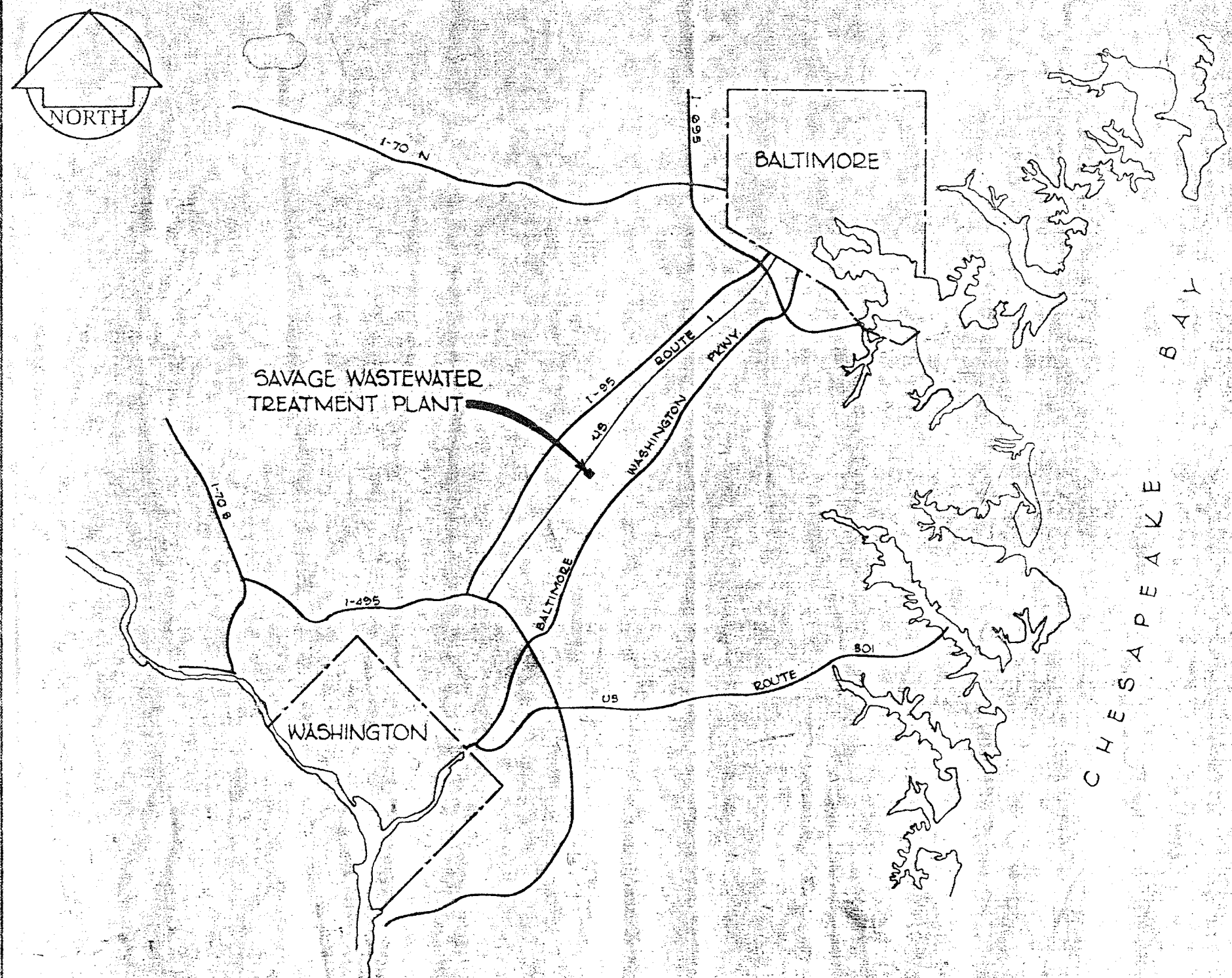
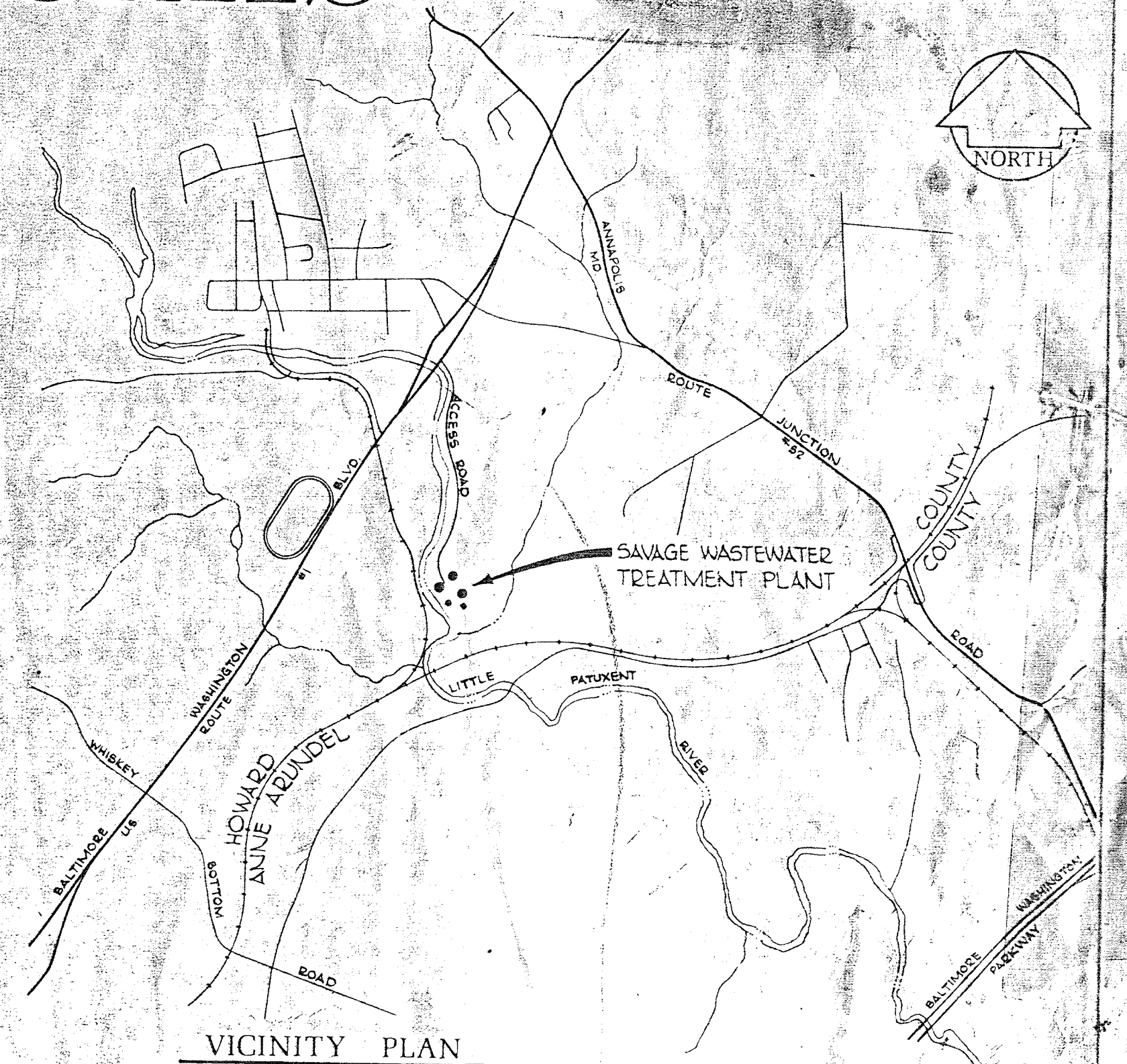
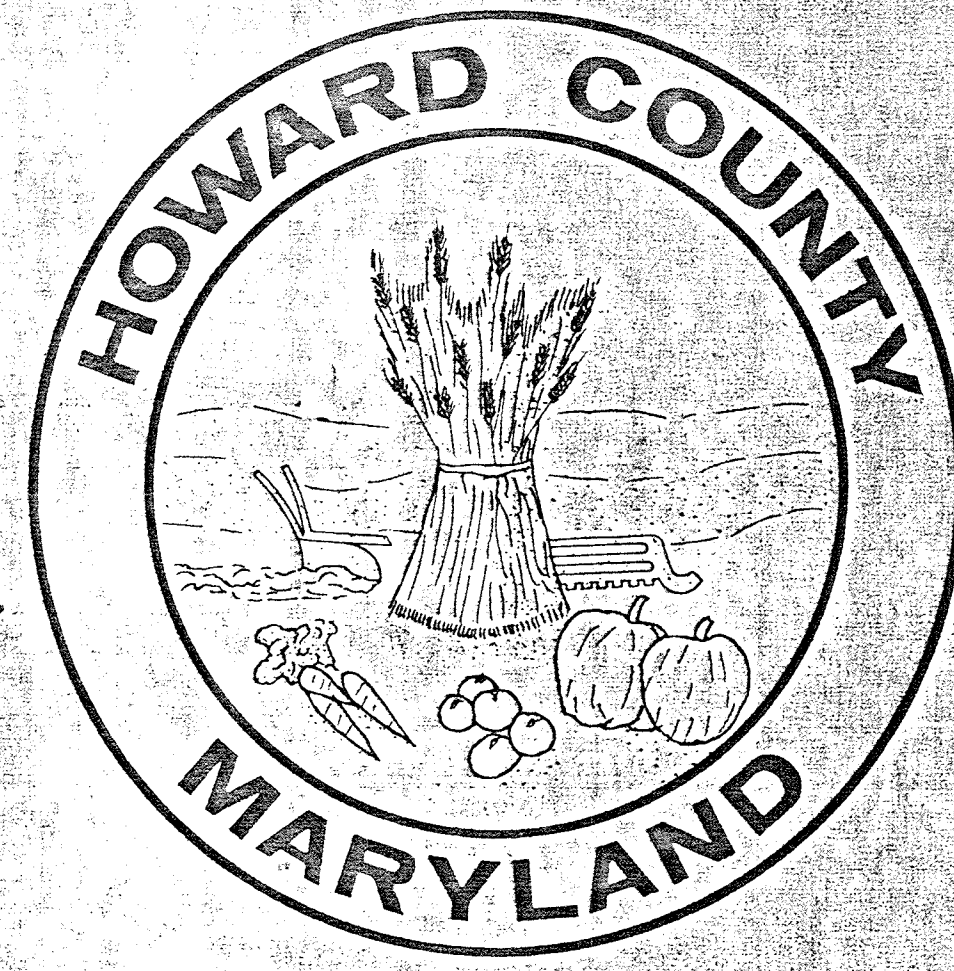


HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS



LOCATION MAP
SCALE: 1" = 5 MILES



VICINITY PLAN
SCALE: 1" = 2000'

SAVAGE WASTEWATER TREATMENT PLANT

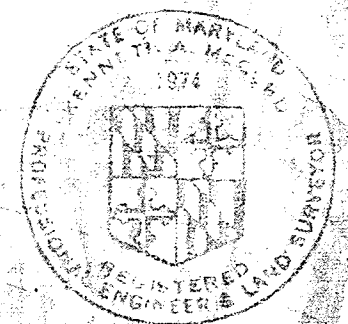
ADDITION NO. 3
CONTRACT 526-S

HOWARD COUNTY

William O. Filbert
WILLIAM O. FILBERT - CHIEF - BUREAU OF ENGINEERING

WHITMAN, REQUARDT & ASSOCIATES - ENGINEERS

Kenneth A. McCord
KENNETH A. McCORD



SAVAGE WASTEWATER TREATMENT PLANT

LIST OF DRAWINGS

DRAWING & SHEET NO.	GENERAL DESCRIPTION
GENERAL	
1	G-1 TITLE SHEET
2	G-2 LIST OF DRAWINGS AND DESIGN DATA
CIVIL	
3	C-1 LOCATION PLAN AND REFERENCES
4	C-2 SITE PLAN
5	C-3 SITE PLAN AND LEGEND
6	C-4 PROFILES
7	C-5 PROFILES
8	C-6 TYPICAL SECTIONS CHLORINATION BASIN AND DETAILS
9	C-7 MISCELLANEOUS DETAILS AND SOIL BORINGS
ARCHITECTURAL	
10	A-1 CONTROL BUILDING-PLAN AND SCHEDULES
11	A-2 CONTROL BUILDING-ELEVATIONS AND SECTIONS
12	A-3 CONTROL BUILDING-SECTIONS
13	A-4 CONTROL BUILDING-DETAILS
14	A-5 MISCELLANEOUS ARCHITECTURAL DETAILS
STRUCTURAL	
15	S-1 STRUCTURAL NOTES AND DETAILS
16	S-2 SECONDARY CLARIFIER-PLAN AND DETAILS
17	S-3 SECONDARY CLARIFIER-SECTION AND DETAILS
18	S-4 AERATION BASIN-FOUNDATION DETAILS
19	S-5 AERATION BASIN-PLAN-ELEVATION 144
20	S-6 AERATION BASIN-SECTIONS AND DETAILS
21	S-7 AERATION BASIN-SECTIONS AND DETAILS
22	S-8 PIPE GALLERY-FOUNDATION DETAILS
23	S-9 PIPE GALLERY-PLAN AND DETAILS
MECHANICAL	
24	M-1 HYDRAULIC PROFILE
25	M-2 PROCESS DIAGRAM
26	M-3 AERATION BASIN - PLANS AND SECTIONS
27	M-4 AERATION BASIN - SECTION AND DETAILS
28	M-5 ACTIVATED SLUDGE BASIN AND PIPE GALLERY - PLAN AND SECTIONS
29	M-6 ACTIVATED SLUDGE BASIN AND PIPE GALLERY - PLAN AND SECTIONS
30	M-7 ACTIVATED SLUDGE BASIN AND PIPE GALLERY - SECTION AND DETAILS
31	M-8 CONTROL BUILDING
32	M-9 SECONDARY CLARIFIER-PLAN SECTION AND DETAILS
33	M-10 RAW SEWAGE PUMPING STATION ADDITIONS PLANS AND SECTIONS
34	M-11 MISCELLANEOUS PLANS SECTIONS AND DETAILS
ELECTRICAL	
35	E-1 PLANT - ONE LINE WIRING DIAGRAM
36	E-2 GENERAL ELECTRICAL NOTES AND LEGEND
37	E-3 ELECTRICAL SITE PLAN
38	E-4 MANHOLE AND DUCTBANK DETAILS
39	E-5 AERATION BASIN - CONTROL BUILDING PLAN AND DETAILS
40	E-6 AERATION BASIN - PIPE GALLERY-PLAN AND DETAILS
41	E-7 MOTOR CONTROL CENTER
42	E-8 AERATION BASIN CONTROL BUILDING - ONELINE WIRING DIAGRAM
43	E-9 ELEMENTARY WIRING DIAGRAMS
44	E-10 ELEMENTARY WIRING DIAGRAMS
45-A	E-11 BLOWER BUILDING AND PUMPING STATION ADDITIONS - PLAN AND DETAILS
45-B	SC-1 SEDIMENT CONTROL PLAN

SAVAGE WASTEWATER TREATMENT PLANT

DESIGN CRITERIA

DESIGN YEAR - 1978
 EXPECTED AVERAGE DAILY SEWAGE FLOW
 - JANUARY 1973 - 32 MGD
 - APRIL 1974 - 5.0 MGD (EXISTING CAPACITY)
 - MID 1978 - 10.0 MGD (DESIGN CAPACITY - 3rd ADDITION)
 - 2000 - 25.0 MGD (ULTIMATE CAPACITY)

INSTALLED PUMPING CAPACITY - 24 MGD
 DESIGN PUMPING CAPACITY - 19 MGD (ONE PUMP OUT OF SERVICE)

PRIMARY CLARIFIER - 105 FOOT DIAMETER
 CAPACITY - 7.0 MGD AVERAGE DAILY FLOW
 DESIGN OVERFLOW RATE - 800 GPD/SF (W/O RECYCLE)
 DETENTION TIME - 3.7 HOURS
 WEIR RATE - 21,200 GPD/L.F.

AERATION BASIN
 CONTACT STABILIZATION - 3 UNITS FOR 5 MGD (EXISTING)
 (FUTURE CONVERSION OF 1MGD UNIT TO THICKENER - DIGESTER)
 DESIGN ACTIVATED SLUDGE - TWO - PASS TANK FOR 5 MGD
 DETENTION TIME - 6 HOURS

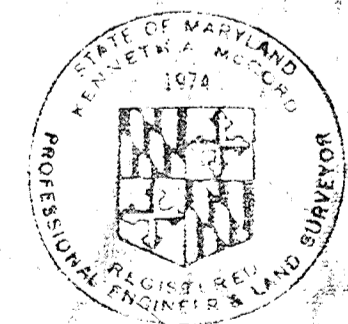
SECONDARY CLARIFIERS
 CONTACT STABILIZATION - TWO - 57'Ø UNIT FOR 5 MGD (EXISTING)
 - DETENTION TIME - 2.0 HOURS
 - OVERFLOW RATE - 1980 GPD/SF (W/FLOW MODULES)
 WEIR RATE - 9200 GPD/LINEAR FOOT
 DESIGN ACTIVATED SLUDGE - ONE - 90'Ø FOR 5 MGD
 - DETENTION TIME - 3.65 HOURS
 - DESIGN OVERFLOW RATE - 800 GPD/SF
 - WEIR RATE - 12,000 GPD/L.F.

CHLORINATION - INTERIM LAGOON FOR 30 MGD PEAK FLOW
 - DESIGN DETENTION TIME - 15 MINUTES - PEAK FLOW
 - DESIGN DOSAGE - 10 PPM
 - 1250 POUNDS DAY/15/MGD

SLUDGE OXIDATION - DESIGN CAPACITY 230 GPM AT 2.5% SUSPENDED SOLIDS

ABBREVIATIONS

PIPELINE		MISCELLANEOUS	
A	AIR	B	BASELINE
ABI	AERATION BASIN INFLUENT	C	CENTERLINE
CCBI	CHLORINE CONTACT BASIN INFLUENT	EX.	EXISTING
CCBE	CHLORINE CONTACT BASIN EFFLUENT	FF	FIRST FLOOR
CL ₂	CHLORINE	MH	MANHOLE
D	DRAIN	INV. ELEV.	INVERT ELEVATION
DB	DUCTBANK	PC	POINT OF CURVATURE
FM	FORCE MAIN	PI	POINT OF INTERSECTION
IS	INCINERATOR SLUDGE	PT	POINT OF TANGENCY
PCI	PRIMARY CLARIFIER INFLUENT	N	NORTH
Pr	PROFILE	E	EAST
S	SEWER OR INTERCEPTOR	S	SOUTH
FCP	FLOOD CONTROL PIPE	W	WEST
UD	UNDERDRAIN		
W	WATER		
WS	WASTE SLUDGE		
FW	FLUSHING WATER		
PCI	PRIMARY CLARIFIER INFLUENT		
SCI	SECONDARY CLARIFIER INFLUENT		
RAS	RETURN ACTIVATED SLUDGE		
APPURTENANCES			
C	CROSS	TY	TANGENTIAL WYE
T	TEE	ER	ECCENTRIC REDUCER
V	VALVE	EI	ECCENTRIC INCREASER
Y	WYE	CR	CONCENTRIC REDUCER
HB	HORIZONTAL BEND	CI	CONCENTRIC INCREASER
VB	VERTICAL BEND		



Kenneth M. Gledhill

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

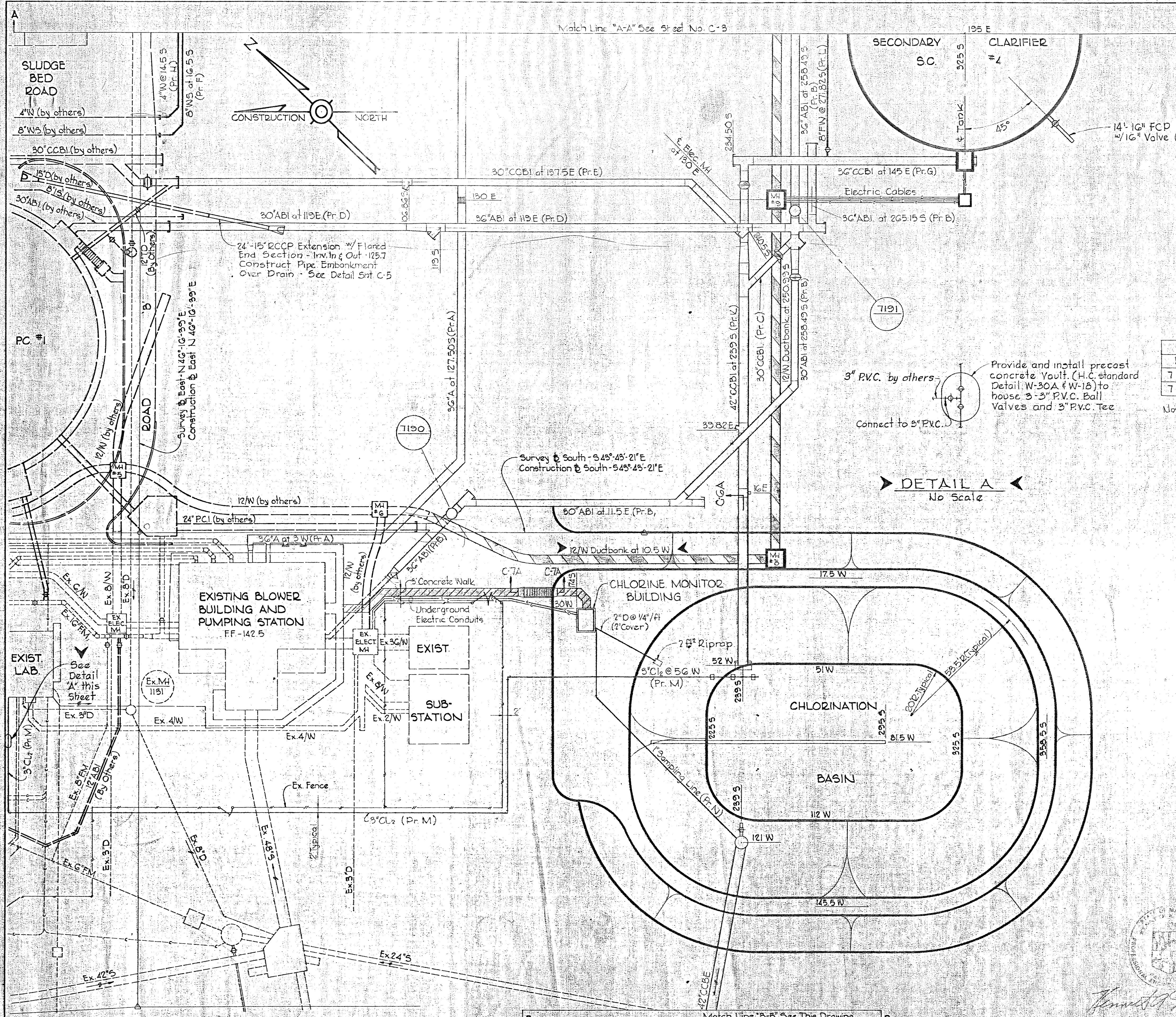
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 3-30-73
 DATE

CONTRACT NO. 526-S

LIST OF DRAWINGS AND
 DESIGN DATA

SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 3

DRAWING NO. 2
 OF 45
 SCALE NONE



- REFERENCES**
1. For General Notes See Sheet C-1
 2. For Grading & Drainage See Sheet C-1
 3. For Section & Details of Chlorination Basin See Sheet C-6
 4. For Profiles of Pipelines See Sheets C-4 & C-5
 5. For Details of Steps, Headwalls, etc. See Sheet C-7

MANHOLE SCHEDULE

No.	TYPE	INVERT	TOPELEV.
7190	Standard 5'-0" Manhole (S-2A)	130.0	3' above Gr.
7191	Standard 5'-0" Manhole (S-2A)	118.0	128.0

Note: Manholes to be located directly over Plunged vertical tee (pipe entry part).

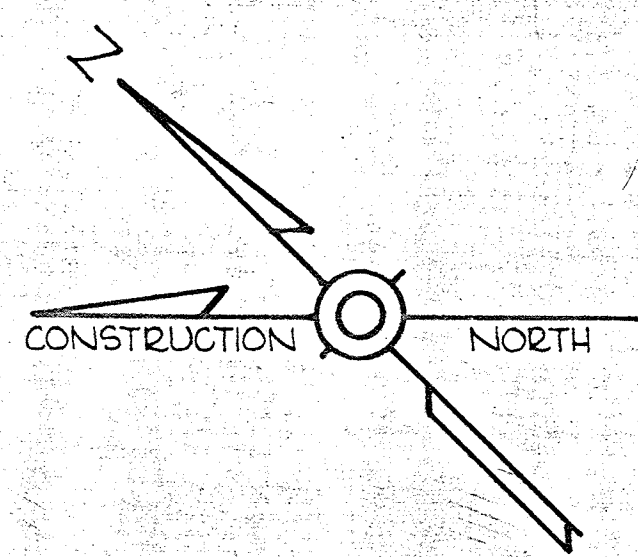
3" P.V.C. by others - Provide and install precast concrete Yault. (H.C. standard Detail W-30A (W-18) to house 3-3" P.V.C. Ball Valves and 3" P.V.C. Tee Connect to 8" P.V.C.)

DETAIL A
No Scale

<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3-3-73 W. O. Gilbert CHIEF - BUREAU OF ENGINEERING</p>	<p>CONTRACT NO. 526-S</p>	<p>SITE PLAN</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3</p>	<p>DRAWING NO. 4 OF 45 SCALE 1"=20'</p>
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W. O. 6538-2 Clarification - Change Order No. 1 2-19-74 Relocated Ductbank 4-15-74

SHEET C-2



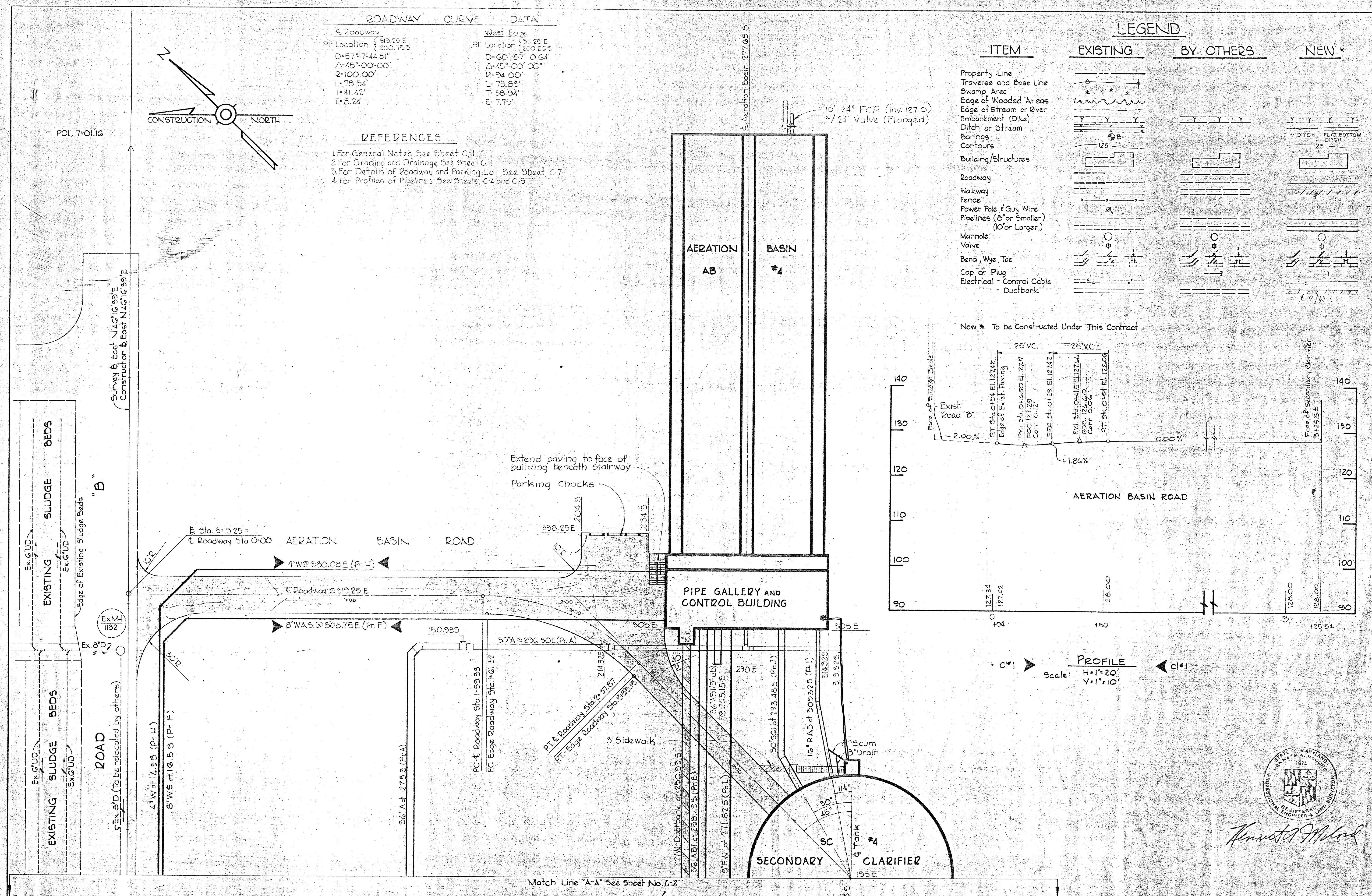
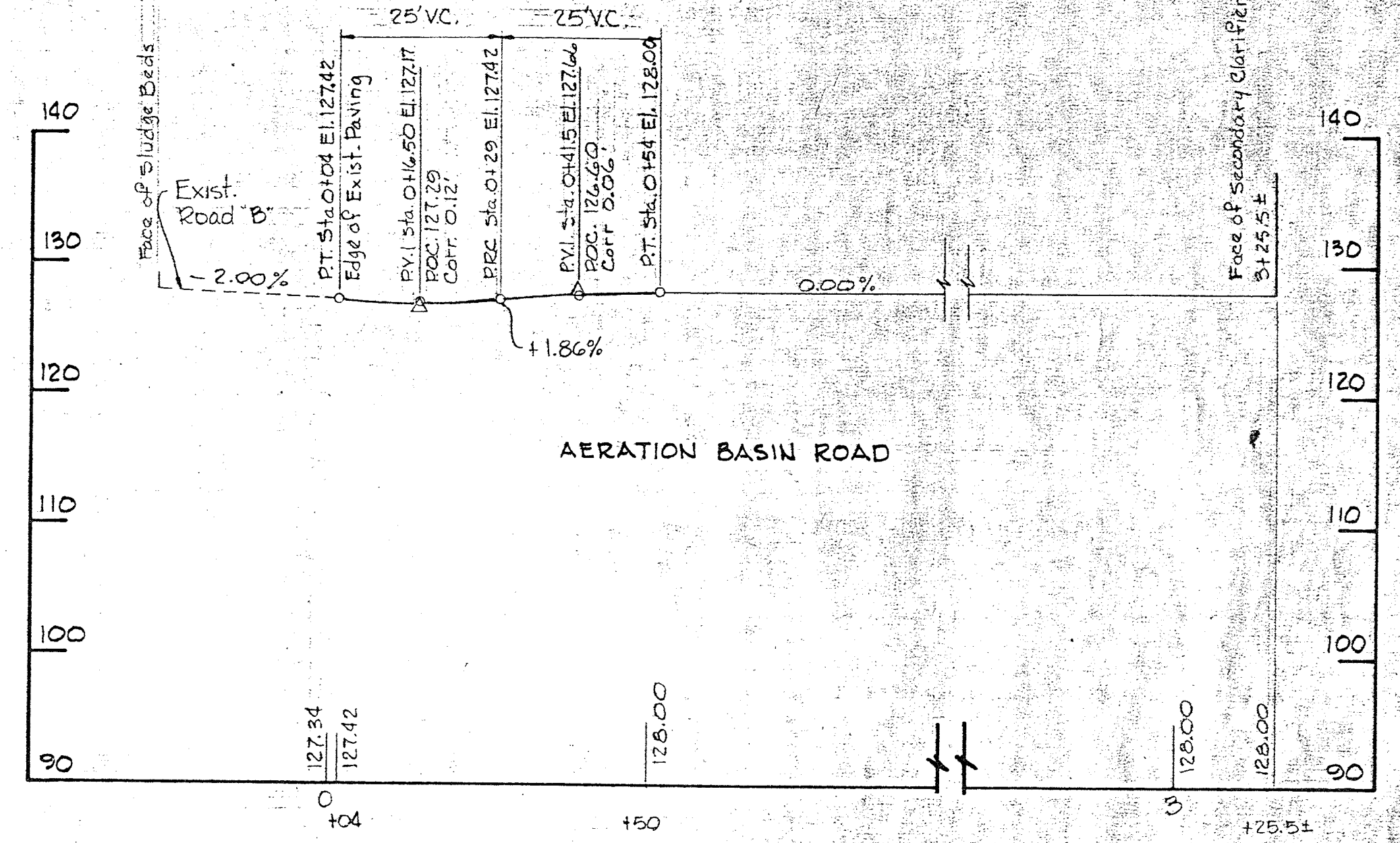
ROADWAY CURVE DATA	
East Roadway	West Edge
PI Location 319.25 E 200.75 S	PI Location 311.25 E 200.25 S
D=57°17'44.81"	D=60°57'0.64"
Δ=45°00'00"	Δ=45°00'00"
R=100.00'	R=94.00'
L=78.54'	L=78.83'
T=41.42'	T=38.94'
E=8.24'	E=7.75'

- REFERENCES**
- 1 For General Notes See Sheet C-1
 - 2 For Grading and Drainage See Sheet C-1
 - 3 For Details of Roadway and Parking Lot See Sheet C-7
 - 4 For Profiles of Pipelines See Sheets C-4 and C-5

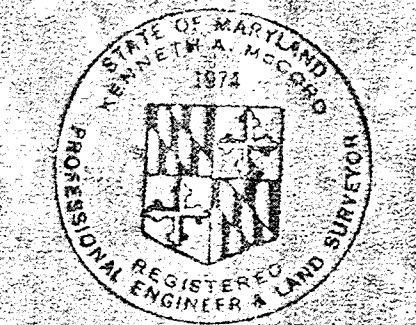
LEGEND

ITEM	EXISTING	BY OTHERS	NEW *
Property Line	---	---	---
Traverse and Base Line	---	---	---
Swamp Area	~ ~ ~	---	---
Edge of Wooded Areas	~ ~ ~	---	---
Edge of Stream or River	~ ~ ~	---	---
Embankment (Dike)	---	---	---
Ditch or Stream	---	---	---
Borings	⊙	⊙	⊙
Contours	---	---	---
Building/Structures	---	---	---
Roadway	---	---	---
Walkway	---	---	---
Fence	---	---	---
Power Pole & Guy Wire	⊙	⊙	⊙
Pipelines (8" or Smaller)	---	---	---
(10" or Larger)	---	---	---
Manhole	⊙	⊙	⊙
Valve	⊙	⊙	⊙
Bend, Wye, Tee	---	---	---
Cap or Plug	---	---	---
Electrical - Control Cable	---	---	---
- Ductbank	---	---	---

New * To be Constructed Under This Contract



PROFILE
Scale: H=1"=20'
V=1"=10'

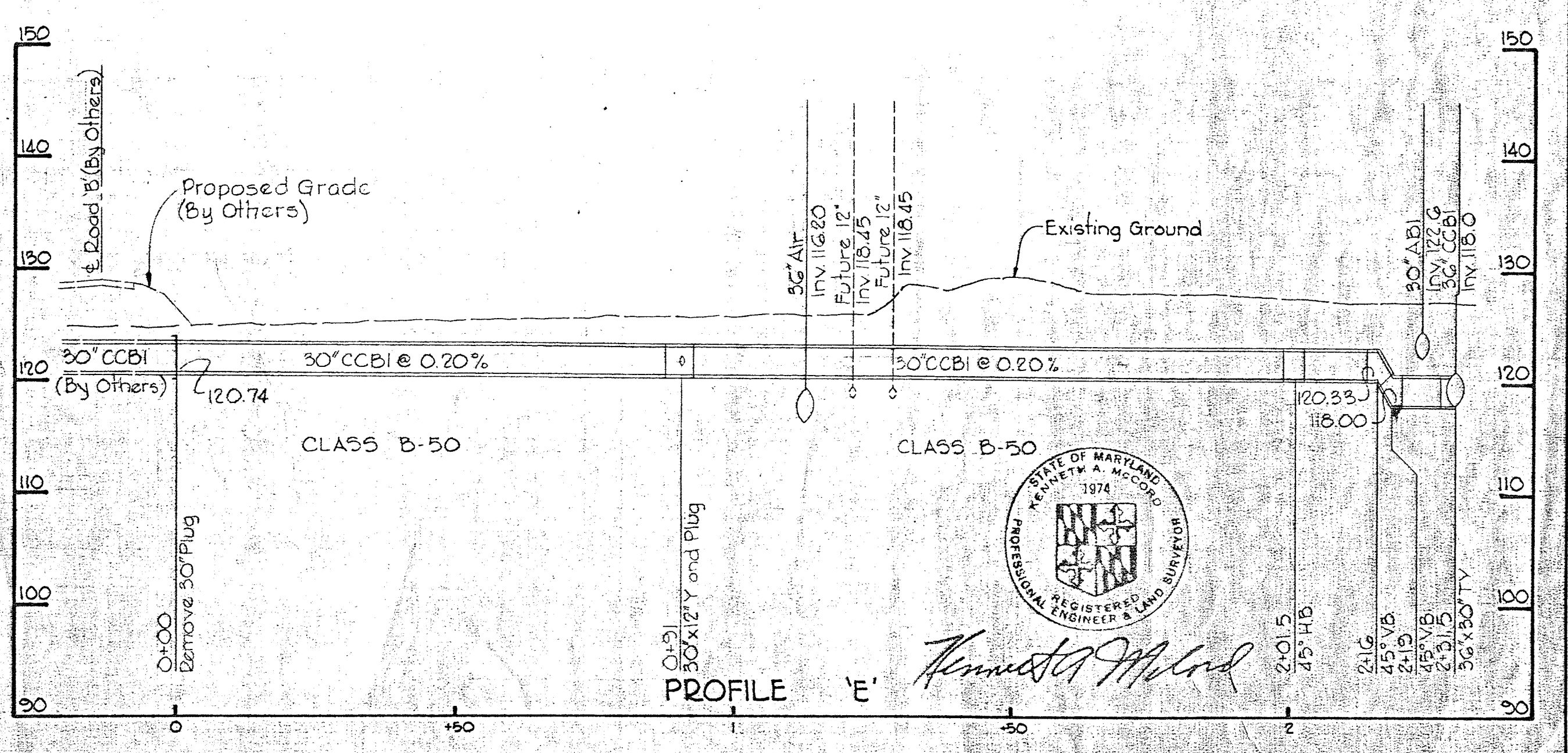
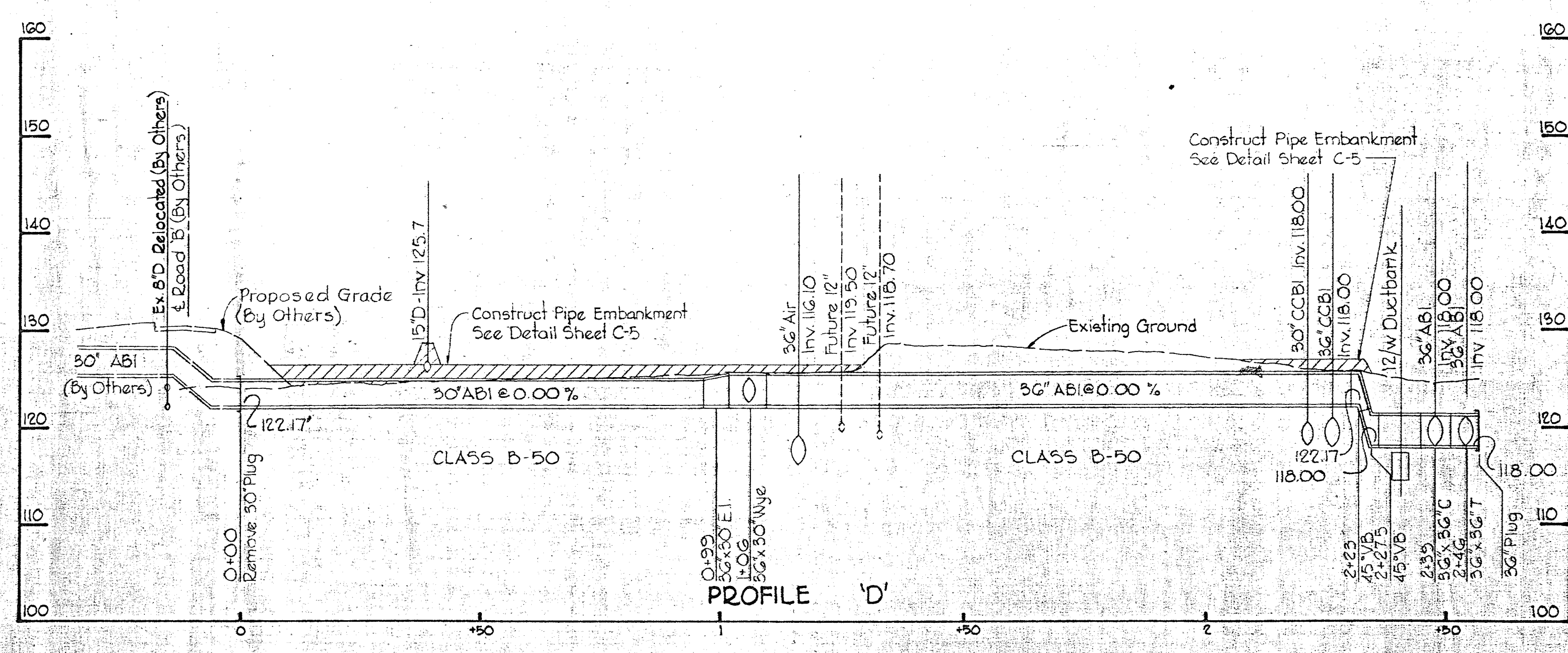
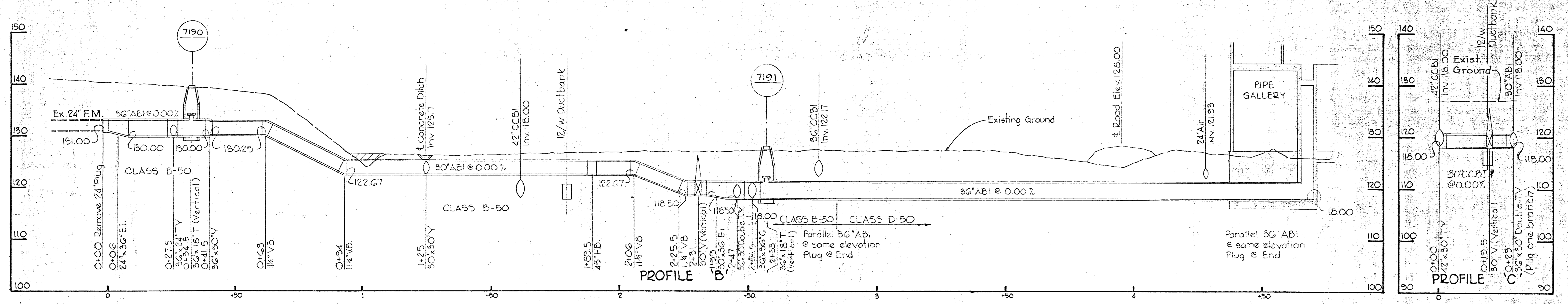
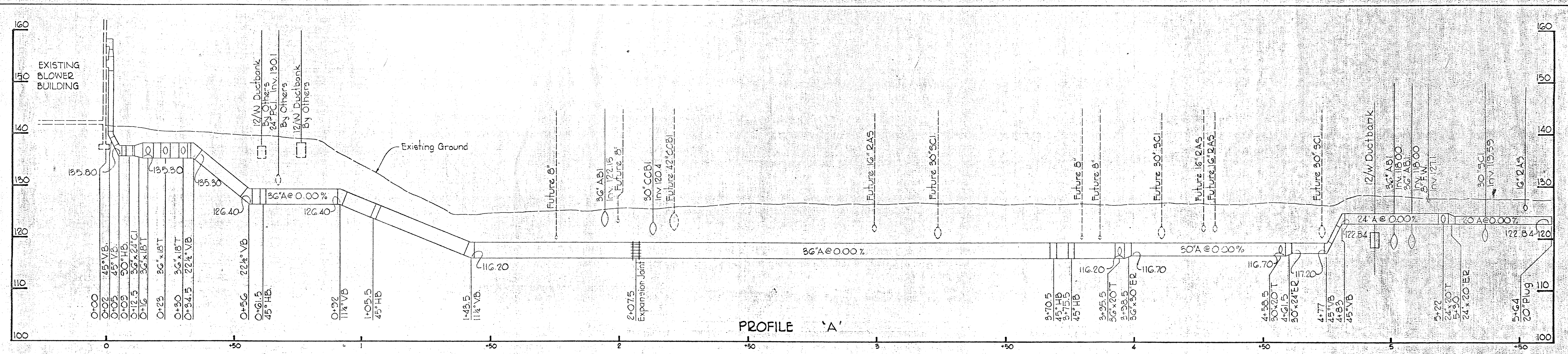


Kenneth J. Mank

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 DATE	CONTRACT NO. 526-S	SITE PLAN AND LEGEND	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 5	SCALE 1"=20'
					OF 45	SHEET C-3

W. O. 6538-2 Clarification Added Profile Changed Pipe Locations 10-B-73

DRAWING 44.510.14778

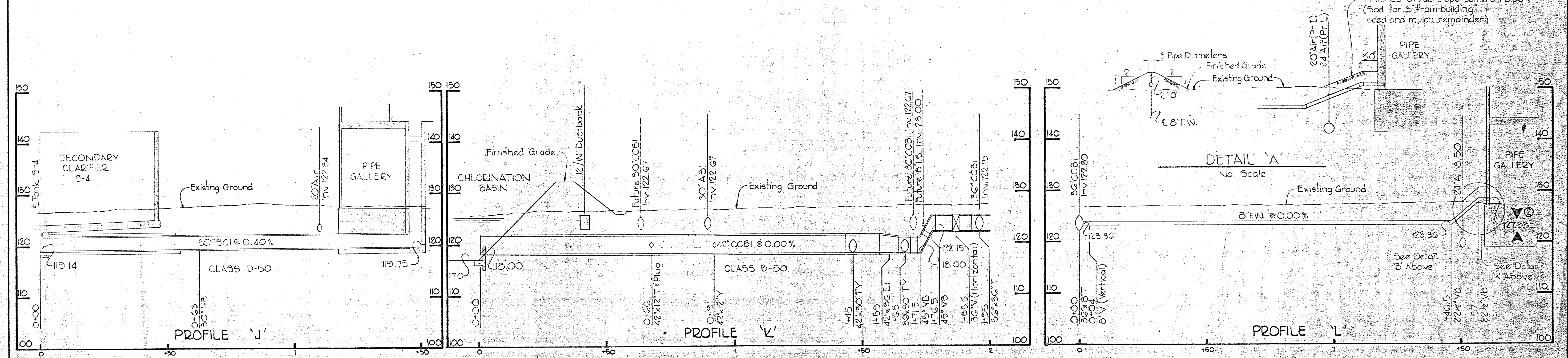
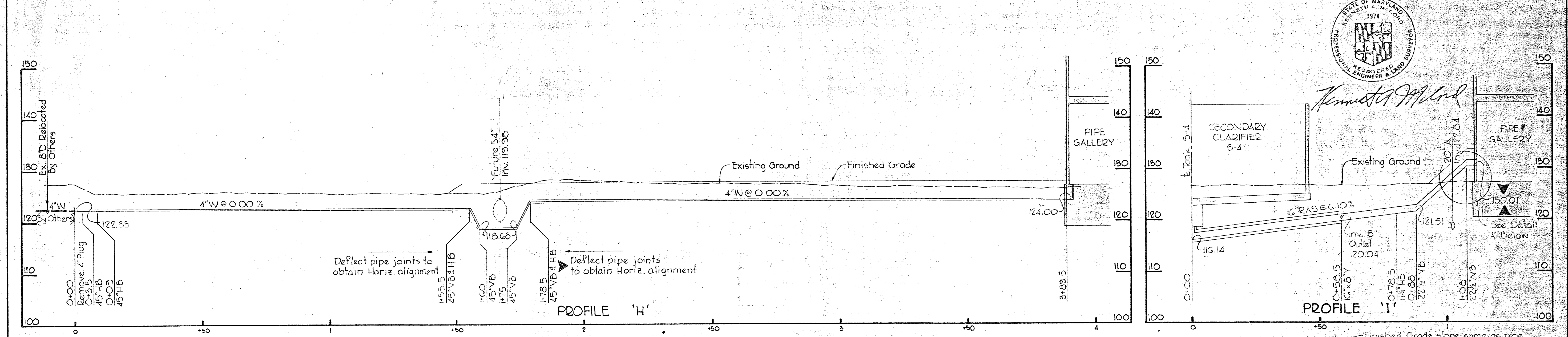
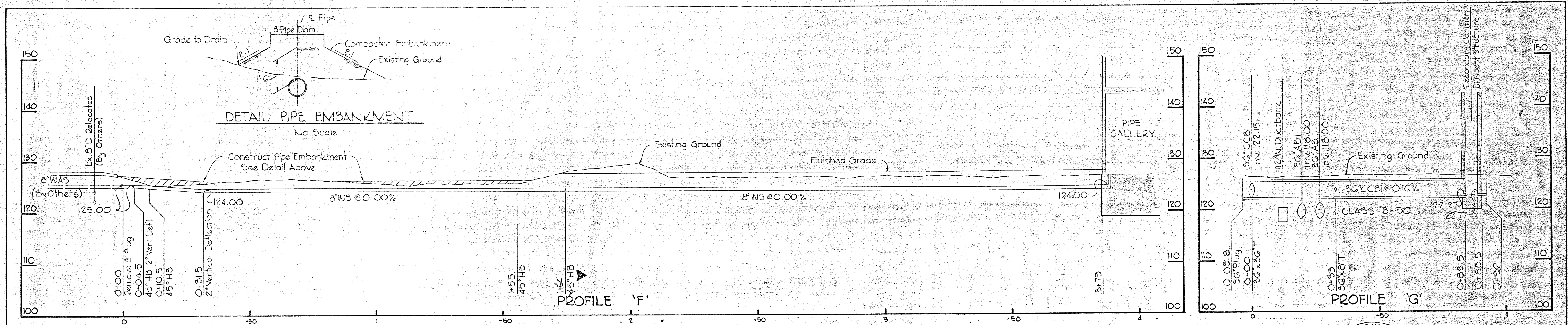


WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3-30-73 <i>W. O. Falbert</i> CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 526-S	PROFILES	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 6	SCALE 1" = 20'H
					OF 45	1" = 10'V

W. O. 6538-2

SHEET C-4

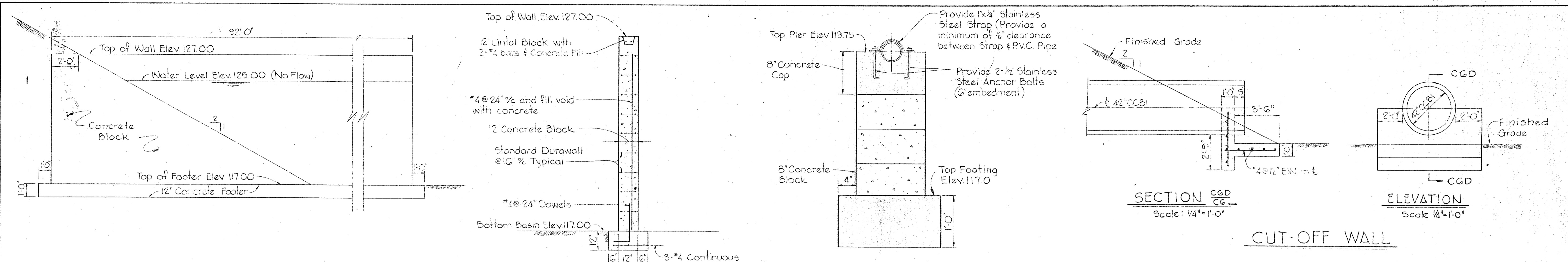
BRUNING 44.510 18392



WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 DATE CHIEF, BUREAU OF ENGINEERING	CONTRACT NO. 526-S	PROFILES	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 7 OF 45 SCALE 1" = 20H 1" = 10V
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W. O. 6538-2 Clarification Pipe Location Change 10-8-73 ② Lowered Inv. Elev. of 8" FW, 11-29-73 ③ Raised Inv. Elev. of 16" RAS 1-24-74

BRUNING 44-510 1838Z

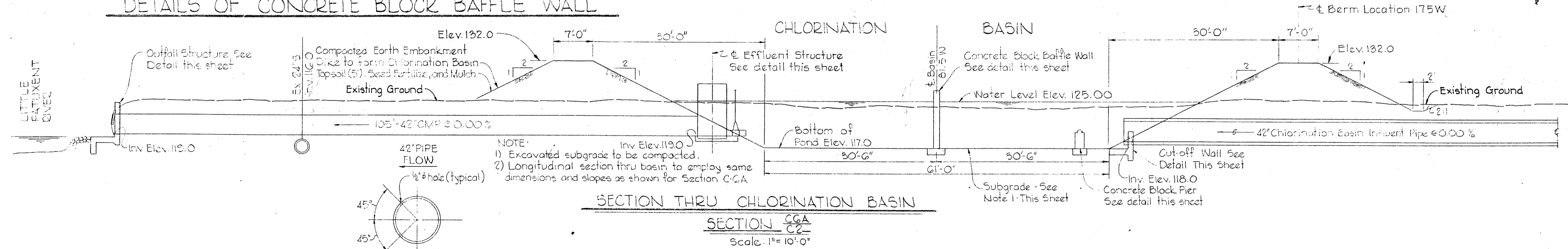


ELEVATION OF BAFFLE WALL
Scale: 1/4"=1'-0"

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

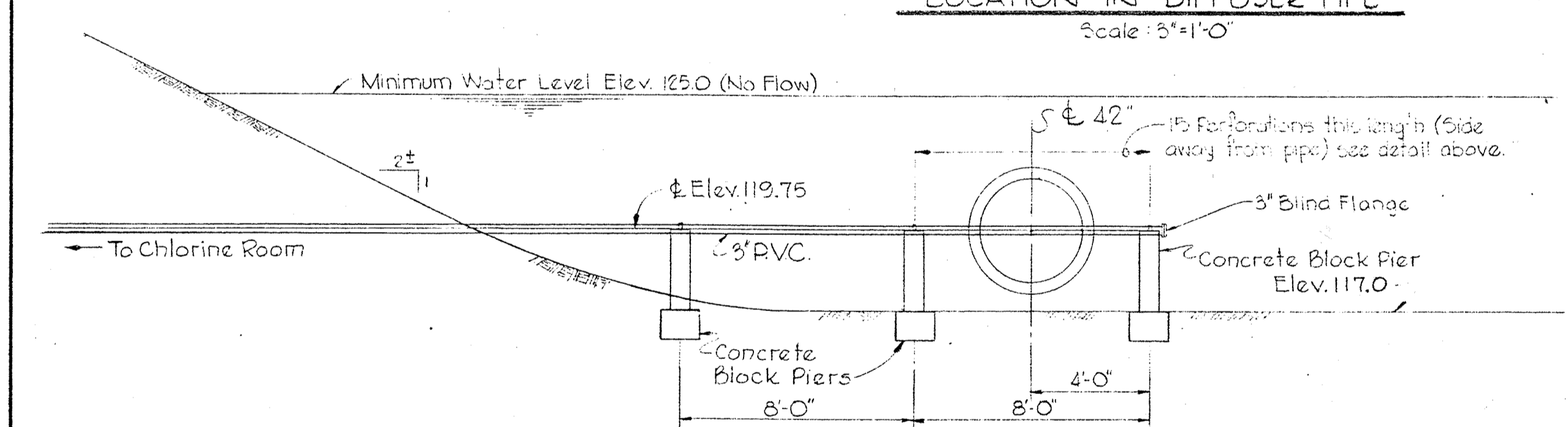
DETAIL OF CONCRETE BLOCK PIER
Scale: 1"=1'-0"

DETAILS OF CONCRETE BLOCK BAFFLE WALL

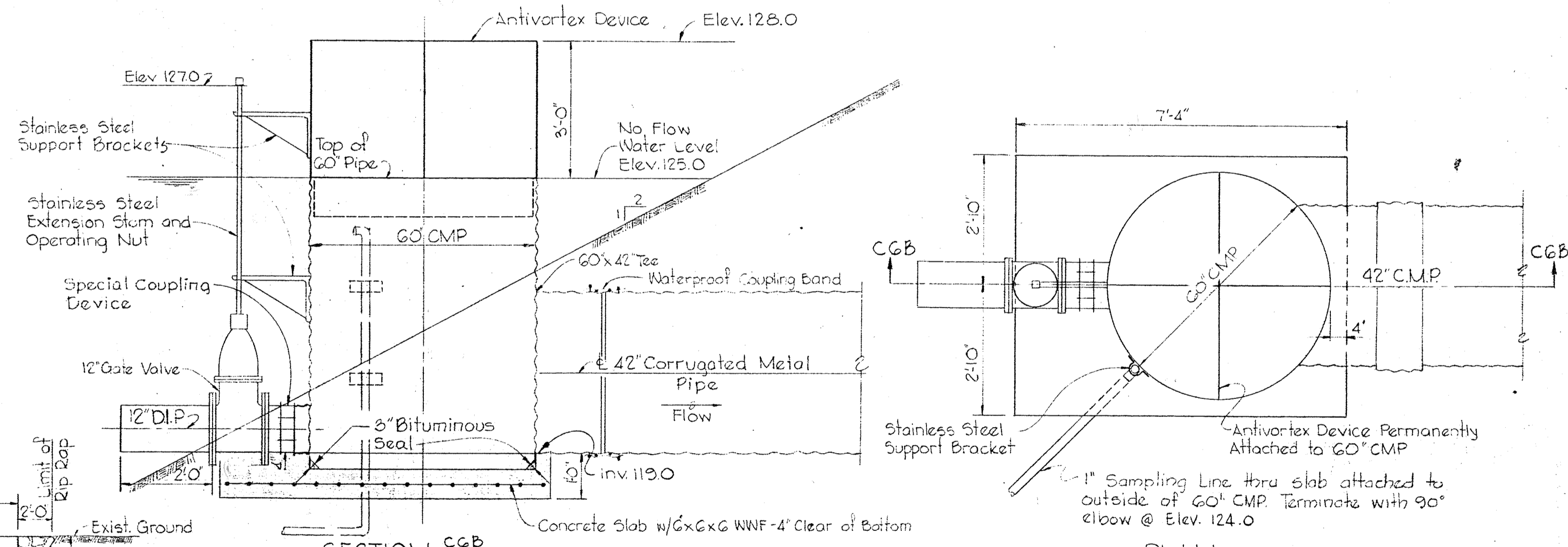


SECTION THRU CHLORINATION BASIN
Scale: 1"=10'-0"

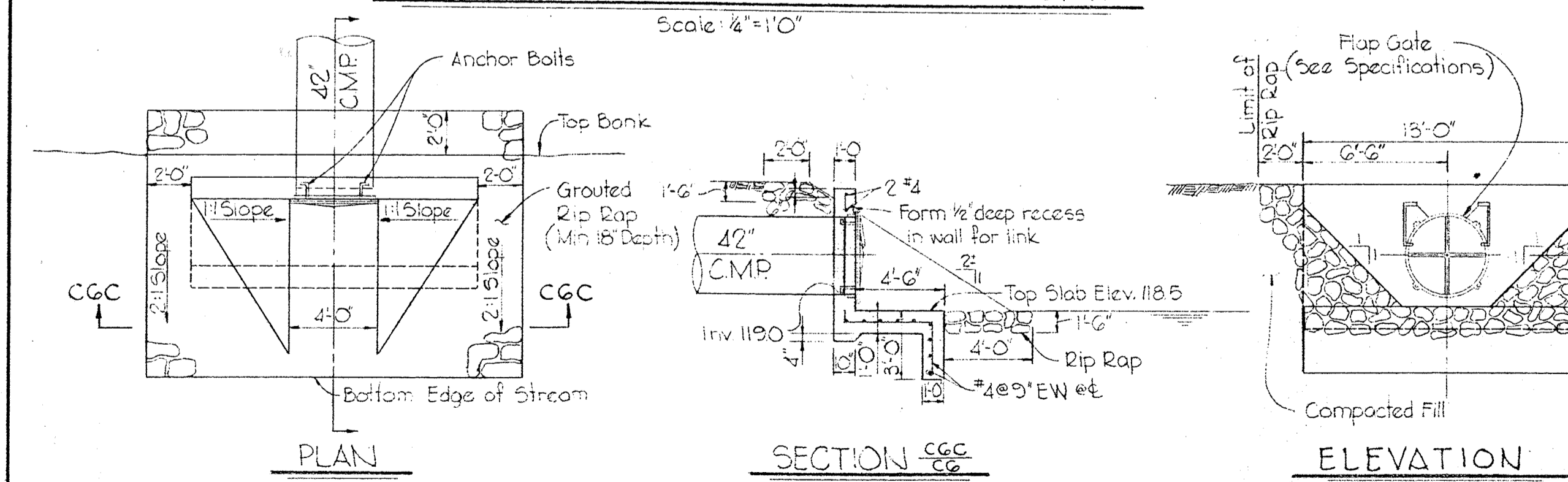
DETAIL OF HOLE LOCATION IN DIFFUSER PIPE
Scale: 5"=1'-0"



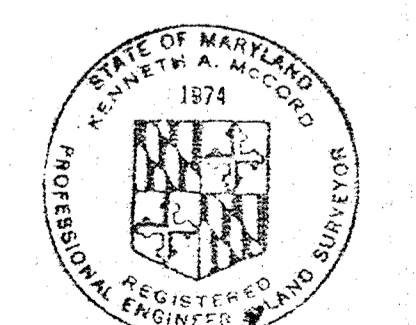
SECTION AT CHLORINE APPLICATION POINT
Scale: 1/2"=1'-0"



DETAIL OF EFFLUENT STRUCTURE
Scale: 1/2"=1'-0"



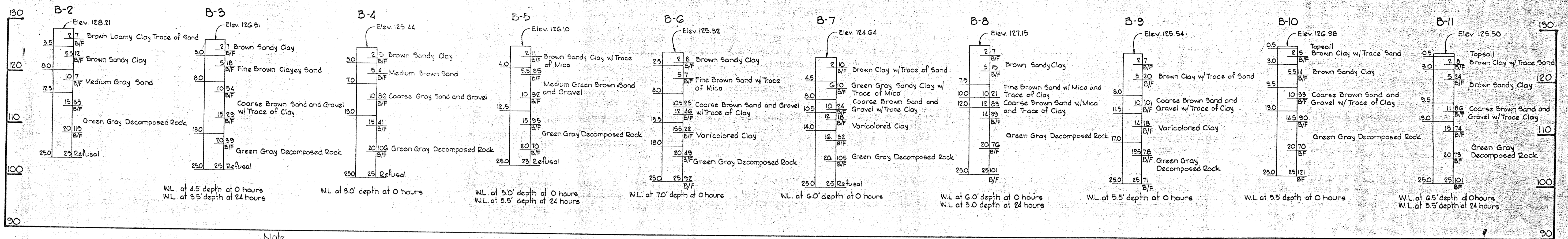
DETAILS OF OUTFALL STRUCTURE
Scale: 3/8"=1'-0"



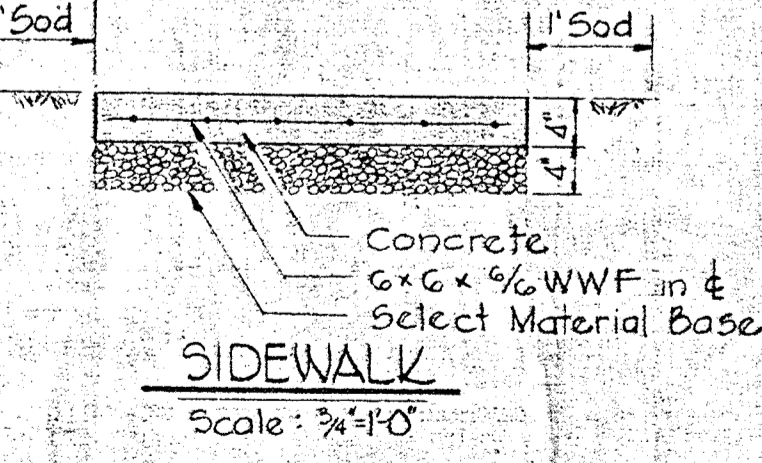
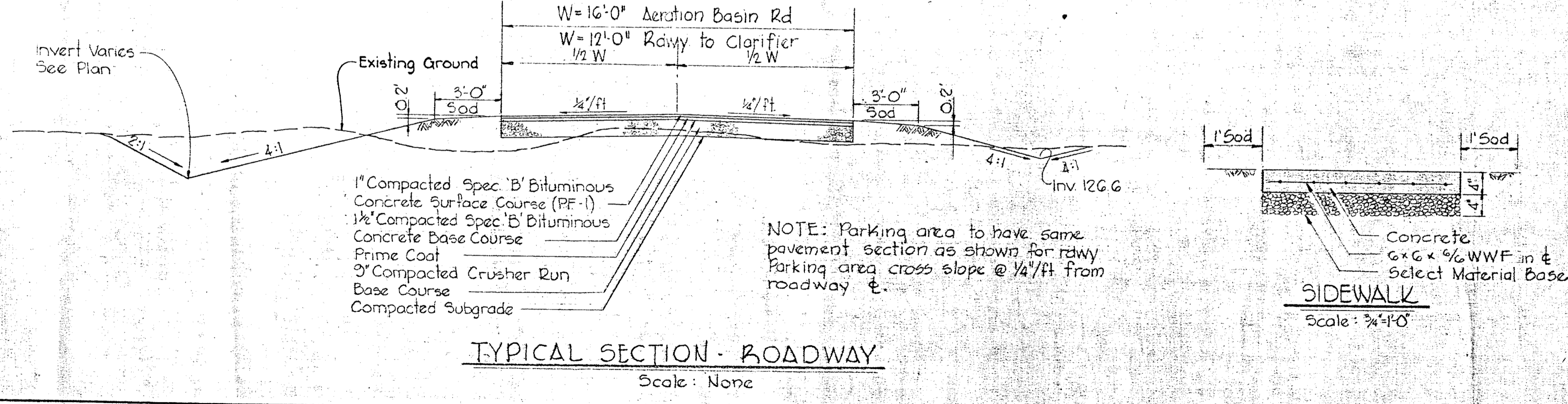
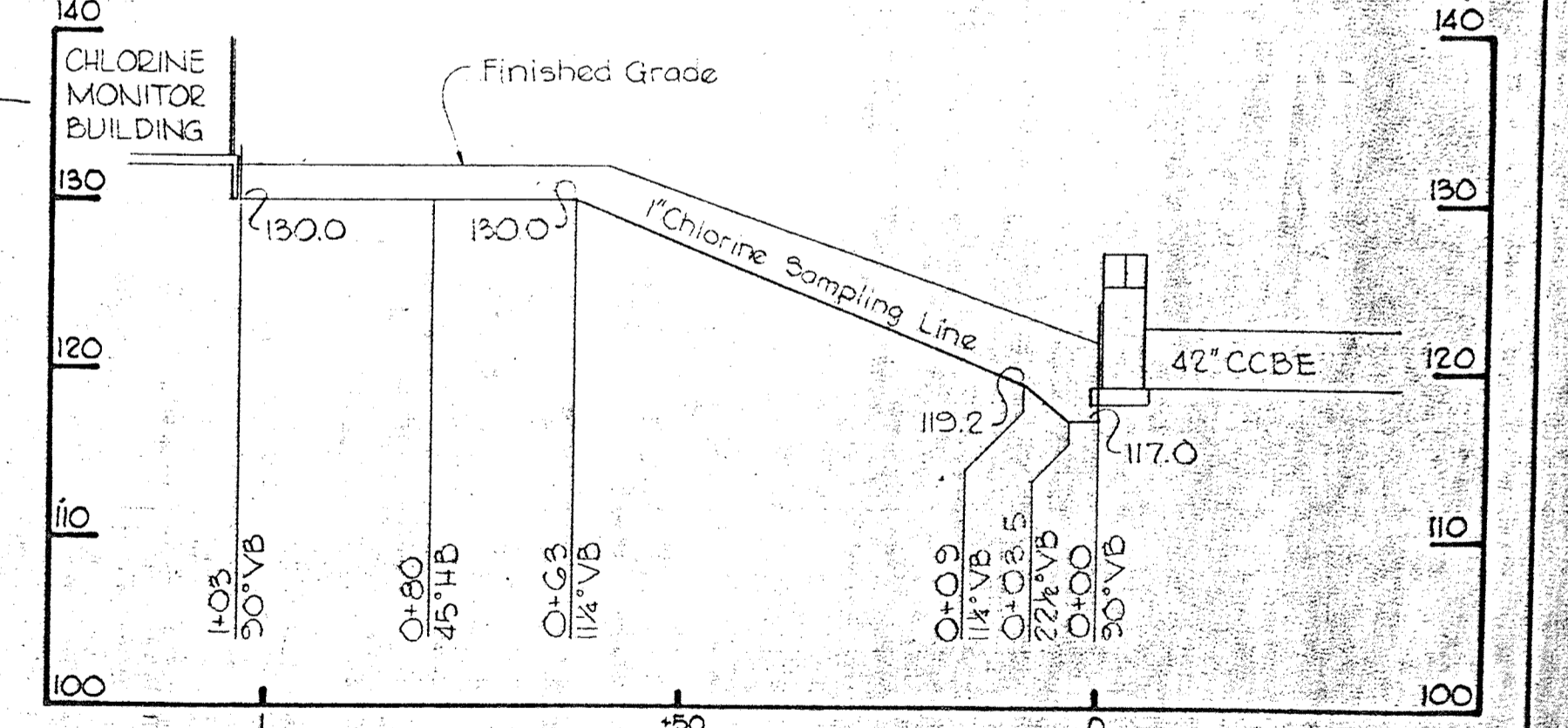
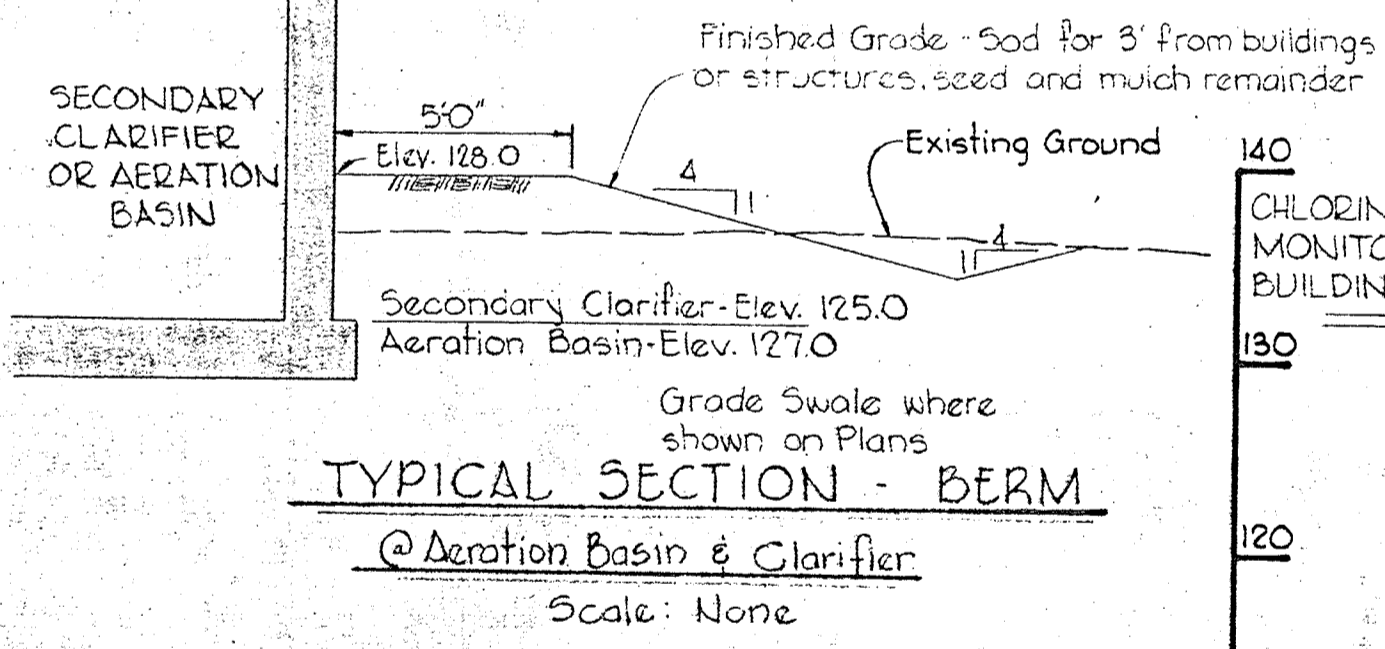
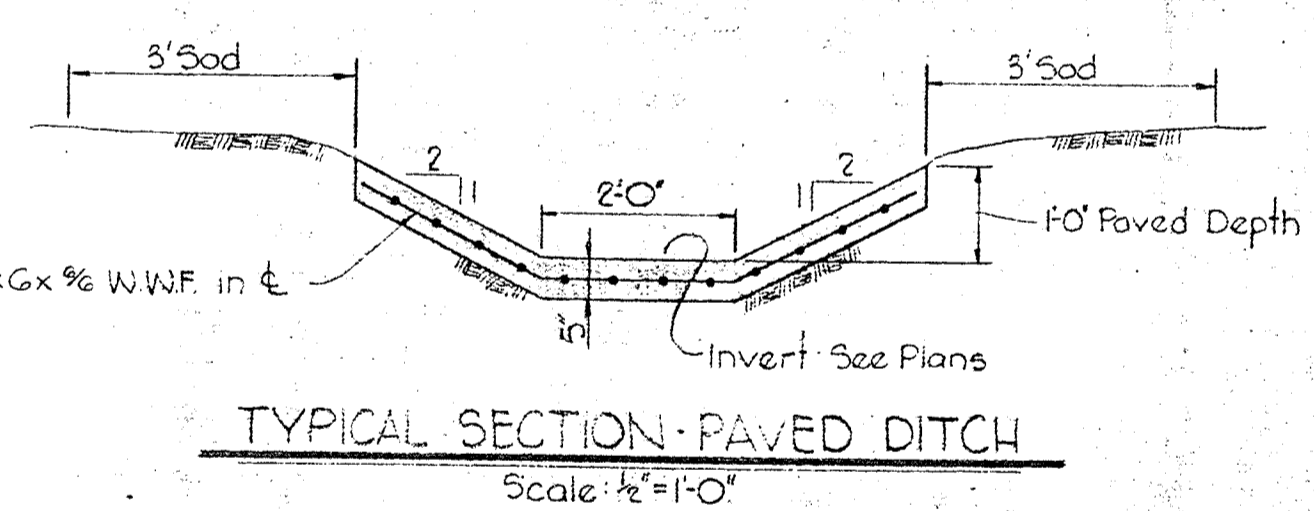
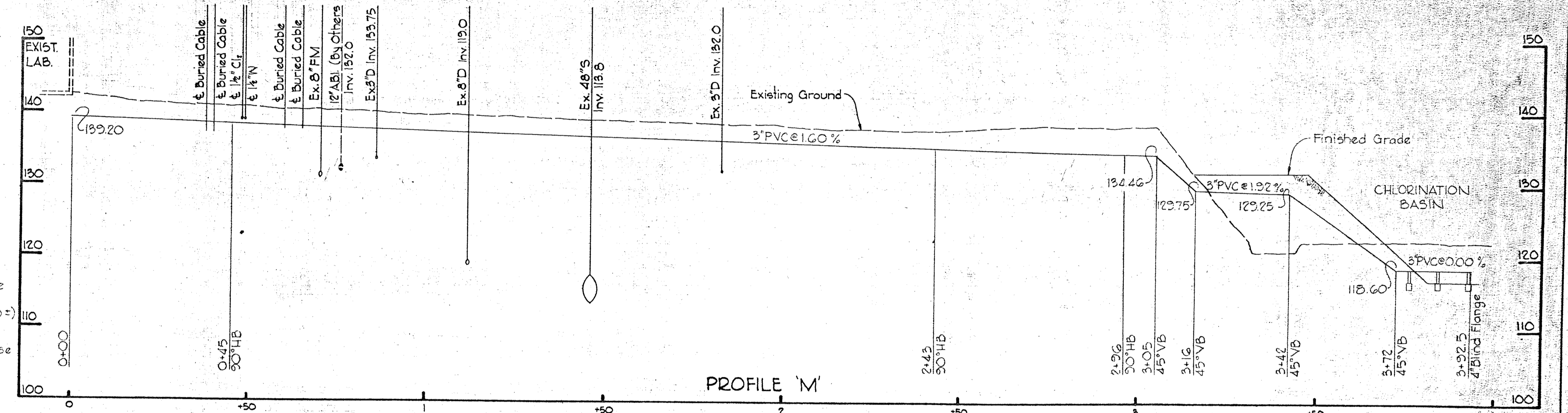
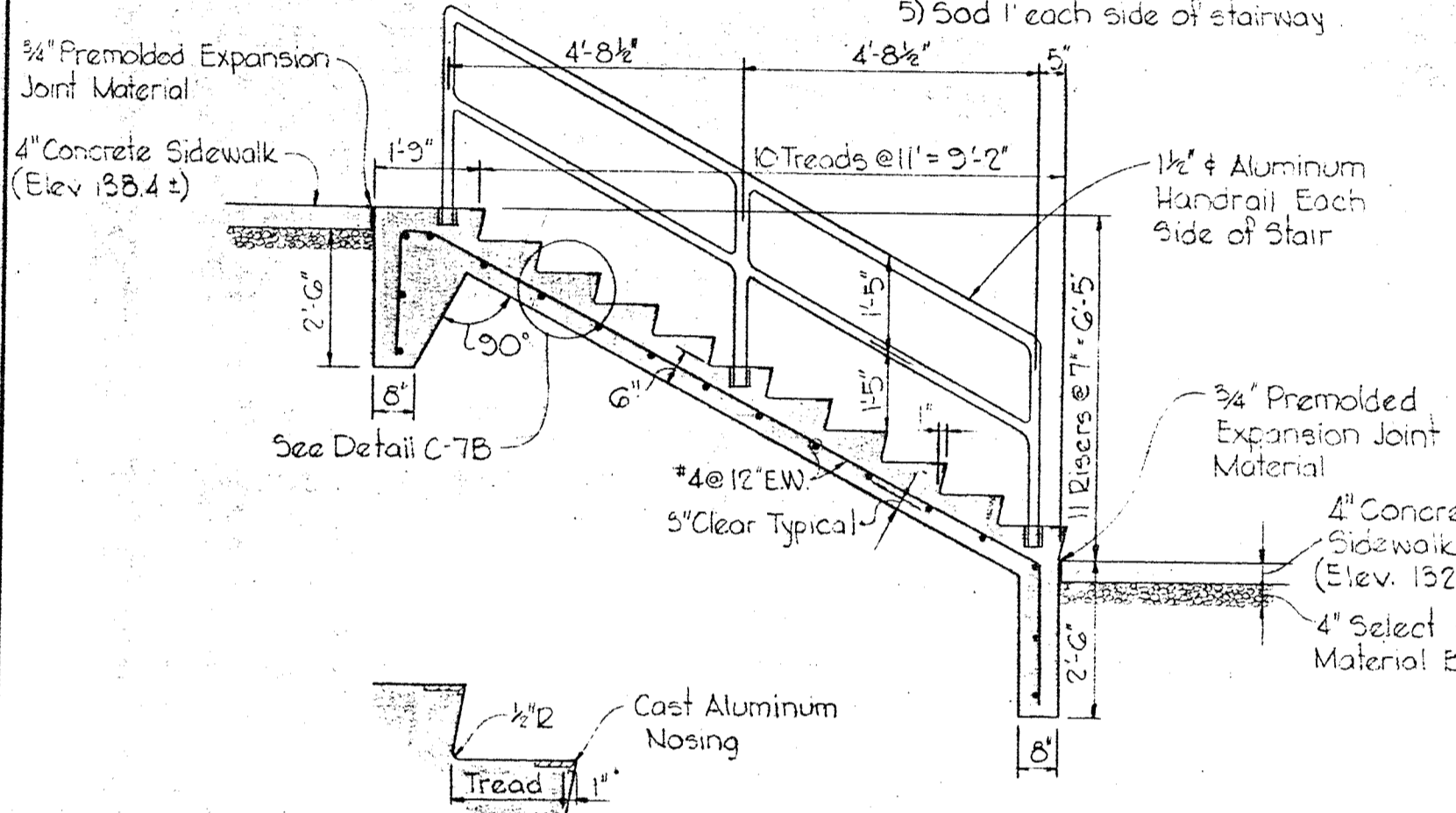
Kenneth M. Lord

<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 DATE <i>W.D. Feltner</i> CHIEF - BUREAU OF ENGINEERING</p>	<p>CONTRACT NO. 526-S</p>	<p>TYPICAL SECTIONS CHLORINATION BASIN & DETAILS</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3</p>	<p>DRAWING NO. 8 OF 45 SCALE AS SHOWN SHEET C-6</p>
---	--	---------------------------	--	---	---

NOTE: TEST BORINGS AND SOIL CLASSIFICATION BY RAYMOND INTERNATIONAL INC.



