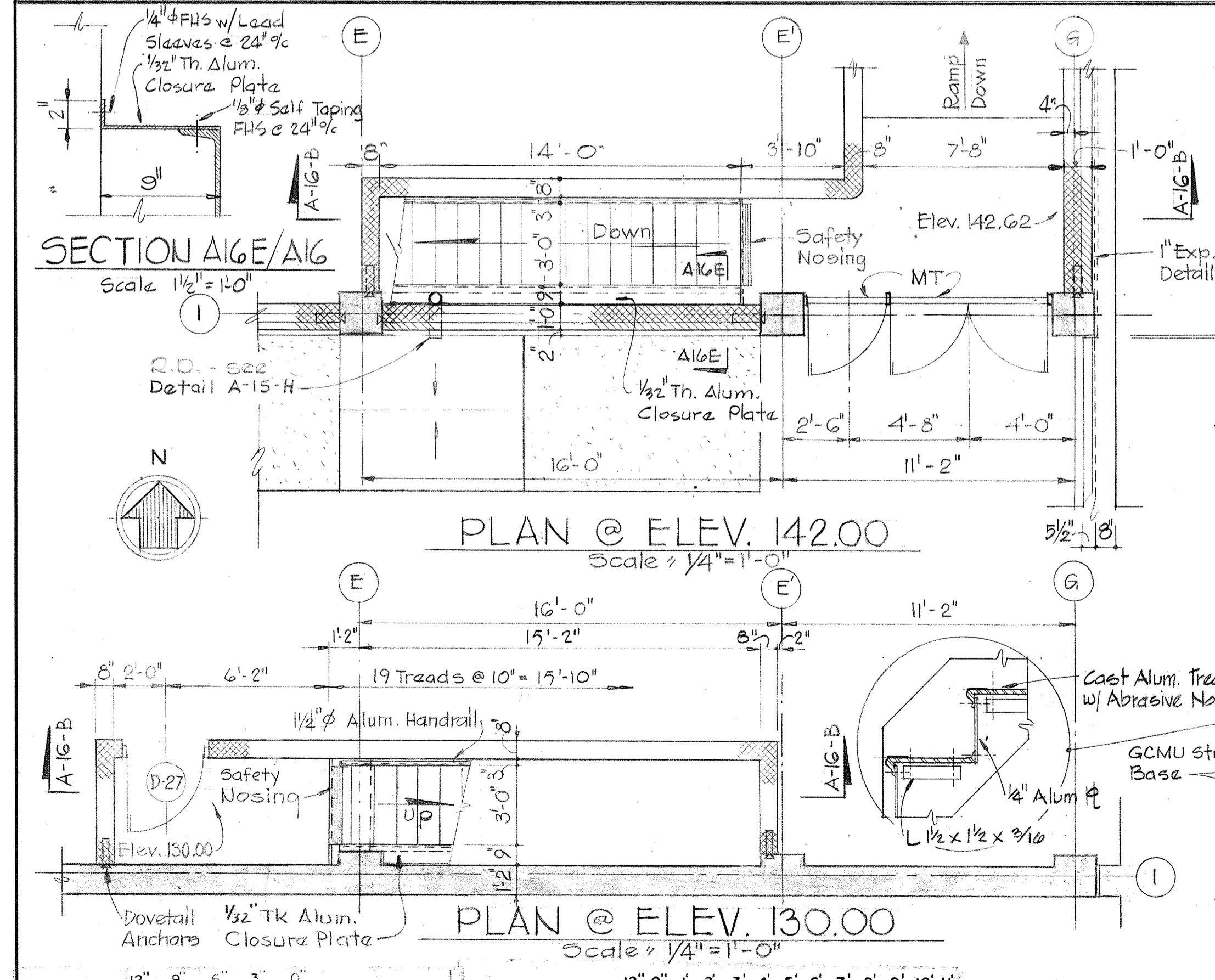
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 30
OF 128

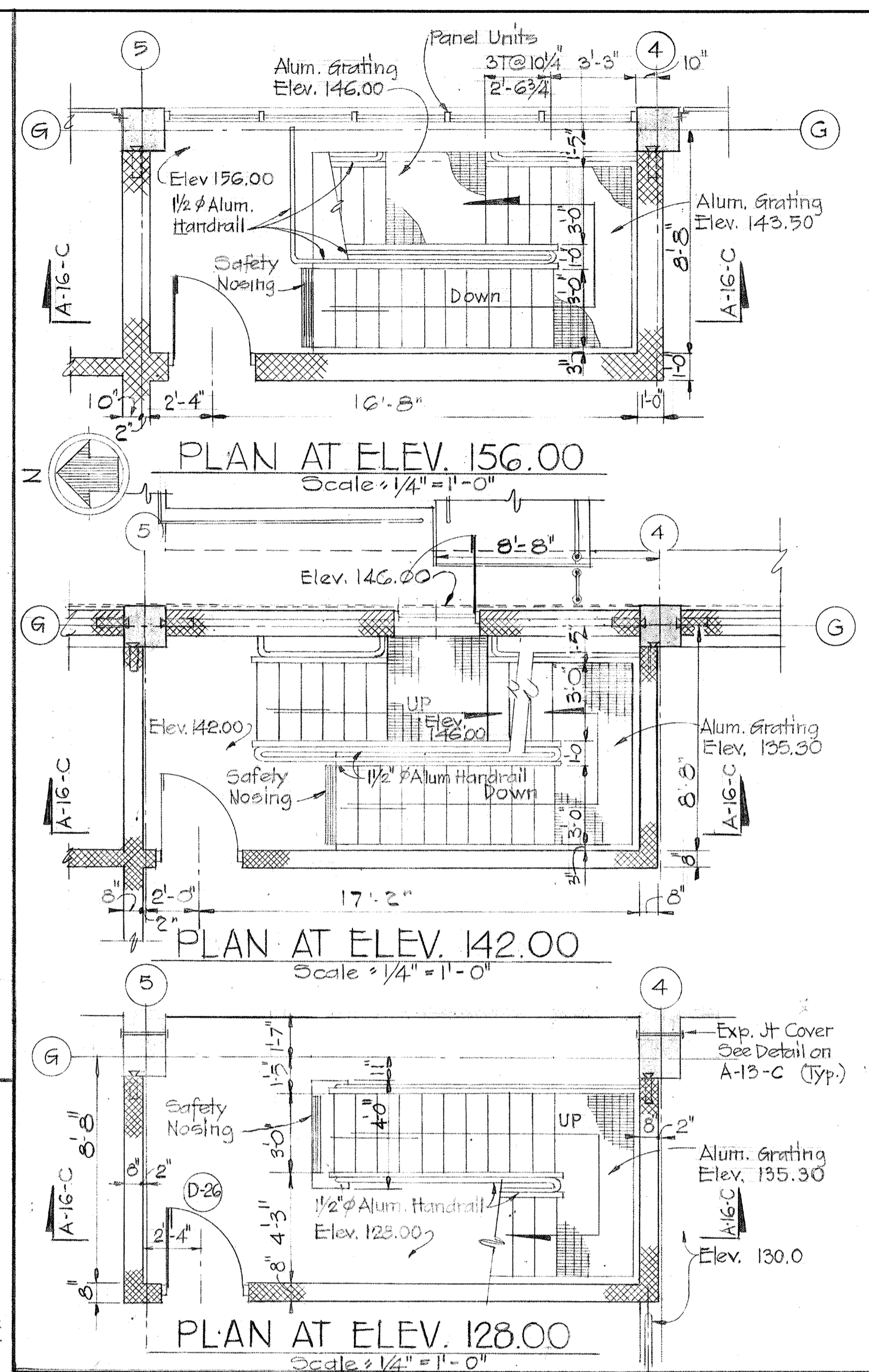
SCALE
AS
NOTED



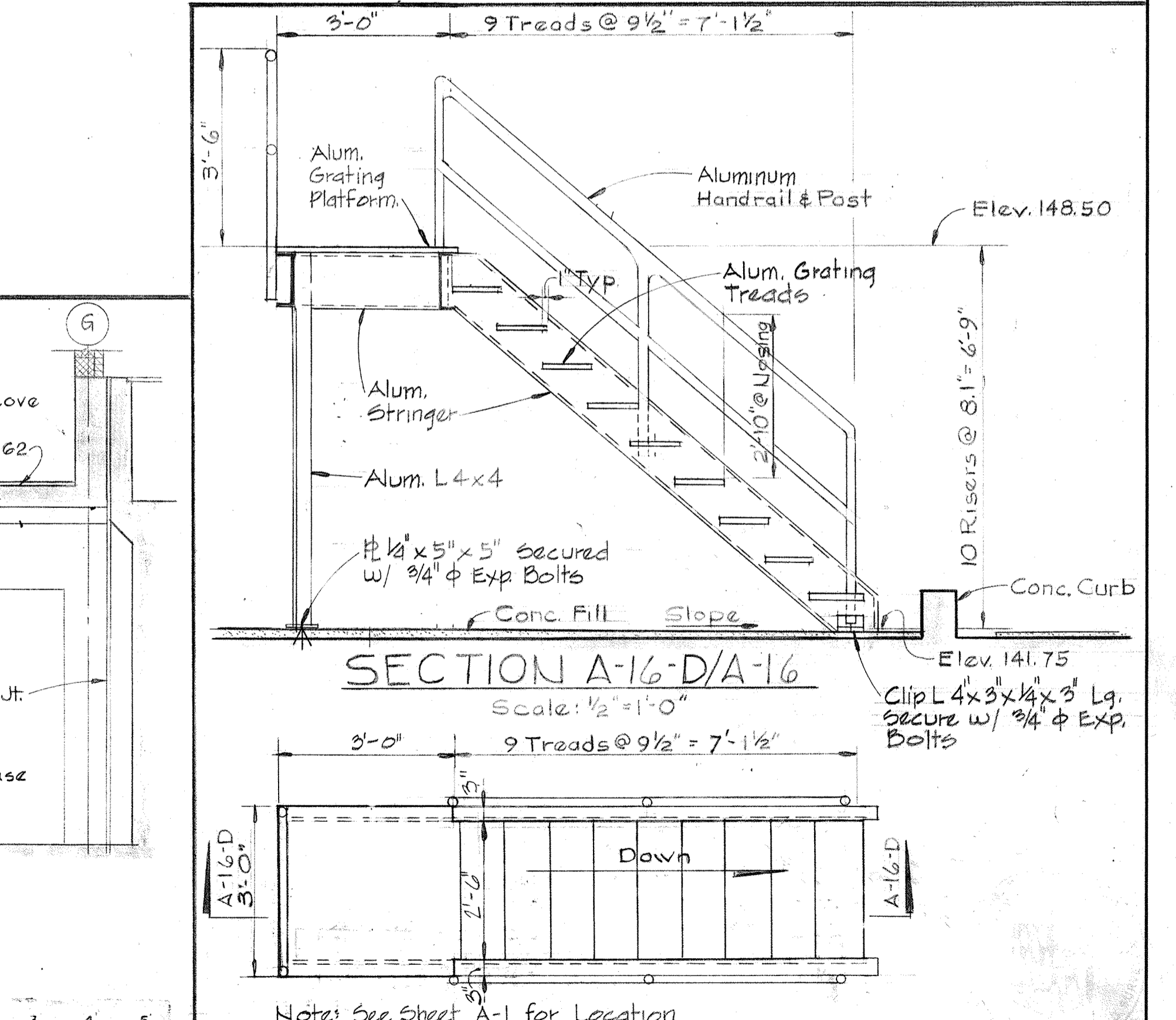
STAIR NO. 1 - FLOTATION BUILDING



STAIR NO. 3 - DEWATERING BLDG.



STAIR NO. 2 - DEWATERING BUILDING

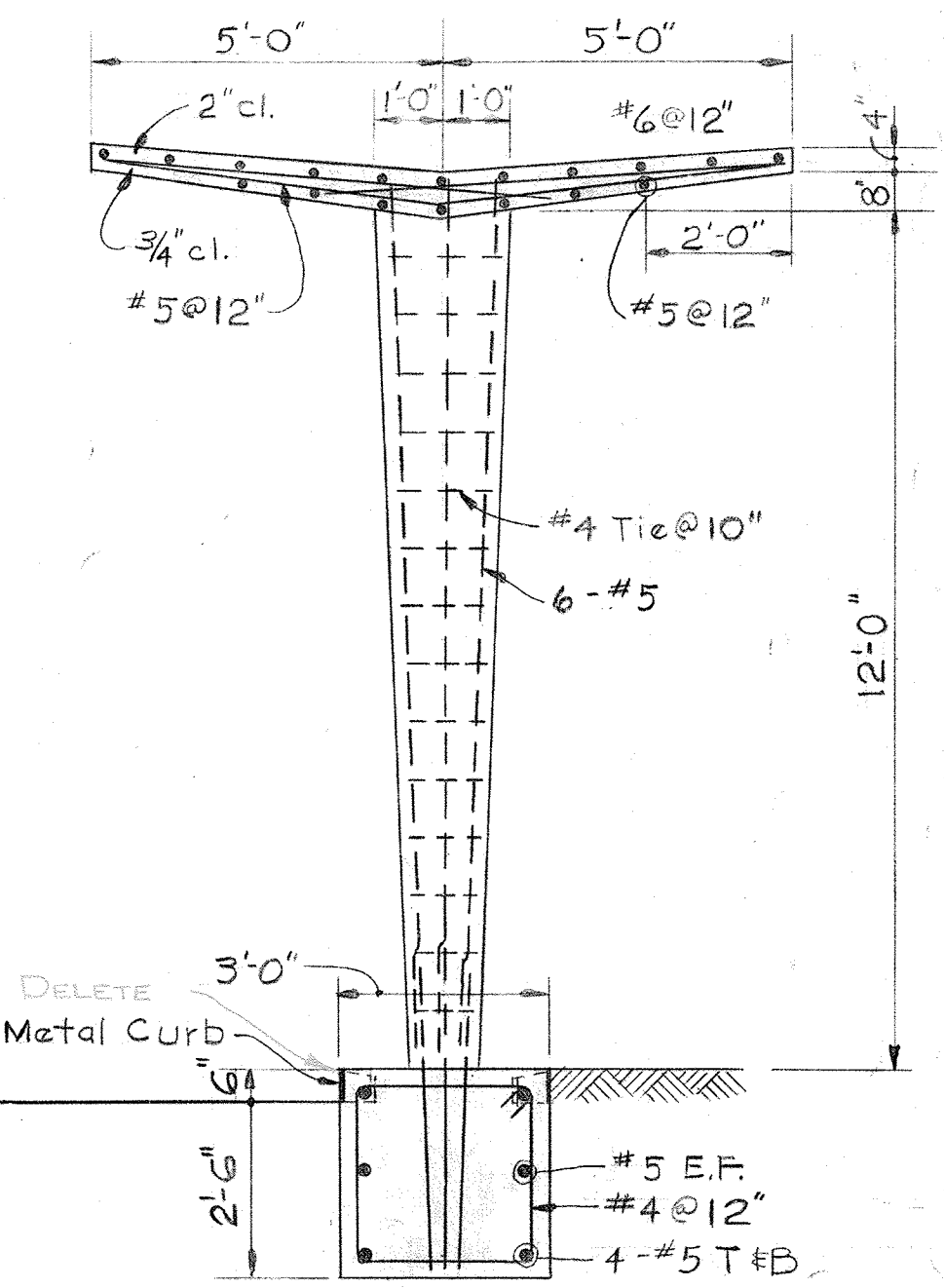
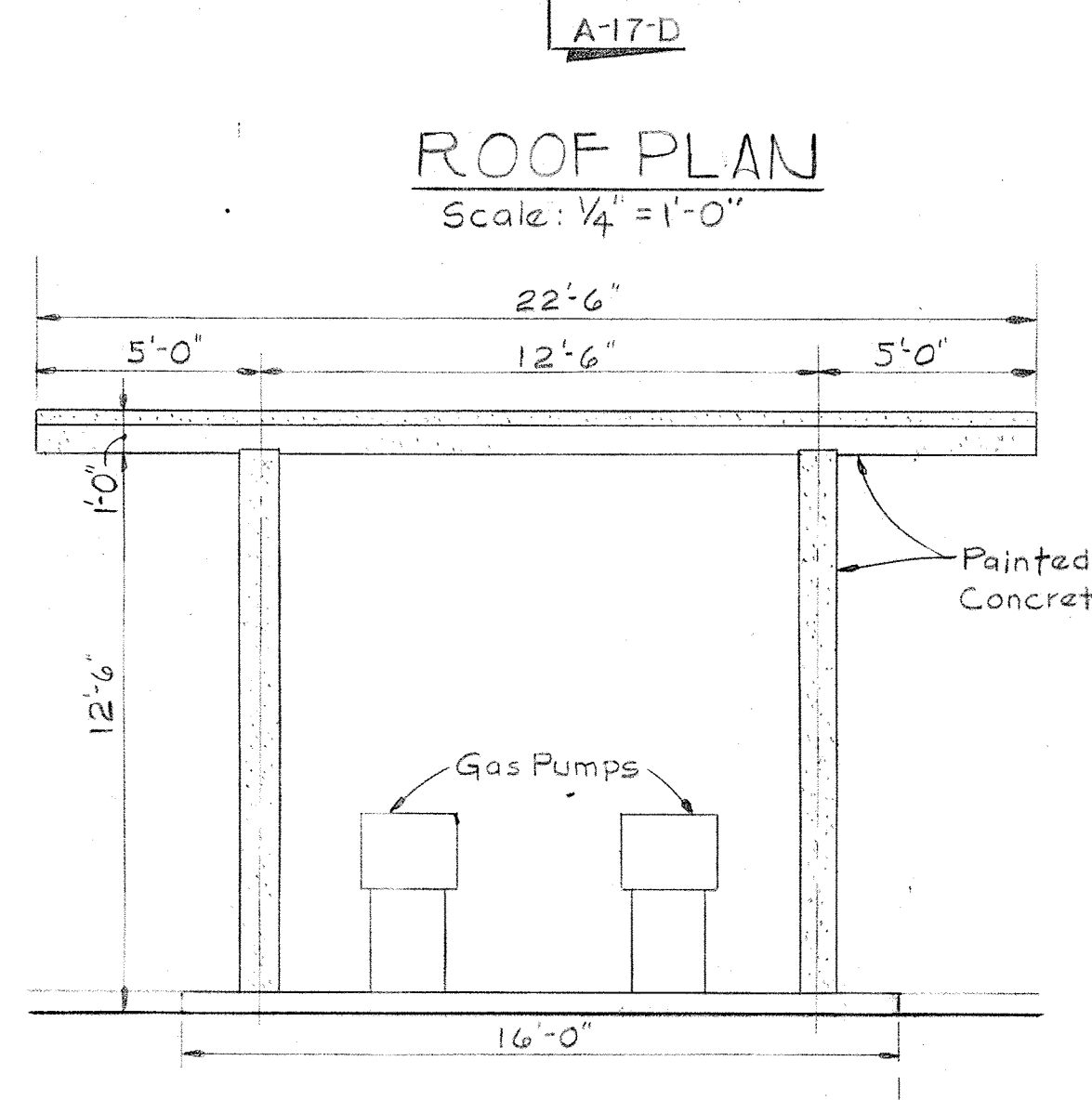
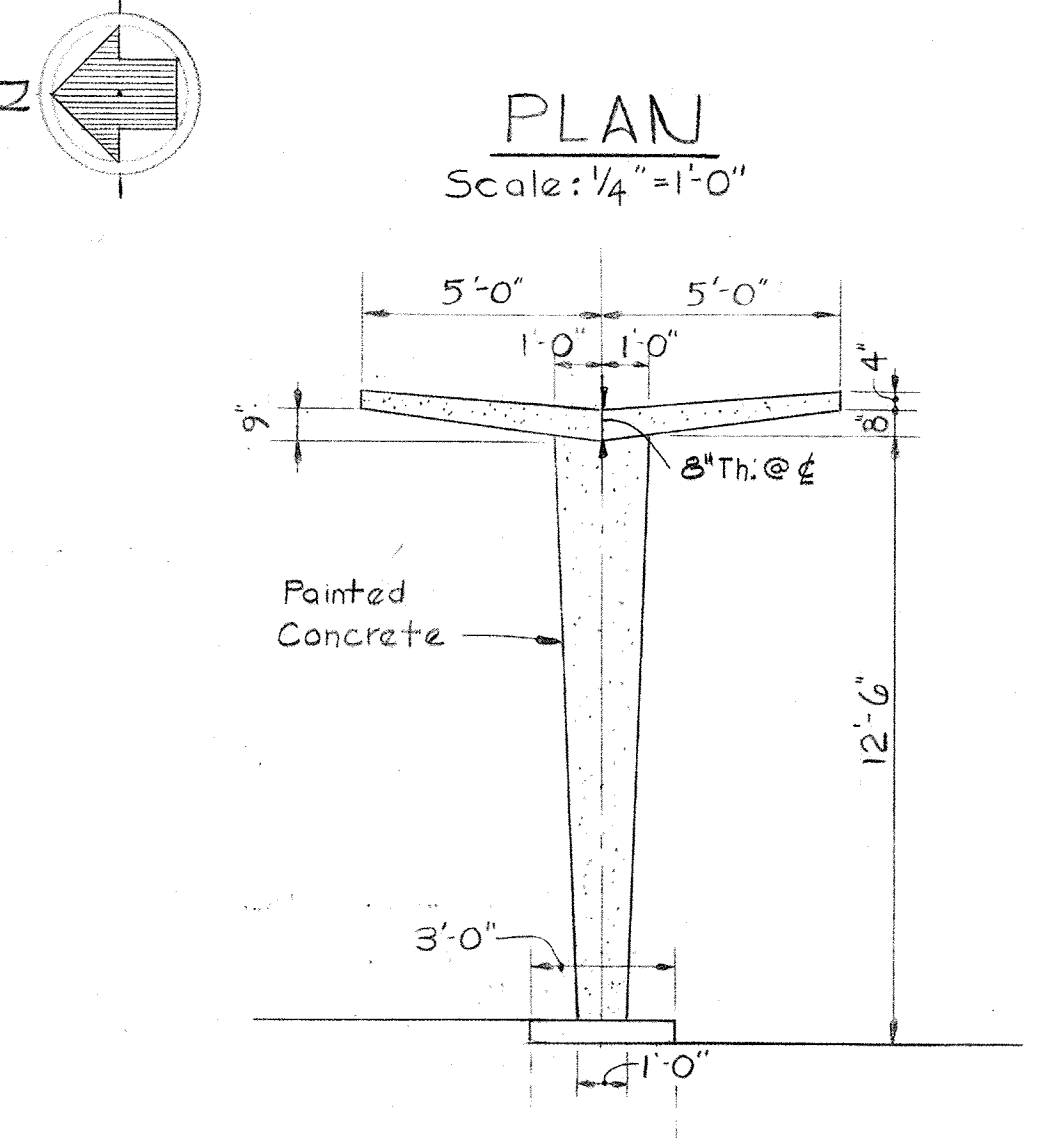
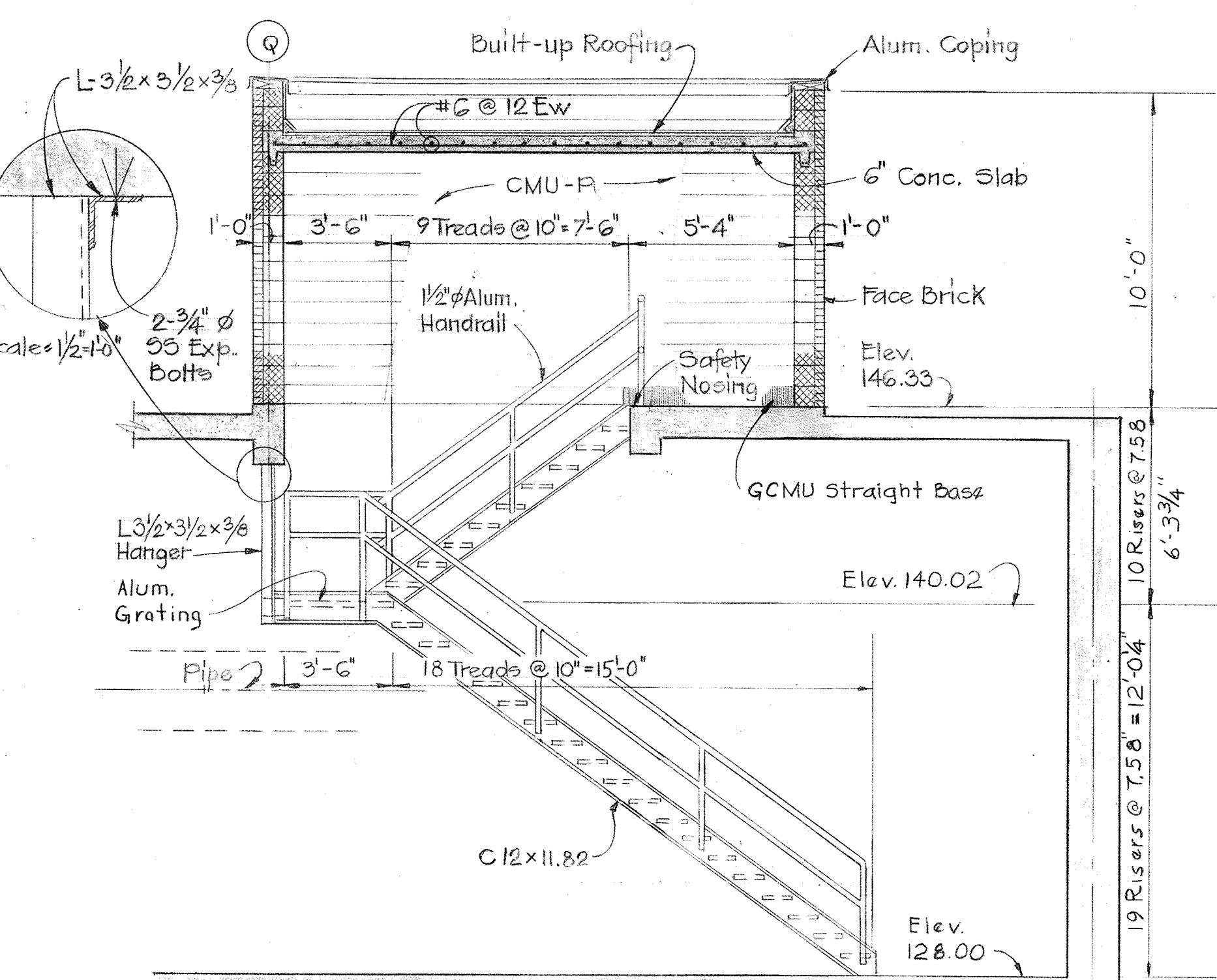
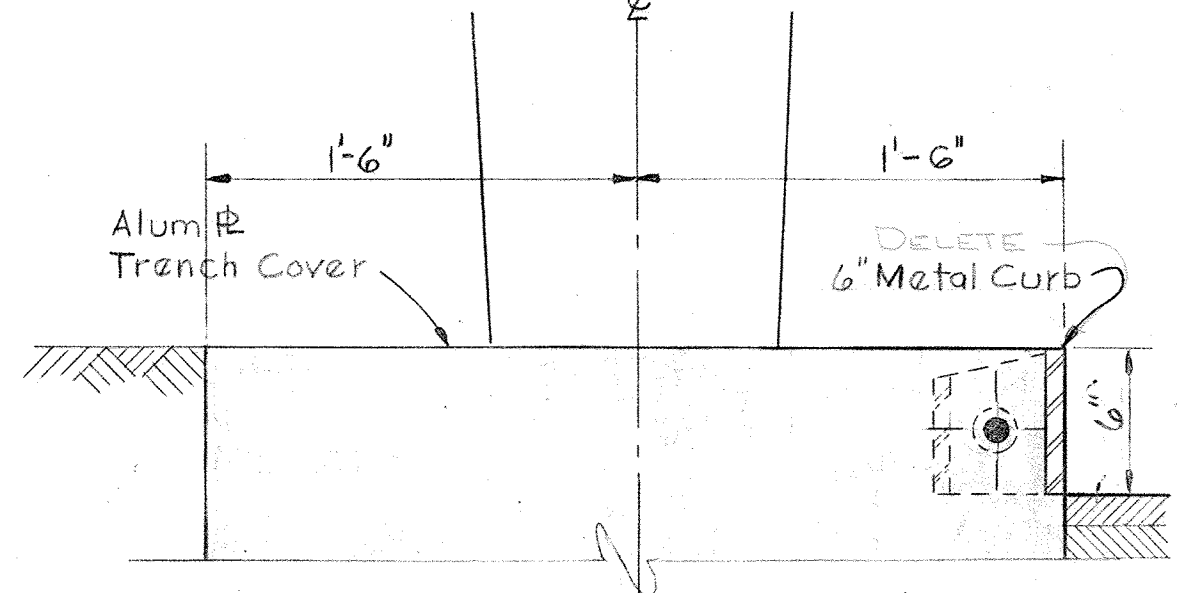
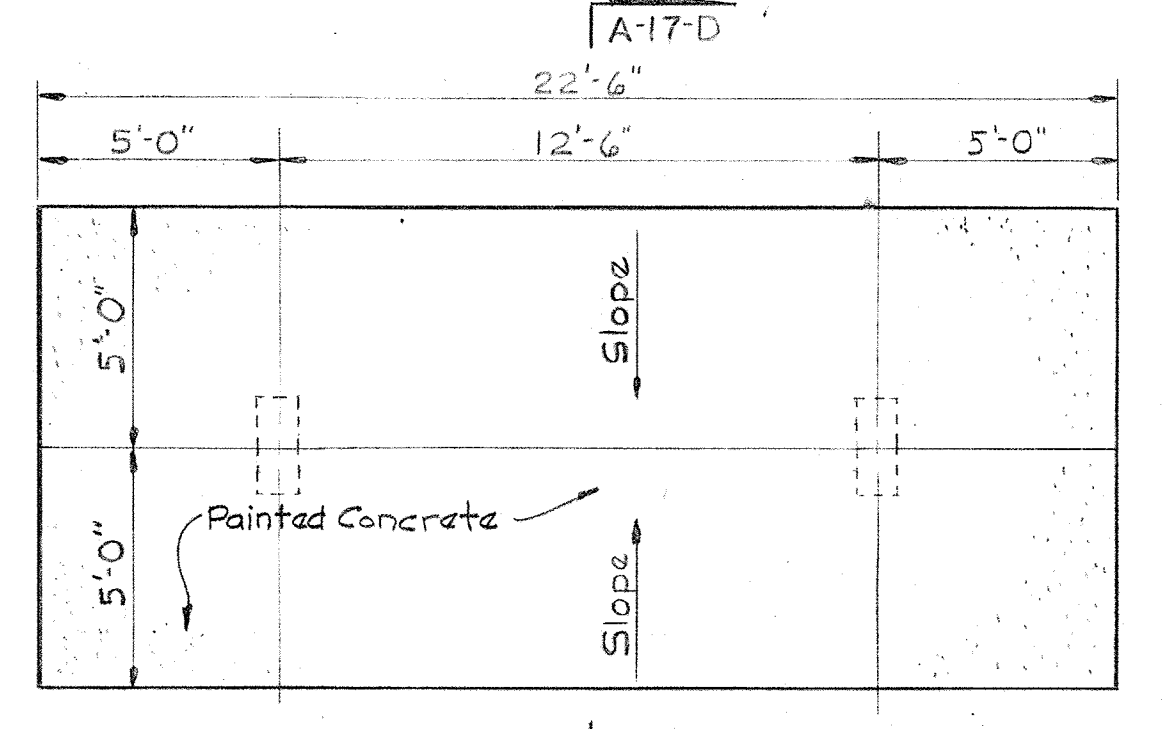
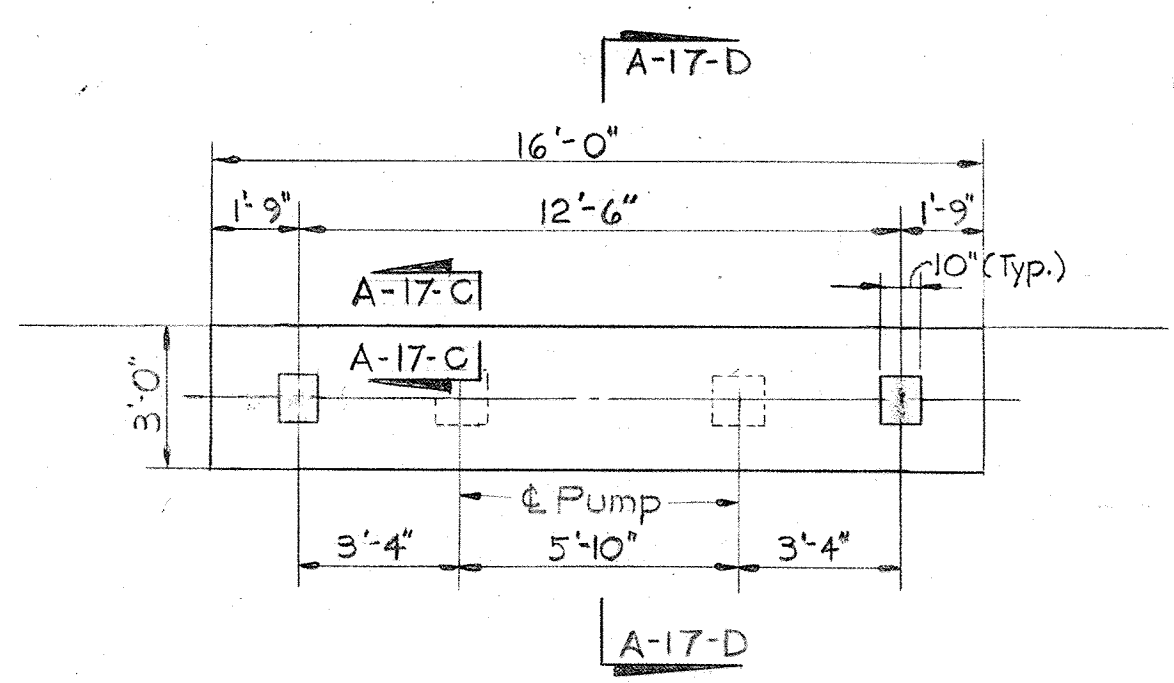
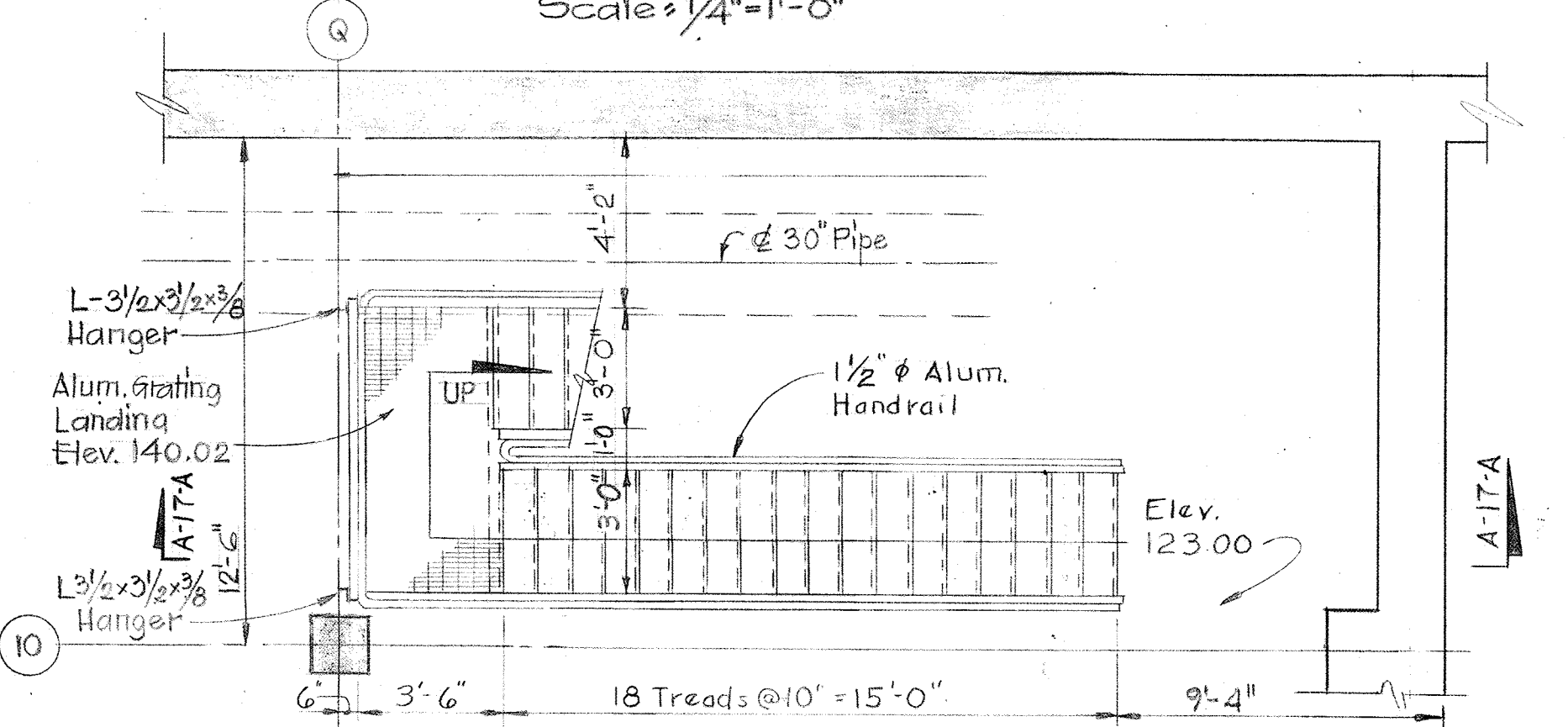
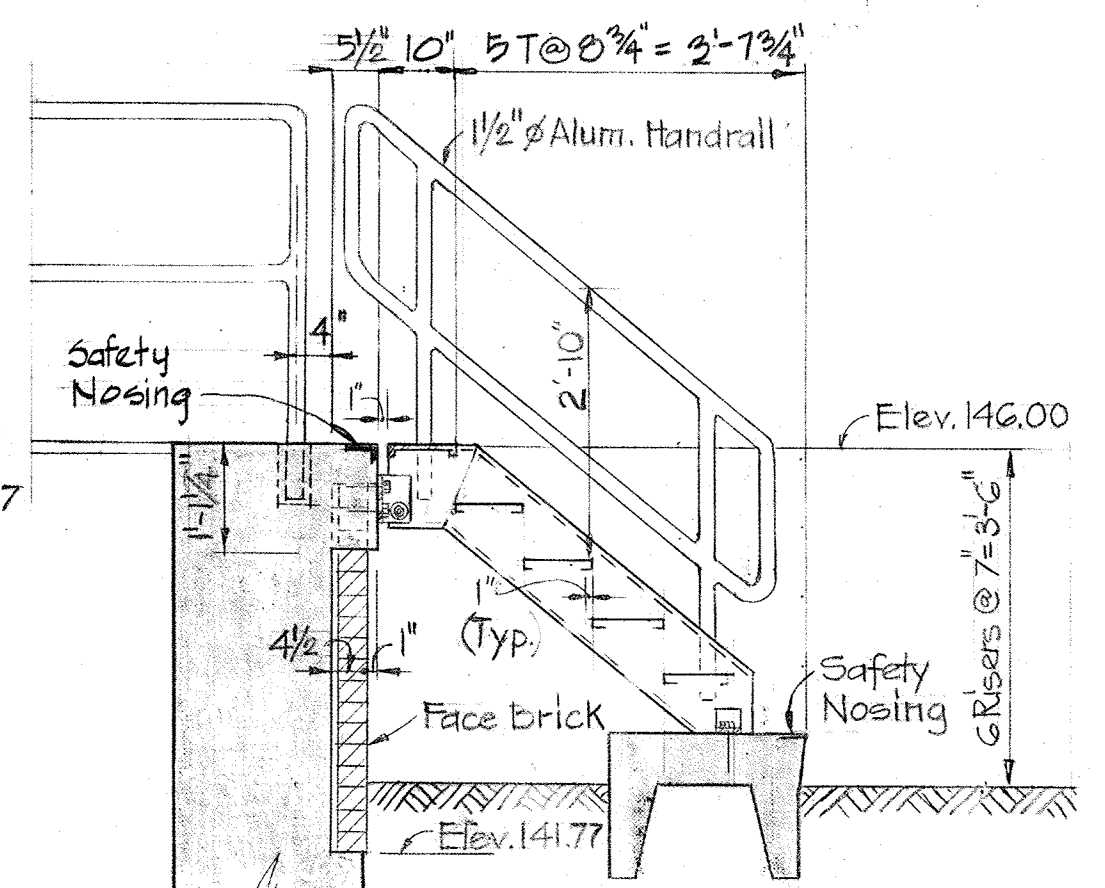
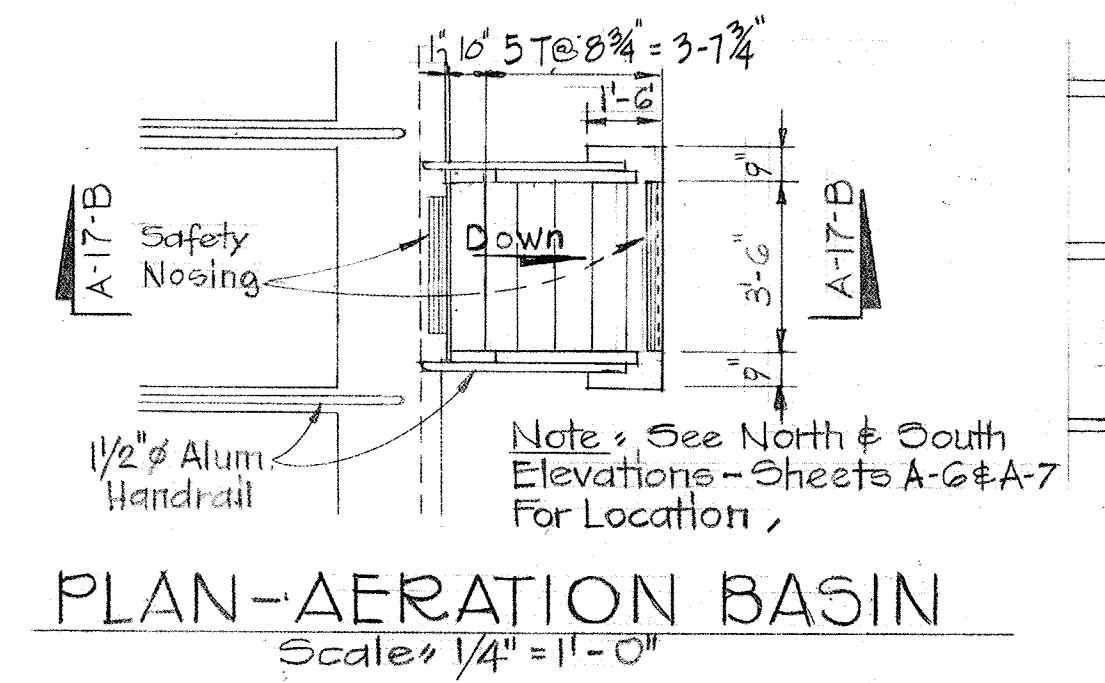
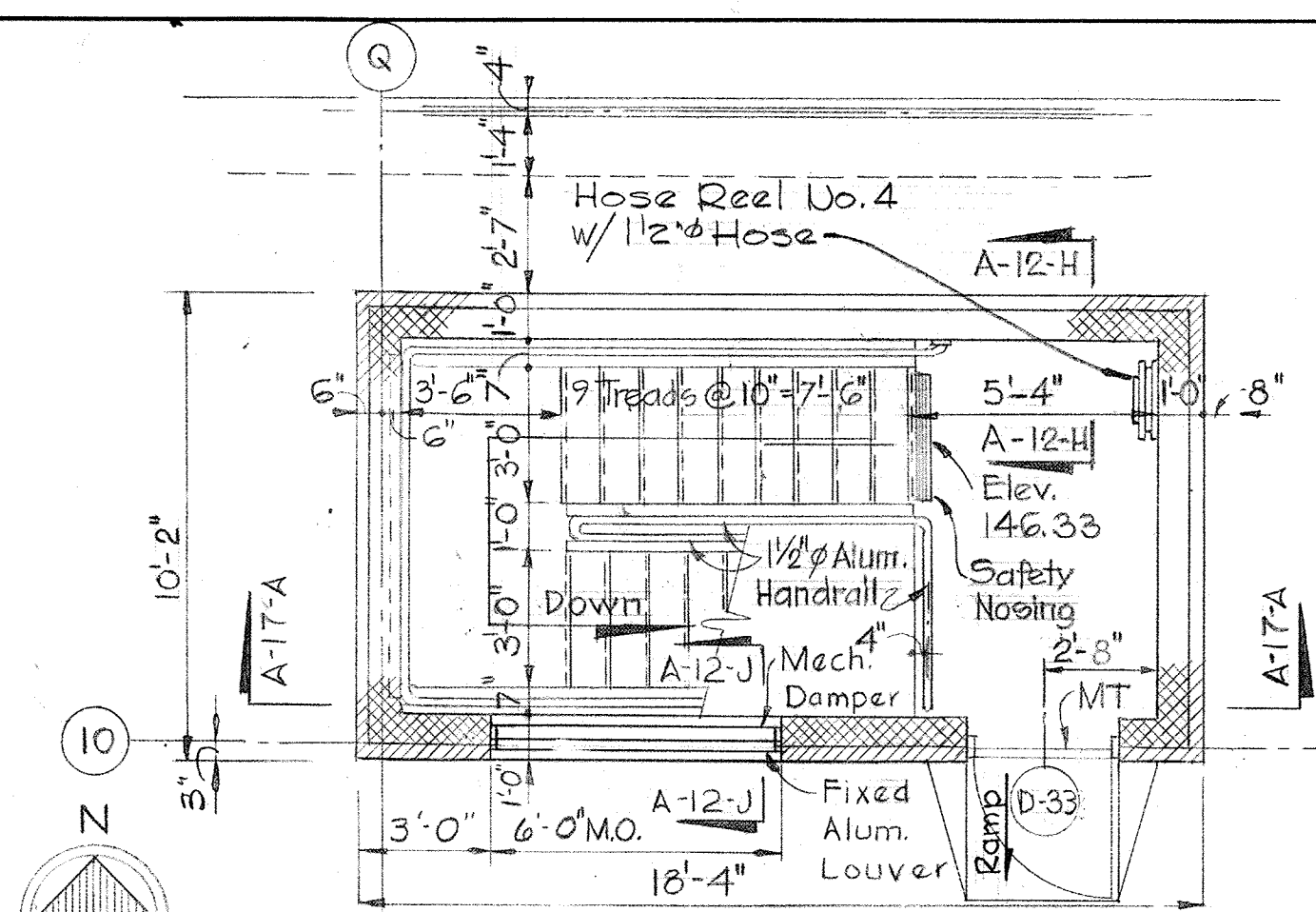


<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3/20/75 DATE</p>	<p>CONTRACT NO. 501-S JAMES A. FEDERLINE INC.</p>	<p>ARCHITECTURAL STAIR DETAILS</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 31 OF 128 SCALE AS NOTED</p>
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W.O. 6887-2

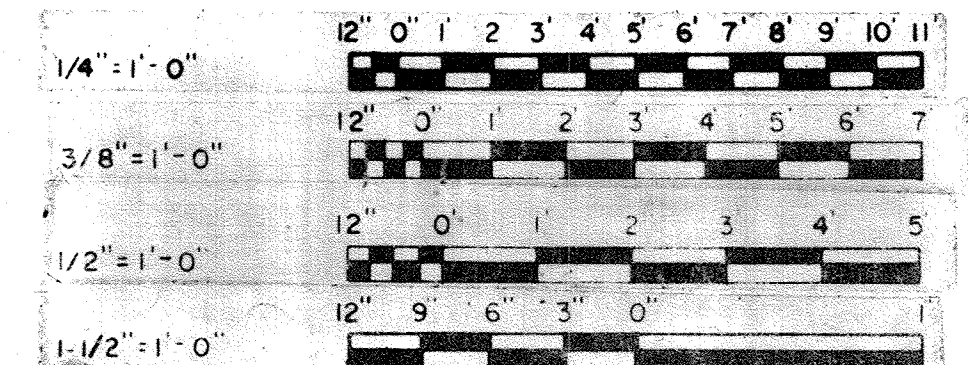
AS BUILT DRAWING

SHEET A-16



FUEL ISLAND CANOPY DETAILS

NOTE: See Sheet C-2 for Location.



WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3/20/15
DATE

JAMES A. FEDERLINE INC.
AS BUILT DRAWING
CONTRACT NO. 501-S

ARCHITECTURAL
STAIR DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 32 OF 128
SCALE AS NOTED

BRUNING 44510 10392

CONCRETE NOTES

- All concrete shall have a minimum compressive strength of 3,500 p.s.i. at 28 days.
- Reinforced concrete shall be detailed and constructed in accordance with current A.C.I. specification 318-71. Concrete has been designed by the alternate design method.
- All reinforcing steel shall conform to ASTM A615-72 Grade 40.
- Concrete cover for reinf. shall be as follows, unless otherwise noted on the drwgs:
 - Unformed concrete, bottom bars in footings and slabs on earth, rock, gravel or crushed stone 3".
 - Beams, columns, walls, slabs, piers exposed to ground, weather or process liquid after the removal of forms, 2".
 - Beams, columns, walls, piers not exposed to weather 1 1/2".
 - Structural slabs not exposed to ground, weather, process liquid 3/4".
- Exposed concrete edges shall be chamfered 3/8" unless noted otherwise.
- Slabs & walls shall be poured between indicated joints allowing a minimum period of 3 days to elapse between adjacent pours.
- Construction, expansion, and contraction joints shall be as shown on the drawings and no additional joints will be used, nor any omitted except by written authorization of the engineer.
- Reinf. bar laps shall be as follows, unless shown otherwise on the drwgs:
 - Sizes #3 to #5 - 24 bar diameters
 - Sizes #6 to #8 - 32 bar diameters
 - Sizes #9 to #11 - 44 bar diameters
- Anchor bolts and equipment pedestals shall be sized & located as required to suit equipment furnished by manufacturer.
- See civil, architectural, mechanical, electrical drawings for all embedded items, such as pipe sleeves, anchors, electrical conduit openings, chases etc. which interfere with concrete construction.
- Reinforcing bar laps for all horizontal bars in walls shall be increased 40% over those laps indicated in note 8.

STRUCTURAL STEEL NOTES

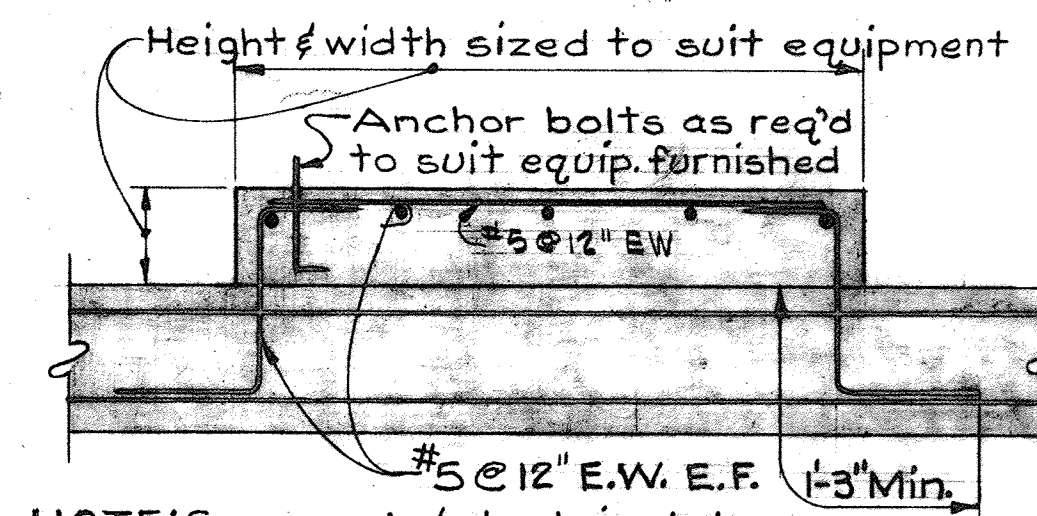
- All structural steel shall conform to ASTM A-36-70a.
- All shop connections shall be welded with AWS A5.5 class E70 series electrodes.
- All field connections shall be high strength bolted using ASTM-A325 bolts except where otherwise shown or noted on drawings.
- All structural steel is designed by elastic analysis and shall be fabricated in accordance with current A.I.S.C. specs for buildings.
- All structural steel shall be given one shop coat of paint.
- Anchor bolts to be stainless steel unless otherwise noted on drawings.

STRUCTURAL ALUMINUM NOTES

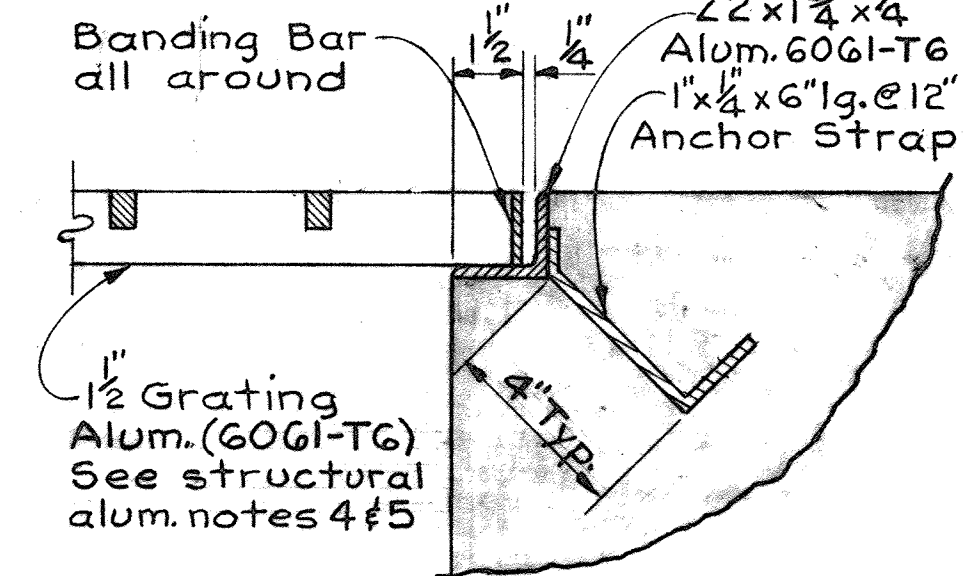
- All aluminum in contact with concrete shall, before erection be heavily coated as specified.
- All structural aluminum shall be alloy 6061-T6, except aluminum handrails and posts which shall be alloy 6063-T6.
- All structural aluminum is designed and shall be fabricated in accordance with the current specifications of the aluminum association.
- All grating sections shall be capable of supporting a live load of 150 P.S.F. with a maximum deflection of 1/4" at 100 P.S.F. Bearing bars shall be a minimum of 1 1/2" deep x 3/8" wide unless noted otherwise on the drawings.
- Grating to be mechanically fastened to supports as recommended by the manufacturer.

FOUNDATION NOTES

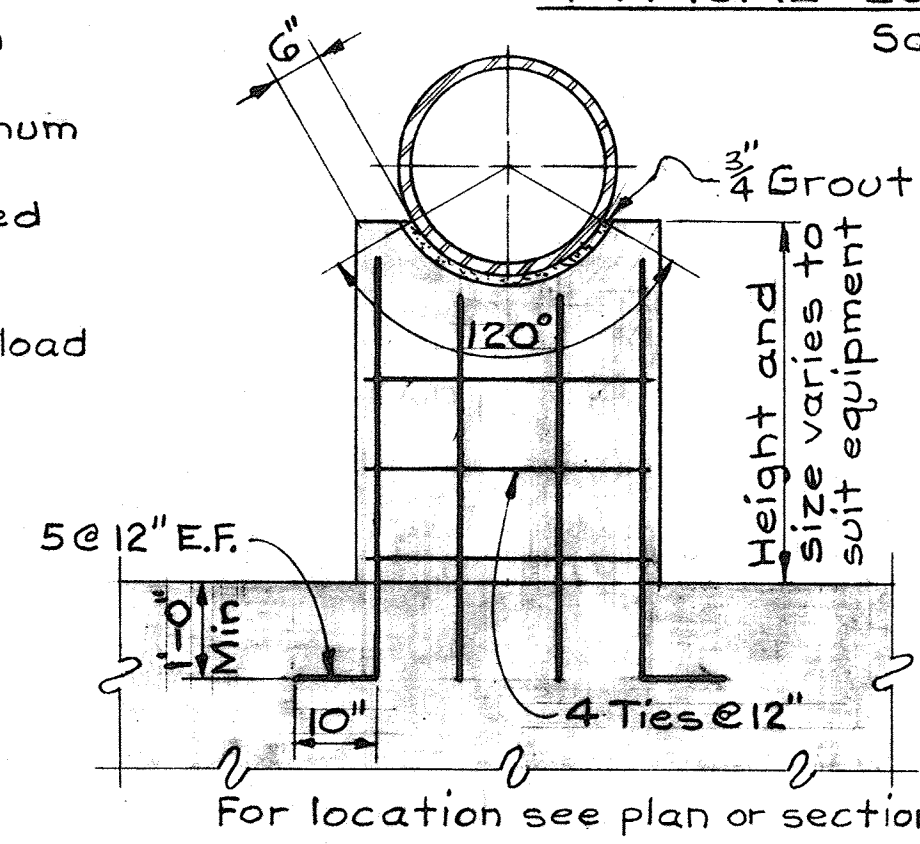
- All backfill shall be compacted to 90% of max. density in maximum increments of 6", except top 12" shall be compacted to 95% of max. density.
- Maximum density and optimum moisture shall be in accordance with AASHTO test designation "T180-70 method D".
- All foundations have been designed for a maximum allowable soil bearing pressure of 3,000 p.s.f.



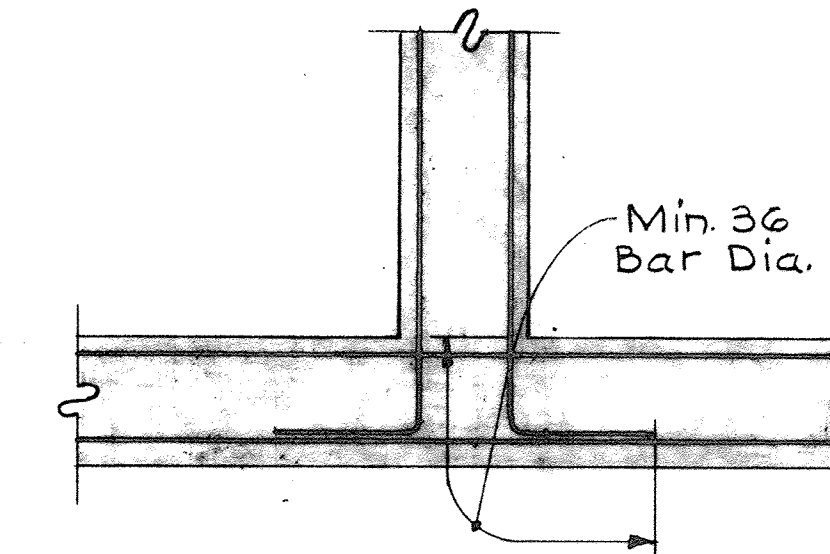
NOTE: See mech. & electrical dwg. for exact size & location of equip.
TYPICAL EQUIPMENT SUPPORT
Scale: 3/4"=1'-0"



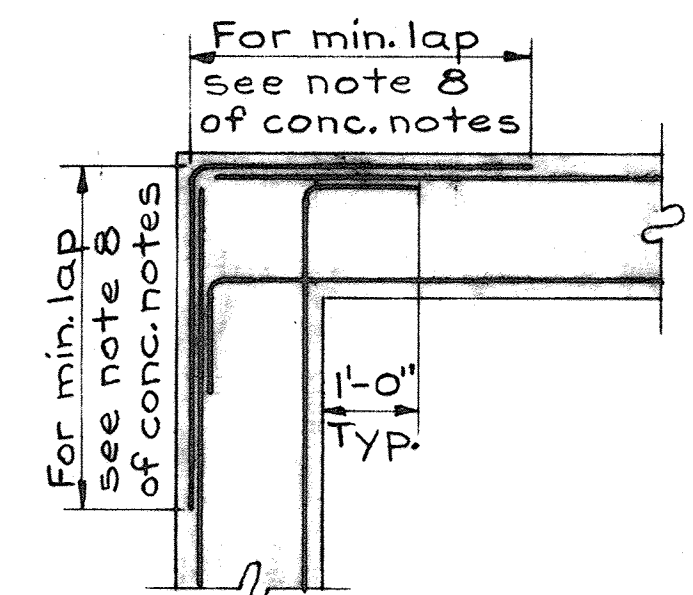
TYP. GRATING BEARING DETAIL
Scale: 3/8"=1'-0"



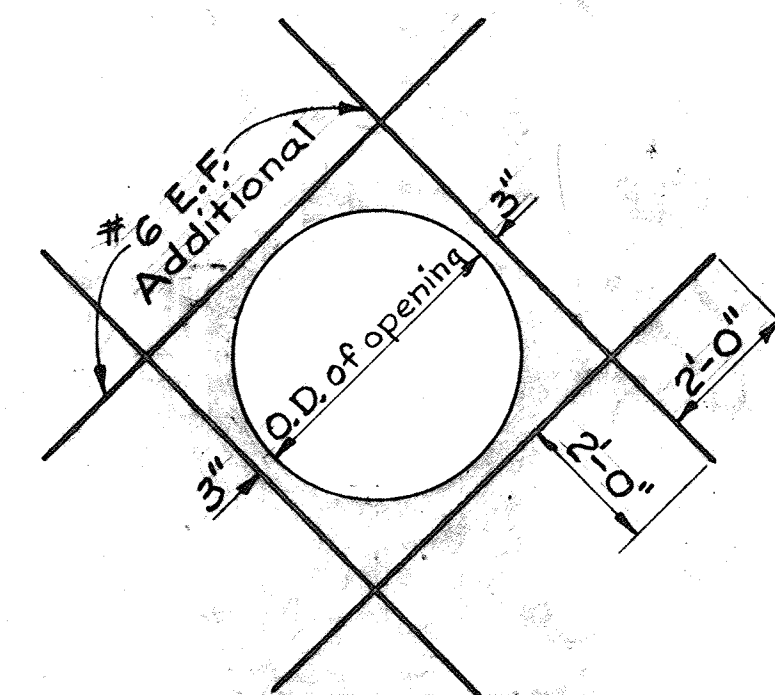
TYP. PIPE SUPPORT
Scale: 1/2"=1'-0"



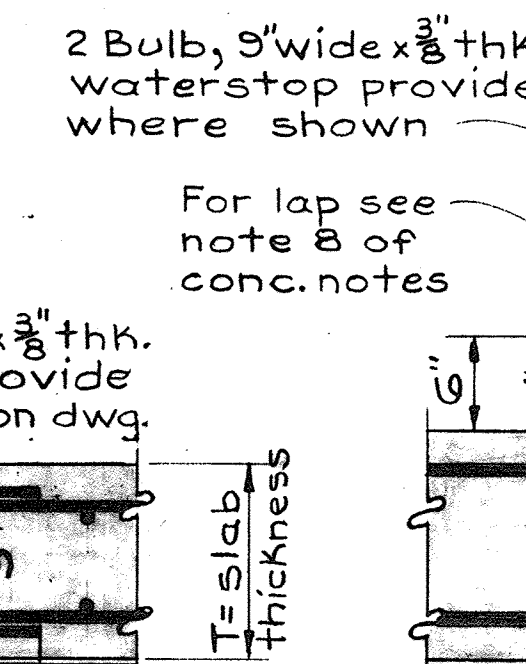
REINFORCING DETAIL AT WALL INTERSECTION
Scale: 1/2"=1'-0"



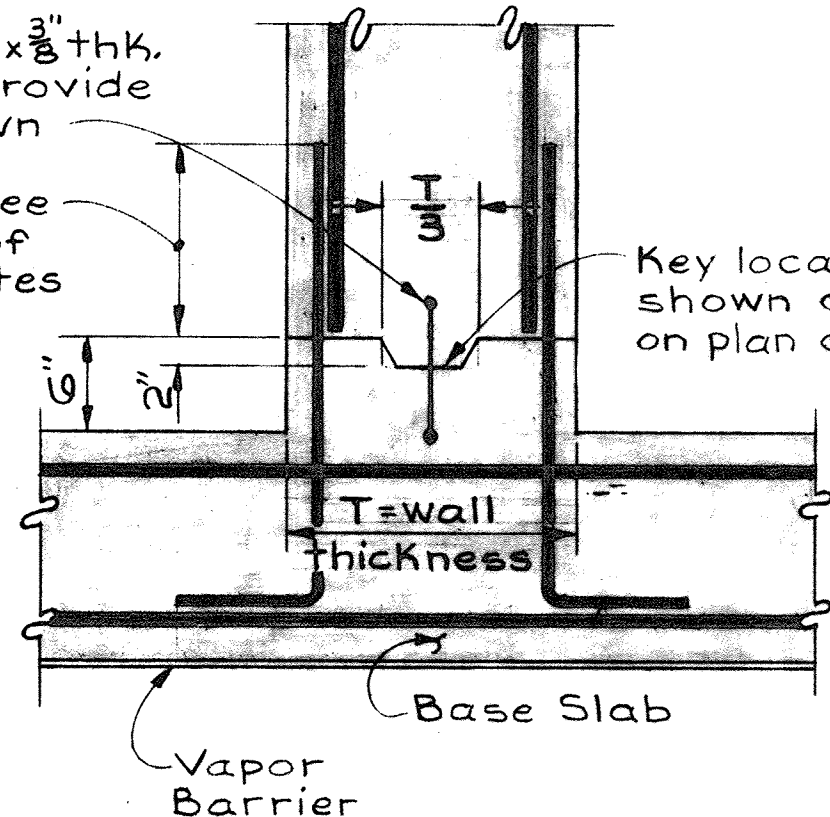
REINFORCING DETAIL AT WALL CORNER
Scale: 1/2"=1'-0"



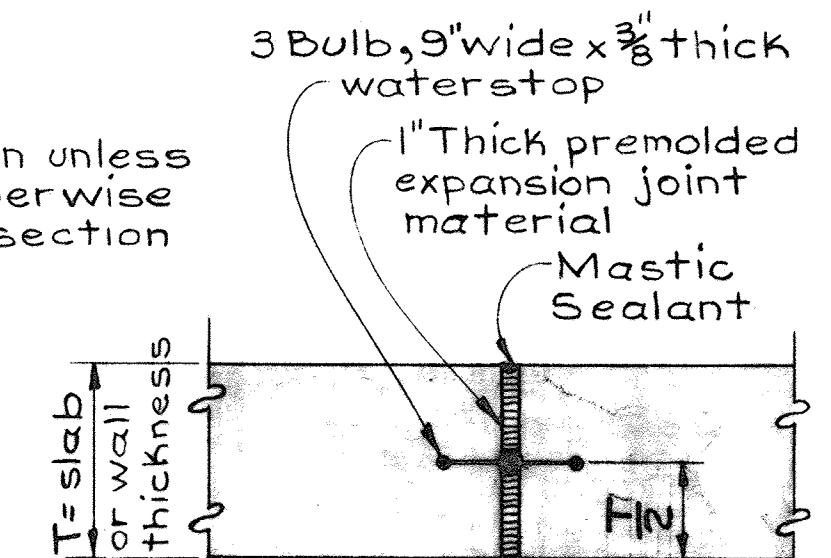
REINFORCING DETAIL IN SLAB OR WALL FOR PIPE OR MANHOLE
Scale: 3/8"=1'-0"



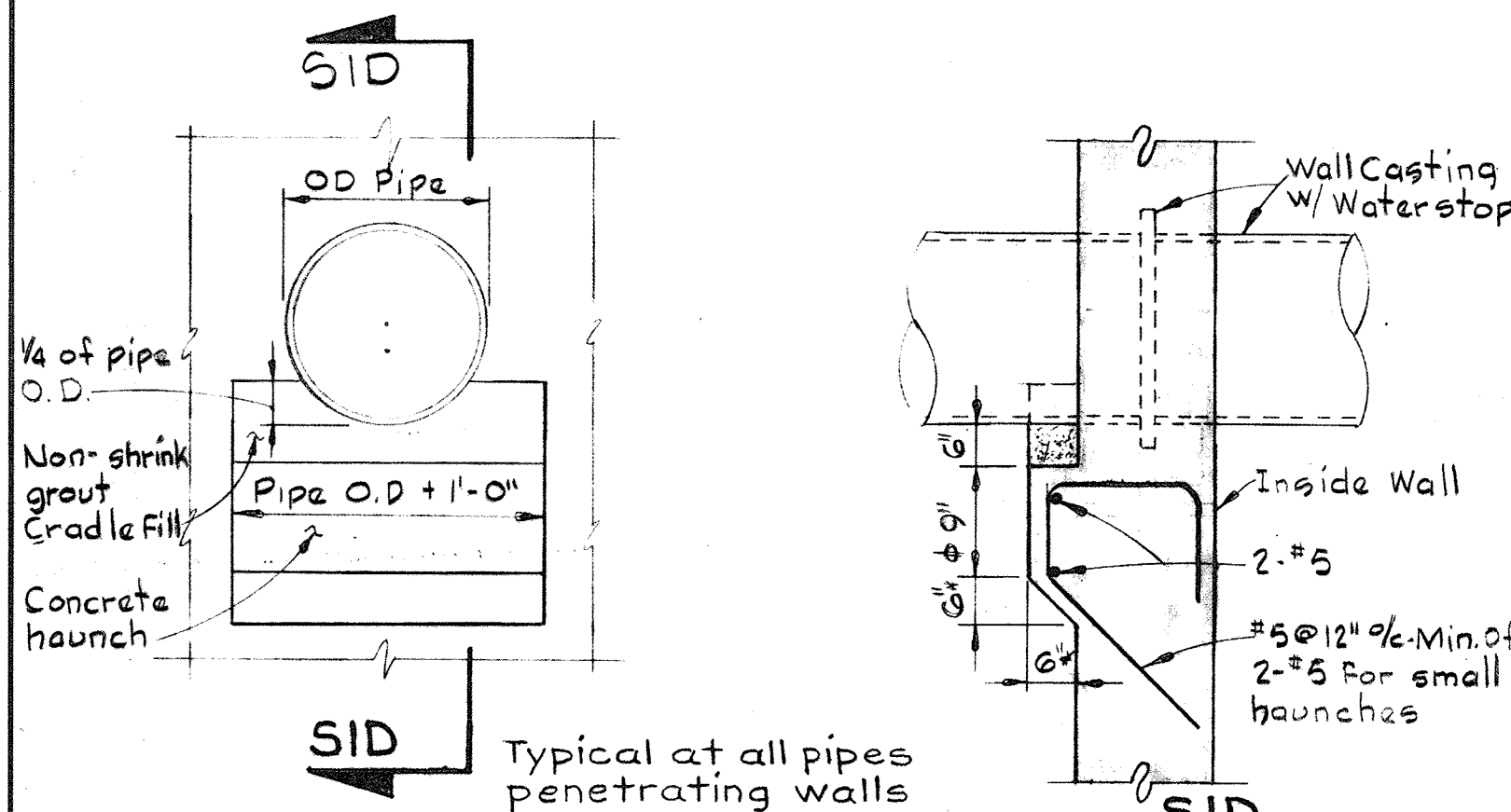
CONSTRUCTION JOINT IN SLABS ON GRADE
Scale: None



HORIZONTAL CONSTRUCTION JOINT IN WALLS & BASE SLAB
Scale: None



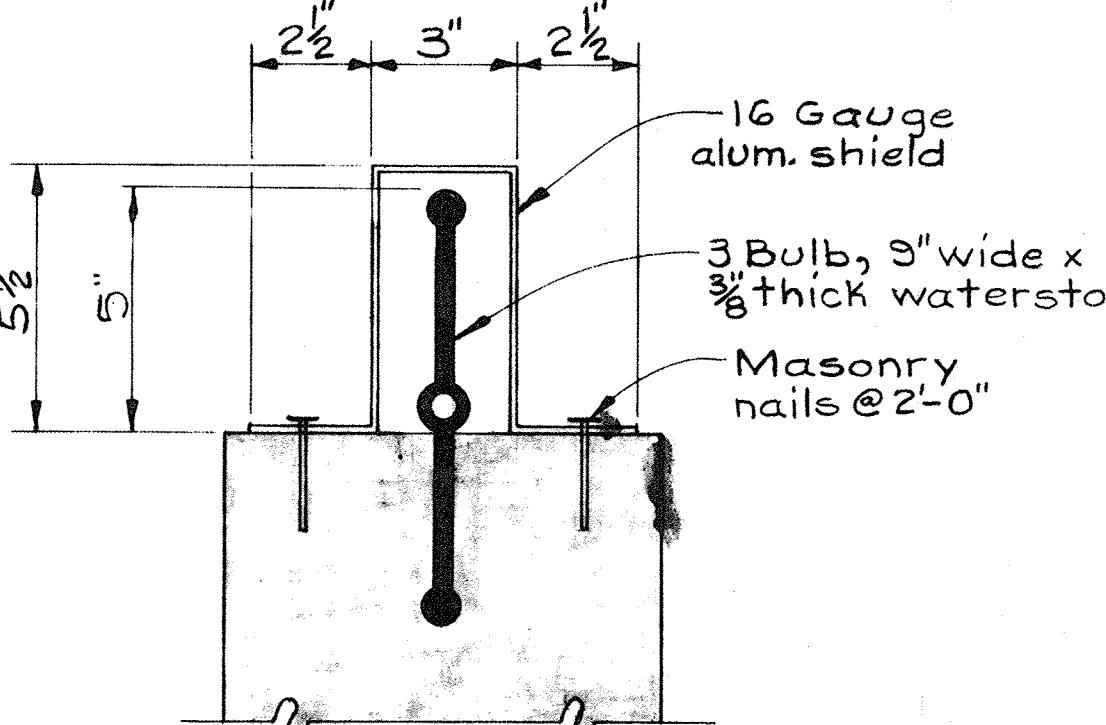
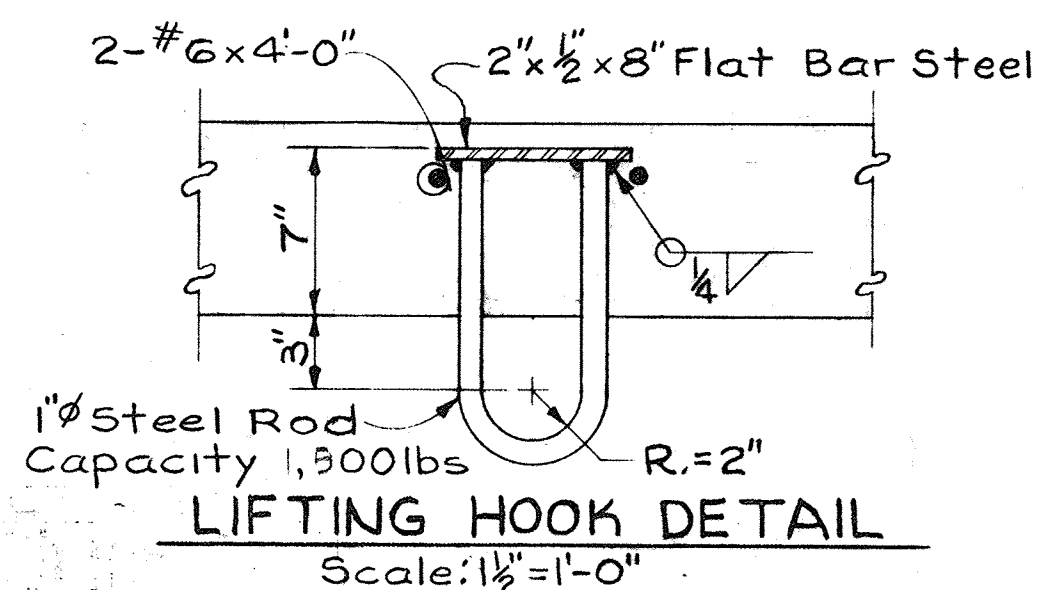
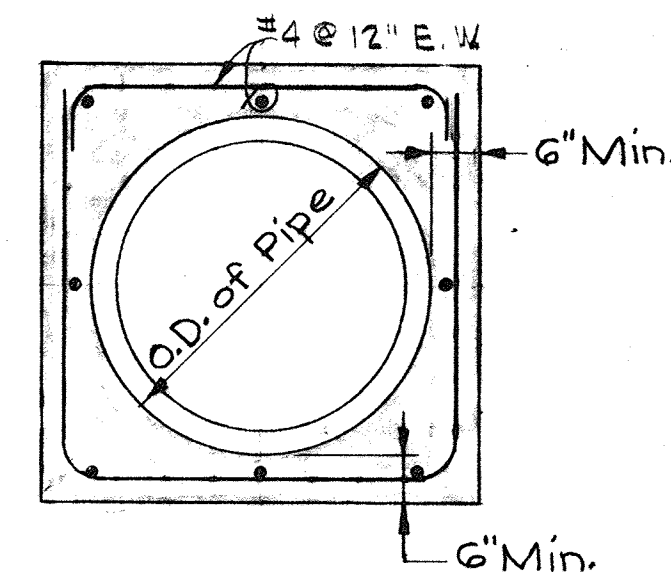
TYP. SLAB & WALL EXPANSION JOINT
Scale: None



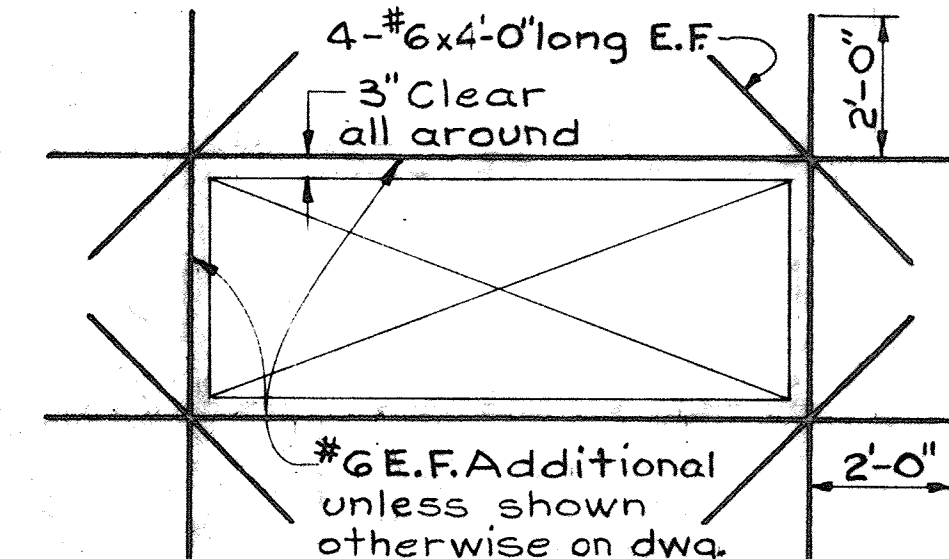
TYPICAL PIPE HAUNCH DETAIL
Scale: 1/2"=1'-0"

- NOTES:
- Where invert of pipe is 2'-0" or less above footing, omit haunch and build cradle on extension of footing.
 - Concrete haunch, as shown, shall apply for 12" and smaller pipes. For pipes larger increase dimensions marked * to 9" & to 12"
 - All exposed steel parts shall be bituminous coated to a dry film thickness of 12 mills.

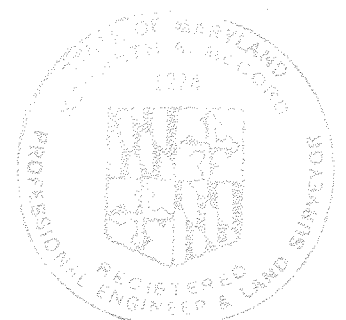
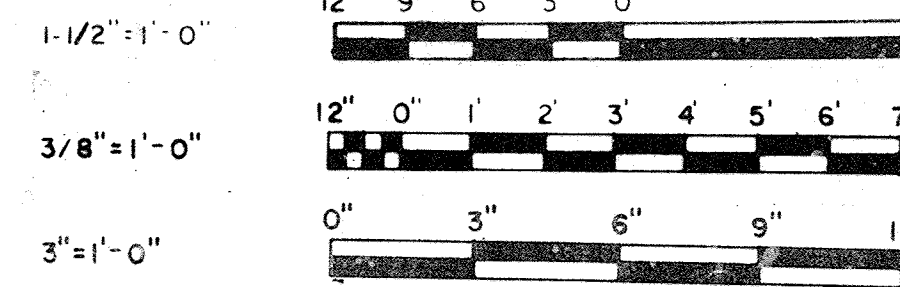
TYPICAL CONCRETE ENCASEMENT AT PIPE
Scale: None



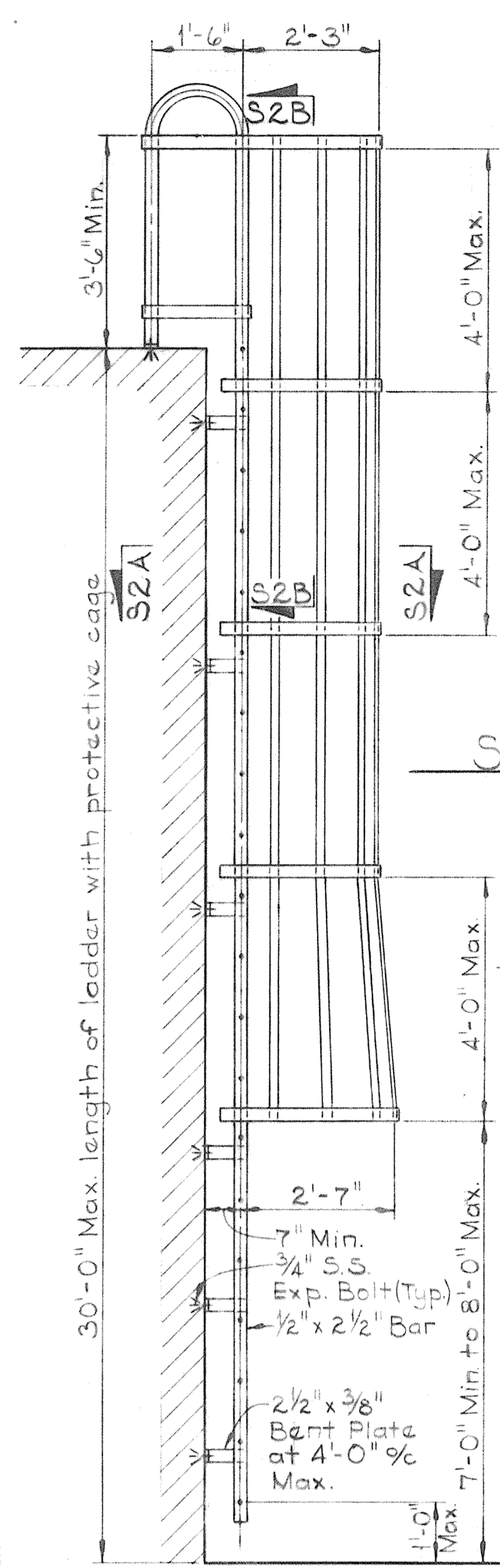
NOTE: Alum. flashing shall be used to 2'-0" below grade where the waterstop is exposed for possible future extension.
TYP. DETAIL OF FLASHING FOR WATERSTOP
Scale: 3"=1'-0"



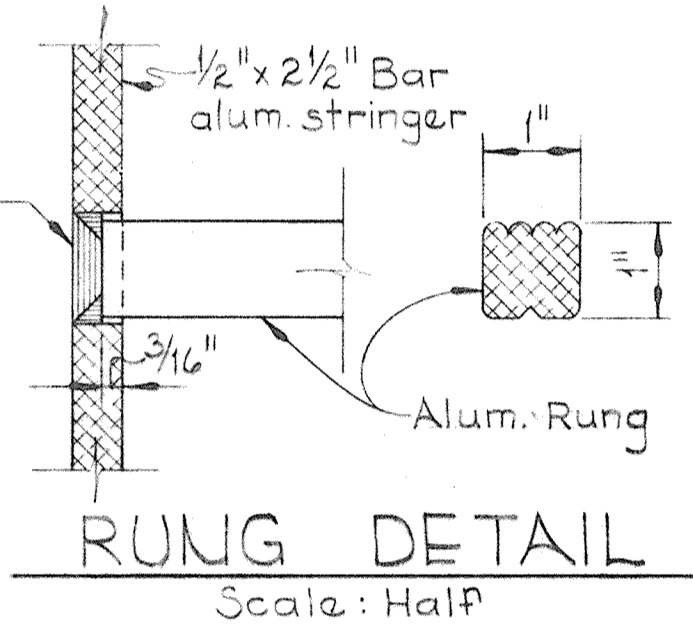
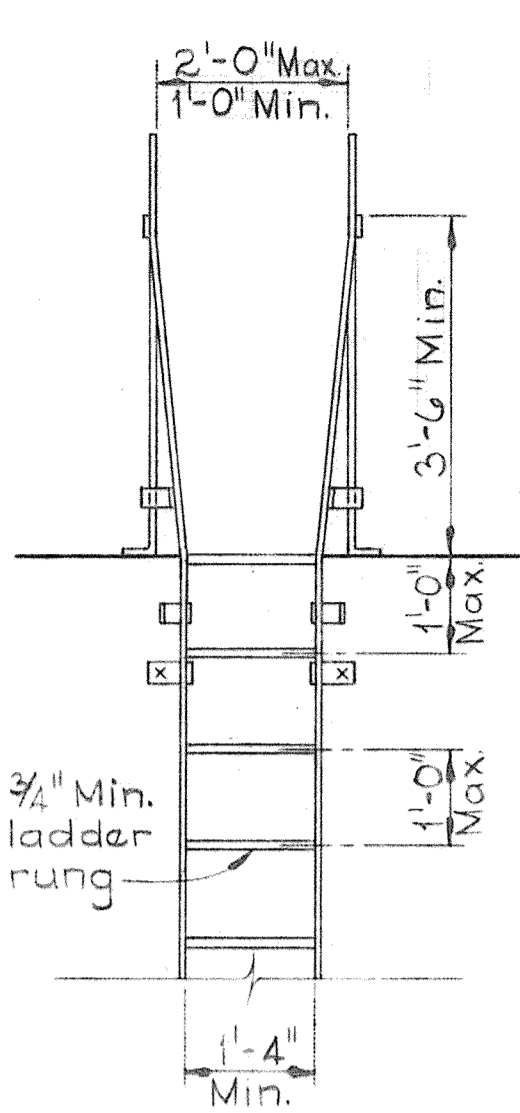
REINFORCING AT OPENINGS IN WALLS OR SLABS
Scale: 3/8"=1'-0"



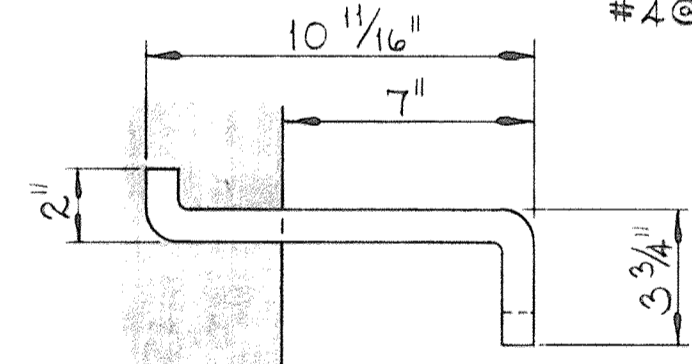
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3/20/75 DATE	CONTRACT NO. 501-S	STRUCTURAL NOTES & TYPICAL DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 34 OF 128	SCALE AS SHOWN
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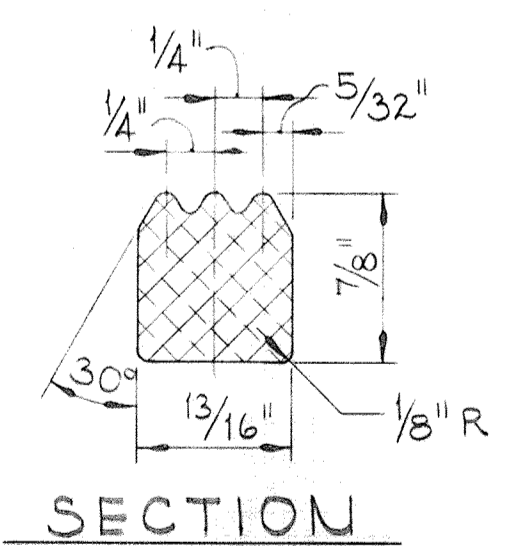
SECTION S2B/S2
Scale: 1/2" = 1'-0"



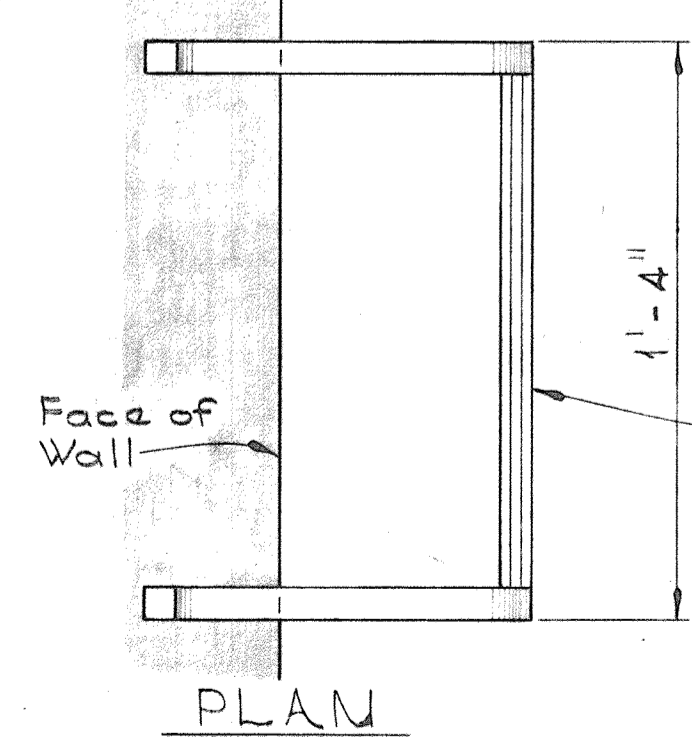
RUNG DETAIL
Scale: Half



ELEVATION



SECTION

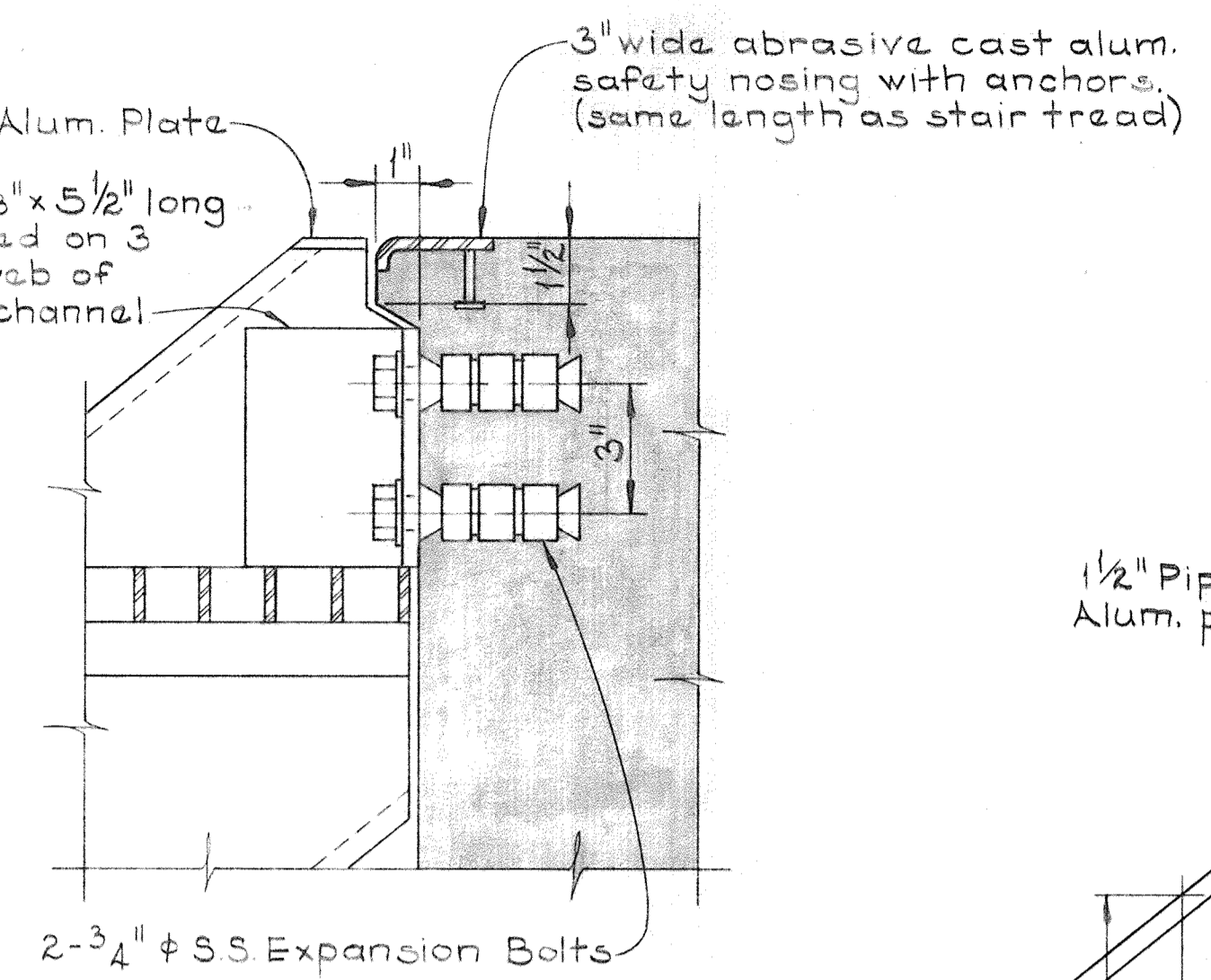


PLAN

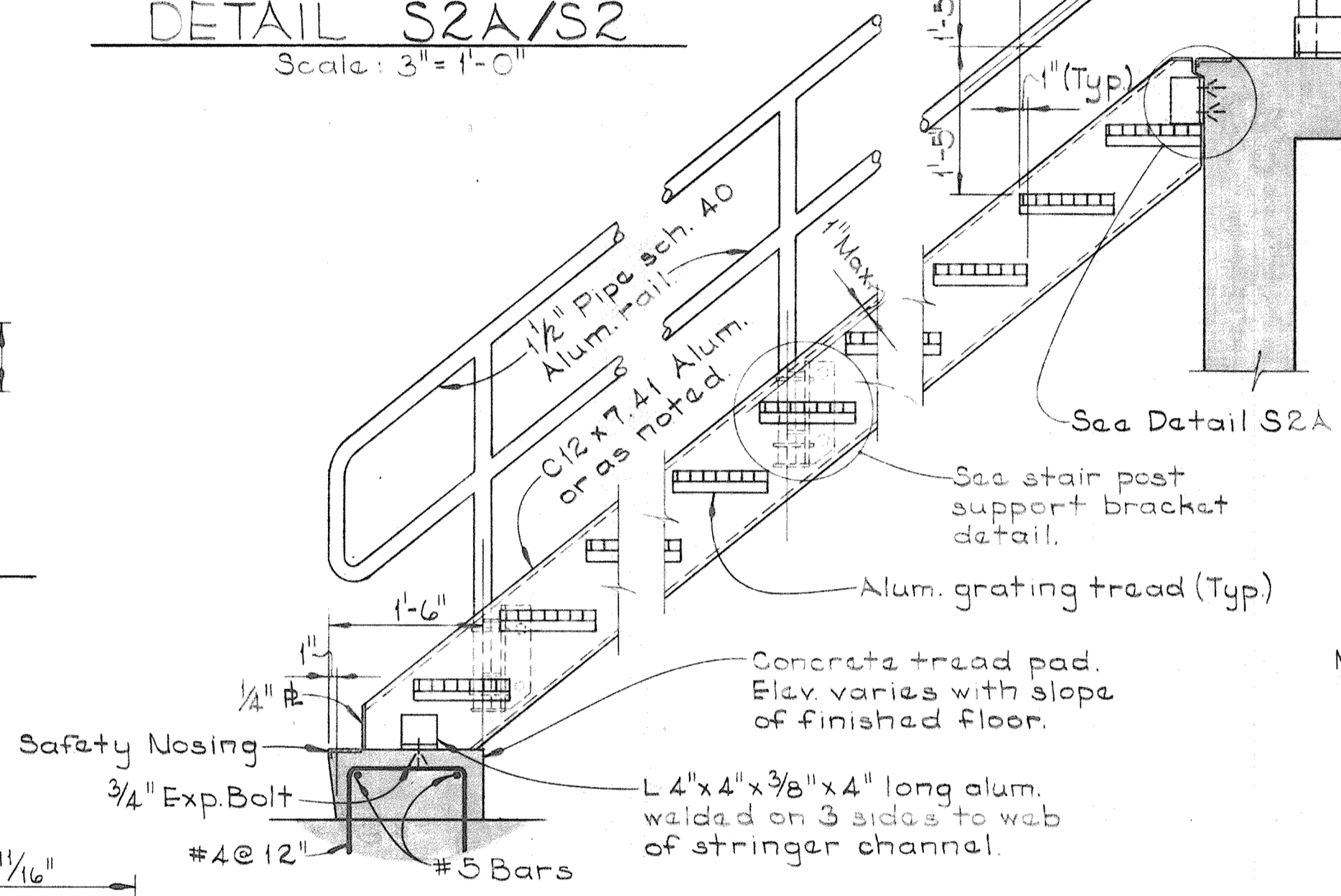
ALUMINUM MANHOLE STEP
Scale: None

Manhole step as manuf. d. by WACO Type F-14-2-D or approved equal.

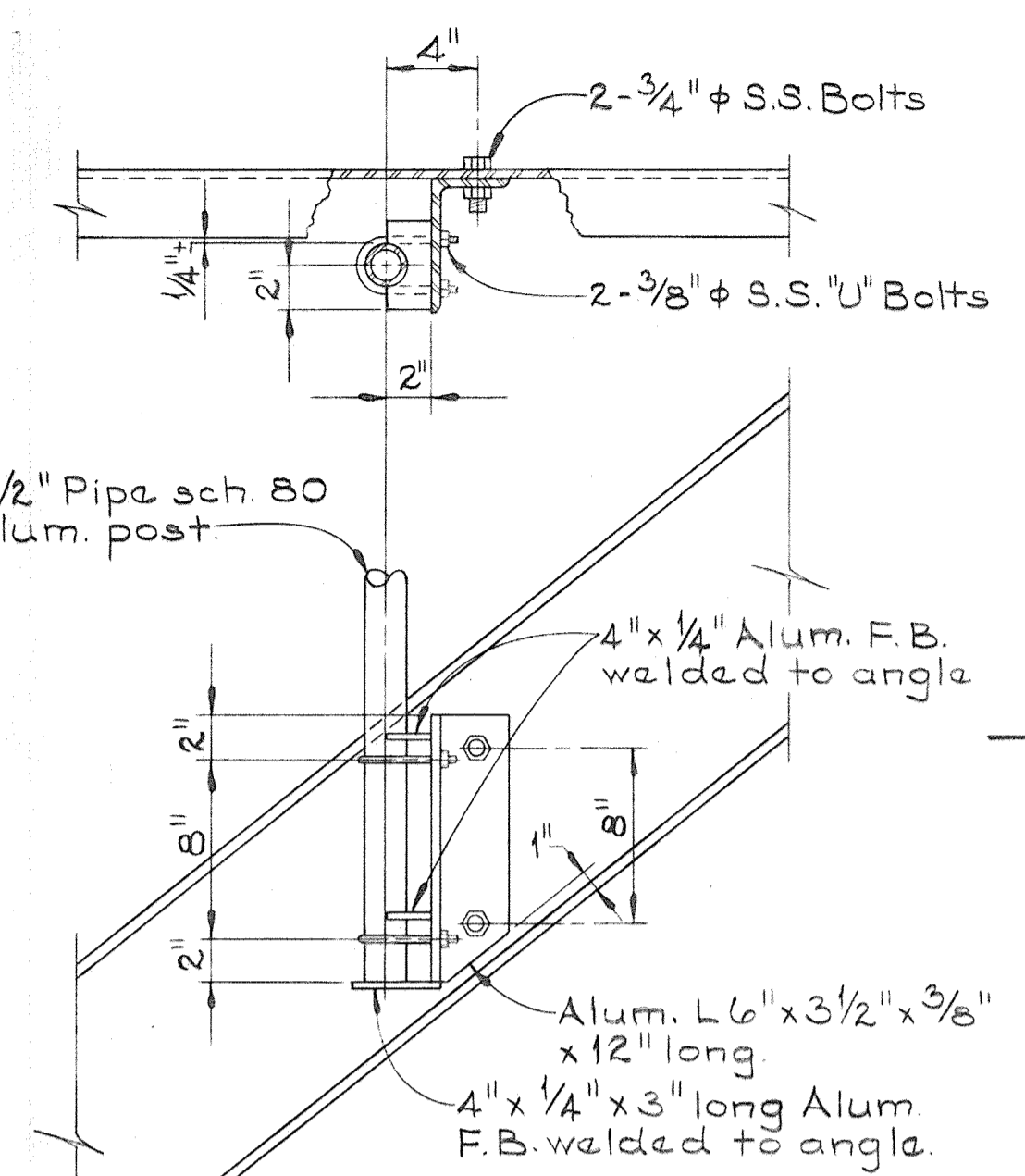
DATE



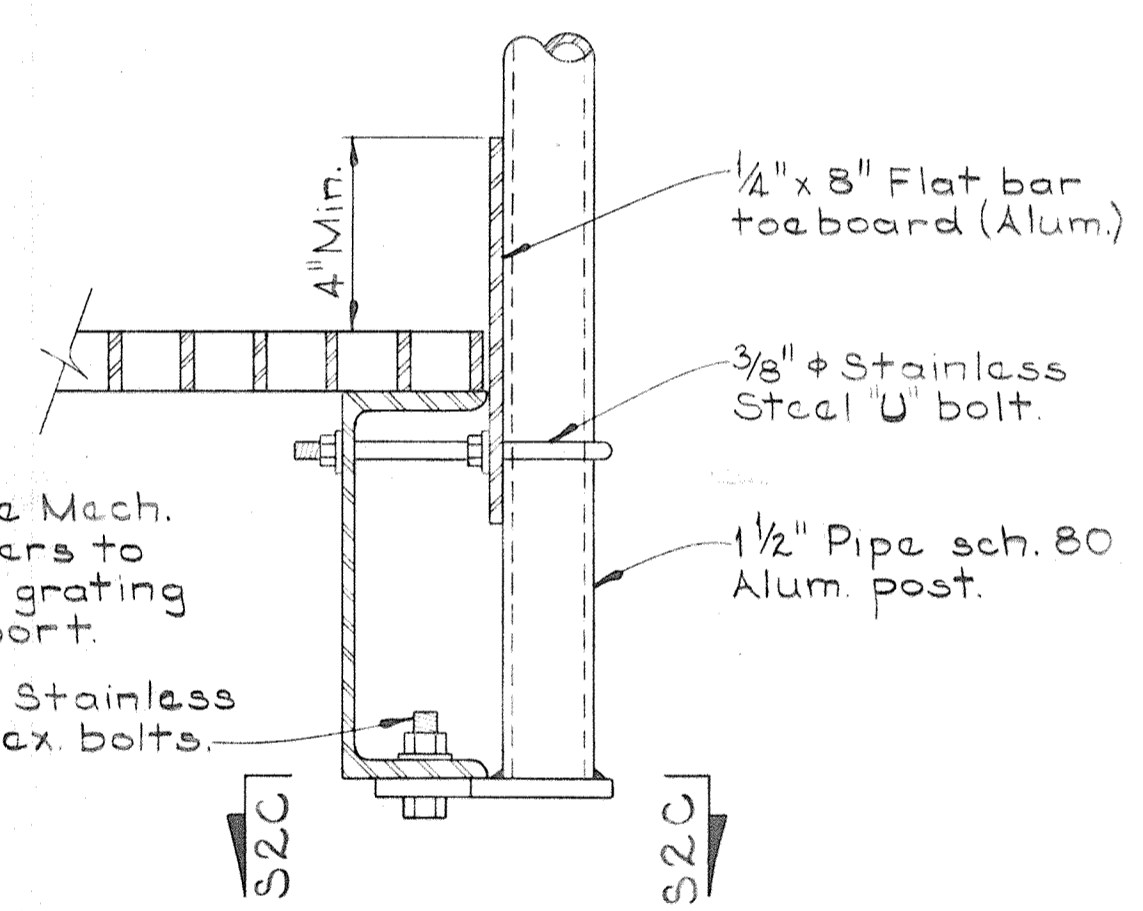
DETAIL S2A/S2
Scale: 3" = 1'-0"



TYP. STAIR & RAILING SECTION
Scale: 3/4" = 1'-0"

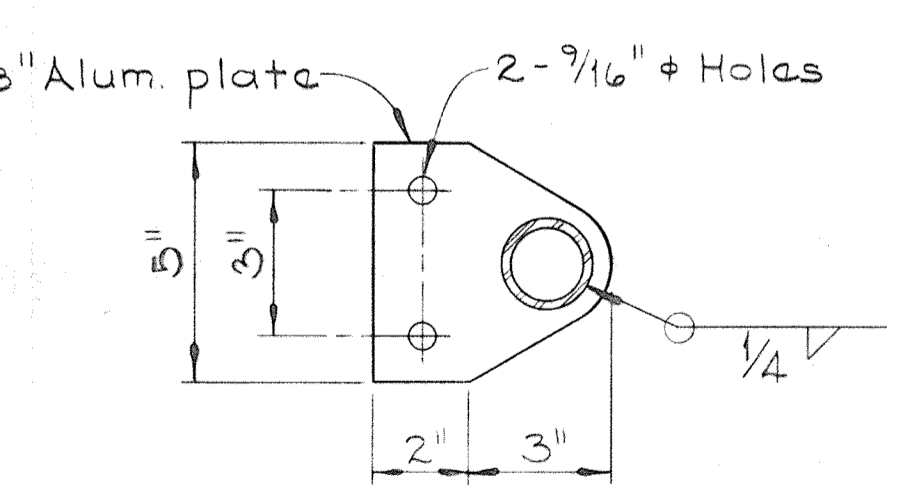


TYP. STAIR POST SUPPORT BRACKET
Scale: 1/2" = 1'-0"



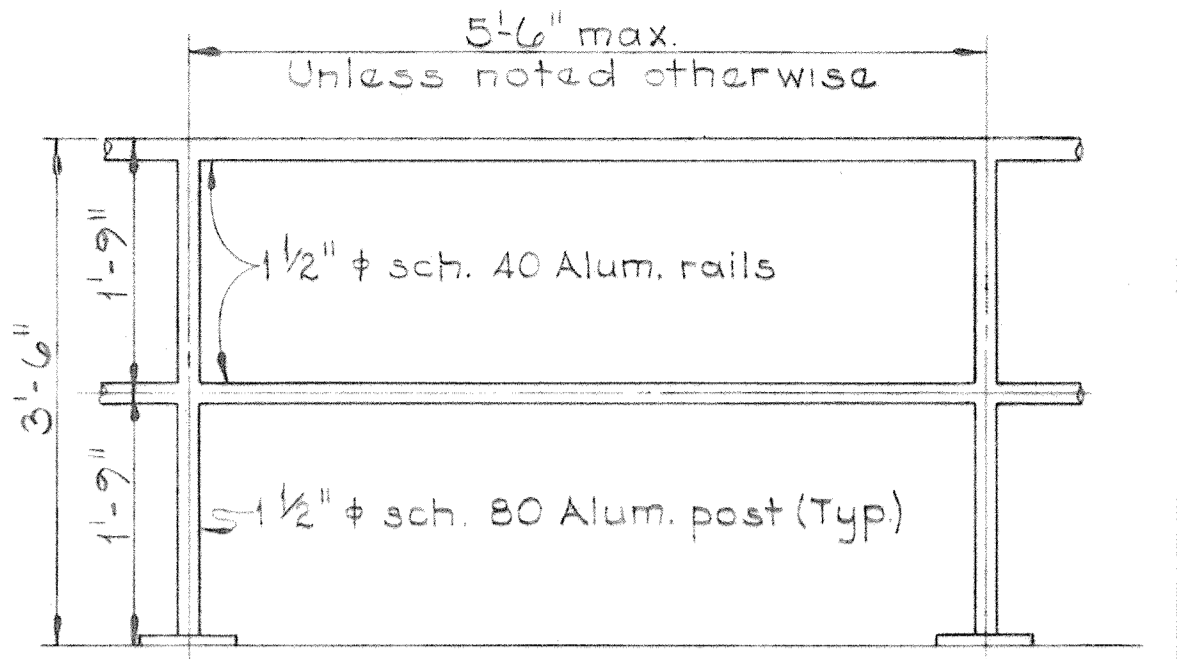
Note: Provide Mech. fasteners to attach grating to support.

TYPICAL HANDRAIL POST CONNECTION AT PLATFORMS
Scale: 3" = 1'-0"

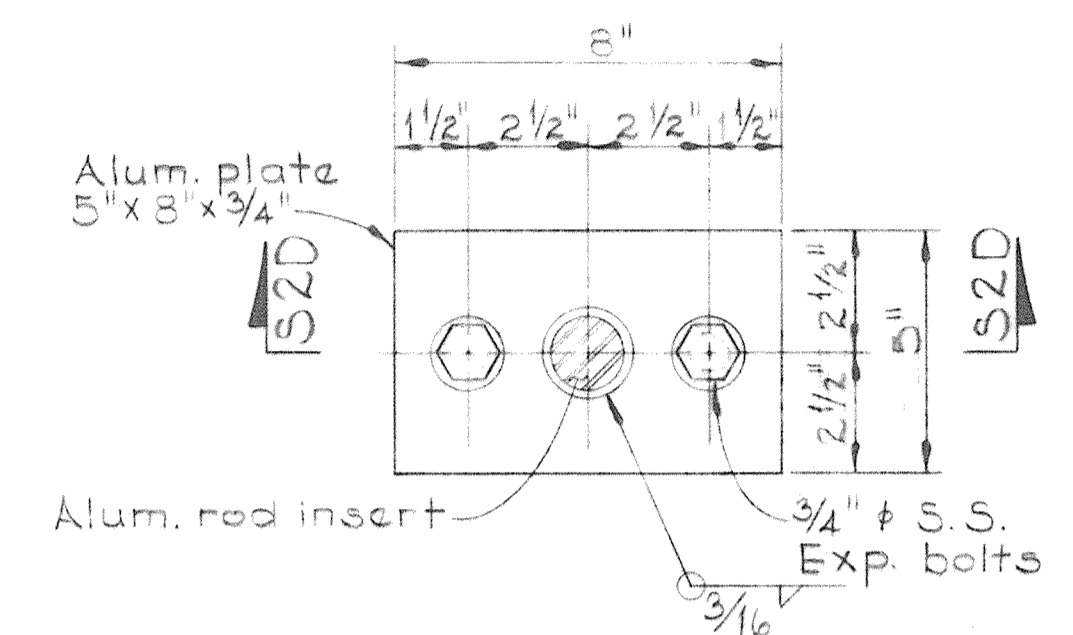


SECTION S2C/S2
Scale: 3" = 1'-0"

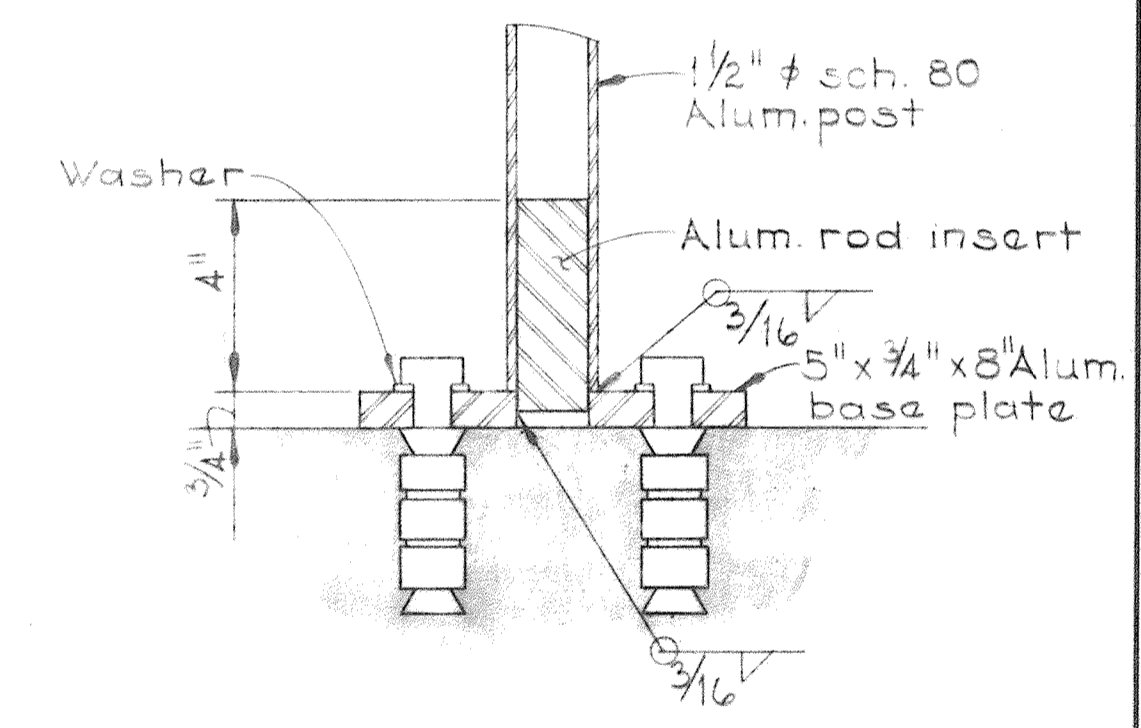
Note: Provide Expansion Joints in handrail at locations of Expansion Joints in concrete.



TYP. ALUMINUM HANDRAIL ELEVATION
Scale: 3/4" = 1'-0"

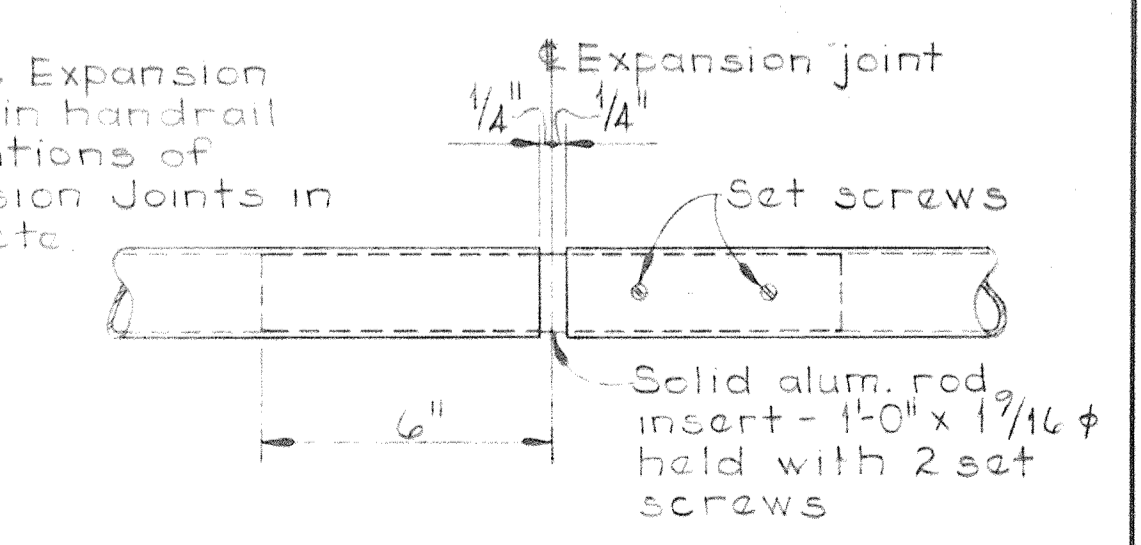


PLAN



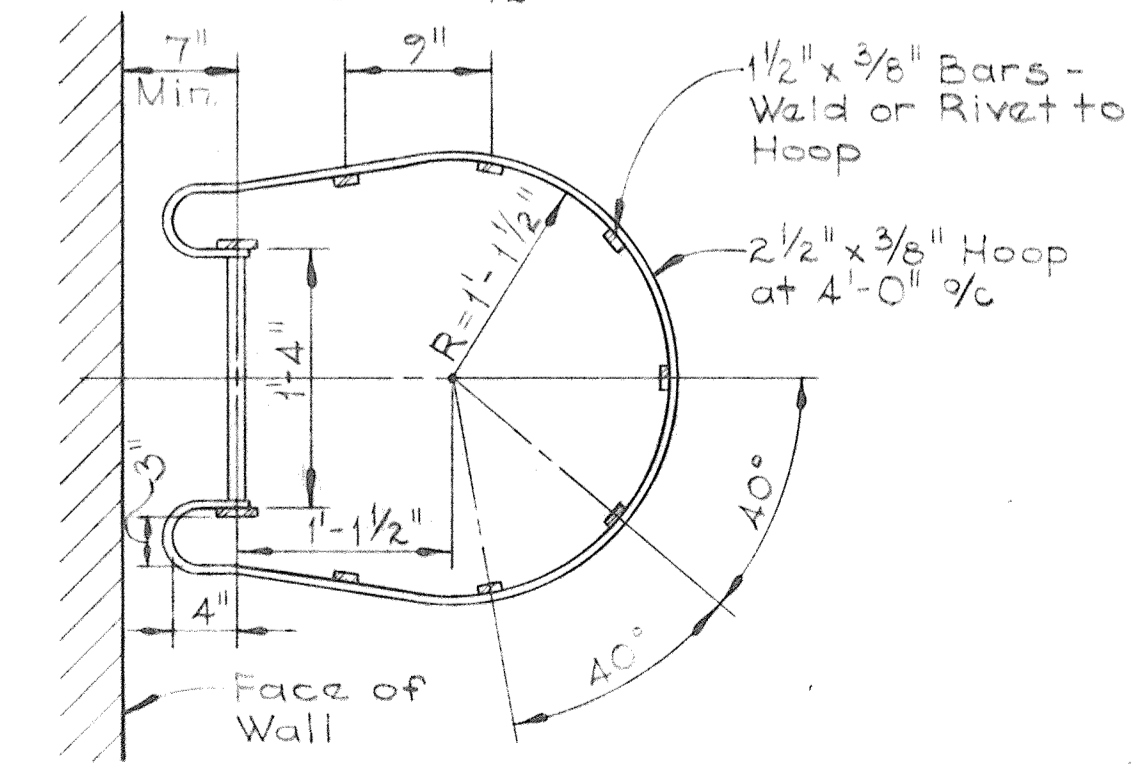
SECTION S2D/S2

ALUMINUM HANDRAIL BASE DETAIL
Scale: 3" = 1'-0"



TYP. EXPANSION JOINT ALUMINUM HANDRAIL
Scale: 3" = 1'-0"

TYP. LADDER WITH CAGE
Scale: 1/2" = 1'-0"



SECTION S2A/S2
Scale: 1" = 1'-0"

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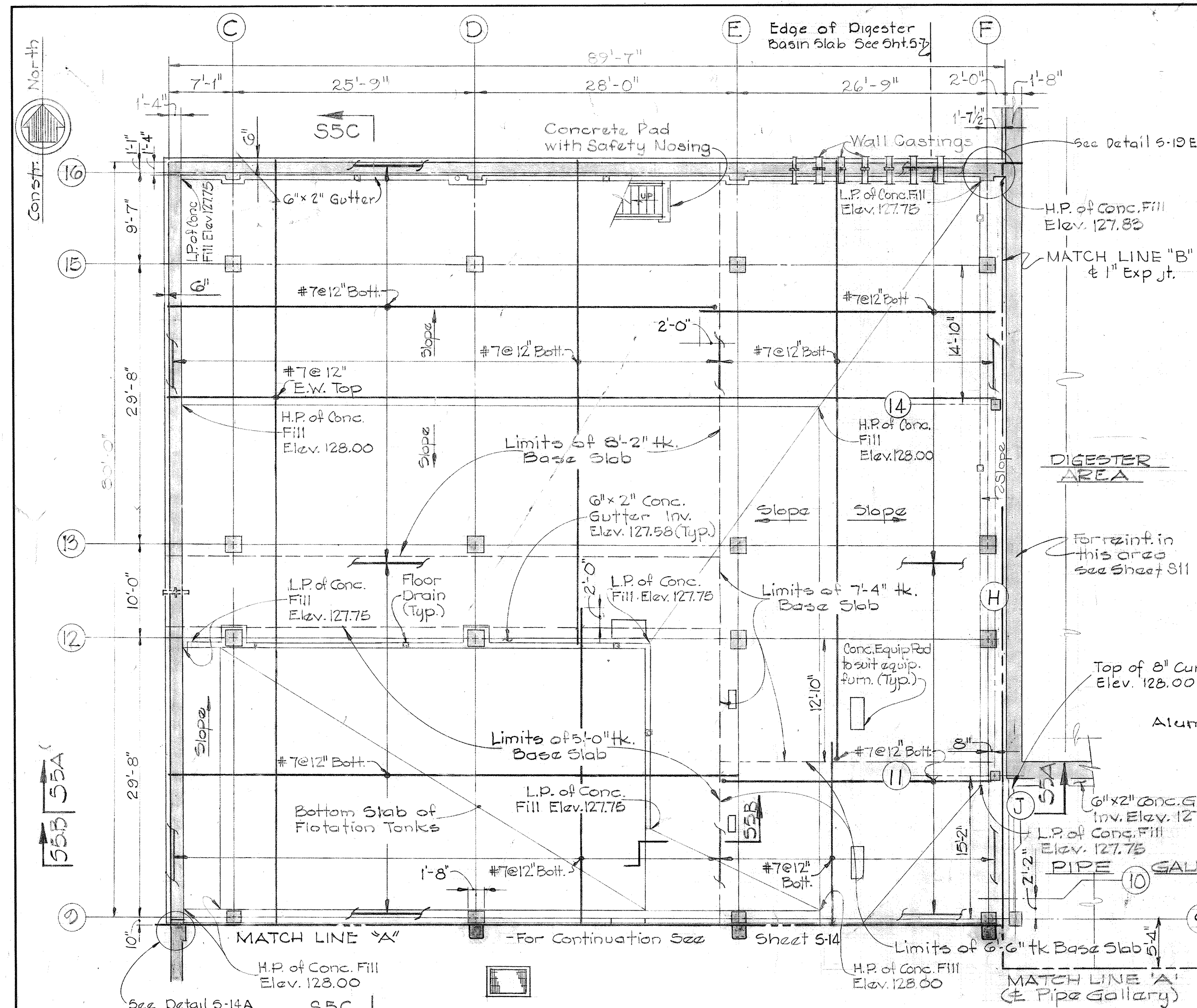
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
WACO & Associates
DATE: 9-28-71
CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 501-S

STRUCTURAL
TYPICAL DETAILS

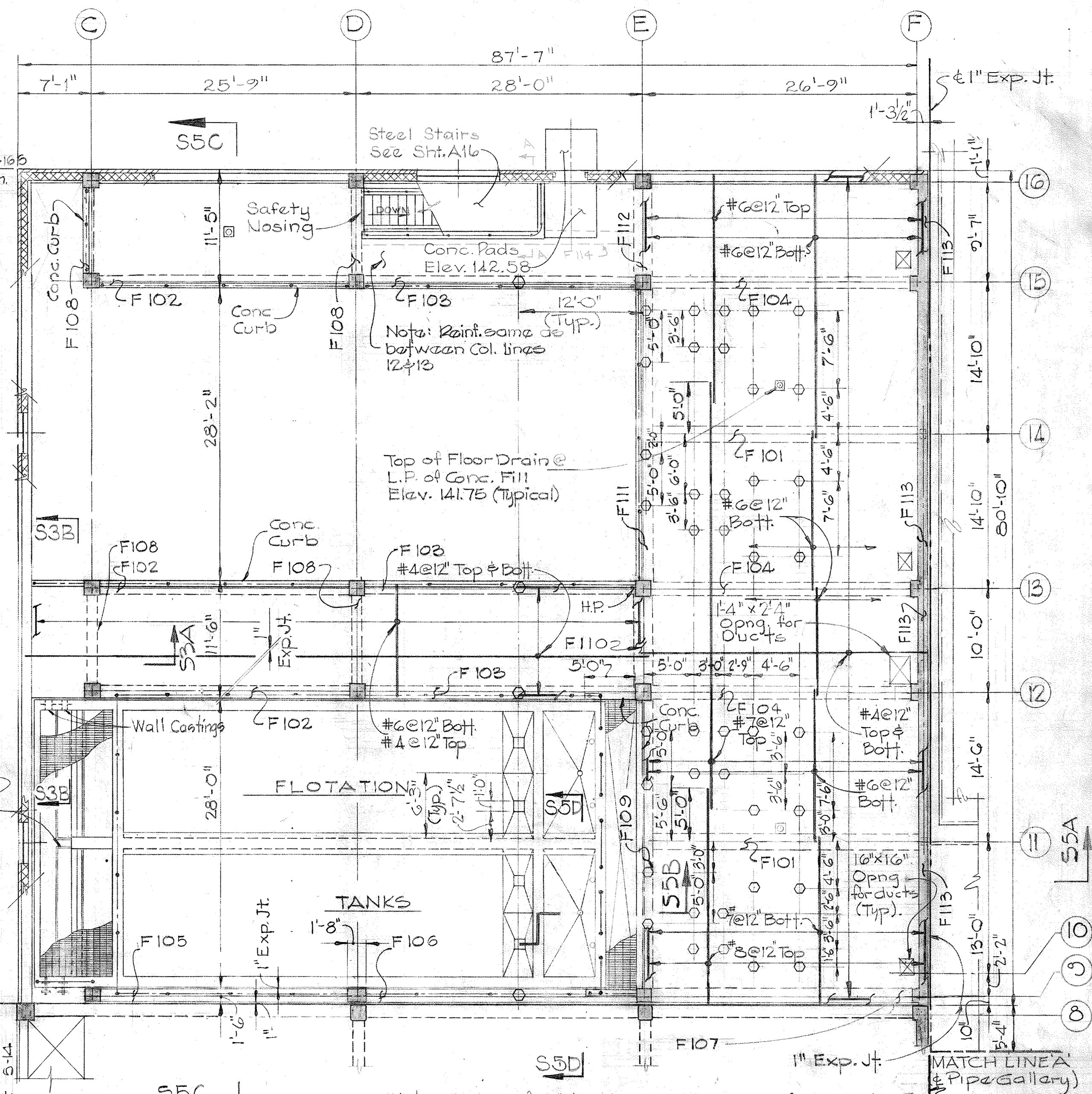
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO.4

DRAWING NO. 35 OF 128
SCALE AS NOTED



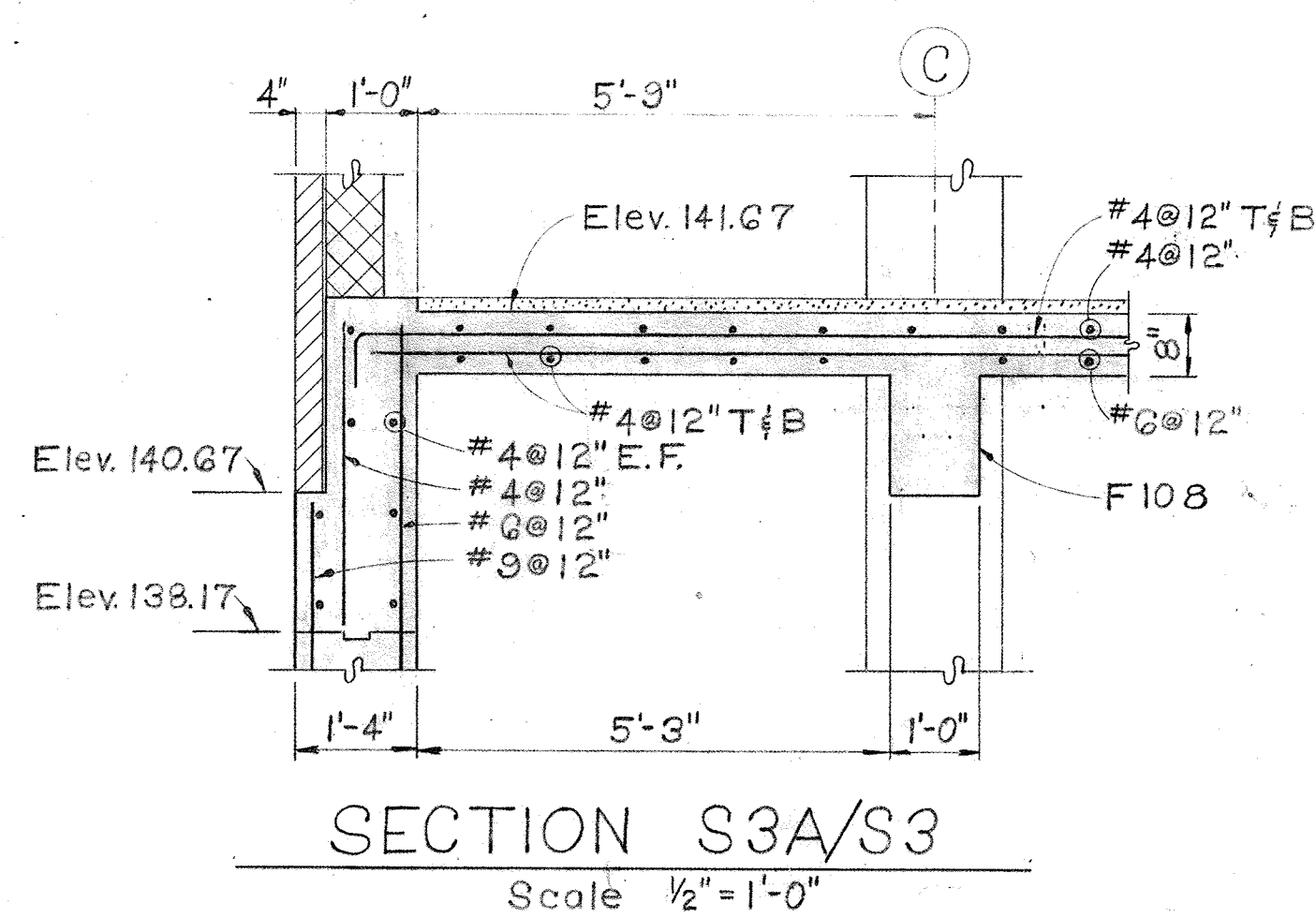
PLAN AT ELEV. 128.00
Scale 1/8"=1'-0"

Note: 1. Top of base slab Elev. 127.75
2. Design live load 150 psf.

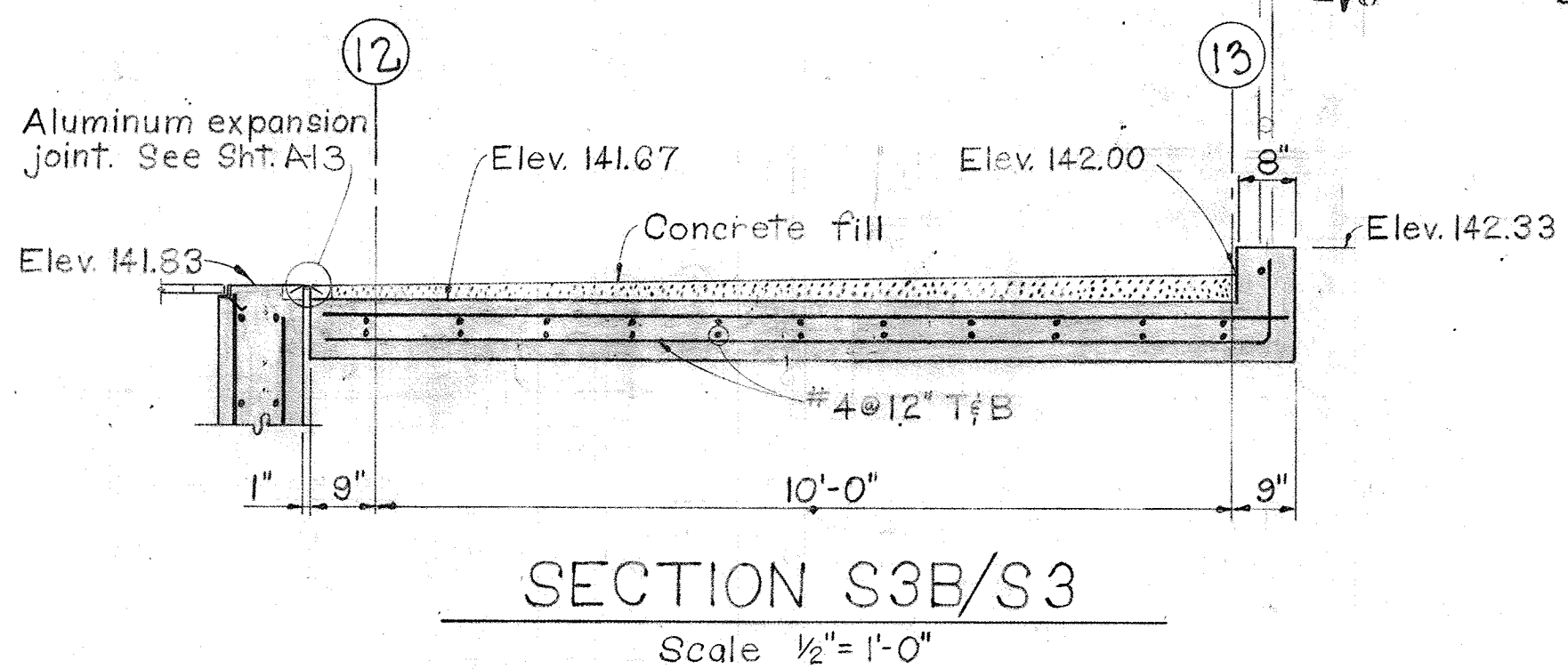


PLAN AT ELEV. 142.00
Scale: 1/8"=1'-0"

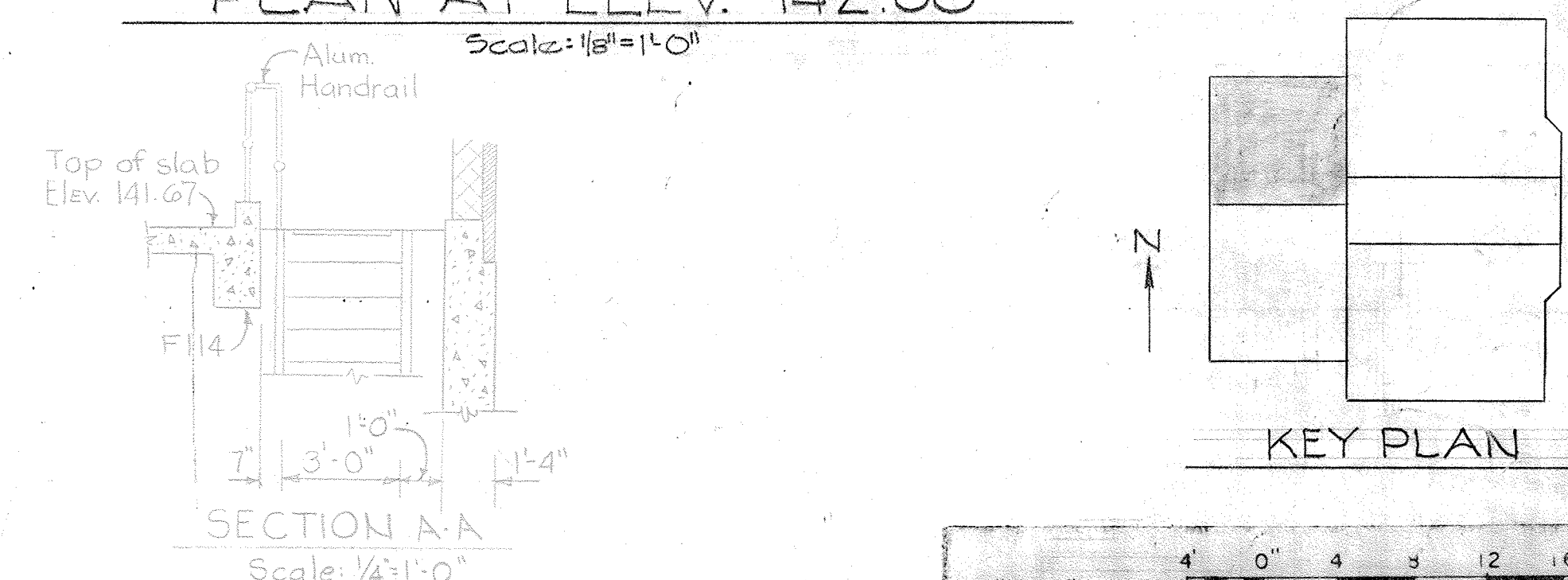
Notes: 1. Top of 8" thick structural slab is Elev. 141.67
2. High point of concrete fill is Elev. 142.00
3. Low point of concrete fill is Elev. 141.75
4. For layout of concrete fill slopes see Arch. Drawings.
5. Live load capacity 125 psf.
6. See Mech. Drawings for additional equipment pads.



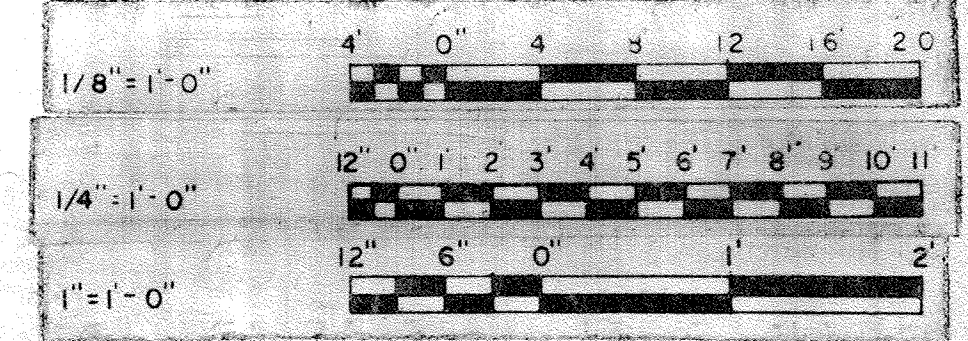
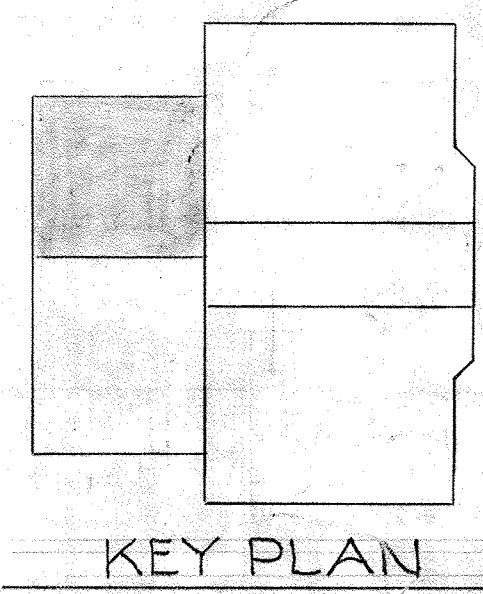
SECTION S3A/S3
Scale 1/2"=1'-0"



SECTION S3B/S3
Scale 1/2"=1'-0"



SECTION A-A
Scale: 1/4"=1'-0"



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HOWARD COUNTY, MARYLAND
DATE 3/20/75
W. O. Federline
CHIEF-BUREAU OF ENGINEERING

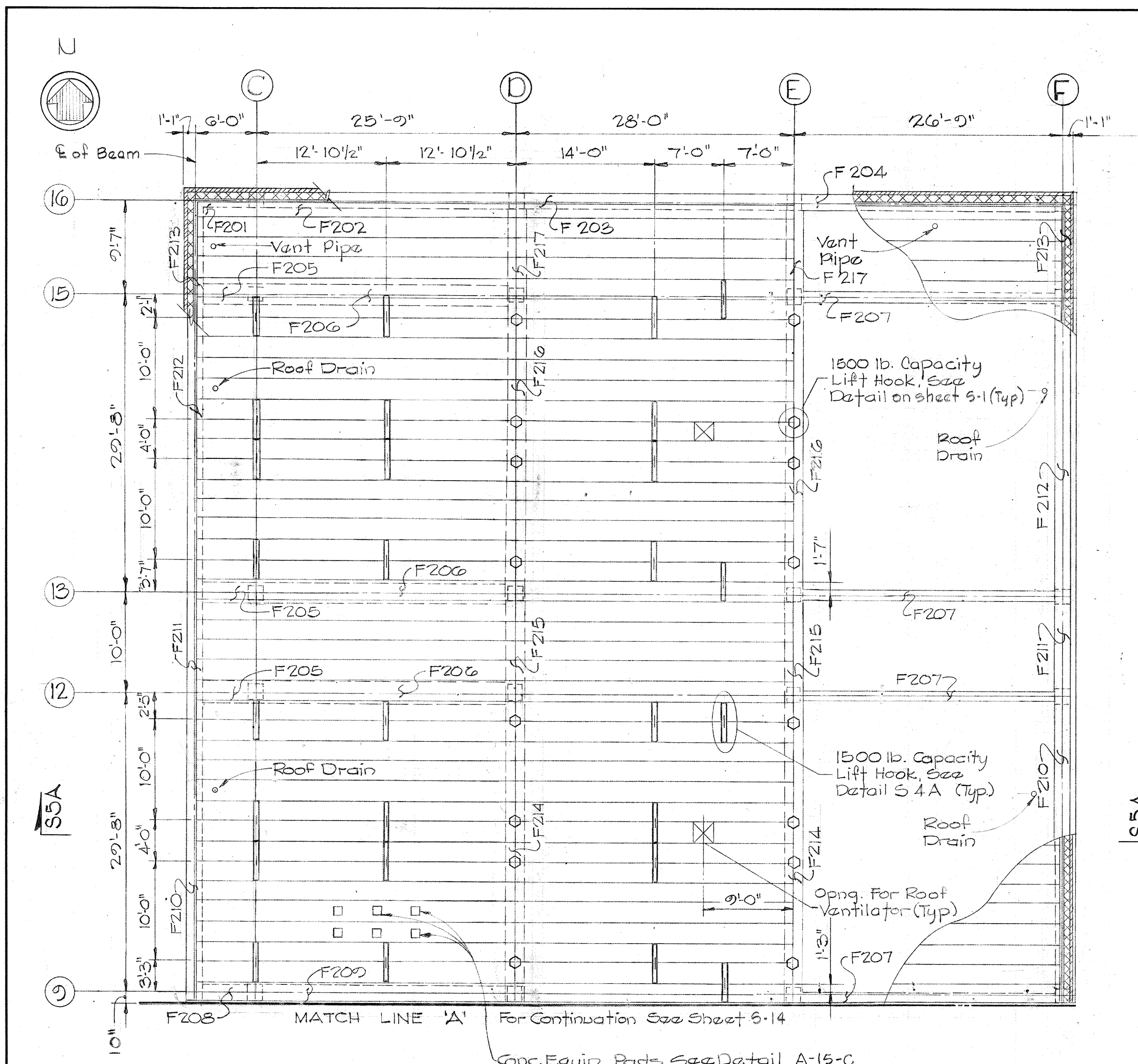
JAMES A. FEDERLINE INC.
AS BUILT DRAWING
CONTRACT NO. 501-S

STRUCTURAL
FLOTATION THICKENERS
PLAN ELEV. 128.00 & 142.00

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO.4

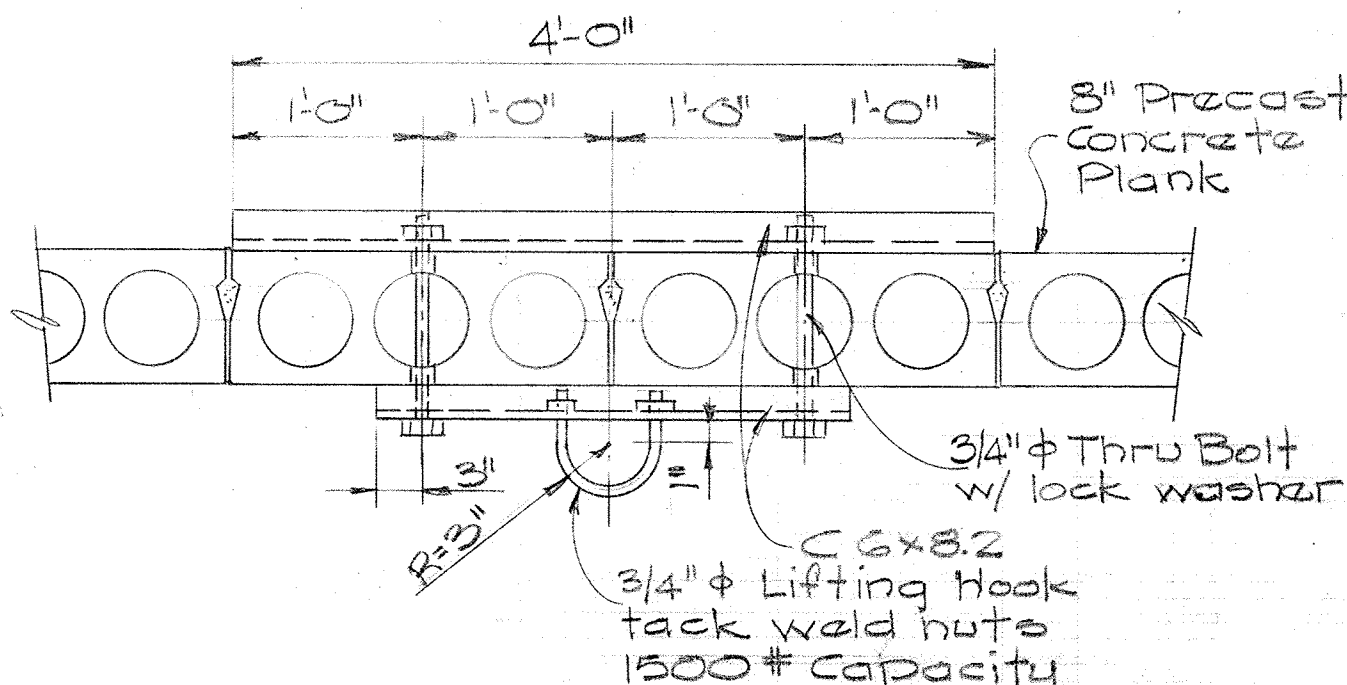
DRAWING
NO. 36
OF 128

SCALE
AS
NOTED



ROOF FRAMING PLAN ELEV. 154.50
Scale: 1/8" = 1'-0"

- Notes:
1. Roof deck to be 5" thick precast concrete planks. See specifications.
 2. Planks between column lines D & E subject to load of concrete fill.
 3. Planks supporting condenser unit to be same as required for lifting hooks.
 4. Plank manufacturer shall design and supply the opening saddles in planks.
 5. Live load capacity 30 p.s.f.

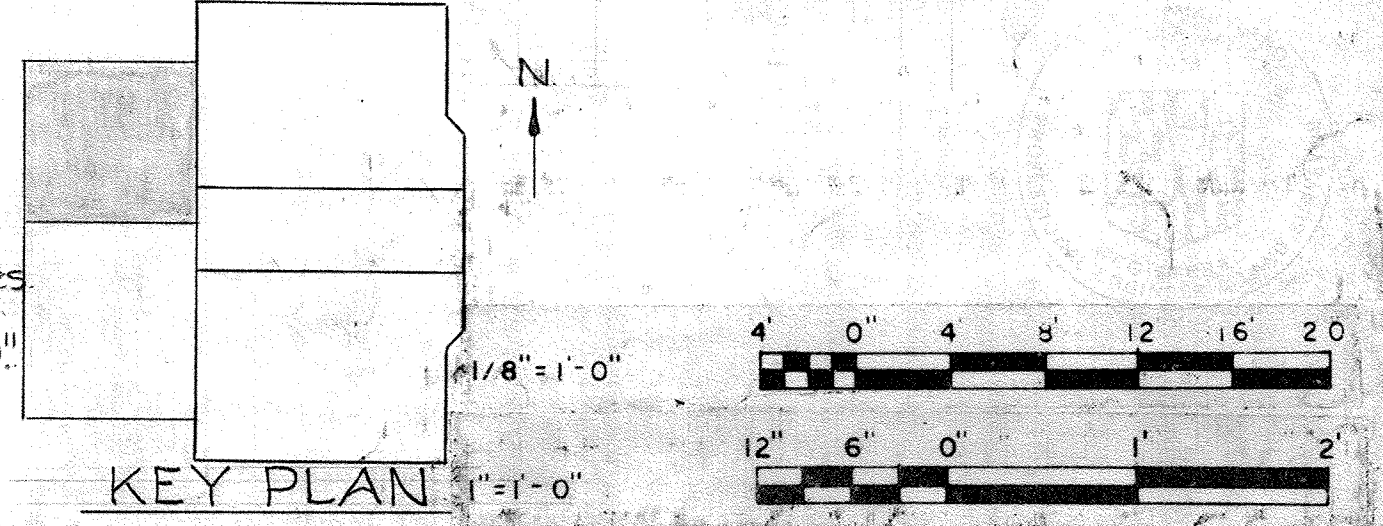


- Notes:
1. The two planks supporting the lifting hook to be designed for additional 1500# load.
 2. All steel items to be galvanized.

DETAIL S4A/S4
Scale: 1" = 1'-0" JAMES A. FEDERLINE INC.

BEAM SCHEDULE - FLOTATION TANK AREA													
MARK	WIDTH (IN)	DEPTH (IN)	BOTTOM BARS				TOP BARS				STIRRUPS		
			TYPE	NO. & SIZE	DIMENSION		REMARKS	TYPE	NO. & SIZE	DIMENSION		REMARKS	SIZE
F101	18	34	1	2# 11* 4# 11	10"	10"						# 4	6 @ 12" ea end Remainder @ 15"
F102	16	30	1	3# 8	8"	8"		2	2# 6 3# 9	4'-0" 7'-0"	3'-4" 8'-6"	@ west end @ east end	# 4 @ 12" thruout
F103	16	30	1	3# 8	8"	8"		3	5# 9	9'-6"	7'-6"	@ east end	# 4 @ 12" thruout
F104	16	30	1	5# 9	8"	8"		2	3# 8	5'-0"	3'-4"	@ east end	# 4 @ 12" thruout
F105	18	29.5	1	3# 8	8"	8"		2	2# 6 3# 9	4'-0" 7'-0"	3'-4" 8'-6"	@ west end @ east end	# 4 @ 12" thruout
F106	18	29.5	1	3# 8	8"	8"		3	5# 9	9'-6"	7'-6"	@ east end	# 4 @ 12" thruout
F107	18	29.5	1	5# 9	8"	8"		2	3# 8	5'-0"	3'-4"	@ east end	# 4 @ 12" thruout
F108	12	24	1	3# 6	8"	8"		4	3# 6	2'-10"	2'-10"		# 4 @ 12" thruout
F109	20	36	1	2# 9* 7# 9	8"	8"		2	3# 8	5'-0"	3'-10"	@ south end	# 4 @ 12" thruout
F110	20	36	1	3# 5	8"	8"		1	7# 9	10'-0"	9'-0"	@ north end	# 4 @ 16" thruout
F111	20	36	1	2# 9* 6# 9	8"	8"		3	7# 9	9'-0"	9'-0"	@ north end	# 4 @ 12" thruout
F112	20	36	1	3# 5	8"	8"						From F108	# 4 @ 16" thruout
F113	14	60 ^Δ		3# 5			Continuous, splice = 2'-0"		3# 5			Continuous, splice = 2'-0"	# 4 @ 12" thruout
F114	14	24	1	4# 9	8"	8"		1	4# 9	8"	8"		# 4 @ 12" thruout
F201	18	28 ^Δ	3	3# 7	6'-6"	26'-0"	Bot. Elev. 151.23 @ east end	3	3# 8	6'-6"	9'-0"	@ east end	# 4 @ 12" thruout
F202	18	28 ^Δ					Bot. Elev. 151.33	3	3# 8	7'-0"	8'-0"	@ east end	# 4 @ 12" thruout
F203	18	28 ^Δ	1	3# 7	12"	12"	Bot. Elev. 151.92 See Note 4.	3	3# 8	8'-0"	8'-0"	@ east end	# 4 @ 12" thruout
F204	18	28 ^Δ	1	3# 7	12"	12"	Bot. Elev. 151.33					From F203	# 4 @ 12" thruout
F205	24	26 ^Δ	3	4# 9	6'-6"	26'-0"	Bot. Elev. 151.50 @ east end	3	3# 11 4# 11	6'-6" 6'-6"	13'-0" 25'-0"	@ east end	# 5 @ 6" thruout
F206	24	26 ^Δ					Bot. Elev. 151.50	2	3# 8	3'-6"	3'-0"	@ east end	# 5 @ 12" thruout
F207	12	24 ^Δ	1	3# 6	12"	12"	Bot. Elev. 151.67	4	3# 6	2'-10"	2'-10"		# 4 @ 10" thruout
F208	18	26 ^Δ	3	3# 6	6'-6"	26'-0"	Bot. Elev. 151.50 @ east end	3	3# 9 3# 9	6'-6" 6'-6"	13'-0" 25'-0"	@ east end	# 4 @ 12" thruout
F209	18	26 ^Δ					Bot. Elev. 151.50	2	3# 6	3'-6"	3'-0"	@ east end	# 4 @ 12" thruout
F210	18	28	1	5# 9	8"	8"	2# 5 E.F. of Web Splice = 2'-0" Top Elev. 153.67					From F211	# 4 @ 12" thruout
F211	18	28	1	3# 5	8"	8"	do	1	6# 9	7'-0"	7'-0"		# 4 @ 12" thruout
F212	18	28	1	4# 9	8"	8"	do	3	5# 9	7'-0"	7'-0"	@ north end	# 4 @ 12" thruout
F213	18	28	1	3# 5	8"	8"	do					From F212	# 4 @ 12" thruout
F214	20	34	1	6# 9	8"	8"	Bot. Elev. 151.42	2	3# 8	5'-0"	3'-8"	@ South End	# 4 @ 10" thruout
F215	20	34	1	3# 5	8"	8"	do	1	6# 9	8'-0"	8'-0"		# 4 @ 16" thruout
F216	20	34	1	5# 9	8"	8"	do	3	7# 9	7'-6"	7'-6"	@ north end	# 4 @ 10" thruout
F217	20	34	1	3# 5	8"	8"	do					From F216	# 4 @ 16" thruout

- NOTE:
- 1* Indicates reinforcing bars of second layer.
 - Δ Indicates beam section varied or irregular, see section for detail.
 3. See S20 for typical beam details and bar types.
 4. F201 - F204 to be supplied with 2-#5 at each face of web additional, continuous, splice = 2'-0".



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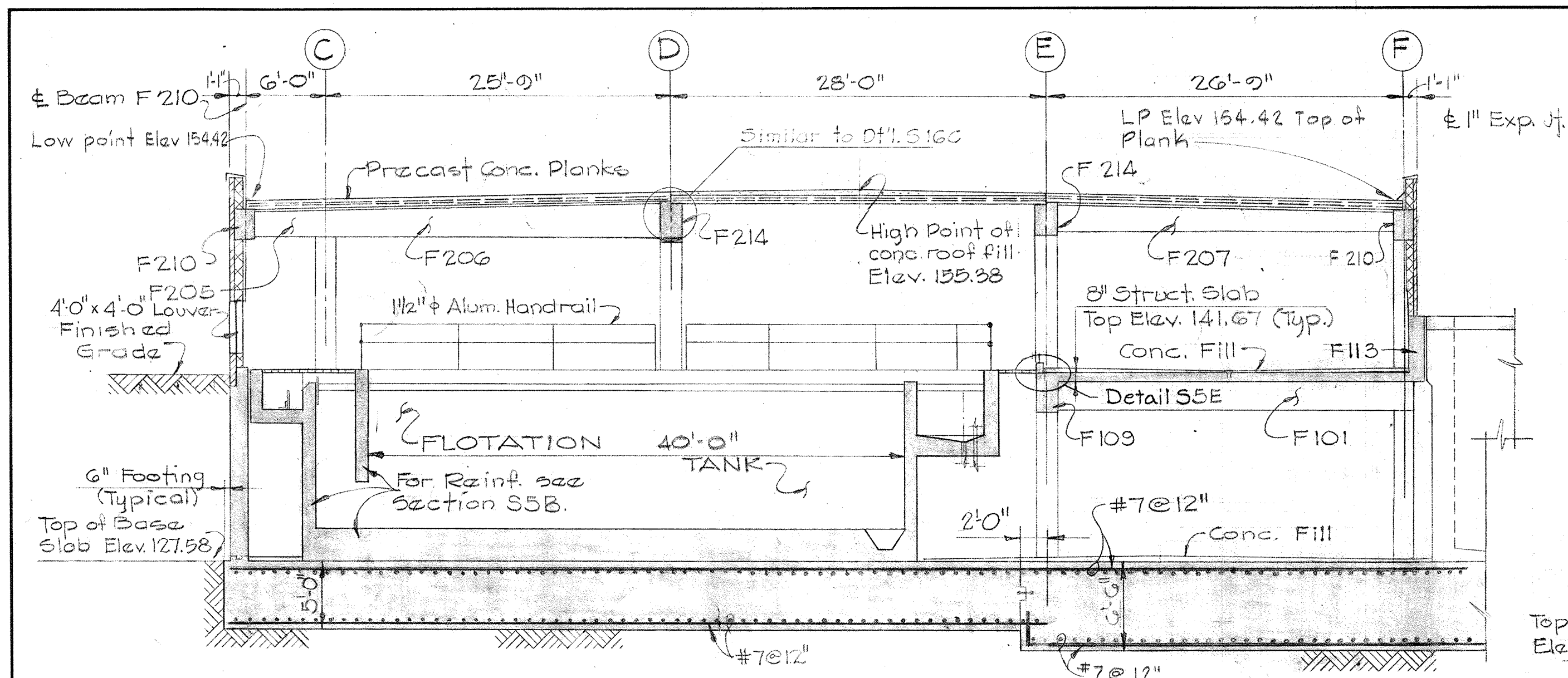
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3/20/75
W. O. Libbert
CHIEF-BUREAU OF ENGINEERING

AS BUILT DRAWING
CONTRACT NO. 501-S

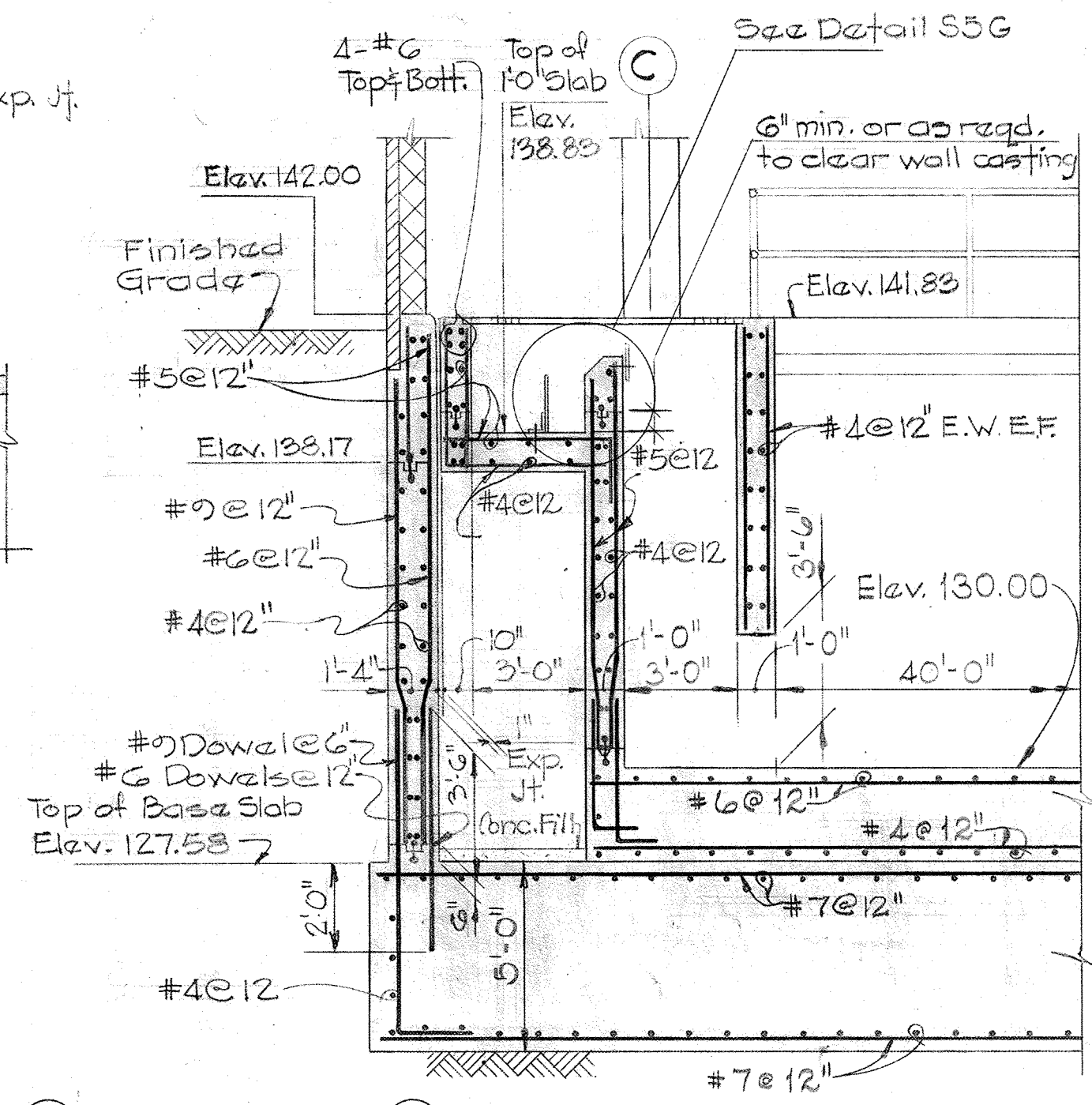
STRUCTURAL
FLOTATION THICKENE RS
ROOF FRAMING PLAN
& BEAM SCHEDULE

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

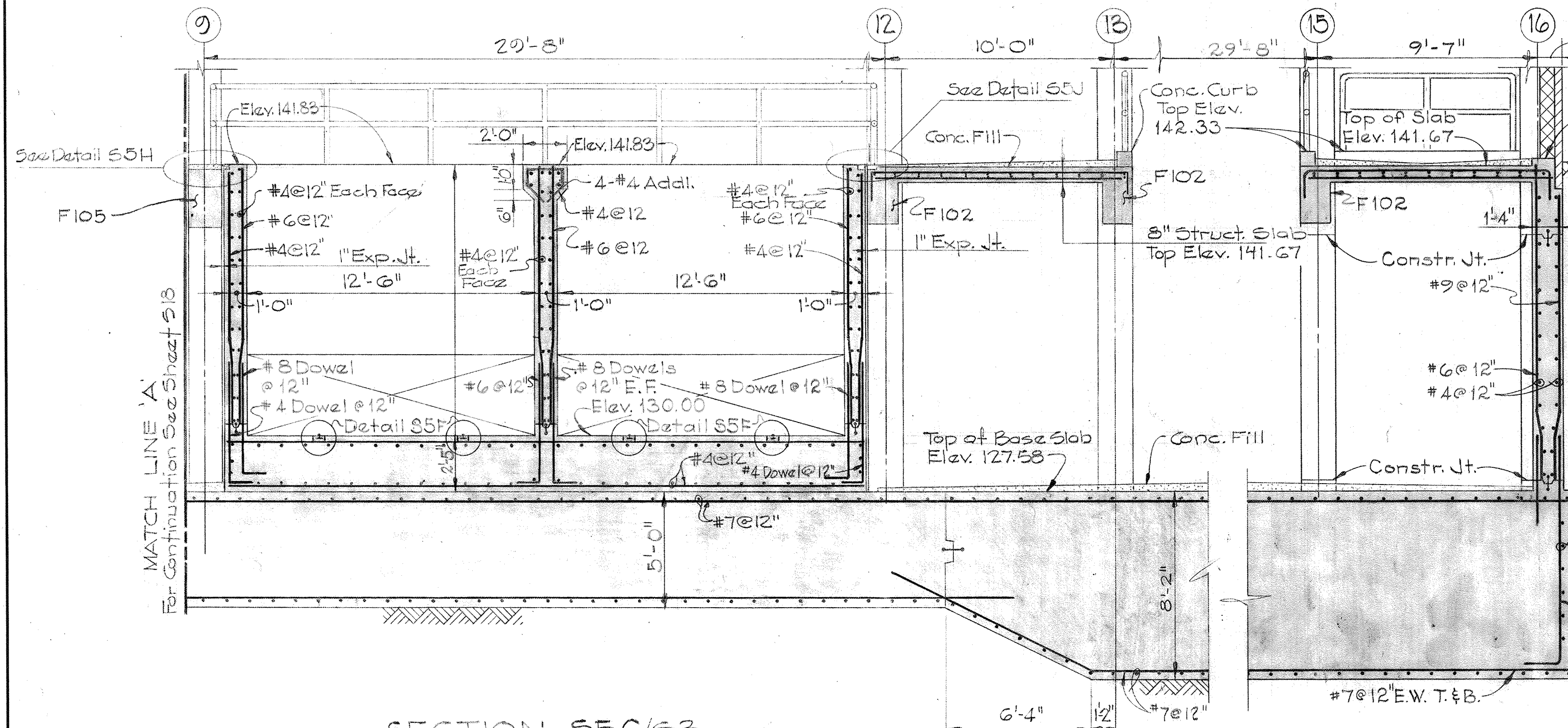
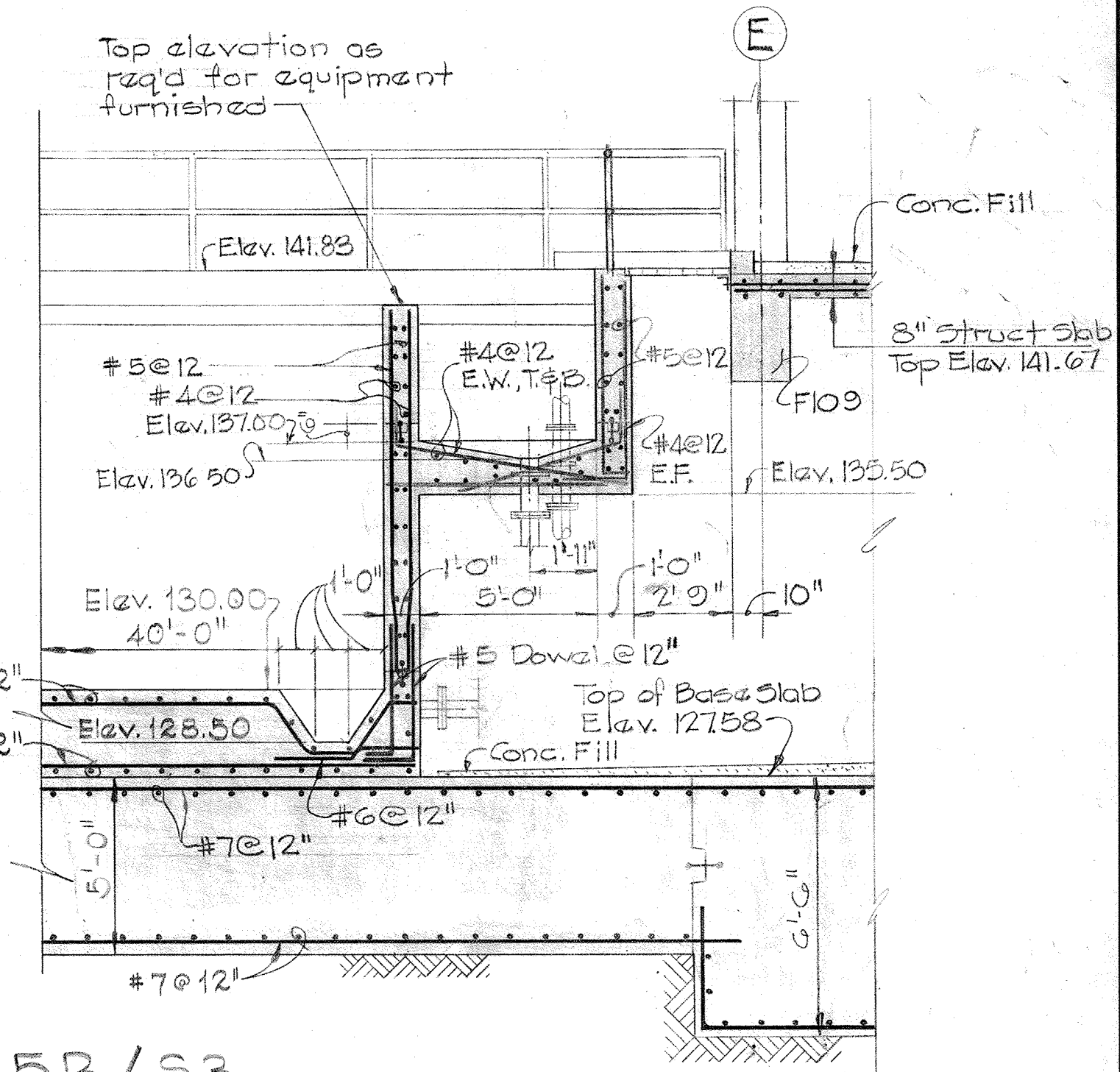
DRAWING NO. 37 OF 128
SCALE AS NOTED



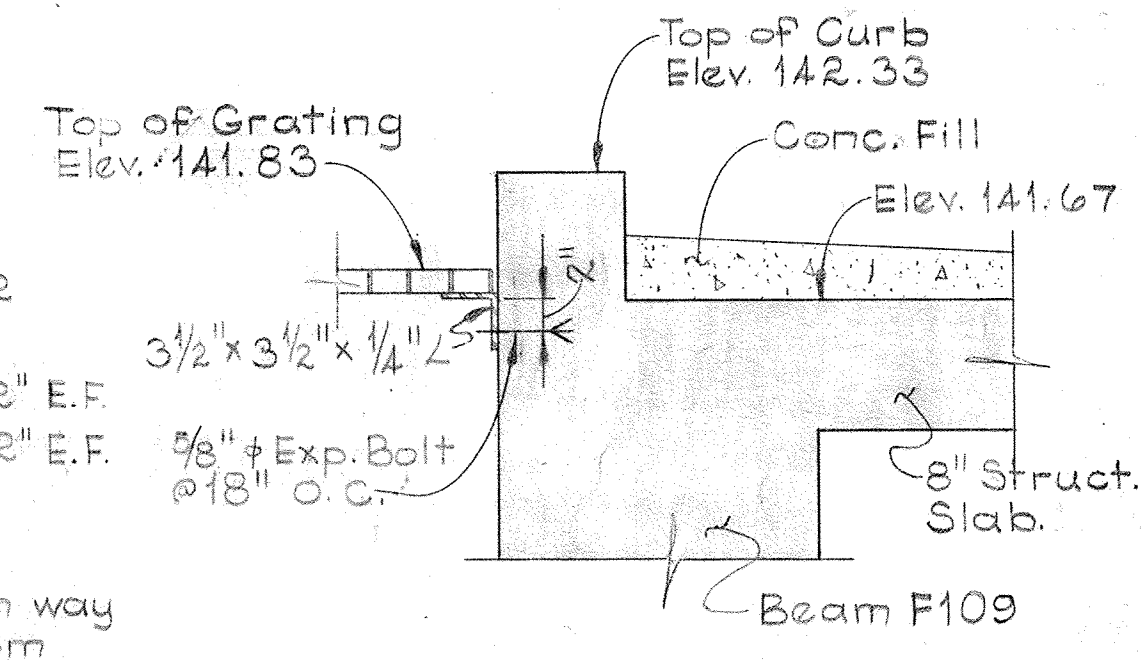
SECTION S5A/S3, S4
Scale: 1/8" = 1'-0"



SECTION S5B/S3
Scale: 1/4" = 1'-0"

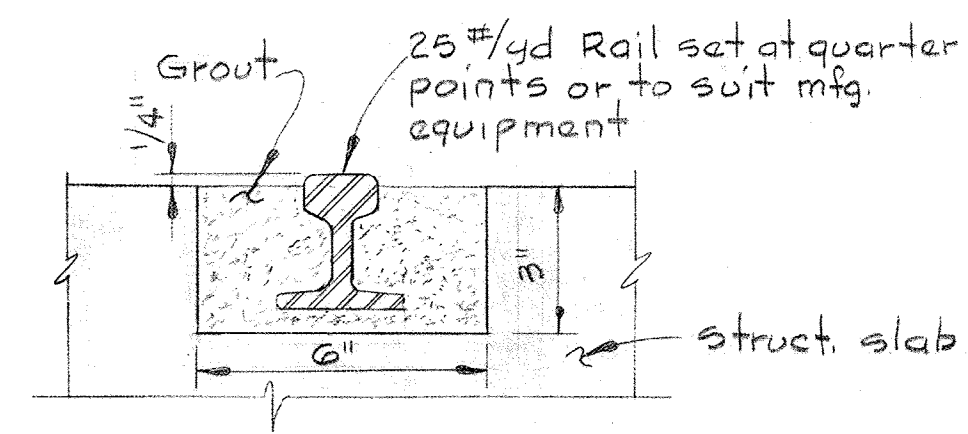


SECTION S5D/S3
Scale: 1/4" = 1'-0"

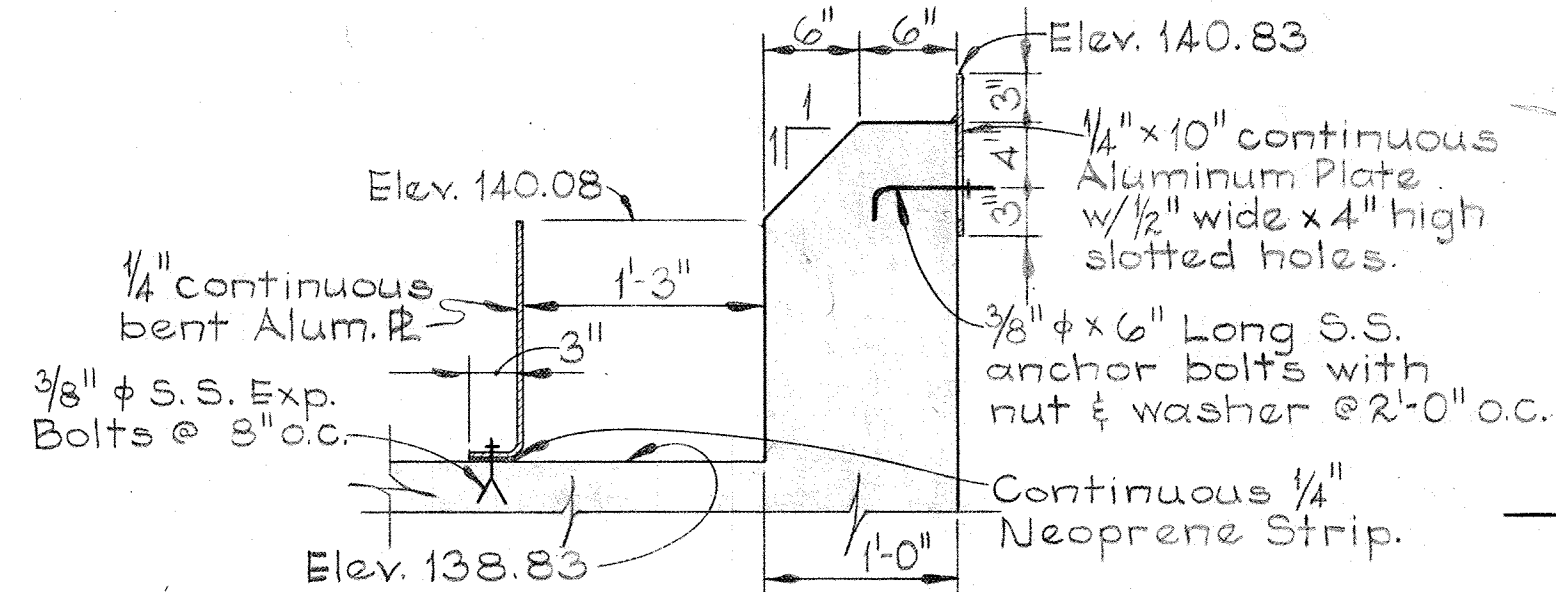


DETAIL S5E/S5
Scale: 1" = 1'-0"

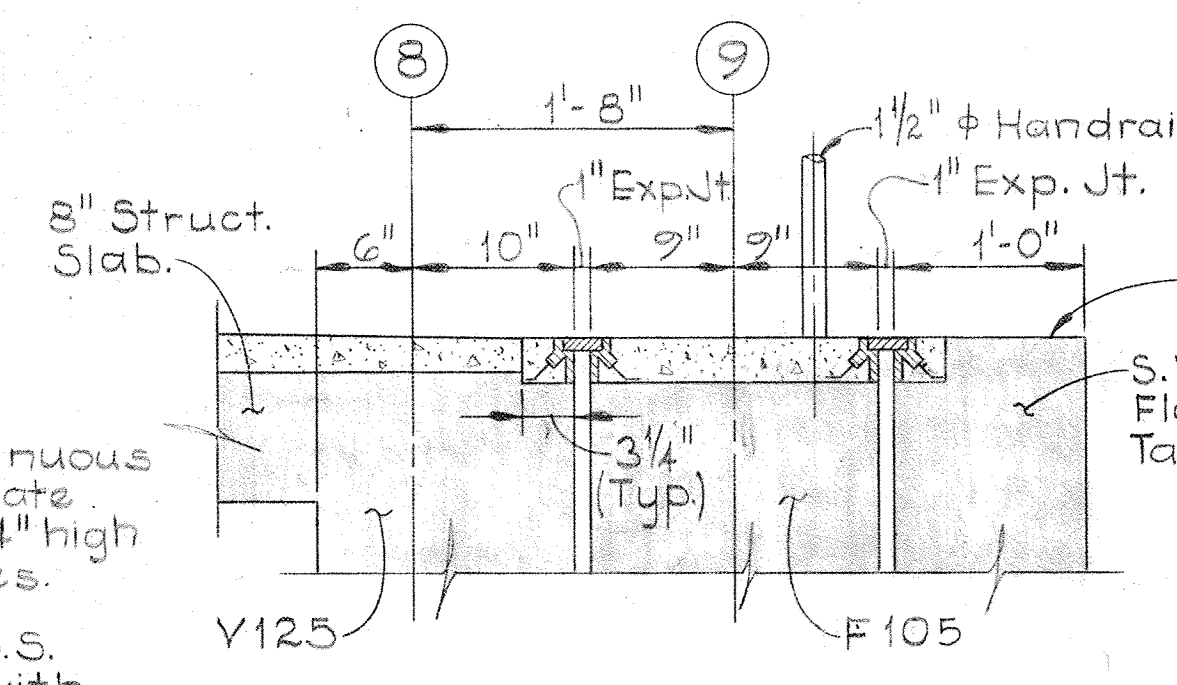
SECTION S5C/S3
Scale: 1/4" = 1'-0"



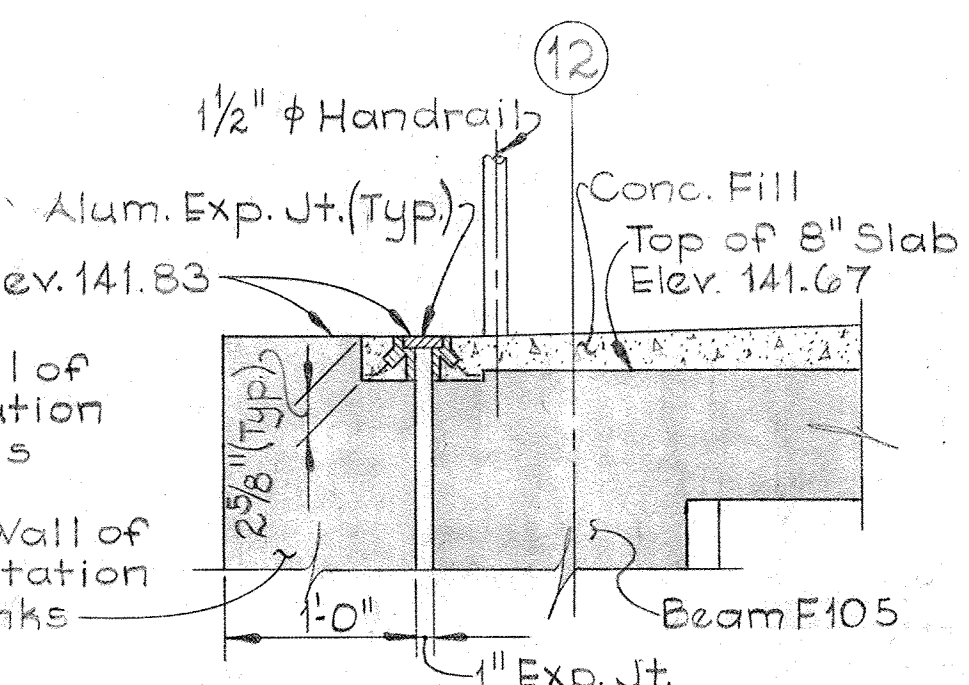
DETAIL S5F/S5
Scale: 3" = 1'-0"



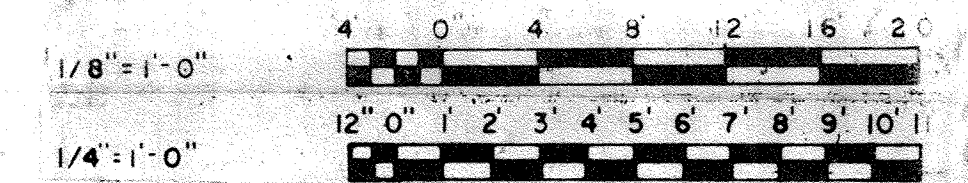
DETAIL S5G/S5
Scale: 1" = 1'-0"



DETAIL S5H/S5, S18
Scale: 1" = 1'-0"



DETAIL S5J/S5
Scale: 1" = 1'-0"



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CONTRACT NO. 501-S
JAMES A. FEDERLINE INC.
AS BUILT DRAWING

STRUCTURAL
FLOTATION THICKENERS
SECTION & DETAILS

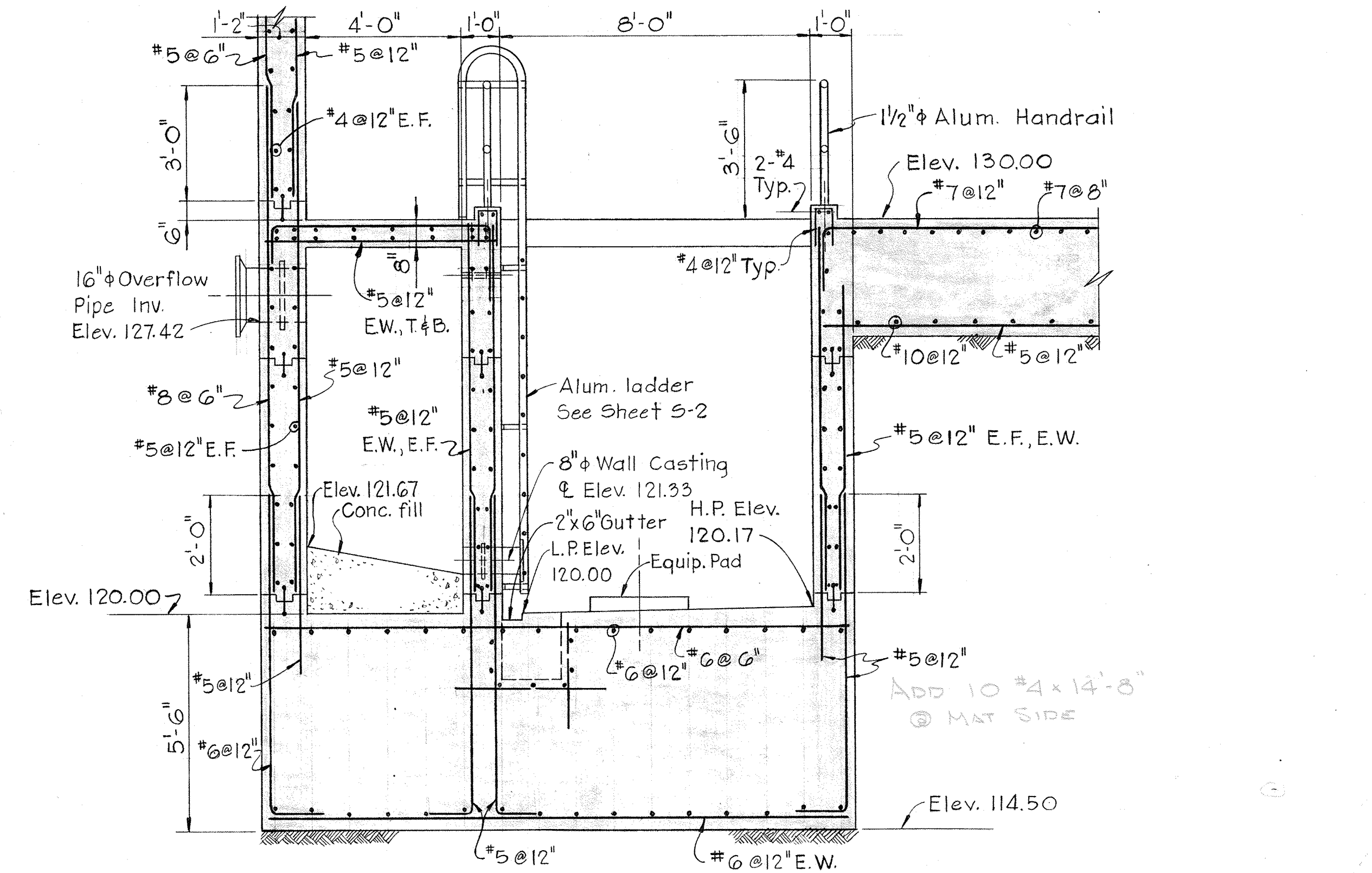
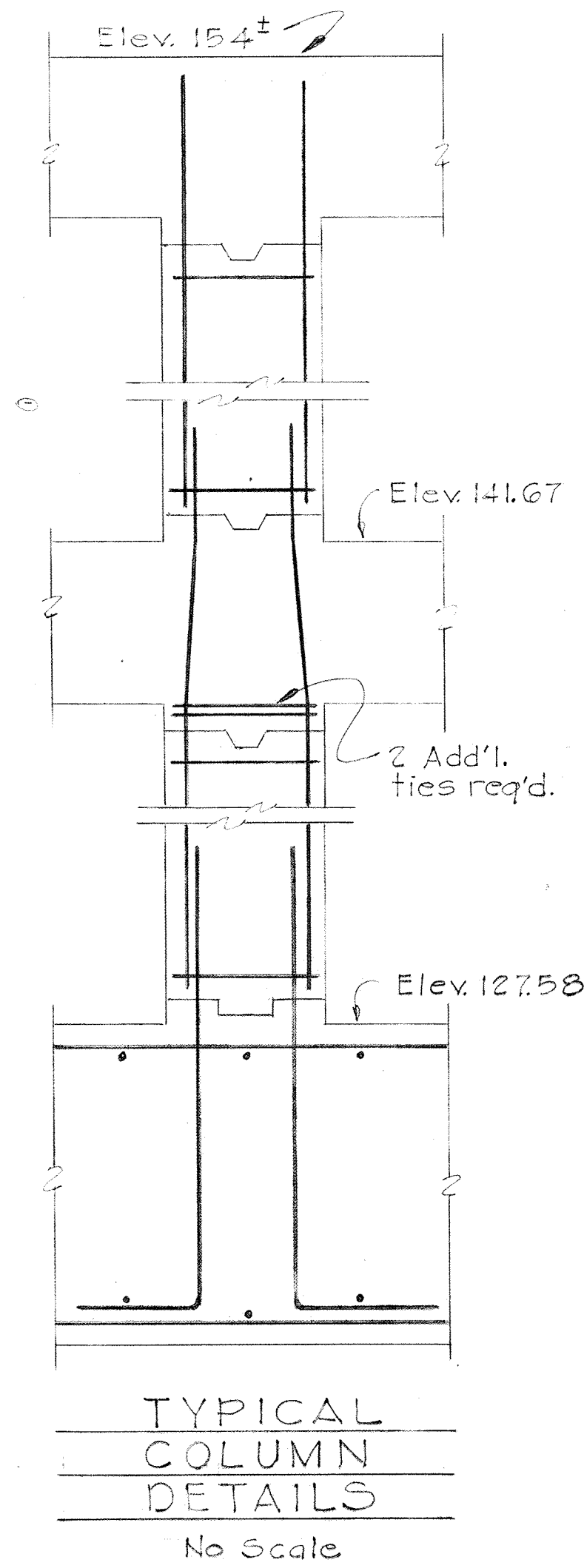
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 38
OF 128

SCALE
AS NOTED

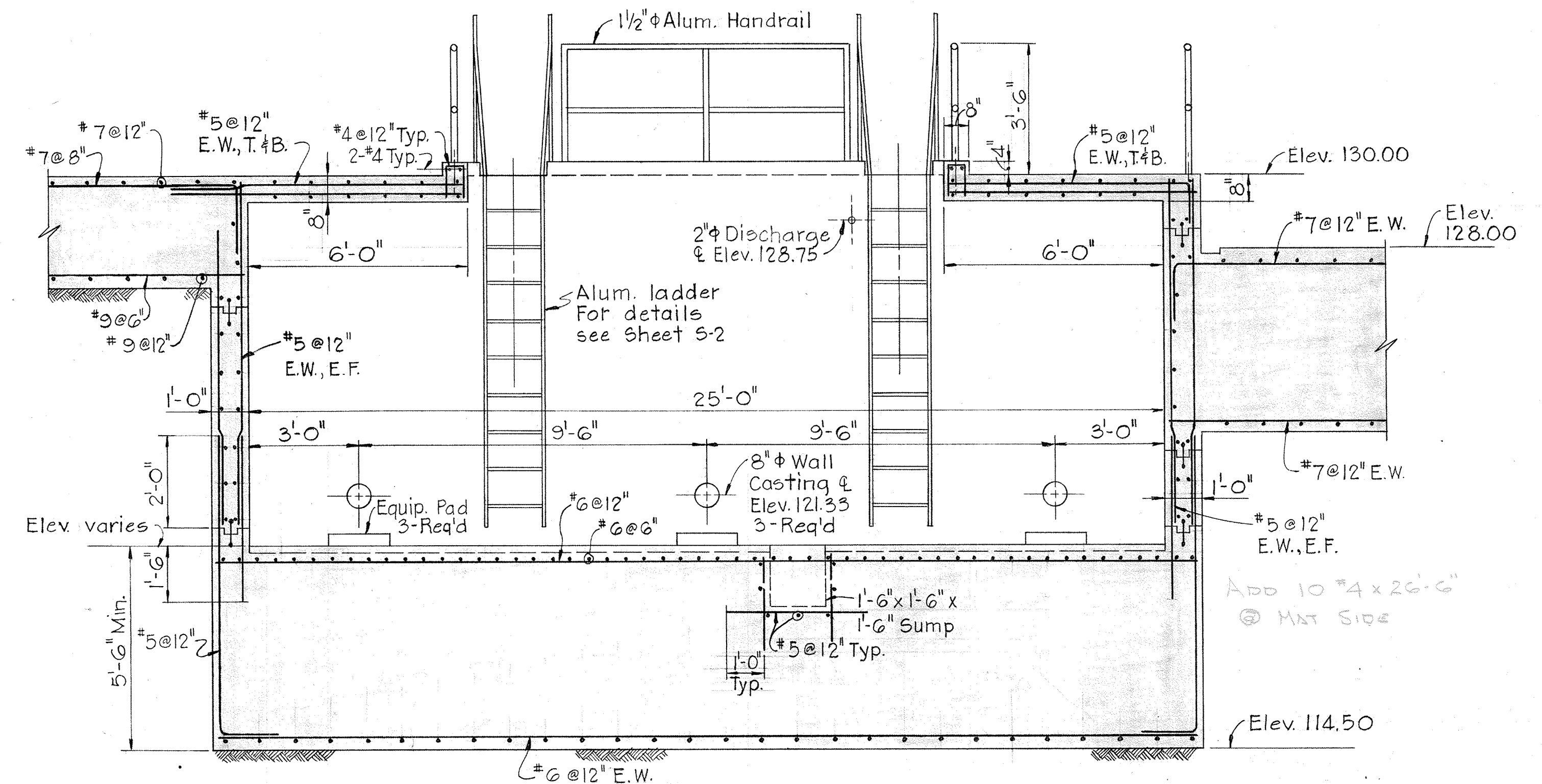
COLUMN SCHEDULE FLOTATION TANK AREA

	COLUMN MARK	D9	C9, C12, C13, C15 D12, D13, D15	E9	E12, E13, E15 F9	F12, F13, F15	C16, D16 E16, F16	H11, H14
Elev. 154.7	SIZE	18" x 20"	18" x 18"	18" x 18"	18" x 15"	18" x 18"	18" x 18"	-
	REINF.	8-#9	8-#9	12-#9	8-#10	8-#6	8-#6	-
	TIE	#5 @ 18"	#5 @ 16"	#5 @ 15"	#4 @ 12"	#5 @ 12"	#5 @ 12"	-
Elev. 141.67	SPLICE	4'-2"	3'-6"	4'-2"	5'-4"	1'-6"	1'-6"	-
	SIZE	18" x 20"	18" x 18"	18" x 18"	18" x 15"	18" x 18"	18" x 22"	12" x 12"
	REINF.	8-#9	8-#9	12-#9	8-#10	8-#6	8-#6	8-#6
	TIE	#5 @ 18"	#5 @ 16"	#5 @ 15"	#4 @ 12"	#5 @ 12"	#5 @ 12"	#3 @ 12"
Elev. 127.58	SPLICE	4'-2"	3'-6"	4'-2"	3'-0"	3'-0"	3'-0"	1'-6"



SECTION 56A/514

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



SECTION 56B/514

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

GRAPHIC SCALES

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

JAMES A. FEDERLINE INC.

