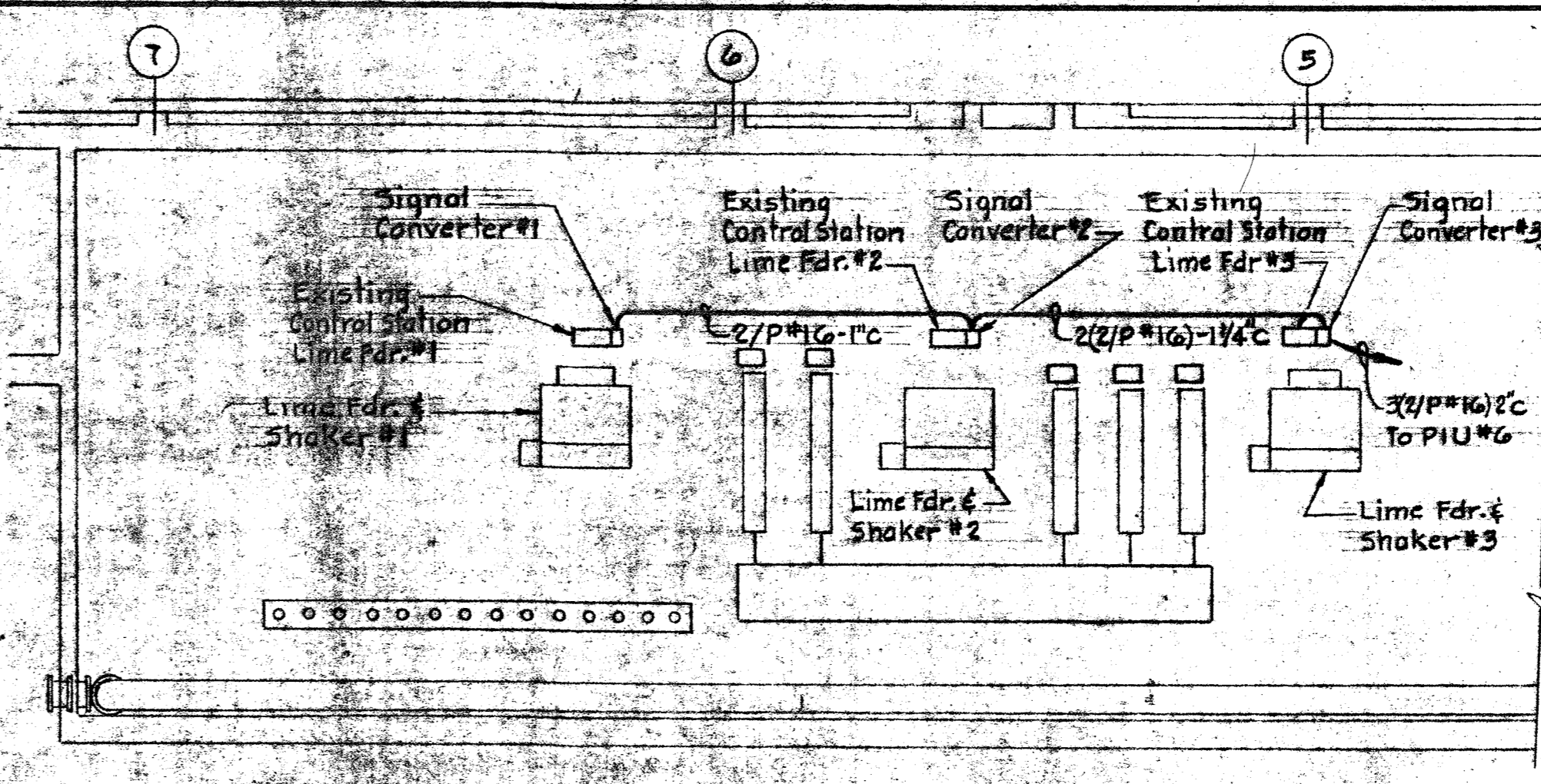
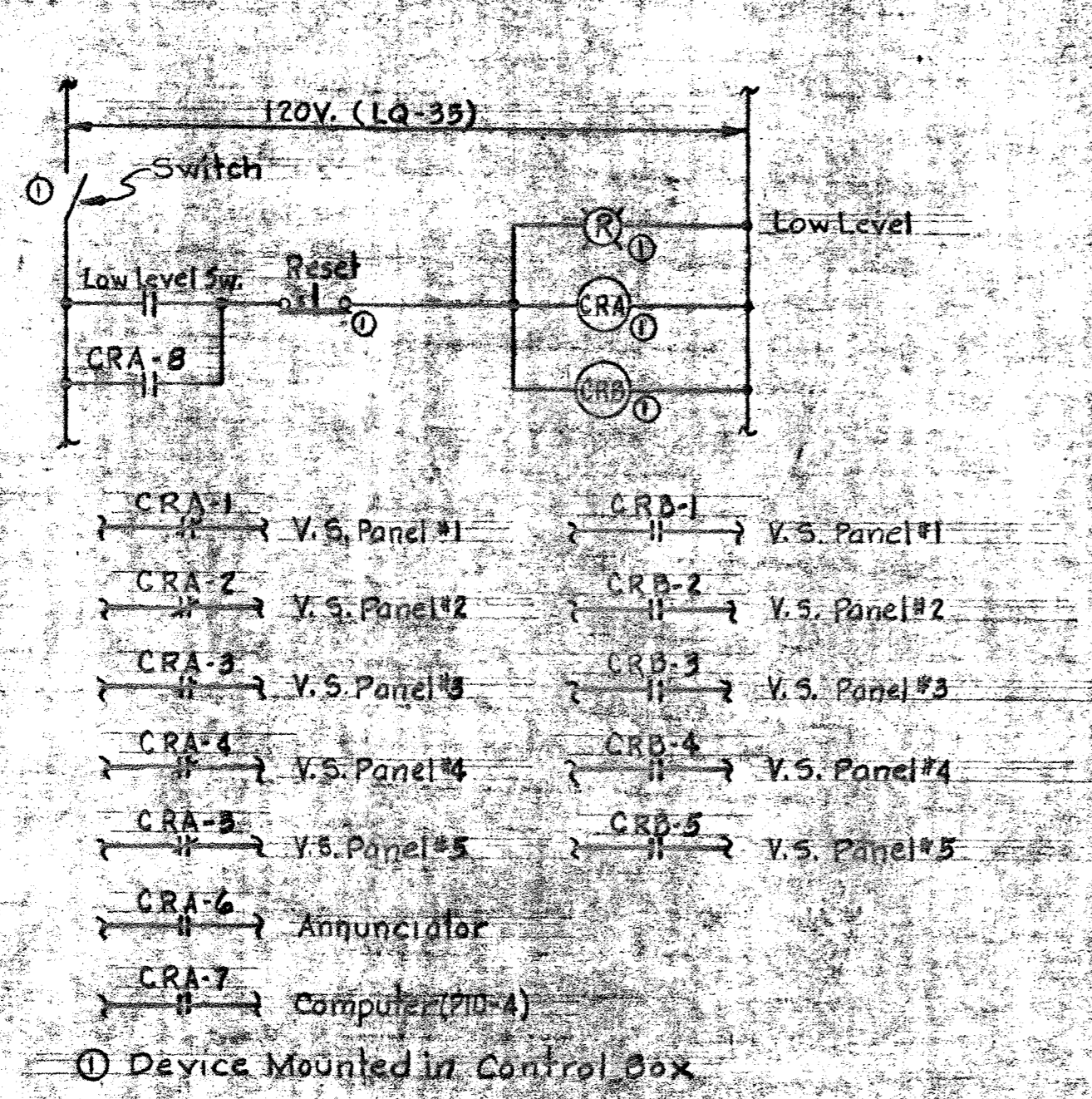


PART PLAN - AERATION BASIN PIPE GALLERY WEST
Scale: 1/8"=1'-0"

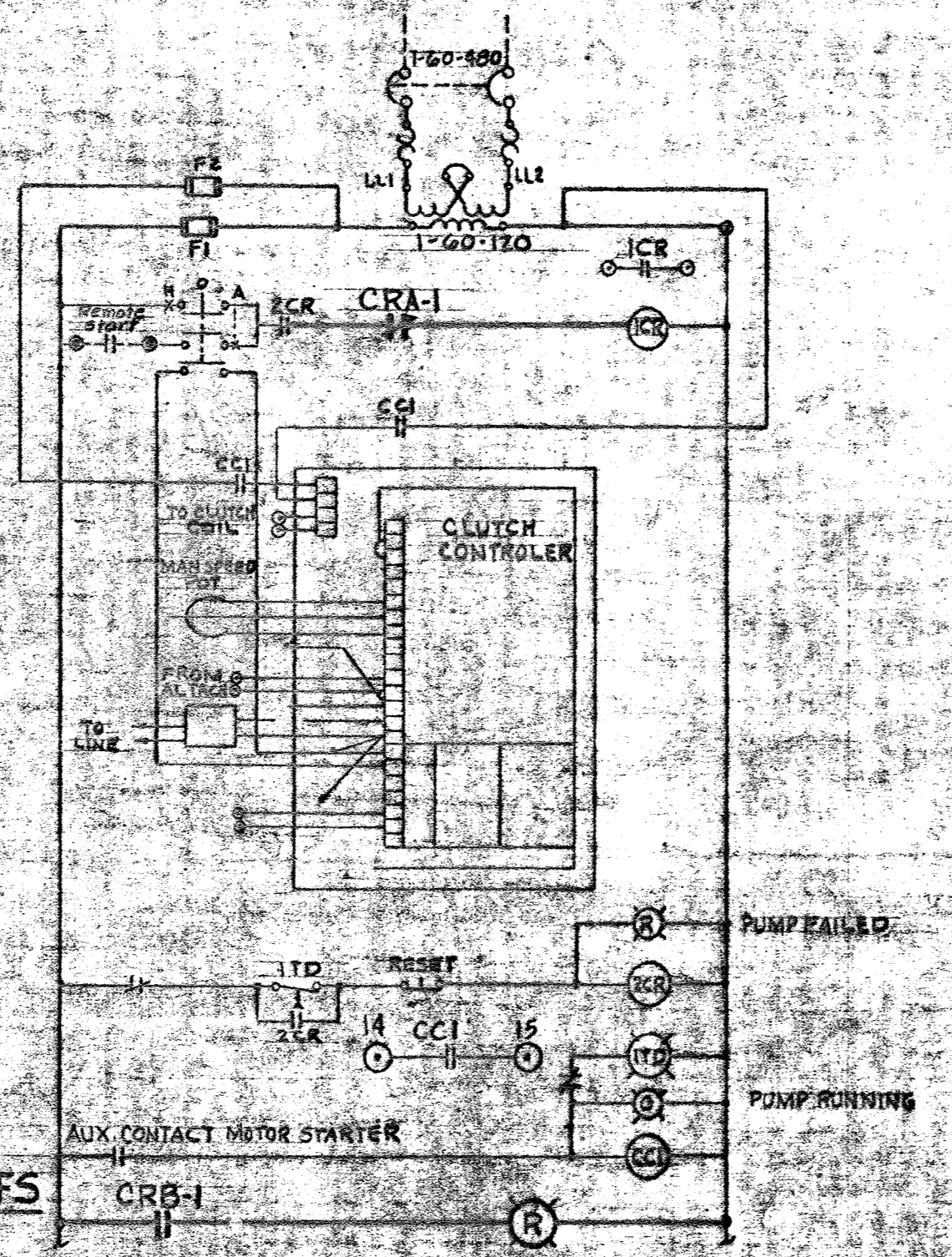


PART PLAN - AERATION BASIN PIPE GALLERY WEST
Scale: 1/8"=1'-0"

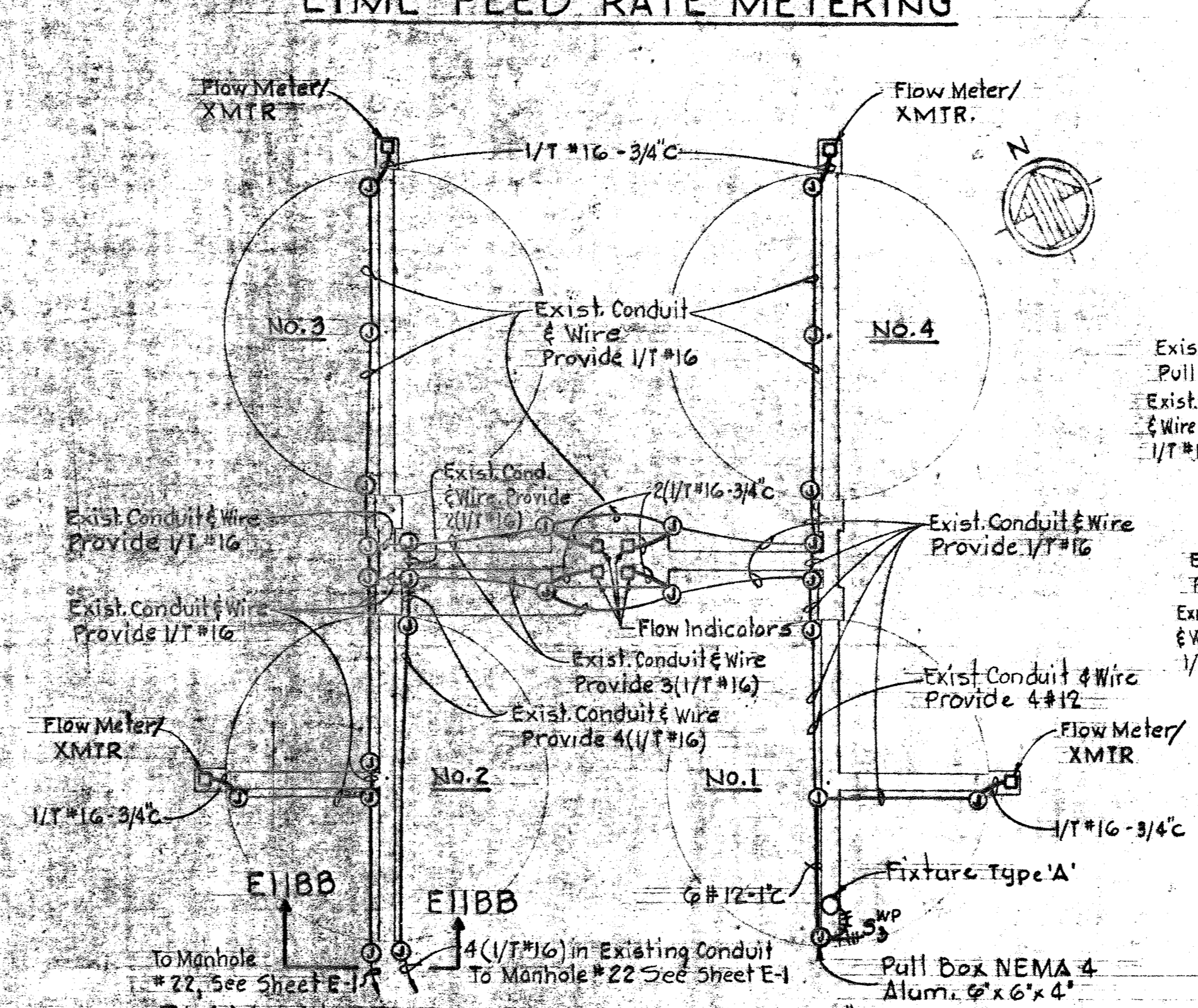
- NOTES:**
- For General Electrical Notes & Legend, see Sheet E-3.
 - Light dashed line work indicates existing; light line work indicates by others; heavy line work indicates work to be provided under this contract.



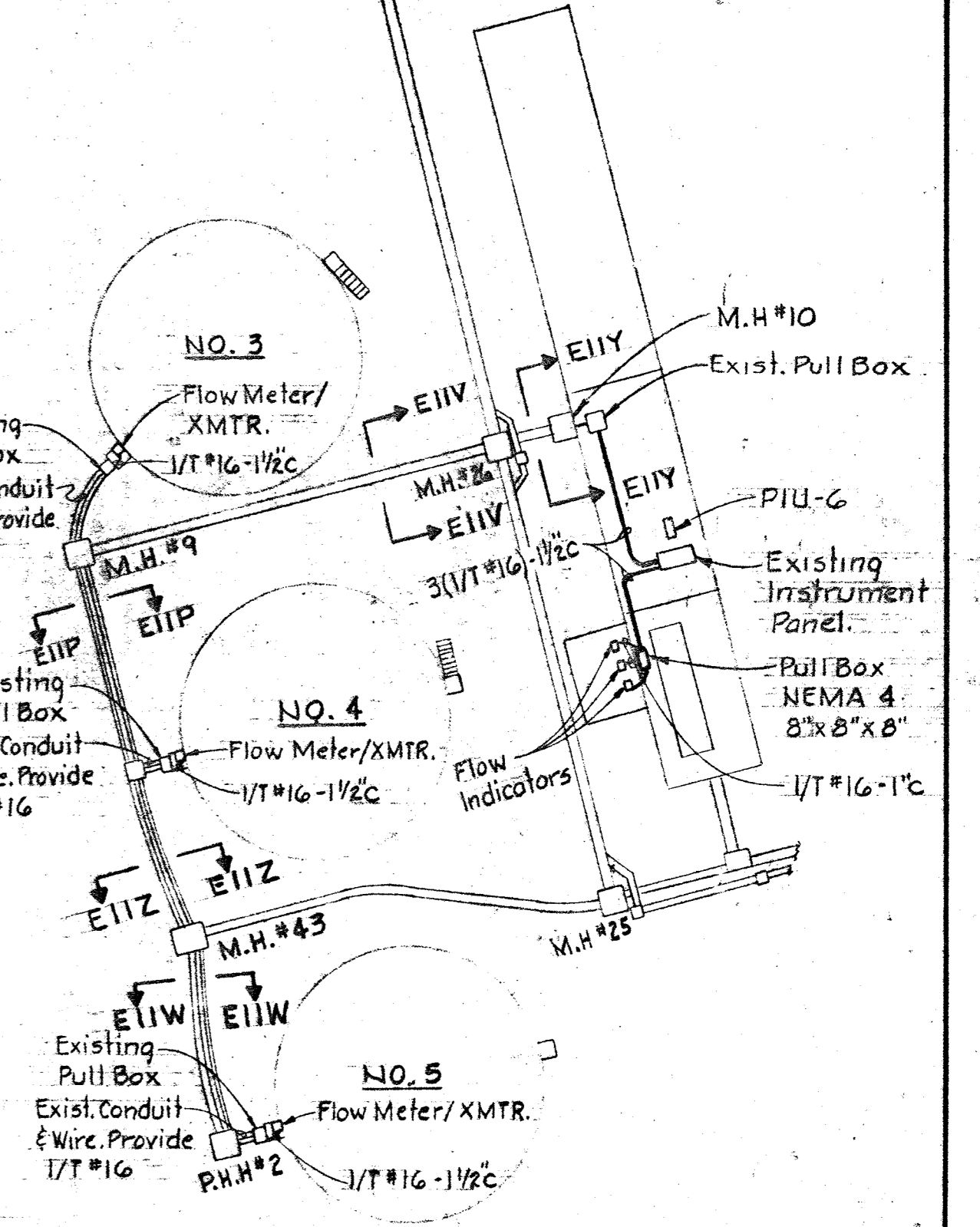
ELEMENTARY CONTROL WIRING DIAGRAM FOR LIME SLURRY THICKENER TANK LOW LEVEL ALARMS & PUMP SHUTOFFS
Scale: 1/8"=1'-0"



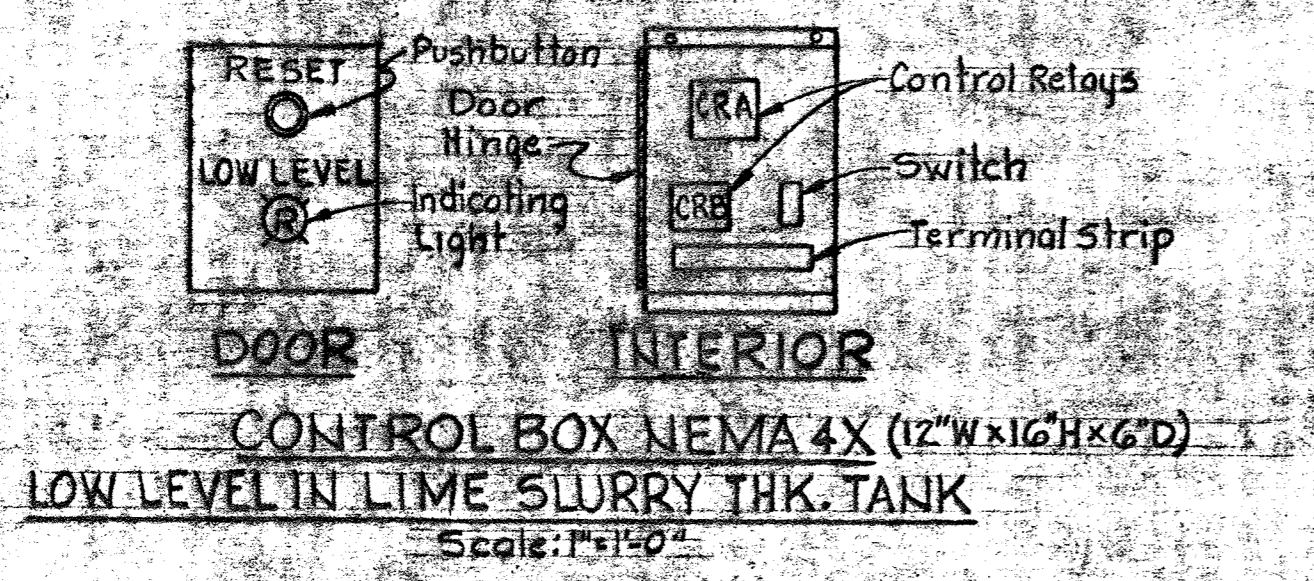
REVISED WIRING DIAGRAM FOR V.S. CONTROL PNL'S LIME SLURRY TRANSF. PUMPS (TYPICAL FOR 5)



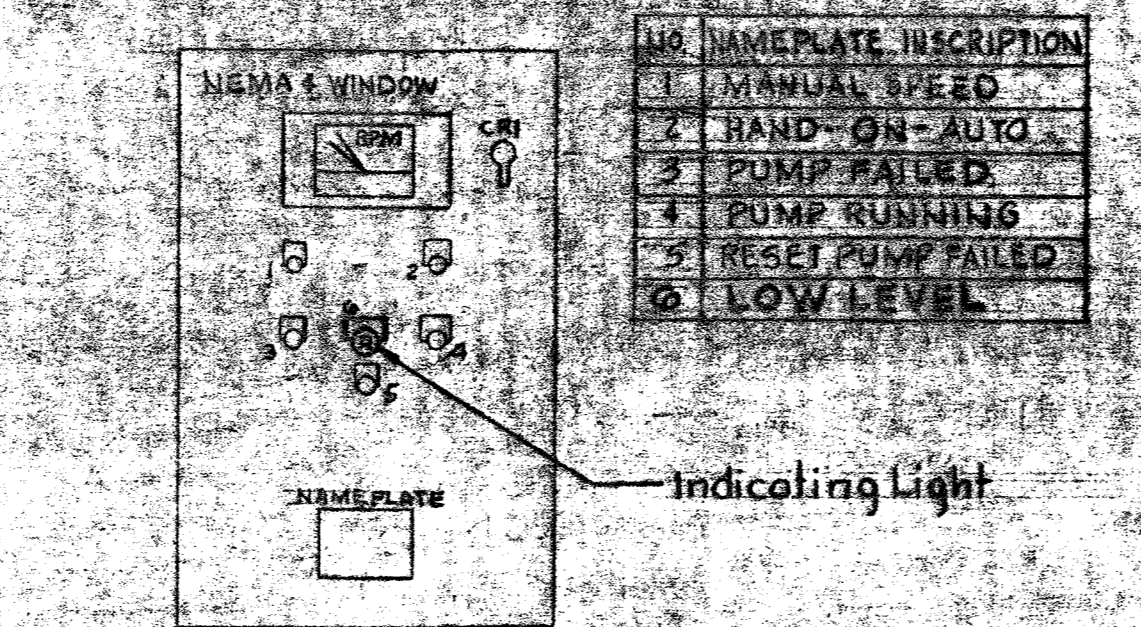
PLAN - NITRIFICATION CLARIFIERS #1 THRU #4
Scale: 1/32"=1'-0"



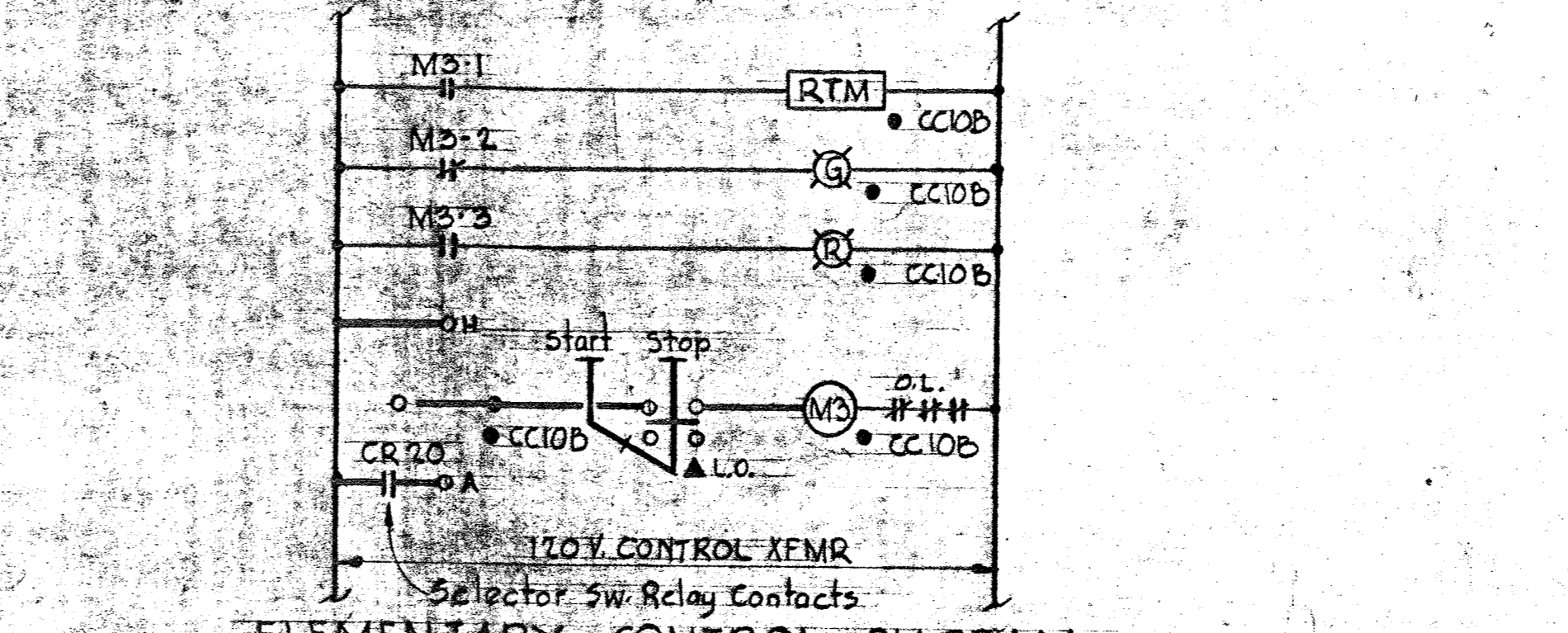
PLAN - SECONDARY CLARIFIER #3, #4 & #5
Scale: 1"=50'



CONTROL BOX NEMA 4X (12" W x 16" H x 6" D)
Scale: 1"=1'-0"



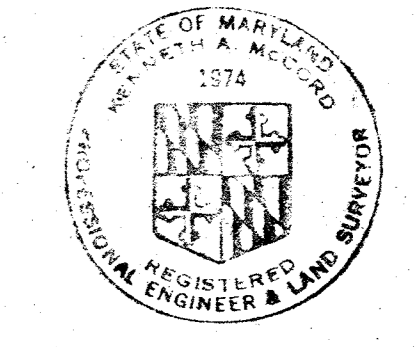
ADDITIONS TO V.S. CONTROL PANELS LIME SLURRY TRANSF. PUMPS (TYP. FOR 5)



ELEMENTARY CONTROL DIAGRAM FLUSHING WATER PUMP NO. 3

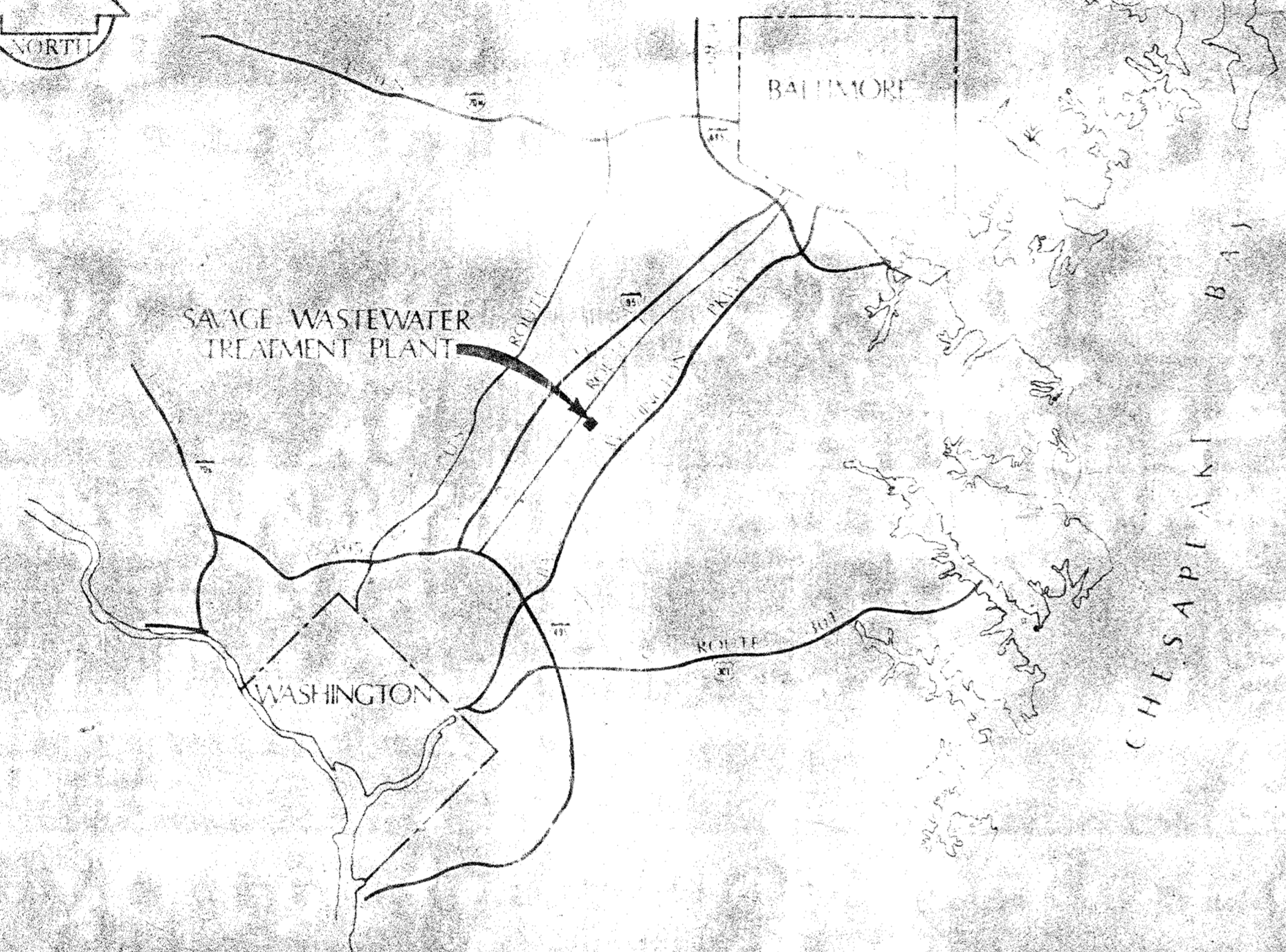
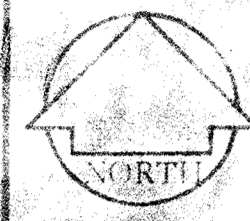
DETAILS FOR LIME SLURRY THICKENER TANK LOW LEVEL ALARMS & PUMP CUTOFFS

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 2/15/80 DATE	CONTRACT NO. 761-S	MISCELLANEOUS PLANS & DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 43 OF 50	SCALE AS SHOWN
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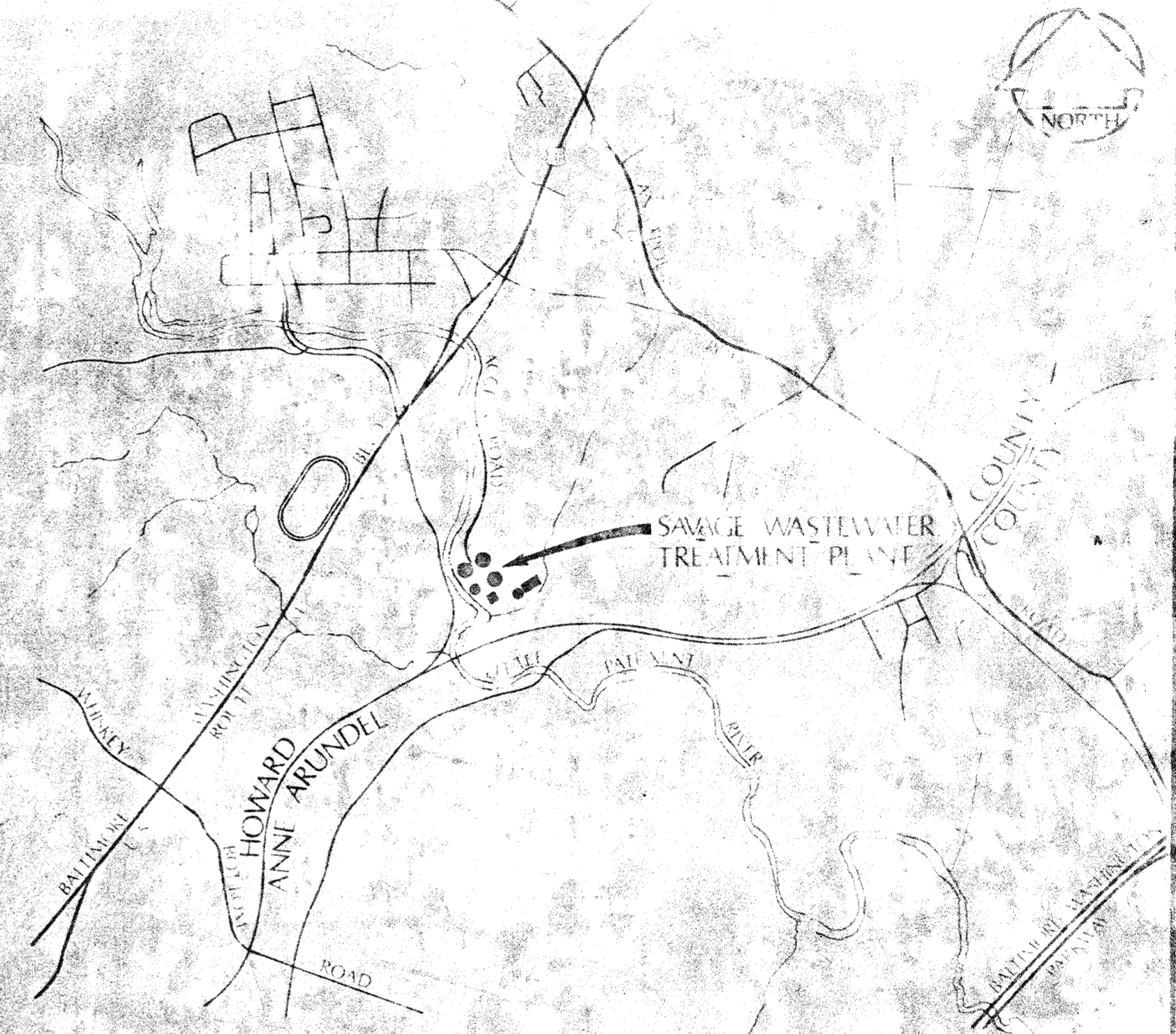
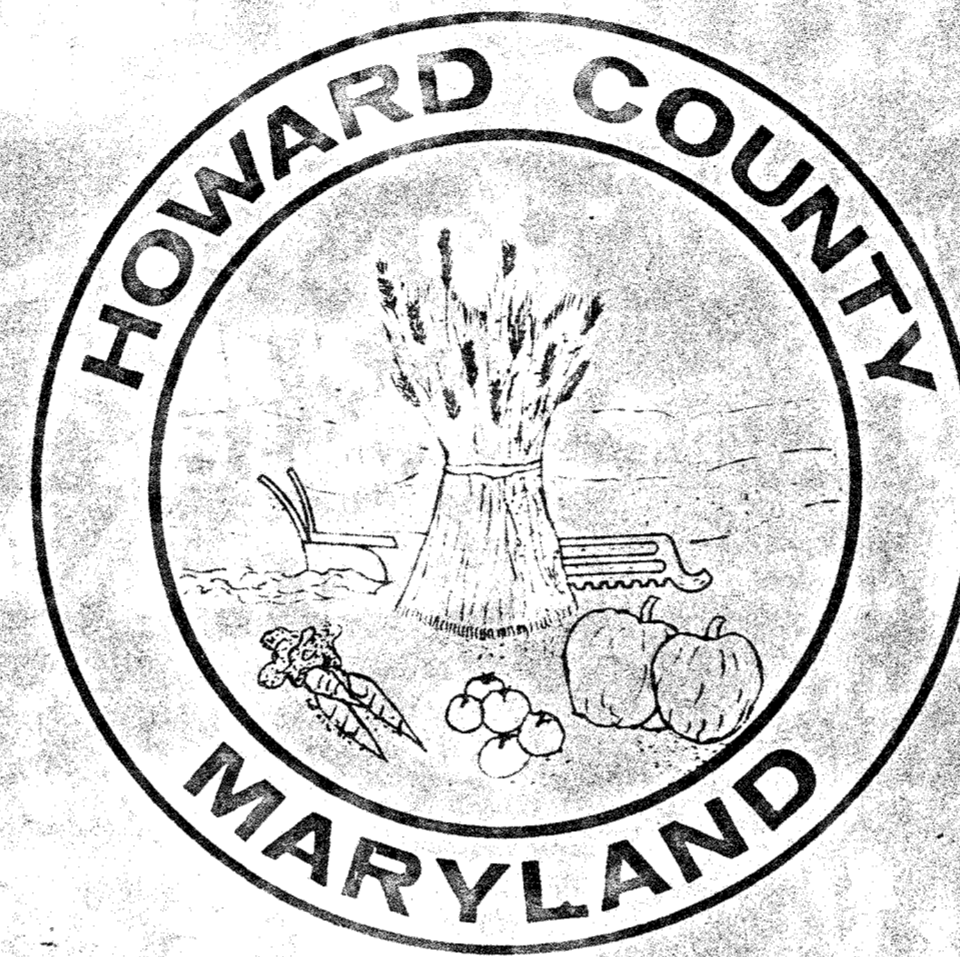


HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS



LOCATION MAP
SCALE: 1" = 6 MILES



VICINITY PLAN
SCALE: 1" = 2000'

SAVAGE WASTEWATER TREATMENT PLANT

ADDITION NO. 4
CONTRACT 761-S

HOWARD COUNTY

GEORGE F. NEIMEYER - DIRECTOR - DEPARTMENT OF PUBLIC WORKS

JAMES M. IRVIN - CHIEF - BUREAU OF ENVIRONMENTAL SERVICES

WHITMAN, REQUARDT & ASSOCIATES - ENGINEERS

KENNETH A. M. CORD

LIST OF DRAWINGS

DRAWING AND SHEET NO.	DESCRIPTION
GENERAL	
1 G-1	TITLE SHEET
2 G-2	LIST OF DRAWINGS ABBREVIATIONS AND LEGEND
3 G-3	GENERAL NOTES, REFERENCES & BASELINE PLAN
CIVIL	
4 C-1	GENERAL PLAN
5 C-2	GENERAL PLAN
6 C-3	RIVER ACCESS ROAD PLAN AND PROFILE
7 C-4	RIVER ACCESS ROAD PLAN AND PROFILE
8 C-5	RIVER ACCESS ROAD PLAN AND PROFILE
9 C-6	DRAINAGE PROFILES
10 C-7	PART UTILITY PLAN AND 6" FLUSHING WATER PROFILE
11 C-8	PART UTILITY PLAN AND 3" CHLORINE PROFILE
12 C-9	CHLORINATION BASIN AREA PLAN
13 C-10	TURNAROUND, AND DRIVEWAY PLAN & DETAILS
14 C-11	WEIGH STATION PLAN & MISCELLANEOUS PROFILES & DETAILS
15 C-12	LANDSCAPE PLANS AND METER VAULT DETAILS
16 C-13	LANDSCAPE AND GRADING PLAN ADMINISTRATION BUILDING & 15" DRAIN
17 C-14	LANDSCAPE PLAN DEWATERING BUILDING
18 C-15	PLANT LIST AND PLANTING DETAILS
19 C-16	4" SCUM PROFILE AND MISCELLANEOUS DETAILS
ARCHITECTURAL	
20 A-1	SUBSTATION & SCALE HOUSE PLANS SECTIONS & DETAILS
21 A-2	STAIR DETAILS
22 A-3	LABORATORY REVISIONS-PLAN
23 A-4	LABORATORY REVISIONS-ELEVATIONS & DETAILS
24 A-5	ADMINISTRATION BUILDING-ROOF PLAN & DETAILS
25 A-6	DOOR & WINDOW DETAILS
26 A-7	MODIFICATIONS TO SLUDGE OXIDATION BUILDING
STRUCTURAL	
27 S-1	SCALE PIT SECTIONS & DETAILS AND STRUCTURAL NOTES
MECHANICAL	
28 M-1	MISCELLANEOUS PLANS SECTIONS & DETAILS
29 M-2	DEWATERING BUILDING-PIPING ADDITIONS
30 M-3	DEWATERING BUILDING-METERING & PIPING ADDITIONS
31 M-4	DEWATERING BUILDING-INSTRUMENT PANEL ADDITIONS
32 M-5	MISCELLANEOUS METERING & DETAILS
33 M-6	SLUDGE OXIDATION BUILDING PLANS & DETAILS
34 M-7	MISCELLANEOUS PLANS, SECTIONS & DETAILS
35 M-8	MISCELLANEOUS PLANS, SECTIONS & DETAILS
MECHANICAL/ELECTRICAL	
36 ME-1	ADMINISTRATION BUILDING PLAN & DETAILS
37 ME-2	MISCELLANEOUS PLANS AND DETAILS
ELECTRICAL	
38 E-1	SITE PLAN & DETAILS
39 E-2	SITE PLAN & DETAILS
40 E-3	GENERAL ELECTRICAL NOTES & LEGEND
41 E-4	SCALE HOUSE & MISCELLANEOUS DETAILS
42 E-5	WIRING DIAGRAMS - CAPACITORS
43 E-6	MISCELLANEOUS PLANS & DETAILS
44 E-7	BLOWER BUILDING & PUMPING STATION PLAN & DETAILS
45 E-8	MISCELLANEOUS PLANS & DETAILS
46 E-9	AERATION BASIN CONTROL BUILDING #1 PLAN & DETAILS
47 E-10	UNDERGROUND MANHOLE DETAILS
48 E-11	UNDERGROUND DUCTBANK SECTIONS AND DETAILS
49 E-12	SLUDGE OXIDATION BUILDING PLAN & DETAILS
50 E-13	WIRING DIAGRAMS AND MISCELLANEOUS DETAILS

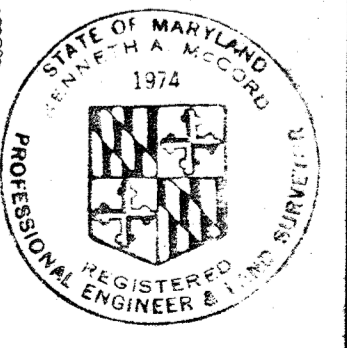
ABBREVIATIONS

PIPELINE	MISCELLANEOUS
I INLET	⊕ BASELINE
H HEADWALL	⊕ CENTERLINE
MH MANHOLE	PI POINT OF INTERSECTION
D DRAIN	PC POINT OF CURVATURE
TD TANK DRAIN	PT POINT OF TANGENCY
S SEWER OR INTERCEPTOR	VC VERTICAL CURVE
SHC SEWER HOUSE CONNECTION	PVC POINT OF VERTICAL CURVATURE
W POTABLE WATER	PVI POINT OF VERTICAL CURVE INTERSECTION
WHC WATER HOUSE CONNECTION	POC POINT ON CURVE
FM FORCE MAIN	PVT POINT OF VERTICAL TANGENCY
FW FLUSHING WATER	PGL PROFILE GRADE LINE
ABI AERATION BASIN INFLUENT	STA STATION
CCBI CHLORINE CONTACT BASIN INFLUENT	HOR HORIZONTAL
CCBE CHLORINE CONTACT BASIN EFFLUENT	VER VERTICAL
WS WASTE SLUDGE	N NORTH
PD PROCESS DRAIN	S SOUTH
PS PRIMARY SLUDGE	E EAST
TDS THICKENED DIGESTED SLUDGE	W WEST
TSE THICKENED SLUDGE EFFLUENT	BM BENCH MARK
IS INCINERATOR SLUDGE	N&T NAIL & TIN TOP
PCI PRIMARY CLARIFIER INFLUENT	EX. EXIST. EXISTING
Cl ₂ CHLORINE	TYP TYPICAL
A AIR	BLDG BUILDING
RCP REINFORCED CONCRETE PIPE	INV INVERT ELEVATION
R REDUCER	INT INTERSECTION
HB HORIZONTAL BEND	R RADIUS
VB VERTICAL BEND	RD ROAD
IWL INDUSTRIAL WATER LINE	O/C ON CENTERS
NABI NITRIFICATION AERATION BASIN INFLUENT	CONC CONCRETE
WAS WASTE ACTIVATED SLUDGE	ELECT ELECTRICAL
IS INTERIM SLUDGE	DB DUCTBANK
FBI FLOCCULATION BASIN INFLUENT	FF FIRST FLOOR
	FT FEET
	MJ MECHANICAL JOINT
	PL PROPERTY LINE
	HP HIGH POINT
	PAVMT PAVEMENT

LEGEND

	EXISTING	CONSTRUCTION THIS CONTRACT	EXISTING	CONSTRUCTION THIS CONTRACT
PROPERTY LINE	---	---	---	---
TREE				
EMBANKMENT				
SURVEY TRAVERSE or CONSTRUCTION				
WOODS				
STREAM				
DITCH				
CONTOURS				
GRADE CONTROL ELEVATION				
BUILDINGS or STRUCTURES				
ROADWAYS				
CURB				
PARKING CHOCKS				
RESURFACING (PAVING)				
SIDEWALK				
STAIRWAY				
FENCE & GATE				
PIPELINE (8" & SMALLER)				
(10" & LARGER)				
MANHOLES / CLEANOUTS				
VALVES				
BEND, WYE, TEE, REDUCER / INCREASER				
CAP or PLUG				
HYDRANT (STANDARD FIRE) (SIAMESE)				
CONDUIT				
ELECTRICAL DUCTBANK				
RIP RAP				
WEDGE PAVING				

NOTE:
 FOR LANDSCAPING LEGEND, SEE SHEET C-16
 FOR ELECTRICAL LEGEND, SEE SHEET E-3



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

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

CONTRACT NO. 761-S

LIST OF DRAWINGS,
 ABBREVIATIONS AND LEGEND

SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO.4

DRAWING
 NO. 2
 OF 50

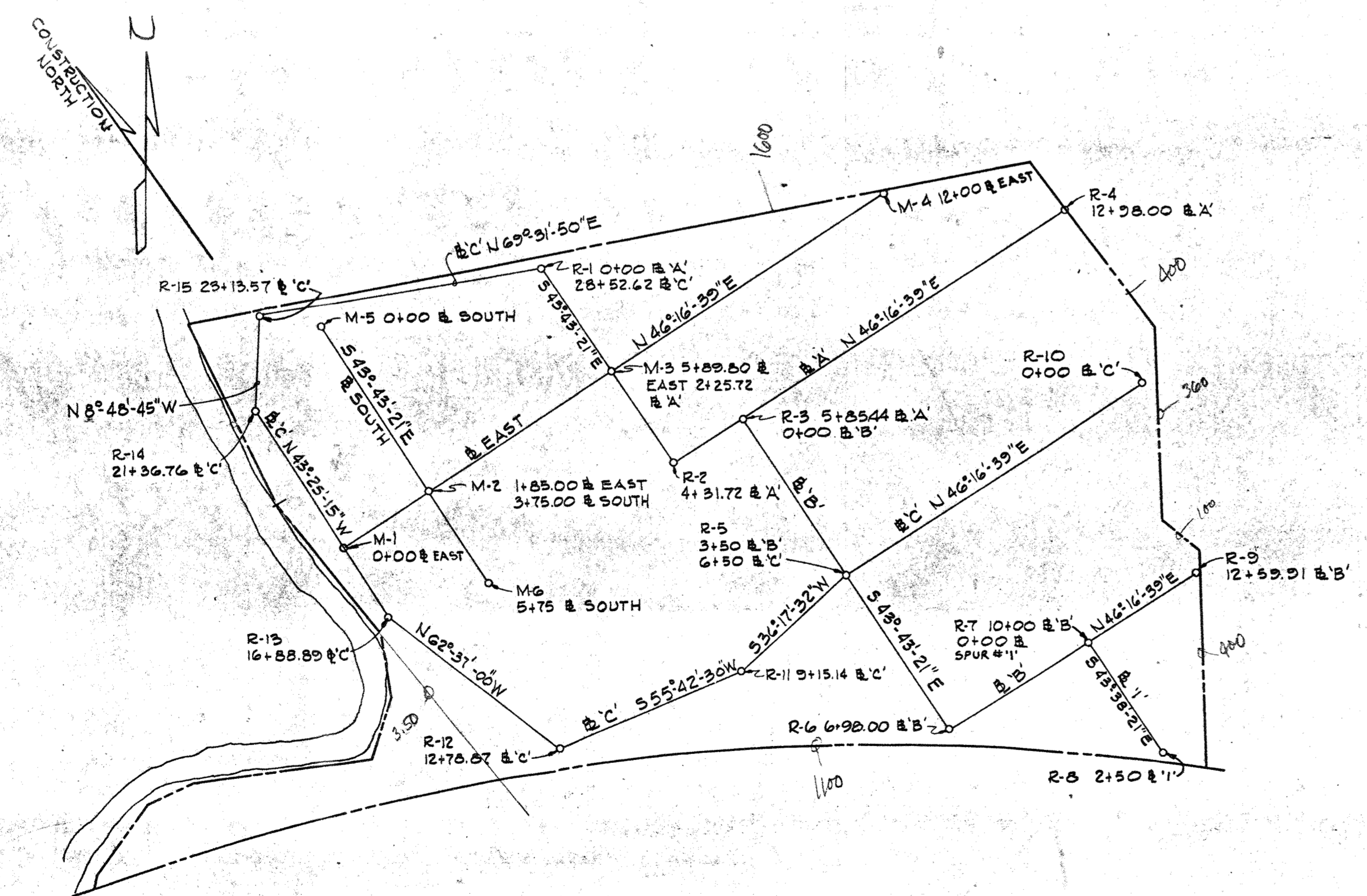
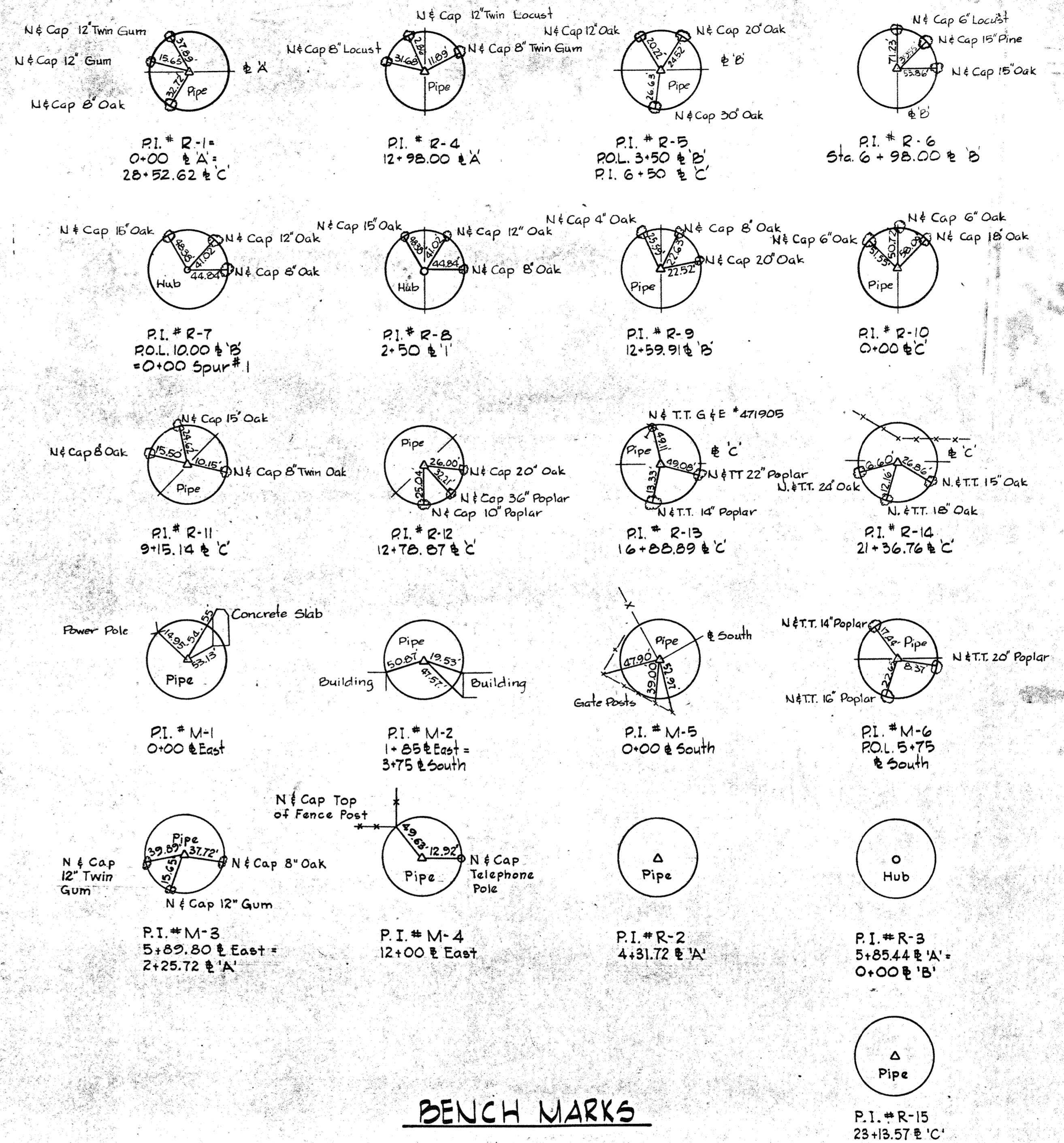
SCALE
 NONE

GENERAL NOTES

1. The location of existing utilities where shown 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 shop drawing transmittal pipe lay schedules.
3. All pipeline profile elevations are invert elevations, unless otherwise noted.
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 4 feet unless otherwise shown by profiles or elevations on 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 prior to resurfacing.
11. 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. All disturbed areas not paved or sodded shall be fine graded and shall have topsoil, seed, fertilizer, lime and mulch placed in accordance with the Specifications. The entire plant area whether disturbed or not shall receive top dressing of top soil, and be seeded and mulch. See specifications.
13. 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 survey baselines.
14. For location of utilities entering buildings, see Mechanical & Electrical Drawings.
15. 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.
16. 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.
17. All existing walkways & paved areas that require removal for construction purposes or that are disturbed or damaged by construction activities shall be replaced.
18. 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.
19. Existing site topography, existing utilities and existing ground profiles shown on these contract drawings are a composite of field surveys completed in 1974 thru 1977 and design drawings of various construction contracts. In addition, existing underground utilities throughout the plant are significant in number, however, only a very limited amount have been shown on these drawings. The Contractor's attention is directed to the Contract Conditions in this regard.

P.I. REFERENCES

(For Additional P.I. References, see Sheets C-3 to C-5)



BENCH MARKS

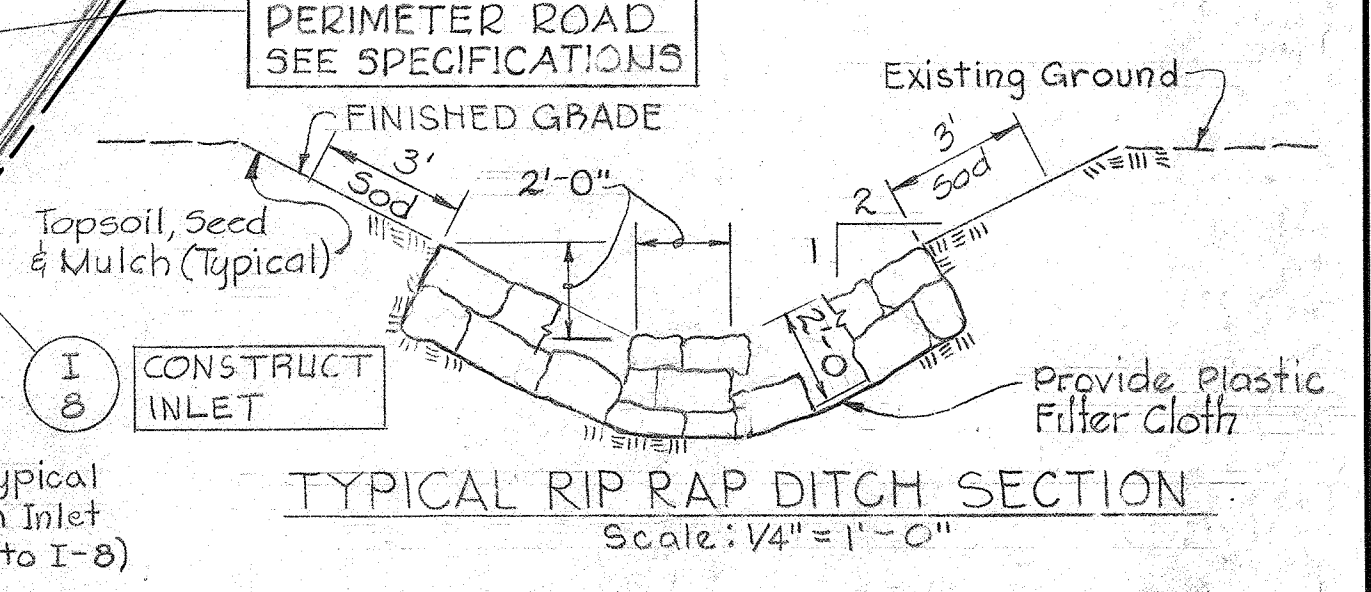
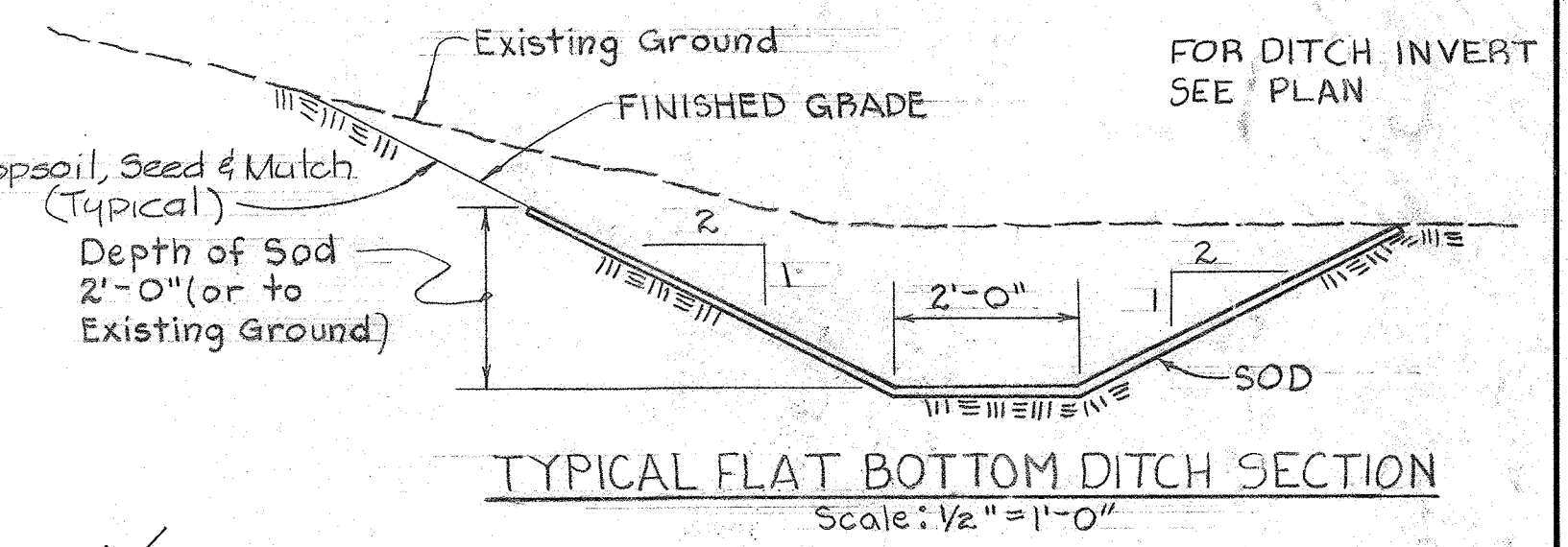
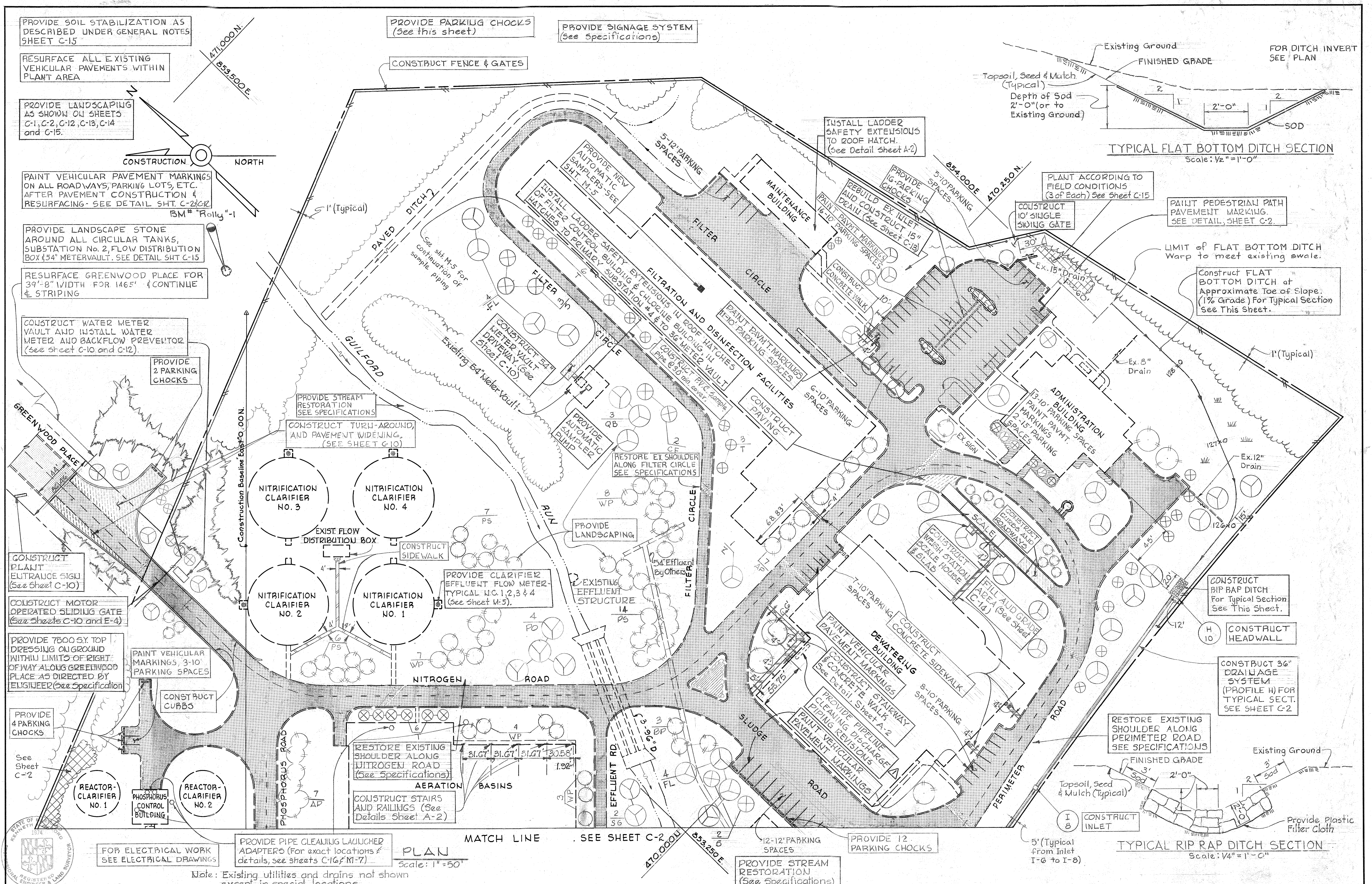
- W.R.#A. BM "Blaine" Elev. 137.770
X-Cut on flange bolt of fire hydrant
40± Rt. of Sta. 2+25 ± S. South
- W.R.#A. BM "Rolly"-1 Elev. 130.388
RR Spike in 12" Oak 25± Lt. of
Sta. 12+50 ± East
- W.R.#A. BM "Rolly"-2 Elev. 147.087
RR Spike in 8" Locust 4± from
P.I. # R-4 (Not shown on plan)
- W.R.#A. BM "Rolly"-3 Elev. 132.162
RR Spike in 15" at foot of RR. Fill
35± East of P.I. # R-6
- 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)
- W.R.#A. BM "Rolly"-5 Elev. 132.996
RR Spike in 36" Poplar -30' Lt. of
P.I. # R-12

(For Additional Bench Marks, see Sheet C-3)

LOCATION SYMBOL



WHITMAN, REARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: <u> </u> CHIEF - BUREAU OF ENVIRONMENTAL SERVICES	CONTRACT NO. <u>761-S</u>	GENERAL NOTES, REFERENCES & BASELINE PLAN	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. <u>3</u> OF <u>50</u>	SCALE NONE
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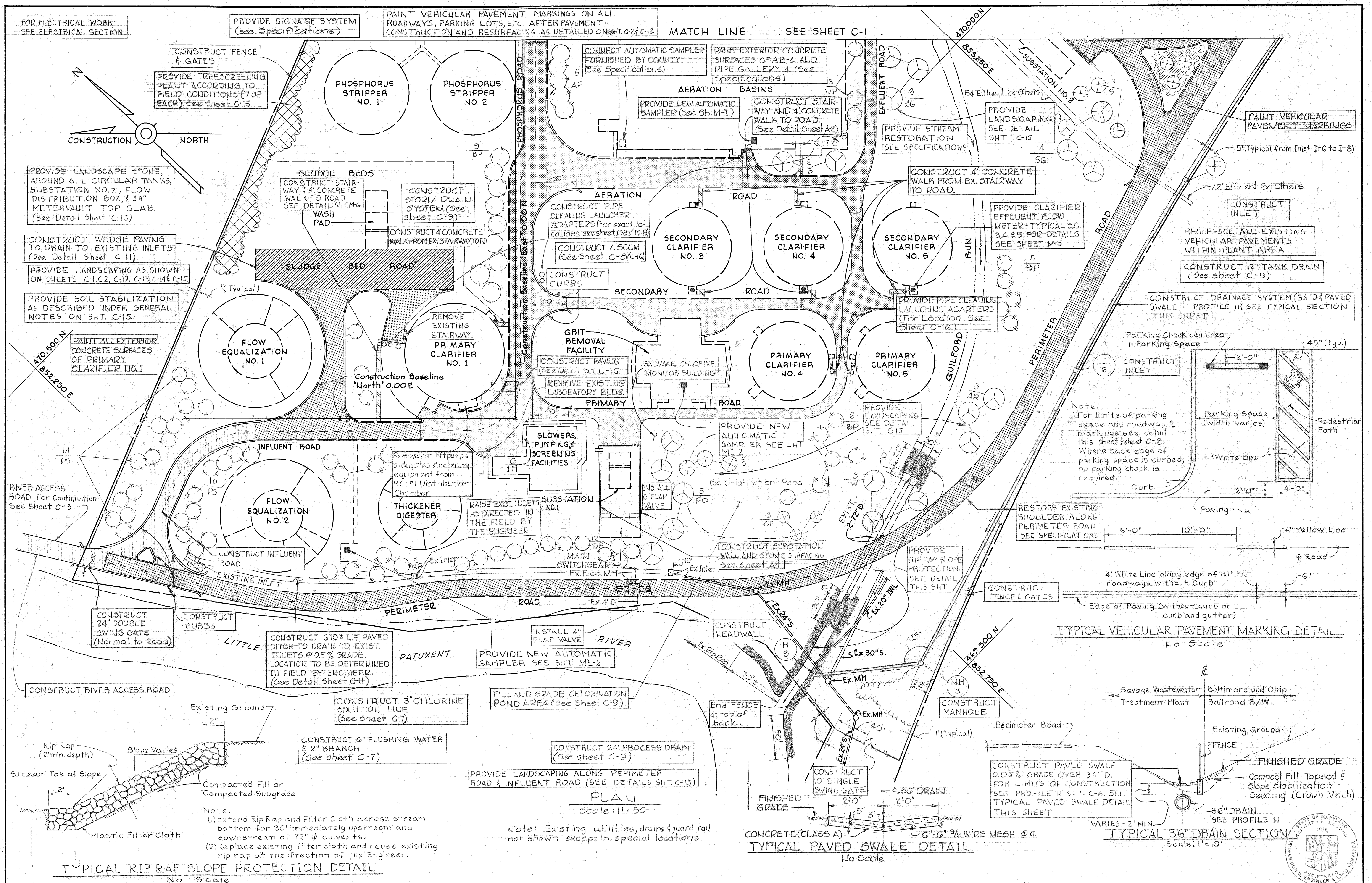
FOR ELECTRICAL WORK SEE ELECTRICAL DRAWINGS

PROVIDE PIPE CLEANING LAUNCHER ADAPTERS (For exact locations & details, see sheets C-16 & M-7)

PLAN Scale: 1" = 50'

Note: Existing utilities and drains not shown except in special locations.

<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p>2/16/80 DATE</p> <p>James W. J... CHIEF - BUREAU OF ENVIRONMENTAL SERVICES</p>	<p>CONTRACT NO. 761-S</p>	<p>GENERAL PLAN</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 4 OF 50 SCALE AS SHOWN</p>
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WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
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BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

2/15/80
DATE

James M. Owen
CHIEF - BUREAU OF ENVIRONMENTAL SERVICES

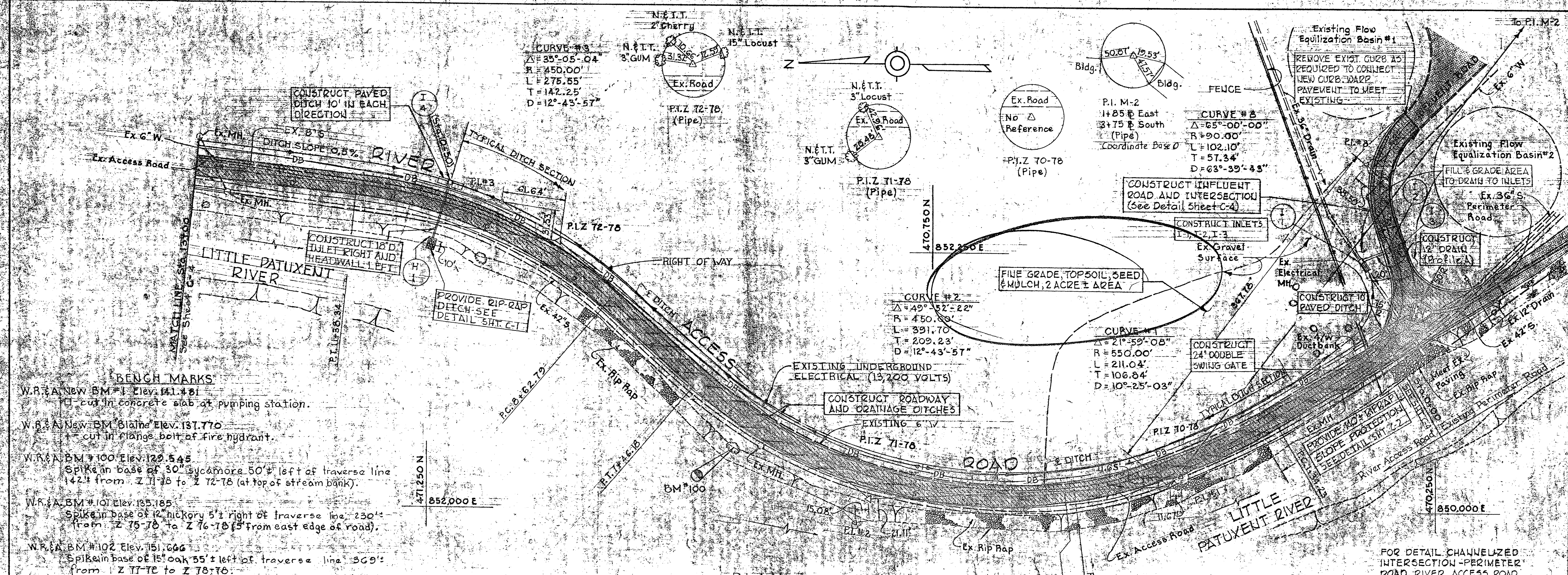
CONTRACT NO. 761-S

GENERAL PLAN

SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4

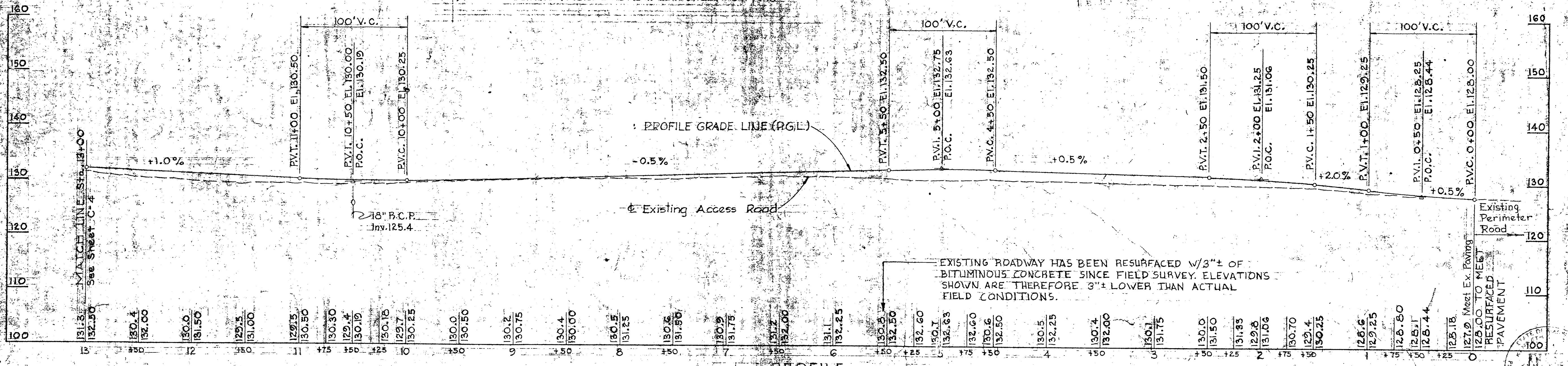
DRAWING NO. 5 OF 50

SCALE AS SHOWN



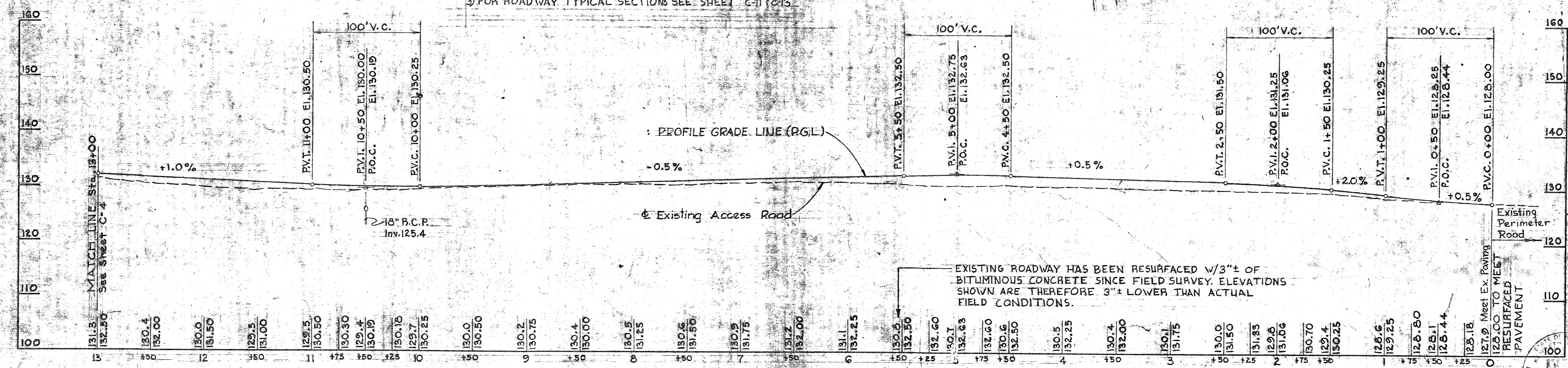
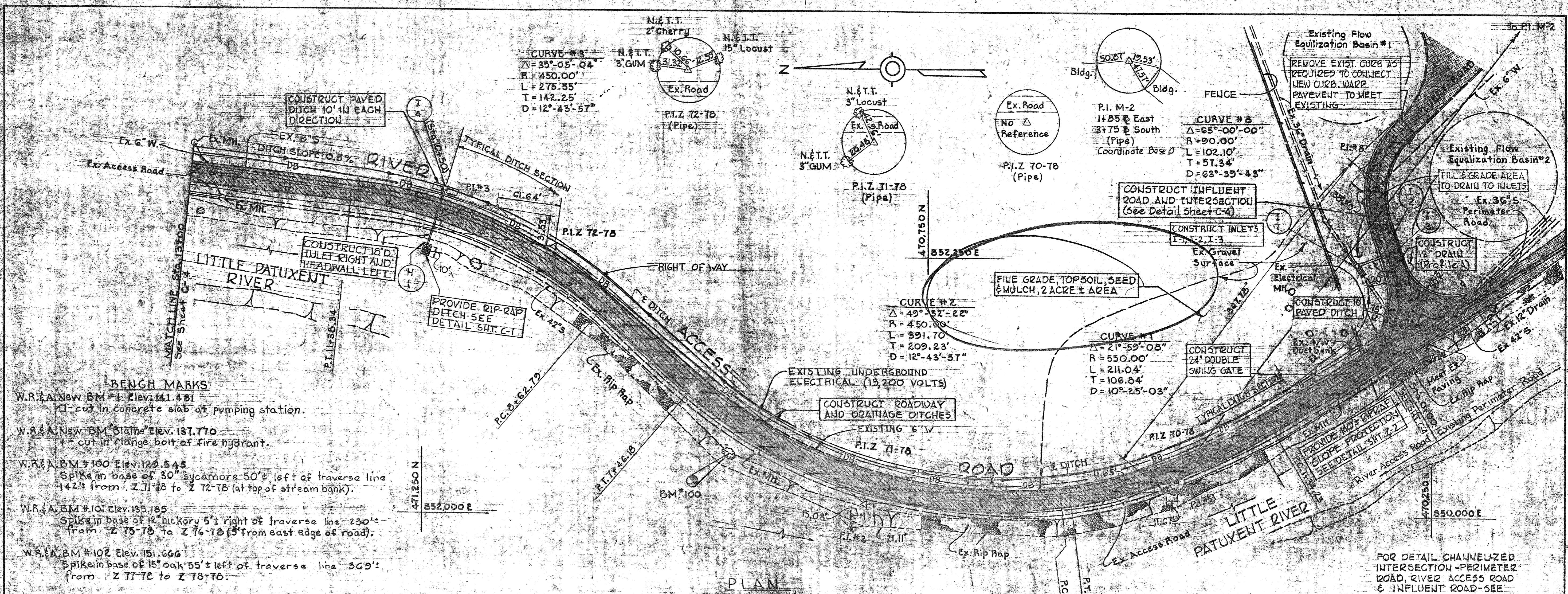
- BENCH MARKS**
- W.R.#A New BM #1 Elev. 141.481
cut in concrete slab at pumping station.
 - W.R.#A New BM #6a Elev. 131.770
cut in flange bolt of fire hydrant.
 - W.R.#A BM #100 Elev. 120.545
Spike in base of 30" sycamore 50' left of traverse line 142'± from Z 71-78 to Z 72-78 (at top of stream bank).
 - W.R.#A BM #101 Elev. 135.185
Spike in base of 12" hickory 5' right of traverse line 230'± from Z 75-76 to Z 76-78 (5' from east edge of road).
 - W.R.#A BM #102 Elev. 151.066
Spike in base of 15" oak 55'± left of traverse line 369'± from Z 77-78 to Z 78-78.

- REFERENCES**
- FOR DRAINAGE STRUCTURE SCHEDULE SEE SHEET C-10
 - FOR PIPELINE PROFILE SEE SHEET C-2
 - FOR ROADWAY TYPICAL SECTIONS SEE SHEET C-1 (21)



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

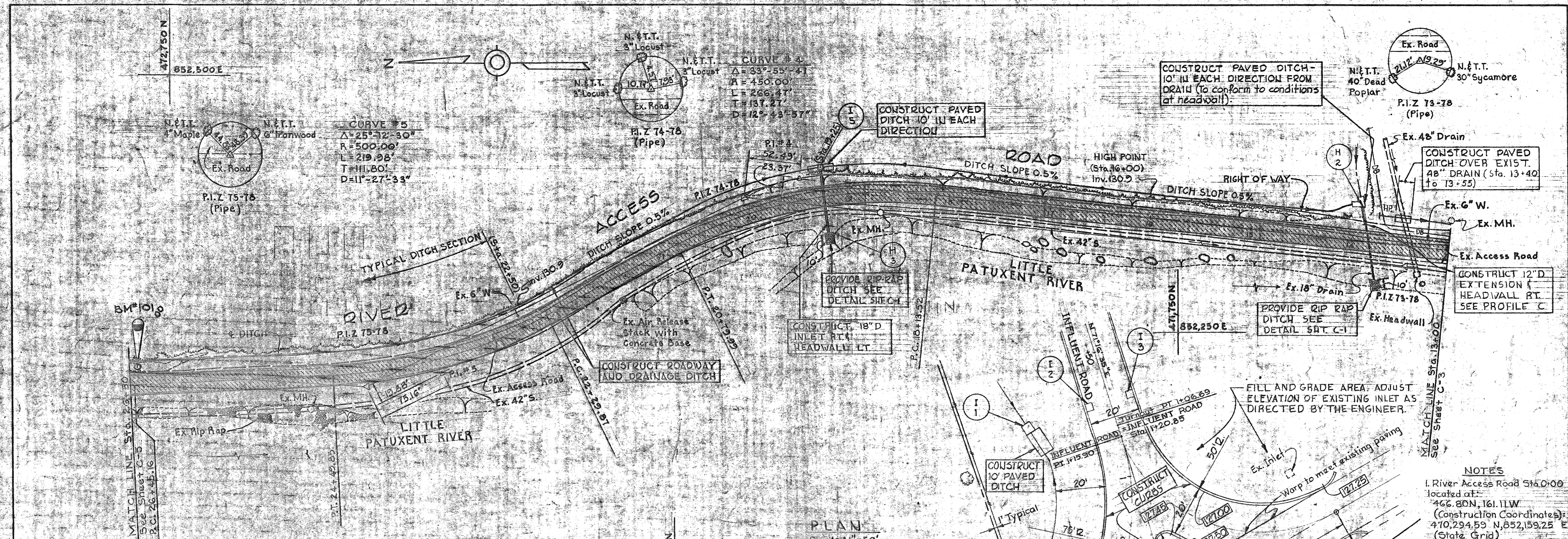
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 2/15/80 CHEF - BUREAU OF ENVIRONMENTAL SERVICES	CONTRACT NO. 761-S	RIVER ACCESS ROAD PLAN AND PROFILE	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 6 OF 50 SCALE AS SHOWN
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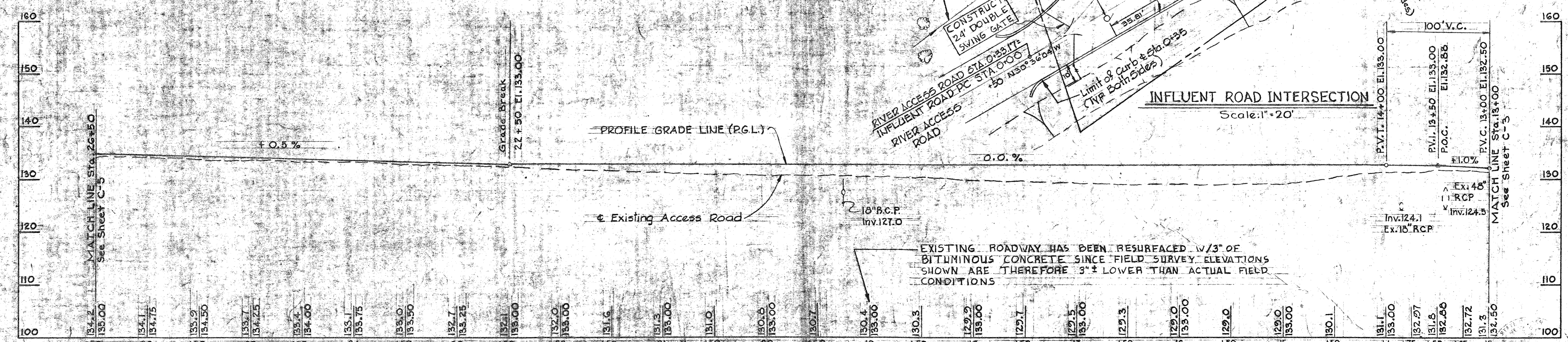
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 2/15/80 CHEF - BUREAU OF ENVIRONMENTAL SERVICES	CONTRACT NO. 761-S	RIVER ACCESS ROAD PLAN AND PROFILE	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 6 OF 50 SCALE AS SHOWN
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W. O. 7132-2F

SHEET C-3



PLAN
Scale: 1"=50'

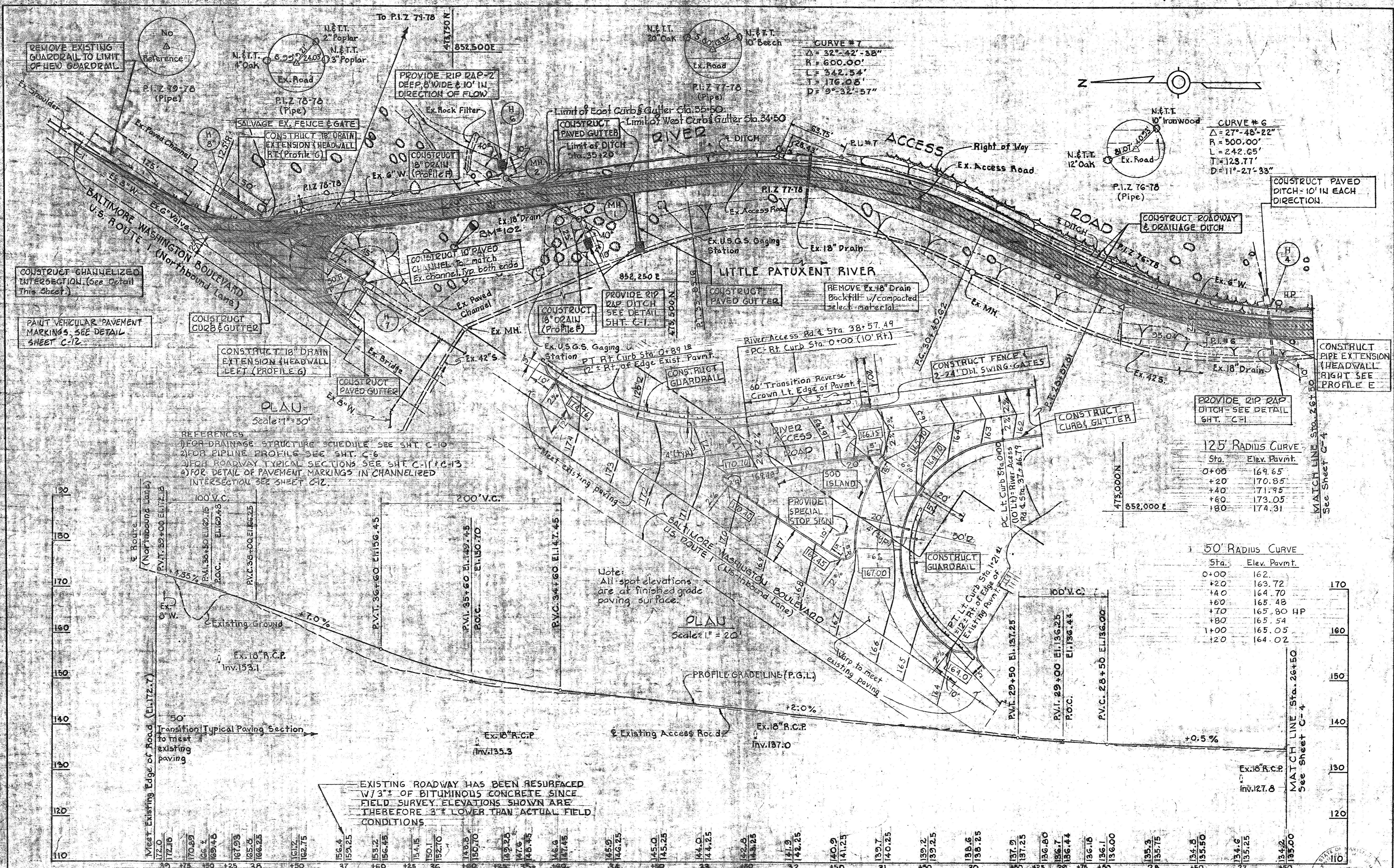


PROFILE
Scale: Hor. 1"=50'
Ver. 1"=10'

- NOTES**
1. River Access Road Sta. 0+00 located at:
466.80N, 161.11W
(Construction Coordinates):
470,294.55 N, 852,159.25 E
(State Grid)
 2. All bearings shown based on State Grid.
 3. All spot elevations are of finished grade paving surface.
 4. For limits of paved ditch to existing inlet, see sheet C-2.