- Note
- 1) Construct stairs 4'-0" Wide
 - 2) Set handrail 6" Clear from outside
 - 3) Taper 3' Walkway to meet 4' stairs in 2 feet
 - 4) For General Notes - Concrete and Steel See Sheet C-1
 - 5) Sod 1' each side of stairway



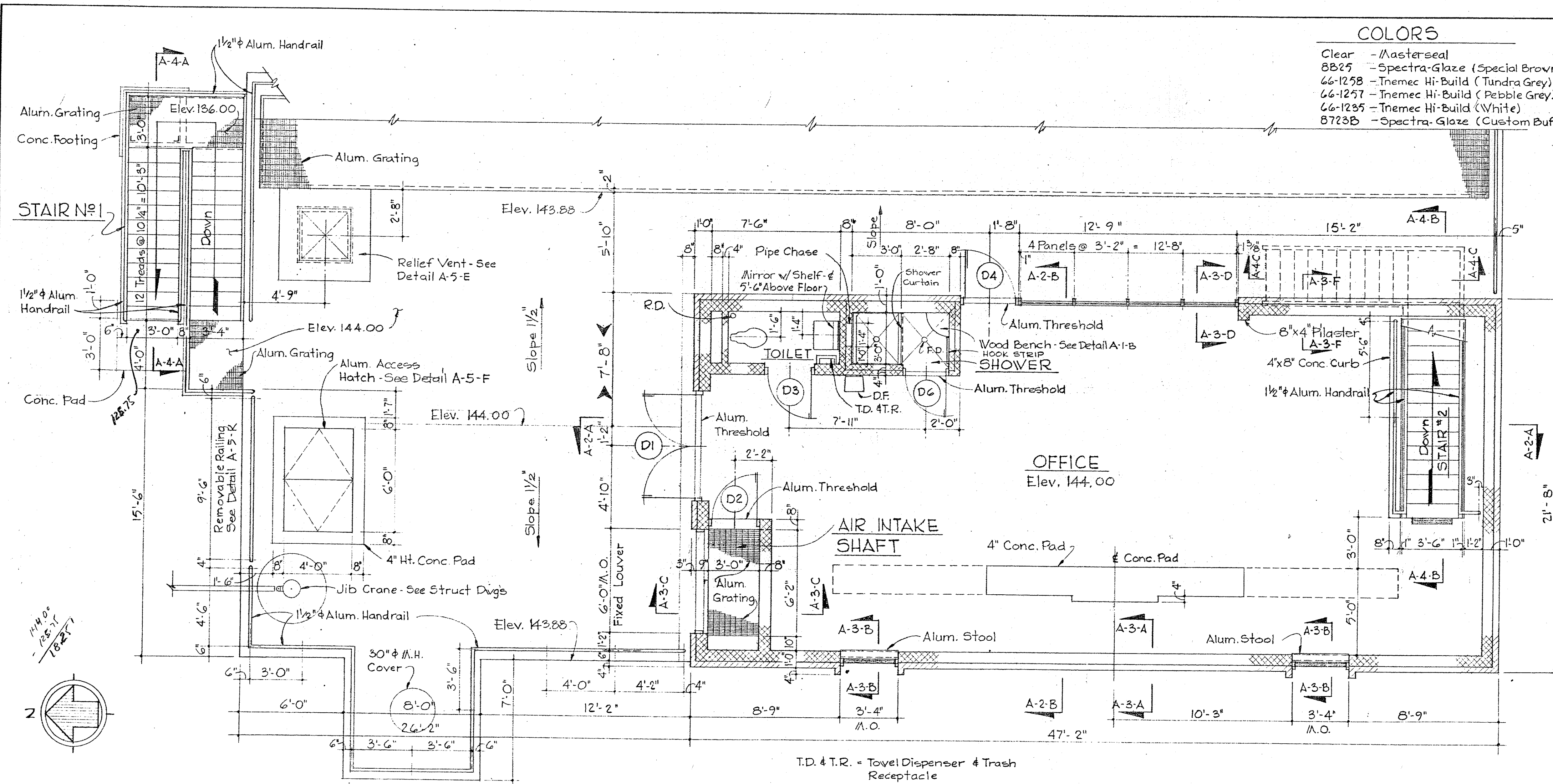
Kenneth A. Whitman

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 <i>W. O. Palbert</i> CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	MISCELLANEOUS DETAILS PROFILES AND SOIL BORINGS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 9	SCALE AS SHOWN
					OF 45	

W. O. 6538-2

SHEET C-7

BRUNING 44510 14778



COLORS

- Clear - Masterseal
- 8B25 - Spectra-Glaze (Special Brown)
- 66-125B - Tramec Hi-Build (Tundra Grey)
- 66-1257 - Tramec Hi-Build (Pebble Grey)
- 66-1235 - Tramec Hi-Build (White)
- 8723B - Spectra-Glaze (Custom Buff)

FINISH SCHEDULE

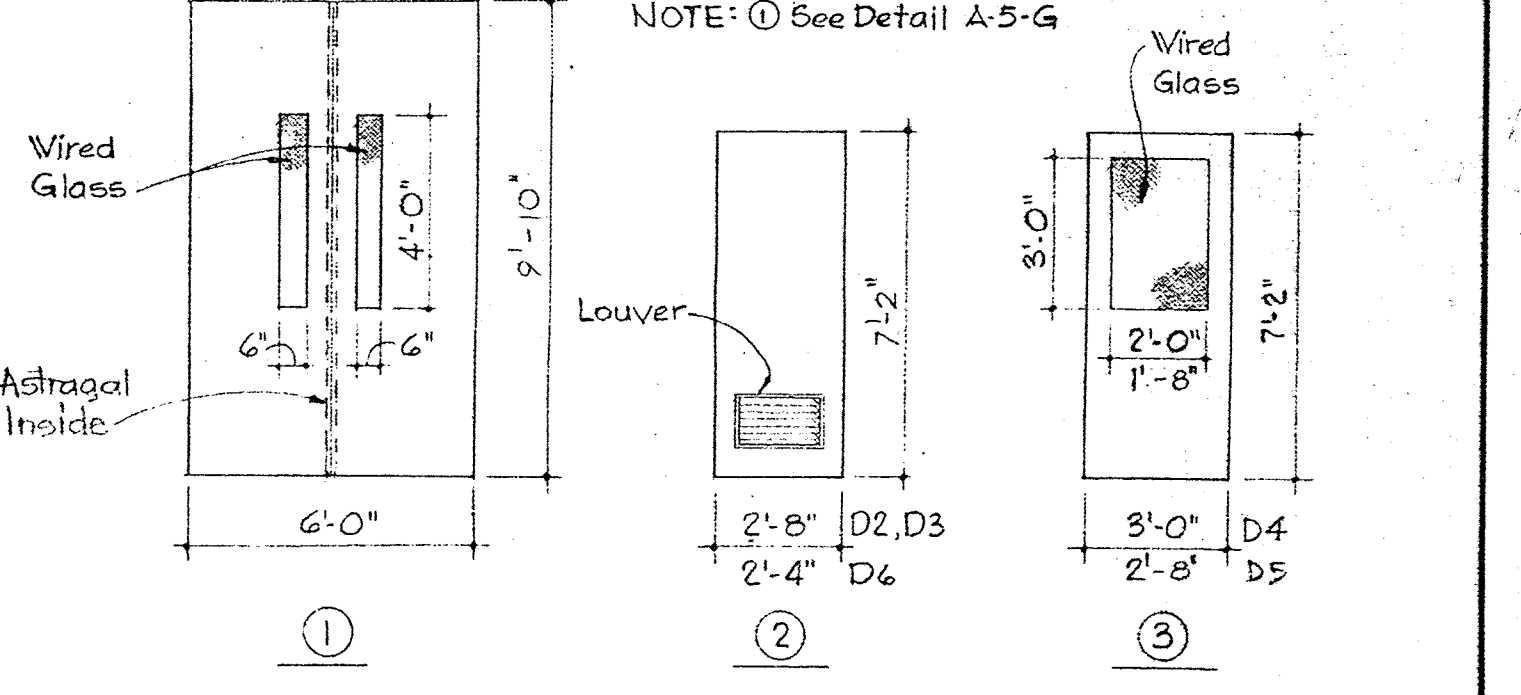
ROOM	F/C	FLOOR	BASE	WALL	CEILING
OFFICE	F/C	CFH Clear	GCMU 8B25	CAU-P	Conc-P
TOILET	F/C	CFH Clear	GCMU 8B25	CAU-P	Conc-P
AIR INTAKE SHAFT	F/C	Grating	GCMU 8B25	CAU-P	Conc-P
PIPE GALLERY	F/C	CFH Clear	Conc-P	Conc-P	66-1235
SHOWER	F/C	CFH Clear	GCMU 8B25	CAU 8723B	Conc-P

ABBREVIATIONS

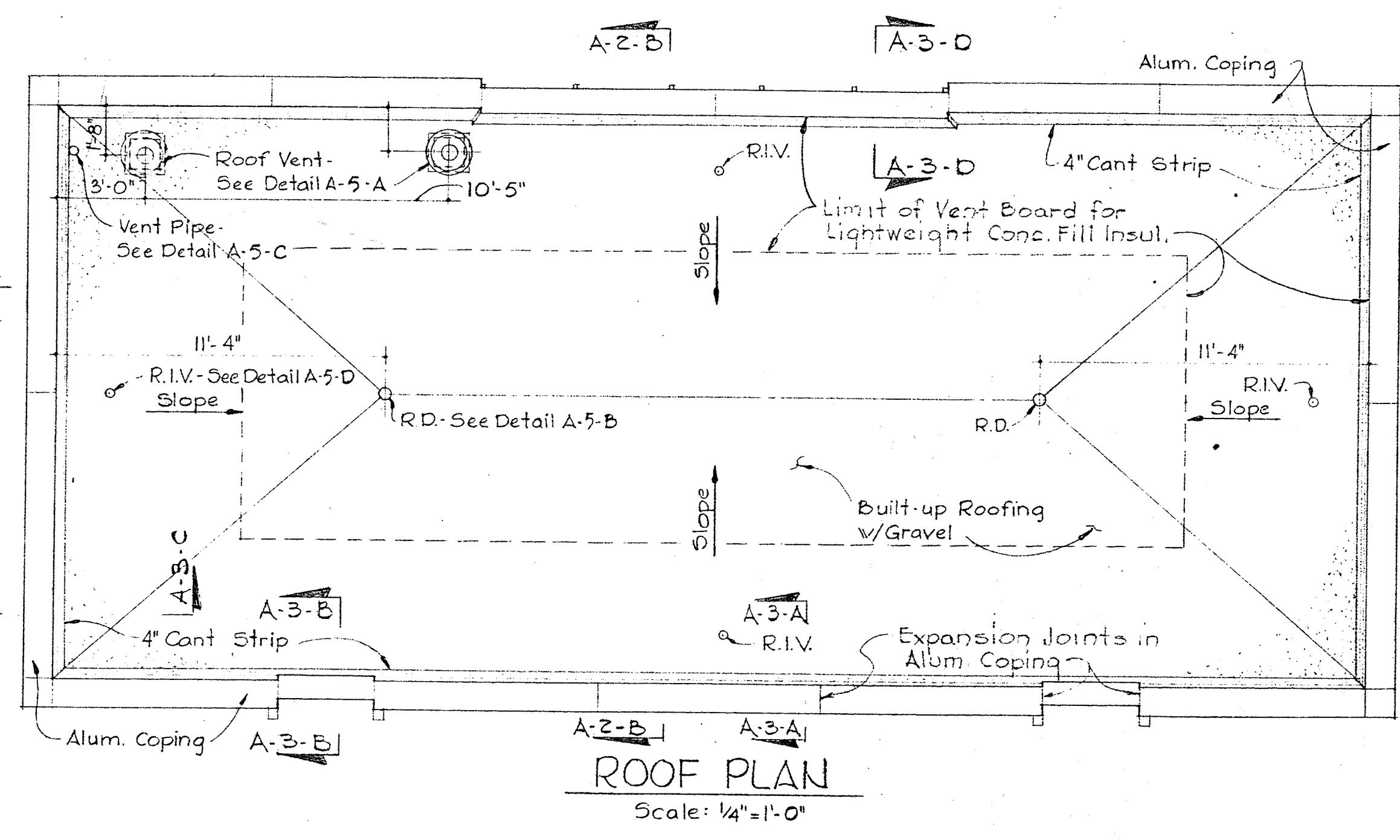
F - Finish	CAU - Concrete/Masonry Unit
C - Color	Conc. - Concrete
CFH - Clear Floor Hardener	P - Painted
GCMU - Glazed Concrete/Masonry Unit	Material - Color
Ⓞ - Broom Finish	

DOOR SCHEDULE

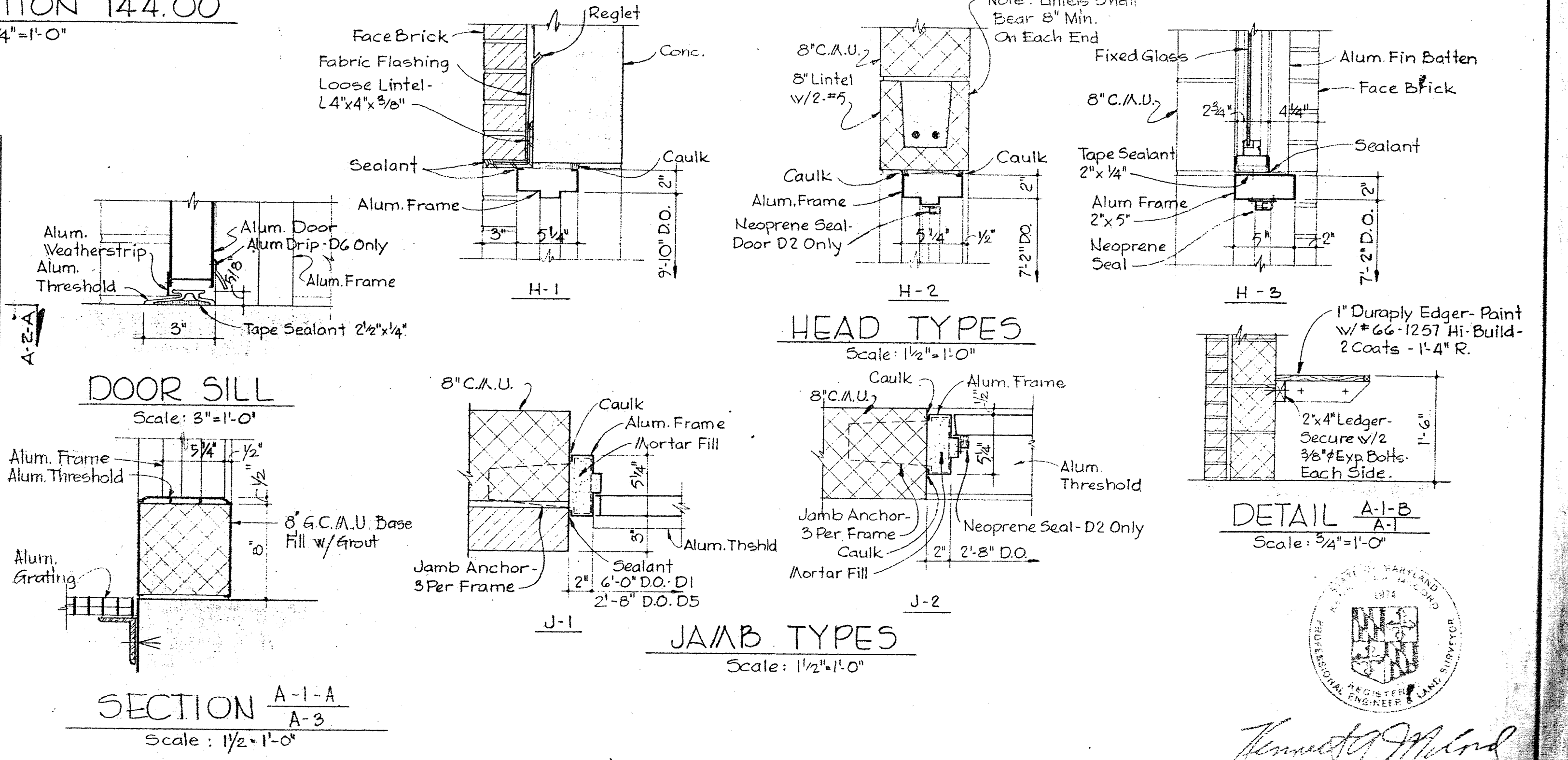
Door No.	SWING	SIZE	MAT'L	TYPE	JAMB	HEAD	LOUVER	HARDWARE
D1	LHR	2'-9" x 3'-0" x 1 3/4"	Alum.	1	J-1	H-1		HW-1
D2	LHR	7'-2" x 2'-8" x 1 3/4"	Alum.	2	J-2	H-2		HW-2
D3	RHR	7'-2" x 2'-8" x 1 3/4"	Alum.	2	J-2	H-2	12" x 20"	HW-3
D4	RHR	7'-2" x 3'-0" x 1 3/4"	Alum.	3	Ⓞ	H-3		HW-4
D5	LHR	7'-2" x 2'-8" x 1 3/4"	Alum.	3	See Details	On Sheet	A-5	HW-6
D6	RHR	7'-2" x 2'-4" x 1 3/4"	Alum.	2	J-2	H-2	12" x 16"	HW-5



PLAN @ ELEVATION 144.00
Scale: 1/4" = 1'-0"



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



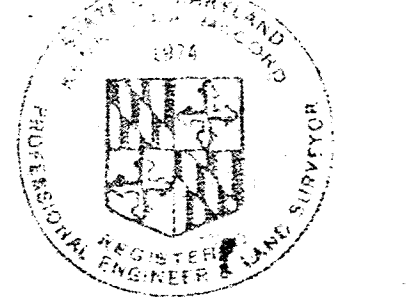
DOOR SILL
Scale: 3/8" = 1'-0"

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

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

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

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



Kenneth J. Milrod

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3-30-73
W. O. Fulbert
CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 526-S

CONTROL BUILDING
PLAN, ELEVATIONS, & SCHEDULES

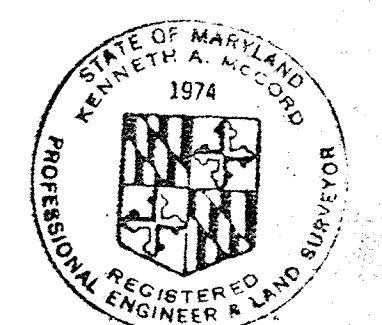
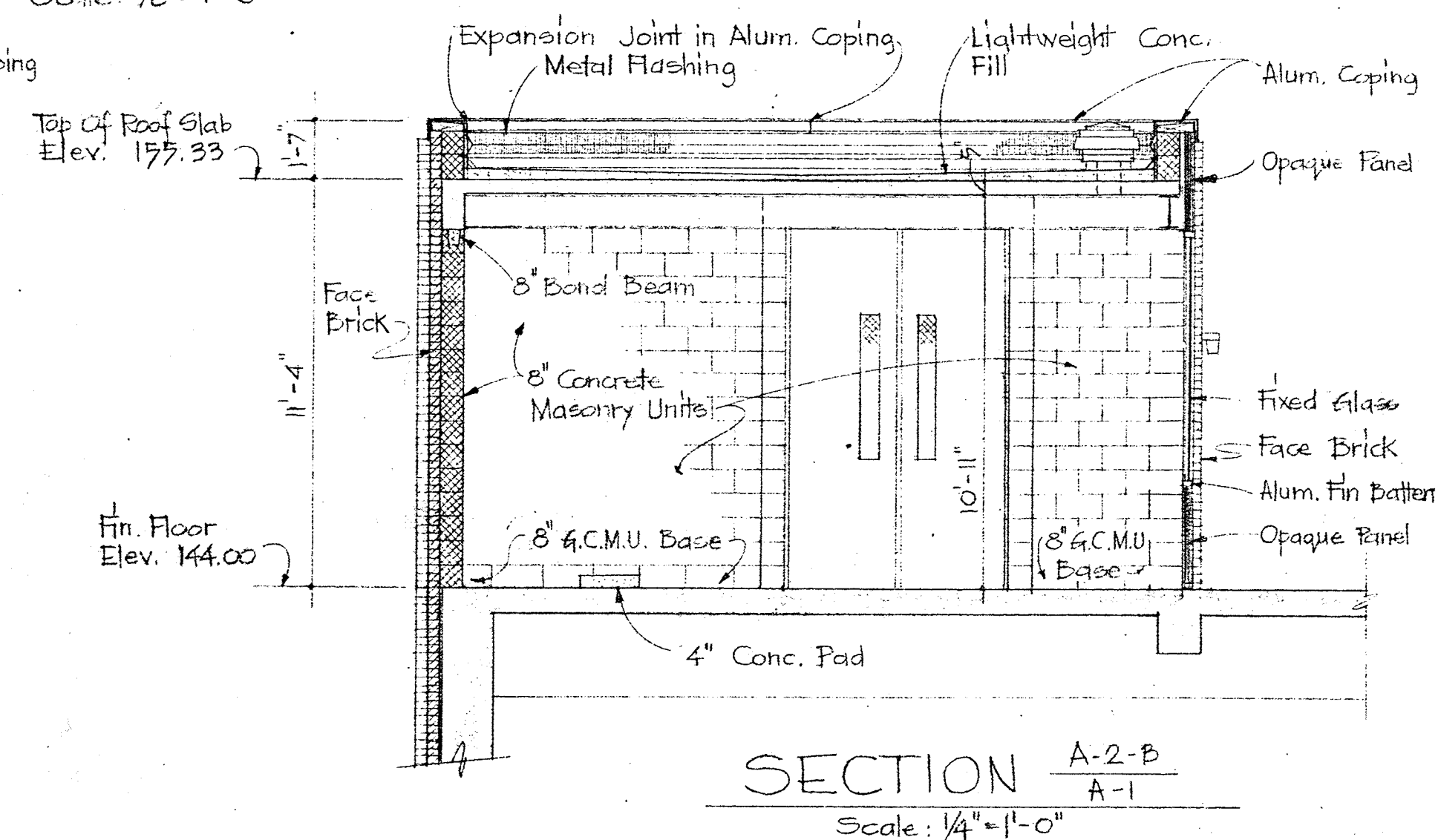
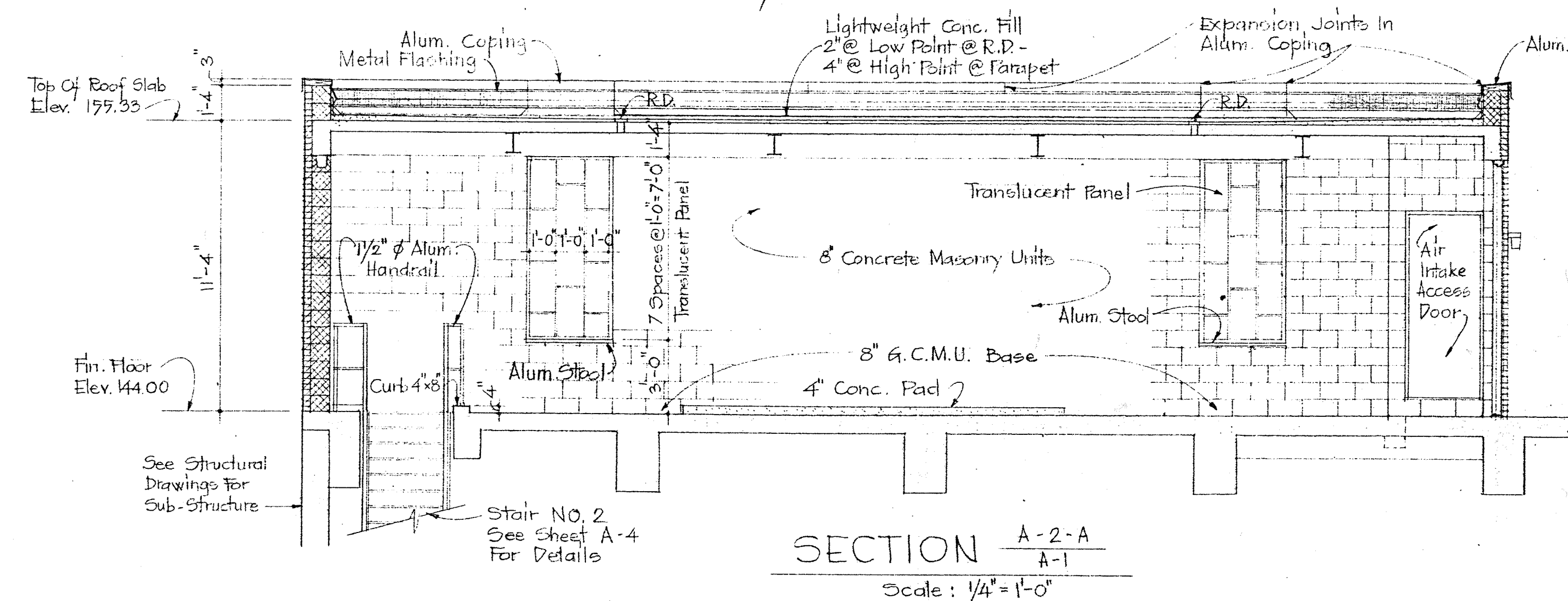
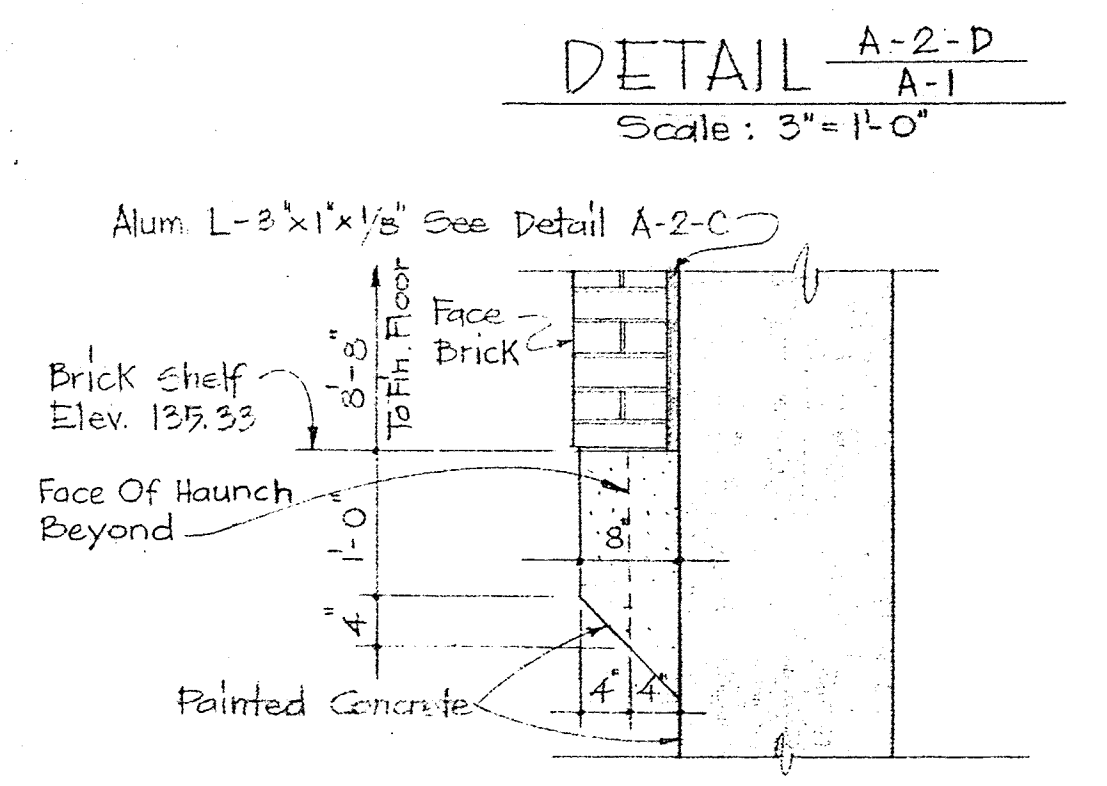
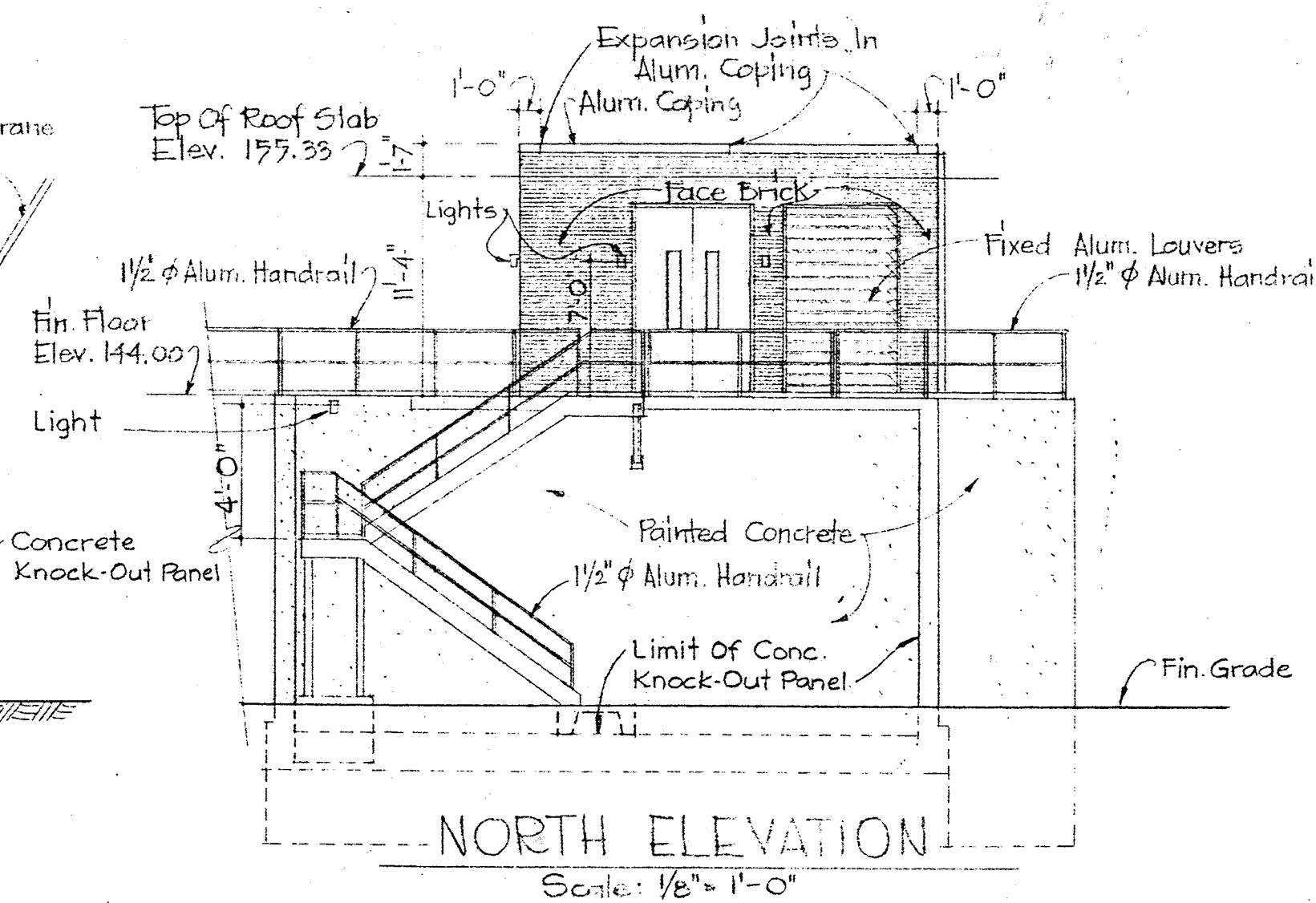
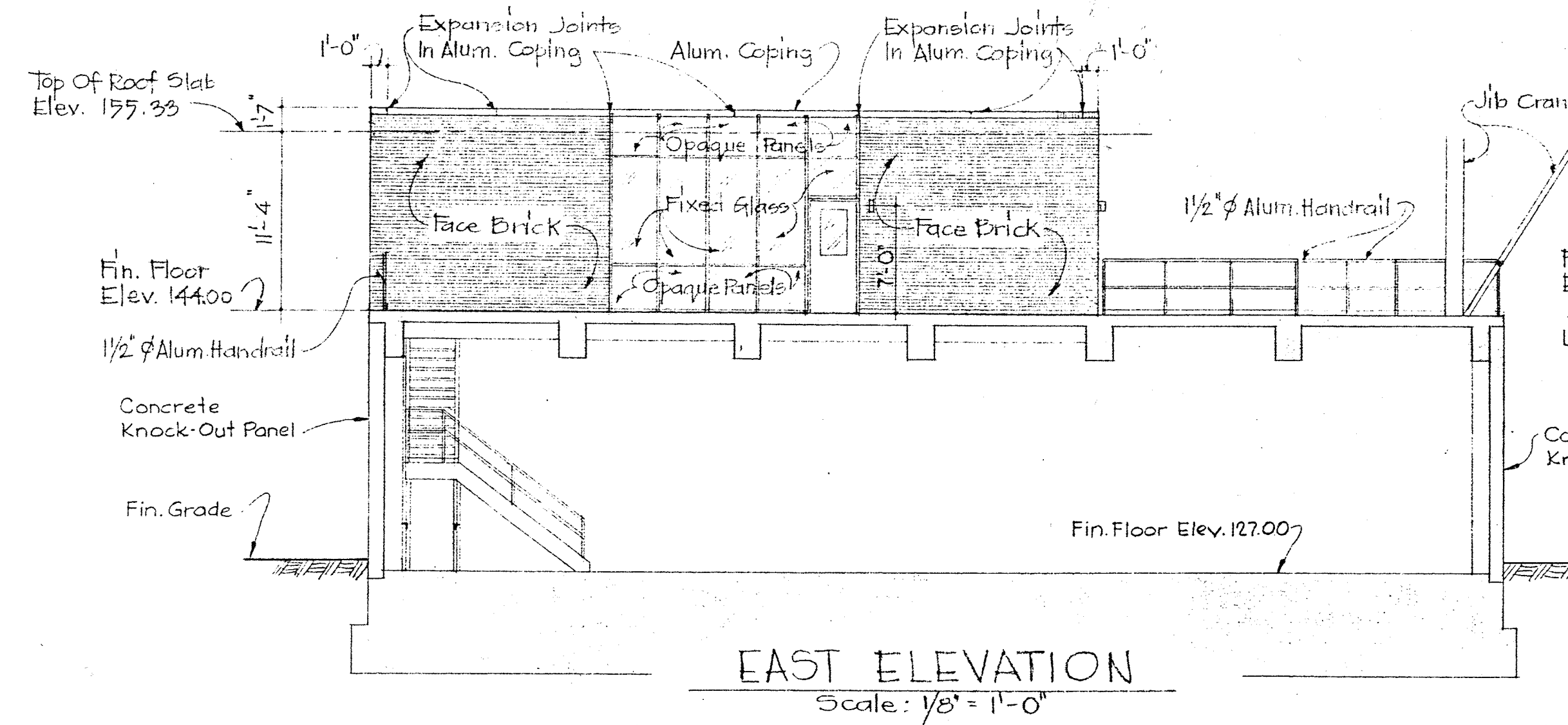
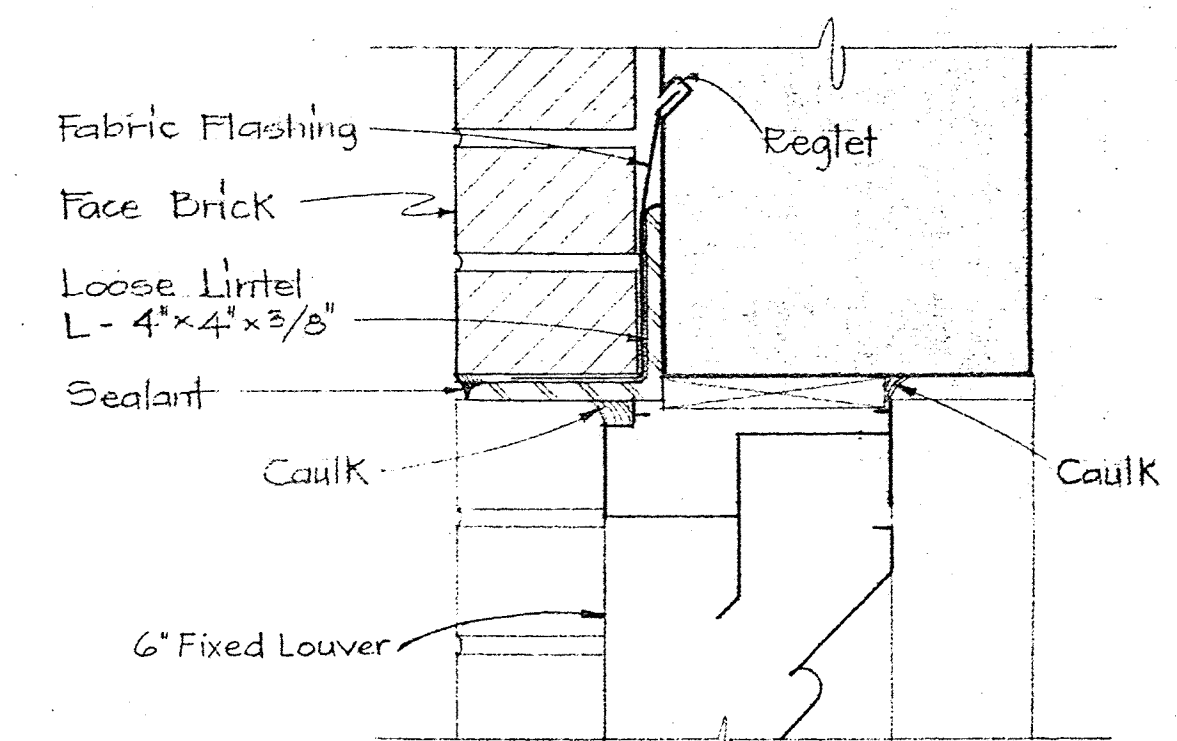
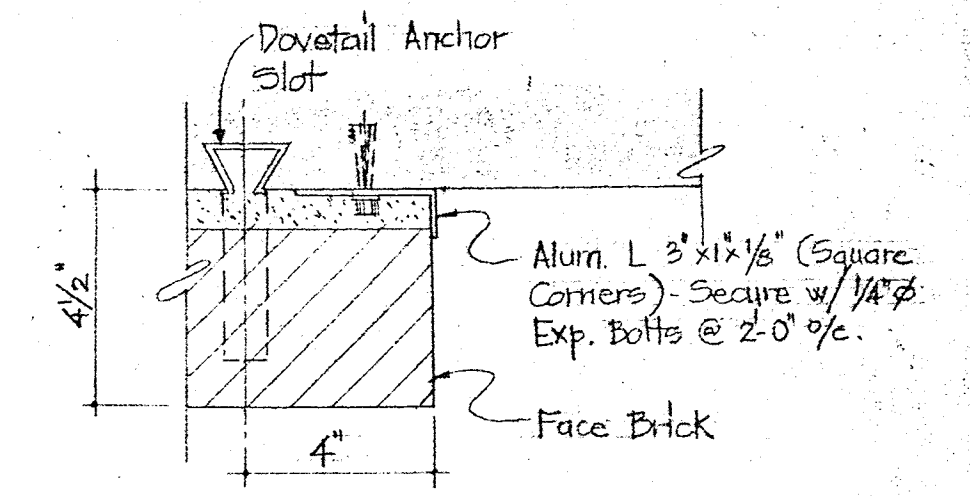
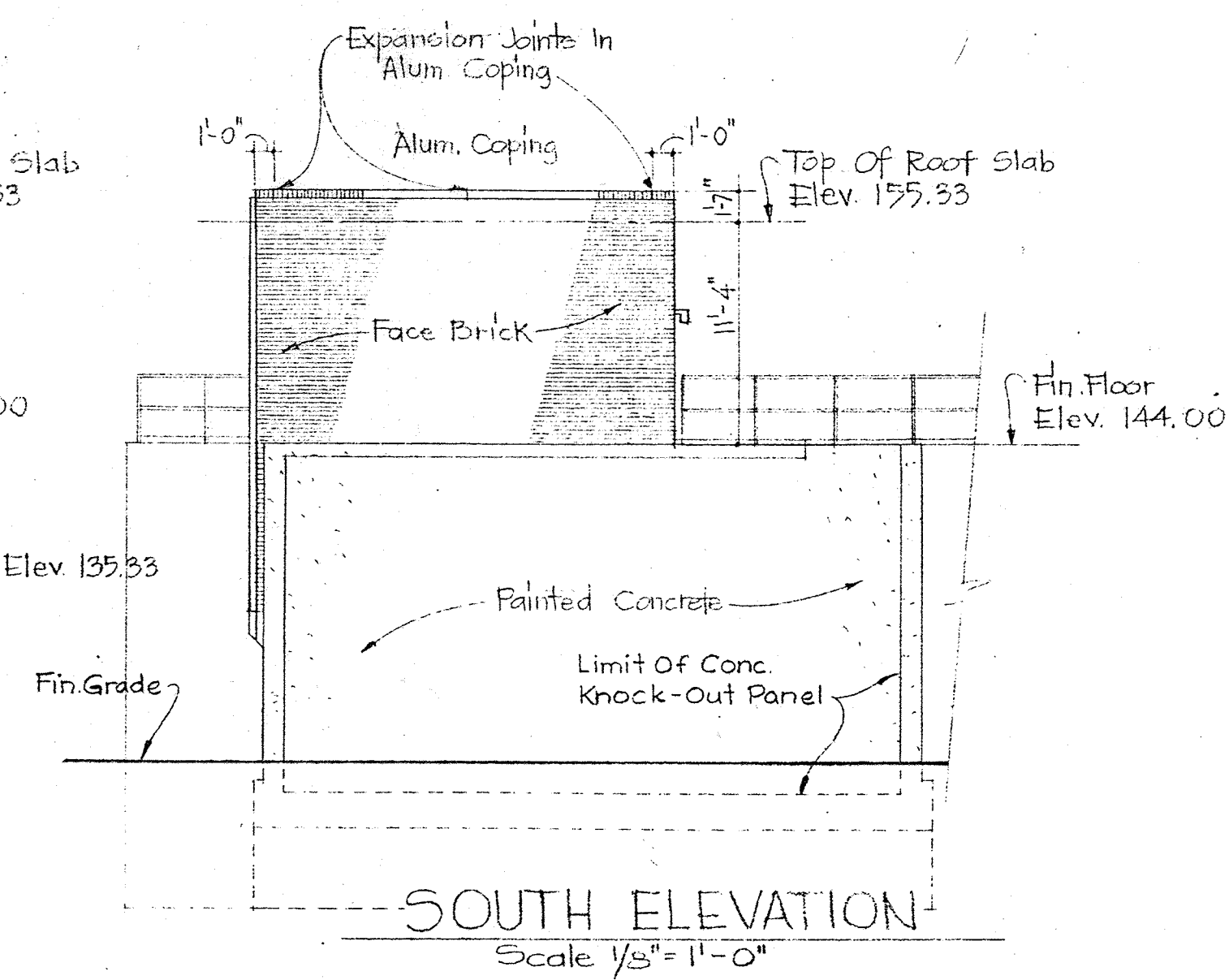
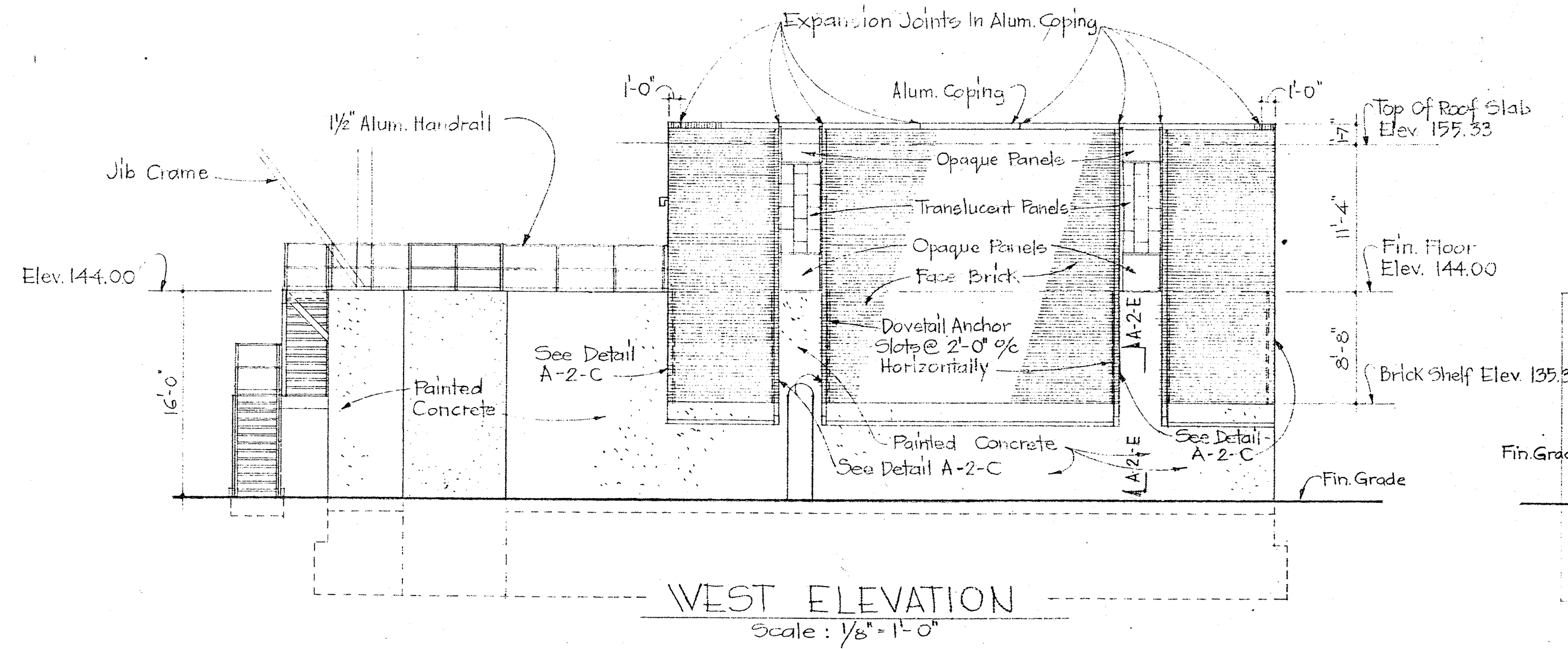
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 3

DRAWING NO. 10 OF 45
SCALE AS SHOWN

SHEET A-1

W. O. 6538-2 Clarification Changed Dimension 10-30-73

BRUNING 44210 1B392



Kenneth A. McLeod

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1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3-30-73
DATE
W. O. Gilbert
CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 526-S

CONTROL BUILDING
ELEVATIONS AND SECTIONS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 3

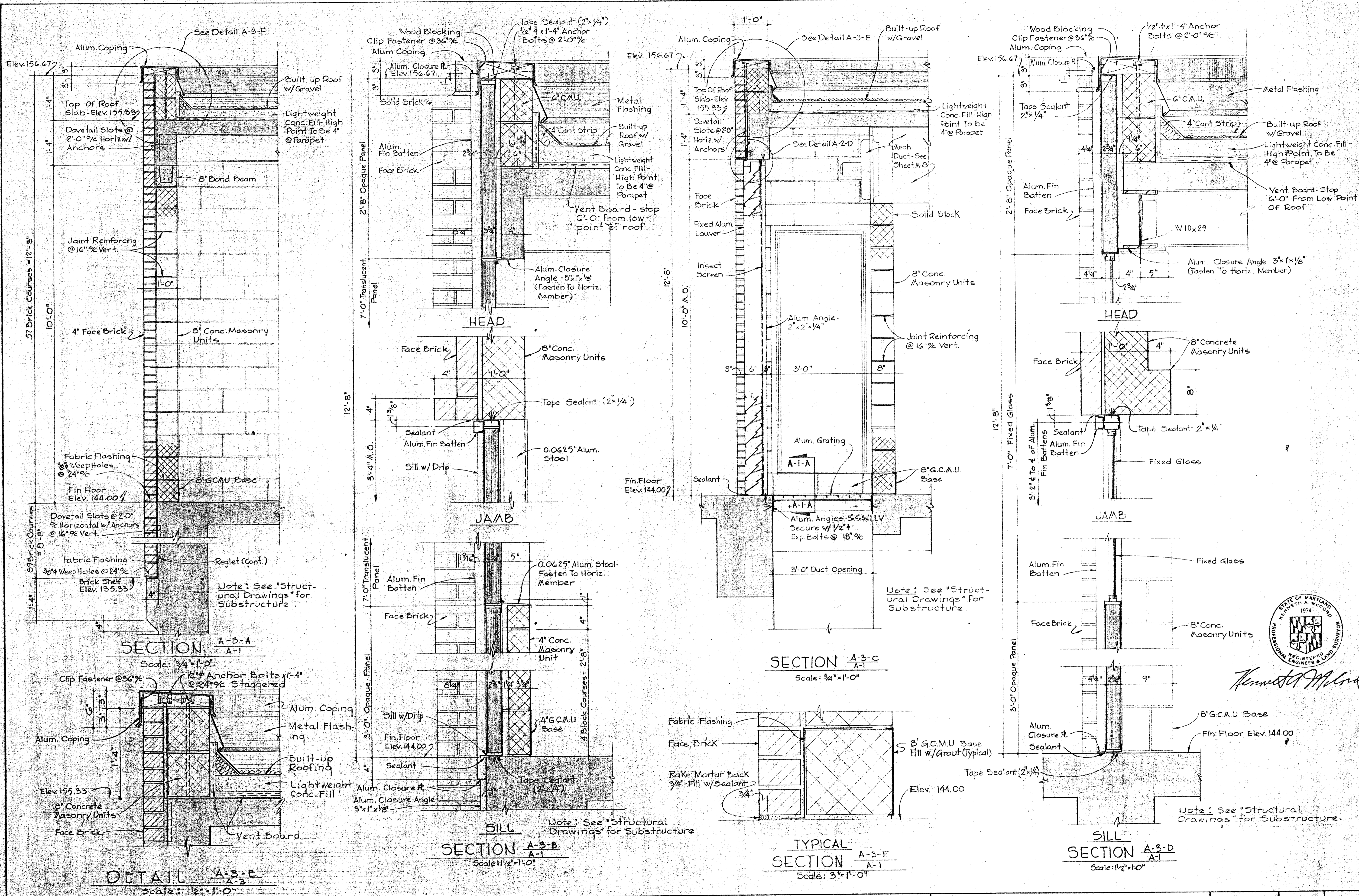
DRAWING NO. 11 OF 45

SCALE AS SHOWN

W. O. 6538-2

SHEET A-2

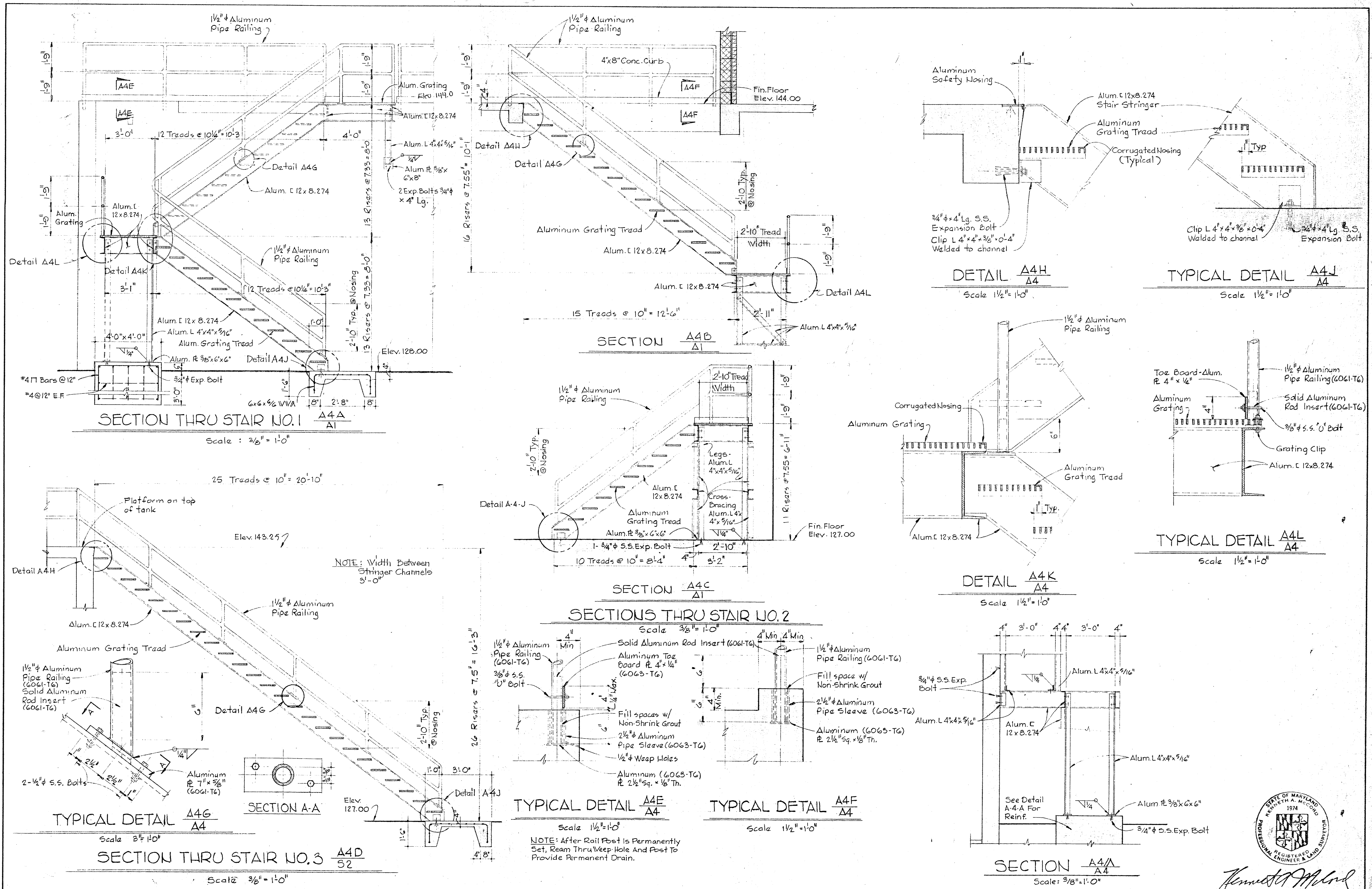
BRUNING 44-510 1899Z



Kenneth A. McCord

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 DATE <i>W. O. Gilbert</i> CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 526-S	CONTROL BUILDING SECTIONS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 12 OF 45 SCALE AS SHOWN SHEET A-3
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W. O. 6538-2



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

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 3-30-93
 DATE
 W.O. Lubert
 CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 526-S

CONTROL BUILDING
 DETAILS

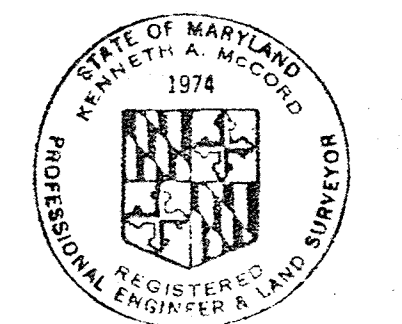
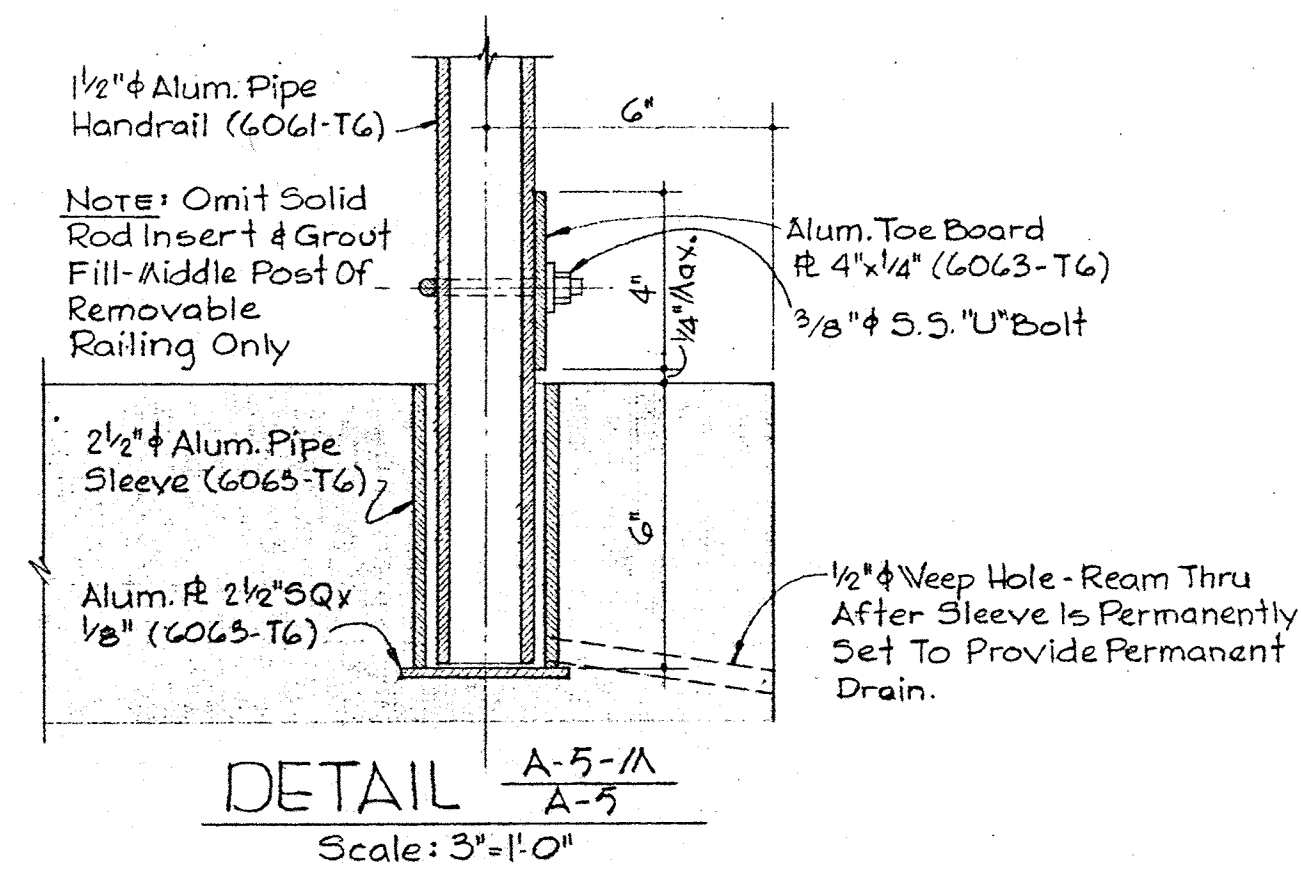
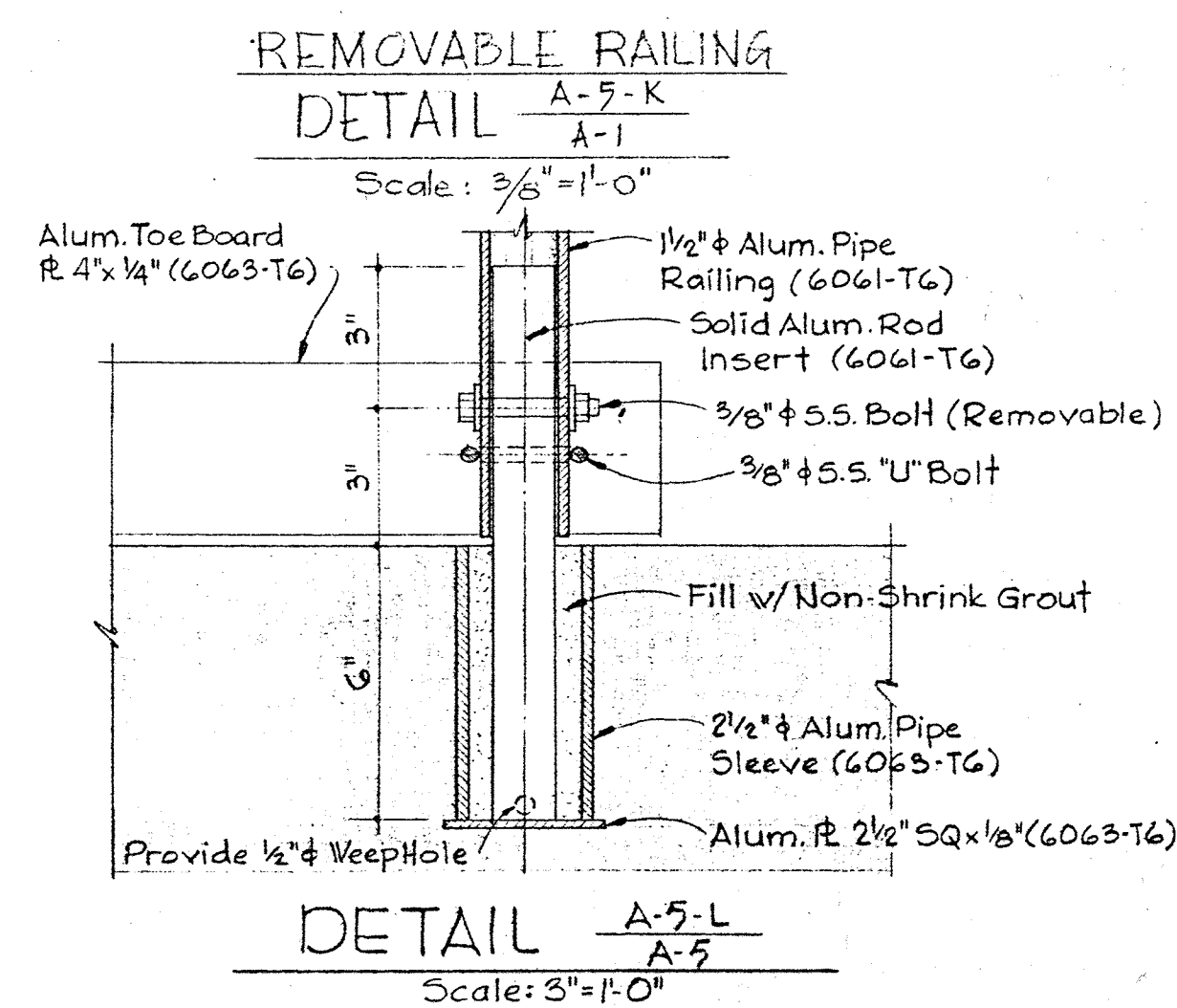
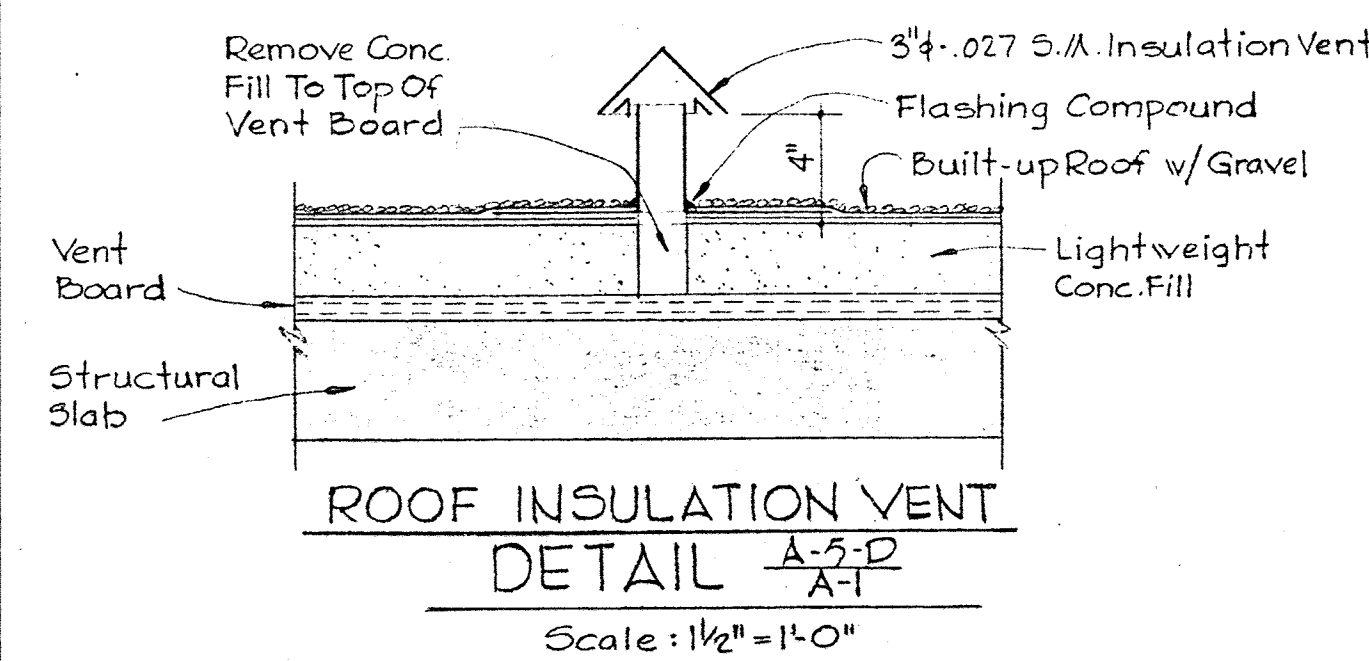
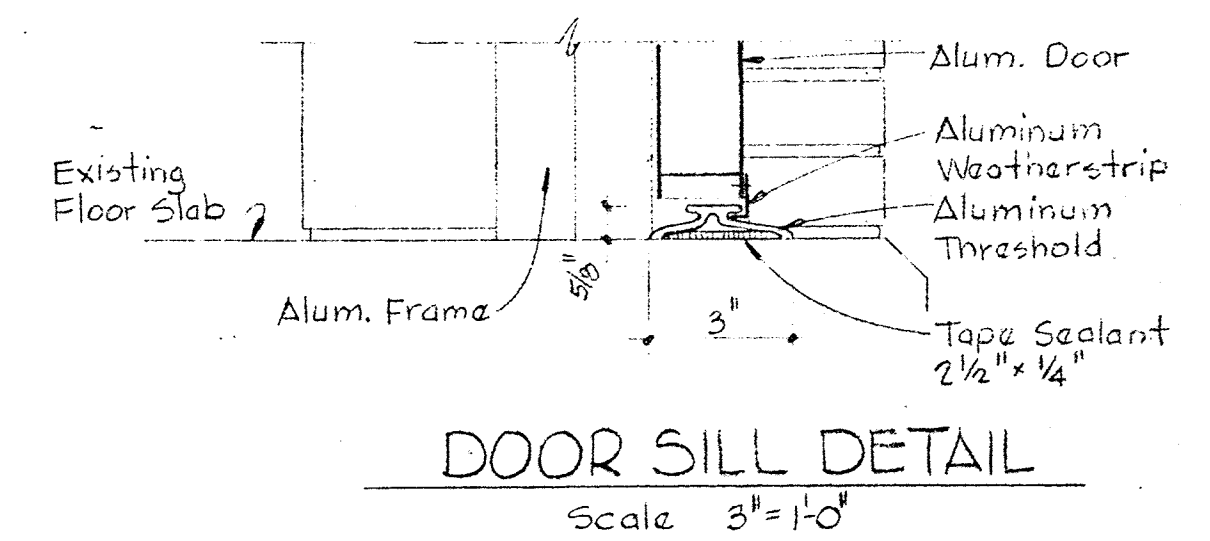
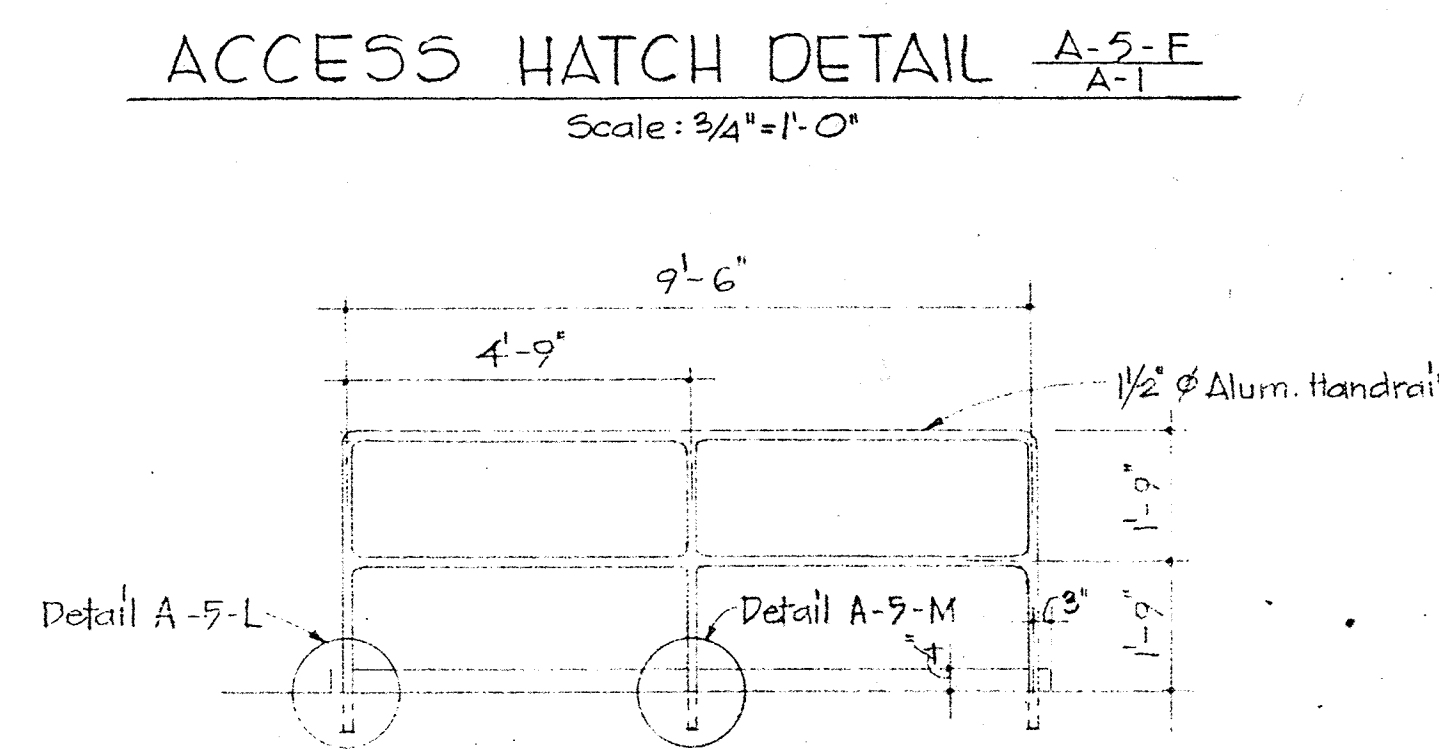
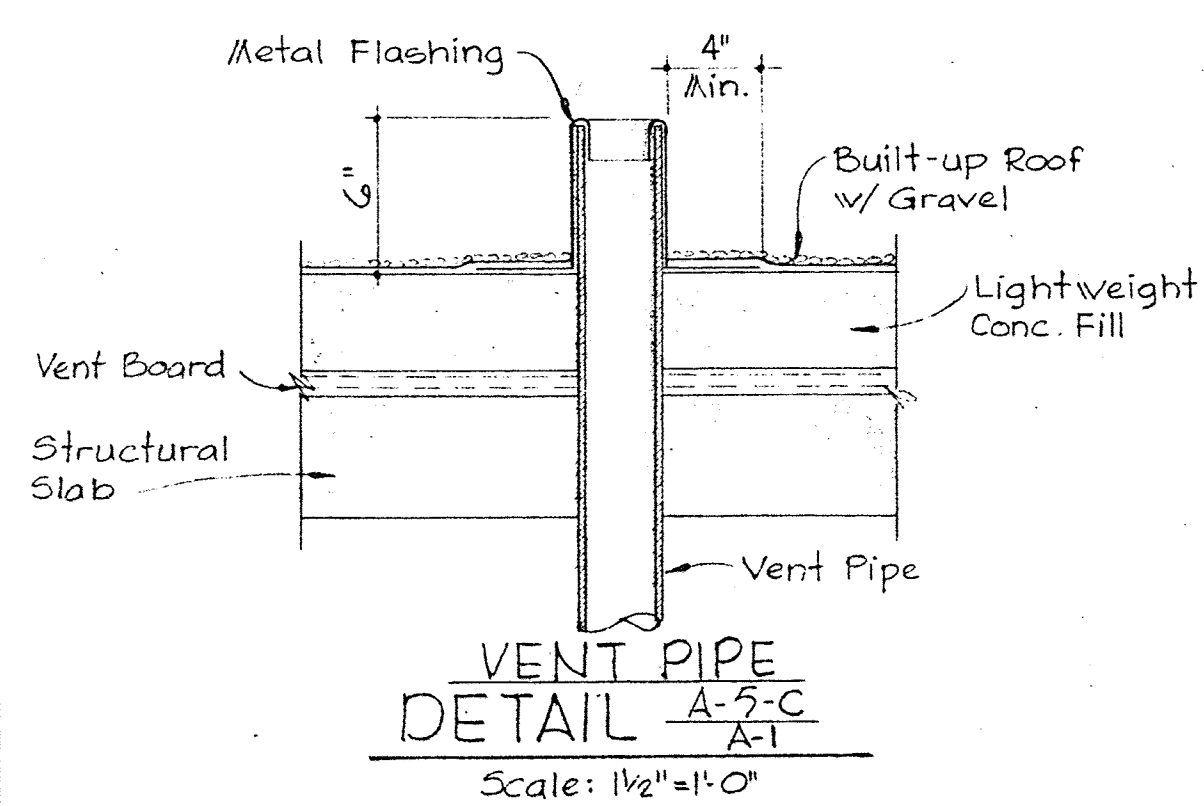
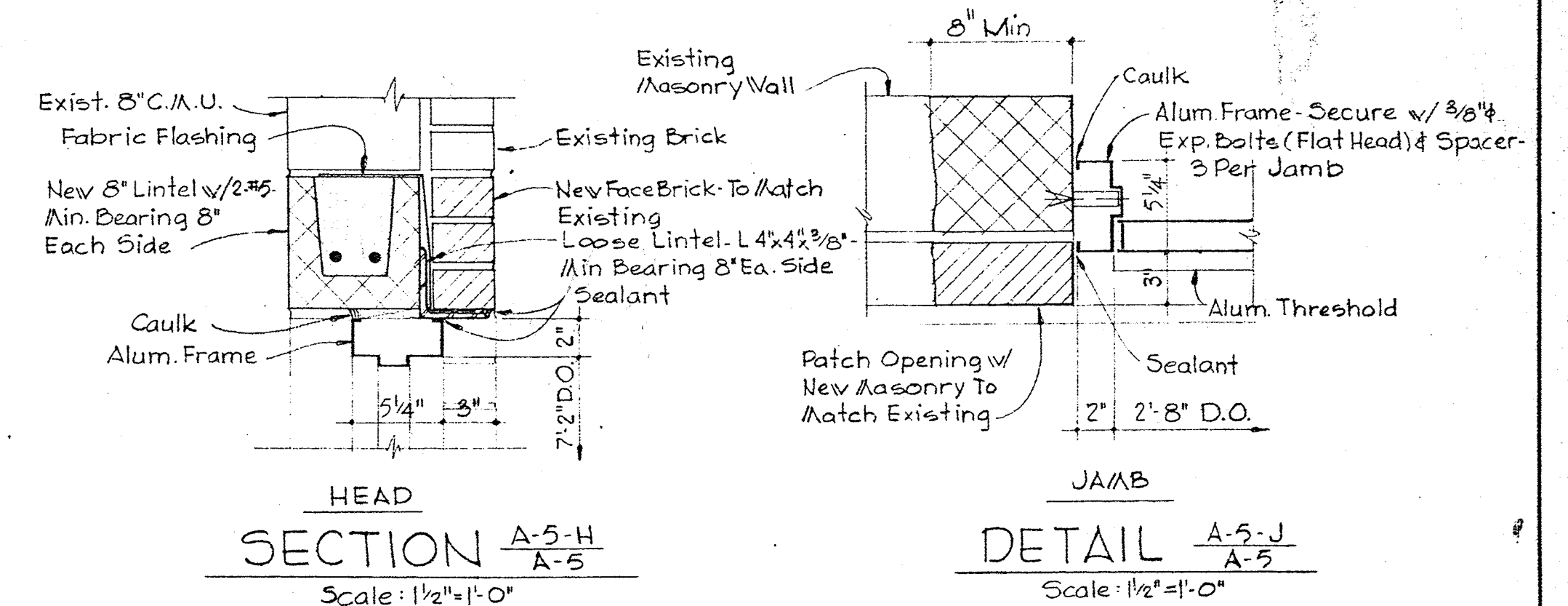
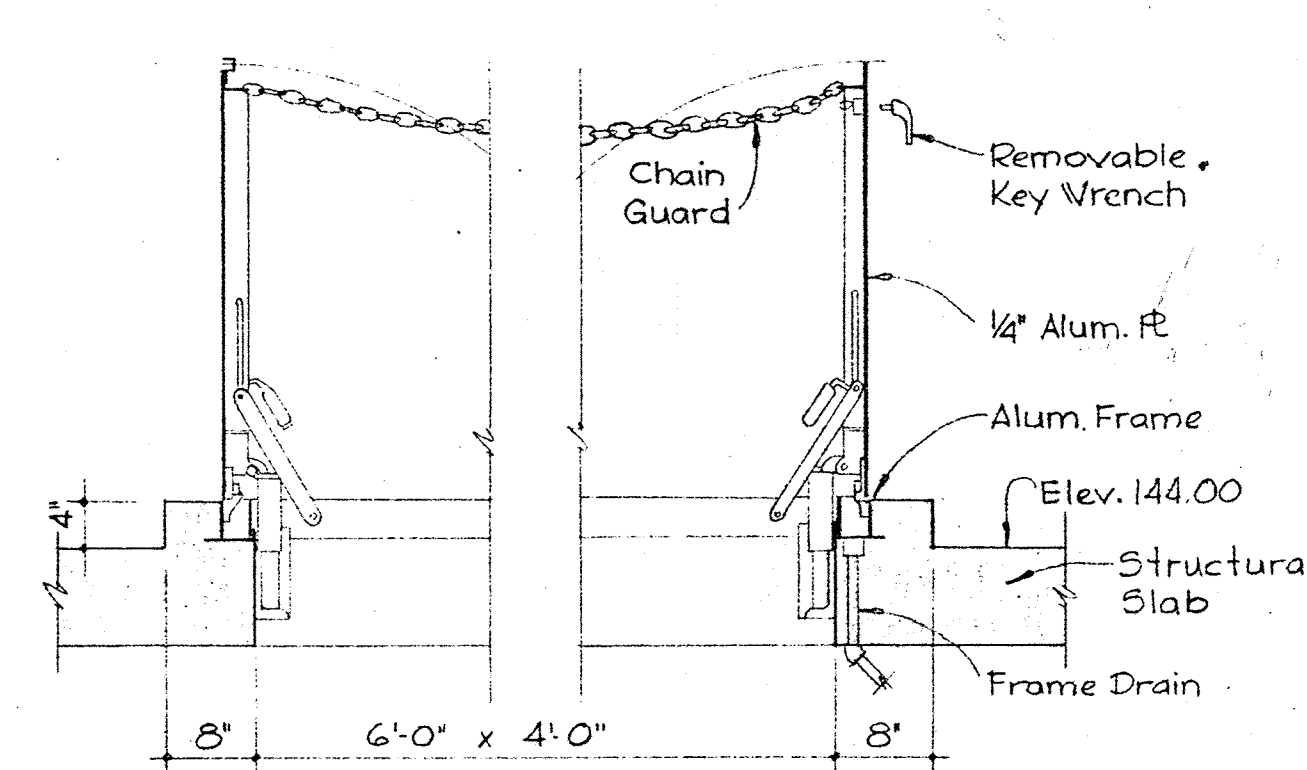
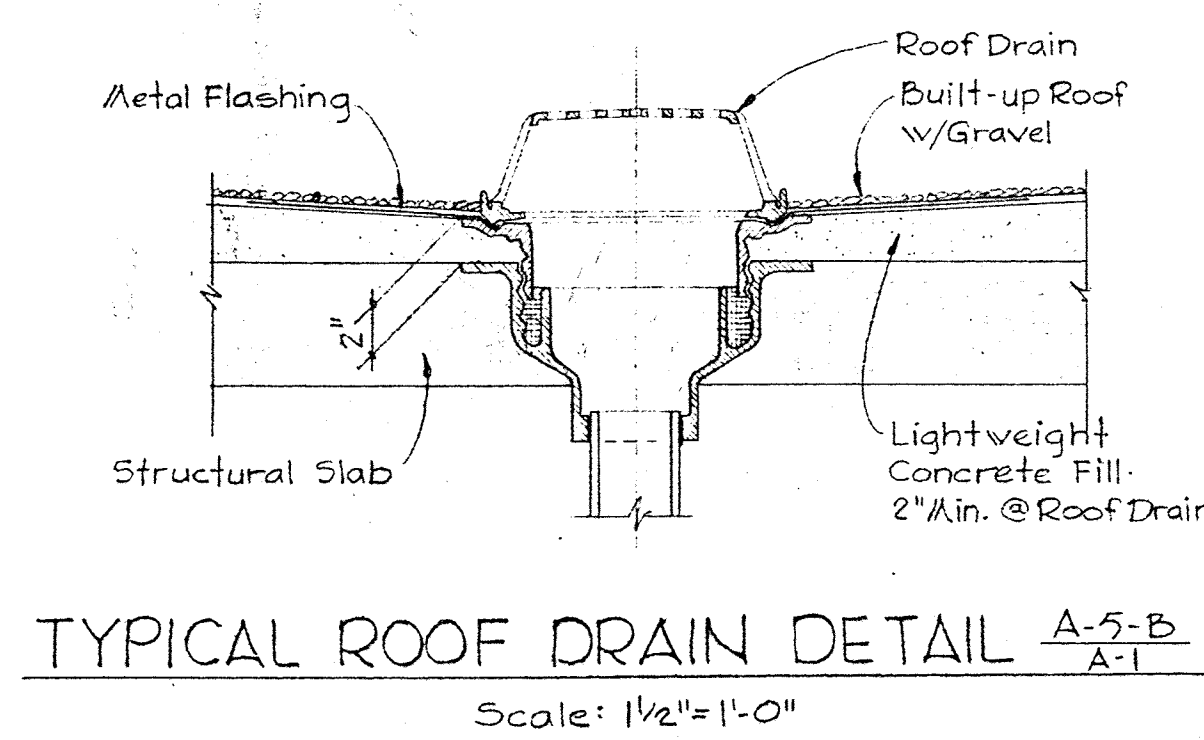
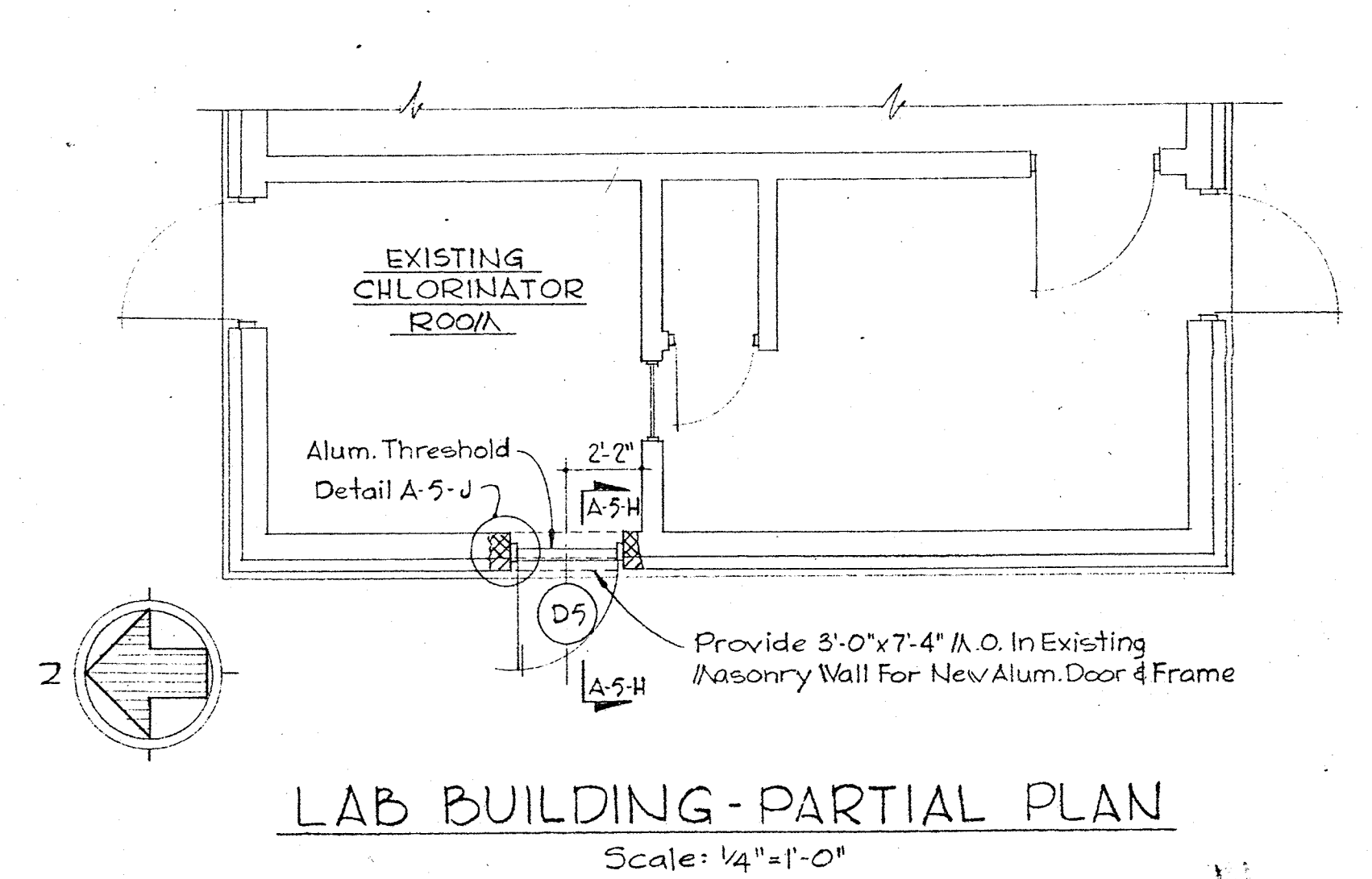
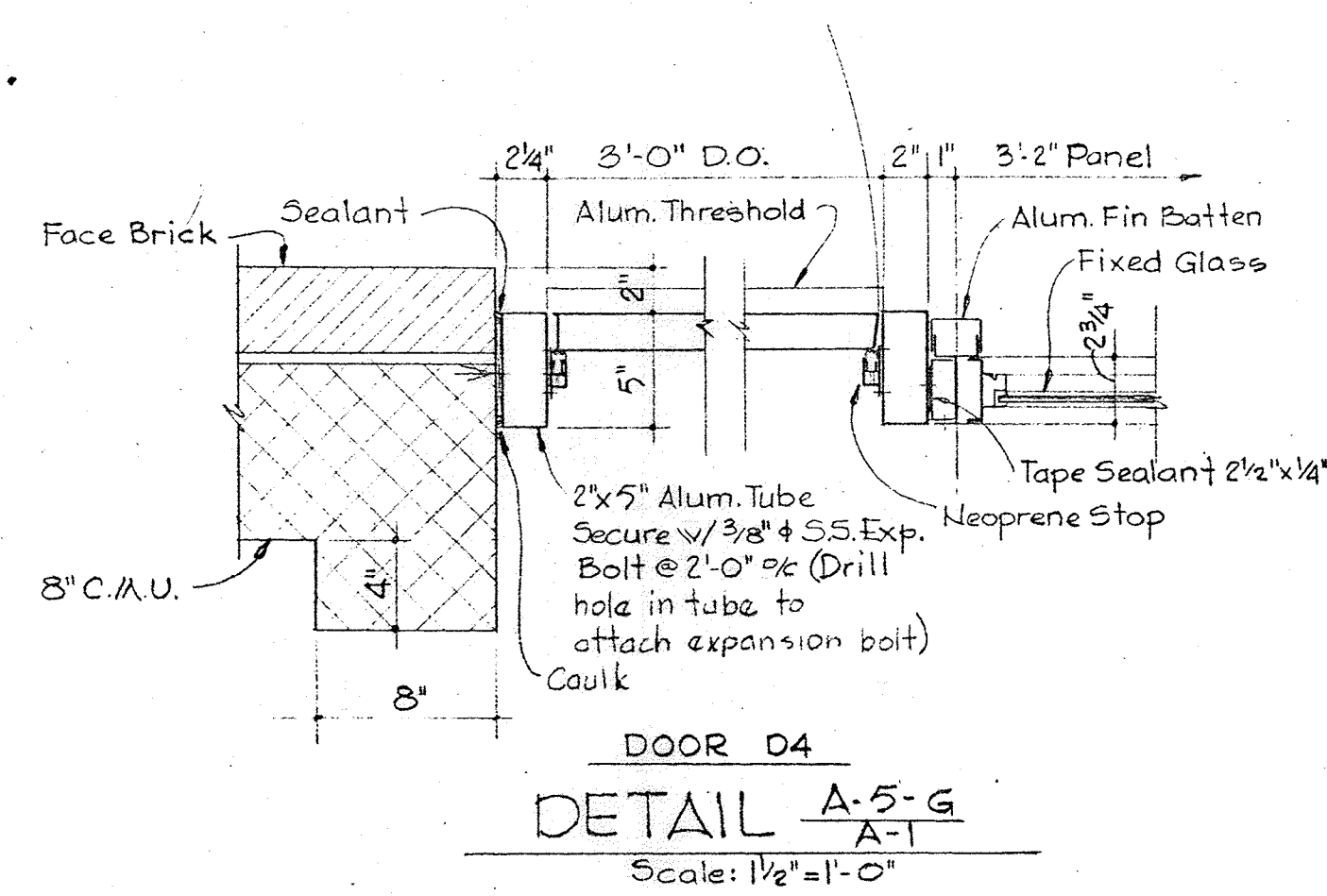
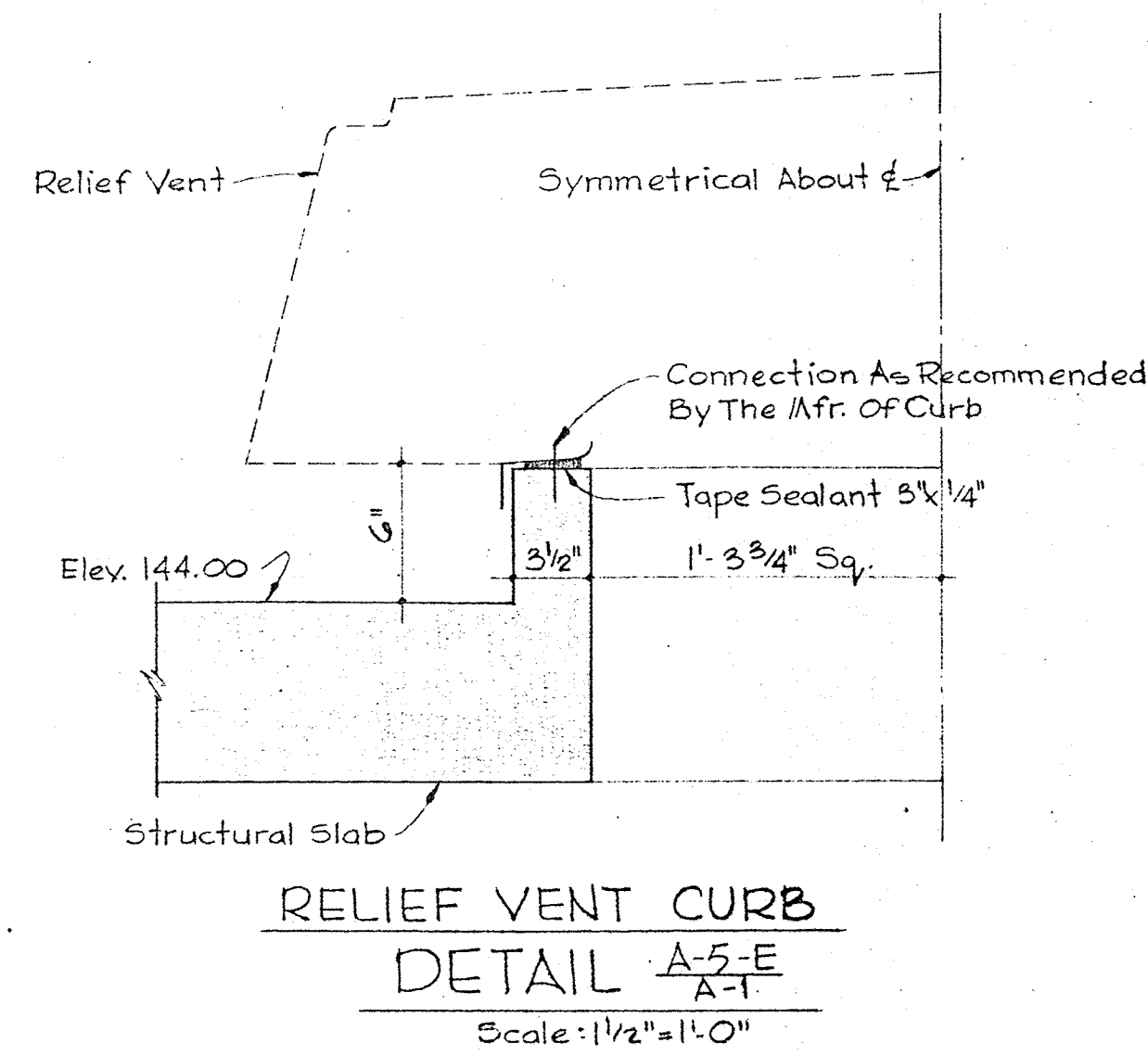
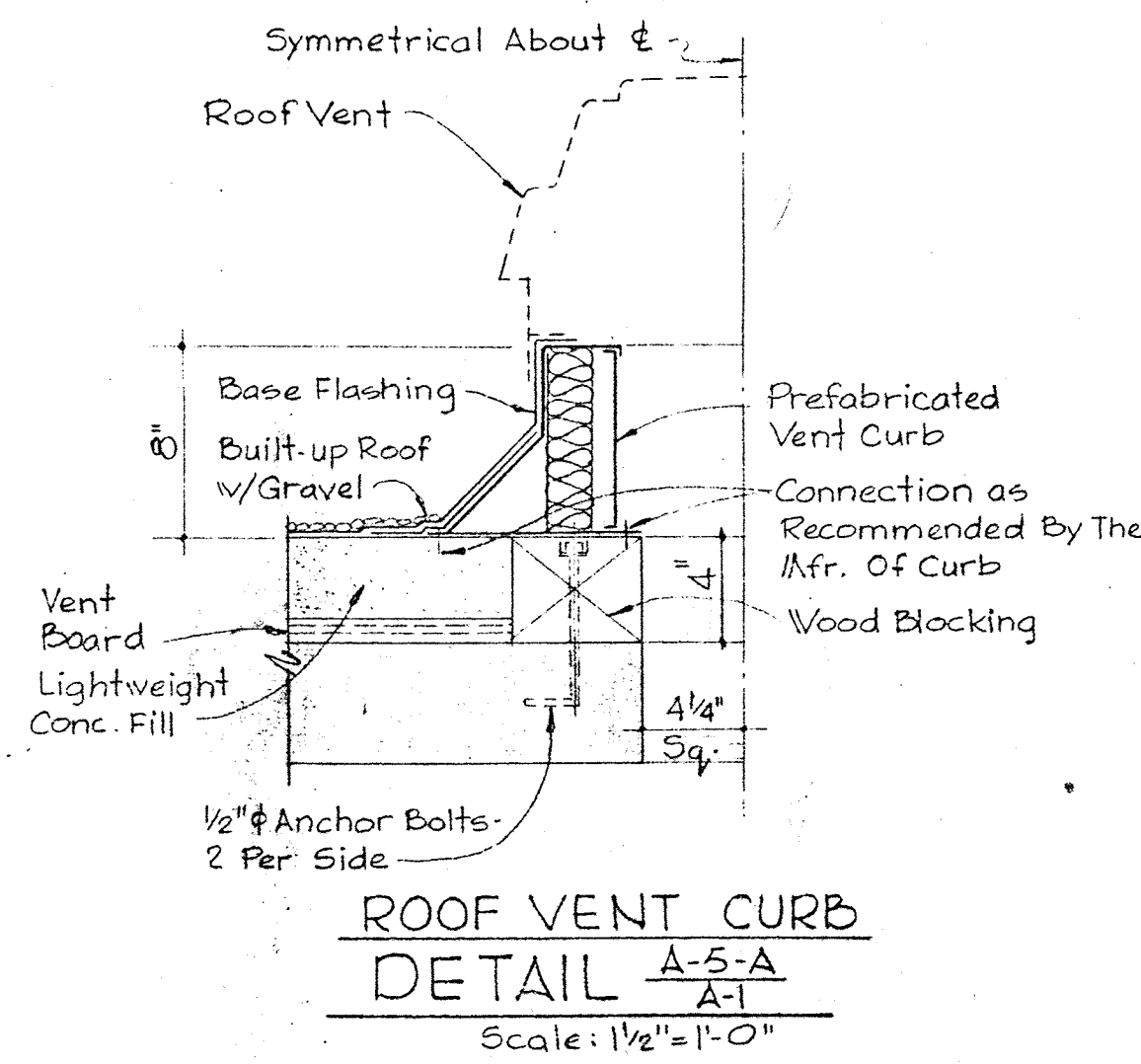
SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 3