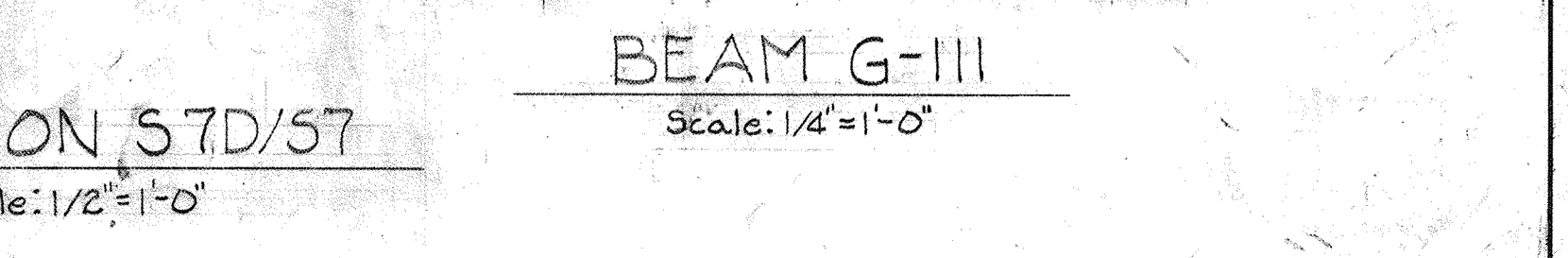
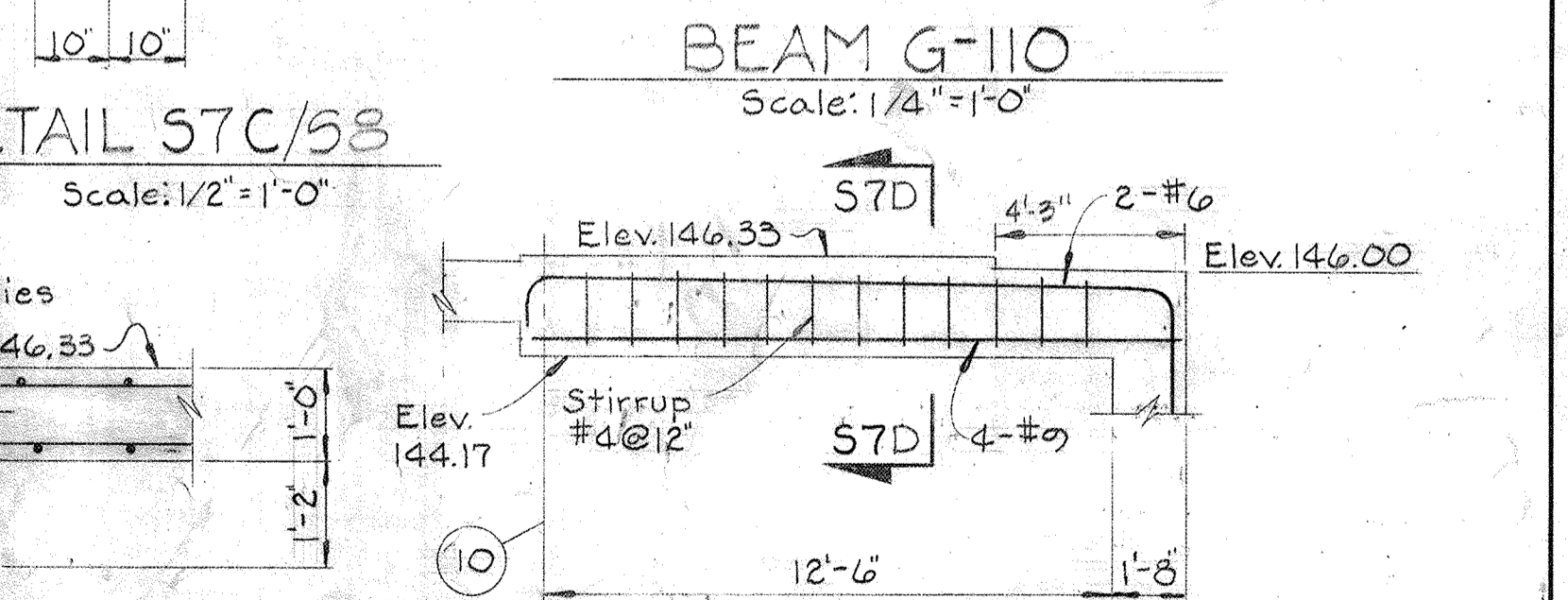
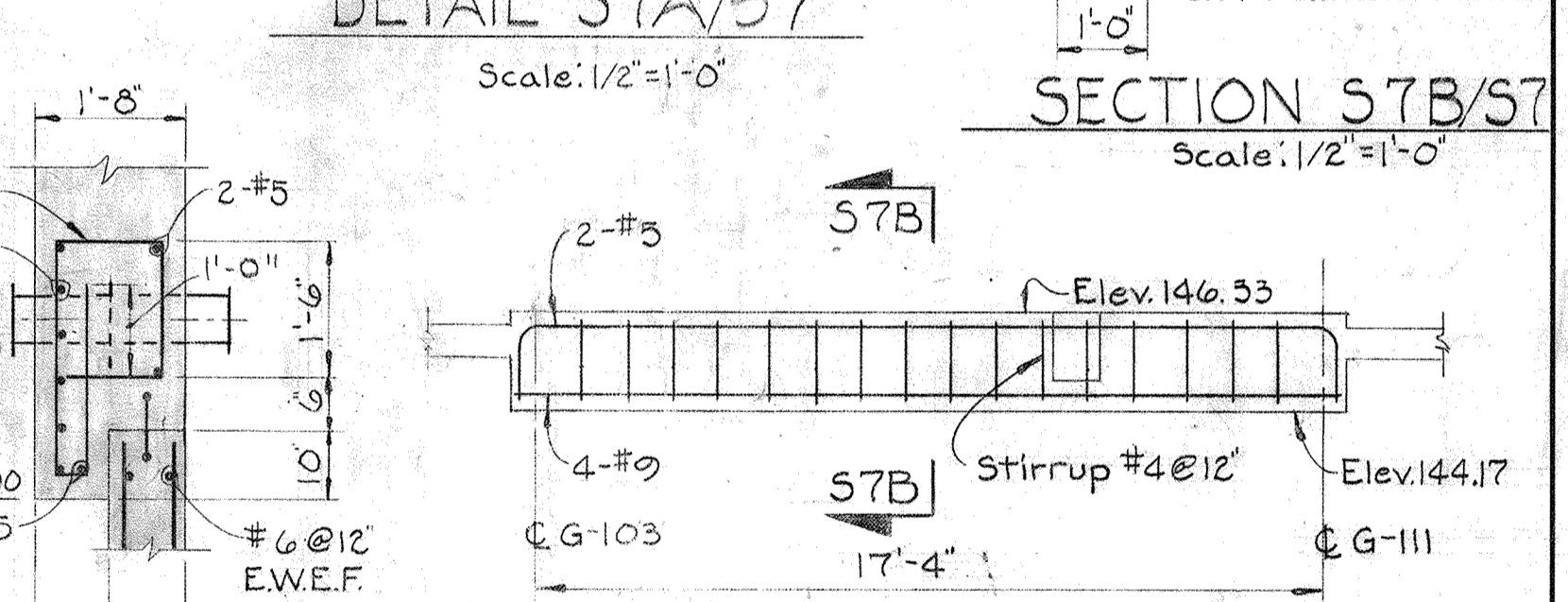
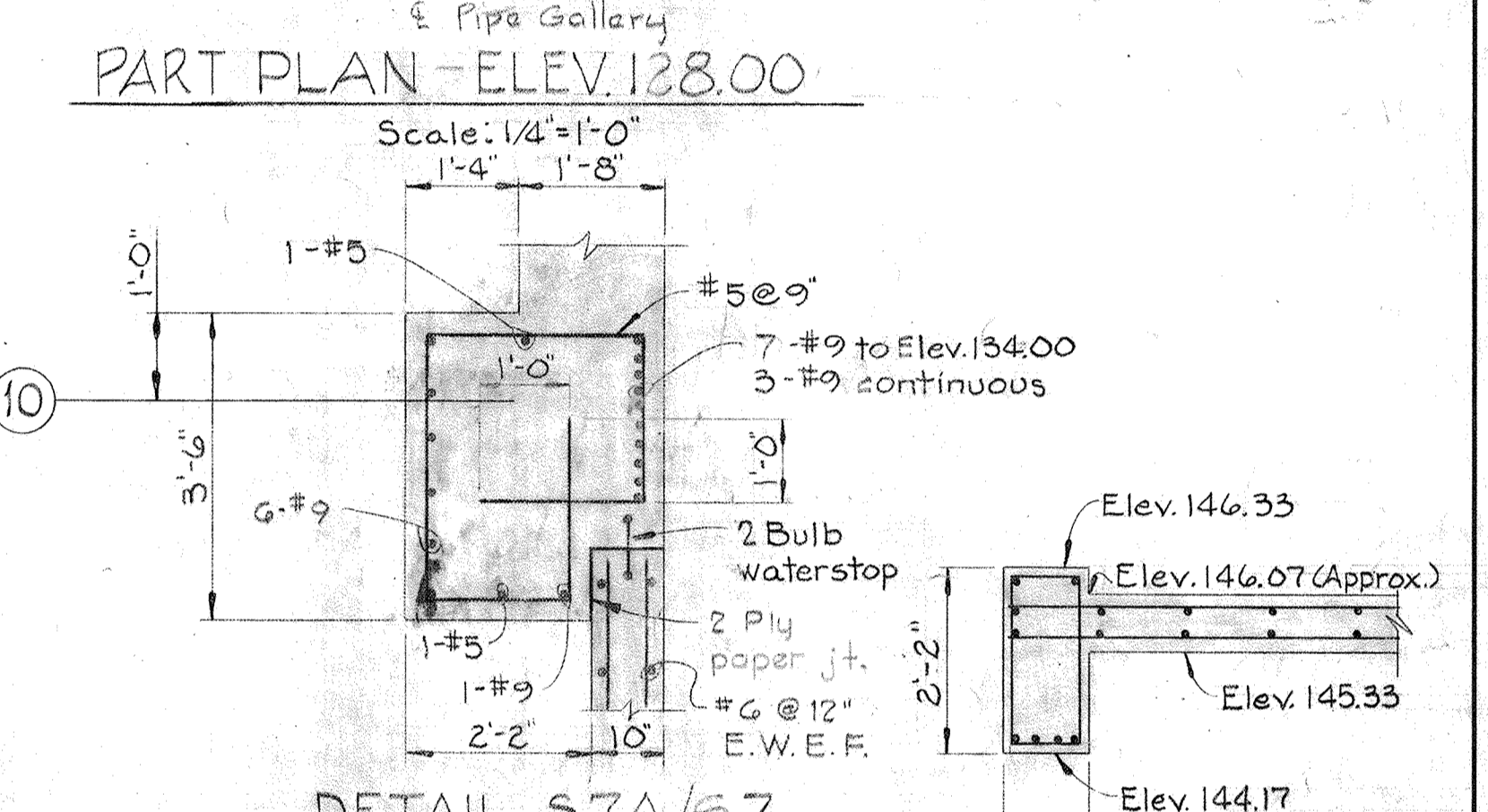
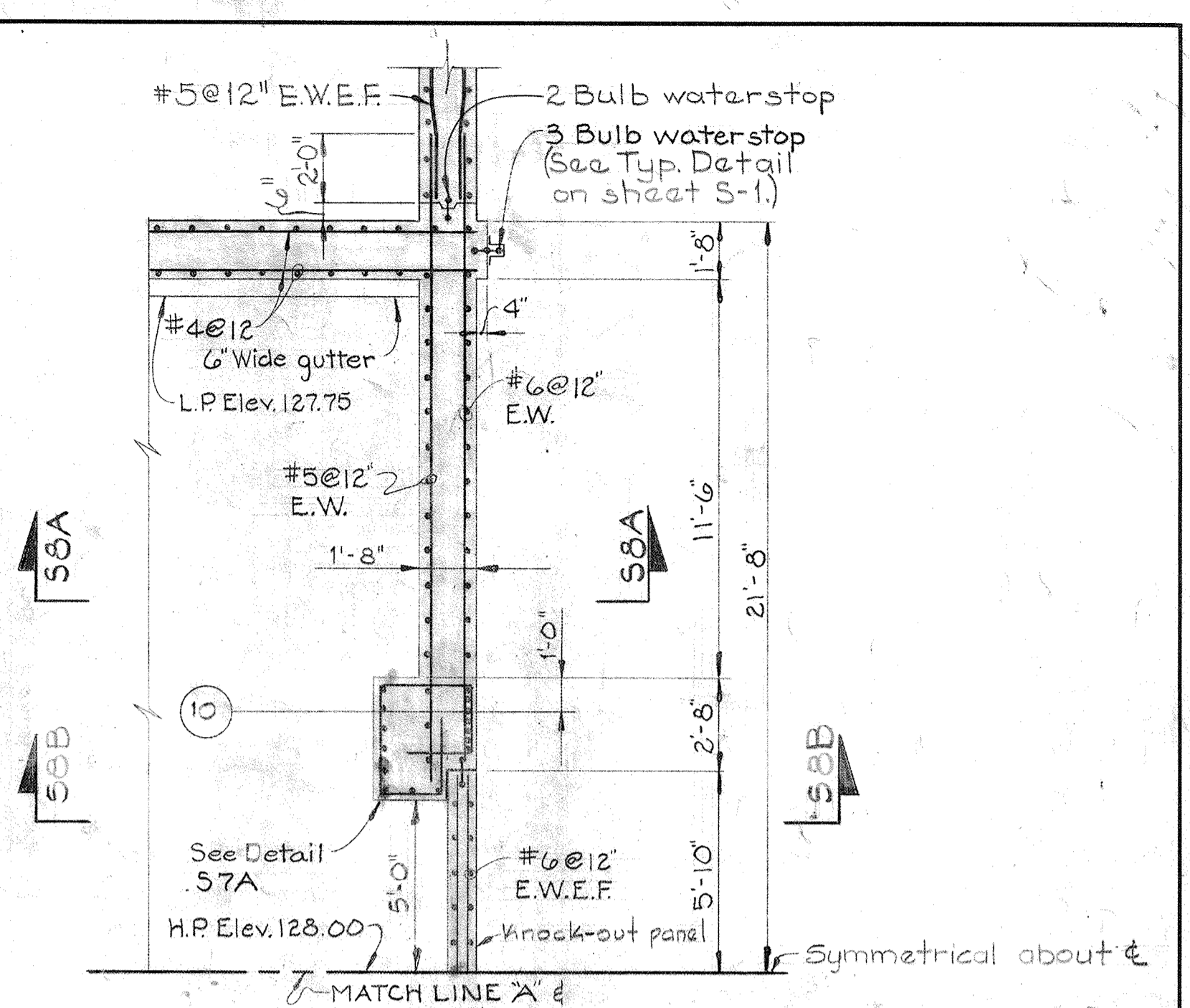
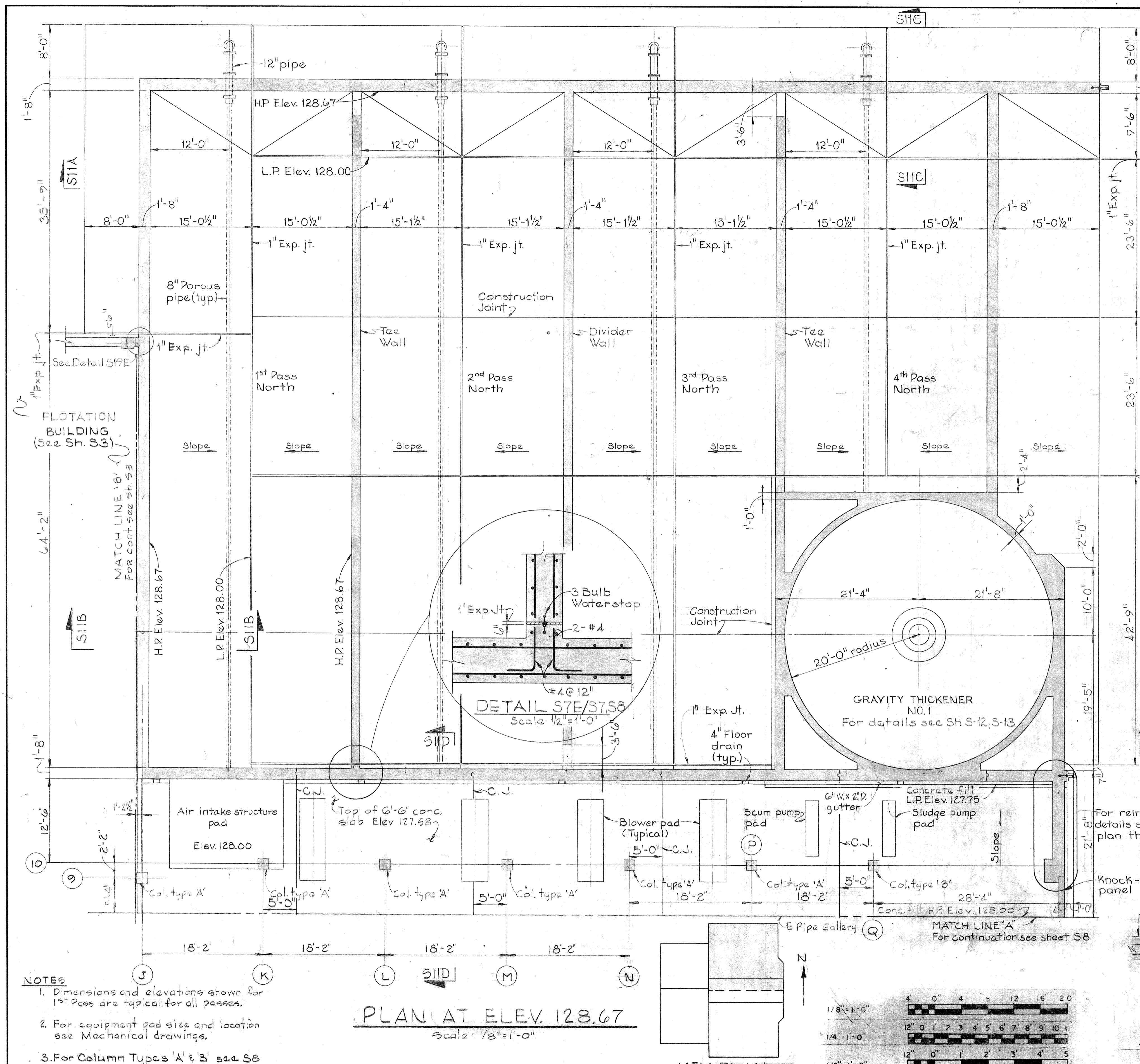
AS-BUILT DRAWING
CONTRACT NO. 50I-S

STRUCTURAL
FLOTATION THICKENERS
COLUMN SCHEDULE & DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO.4

DRAWING
NO. 39
OF 128

SCALE
AS
NOTED

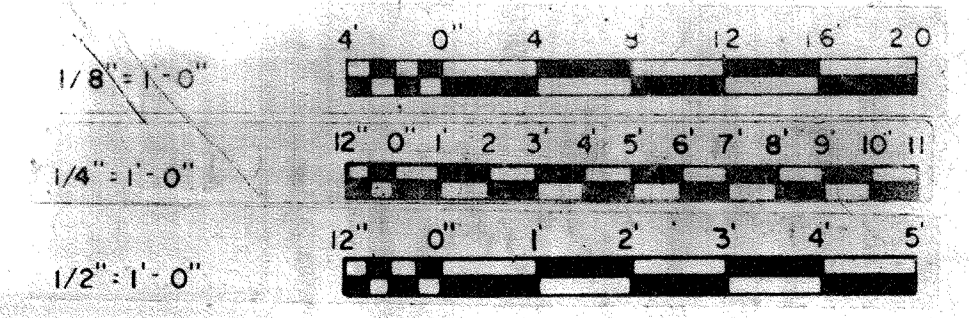


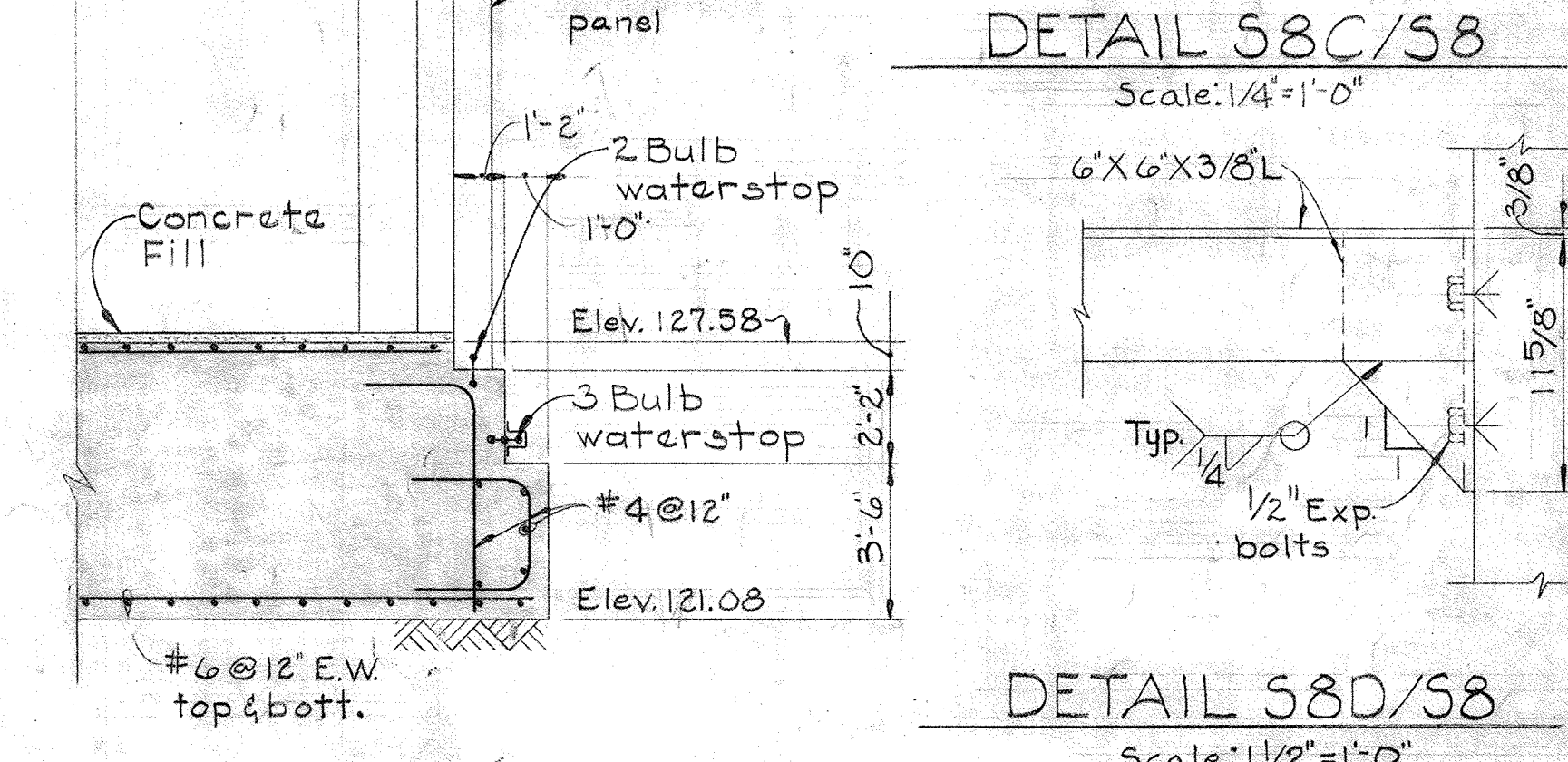
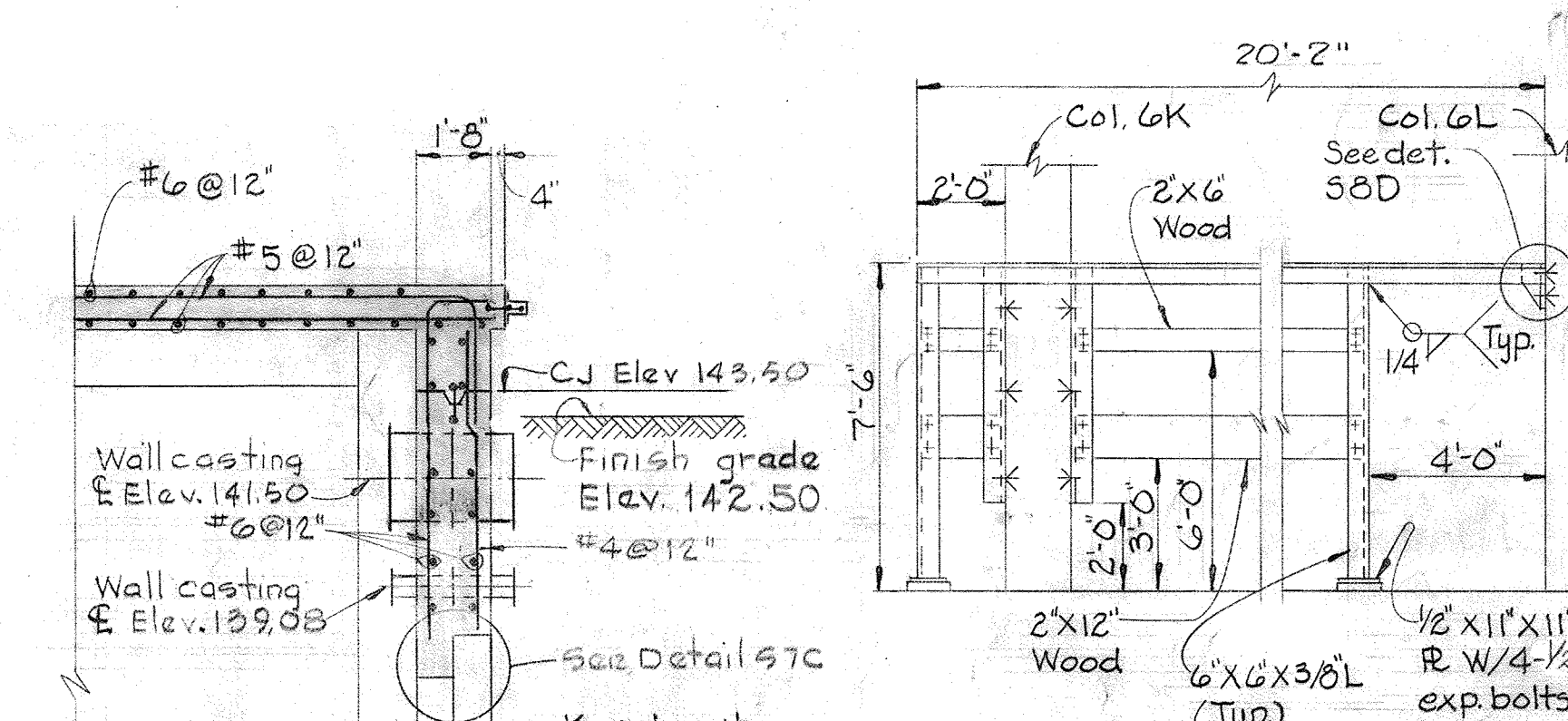
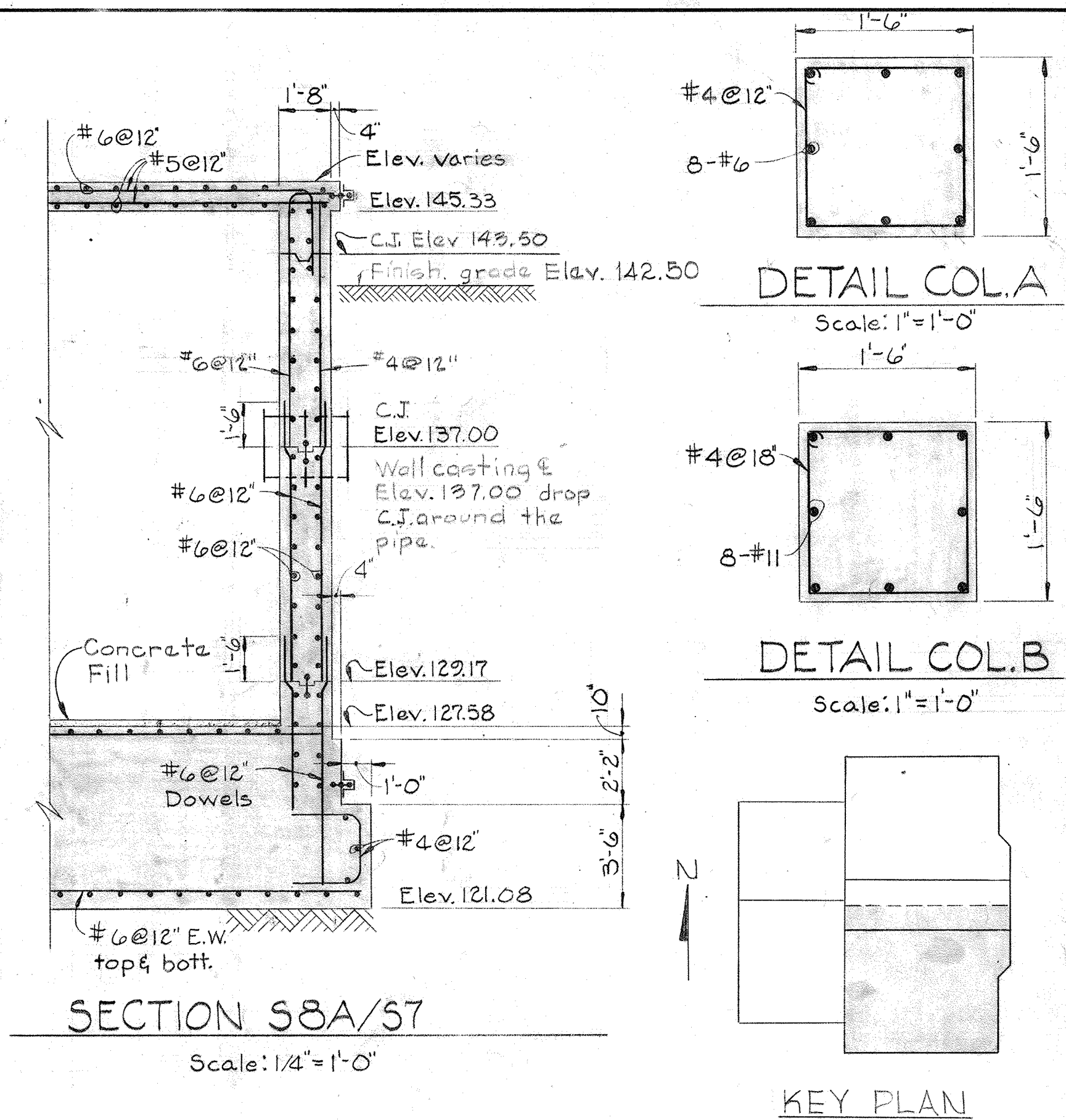
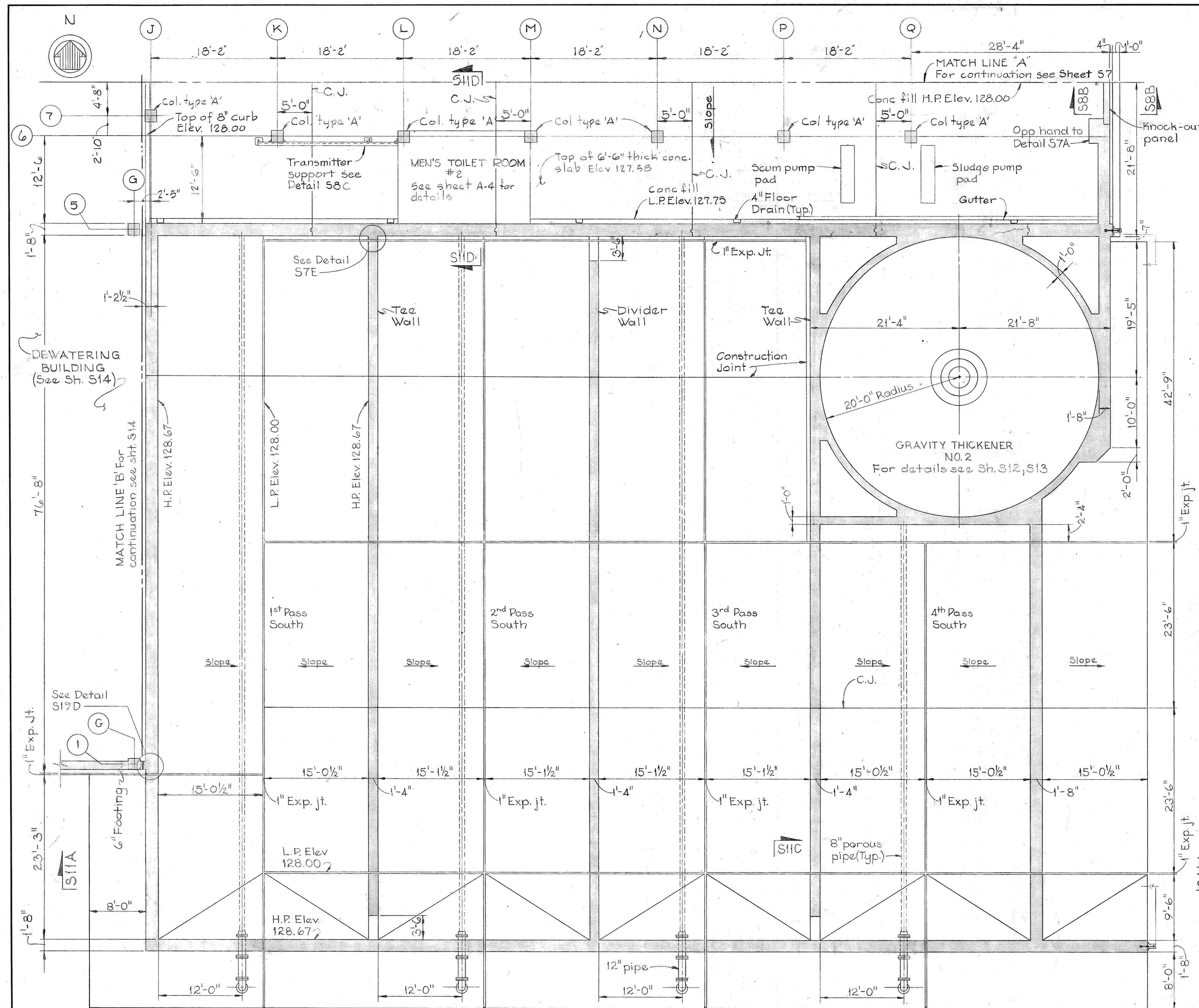
NOTES

1. Dimensions and elevations shown for 1st Pass are typical for all passes.
2. For equipment pad size and location see Mechanical drawings.
3. For Column Types 'A' & 'B' see S8

PLAN AT ELEV. 128.67
Scale: 1/8" = 1'-0"

KEY PLAN





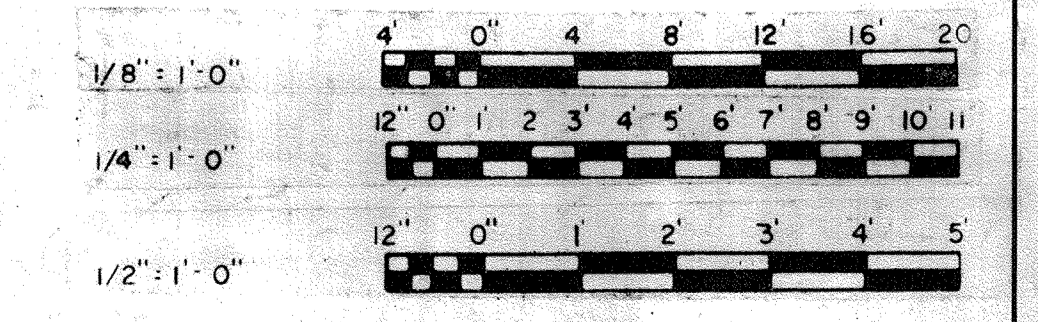
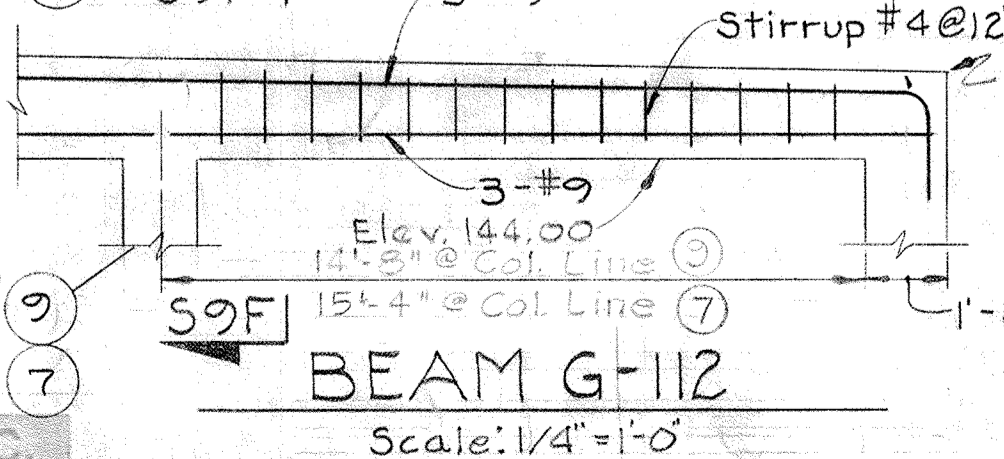
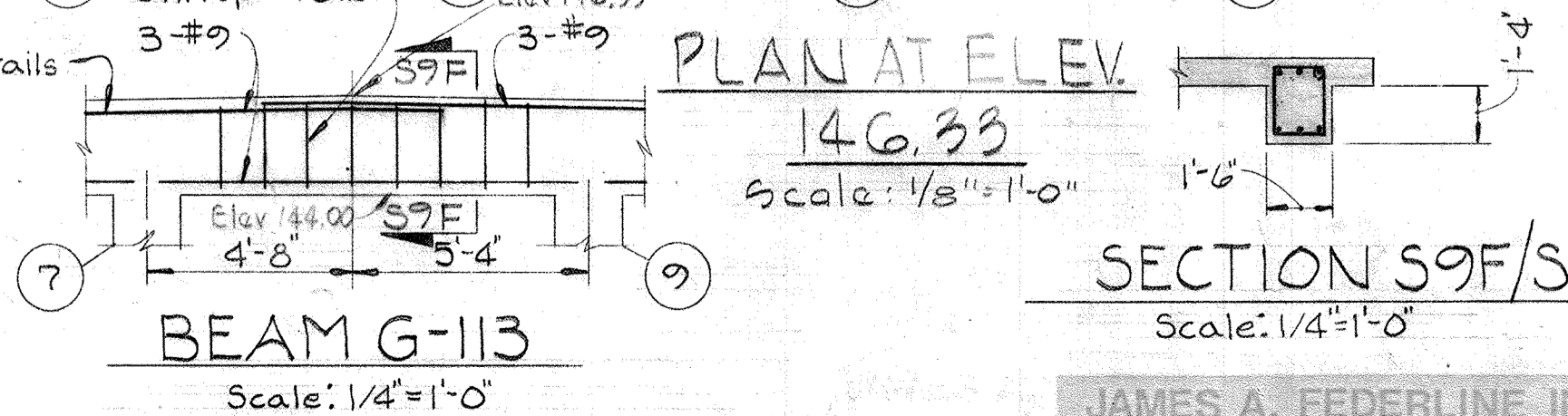
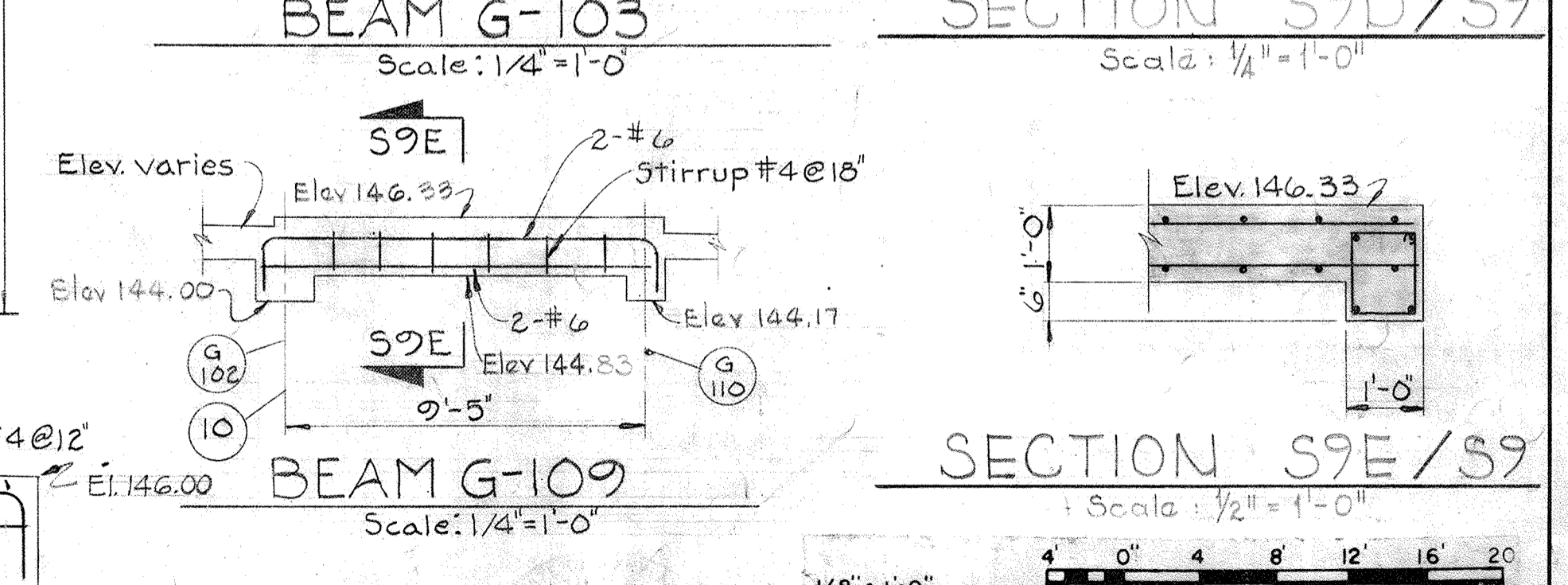
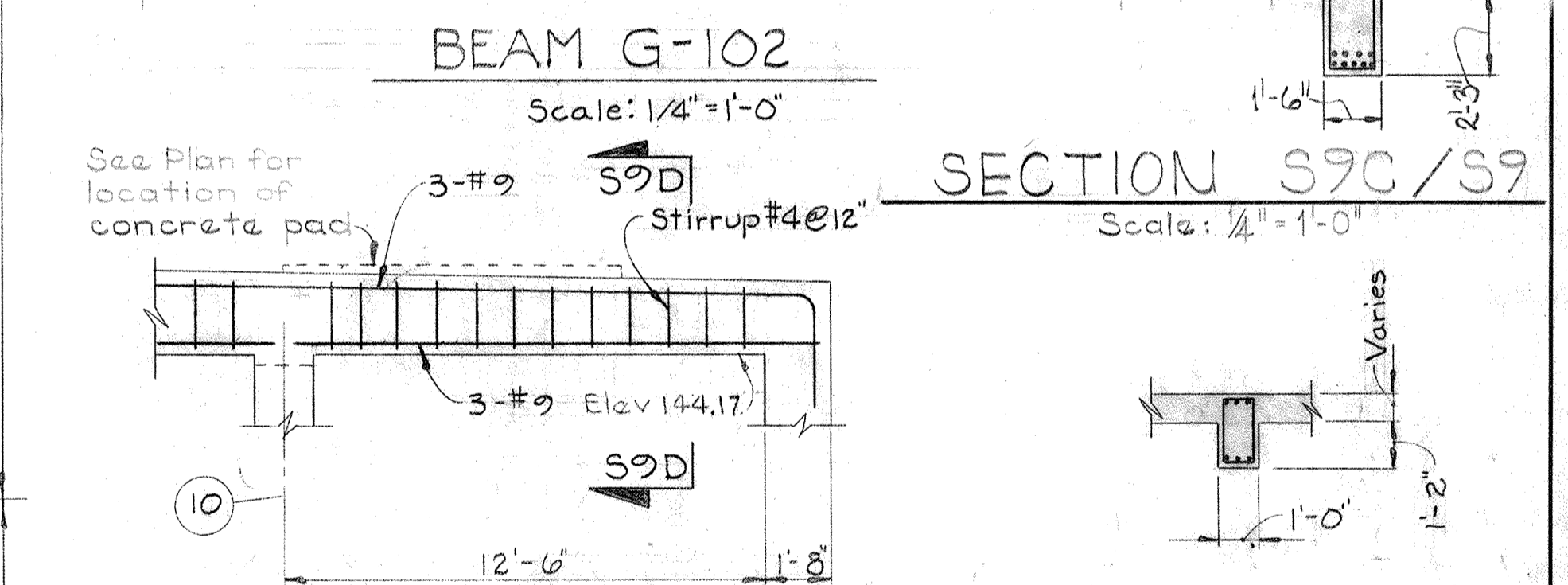
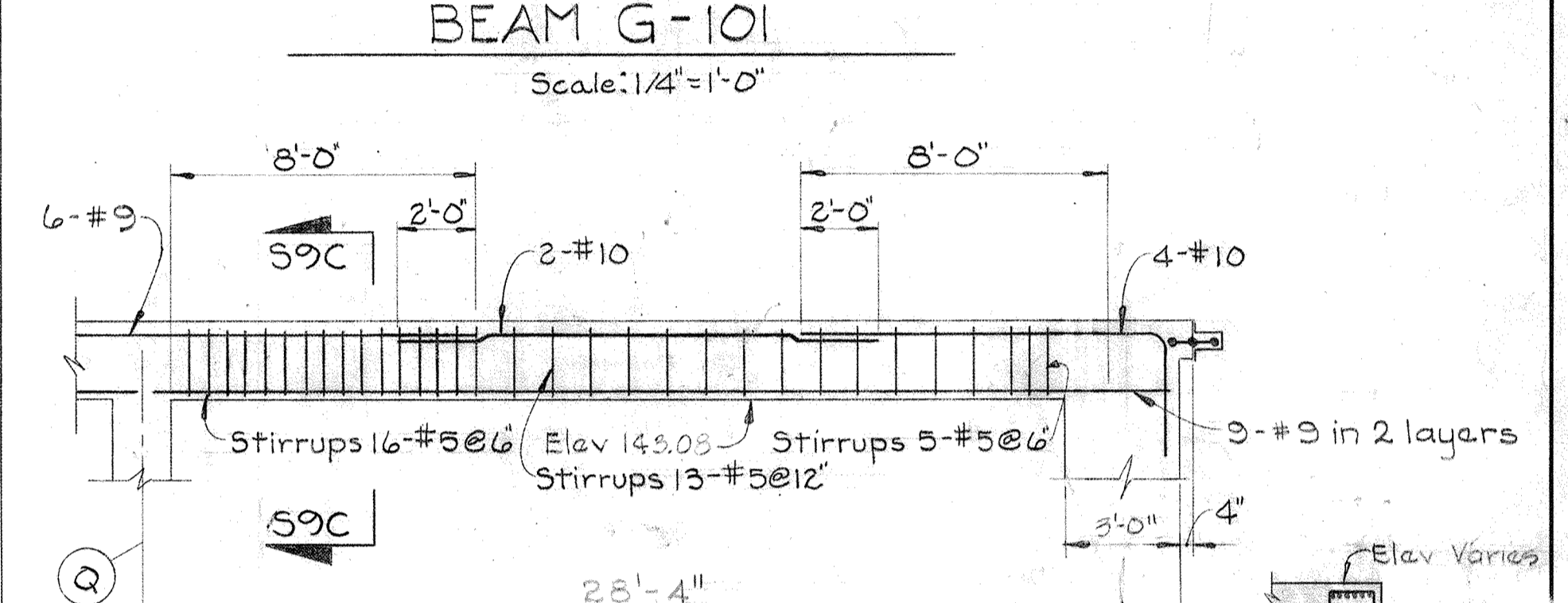
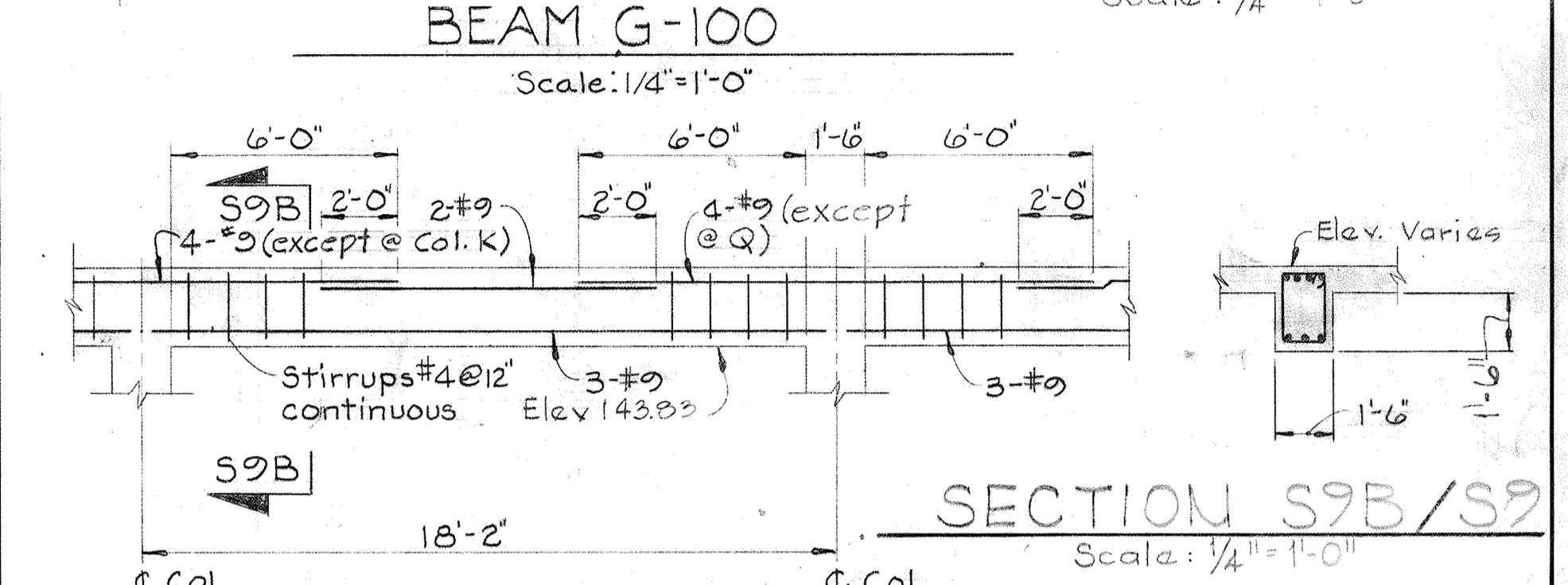
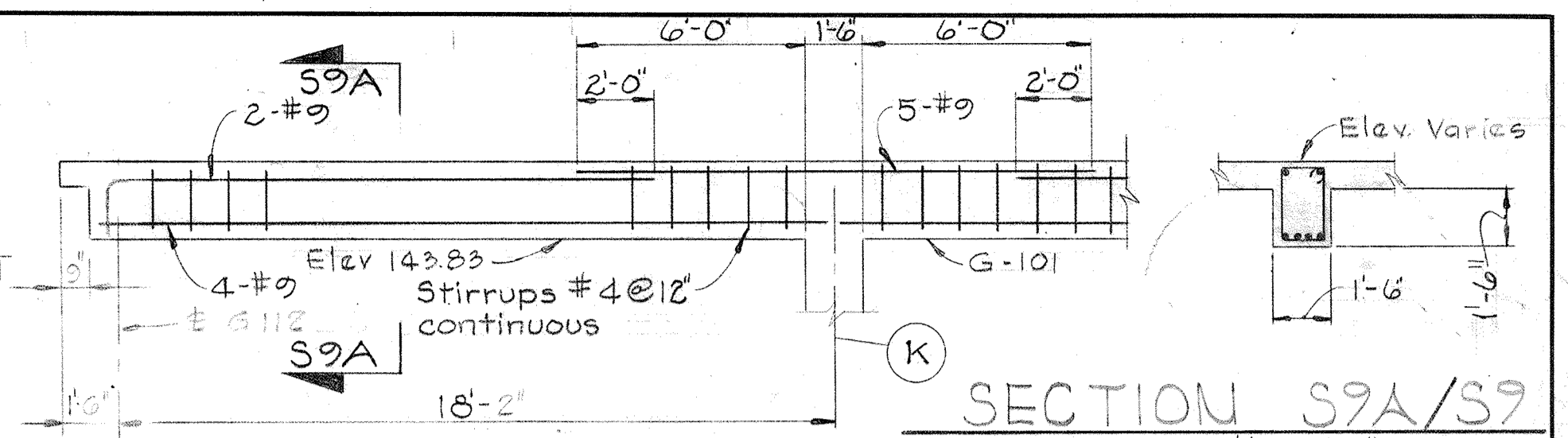
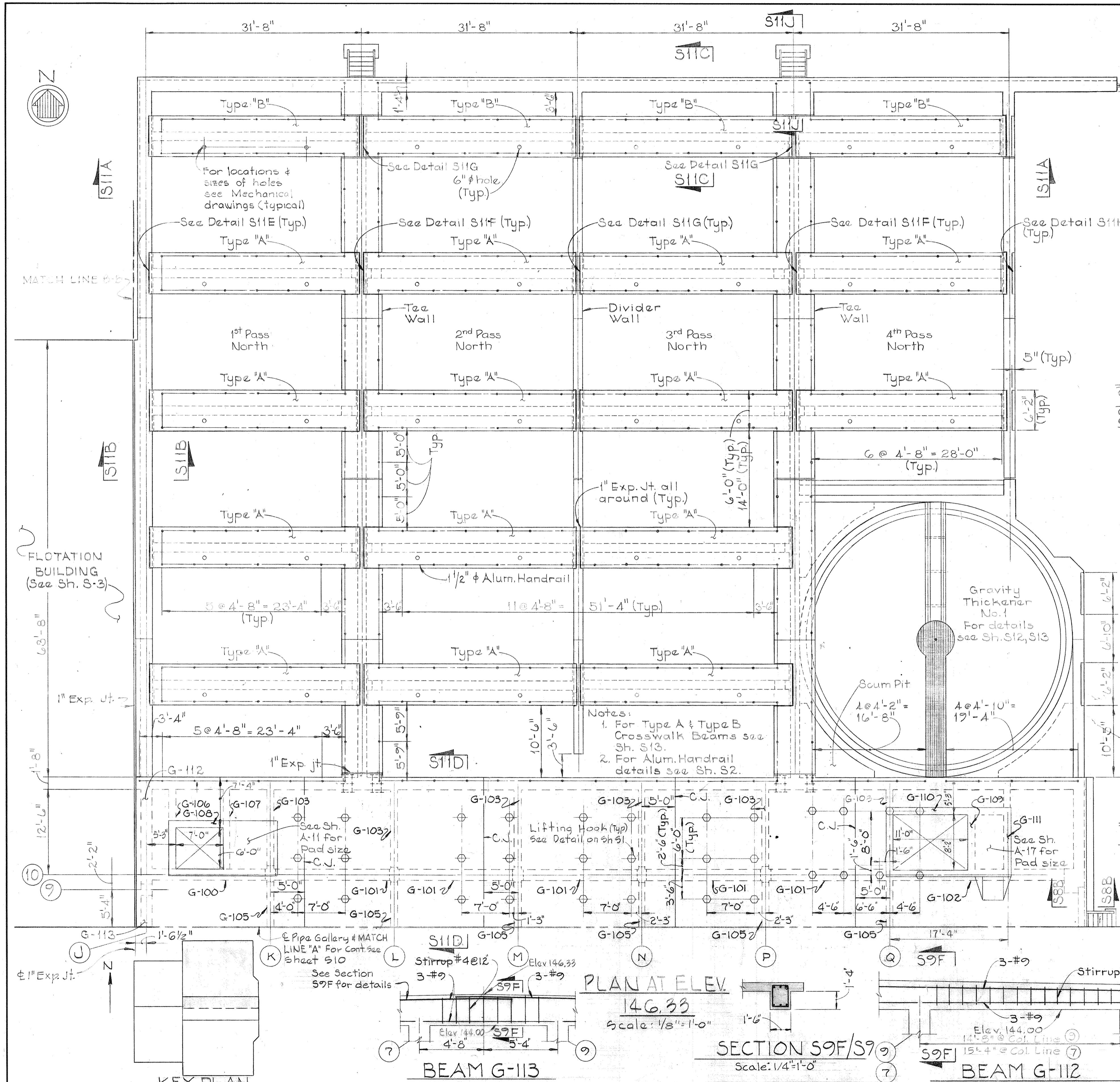
NOTES:
 1. Dimensions and elevations shown for 1st Pass are typical for all passes.
 2. For equipment pad size and location see Mechanical drawings

PLAN AT ELEV. 128.67
 Scale: 1/8" = 1'-0"

JAMES A. FEDERLINE INC.
 AS BUILT DRAWING

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/20/75 CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 501-S	STRUCTURAL DIGESTERS & GRAVITY THICKENERS PLAN ELEV. 128.00 SOUTH	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 41 OF 128	SCALE AS NOTED
					W. O. 6887-2	SHEET S-8

BRUNING 44-510 18392



WHITMAN, REQUARDT & ASSOCIATES
 ENGINEERS
 1304 ST. PAUL ST.
 BALTIMORE, MARYLAND

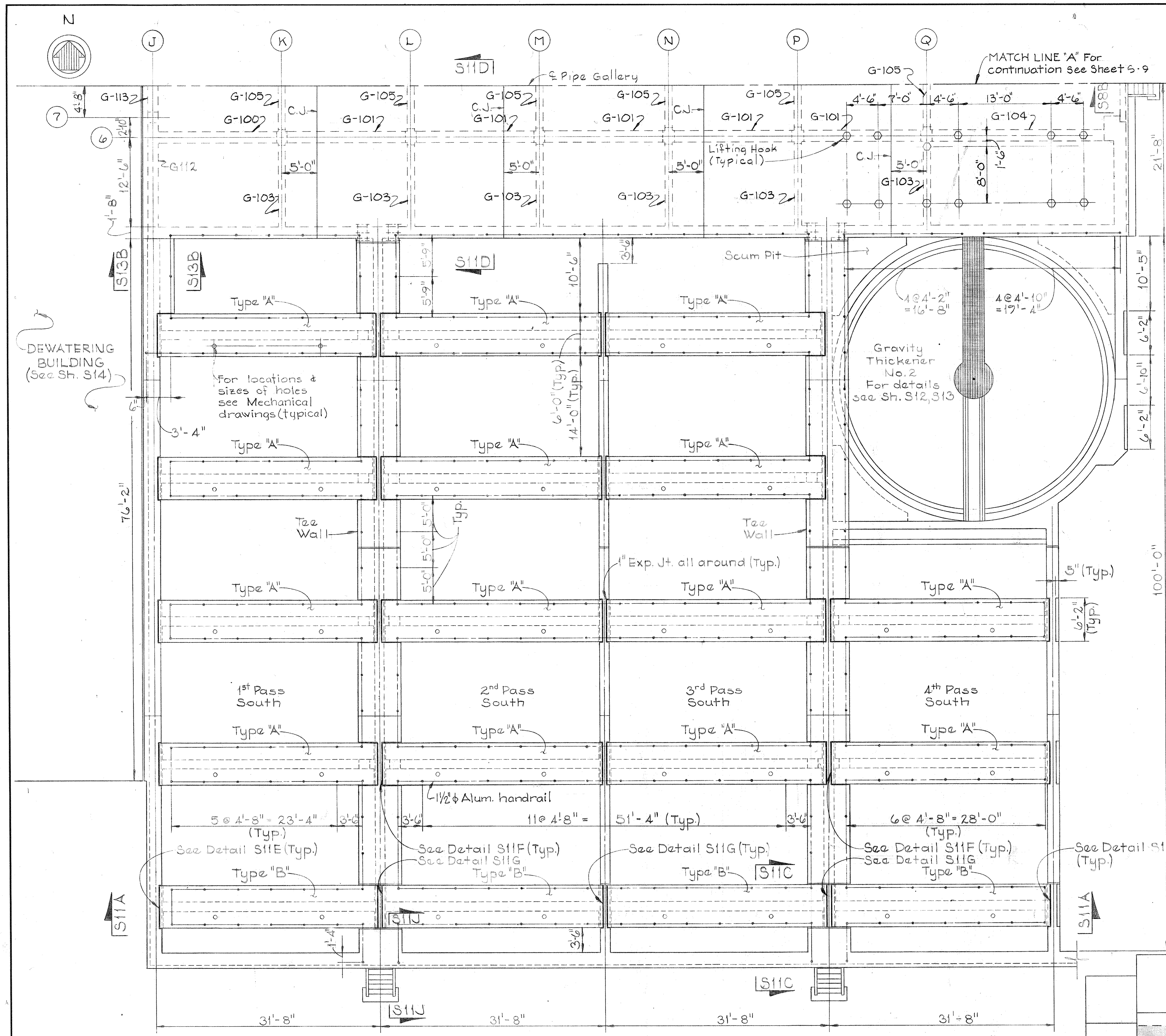
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE 3/20/15
 W. O. Federline
 CHIEF-BUREAU OF ENGINEERING

AS BUILT DRAWING
 CONTRACT NO. 501-S

STRUCTURAL
 DIGESTERS &
 GRAVITY THICKENERS
 PLAN ELEV. 146.33 NORTH

SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 4

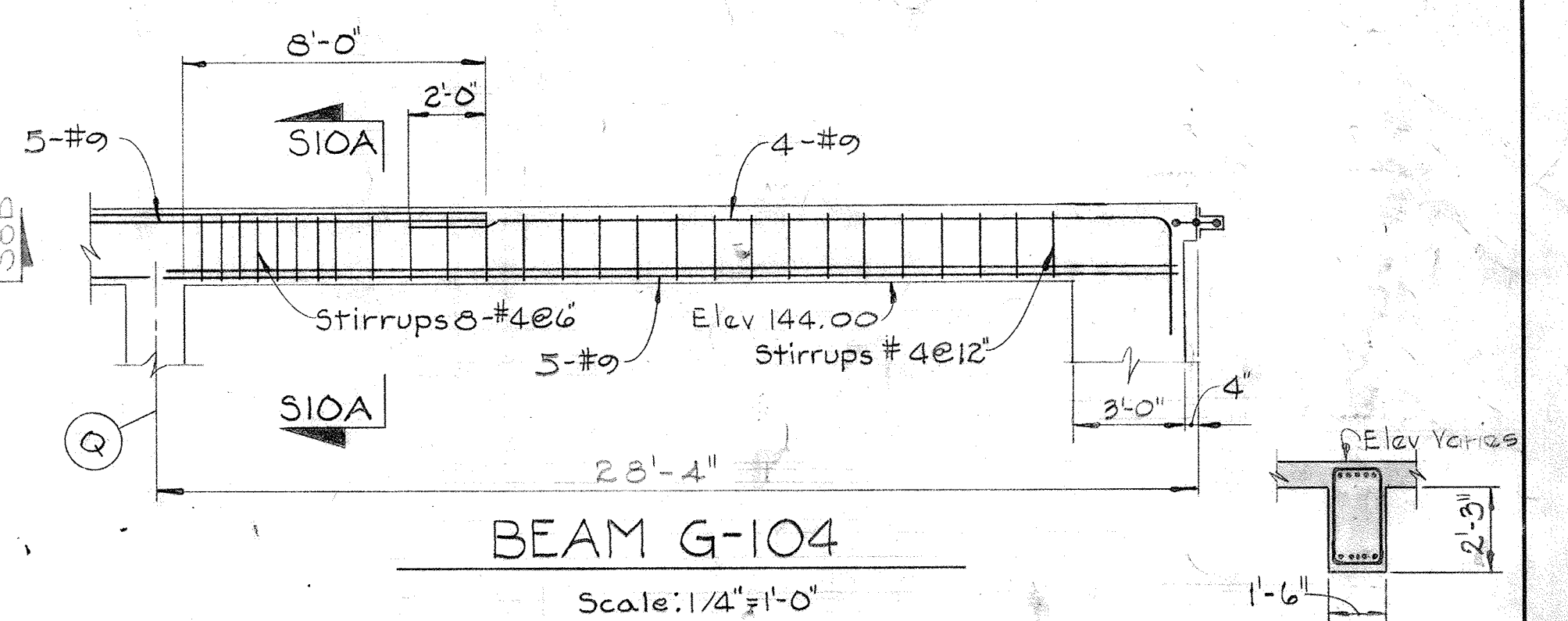
DRAWING NO. 42 OF 128
 SCALE AS NOTED



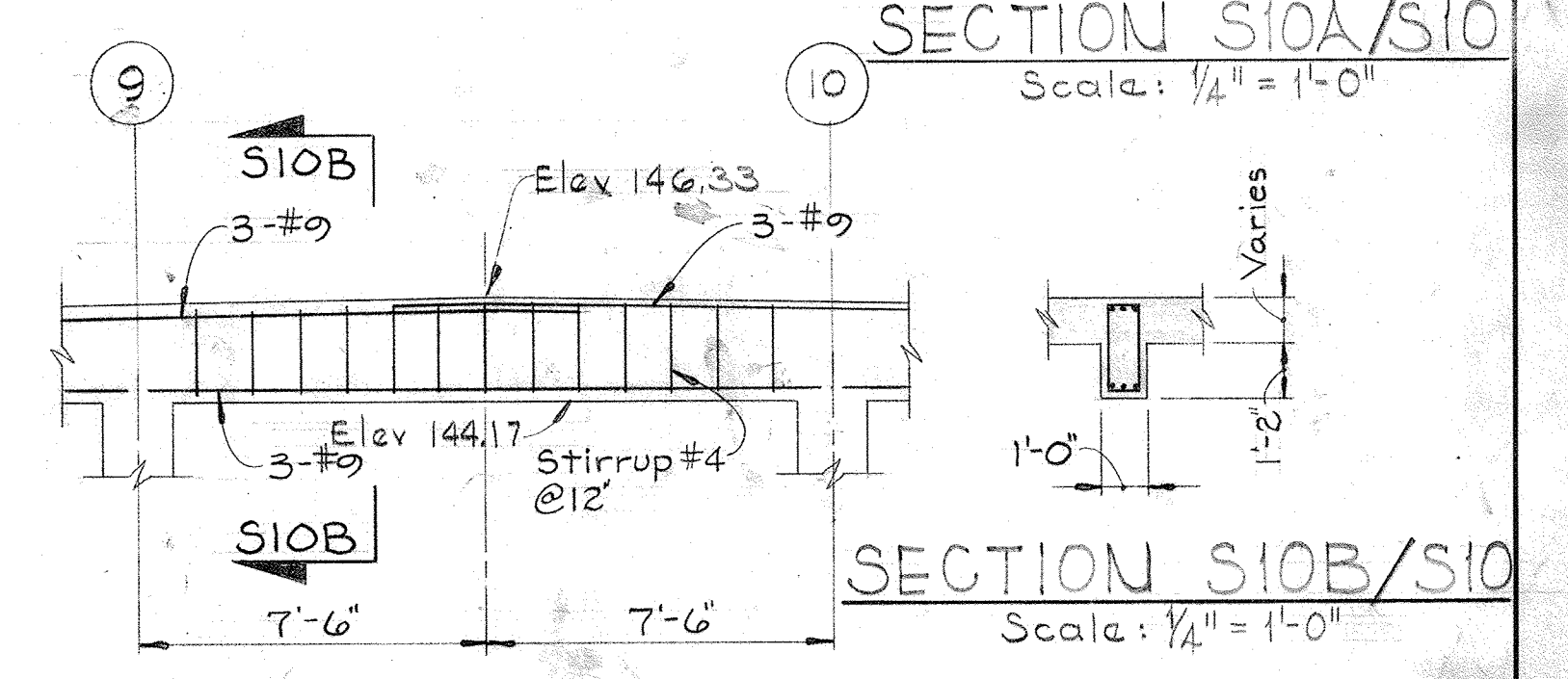
DEWATERING BUILDING (See Sh. S14)

- Notes:
1. For Type "A" & Type "B" Crosswalk Beams see Sh. S-13
 2. For Aluminum Handrail details see Sh. S-2.

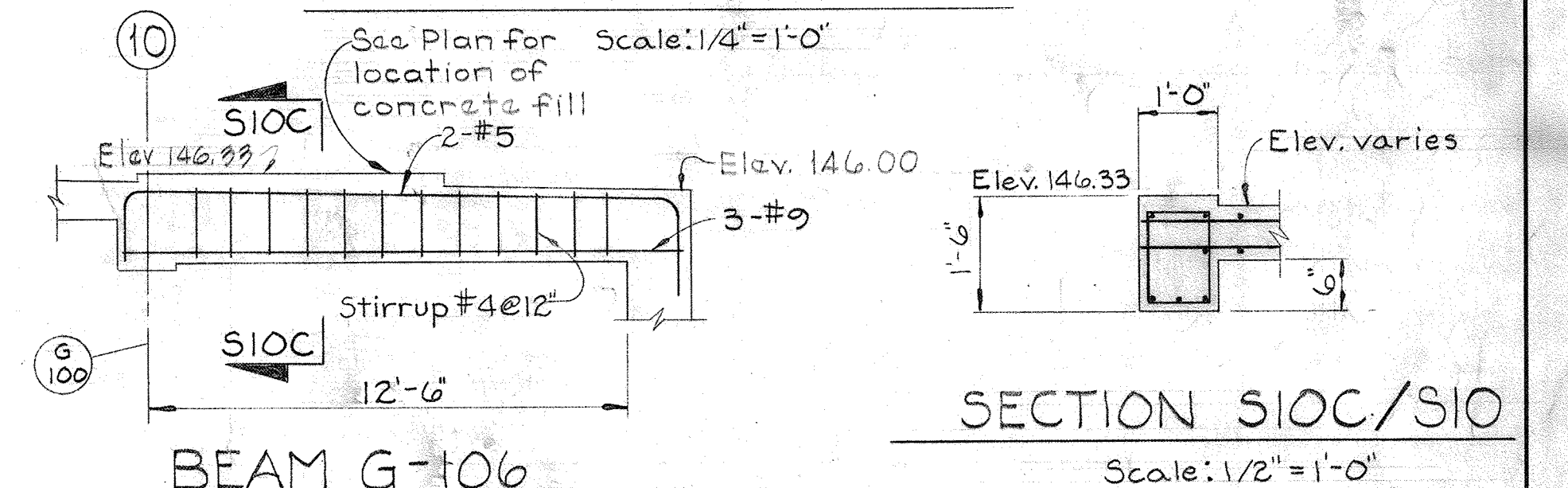
PLAN AT ELEV. 146.33
Scale: 1/8" = 1'-0"



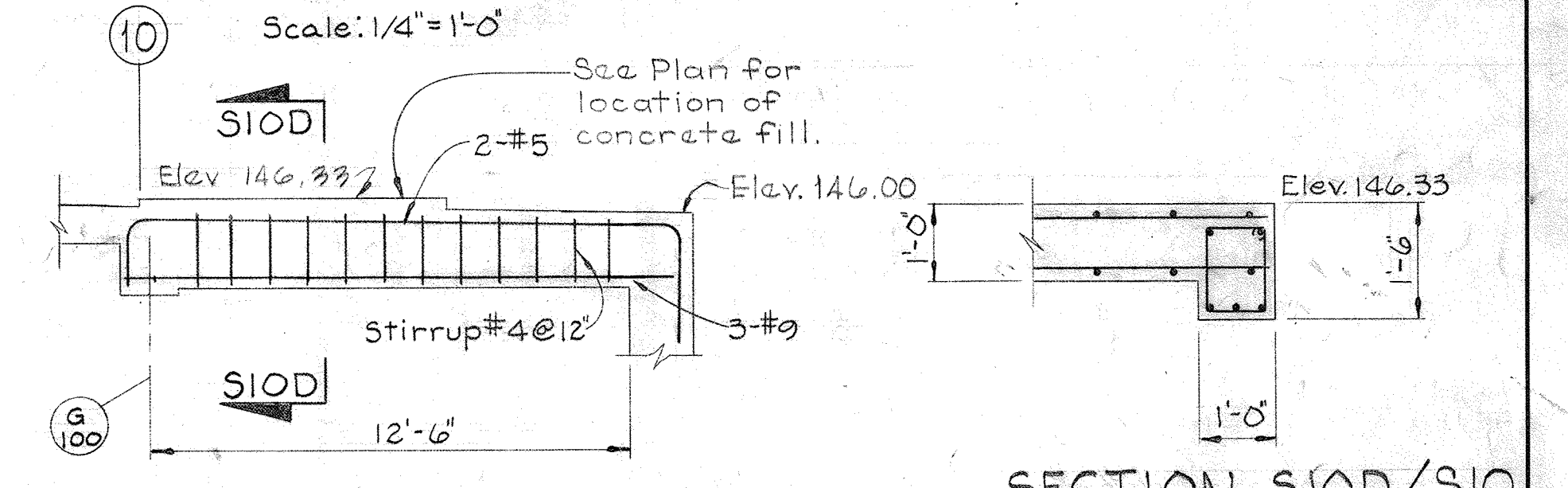
BEAM G-104
Scale: 1/4" = 1'-0"



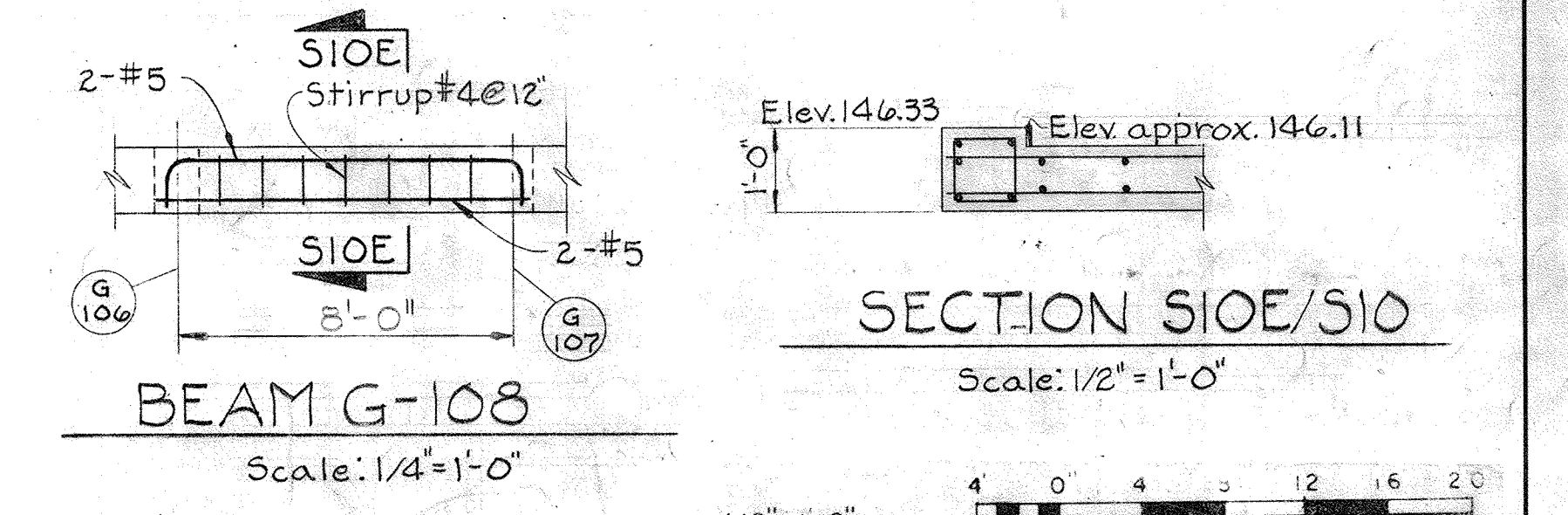
BEAM G-105
Scale: 1/4" = 1'-0"



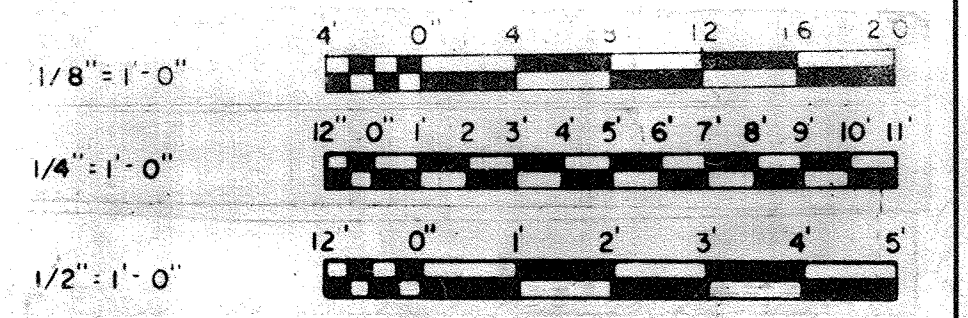
BEAM G-106
Scale: 1/2" = 1'-0"



BEAM G-107
Scale: 1/4" = 1'-0"



BEAM G-108
Scale: 1/4" = 1'-0"



KEY PLAN

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

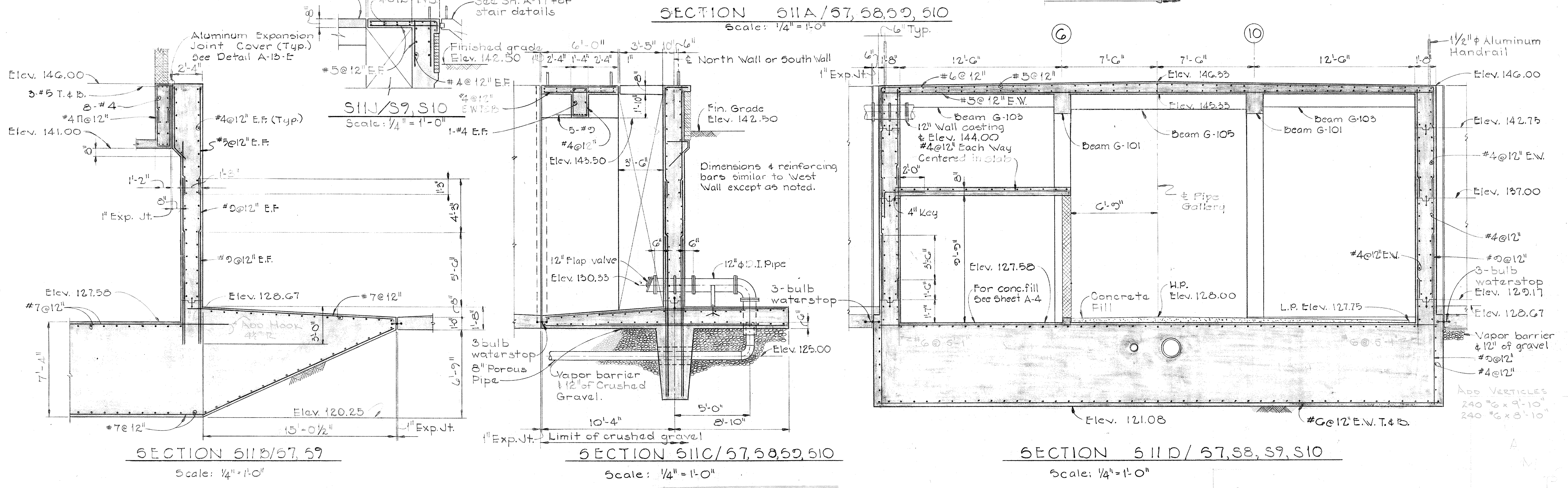
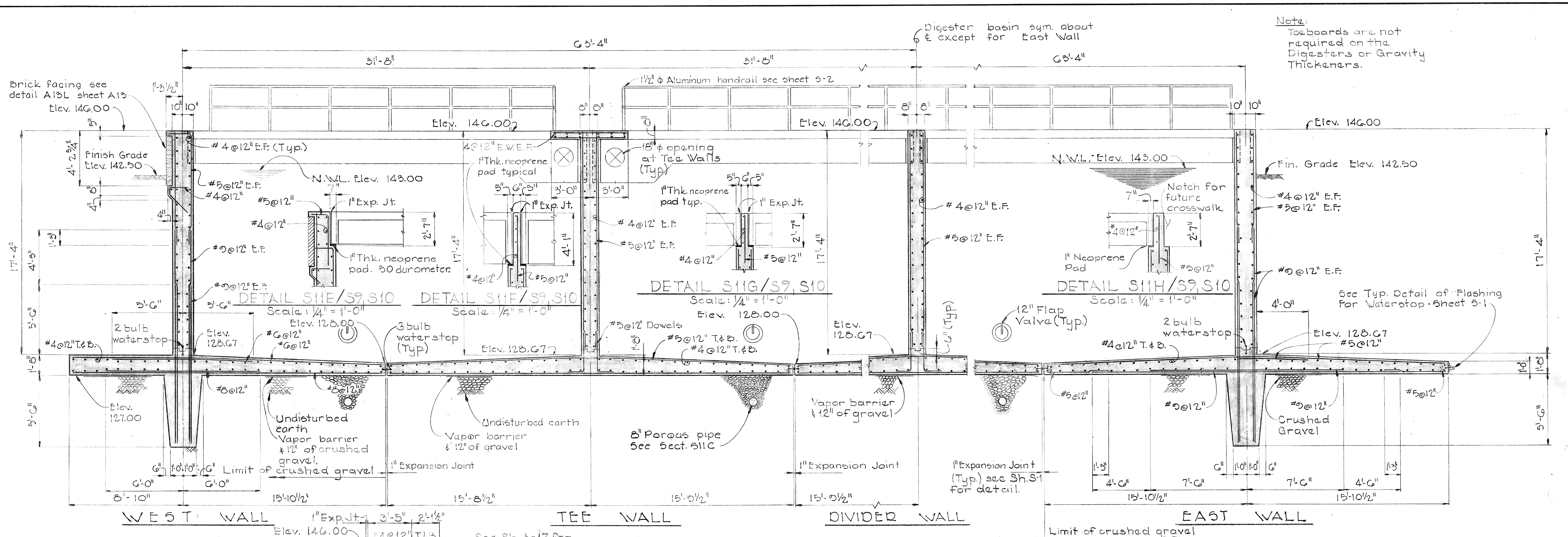
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3/20/75
W. O. Federline
CHIEF BUREAU OF ENGINEERING

JAMES A. FEDERLINE INC.
AS BUILT DRAWING
CONTRACT NO. 501-S

STRUCTURAL
DIGESTERS &
GRAVITY THICKENERS
PLAN ELEV. 146.33 SOUTH

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 43 OF 128
SCALE AS NOTED

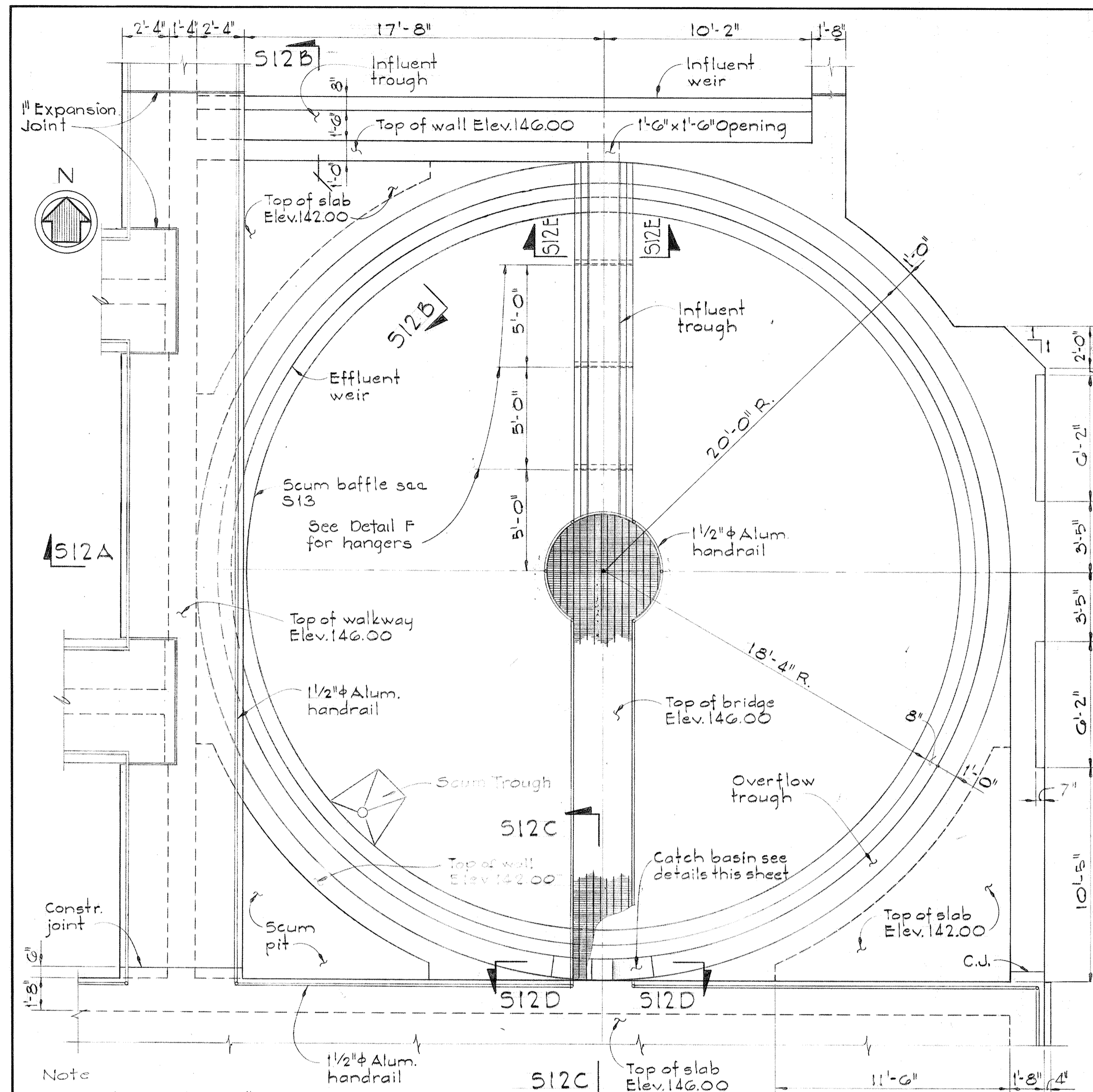


<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND W.O. 6887-2 CHIEF-BUREAU OF ENGINEERING</p>	<p>JAMES A. FEDERLINE INC. AS-BUILT DRAWING CONTRACT NO. 501-S</p>	<p>STRUCTURAL DIGESTERS & GRAVITY THICKENERS SECTIONS</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.4</p>	<p>DRAWING NO. 44 OF 128</p>	<p>SCALE AS NOTED</p>
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W.O. 6887-2

SHEET S-11

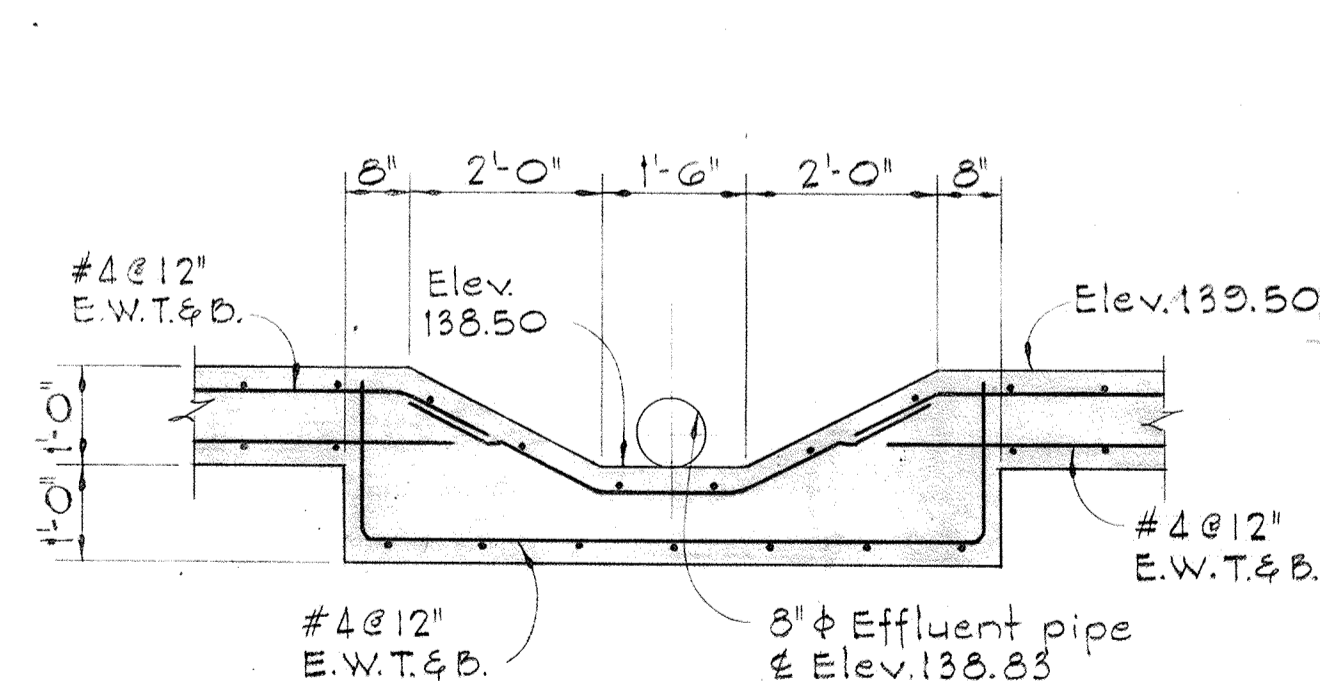
BRUNING 44-510 18392



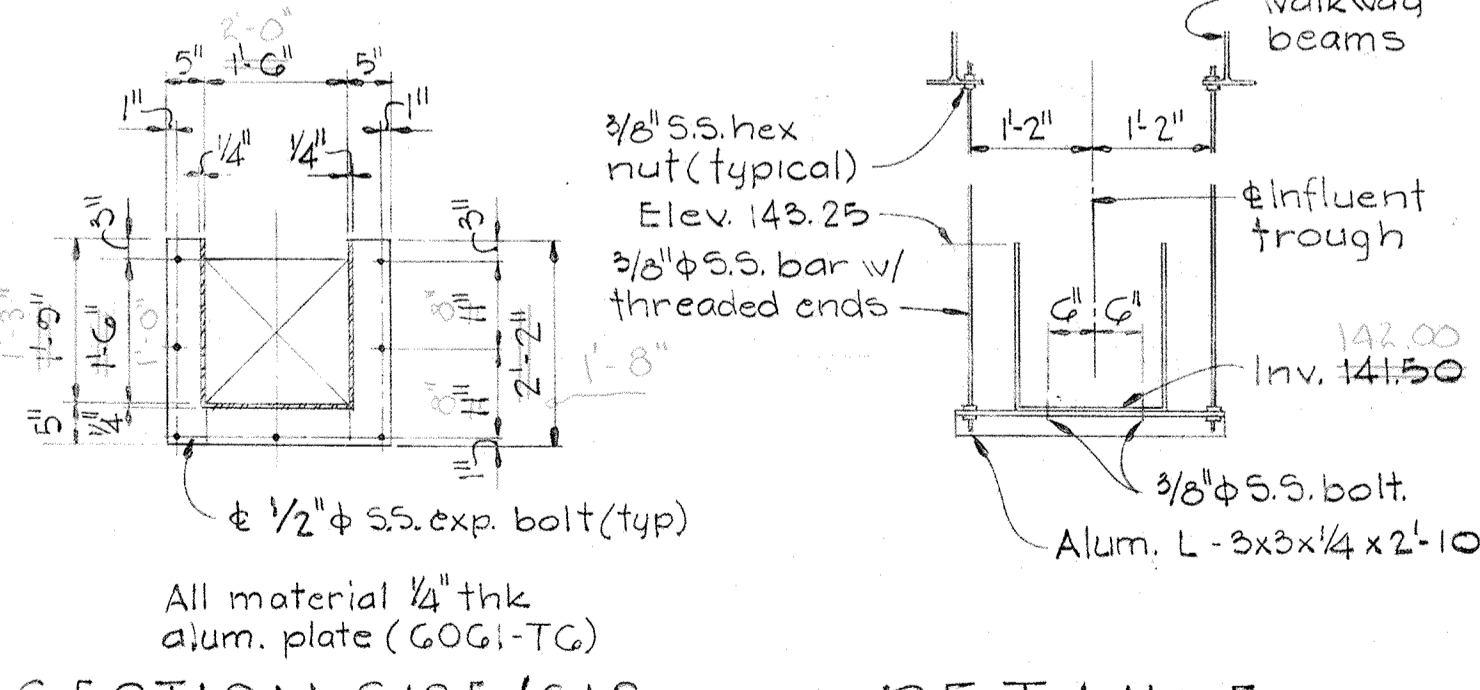
PLAN - GRAVITY THICKENER #1

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

Note
Gravity Thickener #2
similar but
opposite hand.

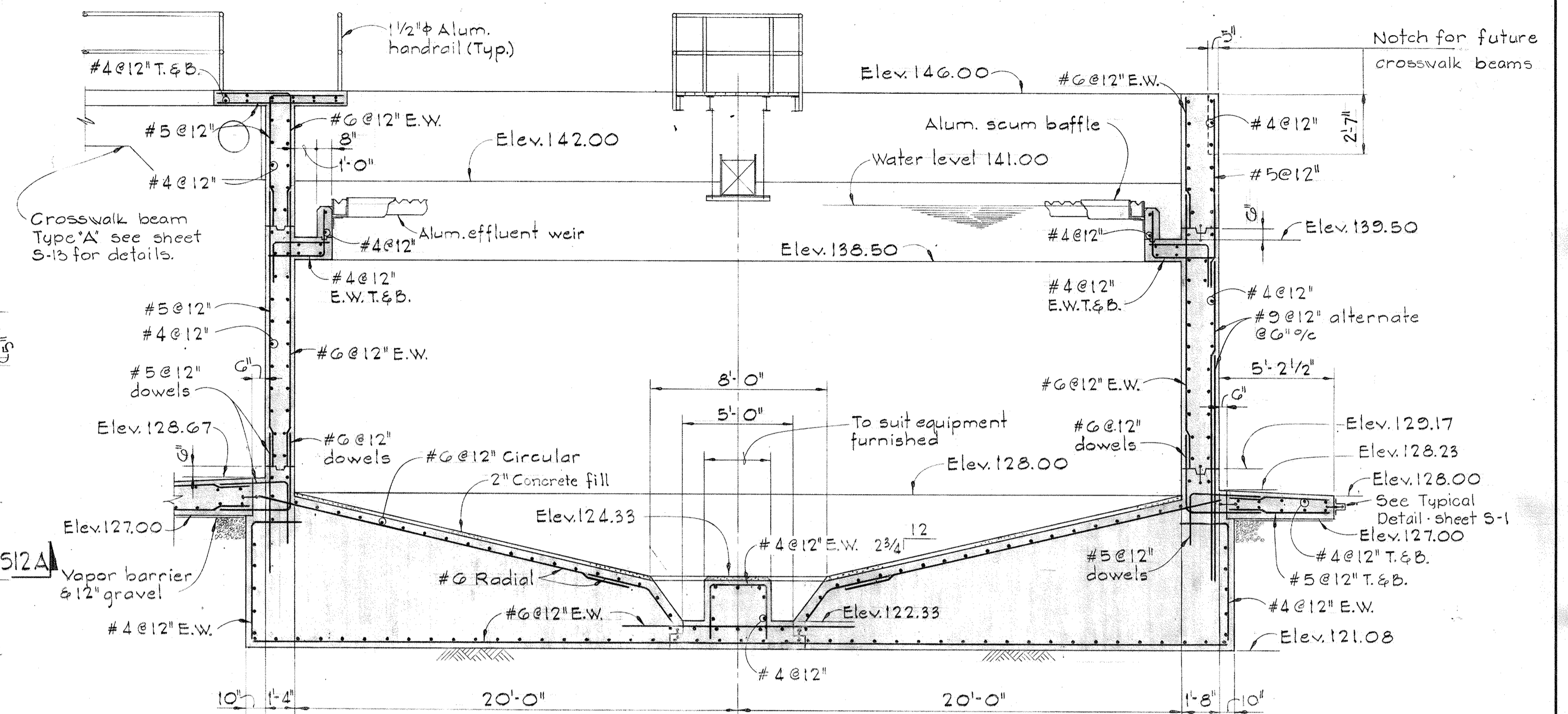


SECTION 512 D/512
Scale: 1/2" = 1'-0"



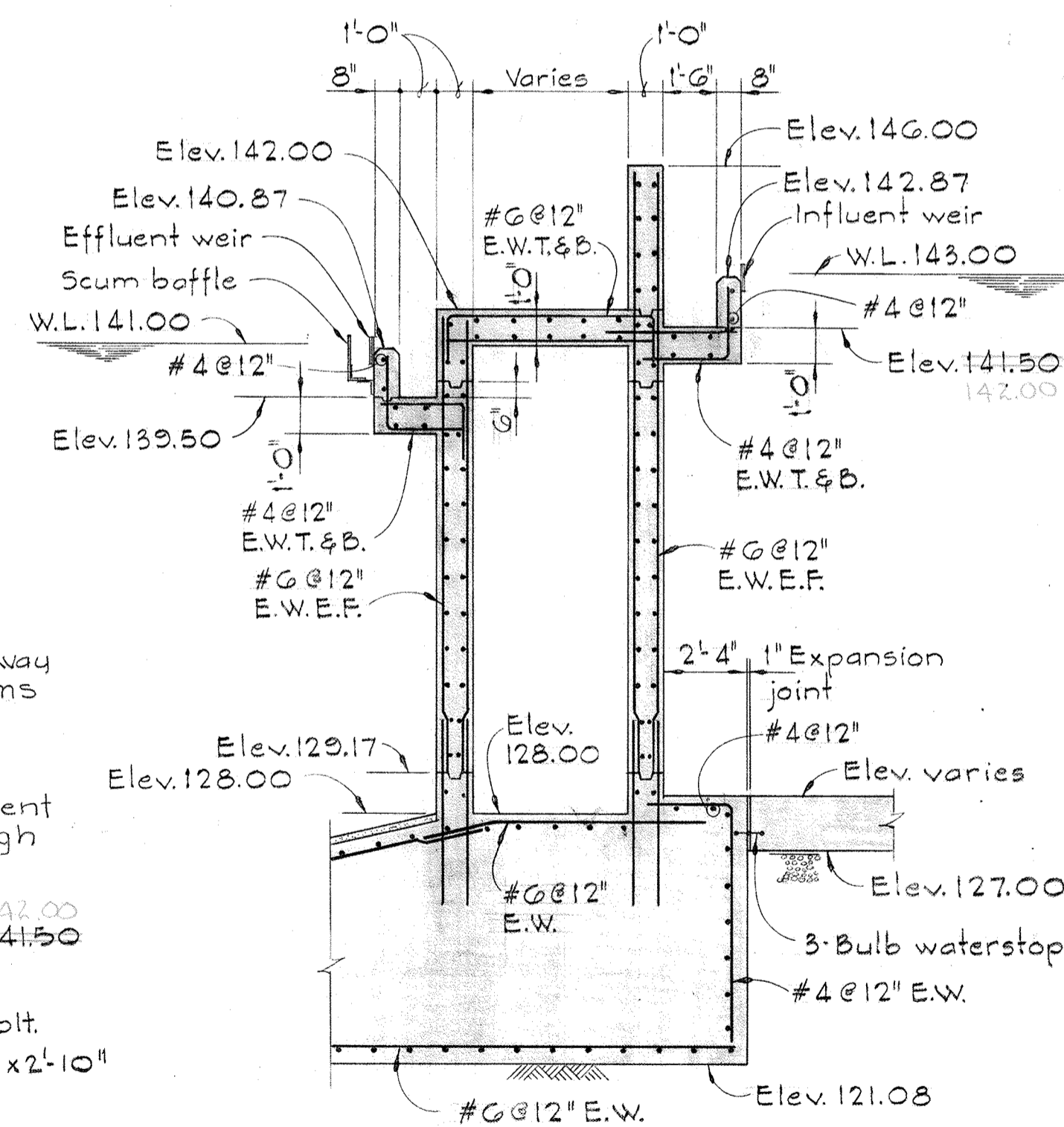
SECTION 512 E/512
Scale: 1/2" = 1'-0"

DETAIL F
Scale: 1/2" = 1'-0"



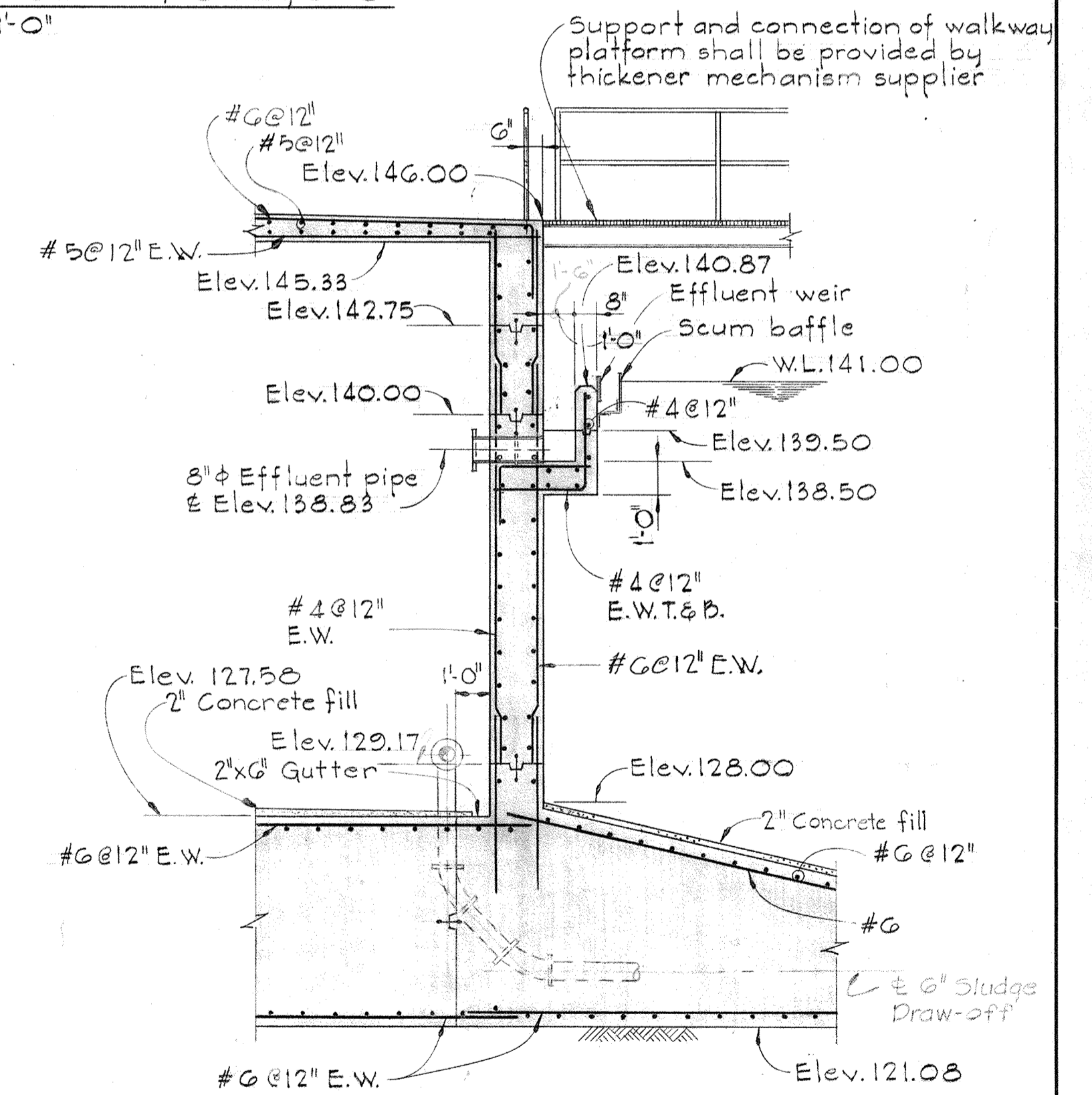
SECTION 512 A/512, S13

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



SECTION 512 B/512, S13

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



SECTION 512 C/512, S13

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

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

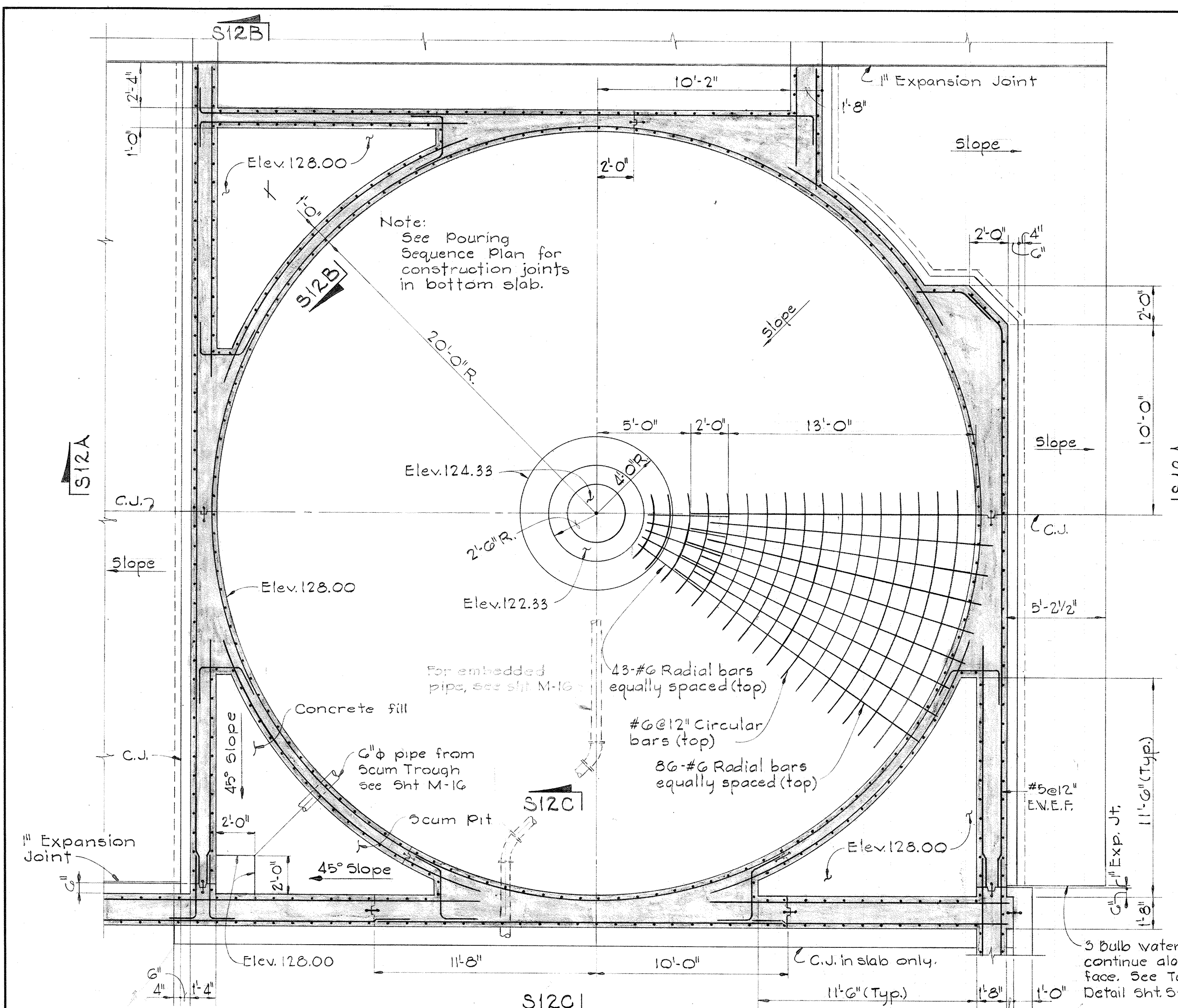
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
W.O. Federline
CHIEF - BUREAU OF ENGINEERING

JAMES A. FEDERLINE INC.
AS BUILT DRAWING
CONTRACT NO. 501-S

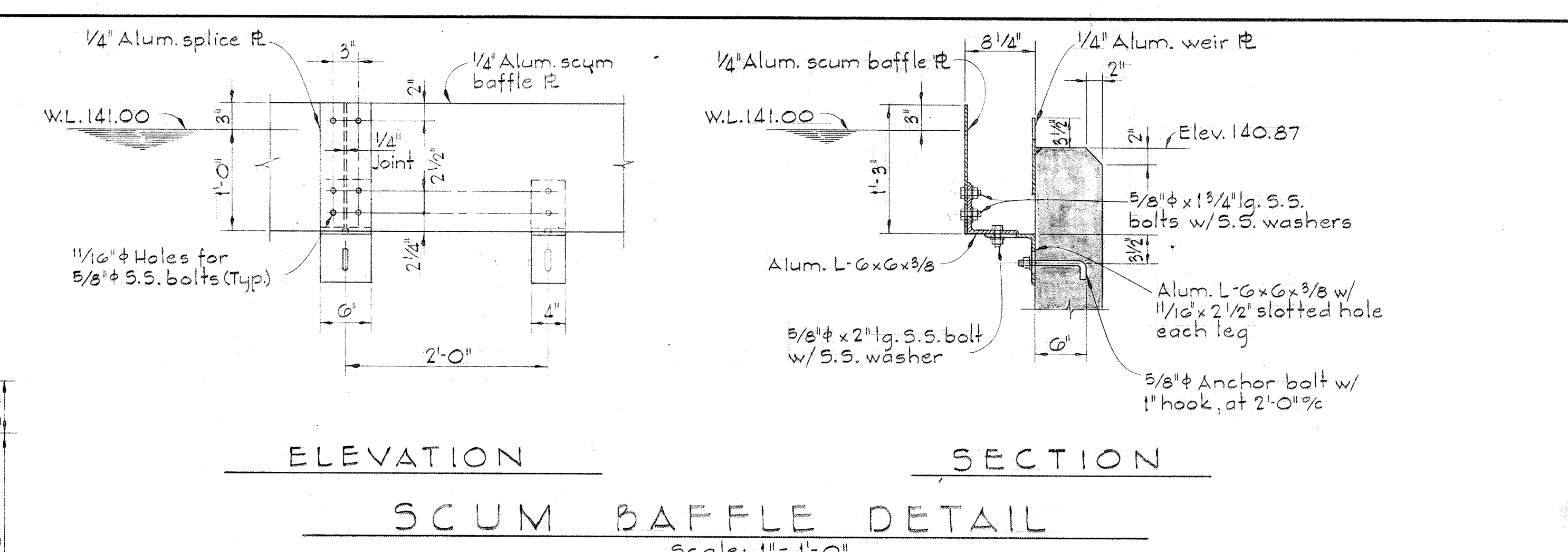
STRUCTURAL
DIGESTERS &
GRAVITY THICKENERS
PLAN, SECTIONS, & DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO.4

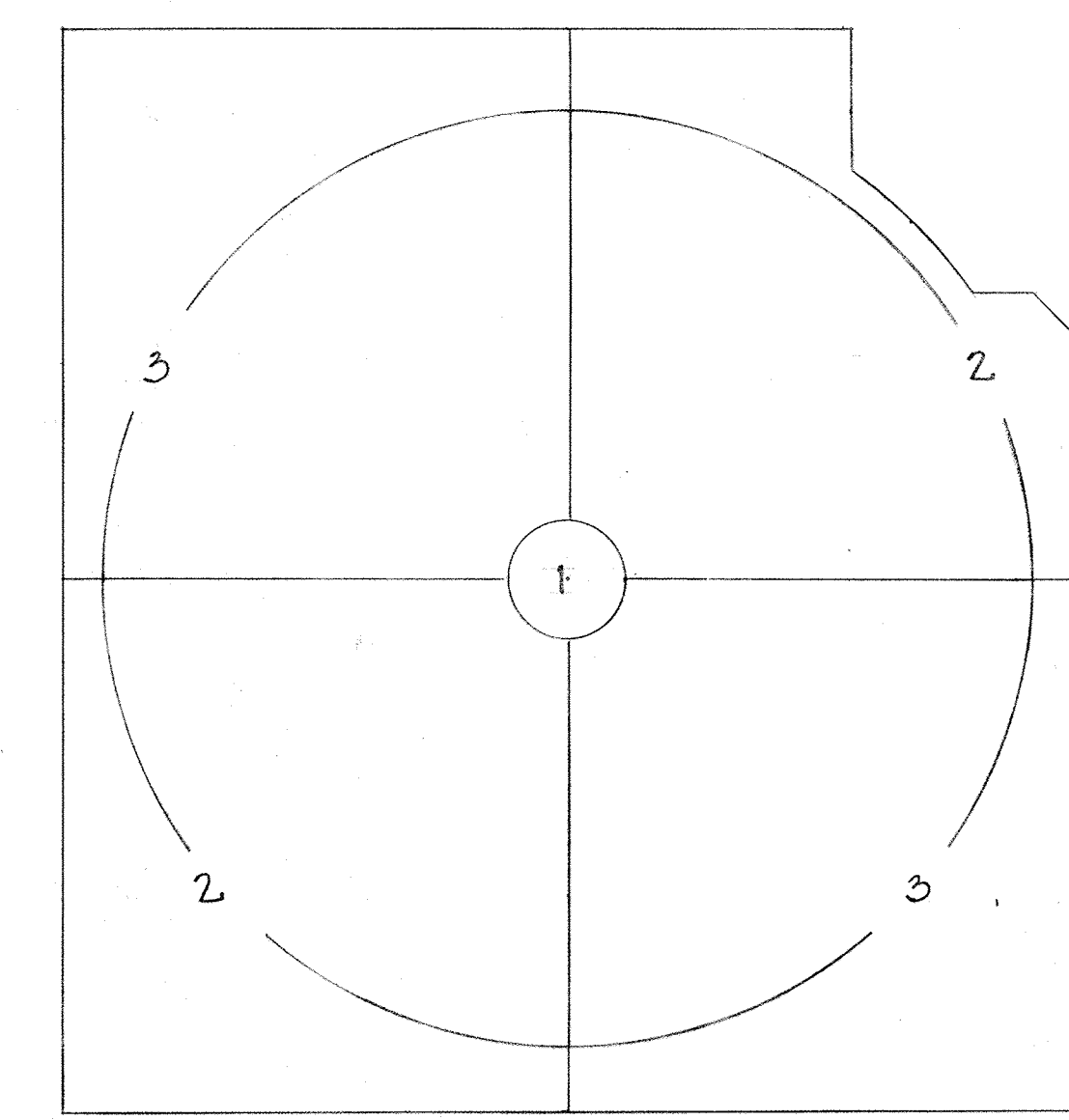
DRAWING
NO. 45
OF 128
SCALE
AS
NOTED



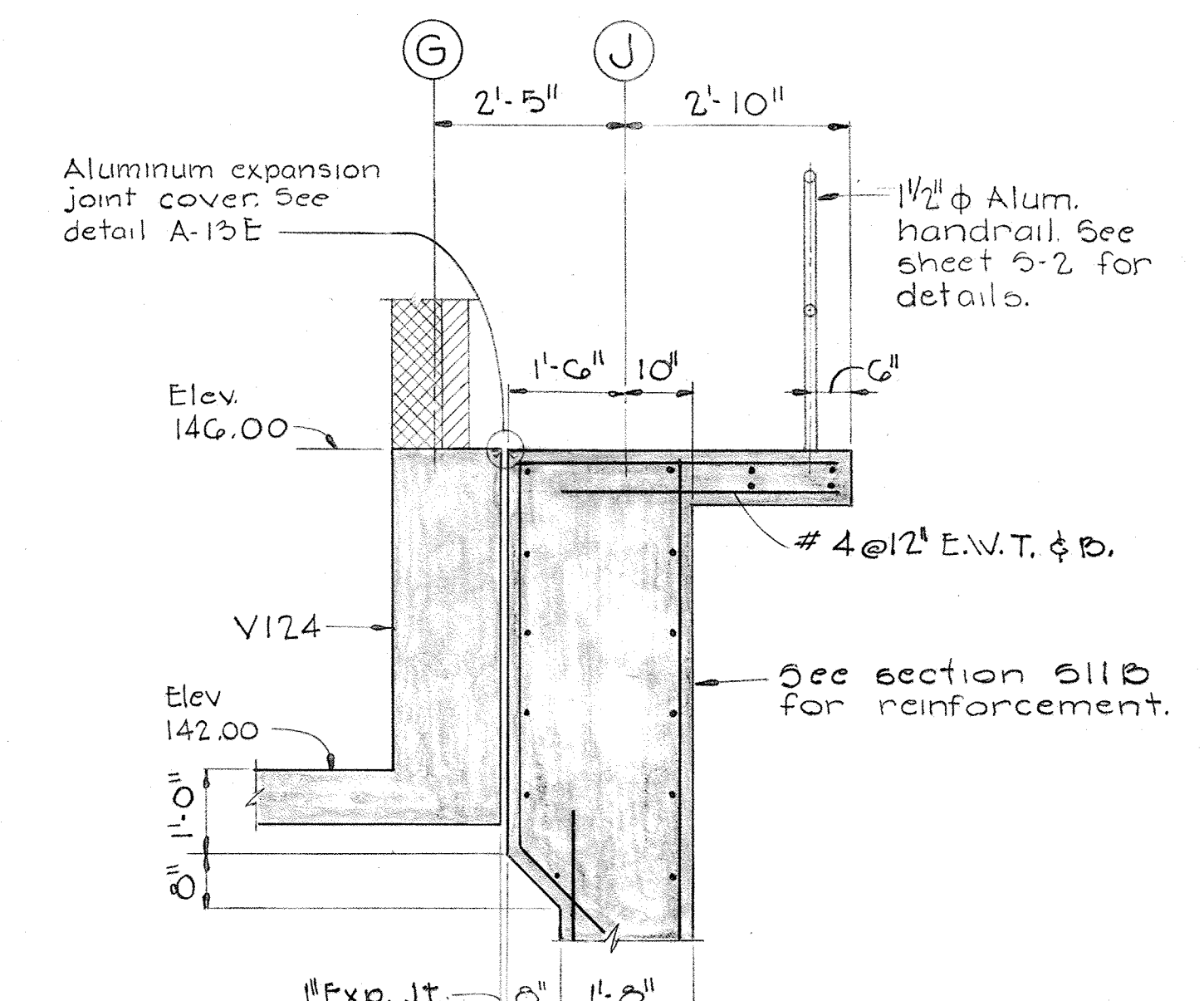
PLAN AT ELEV. 130.00
Scale: 1/4" = 1'-0"



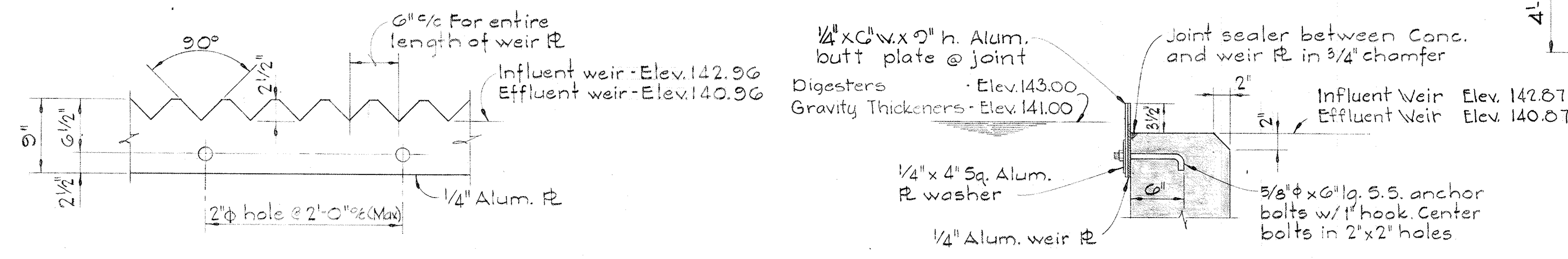
ELEVATION SECTION
SCUM BAFFLE DETAIL
Scale: 1" = 1'-0"



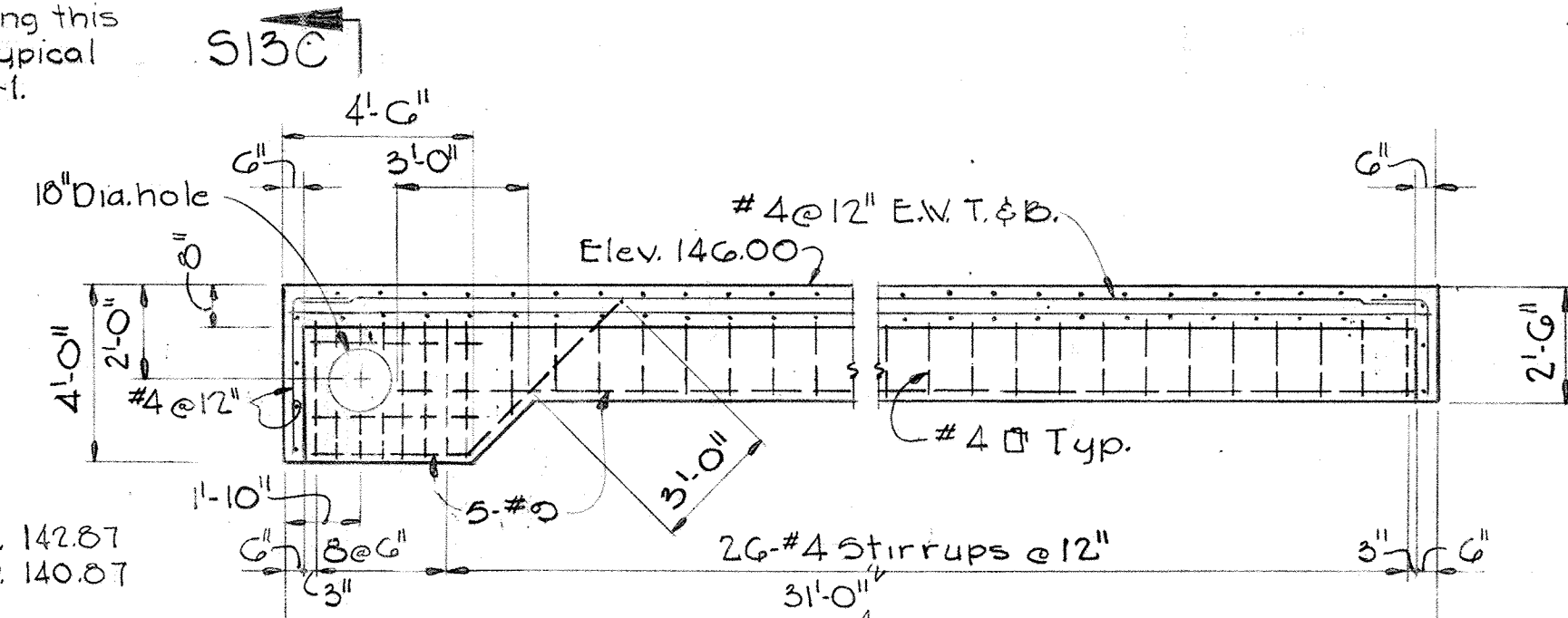
POURING SEQUENCE PLAN
Scale: None



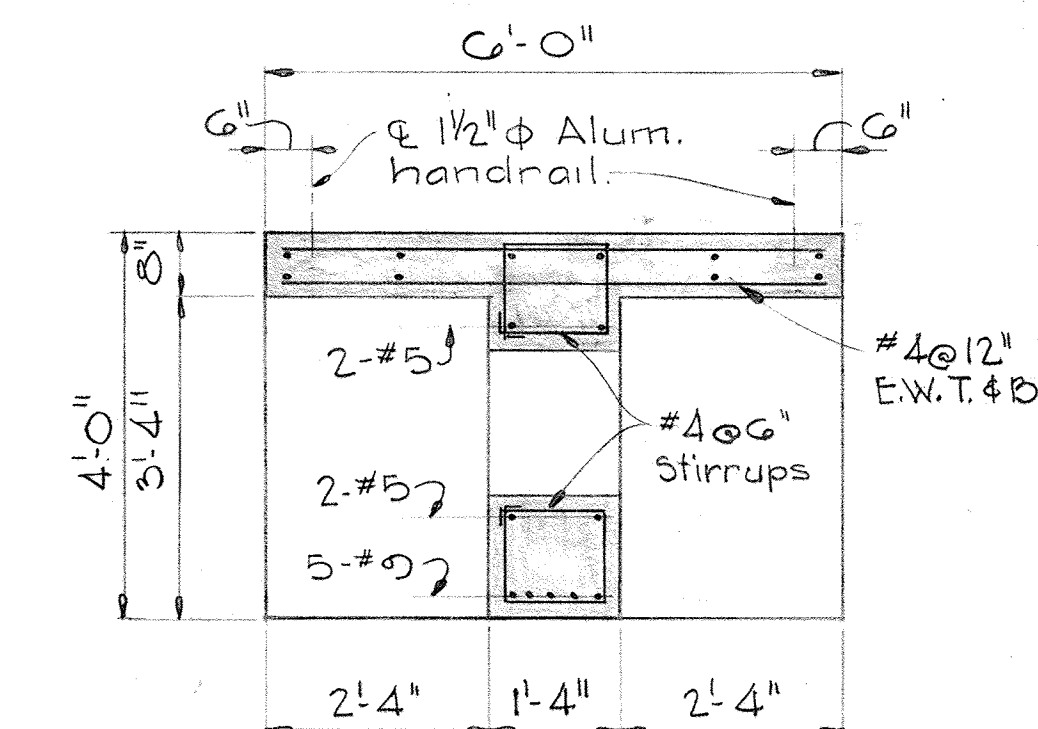
SECTION 513B/510
Scale: 1/2" = 1'-0"



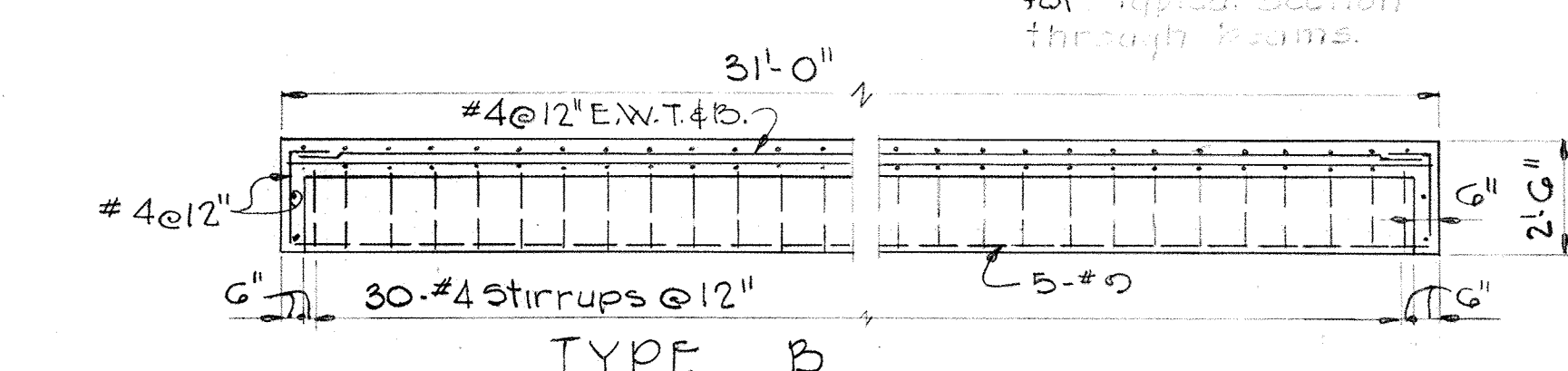
ELEVATION SECTION
TYPICAL WEIR DETAIL
Scale: 1" = 1'-0"



TYPE A
Note: See section 511C for typical section through beams.



SECTION 513C/513
Scale: 1/2" = 1'-0"



TYPE B
CROSS WALK BEAMS
Scale: 1/4" = 1'-0"

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

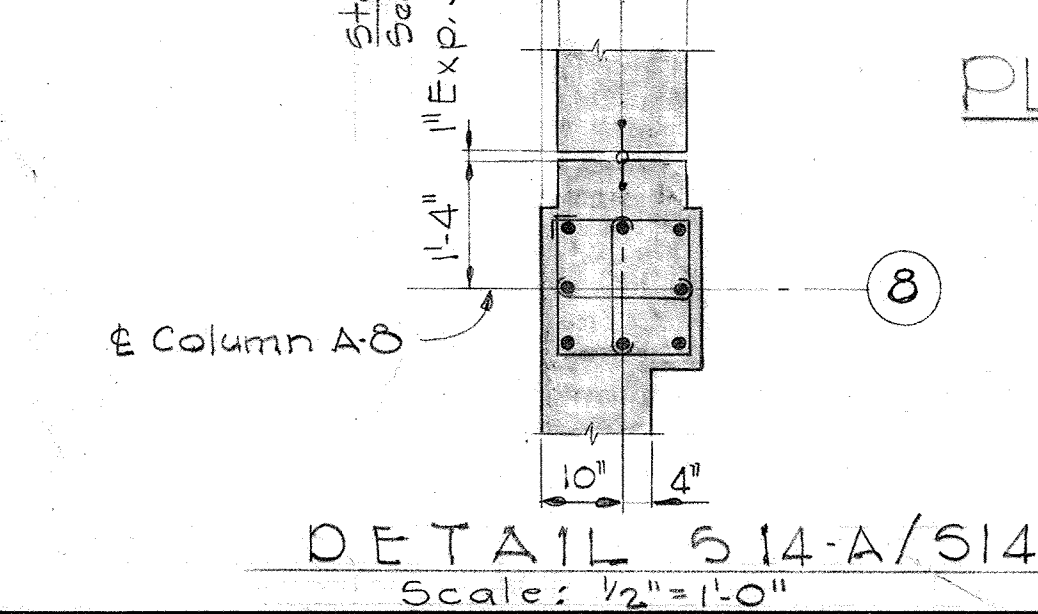
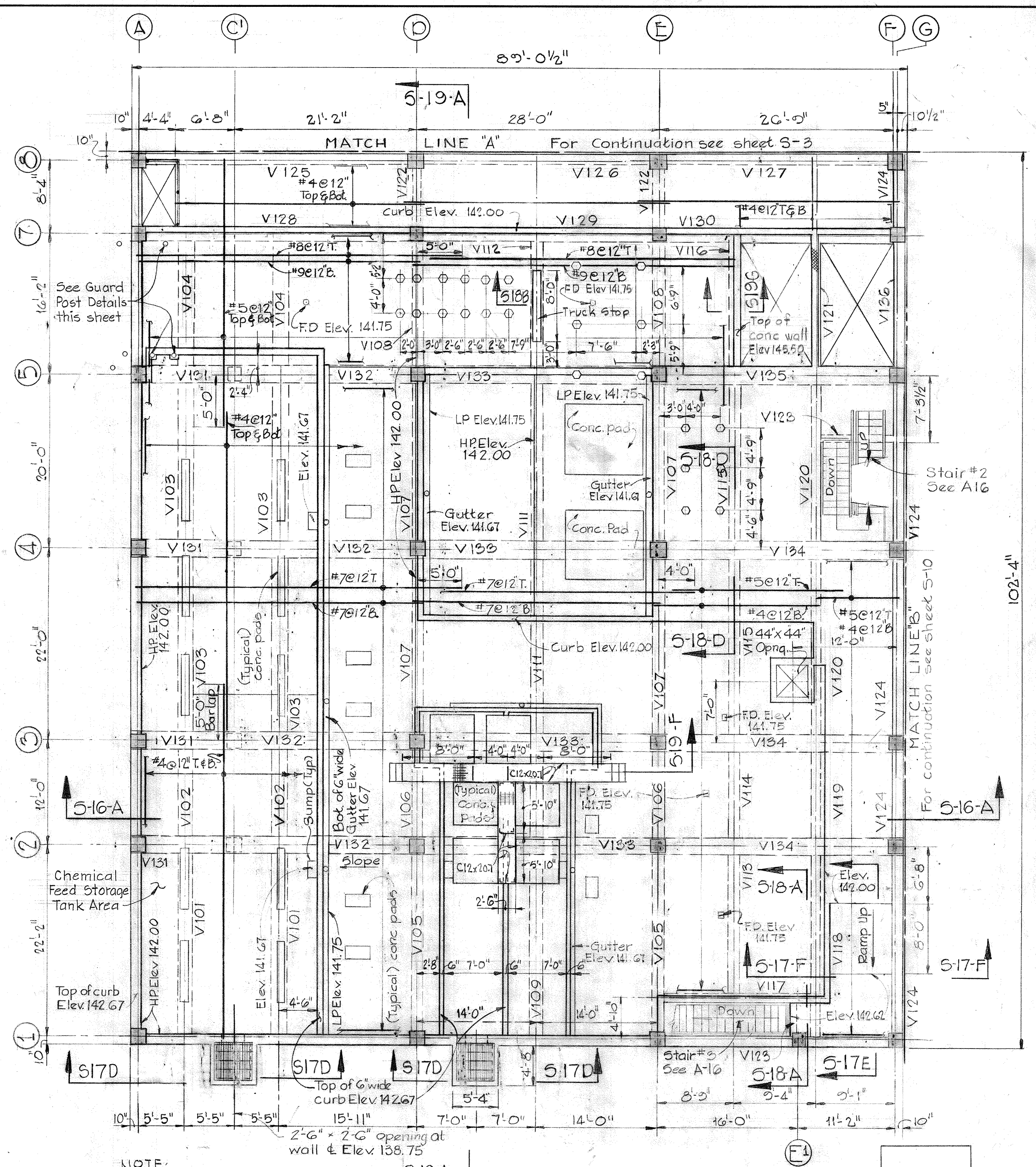
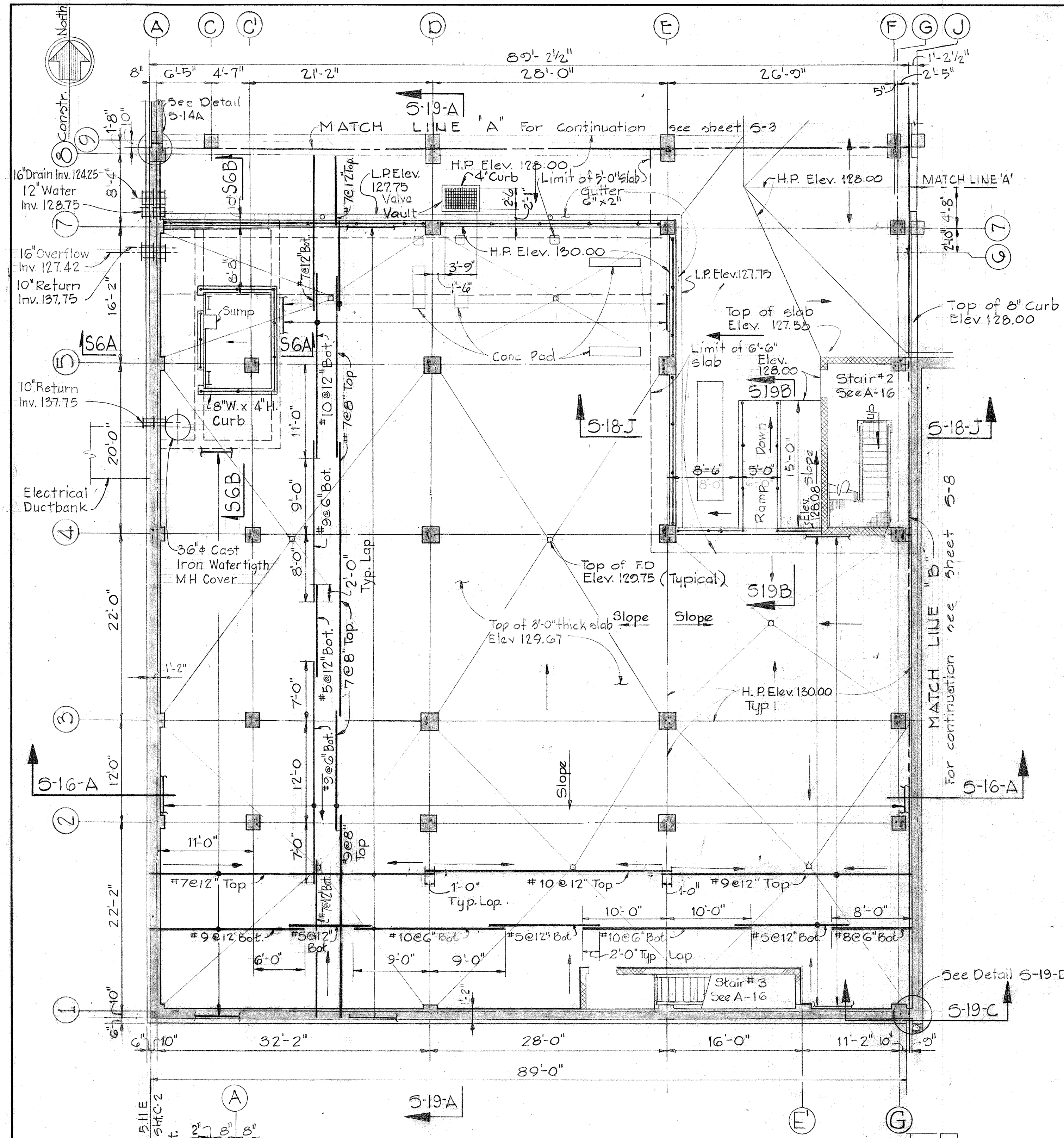
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE
W.O. Federline, 92877
CHIEF-BUREAU OF ENGINEERING

JAMES A. FEDERLINE INC.
AS BUILT DRAWING
CONTRACT NO. 501-S

STRUCTURAL
DIGESTERS &
GRAVITY THICKENERS
PLAN, SECTIONS, & DETAILS

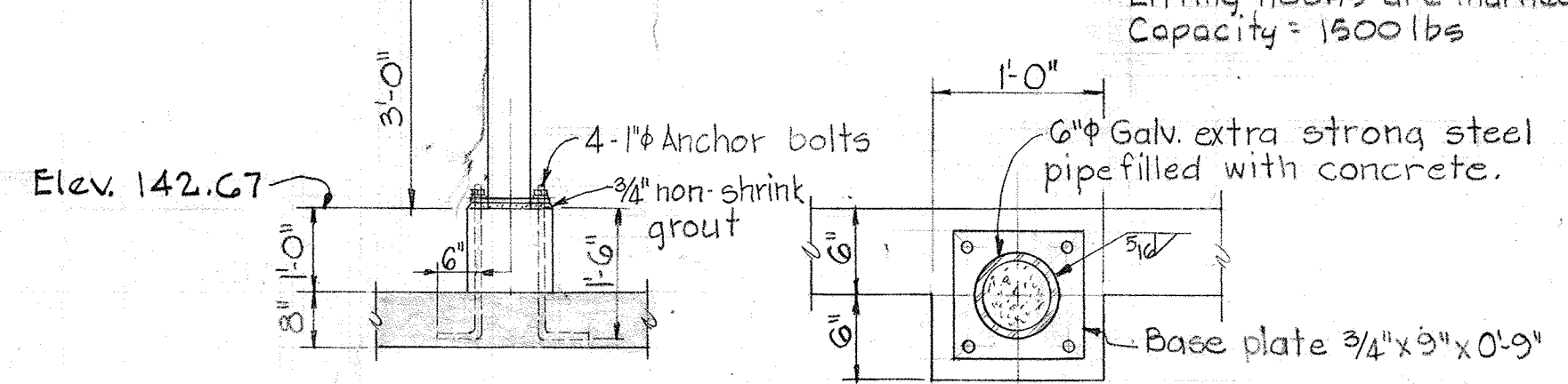
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 46 OF 128
SCALE AS NOTED



PLAN AT ELEV. 130.00
Scale: 1/8" = 1'-0"

Note:
Design Live load 150 P.S.F.

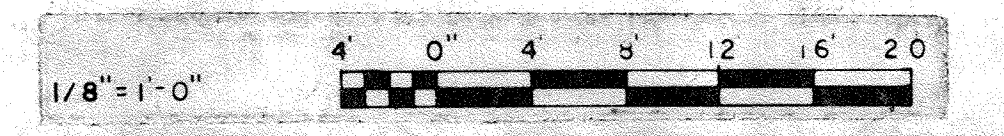
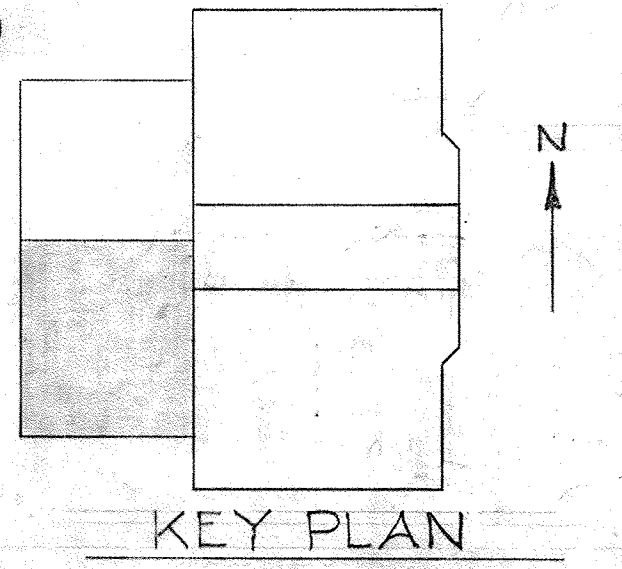


GUARD POST DETAILS

NOTE:
Lifting hooks are marked \square
Capacity = 1500 lbs

PLAN AT ELEV. 142.00
Scale: 1/8" = 1'-0"

Notes: 1. Top of 8" thick structural slab Elev. 141.67.
2. Live load capacity 125 p.s.f., except in the following areas: Chemical Feed Storage Tank area, 150 p.s.f. and the Truck Bay, H-20 Truck loading.



WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE 3/20/75
W.O. Libert
CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 501-S
JAMES A. FEDERLINE INC.

STRUCTURAL
DEWATERING BUILDING
PLAN ELEV. 130.00 & 142.00

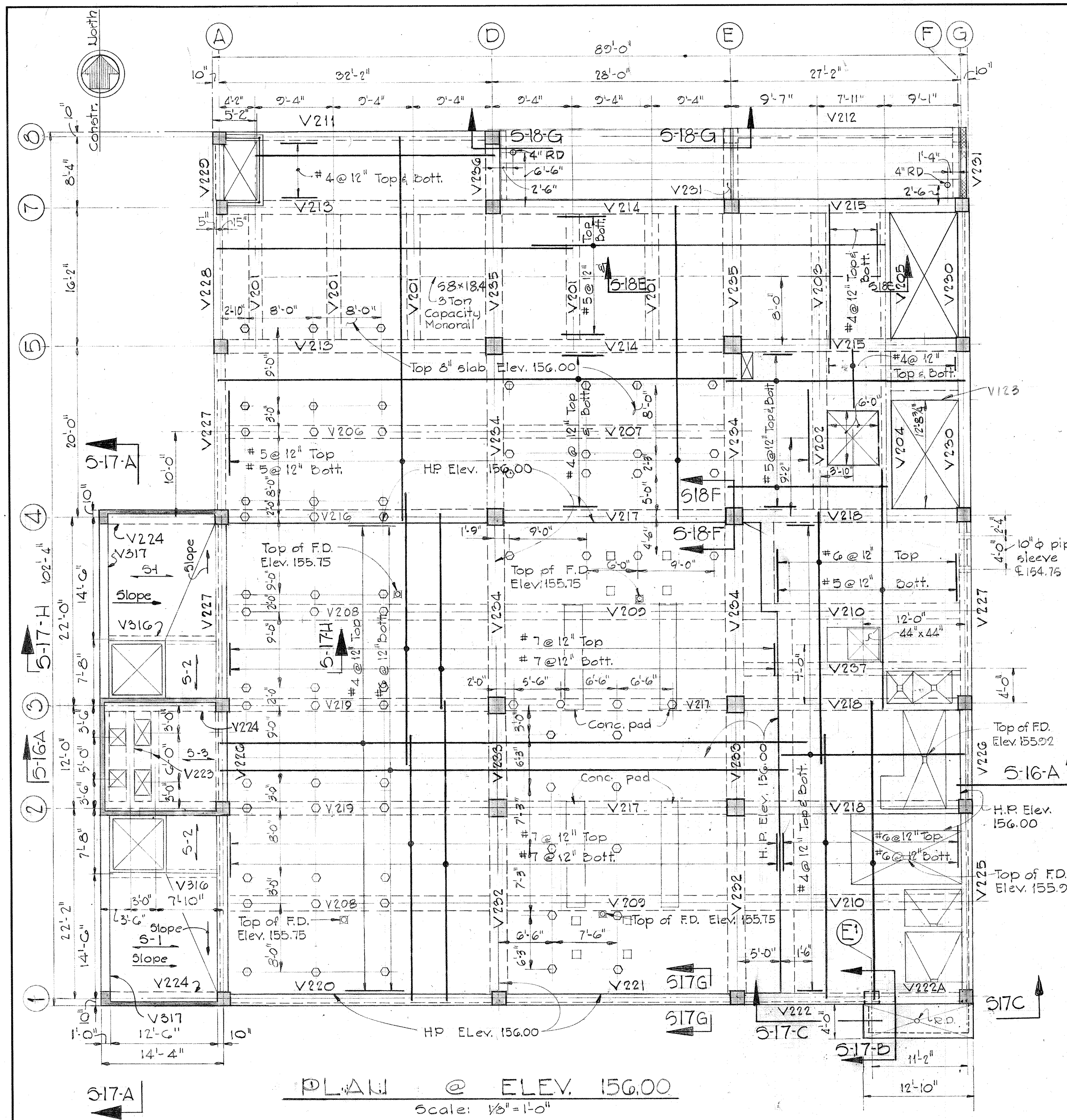
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 47 OF 125
SCALE AS NOTED

W. O. 6887

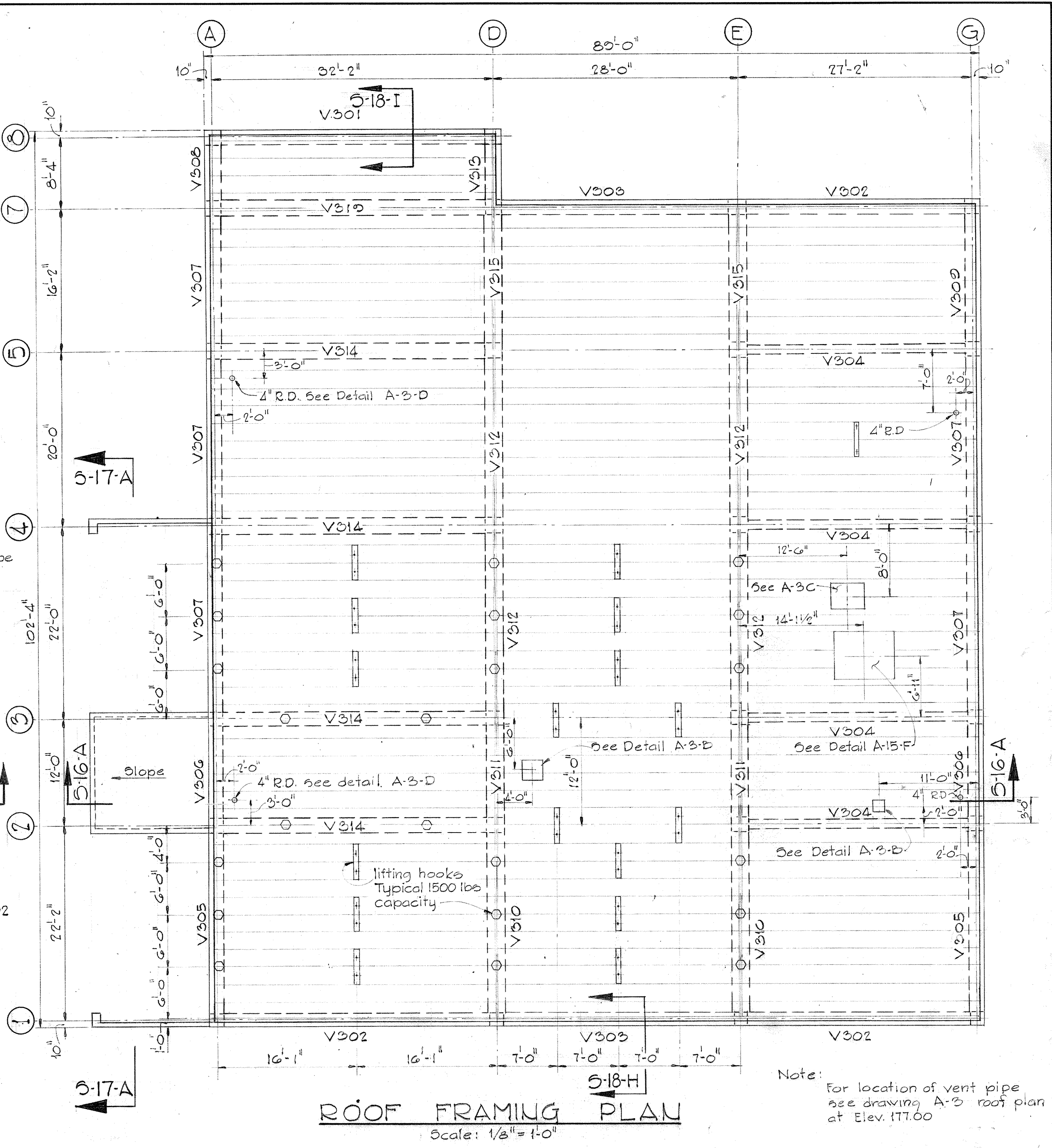
AS BUILT DRAWING

SHEET S-14



PLAN @ ELEV. 156.00
Scale: 1/8" = 1'-0"

Note: Design Live Load 125 p.s.f.

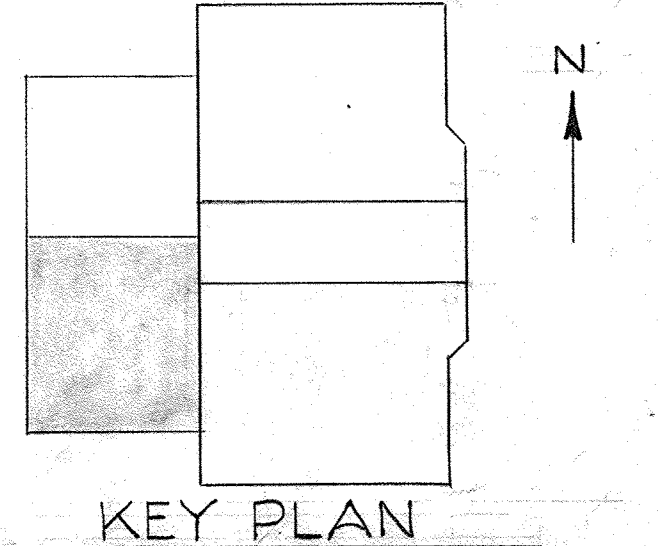


ROOF FRAMING PLAN
Scale: 1/8" = 1'-0"

Note: Live load capacity 30 p.s.f.

Note: For location of vent pipe see drawing A-3 roof plan at Elev. 177.00

SOLID SLAB SCHEDULE				
Slab Number	Slab Thickness	East-West Reinf. Bars	North-South Reinf. Bars	Remarks
5-1	6" min	#4 @ 12"	#4 @ 12"	E-W Bars 2" clear from bottom
5-2	6" min	#4 @ 12"	#4 @ 12"	N-S Bars 2" clear from bottom
5-3	6" min	#6 @ 12"	#4 @ 12"	E-W Bars 2" clear from bottom



WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

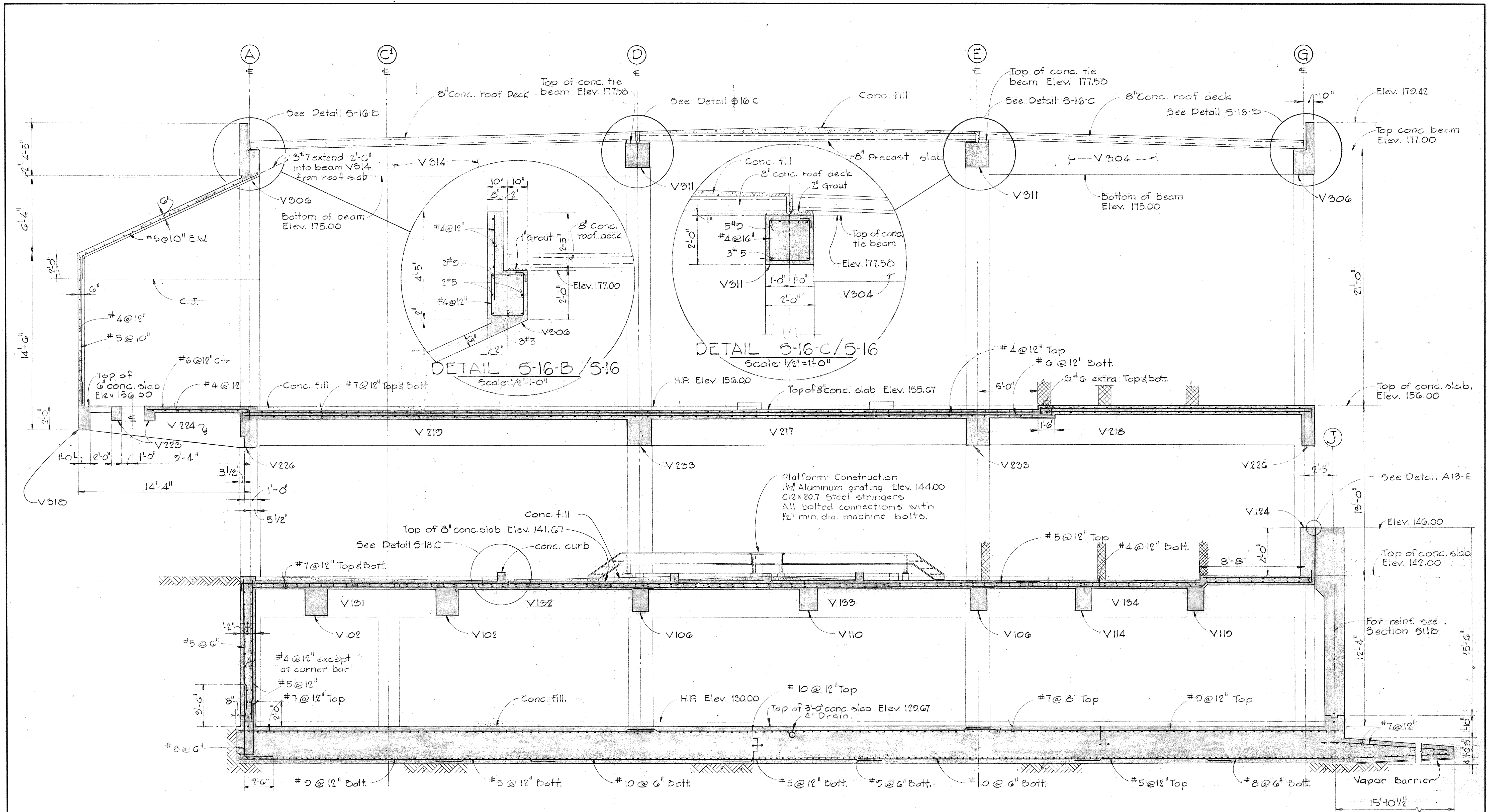
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3/30/75
W. O. Libert
CHIEF-BUREAU OF ENGINEERING

JAMES A. FEDERLINE INC.
AS BUILT DRAWING
CONTRACT NO. 501-S

STRUCTURAL
DEWATERING BUILDING
PLAN ELEV. 156.00 &
ROOF FRAMING PLAN

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

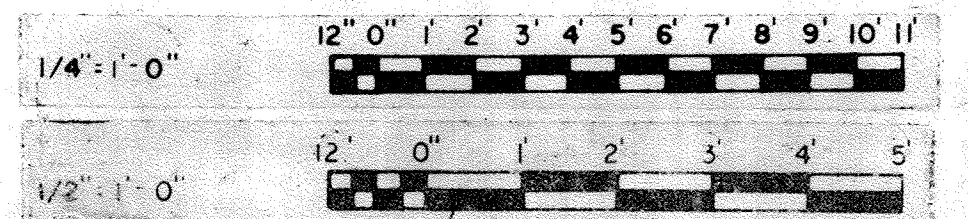
DRAWING NO. 48 OF 125
SCALE AS NOTED



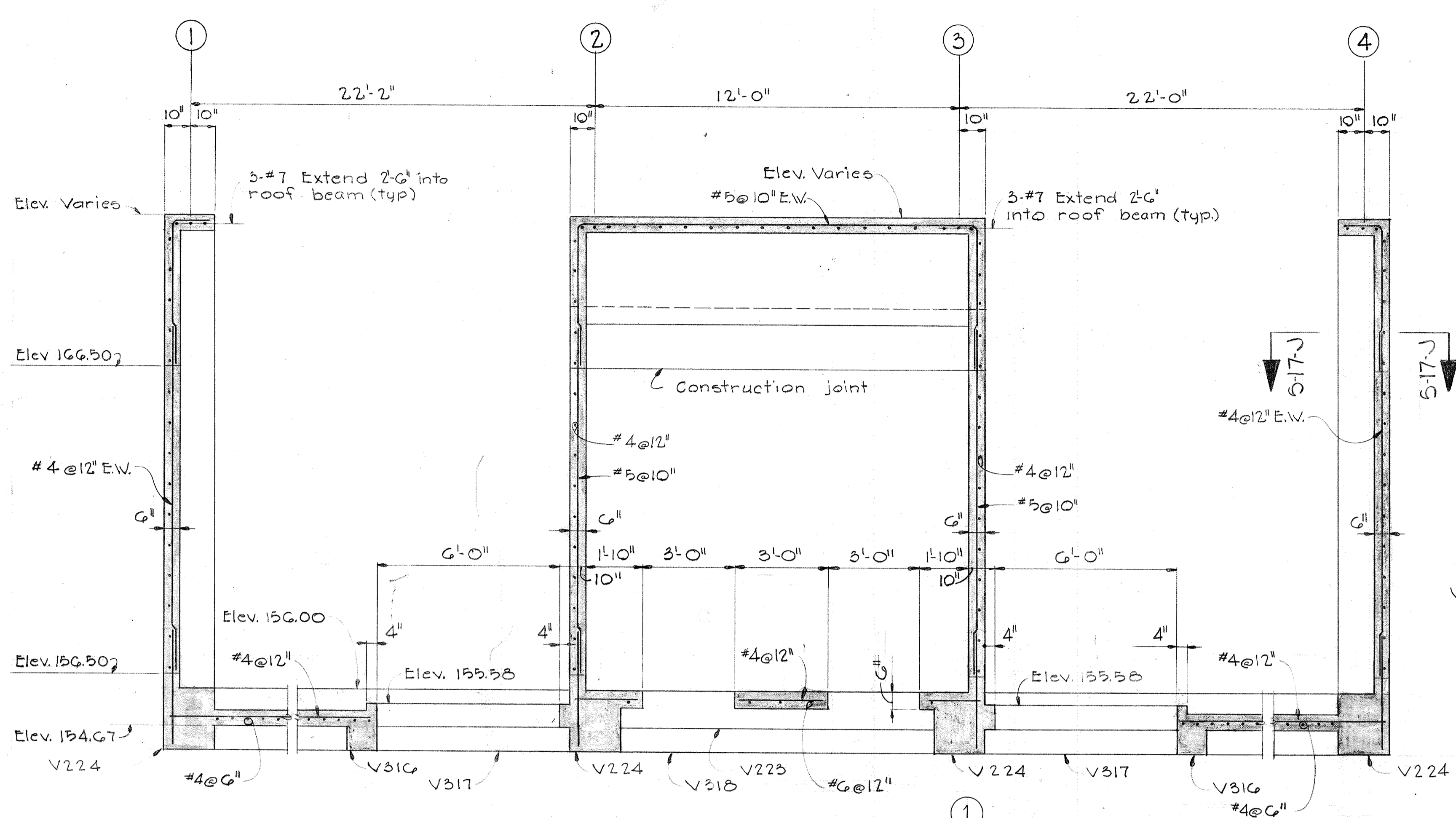
NOTES.

1. For size of beams & reinforcing see beam schedule Dwg 5-20 & 5-21.
2. For size of col. & reinforcing see col. schedule Dwg 5-21.

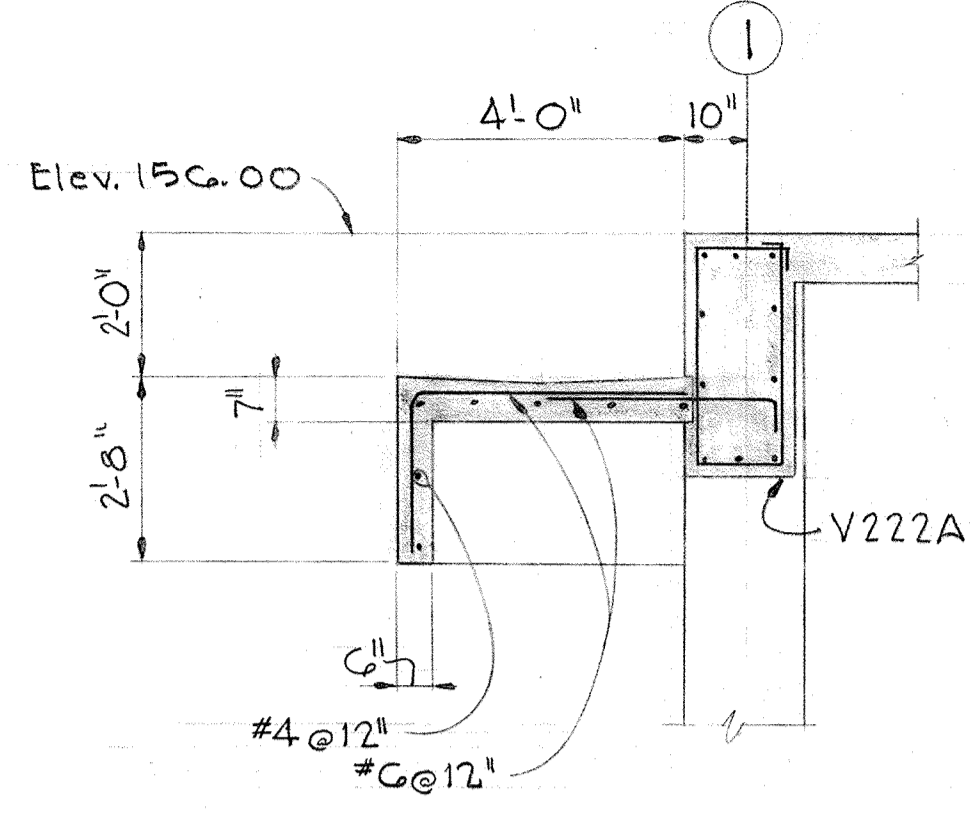
SECTION 5-16-A/5-14, 5-15
Scale: 1/4"=1'-0"



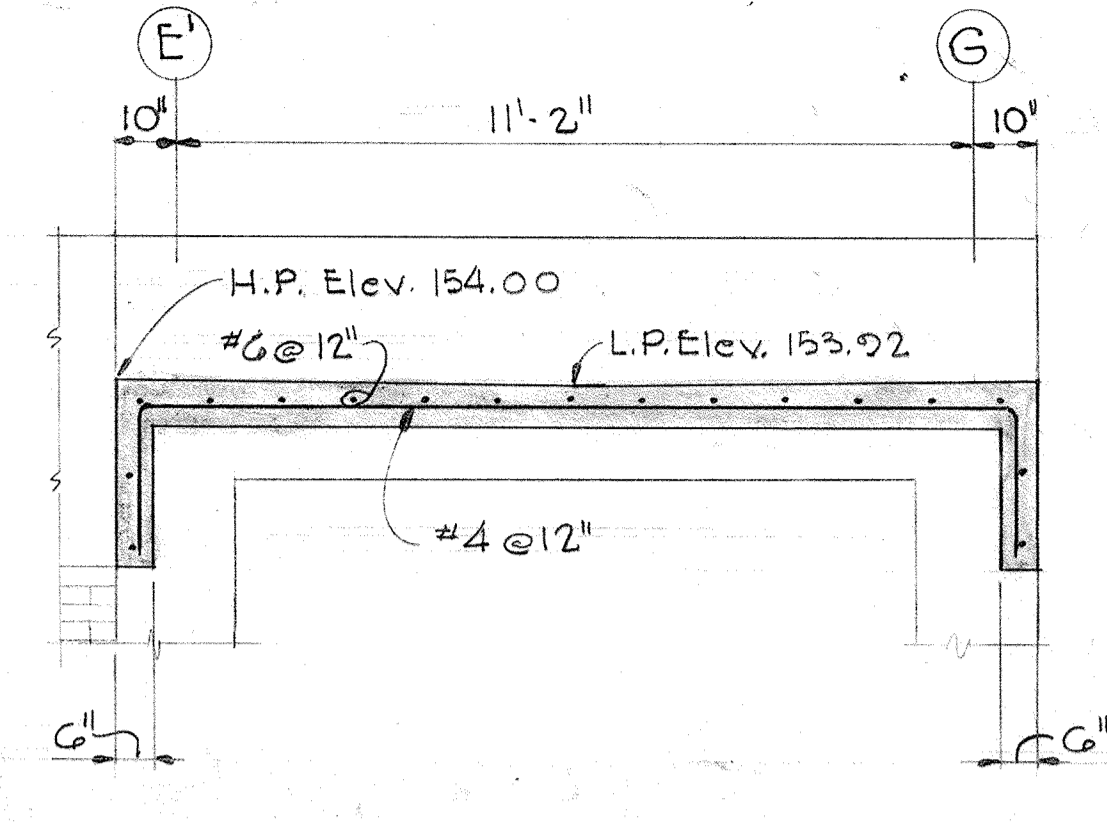
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>3/20/78</i> DATE	JAMES A. FEDERLINE INC. AS BUILT DRAWING CONTRACT NO. 501-S	STRUCTURAL DEWATERING BUILDING SECTIONS & DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 49 OF 125 SCALE AS NOTED
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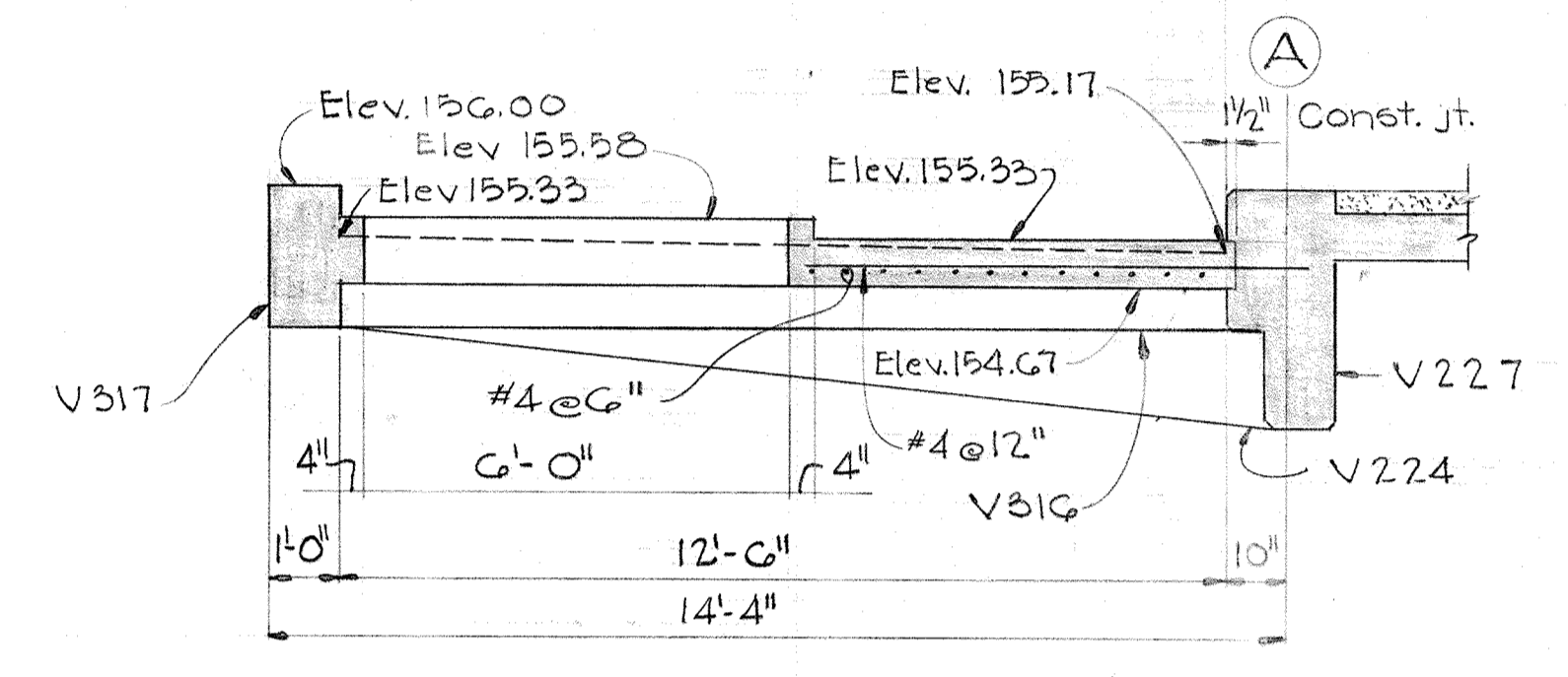
SECTION 5-17-A/5-15
Scale: 3/8" = 1'-0"



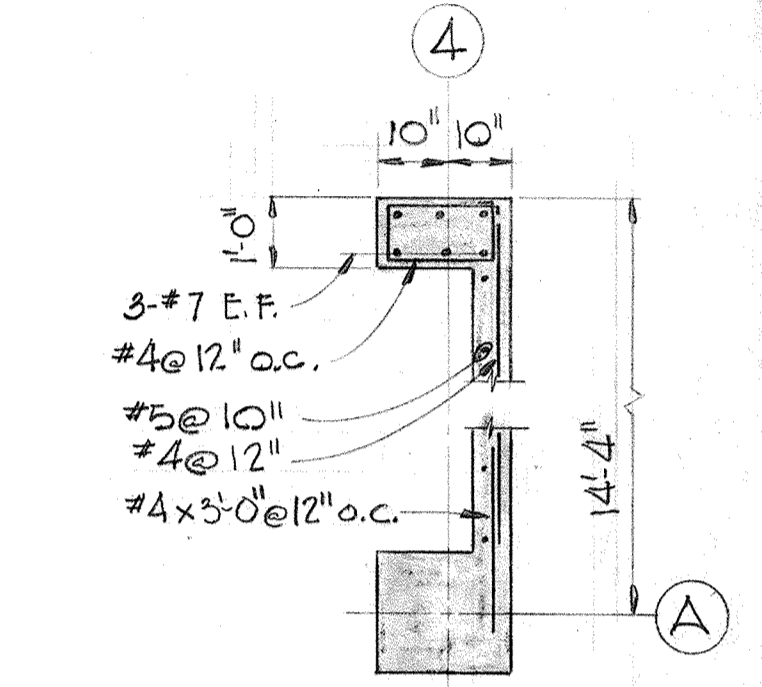
SECTION 5-17-B/5-15
Scale: 3/8" = 1'-0"



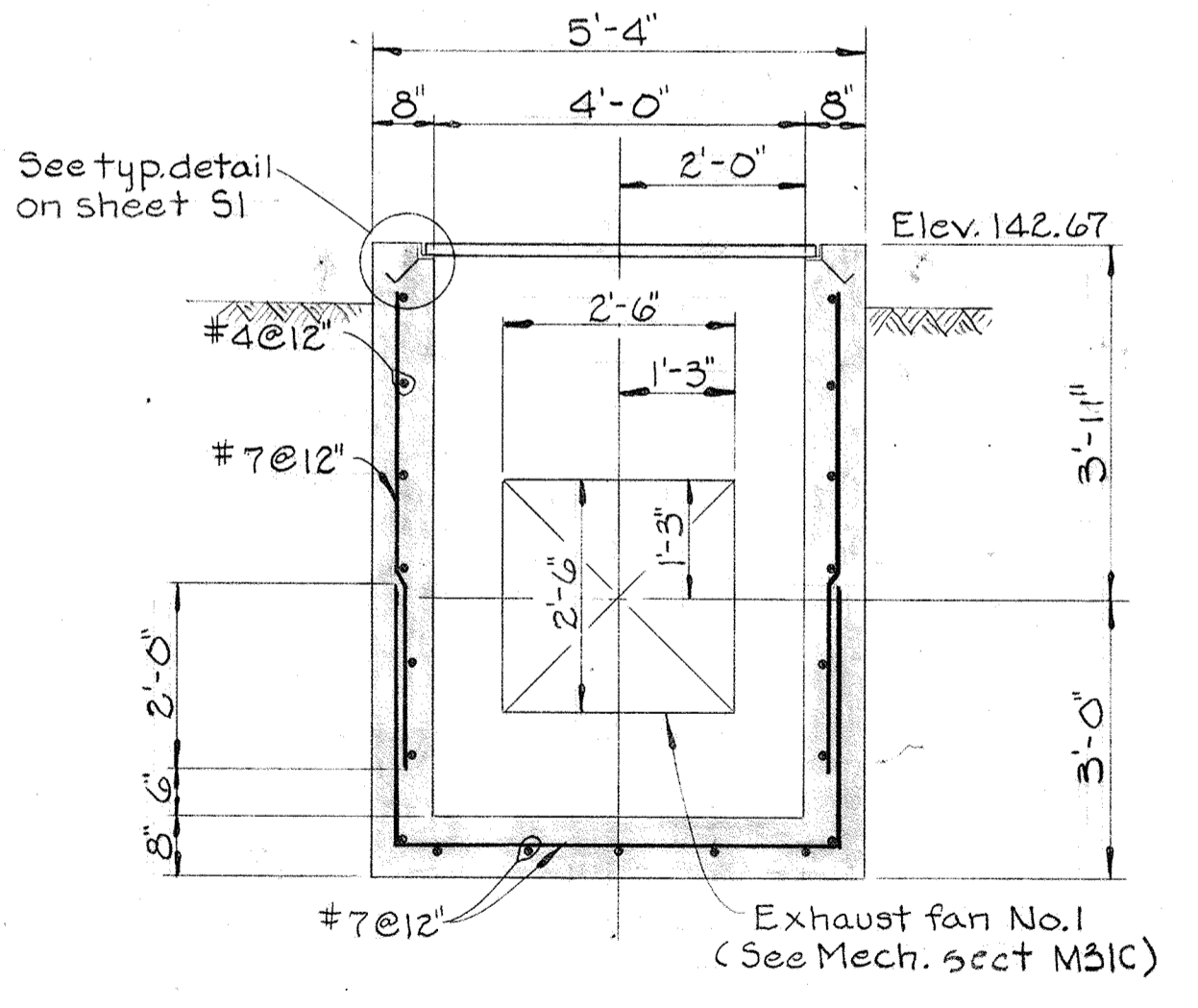
SECTION 5-17-C/5-15
Scale: 3/8" = 1'-0"



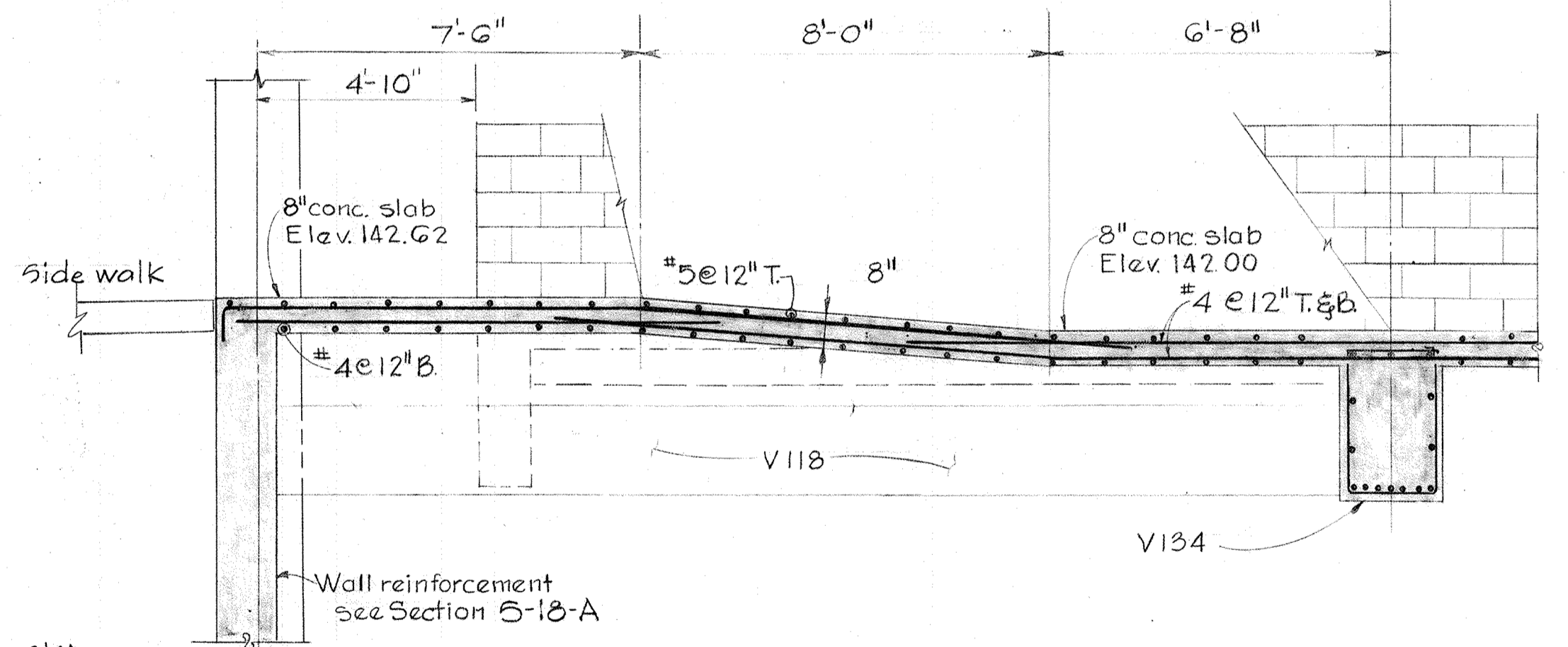
SECTION 5-17-H/5-15
Scale: 3/8" = 1'-0"



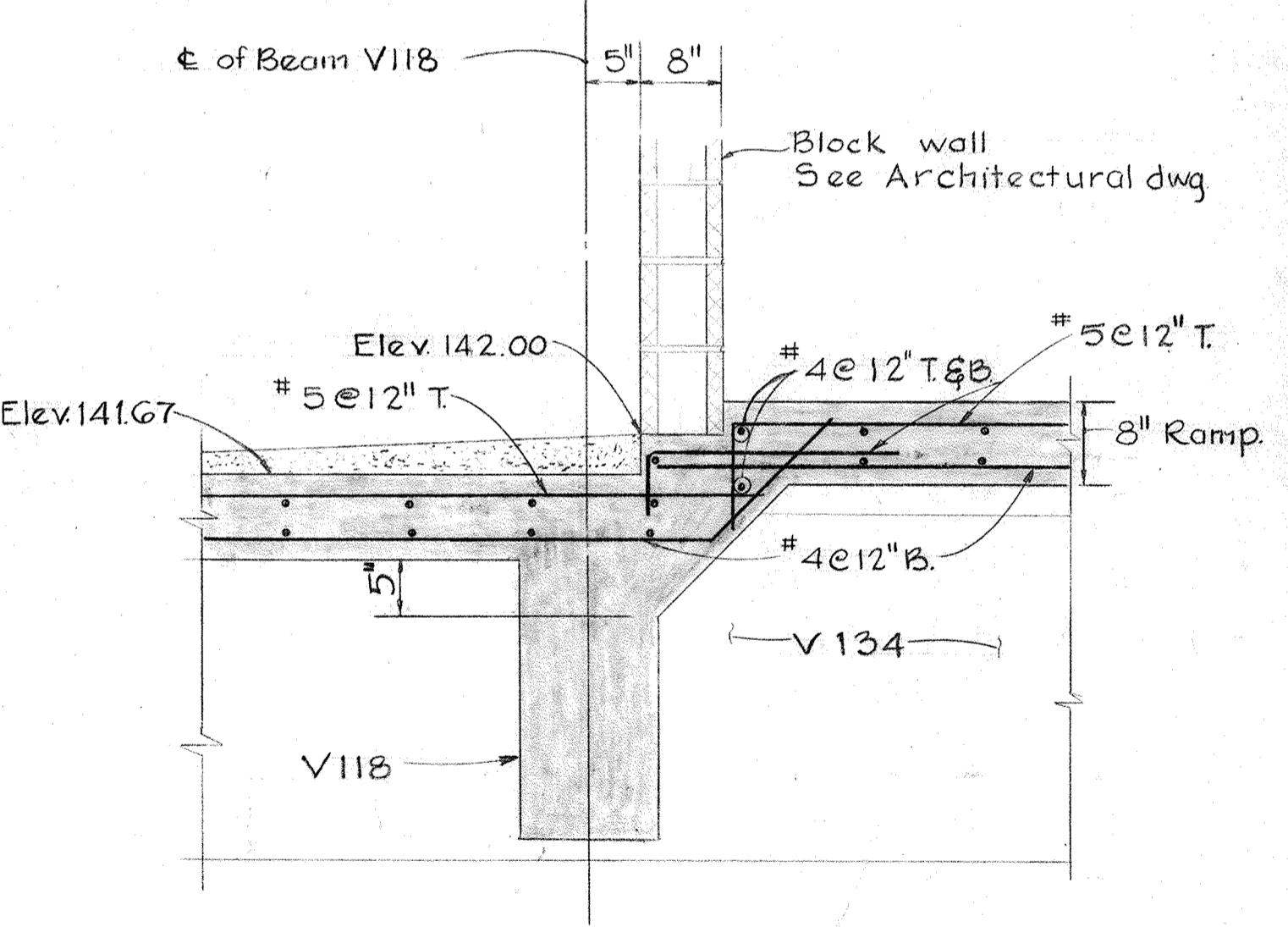
Detail @ Col A-1 opp. hand
SECTION 5-17-J/5-17
Scale 3/8" = 1'-0"



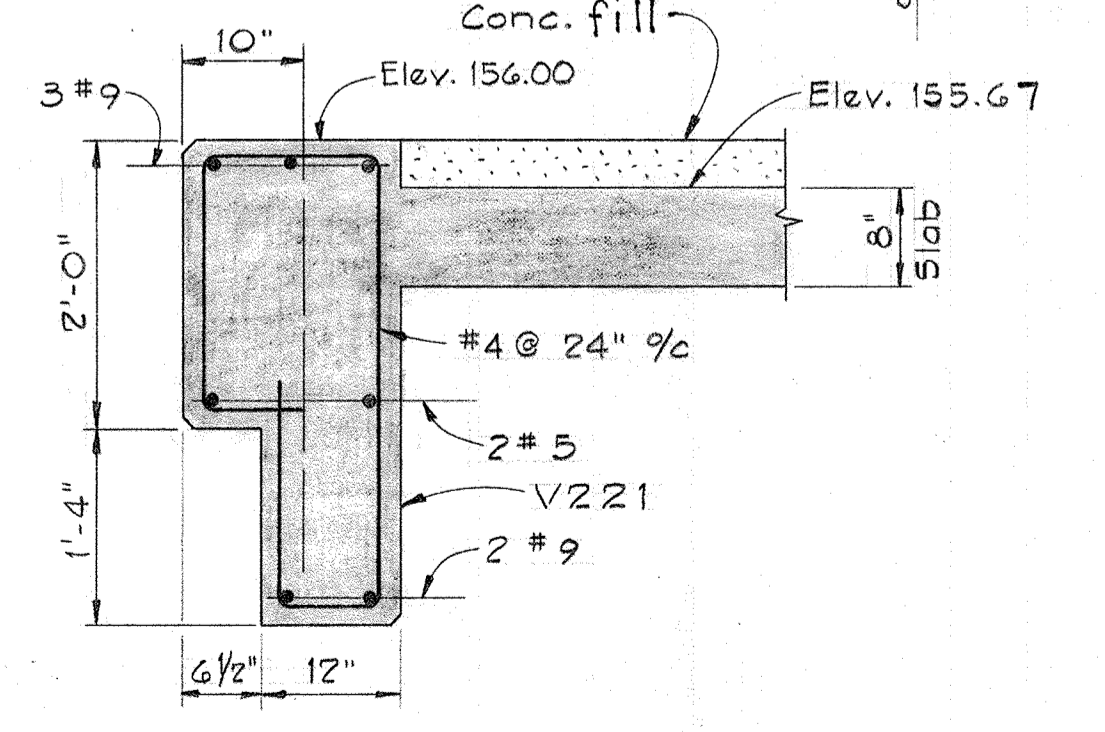
SECTION 5-17-D/5-14
Scale: 1/2" = 1'-0"



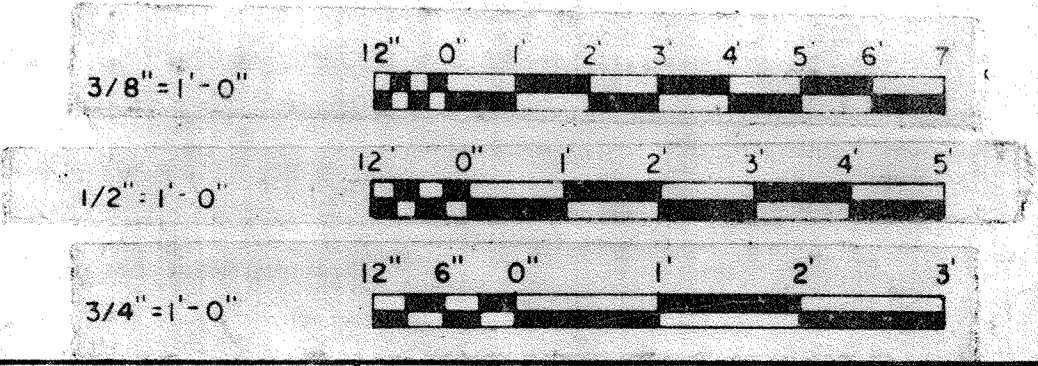
SECTION 5-17-E/5-14
Scale: 3/8" = 1'-0"



SECTION 5-17-F/5-14
Scale: 3/4" = 1'-0"



SECTION 5-17-G/5-15
Scale: 3/4" = 1'-0"



WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE 3/30/75
W.O. Federline
CHIEF-BUREAU OF ENGINEERING

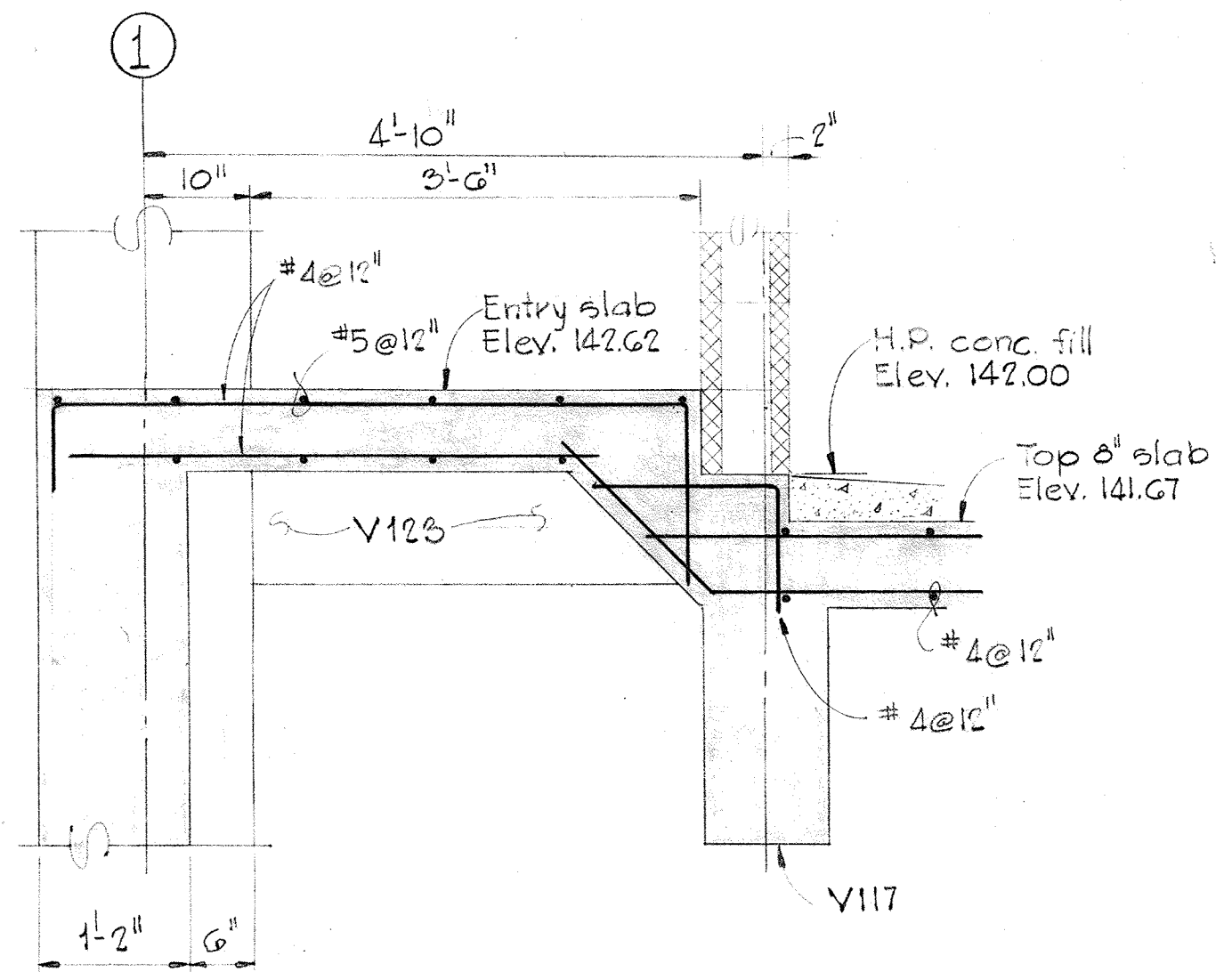
JAMES A. FEDERLINE INC.
AS-BUILT DRAWING
CONTRACT NO. 50I-S

STRUCTURAL
DEWATERING BUILDING
SECTIONS & DETAILS

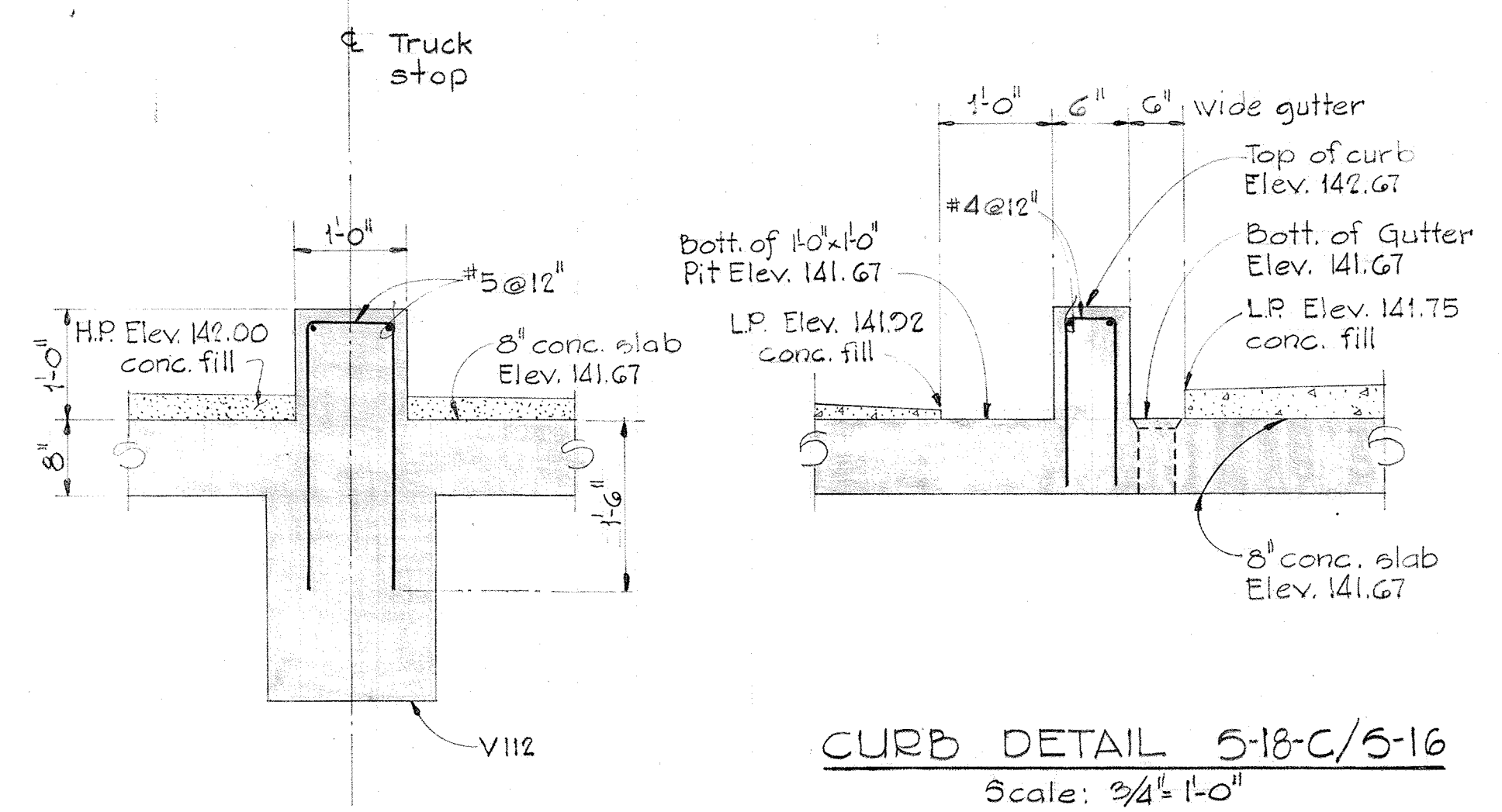
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 50
OF 128

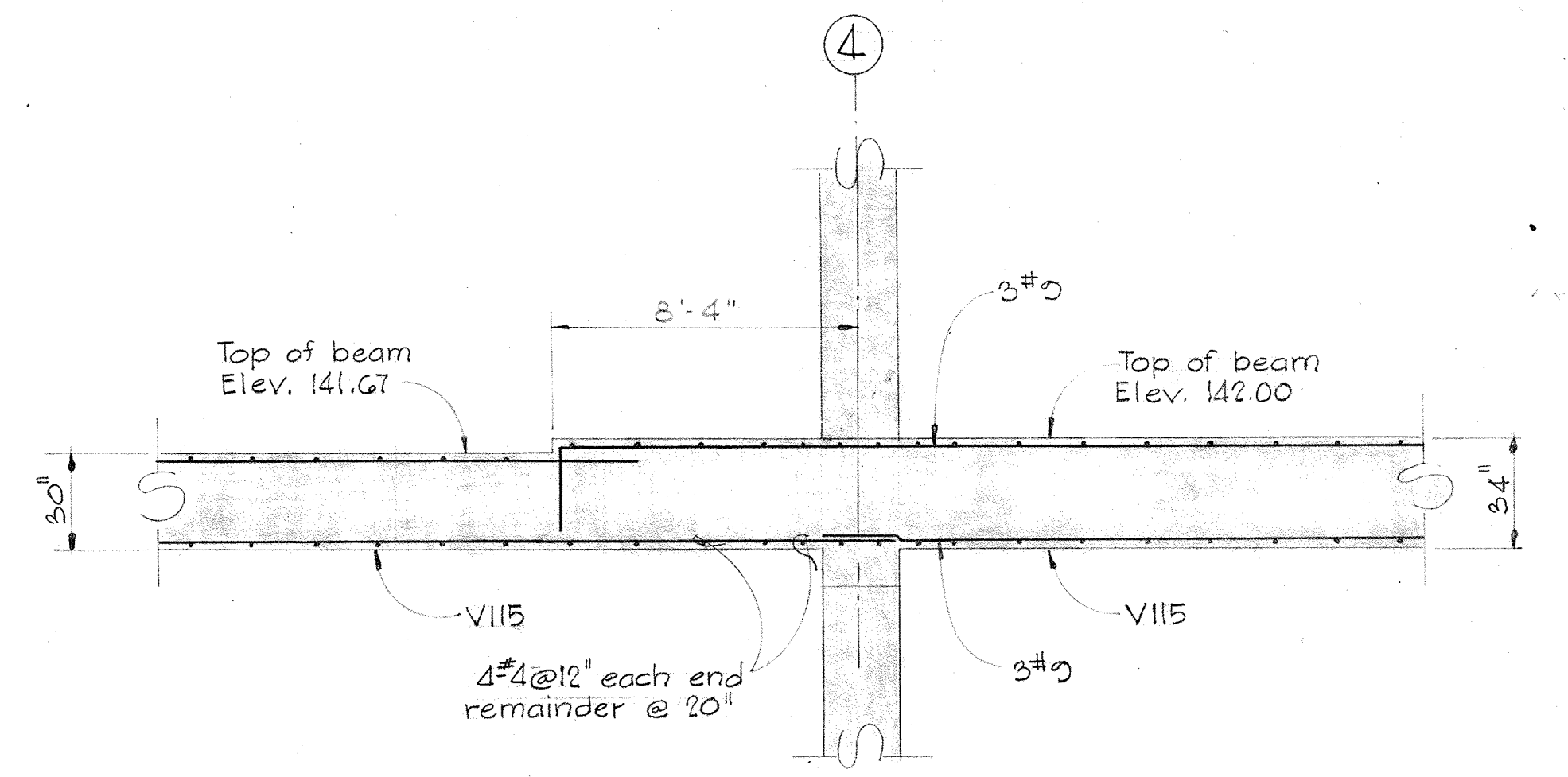
SCALE
AS
NOTED



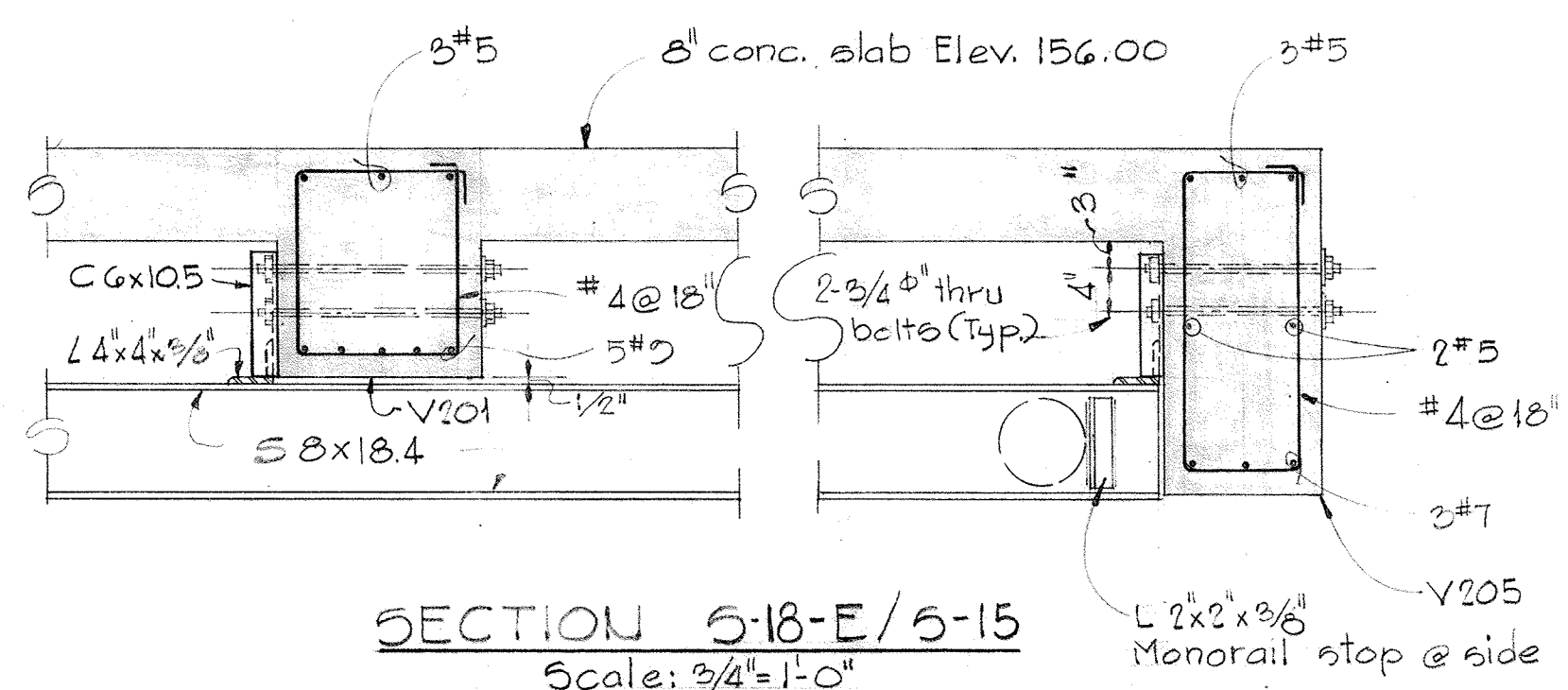
SECTION 5-18-A/5-14
Scale: 3/4"=1'-0"



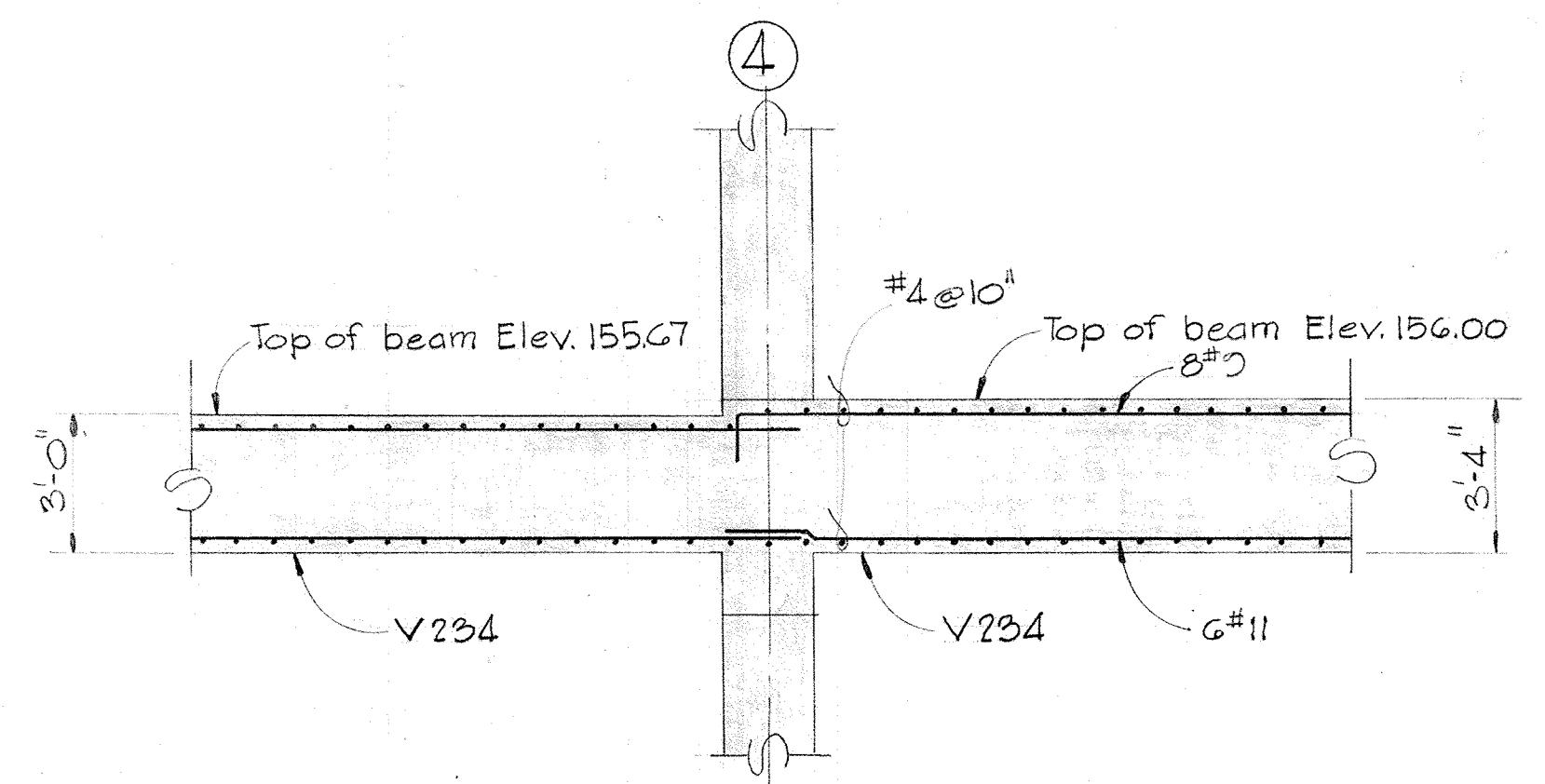
CURB DETAIL 5-18-C/5-16
Scale: 3/4"=1'-0"



