

PROJECT NO. W-4-8035

ELKRIDGE WATER PUMPING STATION

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS



*Kenneth A. McCord*

Elkrige Water Pumping Station  
Project No. W-4-8035  
Contract No. 399-W

DRAWING NO. 1 OF 24 SCALE 1" = 200'

October 14, 1975

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

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

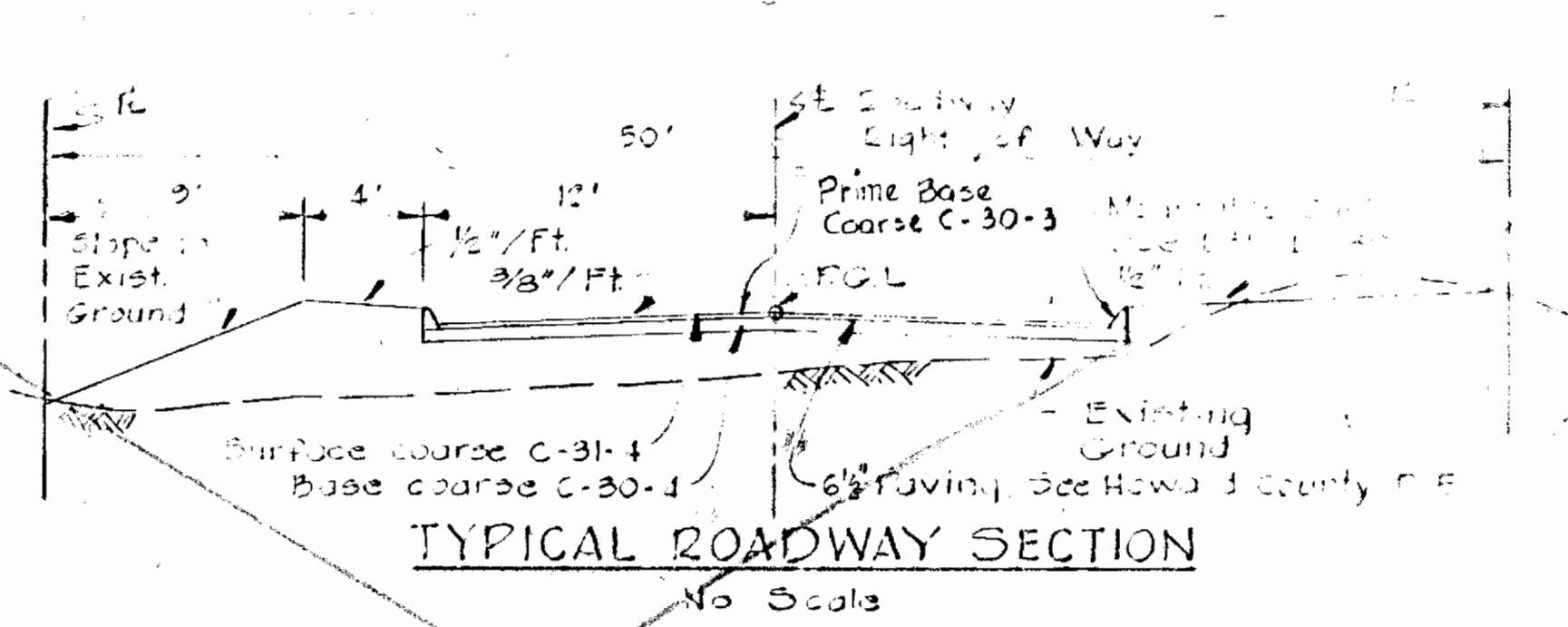
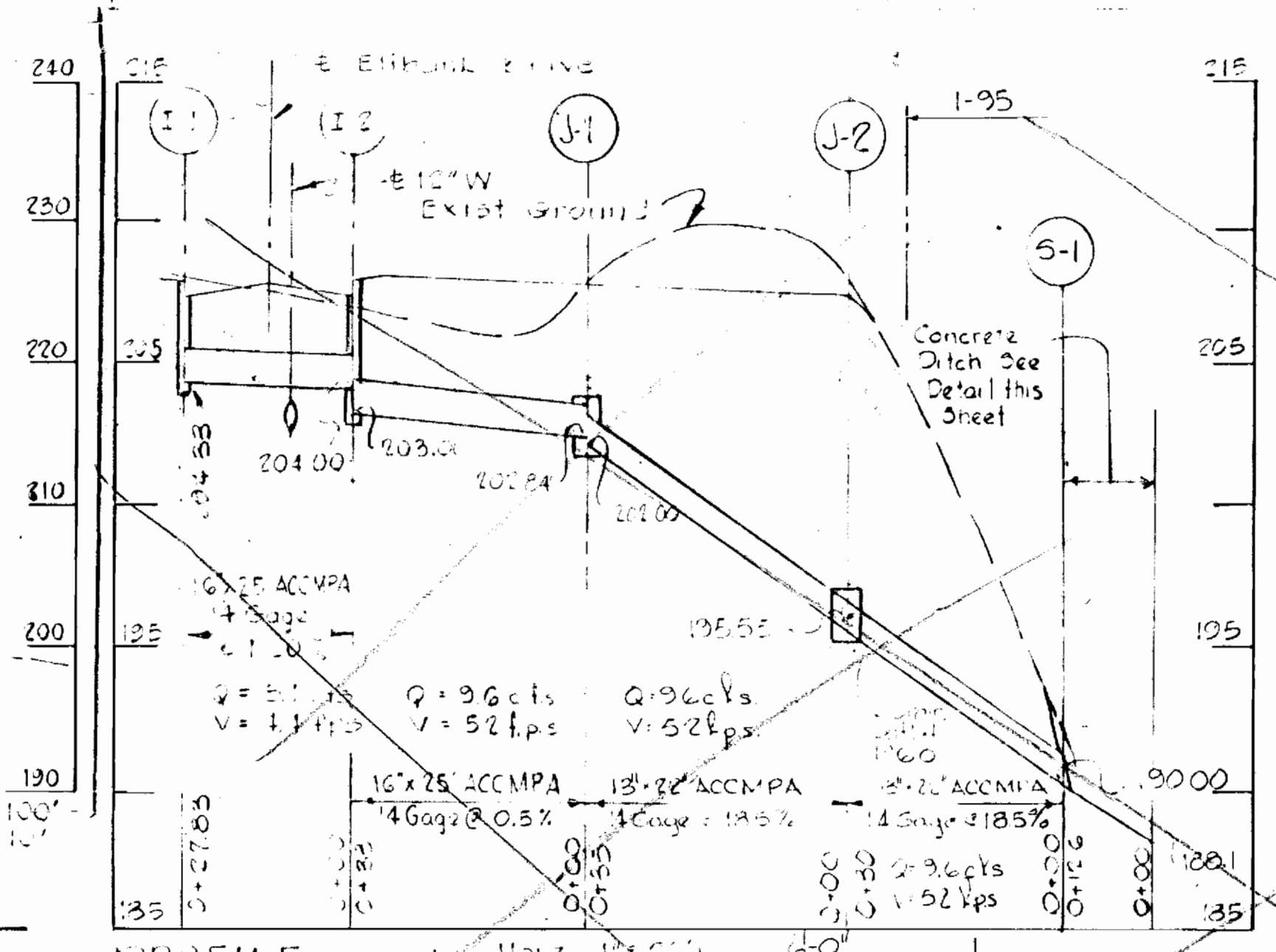
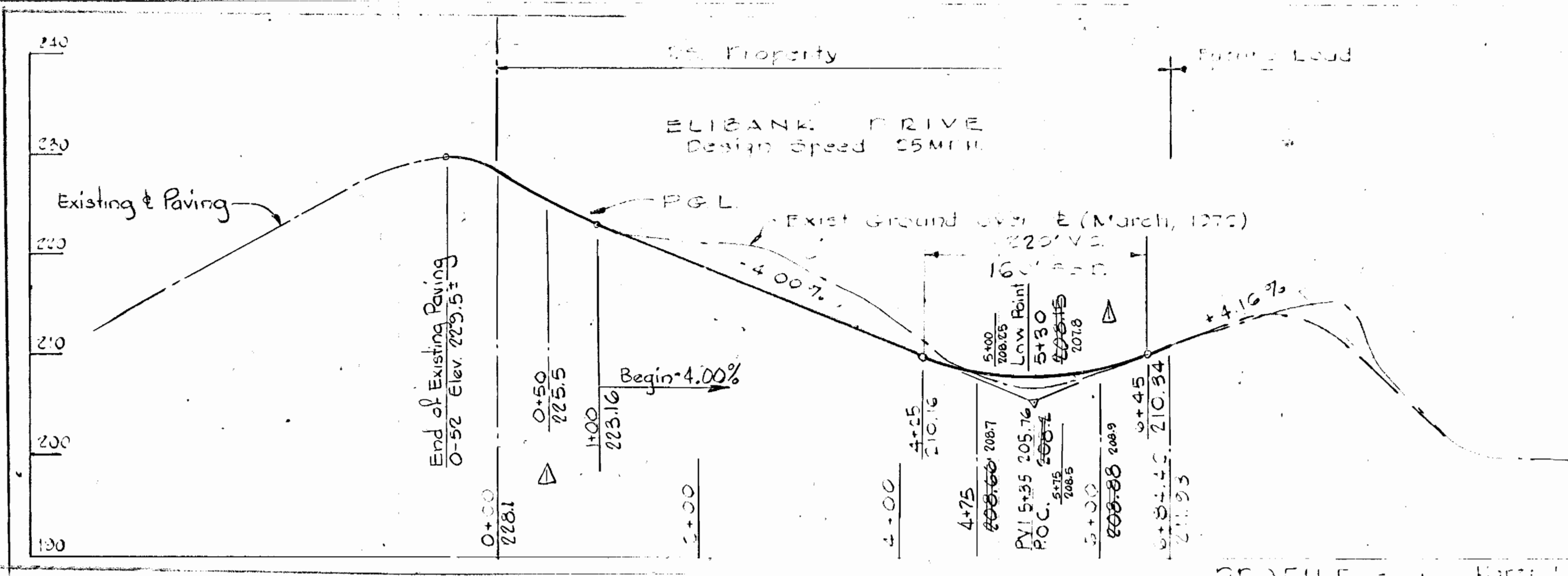
10-14-75  
DATE

*W.O. Pelland*  
CHIEF BUREAU OF ENGINEERING

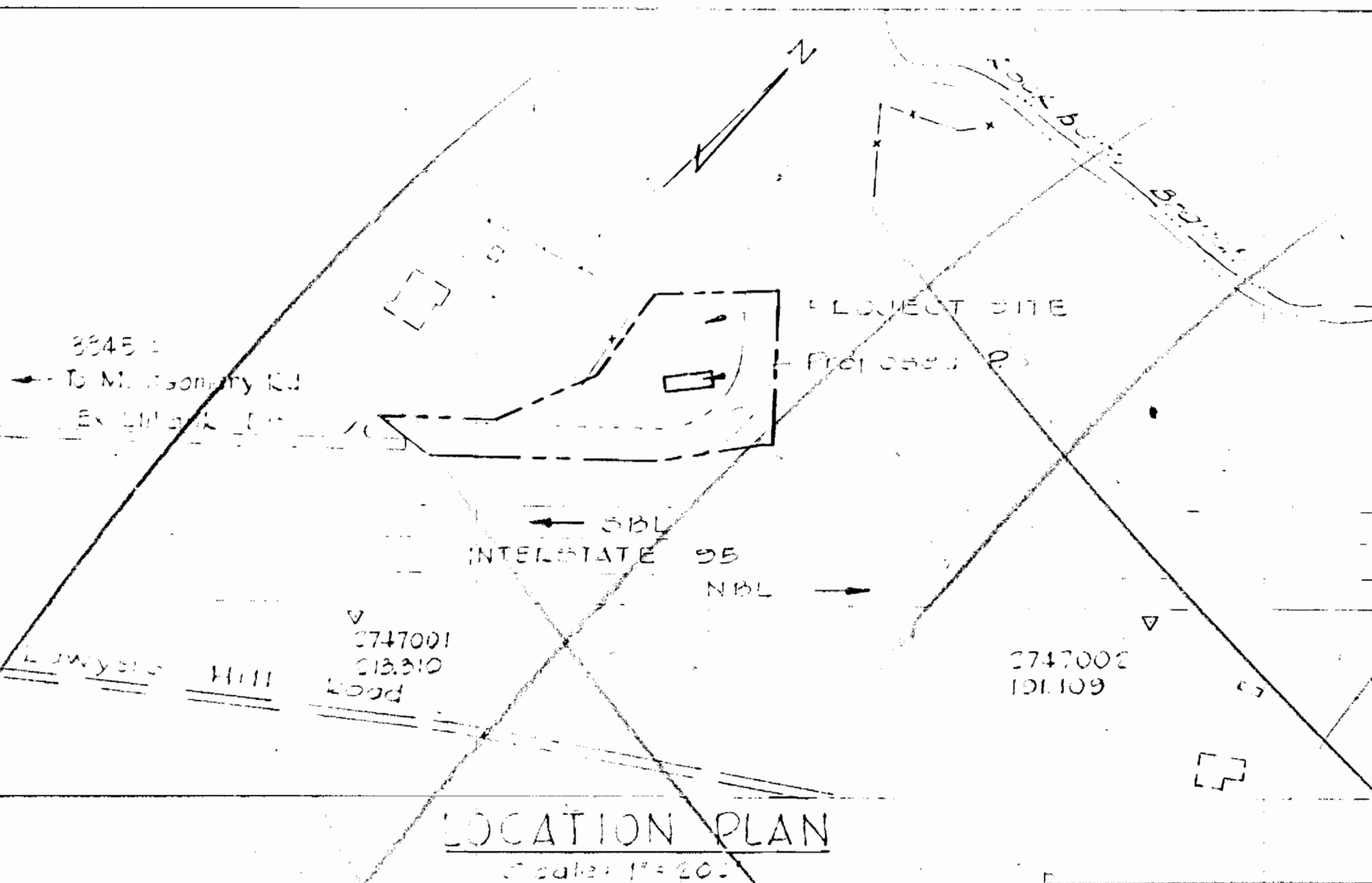
CONTRACT NO. 399-W

LOCATION PLAN

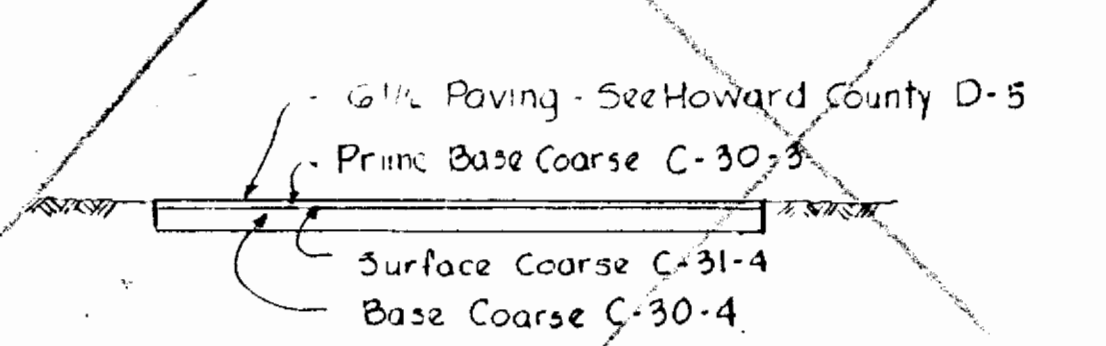
ELKRIDGE WATER PUMPING STATION



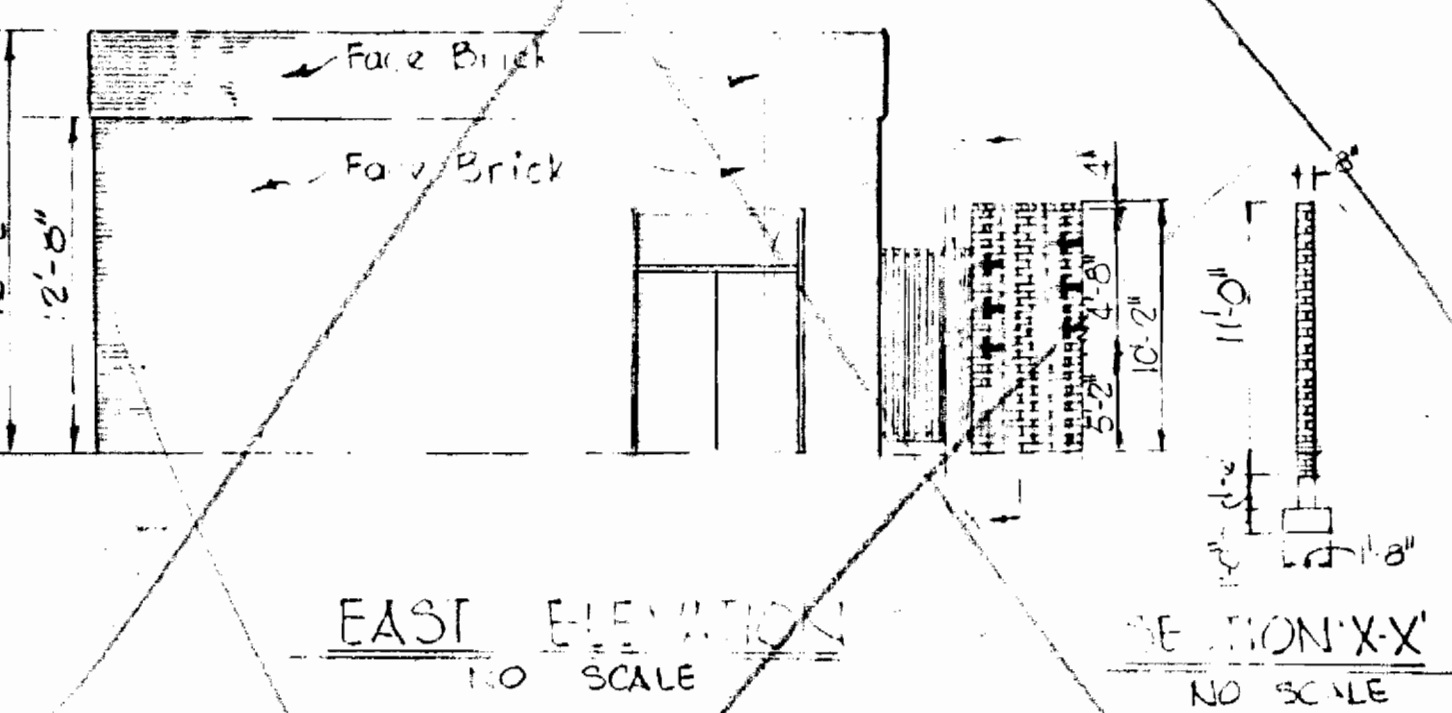
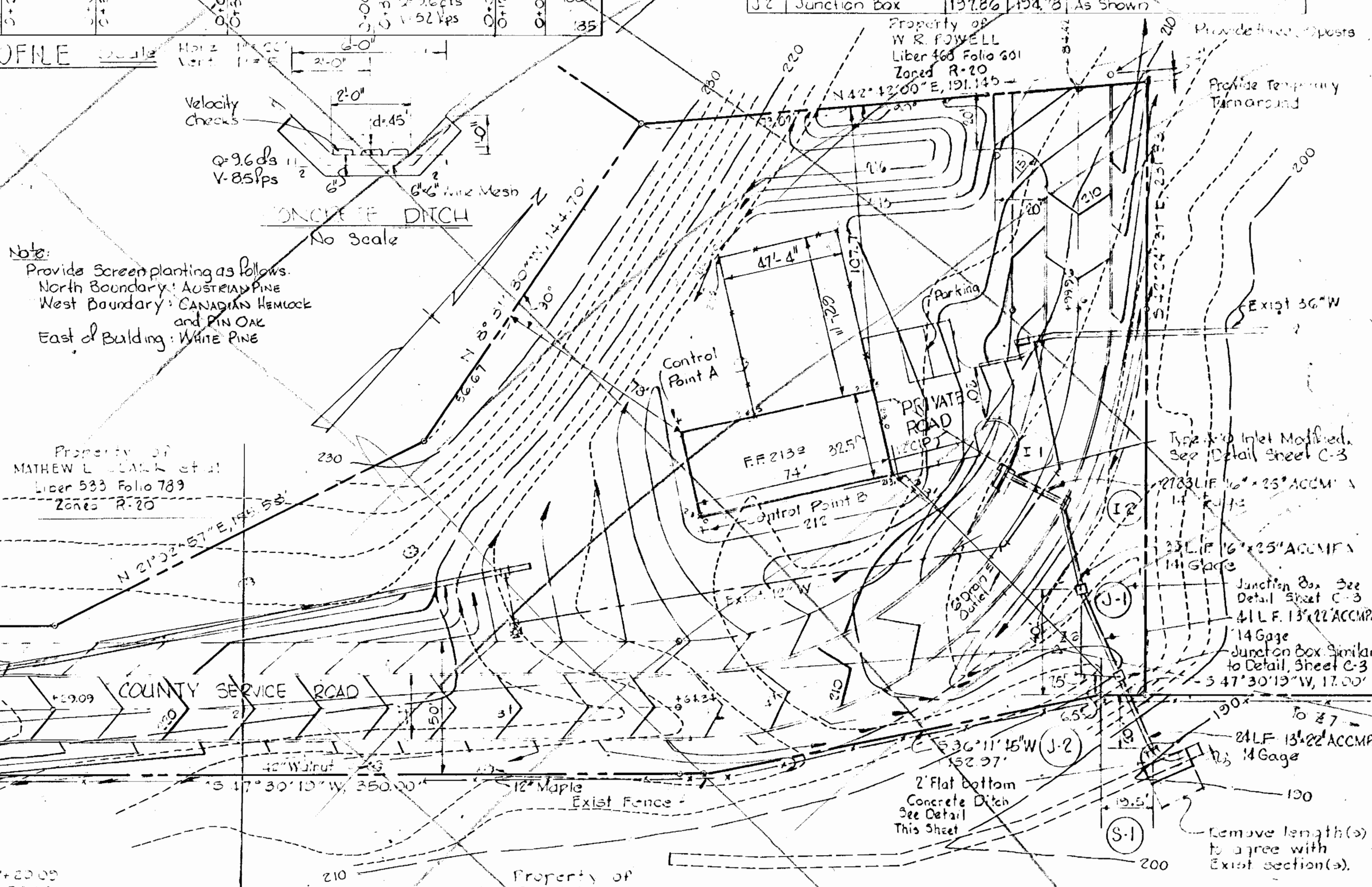
AREA Ac.	NO	TYPE	TOP ELEV.	INV. ELEV.	LOCATION
3.6	I-1	A-10 Inlet Modified	208.15	204.33	12.42' E. ST. 5+20
0.1	I-2	A-5 Inlet	208.15	204.00	12.42' E. ST. 5+20
	S-1	18" x 25" End Point	-	120.00	As Shown
	J-1	Junction Box	204.80	201.80	As Shown
	J-2	Junction Box	197.80	194.78	As Shown



Area of Site	1.37 Ac.
No. of Employees	0
Parking Required	0
Parking Provided	2
Area to be graded	1.52 Ac.
Area to be paved	0.6 Ac.
Area to be seeded	0.43 Ac.
Area to be understored	0.35 Ac.
Zoned	R-20
Tax Map No.	32



TYPICAL PAVING SECTION  
DRIVEWAY & PARKING LOT



WHITMAN, REQUARDT AND ASSOCIATES  
ENGINEERS  
1304 ST. PAUL STREET  
BALTIMORE, MARYLAND  
*Kenneth A. McCord*  
Kenneth A. McCord PE 1974

HOWARD COUNTY, MARYLAND  
OWNER AND DEVELOPER  
LIBER 669 FOLIO 489  
ZONED R-20

CURVE DATA  
R=364.34' P=50.00'  
L=30.00' Δ=50.00'  
E=50.00' Chd. Pnt. = 212.13'  
W=235.00'  
Chd. Brg. = N. 02°35' 30"E

PROPERTY OF STATE OF MARYLAND  
PLAT NO. 31902

REVISIONS

NO.	DATE	DESCRIPTION OF REVISION
1	1-8-76	Revised Grading, Elbank Drive

Reviewed for Name and meets technical requirements  
Signature Date  
U.S. Soil Conservation Service

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
APPROVED HOWARD S.C.D. DATE  
DIRECTOR DATE

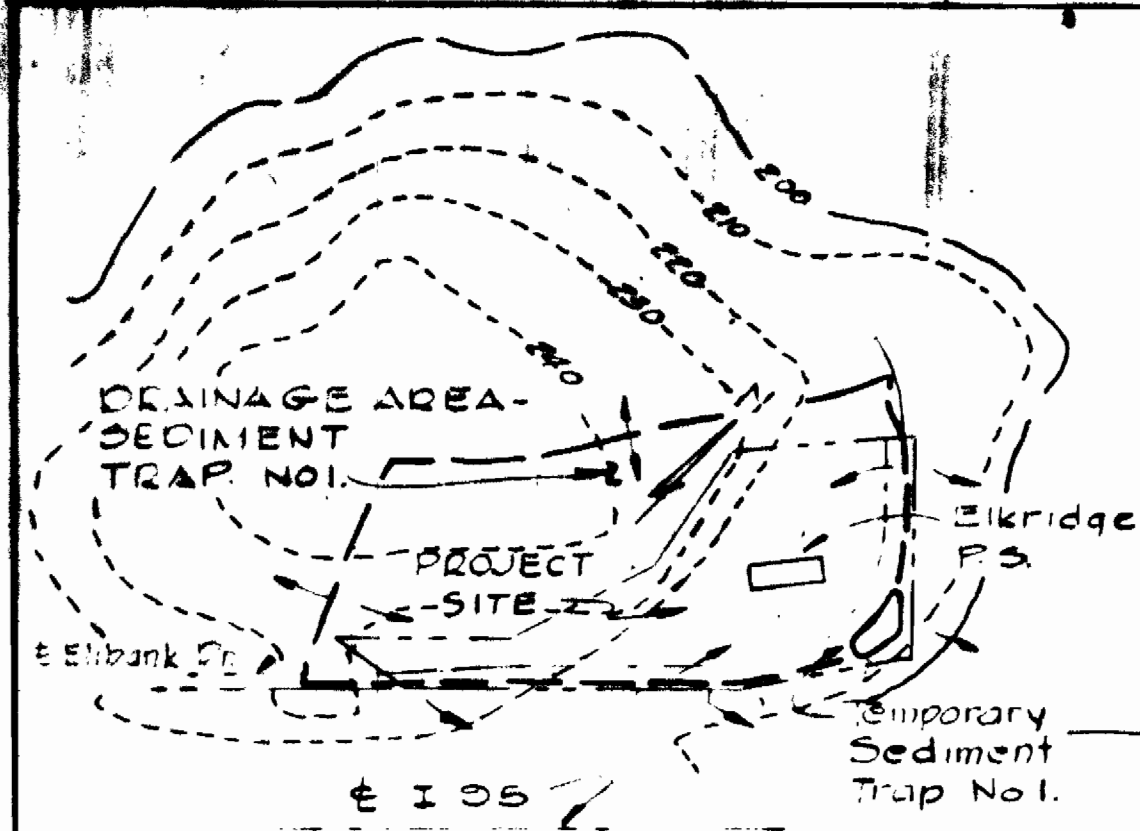
APPROVED FOR STORM DRAINAGE SYSTEMS AND ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
DATE  
PLANNING DIRECTOR DATE

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
DATE  
CHIEF, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE

CERTIFICATION 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 condition and it was prepared in accordance with the requirements of the Howard Soil Conservation District.  
*Kenneth A. McCord* 1-13-75  
Signature by Engineer Date