DRAWING NO. 13 OF 45
 SCALE AS SHOWN

W. O. 6538-2

SHEET A-4

BRINING 44510 18392



Kenneth A. McLeod

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BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3-30-73
DATE
W. O. Lubert
CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 526-S

MISCELLANEOUS
ARCHITECTURAL
DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 3

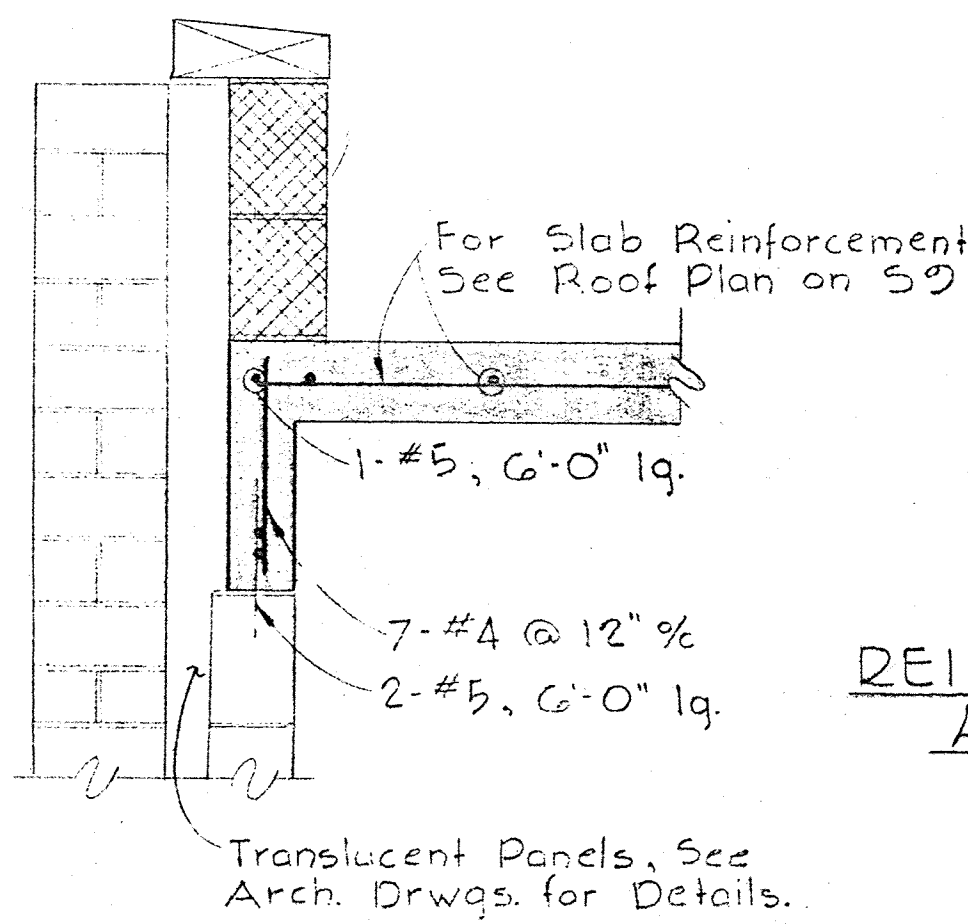
DRAWING
NO. 14
OF 45

SCALE
AS
SHOWN

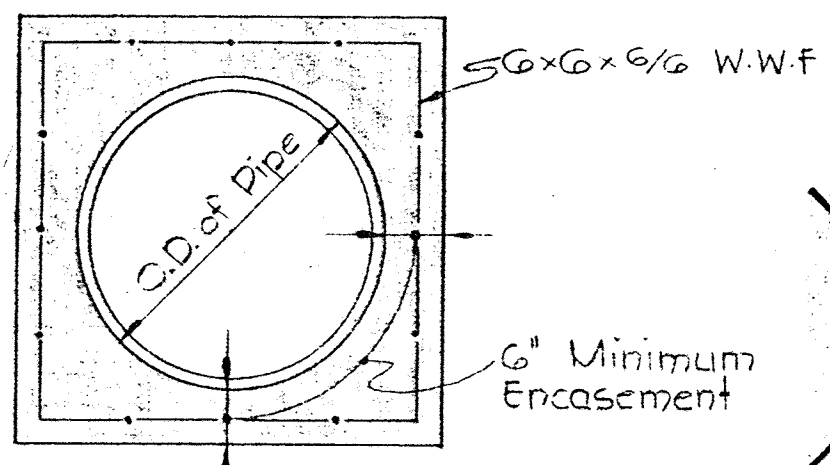
SHEET A-5

W. O. 6538-2

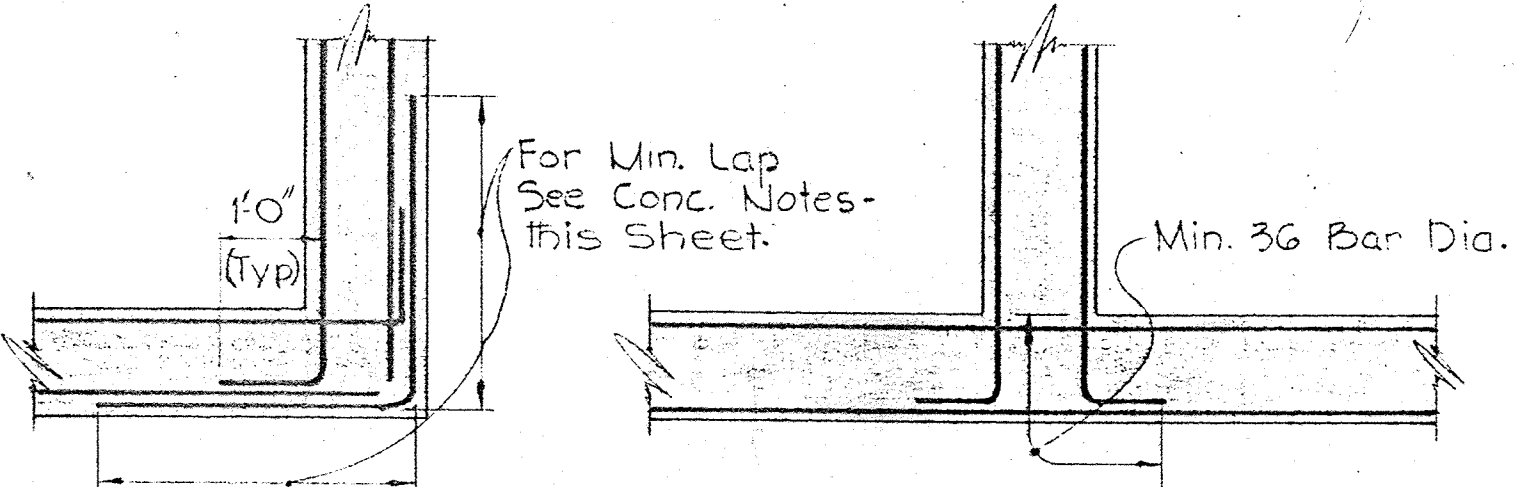
BRUNING 44-510 1B392



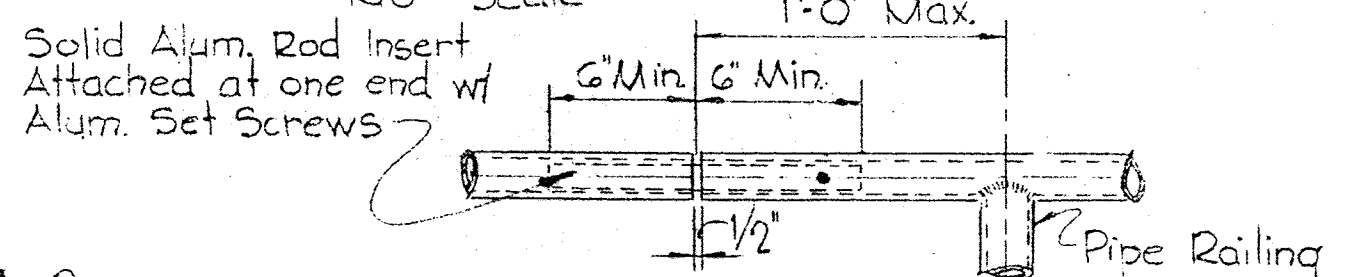
SECTION 51B
Scale 1"=1'-0"



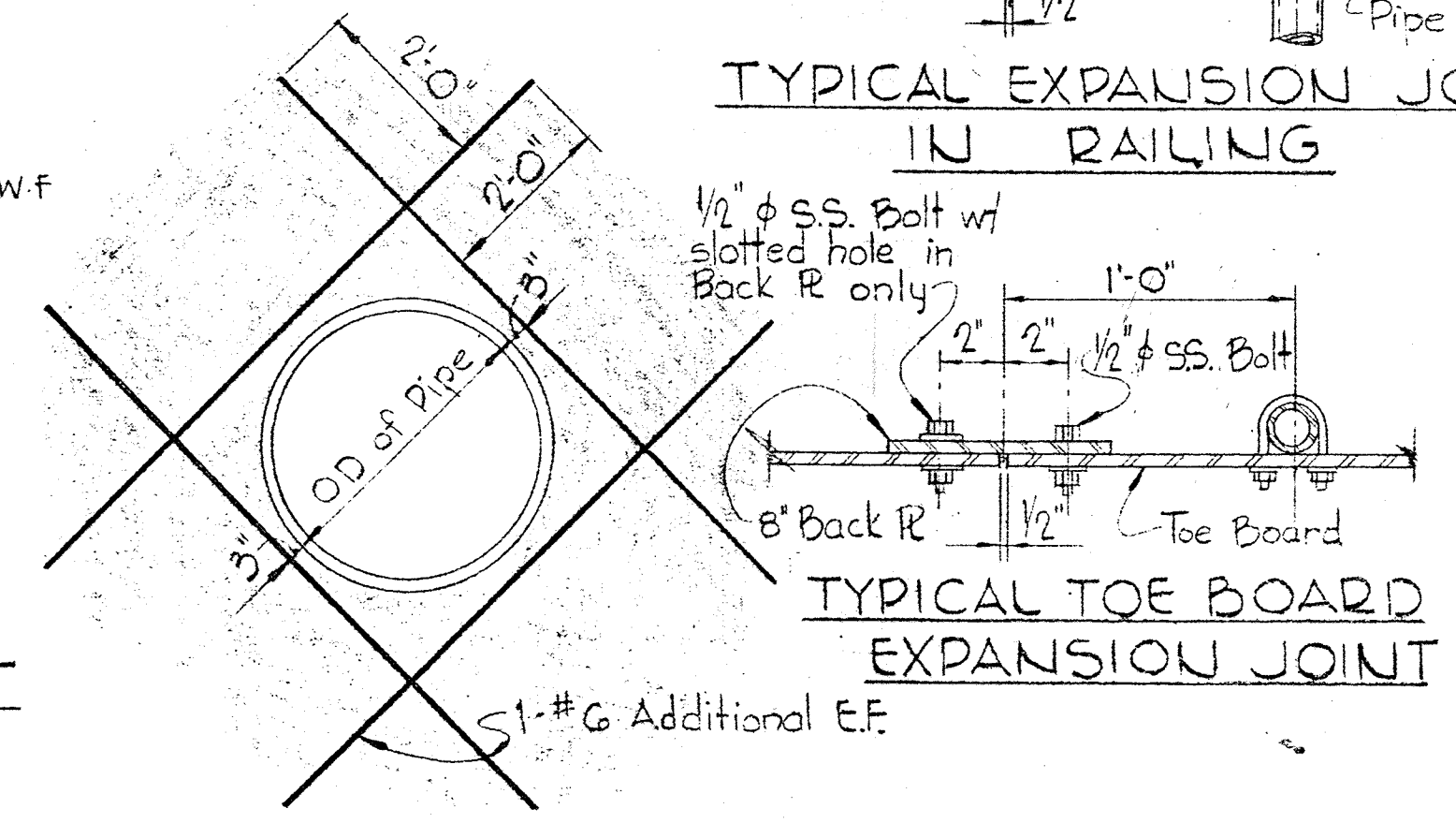
TYPICAL CONCRETE ENCASEMENT
AROUND PIPE
No Scale



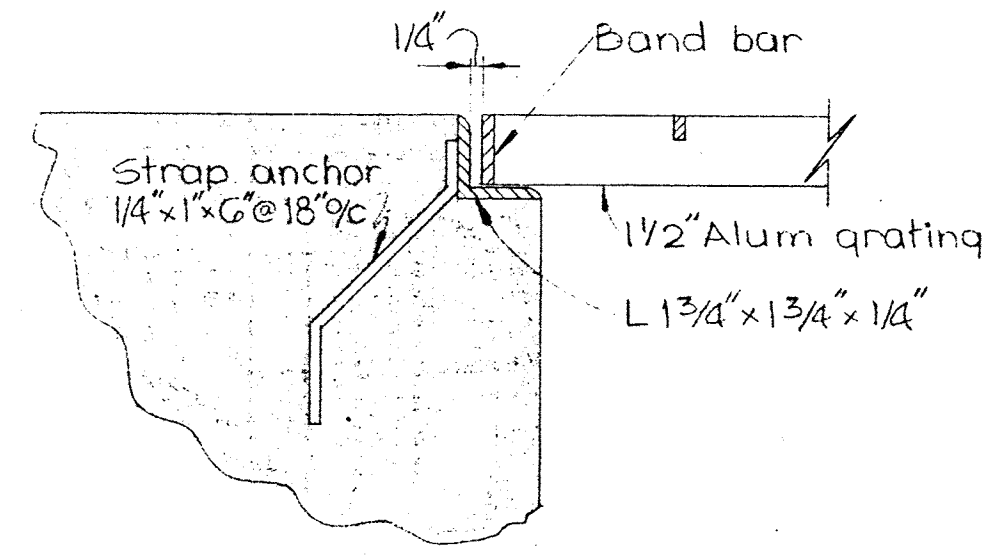
REINFORCING DETAIL AT CORNER
REINFORCING DETAIL AT WALL INTERSECTION
TYPICAL REINFORCING DETAILS IN WALL



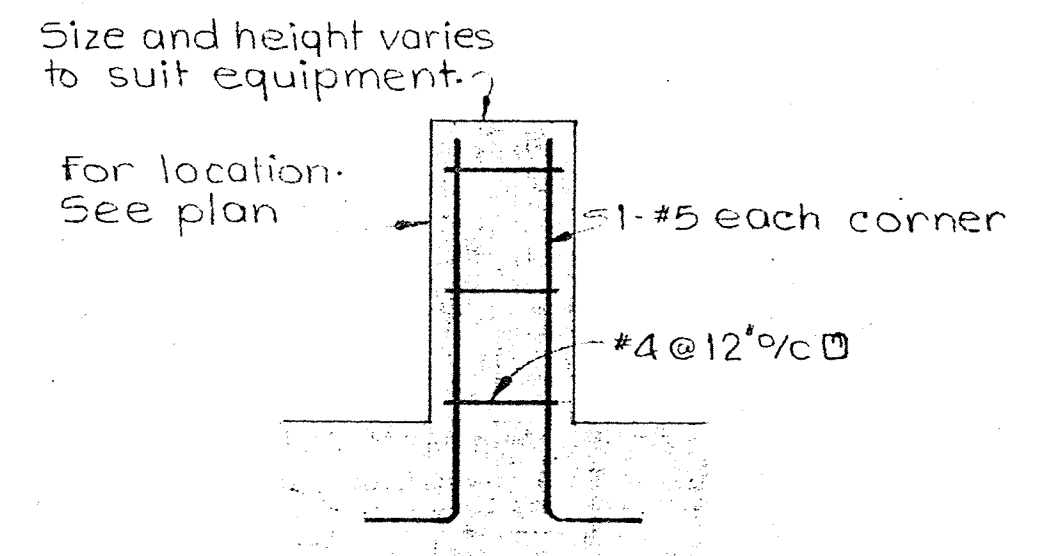
TYPICAL EXPANSION JOINT
IN RAILING
No Scale



REINFORCING AROUND PIPES OR
ROUND OPENINGS IN WALL OR SLAB
No Scale

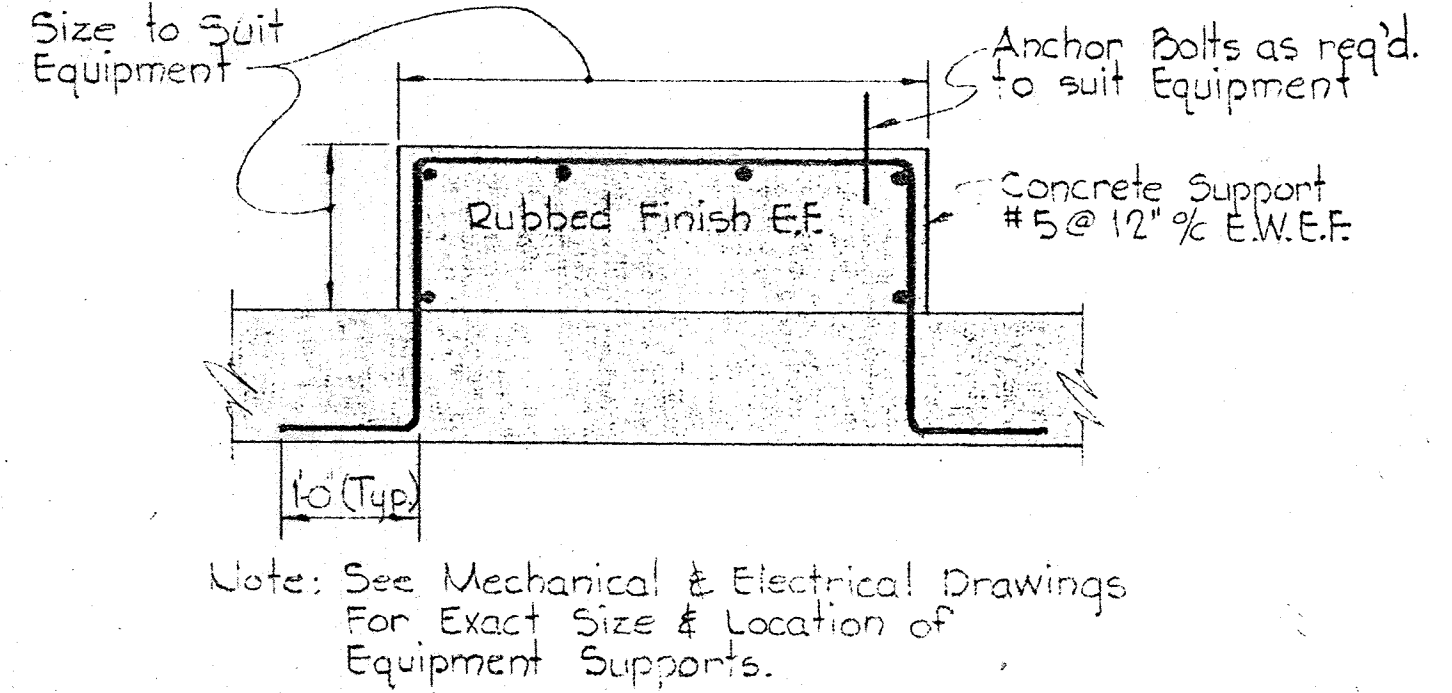


TYPICAL GRATING DETAIL
Scale: 3"=1'-0"

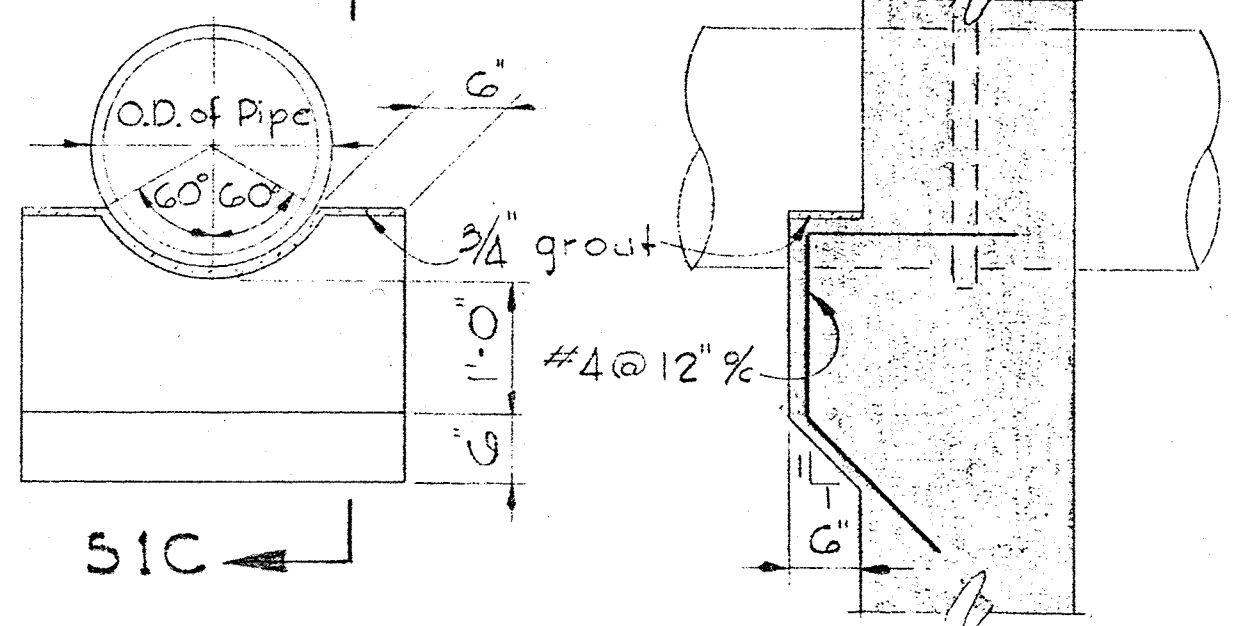


TYPICAL PIPE SUPPORT
Scale: 3/4"=1'-0"

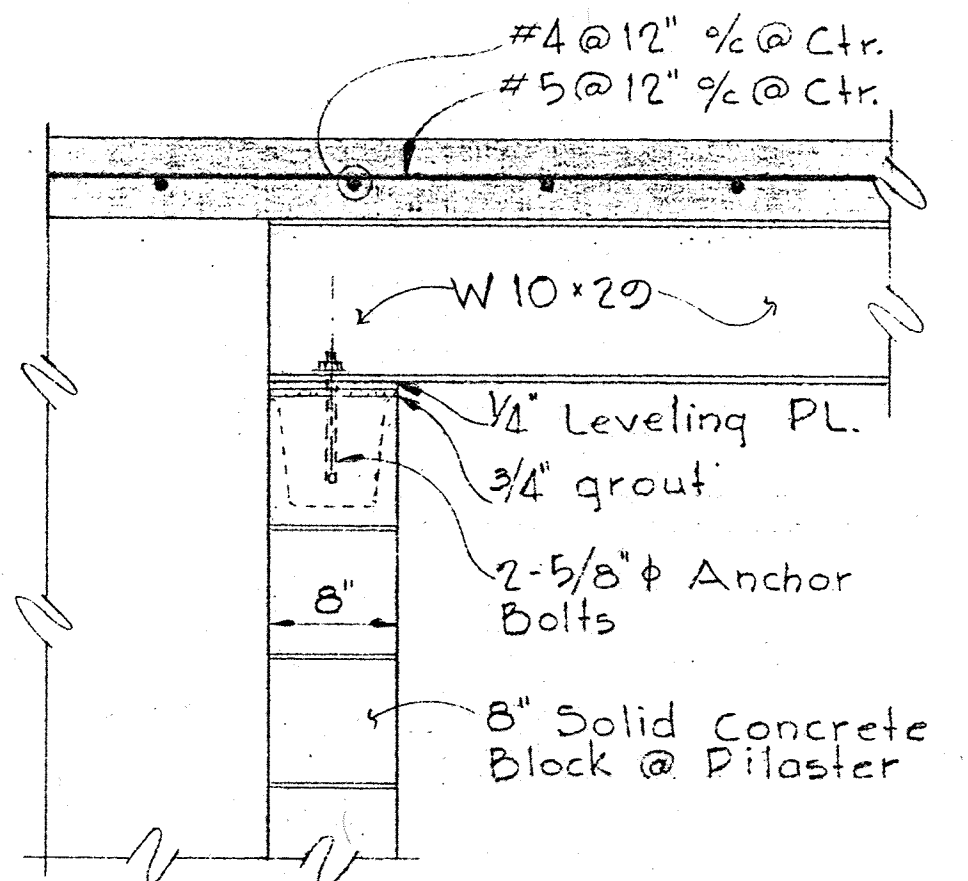
- STRUCTURAL STEEL NOTES**
- All Structural Steel Shall Conform to ASTM Designation "A-36"
 - All Shop Connections Shall be Welded With A233 Class E70 Series Electrodes. All Field Connections Shall be High Strength Bolted Using A325 Bolts Except Where Otherwise Noted
 - All Structural Steel is Designed by Elastic Analysis and Shall be Fabricated in Accordance With Current A.I.S.C. Specifications For Buildings.
 - The Contractor Shall Submit Erection Plans and Shop Details Before Starting Fabrication.
 - All Structural Steel Shall be Given One Shop Coat of Paint See Specs.
 - All Steel Anchor Bolts Shall be Stainless Steel. See Specifications For Additional Requirements.



TYPICAL EQUIPMENT SUPPORT
51C
No Scale



ELEVATION SECTION 51C
TYPICAL PIPE HAUNCH DETAIL
No Scale

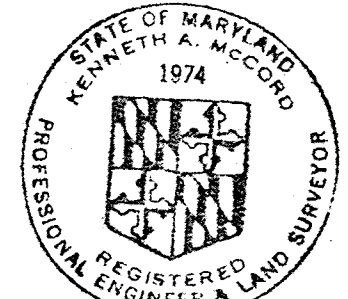


SECTION 51A
Scale 1"=1'-0"

- 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 AASHTO Test Designation "T180-51 Method D"
 - All Foundations Have been Designed For a Maximum Allowable Soil Bearing Pressure of 3000 psf.

- CONCRETE NOTES**
- All Concrete Shall Have a Minimum Compressive Strength of 3500 psi at 28 Days.
 - Reinforced Concrete Shall be Detailed and Constructed in Accordance With Current A.C.I. Specification 318-71. Concrete Has been Designed by The Alternate Design Method.
 - All Reinforcing Steel Shall Conform to ASTM Specification A15-68 Grade 40.
 - Unless Otherwise Noted on The Drawings, Concrete Cover For Reinforcement Shall be as Follows:
 - Unformed Concrete, Bottom Bars in Footings and Slabs on Earth, Rock, Gravel, or Crushed Stone, 3"
 - Beams, Slabs, Columns and Walls Exposed to Ground, Weather or Process Liquid, After The Removal of Forms, 2"
 - Beams, Walls, Columns and Piers Not Exposed to Weather, 1 1/2"
 - Structural Slabs Not Exposed to Weather or Process Liquid, 3/4"
 - All Exposed Concrete Edges Shall be Chamfered 3/4" Unless Otherwise Noted.
 - Concrete Slabs and Walls Shall be Poured Between Indicated Joints, Allowing a Minimum Period of 3 Days to Elapse Between Adjacent Pours.
 - Construction, Expansion and Contraction Joints Shall be as Detailed on The Drawings and no Additional Joints Shall be Used Nor Any Omitted Except by Written Authorization of The Engineer.
 - The Contractor Shall Submit Shop Details of Reinforcing Steel Before Proceeding With Fabrication.
 - Unless Otherwise Noted, All Reinforcing Bar Laps Shall be as Follows:
 - Sizes #3 to #5 - 24 Bar Diameters
 - Sizes #6 to #8 - 32 Bar Diameters
 - Sizes #9 to #11 - 44 Bar Diameters
 - Anchor Bolts and Equipment Pedestals Shall be Sized and Located as Required to Suit Equipment Furnished.
 - See Civil, Architectural, Mechanical and Electrical Drawings For All Embedded Items, Such as Sleeves, Anchors, Electrical Conduits, Openings, Chases Etc. Which Interfere With Concrete Construction.
 - All Wall Horizontal Reinforcing Bar Laps Shall be 140% of those Stated in Item 9.

- STRUCTURAL ALUMINUM NOTES**
- All Aluminum in Contact With Concrete Shall, Before Erection, be Heavily Coated as Specified.
 - All Structural Aluminum Shall be Alloy 6061-T6. Handrail horizontal bars Shall be Alloy 6063-T6. Handrail Posts Shall be Alloy 6061-T6.
 - All Structural Aluminum is Designed and Shall be Fabricated in Accordance With The Current Specifications of The Aluminum Association.
 - All Aluminum Grating Shall be Capable of Supporting 150 psf with a maximum deflection of 1/4" when loaded at 100 p.s.f. Minimum depth of grating shall be 1 1/2".



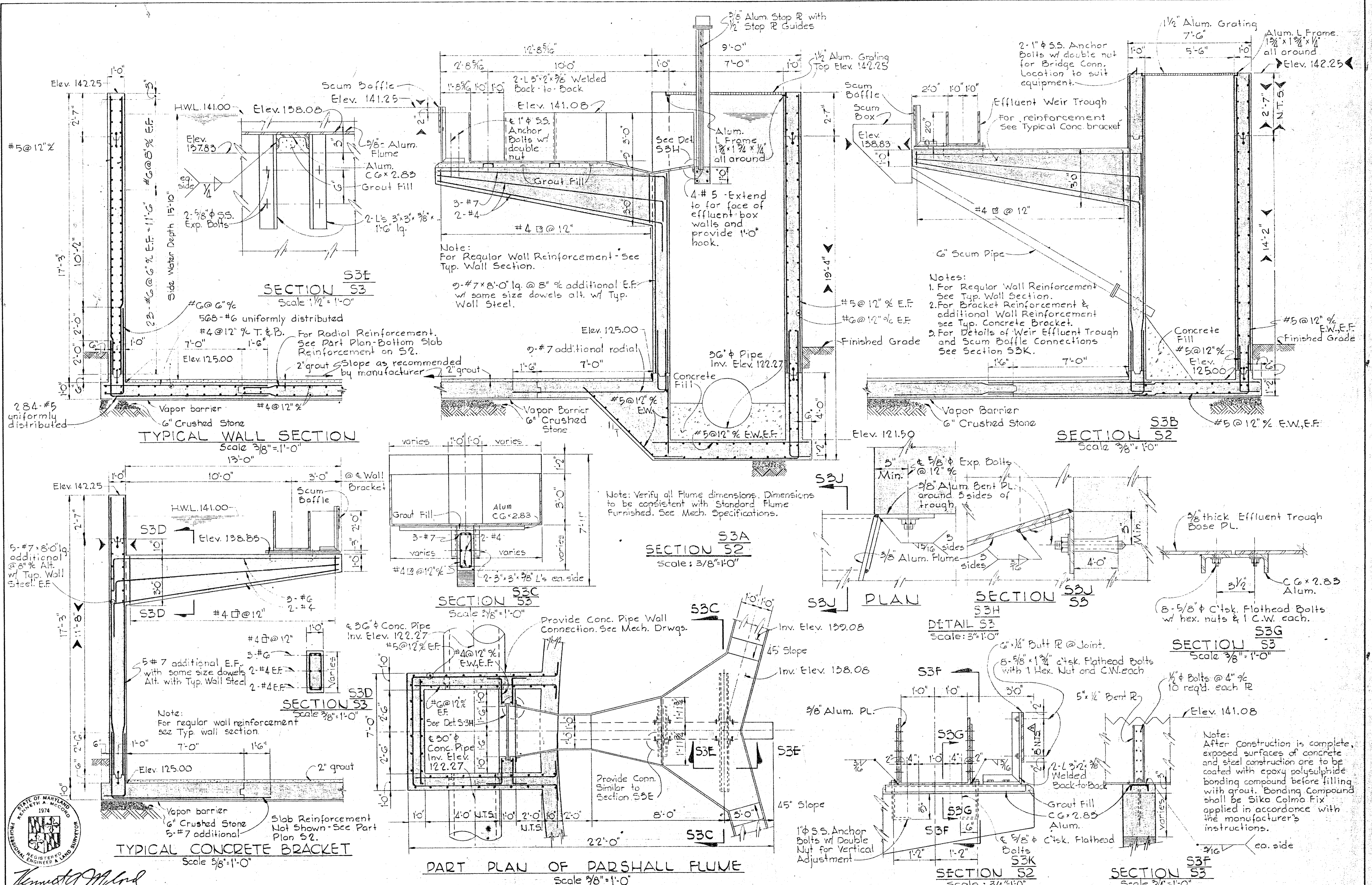
Kenneth A. McLeod

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 DATE W.D. Libert CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	STRUCTURAL NOTES AND DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.3	DRAWING NO. 15 OF 45	SCALE AS SHOWN
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W.O. 6538-2

SHEET S-1

BRUNING 44-510 14778



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

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE 3-30-73
 W. O. Lubert
 CHIEF - BUREAU OF ENGINEERING

CONTRACT NO. 526-S

SECONDARY CLARIFIER
 SECTIONS AND DETAILS

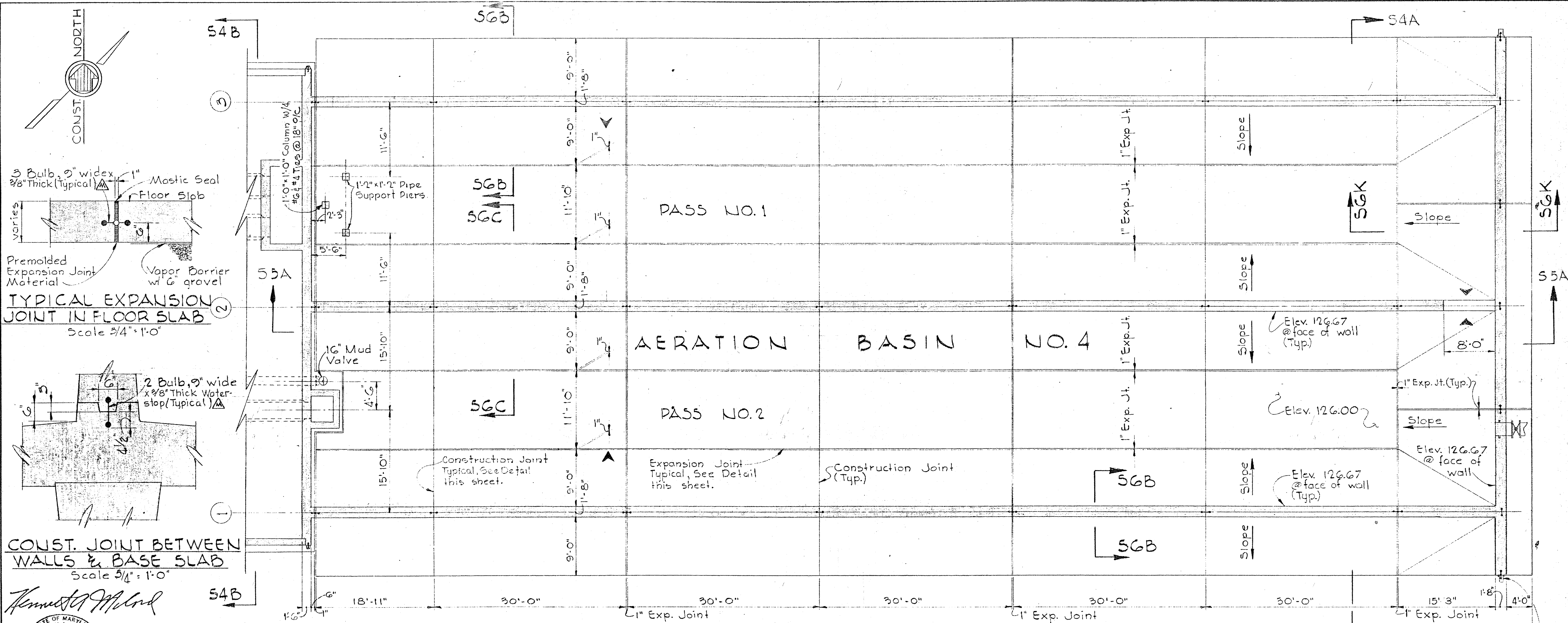
SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO. 3

DRAWING NO. 17 OF 45
 SCALE AS SHOWN

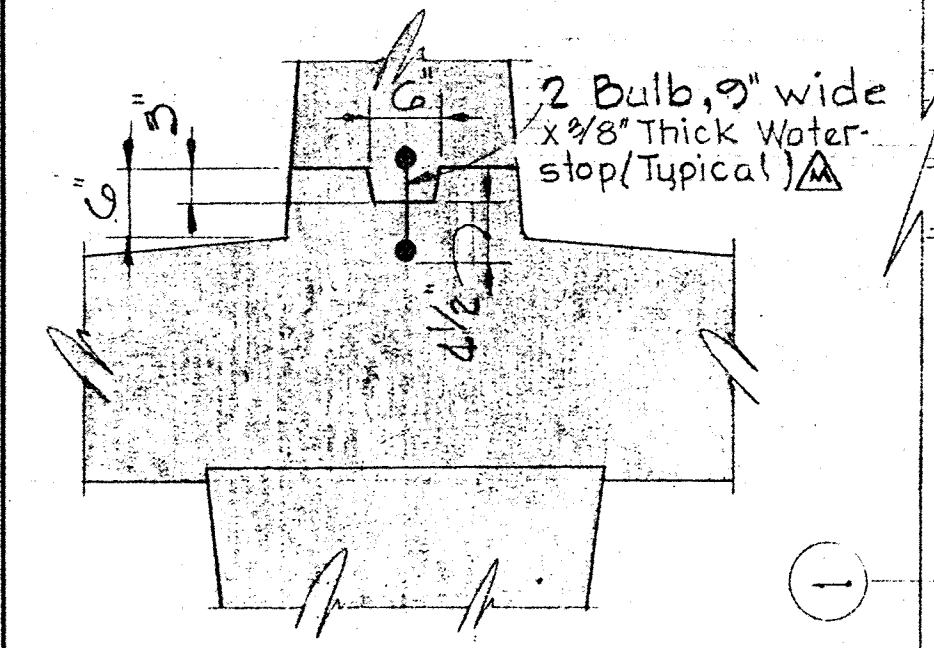
W.O. 6538-2 Clarification Rev. Dimensions 10-25-73 Rev. Dimensions 10-30-73

Addendum No. 5

SHEET S-3

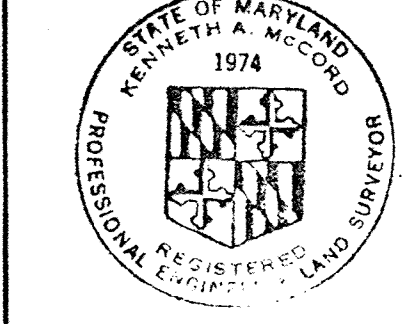


TYPICAL EXPANSION JOINT IN FLOOR SLAB
Scale 3/4" = 1'-0"

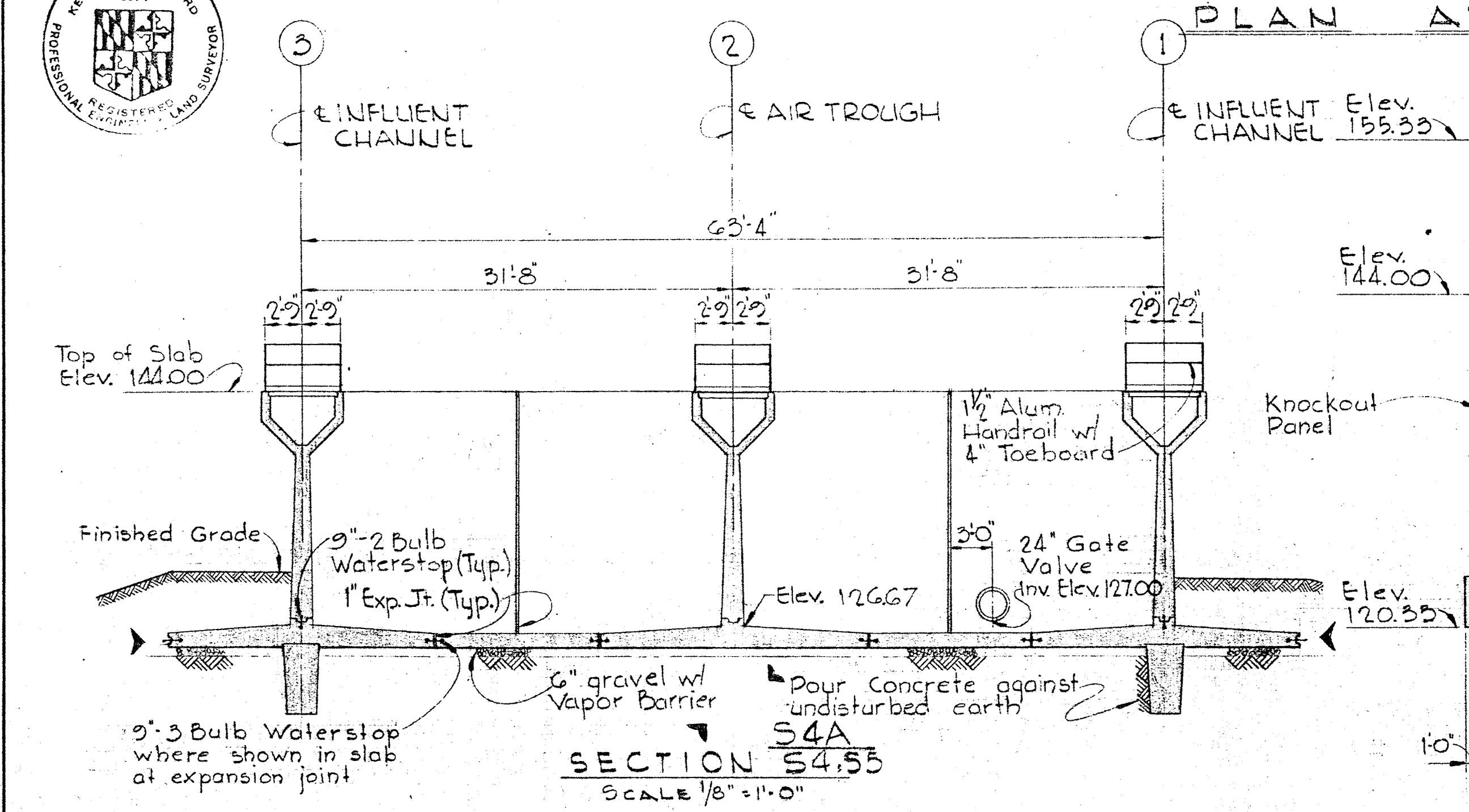


CONST. JOINT BETWEEN WALLS & BASE SLAB
Scale 5/8" = 1'-0"

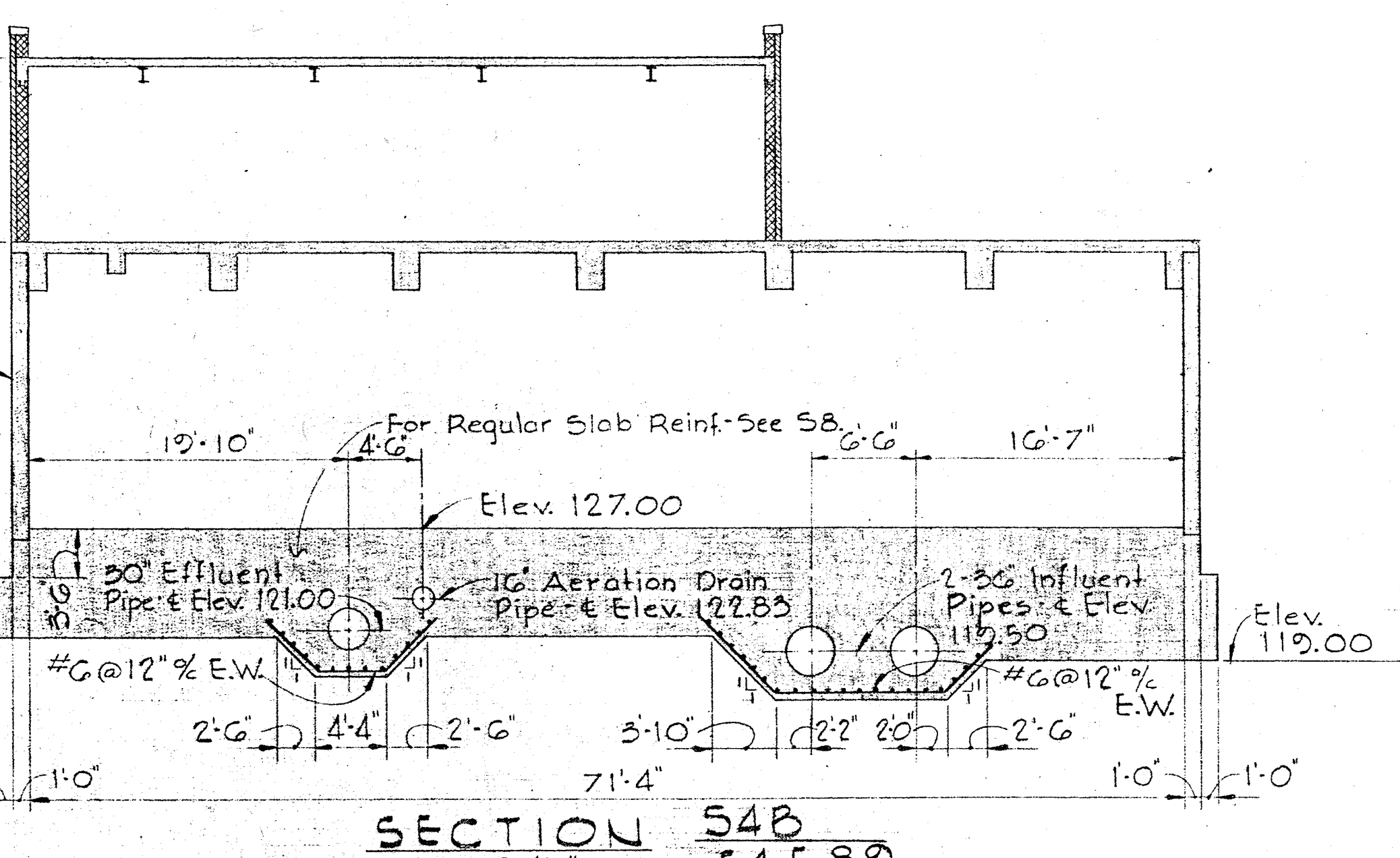
Kenneth A. M. Land



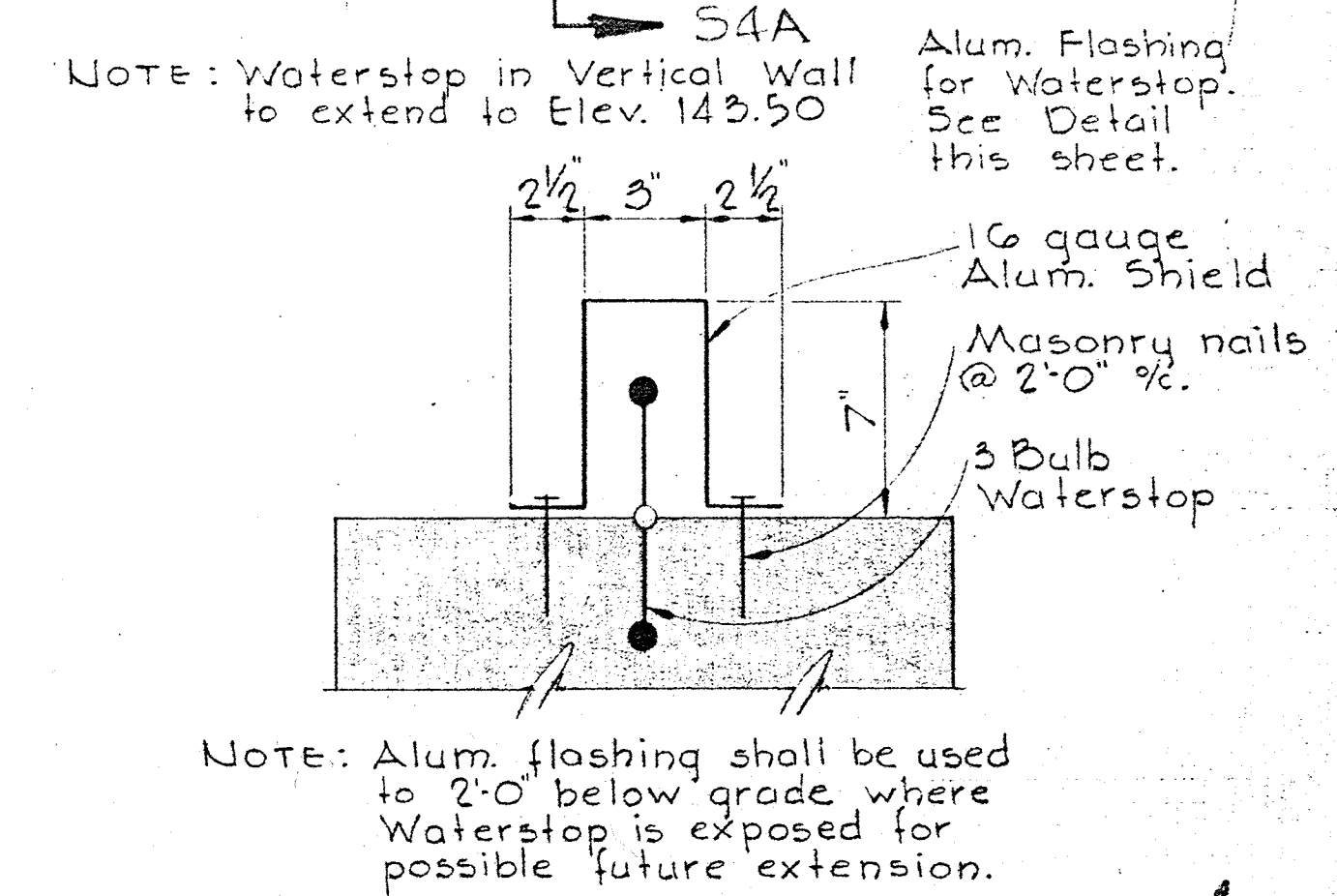
PLAN AT ELEVATION 126.67
SCALE 1/8" = 1'-0"



SECTION S4A
SCALE 1/8" = 1'-0"



SECTION S4B
SCALE 1/8" = 1'-0"



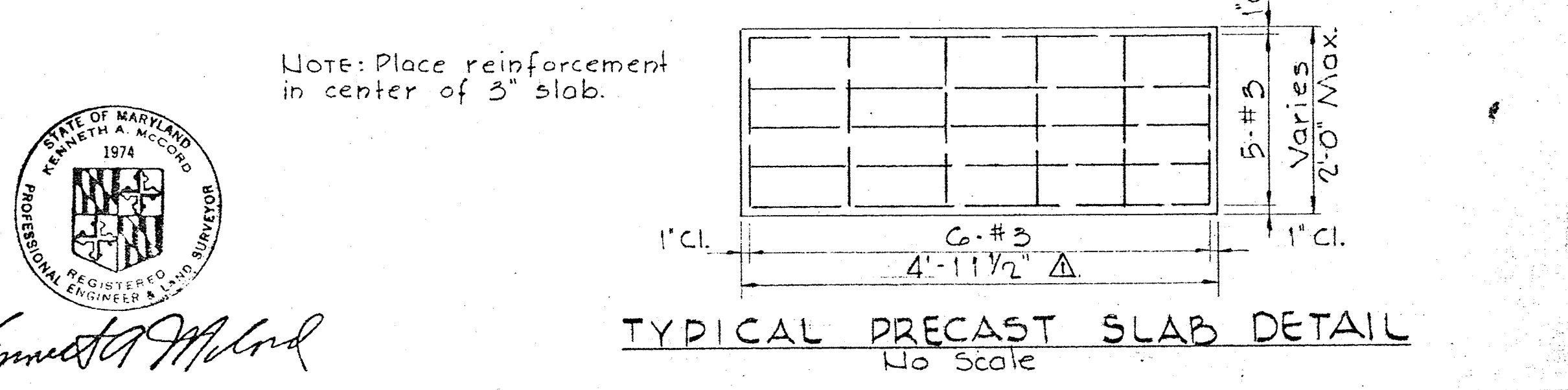
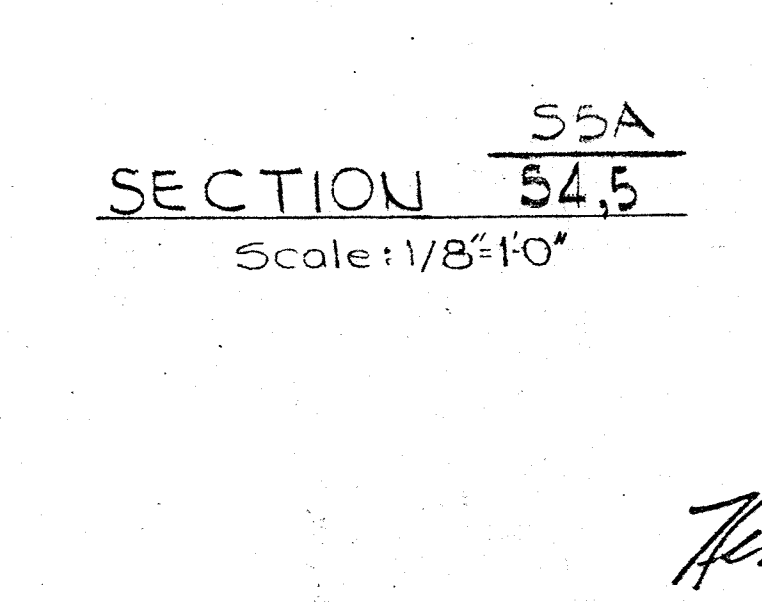
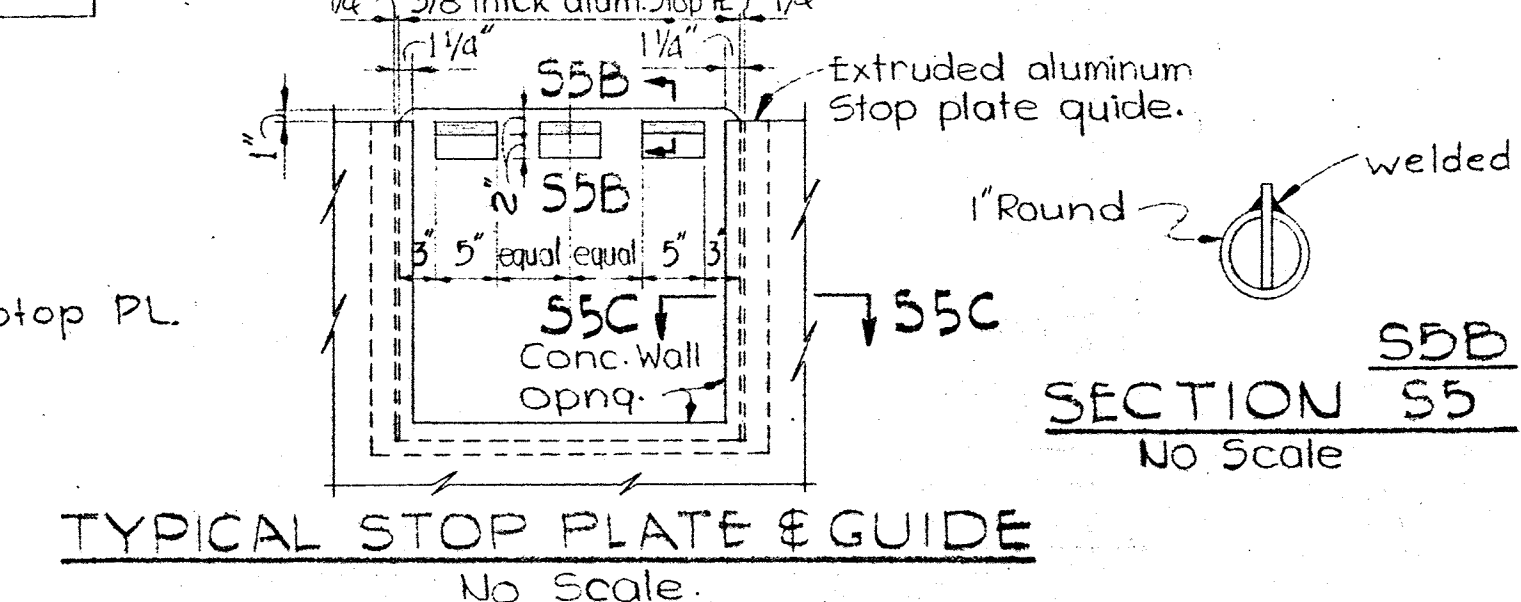
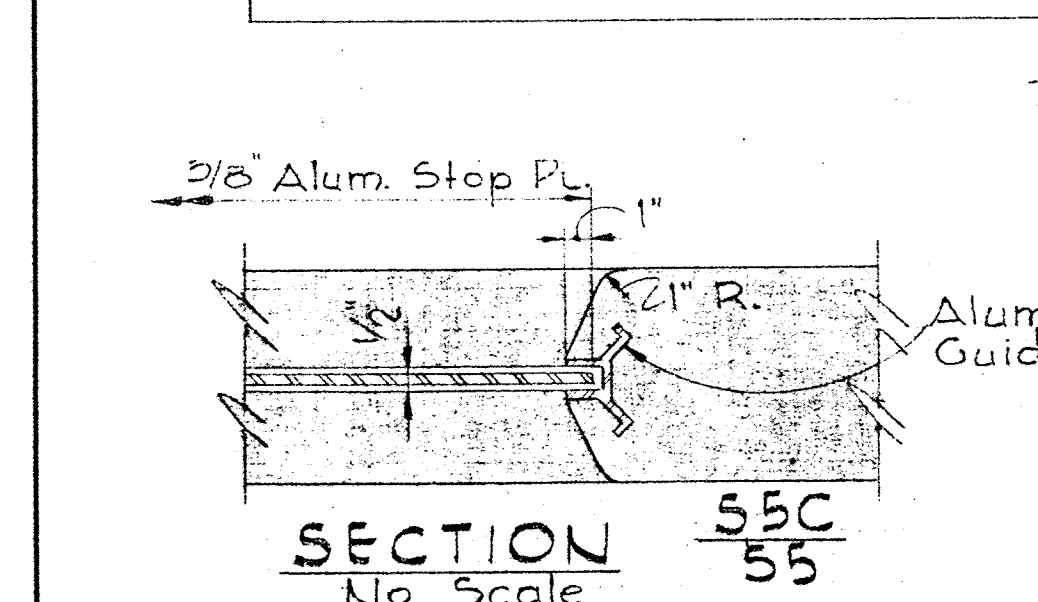
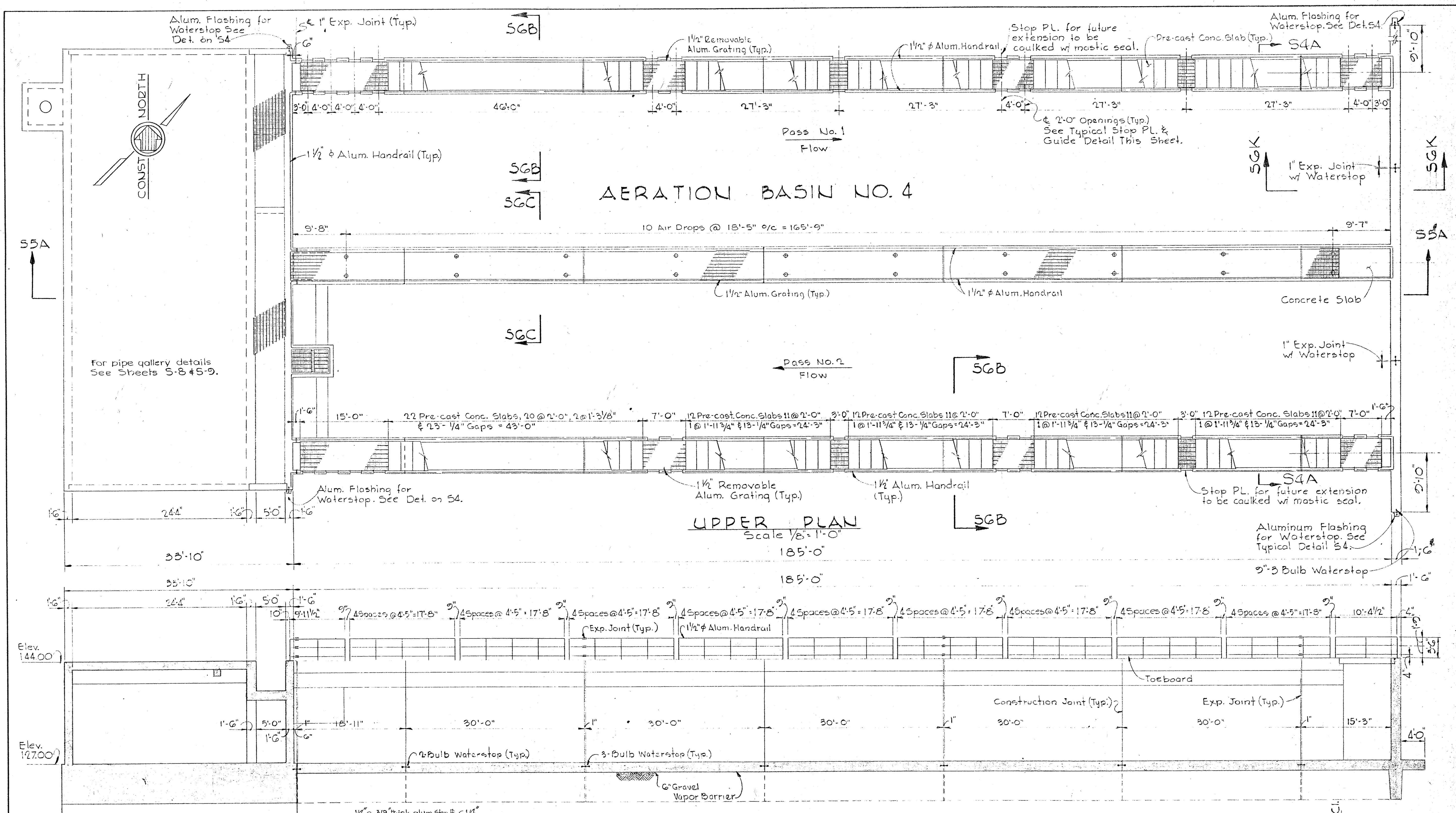
TYPICAL ALUMINUM FLASHING DETAIL FOR WATERSTOP
No SCALE

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 DATE <i>W.O. Lambert</i> CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	AERATION BASIN FOUNDATION DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 18 OF 45 SCALE AS SHOWN SHEET S-4
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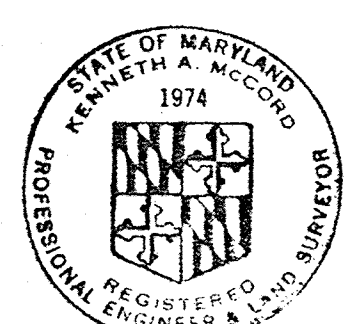
W.O. 6538-2 Clarification Delete Foot 10-25-73 Added Dimensions 10-30-73

Construction Modification

BRUNING 44-510 14778



Note: Place reinforcement in center of 3" slab.