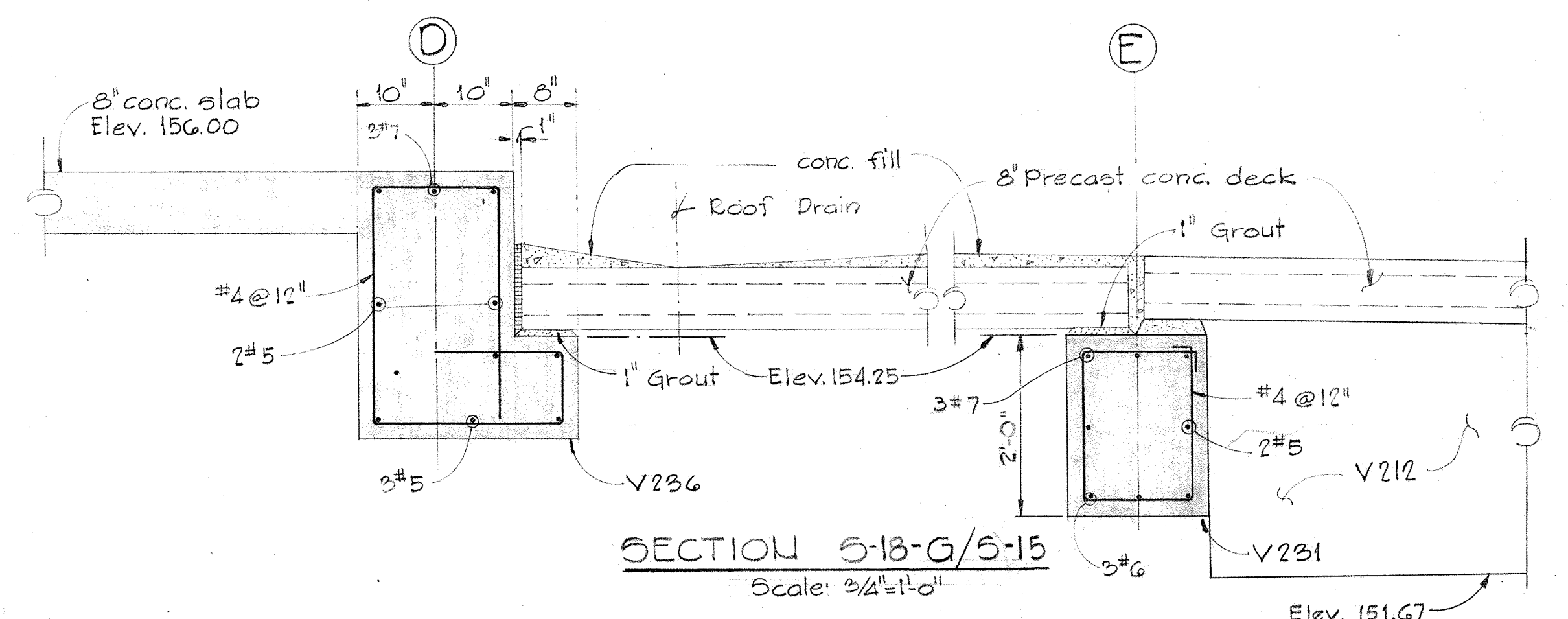
SECTION 5-18-D/5-14
Scale: 1/4"=1'-0"



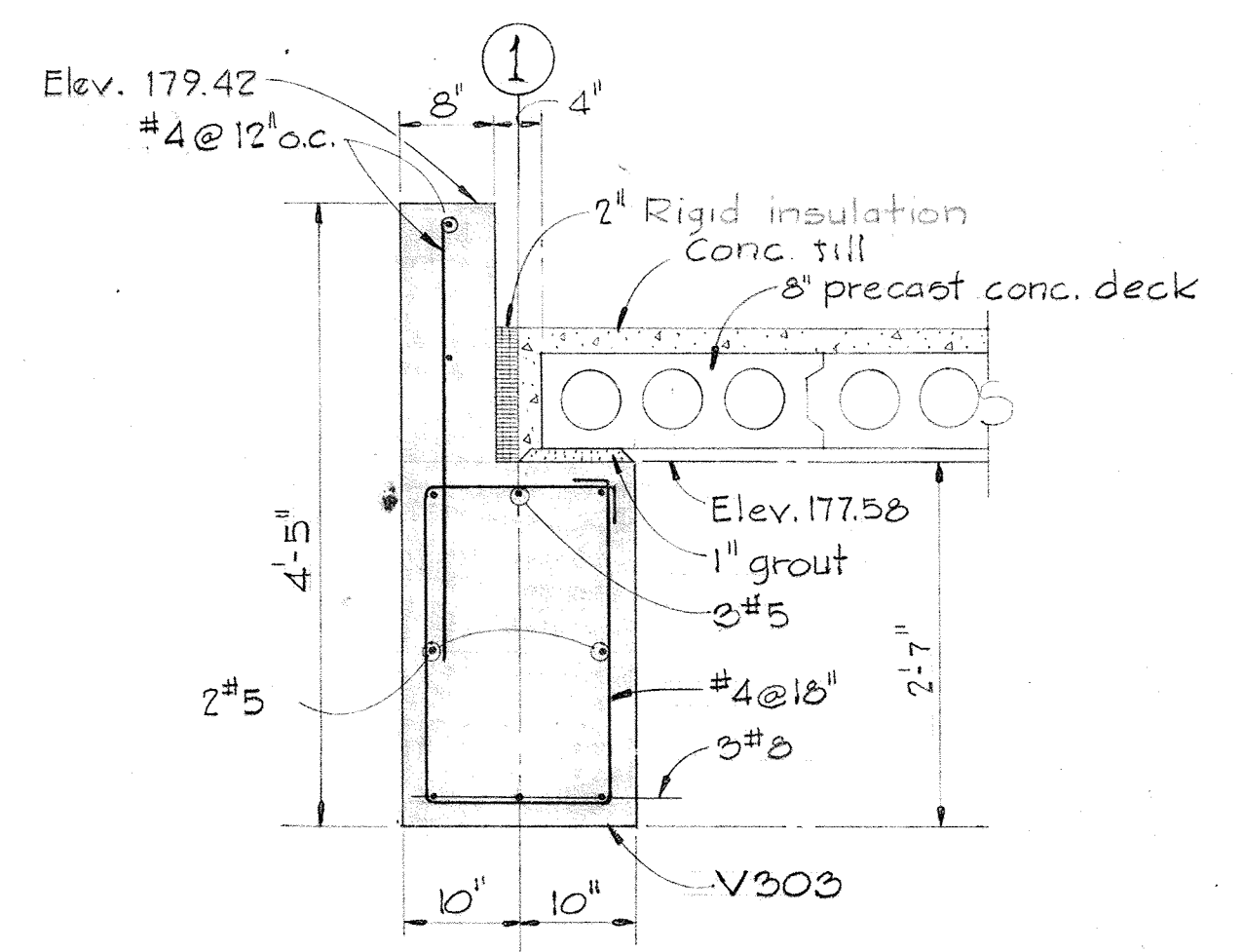
SECTION 5-18-E/5-15
Scale: 3/4"=1'-0"



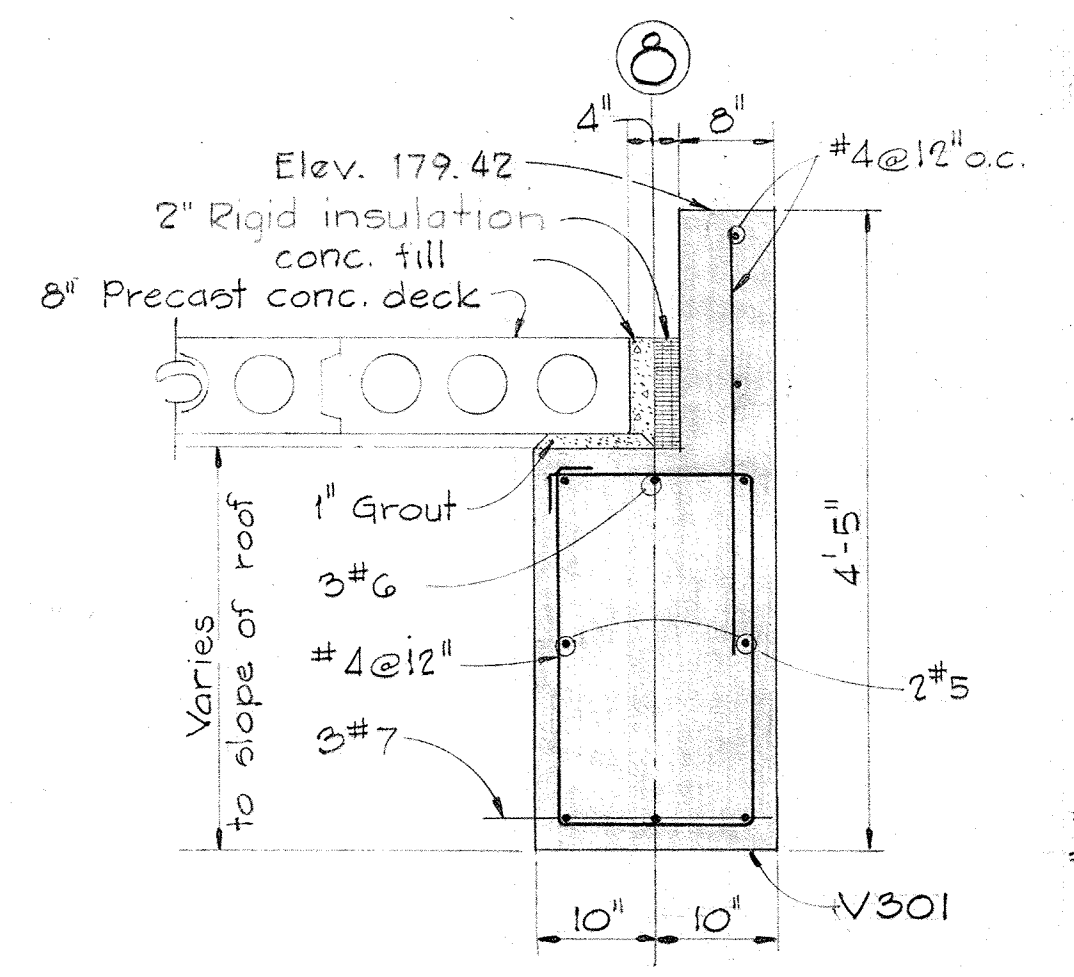
SECTION 5-18-F/5-15
Scale: 1/4"=1'-0"



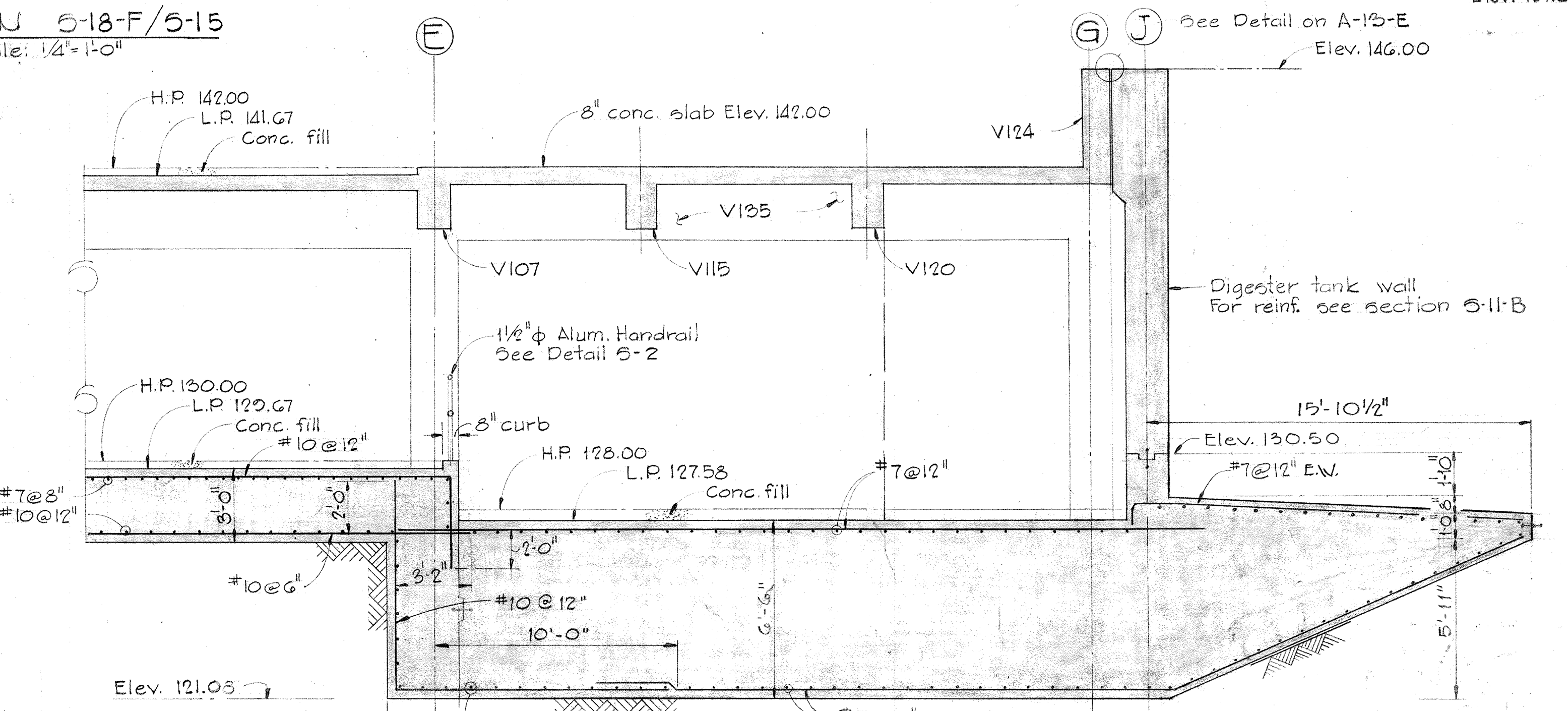
SECTION 5-18-G/5-15
Scale: 3/4"=1'-0"



SECTION 5-18-H/5-15
Scale: 3/4"=1'-0"



SECTION 5-18-I/5-15
Scale: 3/4"=1'-0"



SECTION 5-18-J/5-14
Scale: 1/4"=1'-0"



WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE 3/20/75
W. O. Federline
CHIEF-BUREAU OF ENGINEERING

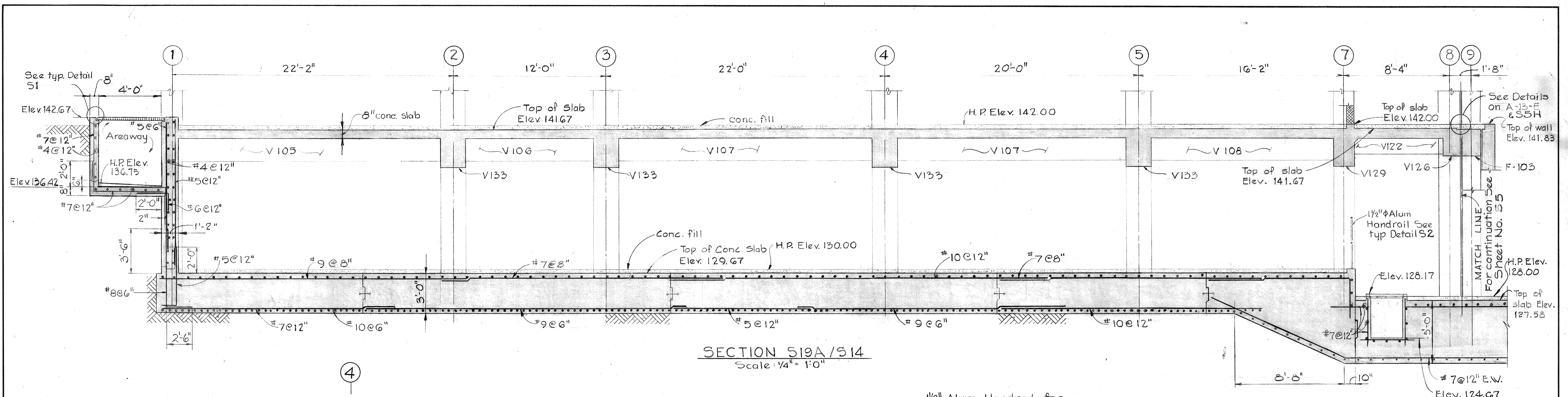
JAMES A. FEDERLINE INC.
AS BUILT DRAWING
CONTRACT NO. 501-S

STRUCTURAL
DEWATERING BUILDING
SECTIONS & DETAILS

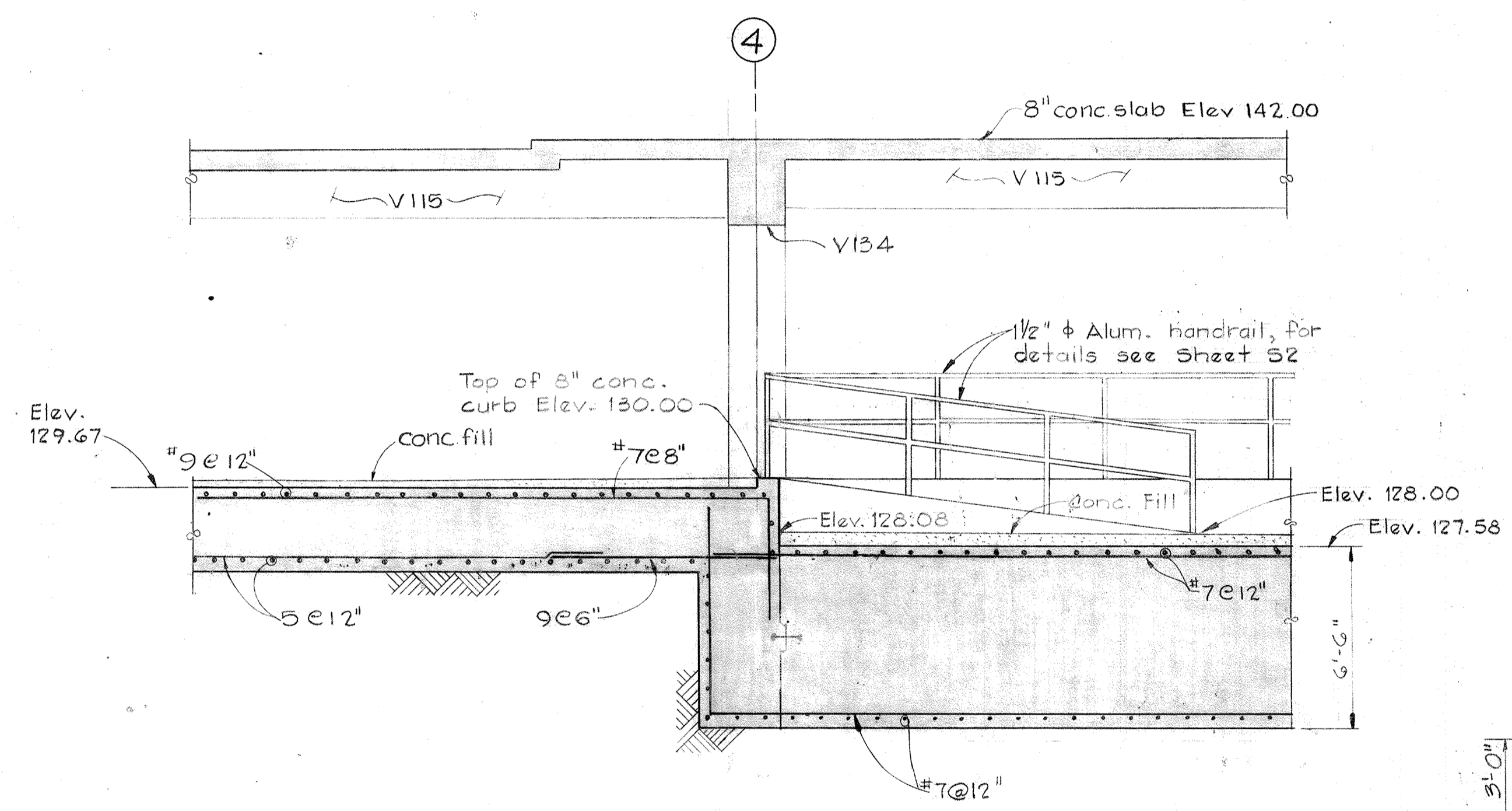
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 51
OF 128

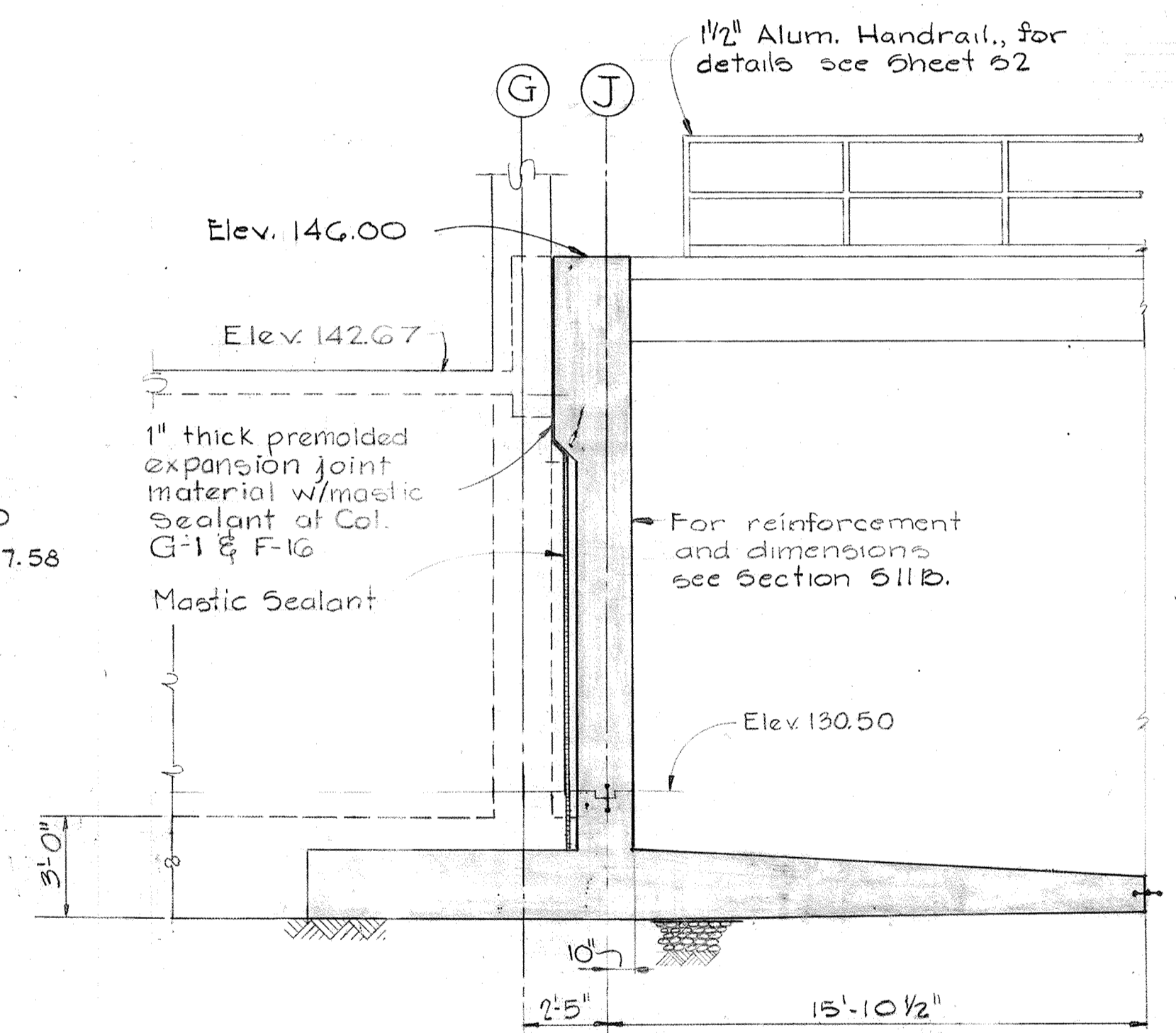
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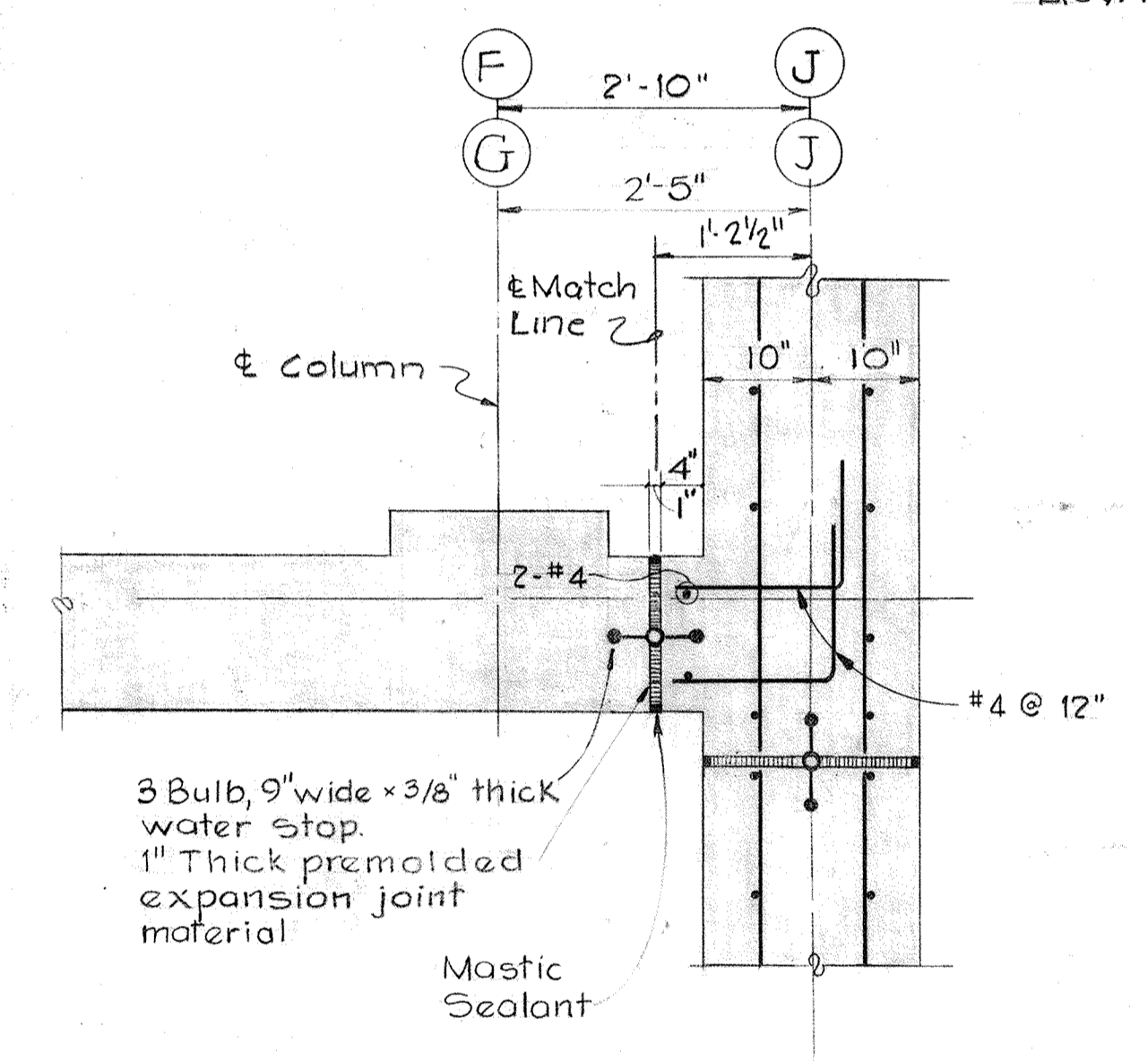
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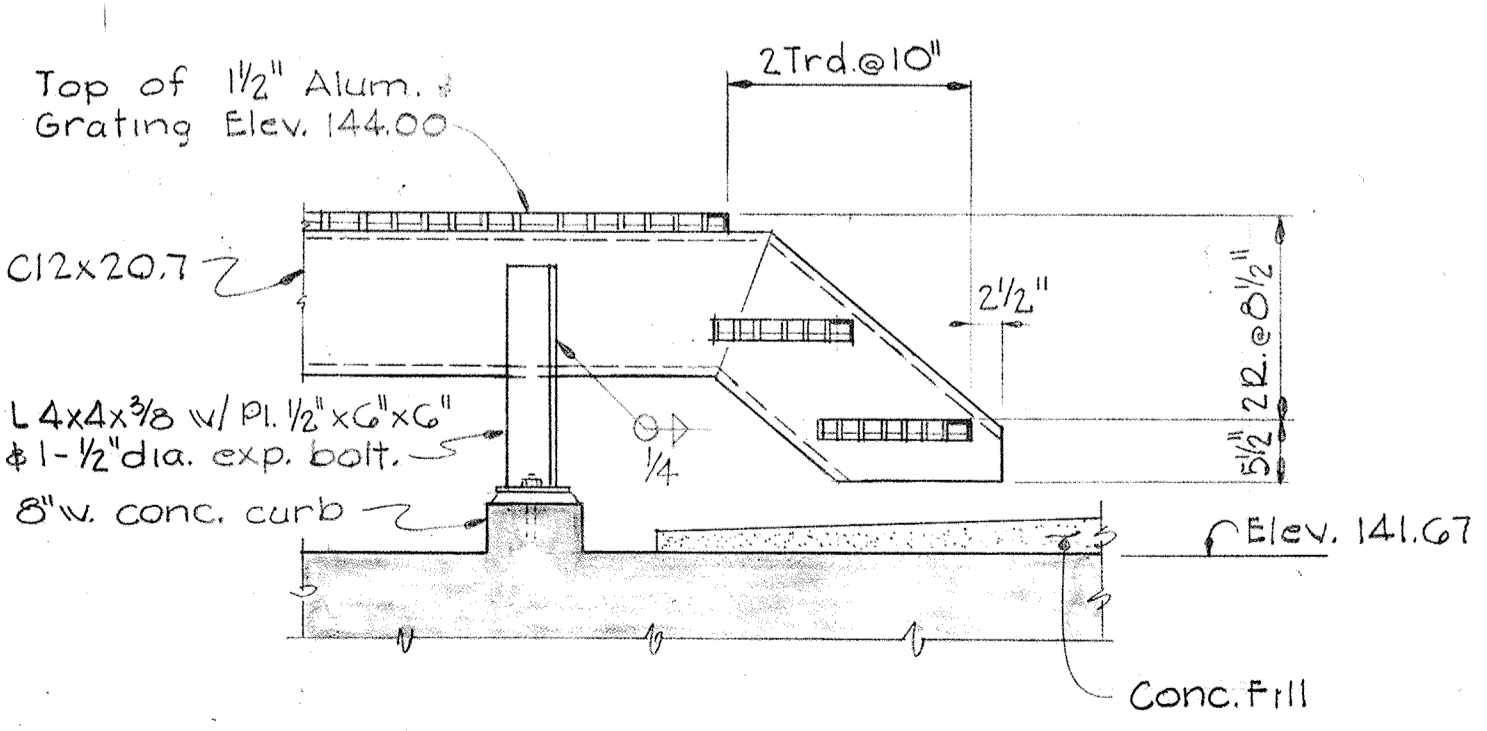
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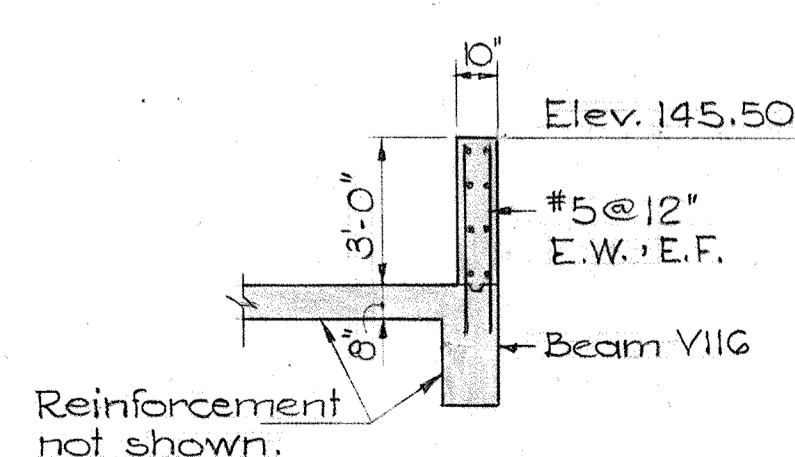
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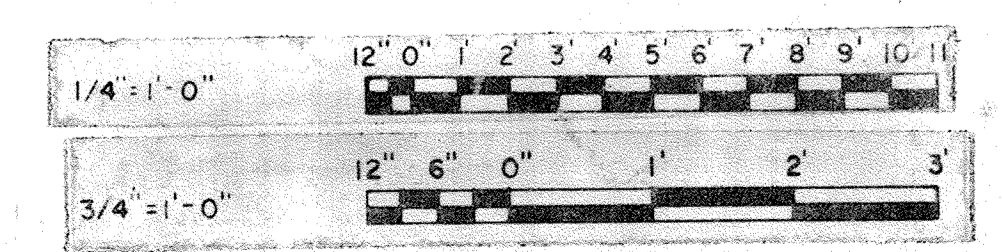
DETAIL S19D/S8, S14
Scale: 3/4" = 1'-0"
Detail S19E/S7 similar and opposite hand



SECTION S19F/S14
Scale: 3/4" = 1'-0"



SECTION S19G/S14
Scale: 1/4" = 1'-0"



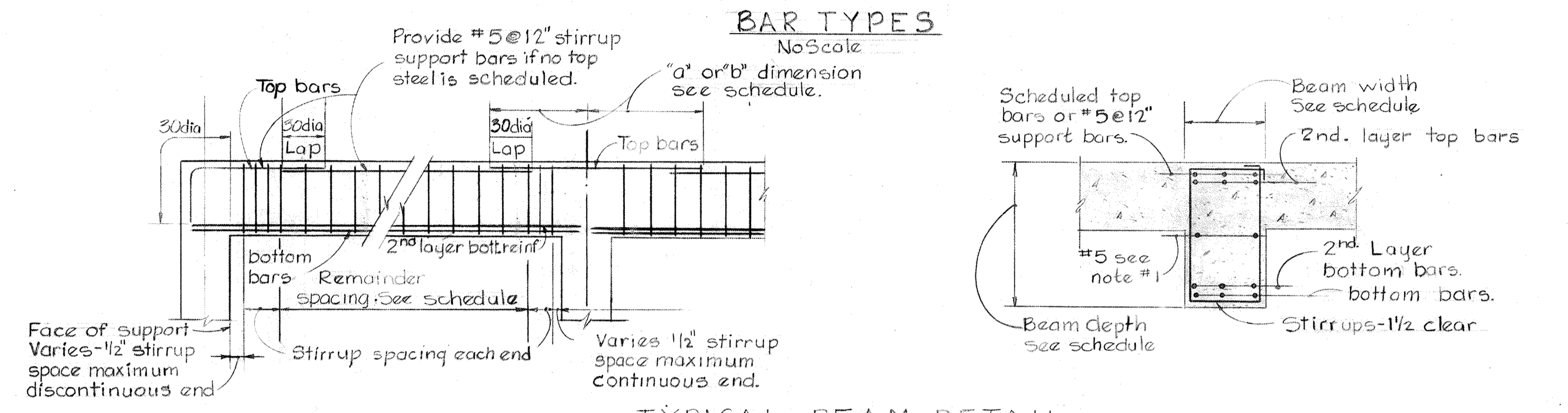
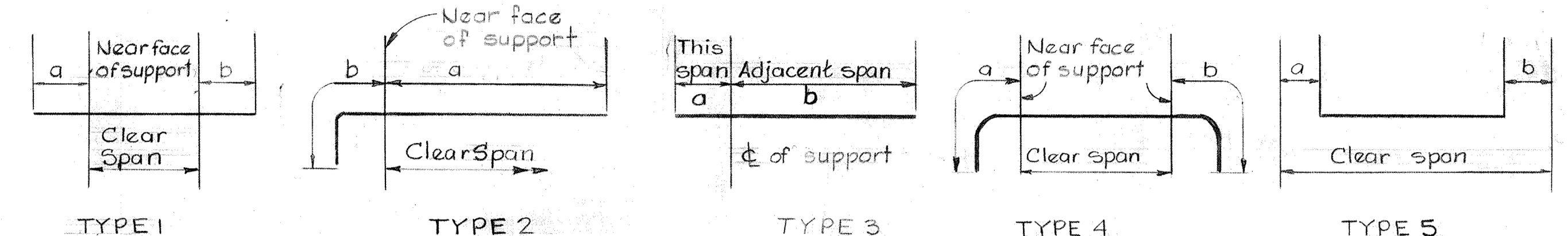
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/20/15 W. O. Federline CHIEF-BUREAU OF ENGINEERING	AS-BUILT DRAWING CONTRACT NO. 501-S	STRUCTURAL DEWATERING BUILDING SECTIONS & DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.4	DRAWING NO. 52 OF 128	SCALE AS NOTED
					SHEET S-19	

W. O. 6887

BRUNING 44-510 18392

CONCRETE BEAM SCHEDULE - DEWATERING BUILDING

MARK	WIDTH IN	DEPTH IN	BOTTOM BARS				TOP BARS				STIRRUPS			
			TYPE	NO. & SIZE	DIMENSION		REMARKS	TYPE	NO. & SIZE	DIMENSION		REMARKS	SIZE	SPACING
V225	12	40 ^Δ	1	2 #10	8"	8"	See Section A10B	2	3 #6	15'-10"	4'-4"	@ South end	#4	@18" thruout
V226	12	40 ^Δ	1	3 #5	8"	8"	DO	1	3 #10	8'-6"	8'-6"		#4	@18" thruout
V227	12	40 ^Δ	1	2 #9	8"	8"	DO	3	3 #9	9'-0"	10'-0"	@ north end	#4	@12" thruout
V228	12	26	1	3 #5	8"	8"	DO	3	3 #6	5'-0"	5'-0"	@ north end	#3	@12" thruout
V229	12	24	1	3 #5	8"	8"	From V228						#3	@10" thruout
V230	18 1/2	24	1	3 #5	8"	8"	At adjacent V230 end	3	3 #8	13'-0"	13'-0"		#4	@18" thruout
V231	18	24	1	3 #6	8"	8"		4	3 #6	3'-0"	3'-0"		#4	@10" thruout
V232	24	36	1	7 #11	10"	10"		2	3 #6	5'-0"	3'-6"	@ south end	#4	@8" thruout
V233	24	36	1	3 #5	10"	10"		1	7 #9	9'-0"	9'-0"		#4	@12" thruout
V234	24	36 ^Δ	1	6 #11	10"	10"		3	3 #9	9'-0"	4'-0"	Col. line 4 @ col. line 5	#4	@10" thruout
V235	24	20	1	3 #8	8"	8"		2	3 #8	5'-0"	4'-0"	@ North end	#4	@8" thruout
V236	20 ^Δ	34	1	3 #5	8"	8"	See Section S18G	3	3 #7	6'-0"	2'-0"	@ south end	#4	@12" thruout
V237	20	28	1	6 #11	10"	10"							#4	@12" thruout
V301	20	24 ^Δ	1	3 #7	10"	10"	See Section S18I	4	3 #6	3'-0"	3'-0"		#4	@10" thruout
V302	20	24 ^Δ	1	3 #8	8"	8"	Detail similar to Section S18I	2	6 #9	14'-0"	5'-6"	@ west end @ east end	#4	@10" thruout
V303	20	31	1	3 #8	8"	8"	2 #5 Addition each side see Sect. S18H						#4	@14" thruout
V304	12	24 ^Δ	1	2 #7	8"	8"		4	2 #7	3'-0"	3'-0"		#4	@12" thruout
V305	20	24	1	3 #9	8"	8"	See Section S16A	2	3 #6	5'-0"	3'-0"	@ south end	#4	@10" thruout
V306	20	24	1	3 #5	8"	8"	2 #5 Addition @ each face	1	3 #9	3'-0"	3'-0"		#4	@10" thruout
V307	20	24	1	3 #9	8"	8"	See Section S16A	3	3 #9	7'-0"	7'-0"	@ north end	#4	@10" thruout
V308	20	24	1	3 #5	8"	8"					From V 307	#4	@10" thruout	
V309	20	24	1	3 #9	8"	8"	See Section S16A				From V 307	#4	@10" thruout	
V310	24	24	1	5 #9	10"	10"		2	3 #6	5'-0"	3'-0"	@ south end	#4	@10" thruout
V311	24	24	1	3 #5	10"	10"		1	5 #9	8'-0"	8'-0"		#4	@10" thruout
V312	24	24	1	4 #9	10"	10"		3	5 #9	7'-0"	7'-0"	@ north end	#4	@10" thruout
V313	20	24	1	3 #5	8"	8"		4	3 #7	3'-0"	3'-0"		#4	@10" thruout
V314	20	24 ^Δ	1	3 #9	10"	10"	See Section S16A	4	6 #9	3'-6"	3'-6"		#4	@10" thruout
V315	24	24	1	3 #9	10"	10"		2	3 #7	5'-0"	3'-0"	@ north end	#4	@10" thruout
V316	12	14 ^Δ	1	3 #7	8"	8"	See Section S17H	4	2 #8	1'-6"	1'-6"		#3	@6" thruout
V317	12	24	1	3 #8	8"	8"					From V318	#3	@10" thruout	
V318	12	24	1	2 #5	8"	8"		1	3 #8	6'-10"	6'-10"		#3	@10" thruout
V319	20	24 ^Δ	1	3 #8	8"	8"		3	3 #9	11'-0"	10'-0"	@ east end	#4	@10" thruout



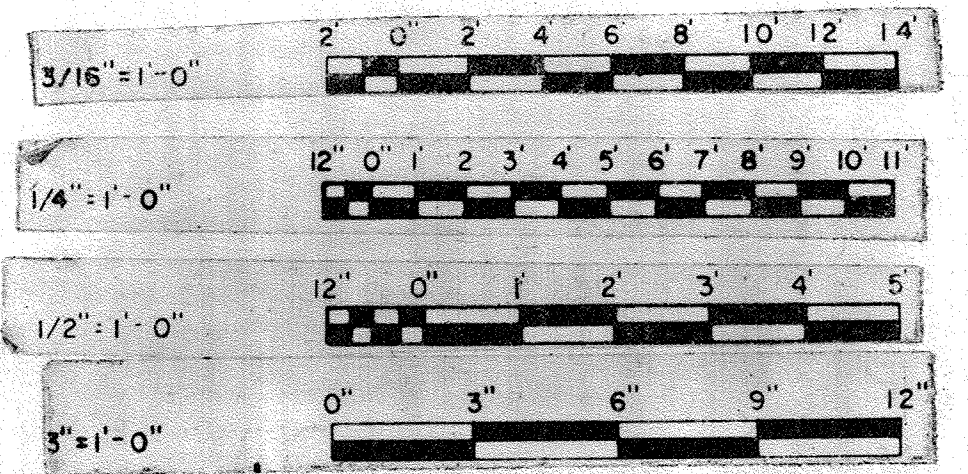
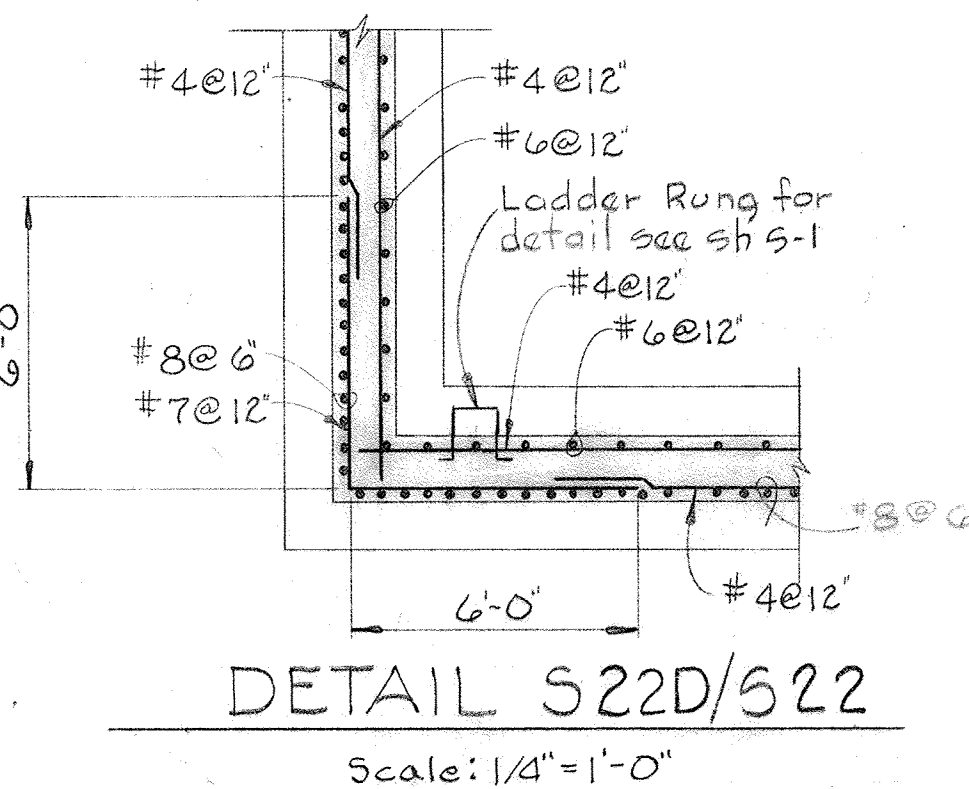
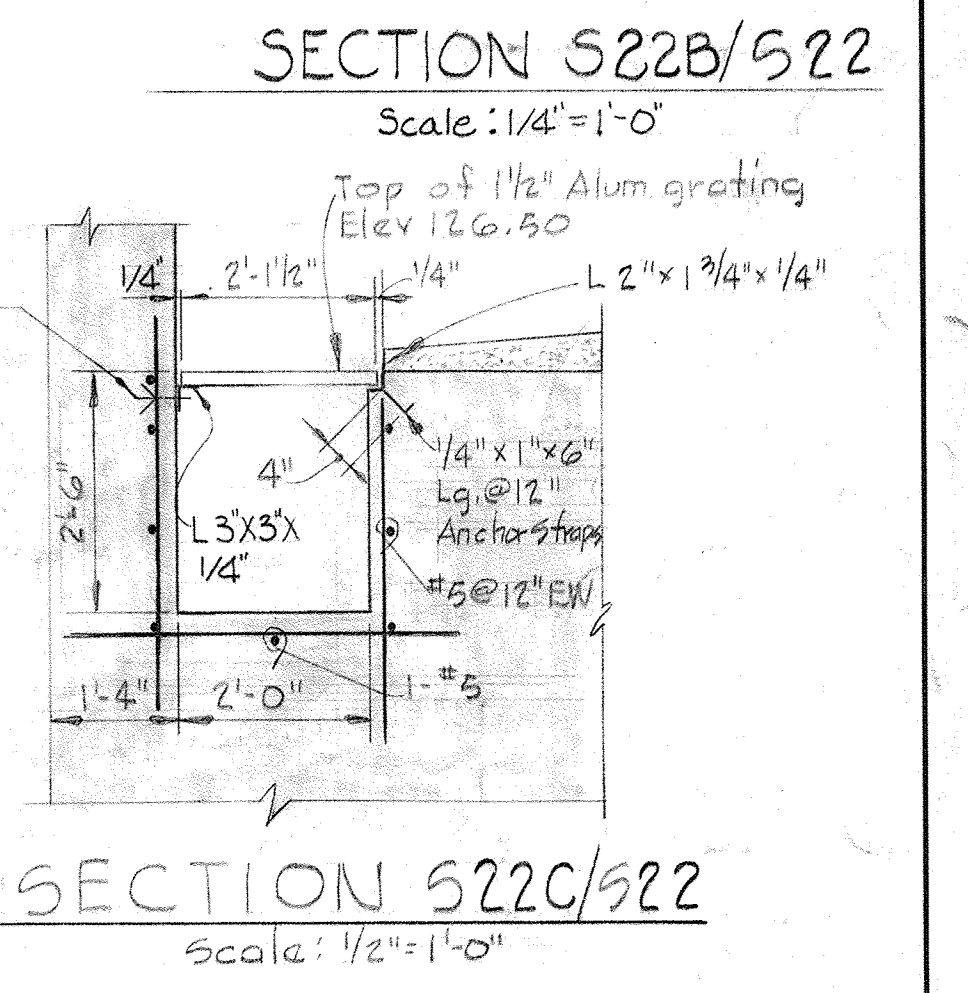
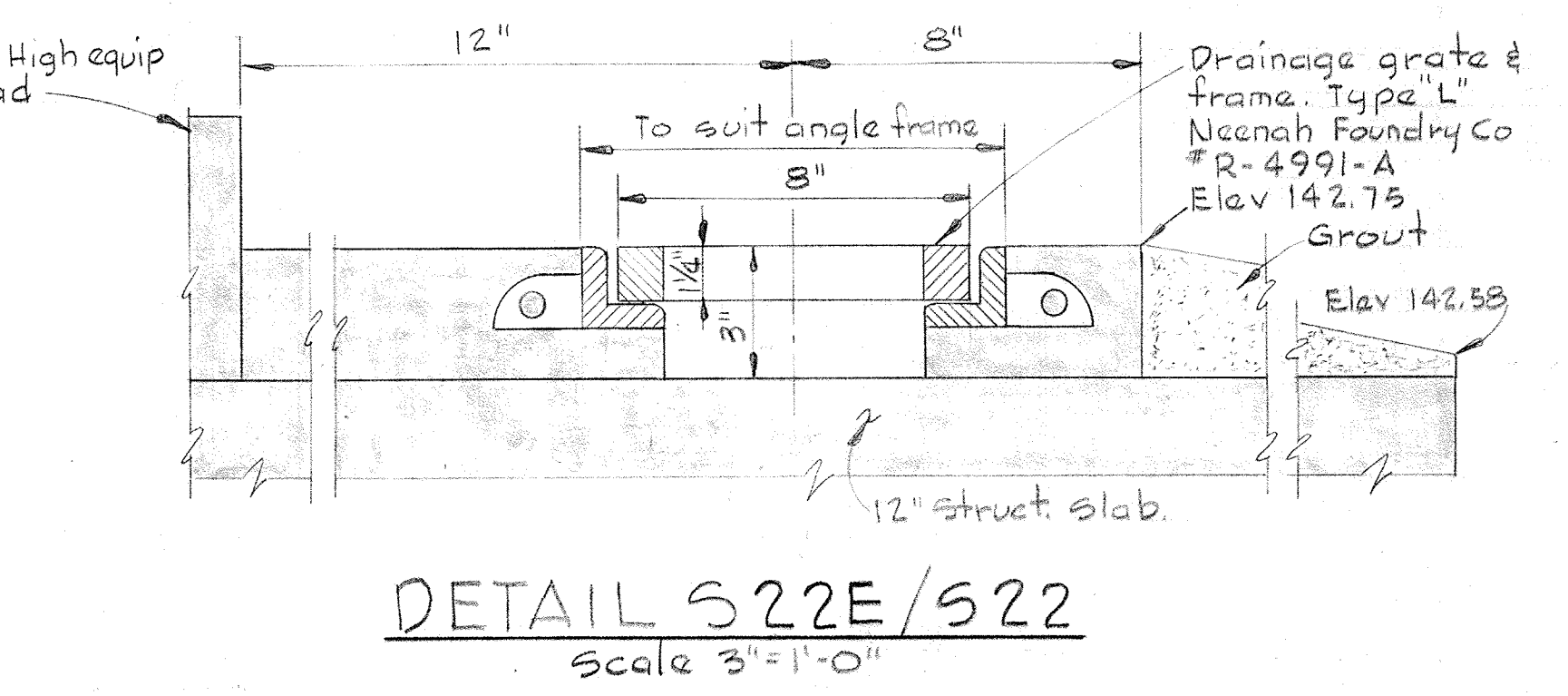
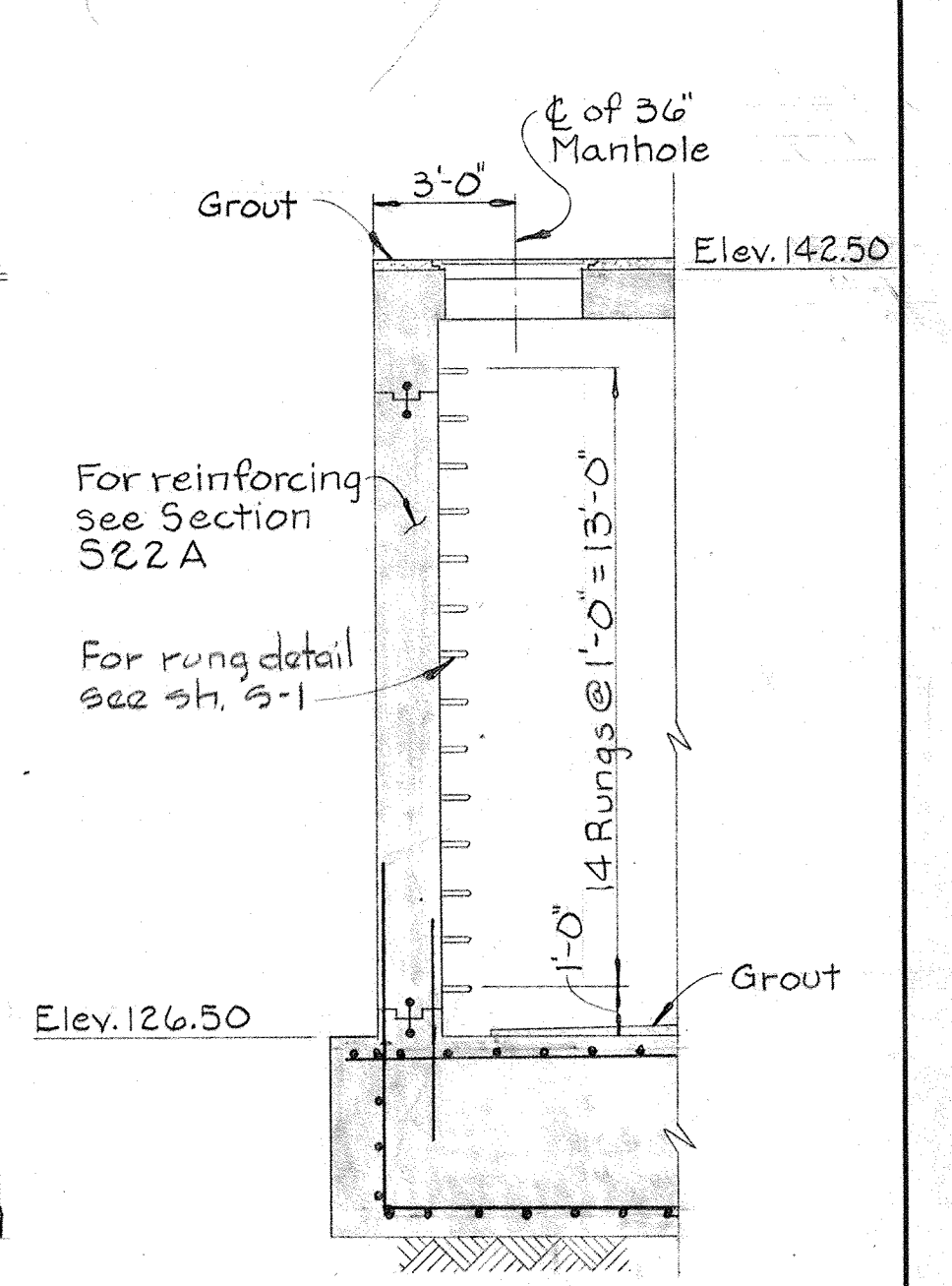
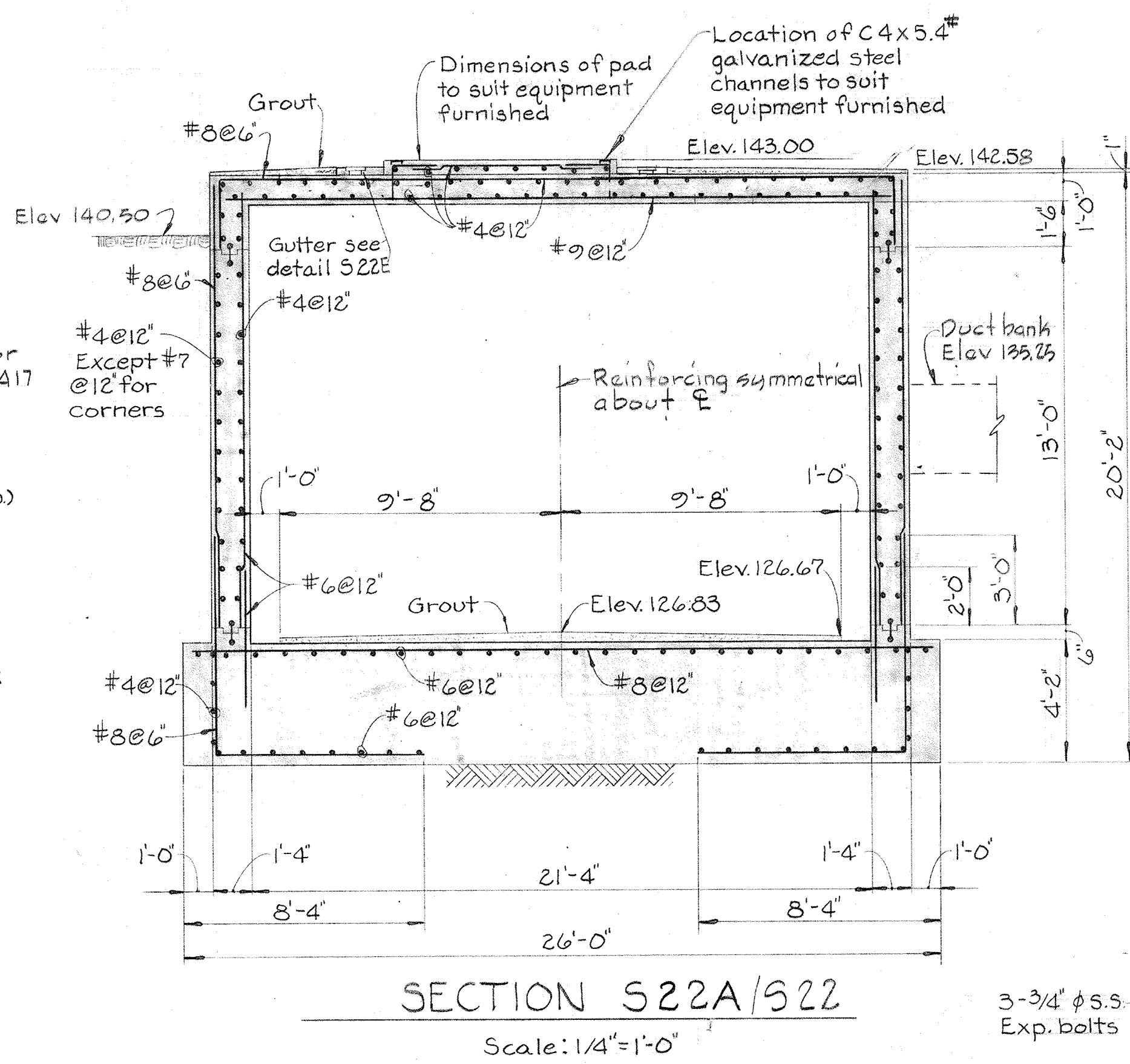
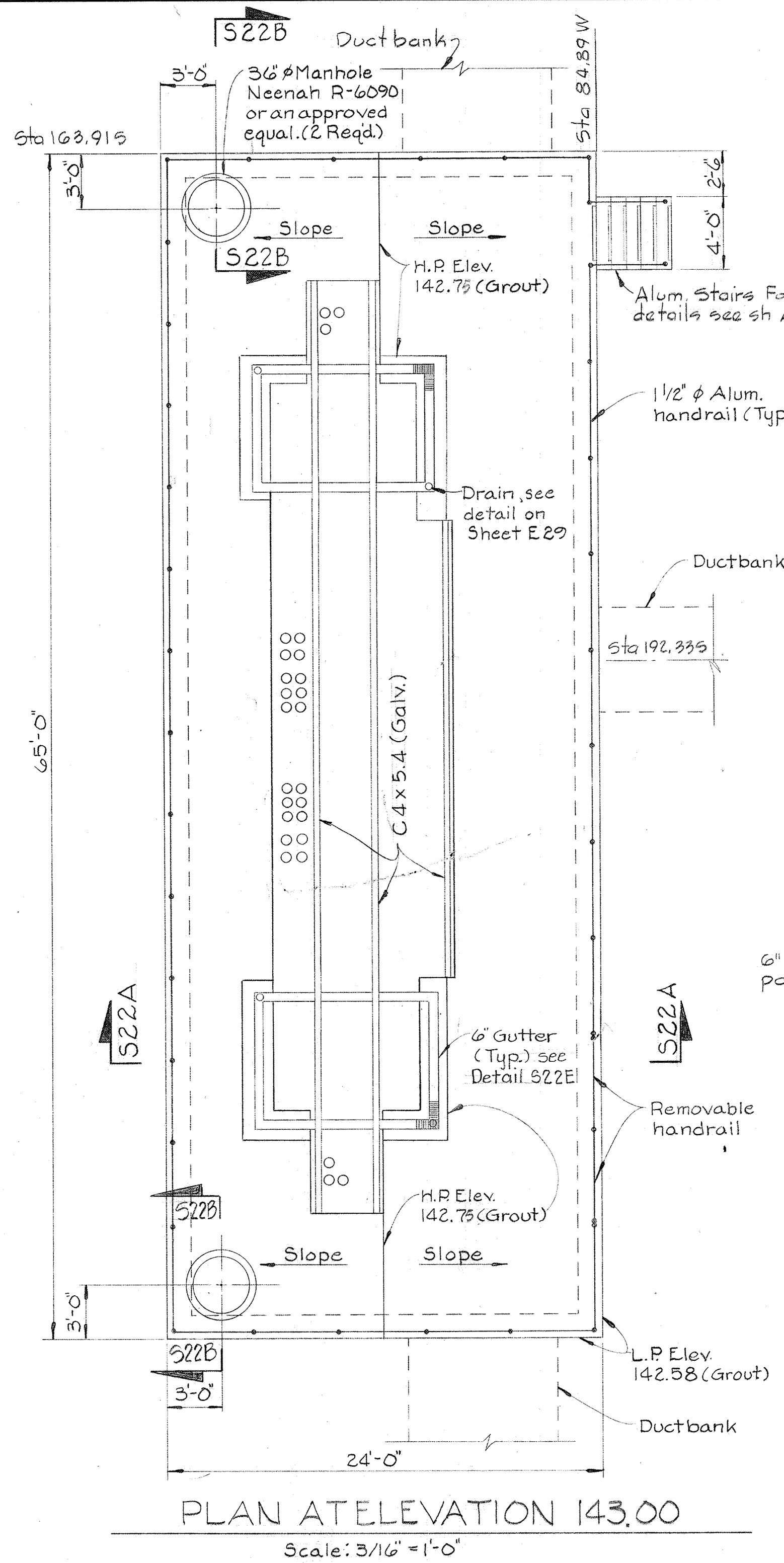
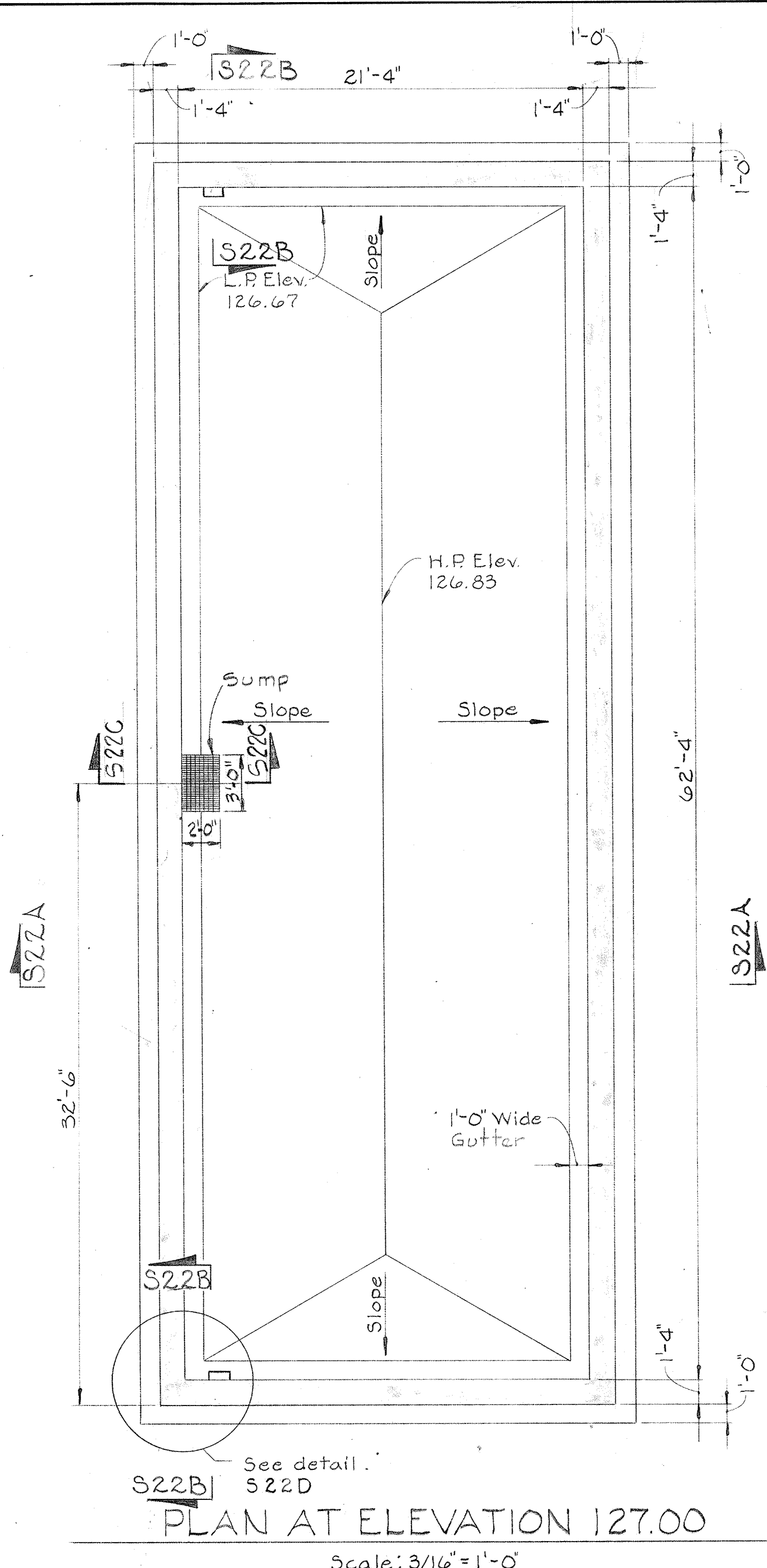
NOTES: Concrete beams
 1. All beams greater than 24" in depth shall have #5@12" each face.
 2. Top reinforcing for all beams shall have 1 1/2" cover unless noted.
 3. Δ indicates beam section varied or irregular. See sections for details.
 4. * indicates reinforcement in 2nd layer.
 5. Reinforcement not required at column A1.

COLUMN SCHEDULE - DEWATERING BUILDING

Elev.	COLUMN MARK	A1, A2, A3, A4 A5, D1, D7, D8 E1, E7, G1, G7	A5	A7	C'5	G2, G3, G4, G5	D2, D3, D4 E2, E3, E4	D5, E5	C'2, C'3 C4,	E8, F8	E'1
Elev. 177.67											
Elev. 156.00											
Elev. 142.00											
Elev. 129.67											
Elev. 120.00											

NOTES
 1. Columns G5, G7, A8 & D8 bottom Elev. 127.58.
 2. Dowels to match reinforcement at bottom of each column.
 3. Columns E8 and F8 top Elev. 154.00.
 4. For typical column details see Sheet 50.

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/20/15 W.P. Lambert CHIEF, BUREAU OF ENGINEERING	AS BUILT DRAWING CONTRACT NO. 50I-S	STRUCTURAL DEWATERING BUILDING BEAM & COLUMN SCHEDULES	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 54 OF 128	SCALE AS NOTED
					W.O. 6887-2	SHEET S-21



WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3/20/75 DATE	JAMES A. FEDERLINE INC. AS BUILT DRAWING CONTRACT NO. 501-S	STRUCTURAL OUTDOOR PRIMARY SUBSTATION PS2 PLAN, SECTIONS & DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 55 OF 128	SCALE AS NOTED
					SHEET S-22	

W. O. 6887-2

BRUNING 44510 18392

LEGEND

GENERAL NOTES

SYMBOLS

DESCRIPTION


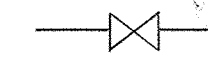
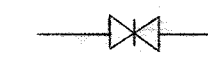
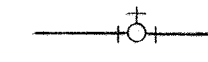
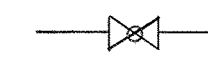
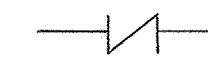

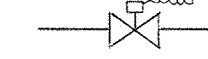
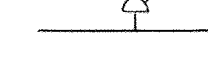


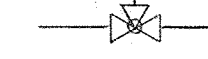
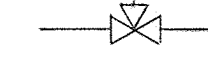
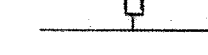
ABBREVIATION

————— Piping And Equipment Installed Under This Contract
 - - - - - Piping And Equipment Shown By A Comparatively Light Line Shall Be Future

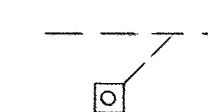
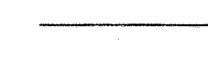

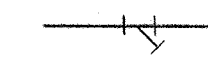
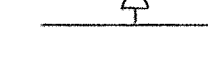

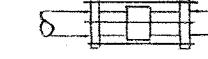
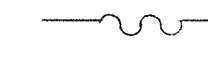
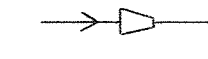
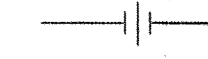
PIPING

—C.W.— Cold Water, City Water C.W.
 —H.W.— Hot Water H.W.
 —A— Vent Thru Roof YTR
 —YTR— Compressed Air A
 - - - - - Floor Drainage F.D.
 —FW— Flushing Water F.W.

VALVES

 Ball Check Valve
 Gate Valve
 Butterfly Valve
 Globe Valve
 Plug Valve
 Swing Check Valve
 Pressure Reducing Valve
 Solenoid Valve
 Pressure Relief Valve
 Ball Valve
 Four Way Solenoid Valve
 Three Way Plug Valve
 Needle Valve
 Vacuum Relief Valve

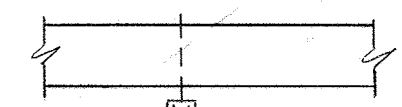
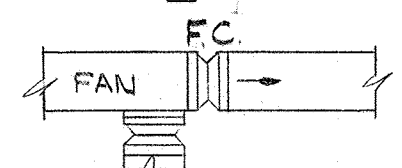
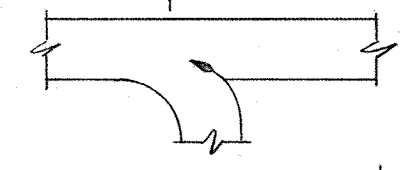
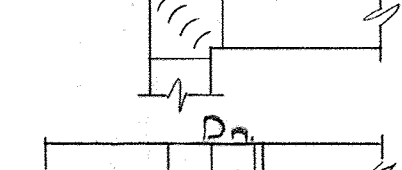

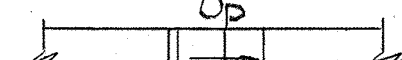
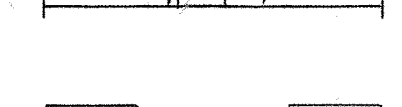

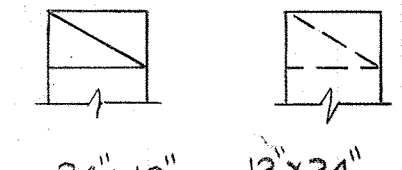
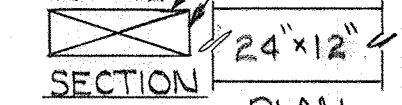
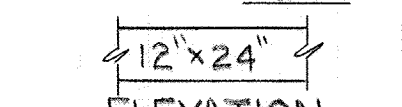
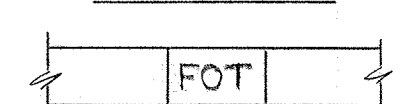
FITTINGS

 Floor Drain F.D.
 Cleanout, Flush Type F.C.O.
 Cleanout C.O.
 Strainer
 Shock Absorber
 Hose Bibb H.B.
 Flexible Coupling
 Flexible Rubber Coupling
 Reducer
 Union



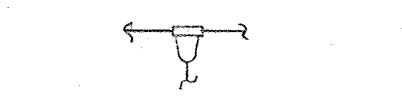
SYMBOLS

DESCRIPTION

VENTILATION

 Motor Operated Damper
 Flexible Connections At Fan Suction And Discharge
 Splitter Damper
 Square Elbow With Turning Vanes
 Inclined Drop In Duct With Respect To Air Flow
 Inclined Rise In Duct With Respect To Air Flow
 Supply Air Duct
 Return Or Exhaust Air Duct
 Duct Size-Rectangular (First Dimension On Plan Or Elevation Is Side Shown)
 Duct Transition, Flat On Top
 Duct Transition, Flat On Bottom
 Ductstat

MISCELLANEOUS

 Compressed Air Outlet
 Pressure Gage
 Moisture Separator w/ Automatic Drain

- The Contractor shall correlate with the manufacturer of the flotation thickener equipment in regards to location and arrangement of chemical, influent and air piping. The Contractor shall modify, as required, the location and arrangement of piping to suit equipment requirements.
- The Contractor shall correlate with the manufacturer of the vacuum filter equipment in regards to location and arrangement of equipment and piping and modify, as may be required, to suit equipment requirements.
- For sludge process piping schematic see sheet M2.
- For chemical piping schematic see sheet M3.
- Drainage piping for future equipment to be extended above floor, and capped in areas similar to locations required by items furnished under this contract.
- All vents thru roof to be extended a minimum of 8" above roof.
- All floor drains shall be trapped unless otherwise noted.
- For plumbing schematic see sheet M4.
- For flushing water, potable water, and high pressure air schematic see sheet M5.
- For metering systems schematics see sheet M6.
- All hose bibbs to be located 3'-0" above finished floor.
- Digester and gravity thickener No.1 and No.2 are duplicates, but opposite hand with gravity thickener adjacent to each other. Digester and gravity thickener require duplicate services and equipment.
- All piping and ductwork thru floors and walls to be sleeved, unless otherwise noted.
- Concrete pads shall be provided for equipment, and shall be a minimum of 4" high.
- For tie rod detail see sheet M16. It shall be noted, all flexible couplings, required for piping to assure ease of equipment disassembly, may not be shown on the drawings. Additional units shall be provided as required by the Engineer.
- All 3/4" hose bibbs are to be used with potable water.
- All 2 1/2" hose bibbs (except those installed on piping blind flanges) are to be used with flushing water.
- For air device schedule see sheet M32.

JAMES A. FEDERLINE INC.
AS-BUILT DRAWING

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE *3/18/87*
W.O. Federline
CHIEF BUREAU OF ENGINEERING

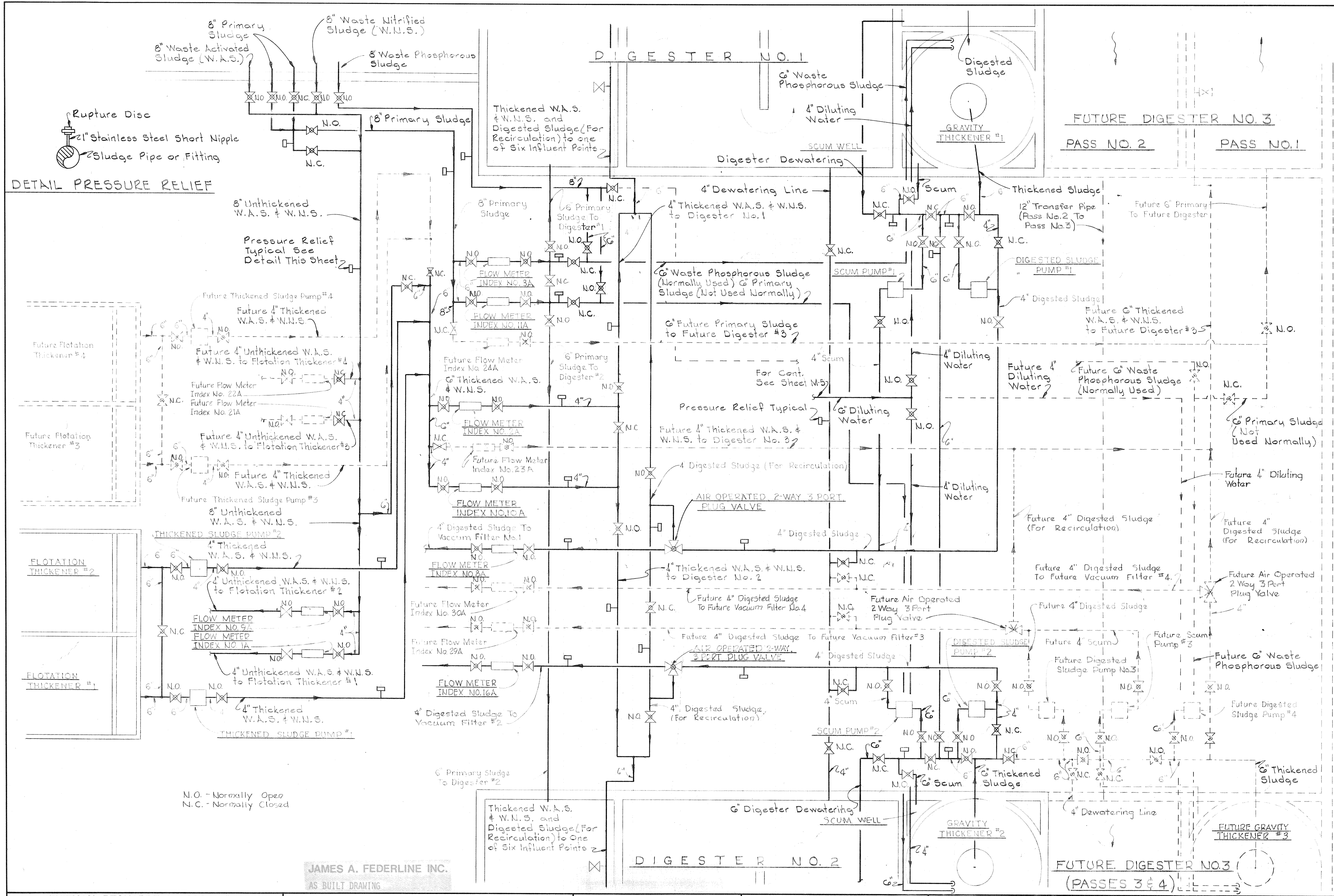
CONTRACT NO. 501-S

MECHANICAL
LEGEND, ABBREVIATIONS &
GENERAL DETAILS

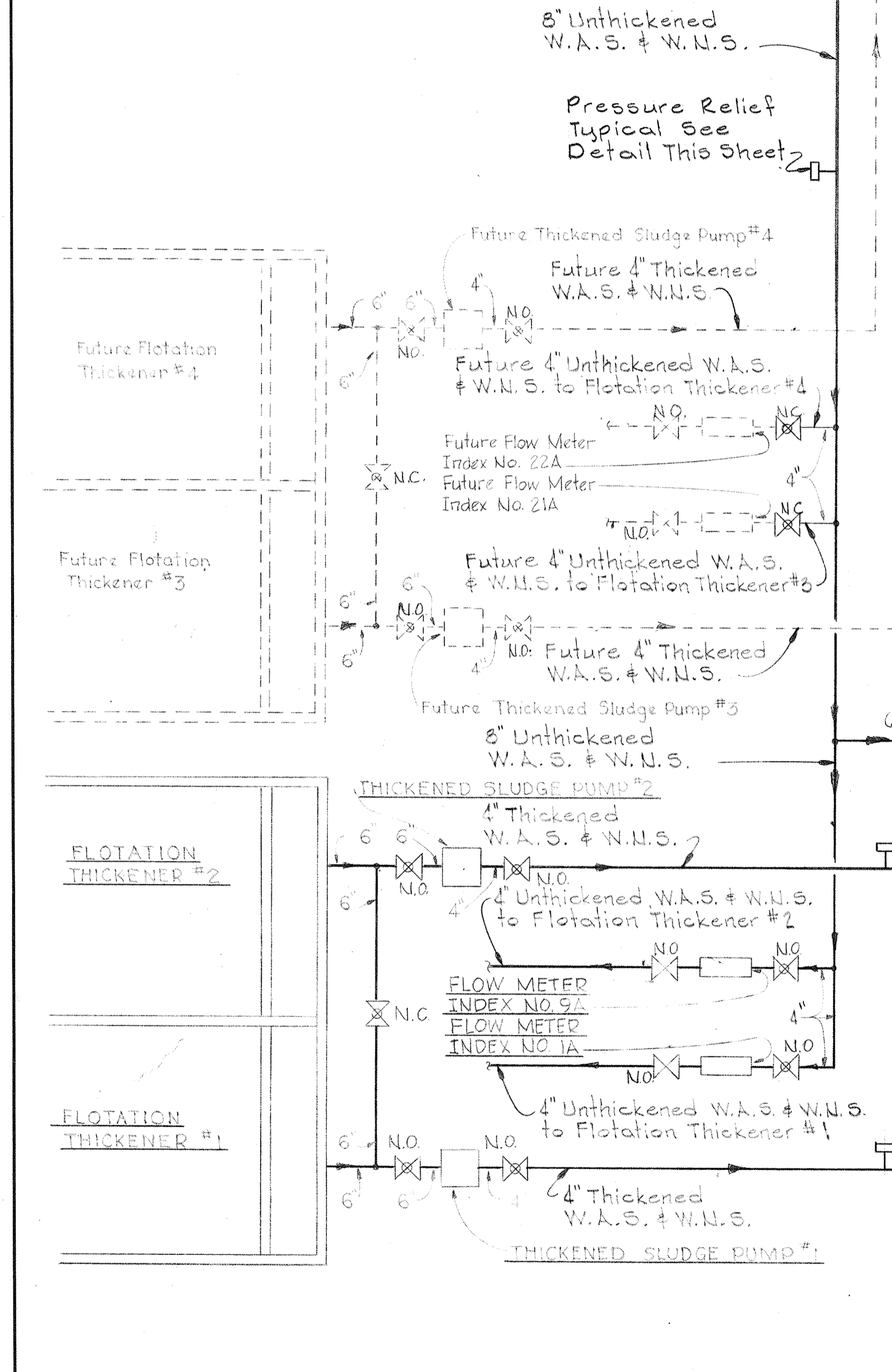
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 56
OF 128

SCALE
AS
NOTED



DETAIL PRESSURE RELIEF



N.O. - Normally Open
N.C. - Normally Closed

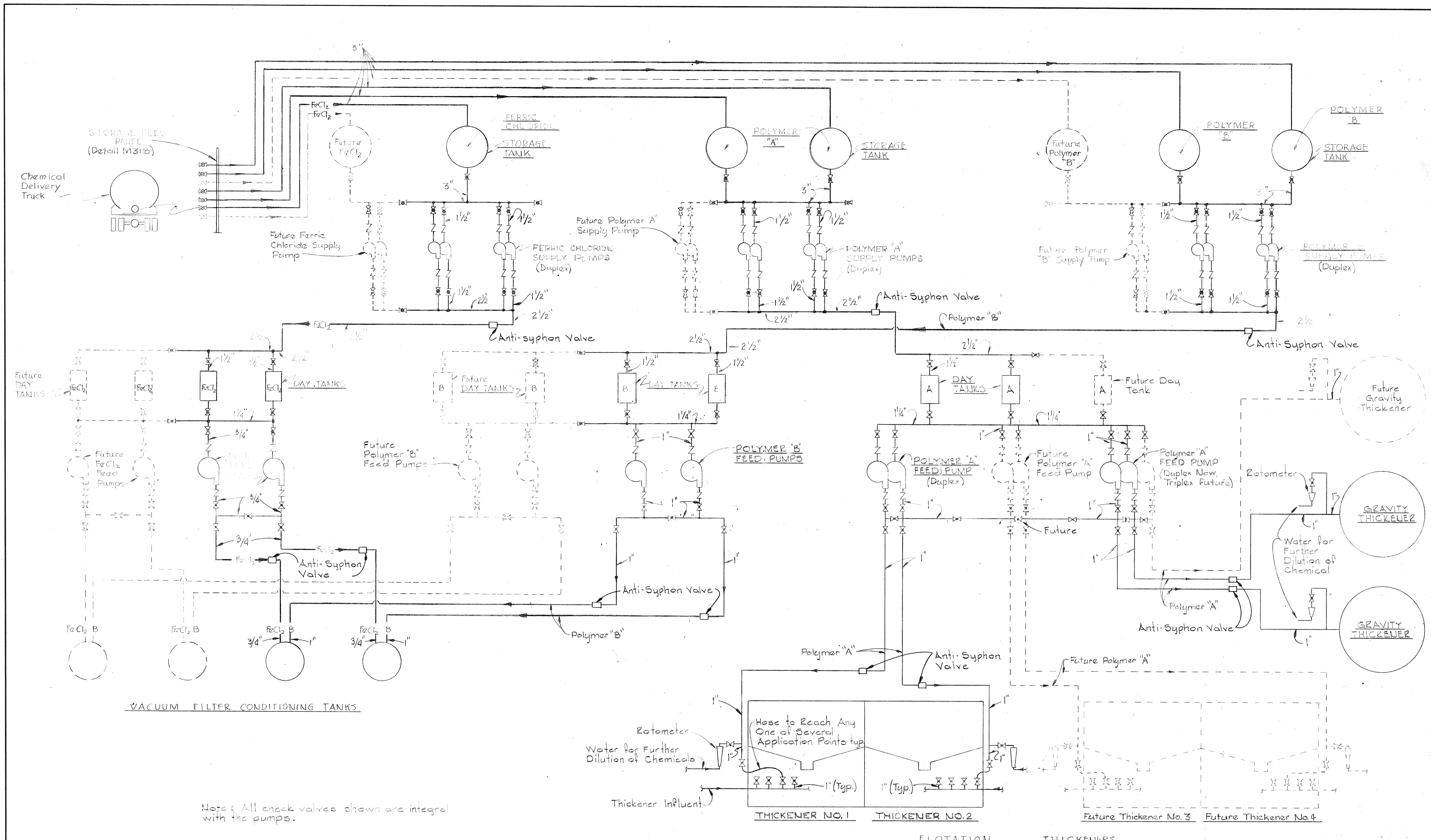
JAMES A. FEDERLINE INC.
AS BUILT DRAWING

<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>slp</i> DATE CHIEF-BUREAU OF ENGINEERING</p>	<p>CONTRACT NO. 501-S</p>	<p>MECHANICAL SLUDGE PROCESS PIPING SCHEMATICS</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 57 OF 128</p>	<p>SCALE AS NOTED</p>
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W. O. 6887

SHEET M-2

BRUNING 44-510 18392



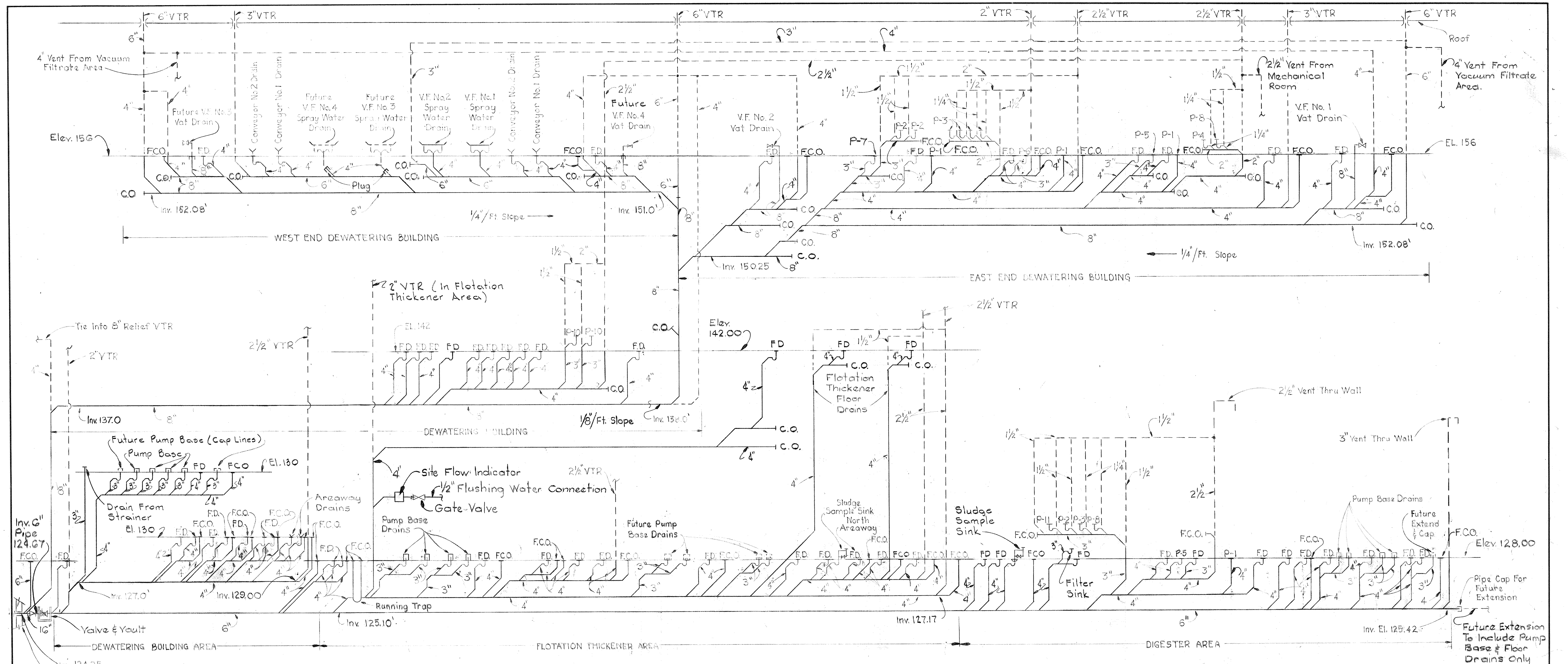
Note: All check valves shown are integral with the pumps.

SCHEMATIC OF CHEMICAL SYSTEM

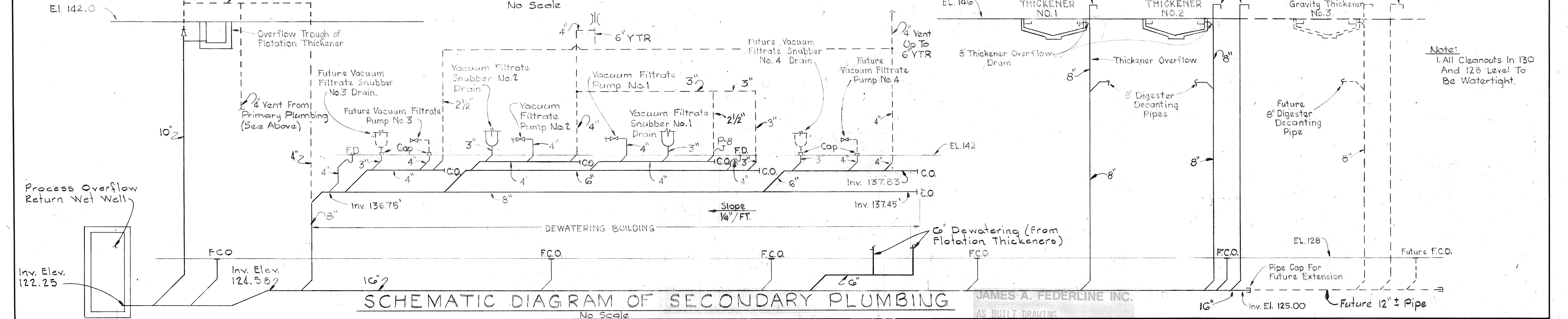
No. 501-S
 JAMES A. FEDERLINE INC.
 AS BUILT DRAWING

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/20/75 W. O. LIBERT CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 501-S	MECHANICAL CHEMICAL PIPING SCHEMATICS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 58 OF 128 SCALE AS NOTED
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BRUNING 44-510 18392



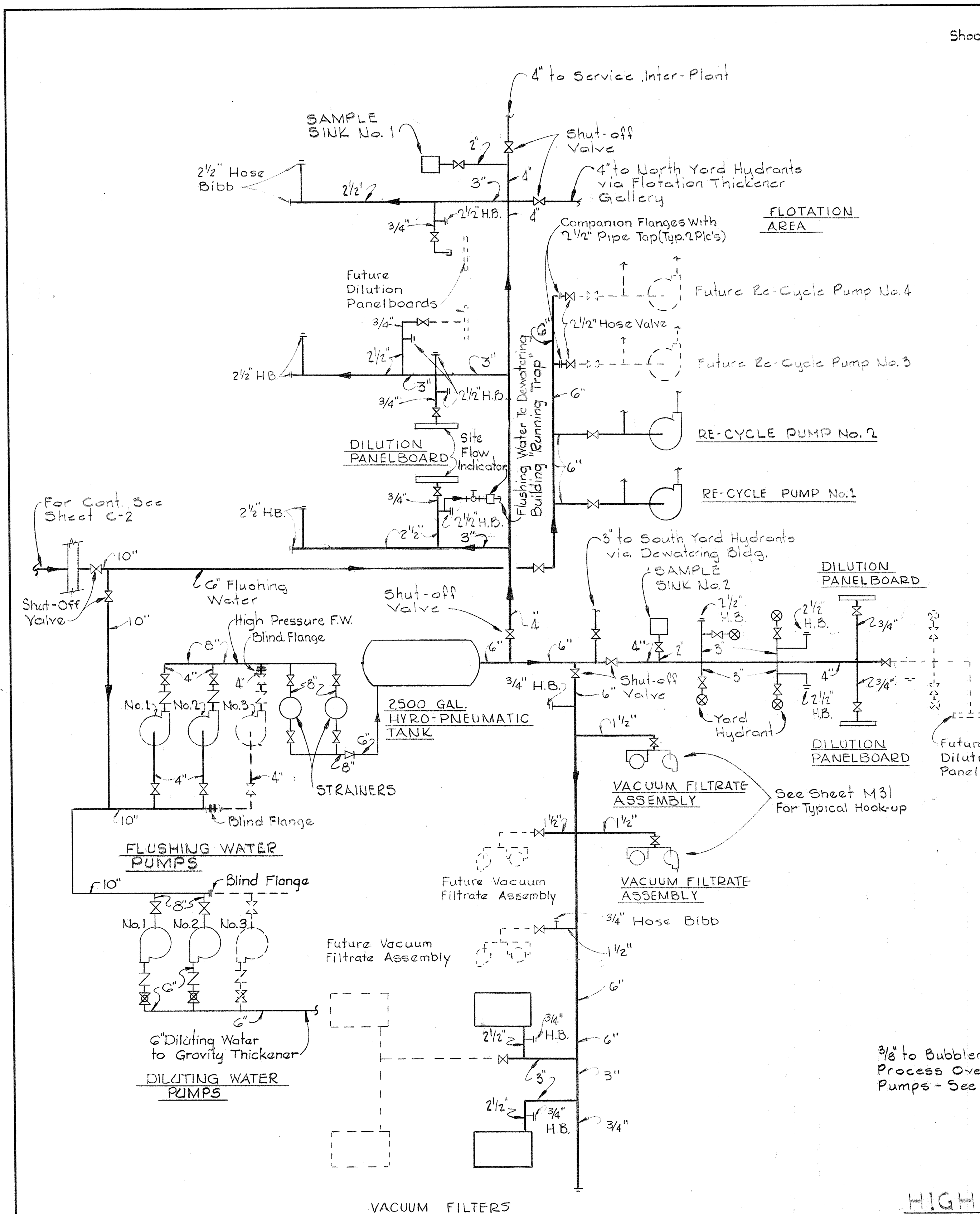
SCHEMATIC DIAGRAM OF PRIMARY PLUMBING



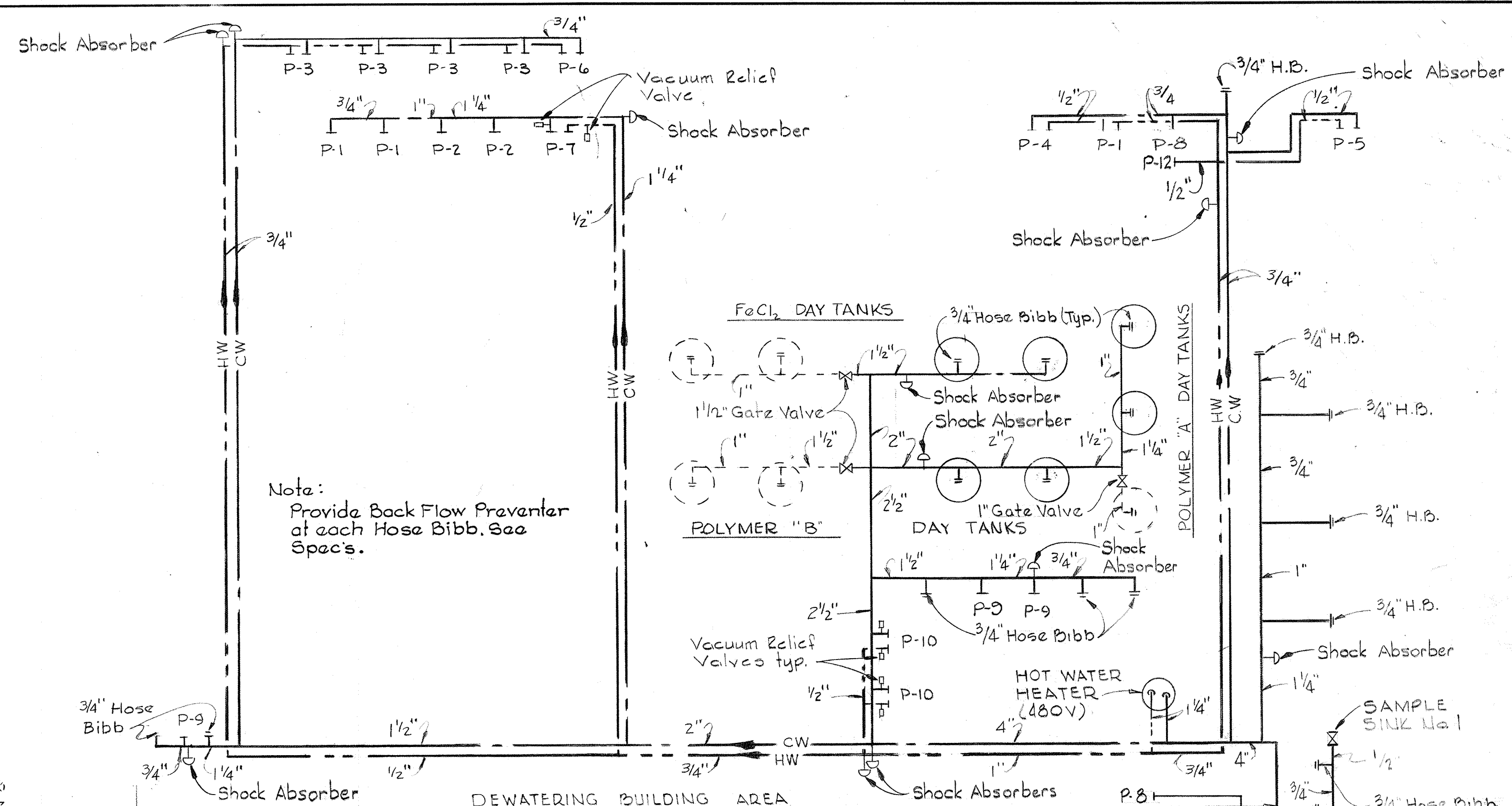
SCHEMATIC DIAGRAM OF SECONDARY PLUMBING

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>W. O. Federline</i> CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 501-S	MECHANICAL PLUMBING SCHEMATICS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 59 OF 128	SCALE AS NOTED
					W. O. 6887	

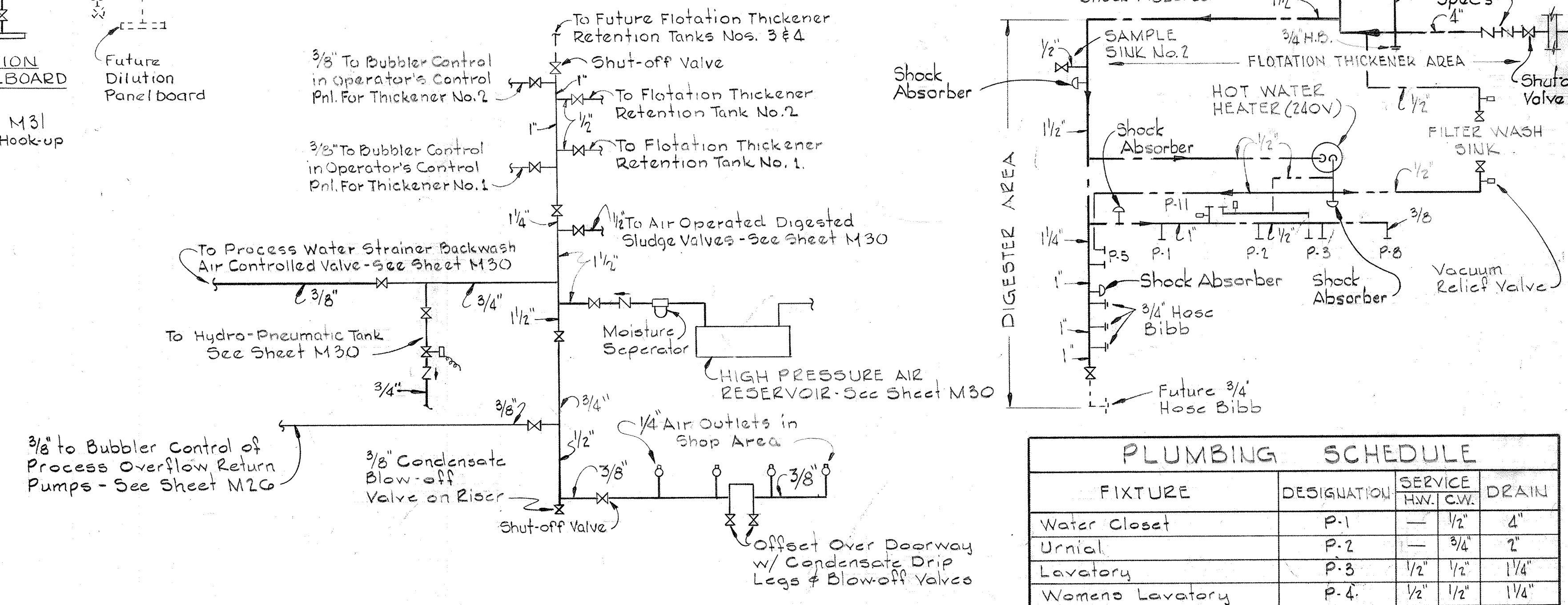
BRUNING 44510 18392



FLUSHING WATER SCHEMATIC
No Scale



DOTABLE WATER SCHEMATIC
No Scale



HIGH PRESSURE AIR PIPING SCHEMATIC
No Scale

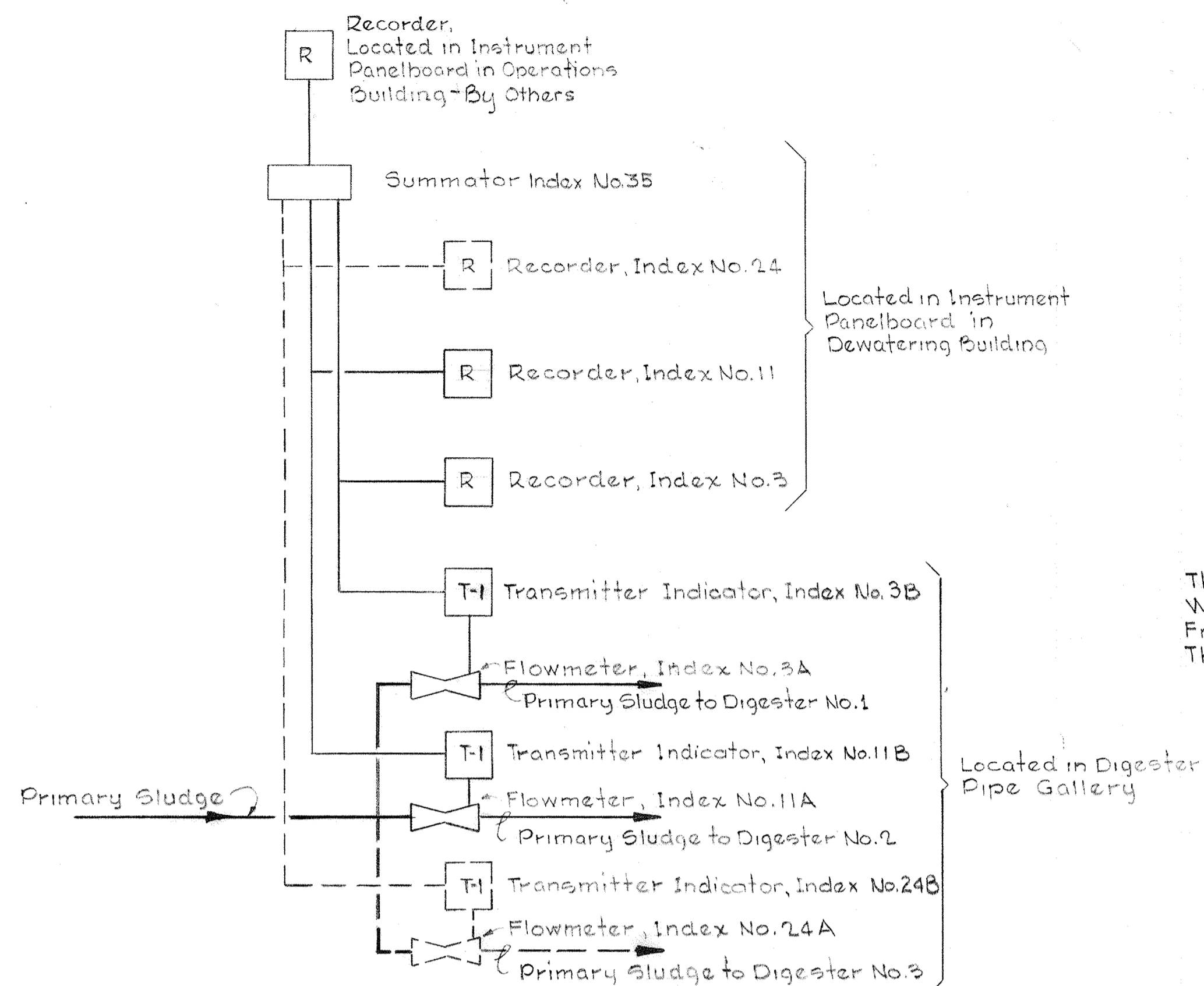
PLUMBING SCHEDULE

FIXTURE	DESIGNATION	SERVICE HW./CW.	DRAIN
Water Closet	P-1	1/2"	4"
Urinal	P-2	3/4"	2"
Lavatory	P-3	1/2"	1 1/4"
Womens Lavatory	P-4	1/2"	1 1/4"
Shower Stall	P-5	1/2"	3"
Shower Mens Gang Type	P-6	3/4"	3"
Map Sink	P-7	1/2"	3"
Drinking Fountain	P-8	3/8"	1 1/4"
Emerg. Shower & Eye Wash	P-9	1"	Local
Service Sink (S-Trap)	P-10	1/2"	3"
Service Sink (P-Trap)	P-11	1/2"	3"

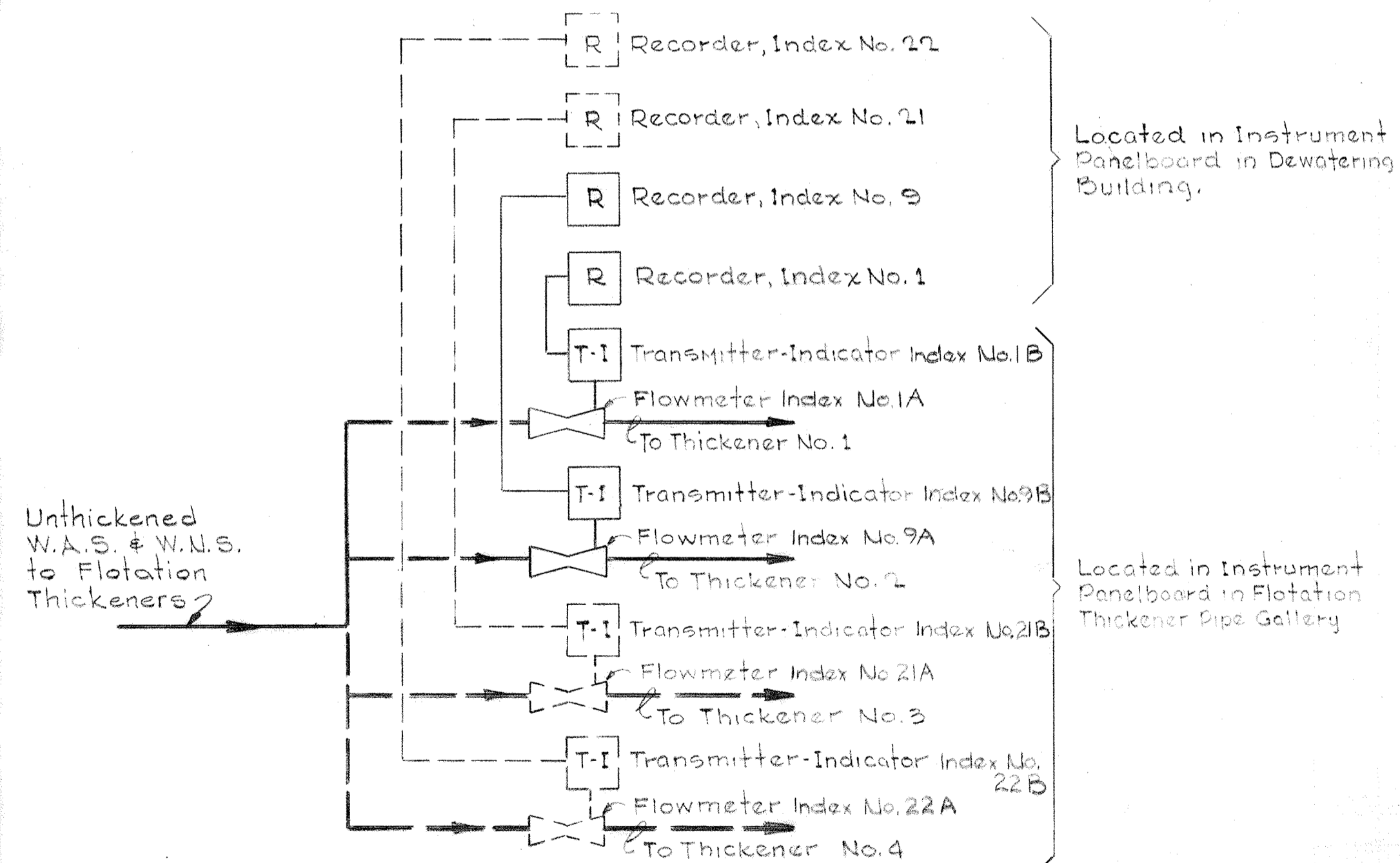
Note:
1. Shop Area Outlets To Include A Shut-Off Valve And Quick Disconnect Ends (Include Both Male And Female Pieces With Hose Fitting End.)

JAMES A. FEDERLINE INC.
AS BUILT DRAWING

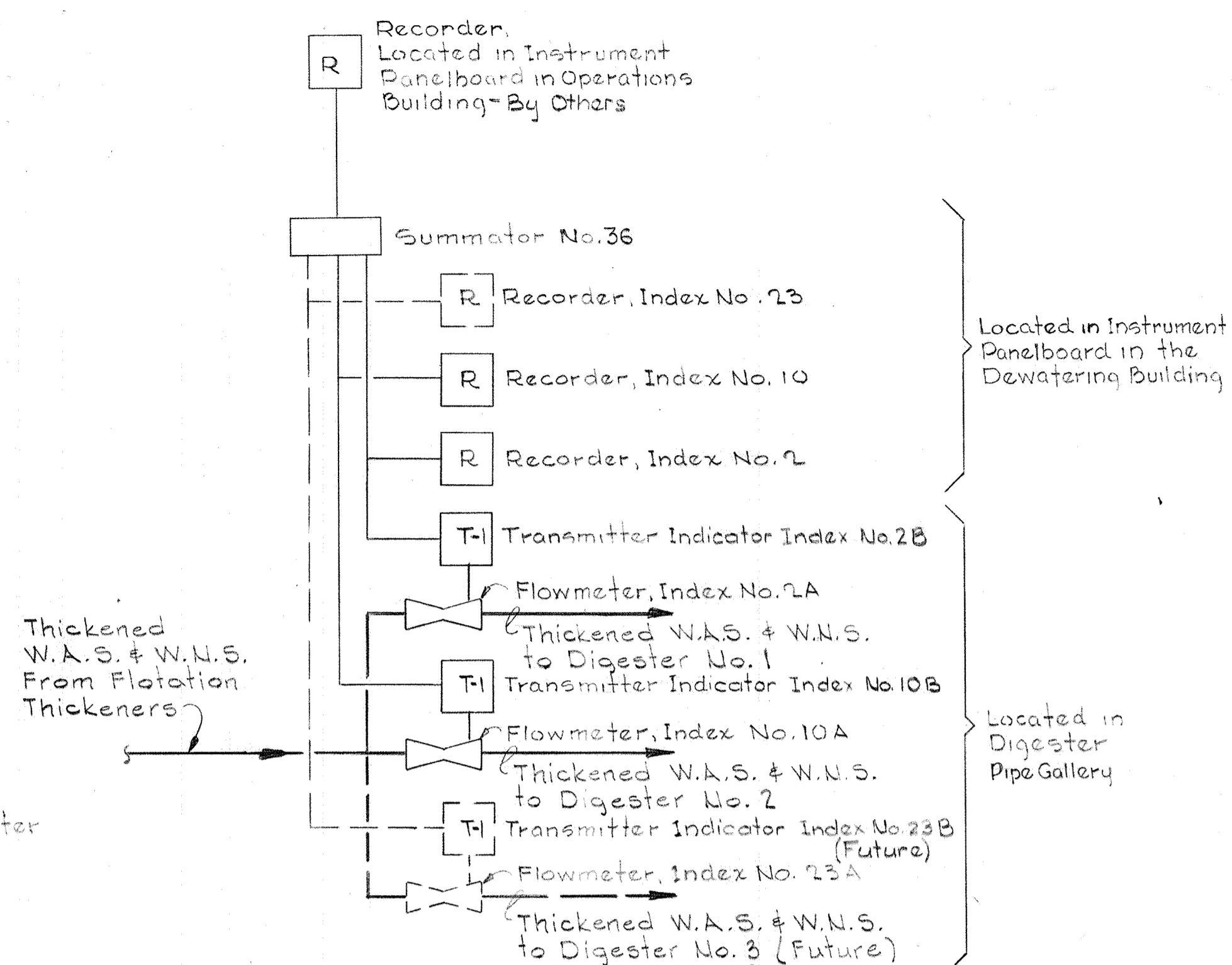
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>zh/his</i> DATE	CONTRACT NO. 501-S <i>WO/Filbert</i> CHIEF-BUREAU OF ENGINEERING	MECHANICAL PLANT SERVICE PIPING SCHEMATICS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 60	SCALE AS NOTED
					OF 128	



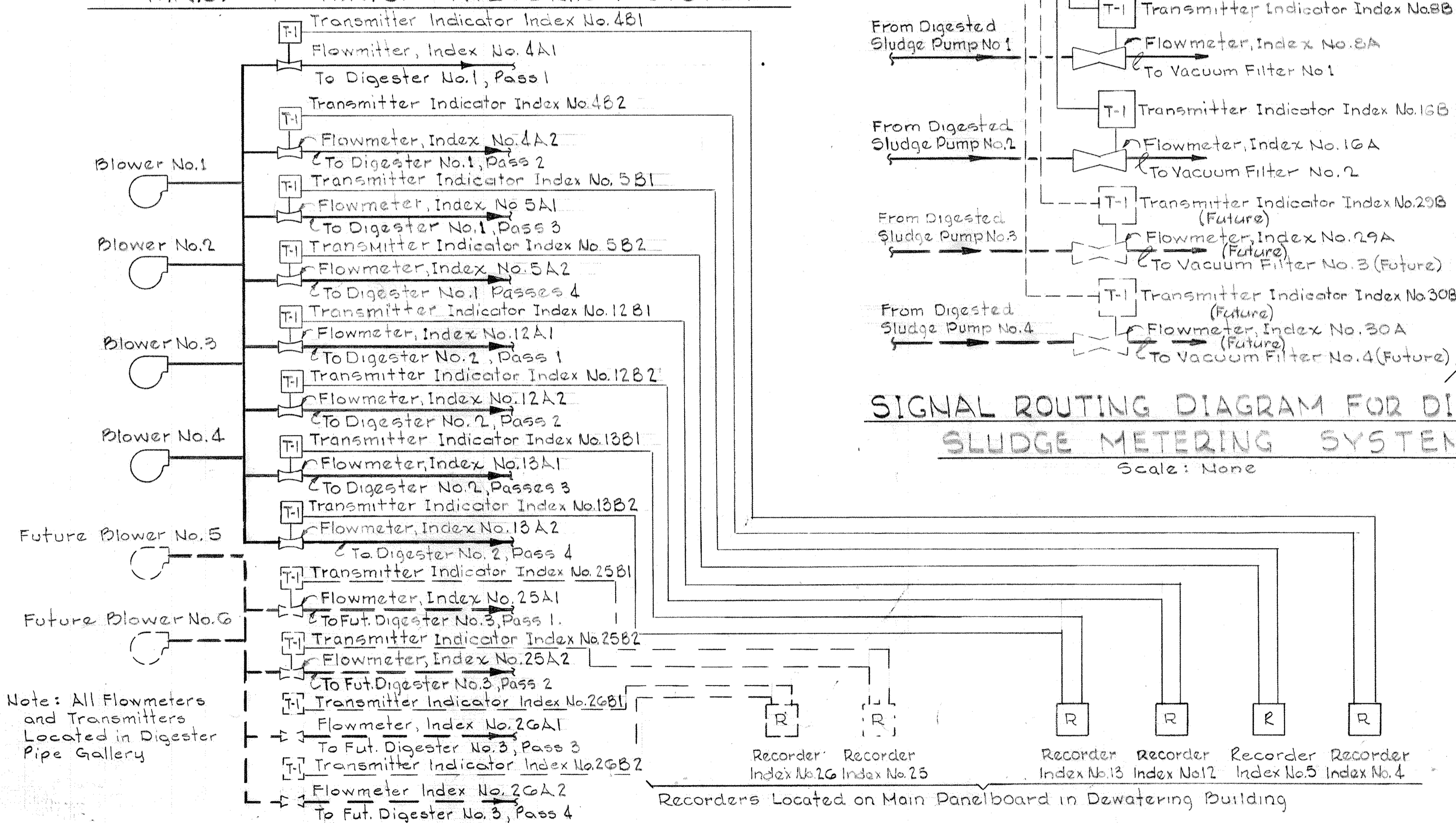
SIGNAL ROUTING DIAGRAM FOR PRIMARY SLUDGE METERING SYSTEM
Scale - None



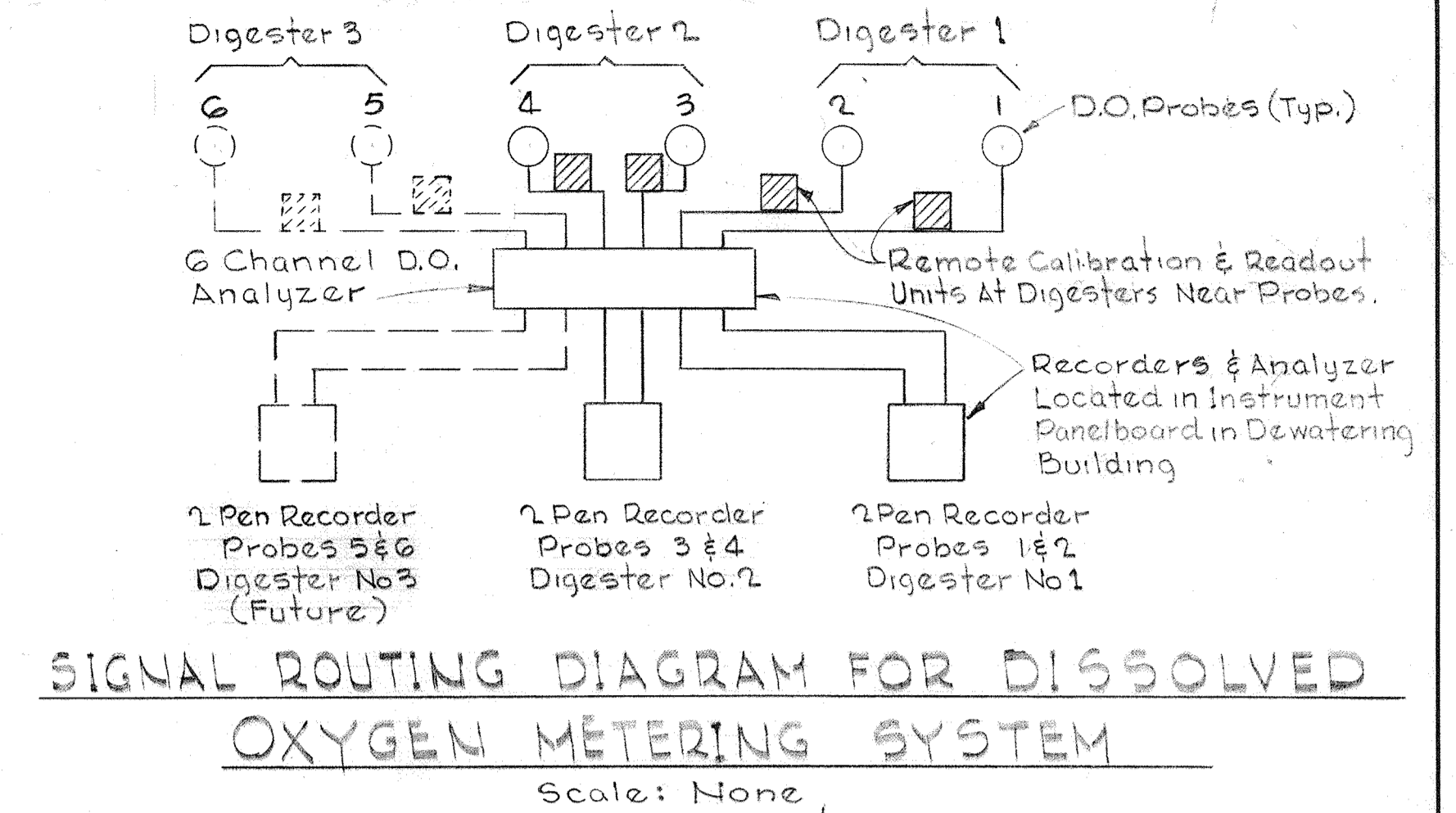
SIGNAL ROUTING DIAGRAM FOR UNTHICKENED W.A.S. & W.N.S. METERING SYSTEM
Scale: None



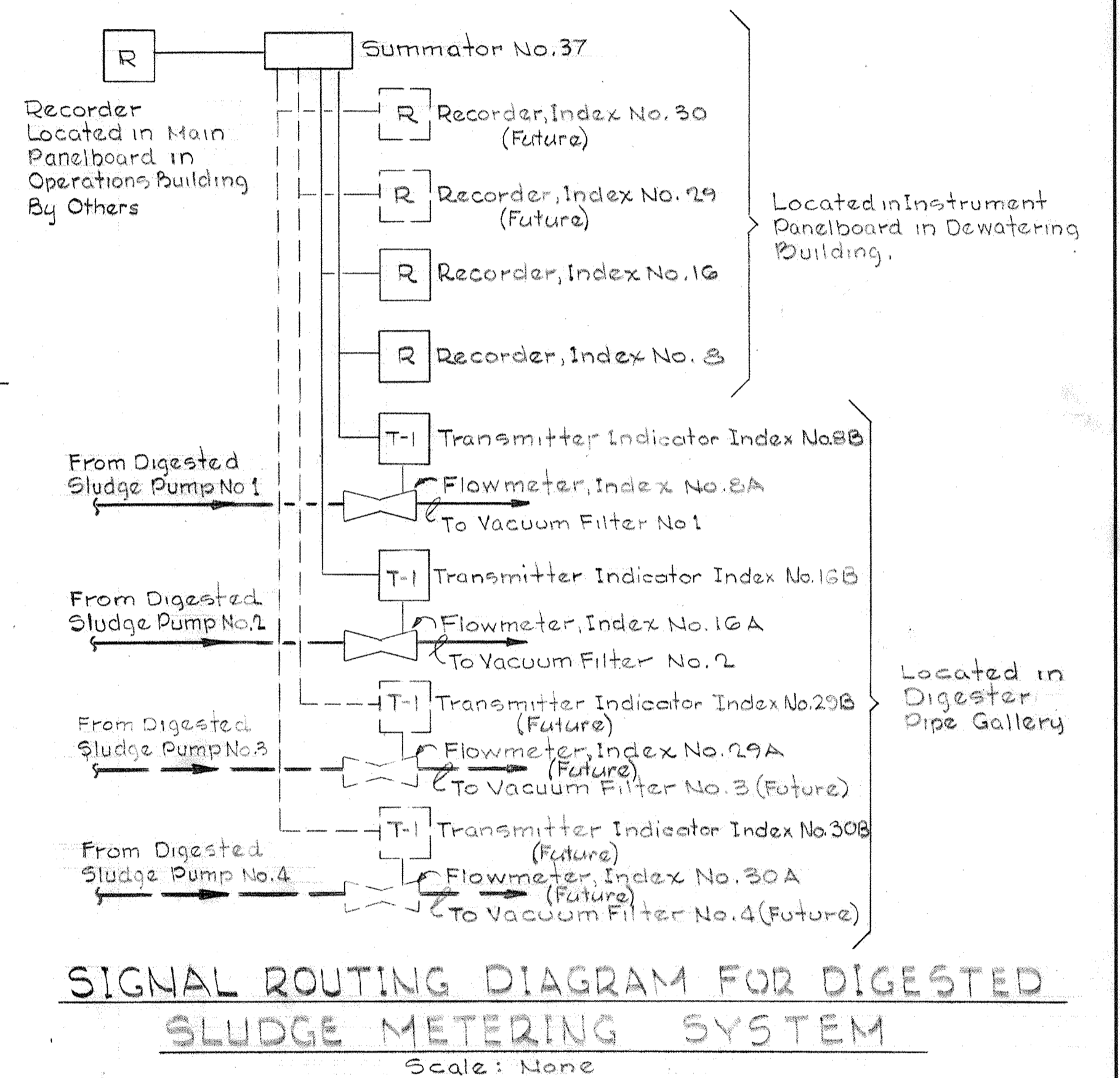
SIGNAL ROUTING DIAGRAM FOR THICKENED W.A.S. & W.N.S. METERING SYSTEM



SIGNAL ROUTING DIAGRAM FOR AIR FLOW METERING SYSTEM
Scale: None



SIGNAL ROUTING DIAGRAM FOR DISSOLVED OXYGEN METERING SYSTEM
Scale: None



SIGNAL ROUTING DIAGRAM FOR DIGESTED SLUDGE METERING SYSTEM
Scale: None

NOTE: ALL EQUIPMENT AND LINES SHOWN DASHED REPRESENTS FUTURE EXPANSION.

JAMES A. FEDERLINE INC.
AS BUILT DRAWING

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE *3/26/75*
W. O. Libbet
CHIEF BUREAU OF ENGINEERING

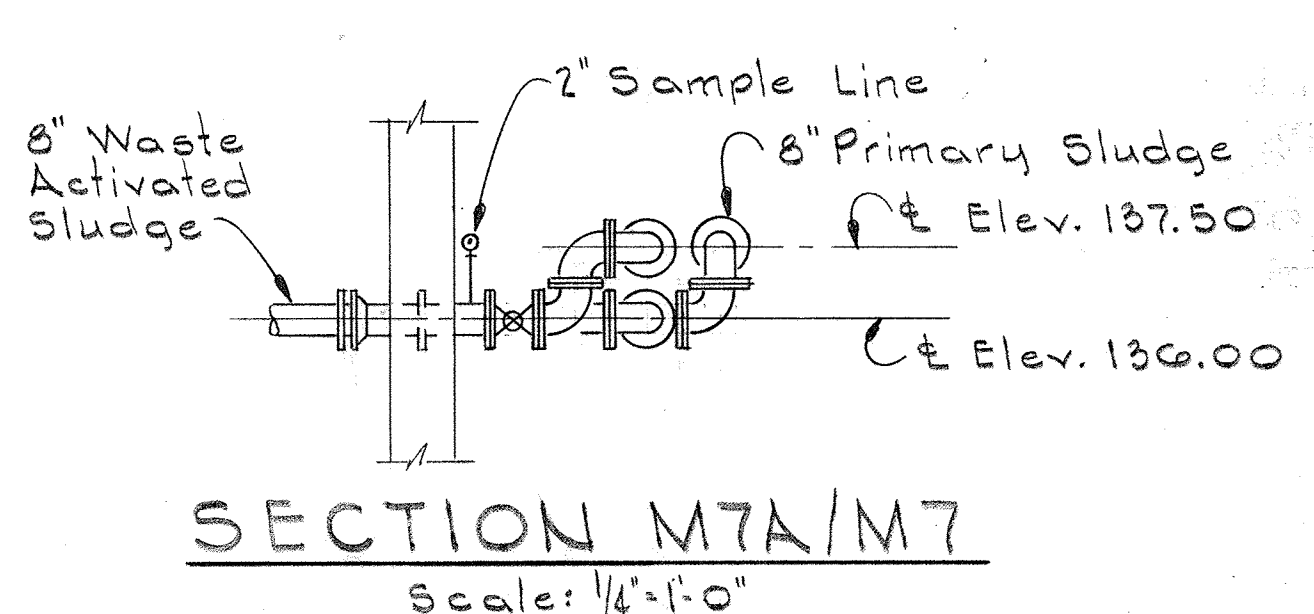
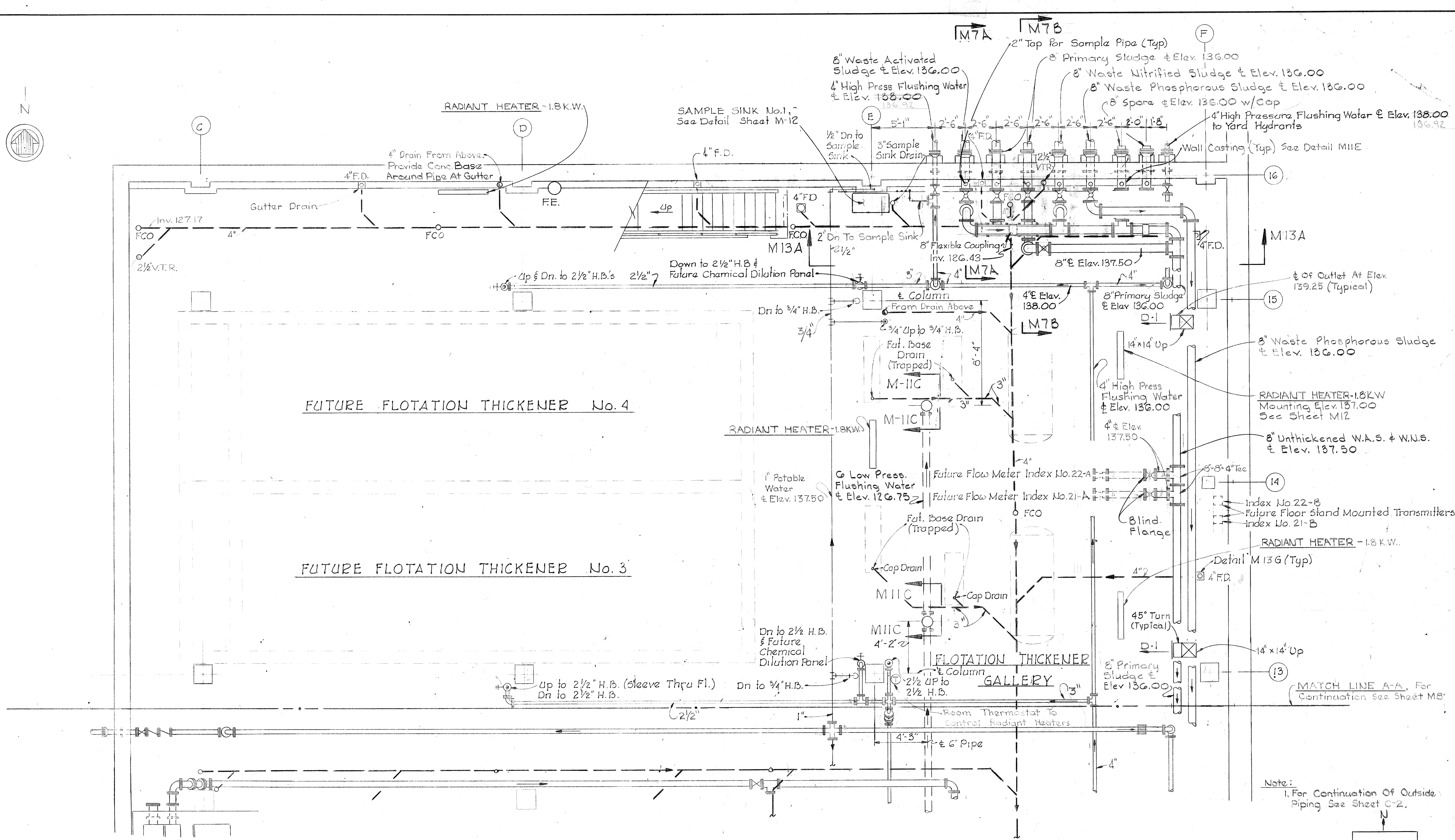
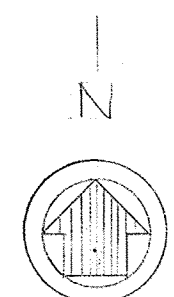
CONTRACT NO. 501-S

MECHANICAL
METERING SYSTEMS
SCHEMATICS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

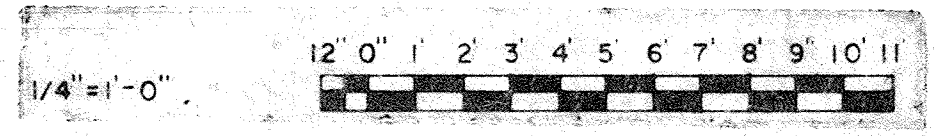
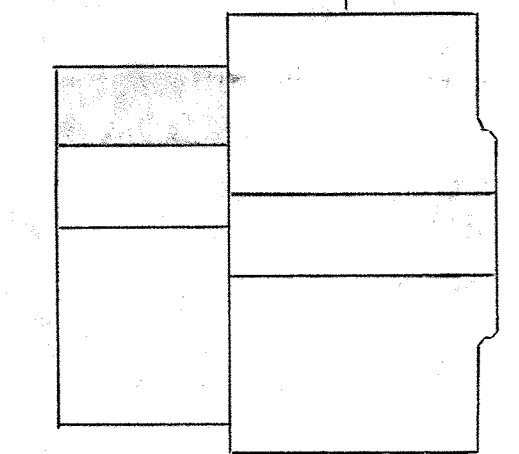
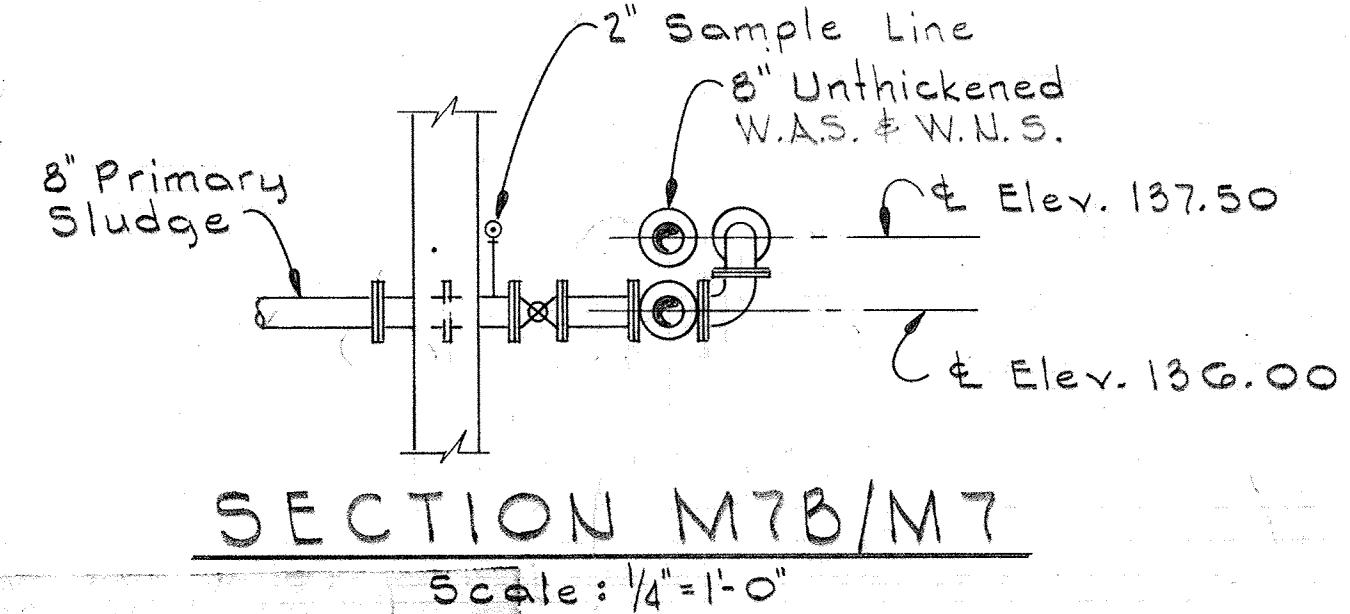
DRAWING
NO. 61
OF 128

SCALE
AS
NOTED



PLAN AT ELEVATION 128.00 - NORTH

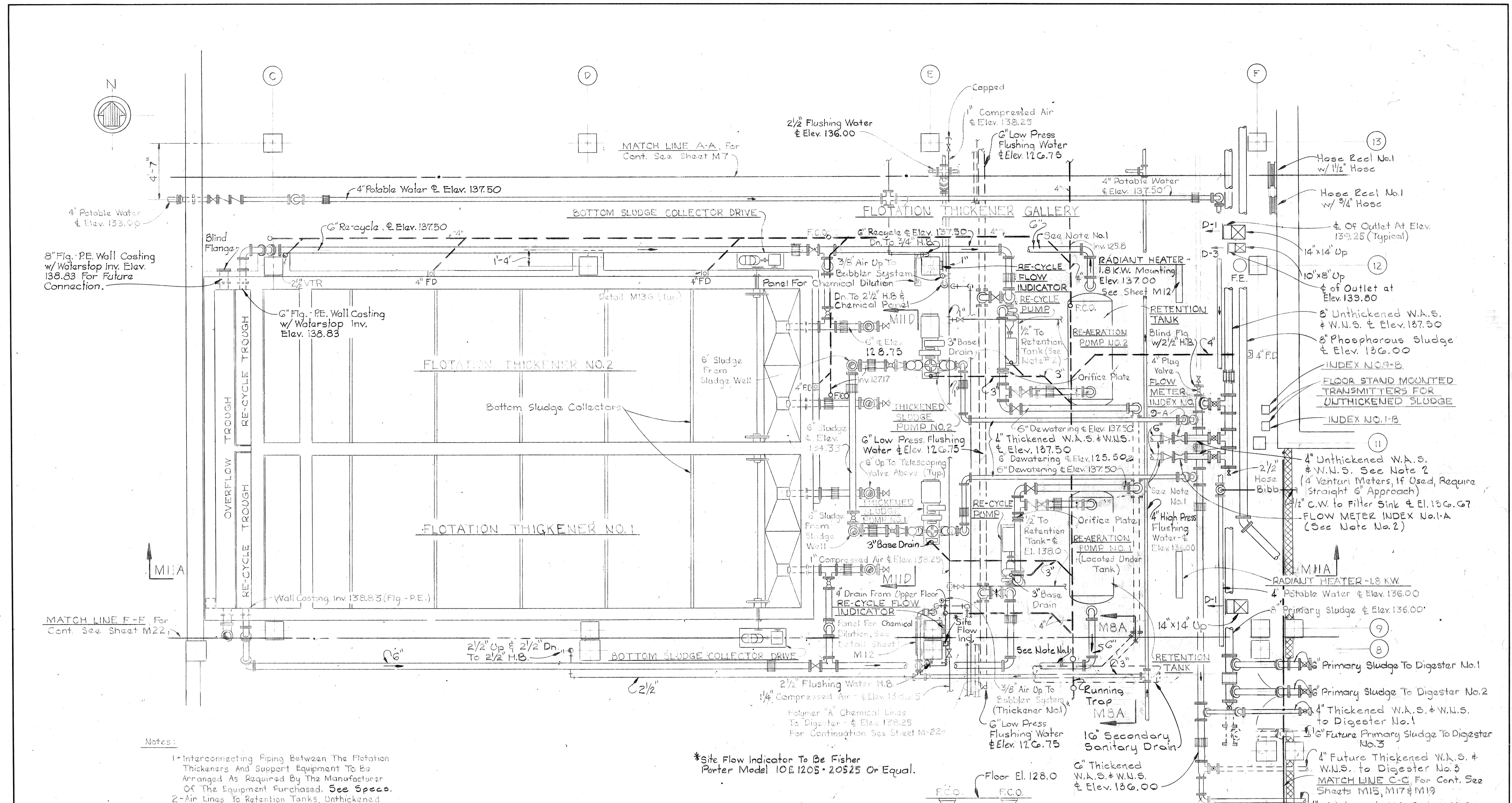
JAMES A. FEDERLINE INC.
AS BUILT DRAWING
FOR CORRELATION SEE JAFI SHOP DRAWING I-ASP



WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3/20/18 DATE	CONTRACT NO. 501-S W.O. Libert CHIEF-BUREAU OF ENGINEERING	MECHANICAL FLOTATION THICKENERS PLAN ELEV. 128.0- NORTH	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 62 OF 128	SCALE AS NOTED
					SHEET M-7	

W. O. 6887

BRUNING 44-510 18392

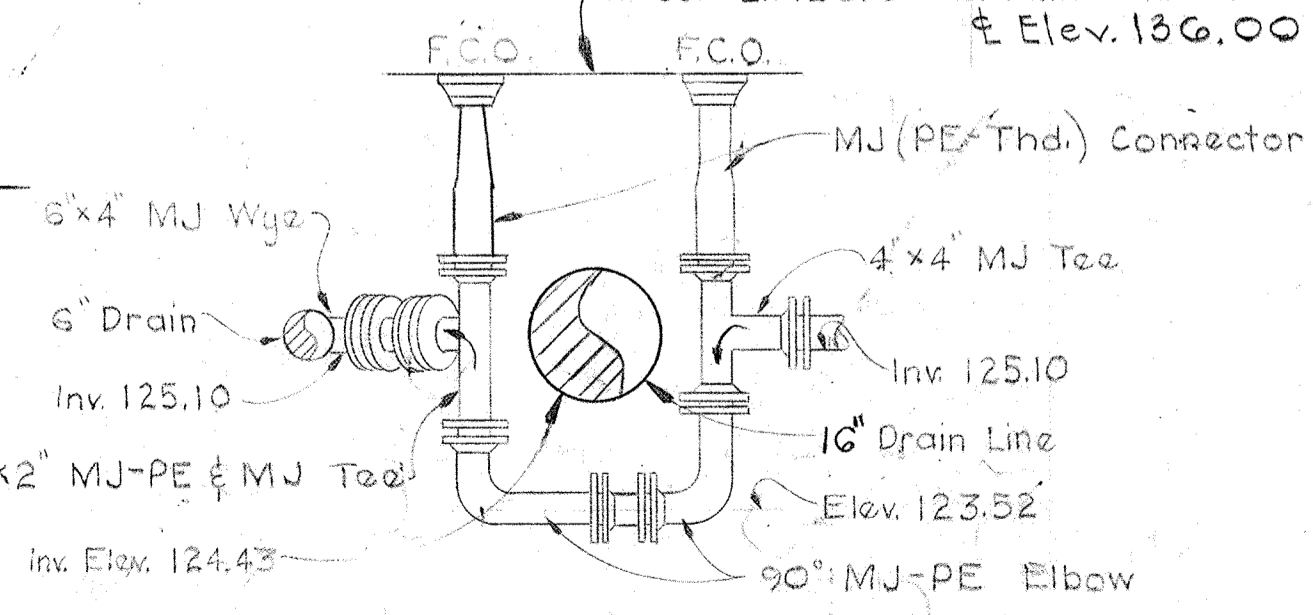


- Notes:
- 1- Interconnecting Piping Between The Flotation Thickeners And Support Equipment To Be Arranged As Required By The Manufacturer Of The Equipment Purchased. See Specs.
 - 2- Air Lines To Retention Tanks, Unthickened Secondary And Tertiary Sludge Lines To Flotation Thickeners, To Be Piped Into The Equipment In Accordance With The Manufacturers Requirements.
 - 3- Vent Lines Penetrating Gutter Areas To Be Provided With Concrete Bosses Around Piping With Gutter Offset To Prevent Moisture Contact With Vent Piping.

PLAN AT ELEVATION 128.00 - SOUTH

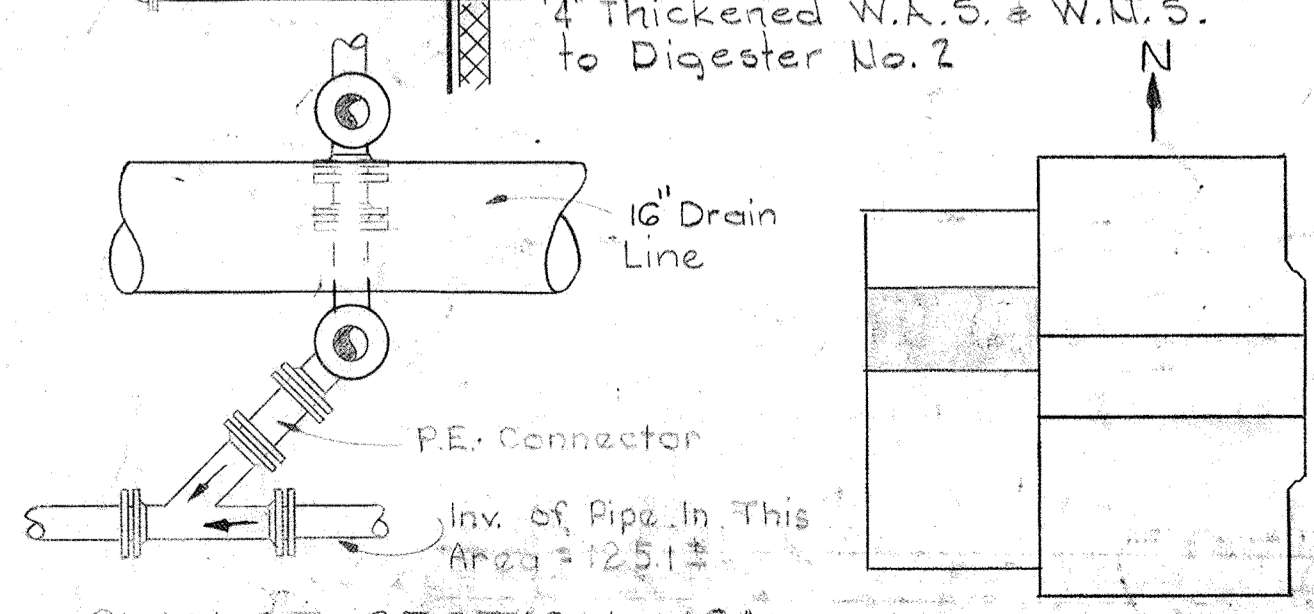
Scale: 1/4" = 1'-0"

JAMES A. FEDERLINE INC.
AS BUILT DRAWING
FOR CORRELATION SEE JAFI SHOP DRAWING 2-ASP



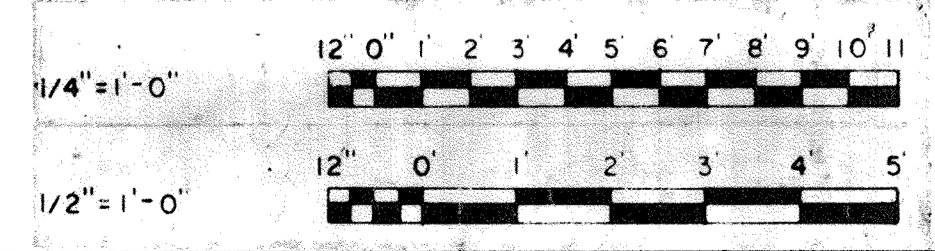
SECTION M8A/M8

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



PLAN OF SECTION M8A

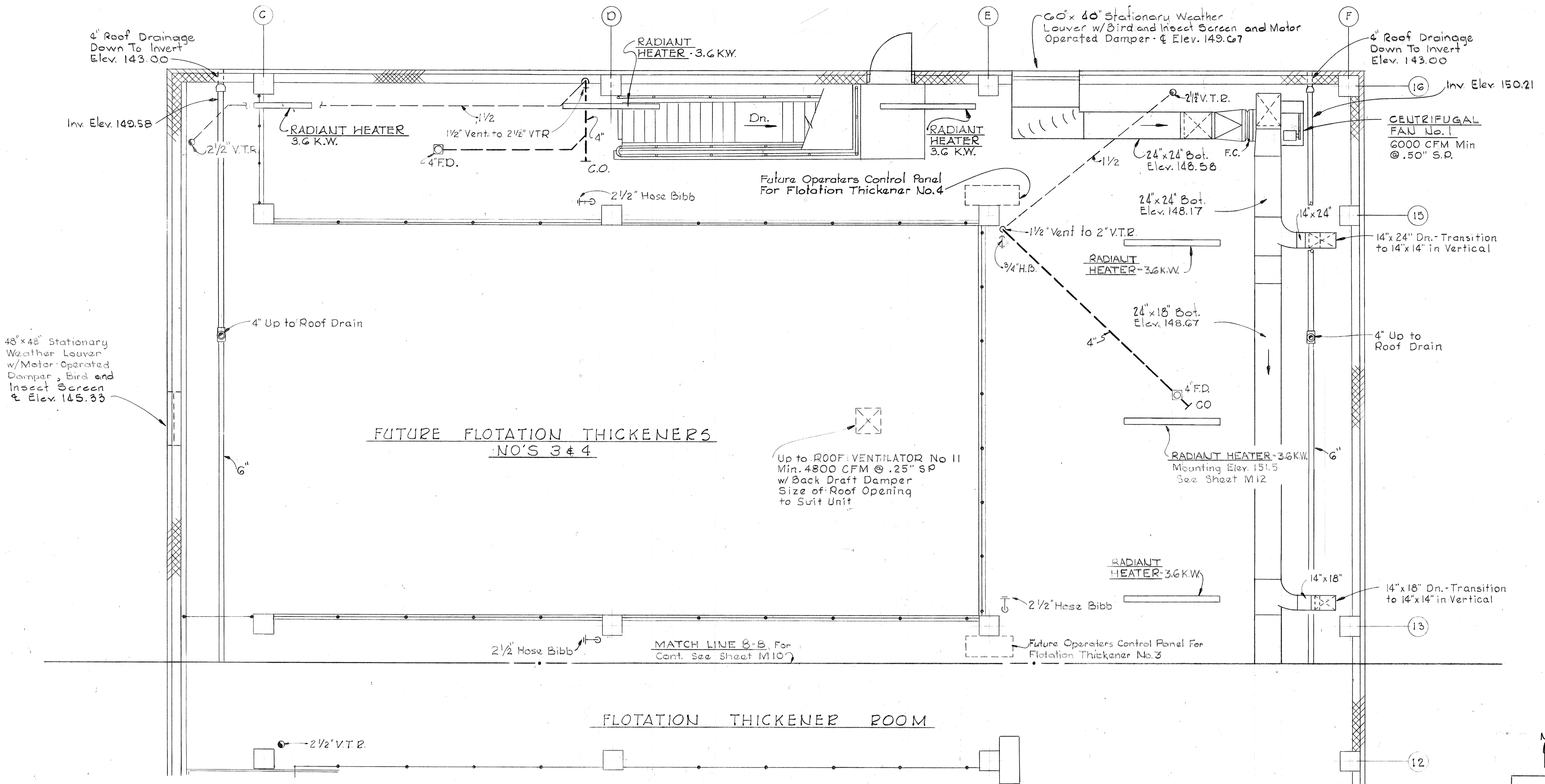
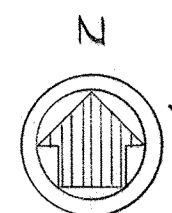
KEY PLAN



WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE 3/20/15 W.D. Lambert CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 501 - S	MECHANICAL FLOTATION THICKENERS PLAN ELEV. 128.0 - SOUTH	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 63 OF 128	SCALE AS NOTED
					SHEET M-8	

W. O. 6887

BRUNING 44-510 1892

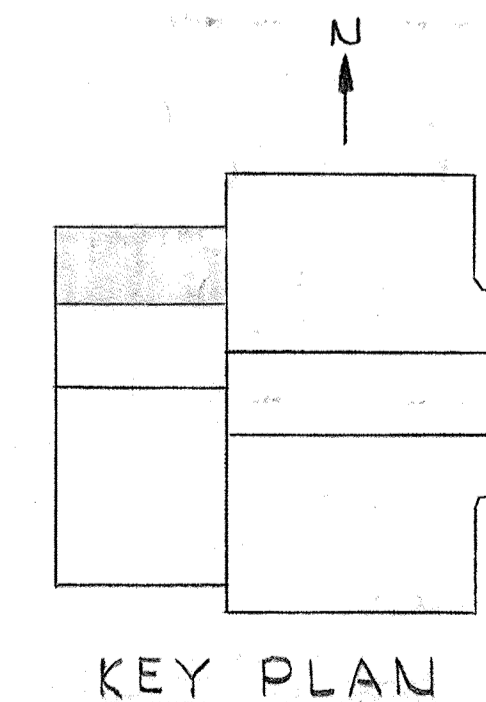


FUTURE FLOTATION THICKENERS
NO'S 3 & 4

FLOTATION THICKENER ROOM

PLAN AT ELEVATION 142.00 - NORTH

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



KEY PLAN

JAMES A. FEDERLINE INC.
AS BUILT DRAWING

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

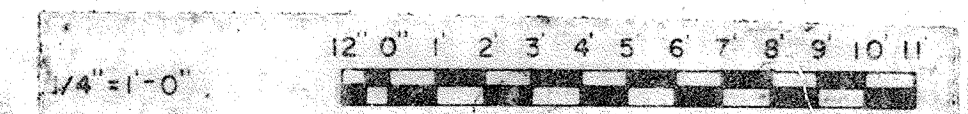
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3/20/15
DATE
W. O. Federline
CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 501-S

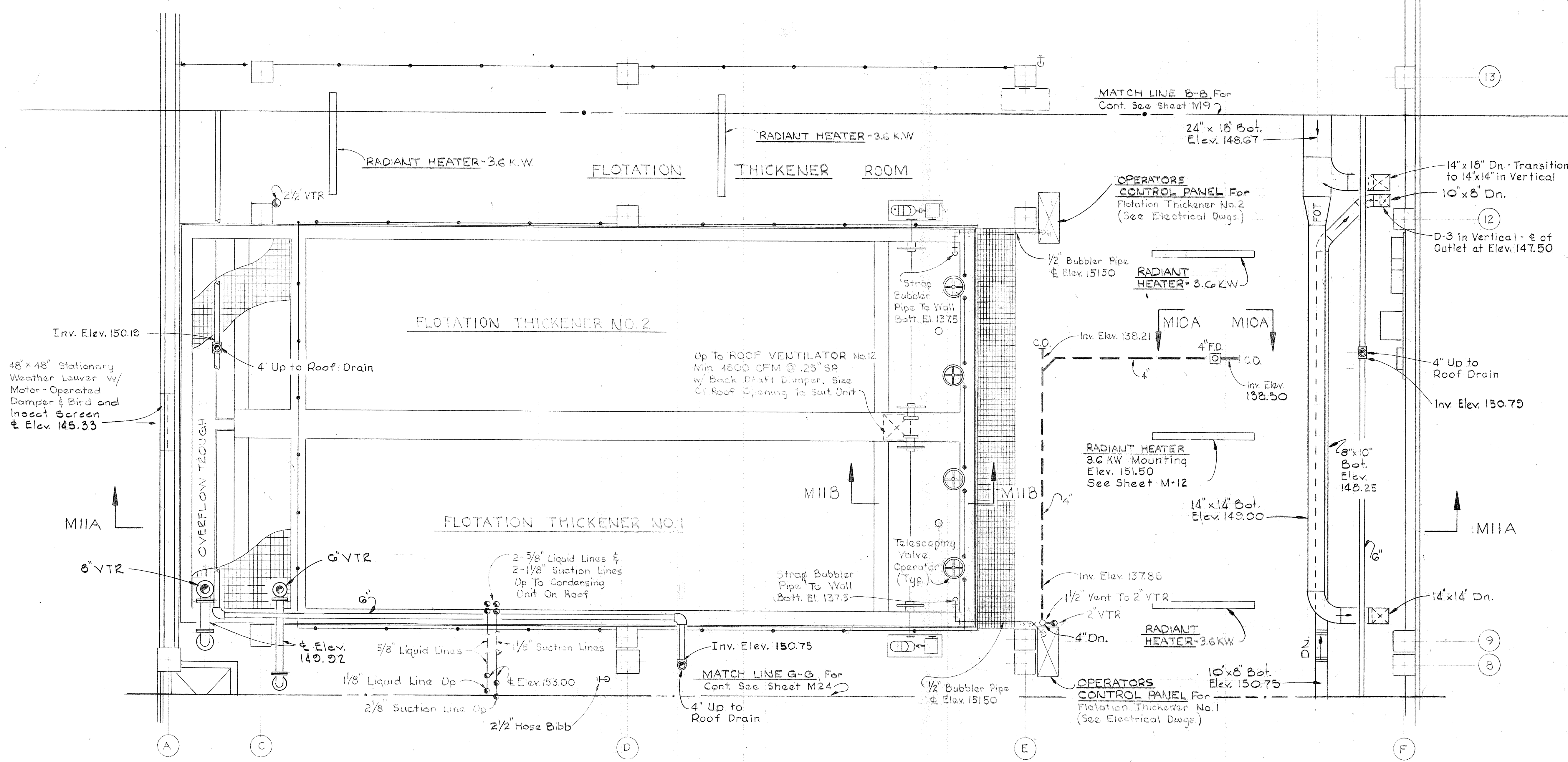
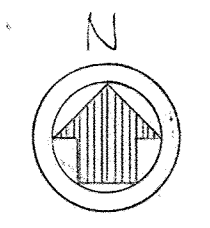
MECHANICAL
FLOTATION THICKENERS
PLAN ELEV. 142.0 - NORTH

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 64
OF 128
SCALE AS NOTED



BRUNING 44-510 18592



48" x 48" Stationary Weather Louver w/ Motor-Operated Damper & Bird and Insect Screen & Elev. 145.33

Inv. Elev. 150.10

MIIA

8" VTR

A

C

D

E

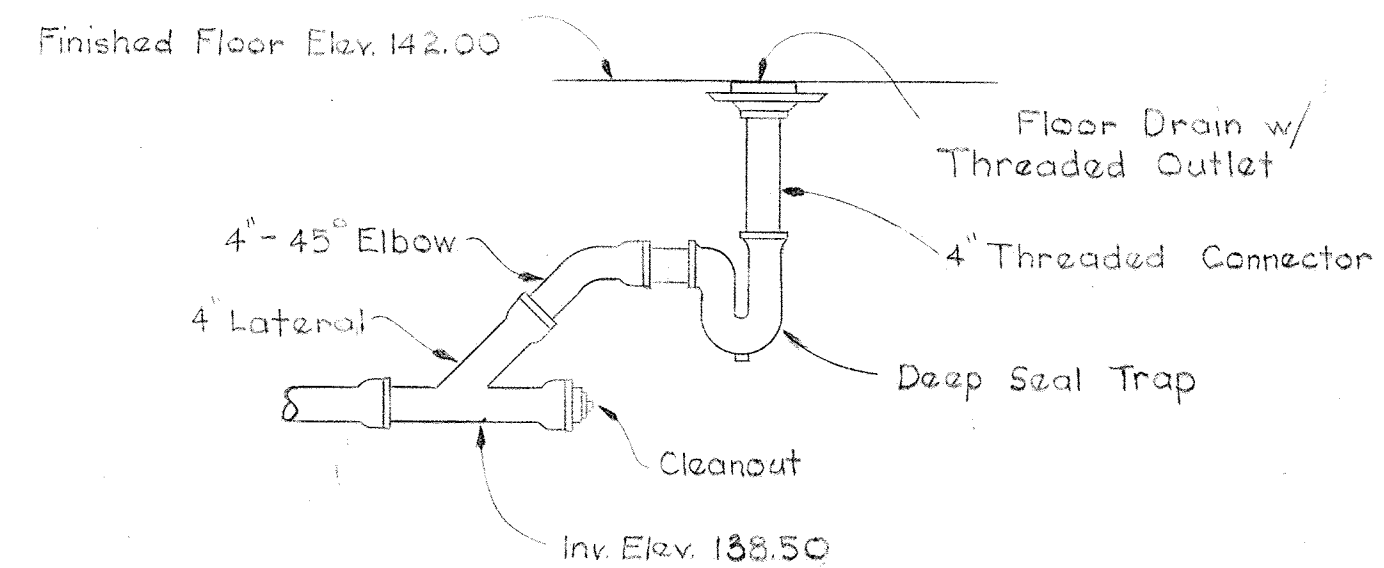
F

13

12

9

8



SECTION MIOA/MIO

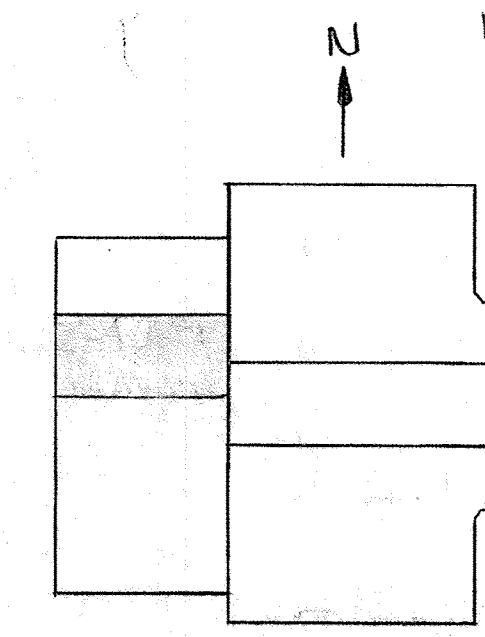
Scale - 1/2" = 1'-0"

PLAN AT ELEVATION 142.00 - SOUTH

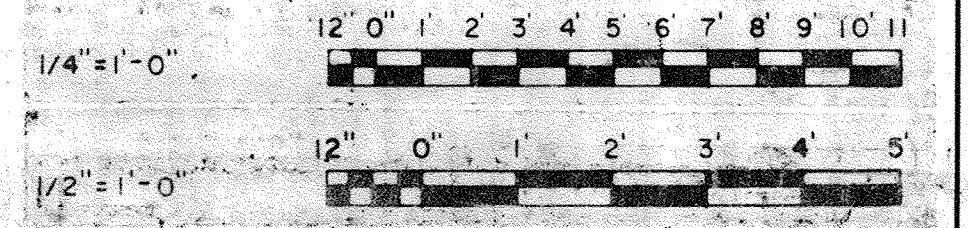
Scale: 1/4" = 1'-0"

Note:

1- Collector Flight Guides, Structural Support, And General Arrangement Of Flotation Thickener Collectors Shall Be Fabricated And Provided By Manufacturer Of The Equipment.



KEY PLAN



WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3/20/78
W. O. Libert
CHIEF-BUREAU OF ENGINEERING

JAMES A. FEDERLINE INC.
AS BUILT DRAWING

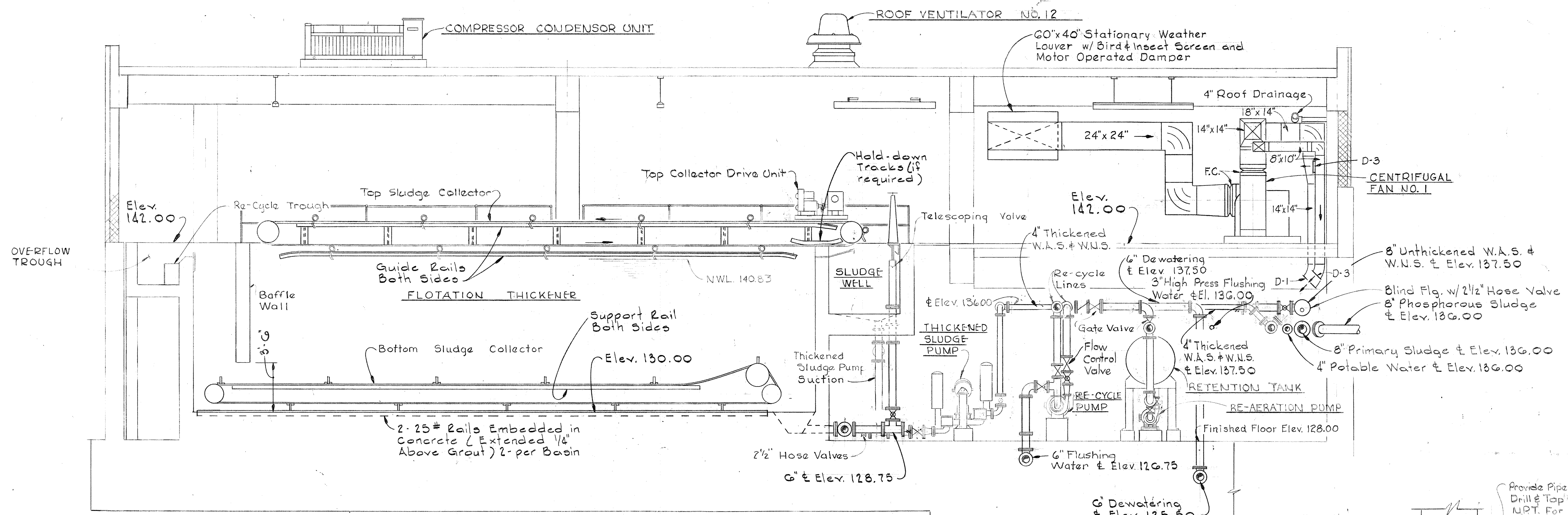
CONTRACT NO. 501-S

MECHANICAL
FLOTATION THICKENERS
PLAN ELEV. 142.0-SOUTH

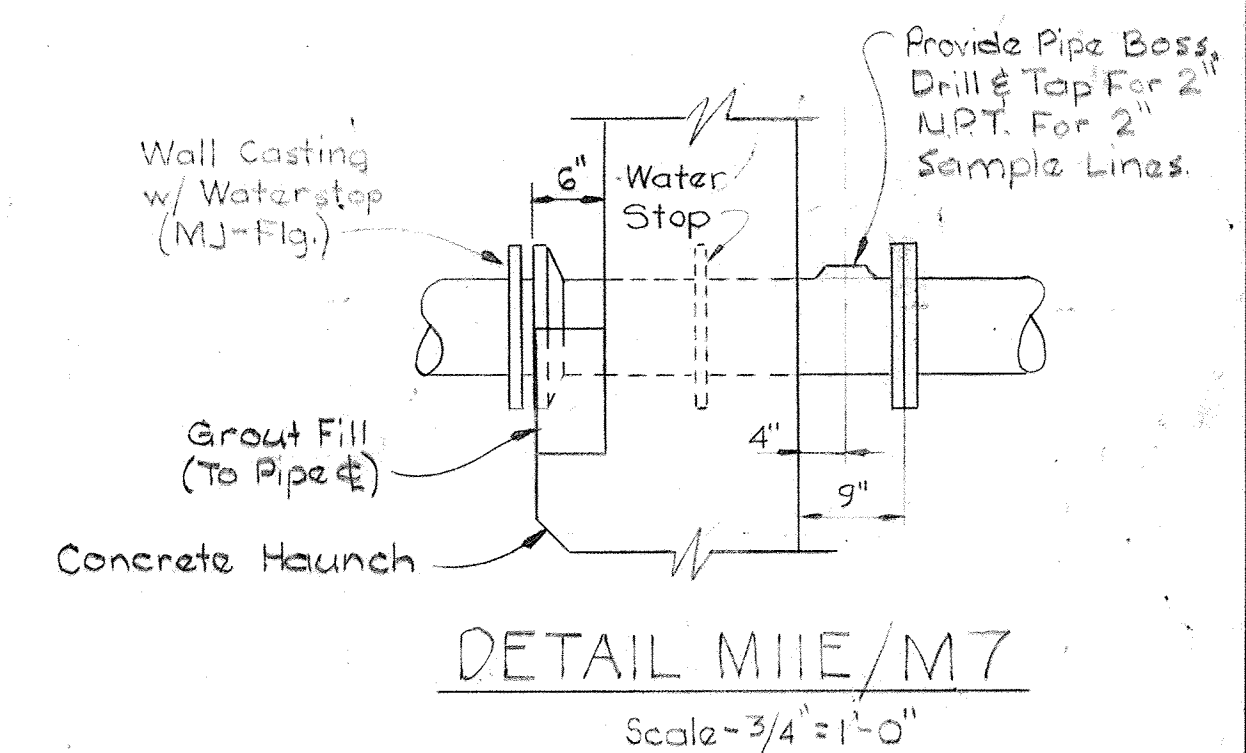
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 65
OF 128

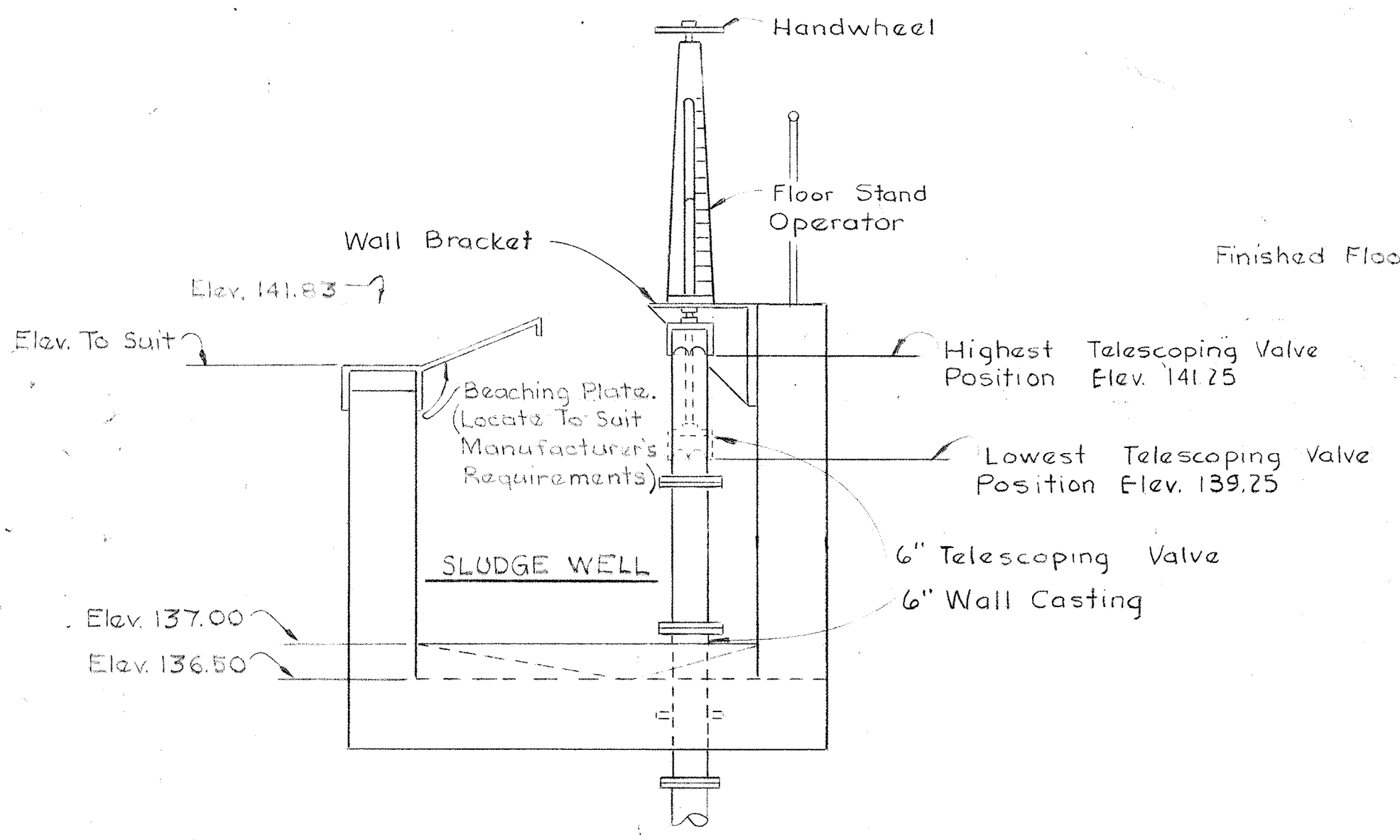
SCALE
AS
NOTED



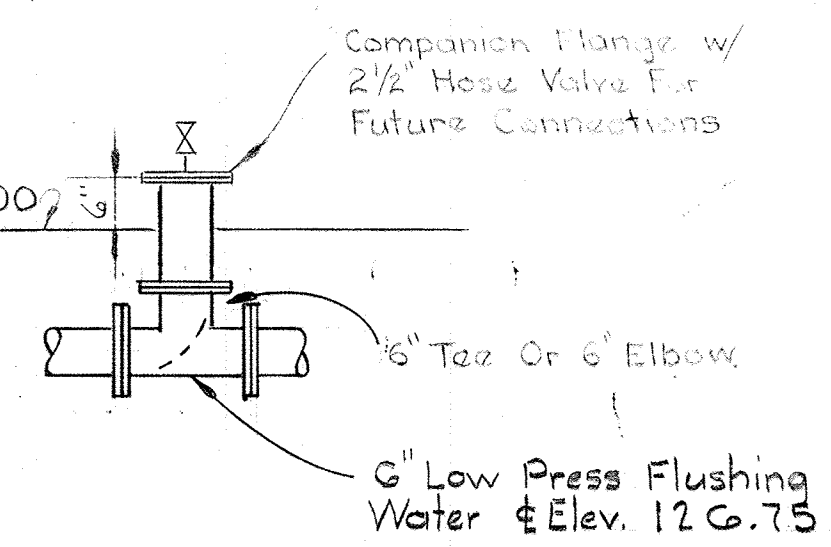
SECTION MIIA/M8, M10
Scale - 1/4" = 1'-0"



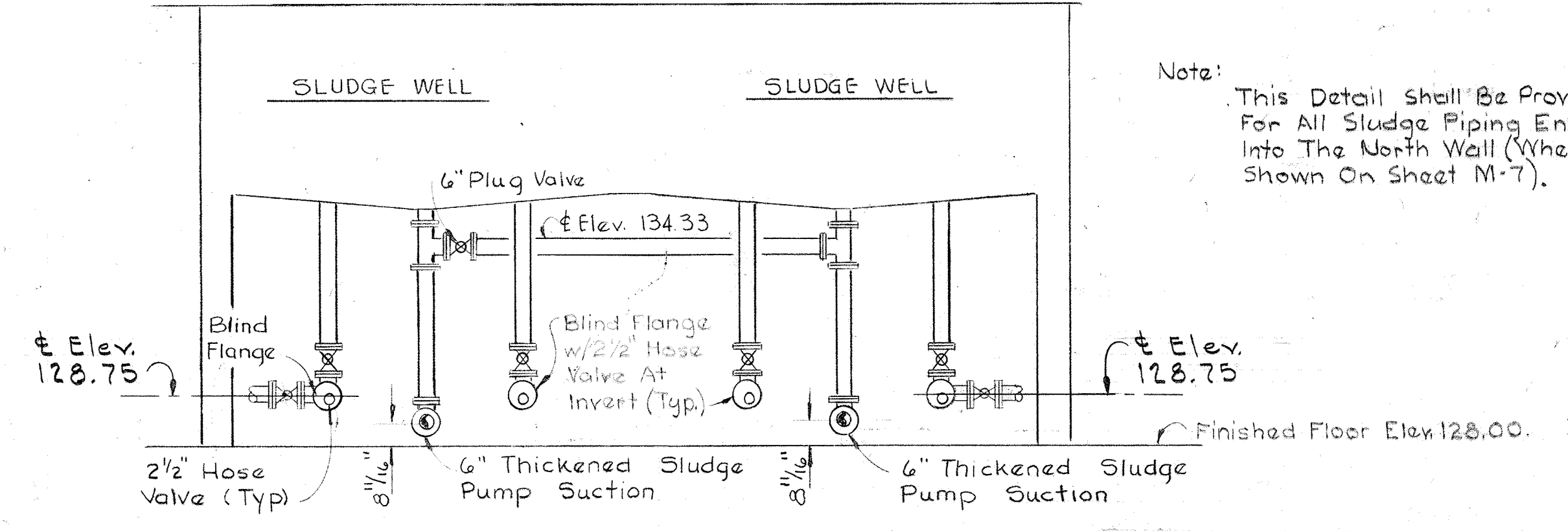
DETAIL MII E/M7
Scale - 3/4" = 1'-0"



SECTION MII B/M10
Scale - 1/2" = 1'-0"

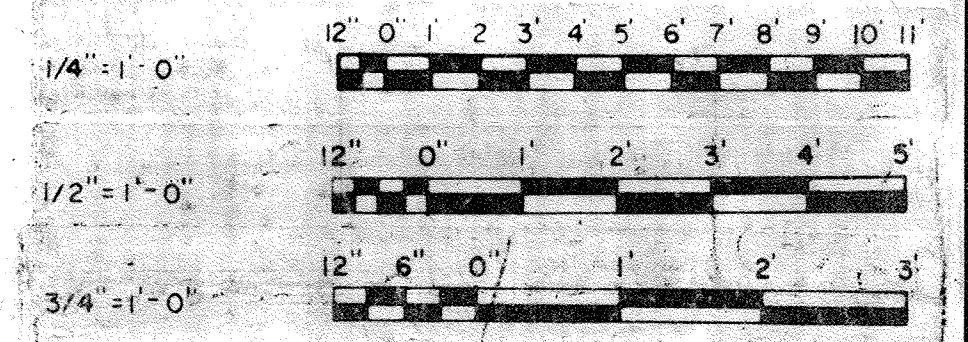


SECTION MII C/M7 & M8
Scale - 1/2" = 1'-0"



SECTION MII D/M8
Scale - 1/4" = 1'-0"

Note: This Detail shall be Provided For All Sludge Piping Entering Into The North Wall (Where Shown On Sheet M-7).



JAMES A. FEDERLINE INC.
AS BUILT DRAWING

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3/20/15
DATE
W.D. Libert
CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 501-S

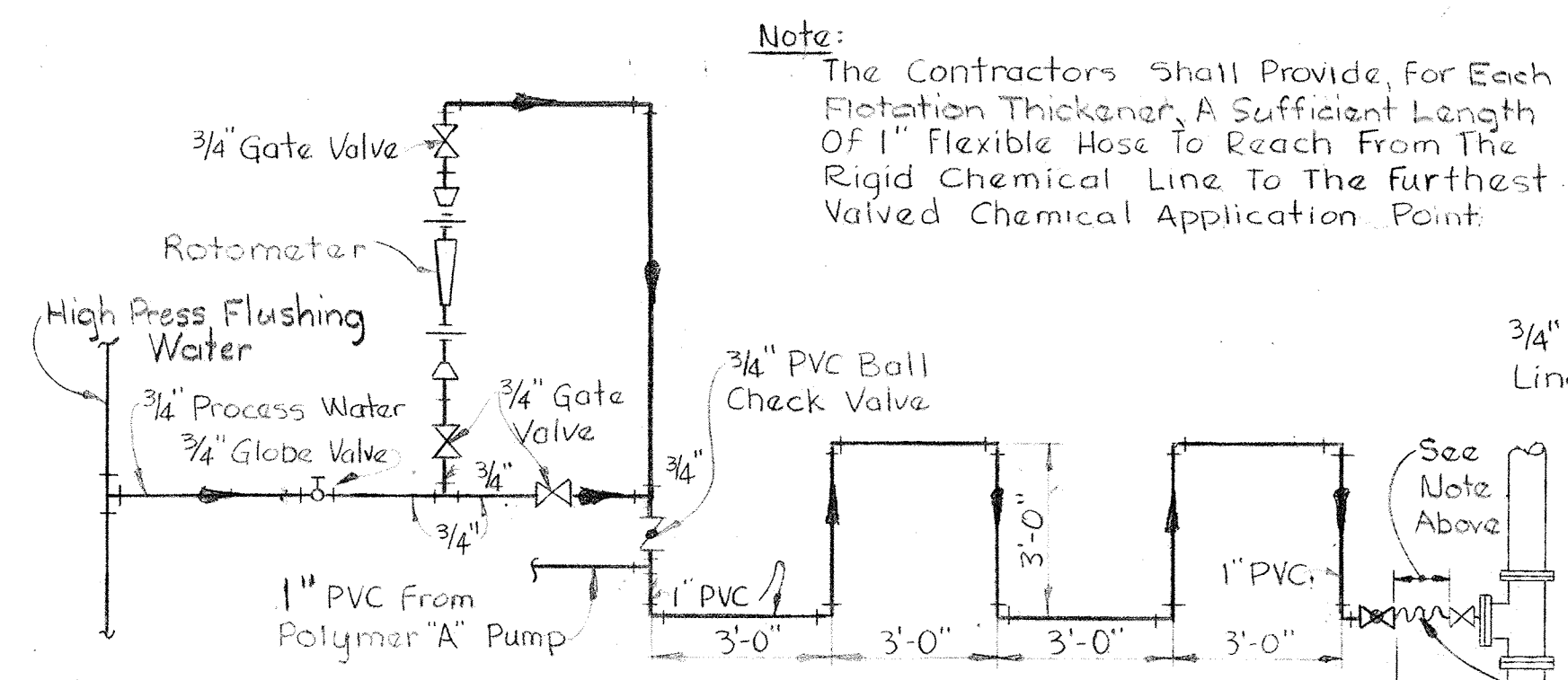
MECHANICAL
FLOTATION THICKENERS
SECTIONS & DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

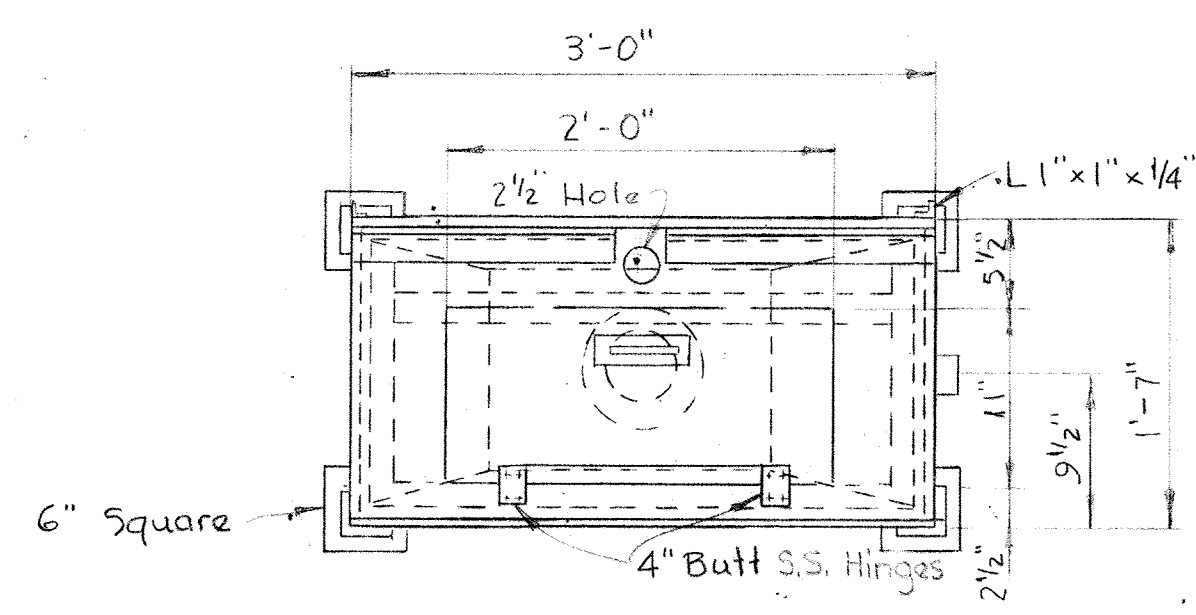
DRAWING
NO. 66
OF 128

SCALE
AS
NOTED

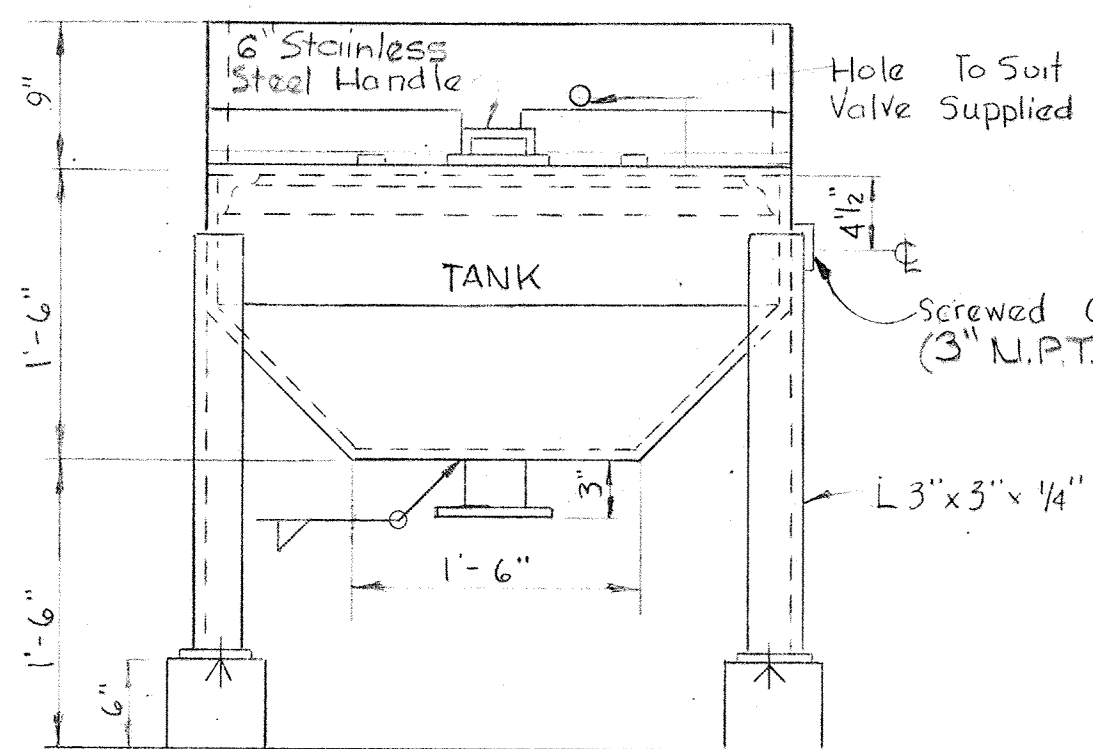
BRUNING 44510 18392



SCHEMATIC OF CHEMICAL DILUTION PIPING
No Scale



PLAN
Scale: 1"=1'-0"



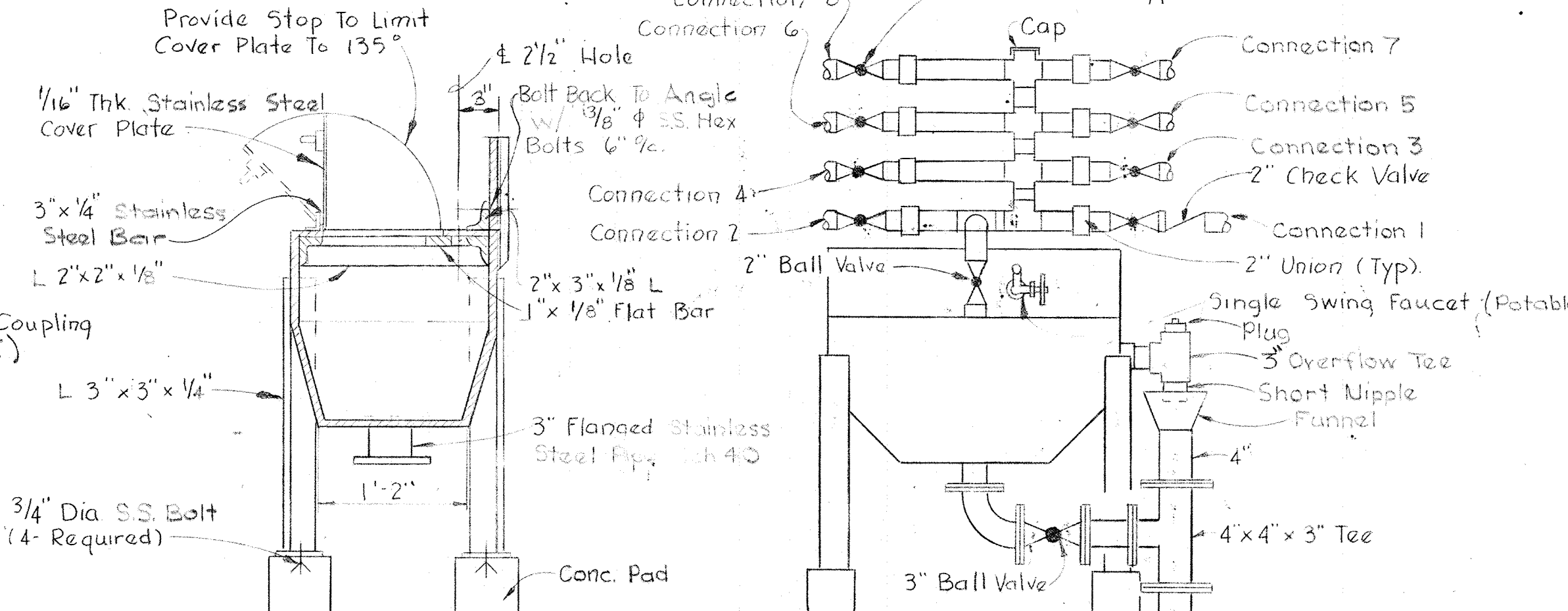
ELEVATION
Scale: 1"=1'-0"

Note:
The Contractors Shall Provide, For Each Flotation Thickener, A Sufficient Length OF 1" Flexible Hose To Reach From The Rigid Chemical Line To The furthest Valved Chemical Application Point.

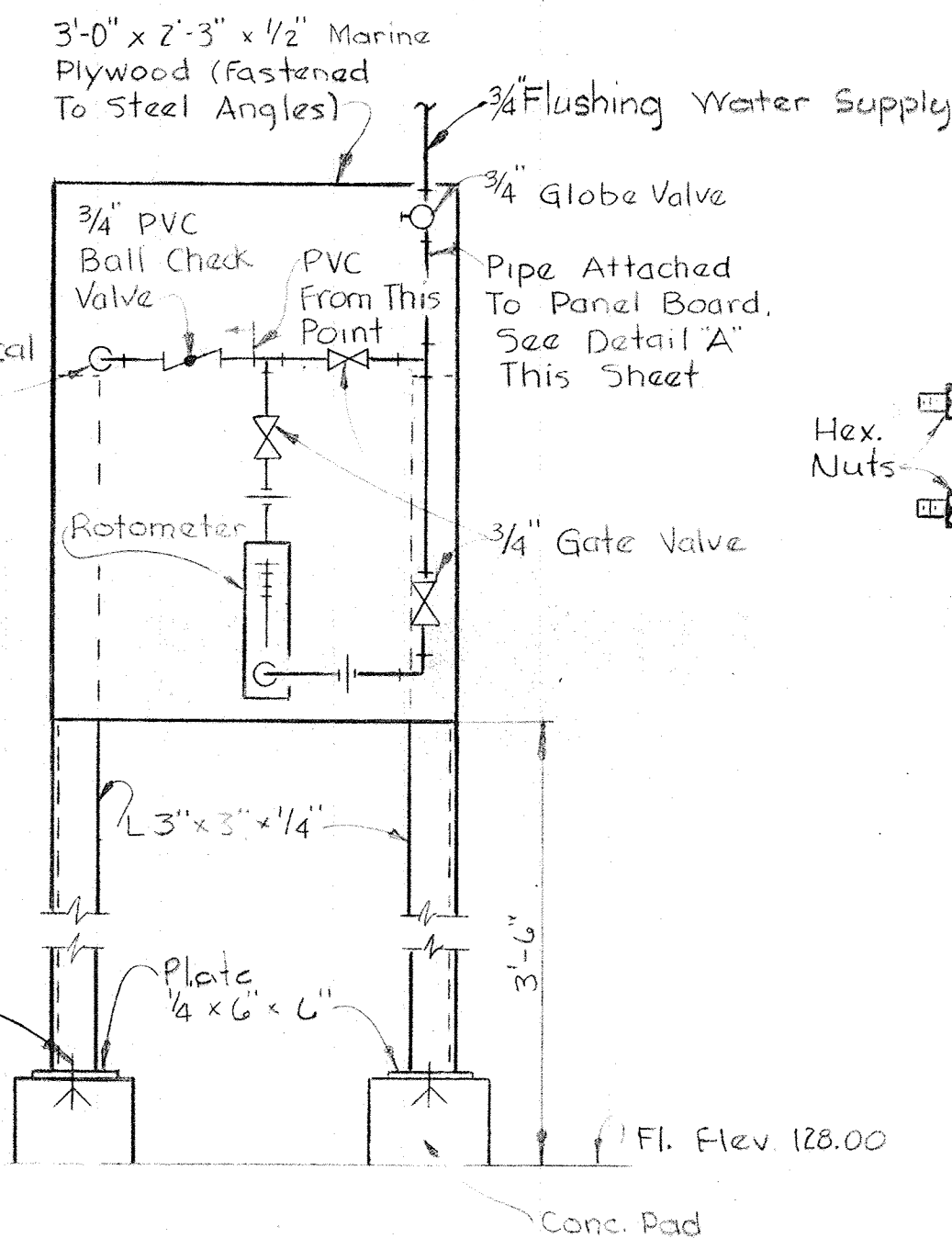
Assembly From This Point On Is For The Flotation Thickeners. For Gravity Thickeners See Sheet M-16 thru M-20.

Notes:

1. All Plate (Except Cover Plate) Shall Be 1/8" Thick Stainless Steel.
2. All Welded Joints Shall Be Welded Watertight.
3. All Portions Of The Tank And Cover Including Drain Connections Shall Be 316 Stainless-Steel And of Thickness Noted.
4. Provide Angles Steps Behind C.W. Connections At Faucet.



SECTION
Scale: 1"=1'-0"



PANELBOARD FOR DILUTION OF CHEMICALS
Scale: 1"=1'-0"

Note:
All sample lines to be 2".

PIPING CONNECTIONS
Scale: 3/4"=1'-0"

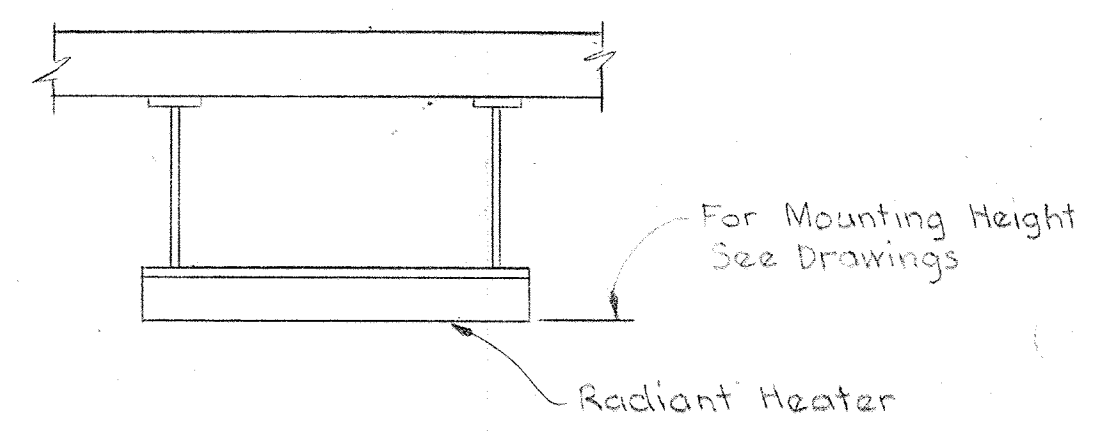
SAMPLE SINK DETAIL

SAMPLE SINK SCHEDULE									
SINK	LOCATION	Conn 1	Conn 2	Conn 3	Conn 4	Conn 5	Conn 6	Conn 7	Conn 8
1	North End Flat Thick. Gall.	Flushing Water	Waste Phosphorous Sludge	Waste Act. Sludge	Waste Nit. Sludge	Primary Sludge	Primary Sludge		
2	West End Digest Gall.	Flushing Water	Digested Sludge No. 1	Thk. W.L.S. + W.L.S.	Digested Sludge No. 2	Spare Conn.	Fur. Digest Sludge No. 3	Spare Conn.	Fur. Digest Sludge No. 4

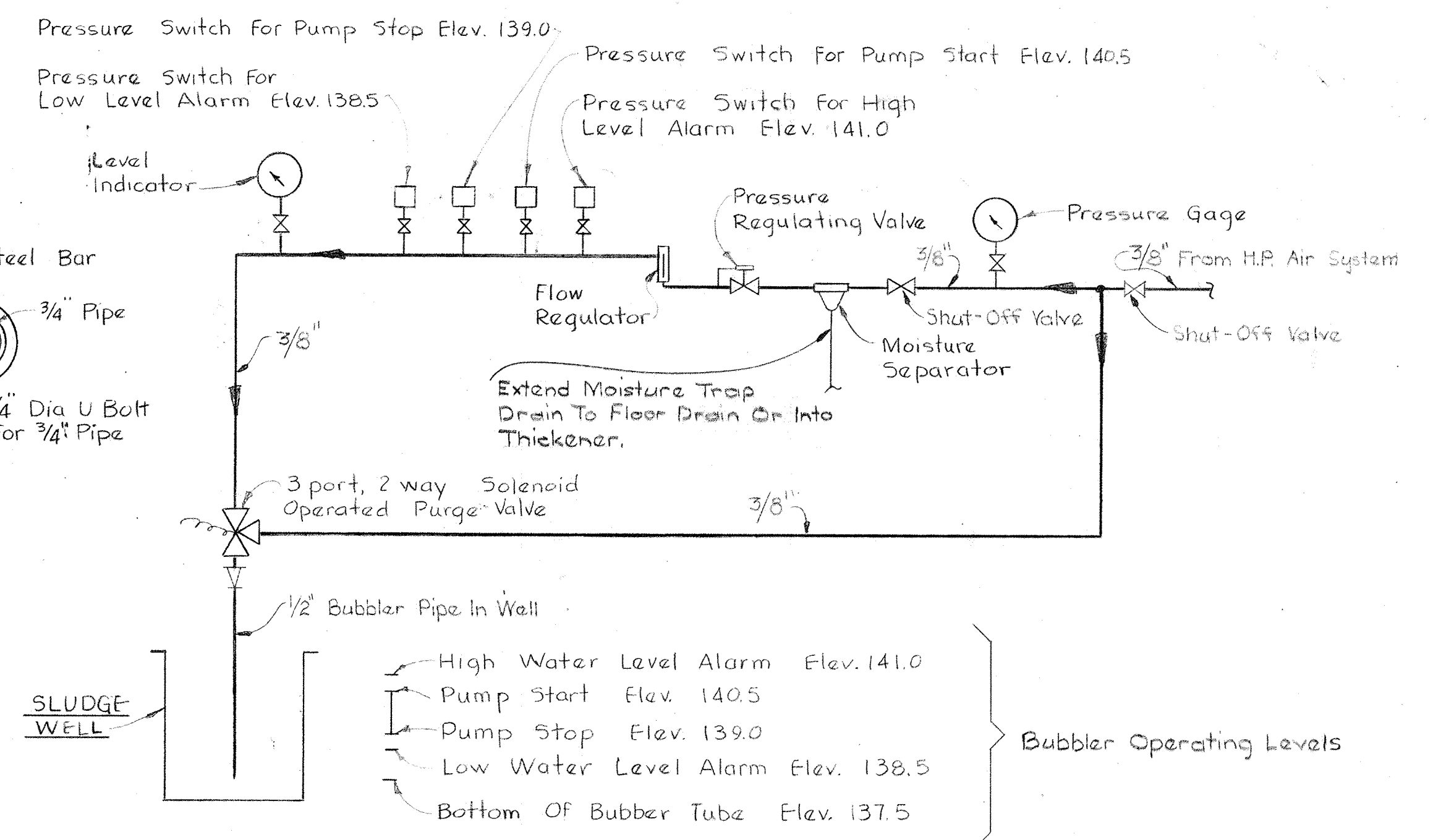
- Note:**
1. All spare connections to be capped.
 2. For piping connections to sink No. 1, see sht. M-7 & M-18.
 3. For piping connections to sink No. 2, see sht. M-10.