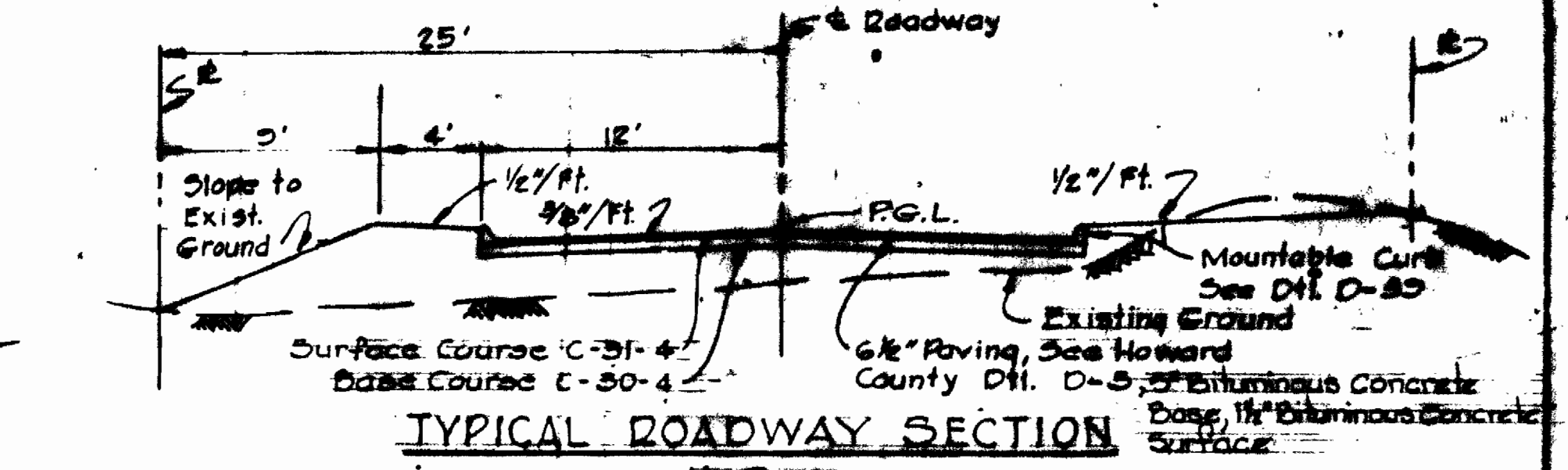
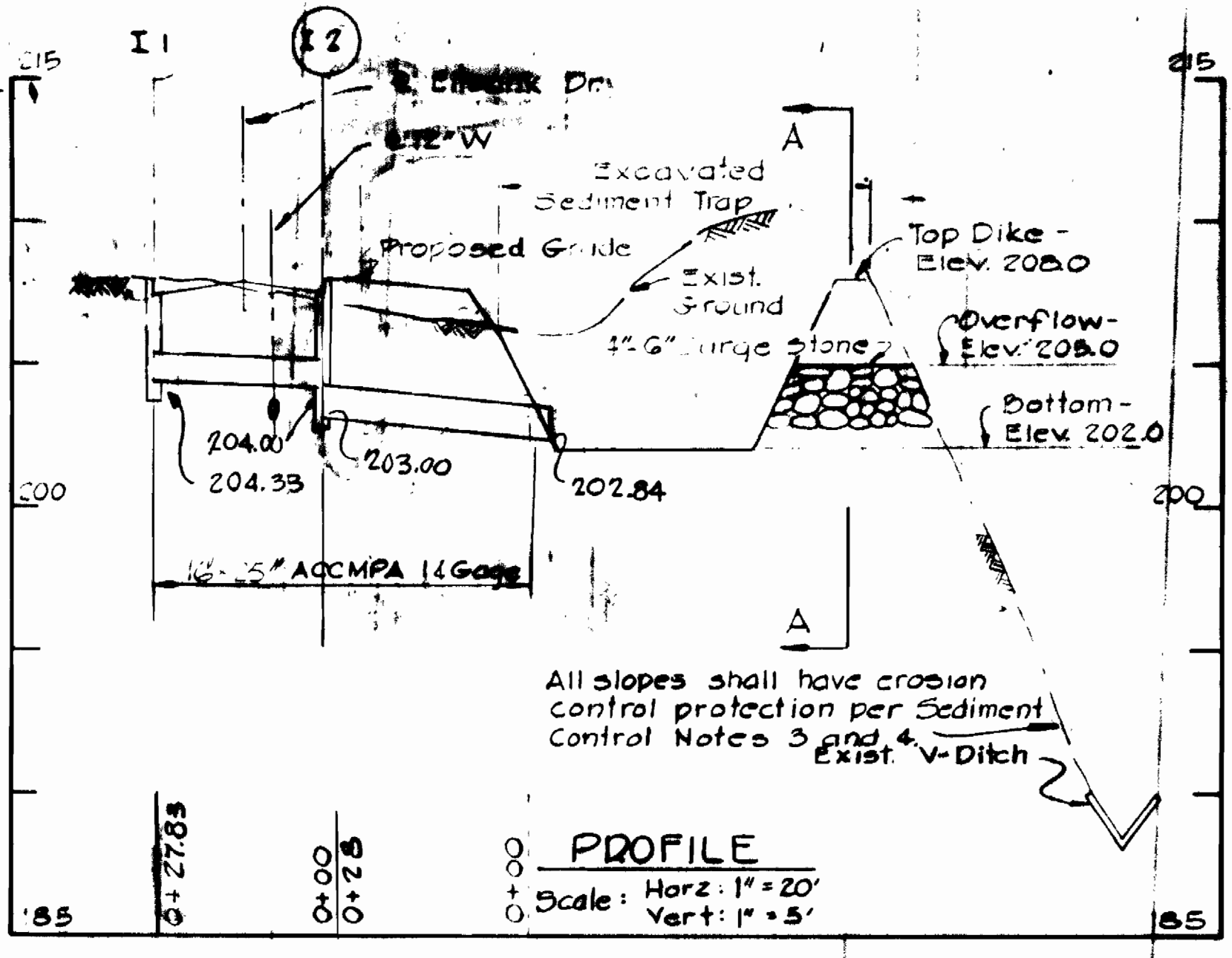
CERTIFICATION BY THE DEVELOPER  
I certify that all development and/or construction will be done according to these Plans of Development and Plans for Erosion and Sediment Control and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents as are deemed necessary. Deviation from this plan will not be made unless authorized by the Howard Soil Conservation District.  
*William A. O'Neil*  
Signature of Developer Date

SITE DEVELOPMENT PLAN  
FOR  
ELK RIDGE WATER PUMPING STATION  
PROJECT No. W-4-8035  
CONTRACT No. 399-W  
ELECTION DISTRICT NO. 1  
HOWARD COUNTY, MARYLAND  
DATE: JANUARY 13, 1975  
OCTOBER 14, 1975  
SCALE: As Shown



**SEDIMENT CONTROL NOTES**

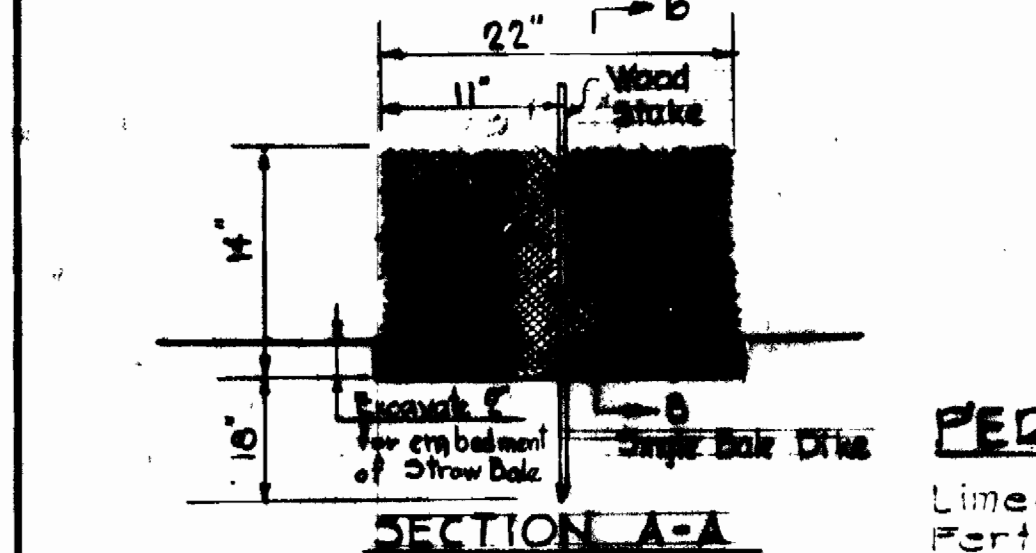
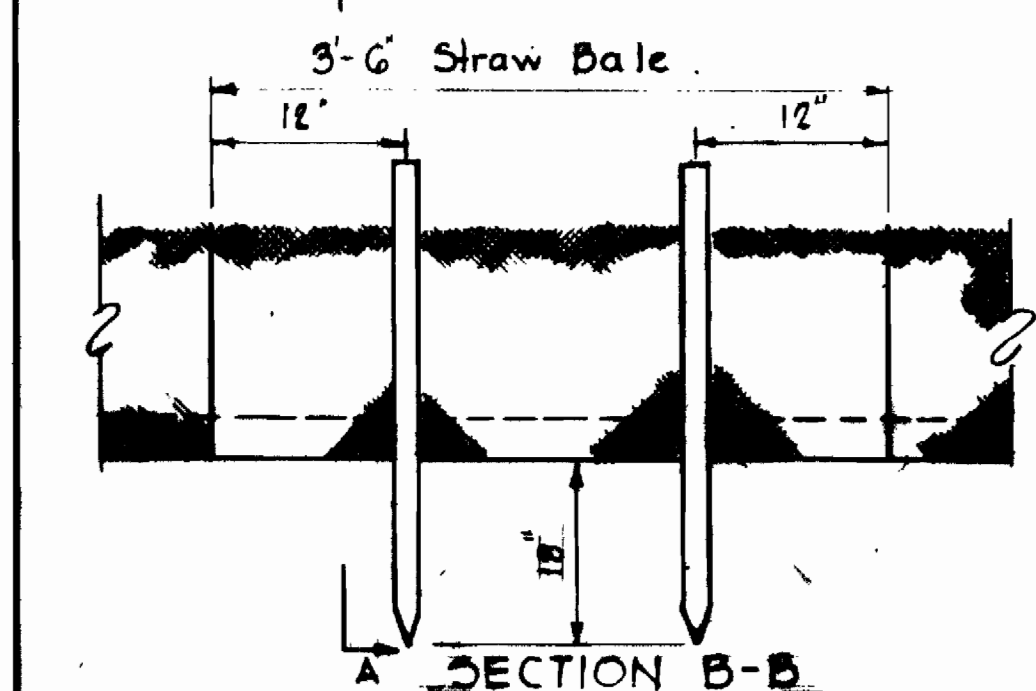
- All sediment control measures must be constructed and stabilized prior to any other grading.
- No temporary sediment control structure may be removed or destroyed without approval of the Howard County Soil Conservation District.
- All disturbed areas are to be seeded and shall receive the following mixture:  
Annual Rye Grass (20%) Kentucky Blue Grass (20%) & Kentucky "Bl" Fescue (40%)  
Rate shall be 200#/Acre. Sow with mechanical spreader. Minimum of two (2) passes with "Valk Rate" cover and compact with cultipacker. Surface preparation to include ground limestone over topsoil surface area at the rate of 1 1/2 Tons/Ac. (500#/1000<sup>2</sup>) commercial fertilizer (5-10-10) at the rate of 3 Tons/Ac. (350#/1000<sup>2</sup>) Superphosphate at the rate of 200#/Ac. (150#/1000<sup>2</sup>)
- Mulch areas with straw at rate of 75#/1000<sup>2</sup> or 1/2 Tons/Ac. Anchor with asphalt at rate of 1-30 gal./Ac.
- Prior to starting grading the contractor shall give 24 hrs. notice to the Howard Soil Conservation District and the Howard County Bureau of License, Inspections and Permits.
- All earthwork stockpiles that will not be disturbed for 6 months or longer shall immediately after piling be fertilized, limed and seeded with annual rye grass at the rate of 1#/1000<sup>2</sup>.
- All dikes and drainage swales shall be stabilized immediately after construction of same. See Permanent Seeding note.



**SEQUENCE OF CONSTRUCTION**

- Clear, grub and strip area required for the construction of Sediment Trap No. 1.
- Construct Sediment Trap No. 1 at location specified on plan and stabilize immediately after completion.
- Top soil from excavation of Sediment trap shall be stockpiled where designated by the Owner. Stabilize stockpiles immediately after completion.
- Construct Straw Bale Dikes as shown on plans.
- Construct Storm Drain System and cap inlet I-2.
- Remove temporary sediment trap after construction site is complete and ground cover is established in the contributing drainage areas.
- Upon removal of sediment trap extend storm drain to conform with location of same as shown on Site Development Plan.

**DRAINAGE AREA MAP**  
Scale: 1" = 200'



**DETAIL STRAW BALE DIKE**

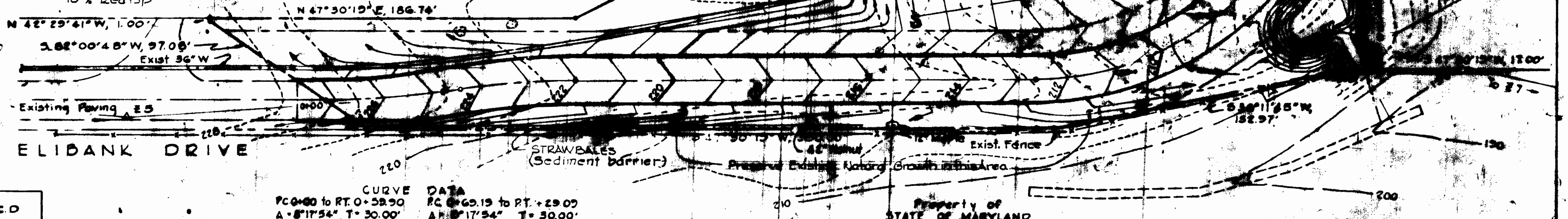
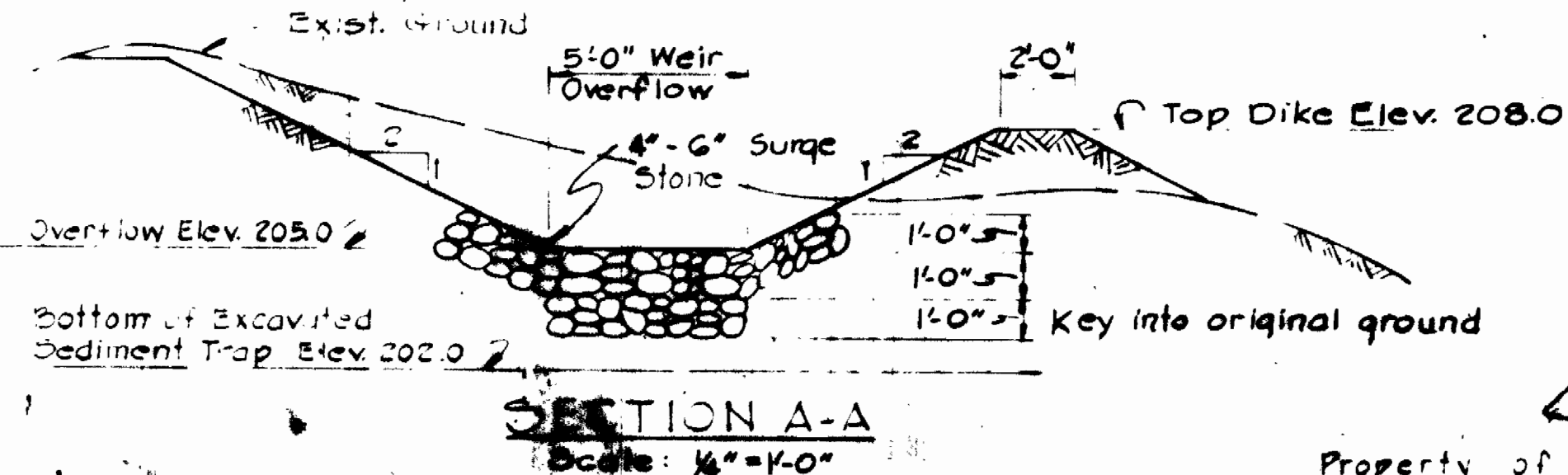
WHITMAN, DEQUARDT & ASSOCIATES  
ENGINEERS  
304 ST. PAUL STREET  
BALTIMORE, MARYLAND  
*Anneth McJord*  
APPROVED: ANNETH McJord  
DIVISION OF LAND DEVELOPMENT  
AND TRANSPORTATION PLANNING  
HOWARD COUNTY, MARYLAND  
DATE: 3-24-75

**PERMANENT SEEDING**

- Lime: 2000#/Ac. agricultural ground limestone
- Fertilizer: 1000#/Ac. (5-10-10)
- Seeding: 100#/Ac. (3 1/2#/1000<sup>2</sup>)  
20% Kentucky Blue Grass  
20% Merion Blue Grass  
50% Creeping Red Fescue  
10% Redtop

TEMPORARY  
SEDIMENT TRAP NO. 1  
Drainage Area 3.6 Ac.  
Disturbed Area 1.3 Ac.  
Volume Req'd 87.1 CY.  
Volume Avail. 117.5 CY.  
Size Trap 30'x35'x3'

**CURVE DATA**  
PT. 3+64.54 to PT. 5+00.95  
A = 90°00'00" T = 150.00'  
R = 150.00' Chd. = 212.8'  
Arc = 255.62'  
Chd. Drg. = N 2°55'29"E



**SITE PLAN**  
Scale: 1" = 50'

Reviewed for Howard SCD  
and meets technical requirements.  
*C. Wayne Ray*  
Signature Date 12-14-75

**CURVE DATA**  
PC=80 to PT=59.90  
A = 8°17'54" T = 30.00'  
R = 418.54' Chd. = 89.84'  
Arc = 33.50'  
Chd. Drg. = N 43°21'22" E

**CURVE DATA**  
PC=65.19 to PT=29.07  
A = 17°54" T = 30.00'  
R = 418.54' Chd. = 89.84'  
Arc = 33.50'  
Chd. Drg. = N 43°21'22" E

NO.	DATE	DESCRIPTION OF REVISION
1	Oct. 30, 1975	Revised Temporary Turnaround

U.S. Soil Conservation Service  
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.  
*Robert W. Johnson*  
APPROVED: HOWARD SCD DATE 10/14/75

APPROVED FOR STORM DRAINAGE SYSTEMS AND ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
*W. L. Liberty*  
DIRECTOR DATE 10-22-75

*J. N. Roberts*  
CHIEF, BUREAU OF HIGHWAYS DATE 10/20/75

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING  
*James A. Harris*  
PLANNING DIRECTOR DATE 10-23-75

*J. H. Chawant*  
CHIEF, DIVISION OF LAND DEVELOPMENT AND TRANSPORTATION PLANNING DATE 10/20/75

CERTIFICATION 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 condition and it was prepared in accordance with the requirements of the Howard Soil Conservation District."  
*Anneth McJord*  
Signature by Engineer Date 1-13-75

CERTIFICATION BY THE DEVELOPER  
"I certify that all development and/or construction will be done according to these Plans of Development and Plans 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."  
*William J. Otto*  
Signature of Developer Date 2/4/75

**SEDIMENT CONTROL PLAN**  
FOR  
ELKRIDGE WATER PUMPING STATION  
HOWARD COUNTY, MARYLAND  
OWNER AND DEVELOPER  
CONTRACT No. 399 W  
ELECTION DISTRICT NO. 1  
HOWARD COUNTY, MARYLAND  
DATE: JANUARY 14, 1975 SCALE: As Shown  
OCTOBER 14, 1975  
SDP-75-75 DRAWING 3 OF 24 SHEET