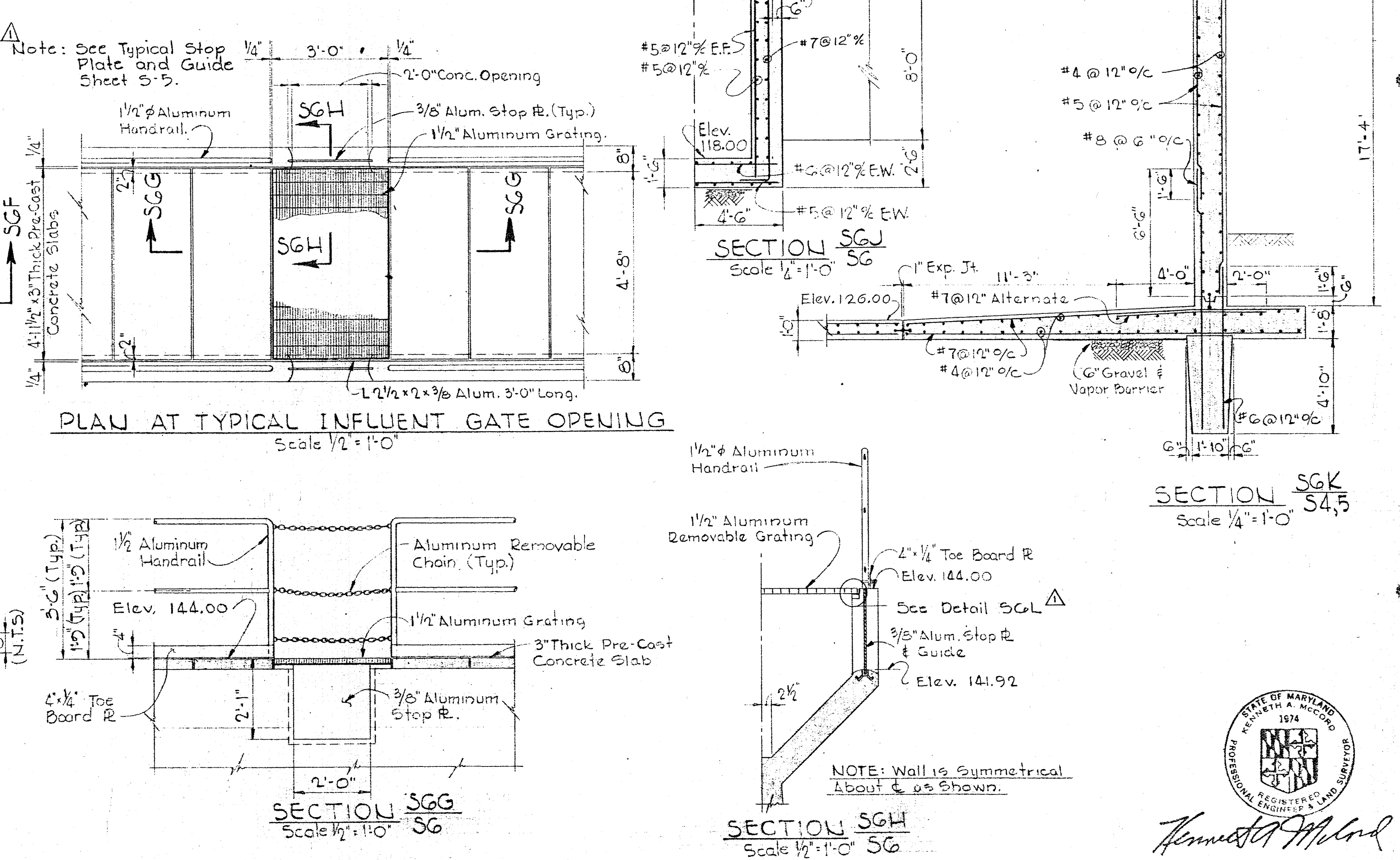
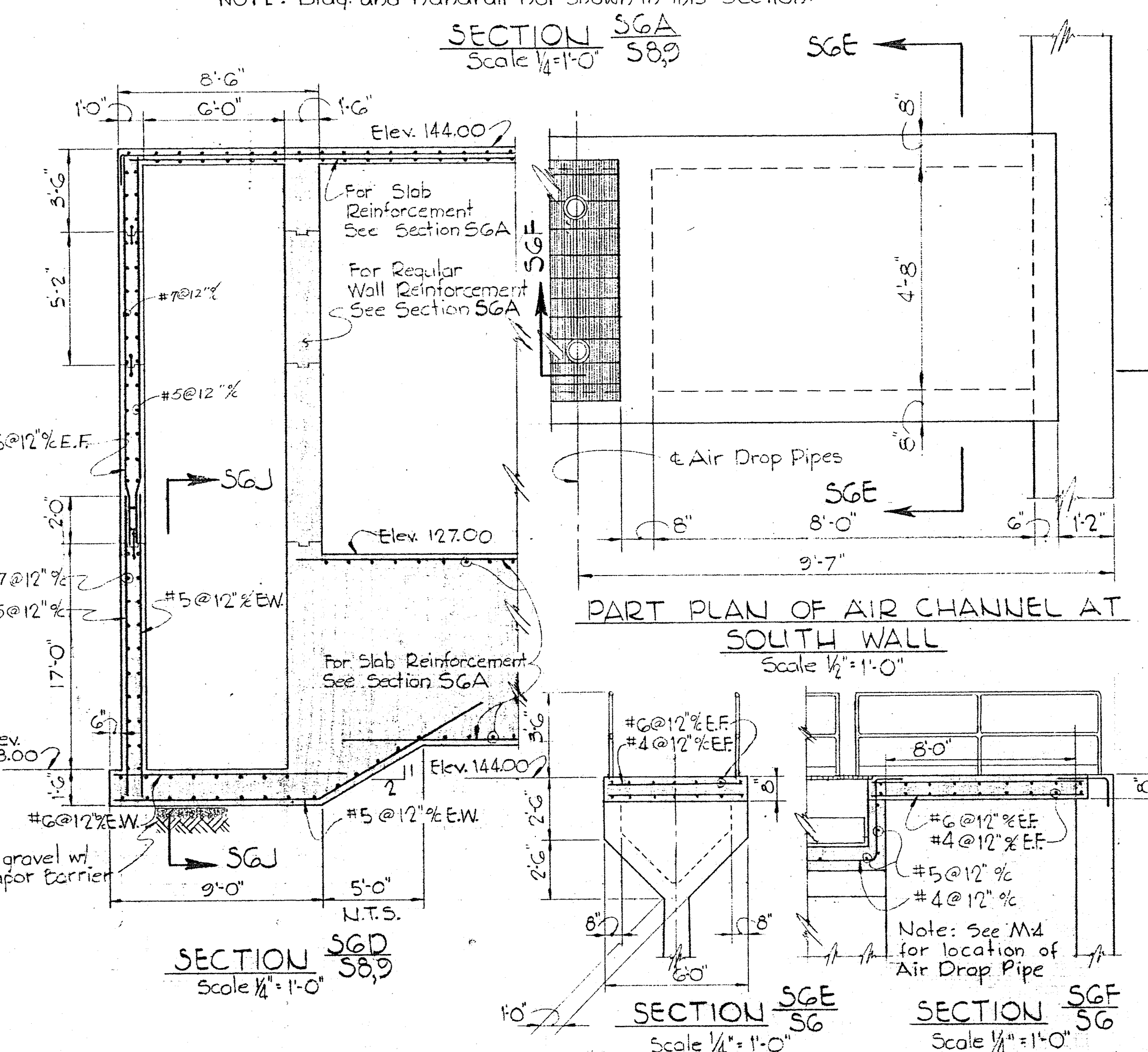
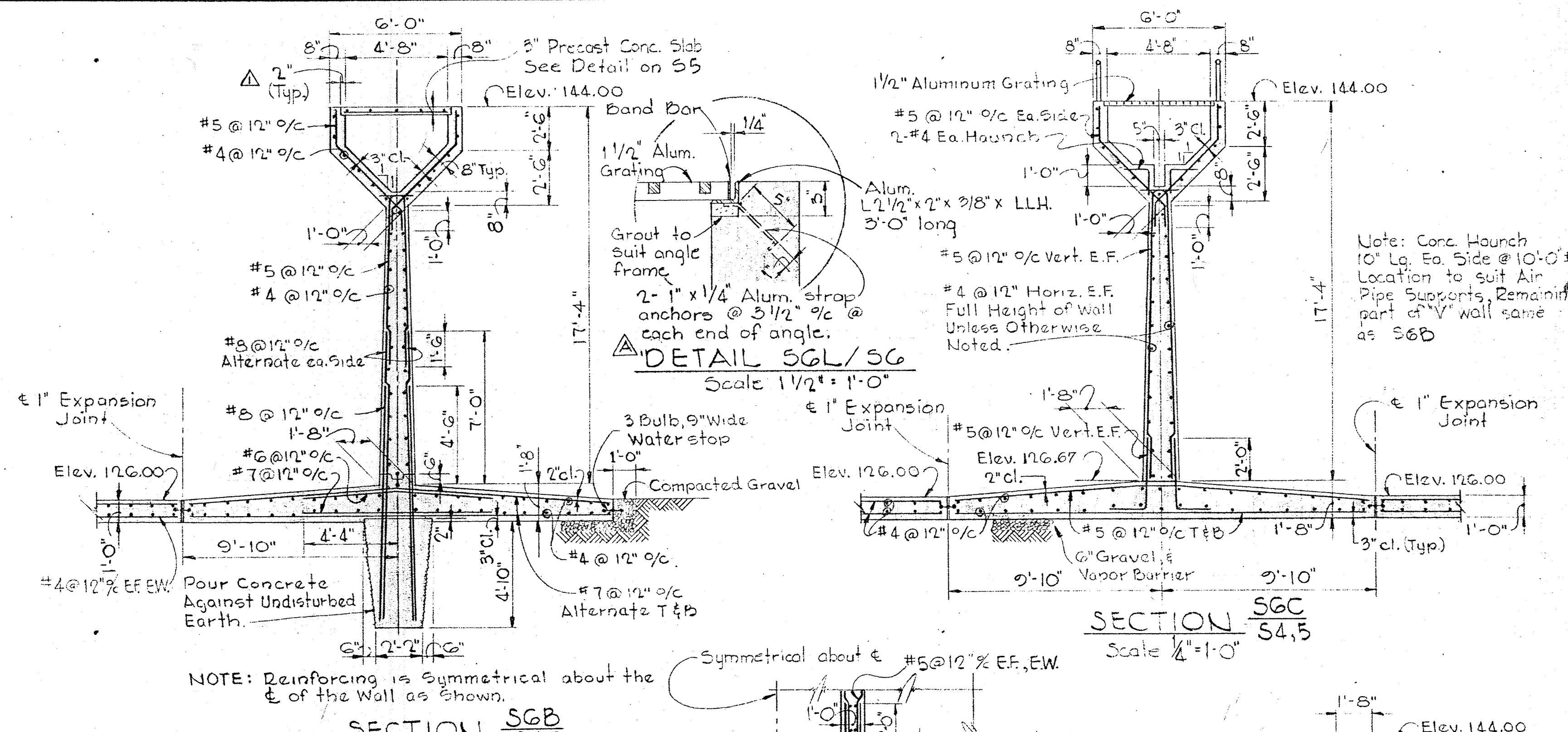
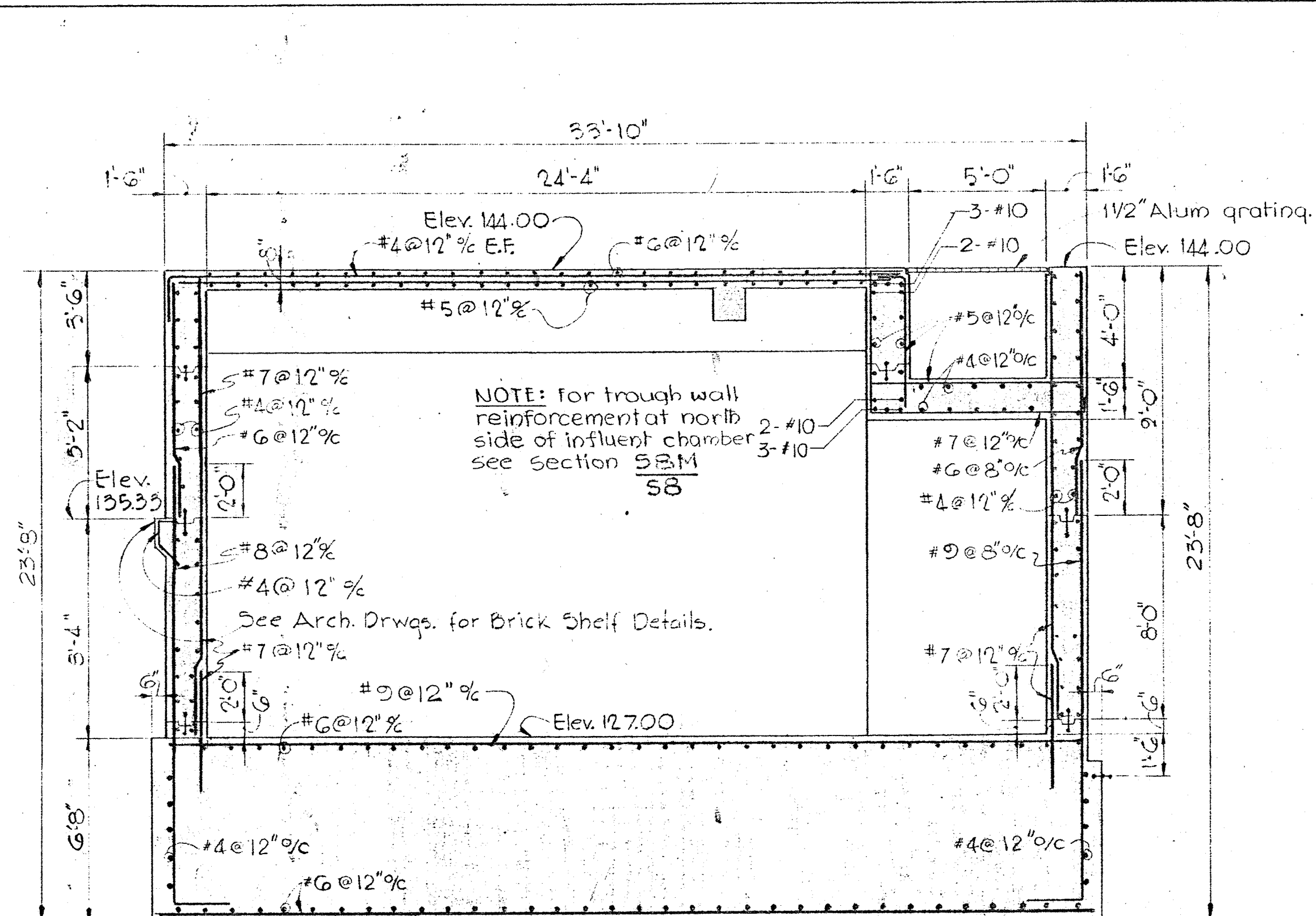
Kenneth A. McCord

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 DATE <i>W. O. Falbert</i> CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	AERATION BASIN PLAN ELEVATION 144	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 19 OF 45 SCALE AS SHOWN SHEET S-5
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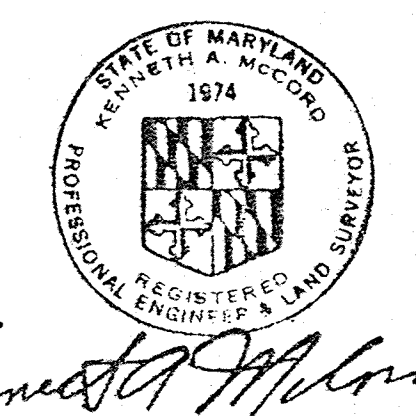
W. O. 6538-2

△ - Addendum No. 1

BRUNING 44510 14778



WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 DATE W. O. Lambert CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	AERATION BASIN SECTIONS AND DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 20 OF 45 SCALE AS SHOWN SHEET S-6
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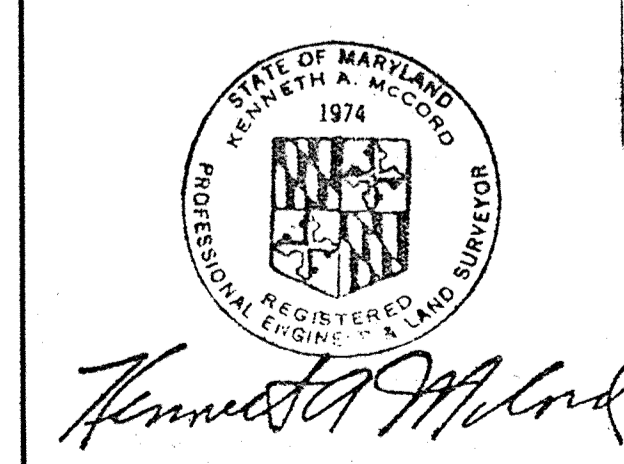
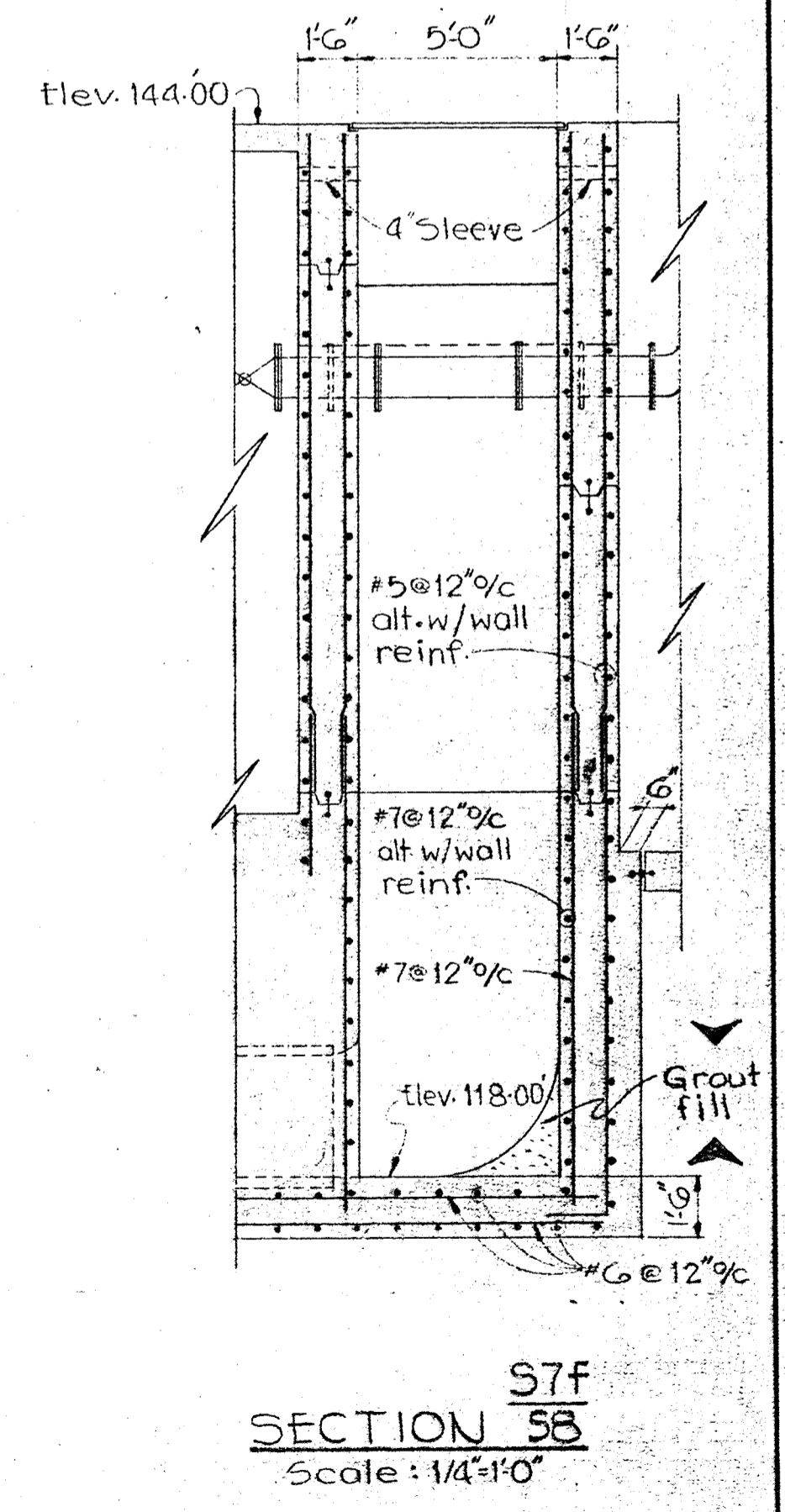
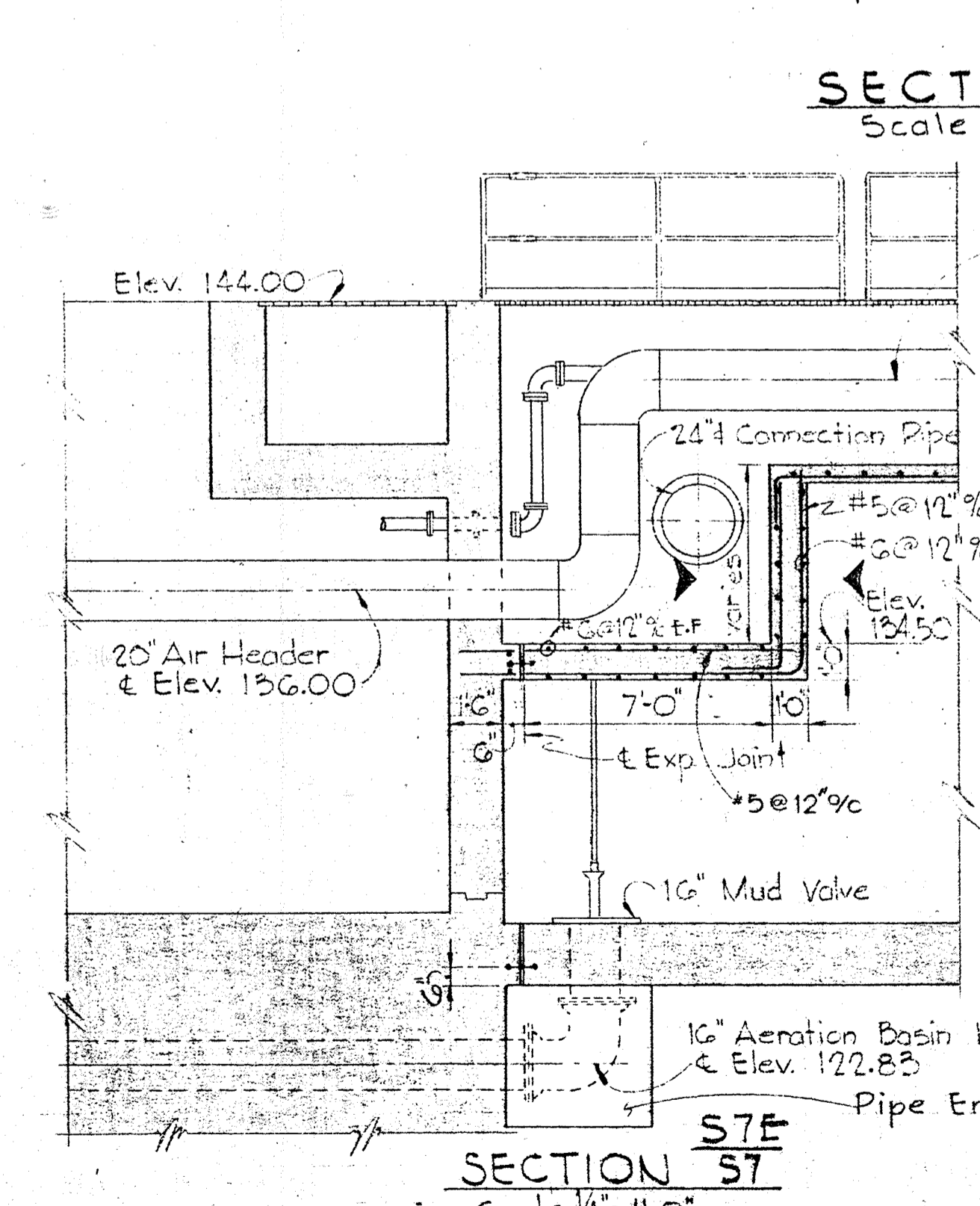
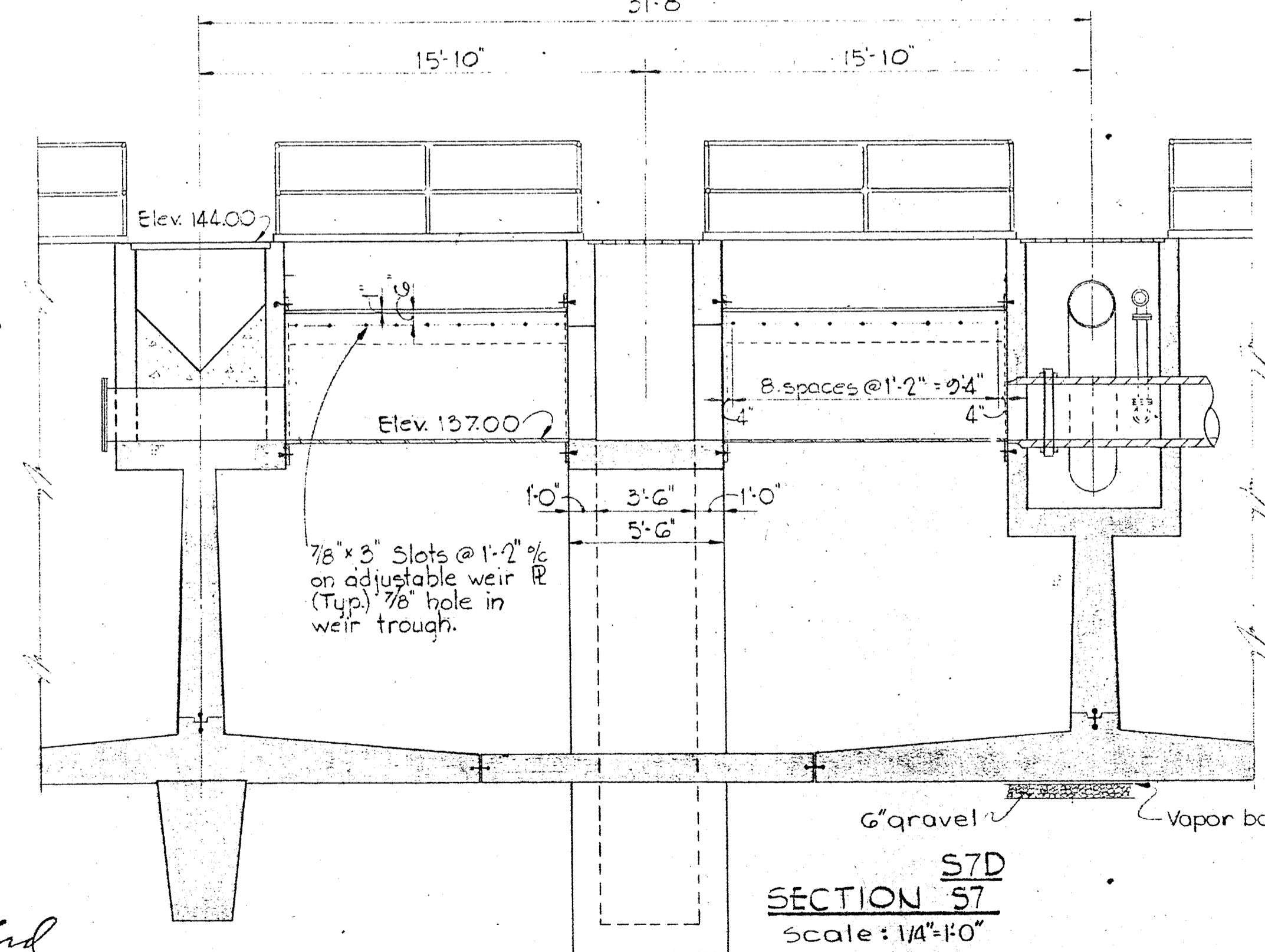
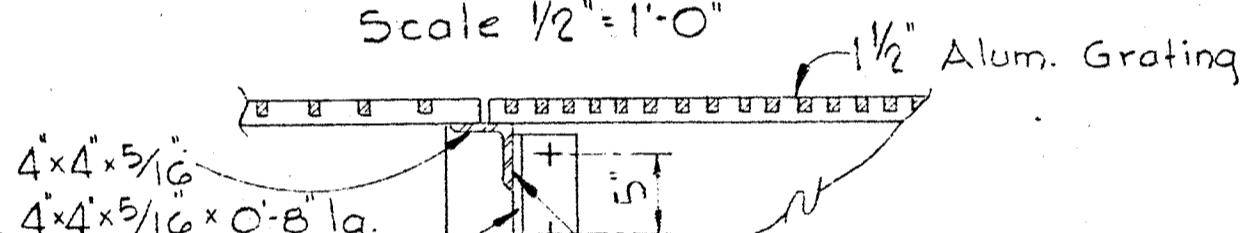
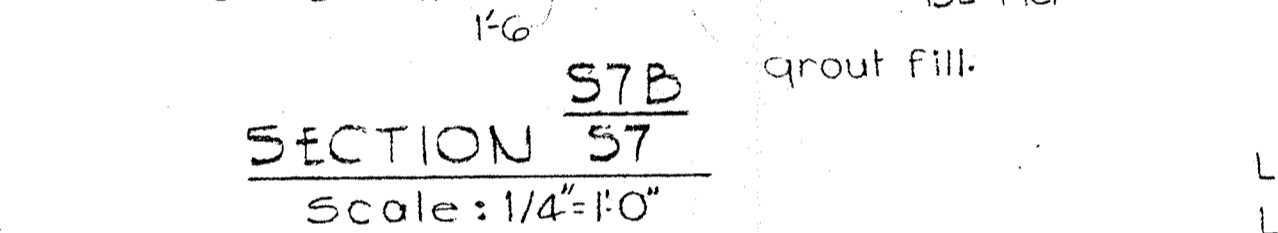
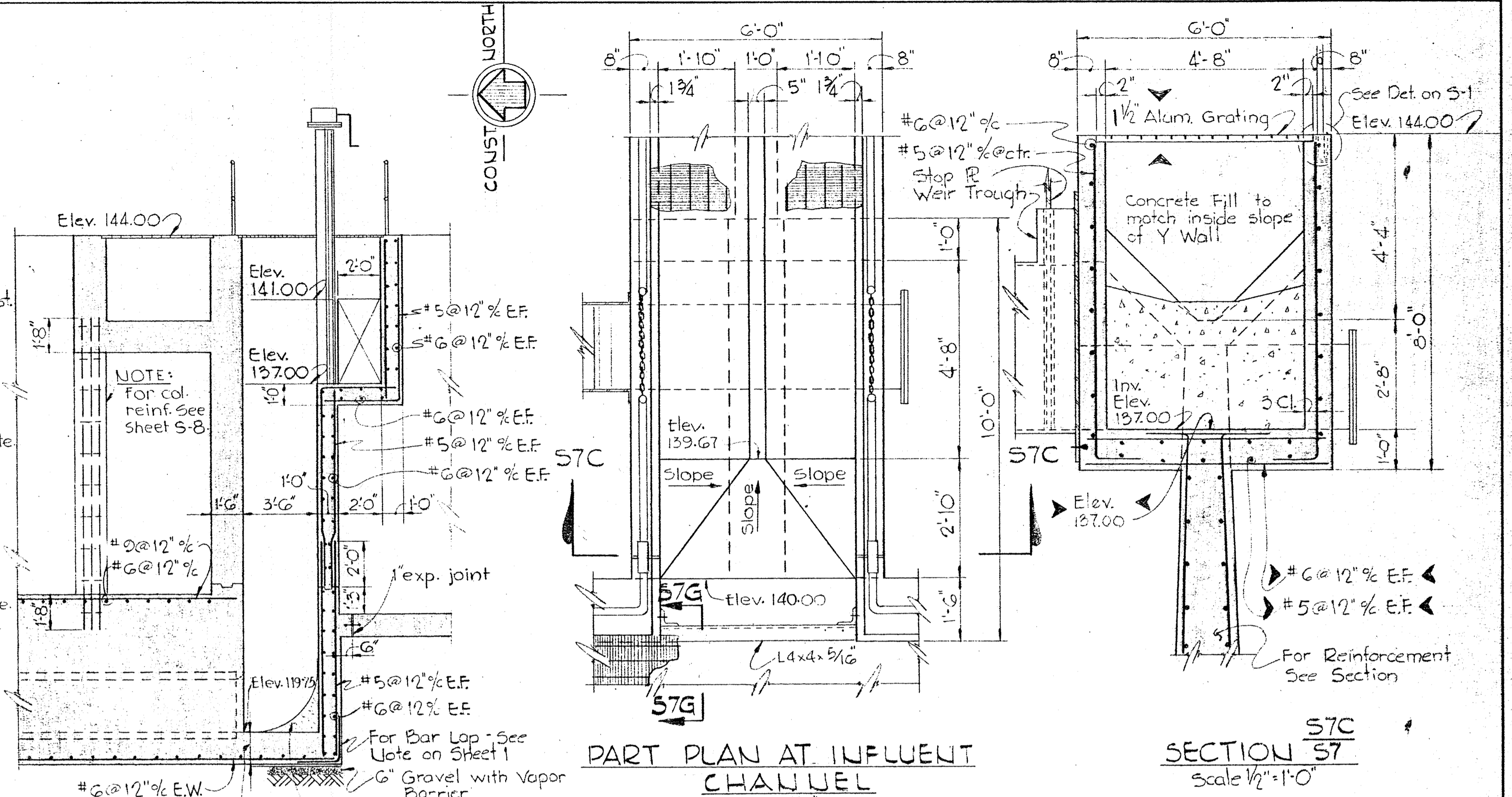
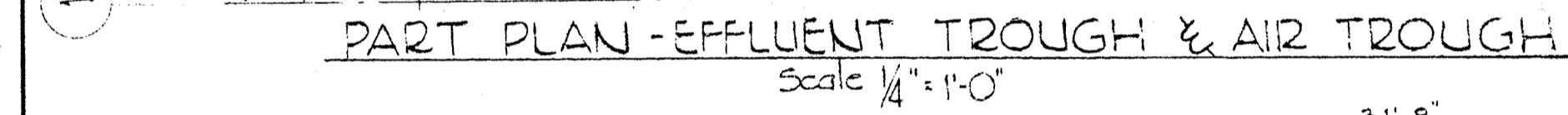
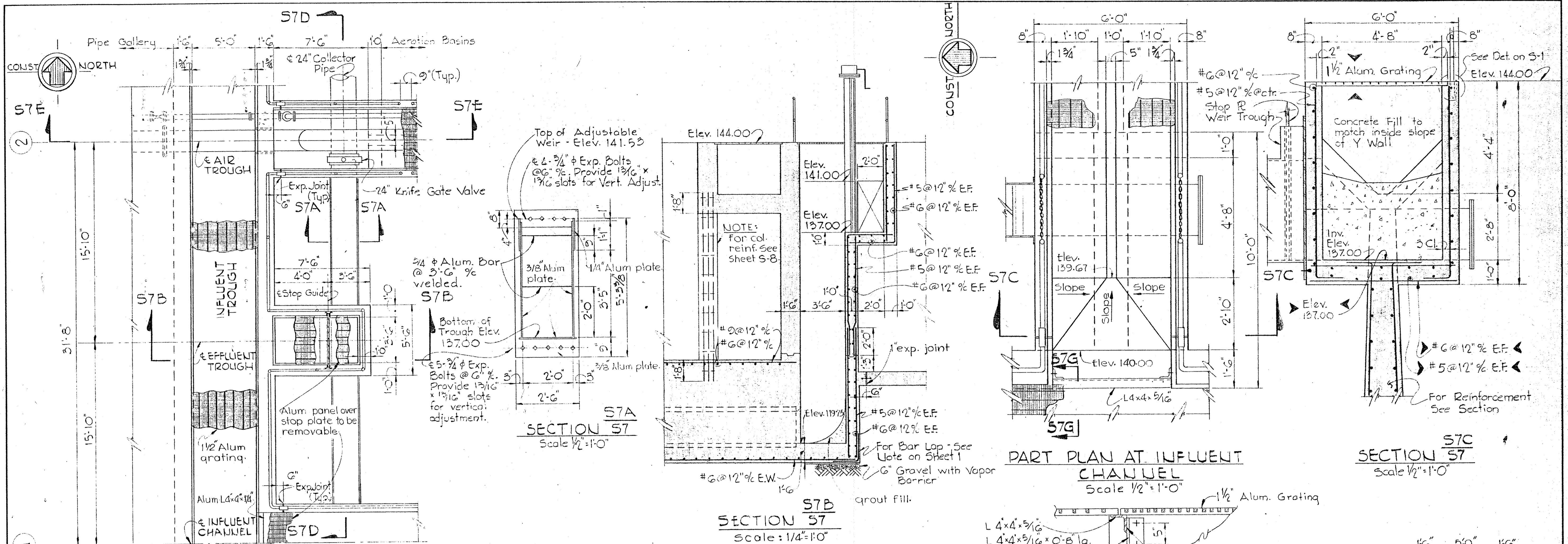


Kenneth A. McCord

BRUNING 44-510 14778

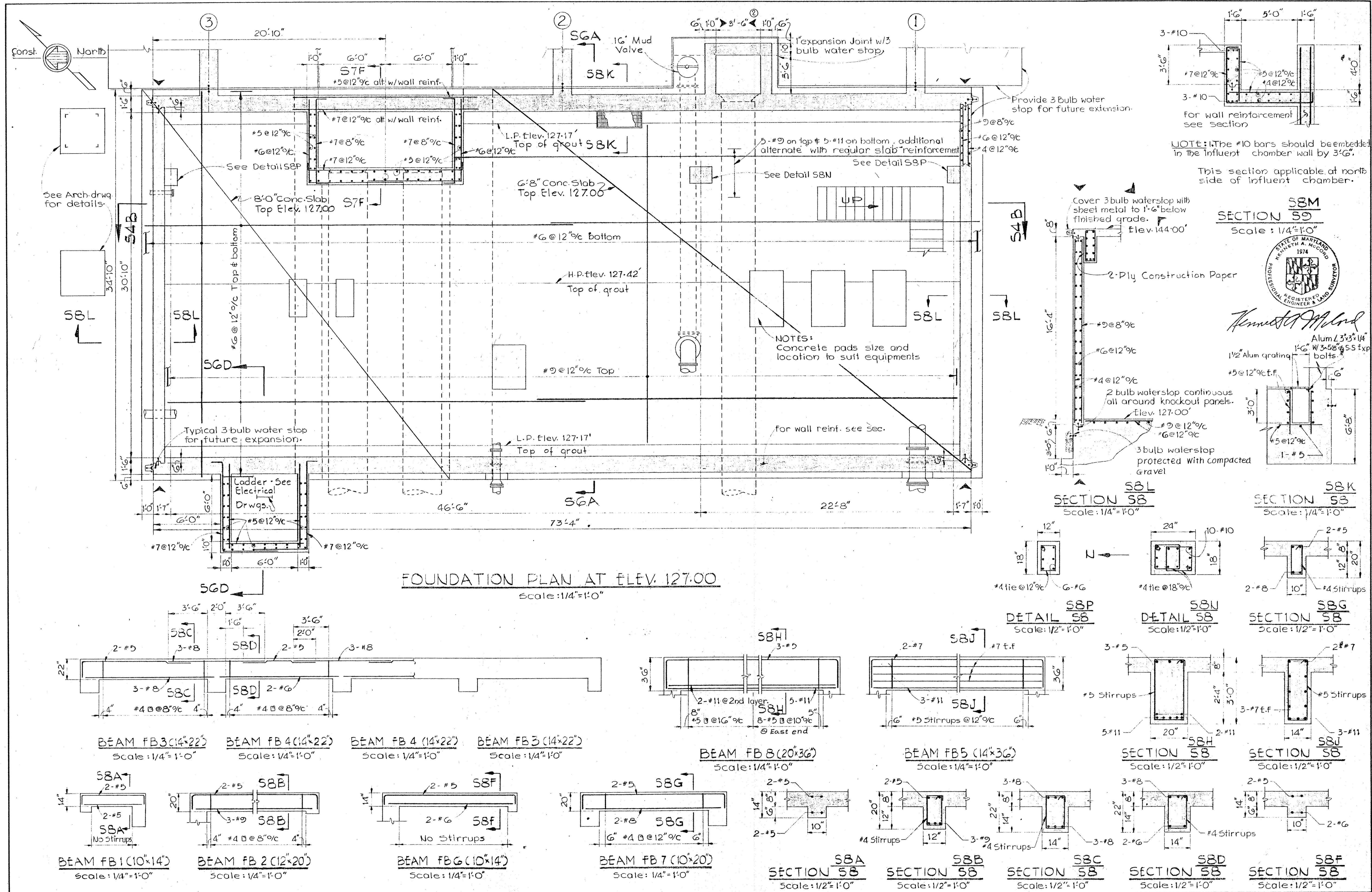
W. O. 6538-2

△ - Addendum No. 1



WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE 2-30-13 W. O. Falbert CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 526-S	AERATION BASIN SECTIONS AND DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 21 OF 45 SCALE AS SHOWN SHEET S-7
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W. O. 6538-2 Clarification Changed Reinforcing steel 10-30-73 Clarification Changed Elevation 4-25-74



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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3-30-73
DATE
W. O. Gilbert
CHIEF BUREAU OF ENGINEERING

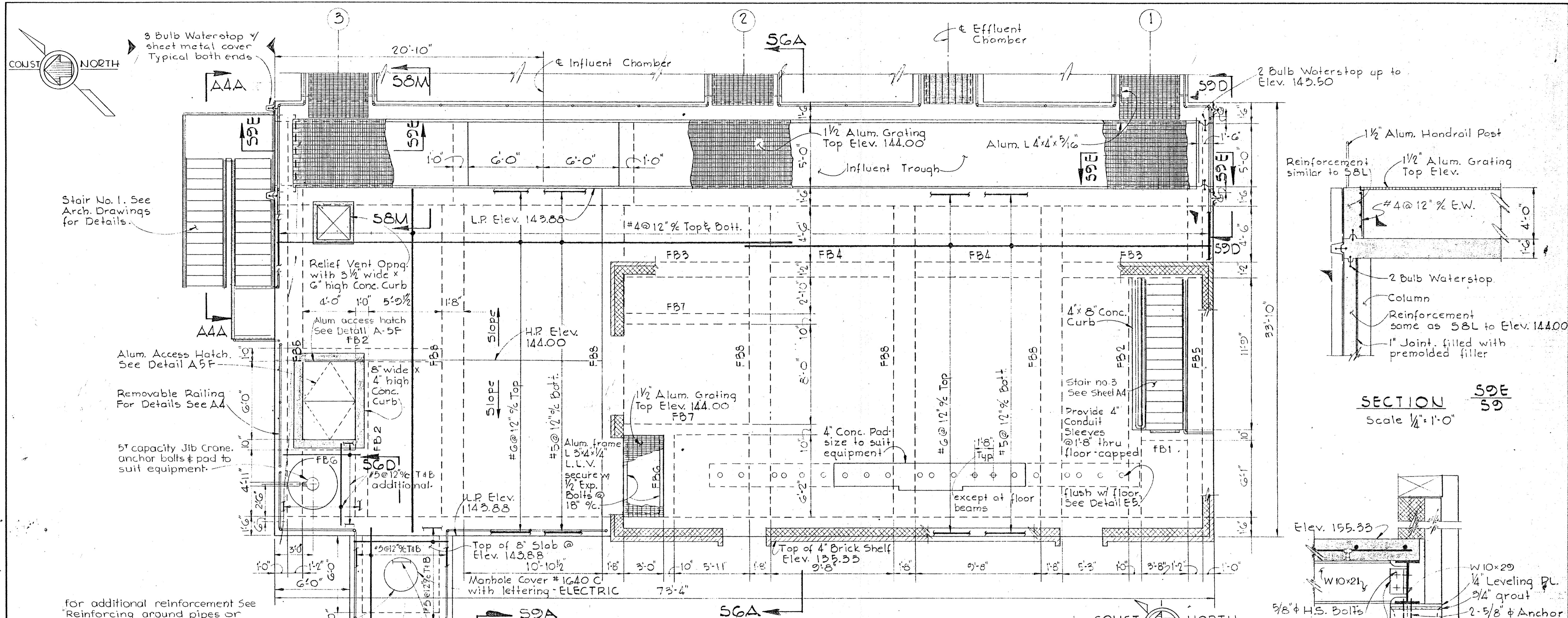
CONTRACT NO. 526-S

PIPE GALLERY
FOUNDATION DETAILS

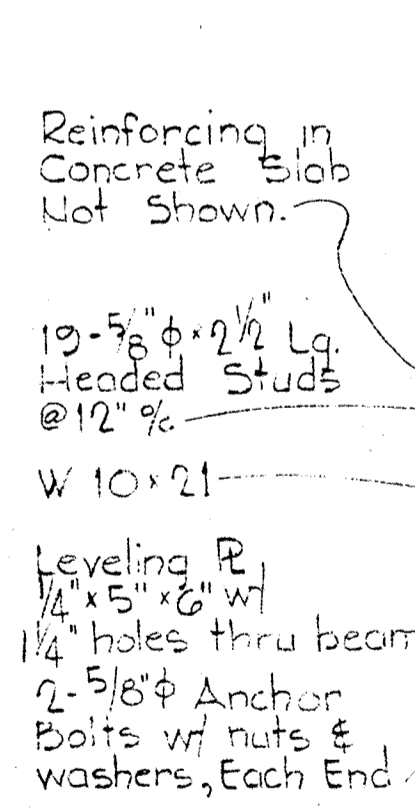
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 3

DRAWING NO. 22 OF 45
SCALE AS SHOWN

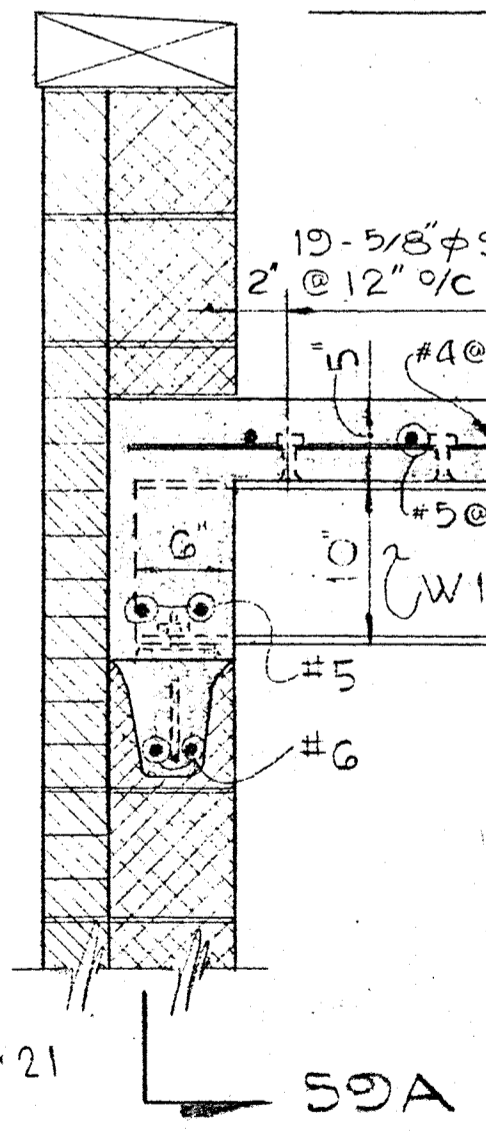
W. O. 6538-2 Clarification Changed Dimensions 10-30-75 @ Changed Dimension 11-23-75



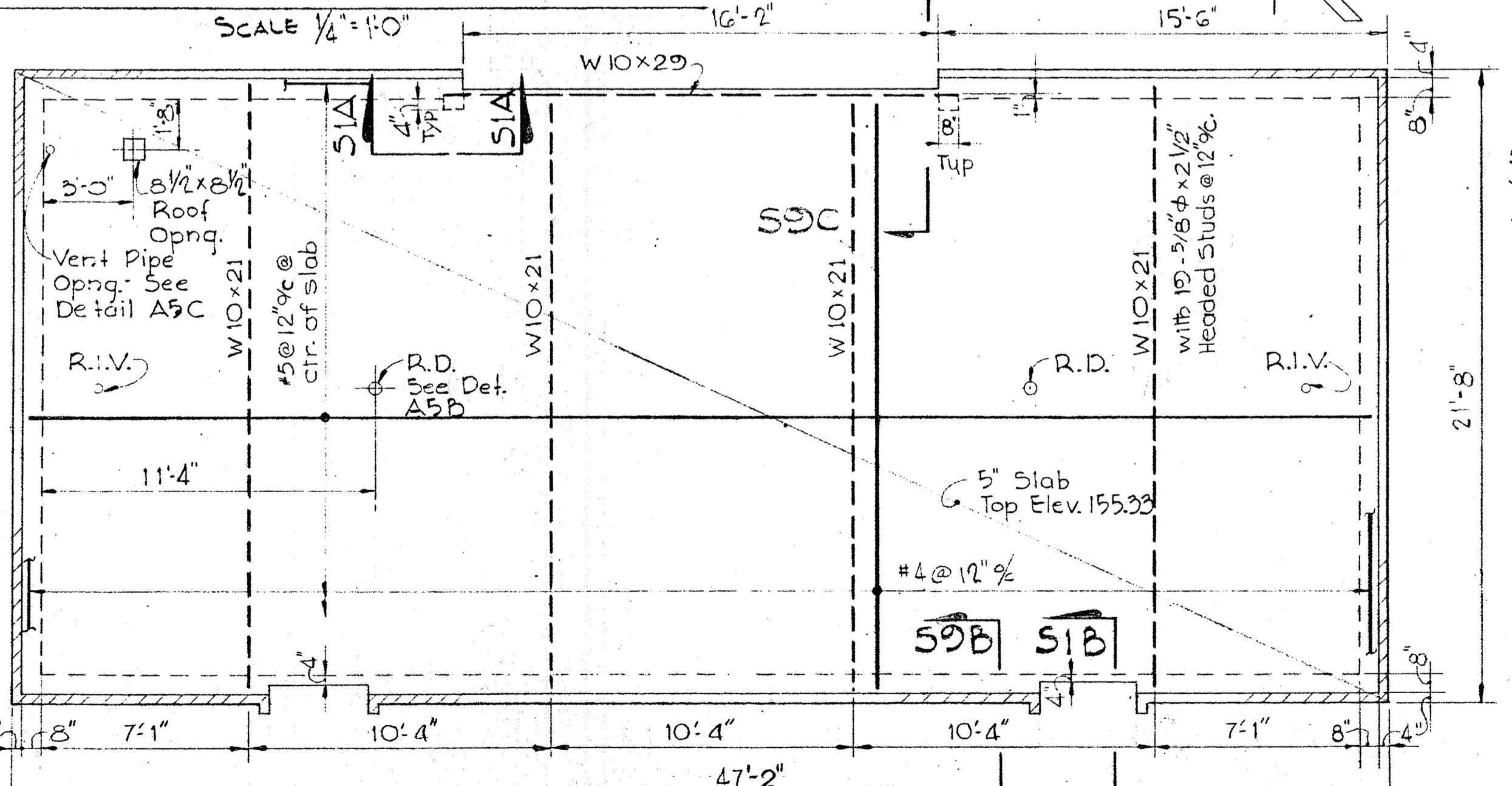
for additional reinforcement see
"Reinforcing around pipes or
round opngs in wall or slab detail
on sheet S-1."



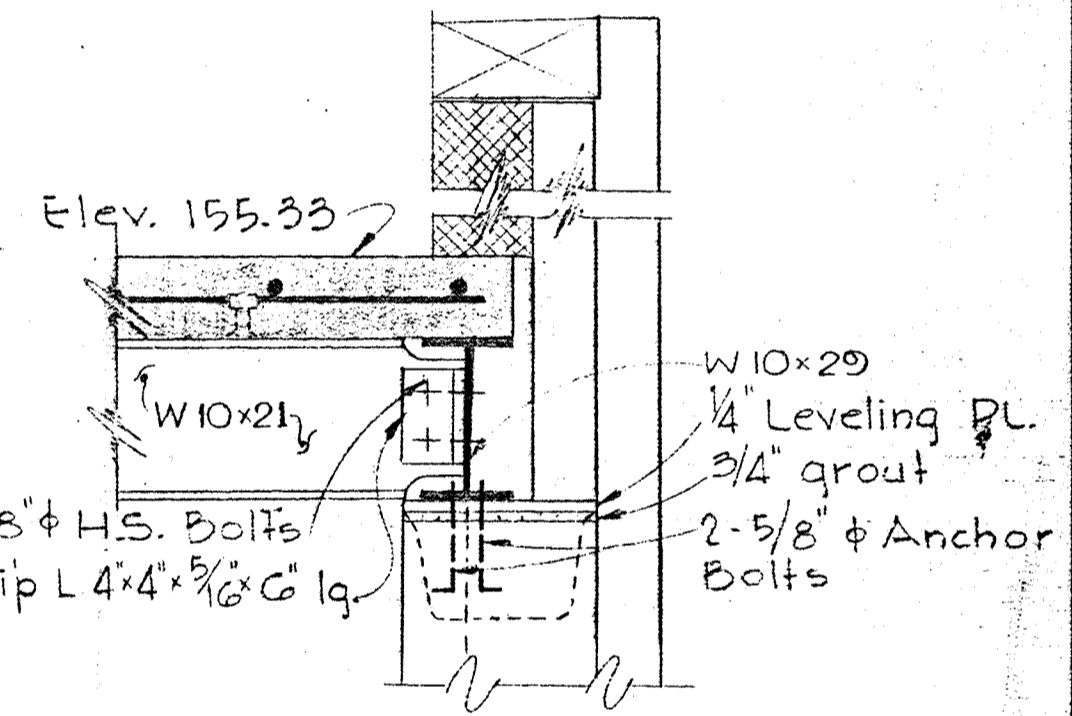
SECTION S9A
Scale: 1" = 1'-0"



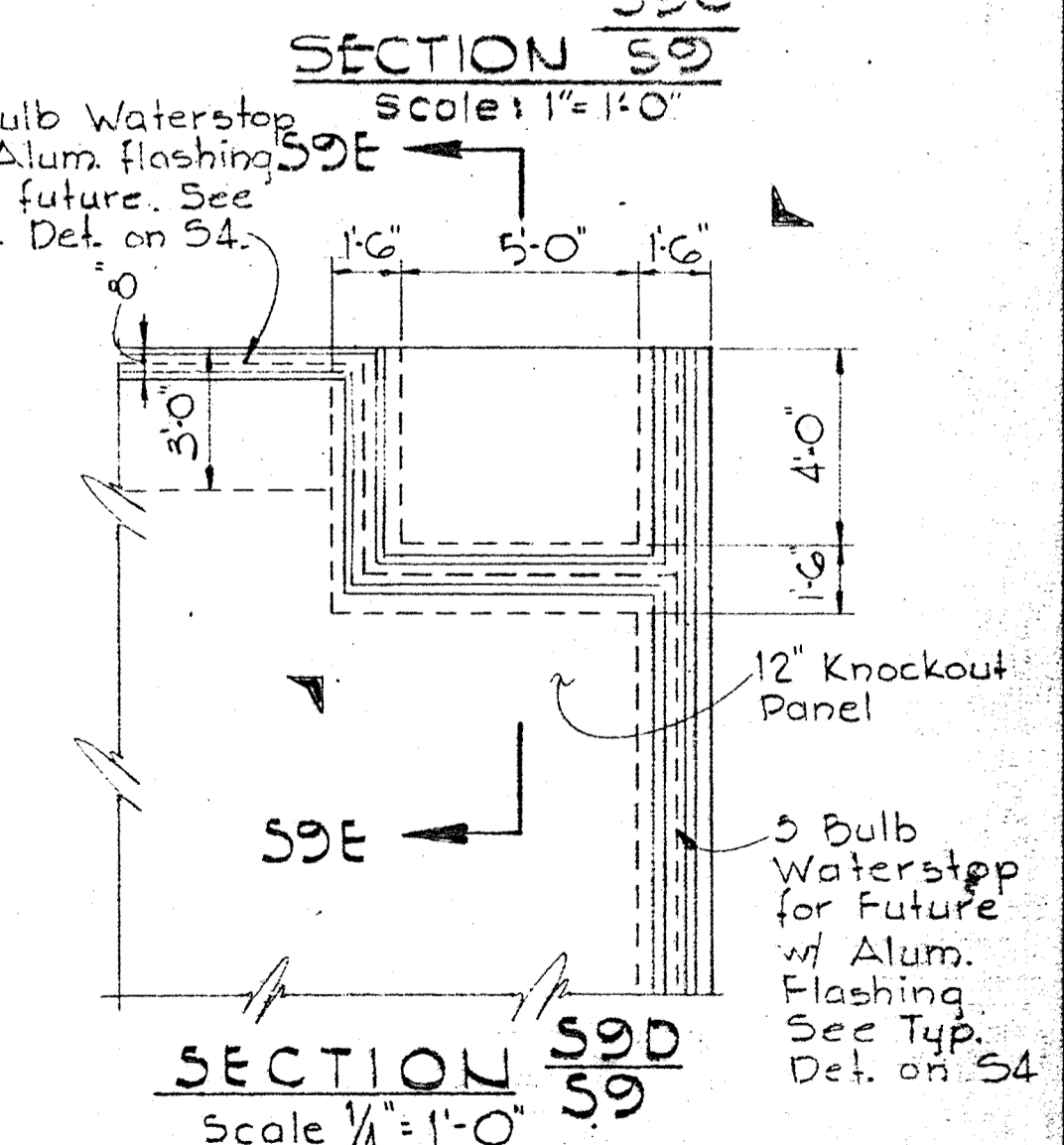
SECTION S9B
Scale: 1" = 1'-0"



ROOF PLAN
Scale 1/4" = 1'-0"



SECTION S9C
Scale: 1" = 1'-0"



SECTION S9D
Scale 1/4" = 1'-0"



Kenneth M. Lind

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3-30-73
DATE

CONTRACT NO. 526-S

PIPE GALLERY
PLAN AND DETAILS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO.3

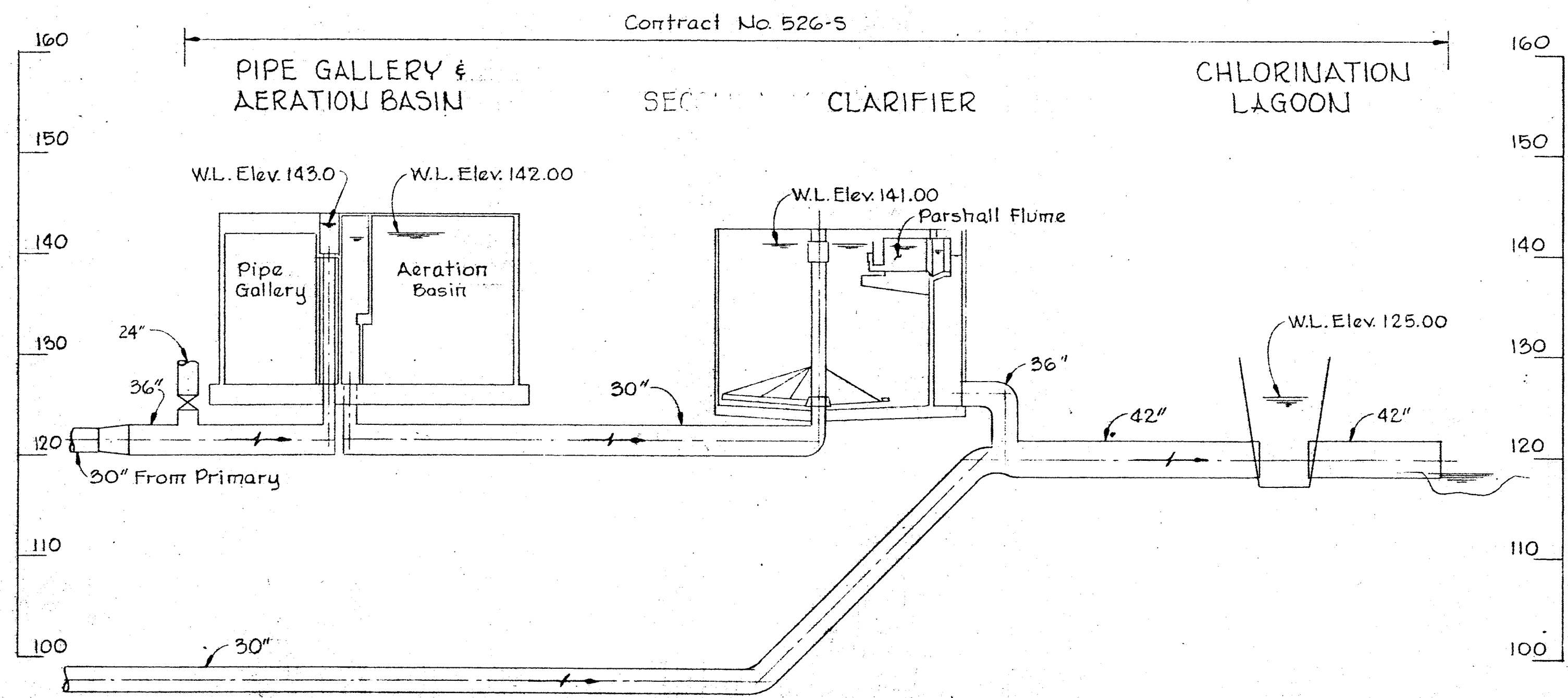
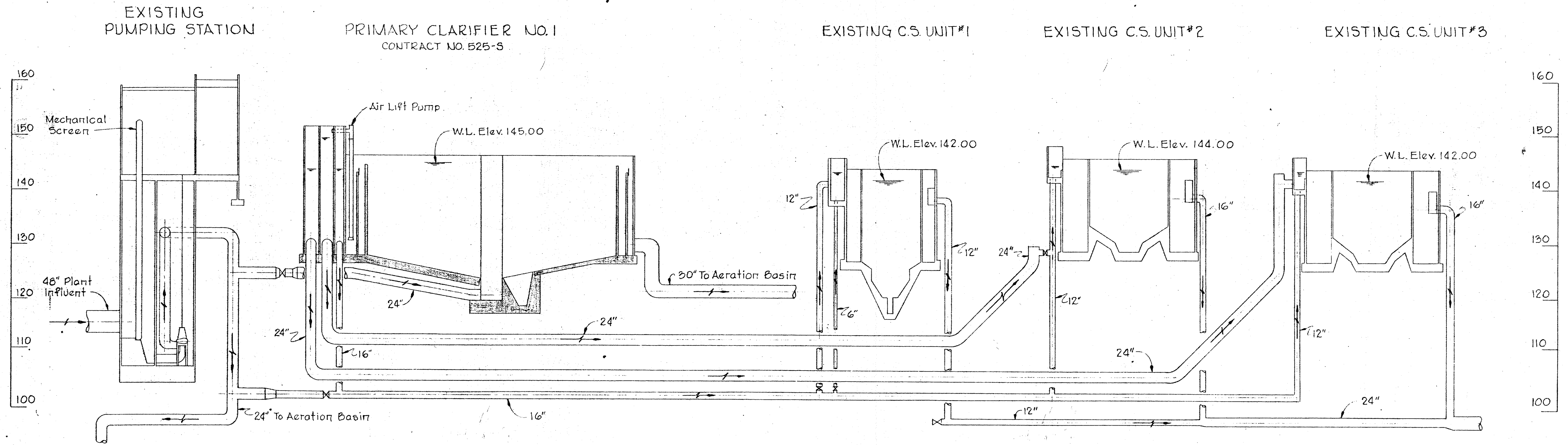
DRAWING
NO. 23
OF 45

SCALE
AS
SHOWN

W.O. 6538-2 Clarification Added Bulb Waterstop 10-30-73

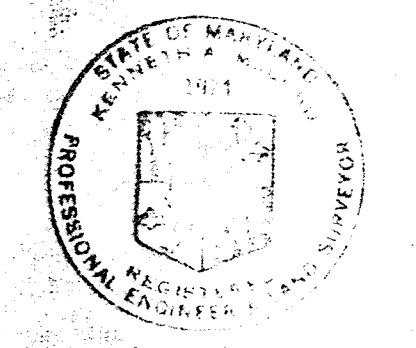
SHEET S-9

BRUNING 44510 18392



- LEGEND**
- C.W. — Cold Water
 - W.L. — Water Level
 - A — Control Air
 - X — Gate Valve
 - X — Plug Valve
 - X — Ball Valve (Chlorine Service)
 - P.V.C. — Polyvinyl Chloride Pipe
 - C.I.P. — Cast Iron Pipe or Ductile Iron Pipe
 - C.S. — Contact Stabilization
 - A.S. — Activated Sludge
 - S.W. — Sealing Water
 - O.S. — Oxidized Sludge

NOTE:
Pipe shown diagrammatic. For exact arrangement, elevations, and connections see civil and mechanical drawings.

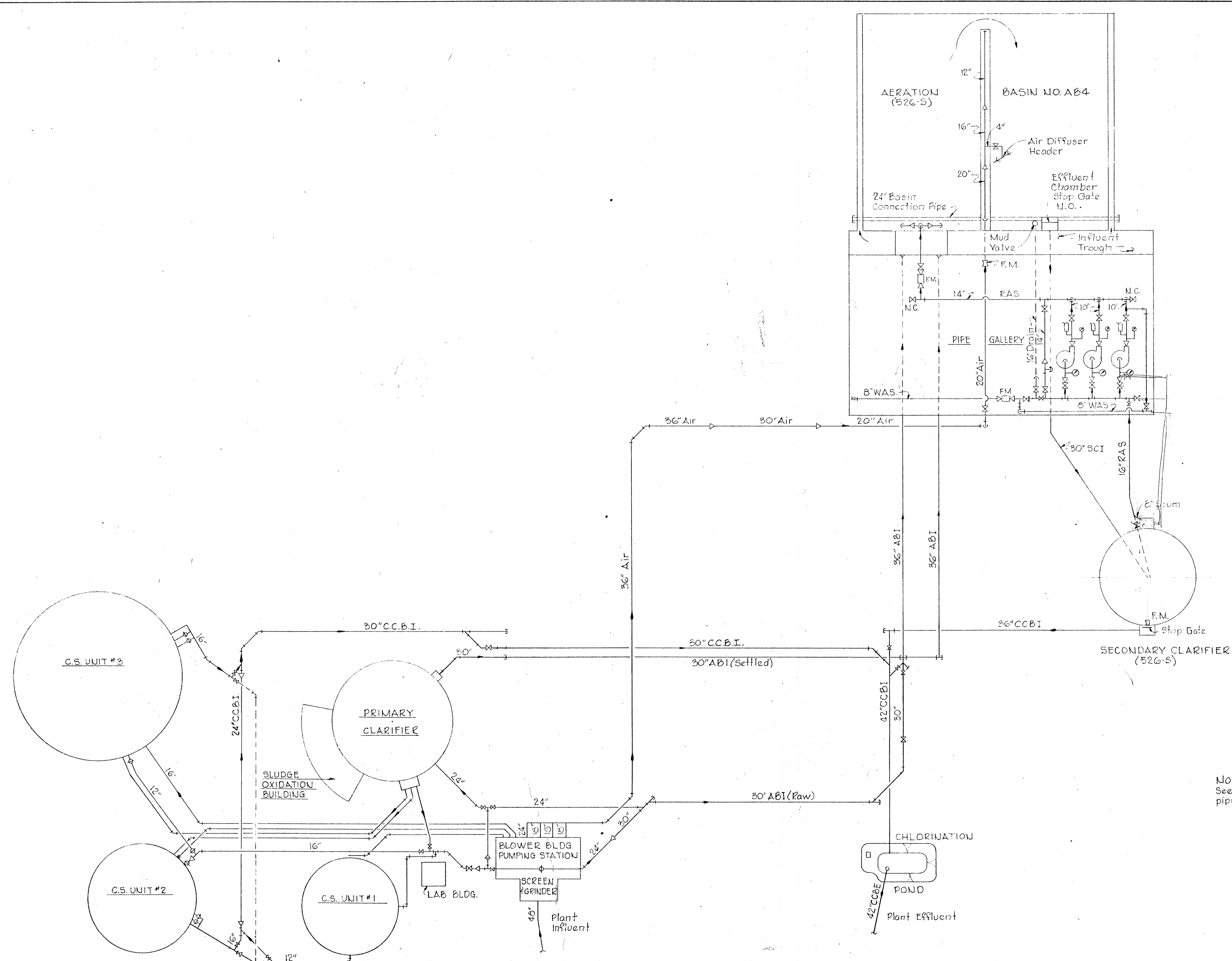


WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>W.O. Gilbert</i> CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	HYDRAULIC PROFILE	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 24 OF 45 SCALE AS SHOWN
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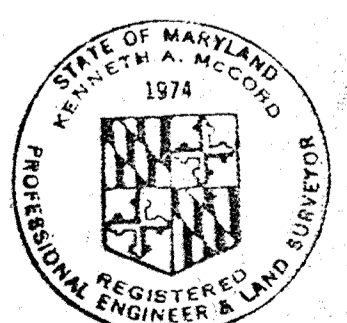
W. O. 6538-2

SHEET M-1

BRUNING 44-510 14778



NOTE:
See civil drawings for limits of piping under this contract



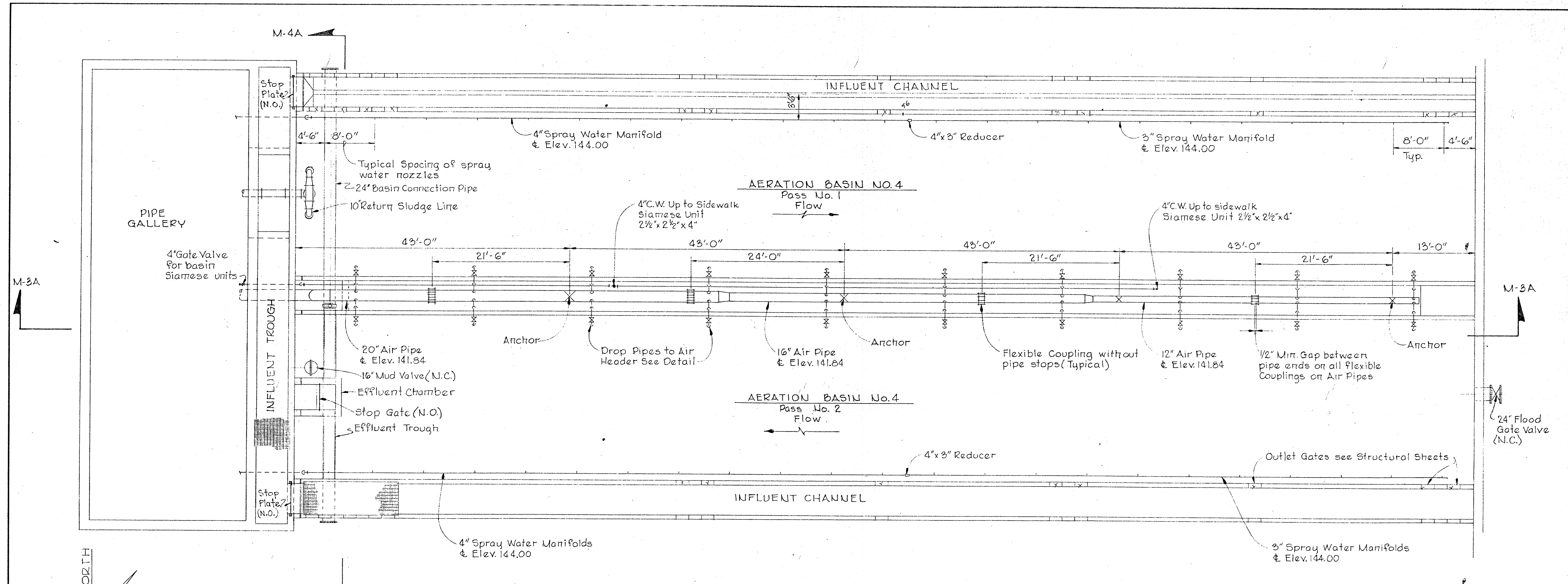
Kenneth A. McLeod

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE 3-30-73 <i>W.D. Gilbert</i> CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 526-S	PROCESS DIAGRAM	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.3	DRAWING NO. 25 OF 45 SCALE AS SHOWN
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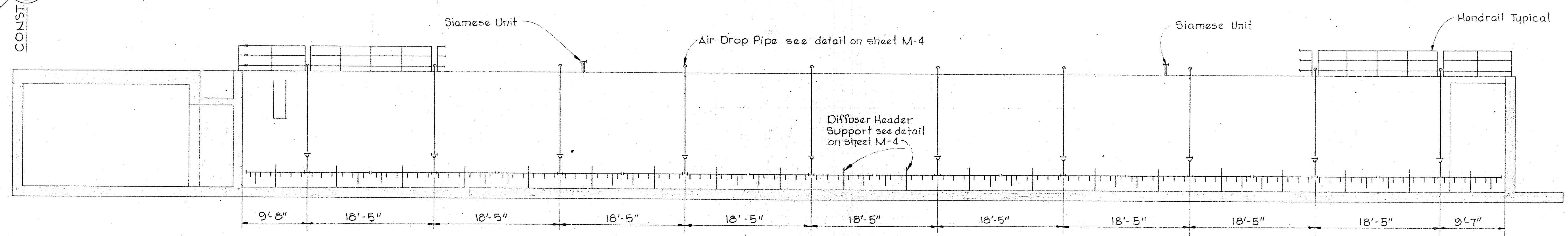
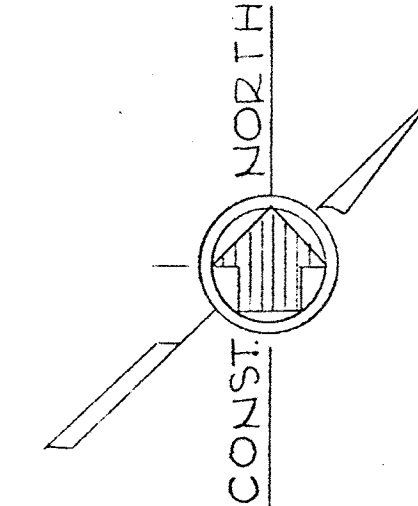
W.O. 6538-2

SHEET M-2

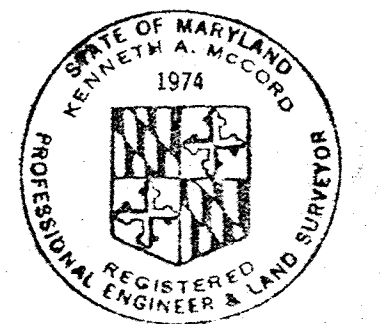
BRUNING 44510 18392



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



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



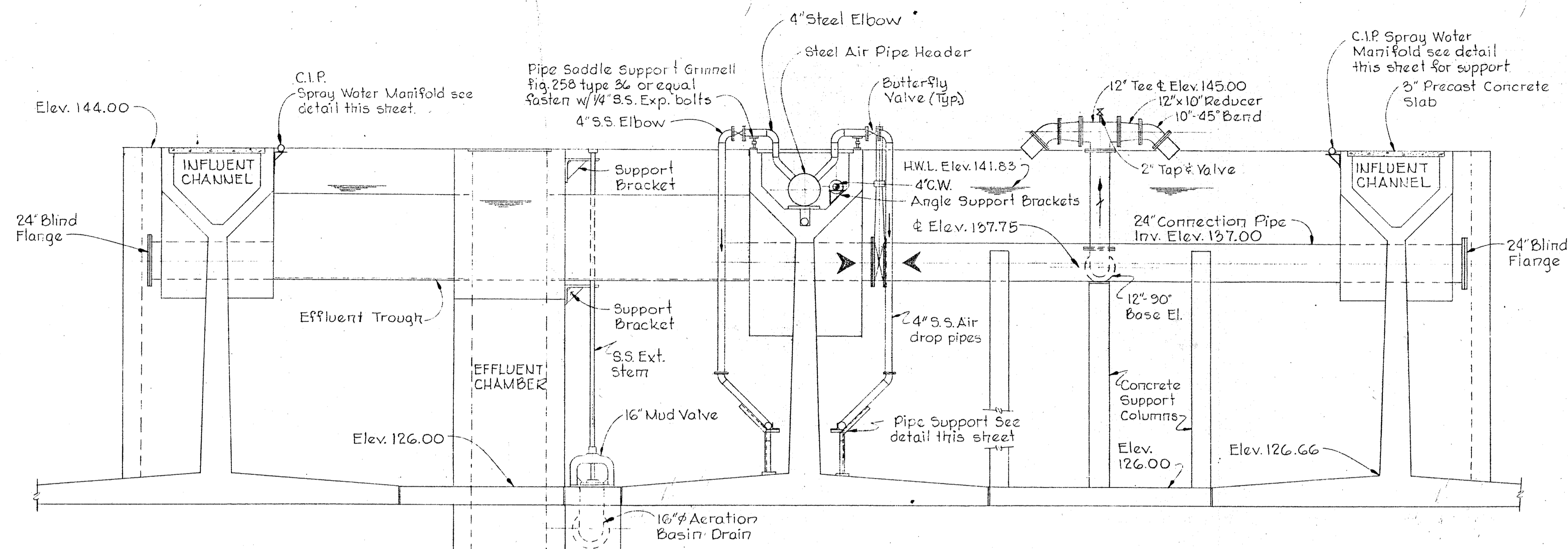
Kenneth A. McCord

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE 3-30-73 <i>W.D. Falbert</i> CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	AERATION BASIN PLANS AND SECTIONS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 26 OF 45 SCALE AS SHOWN
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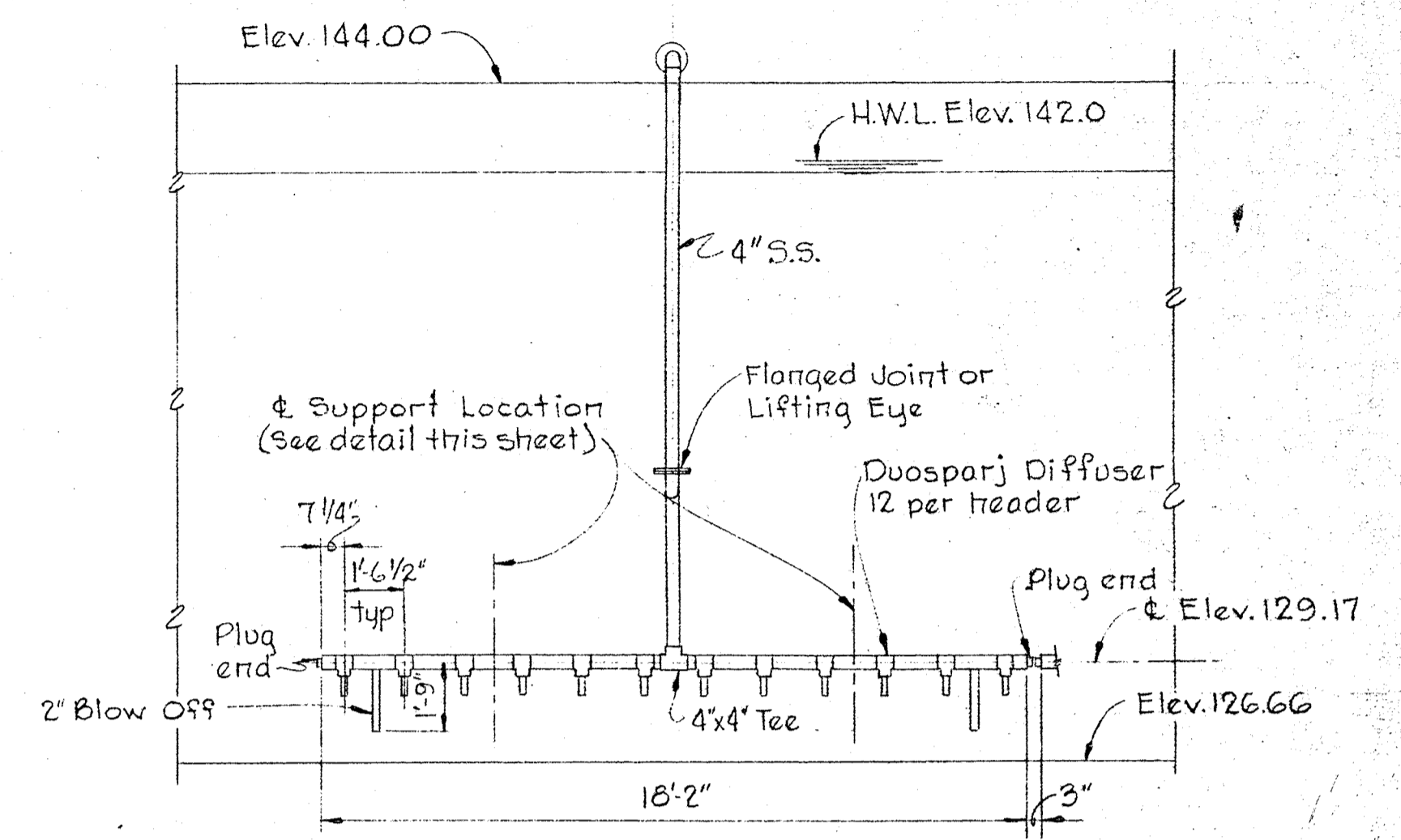
W.O. 6538-2

SHEET M-3

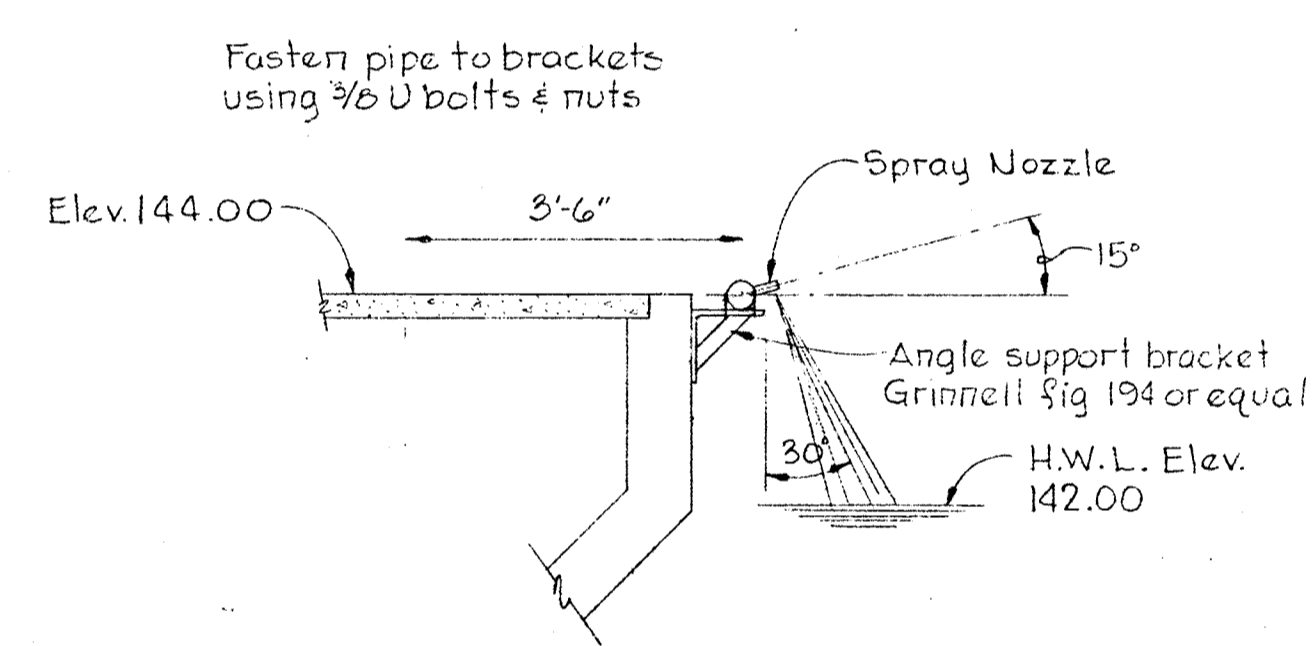
BRUNING 44-510 14778



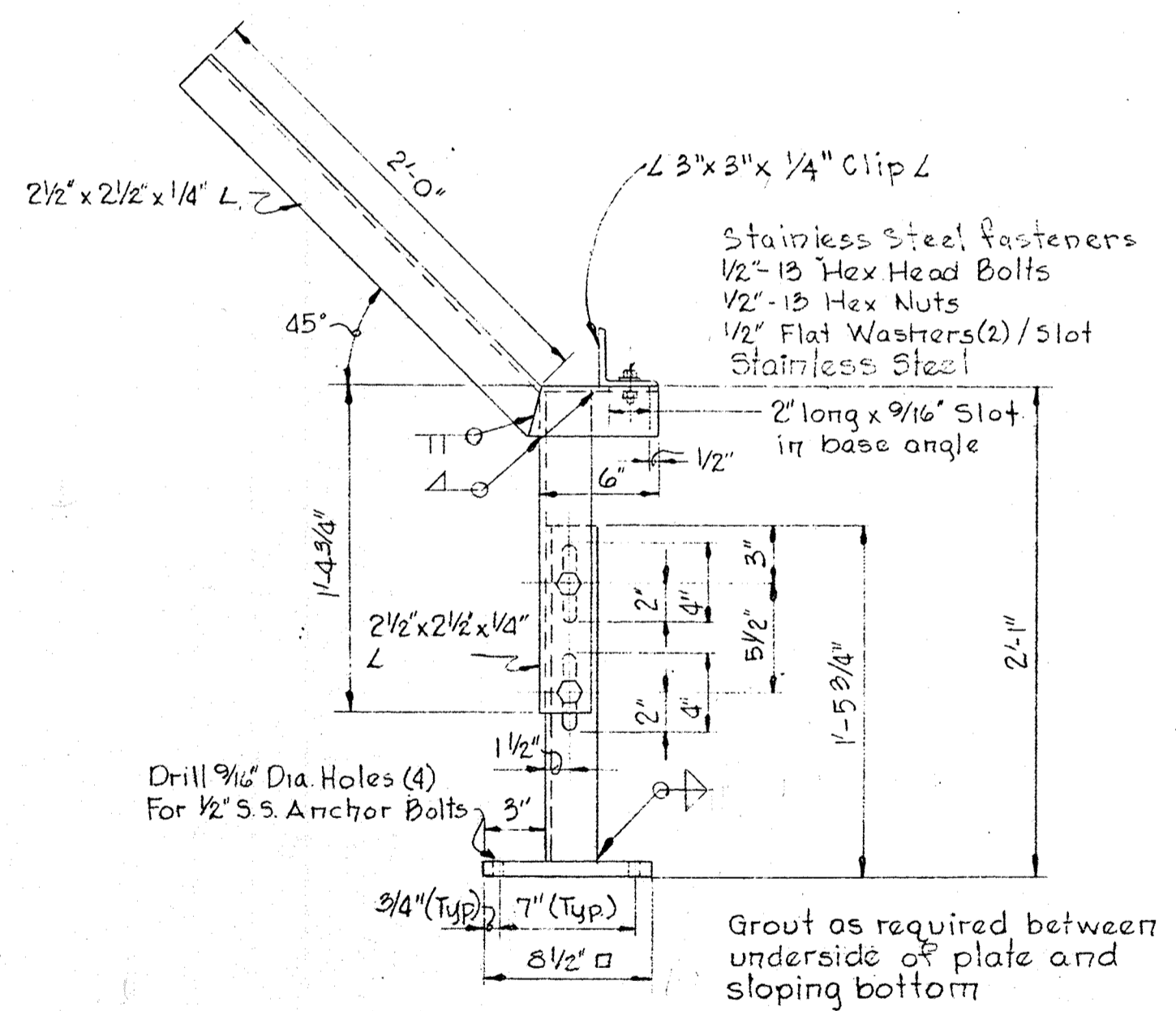
SECTION M4A/M-3
Scale: 1/4" = 1'-0"



ELEVATION OF DROP PIPE AND DIFFUSER HEADER
Scale: 1/4" = 1'-0"



SPRAY WATER MANIFOLD DETAIL
Scale: 1/2" = 1'-0"



AIR DROP SUPPORT DETAIL
Scale: 1/2" = 1'-0"

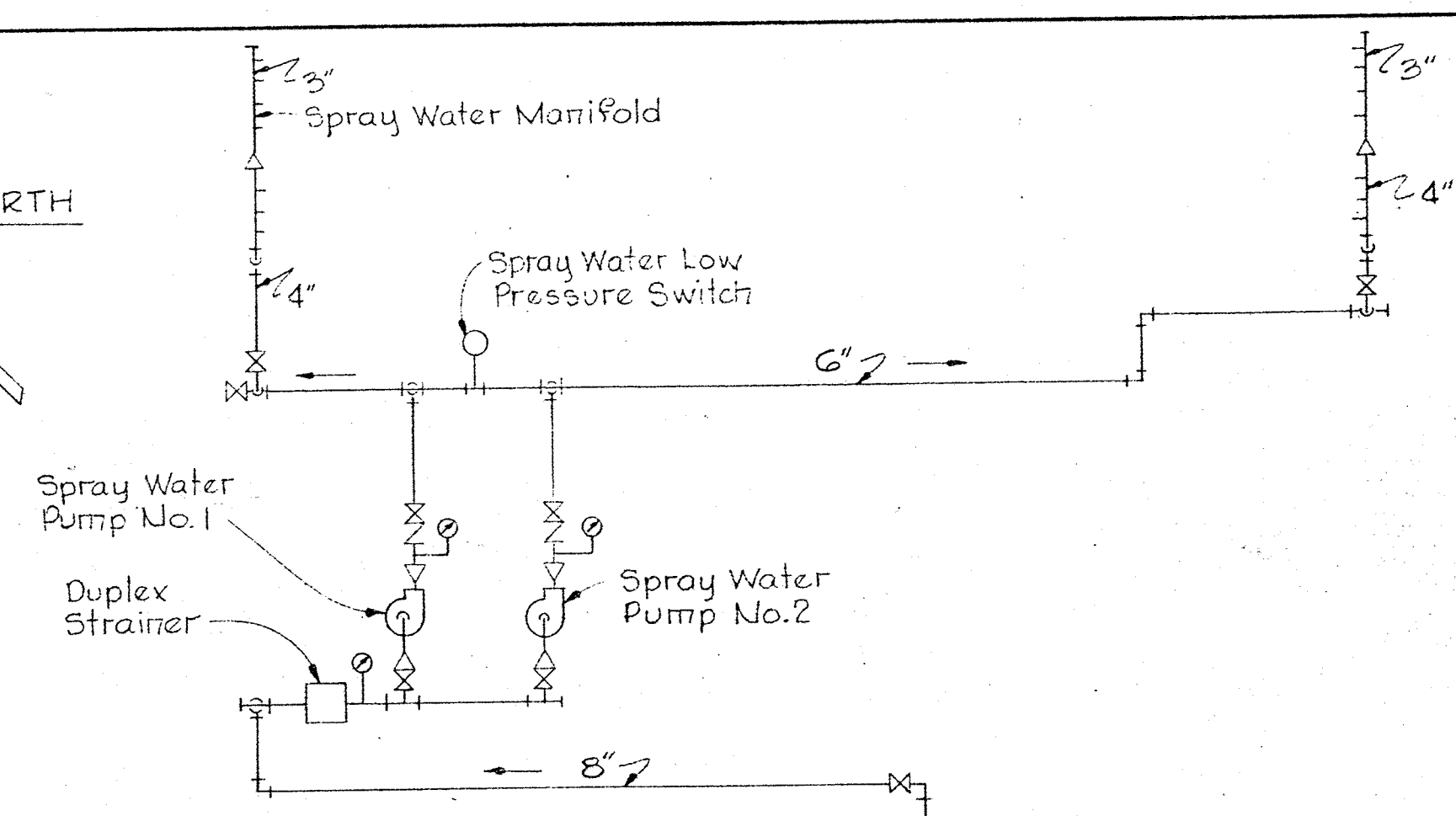
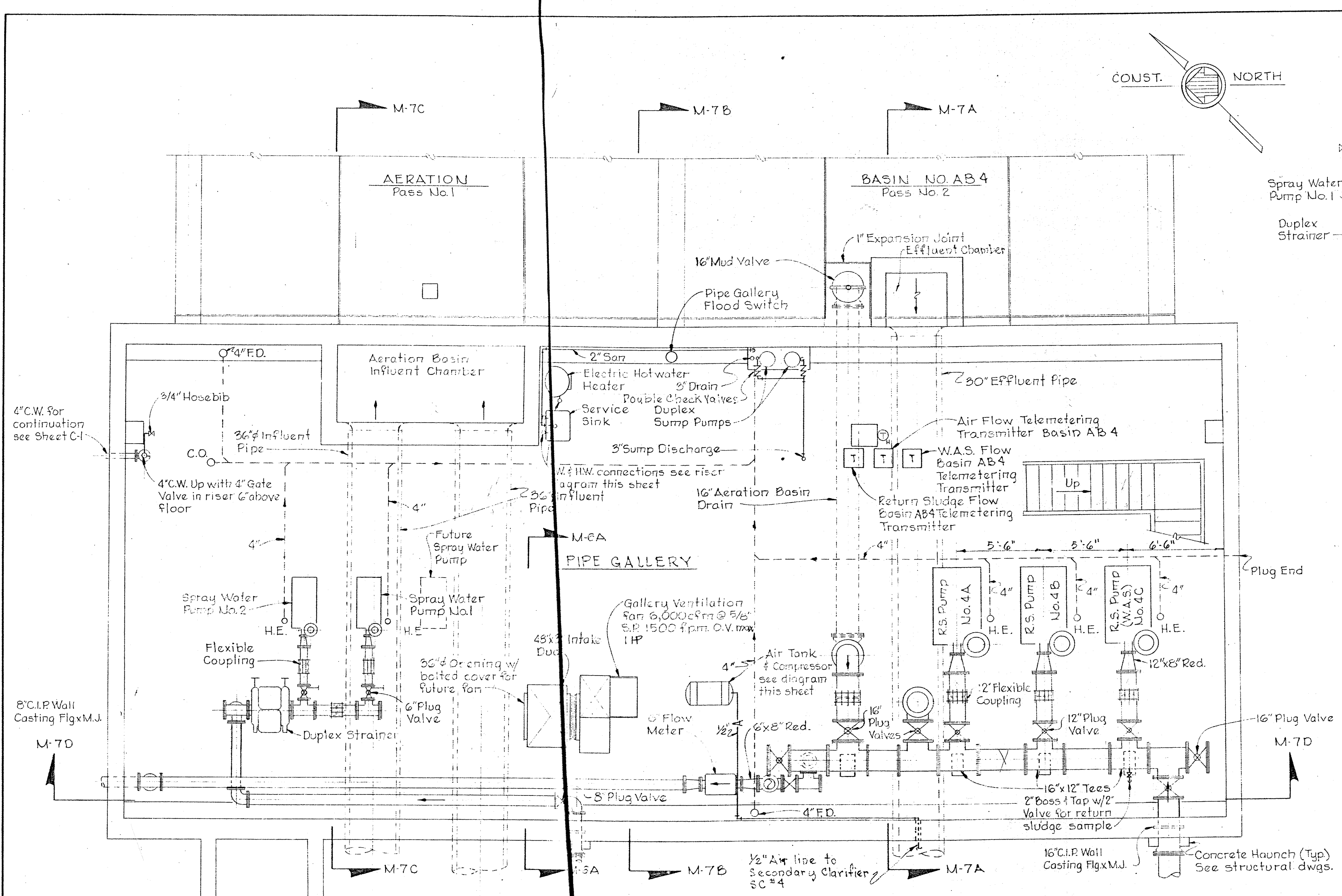
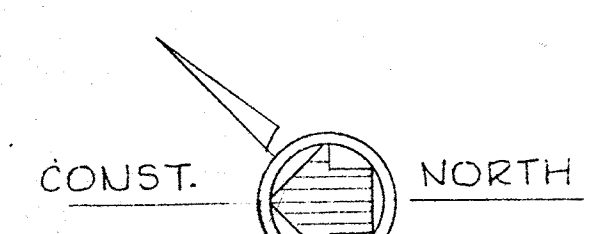
- Notes:
- 1- All cast iron and steel supports shall be shop pointed as specified for submerged and exposed to sewage. Field touch up or repainting shall be as directed by the Engineer.
 - 2- Suitable insulating gaskets shall be provided where dissimilar metals are attached.