JAMES A. FEDERLINE INC.
AS BUILT DRAWING

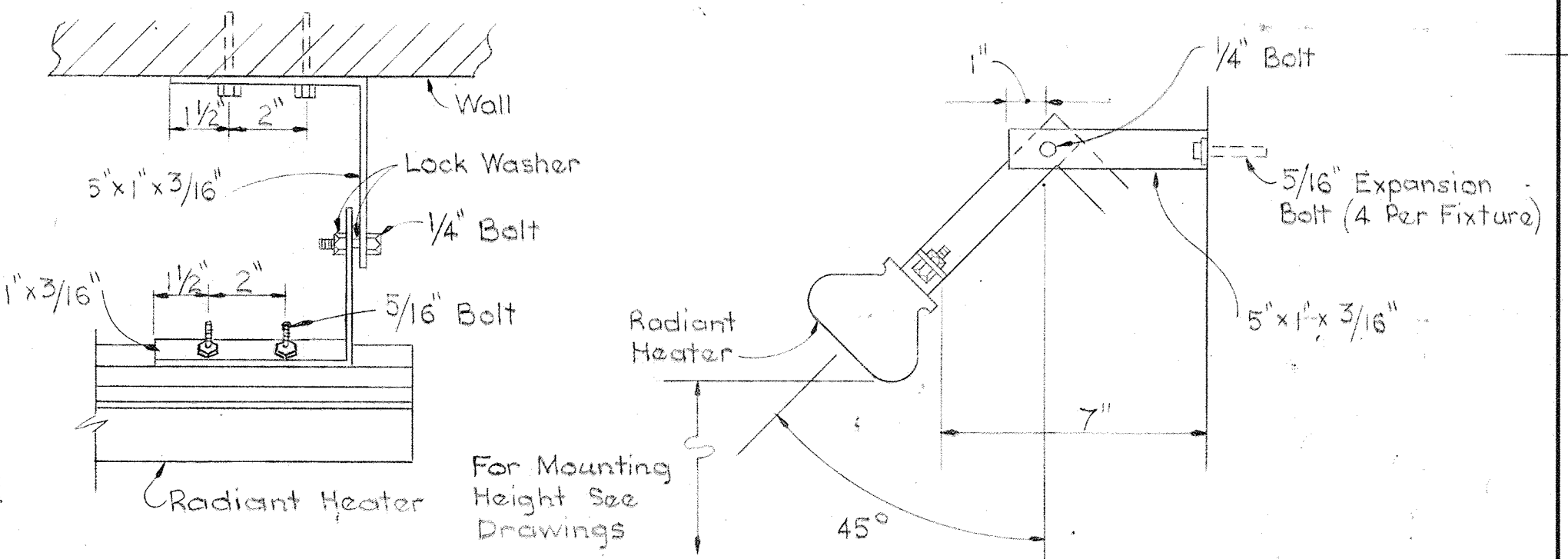
CONTRACT NO. 501-S



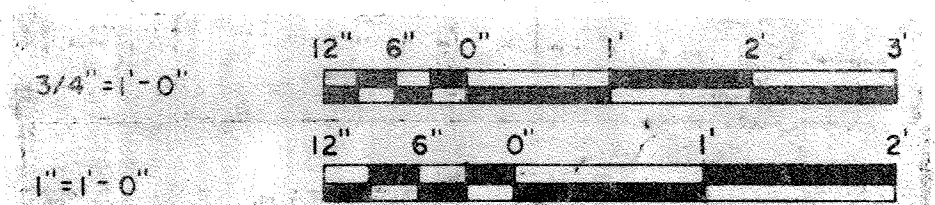
TYPICAL CEILING MOUNTING ARRANGEMENT OF RADIANT HEATERS
No Scale

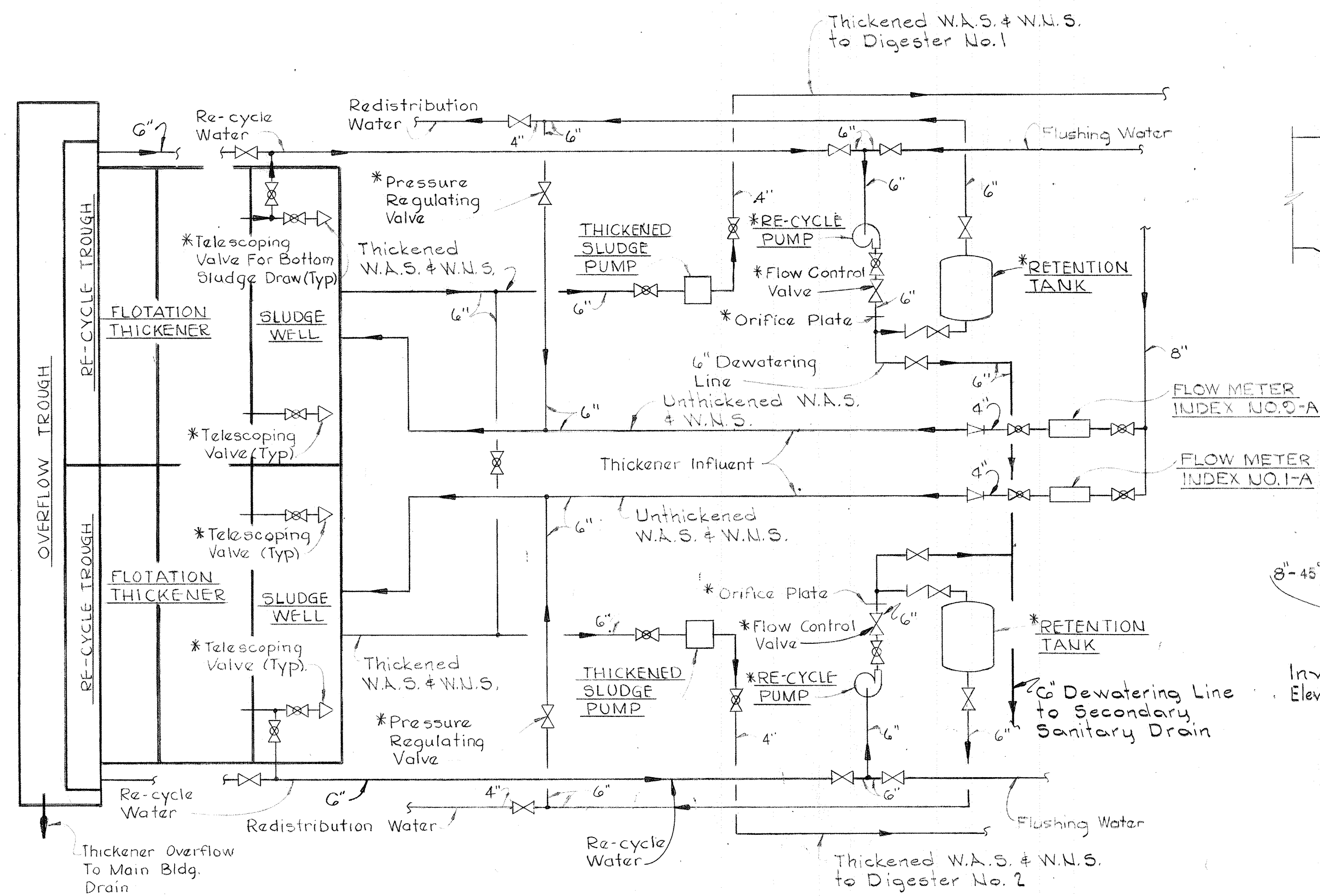


BUBBLER SCHEMATIC
No Scale



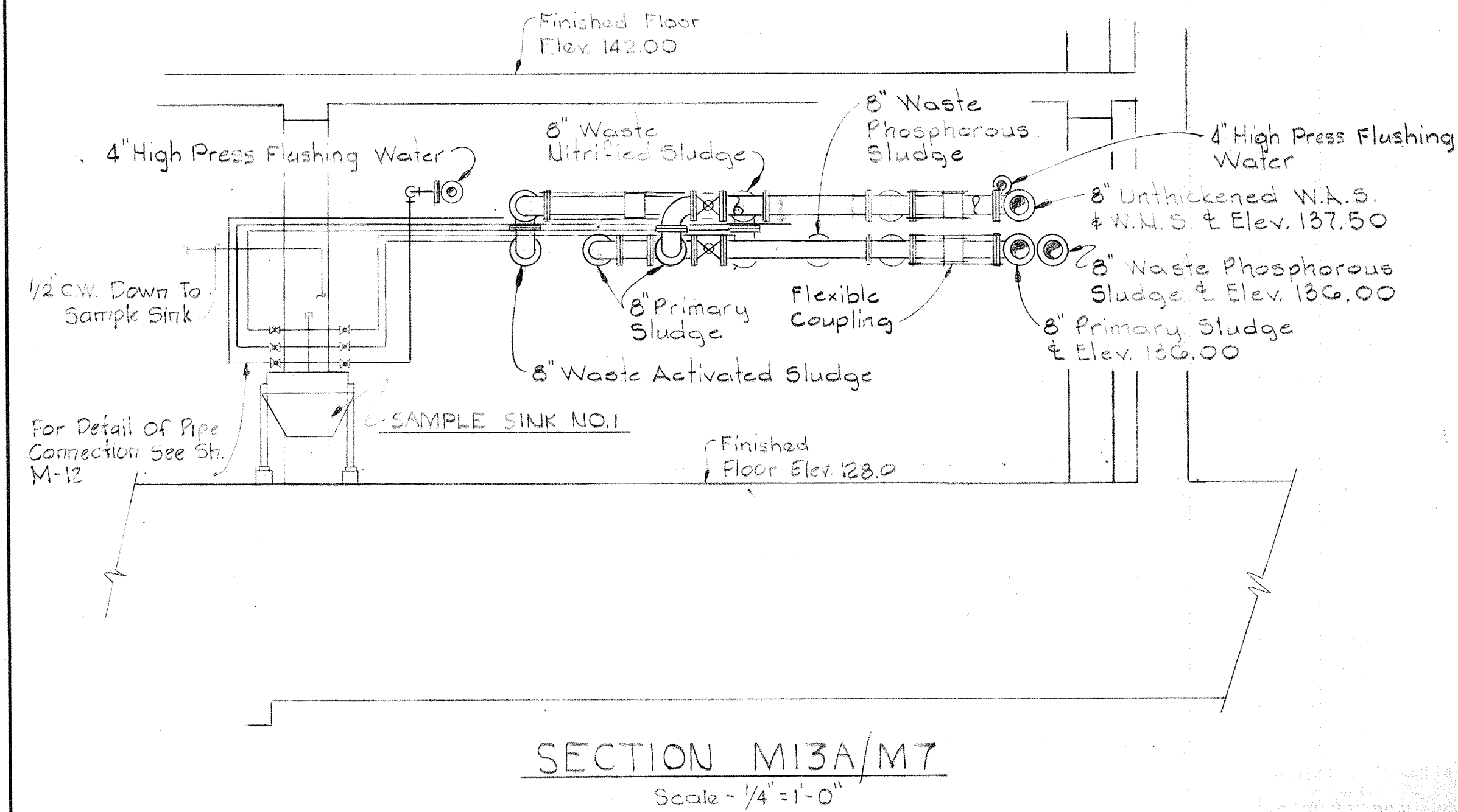
TYPICAL WALL MOUNTING ARRANGEMENT OF RADIANT HEATERS
No Scale



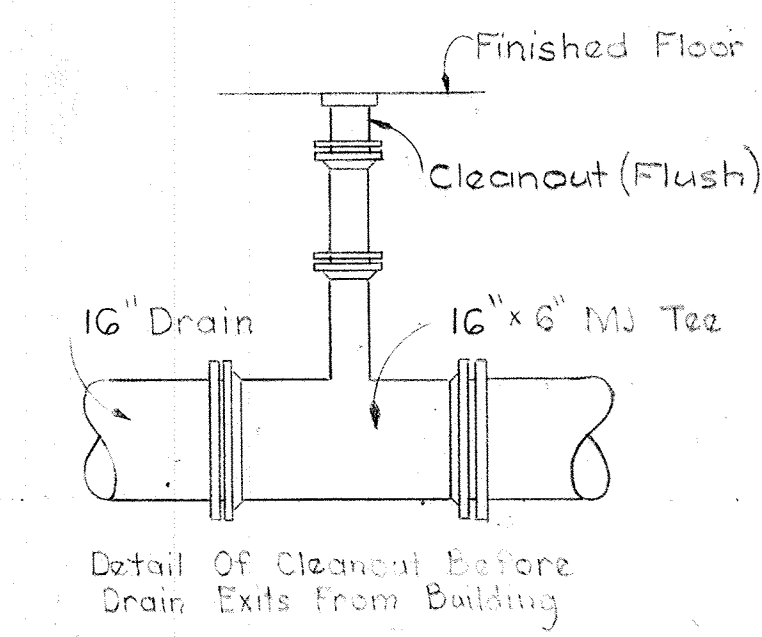


Note: These Items Identified With An Asterisk (*) Are Provided By The Flotation Thickener Manufacturer.

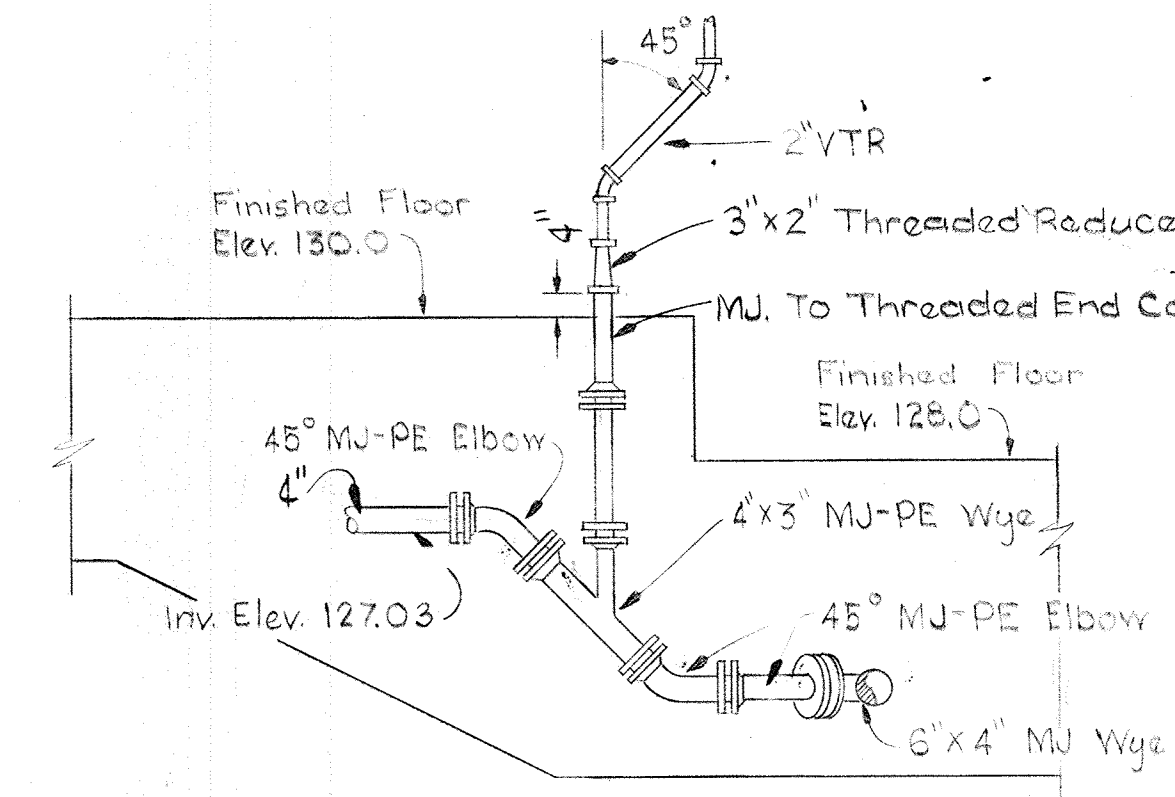
FLOTATION THICKENER PIPING, SCHEMATIC
No Scale



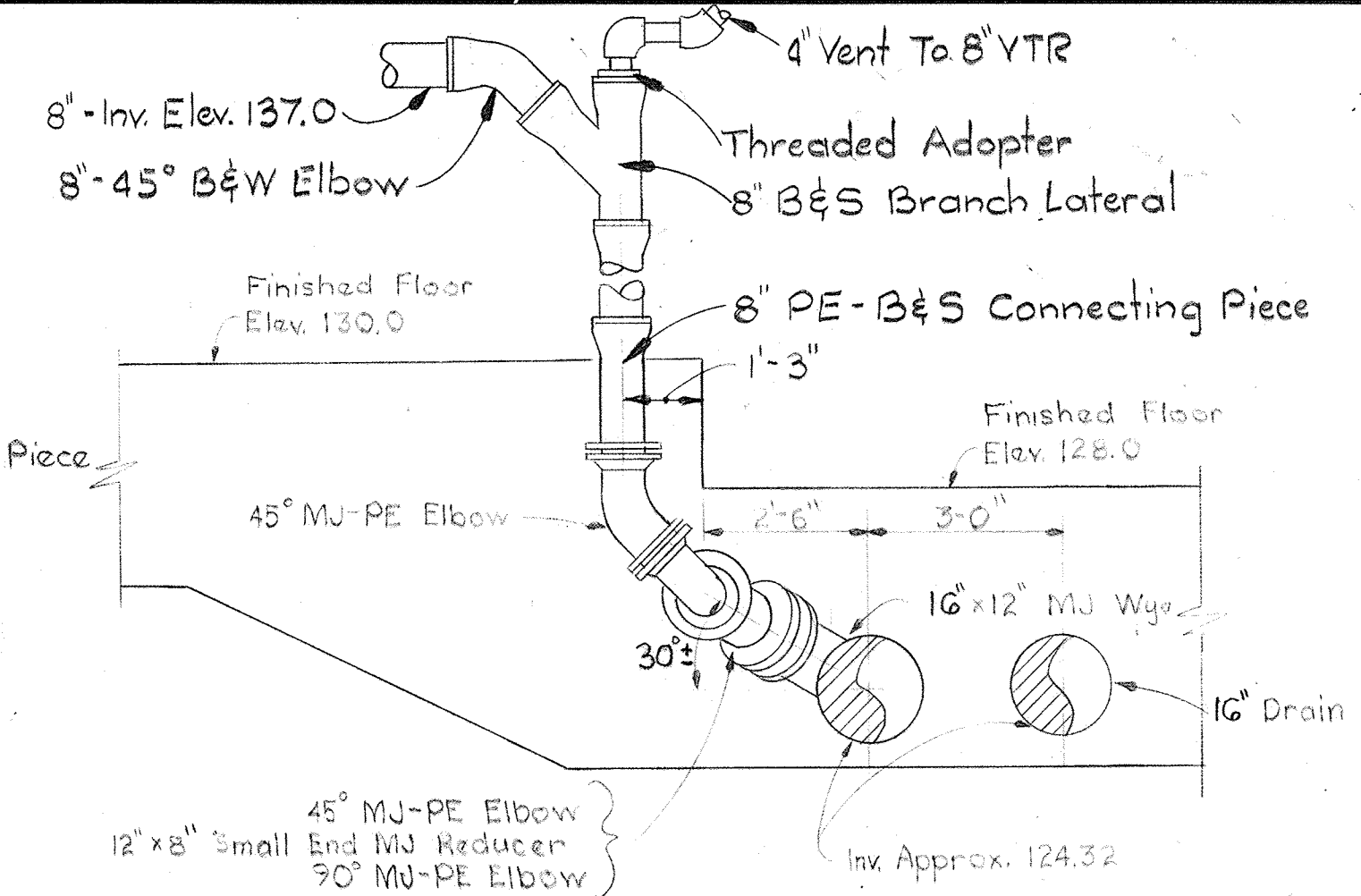
SECTION M13A/M7
Scale - 1/4" = 1'-0"



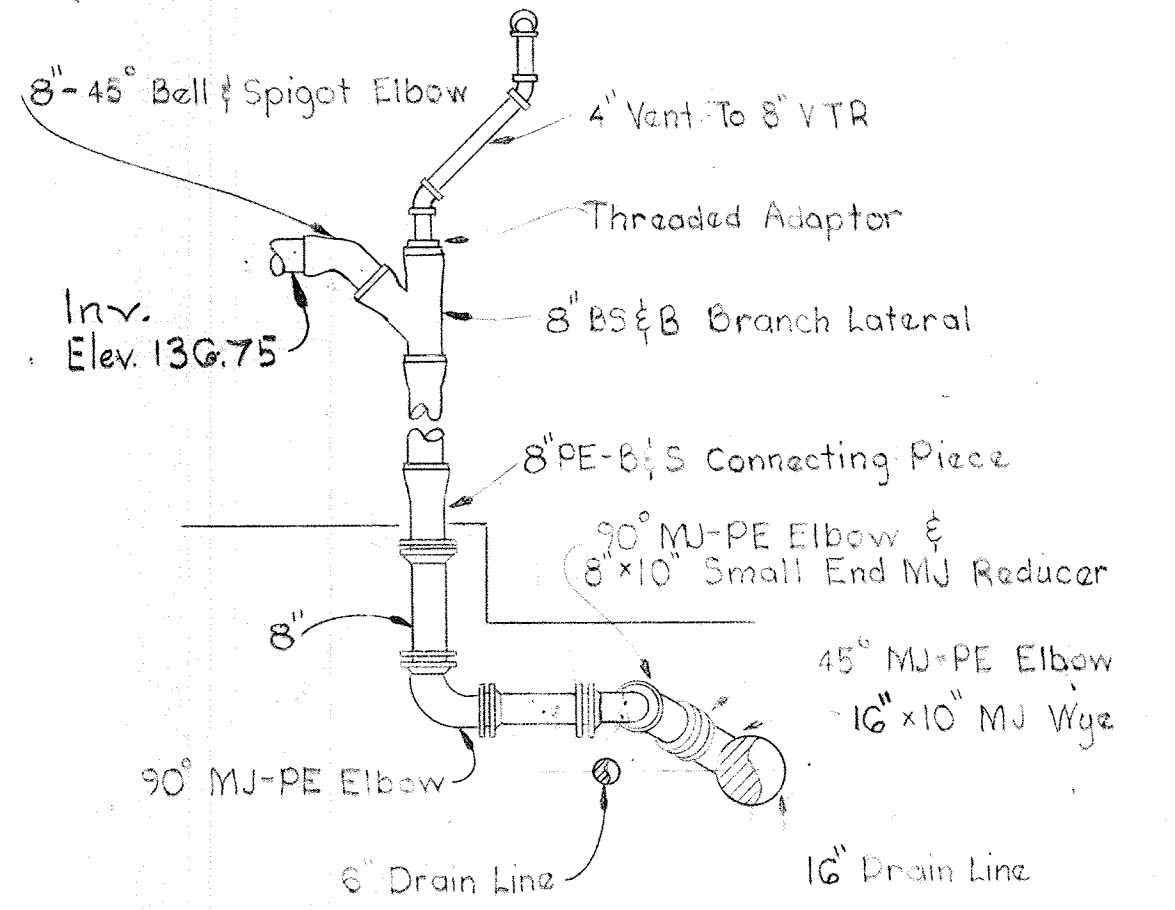
SECTION M13F/M22
Scale - 3/8" = 1'-0"



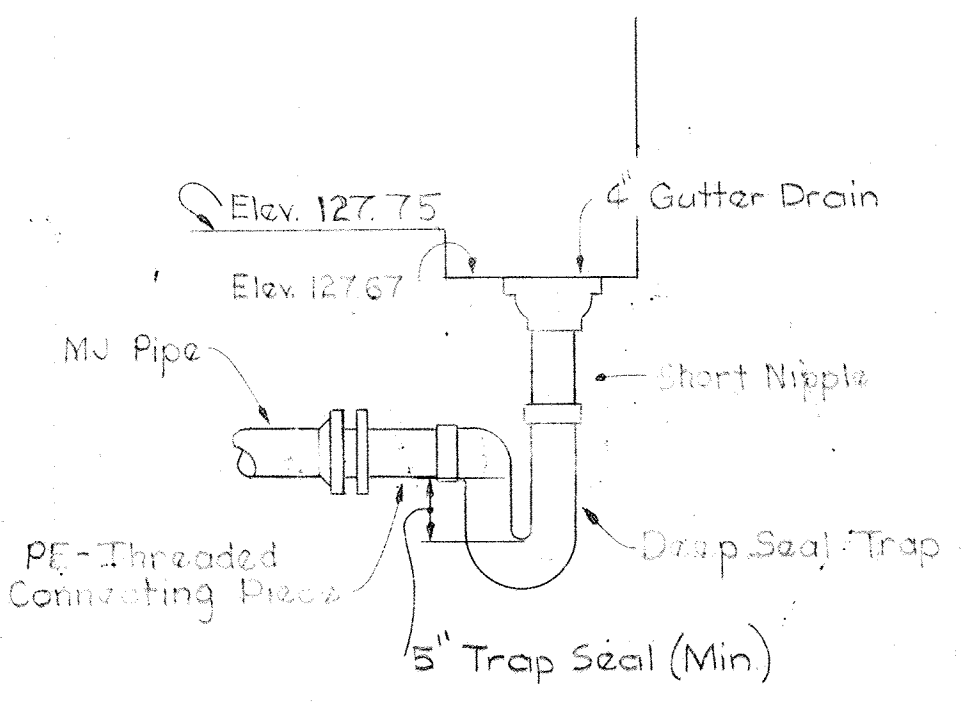
SECTION M13B/M22
Scale: 3/8" = 1'-0"



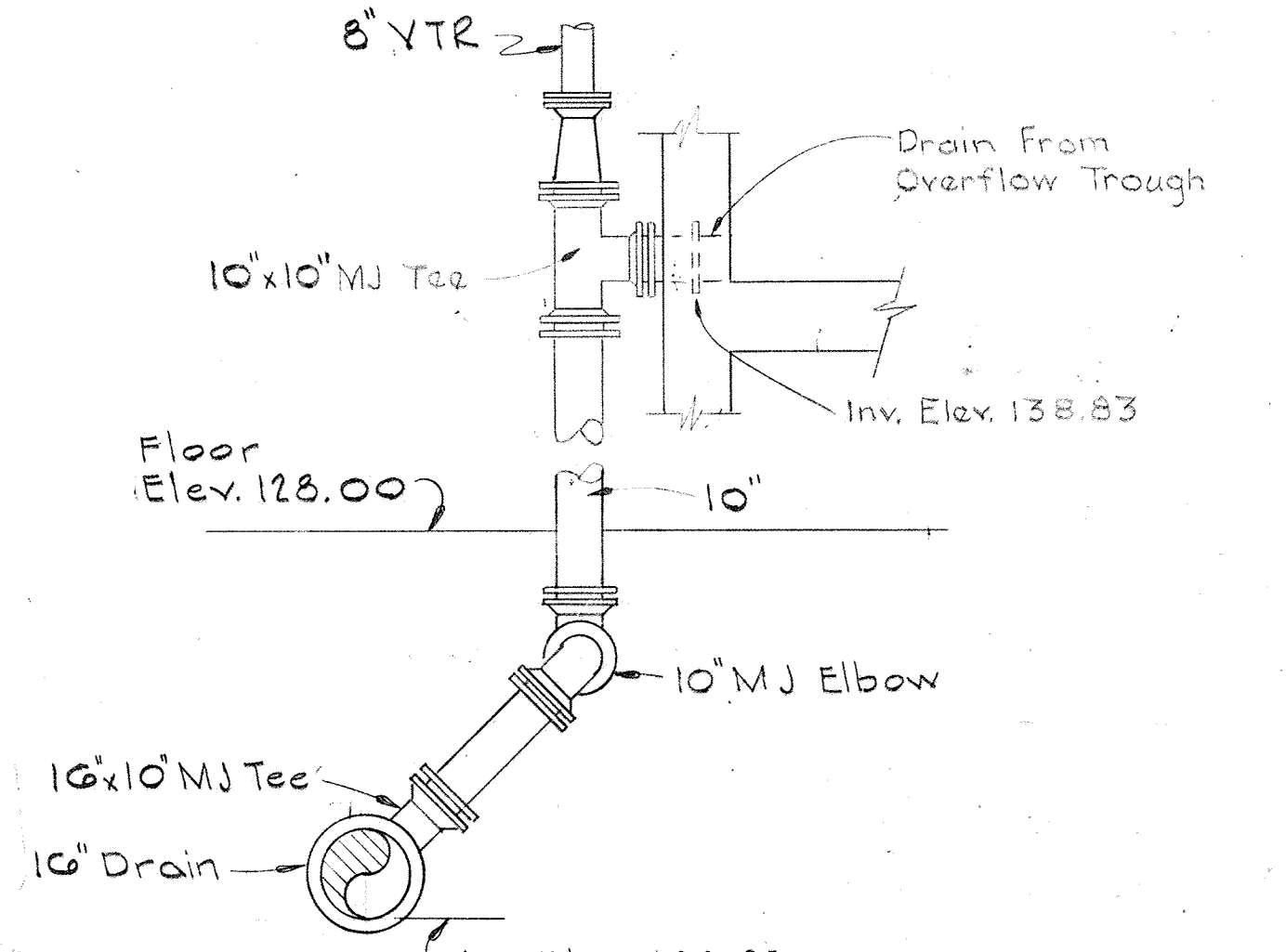
SECTION M13C/M22
Scale: 3/8" = 1'-0"



SECTION M13D/M22
Scale: 1/4" = 1'-0"

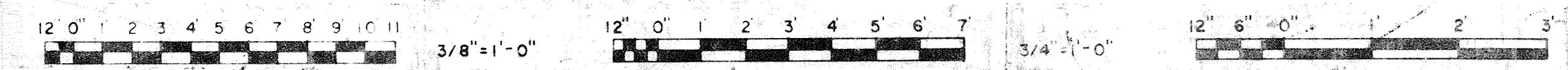


DETAIL M13G/M8
Scale: 3/4" = 1'-0"



SECTION M13H/M22
Scale: 3/8" = 1'-0"

JAMES A. FEDERLINE INC.
AS BUILT DRAWING



WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3/20/18
CHIEF BUREAU OF ENGINEERING

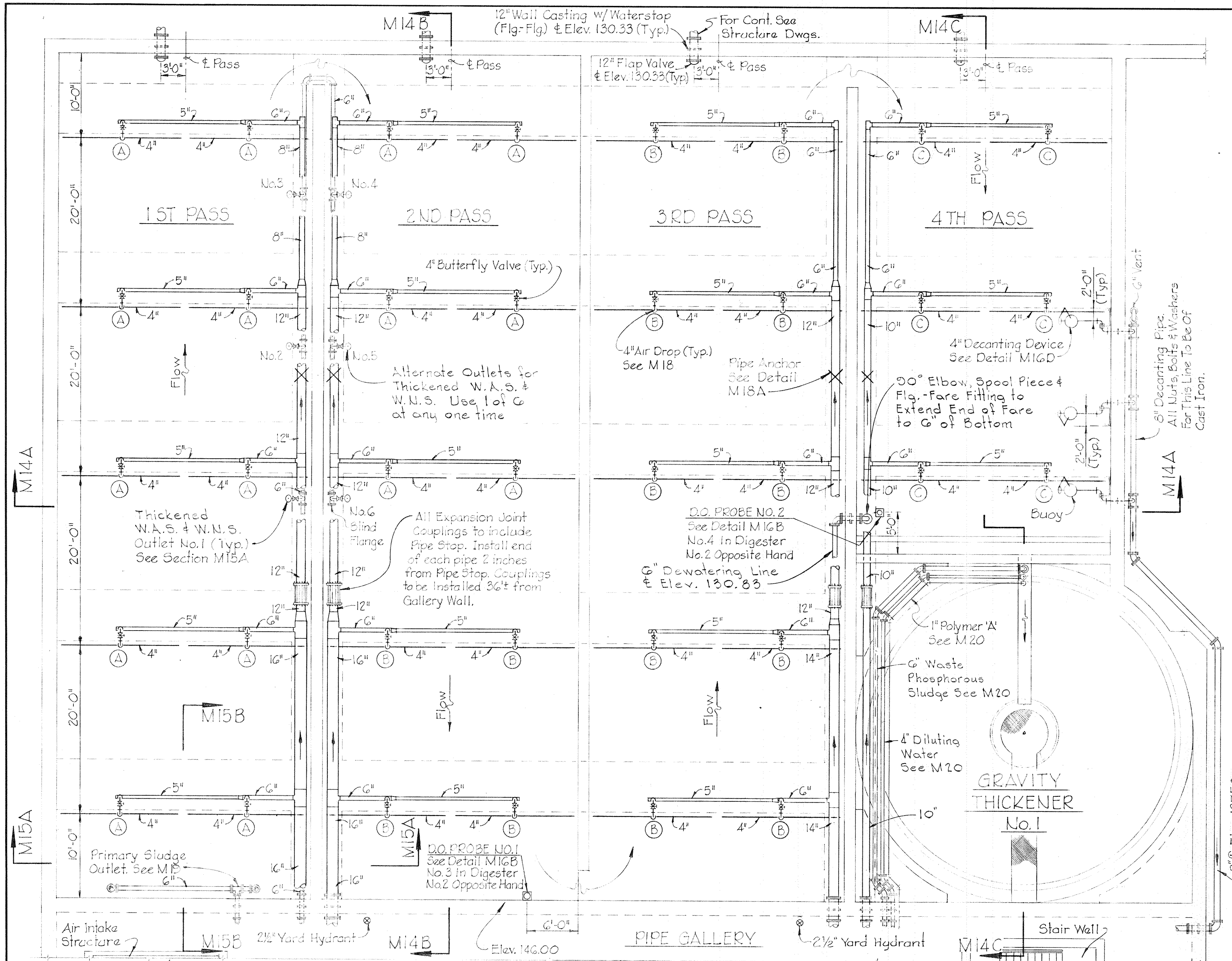
CONTRACT NO. 501-S

MECHANICAL
FLOTATION THICKENERS
SECTIONS & DETAILS

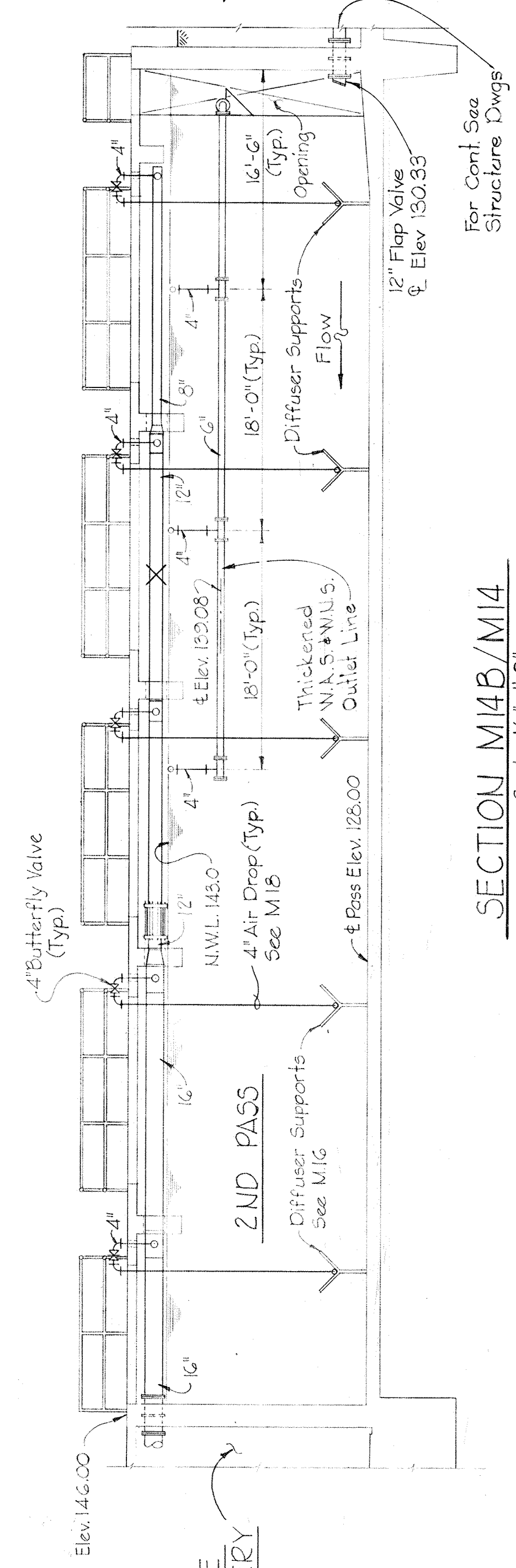
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 68 OF 128

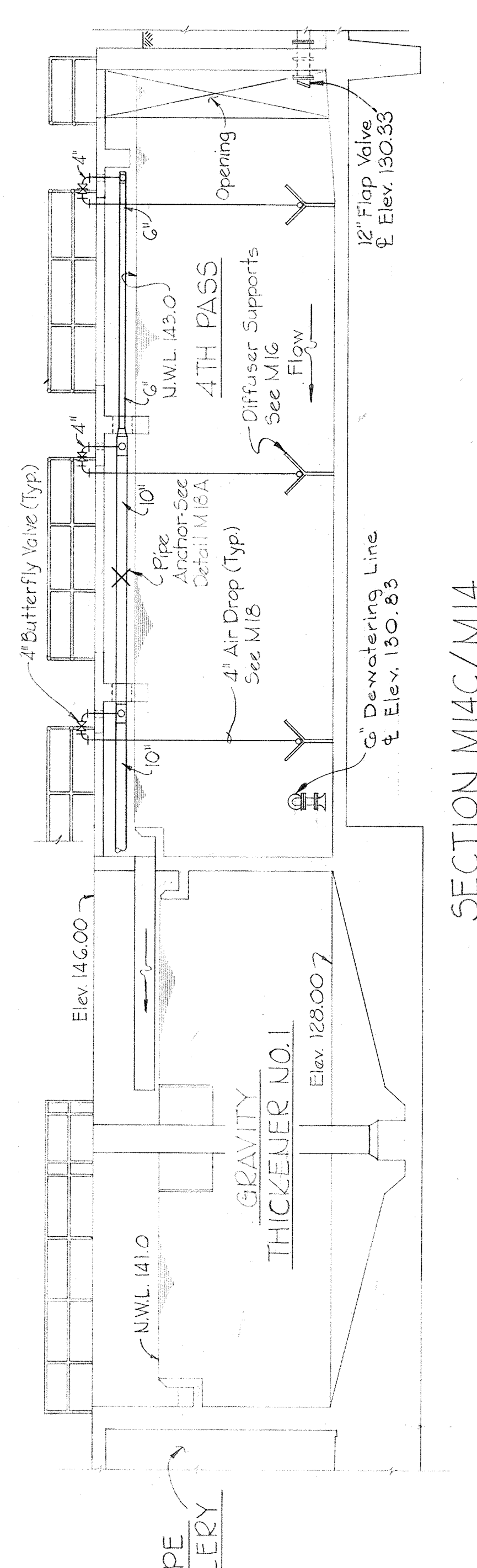
SCALE AS NOTED



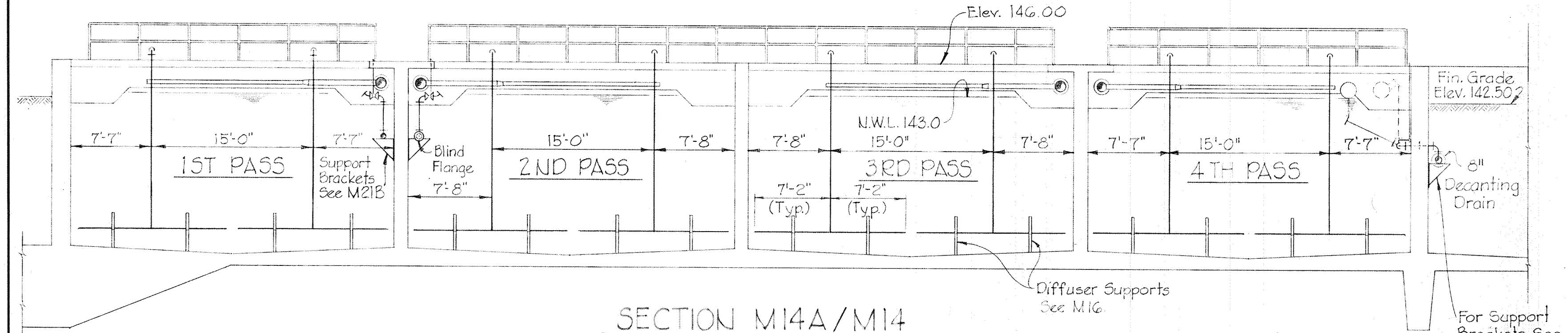
PLAN DIGESTER No. 1
Scale: 1/8" = 1'-0"



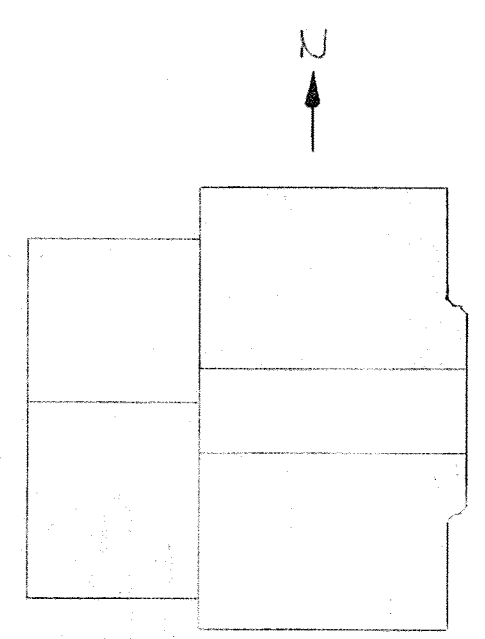
SECTION M14B/M14
Scale: 1/8" = 1'-0"



SECTION M14C/M14
Scale: 1/8" = 1'-0"



SECTION M14A/M14
Scale: 1/8" = 1'-0"



KEY PLAN

- Note:
1. North Digester No. 1 and Gravity Thickener No. 1 are shown. South Digester No. 2 and Gravity Thickener No. 2 (Not Shown) are Opposite Hand. South Digester No. 2 and Gravity Thickener No. 2 require duplicate Piping, Services, & Equipment as shown on this Plan.
 2. Diffusers are identified by Type (A), (B), and (C) as shown. For Details of Diffusers, see Sheet M18.

JAMES A. FEDERLINE INC.
AS BUILT DRAWING
FOR CORRELATION SEE JAFI SHOP DRAWING 8ASP

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

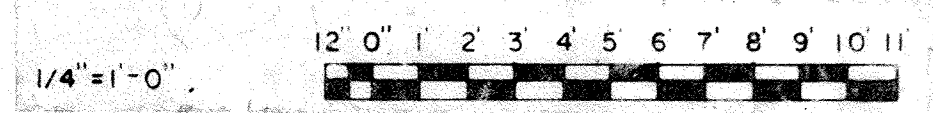
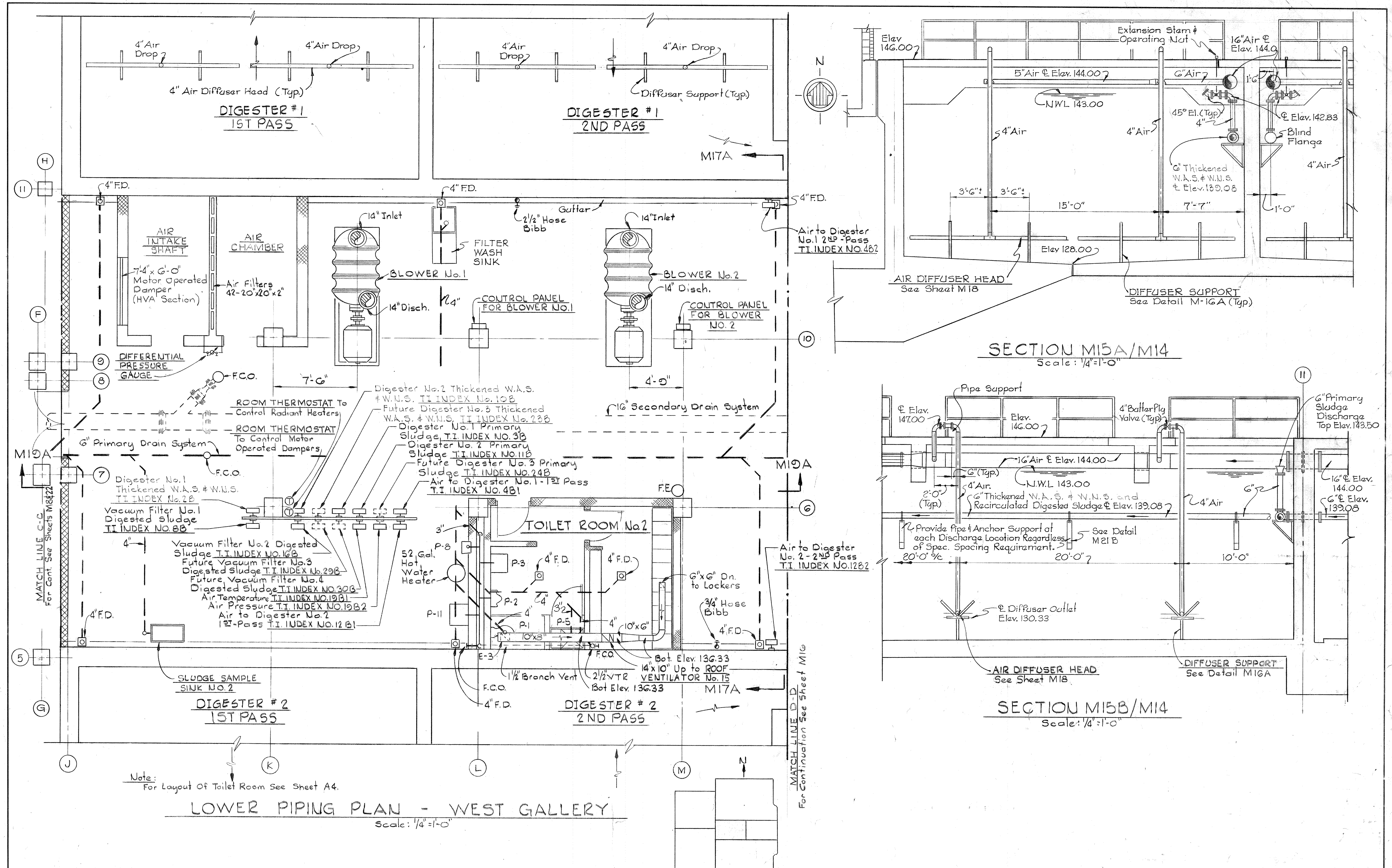
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE _____
CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 501-S

MECHANICAL
DIGESTERS & GRAVITY THICKENERS
DIGESTER PLAN

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

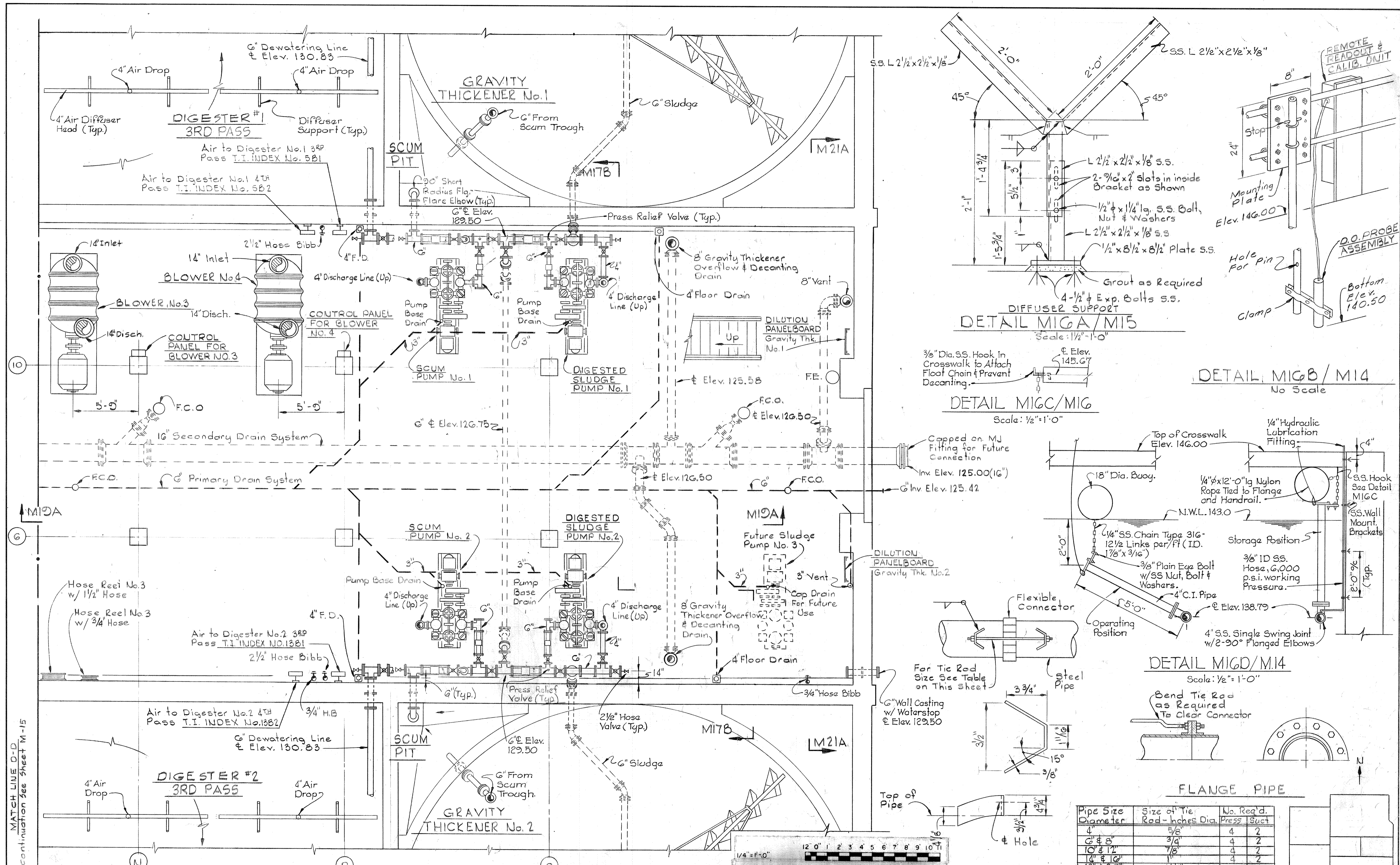
DRAWING NO. 69 OF 128
SCALE AS NOTED



JAMES A. FEDERLINE INC.
 AS BUILT DRAWING

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>W. O. Federline</i> DATE: _____ CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 501-S	MECHANICAL DIGESTERS & GRAVITY THICKENERS LOWER PIPING PLAN - WEST	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 70 OF 128	SCALE AS NOTED
					W. O. 6887	

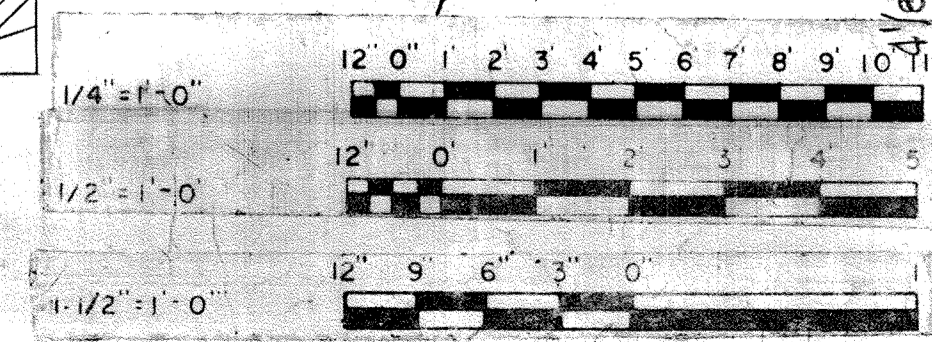
BRUNING 44510 1859Z



MATCH LINE D-D
For continuation See Sheet M-15

JAMES A. FEDERLINE INC.
AS BUILT DRAWING
For CORRELATION SEE JAFI SHOP DRAWING 7ASP

LOWER PIPING PLAN - EAST GALLERY
Scale: 1/4" = 1'-0"



Pipe Size Diameter	Size of Tie Rod - inches Dia.	No. Req'd. Press. Suct.
4"	3/8"	4 2
6" & 8"	3/4"	4 2
10" & 12"	7/8"	4 2
14" & 16"	1 1/8"	4 4
18" & 20"	1 1/8"	4 4
24" & 30"	1 1/4"	4 4

TIE ROD DETAIL
No. Scale

KEY PLAN

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

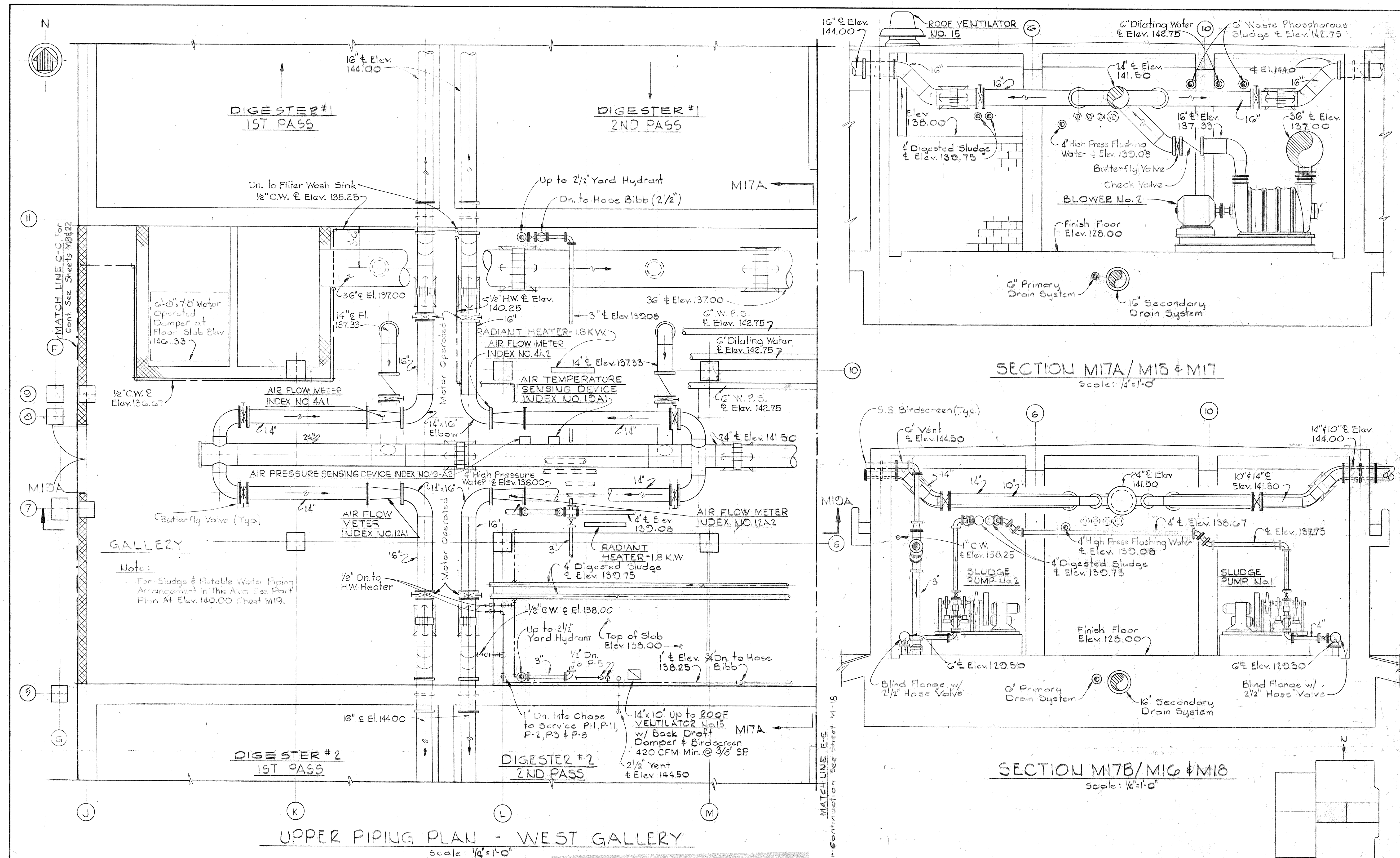
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3/20/15
W. O. Libert
CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 501 - S

MECHANICAL
DIGESTERS & GRAVITY THICKENERS
LOWER PIPING PLAN - EAST

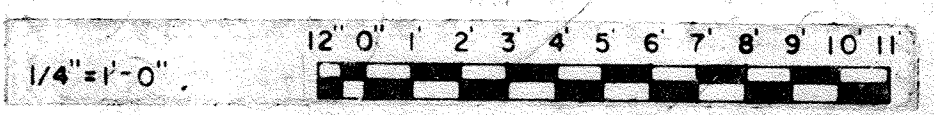
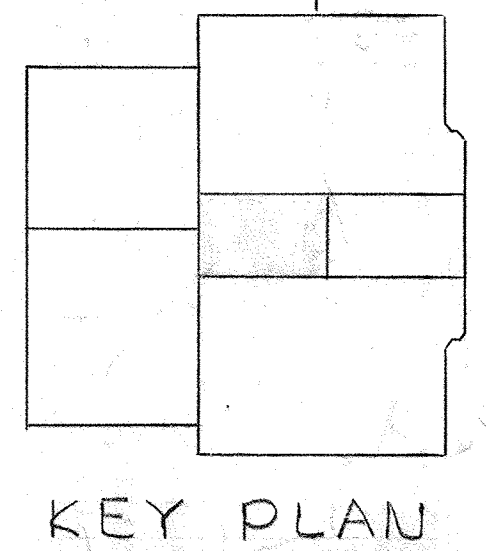
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 71 OF 128
SCALE AS NOTED



Note:
For Sludge & Potable Water Piping Arrangement in This Area See Plant Plan At Elev. 140.00 Sheet M19.

JAMES A. FEDERLINE INC.
AS BUILT DRAWING
FOR CORRELATION SEE JAFI SHOP DRAWING CPD-3,54SP

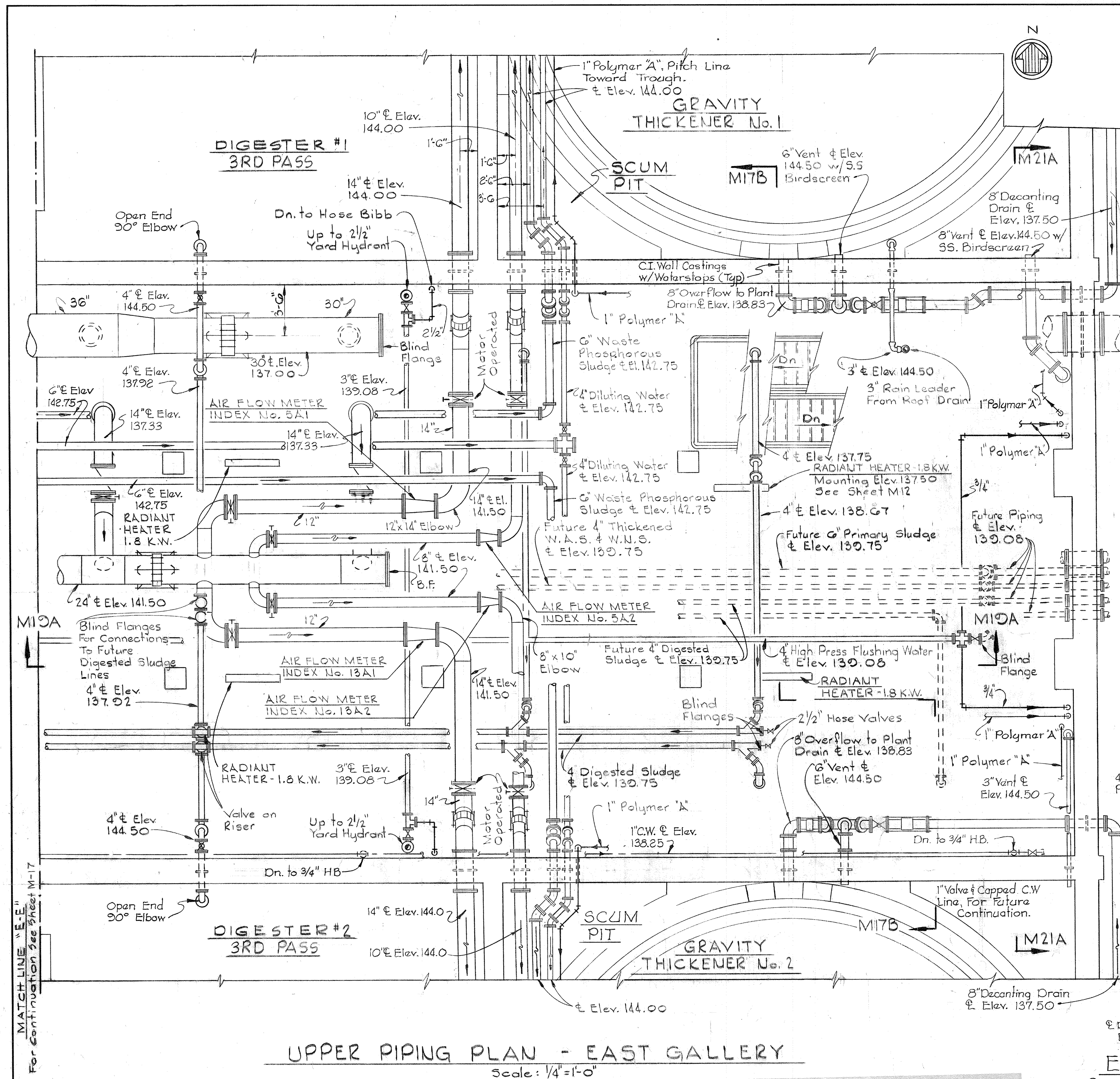


WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3/20/85 DATE W. O. Federline CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 501-S	MECHANICAL DIGESTERS & GRAVITY THICKENERS UPPER PIPING PLAN-WEST	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 72 OF 128 SCALE AS NOTED
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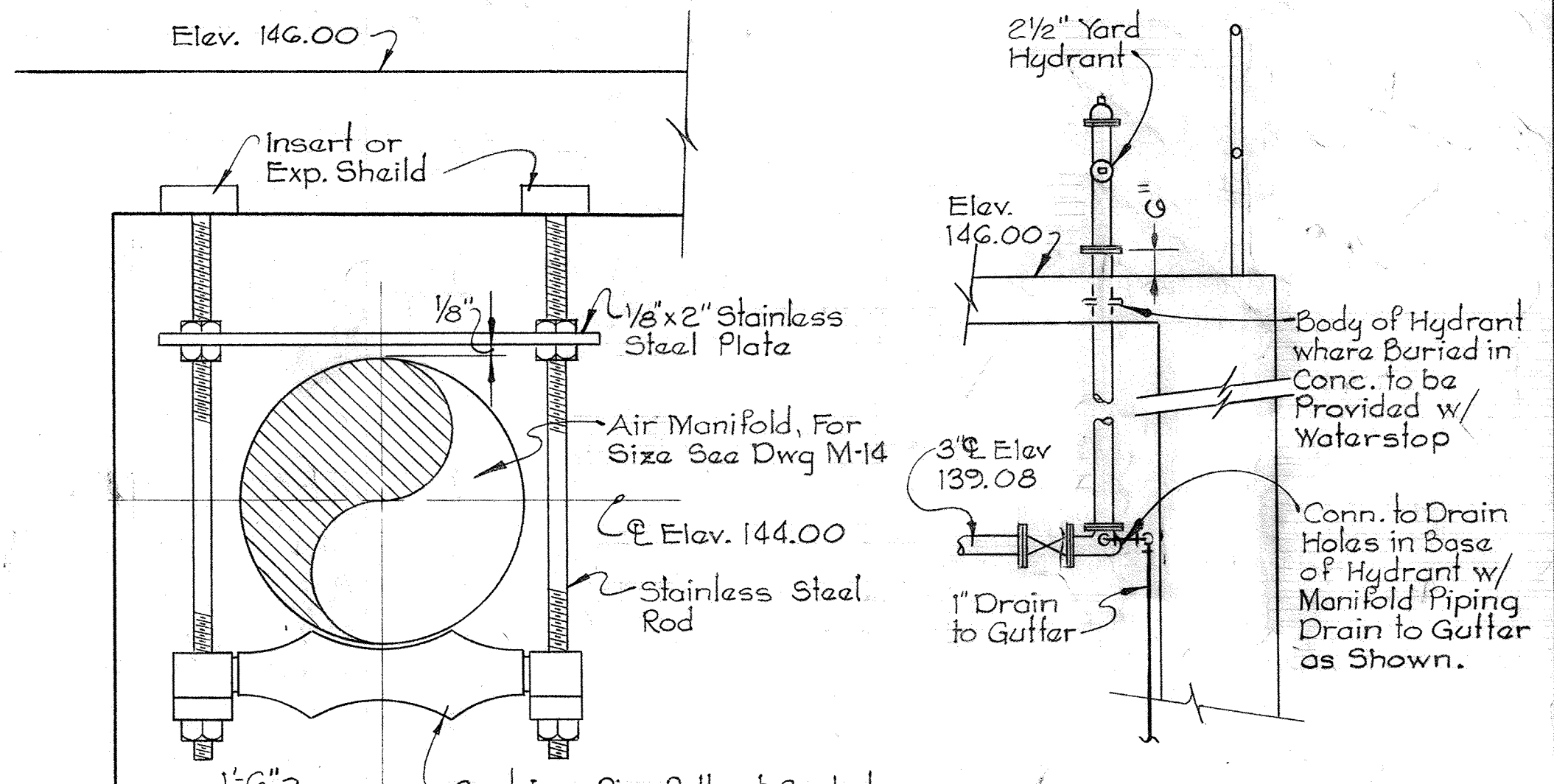
W. O. 6887

SHEET M-17

BRUNING 44-510 18392

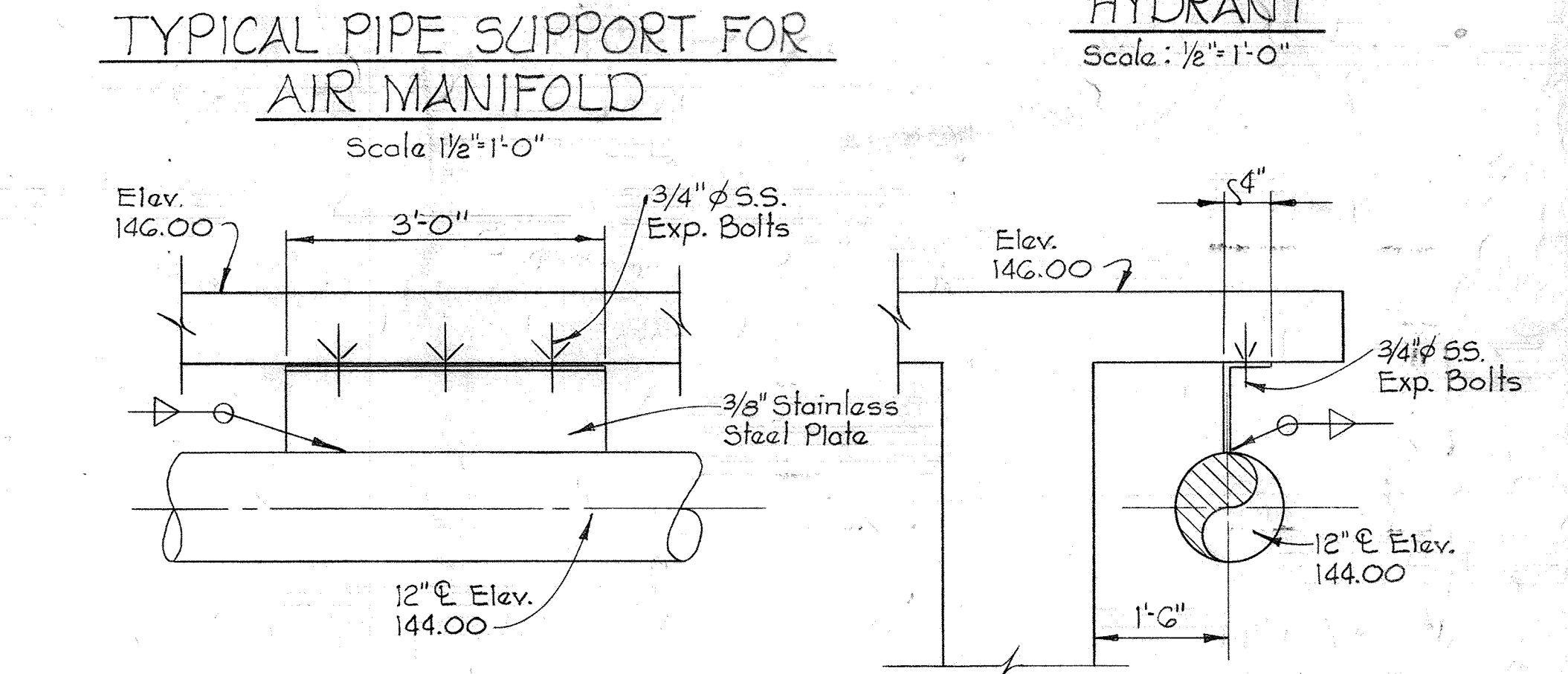


UPPER PIPING PLAN - EAST GALLERY
Scale: 1/4" = 1'-0"

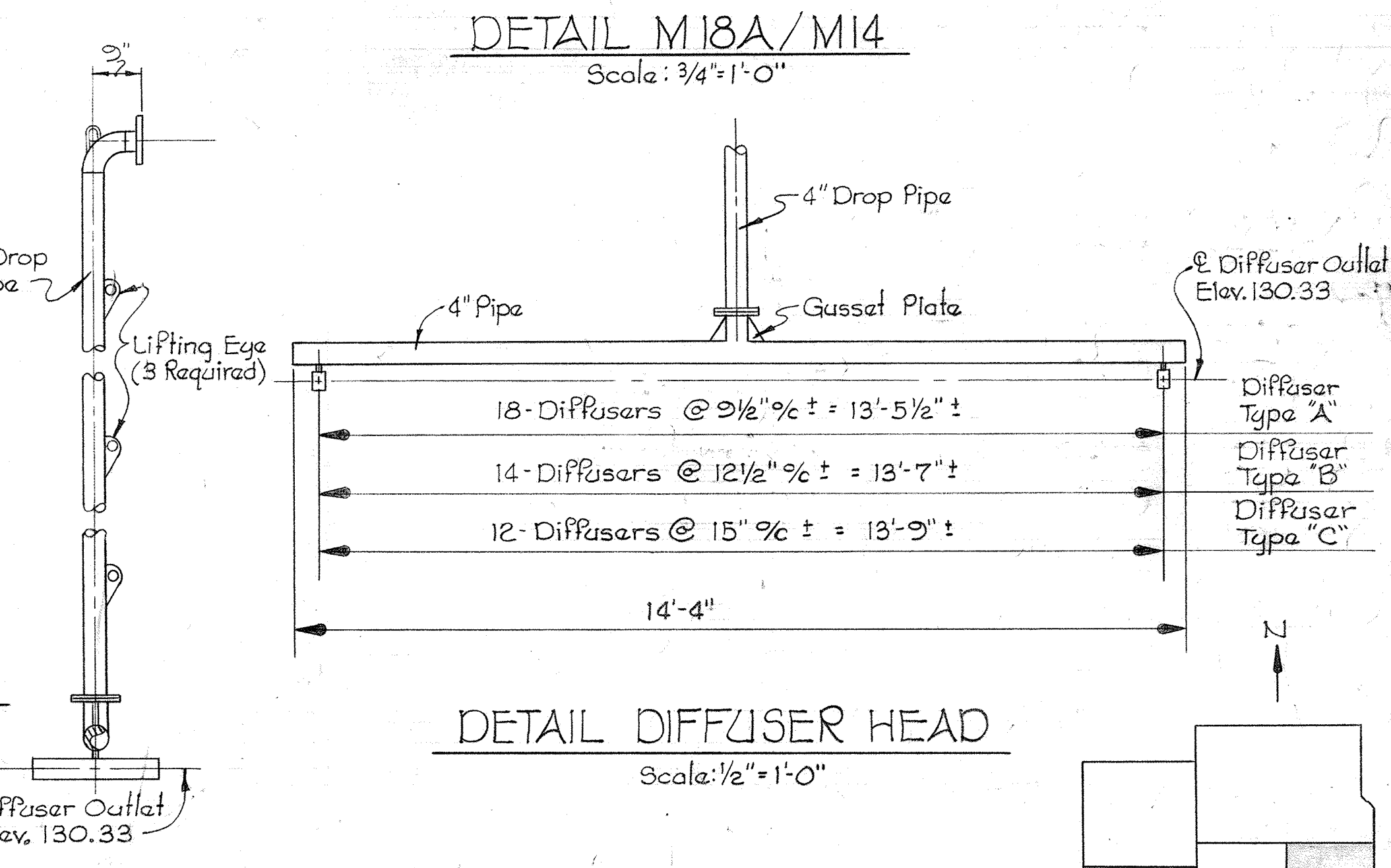


TYPICAL PIPE SUPPORT FOR AIR MANIFOLD
Scale: 1/2" = 1'-0"

DETAIL YARD HYDRANT
Scale: 1/2" = 1'-0"



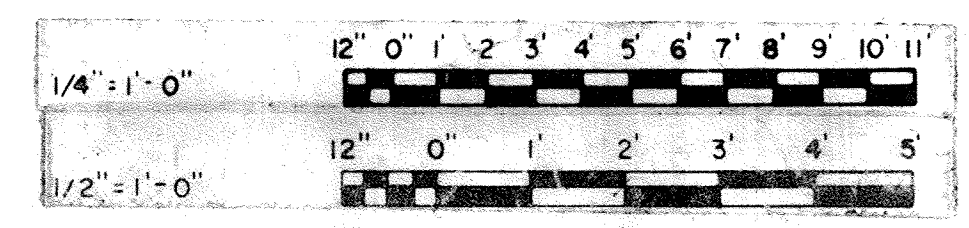
DETAIL M18A/M14
Scale: 3/4" = 1'-0"



ELEVATION TYPICAL AIR PIPE
Scale: 1/2" = 1'-0"

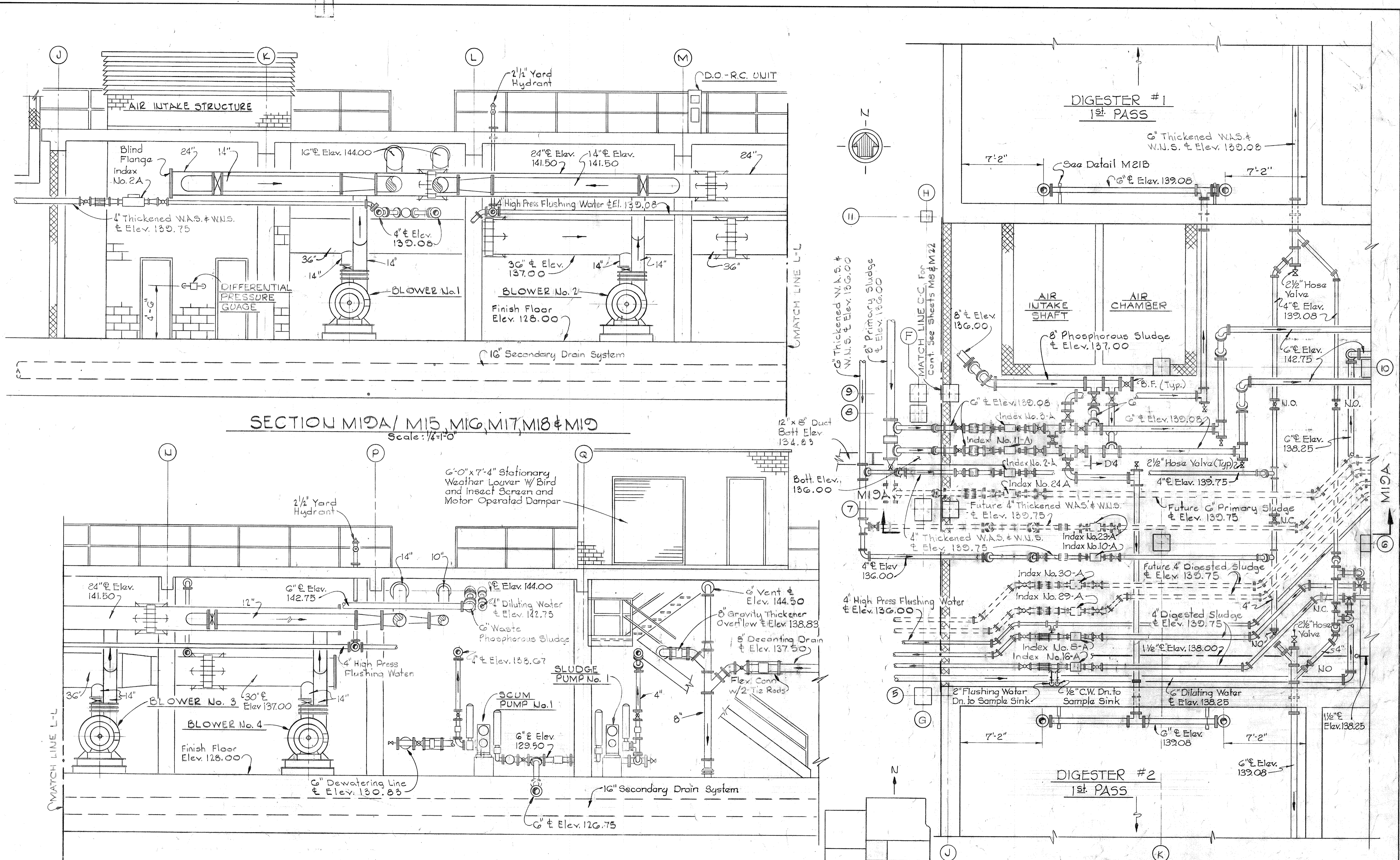
DETAIL DIFFUSER HEAD
Scale: 1/2" = 1'-0"

KEY PLAN



JAMES A. FEDERLINE INC.
AS BUILT DRAWING
FOR CORRELATION SEE JAFI SHOP DRAWING CPD-4, 6-ASP

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE 3/20/15 W.C. Federline CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 501 - S	MECHANICAL DIGESTERS & GRAVITY THICKENERS UPPER PIPING PLAN - EAST	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 73 OF 128	SCALE AS NOTED
					SHEET M-18	



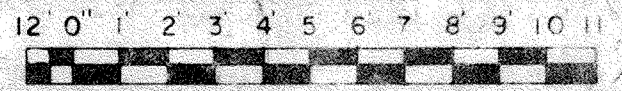
SECTION M10A/ M15, M16, M17, M18 & M19
Scale: 1/4"=1'-0"

SECTION M19A CONT.
Scale: 1/4"=1'-0"

PART - PIPING PLAN AT ELEV. 140.00
Scale: 1/4"=1'-0"

JAMES A. FEDERLINE INC.
AS BUILT DRAWING
FOR CORRELATION SEE JAFI SHOP DRAWING CPD-3,5ASP

KEY PLAN



WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE 3/20/15
W. O. Salbeck
CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 501-S

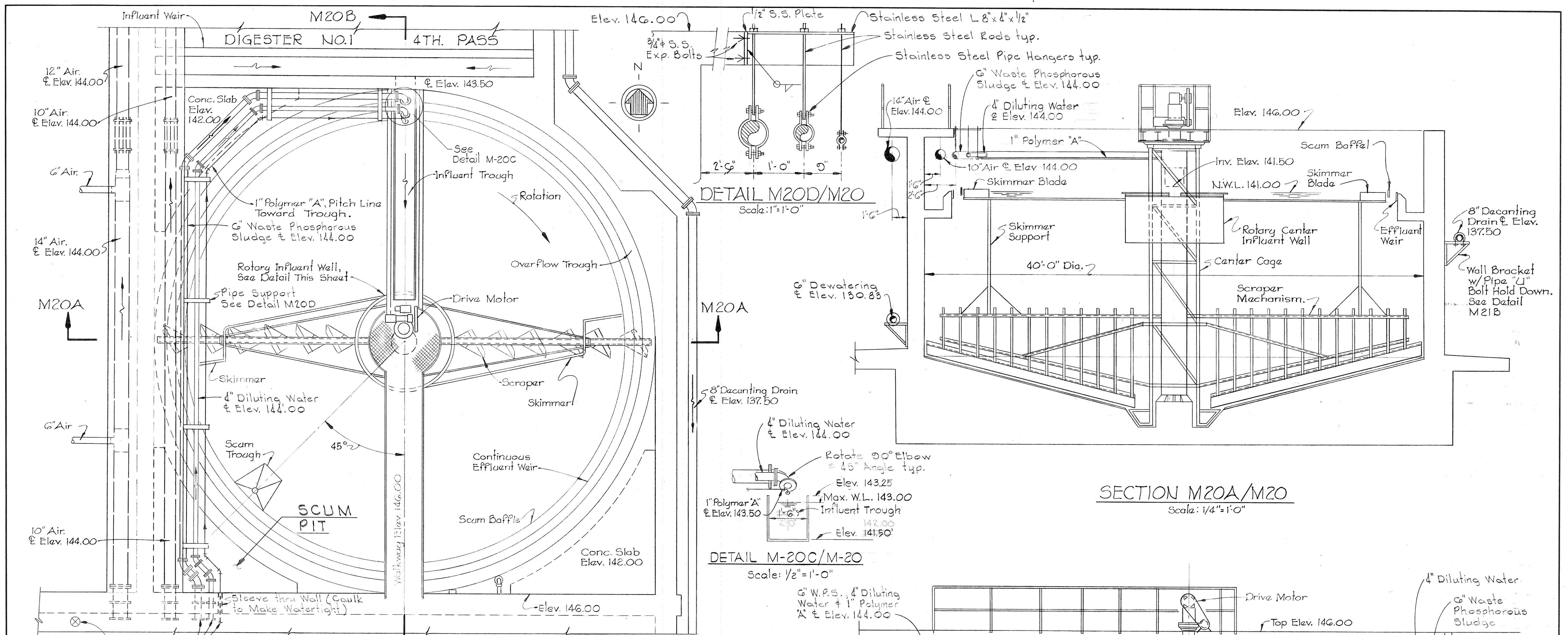
MECHANICAL
DIGESTERS & GRAVITY THICKENERS
PIPING PLAN ELEV. 140.0

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

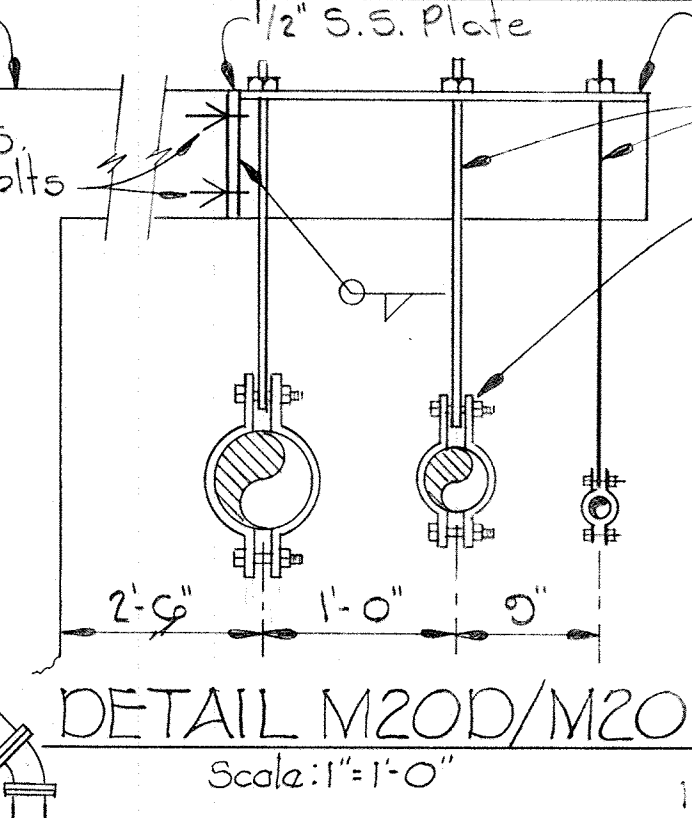
DRAWING
NO. 74
OF 128

SCALE
AS
NOTED

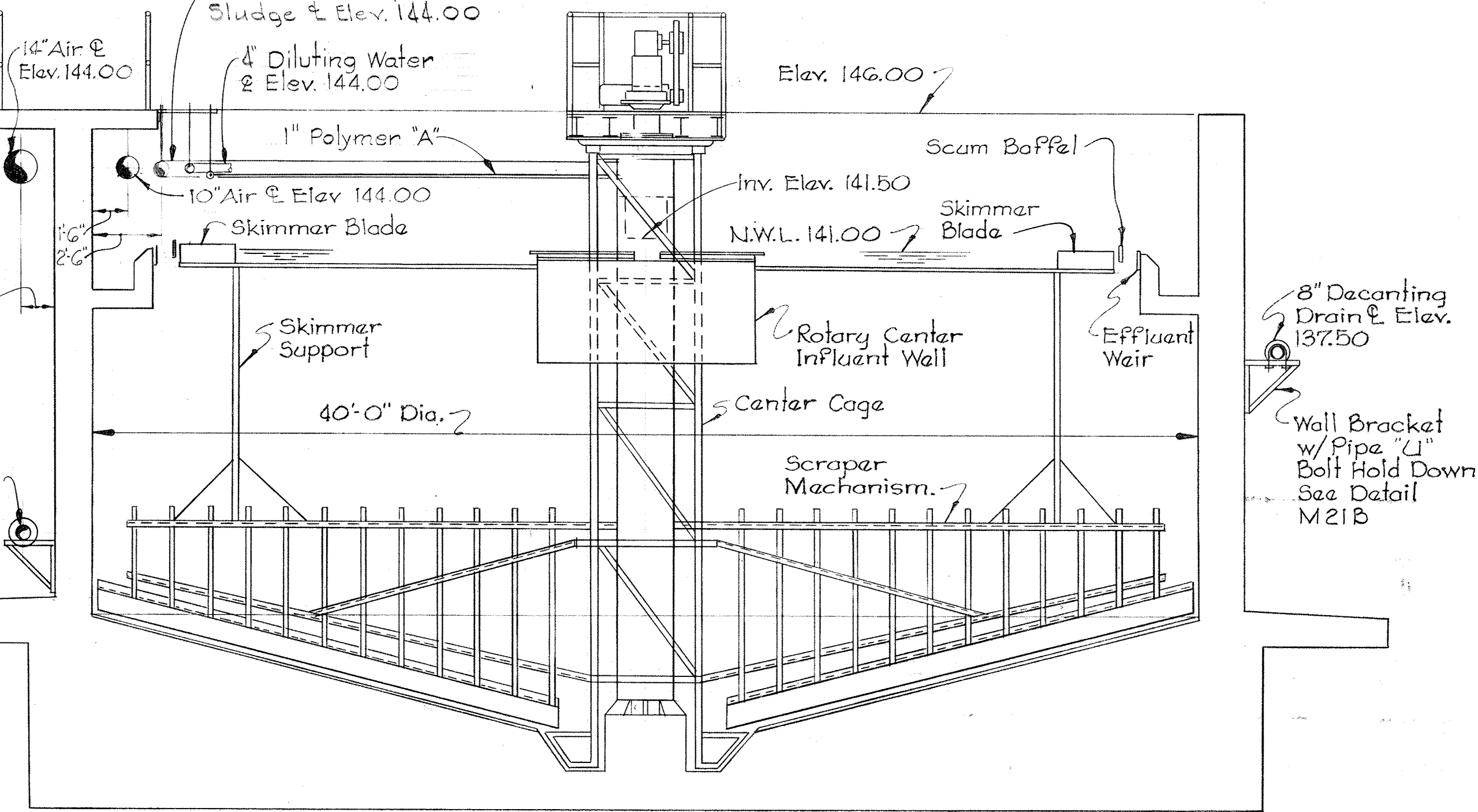
BRUNING 44-510 1032



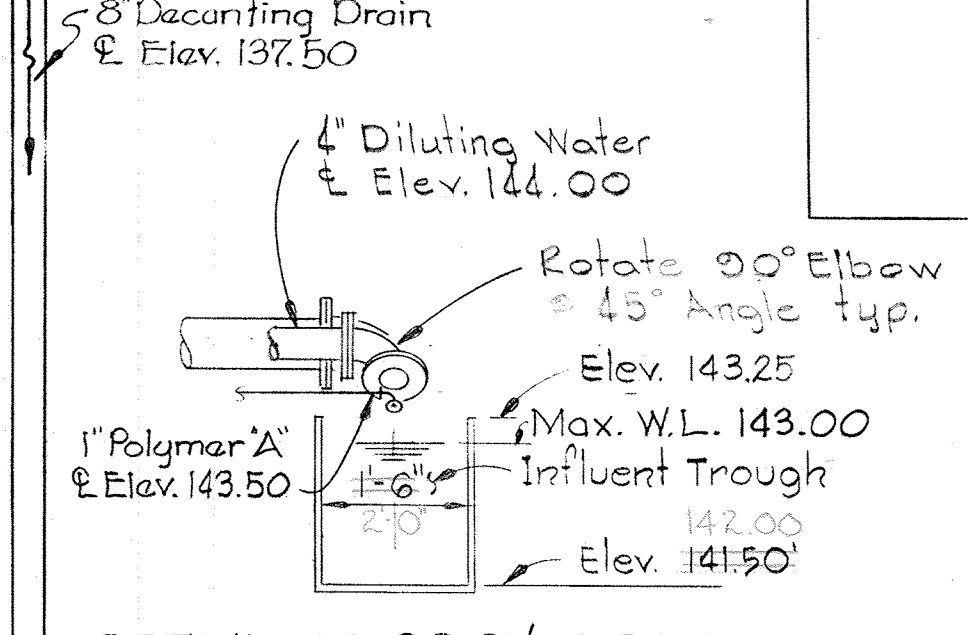
PLAN GRAVITY THICKENER No.1
Scale: 1/4" = 1'-0"



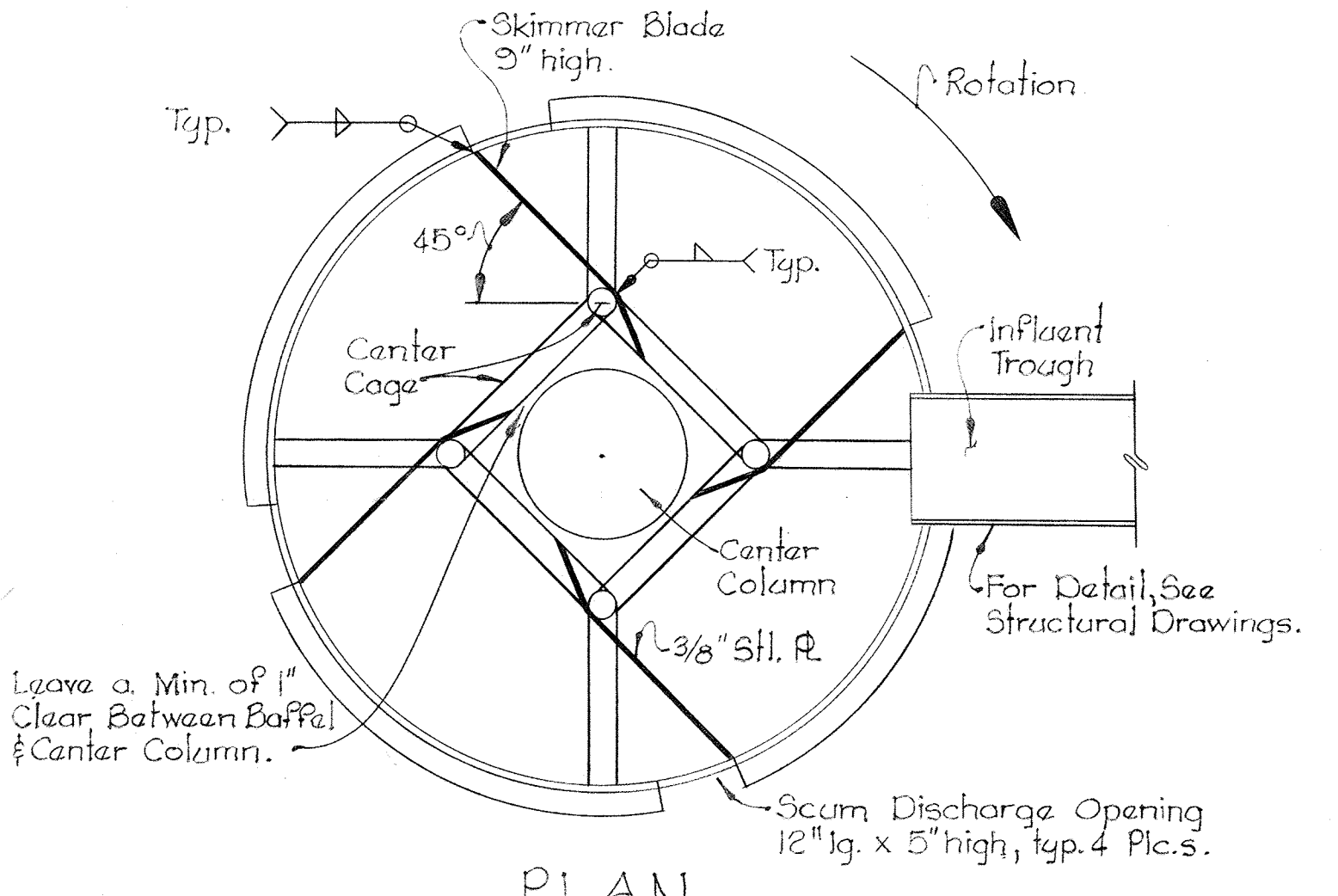
DETAIL M20D/M20
Scale: 1/2" = 1'-0"



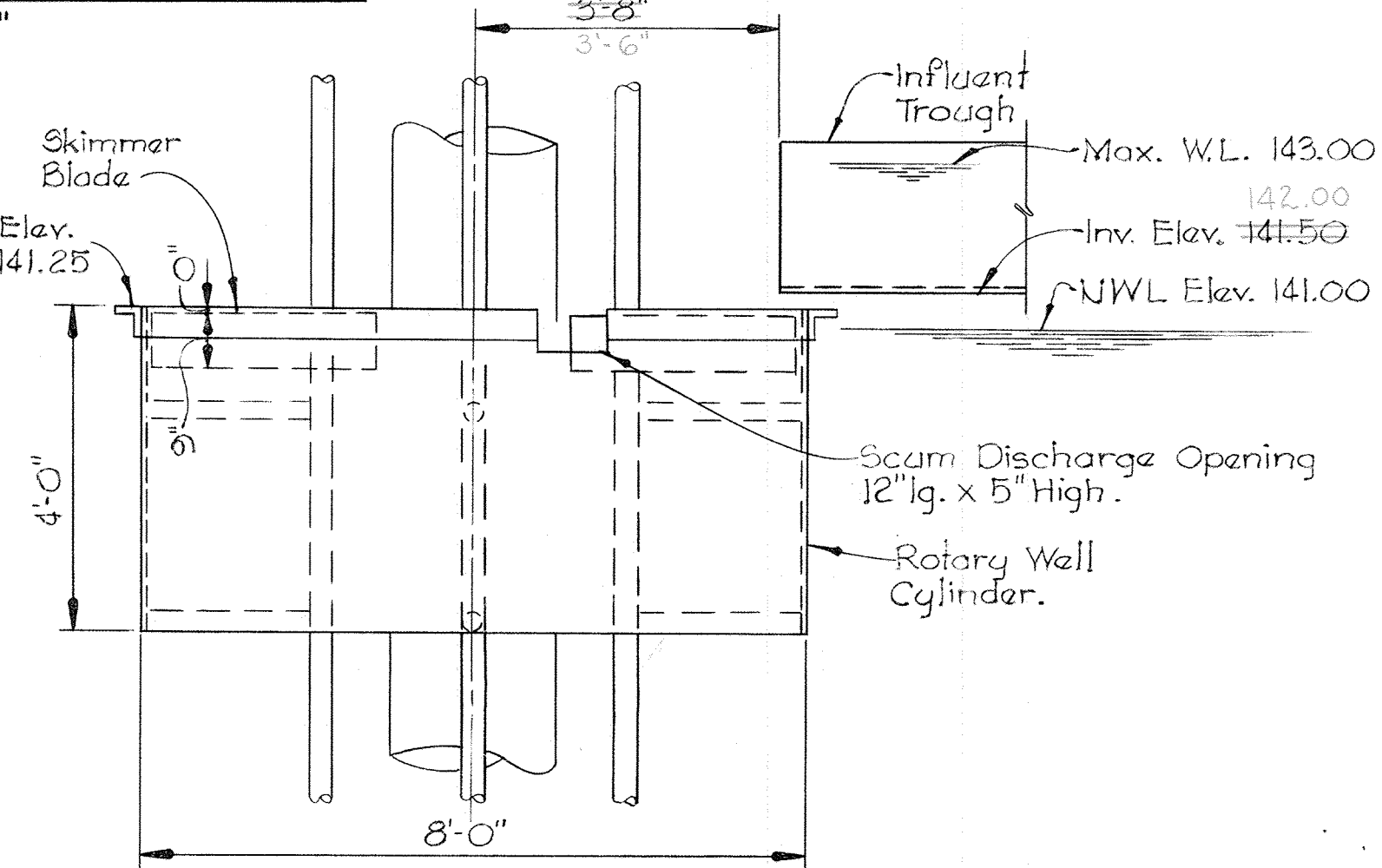
SECTION M20A/M20
Scale: 1/4" = 1'-0"



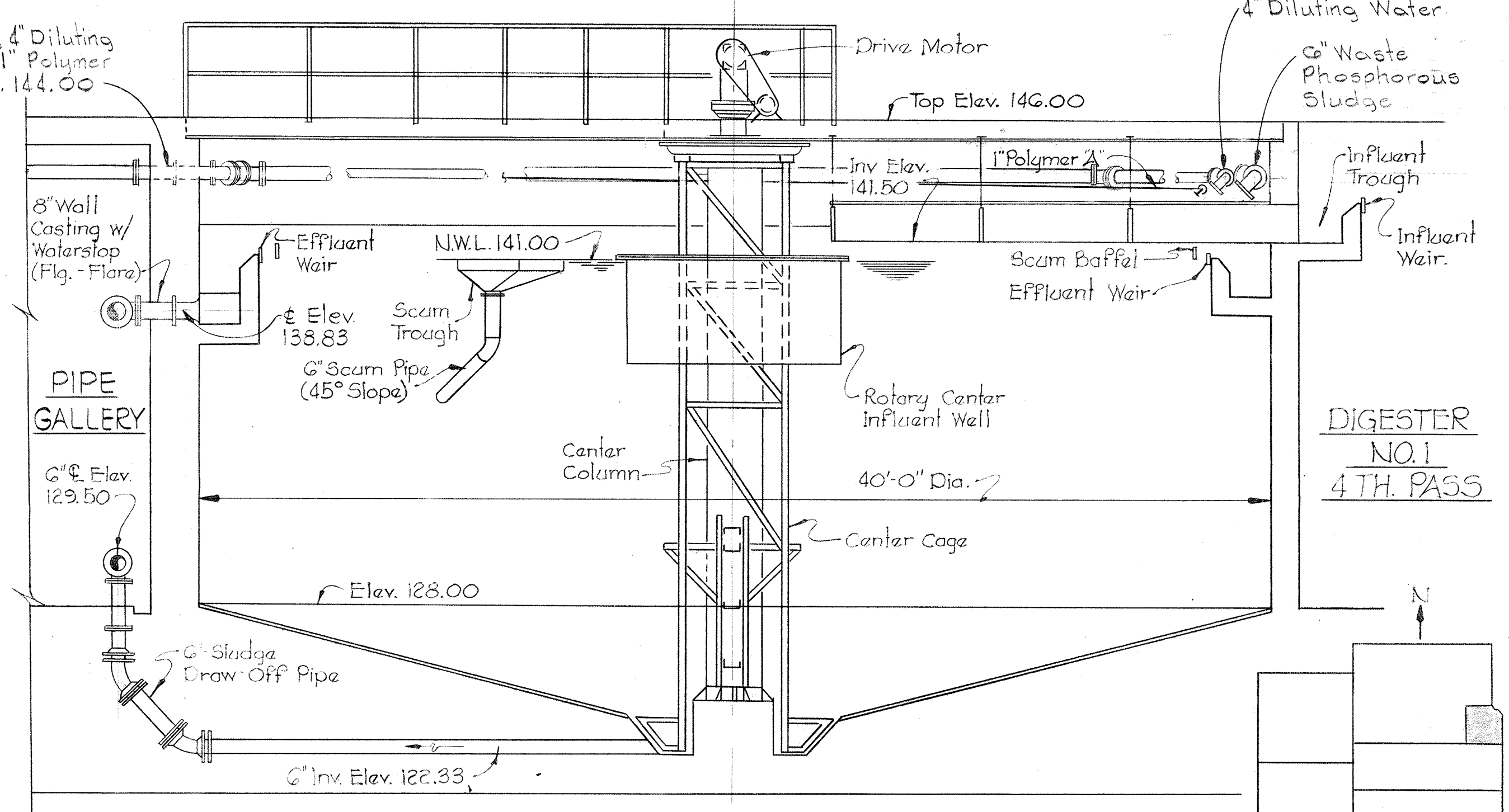
DETAIL M-20C/M-20
Scale: 1/2" = 1'-0"



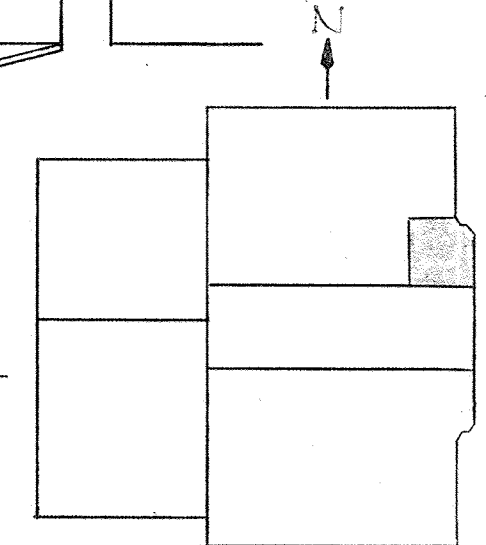
DETAIL ROTARY INFLUENT WELL
Scale: 1/2" = 1'-0"



ELEVATION



SECTION M20B/M20
Scale: 1/4" = 1'-0"



KEY PLAN

JAMES A. FEDERLINE INC.
AS BUILT DRAWING

CONTRACT NO. 501-S

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

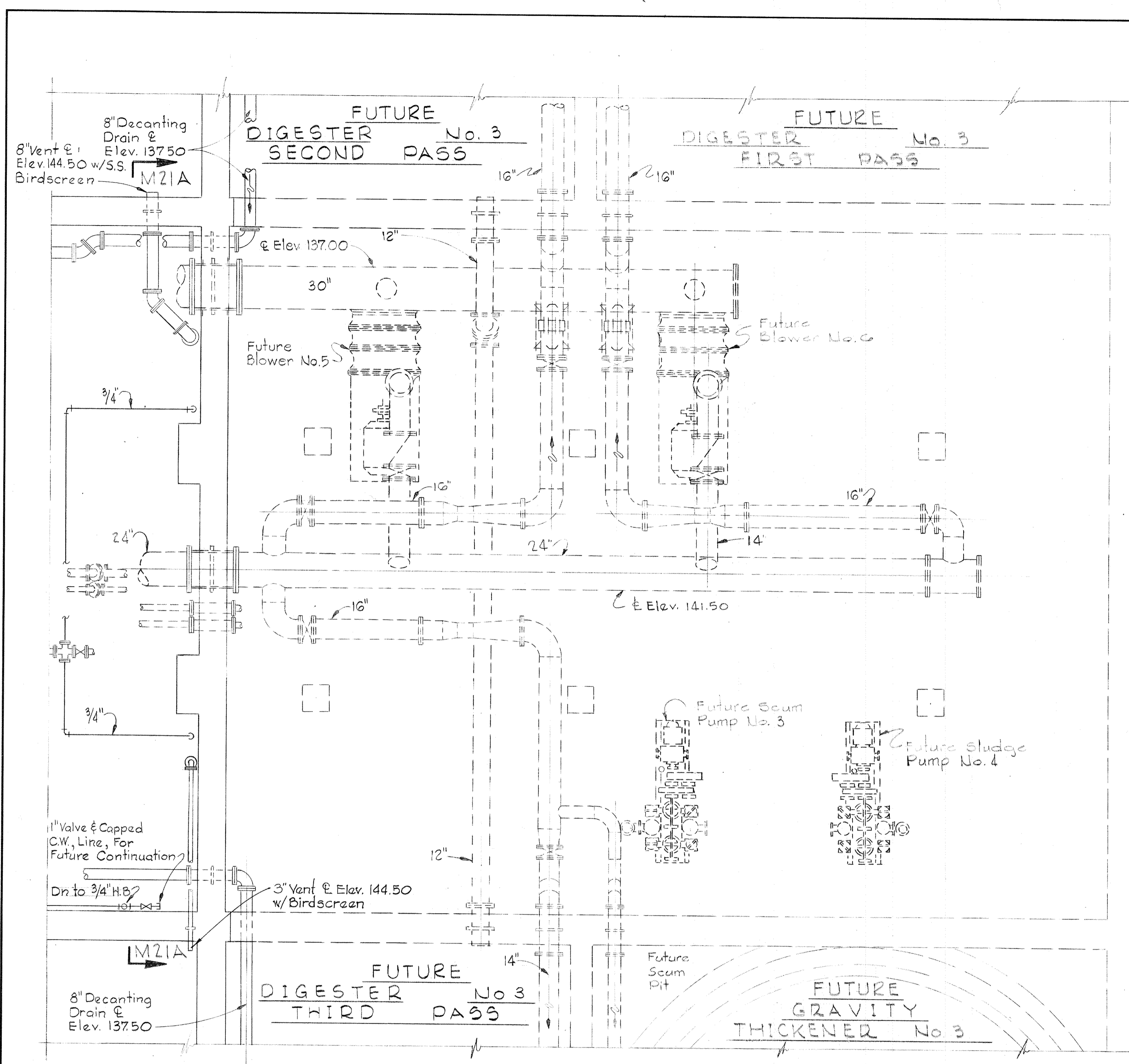
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 11/16/2017
CHIEF BUREAU OF ENGINEERING

MECHANICAL
DIGESTERS & GRAVITY THICKENERS
GRAVITY THICKENER PLAN

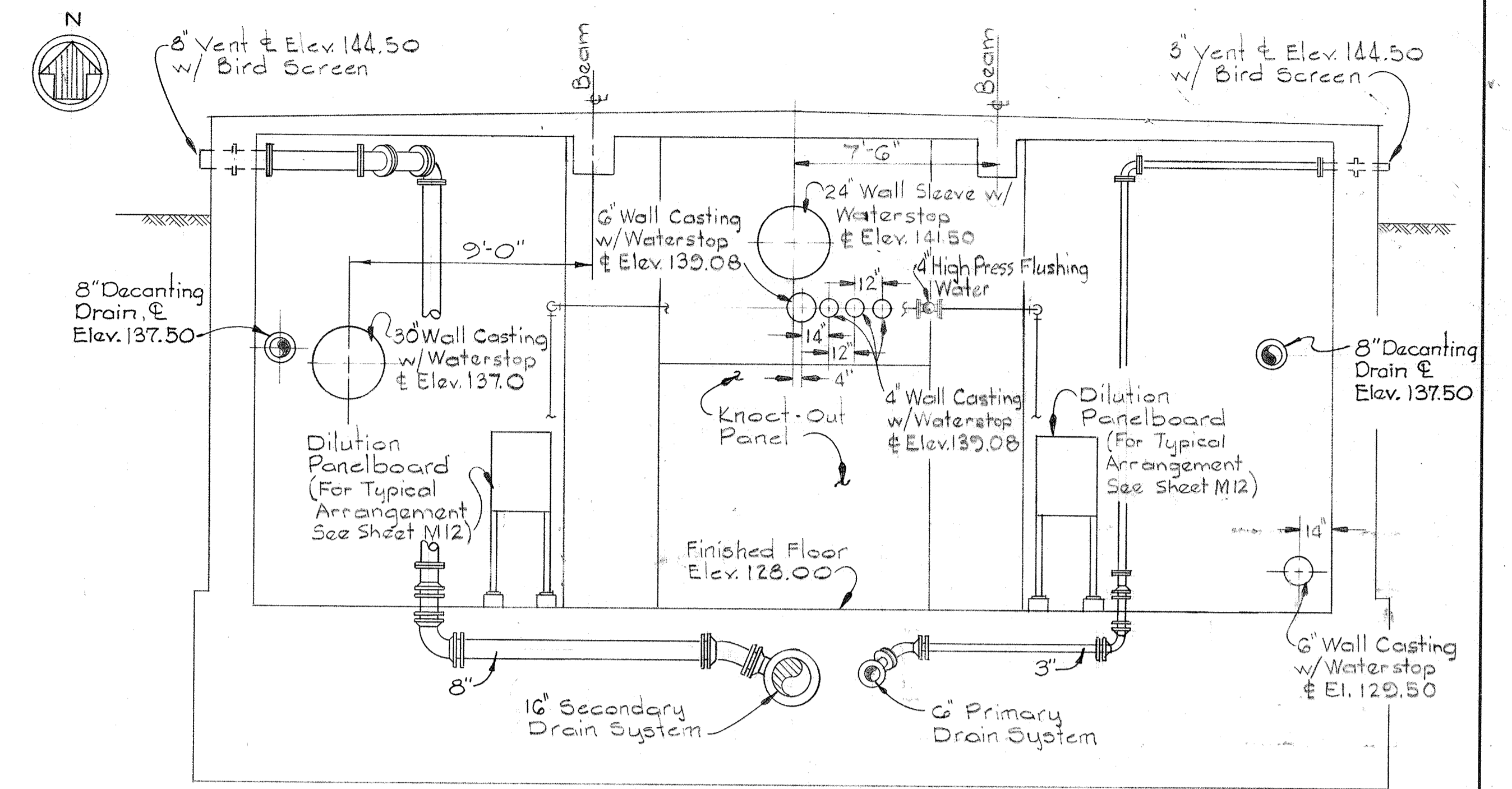
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 75 OF 128
SCALE AS NOTED

BRUNING 441510 32872

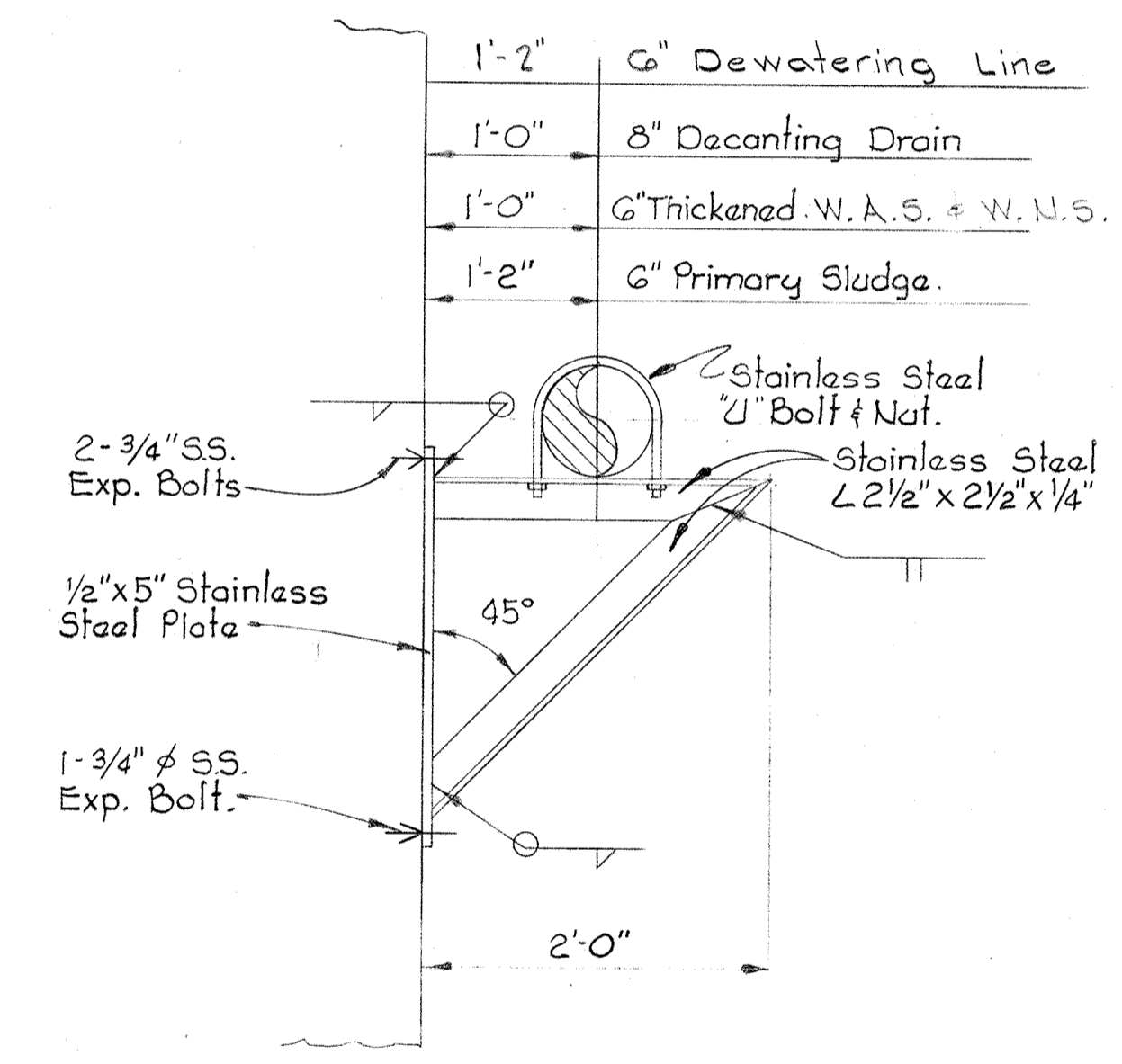


FUTURE PLAN - DIGESTER No. 3 AND PIPE GALLERY
Scale: 1/4" = 1'-0"

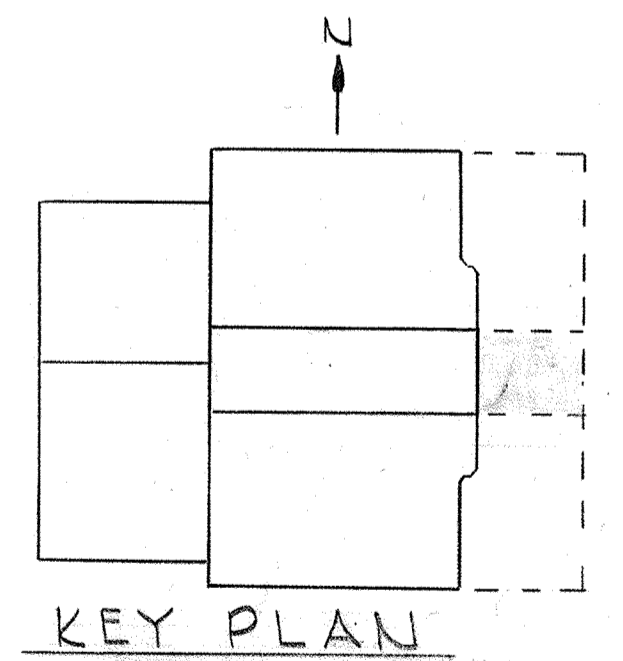


SECTION M21A/M10, M18 & M21
Scale: 1/4" = 1'-0"

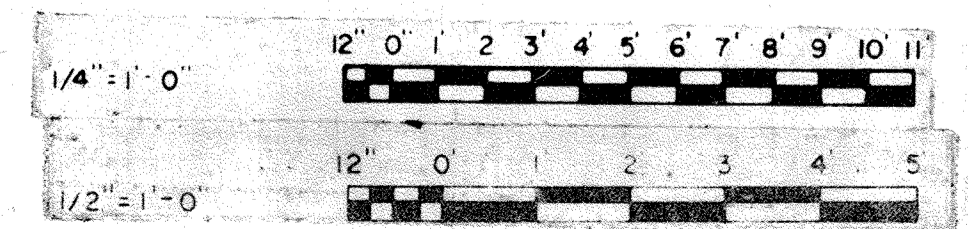
Note: Wall Sleeves Shall Be Installed And Plugged In End Wall For Future Pipe Extensions.



DETAIL M21B/M14, M15, & M19
Scale: 1" = 1'-0"



KEY PLAN



JAMES A. FEDERLINE, INC.
AS BUILT DRAWING

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3/20/75
W. O. Liberty
CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 501-S

MECHANICAL
DIGESTERS & GRAVITY THICKENERS
FUTURE EXPANSION PLAN

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

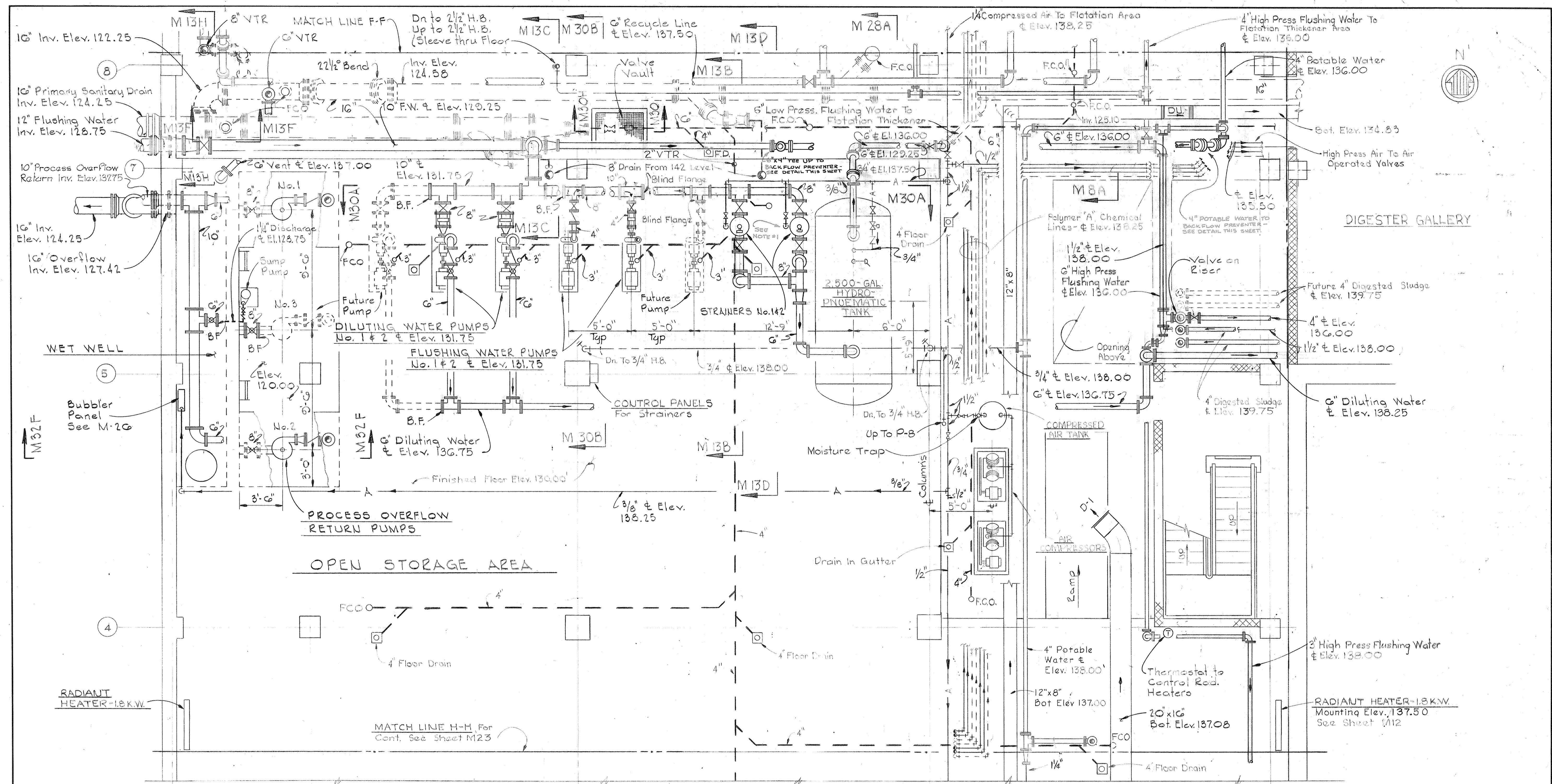
DRAWING
NO. 76
OF 128

SCALE
AS
NOTED

W. O. 6887

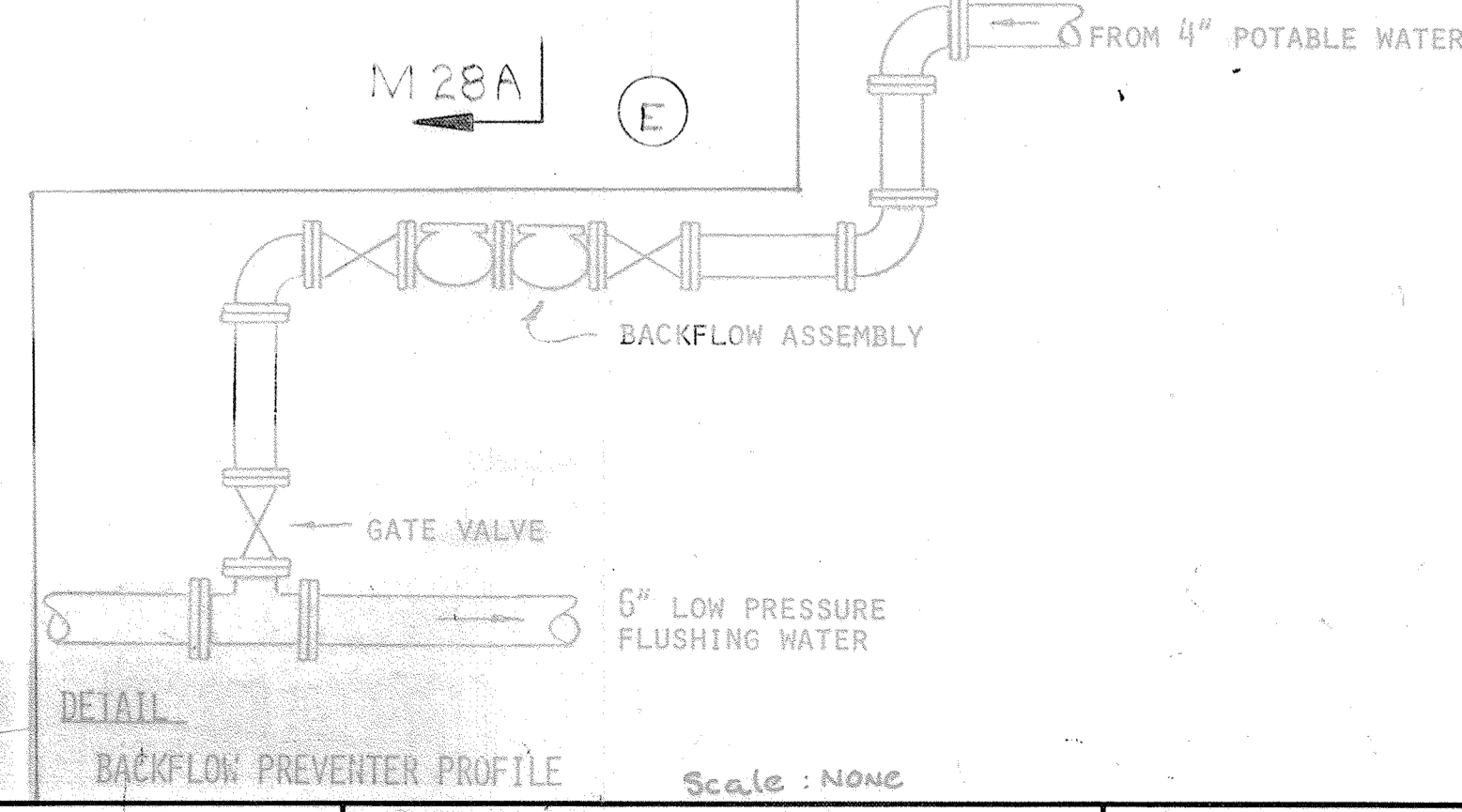
SHEET M-21

BRUNING 44-510 18392



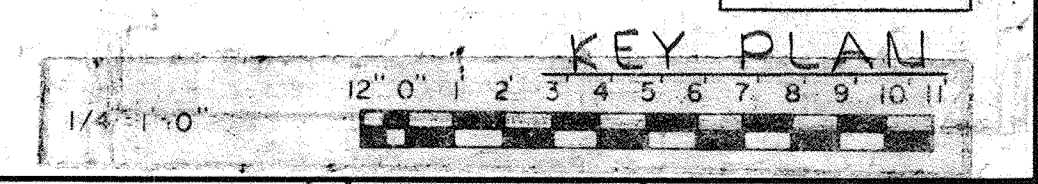
PLAN AT ELEVATION 130.00 - NORTH

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

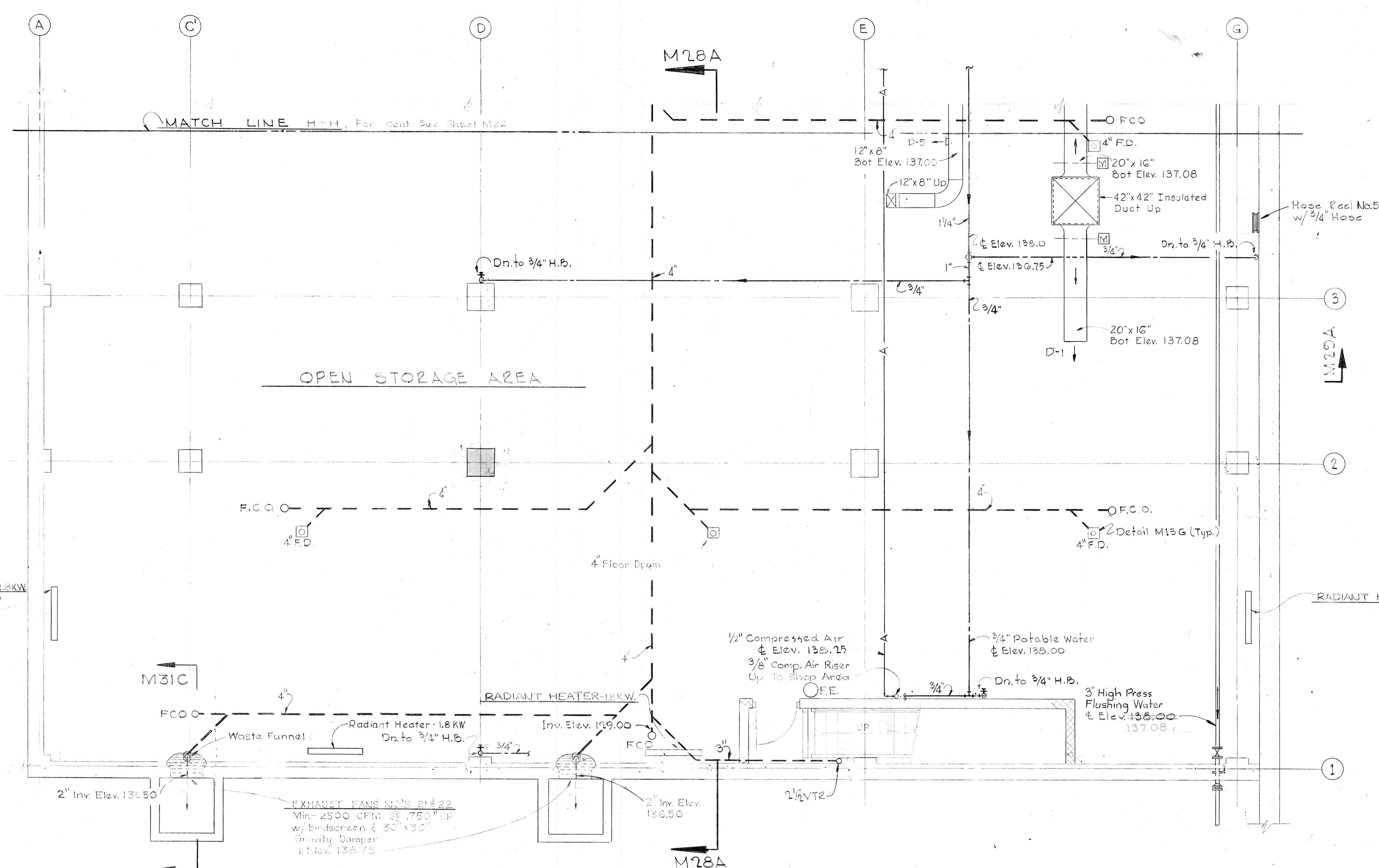


- Notes:**
- 1- For Schematic Of Air Compressor Piping See Sheet M30
 - 2- For Schematic Of Hydro-pneumatic Piping System See Sheet M30

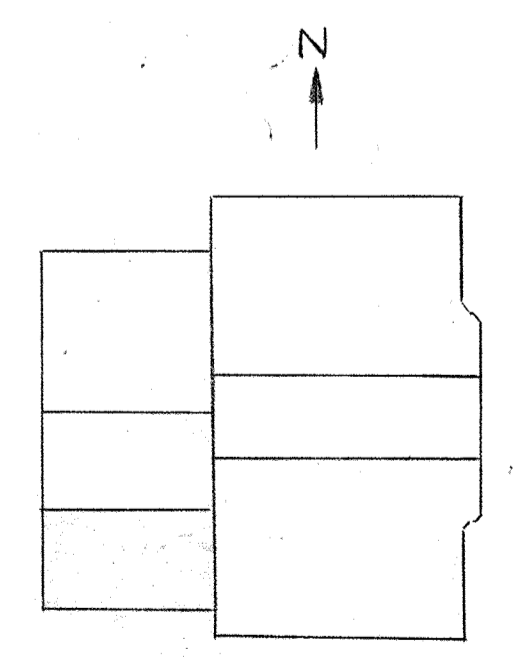
JAMES A. FEDERLINE INC.
 AS BUILT DRAWING
 FOR CORRELATION SEE JAFI SHOP DRAWING CPD-2



<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/20/75 CHIEF-BUREAU OF ENGINEERING</p>	<p>CONTRACT NO. 501-S</p>	<p>MECHANICAL DEWATERING BUILDING PLAN ELEV. 130.0 - NORTH</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 77 OF 128 SCALE AS NOTED SHEET M-22</p>
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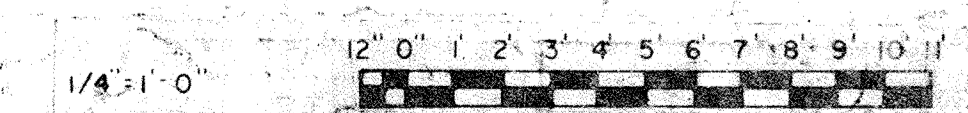


PLAN ELEVATION 130.00 SOUTH
Scale 1/4" = 1'-0"



KEY PLAN

JAMES A. FEDERLINE INC.
AS BUILT DRAWING
FOR CORRELATION SEE JAFI SHOP DRAWING 4-ASP

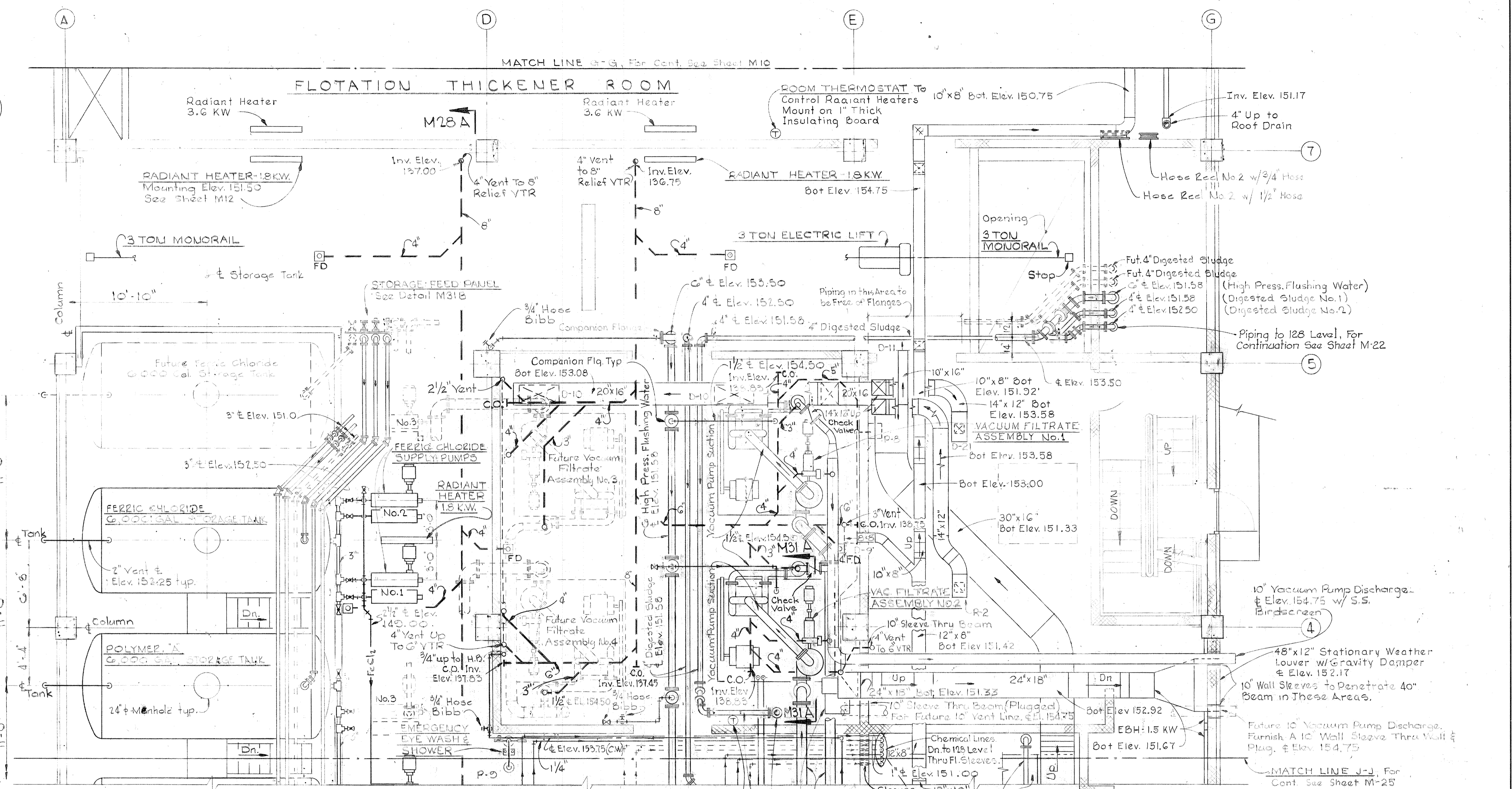
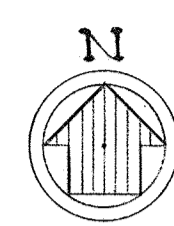


WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE 3/20/15 CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 501-S	MECHANICAL DEWATERING BUILDING PLAN ELEV. 130.0-SOUTH	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 78 OF 128 SCALE AS NOTED
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W. O. 6887

SHEET M-23

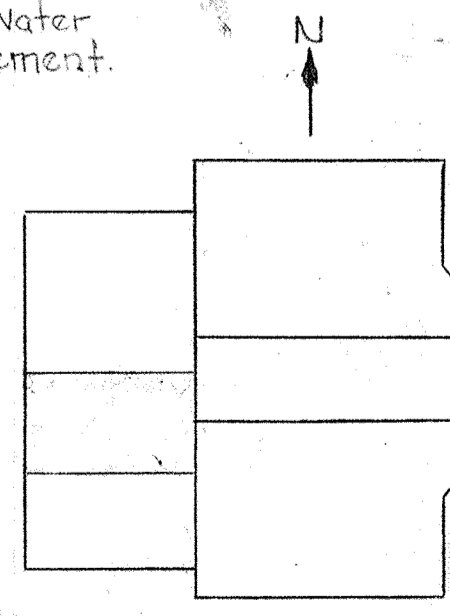
BRUNING 44510 18992



PLAN - ELEVATION 142.00 - NORTH
Scale 1/4" = 1'-0"

- NOTES -

1. - Drainage Piping to Future Vacuum Filtrate Pumps and Snubbers to be Extended Above Base Slabs and Capped in Area Locations. Similar to Locations Required by Items Purchased for Assemblies Nos. 1 & 2. Caps to be Flush with Finished Floor.
2. - All Branch Vents to Run Near Underside of Beams, Where Possible & Pitch Back to Risers.
3. - All Floor Drains to Be 4".
4. - Check Valves on Vacuum Filtrate Snubber Discharge to Be the Same Type Used on Air Blower System in Digester Pipe Gallery.
5. - At Areas Where Drain Piping Requires a Cleanout & is Close to Beams, Provide a Lateral with an Offset Cleanout. Note Pertains to All Floors.



JAMES A. FEDERLINE INC.
AS-BUILT DRAWING
FOR CORRELATION SEE JAFI SHOP DRAWING CPD-5, INT-1

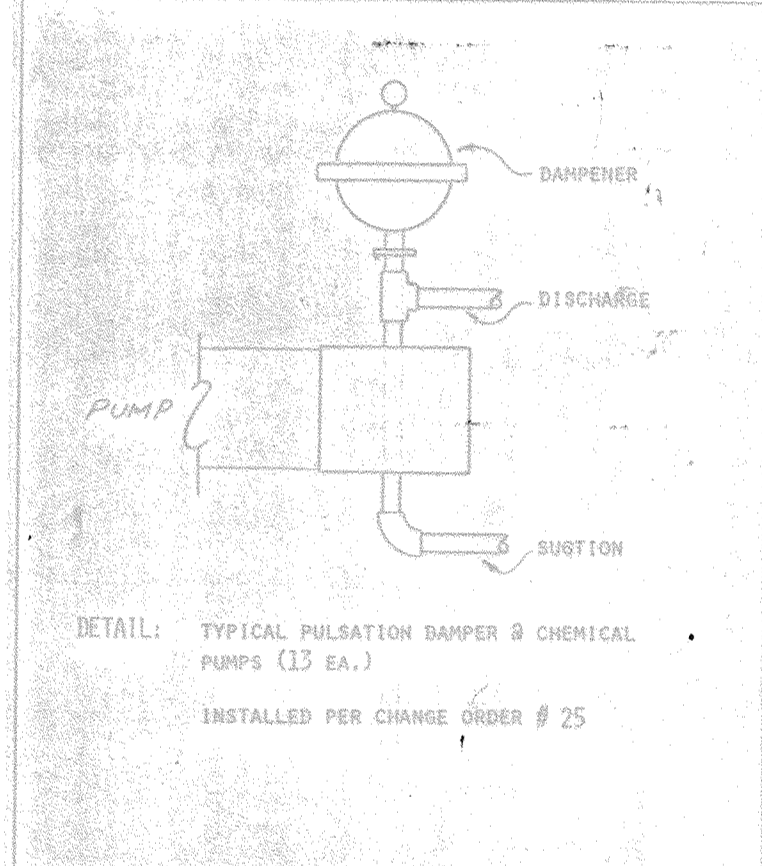
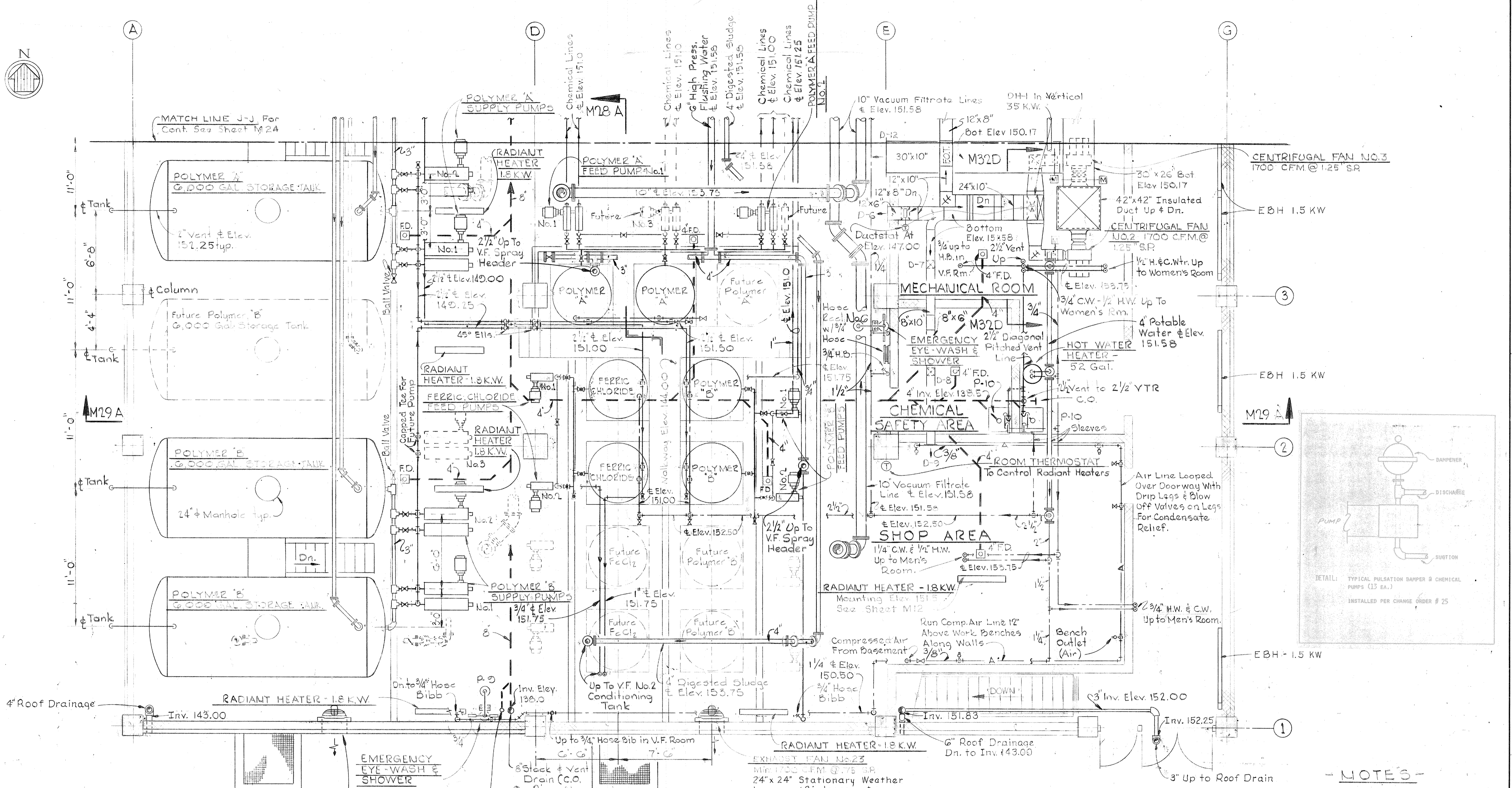
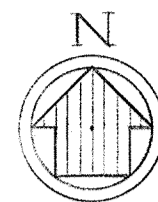
Provide Tee Fittings w/ Threaded Capped Ends @ High Point

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3/10/15 DATE W. O. Gilbert CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 501-S	MECHANICAL DEWATERING BUILDING PLAN ELEV. 142.0-NORTH	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 79 OF 128 SCALE AS NOTED
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W. O. 6887

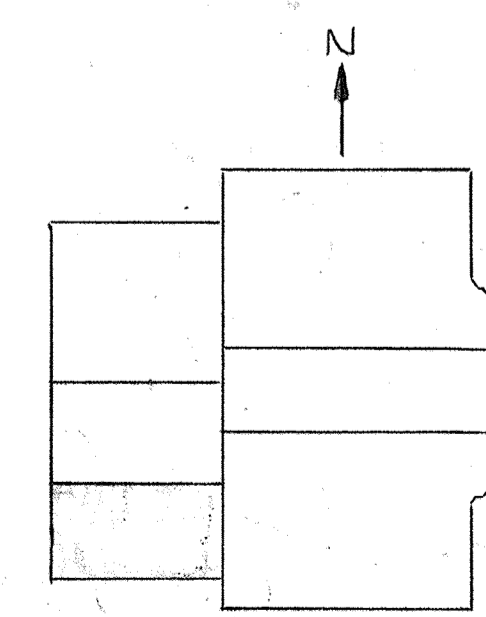
SHEET M-24

BRUNING 44510 18592



PLAN - ELEVATION 142.00 - SOUTH
Scale 1/4" = 1'-0"

- NOTES**
- 1 - For Typical Day Tank Detail See Sheet M-31.
 - 2 - For Emergency Eye Wash and Shower Detail See Sheet M-31.
 - 3 - For Chemical Piping Schematic See Sheet M-3.
 - 4 - For Hot Water Heater Schematic See Sheet M-31.
 - 5 - For Air Device Schedule See Sheet M-32.
 - 6 - For Schematic Piping Diagram See Sheet M-5.



JAMES A. FEDERLINE INC.
AS BUILT DRAWING
FOR CORRELATION SEE JAFI SHOP DRAWING CPD-6, INT-P-3

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3/20/15
CHIEF-BUREAU OF ENGINEERING

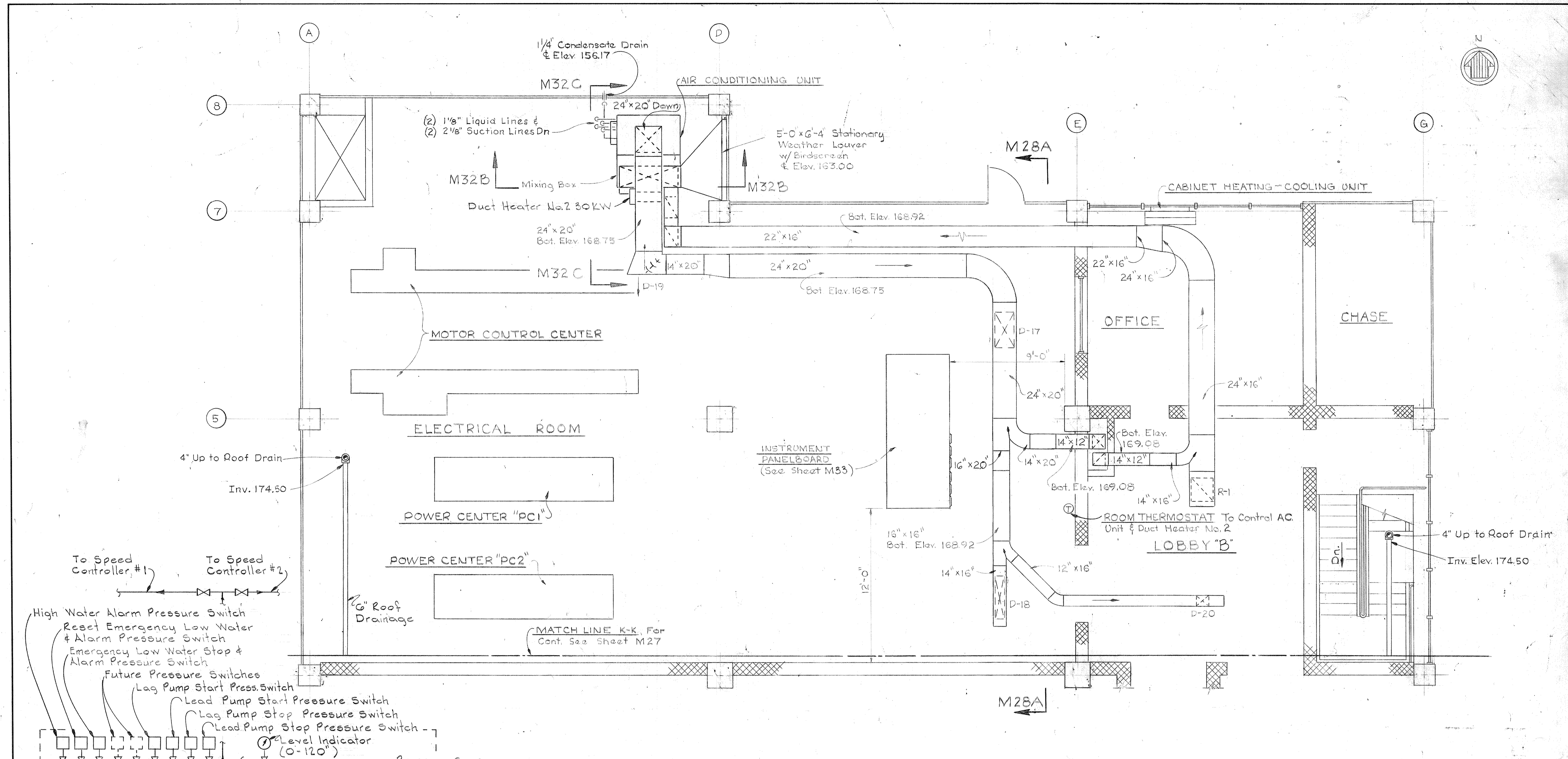
CONTRACT NO. 501-S

MECHANICAL
DEWATERING BUILDING
PLAN ELEV. 142.0 - SOUTH

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

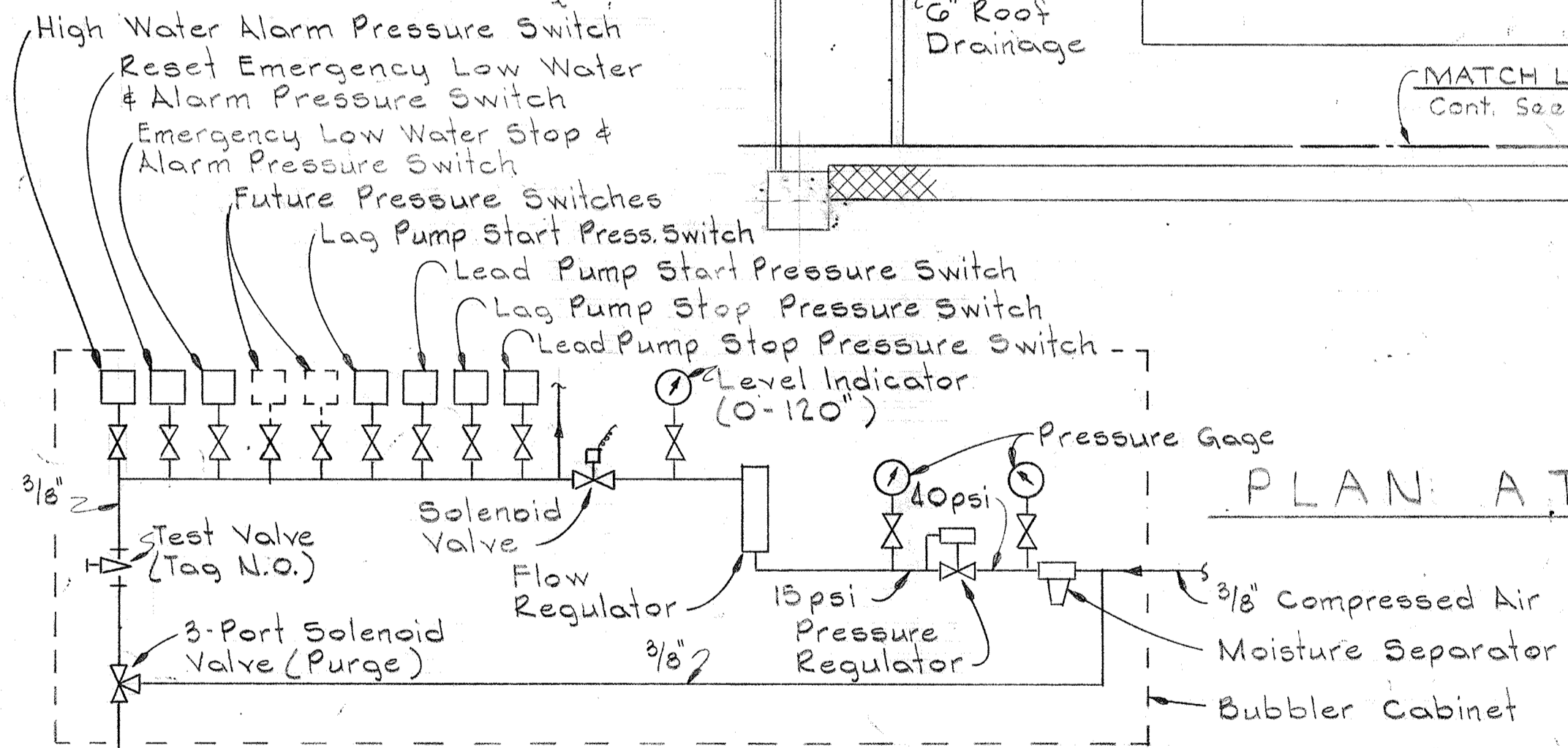
DRAWING NO. 80 OF 128
SCALE AS NOTED

BRUNING 44510 18392



PLAN AT ELEVATION 156.00 - NORTH

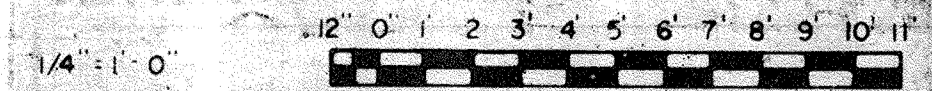
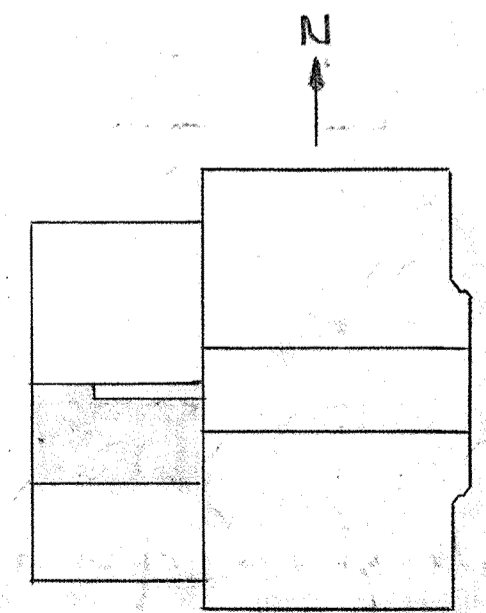
Scale: 1/4" = 1'-0"



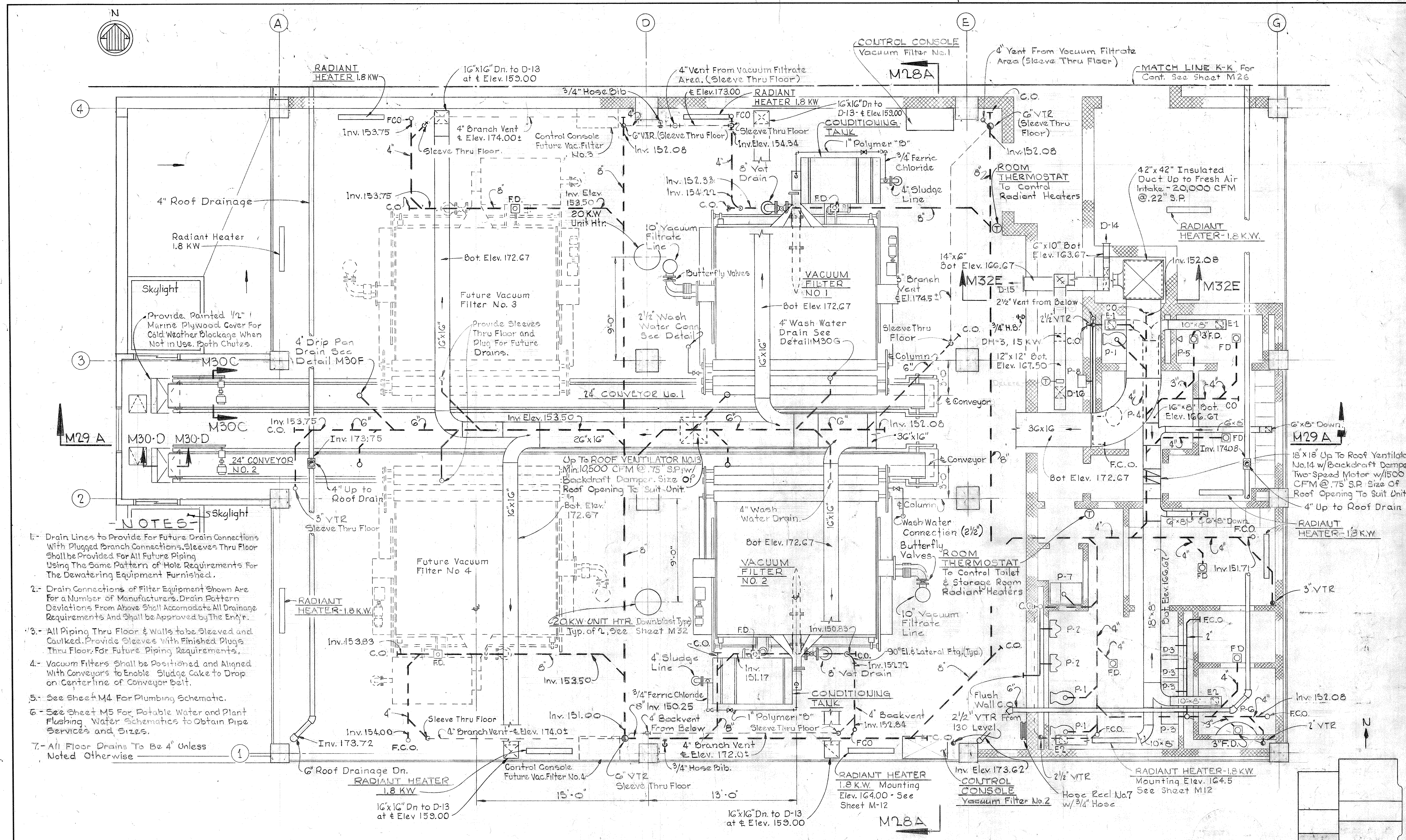
- Reset Emergency Low Water & Alarm Elev. 125.50
- High Water Alarm Elev. 127.00
- Start Lag Pump if Lead Pump has not Started Elev. 126.00
- Highest Speed (1130 rpm) Elev. 125.50, Start Lead Pump
- Lowest Speed (730 rpm) Elev. 124.00
- Stop Either Pump Elev. 123.50 (One Switch for Each Pump)
- Emergency Low Water Stop, All Pumps and Alarm Elev. 123.00
- Bottom of Bubbler Pipe Elev. 122.00

- Notes:
1. Face of cabinet shall have statement "0" on level indicator = Elev. 122.00.
 2. Bubbler schematic is for Process Overflow Return Pumps.

BUBBLER SCHEMATIC
No Scale



<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE 3/6/75 W. O. Federline CHIEF BUREAU OF ENGINEERING</p>	<p>CONTRACT NO. 501 - S</p>	<p>JAMES A. FEDERLINE INC. AS BUILT DRAWING MECHANICAL DEWATERING BUILDING PLAN ELEV. 156.0 - NORTH</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 81 OF 128 SCALE AS NOTED SHEET M-26</p>
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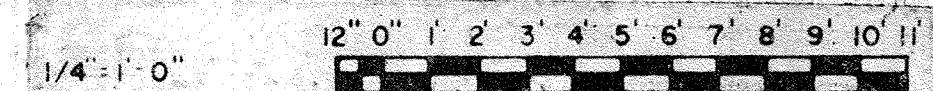


- NOTES**
- 1- Drain Lines to Provide For Future Drain Connections With Plugged Branch Connections. Sleeves Thru Floor Shall be Provided For All Future Piping Using The Same Pattern of Hole Requirements For The Dewatering Equipment Furnished.
 - 2- Drain Connections of Filter Equipment Shown Are For a Number of Manufacturers. Drain Pattern Deviations From Above Shall Accomodate All Drainage Requirements And Shall be Approved by The Engr.
 - 3- All Piping Thru Floor & Walls to be Sleeved and Caulked. Provide Sleeves With Finished Plugs Thru Floor. For Future Piping Requirements.
 - 4- Vacuum Filters Shall be Positioned and Aligned With Conveyors to Enable Sludge Cake to Drop on Centerline of Conveyor Belt.
 - 5- See Sheet M4 For Plumbing Schematic.
 - 6- See Sheet M5 For Potable Water and Plant Flushing Water Schematics to Obtain Pipe Services and Sizes.
 - 7- All Floor Drains To Be 4" Unless Noted Otherwise

PLAN ELEVATION 156.00 SOUTH
Scale 1/4" = 1'-0"

JAMES A. FEDERLINE INC.
AS BUILT DRAWING
FOR CORRELATION SEE JAFI SHOP DRAWING CDD-1 INT P2

KEY PLAN

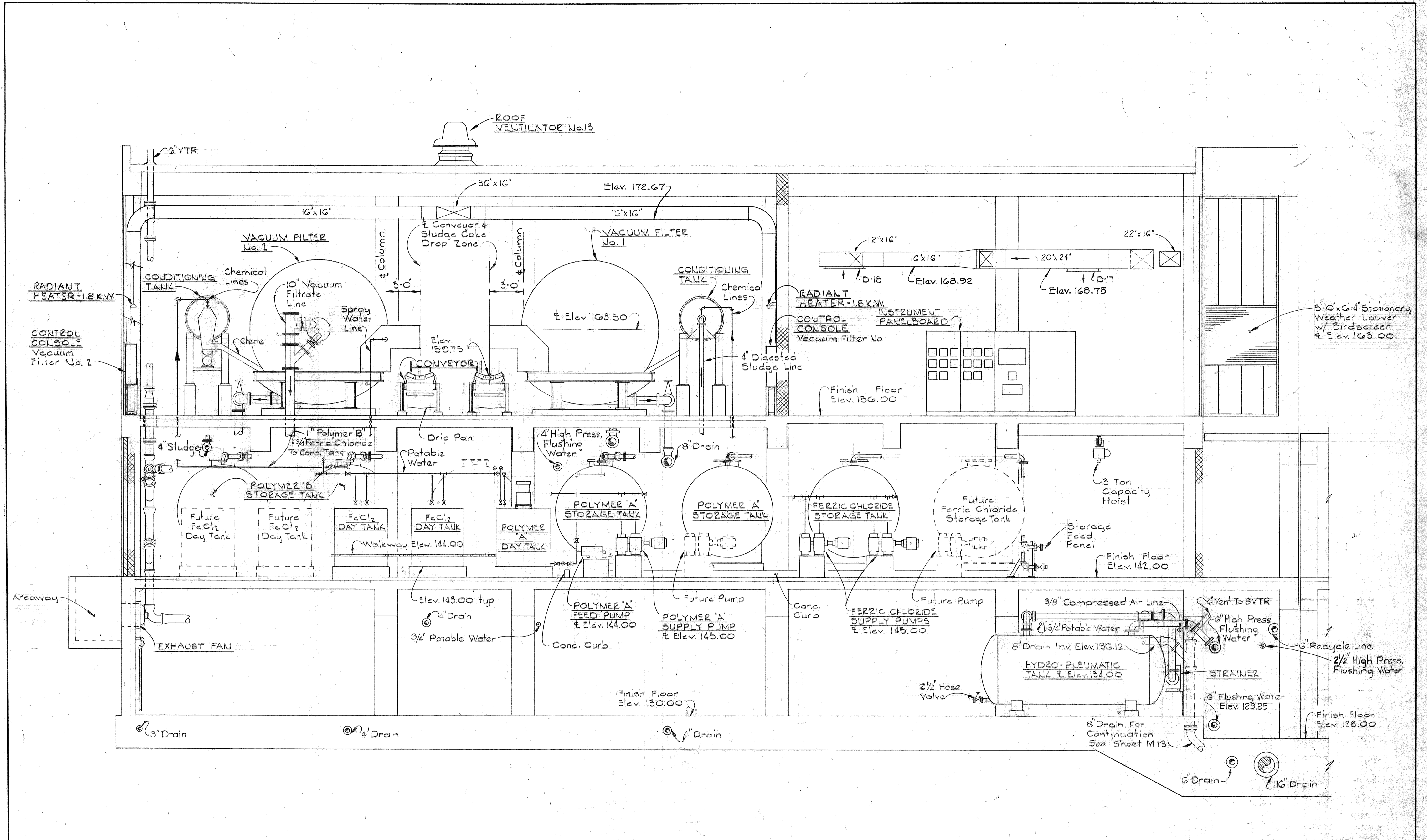


WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>3/20/15</i> DATE <i>W.O. Libbert</i> CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 501-S	MECHANICAL DEWATERING BUILDING PLAN ELEV. 156.0 - SOUTH	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 82 OF 128 SCALE AS NOTED
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W. O. 6887

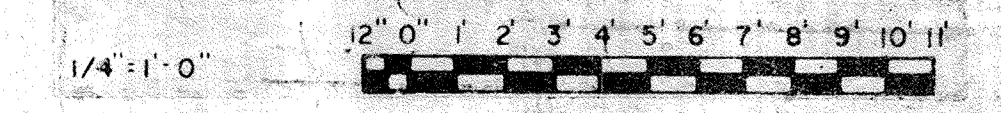
SHEET M-27

BRUNING 44510 18392



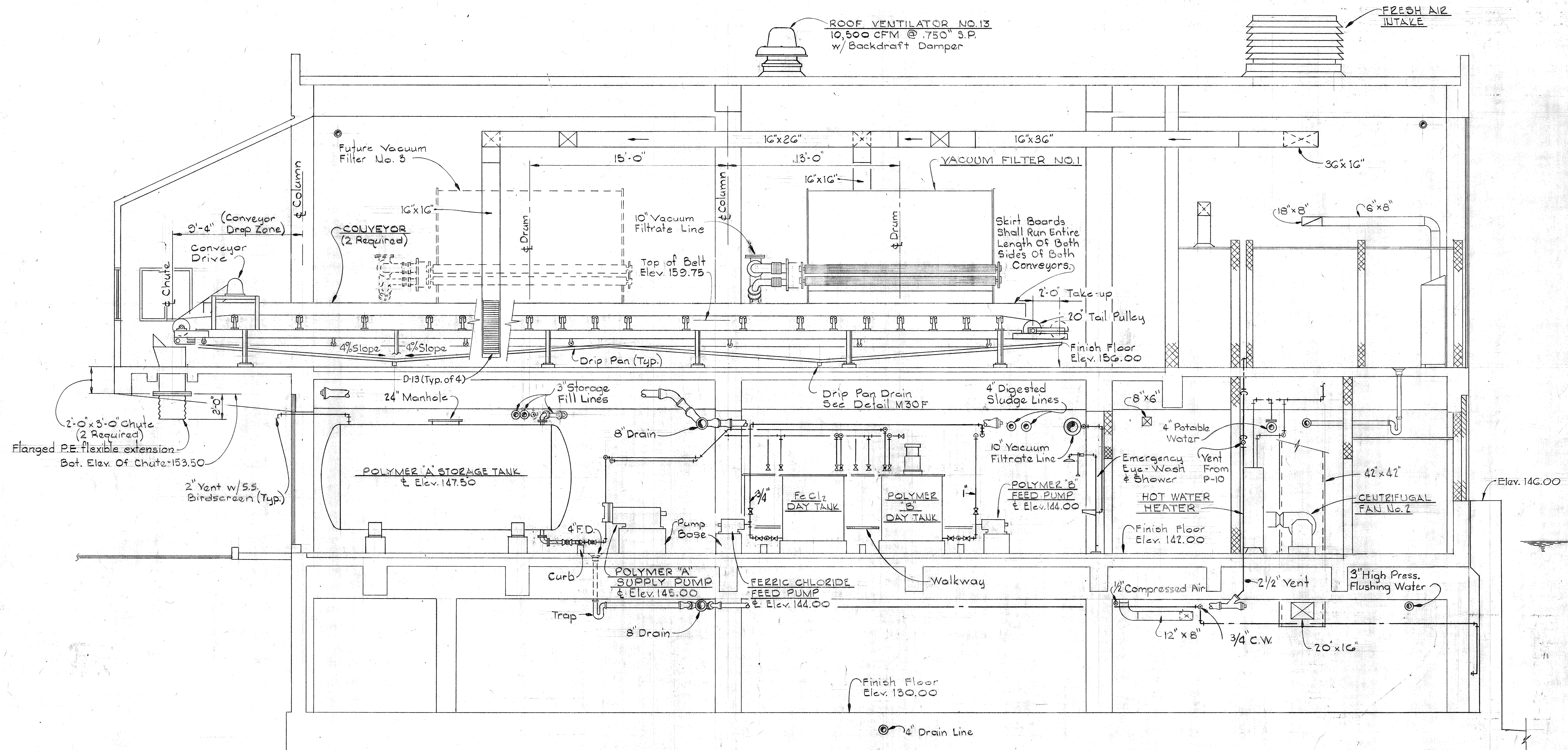
SECTION M28A / M22, M23, M24, M25, M26 & M27
 Scale: 1/4" = 1'-0"

JAMES A. FEDERLINE INC.
 AS BUILT DRAWING



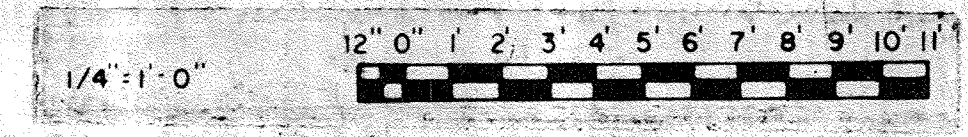
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/20/75 W. O. Federline CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 501-S	MECHANICAL DEWATERING BUILDING SECTIONS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 83 OF 128 SCALE AS NOTED
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BRUNING 44510 10392



- Notes:
1. All Chemical Lines (Supply) To Chemical Day Tanks, Shall Extend Into The Respective Day Tank By 10'
 2. Potable Water To Day Tanks Shall Terminate With Hose Valves Above The Respective Tank So Arranged To Allow Delivery Into The Tank Without The Use Of A Hose, But Will Allow Quick And Easy Access For Hose Assembly, If Required.

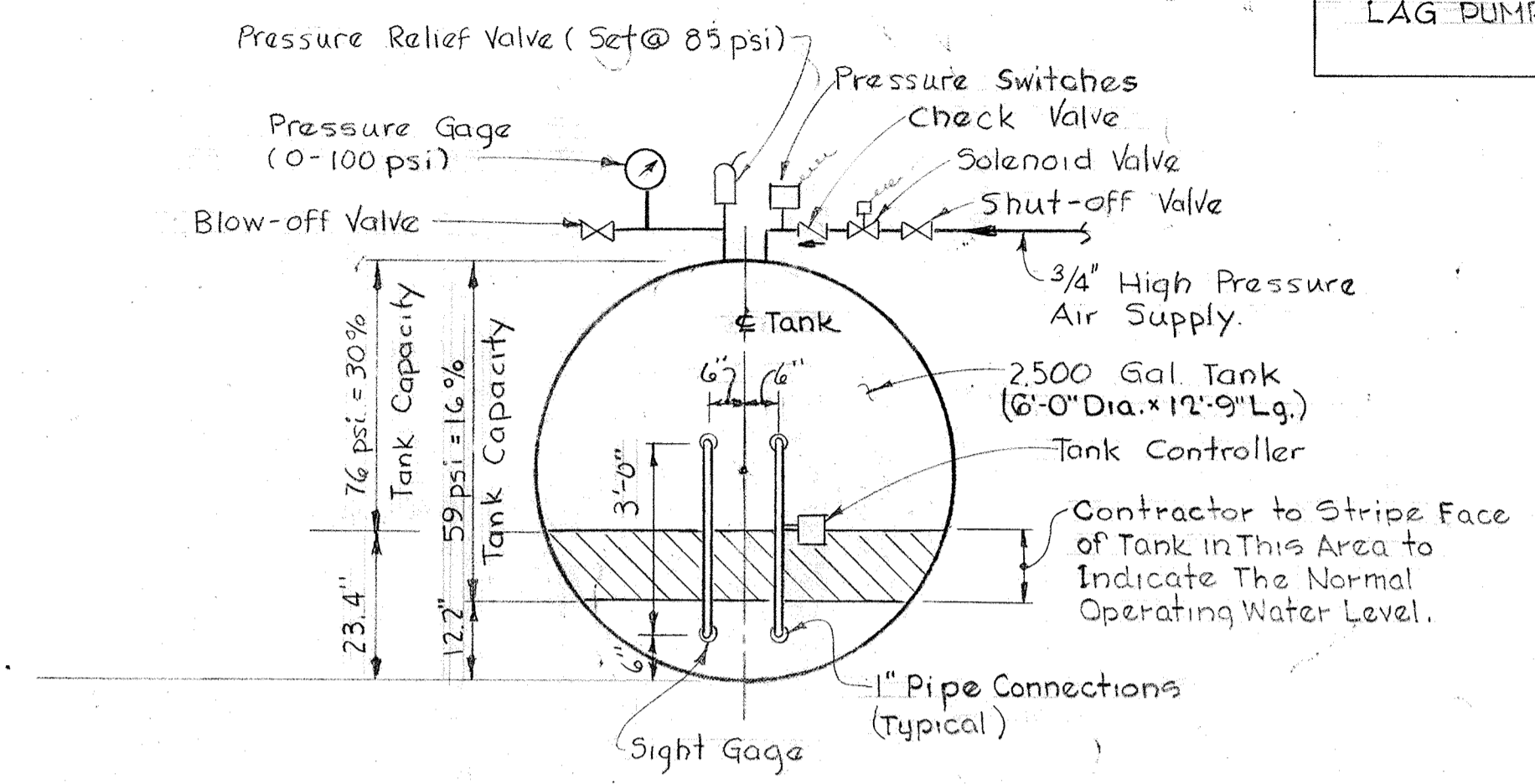
SECTION M20A/M23, M25 & M27
Scale: 1/4"=1'-0"



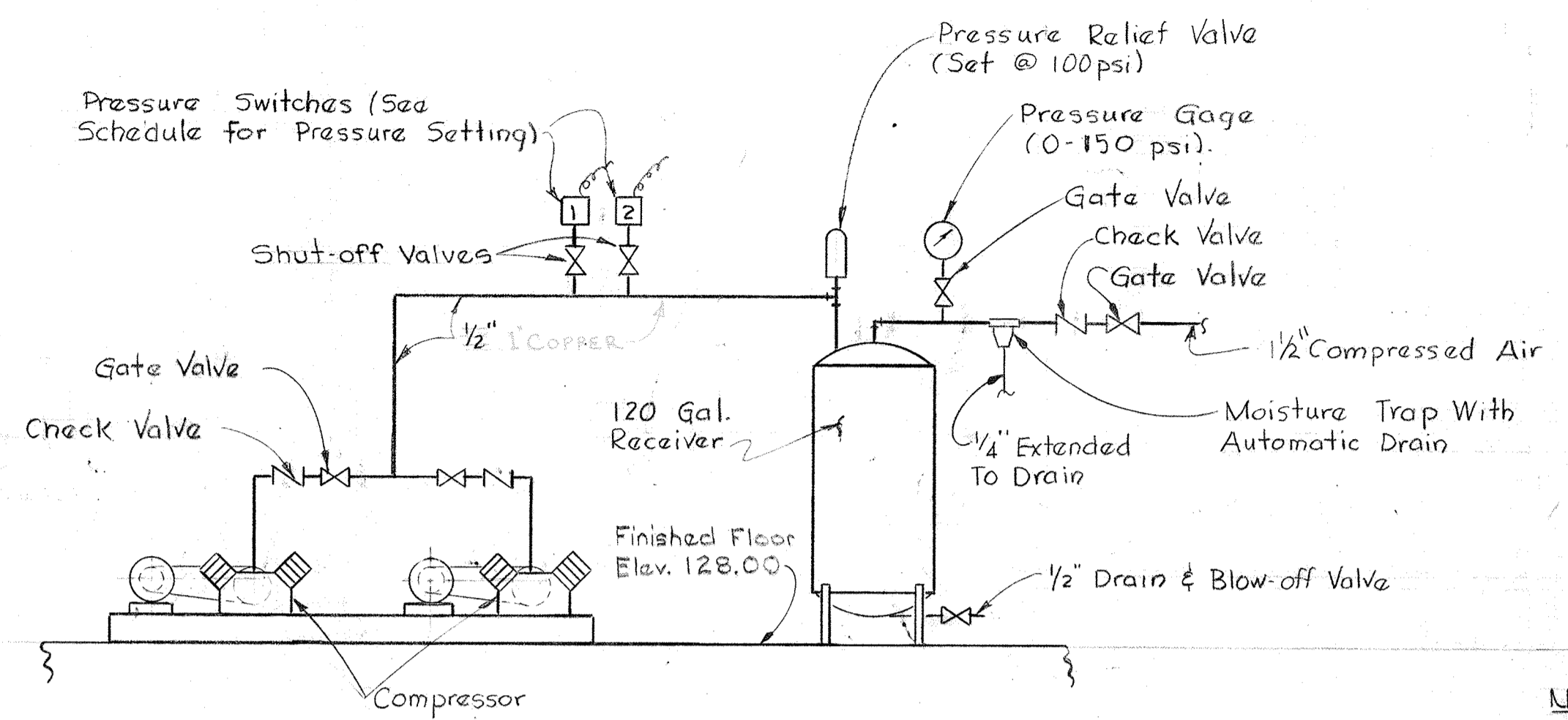
JAMES A. FEDERLINE INC.
AS BUILT DRAWING

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/20/18 W.O. Falberk CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 501-S	MECHANICAL DEWATERING BUILDING SECTIONS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 84 OF 128 SCALE AS NOTED
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SCHEDULE OF HYDROPNEUMATIC PRESSURE SWITCH SETTINGS		
EQUIPMENT CONTROLLED	STOP (PSI)	START (PSI)
LEAD PUMP	76 Float Controlled	60
LAG PUMP	76 Float Controlled	55



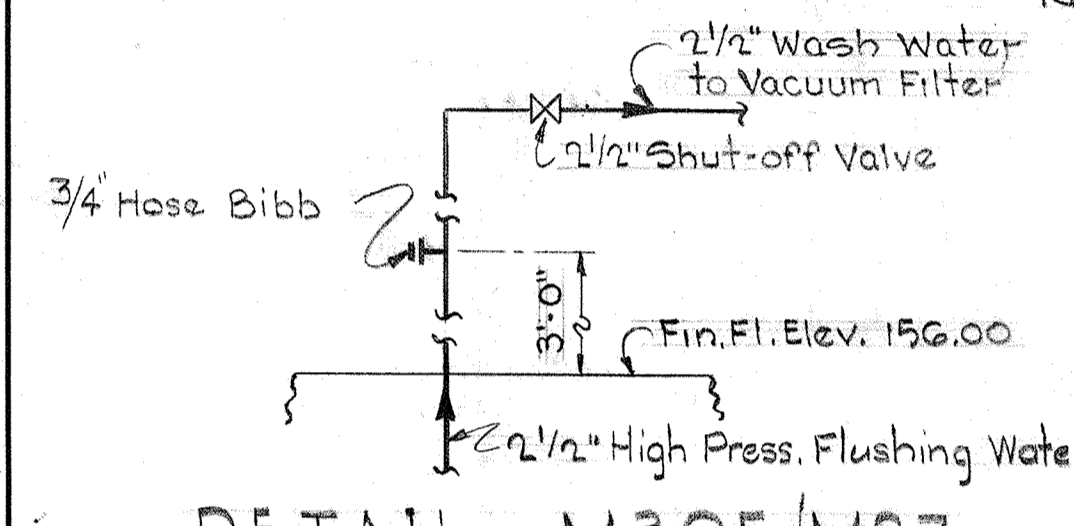
SCHMATIC PIPING FOR HYDRO-PNEUMATIC TANK
No Scale



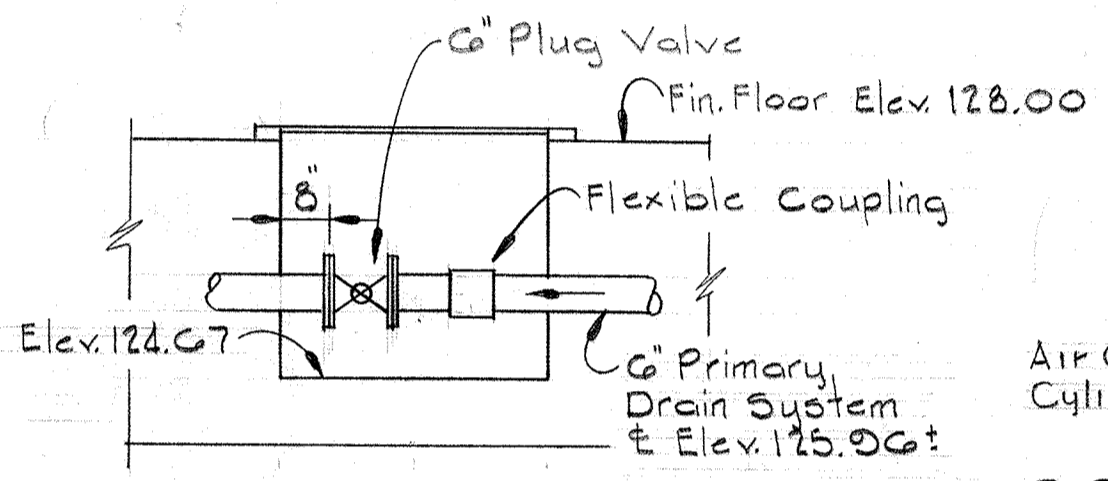
SCHMATIC OF AIR COMPRESSOR
No Scale

SCHEDULE PRESSURE SWITCH SETTING		
Pressure Switch For:	Stop (PSI)	Start (PSI)
1- Lead Compressor	95	85
2- Lead Compressor	90	80

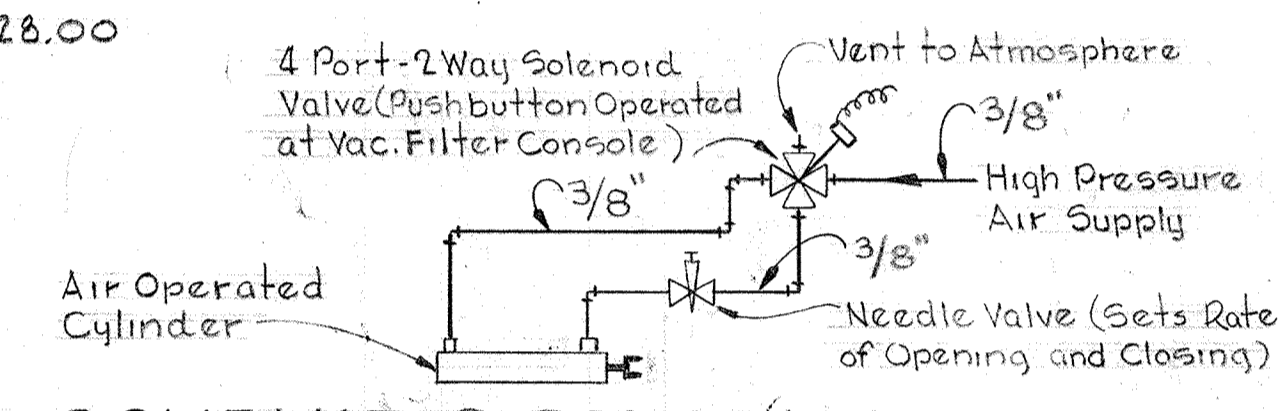
Note: Alternator Control Required For Compressors.



DETAIL M30E/M27
No Scale

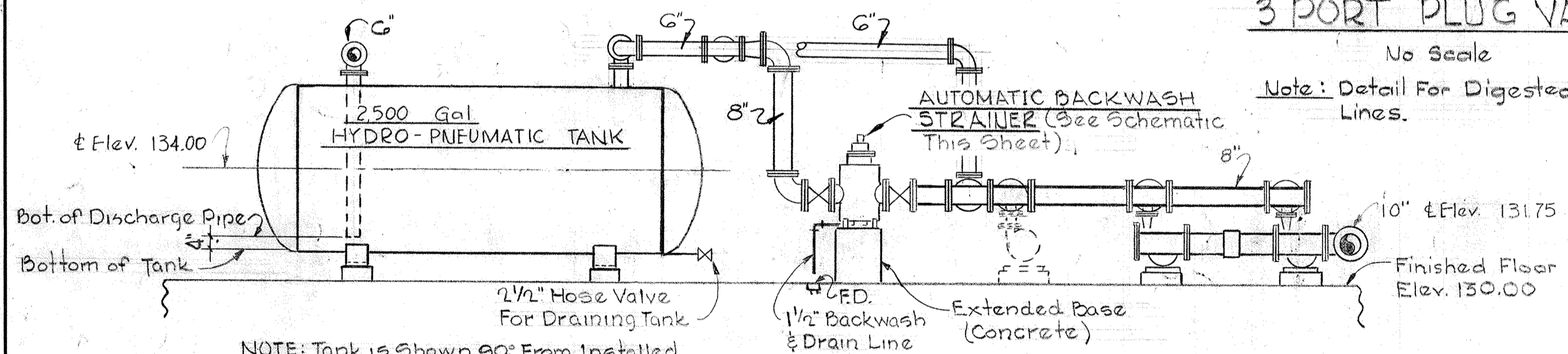


SECTION M30H/M22
Scale: 3/8" = 1'-0"



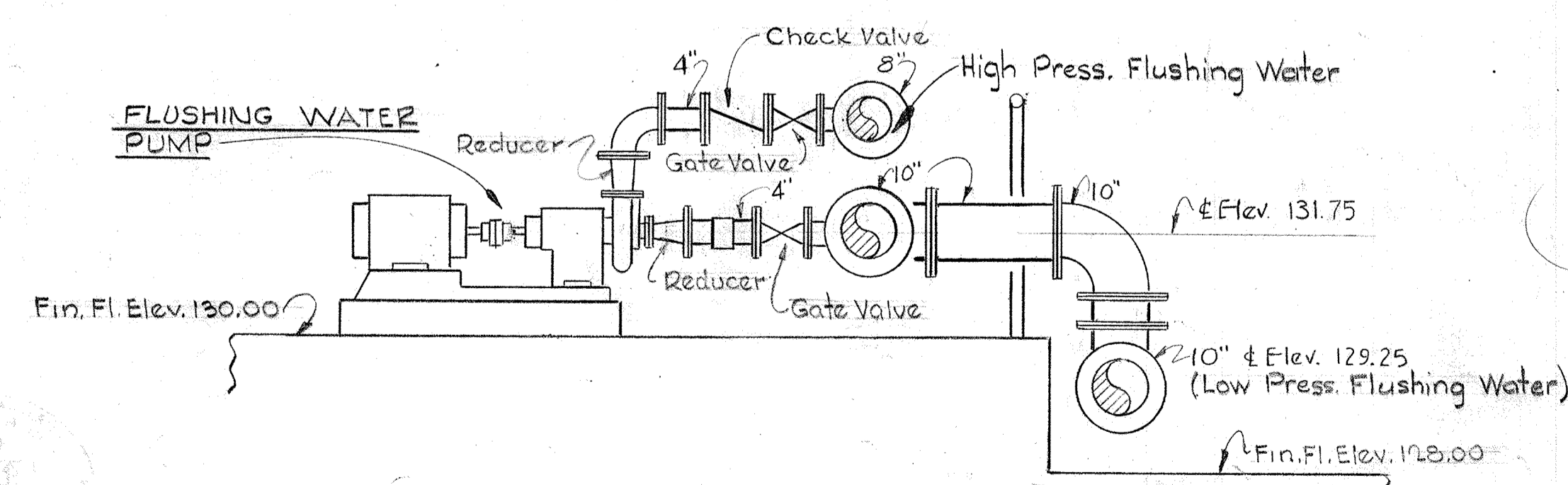
SCHMATIC DIAGRAM AIR OPERATOR FOR 3 PORT PLUG VALVE
No Scale

Note: Detail For Digested Sludge Lines.

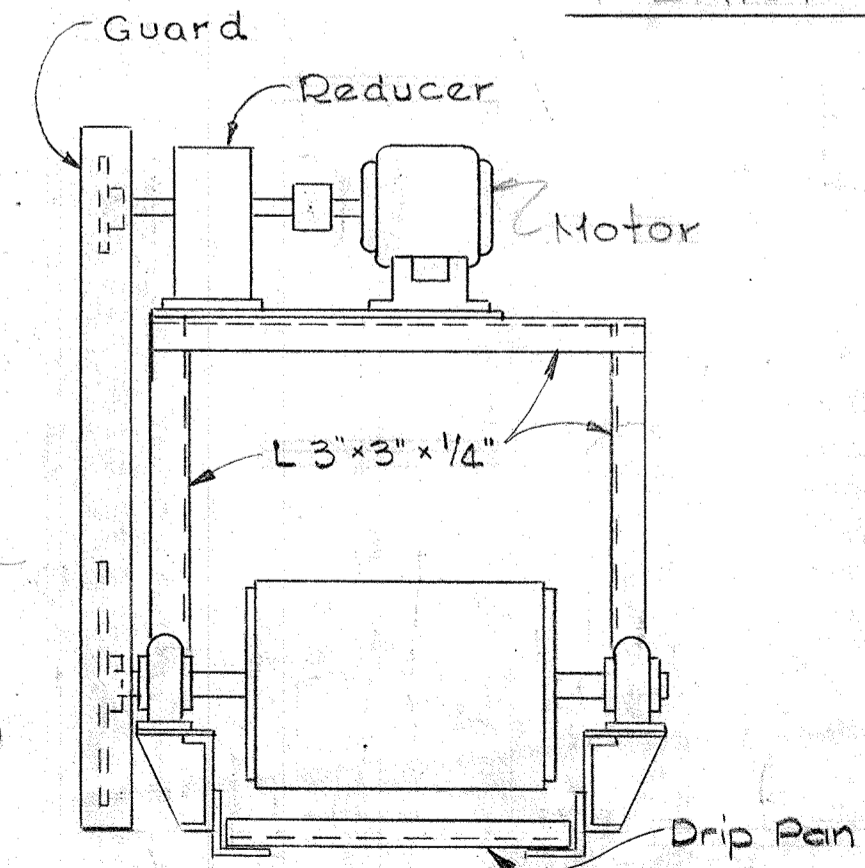


NOTE: Tank is shown 90° From Installed Position to Clarify Piping and Supports.

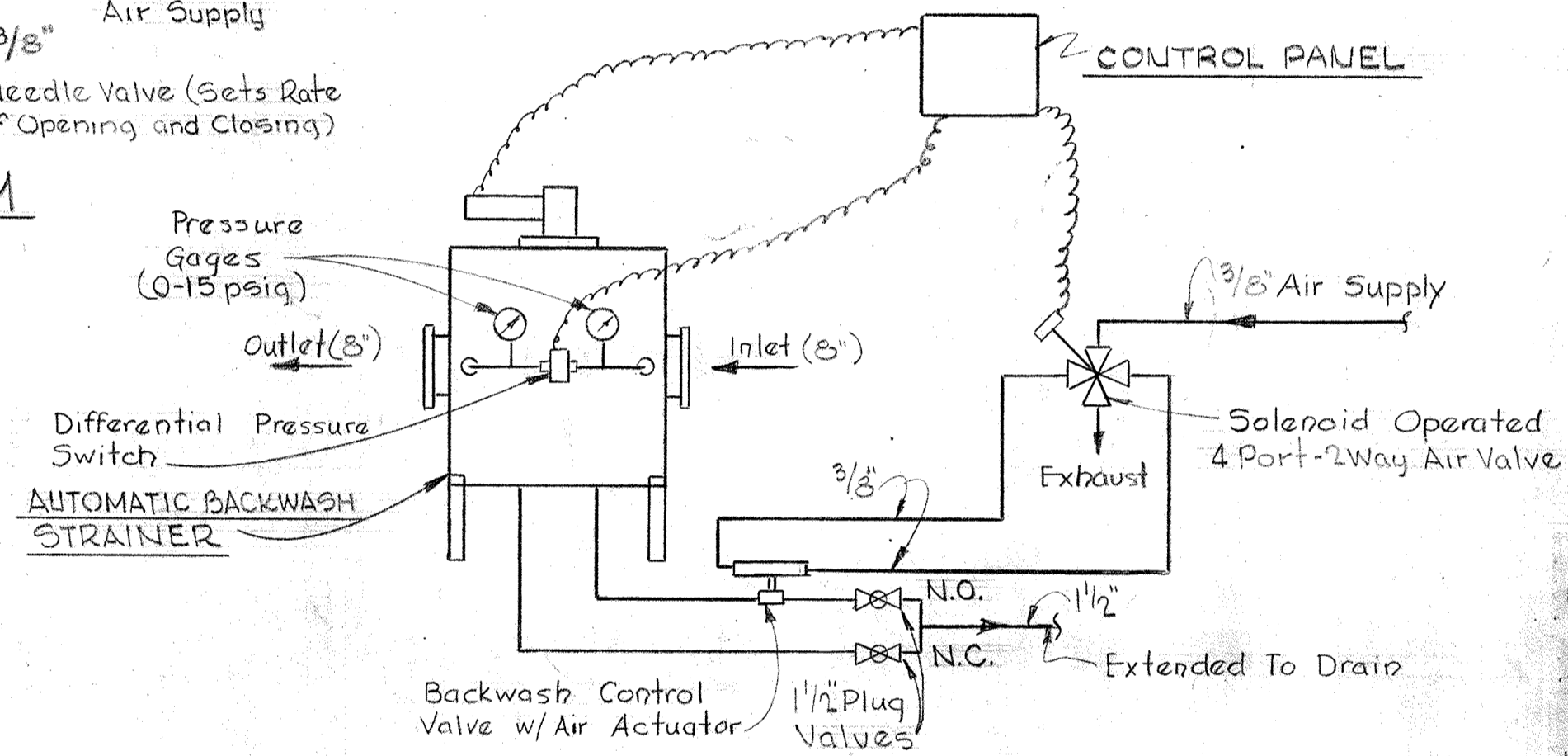
SECTION M30A/M22
Scale 1/4" = 1'-0"



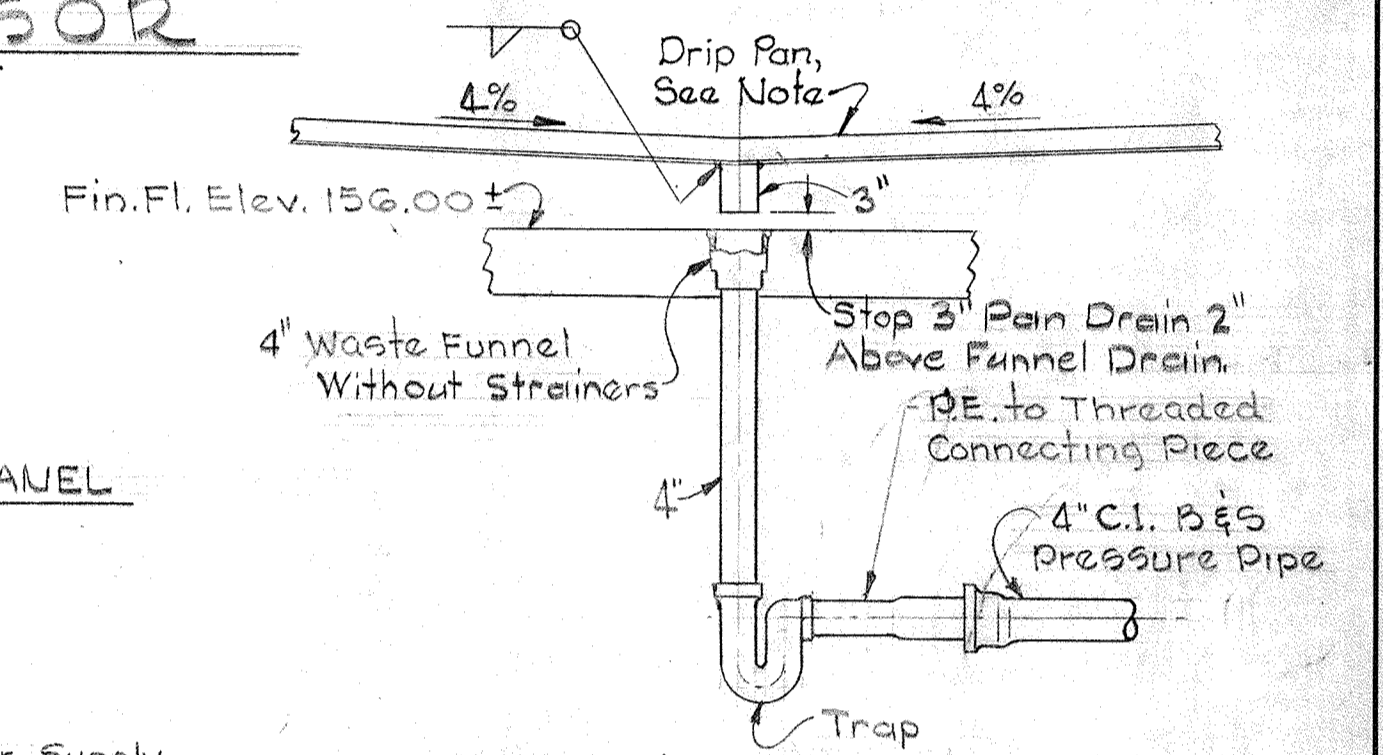
SECTION M30B/M22
Scale 1/2" = 1'-0"



SECTION M30C/M27
Scale 3/4" = 1'-0"

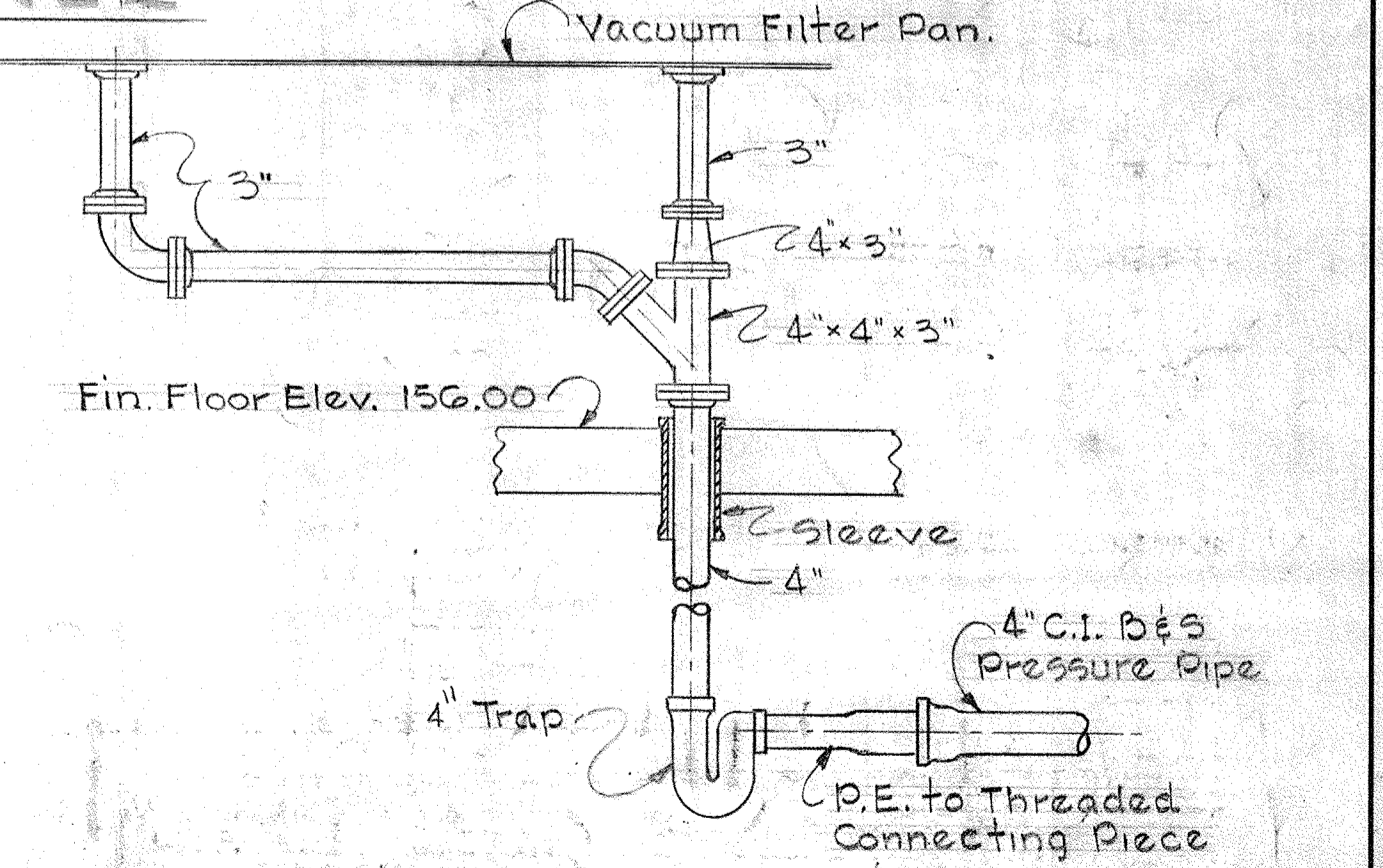
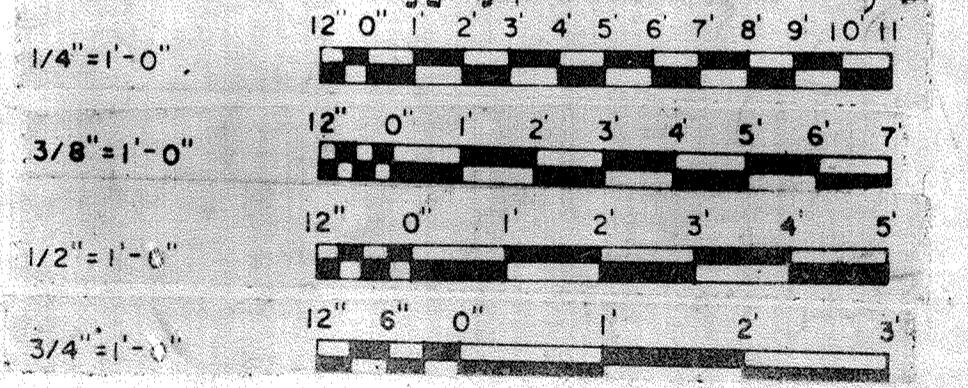


SCHMATIC CONTROL DIAGRAM PLANT PROCESS WATER STRAINER
No Scale



DETAIL M30F/M27
Scale 1/2" = 1'-0"

Note: To Be Constructed Of 16 Gauge Type 304 Stainless Steel Sheet. Edges To Be Turned Up 1/2". Pan Shall Be Adequately Supported Or Suspended To Prevent Sagging & Shall Pitch Evenly To Drain.