suspend

suspend

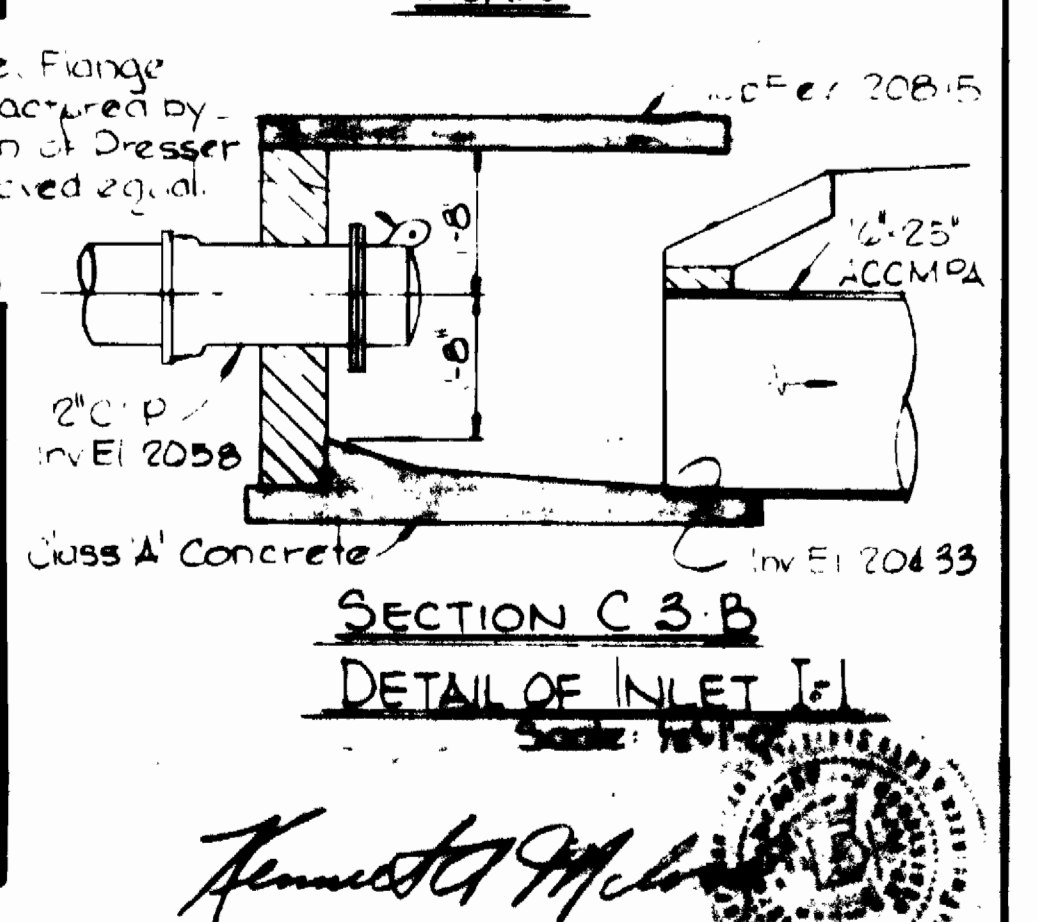
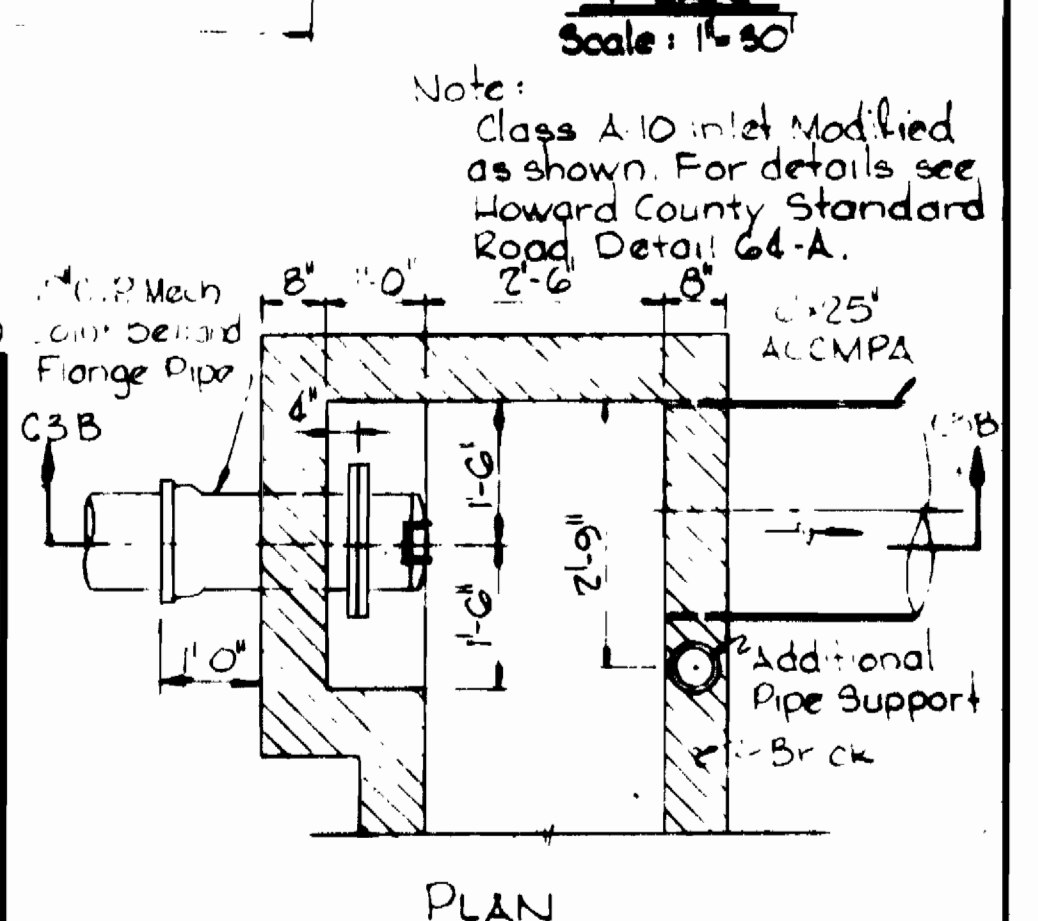
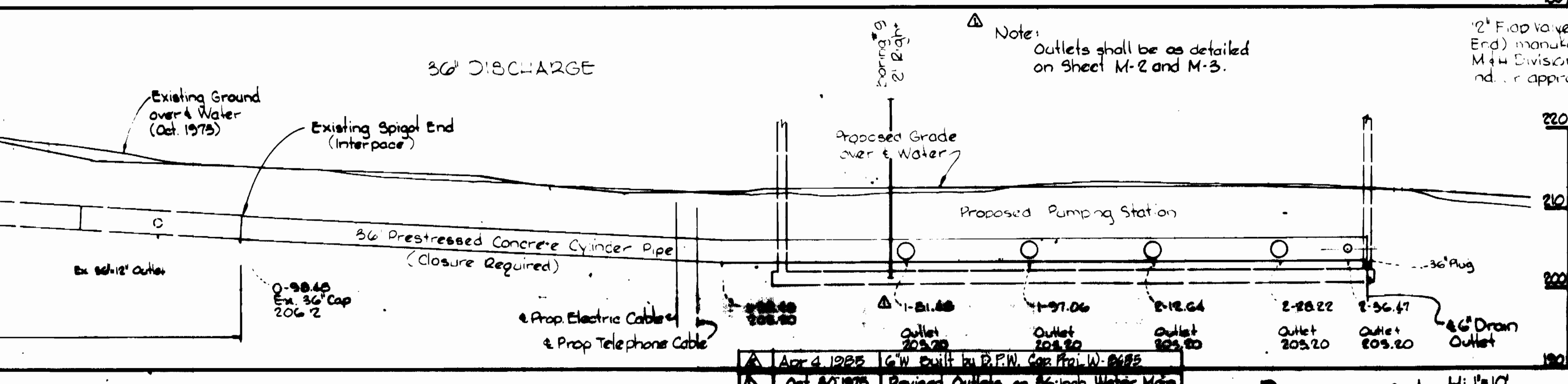
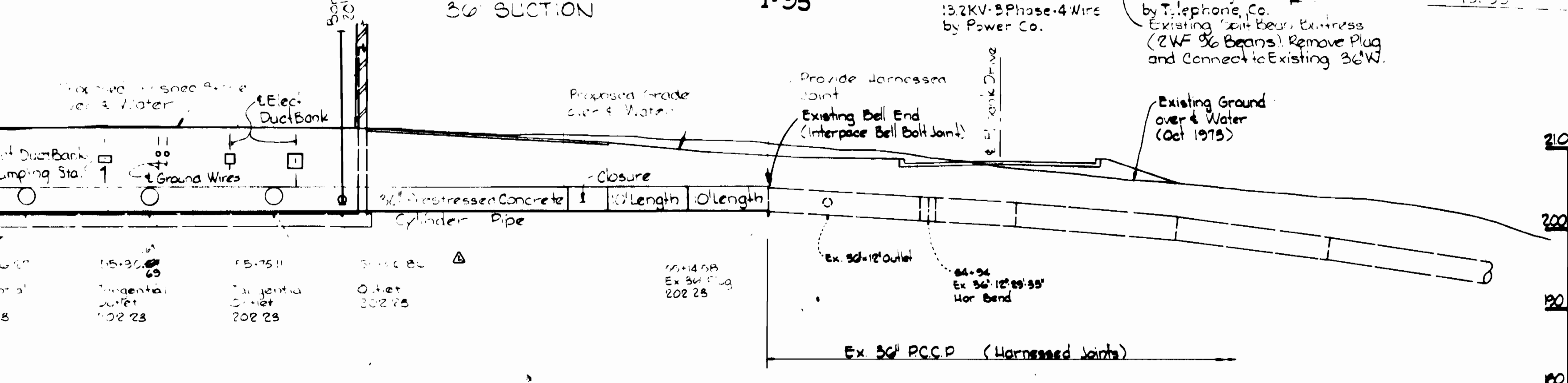
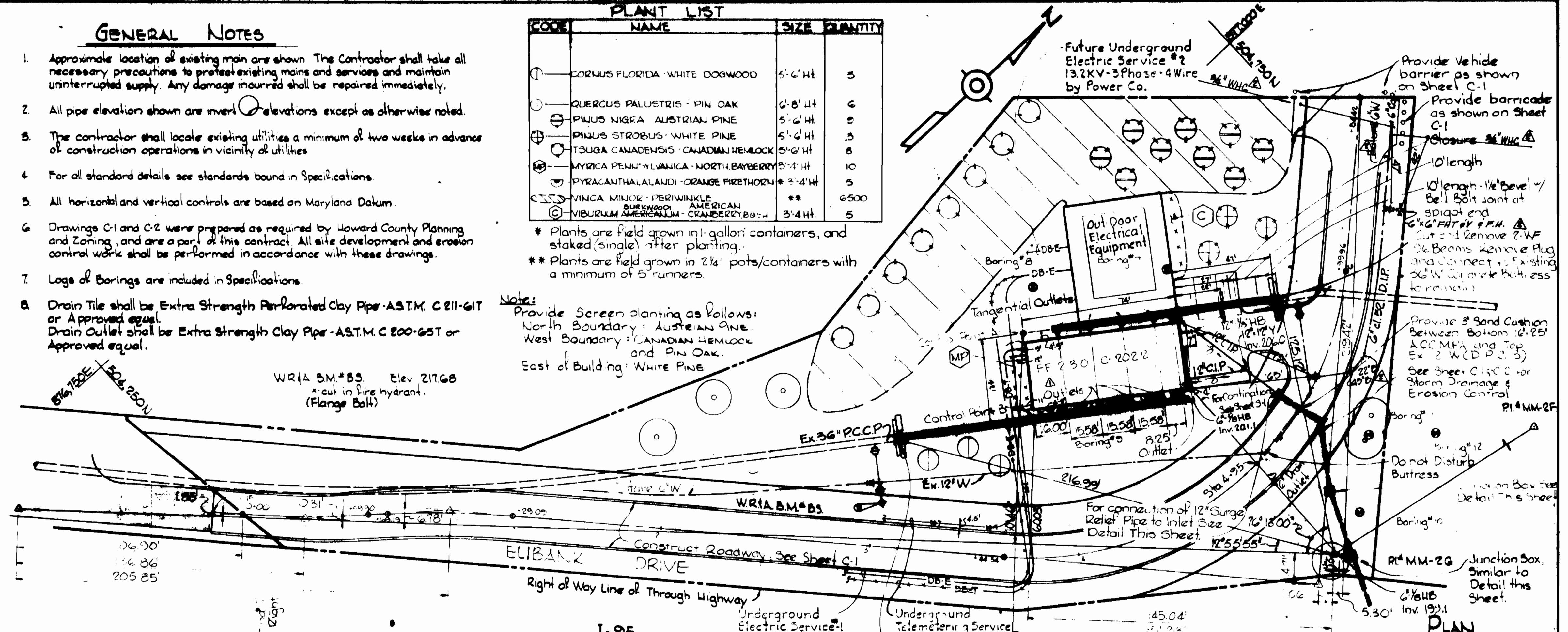
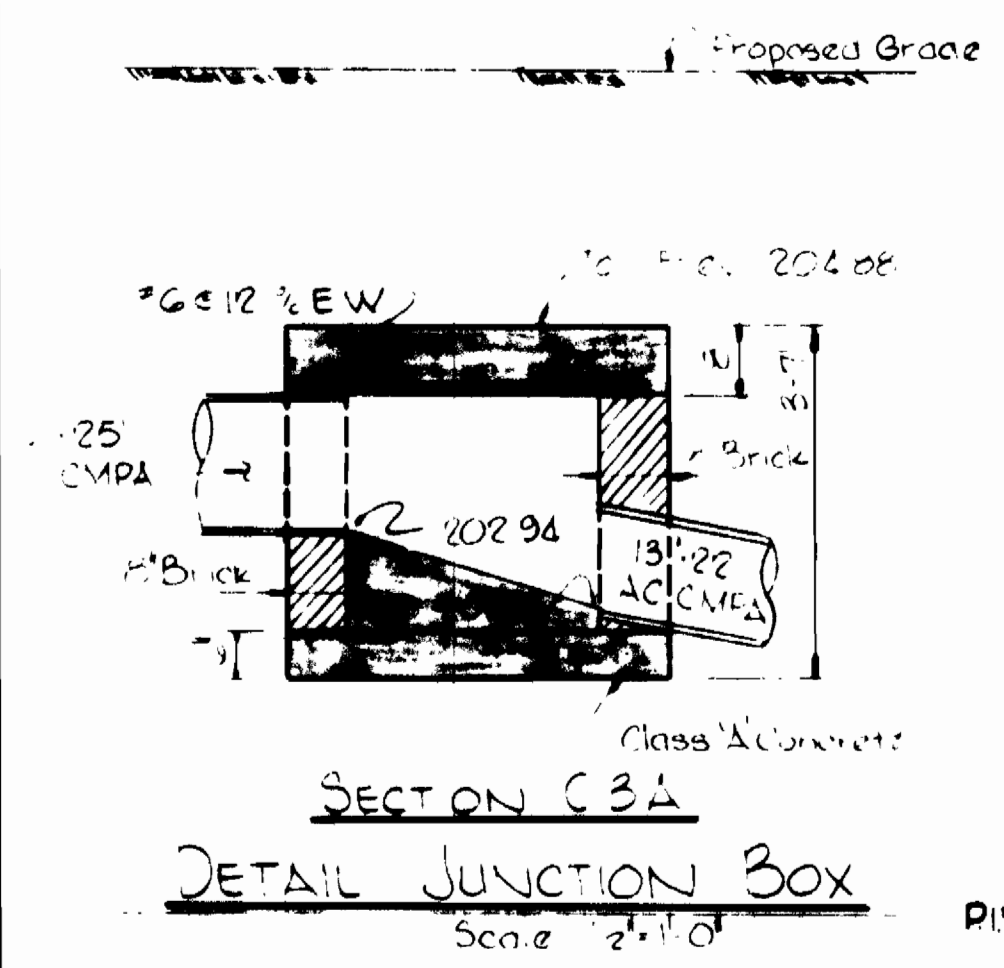
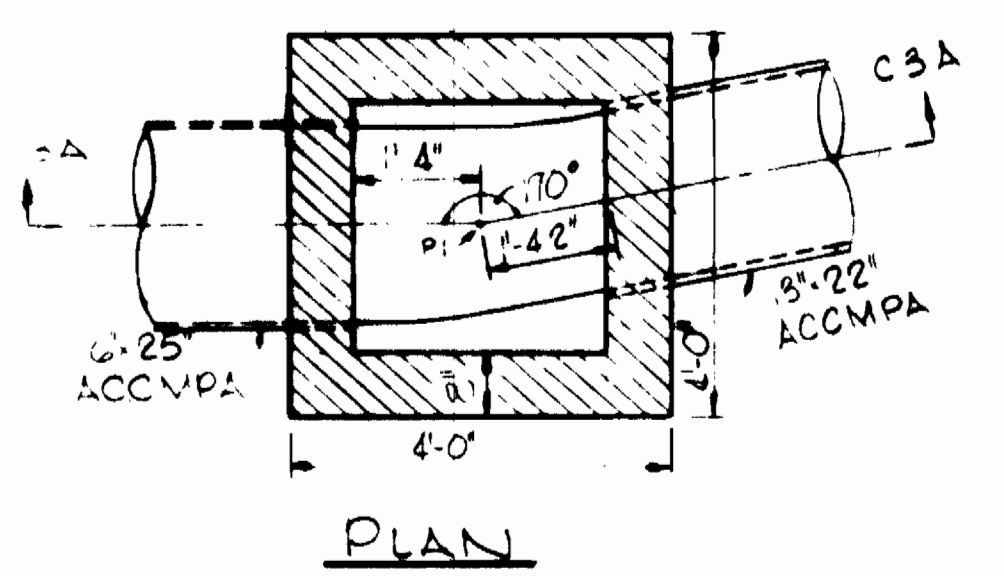
### GENERAL NOTES

1. Approximate location of existing main are shown. The Contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted supply. Any damage incurred shall be repaired immediately.
2. All pipe elevation shown are invert elevations except as otherwise noted.
3. The contractor shall locate existing utilities a minimum of two weeks in advance of construction operations in vicinity of utilities.
4. For all standard details see standards bound in Specifications.
5. All horizontal and vertical controls are based on Maryland Datum.
6. Drawings C-1 and C-2 were prepared as required by Howard County Planning and Zoning, and are a part of this contract. All site development and erosion control work shall be performed in accordance with these drawings.
7. Logs of Borings are included in Specifications.
8. Drain Tile shall be Extra Strength Perforated Clay Pipe - ASTM C 211-61T or Approved equal. Drain Outlet shall be Extra Strength Clay Pipe - ASTM C 200-65T or Approved equal.

CODE	NAME	SIZE	QUANTITY
①	CORNUS FLORIDA - WHITE DOGWOOD	5'-6" HT	5
②	QUERCUS PALUSTRIS - PIN OAK	6'-8" HT	6
③	PINUS NIGRA - AUSTRIAN PINE	5'-6" HT	5
④	PINUS STROBUS - WHITE PINE	5'-6" HT	5
⑤	TSUGA CANADENSIS - CANADIAN HEMLOCK	5'-6" HT	8
⑥	MYRICA PENNSYLVANICA - NORTH BAYBERRY	5'-4" HT	10
⑦	PYRACANTHALALANDI - ORANGE FIRETHORN	* 2'-4" HT	5
⑧	VINCA MINOR - PERIWINKLE	**	6500
⑨	BUEWOOD - AMERICAN BUEWOOD	**	6500
⑩	VIBURNUM AMERICANUM - CRANEBERRY BUSH	3'-4" HT	5

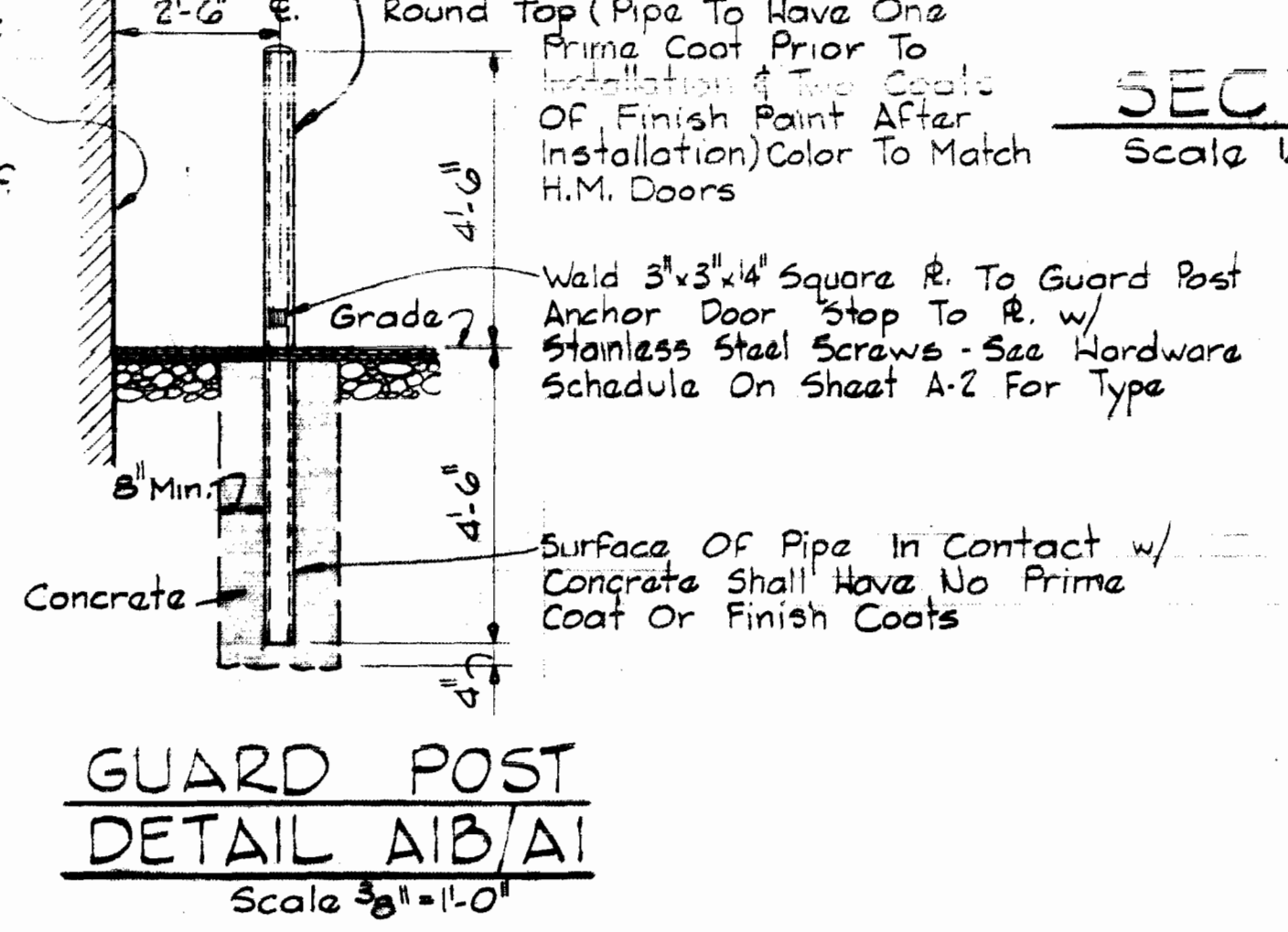
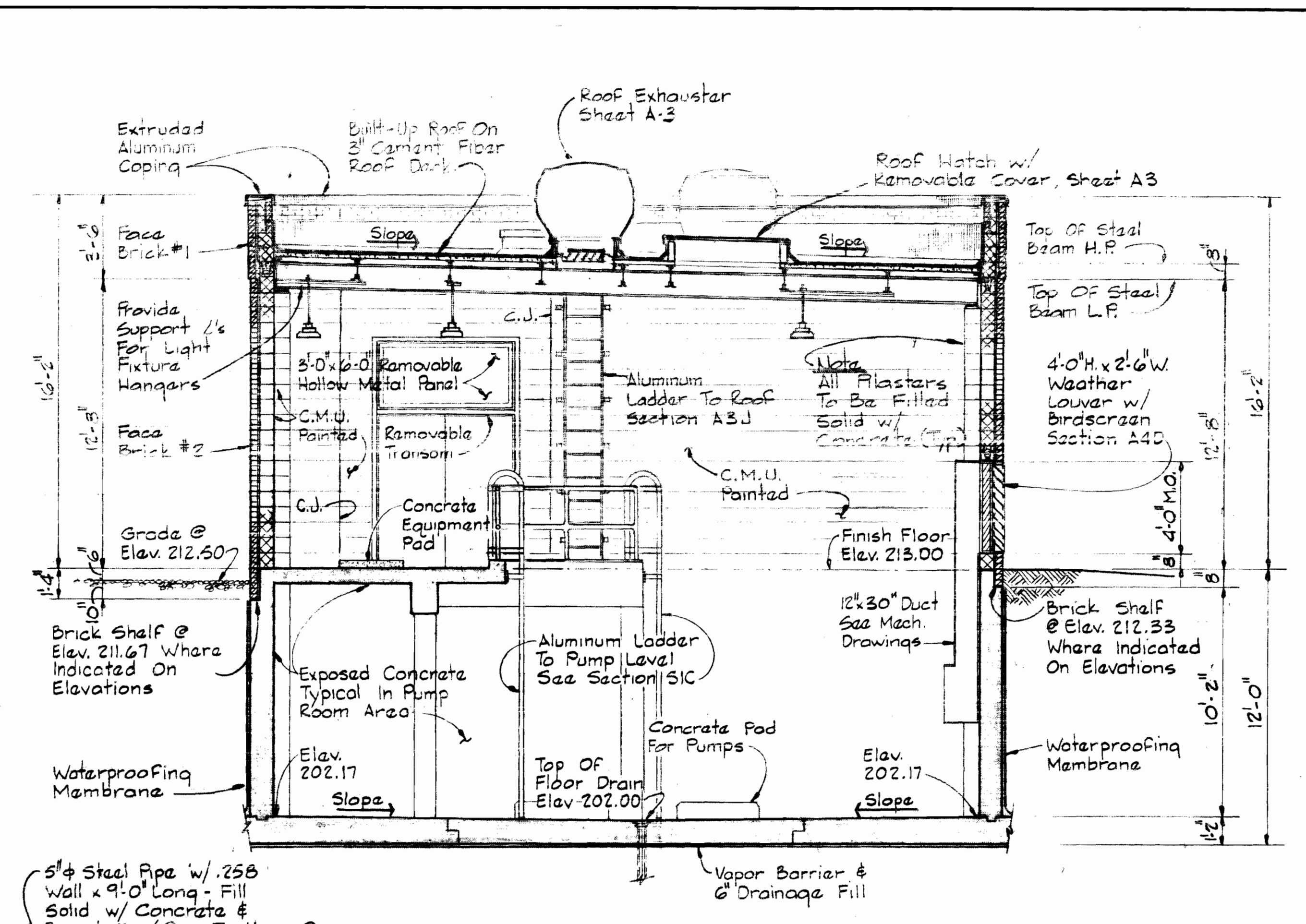
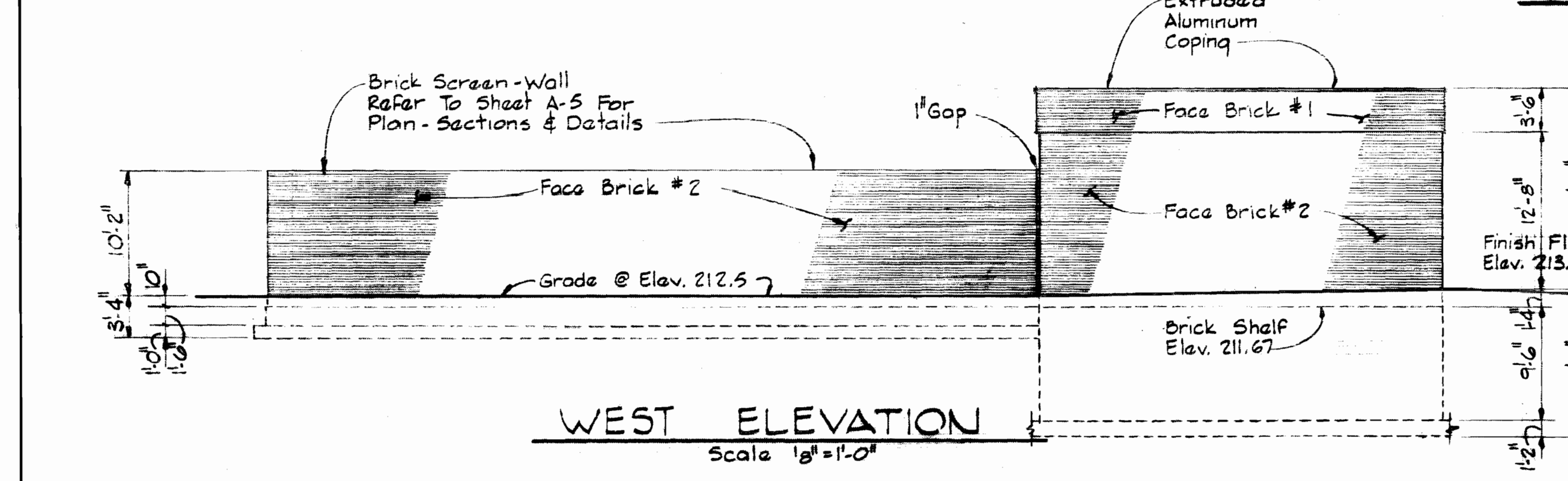
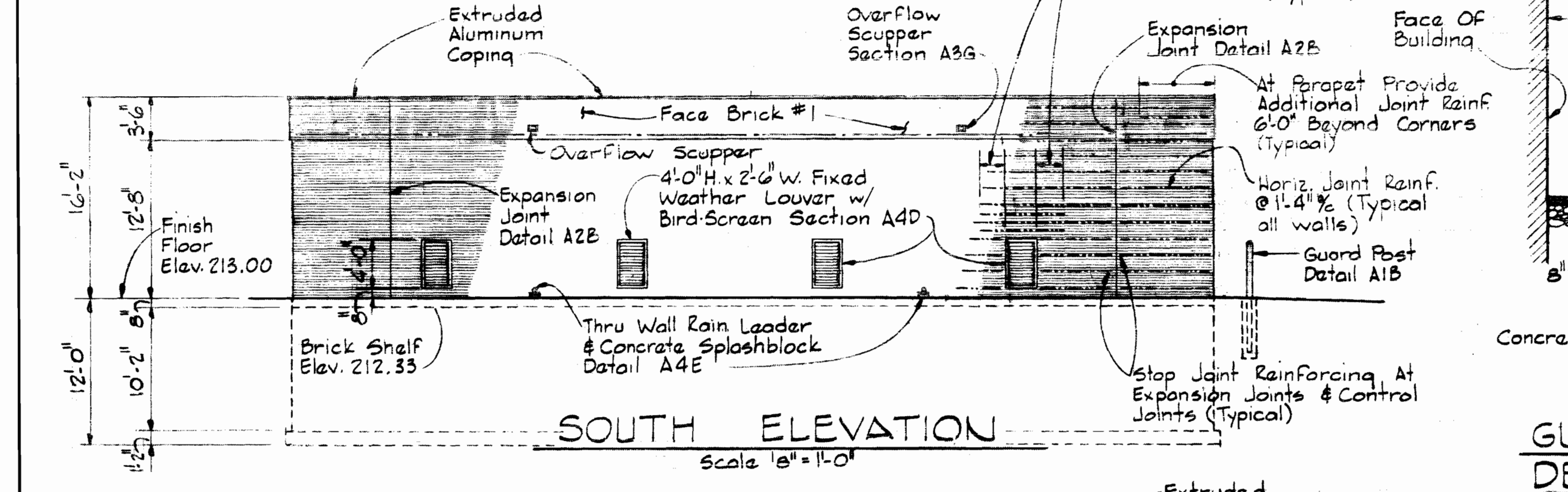
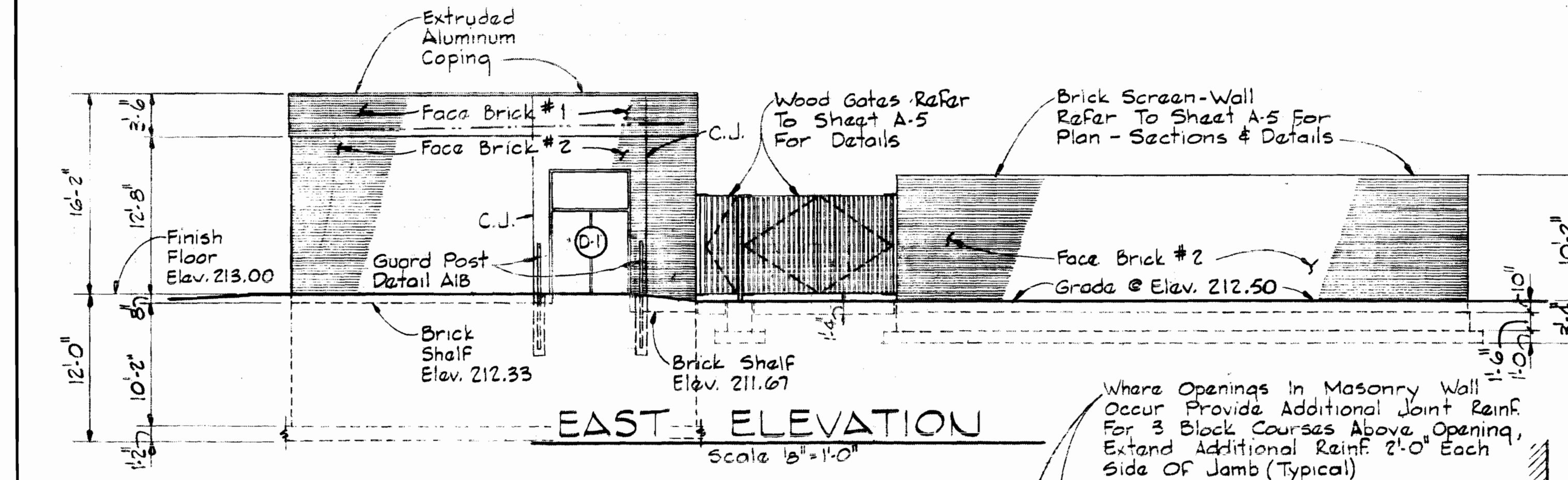
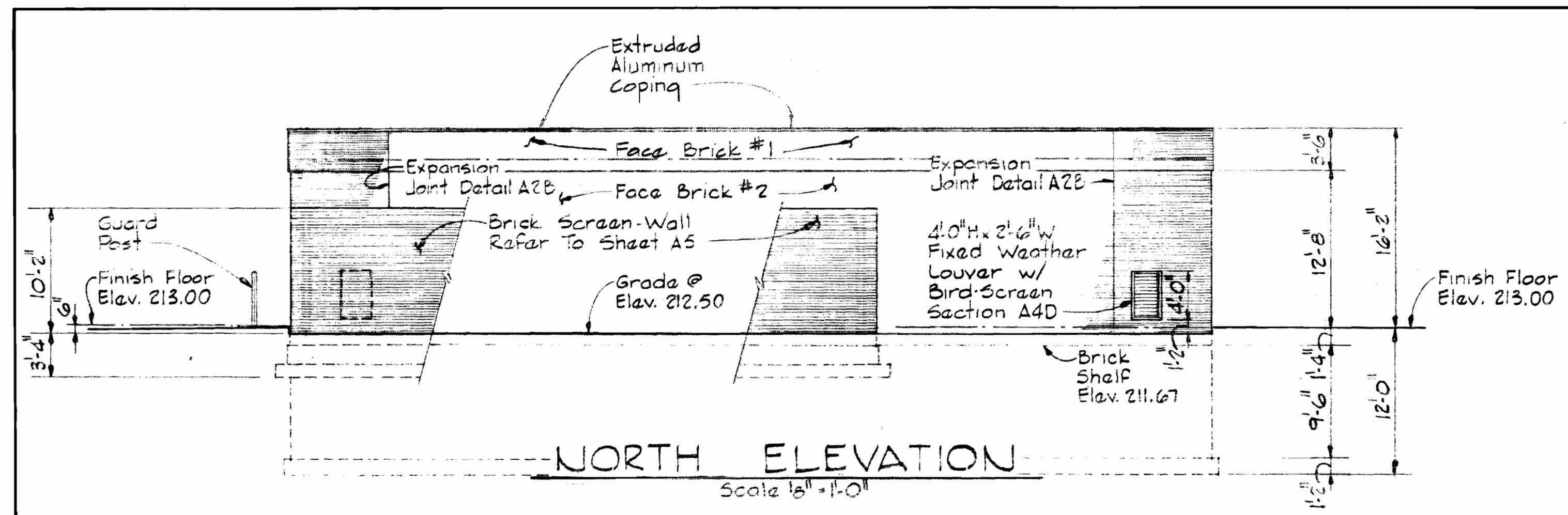
\* Plants are field grown in 1-gallon containers, and staked (single) after planting.  
 \*\* Plants are field grown in 2 1/4" pots/containers with a minimum of 5 runners.