Kenneth A. McLeod

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3-30-73 W.O. Filbert CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	AERATION BASIN SECTIONS AND DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 27 OF 45 SCALE AS SHOWN
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W. O. 6538-2 Clarification Relocated Knife Gate Valve 3-21-74



SPRAY WATER SCHEMATIC
No Scale

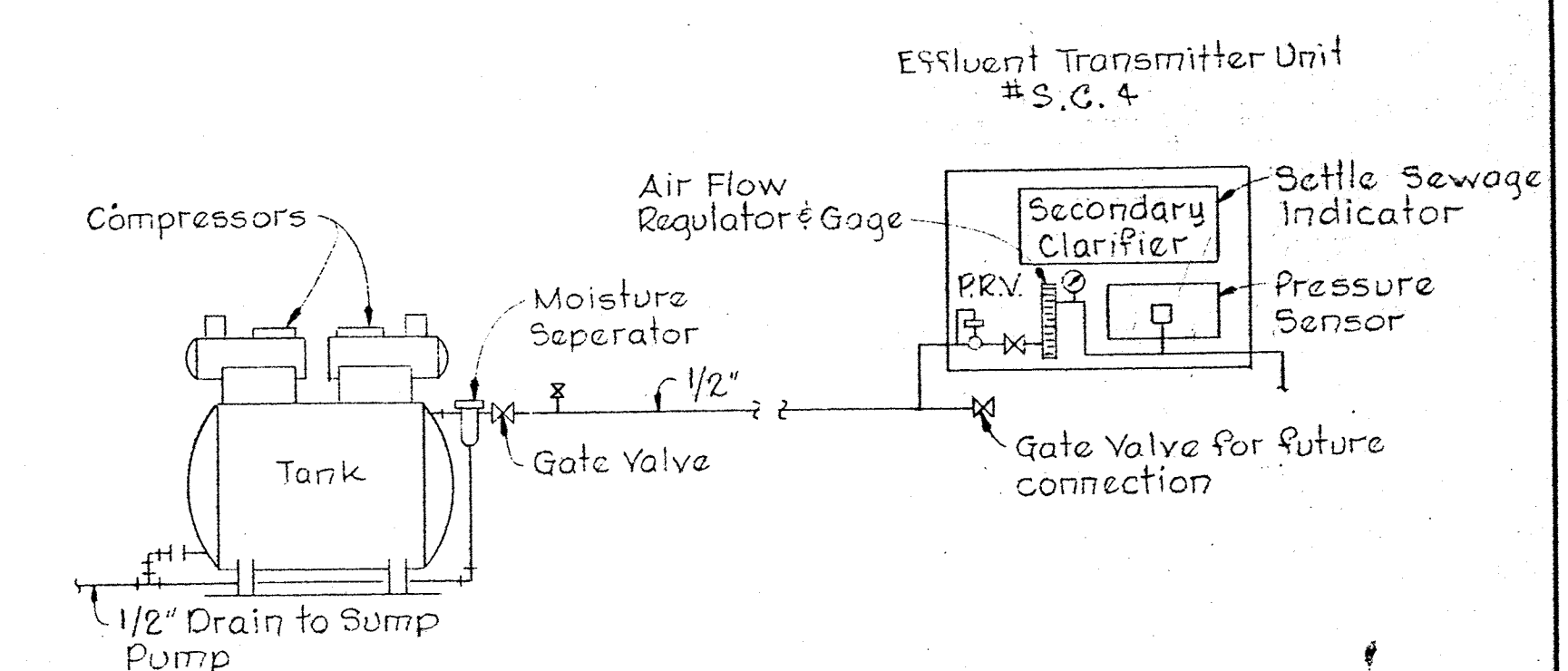
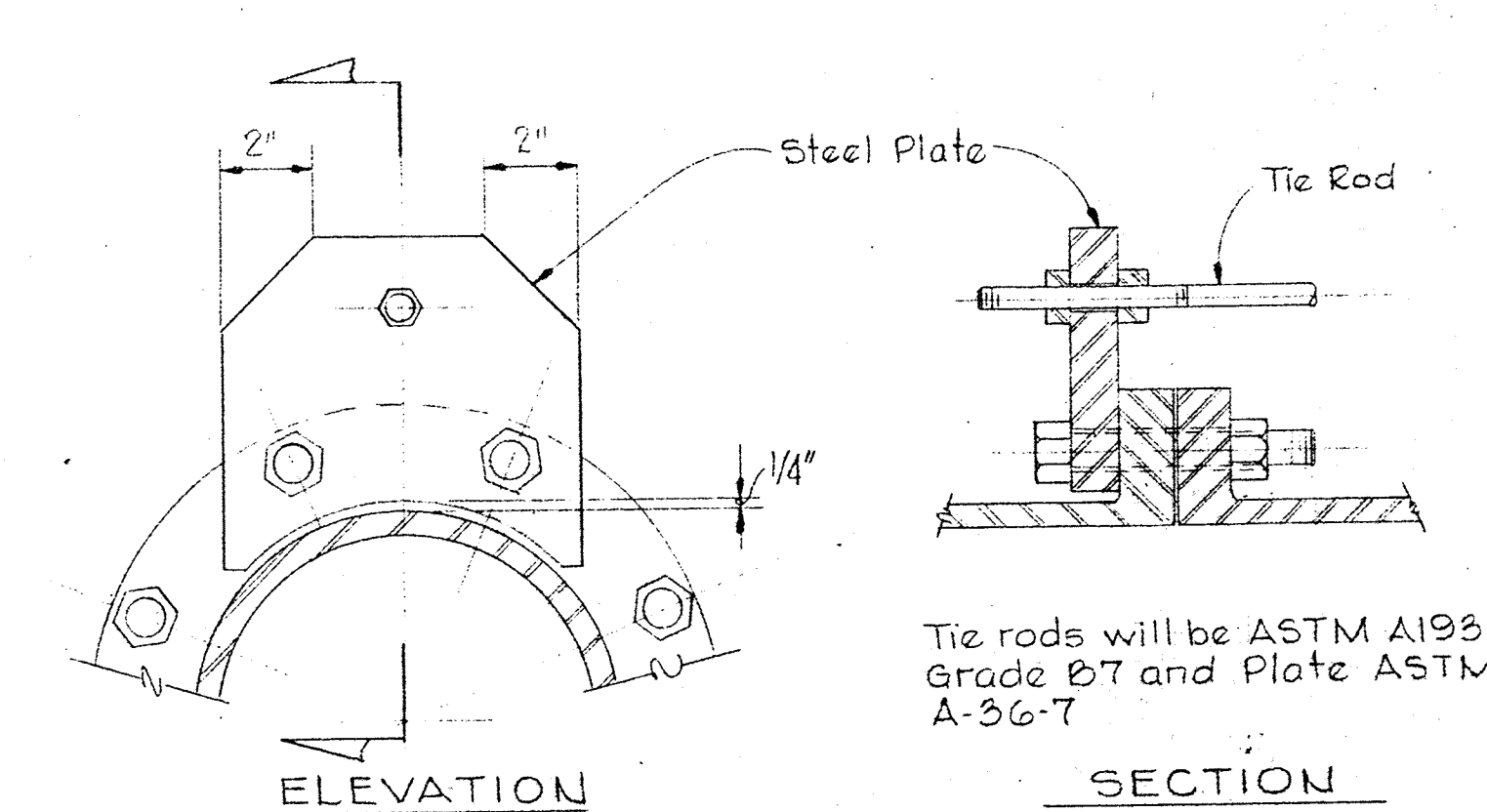
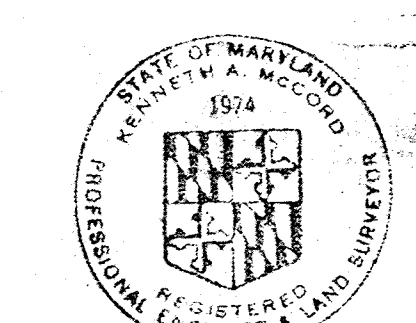


DIAGRAM BUBBLER SYSTEM
No Scale

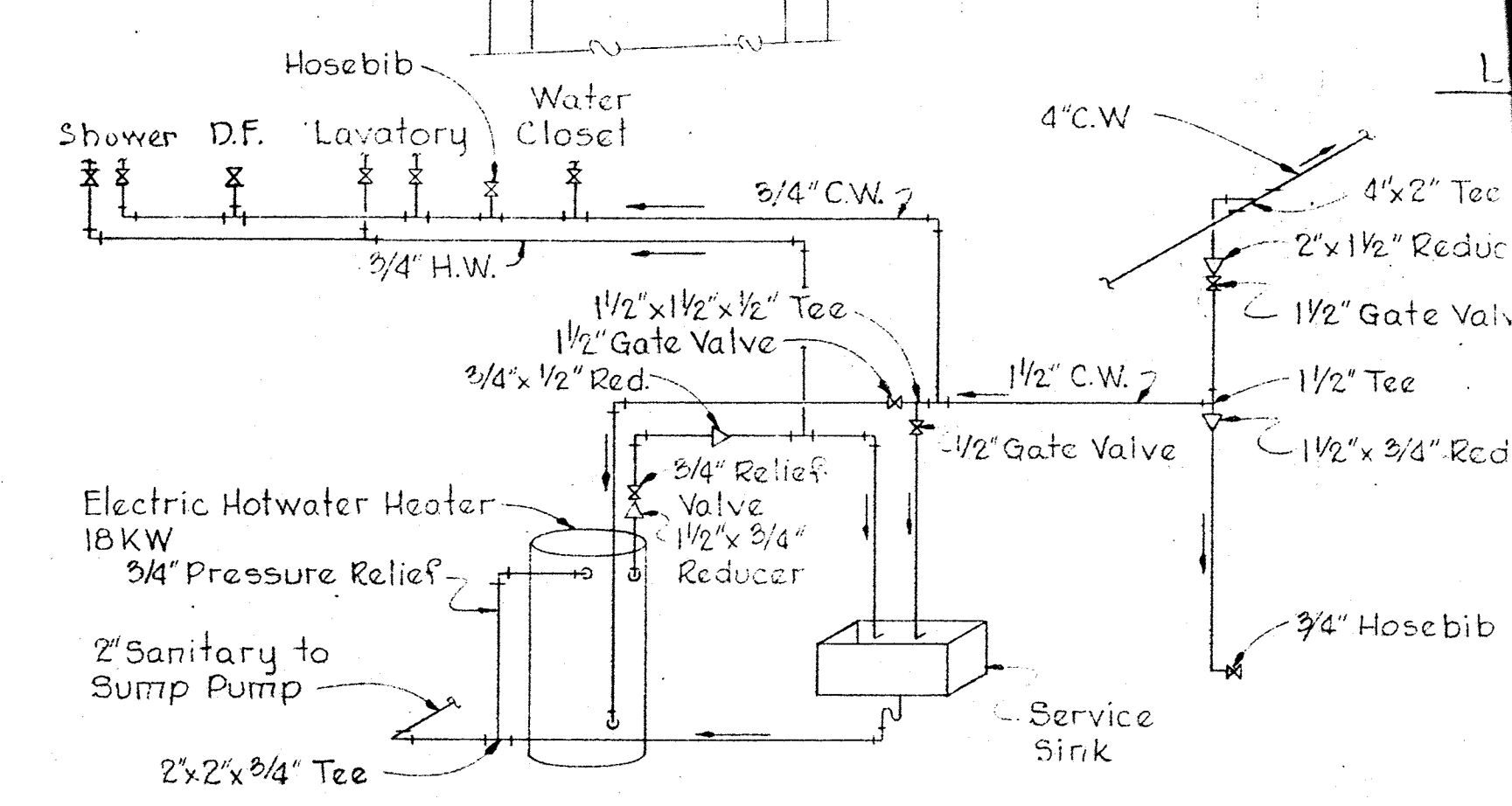


TIE ROD DETAIL
No Scale

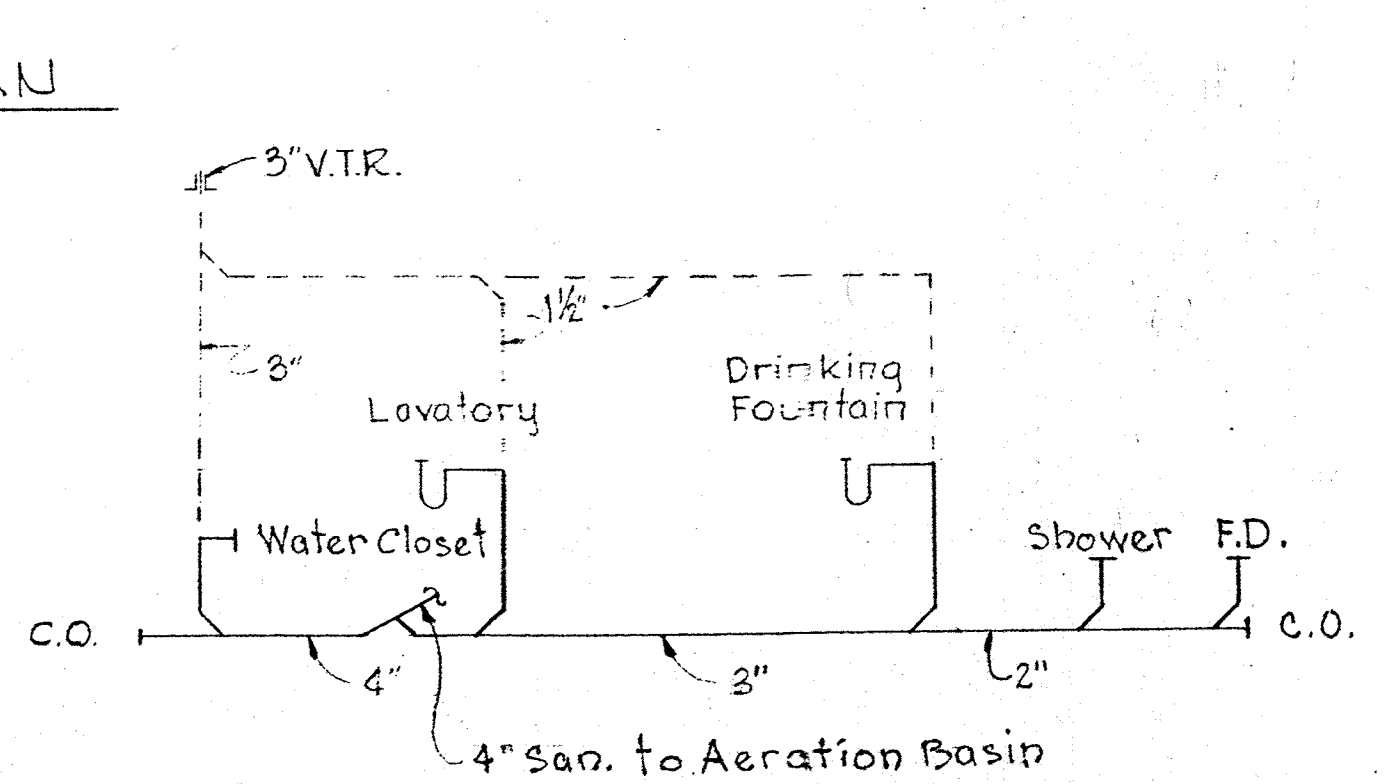
PIPE SIZE	TIE ROD	PLATE
4"	2 - 1/2" φ	6" 3/4"
6"	2 - 3/4" φ	7" 3/4"
8"	2 - 7/8" φ	7" 7/8"
10"	2 - 1 1/8" φ	7" 1"
12"	2 - 1 1/4" φ	7" 1 1/8"
14"	4 - 1" φ	8" 1"
16"	4 - 1 1/8" φ	7" 1 1/8"



Thomas A. Milrod



HOT AND COLD WATER RISER DIAGRAM
No Scale



SANITARY SCHEMATIC
No Scale

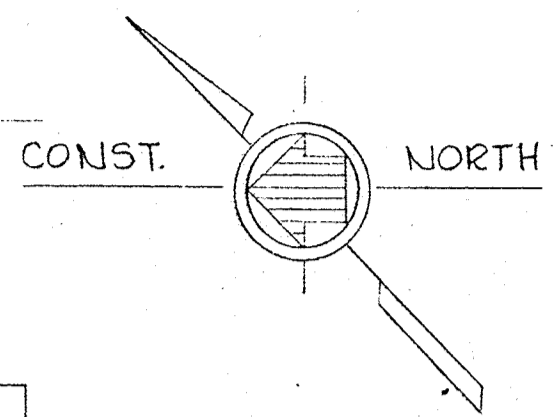
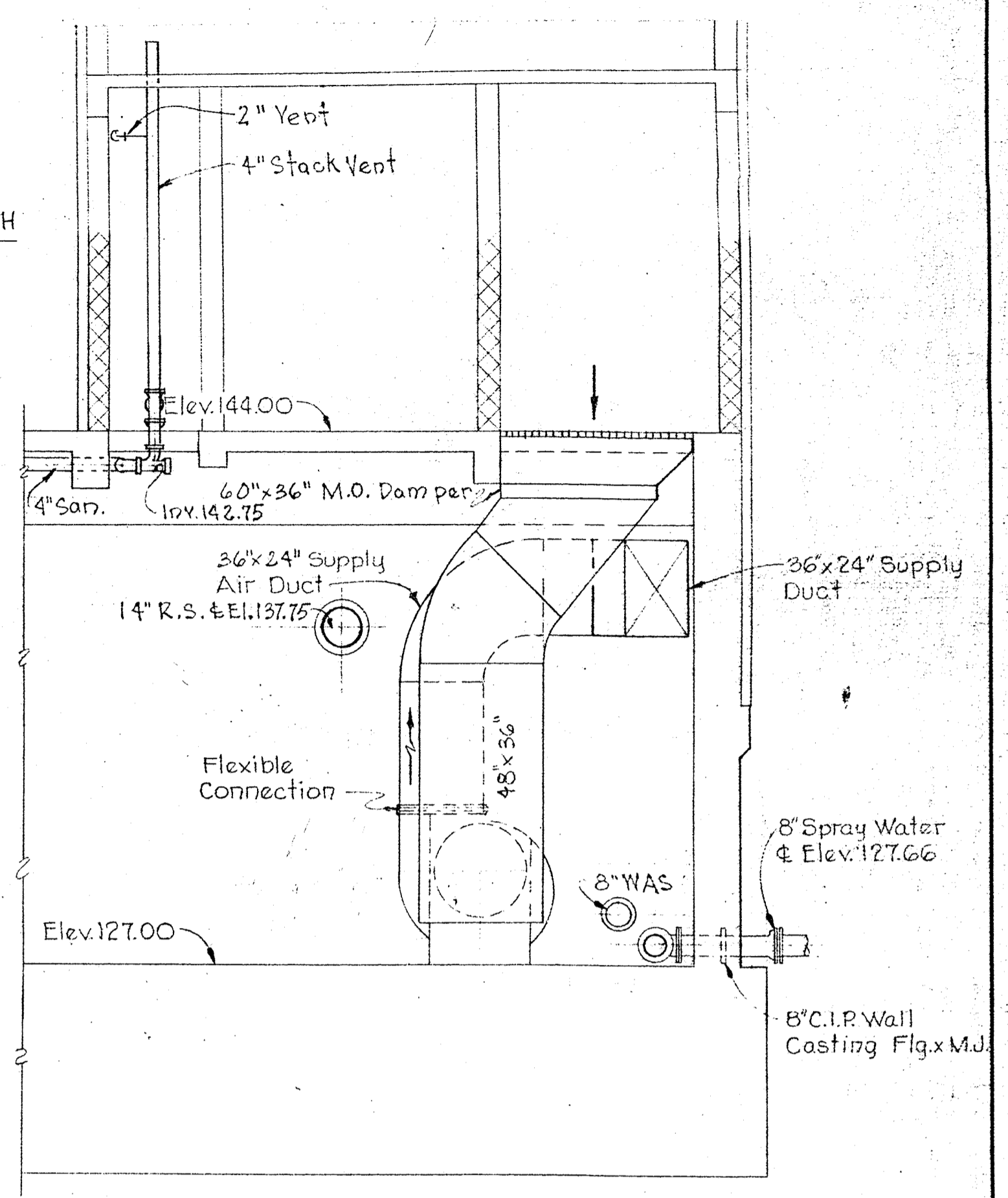
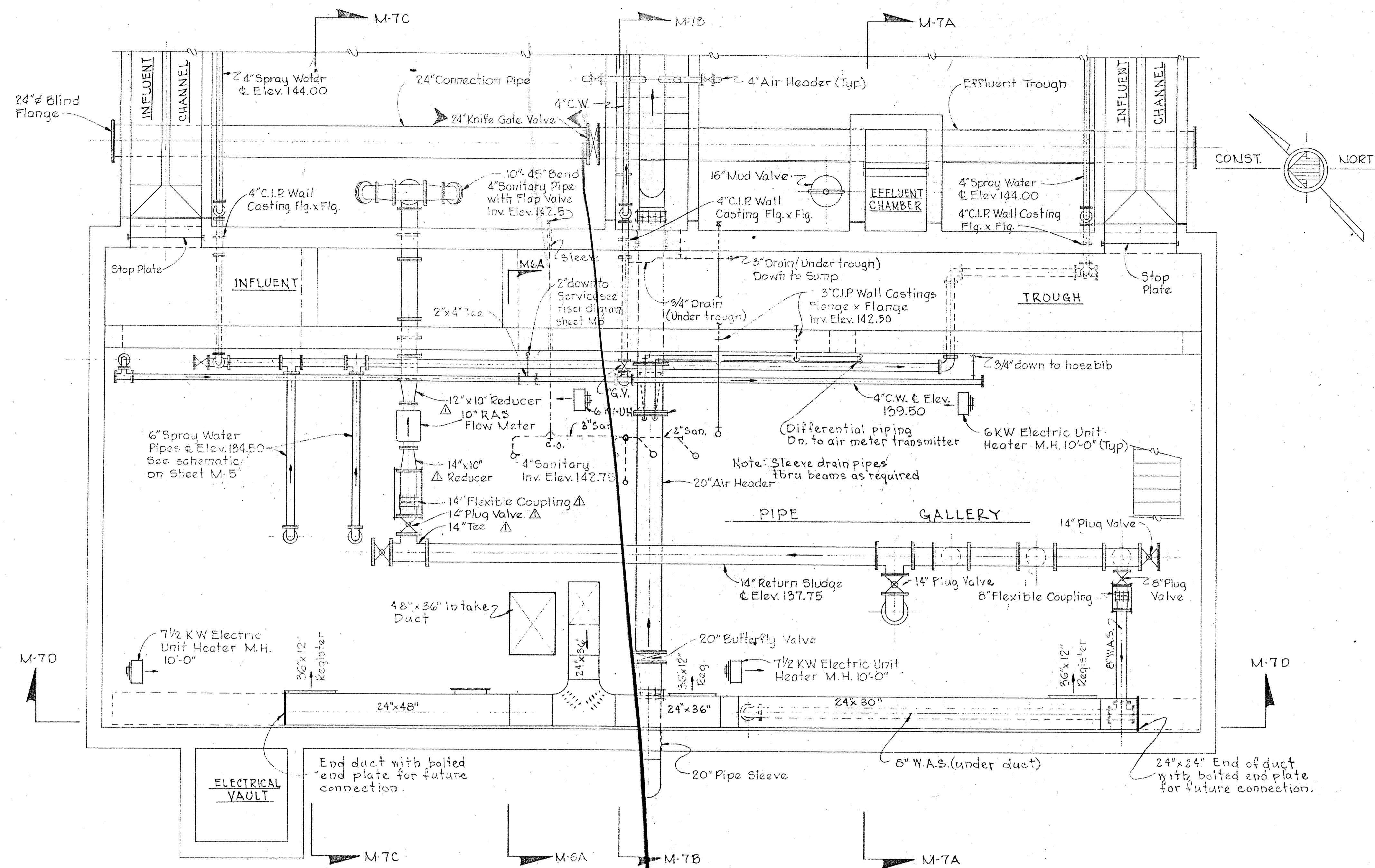
WHITMAN, REQUARDT & ASSOCIATES
ENGINEERS
1304 ST. PAUL ST.
BALTIMORE, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
CONTRACT NO. 526-S
DATE 2-30-73
W. O. Falbert
CHIEF - BUREAU OF ENGINEERING

ACTIVATED SLUDGE BASIN
AND PIPE GALLERY
PLAN AND SECTIONS

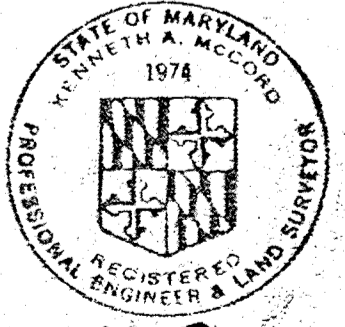
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 3

DRAWING NO. 28 OF 45
SCALE AS SHOWN
SHEET M-5



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

SECTION M-6A, M-5, M-6 & M-8
Scale: 1/4"=1'-0"



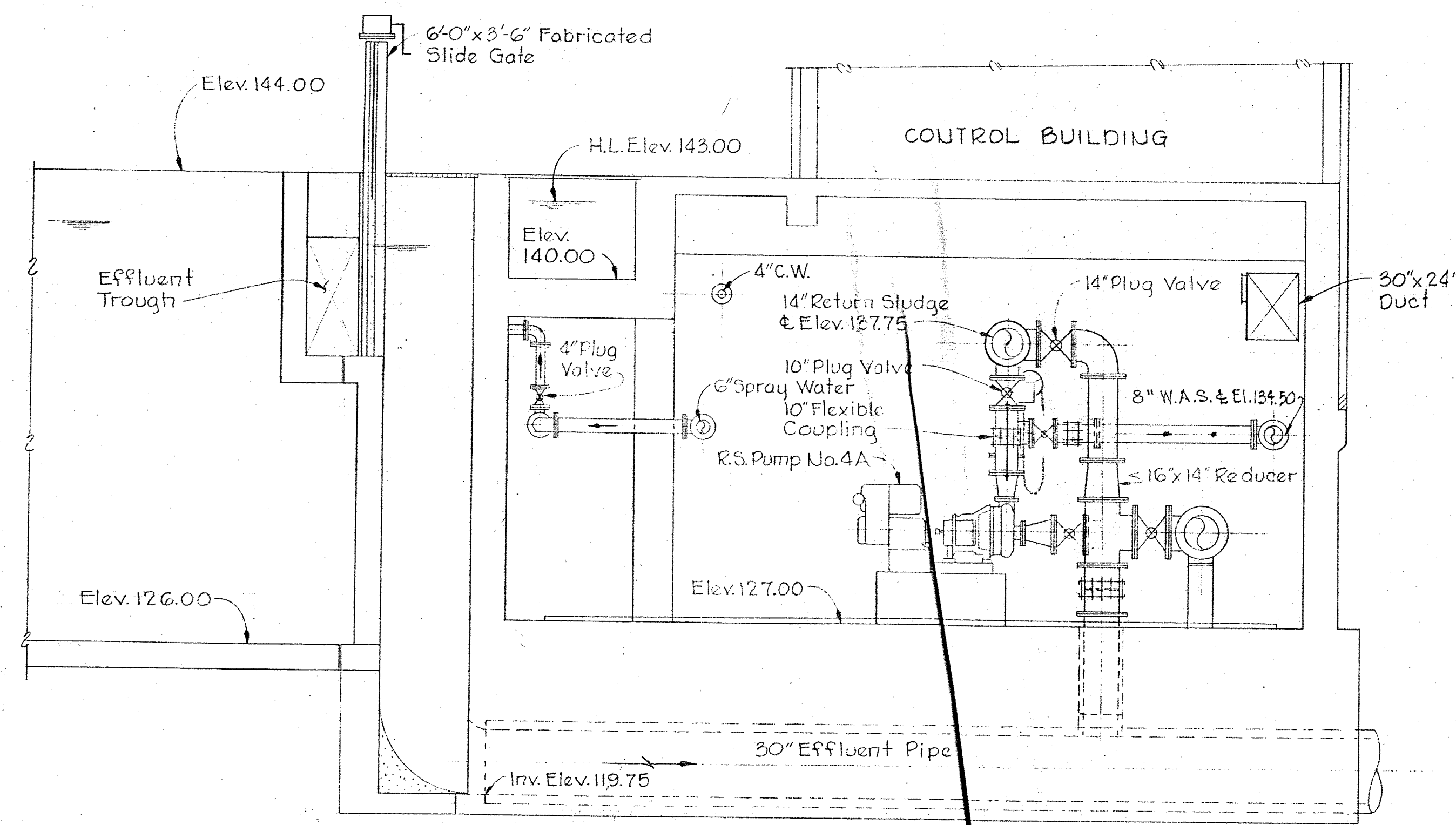
Kenneth A. Wood

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 DATE <i>W.O. Fallet</i> CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	ACTIVATED SLUDGE BASIN AND PIPE GALLERY PLAN AND SECTIONS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 29 OF 45 SCALE AS SHOWN SHEET M-6
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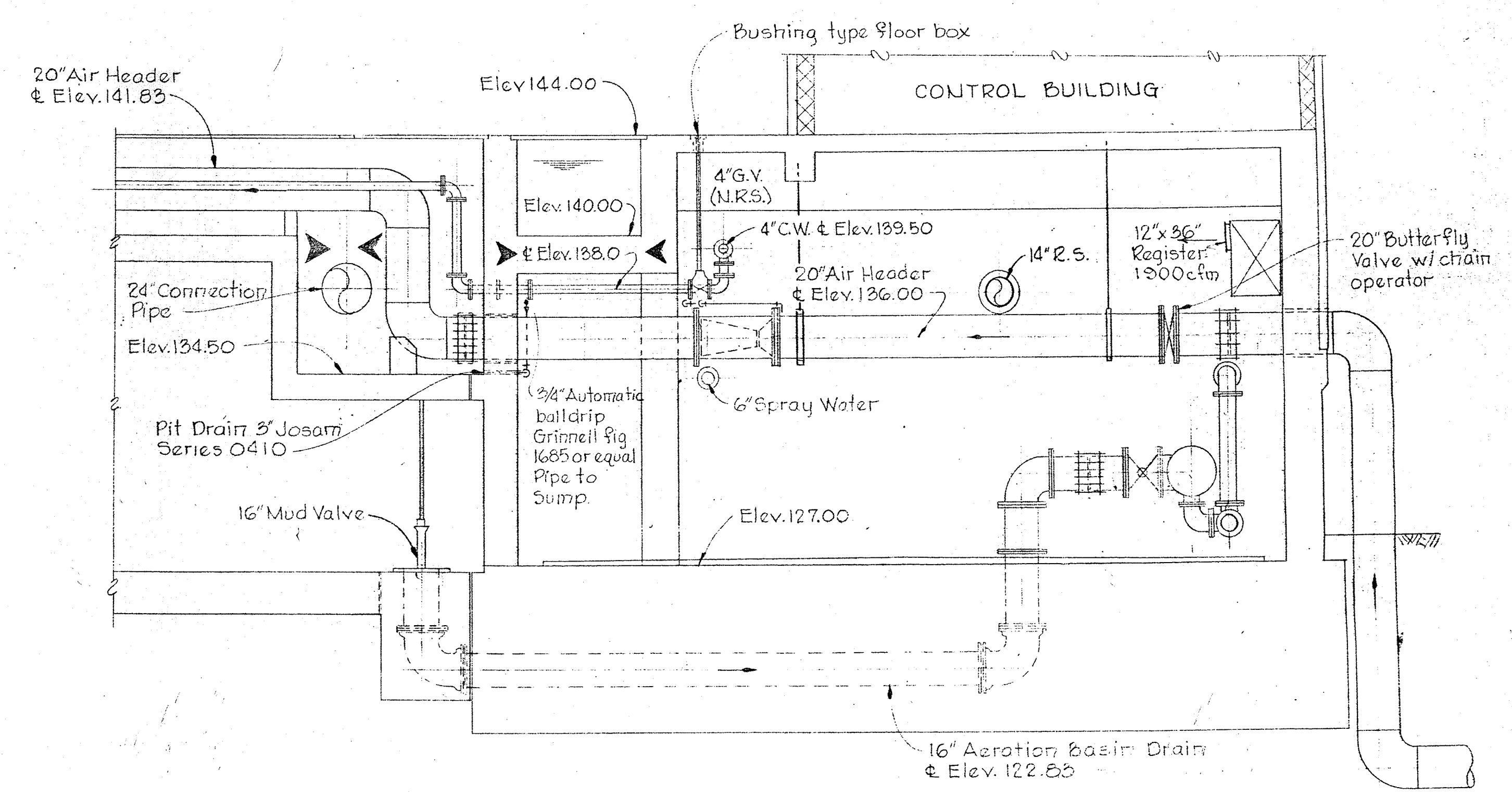
W.O. 6538-2 Clarification Relocated Knife Gate Valve 3-21-74

△ Addendum No. 1

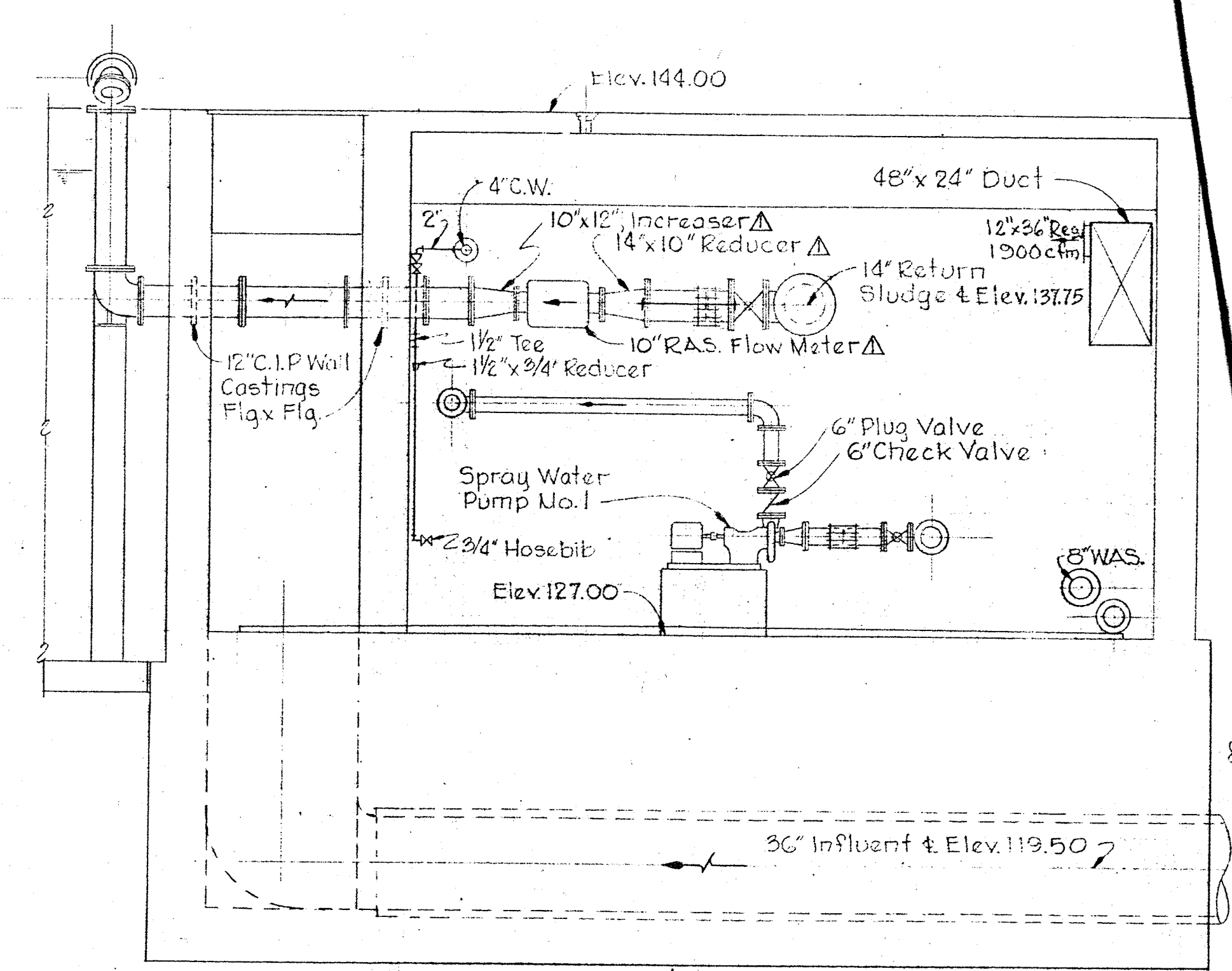
BRUNING 44-510 14778



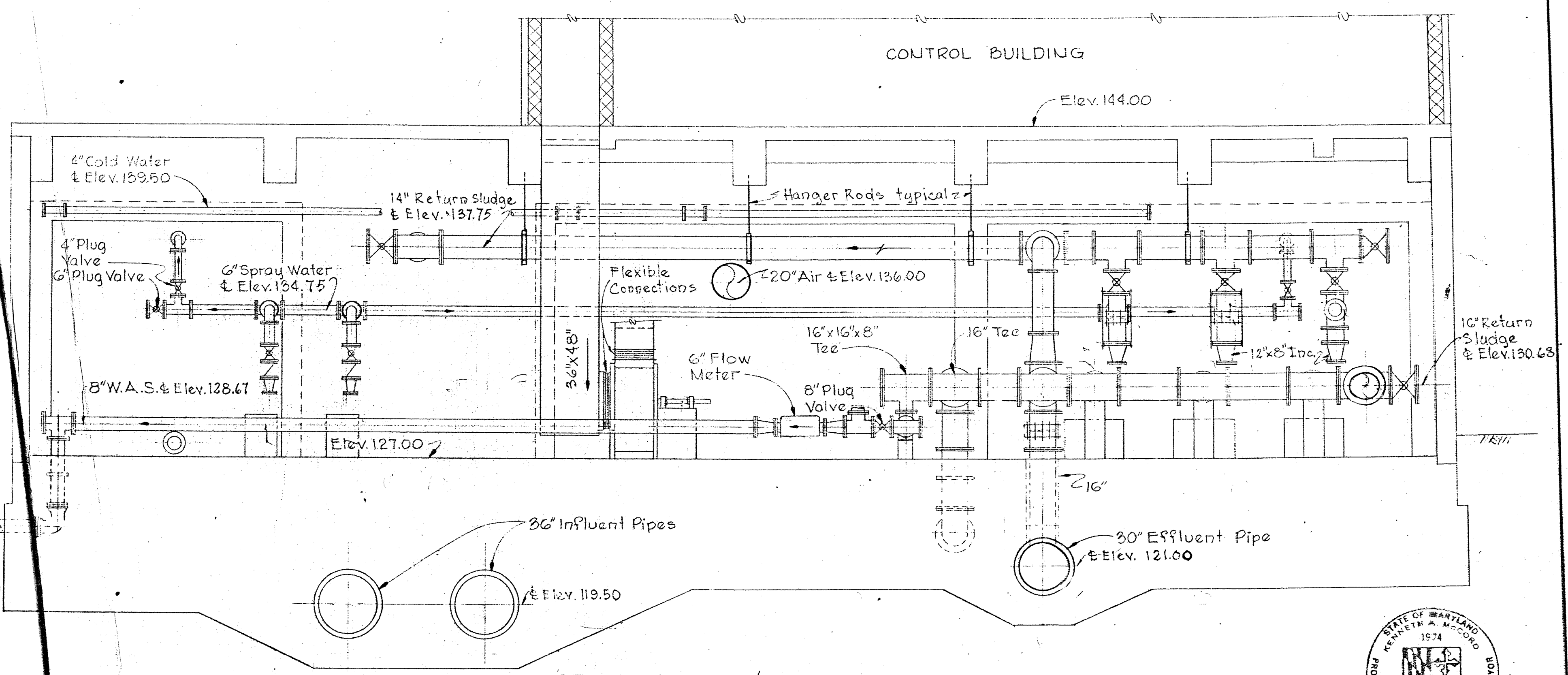
SECTION M-7A/M-5 & M-6 & M-8
Scale: 1/4" = 1'-0"



SECTION M-7B/M-5 & M-6 & M-8
Scale: 1/4" = 1'-0"



SECTION M-7C/M-5 & M-6 & M-8
Scale: 1/4" = 1'-0"



SECTION M-7D/M-5 & M-6 & M-8
Scale: 1/4" = 1'-0"



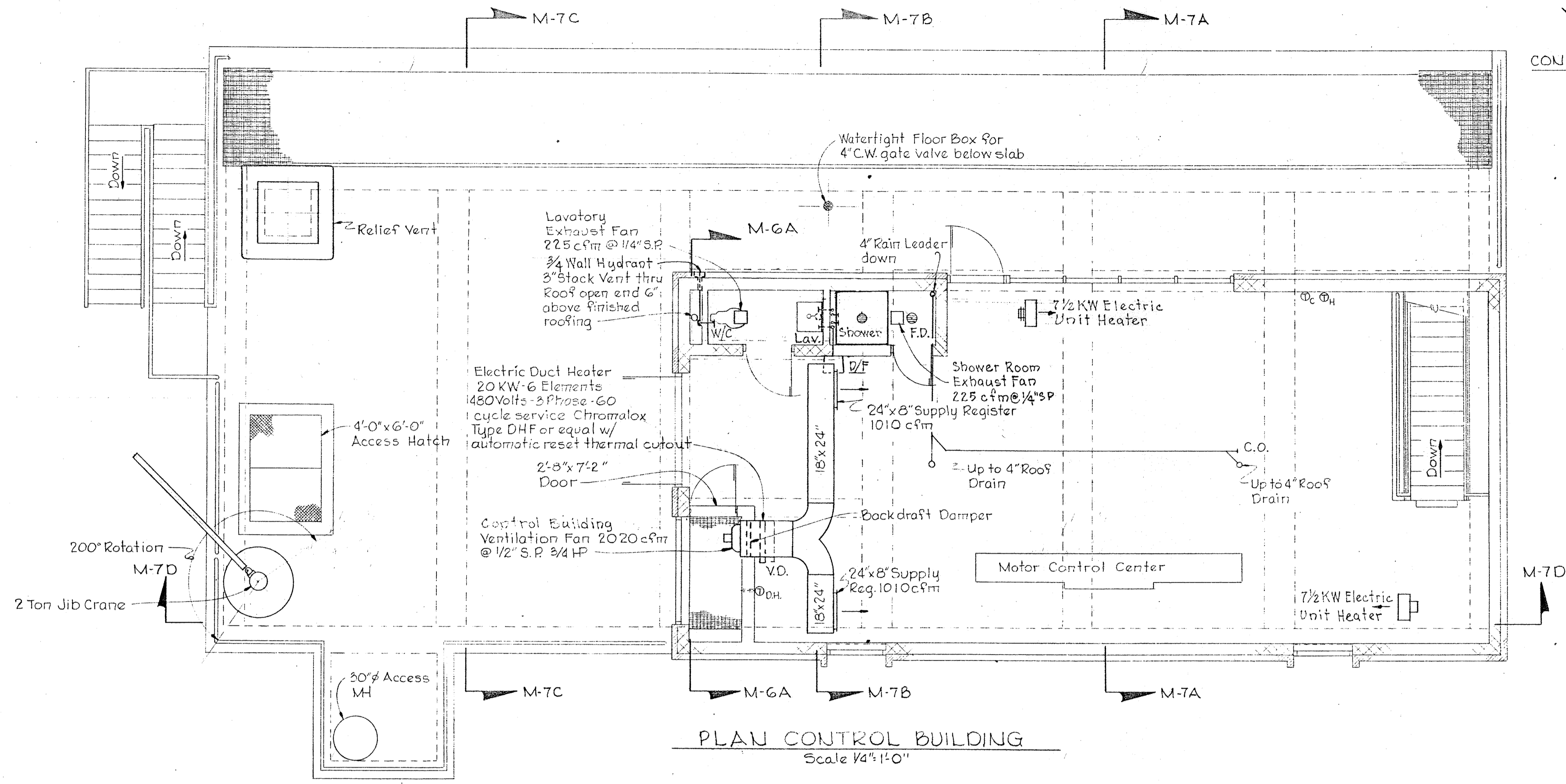
Kenneth M. Wood

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3-30-73 W.O. Falber CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	ACTIVATED SLUDGE BASIN AND PIPE GALLERY SECTIONS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 30 OF 45 SCALE AS SHOWN SHEET M-7
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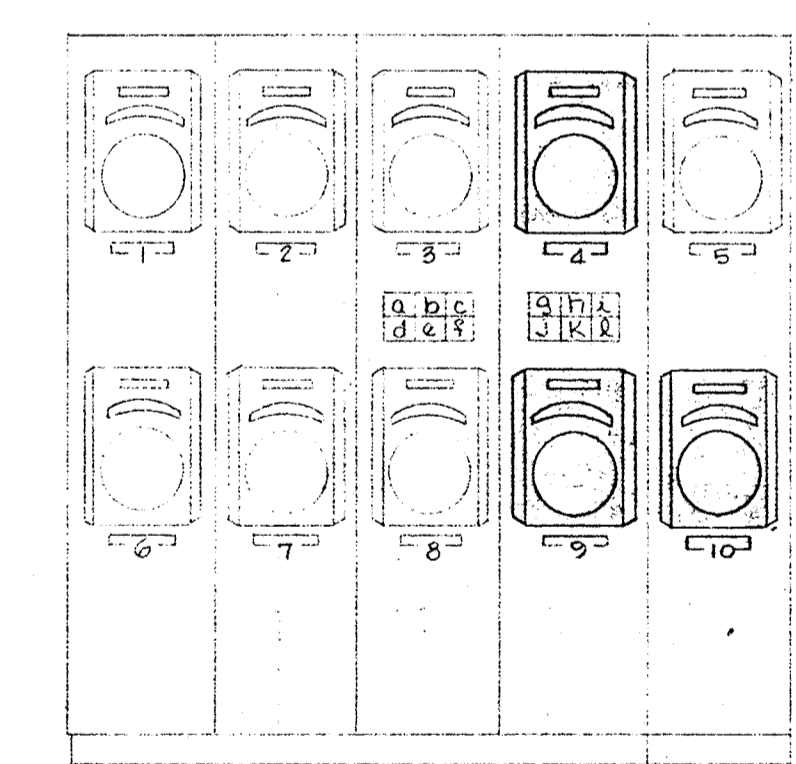
W.O. 6538-2 > Clarification < Lowered ϕ of Pipe 11-29-73 > Clarification < Removed Knife Gate Valve & Operator 5-21-74

▲ Addendum No. 1

DRAWING 44-510 14778

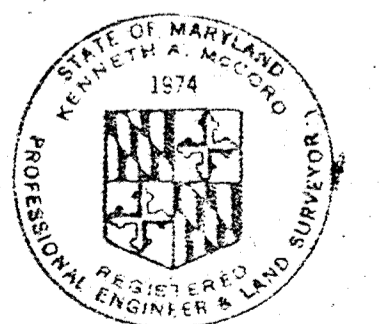


PLAN CONTROL BUILDING
Scale 1/4"=1'-0"



ELEVATION EXISTING
LAB BUILDING PANELBOARD
No Scale

- PANELBOARD LEGEND**
- 1-Sewage Effluent Flow - Treatment Unit CS #1
 - 2-Sewage Effluent Flow - Treatment Unit CS #2
 - 3-Sewage Effluent Flow - Treatment Unit CS #3
 - 4-Sewage Effluent Flow - Treatment Unit SC #4
 - 5-Sewage Effluent Total Flow
 - 6-Sewage Influent Flow - Primary No.1
 - 7-Return Sludge Flow - Treatment Unit CS #2
 - 8-Return Sludge Flow - Treatment Unit CS #3
 - 9-Return Sludge Flow - Treatment Unit AB #4
 - 10-Plant Effluent Chlorine Residual
 - a-Collector Drive Trouble
 - b-Blower Surge
 - c-Wet Well Level & Control Air
 - d-Sludge Oxidation - Trouble
 - e-Chlorine Leak - Oxidation Building
 - f-Chlorine Weight - Oxidation Building
 - g-Chlorine Leak - Lab Building
 - h-Chlorine Weight - Lab Building
 - i-Aeration Basin AB #4 - Trouble
 - j-Spare
 - k-Spare
 - l-Spare
- New Instrument



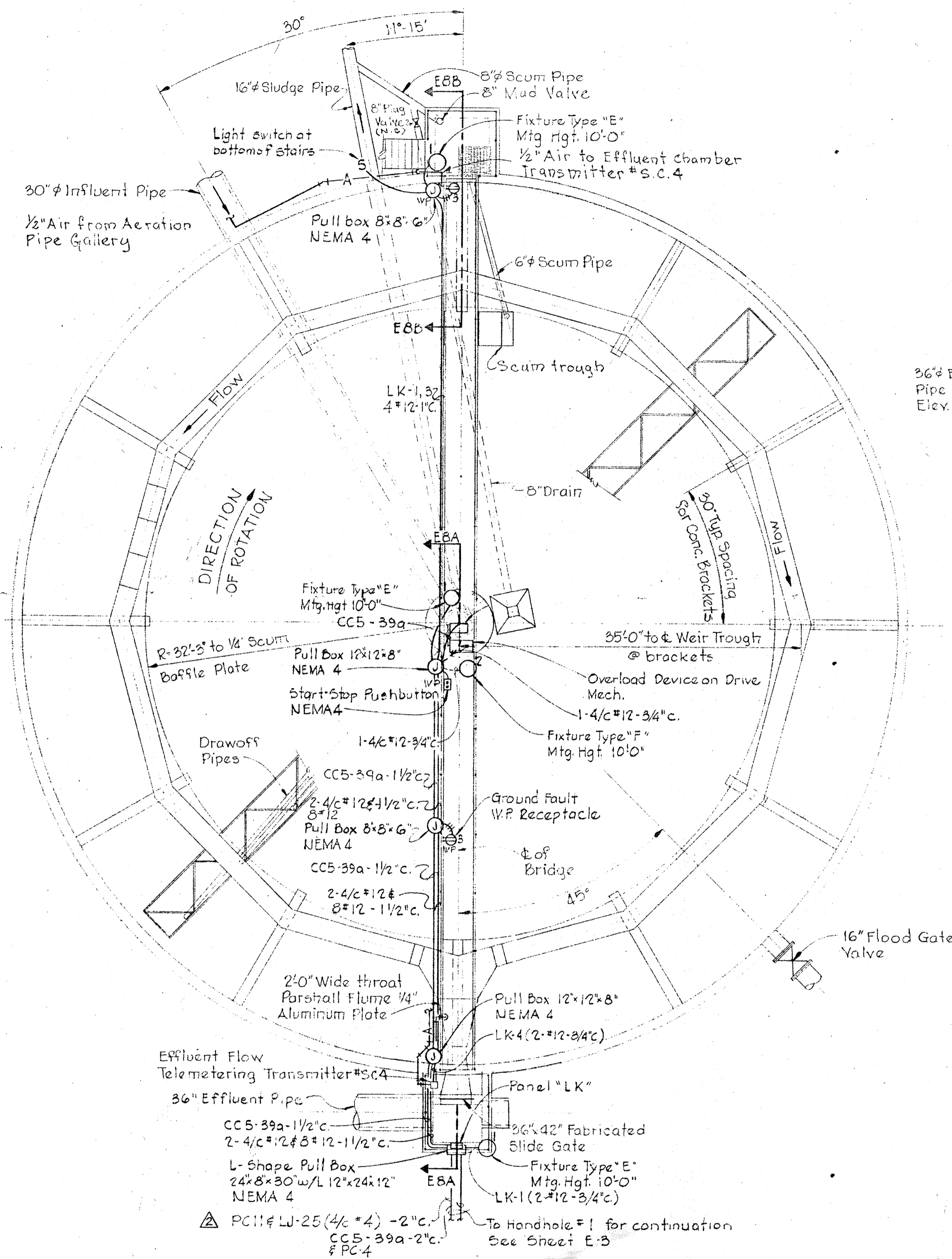
Kenneth A. McLeod

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 DATE <i>W.D. Fulbert</i> CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	CONTROL BUILDING	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.3	DRAWING NO. 31 OF 45 SCALE AS SHOWN
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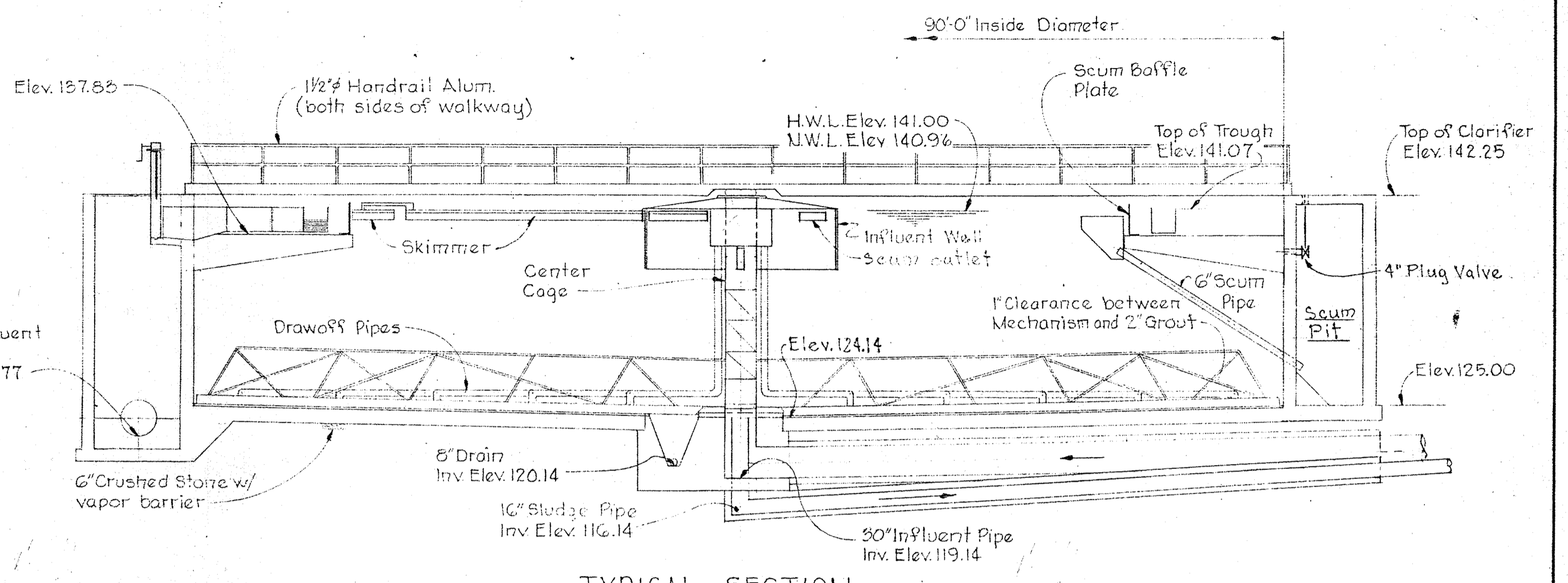
W. O. 6538-2

SHEET M-8

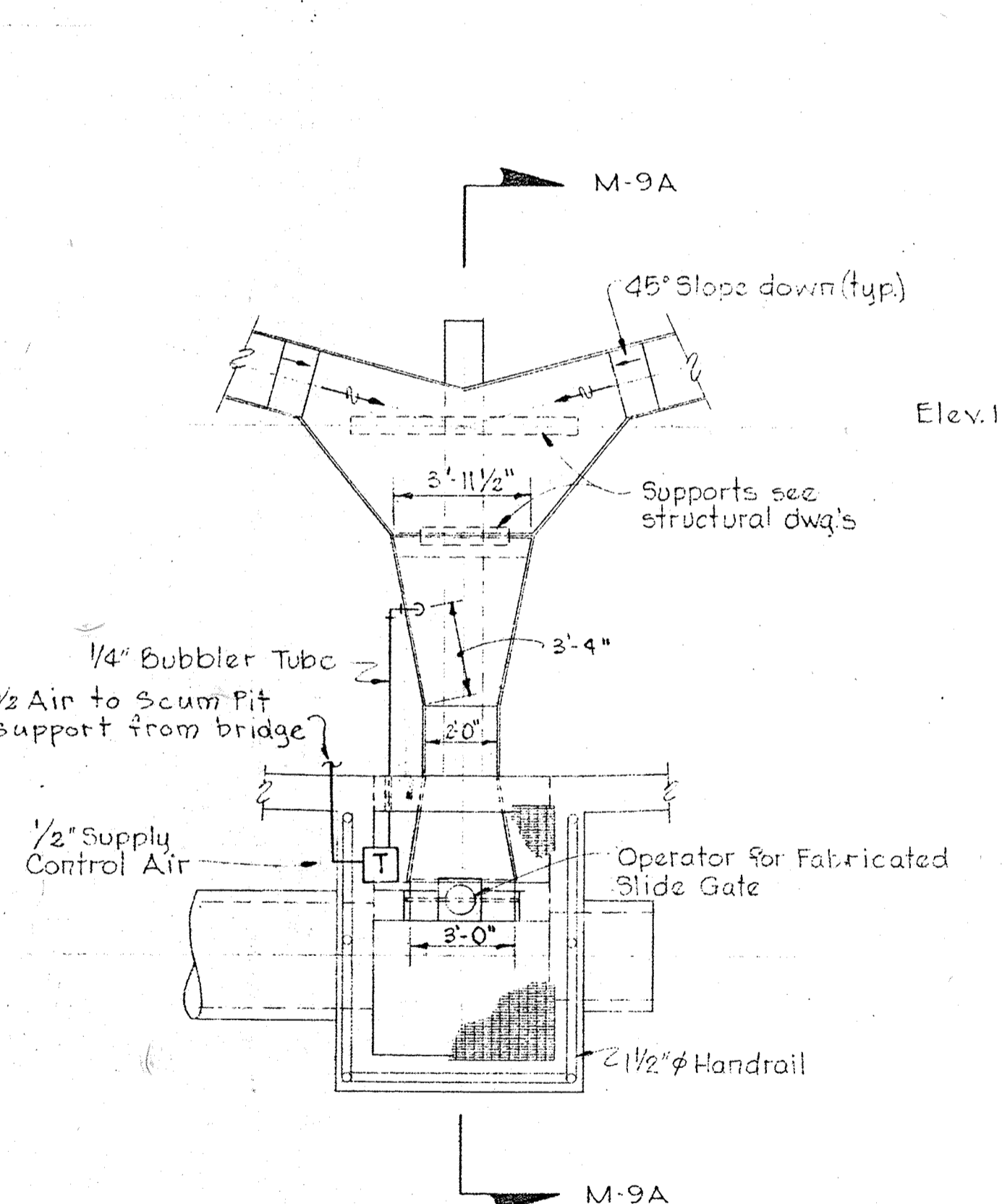
BRUNING 44-510 14778



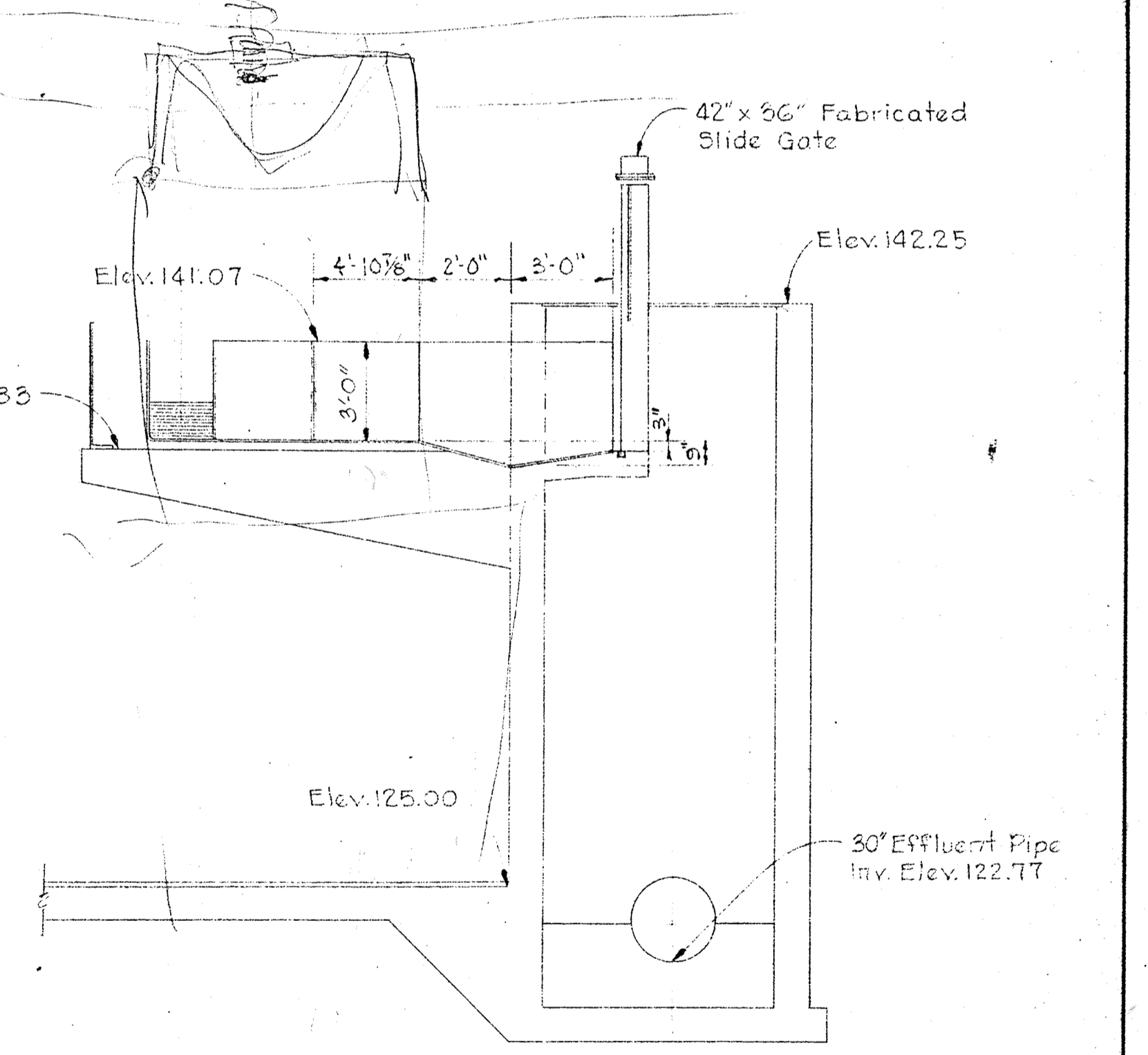
PLAN SECONDARY CLARIFIER NO. 4
Scale: 1/8" = 1'-0"



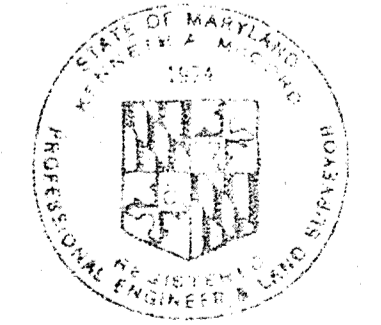
TYPICAL SECTION
Scale: 1/8" = 1'-0"



PART PLAN AT PARSHALL FLUME
Scale: 1/4" = 1'-0"



SECTION M-9A/M-9
Scale: 1/4" = 1'-0"



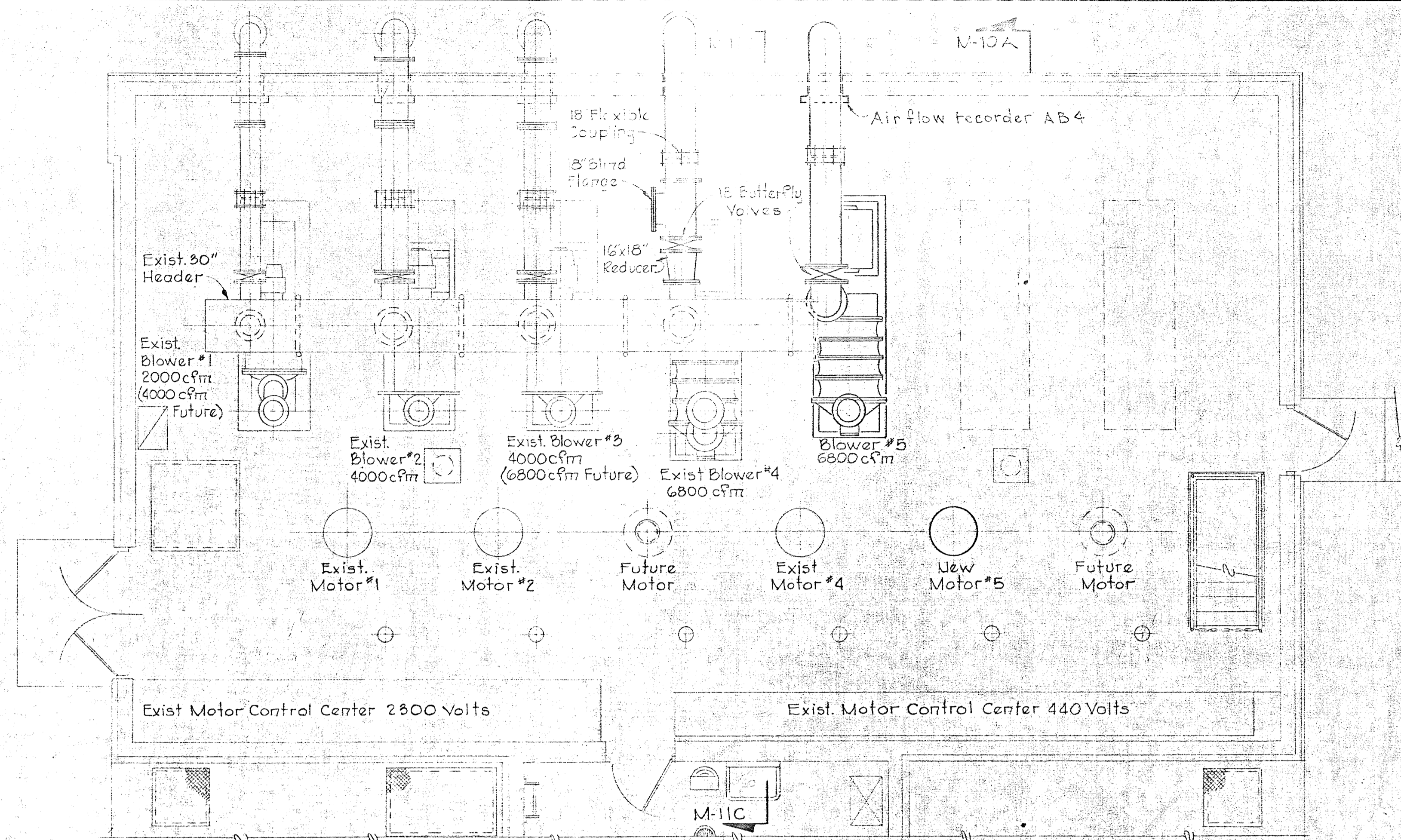
Handwritten signature

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3-30-73 W.D. Falbert CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	SECONDARY CLARIFIER PLAN, SECTION & DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 32 OF 45 SCALE AS SHOWN SHEET M-9
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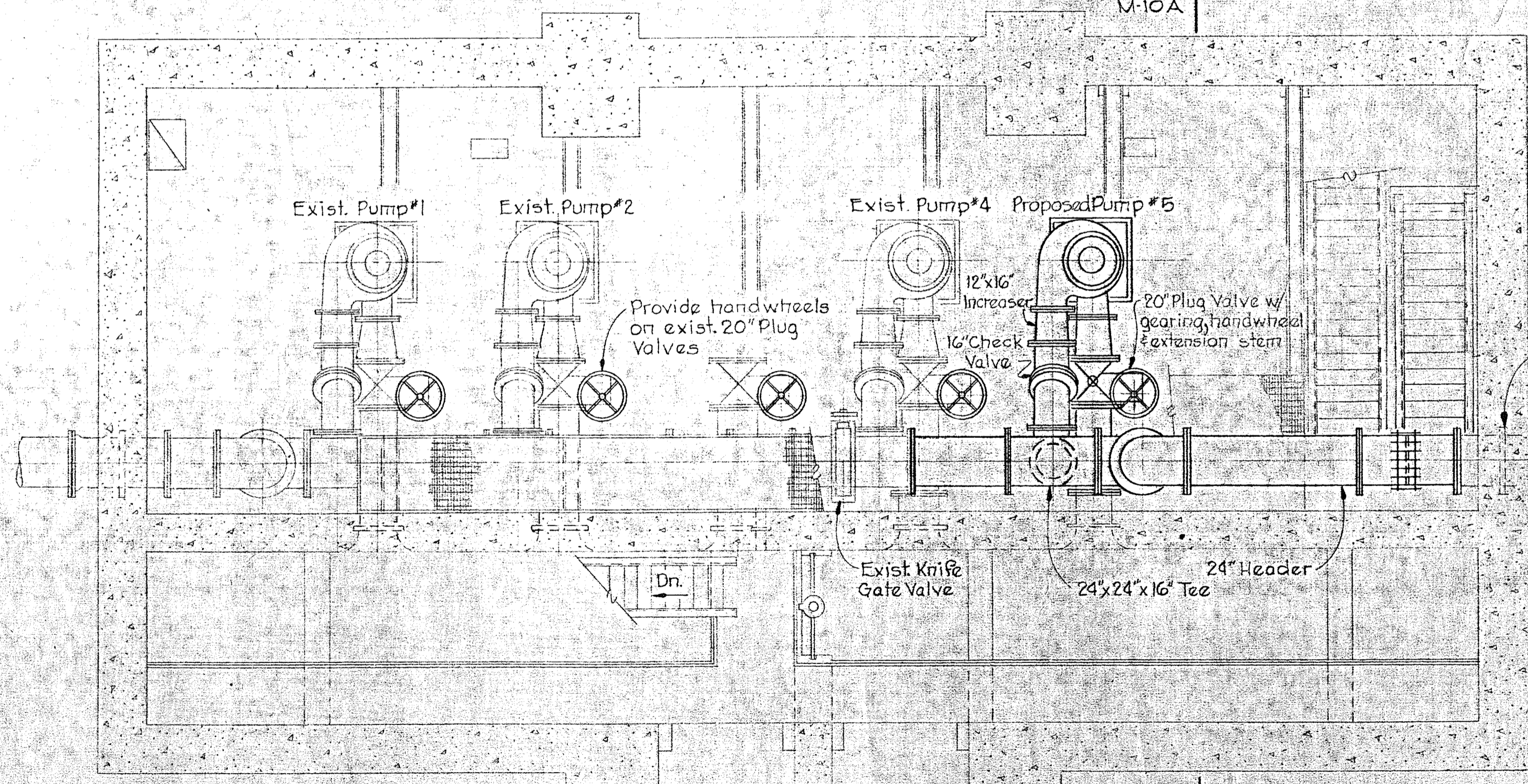
W.O. 6538-2

Addendum

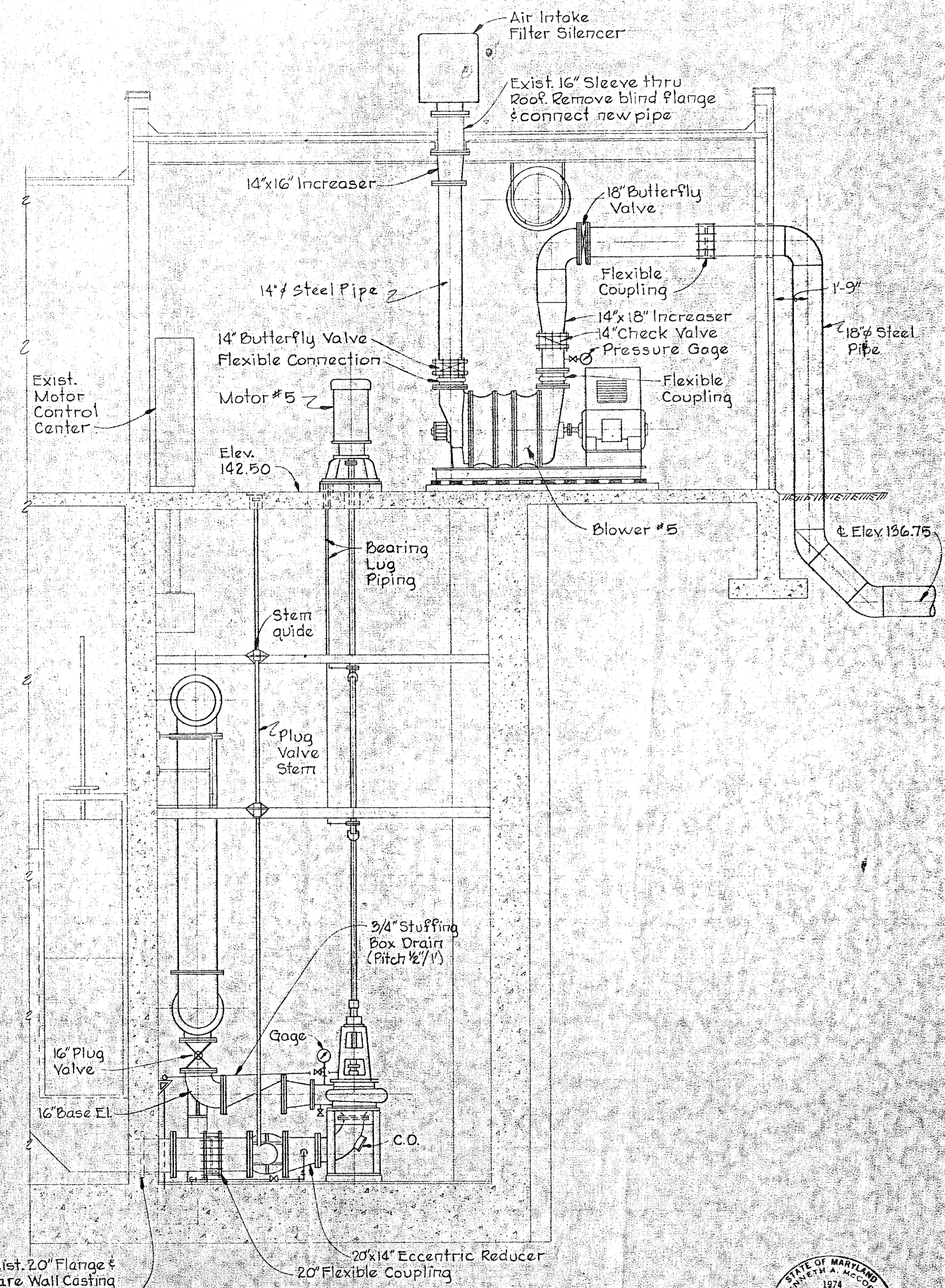
BRUNING 44-510 14778



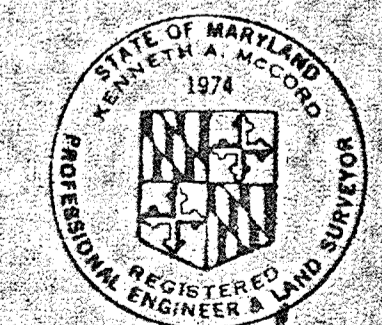
PLAN-OPERATING ROOM
Scale: 1/4"=1'-0"



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



SECTION M10A/M10
Scale 1/4"=1'-0"

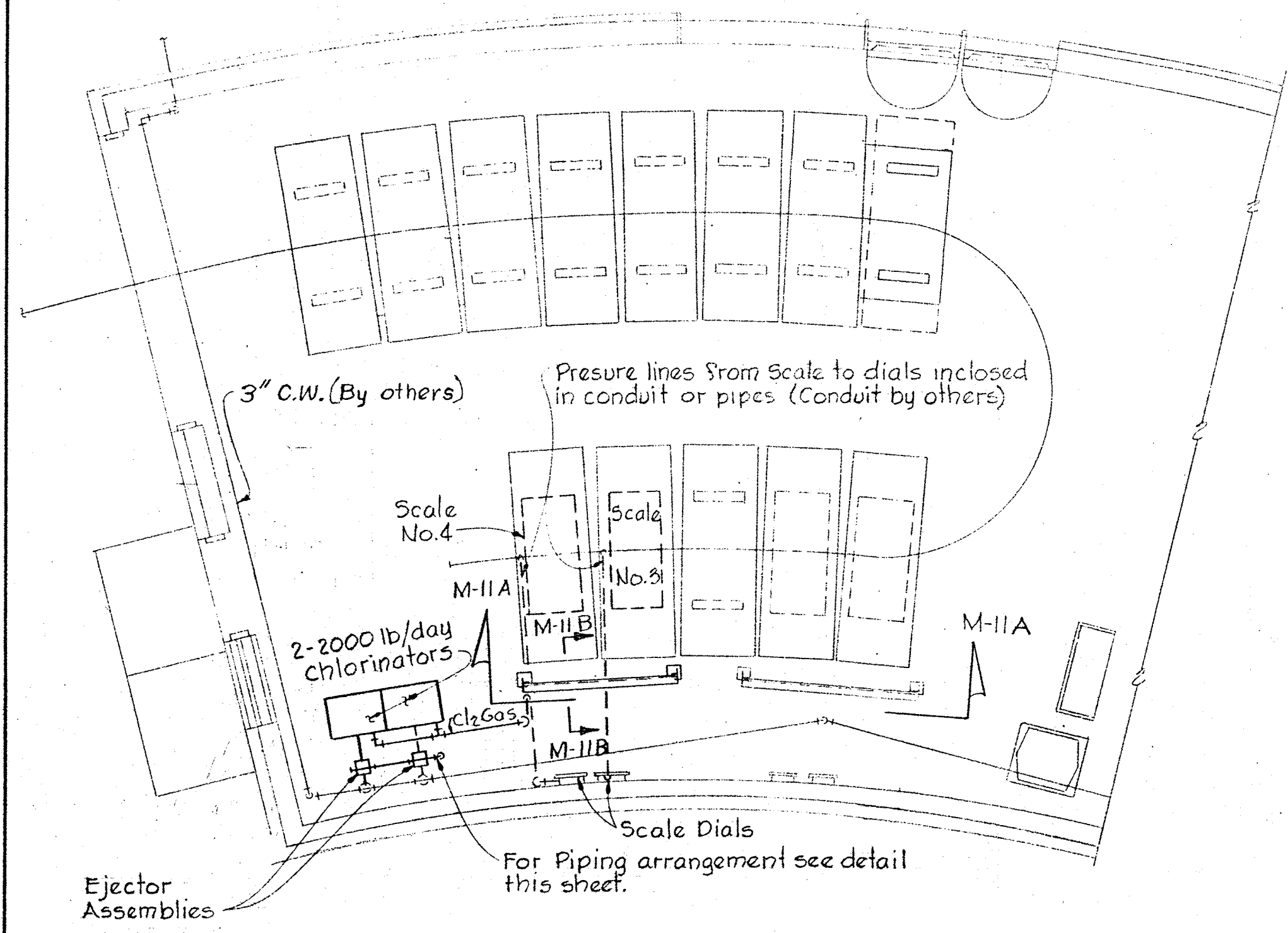


Kenneth A. McCord

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 DATE <i>W. O. Fulbert</i> CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	RAW SEWAGE PUMPING STATION ADDITIONS PLANS AND SECTIONS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.3	DRAWING NO. 33 OF 45 SCALE AS SHOWN SHEET M-10
---	---	--------------------	---	--	--

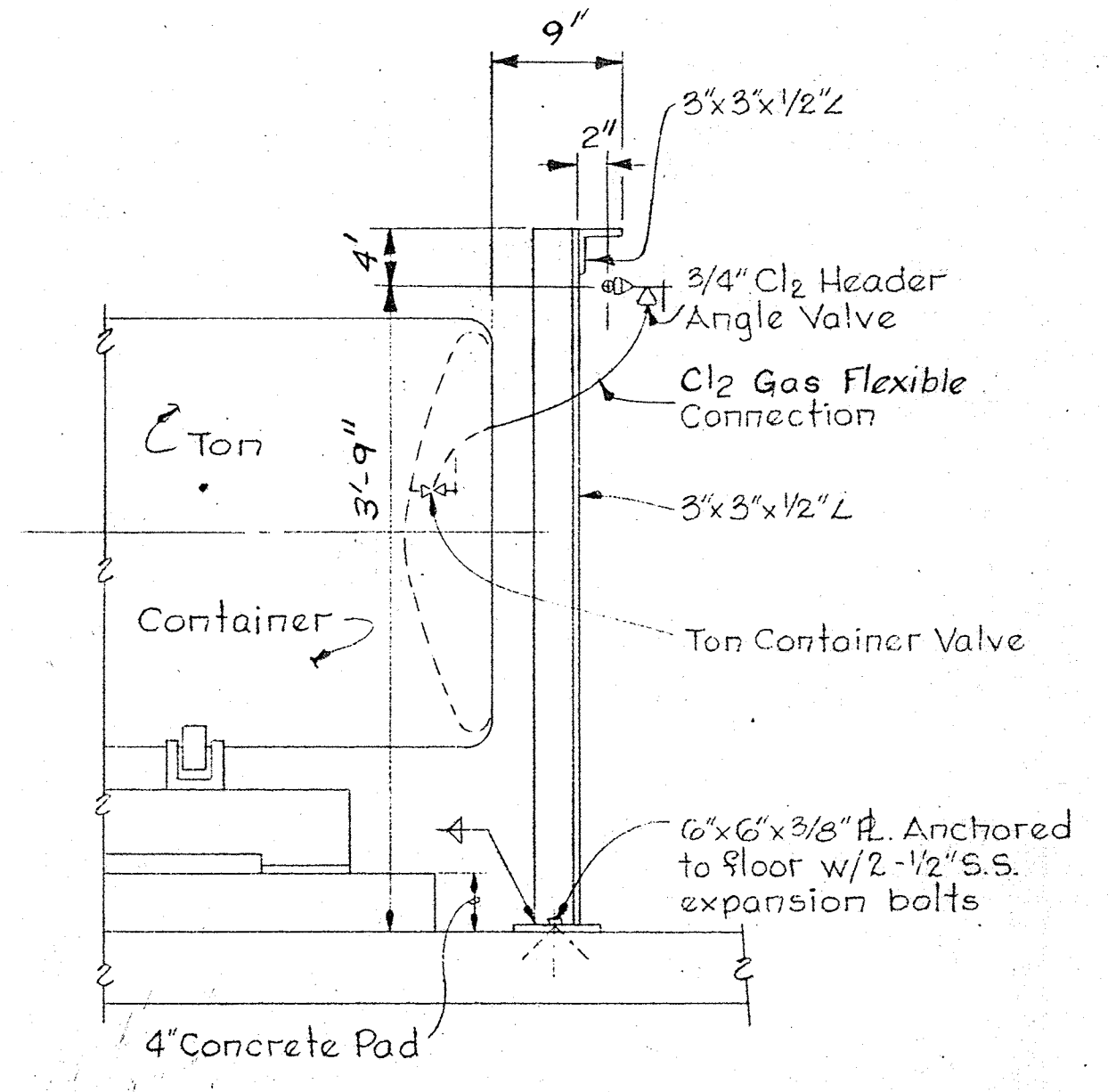
W. O. 6538-2

BRUNING 44-510 14778

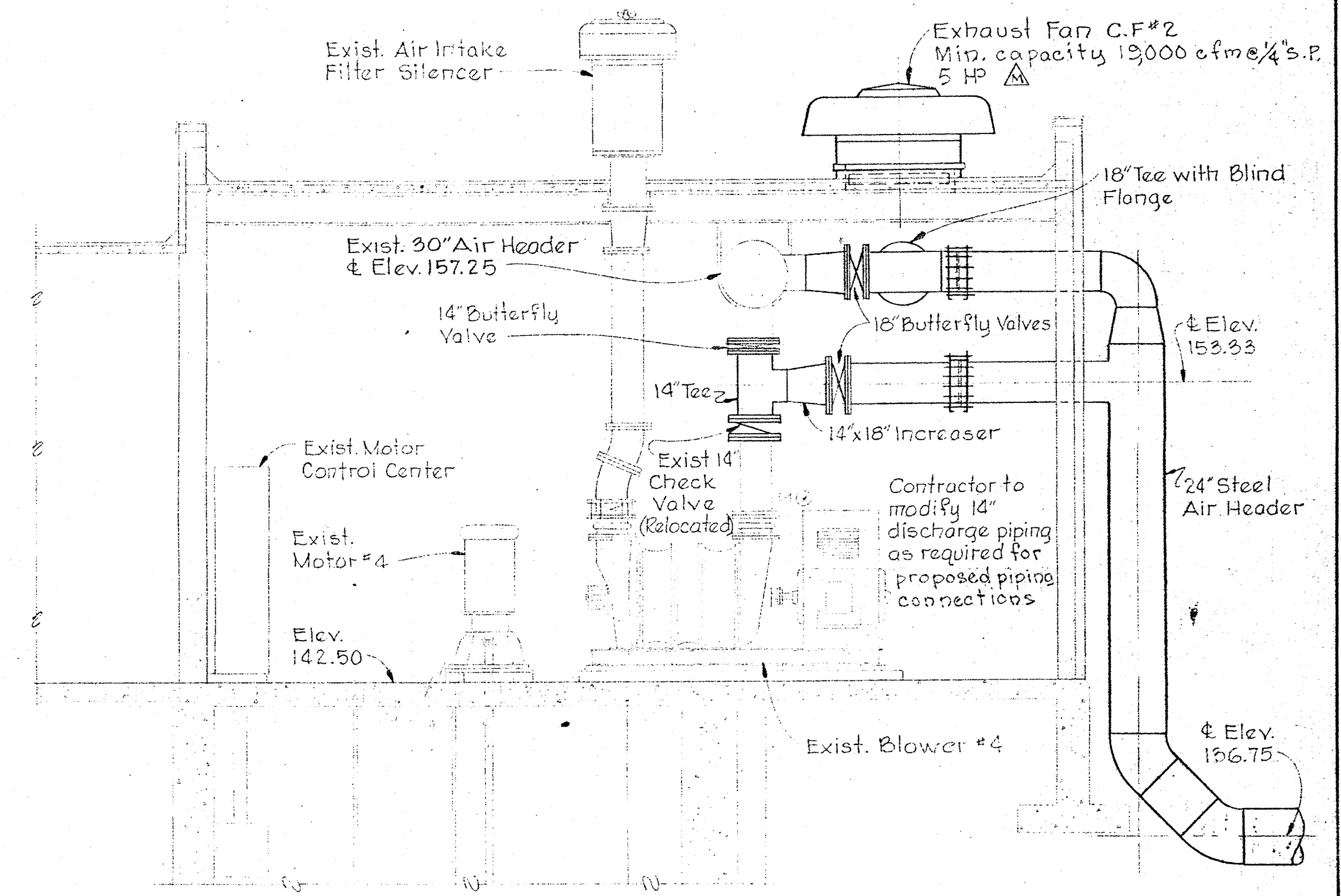


Notes
 1-Connect Cl₂ Gas piping between Chlorinator and Ejector as recommended by manufacturer.
 2-Vent piping from Chlorinators to exterior as recommended by manufacturer