DETAIL M30G/M27
Scale 1/2" = 1'-0"

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HOWARD COUNTY, MARYLAND
DATE: 3/20/18
W. O. Federline
CHIEF-BUREAU OF ENGINEERING

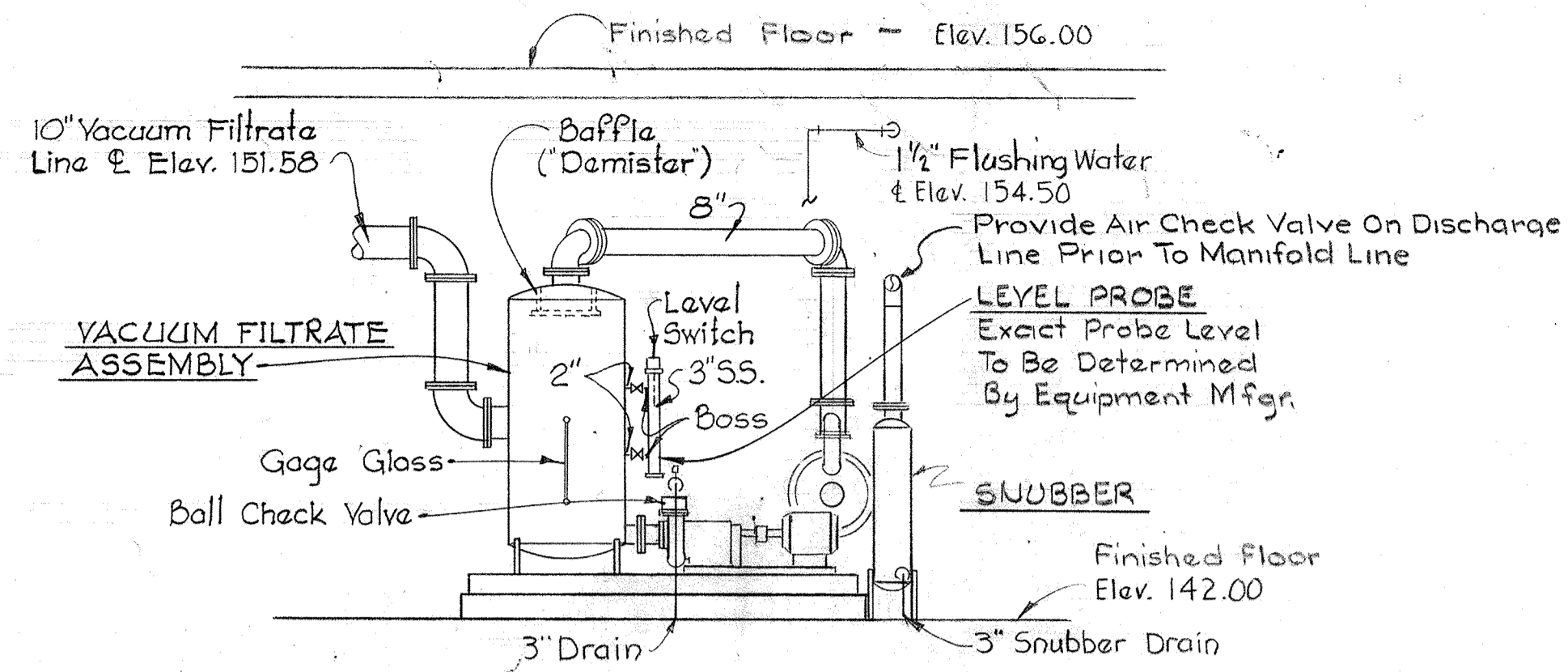
CONTRACT NO. 501-S

MECHANICAL
DEWATERING BUILDING
SECTIONS & DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 85
OF 128

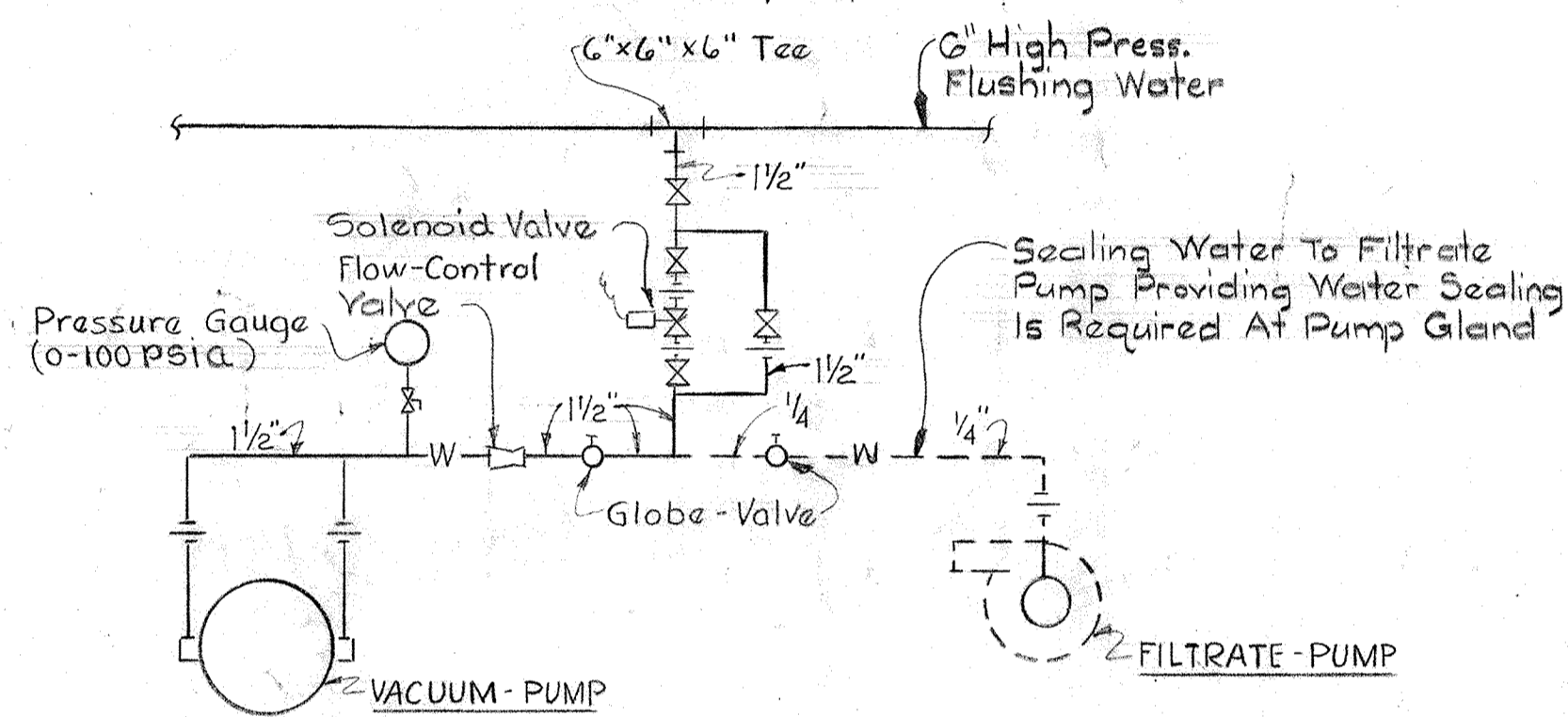
SCALE
AS
NOTED



NOTE: Both the Vacuum Filtrate Pump & Snubber Drains are Direct Coupled to the Drainage System. Provide Flexible Connectors Where Required, And Provide A Vacuum Breaker On Pump Discharge Piping, Prior To Drop Into Sanitary Drain.

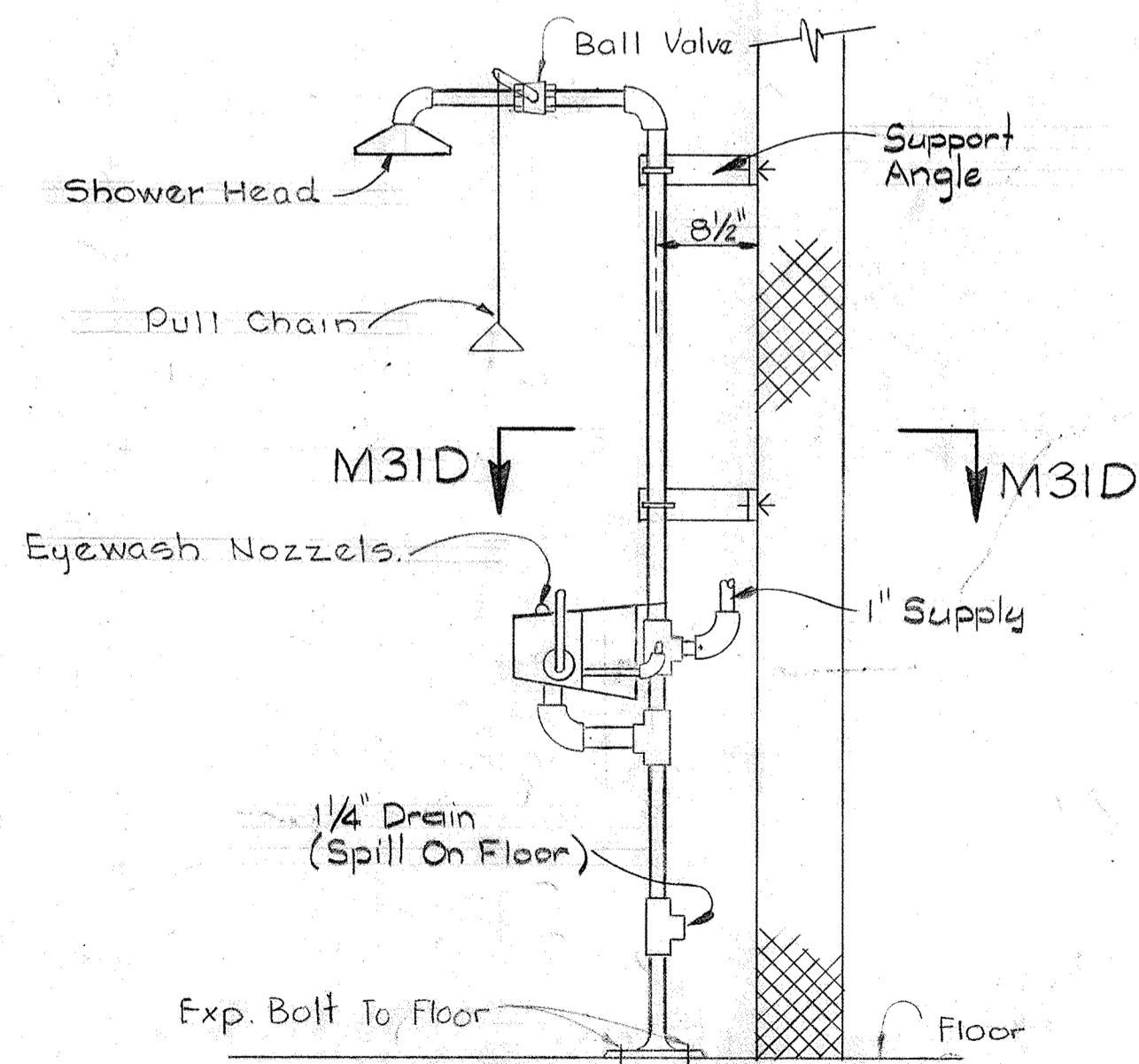
SECTION M31A/M24

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



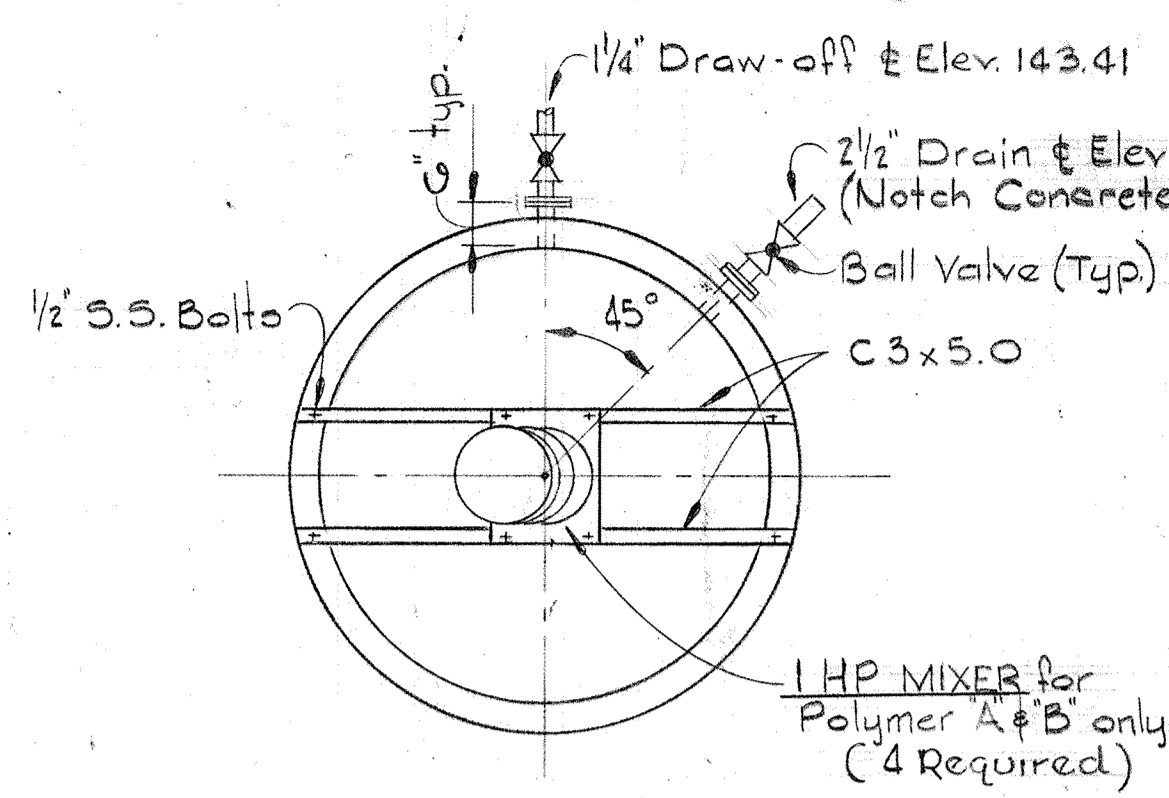
SCHEMATIC - SEALING WATER FOR VACUUM FILTRATE UNITS

No Scale

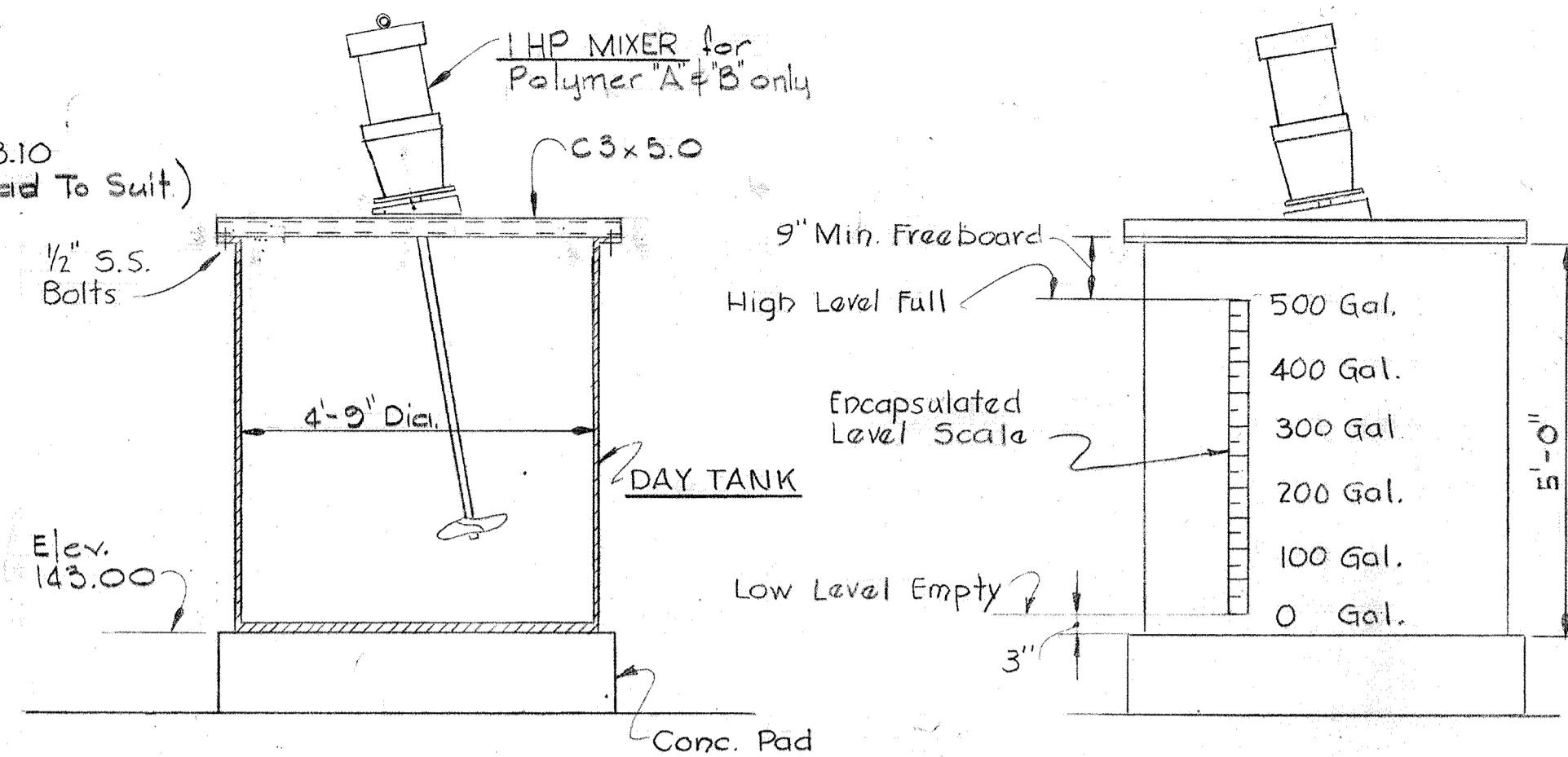


EMERGENCY SHOWER AND EYEWASH

Scale 3/4" = 1'-0"



PLAN



SECTION

ELEVATION

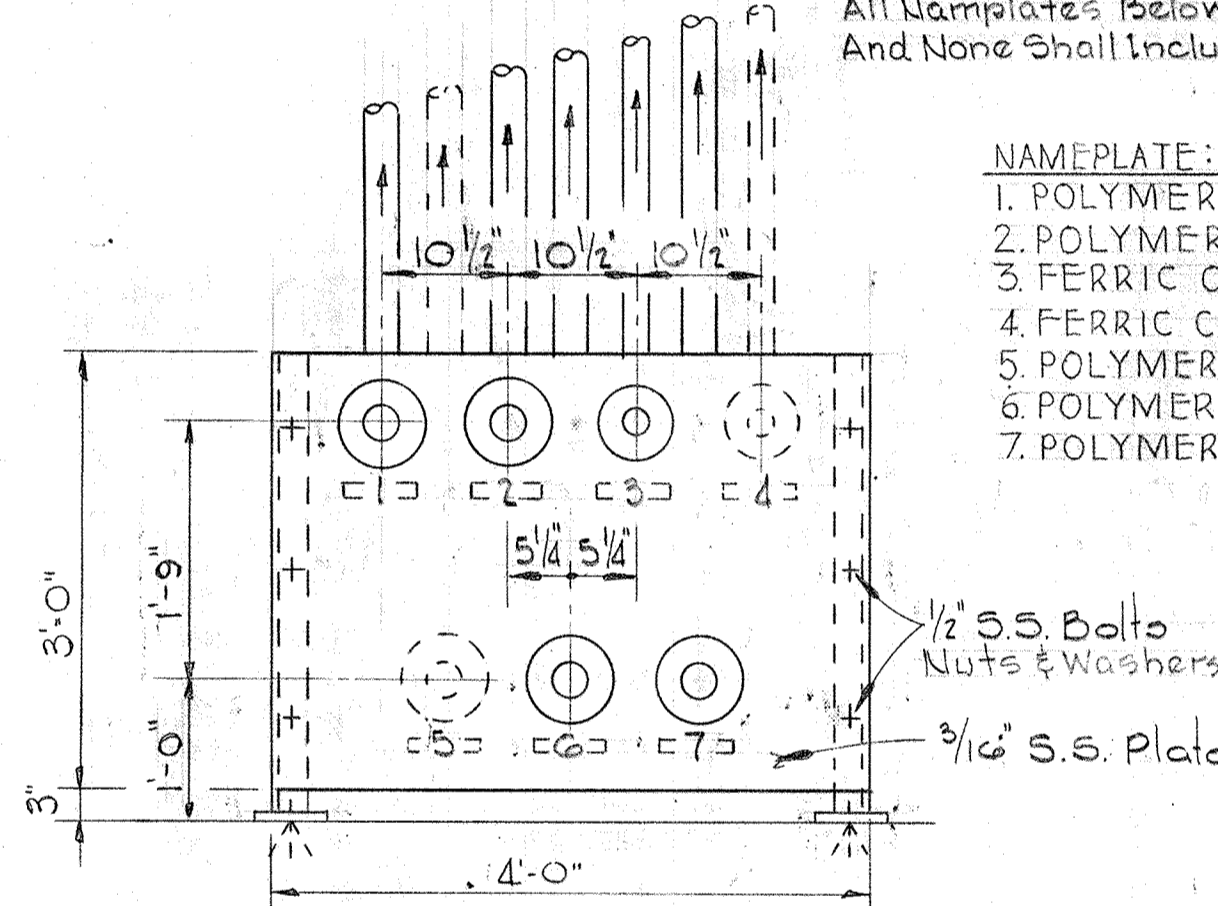
TYPICAL DAY TANK DETAILS

(6 Required) Scale 1/2" = 1'-0"

NOTE: Nameplates to be Made of 16 Ga. S.S. With 1/32" Deep Etched Letters. Nameplates to be 1"x6" Lg. With 1/4" Letters. All Nameplates Below Shall be Provided And None Shall Include the Word "Future".

NAMEPLATE:

1. POLYMER "A"
2. POLYMER "A"
3. FERRIC CHLORIDE
4. FERRIC CHLORIDE (FUTURE)
5. POLYMER "B" (FUTURE)
6. POLYMER "B"
7. POLYMER "B"

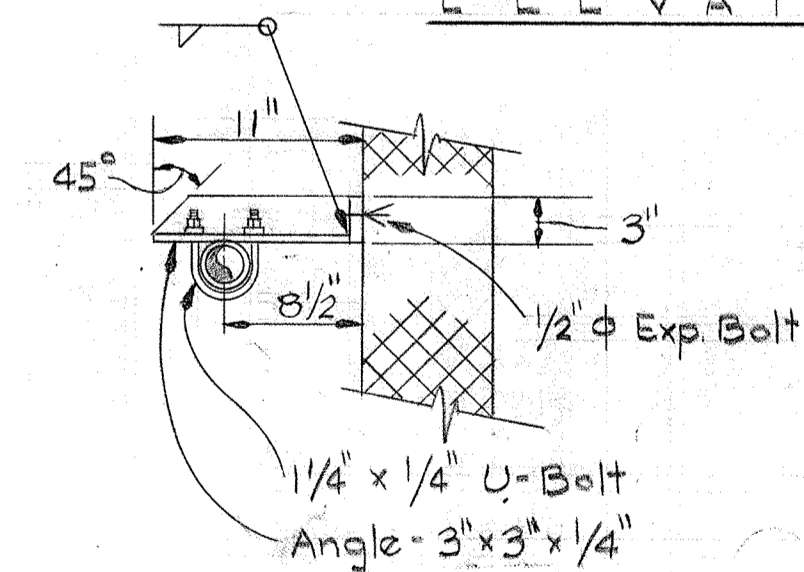


ELEVATION

DETAIL M31B/M24

Scale 3/4" = 1'-0" (1 Required)

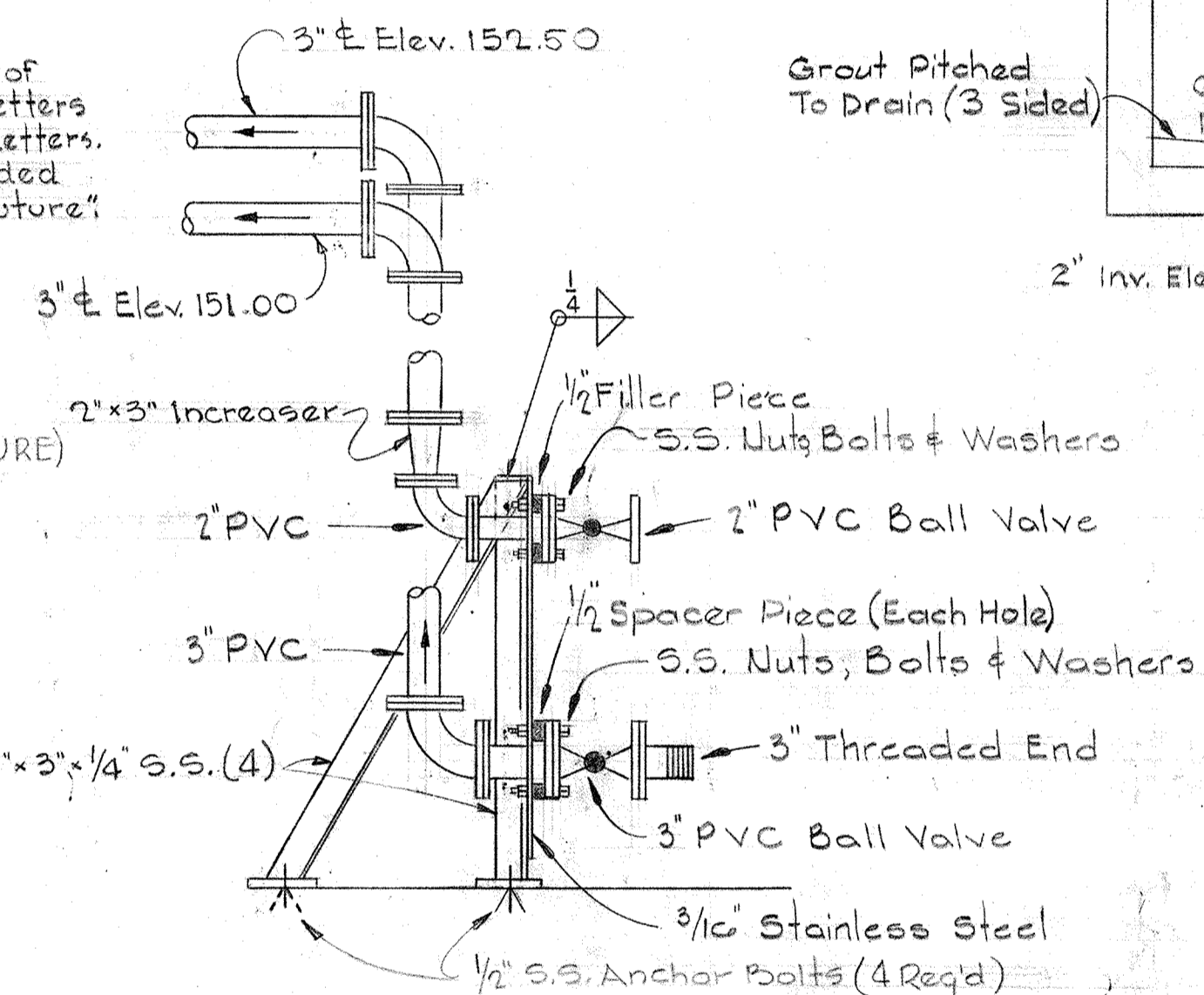
1. Ferric Chloride Connections to be Rubber Lined Flanged Connections.
2. All Polymer Connections to be 3" Pipe Threads (3" C.I. Companion Flange With C.I. Threaded Nipple)



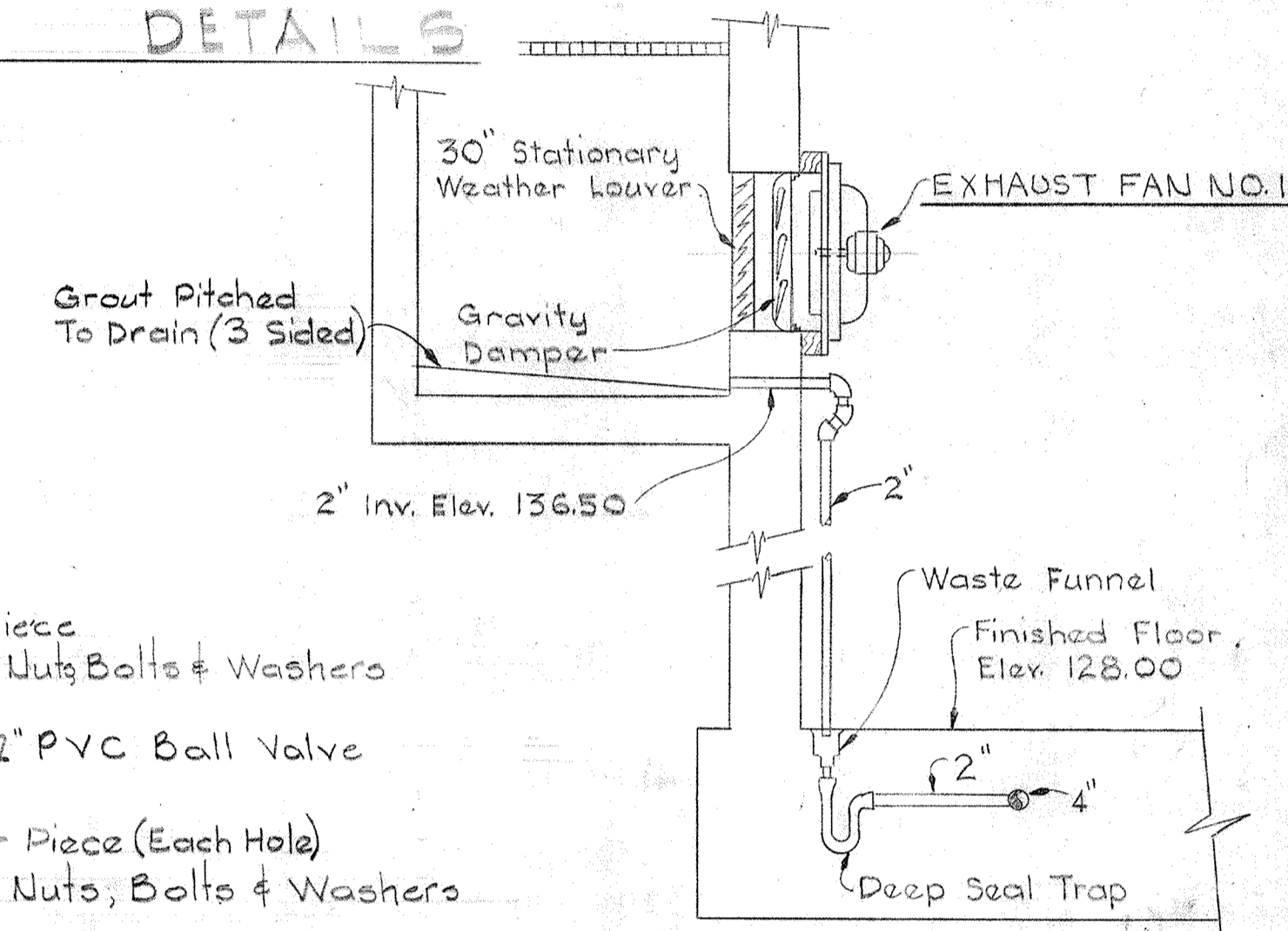
SECTION M31D/M31

Scale: 1" = 1'-0"

Note: Support Angles To Be 1020 H.R. Steel, Hot Dipped Galv. After Assembly

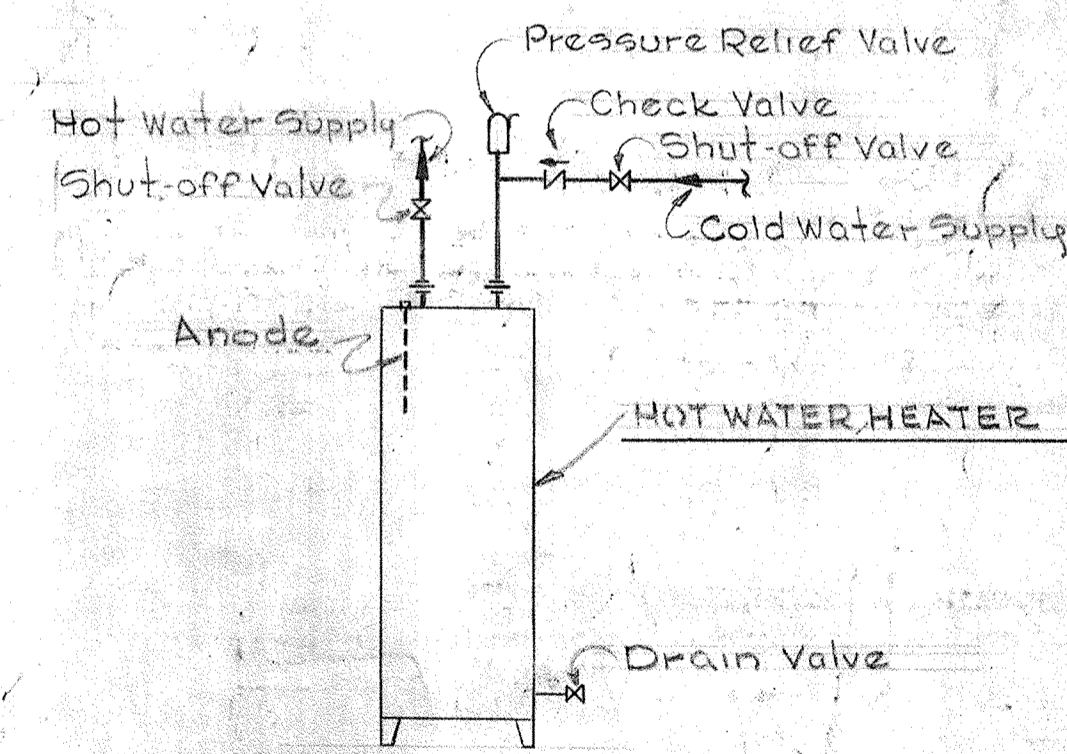


SECTION

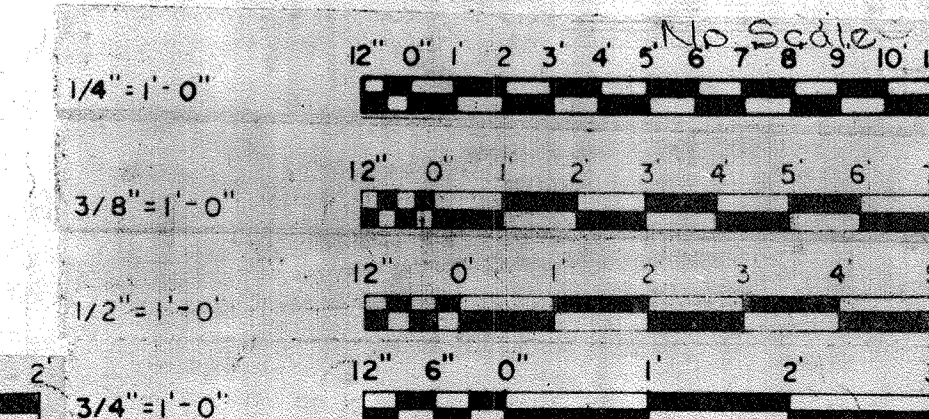


SECTION M31C/M23

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



TYPICAL HOT WATER HEATER PLUMBING SCHEMATIC



WHITMAN, REQUARDT & ASSOCIATES
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W. O. Federline
CHIEF-BUREAU OF ENGINEERING

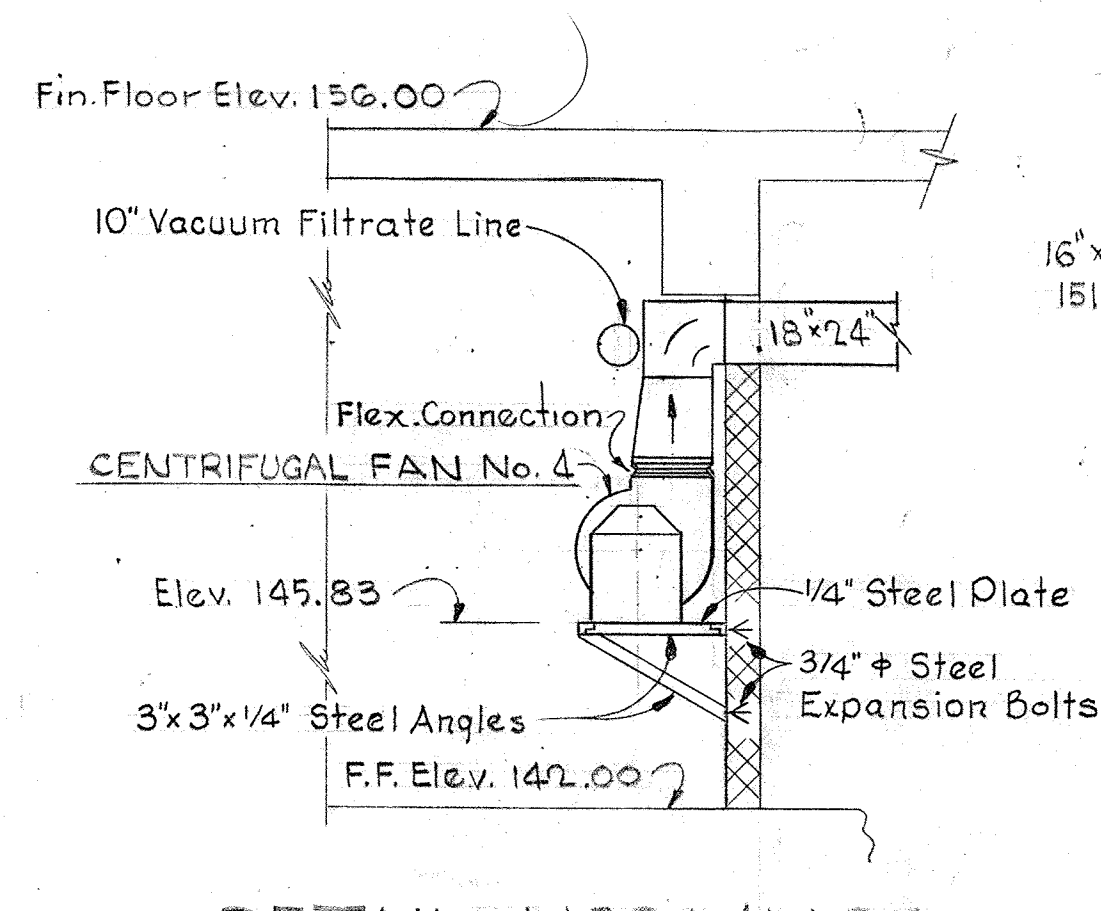
CONTRACT NO. 501-S

MECHANICAL
DEWATERING BUILDING
SECTIONS & DETAILS

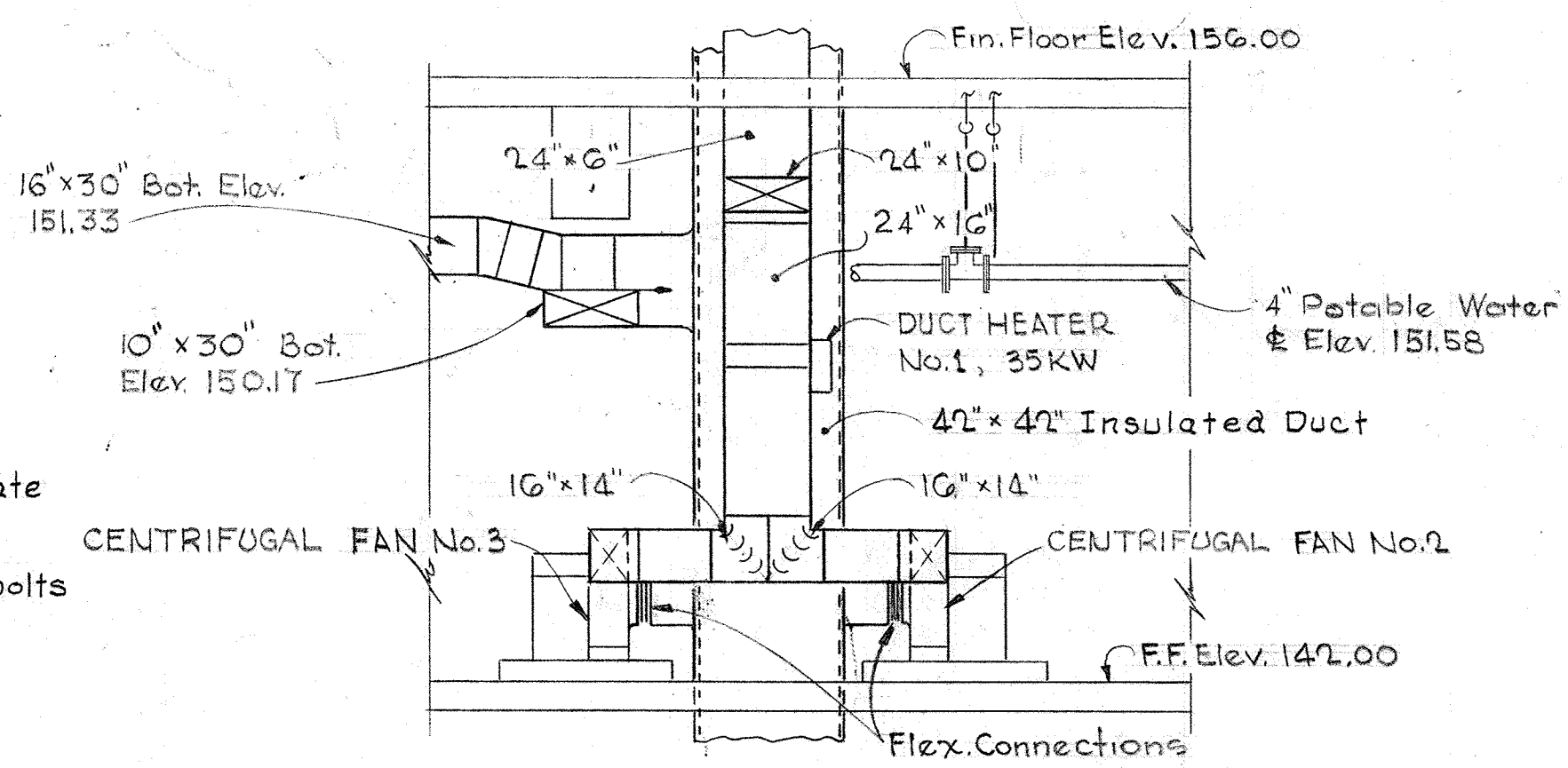
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 86
OF 128

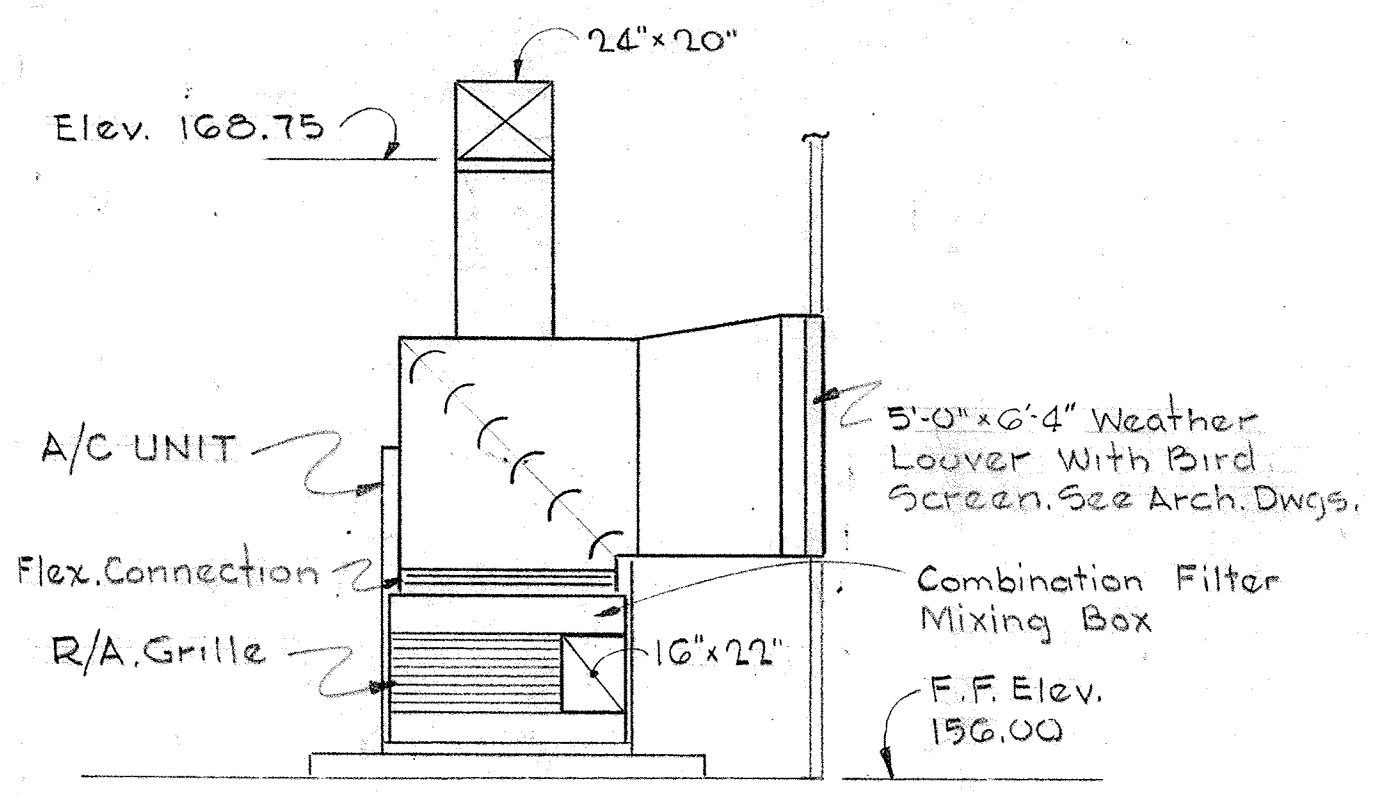
SCALE AS NOTED



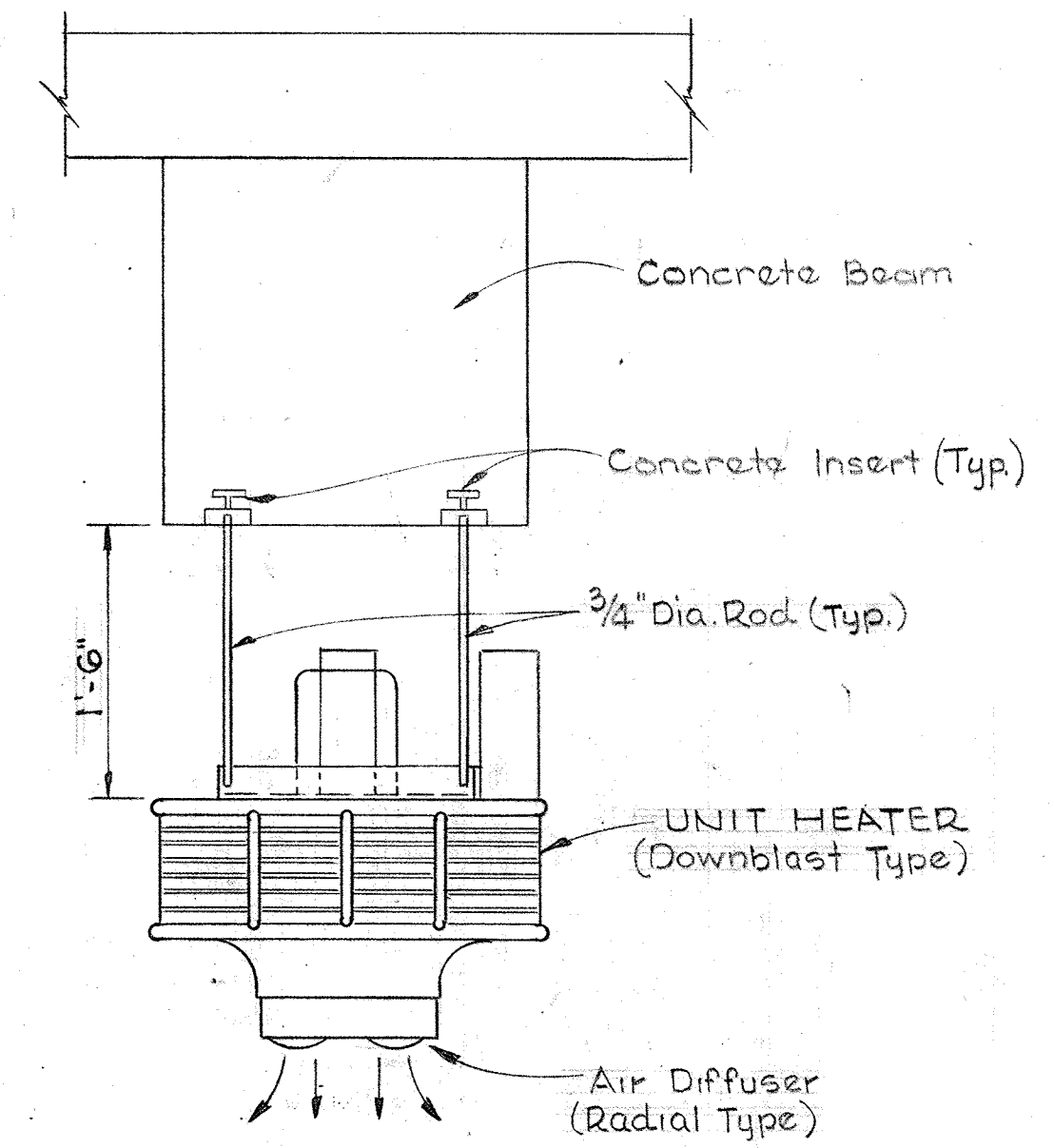
DETAIL M32A/M24
Scale: 1/4" = 1'-0"



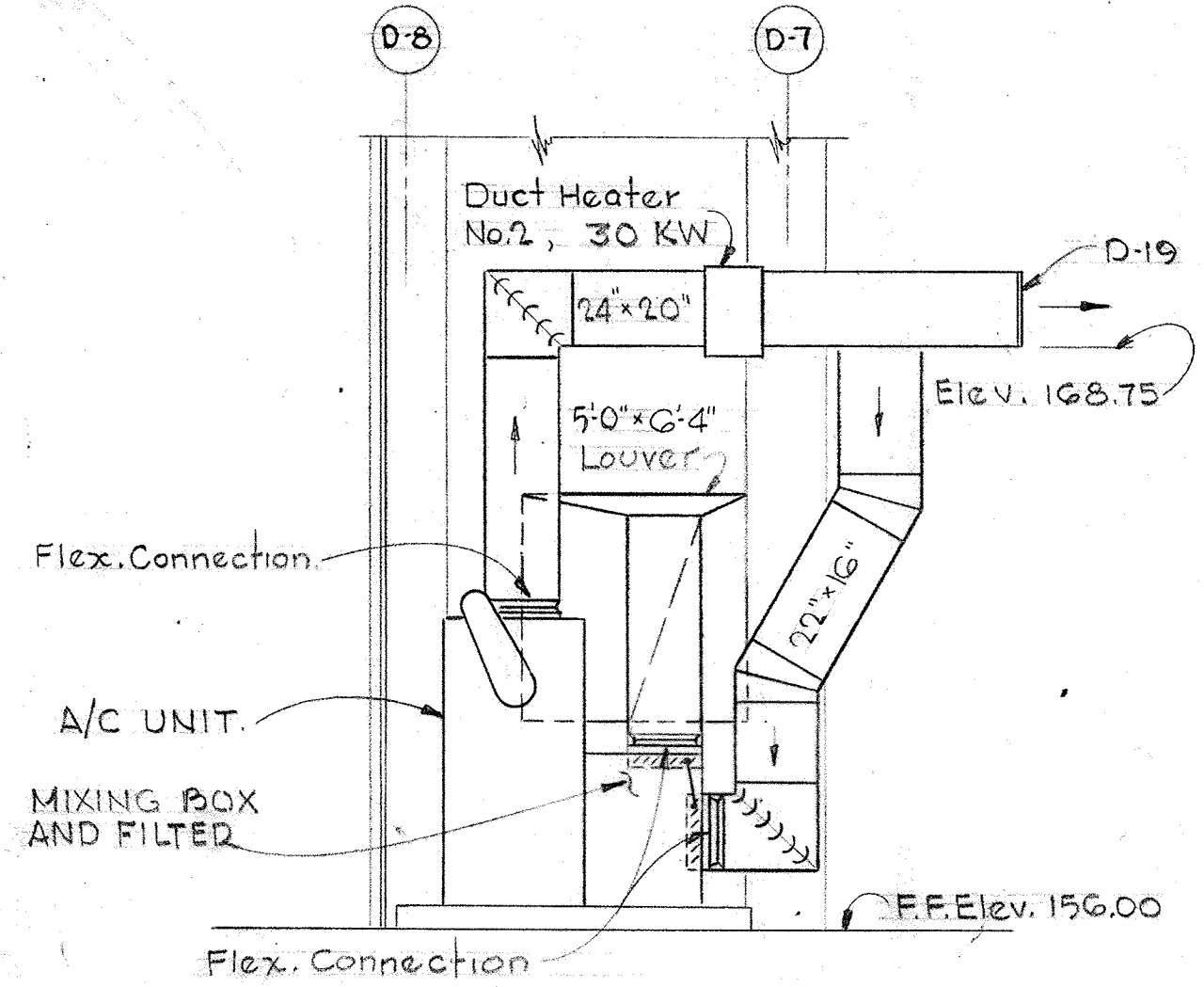
SECTION M32D/M25
Scale: 1/4" = 1'-0"



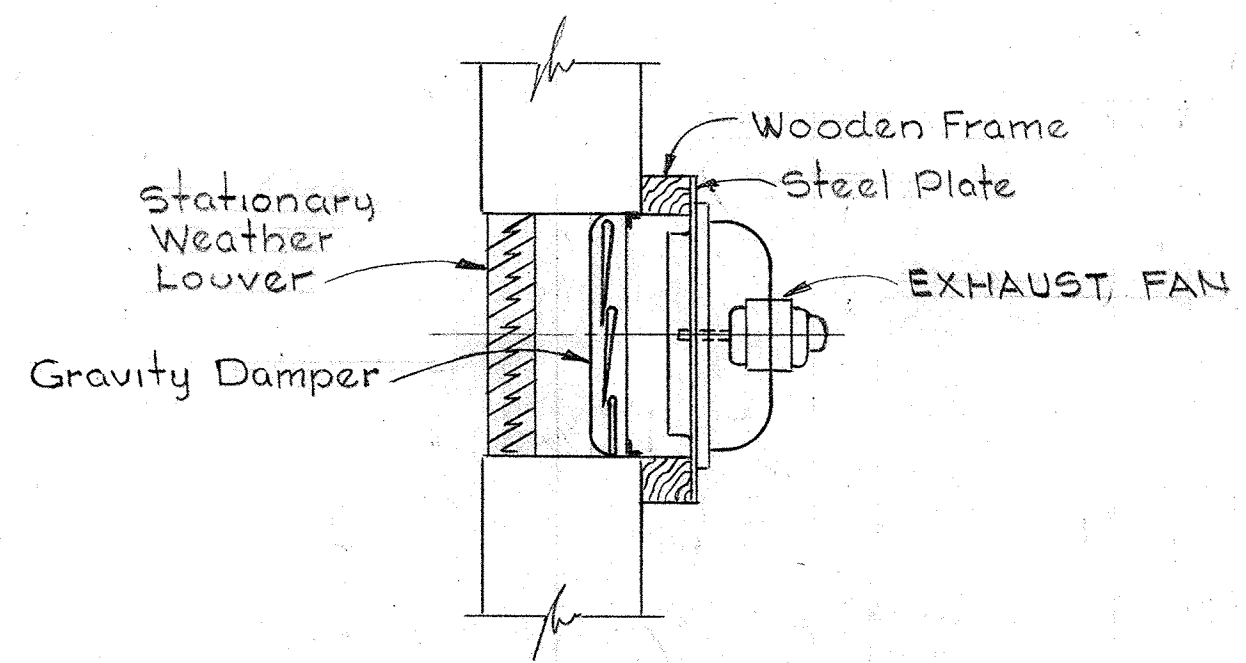
SECTION M32B/M26
Scale: 1/4" = 1'-0"



TYPICAL MOUNTING DETAIL FOR UNIT HEATERS
Scale: 1" = 1'-0"

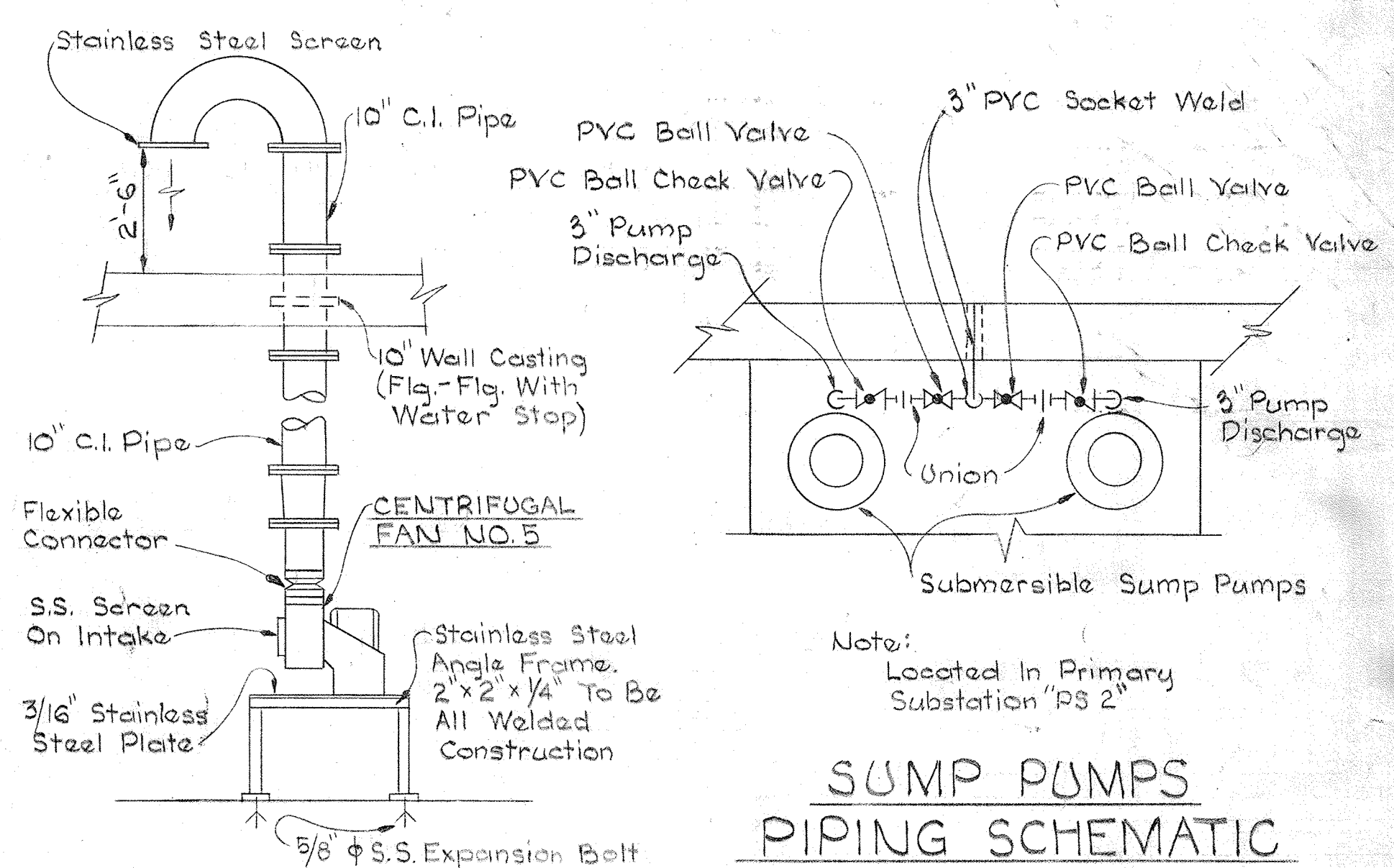


SECTION M32C/M26
Scale: 1/4" = 1'-0"



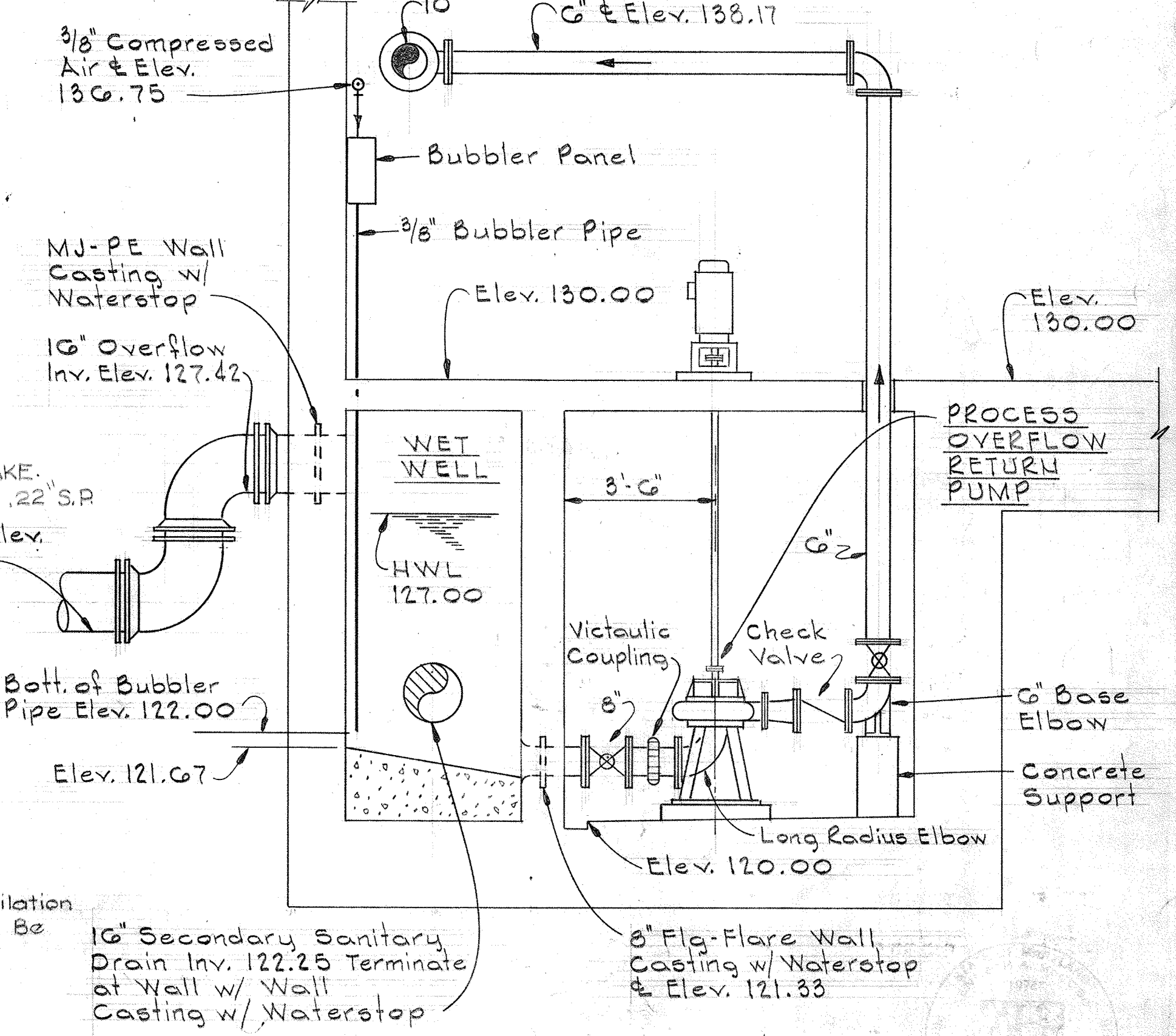
TYPICAL MOUNTING DETAIL FOR WALL MOUNTED EXHAUST FANS
Scale: 3/4" = 1'-0"

AIR DEVICE SCHEDULE			
ITEM	CFM	NECK SIZE	TYPE
D-1	2500	20" x 16"	Grille
D-2	1500	14" x 14"	Register
D-3	150	10" x 8"	Register
D-4	500	12" x 8"	Register
D-5	150	8" x 4"	Register
D-6	100	12" x 6"	Register
D-7	100	8" x 6"	Register
D-8	50	8" x 6"	Register
D-9	150	8" x 6"	Register
D-10	2050	34" x 16"	Grille
D-11	1600	10" x 16"	Grille
D-12	1700	30" x 10"	Grille
D-13	2600	16" x 48"	Register
D-14	100	10" x 6"	Register
D-15	150	14" x 6"	Register
D-16	1500	12" x 12"	Grille
D-17	1125	34" x 20"	Register
D-18	1125	44" x 12"	Register
D-19	2250	18" x 26"	Register
D-20	1000	12" x 12"	Register
D-21	500	9" x 9"	Register
R-1	1000	22" x 22"	Register
R-2	500	9" x 9"	Register
E-1	325	8" x 8"	Register
E-2	380	8" x 8"	Register
E-3	370	8" x 8"	Register

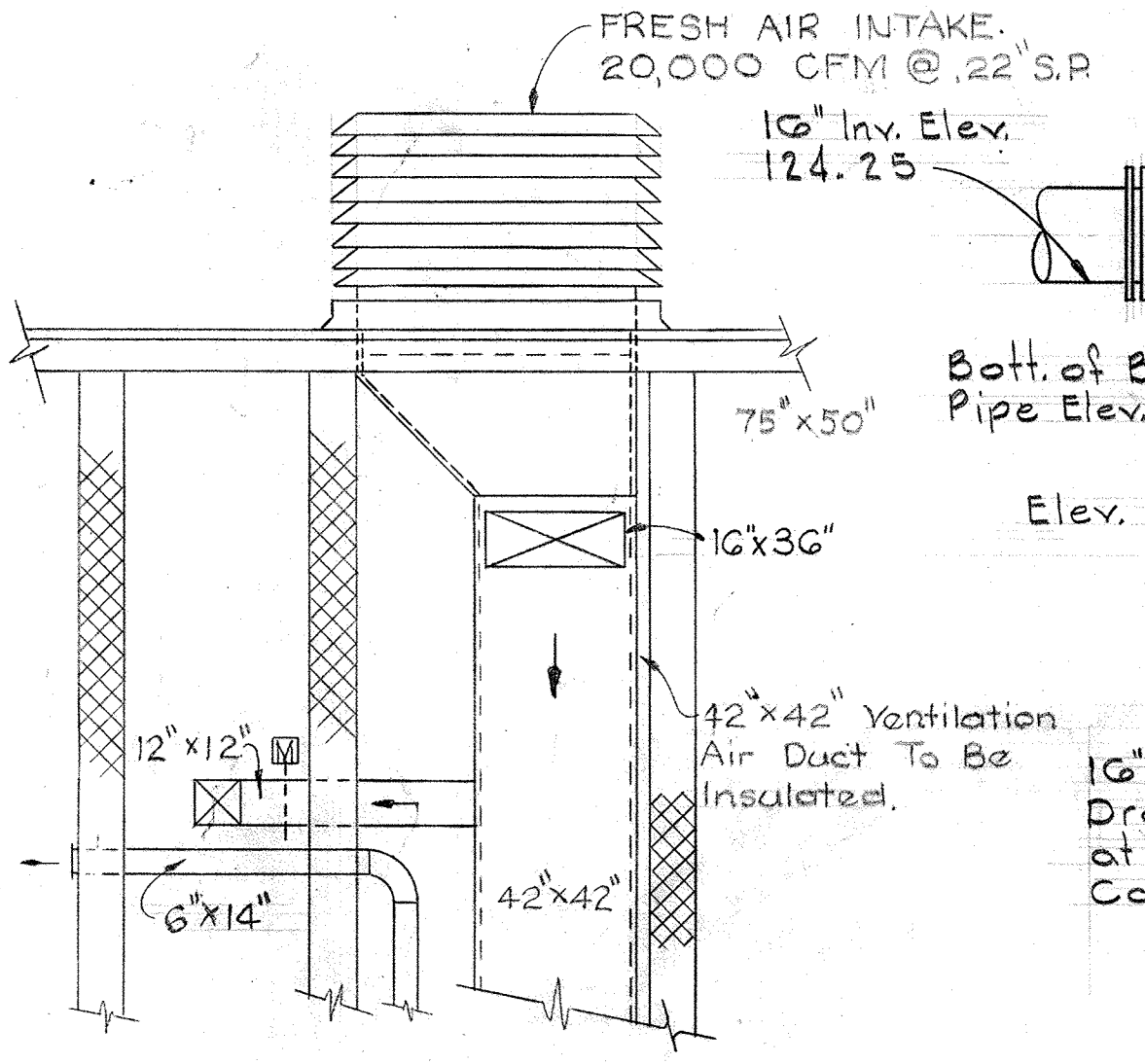


SUMP PUMPS PIPING SCHEMATIC
No Scale

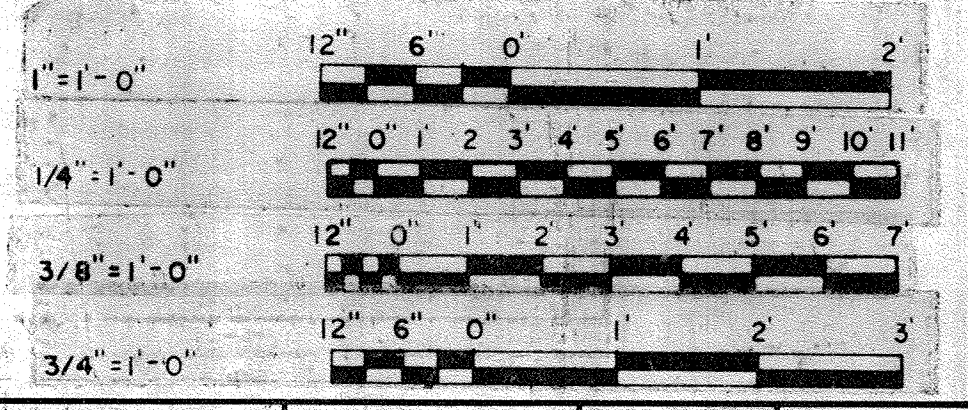
SECTION OF CENTRIFUGAL FAN NO. 5
Scale: 3/8" = 1'-0"



SECTION M32E/M27
Scale: 3/8" = 1'-0"



SECTION M32F/M22
Scale: 1/4" = 1'-0"



WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>3/22/15</i> DATE	<i>W. O. Federline</i> CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 501-S	MECHANICAL DEWATERING BUILDING SECTIONS & DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 87 OF 128	SCALE AS NOTED
						W. O. 6887	

BRUNING 44-510 16392

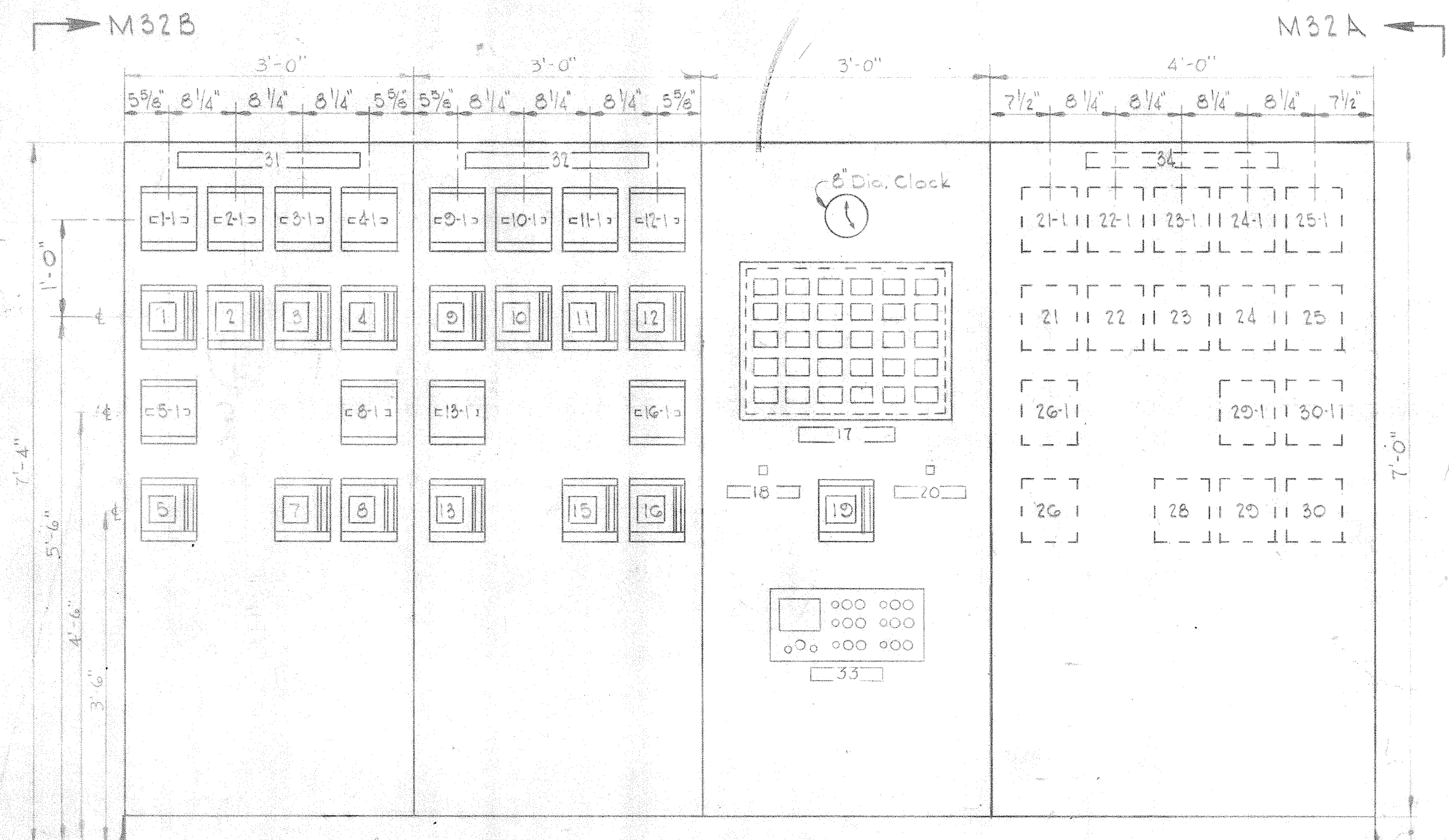
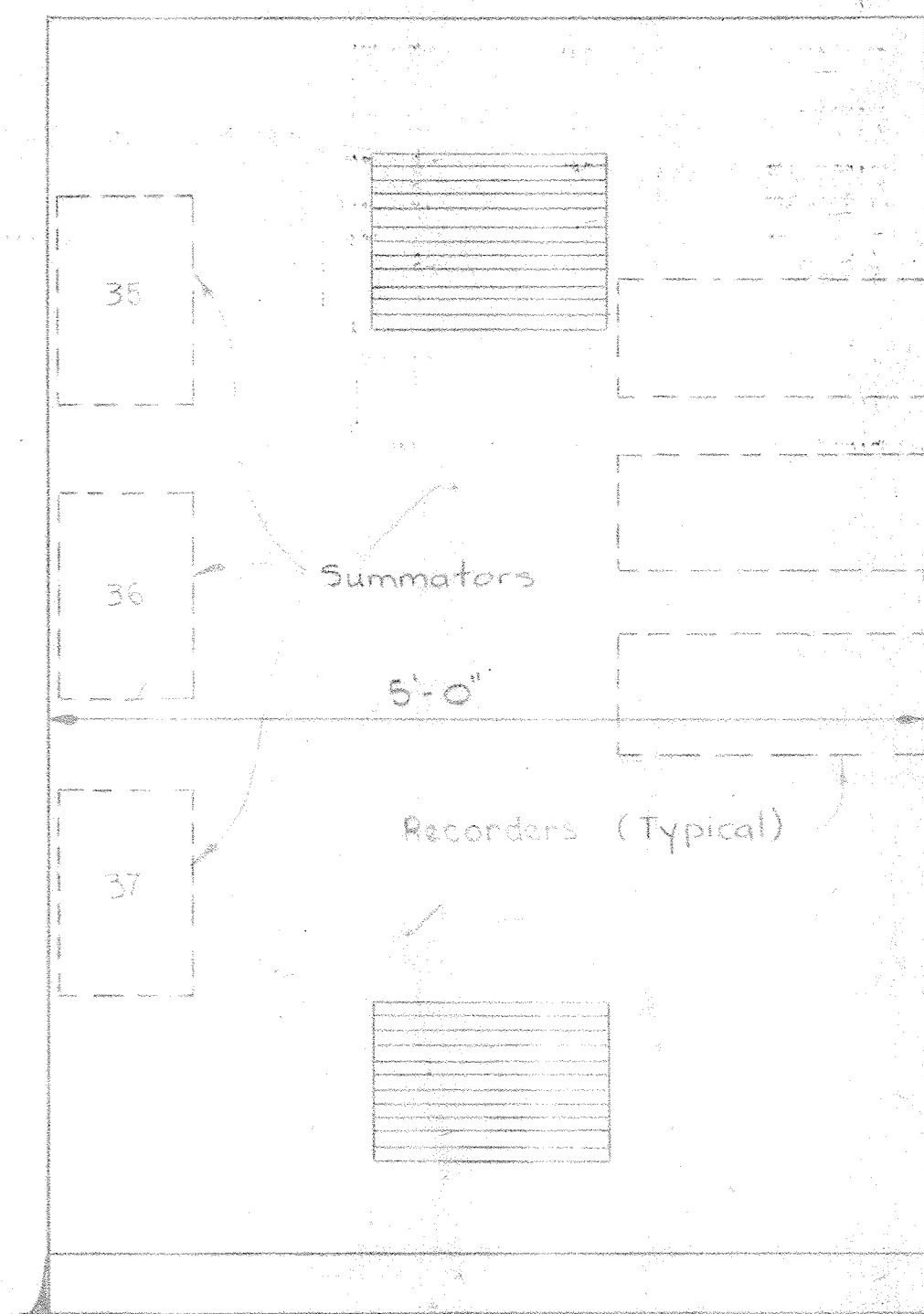
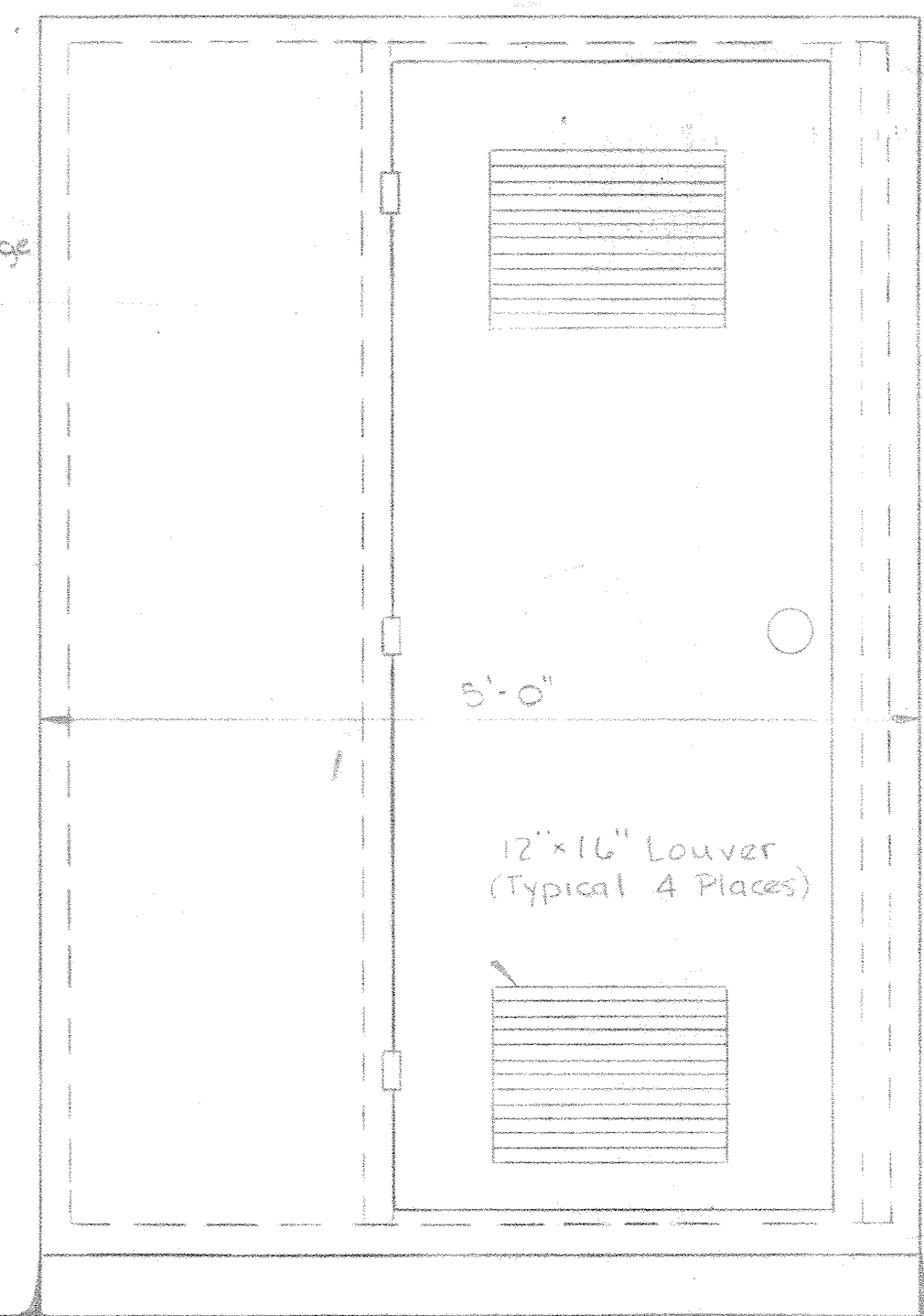
NAMEPLATE DESIGNATIONS

1-1	T	Unthickened Waste Activated & Waste Nitrified Sludge
1	1/2	1 Pen Unthickened Waste Activated & Waste Nitrified Sludge
2-1	T	Thickened Waste Activated & Waste Nitrified Sludge
2	1/2	1 Pen Thickened Waste Activated & Waste Nitrified Sludge
3-1	T	Primary Sludge
3	1/2	1 Pen Primary Sludge
4-1	T	Air 1 ST & 2 ND Pass
4	1/2	2 Pen Air 1 ST & 2 ND Pass
5-1	T	Air 3 RD & 4 TH Pass
5	1/2	2 Pen Air 3 RD & 4 TH Pass
6		Not Used
7	R	2 Pen Dissolved Oxygen Probe No. 1 & 2
8-1	T	Digested Sludge to Vacuum Filter No. 1
8	1/2	1 Pen Digested Sludge to Vacuum Filter No. 1
9-1	T	Unthickened Waste Activated & Waste Nitrified Sludge
9	1/2	1 Pen Unthickened Waste Activated & Waste Nitrified Sludge
10-1	T	Thickened Waste Activated & Waste Nitrified Sludge
10	1/2	1 Pen Thickened Waste Activated & Waste Nitrified Sludge
11-1	T	Primary Sludge
11	1/2	1 Pen Primary Sludge
12-1	T	Air 1 ST & 2 ND Pass
12	1/2	2 Pen Air 1 ST & 2 ND Pass
13-1	T	Air 3 RD & 4 TH Pass
13	1/2	2 Pen Air 3 RD & 4 TH Pass
14		Not Used
15	R	2 Pen Dissolved Oxygen Probe No. 3 & 4
16-1	T	Digested Sludge to Vacuum Filter No. 2
16	1/2	1 Pen Digested Sludge to Vacuum Filter No. 2
17		Alarm Panel
18		Alarm Silence
19	1/2	2 Pen Air Pressure & Air Temperature

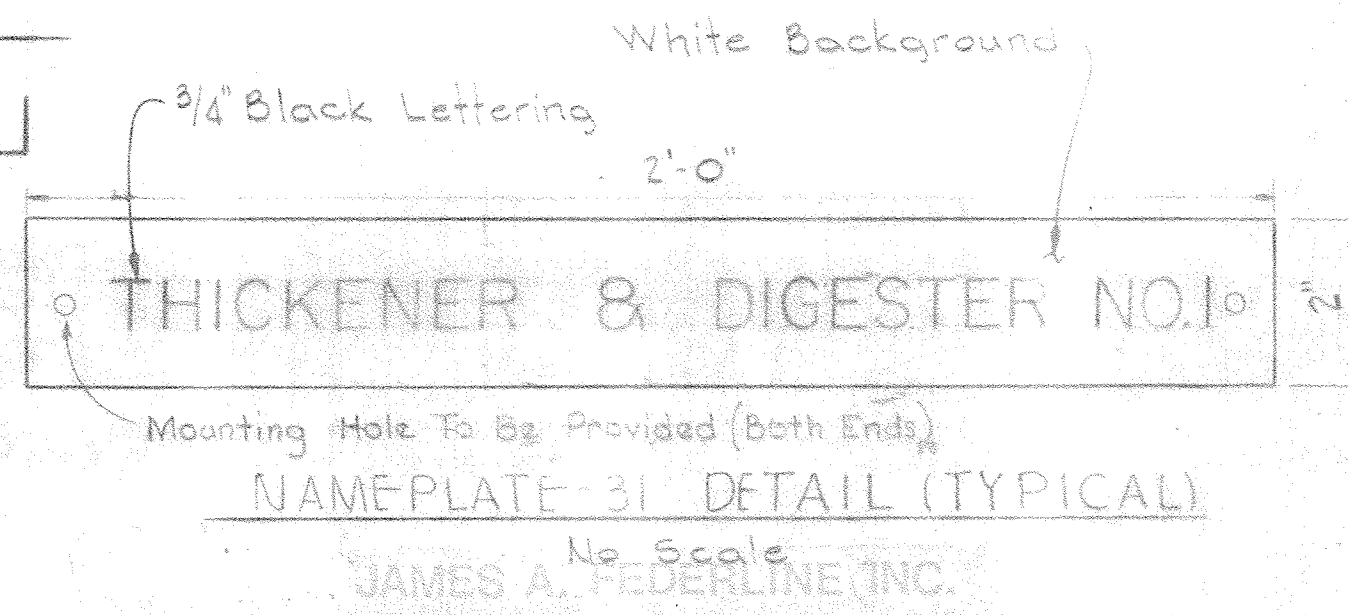
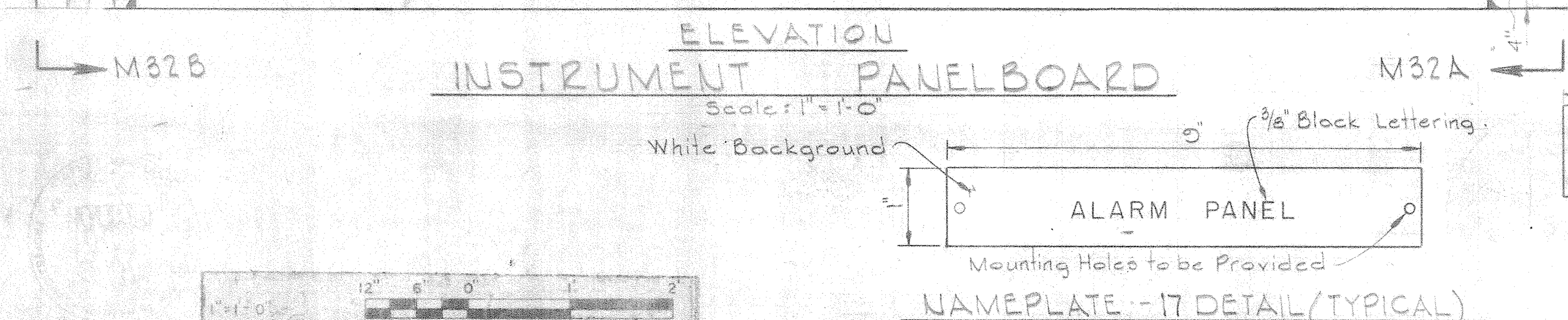
20		Panel Test
31		Thickener & Digester No. 1
32		Thickener & Digester No. 2
33		D.O. Analyzer
35	S	Total Primary Sludge
36	S	Total Thickened Waste Activated & Waste Nitrified Sludge
37	S	Total Digested Sludge

FUTURE NAMEPLATE DESIGNATIONS

21-1	T	Thickener No. 3 Unthickened W.A. & W.N. Sludge
21	1/2	1 Pen Thickener No. 3 Unthickened W.A. & W.N. Sludge
22-1	T	Thickener No. 4 Unthickened W.A. & W.N. Sludge
22	1/2	1 Pen Thickener No. 4 Unthickened W.A. & W.N. Sludge
23-1	T	Thickened W.A. & W.N. Sludge
23	1/2	1 Pen Thickened W.A. & W.N. Sludge
24-1	T	Primary Sludge
24	1/2	1 Pen Primary Sludge
25-1	T	Air 1 ST & 2 ND Pass
25	1/2	2 Pen Air 1 ST & 2 ND Pass
26-1	T	Air 3 RD & 4 TH Pass
26	1/2	2 Pen Air 3 RD & 4 TH Pass
27		Not Used
28	R	2 Pen Dissolved Oxygen Probe No. 5 & 6
29-1	T	Digested Sludge to Vacuum Filter No. 3
29	1/2	1 Pen Digested Sludge to Vacuum Filter No. 3
30-1	T	Digested Sludge to Vacuum Filter No. 4
30	1/2	1 Pen Digested Sludge to Vacuum Filter No. 4
34		Thickeners No. 3 & No. 4, Digester No. 3



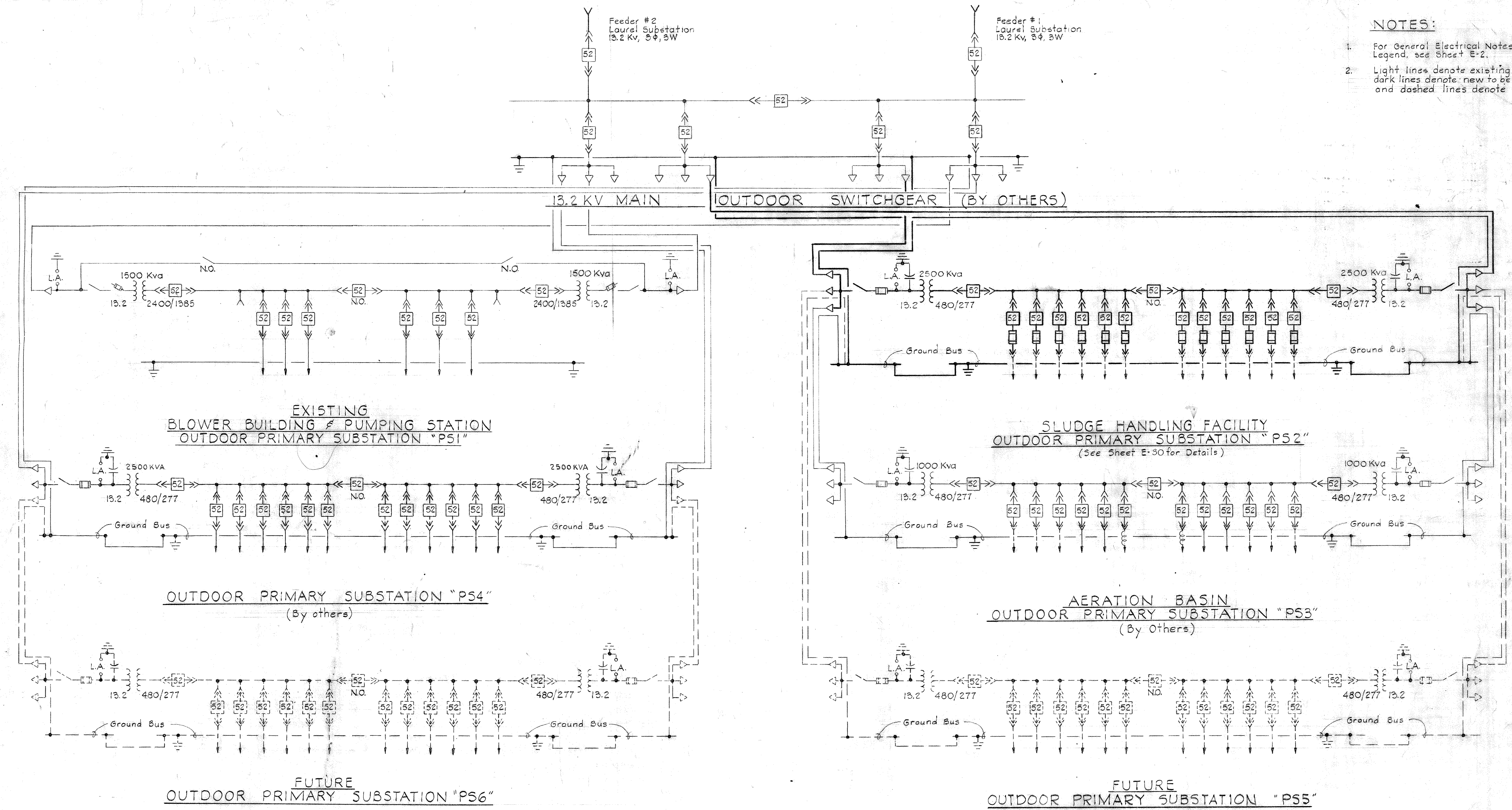
NOTE:
FOR ALARM DESIGNATIONS
SEE SHEET E-30.



- Notes:**
- Nameplate Number Designations For Recorders Shall Also Be Used As The Index Number Of That Recorder For Identification in Specs.
 - Nameplates 31, 32, Are To Be The Lettering And Plate Size As Shown On This Sheet As "Nameplate - 31 Detail (Typical)". All Other Nameplates Shall Have Lettering And Plate Sizes Conforming To The Illustration - "Nameplate - 17 Detail (Typical)".
 - The Contractor Shall Furnish The Alarm Panel Windows With Engraved Lettering In All Windows As Designated, Whether Identified For Future Use Or Not. The Word "Future" Shall Not Be Included In The Engraving. Spare And "Future" Windows Shall Not Be Used Although The Electrical Components Shall Be Supplied And The "Panel Test" Button Shall Cause All Indicating Lights To Light.
 - Nameplates 18 & 20 Are For Pushbuttons. The Face Of Each Pushbutton Shall Be Engraved The Word "Push" In 1/8 inch High Lettering.
 - The Contractor Shall Not Be Required To Supply Nameplate 34.
 - All Panel Sections Shown Are To Be Provided.

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3/20/75 DATE	CONTRACT NO. 501-S JAMES A. FEDERLINE, INC. AS BUILT DRAWING	MECHANICAL DEWATERING BUILDING INSTRUMENT PANELBOARD	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 88 OF 128	SCALE AS NOTED
					W. O. 6887	SHEET M-33

- NOTES:**
- For General Electrical Notes and Legend, see Sheet E-2.
 - Light lines denote existing or by others, dark lines denote new to be provided and dashed lines denote future.



**POWER
MASTER ONE LINE WIRING DIAGRAM**

<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3/20/75 <i>W. O. Lambert</i> DATE CHIEF-BUREAU OF ENGINEERING</p>	<p>CONTRACT NO. 501-S</p>	<p>ELECTRICAL POWER MASTER ONE LINE WIRING DIAGRAM</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 89 OF 128 SCALE AS NOTED</p>
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W. O. 6887

SHEET E-1

BEGINNING 44510 10392

INTERIOR

- □ ○ Outlet Incandescent Ceiling Recessed Wall
- ⊙ ⊙ Outlet Incandescent Emergency Ceiling Wall
- ⊙ ⊙ Outlet Glass Single Face Ceiling Wall
- ⊙ ⊙ ⊙ Outlet Glass Double Face Ceiling Wall
- ⊙ ⊙ Outlet Fluorescent 4 Foot
- ⊙ ⊙ ⊙ Outlet Fluorescent 4 Foot With Kindorf Wiring Channel
- ⊙ ⊙ ⊙ Outlet Fluorescent 4 Foot With Kindorf Support & Conduit
- ⊙ ⊙ Outlet Fluorescent 2 Foot
- ⊙ ⊙ ⊙ ⊙ Outlet Exit Light Ceiling Wall With Or Without Directional Arrows
- ⊙ ⊙ ⊙ Outlet H.I.D. Ceiling Wall
- ⊙ ⊙ ⊙ Outlet Duplex Convenience
- ⊙ ⊙ ⊙ Outlet Special Purpose Floor
- ⊙ ⊙ ⊙ ⊙ Outlet 20A 250V Receptacle Polarized
- ⊙ ⊙ ⊙ ⊙ Outlet 30A 250V Receptacle & Plug Polarized
- ▼ w ▼ d ▼ e Outlet Telephone Wall Desk Extension
- ▼ Outlet Intercommunication
- ⊙ ⊙ Junction Box
- EXP WP Explosion proof Weatherproof Where Indicated
- S S2 S3 Switch Single Pole Double Pole With Pilot Light
- S3 S4 Switch Three Way Four Way
- Sk S0 Switch Key Operated Door Operated
- Smc Src Switch Momentary Contact Remote Control Contactor Number As Indicated
- ⊙ h ⊙ c ⊙ f Thermostat Heating Cooling Freeze Stop
- A Aquastat
- Unit Heater
- ⊙ Generator
- ⊙ ⊙ Motor Constant Speed Variable Speed
- M ⊙ Starter Manual Combination
- S ⊙ Starter Magnetic (FVNR) Magnetic (FVR)
- S ⊙ Starter Magnetic (FVNR-2S (Two Speed))
- F ⊙ Disconnect Switch Fused Unfused
- 7 Selector Switch Two Position
- ⊙ Secondary Motor Controls
- ⊙ Pull Box Size As Noted
- ⊙ Telemetry Transmitter Number as noted
- Lighting Panel
- Power Panel
- Telephone Or Control Wire Cabinet as noted
- Contactor Cabinet
- Home Run To Panelboard Number Of Arrows Indicates Number Of Circuits Number Of Cross Lines Indicates Number Of Wires Where No Cross Lines Appear Two Conductors Are Implied
- Conduit On Ceiling Or Wall
- Conduit Under Floor
- Conduit In Ceiling Wall Or Floor
- Conduit Telephone
- FA Conduit Fire Alarm
- c Conduit Communication
- E Conduit Emergency
- Conduit Stab-Up Stab-Down
- Conduit Seal
- ⊙ ⊙ Disconnect Circuit Breaker
- ⊙ ⊙ Outlet Incandescent Floodlight
- ⊙ ⊙ ⊙ Pushbutton Station One Two & Three Pushbutton Lockout
- ⊙ ⊙ Horn
- ⊙ Bell
- CCSA-6 Motor Control Center Wire & Cable Run Number
- SH Switchgear Wire & Cable Run Number
- PSI-1 Pri. Substation Wire & Cable Run Number
- CCS Control Cable Wire & Cable Run Number
- Radiant Heater

UNDERGROUND

- 4/w Conduitbank Number Of Ducts As Indicated
- 2" C Existing Conduit Size As Indicated
- DB-2#4 Existing Direct Buried Cable Number & Size As Indicated
- DB-2#4 Direct Buried Cable Number & Size As Indicated
- C Conduit Size As Indicated
- ⊙ ⊙ Shaded Duct In Ductbank Sections Denotes Existing Cables

CIRCUIT BREAKER S.I.C. LEGEND

- 10 - 10,000 Amperes At Operating Voltage
- 14 - 14,000 Amperes At Operating Voltage
- 22 - 22,000 Amperes At Operating Voltage
- 30 - 30,000 Amperes At Operating Voltage
- 50 - 50,000 Amperes At Operating Voltage
- 60 - 60,000 Amperes At Operating Voltage
- 65 - 65,000 Amperes At Operating Voltage
- 85 - 85,000 Amperes At Operating Voltage
- 200 - 200,000 Amperes At Operating Voltage

LOCATION SYMBOLS FOR ELEMENTARY CONTROL DIAGRAMS

- ⊙ cc3A Device located in respective Motor Control Center
- Device located at respective unit
- ▲ Device located at respective motor
- Device located in Starter
- ⊕ Device located in Vacuum Filter Control Panel
- ⊕ Device located in Filter Power Center
- ⊕ Device located in Blower Control Panel
- Device located at Scum Pit on top deck
- Device located in Flat Thick Control Panel & Bubbler Cab.
- △ Device located in Strainer Control Panel
- ⊕ Device located in Instrument Panelboard
- ⊕ Device located in Hydropneumatic Tank Controller
- △ Device located in Process Overflow Return Bubbler Cabinet
- ⊕ Device located in Process Overflow Return Pump Speed Controllers

MOTOR CONTROL CENTERS, POWER CENTERS & UNIT SUBSTATIONS AUXILIARY DESCRIPTION

- a - Red & Green Indicating Lights
- b - Open Close Control Switch
- c - Running Time Meter
- d - Hand-Off-Automatic Selector switch
- e - Start-stop pushbutton station
- f - Key Interlock
- g - 480-120Volt Control Transformer
- h - Slow-Fast-Stop Pushbutton Station
- j - Forward-Reverse-Stop Pushbutton Station

ONE LINE/ELEMENTARY

- ⊙ ⊙ Moulded Case Circuit Breaker
- ⊙ ⊙ Oil Circuit Breaker
- ⊙ ⊙ Selector Switch
- ⊙ ⊙ Disconnecting Switch
- ⊙ ⊙ Interrupter Switch
- ⊙ ⊙ Selector Interrupter Switch
- ⊙ ⊙ Knife Switch
- ⊙ ⊙ Contacts Normally Open
- ⊙ ⊙ Contacts Normally Closed
- ⊙ ⊙ Current Transformer
- ⊙ ⊙ Potential Transformer
- ⊙ ⊙ Power Transformer
- ⊙ ⊙ Ground
- ⊙ ⊙ Resistor
- ⊙ ⊙ Fuse
- ⊙ ⊙ Pathead
- ⊙ ⊙ Pushbutton
- ⊙ ⊙ Pressure Switch
- ⊙ ⊙ Float Switch
- ⊙ ⊙ Flow Switch
- ⊙ ⊙ Limit Switch
- ⊙ ⊙ Thermostat
- ⊙ ⊙ Disconnect Link
- ⊙ ⊙ Lightning Arrester
- ⊙ ⊙ Incoming Line
- ⊙ ⊙ Outgoing Line
- ⊙ ⊙ Tie Line
- ⊙ ⊙ Capacitor
- ⊙ ⊙ Rectifier
- ⊙ ⊙ Mechanical Interlock
- ⊙ ⊙ Electrical Interlock
- ⊙ ⊙ Key Interlock
- ⊙ ⊙ Overcurrent Trip Thermal Type
- ⊙ ⊙ Relay Instantaneous Overcurrent
- ⊙ ⊙ Relay Time Overcurrent
- ⊙ ⊙ A.C. Power Circuit Breaker
- ⊙ ⊙ Motor (Three Phase) Constant Speed Variable Speed
- ⊙ ⊙ Starter Magnetic (FVNR) Magnetic (FVR)
- ⊙ ⊙ Starter Magnetic (FVNR-2S (Two Speed))
- ⊙ ⊙ Running Time Meter
- ⊙ ⊙ Indicating Light Color As Indicated By Letter
- ⊙ ⊙ Solenoid Motor (Single Phase)
- ⊙ ⊙ Contactor Coil Starter Coil Number As Indicated
- ⊙ ⊙ Ammeter-Ammeter Switch
- ⊙ ⊙ Voltmeter-Voltmeter Switch
- ⊙ ⊙ Wattmeter-Kilowatt Meter
- ⊙ ⊙ Test Block-Test Switch
- ⊙ ⊙ Recording-Recording Demand Meter
- ⊙ ⊙ Relay Number As Indicated
- ⊙ ⊙ Instrument Switch-Control Switch
- ⊙ ⊙ Ground Lamps
- ⊙ ⊙ Power Factor Meter
- ⊙ ⊙ Timer-Number As Indicated
- ⊙ ⊙ Watthour Meter
- ⊙ ⊙ Phase Sequence Voltage Relay
- ⊙ ⊙ Tripping Relay Lock out Type-Differential Relay
- ⊙ ⊙ Automatic Transfer Switch
- ⊙ ⊙ Electric Radiant Heaters
- ⊙ ⊙ Contactor
- ⊙ ⊙ Relay-Time Overcurrent w/Instantaneous Trip
- ⊙ ⊙ Ground Overcurrent Relay
- ⊙ ⊙ Tripping Relay
- ⊙ ⊙ Demand Meter
- ⊙ ⊙ Frequency Meter
- ⊙ ⊙ Phase Meter
- ⊙ ⊙ Position Indicator
- ⊙ ⊙ Ground Sensing Relay
- ⊙ ⊙ A.C. Power Circuit Breaker With Solid State Trip & Ground Device
- ⊙ ⊙ Receptacle & Plug Polarized
- ⊙ ⊙ Horsepower Meter
- ⊙ ⊙ Permissive Control Switch
- ⊙ ⊙ Reverse Phase Or Phase Balance Current Relay
- ⊙ ⊙ Time Delay Relay
- ⊙ ⊙ Voltage Unbalance Relay
- ⊙ ⊙ Liquid or Gas Pressure Relay
- ⊙ ⊙ Fused A.C. Power Circuit Breaker
- ⊙ ⊙ A.C. Undervoltage Relay & Phase Sequence Voltage Relay
- Start Stop Pushbutton Station Maintained Contact Type
- LTR Lamp Test Relay

GENERAL ELECTRICAL NOTES

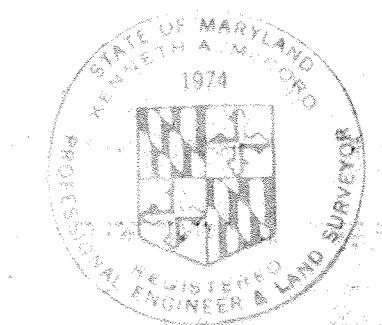
1. For PANELBOARD SCHEDULES see Specifications, DETAILED ELECTRICAL REQUIREMENTS.
2. For explanation of Lighting Fixture Types shown on Dwg's. See Specifications, DETAILED ELECTRICAL REQUIREMENTS.
3. Mounting heights for interior lighting fixtures shall be from finished floor to bottom of fixture unless otherwise noted.
4. Mounting heights for lighting fixtures mounted on exterior walls of buildings shall be from finished floor to centerline of recessed junction box unless otherwise noted.
5. Verify all door swings before installing switch boxes.
6. Receptacles shall be mounted 2'-0" above finished floor unless otherwise noted. All receptacles in finished areas shall be surface mounted. All receptacles in unfinished areas shall be surface mounted.
7. All Elementary Control Diagrams are shown in the de-energized position.
8. All wiring in finished areas shall be run concealed. All wiring in unfinished areas shall be run exposed.

INTERIOR

- ⊙ ⊙ End of Line Resistor
- ⊙ ⊙ Radiant Heater
- ⊙ ⊙ Fire Alarm Striking Station
- ⊙ ⊙ Damper Motor
- ⊙ ⊙ Duct Heater
- ⊙ ⊙ Fire Detector
- ⊙ ⊙ Fire Alarm Bell
- ⊙ ⊙ Outlet - Fluorescent - 4 Foot - Night Light
- ⊙ ⊙ H-O-A Selector Switch

EXTERIOR

- ⊙ ⊙ H.I.D. Area Light
- ⊙ ⊙ Incandescent Area Light
- ⊙ ⊙ Existing Pole
- ⊙ ⊙ Pole Length & Class As Indicated
- ⊙ ⊙ Pole With Down Guy & Anchor Length, Class & Lead As Indicated
- ⊙ ⊙ Pole With Street Light Length & Class As Indicated
- ⊙ ⊙ Primary Distribution Line KV Number & size Of Wires As Indicated
- ⊙ ⊙ Secondary Distribution Line KV Number & size Of Wires As Indicated
- ⊙ ⊙ Service Prop. Number & Size of Wires As Indicated
- ⊙ ⊙ Weatherhead & Rack



WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3/20/75
DATE

W.O. Libert
CHIEF - BUREAU OF ENGINEERING

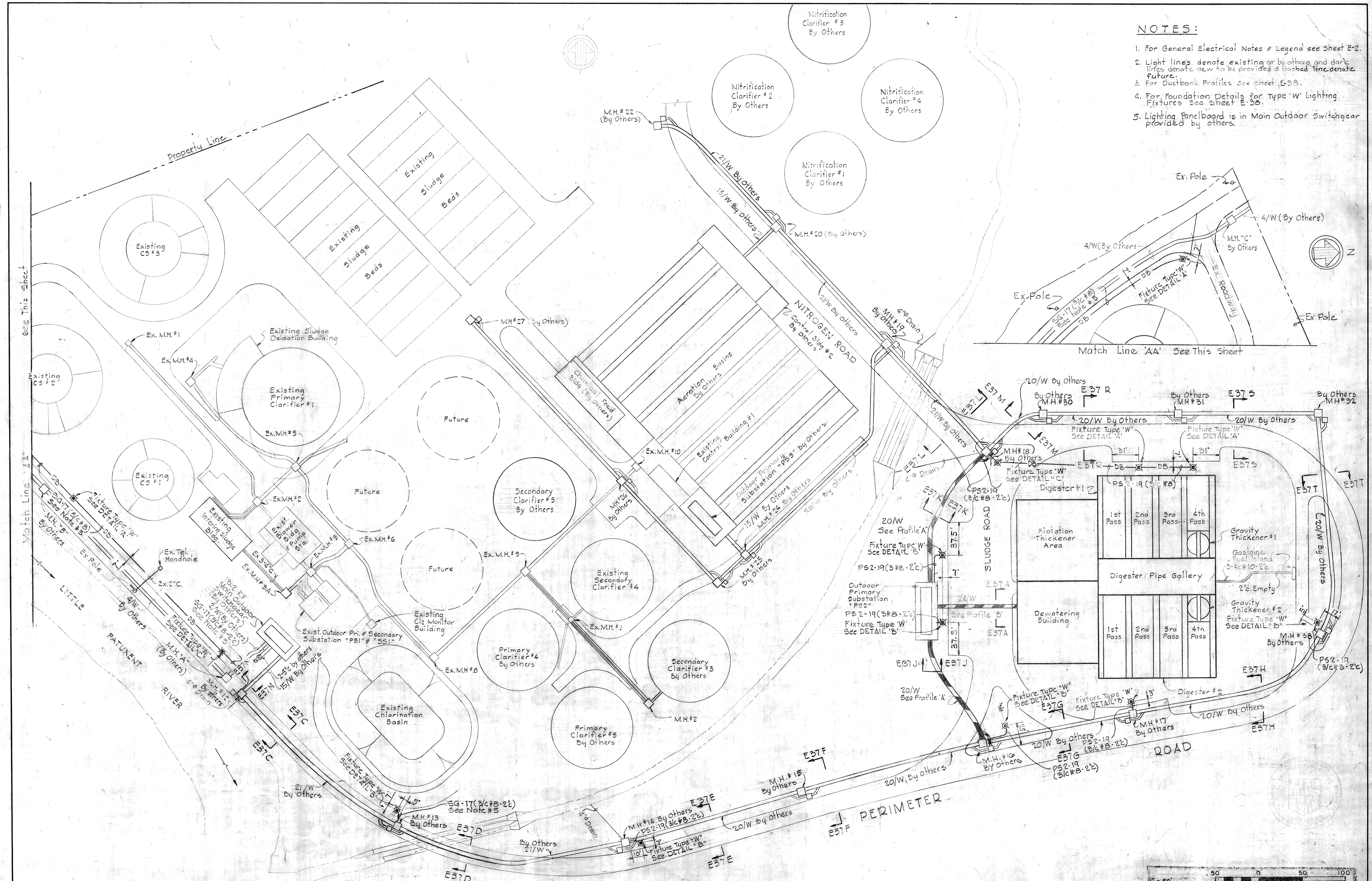
CONTRACT NO. 501-S

ELECTRICAL
GENERAL NOTES & LEGEND

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 90
OF 128

SCALE
AS
SHOWN



- NOTES:**
1. For General Electrical Notes & Legend see Sheet E-2.
 2. Light lines denote existing or by others and dark lines denote new to be provided & dashed lines denote Future.
 3. For Ductbank Profiles see sheet E-3B.
 4. For Foundation Details for Type 'W' Lighting Fixtures see sheet E-3B.
 5. Lighting panelboard is in Main Outdoor Switchgear provided by others.

WHITMAN, REQUARDT & ASSOCIATES
 ENGINEERS
 1304 ST. PAUL ST.
 BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE 3/20/75
 W.O. Libert
 CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 501-S

ELECTRICAL
 SITE PLAN

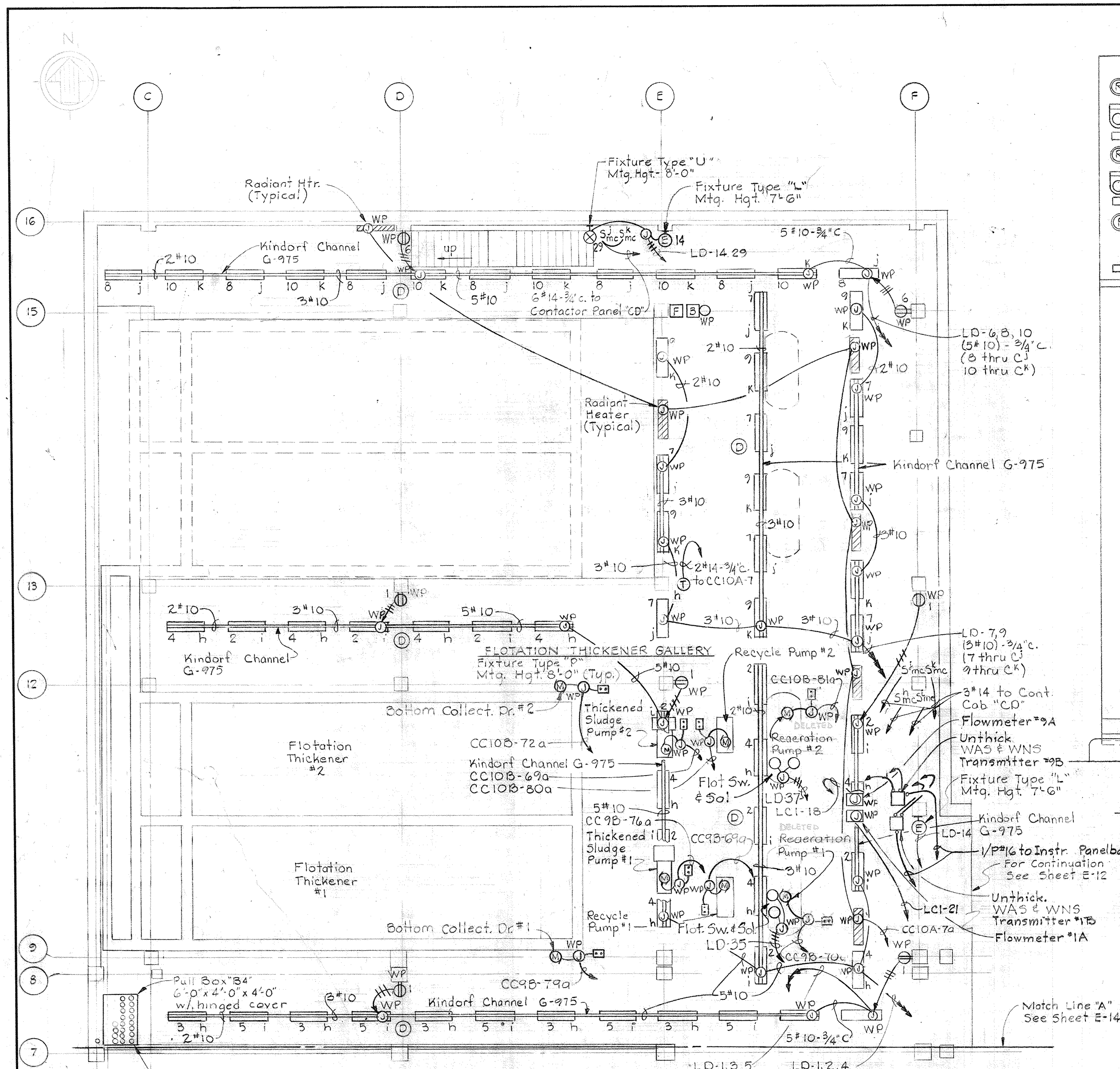
SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 91 OF 128
 SCALE 1"=50'

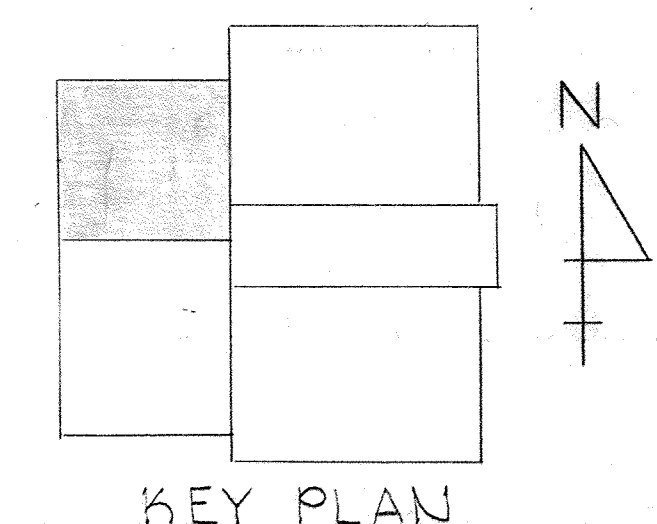
W.O. 6887

SHEET E-3

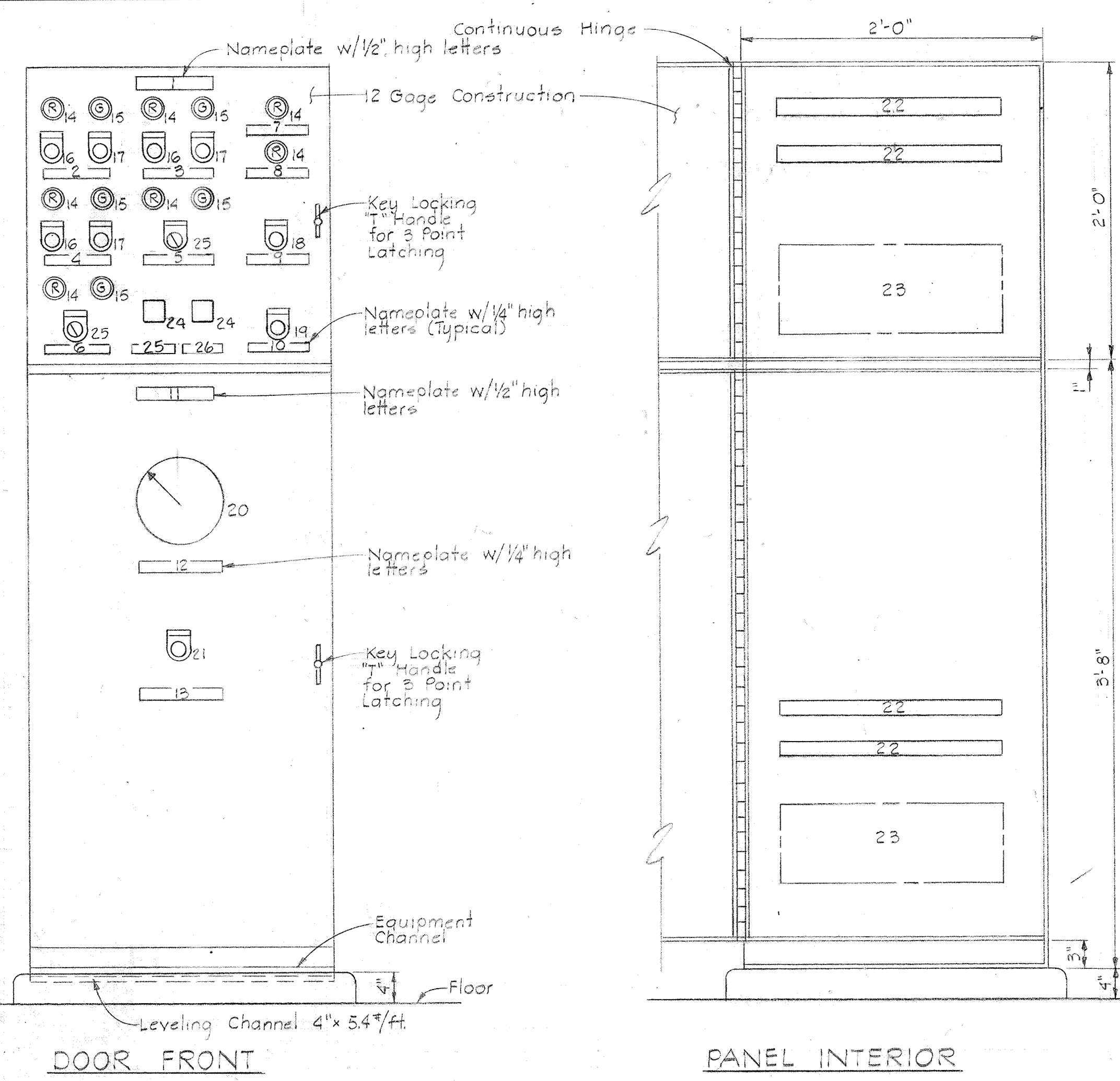
BRUNING 44510 1932



PLAN - ELEVATION 128.00
Scale: 1/8" = 1'-0"

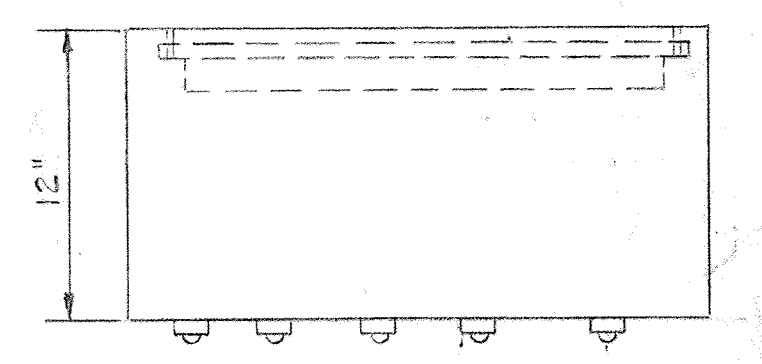


KEY PLAN



DOOR FRONT

PANEL INTERIOR



PLAN

NOTES:

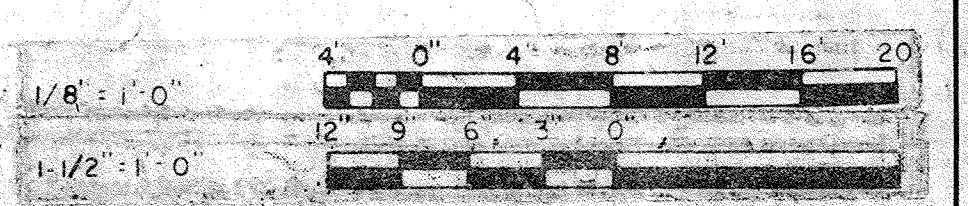
- For General Electrical Notes and Legend, see Sheet E-2.
- Run all motor & heater branch circuits & metering wiring in Flotation Thickener Gallery thru Pull Box "B". See Sheet E-14.

LEGEND

- | | | | |
|--------------|--|----|--------------------------------------|
| 1-13, 25, 26 | Nameplates | 19 | Start - Momentary Contact Type |
| 14 | Red Indicating Light | 20 | Water Level Indicating Meter |
| 15 | Green Indicating Light | 21 | Manual Purge Pushbutton |
| 16 | Start Pushbutton - Maintained Contact Type | 22 | Terminal Strip |
| 17 | Stop Pushbutton - Maintained Contact Type | 23 | Accessories |
| 18 | Stop - Momentary Contact Type | 24 | Recycling Timer |
| | | 25 | Hand-Off - Automatic Selector Switch |
-
- | | | | |
|----|--|----|--|
| 1 | FLOTATION THICKENER #1 CONTROL PANEL & BUBBLER CABINET #1 NAMEPLATE DATA | 1 | FLOTATION THICKENER #2 CONTROL PANEL & BUBBLER CABINET #2 NAMEPLATE DATA |
| 2 | FLOTATION THICKENER #1 CONTROL PANEL | 1 | FLOTATION THICKENER #2 CONTROL PANEL |
| 3 | THICKENED SLUDGE PUMP #1 | 2 | THICKENED SLUDGE PUMP #2 |
| 4 | RECYCLE PUMP #1 | 3 | RECYCLE PUMP #2 |
| 5 | POLYMER 'A' FEED PUMP #1 | 4 | POLYMER 'A' FEED PUMP #2 |
| 6 | TOP COLLECTOR DRIVE #1 | 5 | TOP COLLECTOR DRIVE #2 |
| 7 | BOTTOM COLLECTOR DRIVE #1 | 6 | BOTTOM COLLECTOR DRIVE #2 |
| 8 | SLUDGE WELL #1 LOW LIQUID LEVEL | 7 | SLUDGE WELL #2 LOW LIQUID LEVEL |
| 9 | SLUDGE WELL #1 HIGH LIQUID LEVEL | 8 | SLUDGE WELL #2 HIGH LIQUID LEVEL |
| 10 | ALARM SILENCE | 9 | ALARM SILENCE |
| 11 | TEST INDICATING LIGHTS | 10 | TEST INDICATING LIGHTS |
| 12 | BUBBLER CABINET #1 | 11 | BUBBLER CABINET #2 |
| 13 | SLUDGE WELL LEVEL | 12 | SLUDGE WELL LEVEL |
| 14 | BUBBLER PURGE | 13 | BUBBLER PURGE |
| 15 | TIMER-TOP COLLECTOR DRIVE #1 | 14 | TIMER-TOP COLLECTOR DRIVE #2 |
| 16 | TIMER-BOTTOM COLLECTOR DRIVE #1 | 15 | TIMER-BOTTOM COLLECTOR DRIVE #2 |

FLOTATION THICKENER CONTROL PANEL & BUBBLER CABINET

Scale: 1 1/2" = 1'-0"
Typical for the following units:
Flotation Thickener #1 Control Panel & Bubbler Cabinet #1
Flotation Thickener #2 Control Panel & Bubbler Cabinet #2



WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

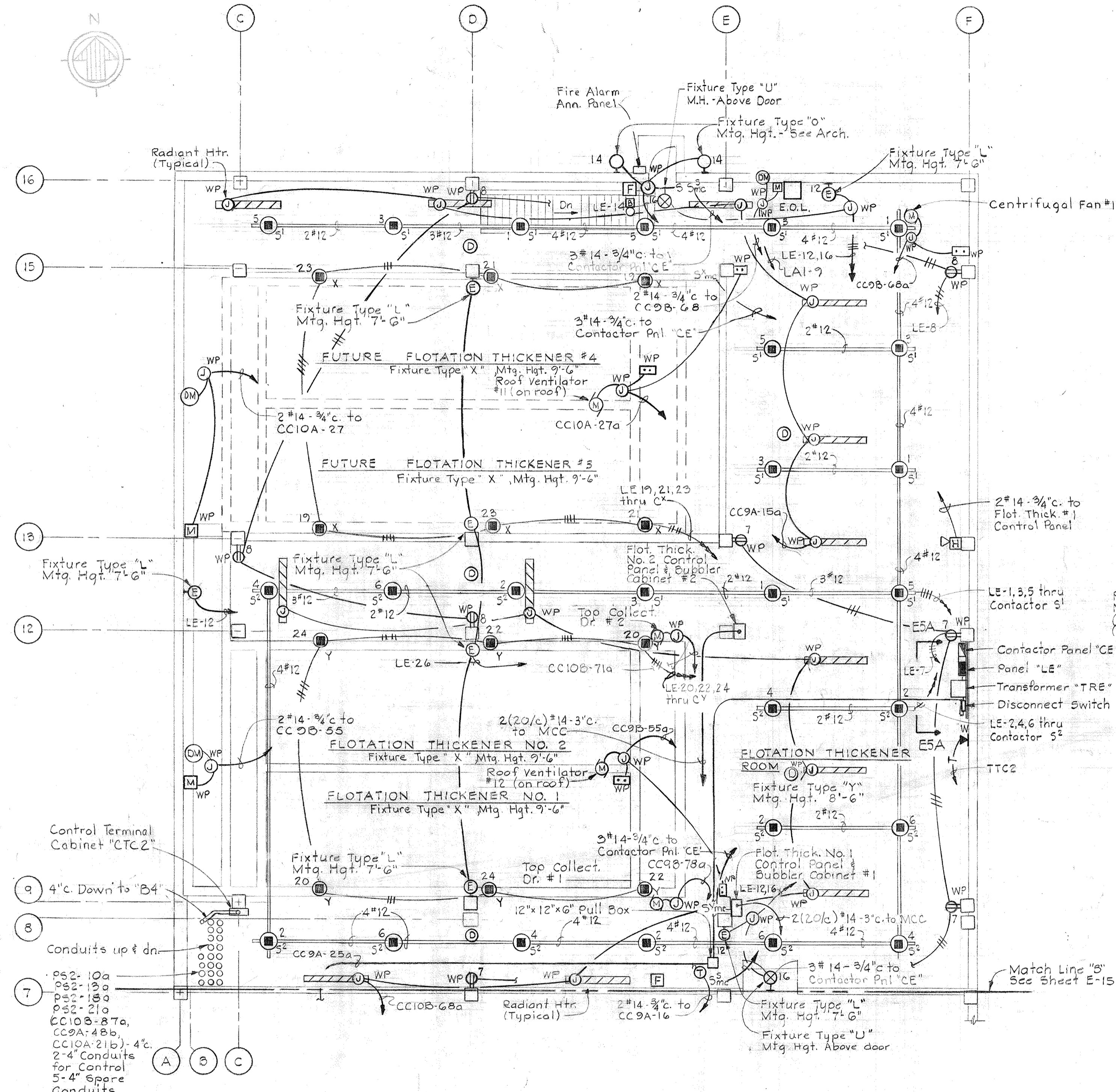
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3/20/75
W. O. Libert
CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 50I-S

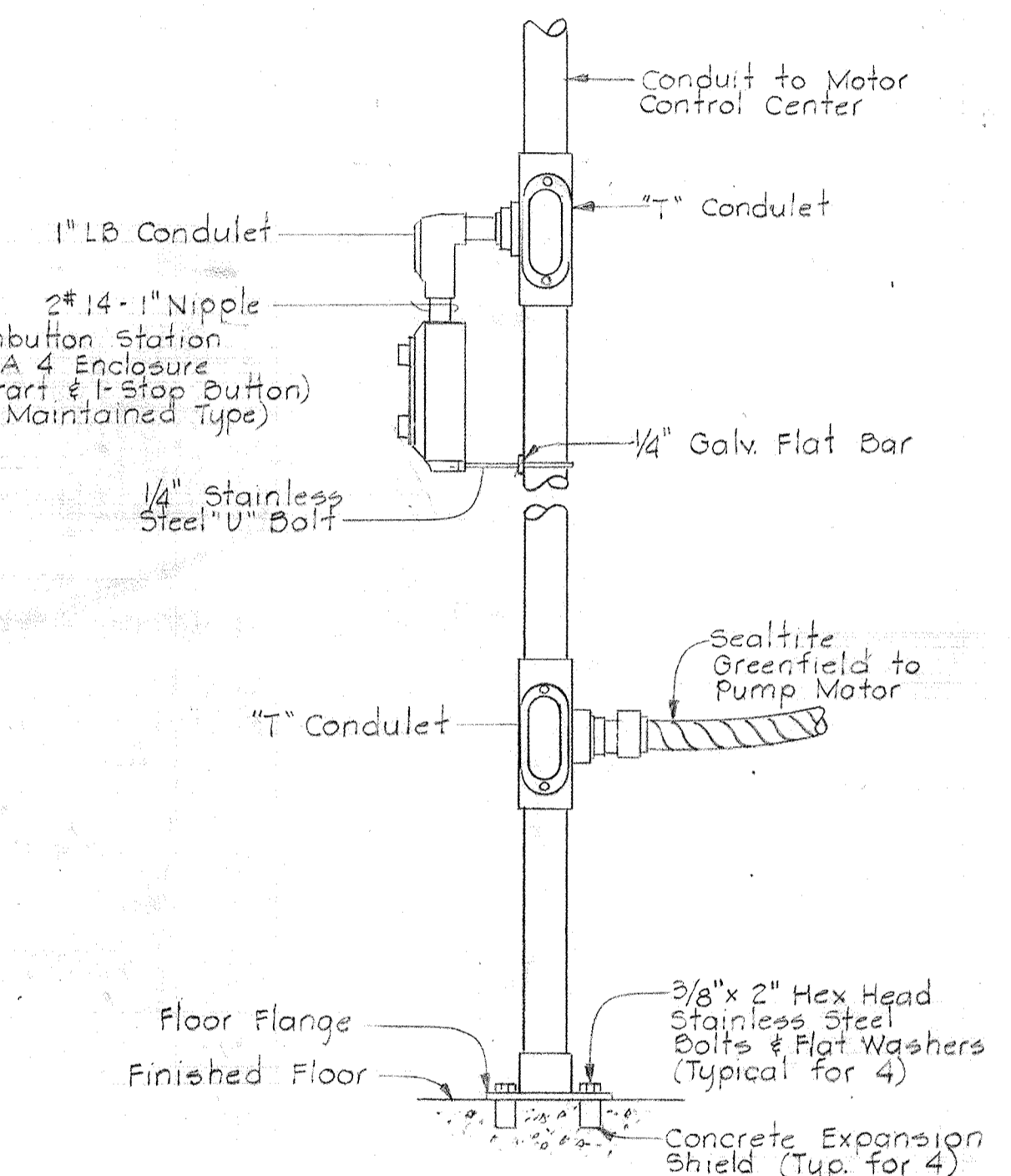
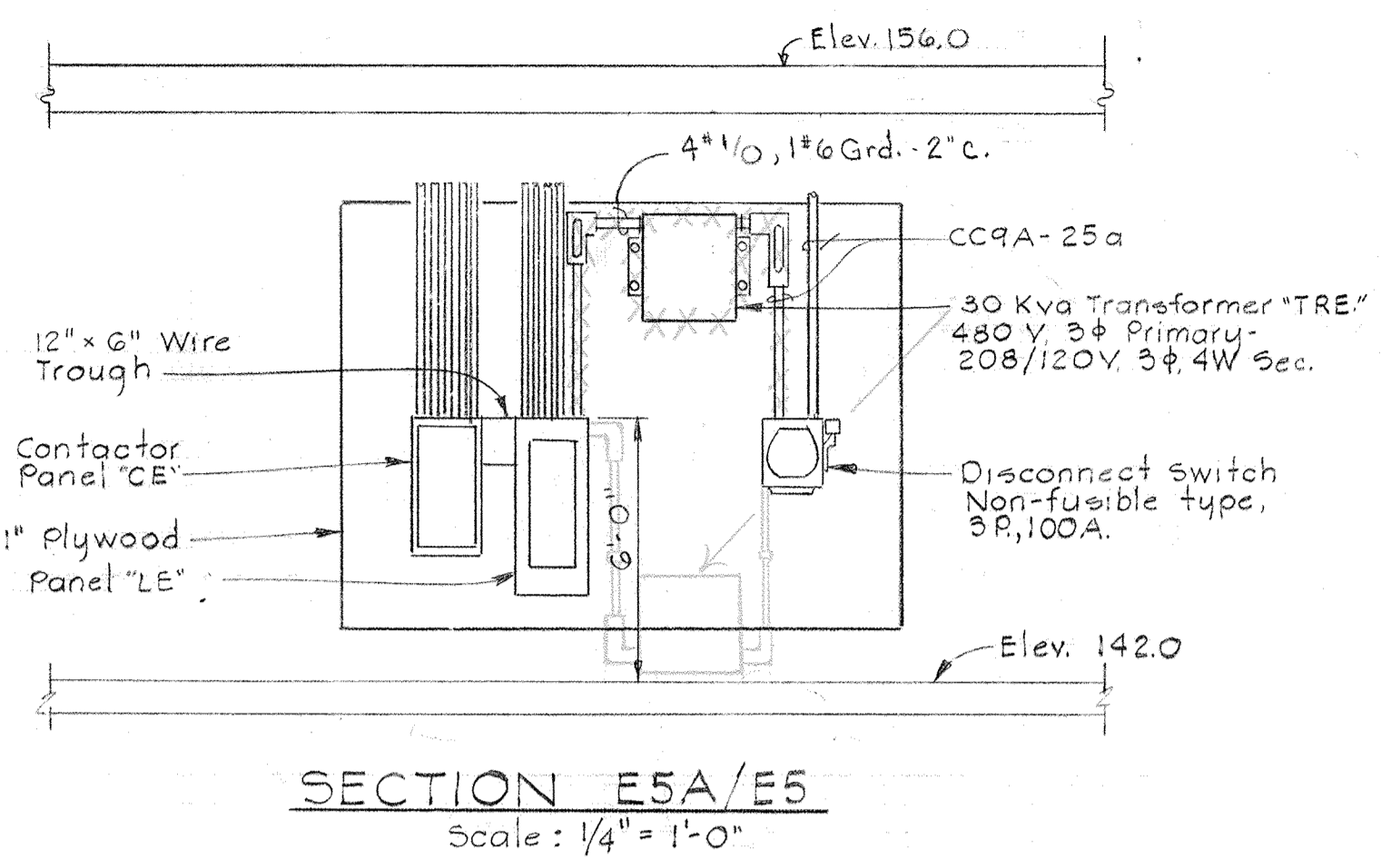
ELECTRICAL
FLOTATION THICKENERS
PLAN ELEV. 128.0 & DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 92 OF 128
SCALE AS NOTED

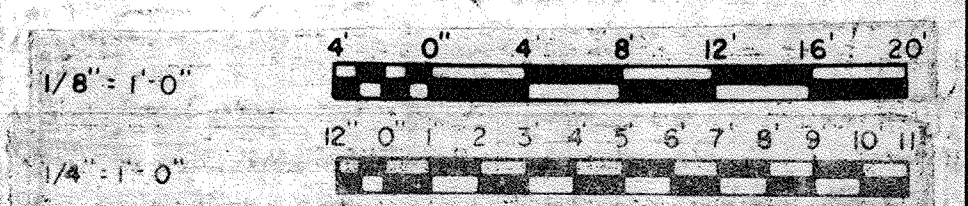
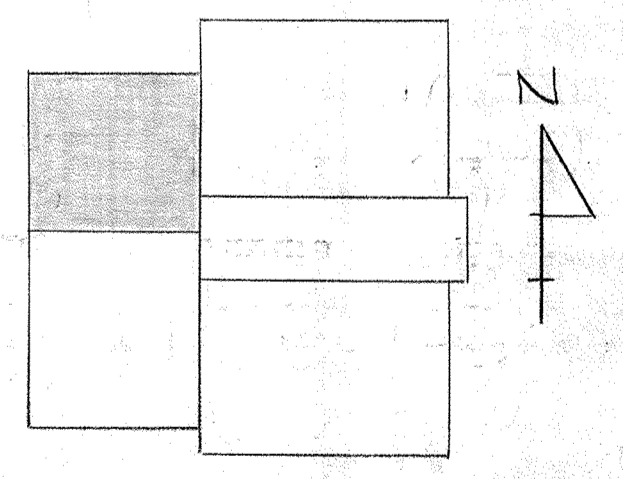


PLAN - ELEV. 142.00
Scale: 1/8" = 1'-0"



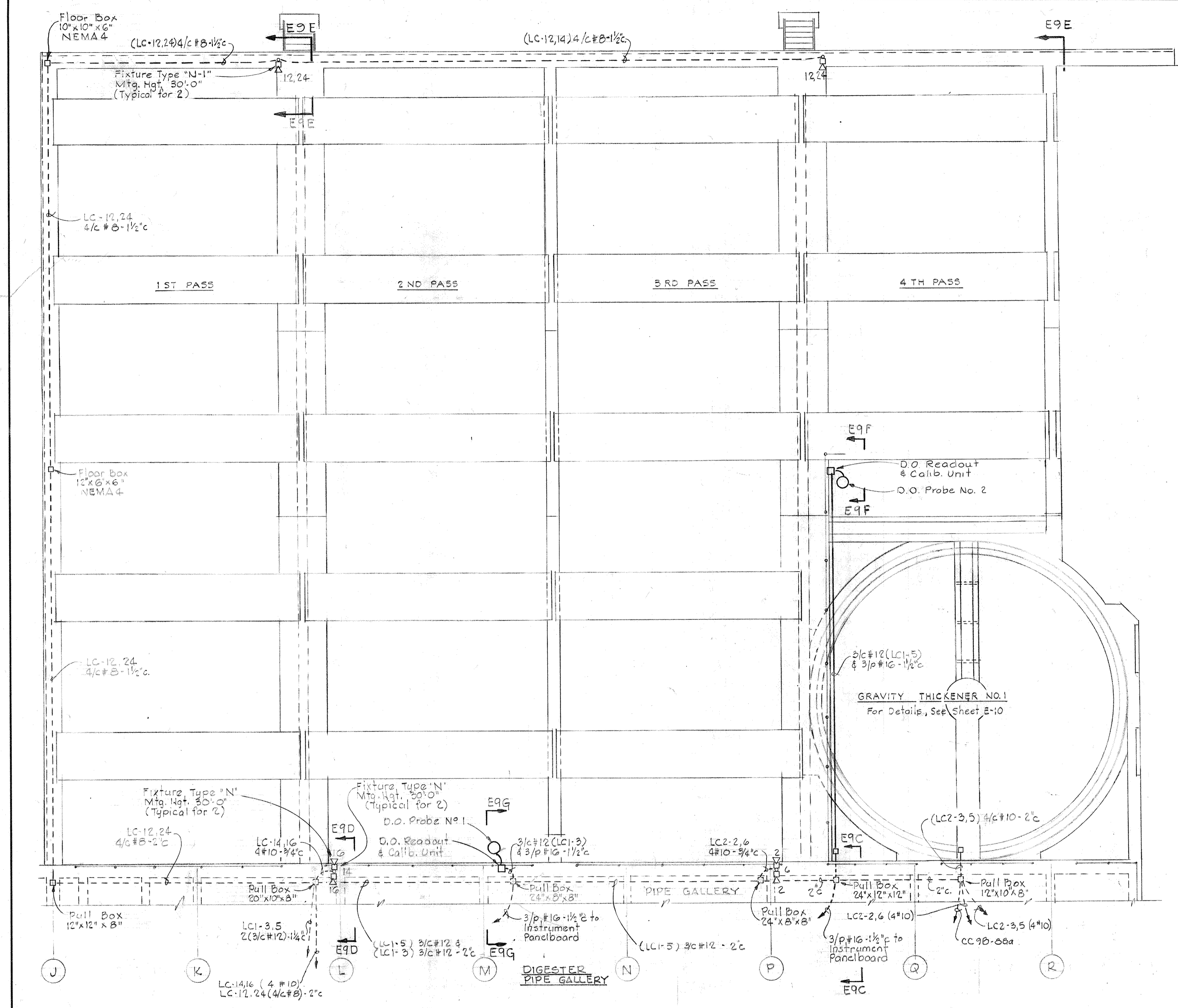
Typical for the following units:
 Flotation Thickener Area Bottom Collector Drs #1 & #2
 Flotation Thickener Area Recirculation Pumps #1 & #2
 Flotation Thickener Area Thickened Sludge Pumps #1 & #2
 Flotation Thickener Area Recycle Pumps #1 & #2

- NOTES
- For General Electrical Notes & Legend see Sheet E-2
 - For Details of Flotation Thickener Control Panels & Bubbler Cabinets see Sheet E-4.

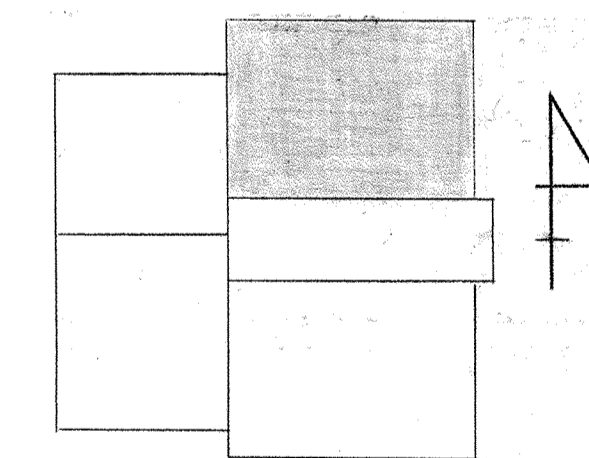


WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/30/75 CHIEF: W. O. Lambert CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 501-S	ELECTRICAL FLOTATION THICKENERS PLAN ELEV. 142.0 & DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 93 OF 128	SCALE AS NOTED
					W. O. 6887	

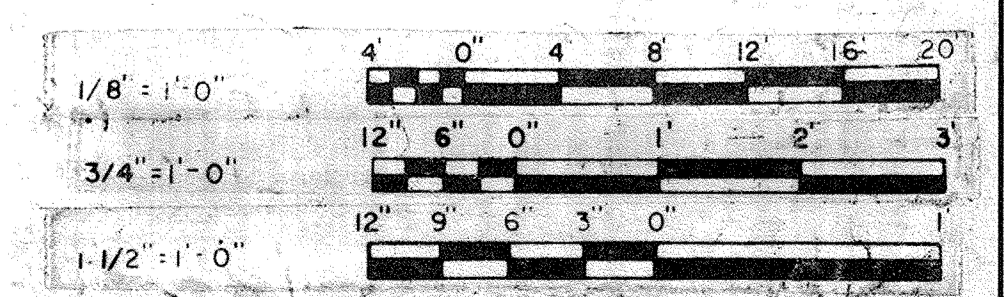
- NOTES:**
- For General Electrical Notes and Legend, see Sheet E-2.
 - For Continuation see Sheet E-12 & E-13.



DIGESTER NO. 1 PLAN
Scale 1/8"=1'-0"



KEY PLAN

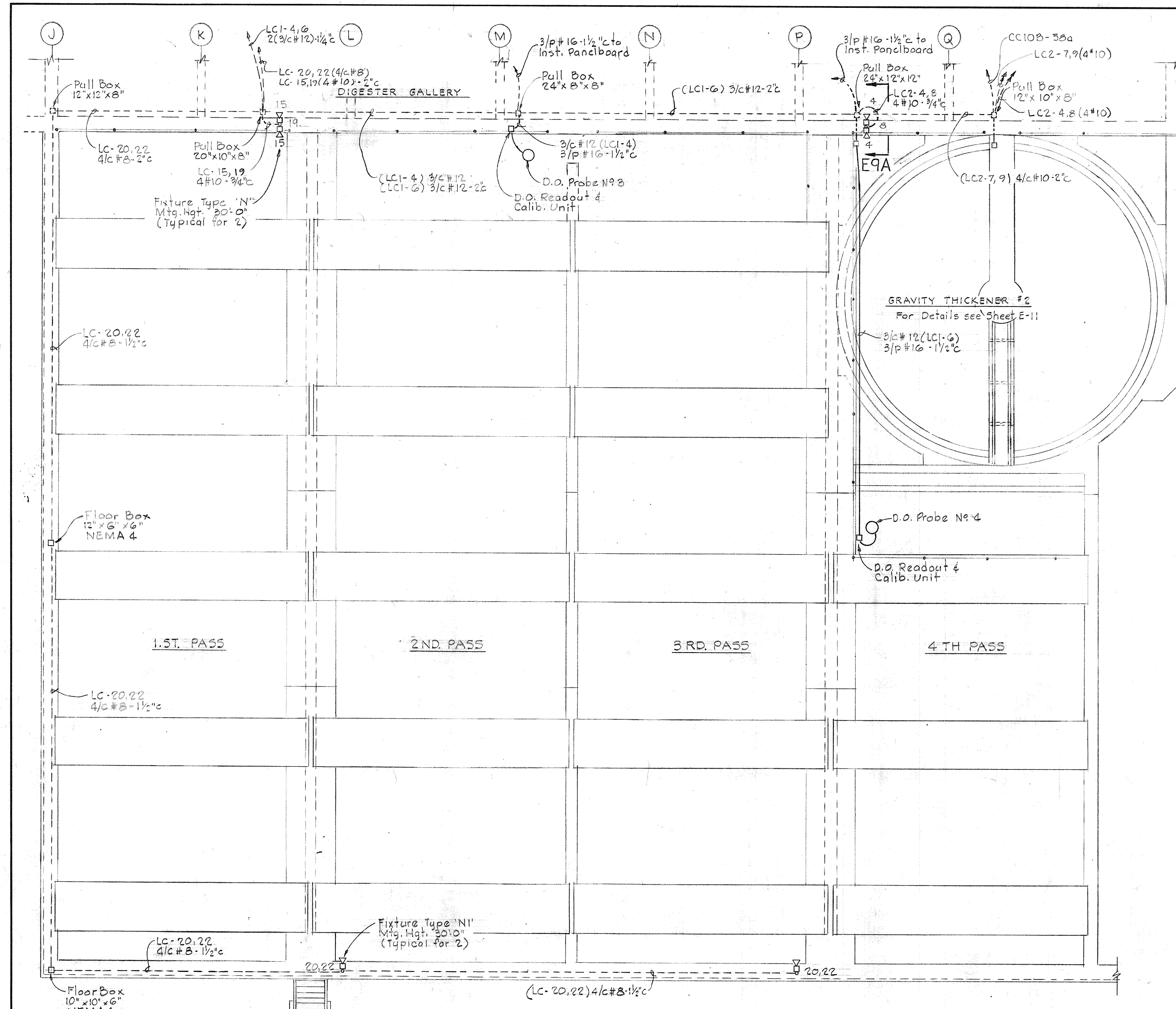


<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 2/20/75 W. O. Libat CHIEF-BUREAU OF ENGINEERING</p>	<p>CONTRACT NO. 501-S</p>	<p>ELECTRICAL DIGESTERS & GRAVITY THICKENERS PLAN & DETAILS</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 94 OF 128</p> <p>SCALE AS NOTED</p>
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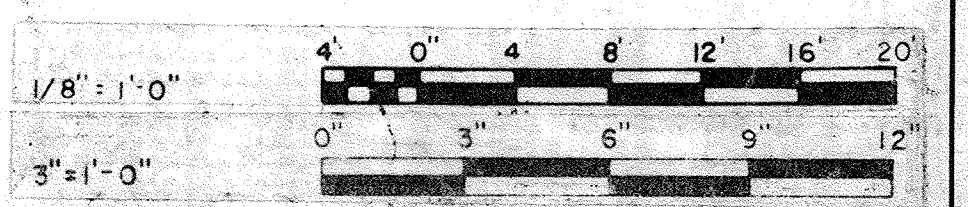
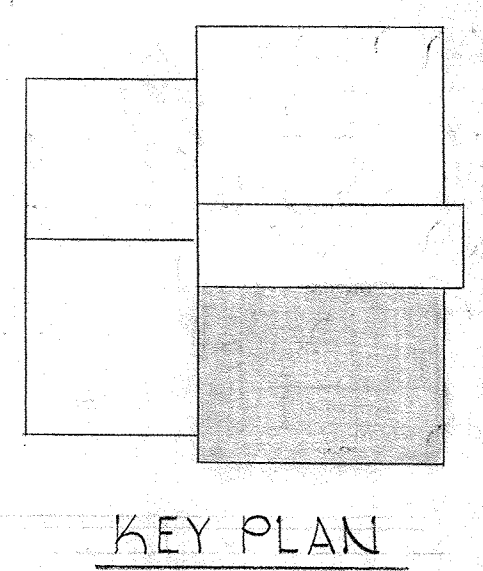
SHEET E-6

DRAWING 44510 1932



- NOTES:**
1. For General Electrical Notes & Legend see Sheet E-2.
 2. The details of Digester #2 shall be similar to those of Digester #1, excepting opposite hand. For details see Sheets E-6, E-9.
 3. For continuation see Sheet E-12 & E-13.

DIGESTER NO. 2 PLAN
Scale 1/8" = 1'-0"

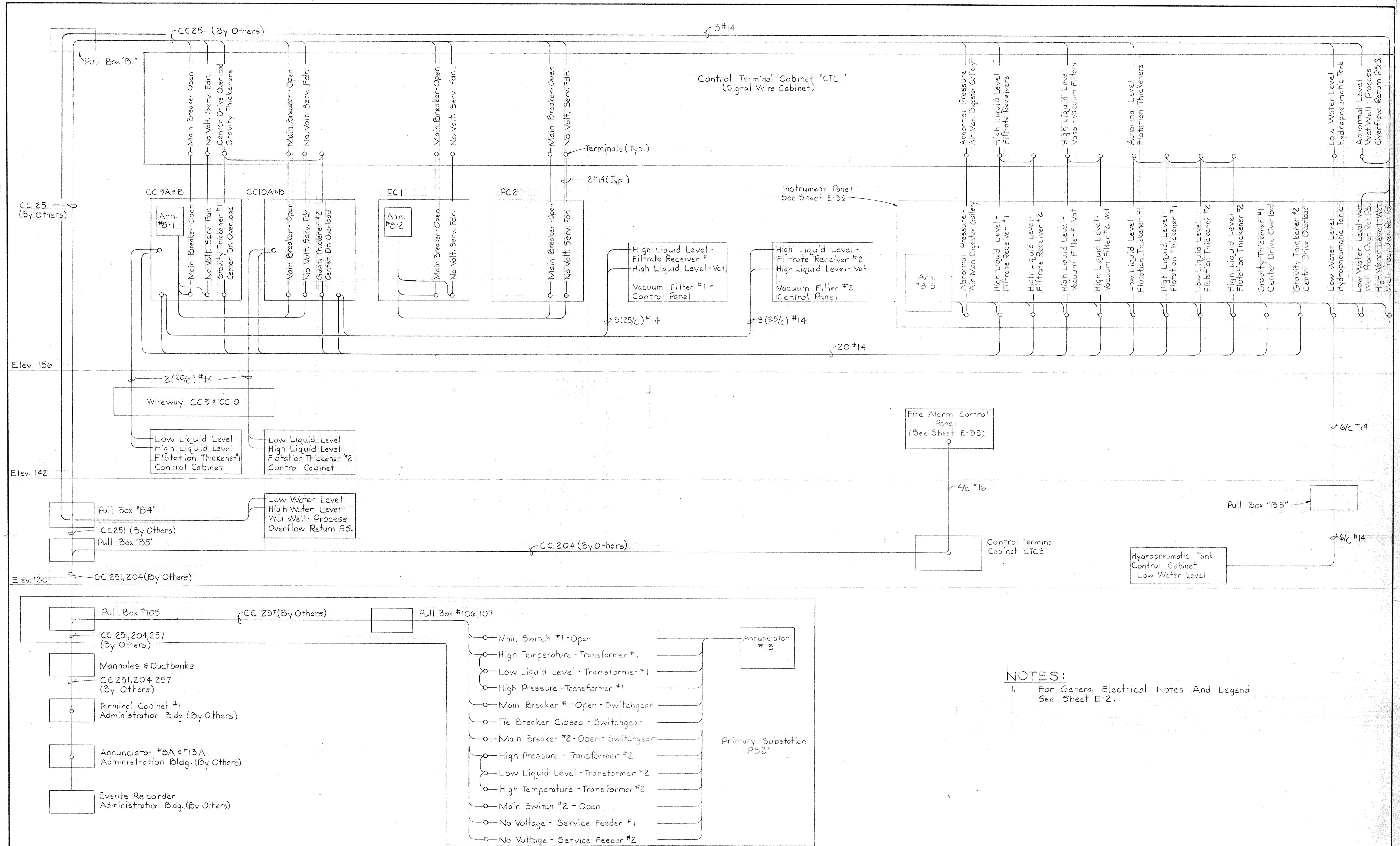


<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3/20/75 DATE</p> <p><i>W. O. Albert</i> CHIEF BUREAU OF ENGINEERING</p>	<p>CONTRACT NO. 501-S</p>	<p>ELECTRICAL DIGESTERS & GRAVITY THICKENERS PLAN & DETAILS</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 95 OF 128</p> <p>SCALE AS NOTED</p>
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W. O. 6887

SHEET E-7

BRUNING 44510 18392

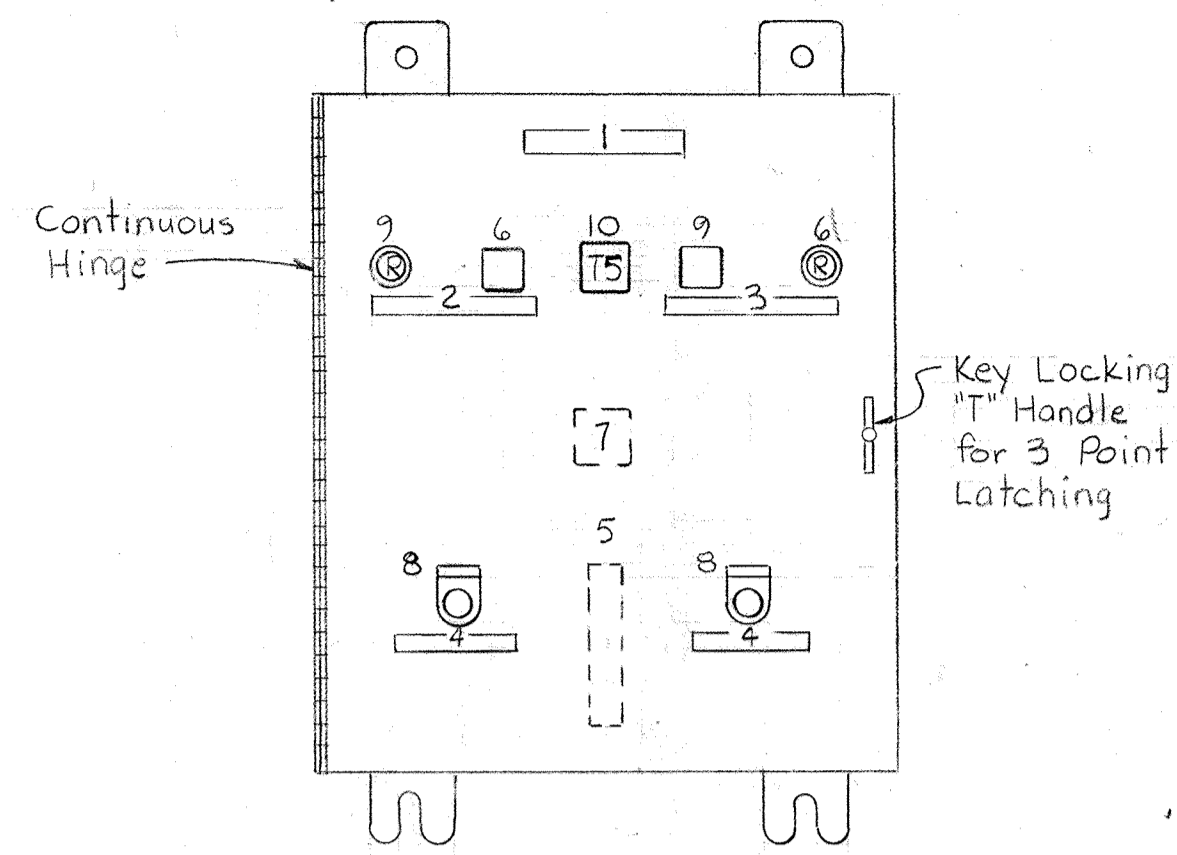


NOTES:
 1. For General Electrical Notes And Legend See Sheet E-2.

ALARM WIRING DIAGRAM

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE <i>NOV 28 1977</i> CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 50I-S	ELECTRICAL MISCELLANEOUS ALARM WIRING DIAGRAM	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 96 OF 128 SCALE AS NOTED
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BRUNING 44-510 3287Z



**CONTROL PANEL
PIPE GALLERY DAMPERS**
#1, #2, #3

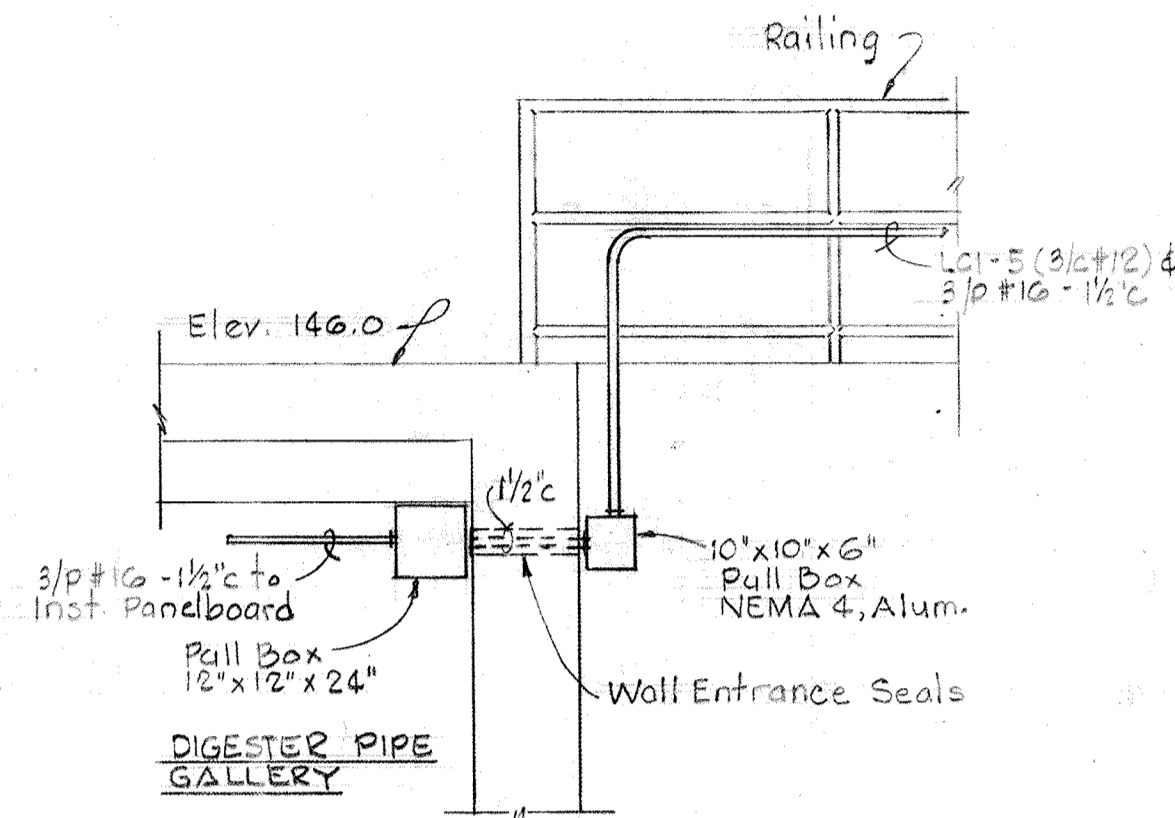
No Scale

LEGEND

- 1,2,3,4 Nameplates
- 5 Terminal Block
- 6 Manual Starter
- 7 Control Relay
- 8 Double Pole Pushbutton
- 9 Indicating Lights
- 10 Timer

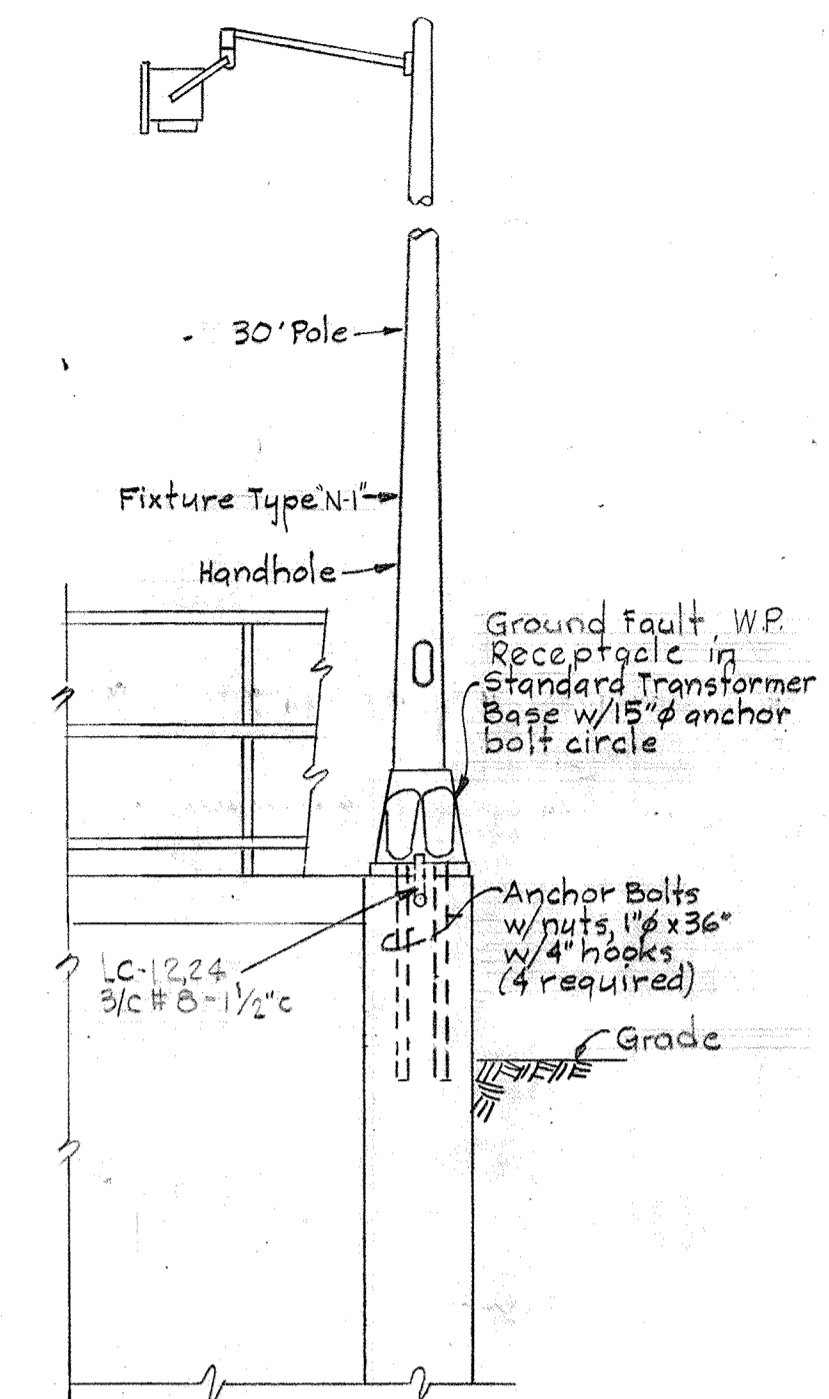
NAMEPLATE DATA

- 1 PIPE GALLERY DAMPERS
- 2 DAMPER #1
- 3 DAMPER #2
- 4 TEST-DAMPER



SECTION E9C/EG

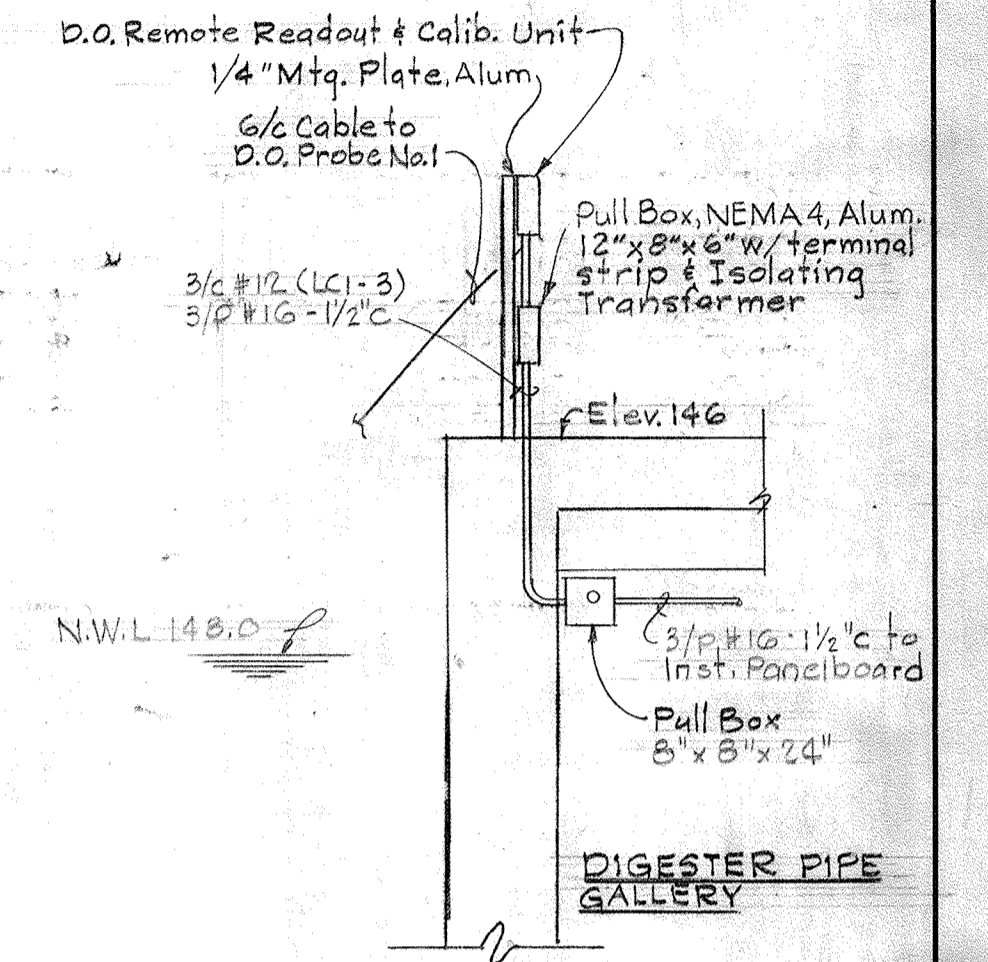
Scale: 3/8"=1'-0"
Section E9A/E6 Similar



SECTION E9E/EG

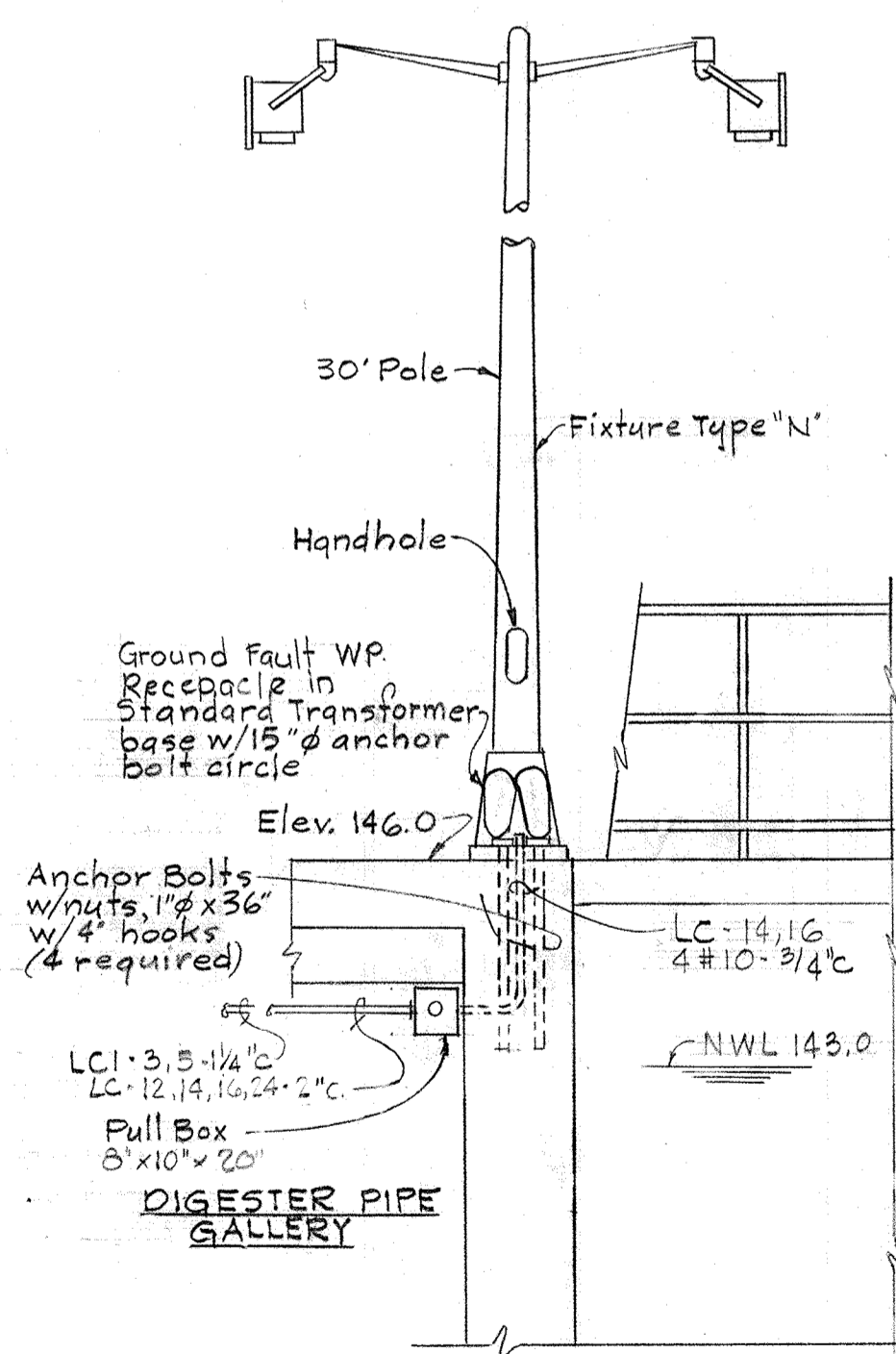
Scale: 3/8"=1'-0"

NOTES
1. For General Electrical Notes and Legend see Sheet E-2.



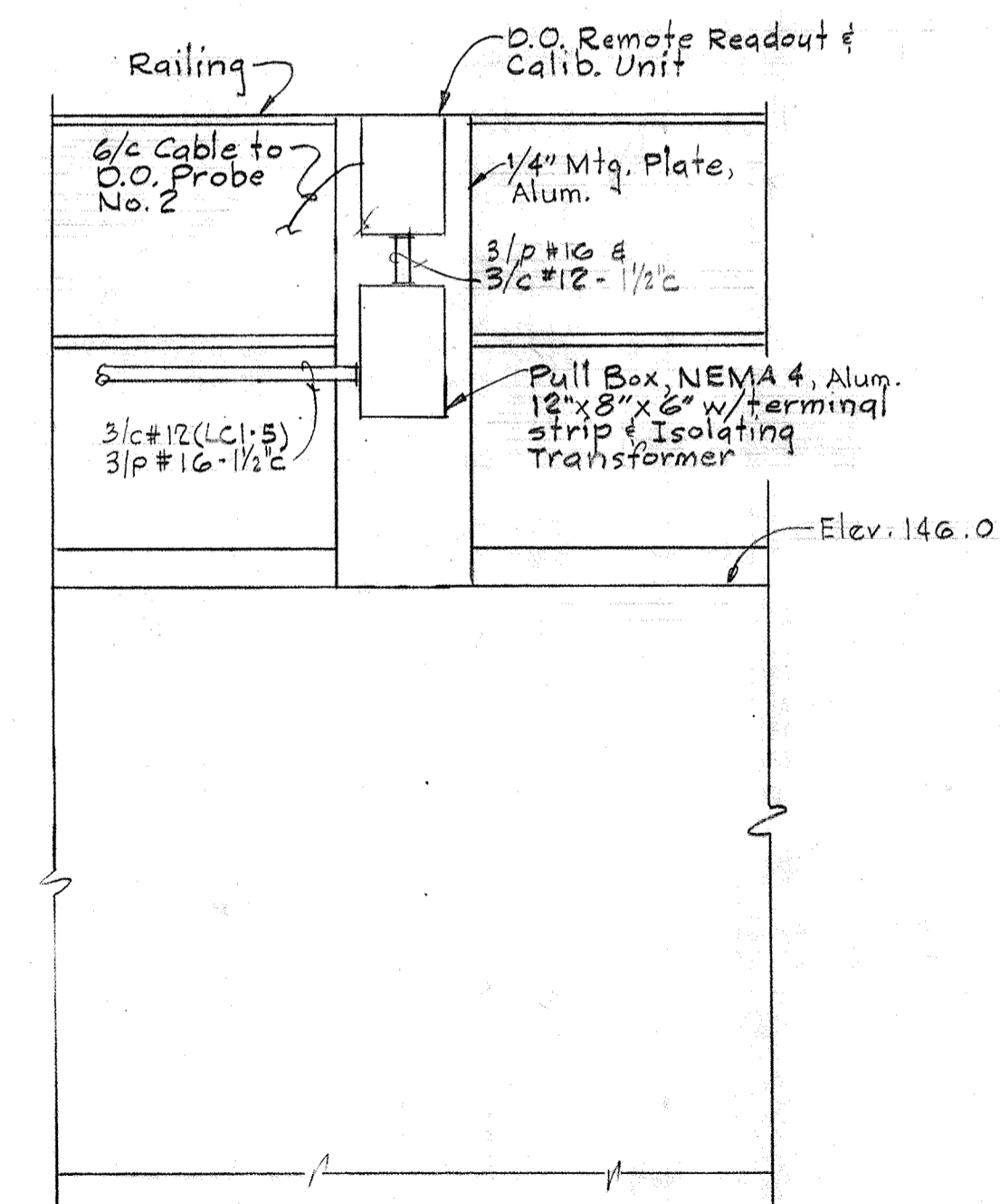
SECTION E9G/EG

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



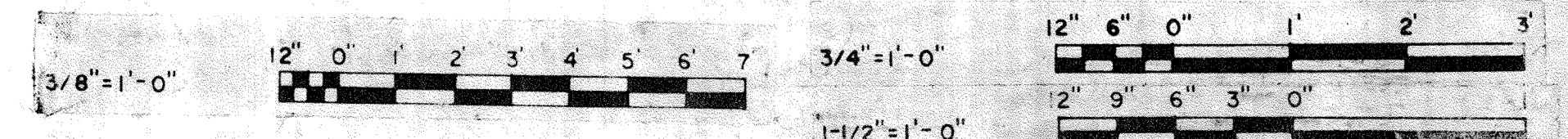
SECTION E9D/EG

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



SECTION E9F/EG

Scale: 3/4"=1'-0"



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BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3/20/75
W. O. Gilbert
CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 501-S

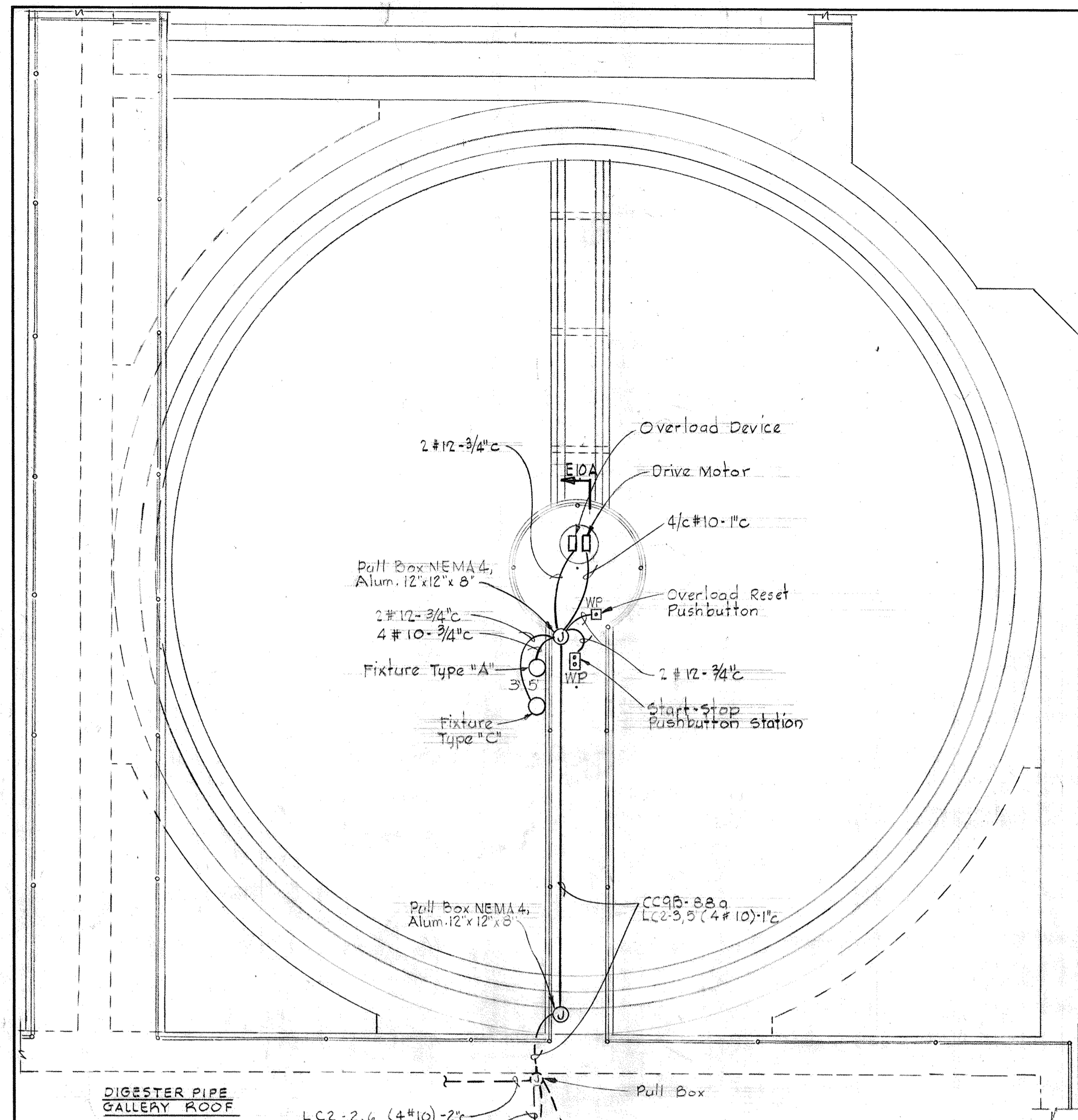
ELECTRICAL
DIGESTERS & GRAVITY THICKENERS
DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 97 OF 128
SCALE AS NOTED

NOTES:

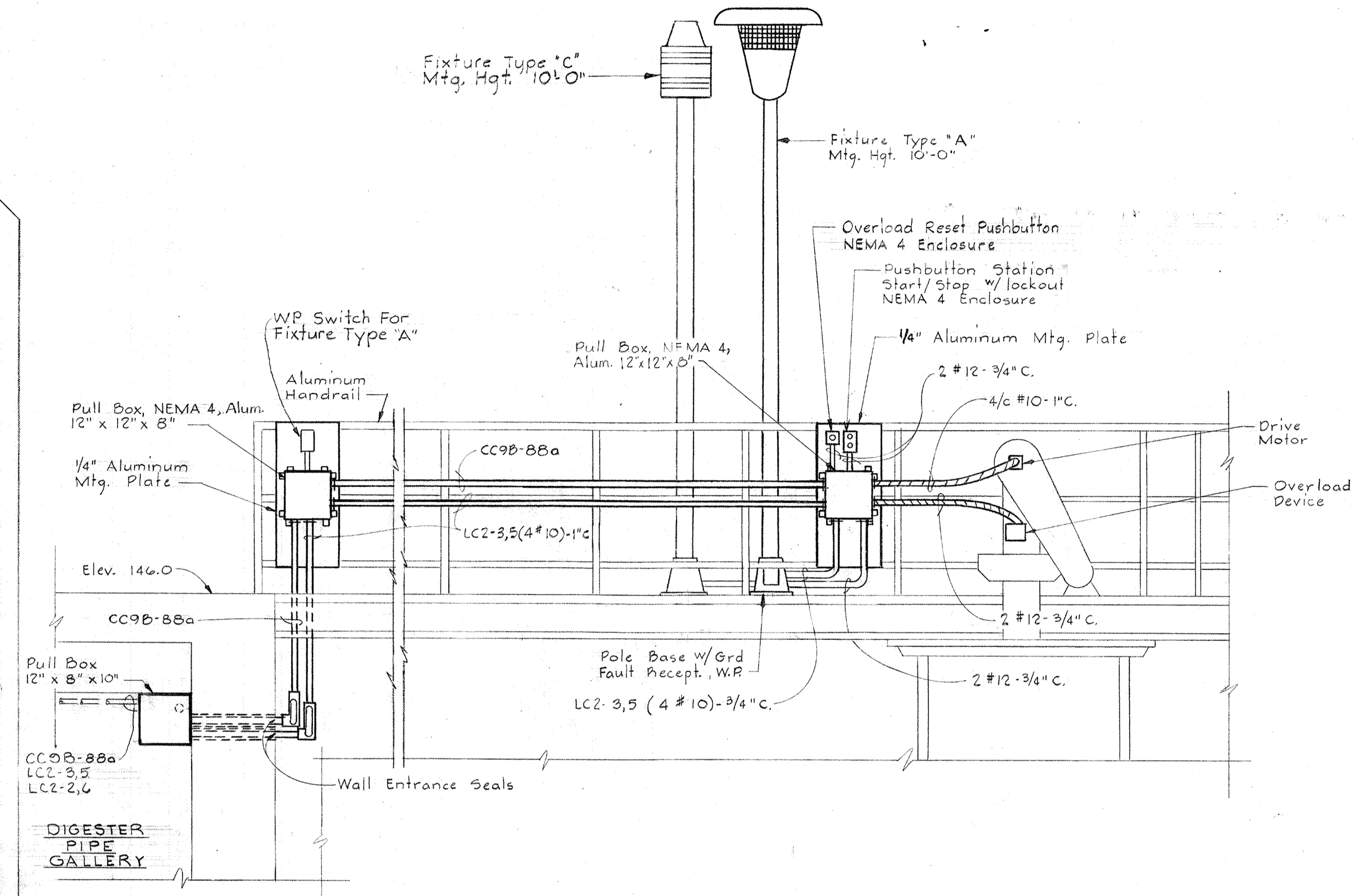
1. For General Electrical Notes and Legend, see Sheet E-2.
2. Allow 6" opening in Toe Board for access to receptacle.