- REFERENCES**
- 1) FOR DRAINAGE STRUCTURE SCHEDULE SEE SHT. C-10
 - 2) FOR PIPE LINE PROFILES SEE SHT. C-4
 - 3) FOR ROADWAY TYPICAL SECTIONS SEE SHT. C-11 & C-13

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 2/15/80 CHIEF: BUREAU OF ENVIRONMENTAL SERVICES	CONTRACT NO. 761-S	RIVER ACCESS ROAD PLAN AND PROFILE	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 7 OF 50 SCALE AS SHOWN
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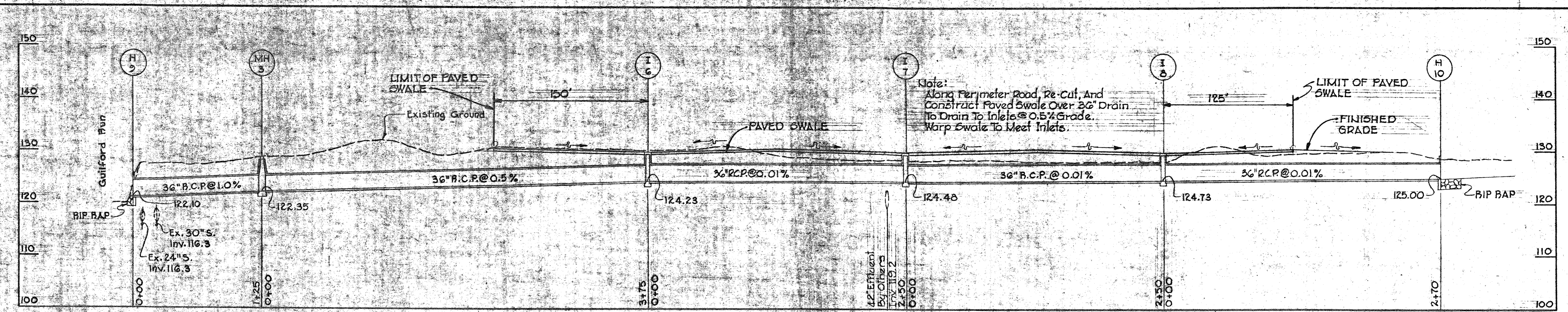
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
2/18/80
DATE

CONTRACT NO. 761-S

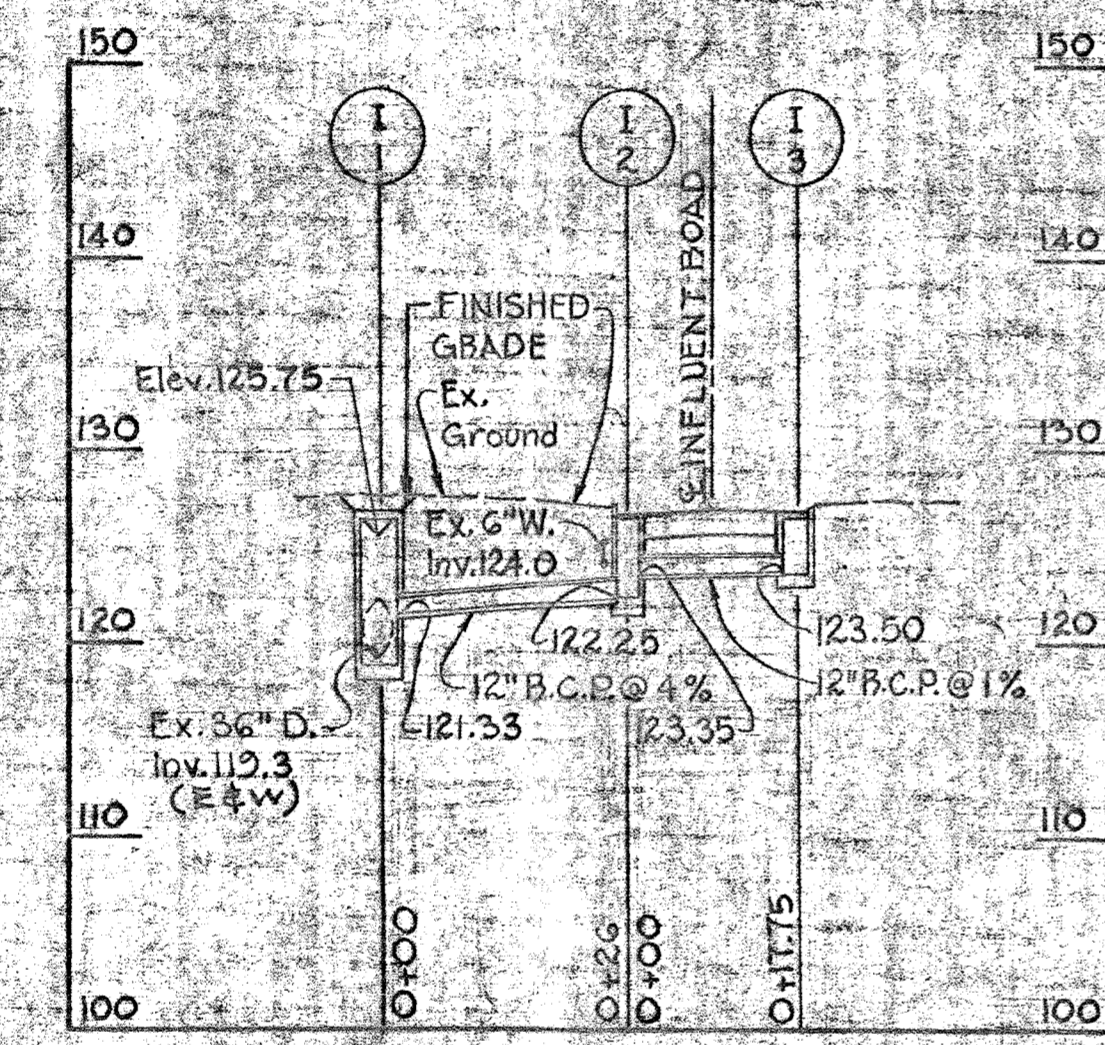
RIVER ACCESS ROAD
PLAN AND PROFILE

SARGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

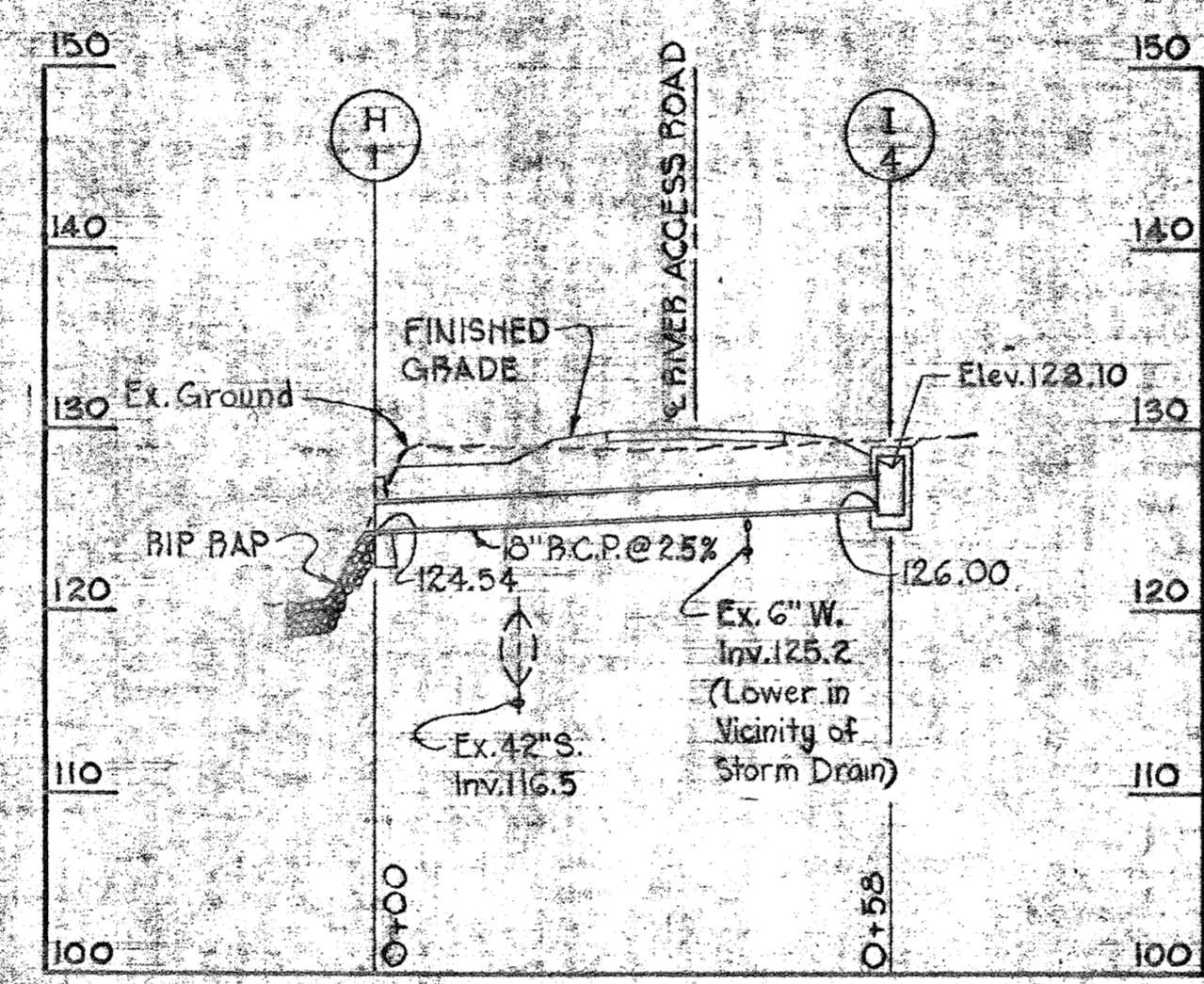
DRAWING NO. 8 OF 50
SCALE AS SHOWN



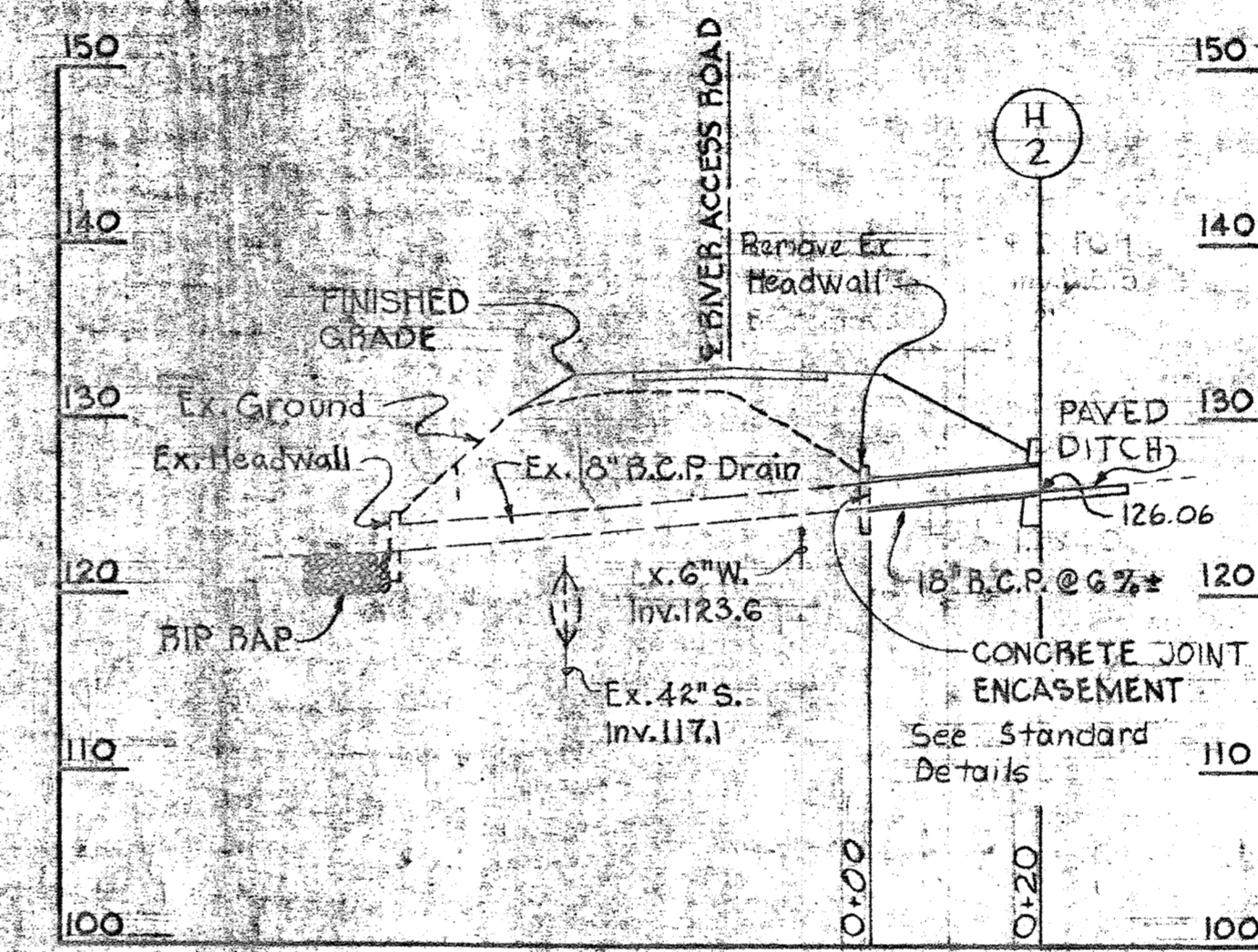
PROFILE H
Scale: Hor. 1" = 50'
Ver. 1" = 10'



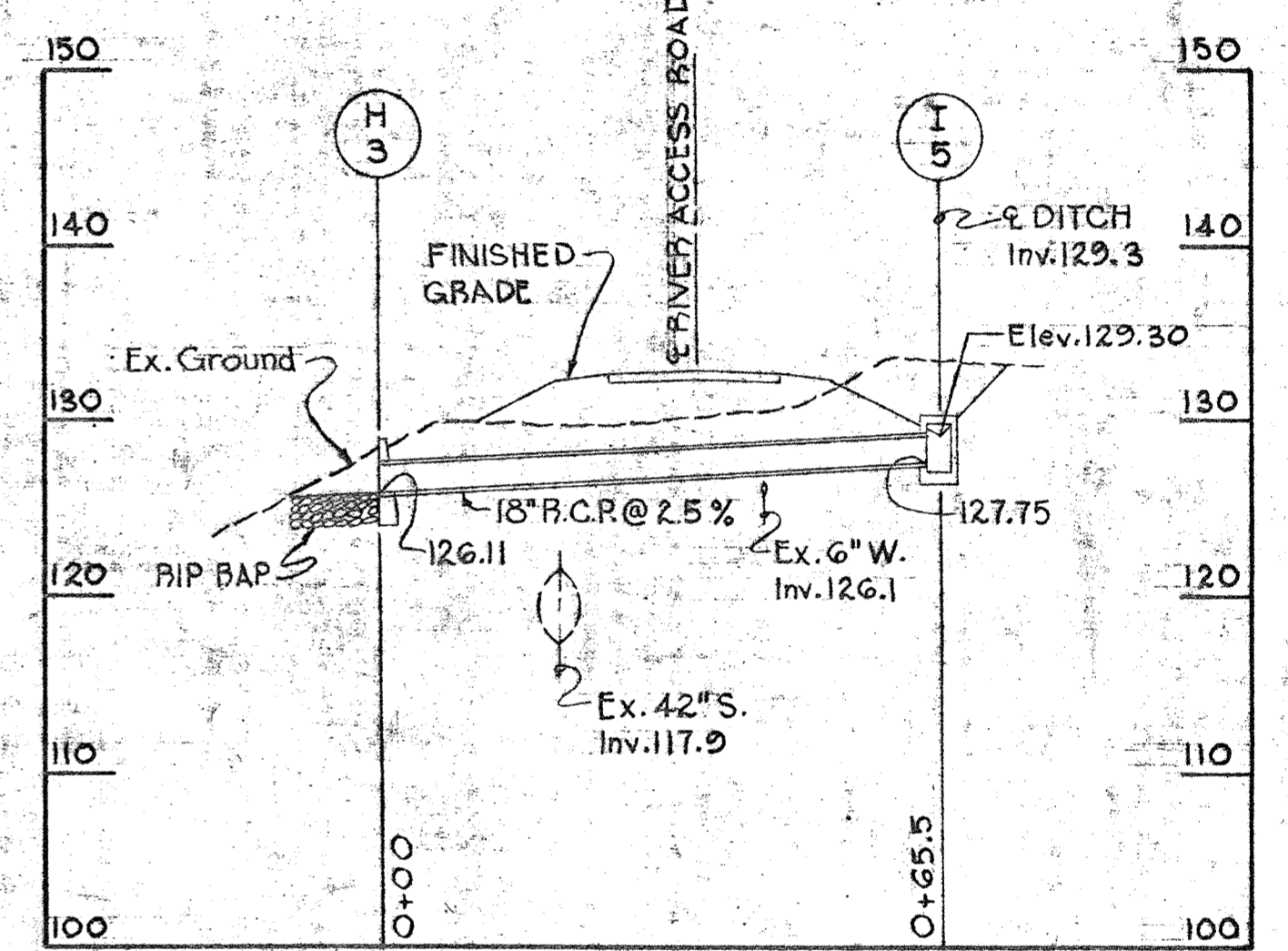
PROFILE A
Scale: Hor. 1" = 20'
Ver. 1" = 10'



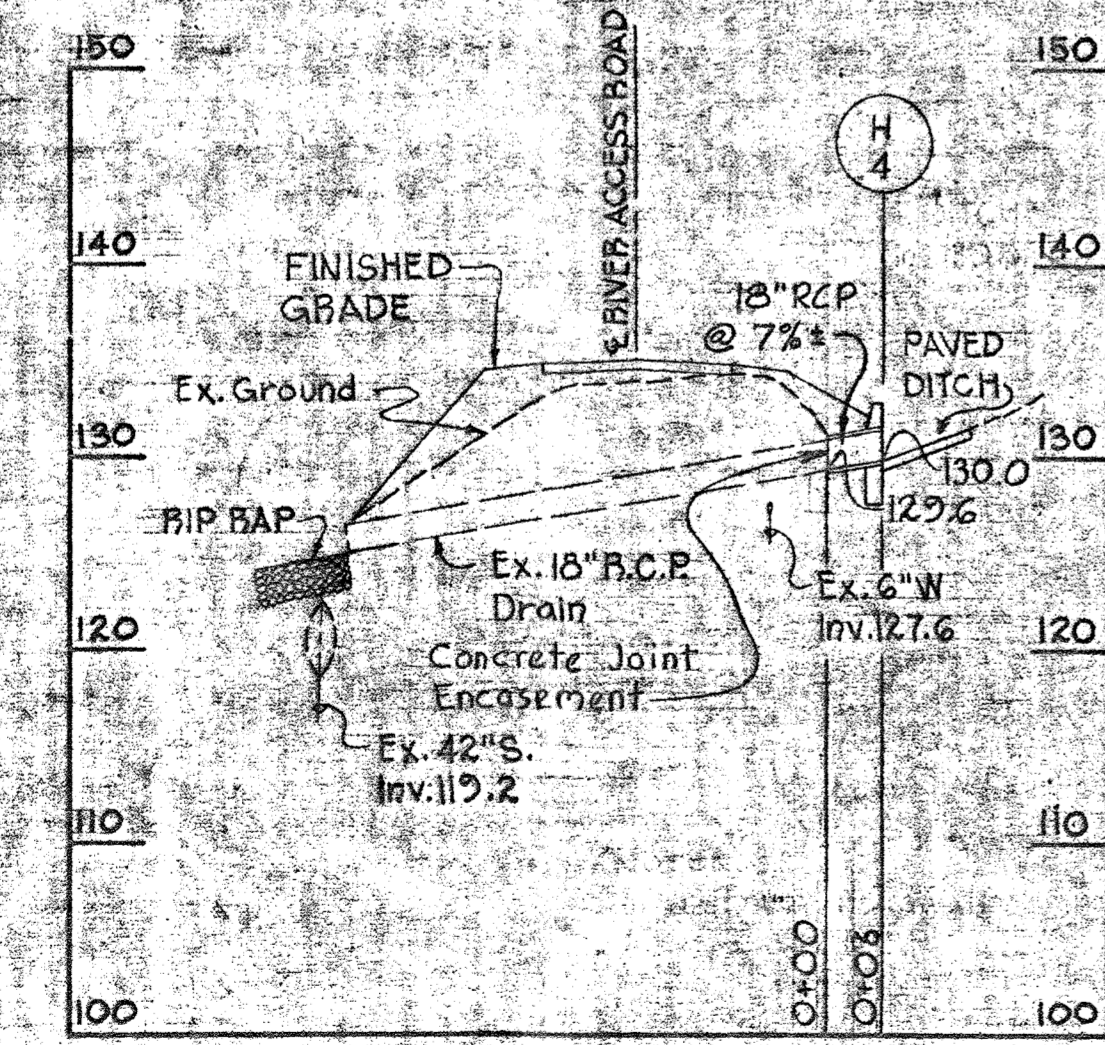
PROFILE B
Scale: Hor. 1" = 20'
Ver. 1" = 10'



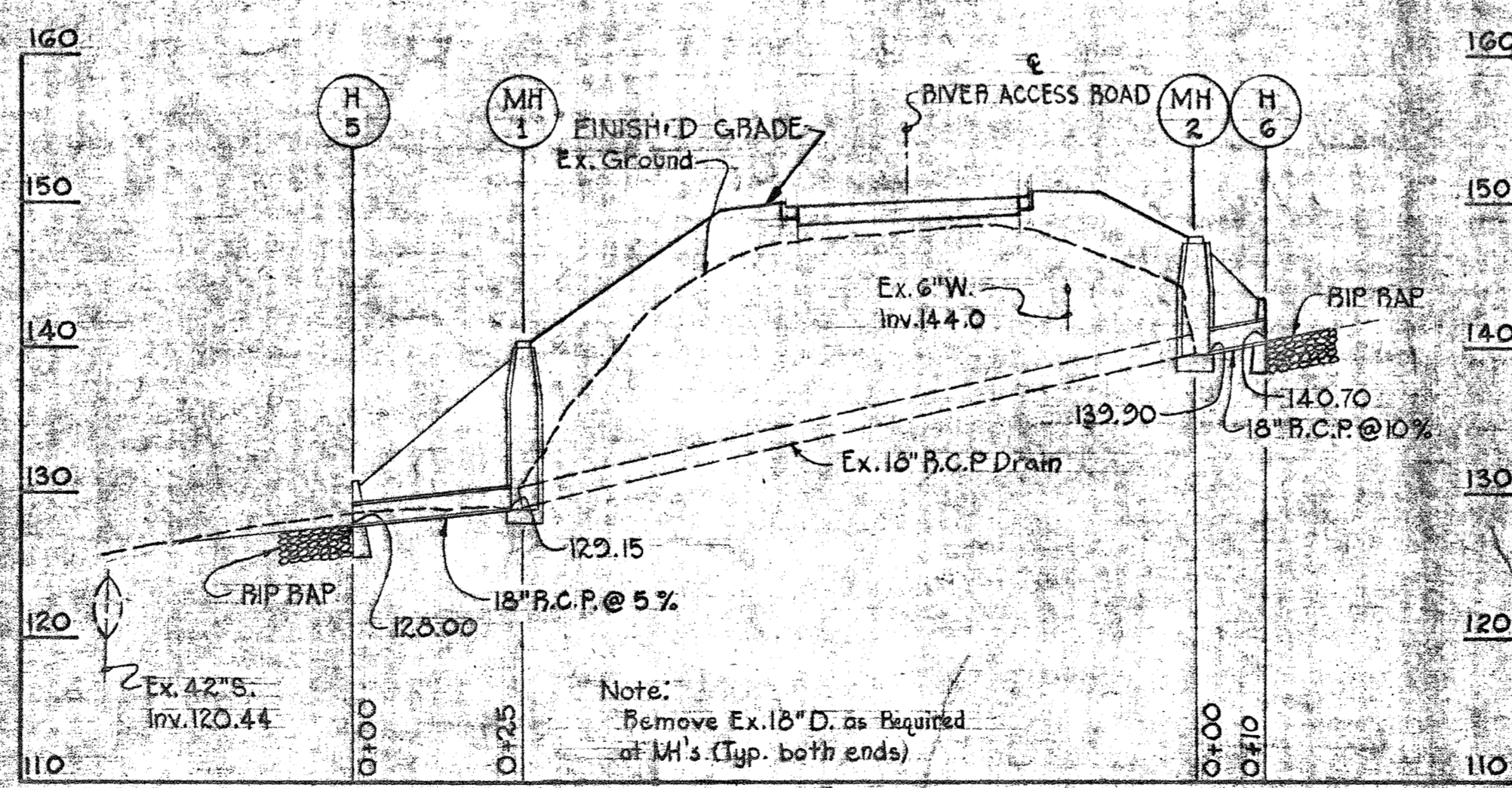
PROFILE C
Scale: Hor. 1" = 20'
Ver. 1" = 10'



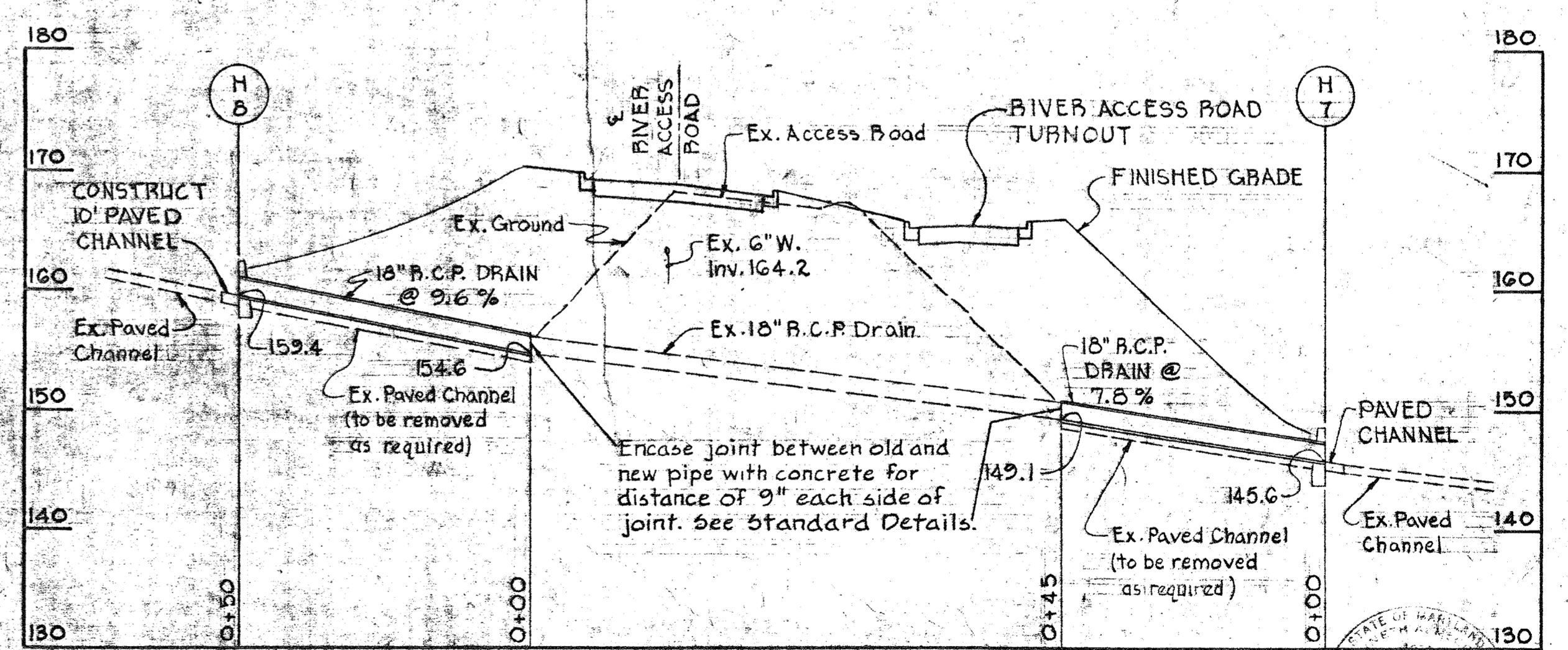
PROFILE D
Scale: Hor. 1" = 20'
Ver. 1" = 10'



PROFILE E
Scale: Hor. 1" = 20'
Ver. 1" = 10'



PROFILE F
Scale: Hor. 1" = 20'
Ver. 1" = 10'



PROFILE G
Scale: Hor. 1" = 20'
Ver. 1" = 10'

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 2/11/80
CHIEF - BUREAU OF ENVIRONMENTAL SERVICES

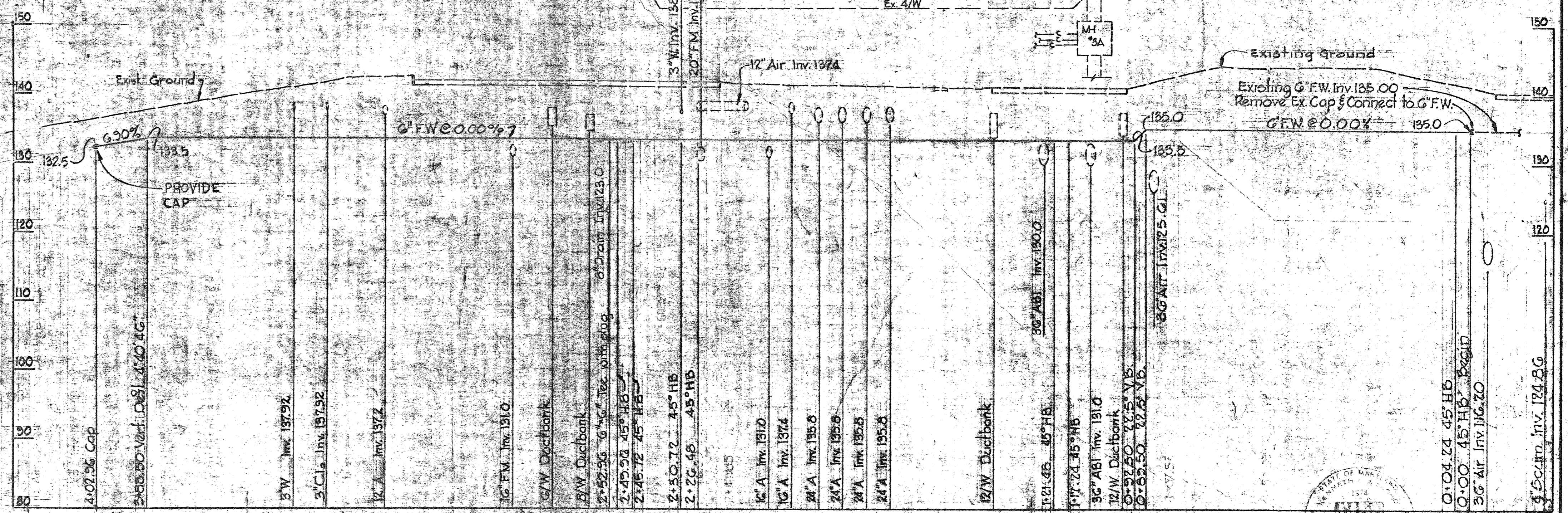
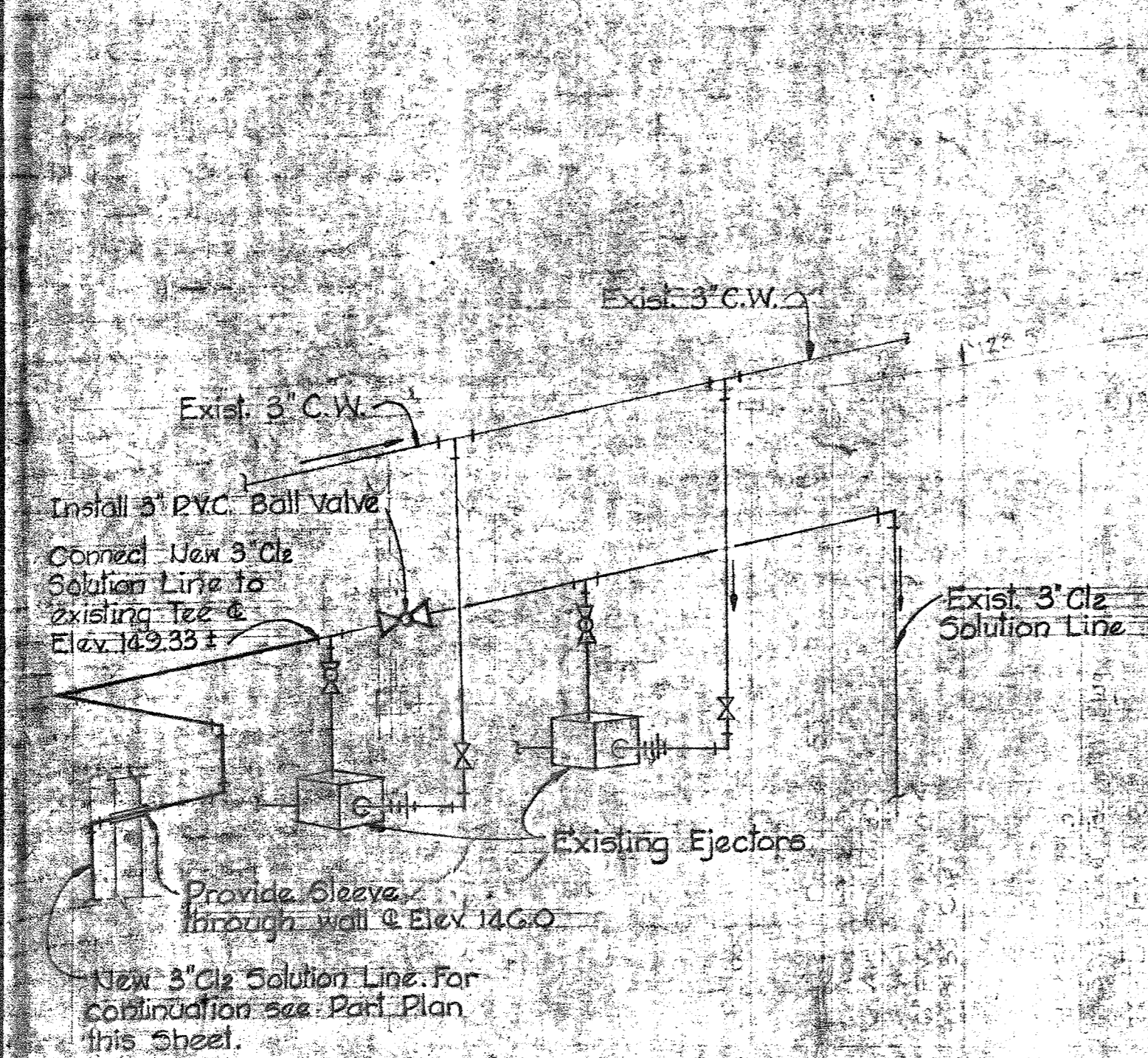
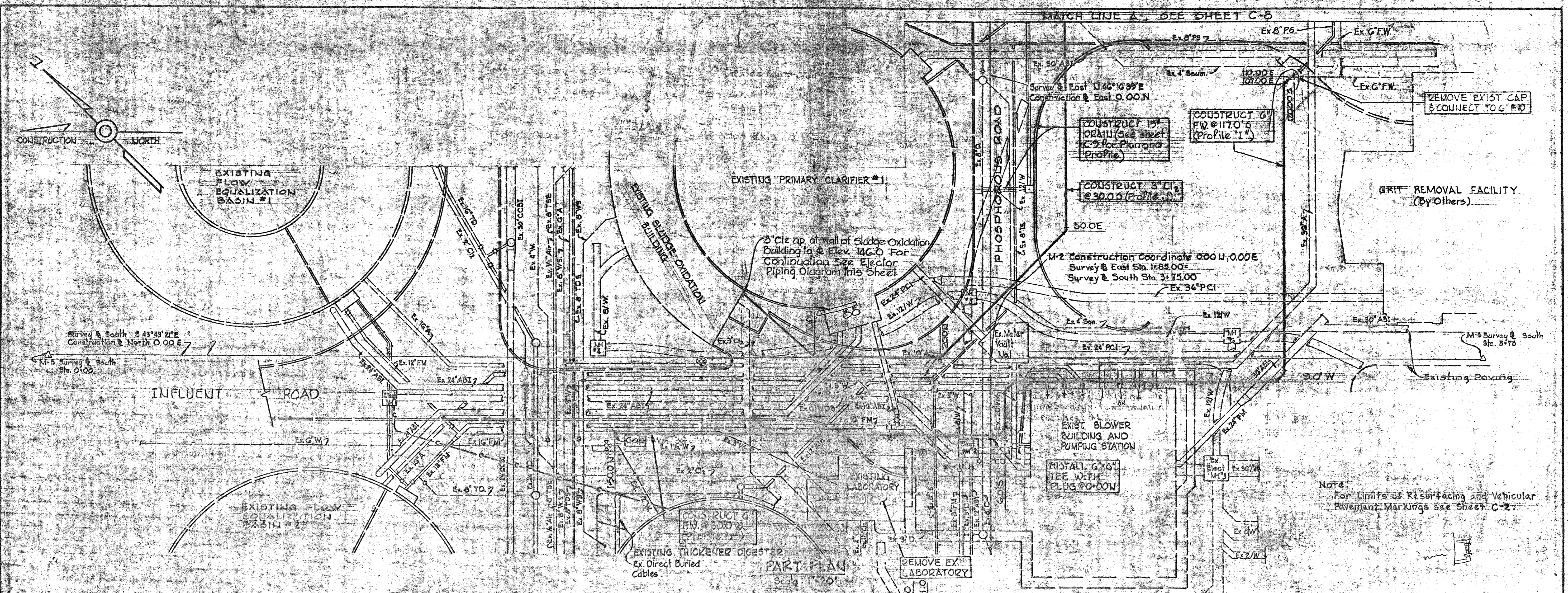
CONTRACT NO. 761-S

DRAINAGE PROFILES

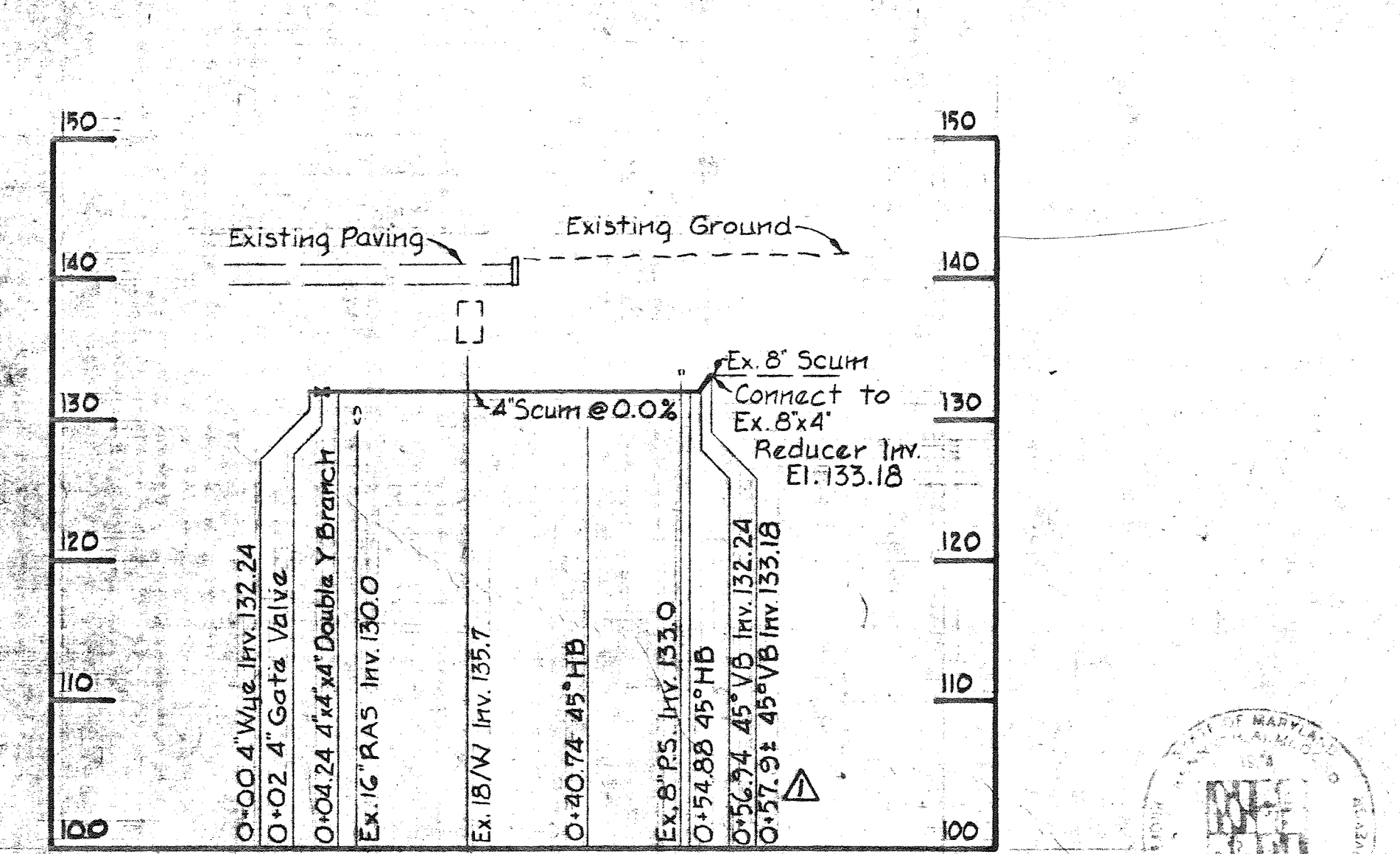
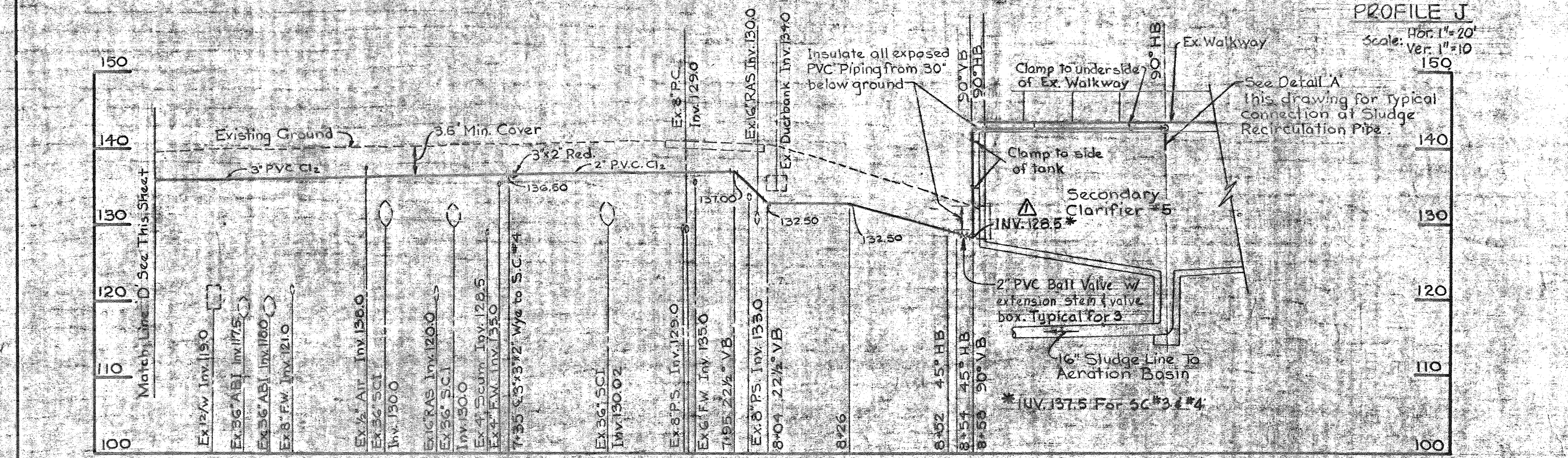
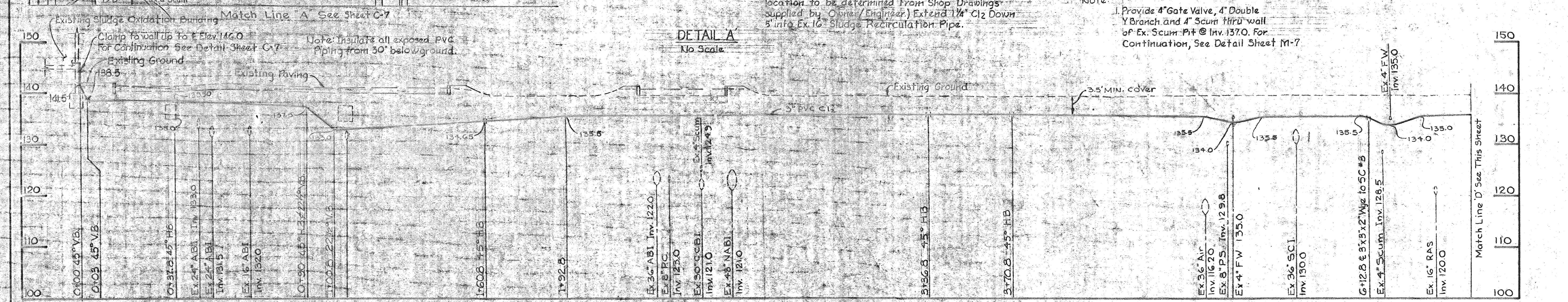
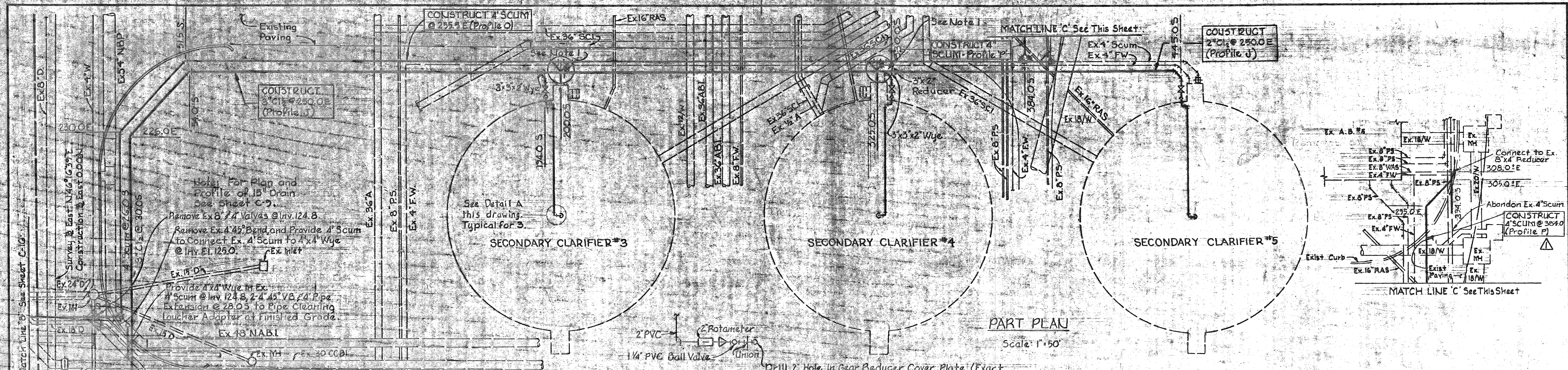
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 9
OF 50

SCALE
AS
SHOWN

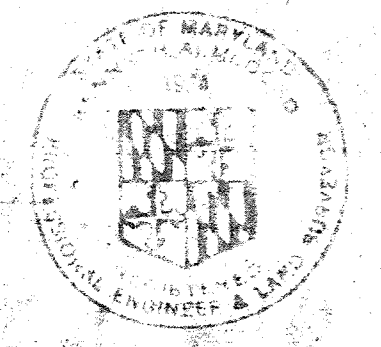


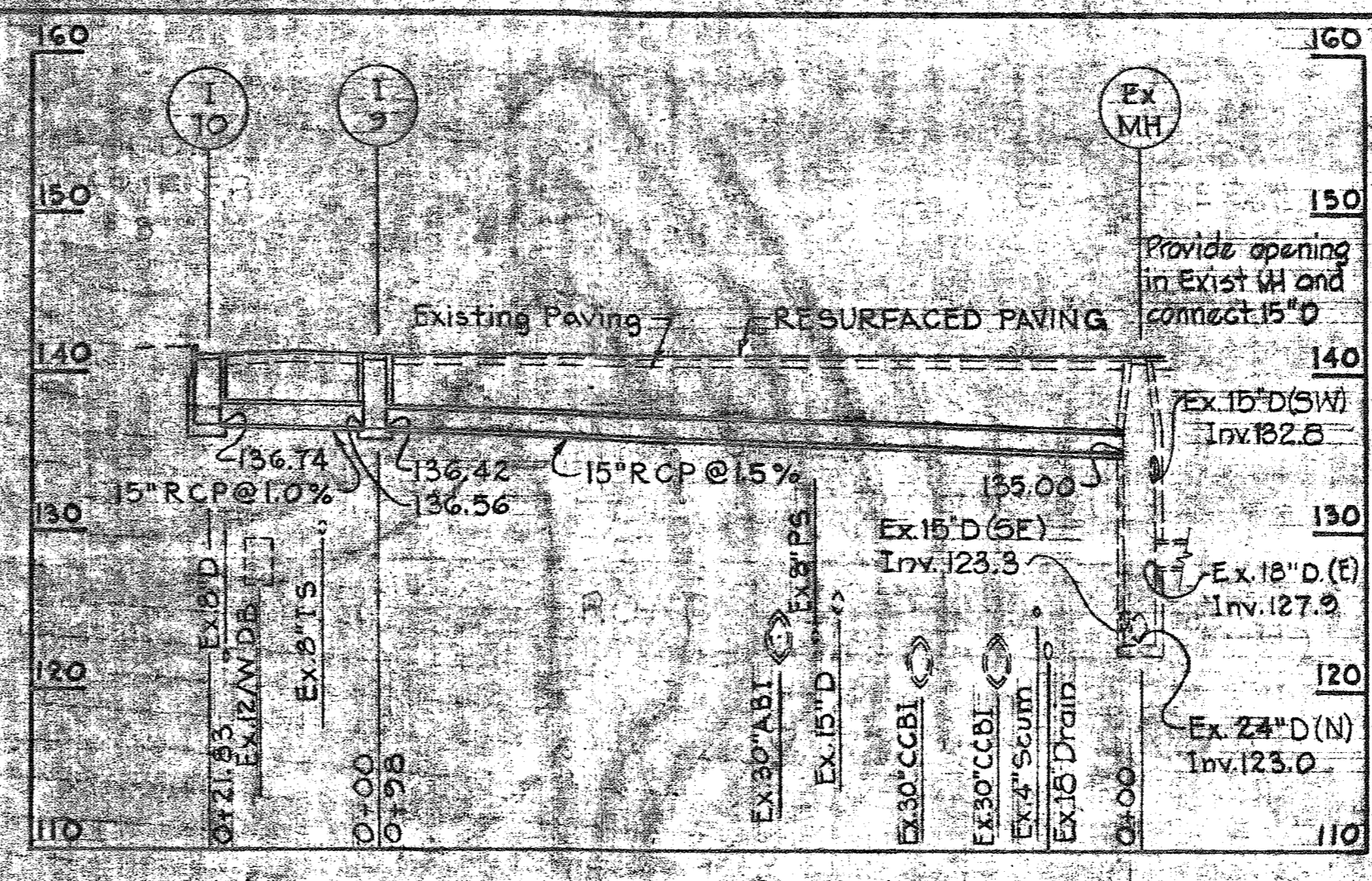
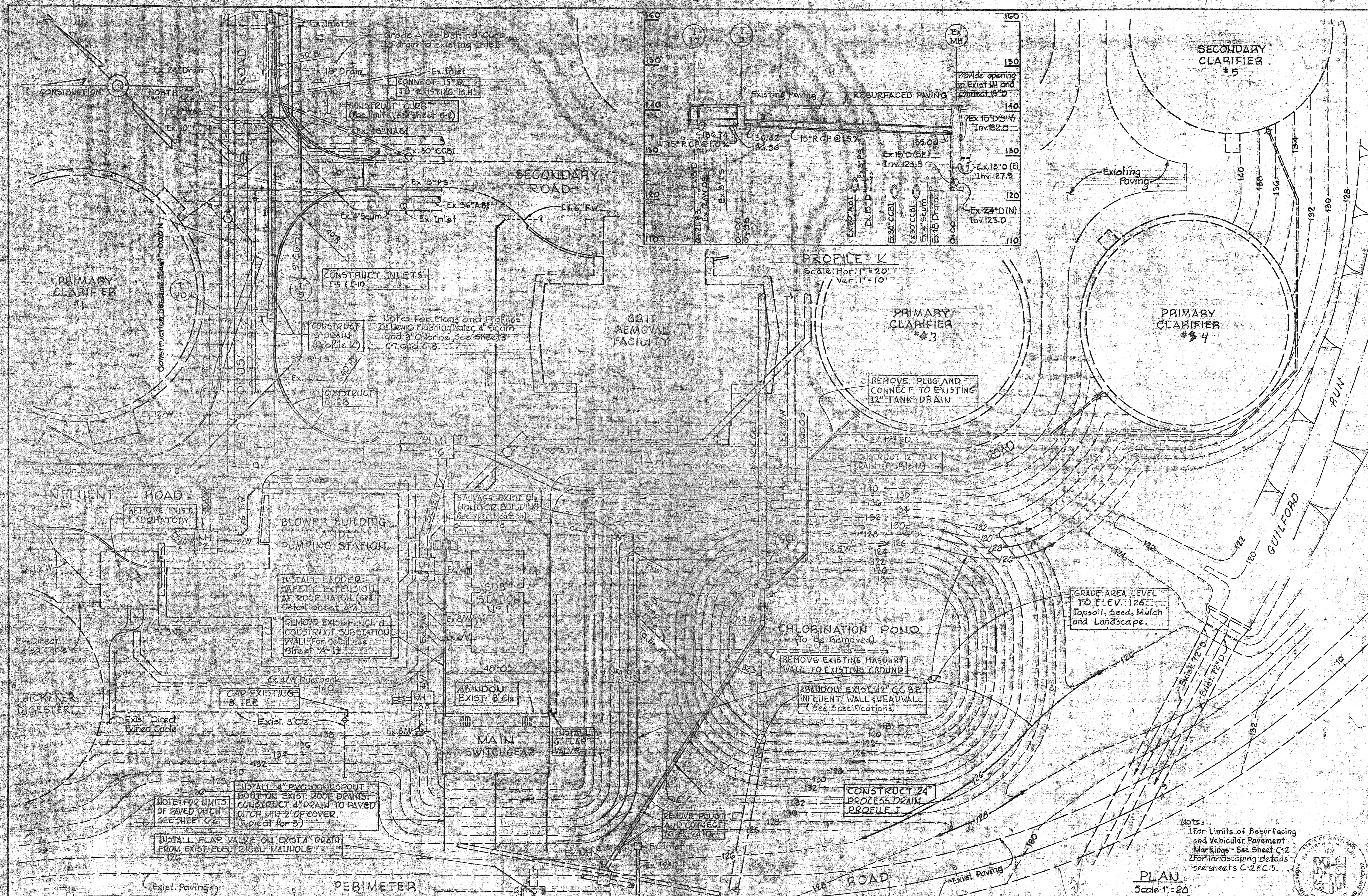
<p>WHITMAN REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p>2/15/60 DATE</p> <p>CHIEF - BUREAU OF ENVIRONMENTAL SERVICES</p>	<p>CONTRACT NO. 761-S</p>	<p>UTILITY PART PLAN AND 6" FLUSHING WATER PROFILE</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 10 OF 50</p> <p>SCALE AS SHOWN</p>
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Match Line 'A' See Sheet C-7
Match Line 'C' See This Sheet
Match Line 'D' See This Sheet
Match Line 'C' See This Sheet

<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p>2/15/80 DATE</p> <p><i>James M. Linn</i> CHIEF, BUREAU OF ENVIRONMENTAL SERVICES</p>	<p>CONTRACT NO. 761-S</p>	<p>PART UTILITY PLAN & 3" CHLORINE PROFILE</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 11 OF 50</p> <p>SCALE AS SHOWN</p>
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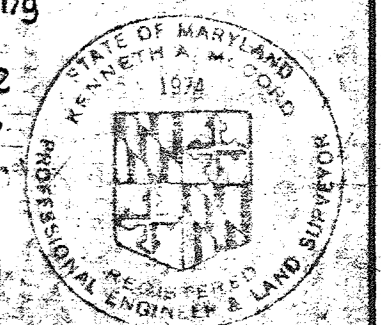




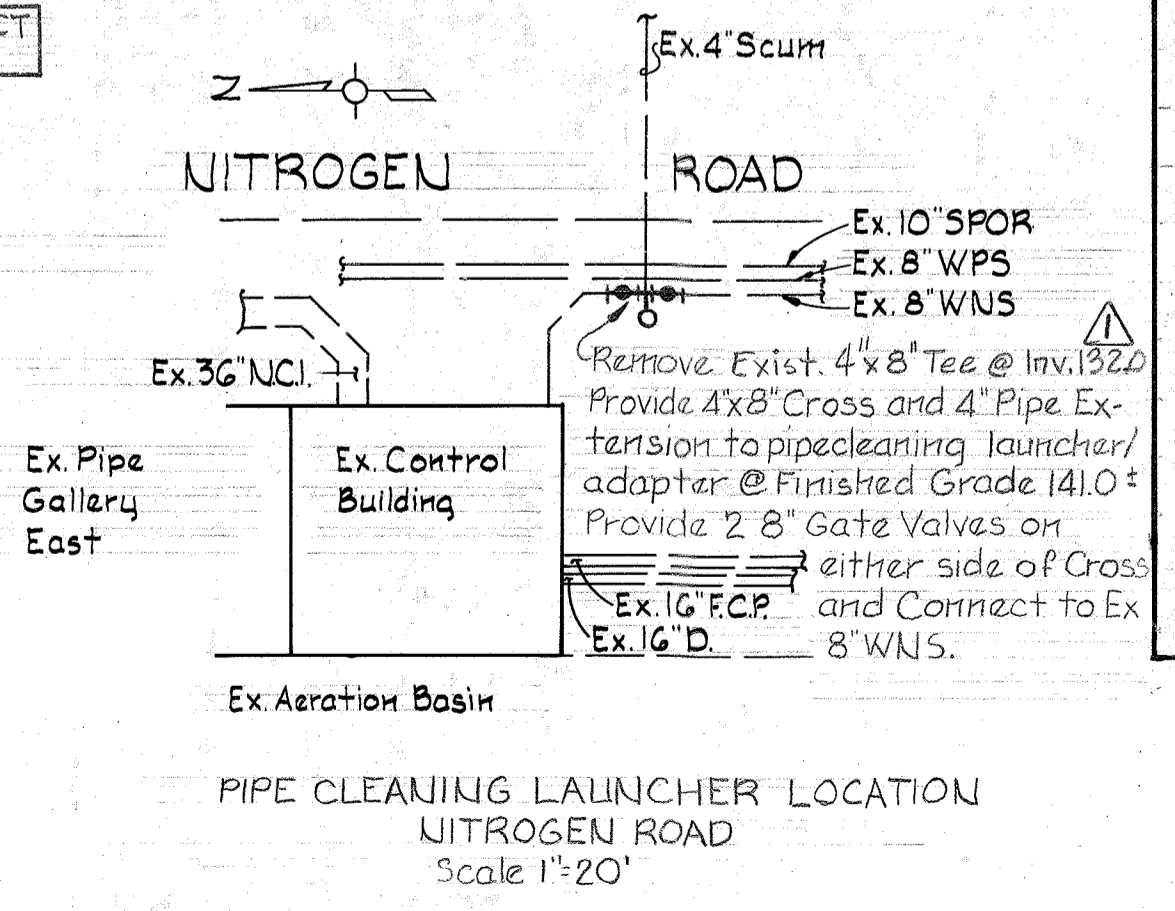
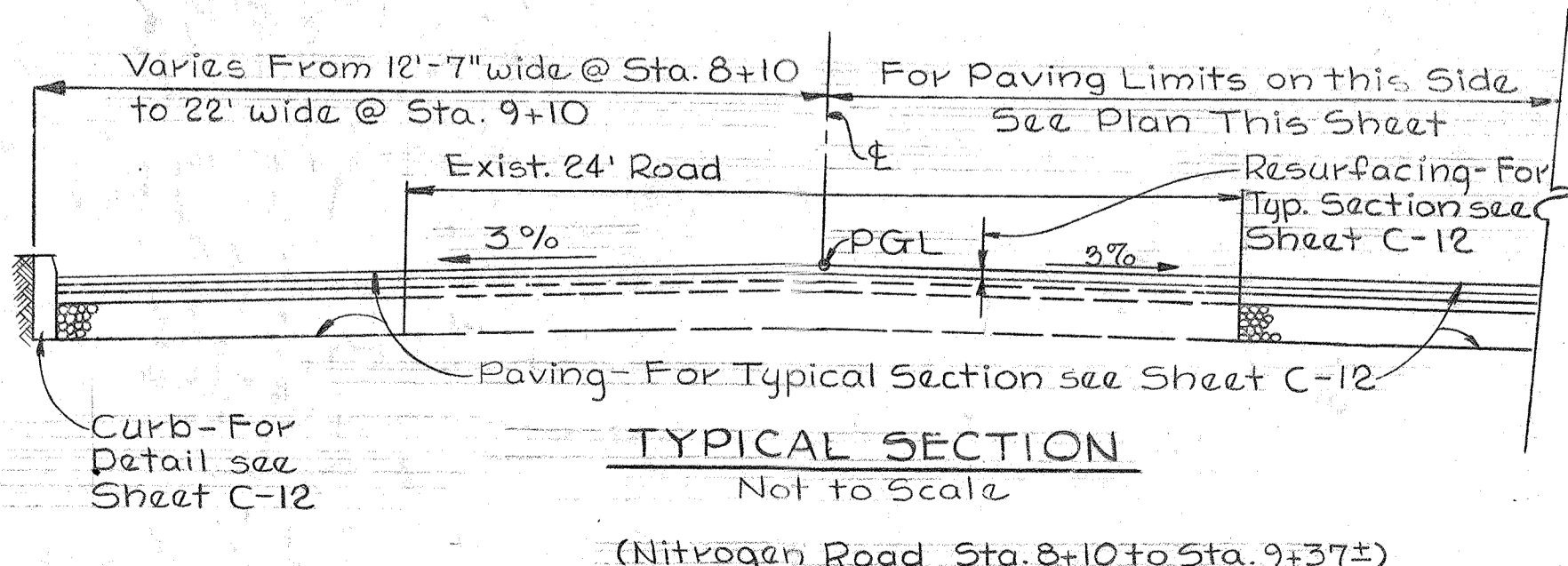
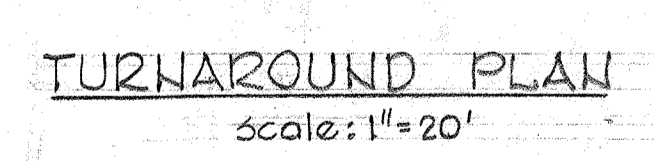
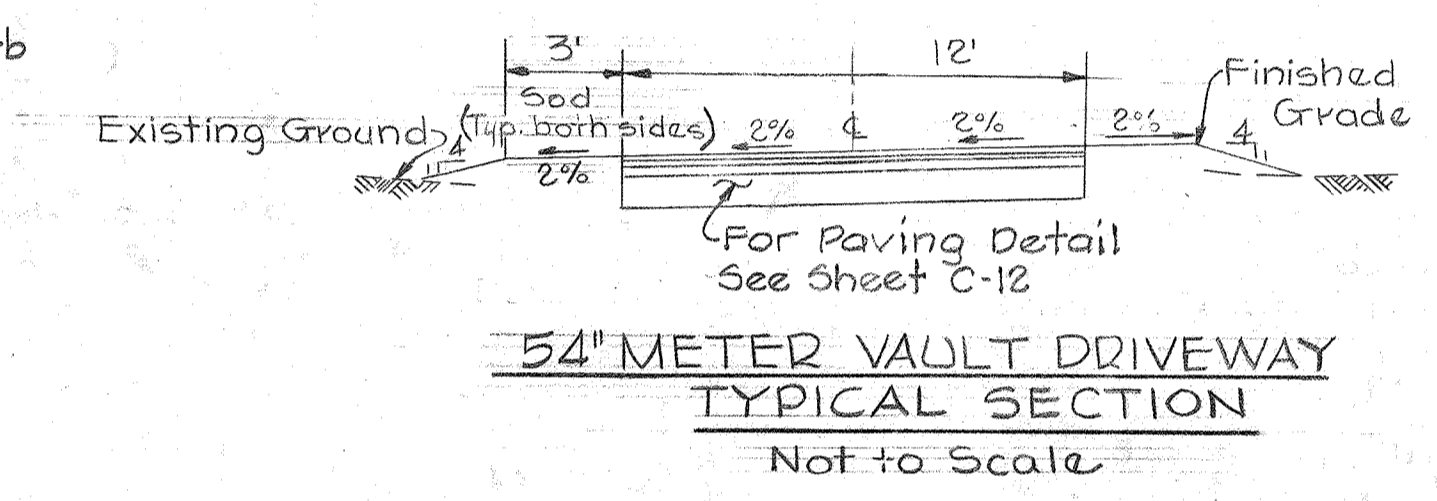
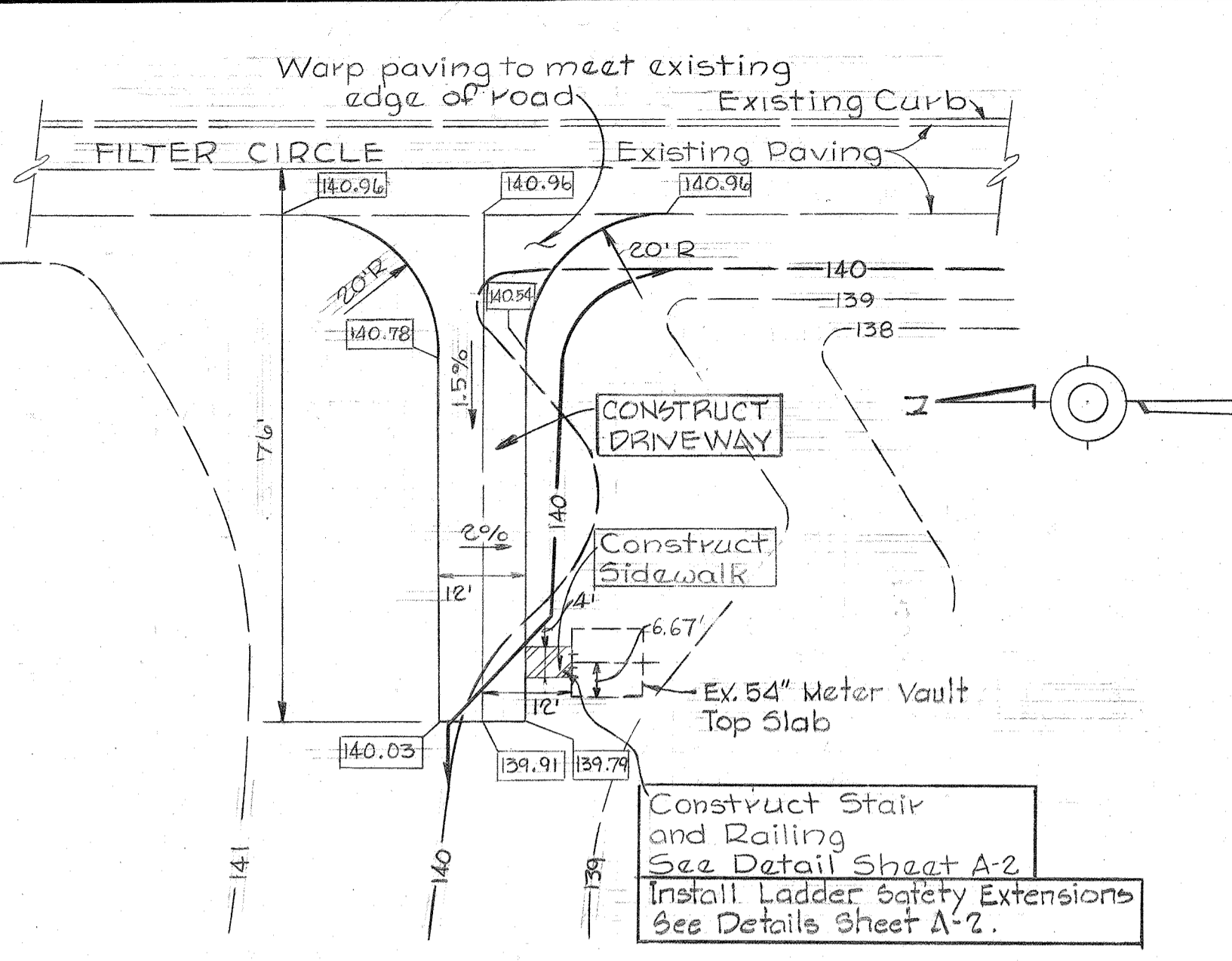
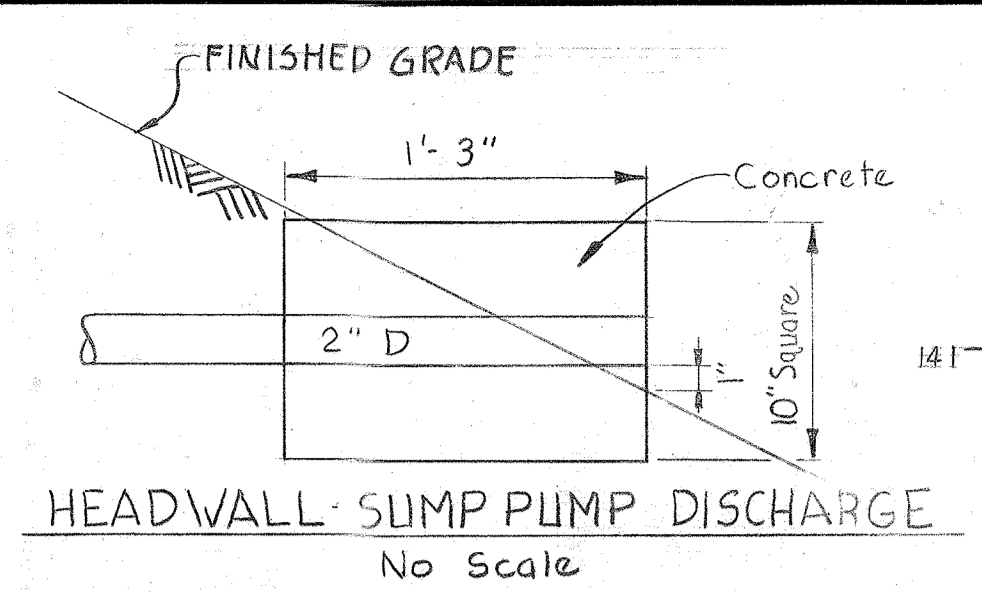
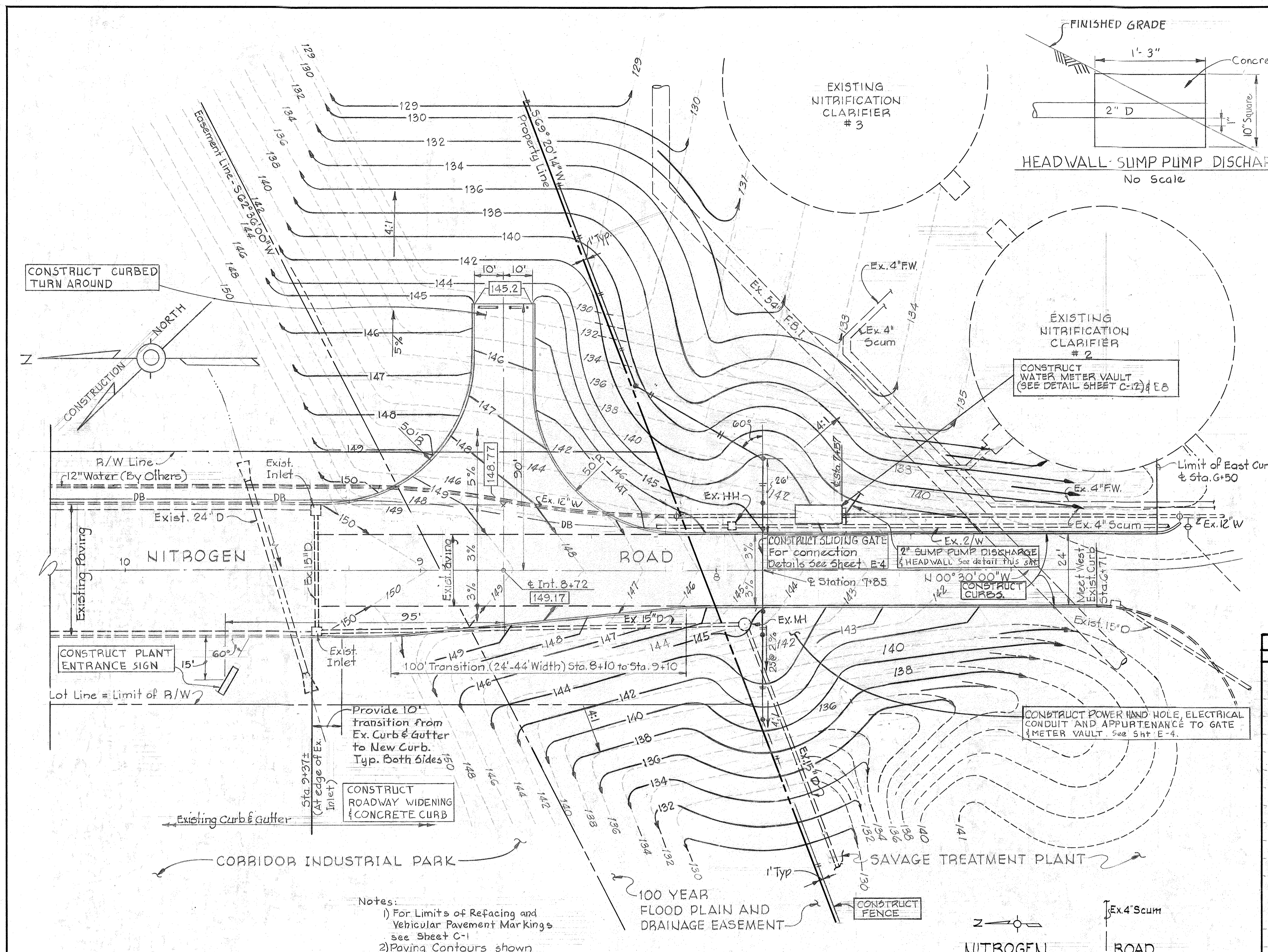
PROFILE K
Scale: Hpr. 1"=20'
V.C. 1"=10'

Notes:
1 For Limits of Resurfacing and Vehicular Pavement Markings - See Sheet C-2
2 For landscaping details see sheets C-2 & C-15.

PLAN
Scale 1"=20'

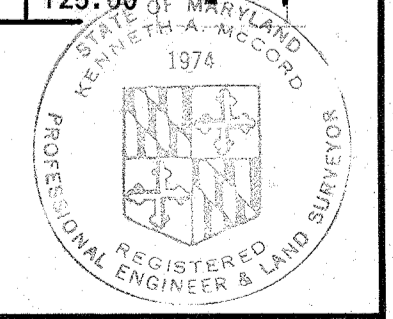


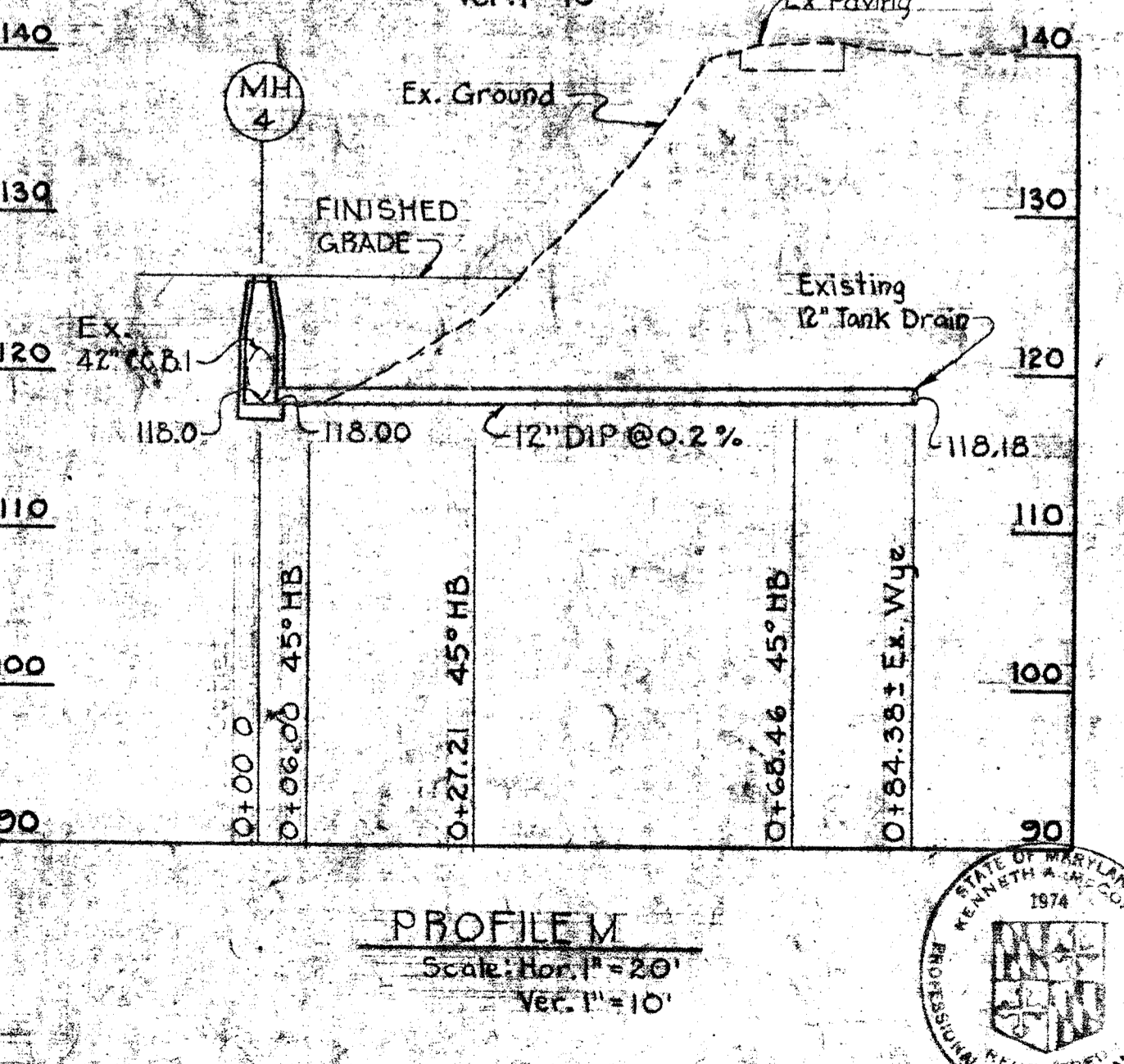
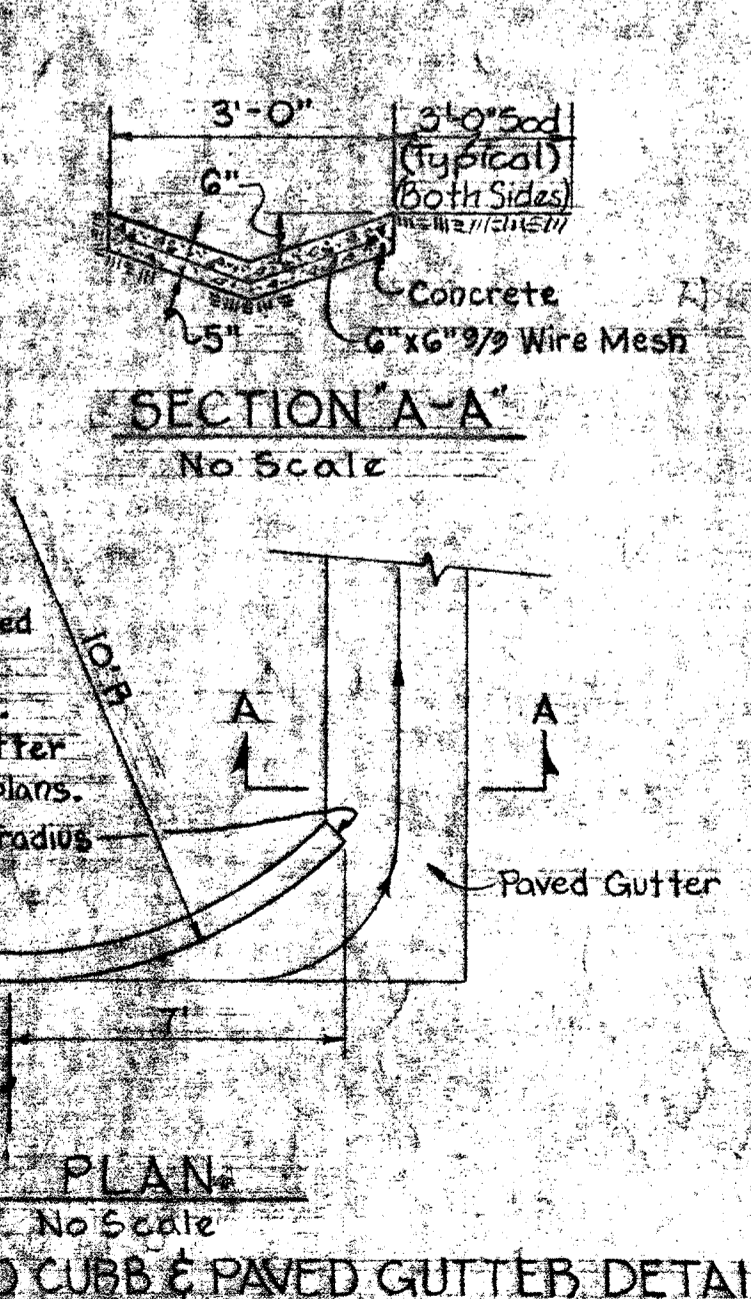
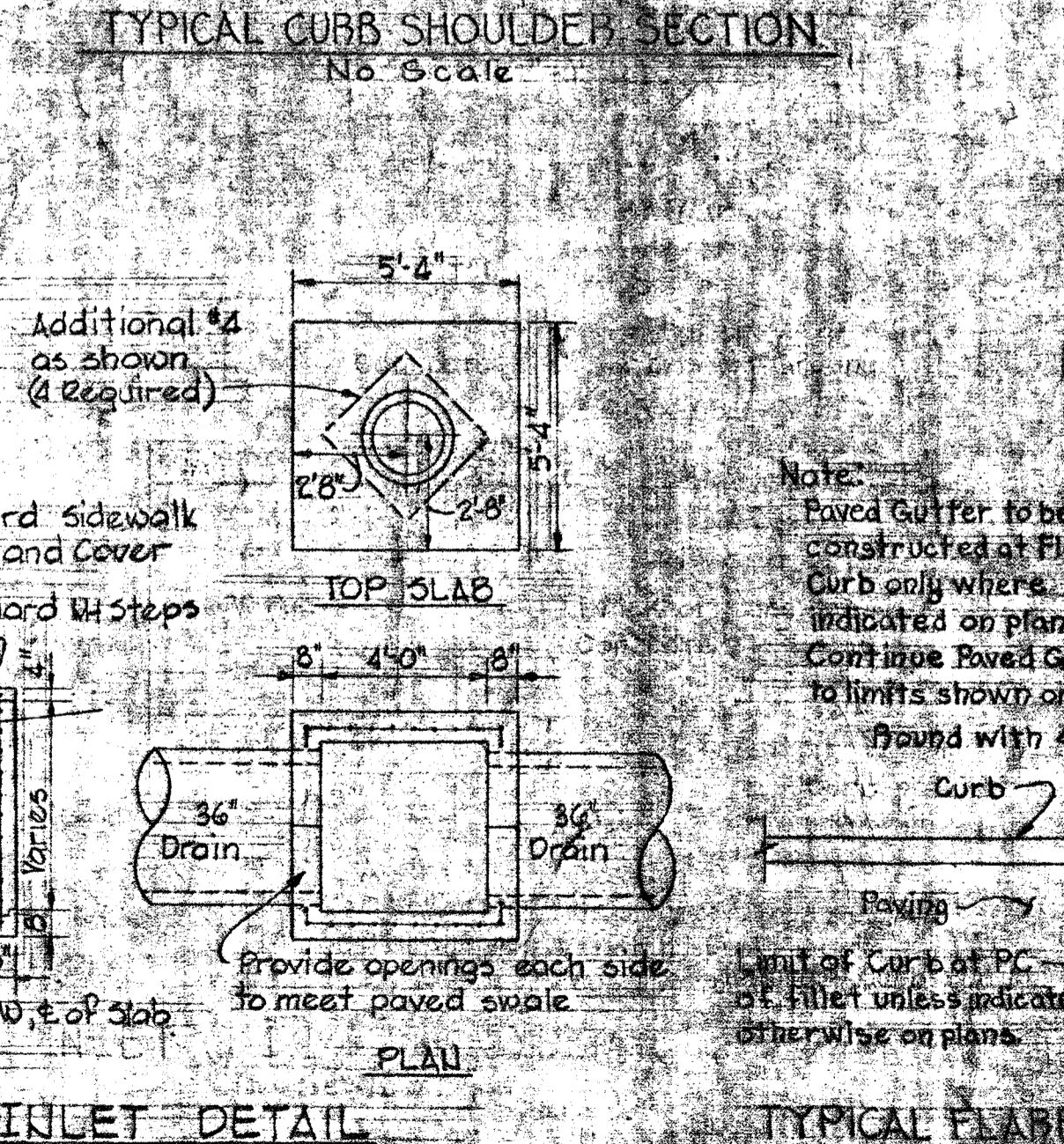
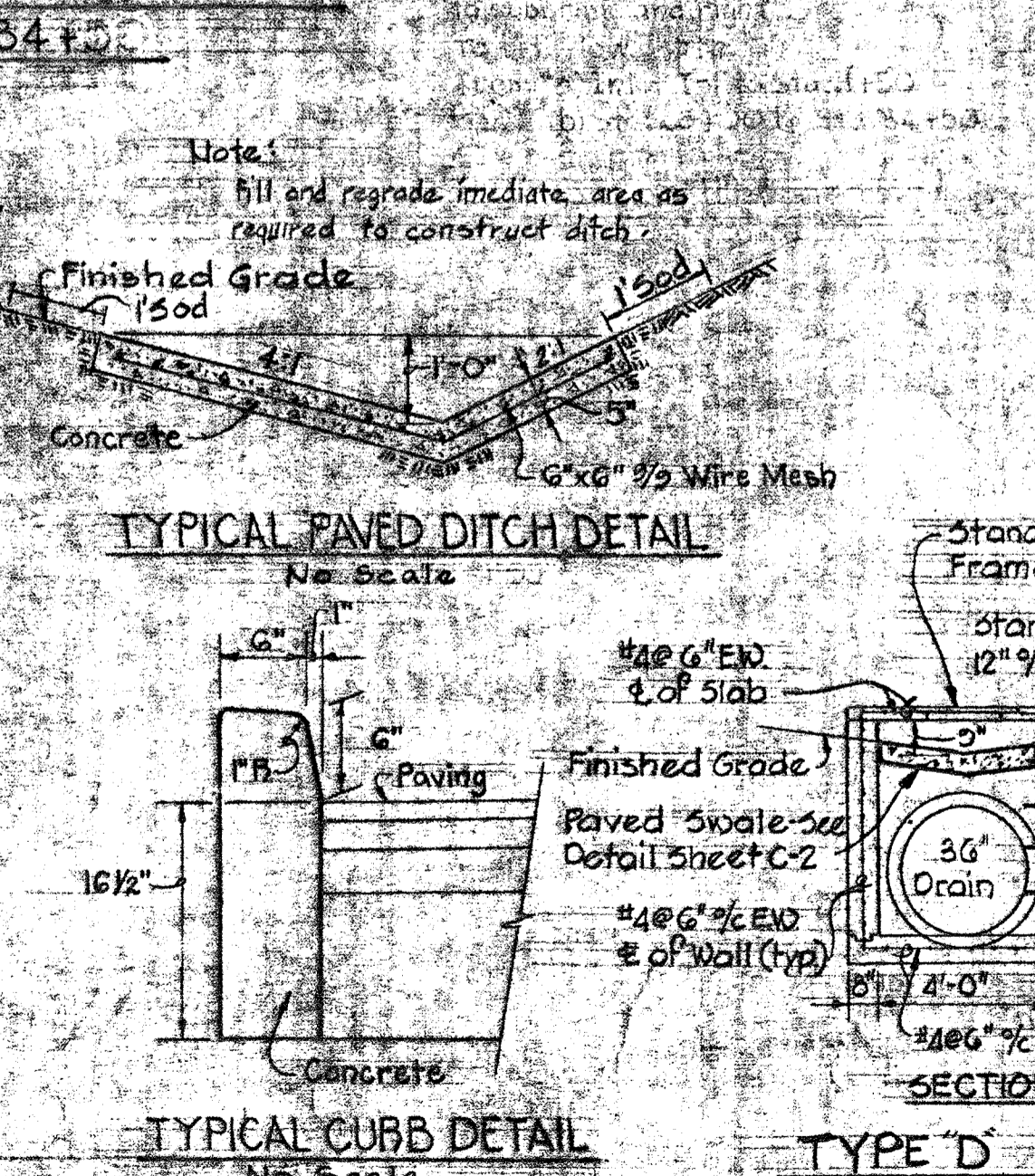
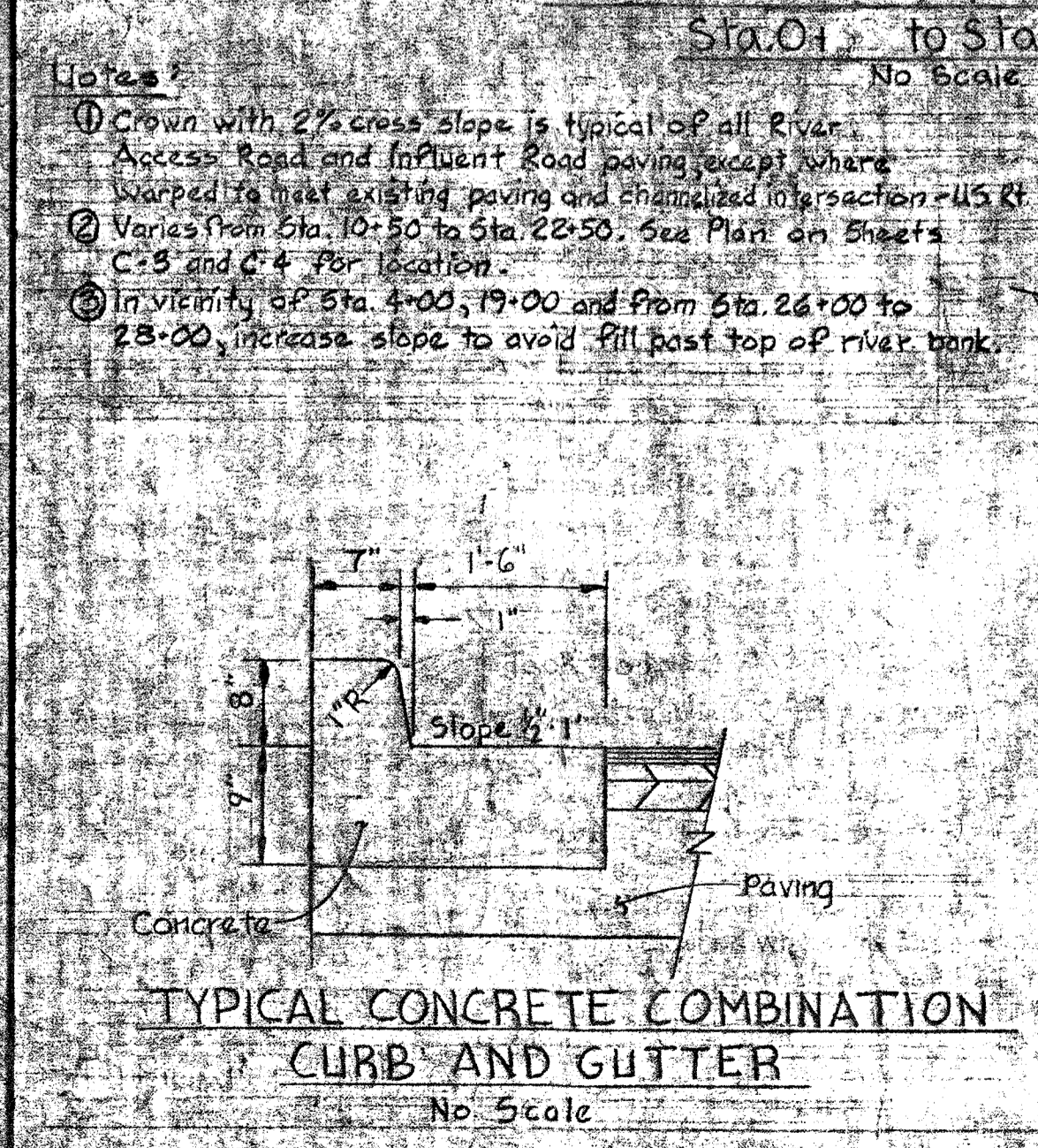
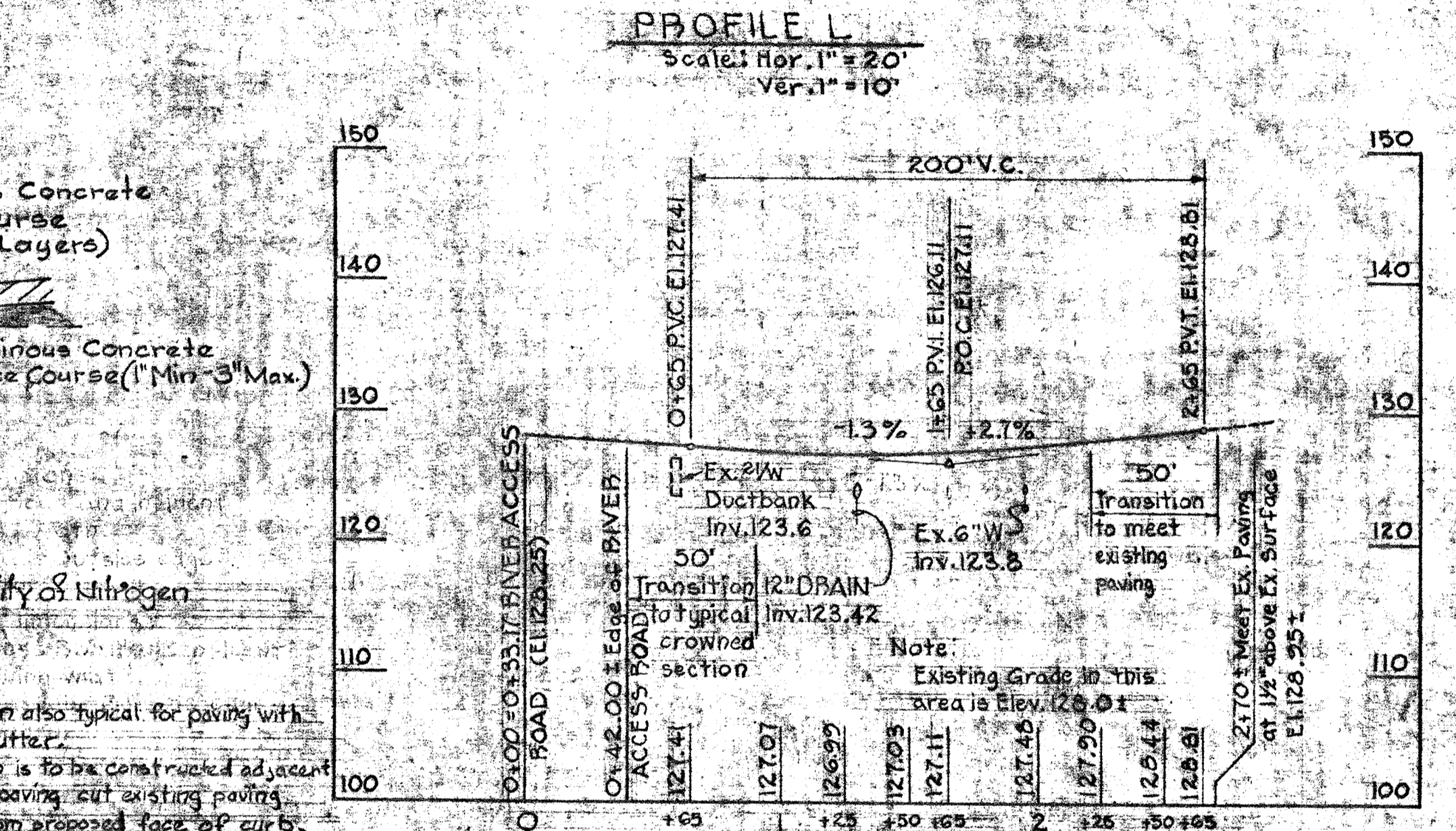
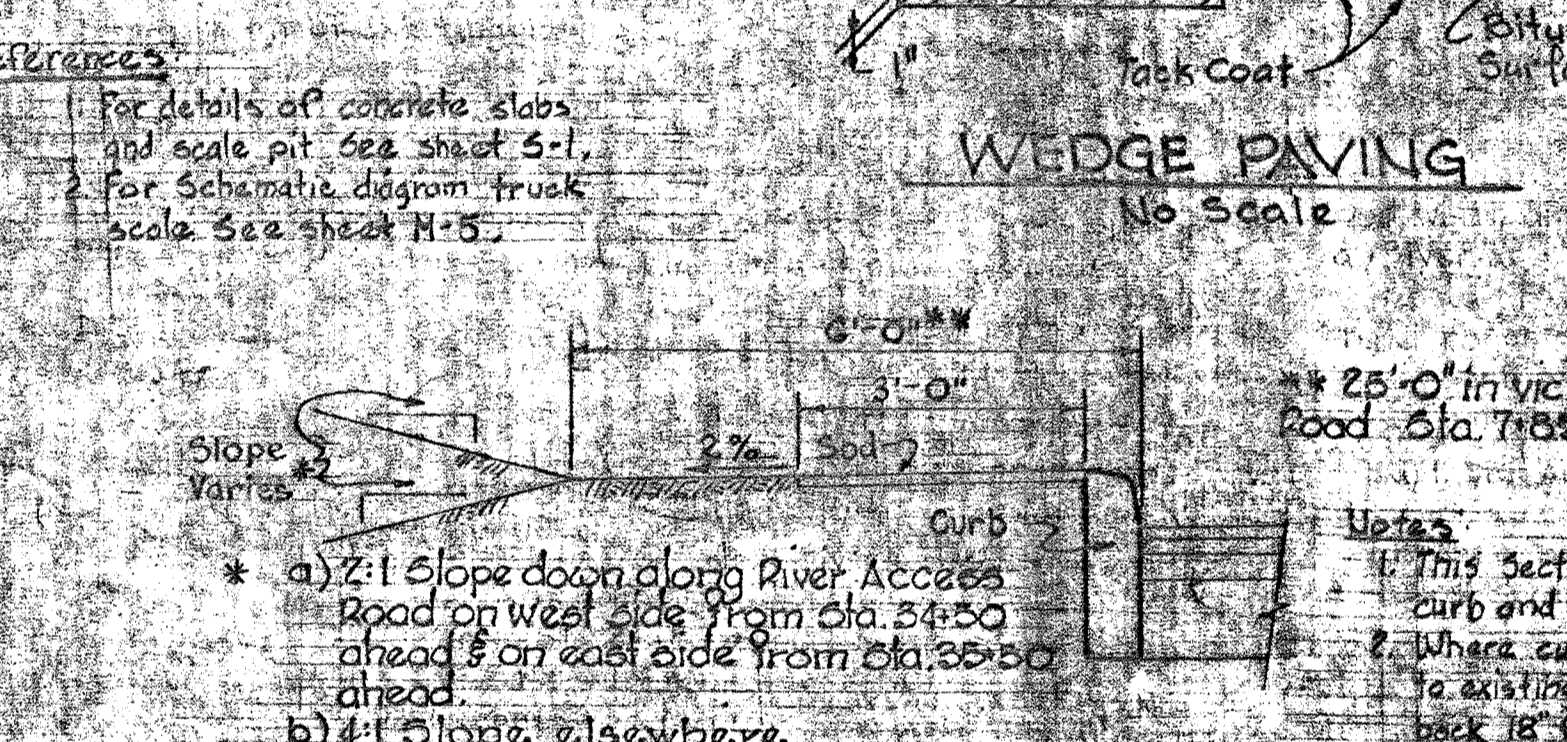
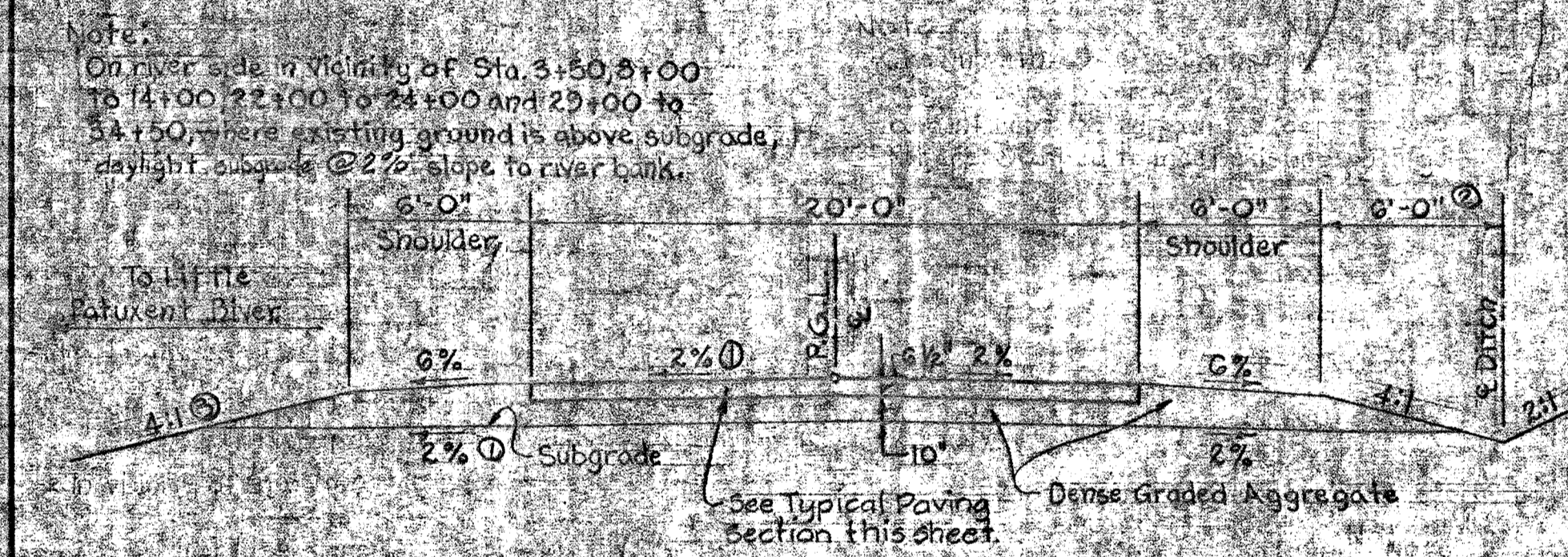
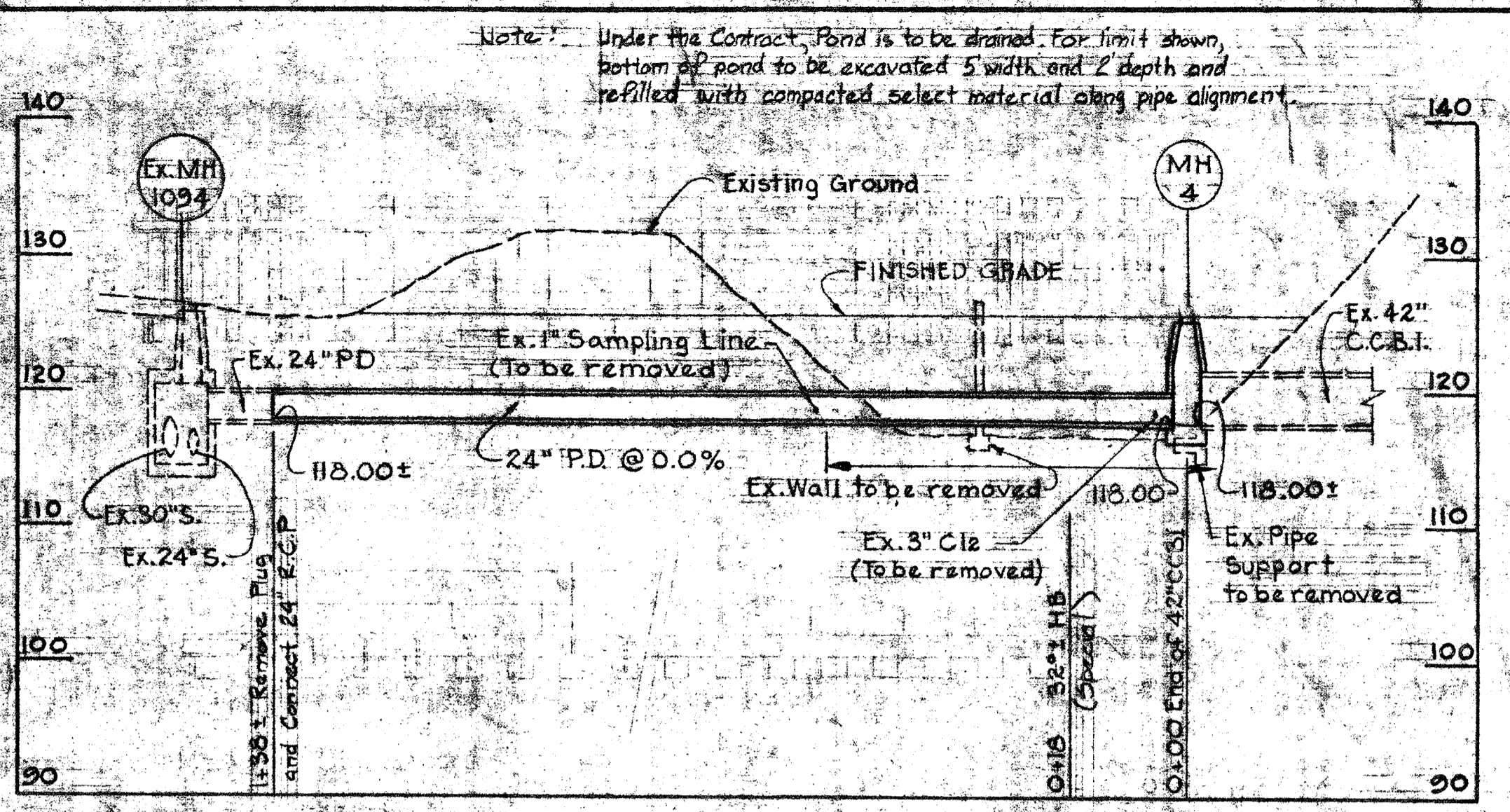
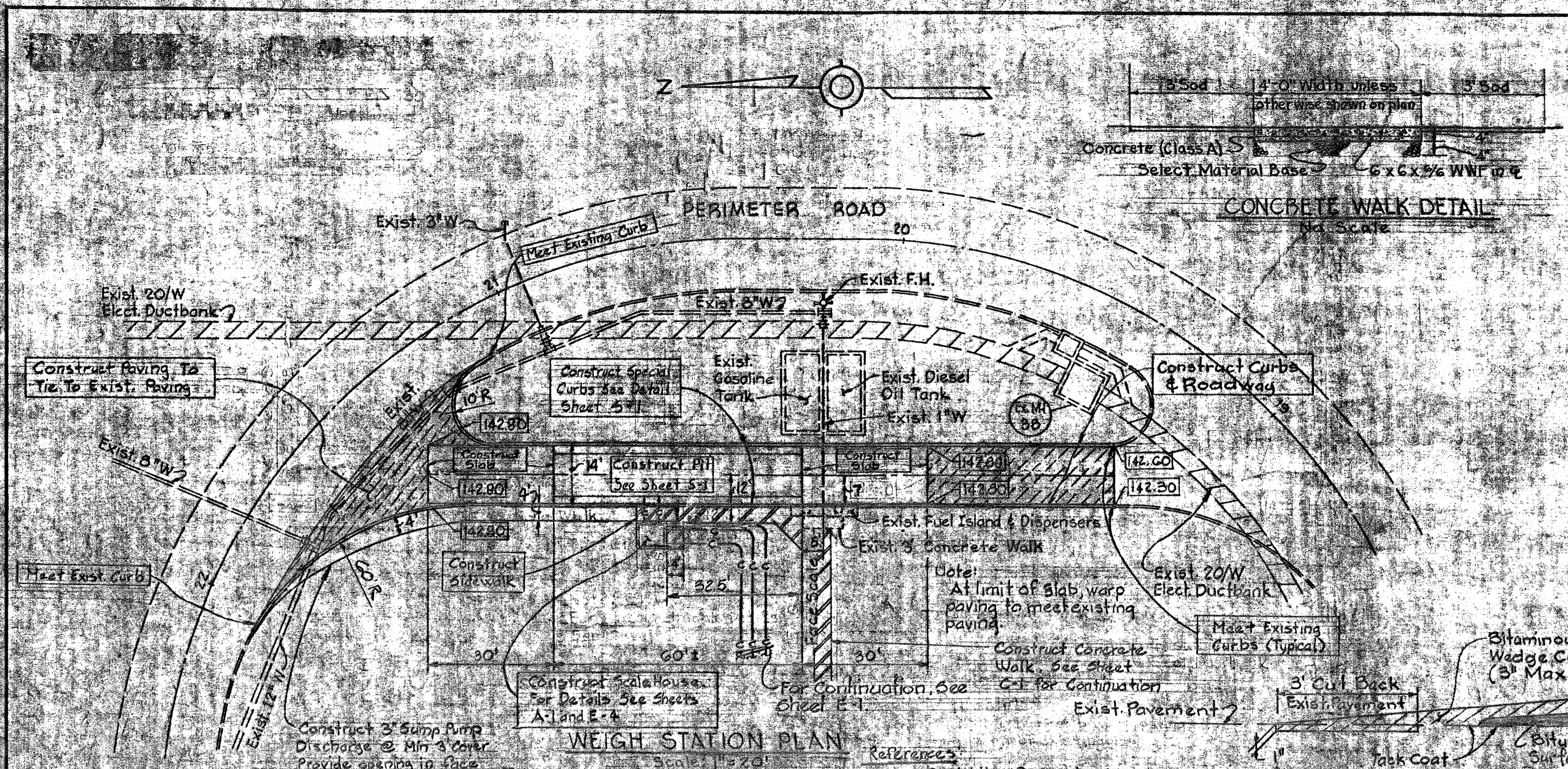
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 2/15/80 JAMES M. McLEAN CHIEF - BUREAU OF ENVIRONMENTAL SERVICES	CONTRACT NO. 761-S	CHLORINATION BASIN AREA PLAN	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 12 OF 50 SCALE AS SHOWN SHEET C-9
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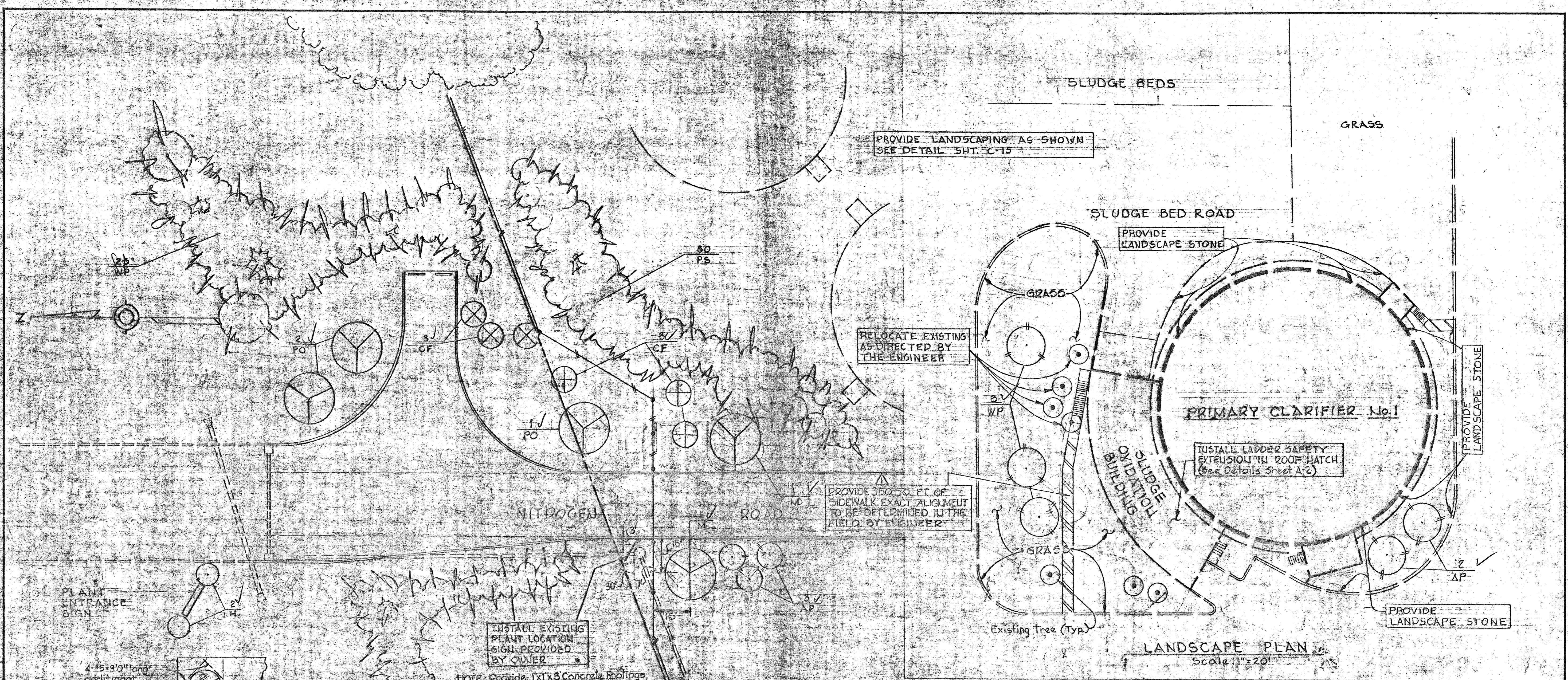
DRAINAGE STRUCTURE SCHEDULE						
NO.	LOCATION	TYPE	INT. DIM.	TOP ELEVATION	INV. IN	INV. OUT
I-1	INFLUENT RD. STA. 1+30 (25' LEFT OF I-2)	J	4'x4'	127.00	121.33	119.3±
I-2	INFLUENT RD. STA. 1+30 (LEFT SIDE)	"S" COMB.	2'-7" x 3'-5"	MEET PAVING	123.35	122.25
I-3	INFLUENT RD. STA. 1+30 (RIGHT SIDE)	"S" COMB.	2'-7" x 3'-5"	MEET PAVING	-	123.50
I-4	RIVER ACCESS RD. STA. 10+50	J	3'x3'	128.60 (GRATE)	-	126.00
I-5	RIVER ACCESS RD. STA. 19+25	J	3'x3'	129.80 (GRATE)	-	127.75
I-6	PERIMETER RD. STA. 11+90±	"D"	4'x4'	130.00	124.23	124.22
I-7	PERIMETER RD. STA. 14+50±	"D"	4'x4'	130.00	124.48	124.48
I-8	PERIMETER RD. STA. 16+90±	"D"	4'x4'	130.00	124.73	124.73
I-9	PHOSPHORUS RD. STA. 0+67 (RIGHT SIDE)	"S" COMB.	2'-7" x 3'-5"	MEET PAVING	136.56	136.40
I-10	PHOSPHORUS RD. STA. 0+67 (LEFT SIDE)	"S" COMB.	2'-7" x 3'-5"	MEET PAVING	-	136.74
MH-1	RIVER ACCESS RD. STA. 35+00±	STANDARD	4'φ	130.50	129.4±	129.15
MH-2	RIVER ACCESS RD. STA. 35+80±	STANDARD	4'φ	147.50	139.90	139.5±
MH-3	PERIMETER RD. STA. 8+80± (RIGHT 140±)	STANDARD	4'φ	129.00	122.36	122.33
MH-4	CONSTRUCTION COORDINATES-239.0±S, 51.5±W.	STANDARD	4'φ	126.00	118.00	118.00
EW-1	FILTER CIRCLE-STA. 2+05± (RIGHT 120±)	SHA. STD.	-	-	-	134.10
H-1	RIVER ACCESS RD. STA. 10+50	B	-	-	-	124.54
H-2	RIVER ACCESS RD. STA. 13+90±	B	-	-	-	125.40
H-3	RIVER ACCESS RD. STA. 19+25	B	-	-	-	126.11
H-4	RIVER ACCESS RD. STA. 27+00±	B	-	-	-	129.6
H-5	RIVER ACCESS RD. STA. 35+00±	B	-	-	-	128.00
H-6	RIVER ACCESS RD. STA. 35+00±	B	-	-	-	140.70
H-7	RIVER ACCESS RD. STA. 37+50±	B	-	-	-	145.6
H-8	RIVER ACCESS RD. STA. 39+00±	B	-	-	-	159.4
H-9	PERIMETER RD. STA. 7+80± (RIGHT 110±)	B	-	-	-	122.10
H-10	PERIMETER RD. STA. 19+00± (RIGHT 100±)	B	-	-	-	125.00

* Note: Provide Standard Watertight Frame and Cover.
 For details of D Inlet See Sht. C-11.
 For all other details See Standard Details in Specifications.





WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 2/15/80 CHIEF - BUREAU OF ENVIRONMENTAL SERVICES	CONTRACT NO. 761-S	WEIGH STATION PLAN & MISCELLANEOUS PROFILES & DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 14 OF 50 SCALE AS SHOWN
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PLANT ENTRANCE SIGN

4-#5x3'0\"/>

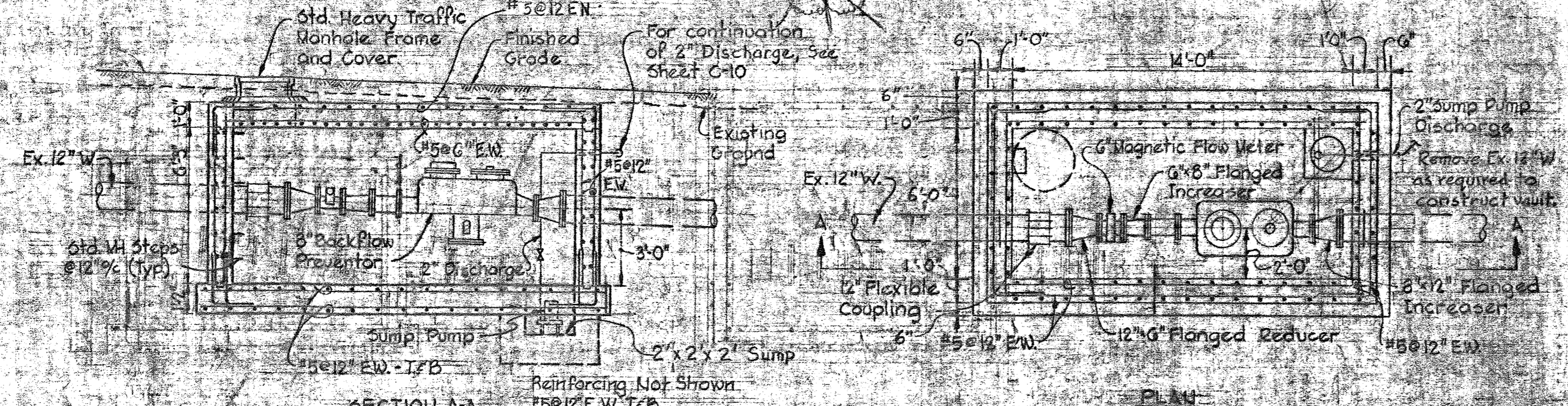
2-#5x5-0\"/>

INSTALL EXISTING PLANT LOCATION SIGN PROVIDED BY OWNER

NOTE: Provide 1x1x3 Concrete Footings for 2 Posts of Location Sign

LANDSCAPE PLAN
Scale: 1" = 20'

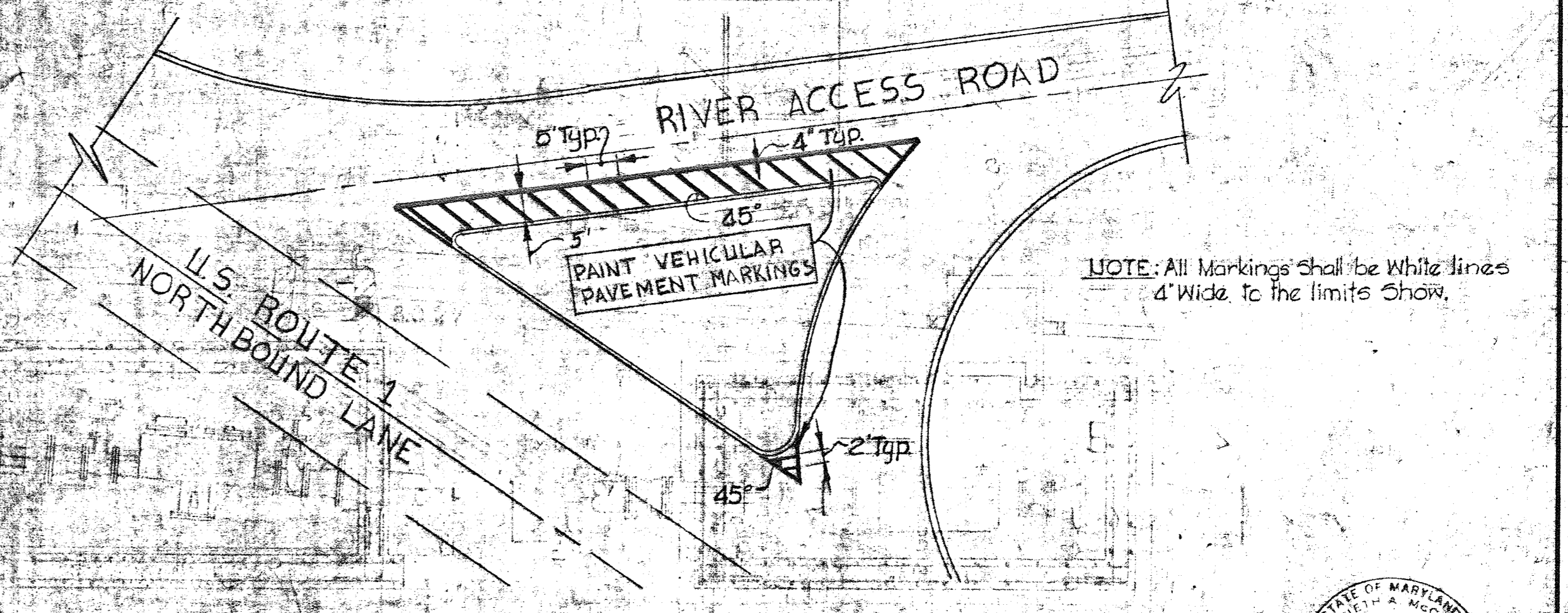
TOP SLAB PLAN



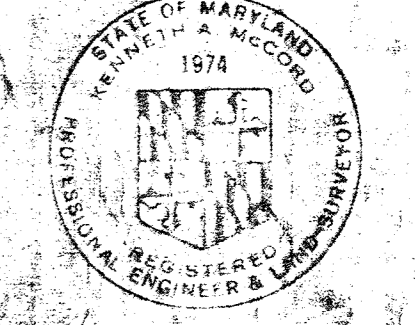
Notes:

- 1. For Electrical detail see Sht. E-8
- 2. Provide support blocks for Isolator Piping Appurtenances

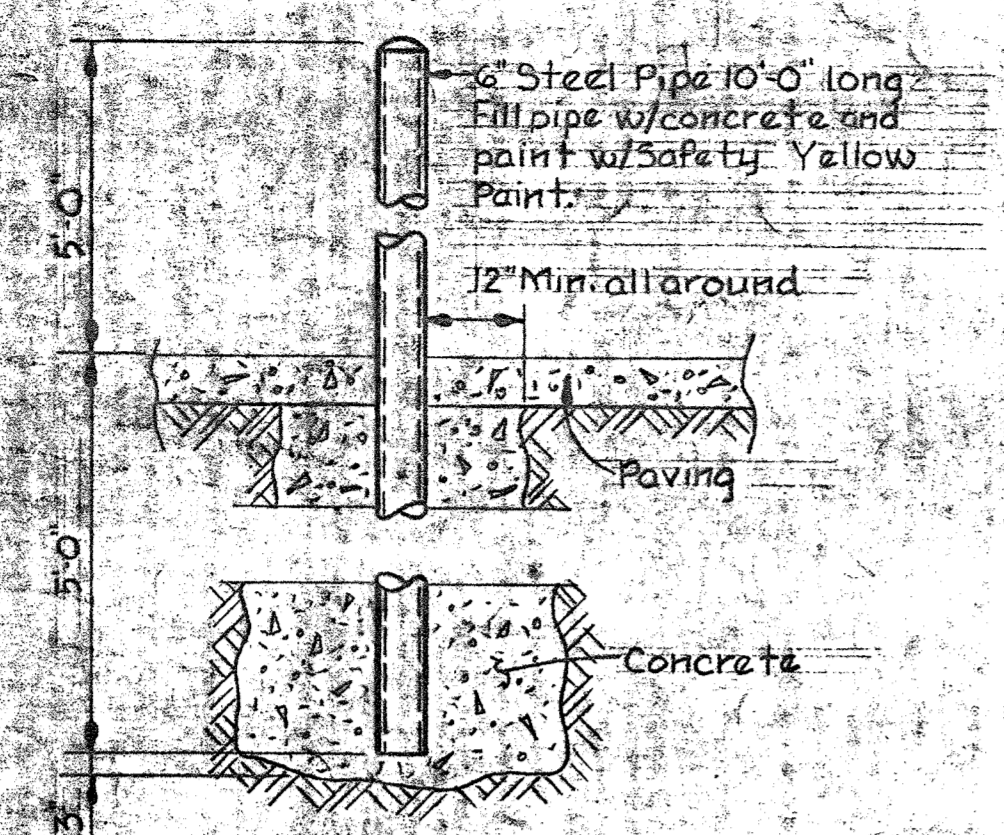
METER VAULT DETAIL
Scale: 1/4" = 1'-0"



PAVEMENT MARKING DETAIL
RIVER ACCESS ROAD AT US ROUTE 1
Scale: 1" = 20'

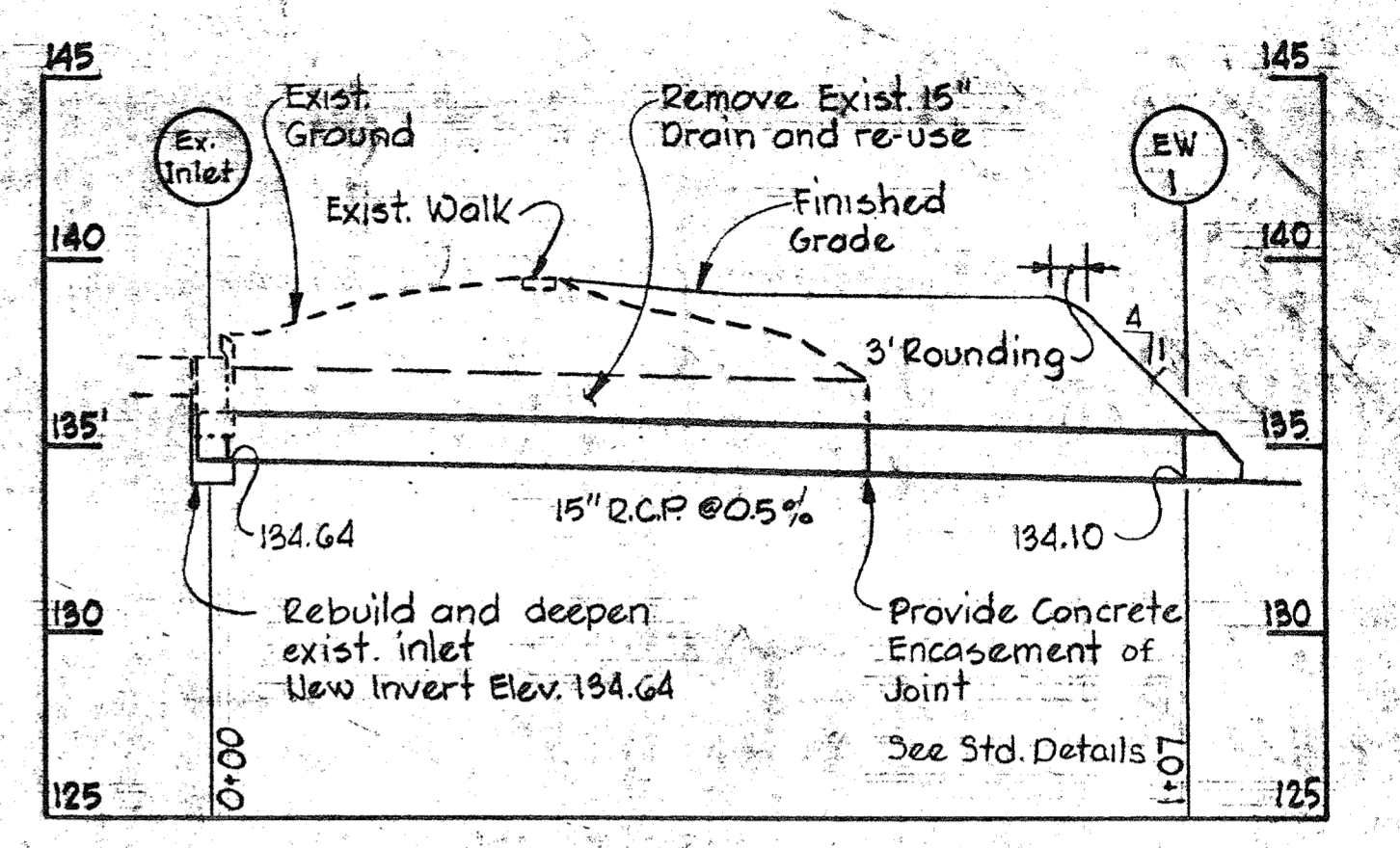


WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 11/15/80 CHIEF BUREAU OF ENVIRONMENTAL SERVICES	CONTRACT NO. 761-S	LANDSCAPE PLANS METER VAULT DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 15 OF 50 SCALE AS SHOWN
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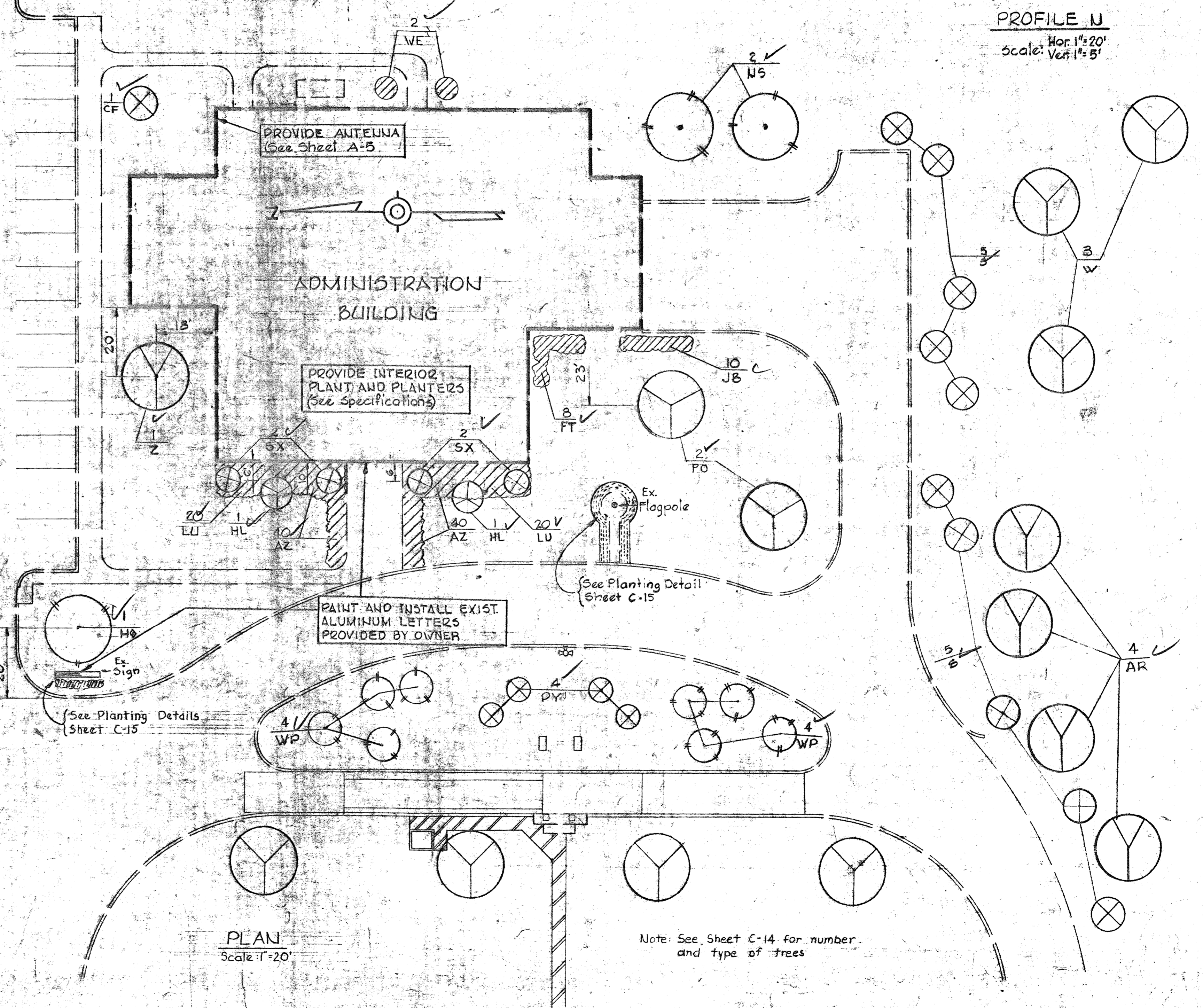
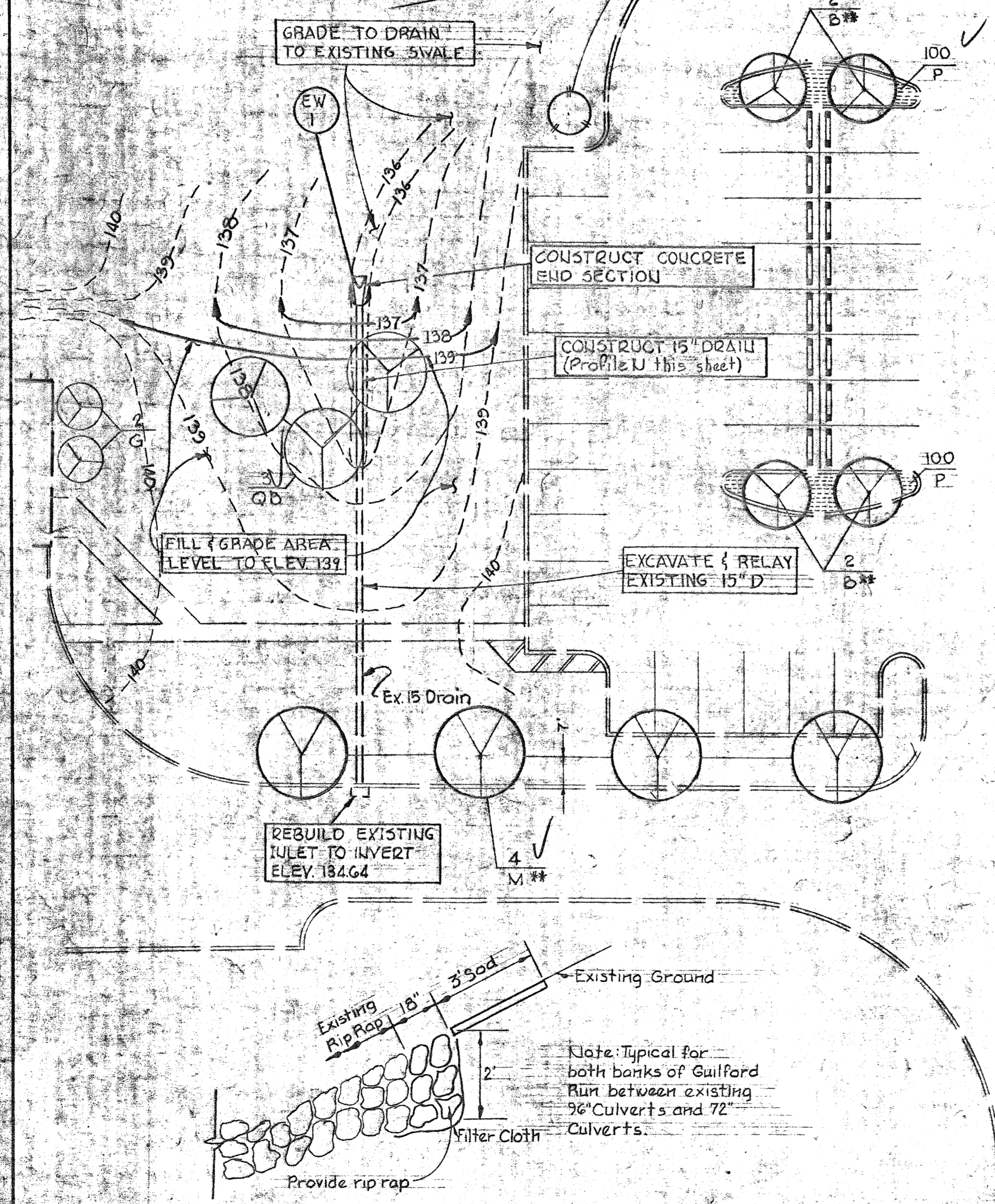


GUARD POST DETAIL
Scale: 1/2" = 1'-0"

PLANT ACCORDING TO FIELD CONDITIONS (13 OF EACH) See PLANT LIST Sheet C-15

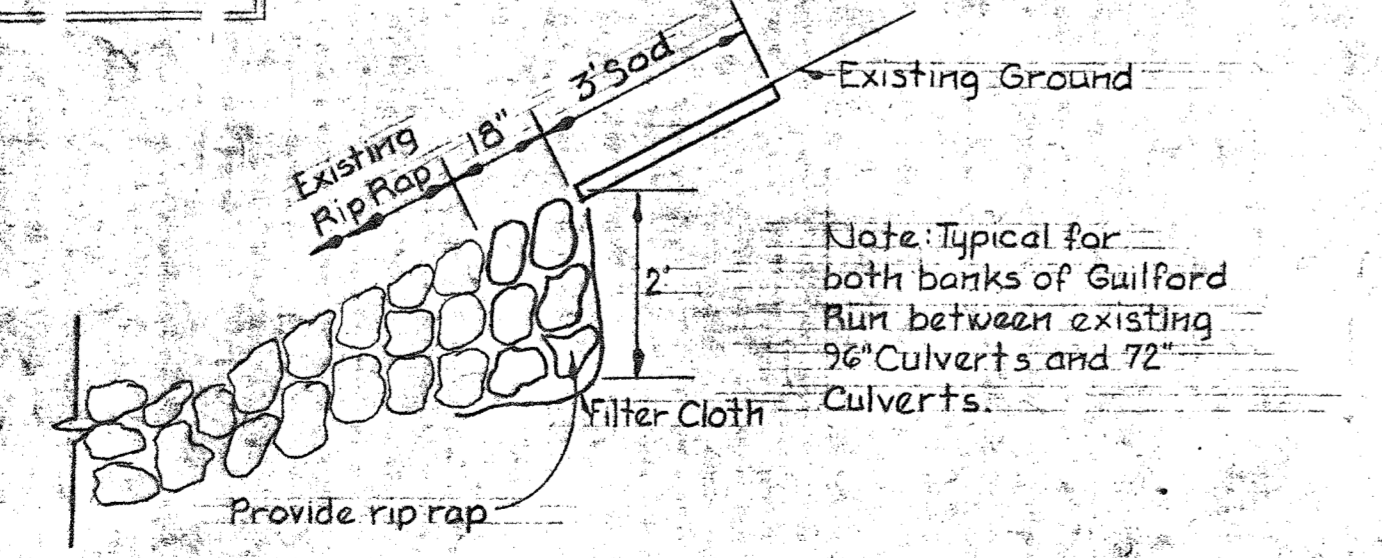


PROFILE U
Scale: Hor. 1" = 20'
Vert. 1" = 5'



PLAN
Scale: 1" = 20'

Note: See Sheet C-14 for number and type of trees



DETAIL-GUILFORD RUN RESTORATION
No Scale

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 2/15/80
James M. ...
CHIEF - BUREAU OF ENVIRONMENTAL SERVICES

CONTRACT NO. 761-S

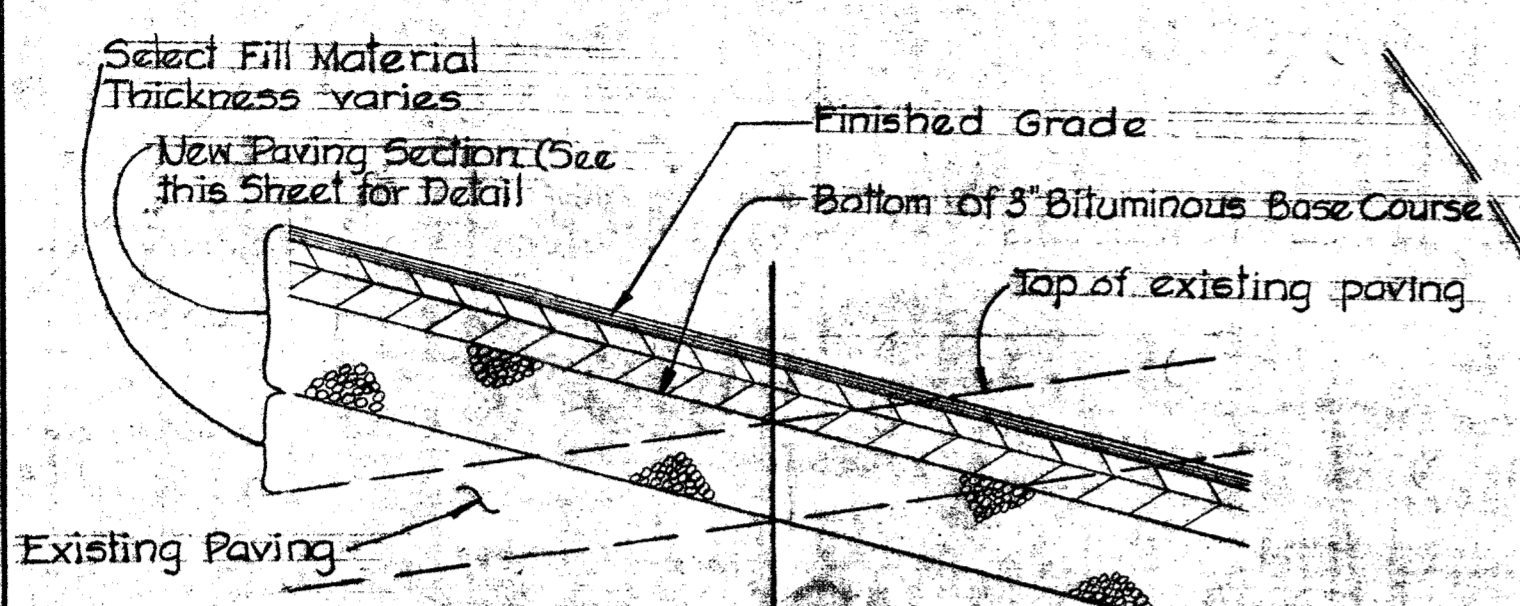
LANDSCAPE & GRADING PLAN
ADMINISTRATION BUILDING &
15" DRAIN

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 16 OF 50
SCALE AS SHOWN

W.O. 7132-2F

SHEET C-13



Scarify Existing Paving River Access Rd. Sta. 7+ to 9+ 15+ to 27+ 34+ to 36+

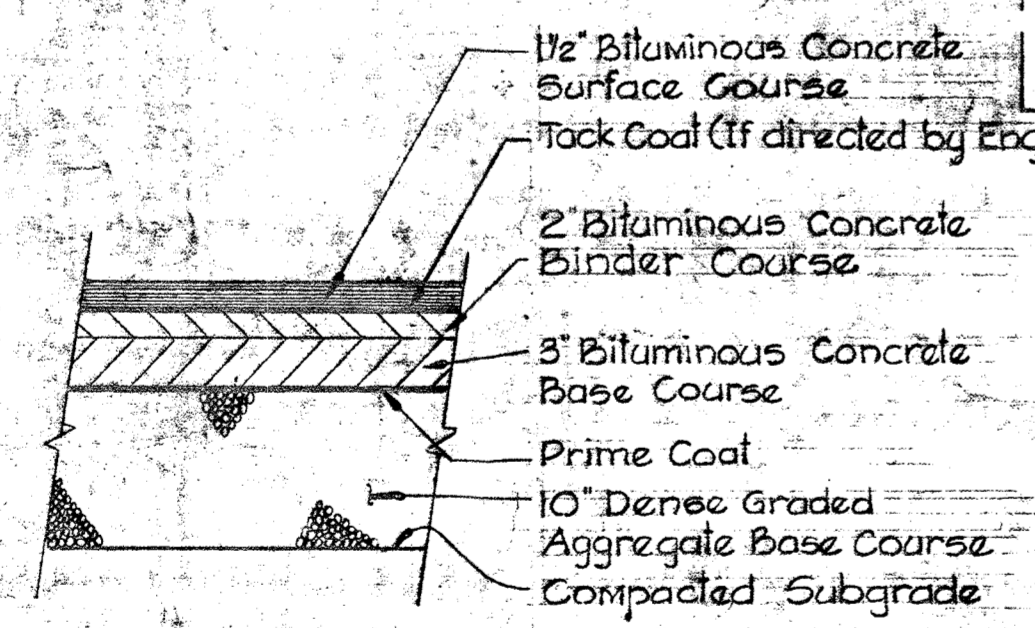
Remove Existing Paving River Access Rd. Sta. 0+ to 1+ 9+ to 10+ 27+ to 34+ 0+ to 3+

Influent Rd. Sta. 0+ to 3+

DETAIL CONSTRUCTION OF PAVING OVER EXISTING PAVEMENT

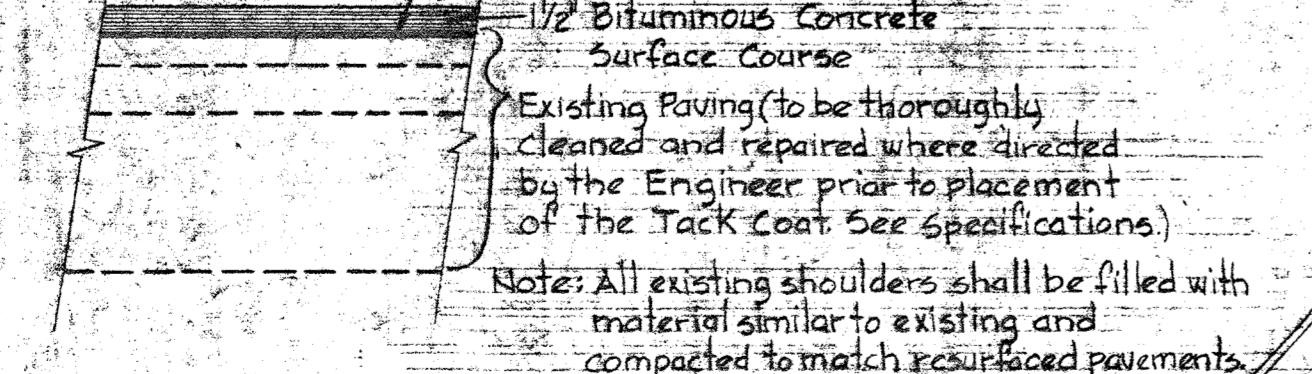
No Scale

- Notes:
- Existing paving shall be removed or scarified per the specifications.
 - In addition to the areas indicated above the existing paving shall be removed in the following:
- River Access Rd. Sta. 10+ to 15+ Sta. 36+ to 39+



TYPICAL PAVING SECTION

No Scale



TYPICAL RESURFACING SECTION

No Scale

INSTALL LADDER SAFETY EXTENSIONS - See Details Sheet A-2

INSTALL LADDER SAFETY EXTENSION IN ROOF HATCH OF DEWATERING BUILDING - See Details Sheet A-2

MODIFY EXISTING STAIRWAY (See Detail Sheet A-6)

CONSTRUCT STAIRWAY (See Detail Sheet A-2)

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

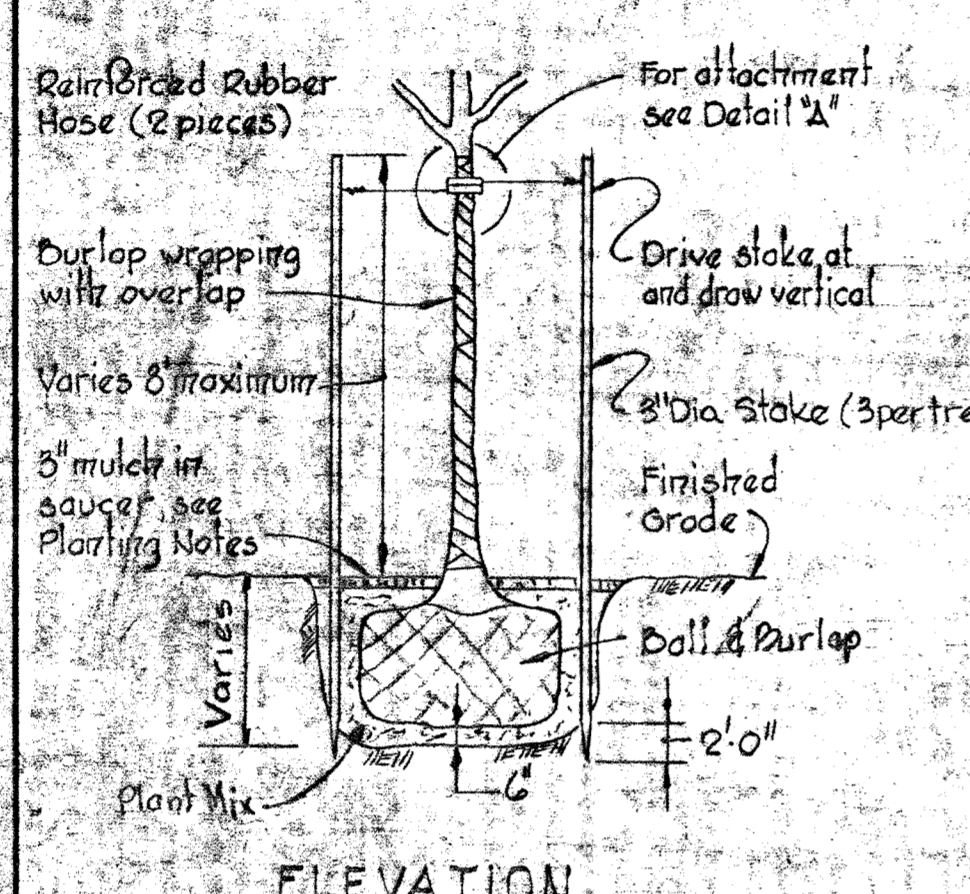
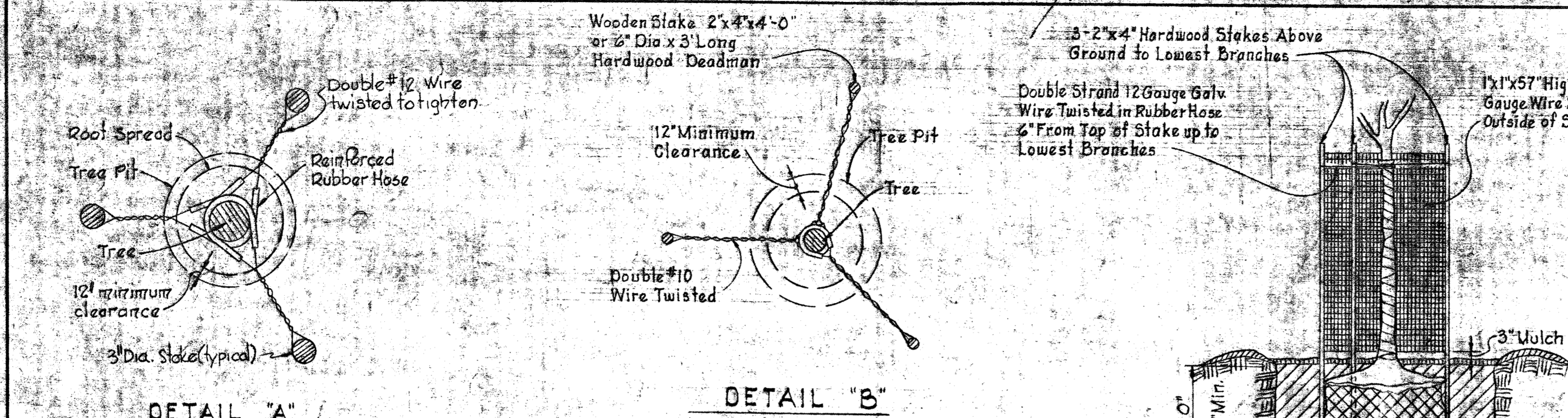
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
2/15/80
DATE
James M. ...
CHIEF - BUREAU OF ENVIRONMENTAL SERVICES

CONTRACT NO. 761-S

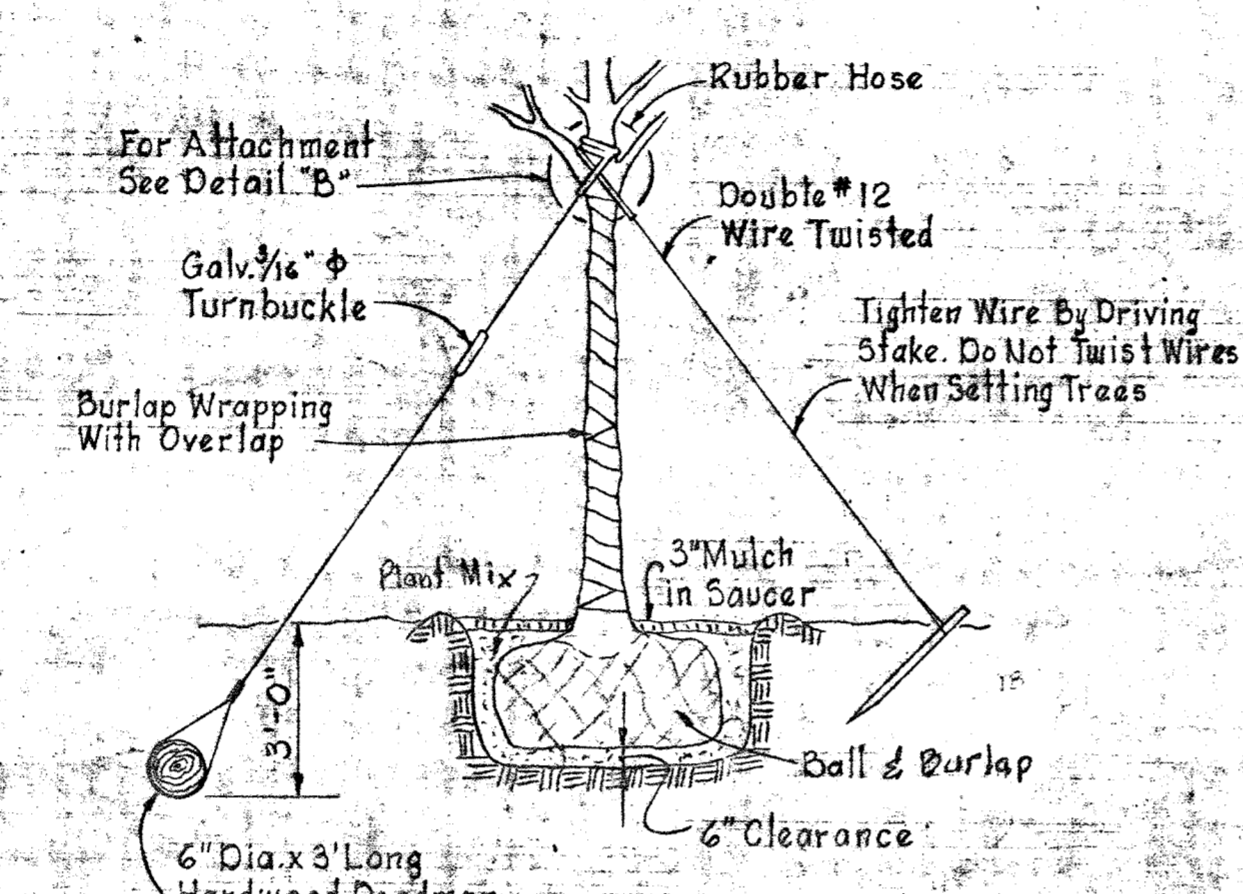
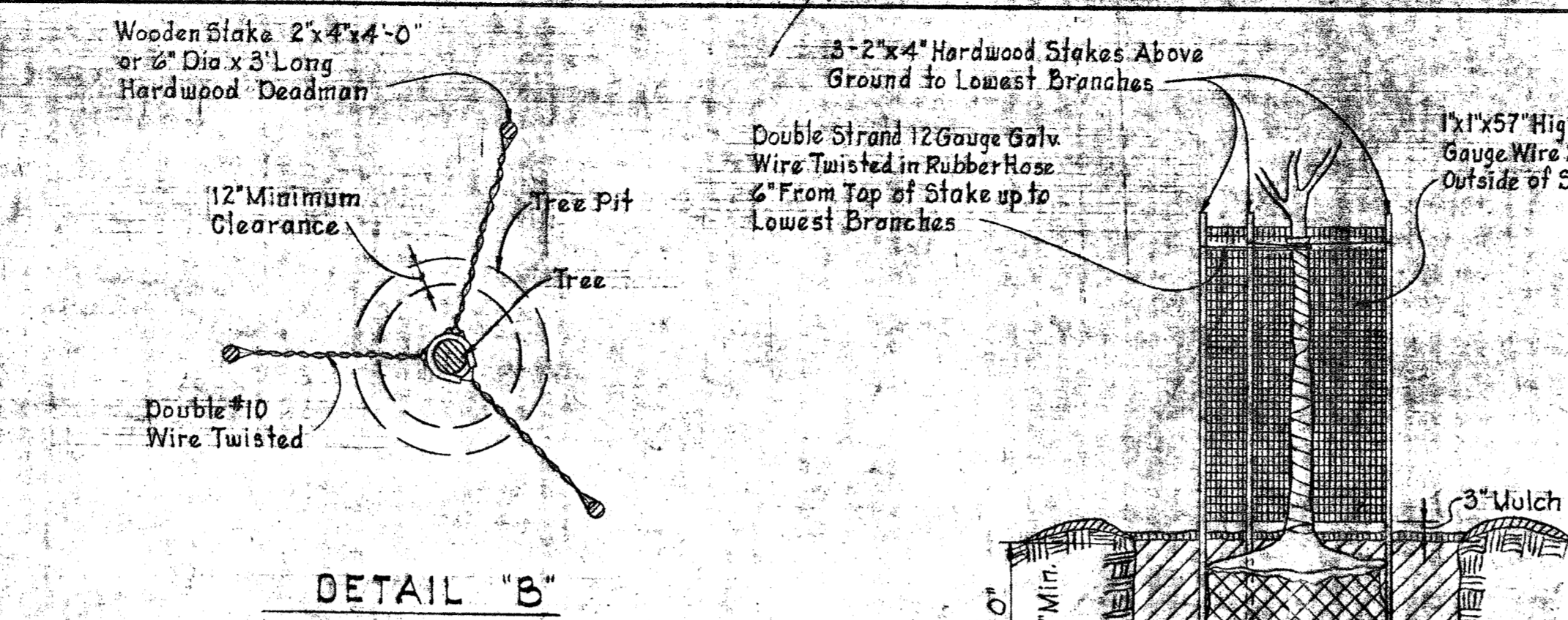
LANDSCAPE PLAN
DEWATERING BUILDING

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

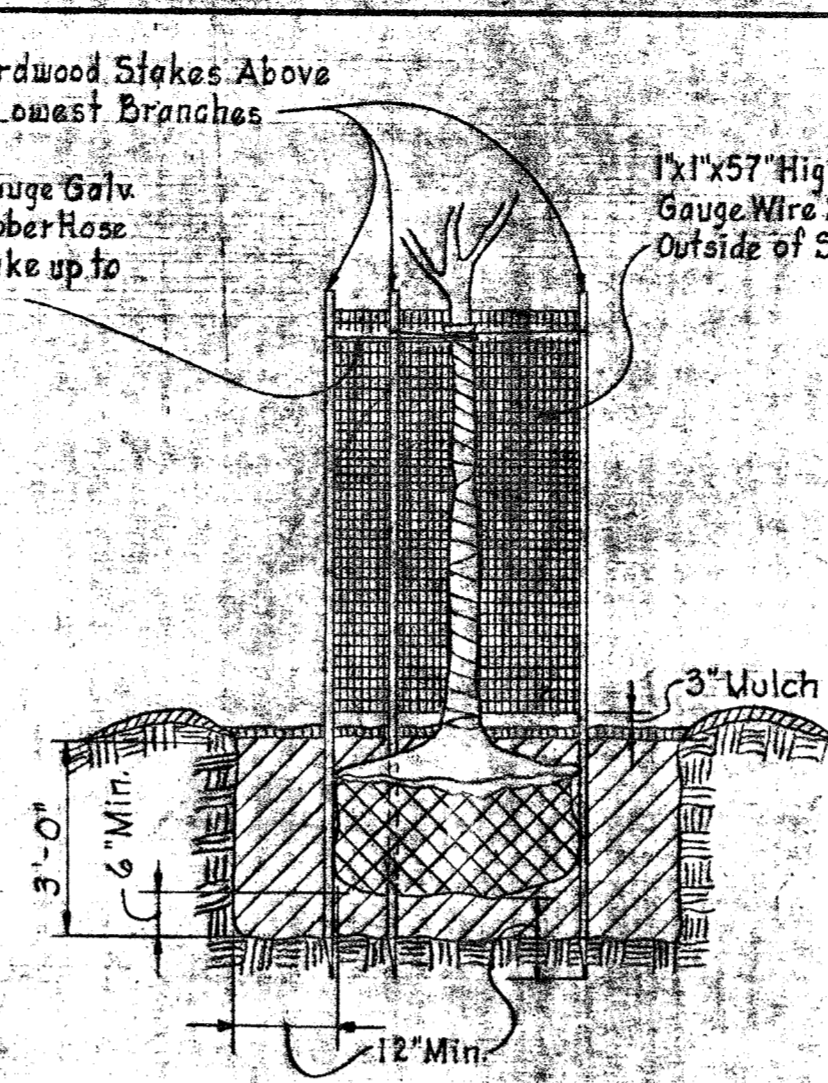
DRAWING NO. 17 OF 50
SCALE AS SHOWN



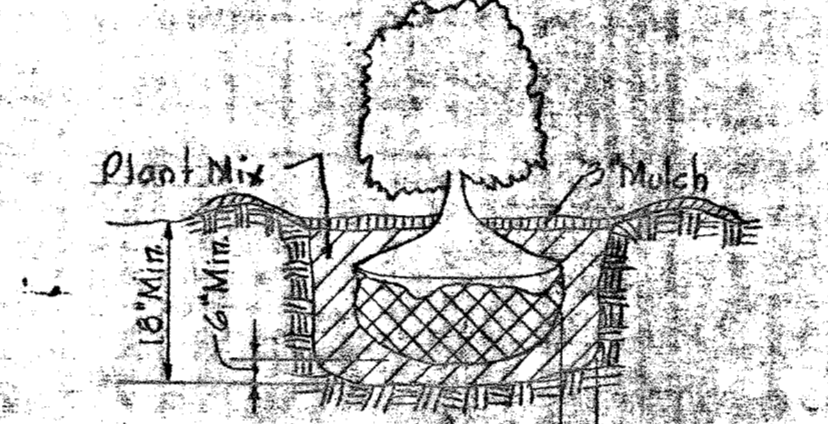
TREE STAKING
MAJOR TREES
TO 3\"/>



TREE GUYING
MINOR TREES



TREE GUARD
(See General Notes)

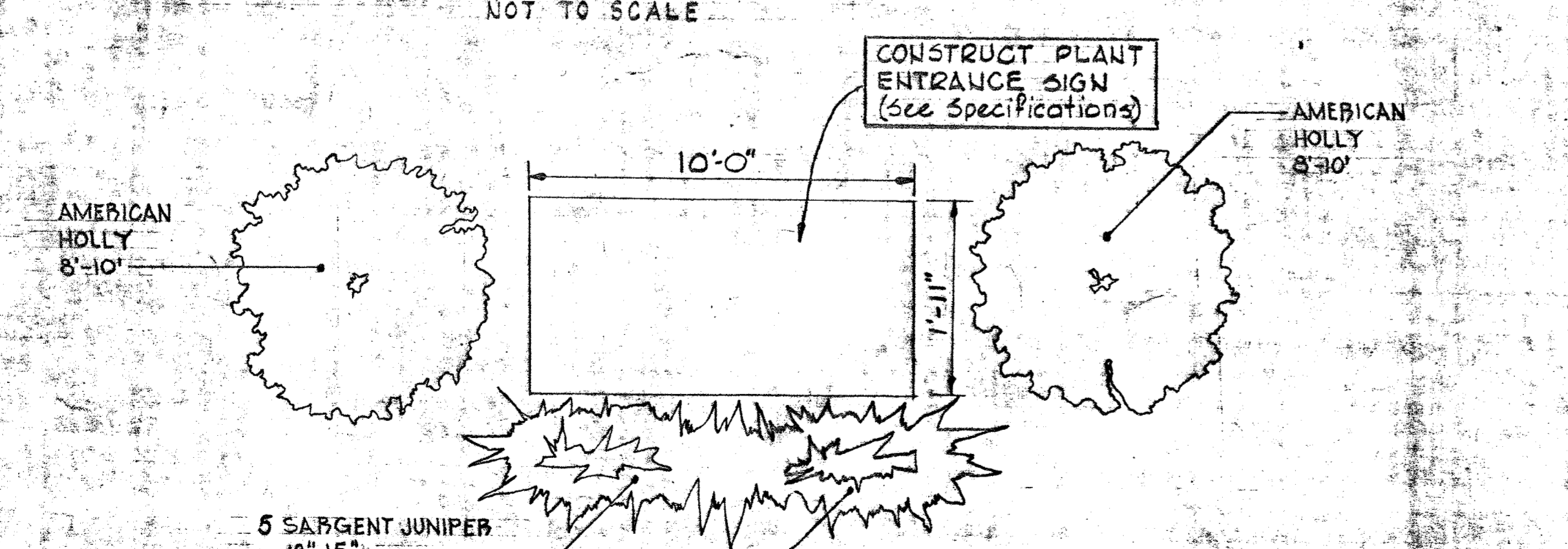


SHRUB PLANTING

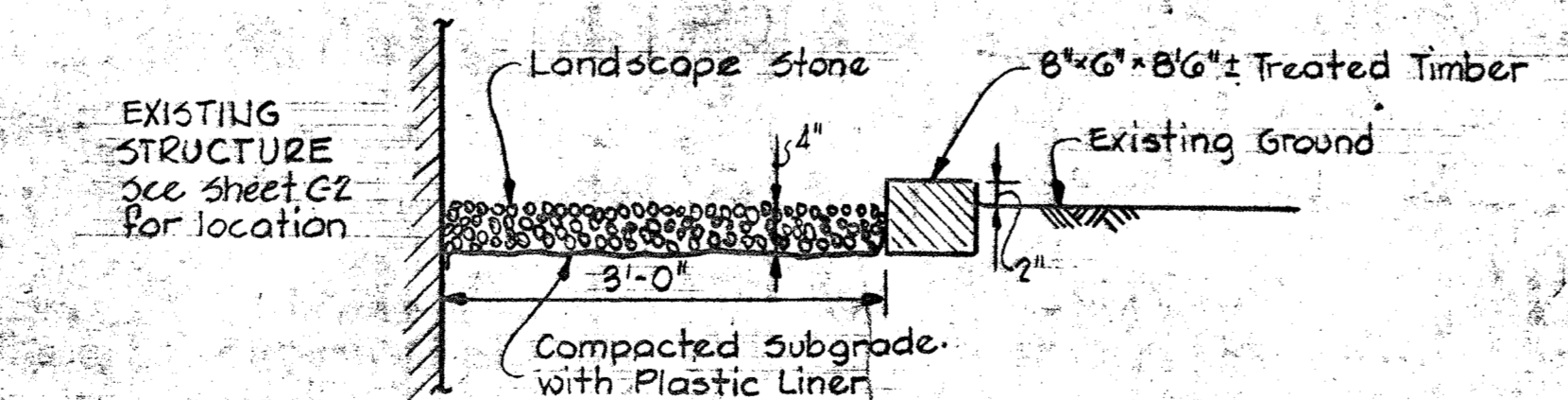
PLANTING DETAILS
NOT TO SCALE

PLANT LEGEND

- Existing Trees
- Evergreen Mass Planting
- Number of Plants (Total Quantity)
- Name of Plants (Code)
- Existing Tree



ENTRANCE SIGN
No Scale



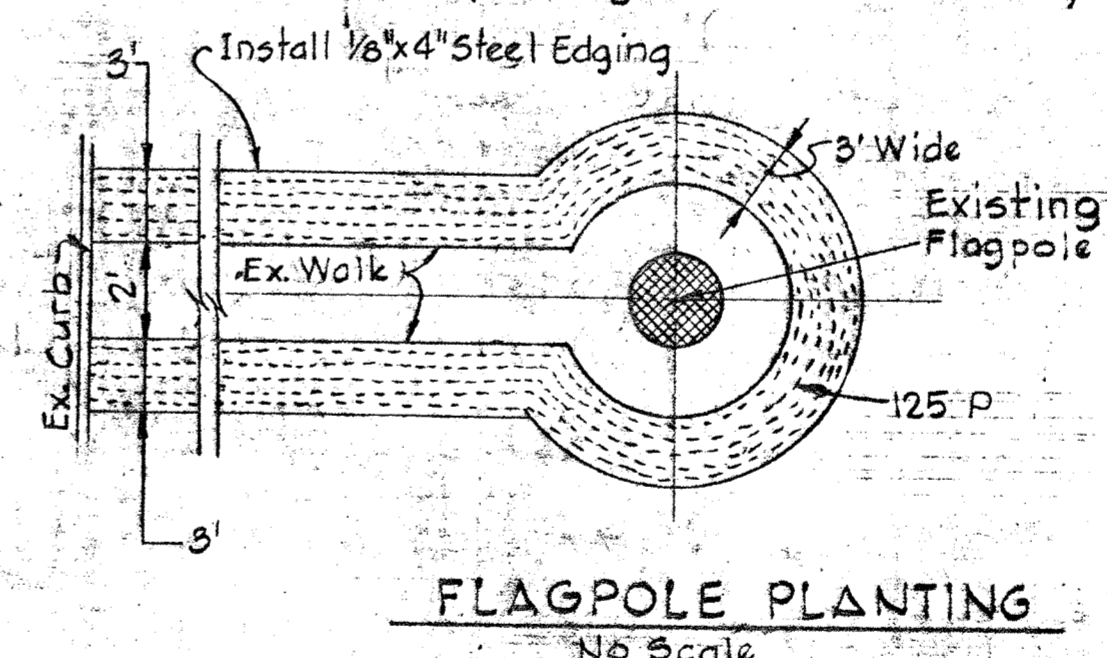
LANDSCAPE STONE TYPICAL DETAIL
No Scale

- GENERAL NOTES FOR PLANTING**
- All trees shall be balled and burlapped at time of digging in nursery.
 - All trees over 3\"/>

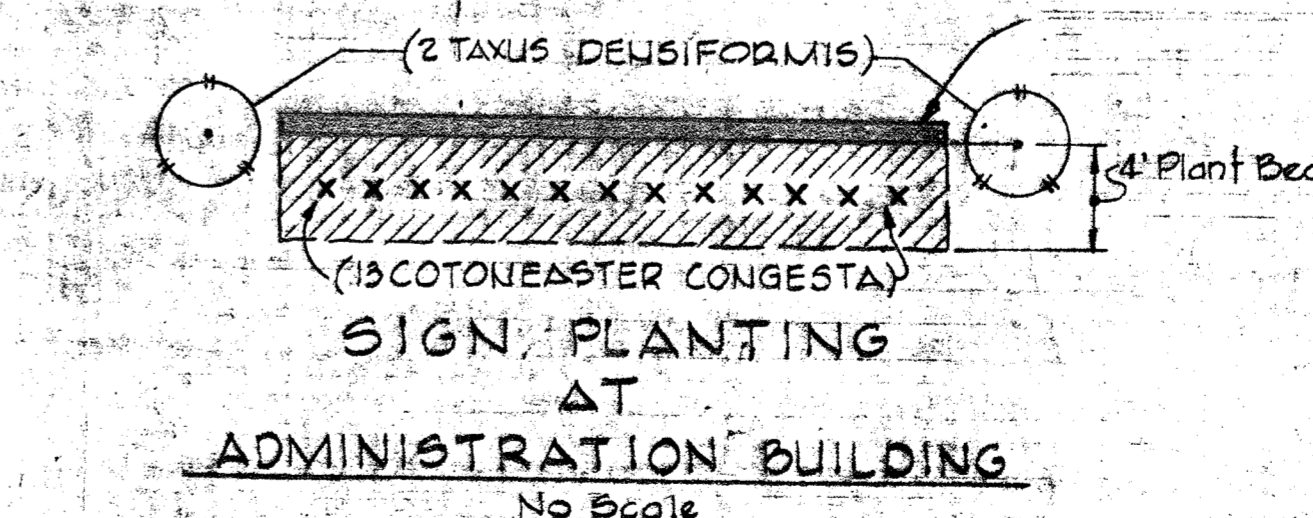
CONTRACT 761-5 PLANT LIST

SYMBOL	CODE	BOTANICAL & COMMON NAME	SIZE	REMARKS	TOTAL QUANTITY
MAJOR TREES	M	ACER PLATANOIDES - NORWAY MAPLE	3-3 1/2\"/>		
	AR	ACER RUBRUM - RED MAPLE	2 1/2\"/>		
	FL	FRAXINUS LAUCIFOLIA - GREEN ASH	2\"/>		
	HL	GLEDITSIA TRI. IUCRIMIS - SUDBURY HONEYLOCUST	2\"/>		
	SG	LIQUIDAMBER STYRACIFLUA - SWEET GUM	2\"/>		
	B	PYRUS CALLERYANA BRADFORD BRADFORD PEAR	2\"/>		
	QB	QUERCUS BOREALIS - NORTHERN RED OAK	3\"/>		
	PO	QUERCUS PALUSTRIS - PIN OAK	3\"/>		
	W	SALIX BABYLONICA - WEeping WILLOW	4\"/>		
	L	TILIA CORDATA - LITTLE LEAF LINDEN	2\"/>		
Z	ZELKOVA SERRATA - JAP ZELKOVA	4\"/>			
G	GINKGO BILOBA 'SENTRY' - MAIDENHAIR 'SENTRY'	3 1/2\"/>			
S	AMELANCHIER CANADENSIS - SHADBLow	6\"/>			
R	CERCIS CANADENSIS - REDBUD	7\"/>			
CF	CORNUS FLORIDA - WHITE DOGWOOD	8\"/>			
T	CRATAEGUS CORDATA - WASHINGTON HAWTHORN	7\"/>			
MINOR TREES	PY	PRUNUS VEDOENSIS - YOSHINO CHERRY	7\"/>		
	SX	STYRAX JAPONICA - JAP SNOWBELL	7\"/>		
EVERGREEN TREES	H	ILEX OPACA - AMERICAN HOLLY	8\"/>		
	AP	PINUS NIGRA - AUSTRIAN PINE	12\"/>		
	WP	PINUS STROBUS - WHITE PINE	10\"/>		
	PS	PINUS SYLVESTRIS - SCOTCH PINE	5\"/>		
	BP	PINUS THUNBERGI - JAPANESE BLACK PINE	10\"/>		
	NS	PICEA ABIES - NORWAY SPRUCE	14\"/>		
	K	PICEA PUNGENS KOSTER - KOSTER BLUE SPRUCE	10\"/>		
	SHRUBS	AZ	AZALEA VURUJE - MOTHER'S DAY OR PINK PEARL	18\"/>	
		JB	BERBERIS JULIAE - WINTERGREEN BARBERY	24\"/>	
		CO	COTONEASTER CONGESTA - CREEPING COTONEASTER	15\"/>	
WE		EUONYMUS ALATUS - WINGED EUONYMUS	3\"/>		
TH	ILEX CRENATA HELLER - DWARF JAPANESE HOLLY	18\"/>			
TREE SCREENING	SJ	JUNIPERUS SARGENTI - SARGENT JUNIPER	12\"/>		
	LU	LEUCOTHOE AXILLARIS - COAST LEUCOTHOE	18\"/>		
	FT	PYRACANTHA COCCINNEA LALANDI - FIRETHORN	3\"/>		
GROUND COVER		TAXUS CUSPIDATA DENSIFORMIS - DENSE YEW	3\"/>		
	P	PACHYSANDBA TERMINALIS - JAPANESE SPURGE	2 1/2\"/>		

* Final location of all planting to be determined by Engineer



FLAGPOLE PLANTING
No Scale

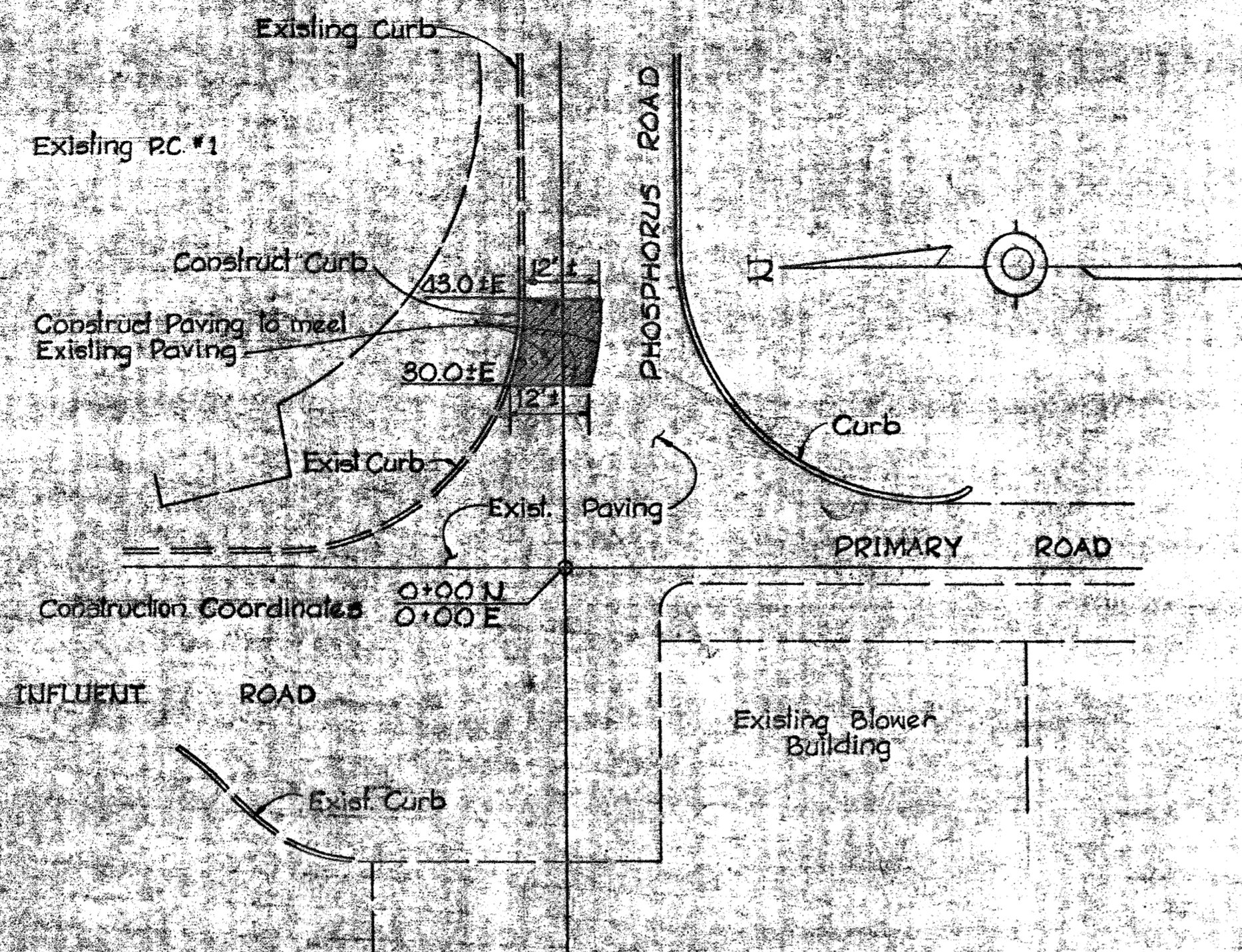


SIGN PLANTING
ADMINISTRATION BUILDING
No Scale

NOTE: Planting beds for sign and flagpole planting shall be 18\"/>

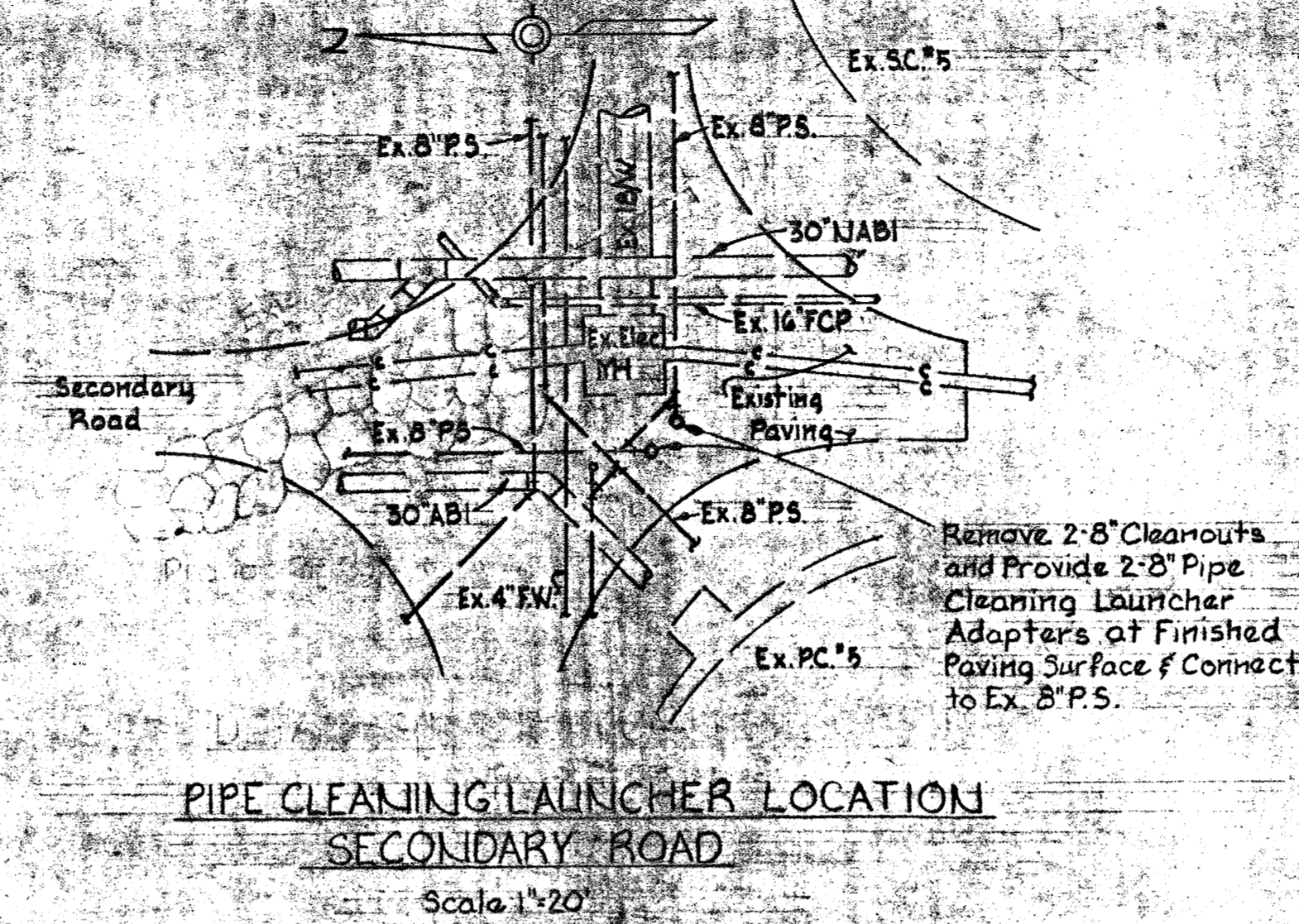
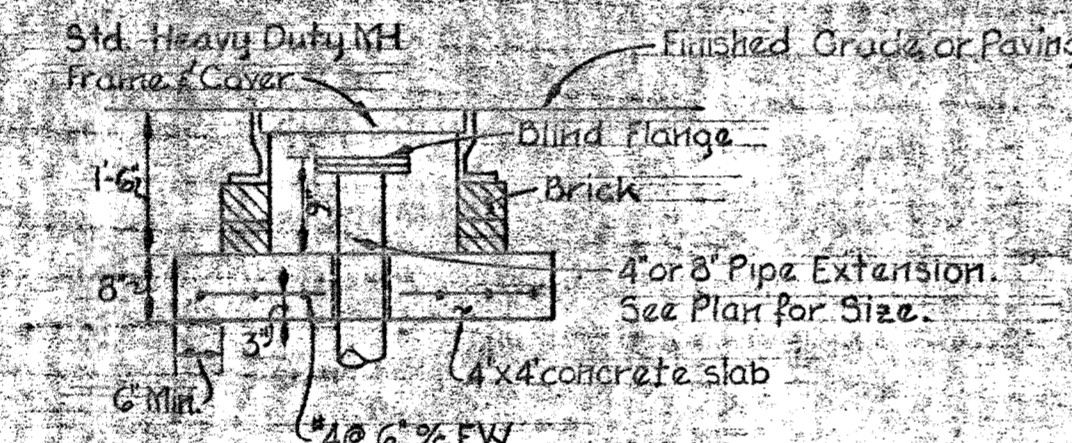
GENERAL NOTES FOR SOIL STABILIZATION

- All areas disturbed by construction under this contract shall be topsoiled, seeded, limed, fertilized and mulched.
- All other plant areas not disturbed by construction shall be top dressed with topsoil, seeded, limed, fertilized and mulched.
- All slope areas $\geq 4:1$ shall be planted with crown vetch. These areas include but are not limited to:
 - Slopes back of Administration Building
 - Slopes along Perimeter Road & South Plant #
 - Slopes along Guilford Run
 - Slopes along North Plant #
 - Slopes of embankments of adjacent property along North Plant #
 - Slopes north of Maintenance Building
 - Both sides of paved ditch north of Filter Circle
 - Slopes between Blower Bldg, Pumping Station & Perimeter Road
 - Slope South of Substation No. 1

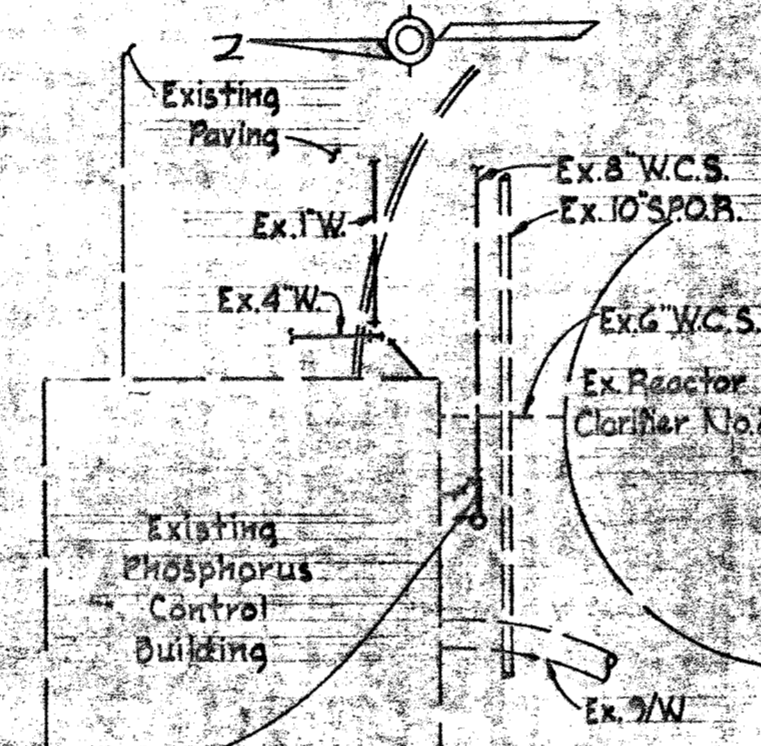


PHOSPHORUS ROAD PAVING DETAIL
Scale 1"=20'

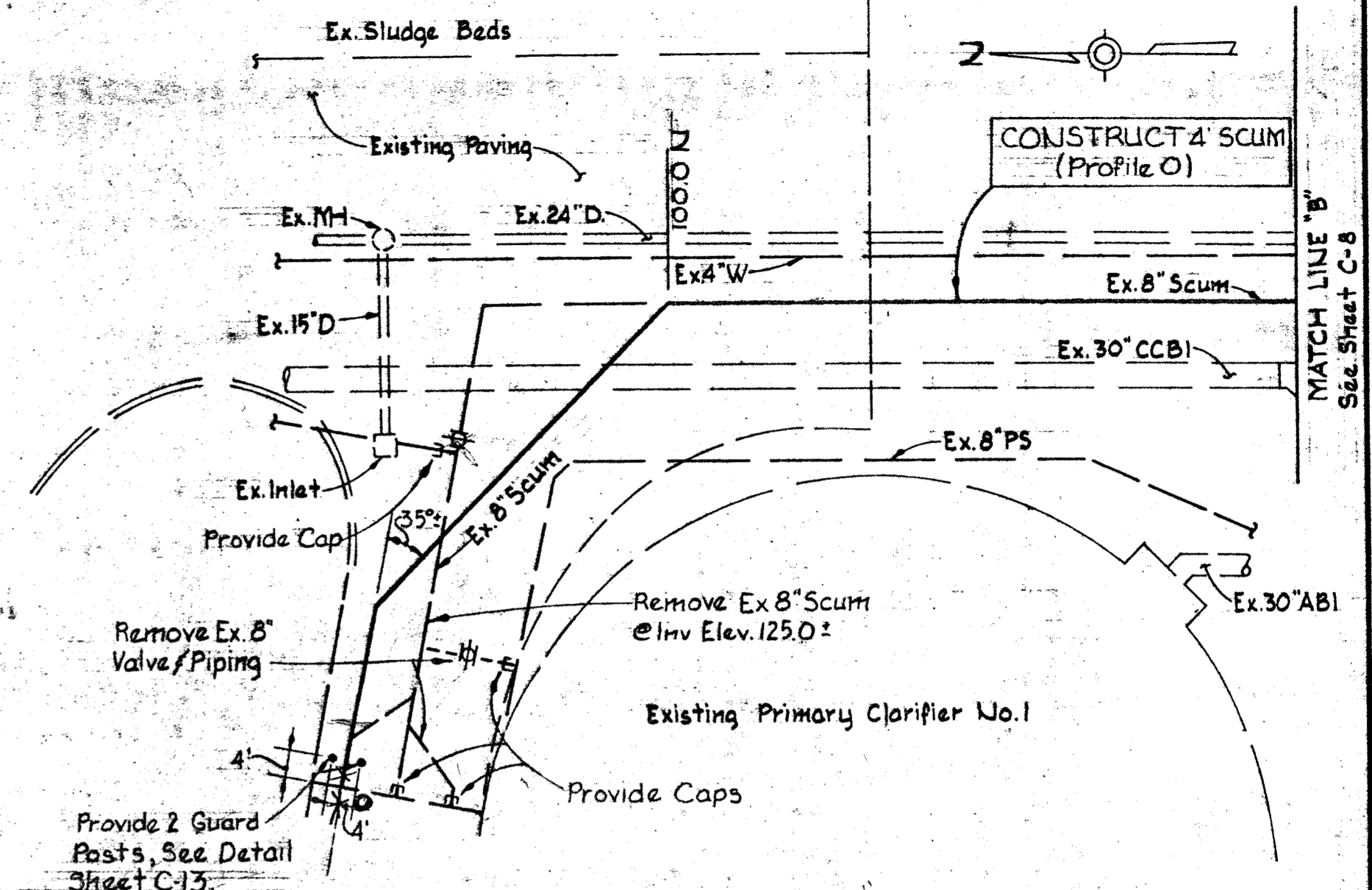
DETAIL-PIPE CLEANING LAUNCHER ADAPTER
No Scale



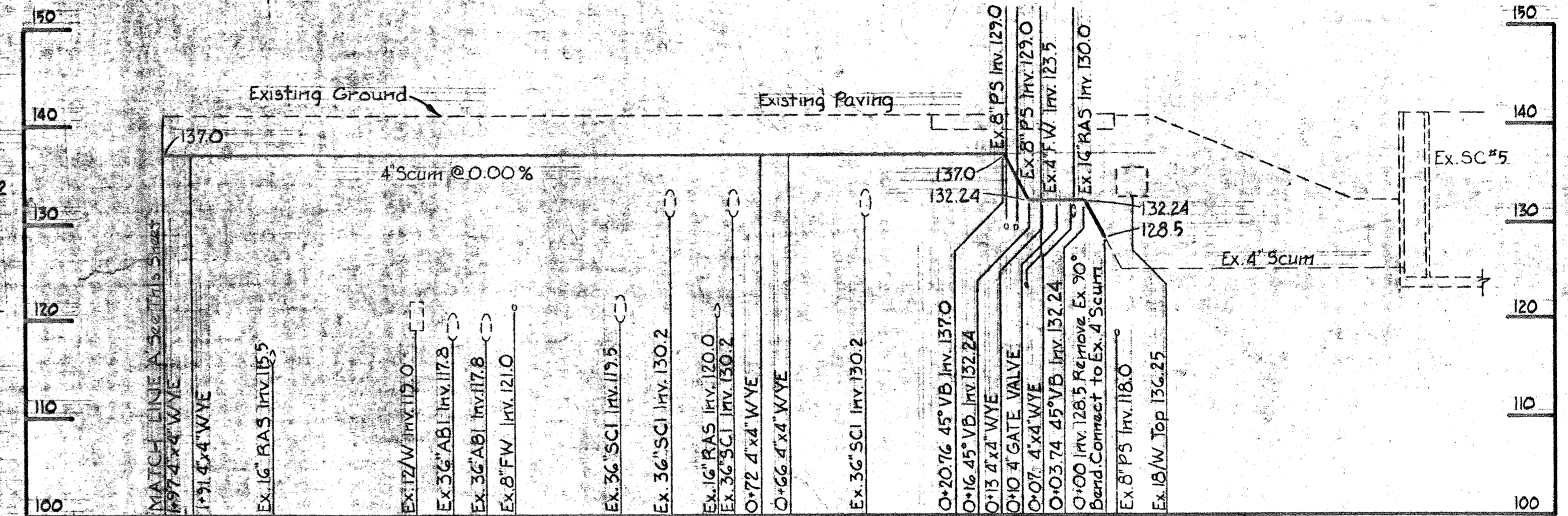
PIPE CLEANING LAUNCHER LOCATION
SECONDARY ROAD
Scale 1"=20'



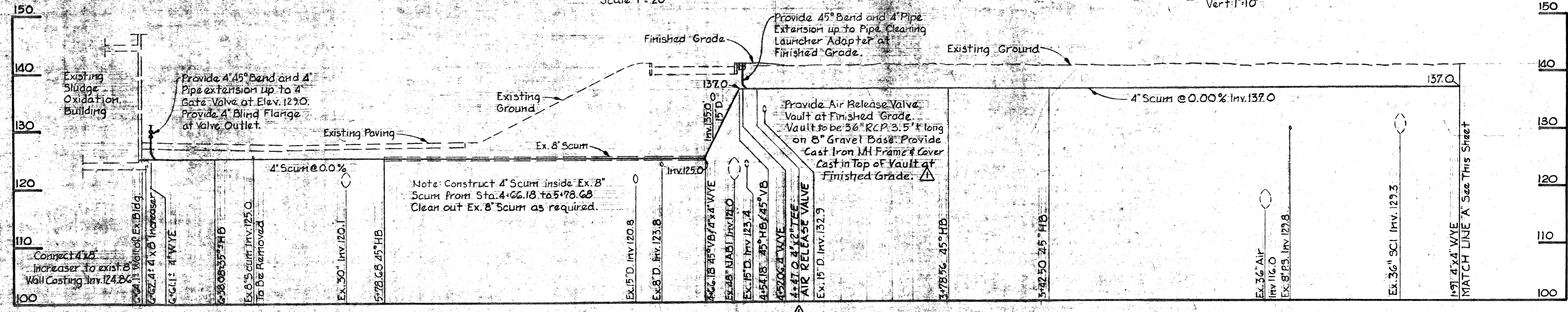
PIPE CLEANING LAUNCHER LOCATION
PHOSPHORUS CONTROL BUILDING
Scale 1"=20'



PART PLAN
Scale 1"=20'



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



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

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
6/21/80
DATE

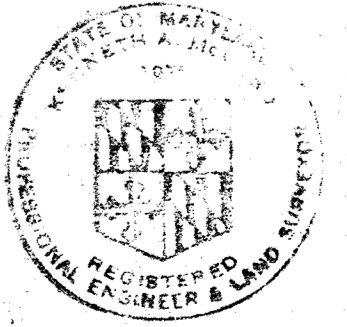
CONTRACT NO. 761-S

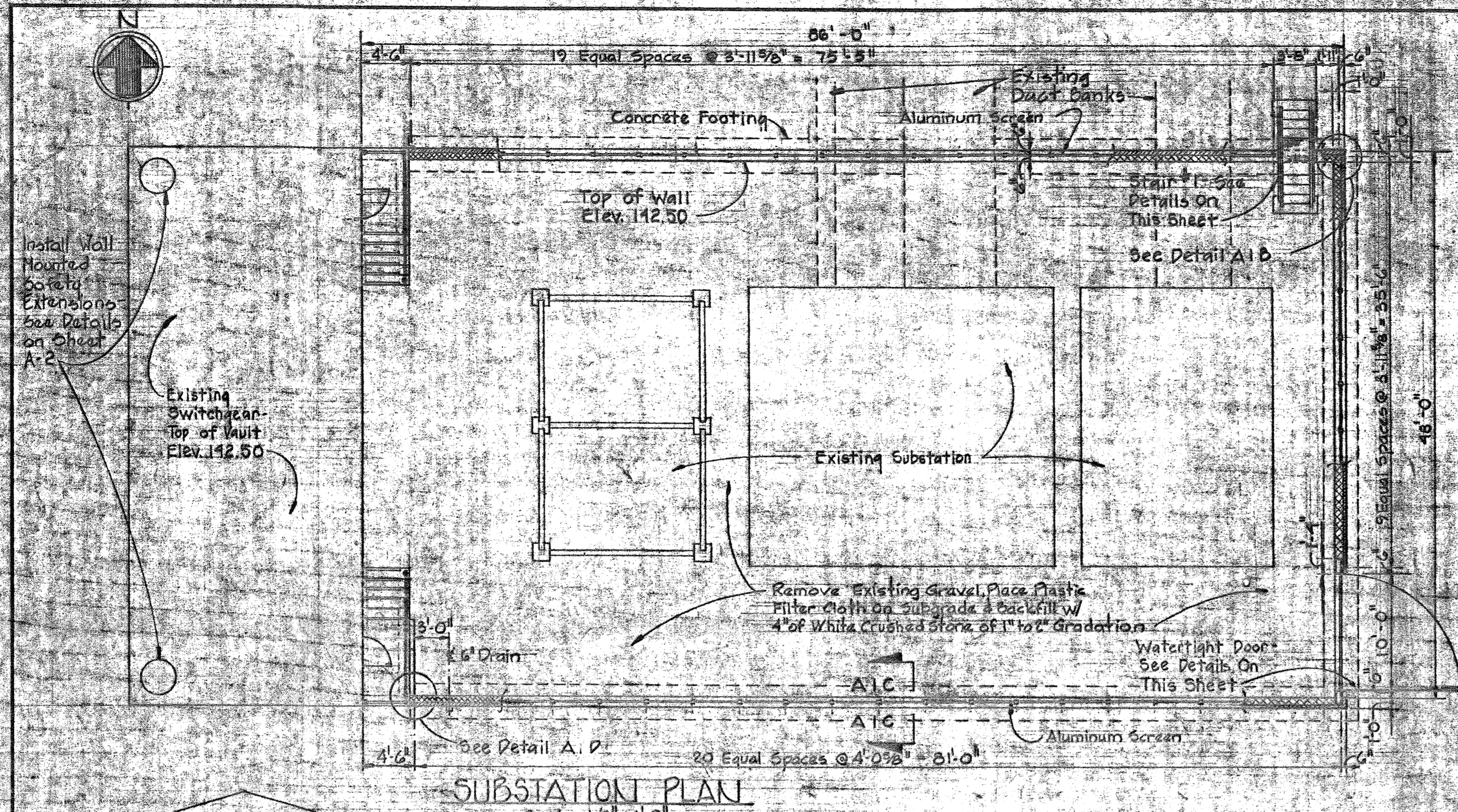
4" SCUM PROFILE &
MISCELLANEOUS DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

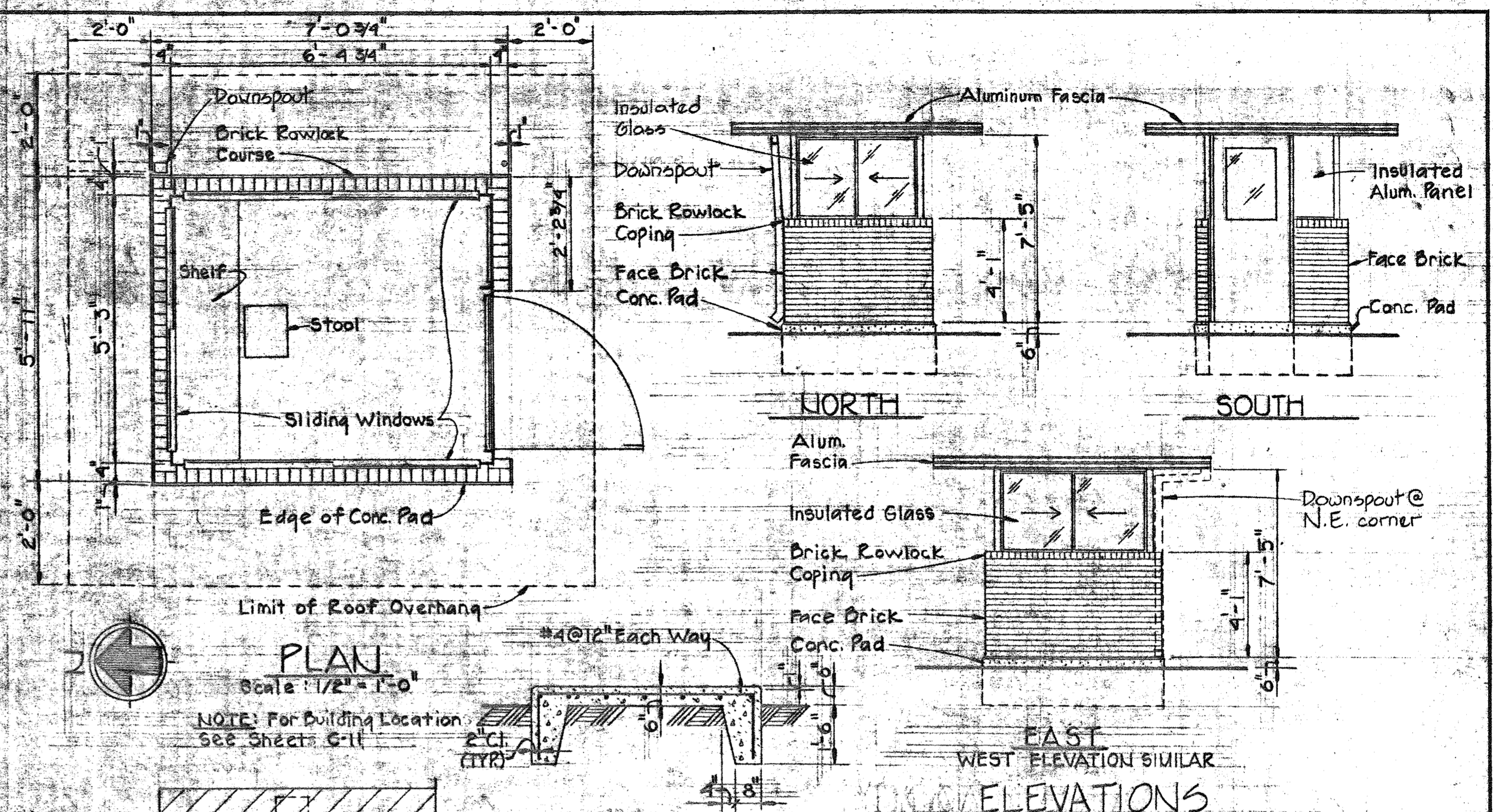
DRAWING
NO. 19
OF 50

SCALE
AS
SHOWN

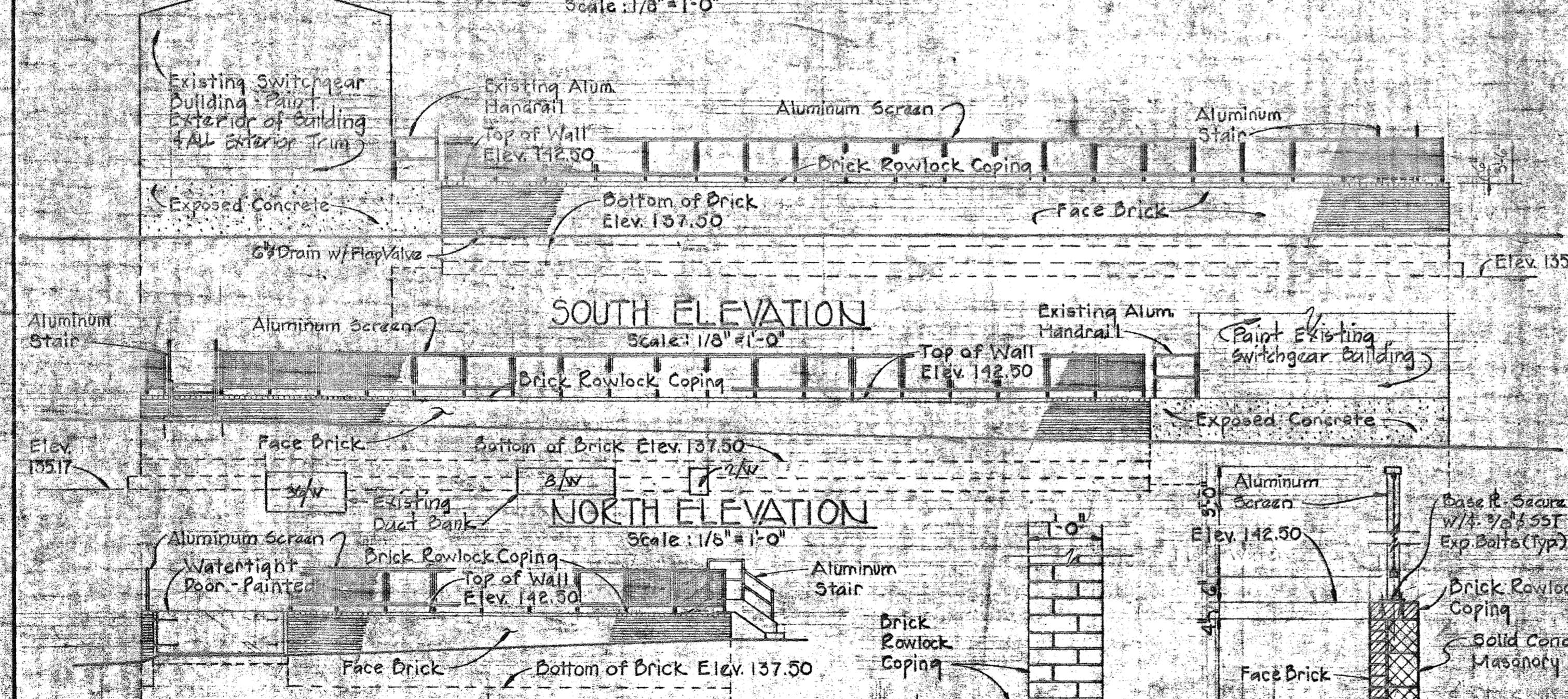




SUBSTATION PLAN
Scale: 1/8" = 1'-0"

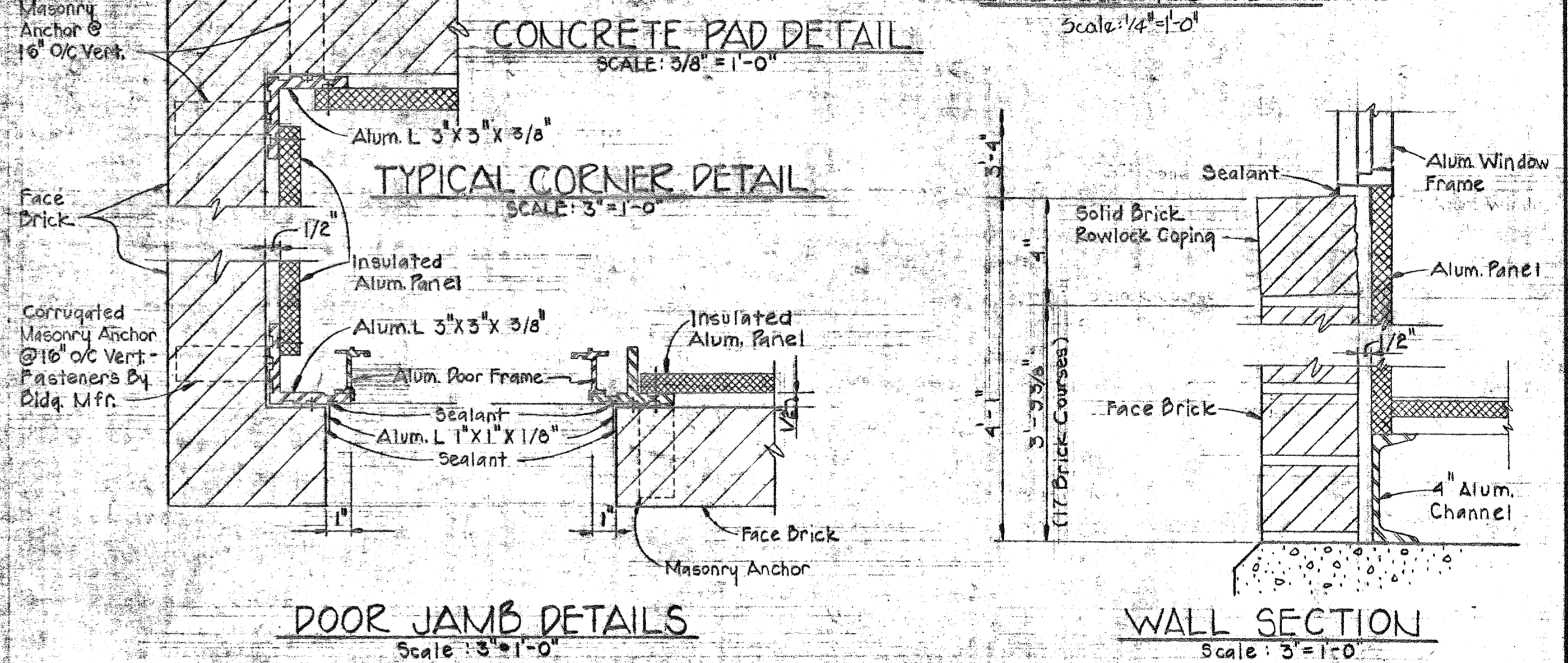


PLAN
Scale: 1/2" = 1'-0"
ELEVATIONS
Scale: 1/4" = 1'-0"



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

NORTH ELEVATION
Scale: 1/8" = 1'-0"

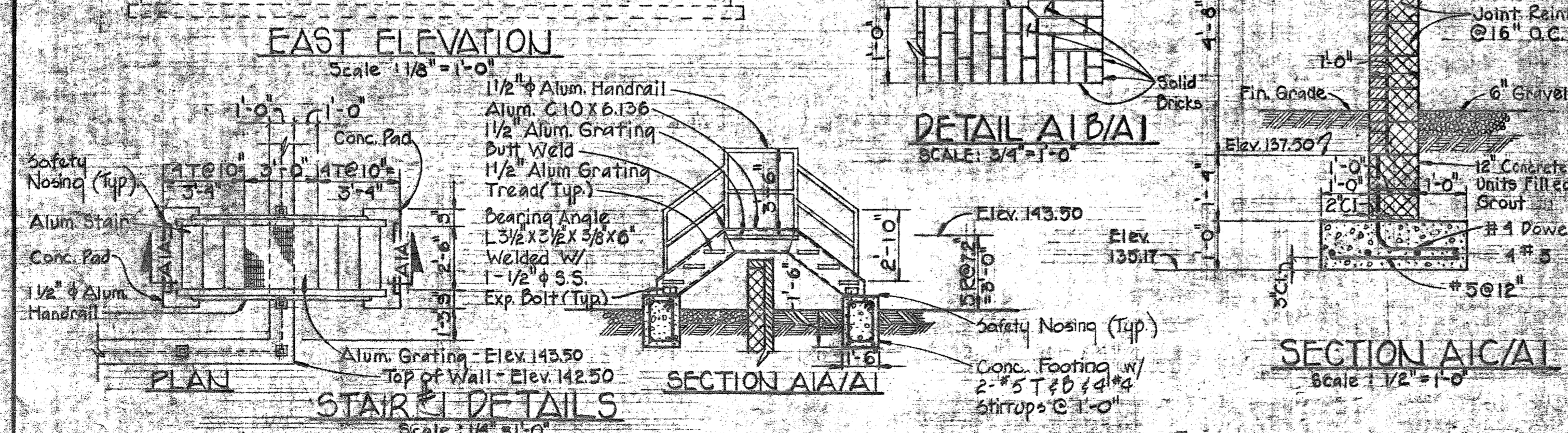


CONCRETE PAD DETAIL
Scale: 3/8" = 1'-0"

TYPICAL CORNER DETAIL
Scale: 3/8" = 1'-0"

DOOR JAMB DETAILS
Scale: 3/8" = 1'-0"

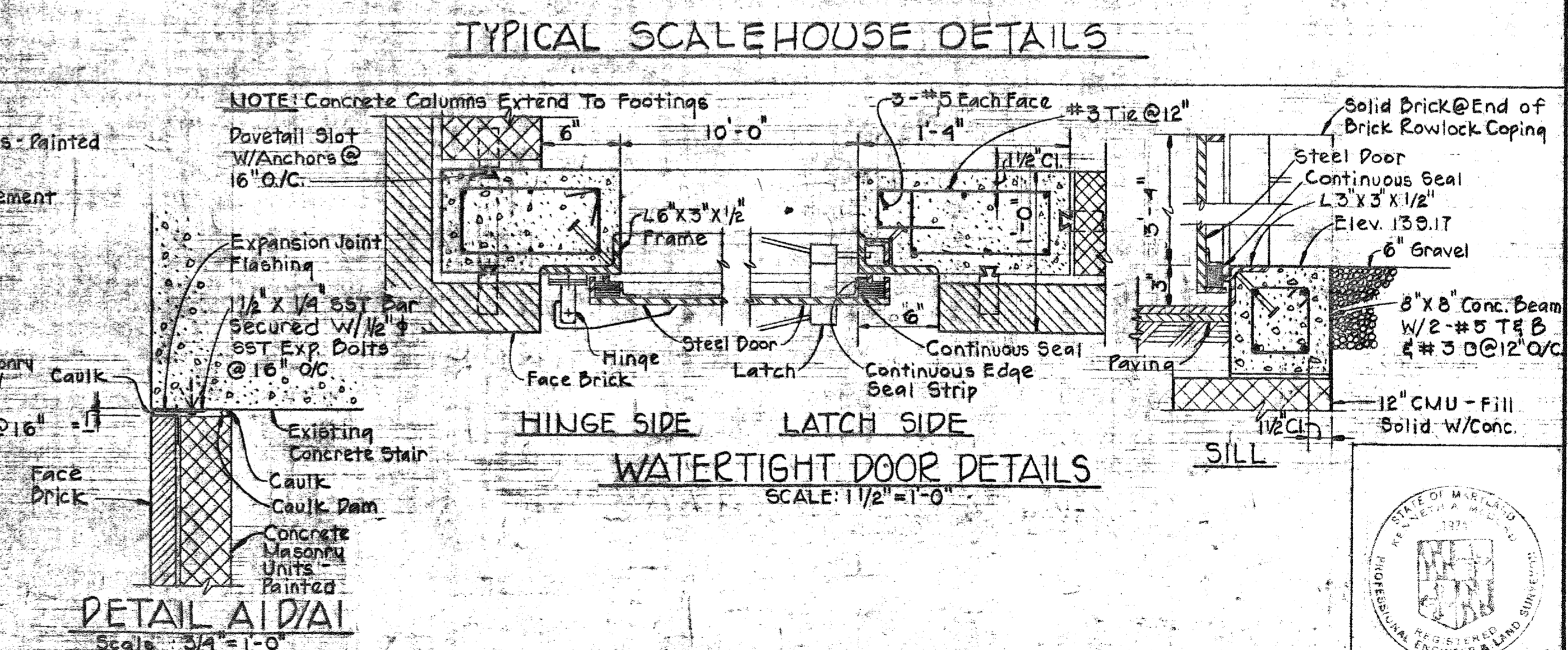
WALL SECTION
Scale: 3/8" = 1'-0"



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

DETAIL A1/B1
Scale: 3/4" = 1'-0"

SECTION A1/A1
Scale: 1/2" = 1'-0"