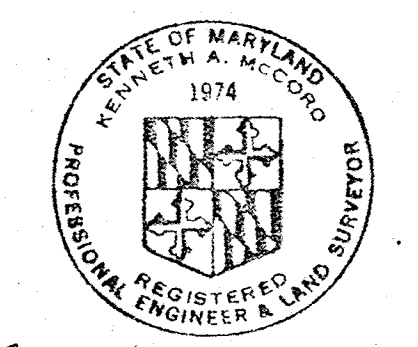
► PLAN SLUDGE OXIDATION BUILDING ◀
 Scale: 1/4" = 1'-0"



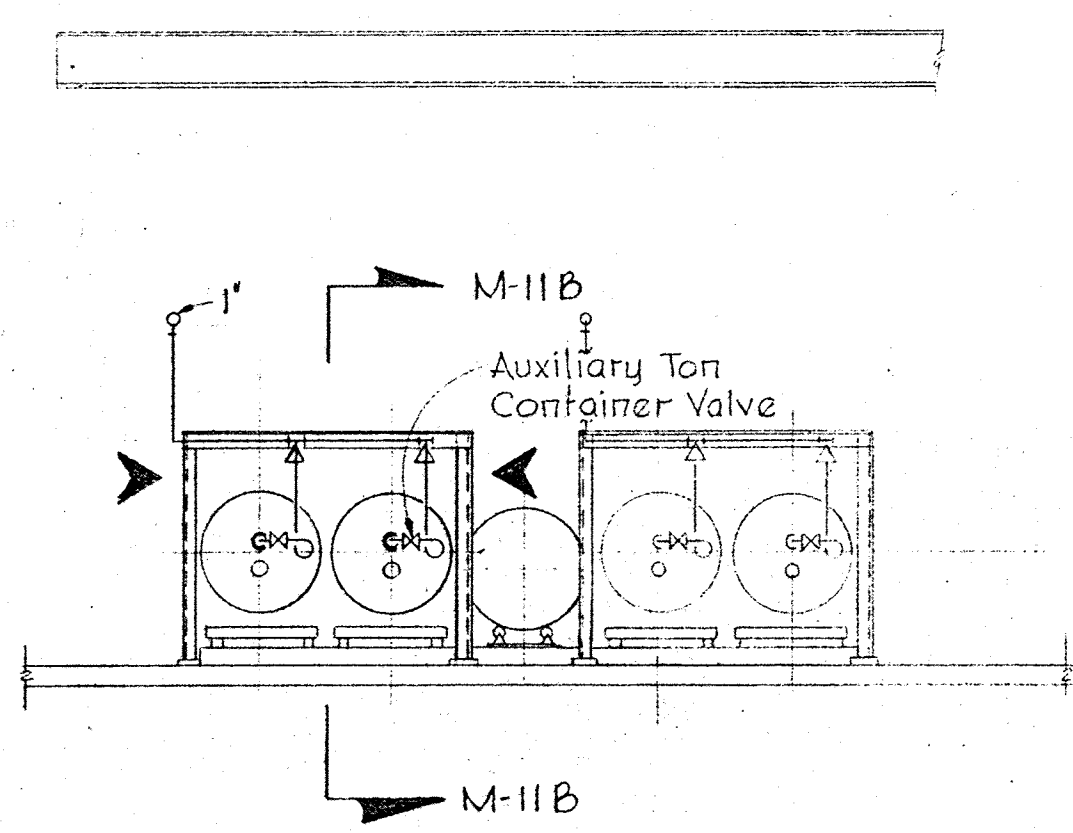
SECTION M-IIB/M-II
 Scale: 1" = 1'-0"



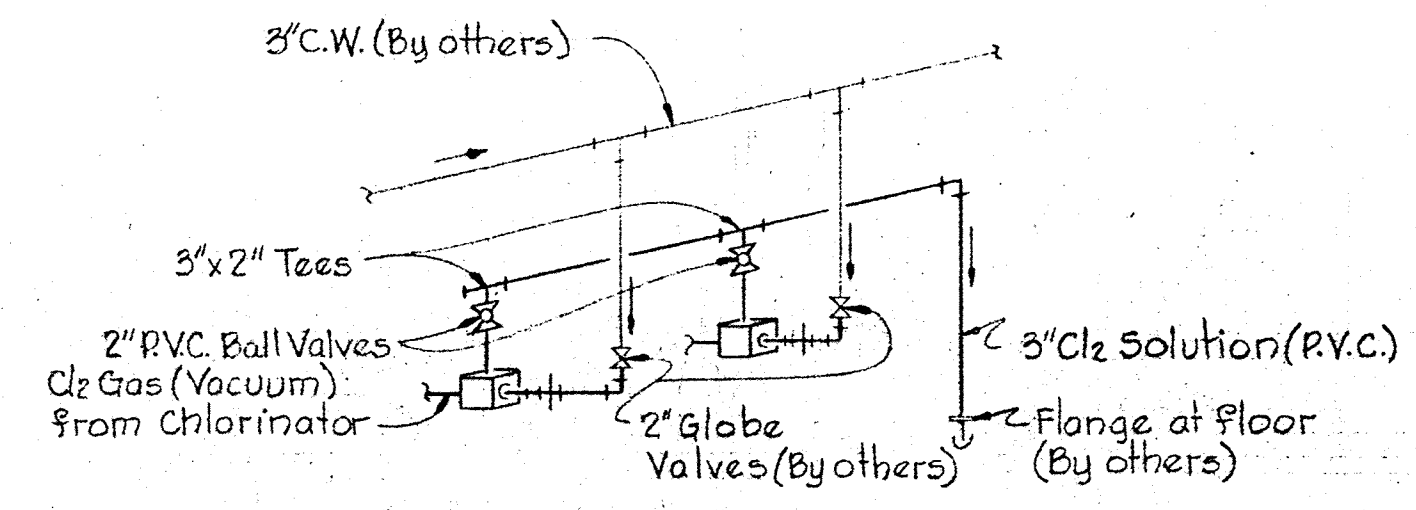
SECTION M-IIC/M-IO
 Scale: 1/4" = 1'-0"



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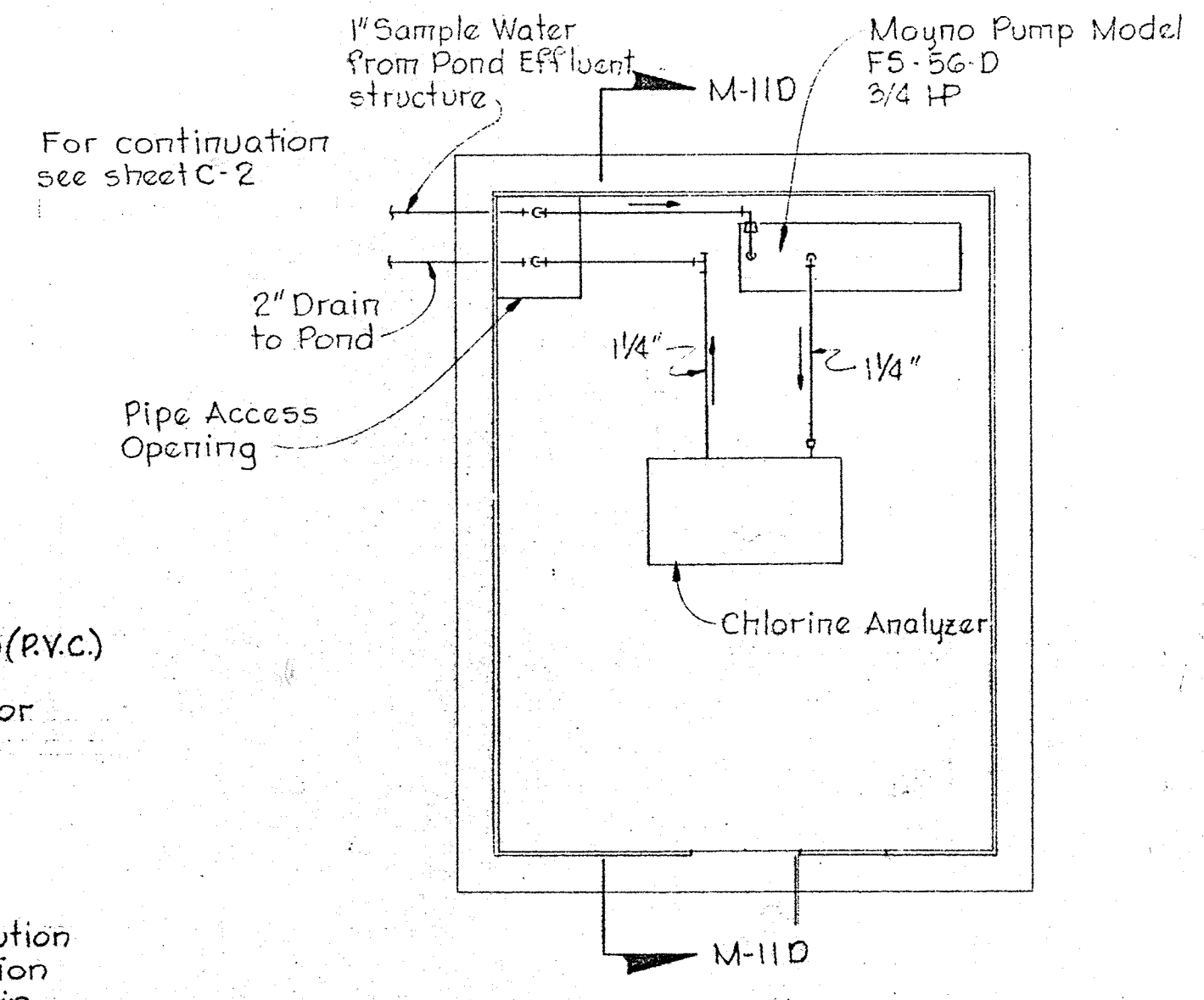


SECTION M-IIA/M-II
 Scale: 1/4" = 1'-0"

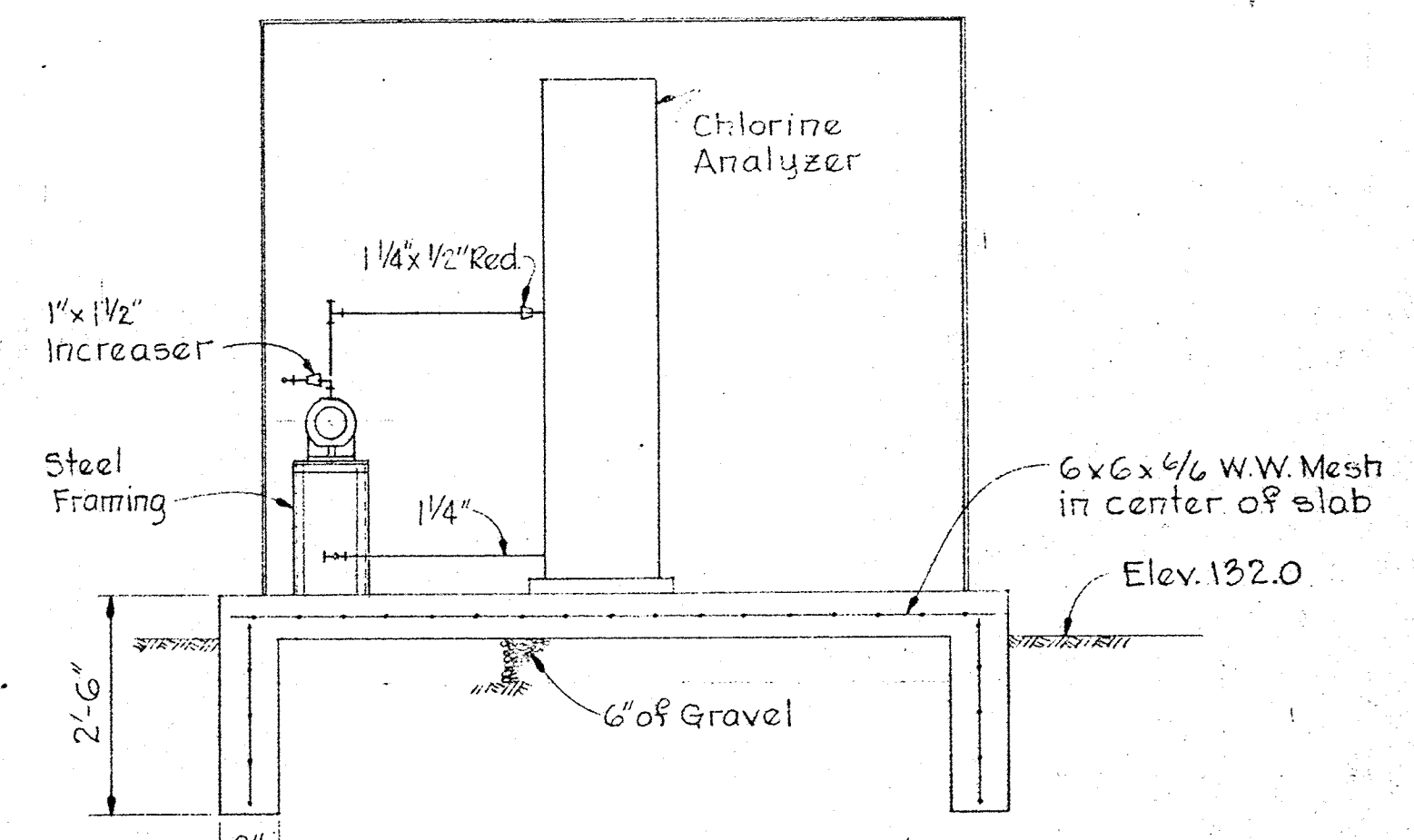


► EJECTOR-PIPING DIAGRAM ◀
 No Scale

1-After chlorine contact pond is in service and 3" solution piping is in service to pond, remove existing distribution panel; and all solution, water, and chlorine gas piping in existing Chlorine Room. Turn over all equipment and piping to County and repair all damaged wall surfaces. Cap all existing piping at wall.



▲ PLAN-CHLORINE MONITOR BUILDING
 Scale: 1/2" = 1'-0"



SECTION M-IIID/M-II
 Scale: 1/2" = 1'-0"

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

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 DATE 3-30-73
 K. D. Fallick
 CHIEF, BUREAU OF ENGINEERING

CONTRACT NO. 526-S

MISCELLANEOUS
 PLANS, SECTIONS & DETAILS

SAVAGE WASTEWATER
 TREATMENT PLANT ADDITION NO.3

DRAWING NO. 34 OF 45
 SCALE AS SHOWN

SHEET M-II

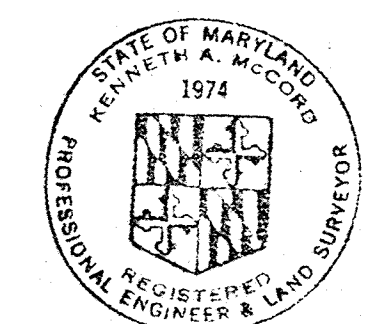
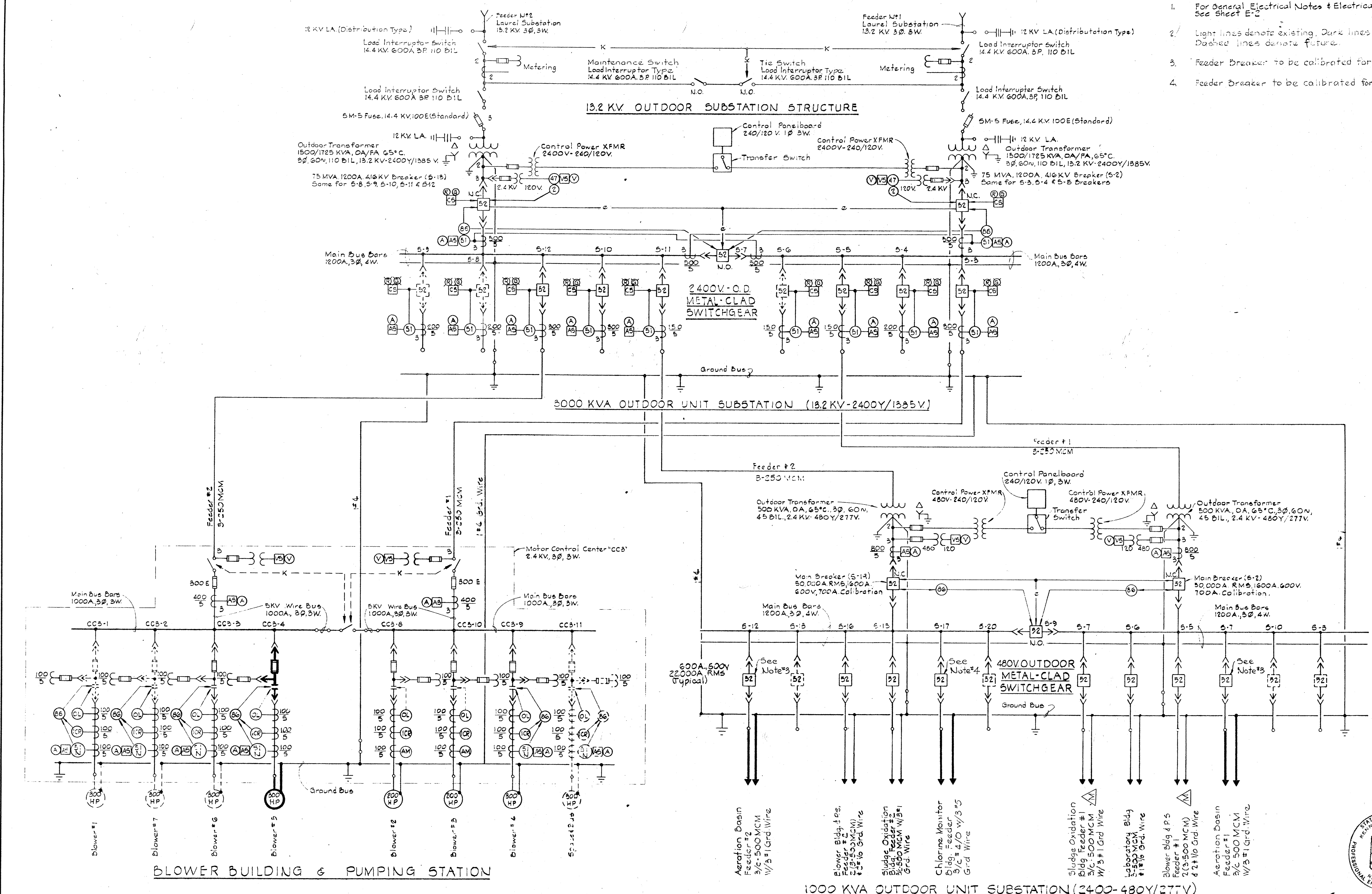
W. O. 6538-2 ► Clarification - Change Order No. 2-19-74

Construction Modification

BRUNING 44-510 14778

NOTES

1. For General Electrical Notes & Electrical Legend See Sheet E-2
2. Light lines denote existing, Dark lines denote new, Dashed lines denote future.
3. Feeder Breaker to be calibrated for 500A.
4. Feeder Breaker to be calibrated for 250A.



Kenneth A. McLeod

<p>WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3-30-73 W. O. Filbert CHIEF - BUREAU OF ENGINEERING</p>	<p>CONTRACT NO. 526-S</p>	<p>PLANT ONE LINE WIRING DIAGRAM</p>	<p>SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3</p>	<p>DRAWING NO. 35 OF 45 SCALE AS SHOWN</p>
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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 Telephone Wall Desk Extension
- ▽ Outlet Intercommunication
- ⊙ Junction Box
- EXP WP Explosion proof Weatherproof Where Indicated
- S S₂ S Switch Single Pole Double Pole With Pilot Light
- S₃ S₄ Switch Three Way Four Way
- S_k S_o Switch Key Operated Door Operated
- SWC SWC Switch Momentary Contact Remote Control
- C-1 Contactor Number As Indicated
- ⊙ h ⊙ of Thermostat Heating Cooling Freeze Stat
- A Aquastat
- Unit Heater
- Generator
- ⊙ Motor Constant Speed Variable Speed
- M X Starter Manual Combination
- S S Starter Magnetic (FVNR) Magnetic (FVR)
- S Starter Magnetic (FVNR-25 (Two Speed))
- F Disconnect Switch Fused Unfused
- Z Selector Switch Two Position
- Secondary Motor Controls
- Lighting Panel
- Power Panel
- Telephone Or Signal Cabinet
- 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 In Or On Ceiling Or Wall
- Conduit In Or Under Floor
- T Conduit Telephone
- PT Conduit Private Telephone
- FA Conduit Fire Alarm
- C Conduit Communication
- E Conduit Emergency
- Conduit Stub Up Stub Down
- Conduit Seal
- Disconnect Circuit Breaker
- Outlet Floodlight
- Pushbutton Station One Two & Three Pushbutton
- Horn
- Bell
- CC-6a Motor Control Center Wire & Cable Run Number
- SI-1 Switchgear Wire & Cable Run Number
- SSI-1 Unit Substation Wire & Cable Run Number
- PC-4 Control Cable Number

UNDERGROUND

- $\frac{A}{W}$ Ductbank Number Of Ducts As Indicated
- 2" C Existing Conduit Size As Indicated
- DB-2#4 Existing Direct Buried Cable Number & Size As Indicated
- DB-2#4 Direct Buried Cable Number & Size As Indicated
- C Conduit Size As Indicated

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

LOCATION SYMBOLS FOR ELEMENTARY CONTROL DIAGRAMS

- Device located in Motor Control Center "CCB"
- Device located at respective unit
- ▲ Device located at respective motor
- ⊙ Device located in Starter or Contactor
- ⊙ Device located in Instrument Panelboard (Lab. Bldg)
- ⊙ Device located in Motor Control Center "CC1"
- ⊙ Device located in Blower Control Panel
- Device located in Existing Motor Control Center "CC3"
- Device located in Existing Motor Control Center "CC2"
- △ Device located in Existing "CC2" Pump Control Section
- _{DR} Device located at Door, Door No. as noted

MOTOR CONTROL CENTERS 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

ONE LINE/ELEMENTARY

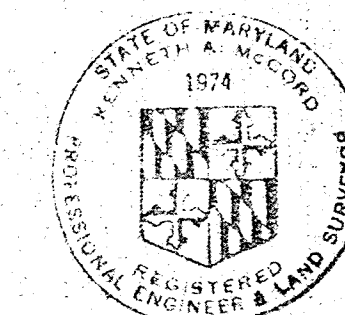
- ↳ Molded Case Circuit Breaker
- ⊖ Oil Circuit Breaker
- Selector Switch
- Disconnecting Switch
- Interrupter Switch
- Selector Interrupter Switch
- Knife Switch
- |— Contacts Normally Open
- |— Contacts Normally Closed
- U— Current Transformer
- }— Potential Transformer
- ⊕ Power Transformer
- ⊕ Ground
- Resistor
- Fuse
- ⊖ Pothead or Stress Cone
- Pushbutton Momentary Type
- Pressure Switch
- Float Switch
- Flow Switch
- Limit Switch
- Thermostat
- Disconnect Link
- ⊕ Lightning Arrester
- Incoming Line
- ← Outgoing Line
- Tie Line
- Capacitor
- Rectifier
- m--- Mechanical Interlock
- e--- Electrical Interlock
- k--- Key Interlock
- Overcurrent Trip Thermal Type
- ⊙ Relay Instantaneous Overcurrent
- ⊙ Relay Time Overcurrent
- ⊙ A.C. Power Circuit Breaker
- ⊙ Motor (Three Phase) Constant Speed Variable Speed
- S S Starter Magnetic (FVNR) Magnetic (FVR)
- S Starter Magnetic (FVNR-25 (Two Speed))
- RTM Running Time Meter
- ⊙ Indicating Light Color As Indicated By Letter
- ⊙ Solenoid Motor (Single Phase)
- ⊙ Contactor Coil Starter Coil Number As Indicated
- A AS Ammeter Ammeter Switch
- V VS Voltmeter Voltmeter Switch
- W WS Wattmeter kilowatt Meter
- ⊙ Test Block Test Switch
- ⊙ Recording Recording Demand Meter
- ⊙ Relay Number As Indicated
- ⊙ Instrument Switch Control Switch
- ⊙ Ground Lamps
- ⊙ Power Factor Meter
- ⊙ Timer Number As Indicated
- ⊙ Watt Hour Meter Watthour Meter
- ⊙ Phase Sequence Voltage Relay
- ⊙ Tripping Relay Lockout Type Differential Relay
- ⊙ Automatic Transfer Switch
- Contactor
- ⊙ Relay Time Overcurrent w/Instantaneous Trip
- ⊙ Ground Overcurrent Relay
- ⊙ Tripping Relay
- ⊙ Demand Meter
- ⊙ Frequency Meter
- ⊙ Phase Meter
- ⊙ Position Indicator
- ⊙ Ground Sensing Relay
- ⊙ A.C. Power Circuit Breaker With Solid State Trip & Ground Device
- ⊙ Receptacle & Plug Polarized
- ⊙ Horsepower Meter
- ⊙ Permissive Control Switch
- ⊙ Reverse Phase Or Phase Balance Current Relay
- ⊙ Time Delay Relay
- ⊙ Voltage Unbalance Relay
- ⊙ Liquid or Gas Pressure Relay
- ⊙ Pushbutton Maintain Type

GENERAL ELECTRICAL NOTES

1. For PANELBOARD SCHEDULES see Specifications DETAILED ELECTRICAL REQUIREMENTS.
2. For explanation of Lighting Fixture Types shown on Dwg. 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 center line 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 in the de-energized.
8. For Electrical Work on Secondary Clarifier See Sheets L19 & E8
9. For Control Cable Schedule see Dwg. E.

EXTERIOR

- ⊙ Mercury 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 & Rock



Kenneth A. McLeod

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

3-30-73
DATE *W. O. Falbert*
CHIEF - BUREAU OF ENGINEERING

CONTRACT NO. 526-S

ELECTRICAL
LEGEND

SAVAGE
TREATMENT PLANT ADDITION NO.

DRAWING NO. 36
OF 45
SCALE AS SHOWN

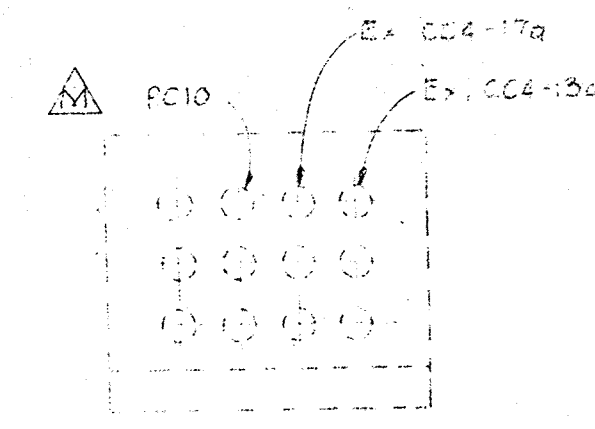
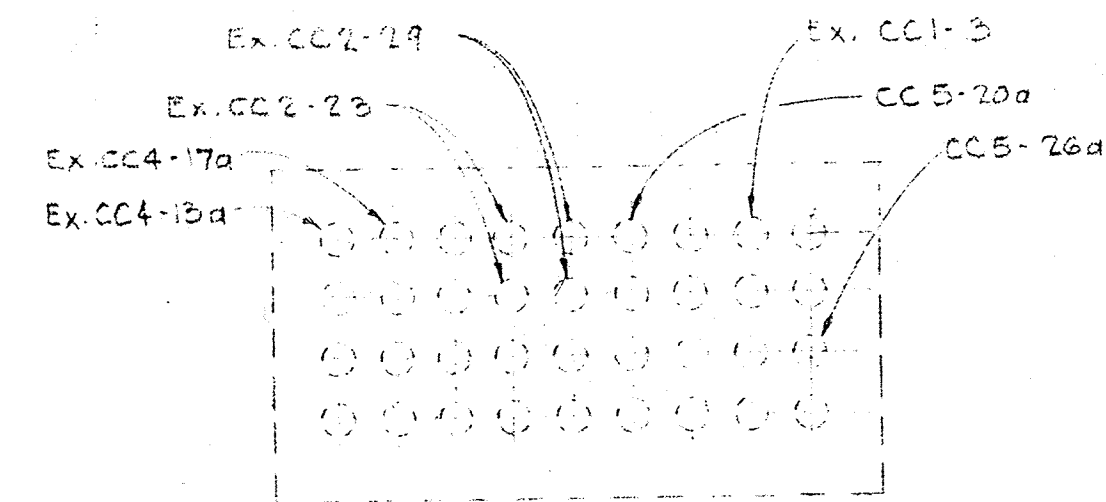
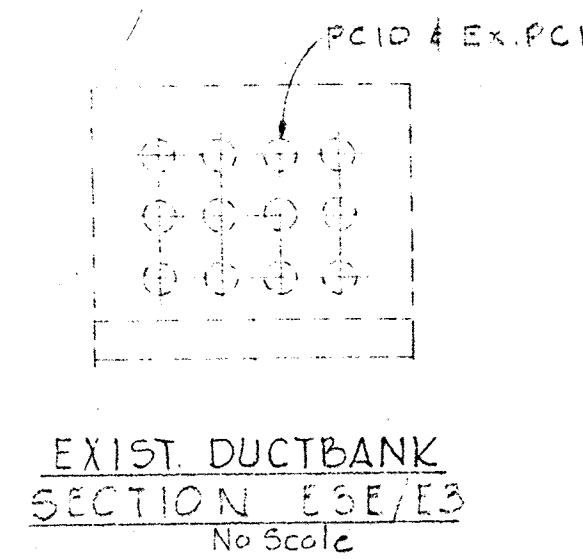
SHEET E-2

W.O. 6538-2

BRUNING 44-510 14778

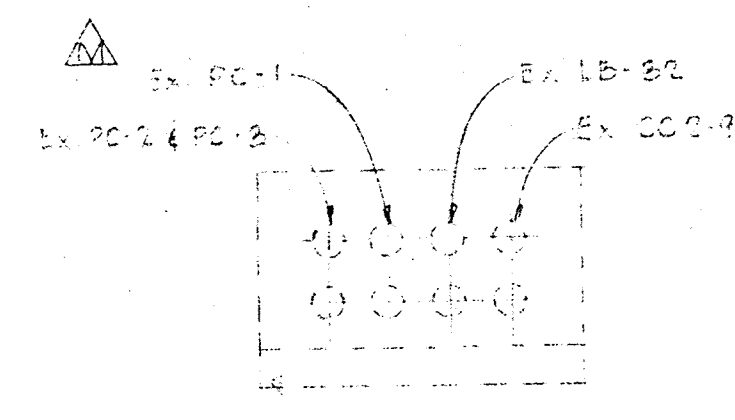
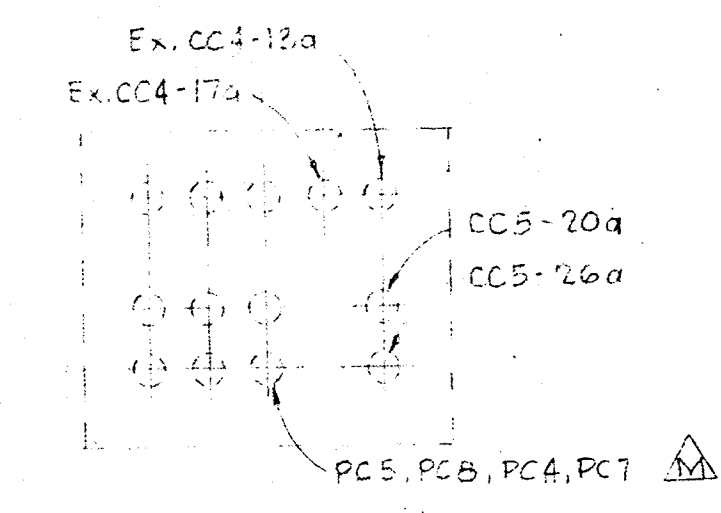
NOTES

1. For General Electrical Notes and Legend, See Sheet E-2
2. Contractor shall core-bore two holes in exist. wall at manhole #2 for two 3" conduits that shall extend to the Chlorine Monitor Bldg. Conduits installed in the exist. wall of manhole #2 shall be made watertight.
3. Contractor shall connect new 12/W Ductbank to exist 12/W Ductbank that exists south of exist. manhole #2.
4. Solid lines denote new, dashed lines denote existing.



SECTION E3A/E3

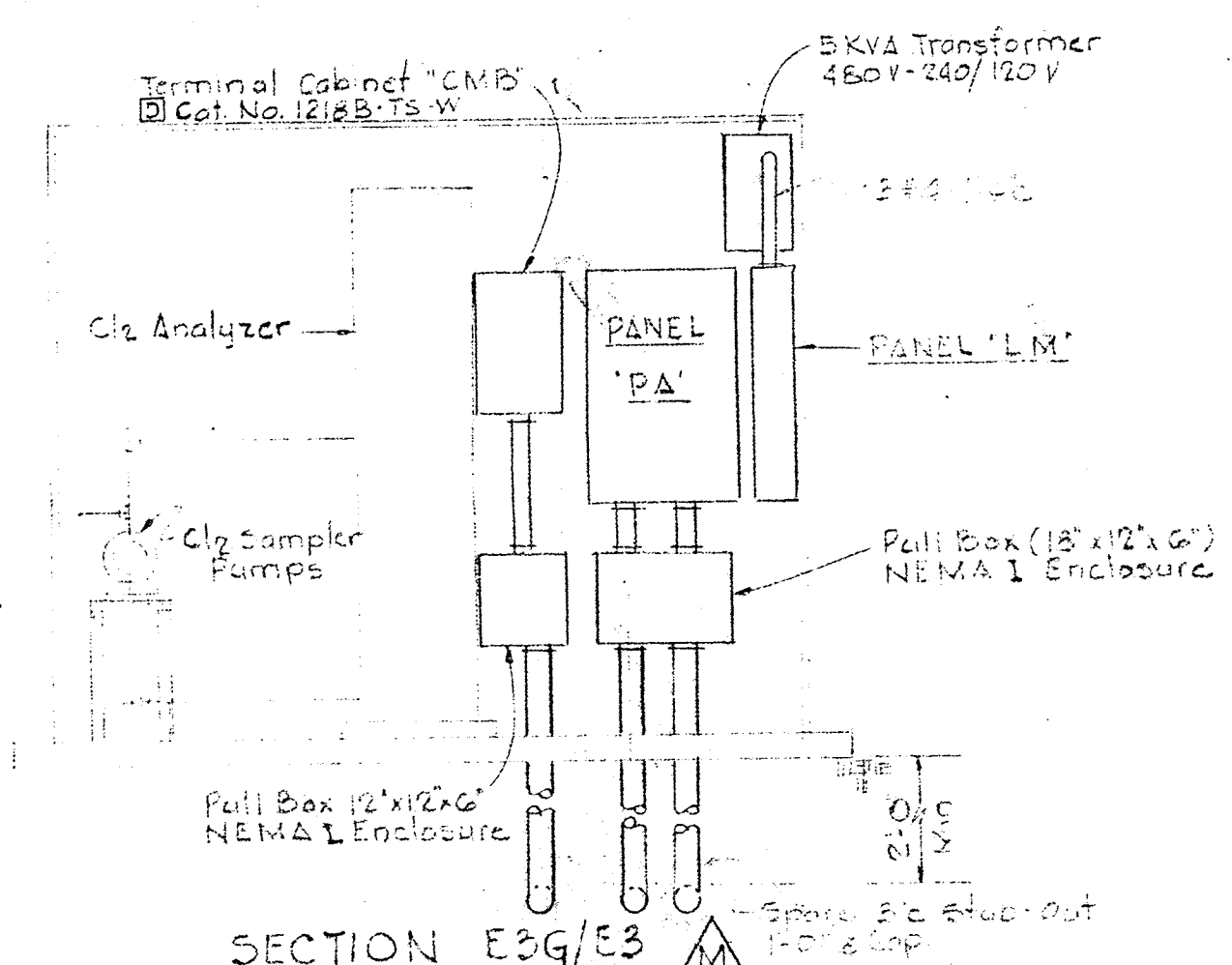
SECTION E3C/E3



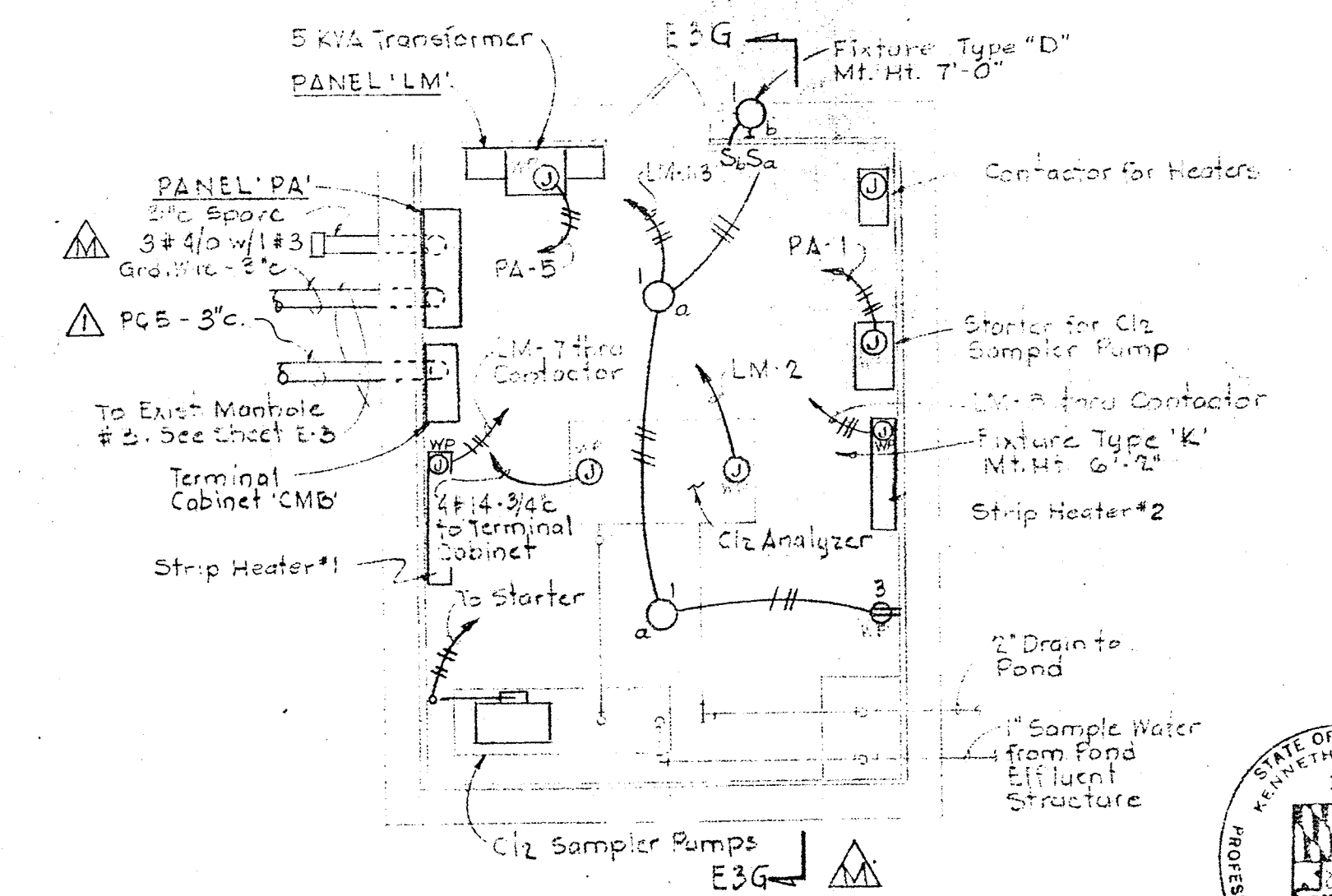
SECTION E3B/E3

SECTION E3D/E3

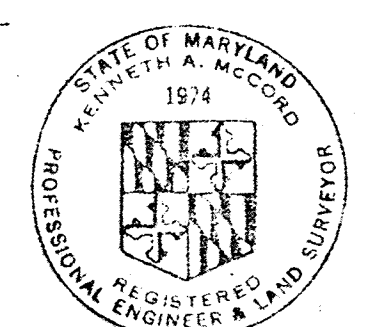
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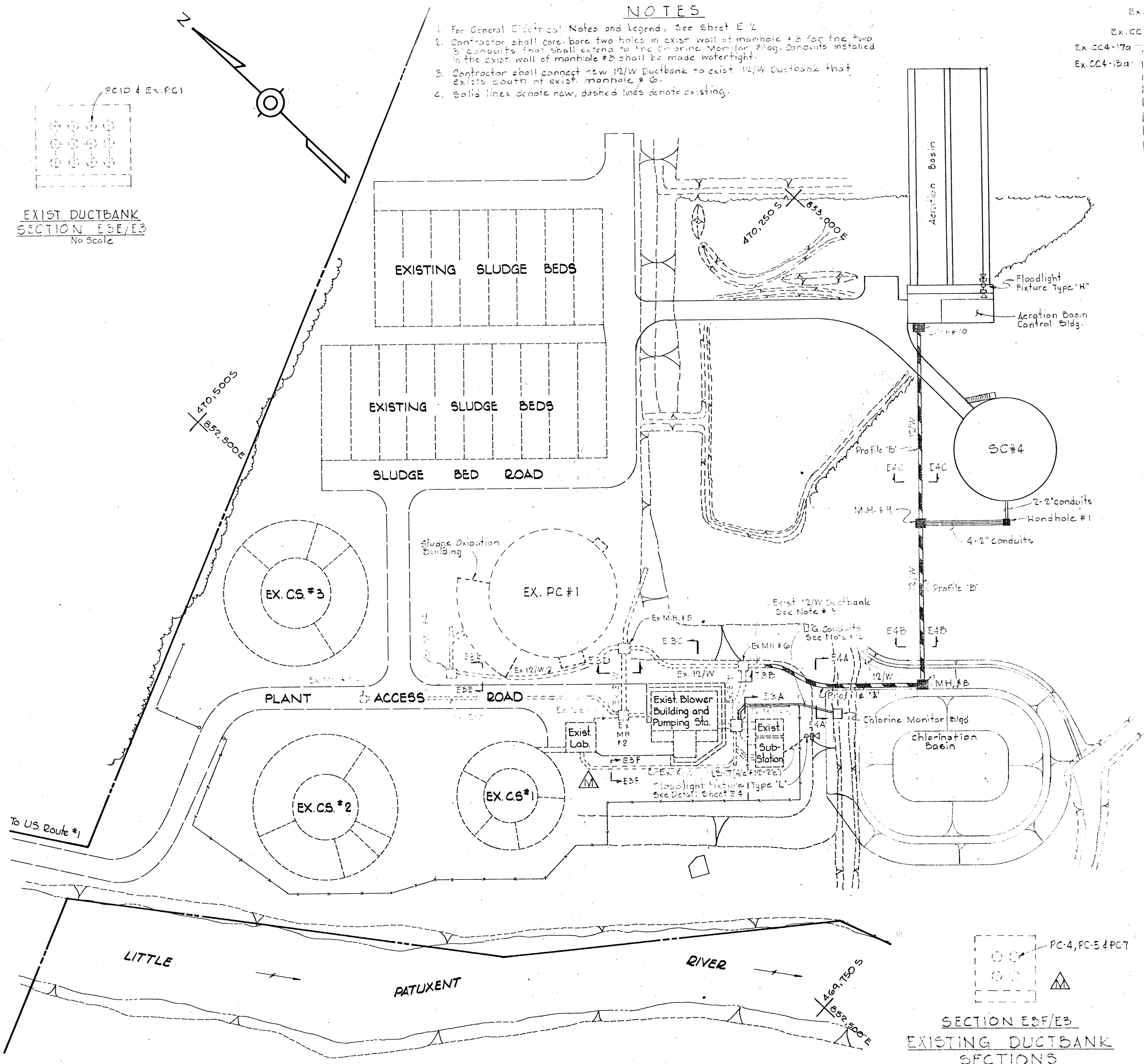
SECTION E3G/E3



PLAN
CHLORINE MONITOR
BUILDING
Scale 1/2"=1'-0"



Kenneth A. McLeod



SECTION E3F/E3
EXISTING DUCTBANK
SECTIONS
No Scale

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 5-30-73
W. O. Falbert
CHIEF - BUREAU OF ENGINEERING

CONTRACT NO. 526-S

ELECTRICAL SITE PLAN

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO.3

DRAWING NO. 37 OF 45

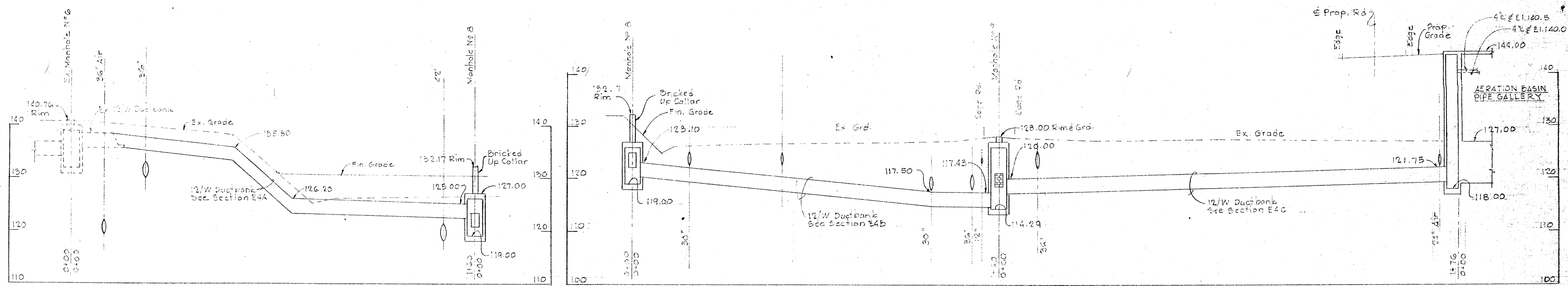
SCALE 1"=50'

Addendum

SHEET E-3

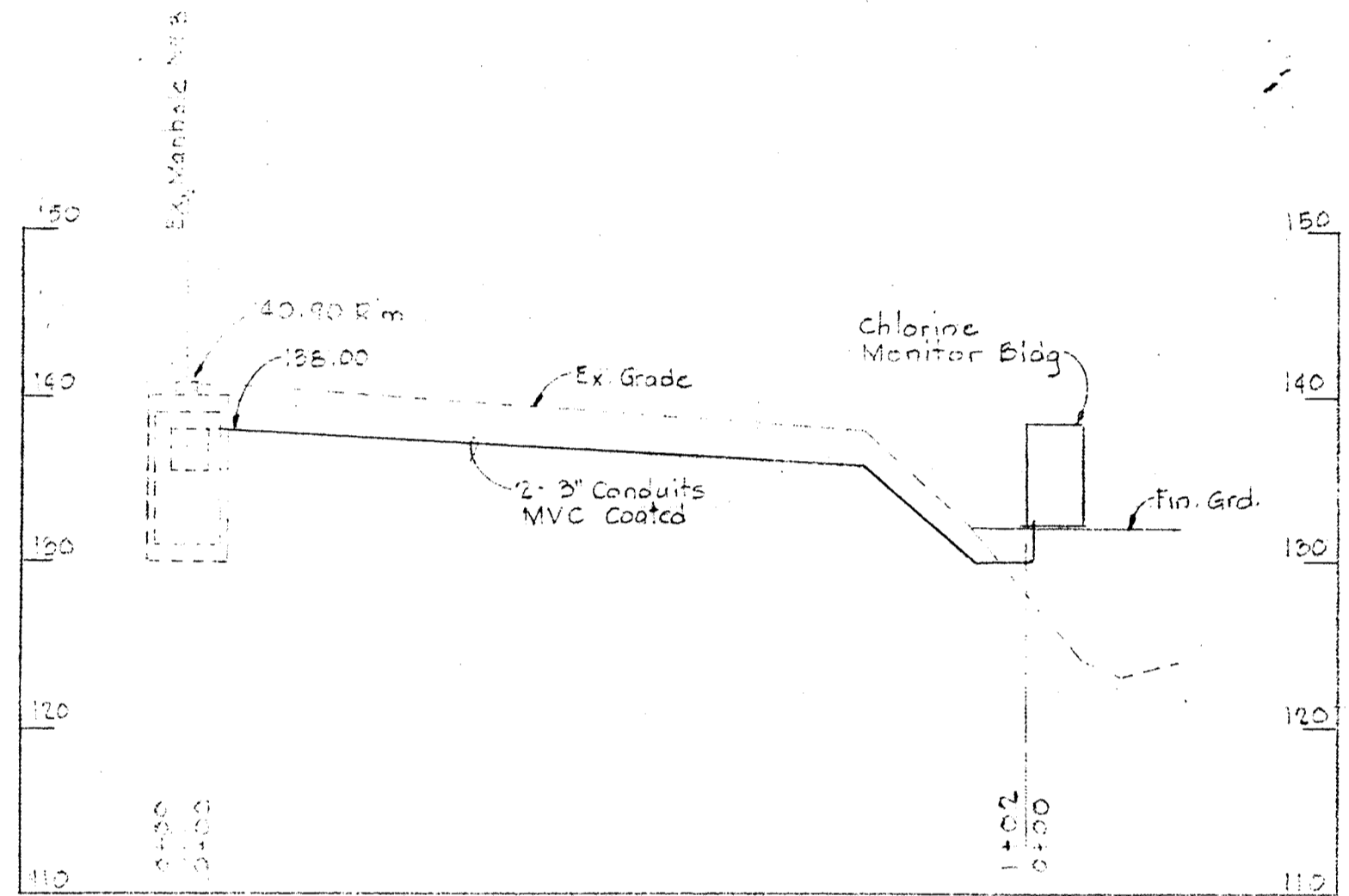
W. O. 6538-2

DRAWING 44-510 14778

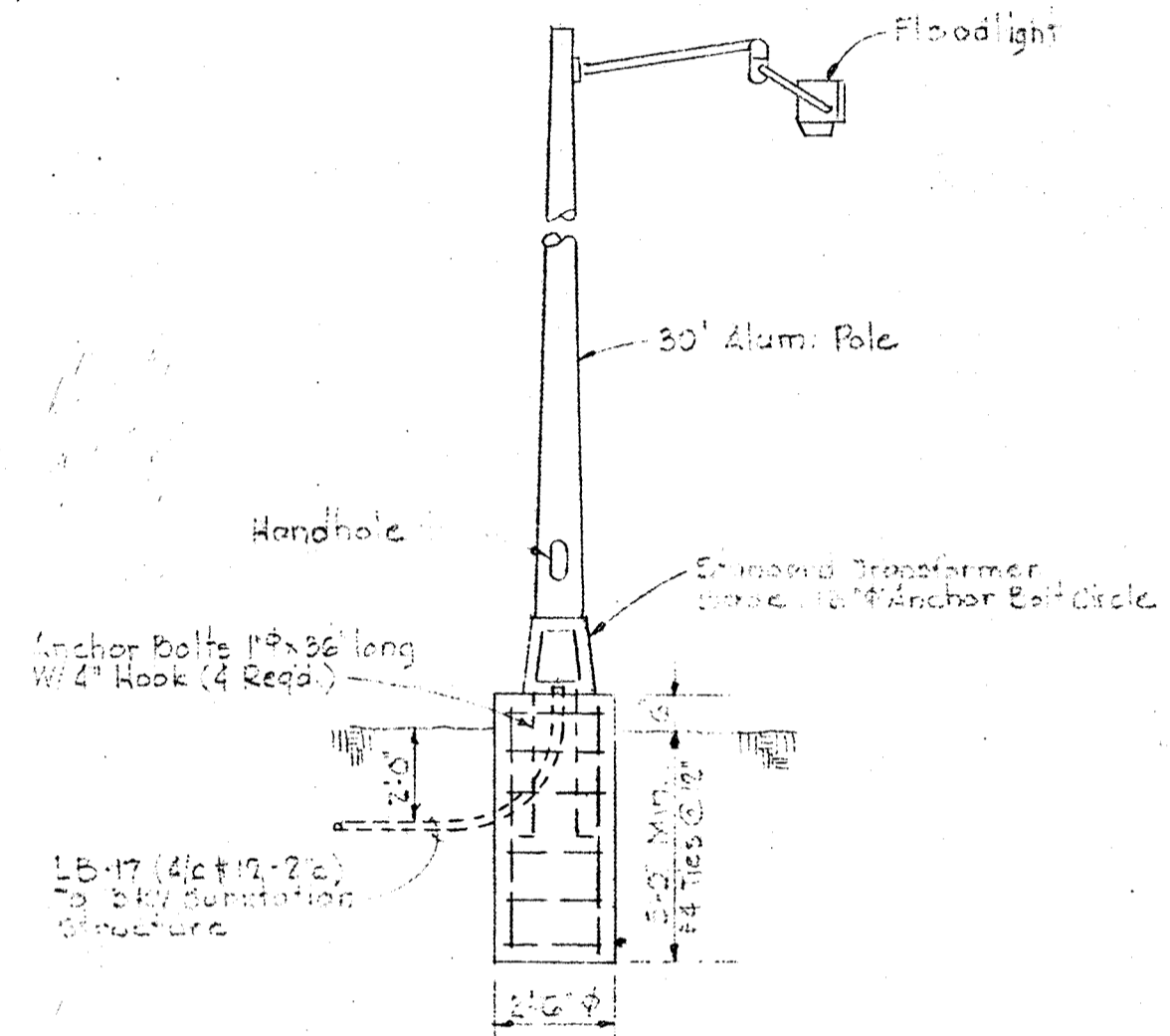


PROFILE "A"
 Horiz: 1" = 20'
 Vert: 1" = 10'

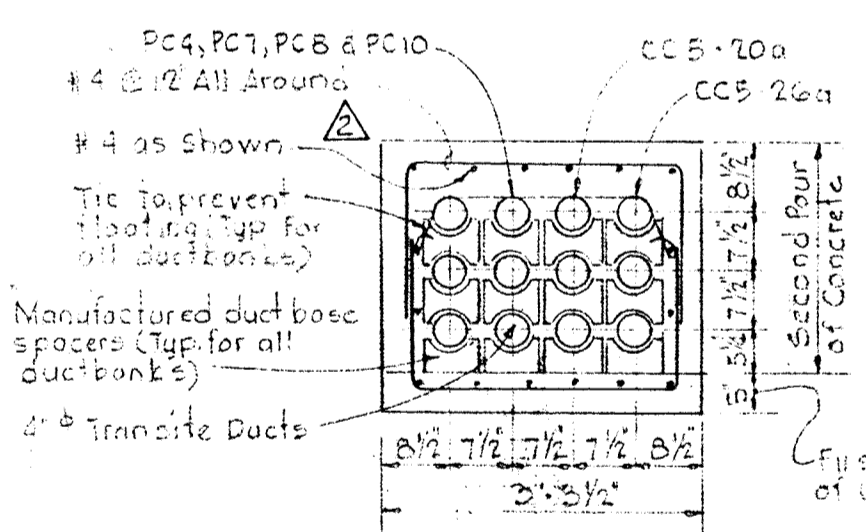
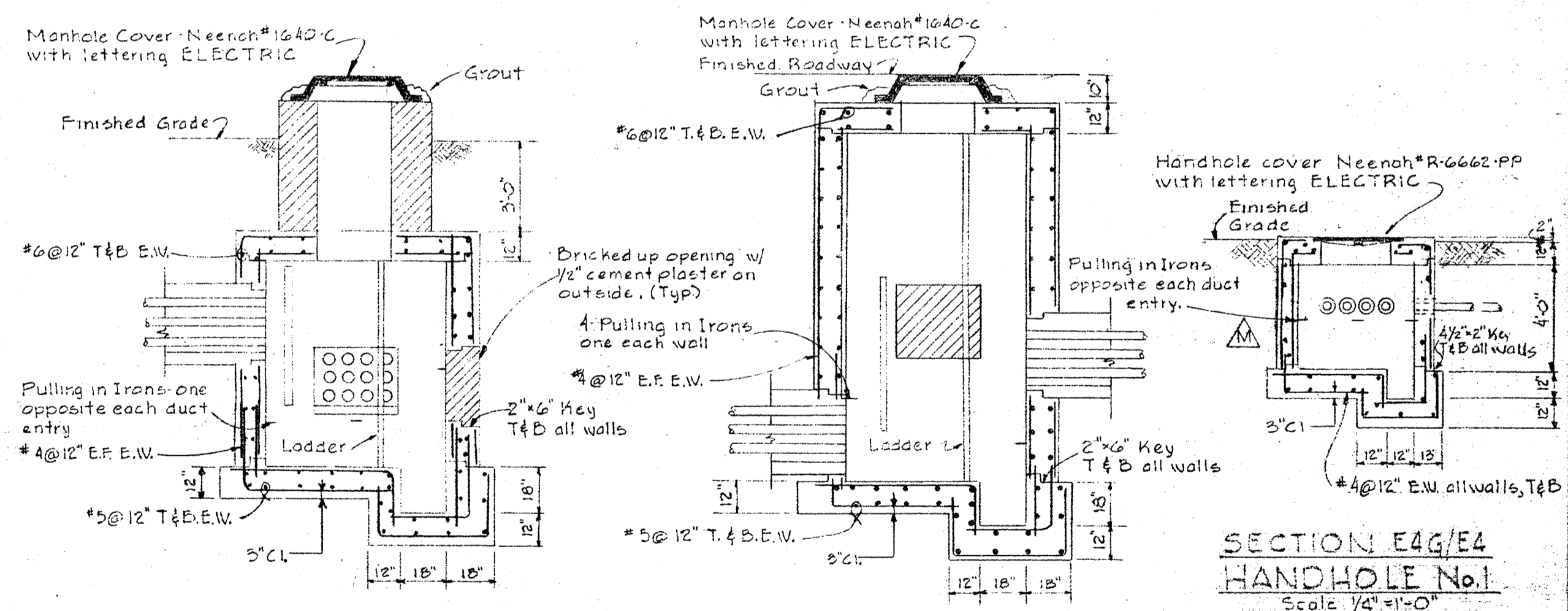
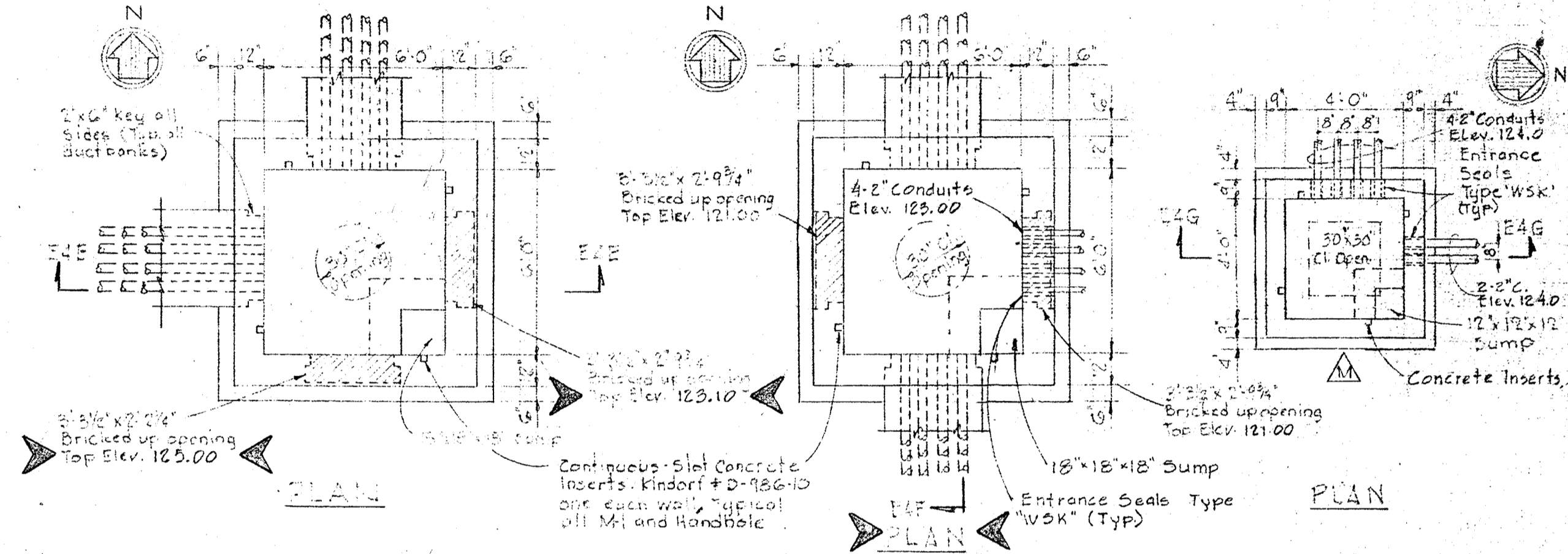
PROFILE "B"
 Horiz: 1" = 20'
 Vert: 1" = 10'



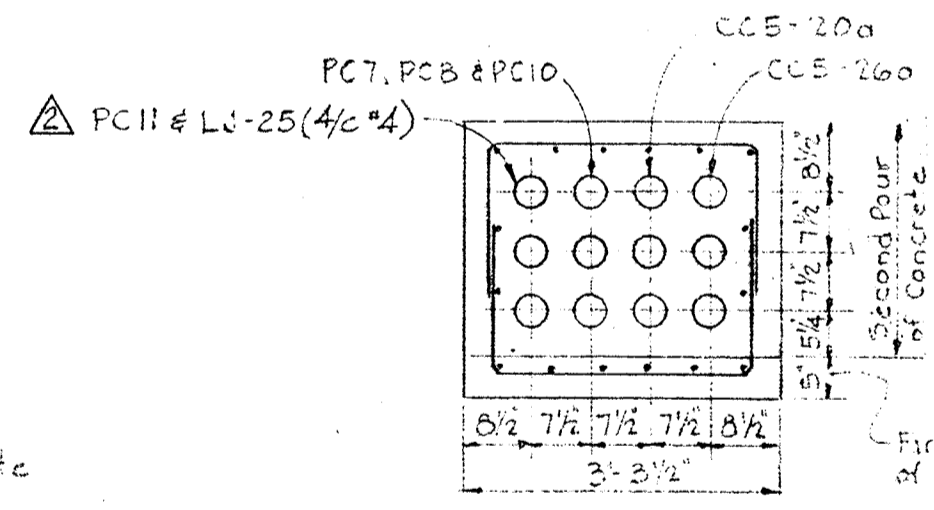
PROFILE "C"
 Horiz: 1" = 20'
 Vert: 1" = 10'



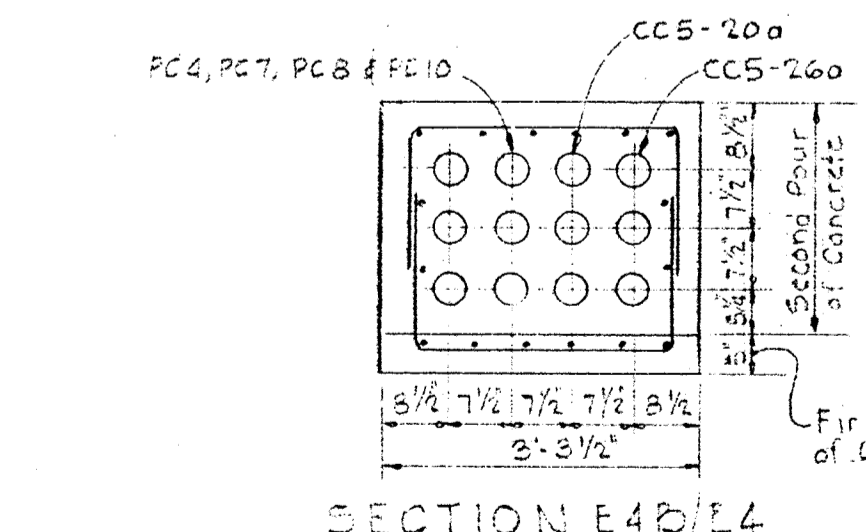
MOUNTING DETAIL
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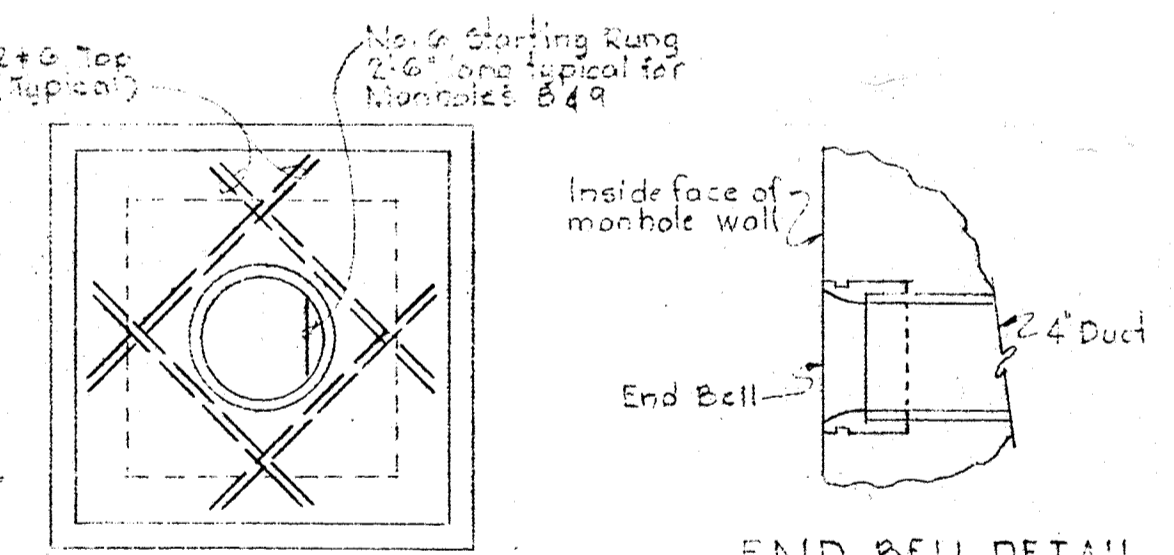
SECTION E4A/E4
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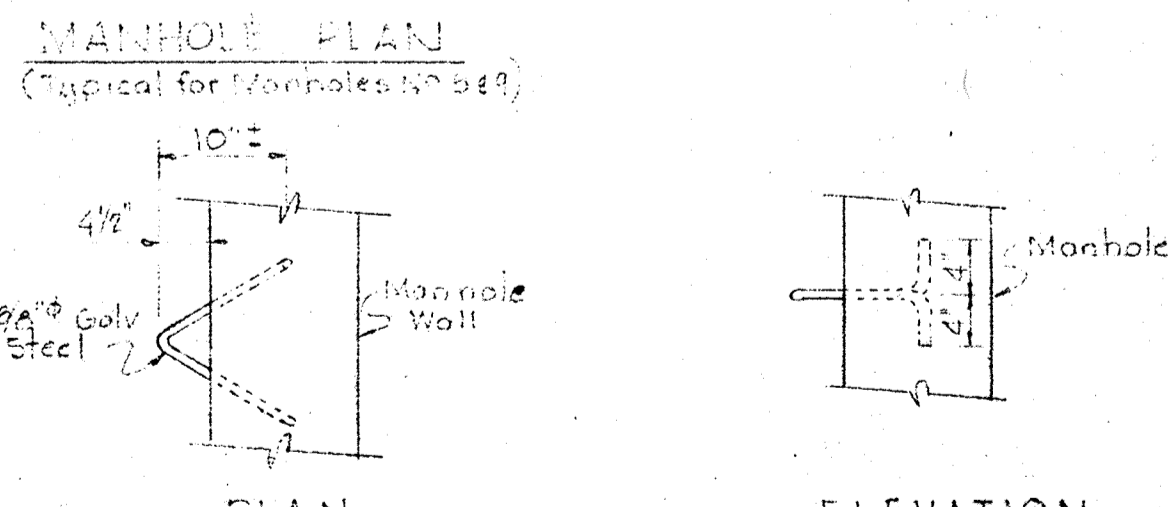
SECTION E4C/E4
 Scale: 1/2" = 1'-0"



SECTION E4D/E4
 Scale: 1/2" = 1'-0"



END BELL DETAIL



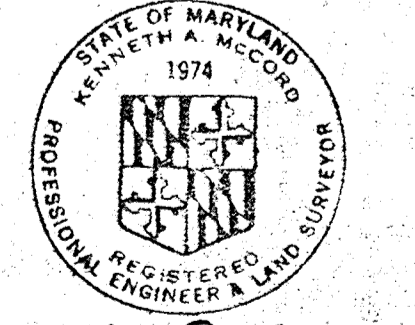
MISCELLANEOUS
 MANHOLE DETAILS
 No Scale

SECTION E4E/E4
 MANHOLE # B
 Scale: 1/4" = 1'-0"

SECTION E4F/E4
 MANHOLE # S
 Scale: 1/4" = 1'-0"

SECTION E4G/E4
 HANDHOLE No. 1
 Scale: 1/4" = 1'-0"

- NOTES:
1. For General Electric Notes and Legend see Sheet E-2
 2. For depths of Manholes and Handholes & Elevation of Duct banks See Profiles Above.

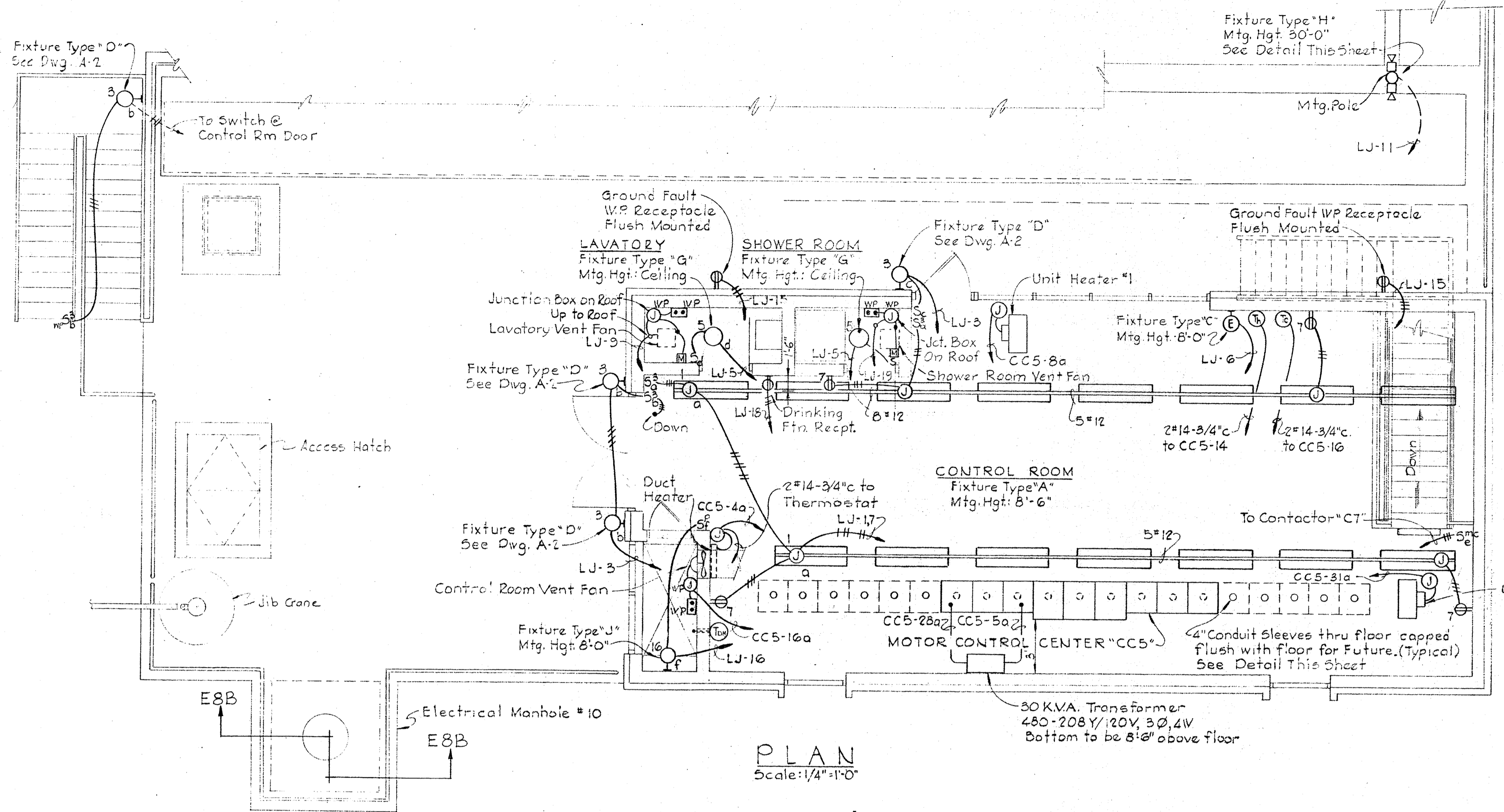


Kenneth A. McLeod

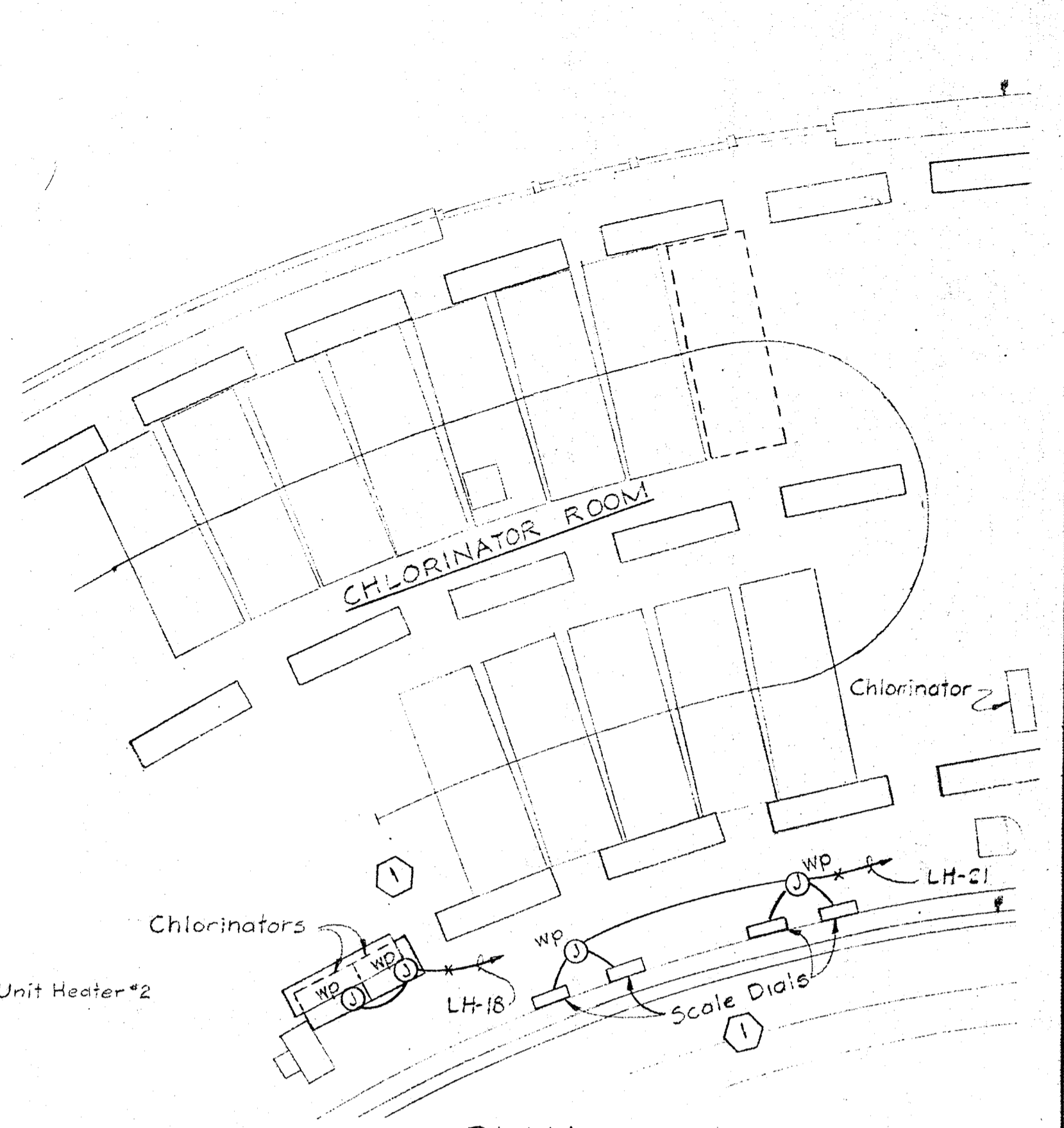
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3-30-74 W. O. Filbert CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	MANHOLE AND DUCTBANK DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.3 Addendum	DRAWING NO. 38 OF 45 SCALE AS SHOWN SHEET E-4
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W.O. 6538-2 Clarification Manhole & Ductbank 3-20-74

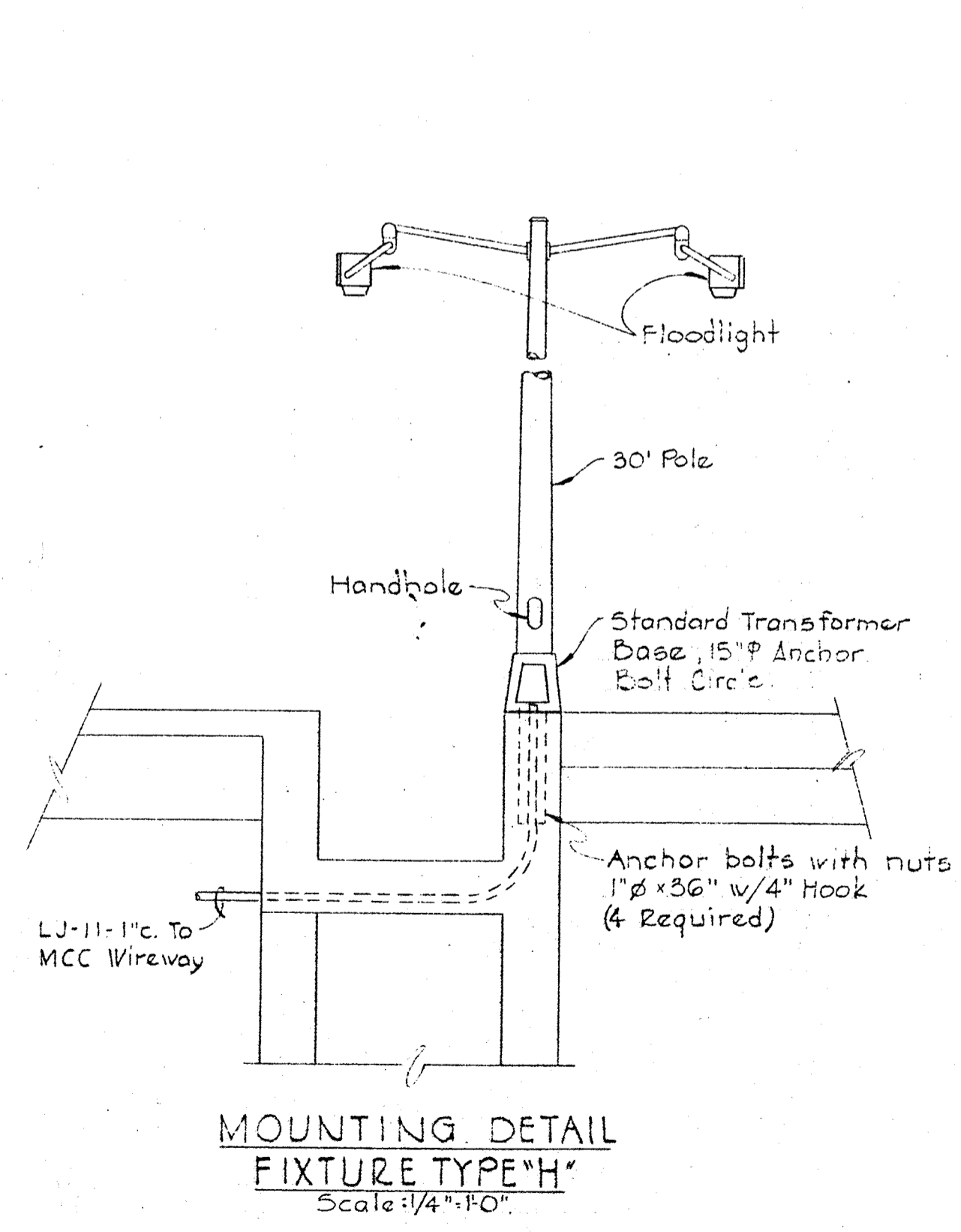
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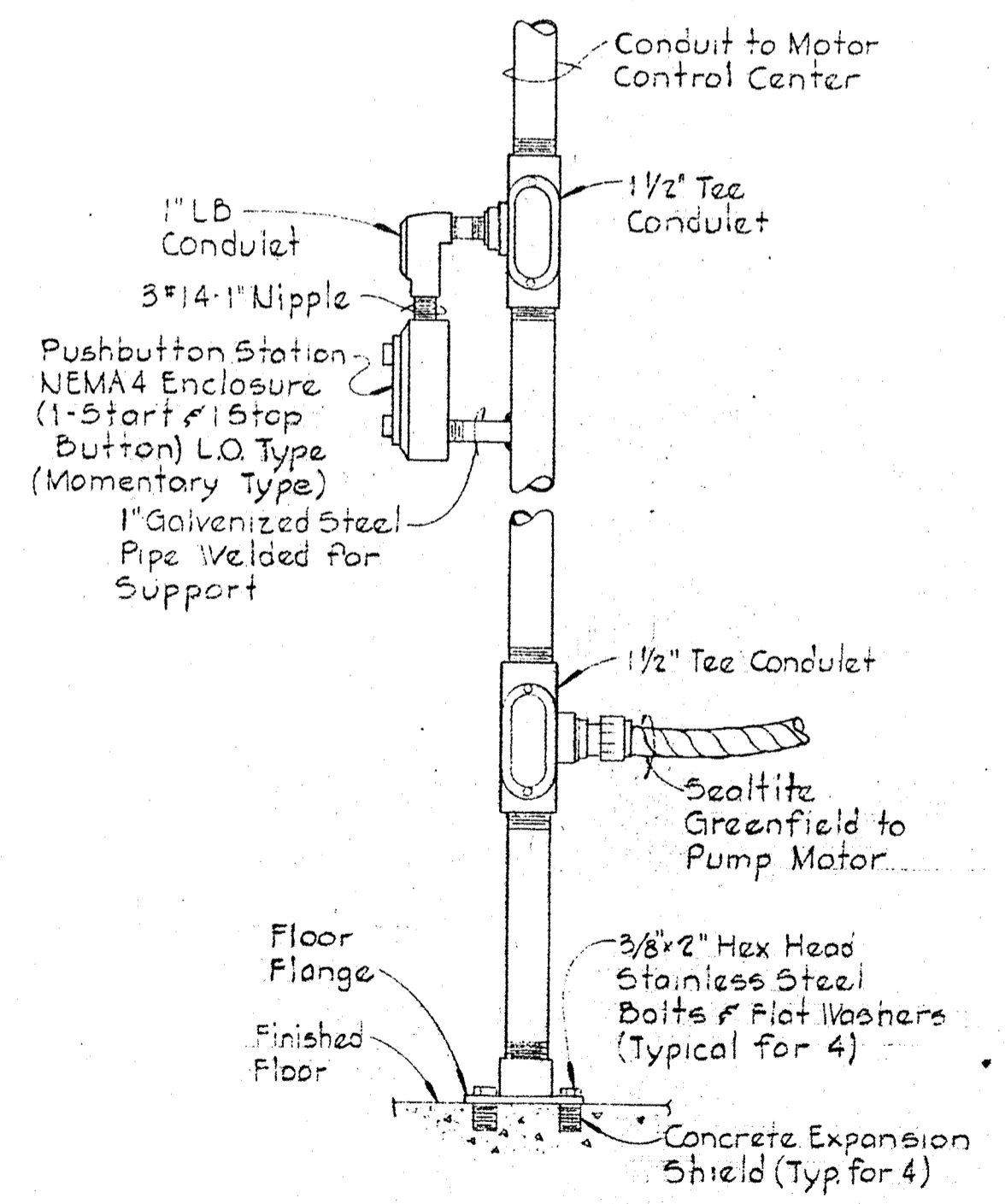
PLAN
Scale: 1/4" = 1'-0"