Note: Provide Screen planting as follows:  
 North Boundary: AUSTRIAN PINE  
 West Boundary: CANADIAN HEMLOCK and PIN OAK  
 East of Building: WHITE PINE

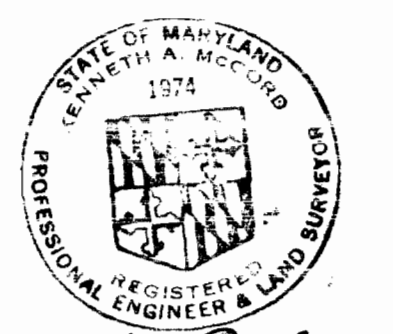


No.	Date	Revision
1	Apr 4 1975	GW built by D.P.W. Cap. (W-8) 855
2	Oct 30 1975	Revised Outlets on 36\"/>

<b>WHITMAN, REQUARDT &amp; ASSOCIATES</b> ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	<b>DEPARTMENT OF PUBLIC WORKS</b> HOWARD COUNTY, MARYLAND 10-14-75 DATE 	<b>CONTRACT NO. 399-W</b>	<b>PLAN, PROFILES AND DETAILS OF WATER MAINS</b>	<b>ELKRIDGE WATER PUMPING STATION</b>	<b>DRAWING NO. 4 OF 24</b>	<b>SCALE AS SHOWN</b>
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Brick Shall Be Stone Craak Brick Or Approved Equal - Shades To Be As Follows:
Face Brick #1 - #390
Face Brick #2 - #370

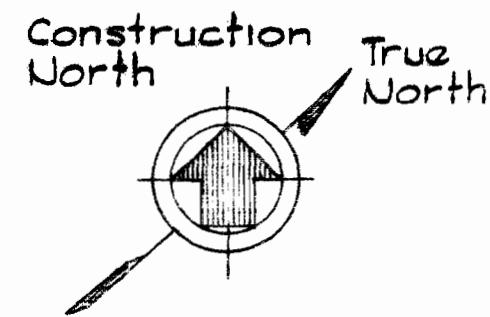


Kenneth A. McLeod  
SHEET A-1  
Contract No. 399-W

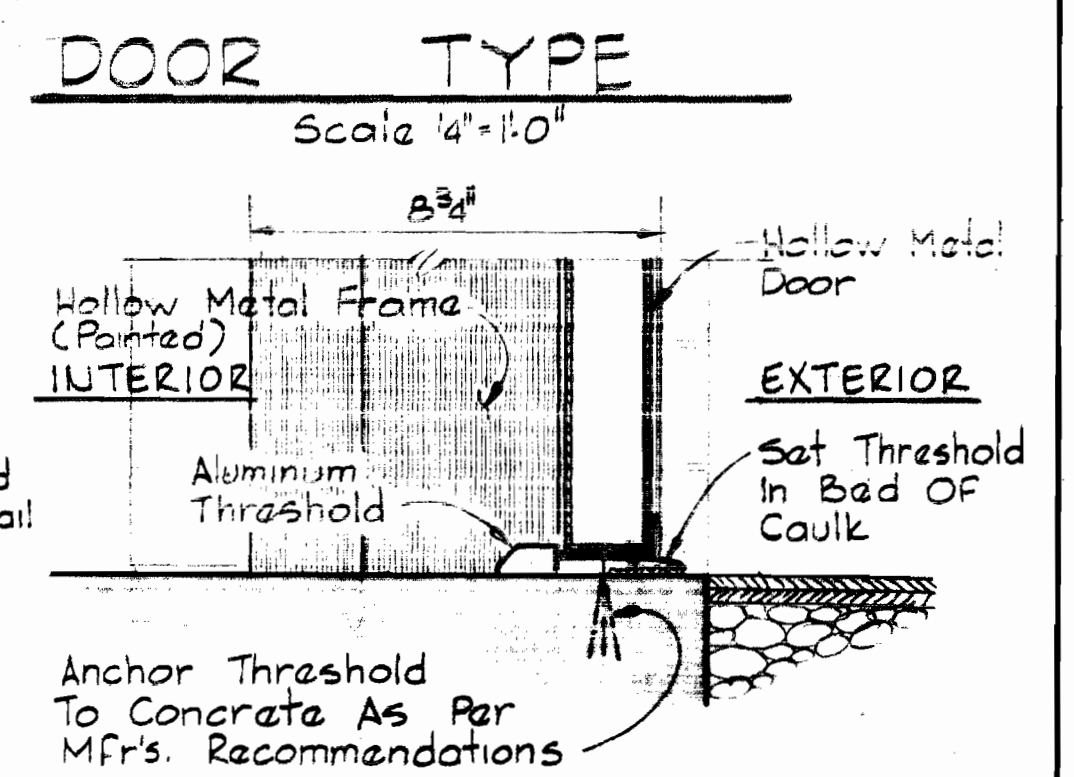
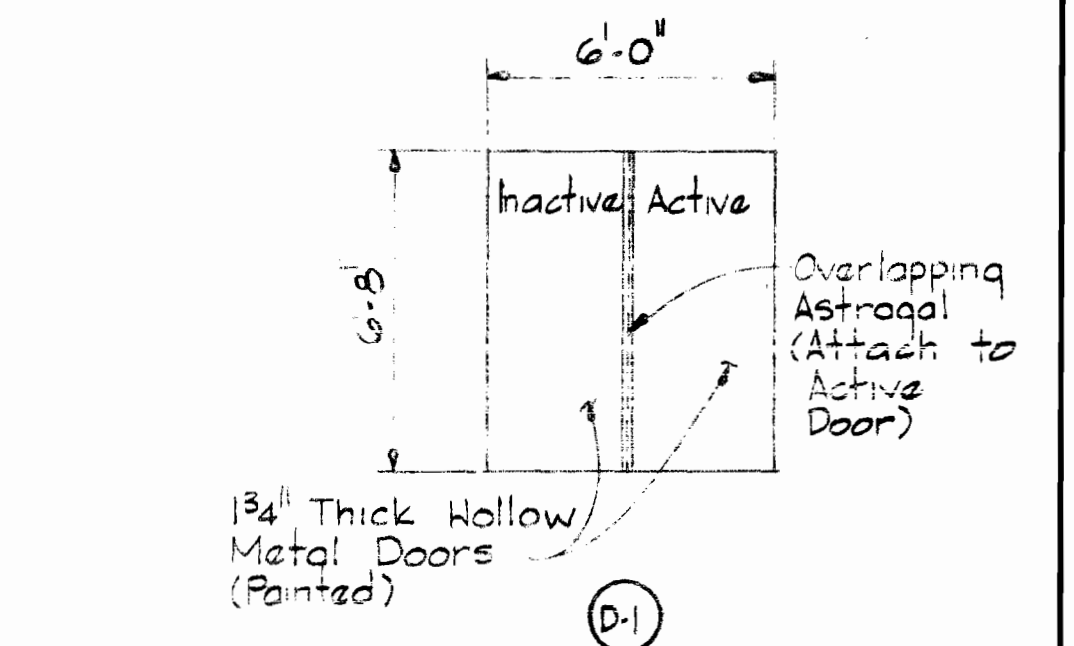
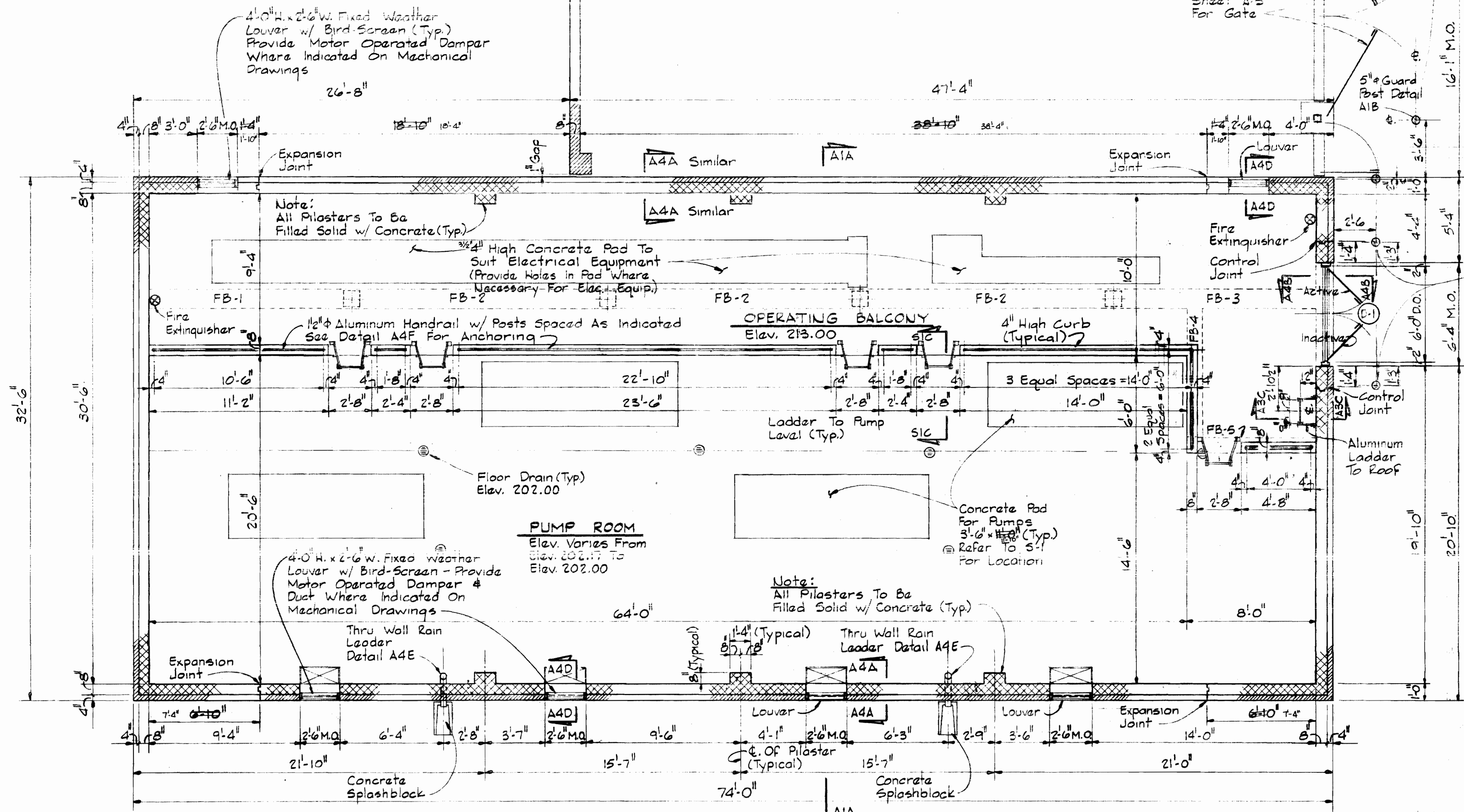
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 10-14-75 DATE W.O. Pelletier CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. 399-W	ELEVATIONS & SECTION	ELKRIDGE WATER PUMPING STATION	DRAWING NO. 5 OF 24	SCALE AS SHOWN
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W.O. 6257-2

October 14, 1975



**SUBSTATION AREA**  
Refer to Sheet A-5 For  
Plan-Sections & Details



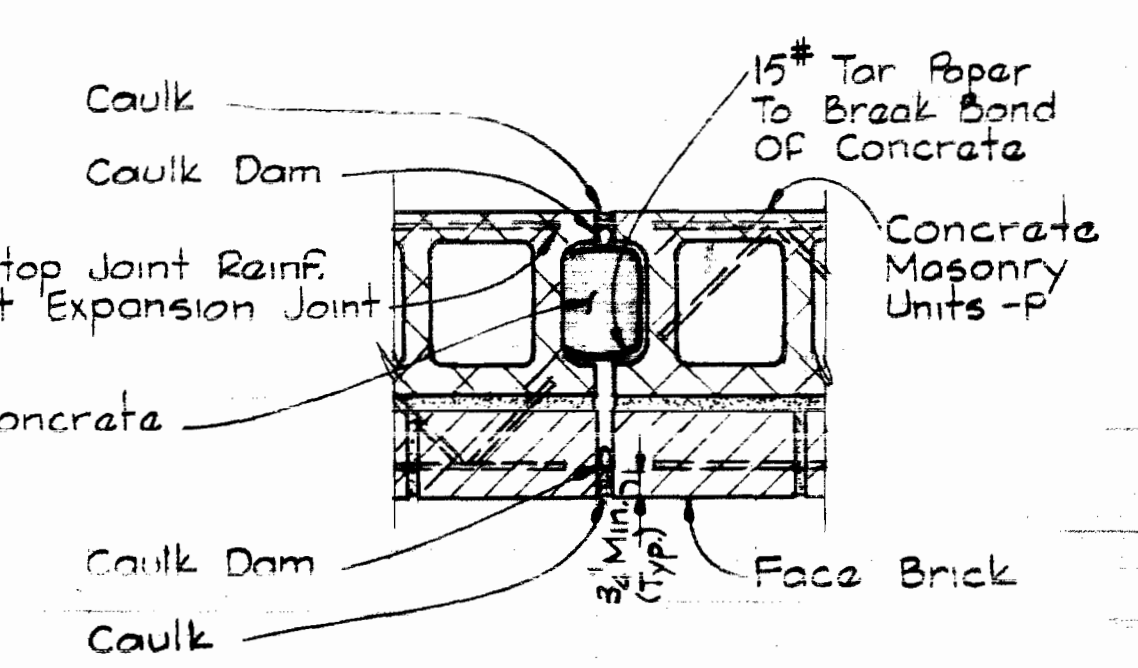
**TYPICAL THRESHOLD DETAIL A2A/A2**  
Scale 3" = 1'-0"

**NOTE:**  
Refer to Section A4B For Typical  
HEAD & JAMB Conditions

**HARDWARE SCHEDULE**

- Door D-1 To Have:**
- 3 Pair Butts FBS 179 NRP 4x4x2 USP
  - 1 Lock w/ Strike A2024 BKCS Rockford US10
  - 2 Flush Bolts 199-12" US10
  - 2 Door Stops 156 US 2 1/2" B/RH & LH
  - 1 Threshold S252A xTL7A
- Miscellaneous:**
- 2 Fire Extinguishers - Type C #20KS (Wall Mounted)
  - 2 Padlocks 2B3H4 US10
- NOTE:** Keying As Per County System Furnish Five Keys Per Lock

Recommended Manufacture Or Approved Equal
Stanley
Russwin
Russwin
Russwin
Reasa
Kidde
Russwin



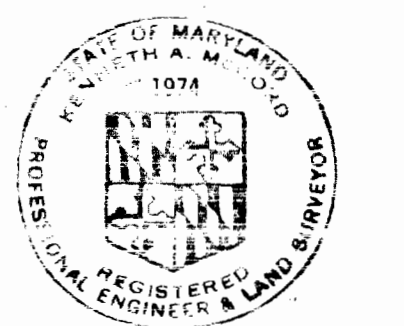
**TYPICAL EXPANSION JOINT DETAIL A2B/A1, A2**  
Scale 1 1/2" = 1'-0"

**FLOOR PLAN**  
Scale 1/4" = 1'-0"

FINISH MATERIAL	COLOR	SCHEDULE	MANUFACTURER	REMARKS
Interior CMU walls	Clay Yellow 66-1762	TNEMEC	Hi-Build Epoxoline	See Specifications
Interior CMU base (8" High)	Burl Brown 66-1284	TNEMEC	Hi-Build Epoxoline	Base only occurs at balcony
Roof joists and misc. roof steel	Eggshell 23-1764	TNEMEC	Enduratone	
H.M. doors, frame & panel - steel on substation gate	Burl Brown 23-1284	TNEMEC	Enduratone	Paint on substation gate framing shall be applied prior to installation of slats
Wood slats on substation gate	Cedar SC-8	SHERWIN-WILLIAMS	Solid Color Exterior Stain	
Aluminum Coping and Louvers	Med. Bronze #43	Construction Specialties	Kynar 500	

**ABBREVIATIONS (FINISH SCHEDULE & DRAWINGS)**

- Alum. — Aluminum
- C.J. — Control Joint
- C.M.U. — Concrete Masonry Units
- Conc. — Concrete
- D.O. — Door Opening
- Elev. — Elevation
- E.S.&RD — Exposed Steel & Roof Decking
- H.M. — Hollow Metal
- L.L.H. — Long Leg Horizontal
- L.L.V. — Long Leg Vertical
- M.O. — Masonry Opening
- Typ. — Typical
- P. — Painted