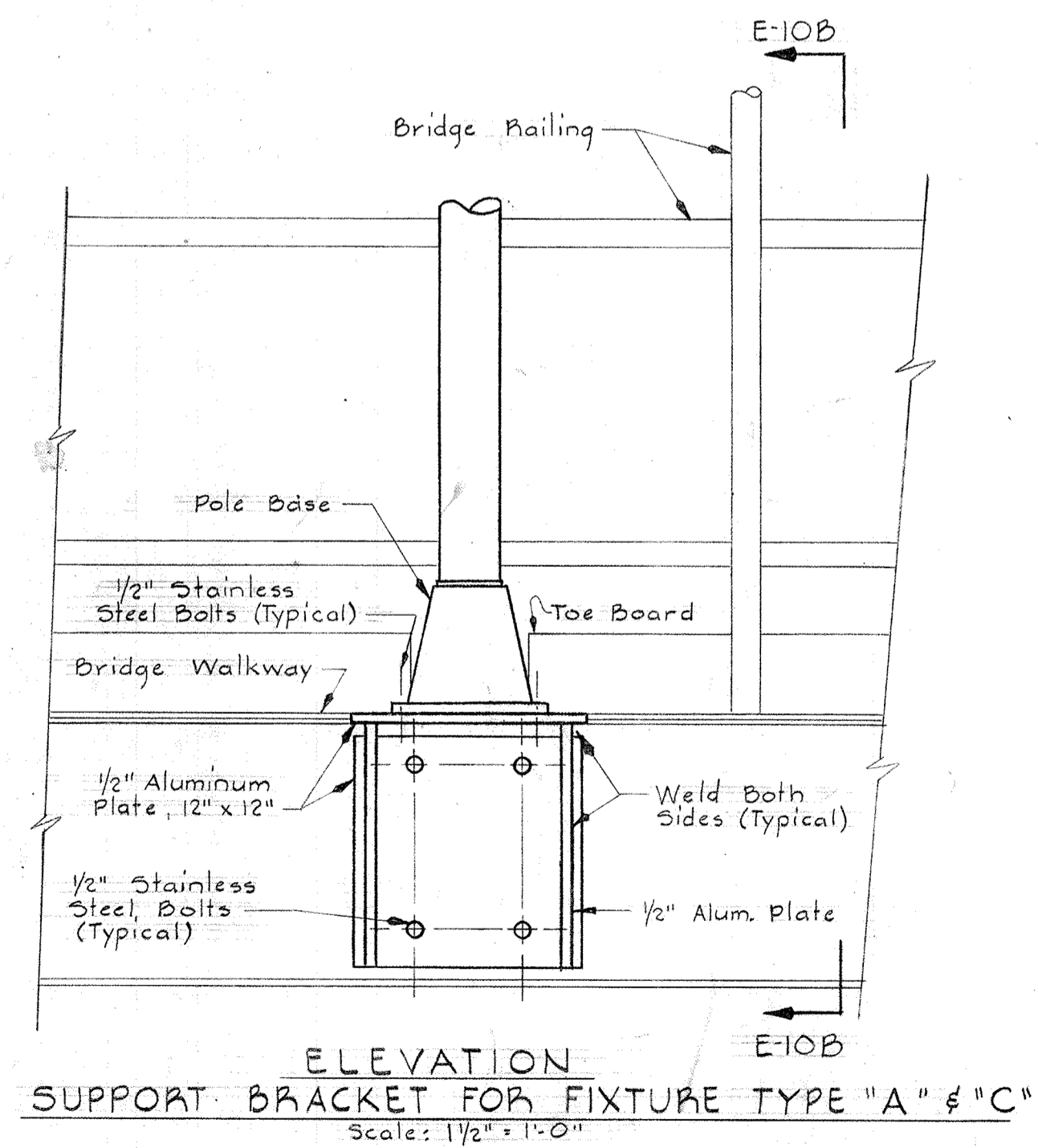
DIGESTER PIPE GALLERY ROOF

LC2-2,6 (4 #10)-2" c
LC2-2,6 (4 #10)
Pull Box
LC2-3,5 (4 #10)

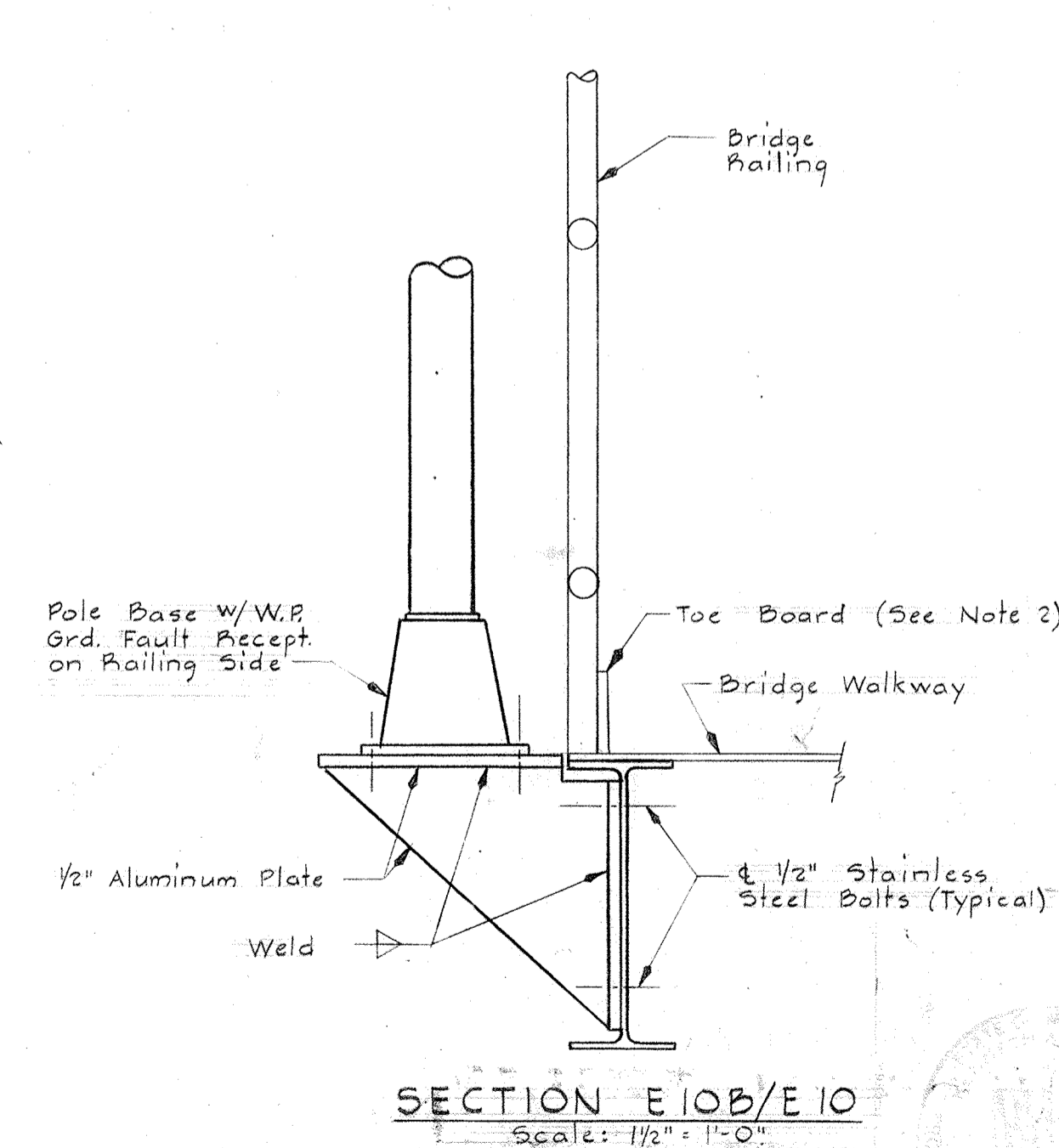
GRAVITY THICKENER #1
Scale: 1/4" = 1'-0"



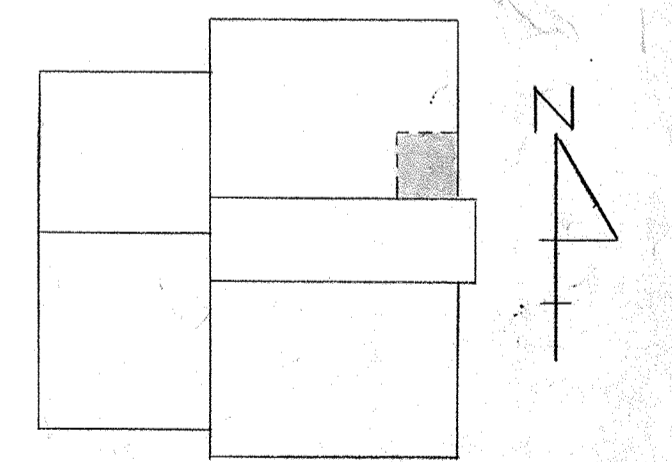
SECTION E10A/E10
Scale: 1/2" = 1'-0"



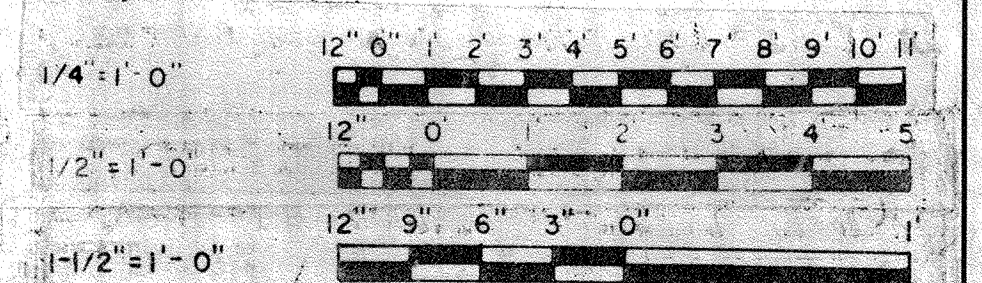
ELEVATION SUPPORT BRACKET FOR FIXTURE TYPE "A" & "C"
Scale: 1/2" = 1'-0"



SECTION E10B/E10
Scale: 1/2" = 1'-0"



KEY PLAN



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HOWARD COUNTY, MARYLAND
3/30/75
DATE
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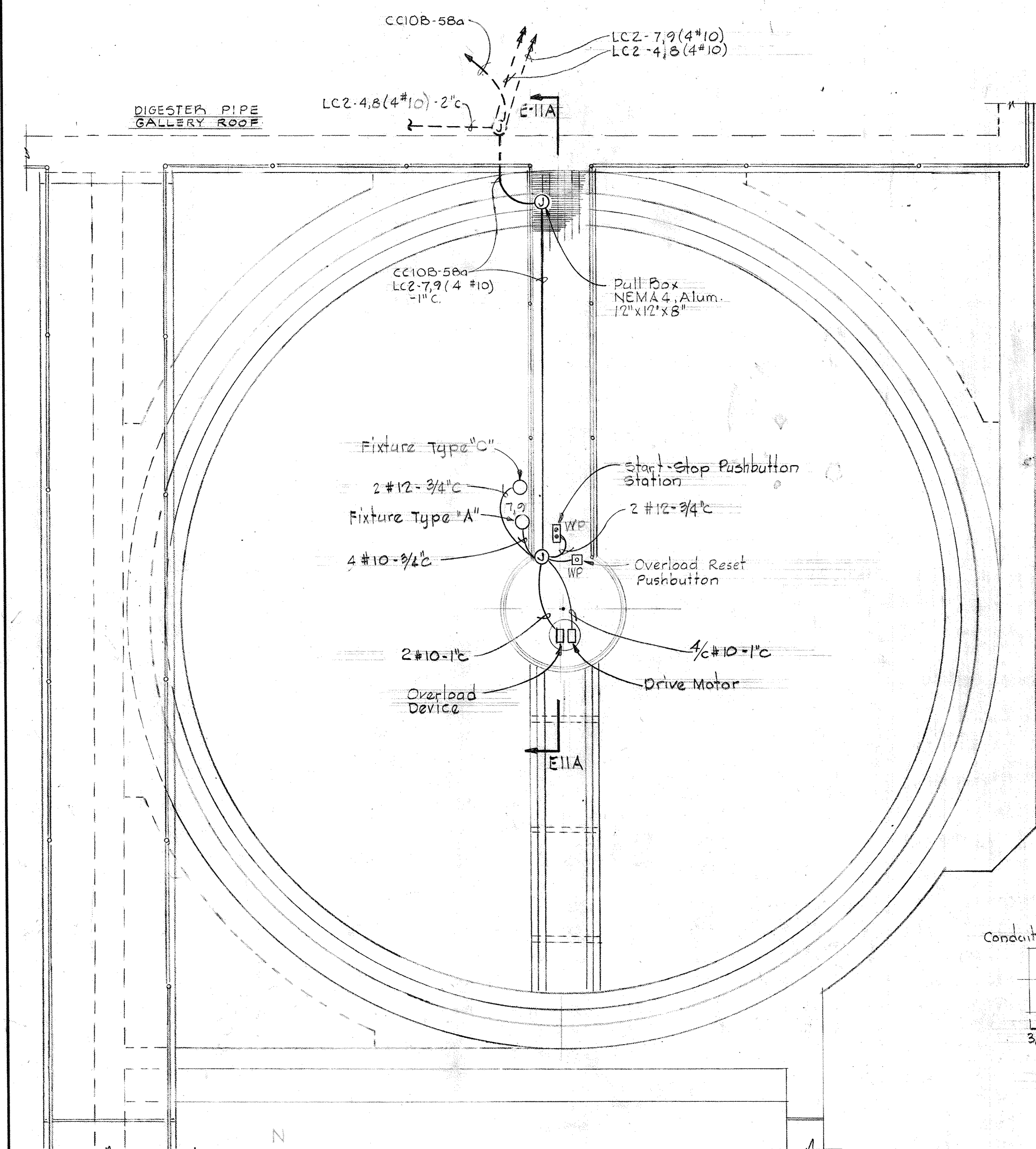
CONTRACT NO. 501-S

ELECTRICAL
DIGESTERS & GRAVITY THICKENERS
PLAN & DETAILS

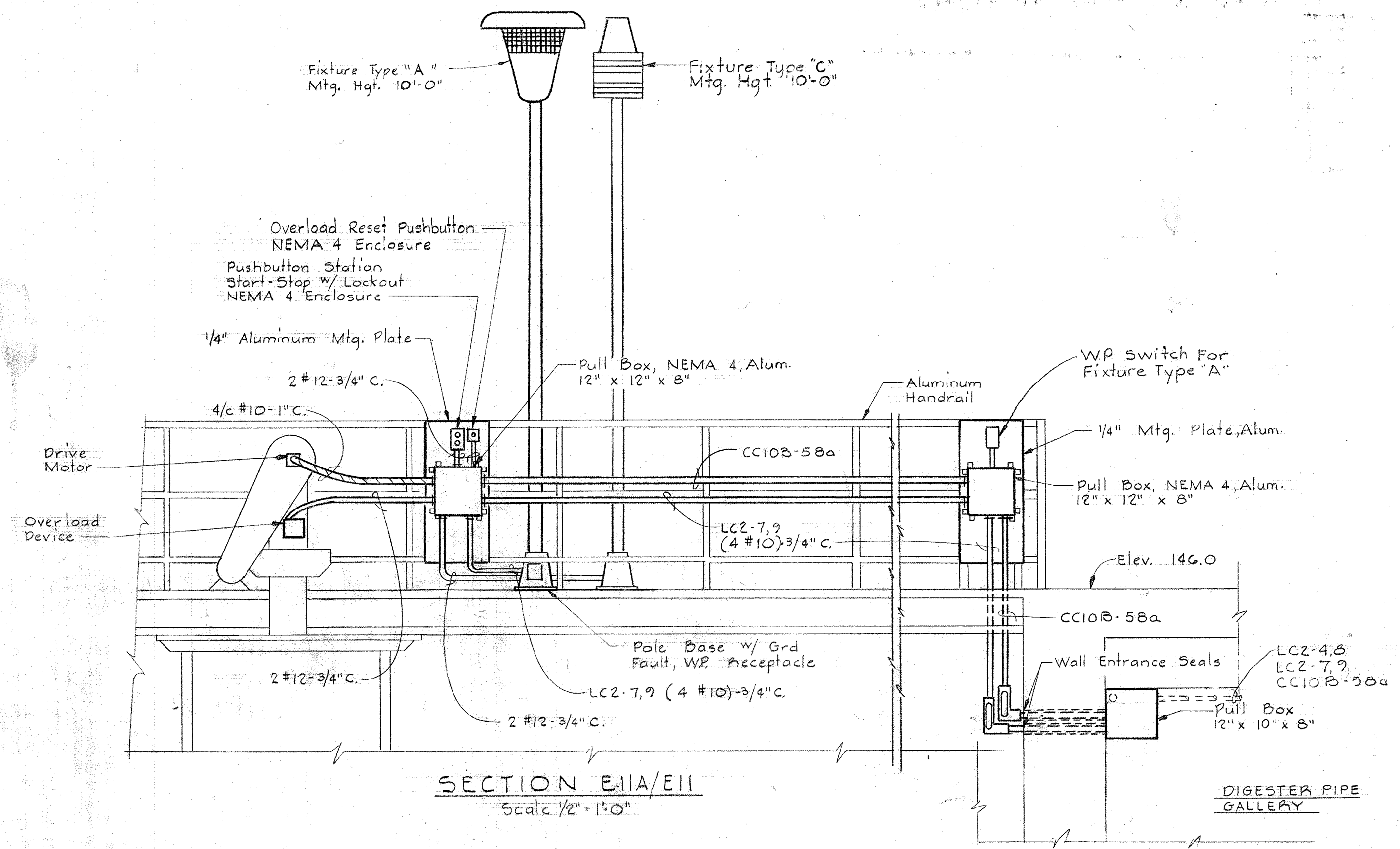
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 98
OF 128
SCALE AS NOTED

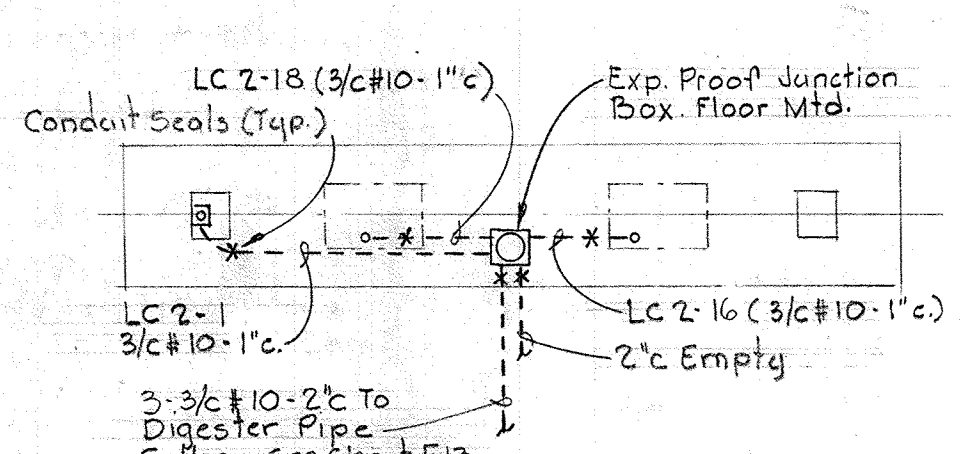
- NOTES:**
- For General Electrical Notes and Legend see Sheet E-2.
 - For Fixture Type "A" and "C" support bracket, see Sheet E-10.



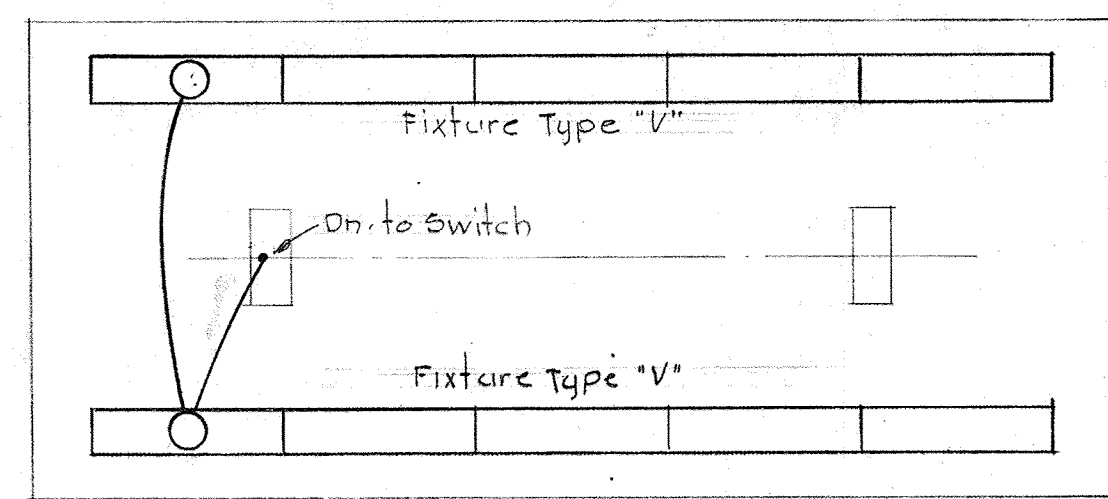
GRAVITY THICKENER #2
Scale: 1/4" = 1'-0"



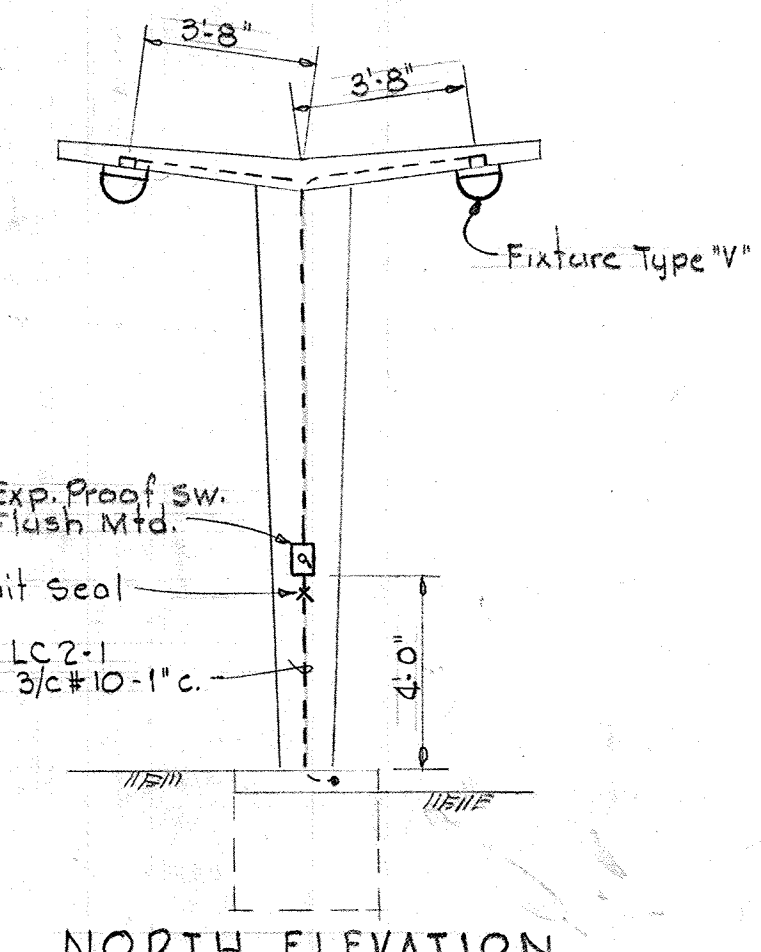
SECTION E-11A/E-11
Scale 1/2" = 1'-0"



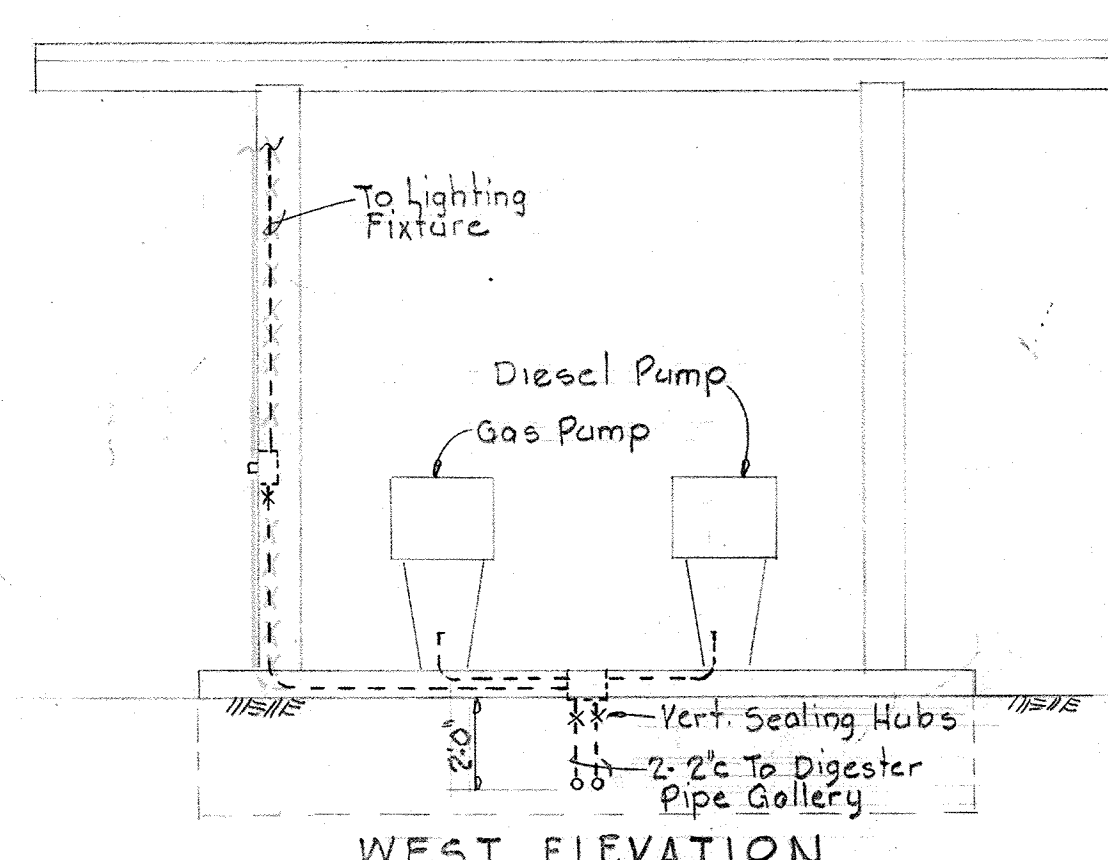
PLAN



ROOF PLAN

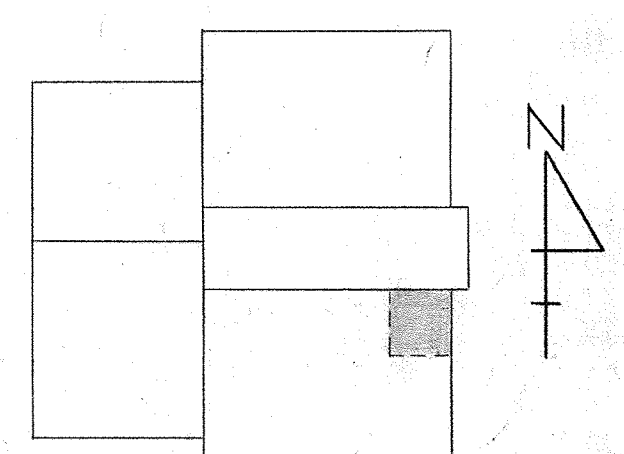


NORTH ELEVATION

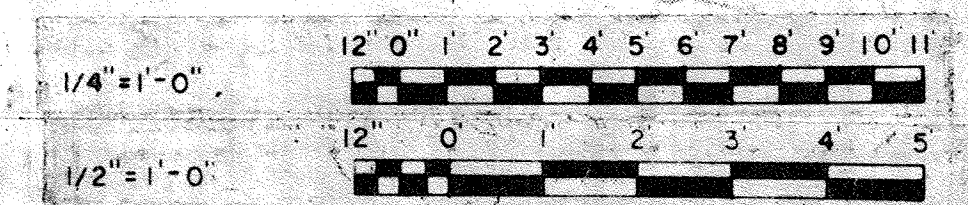


WEST ELEVATION

FUEL ISLAND DETAILS
Scale 1/4" = 1'-0"



KEY PLAN



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BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3/20/75
DATE
W.O. Likert
CHIEF-BUREAU OF ENGINEERING

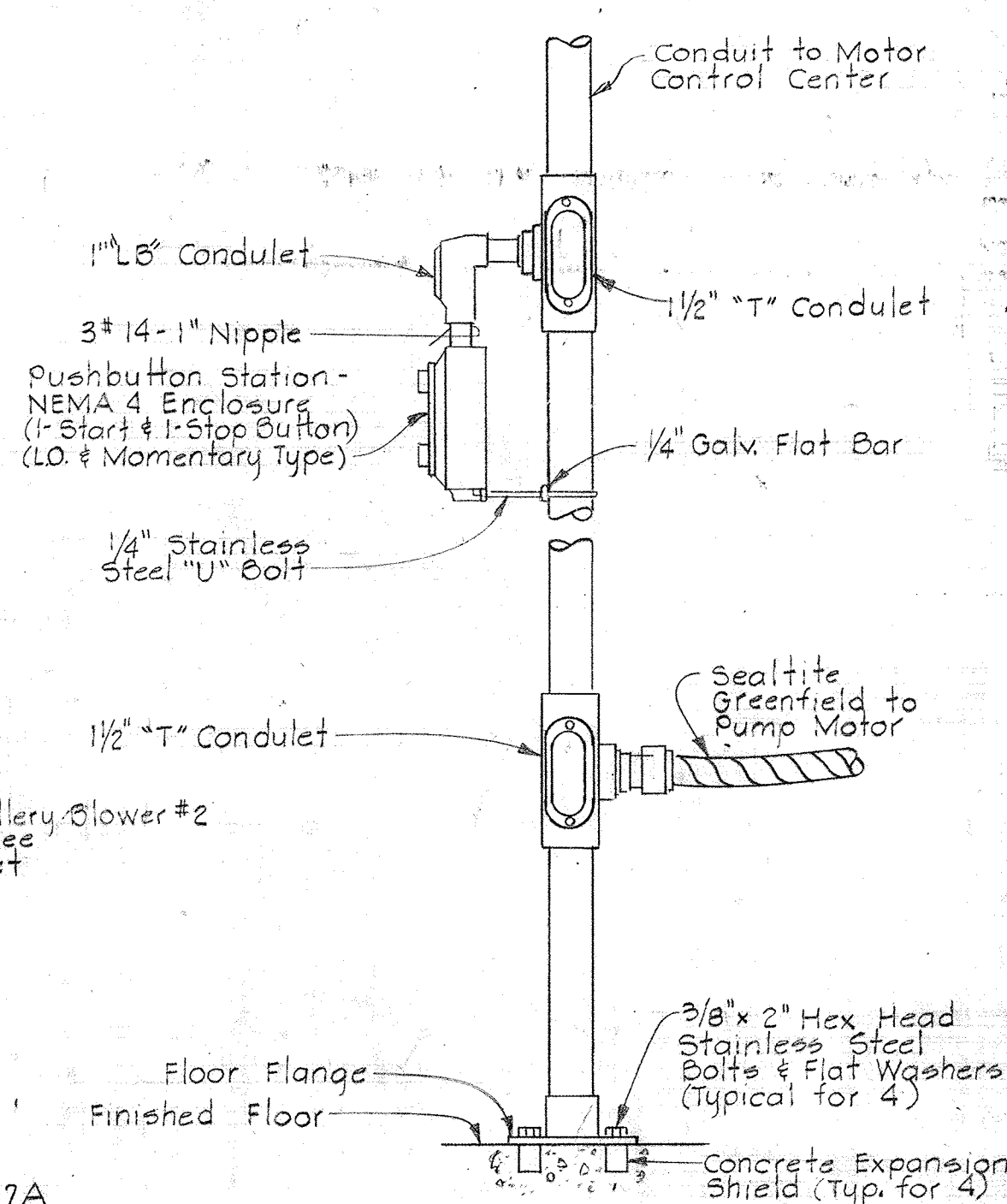
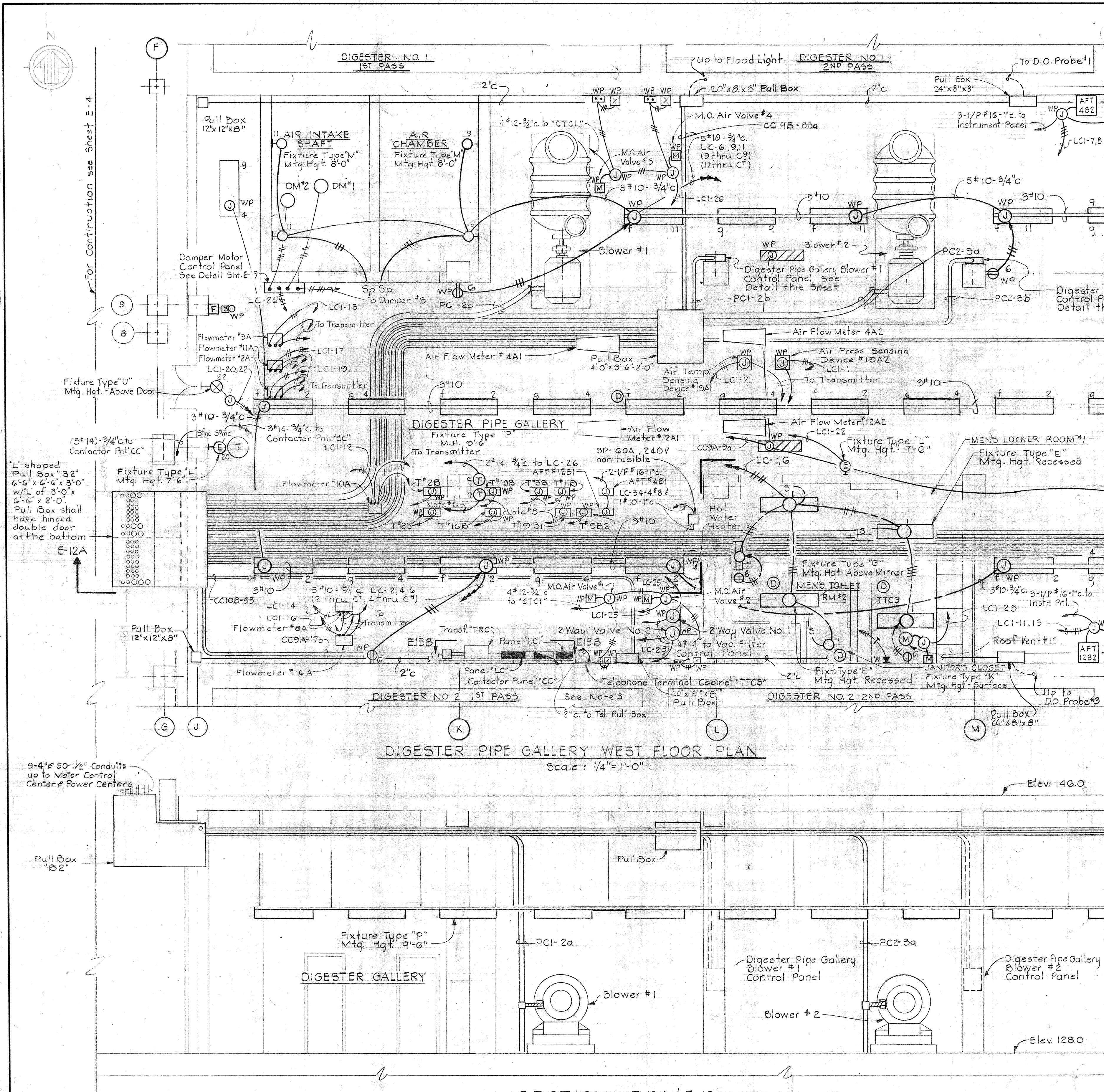
CONTRACT NO. 501-S

ELECTRICAL
DIGESTERS & GRAVITY THICKENERS
PLAN & DETAILS

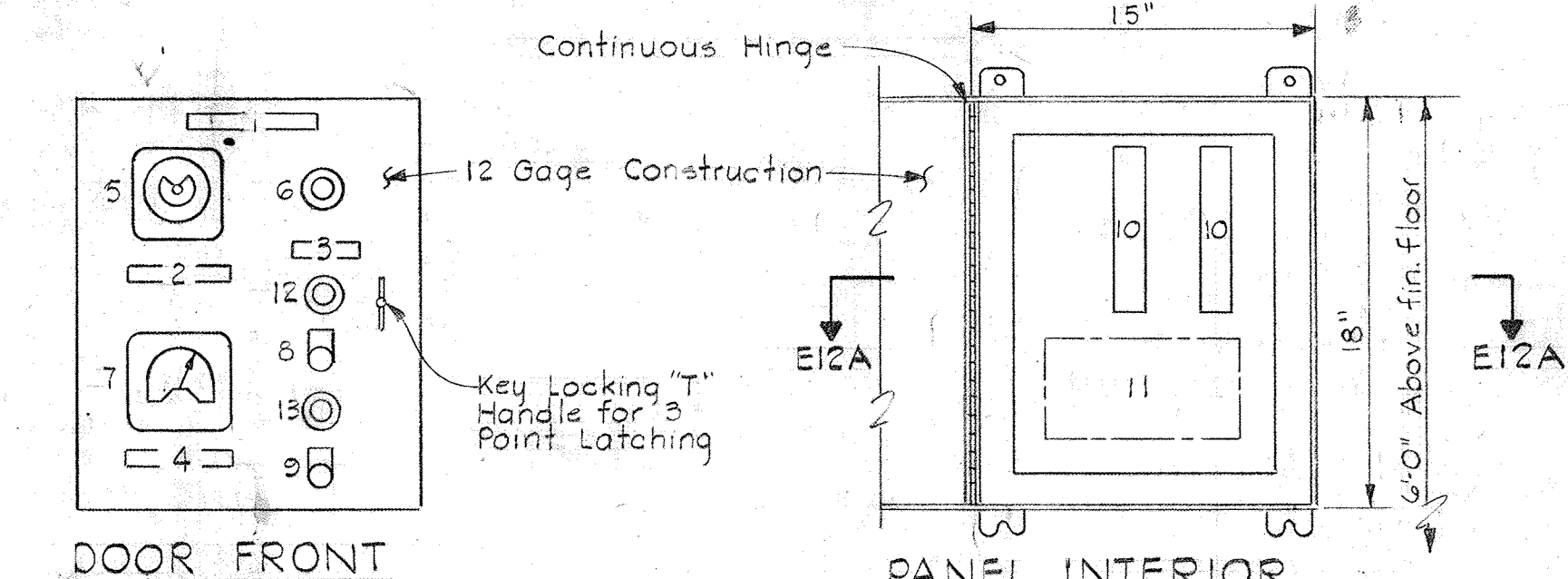
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 99
OF 128

SCALE
AS
NOTED



**MOUNTING DETAIL
PUSHBUTTON STATION**
No Scale
Typical for the following units:
Digester Pipe Gallery Scum Pumps #1 & #2



DOOR FRONT
PANEL INTERIOR
SECTION E12A/E12

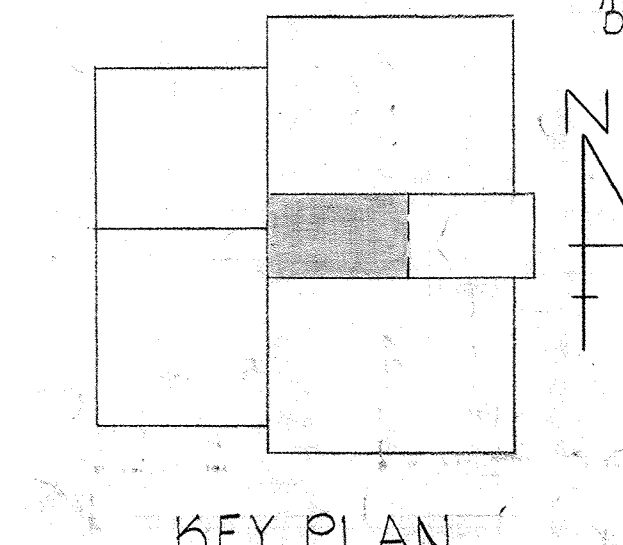
- LEGEND**
- 1,2,3,4 Nameplates
 - 5 Reset Timer on Delay Function
 - 6 Flow Meter in SCFM
 - 7 Blower Surge Low Air Pressure Gage
 - 8 Start Pushbutton-Maintained Contact Type
 - 9 Stop-Lockout Pushbutton-Maintained Contact Type
 - 10 Terminal Blocks-12 Line Min. Each
 - 11 Accessories
 - 12 Red Indicating Light
 - 13 Green Indicating Light

NAMEPLATE DATA

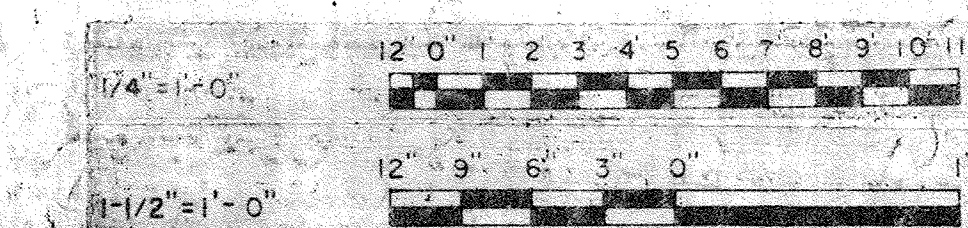
1. DIGESTER PIPE GALLERY BLOWER NO. CONTROL PANEL
2. RESET TIMER
3. FLOWMETER
4. BLOWER SURGE LOW AIR PRESSURE

BLOWER CONTROL PANEL

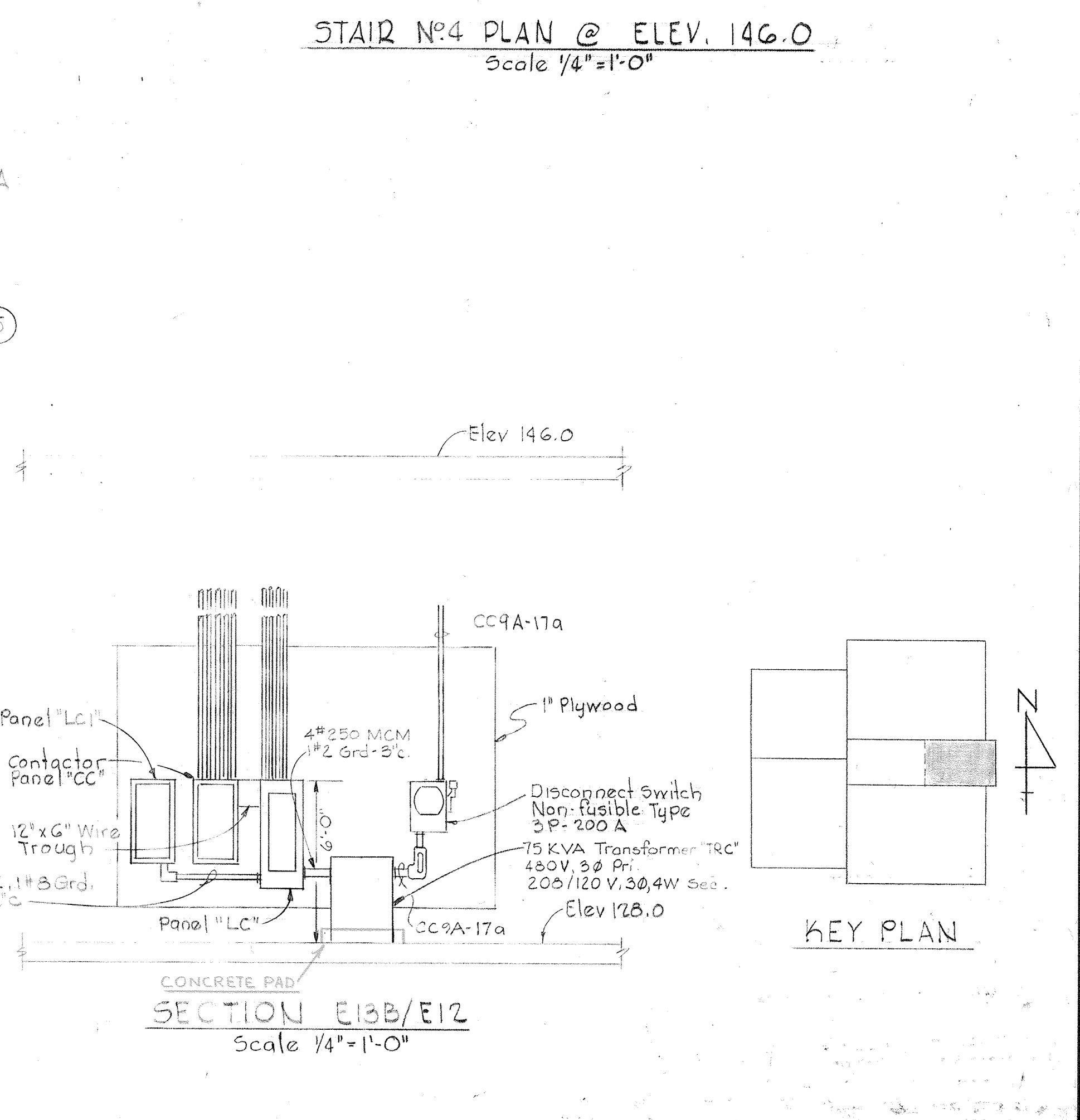
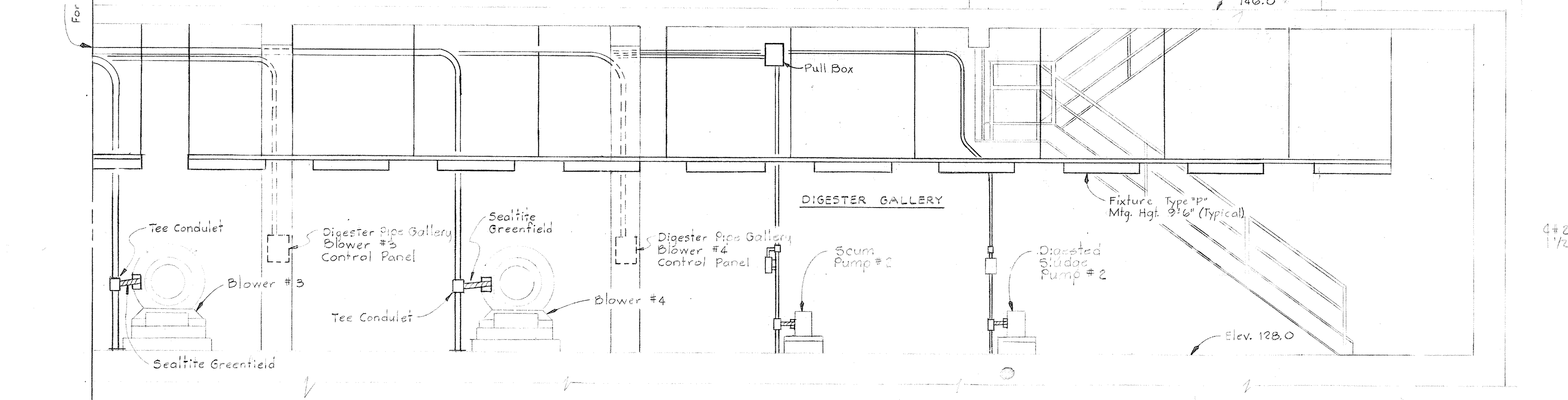
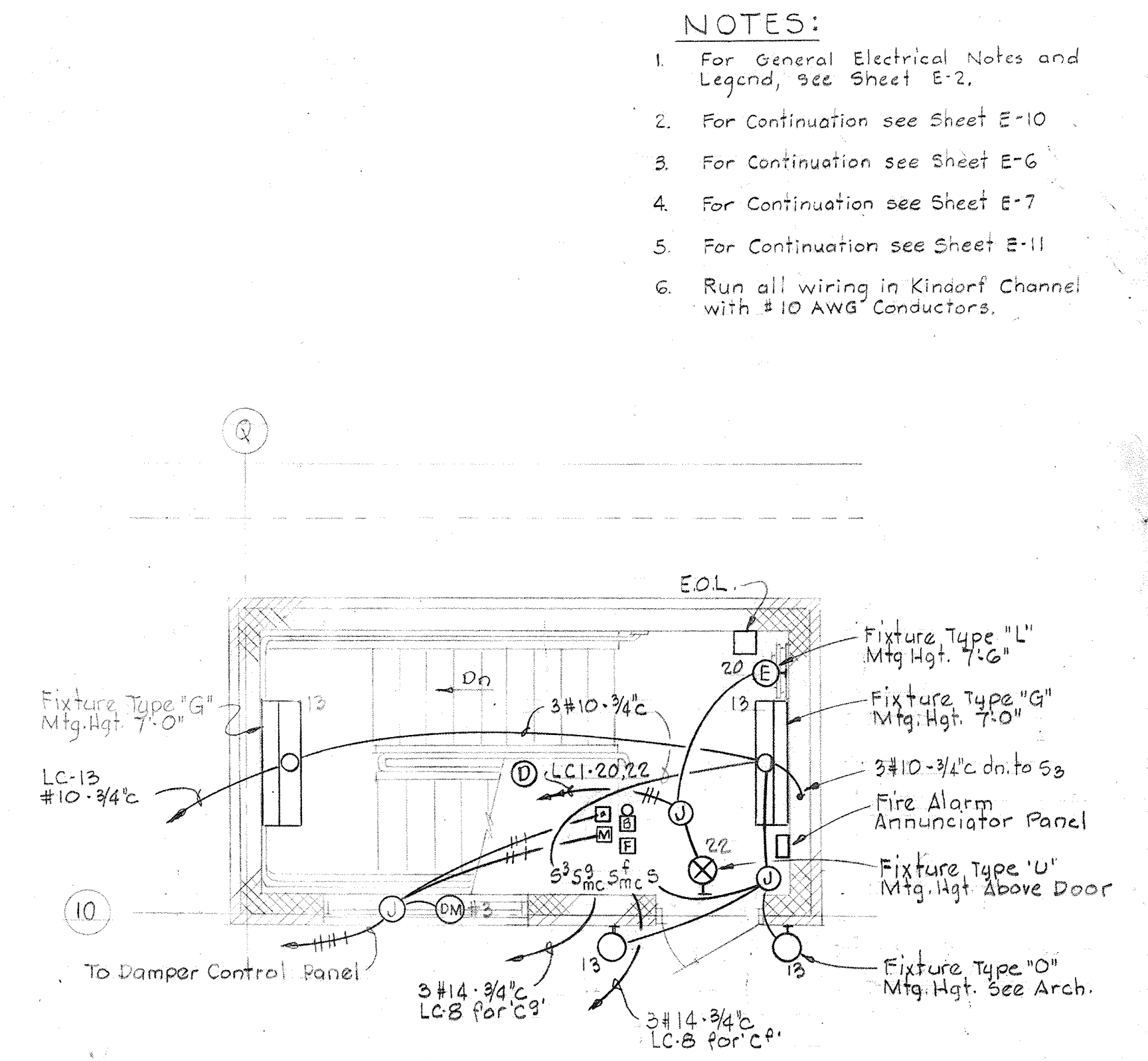
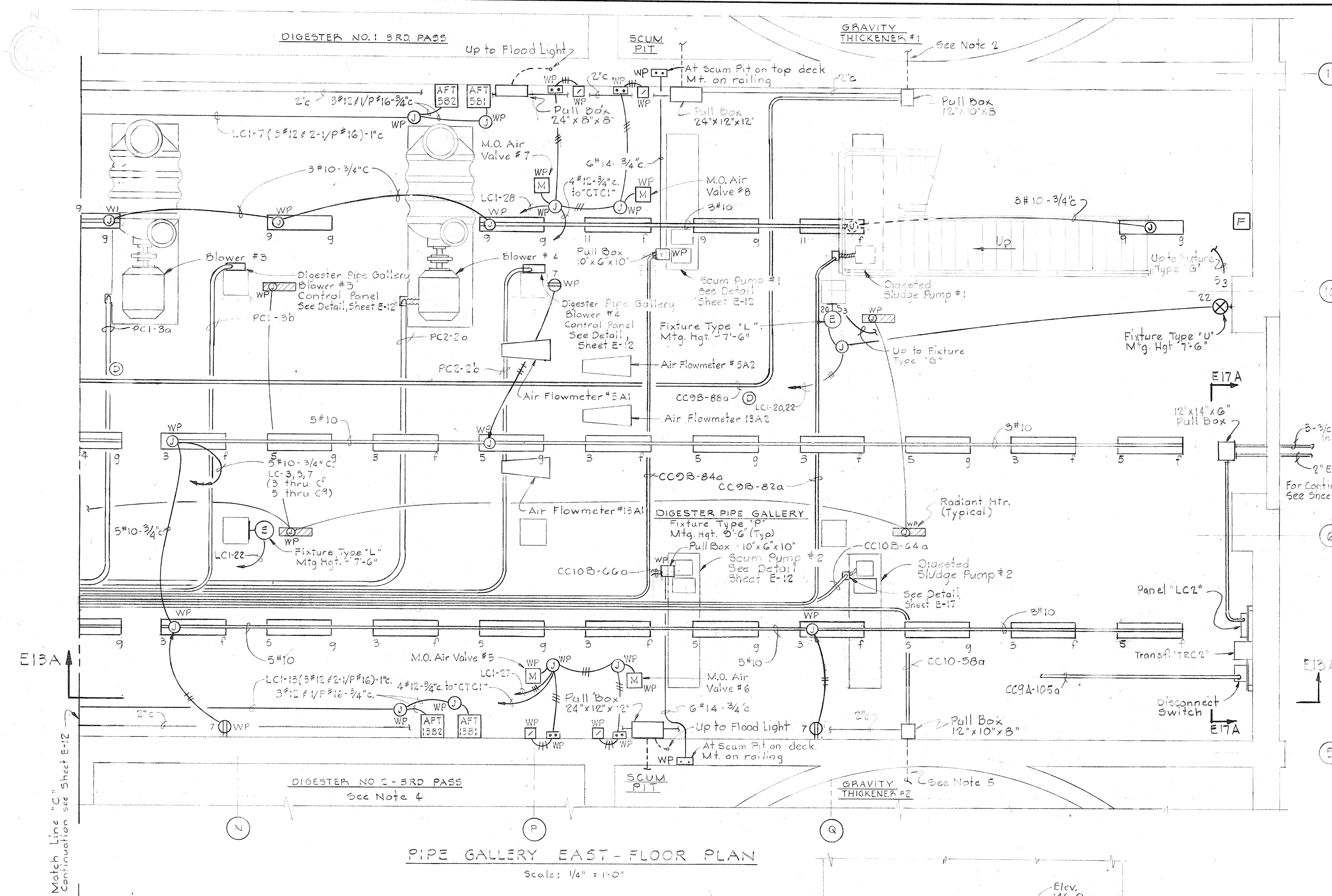
Scale: 1/2" = 1'-0"
Typical for the following Units:
Digester Pipe Gallery Blower Nos. 1 thru 4 Control Panel



KEY PLAN



- NOTES**
1. For General Electrical Notes and Legend, See Sheet E-2
 2. For continuation see Sheet E-6
 3. For continuation see Sheet E-7
 4. Run all wiring in Kindorf Channel with #10 AWG Conductors.
 5. Provide 1/8" #16-3/4" c to Instrument Panelboard.
 6. Provide 2 #14-3/4" c. to CC9A-9



- NOTES:**
1. For General Electrical Notes and Legend, see Sheet E-2.
 2. For Continuation see Sheet E-10.
 3. For Continuation see Sheet E-6.
 4. For Continuation see Sheet E-7.
 5. For Continuation see Sheet E-11.
 6. Run all wiring in Kindorf Channel with #10 AWG Conductors.

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 HOWARD COUNTY, MARYLAND
 DATE: 3/30/75
 CHIEF-BUREAU OF ENGINEERING

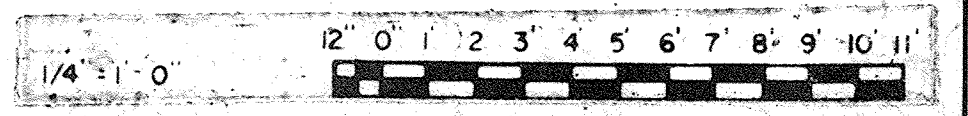
CONTRACT NO. 501-S

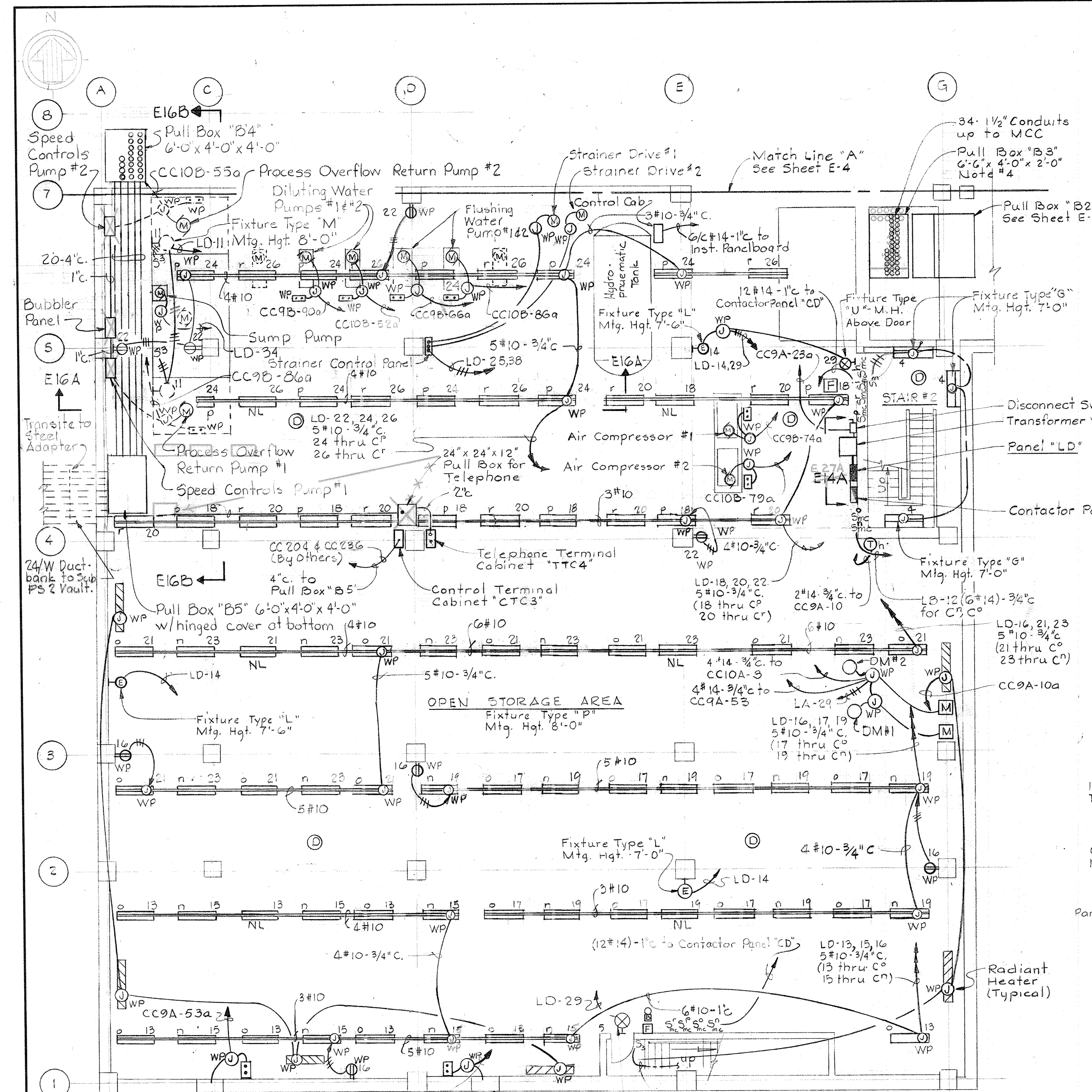
ELECTRICAL
DIGESTERS & GRAVITY THICKENERS
EAST PLAN & DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

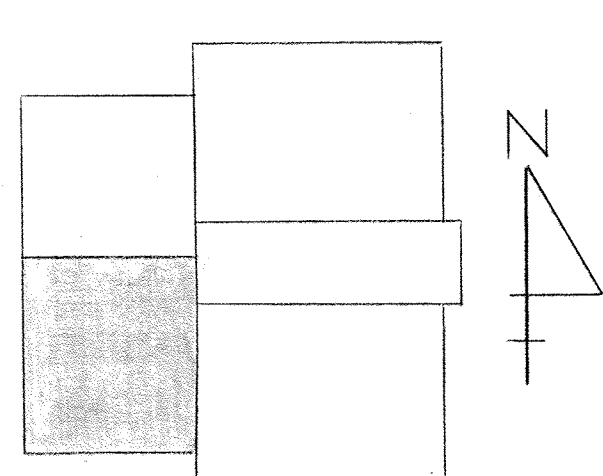
DRAWING NO. 101
OF 128
SCALE AS NOTED

W.O. 6887



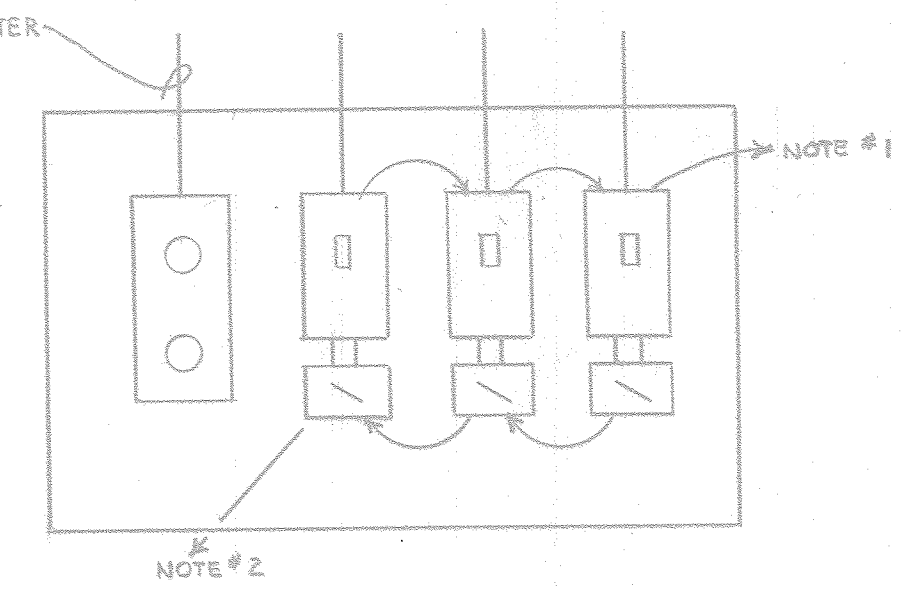


PLAN - ELEVATION 130.0
Scale: 1/8" = 1'-0"

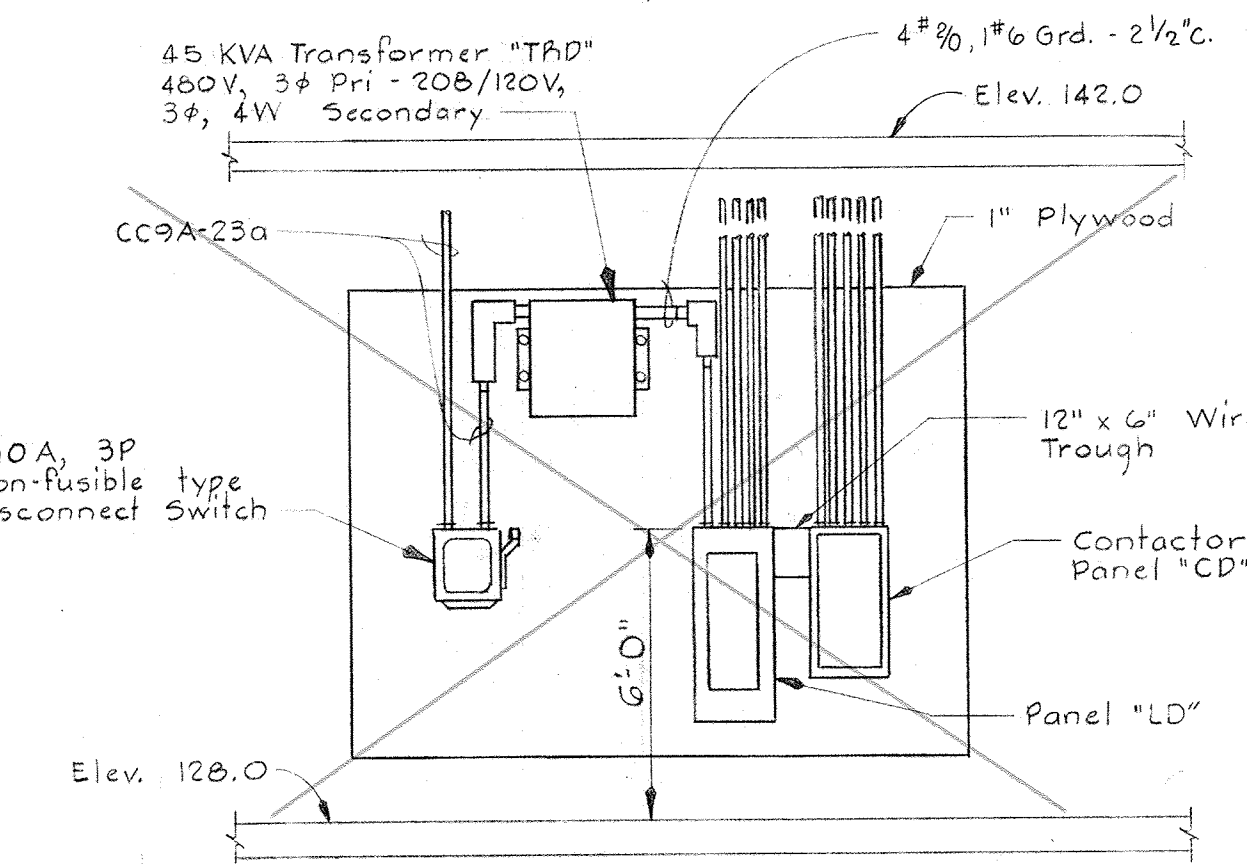


KEY PLAN

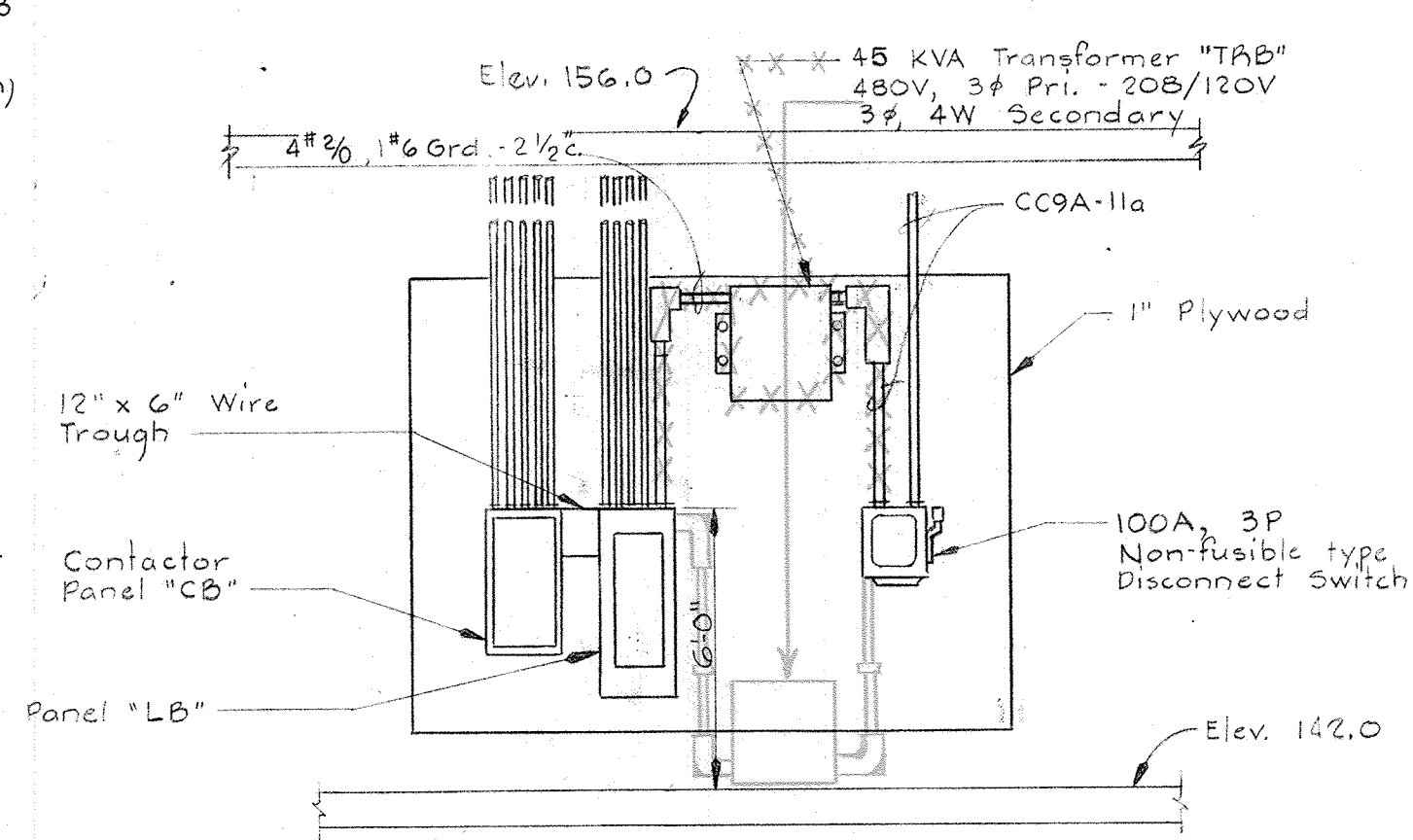
- NOTES
- MANUAL MOTOR STARTERS FOR DAMPER MOTORS #4, 5, 6.
 - NDA SWITCHES FOR DAMPER MOTORS #4, 5, 6.



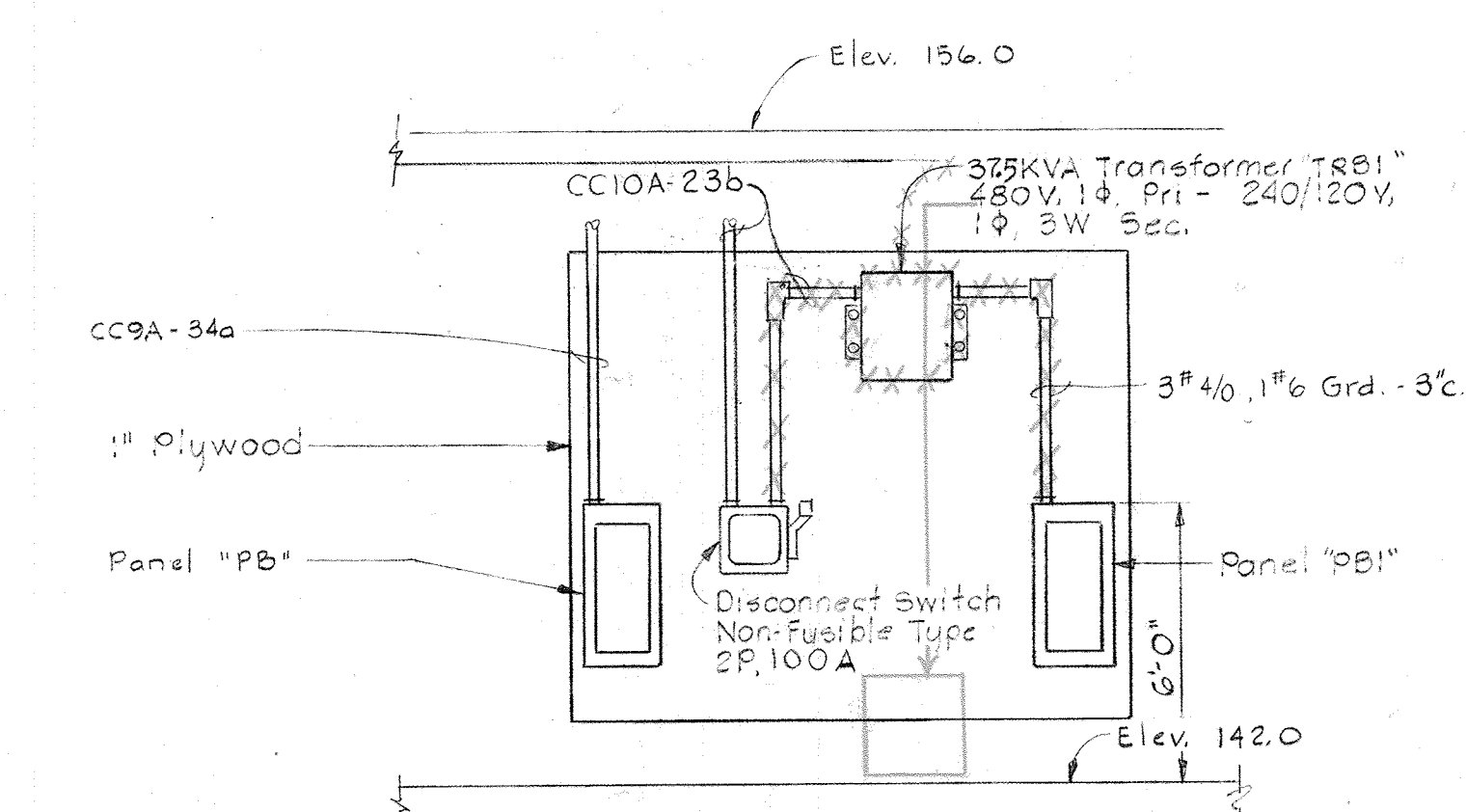
SECTION E14E/E15



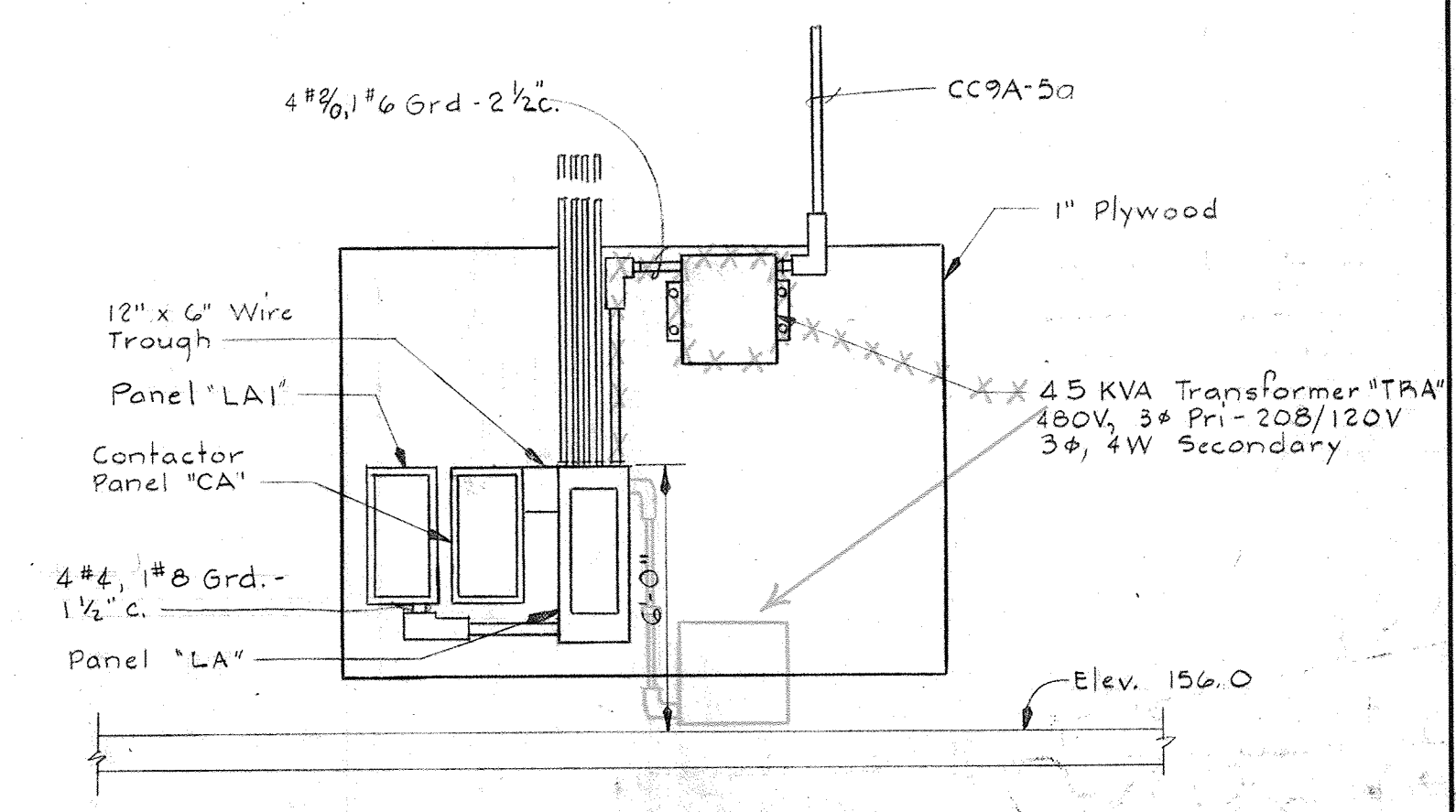
SECTION E14A/E14 REF. DWG E27/E27A
Scale: 1/4" = 1'-0"



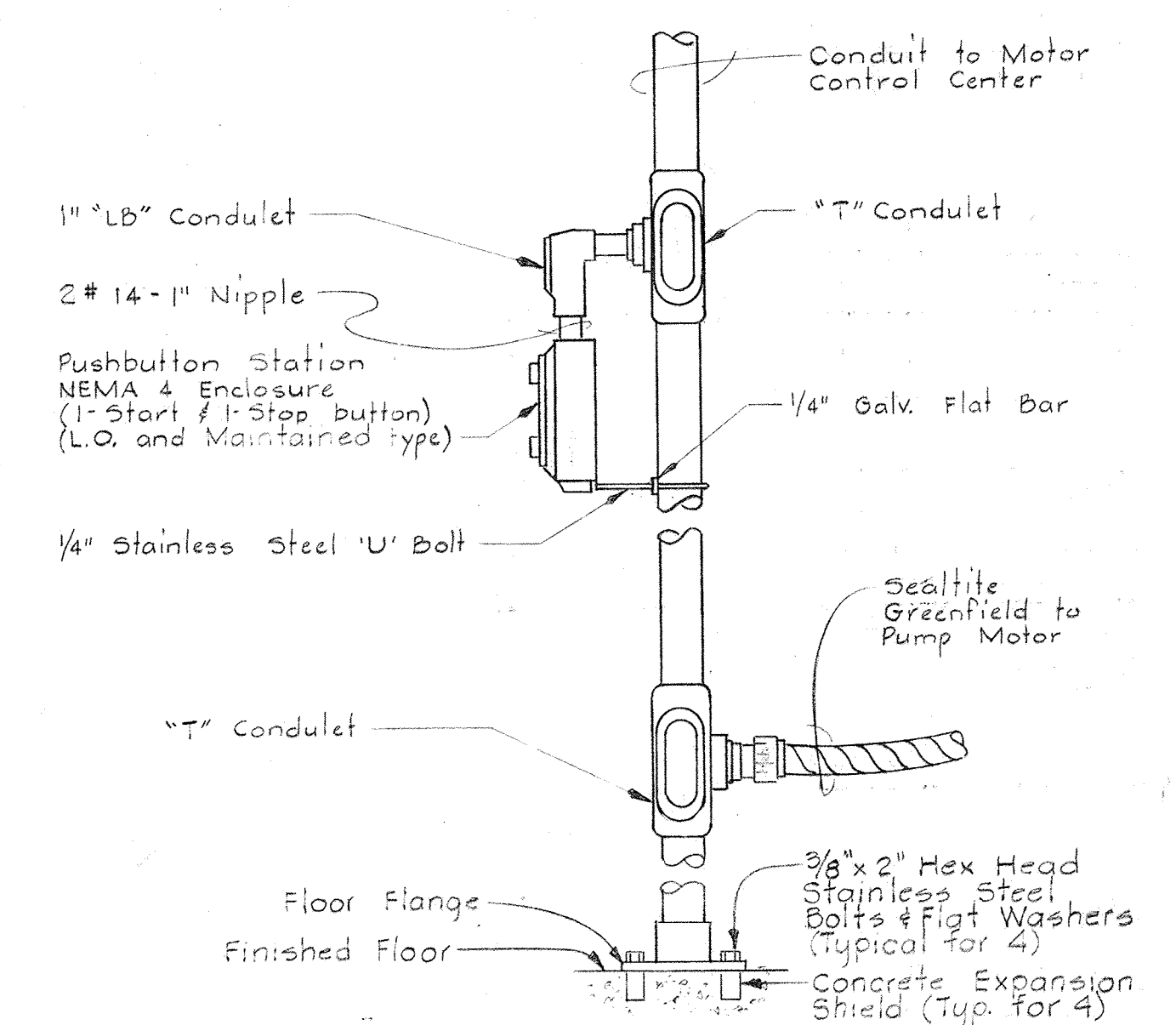
SECTION E14B/E15
Scale: 1/4" = 1'-0"



SECTION E14C/E15
Scale: 1/4" = 1'-0"



SECTION E14D/E15
Scale: 1/4" = 1'-0"

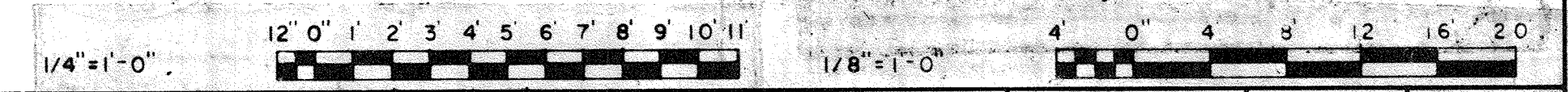


MOUNTING DETAIL-PUSHBUTTON STATION
No Scale

- Typical for the following units:
- Dewatering Bldg. Polymer "A" Supply Pumps #1 & #2
 - Dewatering Bldg. Polymer "B" Supply Pumps #1 & #2
 - Dewatering Bldg. FeCl₂ Supply Pump #1 & #2
 - Dewatering Bldg. Polymer "A" Chemical Mixers #1 & #2
 - Dewatering Bldg. Vacuum Pumps #1 & #2
 - Dewatering Bldg. Filtrate Pumps #1 & #2
 - Dewatering Bldg. Polymer "A" Feed Pumps #1 & #2
 - Dewatering Bldg. Belt Conveyors #1 & #2
 - Dewatering Bldg. Flushing Water Pumps #1 & #2
 - Dewatering Bldg. Air Compressors #1 & #2
 - Dewatering Bldg. Diluting Water Pumps #1 & #2

NOTES:

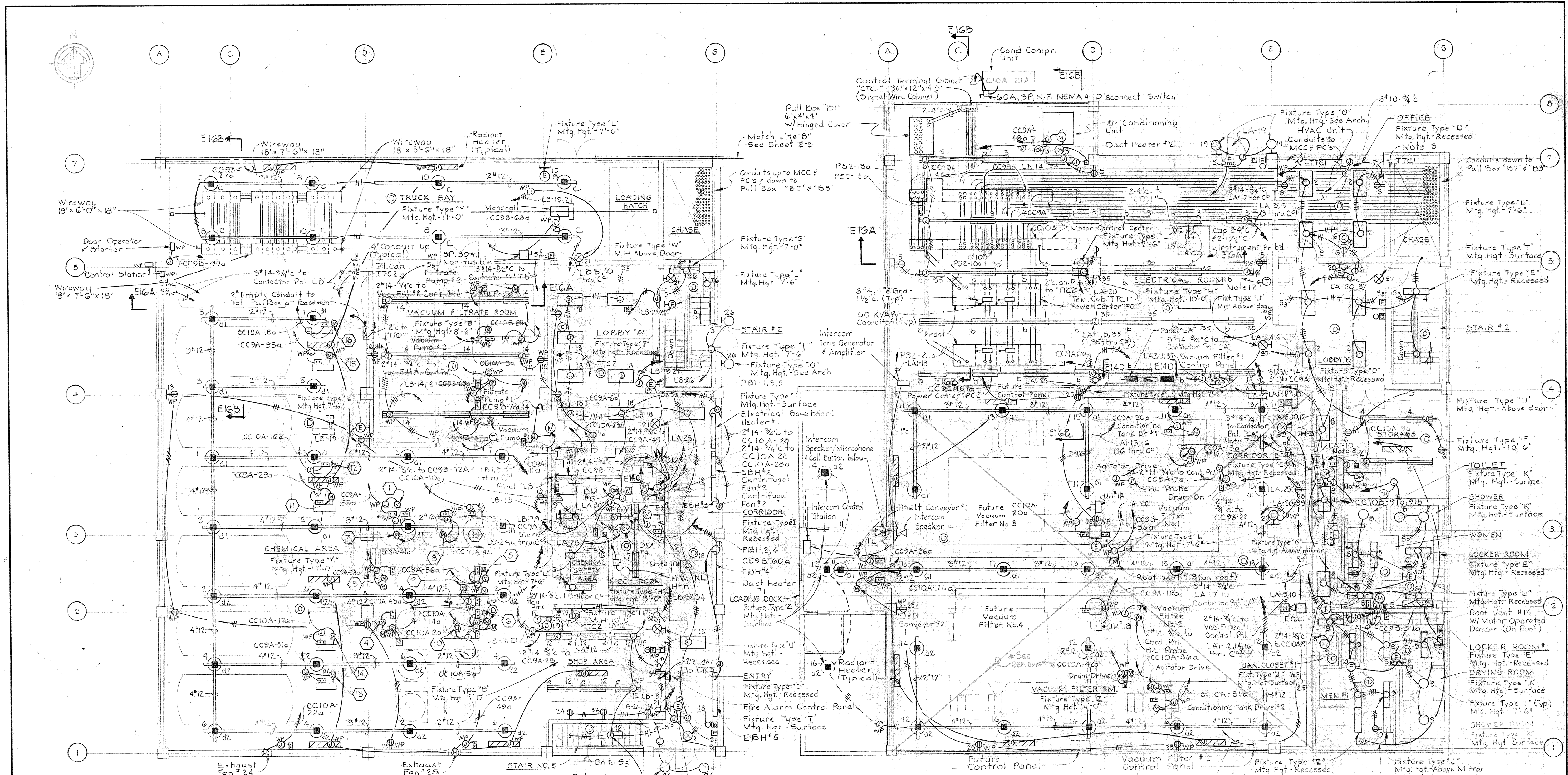
- For General Electrical Notes and Legend, see Sheet E-2.
- Run all wiring in Kindorf Channel with #10AWG Conductors.
- Run all motor and heater branch circuits and Panel "LD" feeder thru Pull Box "B3".
- Pull Box "B3" shall have hinged door at the bottom.



WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/20/75 W. O. Libert CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 501-S	ELECTRICAL DEWATERING BUILDING PLAN ELEV. 130.0 & DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 102 OF 128	SCALE AS NOTED
					SHEET E-14	

W. O. 6887

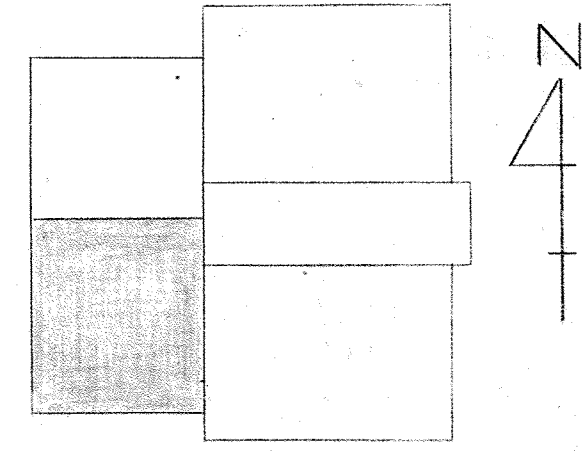
BRUNING 44510 18392



PLAN - ELEVATION 142
Scale: 1/8" = 1'-0"

PLAN - ELEVATION 156
Scale: 1/8" = 1'-0"
* REF DWG E-38 (FOR CHANGES TO ELEV. 156)

PUMP SCHEDULE		SCHEDULE	
TYPE	DESIGNATION	TYPE	DESIGNATION
1	Polymer "A" Feed Pump #1	9	Polymer "B" Chemical Mixer #1
2	Polymer "A" Feed Pump #2	10	Polymer "B" Chemical Mixer #2
3	FeCl ₂ Feed Pump #1	11	Polymer "A" Supply Pump #1
4	FeCl ₂ Feed Pump #2	12	Polymer "A" Supply Pump #2
5	Polymer "B" Feed Pump #1	13	Polymer "B" Supply Pump #1
6	Polymer "B" Feed Pump #2	14	Polymer "B" Supply Pump #2
7	Polymer "A" Chemical Mixer #1	15	FeCl ₂ Supply Pump #1
8	Polymer "A" Chemical Mixer #2	16	FeCl ₂ Supply Pump #2



KEY PLAN

- NOTES:
1. For General Electrical Notes & Legend see Sheet E-2.
 2. (1) Denotes type of Pump. See Pump Schedule this sheet.
 3. Provide sealing fitting for Conduits Penetrating Chase Wall.
 4. For Vacuum Filter Control Panel Detail, see sheet E-17.
 - 5.
 6. Provide 2"14-3/4" c. to CC9B-60.
 7. Provide 2"14-3/4" c. to CC10A-8.
 8. Provide 2"14-3/4" c. to CC9B-57.
 9. Provide 2"14-3/4" c. to CC9B-56.
 10. Provide 3"12, 1"12 Grd. - 1" c. to PB-7.
 11. Provide 3P-30A non-fusible switch.
 12. Provide 2"14-3/4" c. to CC9A-40.

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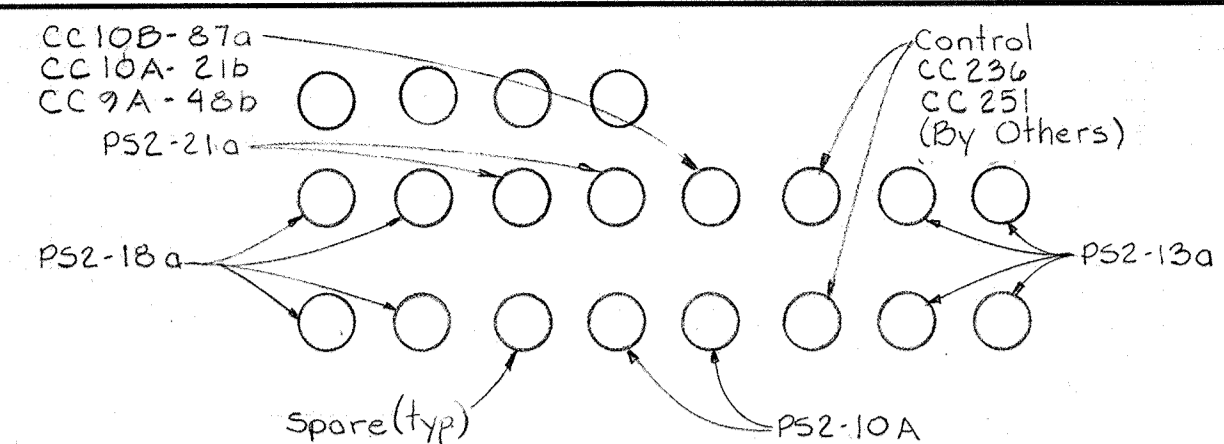
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3/20/75
DATE

CONTRACT NO. 50I-S

ELECTRICAL
DEWATERING BUILDING
PLAN ELEV. 142.0 & 156.0

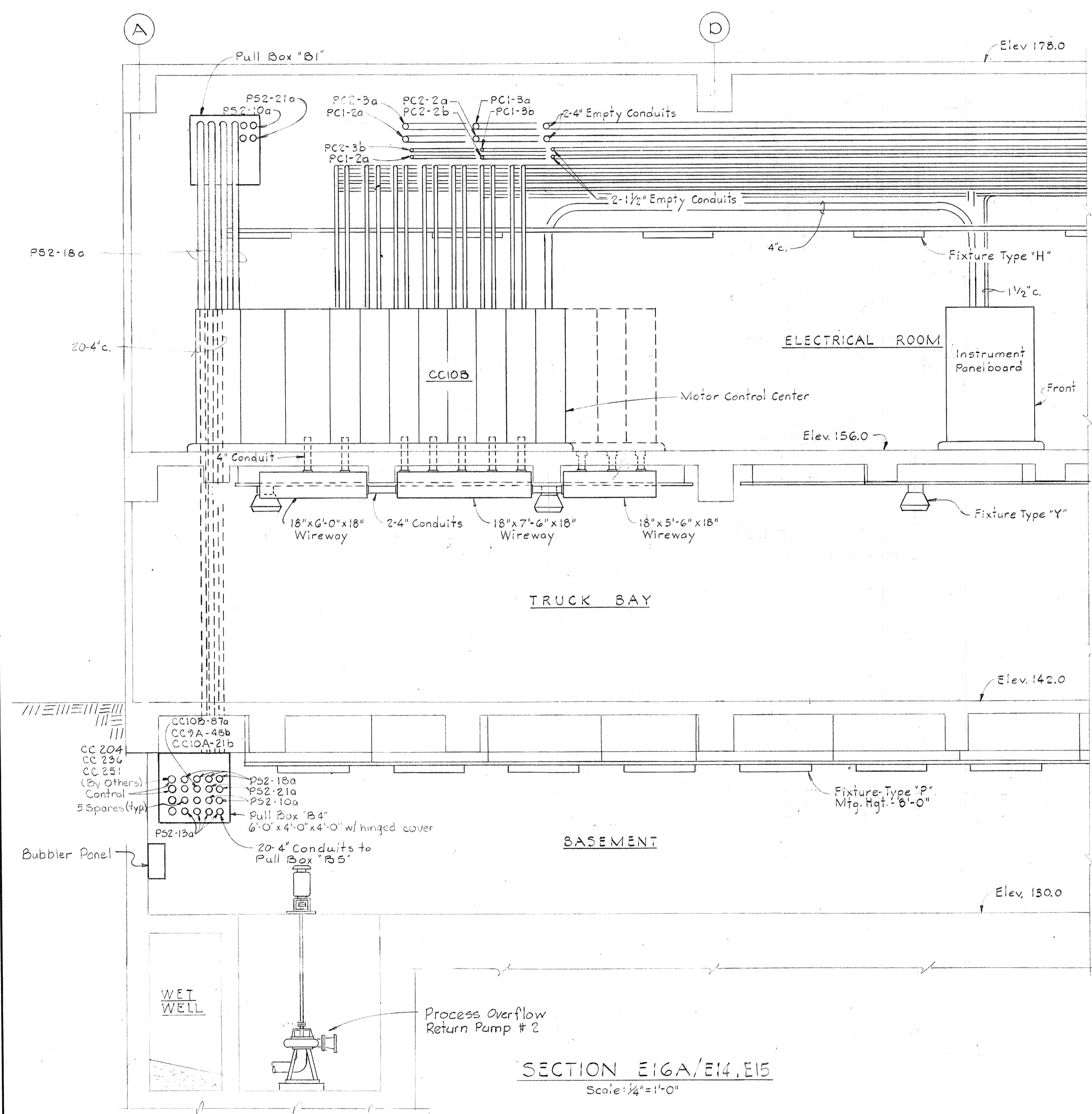
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 103 OF 128
SCALE AS NOTED

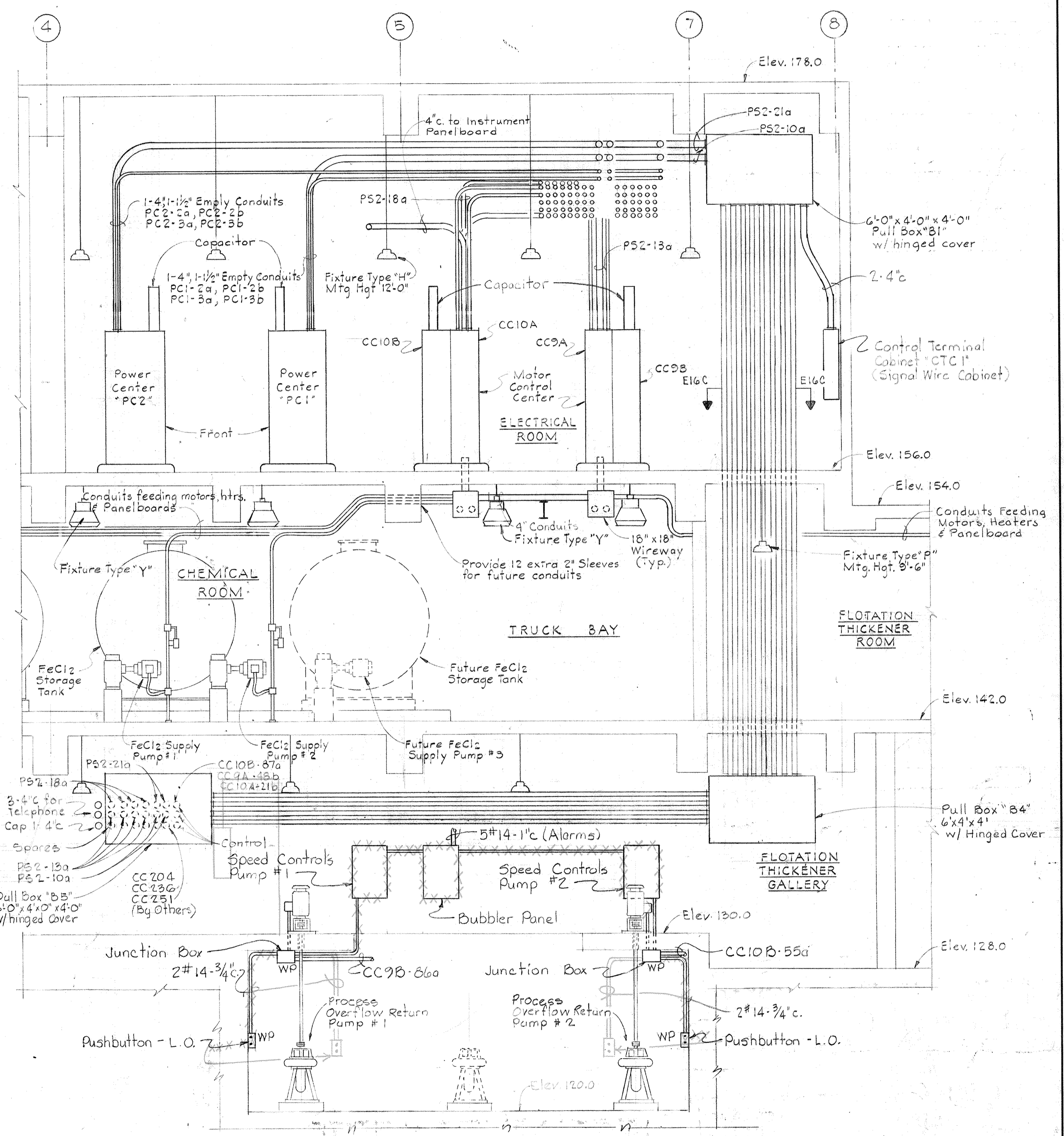


SECTION E16C/E16,34
 No Scale
 Note: All 4" Conduits

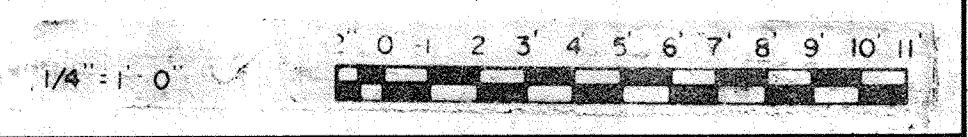
NOTES:
 1. For General Electrical Notes & Legend, see Sheet E-2.



SECTION E16A/E14,E15
 Scale: 1/4"=1'-0"



SECTION E16B/E14,E15
 Scale: 1/4"=1'-0"



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 BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE: 3/20/75
 W. O. Lambert
 CHIEF, BUREAU OF ENGINEERING

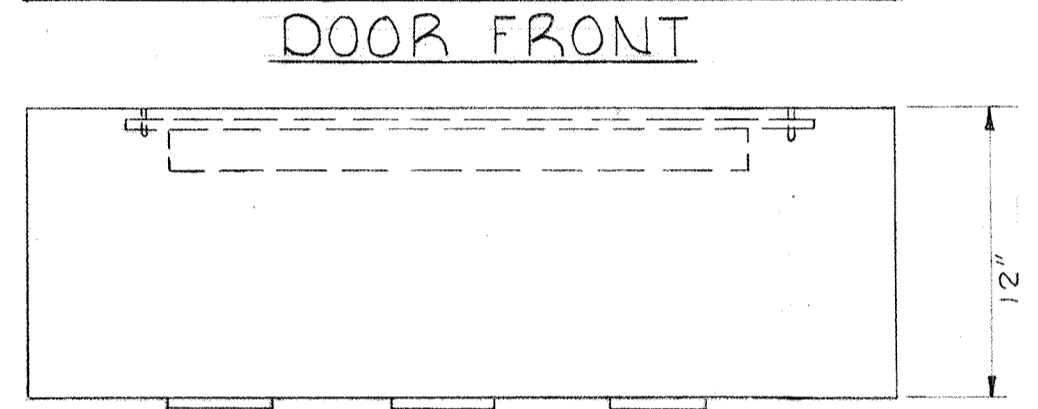
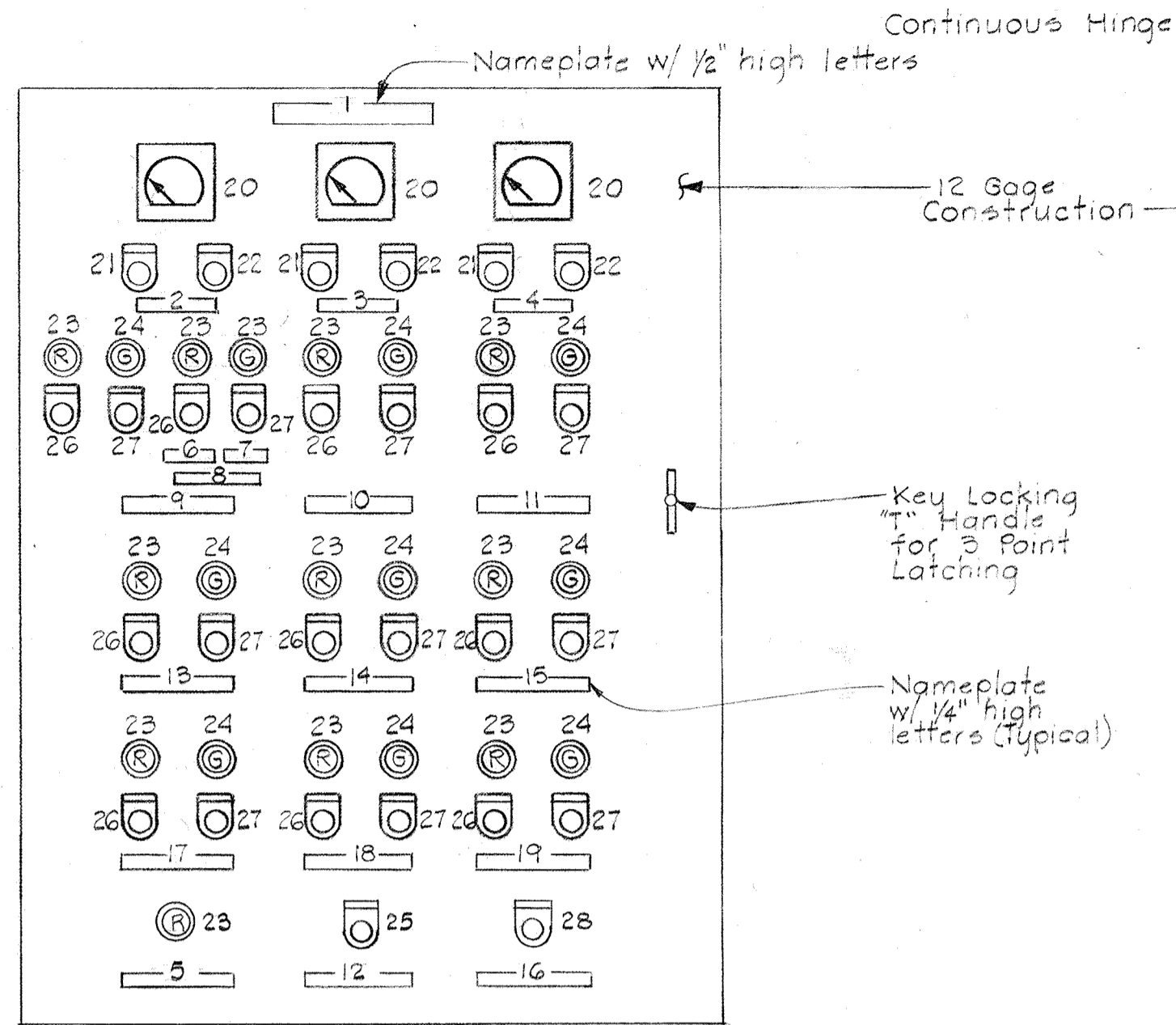
CONTRACT NO. 501-S

ELECTRICAL
 DEWATERING BUILDING
 SECTIONS

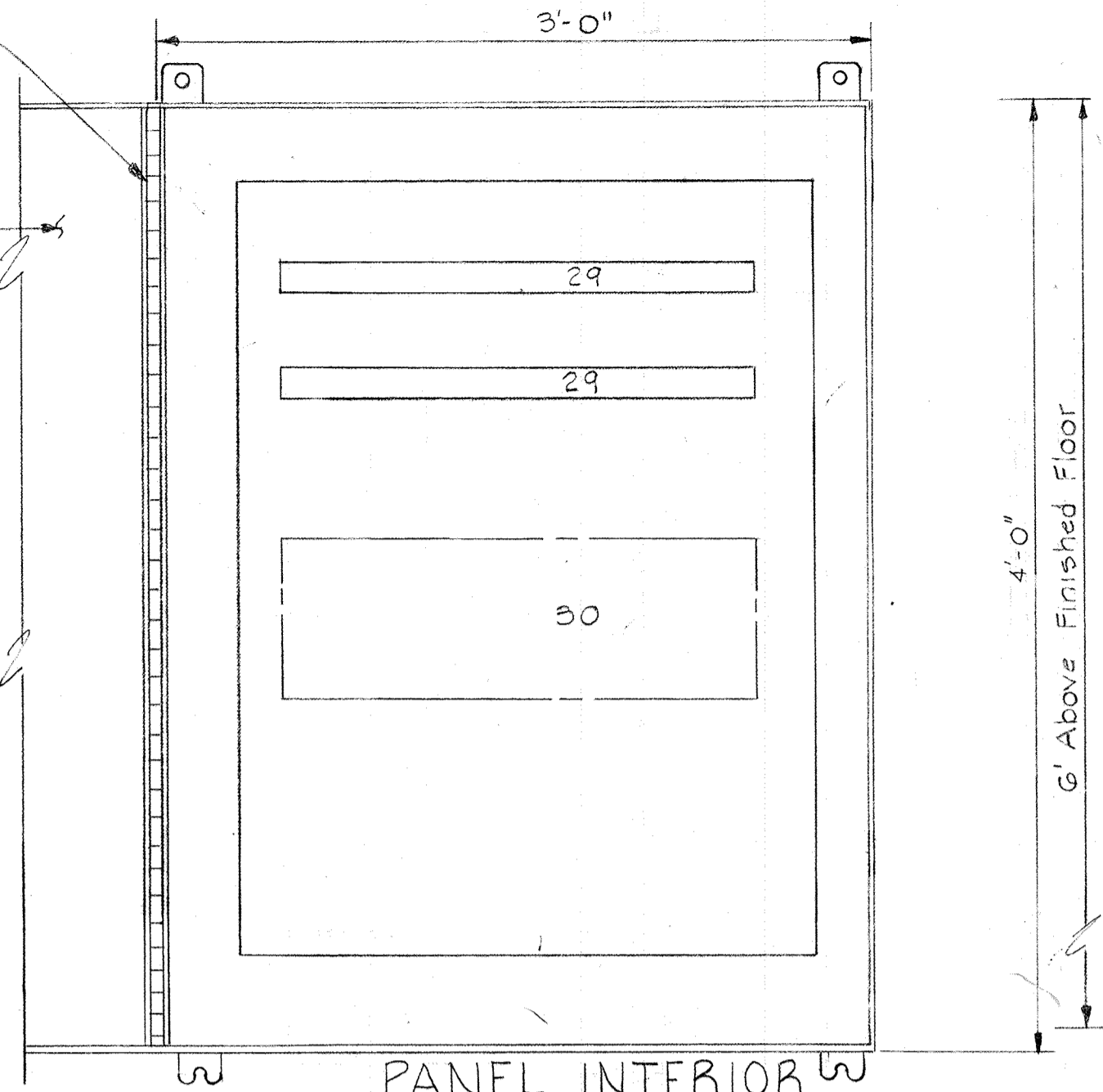
SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO.4

DRAWING NO. 104 OF 128
 SCALE AS NOTED

BRUNING 44-510 1839Z



PLAN



LEGEND

- 1-19 Nameplates
- 20 Tachometer
- 21 Slow Pushbutton
- 22 Fast Pushbutton
- 23 Red Indicating Light
- 24 Green Indicating Light
- 25 Stop Pushbutton-Momentary Contact Type
- 26 Start Pushbutton-Maintained Contact Type
- 27 Stop Pushbutton-Maintained Contact Type
- 28 Start Pushbutton-Momentary Contact Type
- 29 Terminal Strip
- 30 Accessories

VACUUM FILTER NO.1 CONTROL PANEL NAMEPLATE DATA

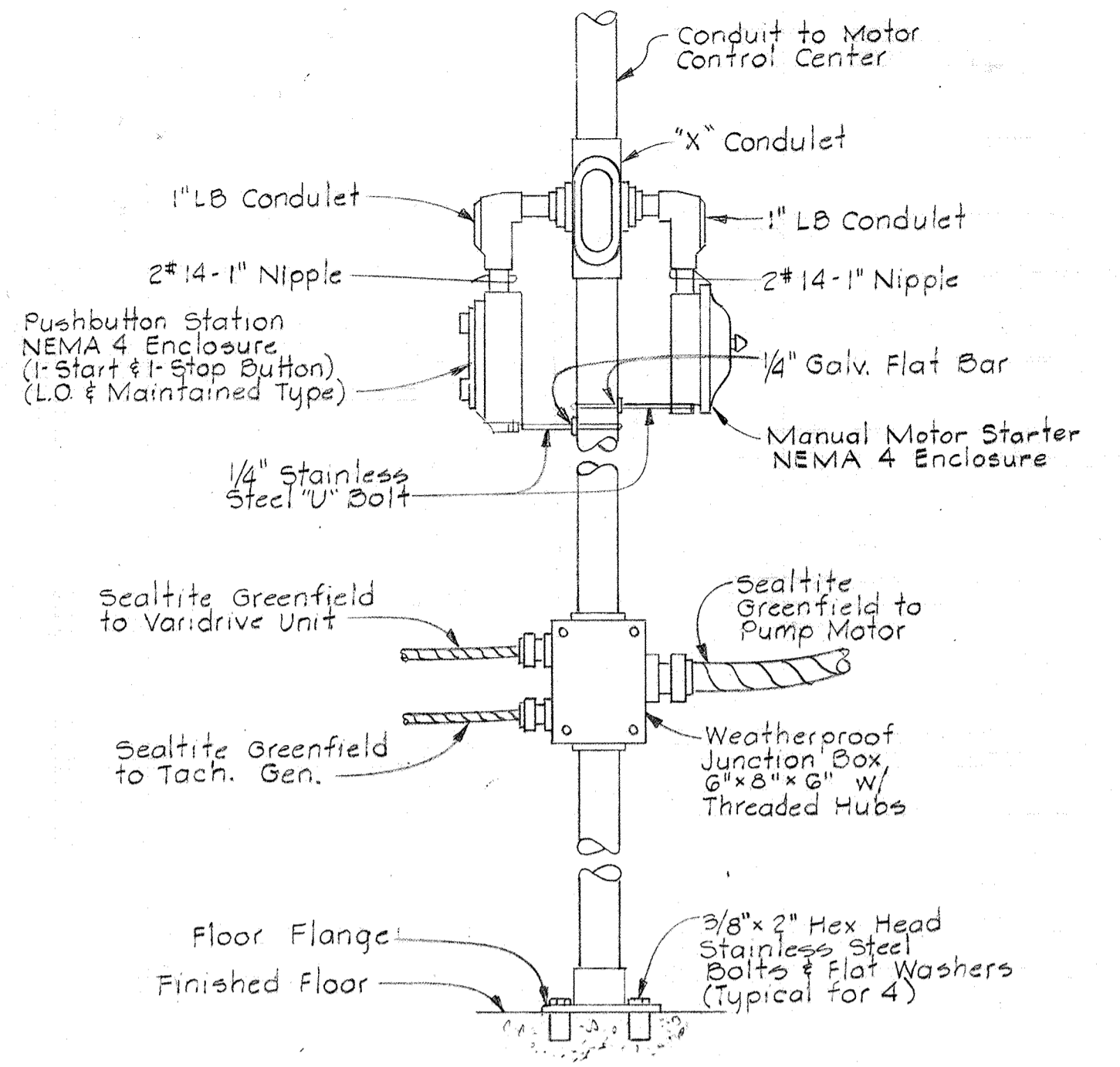
- 1. VACUUM FILTER #1 CONTROL PANEL
- 2. DIGESTED SLUDGE PUMP #1 STROKE CONTROL
- 3. FeCl2 FEED PUMP #1 STROKE CONTROL
- 4. POLYMER "B" FEED PUMP #1 SPEED CONTROL
- 5. HIGH WATER LEVEL - FILTRATE RECEIVER #1 TO DIGESTER
- 6. TO FILTER
- 7. 2-WAY VALVE #1 CONTROL
- 8. DIGESTED SLUDGE PUMP #1
- 9. FeCl2 FEED PUMP #1
- 10. POLYMER "B" FEED PUMP #1
- 11. ALARM SILENCE
- 12. BELT CONVEYOR #1
- 13. CONDITIONING TANK DRIVE #1
- 14. VACUUM FILTER #1 AGITATOR DRIVE
- 15. TEST-INDICATING LIGHTS
- 16. VACUUM FILTER #1 DRUM DRIVE
- 17. VACUUM PUMP #1
- 18. FILTRATE PUMP #1
- 19.

VACUUM FILTER NO.2 CONTROL PANEL NAMEPLATE DATA

- 1. VACUUM FILTER NO.2 CONTROL PANEL
- 2. DIGESTED SLUDGE PUMP #2 STROKE CONTROL
- 3. FeCl2 FEED PUMP #2 STROKE CONTROL
- 4. POLYMER "B" FEED PUMP #2 SPEED CONTROL
- 5. HIGH WATER LEVEL - FILTRATE RECEIVER #2 TO DIGESTER
- 6. TO FILTER
- 7. 2-WAY VALVE #2 CONTROL
- 8. DIGESTED SLUDGE PUMP #2
- 9. FeCl2 FEED PUMP #2
- 10. POLYMER "B" FEED PUMP #2
- 11. ALARM SILENCE
- 12. BELT CONVEYOR #2
- 13. CONDITIONING TANK DRIVE #2
- 14. VACUUM FILTER #2 AGITATOR DRIVE
- 15. TEST-INDICATING LIGHTS
- 16. VACUUM FILTER #1 DRUM DRIVE
- 17. VACUUM PUMP #1
- 18. FILTRATE PUMP #1
- 19.

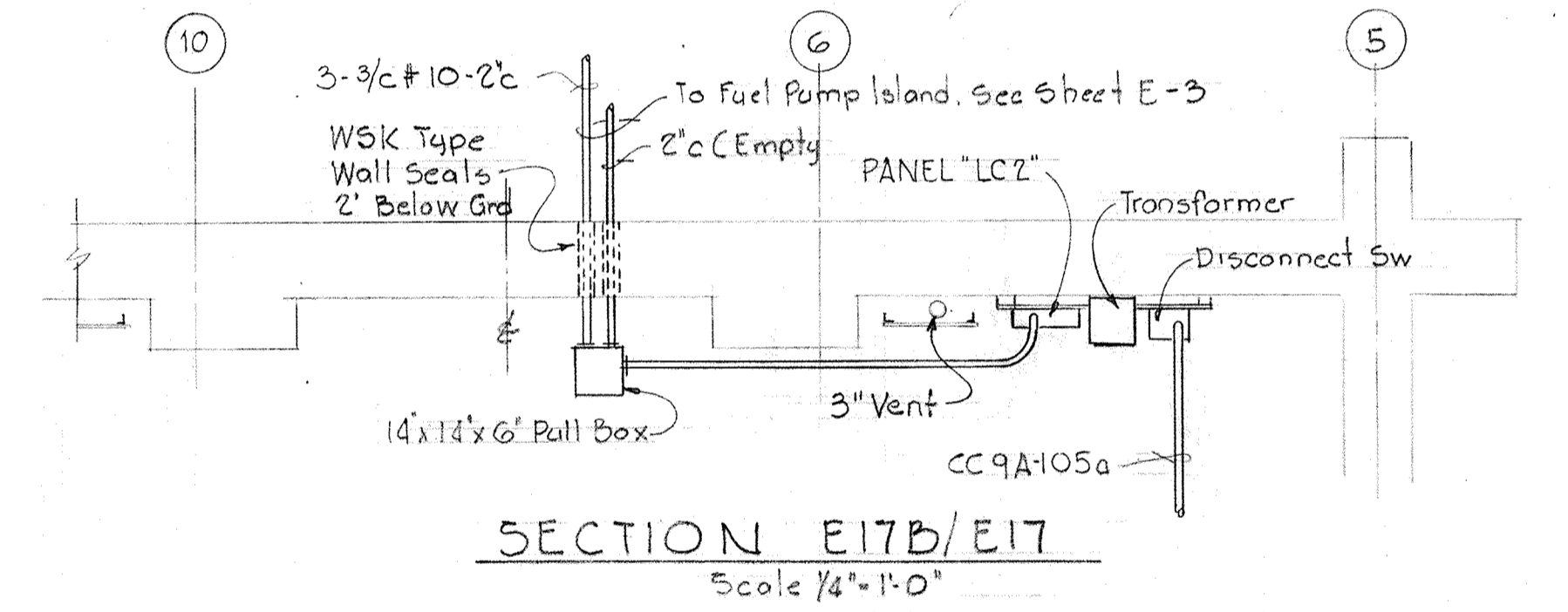
VACUUM FILTER CONTROL PANEL

Scale: 1 1/2" = 1'-0"
 Typical for the following units:
 Vacuum Filter #1 Control Panel
 Vacuum Filter #2 Control Panel

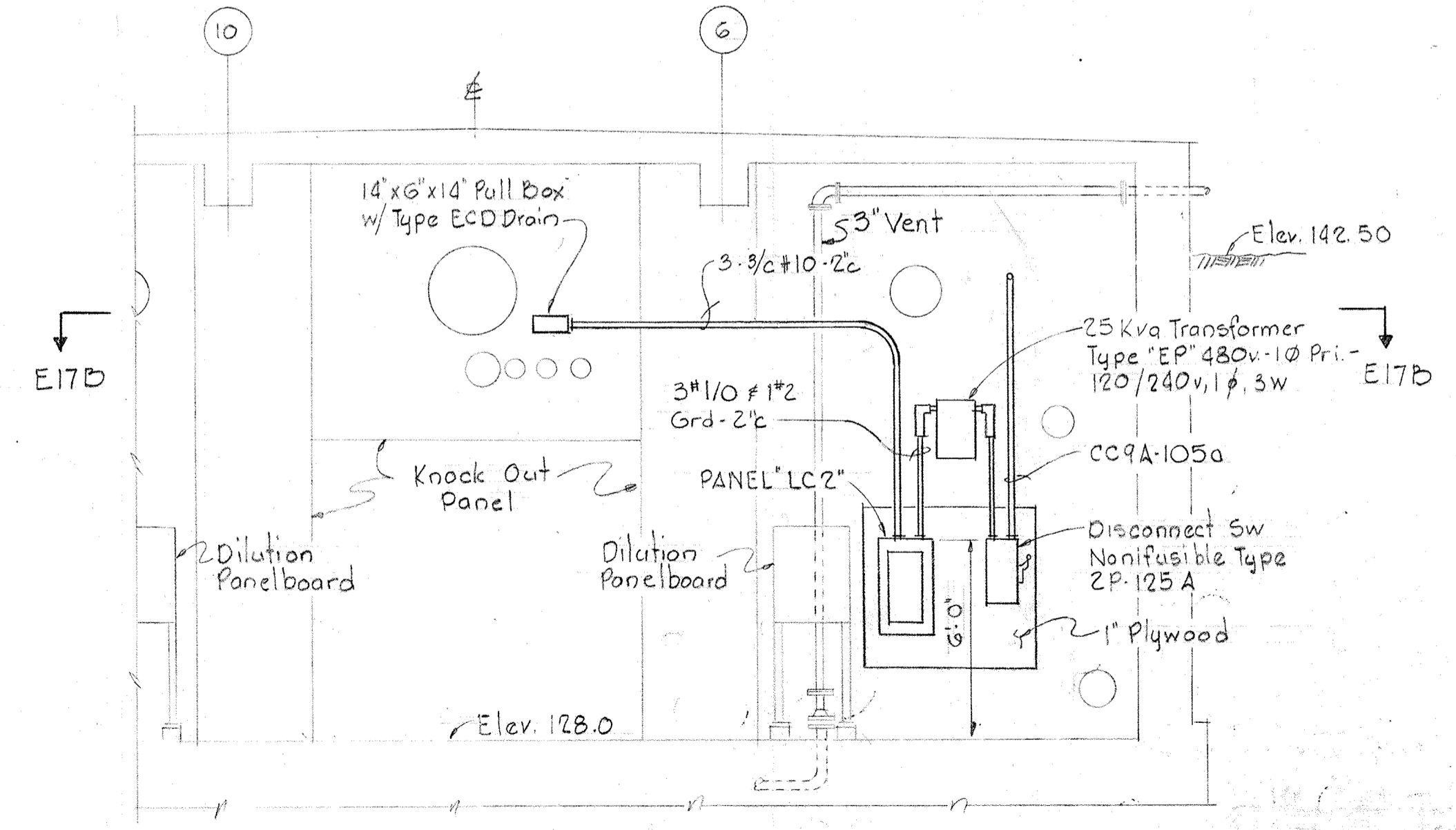


MOUNTING DETAIL
 PUSHBUTTON STATION
 No Scale

Typical for the following units:
 Dewatering Bldg. Polymer "B" Feed Pumps #1 & #2
 Dewatering Bldg. FeCl2 Feed Pumps #1 & #2
 Digester Pipe Gallery - Digested Sludge Pumps #1 & #2



SECTION E17B/E17
 Scale 1/4" = 1'-0"



SECTION E17A/E13
 Scale 1/4" = 1'-0"

NOTES:
 1. For General Electrical Notes & Legend see Sheet E-2

WHITMAN, REQUARDT & ASSOCIATES
 ENGINEERS
 1304 ST. PAUL ST.
 BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE: 3/20/75
 W. O. Gilbert
 CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 501-S

ELECTRICAL
 DEWATERING BUILDING
 DETAILS

SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 4

DRAWING
 NO. 105
 OF 128

SCALE
 AS
 NOTED

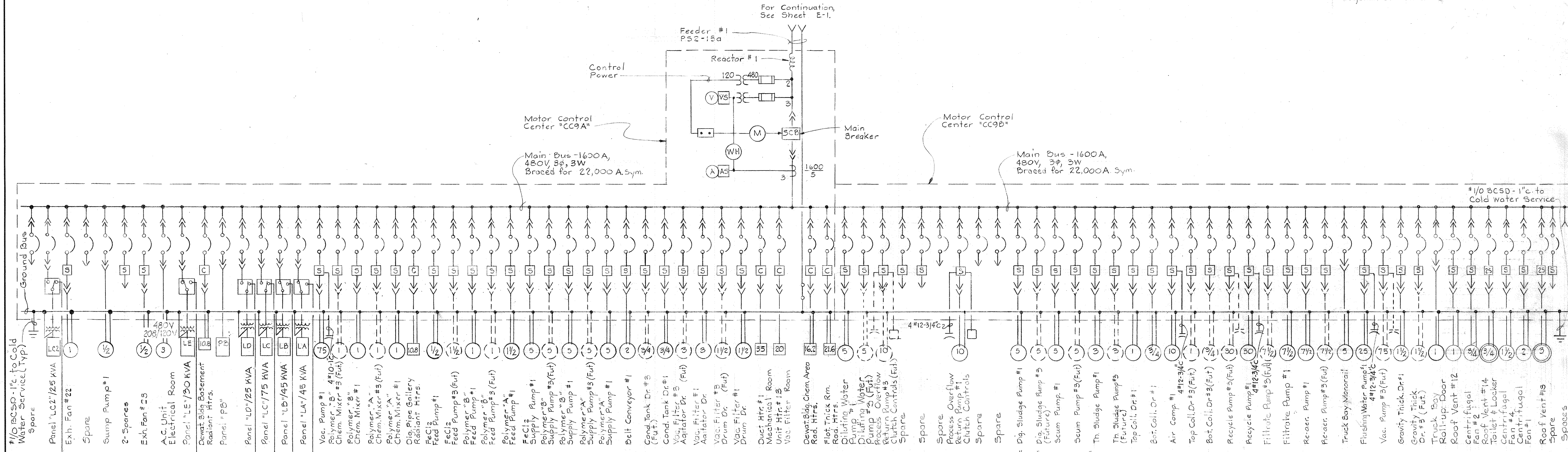
W. O. 6887

SHEET E-17

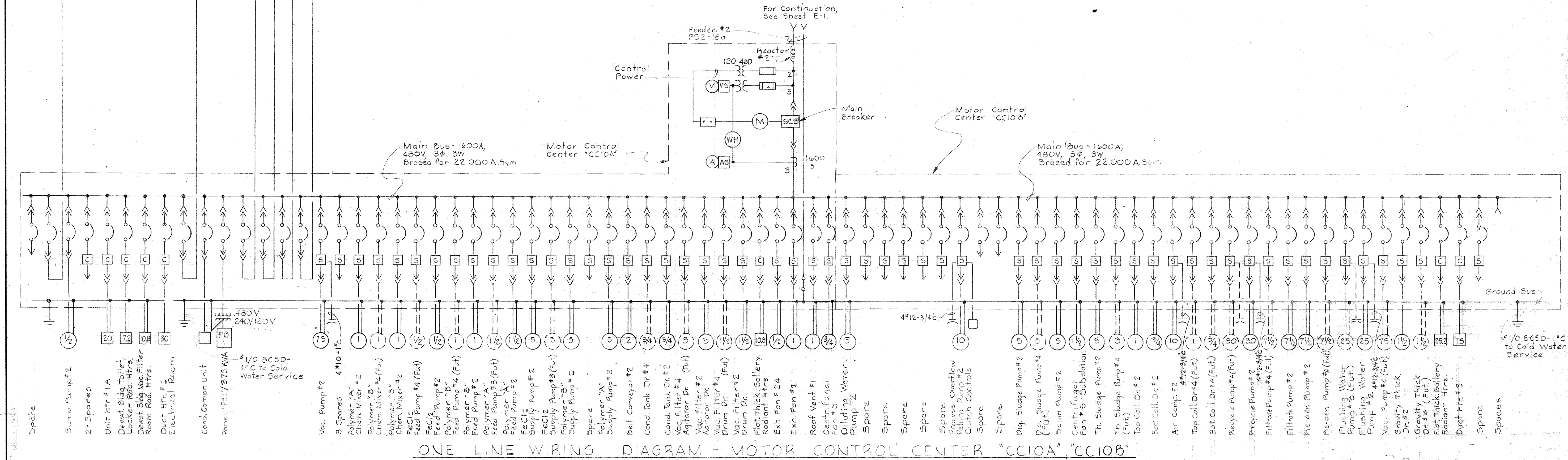
BRUNING 44510 18392

NOTES:

1. For General Electrical Notes & Legend see Sheet E-1.



ONE LINE WIRING DIAGRAM - MOTOR CONTROL CENTER "CC9A", "CC9B"



ONE LINE WIRING DIAGRAM - MOTOR CONTROL CENTER "CC10A", "CC10B"

WHITMAN, REQUARDT & ASSOCIATES
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 HOWARD COUNTY, MARYLAND
 DATE: 3/30/75
 W. O. Libert
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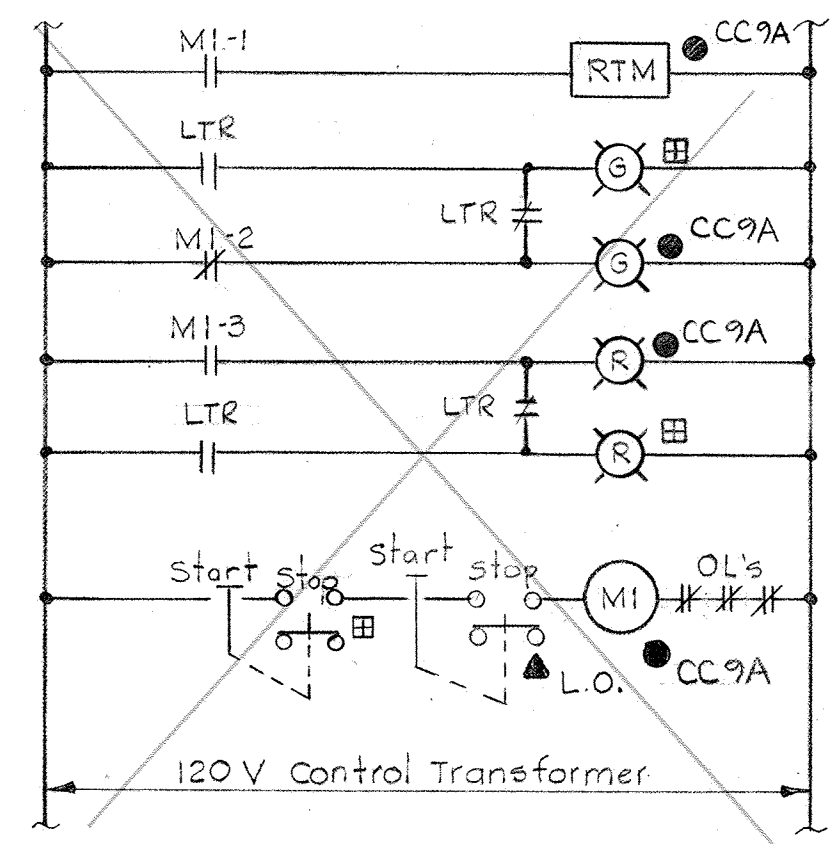
CONTRACT NO. 501-S

ELECTRICAL
 DEWATERING BUILDING
 ONE LINE WIRING DIAGRAM
 "CC9A", "CC9B", "CC10A" & "CC10B"

Savage WASTEWATER
 TREATMENT PLANT ADDITION NO. 4

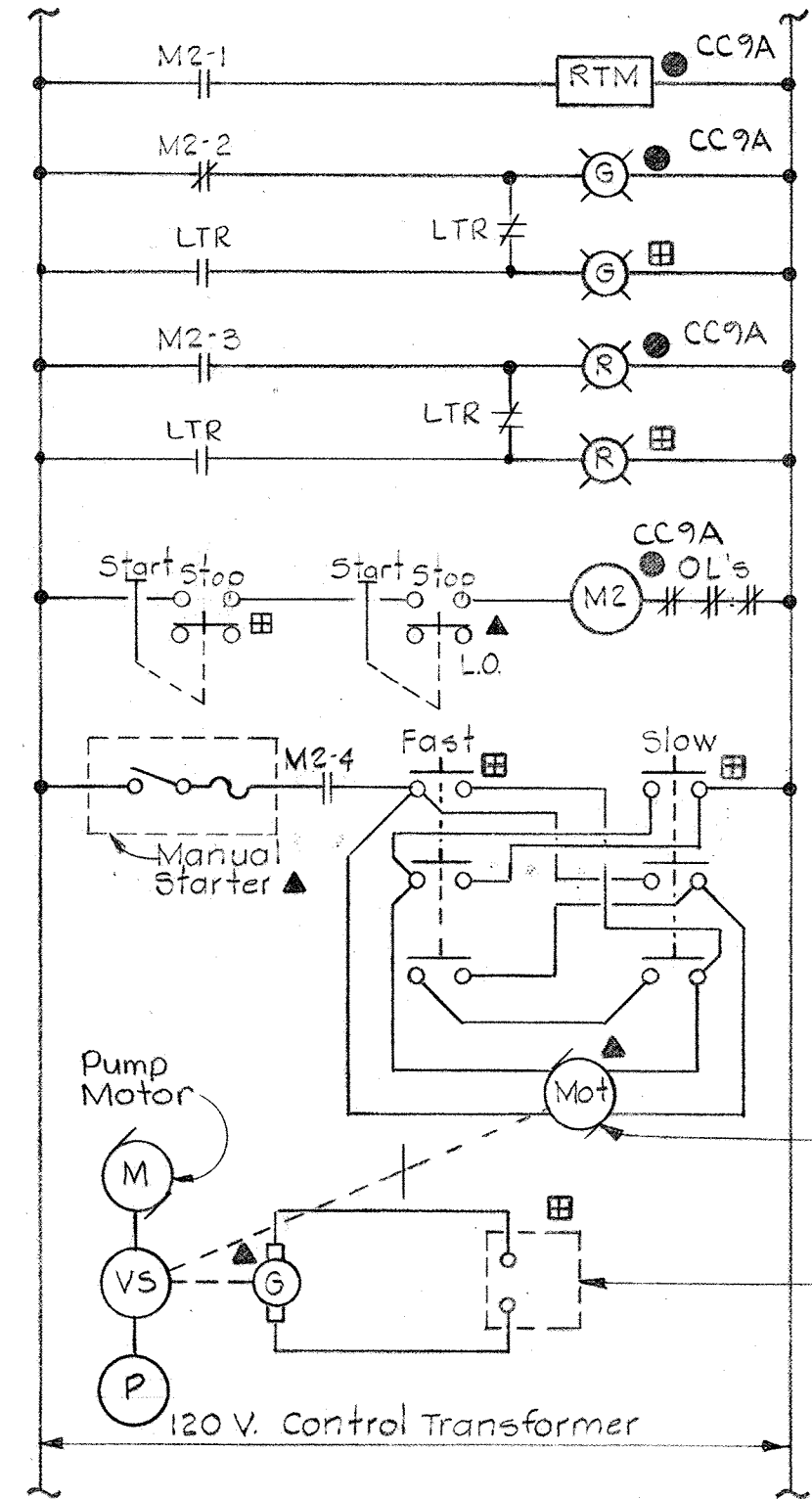
DRAWING
 NO. 106
 OF 128

SCALE
 AS
 NOTED



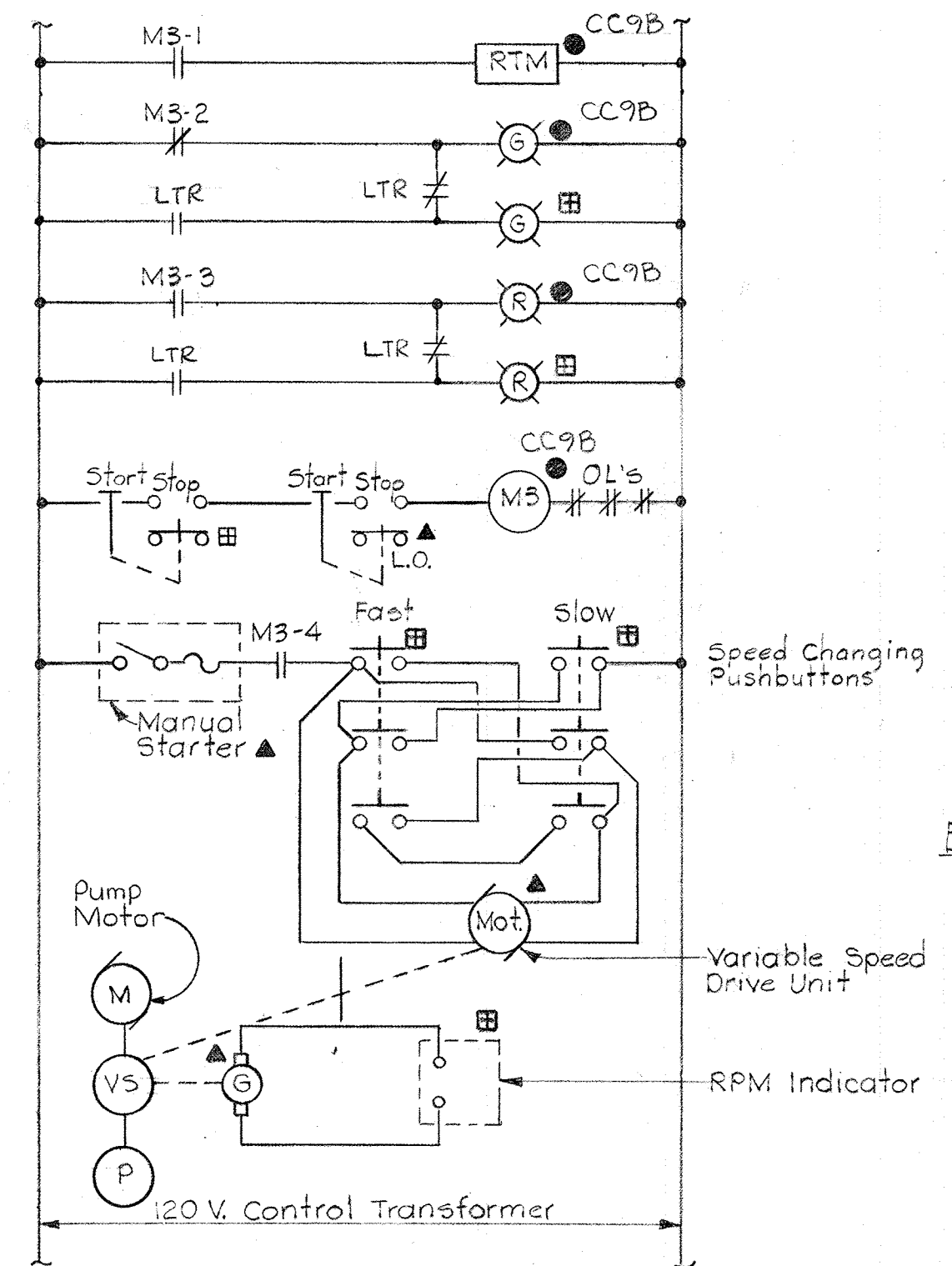
DELETED
ELEMENTARY CONTROL DIAGRAM NO. 3

Typical for the following Units:
Dewatering Building/Vac. Filter #1 Agitator Drive
Dewatering Building/Vac. Filter #2 Agitator Drive



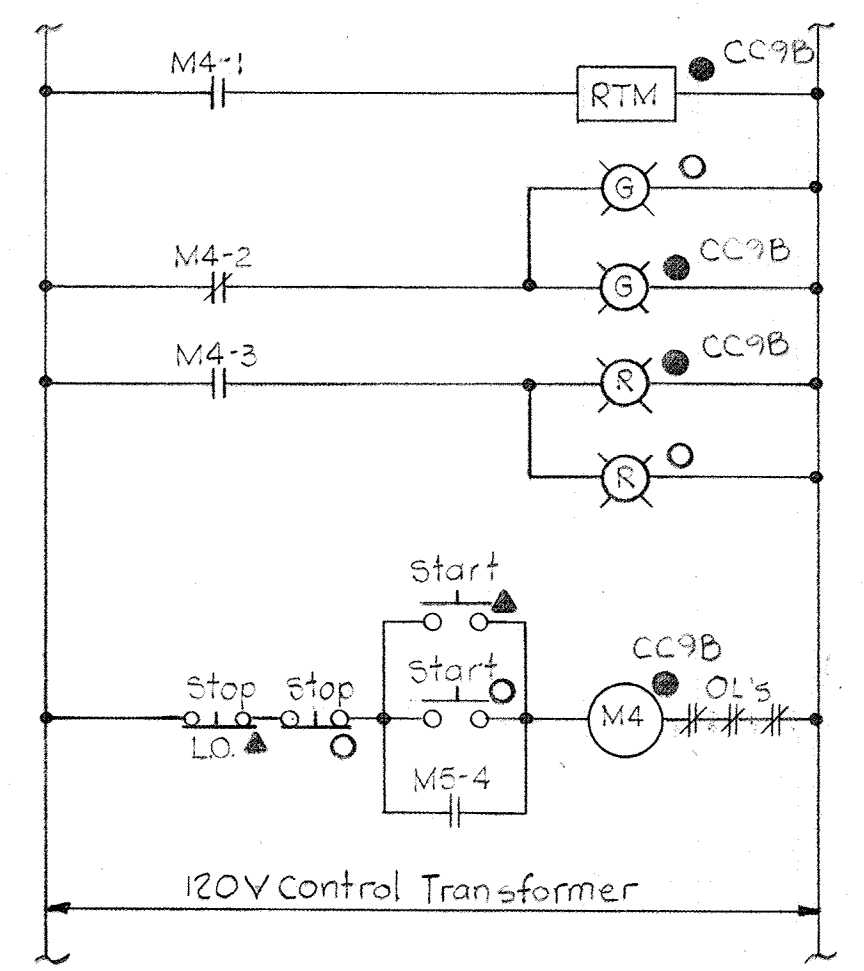
ELEMENTARY CONTROL DIAGRAM NO. 4

Typical for the following Units:
Dewatering Building/Polymer 'B' Feed Pumps #1 & #2
Dewatering Building/Fe Cl₂ Feed Pumps #1 & #2



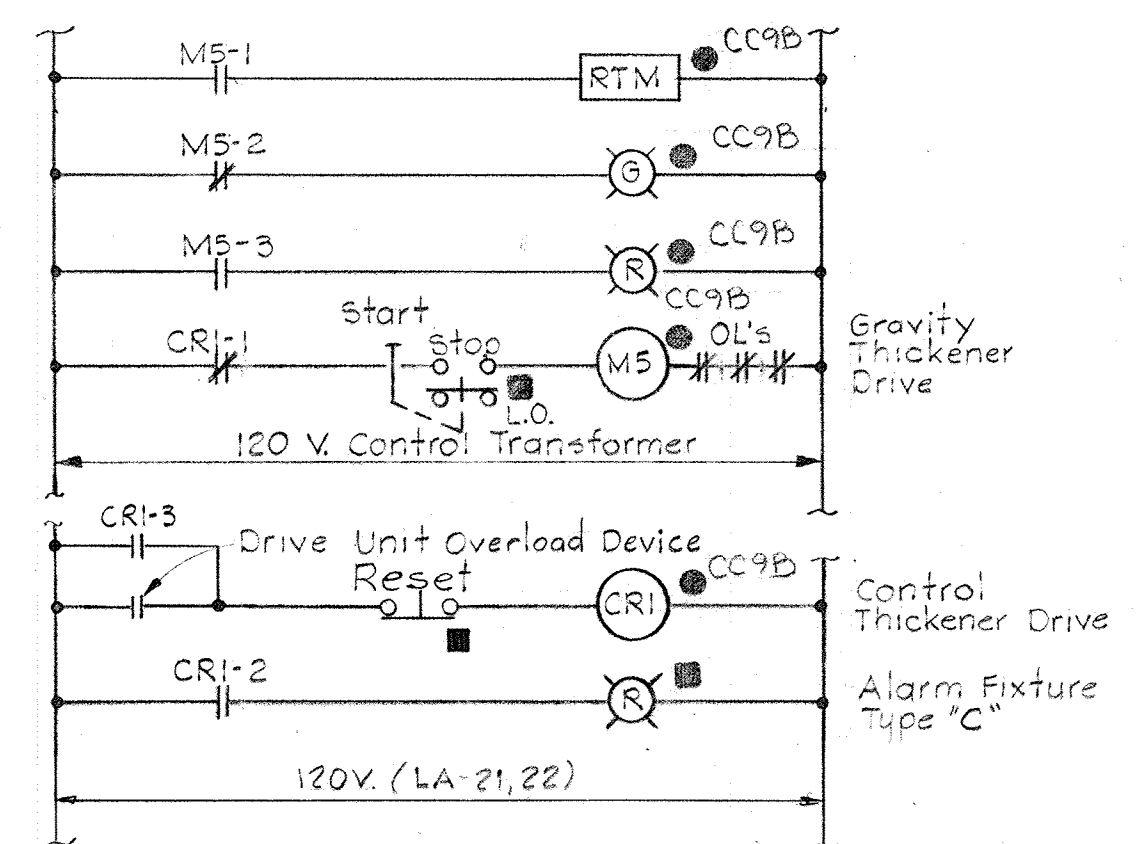
ELEMENTARY CONTROL DIAGRAM NO. 5

Typical for the following Units:
Digester Pipe Gallery/Digested Sludge Pumps #1 & #2



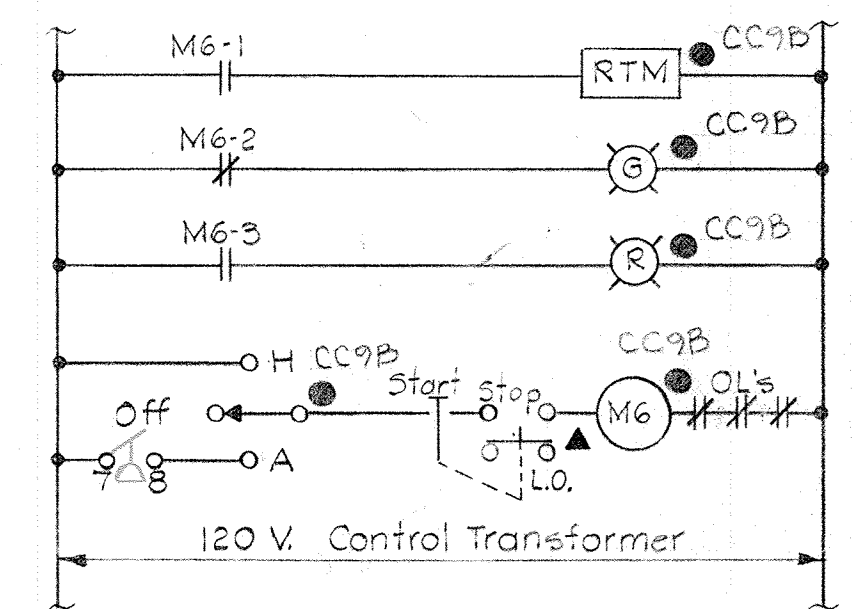
ELEMENTARY CONTROL DIAGRAM NO. 6

Typical for the following Units:
Digester Pipe Gallery/Scum Pumps #1 & #2



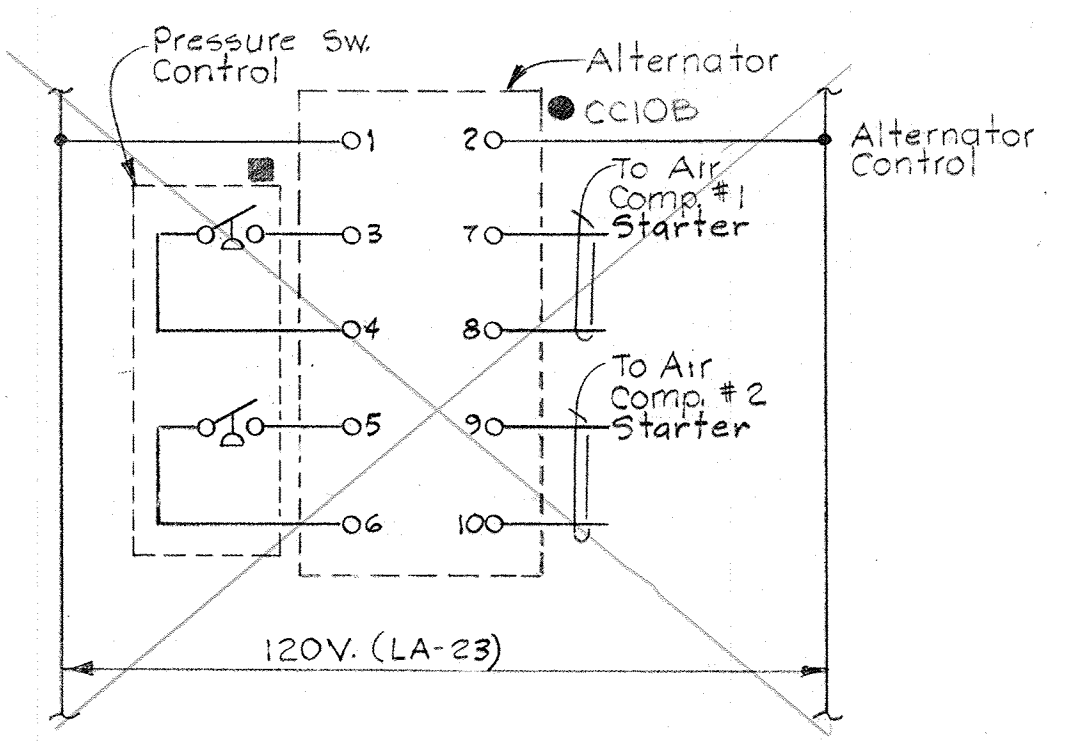
ELEMENTARY CONTROL DIAGRAM NO. 7

(See ECD # 73 on E-39)
Typical for the following units:
Gravity Thickener Drives #1 & #2



ELEMENTARY CONTROL DIAGRAM NO. 8

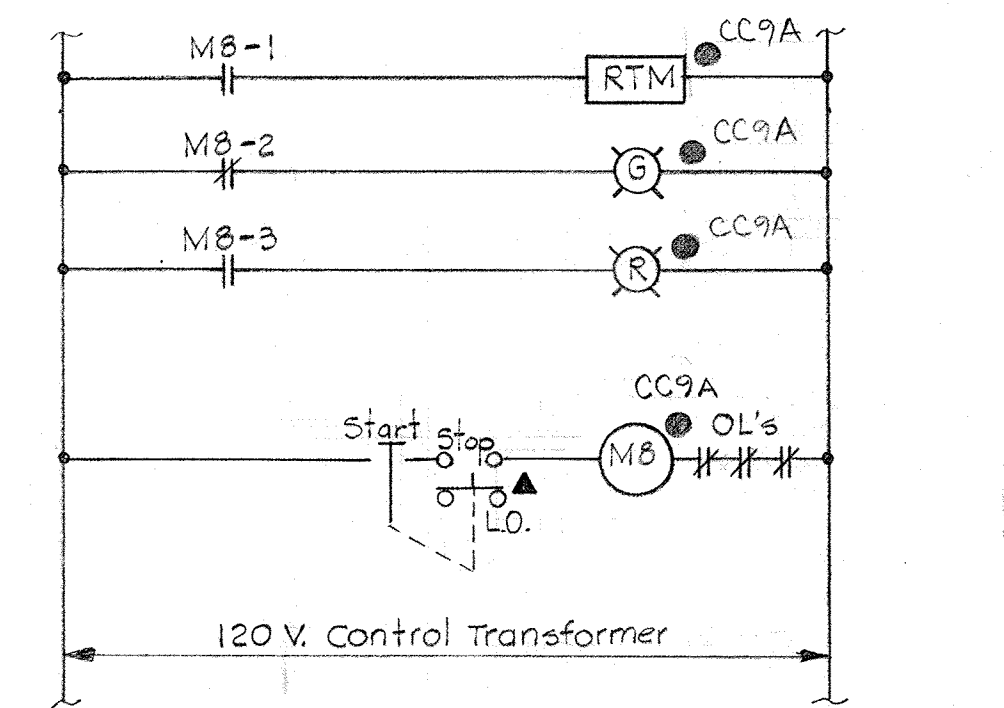
Typical for the following Units:
Dewatering Building/Air Compressors #1 & #2



SEE GENERAL ELECTRIC CONTROL DWG NO. 213139460 SHEET # 171

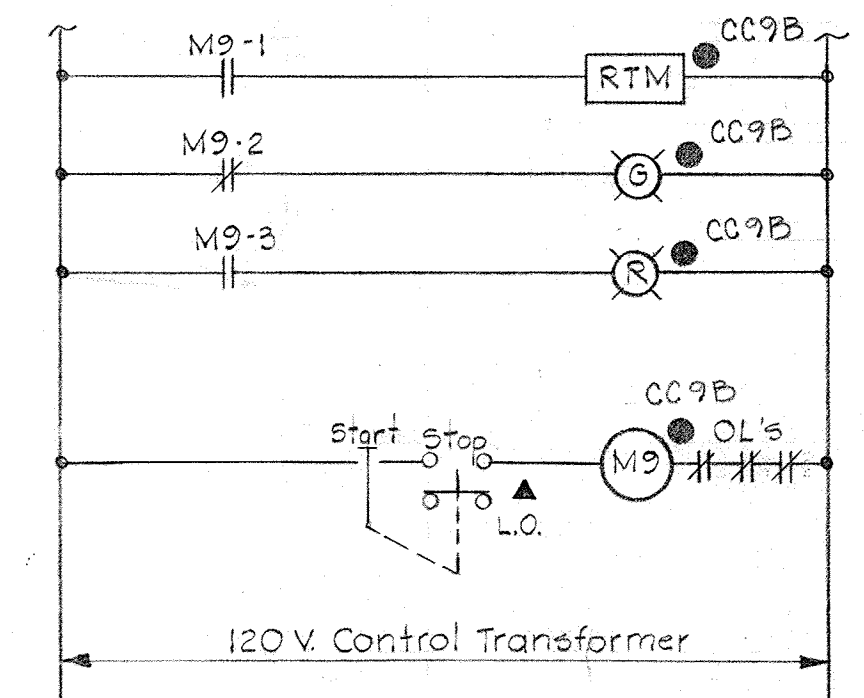
ELEMENTARY CONTROL DIAGRAM NO. 8

Typical for the following Units:
Dewatering Building/Air Compressors #1 & #2



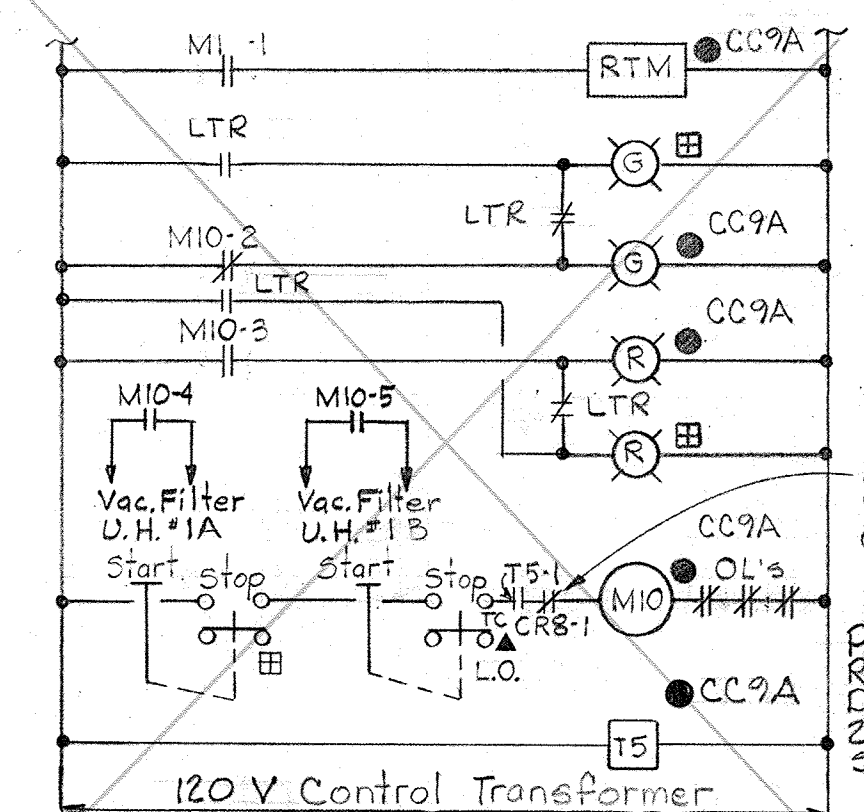
ELEMENTARY CONTROL DIAGRAM NO. 9

Typical for the following Units:
Dewatering Bldg./Polymer 'A' Chem. Mixers #1 & #2
Dewatering Bldg./Polymer 'B' Chem. Mixers #1 & #2



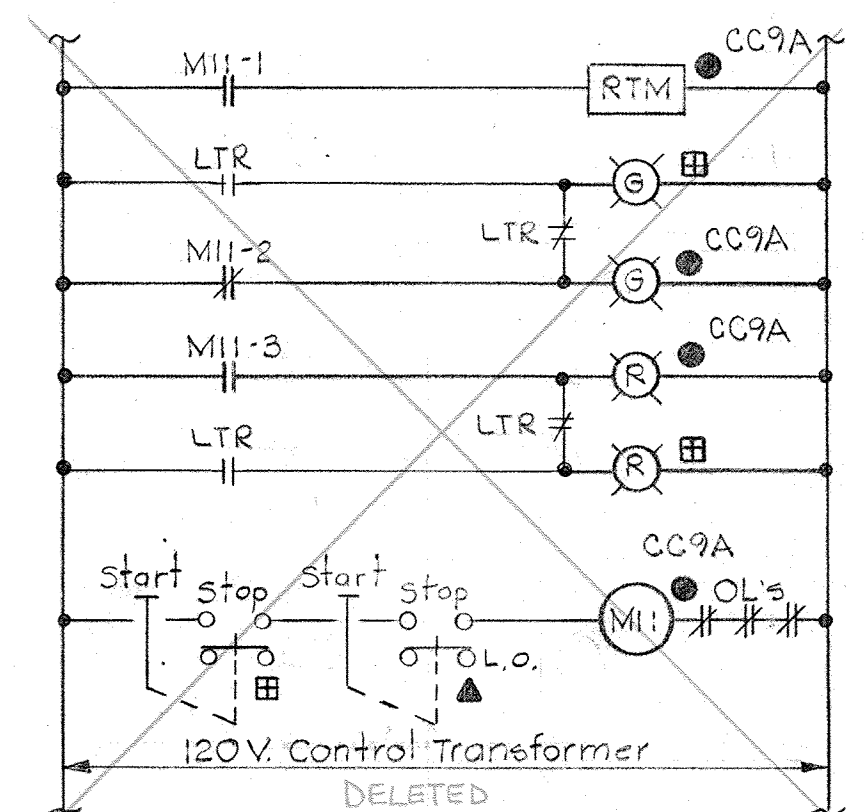
ELEMENTARY CONTROL DIAGRAM NO. 10

Typical for the following Units:
Dewatering Building/Diluting Water Pumps #1 & #2



ELEMENTARY CONTROL DIAGRAM NO. 11

Typical for the following Units:
Dewatering Bldg./Vacuum Pumps #1 & #2

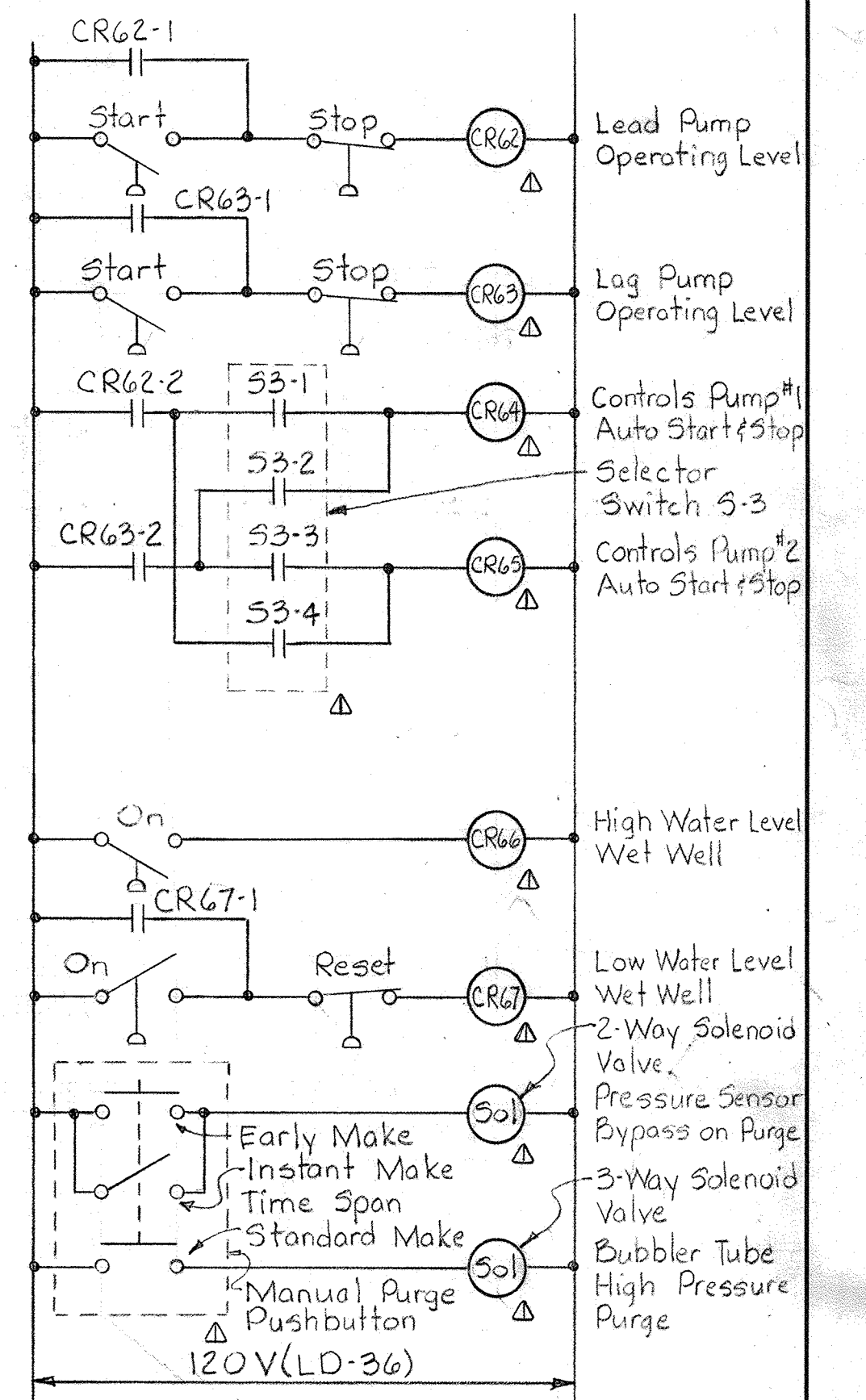


ELEMENTARY CONTROL DIAGRAM NO. 12

Typical for the following Units:
Dewatering Building/Conditioning Tank Drives #1 & #2

NOTES

1. For General Electrical Notes & Legend, See Sheet E-2.



ELEMENTARY CONTROL DIAGRAM NO. 87

(SEE ECD # 87)
Typical for Process Overflow Return Bubbler Cab.

REVISED AS PER CONTROL DWGS RECEIVED WITH PUMPS

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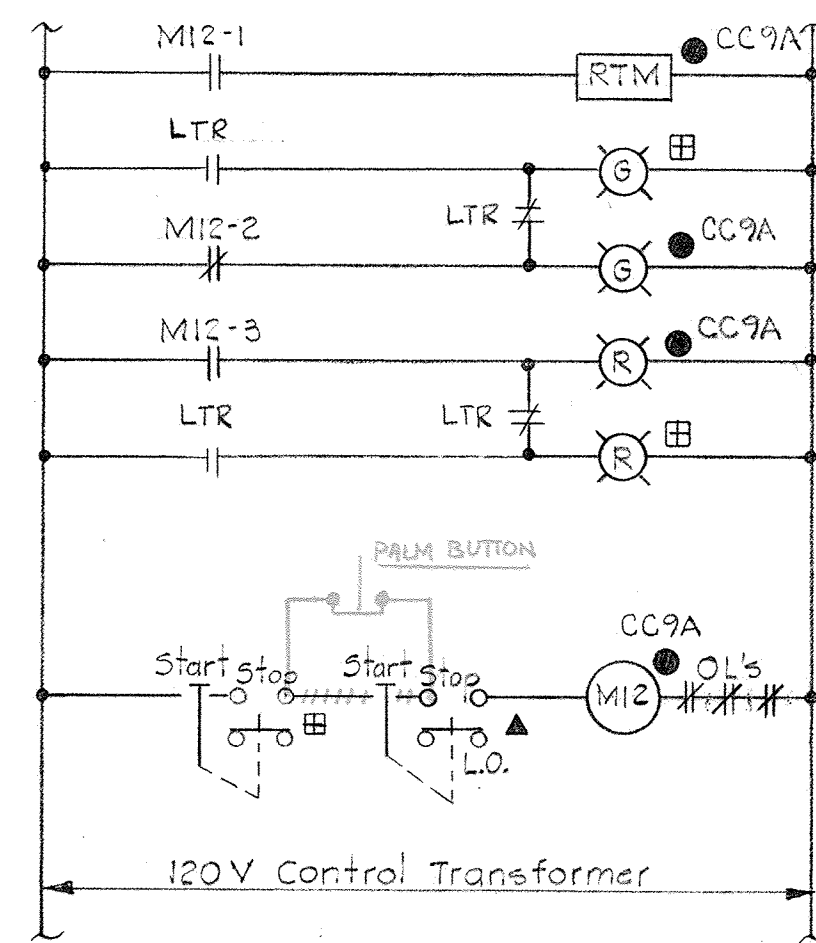
CONTRACT NO. 501-S

ELECTRICAL
DEWATERING BUILDING
ELEMENTARY WIRING DIAGRAMS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

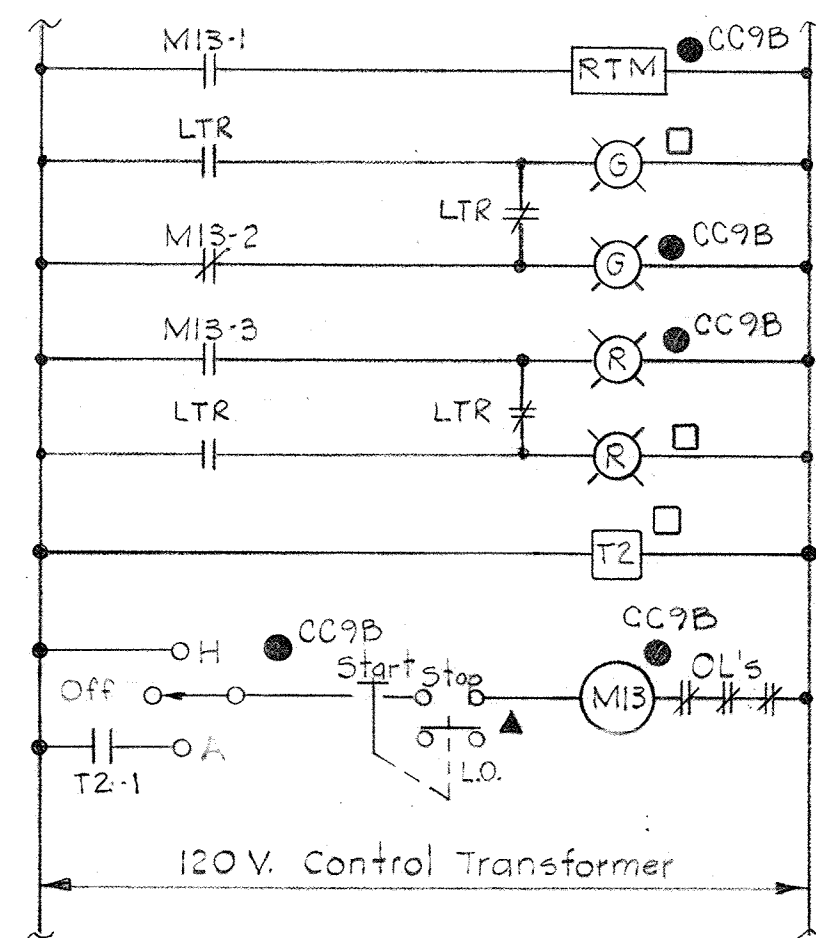
DRAWING
NO. 107
OF 128

SCALE
AS
NOTED



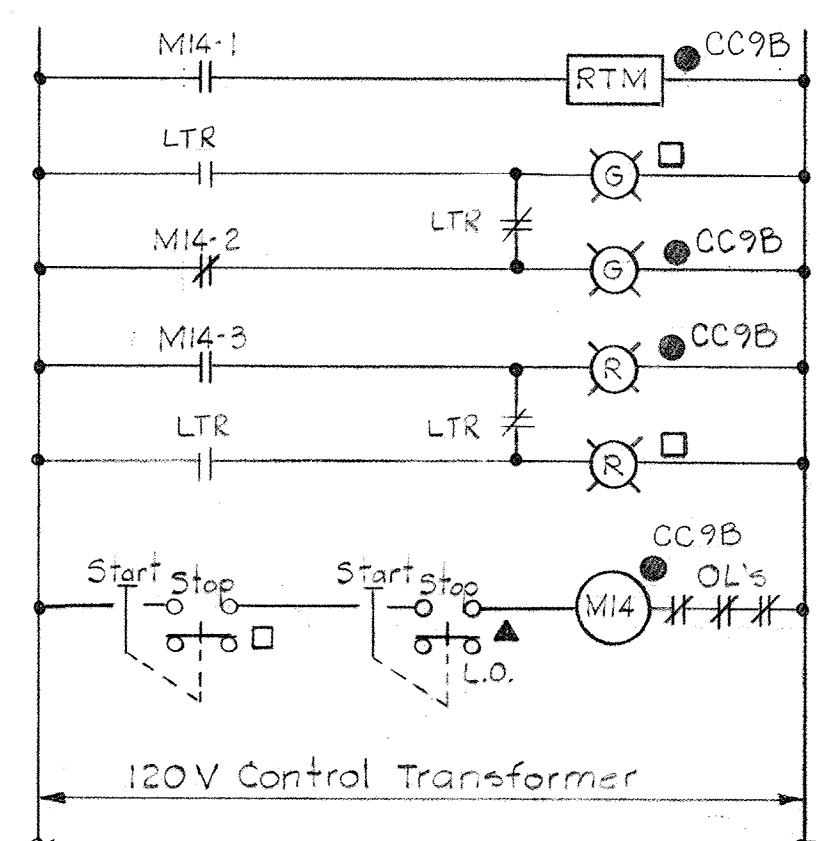
ELEMENTARY CONTROL DIAGRAM NO. 13

Typical for the following Units:
Dewatering Bldg./Bell Conveyors #1 & #2



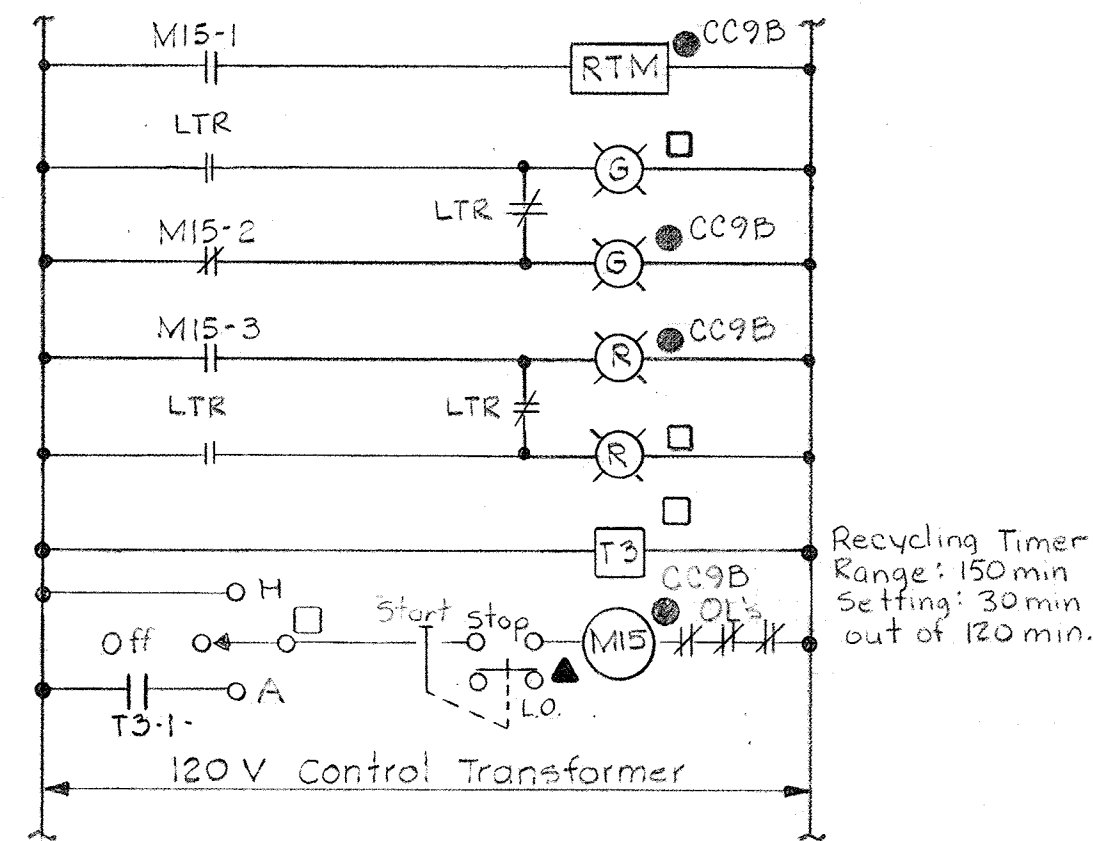
ELEMENTARY CONTROL DIAGRAM NO. 14

Typical for the following Units:
Flotation Thickener Area Bottom Collect. Dr #1 & #2



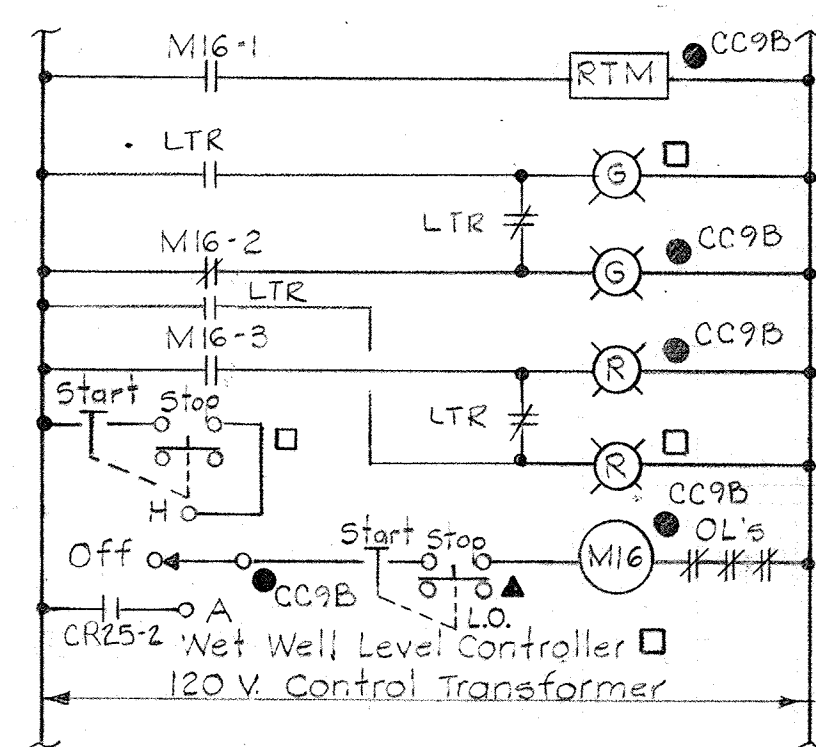
ELEMENTARY CONTROL DIAGRAM NO. 15

Typical for the following Units:
Plot. Thick. Recycle Pumps #1 & #2



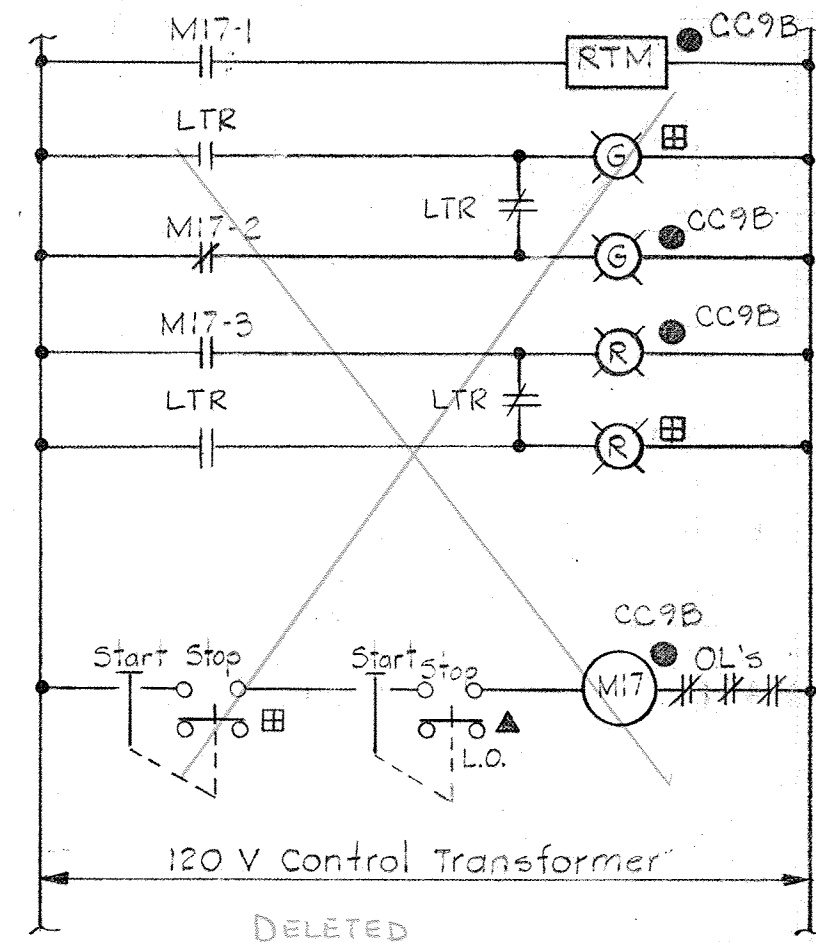
ELEMENTARY CONTROL DIAGRAM NO. 16

Typical for the following Units:
Plot. Thick. Area Top Collect Drives #1 & #2



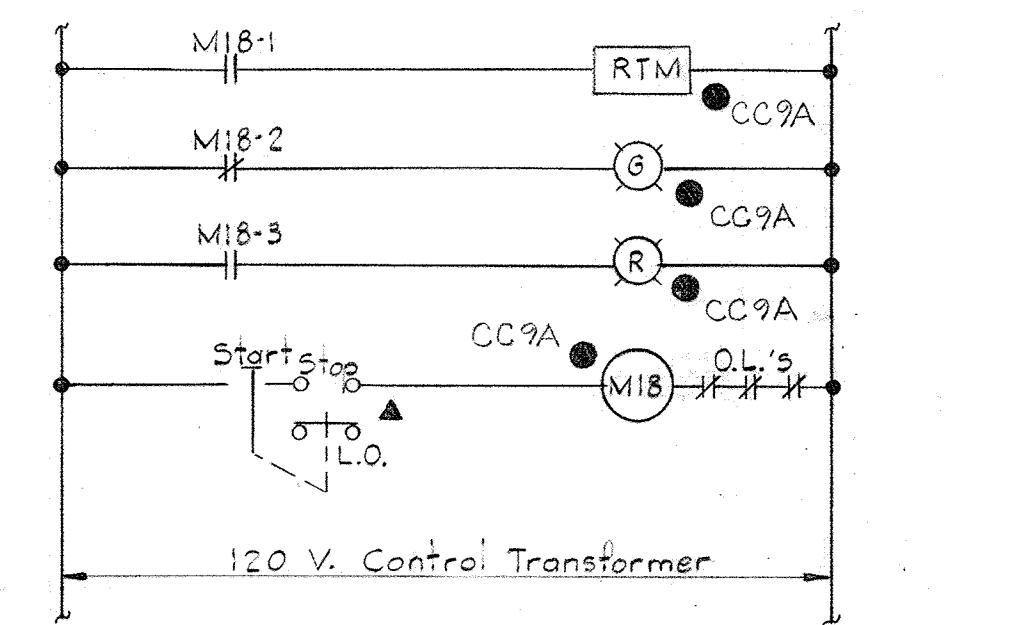
ELEMENTARY CONTROL DIAGRAM NO. 17

Typical for the following Units:
Plot. Thick. Area Thickened Sludge Pumps #1 & #2
(Thickened Secondary & Tertiary Sludge Pump)



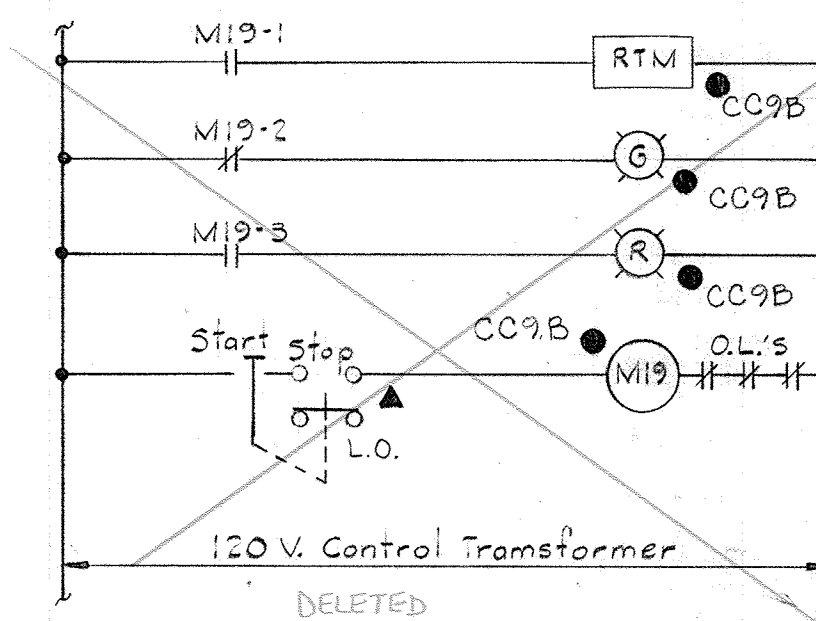
ELEMENTARY CONTROL DIAGRAM NO. 18

Typical for the following Units:
Dewatering Bldg./Filtrate Pumps #1 & #2



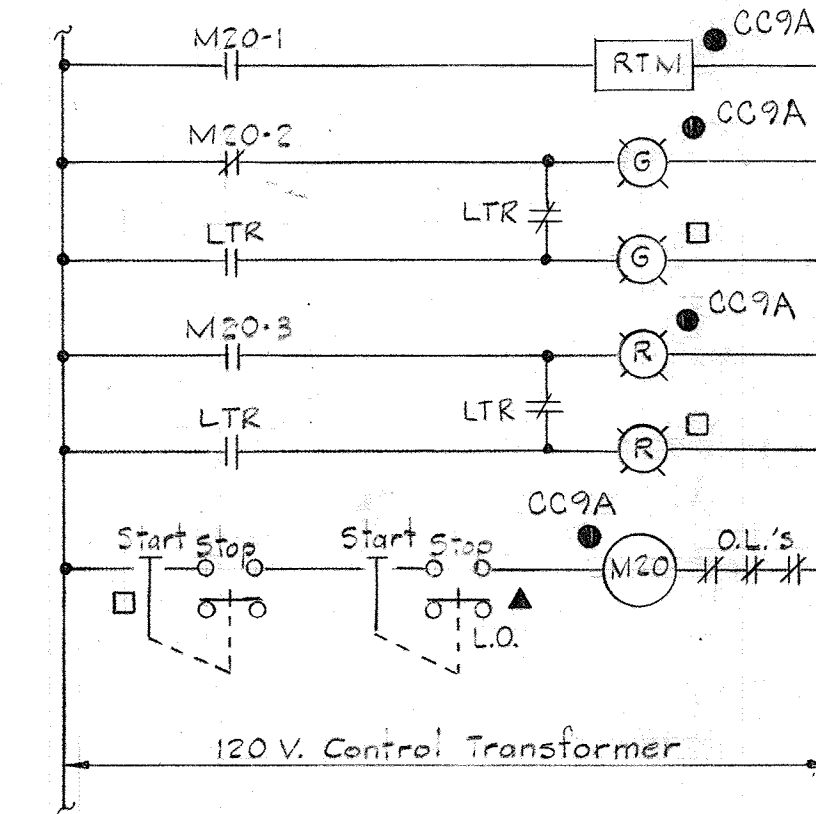
ELEMENTARY CONTROL DIAGRAM NO. 19

Typical for the following Units:
Dewatering Building/Polymer 'A' Supply Pumps #1 & #2
Dewatering Building/Polymer 'B' Supply Pumps #1 & #2
Dewatering Building/FeCl₂ Supply Pumps #1 & #2



ELEMENTARY CONTROL DIAGRAM NO. 20

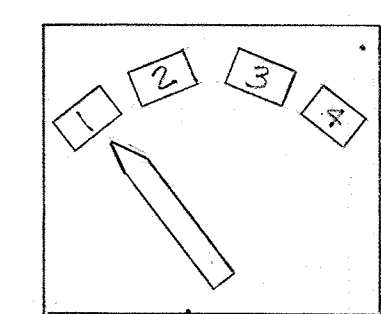
Typical for the following Units:
Plot. Thick. Area Recirculation Pumps #1 & #2



ELEMENTARY CONTROL DIAGRAM NO. 21

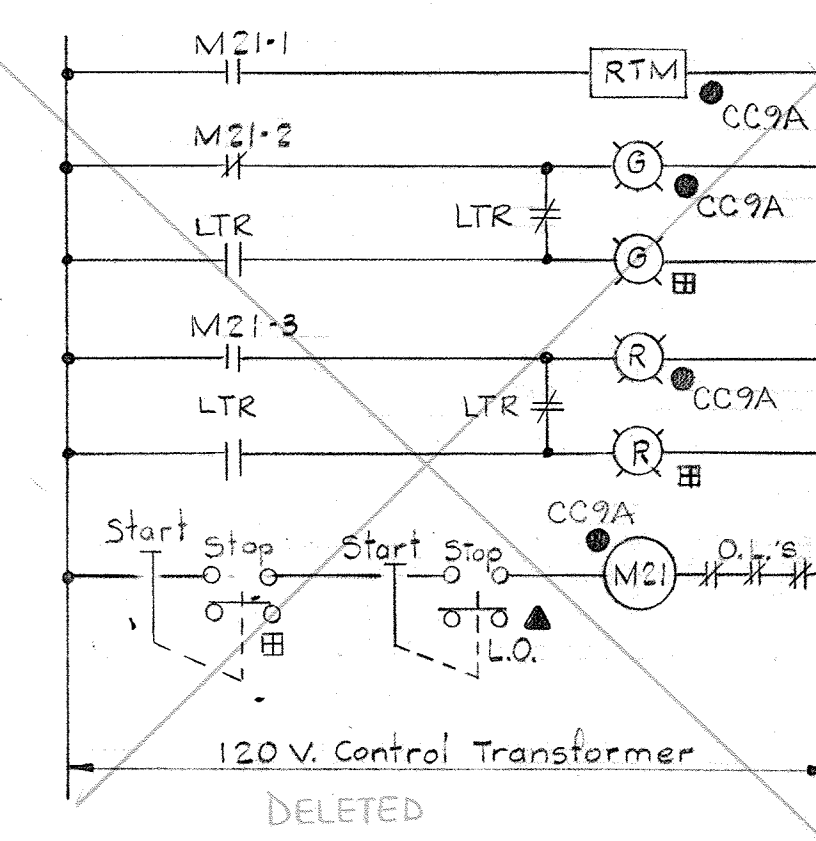
Typical for the following Units:
Dewatering Building Polymer 'A' Feed Pumps #1 & #2

Contact	Position	1	2	3	4
-1-1			X		
-1-2				X	
-1-3					X
-1-4		X			
-1-5			X		
-1-6				X	
-1-7		X			
-1-8			X		
-1-9				X	
-1-10					X



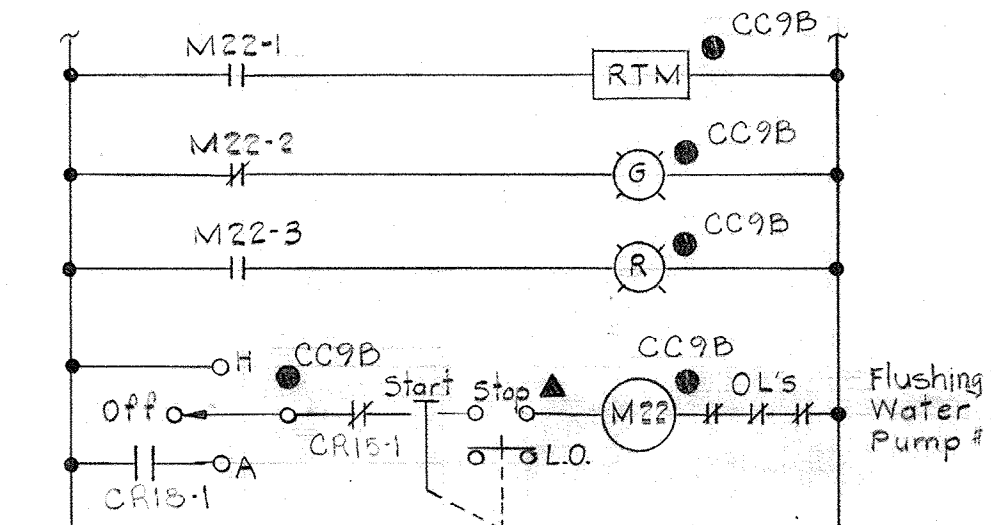
FLUSHING WATER PUMPS SEQUENCE SELECTOR SWITCH "S1"

Pos #1 - Off
#2 - Pumps 1, 2, 3
#3 - Pumps 2, 3, 1
#4 - Pumps 3, 1, 2



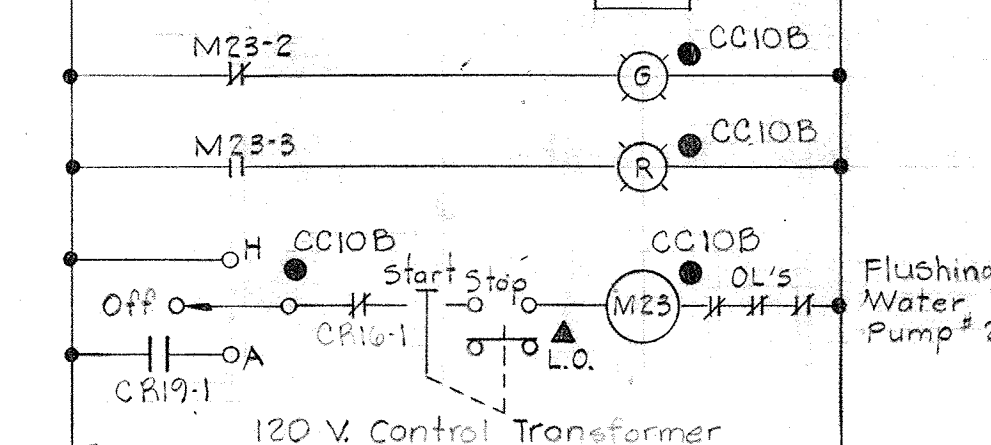
ELEMENTARY CONTROL DIAGRAM NO. 22

Typical for the following Units:
Dewatering Building/Vacuum Filter #1 Drum Drive
Dewatering Building/Vacuum Filter #2 Drum Drive



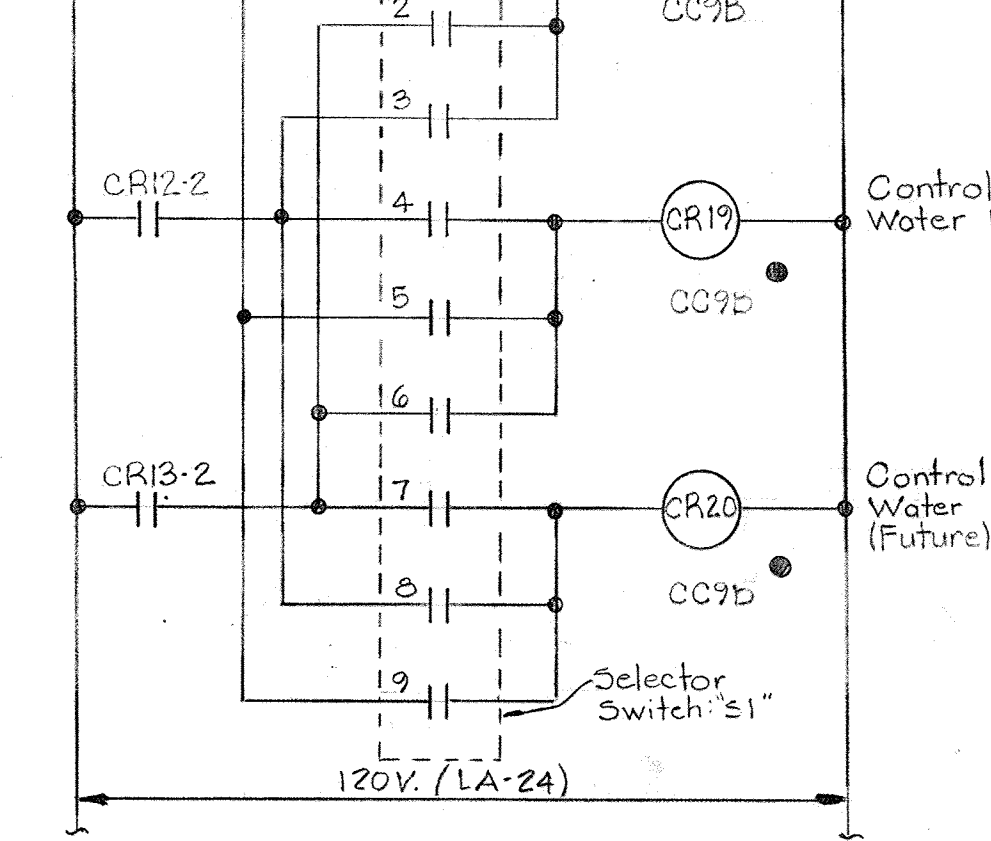
ELEMENTARY CONTROL DIAGRAM NO. 23

Typical for the following Unit:
Hydropneumatic Tank



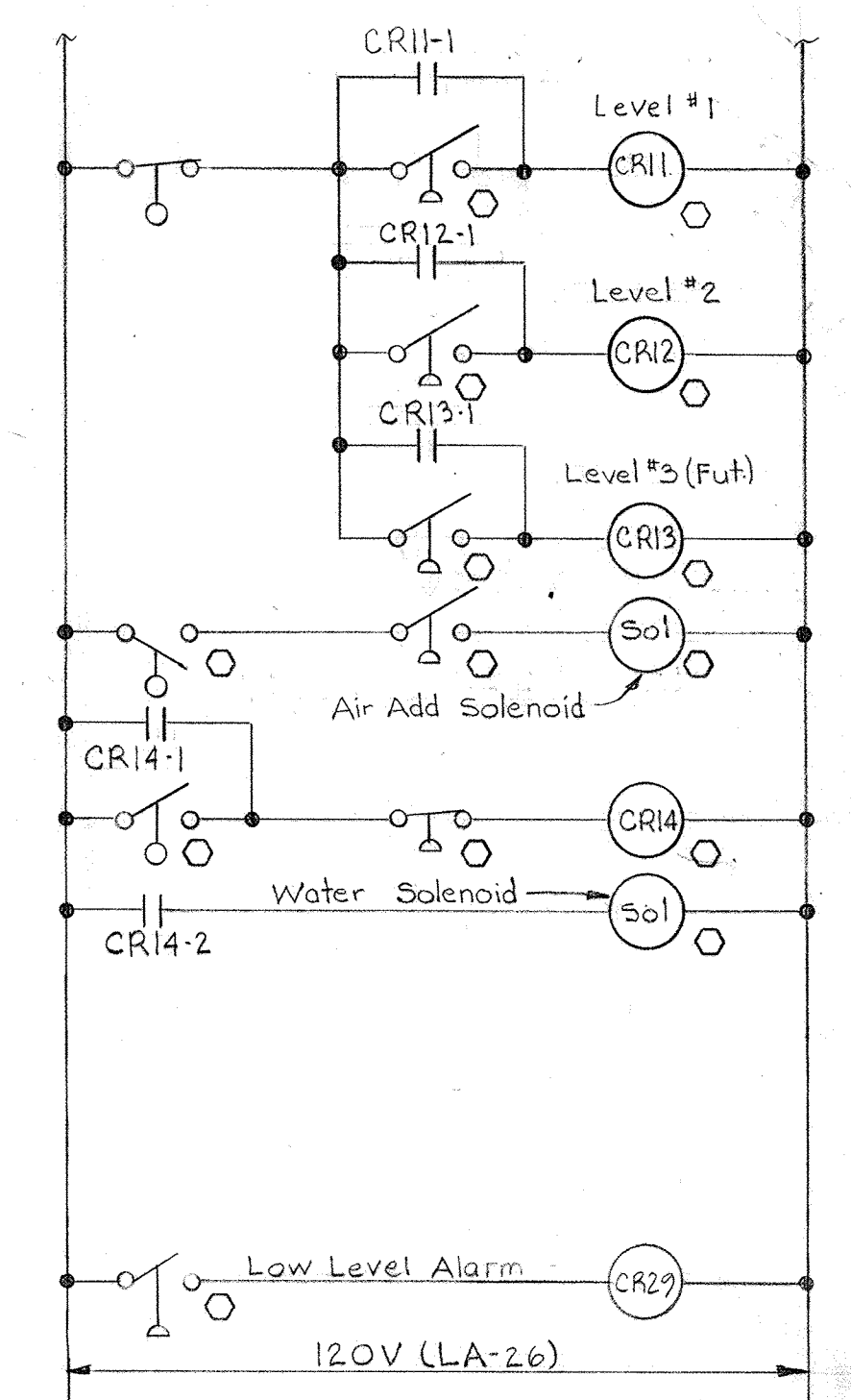
ELEMENTARY CONTROL DIAGRAM NO. 24

Typical for the following Unit:
Dewatering Bldg./Strainer Drive #1 & #2



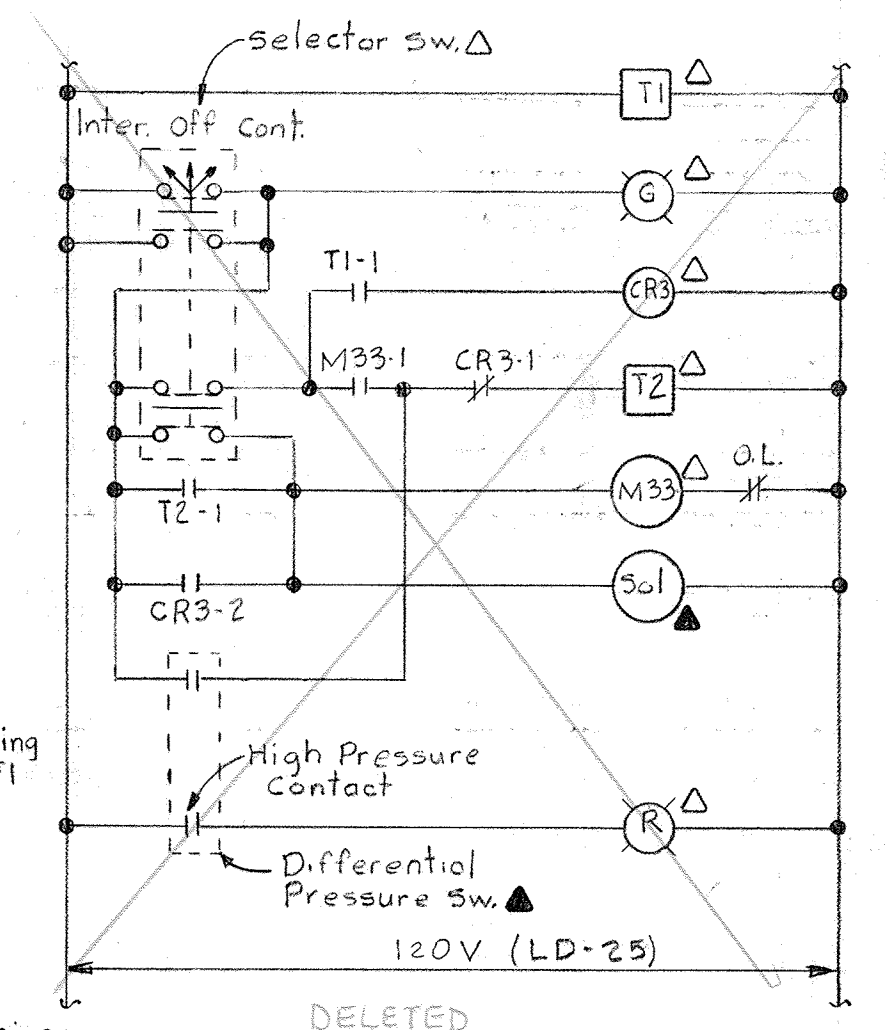
ELEMENTARY CONTROL DIAGRAM NO. 25

Typical for the following Units:
Dewatering Bldg. Flushing Water Pumps #1 & #2



ELEMENTARY CONTROL DIAGRAM NO. 43

Typical for the following Unit:
Hydropneumatic Tank



ELEMENTARY CONTROL DIAGRAM NO. 26

Typical for the following Unit:
Dewatering Bldg./Strainer Drive #1 & #2

NOTES:

1. For General Electrical Notes & Legend see Sheet E-2.

WHITMAN, REQUARDT & ASSOCIATES
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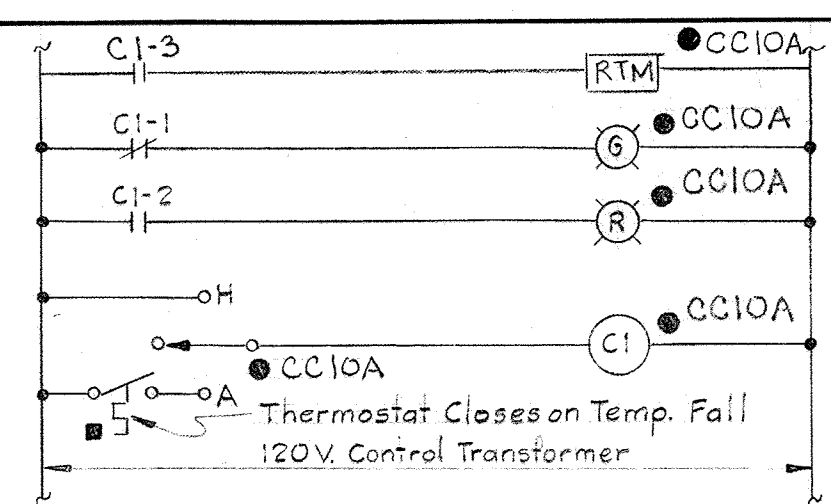
CONTRACT NO. 501-S

ELECTRICAL
DEWATERING BUILDING
ELEMENTARY WIRING DIAGRAMS

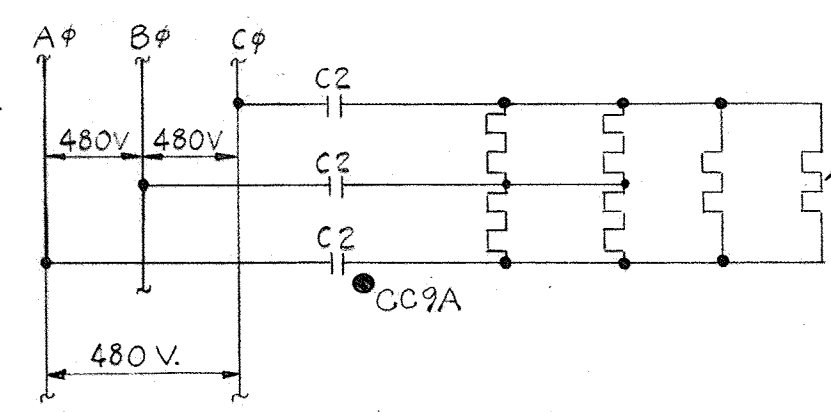
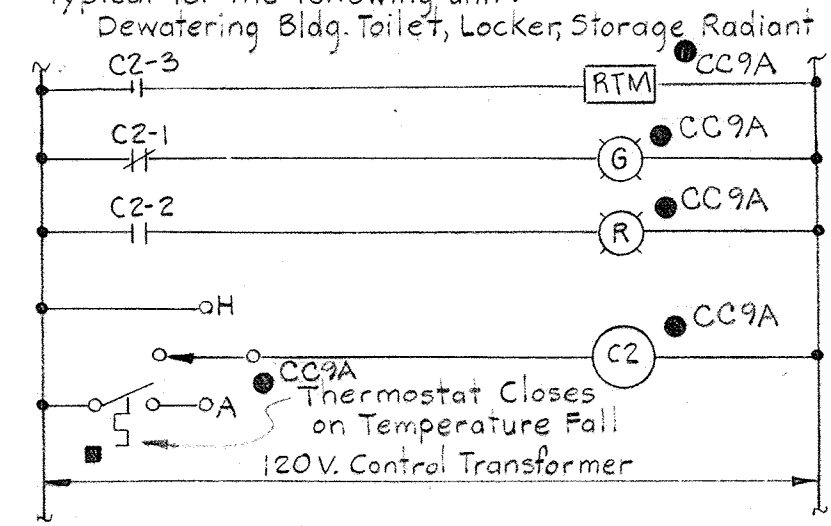
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 108
OF 128

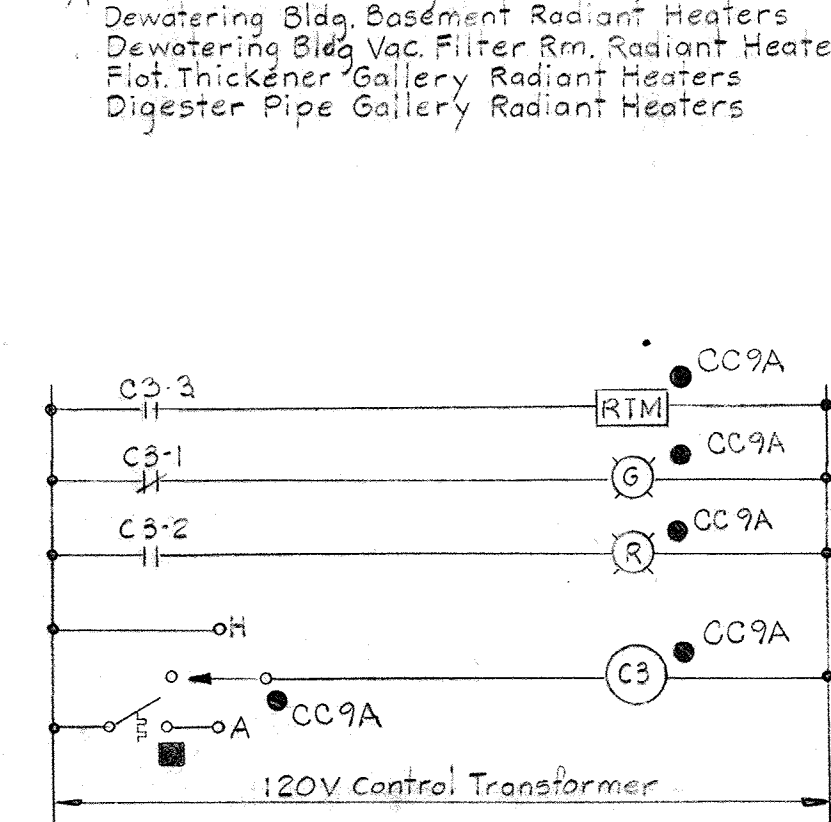
SCALE
AS
NOTED



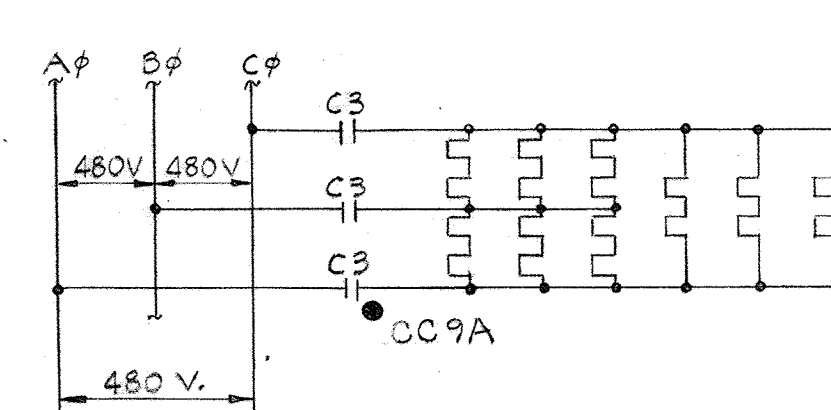
ELEMENTARY CONTROL DIAGRAM NO. 25
 Typical for the following unit:
 Dewatering Bldg. Toilet, Locker, Storage Radiant Htrs.
 C2-3



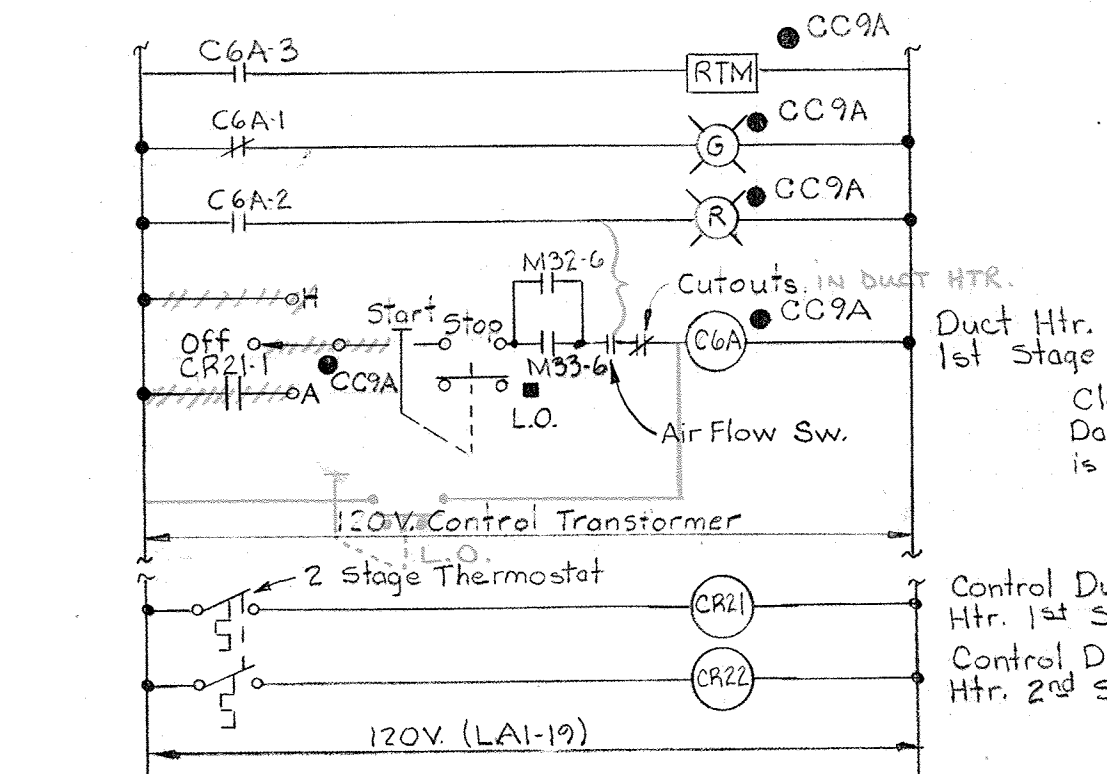
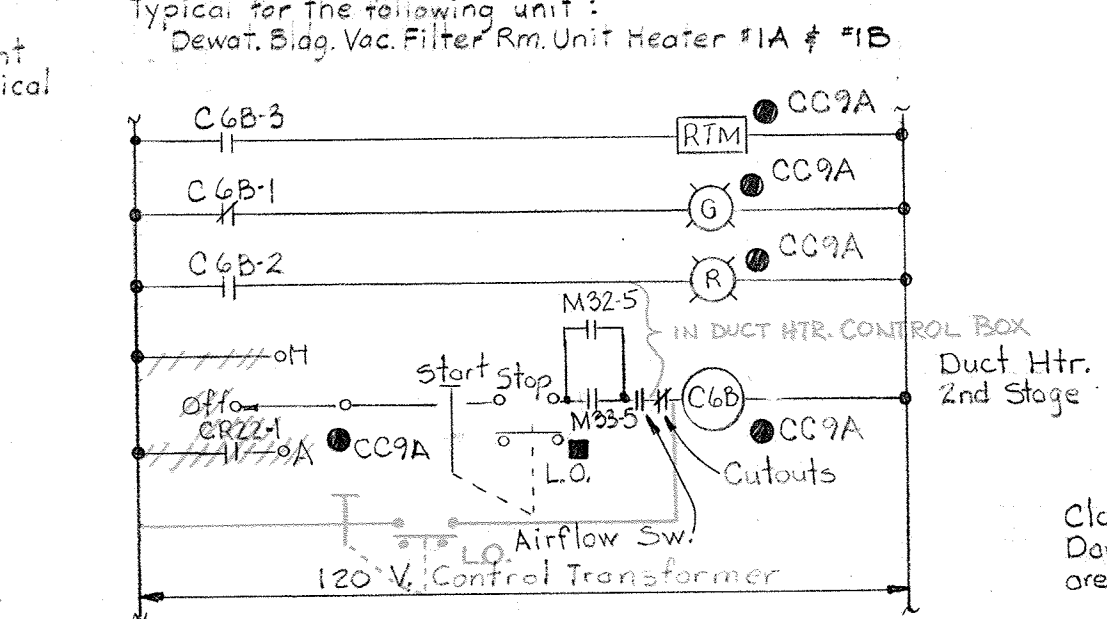
ELEMENTARY CONTROL DIAGRAM NO. 26
 Typical for the following units:
 Dewatering Bldg. Basement Radiant Heaters
 Dewatering Bldg. Vac. Filter Rm. Radiant Heaters
 Flat Thickener Gallery Radiant Heaters
 Digester Pipe Gallery Radiant Heaters



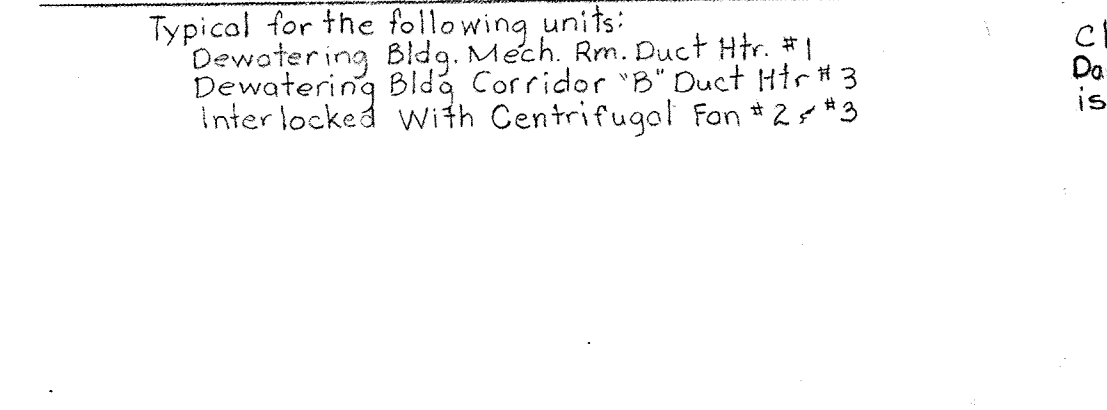
ELEMENTARY CONTROL DIAGRAM NO. 27
 Typical for the following unit:
 Dewat. Bldg. Chem. Area, Truck Bay Shop Area Rad. Htrs.