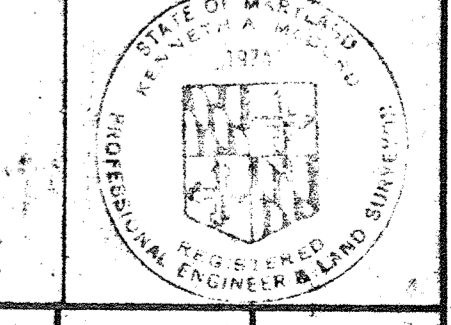


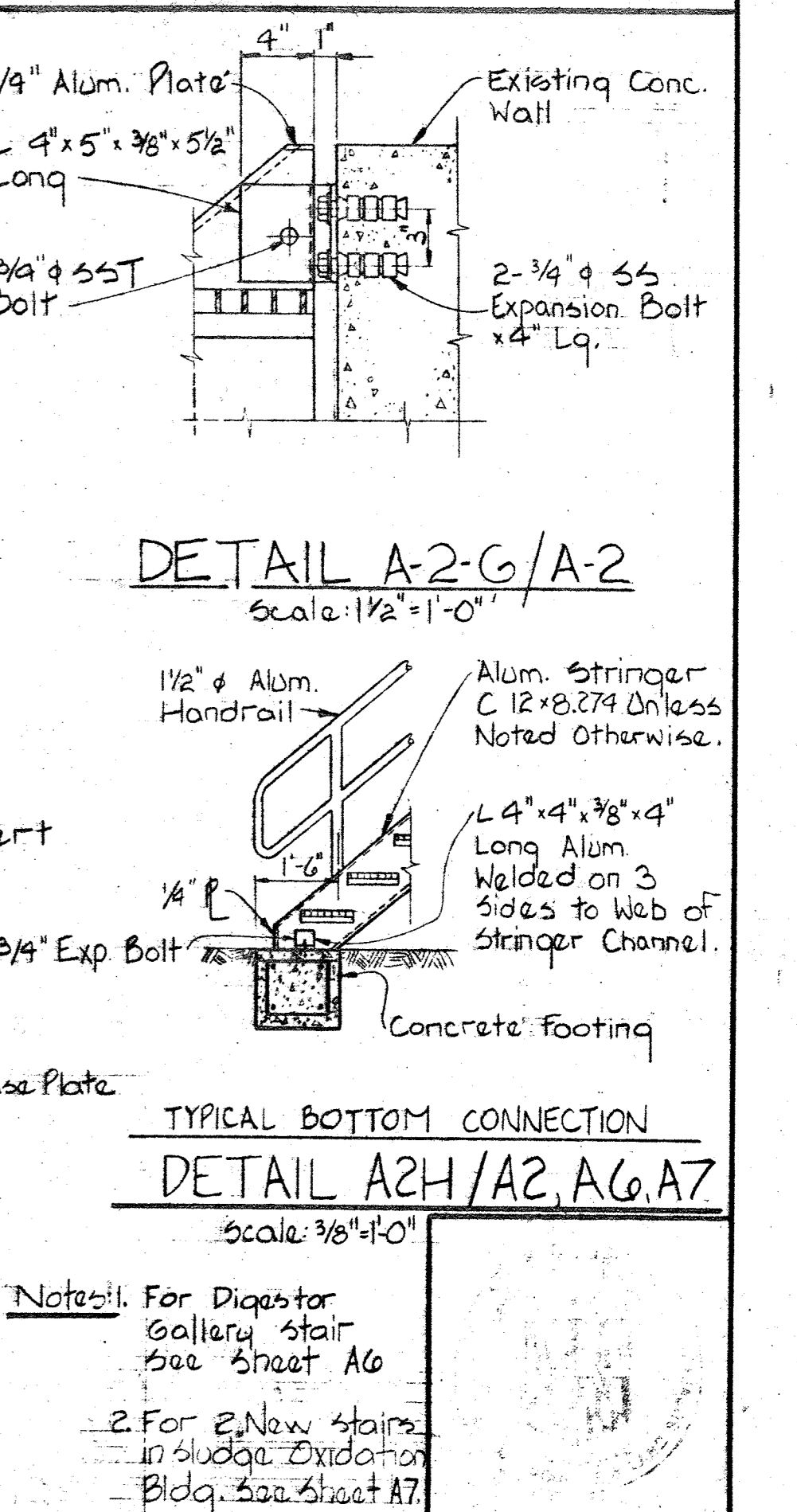
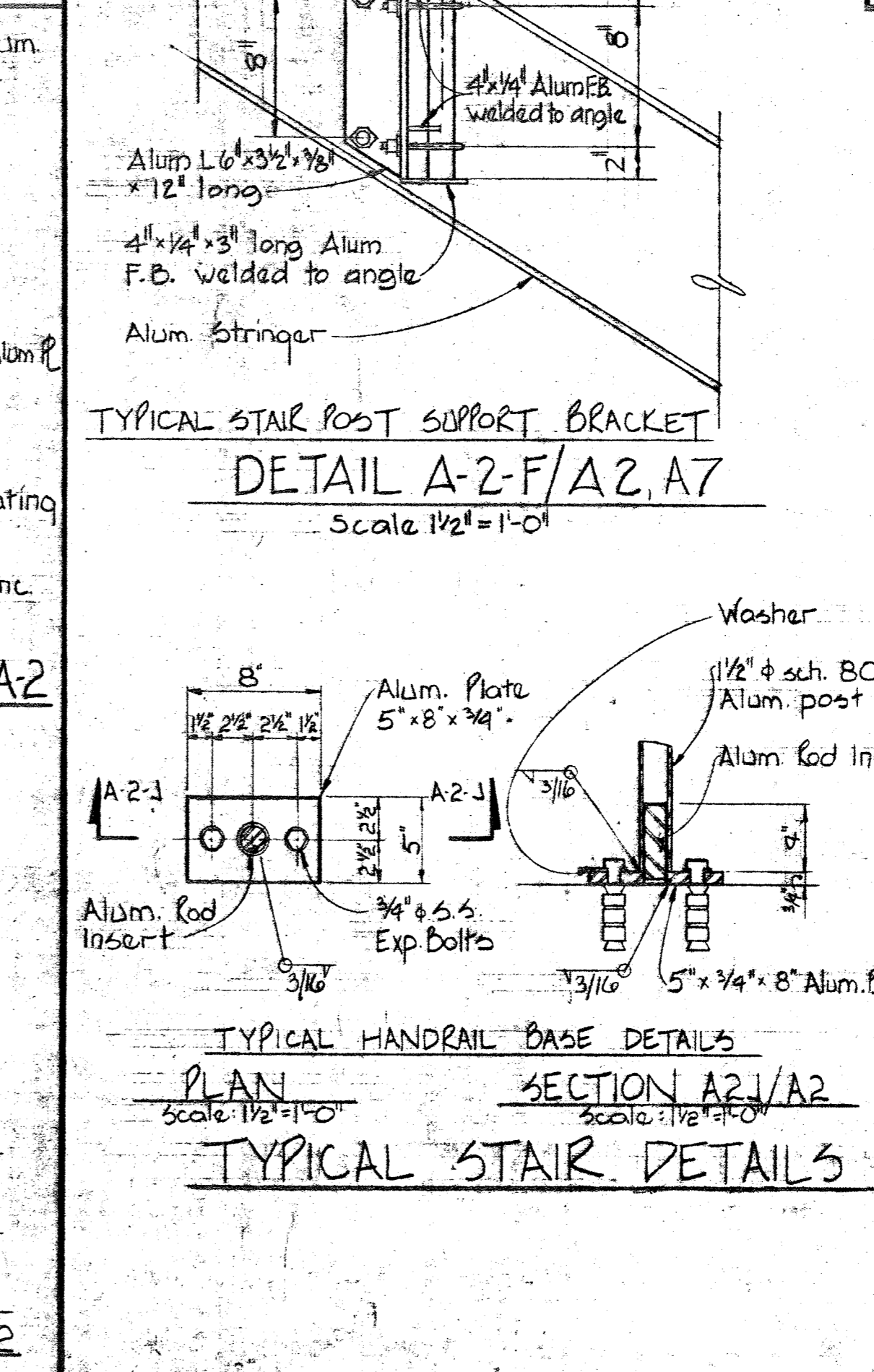
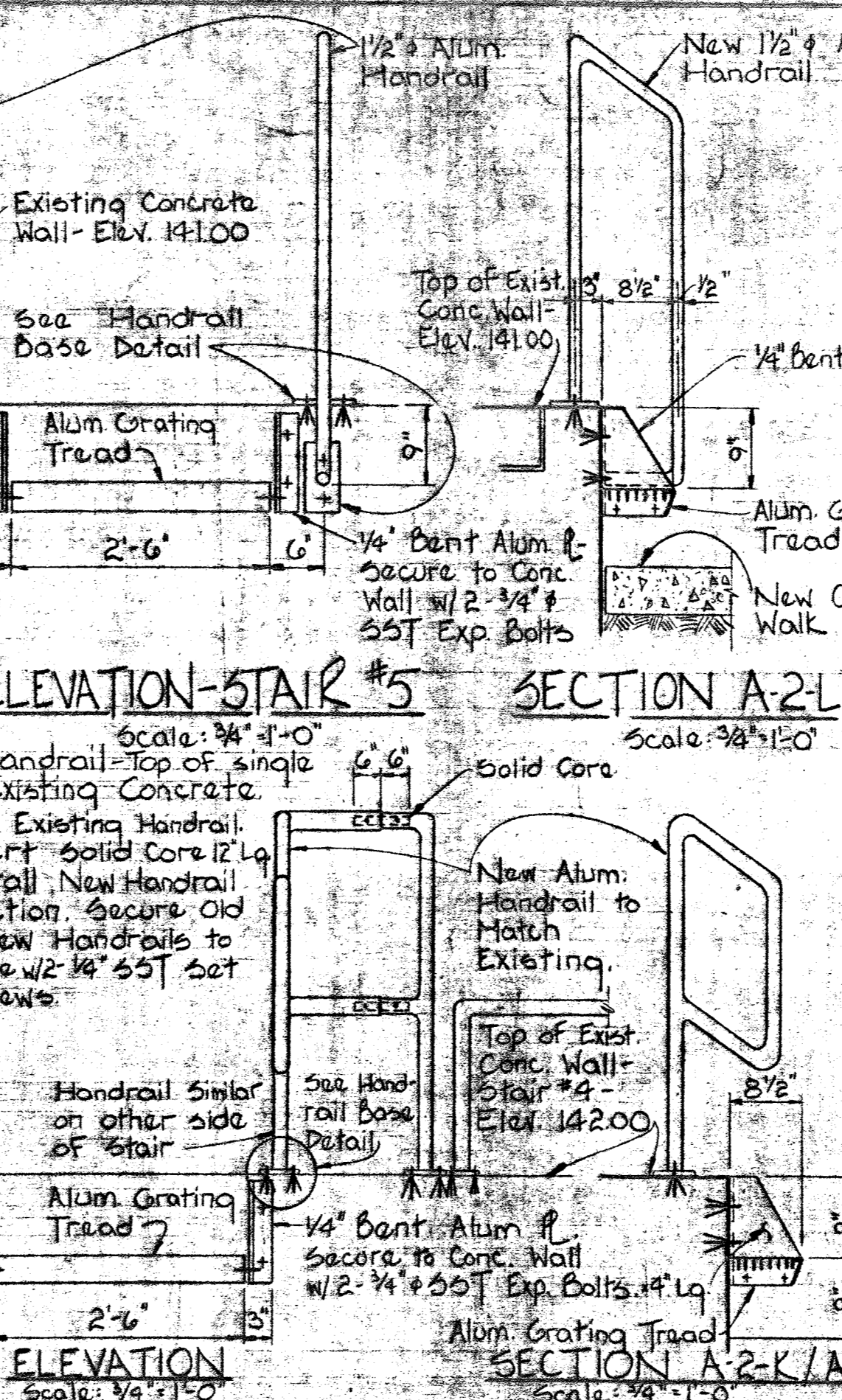
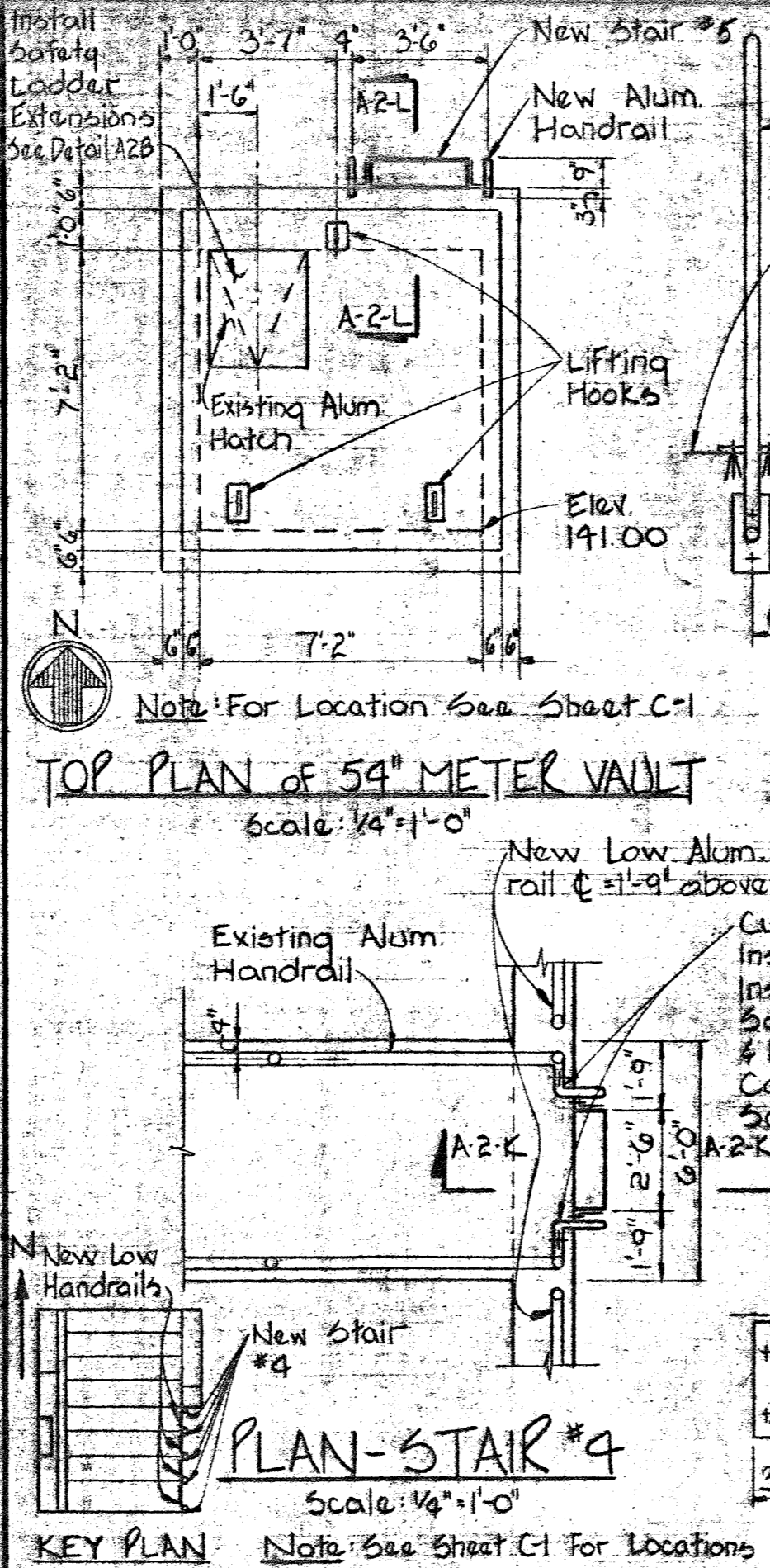
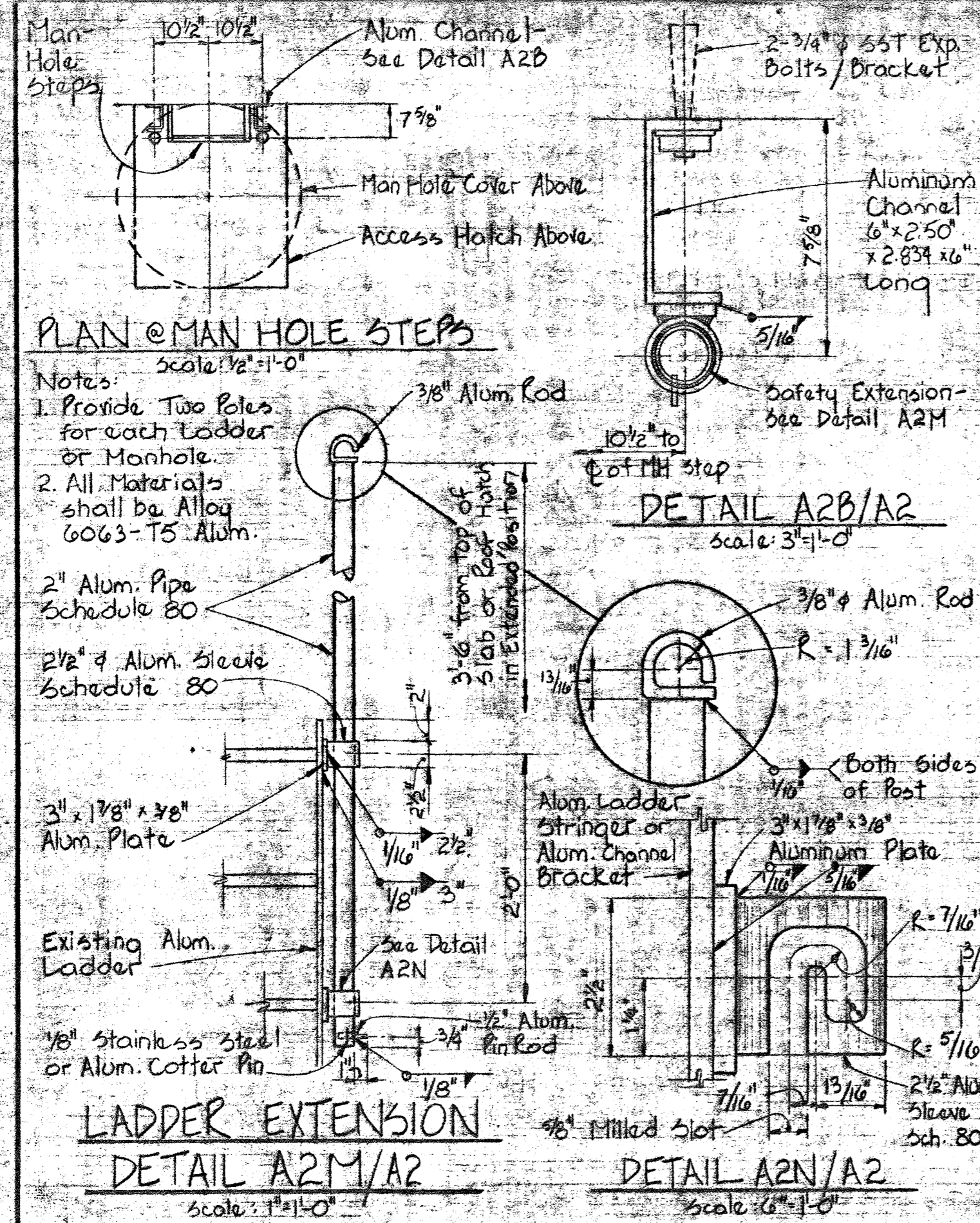
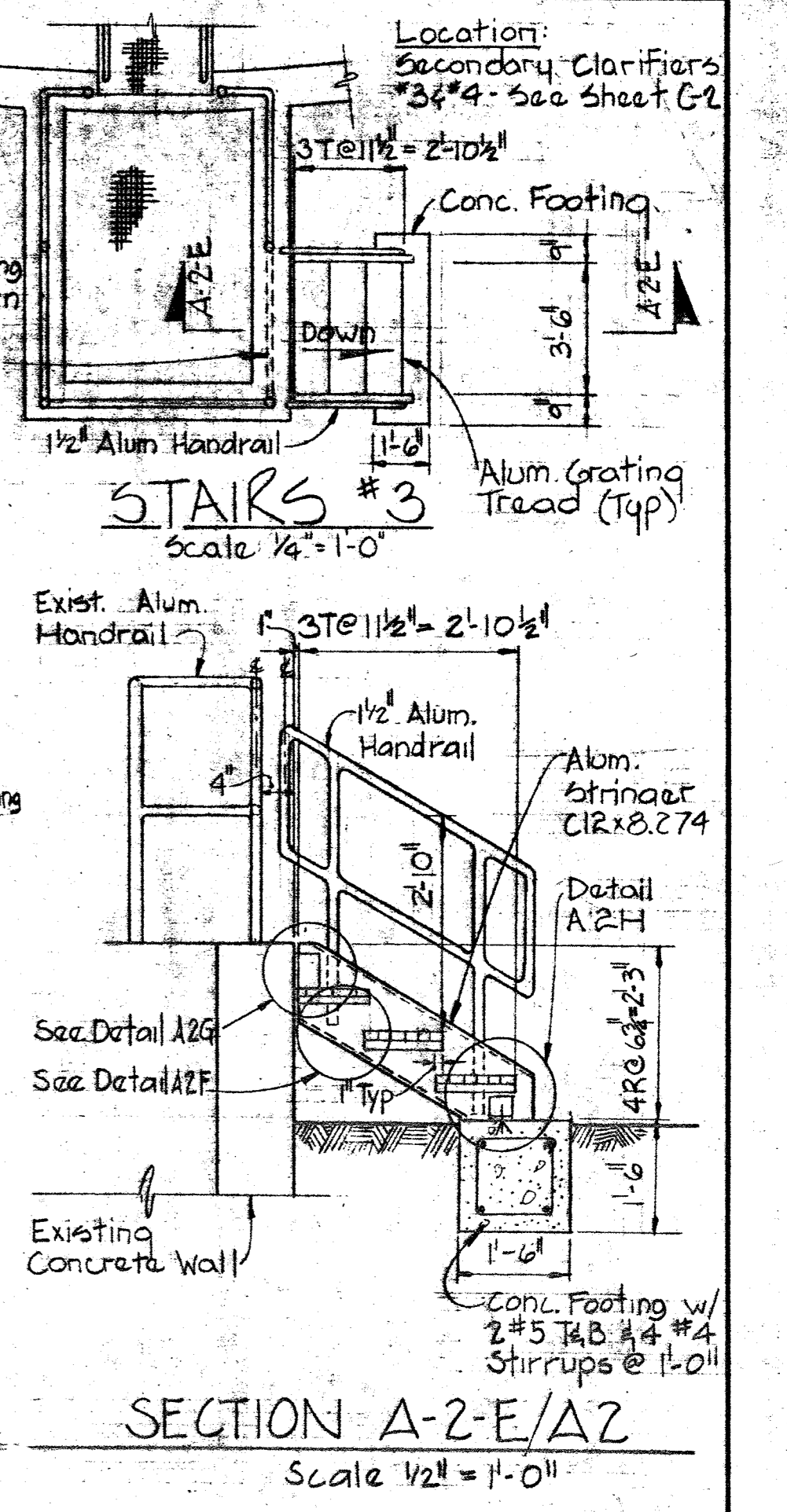
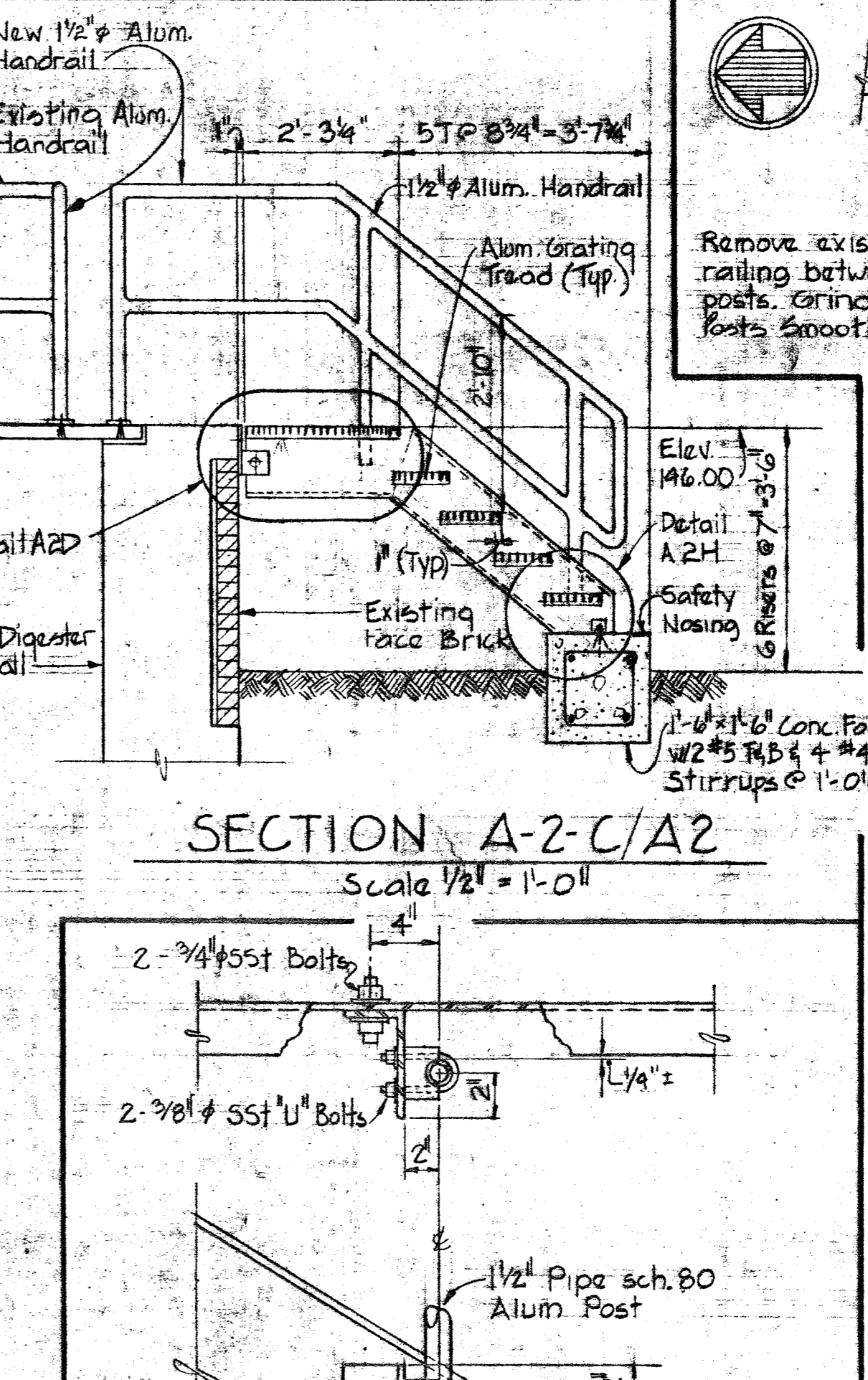
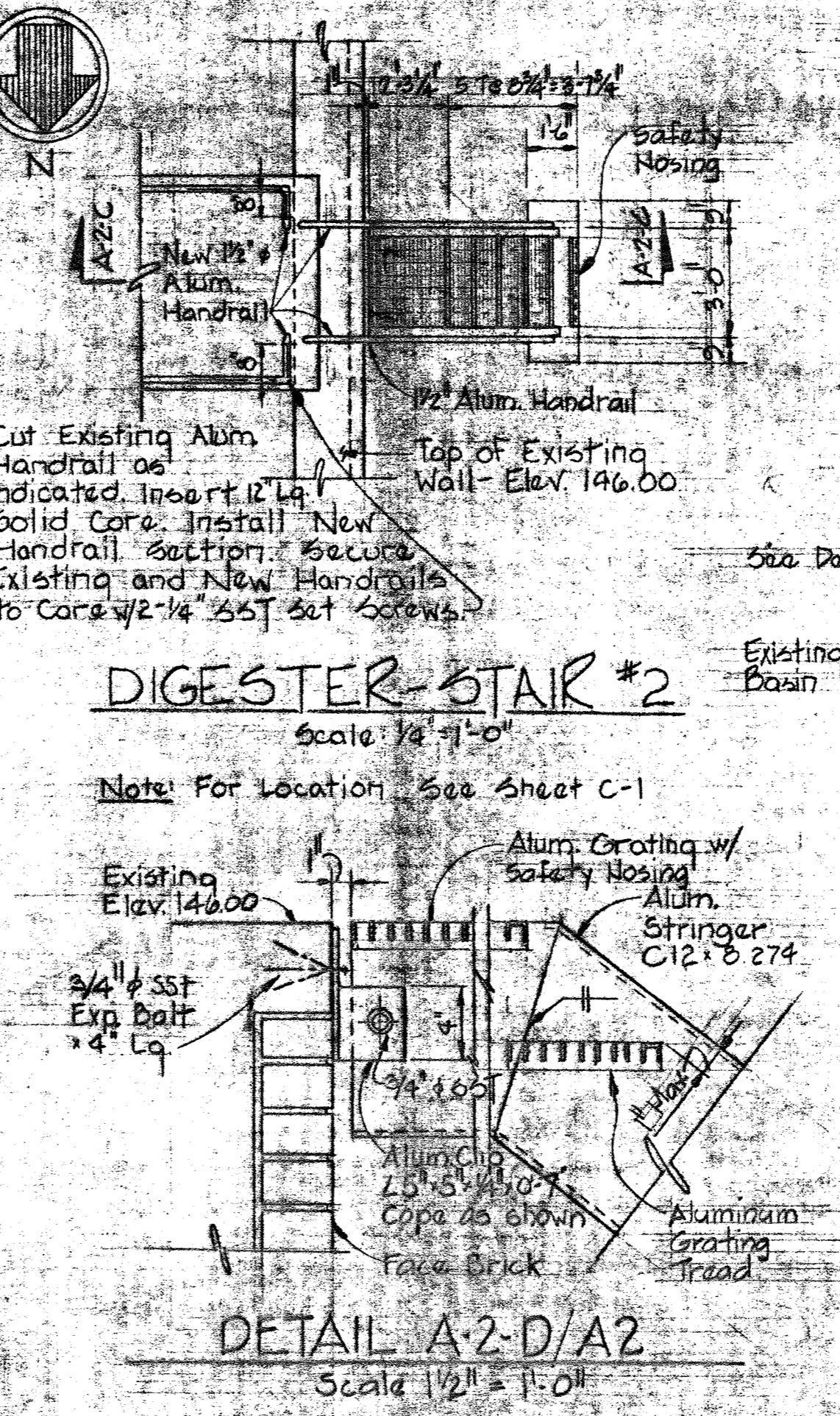
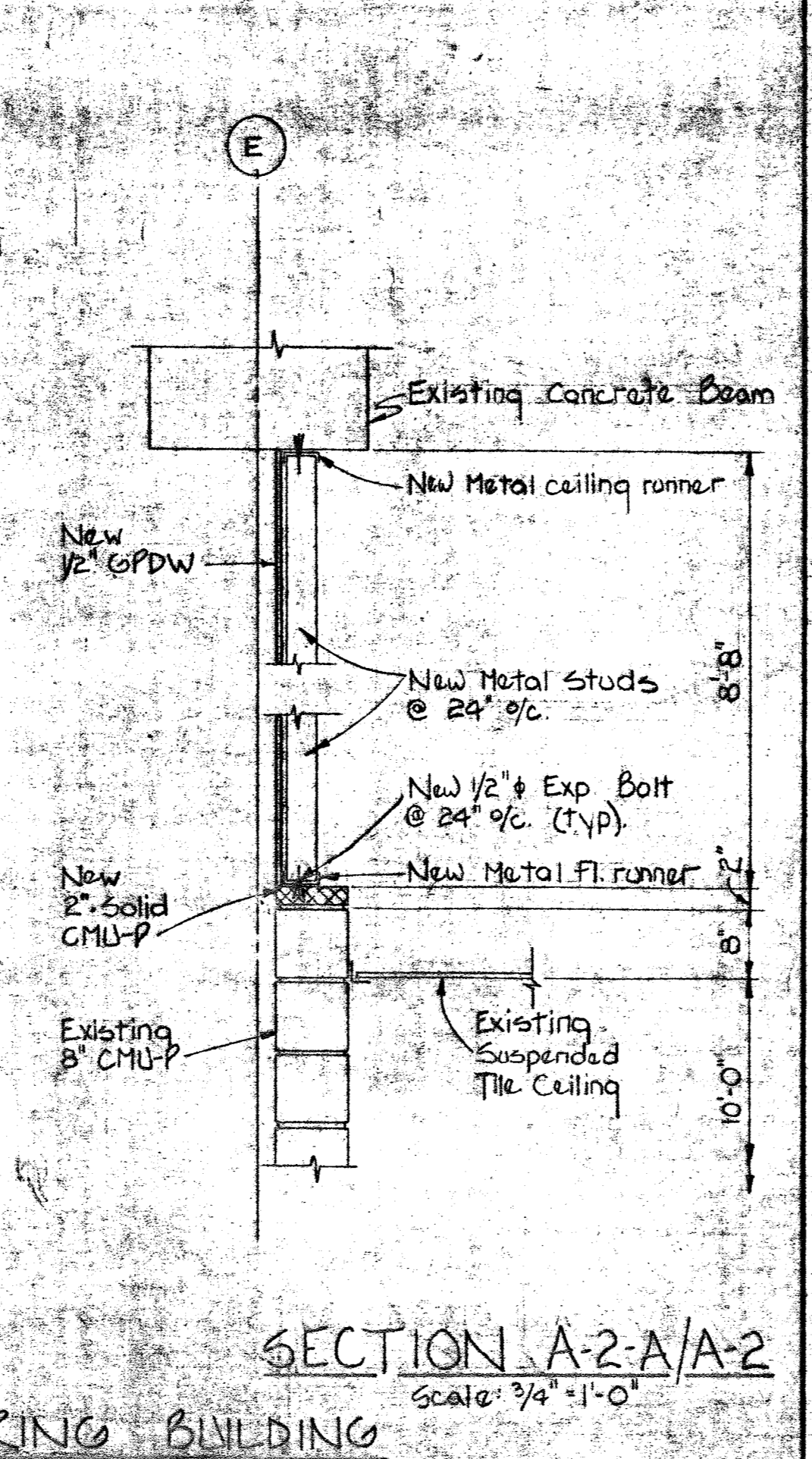
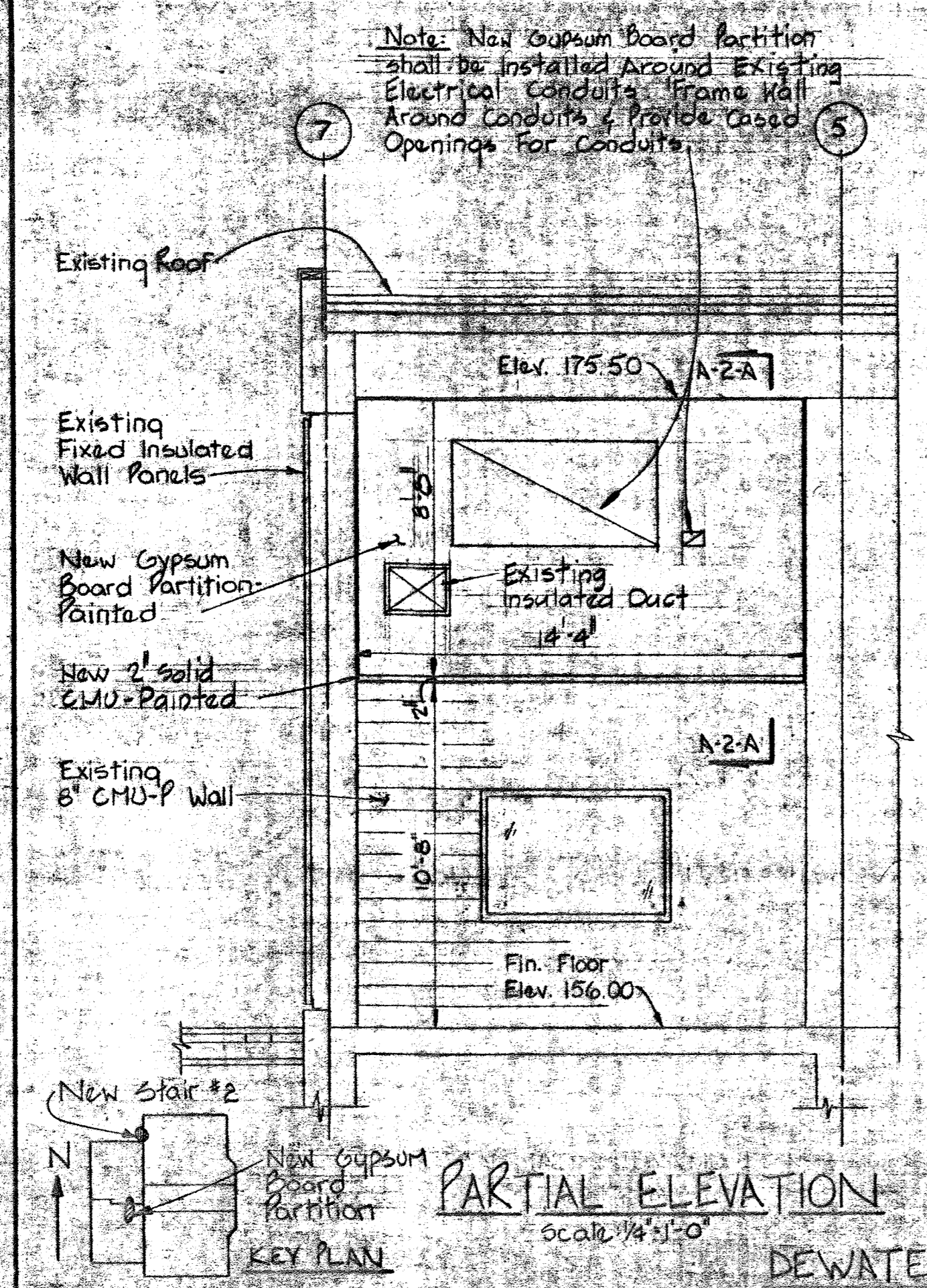
TYPICAL SCALEHOUSE DETAILS
Scale: 1/2" = 1'-0"

HINGE SIDE LATCH SIDE

WATERTIGHT DOOR DETAILS
Scale: 1/2" = 1'-0"

<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 2/15/80 DATE</p>	<p>CONTRACT NO. 761-S</p>	<p>SUBSTATION & SCALE HOUSE PLANS, SECTIONS & DETAILS</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.4</p>	<p>DRAWING NO 20 OF 50 SCALE AS SHOWN</p>
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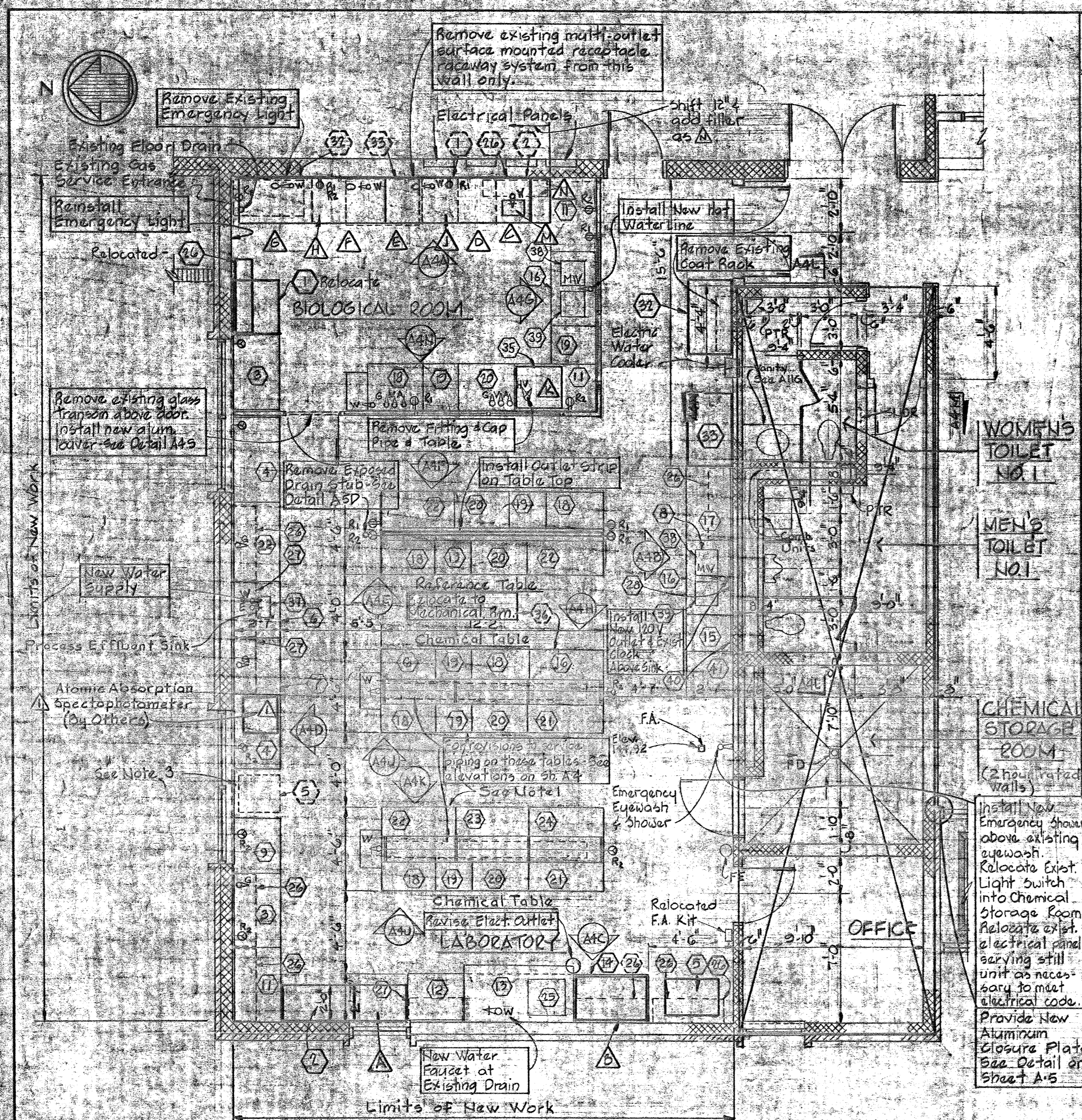
WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
2/11/80
DATE

CONTRACT NO. 761-S
STAIR DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITIONS NO. 4

DRAWING NO. 21 OF 50
SCALE AS SHOWN



PARTIAL PLAN - LABORATORY, WOMEN'S / MEN'S TOILET NO. 1

Scale 1/4" = 1'-0"

NOTE: All partitions are full height unless shown thus 2'-0"
 A Floor Drain in Chemical Storage Room - Top Elev. 144.75

SERVICE FITTING LEGEND

Symbol	Description
E	Plant Effluent
G	Gas
MV	Hot & Cold Water Mixing
R ₁	115V
R ₂	240V
V	Vacuum
W	Cold Water

LEGEND:

- (1) Existing items present location
- (2) Existing items new location
- (A) New items
- * Existing items to be relocated

LABORATORY NOTES

1. Chemical Table Service Piping & Conduit Under Reagent Rack (Gas, Vac, Air, Cv, 115V-6 Each On Each Table)
2. Vacuum Pump Mounted On Floor Inside Cabinet Control Switch Mounted On Face of Cabinet Between Louvers.
3. Existing Floor Standing Equip. To Be Moved From Existing Lab. & Installed, Not shown on Elevation on Sheet A-4
4. Fume Hood w/Air, Vac., Gas, 115V, 230V, & Drain.
5. Vacuum Pump and Air Compressor mounted on floor inside cabinet.

NOTES: CONTRACT 761-5

1. Raise all wall mounted cabinets to underside of ceiling to allow clearance for table mounted equipment.
2. Fume Hood (A) shall have 115V, 240V 30A service only.
3. Fume Hood (A) shall have Air, Vacuum, Gas 120V & 240V service on each side of hood, pedestal electrical box at center w/ 2-120V & 2-240V outlets & two cup sinks with cold water.
4. Fume Hood (A) shall be the same as hood (A) except that it shall also have hot & cold water faucet, sink drain, cup sink with cold water and 120V outlets only.
5. All other laboratory equipment described in the specifications shall be located by the owner and installed as required by the contractor.
6. For revisions to ceiling plan - see sheet ME-2.

LABORATORY FURNITURE & EQUIPMENT SCHEDULE

Equip. No.	No. Req'd.	Manufacturer & Model No.	Description	Dimension LxWxH
* 1	1	Kewaunee KE-2478	Base Unit - Relocate	48" x 22" x 35 3/4"
* 2	1	KD-2318	Base Unit (Relocate - Paint blue to match adjacent units)	48" x 22" x 35 3/4"
3	2	KE-2728	Base Unit Modify top	48" x 22" x 35 3/4"
4	2	KE-2638	Base Unit	48" x 22" x 35 3/4"
* 5	1	KT-6590	Balance Table - Relocate	35" x 24" x 50"
6	2	KG-2006	Sink Base Unit	36" x 22" x 35 3/4"
7	1	KE-2446	Base Unit	36" x 22" x 35 3/4"
8	1	In-Sink Erator 707	Disposal	
9	1	Kewaunee KE-2406	Base Unit	36" x 22" x 35 3/4"
11	2	KG-2128	Base Unit	48" x 22" x 35 3/4"
12	1	KE-2426	Base Unit	36" x 22" x 35 3/4"
13	1	KH-1006-MT	Fume Hood	6'-0" x 37" x 7'-1 1/2"
14	1	KE-2418	Base Unit (Remove existing top. Modify for A)	48" x 22" x 35 3/4"
15	1	3C-4001	Undercounter Dishwasher	
16	2	KG-2008	Sink Base Unit	48" x 22" x 35 3/4"
17	1	KE-2438	Base Unit	48" x 22" x 35 3/4"
18	6	KD-2506	Base Unit	36" x 22" x 35 3/4"
19	7	KA-2422-1A	Drawer Apron Unit	24" x 21 1/8" x 4 1/2"
20	5	KE-2616	Base Unit	36" x 22" x 35 3/4"
21	3	KG-2218	Acid Storage Base Unit	18" x 22" x 35 3/4"
22	4	KD-2528	Base Unit	48" x 22" x 35 3/4"
23	1	KE-2618	Base Unit	48" x 22" x 35 3/4"
24	1	KD-2508	Base Unit	48" x 22" x 35 3/4"
25	1	Existing	Muffle Furnace	
* 26	7	Kewaunee KW-1618	Wall Mounted Unit - Relocate	48" x 16" x 30"
* 27	3	KW-1616	Wall Mounted Unit - Relocate	36" x 16" x 30"
28	1	K7-1906	Payboard	32" L x 29" H x 1 1/4" Th.
29	1	Existing	Drying Oven	
31	1	Existing	Autoclave	
* 32	1	Precision Scientific 31213	BOD Incubator - Relocate	
* 33	1	Existing	BOD Incubator - Relocate	
34	1	Existing	Bacteriological Incubator	
35	1	Precision Model 35	Vacuum Pump - See Note 2	
* 36	1	Pneumatic BLVGH1+BBLECTH-10	Vacuum Pump + Air Compressor See Note 5 - Relocate to Mech. Room.	
37	1	Kewaunee 1000	Kemresin Tub Sink	14" x 10" x 6" D
38	1	1079	Stainless Steel Tub Sink	18" x 14 1/2" x 10" D
39	1	1003	Kemresin Tub Sink	18" x 15" x 11" D
40				
41	1	Horizon # 6321-31	Storage Tank, 30 gal	
42	1	Barnstead	Distilling Apparatus, elec., 5gph	
A	1	Fisher 97-630	Drawer Apron Unit - Relocate & Modify Top from (9)	22" x 35" W x 4 3/4" H
B	1	93-409	Fiberglass Fume Hood w/Duratek Top for (9)	47" W x 25" D x 59" H
C	1	97-290	Base Unit - Sink	24" x 22" x 35 3/4"
D	1	97-260	Base Unit - 4 Drawers	47" x 22" x 35 3/4"
E	1	97-430	Base Unit - Drawers & Cabinets	47" x 22" x 35 3/4"
F	1	97-463	Base Unit - 3 Drawers	47" x 22" x 35 3/4"
G	1	97-504	Base Unit - Flammable Liquid Storage Cabinet	47" x 22" x 35 3/4"
H	1	93-291X	Fiberglass Fume Hood	26" W x 29" D x 59" H
J	1	93-295X	Fiberglass Fume Hood	26" W x 29" D x 59" H
K	1	LaBconco 50350	Glove Box - Chemical Carcinogen	30" x 30" x 37"
L	1	Parkin-Elmer 2000	Atomic Absorption Spectrophotometer	
M	1	Fisher 97-505D	Tub Sink - Duratek	12" W x 16" L x 8" D
N	1		Filler Panel and Duratek Top	12" x 34"

Note: Install new chalk & Tack Board (CT-1) in shift Operator's Room of Administration Building as directed by Owner.

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

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

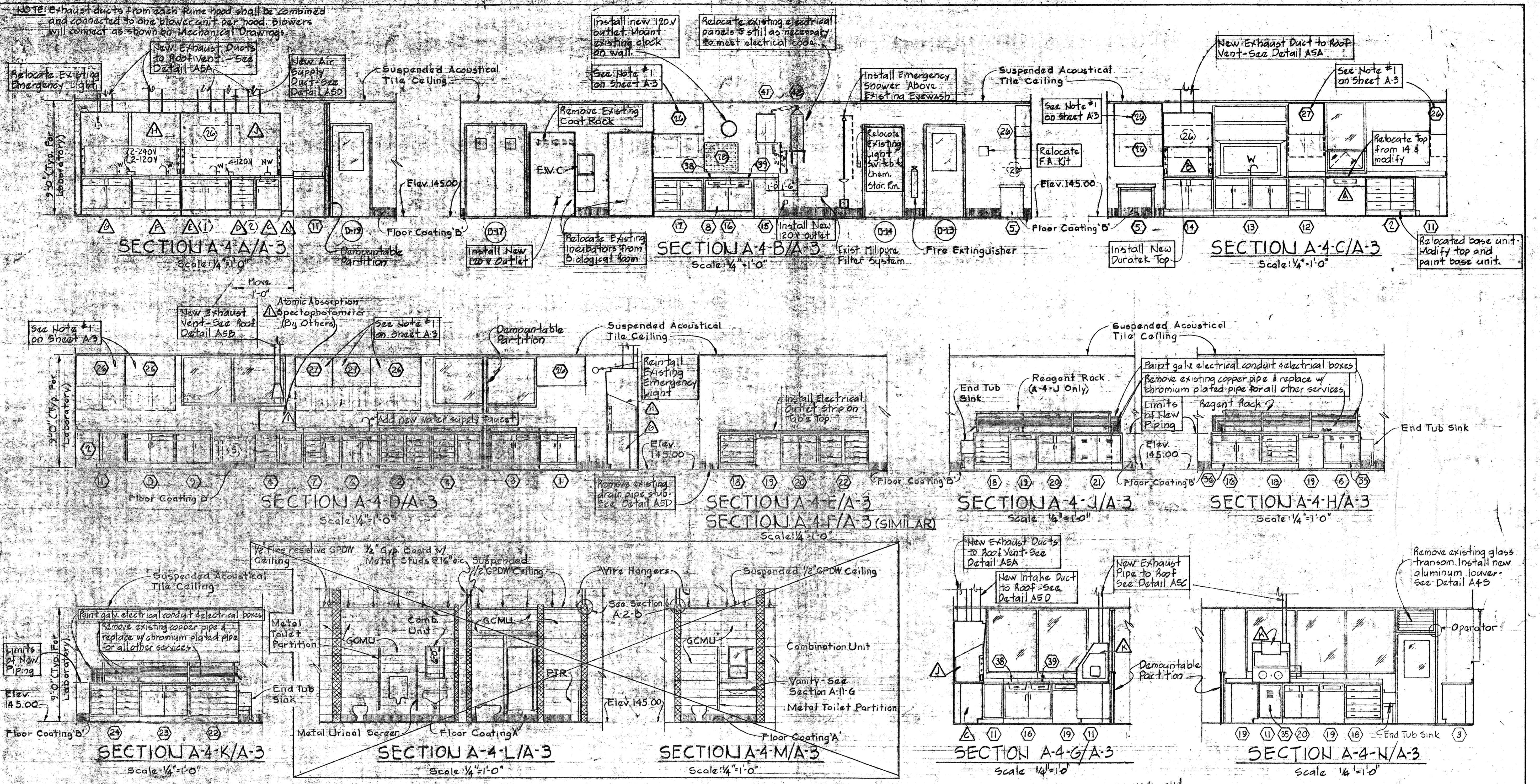
CONTRACT NO. 761-S

ARCHITECTURAL
 LABORATORY REVISIONS
 PLAN

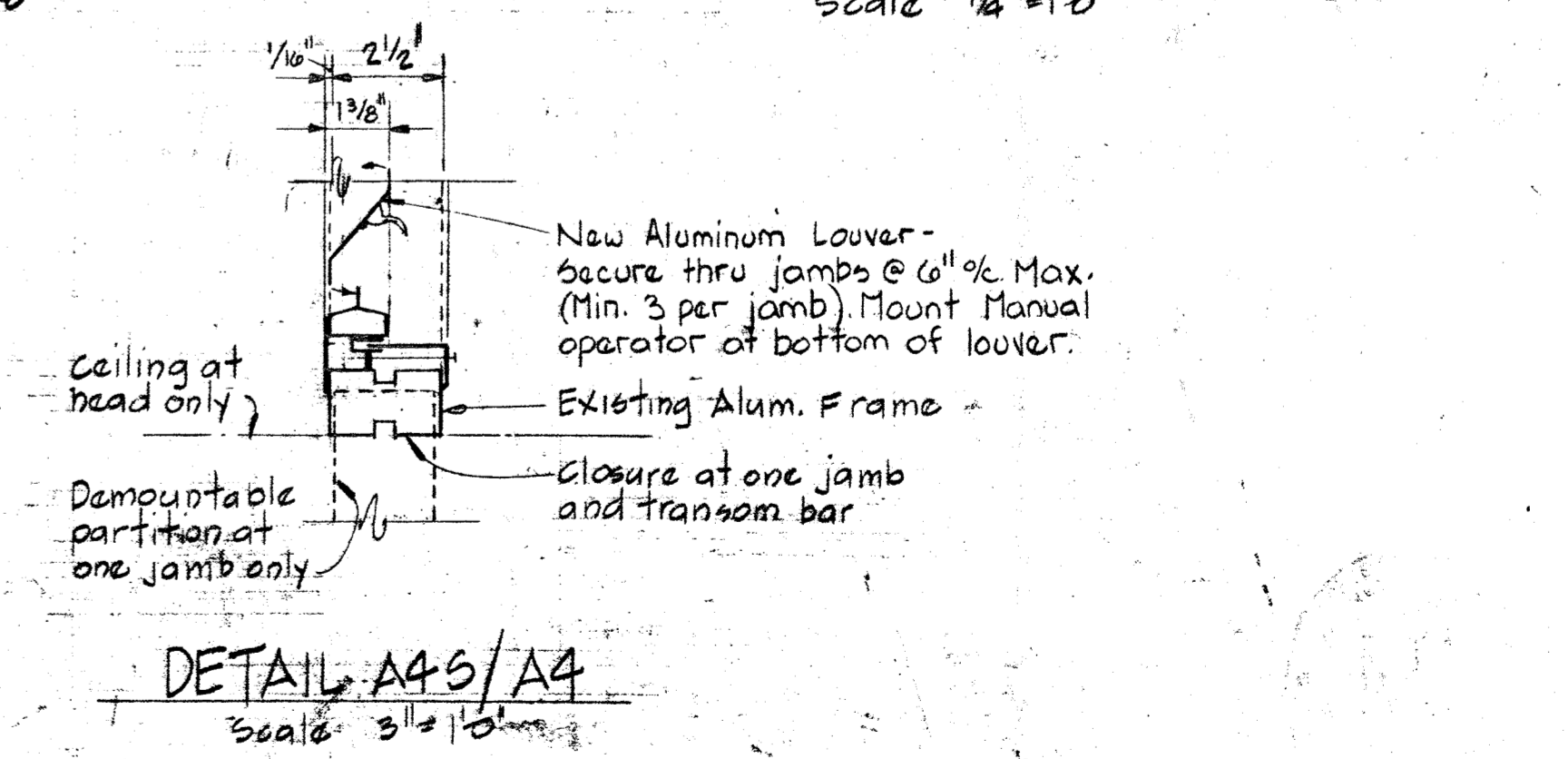
SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 4

DRAWING
 NO. 22
 OF 50

SCALE
 AS
 SHOWN



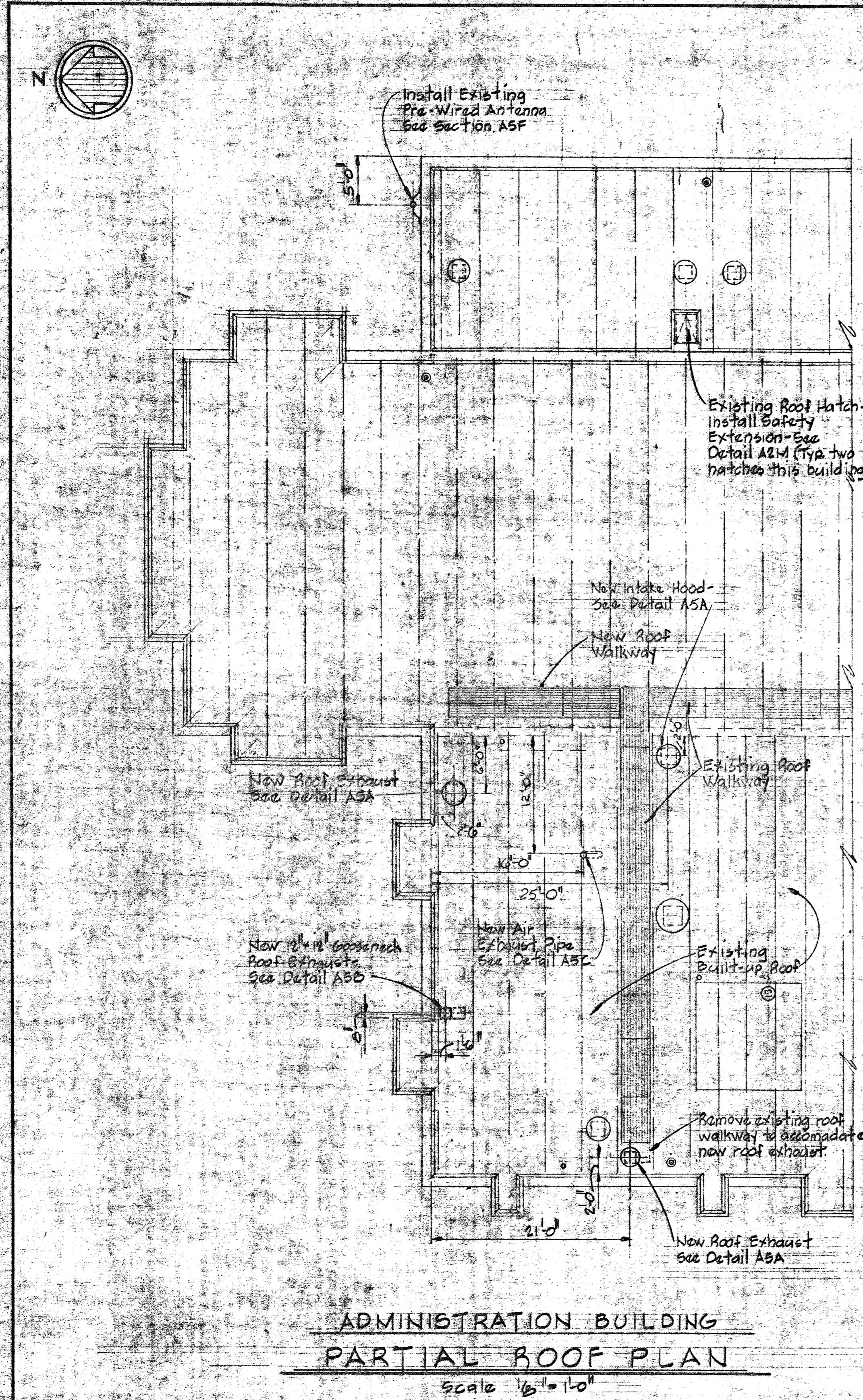
Note: Details A4P, A4Q, & A4R Not Used



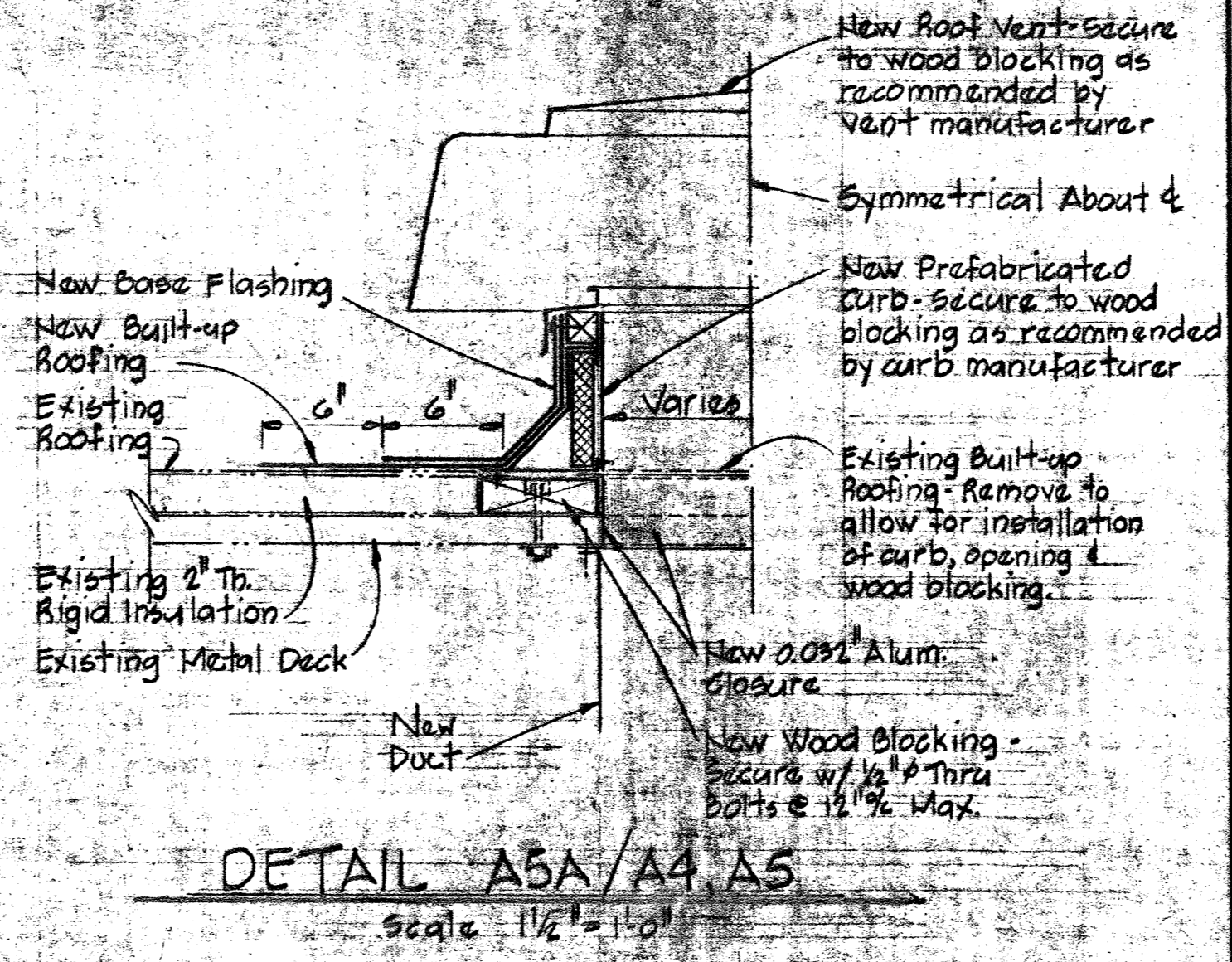
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 6/15/80 Chief: James M. ... CHIEF, BUREAU OF ENVIRONMENTAL SERVICES	CONTRACT NO. 761-S	ARCHITECTURAL LABORATORY REVISIONS ELEVATIONS & DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 23 OF 50	SCALE AS SHOWN
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W.O. 7132-2F A ADDENDUM No. 1 6/15/80

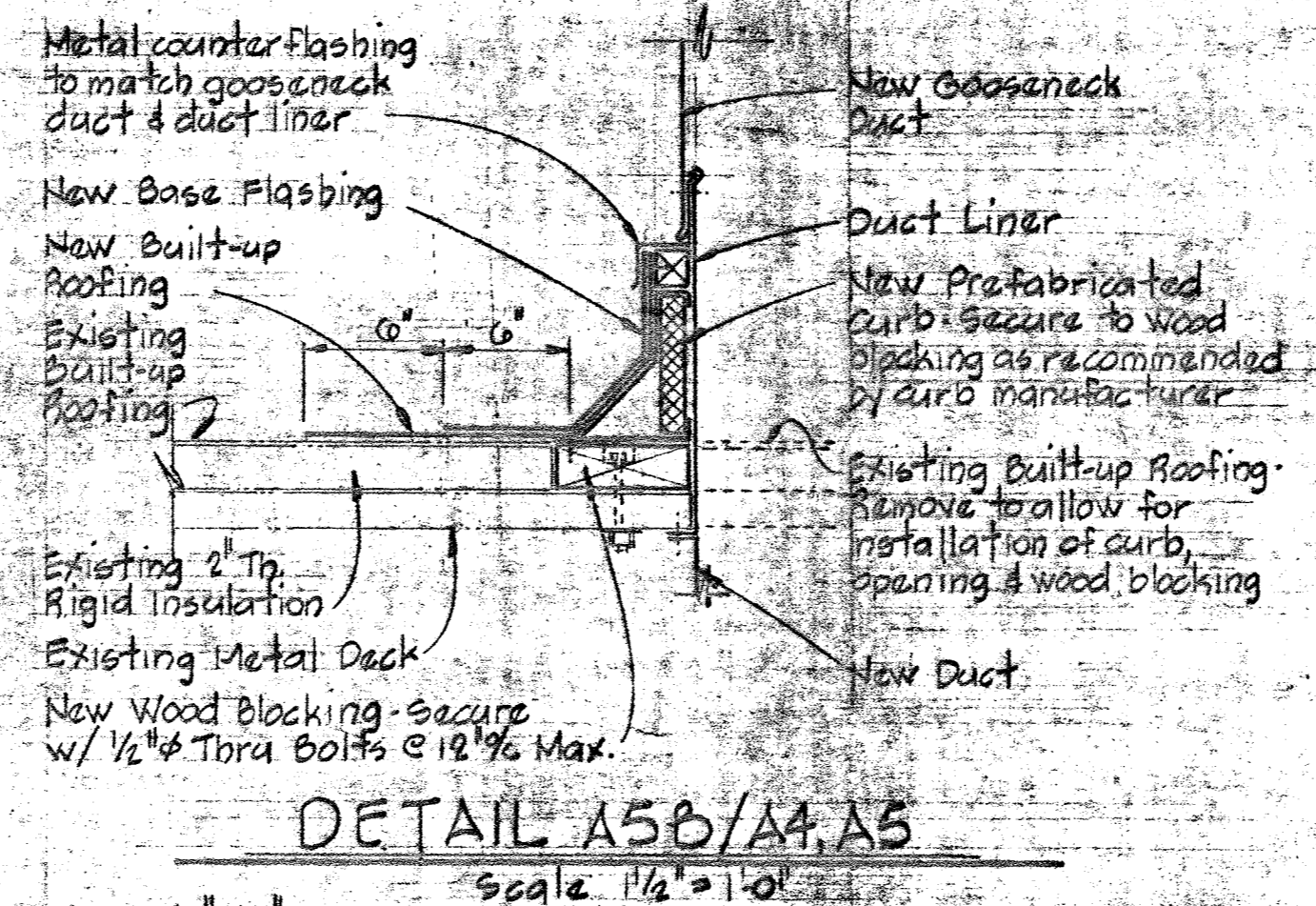
SHEET A-4



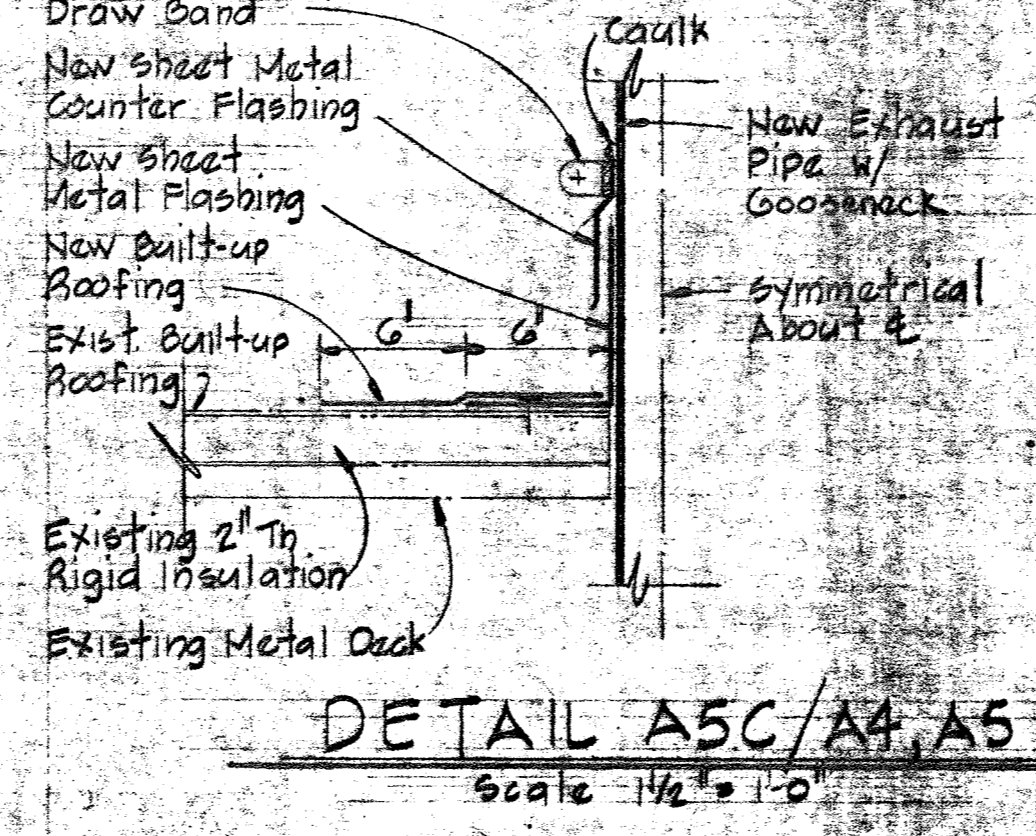
**ADMINISTRATION BUILDING
PARTIAL ROOF PLAN**
Scale 1/8" = 1'-0"



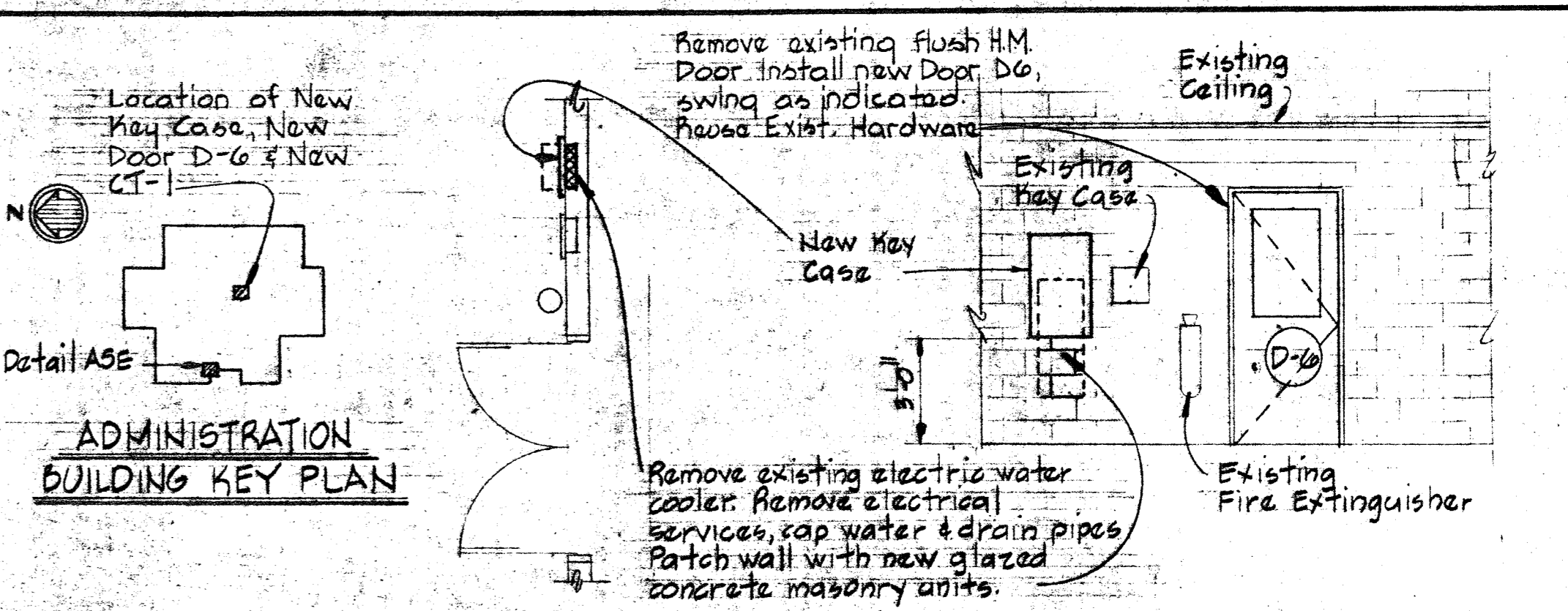
DETAIL A5A/A4 A5
Scale 1 1/2" = 1'-0"



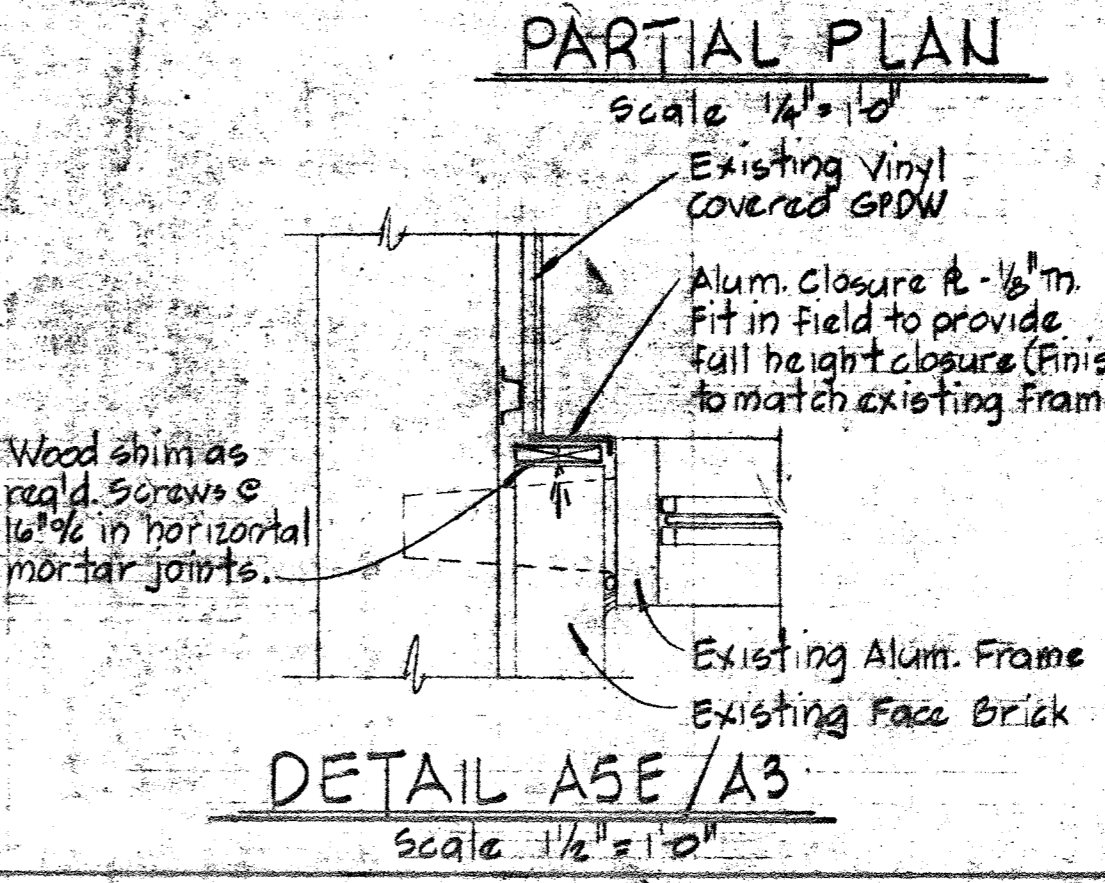
DETAIL A5B/A4 A5
Scale 1 1/2" = 1'-0"



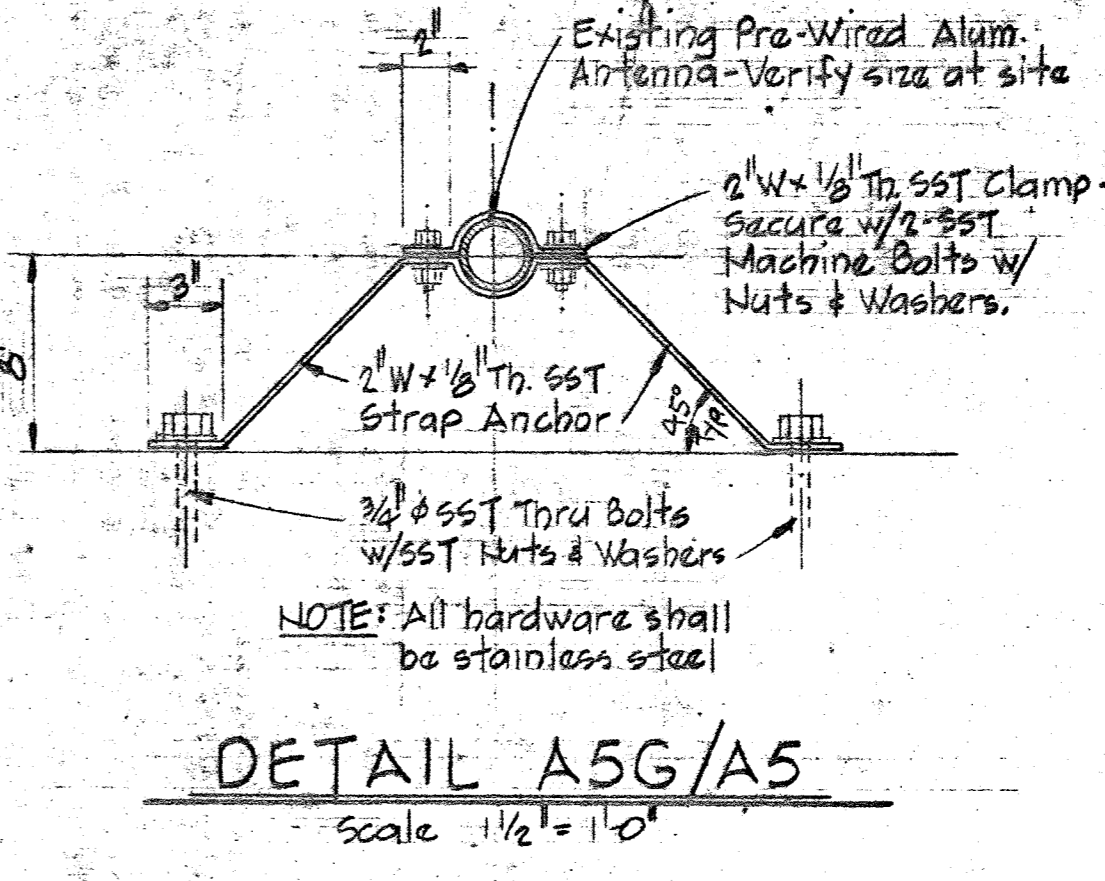
DETAIL A5C/A4 A5
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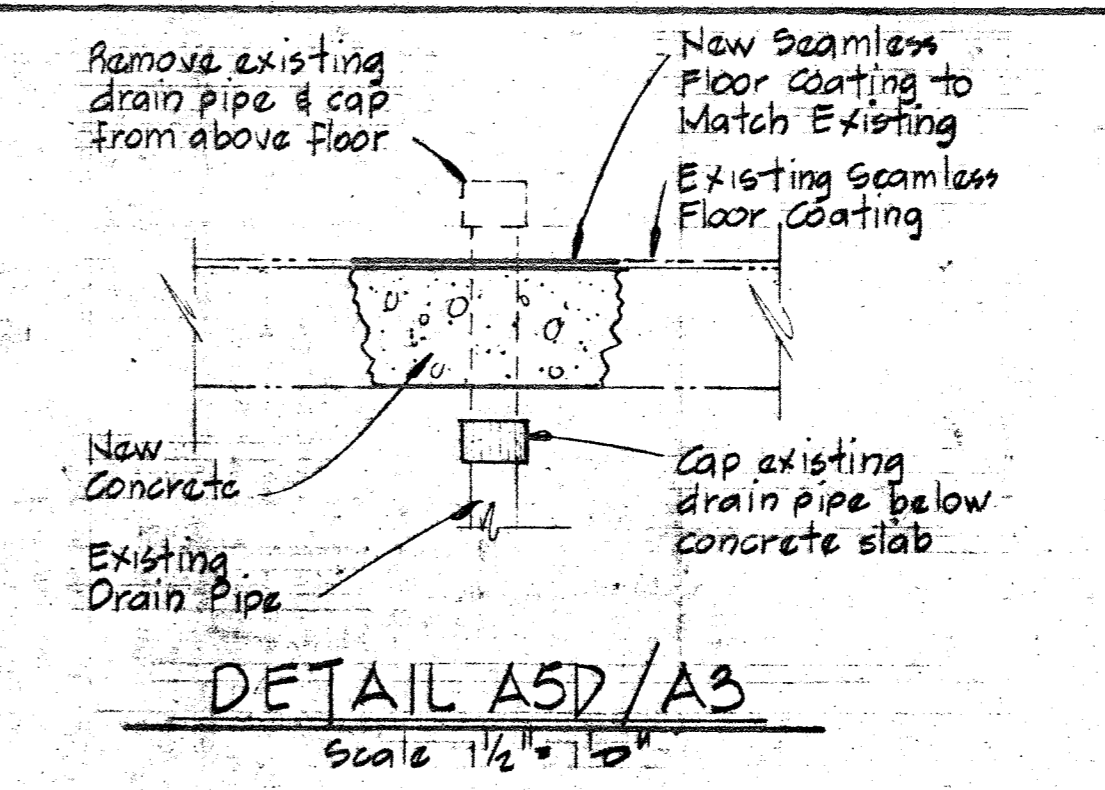
ADMINISTRATION BUILDING KEY PLAN
Scale 1/4" = 1'-0"



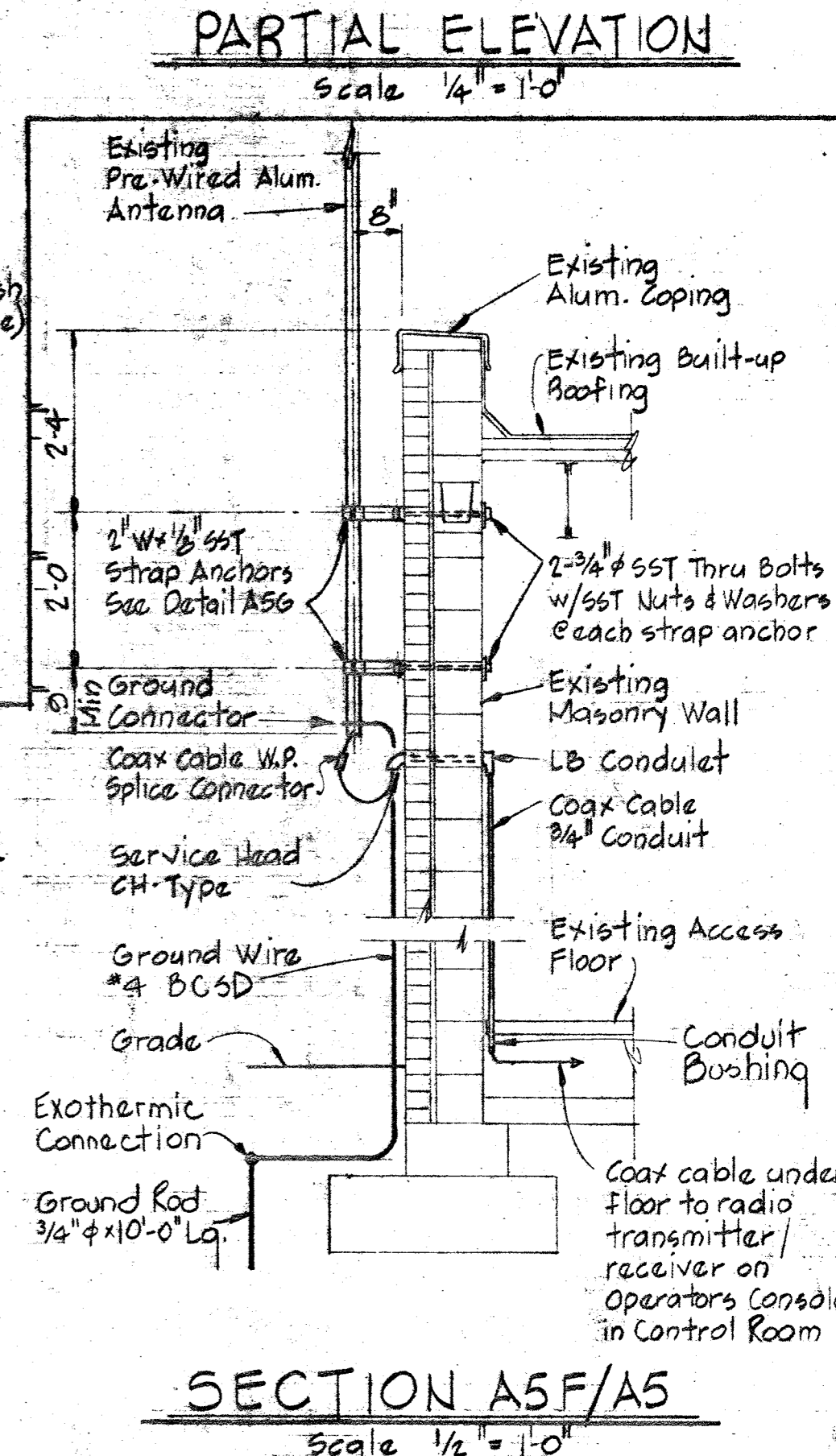
DETAIL A5E/A3
Scale 1 1/2" = 1'-0"



DETAIL A5G/A5
Scale 1 1/2" = 1'-0"



DETAIL A5D/A3
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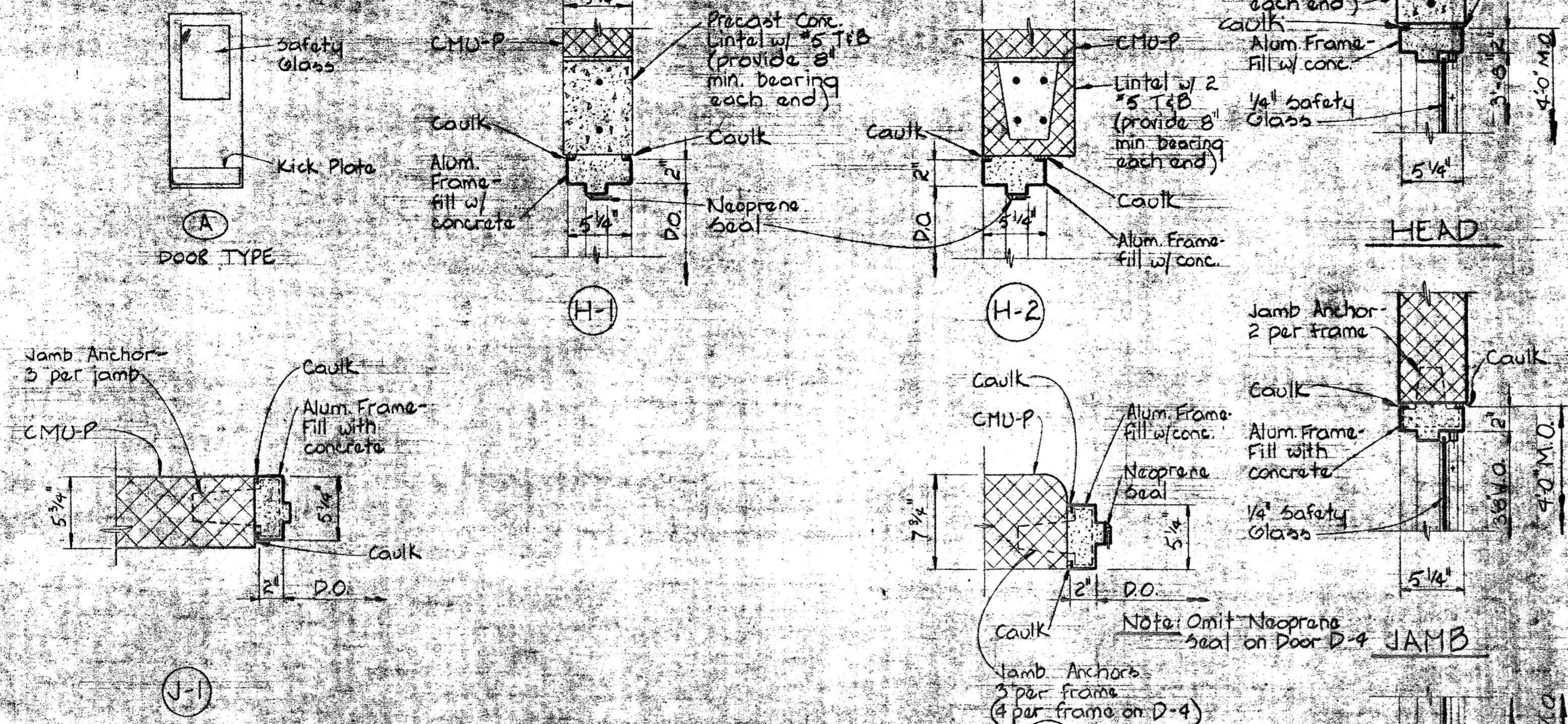


SECTION A5F/A5
Scale 1/2" = 1'-0"

DOOR SCHEDULE

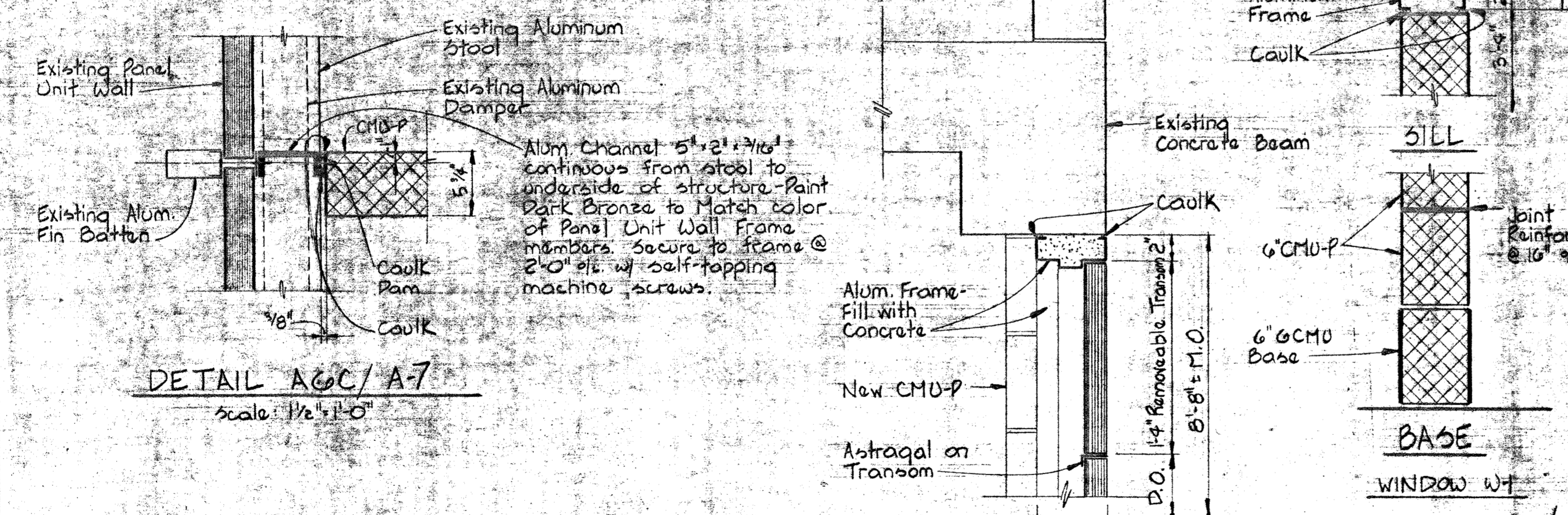
NO.	SIZE	MATL.	TYPE	HEAD	JAMB	UNTEL	LOW.	KICK P.	R.	HDW.	REMARKS
D-1	2'-2" x 7'-2" x 1 3/4"	Alum.	Recessed	Exist.	Exist.	Exist.				HW-1	Remove exist. lock set
D-2	3'-0" x 7'-2" x 1 3/4"	Alum.	A	H-1	Exist.	See H-1				HW-2	
D-3	3'-0" x 7'-2" x 1 3/4"	Alum.	Recessed	Exist.	Exist.	Exist.					Reverse swing of door
D-4	2'-5" x 7'-2" x 1 3/4"	Alum.	A	H-2	J-2	See H-2				HW-3	
D-5	2'-9" x 7'-2" x 1 3/4"	Alum.	A	H-3	J-2	Existing				HW-4	Rem. Transom 8'-0" x 4'-0"
D-6	3'-0" x 7'-2" x 1 3/4"	Masonry	A	Exist.	Exist.	Exist.				HW-7	Reverse swing of Door A-5

Note: Remove existing locks & exit devices on Doors D-1, D-3 (HW-5) & D-3 & D-5 (HW-6) of the Dewatering Building & install new locks or exit devices. See Specifications.



DOOR DETAILS

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

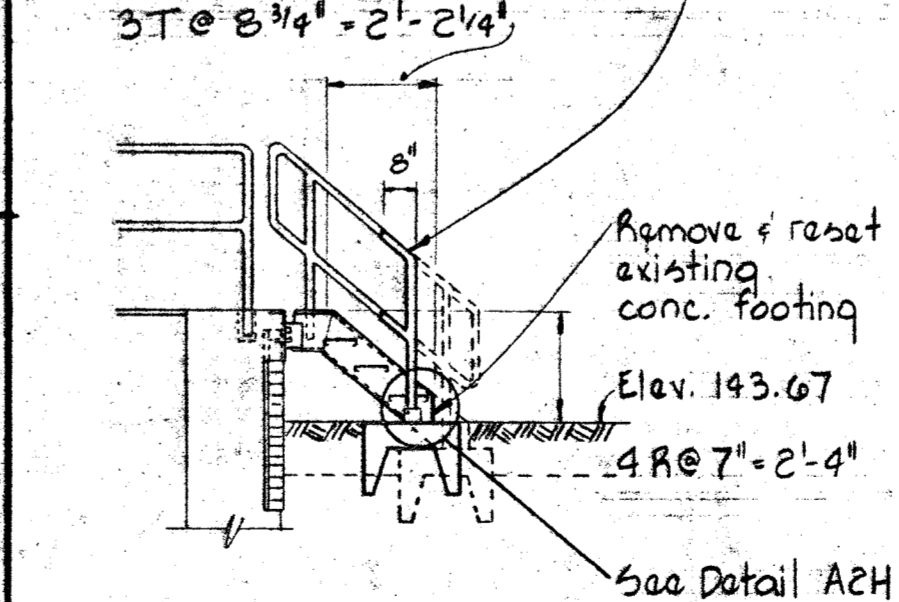


- Notes:
1. Kick plates shall be installed on inside face of exterior doors and outside of doors swinging into rooms.
 2. All Aluminum Hardware on doors except thresholds and threshold anchors shall be Duranodic Dark Bronze 313.
 3. All Lintels shall have 8" Min. bearing on each end unless otherwise noted.
 4. Additional masonry or steel Lintels as required for mechanical and electrical services shall match reinforcing and bearing requirements indicated on Head Details.

HEAD DETAIL

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

Cut Existing Handrail - Install solid handrail section. Secure old & new handrails to core with 2-1/4" SST set screws. Cut Alum. Stringer.

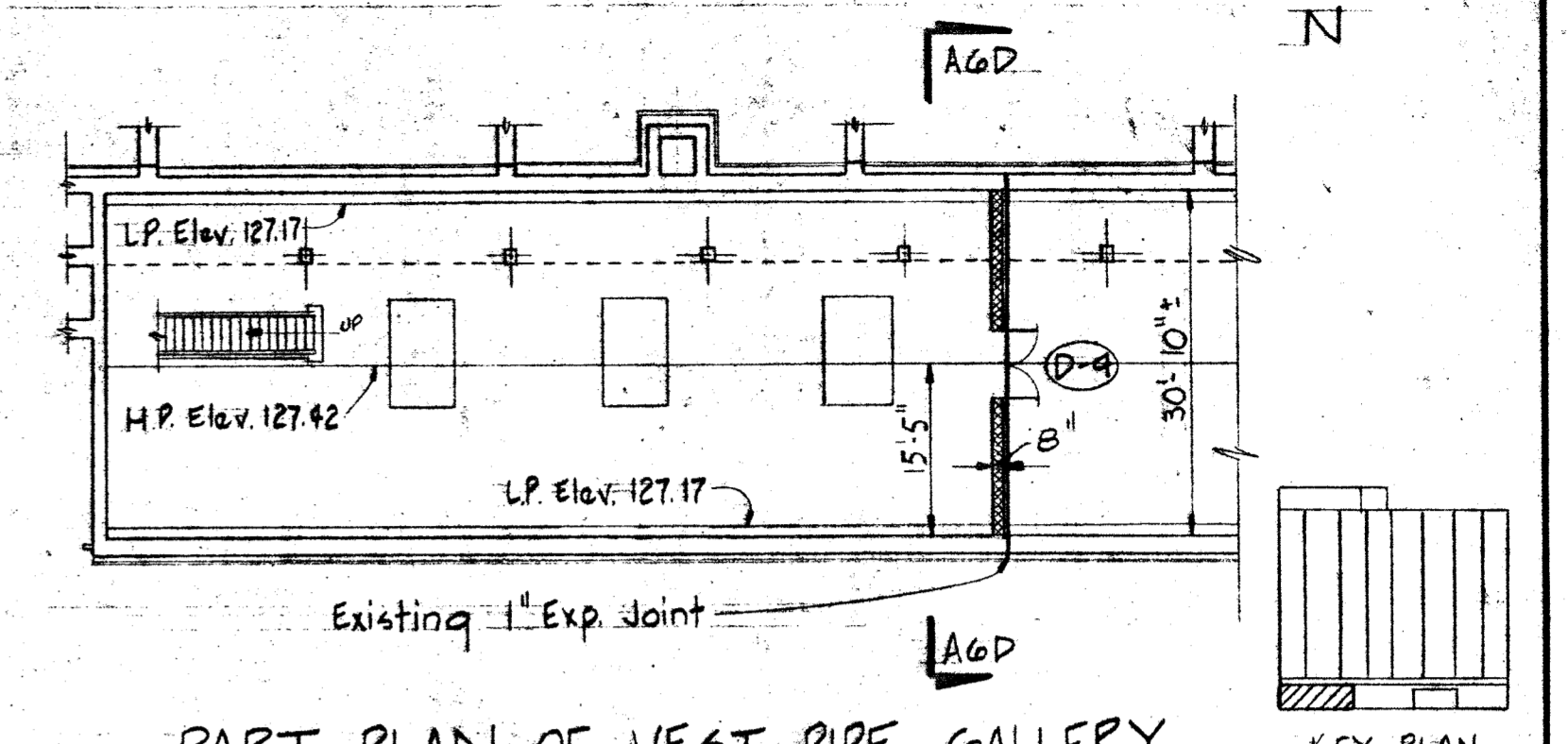


DIGESTOR GALLERY DETAIL

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

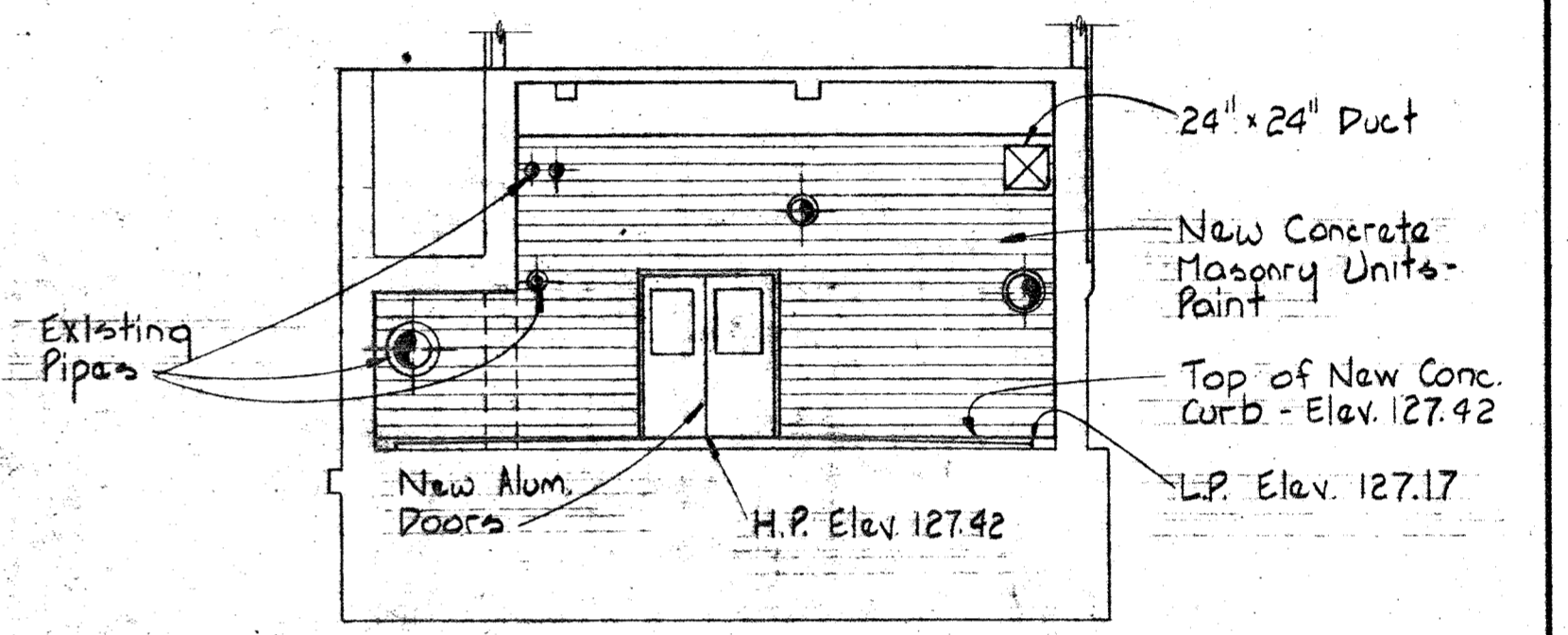
Note: For location see Sheet C-14.

Note: Paint all Interior and Exterior Concrete Surfaces and all interior piping of West Pipe Gallery #4.



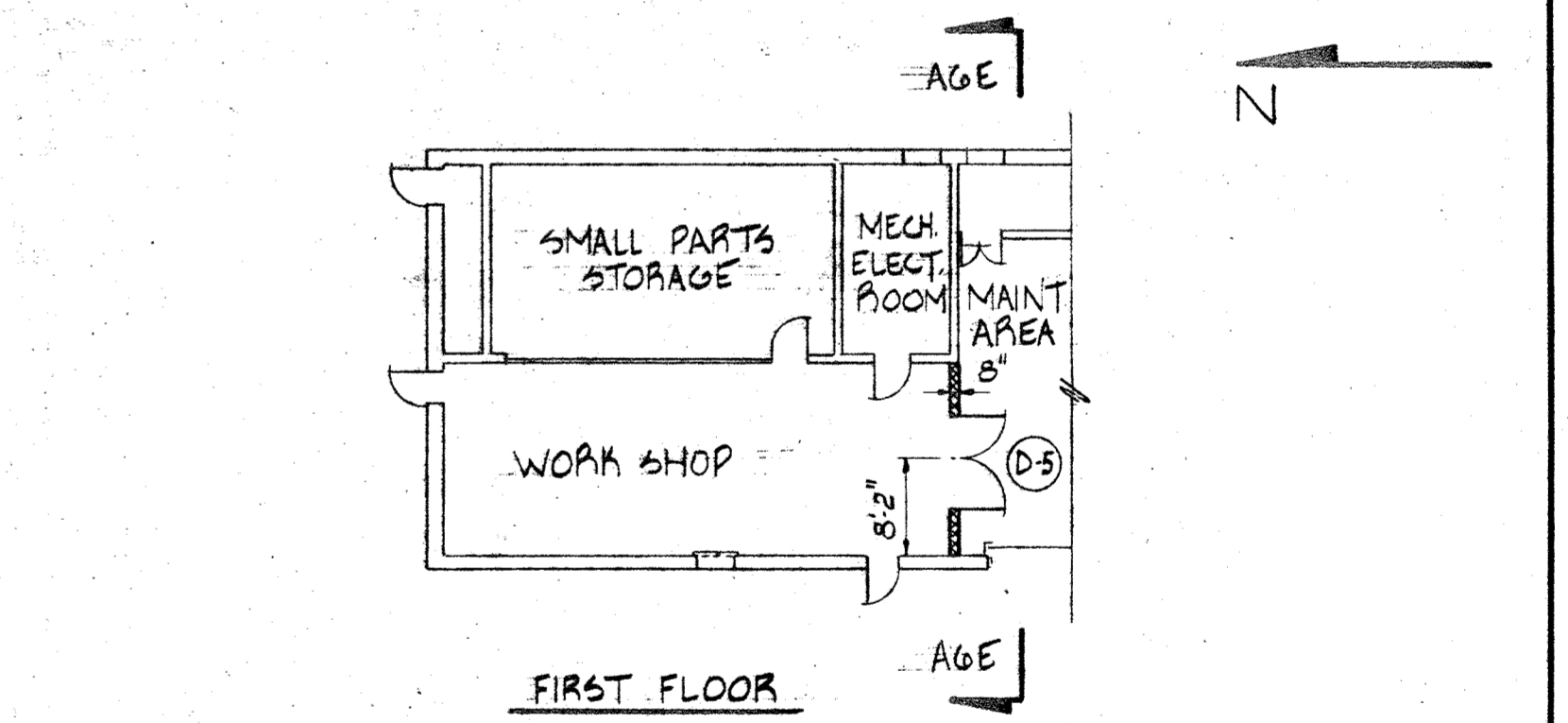
PART PLAN OF WEST PIPE GALLERY @ AERATION BASINS 2 & 3

Scale: 1/16" = 1'-0"



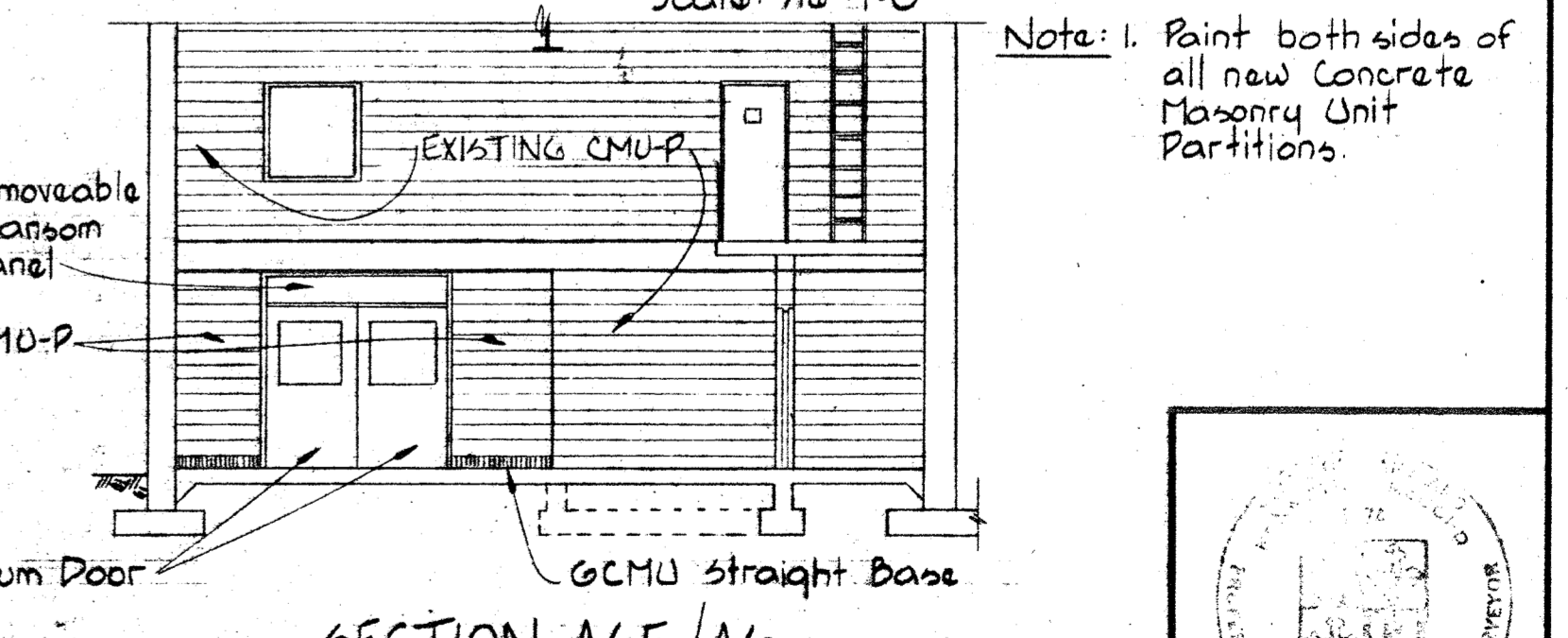
SECTION A-6D/A-6G

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



PART PLAN OF MAINTENANCE BUILDING

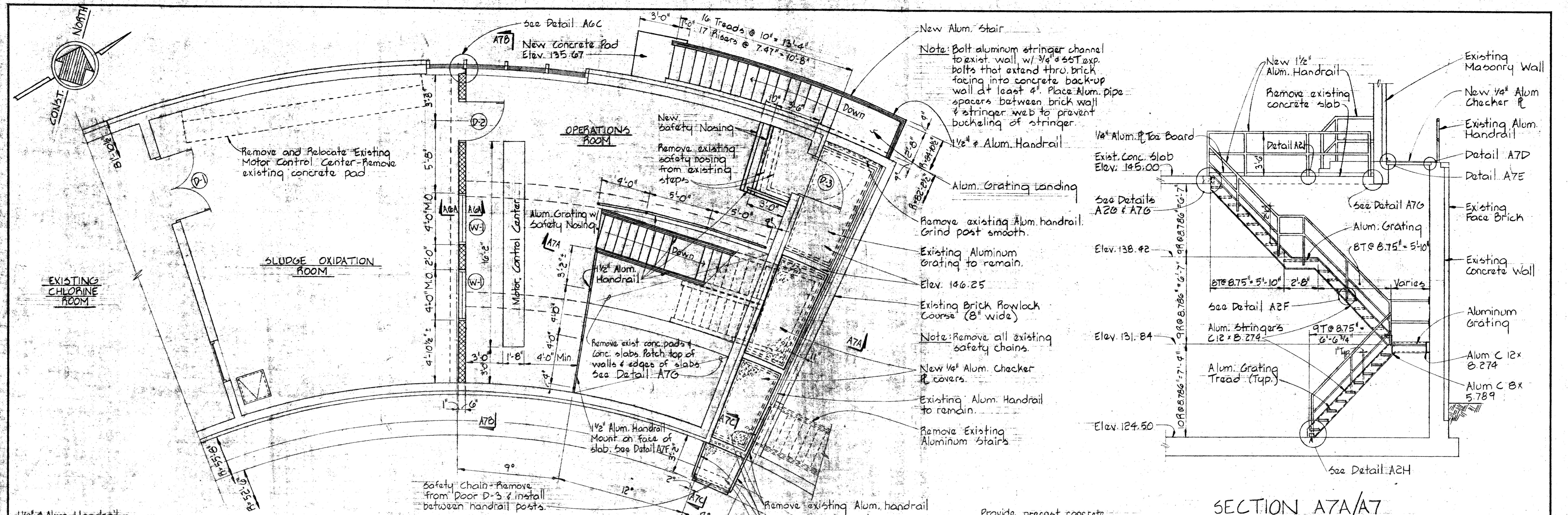
Scale: 1/16" = 1'-0"



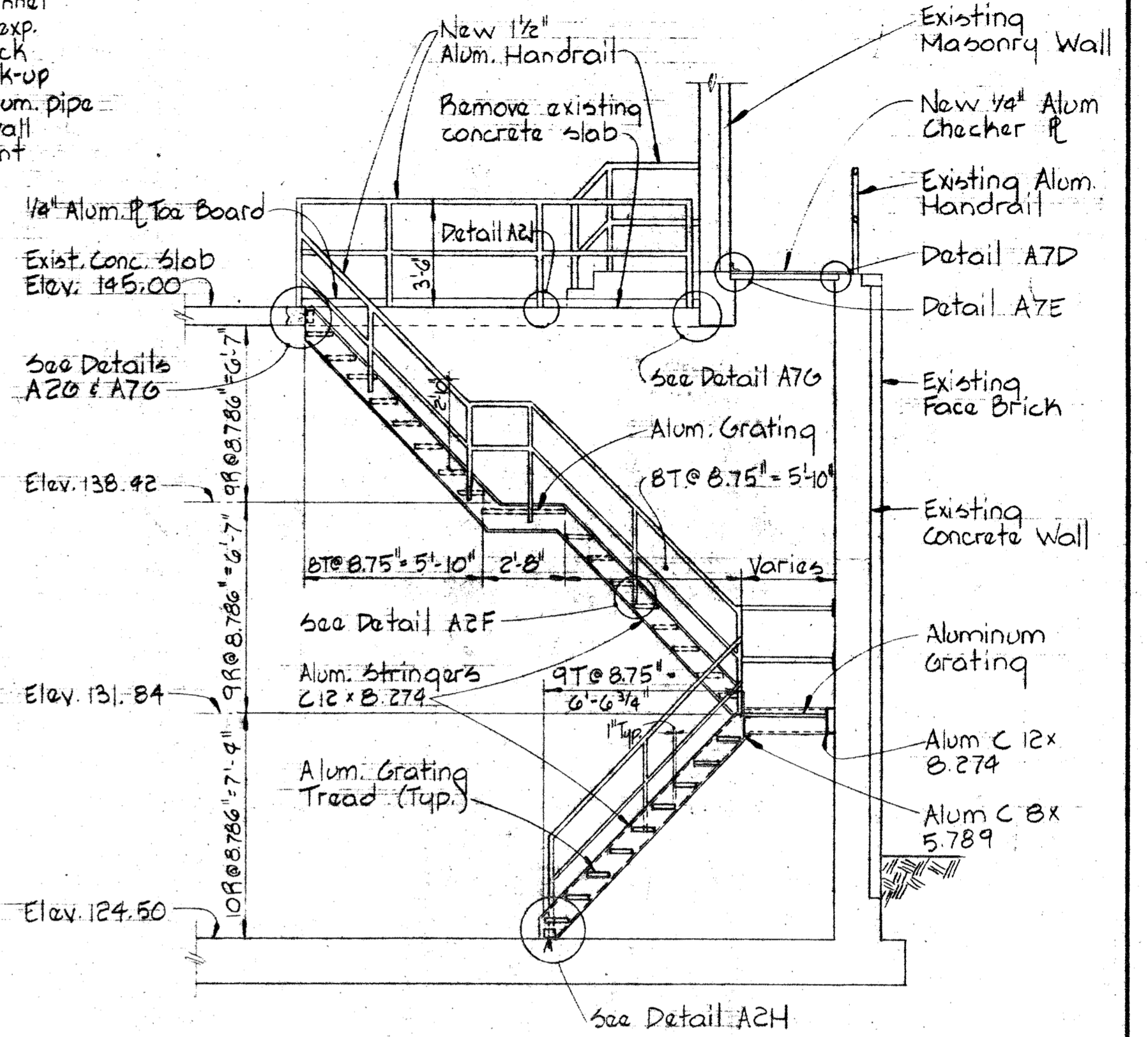
SECTION A-6E/A-6I

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

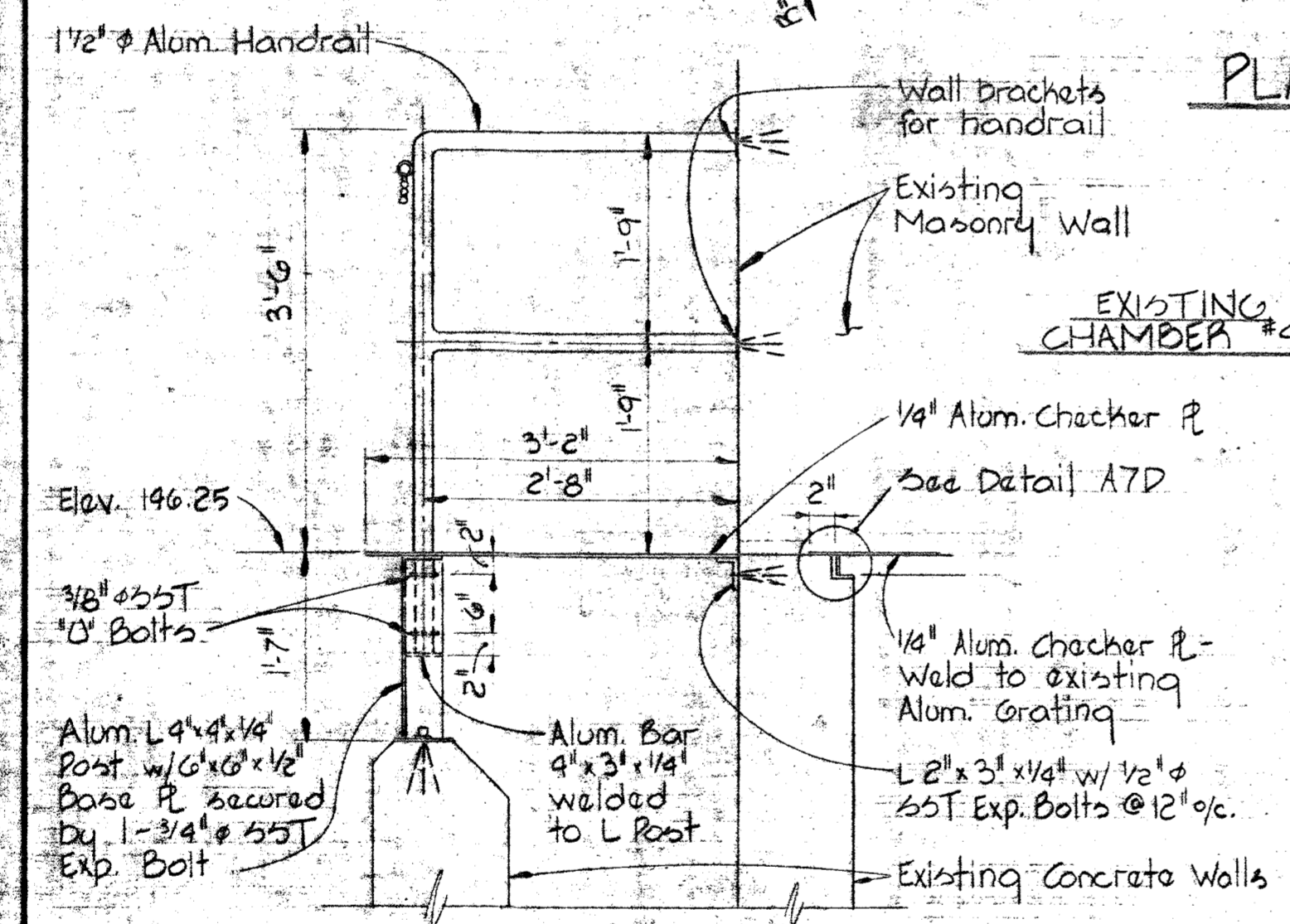
Note: 1. Paint both sides of all new Concrete Masonry Unit Partitions.