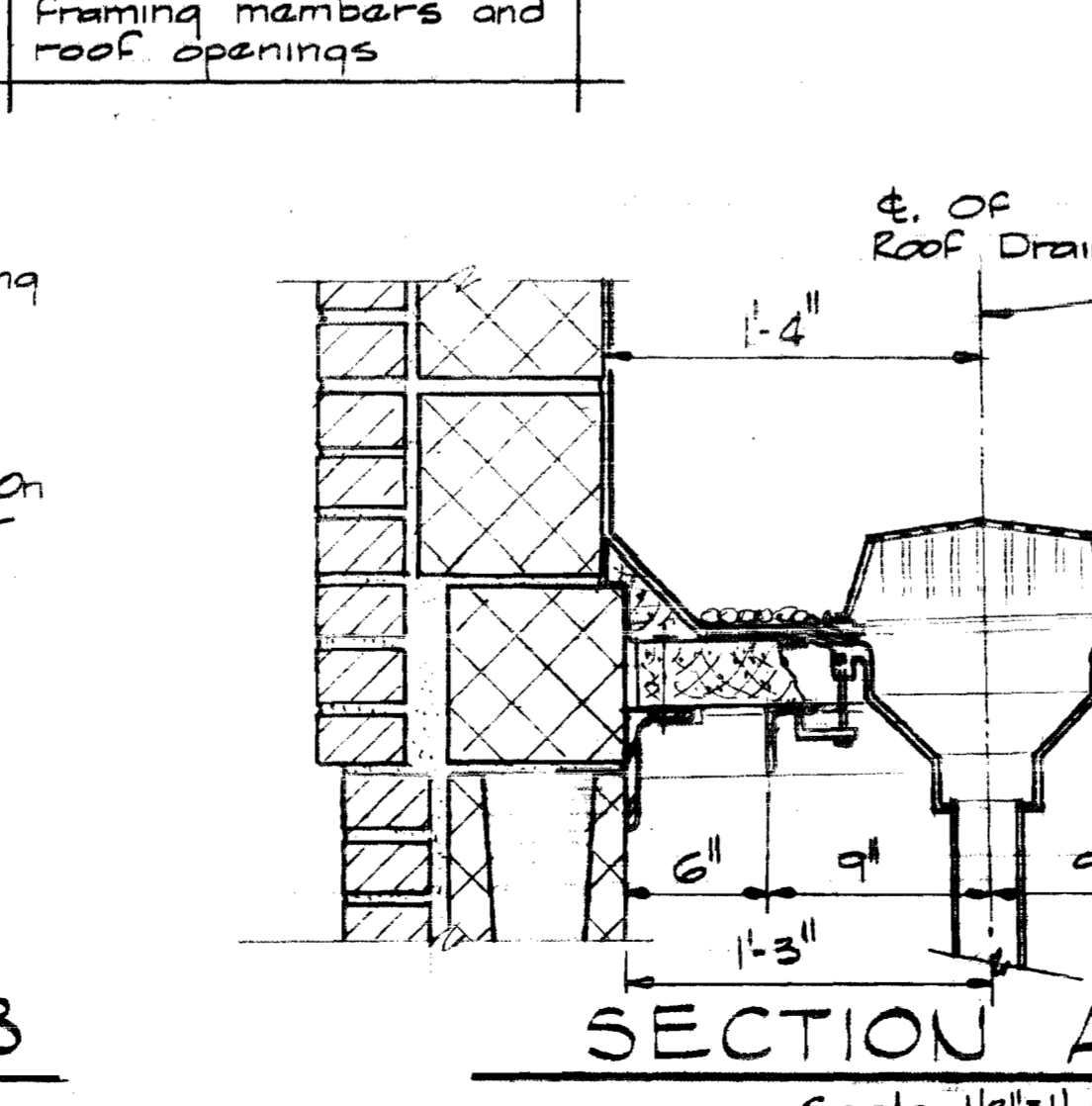
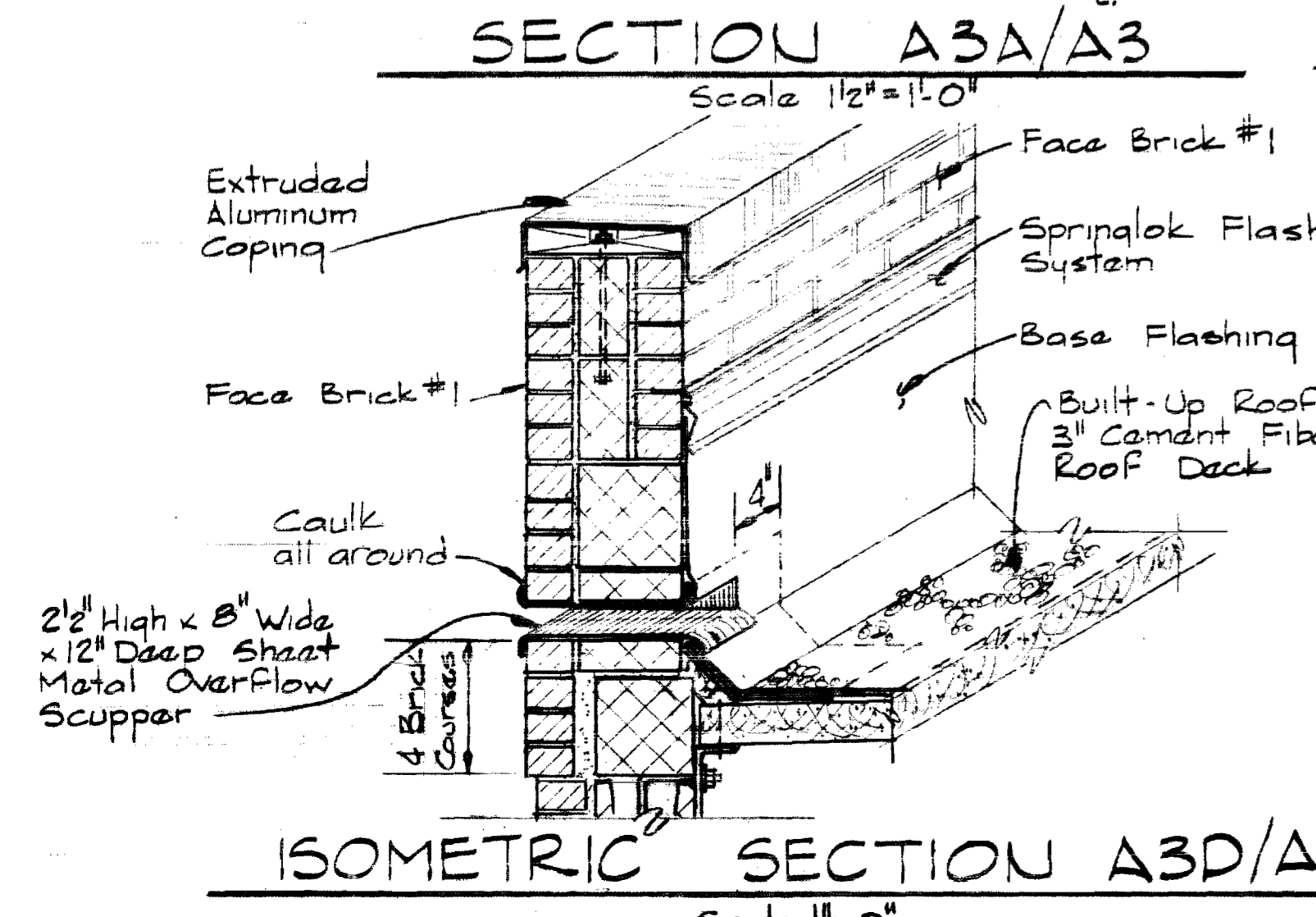
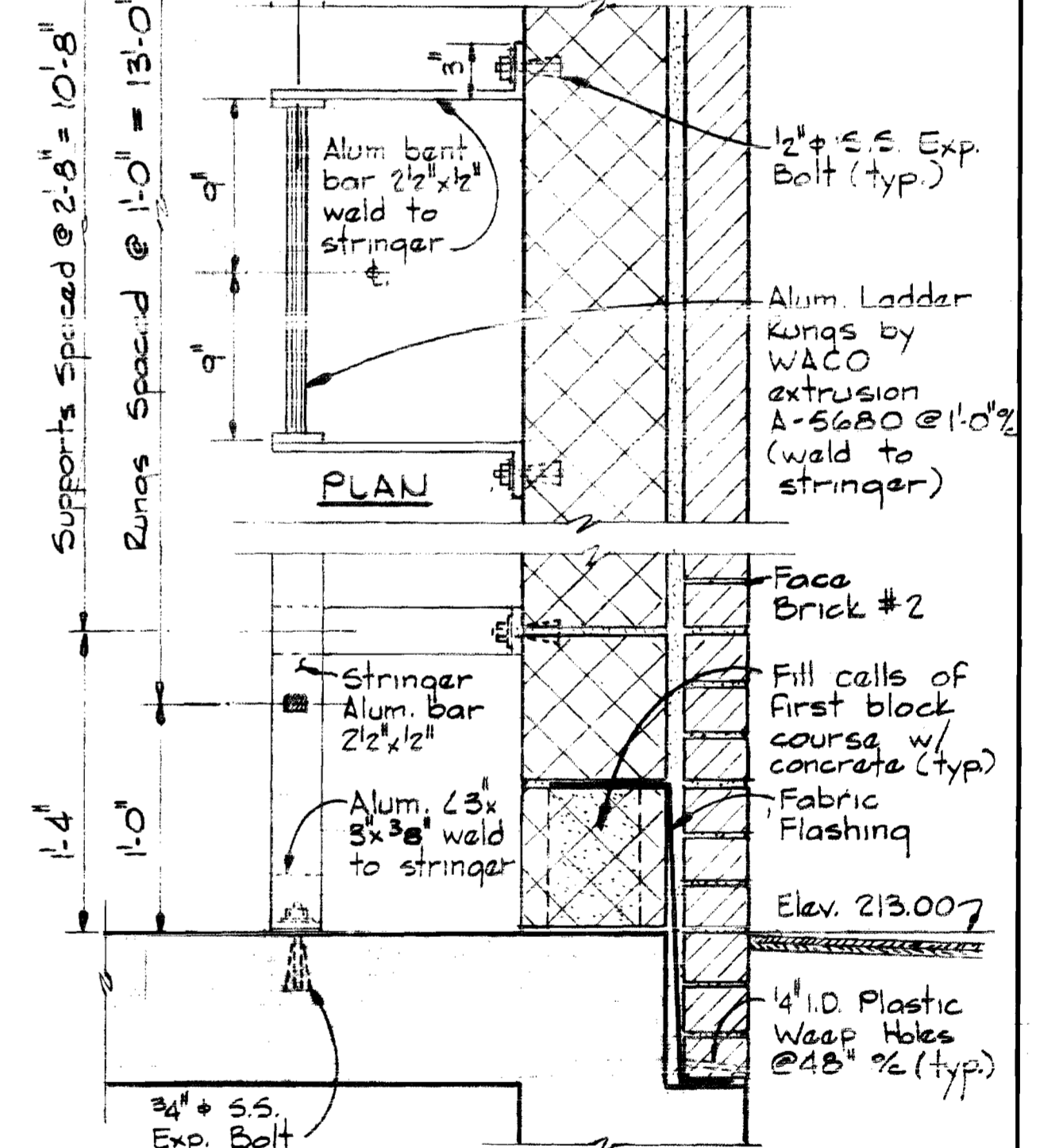
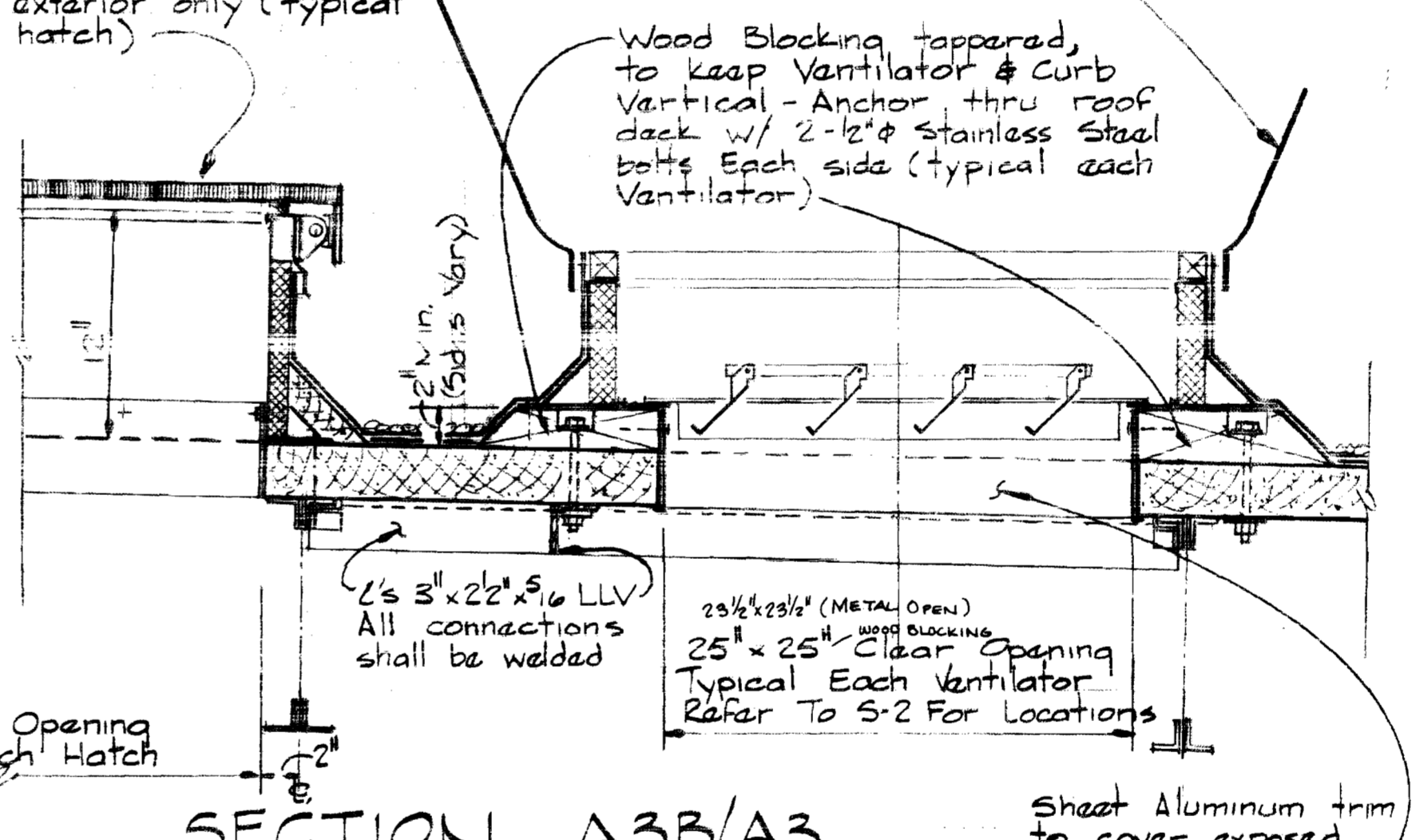
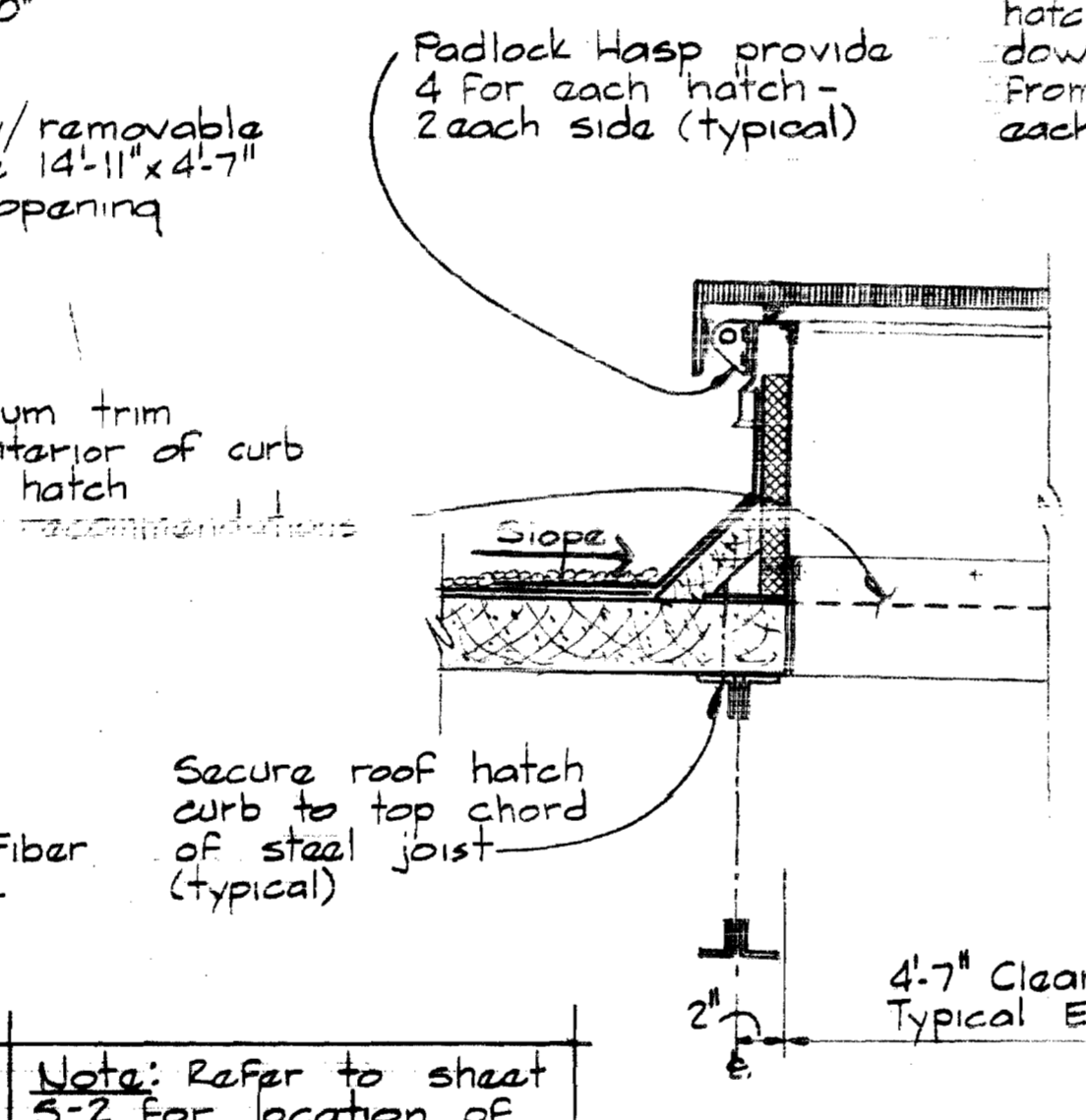
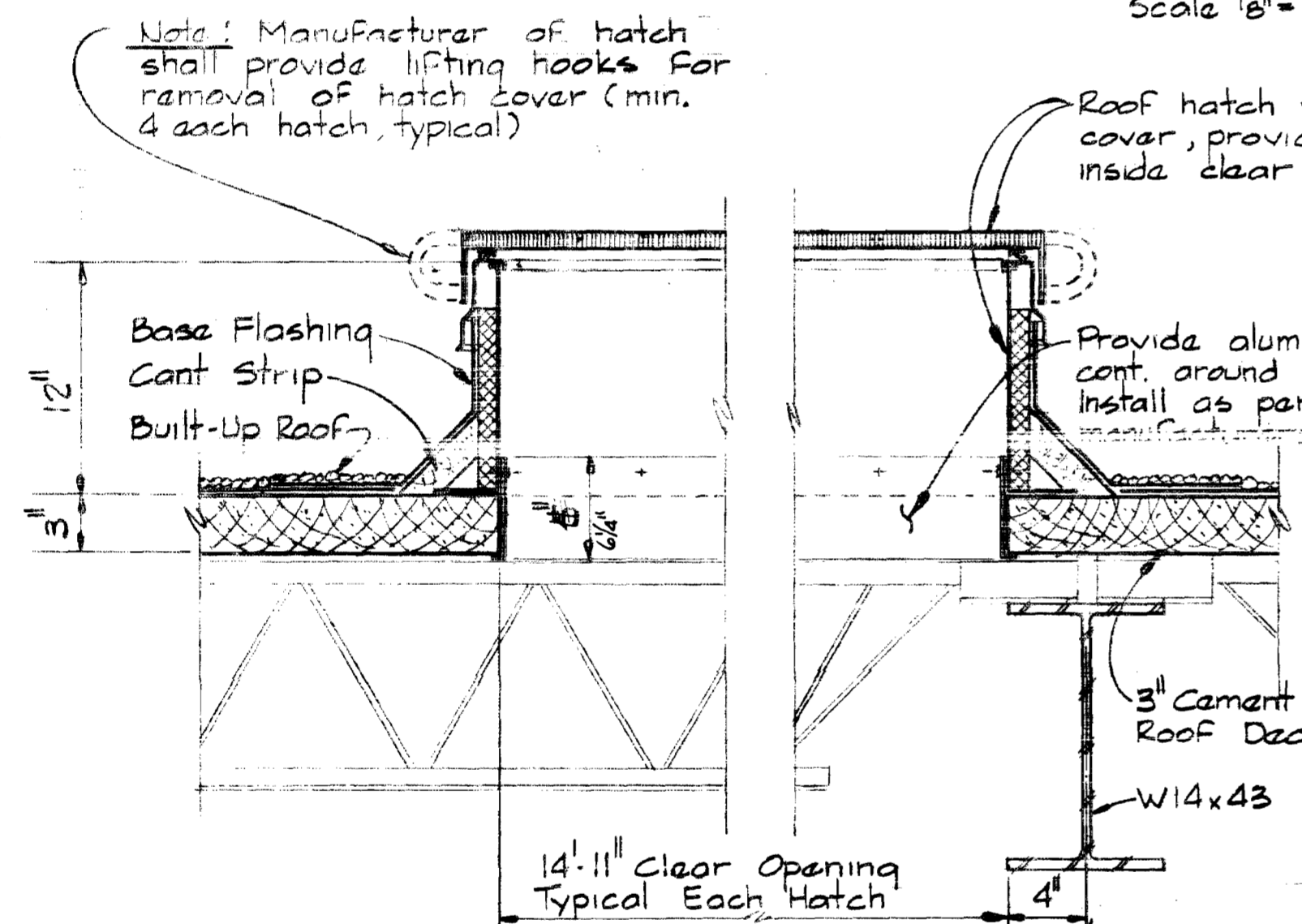
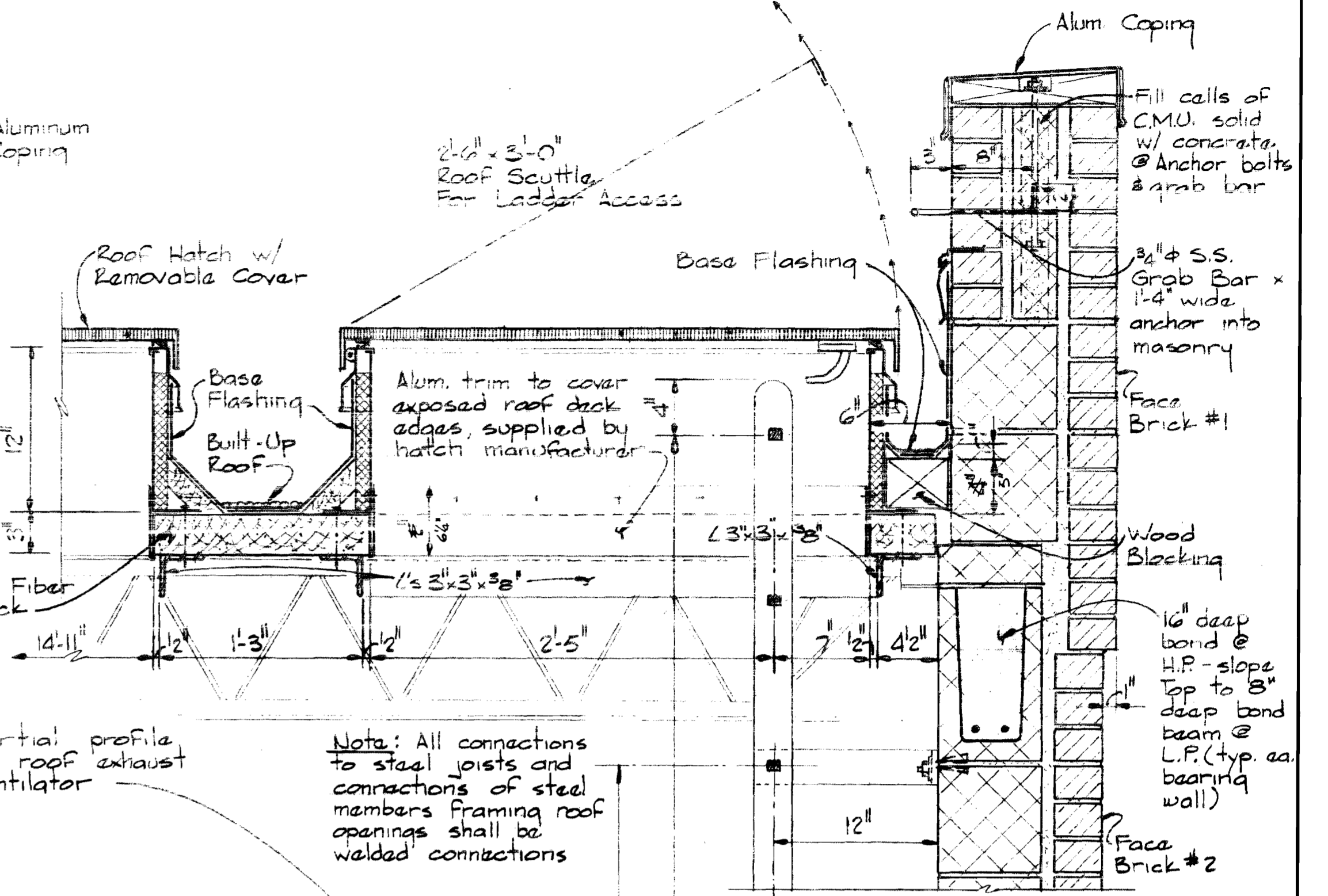
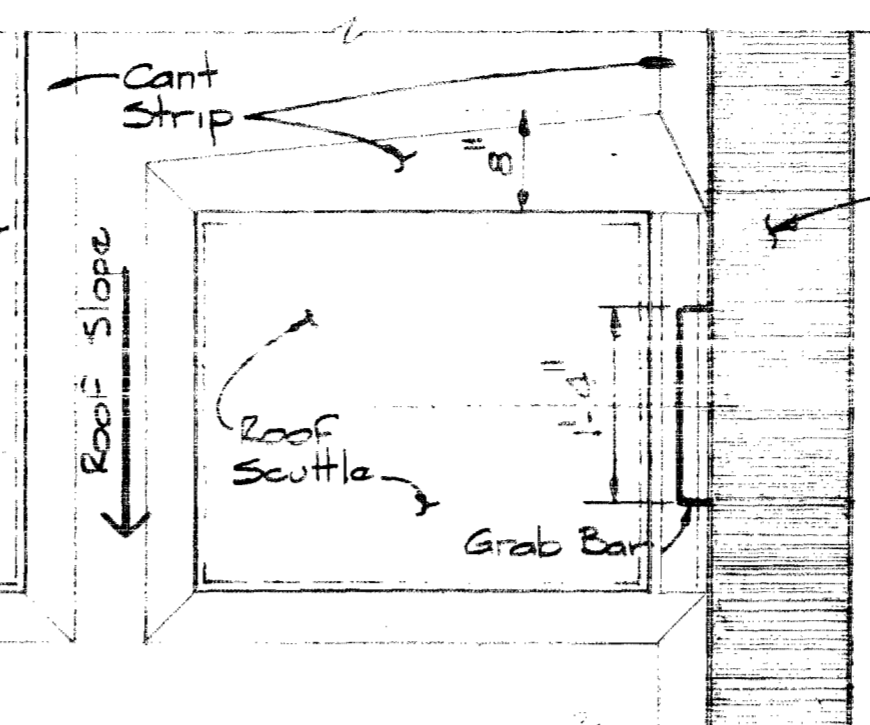
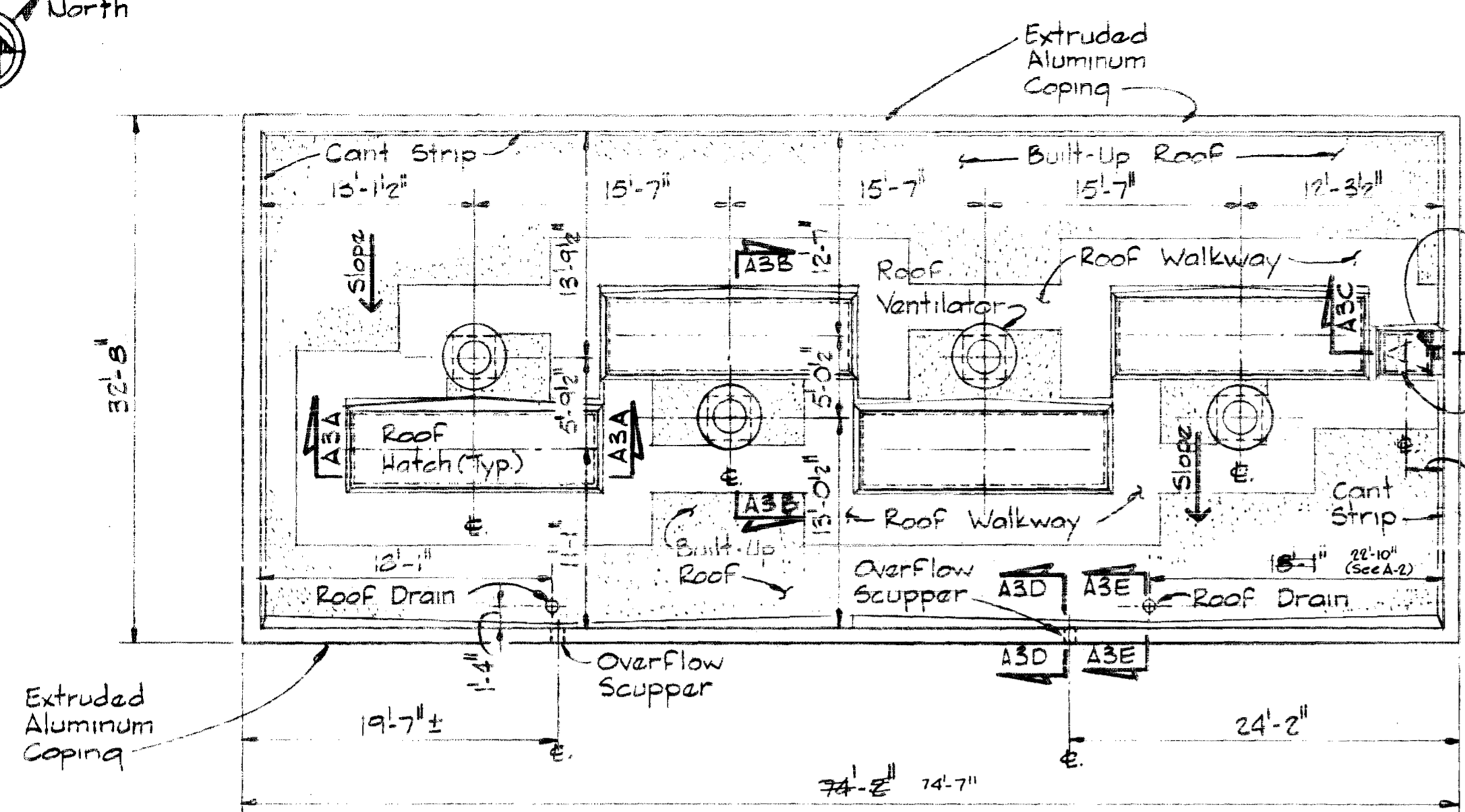
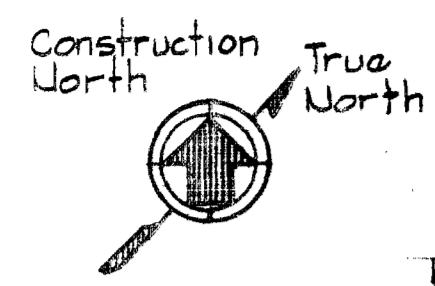
*Handwritten signature*

SHEET A-2  
Contract No. 399-W

WS 399-W/6

W.O. 6257-2

October 14, 1975



Kenneth A. McLeod

SHEET A-3  
Contract No. 399-W

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

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
10-14-75  
DATE  
W.O. McLeod  
CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 399-W  
ROOF PLAN & SECTIONS