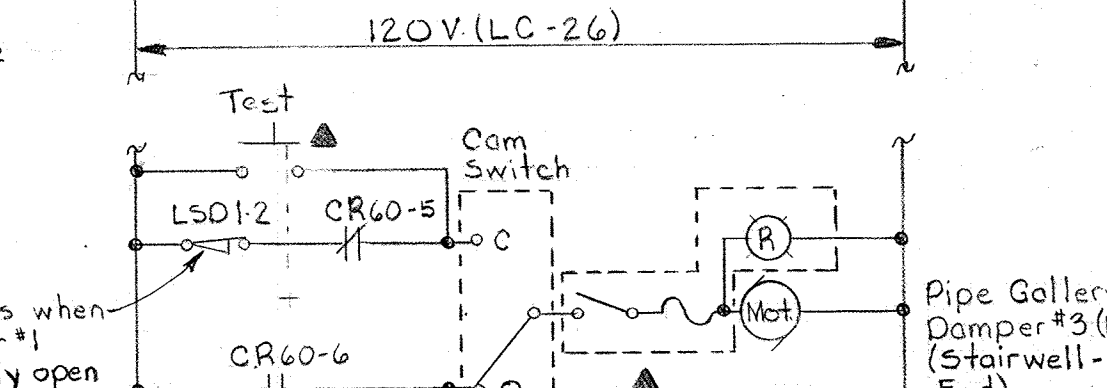
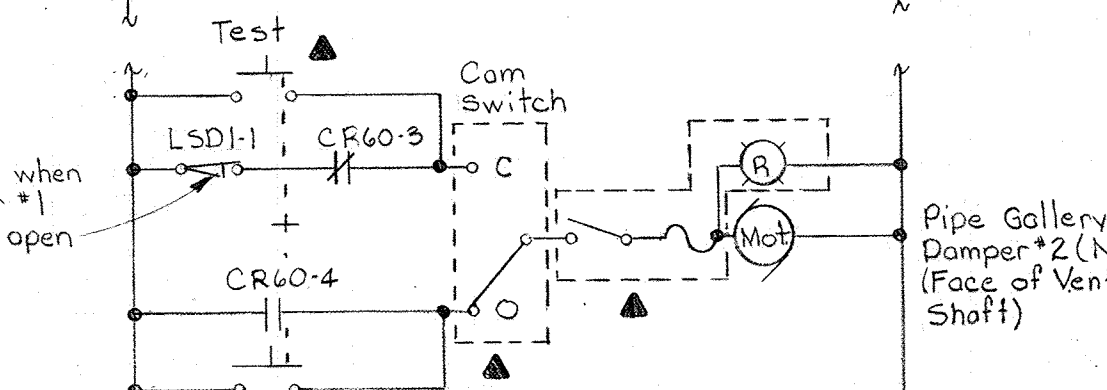
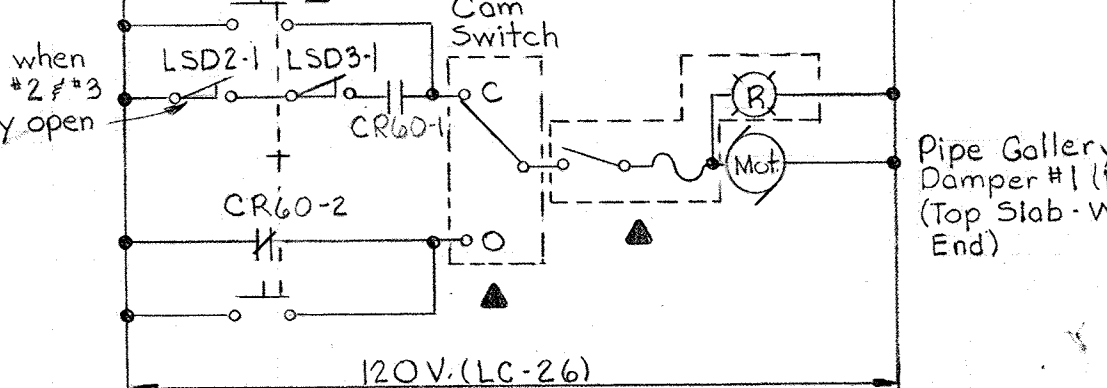
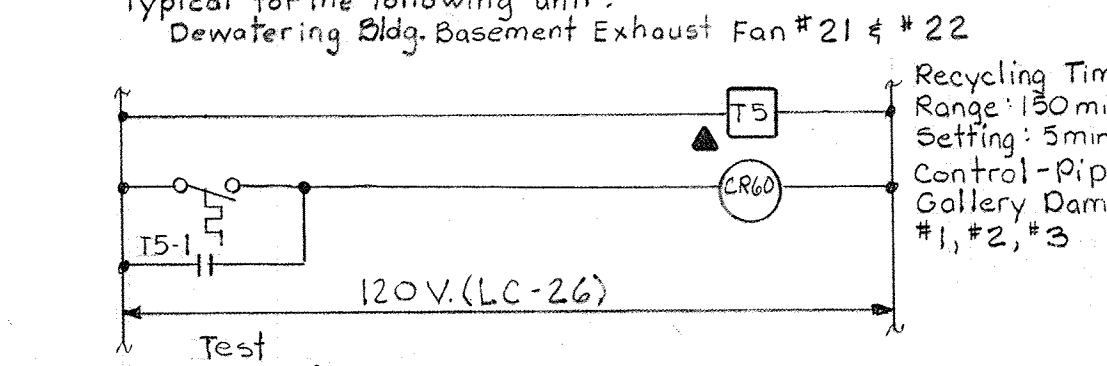
ELEMENTARY CONTROL DIAGRAM NO. 28
 Typical for the following unit:
 Dewat. Bldg. Vac. Filter Rm. Unit Heater #1A #1B



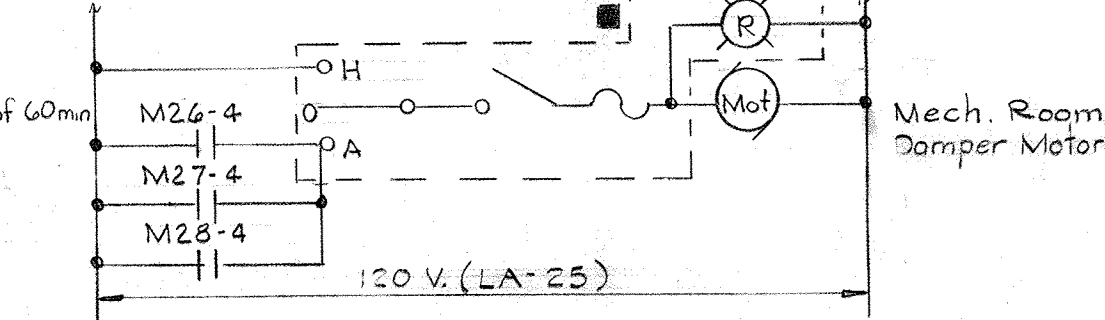
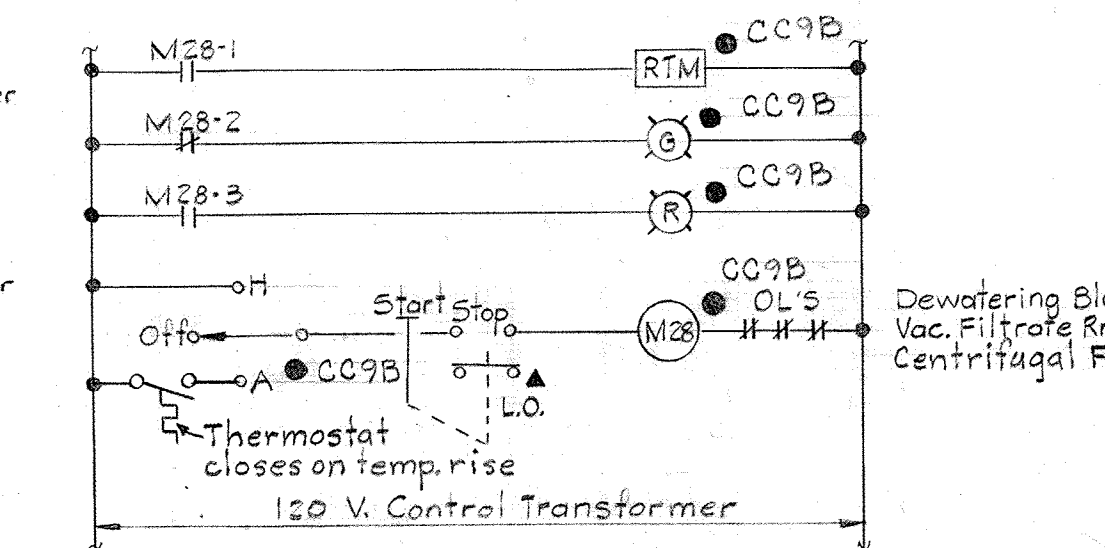
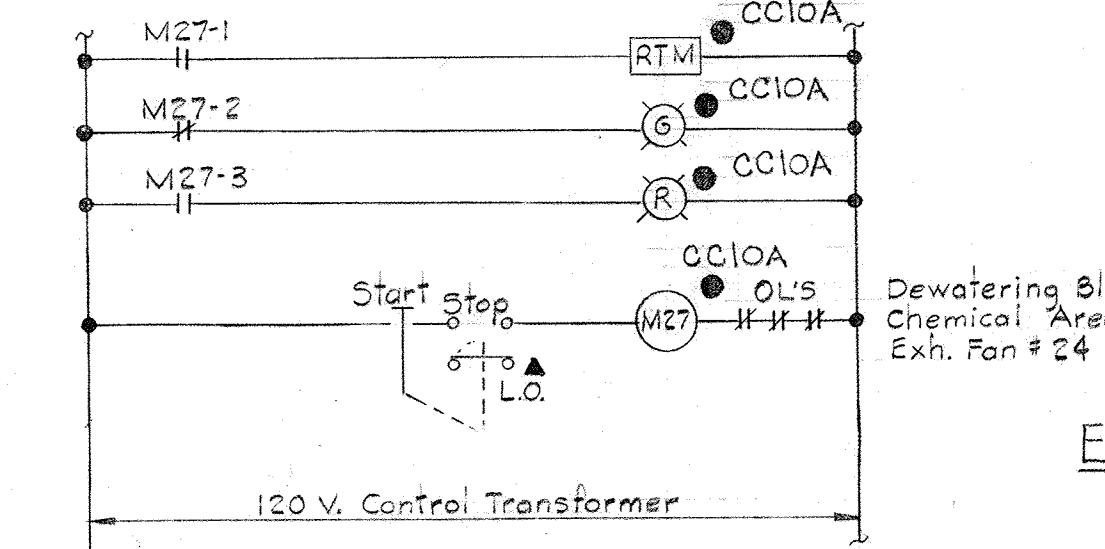
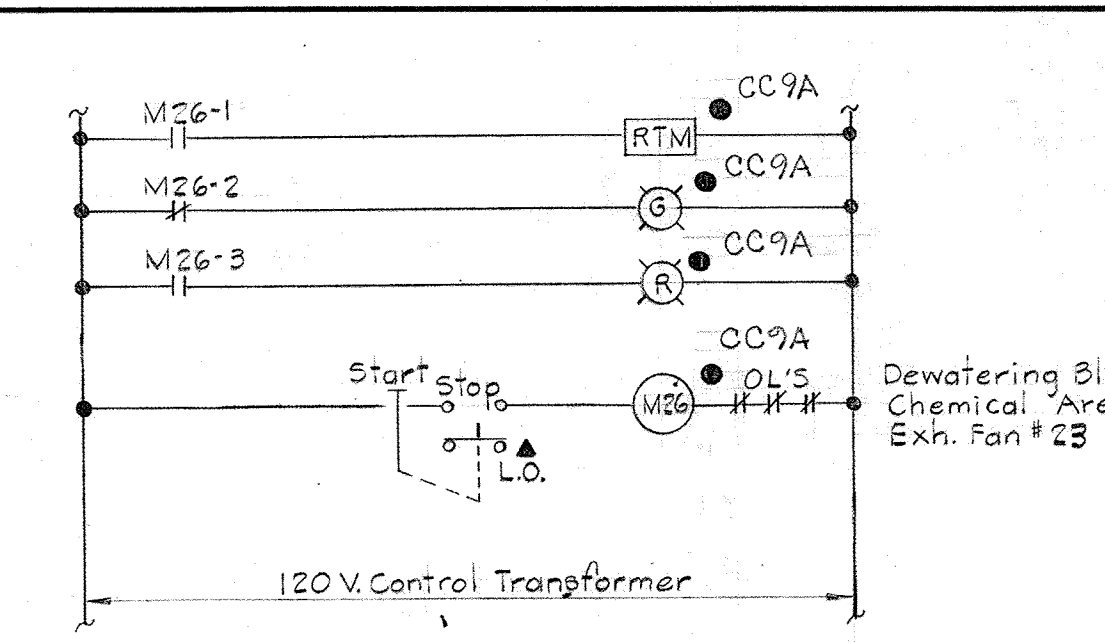
ELEMENTARY CONTROL DIAGRAM NO. 29
 Typical for the following units:
 Dewatering Bldg. Mech. Rm. Duct Htr. #1
 Dewatering Bldg. Corridor 'B' Duct Htr. #3
 Interlocked With Centrifugal Fan #2, #3



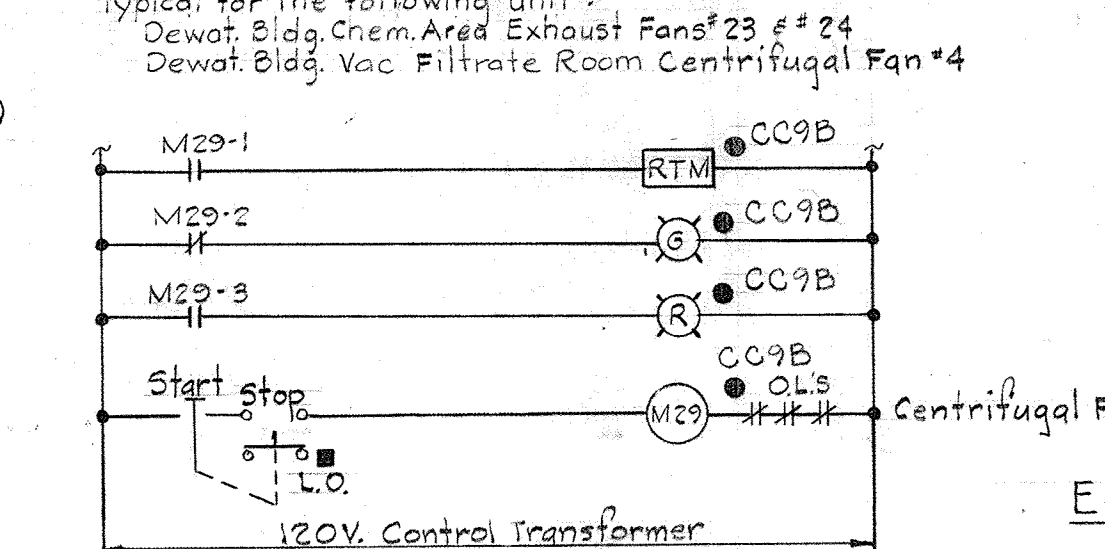
ELEMENTARY CONTROL DIAGRAM NO. 30
 Typical for the following unit:
 Dewatering Bldg. Basement Exhaust Fan #21 #22



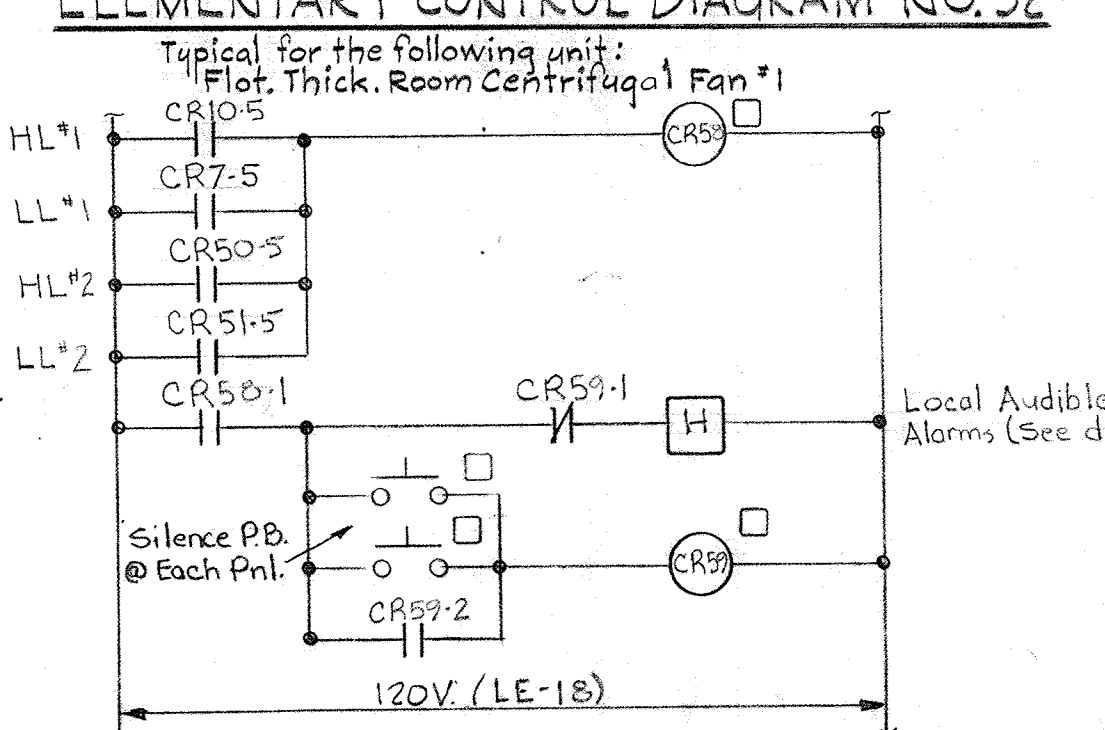
ELEMENTARY CONTROL DIAGRAM NO. 33
 Typical for the following units:
 Pipe Gallery Dampers #1, #2, #3



ELEMENTARY CONTROL DIAGRAM NO. 37
 Typical for the following unit:
 Dewat. Bldg. Chem. Area Exhaust Fans #23 #24
 Dewat. Bldg. Vac. Filtrate Room Centrifugal Fan #4

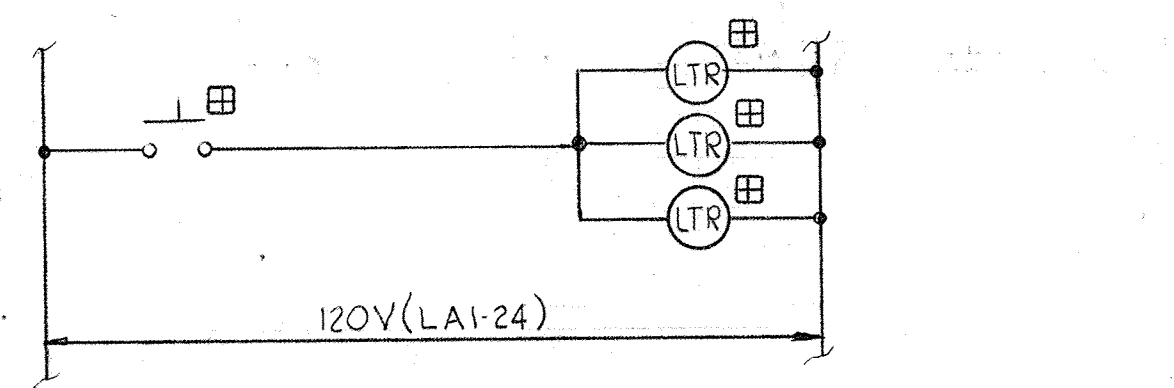


ELEMENTARY CONTROL DIAGRAM NO. 38
 Typical for the following unit:
 Flat. Thick. Room Centrifugal Fan #1 Damper Motor



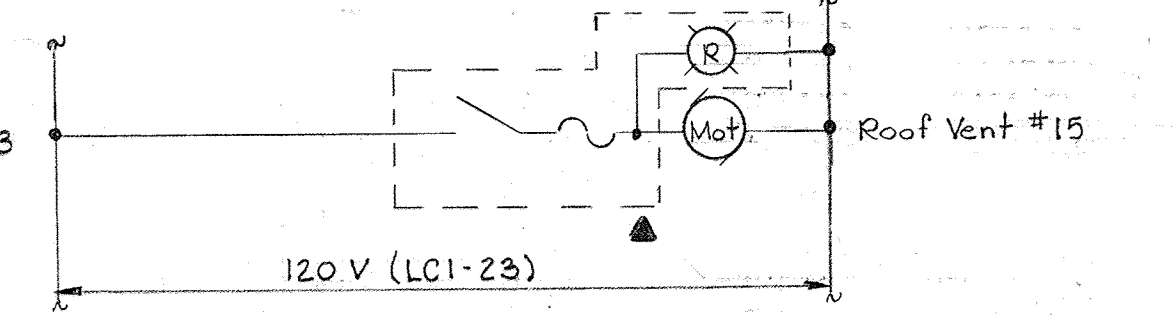
ELEMENTARY CONTROL DIAGRAM NO. 39
 LOCAL AUDIBLE ALARM - FLOTATION THICKENER
 AREA - SLUDGE FACILITY (SEE ECD #38 ON E22)

NOTES:
 1. For General Electrical Notes & Legend, see Sheet E-2.

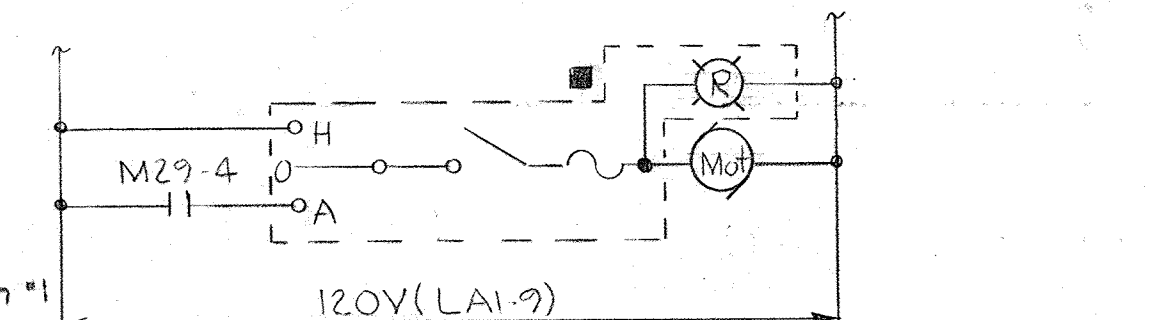


ELEMENTARY CONTROL DIAGRAM NO. 86
 Typical for the following unit:
 Indicating & Alarm Lights - Testing

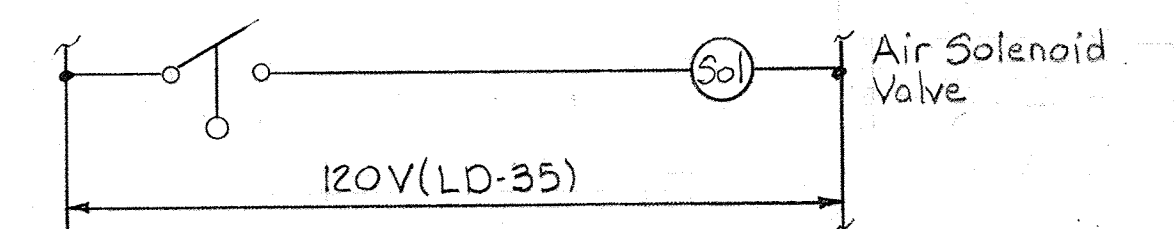
See:
 ECD # 13-18, 21 #22 on E20
 ECD # 3, 4, 5, 11, #12 on E-19



ELEMENTARY CONTROL DIAGRAM NO. 76
 Typical for the following unit:
 Roof Ventilator No. 15



ELEMENTARY CONTROL DIAGRAM NO. 75
 Typical for the following unit:
 Flat. Thick. Room Centrifugal Fan #1 Damper Motor



ELEMENTARY CONTROL DIAGRAM NO. 88
 Typical for the following units:
 1. Retention Tank #1/Flotation Thickener
 2. Retention Tank #2/Flotation Thickener

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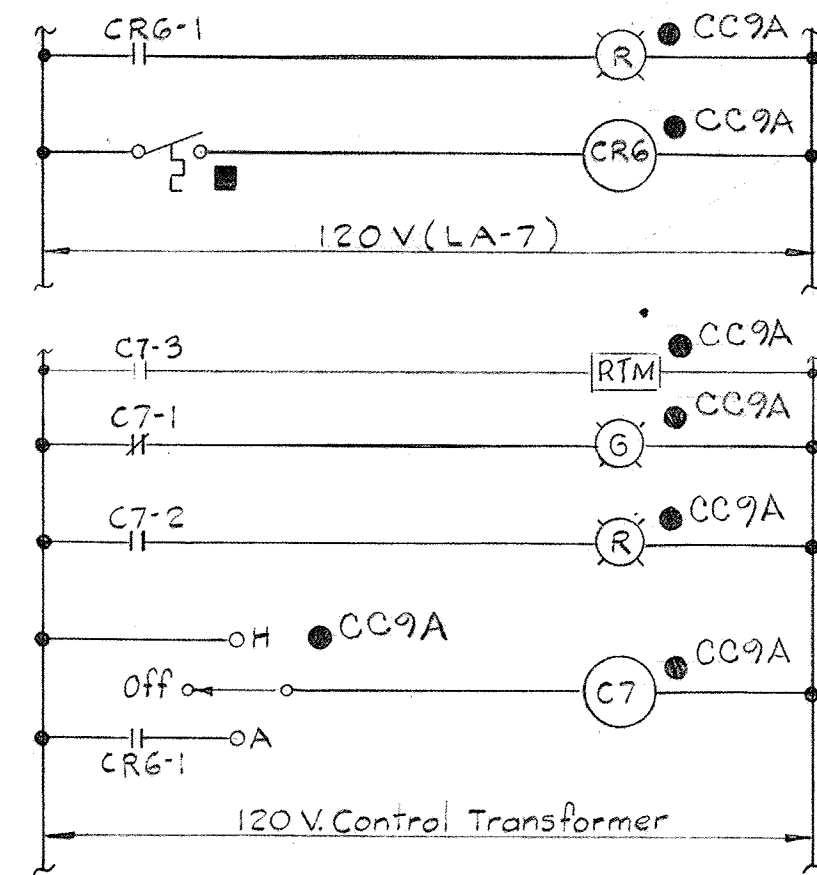
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE 3/20/75
 W.D. Lubert
 CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 501-S

ELECTRICAL
 DEWATERING BUILDING
 ELEMENTARY WIRING DIAGRAMS

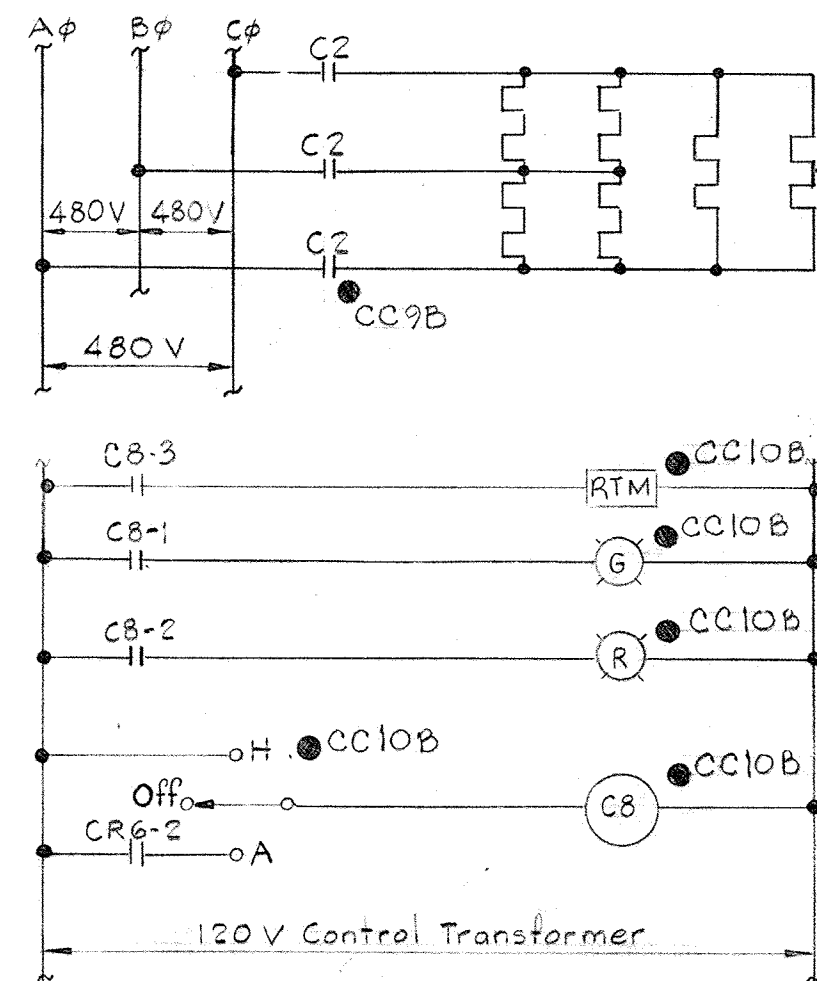
SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 4

DRAWING
 NO. 109
 OF 128
 SCALE
 AS
 NOTED



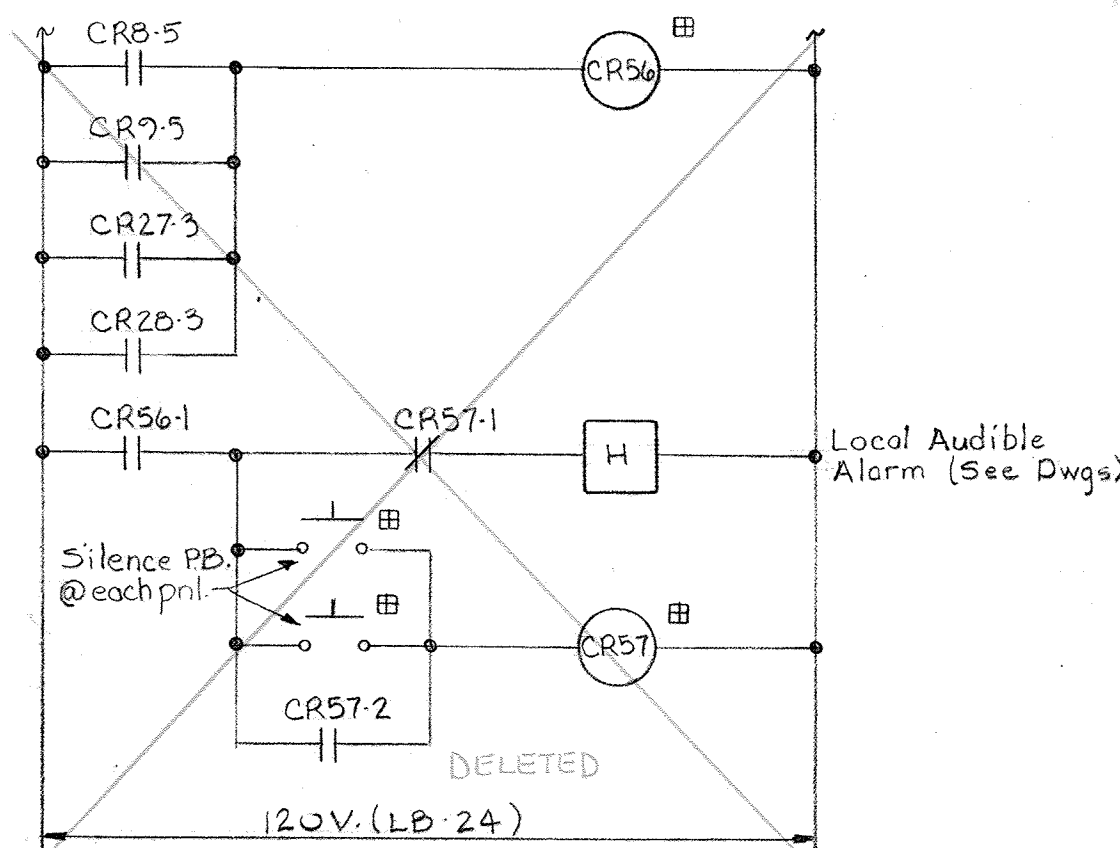
ELEMENTARY CONTROL DIAGRAM NO. 34

Typical for the following unit:
Dewat. Bldg. Vac. Filter Room Roof Vent #13

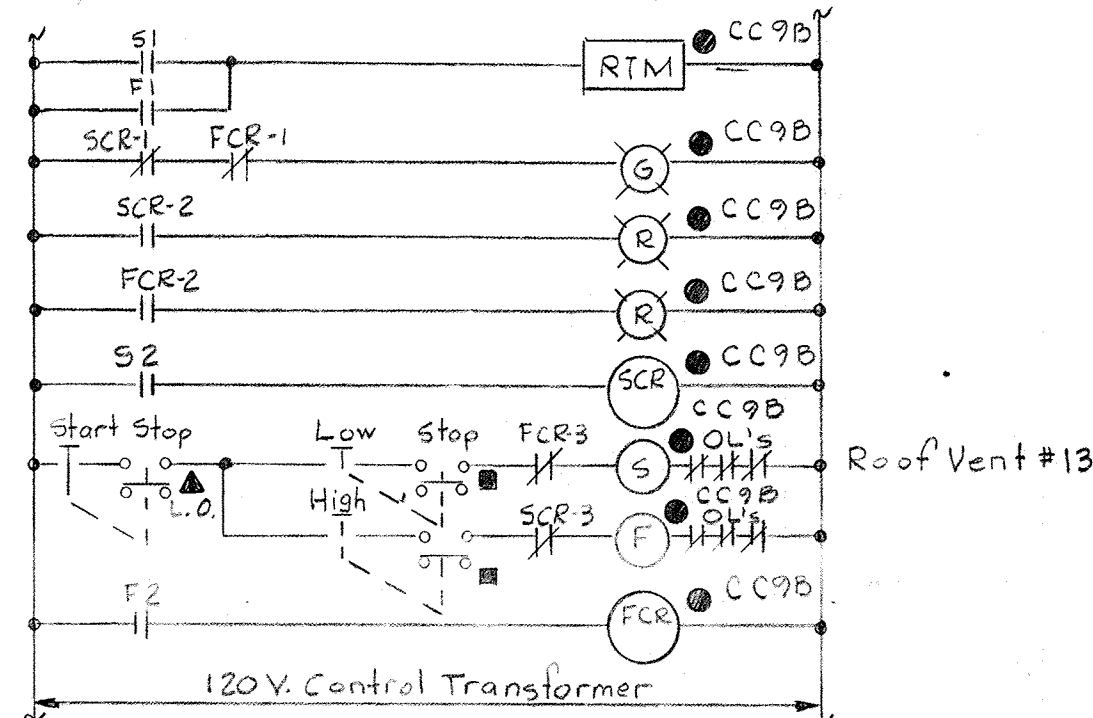


ELEMENTARY CONTROL DIAGRAM NO. 33

Typical for the following unit:
Flot. Thick. Rm. Radiant Heaters

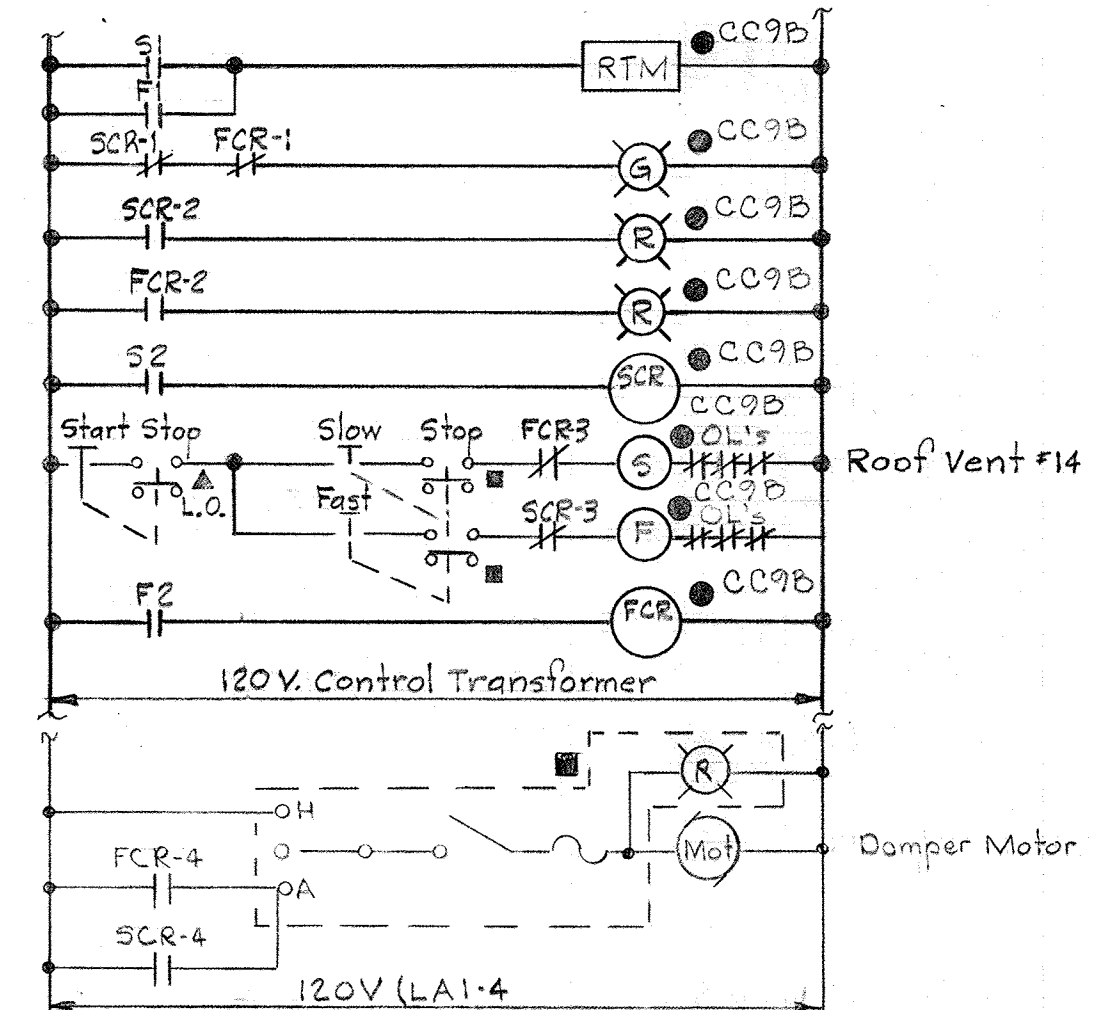


ELEMENTARY CONTROL DIAGRAM NO. 57
LOCAL AUDIBLE ALARM - VACUUM FILTER RM.
SLUDGE FACILITY
(See ECD #40 & 54 on E-22)



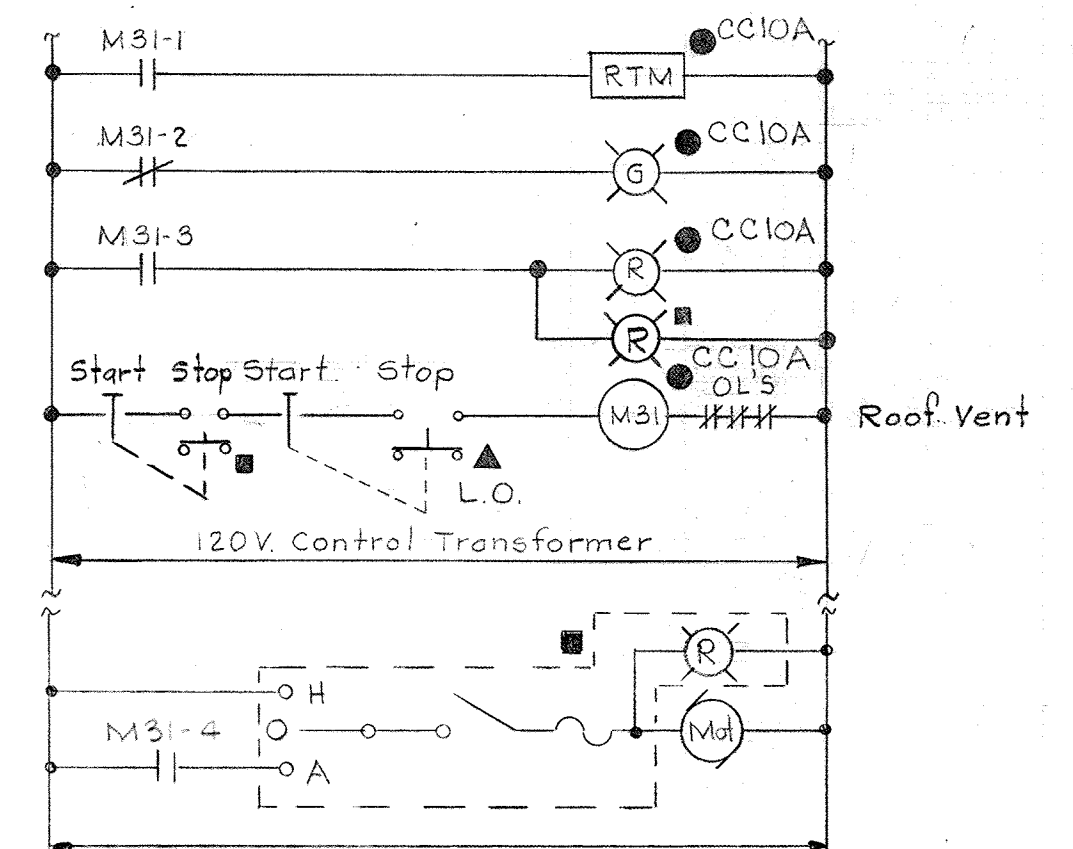
ELEMENTARY CONTROL DIAGRAM NO. 34

Typical for the following unit:
Dewat. Bldg. Vac. Filter Room Roof Vent #13



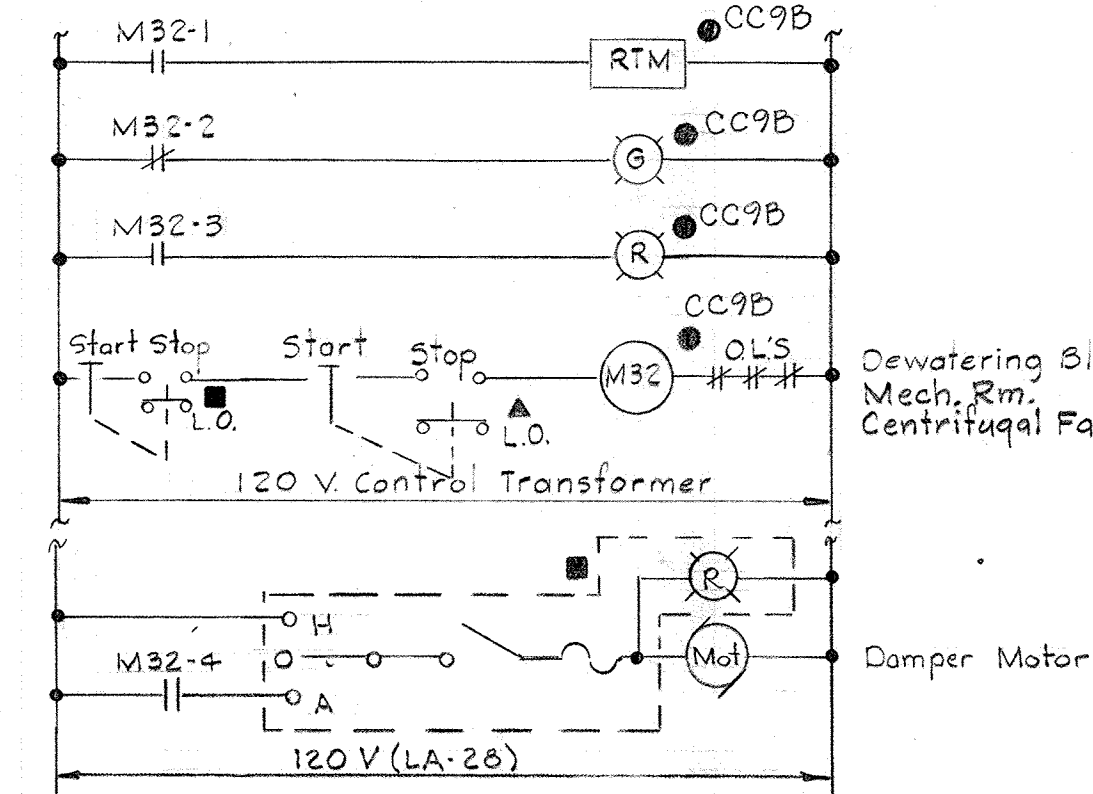
ELEMENTARY CONTROL DIAGRAM NO. 35

Typical for the following unit:
Dewatering Bldg, Toilet, Locker Room Roof Vent #14



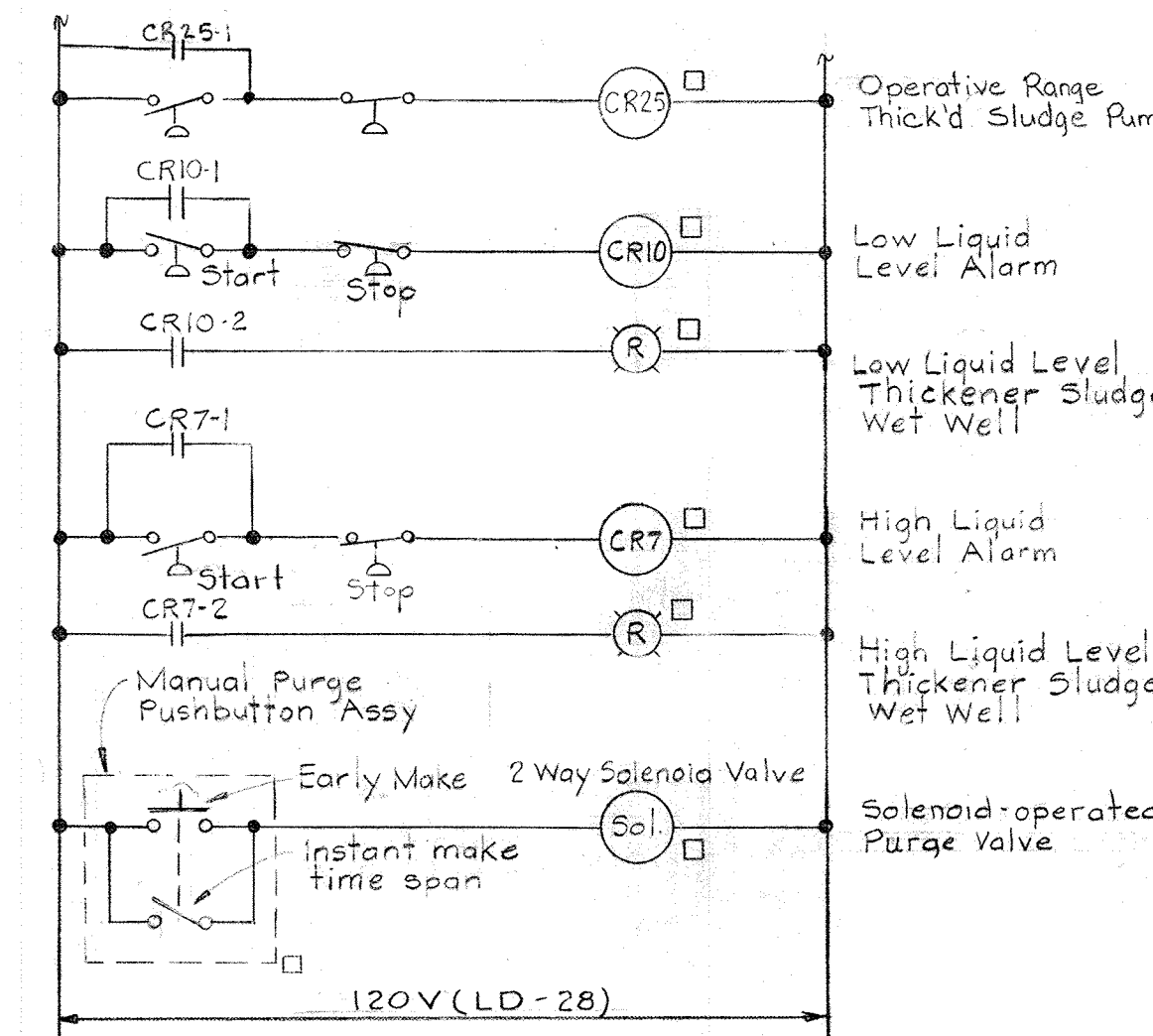
ELEMENTARY CONTROL DIAGRAM NO. 36

Typical for the following units:
Flot. Thickener Room Roof Vent #11 & #12



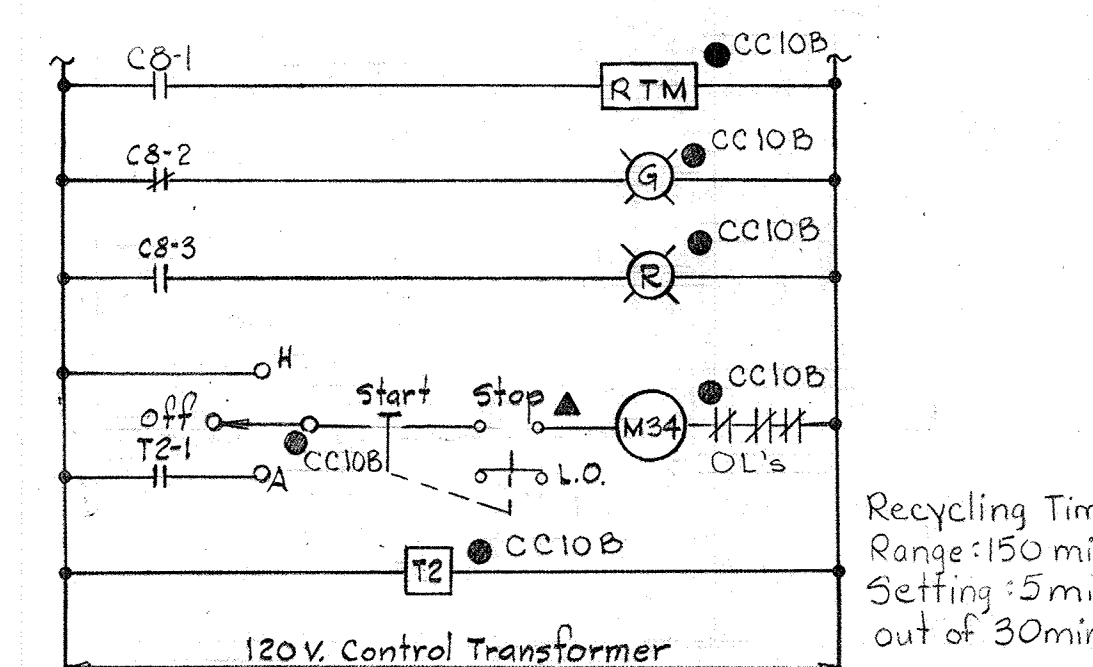
ELEMENTARY CONTROL DIAGRAM NO. 37

Typical for the following units:
Dewat. Bldg. Mech. Rm. Centrifugal Fans #2 & #3



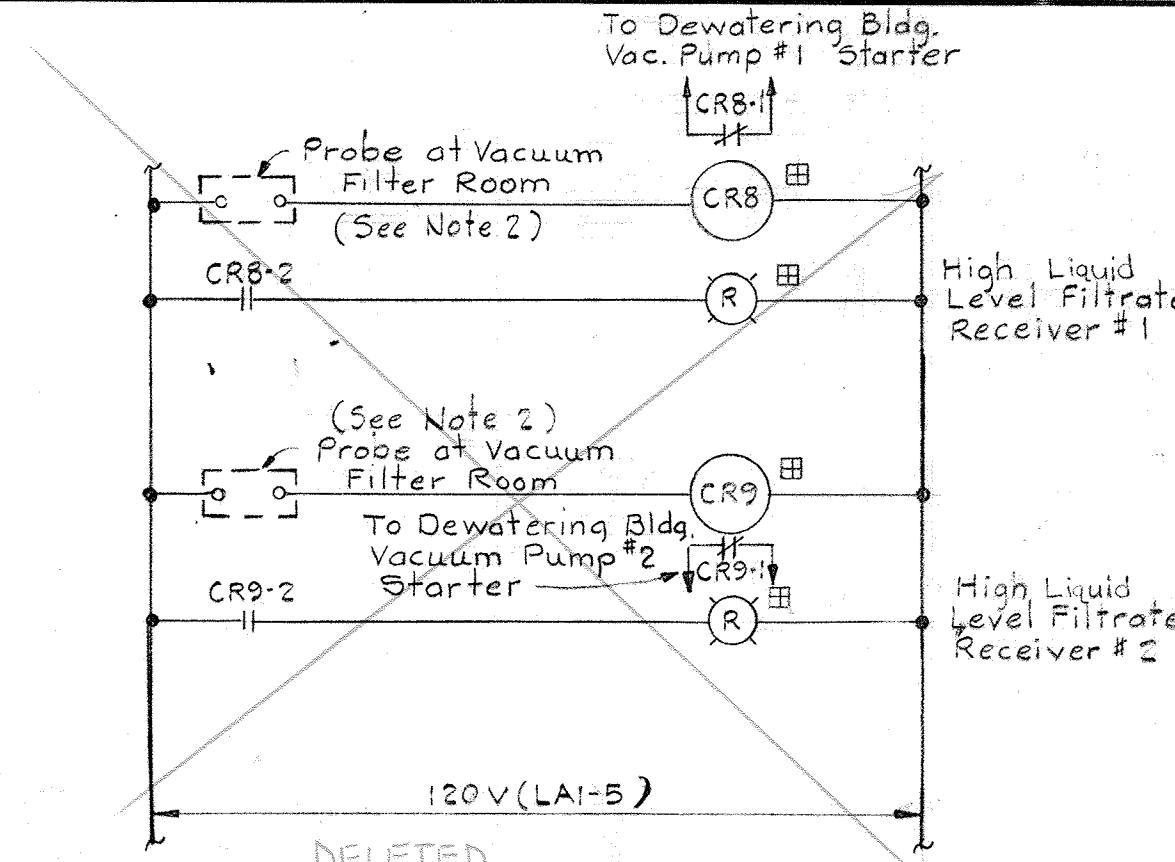
ELEMENTARY CONTROL DIAGRAM NO. 38

Typical for the following units:
Flot. Thick. Cont. Panel & Bubbler Cabinet #1 & #2
(See ECD #50 on E-21)



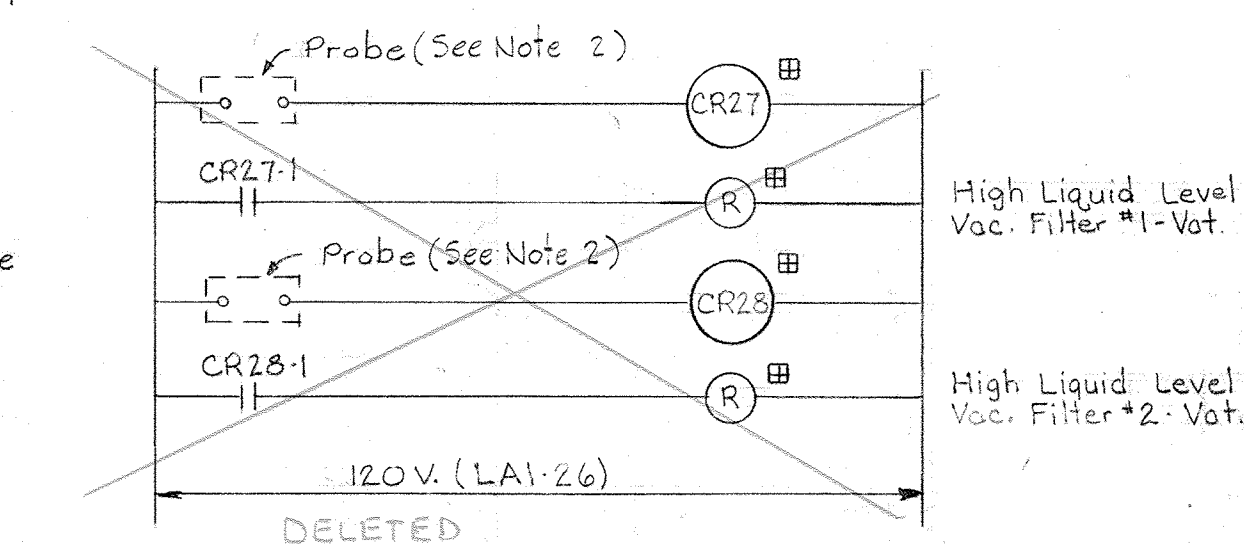
ELEMENTARY CONTROL DIAGRAM NO. 39

Typical for the following unit:
Substation Vault Centrifugal Fan #5



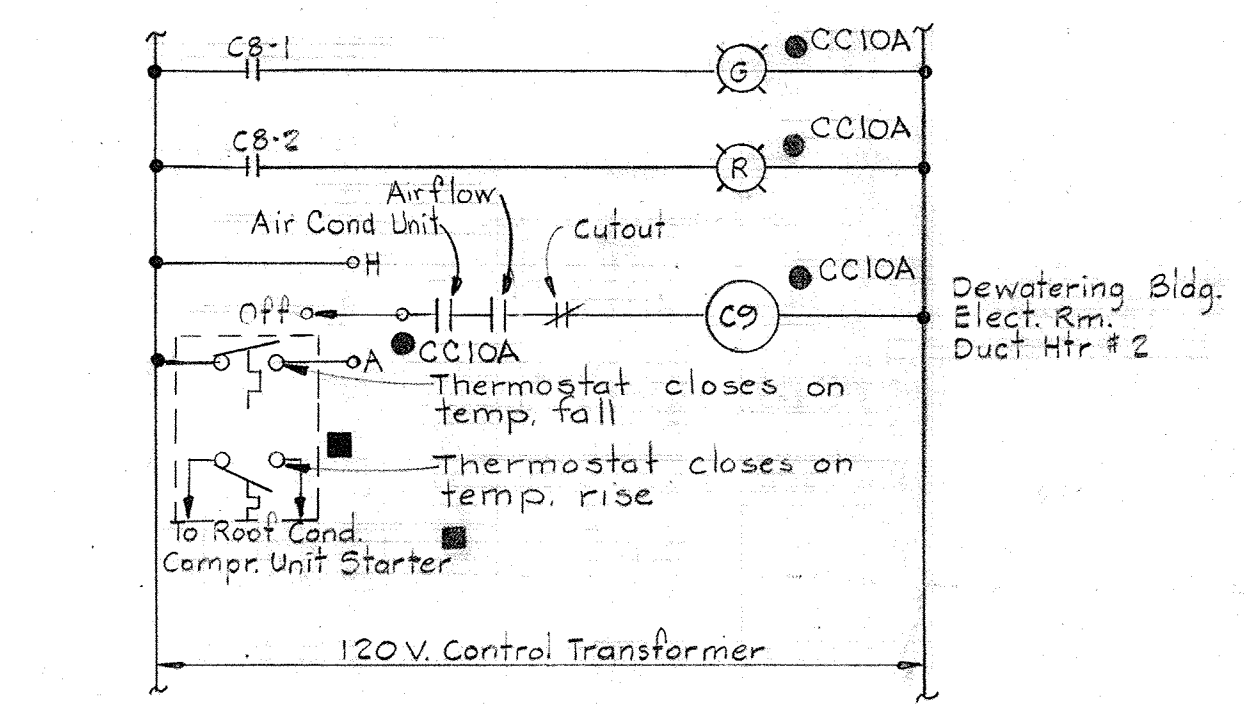
ELEMENTARY CONTROL DIAGRAM NO. 40

Typical for the following units:
Dewatering Bldg. Filtrate Receiver #1 & #2 Control



ELEMENTARY CONTROL DIAGRAM NO. 54

Typical for the following unit:
Dewatering Bldg. Vac. Filter #1 & #2 Vots Control



ELEMENTARY CONTROL DIAGRAM NO. 41

Typical for the following unit:
Dewat. Bldg. Elect. Rm. Duct Htr. #2

- NOTES:
- For General Electrical Notes & Legend see Sheet E-2.
 - Probs shown in ECD #40 & #54 shall be Robertshaw Level-Tek Model 304 or equal.

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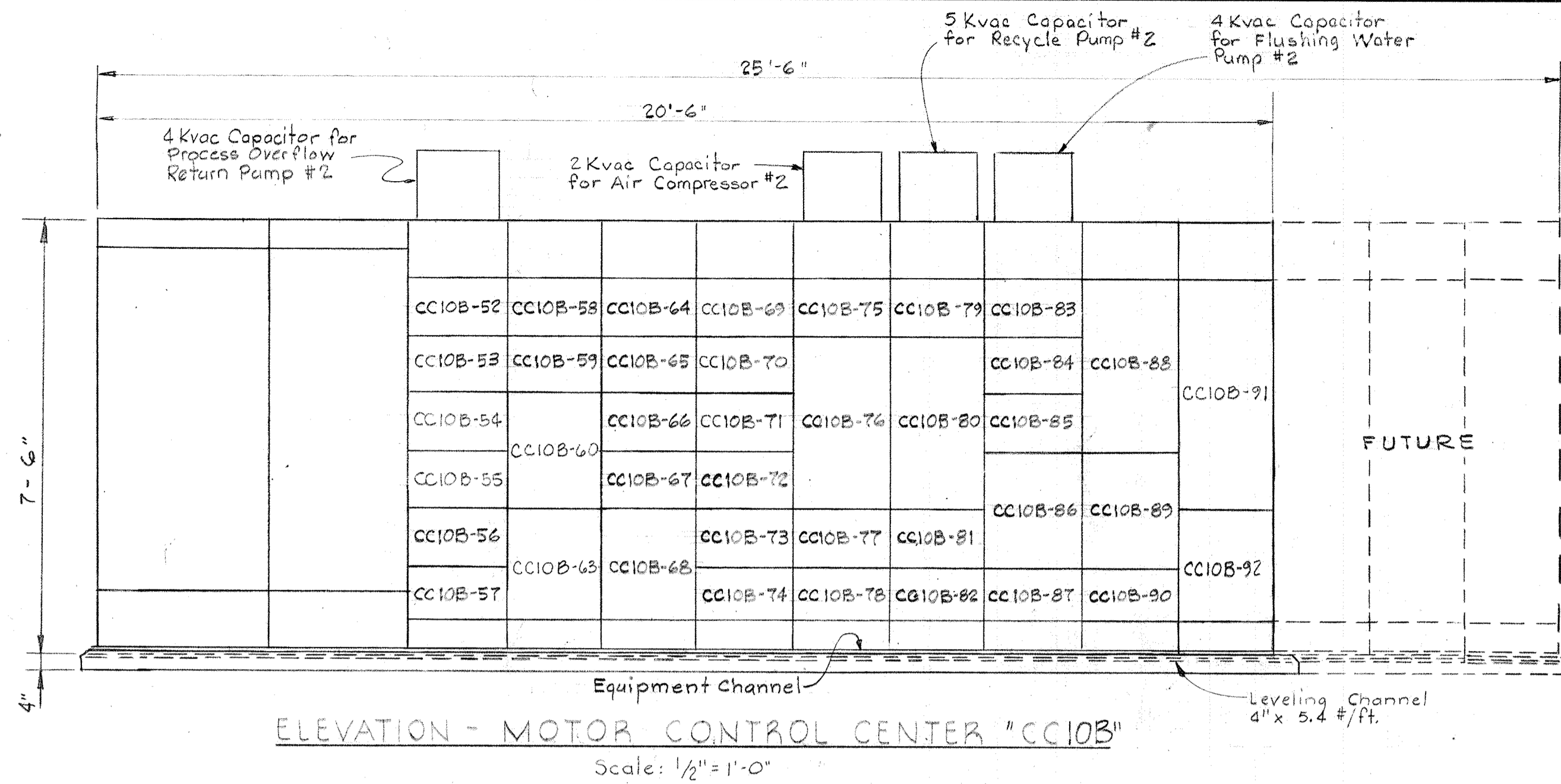
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3/20/75
DATE
W. O. Libert
CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 501-S

ELECTRICAL
DEWATERING BUILDING
ELEMENTARY WIRING DIAGRAMS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 110 OF 128
SCALE AS NOTED



- NOTES:**
1. For General Electrical Notes & Legend See Sheet E-2.
 2. For Elementary Control Diagrams See Sheets E-19, E-20, E-21, and E-22.

MOTOR CONTROL CENTER "CC10B" SCHEDULE 480V-3Ø-3W-60HZ

UNIT NUMBER	NAMEPLATE DATA	DEVICE DESCRIPTION	HP or KVA	AUX. DESC.	BREAKER OR MCP				RUN NUMBER	WIRE - POWER			WIRE - CONTROL			GRD. WIRE	COND. SIZE	
					FRAME	POLE	CAL. SET	S.I.C.		NO.	SIZE	TYPE	NO.	SIZE	TYPE			
CC10B-52	DILUTING WATER PUMP #2	Combination Starter NEMA Size 1, FVNR	5	a,c,g	100	3	10X	22	CC10B-52a	3	#10	THW	2	#14	THW	#12	1"	
CC10B-53	BLANK (Spare)	Circuit Breaker	-	-	225	3	110	22	-	-	-	-	-	-	-	-	-	
CC10B-54	BLANK (Spare)	Combination Starter NEMA Size 2, FVNR	-	a,c,d,g	100	3	40	22	-	-	-	-	-	-	-	-	-	
CC10B-55	PROCESS OVERFLOW RETURN PUMP #2	Combination Starter NEMA Size 1, FVNR	10	a,c,g	100	3	10X	22	CC10B-55a	3	#10	THW	2	#14	THW	#12	1"	
CC10B-56	BLANK (Spare)	Combination Starter NEMA Size 1, FVNR	-	a,c,e,g	100	3	10X	22	-	-	-	-	-	-	-	-	-	
CC10B-57	BLANK (Spare)	Combination Starter NEMA Size 1, FVNR	-	a,c,e,g	100	3	10X	22	-	-	-	-	-	-	-	-	-	
CC10B-58	GRAVITY THICKENER DRIVE #2	Combination Starter NEMA Size 1, FVNR	1 1/2	a,c,g	100	3	10X	22	CC10B-58a	4/c	#10	Multi-Cond	8/c	#12	THW	#10	1 1/2"	
CC10B-59	FUT. GRAVITY THICKENER DRIVE #4	Combination Starter NEMA Size 1, FVNR	1 1/2	a,c,g	100	3	10X	22	-	-	-	-	-	-	-	-	-	
CC10B-60	BLANK (Spare)	Combination Starter NEMA Size 3, FVNR	-	a,c,d,g	100	3	50	22	-	-	-	-	-	-	-	-	-	
CC10B-63	GRAVITY THICKENER DR #2 CONTROL	Control Relays	-	See Specs.	-	-	-	-	By Manufacturer								-	-
CC10B-64	DIGESTER PIPE GALLERY DIGESTED SLUDGE PUMP #2	Combination Starter NEMA Size 1, FVNR	5	a,c,g	100	3	10X	22	CC10B-64a	3	#12	THW	10	#14	THW	#12	1 1/2"	
CC10B-65	FUT. DIGESTER PIPE GALLERY DIGESTED SLUDGE PUMP #4	Combination Starter NEMA Size 1, FVNR	5	a,c,g	100	3	10X	22	-	-	-	-	-	-	-	-	-	
CC10B-66	DIGESTER PIPE GALLERY SCUM PUMP #2	Combination Starter NEMA Size 1, FVNR	5	a,c,g	100	3	10X	22	CC10B-66a	3	#12	THW	4	#14	THW	#12	1 1/2"	
CC10B-67	BLANK (Spare)	Combination Starter NEMA Size 1, FVNR	3	a,c,e,g	100	3	10X	22	-	-	-	-	-	-	-	-	-	
CC10B-68	FLOT. THICK. RM. RADIANT HTRS.	Combination Starter NEMA Size 2, FVNR	25.2	a,c,d,g	100	3	40	22	CC10B-68a	3	#8	THW	-	-	-	#10	1"	
CC10B-69	FLOT. THICKENER AREA THICK. SLUDGE PUMP #2	Combination Starter NEMA Size 1, FVNR	3	a,c,g	100	3	10X	22	CC10B-69a	3	#12	THW	2	#14	THW	#12	1"	
CC10B-70	FUT. FLOT. THICKENER AREA THICK. SLUDGE PUMP #4	Combination Starter NEMA Size 1, FVNR	3	a,c,g	100	3	10X	22	-	-	-	-	-	-	-	-	-	
CC10B-71	FLOT. THICKENER AREA TOP COLLECTOR DR. #2	Combination Starter NEMA Size 1, FVNR	1	a,c,g	100	3	10X	22	CC10B-71a	3	#12	THW	2	#14	THW	#12	1"	
CC10B-72	FLOT. THICKENER AREA BOTTOM COLLECTOR DR. #2	Combination Starter NEMA Size 1, FVNR	3/4	a,c,g	100	3	10X	22	CC10B-72a	3	#12	THW	2	#14	THW	#12	1"	
CC10B-73	FUT. FLOT. THICKENER AREA TOP COLLECTOR DR. #4	Combination Starter NEMA Size 1, FVNR	1	a,c,g	100	3	10X	22	-	-	-	-	-	-	-	-	-	
CC10B-74	FUT. FLOT. THICKENER AREA BOTTOM COLLECTOR DR. #4	Combination Starter NEMA Size 1, FVNR	3/4	a,c,g	100	3	10X	22	-	-	-	-	-	-	-	-	-	
CC10B-75	BLANK (Spare)	Combination Starter NEMA Size 1, FVNR	2	a,c,e,g	100	3	10X	22	-	-	-	-	-	-	-	-	-	
CC10B-76	FUT. FLOT. THICKENER AREA RECYCLE PUMP #4	Combination Starter NEMA Size 3, FVNR	30	a,c,g	100	3	10X	22	-	-	-	-	-	-	-	-	-	
CC10B-77	BLANK (Spare)	Space & Bus	-	-	100	3	-	-	-	-	-	-	-	-	-	-	-	
CC10B-79	BLANK (Spare)	Space & Bus	-	-	100	3	-	-	-	-	-	-	-	-	-	-	-	
CC10B-78	DEWATERING BLDG. AIR COMPRESSOR #2	Combination Starter NEMA Size 1, FVNR	10	a,c,d,g	100	3	10X	22	CC10B-78a	3	#12	THW	4	#14	THW	#12	1"	

MOTOR CONTROL CENTER "CC10B" SCHEDULE 480V-3Ø-3W-60HZ

UNIT NUMBER	NAMEPLATE DATA	DEVICE DESCRIPTION	HP or KVA	AUX. DESC.	BREAKER OR MCP				RUN NUMBER	WIRE - POWER			WIRE - CONTROL			GRD. WIRE	COND. SIZE
					FRAME	POLE	CAL. SET	S.I.C.		NO.	SIZE	TYPE	NO.	SIZE	TYPE		
CC10B-80	FLOT. THICKENER AREA RECYCLE PUMP #2	Combination Starter NEMA Size 3, FVNR	30	a,c,g	100	3	10X	22	CC10B-80a	3	#6	THW	2	#14	THW	#10	1 1/2"
CC10B-81	FLOT. THICKENER AREA RE-AERATION PUMP #2	Combination Starter NEMA Size 1, FVNR	7 1/2	a,c,g	100	3	10X	22	CC10B-81a	3	#12	THW	2	#14	THW	#12	1"
CC10B-82	FUT. FLOT. THICKENER AREA RE-AERATION PUMP #4	Combination Starter NEMA Size 1, FVNR	7 1/2	a,c,g	100	3	10X	22	-	-	-	-	-	-	-	-	-
CC10B-83	DEWATERING BLDG. FILTRATE PUMP #2	Combination Starter NEMA Size 1, FVNR	7 1/2	a,c,g	100	3	10X	22	CC10B-83a	3	#12	THW	2	#14	THW	#12	1"
CC10B-84	FUT. DEWATERING BLDG. FILTRATE PUMP #4	Combination Starter NEMA Size 1, FVNR	7 1/2	a,c,g	100	3	10X	22	-	-	-	-	-	-	-	-	-
CC10B-85	BLANK (Spare)	Combination Starter NEMA Size 2, FVNR	25	a,c,g	100	3	40	22	CC10B-85a	3	#10	THW	2	#14	THW	#10	1"
CC10B-86	DEWATERING BLDG. FLUSHING WATER PUMP #2	Combination Starter NEMA Size 3, FVNR	25	a,c,g	100	3	10X	22	CC10B-86a	3	#8	THW	4	#14	THW	#10	1 1/2"
CC10B-87	SUBSTATION VAULT CENTRIFUGAL FAN #5	Combination Starter NEMA Size 1, FVNR	1 1/2	a,c,d,g	100	3	10X	22	CC10B-87a	4/c	#10	Multi-Cond	2/c	#12	Multi-Cond	#10	See Dwg.
CC10B-88	FUT. DEWATERING BLDG. VACUUM PUMP #4	Combination Starter NEMA Size 4, FVNR	75	a,c,g	225	3	10X	22	-	-	-	-	-	-	-	-	-
CC10B-89	FUT. DEWATERING BLDG. FLUSHING WATER PUMP #3	Combination Starter NEMA Size 2, FVNR	25	a,c,g	100	3	10X	22	-	-	-	-	-	-	-	-	-
CC10B-90	BLANK (Spare)	Space & Bus	-	-	100	3	-	-	-	-	-	-	-	-	-	-	-
CC10B-91	DEWAT. BLDG. CORR. "B" DUCT HEATER #3	Combination Starter - NEMA Size 1, FVNR, 1st Stage Combination Starter - NEMA Size 1, FVNR, 2nd Stage	7.5	a,c,d,g	100	3	20	22	CC10B-91a	3	#10	THW	4	#14	THW	#10	1"
CC10B-92	BLANK (Spare)	Automatic Transfer Switch 100 A, 3Ø, 480V	-	See Specs.	-	-	-	-	-	-	-	-	-	-	-	-	-

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
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BALTIMORE, MARYLAND

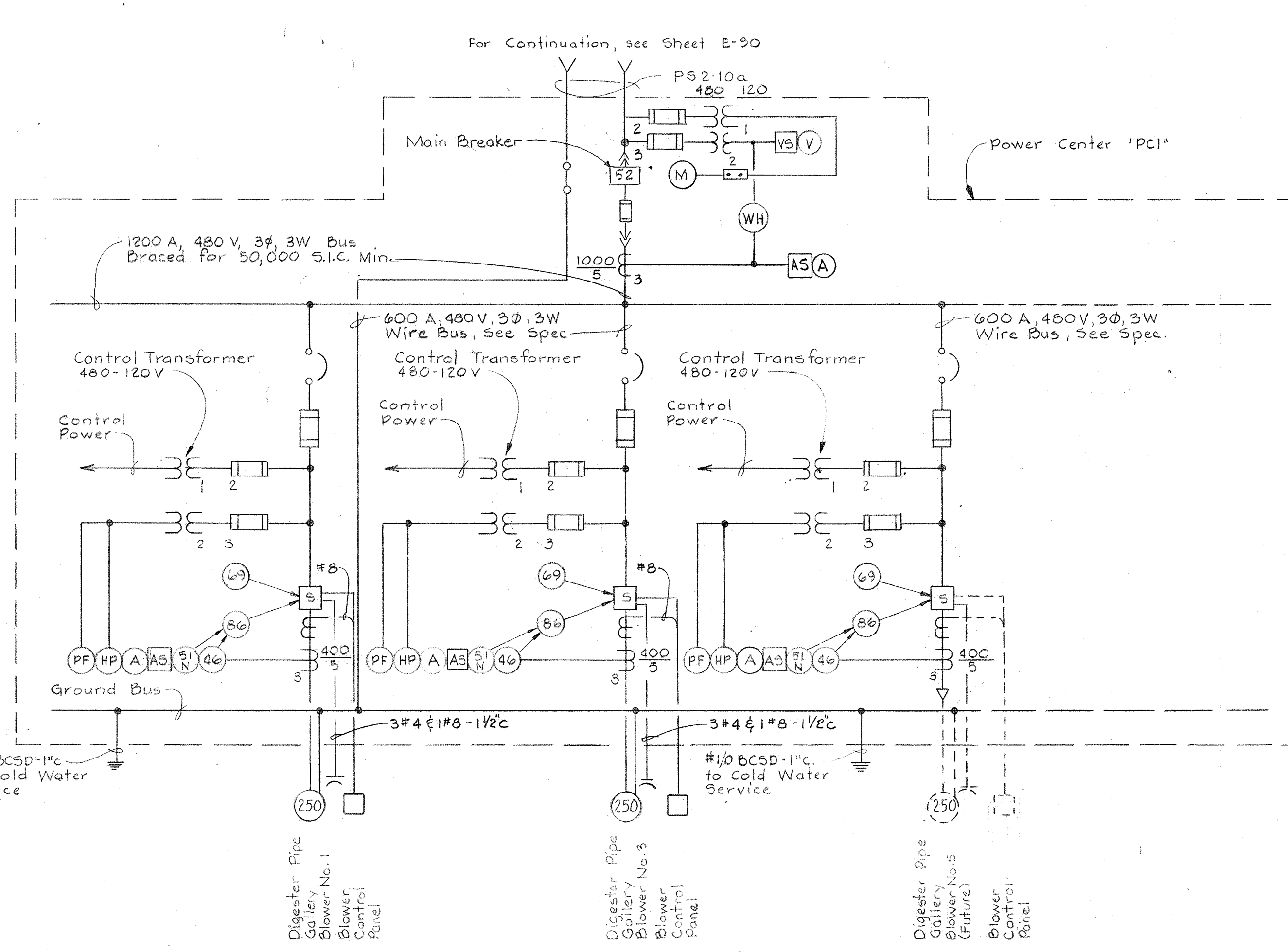
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3/20/75
W. O. Libert
CHIEF-BUREAU OF ENGINEERING

ELECTRICAL
DEWATERING BUILDING
"CC10B" MOTOR CONTROL CENTER
ELEV. & SCHEDULE

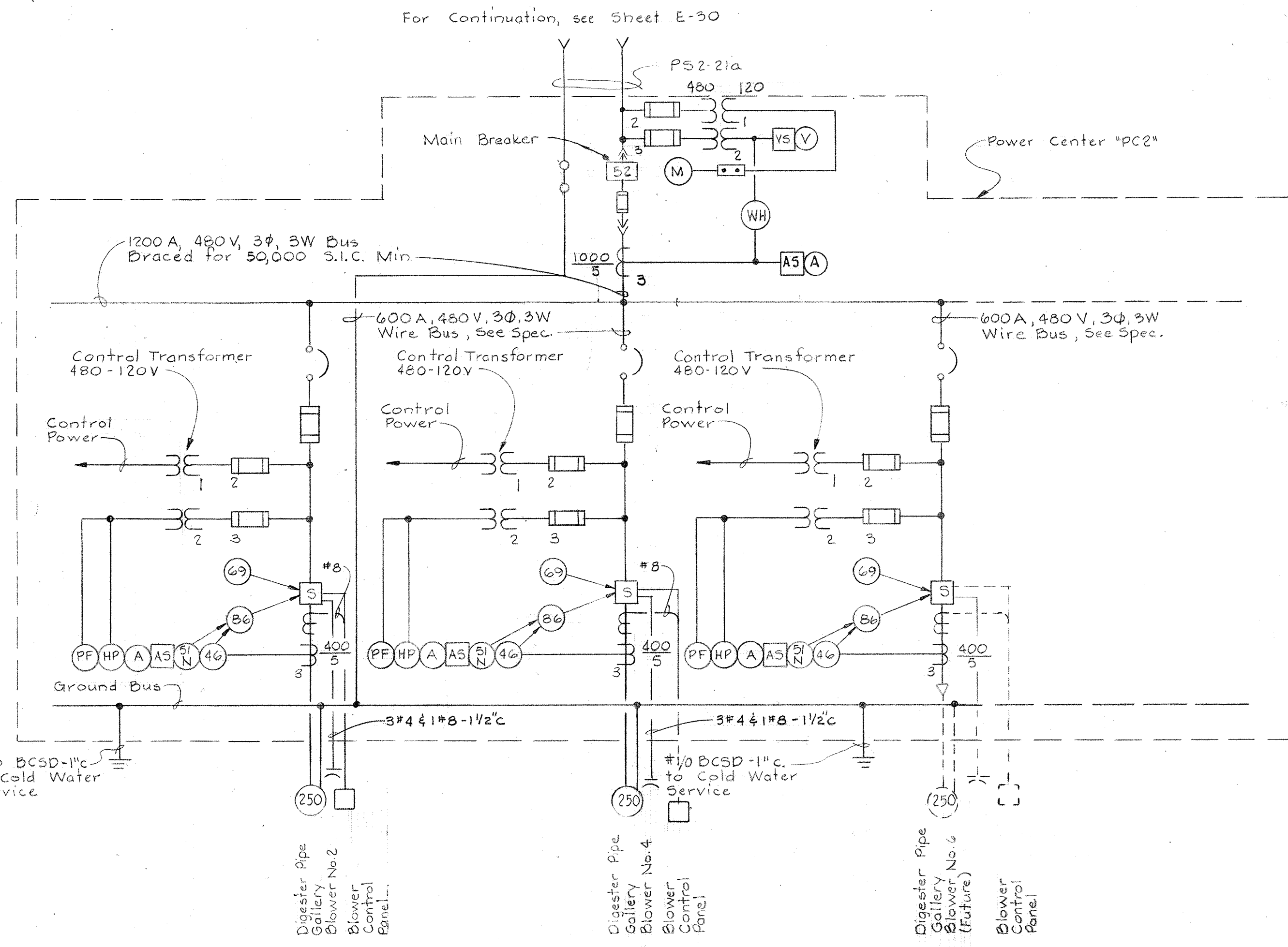
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 114 OF 128
SCALE AS NOTED

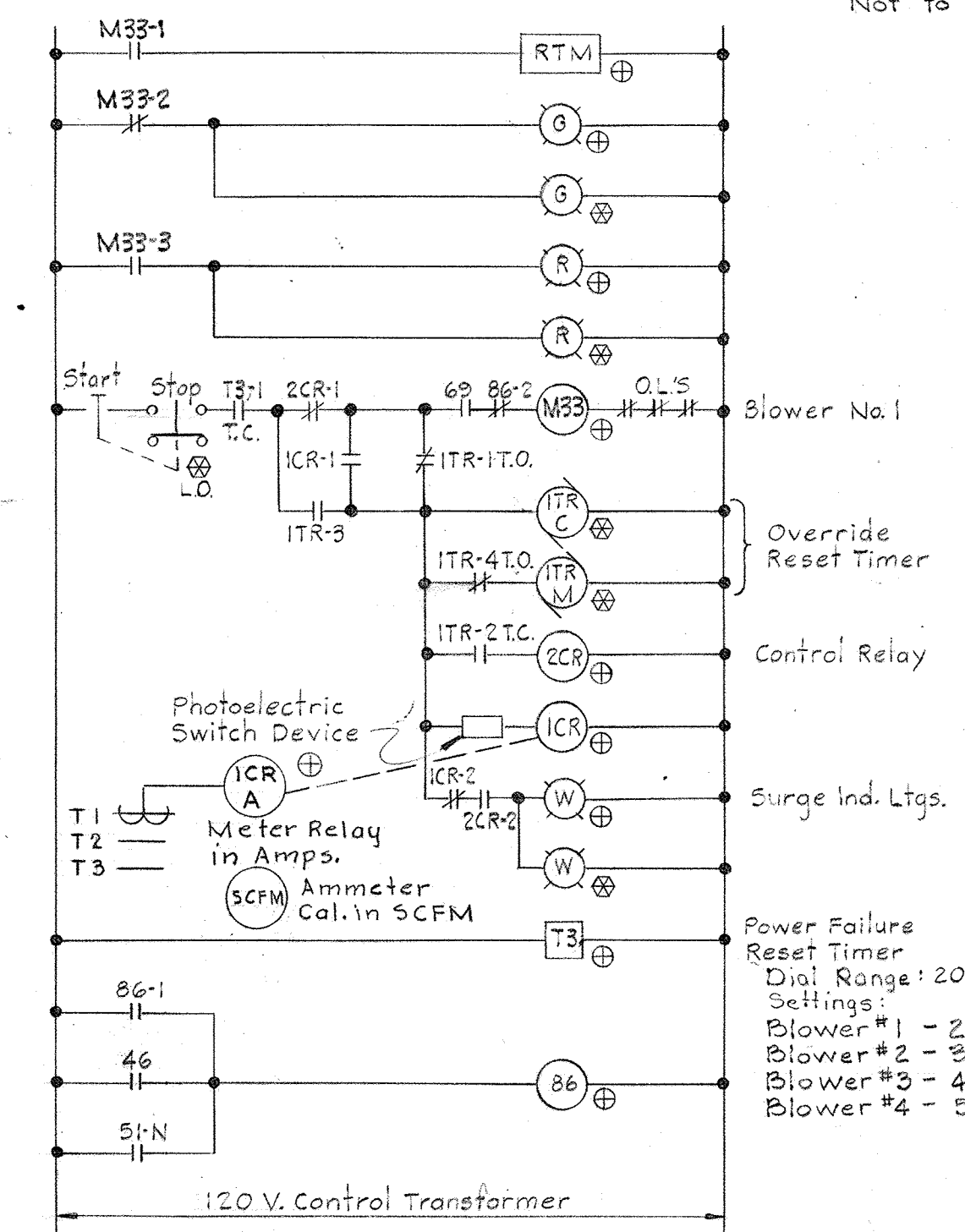
BRUNING 44-510 1839Z



ONE LINE WIRING DIAGRAM
POWER CENTER "PC1"
Not to Scale

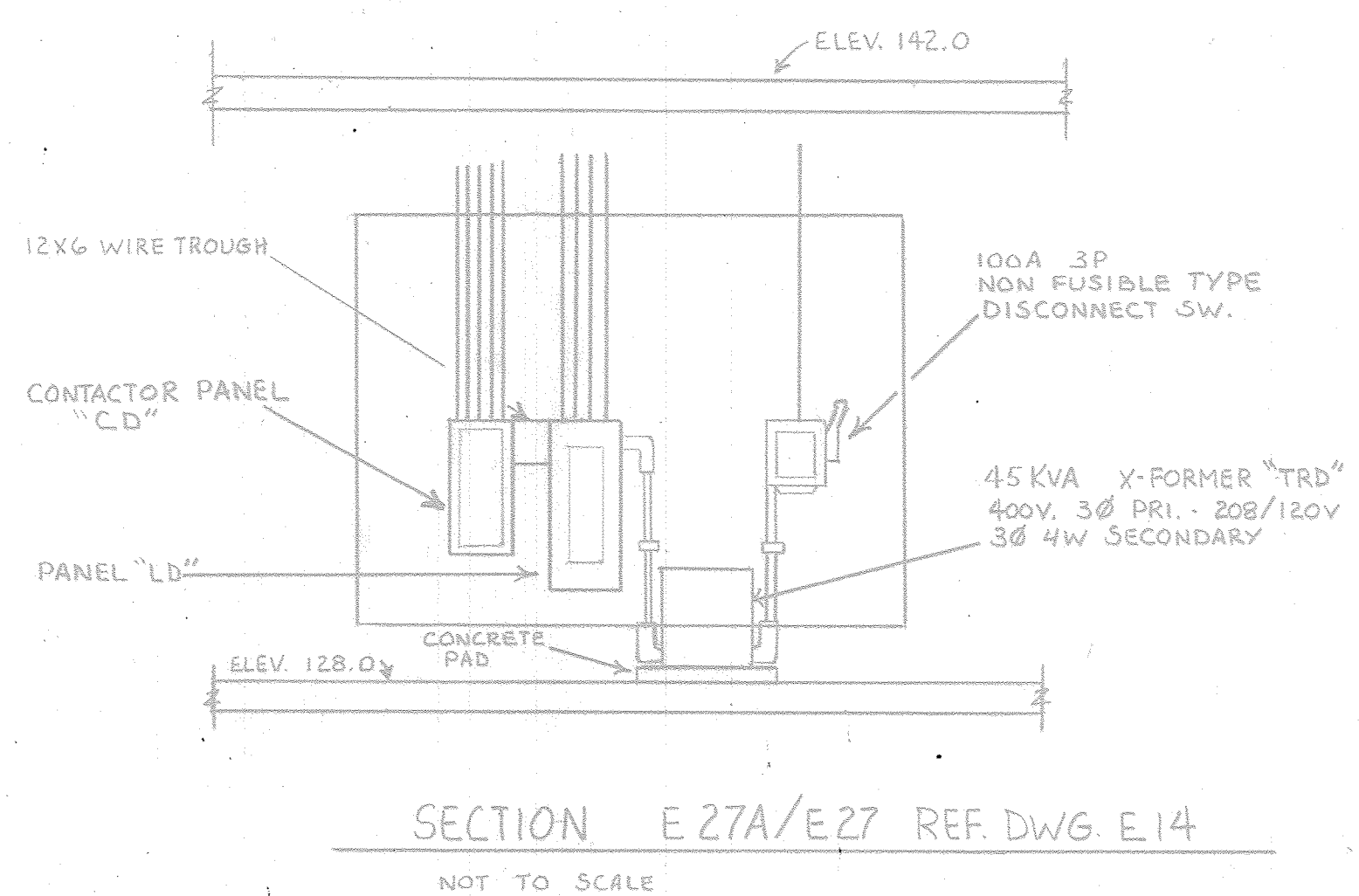


ONE LINE WIRING DIAGRAM
POWER CENTER "PC2"
Not to Scale



ELEMENTARY CONTROL DIAGRAM NO. 42

Typical for the following units:
Digester Pipe Gallery Blowers Nos. 1 thru 4



SECTION E 27A/E27 REF. DWG. E.14
NOT TO SCALE

NOTES:
1. For General Electrical Notes & Legend see Sheet E-2.

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
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BALTIMORE, MARYLAND

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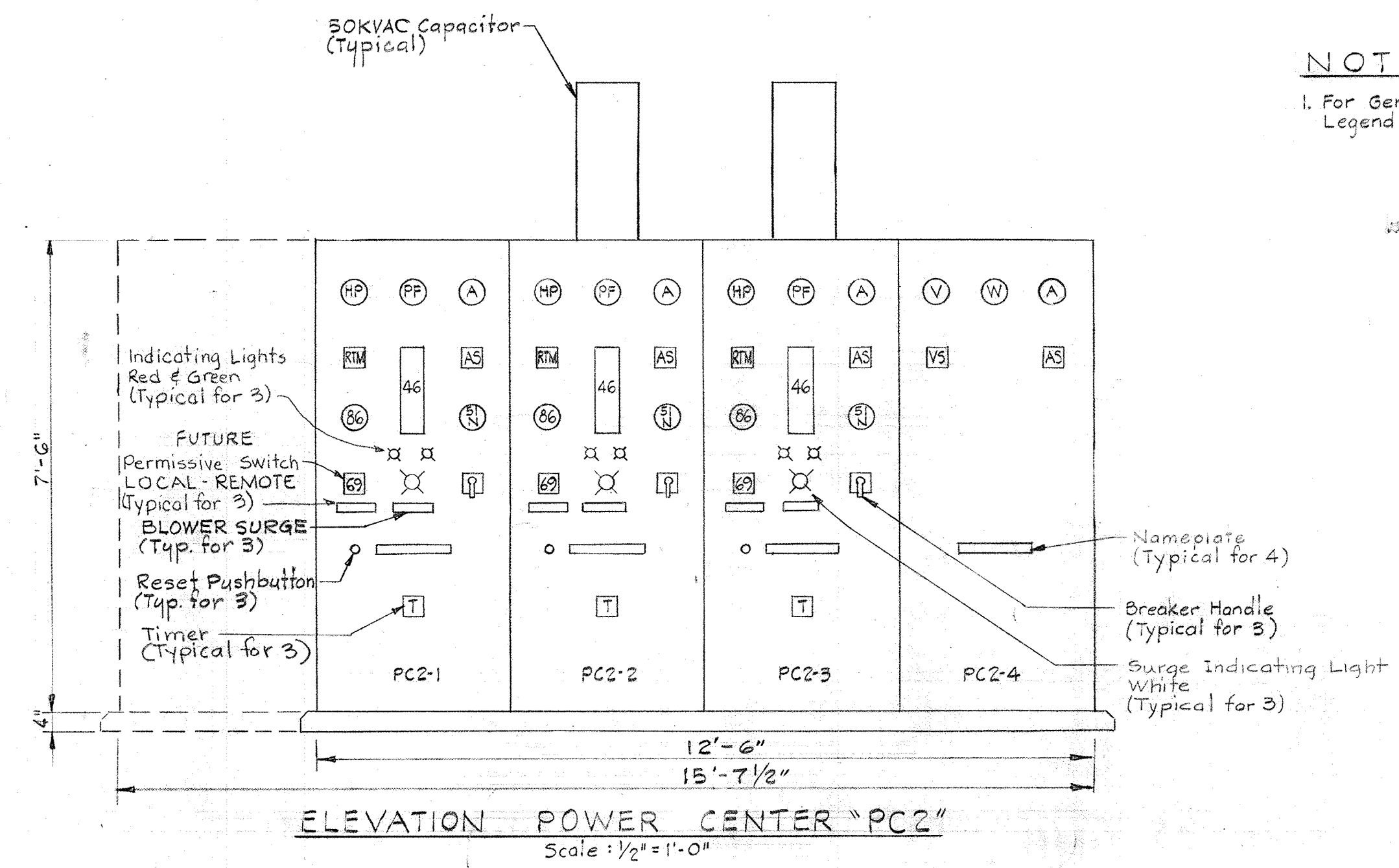
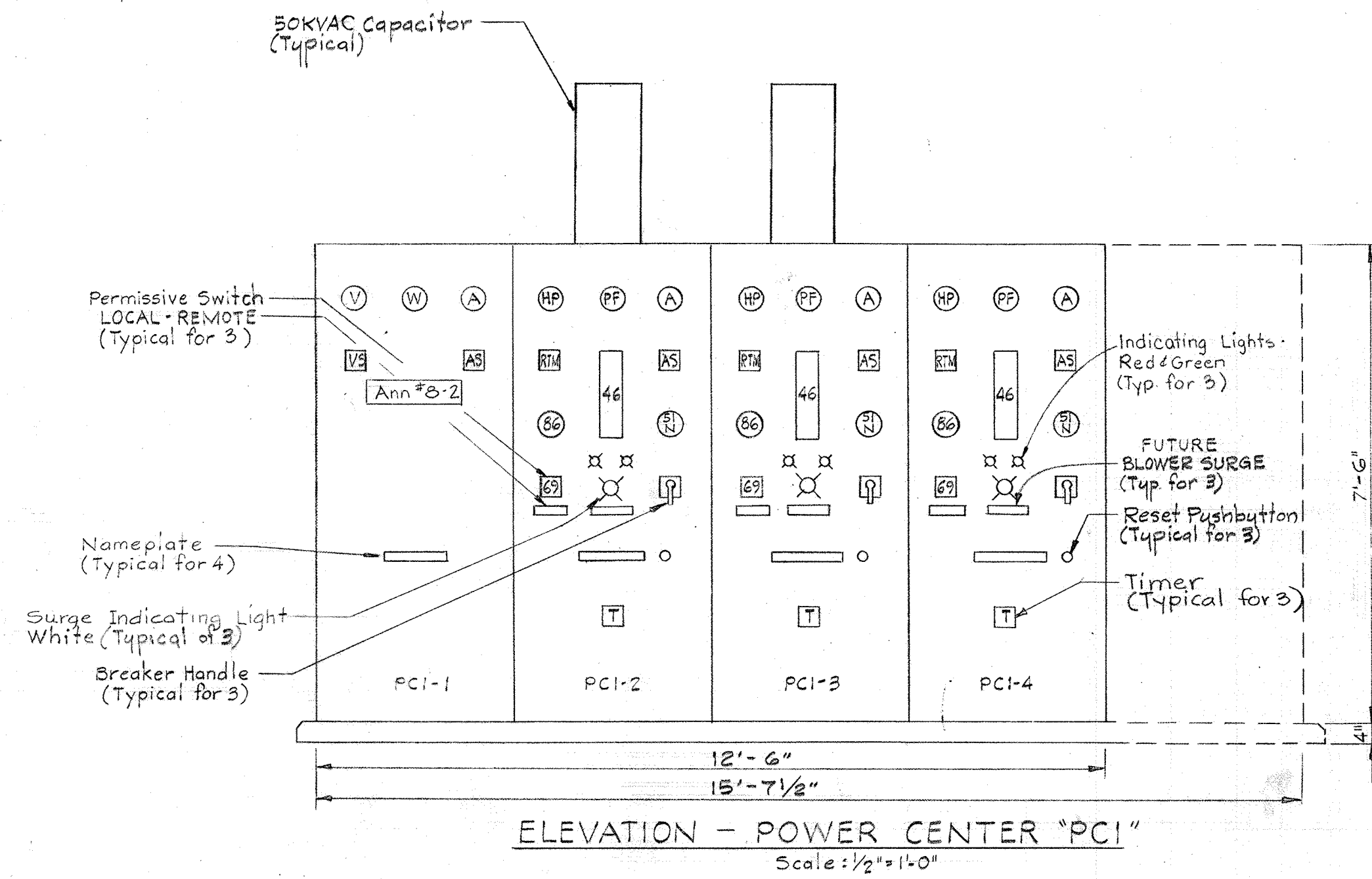
CONTRACT NO. 501-S

ELECTRICAL
DEWATERING BUILDING
ONE LINE & ELEMENTARY WIRING
DIAGRAMS "PC1" & "PC2"

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 115
OF 128

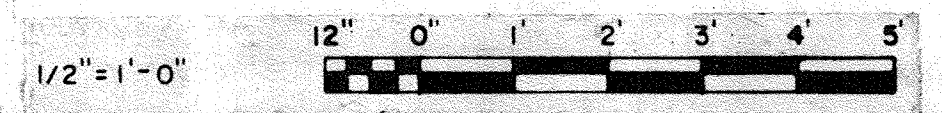
SCALE
AS
NOTED



NOTES:
1. For General Electrical Notes & Legend, see Sheet E-2.

POWER CENTER "PC1" SCHEDULE 480V - 3φ - 3W - 60 HZ																						
UNIT NO.	NAMEPLATE DATA	DEVICE DESCRIPTION	HP or KW	AUX. DESC.	BREAKER				RUN NUMBER	WIRE - POWER			COND. CAPACITOR	REMARKS								
					FRAME	POLE	CALIB.	S.I.C.		NO.	SIZE	TYPE	NO.	SIZE	TYPE	NO.	SIZE	TYPE	NO.	SIZE	TYPE	
PC1-1	Standard Nameplates	Ammeter, Voltmeter, C.T.'s, P.T.'s, Switches & Wattmeter Annunciator *B-2 (Optional)	-	See Specs.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Main Breaker	Power Circuit Breaker Drawout Type W/C.L. Fuses	-	See Specs.	1600	3	1000	50	P52-10a	2(3)	750MCM	-	-	-	-	2(1/0)	See DWG's	-	-	-	-	-
PC1-2	Standard Nameplates	Ammeter, HP Meter, PF Meter, C.T.'s, P.T.'s, Switches, Relays, Timer & Running Time Meter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	DIGESTER PIPE GALLERY BLOWER #1	Combination Starter NEMA Size 6, FVNR	250	a, c, d, g	600	3	450	200	PC1-2a PC1-2b	3	500MCM	THW	10	14	THW	1/0	4" 1 1/2"	50	-	-	-	-
PC1-3	Standard Nameplates	Ammeter, HP Meter, PF Meter, C.T.'s, P.T.'s, Switches, Relays, Timer & Running Time Meter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	DIGESTER PIPE GALLERY BLOWER #3	Combination Starter NEMA Size 6, FVNR	250	a, c, d, g	600	3	450	200	PC1-3a PC1-3b	3	500MCM	THW	10	14	THW	1/0	4" 1 1/2"	50	-	-	-	-
PC1-4	Standard Nameplates	Ammeter, HP Meter, PF Meter, C.T.'s, P.T.'s, Switches, Relays, Timer & Running Time Meter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FUT. DIGESTER PIPE GALLERY BLOWER #5	Combination Starter NEMA Size 6, FVNR	250	a, c, d, g	600	3	450	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-

POWER CENTER "PC2" SCHEDULE 480V - 3φ - 3W - 60 HZ																						
UNIT NO.	NAMEPLATE DATA	DEVICE DESCRIPTION	HP or KW	AUX. DESC.	BREAKER				RUN NUMBER	WIRE - POWER			COND. CAPACITOR	REMARKS								
					FRAME	POLE	CALIB.	S.I.C.		NO.	SIZE	TYPE	NO.	SIZE	TYPE	NO.	SIZE	TYPE	NO.	SIZE	TYPE	
PC2-1	Standard Nameplates	Ammeter, HP Meter, PF Meter, C.T.'s, P.T.'s, Switches, Relays, Timer & Running Time Meter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	FUT. DIGESTER PIPE GALLERY BLOWER #6	Combination Starter NEMA Size 6, FVNR	250	a, c, d, g	600	3	450	200	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PC2-2	Standard Nameplates	Ammeter, HP Meter, PF Meter, C.T.'s, P.T.'s, Switches, Relays, Timer & Running Time Meter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	DIGESTER PIPE GALLERY BLOWER #4	Combination Starter NEMA Size 6, FVNR	250	a, c, d, g	600	3	450	200	PC2-2a PC2-2b	3	500MCM	THW	10	14	THW	1/0	4" 1 1/2"	50	-	-	-	-
PC2-3	Standard Nameplates	Ammeter, HP Meter, PF Meter, C.T.'s, P.T.'s, Switches, Relays, Timer & Running Time Meter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	DIGESTER PIPE GALLERY BLOWER #2	Combination Starter NEMA Size 6, FVNR	250	a, c, d, g	600	3	450	200	PC2-3a PC2-3b	3	500MCM	THW	10	14	THW	1/0	4" 1 1/2"	50	-	-	-	-
PC2-4	Standard Nameplates	Ammeter, Voltmeter, Switches, C.T.'s, P.T.'s & Wattmeter	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Main Breaker	Power Circuit Breaker Drawout Type W/C.L. Fuses	-	See Specs.	1600	3	1000	50	P52-21a	2(3)	750MCM	-	-	-	-	2(1/0)	See DWG's	-	-	-	-	-



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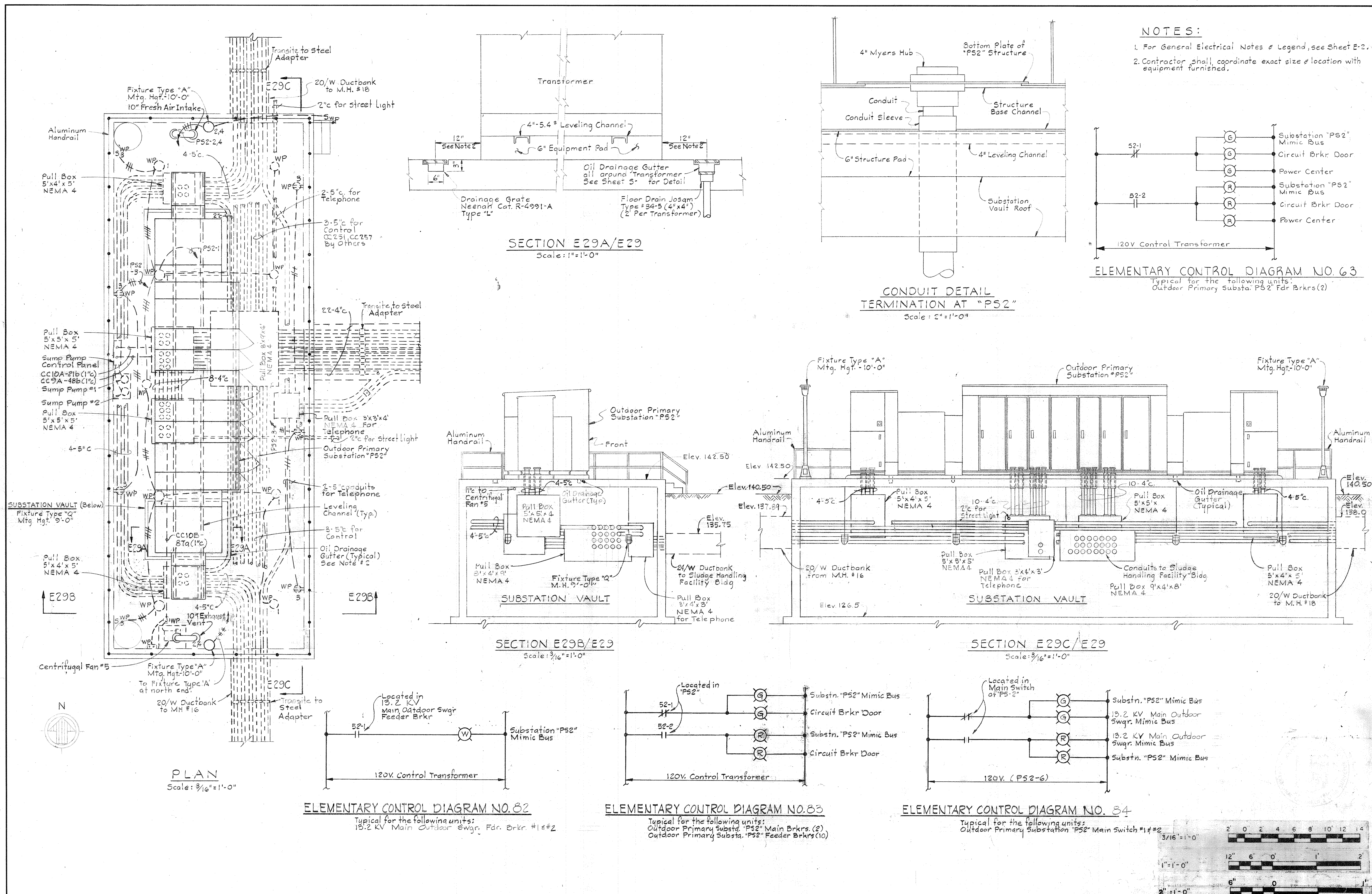
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3/20/75
W. O. Libert
CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 501-S

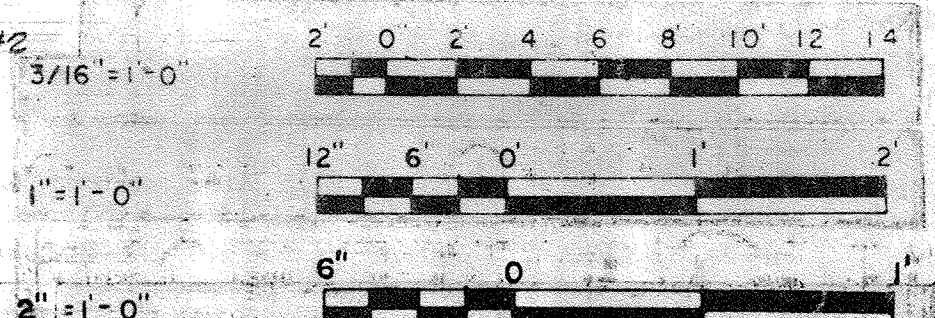
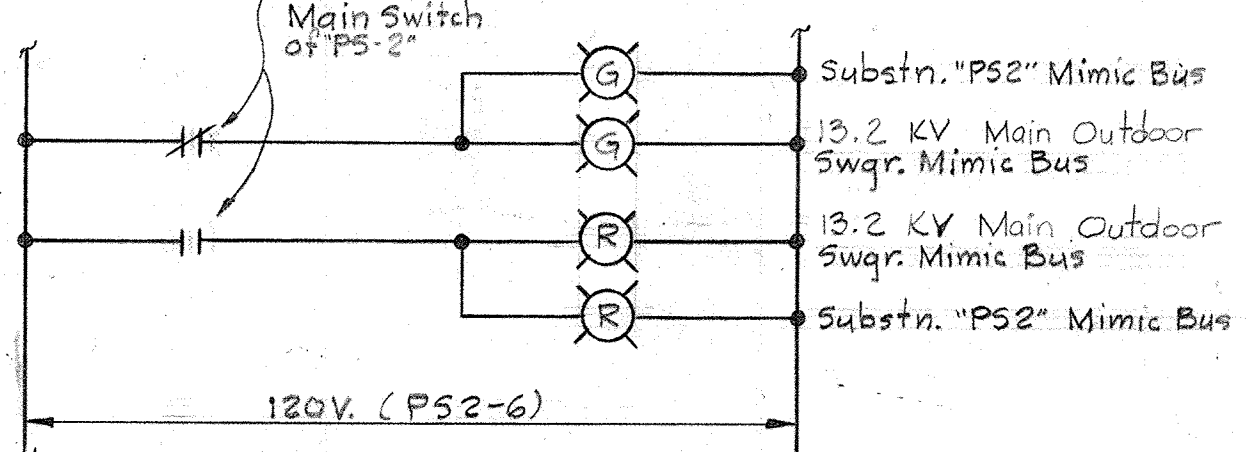
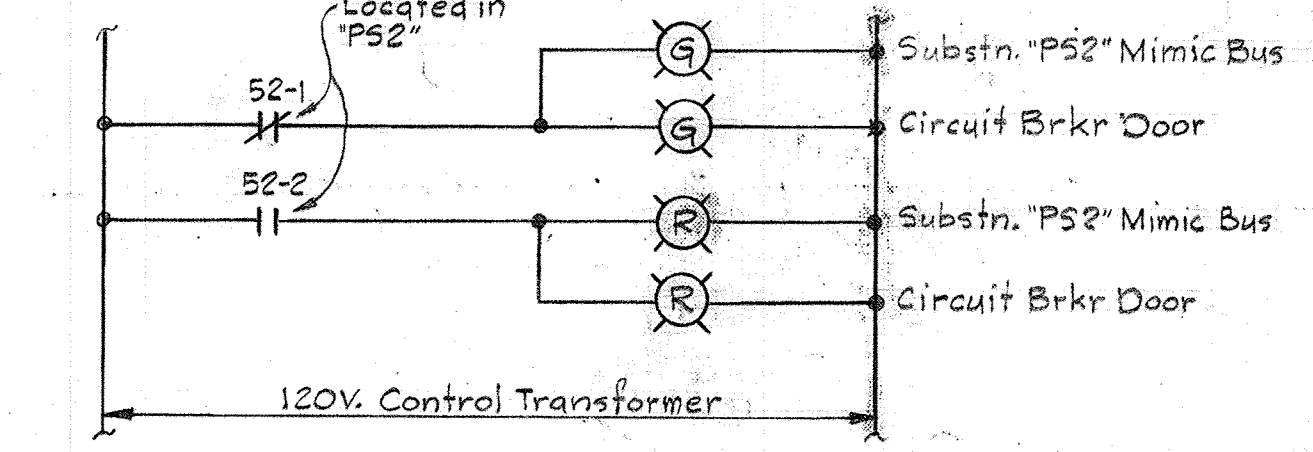
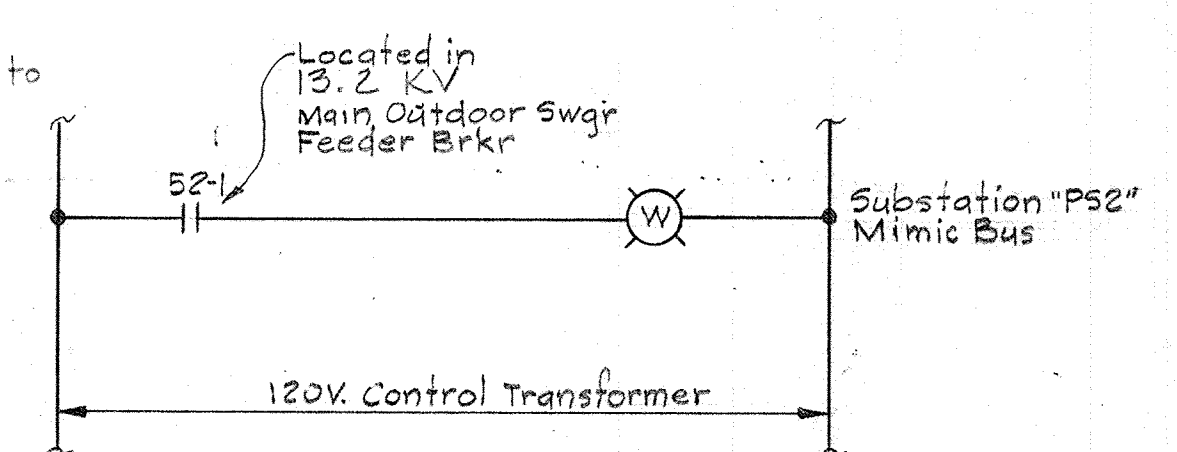
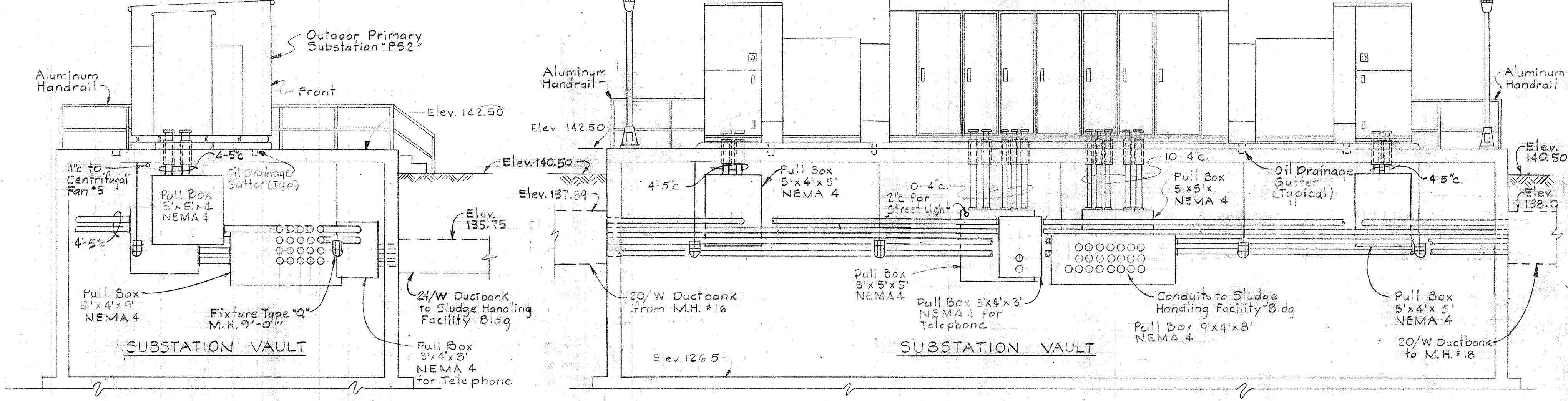
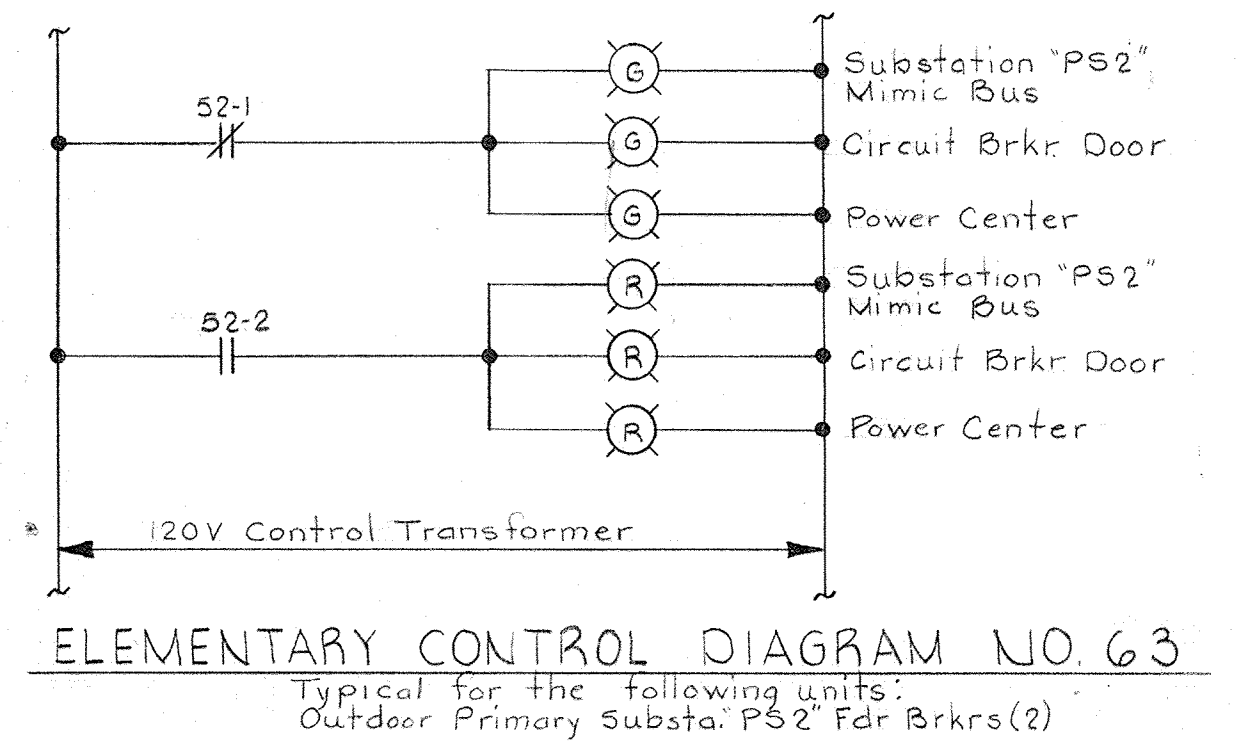
ELECTRICAL
DEWATERING BUILDING
POWER CENTERS "PC1" & "PC2"
ELEV. & SCHEDULE

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 116
OF 126
SCALE AS NOTED



NOTES:
 1. For General Electrical Notes & Legend, see Sheet E-2.
 2. Contractor shall coordinate exact size & location with equipment furnished.



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 DATE: 3/30/75
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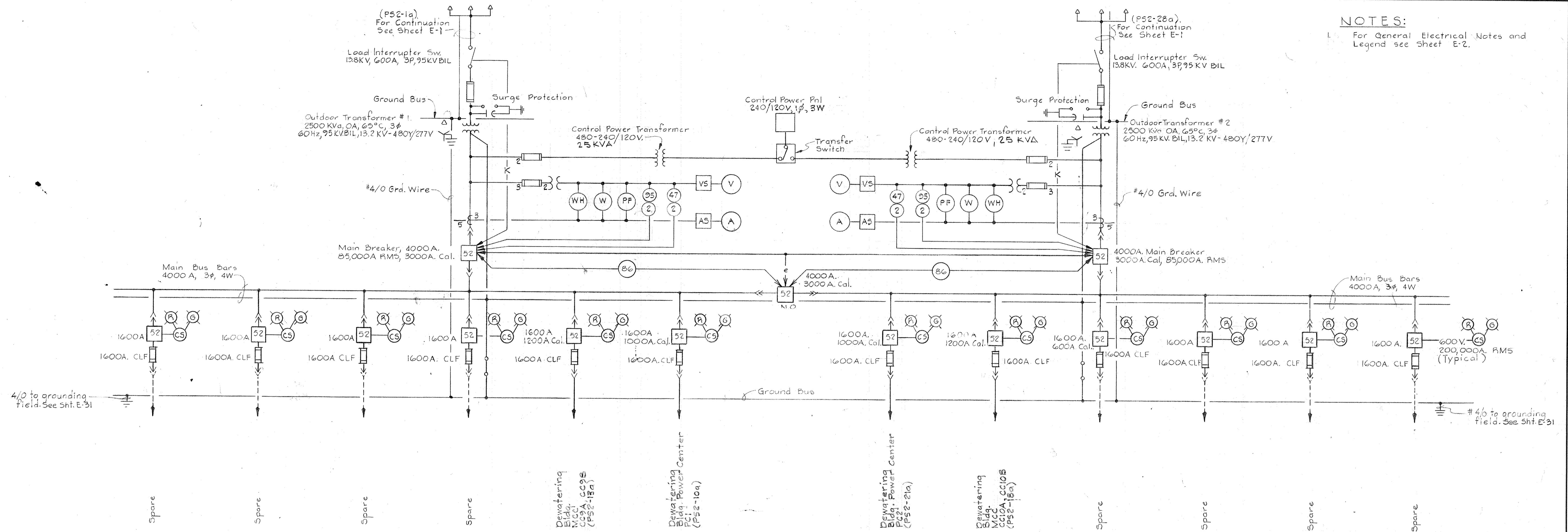
CONTRACT NO. 501-S

ELECTRICAL
MISCELLANEOUS
OUTDOOR PRIMARY SUBSTATION
"PS2" PLANS & DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

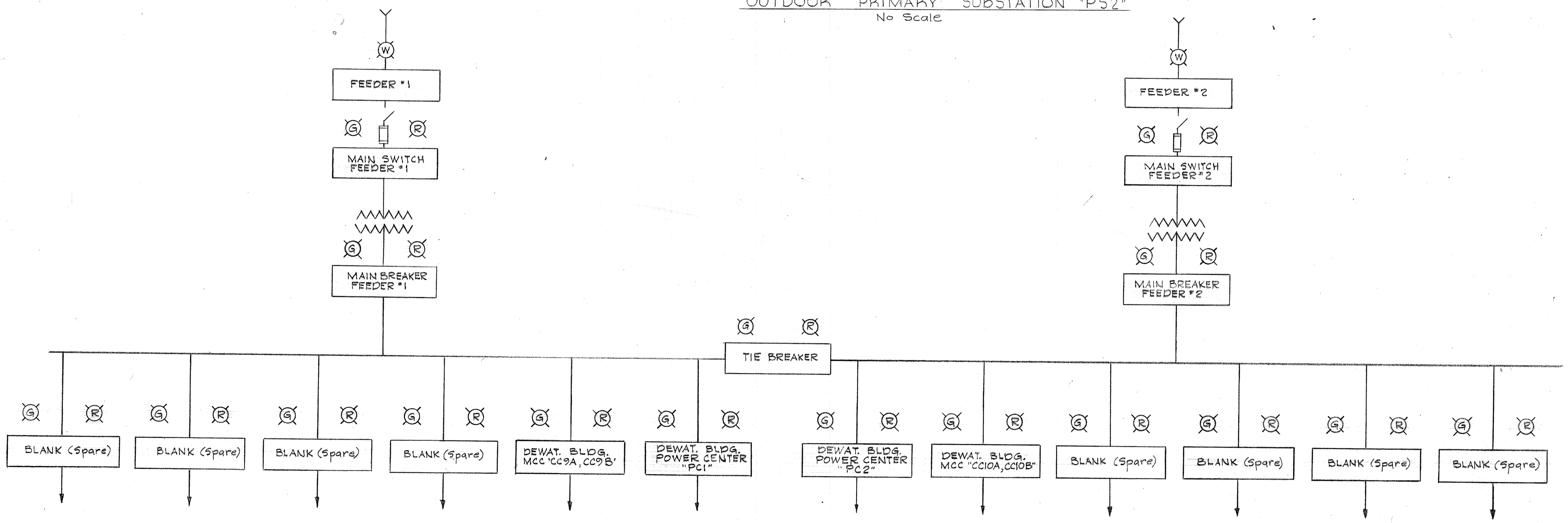
DRAWING
NO. 117
OF 128

SCALE
AS
NOTED



NOTES:
 1. For General Electrical Notes and Legend see Sheet E-2.

OUTDOOR PRIMARY SUBSTATION "PS2"
 No Scale



MIMIC BUS - OUTDOOR PRIMARY SUBSTATION "PS2"
 No Scale

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 HOWARD COUNTY, MARYLAND
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CONTRACT NO. 501-S

ELECTRICAL
 MISCELLANEOUS
 ONE LINE WIRING DIAGRAMS "PS 2"

SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 4

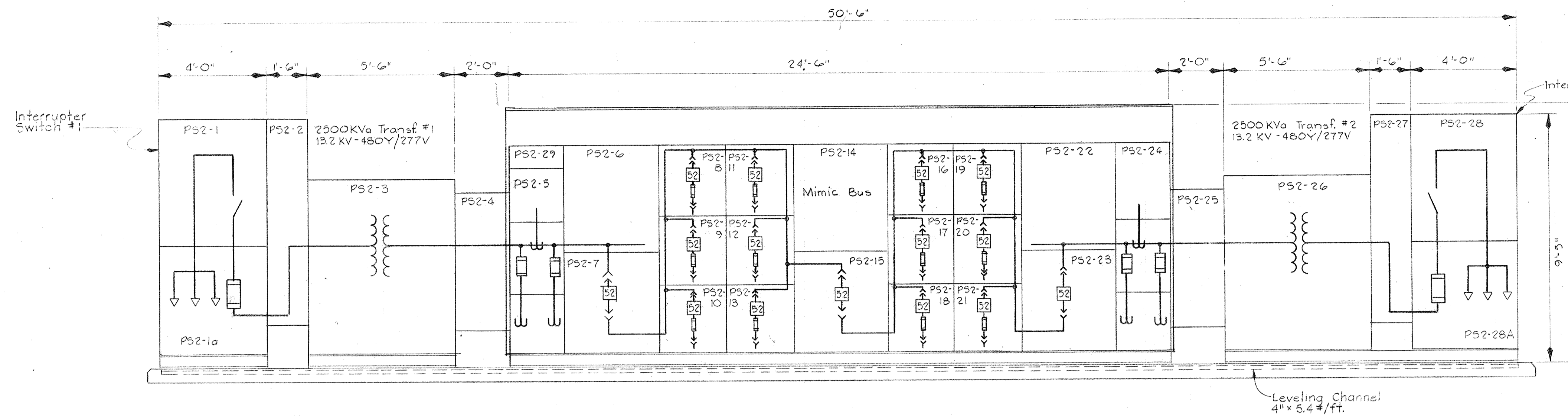
DRAWING
 NO. 118
 OF 128

SCALE
 AS
 NOTED

W. O. 6887

SHEET E-30

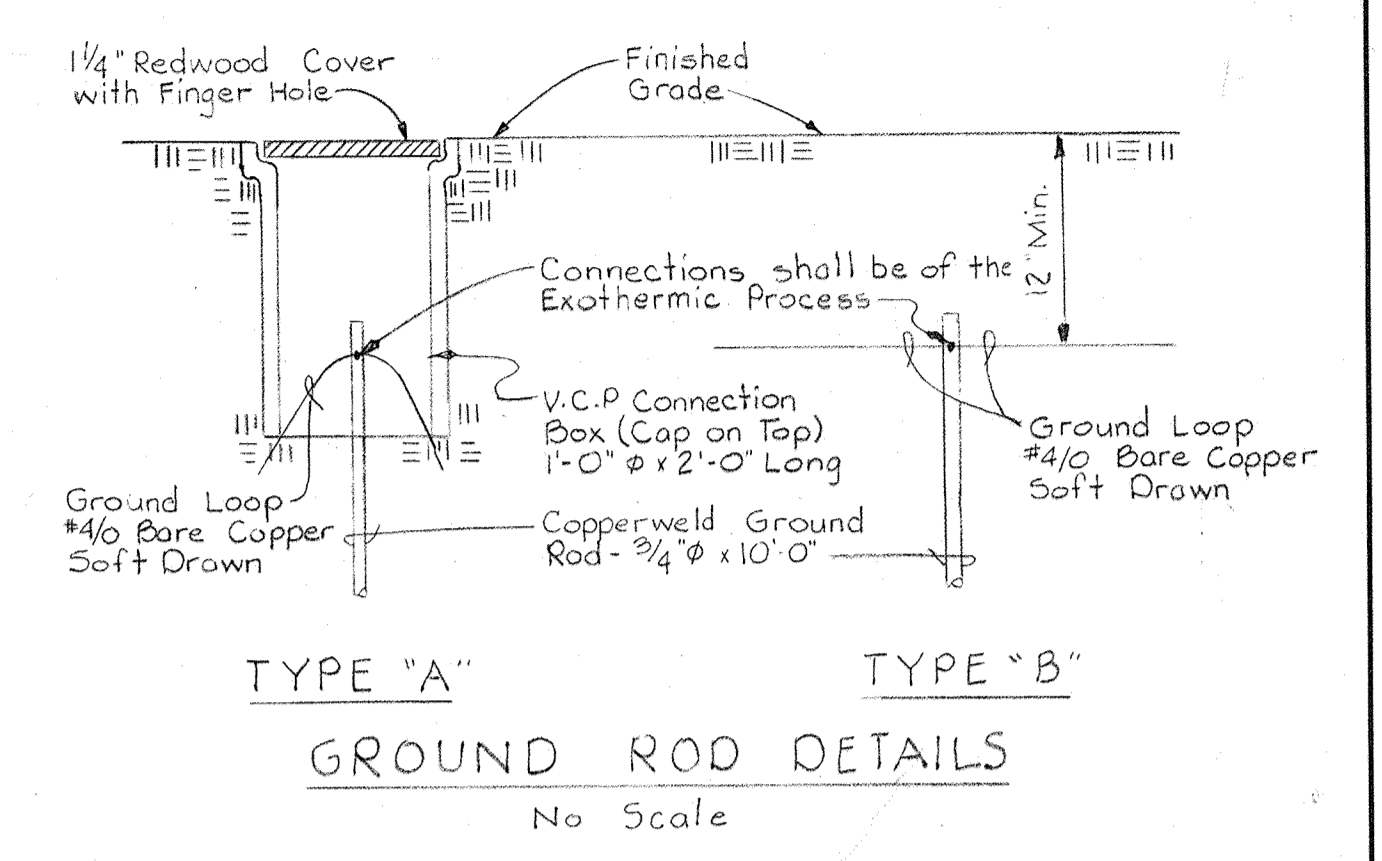
BRUNING 44510 10392



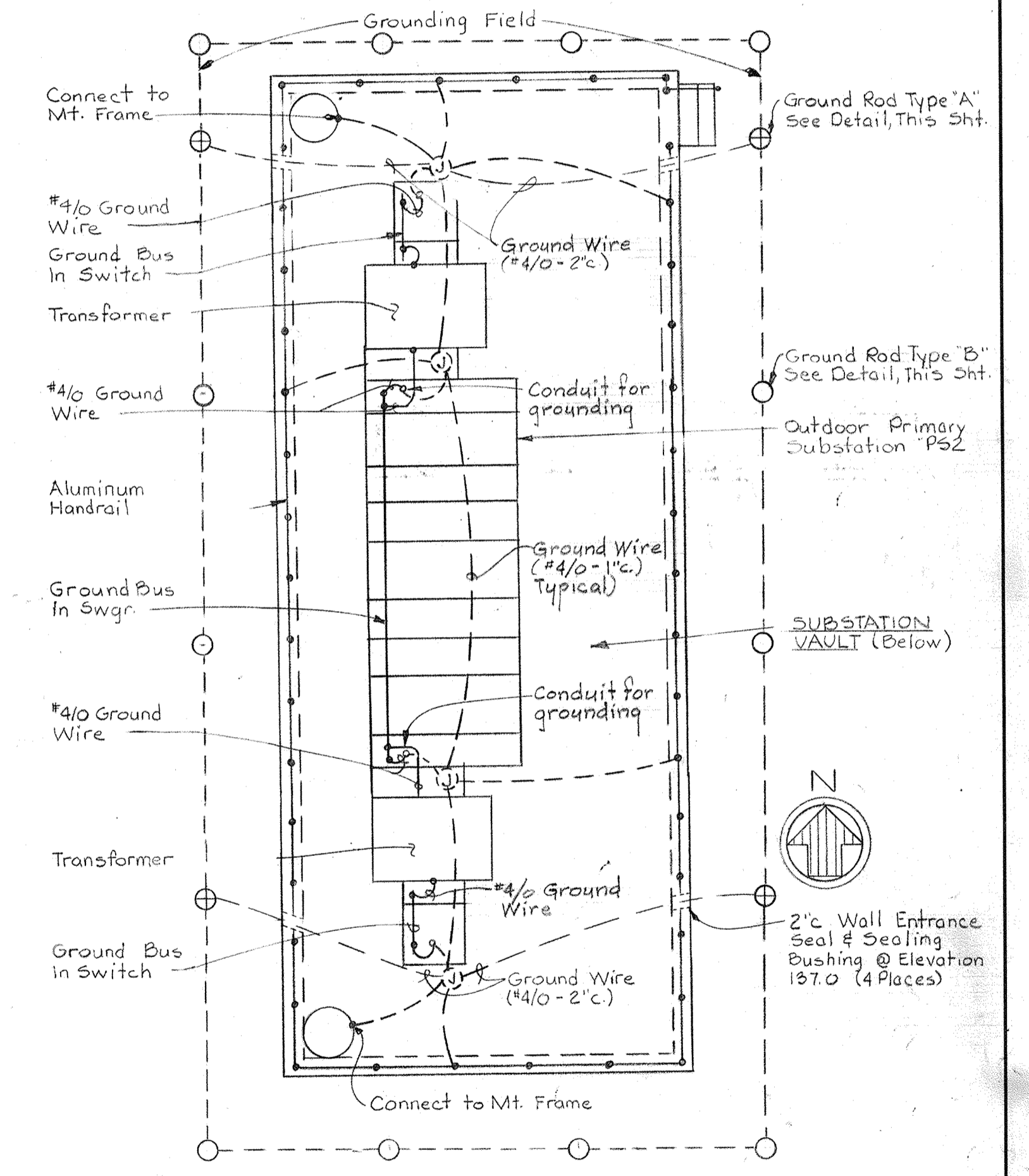
ELEVATION - OUTDOOR PRIMARY SUBSTATION "PS2"
Scale: 3/8" = 1'-0"

NOTES

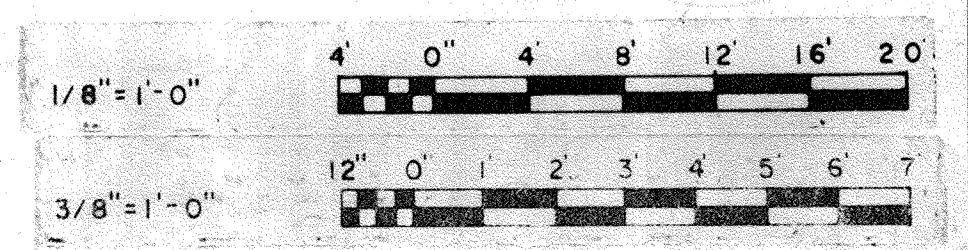
- For General Electrical Notes and Legend, see Sheet E-2.
- *-Indicates Interrupting Capacity in thousands.



OUTDOOR PRIMARY SUBSTATION "PS2" SCHEDULE - 13.2 KV - 480Y/277V														
UNIT NUMBER	NAMEPLATE DATA	DEVICE DESCRIPTION	AUX. DESCRIP.	BREAKER OR FUSED SWITCH				AUN. NUMBER	WIRE OR BUS		COND. SIZE	REMARKS		
				FRAME	POLE	CALIB.	SIC#		RATING	TYPE			NO.	SIZE
PS2-1	MAIN SWITCH FEEDER No. 1	Interrupter Switch Single Throw, gang operated	See Spec.	600A	3	-	60	Load Break	PS2-1a	3	500 MCM	15KV	1/0	See Dwgs
PS2-1A	MAIN SWITCH FEEDER No. 1	Fuses (3)	See Spec.	-	-	-	-	C.L.	-	-	By Manufacturer	-	-	3 Spare Fuses required
PS2-2	-	Transition Section	-	-	-	-	-	-	-	-	By Manufacturer	-	-	-
PS2-3	Standard Nameplates	2500KVa Transformer #1 13.2KV-480Y/277V	See Spec.	-	-	-	-	-	-	-	By Manufacturer	-	-	-
PS2-4	-	Transition Section	-	-	-	-	-	-	-	-	By Manufacturer	-	-	-
PS2-5	Standard Nameplates	Control Power Transf, Potential Transf, Current Transf	See Spec.	-	-	-	-	-	-	-	By Manufacturer	-	-	-
PS2-6	Standard Nameplates	Meters, Switches, Protective Relays	See Spec.	-	-	-	-	-	-	-	By Manufacturer	-	-	-
PS2-7	MAIN BREAKER FEEDER No. 1	Power Circuit Breaker, Drawout Mounting	See Spec.	400A	3	3000A	B5	-	-	-	By Manufacturer	-	-	-
PS2-8	BLANK (Spare)	Fused Power Circuit Breaker Drawout Mounting	See Spec.	1600A	3	-	200	-	-	-	-	-	-	-
PS2-9	BLANK (Spare)	Fused Power Circuit Breaker Drawout Mounting	See Spec.	1600A	3	-	200	-	-	-	-	-	-	-
PS2-10	DEWATERING BLDG POWER CENTER "PC1"	Fused Power Circuit Breaker Drawout Mounting	See Spec.	1600A	3	1000A	200	-	PS2-10a	2(3)	750 MCM	See Spec	2(1/0)	See Dwgs
PS2-11	BLANK (Spare)	Fused Power Circuit Breaker Drawout Mounting	See Spec.	1600A	3	-	200	-	-	-	-	-	-	-
PS2-12	BLANK (Spare)	Fused Power Circuit Breaker Drawout Mounting	See Spec.	1600A	3	-	200	-	-	-	-	-	-	-
PS2-13	DEWATERING BLDG MCC-CC9A,CC9B	Fused Power Circuit Breaker Drawout Mounting	See Spec.	1600A	3	1200A	200	-	PS2-13a	4(3)	750 MCM	See Spec	4(1/0)	See Dwgs
PS2-14	See Drawing E30	Mimic Bus, Indicating Lights	See Spec.	-	-	-	-	-	-	-	By Manufacturer	-	-	-
PS2-15	TIE BREAKER	Power circuit Breaker Drawout Mounting	See Spec.	4000A	3	3000A	200	-	-	-	By Manufacturer	-	-	-
PS2-16	BLANK (Spare)	Fused Power Circuit Breaker Drawout Mounting	See Spec.	1600A	3	-	200	-	-	-	-	-	-	-
PS2-17	BLANK (Spare)	Fused Power Circuit Breaker Drawout Mounting	See Spec.	1600A	3	-	200	-	-	-	-	-	-	-
PS2-18	DEWATERING BLDG MCC-CC10A,CC10B	Fused Power Circuit Breaker Drawout Mounting	See Spec.	1600A	3	1200A	200	-	PS2-18a	4(3)	750 MCM	See Spec	4(1/0)	See Dwgs
PS2-19	BLANK (Spare)	Fused Power Circuit Breaker Drawout Mounting	See Spec.	1600A	3	-	200	-	-	-	-	-	-	-
PS2-20	BLANK (Spare)	Fused Power Circuit Breaker Drawout Mounting	See Spec.	1600A	3	-	200	-	-	-	-	-	-	-
PS2-21	DEWATERING BLDG POWER CENTER "PC2"	Fused Power Circuit Breaker Drawout Mounting	See Spec.	1600A	3	1000A	200	-	PS2-21a	2(3)	750 MCM	See Spec	2(1/0)	See Dwgs
PS2-22	Standard Nameplates	Meters, Switches, Protective Relays	See Spec.	-	-	-	-	-	-	-	By Manufacturer	-	-	-
PS2-23	MAIN BREAKER FEEDER No. 2	Power Circuit Breaker Drawout Mounting	See Spec.	4000A	3	3000A	B5	-	-	-	By Manufacturer	-	-	-
PS2-24	Standard Nameplates	Control Power Transf, Potential Trans, Current Trans	See Spec.	-	-	-	-	-	-	-	By Manufacturer	-	-	-
PS2-25	-	Transition Section	-	-	-	-	-	-	-	-	By Manufacturer	-	-	-
PS2-26	Standard Nameplates	2500KVa Transformer #2 13.2 KV-480Y/277V	See Spec.	-	-	-	-	-	-	-	By Manufacturer	-	-	-
PS2-27	-	Transition Section	-	-	-	-	-	-	-	-	By Manufacturer	-	-	-
PS2-28	MAIN SWITCH FEEDER No. 2	Interrupter Switch Single Throw, gang operated	See Spec.	600A	3	-	60	Load Break	PS2-28a	3	500 MCM	15KV	1/0	See Dwgs
PS2-28A	MAIN SWITCH FEEDER No. 2	Fuses (3)	See Spec.	-	-	-	-	-	-	-	By Manufacturer	-	-	3 Spare Fuses required
PS2-29	-	Annunciator #13 (16 Points)	See Spec.	-	-	-	-	-	-	-	14	THW	-	See Drawings

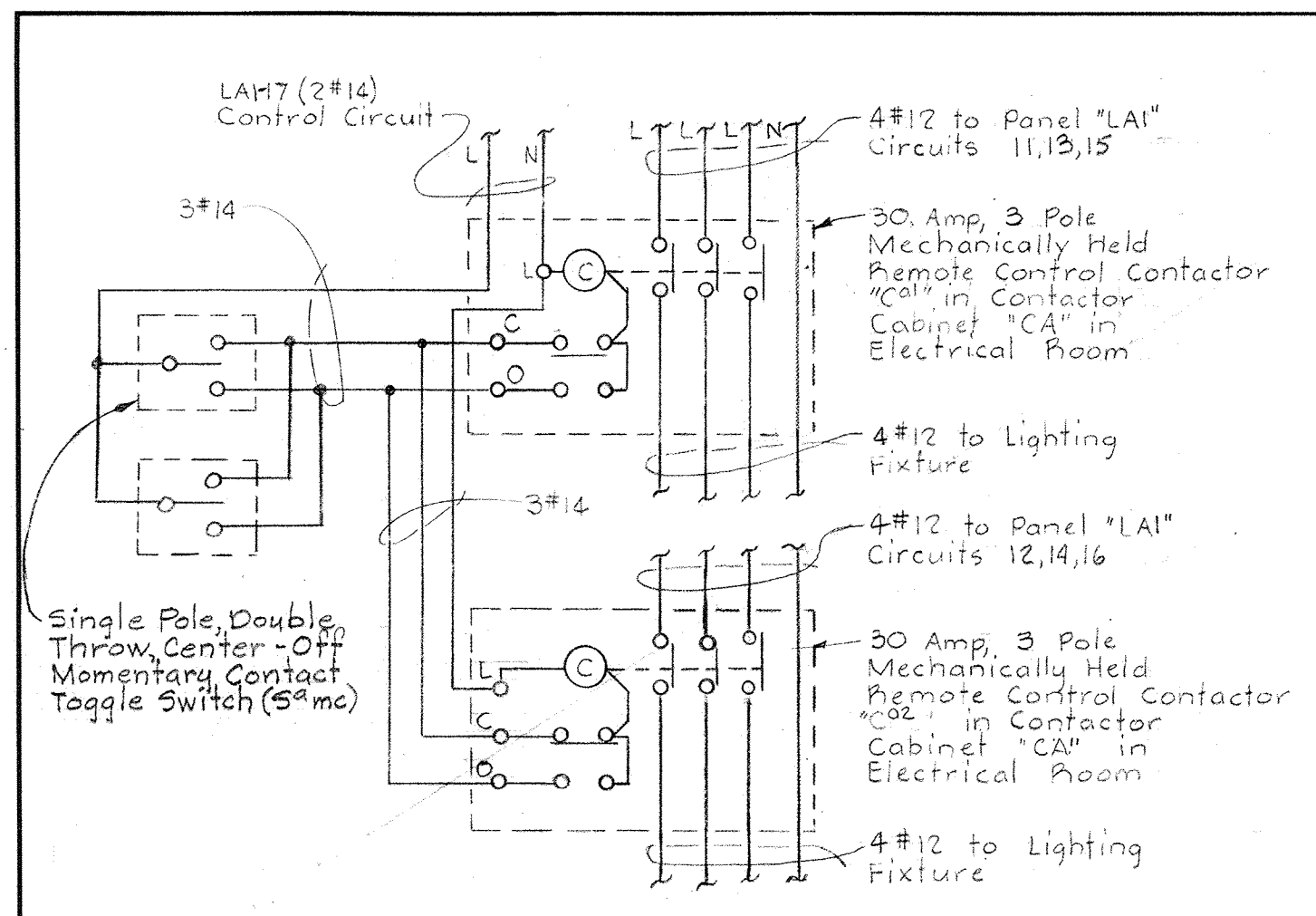


GROUNDING PLAN
OUTDOOR PRI. SUBST. "PS2"



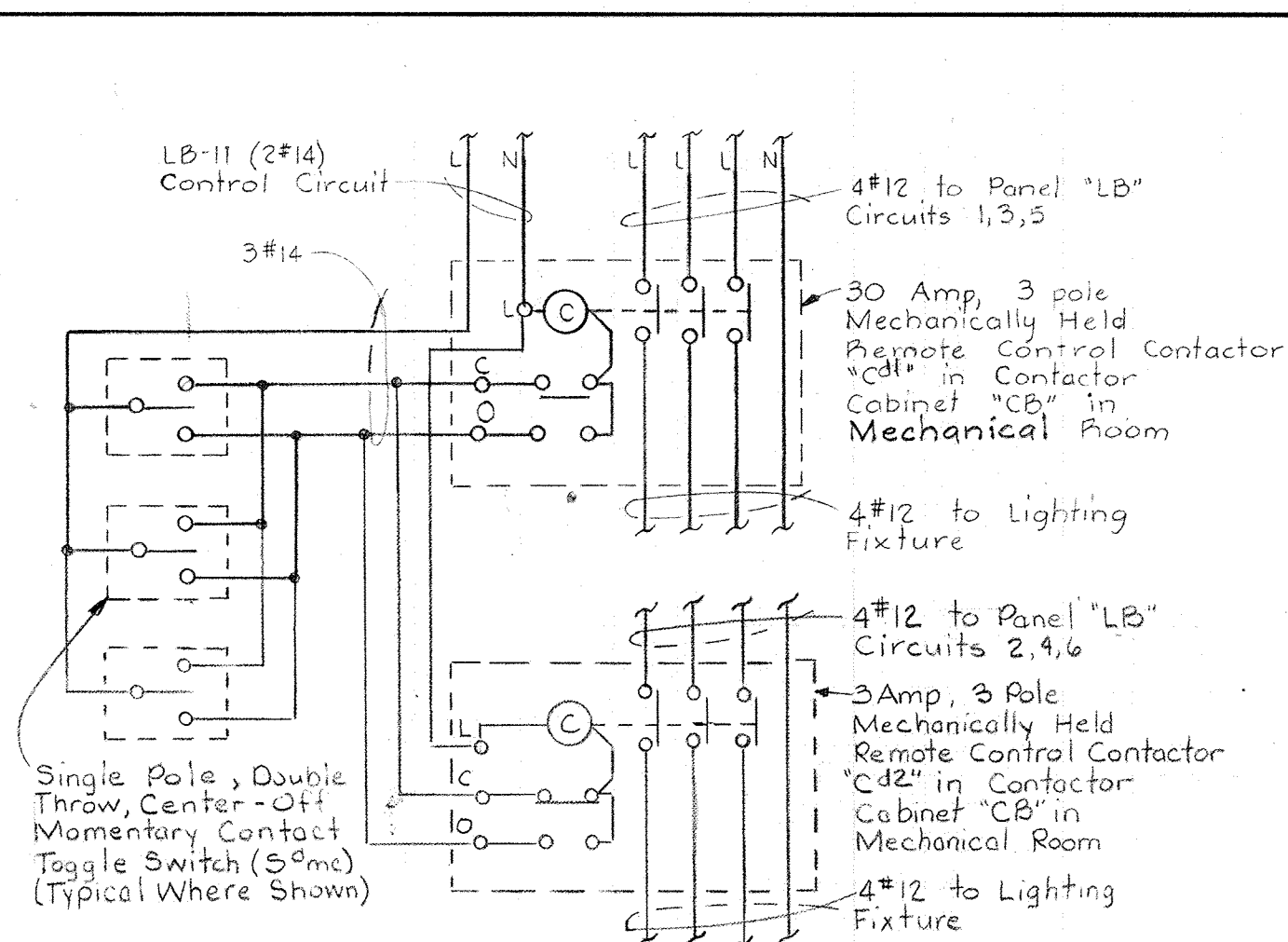
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/30/75 W. O. Liberty CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 501-S	ELECTRICAL MISCELLANEOUS OUTDOOR PRIMARY SUBSTATION "PS 2" ELEV. & SCHEDULE	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 119 OF 128	SCALE AS NOTED
	SHEET E-31					

BRUNING 44-510 18392



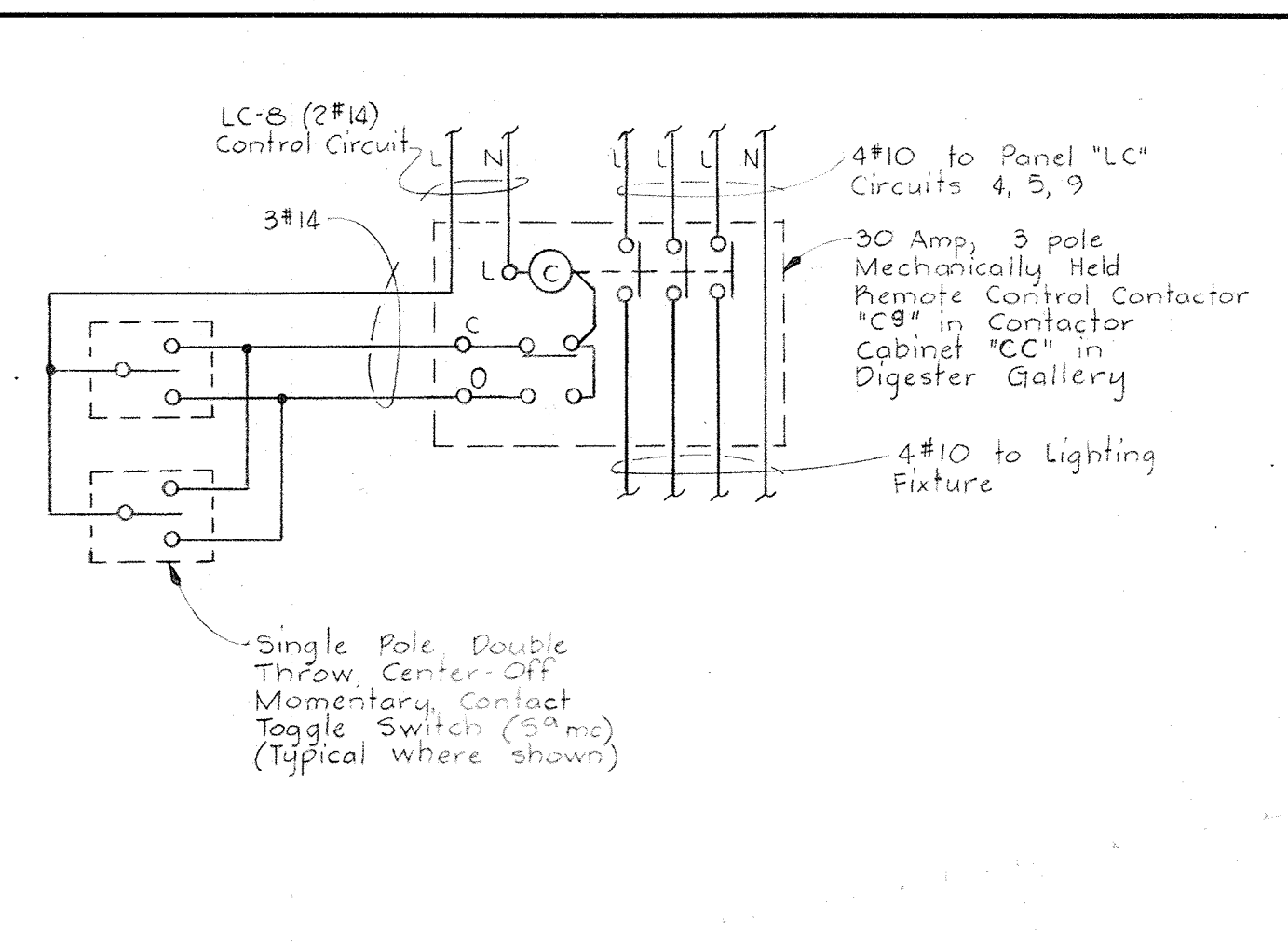
ELEMENTARY CONTROL DIAGRAM No. 46

Typical for the following units:
Lighting - Dewatering Bldg Vacuum Filter Room



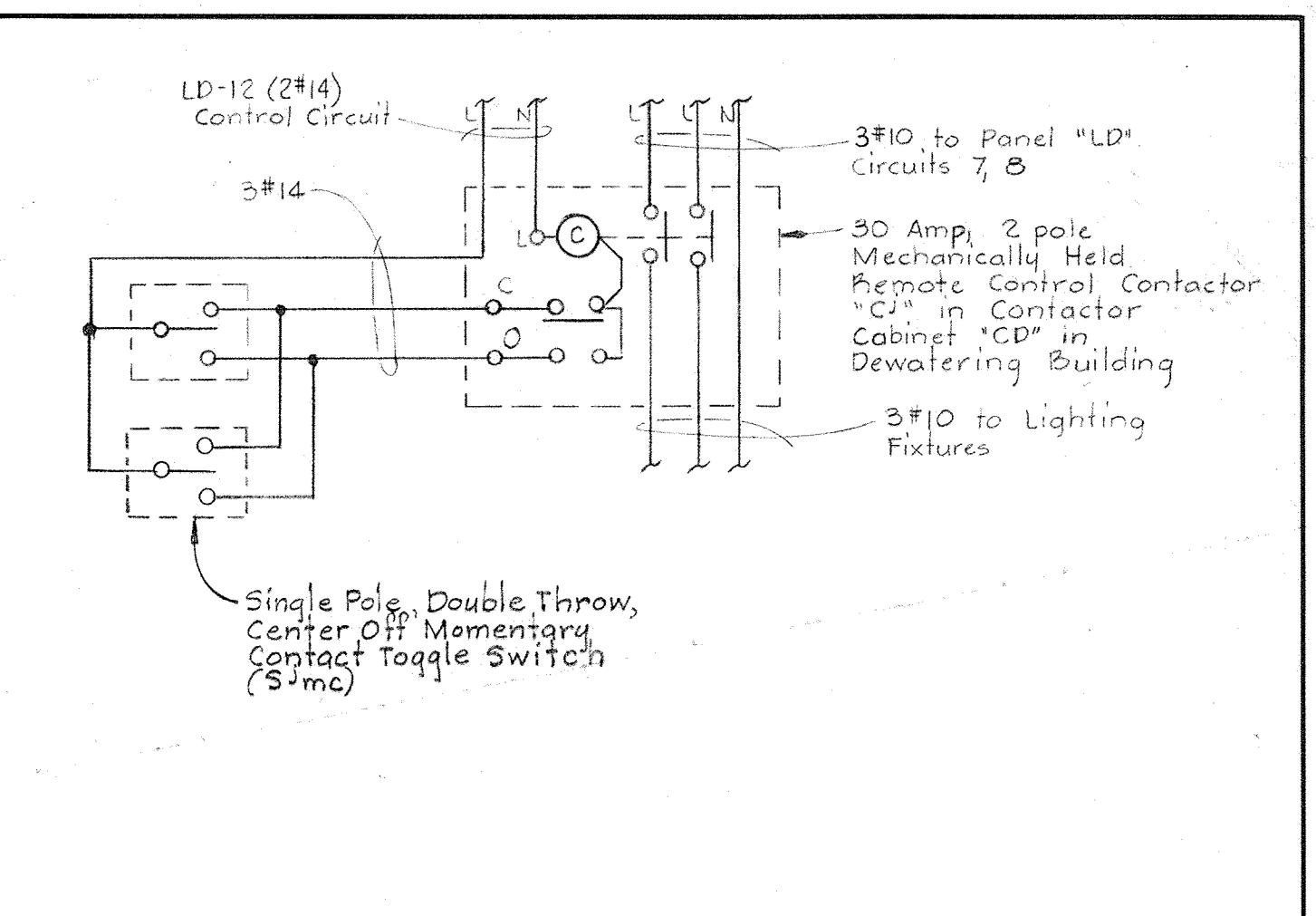
ELEMENTARY CONTROL DIAGRAM No. 48

Typical for the following units:
Lighting - Dewatering Bldg Chemical Area



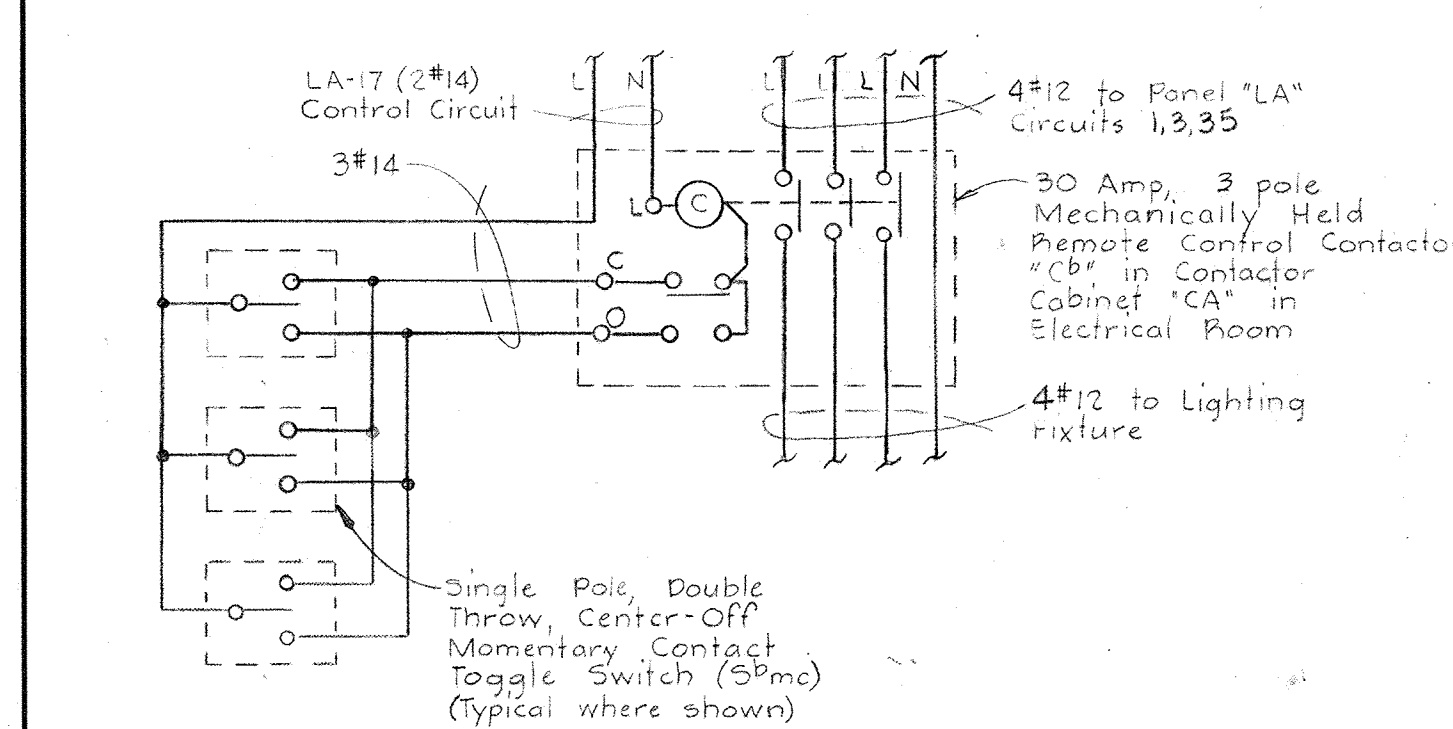
ELEMENTARY CONTROL DIAGRAM No. 50

Typical for the following units:
Lighting - Digester Pipe Gallery



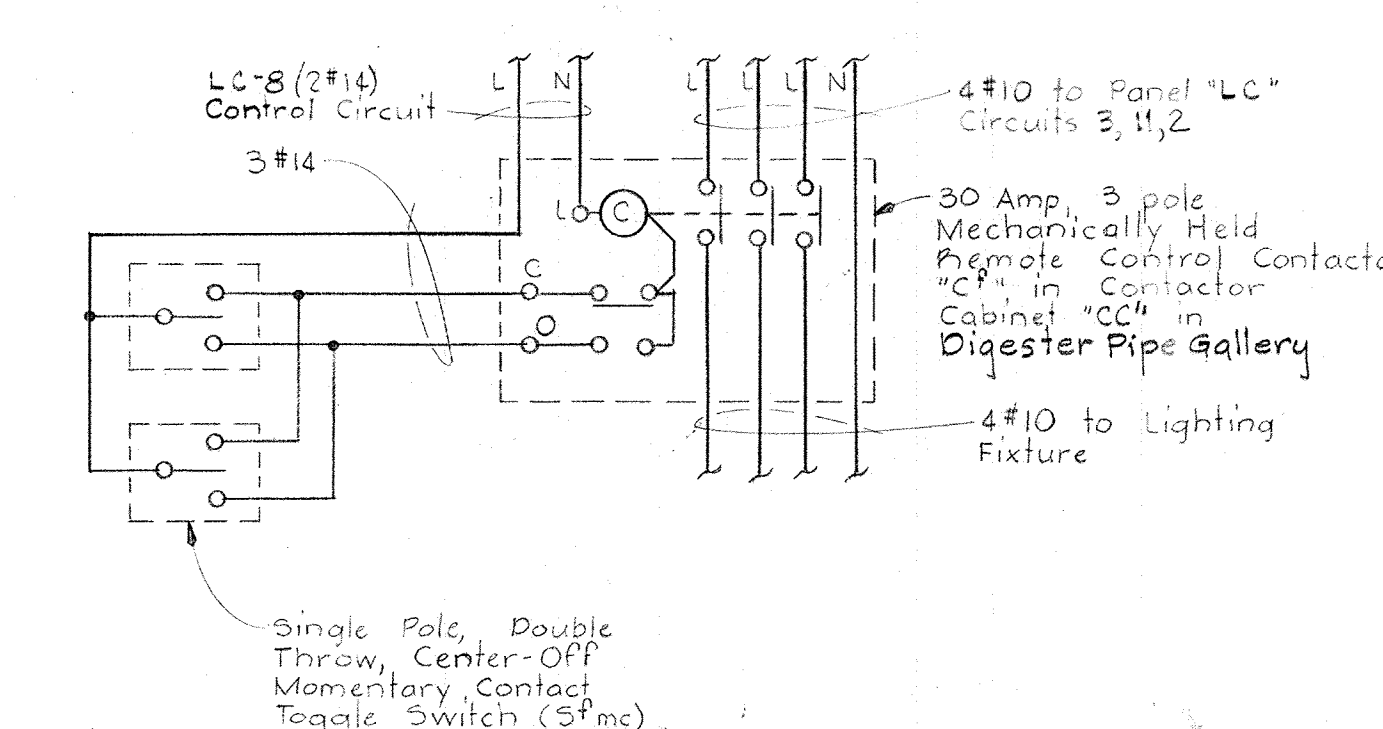
ELEMENTARY CONTROL DIAGRAM No. 53

Typical for the following units:
Lighting - Flotation Thickener Gallery



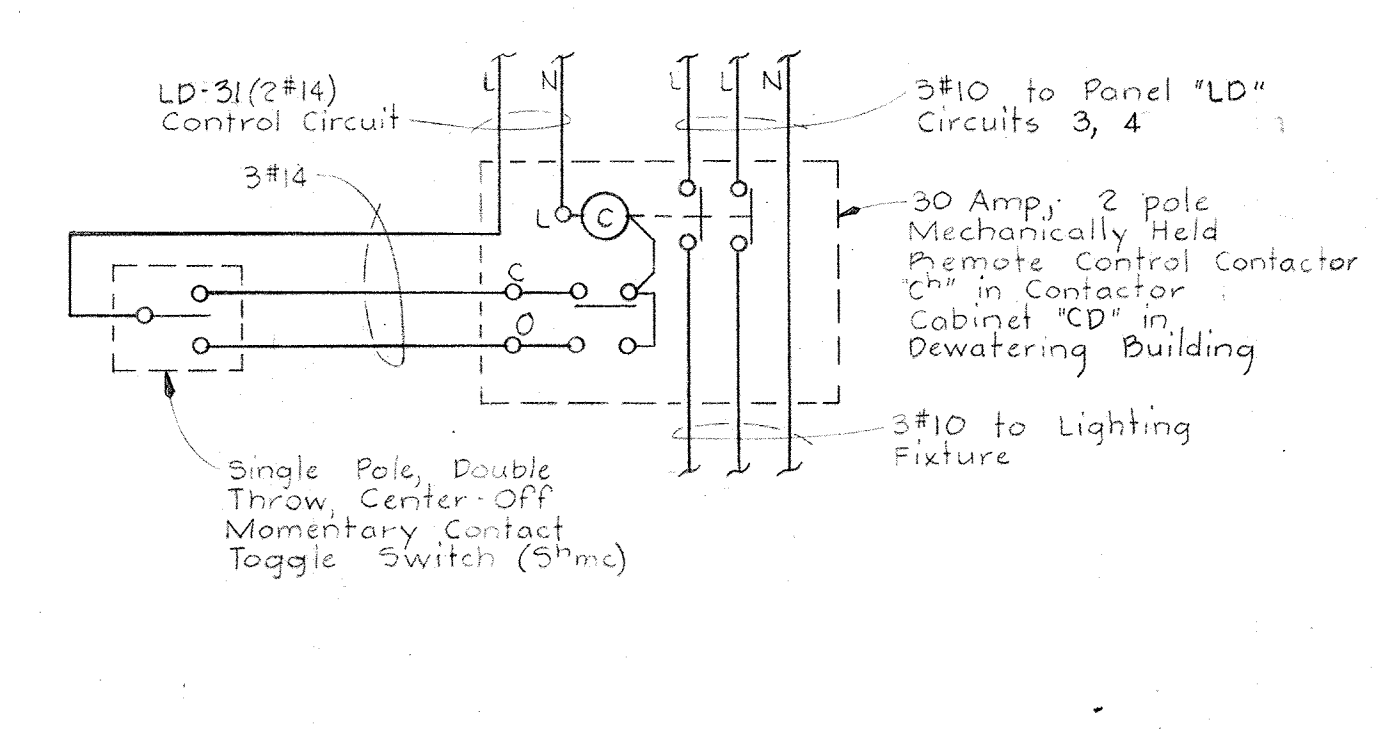
ELEMENTARY CONTROL DIAGRAM No. 47

Typical for the following units:
Lighting - Dewatering Bldg Electrical Room



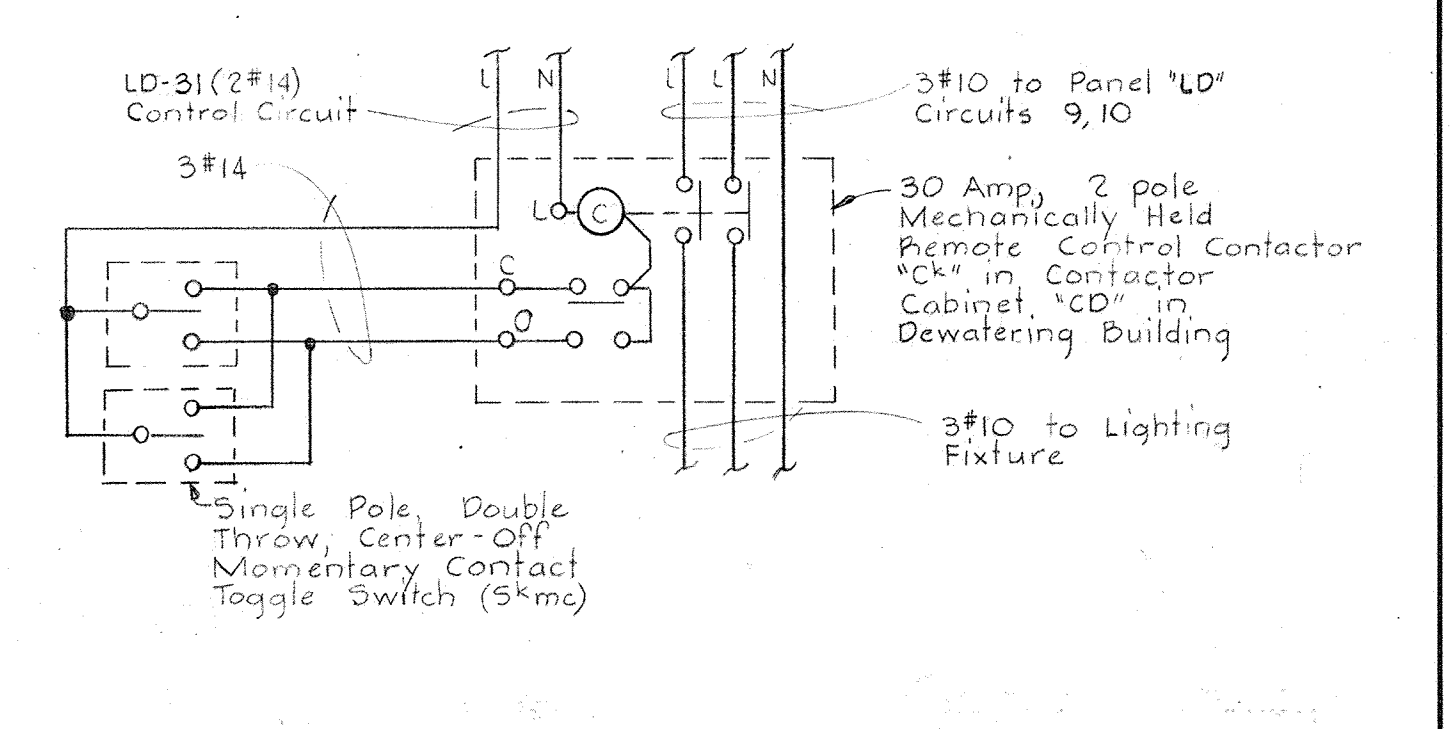
ELEMENTARY CONTROL DIAGRAM No. 49

Typical for the following units:
Lighting - Digester Pipe Gallery



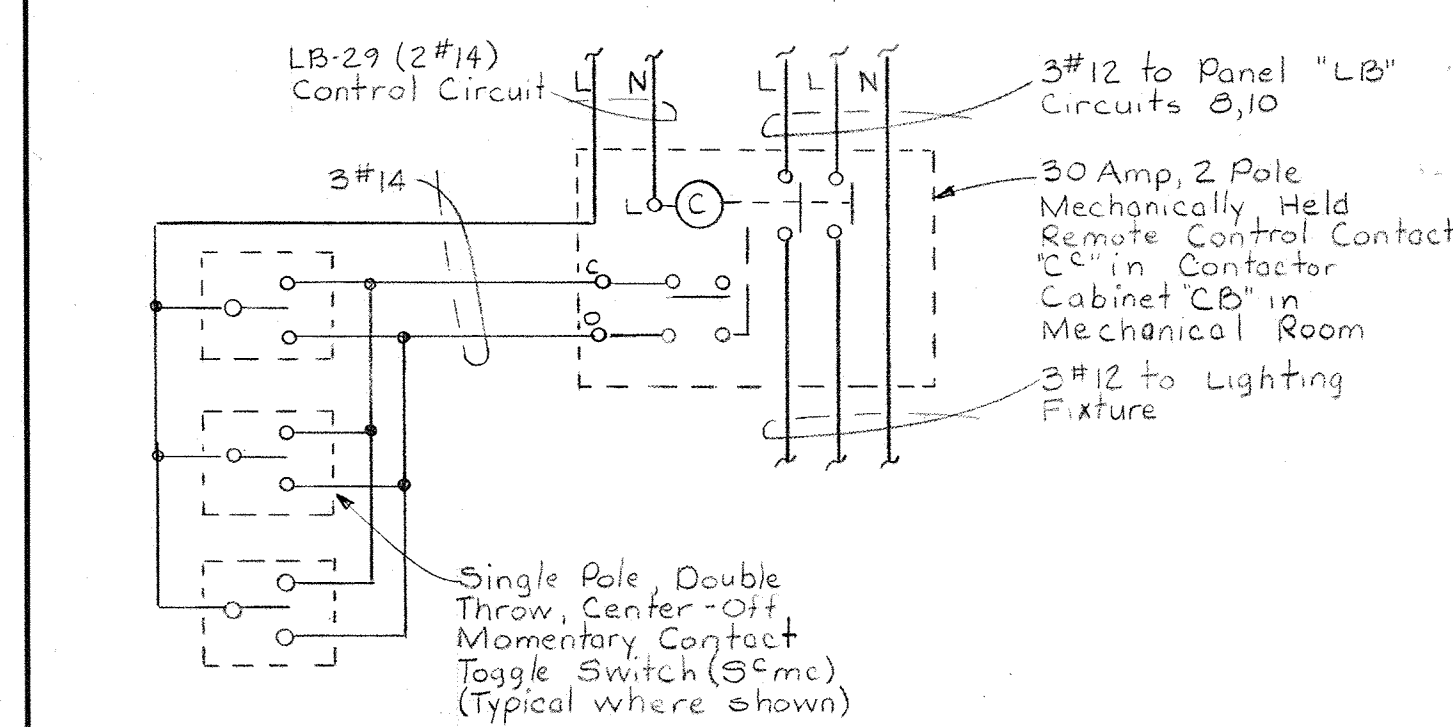
ELEMENTARY CONTROL DIAGRAM No. 51

Typical for the following units:
Lighting - Flotation Thickener Gallery



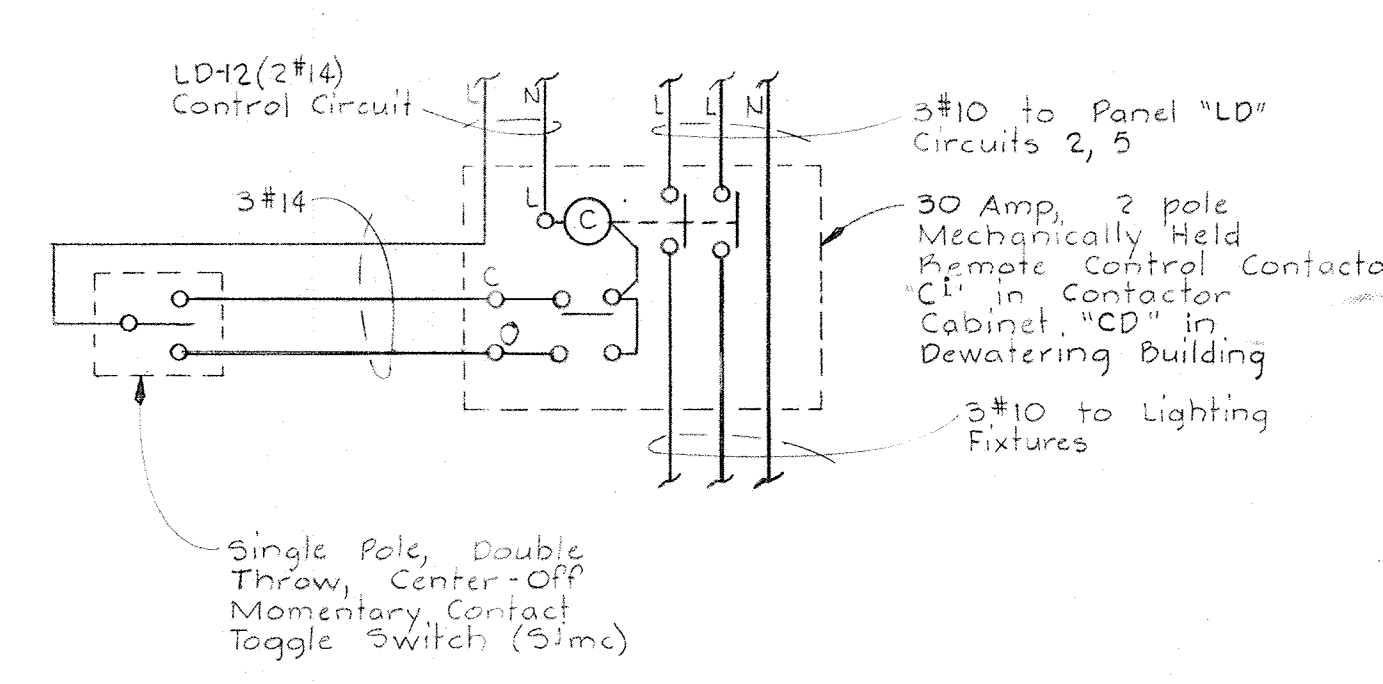
ELEMENTARY CONTROL DIAGRAM No. 54

Typical for the following unit:
Lighting - Flotation Thickener Gallery



ELEMENTARY CONTROL DIAGRAM NO. 64

Typical for the following units:
Lighting - Truck Bay



ELEMENTARY CONTROL DIAGRAM 52

Typical for the following units:
Lighting - Flotation Thickener Gallery

NOTES:
1. For General Electrical Notes & Legend see Sheet E-2.