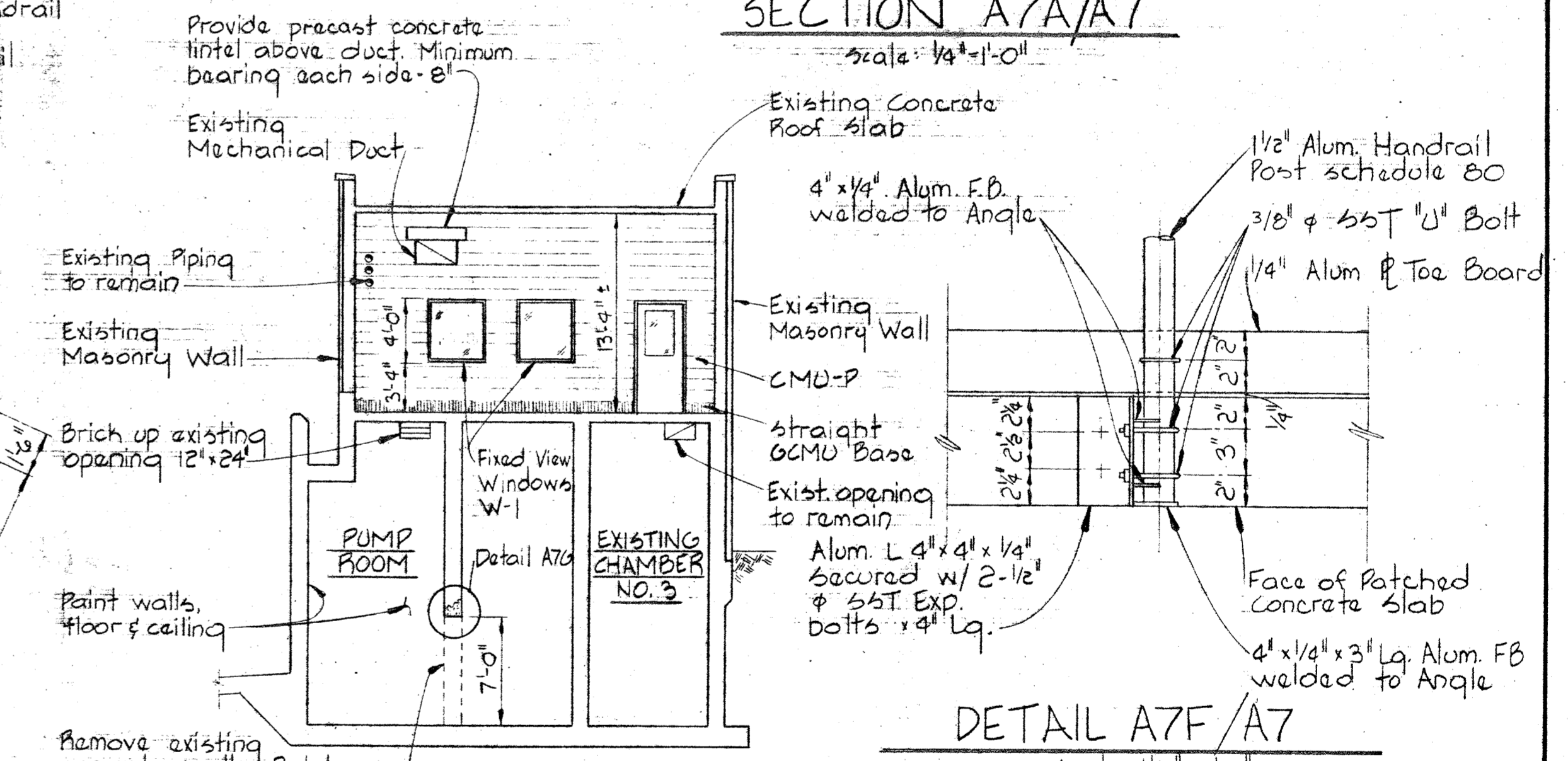
PLAN @ ELEV. 145.00
Scale: 1/4" = 1'-0"



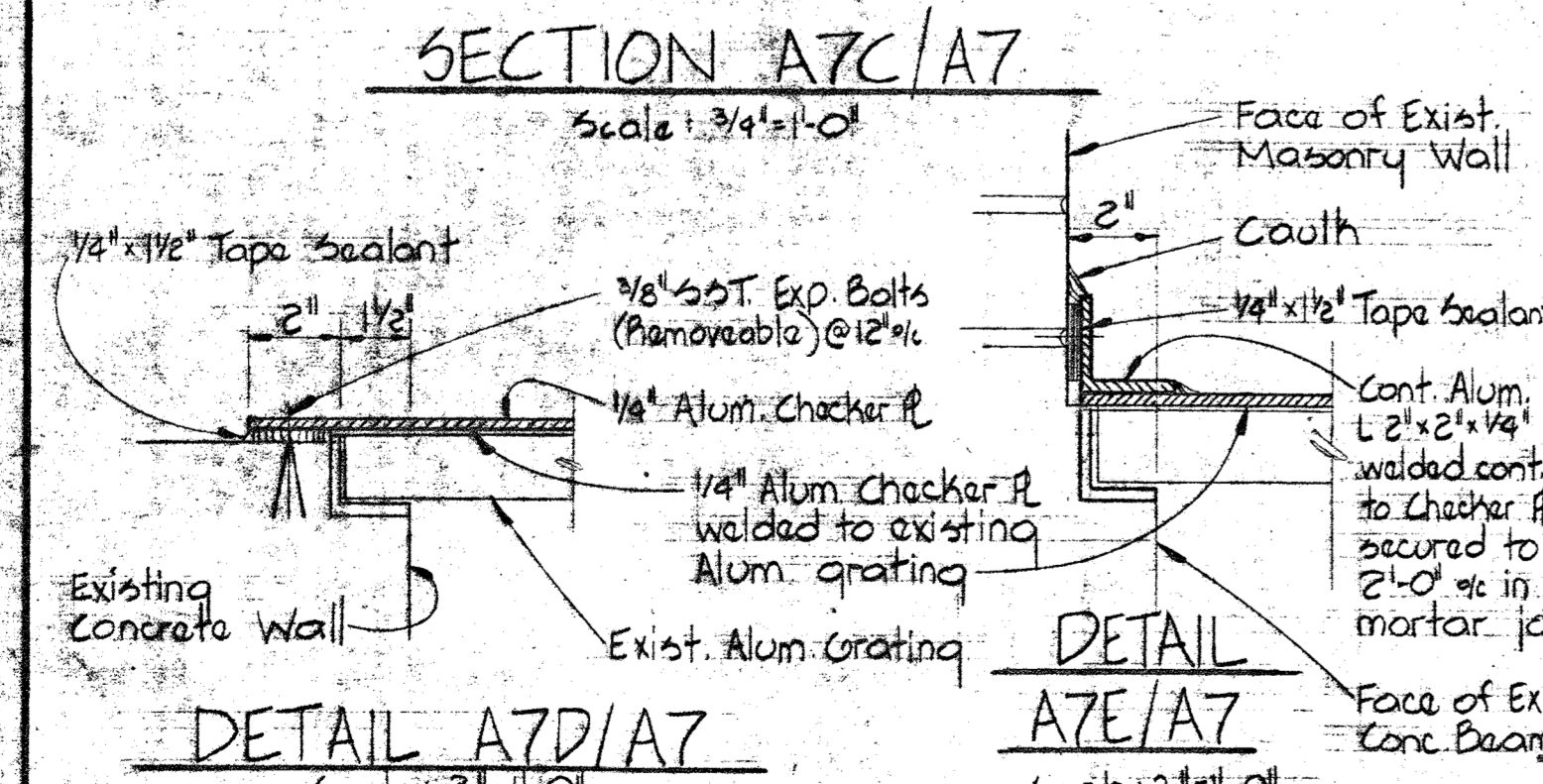
SECTION A7A/A7
Scale: 1/4" = 1'-0"



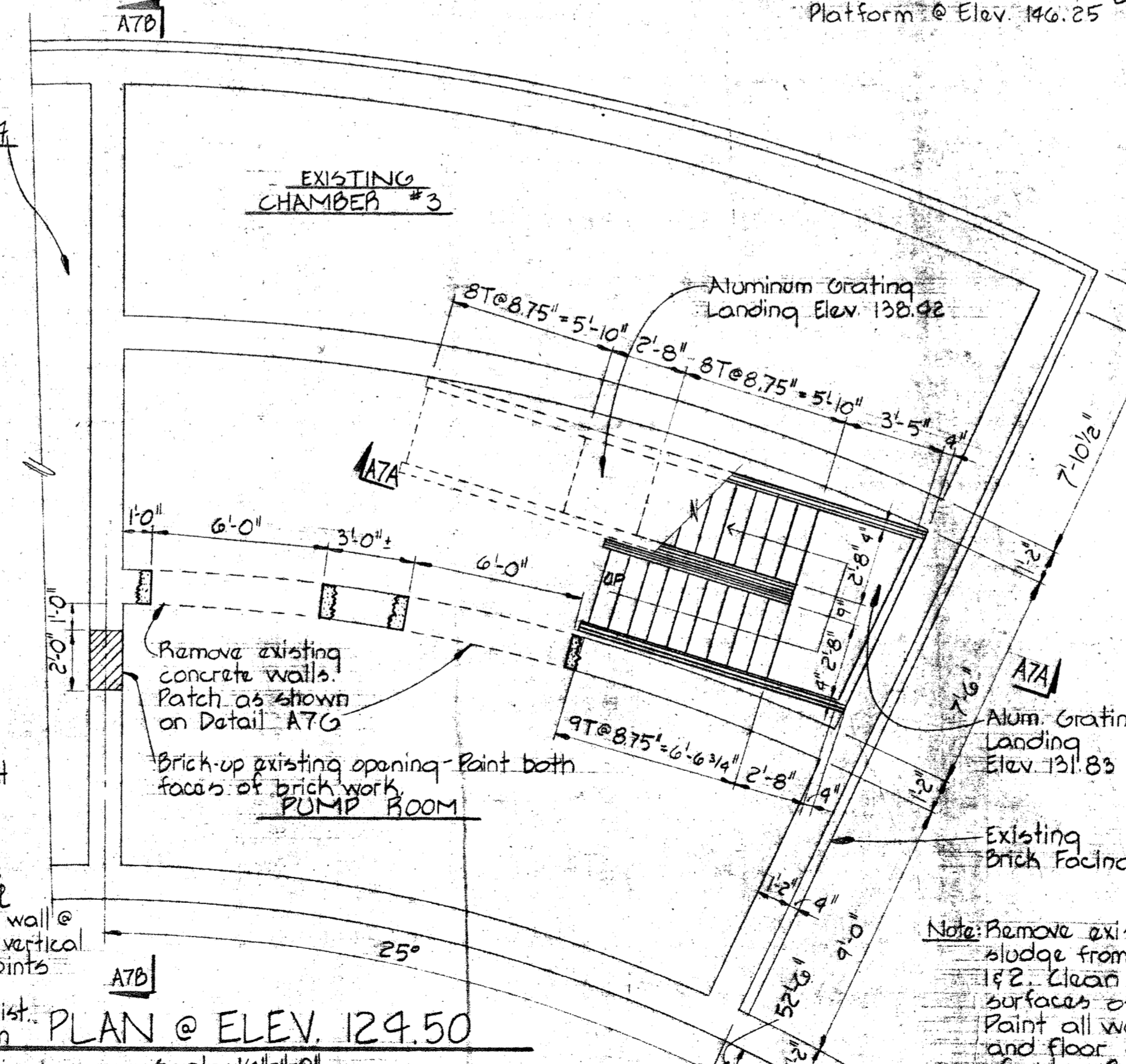
SECTION A7C/A7
Scale: 3/4" = 1'-0"



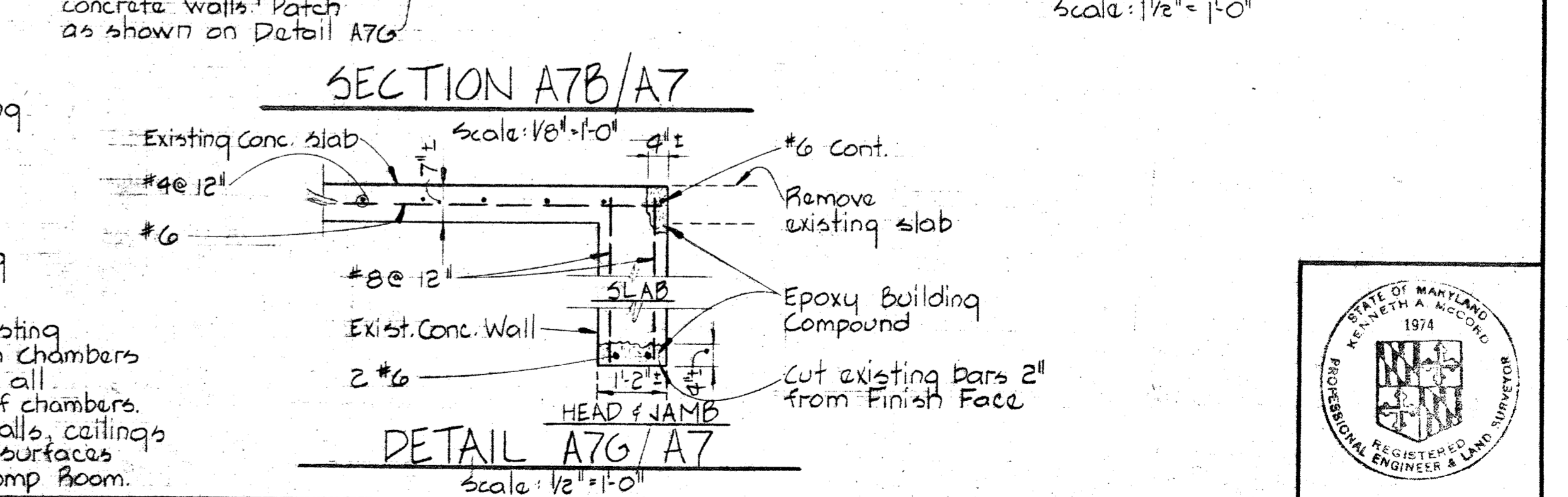
SECTION A7B/A7
Scale: 1/8" = 1'-0"



DETAIL A7D/A7
Scale: 3" = 1'-0"



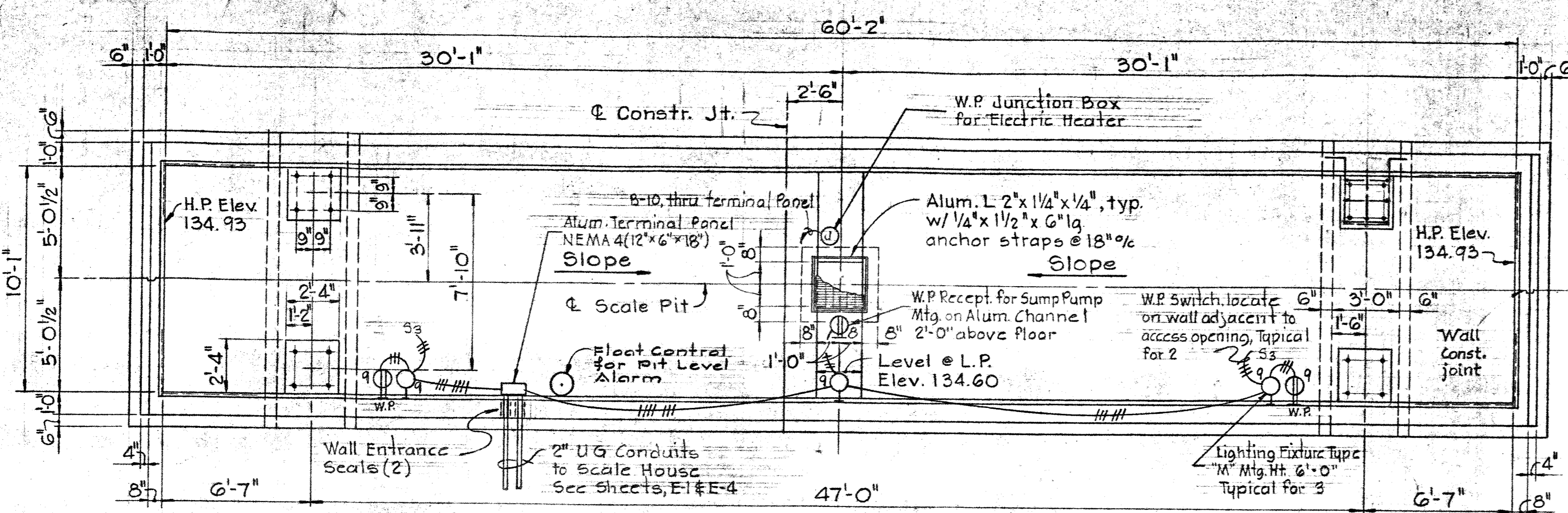
PLAN @ ELEV. 124.50
Scale: 1/4" = 1'-0"



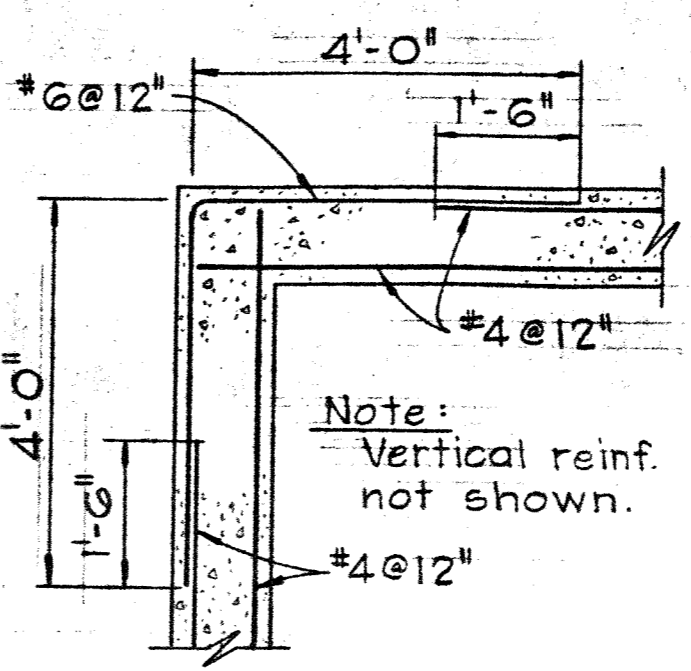
DETAIL A7F/A7
Scale: 1 1/2" = 1'-0"

<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p>	<p>CONTRACT NO. 761-S</p>	<p>MODIFICATIONS TO SLUDGE OXIDATION BUILDING</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 26 OF 50</p>
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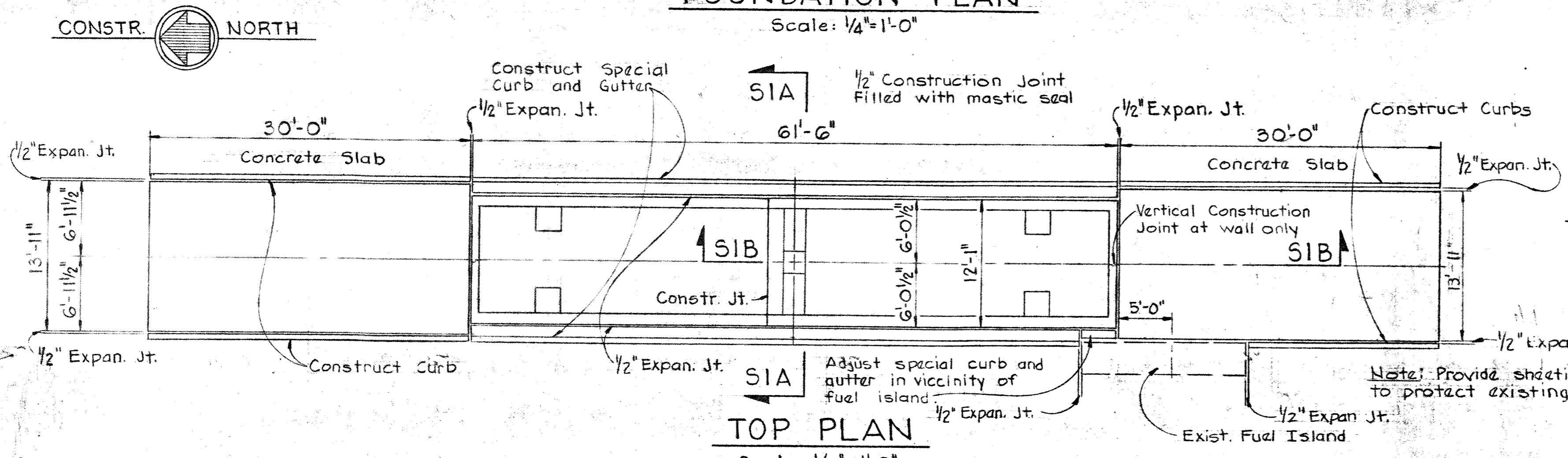
FOUNDATION PLAN
Scale: 1/4" = 1'-0"



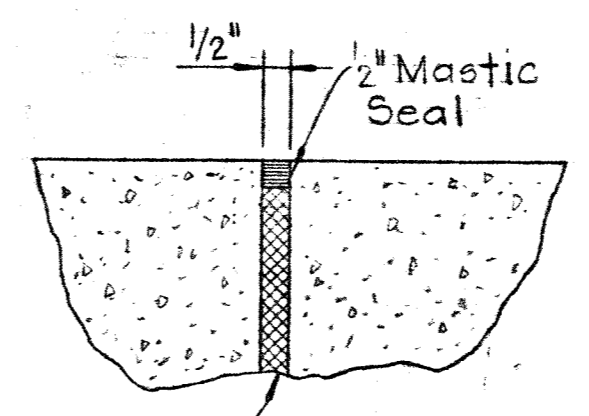
REINFORCING DETAIL AT WALL CORNERS
Scale: 1/2" = 1'-0"

- CONCRETE NOTES**
- All concrete shall have a minimum compressive strength of 3,500 P.S.I. at 28 days.
 - Reinforced concrete has been designed and shall be constructed in accordance with the current A.C.I. Specification 318-71 and all supplements to the code. All structures have been designed using the alternate design method.
 - All reinforcing steel shall conform to A.S.T.M. A615-76a Grade 60.
 - Concrete cover for reinforcing shall be as follows, unless noted otherwise on the drawings:

	Minimum Cover, in.
a. Bottom bars in unformed concrete cast against and permanently exposed to earth, rock, gravel or crushed stone.	3
b. Beams, columns, walls, slabs, or piers exposed to earth, weather or process liquid after removal of forms.	2
c. Beams, columns, walls, or piers not exposed to earth, weather or process liquid.	1 1/2
d. Slabs not exposed to earth, weather or process liquid.	3/4
 - Exposed concrete edges shall be chamfered 3/4" unless noted otherwise.
 - Slabs and walls shall be poured between indicated joints, allowing a minimum period of 3 days to elapse between adjacent pours.
 - Construction and expansion joints shall be as shown on the drawings and no additional joints shall be used nor any omitted except by the written authorization of the Engineer.
 - Splices in reinforcement shall be class C splice lengths as per A.C.I. 318-71 unless noted otherwise on the drawings.
 - Embedment length shall be equal to the development length in accordance with A.C.I. 318-71 unless shown otherwise on the drawings.
 - Horizontal bars in walls shall be considered top bars.
 - See Civil, Architectural, Mechanical and Electrical drawings for all embedded items such as pipe sleeves, anchors, electrical conduit openings, chases, etc. which interfere with concrete construction.
 - Reinforcing bars shall be detailed in accordance with A.C.I. 315-74, "Manual of Standard Practice for Detailing Reinforced Concrete".



TOP PLAN
Scale: 1/8" = 1'-0"



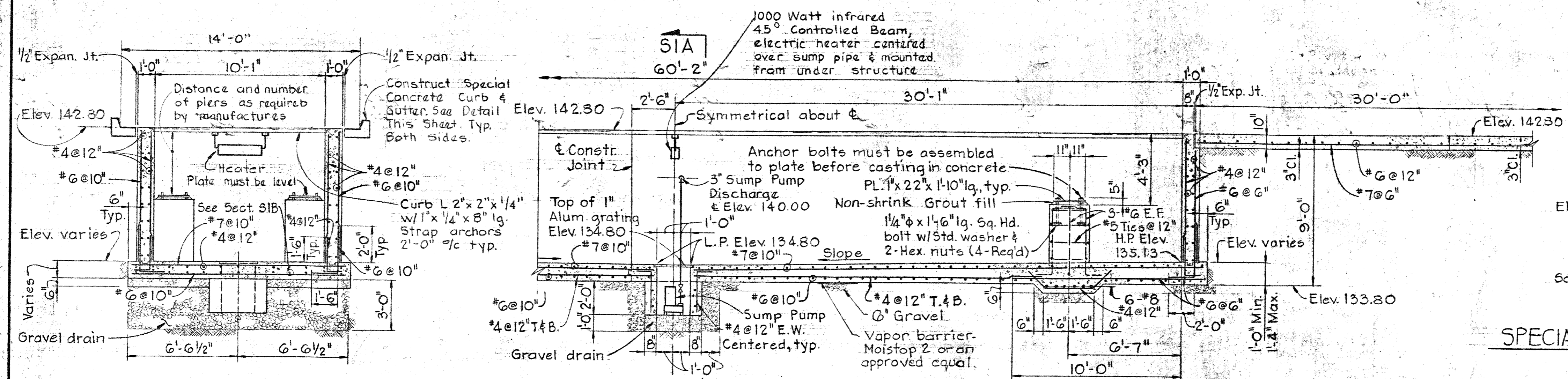
EXPANSION JOINT DETAIL
No Scale

- FOUNDATION NOTES**
- All backfill shall be compacted to 90% of maximum density in maximum increments of 6", except the top 12" shall be compacted to 95% of maximum density.
 - Maximum density and optimum moisture shall be in accordance with AASTHO test designation "T180-74 method D".
 - All foundations have been designed for a maximum allowable soil bearing pressure of 4,000 p.s.f.

DESIGN LIVE LOADS
STANDARD H20-44 TRUCK

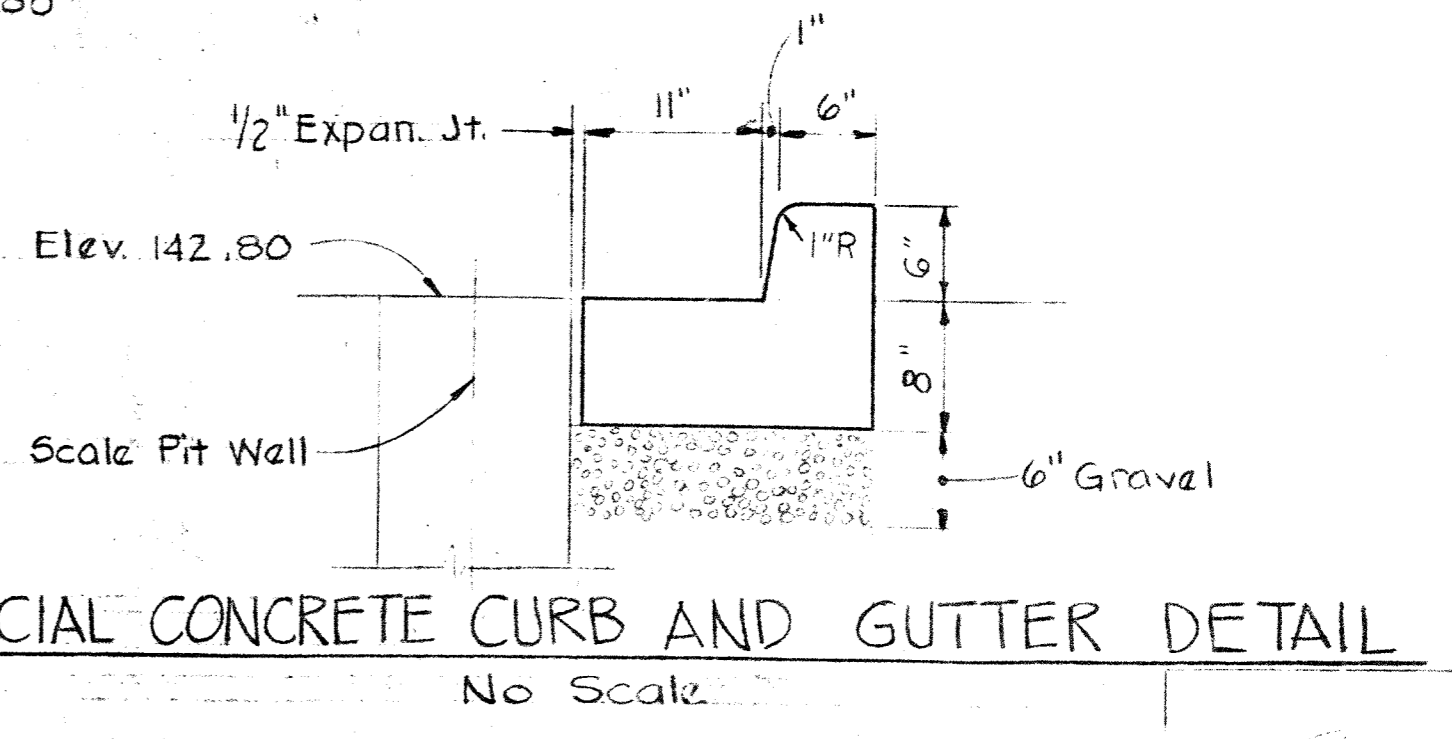
SCALE PIT

SCALE PIT HAS BEEN DESIGNED IN ACCORDANCE WITH SPECIFICATIONS OF 60'-0" LONG DECK (PRESTRESSED CONCRETE DOUBLE TEE). IF OTHER MANUFACTURER'S EQUIPMENT IS FURNISHED, THEN SCALE PIT, LOAD-CELL PIERS, AND PLATFORM SHALL BE DESIGNED WITH THAT MANUFACTURER'S SPECIFICATIONS.



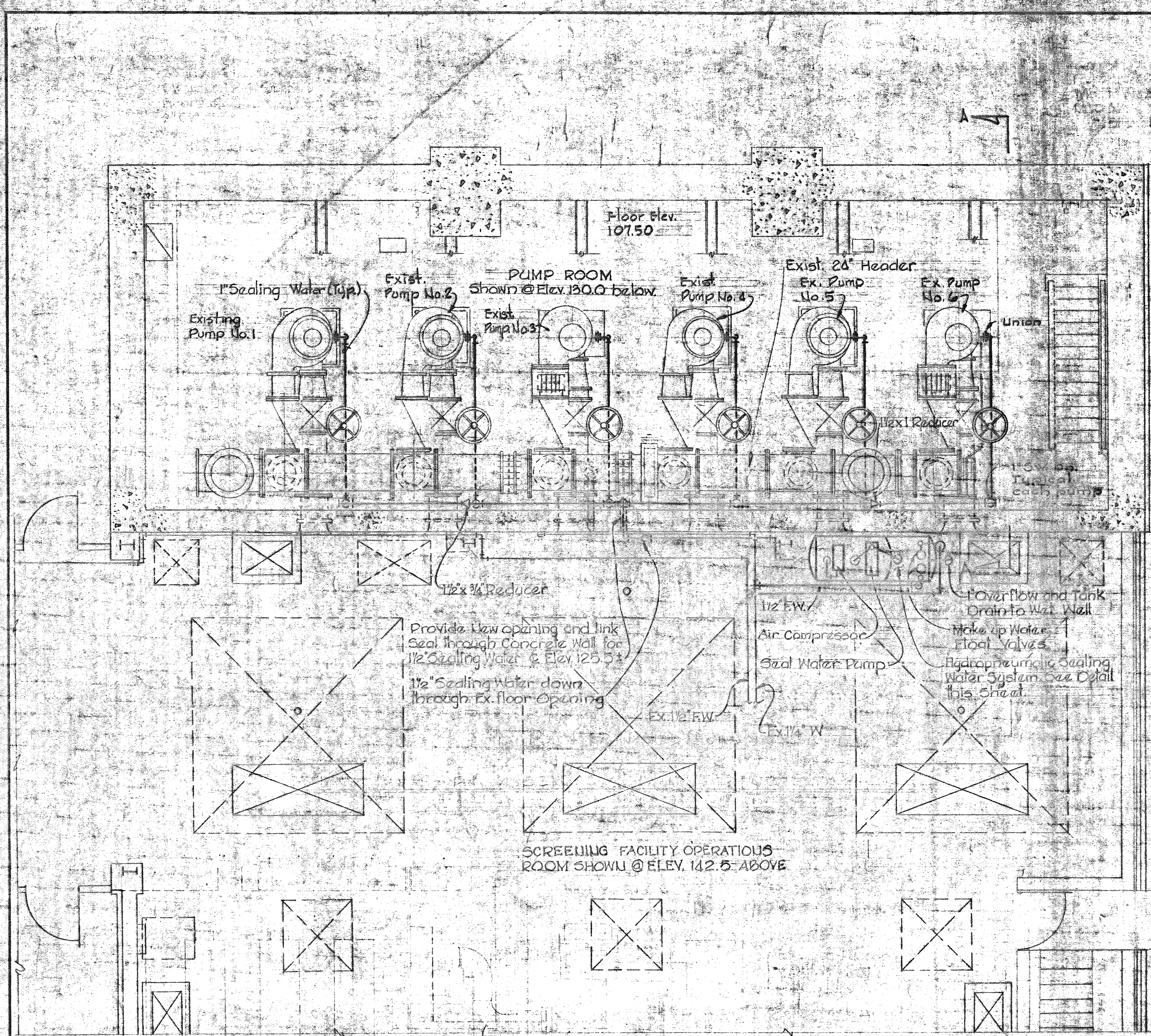
SECTION SIA/SI
Scale: 1/4" = 1'-0"

SECTION SIB/SI
Scale: 1/4" = 1'-0"



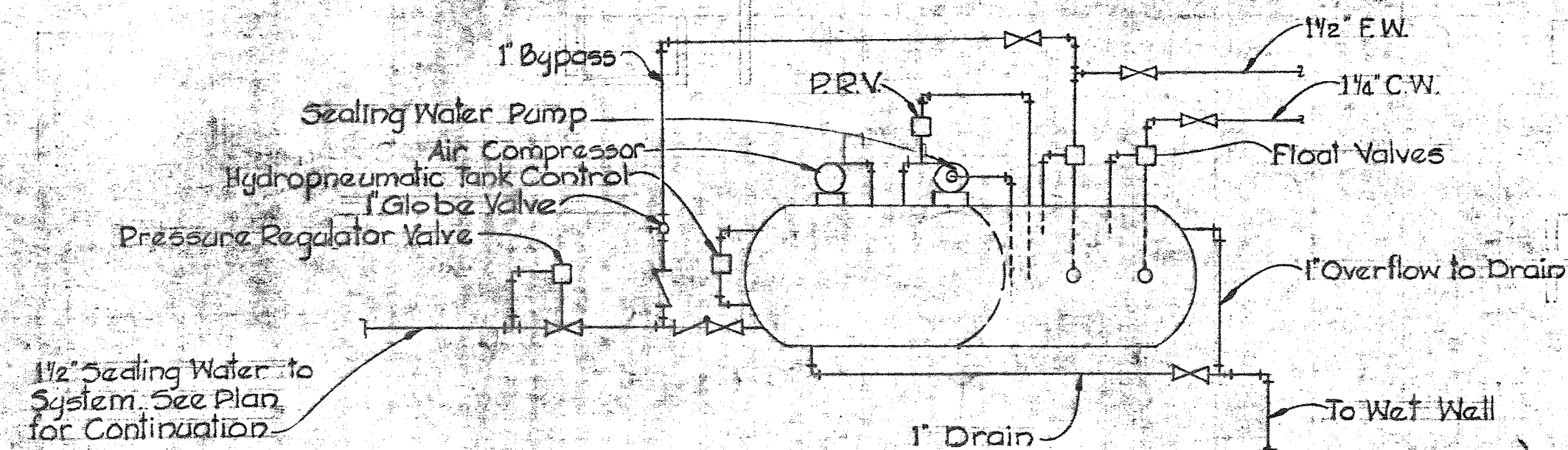
SPECIAL CONCRETE CURB AND GUTTER DETAIL
No Scale

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 2/15/80 CHIEF-BUREAU OF ENVIRONMENTAL SERVICES	CONTRACT NO. 761-S	SCALE PIT PLANS & SECTIONS & STRUCTURAL NOTES	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 27	SCALE AS SHOWN
					OF 50	SHEET S-1



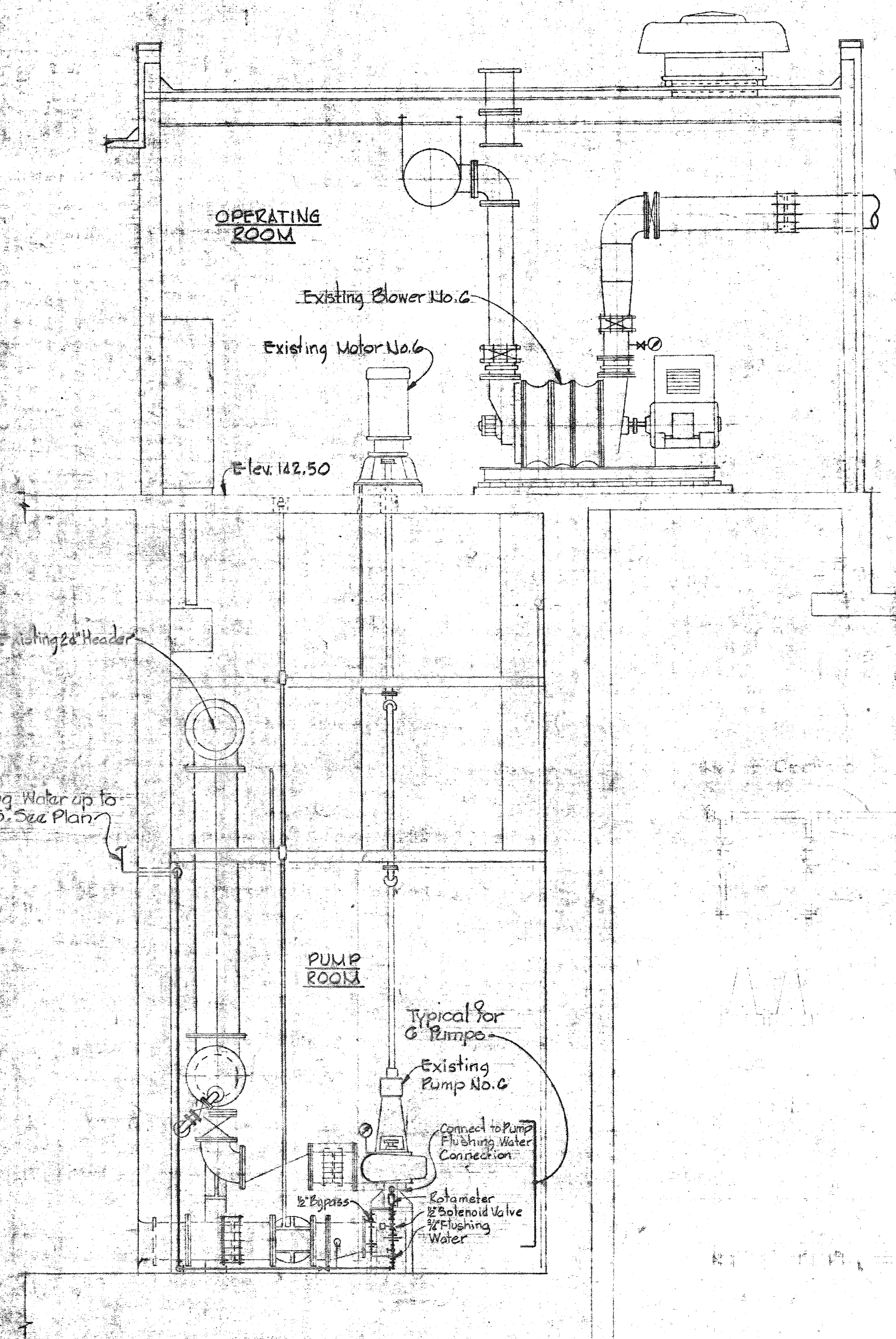
PLAN - SEWAGE PUMPS SEALING WATER SYSTEM

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



TYPICAL SEALING WATER DETAIL

Not to Scale



SECTION AA

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

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

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DATE

CHEF - BUREAU OF ENVIRONMENTAL SERVICES

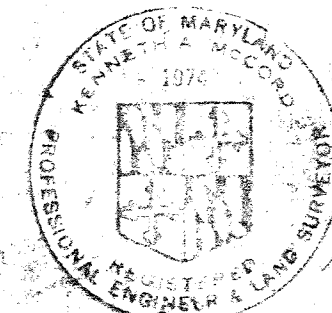
CONTRACT NO. 761-S

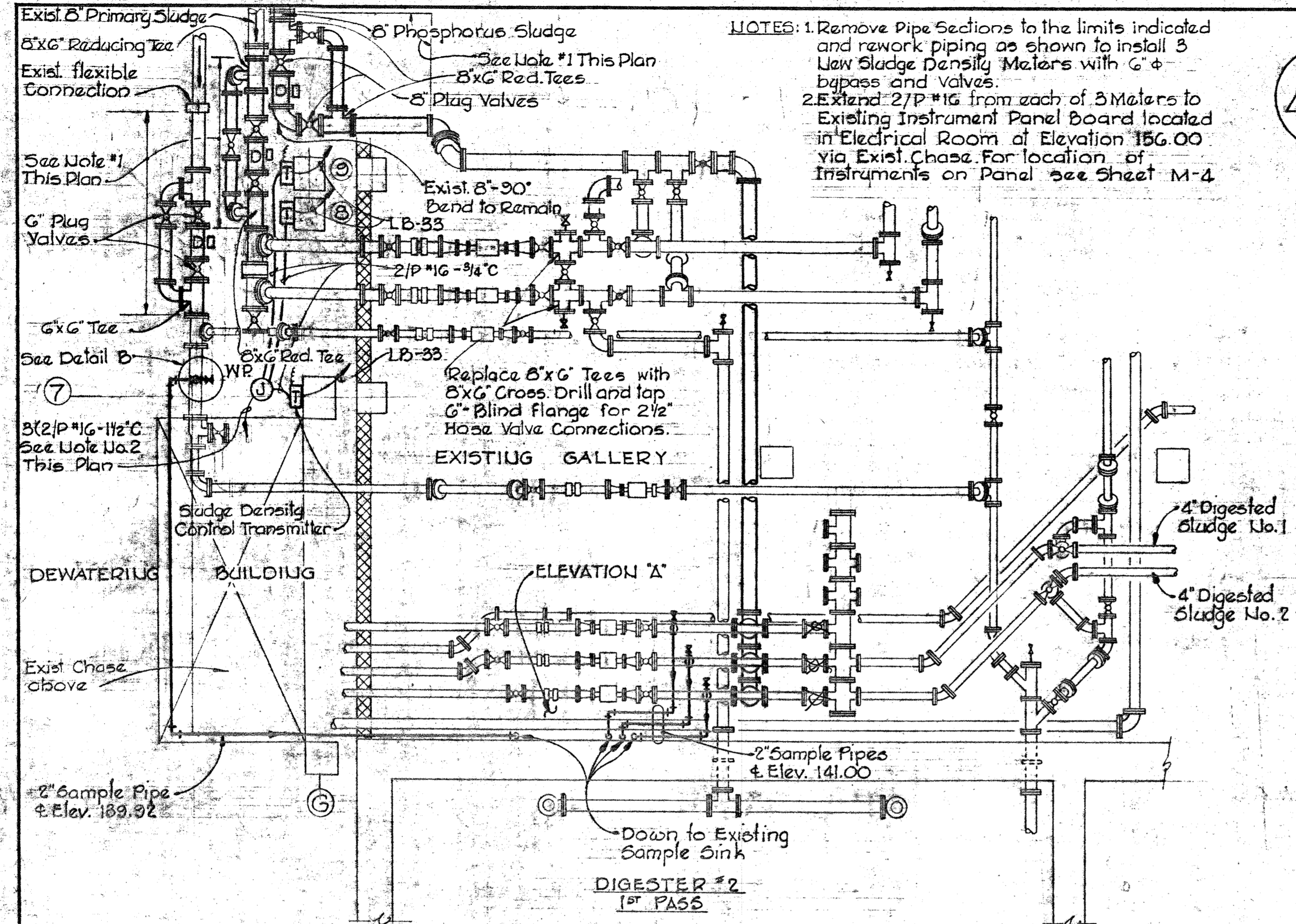
MISCELLANEOUS
 MECHANICAL PLANS, SECTIONS
 & DETAILS

SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 4

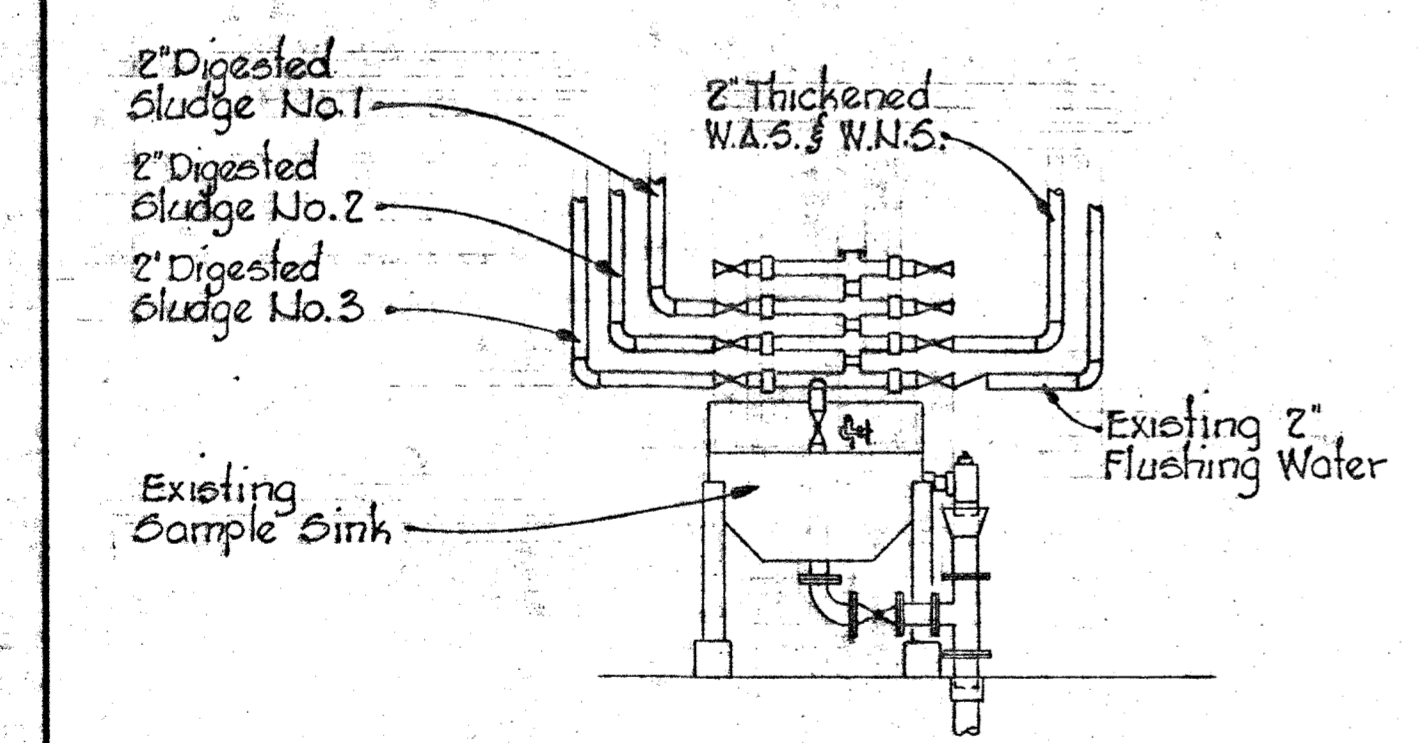
DRAWING
 NO. 28
 OF 50

SCALE
 AS
 SHOWN

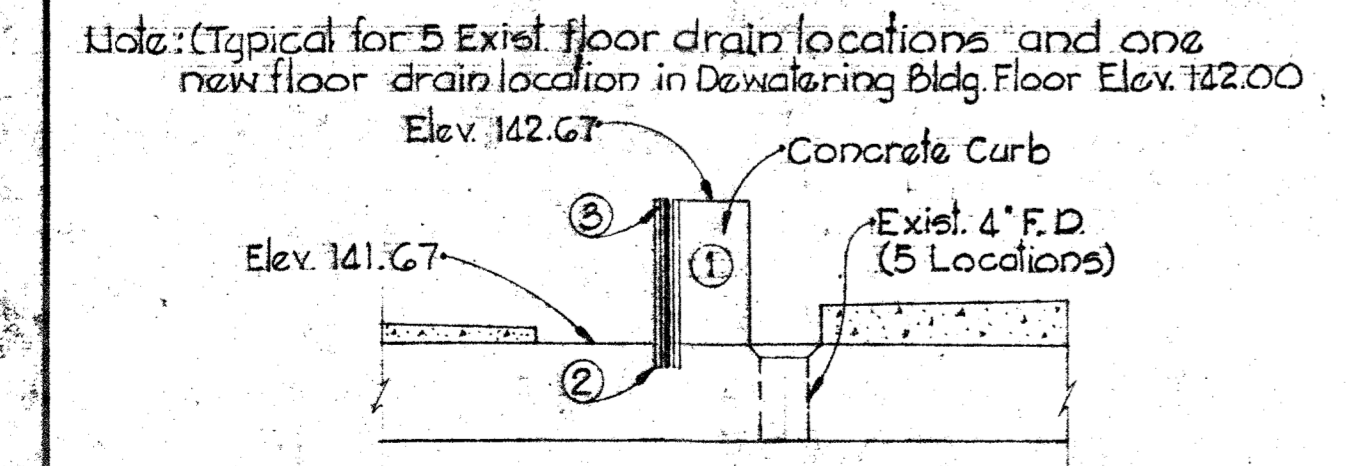




PART PLAN - EXISTING DIGESTER GALLERY
Scale: 1/4" = 1'-0"

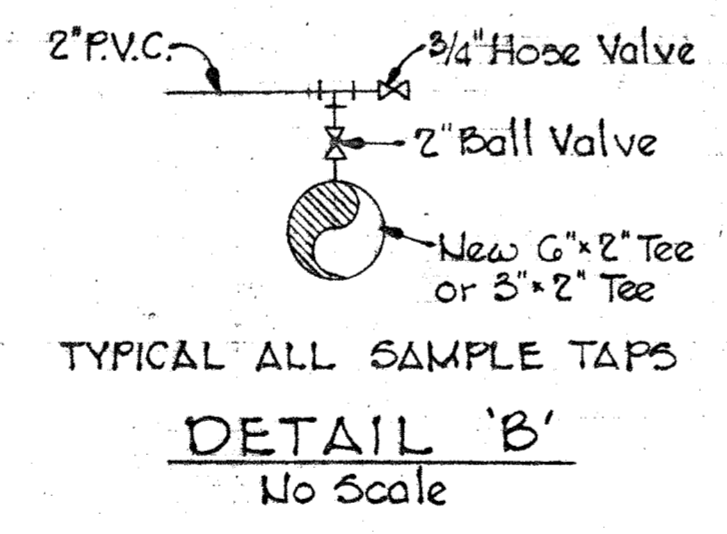


ELEVATION A
Scale: 3/8" = 1'-0"



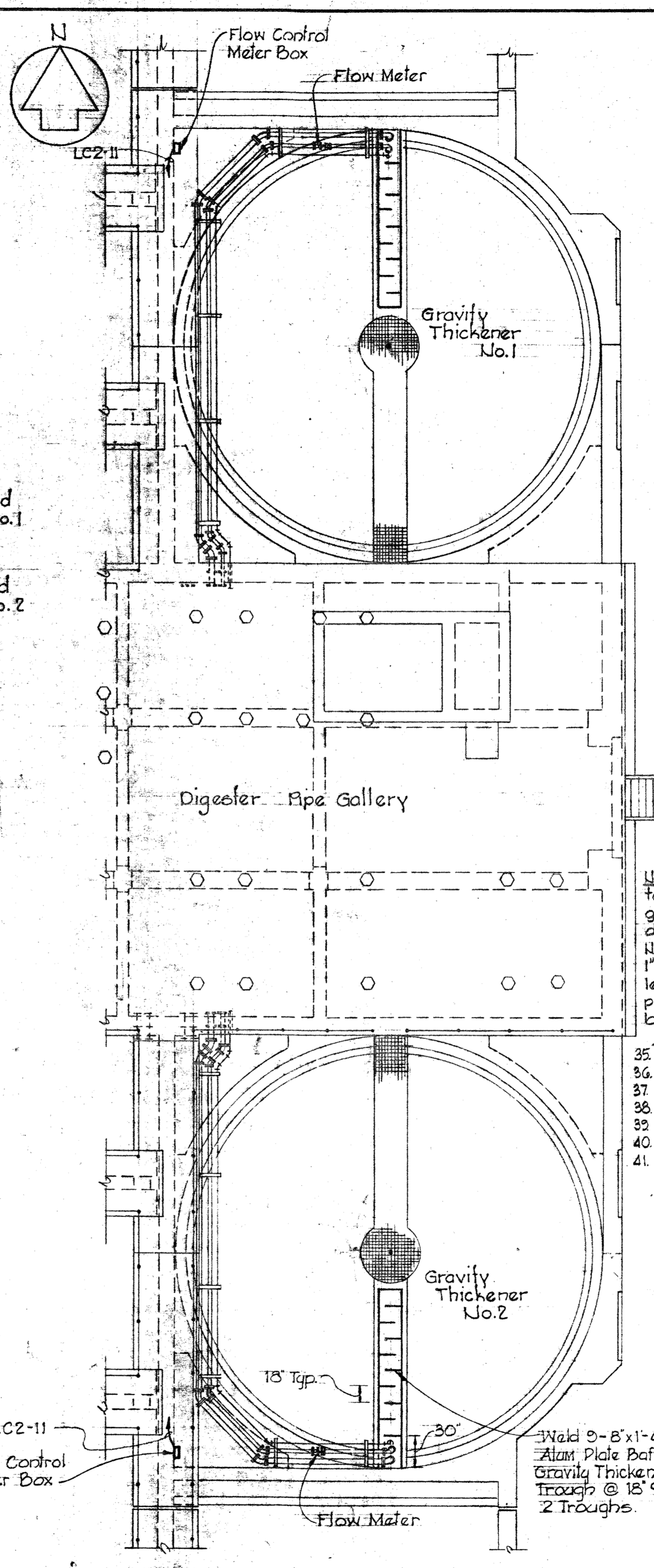
DETAIL: POLYMER STORAGE AND DAY TANK AREA CONCRETE CURB OPENING ADDITIONS
Scale: 3/4" = 1'-0"

NOTES:
1. Remove Pipe Sections to the limits indicated and rework piping as shown to install 3 New Sludge Density Meters with G & bypass and valves.
2. Extend 2\"/>

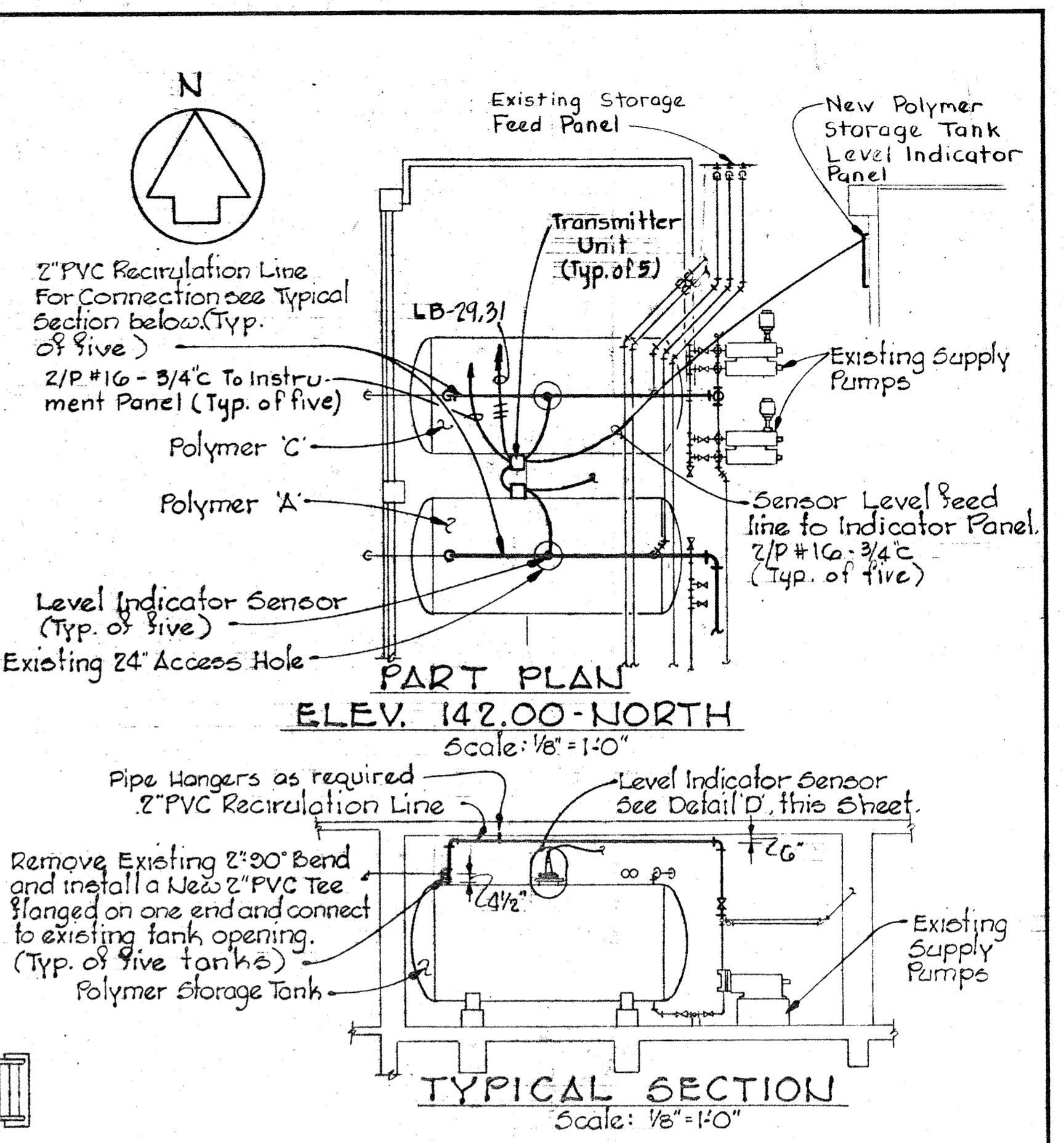


TYPICAL ALL SAMPLE TAPS
No Scale

NOTES:
1. Notch out (Saw cut joint) concrete 12\"/>

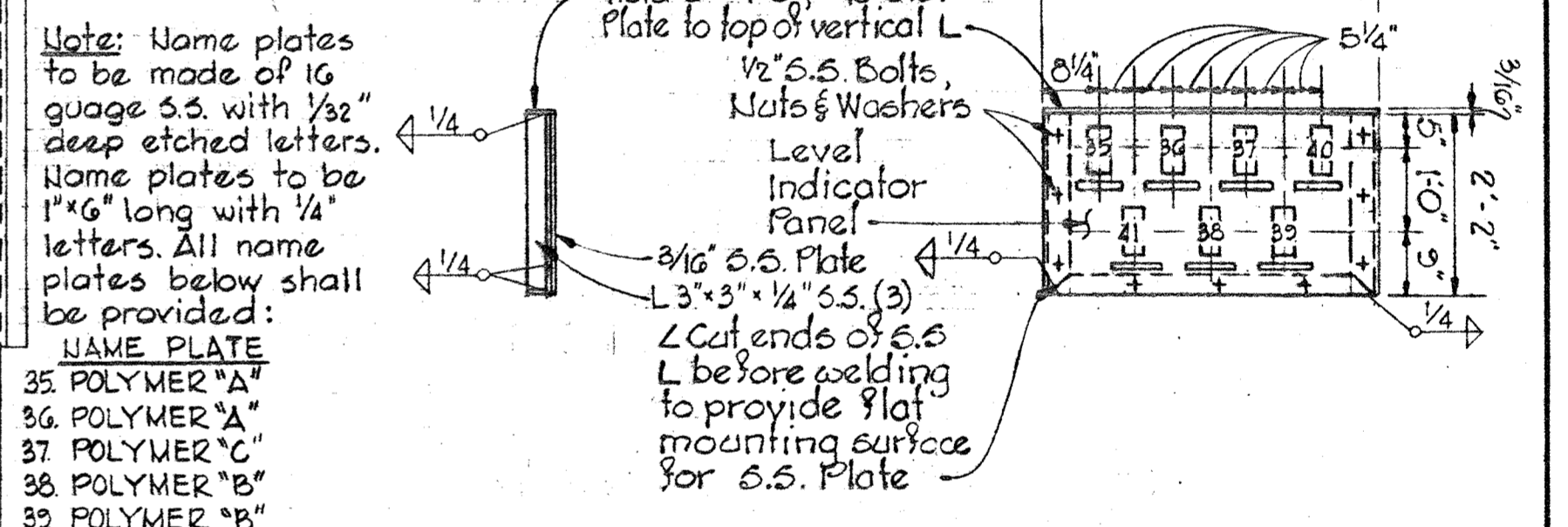


PART PLAN
Scale: 1/8" = 1'-0"

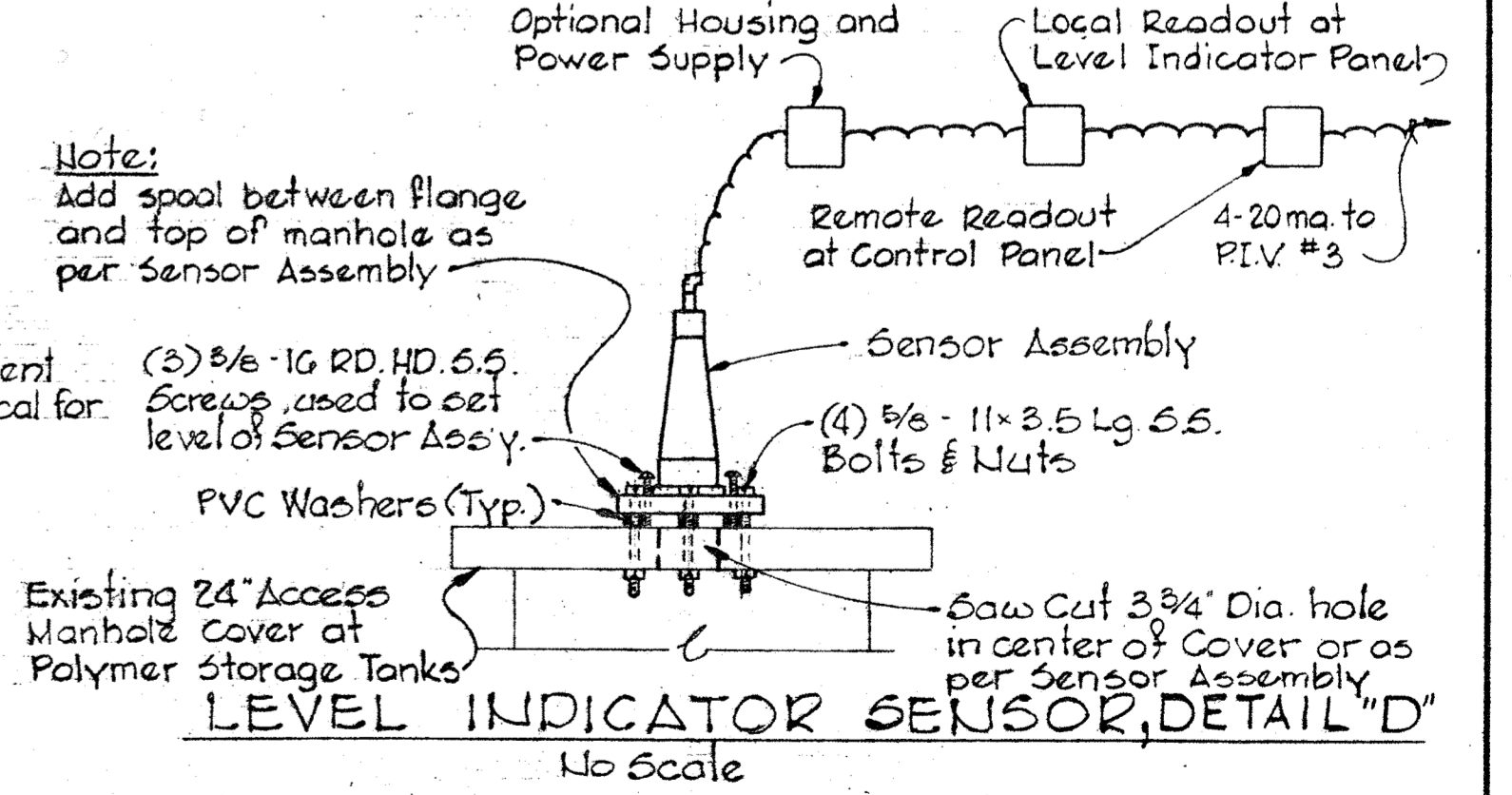


PART PLAN
ELEV. 142.00-NORTH
Scale: 1/8" = 1'-0"

TYPICAL SECTION
Scale: 1/8" = 1'-0"



SECTION LEVEL INDICATOR PANEL
Scale: 1/2" = 1'-0"



LEVEL INDICATOR SENSOR, DETAIL D
No Scale

POLYMER STORAGE TANK DETAILS
Scale: As Shown

<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p>	<p>CONTRACT NO. 761-S</p>	<p>MECHANICAL DEWATERING BUILDING- METERING AND, PIPING ADDITIONS</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 30 OF 50 SCALE AS SHOWN</p>
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NAMEPLATE DESIGNATIONS

1	T	Unthickened Waste Activated & Waste Nitrified Sludge	20		Panel Test
1 1/2	R	Pen Unthickened Waste Activated & Waste Nitrified Sludge	31		Thickener & Digester No. 1
2-1	T	Thickened Waste Activated & Waste Nitrified Sludge	32		Thickener & Digester No. 2
2	1/2	Pen Thickened Waste Activated & Waste Nitrified Sludge	33		D.O. Analyzer
3-1	T	Primary Sludge	35	S	Total Primary Sludge
3	1/2	Pen Primary Sludge	36	S	Total Thickened Waste Activated & Waste Nitrified Sludge
4-1	T	Air 1st & 2nd Pass	37	S	Total Digested Sludge
4	1/2	Pen Air 1st & 2nd Pass	20-1	T	Digested Sludge to Belt Filter Press No. 3
5-1	T	Air 3rd & 4th Pass	20	1/2	Pen Digested Sludge to Belt Filter Press No. 3
5	1/2	Pen Air 3rd & 4th Pass	FUTURE NAMEPLATE DESIGNATIONS		
6		Not Used	21-1	T	Thickener No. 3 Unthickened W.A. & W.U. Sludge
7	R	2 Pen Dissolved Oxygen Probe No. 1 & 2	21	1/2	Pen Thickener No. 3 Unthickened W.A. & W.U. Sludge
8-1	T	Digested Sludge to Belt Filter Press No. 1	22-1	T	Thickener No. 4 Unthickened W.A. & W.U. Sludge
8	1/2	Pen Digested Sludge to Belt Filter Press No. 1	22	1/2	Pen Thickener No. 4 Unthickened W.A. & W.U. Sludge
9-1	T	Unthickened Waste Activated & Waste Nitrified Sludge	23-1	T	Thickened W.A. & W.U. Sludge
9	1/2	Pen Unthickened Waste Activated & Waste Nitrified Sludge	23	1/2	Pen Thickened W.A. & W.U. Sludge
10-1	T	Thickened Waste Activated & Waste Nitrified Sludge	24-1	T	Primary Sludge
10	1/2	Pen Thickened Waste Activated & Waste Nitrified Sludge	24	1/2	Pen Primary Sludge
11-1	T	Primary Sludge	25-1	T	Air 1st & 2nd Pass
11	1/2	Pen Primary Sludge	25	1/2	Pen Air 1st & 2nd Pass
12-1	T	Air 1st & 2nd Pass	26-1	T	Air 3rd & 4th Pass
12	1/2	Pen Air 1st & 2nd Pass	26	1/2	Pen Air 3rd & 4th Pass
13-1	T	Air 3rd & 4th Pass	28	R	2 Pen Dissolved Oxygen Probe No. 5 & 6
13	1/2	Pen Air 3rd & 4th Pass	30-1	T	Digested Sludge to Belt Filter Press No. 4
14		Not Used	30	1/2	Pen Digested Sludge to Belt Filter Press No. 4
15	R	2 Pen Dissolved Oxygen Probe No. 3 & 4	34		Thickeners No. 3 & No. 4, Digester No. 3
16-1	T	Digested Sludge to Belt Filter Press No. 2			
16	1/2	Pen Digested Sludge to Belt Filter Press No. 2			
17		Alarm Panel			
18		Alarm Silence			
19	1/2	Pen Air Pressure & Air Temperature			

NEW NAMEPLATE DESIGNATIONS

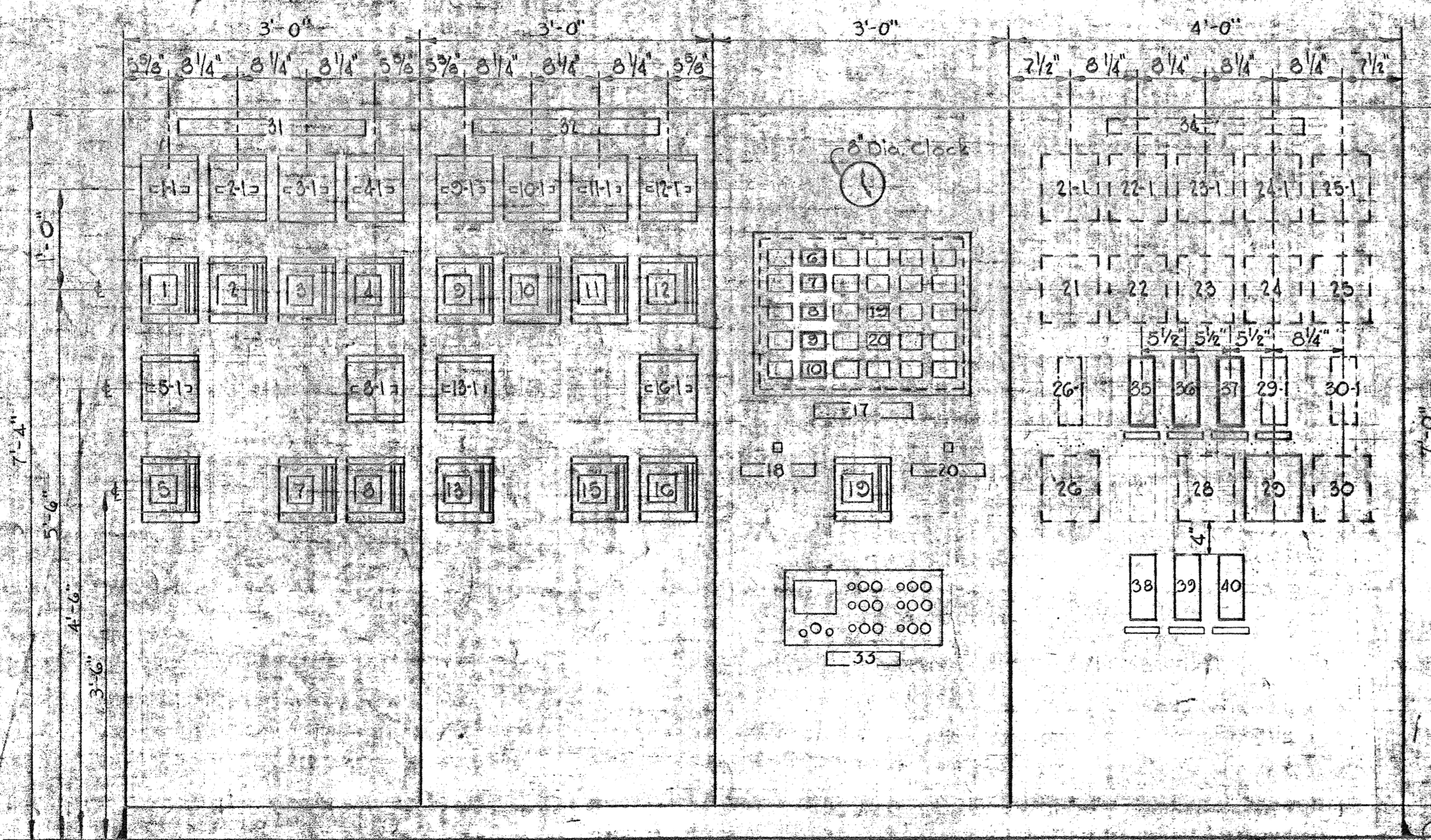
38	I	Primary Sludge Density
39	I	WAS/WUS Sludge Density
40	I	Chemical Sludge Density
35-1	I	Polymer Storage Tank No. 1 & 2
36-1	I	Polymer Storage Tank No. 3 & 4
37-1	I	Polymer Storage Tank No. 5 & 6 (Note: Tank No. 6 for future signal connection)

NEW ANNUNCIATOR WINDOWS

6	(1-2)	Low Level Polymer Storage Tank No. 1
7	(2-2)	Low Level Polymer Storage Tank No. 2
8	(3-2)	Low Level Polymer Storage Tank No. 3
9	(4-2)	Low Level Polymer Storage Tank No. 4
10	(5-2)	Low Level Polymer Storage Tank No. 5
19	(4-4)	High Level Filtrate Drain Control Tank
20	(5-4)	Low Level Filtrate Drain Control Tank

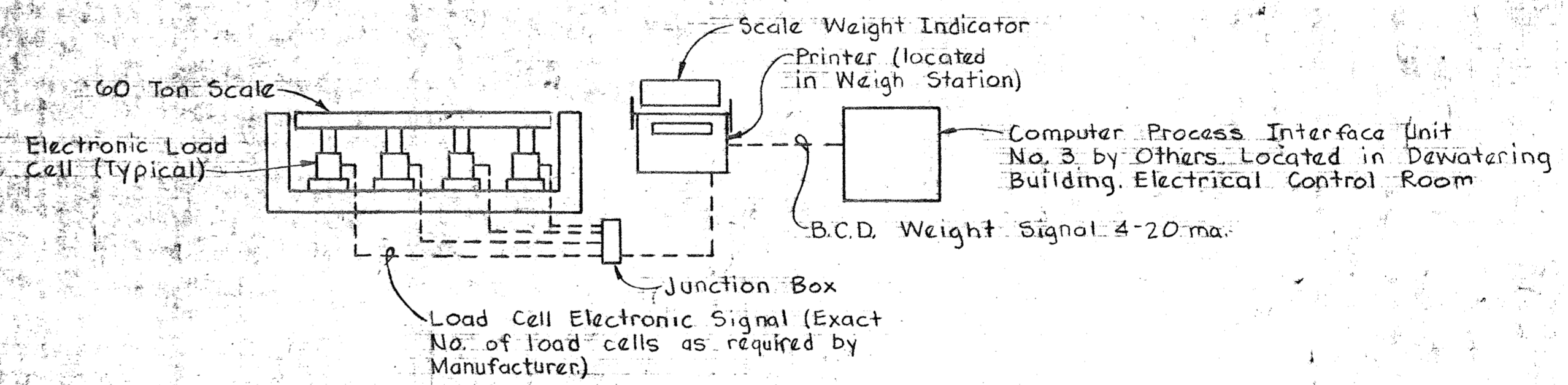
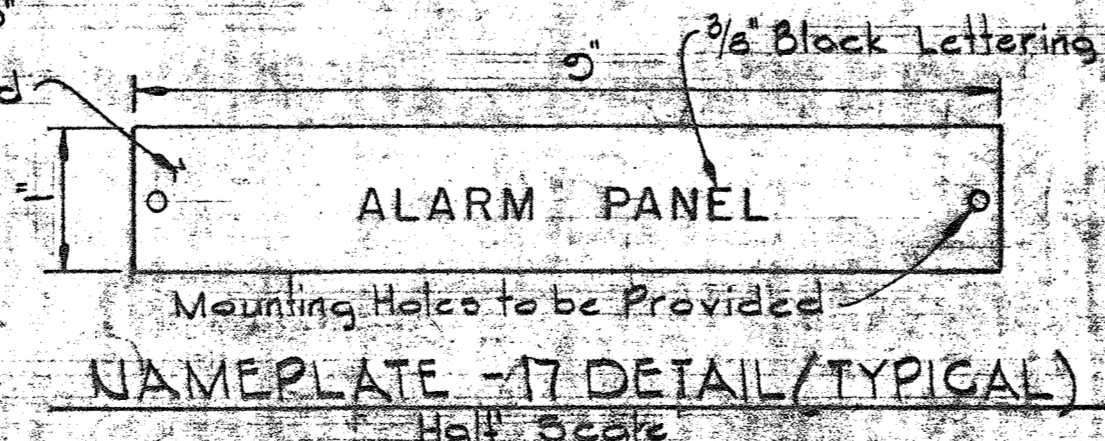
LEGEND:

S	Summator
T	Totalizer
I	Indicator
1/2	Indicator/Recorder
I.L.	Indicator Lights



ELEVATION INSTRUMENT PANELBOARD

Scale: 1" = 1'-0"



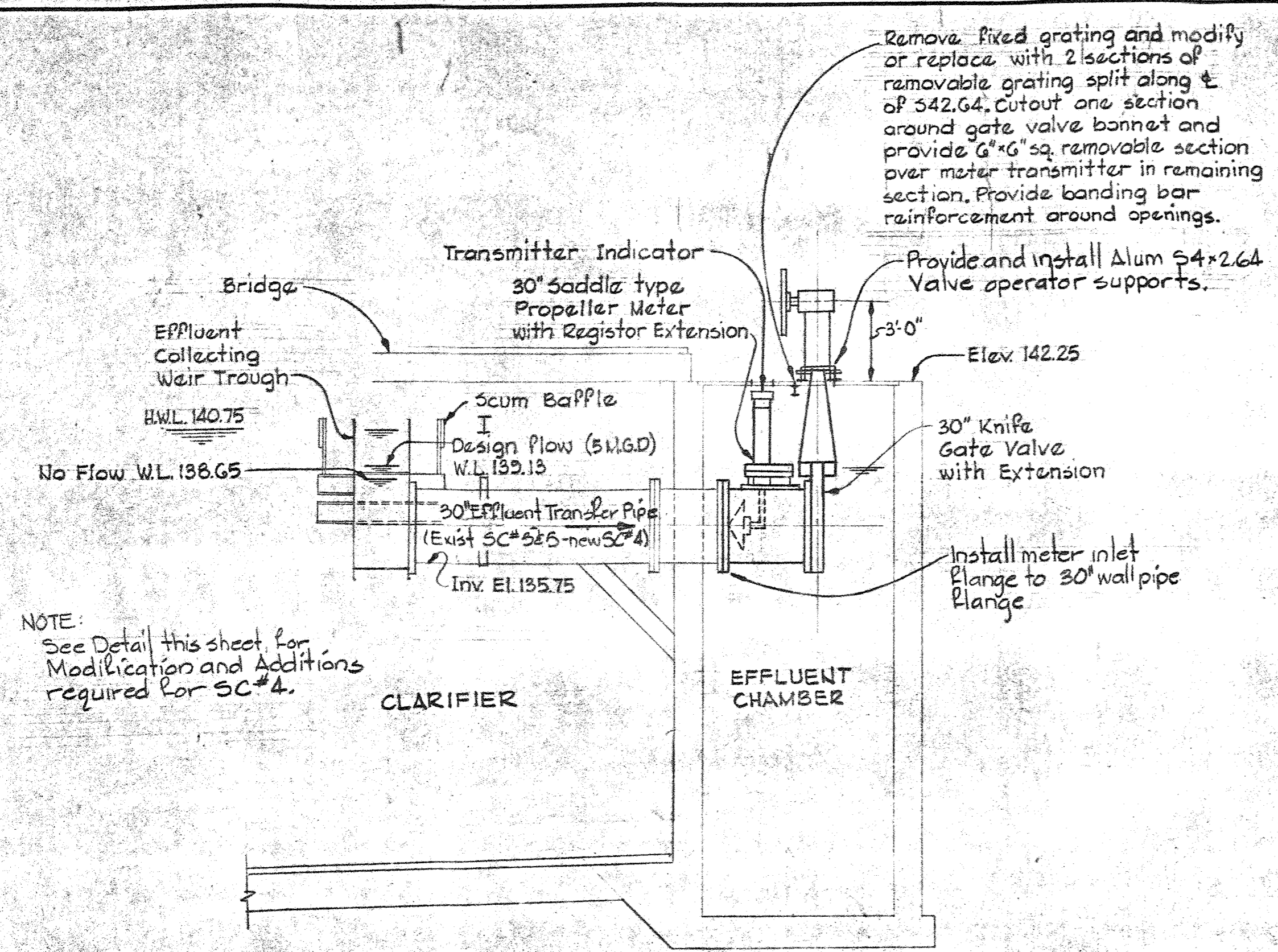
SCHEMATIC DIAGRAM - 60 TON TRUCK SCALE
No Scale

- Notes:**
- Nameplate Number Designations For Recorders Shall Also Be Used As The Index Number Of That Recorder For Identification In Specs.
 - Nameplates 35 & 39 Are To Be The Lettering And Plate Size As Shown On This Sheet. 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 Designated 6 thru 10.

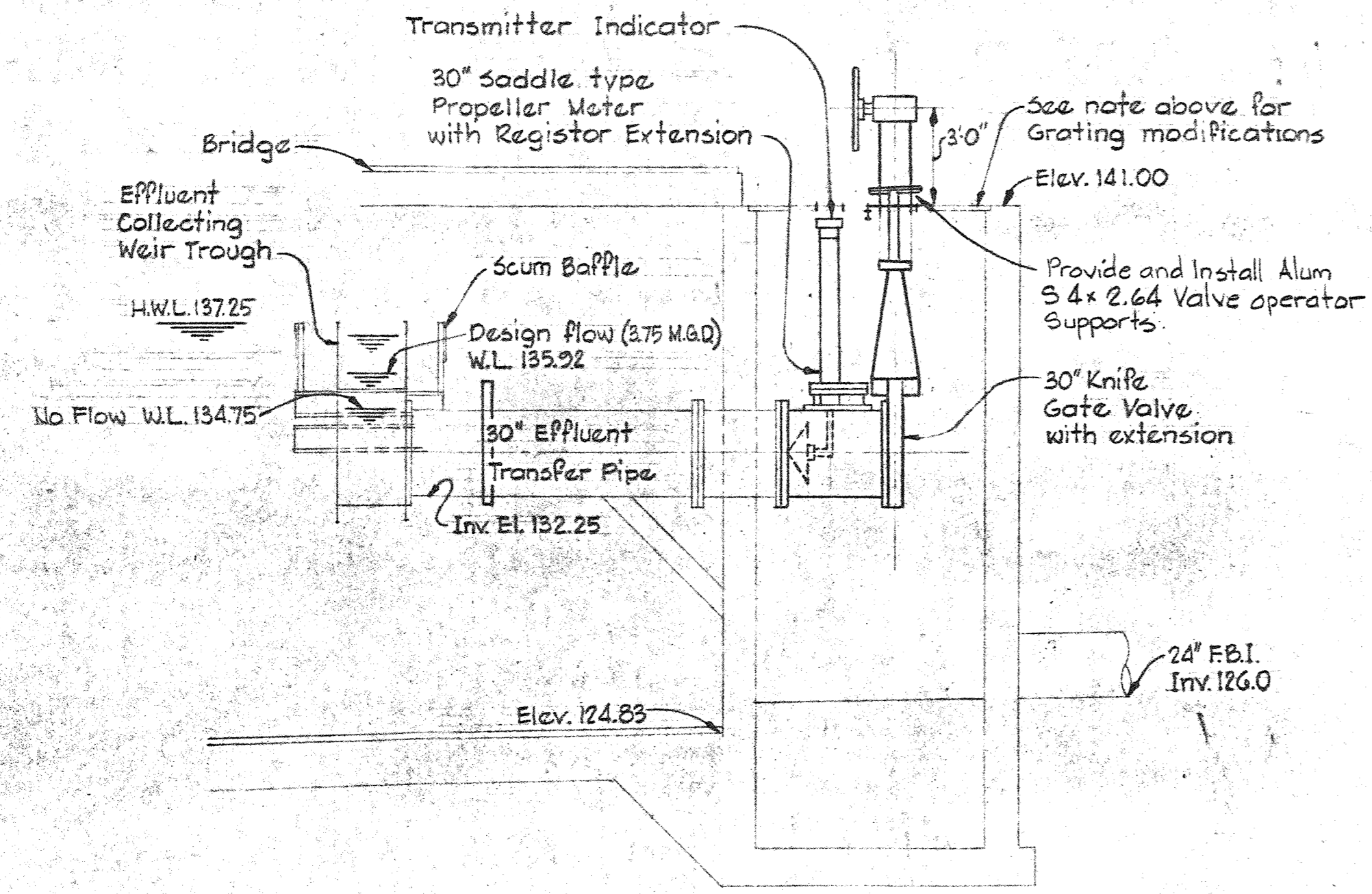
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 2/15/80 CHIEF BUREAU OF ENVIRONMENTAL SERVICES	CONTRACT NO. 761-S	MECHANICAL DEWATERING BUILDING - INSTRUMENT PANEL ADDITIONS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 31 OF 50	SCALE AS SHOWN
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W.O. 7132-2F

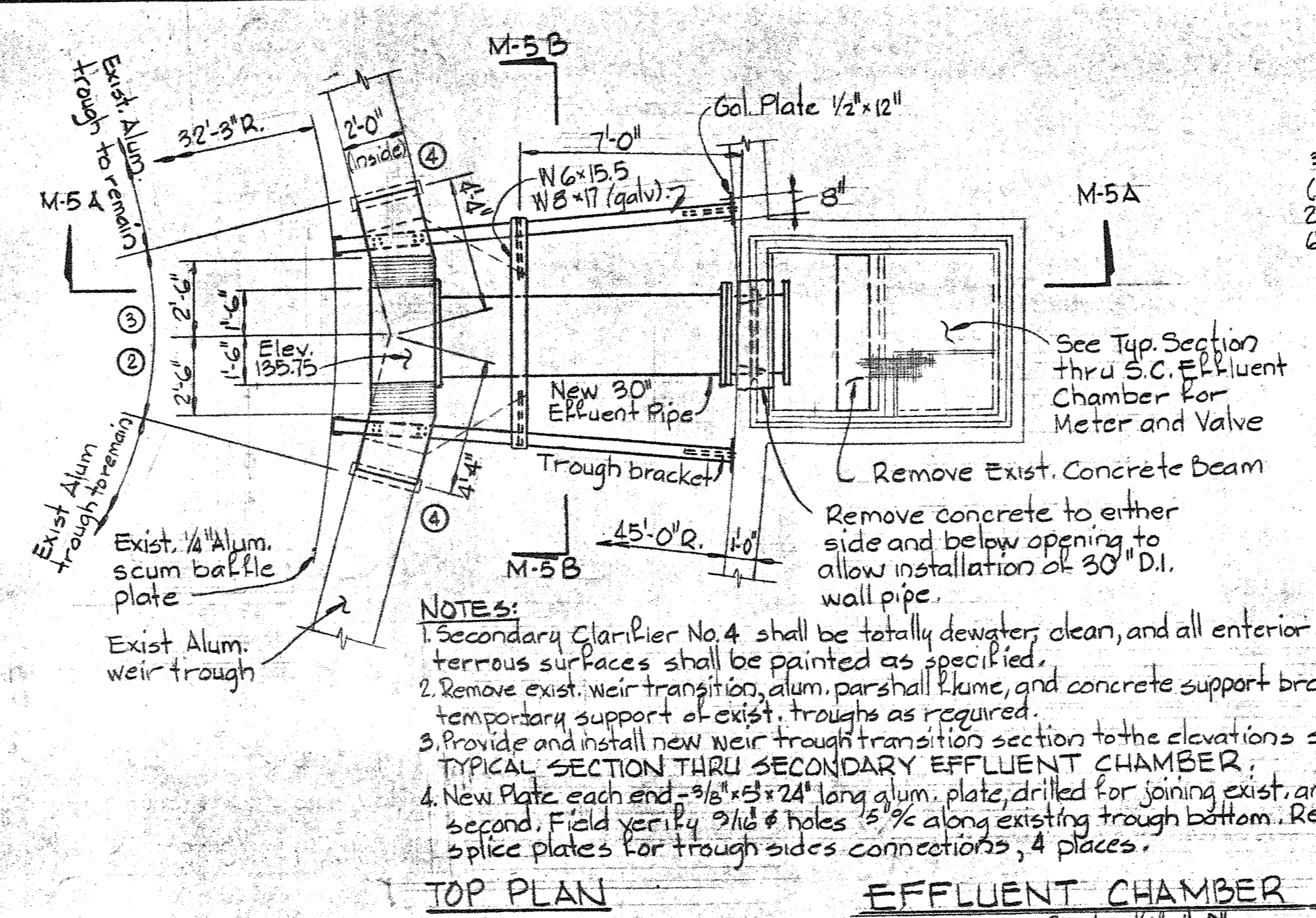
SHEET M-4



TYPICAL SECTION THRU SECONDARY CLARIFIER EFFLUENT CHAMBERS
Scale: 1/4" = 1'-0"

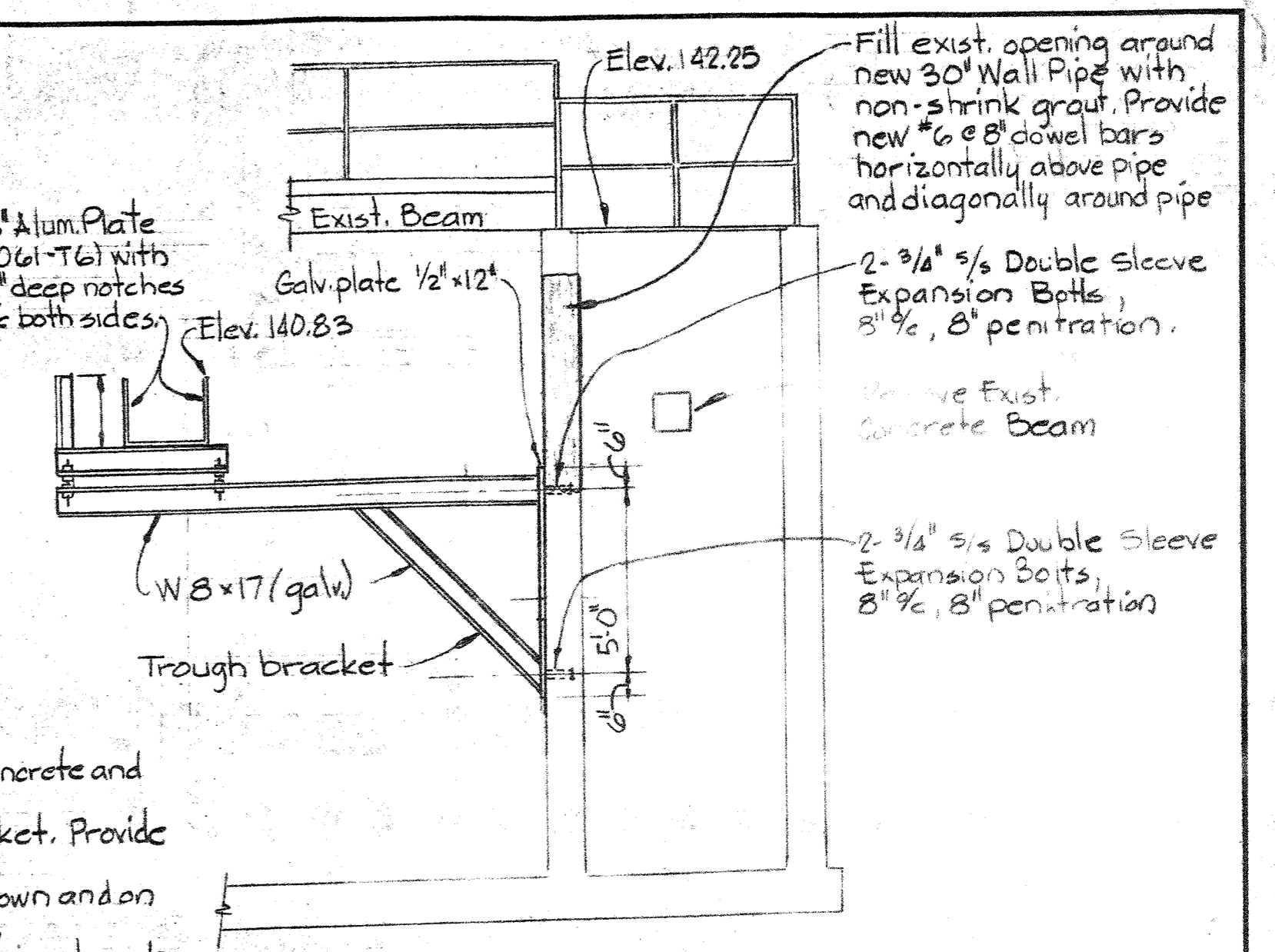


TYPICAL SECTION THRU NITRIFICATION CLARIFIER EFFLUENT CHAMBER
Scale: 1/4" = 1'-0"

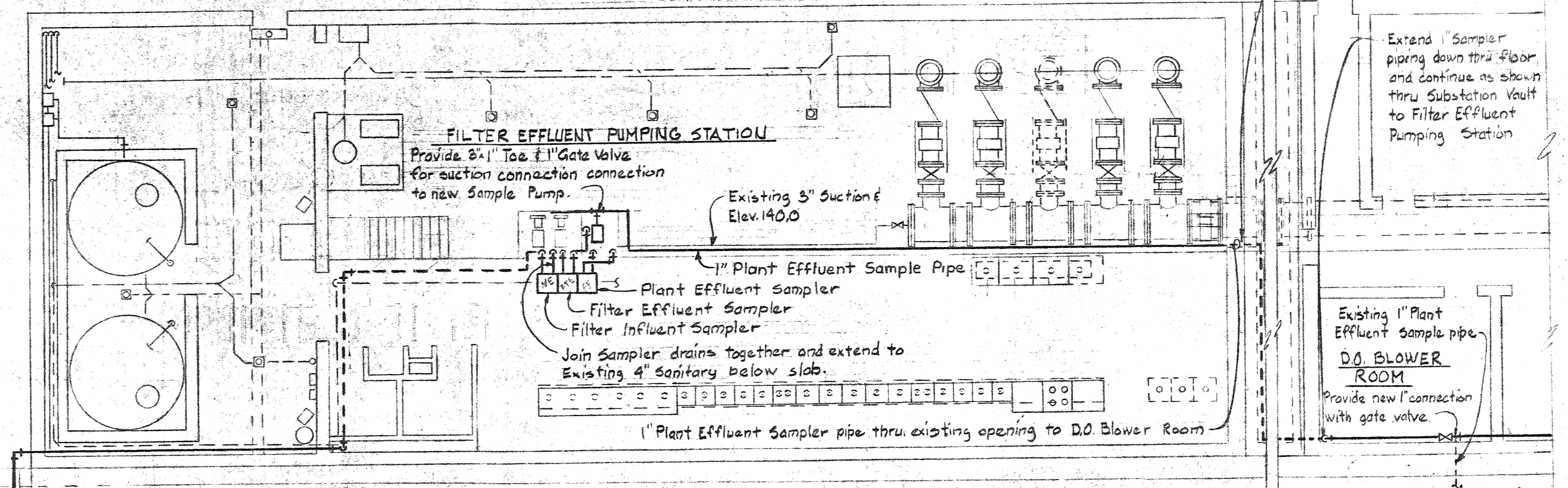


NOTES:
1. Secondary Clarifier No. 4 shall be totally dewatered, clean, and all exterior concrete and terrazzo surfaces shall be painted as specified.
2. Remove exist. weir transition, alum. parshall flume, and concrete support bracket. Provide temporary support of exist. troughs as required.
3. Provide and install new weir trough transition section to the elevations shown and an TYPICAL SECTION THRU SECONDARY EFFLUENT CHAMBER.
4. New Plate each end = 3/8" x 3" x 24" long alum. plate, drilled for joining exist. and new trough second. Field verify 9/16" holes 1/8" along existing trough bottom. Reuse exist. alum. splice plates for trough sides connections, 4 places.

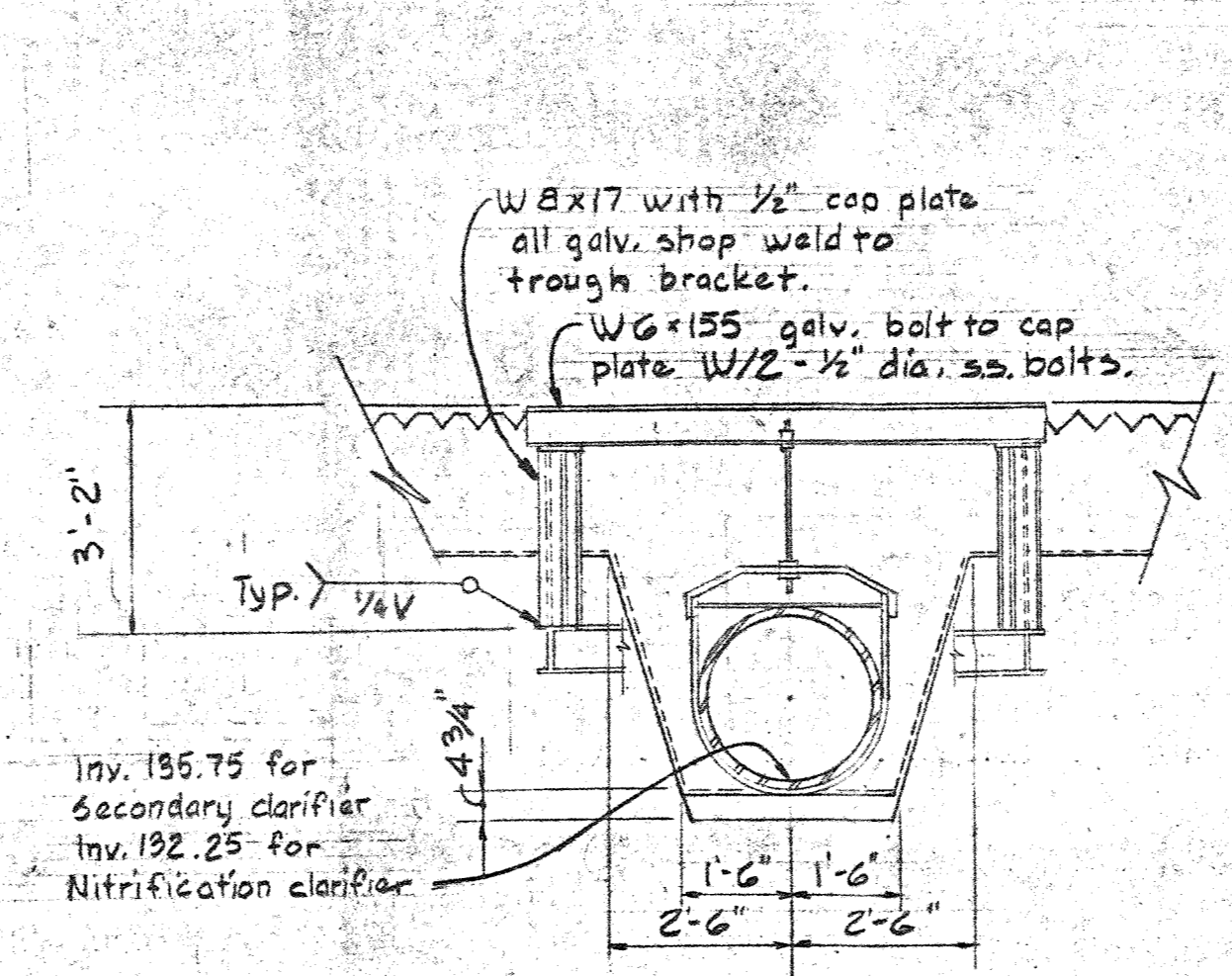
TOP PLAN EFFLUENT CHAMBER SC#4
Scale: 1/4" = 1'-0"



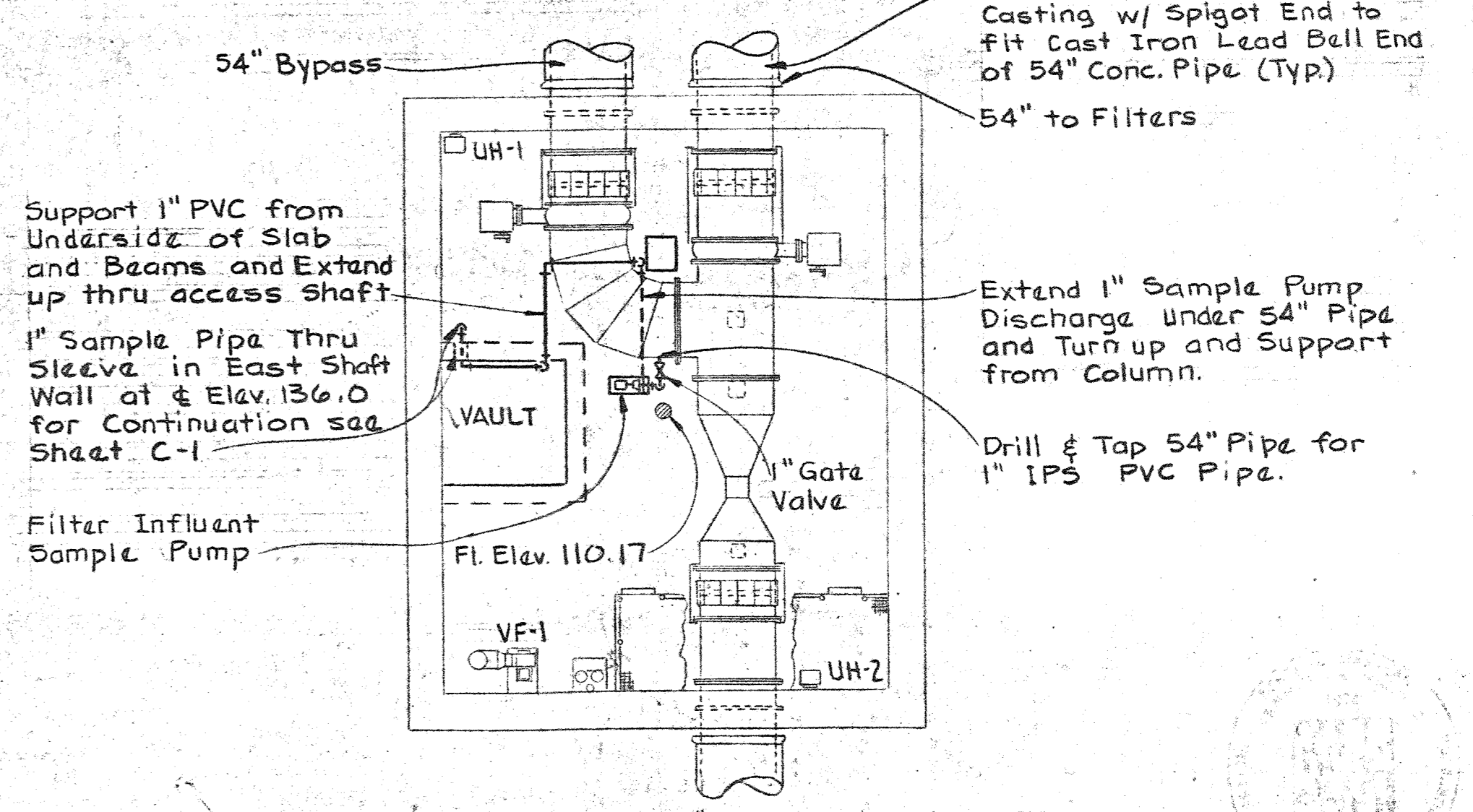
SECTION M-5 A/M-5



PART PLAN FILTER CONTROL BUILDING ELEV. 142.0



SECTION M5 B/M5
Scale: 3/8" = 1'-0"



PLAN EXIS. 54" METER VAULT
Scale: 1/8" = 1'-0"

1" Filter Inflow sample pipe for continuation see sheet C-2.