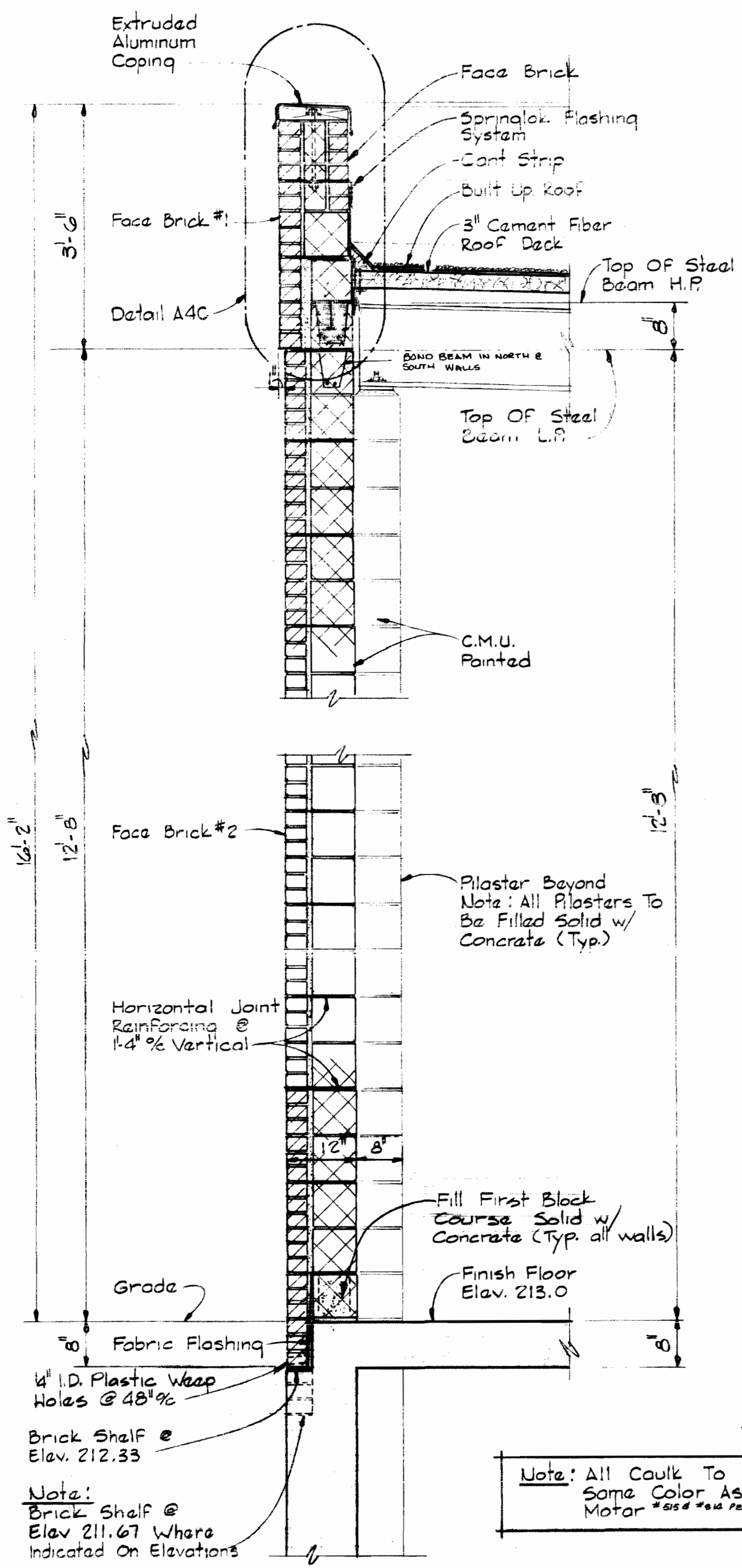
ELKRIDGE WATER PUMPING STATION

DRAWING NO. 7 OF 24  
SCALE AS SHOWN

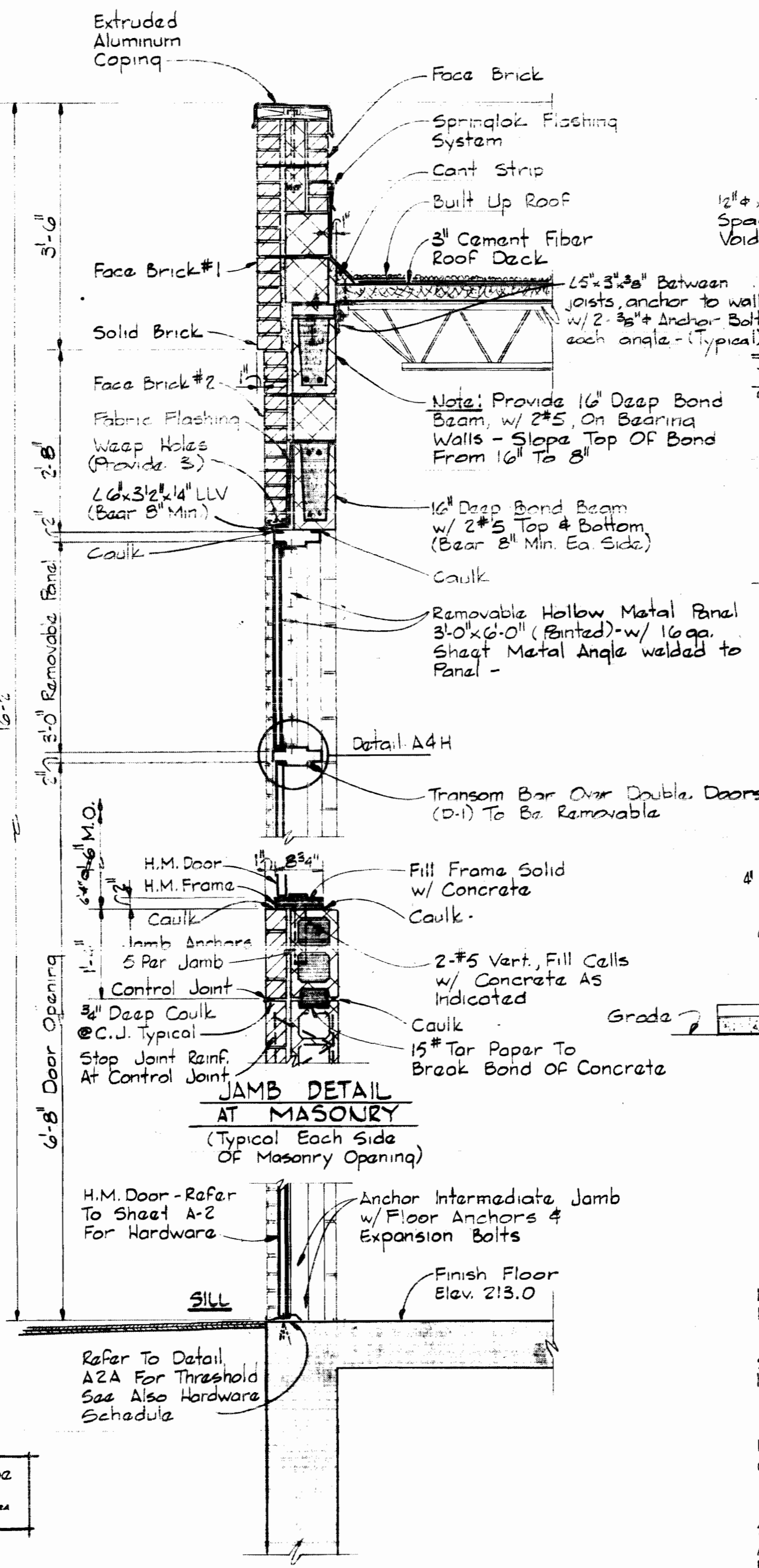
October 14, 1975

W.O. 6257-2

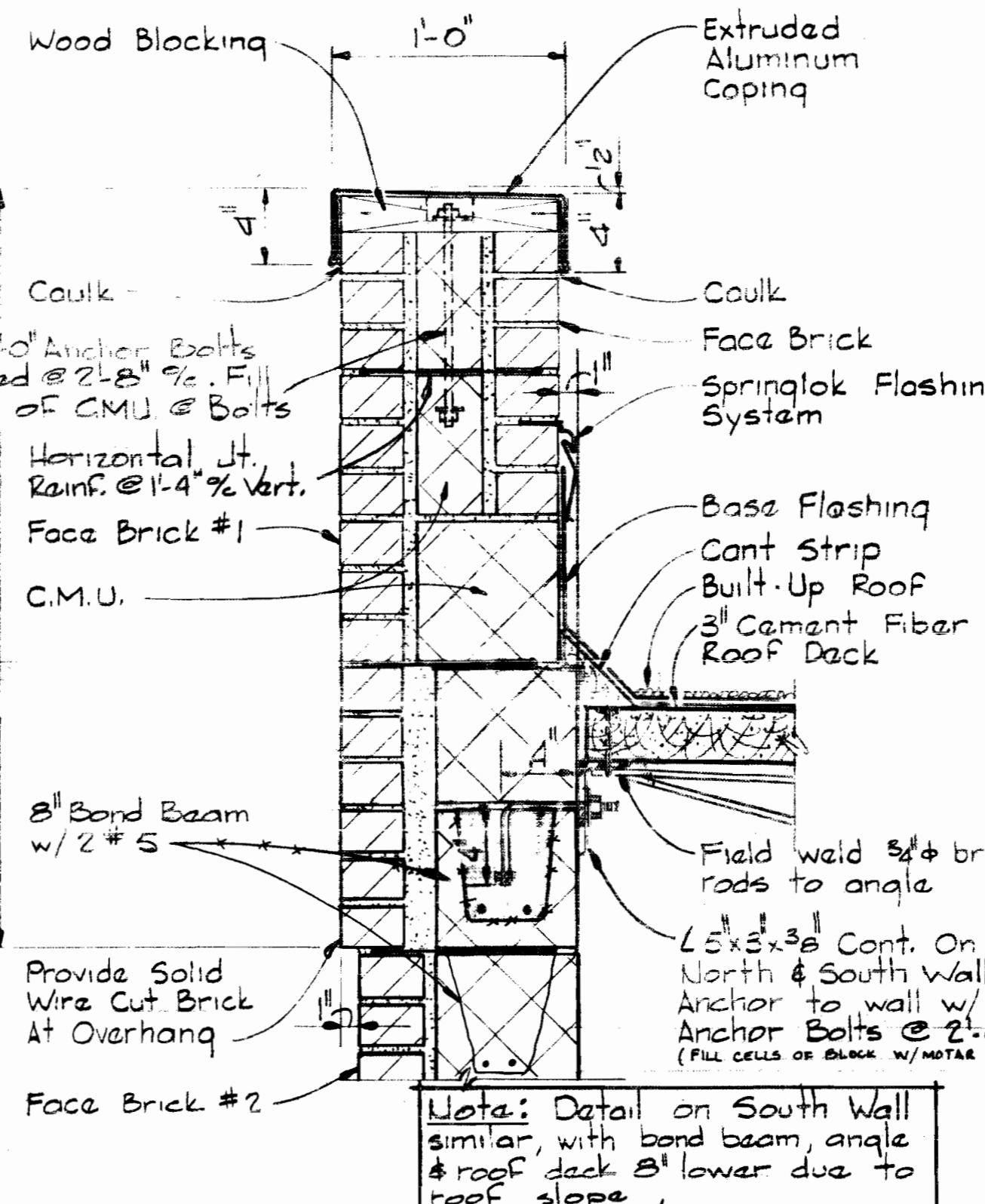
WS 399-W/7



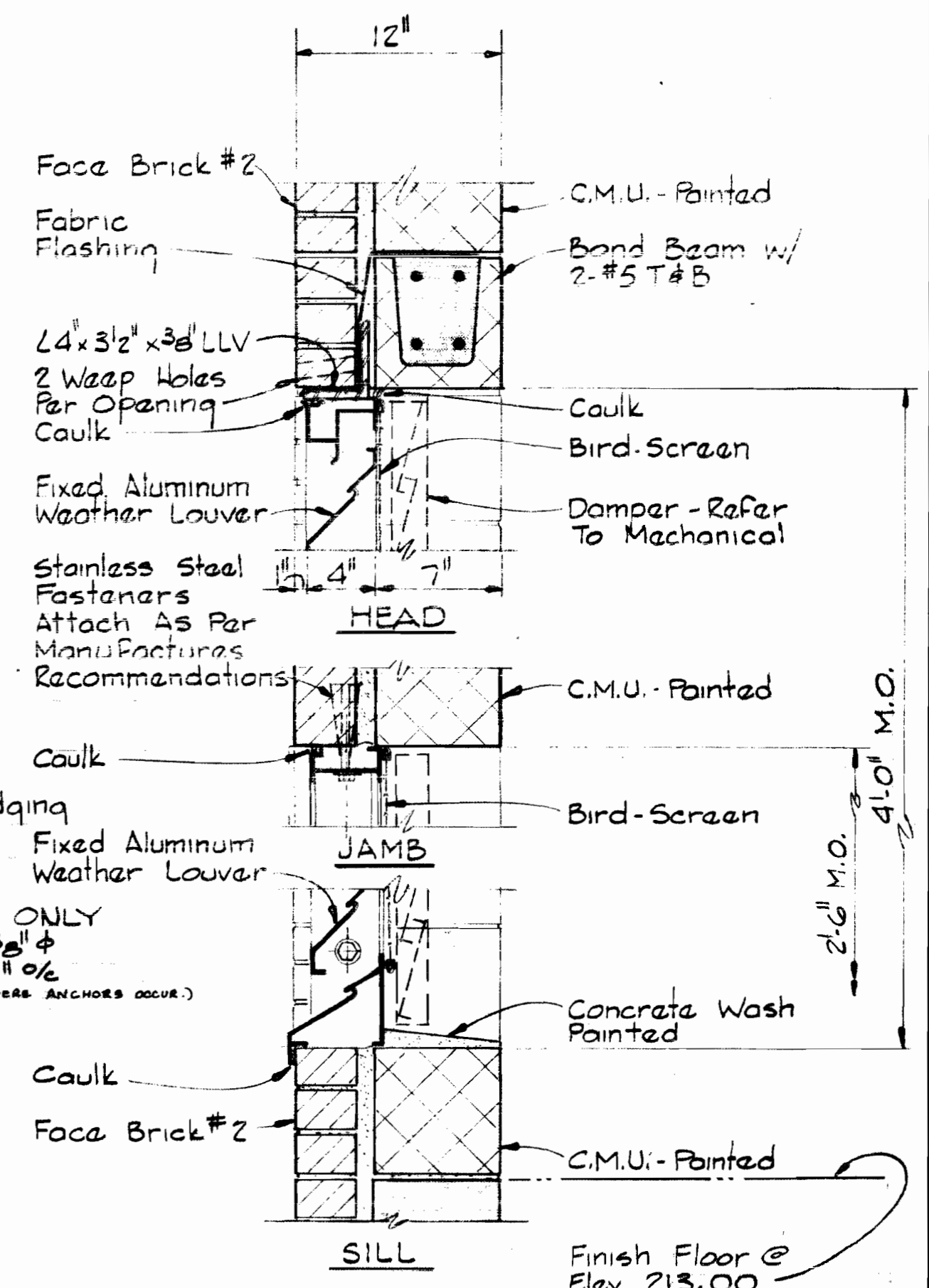
**SECTION A4A/A2**  
Scale 3/4" = 1'-0"



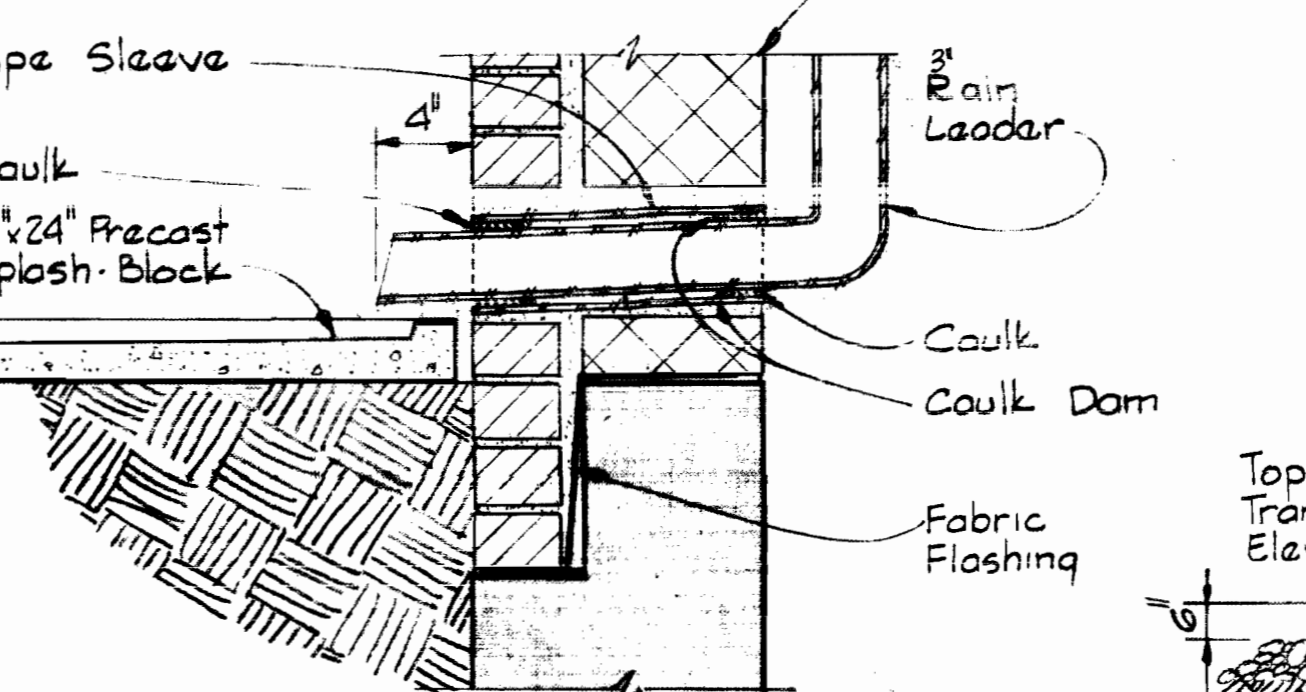
**SECTION A4B/A2**  
Scale 3/4" = 1'-0"



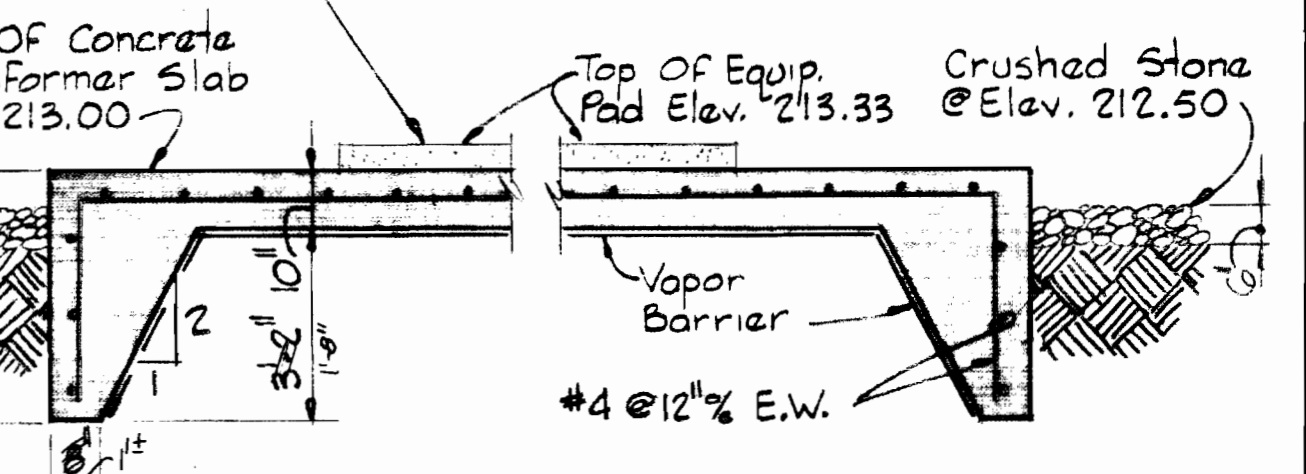
**DETAIL A4C/A4**  
Scale 1/2" = 1'-0"



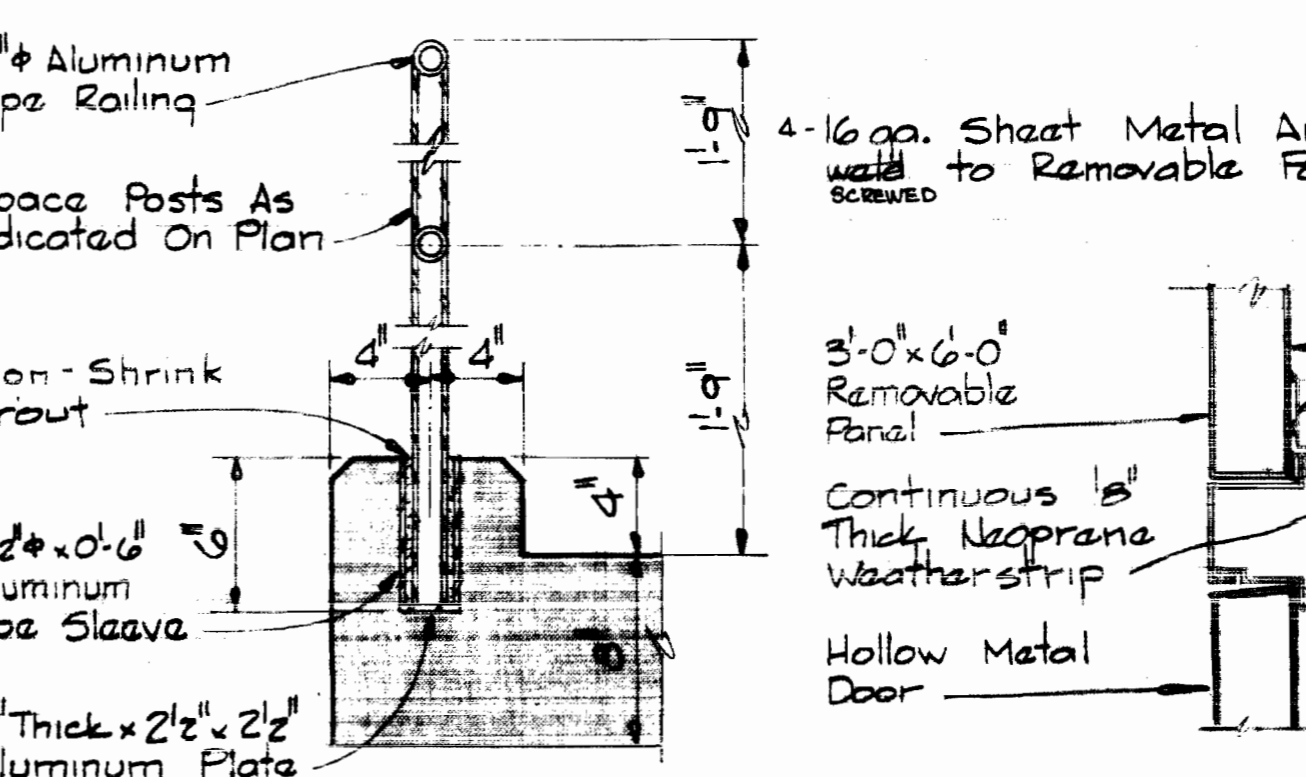
**SECTION A4D/A1, A2**  
Scale 1/2" = 1'-0"



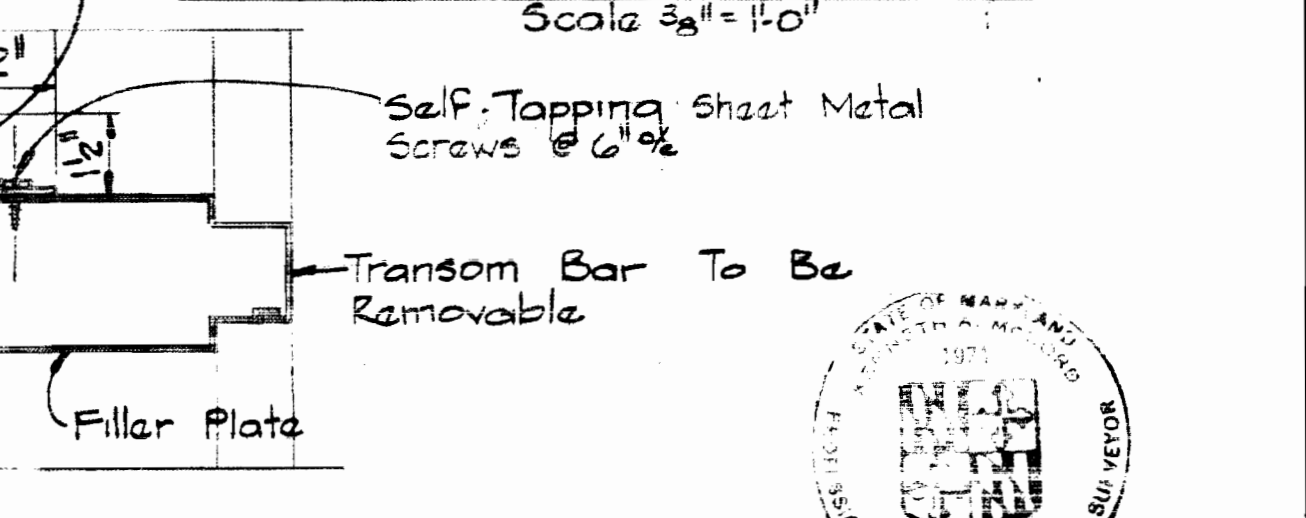
**DETAIL A4E/A2**  
Scale 1/2" = 1'-0"



**SECTION A4G/A5**  
Scale 3/8" = 1'-0"



**DETAIL A4F/A2**  
Scale 1/2" = 1'-0"



**DETAIL A4H/A4**  
Scale 3/8" = 1'-0"

Note: All Caulk To Be Same Color As Motor \*SIS \*GIA \*PACCA



*Kenneth M. Lord*

SHEET A-4  
Contract No. 399-W

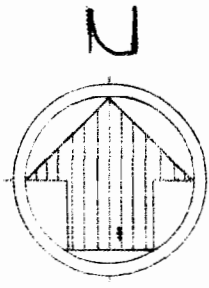
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 10-14-75 DATE <i>W. O. Libbert</i> CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 399-W	WALL SECTIONS & MISC. DETAILS	ELKRIDGE WATER PUMPING STATION	DRAWING NO. 8 OF 24 SCALE AS SHOWN
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October 14, 1975

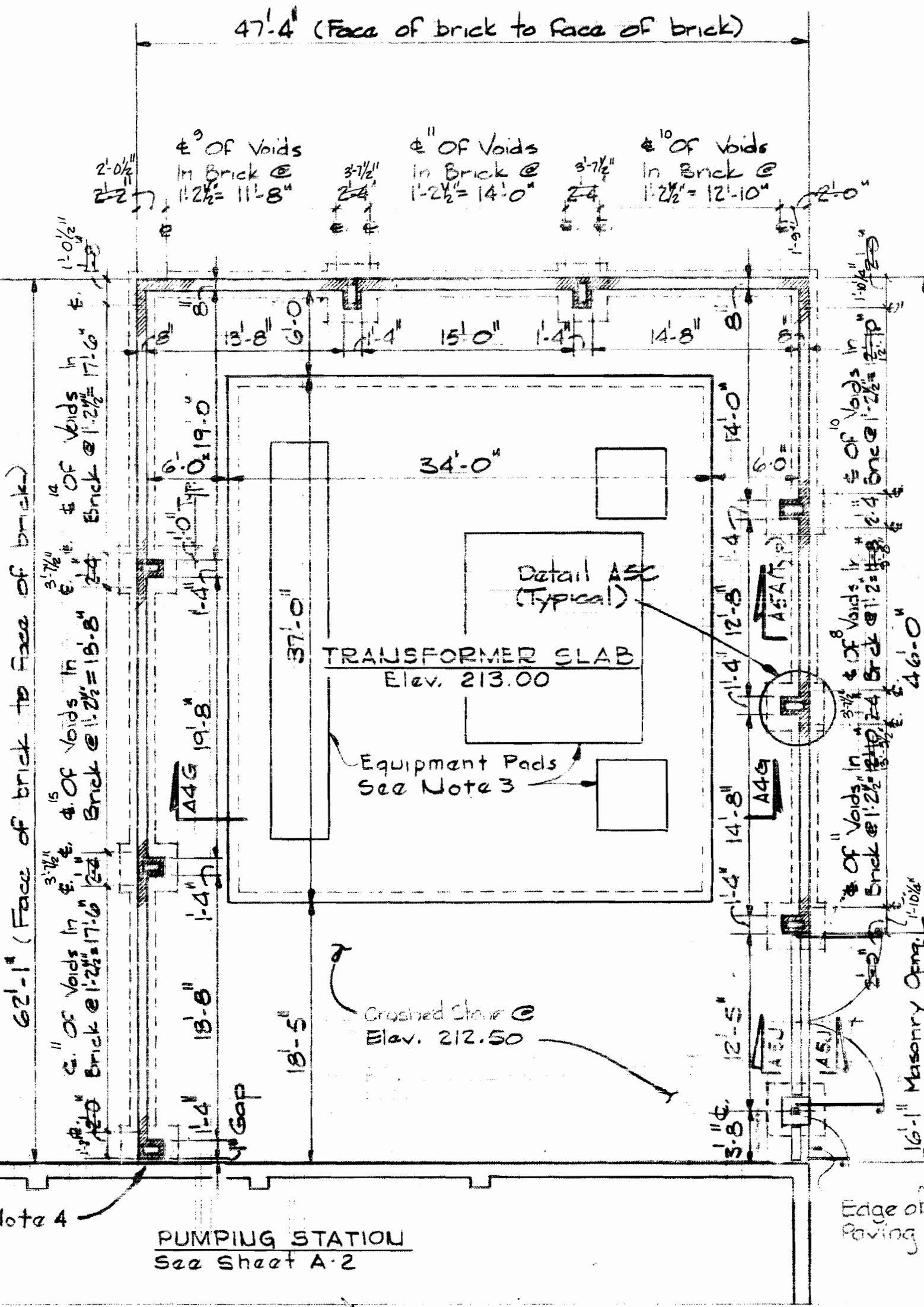
WS 399-W/8

W.O. 6257-2



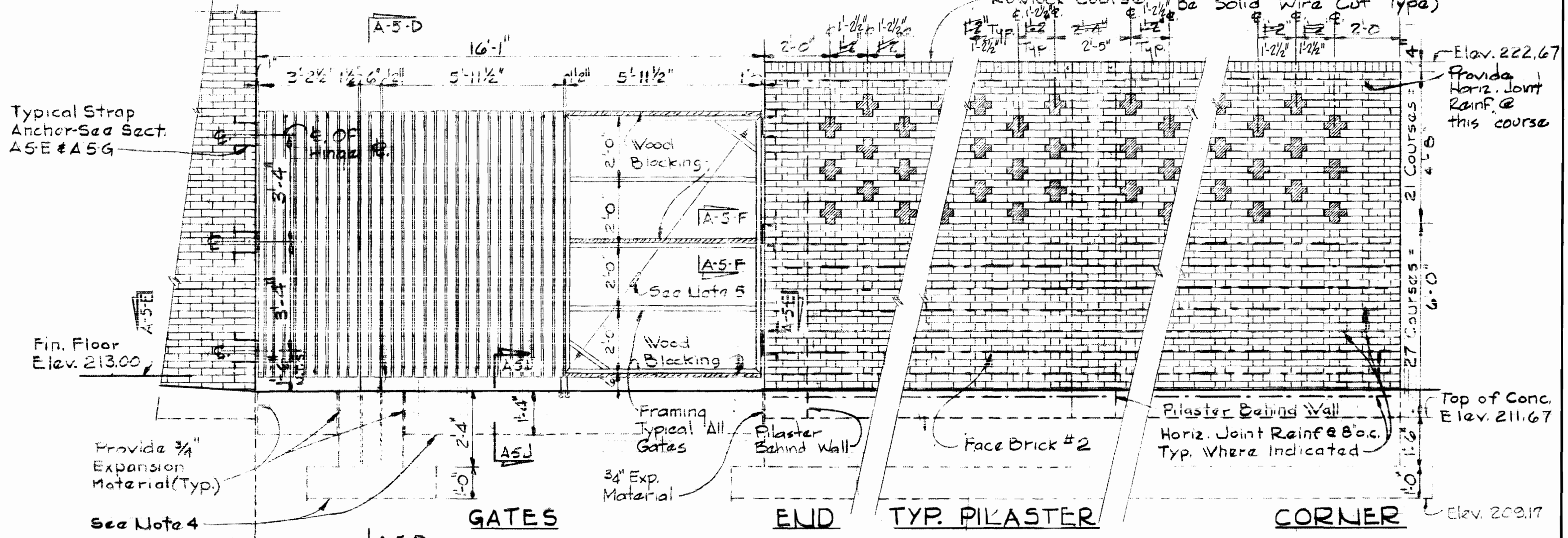


- NOTES:**
- Provide 4 1/2 pr. Hinges BB601-B, 8" x 8" Self-Tapping S.S. Screws By Stanley or Approved Equal.
  - Provide 1 pr. 18" Cane Bolts 1009KUI w/ Self-Tapping S.S. Screws & 2 pr. Strikers (One pr. Located to Suit Gate & Guard Post) By Stanley or Approved Equal.
  - Concrete Pads on Transformer Slab To Suit Elect. Equip. - Provide Leveling Channels & Openings in Pad As Required by Elect. Equip.
  - Provide 95% Compaction Under Column Pilaster Footing & Loading Beams.
  - Provide S.S. 3/8" # Threaded Rods, Washers, Nuts, & Turnbuckle 8416-3/8" By Stanley or Approved Equal. (Typ. All Gates)
  - All Steel Framing Members Shall Be Painted Prior To Application Of Wood Slats