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

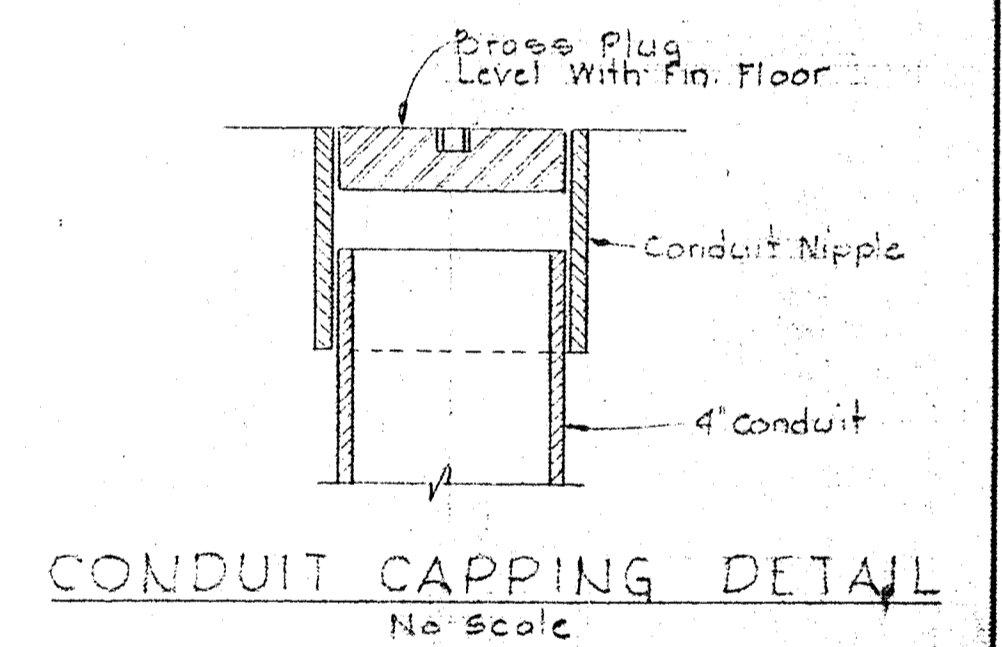


MOUNTING DETAIL
FIXTURE TYPE "H"
Scale: 1/4" = 1'-0"



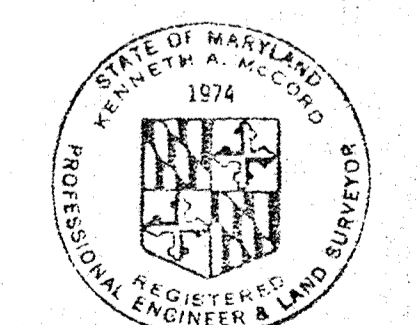
MOUNTING DETAIL
PUSHBUTTON STATION
No Scale
(Typical for Spray Water Pumps #1, #2 and R.S. Pumps #4A, #4B and #4C)

CABLE NO.	FROM	TO	FOR	WIRE		RACEWAY
				NO.	SIZE TYPE	
PC-4	Flow Transmitter at Secondary Clarifier #4	Flow Indicator/Recorder at exist Lab Bldg.	Sewage Effluent Flow Aeration Basin 4	3/c	#12	See Drawings
PC-5	Analyzer in Chlorine Monitor Bldg.	Indicator/Recorder at exist Lab. Bldg.	Plant Effluent Chlorine Residual	3/c	#12	See Drawings
PC-6	Mag Meter in Pipe Gallery Aeration Basin	Transmitter in Pipe Gallery Aeration Basin	Return Sludge Flow Aeration Basin 4	4	#12 Shield	See Drawings
PC-7	Transmitter in Pipe Gallery Aeration Basin	Indicator/Recorder at exist Lab Bldg.	Return Sludge Flow Aeration Basin 4	3/c	#12	See Drawings
PC-8	Air Flow Transmitter in Pipe Gallery Aeration Basin	Indicator in exist Blower Bldg/Pumping Station	Air Flow Aeration Basin 4	3/c	#12	See Drawings
PC-9	Mag Meter in Pipe Gallery Aeration Basin	Transmitter in Pipe Gallery Aeration Basin	Waste Activated Sludge Aeration Basin 4	4	#12 Shield	See Drawings
PC-10	Transmitter in Pipe Gallery Aeration Basin	Indicator/Recorder Sludge Oxidation Bldg.	Waste Activated Sludge Aeration Basin 4	3/c	#12 Shield	See Drawings
PC-11	Motor Control Center CC5 Control Rm. Aeration Basin	Secondary Clarifier #4	Control	4/c	#12	See Drawings
PC-12	Motor Control Center CC5 Control Rm. Aeration Basin	Alarm Annunciator Exist Lab Bldg.	Aeration Basin 4 Trouble Alarms	4/c	#12	



CONDUIT CAPPING DETAIL
No Scale

NOTES
1. For GENERAL ELECTRICAL NOTES and LEGEND See Sheet E-2



Herbert M. Land

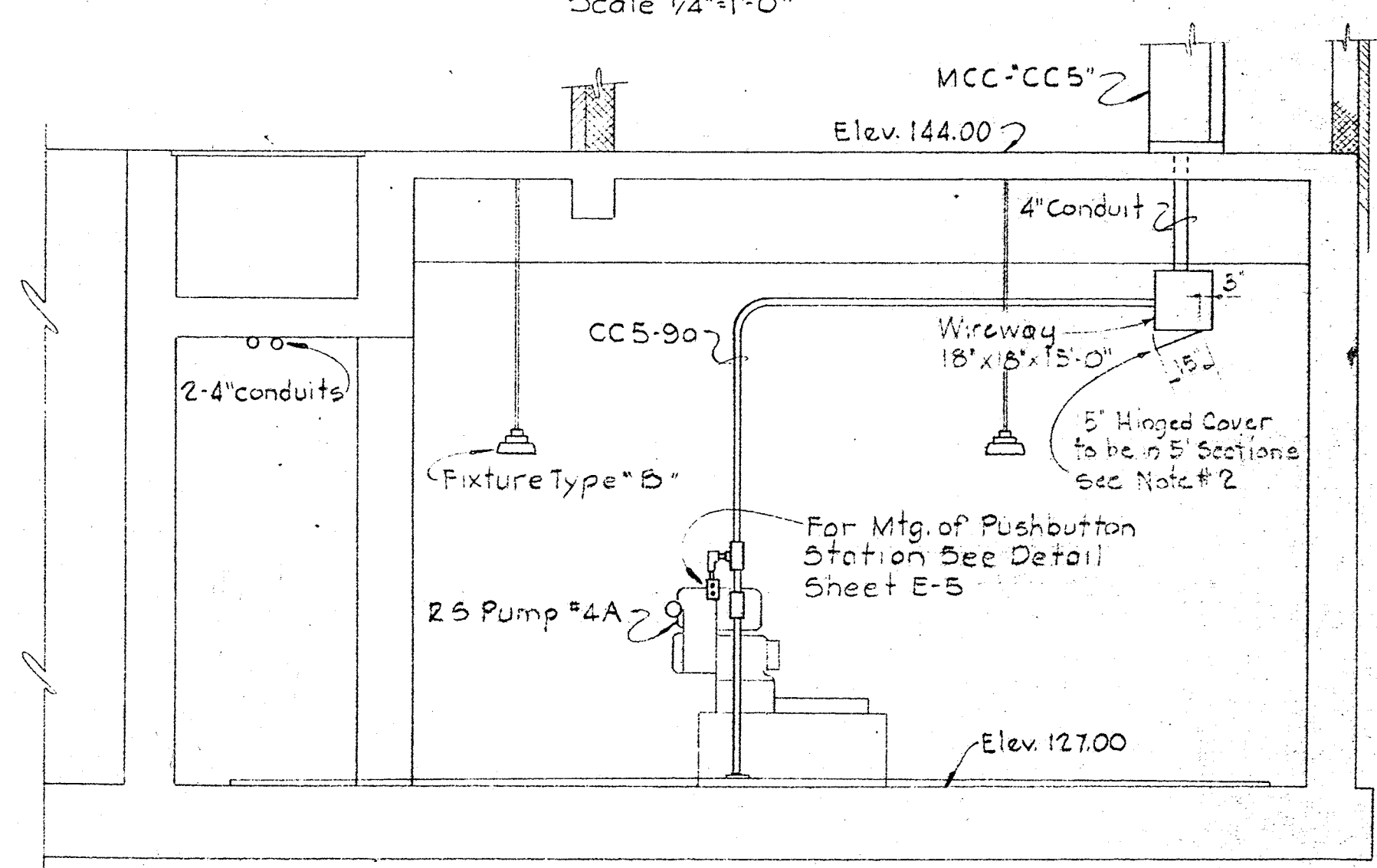
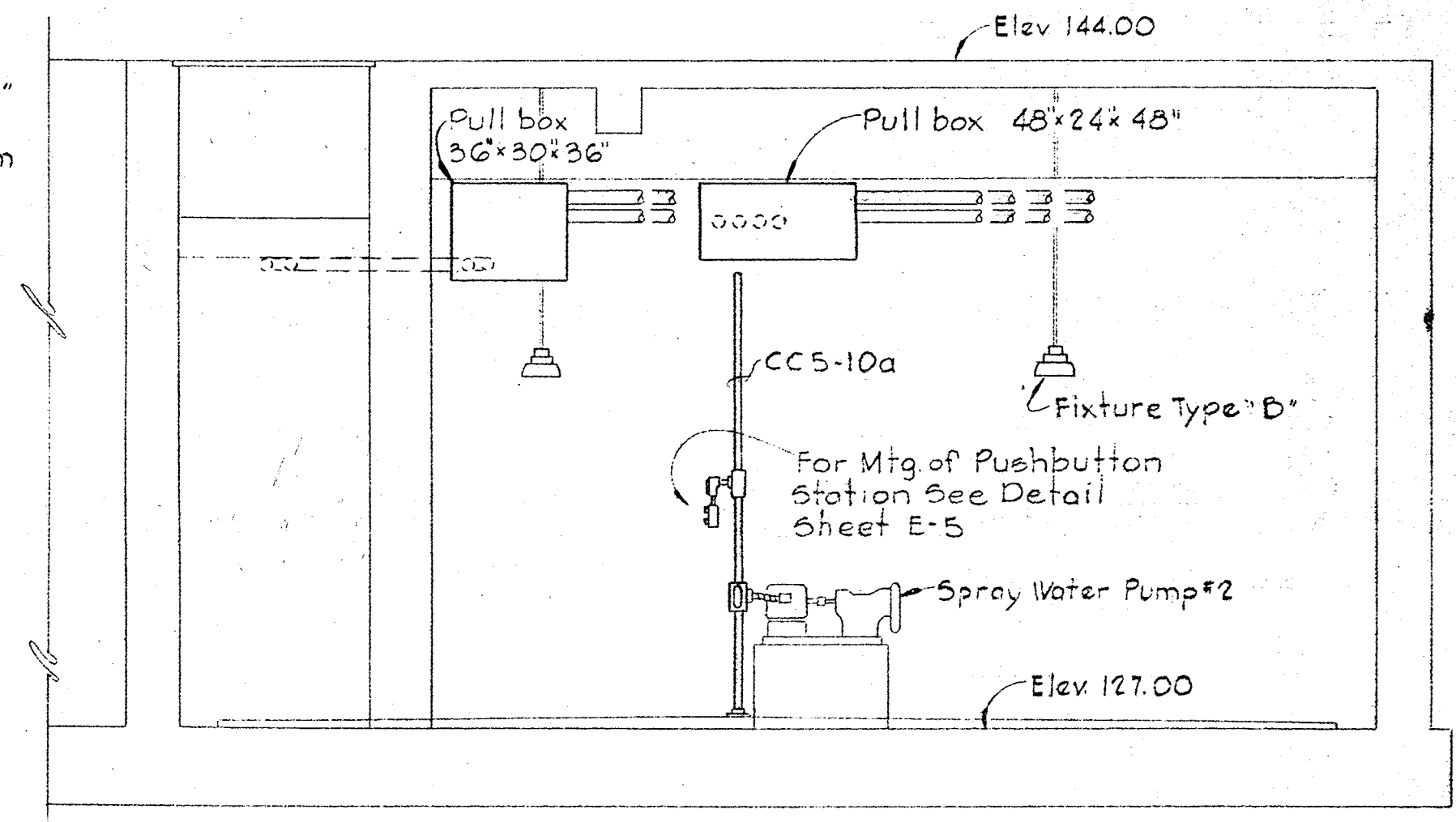
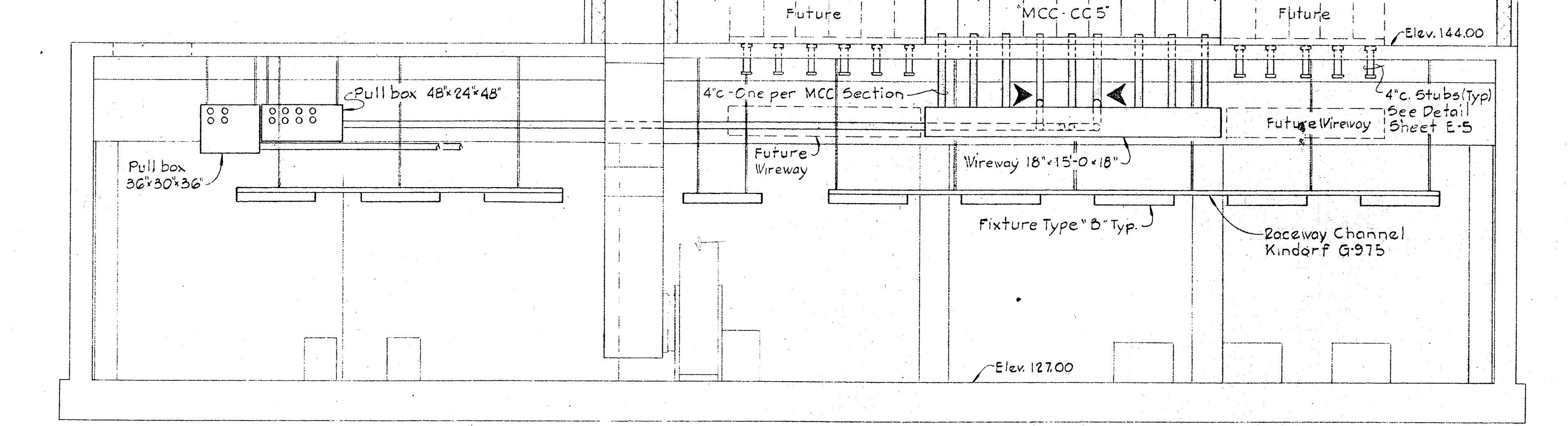
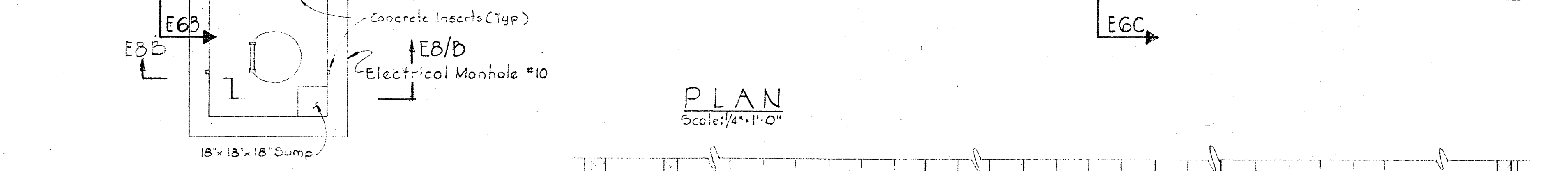
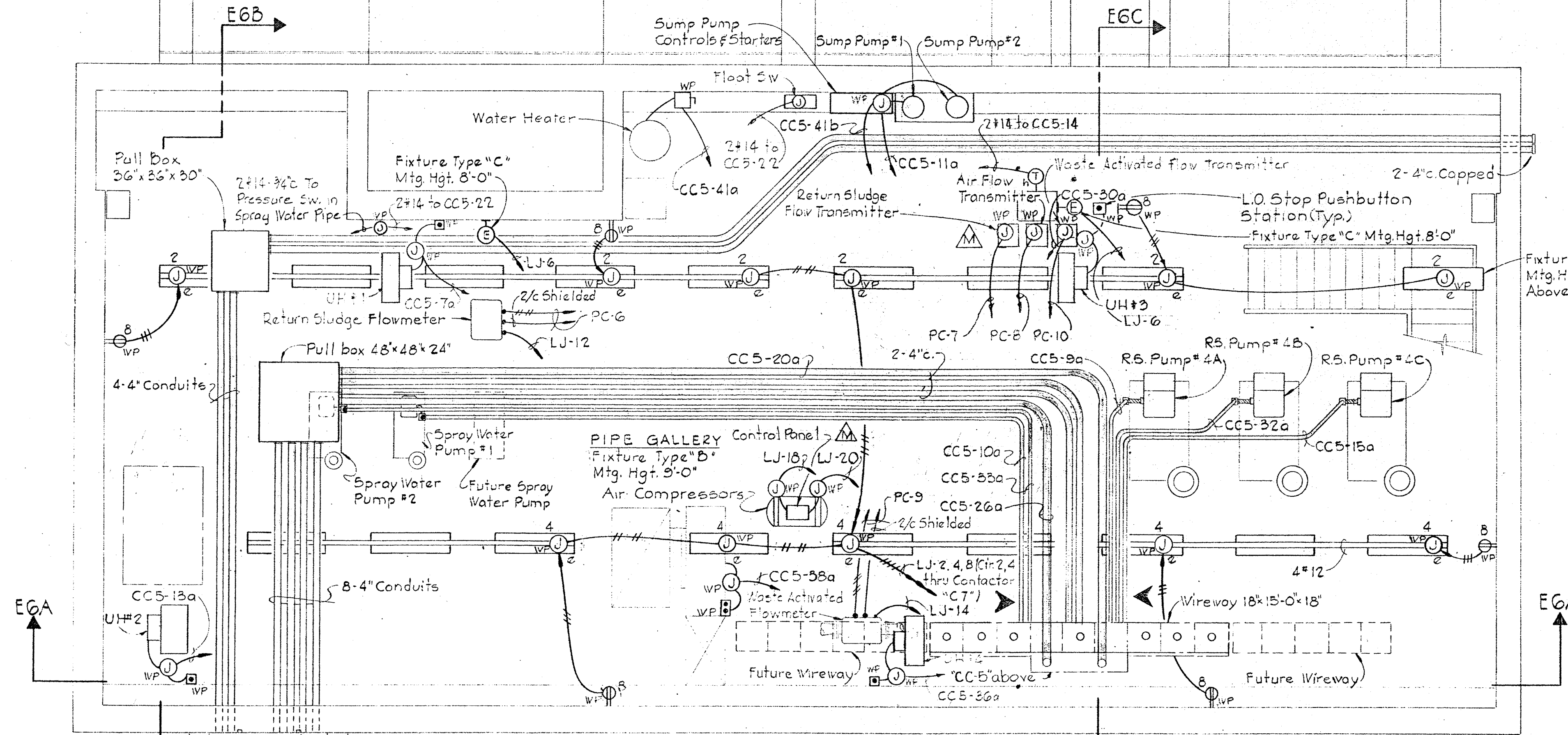
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3-30-73 <i>W.D. Falbert</i> CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	AERATION BASIN CONTROL BUILDING PLAN AND DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.3	DRAWING NO. 39 OF 45	SCALE AS SHOWN
					Addendum Δ	

W.O. 6538-2 Clarification - Change Order No. 1 2-19-74

BRUNING 44-510 14778

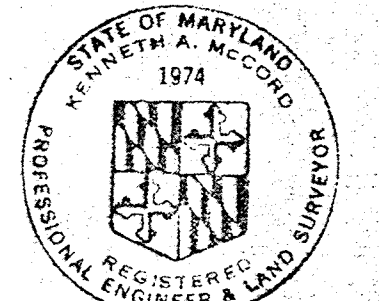
NOTES

1. For GENERAL ELECTRICAL NOTES and LEGEND see Sheet E-2.
2. Provide removable cable supports in Wireway.



SECTION EGA/E6
Scale: 1/4" = 1'-0"

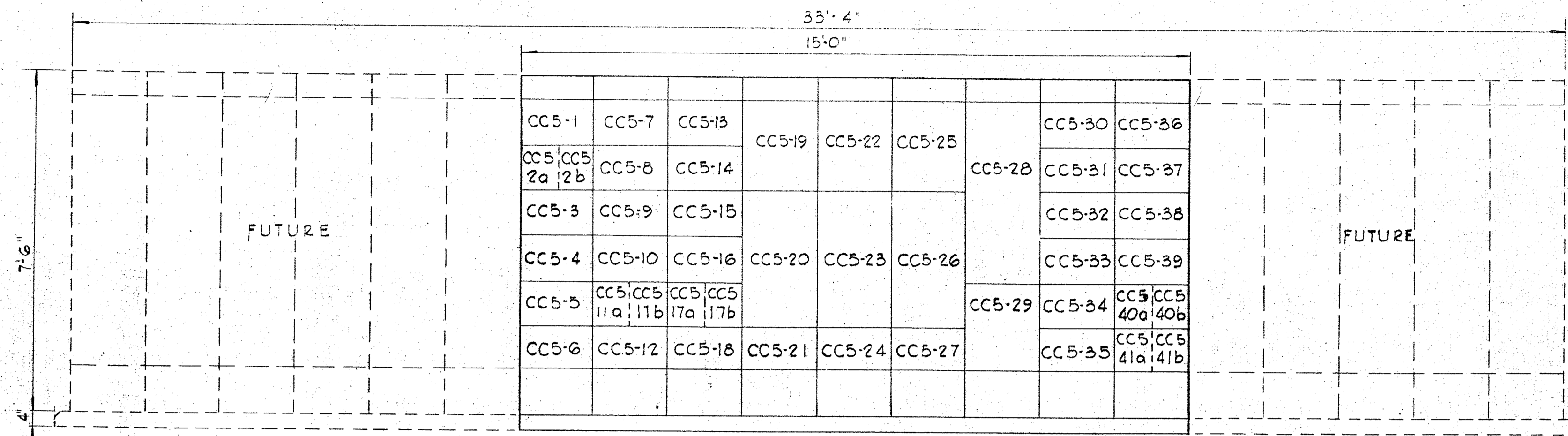
SECTION EGC/E6
Scale: 1/4" = 1'-0"



Kenneth A. McCord

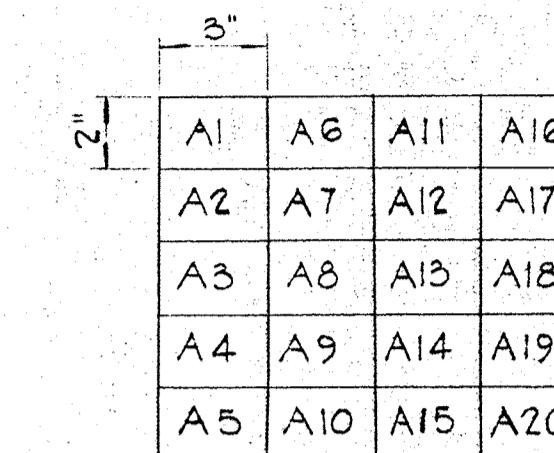
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE: 3-30-73 W. O. Talbot CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	AERATION BASIN PIPE GALLERY PLAN AND DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.3	DRAWING NO. 40 OF 45 SCALE AS SHOWN
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W. O. 6538-2 Clarification Revised Conduit Route 11-14-73



MOTOR CONTROL CENTER "CC5"
Scale: 1/2"=1'-0"

Nº	INSCRIPTION	Nº	INSCRIPTION
A1	PIPE GALLERY FLOODING	A11	BLANK (SPACE)
A2	LOW SPRAY WATER PRESSURE	A12	BLANK (SPACE)
A3	BLANK (SPACE)	A13	BLANK (SPACE)
A4	BLANK (SPACE)	A14	BLANK (SPACE)
A5	SECONDARY CLARIFIER #4 OVERLOAD	A15	BLANK (SPACE)
A6	BLANK (SPACE)	A16	BLANK (SPACE)
A7	BLANK (SPACE)	A17	BLANK (SPACE)
A8	BLANK (SPACE)	A18	BLANK (SPACE)
A9	BLANK (SPACE)	A19	BLANK (SPACE)
A10	BLANK (SPACE)	A20	BLANK (SPACE)



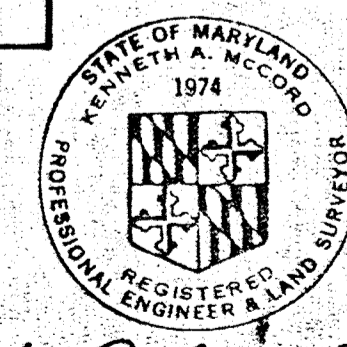
ANNUNCIATOR #4 (WINDOW)
Scale: 3/16"=1"

NOTES

1. For GENERAL ELECTRICAL NOTES & LEGEND See Sheet E-2.

UNIT NUMBER	NAMEPLATE DATA	DEVICE DESCRIPTION	HPor KVA	AUX. DESC.	BREAKER FRAME	POLE	TRIP	SIC	RUN NUMBER	WIRE-POWER Nº	WIRE-POWER SIZE	WIRE-POWER TYPE	WIRE-CONTROL Nº	WIRE-CONTROL SIZE	WIRE-CONTROL TYPE	GRD. WIRE	COND. WIRE SIZE
CC5-1		Control Relays	-	See Dwg.	-	-	-	-	-	-	-	-	-	-	-	-	-
CC5-2a	BLANK (Spare)	Circuit Breaker	-	-	100	3	15	14	-	-	-	-	-	-	-	-	-
CC5-2b	BLANK (Spare)	Circuit Breaker	-	-	100	3	30	14	-	-	-	-	-	-	-	-	-
CC5-3	LIGHTING CONTACTOR "C7" PIPE GALLERY	Contactor 1-2P-30A	-	See Specs.	-	-	-	-	-	-	-	-	-	-	-	-	-
CC5-4	CONTROL ROOM DUCT HEATER	Combination Contactor NEMA Size 2, FVNZ	20	a.c. d.g.	100	3	40	14	CC5-4a	3	#8	THW	4	#14	THW	#10	1 1/2"
CC5-5	TRANSFER SWITCH	Automatic Transfer Switch "A60" Bulletin 940	-	See Specs.	-	-	-	-	CC5-5a	3	#6	THW	-	-	-	#6	1/2"
CC5-6	BLANK (Spare)	Combination Starter NEMA Size 1, FVNZ	-	a.b.c. d.g.	100	3	30	14	-	-	-	-	-	-	-	-	-
CC5-7	PIPE GALLERY UNIT HEATER #1	Combination Contactor NEMA Size 1, FVNZ	6	a.c. d.g.	100	3	15	14	CC5-7a	3	#12	THW	4	#14	THW	#12	1"
CC5-8	CONTROL ROOM UNIT HEATER #1	Combination Contactor NEMA Size 1, FVNZ	7.5	a.c. d.g.	100	3	15	14	CC5-8a	3	#12	THW	4	#14	THW	#12	1"
CC5-9	RETURN SLUDGE PUMP #4A	Combination Starter NEMA Size 2, FVNZ	15	a.b.c. d.g.	100	3	40	14	CC5-9a	3	#10	THW	4	#14	THW	#10	1 1/2"
CC5-10	SPRAY WATER PUMP #1	Combination Starter NEMA Size 1, FVNZ	3	a.b.c. d.g.	100	3	15	14	CC5-10a	3	#12	THW	3	#14	THW	#12	1 1/2"
CC5-11a	Sump Pump #1	Circuit Breaker	1/2	-	100	3	15	14	CC5-11a	3	#12	THW	-	-	-	#12	1"
CC5-11b	BLANK (Spare)	Circuit Breaker	-	-	100	3	15	14	-	-	-	-	-	-	-	-	-
CC5-12	BLANK (Spare)	Combination Starter NEMA Size 1, FVNZ	-	a.b.c. d.g.	100	3	15	14	-	-	-	-	-	-	-	-	-
CC5-13	PIPE GALLERY UNIT HEATER #2	Combination Contactor NEMA Size 1, FVNZ	7.5	a.c. d.g.	100	3	15	14	CC5-13a	3	#12	THW	4	#14	THW	#12	1"
CC5-14	UNIT HEATERS CONTROL RELAYS	Control Relays	-	See Dwg.	-	-	-	-	-	-	-	-	-	-	-	-	-
CC5-15	RETURN SLUDGE PUMP #4C	Combination Starter NEMA Size 2, FVNZ	15	a.b.c. d.g.	100	3	40	14	CC5-15a	3	#10	THW	4	#14	THW	#10	1 1/2"
CC5-16	CONTROL ROOM VENT FAN	Combination Starter NEMA Size 1, FVNZ	3/4	a.b.c. d.g.	100	3	15	14	CC5-16a	3	#12	THW	4	#14	THW	#12	1"
CC5-17a	30 KVA TRANSFORMER	Circuit Breaker	-	-	100	3	50	14	-	-	-	-	-	-	-	-	-
CC5-17b	BLANK (Spare)	Circuit Breaker	-	-	100	3	15	14	-	-	-	-	-	-	-	-	-
CC5-18	BLANK (Spare)	Combination Starter NEMA Size 1, FVNZ	-	a.b.c. d.g.	100	3	15	14	-	-	-	-	-	-	-	-	-
CC5-19	Standard Nameplates	Ammeter, Voltmeter, Switches, C.T.'s	-	See Specs.	-	-	-	-	-	-	-	-	-	-	-	-	-
CC5-20	MAIN BREAKER FEEDER #1	Power Circuit Breaker Draw-out Type	-	See Specs.	600	3	300	30	CC5-20a	3/c	500MCM	2HW	-	-	-	W/3" #1	4"
CC5-21	-	Space for Incoming Feeder #1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC5-22	See Detail, this Sheet	Annunciator 20 Circuits	-	See Dwg.	-	-	-	-	See Dwg.	-	-	See Dwg.	14	THW	-	See Dwg.	-
CC5-23	TIE BREAKER	Power Circuit Breaker Draw-out Type	-	See Specs.	600	3	300	30	-	-	-	-	-	-	-	-	-
CC5-24	-	Space for Outgoing Cables	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC5-25	Standard Nameplates	Ammeter, Voltmeter, Switches, C.T.'s	-	See Specs.	-	-	-	-	-	-	-	-	-	-	-	-	-
CC5-26	MAIN BREAKER FEEDER #2	Power Circuit Breaker Draw-out Type	-	See Specs.	600	3	300	30	CC5-26a	3/c	500MCM	2HW	-	-	-	W/3" #1	4"
CC5-27	-	Space for Incoming Feeder #2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CC5-28	PANEL BOARD "LJ" 20ØY/12Ø-3Ø-4W	Circuit Breaker Panelboard	-	See Specs.	-	-	-	-	CC5-28a	3	#2	THW	-	-	-	#2	2"
CC5-29	BLANK (Spare)	Combination Starter NEMA Size 2, FVNZ	-	a.b.c. d.g.	100	3	50	14	-	-	-	-	-	-	-	-	-
CC5-30	PIPE GALLERY UNIT HEATER #3	Combination Contactor NEMA Size 1, FVNZ	6	a.c. d.g.	100	3	15	14	CC5-30a	3	#12	THW	4	#14	THW	#12	1"
CC5-31	CONTROL ROOM UNIT HEATER #2	Combination Contactor NEMA Size 1, FVNZ	7.5	a.c. d.g.	100	3	15	14	CC5-31a	3	#12	THW	4	#14	THW	#12	1"
CC5-32	RETURN SLUDGE PUMP #4B	Combination Starter NEMA Size 2, FVNZ	15	a.b.c. d.g.	100	3	40	14	CC5-32a	3	#10	THW	4	#14	THW	#10	1 1/2"

UNIT NUMBER	NAMEPLATE DATA	DEVICE DESCRIPTION	HPor KVA	AUX. DESC.	BREAKER FRAME	POLE	TRIP	SIC	RUN NUMBER	WIRE-POWER Nº	WIRE-POWER SIZE	WIRE-POWER TYPE	WIRE-CONTROL Nº	WIRE-CONTROL SIZE	WIRE-CONTROL TYPE	GRD. WIRE	COND. WIRE SIZE
CC5-33	SPRAY WATER PUMP #2	Combination Starter NEMA Size 1, FVNZ	3	a.b.c. d.g.	100	3	15	14	CC5-33a	3	#12	THW	3	#14	THW	#12	1 1/2"
CC5-34	BLANK (Spare)	Combination Starter NEMA Size 1, FVNZ	1/2	a.b.c. d.g.	100	3	15	14	-	-	-	-	-	-	-	-	-
CC5-35	BLANK (Spare)	Combination Starter NEMA Size 1, FVNZ	-	a.b.c. d.g.	100	3	30	14	-	-	-	-	-	-	-	-	-
CC5-36	PIPE GALLERY UNIT HEATER #4	Combination Contactor NEMA Size 1, FVNZ	7.5	a.c. d.g.	100	3	15	14	CC5-36a	3	#12	THW	4	#14	THW	#12	1"
CC5-37	-	Control Relays	-	See Dwg.	-	-	-	-	-	-	-	-	-	-	-	-	-
CC5-38	PIPE GALLERY VENT FAN #1	Combination Starter NEMA Size 1, FVNZ	3	a.b.c. d.g.	100	3	15	14	CC5-38a	3	#12	THW	4	#14	THW	#12	1"
CC5-39	SECONDARY CLARIFIER #4	Combination Starter NEMA Size 1, FVNZ	1	a.b.c. d.g.	100	3	15	14	CC5-39a	3	#10	THW	4/C	#12	THW	#10	See Dwg.
CC5-40a	30 KVA TRANSFORMER	Circuit Breaker	-	-	100	3	50	14	-	-	-	-	-	-	-	-	-
CC5-40b	BLANK (Spare)	Circuit Breaker	-	-	100	3	15	14	-	-	-	-	-	-	-	-	-
CC5-41a	WATER HEATER	Circuit Breaker	18	-	100	3	30	14	CC5-41a	3	#8	THW	-	-	-	#10	1 1/2"
CC5-41b	SUMP PUMP #2	Circuit Breaker	1/2	-	100	3	15	14	CC5-41b	3	#12	THW	-	-	-	#12	1"



Kenneth A. McLeod

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 DATE W. J. Fallick CHIEF - BUREAU OF ENGINEERING	CONTRACT NO. 526-S	MOTOR CONTROL CENTER	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.3	DRAWING NO. 41 OF 45	SCALE AS SHOWN
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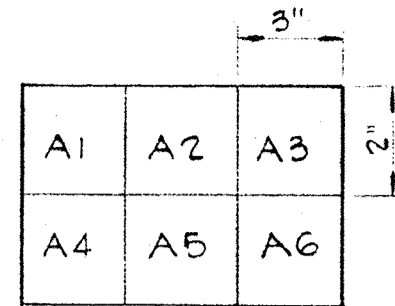
W. O. 6538-2

Addendum Δ

SHEET E-7

DRAWING 44-510-14778

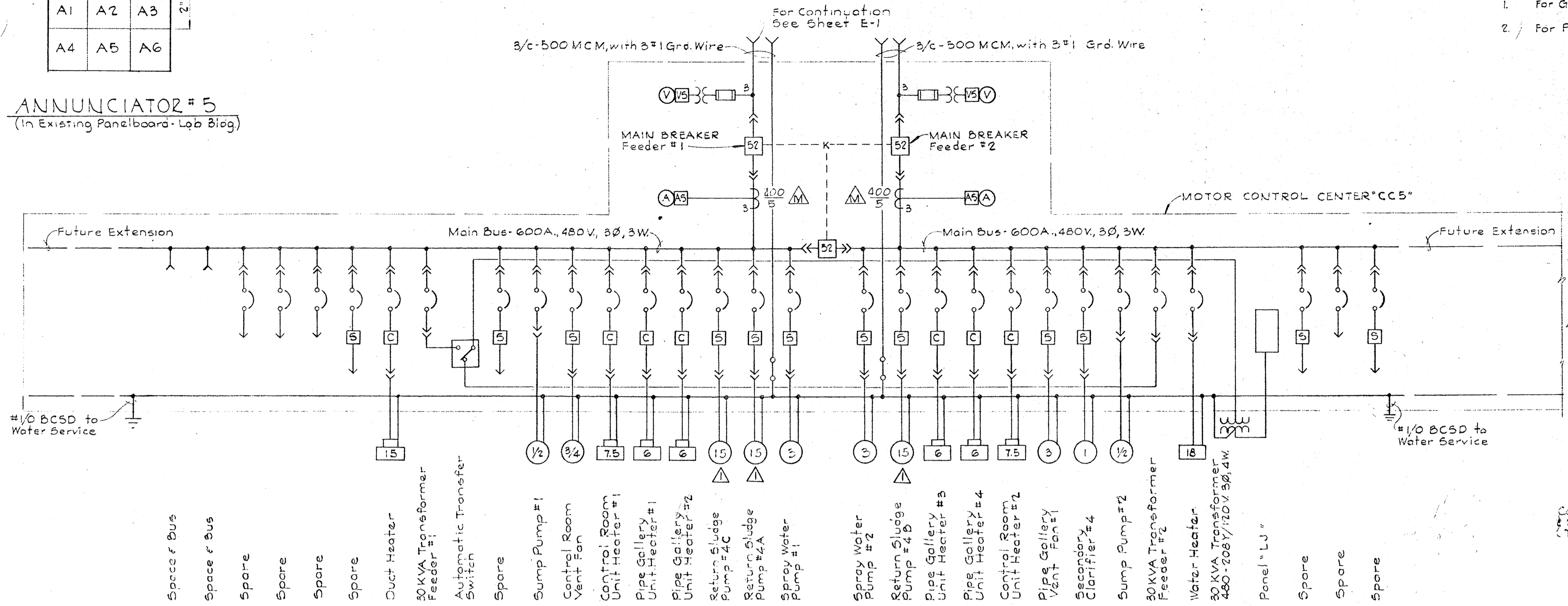
ANNUNCIATOR #5 WINDOW SCHEDULE	
NO	INSCRIPTION
A1	ABNORMAL AERATION BASIN
A2	BLANK (Spare)
A3	BLANK (Spare)
A4	BLANK (Spare)
A5	BLANK (Spare)
A6	BLANK (Spare)



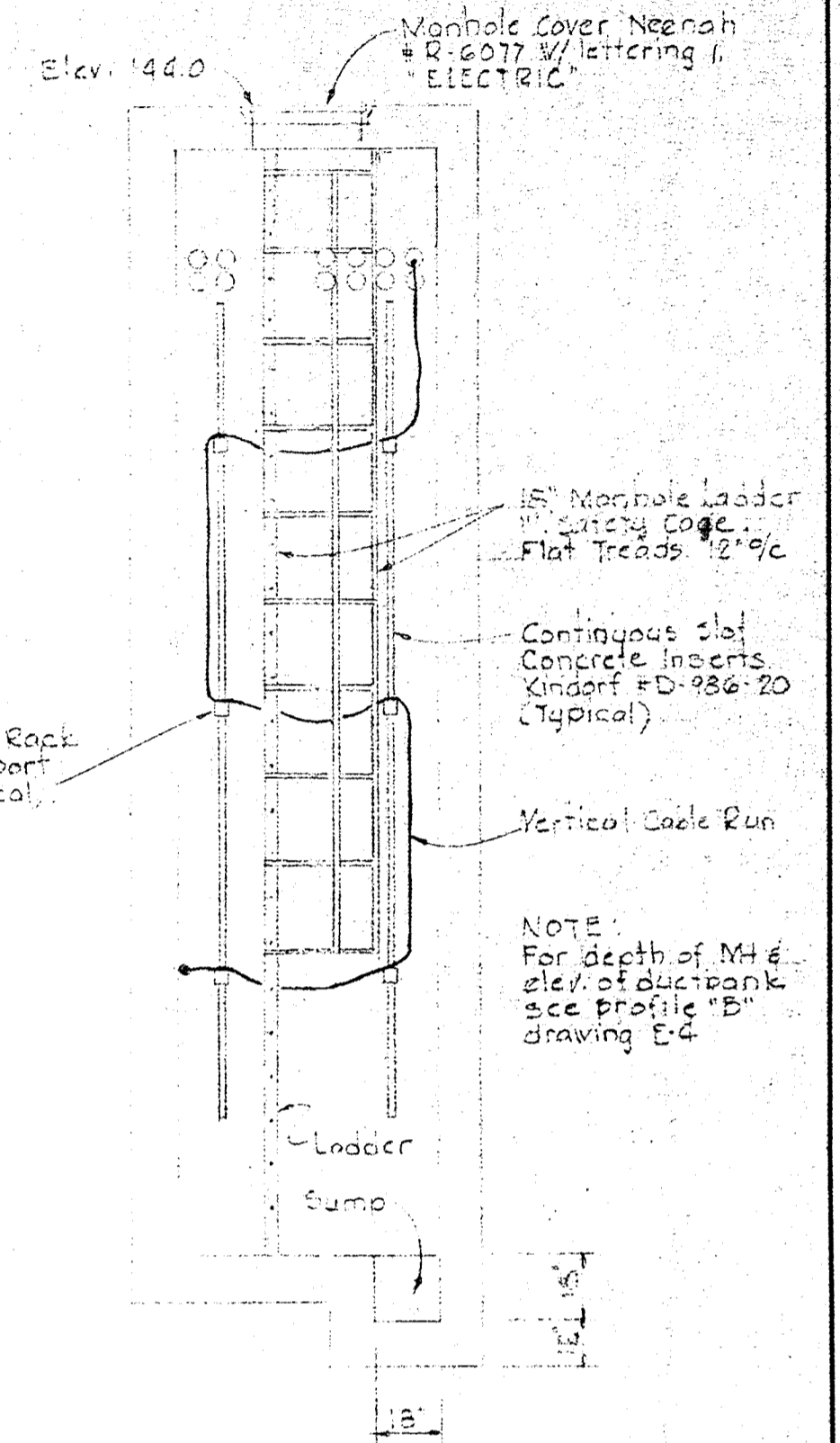
ANNUNCIATOR #5
(In Existing Panelboard - Lab Bldg)

NOTES

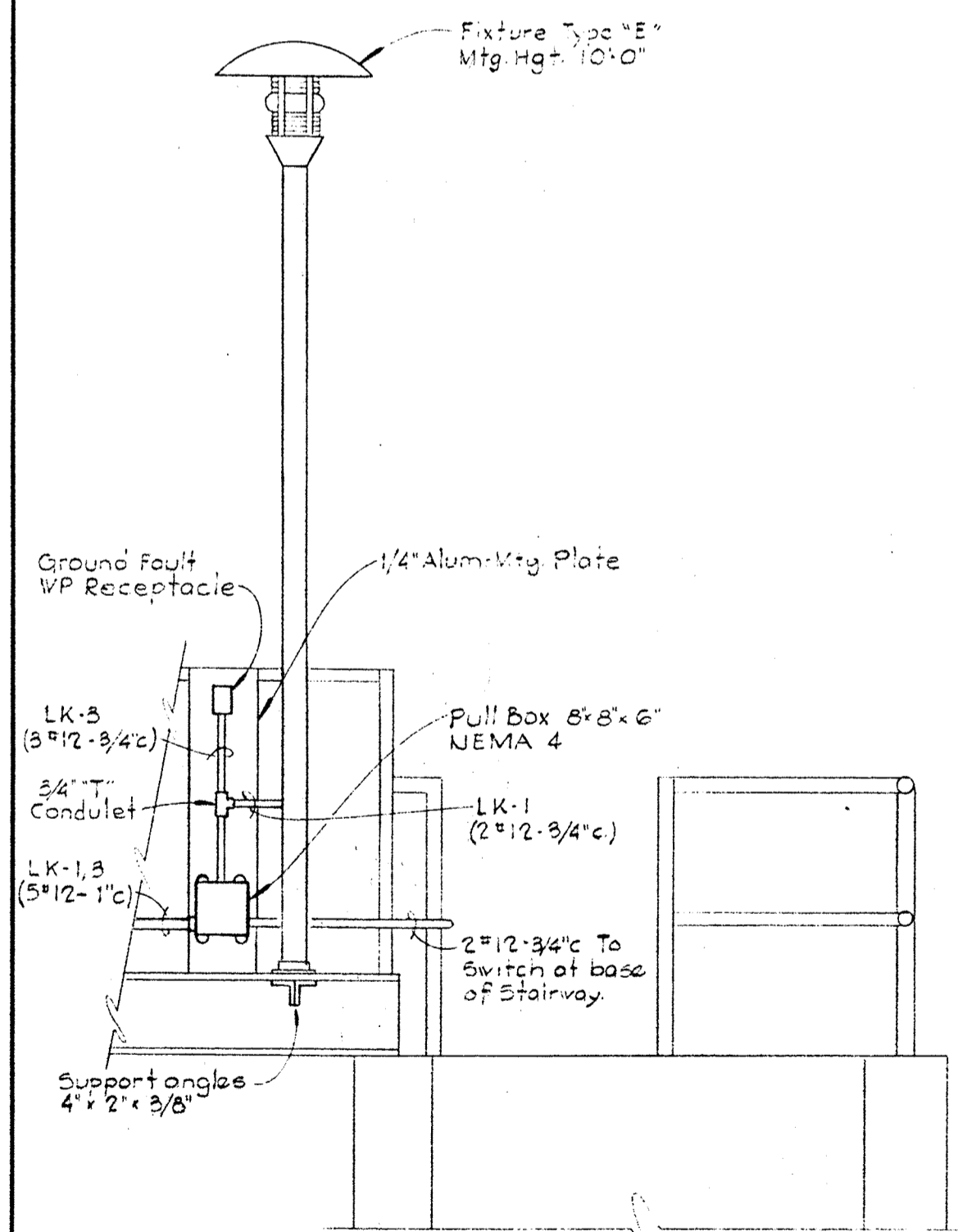
- For GENERAL ELECTRICAL NOTES and LEGEND see sheet E-2
- For PLAN of Secondary Clarifier #4, see sheet M-9



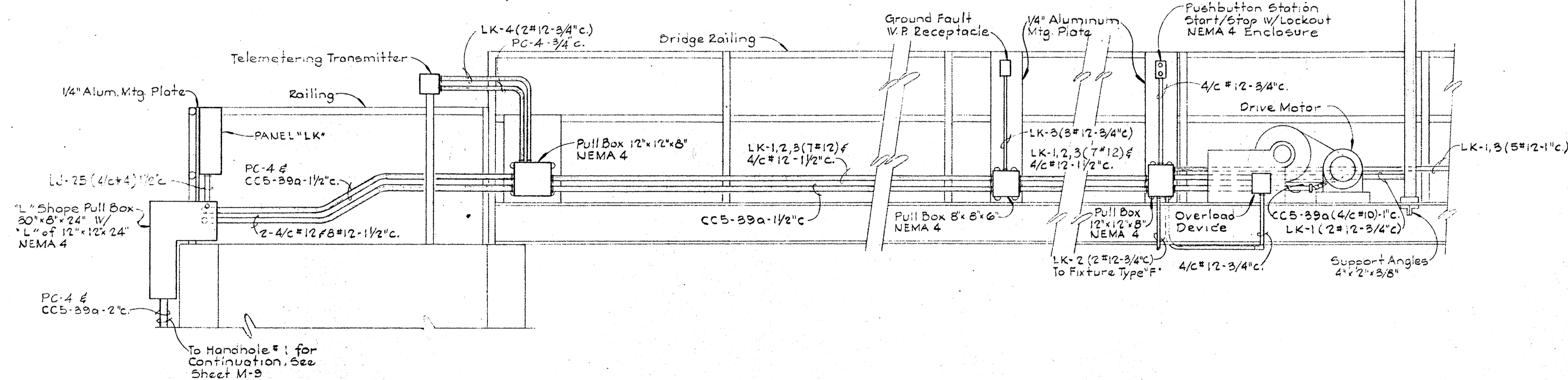
AERATION BASIN
No Scale



SECTION E8B/E5 & E6
Scale 1/4" = 1'-0"



SECTION E8B/M9
Scale: 1/2" = 1'-0"



SECTION E8A/M9
Scale 1/2" = 1'-0"

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
3-30-73
DATE
C. O. Fallick
CHIEF - BUREAU OF ENGINEERING

CONTRACT NO. 526-S

AERATION BASIN CONTROL
BUILDING ONLINE WIRING
DIAGRAM & MISC. DETAILS

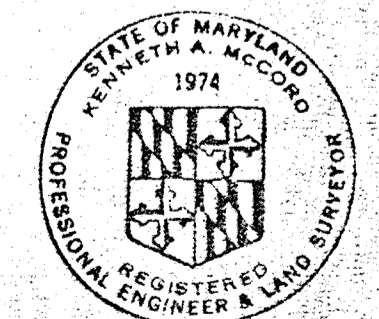
SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO.3

DRAWING NO. 42 OF 45
SCALE AS SHOWN

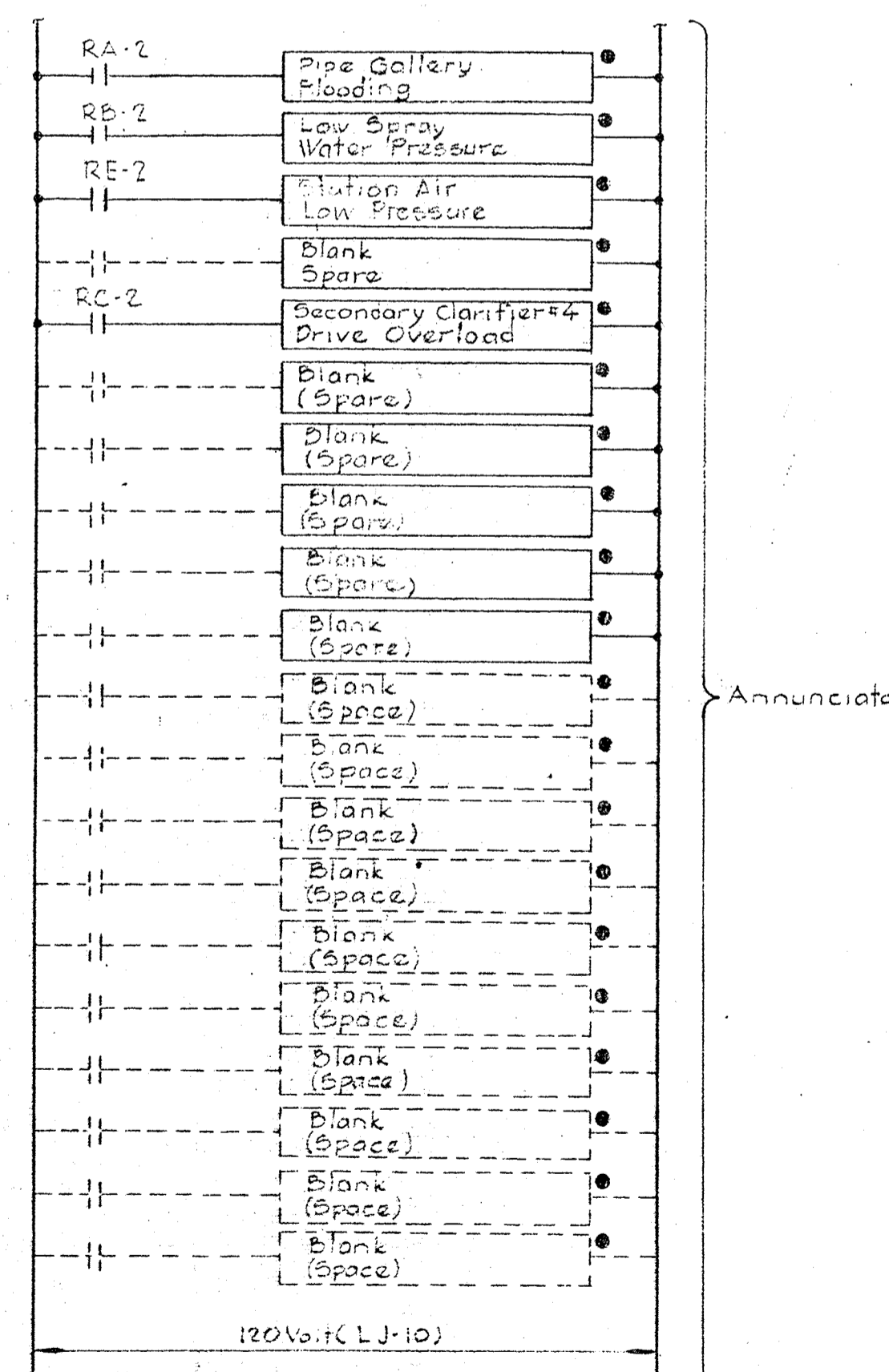
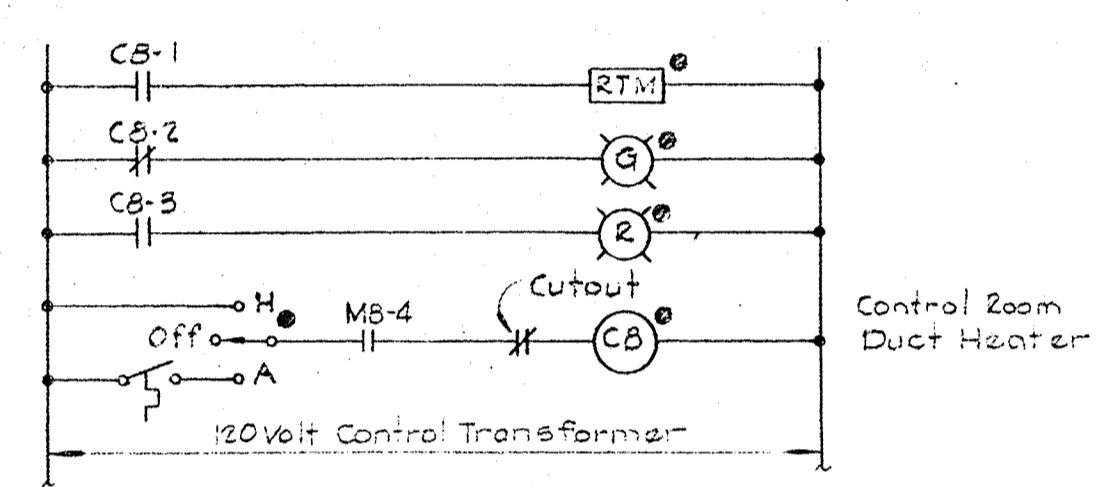
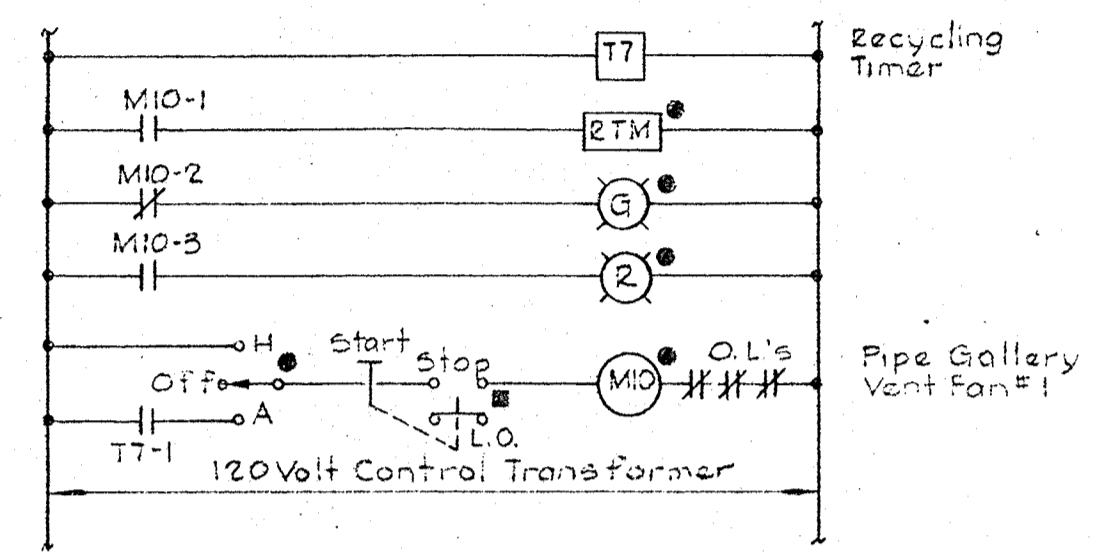
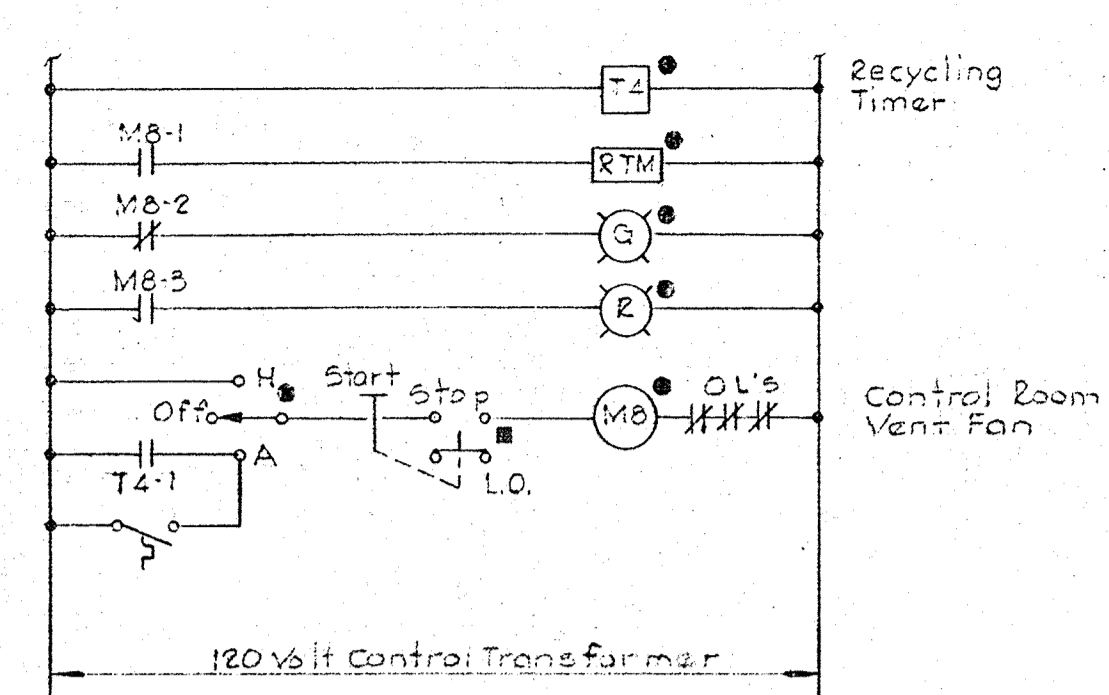
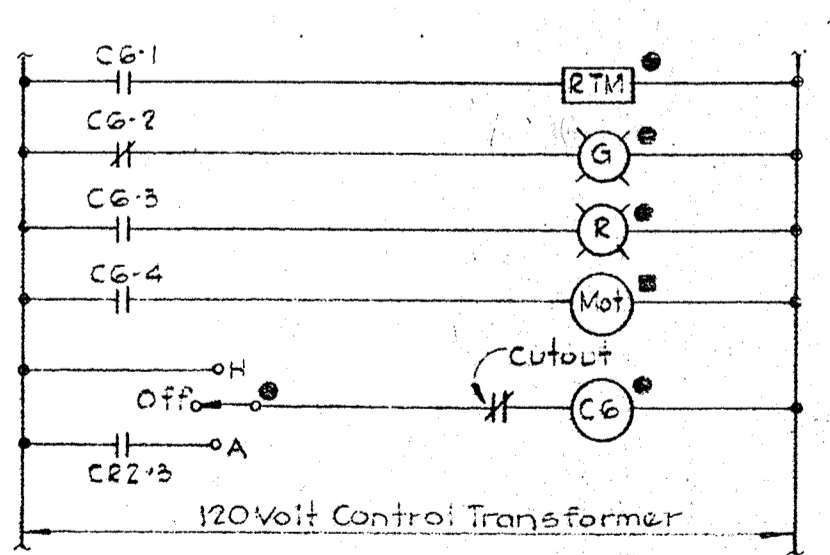
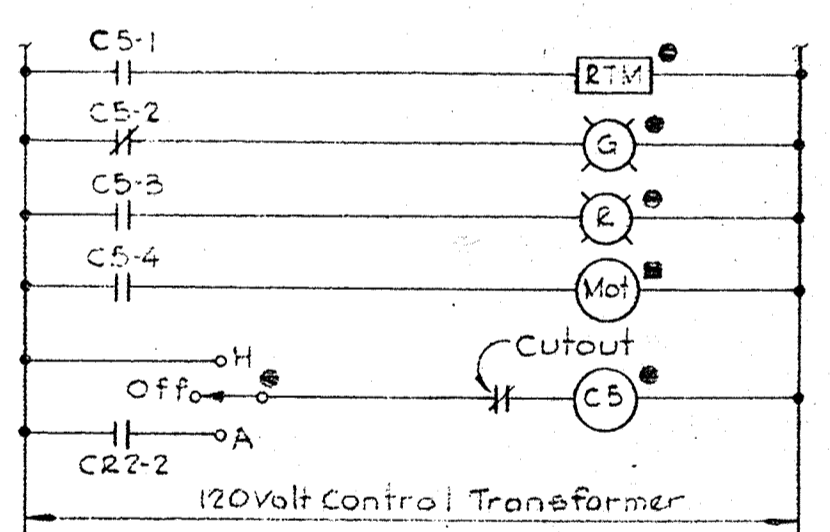
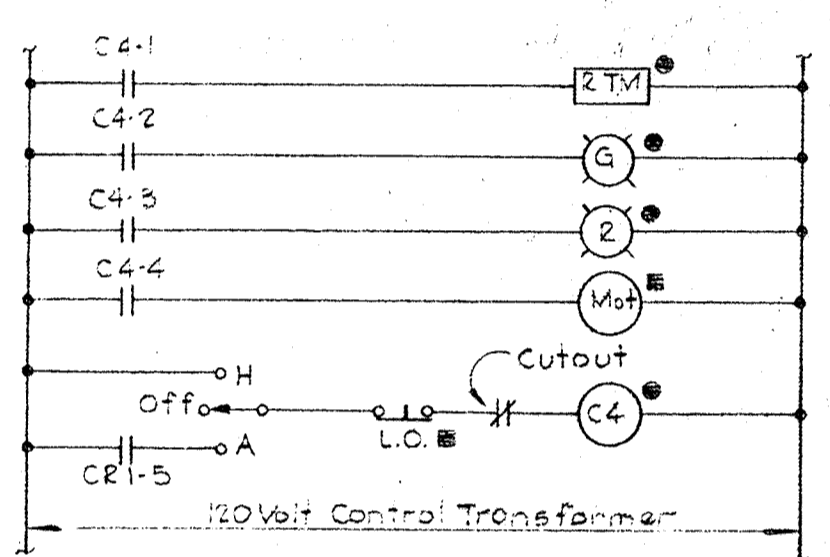
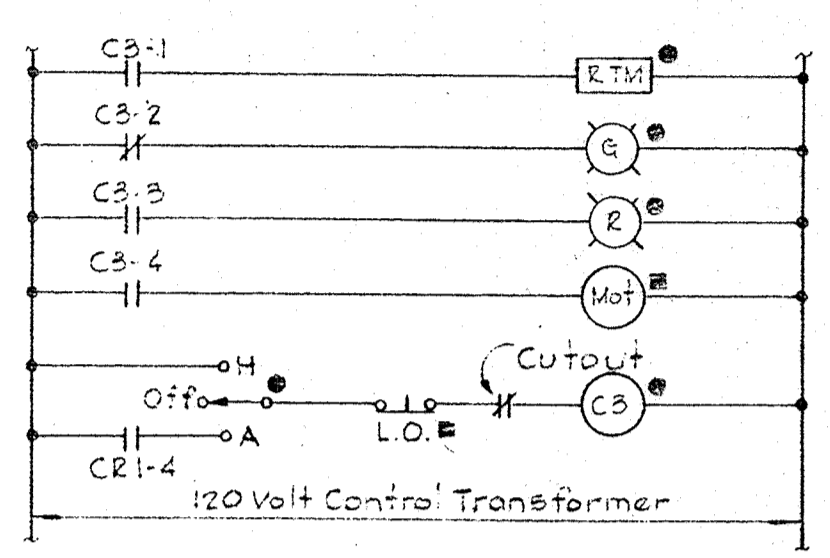
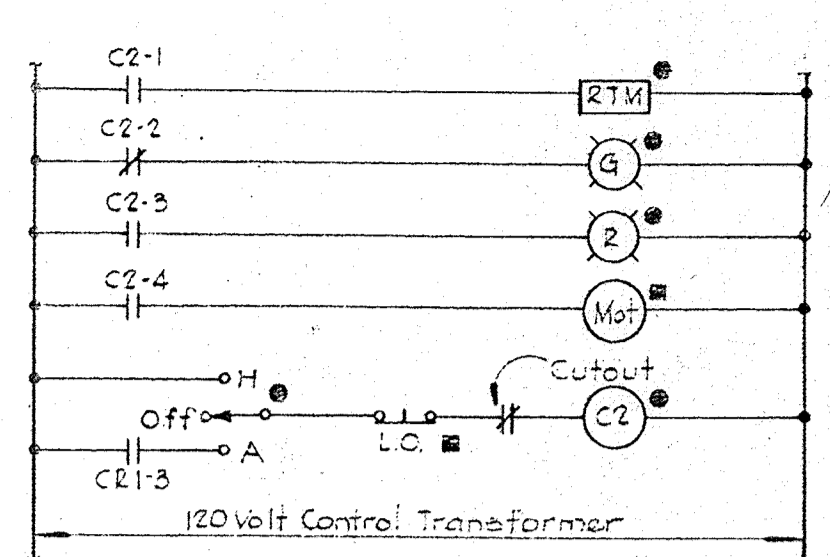
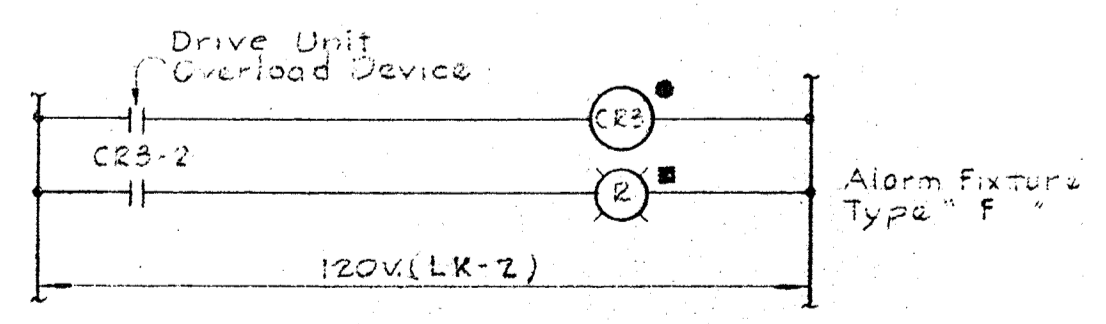
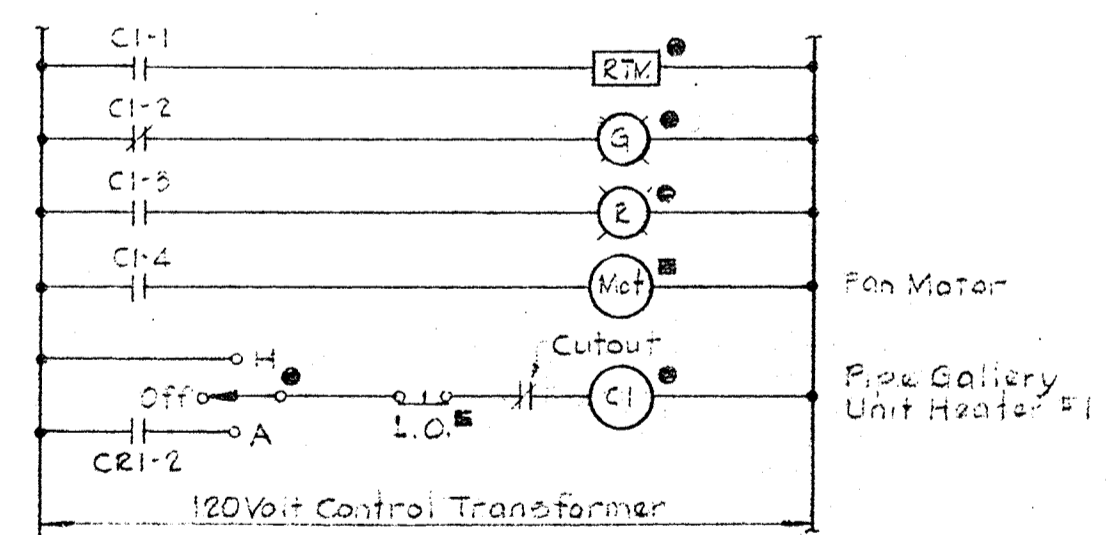
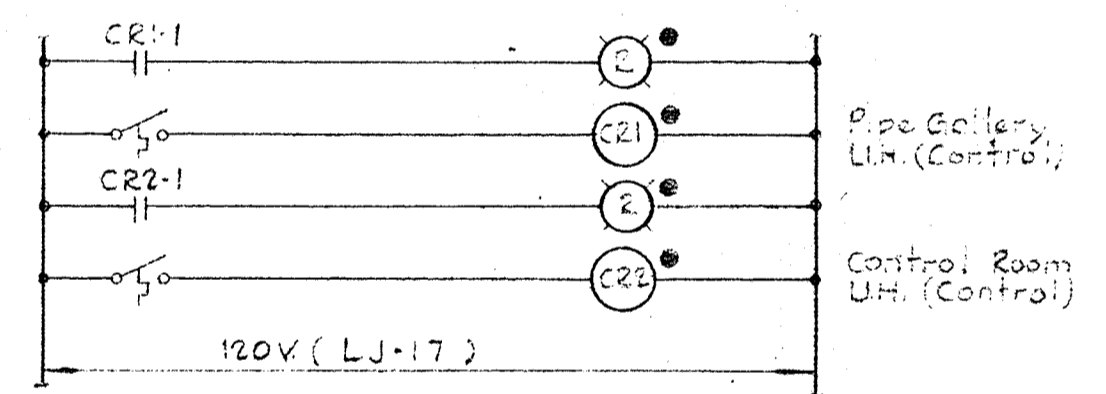
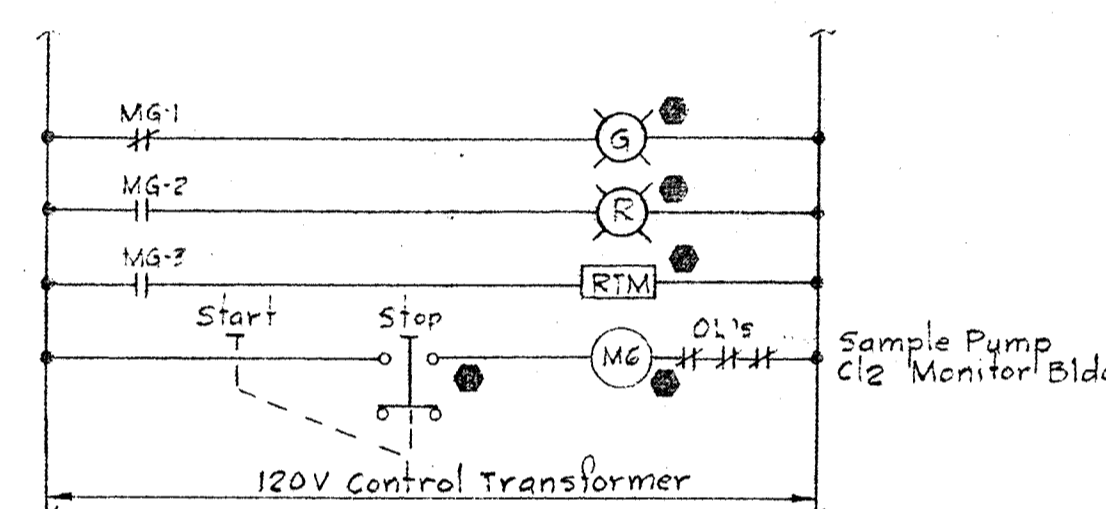
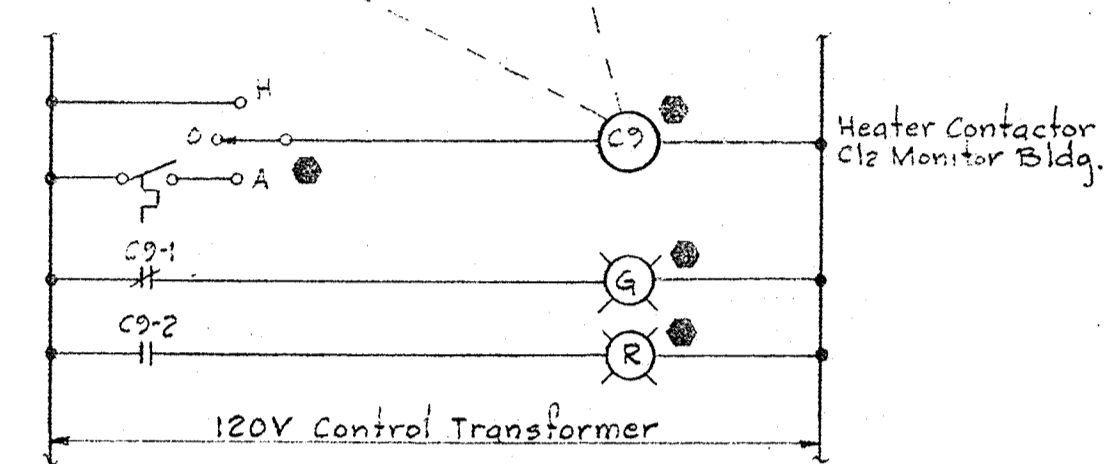
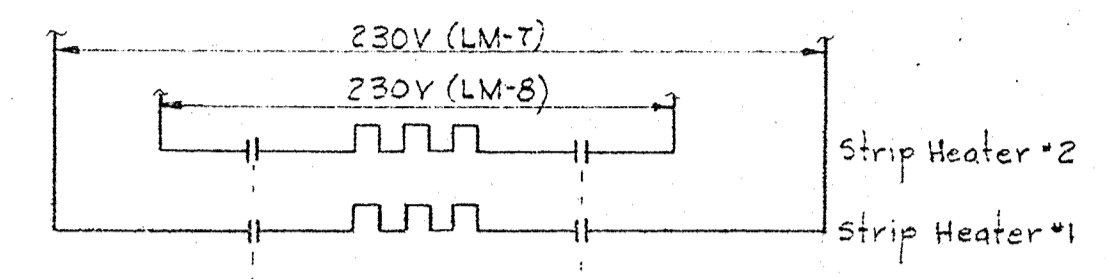
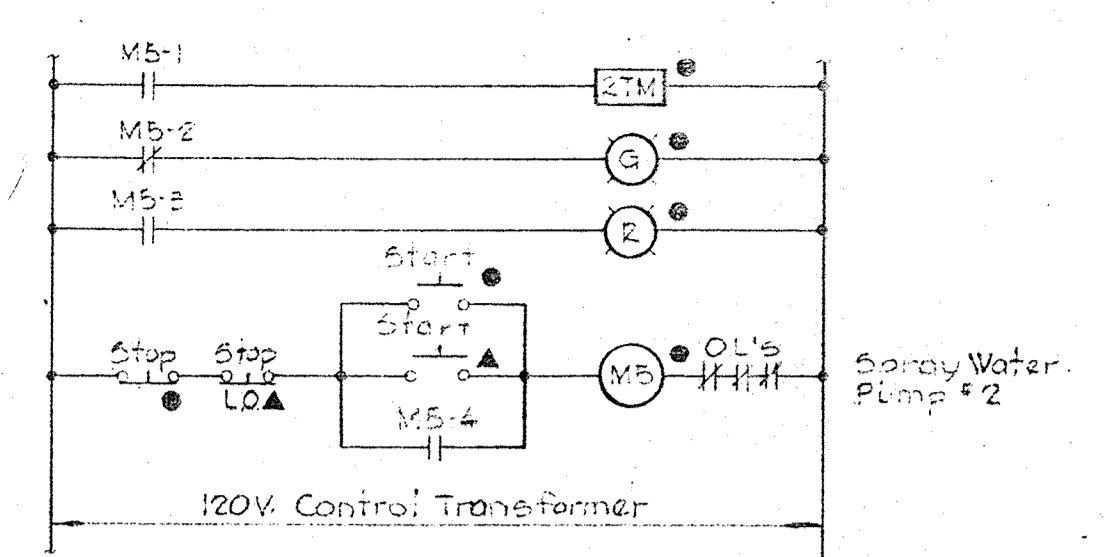
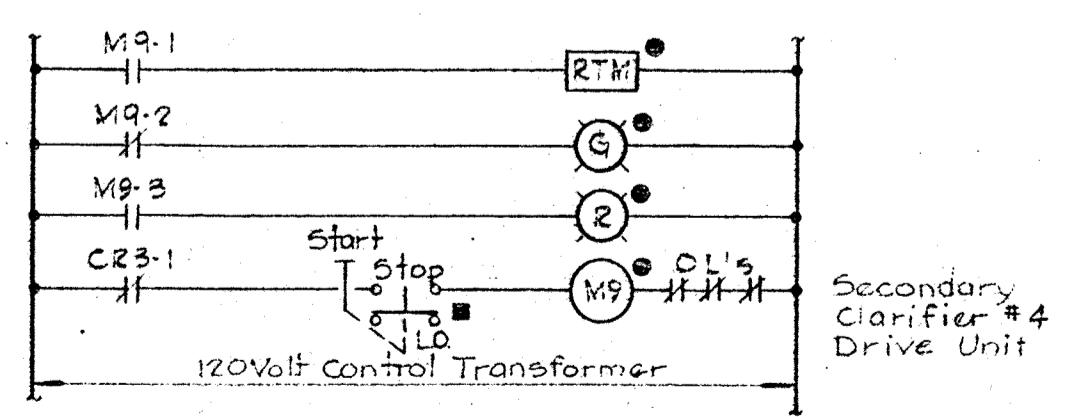
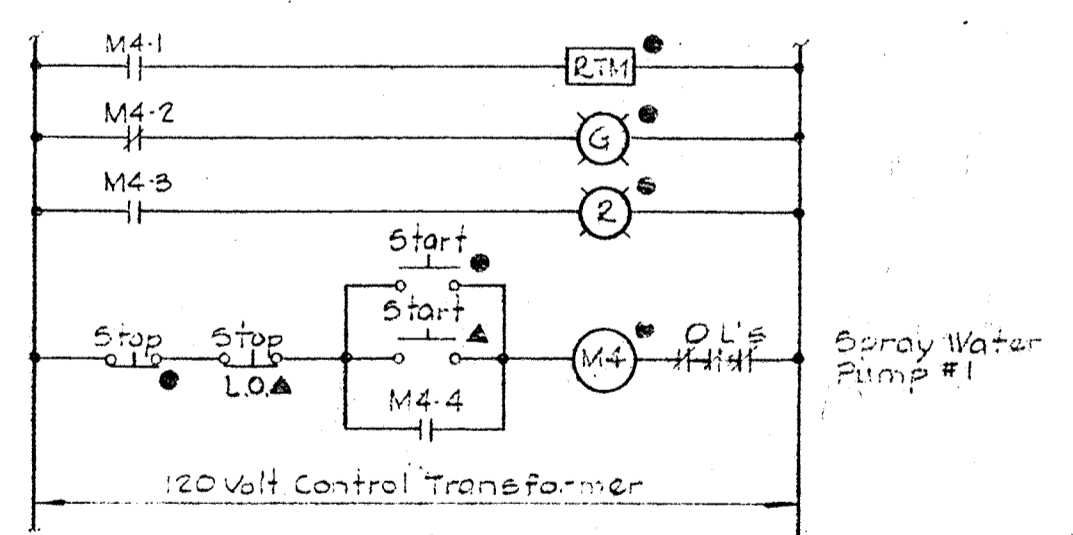
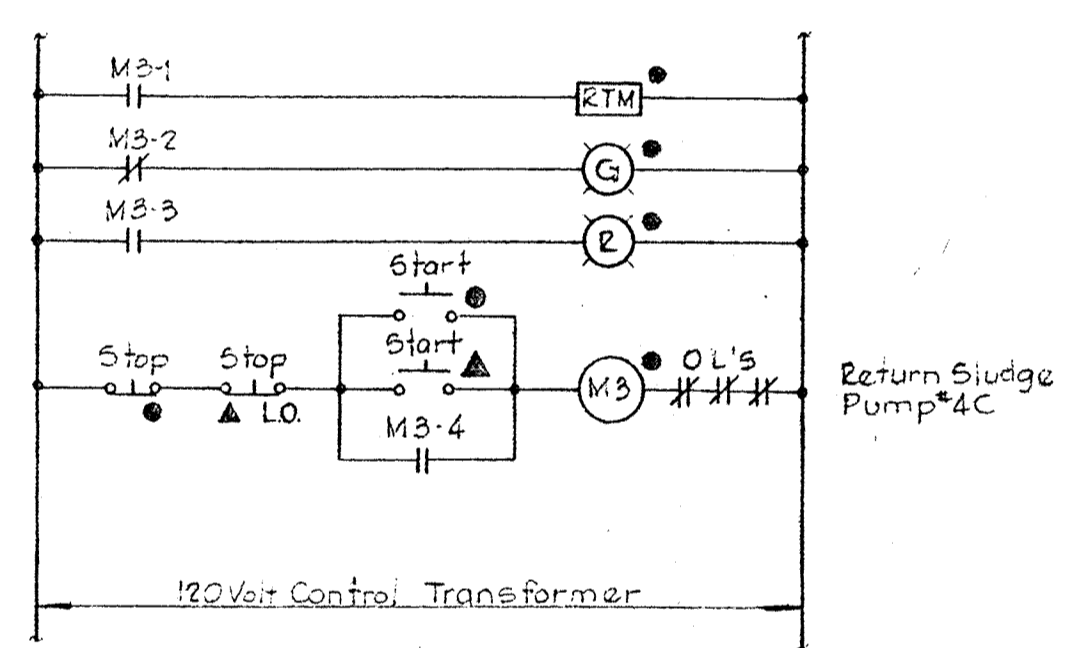
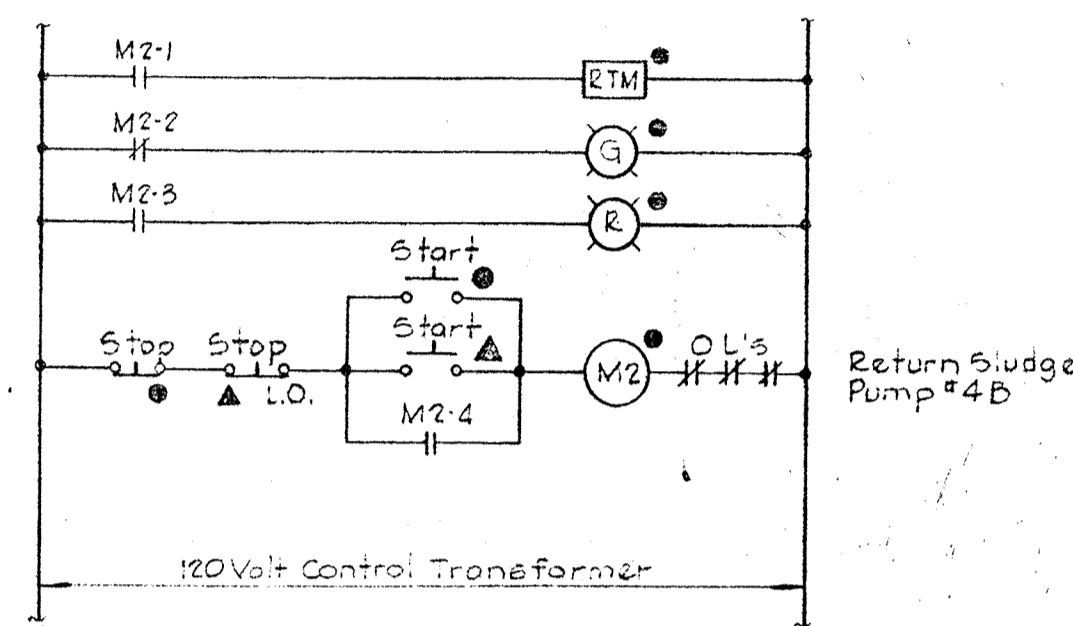
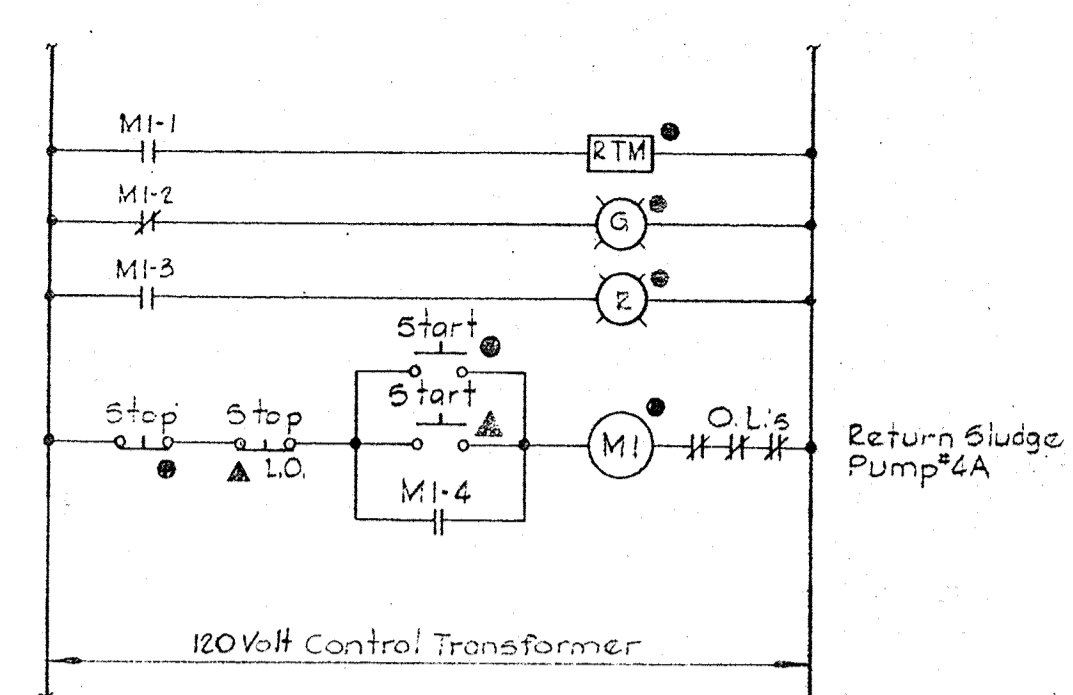
SHEET E-8