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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

CONTRACT NO. 761-S

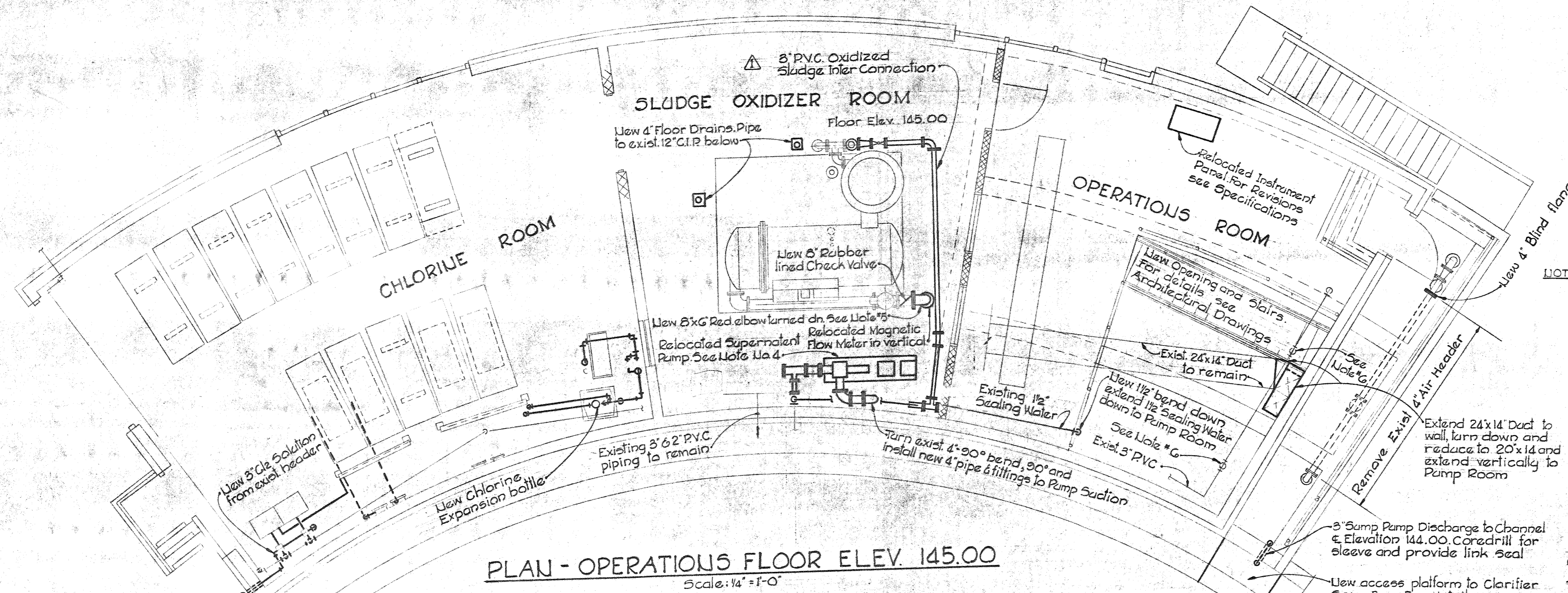
MECHANICAL
MISCELLANEOUS
METERING AND DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 32
OF 50

SCALE AS SHOWN

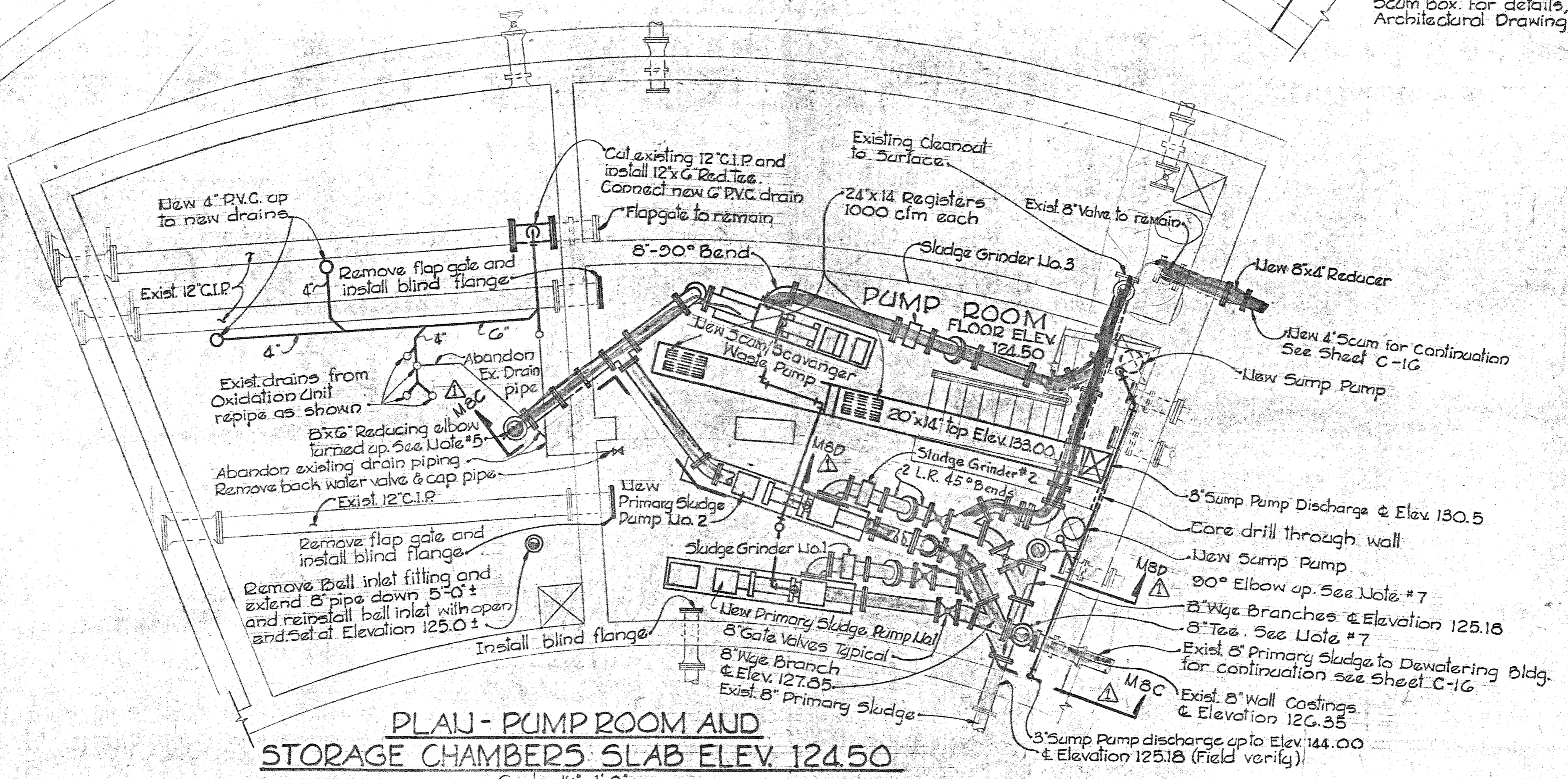
SHEET M-5



PLAN - OPERATIONS FLOOR ELEV. 145.00
Scale: 1/4" = 1'-0"

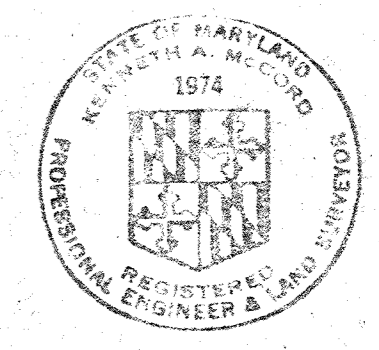
- NOTES:**
1. Remove all Existing 8" C.I.P. PVC and Steel pipe in existing Chambers Nos 1&2 and Provide blind flanges on all unused Wall Castings.
 2. Remove all Sludge Pumping Units, Meters, Piping and Valves from Operations Room.
 3. Provide new openings through floor demolition, cover outside openings and complete structural renovations as shown on Sheet A-7.
 4. Remove existing Supernatant Pumping Unit and piping, revise pumpdrives to constant speed and reinstall Pumping Unit as shown modifying existing Suction and Discharge piping as shown or required.
 5. Core drill opening through floor for new pipe connections to Oxidation Unit. Seal pipe through floor. Install new 8" rubber lined Check Valve flowmeter, and pipe and fittings as shown.
 6. Remove 8" PVC vertical pipe sections and plug or cap existing 3" Tees.
 7. Furnish and install new 8" C.Q. piping up vertically to underside of new Cover Plate over existing opening for pipeline cleaning rig launcher adapter. Terminate with blind flange.
 8. Generally, all existing piping and equipment is shown with light lines and all new and relocated equipment is shown with heavy lines.

New 8" Cle Solution Continuation See Sheet C-7

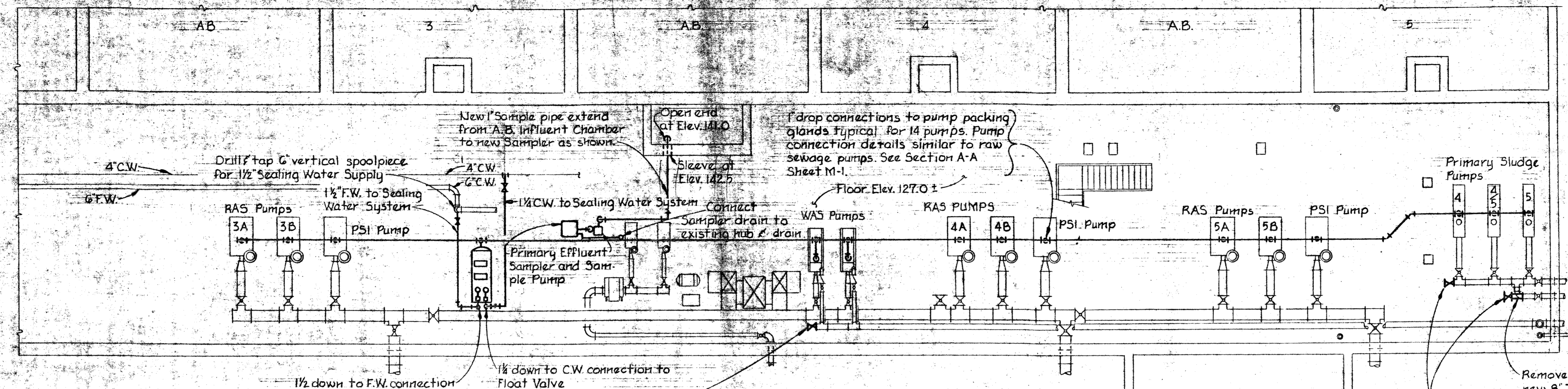


PLAN - PUMP ROOM AND STORAGE CHAMBERS SLAB ELEV. 124.50
Scale: 1/4" = 1'-0"

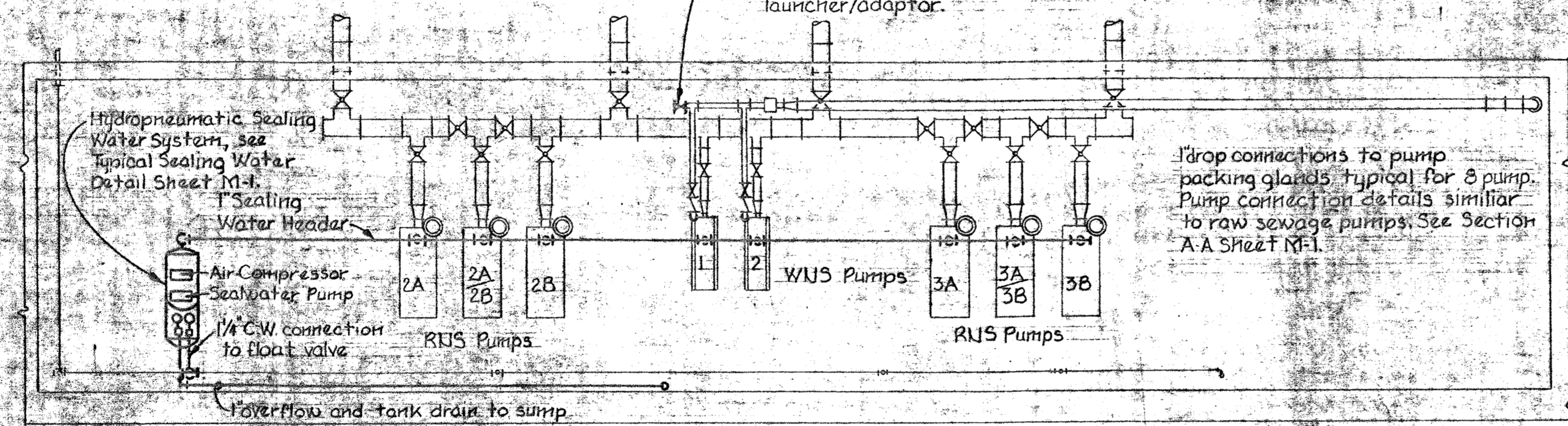
222
167



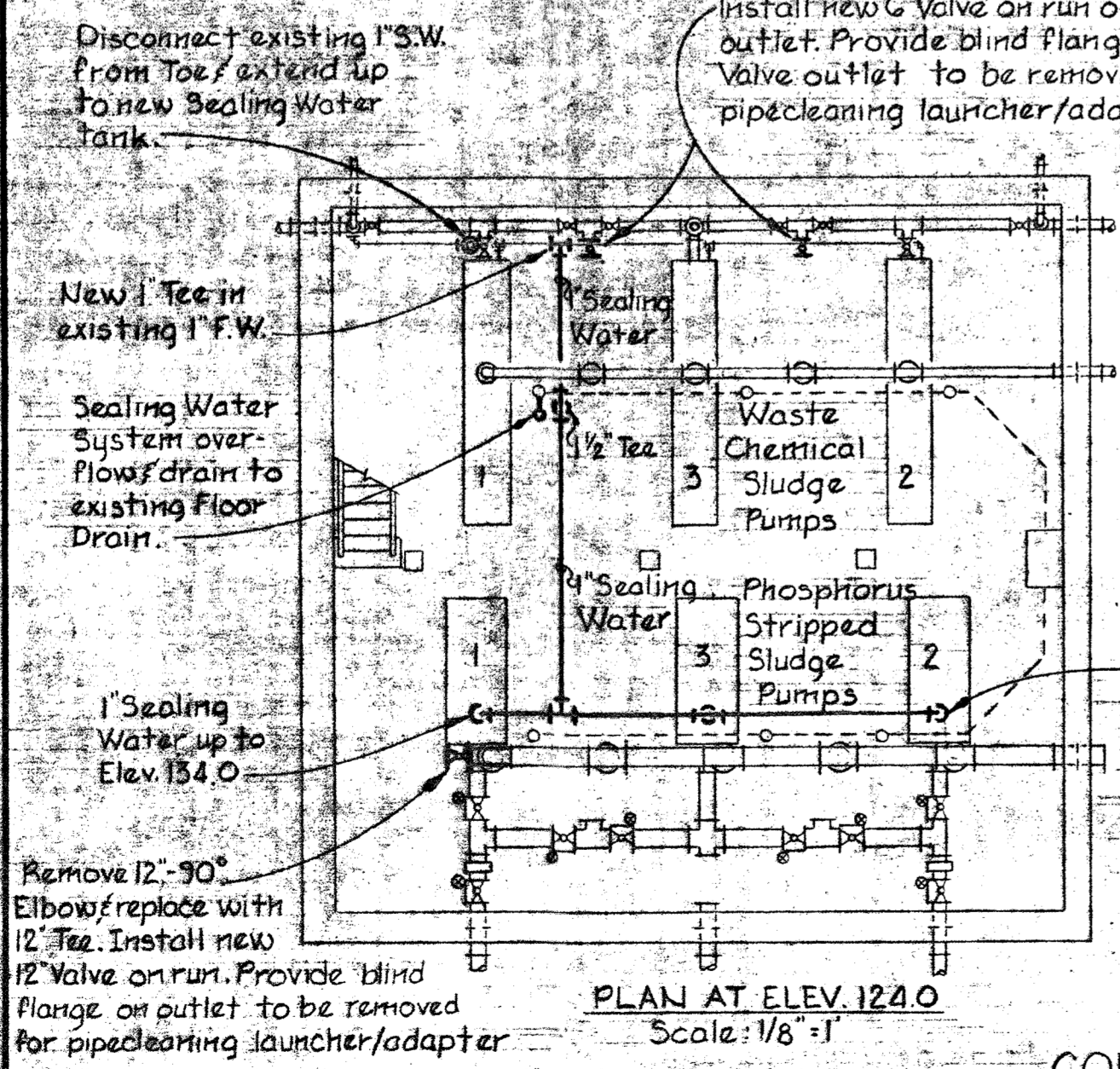
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE _____ CHIEF BUREAU OF ENVIRONMENTAL SERVICES	CONTRACT NO. 761-S	SLUDGE OXIDATION BLDG. PLAN & DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO 4	DRAWING NO. 33 OF 50 SCALE AS SHOWN
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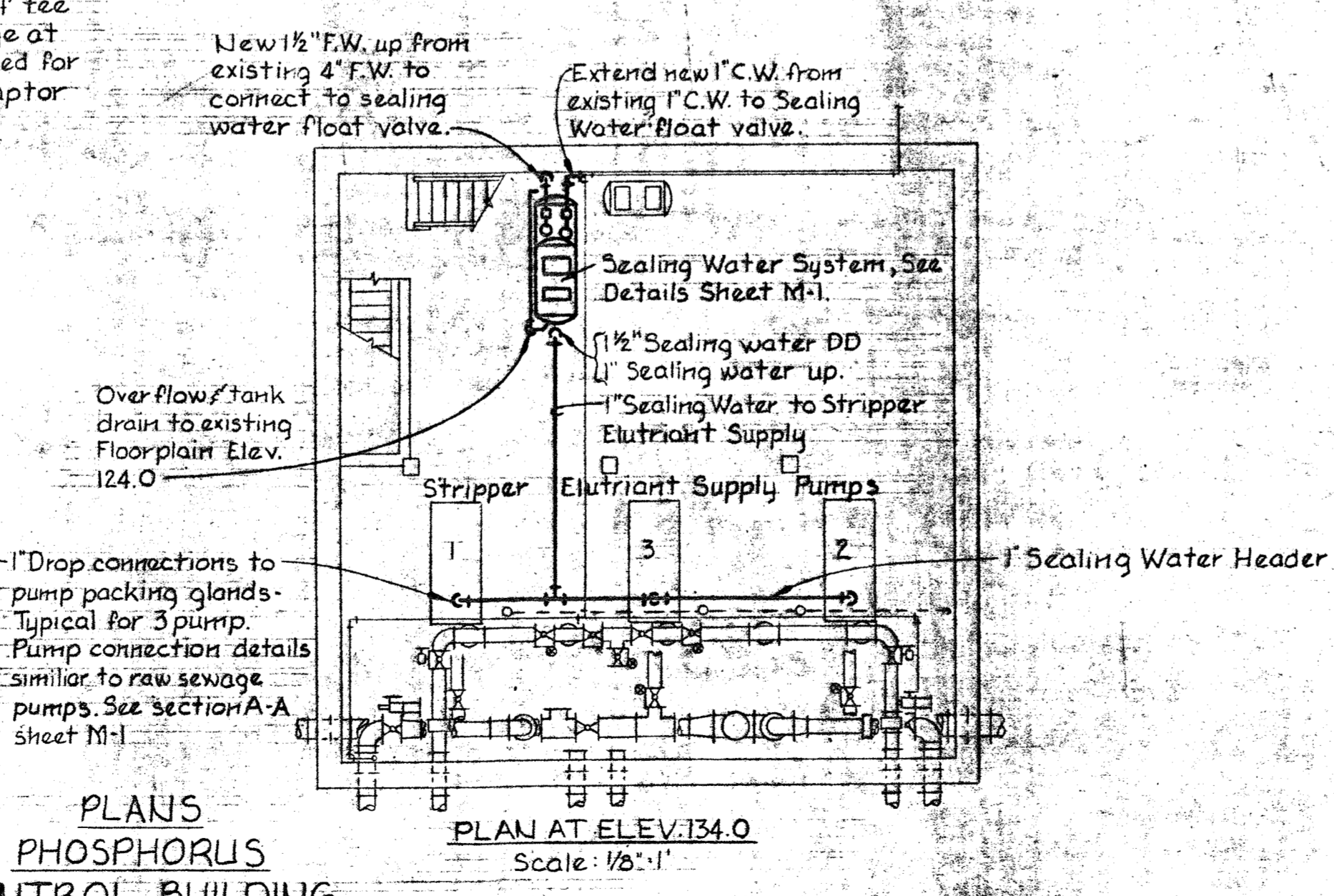
PLAN AERATION PIPE GALLERY WEST
Scale: 1/8"=1'



PLAN AERATION GALLERY EAST
Scale: 1/8"=1'

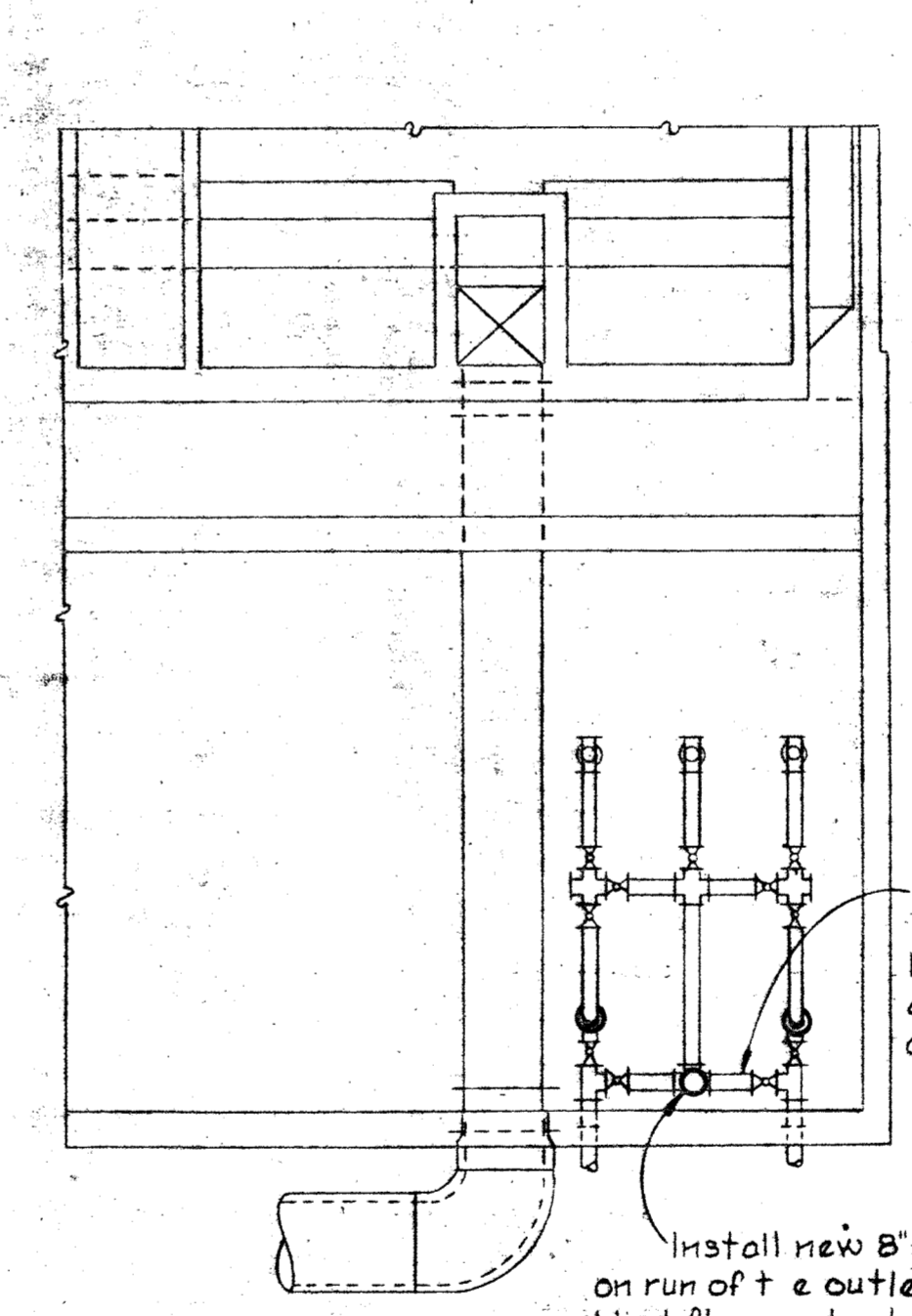


PLAN AT ELEV. 124.0
Scale: 1/8"=1'

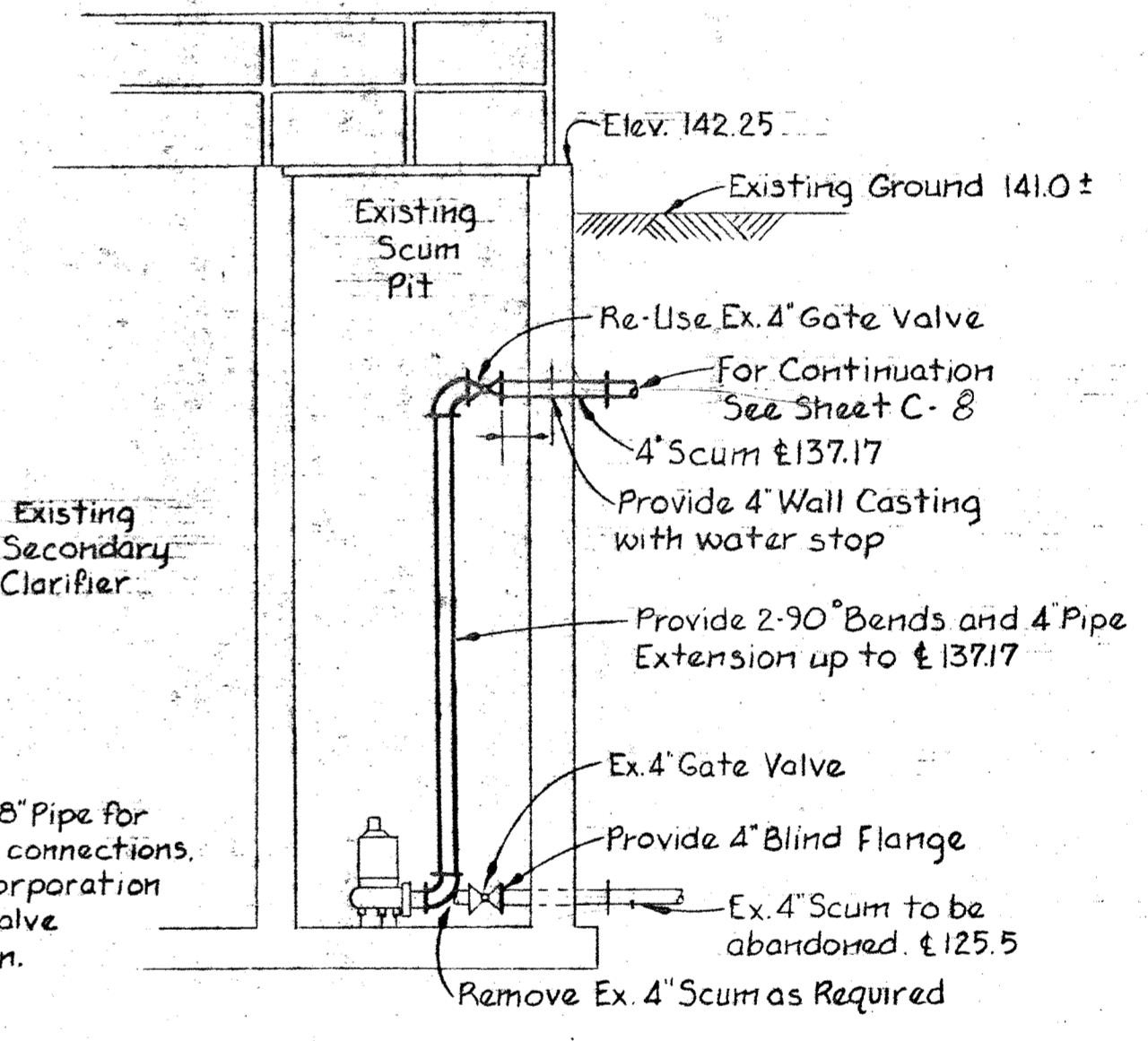


PLAN AT ELEV. 134.0
Scale: 1/8"=1'

PLANS PHOSPHORUS CONTROL BUILDING

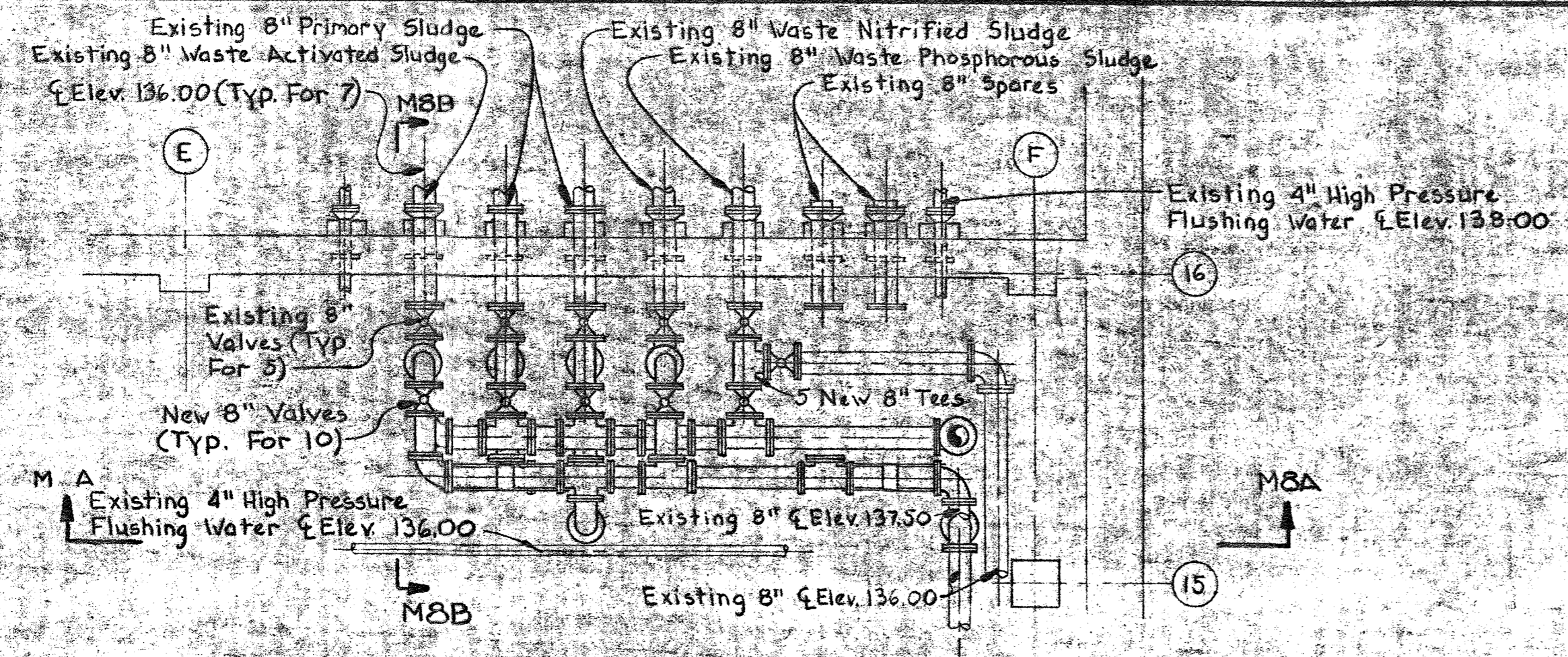


PART PLAN AERATION GALLERY WEST
Scale: 1/8"=1'

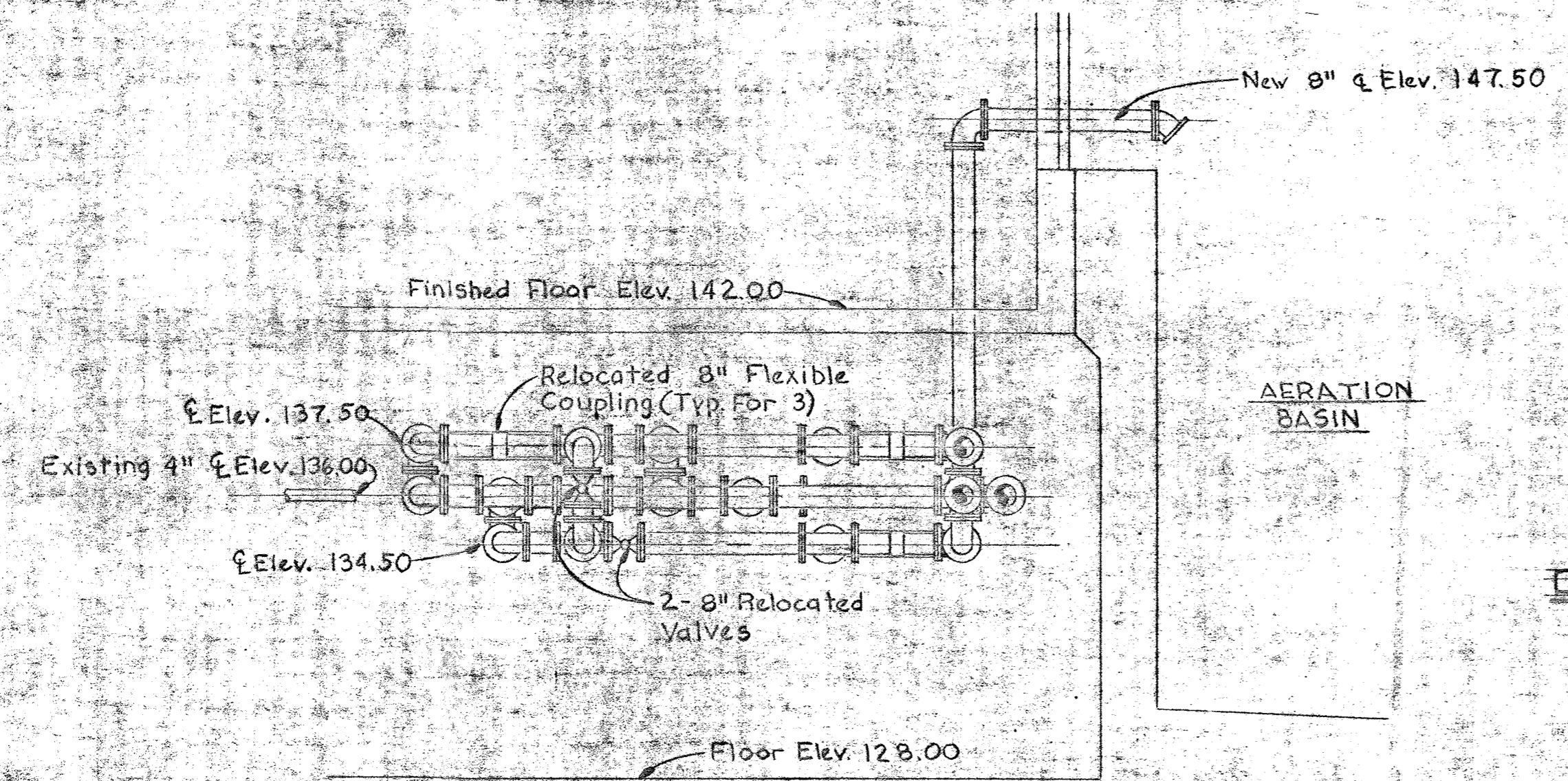


SC #3 & SC #4 SCUM PIT DETAIL
Scale: 1/4"=1'

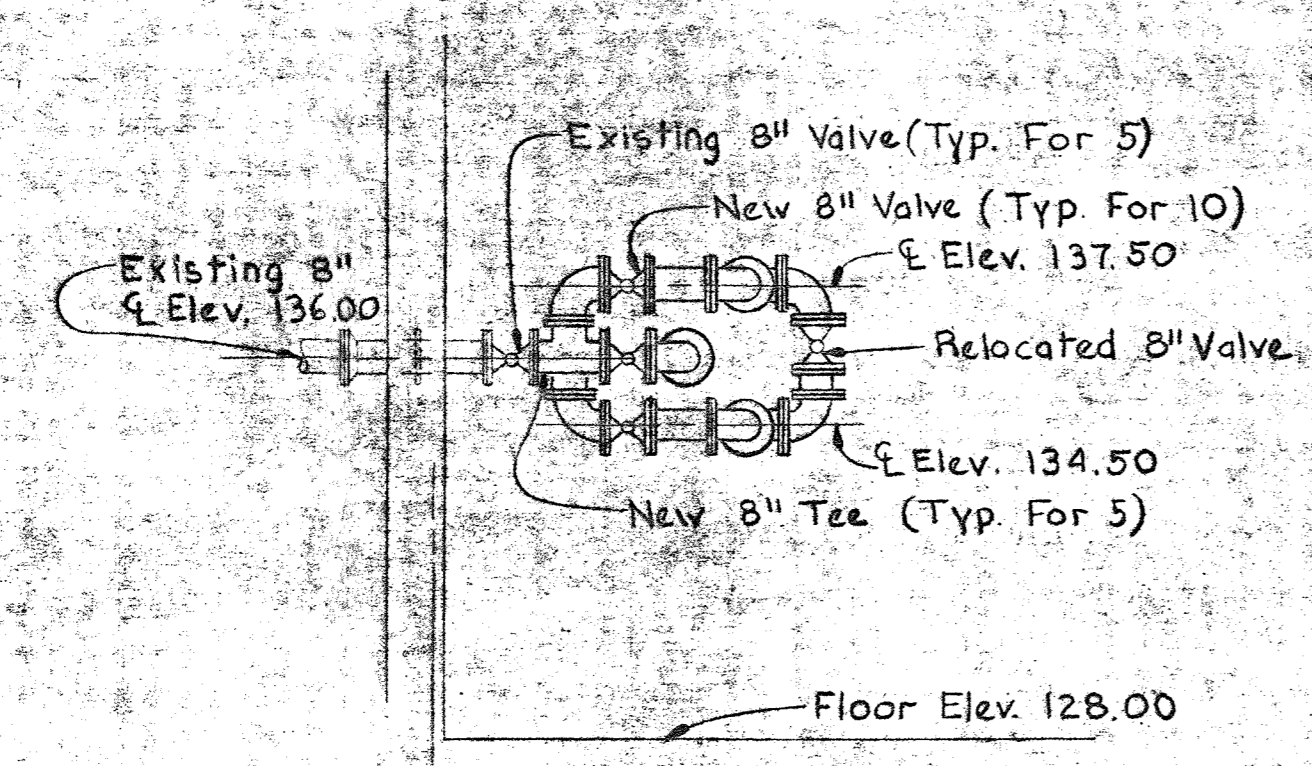
<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p>alg18 DATE</p> <p><i>James M. ...</i> CHIEF, BUREAU OF ENVIRONMENTAL SERVICES</p>	<p>CONTRACT NO. 761-S</p>	<p>MISCELLANEOUS PLANS, SECTIONS AND DETAILS</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.4</p>	<p>DRAWING NO. 34 OF 50</p> <p>SCALE AS SHOWN</p>
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**PART PLAN ELEV 130.00
FLOATATION THICKENER BLDG.**



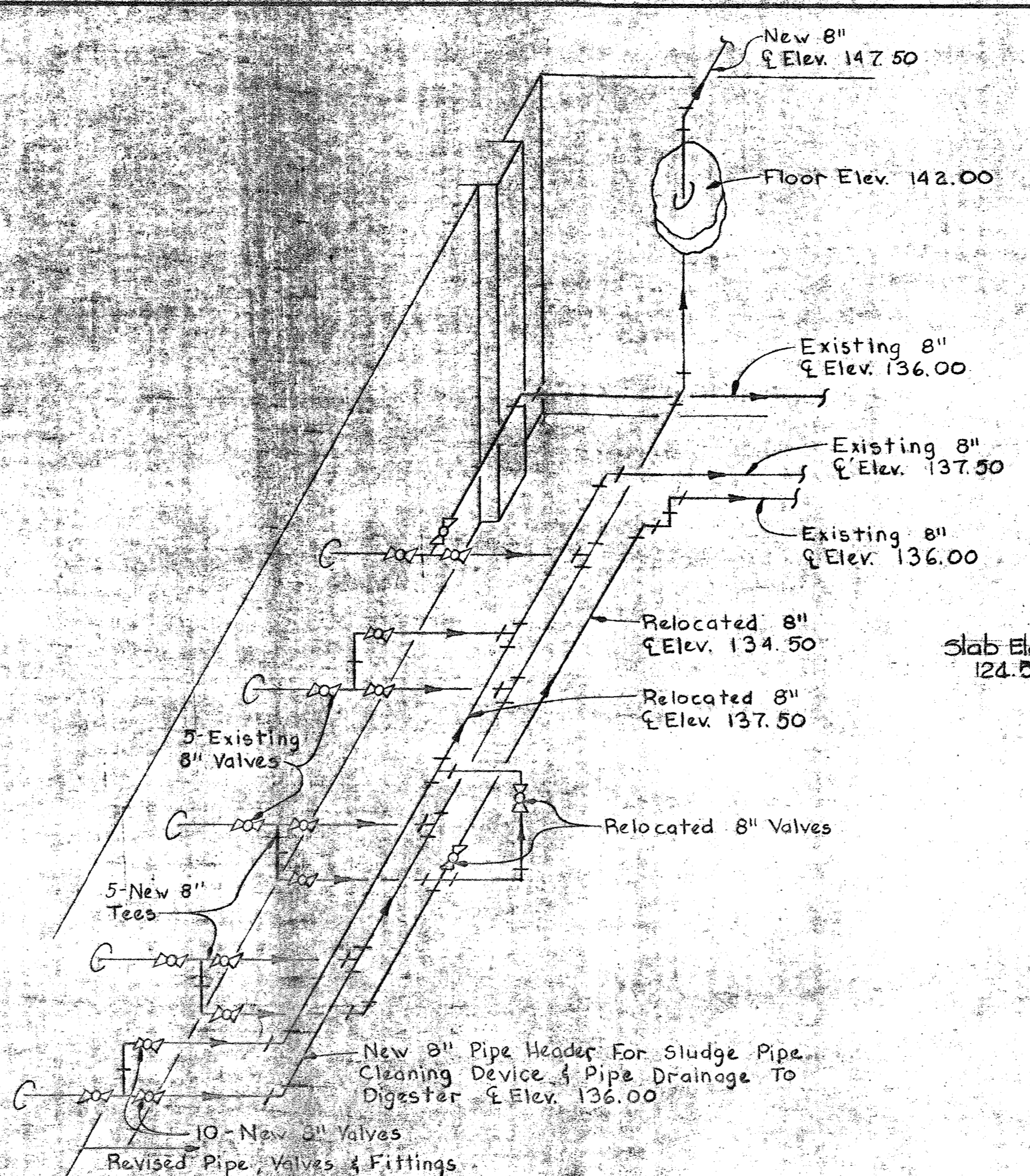
SECTION M8A/M8



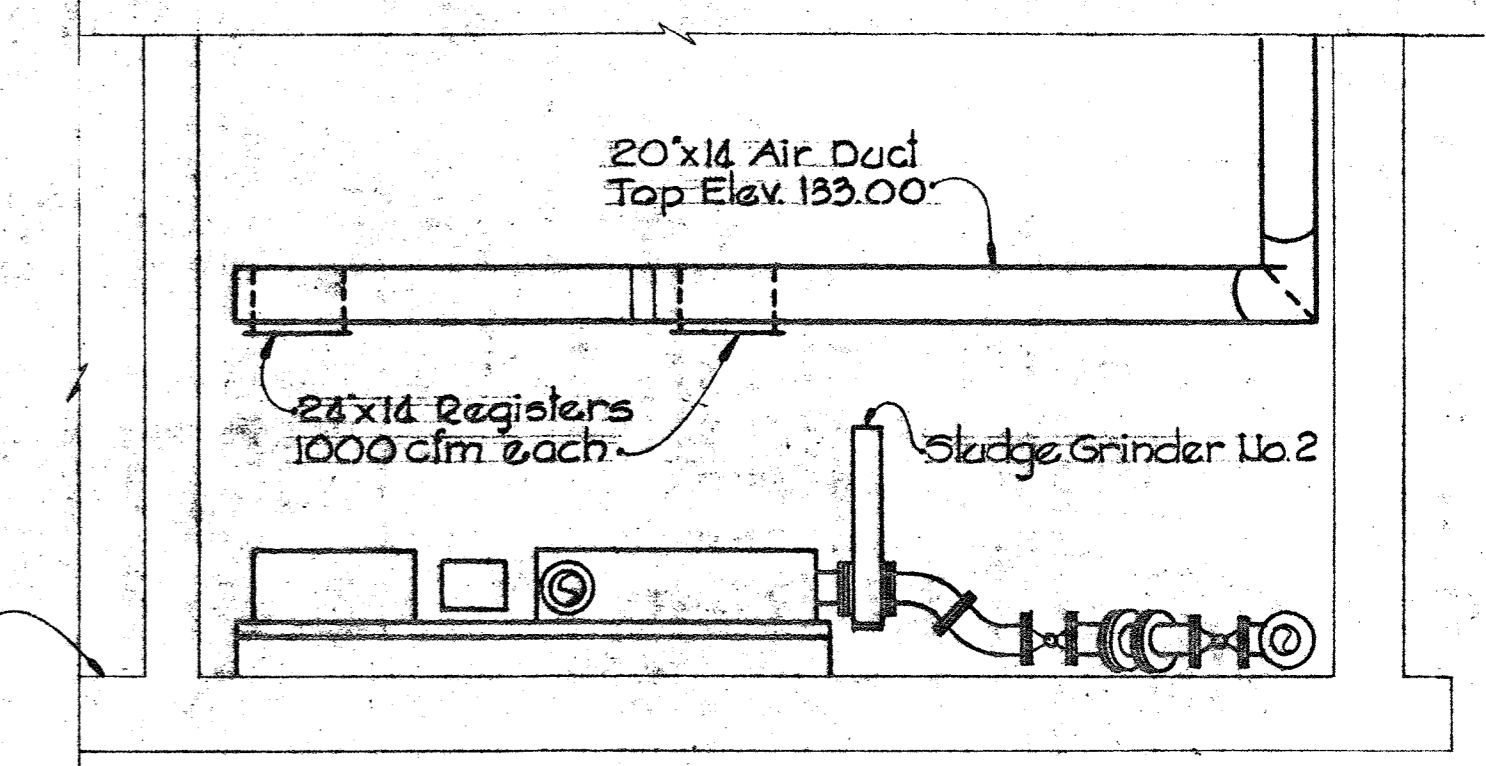
SECTION M8B/M8

**DETAIL-PIPE LINE CLEANING AND FLUSHING DISCHARGE
PIPE REVISIONS**

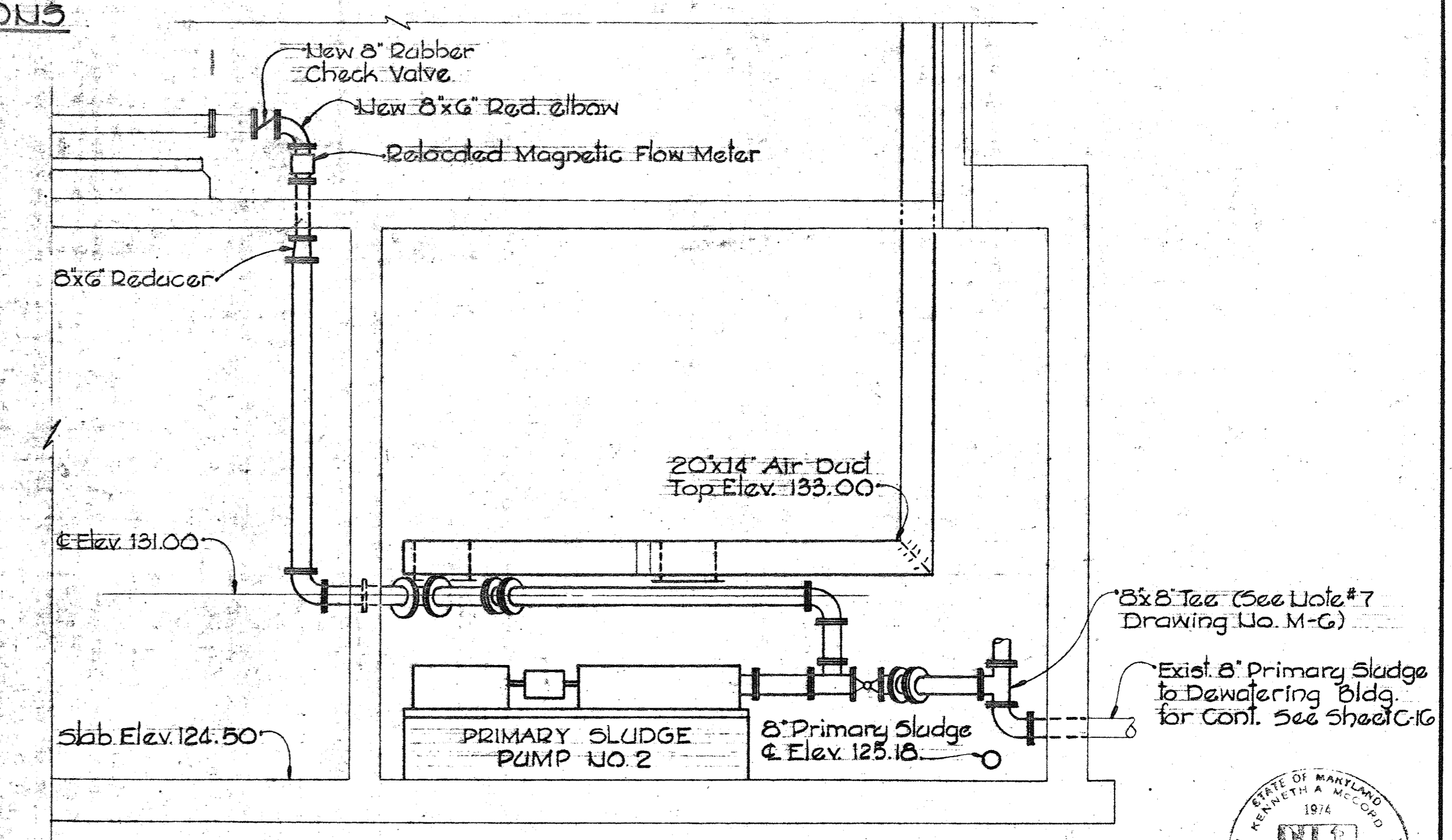
Scale: 1/4" = 1'-0"



**DIAGRAM-PIPE LINE CLEANING AND FLUSHING
DISCHARGE PIPE REVISIONS**

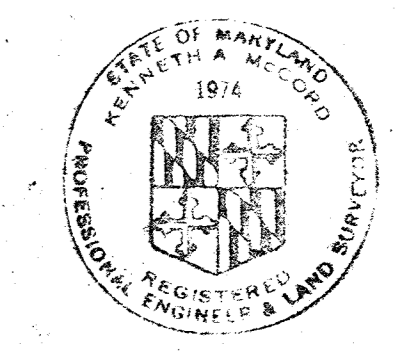


SECTION M8D/MG
Scale: 1/4" = 1'-0"



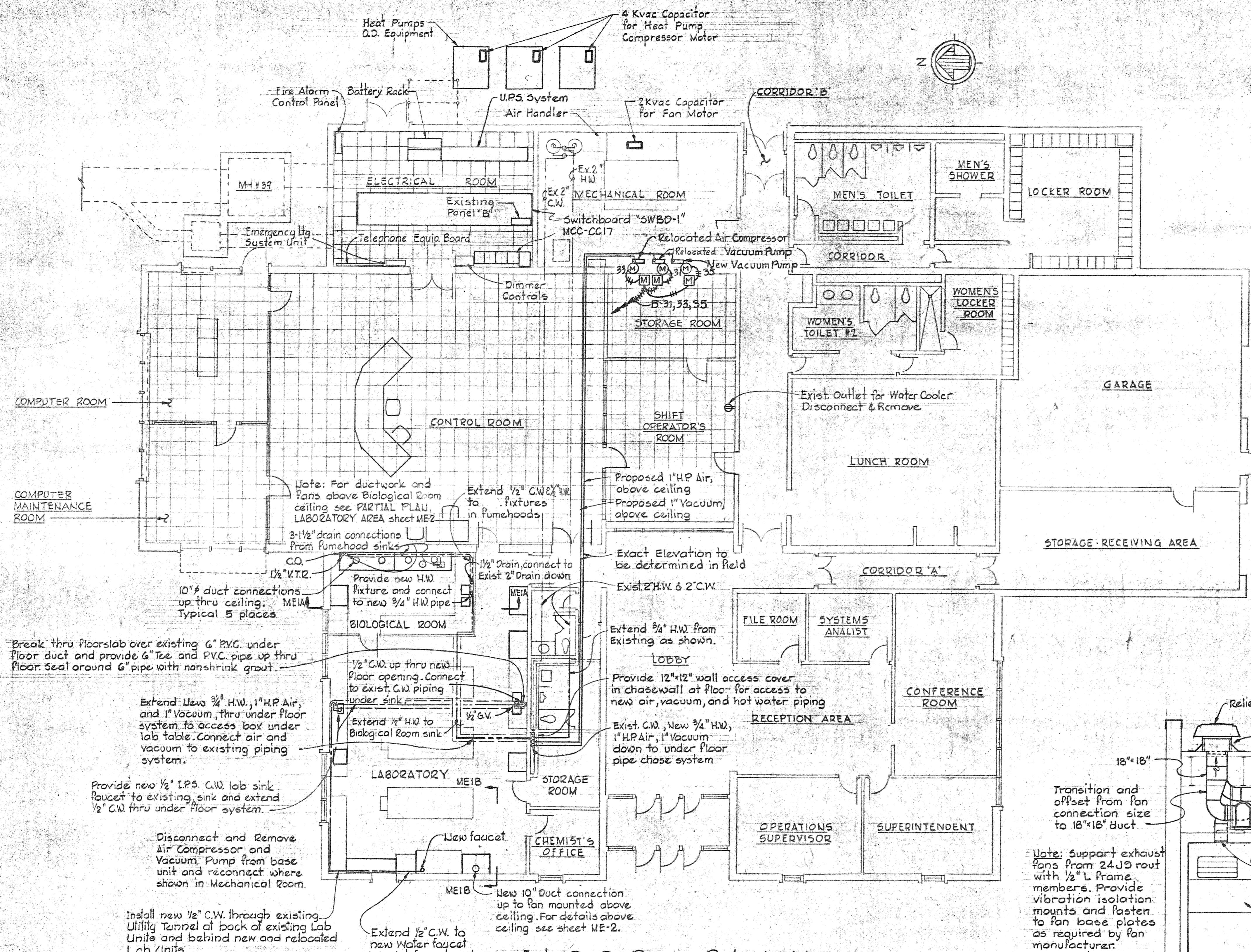
SECTION M8D/MG
Scale: 1/4" = 1'-0"

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: _____ CHIEF: BUREAU OF ENVIRONMENTAL SERVICES	CONTRACT NO. 761-S	MISCELLANEOUS PLANS, SECTIONS AND DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 35 OF 50 SCALE AS SHOWN
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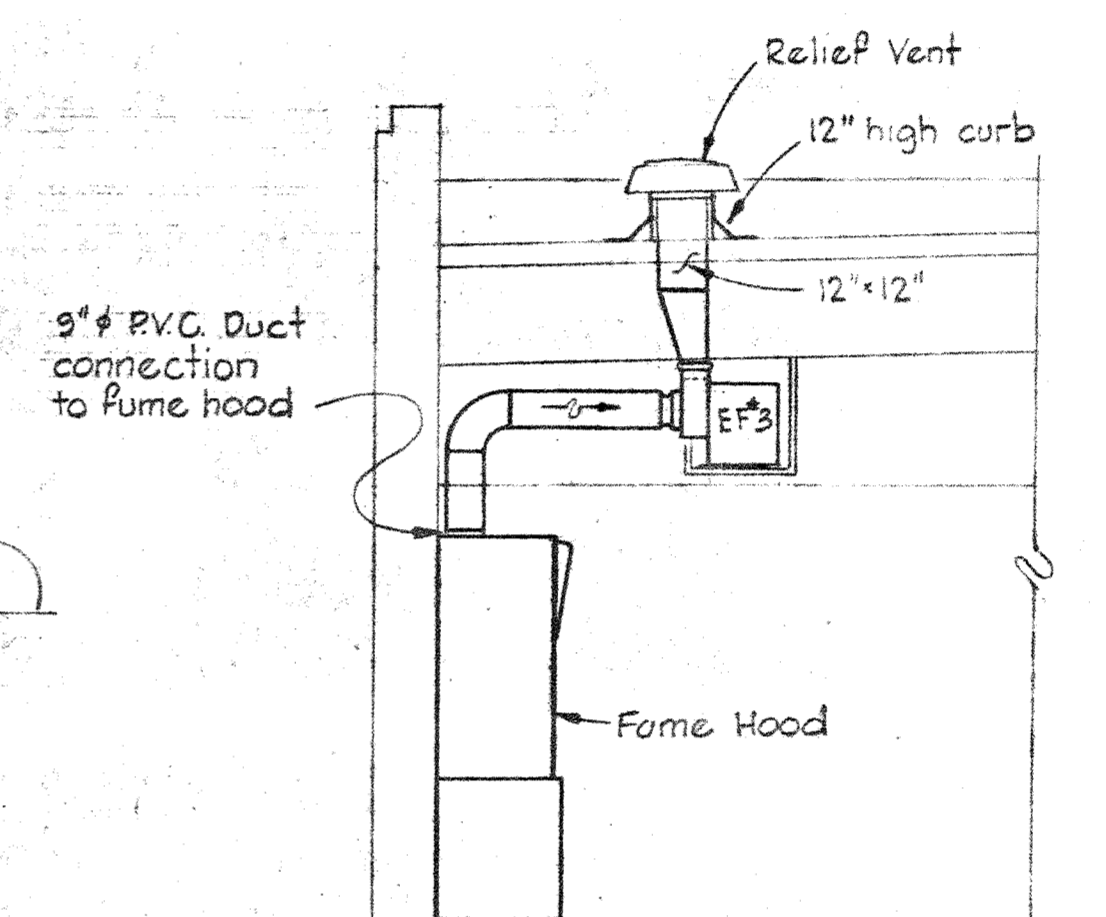


NOTES

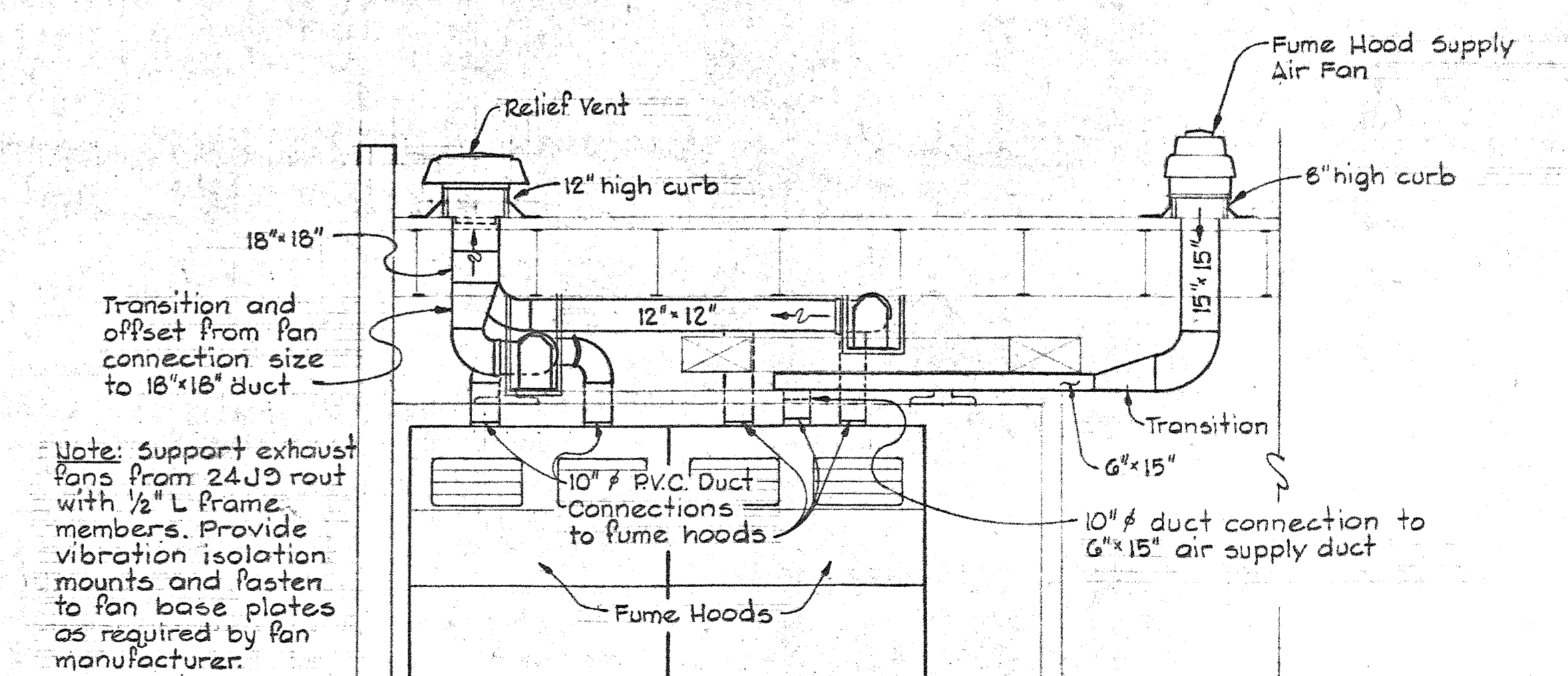
1. For General Electrical Notes and Legend see Sheet E-3.
2. Light line work denotes existing or by others. Dark lines denote work to be provided under this contract.



FLOOR PLAN
Scale: 1/8" = 1'-0"



SECTION ME1B/ME1, ME2
Scale: 1/4" = 1'-0"



SECTION ME1A/ME1, ME2
Scale: 1/4" = 1'-0"

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HOWARD COUNTY, MARYLAND
DATE: 2.11.60
CHIEF BUREAU OF ENVIRONMENTAL SERVICES

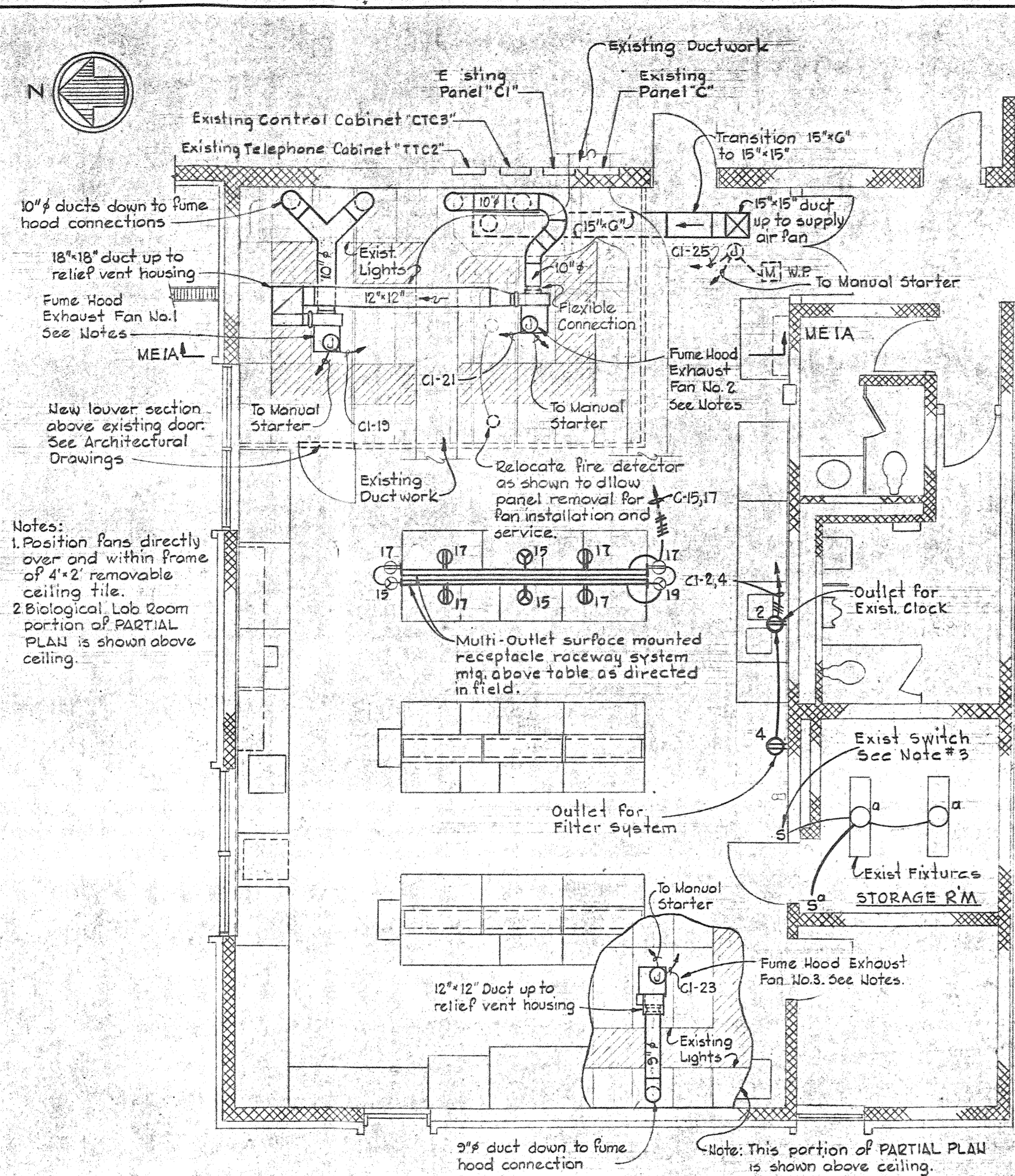
CONTRACT NO. **761-S**

ADMINISTRATION BUILDING
PLAN & DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

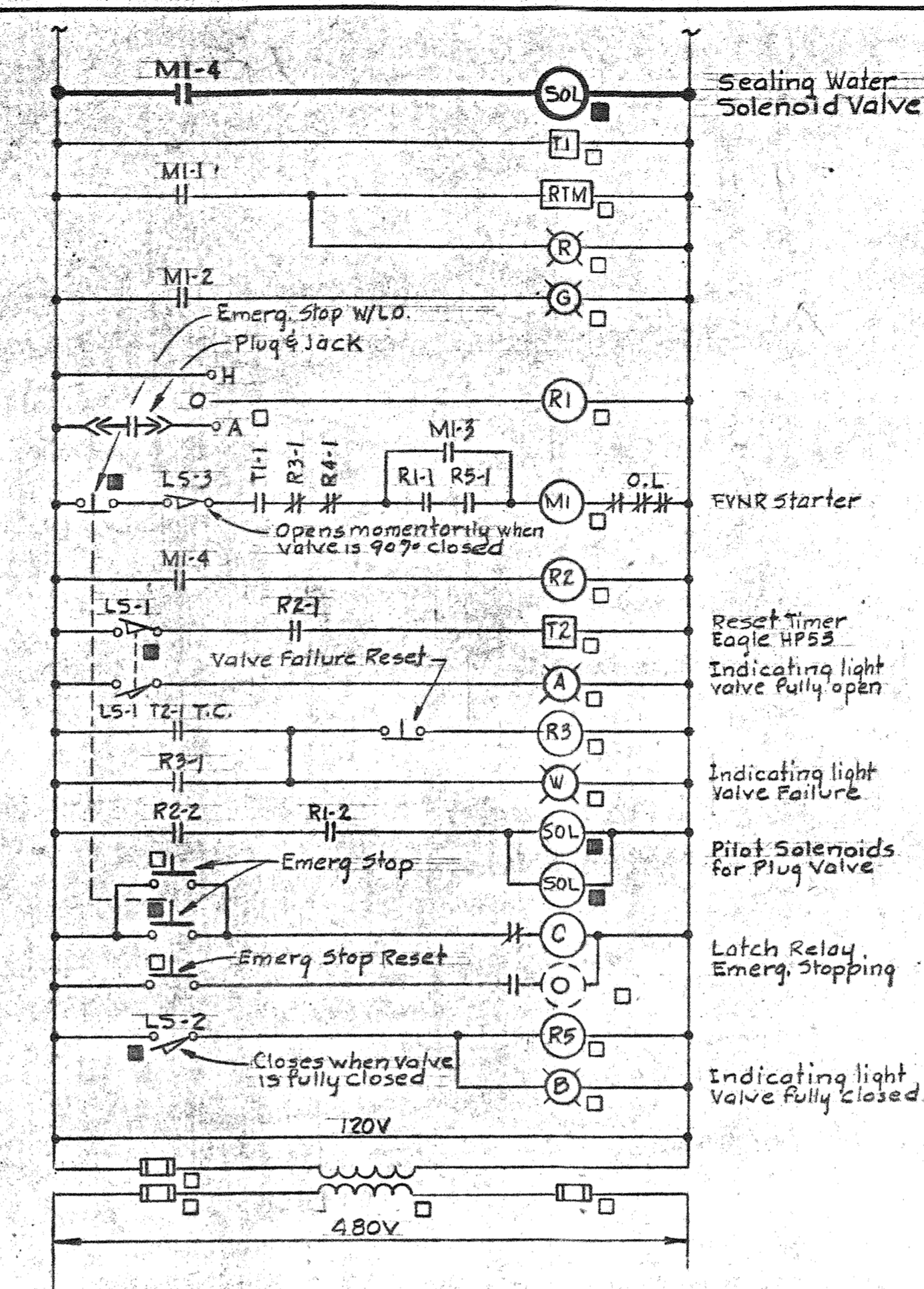
DRAWING NO. **36**
OF **50**
SCALE **AS SHOWN**



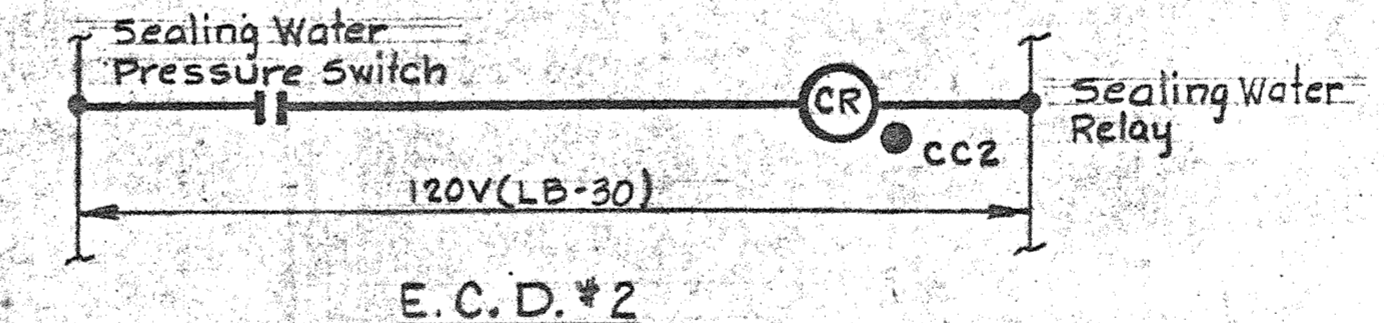


PARTIAL PLAN - LABORATORY AREA
Scale: 1/4"=1'-0"

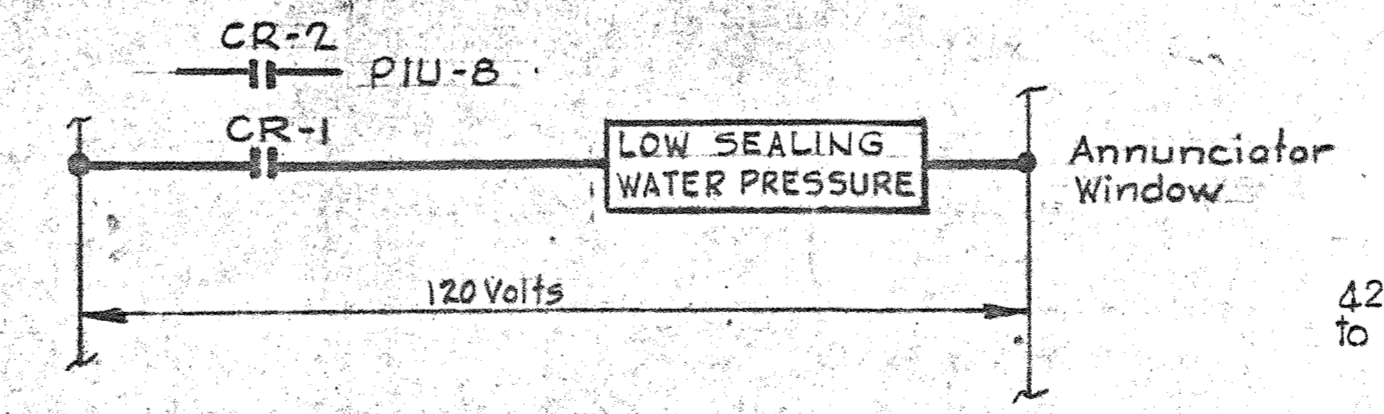
FAN SCHEDULE					
I. D.	CAPACITY c.f.m.	S.P.	O.V. max.	HORSEPOWER	R.R.M.
E.F. No.1	1150	.60	1800	1/3	360
E.F. No.2	1150	.60	1800	1/3	360
E.F. No.3	720	.60	2200	1/4	1525
S.A.F.	575	.25	1600	1/4	1140



REVISED E.C.D. DIAGRAM FOR EXISTING PUMPING UNIT No.1 THRU No.6



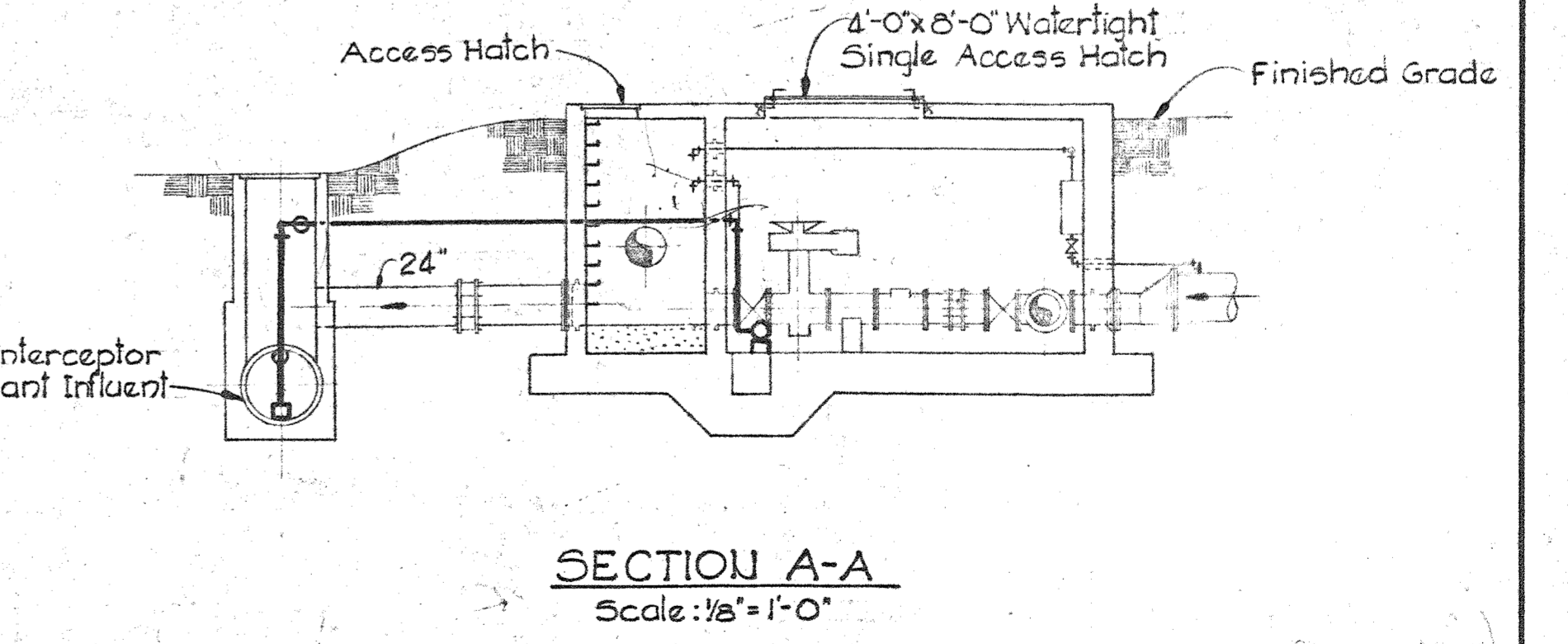
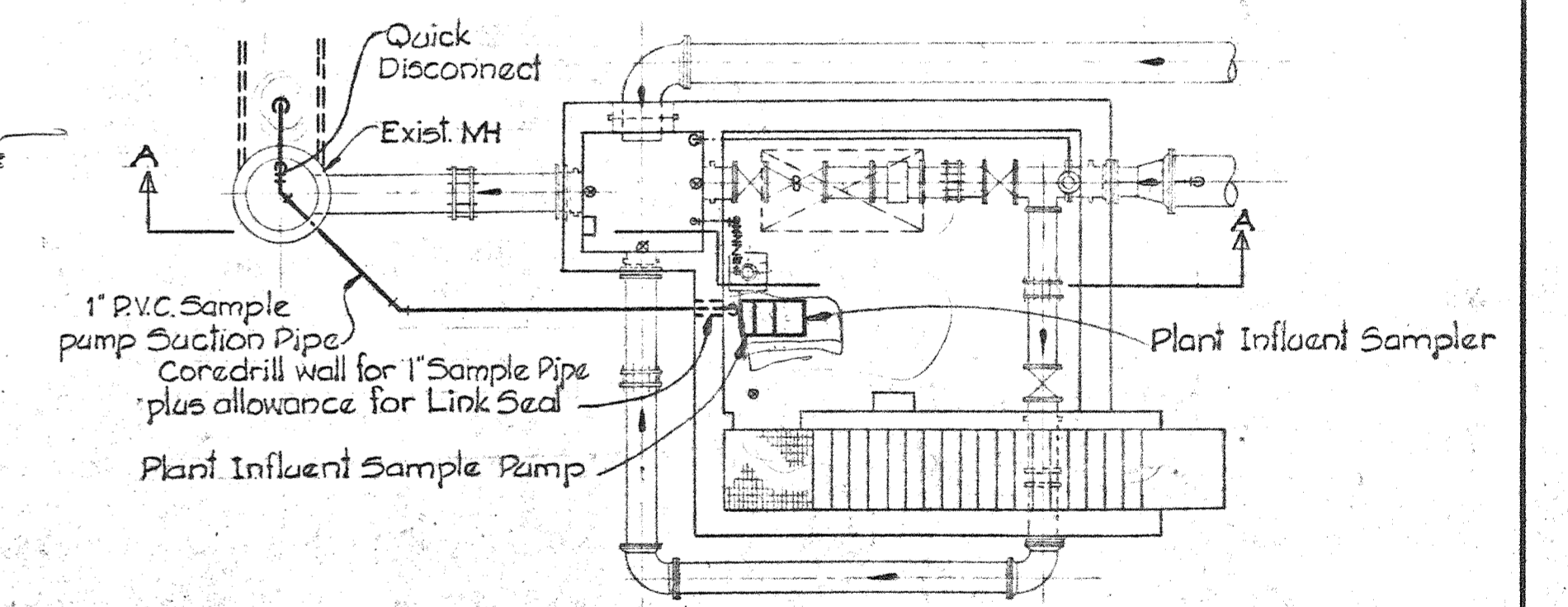
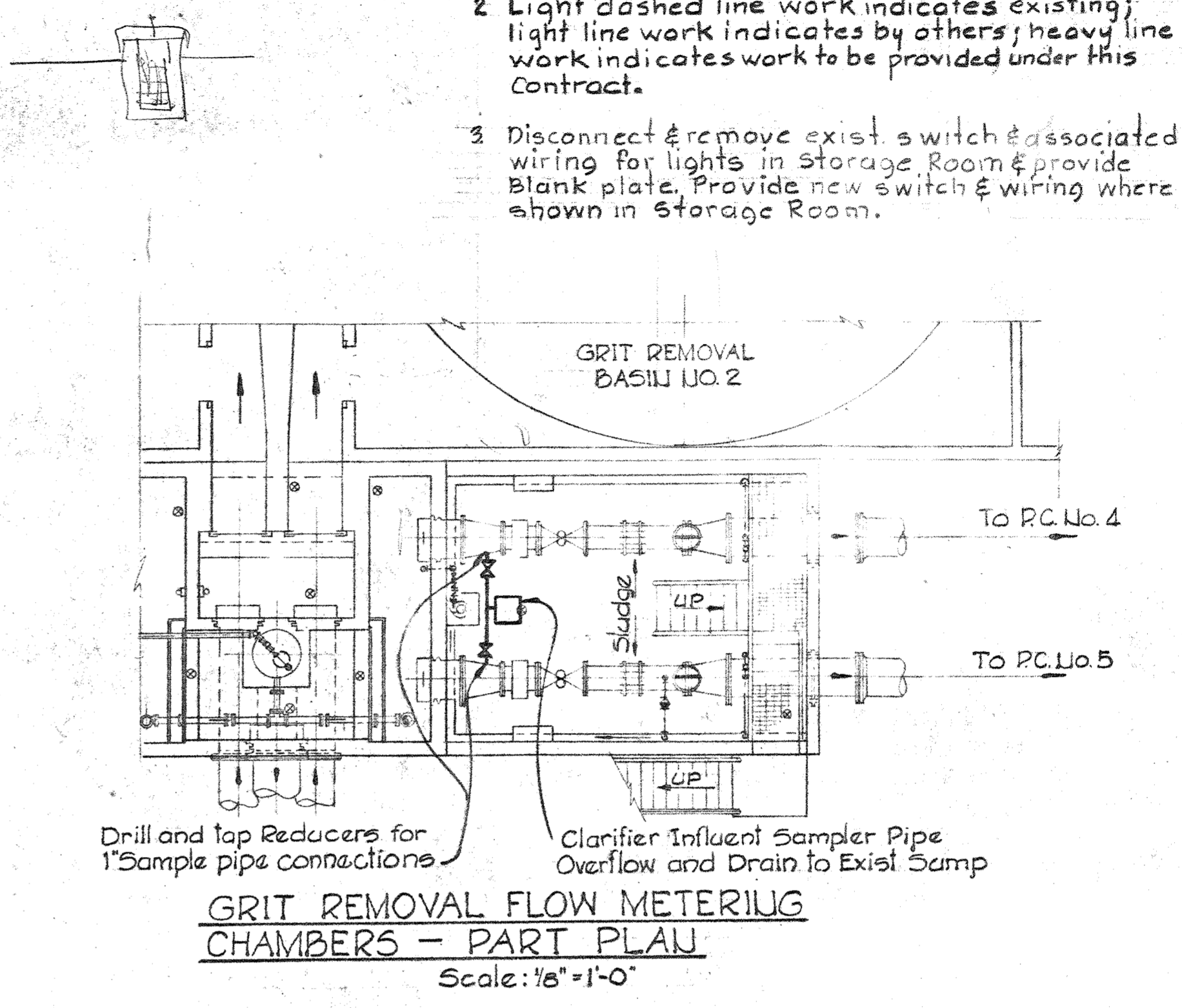
E.C.D. #2 SEALING WATER FOR SEWAGE PUMPS #1 THRU #6



E.C.D. #3 ADDITIONS TO EXISTING ALARM ANNUNCIATOR

NOTES:

- For General Electrical Notes & Legend, See Sheet E-3.
- Light dashed line work indicates existing; light line work indicates by others; heavy line work indicates work to be provided under this Contract.
- Disconnect & remove exist. switch & associated wiring for lights in Storage Room & provide Blank plate. Provide new switch & wiring where shown in Storage Room.



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2/16/80 DATE

James M. ... CHIEF - BUREAU OF ENVIRONMENTAL SERVICES

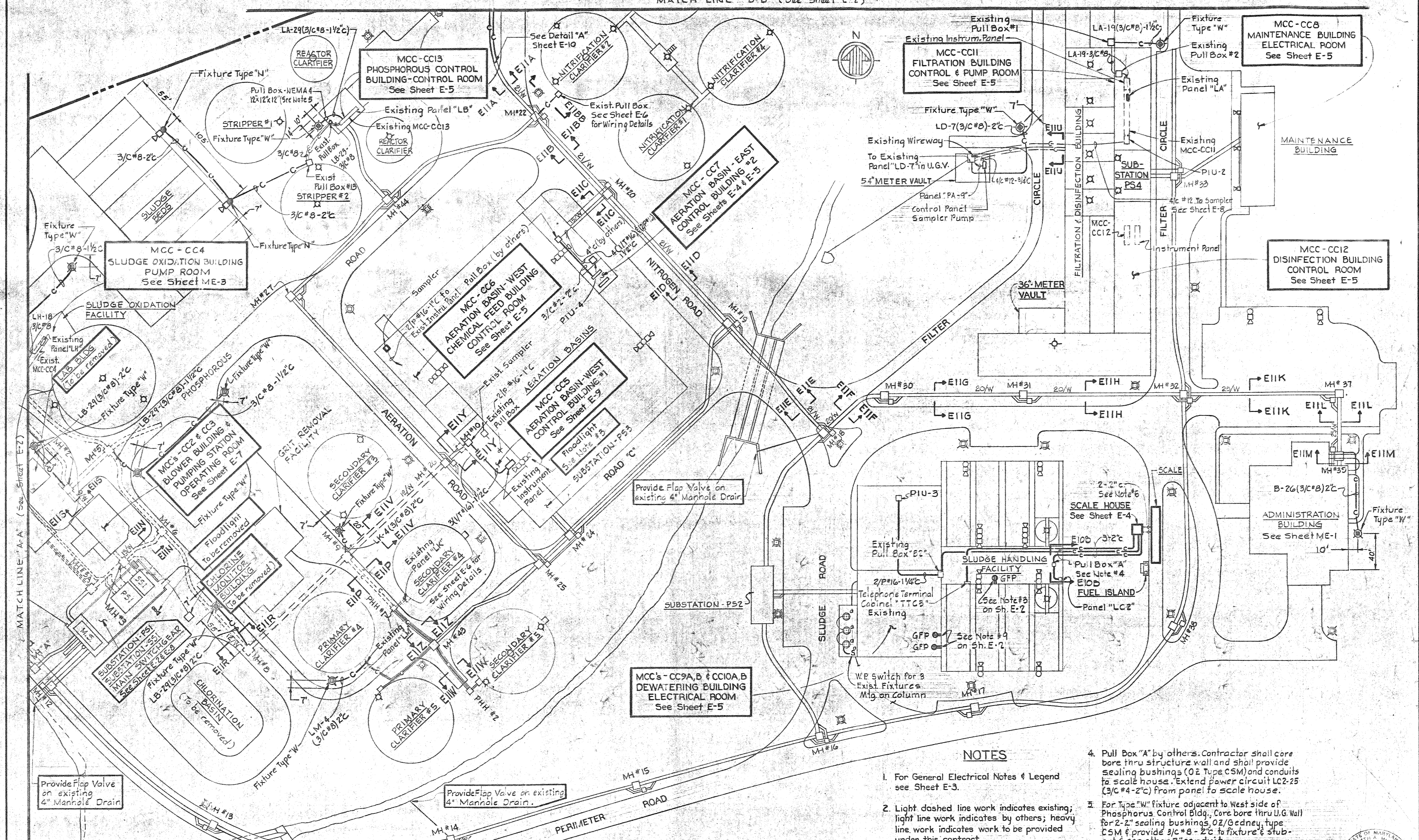
CONTRACT NO. 761-S

MISCELLANEOUS
PLANS & DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 37 OF 50
SCALE AS SHOWN

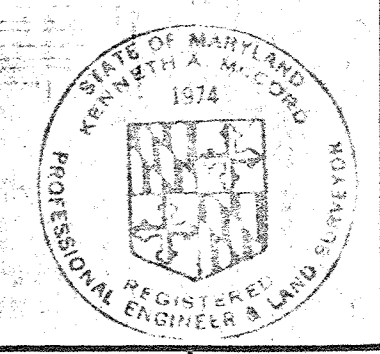
MATCH LINE 'B-B' (See Sheet E-2)



SITE PLAN
Scale: 1"=50'

NOTES

1. For General Electrical Notes & Legend see Sheet E-3.
2. Light dashed line work indicates existing; light line work indicates by others; heavy line work indicates work to be provided under this contract.
3. Contractor shall disconnect and turn over to the county the existing mercury floodlights; provide and connect the specified fixtures on the existing poles.
4. Pull Box "A" by others. Contractor shall core bore thru structure wall and shall provide sealing bushings (OZ Type CSM) and conduits to scale house. Extend power circuit LC2-25 (3/C #4-2"C) from panel to scale house.
5. For Type "W" fixture adjacent to West side of Phosphorous Control Bldg., Core bore thru U.G. Wall for 2-2" sealing bushings, OZ/Gedney type CSM & provide 3/C #8-2"C to fixture & stub-out & cap other 2" conduit.
6. Location of Power & Signal conduits to scale shall be coordinated with scale manufacturer. Provide wall entrance seals in scale pit wall for 2" conduits.



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CHIEF BUREAU OF ENVIRONMENTAL SERVICES

CONTRACT NO. 761-S

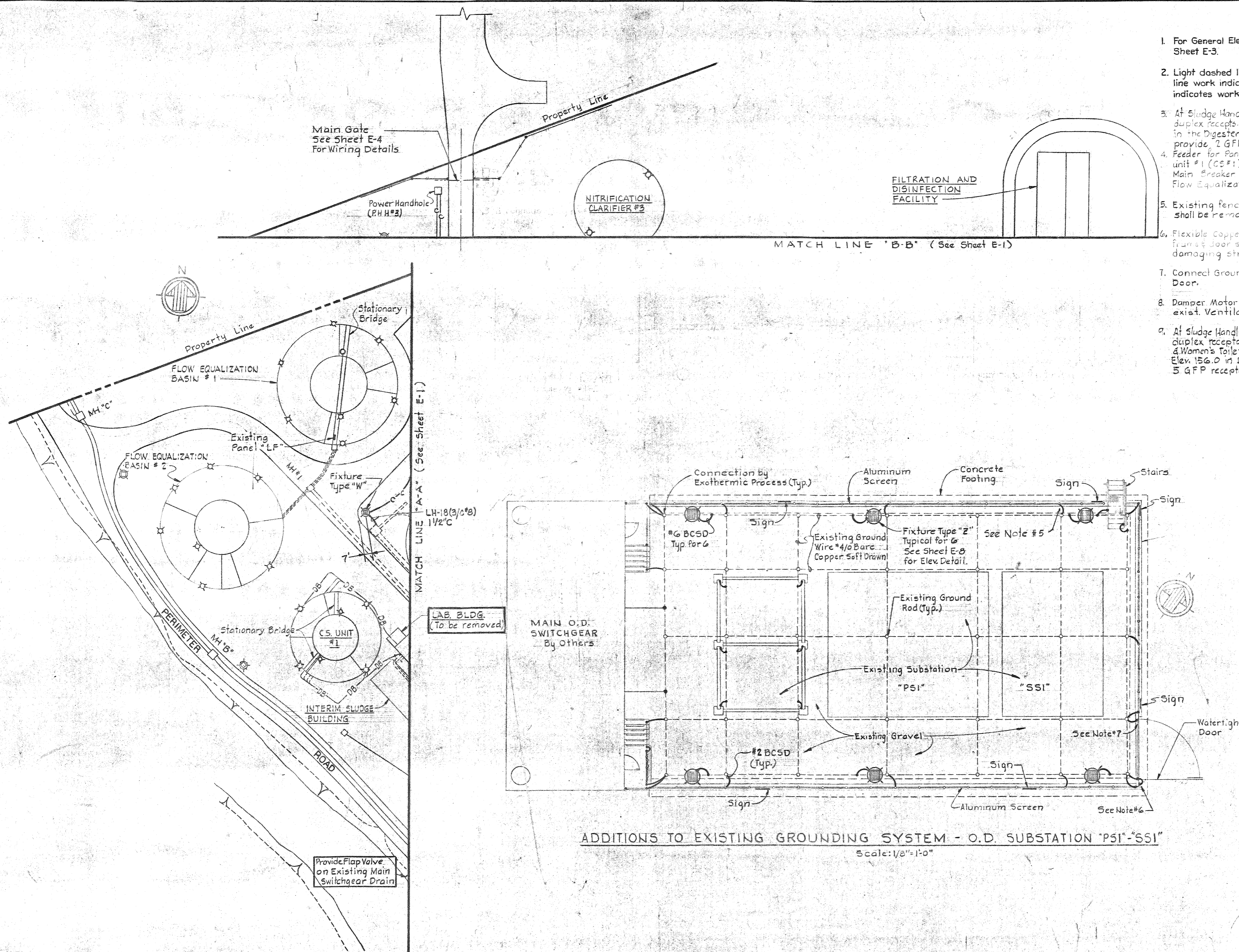
SITE PLAN
AND DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 38
OF 50
SCALE AS SHOWN

NOTES

1. For General Electrical Notes and Legend, see Sheet E-3.
2. Light dashed line work indicates existing; light line work indicates by others; heavy line work indicates work to be provided under this contract.
3. At Sludge Handling Facility, disconnect & remove 5 duplex recepts. in Men's Toilet & Locker Rm #1 located in the Digester Pipe Gallery Area at Elev. 156.0 & provide 7 GFP receptacles.
4. Feeder for Panel "C" on existing contact stabilization unit #1 (CS#1) shall extend from line side of Main Breaker in existing panel "LF" on existing Flow Equalization Basin #1 (CS#3).
5. Existing fence around Substation "PS1 & SSI" shall be removed.
6. Flexible Copper Braids to be mounted between frame & door so that it will not be subject to damaging strain when gate is fully open.
7. Connect Ground Wire to frame of Watertight Door.
8. Damper Motor "B" shall be reconnected to the exist. Ventilation System for the Pump Room.
9. At Sludge Handling Facility disconnect & remove 5 duplex receptacles in Men's Toilet & Locker Rm #1 & Women's Toilet & Locker Rm, both located at Elev. 156.0 in Dewatering Bldg. and provide 5 GFP receptacles.



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HOWARD COUNTY, MARYLAND

CONTRACT NO. 761-S

SITE PLAN
AND DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION. NO. 4

DRAWING
NO. 39
OF 50

SCALE
AS
SHOWN

SHEET E-2

INTERIOR

- Outlet Incandescent - Ceiling, Recessed, Wall
- ⊙ Outlet Incandescent - Emergency - Ceiling, Wall
- ⊙ Outlet Clock - Single Face - Ceiling, Wall
- ⊙ Outlet Clock - 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 Mercury - Ceiling, Wall
- ⊙ Outlet Duplex Convenience
- ⊙ Outlet Special Purpose, Floor
- ⊙ Outlet 20A, 250V Receptacle - Polarized
- ⊙ Outlet 30A, 250V Receptacle & Plug - Polarized
- ⊙ Outlet 50A, 250V Receptacle - Polarized
- Yw Yd Yg Yb Outlet Telephone - Wall, Desk, Extension
- ⊙ Outlet Intercommunication
- ⊙ Junction Box
- EXP WP Explosion-proof, Weatherproof, where indicated
- S S2 S3 S4 S5 S6 Switch - Single Pole, Double Pole, with Pilot Light
- S3 S4 Switch - Three Way, Four Way
- S5 S6 Switch - Key Operated, Door Operated
- SMC SRC Switch - Momentary Contact, Remote Control
- C-1 Contactor - Number as indicated
- ⊙ Thermostat - Heating, Cooling, Freeze-stat
- ⊙ Aquastat - Generator
- ⊙ Unit Heater
- ⊙ Motor - Constant Speed, Variable Speed
- M Starter - Manual, Combination
- S Starter - Magnetic (FVNR), Magnetic (FVR)
- 2S Starter - Magnetic [FVNR - 2S (Two Speed)]
- ⊙ Disconnect Switch - Fused, Unfused
- ⊙ Selector Switch - Two Position
- ⊙ Secondary Motor Controls
- ⊙ Pull Box - Size as indicated
- ⊙ Telemetering Transmitter - Number as Noted
- Lighting Panel - Power Panel
- Telephone or Control Wiring 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
- T- Conduit - Telephone
- PT- Conduit - Private Telephone
- FA- Conduit - Fire Alarm
- C- Conduit - Communication
- In Wall, Slab or Ceiling
- Stub Up, Stub Down
- Conduit Seal
- ⊙ Disconnect - Circuit Breaker
- ⊙ Outlet - Incandescent - Floodlight
- ⊙ Pushbutton Station - One, Two & Three Pushbutton
- ⊙ Horn - Bell
- CC17a-6 Motor Control Center Wire & Cable Run Number
- SI-1 Switchgear Wire & Cable Run Number
- SSI-1 Unit Substation Wire & Cable Run Number
- CC5 Control Cable Wire & Cable Run Number
- ⊙ Fire Detector
- ⊙ Fire Alarm Striking Station
- ⊙ Fire Alarm Bell
- ⊙ End of line Resistor
- ⊙ Pressure Switch
- ⊙ Hydraulic Valve & Limit Switches
- ⊙ Dimmer - type as specified
- GFP Ground Fault Protected
- I/P Shielded Pair Wires, Number & Size as indicated.
- I/T Shielded Triple Wires, Number & Size as indicated.