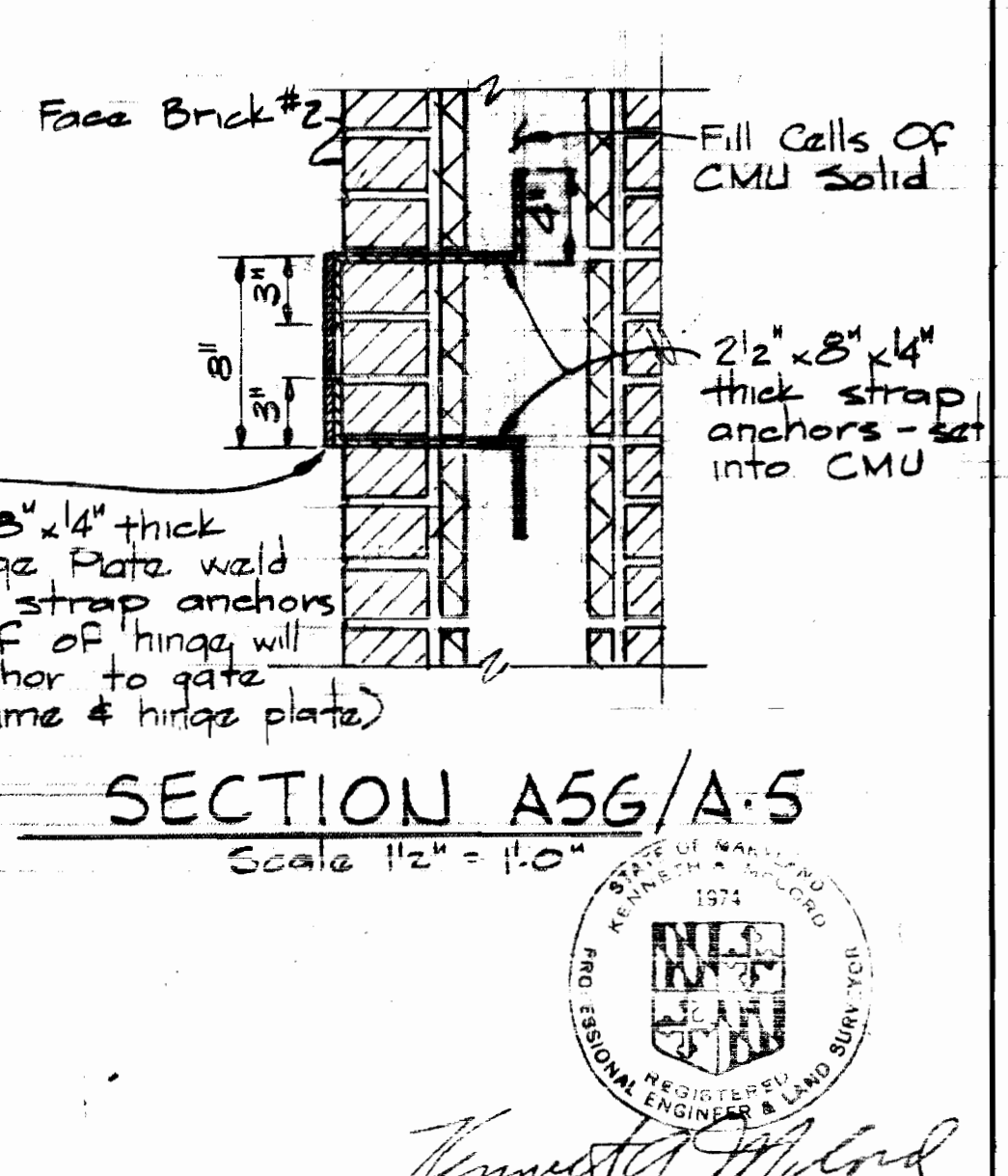
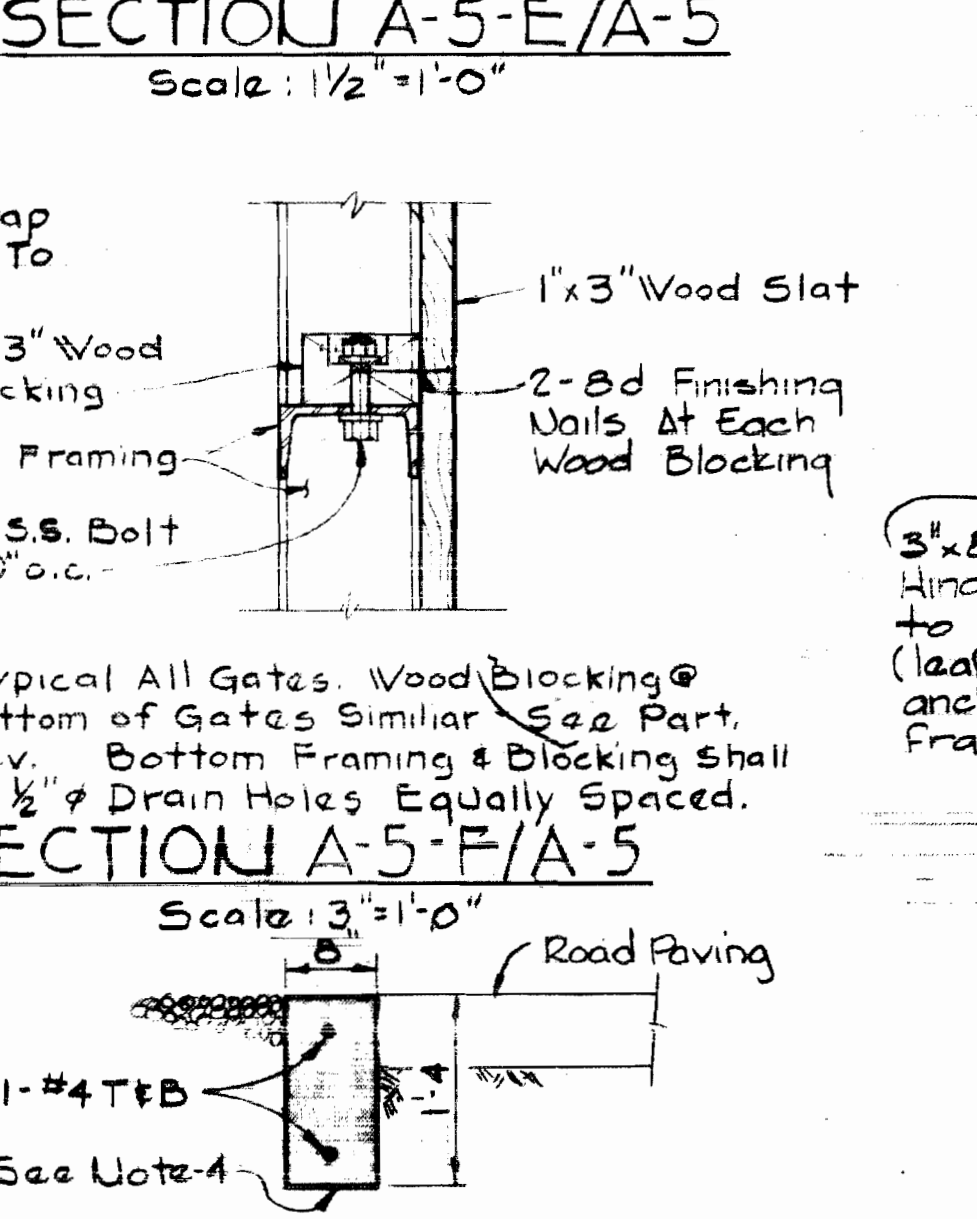
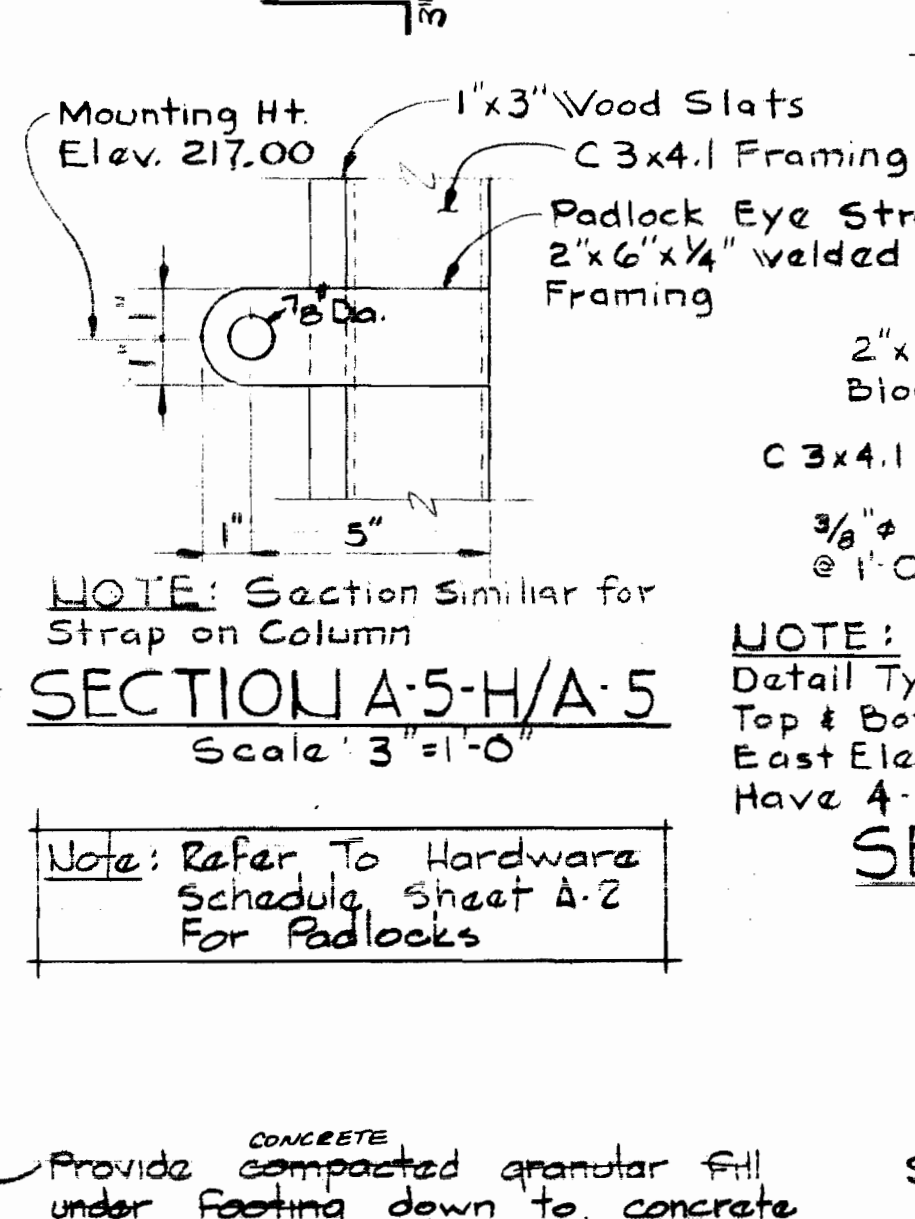
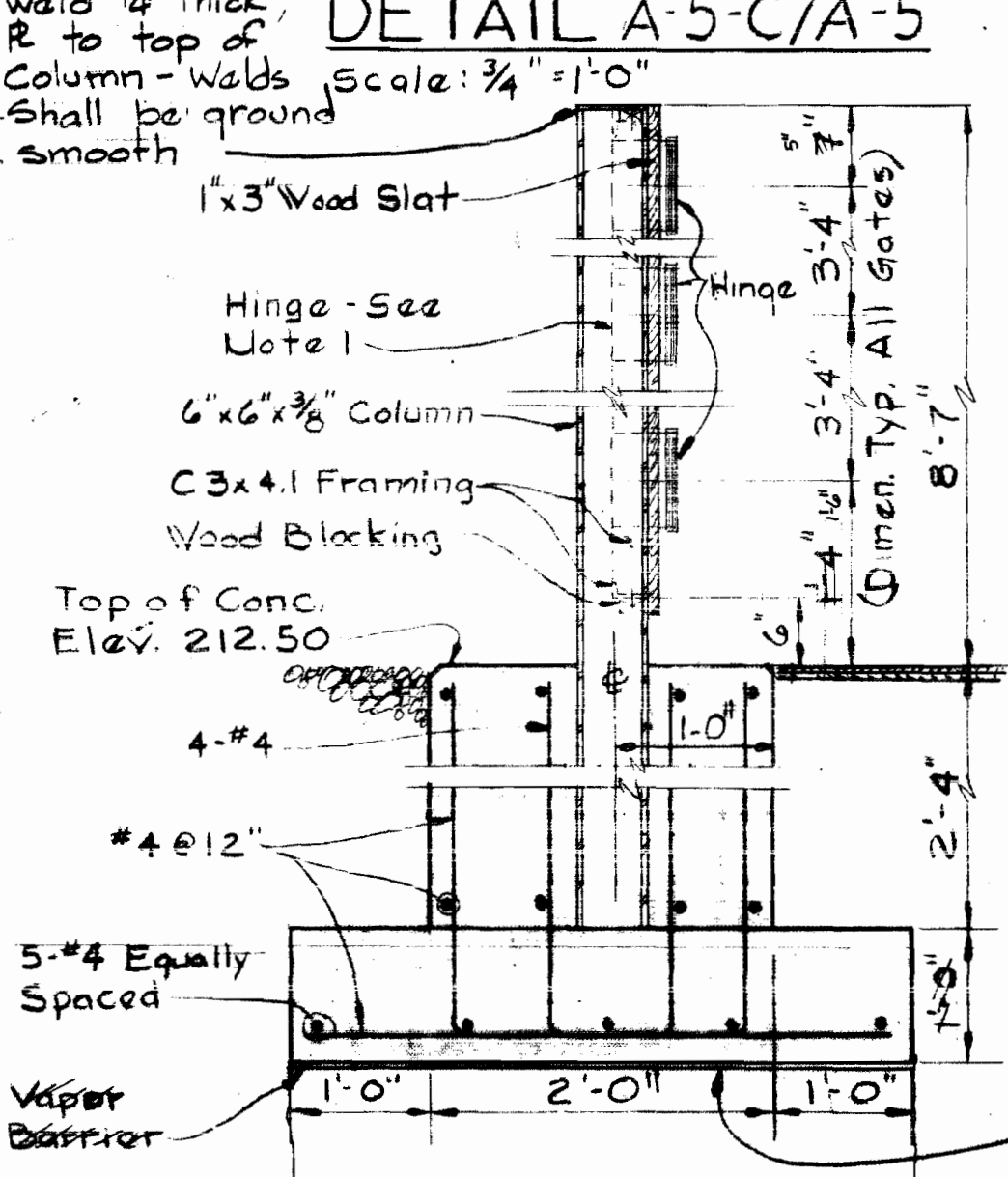
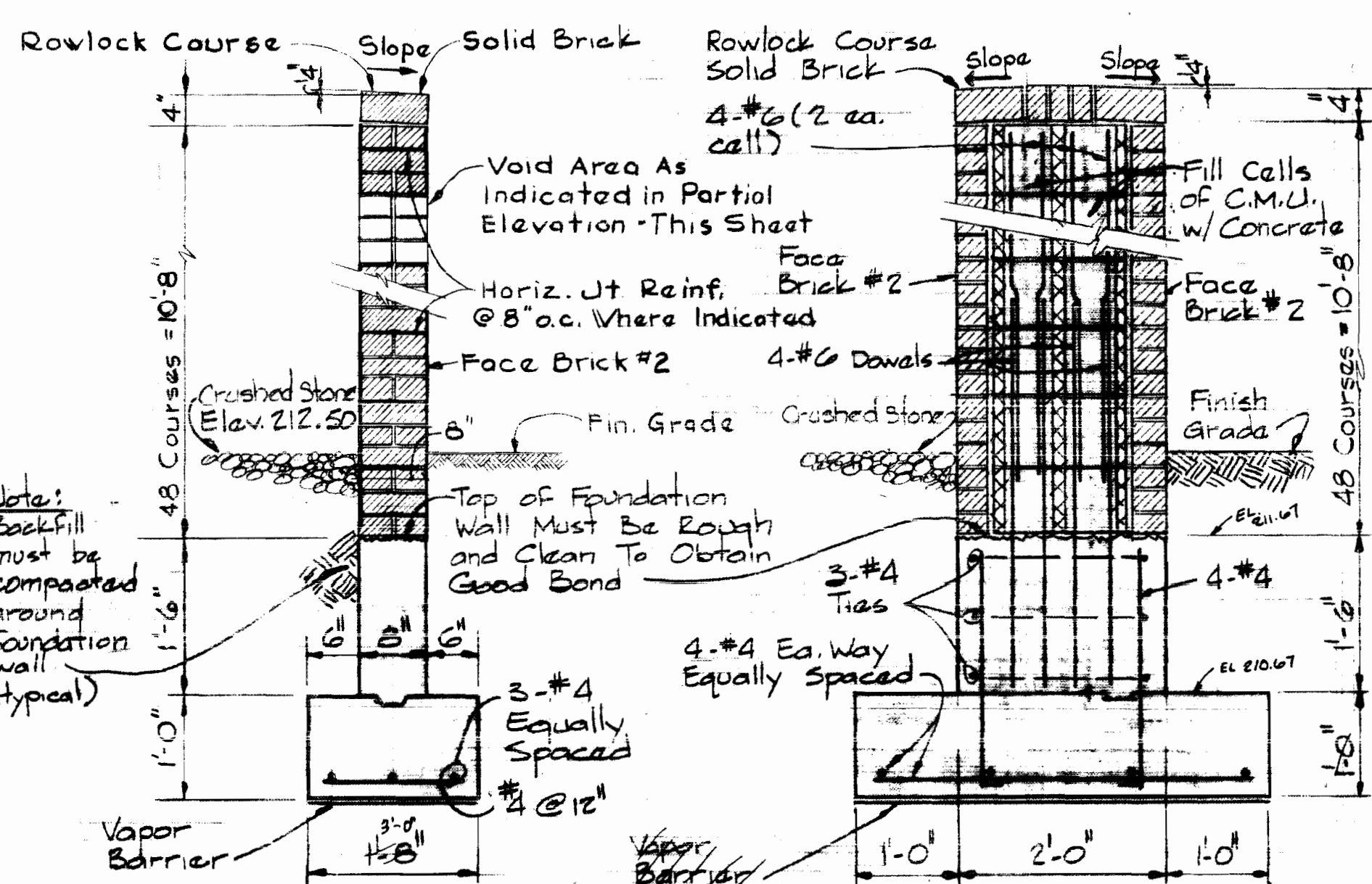
**NOTE:**  
All Joints in Gate Framing Shall Be Welded & Ground Smooth

**NOTE:**  
Shaded Area Indicates Voids in Brick Pattern - Use Solid Brick @ Top & Bottom of Voids (Solid Brick To Be Solid Wire Cut Type)



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

**PARTIAL SCREENWALL ELEVATION (EAST WALL)**  
Scale: 3/8" = 1'-0"



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

**SECTION A-5-B/A-5**  
Scale: 3/4" = 1'-0"

**SECTION A-5-C/A-5**  
Scale: 3/4" = 1'-0"

**SECTION A-5-D/A-5**  
Scale: 3/4" = 1'-0"

**SECTION A-5-E/A-5**  
Scale: 1/2" = 1'-0"

**SECTION A-5-F/A-5**  
Scale: 3/4" = 1'-0"

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BALTIMORE, MARYLAND

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND  
10-14-75  
W. O. Salbert  
CHIEF-BUREAU OF ENGINEERING

**CONTRACT NO. 399-W**

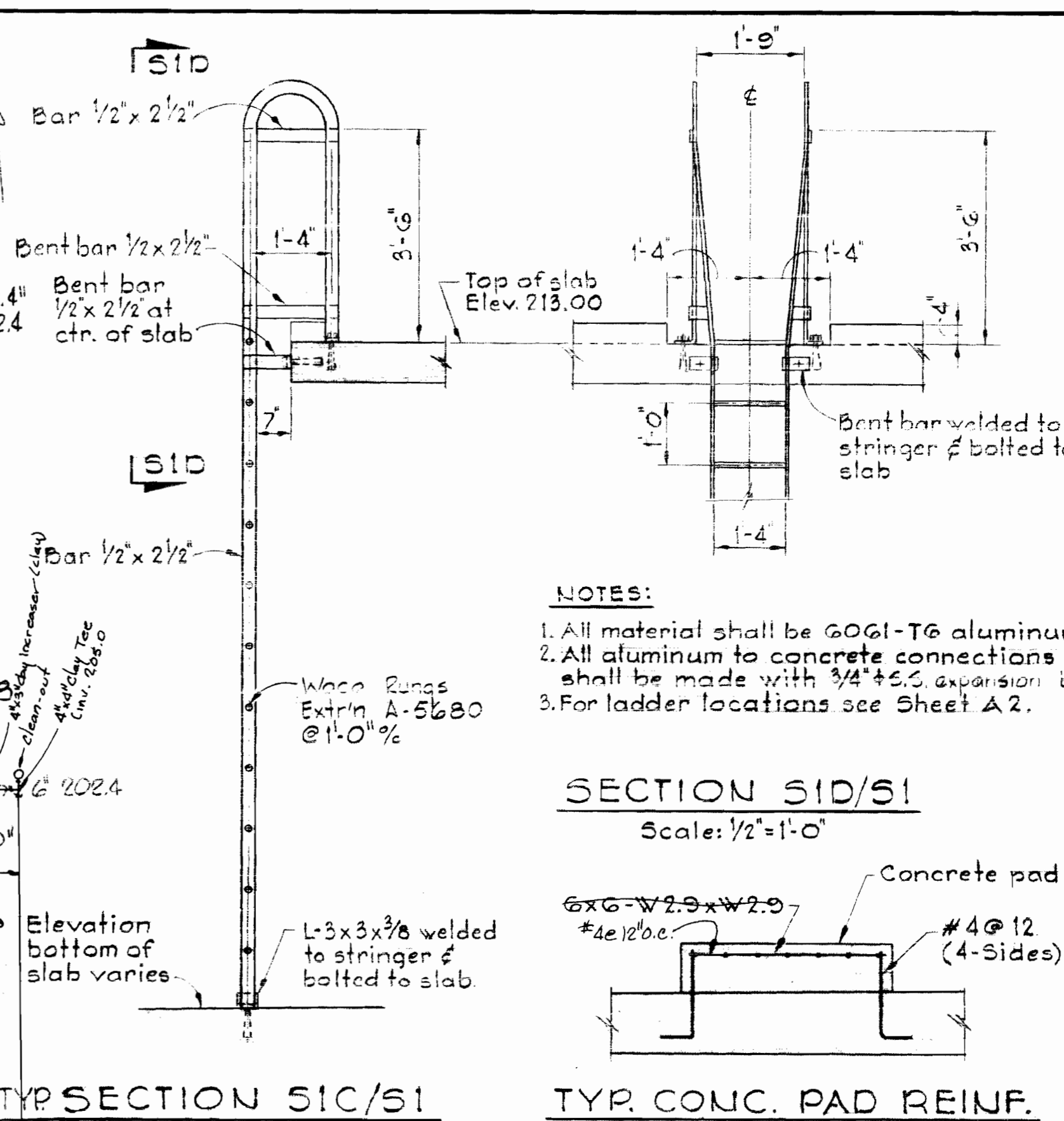
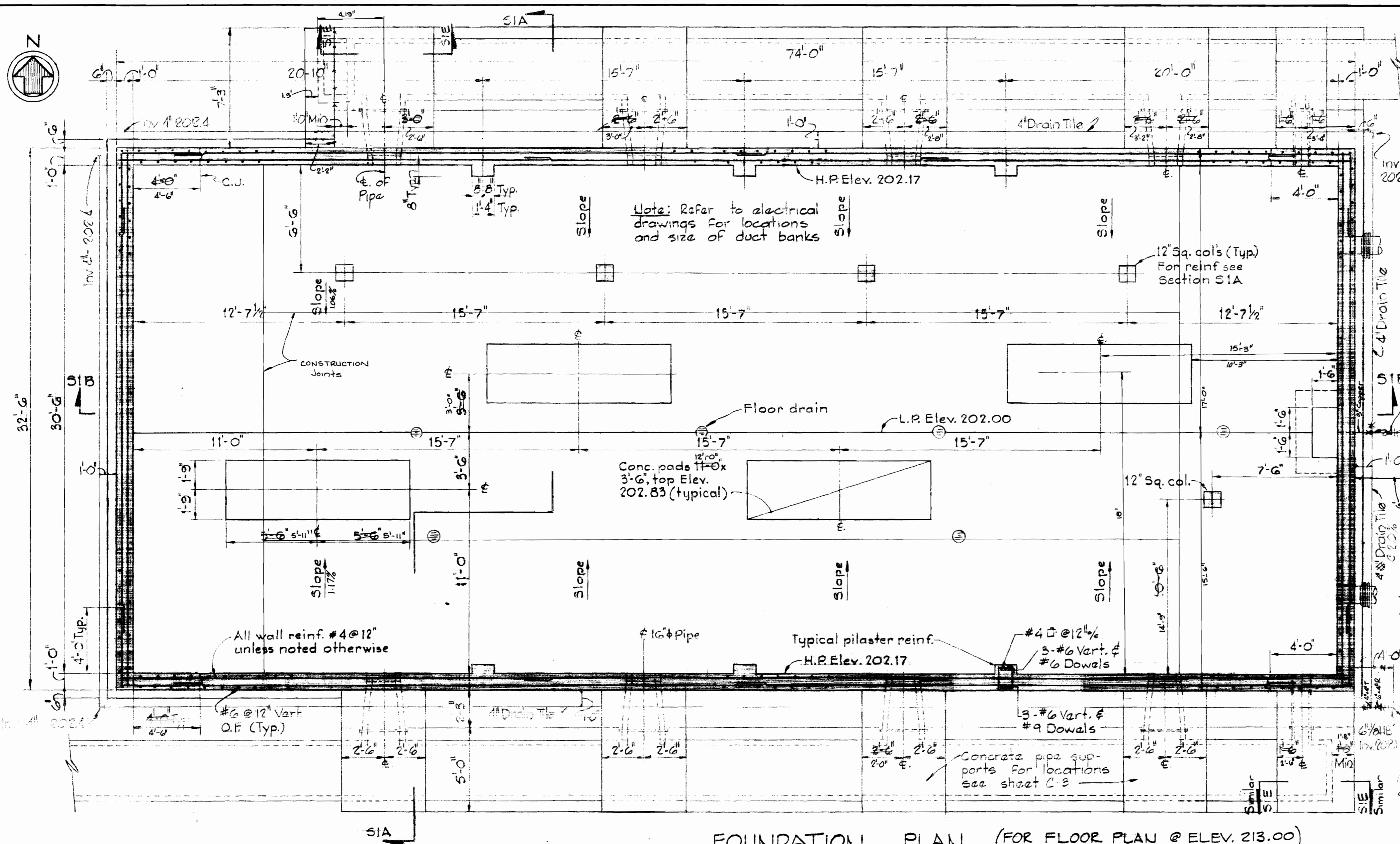
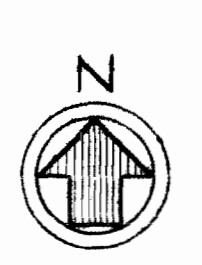
**SUBSTATION PLAN, SCREENWALL & GATE DETAILS**