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3/20/75
W. O. Gilbert
CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 501-S

ELECTRICAL
MISCELLANEOUS
ELEMENTARY WIRING DIAGRAMS
LIGHTING CONTROL

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 120
OF 128

SCALE
AS
NOTED

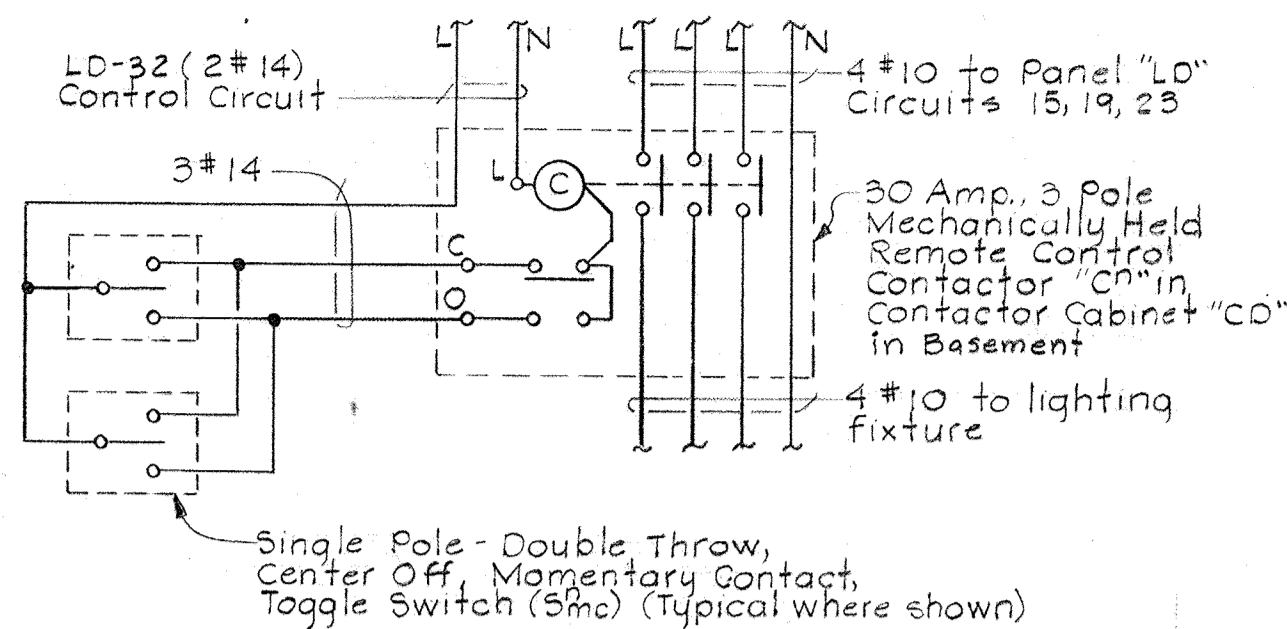
W. O. 6887

SHEET E-32

BRUNING 44510 16392

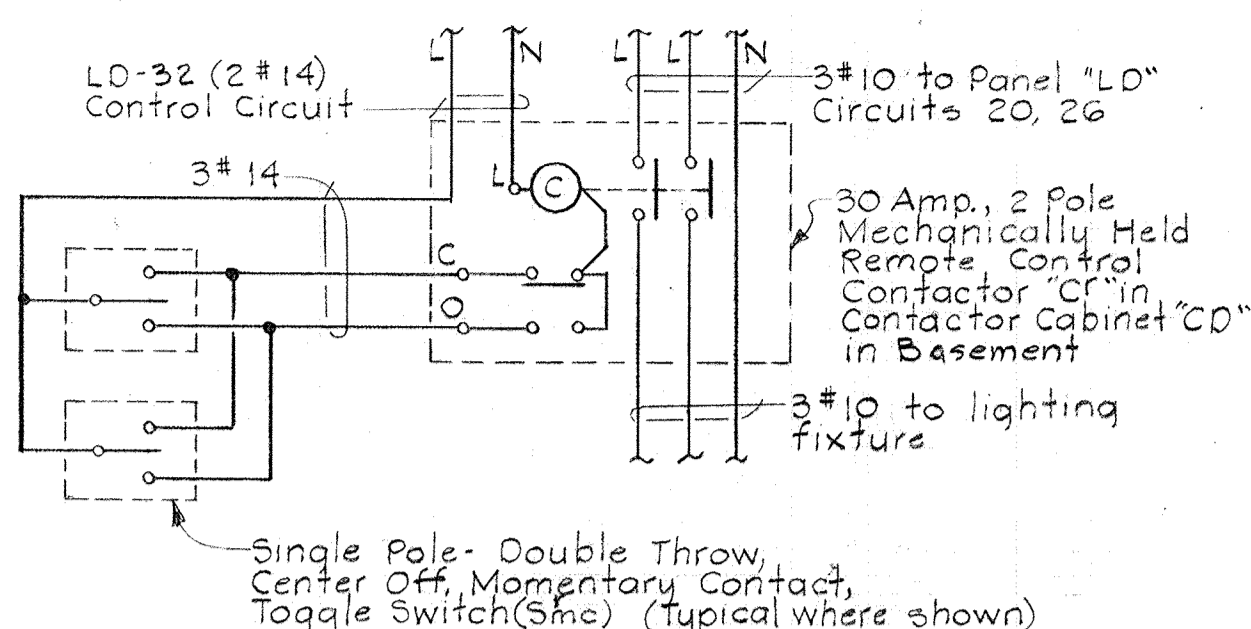
NOTES

1. For General Electrical Notes and Legend see Sheet E-2.



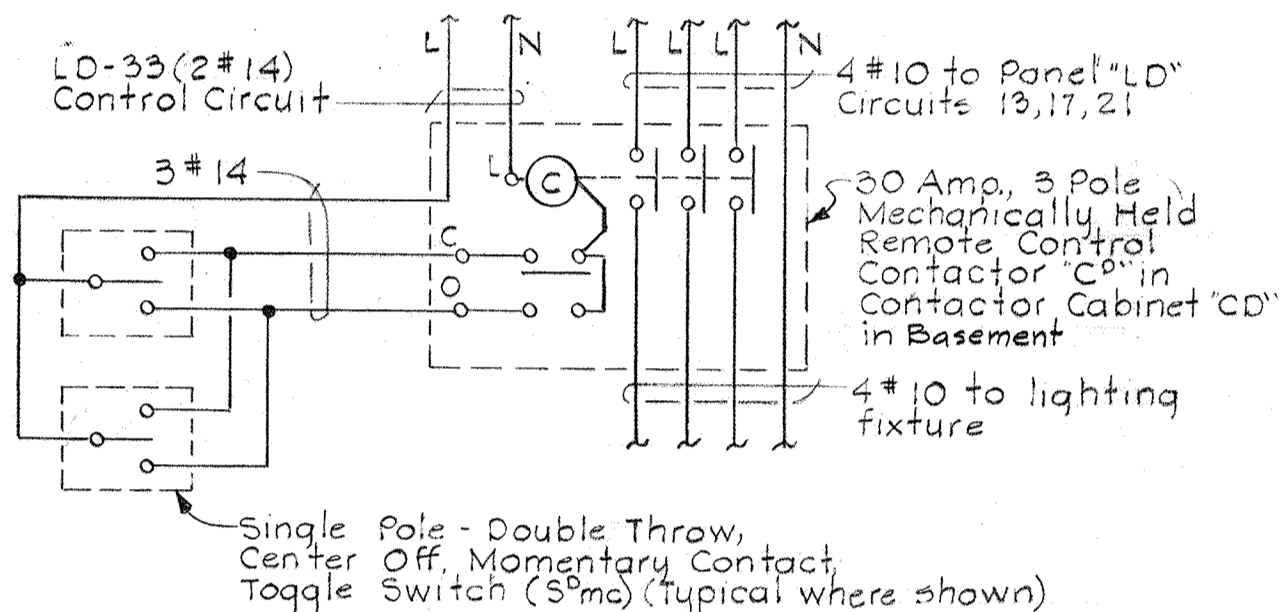
ELEMENTARY CONTROL DIAGRAM NO. 55

Typical for the following units:
Lighting Dewatering Building, Basement



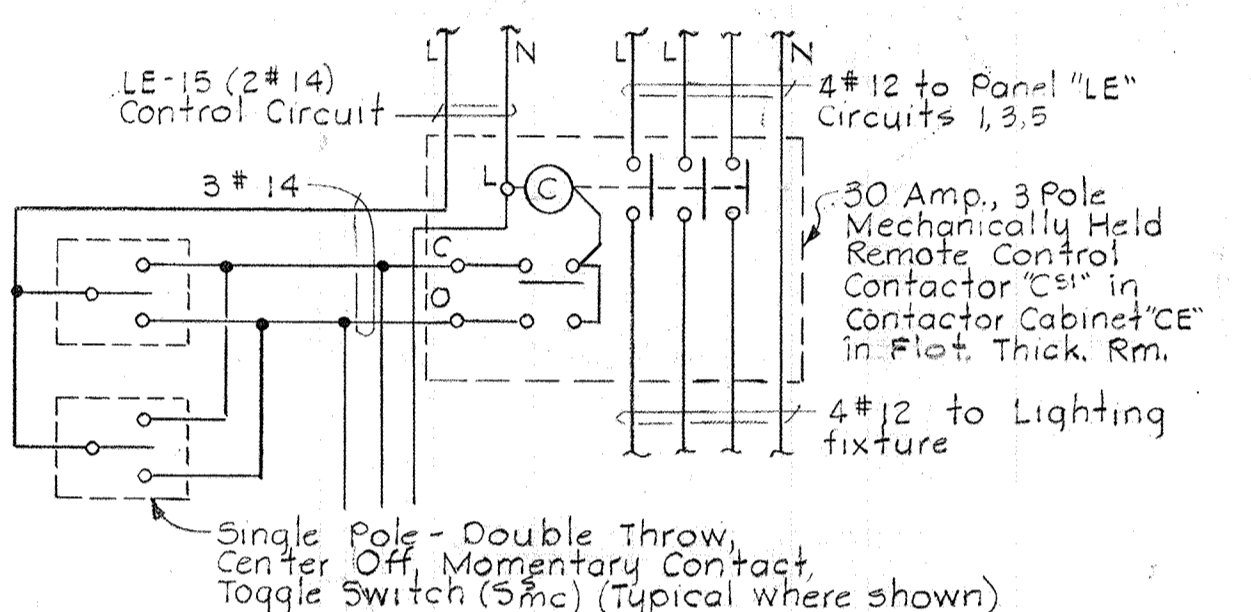
ELEMENTARY CONTROL DIAGRAM NO. 79

Typical for the following units:
Lighting Dewatering Building, Elev. 1300



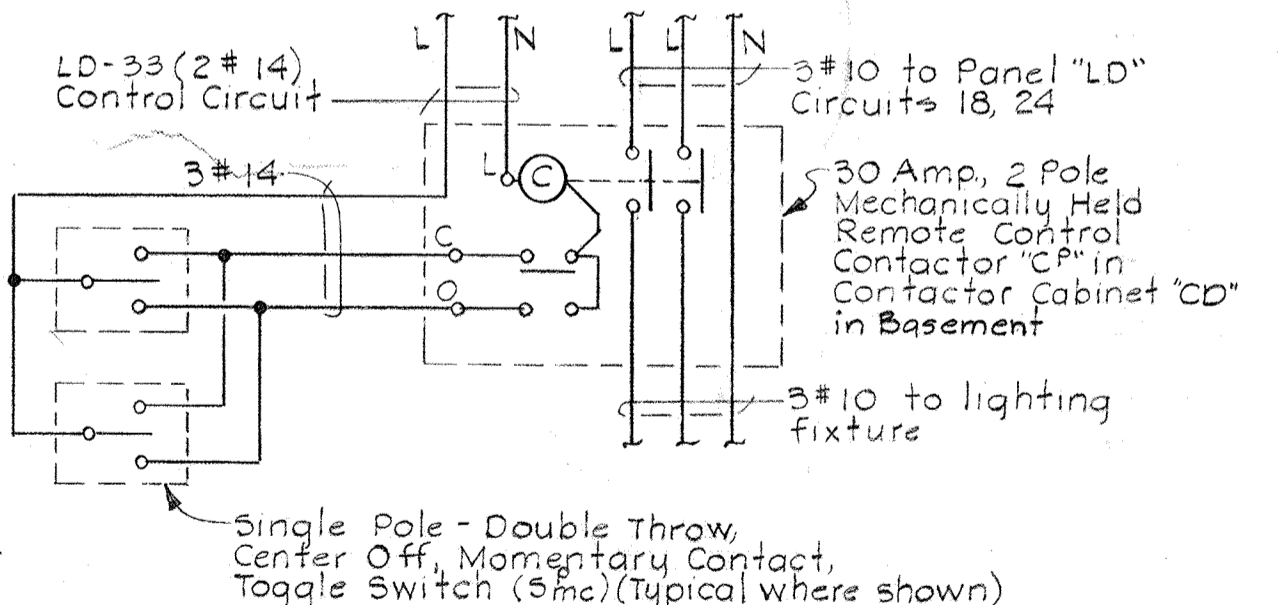
ELEMENTARY CONTROL DIAGRAM NO. 56

Typical for the following units:
Lighting Dewatering Building, Basement



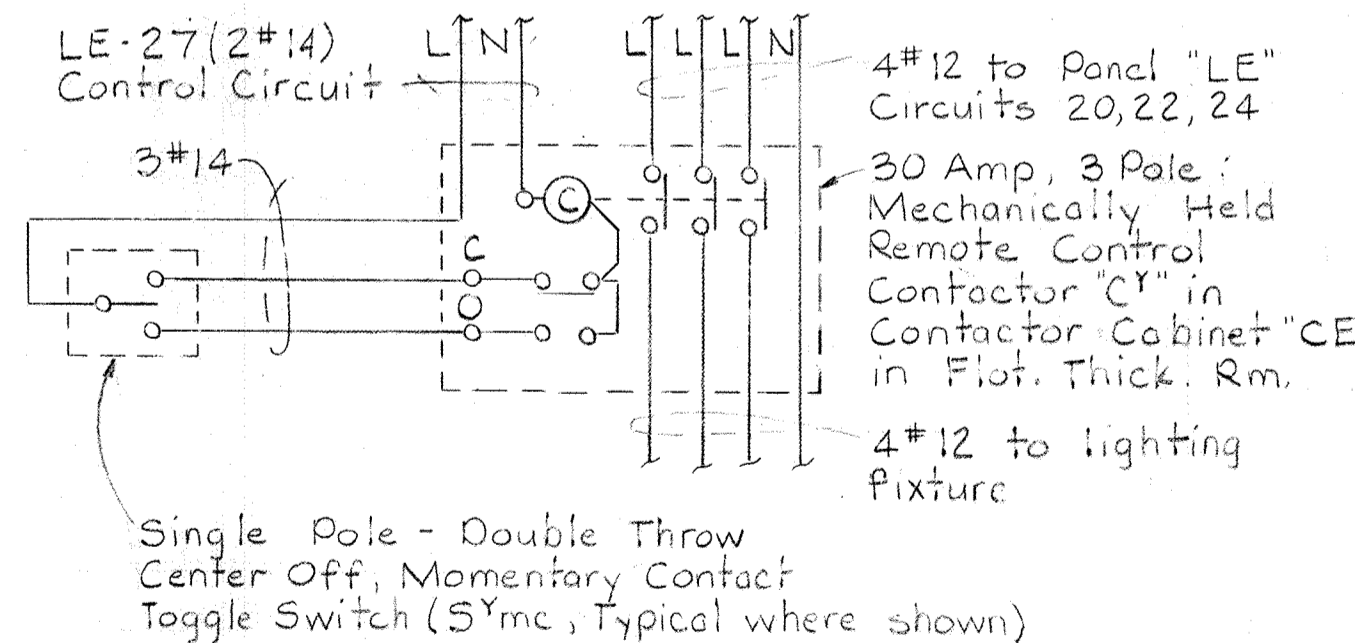
ELEMENTARY CONTROL DIAGRAM NO. 81

Typical for the following units:
Lighting Flotation Thickener Room



ELEMENTARY CONTROL DIAGRAM NO. 77

Typical for the following units:
Lighting Dewatering Building, Basement



ELEMENTARY CONTROL DIAGRAM NO. 63

Typical for the following units:
Lighting Flotation Thickener Tanks No. 1&2
Lighting Future Flotation Thickener Tanks No. 3&4

CONTACTOR SCHEDULE					
CONTACTOR	PANEL	CONTROL CIRCUIT	POWER CIRCUIT	CONTROL DIAGRAMS	LOCATION
C ^{a1, a2}	CA	LA-17	LA-11 to 16	E-32, #40	E-15 Elev. 156 Vac. Filtr. Room
C ^b	CA	LA-17	LA-1, 3, 35	E-32, #47	E-15 Elev. 156 Elect. Room
C ^c	CB	LB-29	LB-8, 10	E-32, #64	E-15 Elev. 142 Truck Bay
C ^{d1, d2}	CB	LB-11	LB-1 to 6	E-32, #48	E-15 Elev. 142 Chem. Area
C ^f	CC	LC-8	LC-2, 3, 11	E-32, #49	E-12 & 13 Digester Pipe Gallery - E+V
C ^g	CC	LC-8	LC-45, 9	E-32, #50	E-12 & 13 Digester Pipe Gallery - E+V
C ^h	CD	LD-31	LD-3, 4	E-32, #51	E-4 Elev. 128 Flot. Thick. Gallery
C ⁱ	CD	LD-12	LD-2, 5	E-32, #52	E-4 Elev. 128 Flot. Thick. Gallery
C ^j	CD	LD-12	LD-7, 8	E-32, #53	E-4 Elev. 128 Flot. Thick. Gallery
C ^k	CD	LD-31	LD-9, 10	E-32, #34	E-4 Elev. 128 Flot. Thick. Gallery
C ⁿ	CD	LD-32	LD-15, 19, 21	E-33, #55	E-14 Elev. 130 Dewater. Basement
C ^o	CD	LD-33	LD-19, 17, 21	E-33, #56	E-14 Elev. 130 Dewater. Basement
C ^p	CD	LD-33	LD-18, 24	E-33, #77	E-14 Elev. 130 Dewater. Basement
C ^r	CD	LD-32	LD-20, 26	E-33, #79	E-14 Elev. 130 Dewater. Basement
C ^{s1, s2}	CE	LE-15	LE-1 to 6	E-33, #81	E-5 Elev. 142 Flot. Thick.
C ^x	CE	LE-27	LE-19, 21, 23	E-33, #63	E-5 Elev. 142 Flot. Thick. Tanks
C ^y	CE	LE-27	LE-20, 22, 24	E-33, #63	E-5 Elev. 142 Flot. Thick. Tanks

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HOWARD COUNTY, MARYLAND

3/20/75
DATE

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CHIEF BUREAU OF ENGINEERING

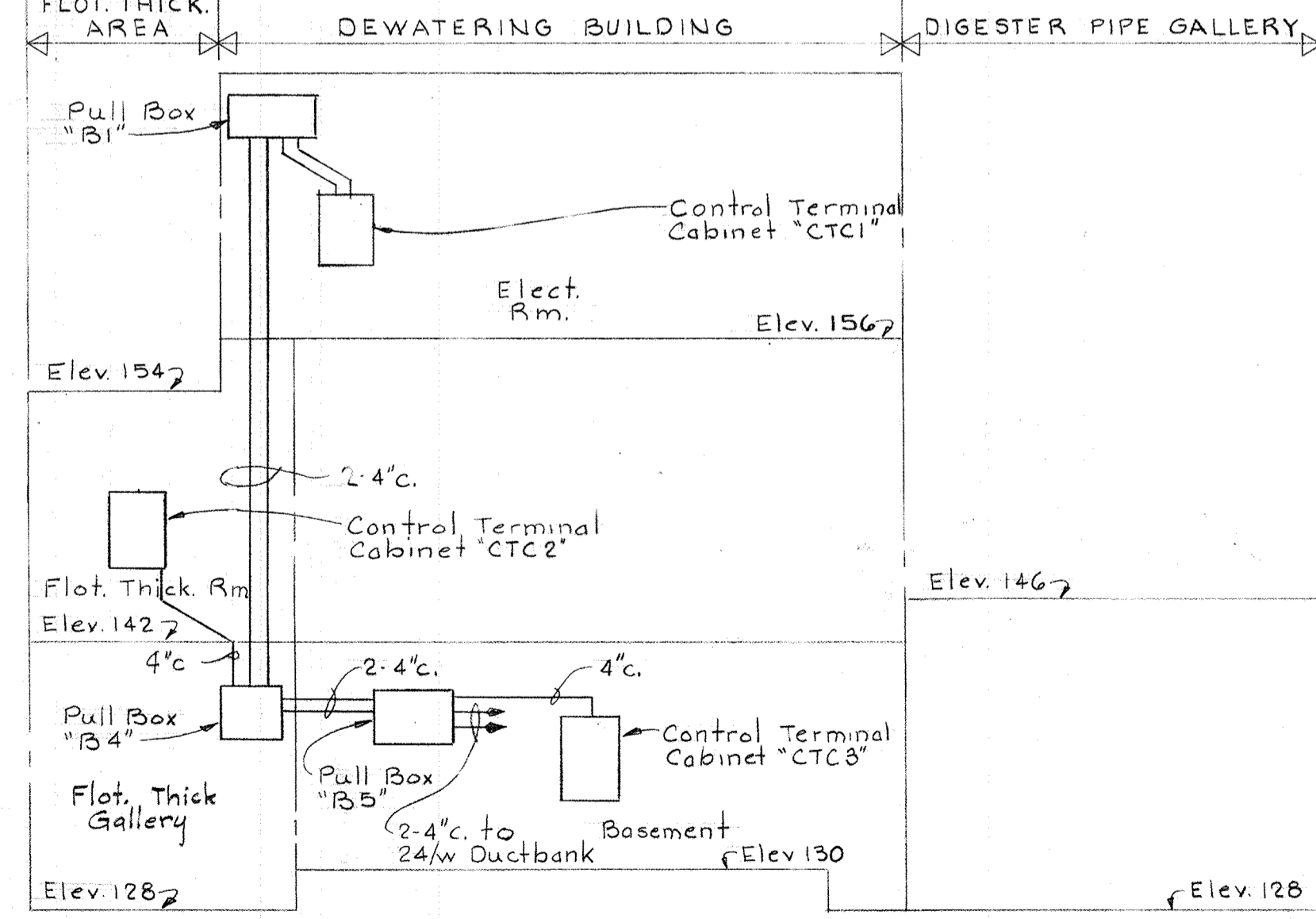
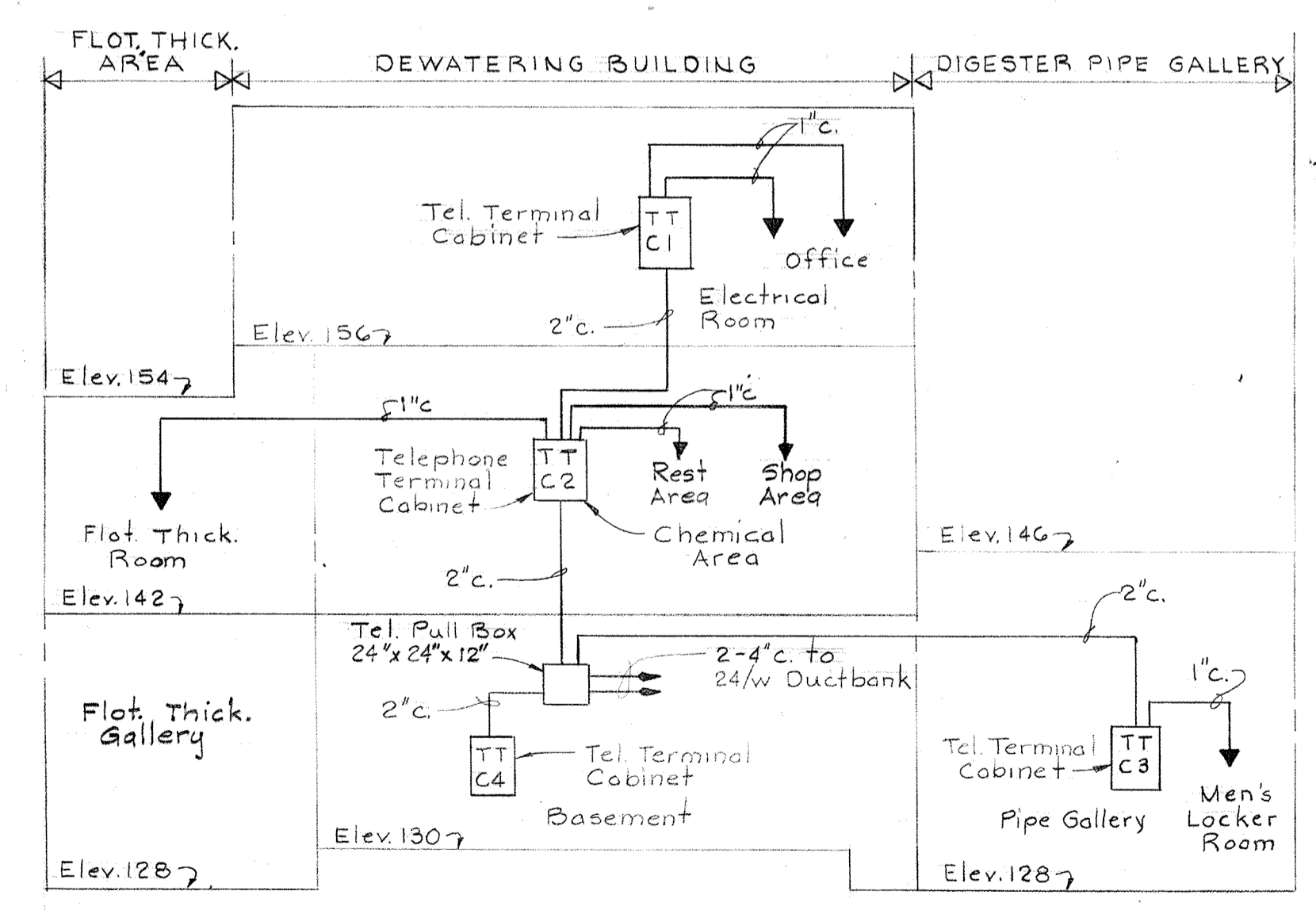
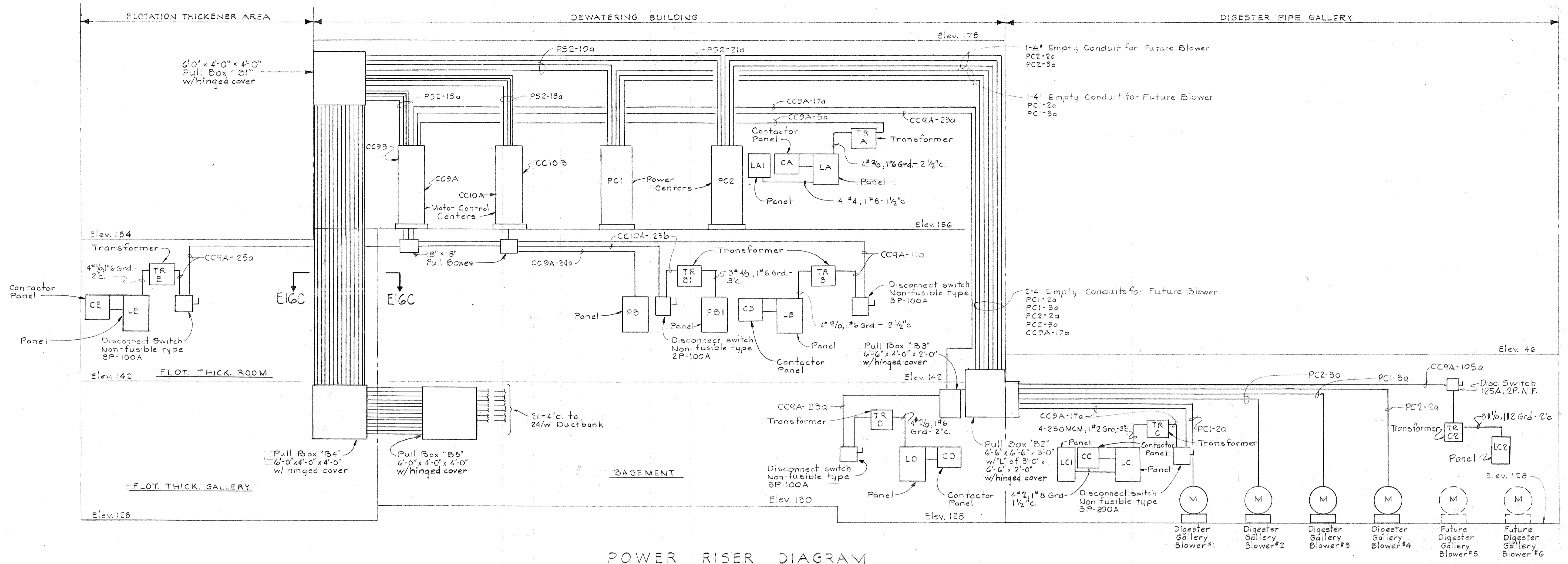
CONTRACT NO. 501-S

ELECTRICAL
MISCELLANEOUS
ELEMENTARY WIRING DIAGRAMS
LIGHTING CONTROL

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

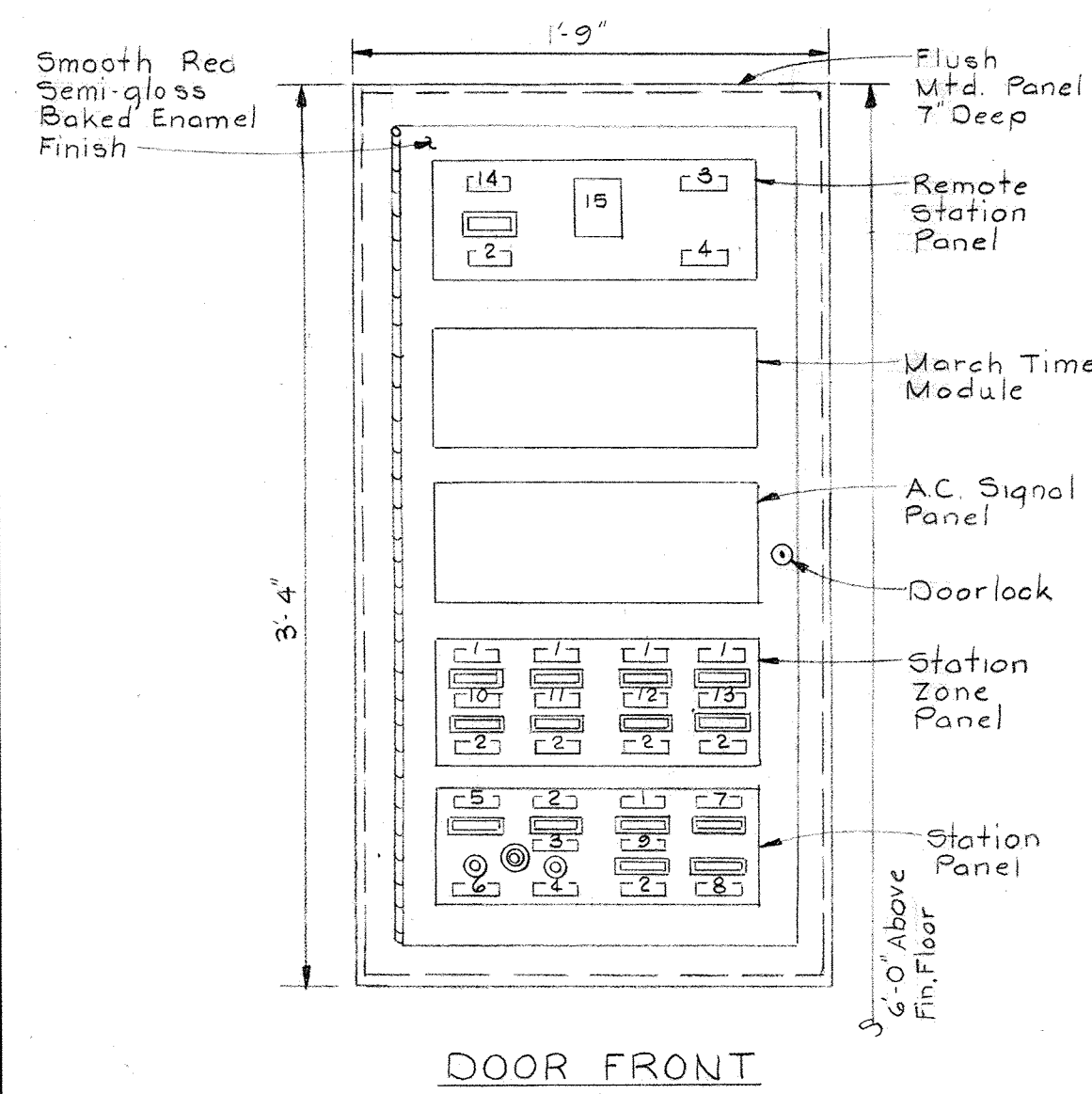
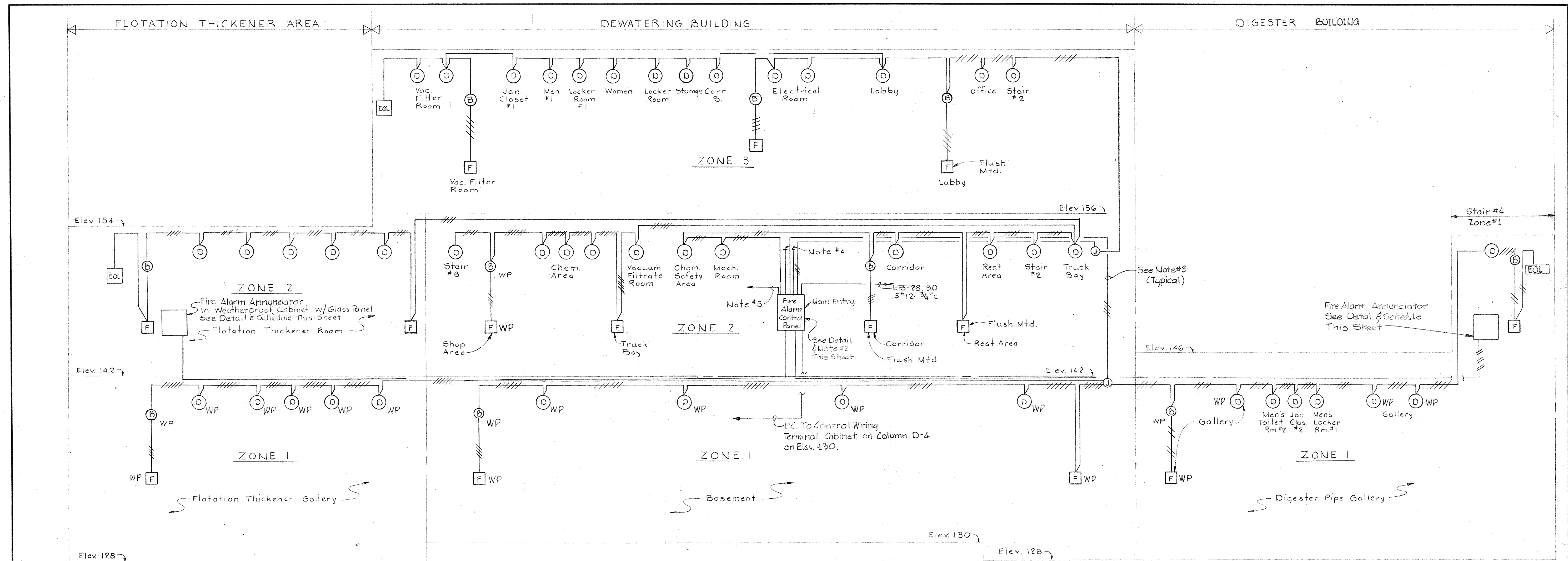
DRAWING
NO. 121
OF 128

SCALE
AS
NOTED



NOTES:
1. For General Electrical Notes & Legend, see Sheet E-2

BRUNING 44-510 18392



FIRE ALARM CONTROL PANEL
Scale: 1/2" = 1'-0"

LEGEND

- 1-14 Nameplates
- 15 Milliammeter
- Indicating Light
- Switch

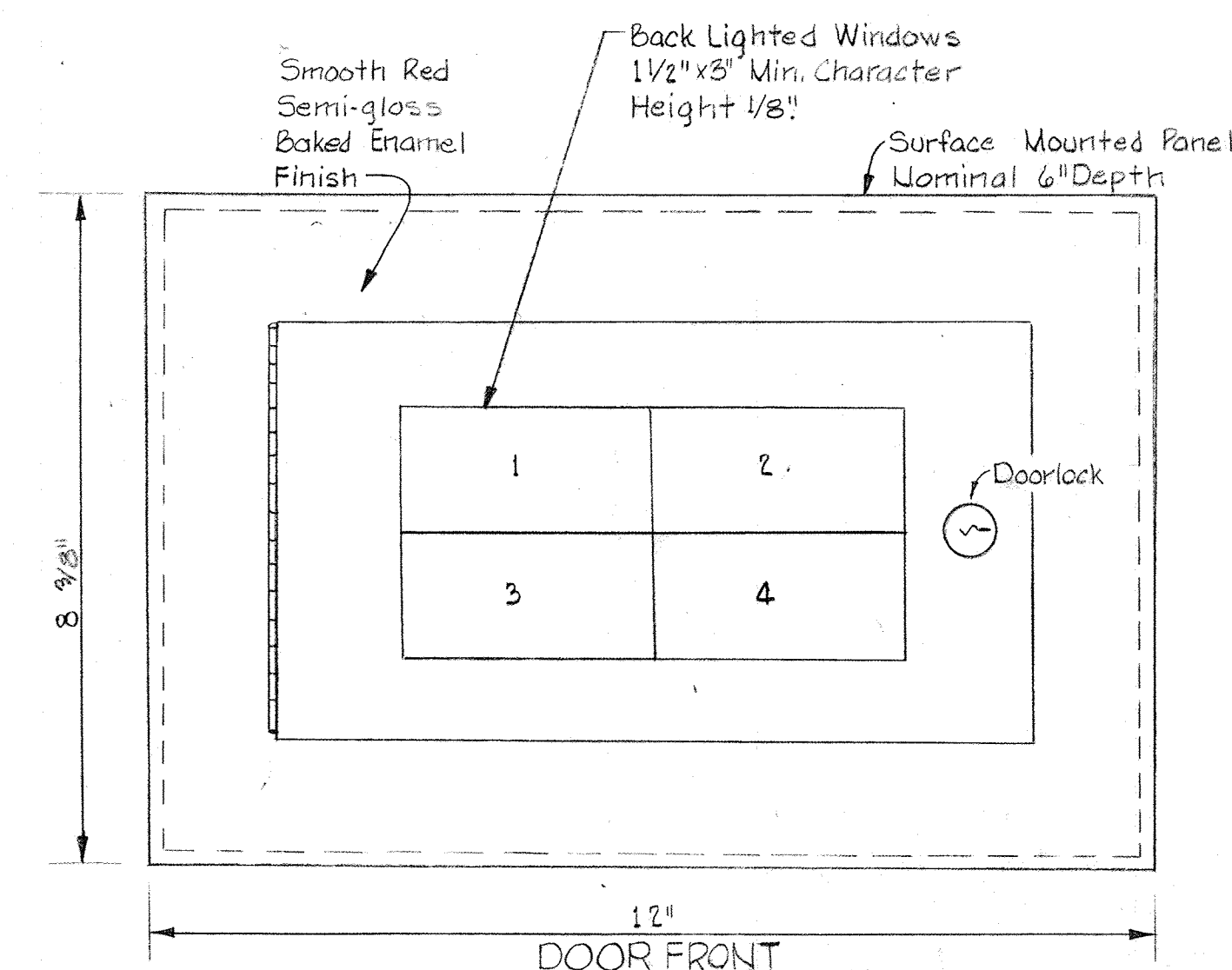
NAMEPLATES

1. ALARM
2. TROUBLE
3. NORMAL
4. SILENCE
5. NORMAL POWER
6. RESET
7. SUPVY. POWER TROUBLE
8. OPER. POWER TROUBLE
9. ELEV. 128 & 130
10. ELEV. 142
11. ELEV. 156
12. BLANK (Spare)
13. BLANK (Spare)
14. REMOTE LINE

**ONE LINE DIAGRAM
FIRE ALARM SYSTEM**
No Scale

Point No.	Window Inscription	ECD No.
1	DEWATER. BASEMENT & DIGESTER GALLERY	
2	THICKENER ROOM & CHEMICAL AREA	
3	VACUUM FILTER BLDG	
4	BLANK	

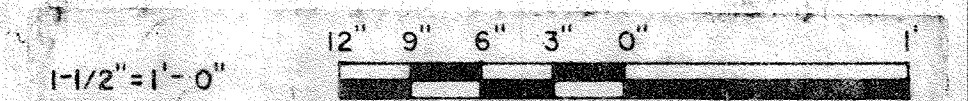
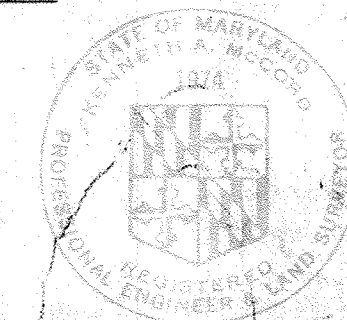
FIRE ALARM ANNUNCIATOR SCHEDULE
3 REQUIRED



FIRE ALARM ANNUNCIATOR PANEL
(2 REQUIRED)

NOTES:

1. For General Electrical Notes & Legend, See Sheet E-2
2. Five-Zone Fire Alarm Control Panel shall be connected as follows:
Zone 1: Elev. 128 & 130
Zone 2: Elev. 142
Zone 3: Elev. 156
Zone 4: Spare (Future Use)
Zone 5: Spare (Future Use)
3. All wiring shall be #14 AWG in 3/4" c unless otherwise noted.
4. Terminate 2-1/2" empty conduits up in ceiling space in coupling with brass plug for future extension.
5. Provide 1" empty conduit up to Pullbox #31 for future use.



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HOWARD COUNTY, MARYLAND
DATE: 3/20/75
W. O. Gilbert
CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 501-S

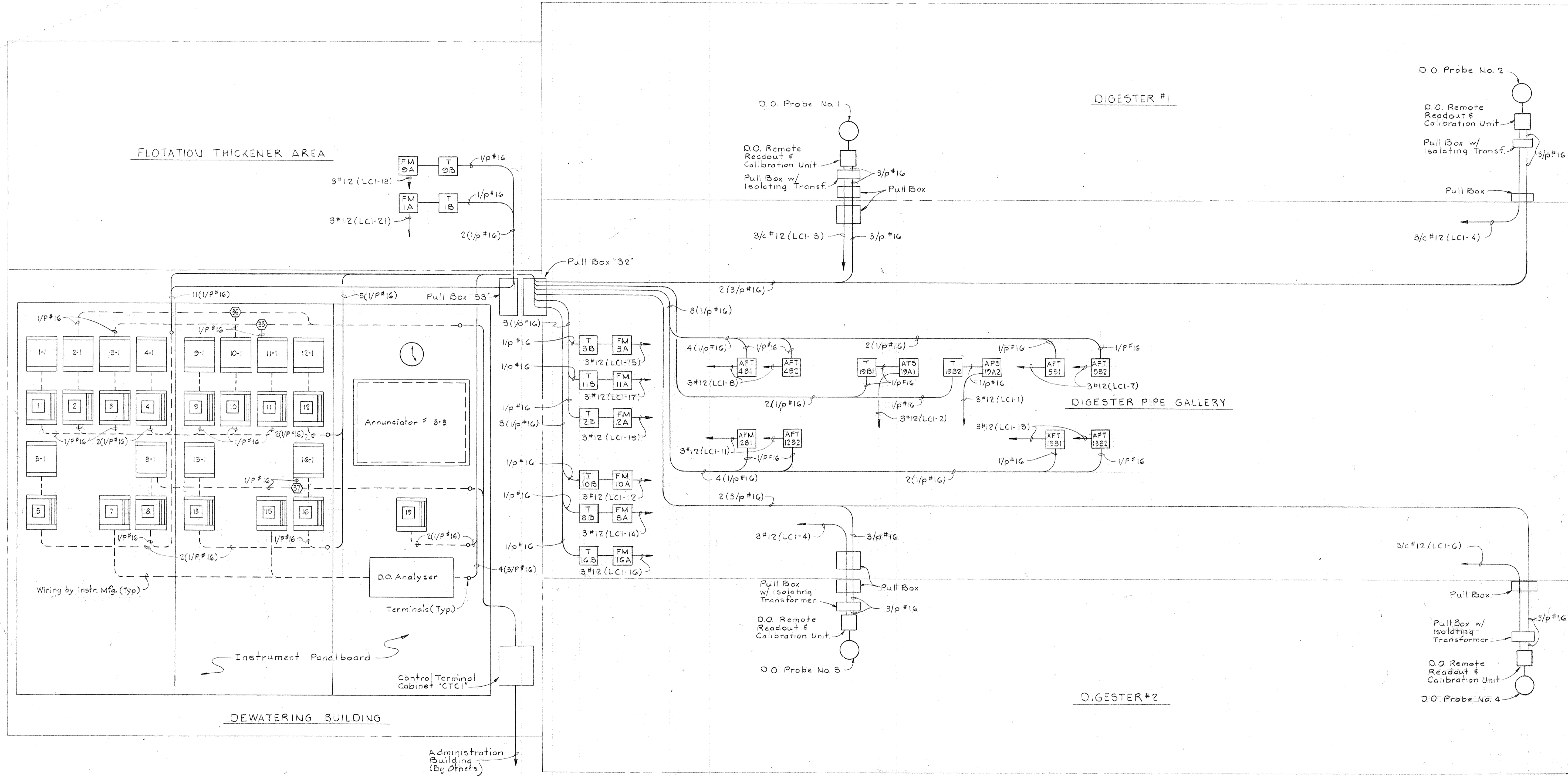
ELECTRICAL
MISCELLANEOUS
ONE LINE DIAGRAM
FIRE ALARM SYSTEM

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 123
OF 126

SCALE
AS
NOTED

- NOTES:**
1. For General Electrical Notes & Legend, See Sheet E-2
 2. Symbols used are as follows:
 T - Transmitter
 FM - Flowmeter
 AFT - Air Flow Transmitter
 ATS - Air Temperature Sensing Device
 APS - Air Pressure Sensing Device
 3. See Mechanical Dwg. M-6 & M-33 and Electrical Plans for device no. designation & location.



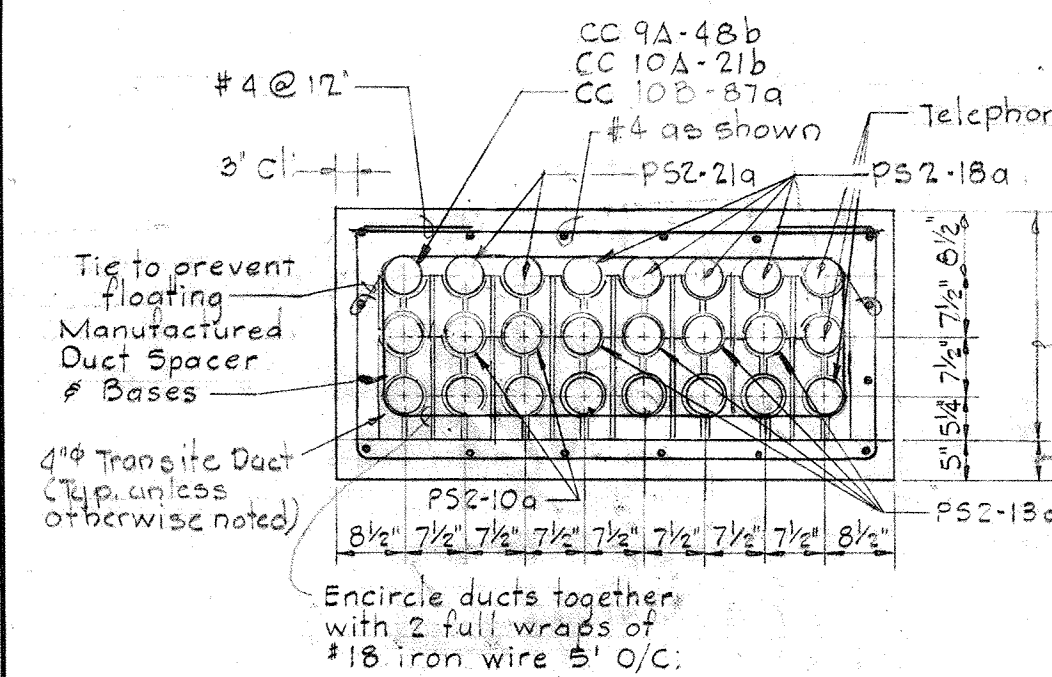
METERS AND INSTRUMENTATION WIRING DIAGRAMS
 No Scale

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3/20/75 W. O. P. Albert CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 501-S	ELECTRICAL MISCELLANEOUS METERS AND INSTRUMENTATION	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 124 OF 128 SCALE AS NOTED
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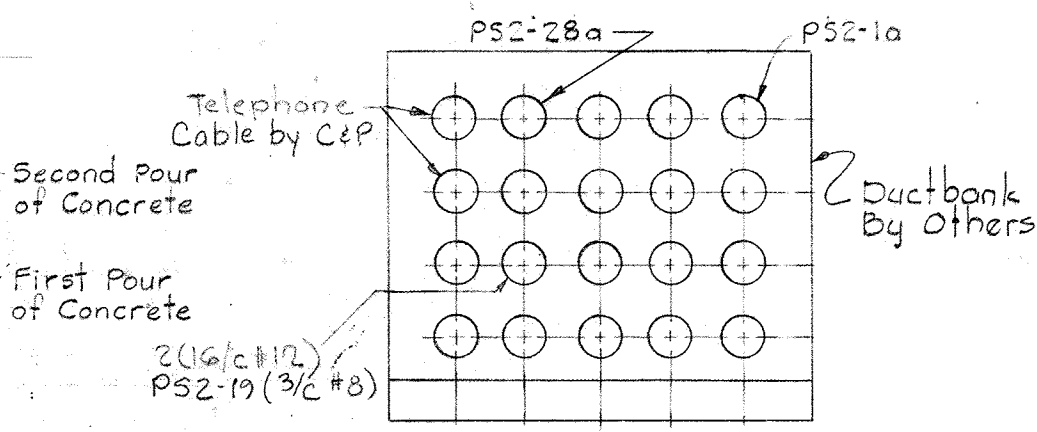
W. O. 6887

SHEET E-36

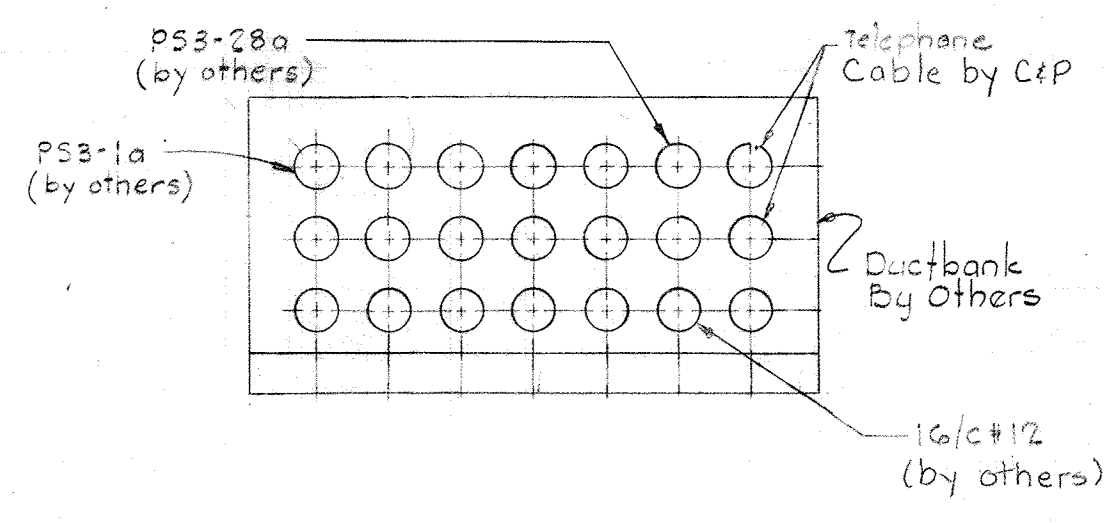
BRUNING 44-510 18392



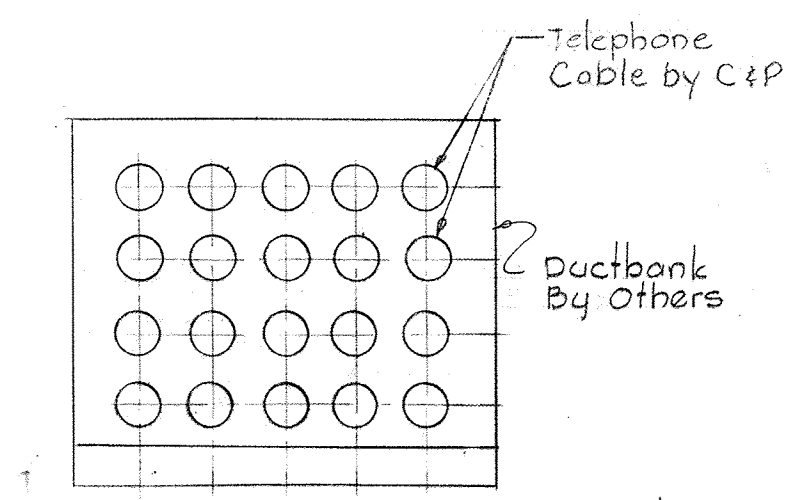
SECTION E37A/E3
See Note #2



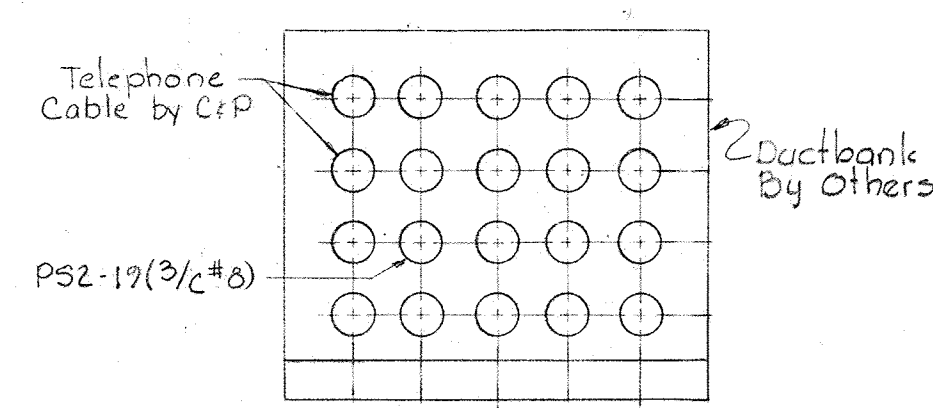
SECTION E37F/E3



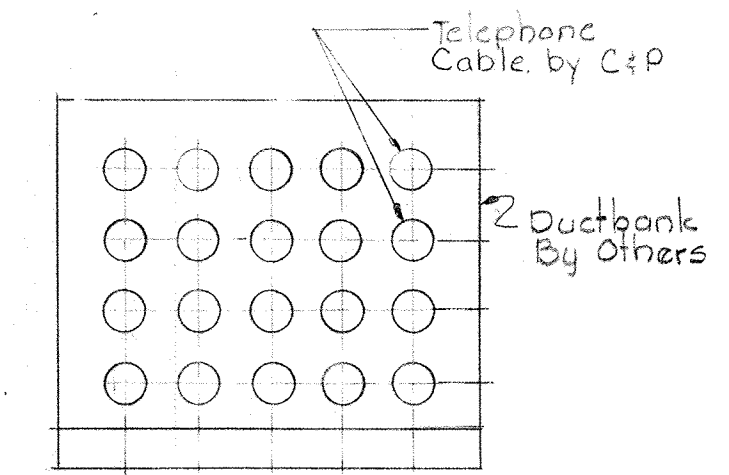
SECTION E37L/E3



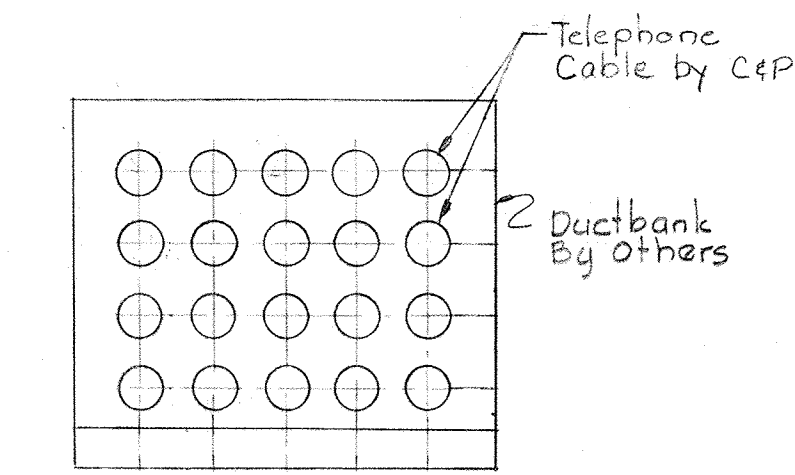
SECTION E37R/E3



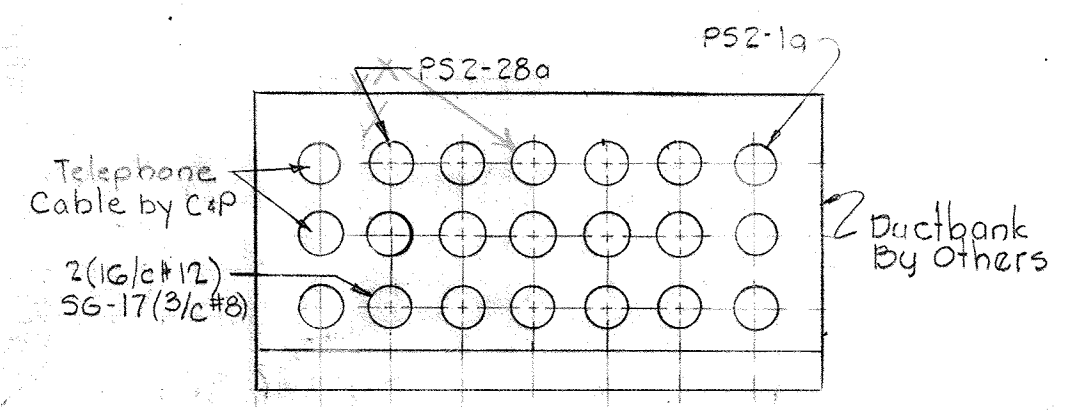
SECTION E37G/E3



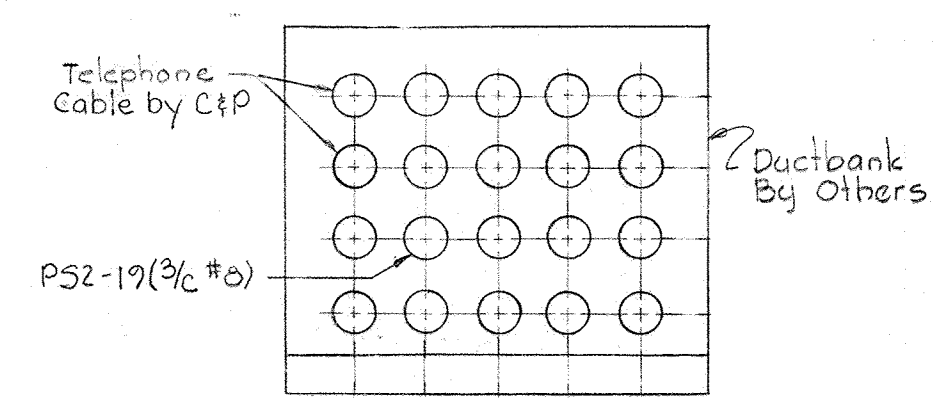
SECTION E37M/E3



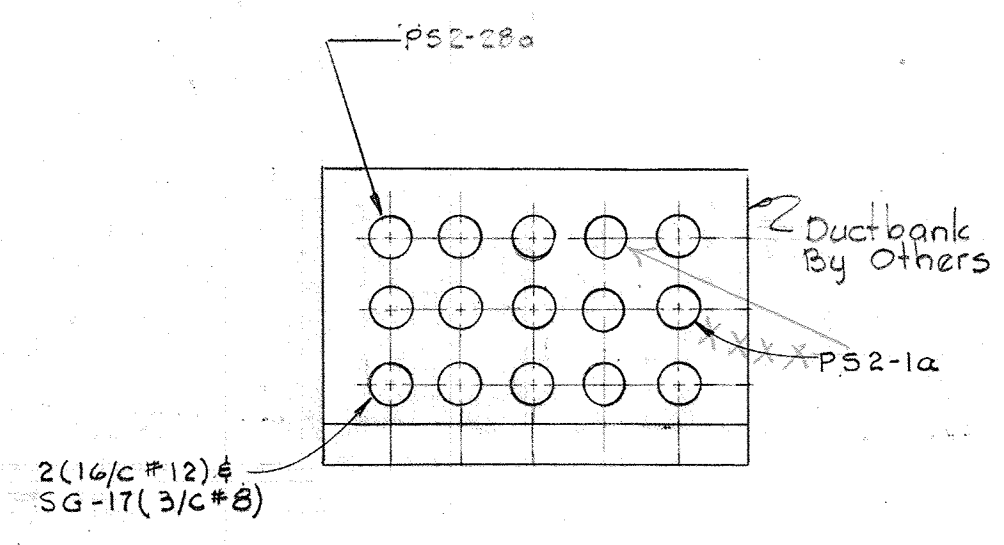
SECTION E37S/E3



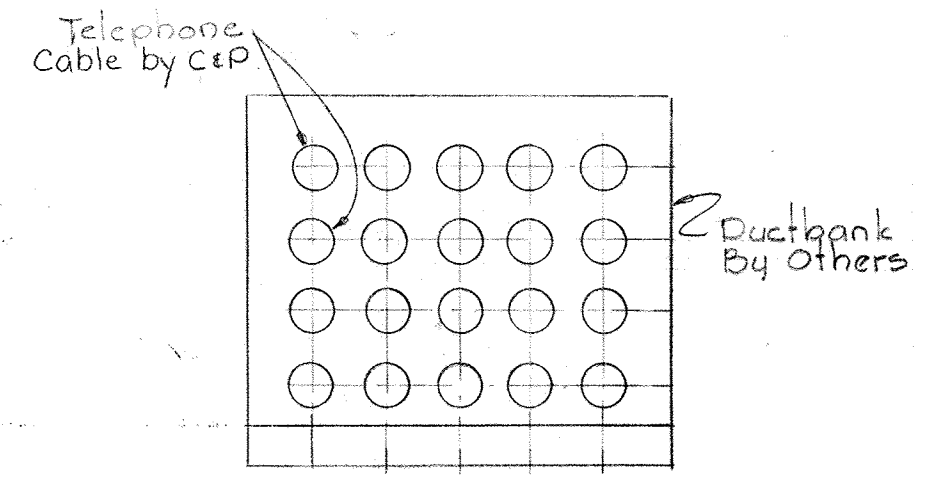
SECTION E37C/E3



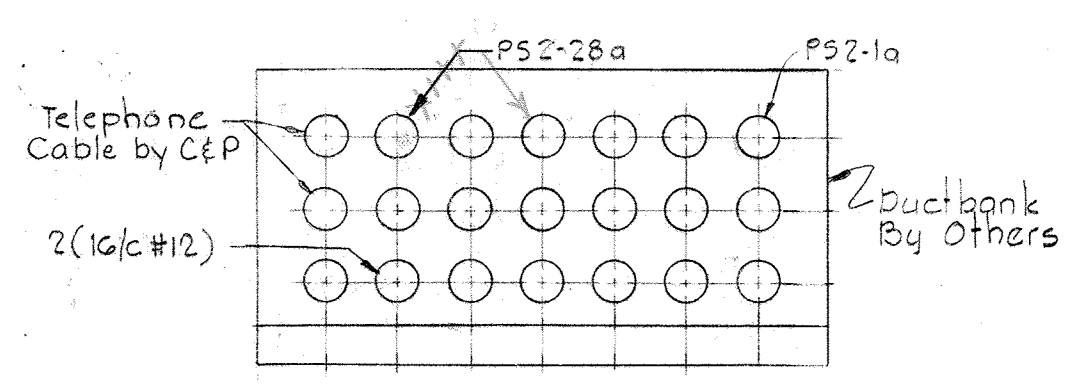
SECTION E37H/E3



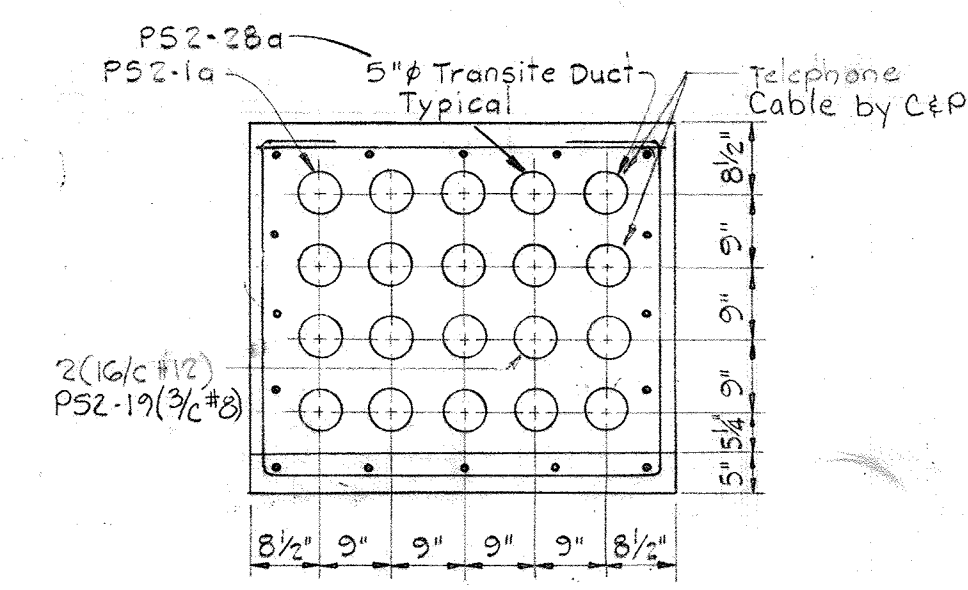
SECTION E37N/E3



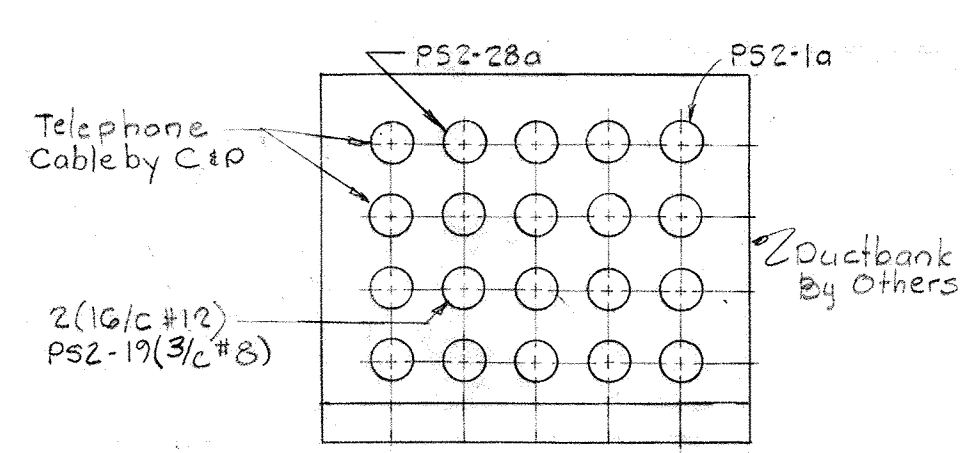
SECTION E37T/E3



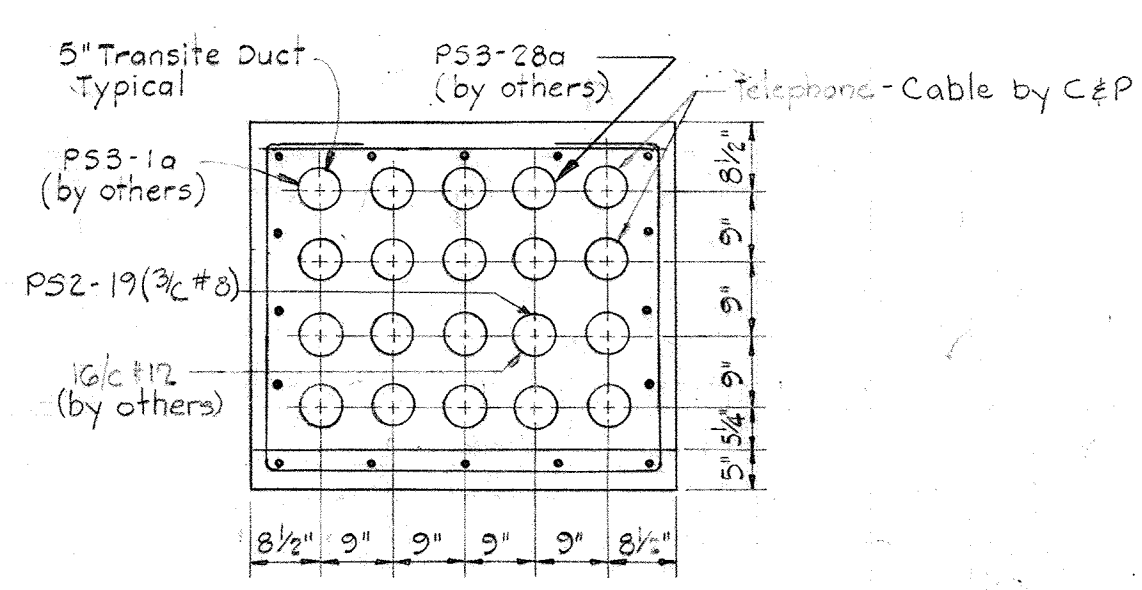
SECTION E37D/E3



SECTION E37J/E3

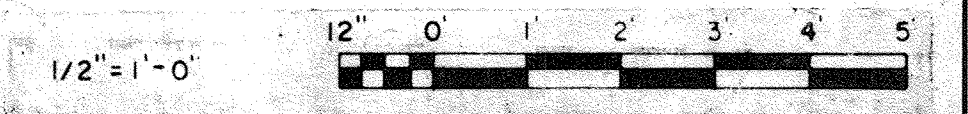


SECTION E37E/E3



SECTION E37K/E3

NOTES:
 1. For General Electrical Notes & Legend see Sheet E-2.
 2. In Ductbank SECTION E37A/E3, the duct spacers, the ties to prevent floating of duct, the method of concrete pours and reinforcing steel are typical for all ductbank sections unless otherwise noted.



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 HOWARD COUNTY, MARYLAND
 DATE: 3/20/15
 W. O. Salbeck
 CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 50I-S

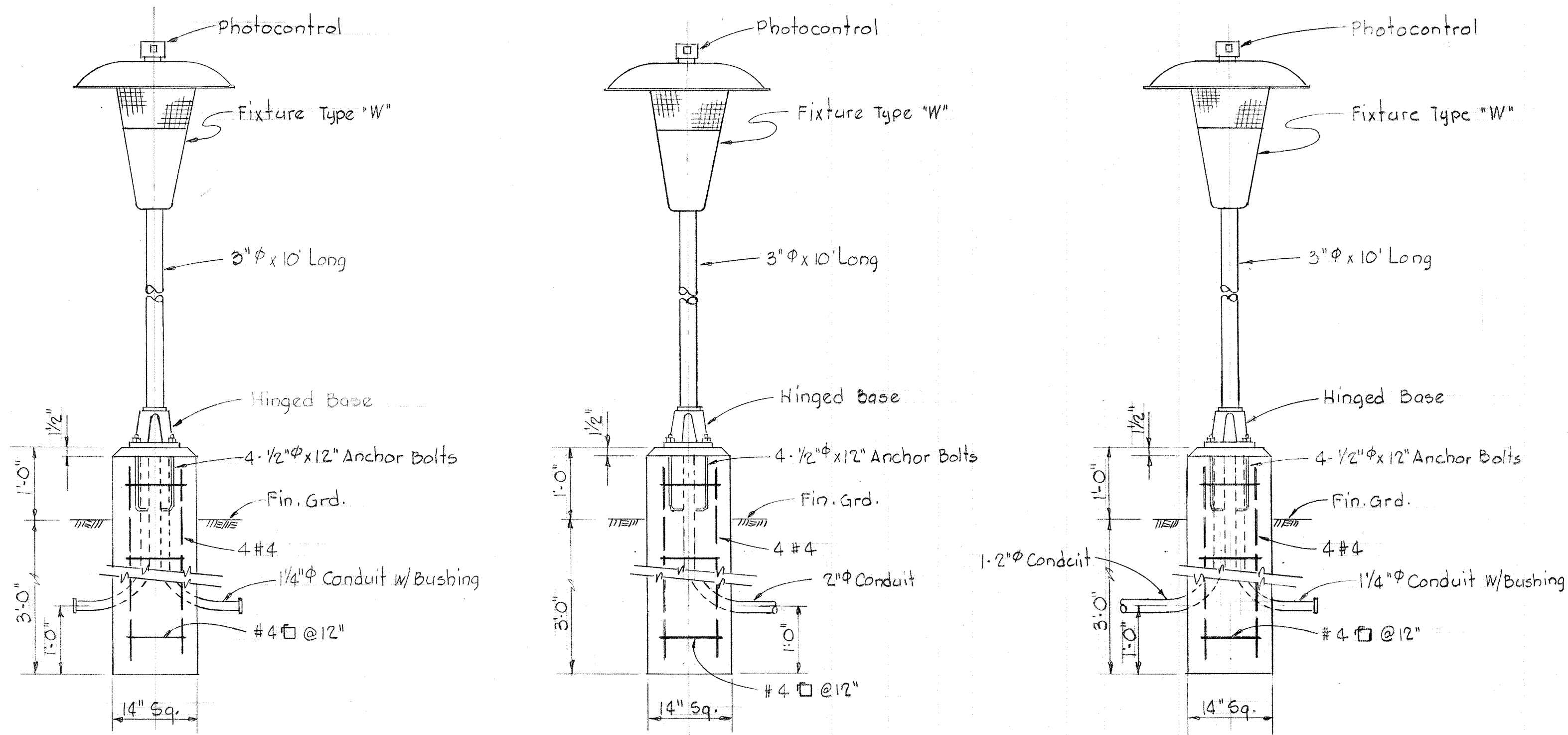
ELECTRICAL
 MISCELLANEOUS
 UNDERGROUND DUCTBANK DETAILS

SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 4

DRAWING
 NO. 125
 OF 128

SCALE
 1/2"=1'-0"

BRUNING 44-510 18392



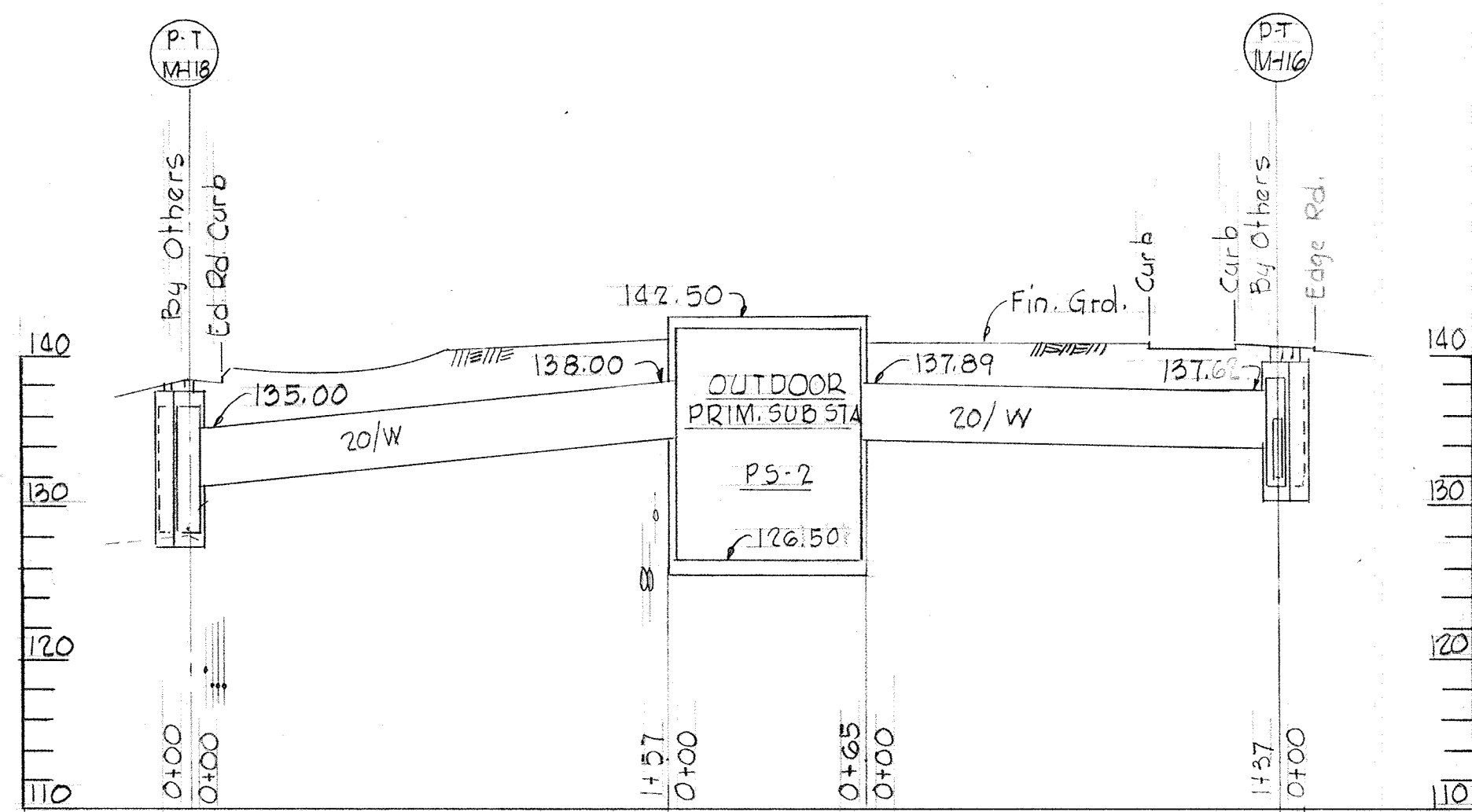
DETAIL "A"

DETAIL "B"

DETAIL "C"

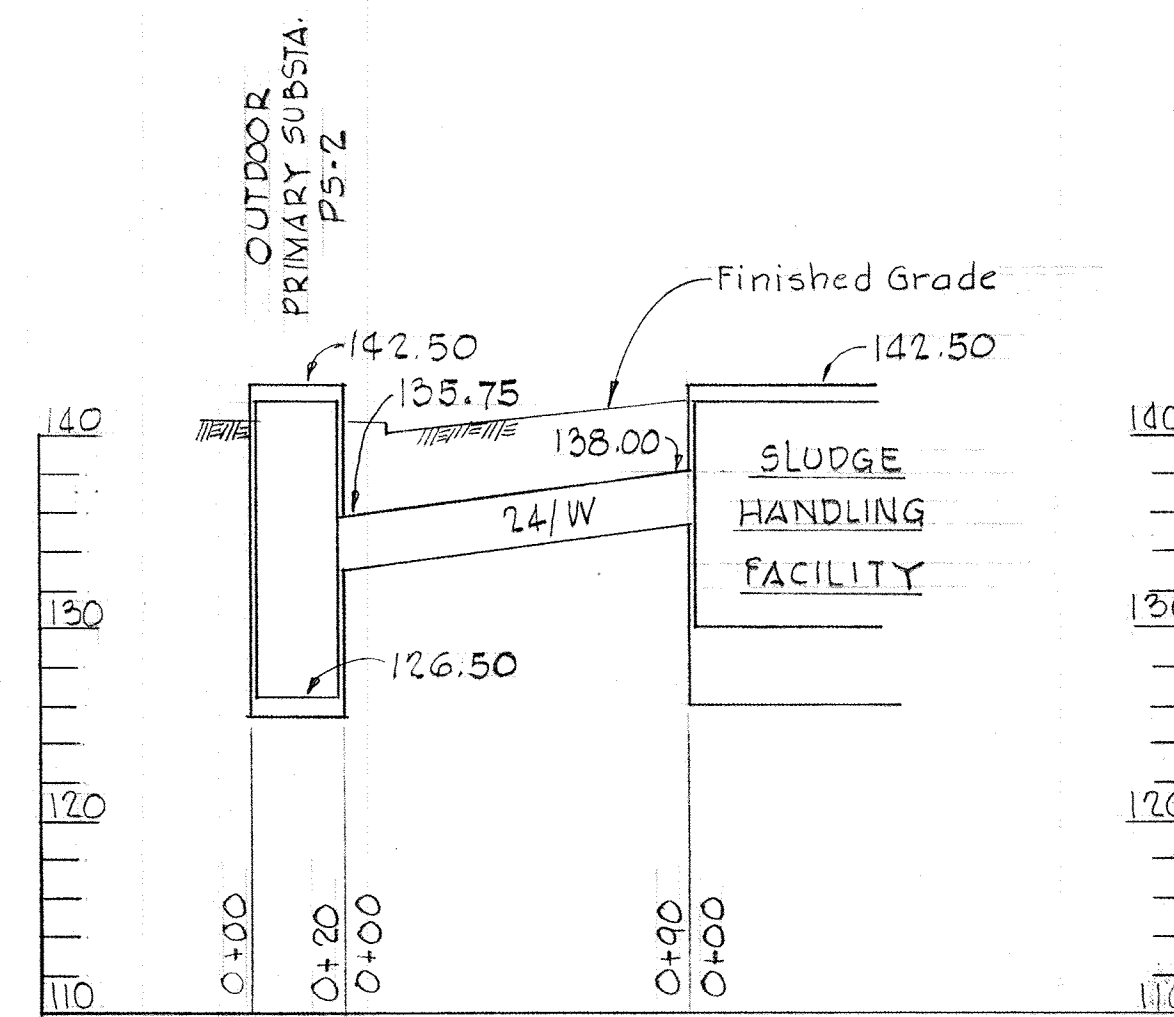
FOUNDATION DETAILS FOR TYPE "W" LIGHTING FIXTURES

Scale 3/4"=1'-0"



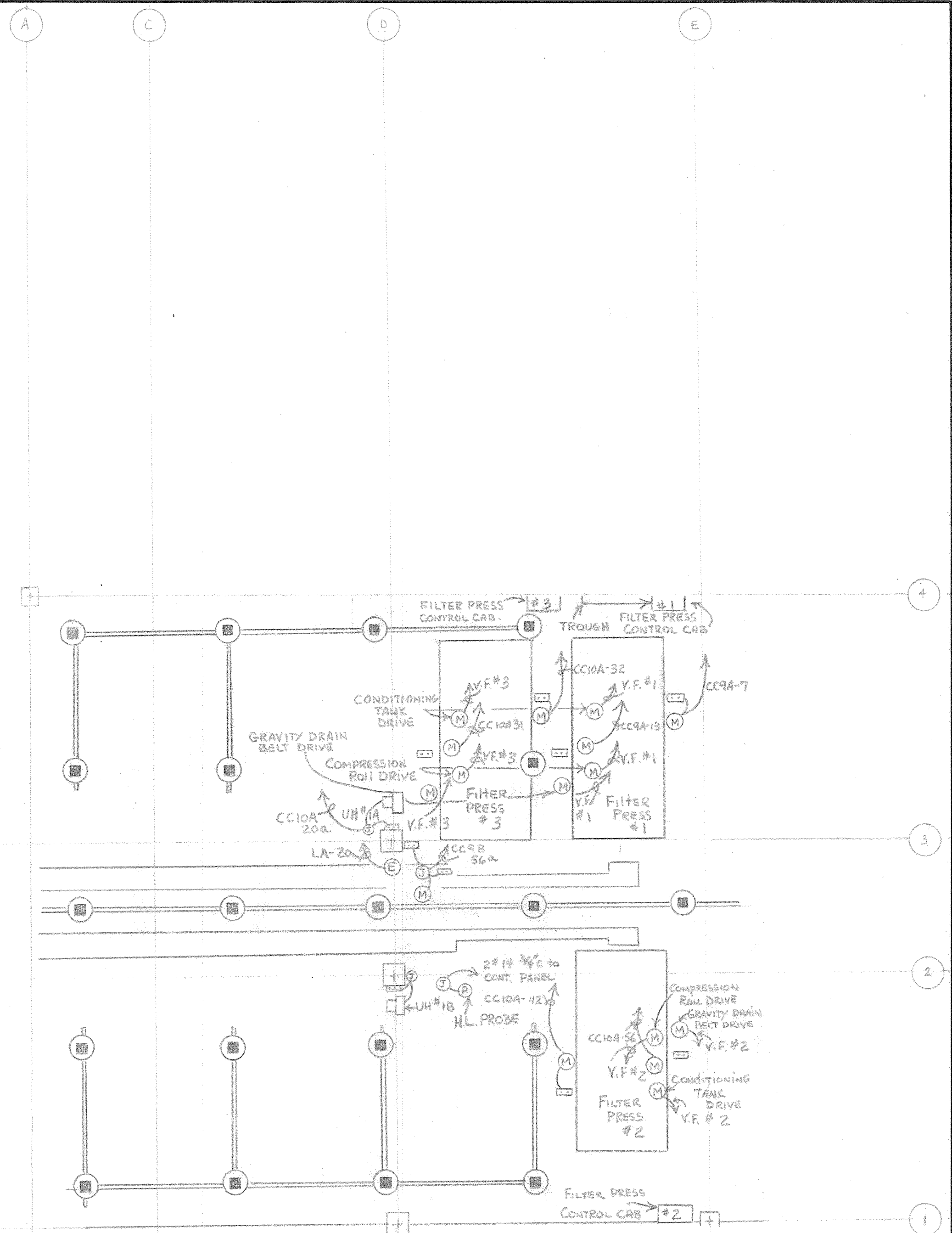
PROFILE "A"

Scale Horiz. 1"=50'
Vert. 1"=10'



PROFILE "B"

Scale Horiz. 1"=50'
Vert. 1"=10'



PLAN-ELEVATION 156 REF DWG E 15

NOT TO SCALE

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HOWARD COUNTY, MARYLAND

CONTRACT NO. 50I-S

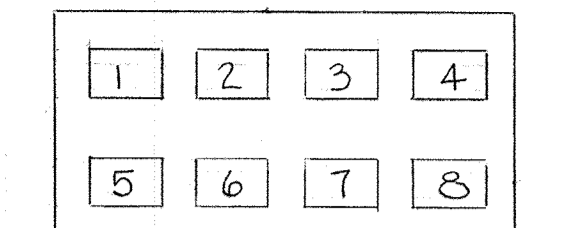
ELECTRICAL
MISCELLANEOUS DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

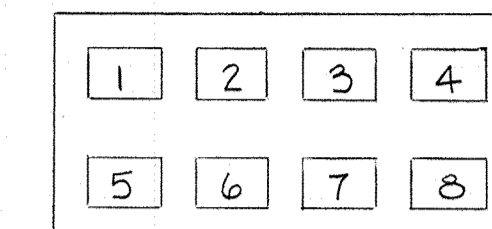
DRAWING
NO. 126
OF 128

SCALE
As
Shown

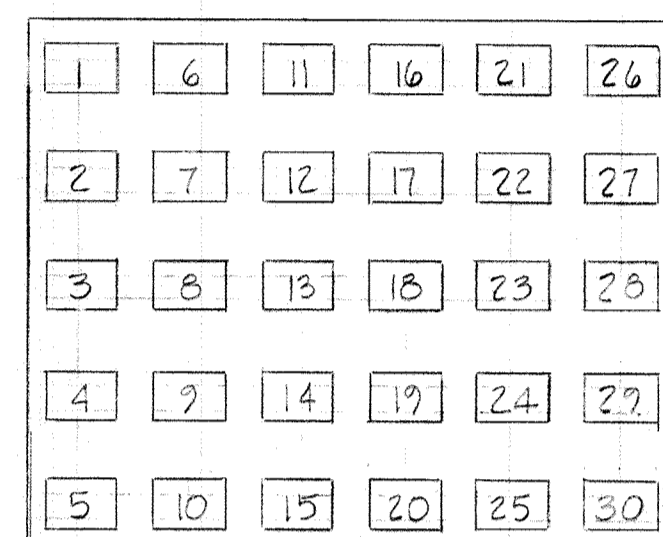
ANNUNCIATOR # 8-1			ANNUNCIATOR # 8-3 (CONT)			ANNUNCIATOR # 13		
POINT NO.	WINDOW INSCRIPTION	ECD NO. SHT. NO.	POINT NO.	WINDOW INSCRIPTION	ECD NO. SHT. NO.	POINT NO.	WINDOW INSCRIPTION	ECD NO. SHT. NO.
1	MAIN BREAKER OPEN 480V-MCC-CC 9A,B SLUDGE FACILITY	68 E-39	8	BLANK (SPARE UNIT)		1	MAIN SWITCH #1 OPEN SUBSTATION "PS2" PLANT FEEDER	66 E-40
2	MAIN BREAKER OPEN 480V-MCC-CC 10A,B SLUDGE FACILITY	68 E-39	9	BLANK (SPARE UNIT)		2	HIGH TEMPERATURE 2500 KVA TRANSFORMER-1 SUBSTATION "PS2"	44 E-40
3	NO VOLTAGE SER. FDR. 480V-MCC-CC 9A,B SLUDGE FACILITY	69 E-39	10	BLANK (SPARE UNIT)		3	LOW LIQUID LEVEL 2500 KVA TRANSFORMER-1 SUBSTATION "PS2"	44 E-40
4	NO VOLTAGE SER. FDR. 480V-MCC-CC 10A,B SLUDGE FACILITY	69 E-39	11	CENTER DRIVE OVERLOAD GRAVITY THICKENER #1	73 E-39	4	HIGH PRESSURE 2500 KVA TRANSFORMER-1 SUBSTATION "PS2"	44 E-40
5	BLANK (SPARE UNIT)		12	CENTER DRIVE OVERLOAD GRAVITY THICKENER #2	73 E-39	5	MAIN BREAKER #1 OPEN 480 V SWITCHGEAR SUBSTATION "PS2"	45 E-40
6	BLANK (SPARE UNIT)		13	BLANK (SPARE UNIT)		6	TIE BREAKER CLOSED 480V SWITCHGEAR SUBSTATION "PS2"	65 E-40
7	BLANK (SPARE UNIT)		14	ABNORMAL PRESSURE AIR MANIFOLD DIGESTER GALLERY	72 E-39	7	MAIN BREAKER #2 OPEN 480V SWITCHGEAR SUBSTATION "PS2"	45 E-40
8	BLANK (SPARE UNIT)		15	BLANK (SPARE UNIT)		8	HIGH PRESSURE 2500 KVA TRANSFORMER-2 SUBSTATION "PS2"	44 E-40
ANNUNCIATOR # 8-2			16	BLANK (SPARE UNIT)		9	LOW LIQUID LEVEL 2500 KVA TRANSFORMER-2 SUBSTATION "PS2"	44 E-40
POINT NO.	WINDOW INSCRIPTION	ECD NO. SHT. NO.	17	HIGH LIQUID LEVEL FILTRATE RECEIVER #1 SLUDGE FACILITY	65 E-40	10	HIGH TEMPERATURE 2500 KVA TRANSFORMER-2 SUBSTATION "PS2"	44 E-40
1	MAIN BREAKER OPEN 480V-PC-PC1 SLUDGE FACILITY	68 E-39	18	HIGH LIQUID LEVEL FILTRATE RECEIVER #2 SLUDGE FACILITY	65 E-40	11	MAIN SWITCH #2 OPEN SUBSTATION "PS2" PLANT FEEDER	66 E-40
2	MAIN BREAKER OPEN 480V-PC-PC2 SLUDGE FACILITY	68 E-39	19	BLANK (SPARE UNIT)		12	NO VOLTAGE 480V SERVICE #1 SUBSTATION "PS2"	67 E-40
3	NO VOLTAGE SER. FDR. 480V-PC-PC1 SLUDGE FACILITY	69 E-39	20	BLANK (SPARE UNIT)		13	NO VOLTAGE 480V SERVICE #2 SUBSTATION "PS2"	67 E-40
4	NO VOLTAGE SER. FDR. 480V-PC-PC2 SLUDGE FACILITY	69 E-39	21	LOW WATER LEVEL HYDROPNEUMATIC TANK SLUDGE FACILITY	78 E-40	14	BLANK (SPARE UNIT)	
5	BLANK (SPARE UNIT)		22	HIGH LIQUID LEVEL VACUUM FILTER #1-VAT SLUDGE FACILITY	80 E-40	15	BLANK (SPARE UNIT)	
6	BLANK (SPARE UNIT)		23	HIGH LIQUID LEVEL VACUUM FILTER #2-VAT SLUDGE FACILITY	80 E-40	16	BLANK (SPARE UNIT)	
7	BLANK (SPARE UNIT)		24	BLANK (SPARE UNIT)				
8	BLANK (SPARE UNIT)		25	BLANK (SPARE UNIT)				
ANNUNCIATOR # 8-3			26	HIGH WATER LEVEL WET WELL - PROCESS OVERFLOW RETURN RS.	86 E-40			
POINT NO.	WINDOW INSCRIPTION	ECD NO. SHT. NO.	27	LOW WATER LEVEL WET WELL - PROCESS OVERFLOW RETURN RS.	86 E-40			
1	LOW LIQUID LEVEL FLOTATION THICKENER #1 SLUDGE FACILITY	70 E-39	28	BLANK (SPARE UNIT)				
2	HIGH LIQUID LEVEL FLOTATION THICKENER #1 SLUDGE FACILITY	71 E-39	29	BLANK (SPARE UNIT)				
3	LOW LIQUID LEVEL FLOTATION THICKENER #2 SLUDGE FACILITY	70 E-39	30	BLANK (SPARE UNIT)				
4	HIGH LIQUID LEVEL FLOTATION THICKENER #2 SLUDGE FACILITY	71 E-39						
5	BLANK (SPARE UNIT)							
6	BLANK (SPARE UNIT)							
7	BLANK (SPARE UNIT)							



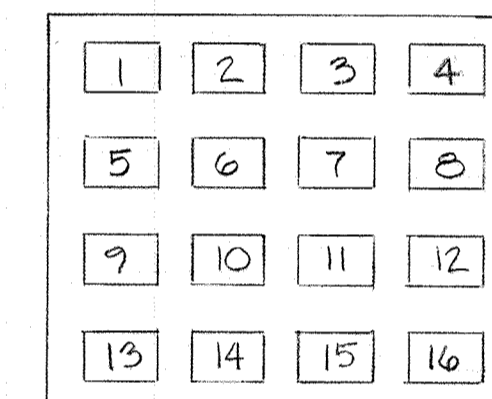
ANNUNCIATOR #8-1
MCC-CC 9A,B
SLUDGE FACILITY



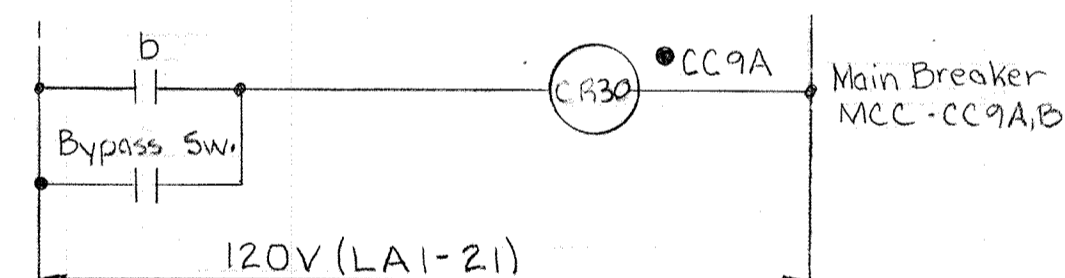
ANNUNCIATOR #8-2
PC-PC1
DEWATERING BUILDING



ANNUNCIATOR #8-3
INSTRUMENT PANELBOARD
SLUDGE FACILITY

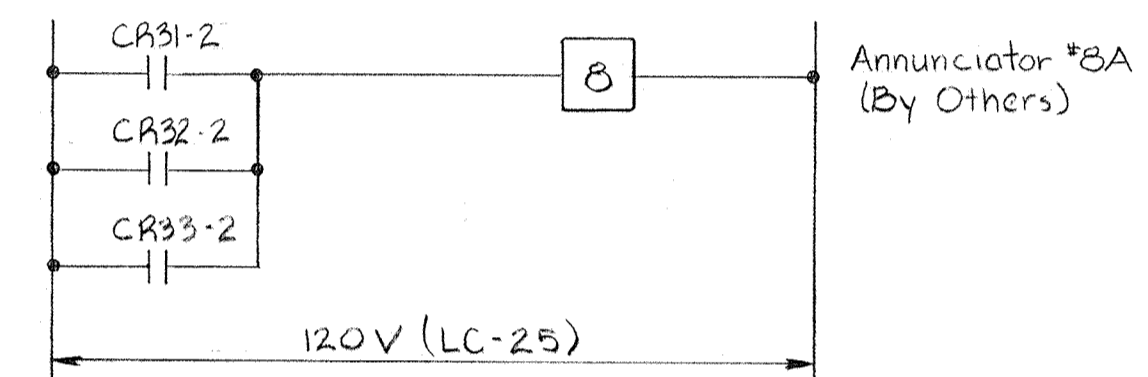
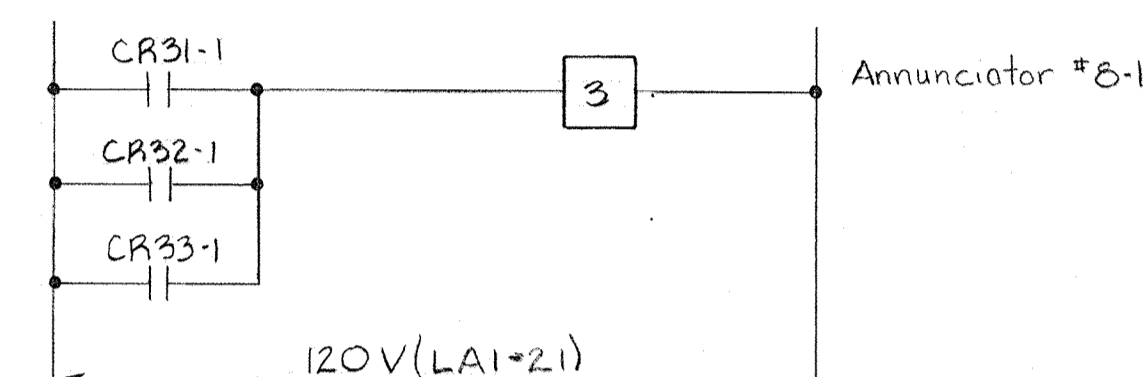
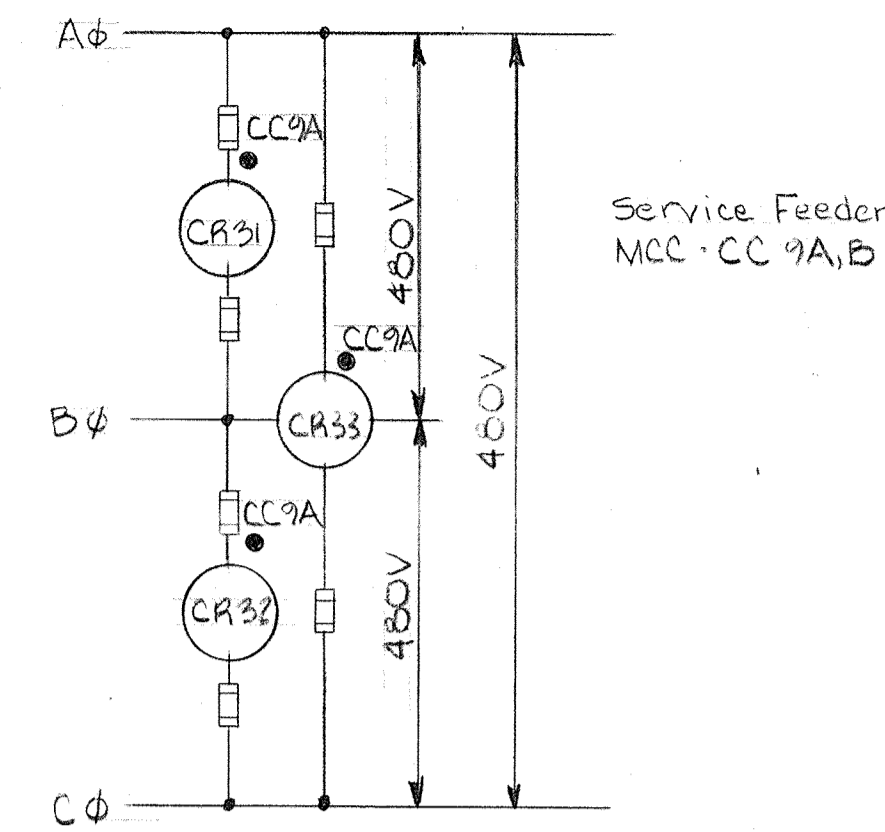


ANNUNCIATOR #13
SUBSTATION "PS2"

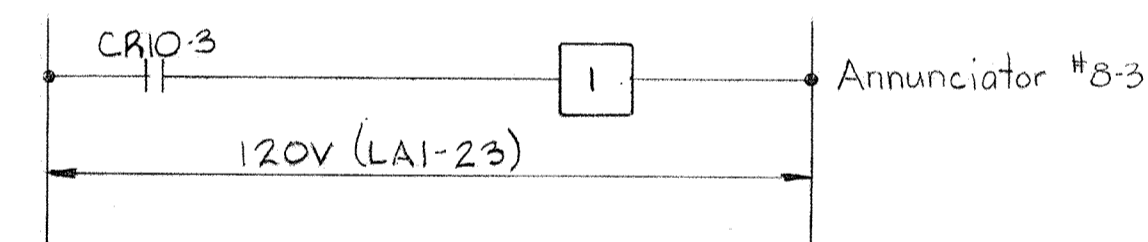


ECD #68
MAIN BREAKER-MCC-CC 9A,B
SLUDGE FACILITY

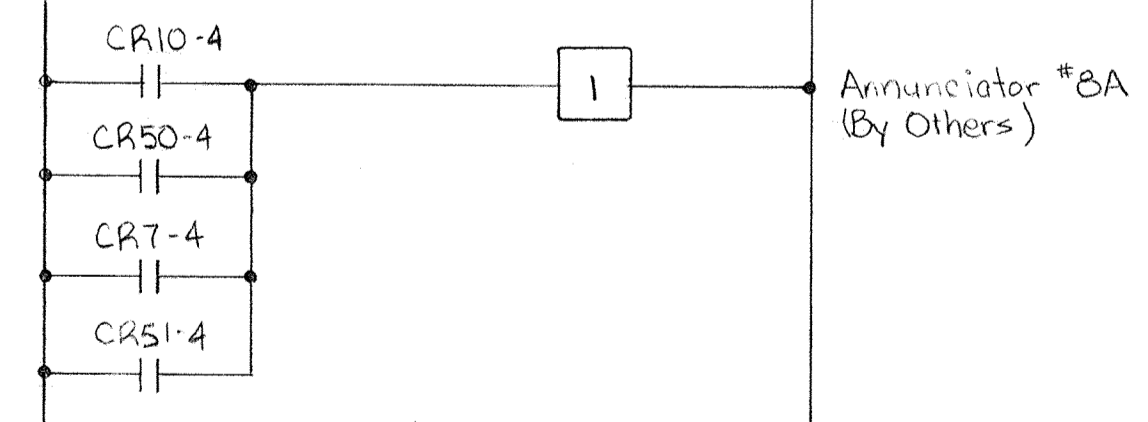
Typical for the following units:
1. Main Breaker - MCC-CC 10A,B - Annunciator # 8-1 & 8A.
2. Main Breaker - PC-PC1 - Annunciator # 8-2 & 8A.
3. Main Breaker - PC-PC2 - Annunciator # 8-2 & 8A.



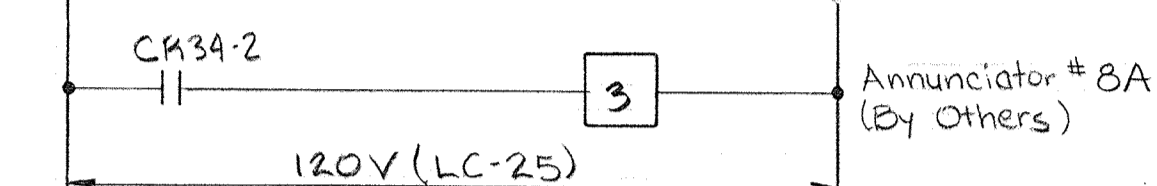
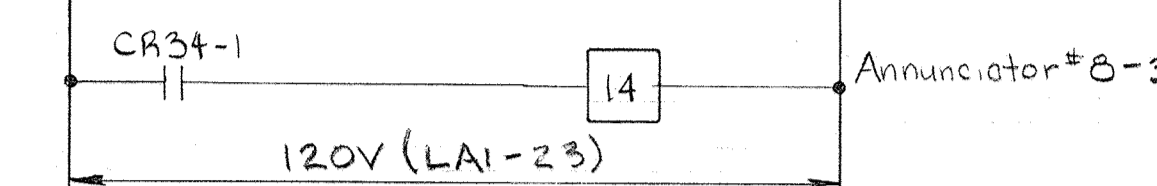
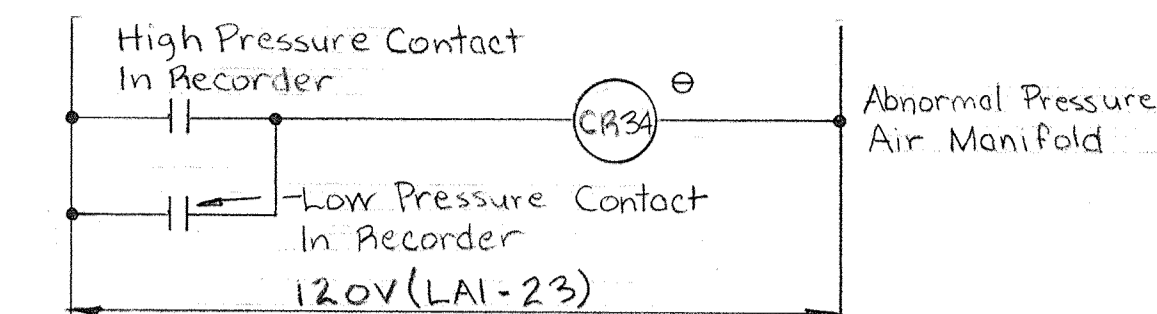
ECD #69
NO VOLTAGE - SERVICE 480V-MCC-
CC 9A,B - DEWATERING BUILDING
Typical for the following units:
1. Service 480V-MCC-CC 10A,B - Annunciator # 8-1 & 8A
2. Service 480V-PC-PC1 - Annunciator # 8-2 & 8A
3. Service 480V-PC-PC2 - Annunciator # 8-2 & 8A



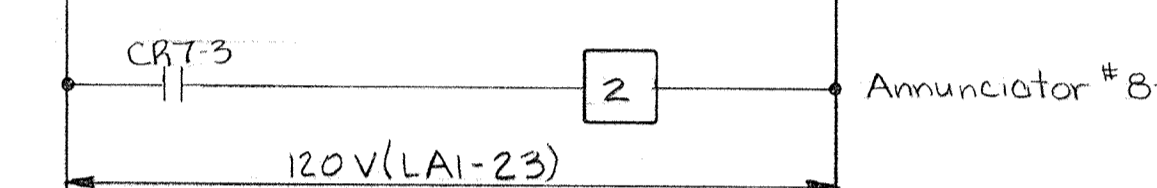
ECD #70
LOW LIQUID LEVEL
FLOTATION THICKENER #1
SLUDGE FACILITY
Typical for the following unit:
1. Low Liquid Level - Flotation Thickener #2



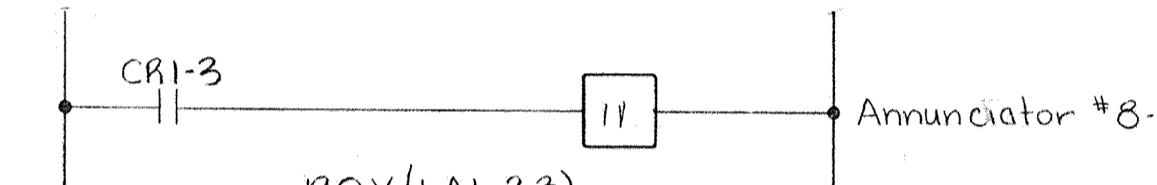
ECD #72
ABNORMAL LEVEL
FLOTATION THICKENERS
SLUDGE FACILITY



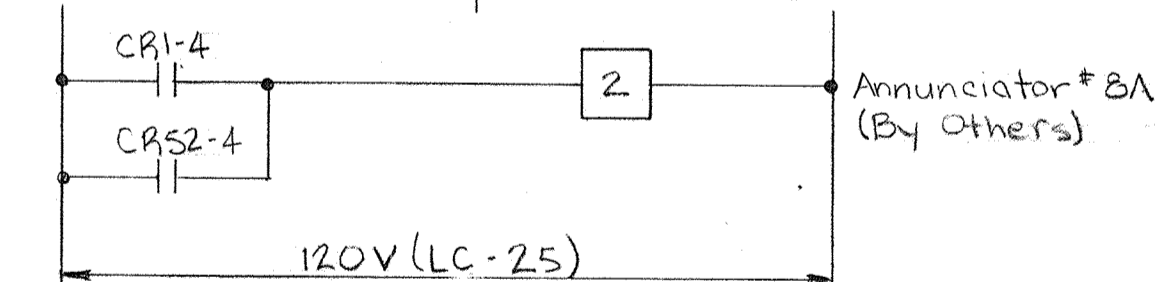
ECD #72
ABNORMAL PRESSURE-AIR
MANIFOLD DIGESTER GALLERY



ECD #71
HIGH LIQUID LEVEL
FLOTATION THICKENER #1
SLUDGE FACILITY
Typical for the following unit:
1. High Liquid Level - Flotation Thickener #2



ECD #73
CENTER DRIVE OVERLOAD-
GRAVITY THICKENERS
(See ECD #7 on E-19)
Typical for the following units:
1. Overload-Gravity Thickener #2



ECD #74
CENTER DRIVE OVERLOAD-
GRAVITY THICKENERS

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DATE _____
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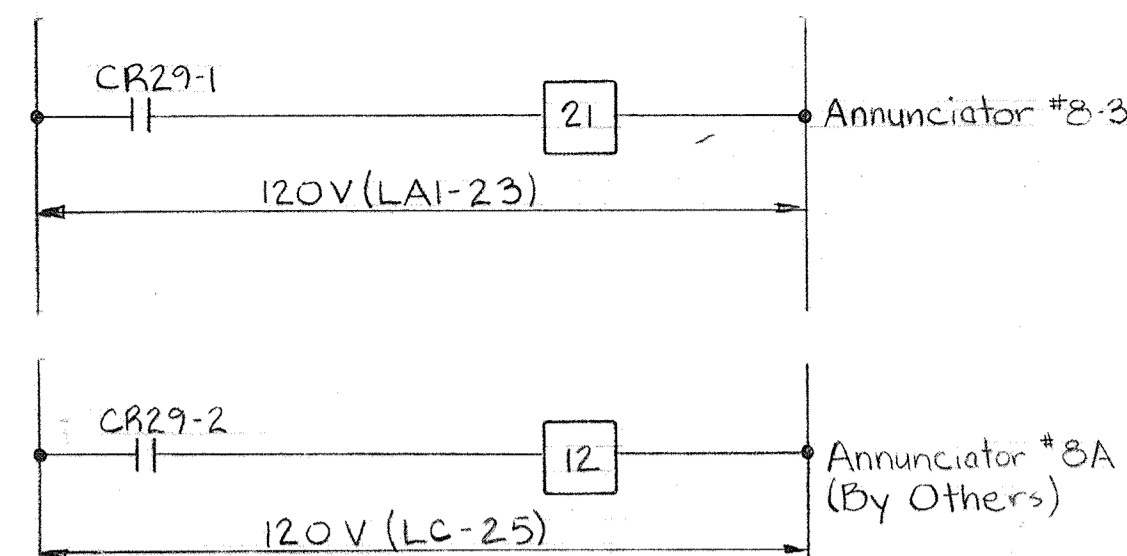
CONTRACT NO. 501-S

ELECTRICAL
ANNUNCIATOR
SCHEDULES, WINDOWS, & WIRING
DIAGRAMS

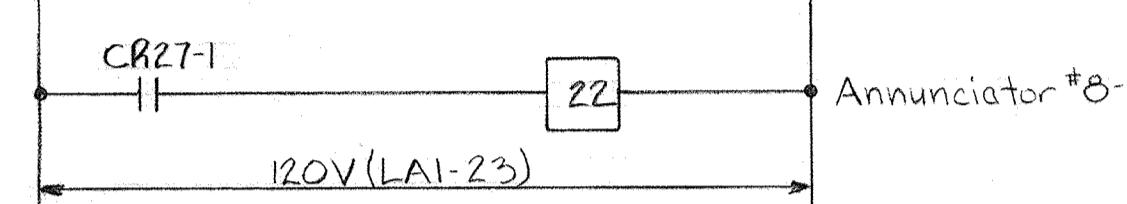
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 127
OF 128

SCALE
AS
NOTED

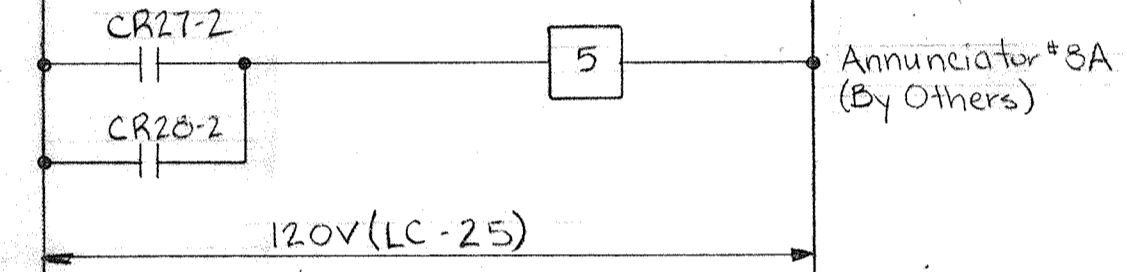


ECD #78
LOW WATER LEVEL
HYDRO-PNEUMATIC TANK
SLUDGE FACILITY

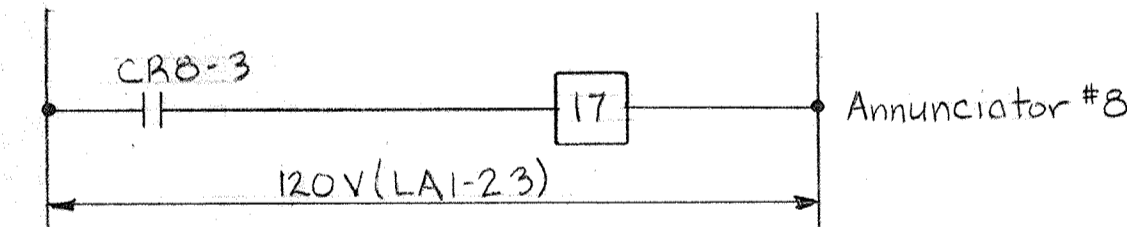


ECD #80
HIGH LIQUID LEVEL
VACUUM FILTER #1 - VAT
SLUDGE FACILITY

Typical for the following unit:
1- Vacuum Filter #2

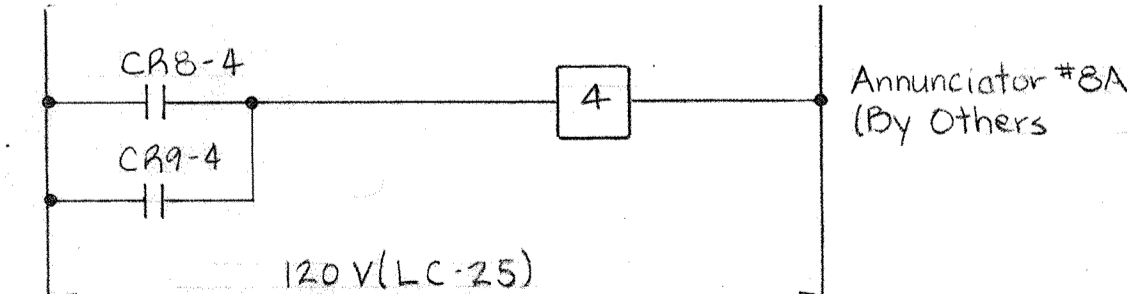


ECD #80
HIGH LIQUID LEVEL
VACUUM FILTER VAT'S
SLUDGE FACILITY

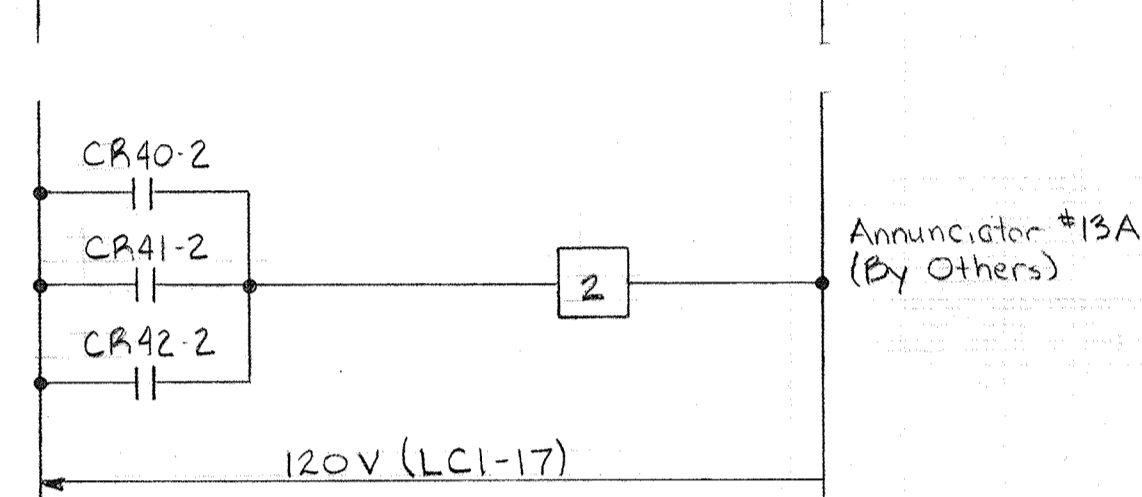
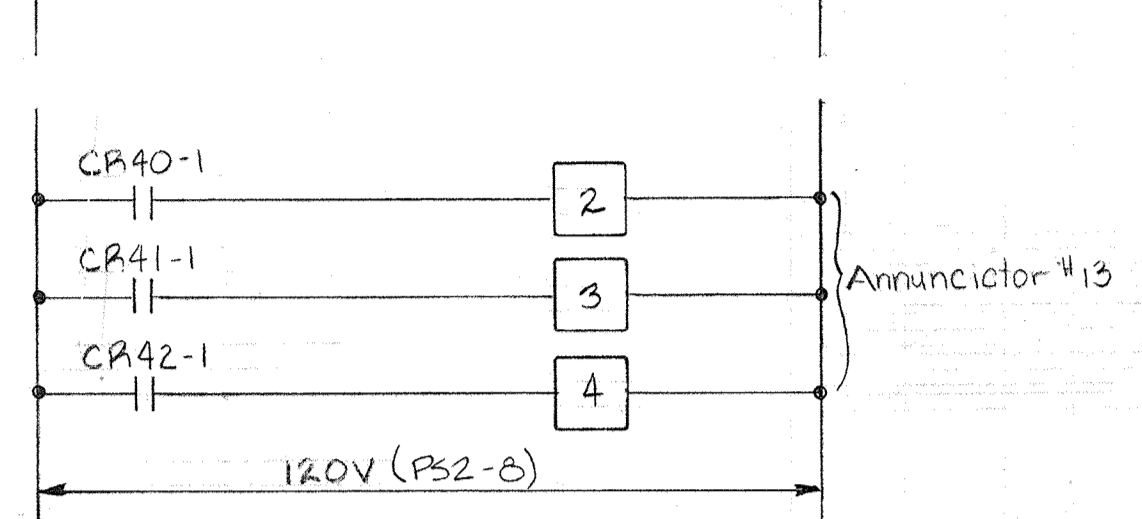
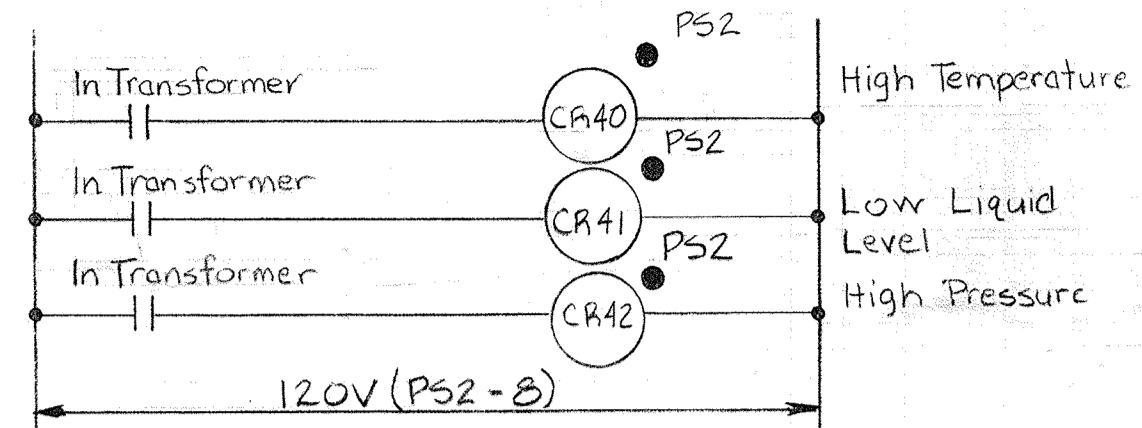


ECD #85
HIGH LIQUID LEVEL
FILTRATE RECEIVER #1
SLUDGE FACILITY

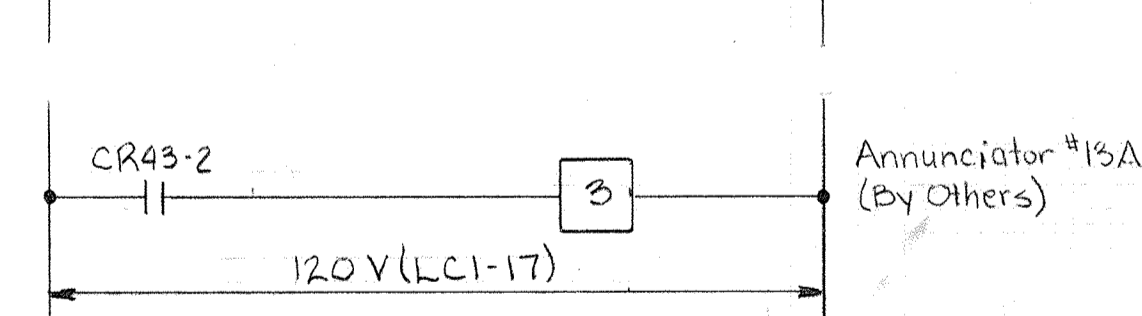
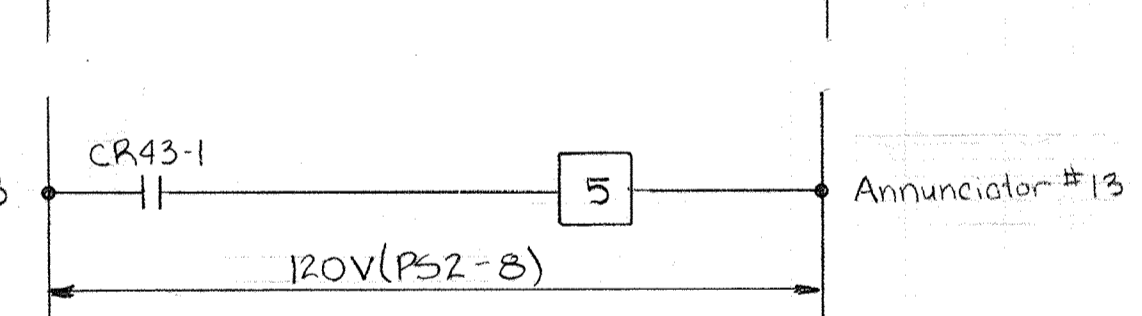
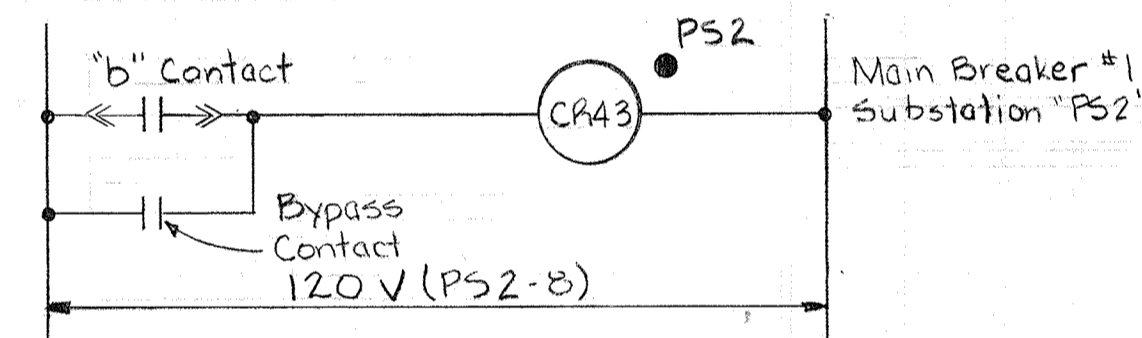
Typical for the following unit:
1- High Liquid Level-Filtrate Receiver #2



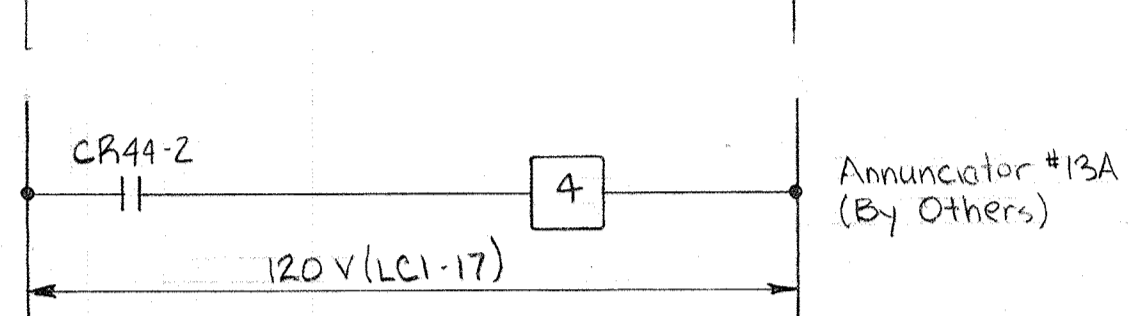
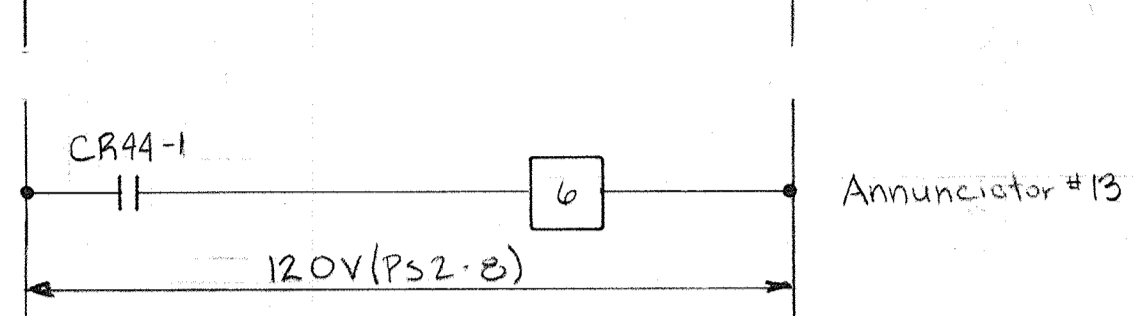
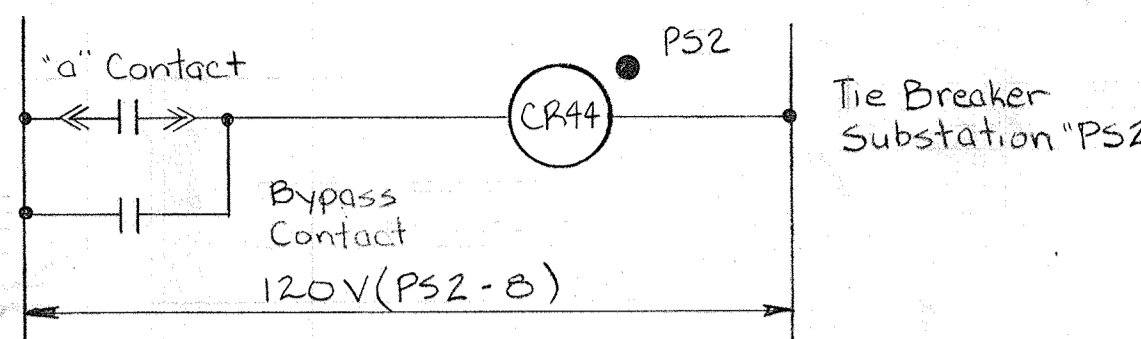
ECD #85
HIGH LIQUID LEVEL
FILTRATE RECEIVERS
SLUDGE FACILITY



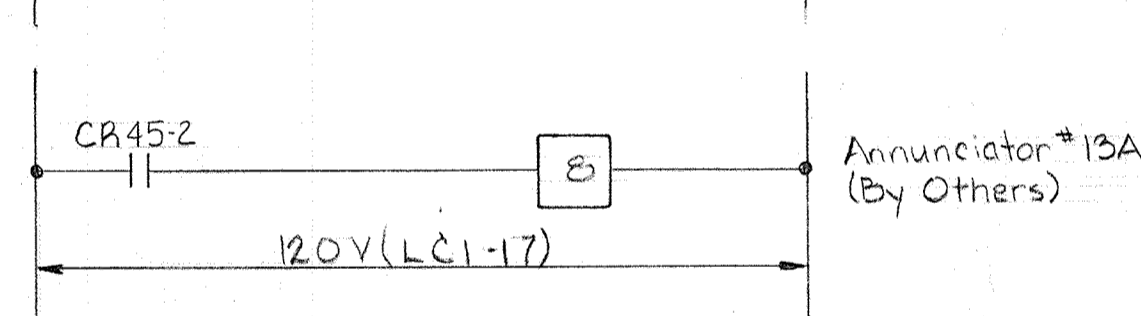
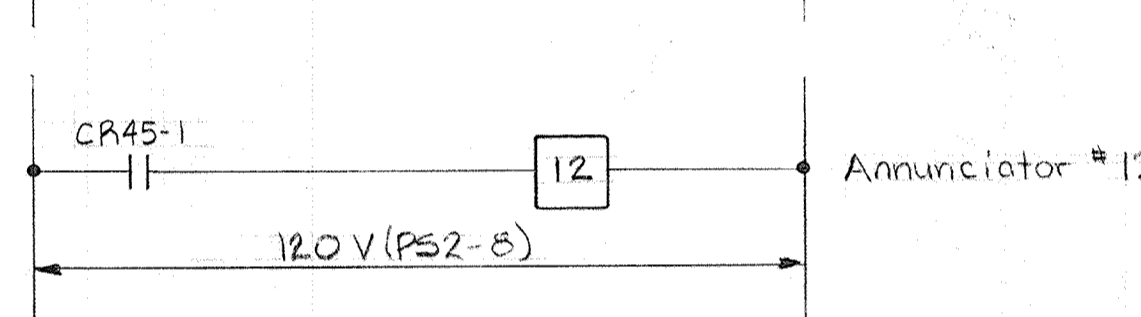
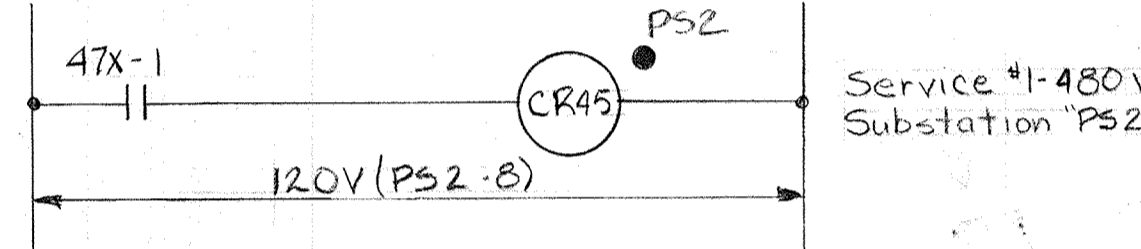
**ELEMENTARY CONTROL
DIAGRAM NO. 44**
ALARM FOR 2500 KVA
TRANSFORMER #1-PS2
Typical for 2500 KVA transformer #2-PS2
Annunciator #13 & 13A



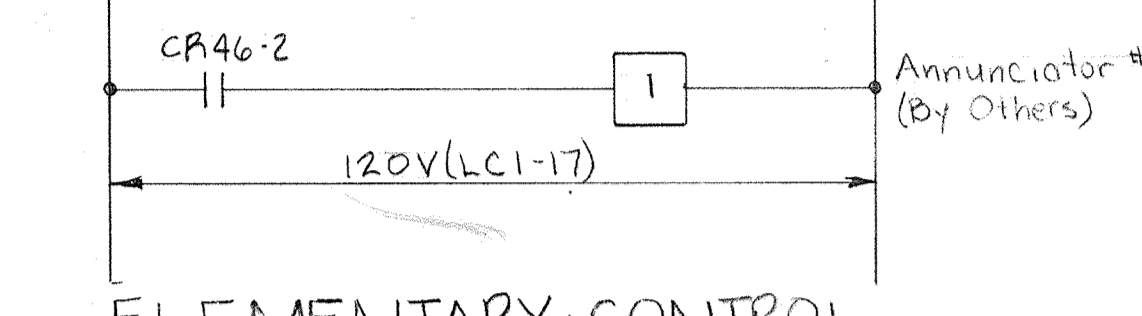
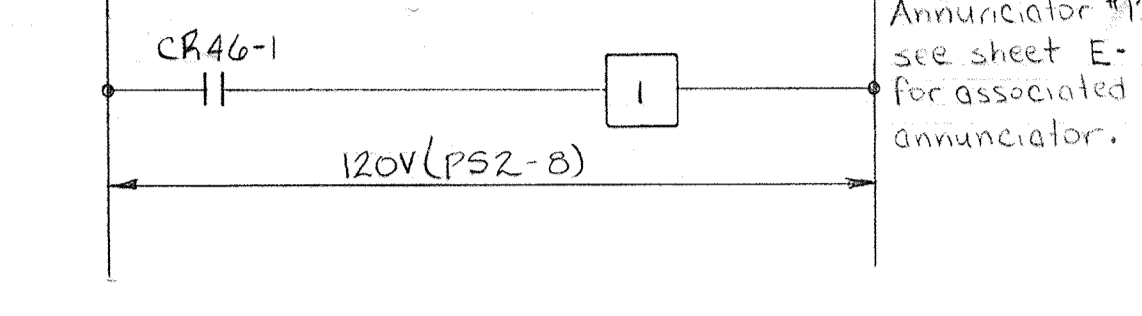
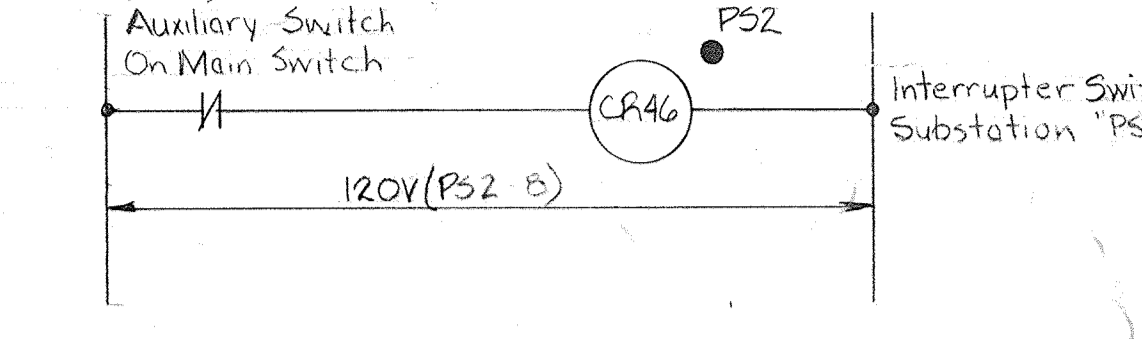
**ELEMENTARY CONTROL
DIAGRAM NO. 45**
POSITION INDICATION FOR
MAIN BREAKER #1-480V
SUBSTATION 'PS2'
Typical for Main Breaker No.2 - 480V
Substation 'PS2'



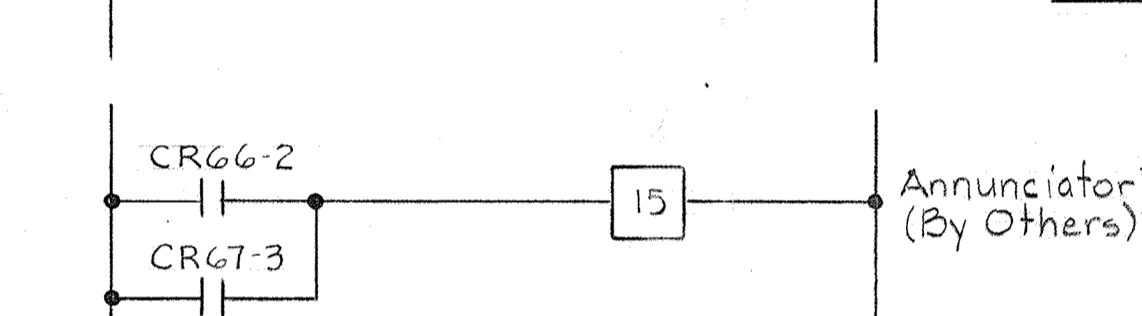
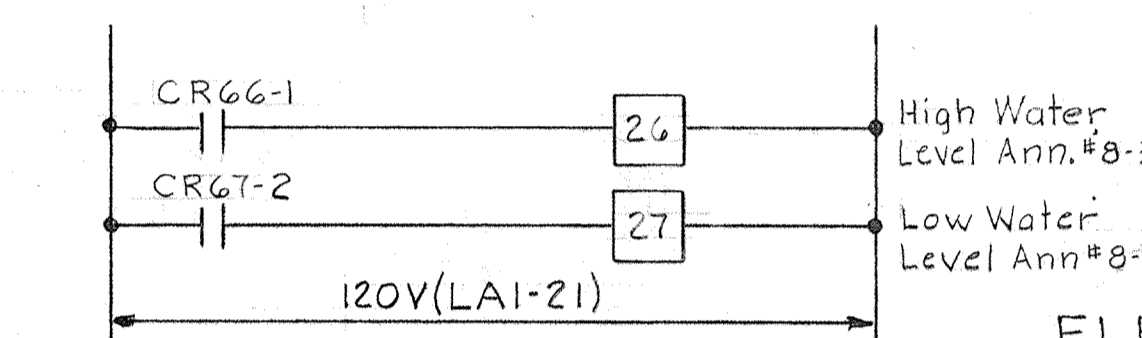
**ELEMENTARY CONTROL
DIAGRAM NO. 65**
POSITION INDICATION FOR
TIE BREAKER-480V
SUBSTATION 'PS2'



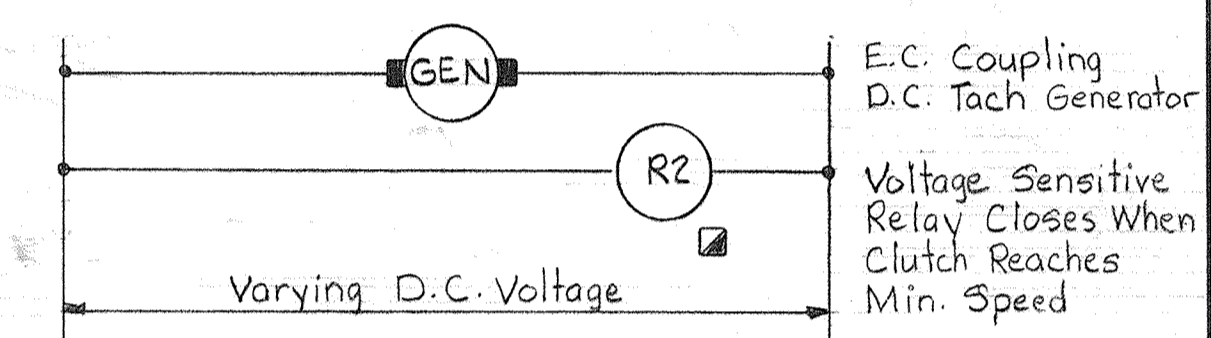
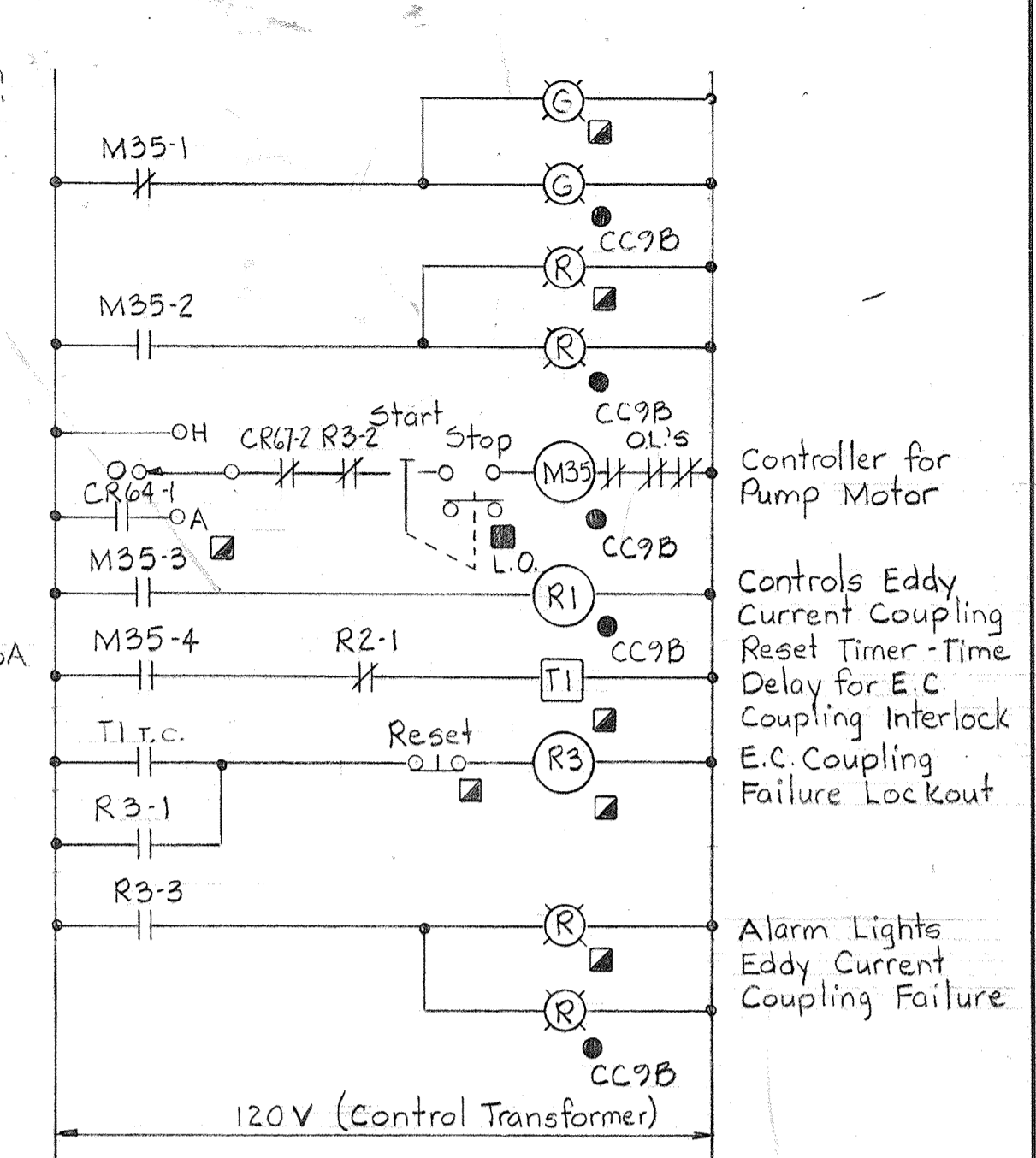
**ELEMENTARY CONTROL
DIAGRAM NO. 67**
NO VOLTAGE - SERVICE #1-
480V SUBSTATION 'PS2'
Typical for No Voltage - Service #2 Substation 'PS2'



**ELEMENTARY CONTROL
DIAGRAM NO. 66**
POSITION INDICATION FOR
INTERRUPTER SWITCH #1
SUBSTATION 'PS2'
Typical for Interrupter Switch #2 - Substation 'PS2'



**ELEMENTARY CONTROL
DIAGRAM NO. 86**
ABNORMAL WET WELL
PROCESS OVERFLOW RETURN PS.
(SEE ECD # 87 on Sheet E-19)



ELEMENTARY CONTROL DIAGRAM NO. 89
(SEE ECD # 87 & Sheet E-19)
Typical for Process Overflow Return Pumps #1 & #2

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE *W.O. 7132 9-28-77*
CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 501-S

ELECTRICAL
ANNUNCIATOR
SCHEDULES, WINDOWS, WIRING
DIAGRAMS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

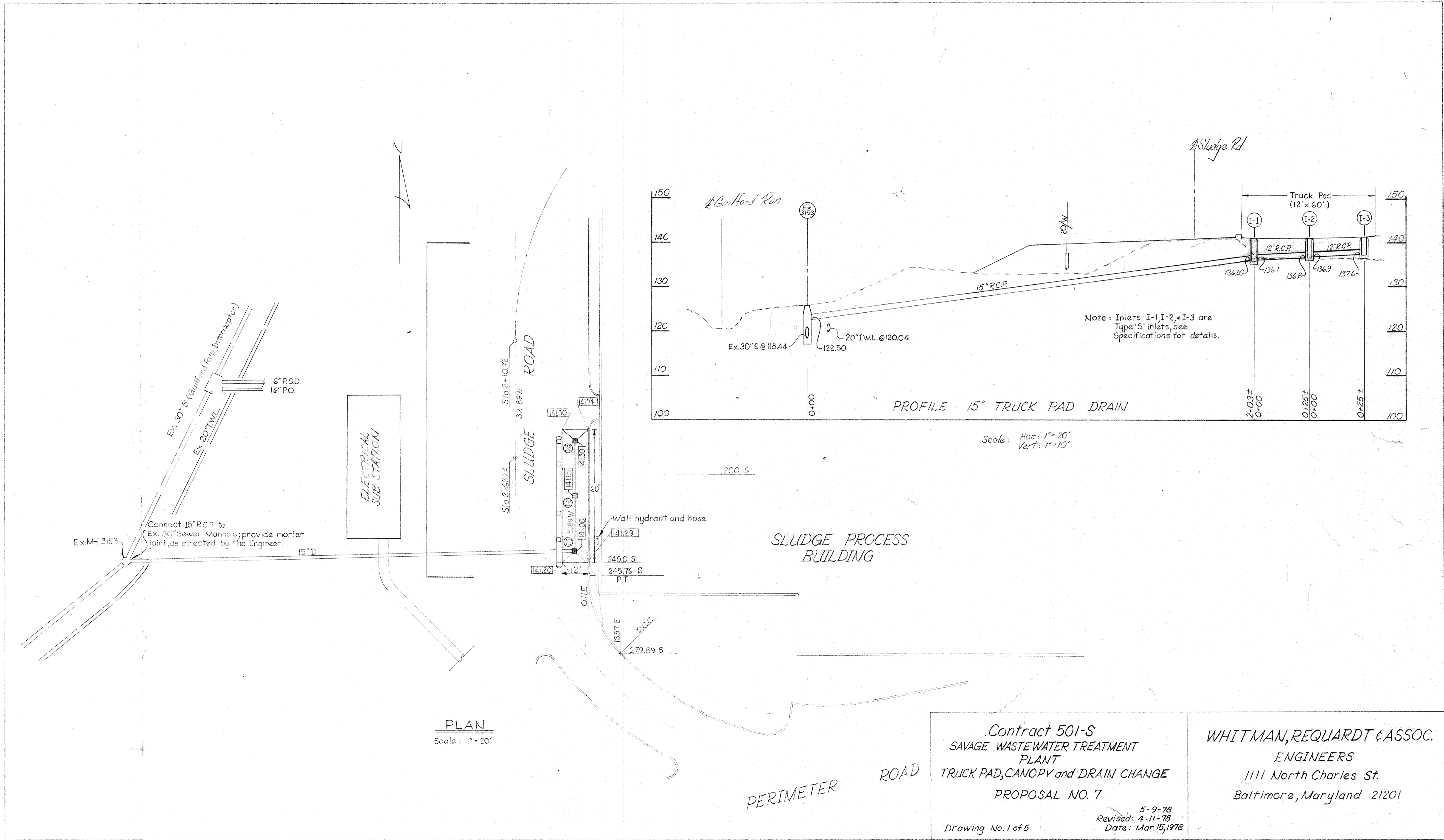
DRAWING
NO. 128
OF 128

SCALE
AS
NOTED

SHEET E-40

W.O. 7132

BRUNING 44-510 22872



Ex. 30" S (Guilford Run Interceptor)
Ex. 20" I.W.L.
16" P.S.D.
16" P.O.
Connect 15" R.C.P. to Ex. 30" Sewer Manhole; provide mortar joint, as directed by the Engineer.
Ex. MH 3153
15" D

ELECTRICAL SUB STATION

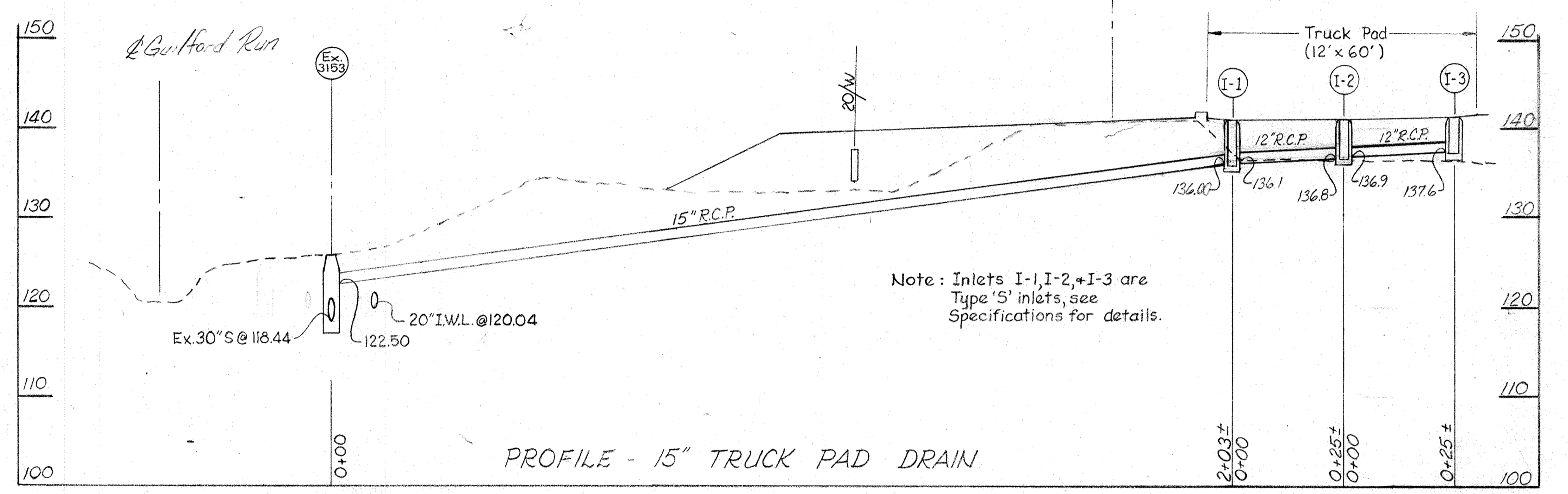
SLUDGE ROAD
Sta. 2+10.72
32.89W
Sta. 2+63.24

141.50
141.74
141.30
141.15
141.00
141.20
12'
13.87 E
D.C.C.
279.89 S

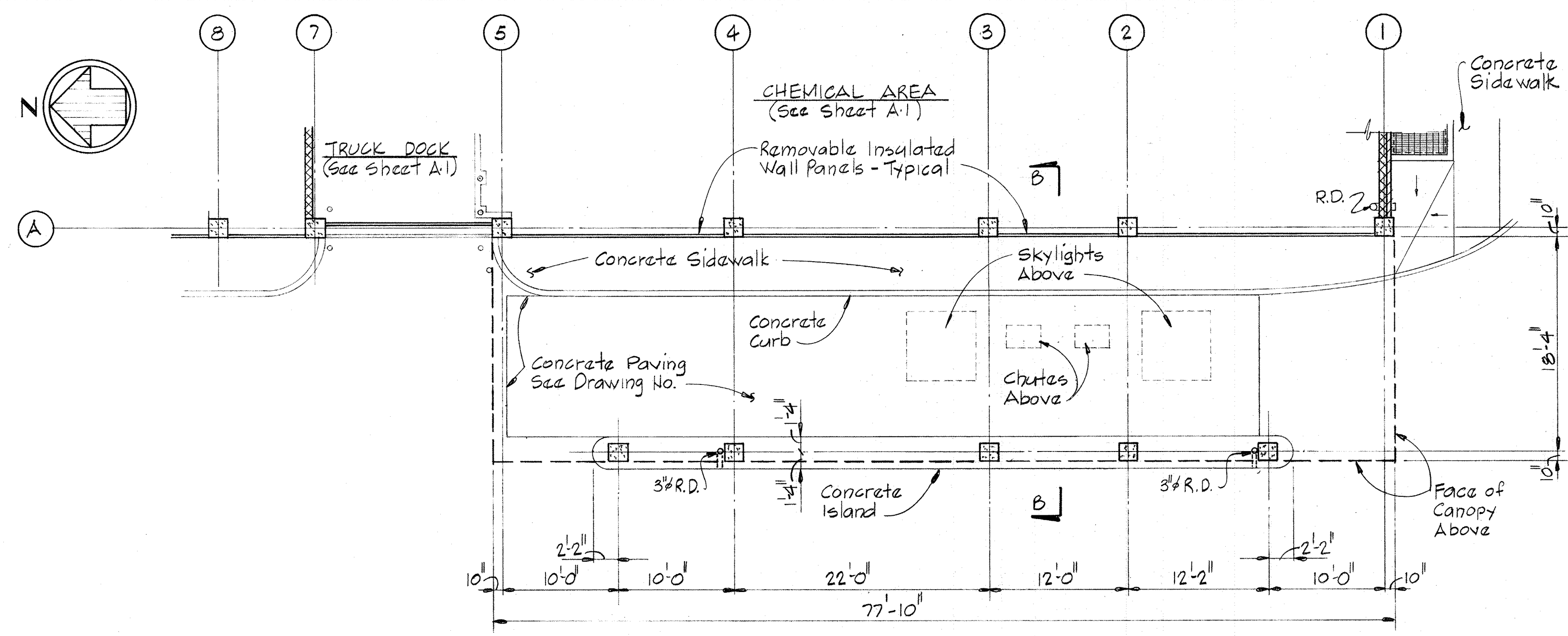
Wall hydrant and hose.
141.29
240.0 S
245.76 S
P.T.

SLUDGE PROCESS BUILDING

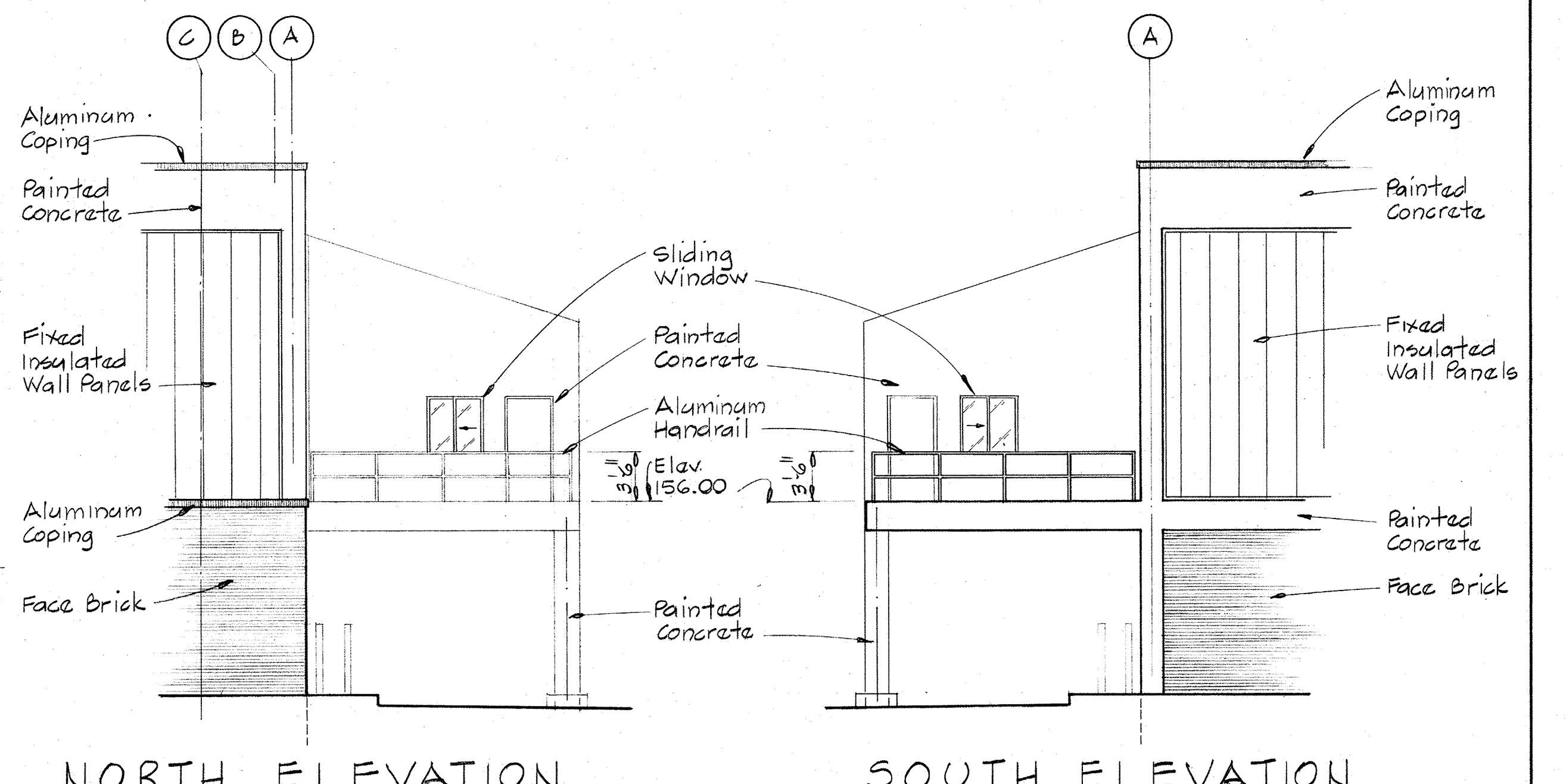
PERIMETER ROAD



Scale: Hor: 1" = 20'
Vert: 1" = 10'

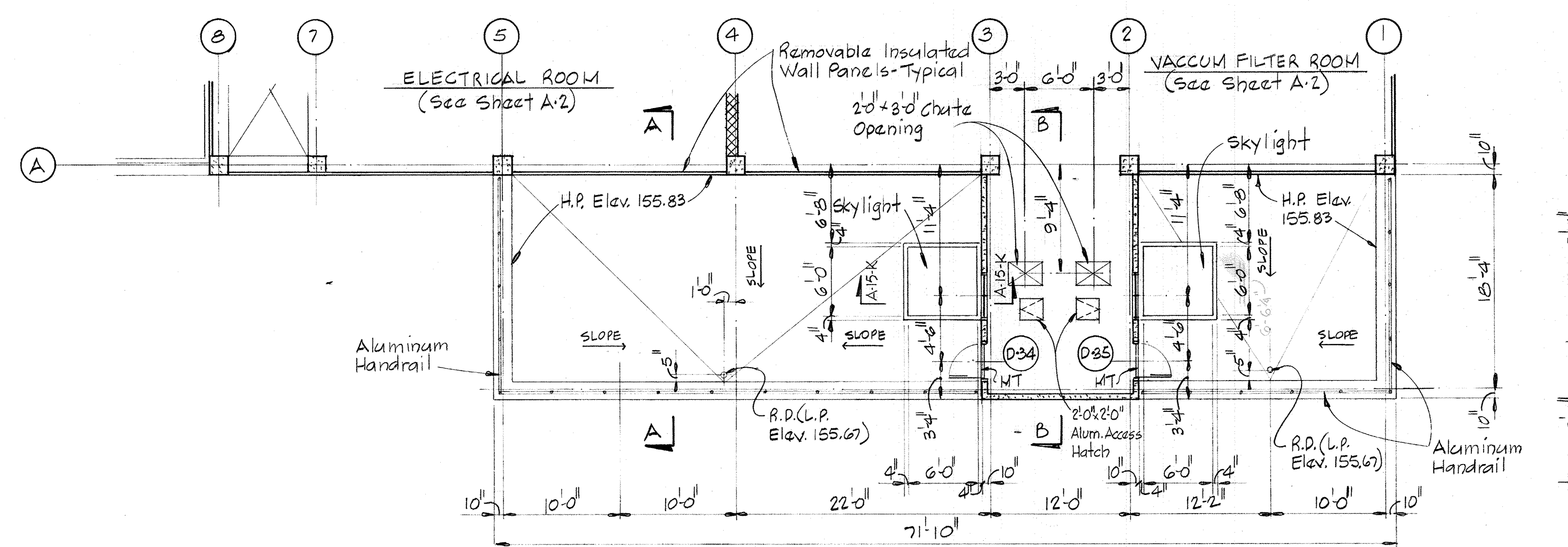


PARTIAL PLAN AT ELEV. 142.00

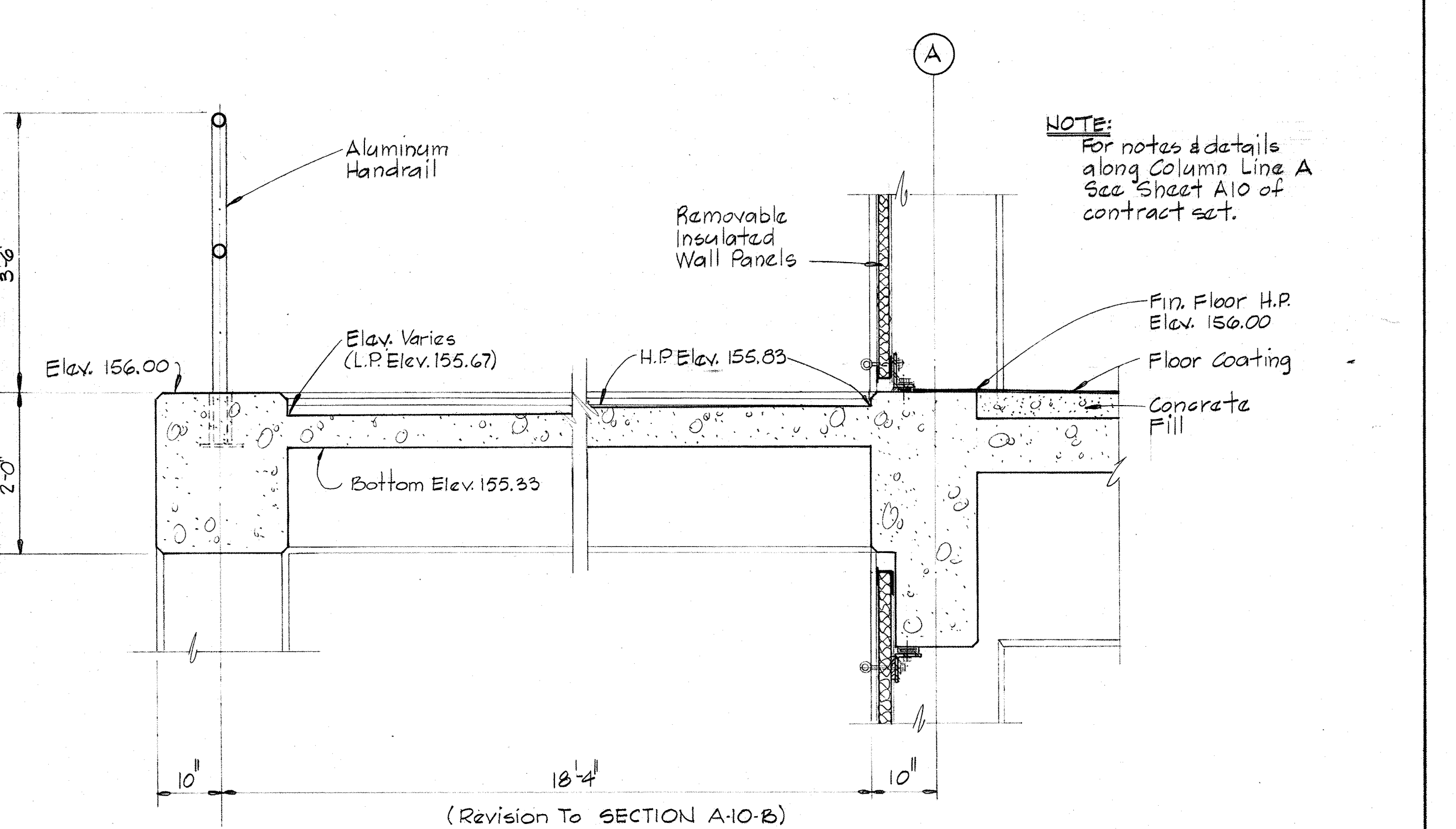


NORTH ELEVATION

SOUTH ELEVATION

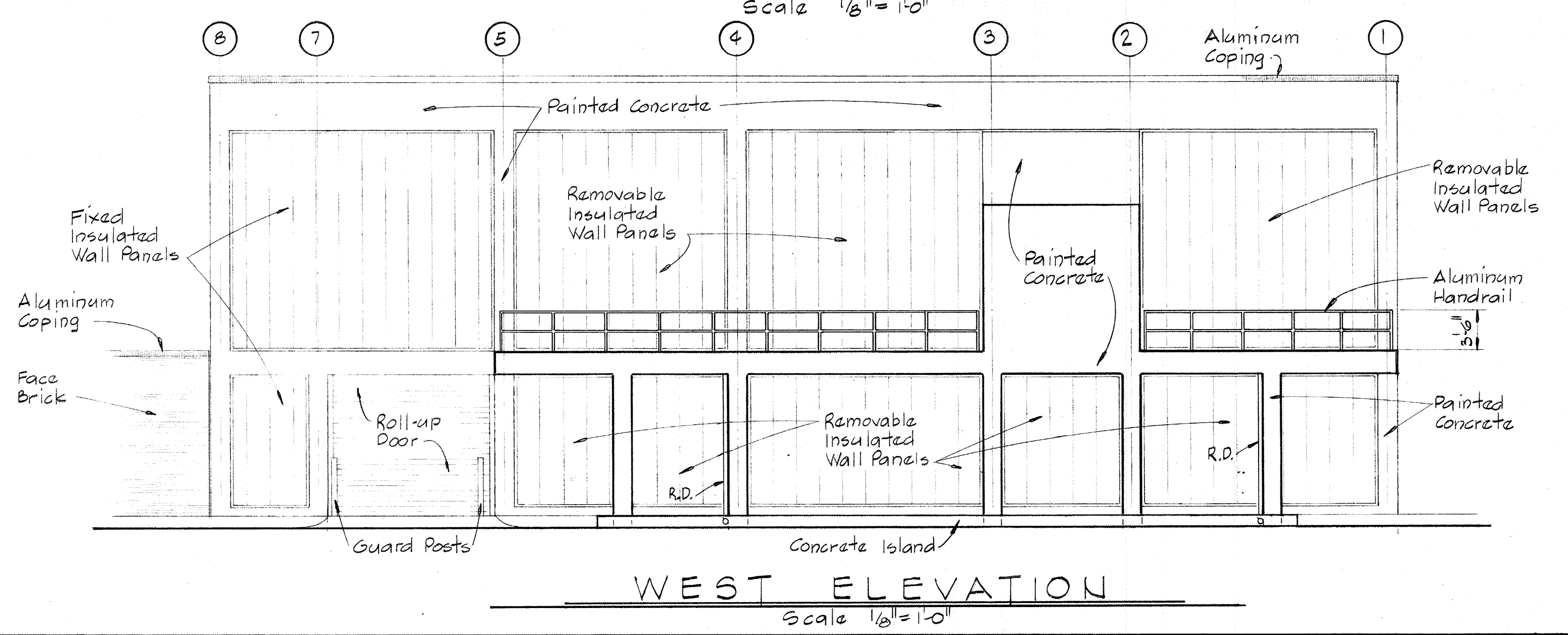


PARTIAL PLAN AT ELEV. 156.00



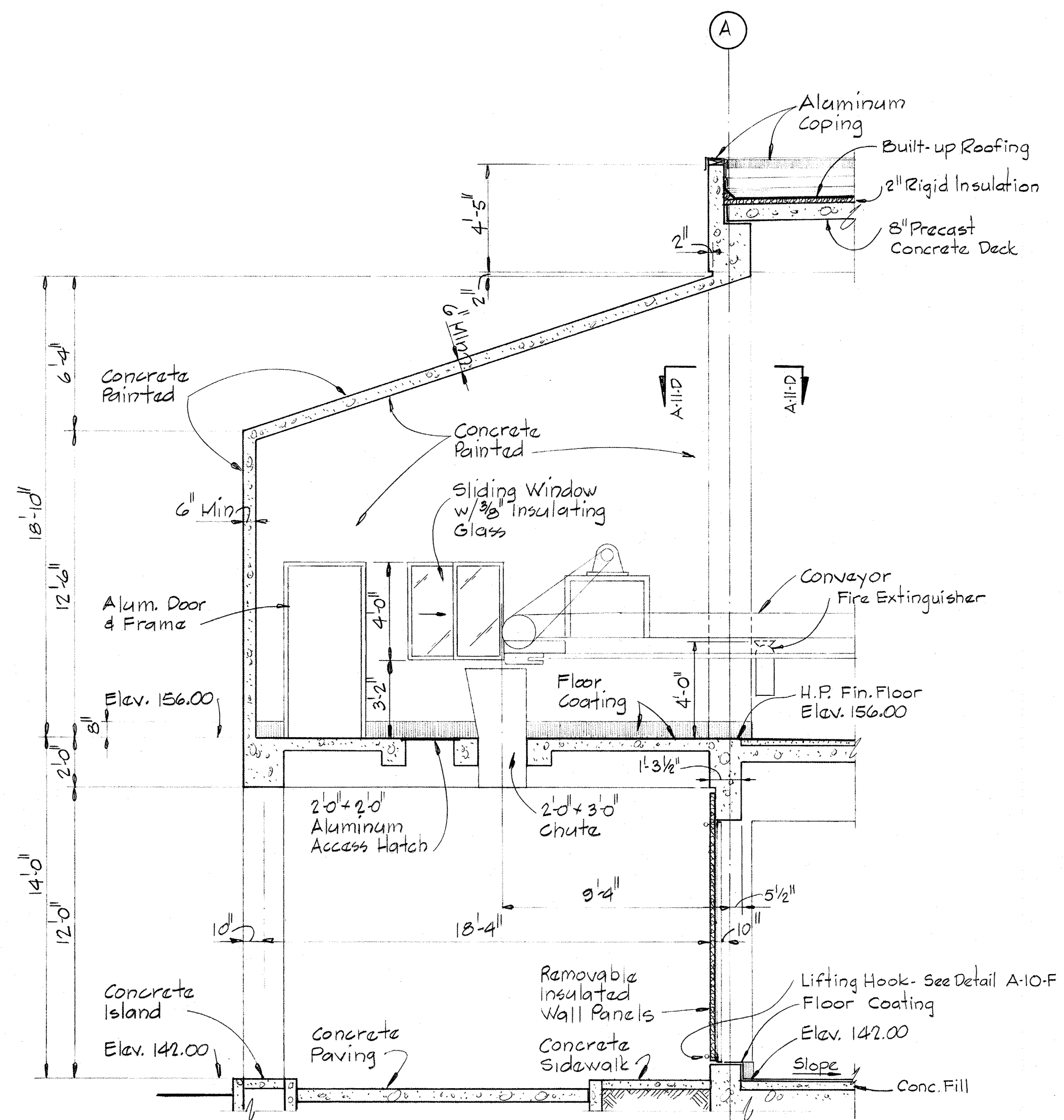
SECTION THRU CANOPY A-A

NOTE:
These drawings shall be considered as part of the original contract drawings. Only the details pertaining to the canopy change have been shown on these drawings. Original contract drawings shall be referred to for additional and supplemental information.



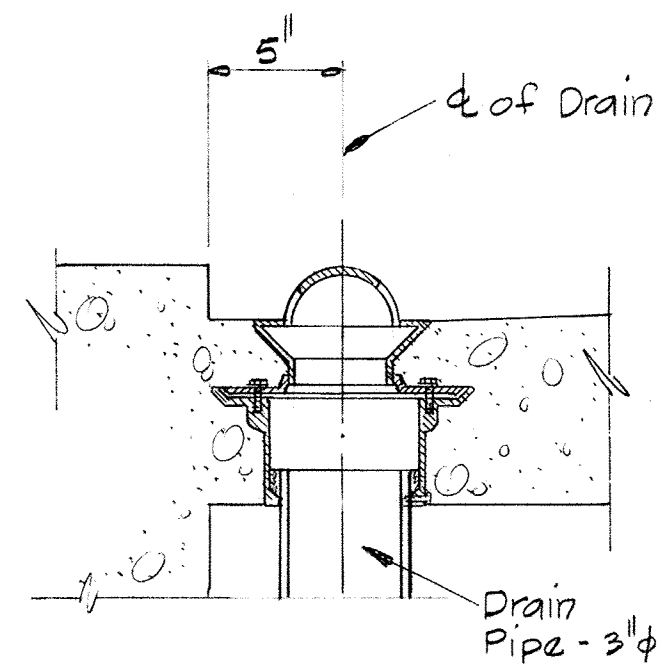
WEST ELEVATION

DEPARTMENT OF PUBLIC WORKS
Howard County, Maryland
SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4
Contract 501-S
PROPOSAL NO. 7
Drawing No. 2 of 5
May, 1978



NOTE:
For Concrete Paving
Curbs and Sidewalks
See Sheet C-2.

(Replaces SECTION A-11-C)
SECTION B-B
Scale 1/4" = 1'-0"

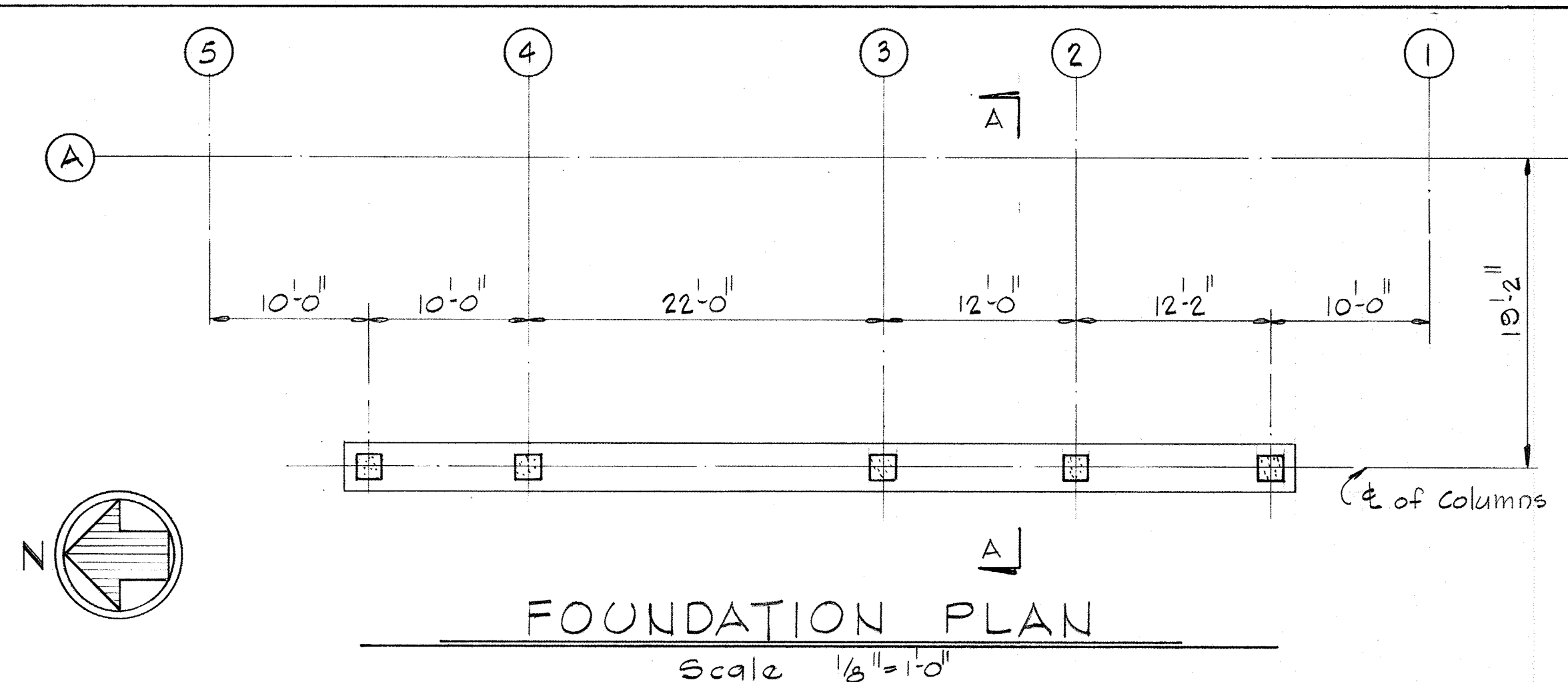


CANOPY DRAIN DETAIL
Scale: No Scale

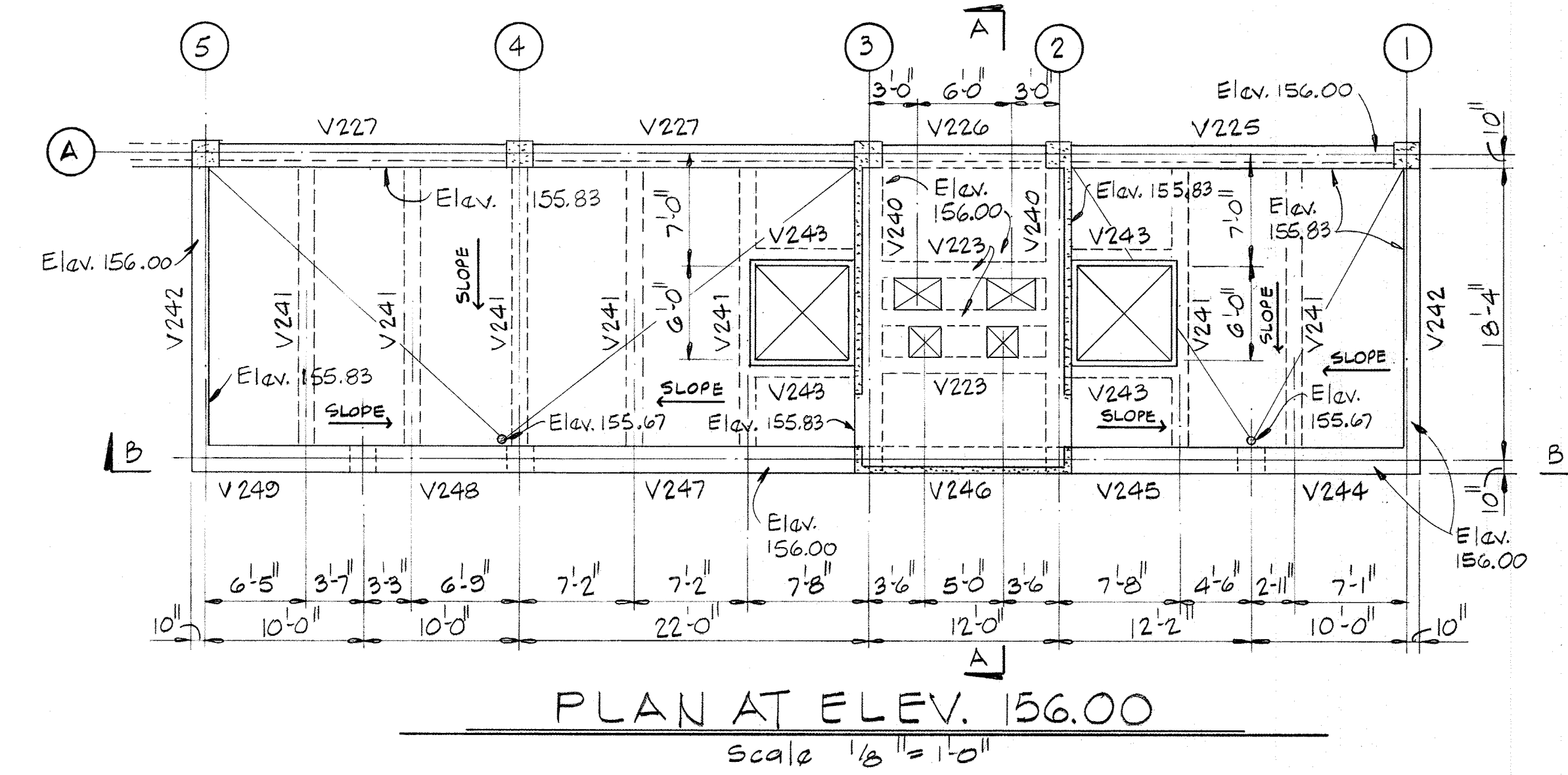
DOOR SCHEDULE

DOOR NO.	SIZE (D.O.)	MAT'L	TYPE	HEAD	JAMB	LOUVER	LINTEL	HD'W	KICK P.
D-34	3'-0" x 7'-2" x 1 3/4"	ALUM	C	H-6	J-6	---	---	HW-17	8' x 80'
D-35	3'-0" x 7'-2" x 1 3/4"	ALUM	C	H-6	J-6	---	---	HW-17	8' x 80'

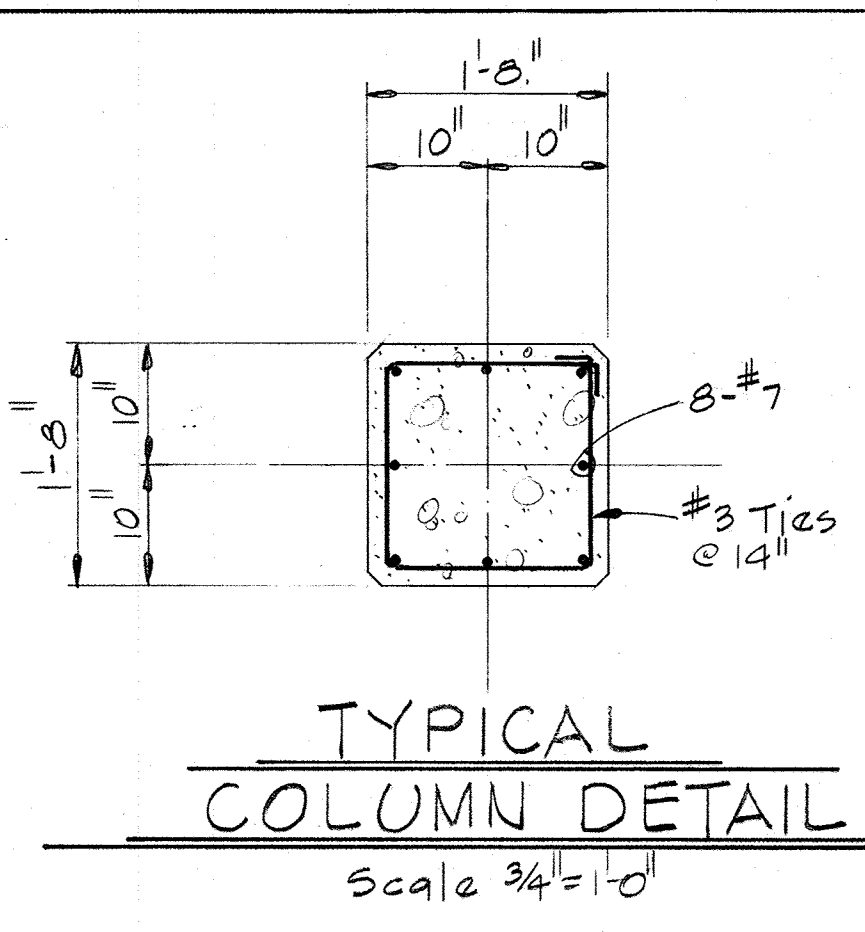
DEPARTMENT OF PUBLIC WORKS
Howard County, Maryland
SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4
Contract 501-3
PROPOSAL NO. 7
Drawing No. 3 of 5 May, 1978



FOUNDATION PLAN
Scale 1/8" = 1'-0"

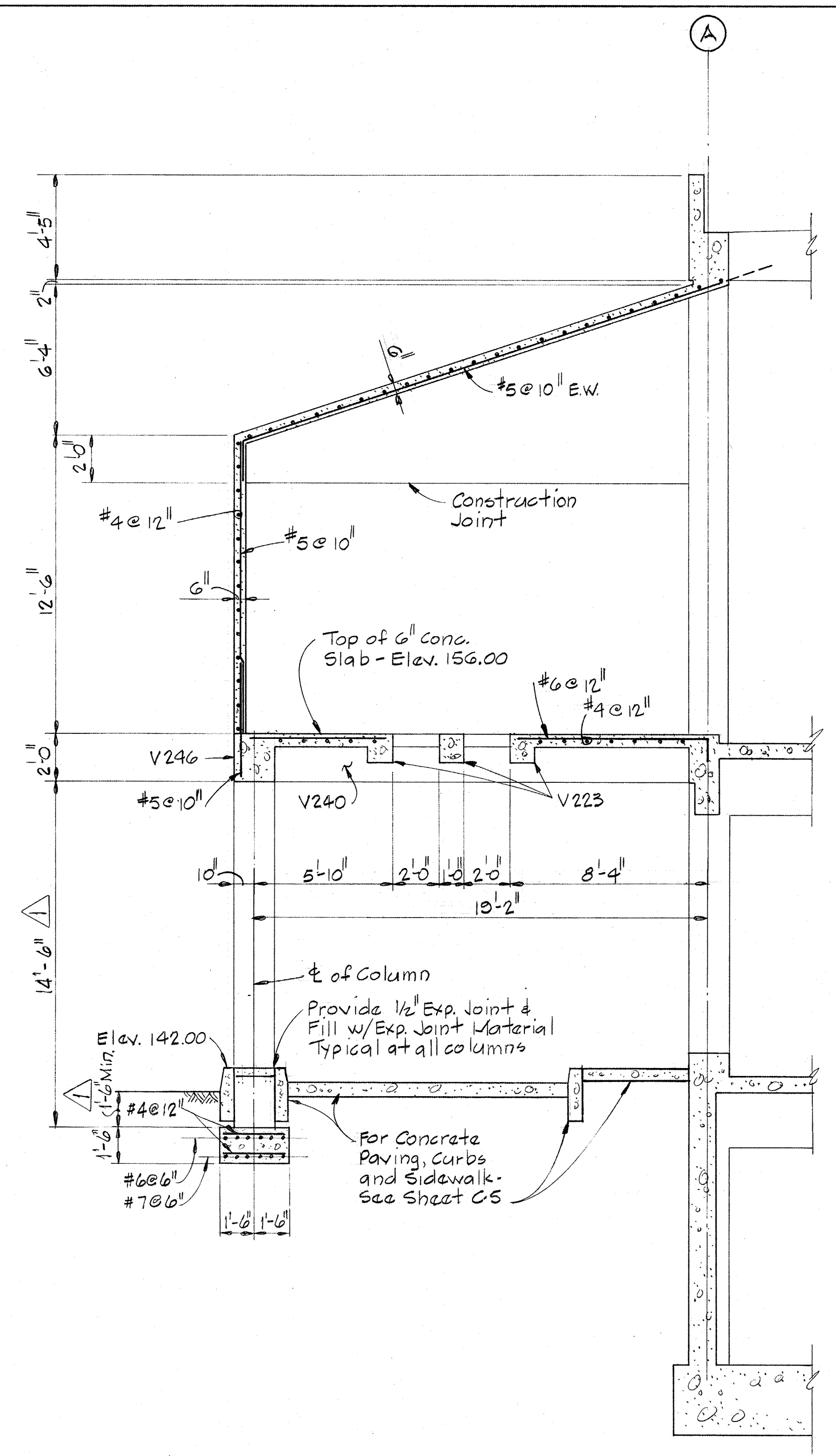


PLAN AT ELEV. 156.00
Scale 1/8" = 1'-0"



TYPICAL COLUMN DETAIL
Scale 3/4" = 1'-0"

- NOTE:
- Concrete slab between Column Lines 1 and 2 and between Column Lines 3 and 5 shall have #5 Bars @ 12" in the center of slab. The bottom elevation of slab shall be 155.33. The top elevation shall be as noted on plan.
 - Concrete slab between Column Lines 2 and 3 shall be 6" thick with top Elev. 156.00. East-West reinforcing bars shall #6 @ 12" and shall be placed 2" clear from bottom of slab. North-South bars shall be #4 @ 12".
 - These drawings shall be considered as part of the original contract drawings. Only the details pertaining to the canopy change have been shown on these drawings. Original contract drawings shall be referred to for additional and supplemental information.
 - Beams V224, V316, V317 & V318 shall be deleted from the beam schedules on Sheets S20 and S21.
 - Beams V225, V226, V227, V228 and V229 shall be revised as shown on this drawing



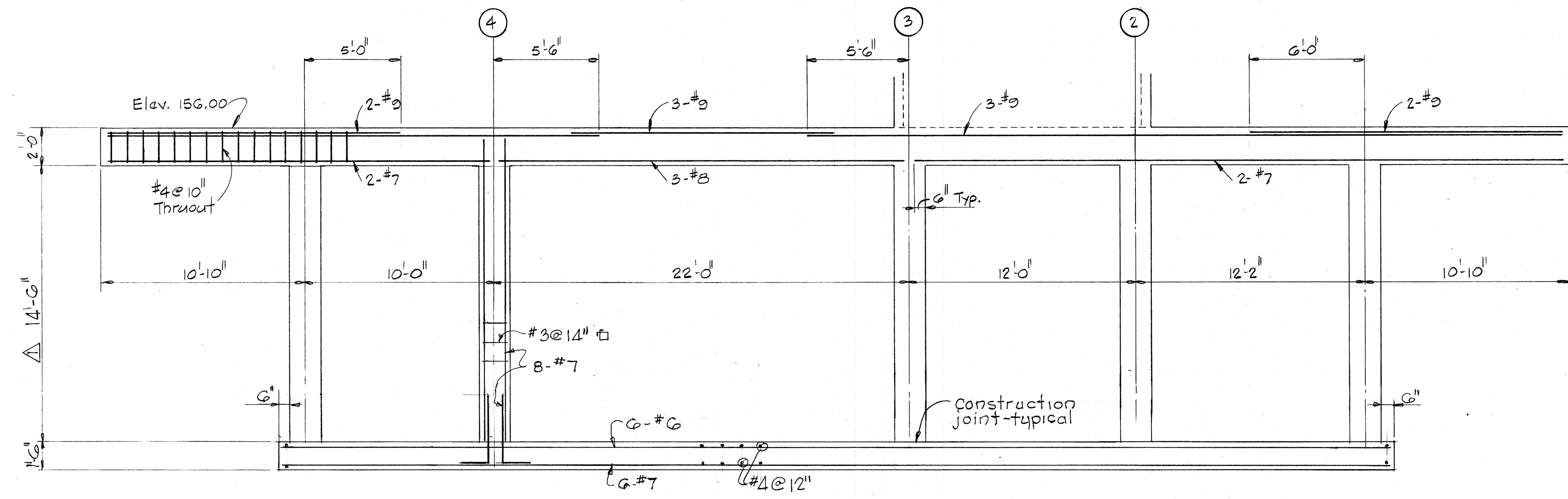
SECTION A-A
Scale 1/4" = 1'-0"

CONCRETE BEAM SCHEDULE

MARK	WIDTH (IN.)	DEPTH (IN.)	BOTTOM BARS				REMARKS	TOP BARS				STIRRUPS	
			TYPE	NO. & SIZE	DIMENSION			TYPE	NO. & SIZE	DIMENSION		SIZE	SPACING
V240	20	24	1	6-#9	6"	6"		4	3-#5	1'-7"	1'-7"	#4	@10" Thruout
V241	12	20 ^Δ	1	3-#8	6"	6"	Bottom Elev. 154.00	4	2-#5	1'-7"	1'-7"	#3	@8" Thruout
V242	12	24	1	2-#7	6"	6"		4	2-#9	2'-10"	2'-10"	#3	@10" Thruout
V243	12	18 ^Δ	1	2-#6	6"	6"	Bottom Elev. 154.17	4	2-#5	1'-7"	1'-7"	#3	@8" Thruout
V244	20	24	SEE SECTION B-B										
V245	20	24											
V246	20	24											
V247	20	24											
V248	20	24											
V249	20	24											
V225	12	40	1	2-#10 3-#10	8"	8"	See Section A10B	2	3-#6	15'-10"	4'-4"	@ South End	#4 @12" Thruout
V226	12	40	1	3-#5	8"	8"	Do	1	3-#10	8'-6"	8'-6"	#4 @18" Thruout	
V227	12	40	1	2-#9 3-#9	8"	8"	Do	3	3-#10	9'-0"	10'-0"	@ North End	#4 @18" Thruout
V228	12	26	1	3-#5	8"	8"		3	3-#6	5'-0"	5'-0"	@ North End	#3 @12" Thruout
V229	12	24	1	3-#5	8"	8"						From V228	#3 @10" Thruout

NO.	DATE	REVISION	BY
Δ	8-10-78	Revised drawing to show change to Proposal No. 7 Raised bottom of column footing	07

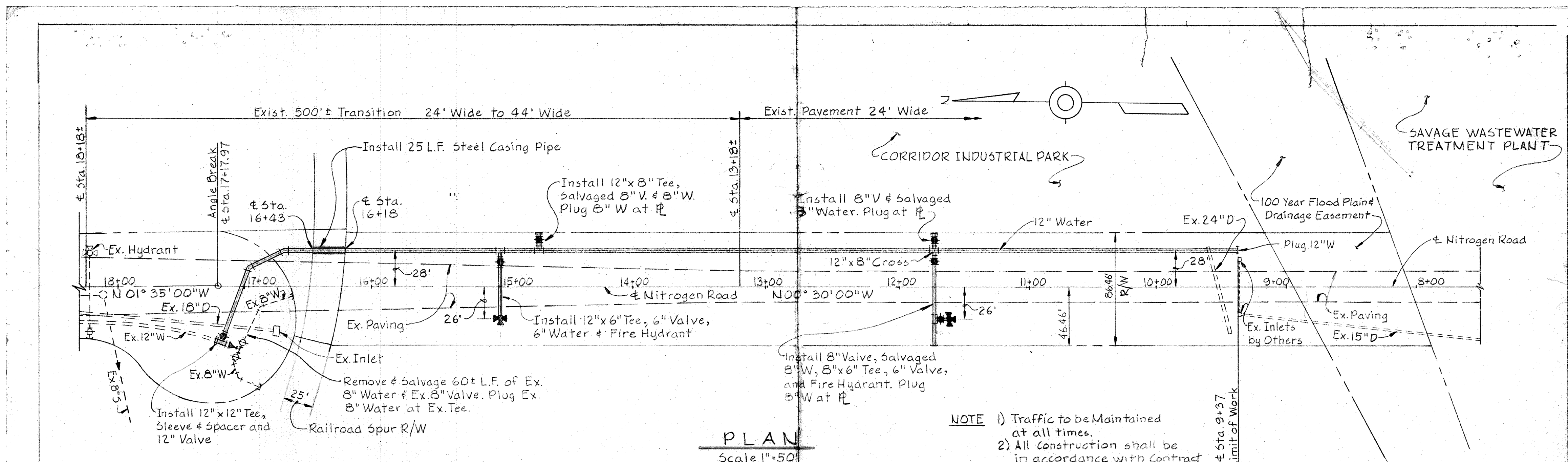
DEPARTMENT OF PUBLIC WORKS
Howard County, Maryland
SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.4
Contract 501-S
PROPOSAL NO.7
Drawing No.4 of 5
May, 1978



SECTION B-B
Scale 1/4" = 1'-0"

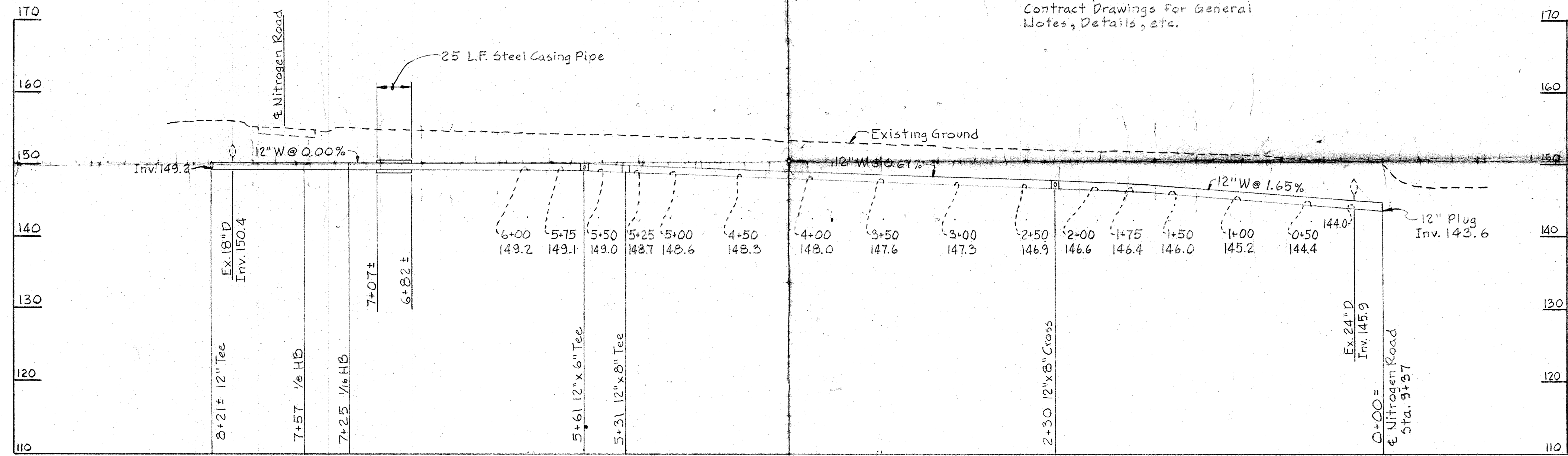
NO.	DATE	REVISION	BY
△	8-10-78	Revised drawing to show change to Proposal No. 7 Raised bottom of column footing.	07

DEPARTMENT OF PUBLIC WORKS
 Howard County, Maryland
 SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4
 Contract 501-S
PROPOSAL NO. 7
 Drawing No. 5 of 5
 May, 1978



PLAN
Scale 1"=50'

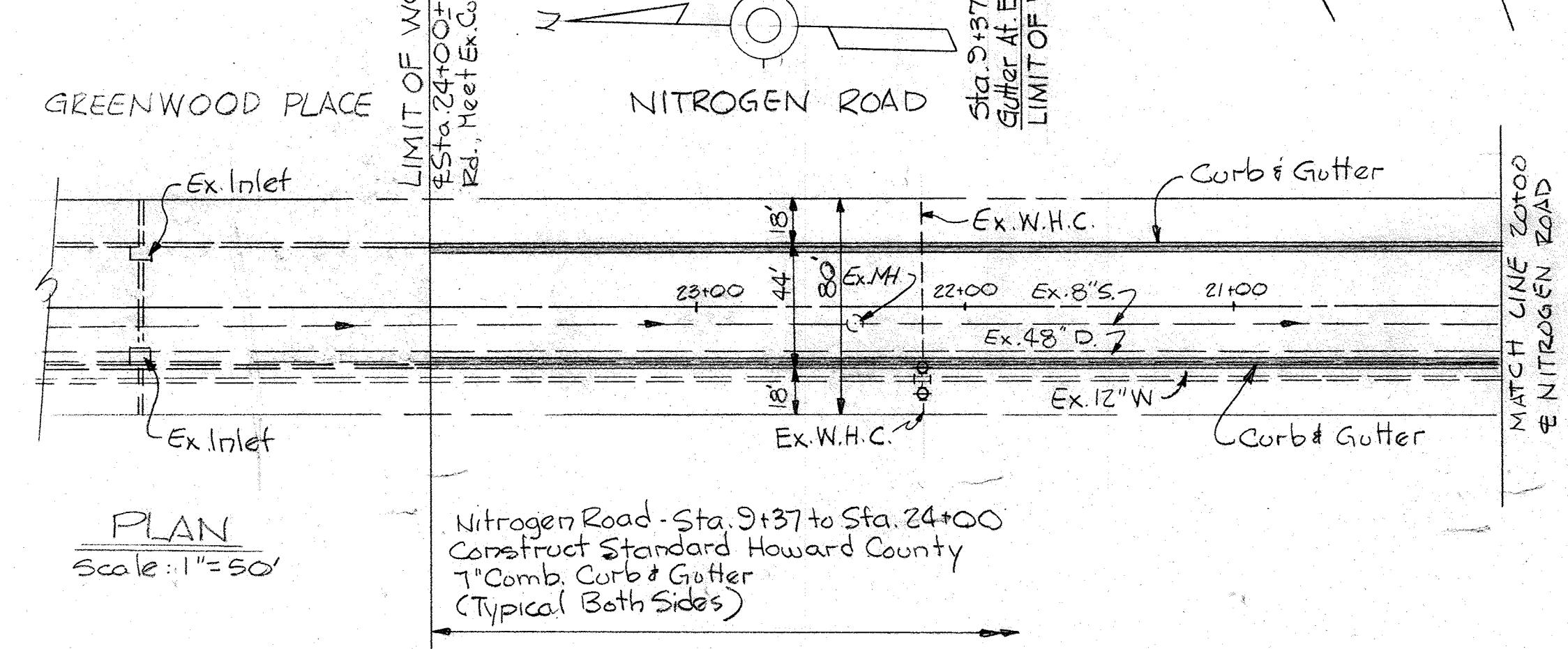
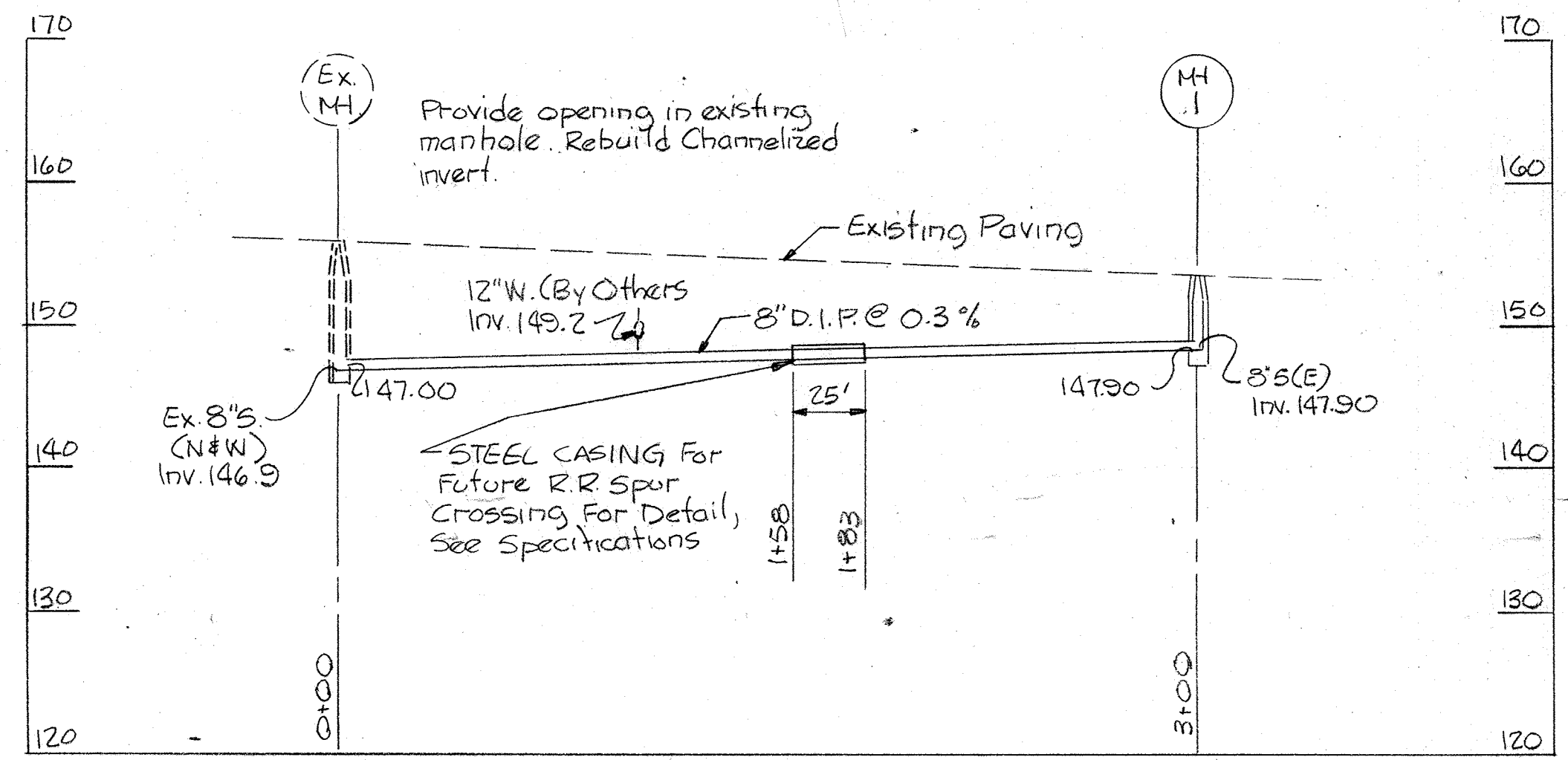
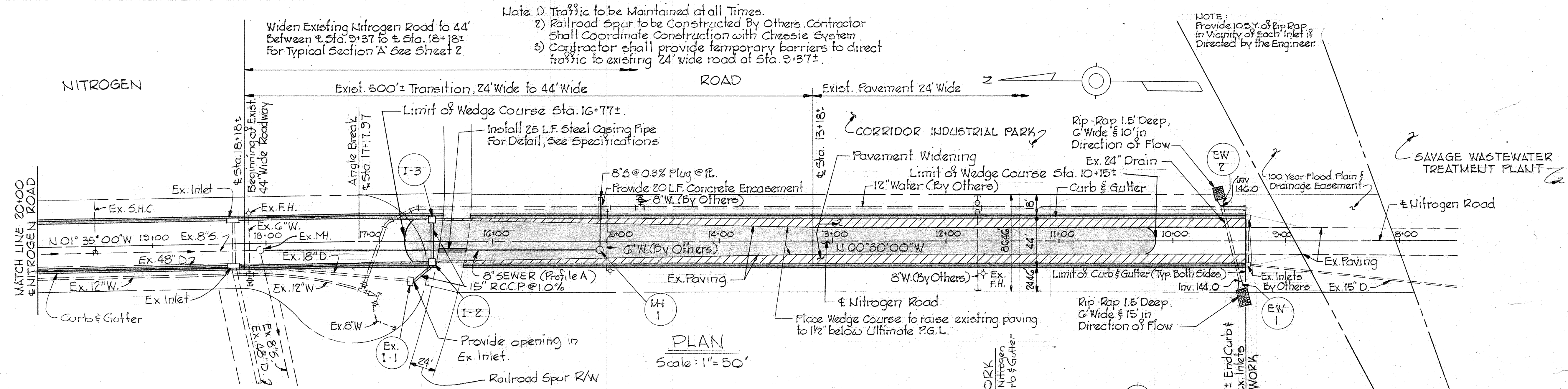
NOTE 1) Traffic to be Maintained at all times.
2) All Construction shall be in accordance with Contract 501-5 Specifications and Contract Drawings for General Notes, Details, etc.



PROFILE
Scale: Hor. 1"=50'
Ver. 1"=10'

Whitman, Reardon & Associates
1111 North Charles Street
Baltimore, Maryland 21202

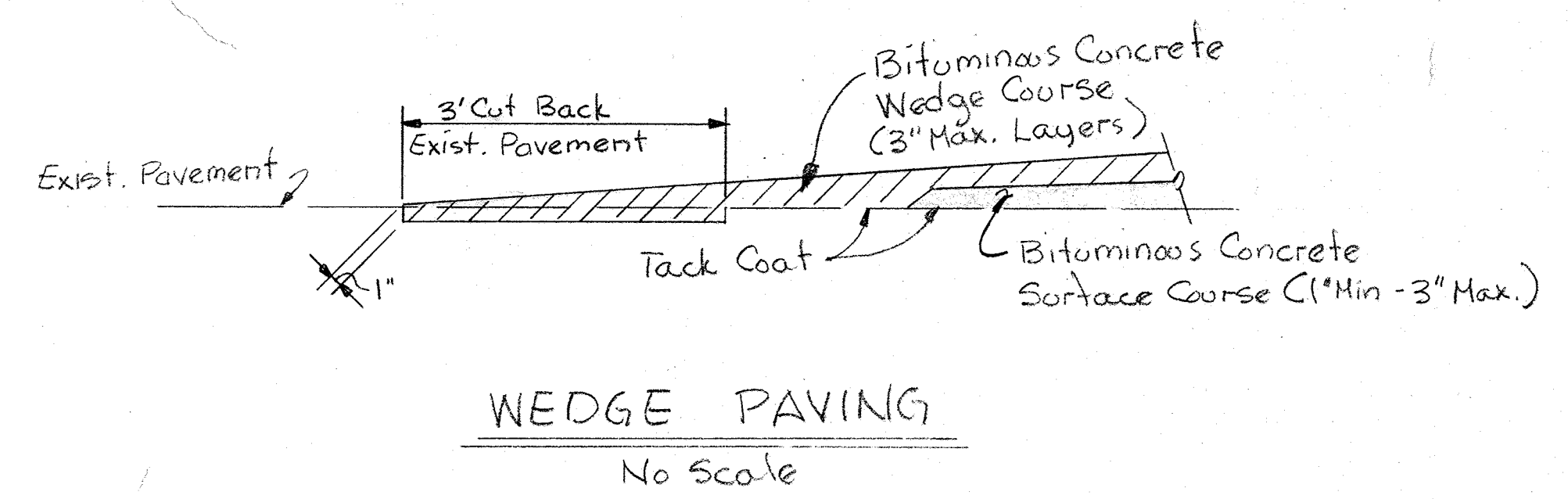
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
SAVAGE WASTEWATER TREATMENT PLANT
FOURTH ADDITION
CONTRACT 501-5
PROPOSAL NO. 31
12" WATER SERVICE
SCALE: AS SHOWN SHEET 1 of 1 AUGUST 2, 1979



- REFERENCES
- 1/ For Profile Nitrogen Road - See Sheet No. 2
 - 2/ For Typical Sections of Roadways Improvements - See Sheet No. 2
 - 3/ For Structure Schedule - See Sheet No. 2

NOTES:

1. ALL PAVING ELEVATIONS SHOWN ARE ULTIMATE ELEVATIONS AFTER PLACEMENT OF 1 1/2" SURFACE COURSE BY OTHERS.
2. FINISHED PAVING ELEVATIONS UNDER THIS WORK SHALL BE 1 1/2" BELOW ULTIMATE P.G.L.



WHITMAN, REQUARDT & ASSOCIATES
 ENGINEERS
 1111 N. CHARLES ST.
 BALTIMORE, MARYLAND 21201

HOWARD COUNTY, MARYLAND
 DEPARTMENT OF PUBLIC WORKS
 SAVAGE WASTE WATER TREATMENT PLANT
 FOURTH ADDITION
 CONTRACT 501-5
 PROPOSAL No. 33
 NITROGEN ROAD WIDENING AND SEWER SERVICE
 SCALE: AS SHOWN SHEET 1 OF 5 OCTOBER 23, 1979