ONE LINE/ELEMENTARY

- ⊙ Molded 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
- ⊙ Pothead
- ⊙ Pushbutton
- ⊙ Pressure Switch
- ⊙ Float Switch
- ⊙ Flow Switch
- ⊙ Limit Switch
- ⊙ Thermostat
- ⊙ Disconnect Link
- ⊙ Lightning Arrester
- ⊙ Incoming Line
- ⊙ Outgoing Line
- ⊙ Tie Line
- ⊙ Capacitor - size as shown
- ⊙ Rectifier
- ⊙ Mechanical Interlock
- ⊙ Electrical Interlock
- ⊙ Key Interlock
- ⊙ Overcurrent Trip Thermal Type
- ⊙ Relay - Instantaneous Overcurrent, Time Overcurrent
- ⊙ A.C. Power Circuit Breaker
- ⊙ Motor (three phase) - Constant Speed, Variable Speed
- ⊙ Starter - Magnetic (FVNR), Magnetic (FVR), Magnetic [FVNR - 2S (Two Speed)]
- ⊙ Running Time Meter
- ⊙ Indicating Light - color as indicated by letter
- ⊙ Solenoid - Motor (single phase)

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.
7. All Elementary Control Diagrams are shown de-energized.
8. For Electrical Work in Scale Pit see sheet 3-1
9. For Electrical Work in Dewatering Bldg, see sheet M-24N-3

LOCATION SYMBOLS FOR ELEMENTARY CONTROL DIAGRAMS

- ⊙ cc1s Device located in respective Motor Control Center
- ⊙ Device located at respective unit
- ⊙ Device located at respective motor
- ⊙ Device located in Starter
- ⊙ Device located in Switchgear
- ⊙ Device located in Grinder Controls
- ⊙ pc5 Device located in Instr. Panel Phosphorus Control Bldg
- ⊙ Device located in Sludge Pumps Control Center
- ⊙ Device located in Station Thick Control Panel & Bubble Cabinet
- ⊙ Device located in Instrumentation and Control Panel
- ⊙ Device located in Control Panel for V.S. Pumping Units

MOTOR CONTROL CENTERS, POWER CENTERS & UNIT SUBSTATIONS

- AUXILIARY DESCRIPTION
- a Red & Green Indicating Lights
 - b Third Overload Relay
 - c Running Time Meter
 - d Hand-Off, Automatic Selector Switch
 - e Start-Stop Pushbutton Station
 - f Key Interlock
 - g 480-120 Volt Control Transformer
 - h Slow-Fast-Stop Pushbutton Station
 - j Forward-Reverse-Stop Pushbutton Station
 - k Open-Close Control Switch

UNDERGROUND

- 4/W Ductbank - number of ducts as indicated
- 2" C Existing Conduit - size as indicated
- DB 2" Existing Direct Buried Cable - number and size as indicated
- DB 2" Existing Direct Buried Cable - number and size as indicated
- C Conduit - size as indicated
- ⊙ ⊗ Crossed duct in ductbank section denotes existing cables or cables by others
- 4/W Existing Ductbank - number of ducts as indicated

EXTERIOR

- ⊙ HID 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 - 3φ - number & size of wires as indicated
- ⊙ Service Prop - number & size of wires as indicated
- ⊙ Weatherhead & Rack
- ⊙ HID Floodlight - Pole Mounted
- ⊙ Existing Floodlight - Pole Mounted
- ⊙ Existing HID Area Light

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

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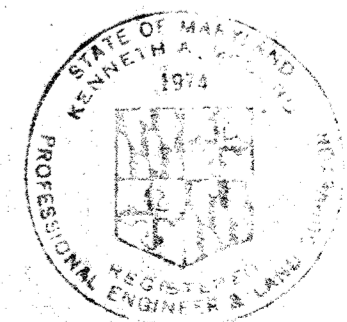
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE 2/15/80
CHIEF BUREAU OF ENVIRONMENTAL SERVICES

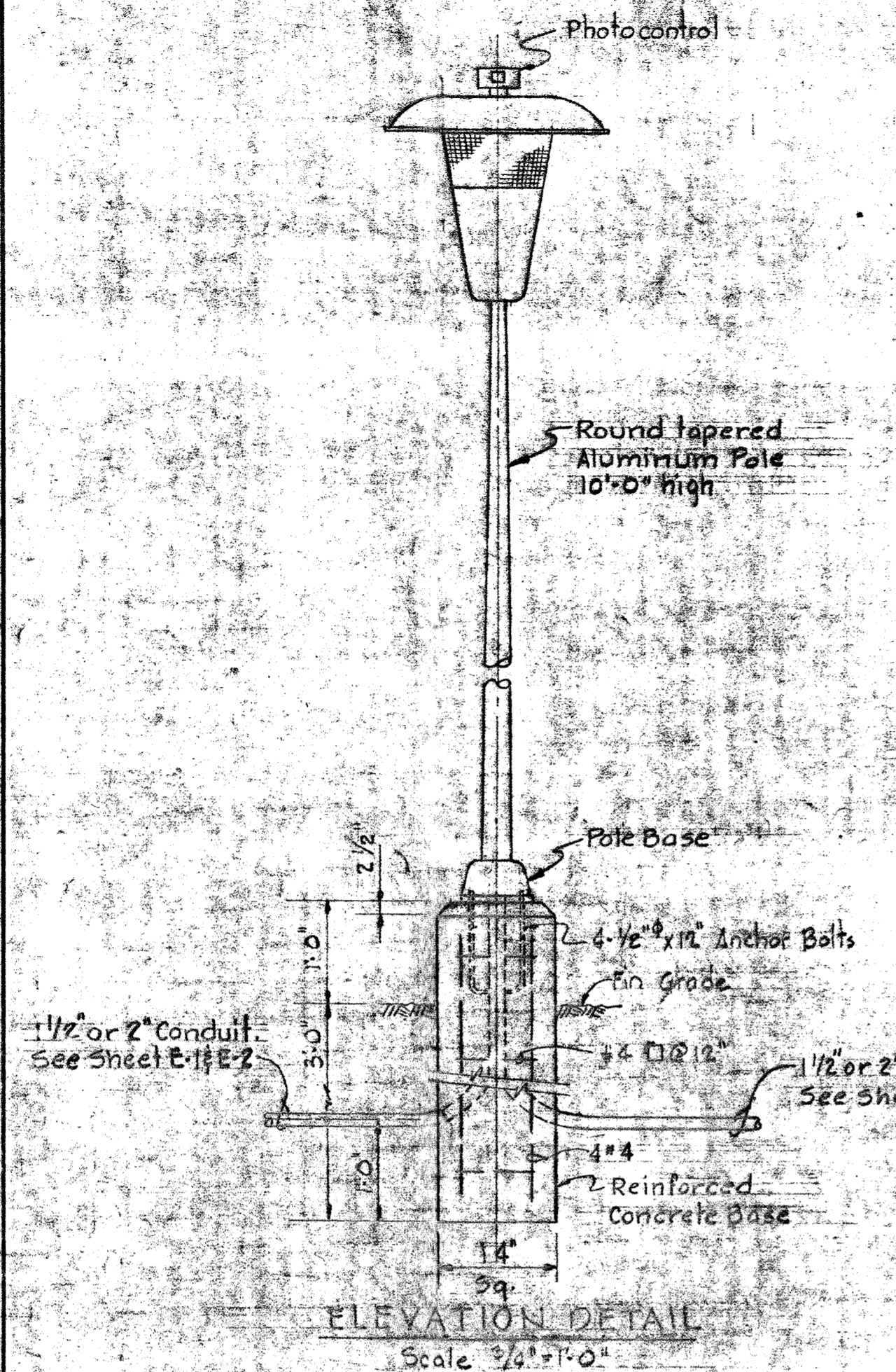
CONTRACT NO. 761-S

GENERAL ELECTRICAL NOTES AND LEGEND

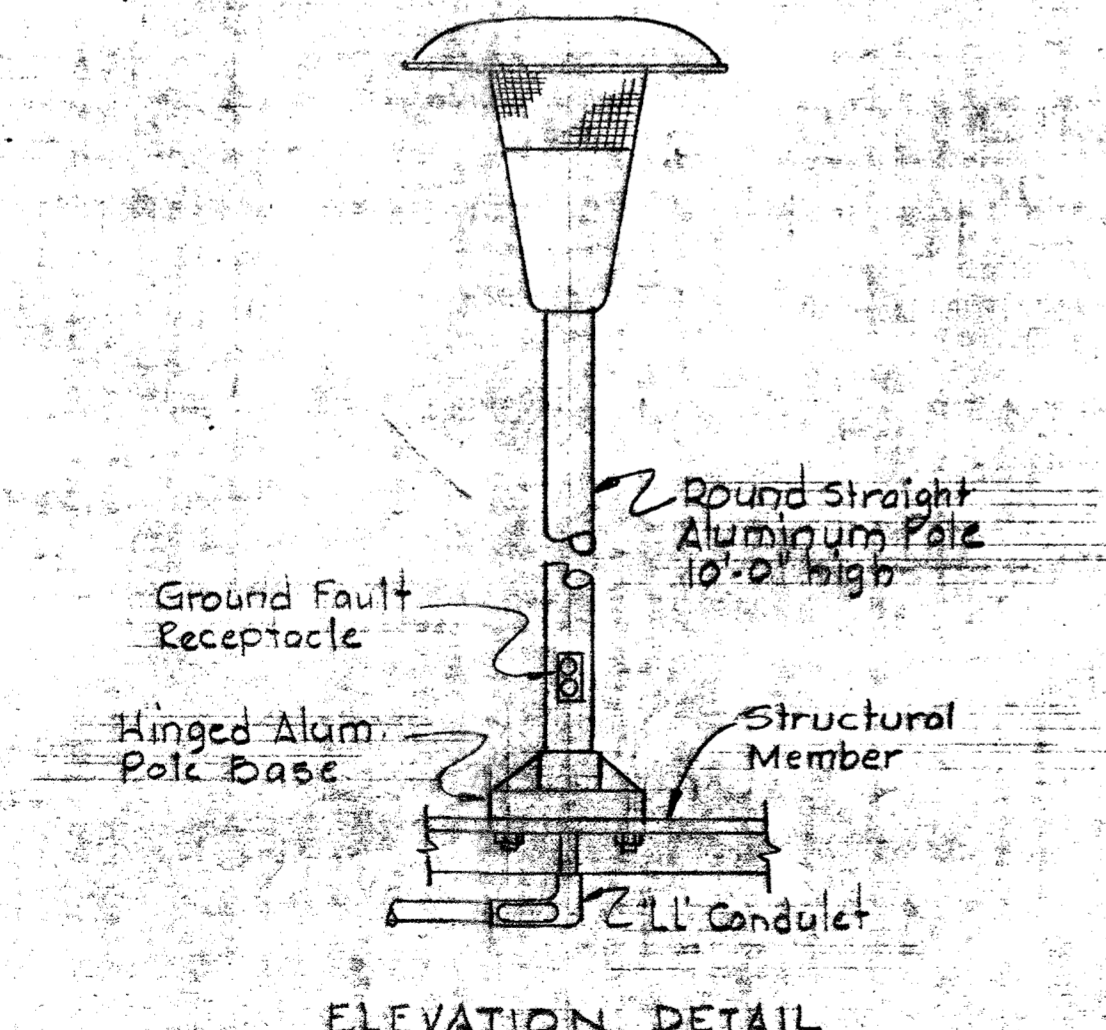
SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 40 OF 50
SCALE AS SHOWN

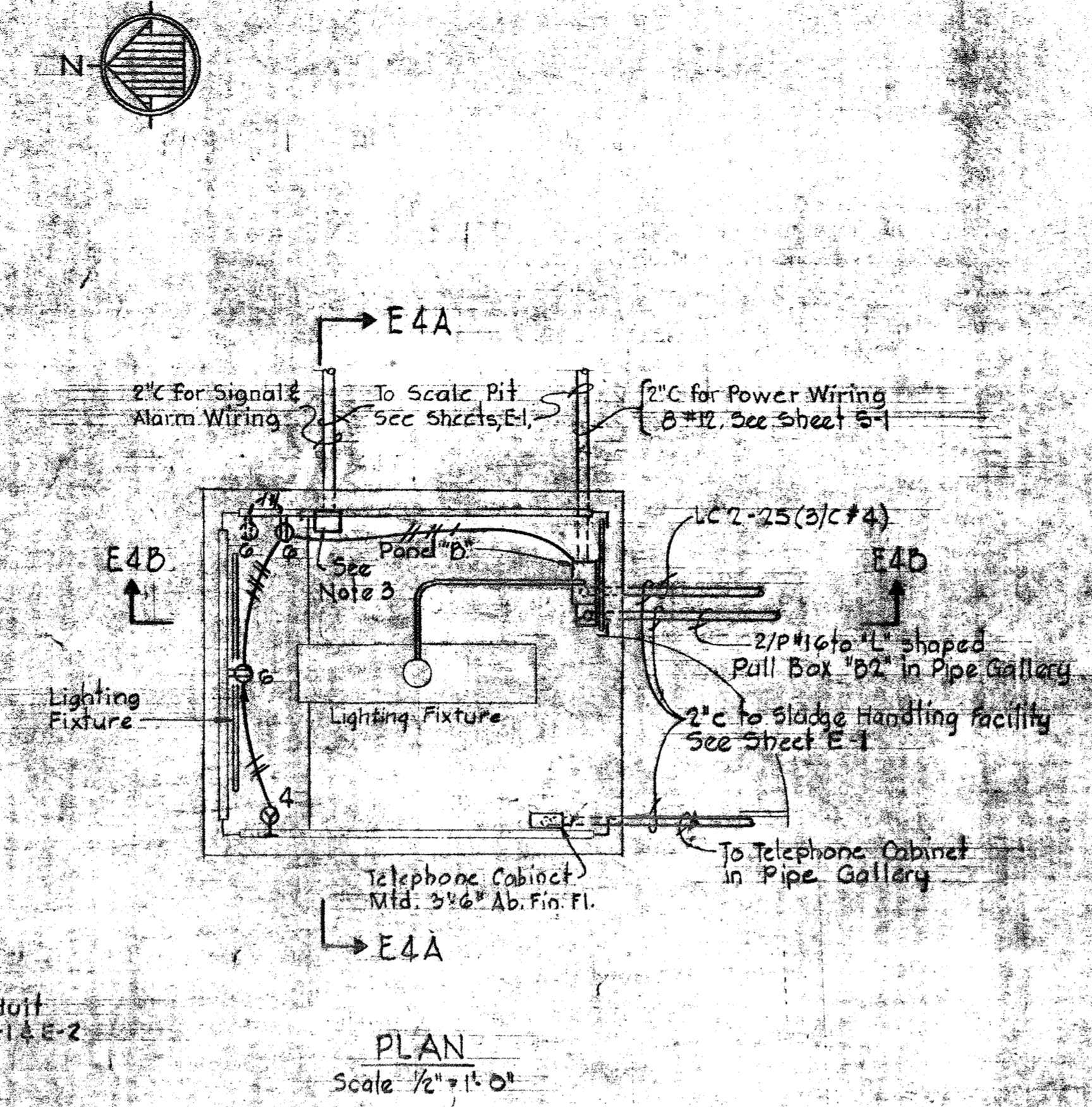




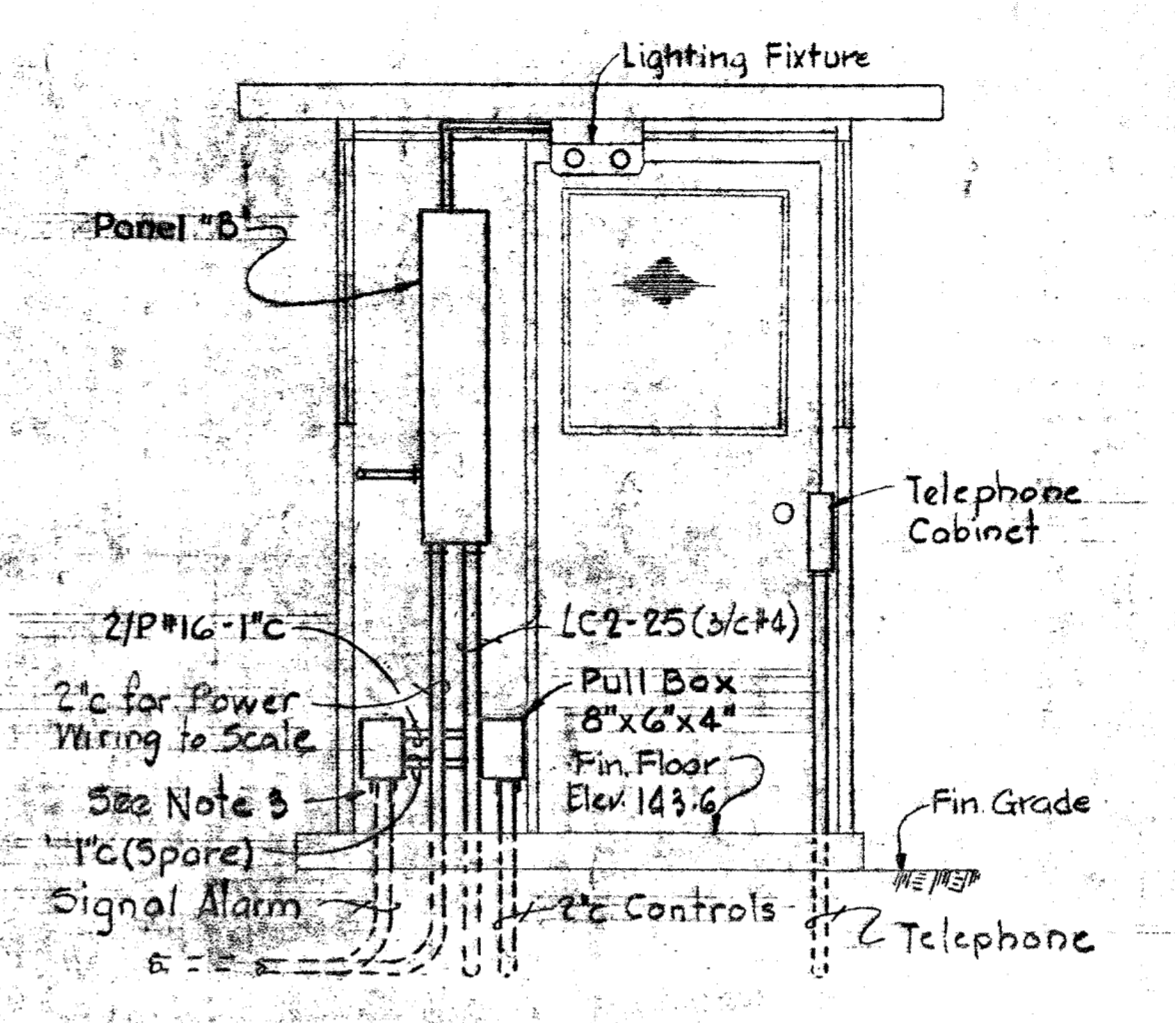
ROADWAY LIGHTING FIXTURE TYPE "W"
(TYPICAL - See Sheet E-1 & E-2)



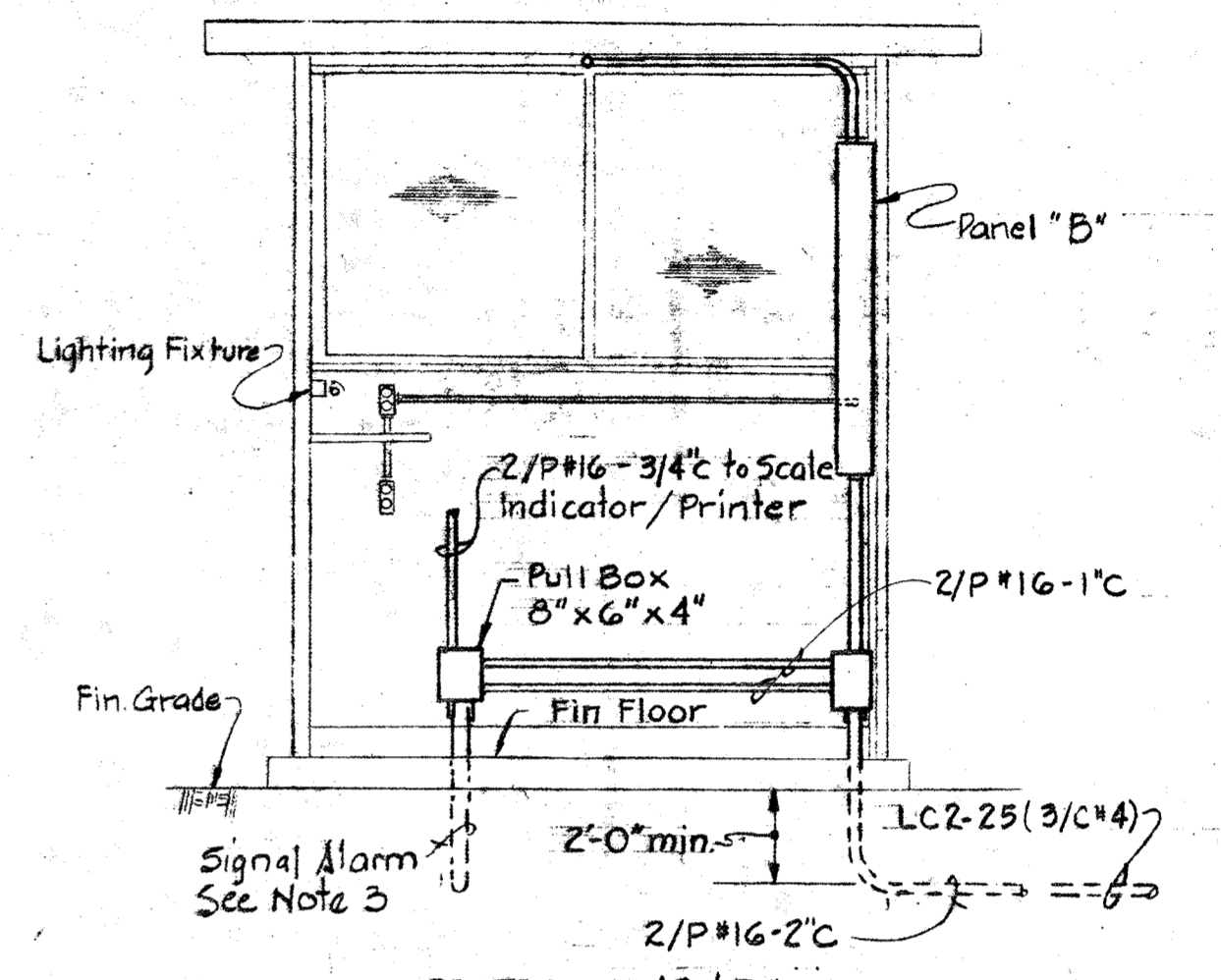
TYPE "A" LIGHTING FIXTURE
Scale 3/4" = 1'-0"
(See Sheet E-6)



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

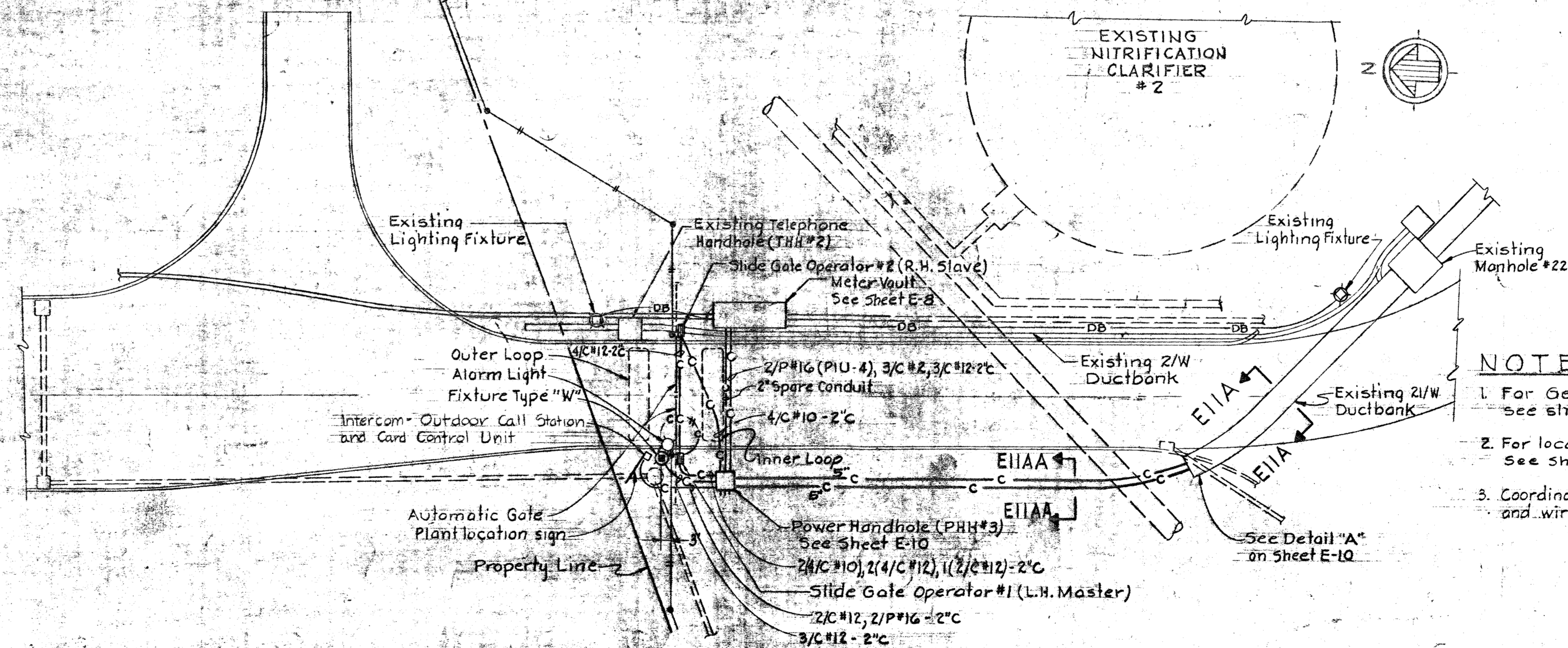


SECTION E4A/E4
Scale 1/4" = 1'-0"



SECTION E4B/E4
Scale 1/4" = 1'-0"

SCALE HOUSE DETAILS
Scale: As Shown



MAIN GATE SITE PLAN
Scale: 1" = 20'
See Sheet E-1 & E-2 for Plant Site Plan

- NOTES
1. For General Electrical Notes and Legend see sheet E-3.
 2. For location of Roadway Lighting Fixture, see sheet E-1 & E-2.
 3. Coordinate termination of scale signal conduit and wire with equipment manufacturer.

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.
DATE: 2/15/60
CHIEF - BUREAU OF ENVIRONMENTAL SERVICES

CONTRACT NO. 761-S

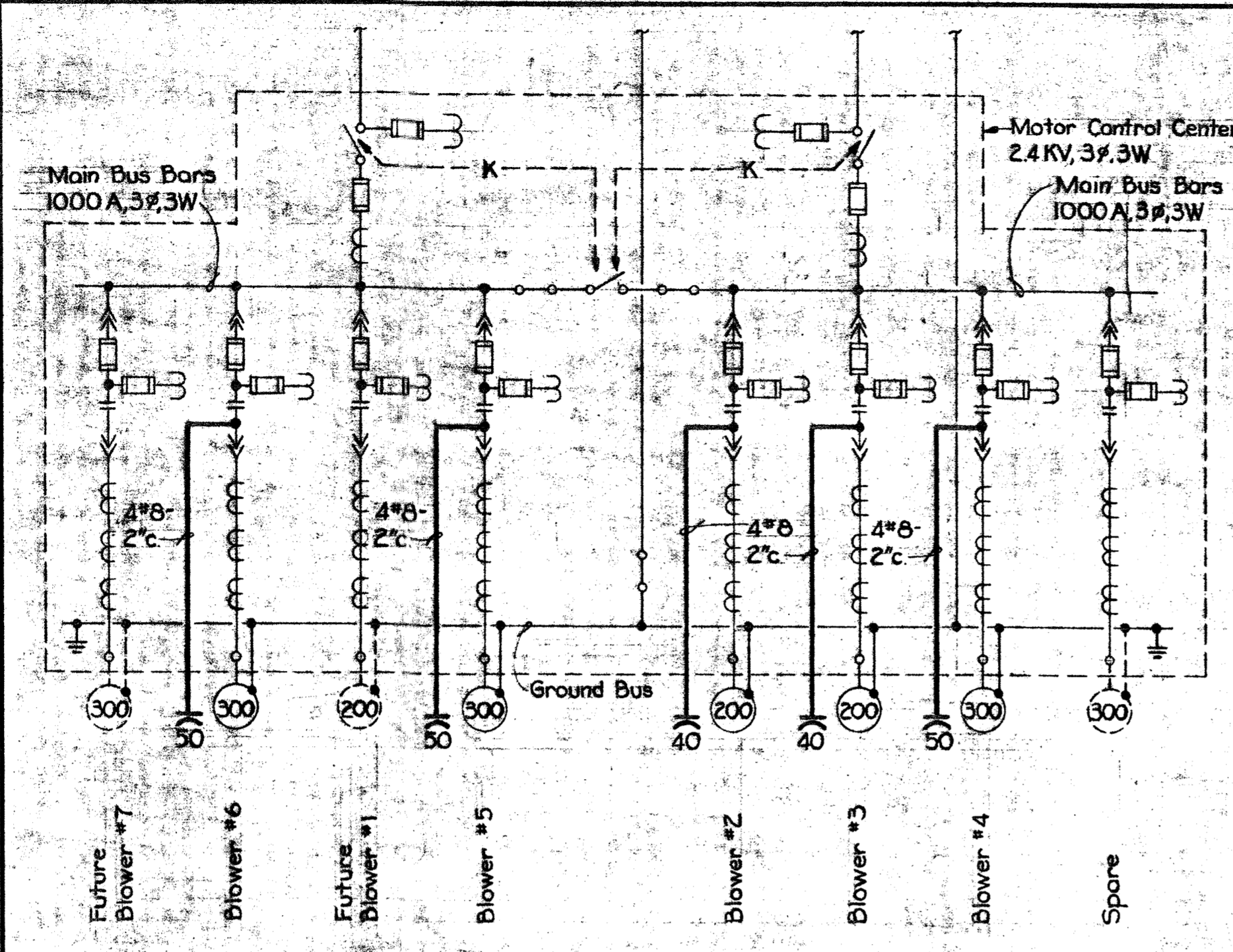
SCALE HOUSE
& MISCELLANEOUS DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

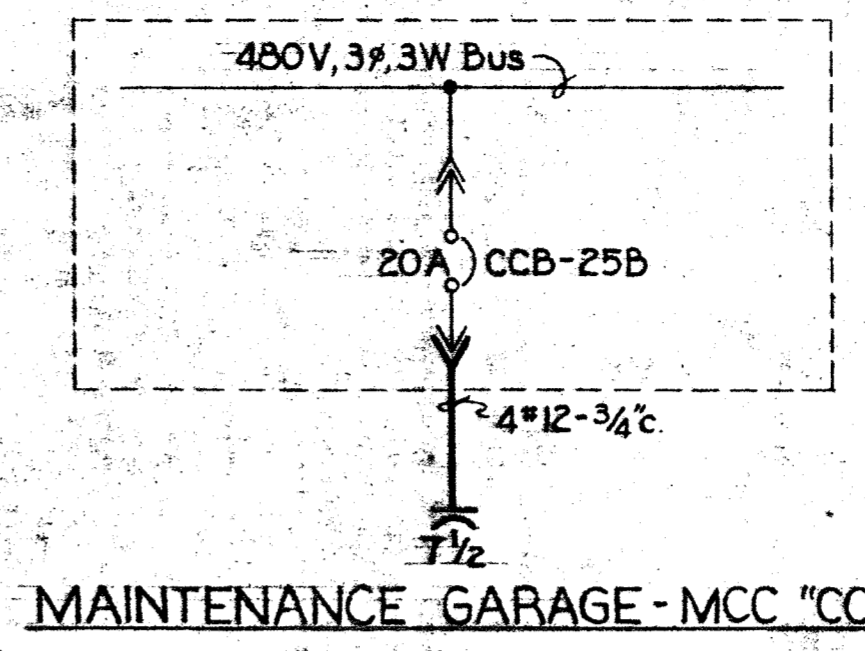
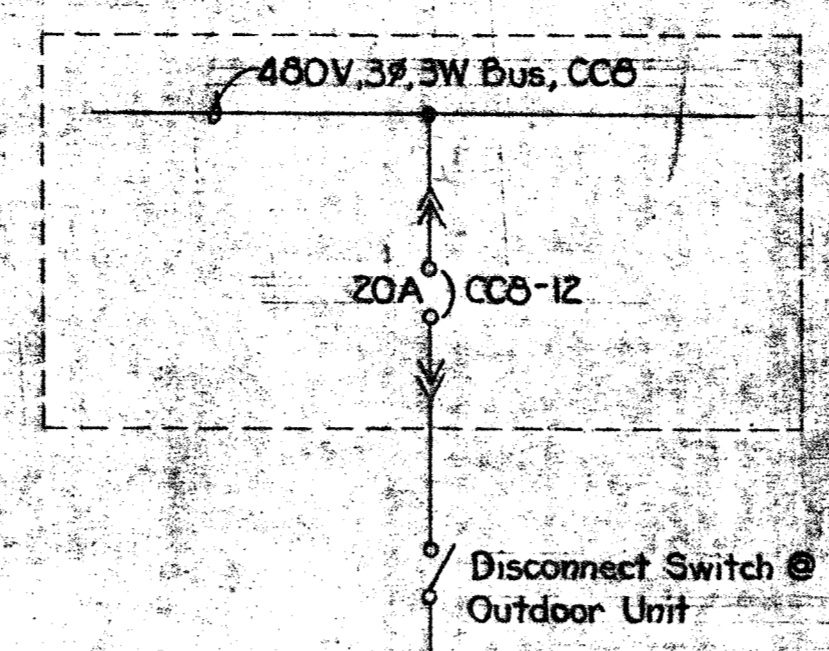
DRAWING
NO. 41
OF 50

SCALE
AS
SHOWN

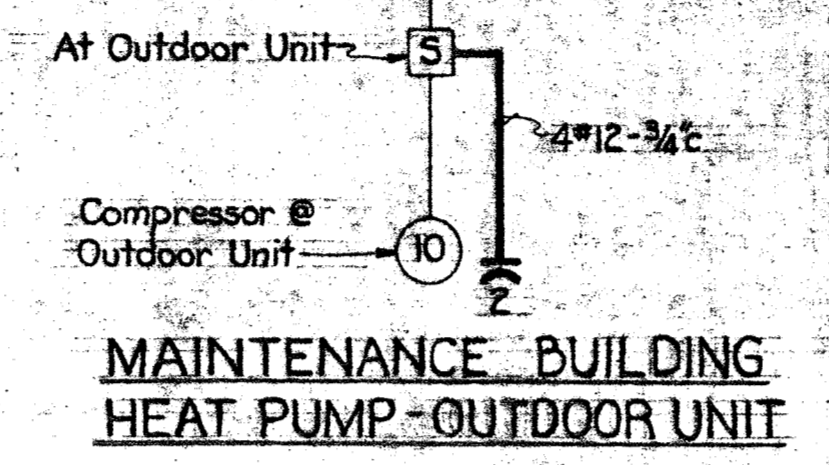
BRUNING 44510 1839Z



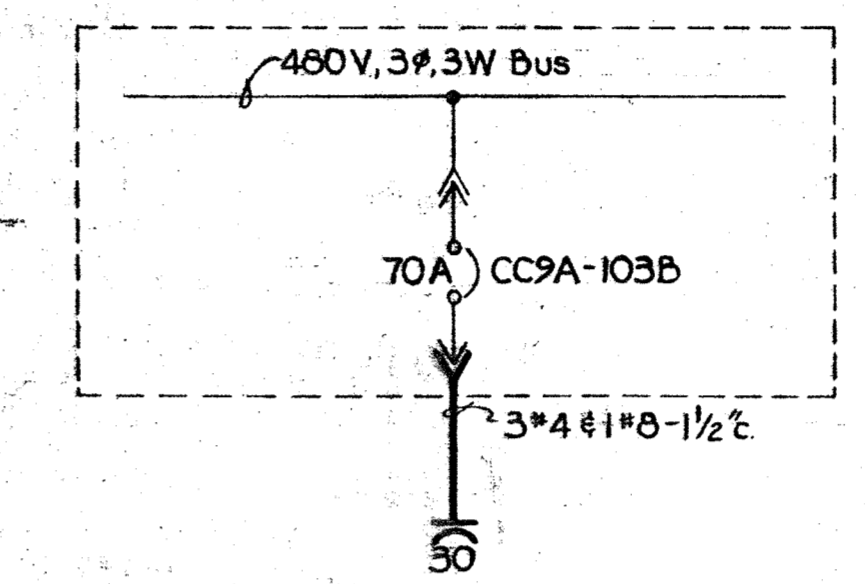
BLOWER BUILDING & PUMPING STATION "CC3"



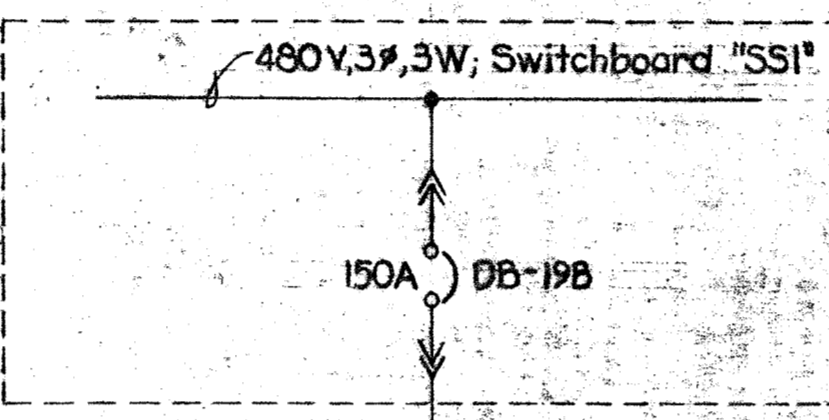
MAINTENANCE GARAGE - MCC "CC8"



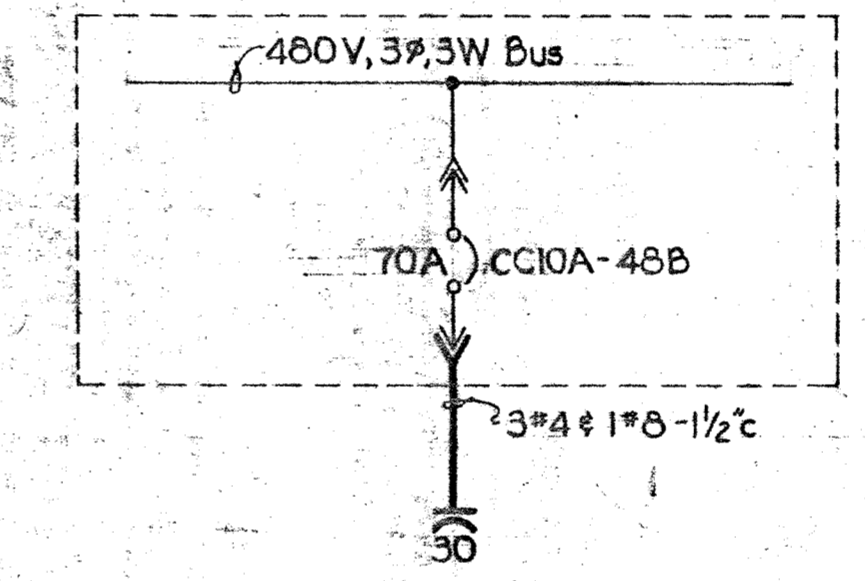
MAINTENANCE BUILDING HEAT PUMP - OUTDOOR UNIT



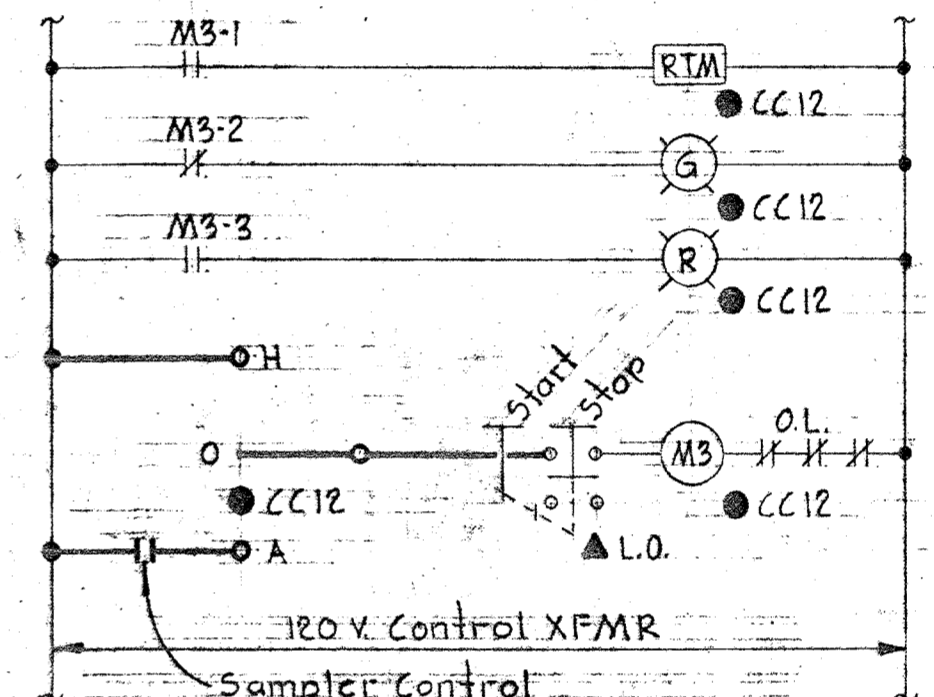
SLUDGE HANDLING FACILITY DEWATERING BUILDING - MCC "CC9A & B"



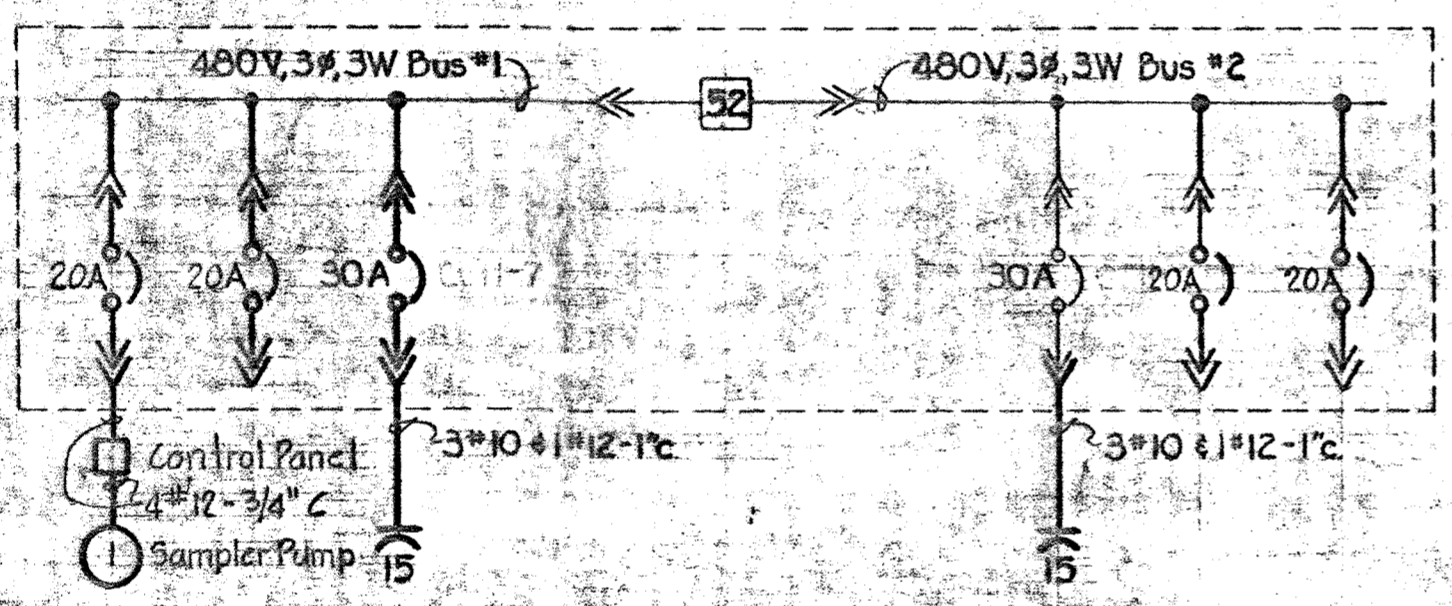
ADMINISTRATION BUILDING HEAT PUMP - EQUIPMENT



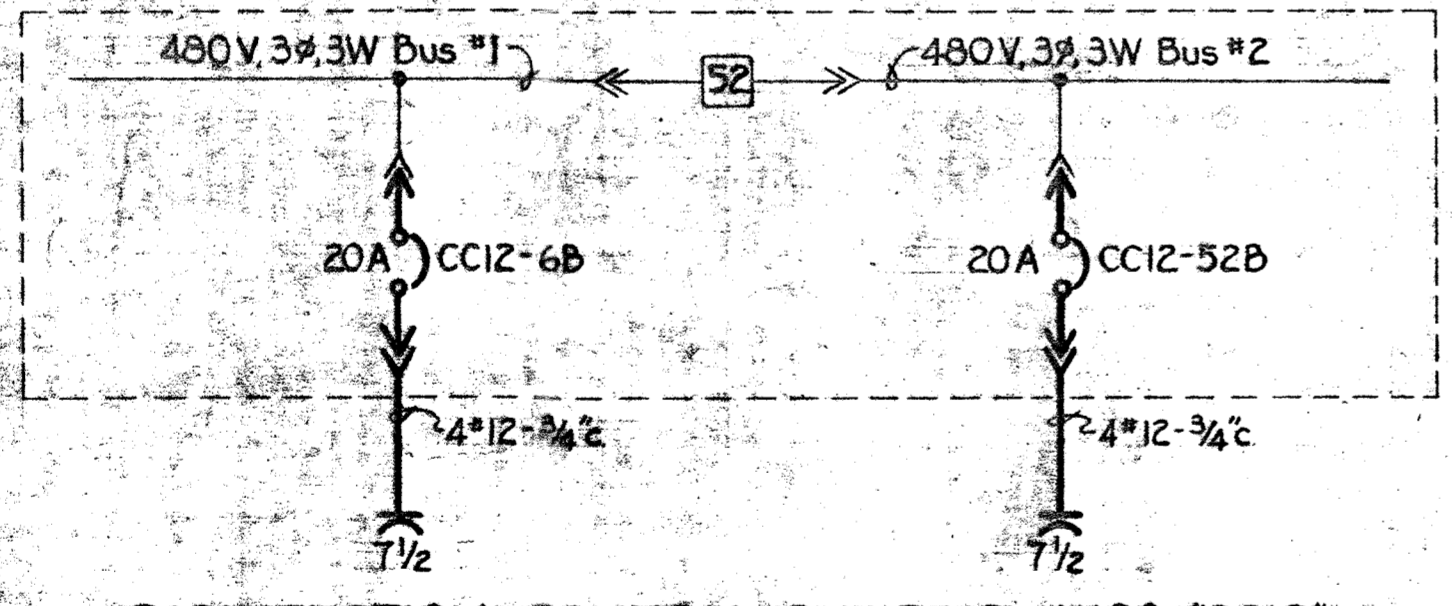
SLUDGE HANDLING FACILITY DEWATERING BUILDING - MCC "CC10A & B"



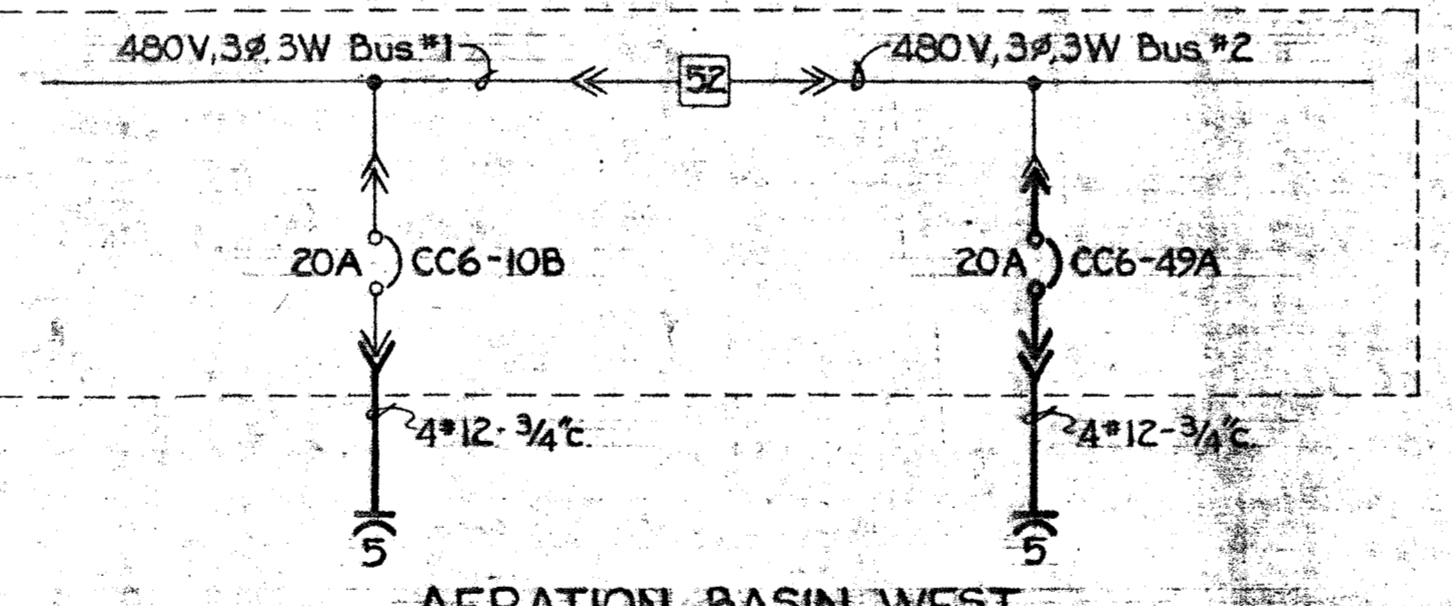
ELEMENTARY CONTROL DIAGRAM TYPICAL FOR 2 EFFLUENT SAMPLER PUMPS IN 36" METER VAULT



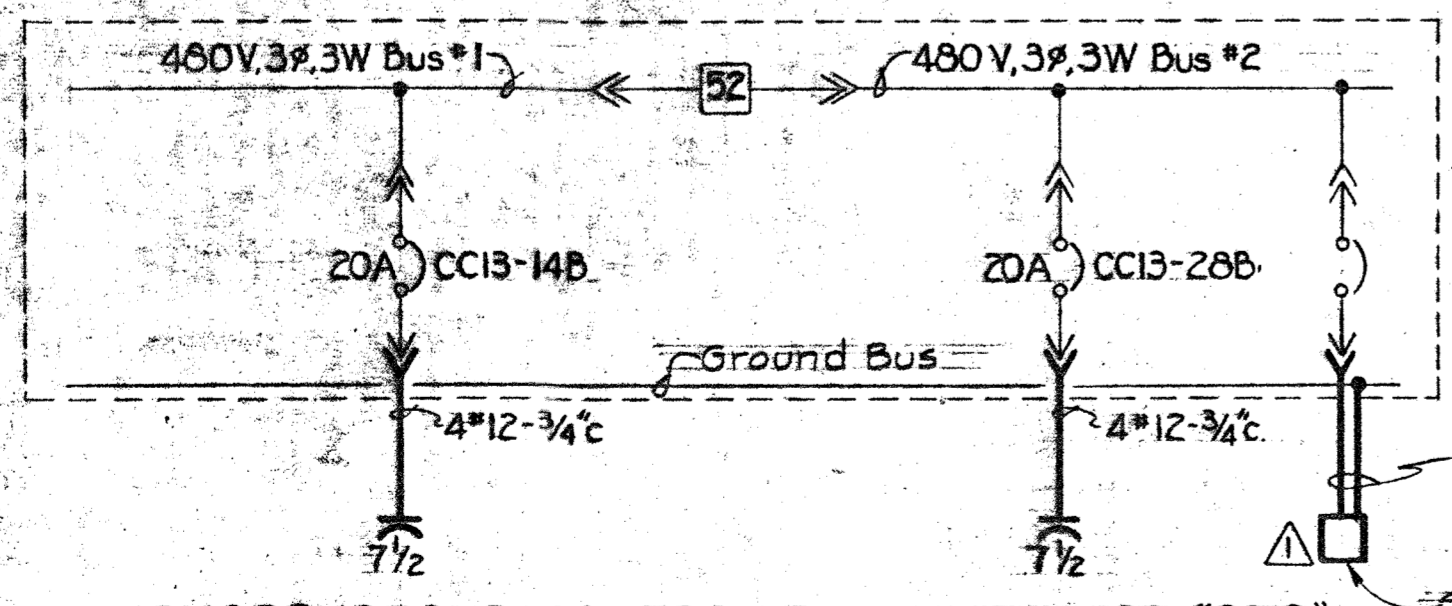
FILTRATION CONTROL BUILDING - MCC "CC11"



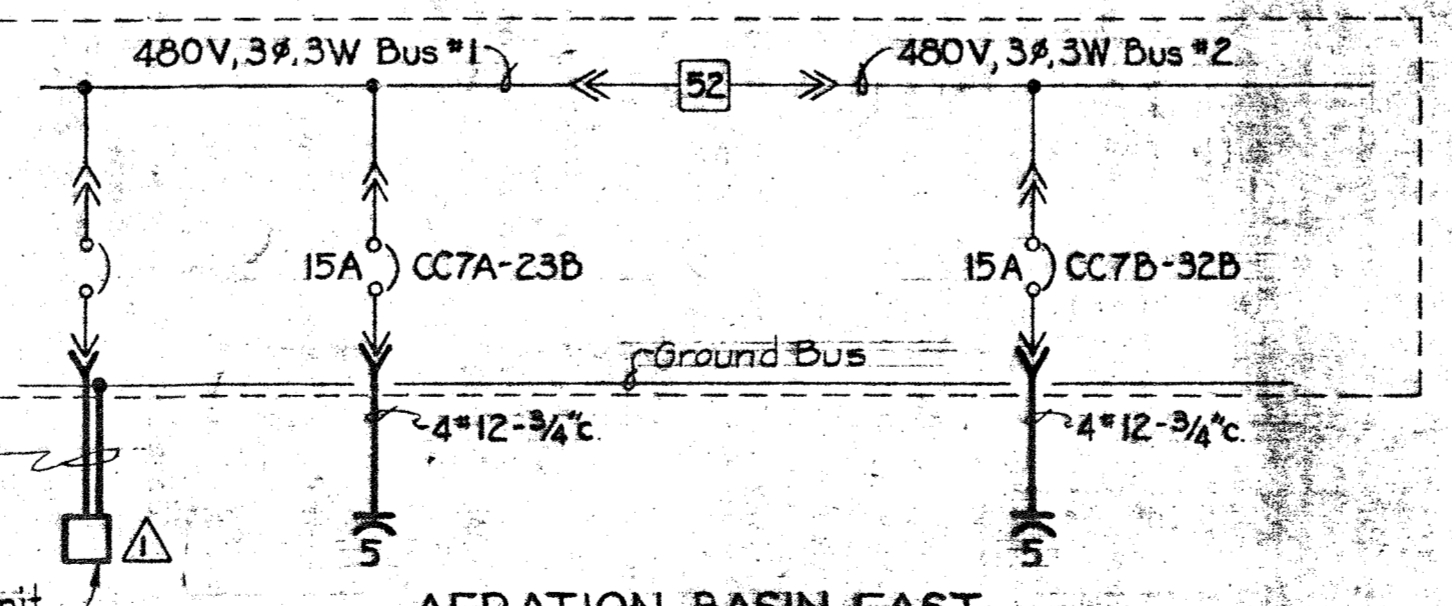
DISINFECTION CONTROL BUILDING - MCC "CC12"



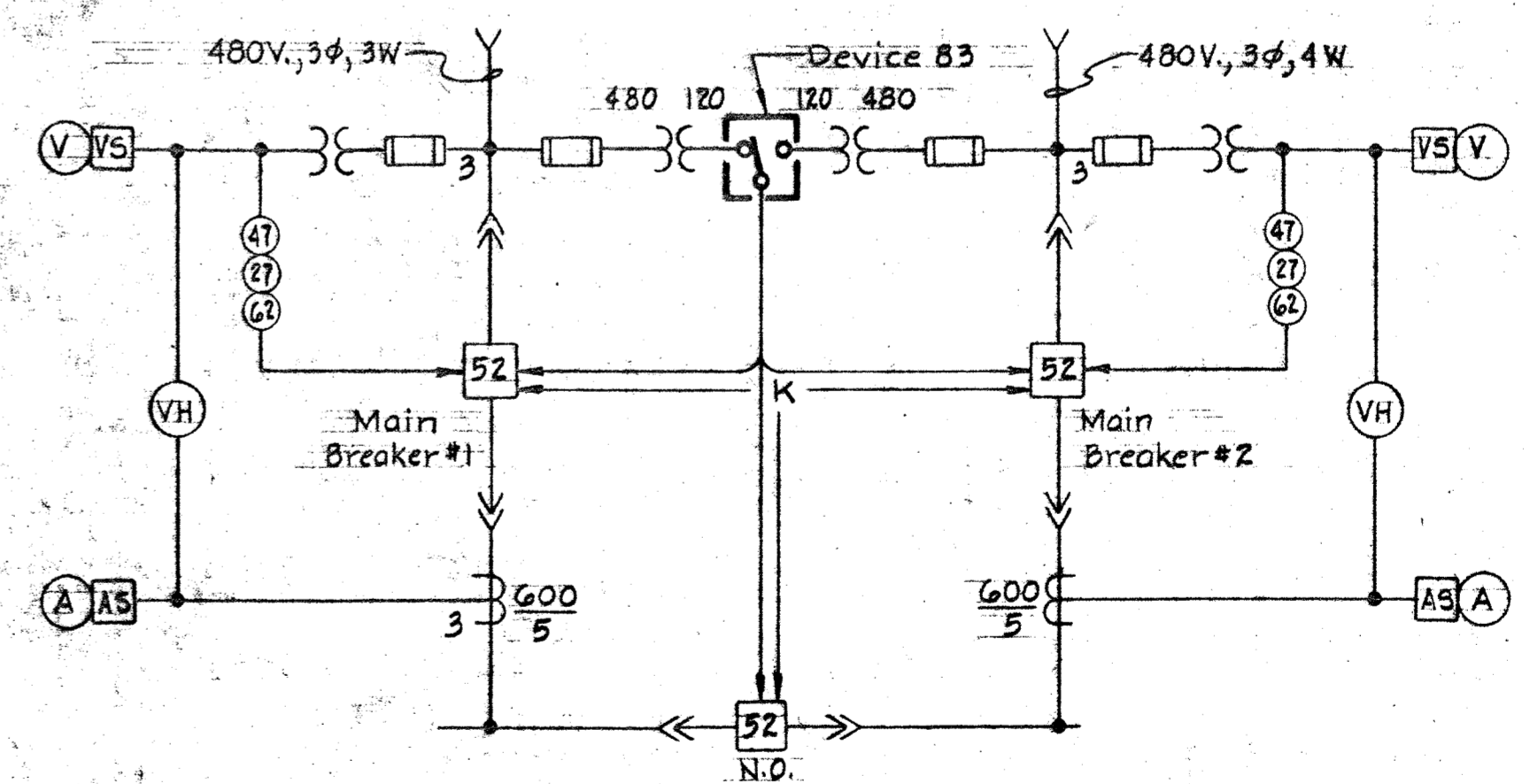
AERATION BASIN WEST CHEMICAL FEED BUILDING - MCC "CC6"



PHOSPHOROUS CONTROL BUILDING - MCC "CC13"



AERATION BASIN EAST CONTROL BUILDING #2 - MCC "CC7"



**PART TYPICAL ONE LINE DIAGRAM FOR FOLLOWING MOTOR CONT. CENTERS
CC6 IN CHEMICAL FEED BUILDING - AERATION BASIN WEST
CC7 IN CONTROL BUILDING #2 - AERATION BASIN EAST
CC11 IN FILTRATION CONTROL BUILDING
CC12 IN DISINFECTION CONTROL BUILDING
CC13 IN PHOSPHOROUS CONTROL BUILDING**

NOTES

1. For General Electrical Notes & Legend, see Sheet E-3.
2. Light line work indicates existing or by others. Dark line work indicates work to be provided under this contract.
3. Provide circuit breakers as shown. Breakers shall be 100 A. frame, 3 pole, calibrated as shown and have symmetrical interrupting current rating of 22,000 A. minimum.
4. Capacitors connected to Main Buses in MCCs and connected to motors served by MCCs shall be mounted on channels which in turn shall be mounted on top of respective MCCs.

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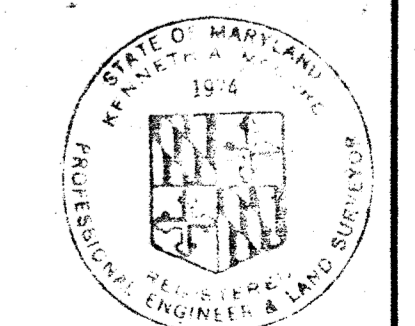
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
2/15/80
DATE

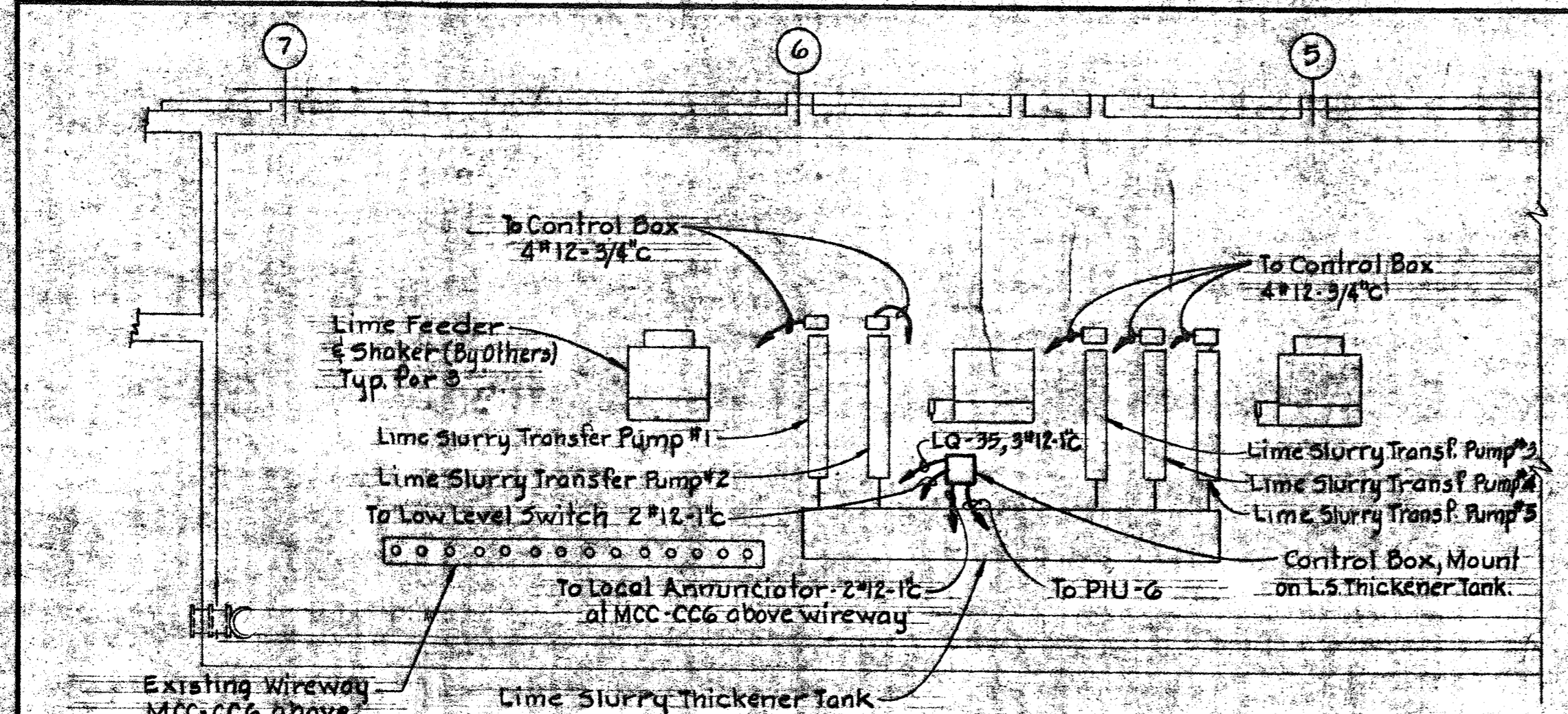
CONTRACT NO. 761-S

WIRING DIAGRAMS
CAPACITORS

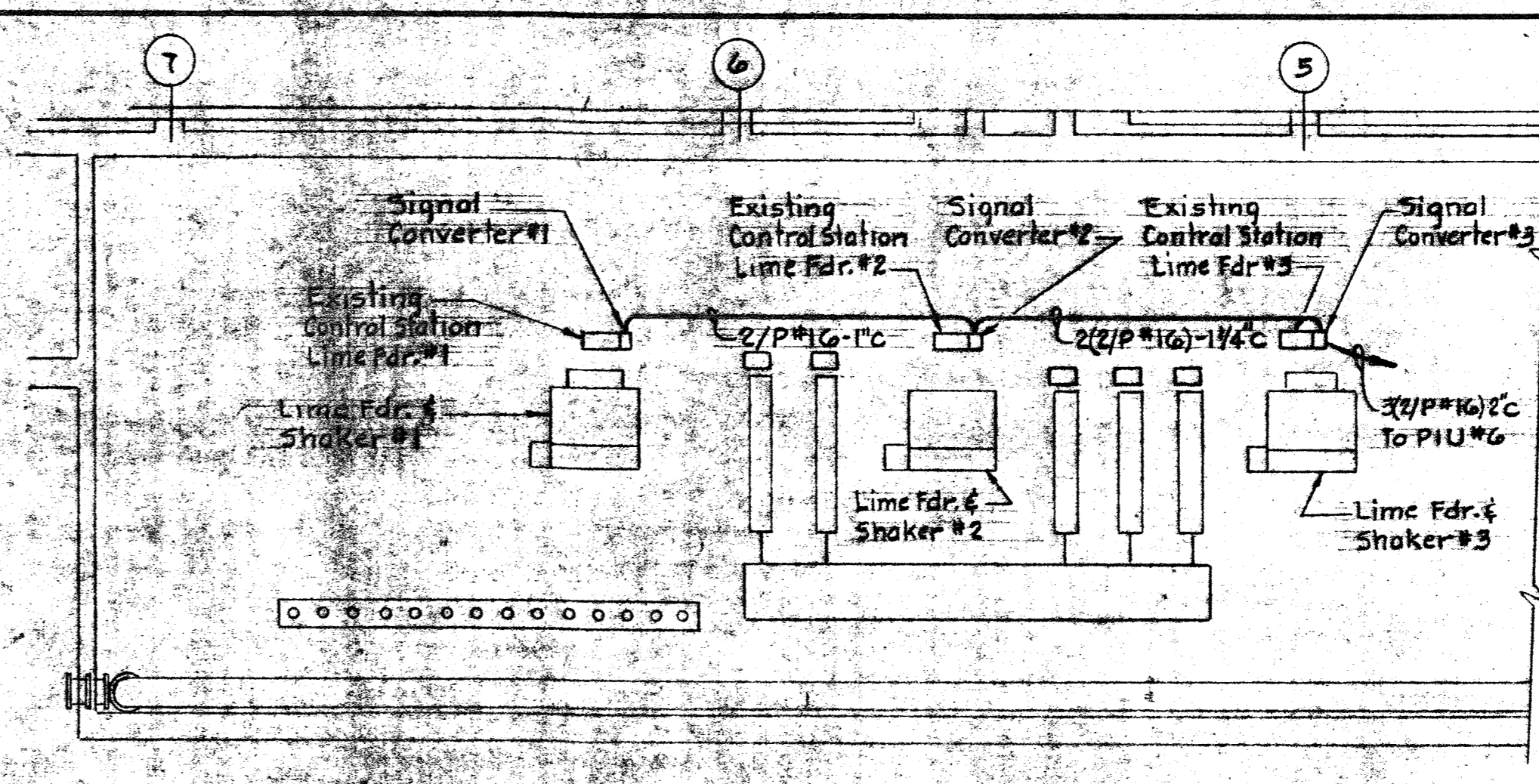
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 42 OF 50
SCALE NONE



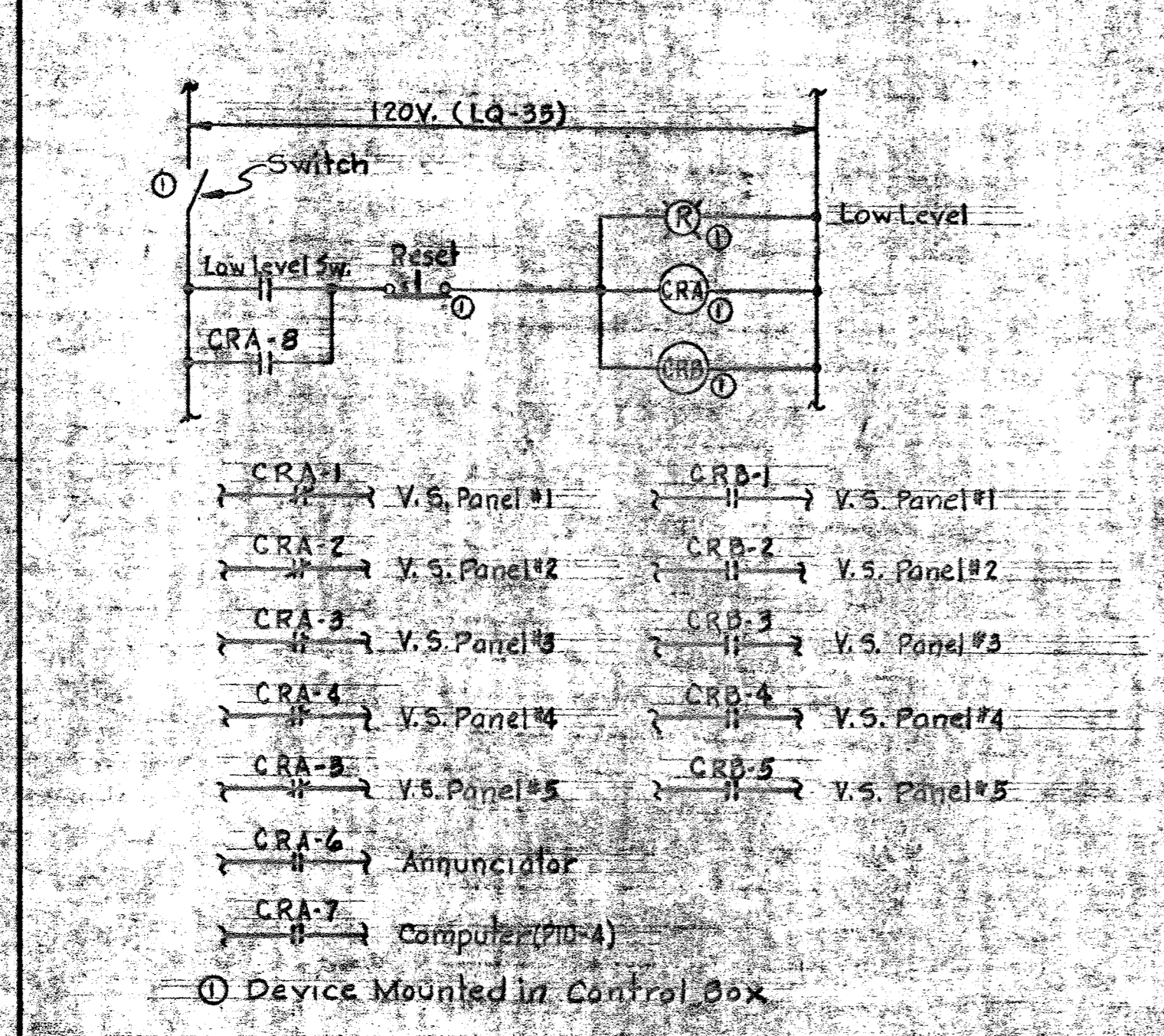


PART PLAN - AERATION BASIN PIPE GALLERY WEST
Scale: 1/8"=1'-0"

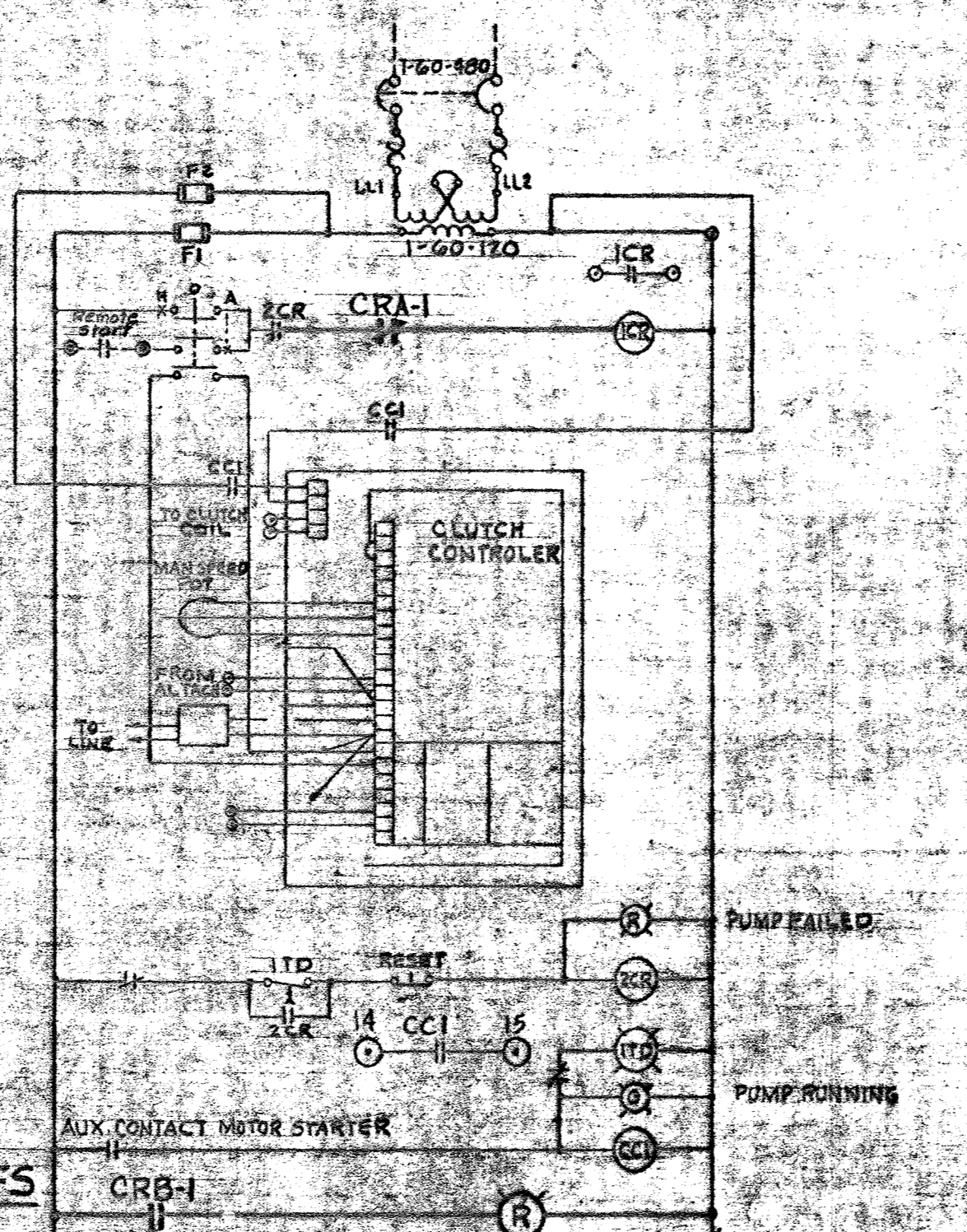


PART PLAN - AERATION BASIN PIPE GALLERY WEST
Scale: 1/8"=1'-0"

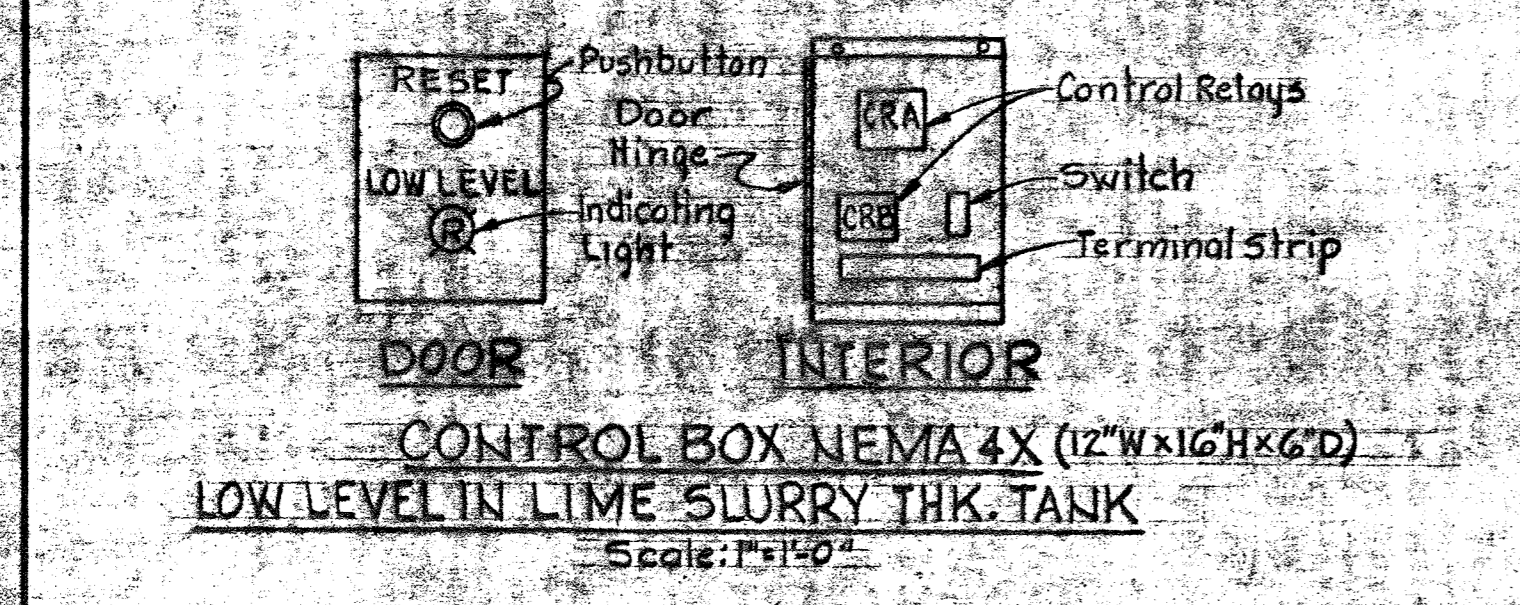
- NOTES:**
1. For General Electrical Notes & Legend, see Sheet E-3.
 2. Light dashed line work indicates existing; light line work indicates by others; heavy line work indicates work to be provided under this contract.



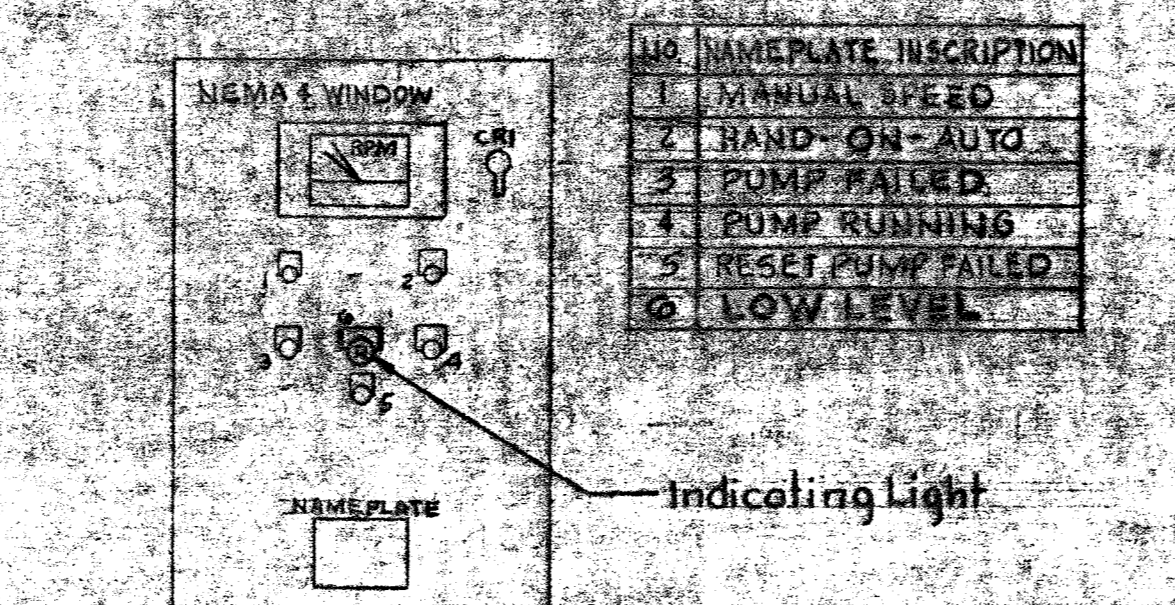
ELEMENTARY CONTROL WIRING DIAGRAM FOR LIME SLURRY THICKENER TANK LOW LEVEL ALARMS & PUMP SHUTOFFS



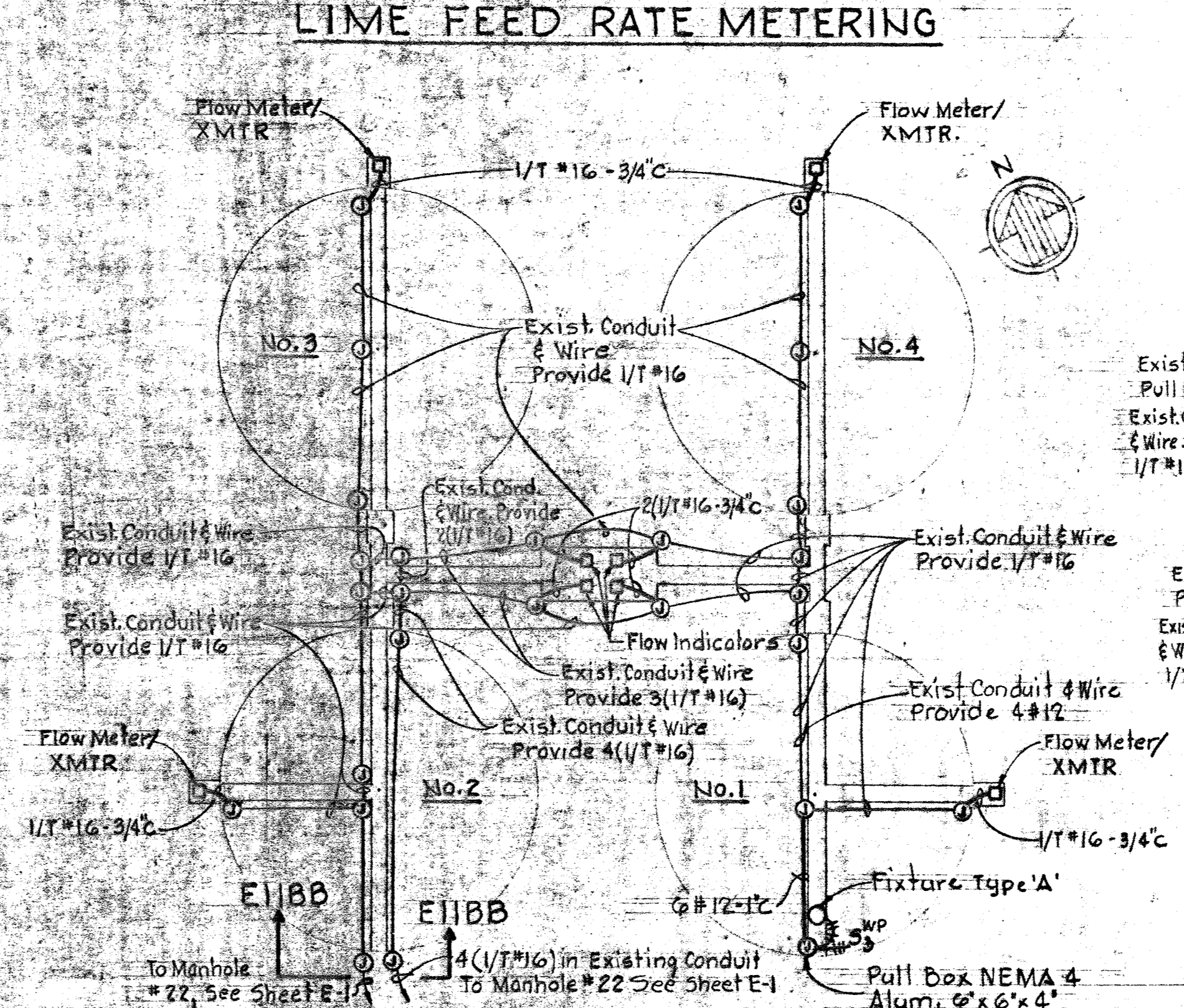
REVISED WIRING DIAGRAM FOR V.S. CONTROL PANELS LIME SLURRY TRANSFER PUMPS (TYPICAL FOR 5)



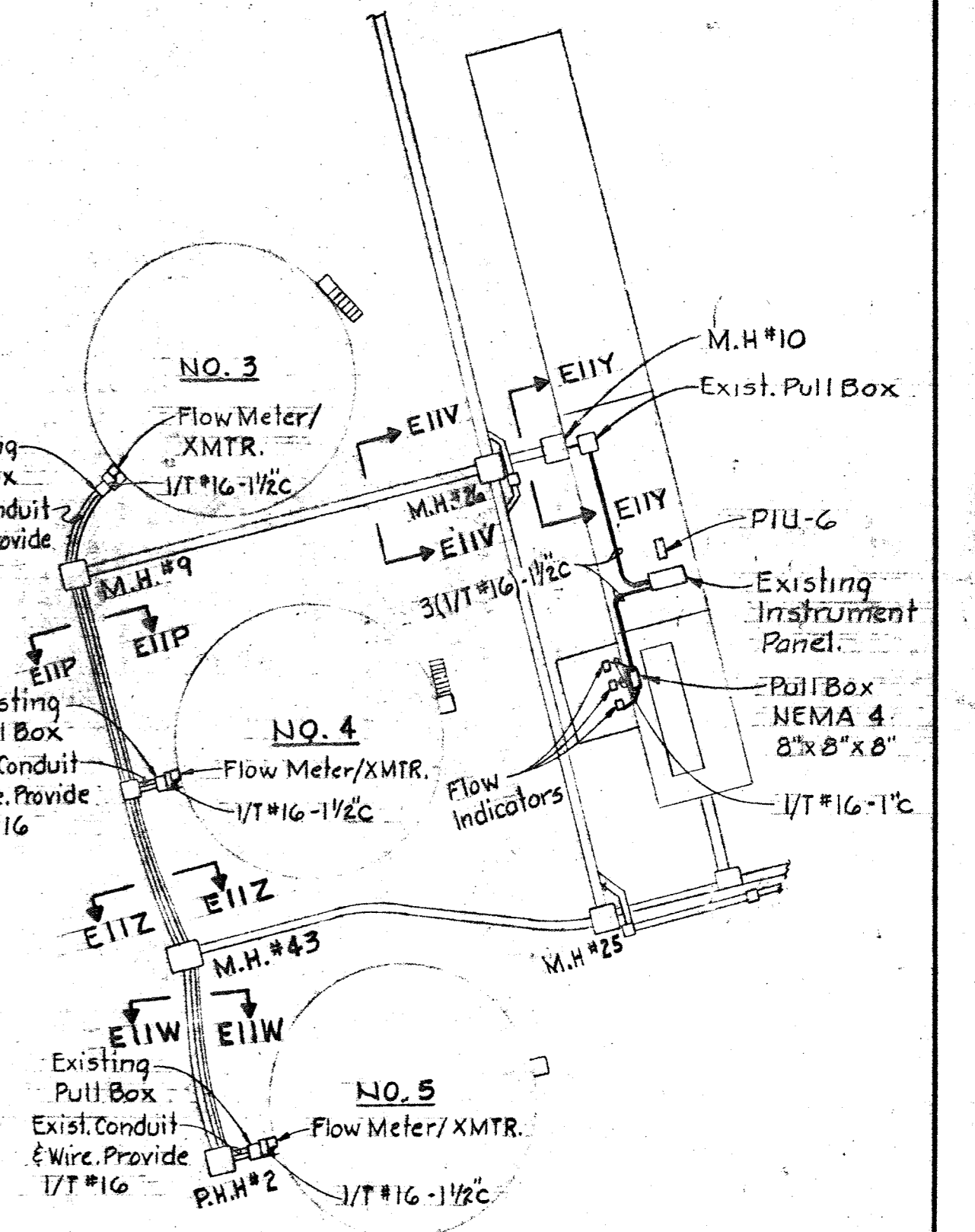
DETAILS FOR LIME SLURRY THICKENER TANK LOW LEVEL ALARMS & PUMP CUTOFFS



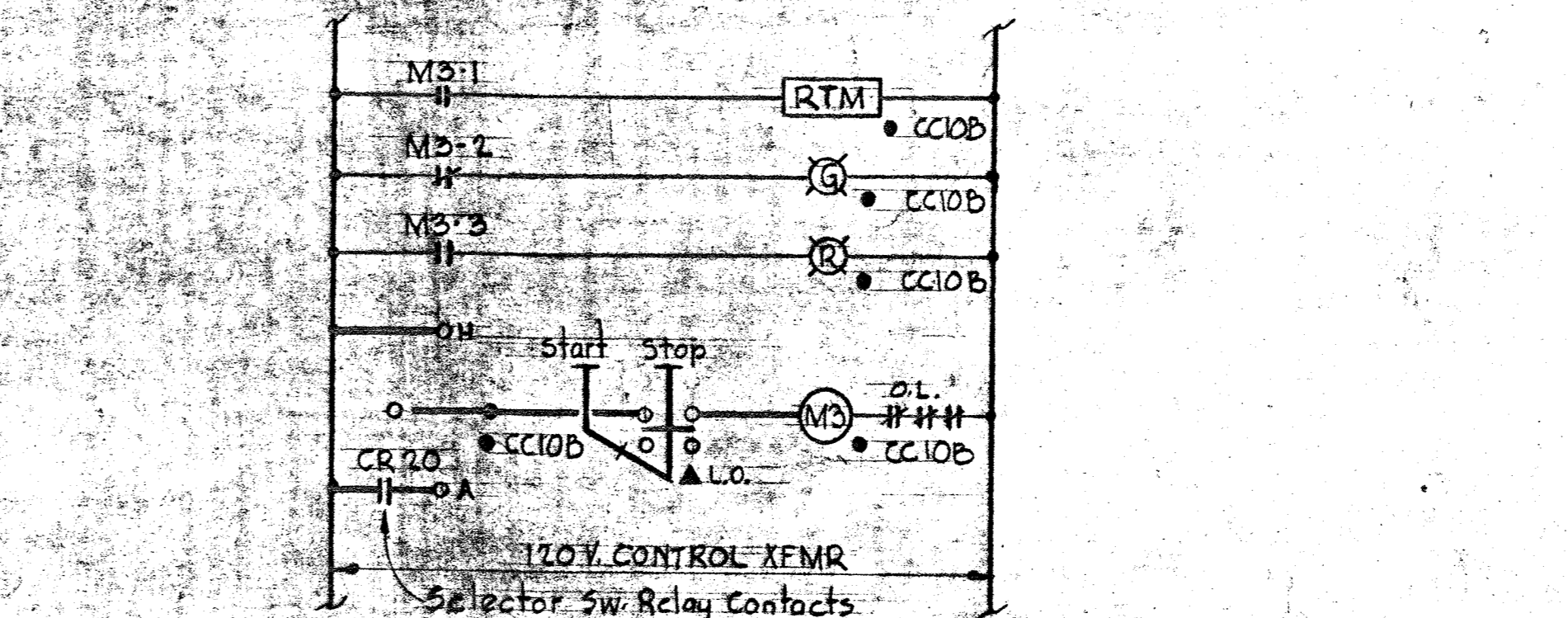
ADDITIONS TO V.S. CONTROL PANELS LIME SLURRY TRANSF. PUMPS (TYP. FOR 5)



PLAN - NITRIFICATION CLARIFIERS #1 THRU #4
Scale: 1/32"=1'-0"



PLAN - SECONDARY CLARIFIER #3, #4 & #5
Scale: 1"=50'



ELEMENTARY CONTROL DIAGRAM FLUSHING WATER PUMP NO. 3

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BALTIMORE, MARYLAND

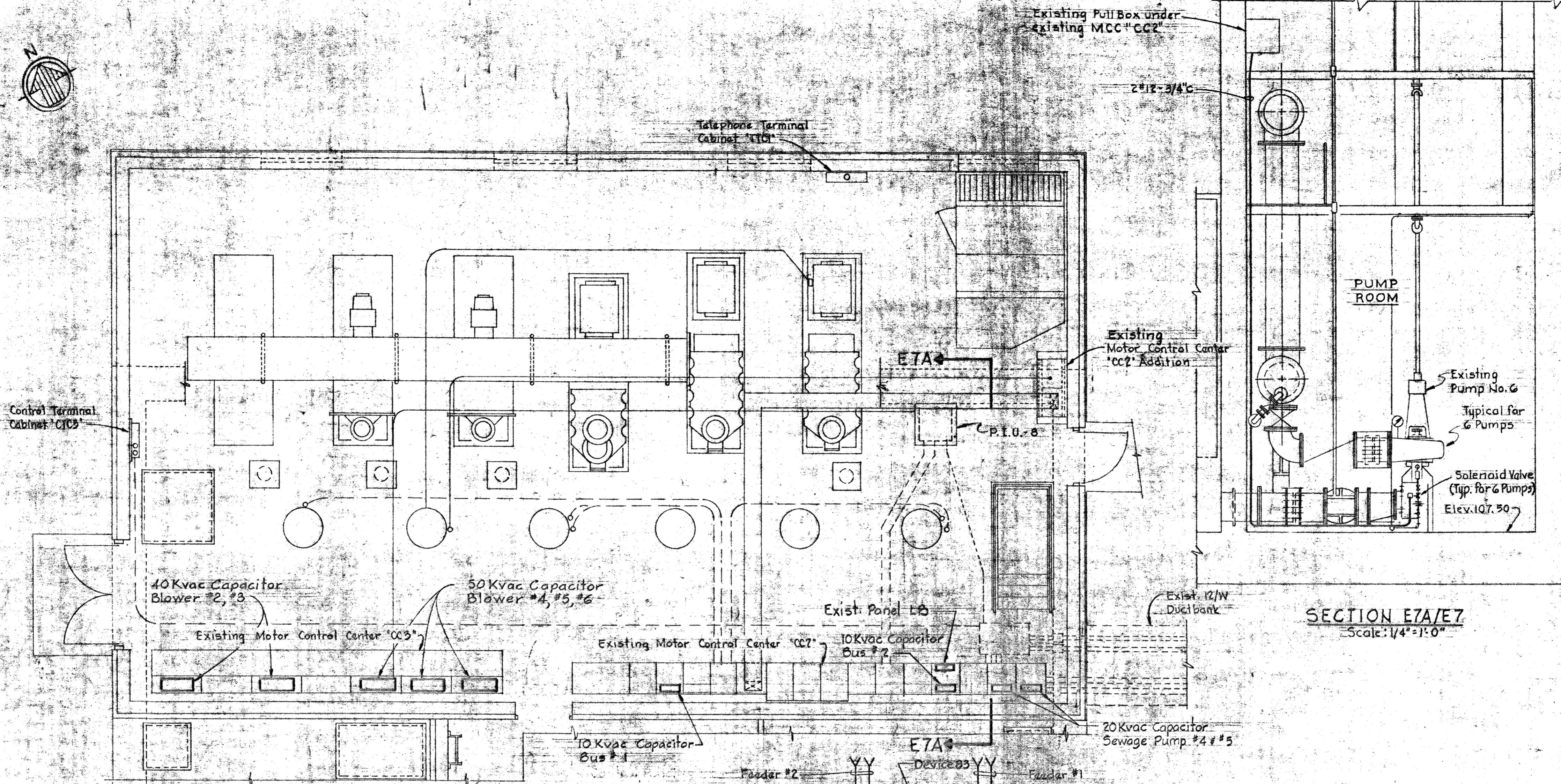
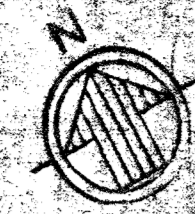
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 2/15/80
CHIEF-BUREAU OF ENVIRONMENTAL SERVICES

CONTRACT NO. 761-S

MISCELLANEOUS
PLANS & DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 43 OF 50
SCALE AS SHOWN

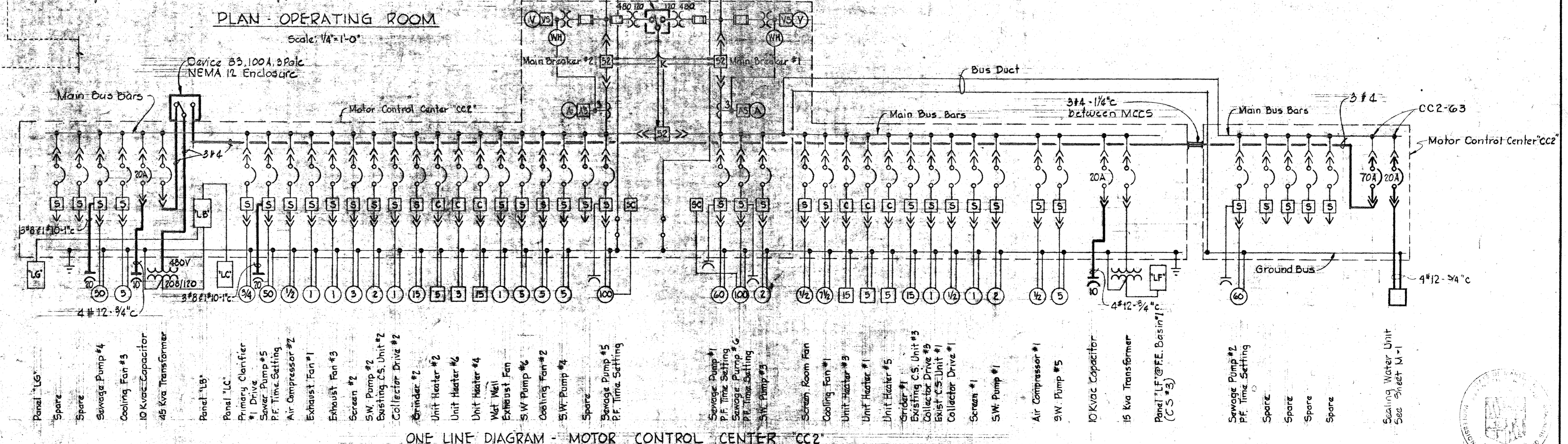


PLAN OPERATING ROOM
Scale: 1/4"=1'-0"

SECTION E7A/E7
Scale: 1/4"=1'-0"

NOTES:

1. For General Electrical Notes & Legend, see Sheet E-3
2. Light line work denotes existing or brothers. Dark lines denote work to be provided under this contract.
3. Capacitors connected to Main Buses in MCCS and connected to motors served by MCCS shall be mounted on channels which in turn shall be mounted on top of respective MCCS.



ONE LINE DIAGRAM - MOTOR CONTROL CENTER 'CC2'

WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
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BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

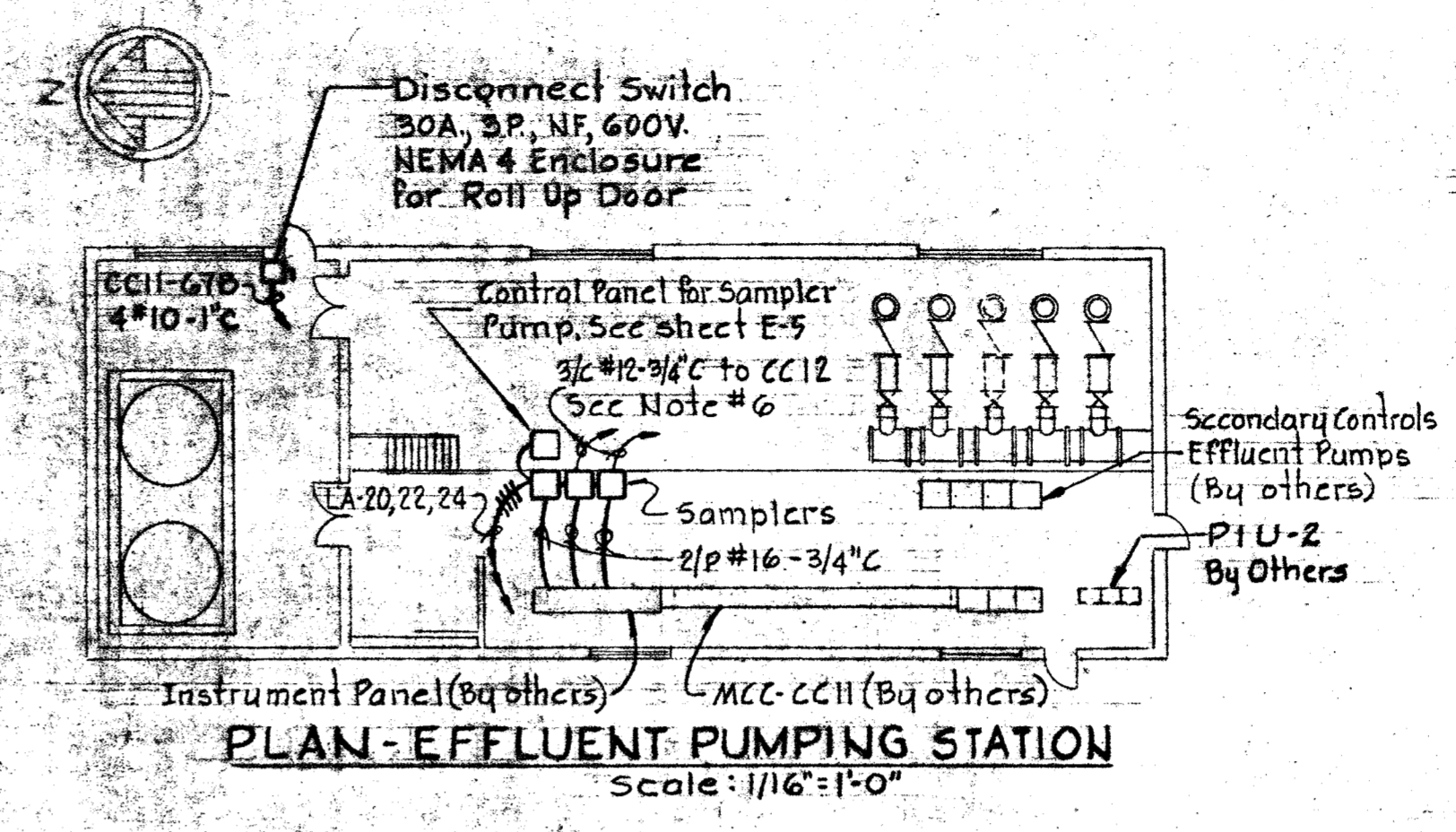
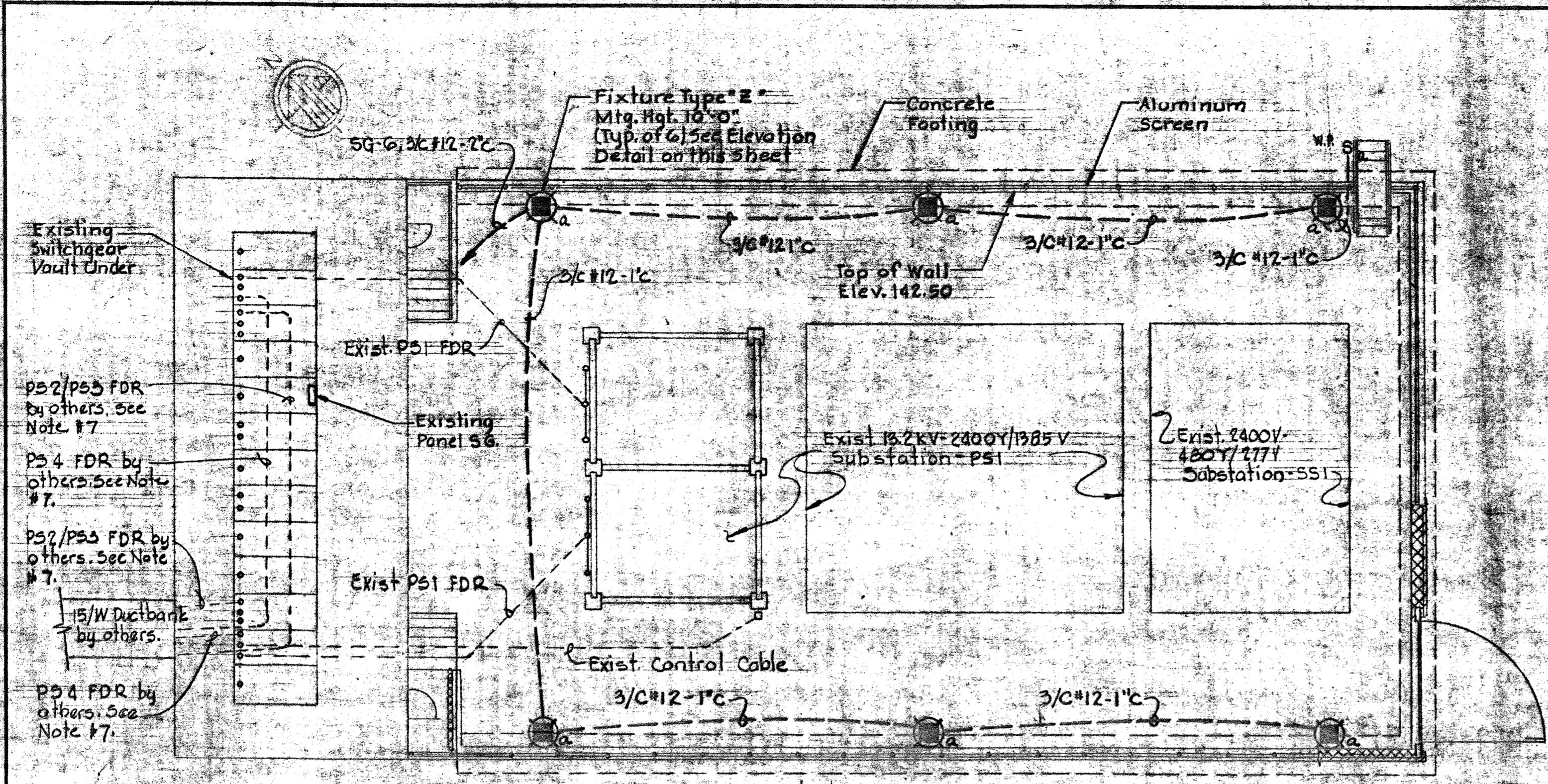
CONTRACT NO. 761-S

BLOWER BLDG. & P.S.
PLAN & DETAILS

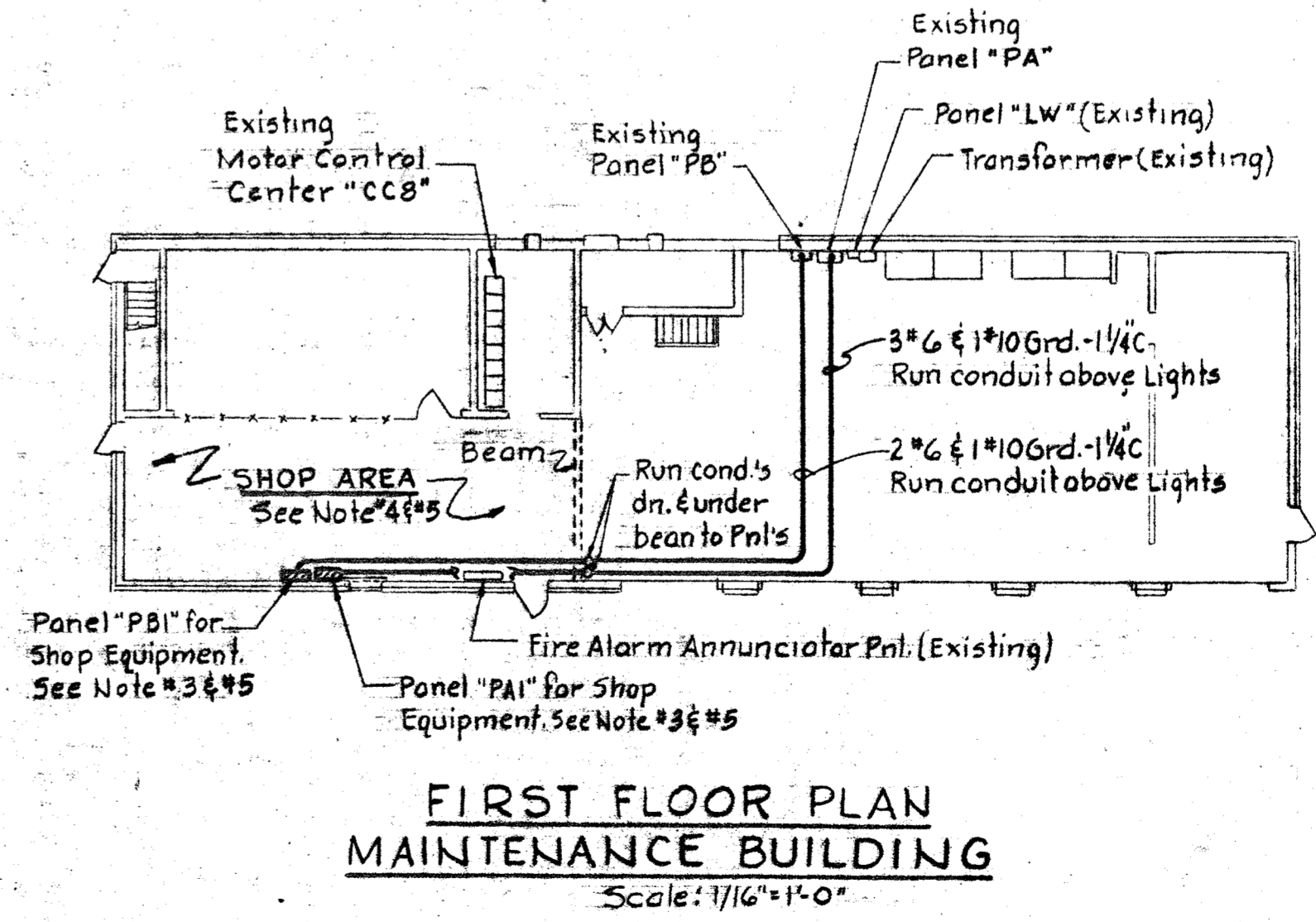
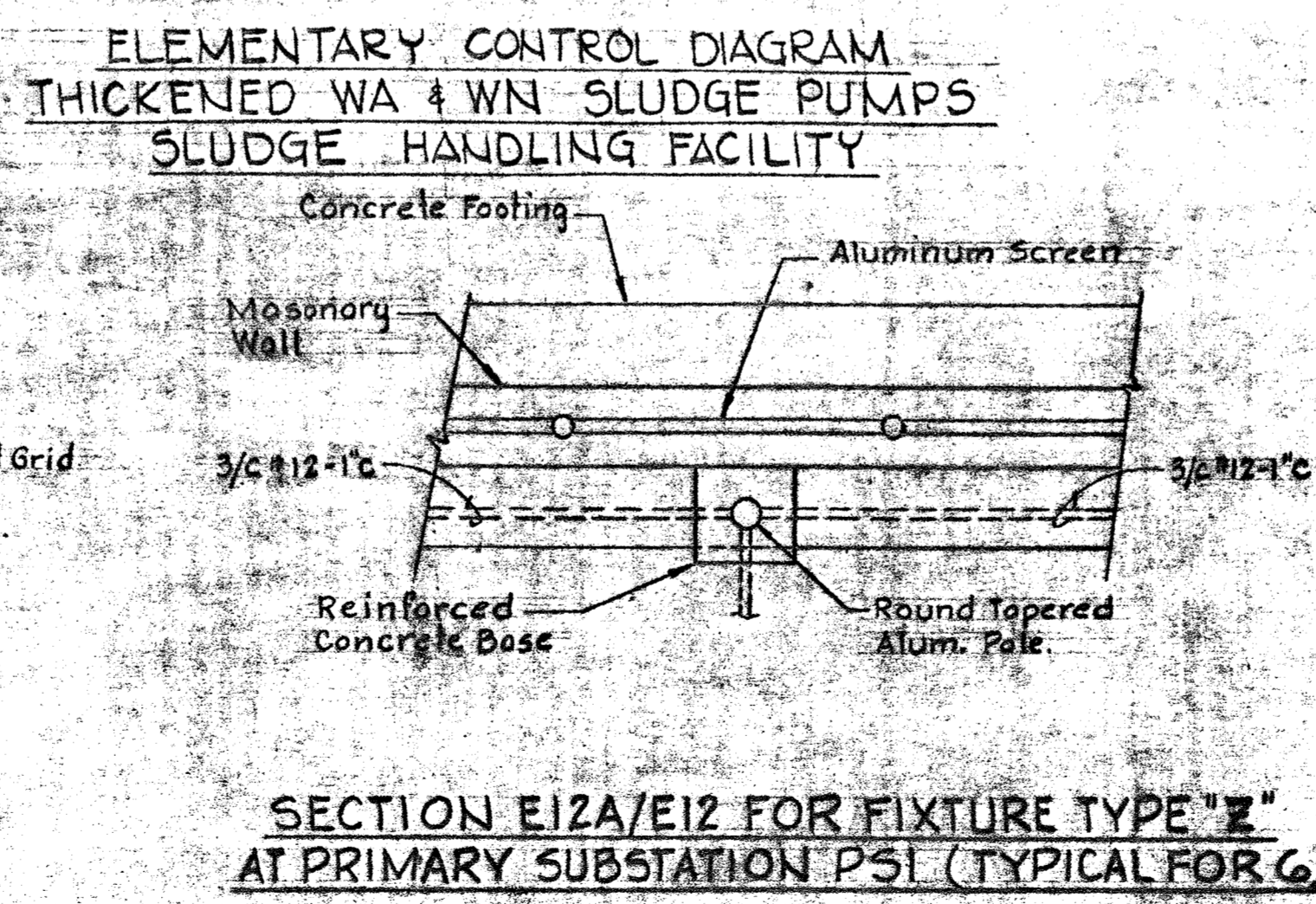
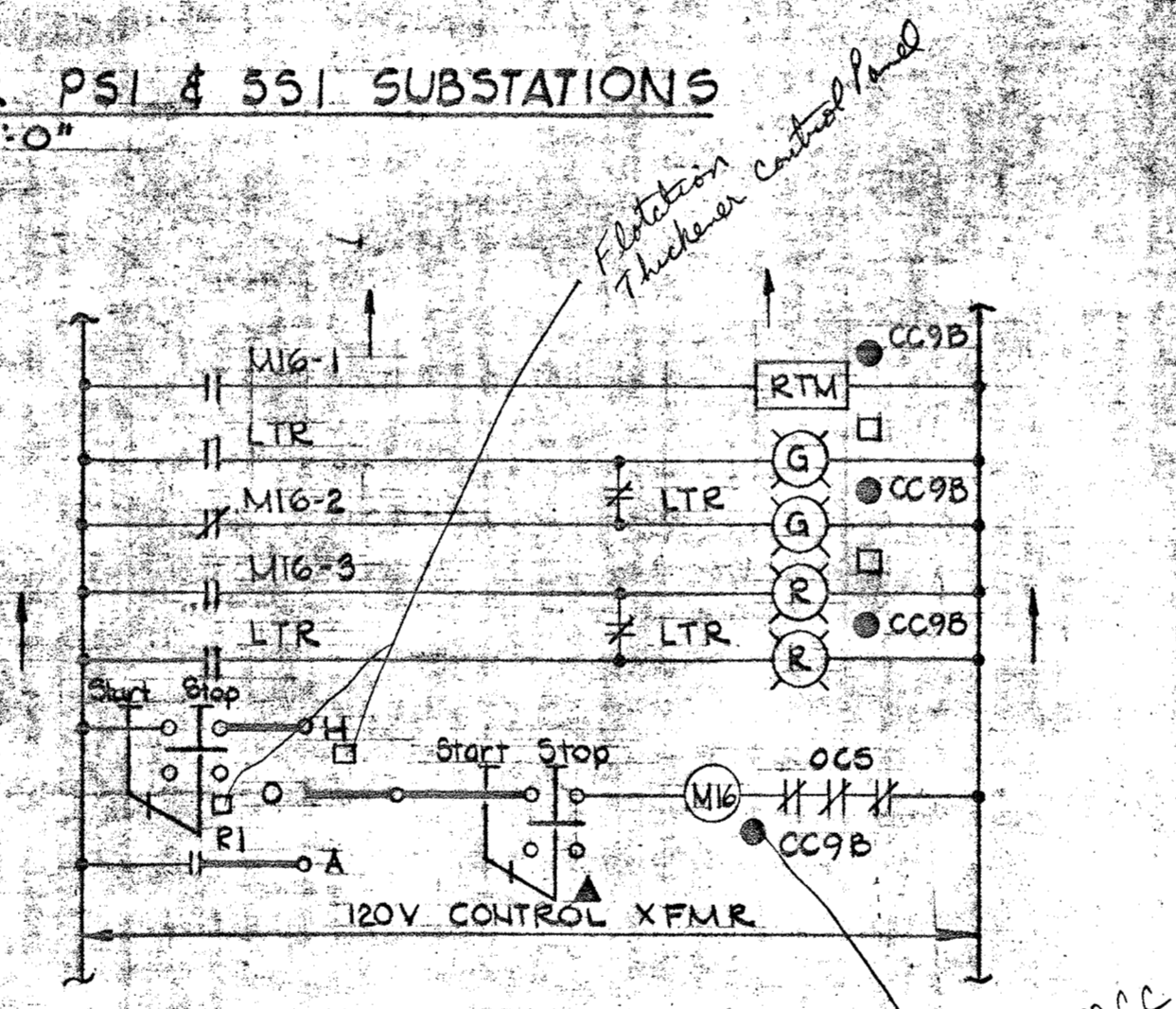
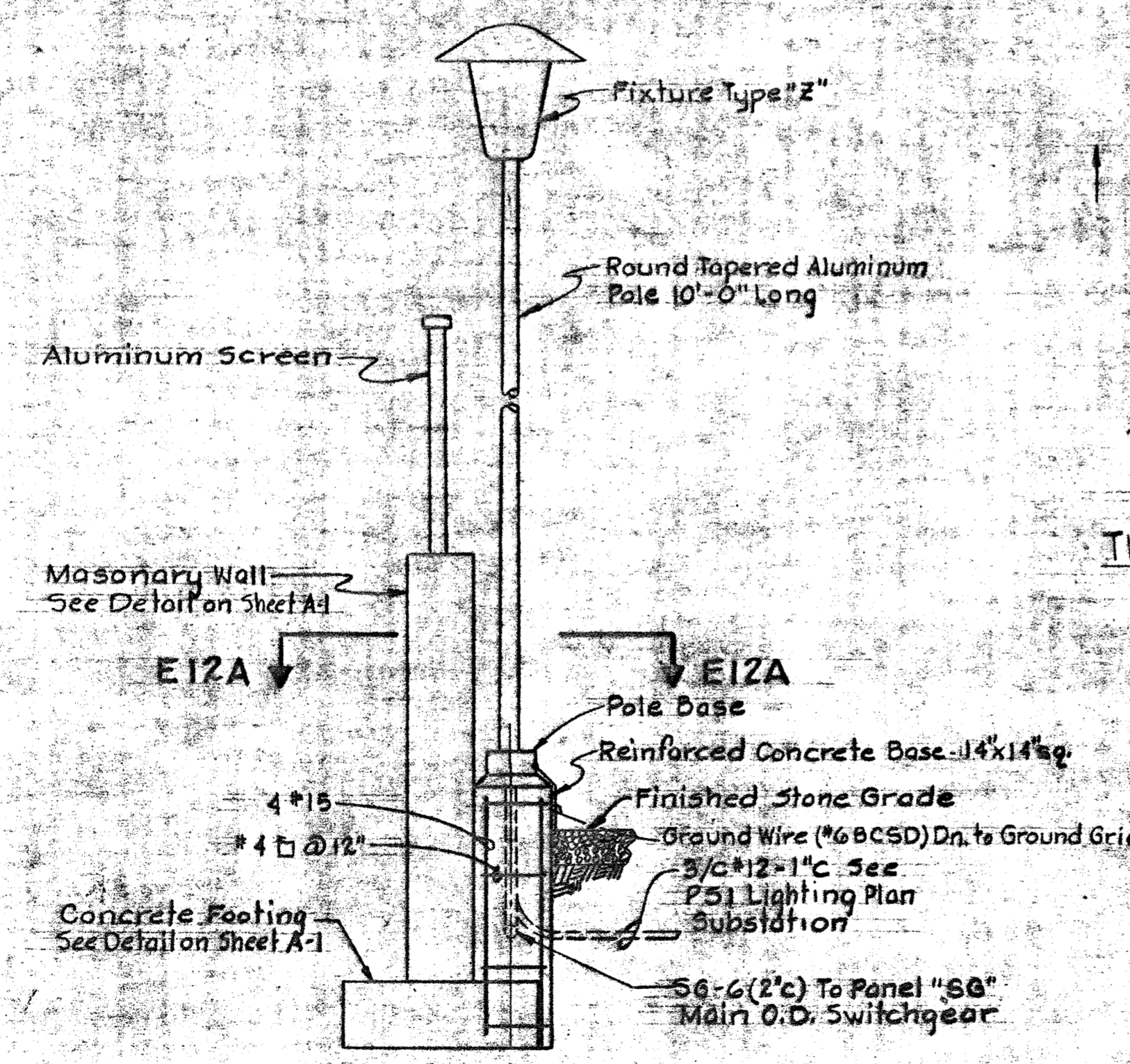
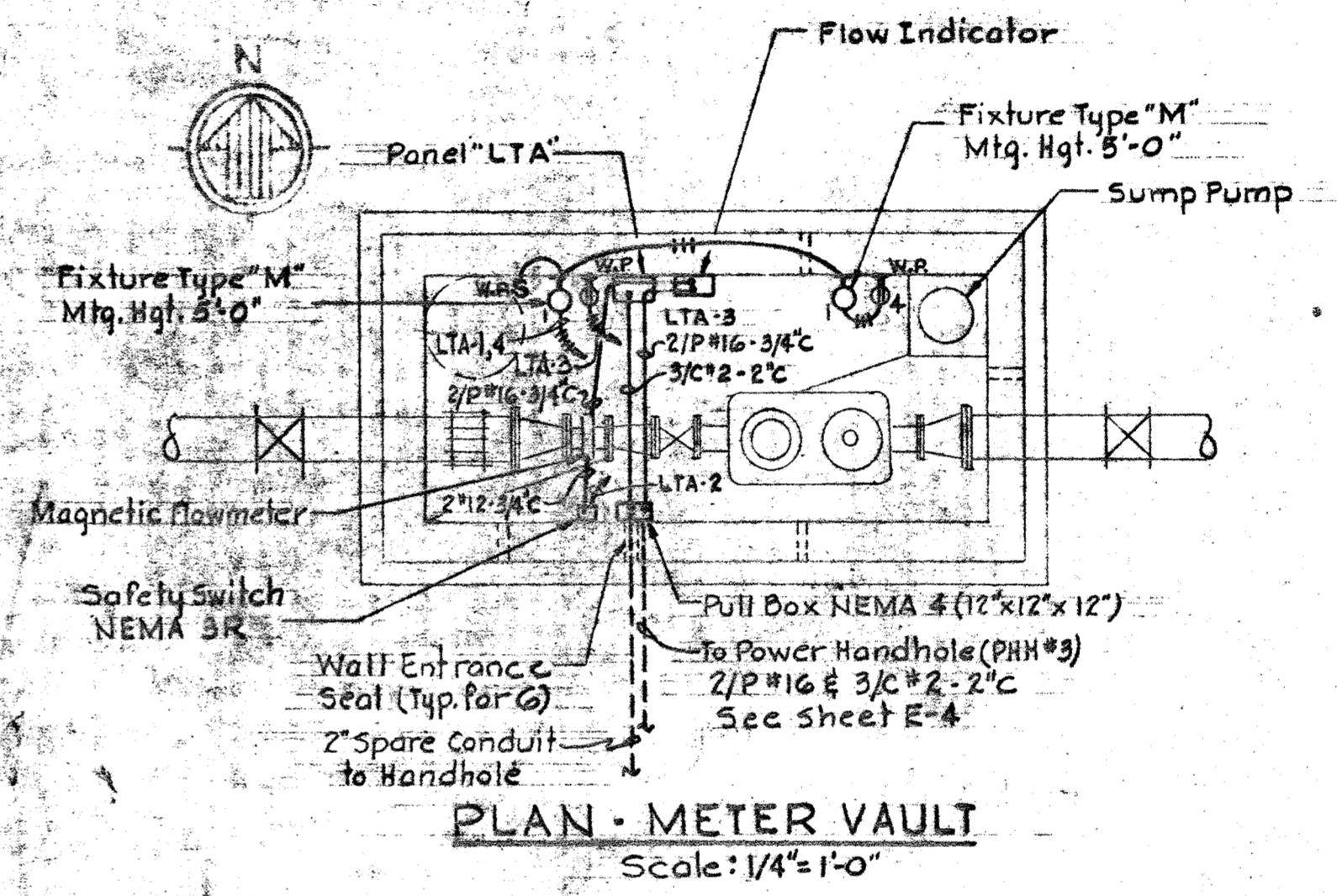
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

DRAWING
NO. 44
OF 50

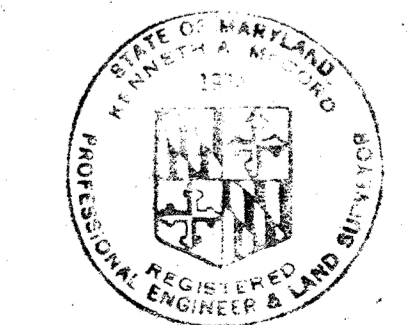
SCALE
AS
SHOWN

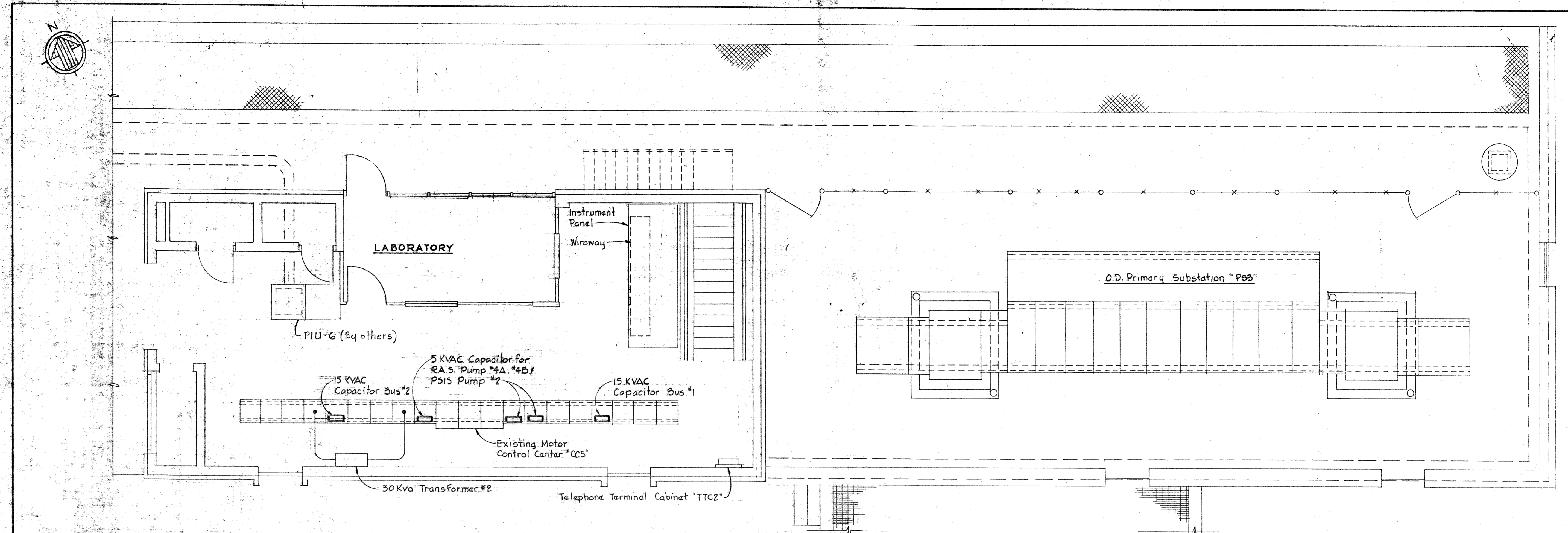


- NOTES:**
1. For General Electrical Notes & Legend, See Sheet E-3.
 2. Light dashed line work indicates existing; light line work indicates by others; heavy line work indicates work to be provided under this contract.
 3. The Tops of Panels "PAI" & "PBI" shall be 6'-6" above finished floor.
 4. Power wiring shall be extended from Panels "PAI" & "PBI" to the machinery located in the shop area. See Panel Schedules "PAI" & "PBI" for names & approximate horse power of the machinery.
 5. Final locations of Panels PAI & PBI depends upon fixed equipment furnished under this contract. Contractor shall submit equipment layout and final panel locations for review.
 6. Control cables (3/4" #12) shall be extended from two Samplers in Effluent PS, to starters in MCC-CC12 in new and exist. conduits - see sheets, E-1, E-5, E-8.
 7. The 15KV FDR cables in the SWGR Vault that extend from the 15/W ductbank to and in the wiring ladder and up to the breakers shall be protected w/ fire-proof tape.