W. O. 6538-2

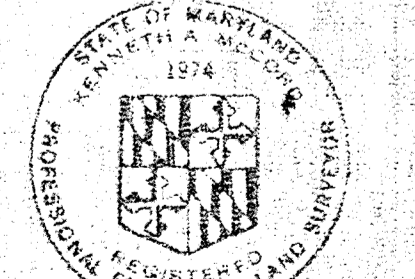
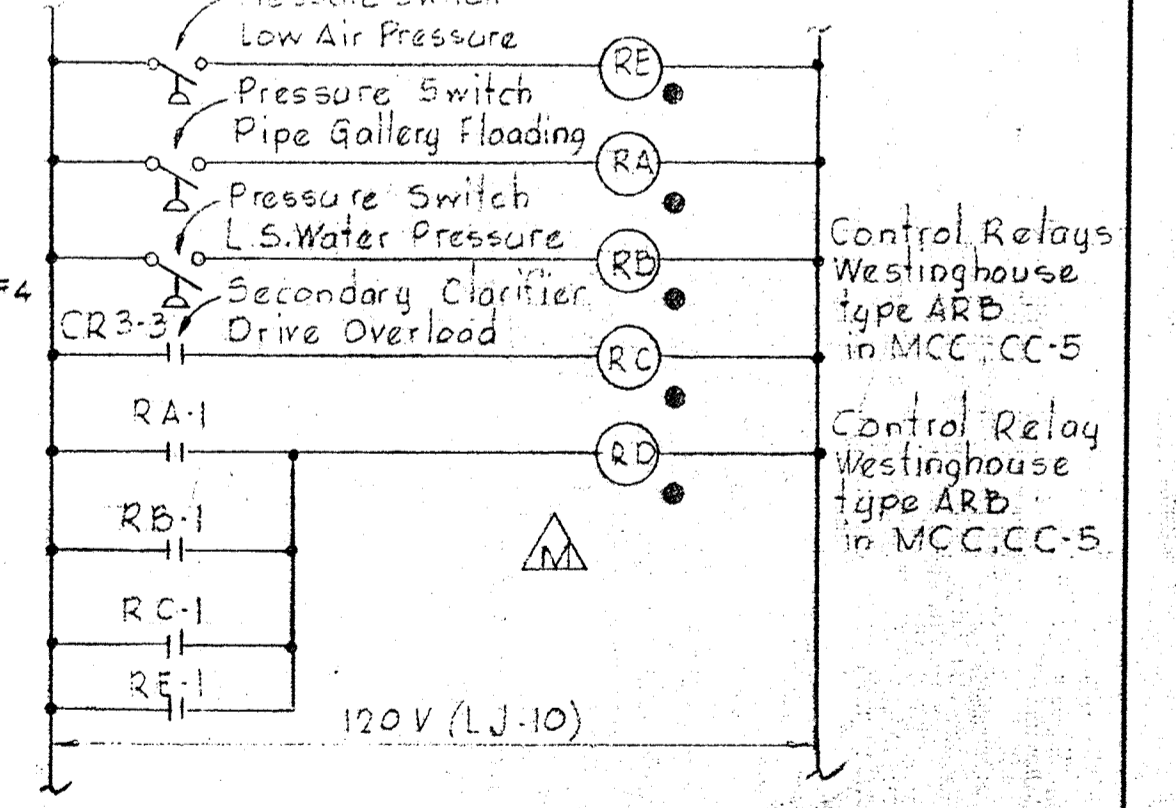
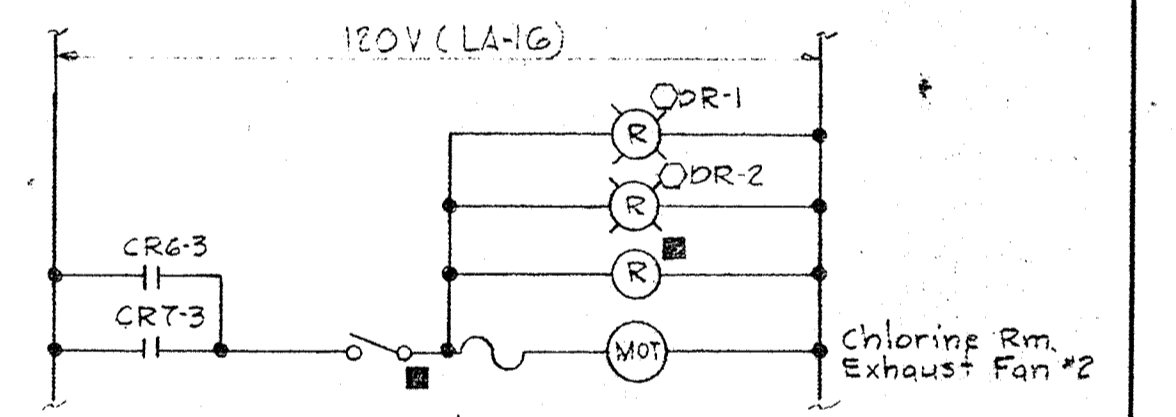
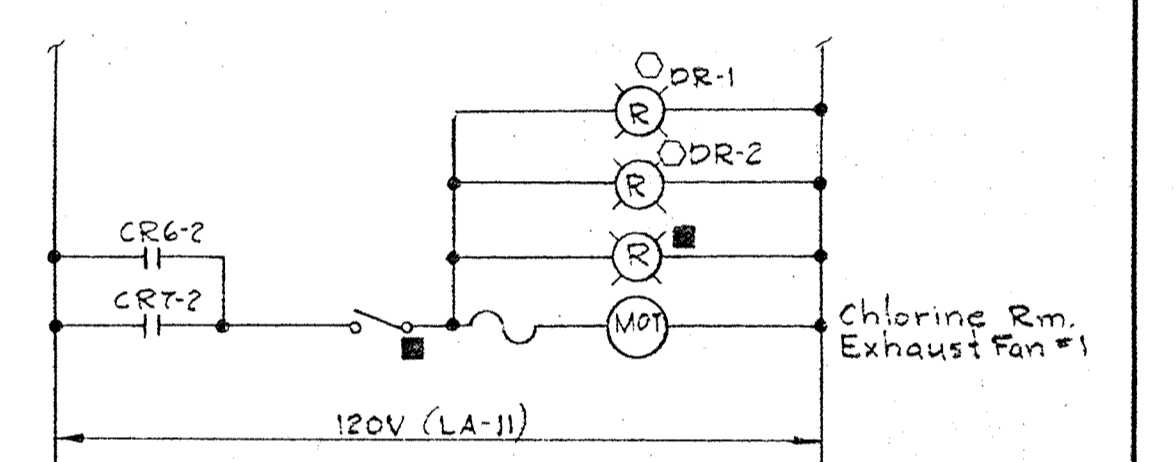
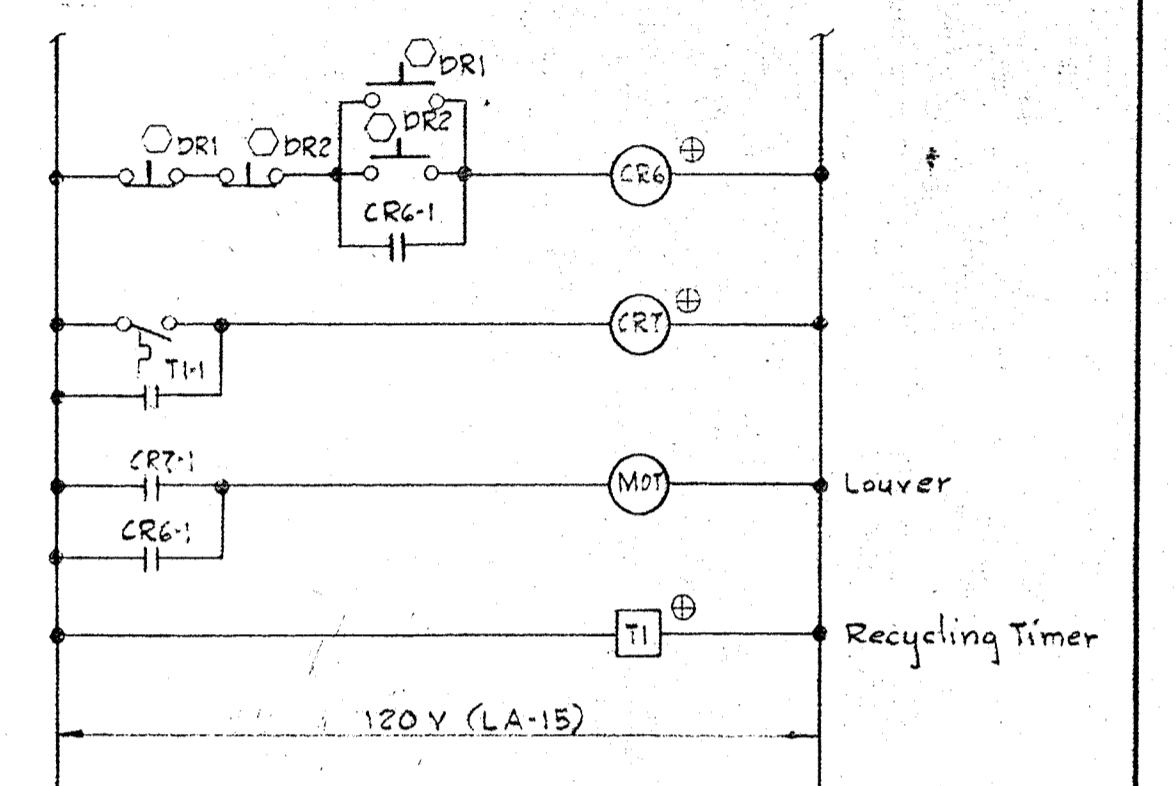
Addendum A



Ernest M. Ford



NOTES
1. For GENERAL ELECTRICAL NOTES and LEGEND See Sheet E-2



Handwritten signature

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 DATE	CONTRACT NO. 526-S W. O. Fulbert CHIEF BUREAU OF ENGINEERING	ELEMENTARY WIRING DIAGRAMS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3	DRAWING NO. 43	SCALE
					OF 45	NONE

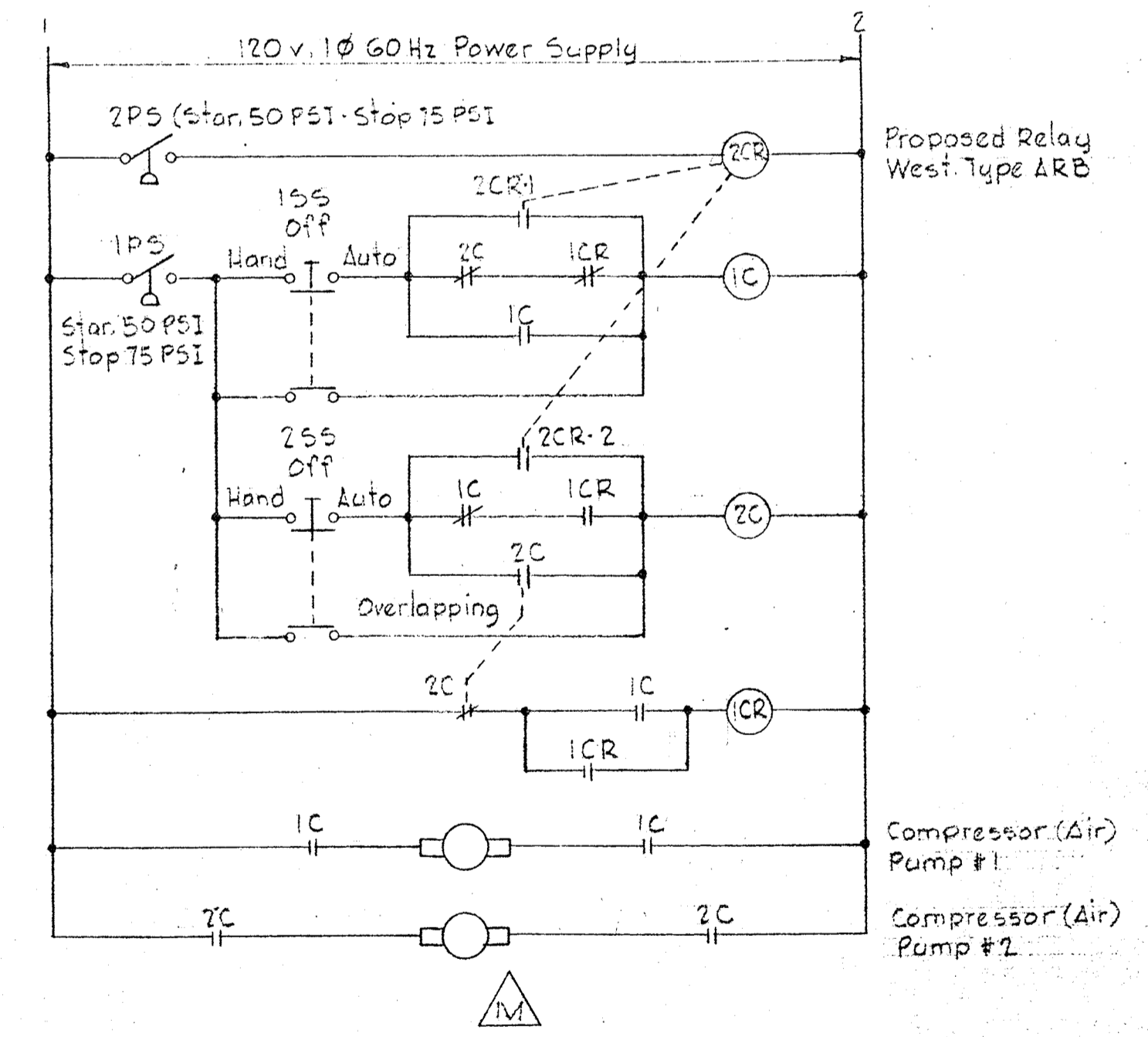
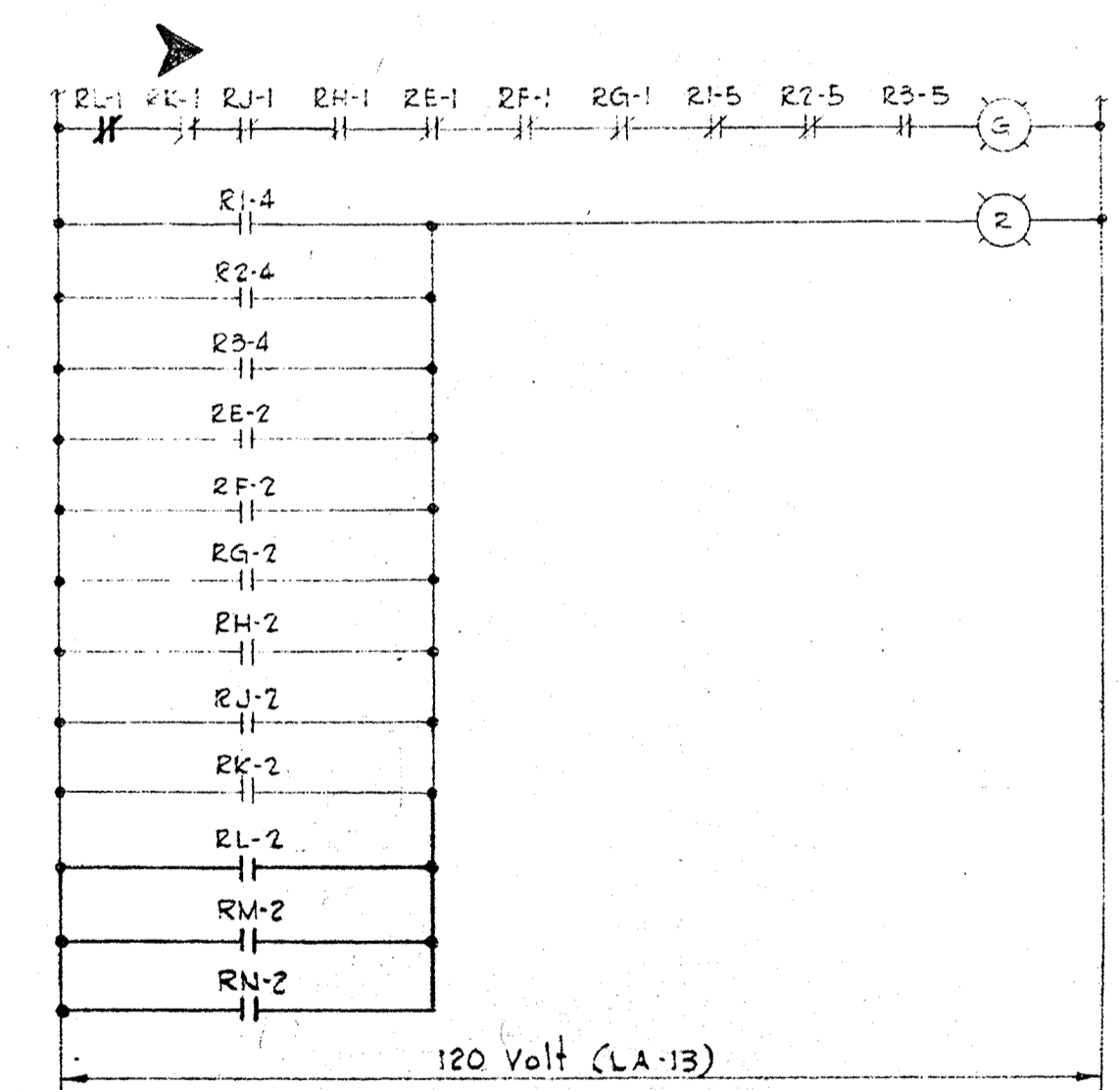
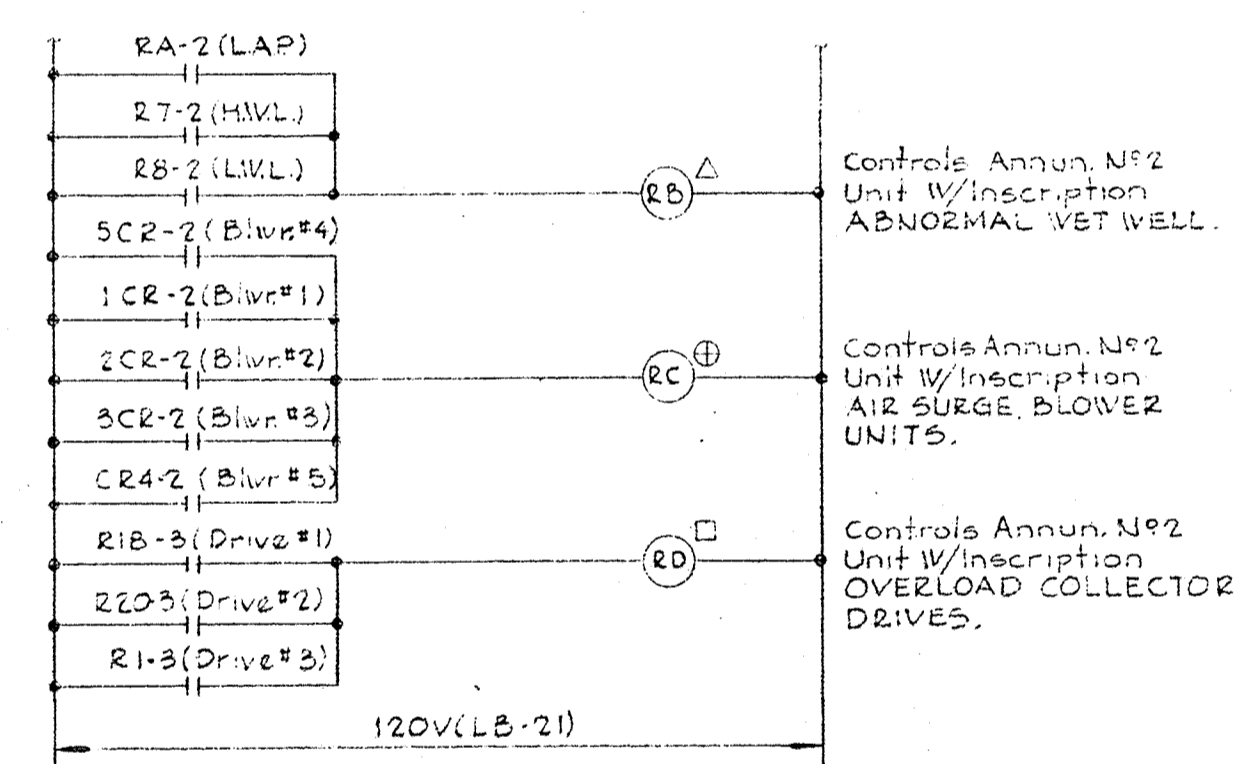
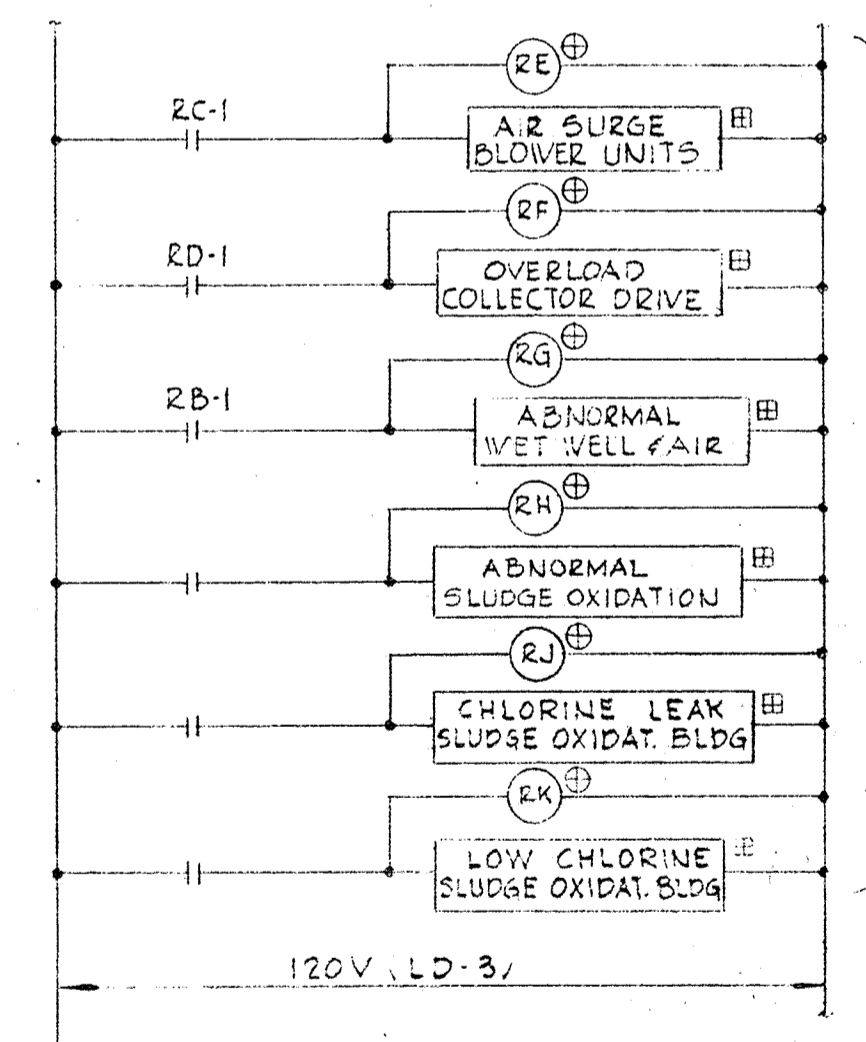
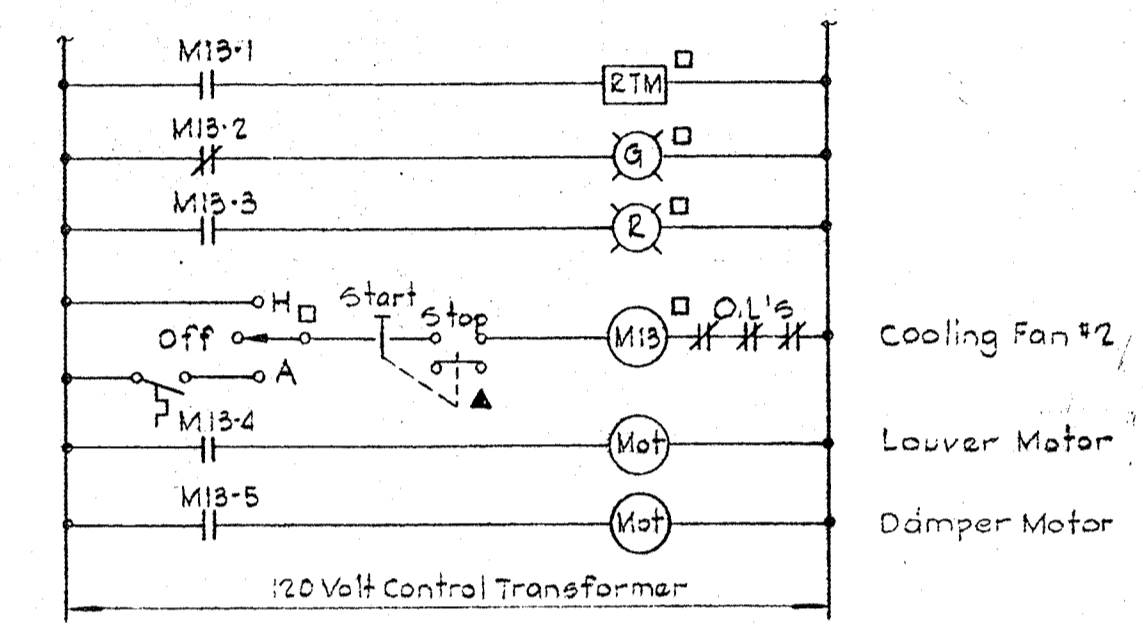
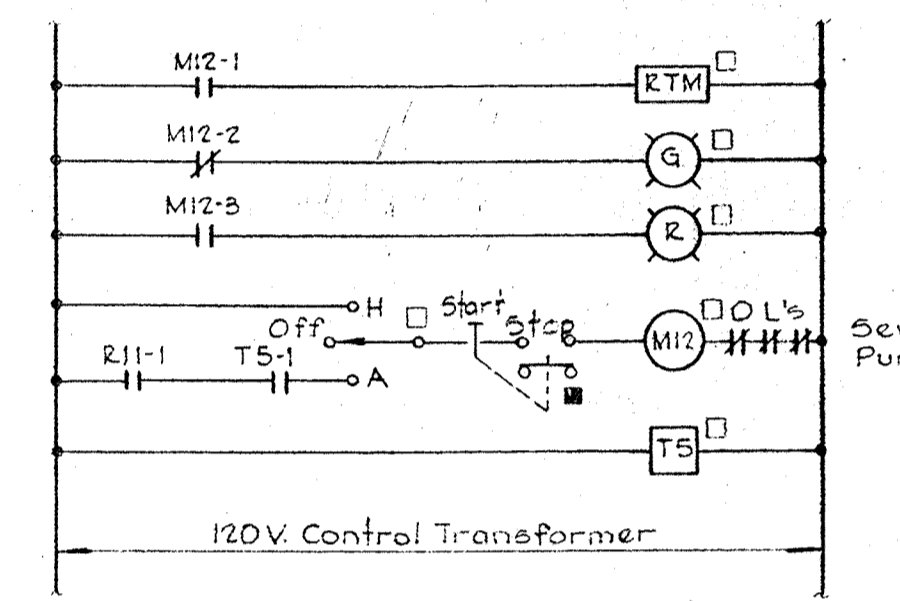
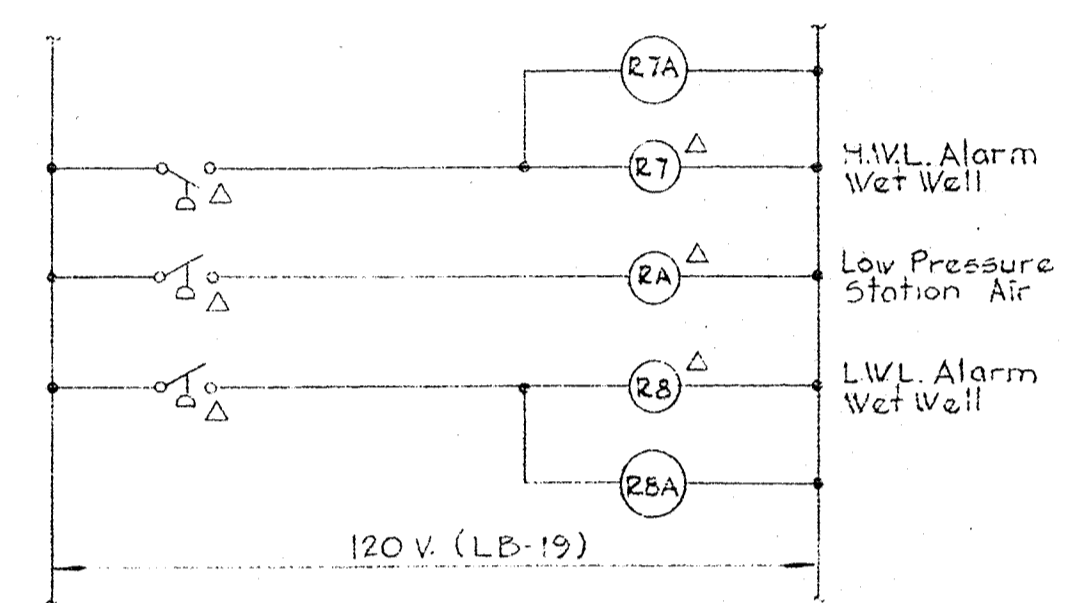
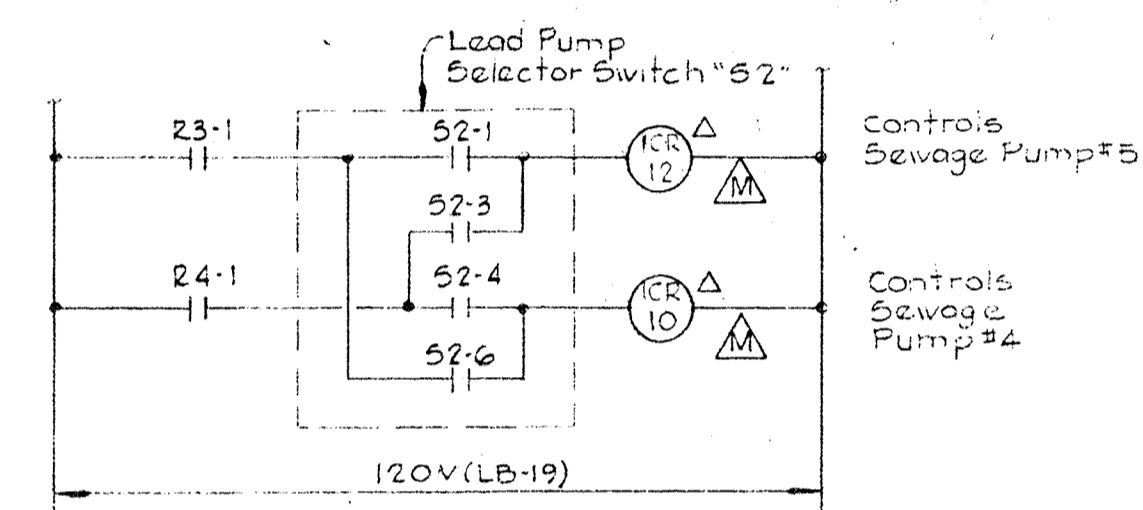
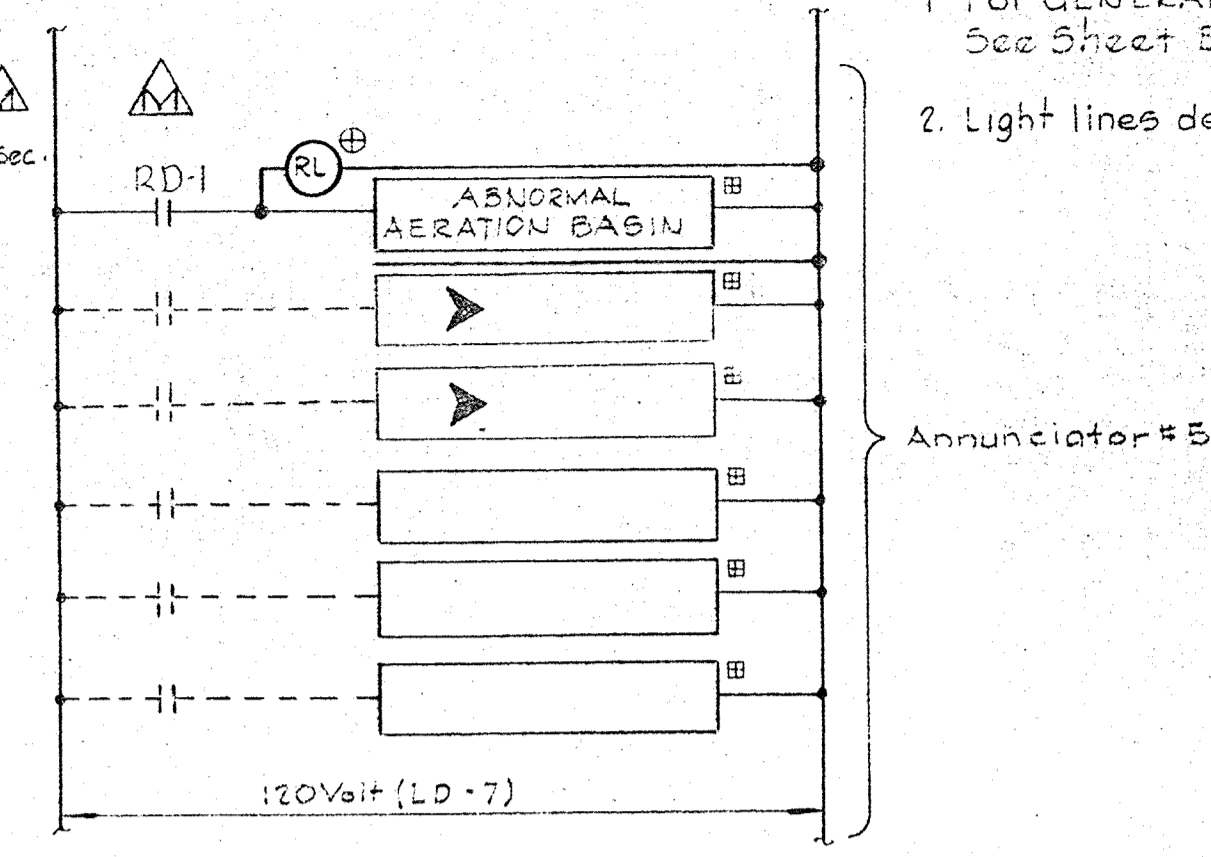
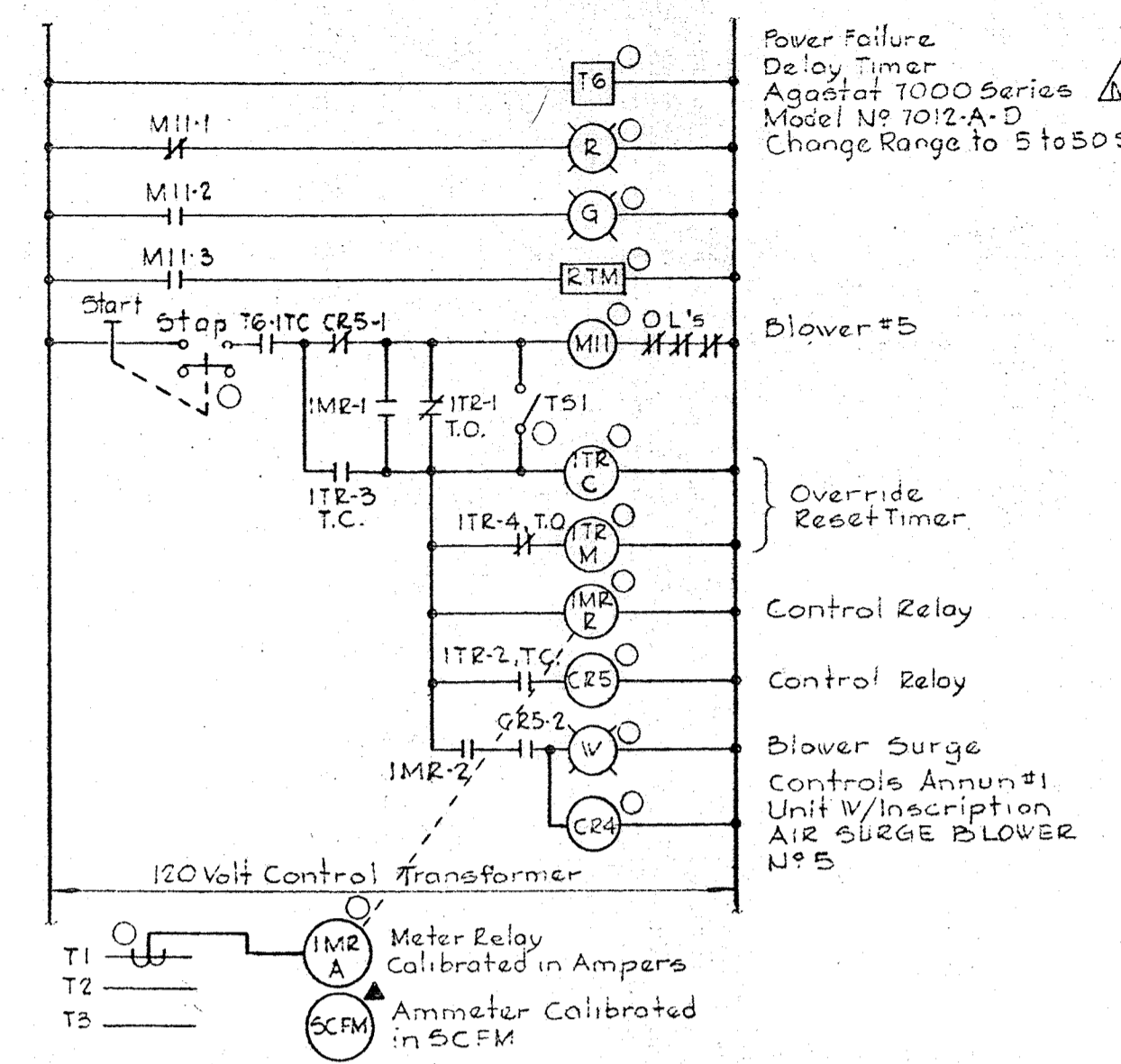
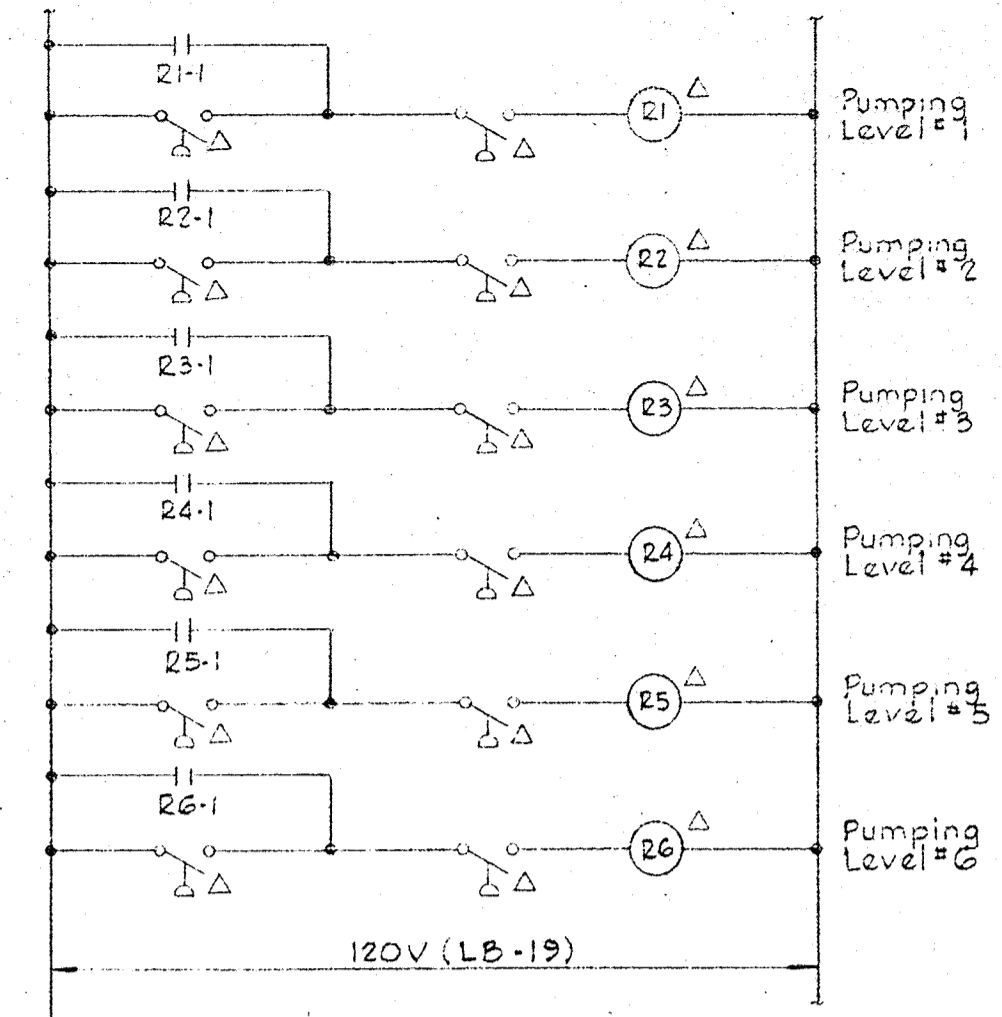
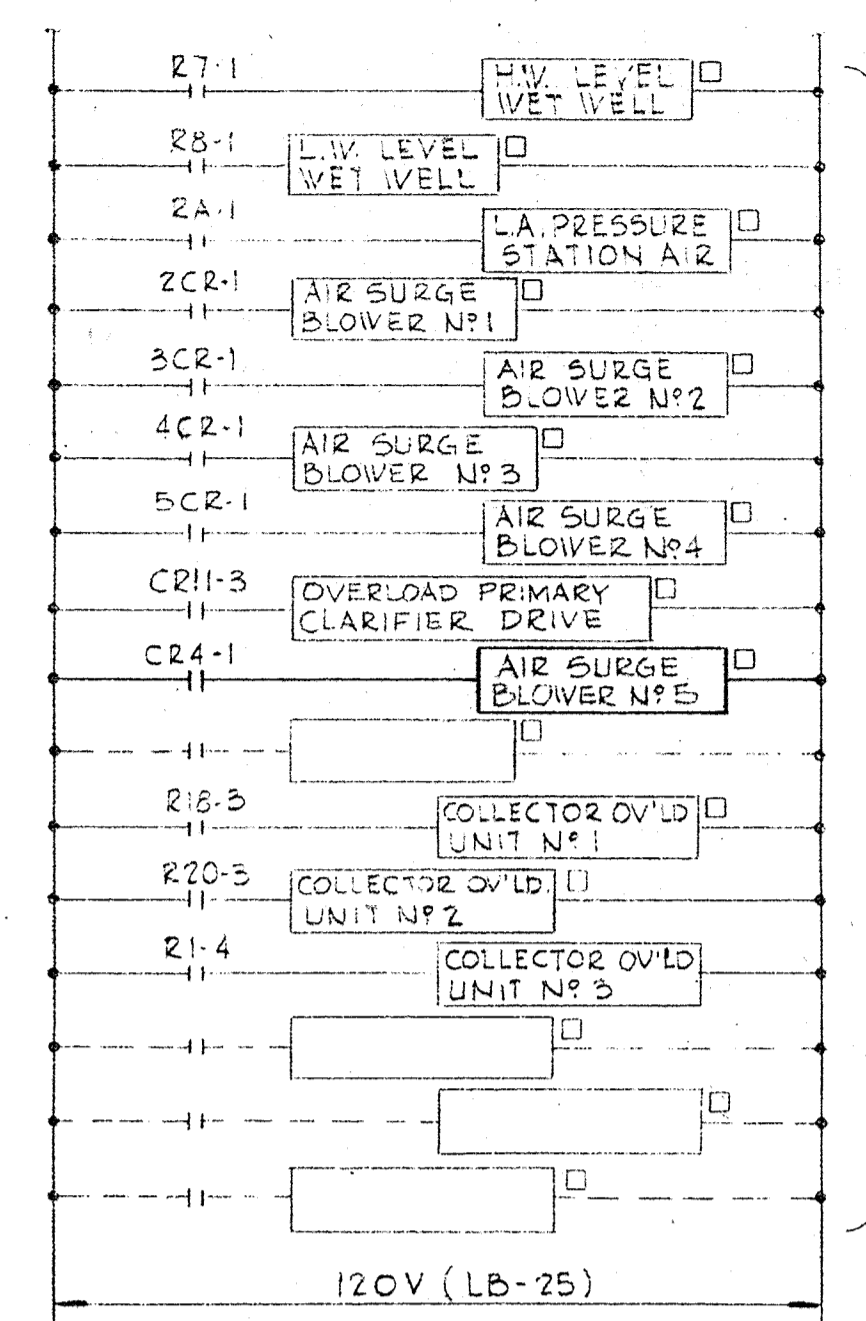
W. O. 6538-2

SHEET E-9

DRAWING 44510 18322

NOTES

- 1 For GENERAL ELECTRICAL NOTES and LEGEND, See Sheet E-2.
- 2 Light lines denote existing, Dark lines denote new.



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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
DATE: 3-30-73
W. O. Fallick
CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 526-S

ELEMENTARY WIRING DIAGRAMS

SAVAGE WASTEWATER
TREATMENT PLANT ADDITION NO. 3

DRAWING NO. 44 OF 45
SCALE NONE
SHEET E-10



Kenneth A. McLeod

BY THE DEVELOPER
 I certify that all development and/or construction will be done according to this plan of development and plan for Erosion and Sediment Control, and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents as are deemed necessary. Deviation from this plan will not be made unless authorized by the Howard Soil Conservation District.

W.O. 6538-2
 Signature of Developer Date: 2/20/73

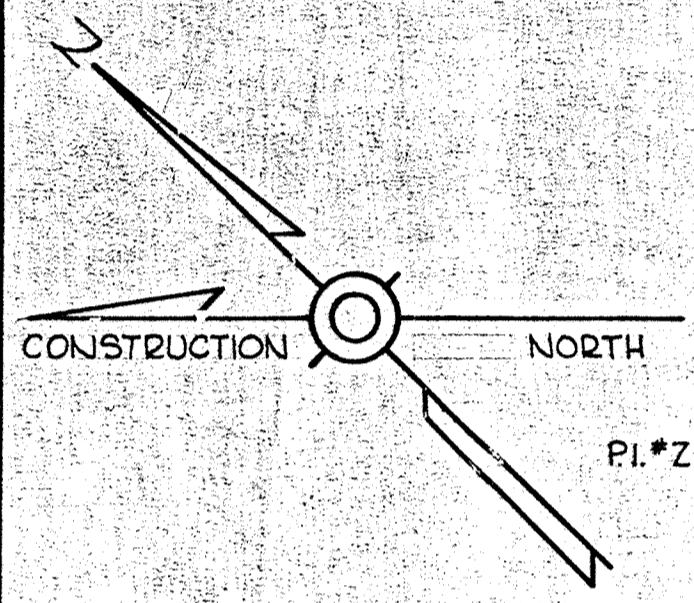
BY THE ENGINEER
 I certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

James M. Malord
 Signature of Engineer Date: 2/20/73 PI.#Z-2

Reviewed for Howard SCD and meets Technical Requirements (Name)
 US Soil Conservation Service: *James M. Malord 2/20/73*
 Signature Date:

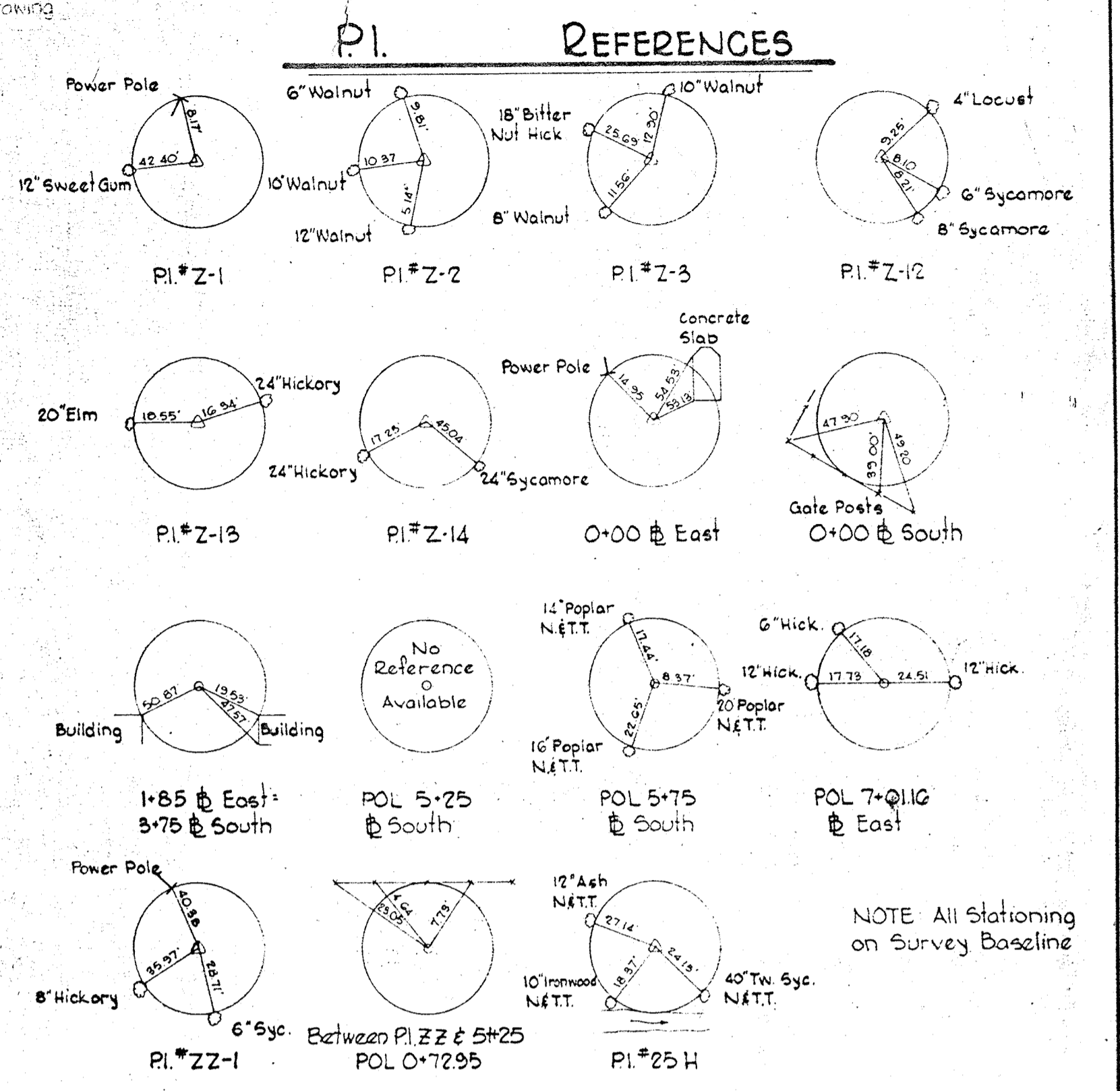
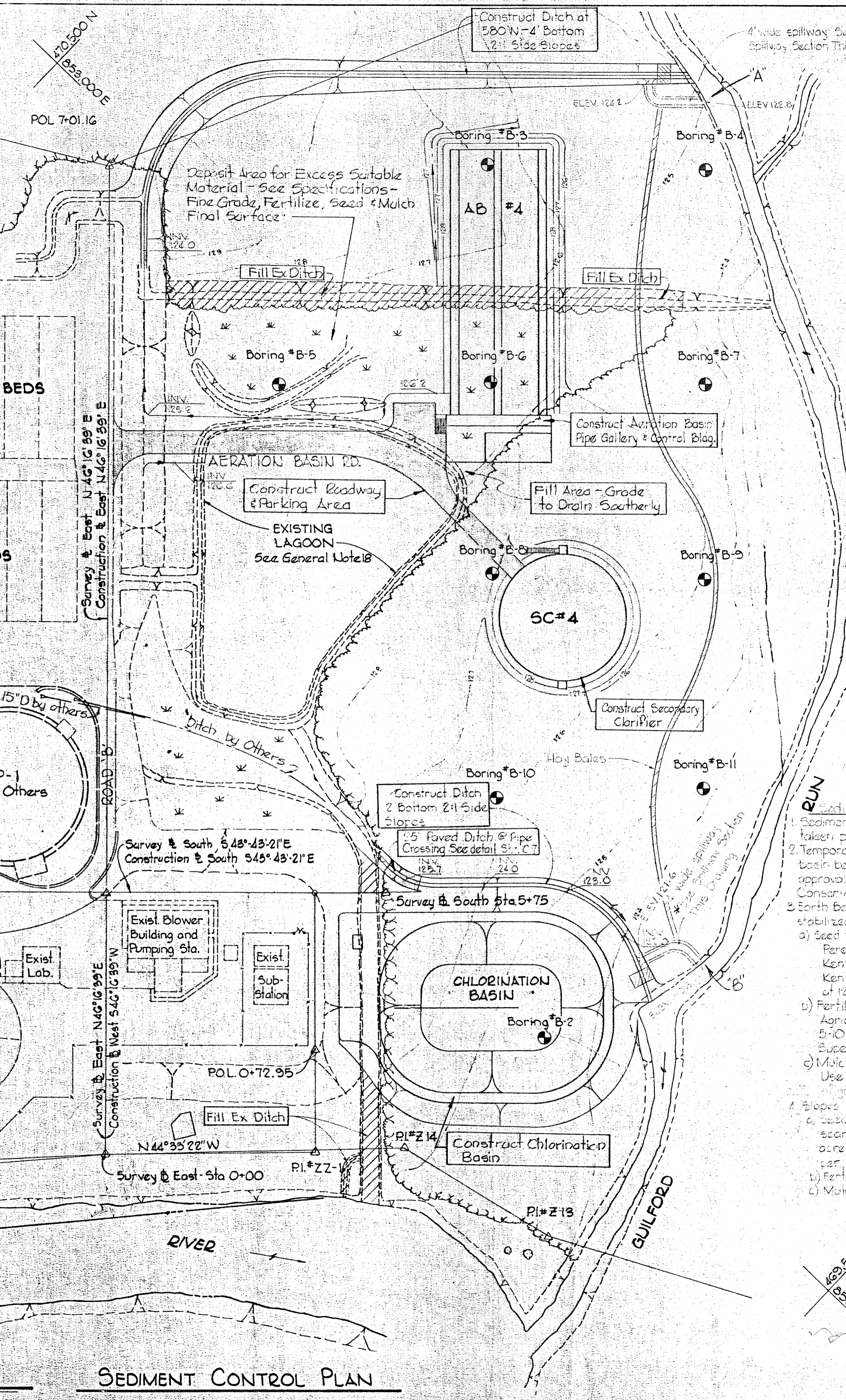
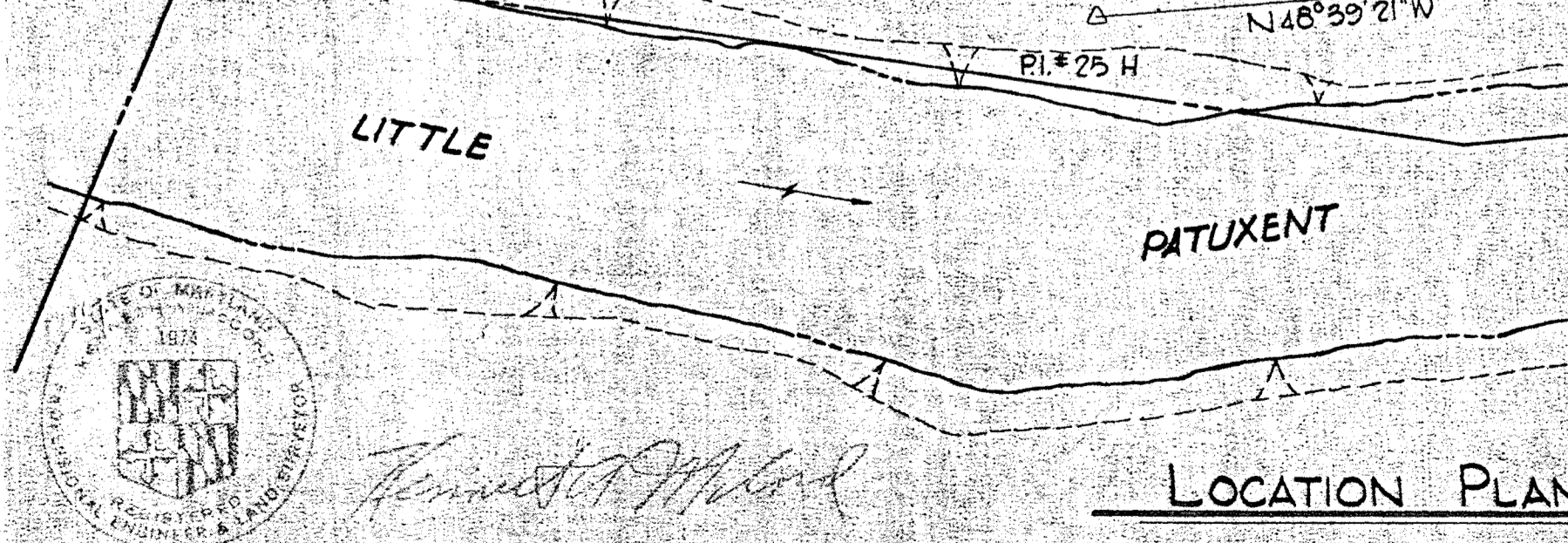
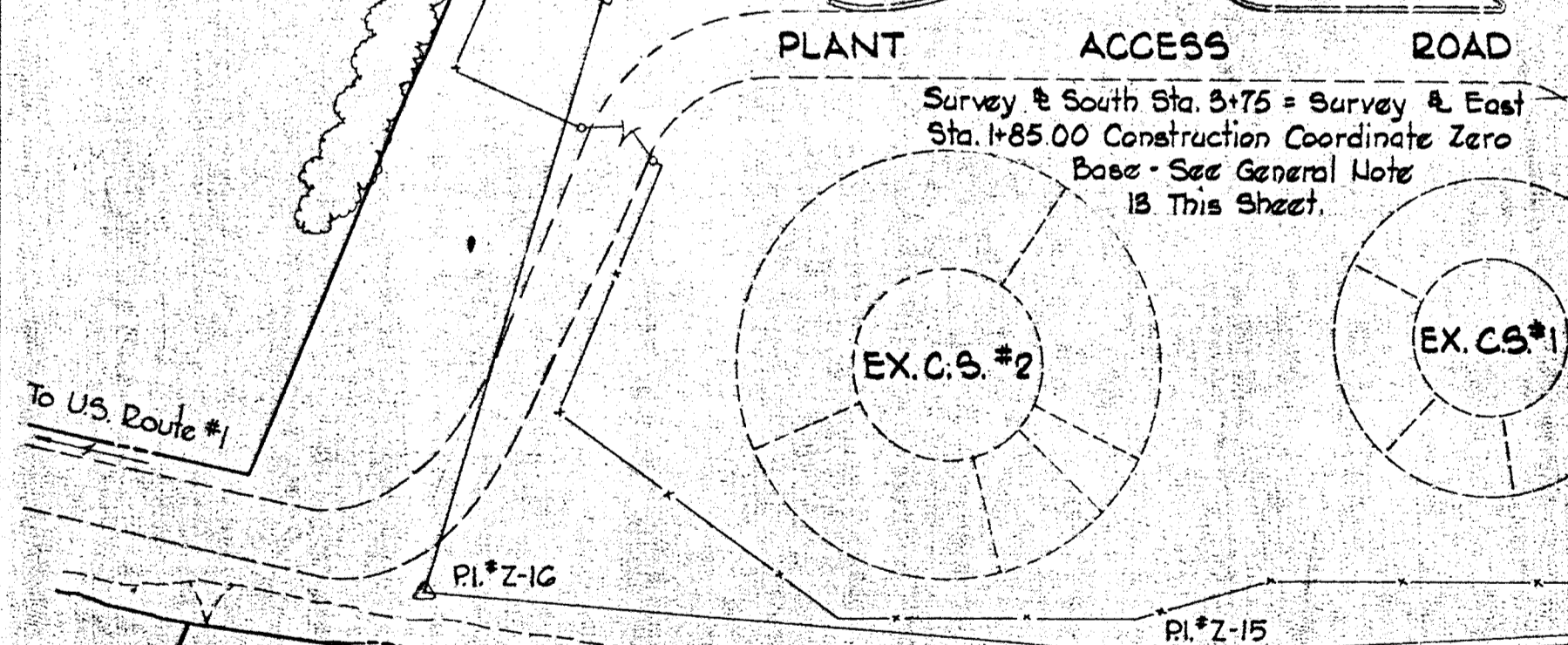
This development plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District

Approved: *Edward J. Zedner* Date: 2/20/73
 Howard S.C.D.



Survey to South 54°45'21"E
 Construction to North N43°45'21"W

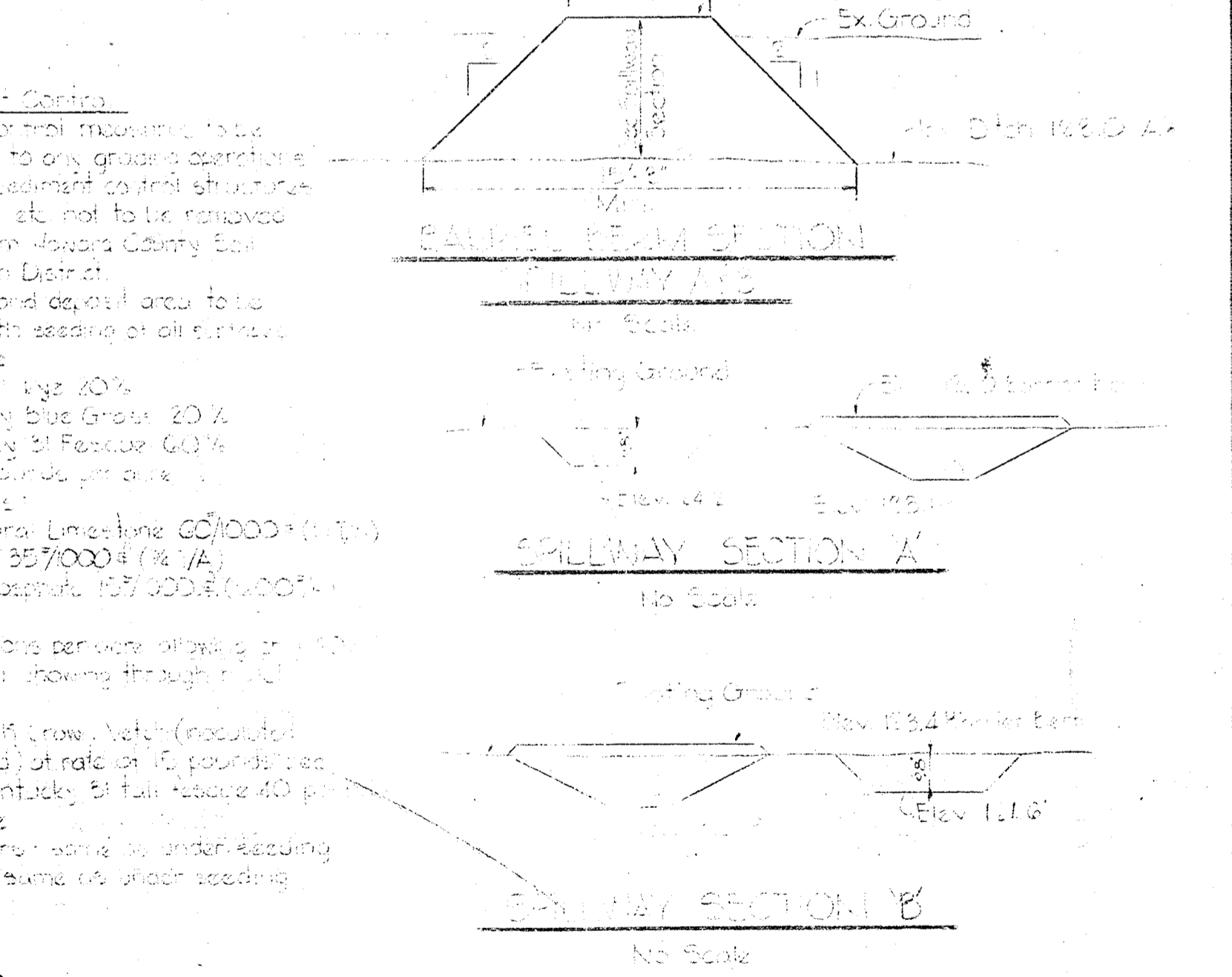
Survey to South Sta 0+00



BENCH MARKS

W.2. & A. B.M. Blaine Elev. 139.06
 X-cut on flange bolt of fire hyd. 40' Rt. of E Sta 2+25 to South

W.2. & A. B.M. #1-A Elev. 127.65
 2.2. Spike in 36" Oak 8' Lt. of PI.#19-H (not shown on Plan)



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

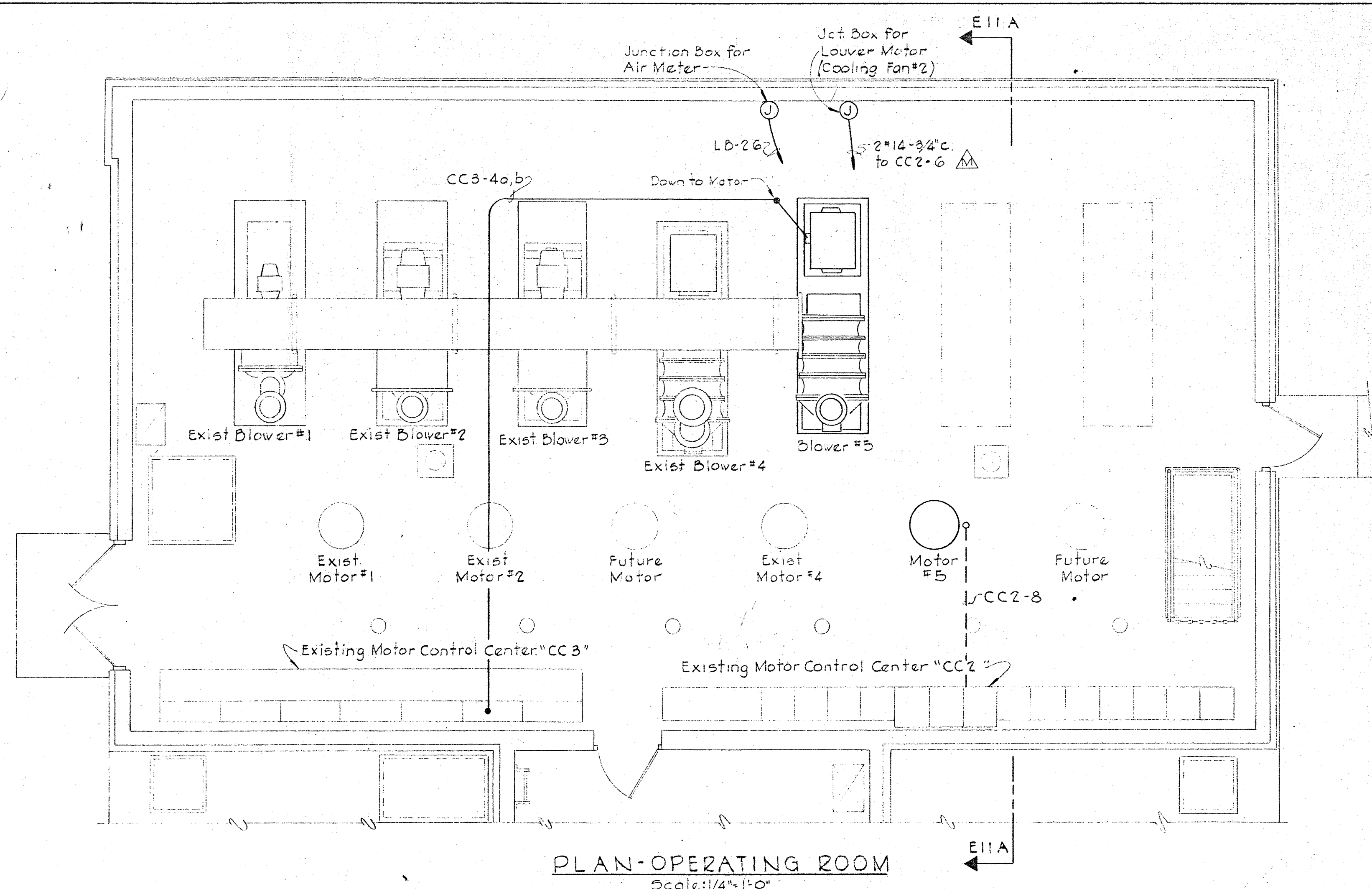
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 CHIEF - BUREAU OF ENGINEERING

CONTRACT NO. 526-S

SEDIMENT CONTROL PLAN

SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO. 3

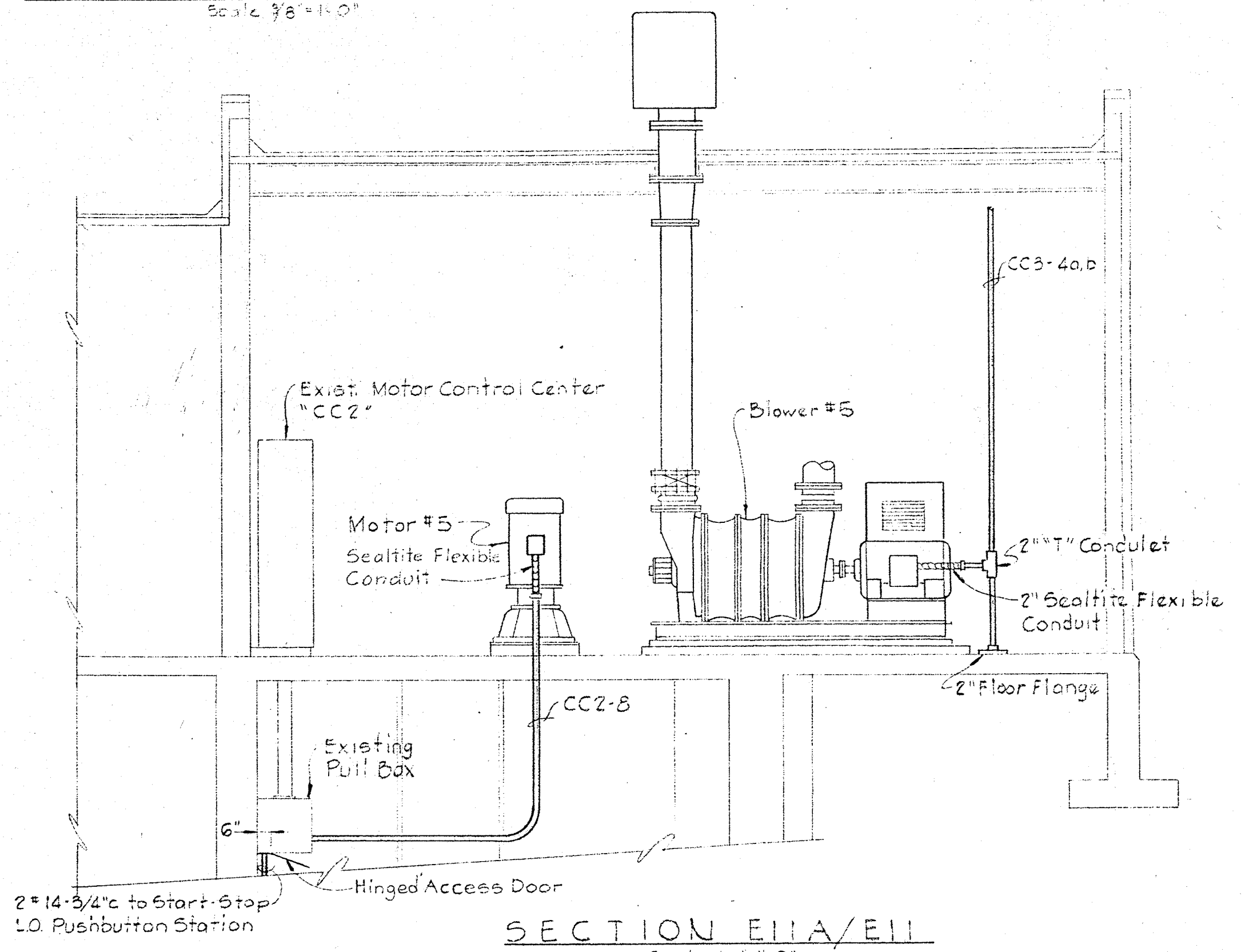
DRAWING NO. 45 OF 45
SCALE 1" = 50'



1	2	3	4	5	6	7	8
CC2-1	CC2-5	CC2-9		CC2-13	CC2-17	CC2-21	CC2-25
CC2-2	CC2-6	CC2-10	CC2-14	CC2-18	CC2-22	CC2-26	CC2-30
CC2-3	CC2-7			CC2-15	CC2-19	CC2-23	CC2-27
CC2-4	CC2-8	CC2-11	CC2-12	CC2-16	CC2-20	CC2-24	CC2-28
				CC2-14	CC2-20	CC2-24	CC2-28
						CC2-30	CC2-33

NOTES
 1. For GENERAL ELECTRICAL NOTES & LEGEND See Sheet E-2
 2. Light lines denote existing. Dark lines denote new.

PARTIAL ELEV. EXIST MCC "CC2"
 Scale: 3/8"=1'-0"



ADDITIONS TO EXISTING MOTOR CONTROL CENTER SCHEDULE "CC2" (480V)

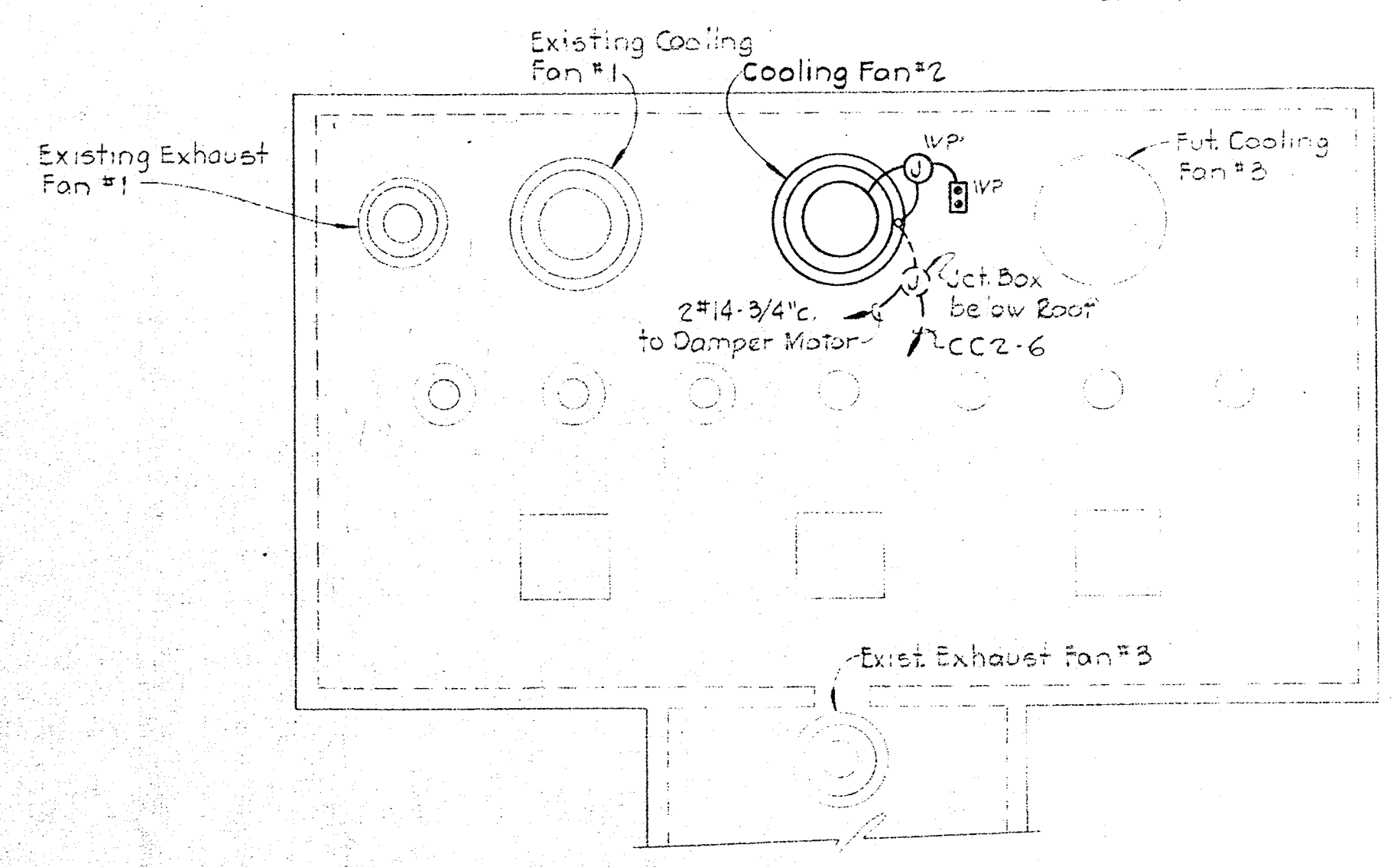
UNIT/FUN NUMBER	NAMEPLATE DATA	DEVICE DESCRIPTION	HP-KVA	AUX DESC.	BREAKER			WIRE				GRD WIRE	COND SIZE	
					FRAME	POLE	CALIB	N°	SIZE	TYPE	FOR			
CC2-8	SEWAGE PUMP #5	Combination Starter NEMA Size 4, FVNR	50	o.b.c. d.g.	225	3	150	22	3	#2	THW	Power	#6	2 1/2"
CC2-6	COOLING FAN #2	Combination Starter NEMA Size 1, FVNR	5	o.b.c. d.g.	100	3	15	14	3	#12	THW	Power	#14	1"
CC2-7	BLANK (Spare)	Combination Starter NEMA Size 1, FVNR	-	o.b.c. d.g.	100	3	20	14	-	-	-	-	-	-

ADDITIONS TO EXISTING MOTOR CONTROL CENTER SCHEDULE "CC3" (2300V)

UNIT/FUN NUMBER	NAMEPLATE DATA	DEVICE DESCRIPTION	HP-KVA	AUX DESC.	SWITCH		FUSE		WIRE				GRD WIRE	COND SIZE	
					FRAME	POLE	RATING	TYPE	N°	SIZE	TYPE	FOR			
CC3-4a	BLOWER #5	CFM Meter, CTs etc. Timers, Controls, Relays	-	-	-	-	-	-	See Wiring Diagram	-	-	-	-	-	
CC3-4b	BLOWER #5	Combination Controller 400 HP size, FVNR	300	o.c.e. f.g.	-	-	-	-	Current Limiting	3	#2	5KV	Pwr	#2	2"

CC3-1	CC3-3	CC3-5	CC3-6	CC3-7	CC3-8	CC3-10
CC3-2	CC3-4a, 4b			CC3-9	CC3-11	

ELEV. EXIST. MCC "CC3"
 Scale: 1/4"=1'-0"



Kenneth A. McLeod

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 3-30-73 DATE <i>W. O. Paul</i> CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 526-S	BLOWER BUILDING PUMPING STATION ADDITIONS PLAN AND DETAILS	SAVAGE WASTEWATER TREATMENT PLANT ADDITION NO.3	DRAWING NO. 45A OF 45	SCALE AS SHOWN
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