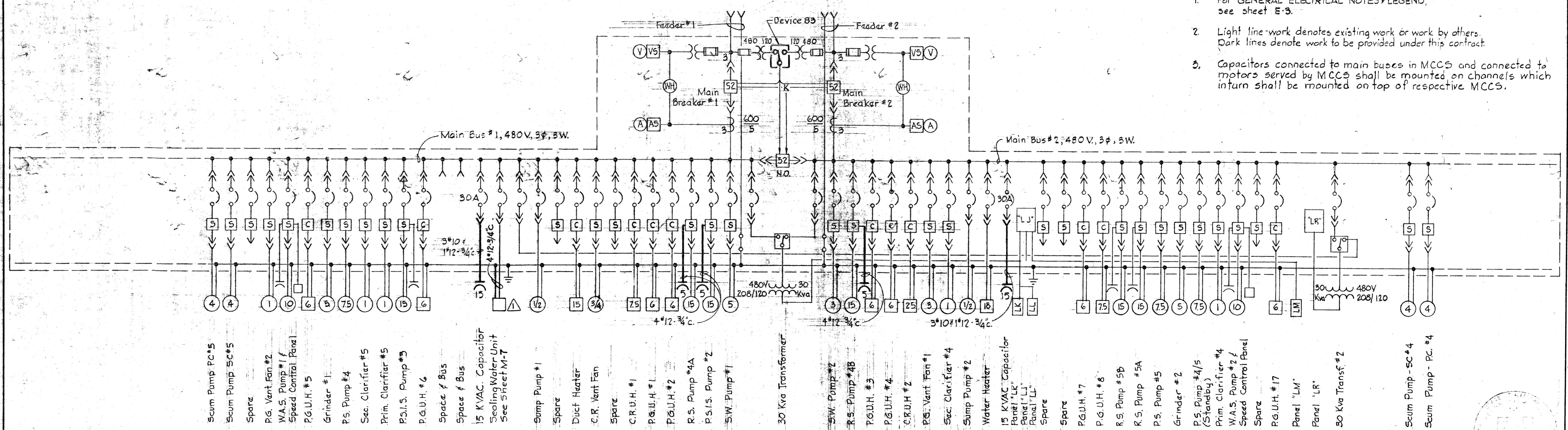
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 2/15/80 DATE James M. ... CHIEF - BUREAU OF ENVIRONMENTAL SERVICES	CONTRACT NO. 761-S	MISCELLANEOUS PLANS & DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4	DRAWING NO. 45 OF 50	SCALE AS SHOWN
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PLAN-CONTROL BUILDING #1
Scale: 1/4" = 1'-0"

- NOTES:**
1. For GENERAL ELECTRICAL NOTES / LEGEND, see sheet E-3.
 2. Light line-work denotes existing work or work by others. Dark lines denote work to be provided under this contract.
 3. Capacitors connected to main buses in MCCS and connected to motors served by MCCS shall be mounted on channels which in turn shall be mounted on top of respective MCCS.

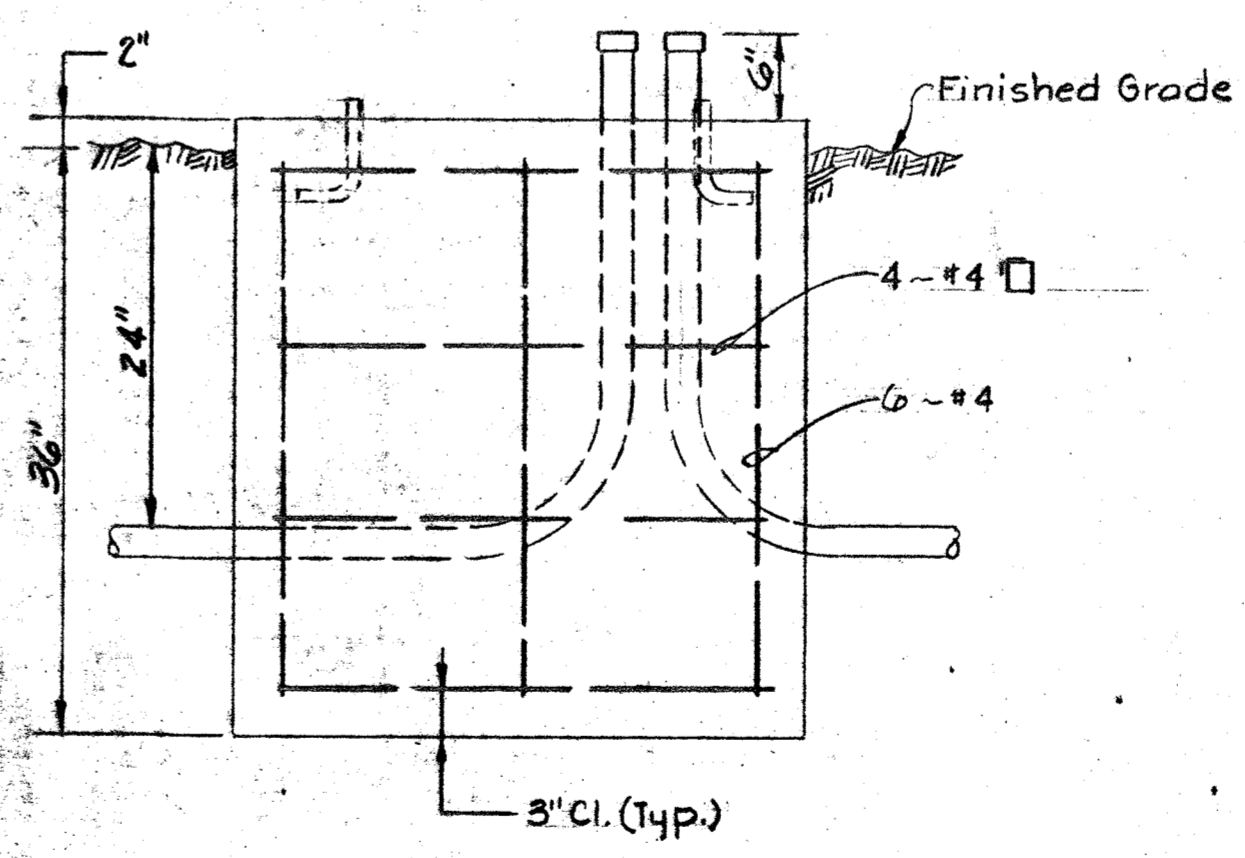
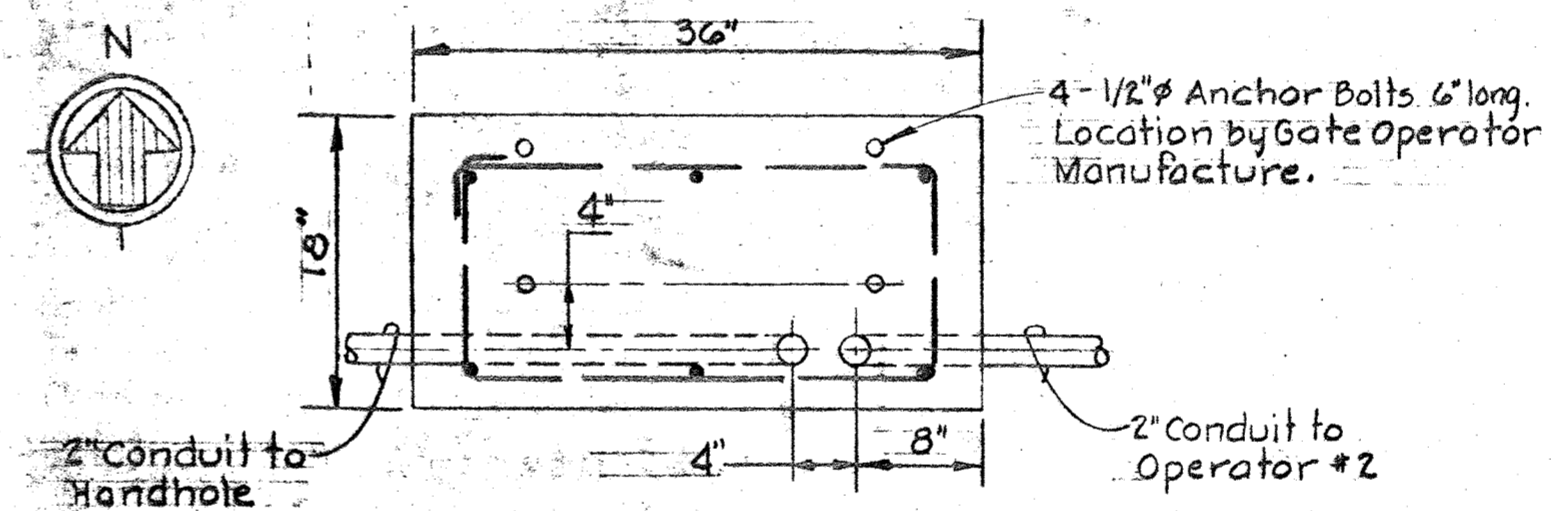
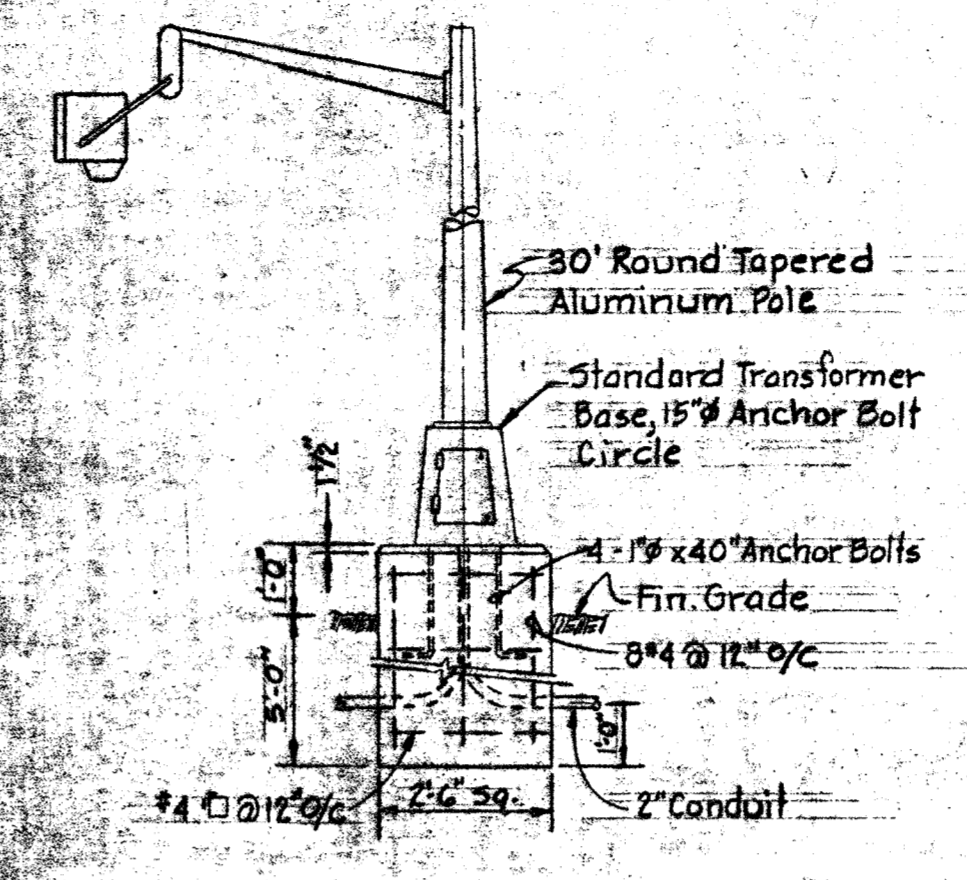
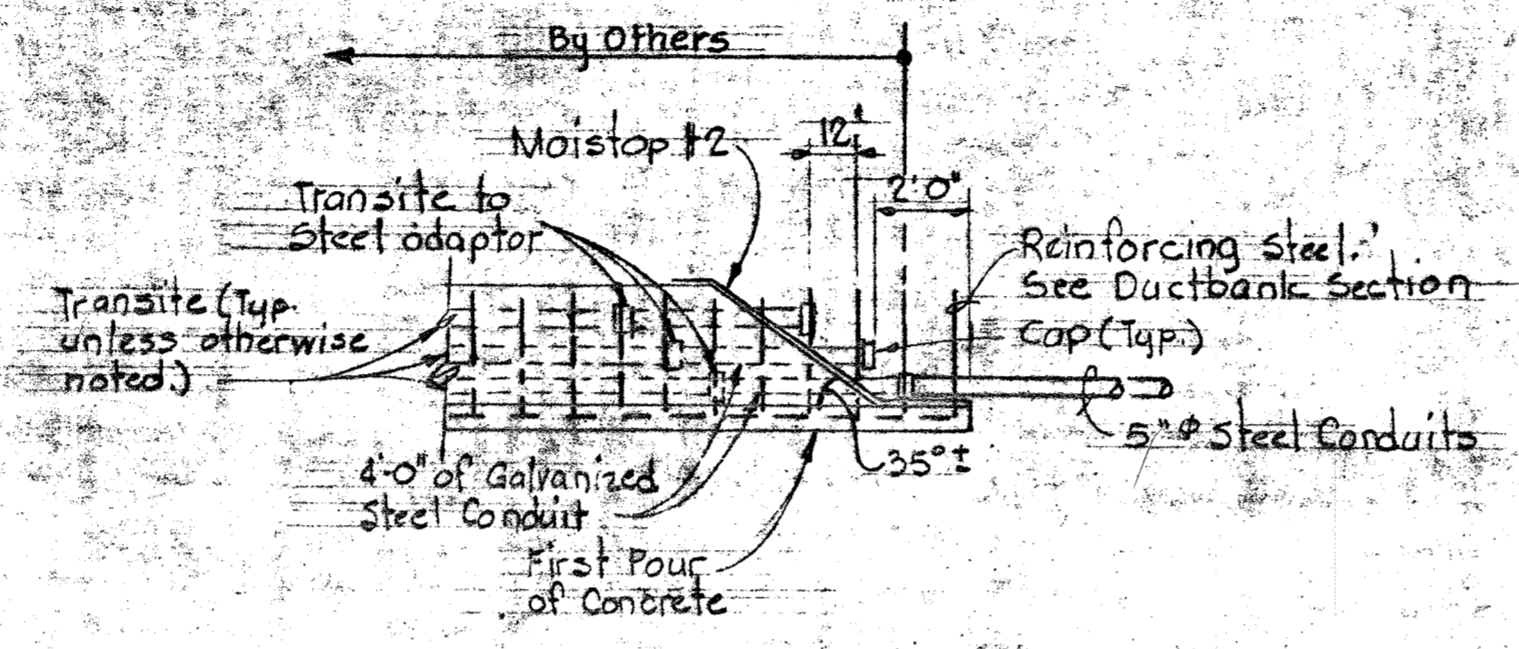
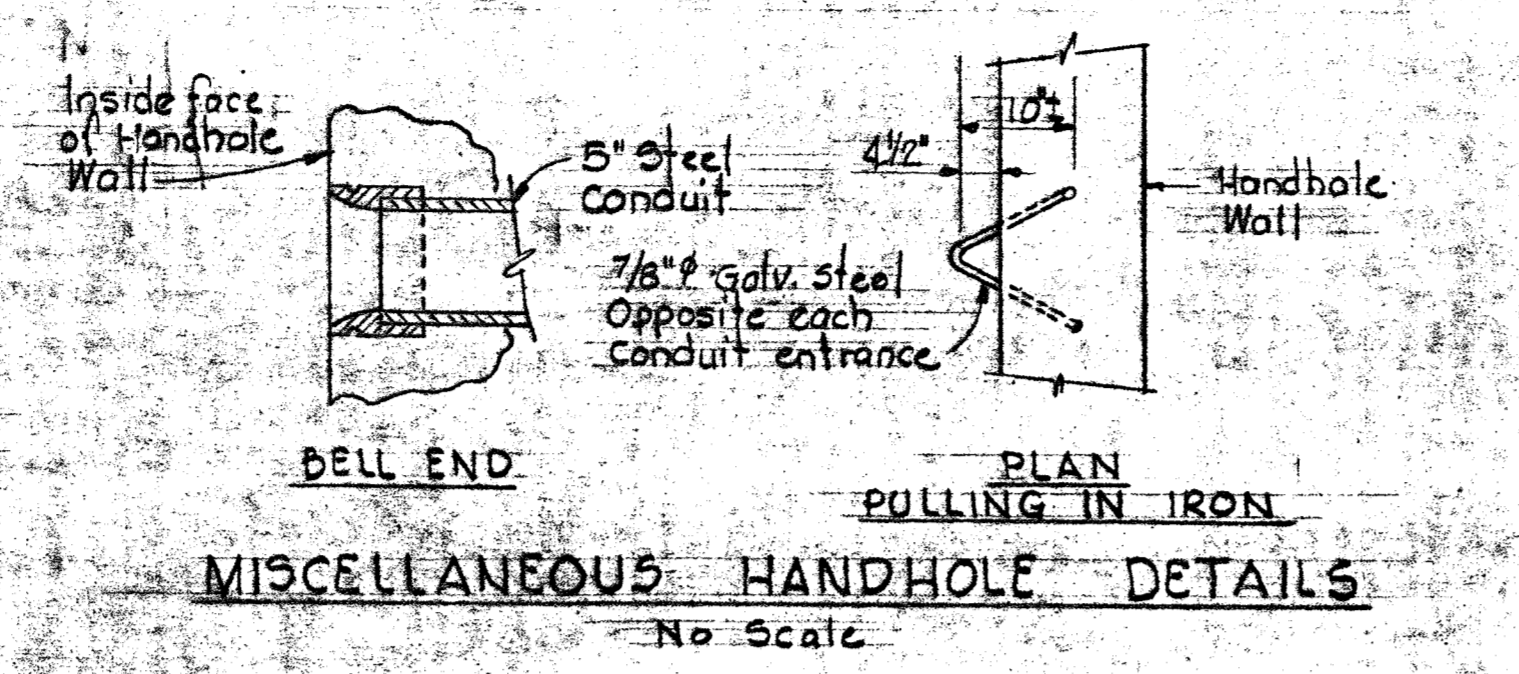
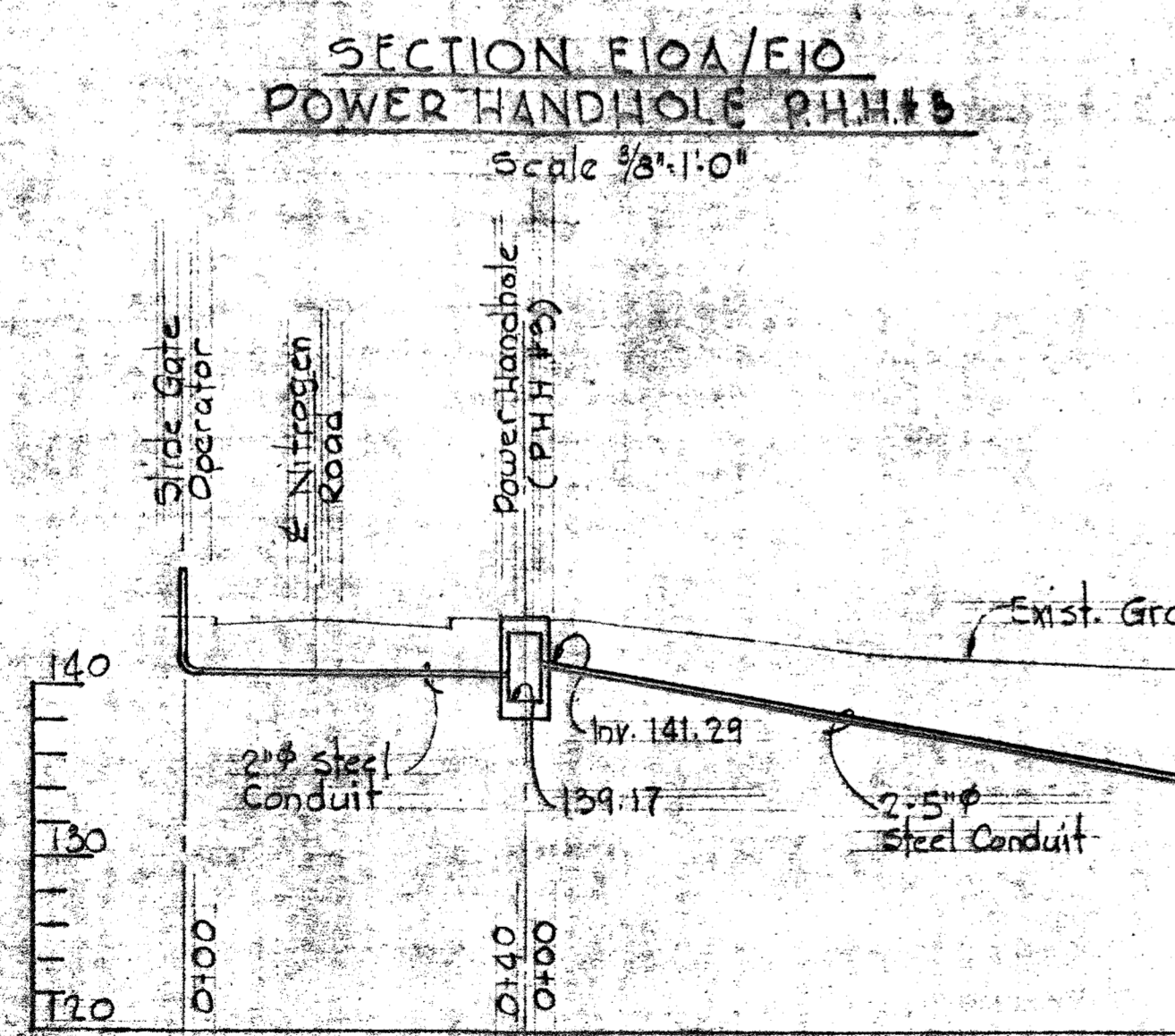
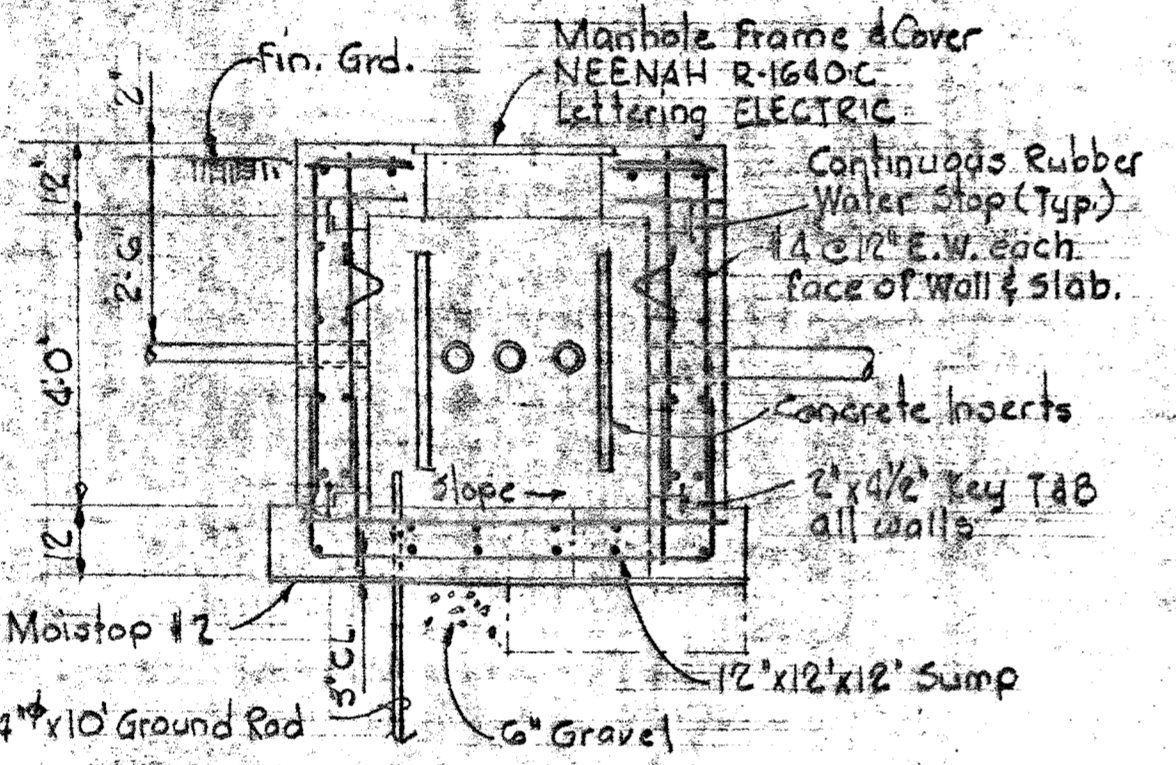
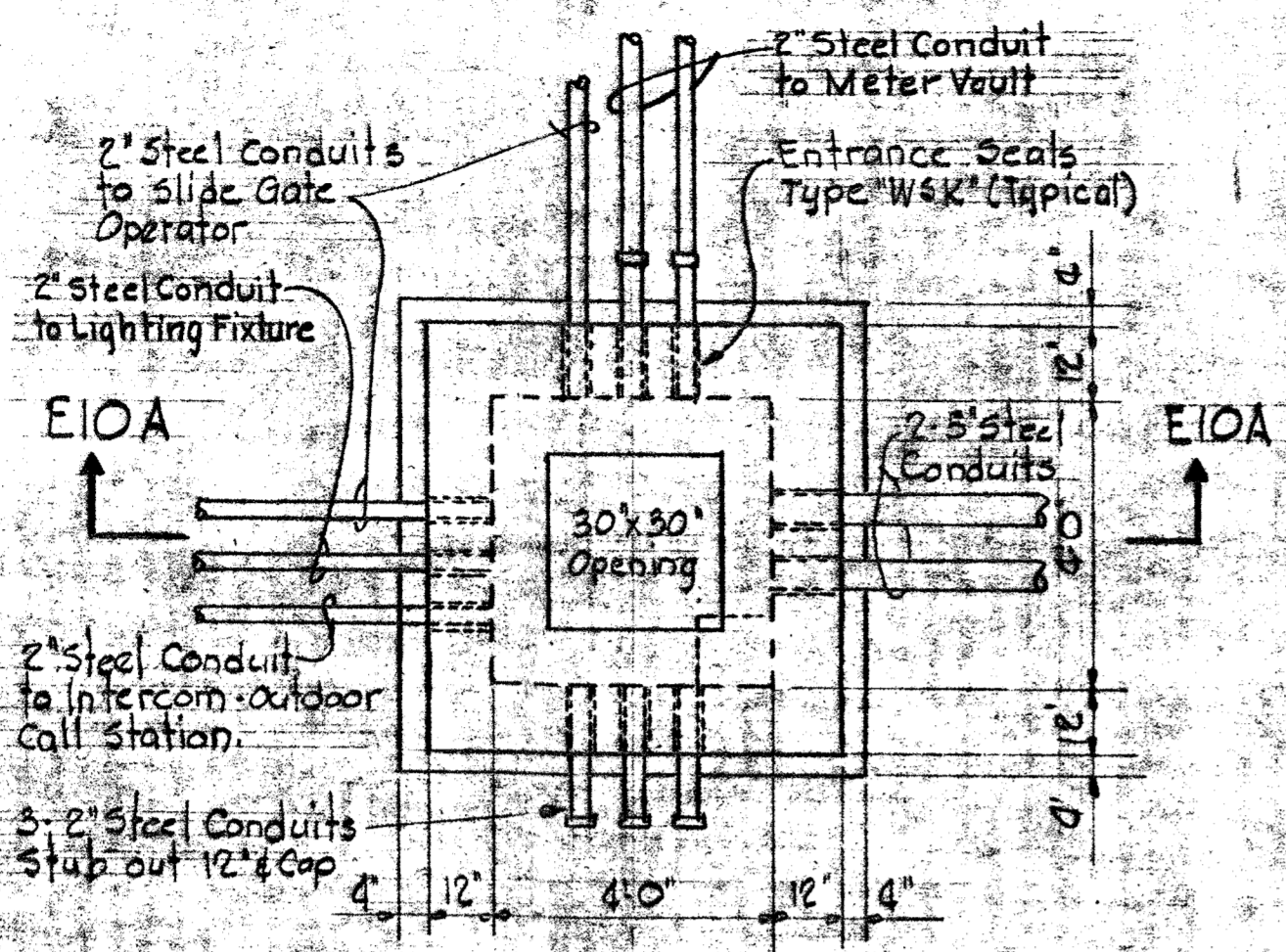


ONE-LINE DIAGRAM
MOTOR CONTROL CENTER "MCCS"

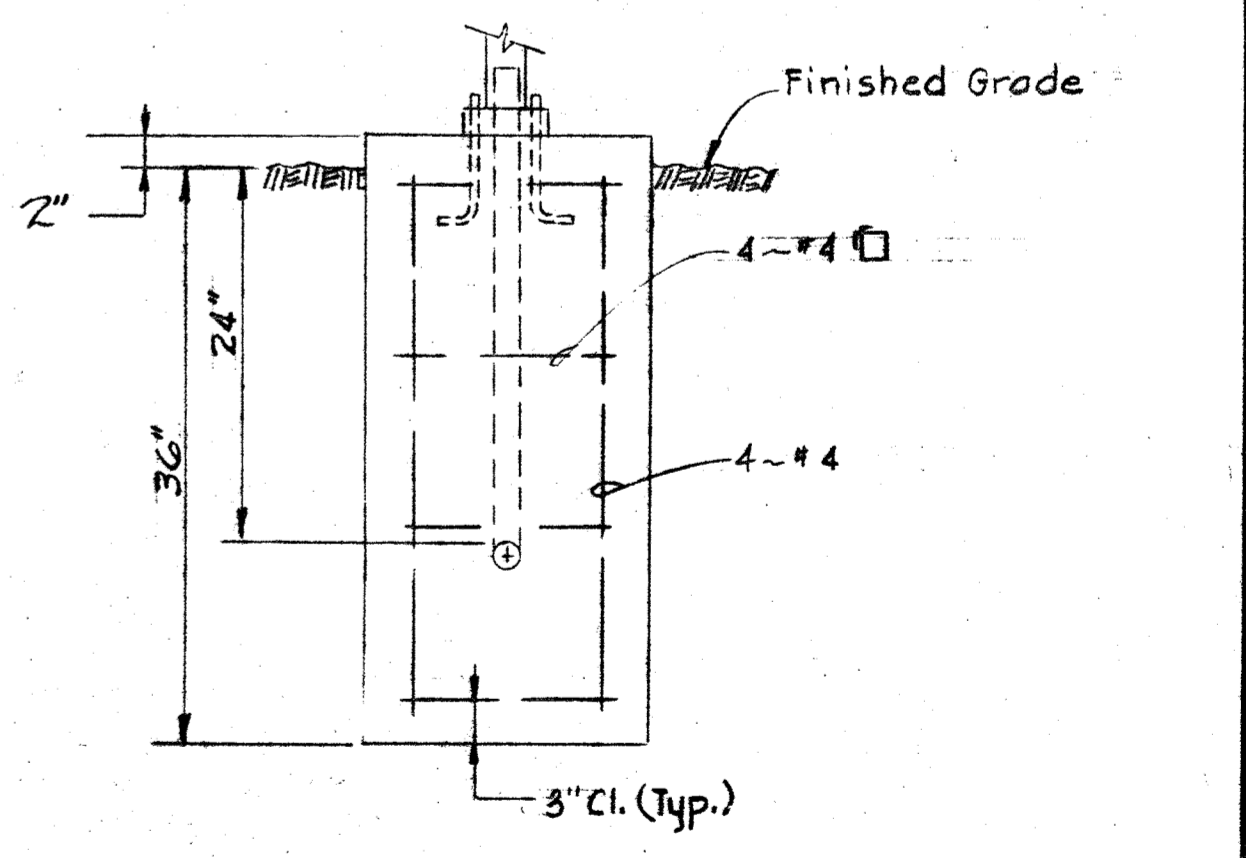
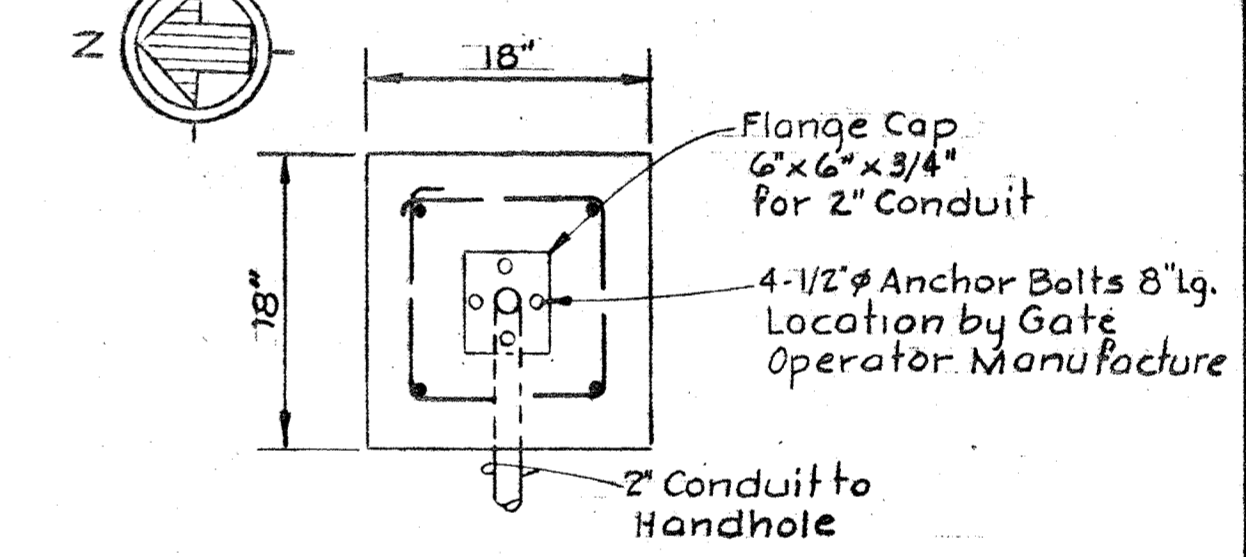
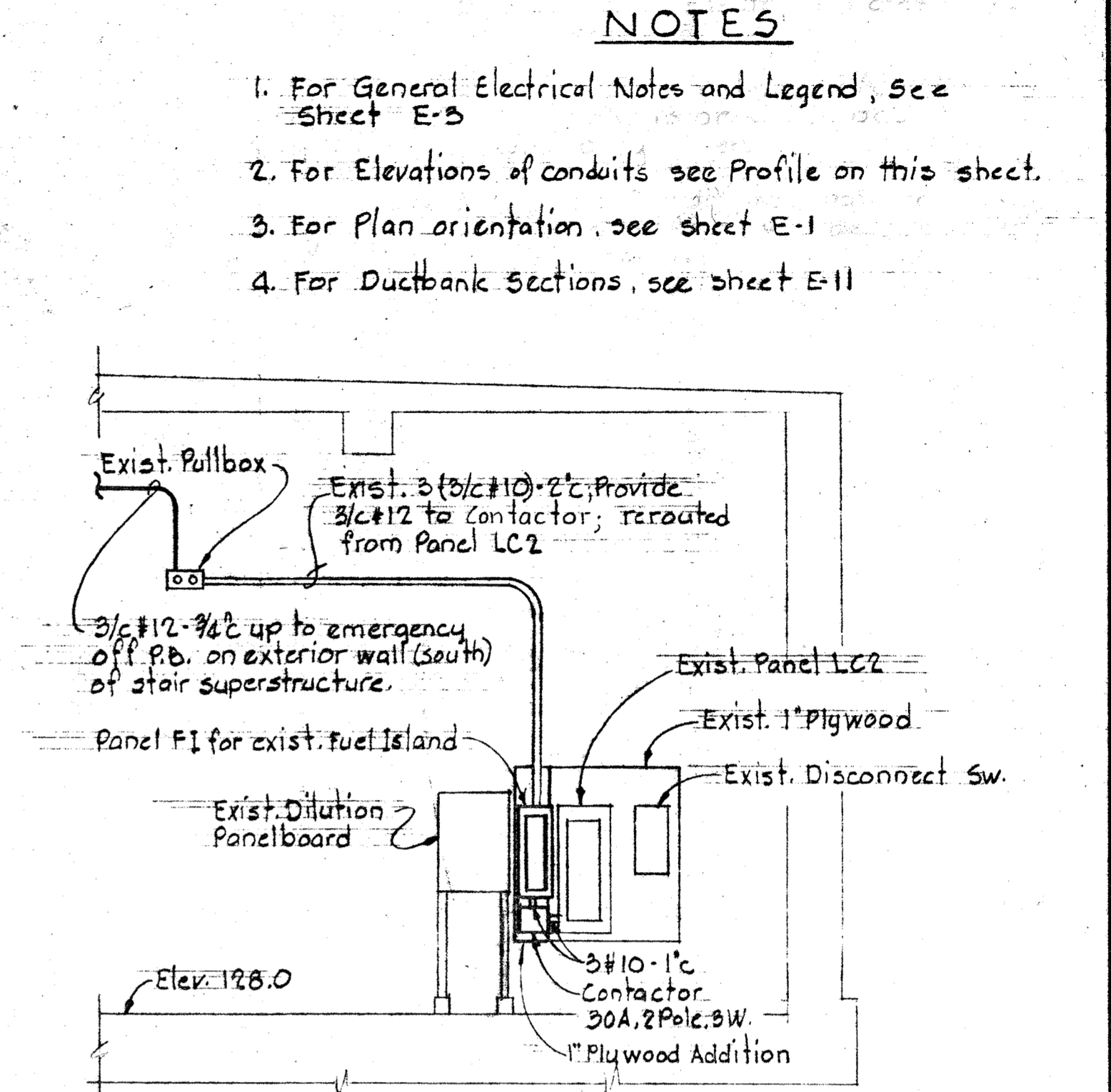
- Scum Pump PC #5
- Scum Pump SC #5
- Spare
- P.G. Vent Fan #2
- W.A.S. Pump #1 / Speed Control Panel
- P.G.U.H. #5
- Grinder #1
- P.S. Pump #4
- Sec. Clarifier #5
- Prim. Clarifier #5
- P.S.I.S. Pump #3
- P.G.U.H. #6
- Space f Bus
- Space f Bus
- 15 KVAC Capacitor Sealing Water Unit See Sheet M-7
- Sump Pump #1
- Spare
- Duct Heater
- C.R. Vent Fan
- Spare
- C.R.U.H. #1
- P.G.U.H. #1
- P.G.U.H. #2
- R.S. Pump #4A
- P.S.I.S. Pump #2
- SW. Pump #1
- 30 Kva Transformer
- SW. Pump #2
- R.S. Pump #4B
- P.G.U.H. #3
- P.G.U.H. #4
- C.R.U.H. #2
- P.G. Vent Fan #1
- Sec. Clarifier #4
- Sump Pump #2
- Water Heater
- 15 KVAC Capacitor Panel "LK"
- Panel "L"
- Panel "L"
- Spare
- Spare
- P.G.U.H. #7
- P.G.U.H. #8
- R.S. Pump #5B
- R.S. Pump #5A
- P.S. Pump #5
- Grinder #2
- P.S. Pump #4/5 (Standby)
- Prim. Clarifier #4
- W.A.S. Pump #2 / Speed Control Panel
- Spare
- P.G.U.H. #17
- Panel "LM"
- Panel "LR"
- 30 Kva Transf. #2
- Scum Pump - SC #4
- Scum Pump - PC #4

<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p>2/15/80 DATE</p> <p><i>James M. ...</i> CHIEF, BUREAU OF ENVIRONMENTAL SERVICES</p>	<p>CONTRACT NO. 761-S</p>	<p>A.B. CONTROL BLDG. #1 PLAN & DETAILS</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 46 OF 50</p> <p>SCALE AS SHOWN</p>
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W.O. 7132-2F ADDENDUM No.1



CONCRETE MOUNTING PAD FOR SLIDING GATE OPERATOR No. 1-TYPICAL FOR SLIDE GATE OPERATOR No. 2 (See Sheet E-4 for Wiring Details)



CONCRETE MOUNTING DETAIL FOR OUTDOOR INTERCOM CALL STATION (See Sheet E-4 for Wiring Details)

NOTES

1. For General Electrical Notes and Legend, See Sheet E-3
2. For Elevations of conduits see Profile on this sheet.
3. For Plan orientation, see sheet E-1
4. For Ductbank Sections, see sheet E-11



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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
2/15/80
DATE
Chief, Bureau of Environmental Services

CONTRACT NO. 761-S

UNDERGROUND HANDHOLE & MISCELLANEOUS DETAILS

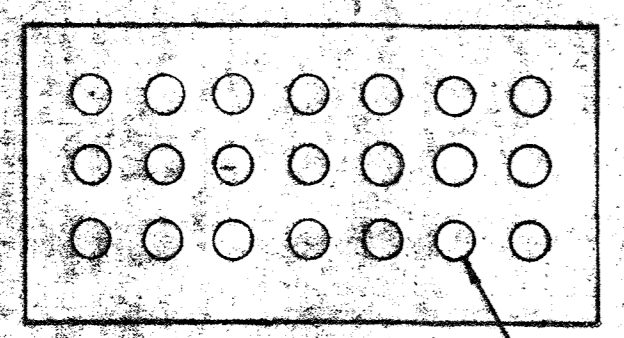
SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4

DRAWING NO. 47 OF 50

SCALE AS SHOWN

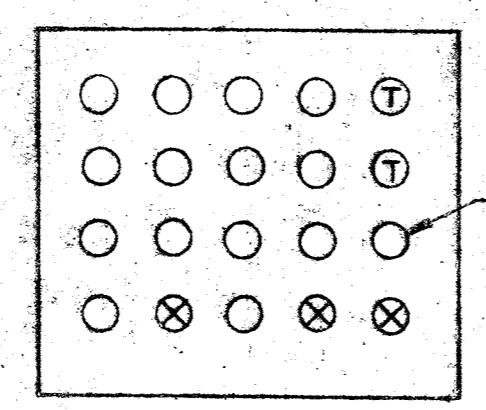
NOTES

1. For General Electrical Notes & Legend See Sheet E-3.
2. Symbol ⊗ Indicates that raceways in ductbanks is or will be occupied with wiring by others.
3. Symbol ⊕ Indicates that raceways in ductbanks is or will be occupied with telephone wiring.



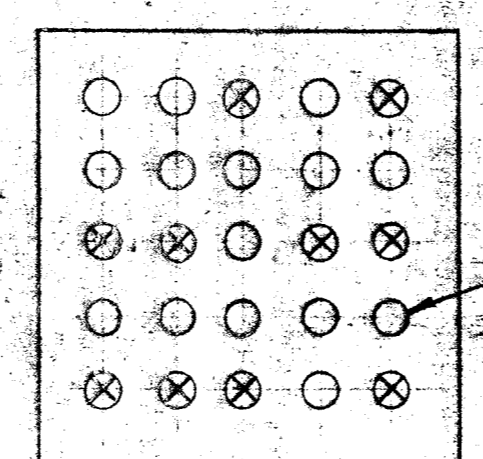
4/C#10, 2(4/C#12)
2(2/P#16), 3/C#2

SECTION EIIA/EI



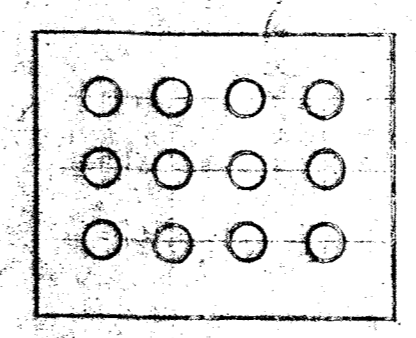
2(4/C#12) 2/P#16

SECTION EIIF/EI

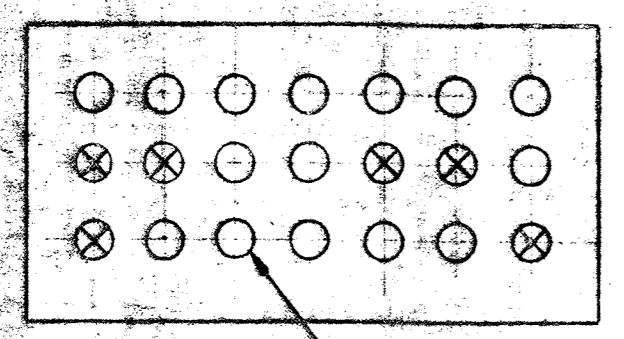
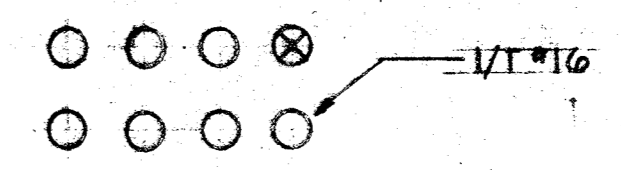


2(4/C#12) 2/P#16
(To Interconnection)

SECTION EIIM/EI

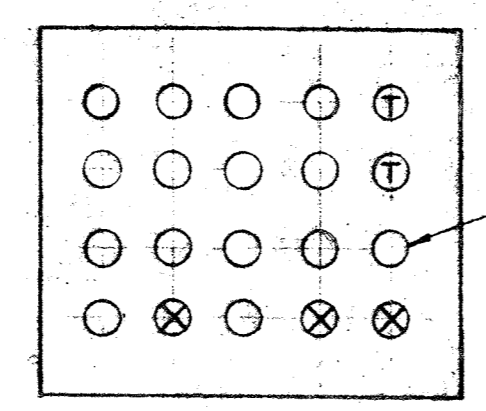


SECTION EIIT/EI



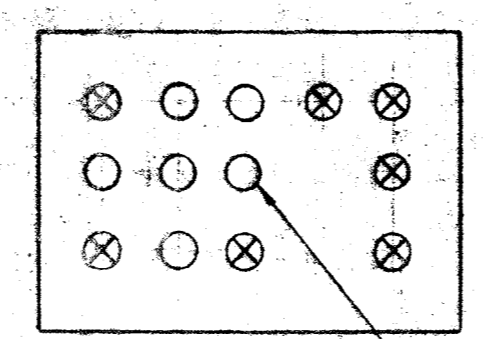
4/C#10, 2(4/C#12), 3/C#2
4(1/T#16), 2(2/P#16)

SECTION EIIH/EI



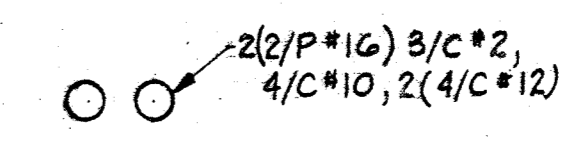
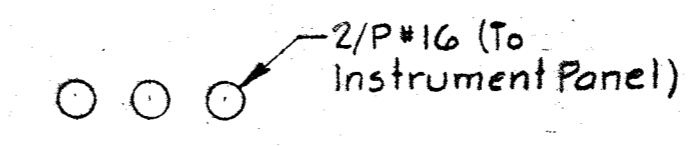
2(4/C#12) 2/P#16

SECTION EIIJ/EI

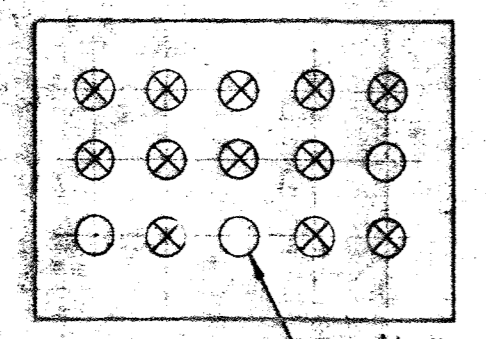


3/C#8 (To Spare Bkr. in Panel "LB")

SECTION EIIN/EI

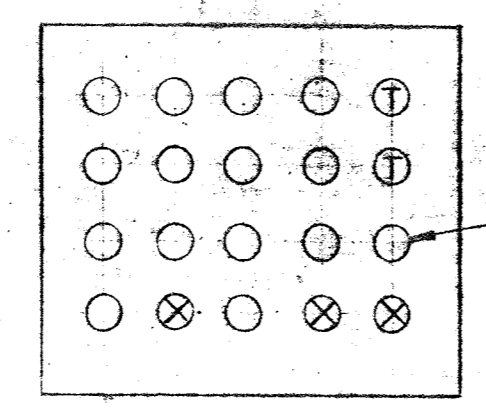


SECTION EIIZ/EI



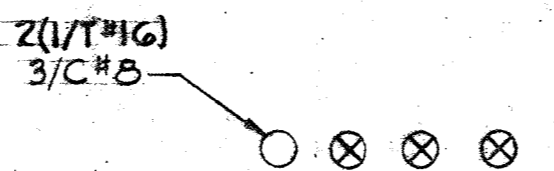
4/C#10 (To Spare Bkr. in MCC-CCT), 3/C#2 (To Panel "LT")
4(1/T#16), 2/P#16 (To PIU)

SECTION EIIK/EI

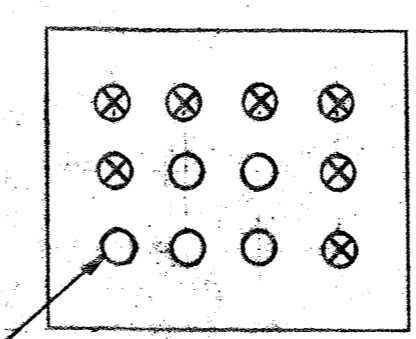


2(4/C#12) 2/P#16

SECTION EIIA/EI

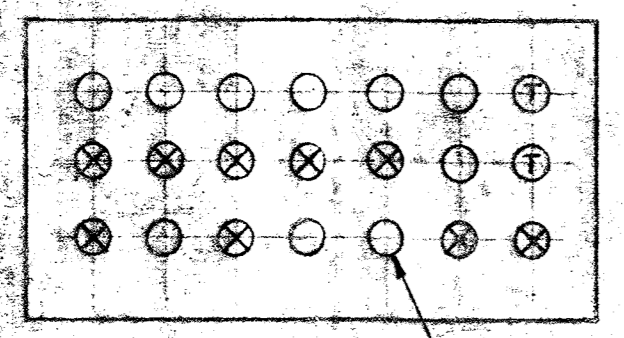


SECTION EIIU/EI



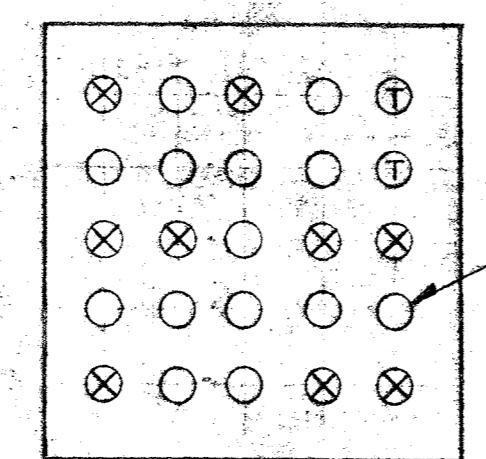
3(1/T#16)

SECTION EIIAA/E4



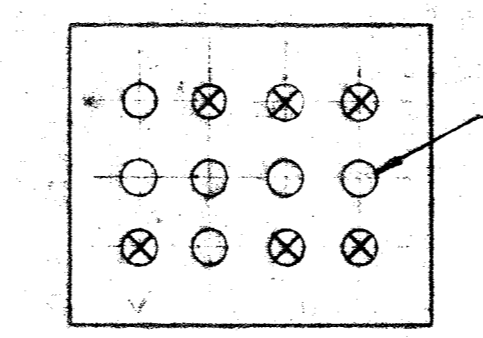
2(4/C#12) 2/P#16

SECTION EIIQ/EI



2(4/C#12) 2/P#16

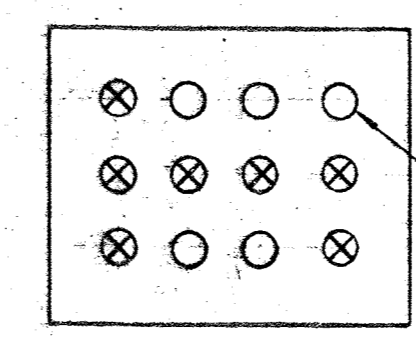
SECTION EIIH/EI



3/C#8

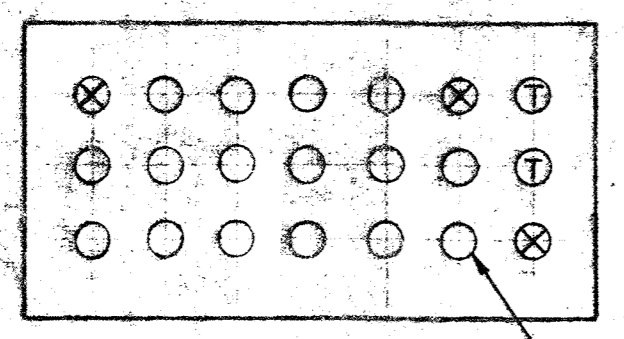
SECTION EIIQ/EI

SECTION EIIV/EI



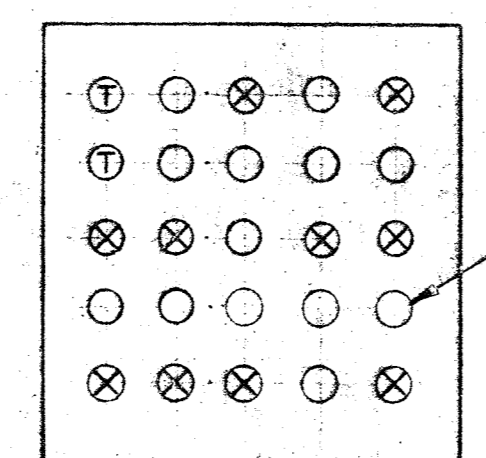
3(1/T#16) To Instrument Panel

SECTION EIIIBB/EI & E6



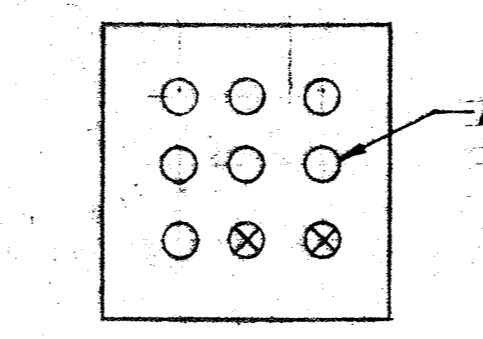
2(4/C#12) 2/P#16

SECTION EIIQ/EI



2(4/C#12) 2/P#16

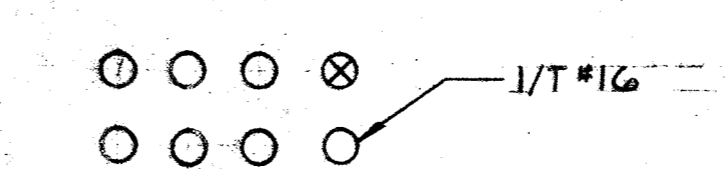
SECTION EIIK/EI



2(3/C#8) To Spare Bkr. in Panel "LB"

SECTION EIIQ/EI

SECTION EIIY/EI



SECTION EIIW/EI

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

2/15/80
DATE

James M. ...
CHIEF-BUREAU OF ENVIRONMENTAL SERVICES

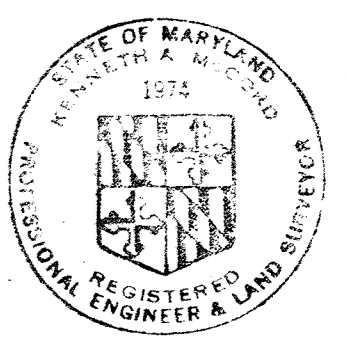
CONTRACT NO. 761-S

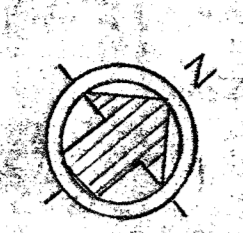
UNDERGROUND DUCTBANK
SECTIONS & DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 4

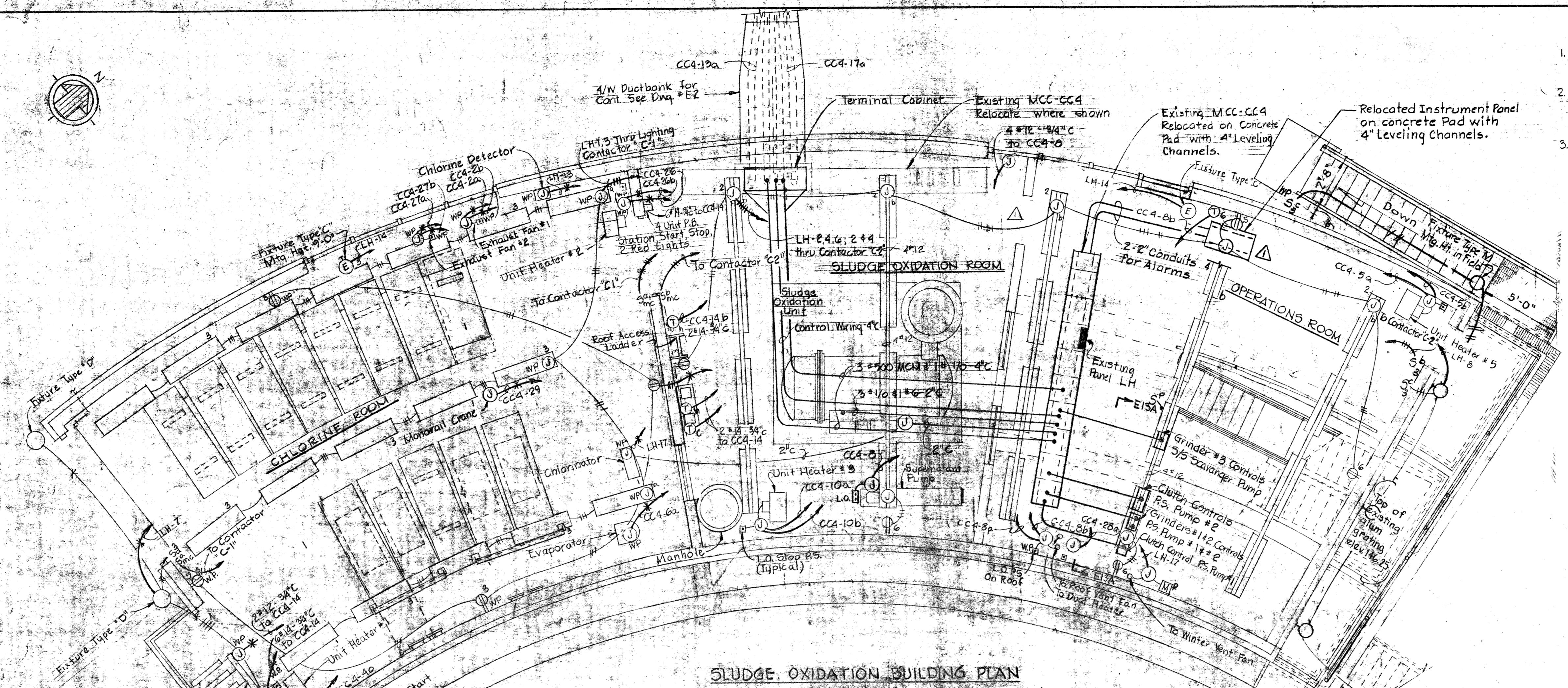
DRAWING
NO. 48
OF 50

SCALE
NONE

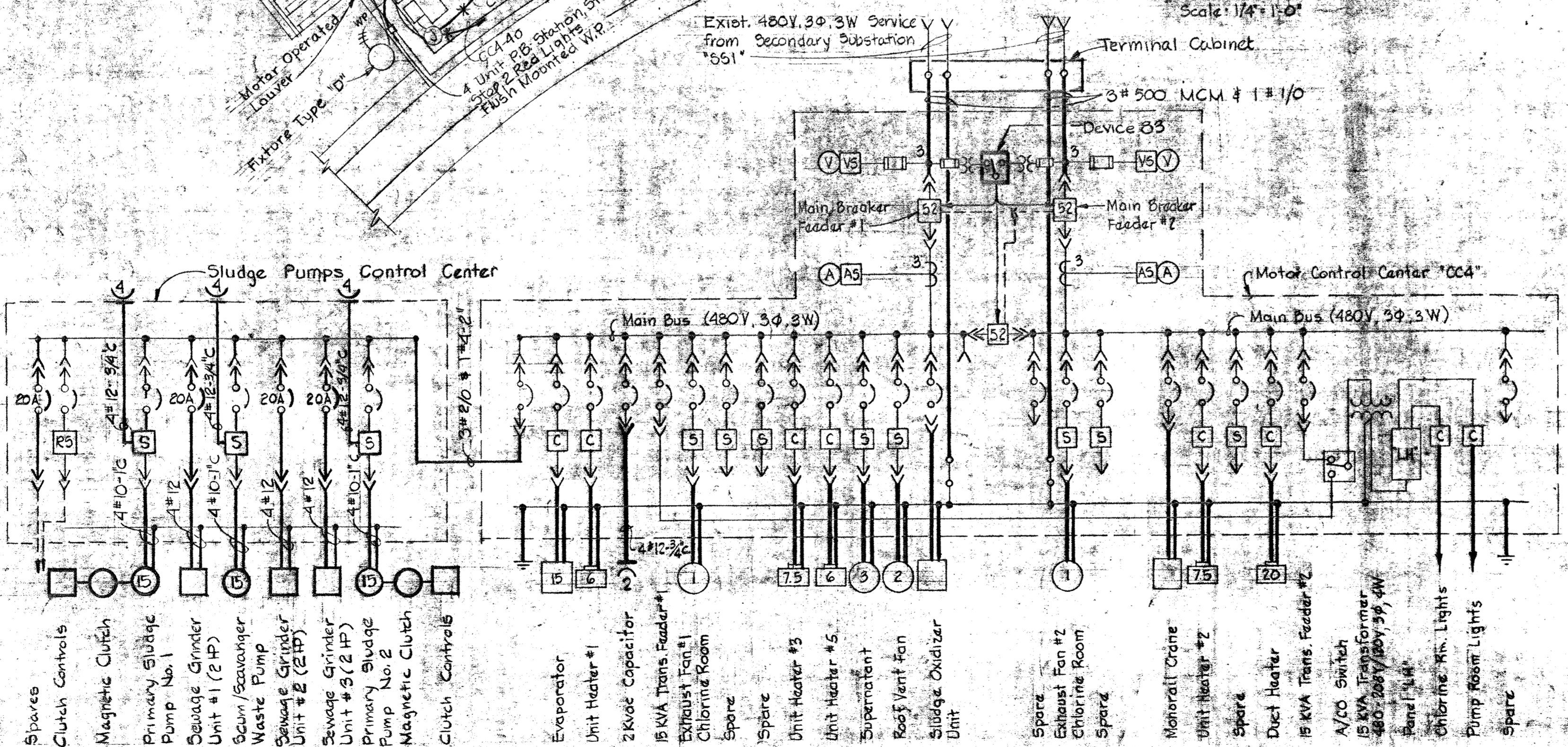




- NOTES:**
1. For General Electrical Notes & Legend, see Sheet E-3.
 2. Light line work denotes existing or by others. Dark lines denote work to be provided under this contract.
 3. For each pull box below MCC-CC4, core bore two holes thru floor for two 3" conduits.

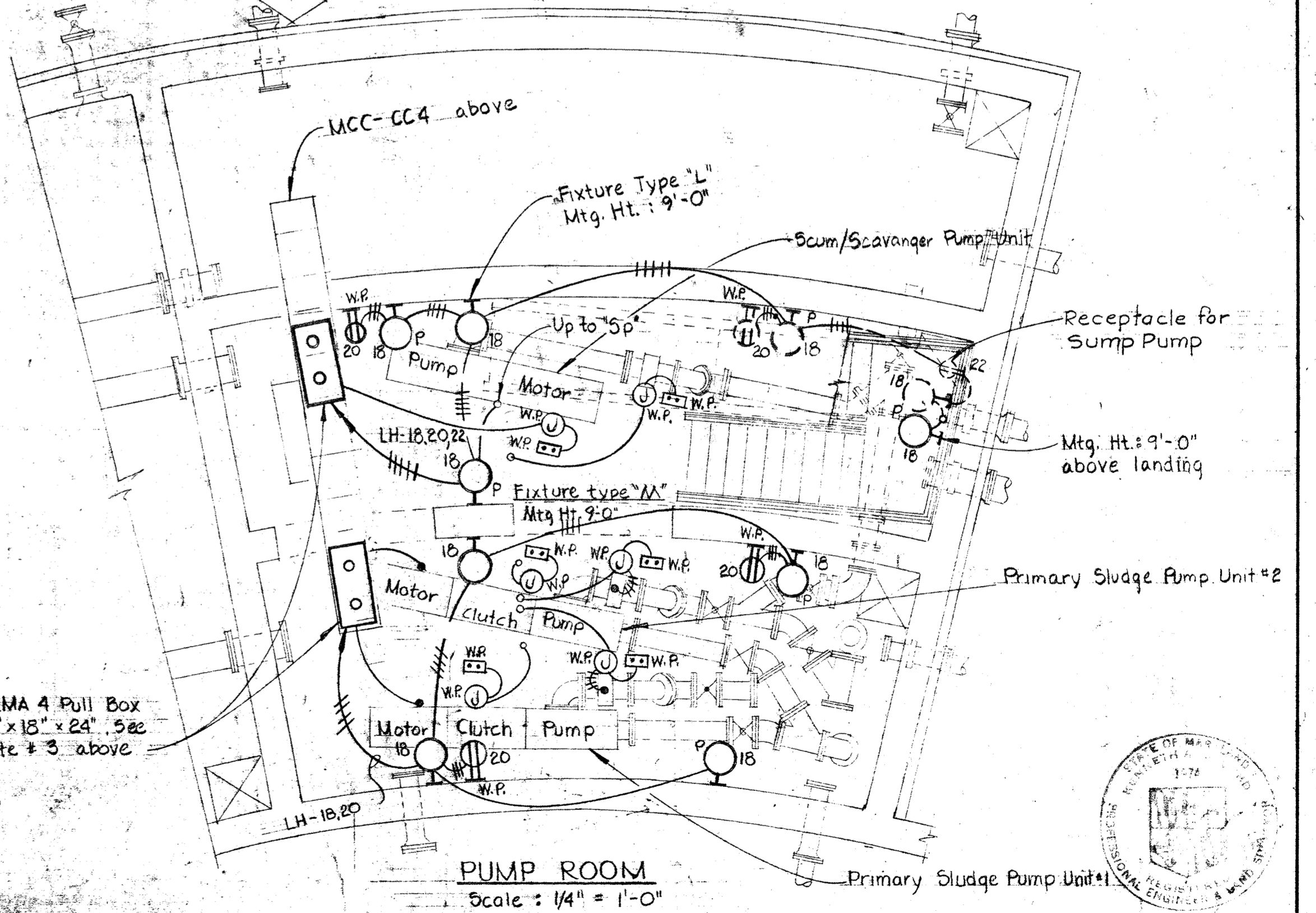


SLUDGE OXIDATION BUILDING PLAN
Scale: 1/4" = 1'-0"



**ONE LINE DIAGRAM
SLUDGE PUMP CONTROL CENTER**

**ONE LINE DIAGRAM
MOTOR CONTROL CENTER 'CC4'**



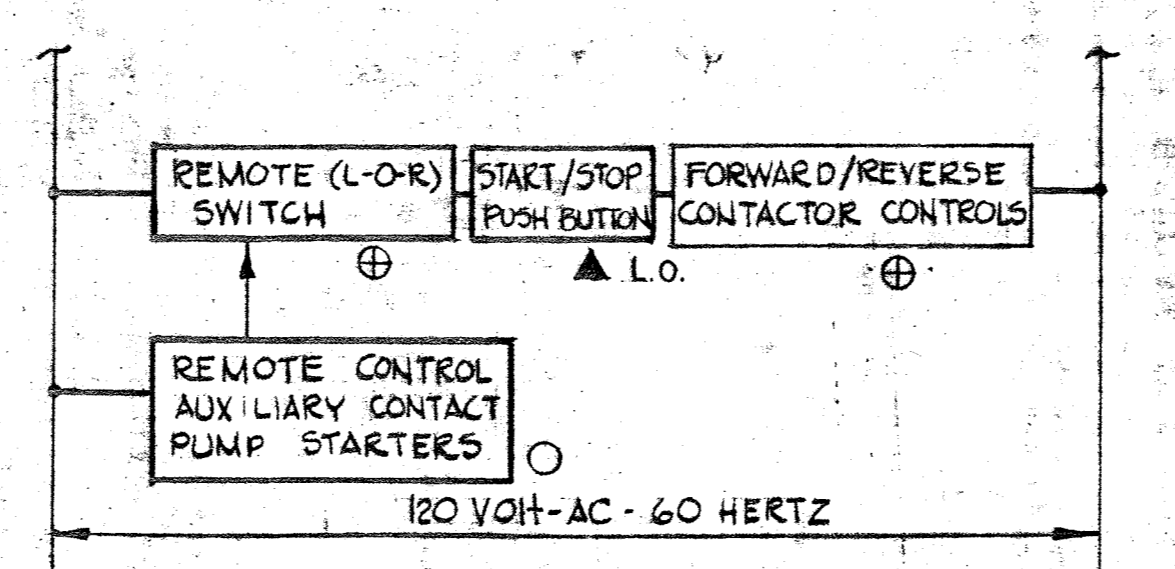
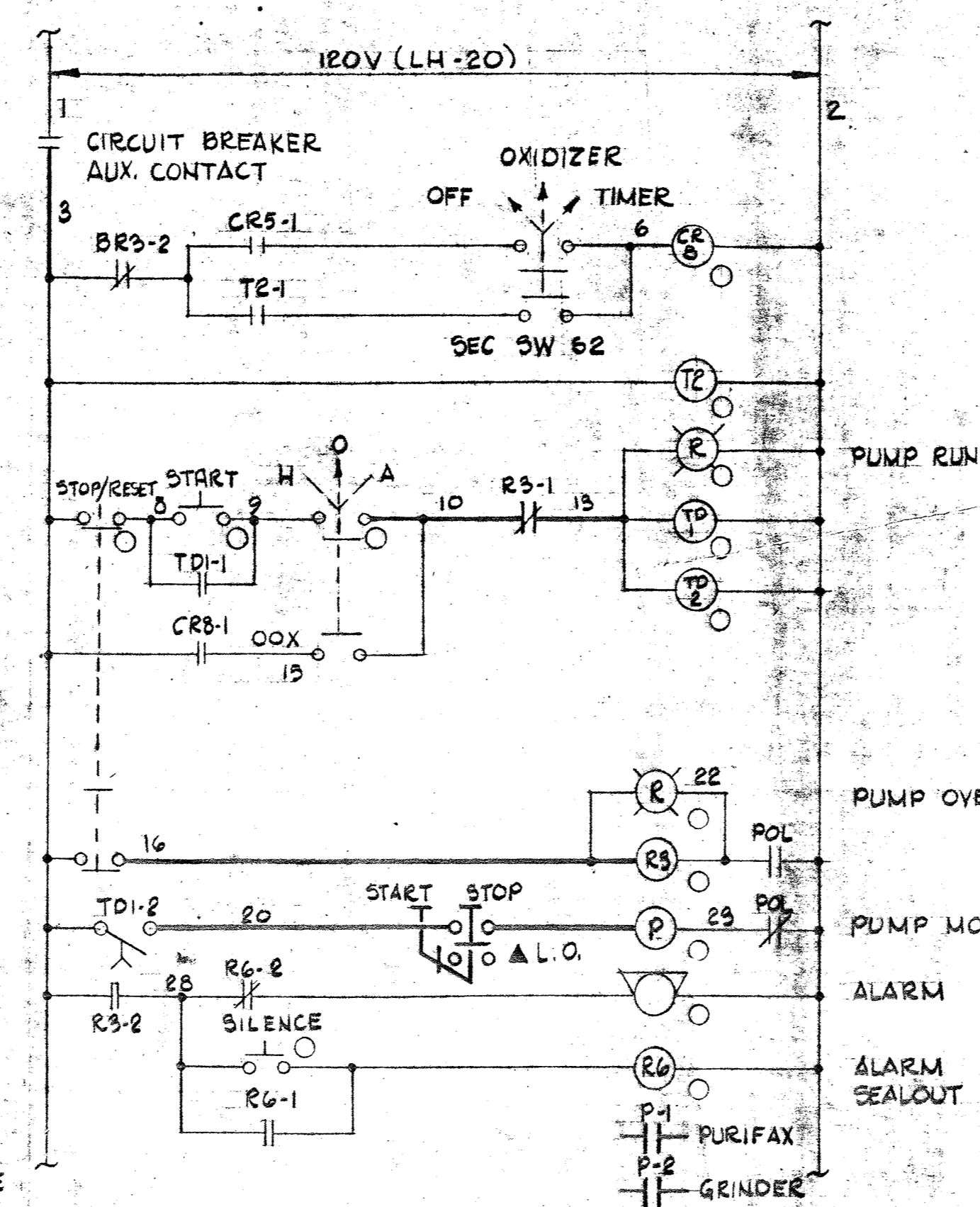
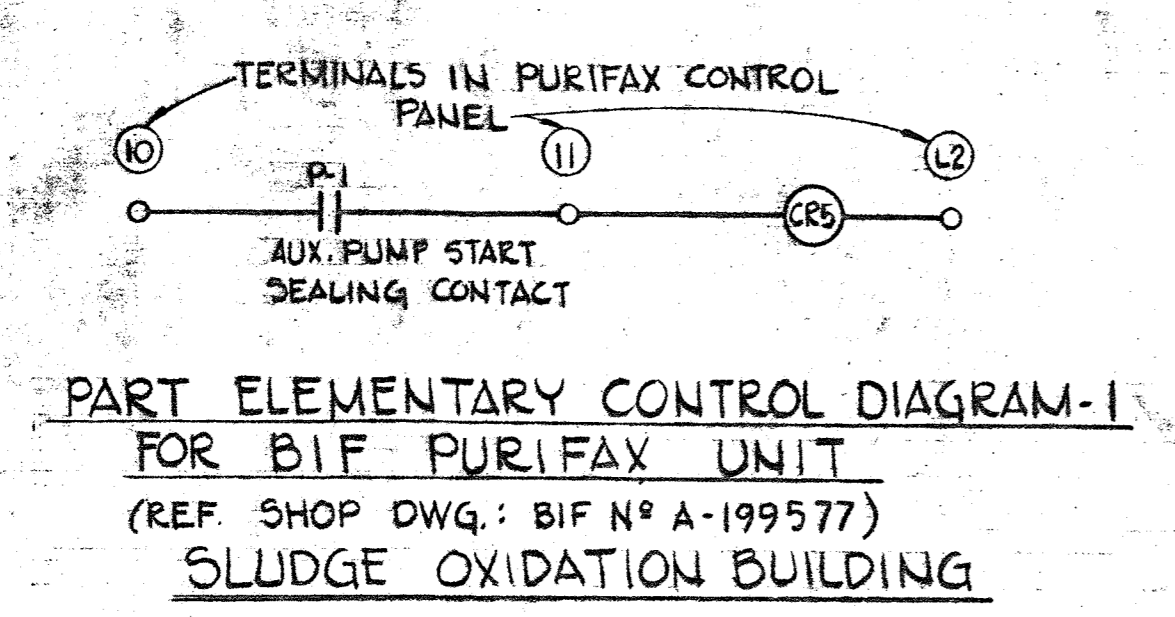
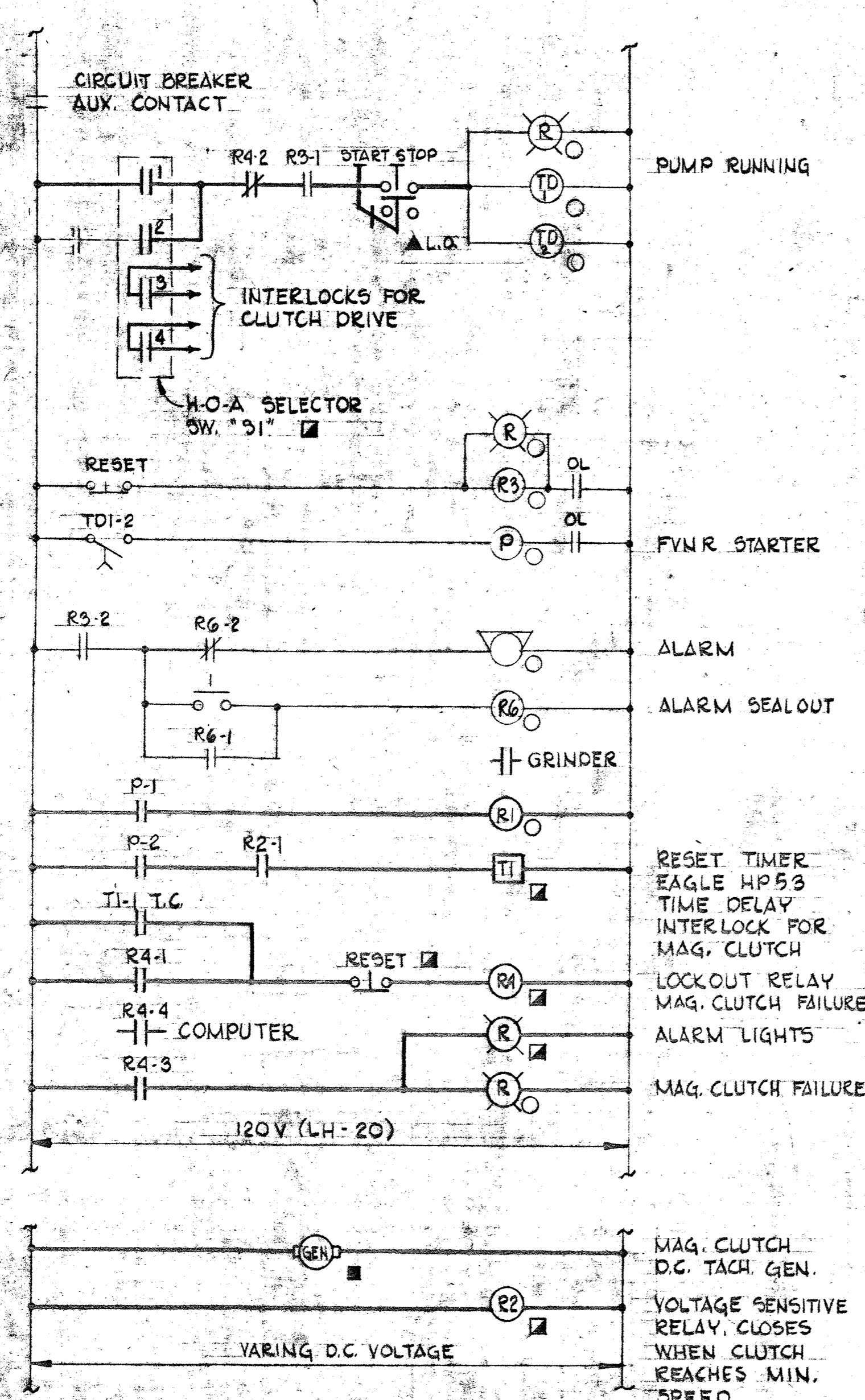
PUMP ROOM
Scale: 1/4" = 1'-0"

<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 2/16/80 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES</p>	<p>CONTRACT NO. 761-S</p>	<p>SLUDGE OXIDATION BLDG. PLAN & DETAILS</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 4</p>	<p>DRAWING NO. 49 OF 50 SCALE AS SHOWN</p>
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W. O. 7132-2F ADDENDUM No. 1

SHEET E-12

BRUNING 44-510 1832



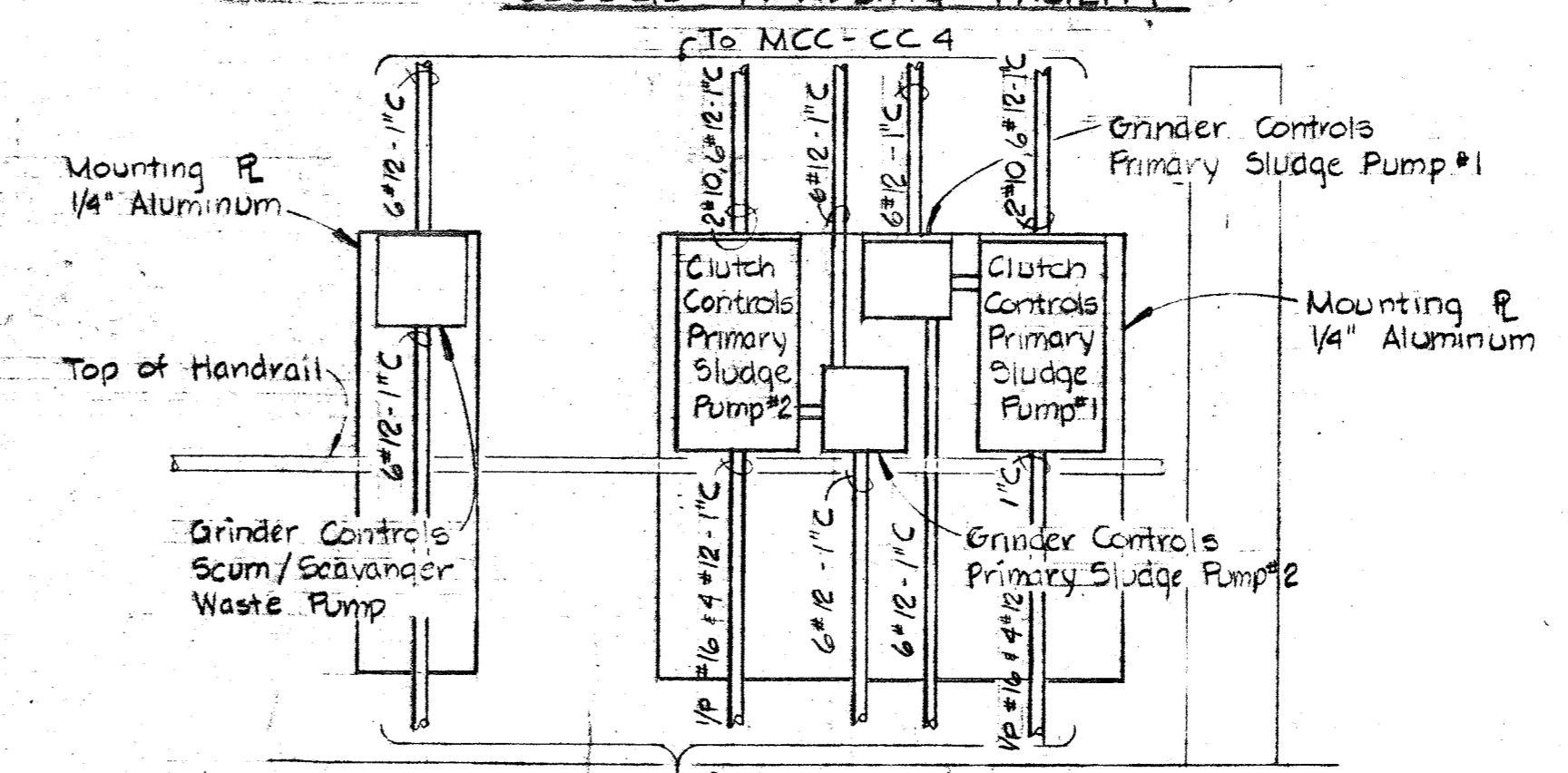
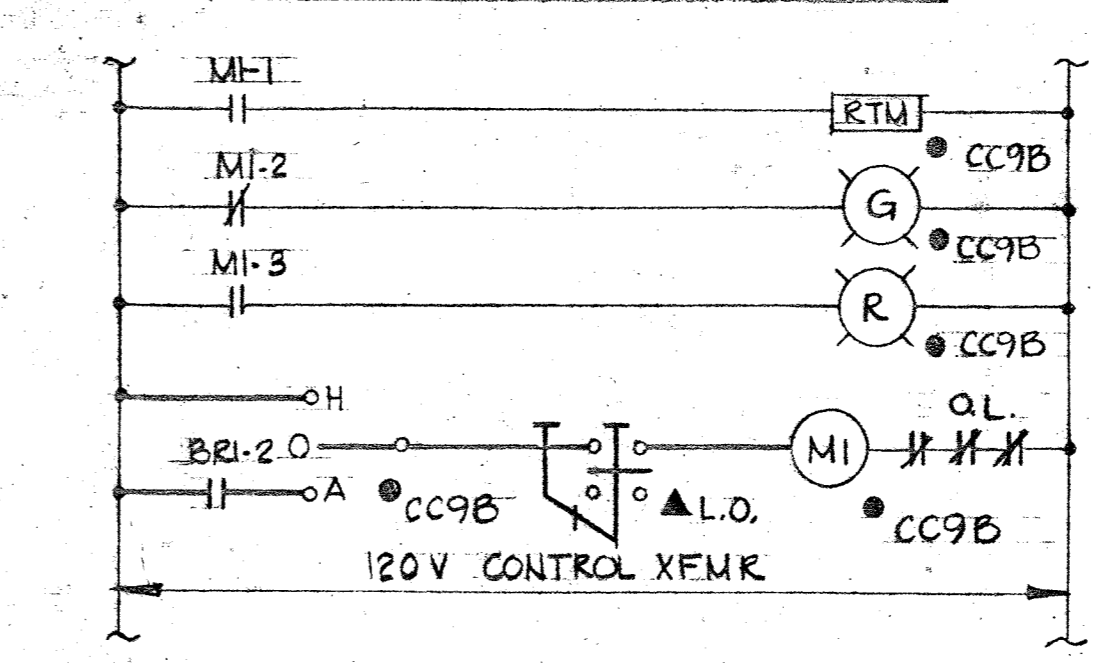
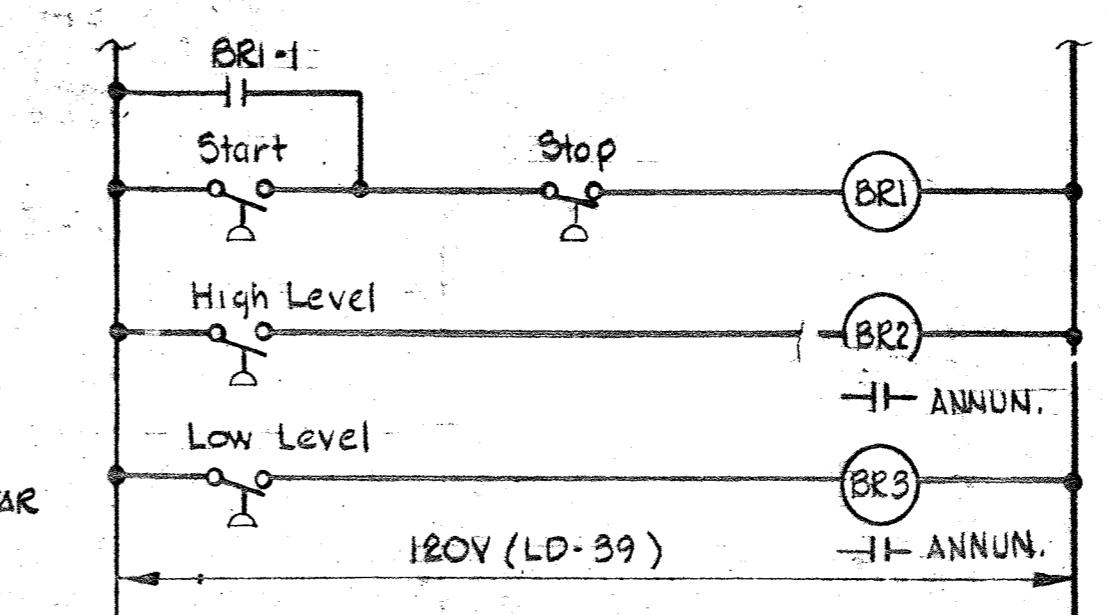
Wire Way
12" x 34" x 20"

Exist. Sludge Pumps Control Center
Exist. Motor Control Center - CC4
2-3" Conduits

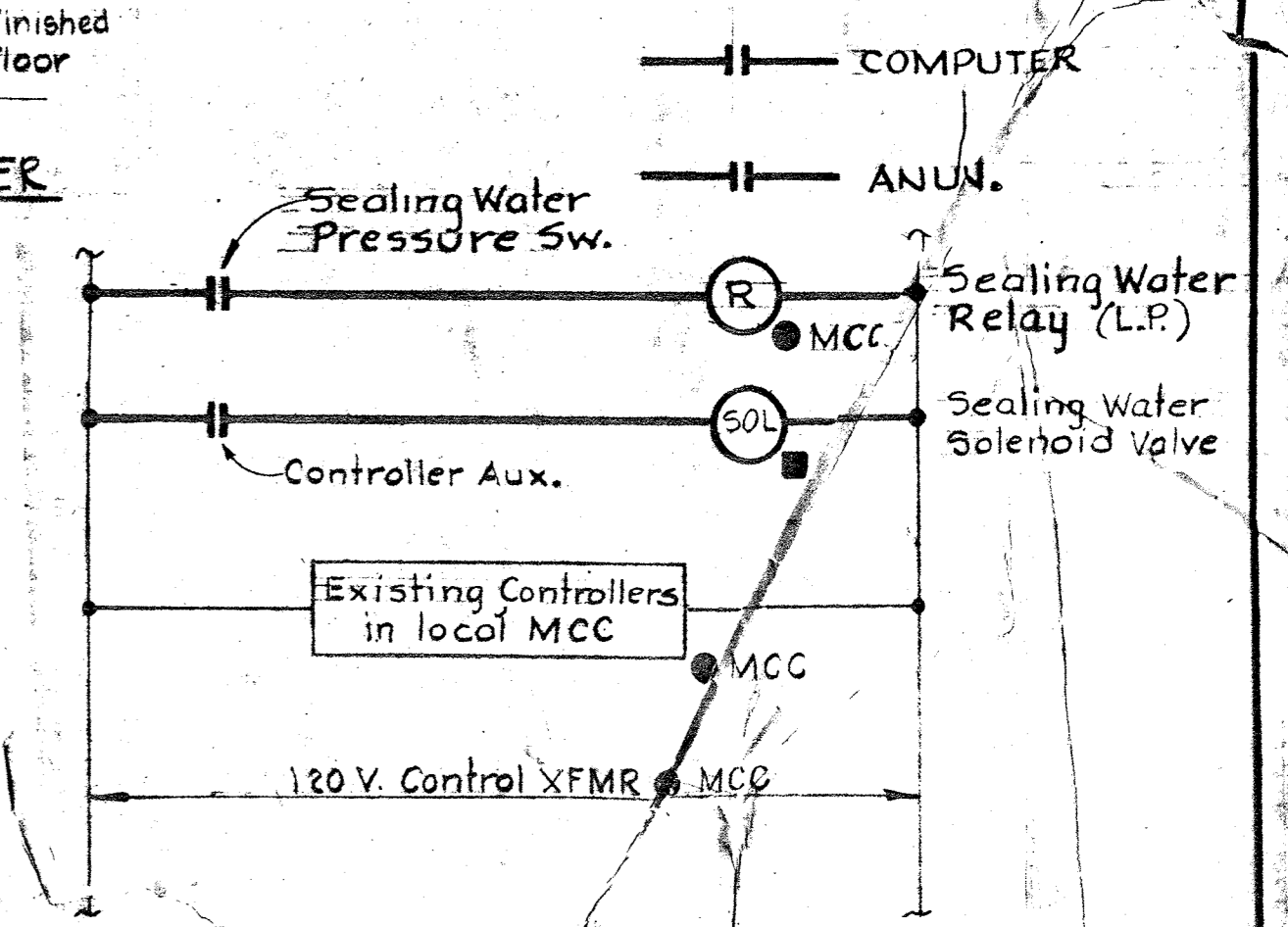
CC4-1	CC4-6	CC4-11	CC4-15	CC4-17	CC4-18	CC4-24	CC4-26	FVNR-2
CC4-2	CC4-7			CC4-19		CC4-27	FVE-1	
CC4-3	CC4-8			CC4-20		CC4-28	FVNR-2	
CC4-4	CC4-9a	CC4-9b		CC4-22	CC4-25	BLANK	FVNR-1	
CC4-5	CC4-10			CC4-23	CC4-29		FVNR-2	
BLANK	CC4-11						FVNR-1	

Finished Floor

ELEVATION: MCC-CC4 & SLUDGE PUMP CONTROL CENTER
Scale: 3/8" = 1'-0"



- NOTES**
1. For GENERAL ELECTRICAL NOTES & LEGEND, See Sheet E3.
 2. Light line work denotes existing work, or work by others. Heavy line work indicates work to be provided under this contract.



- (1) 14 Pumping Units in Aeration Pipe Gallery West
- (2) 8 Pumping Units in Aeration Pipe Gallery East
- (3) 6 Pumping Units in Phosphorus Control Bldg.