**ELKRIDGE WATER PUMPING STATION**

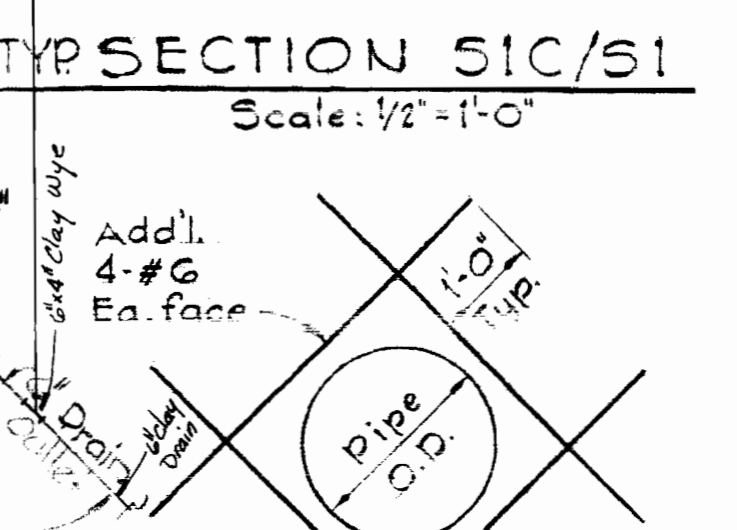
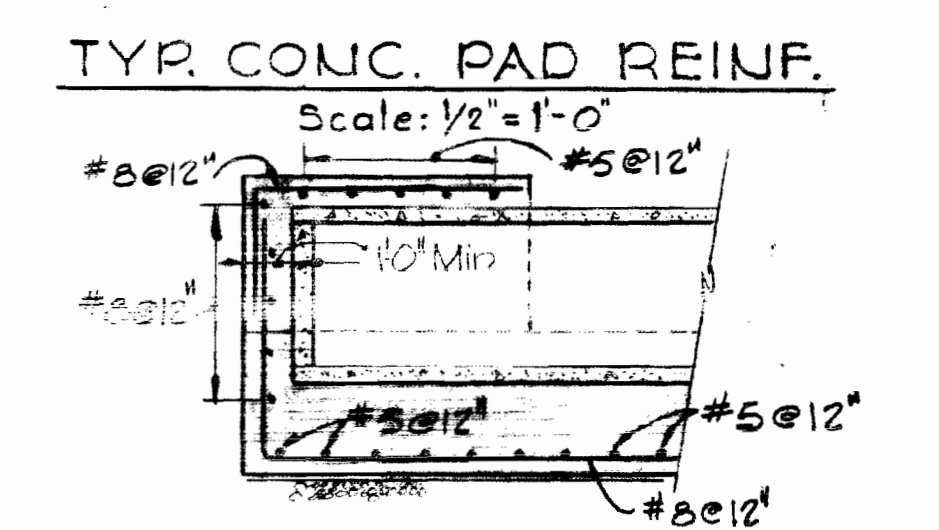
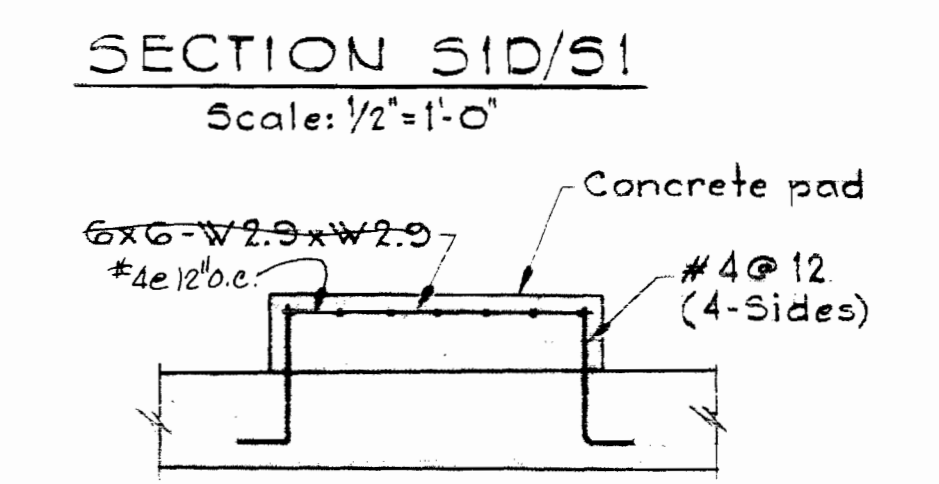
**DRAWING NO. 9 OF 24**  
**SCALE AS SHOWN**



**SHEET A-5**  
Contract No. 399-W



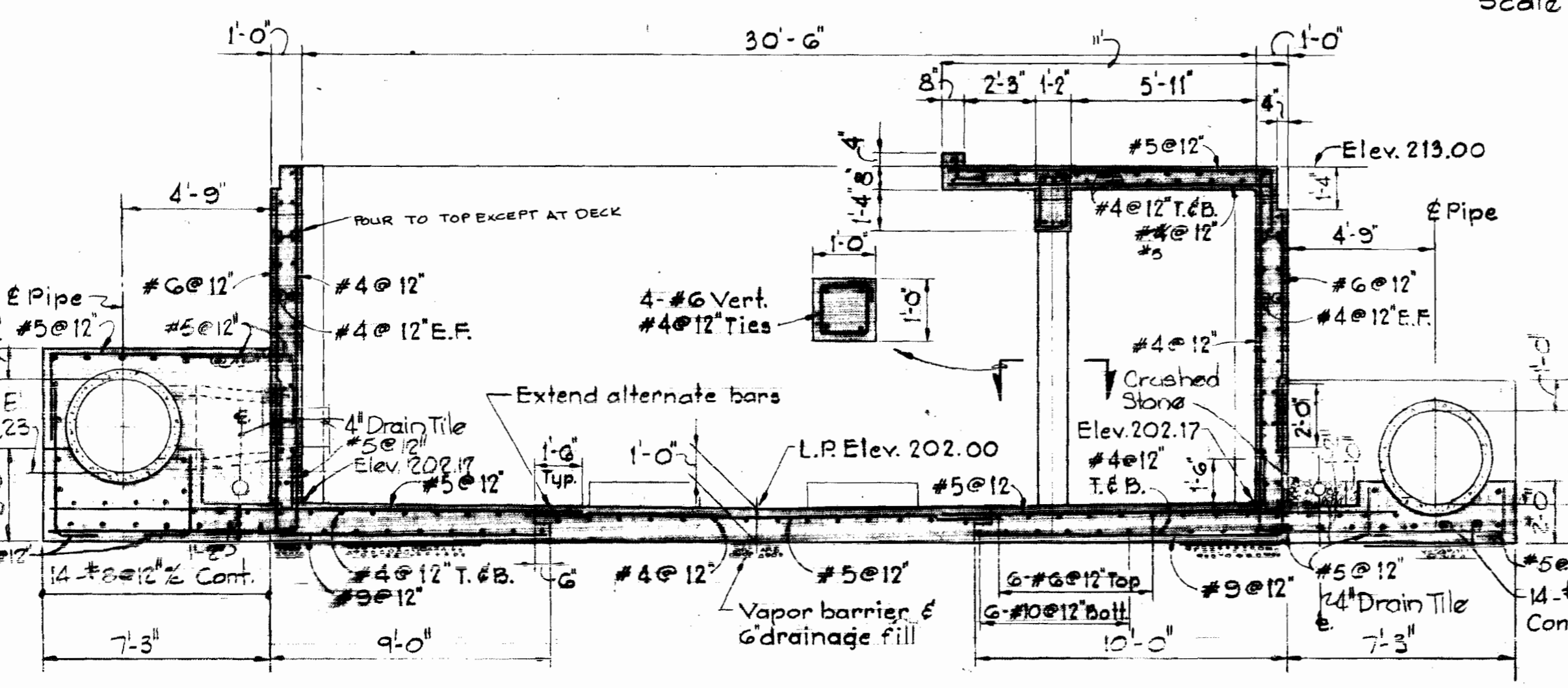
- NOTES:**
1. All material shall be 6061-T6 aluminum.
  2. All aluminum to concrete connections shall be made with 3/4\"/>
  - 3. For ladder locations see Sheet A2.



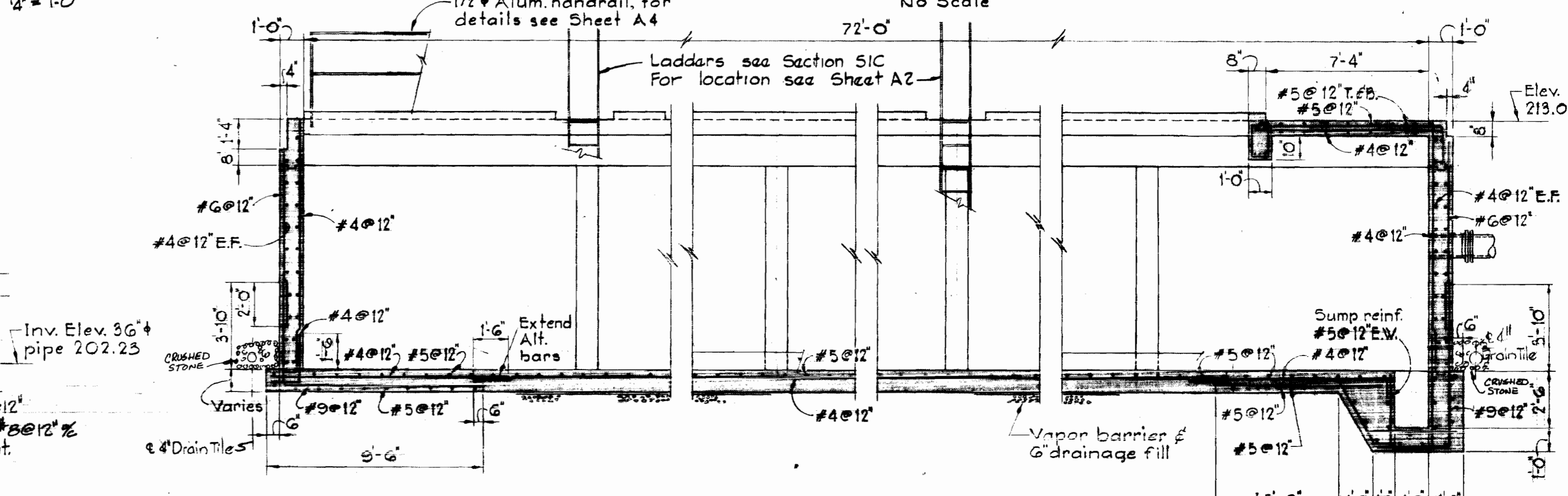
**FOUNDATION PLAN (FOR FLOOR PLAN @ ELEV. 213.00)**  
Scale 1/4\"/>

**TYR. REINF. AT PIPE OPENING**  
No Scale

**SECTION S1E/S1**  
Scale 1/4\"/>

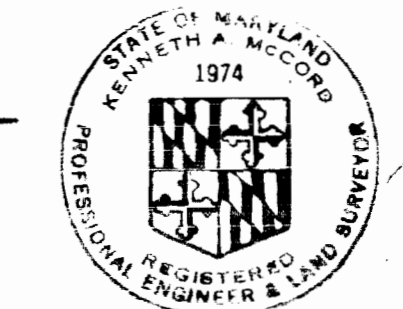


**SECTION S1A/S1**  
Scale 1/4\"/>



**SECTION S1B/S1**  
Scale 1/4\"/>

**STEEL CLEARANCE**  
 1/2\"/>



*Kenneth A. Madala*

WS 399-W/10

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

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND  
10-14-75  
DATE

**CONTRACT NO. 399-W**

**FOUNDATION PLAN & SECTIONS**

**ELKRIDGE WATER PUMPING STATION**

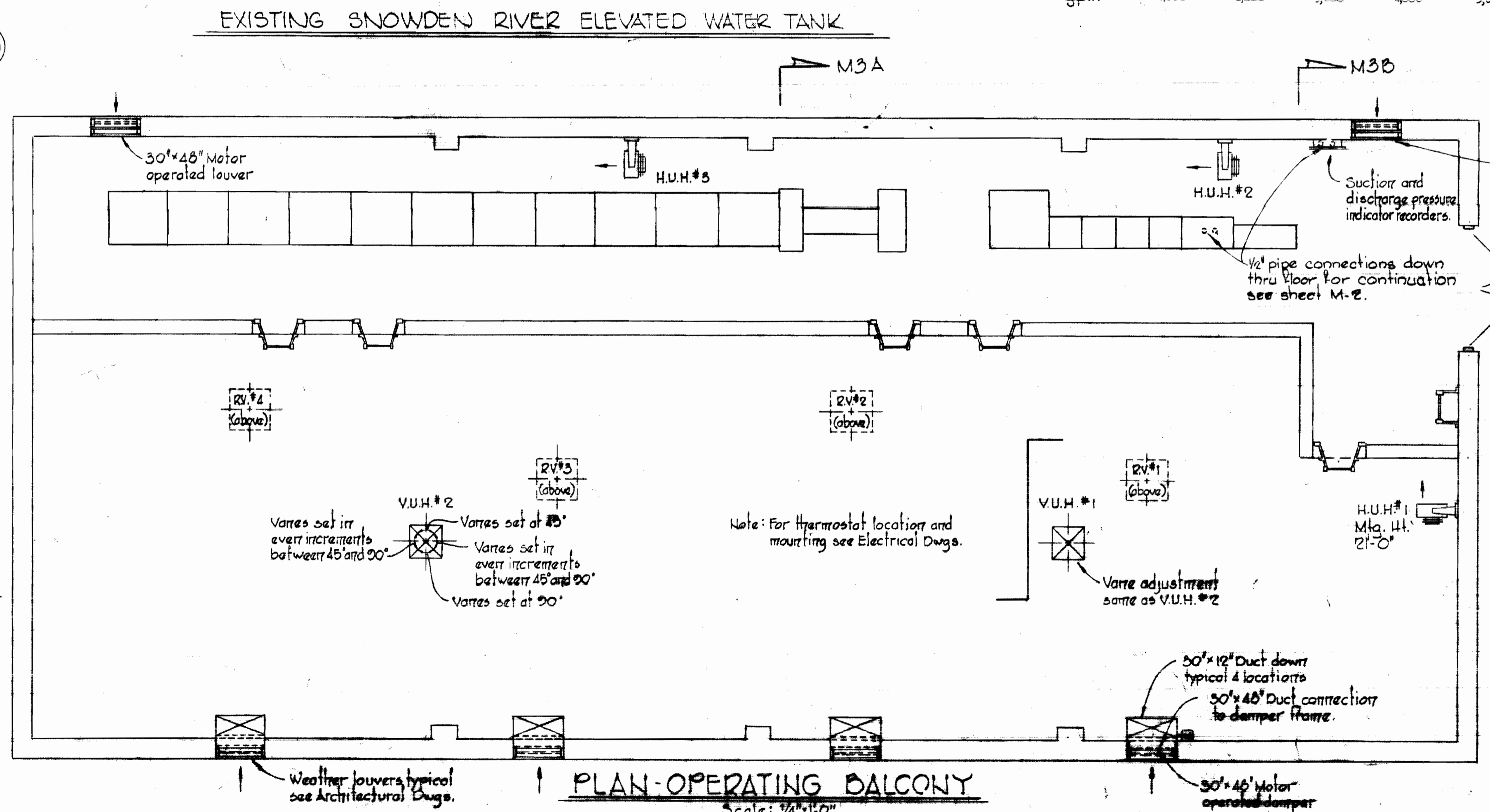
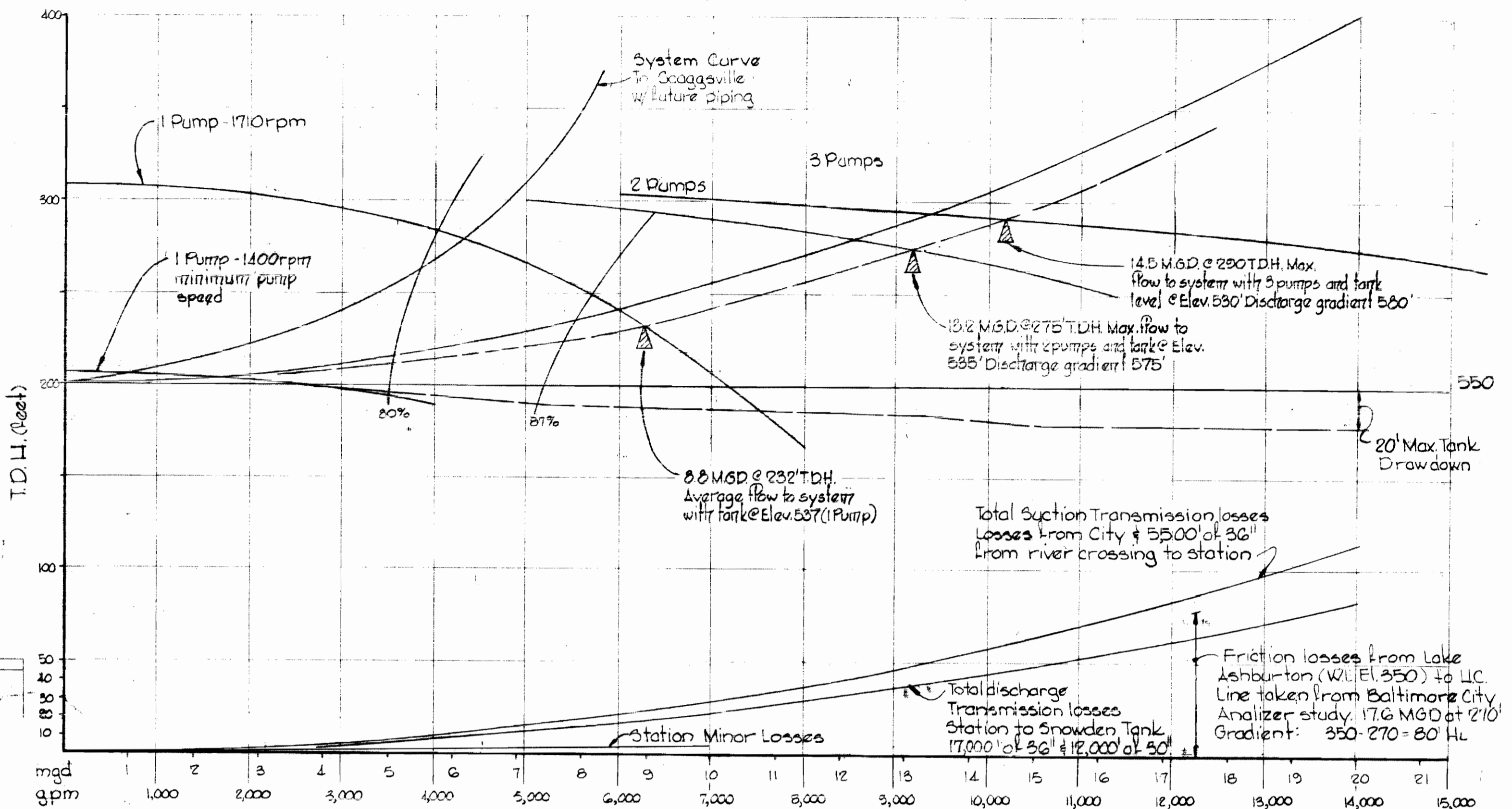
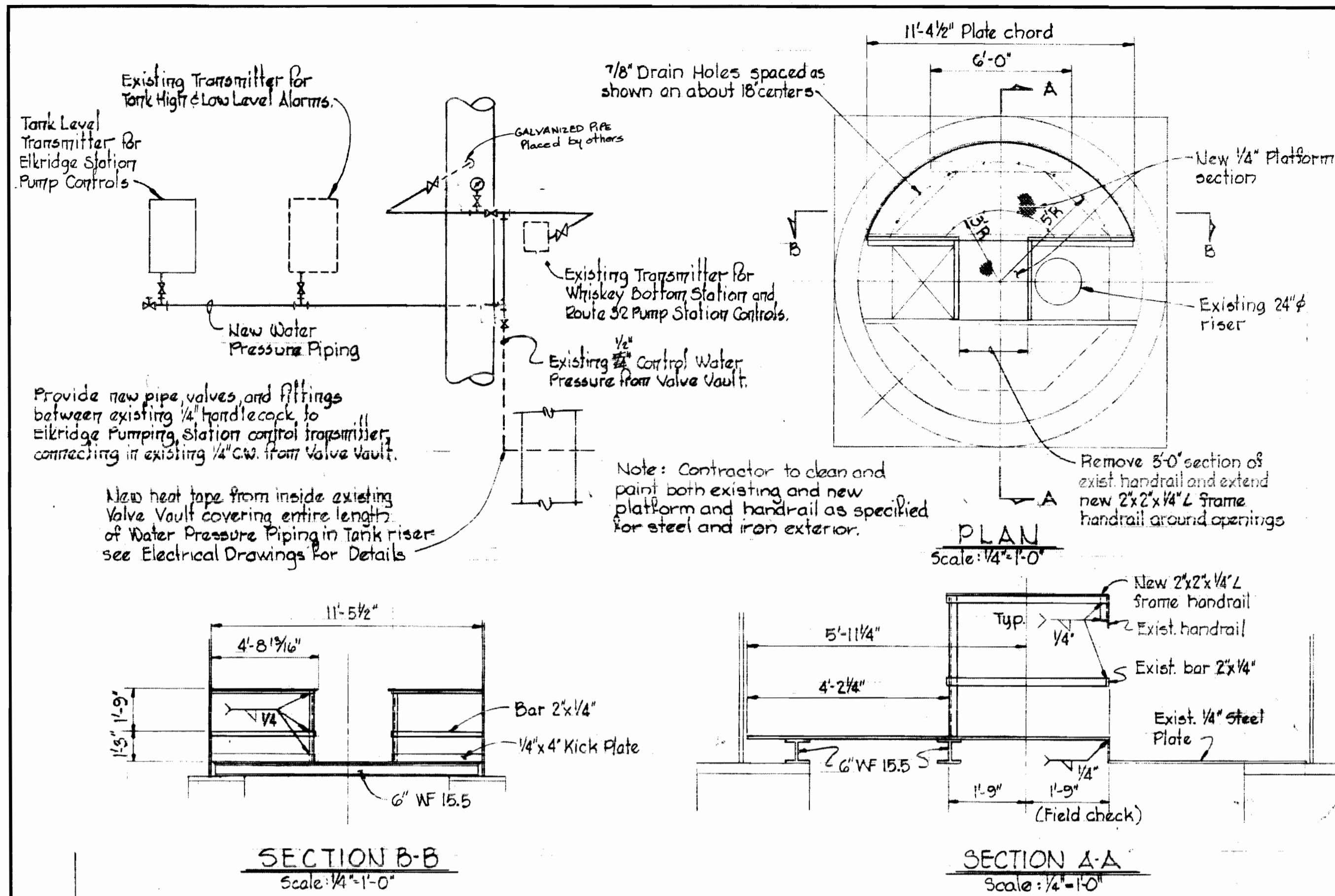
**DRAWING NO. 10 OF 24**  
**SCALE AS SHOWN**

**SHEET S-1**  
Contract No. 399-W

October 14, 1975

W.O. 6257-2



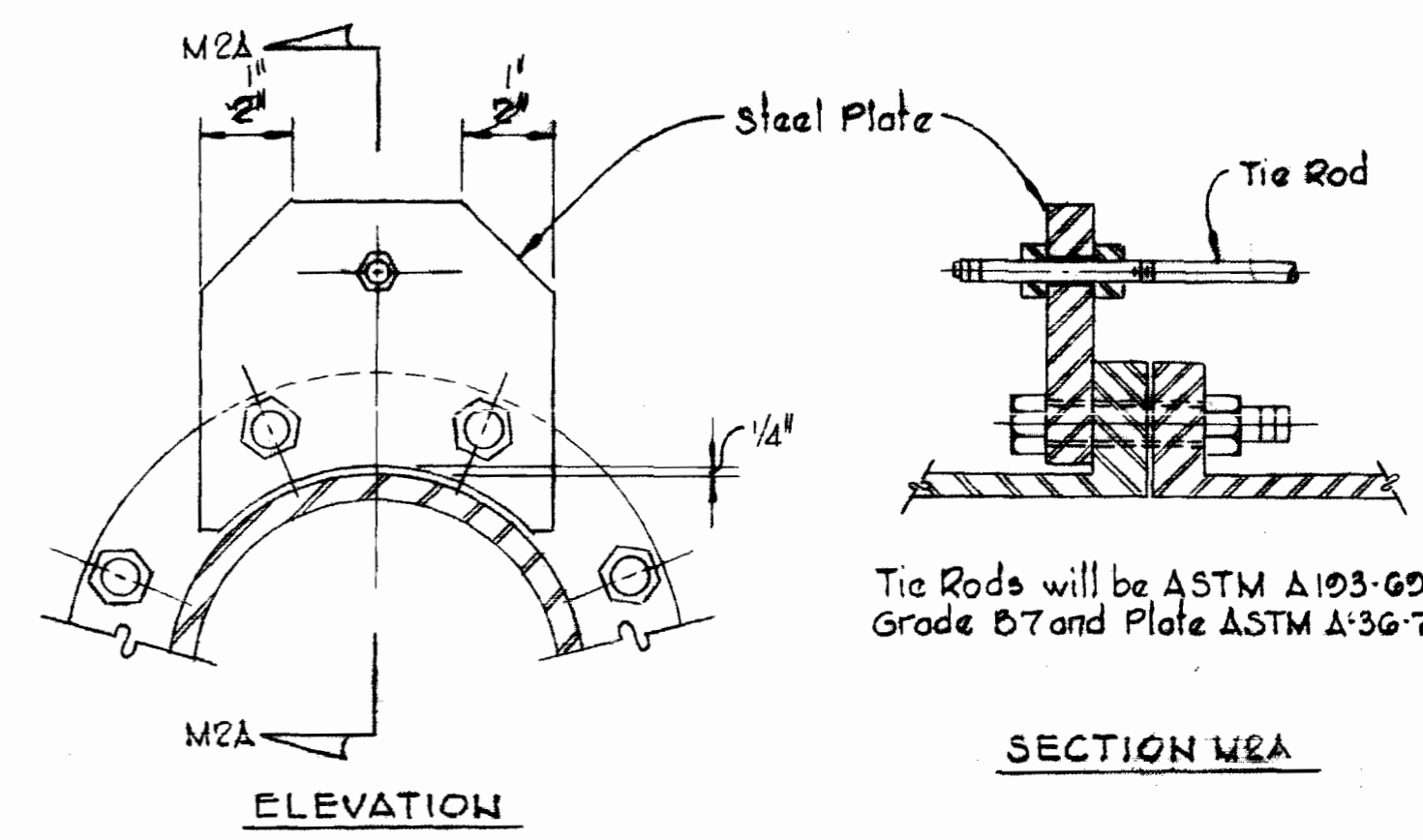
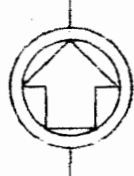


<b>WHITMAN, REQUARDT &amp; ASSOCIATES</b> ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	<b>DEPARTMENT OF PUBLIC WORKS</b> HOWARD COUNTY, MARYLAND 10-14-71 <i>W. O. Fallick</i> CHIEF BUREAU OF ENGINEERING	<b>CONTRACT NO. 399-W</b>	<b>MECHANICAL</b> SYSTEM CURVE, PLAN AND SECTION	<b>ELKRIDGE WATER PUMPING STATION</b>	<b>SHEET M-1</b> Contract No. 399-W <b>DRAWING NO. 12 OF 24</b> <b>SCALE AS SHOWN</b> October 14, 1975
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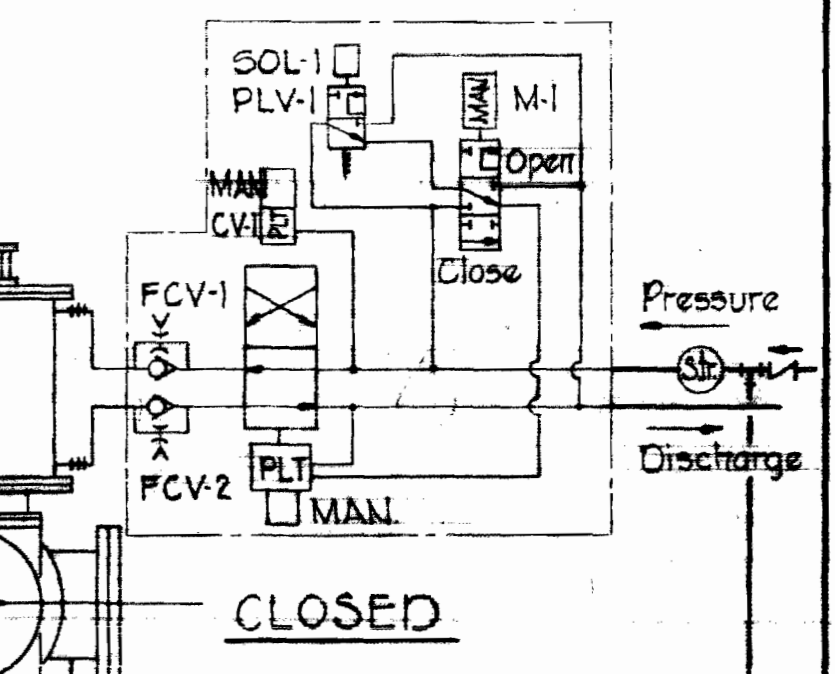
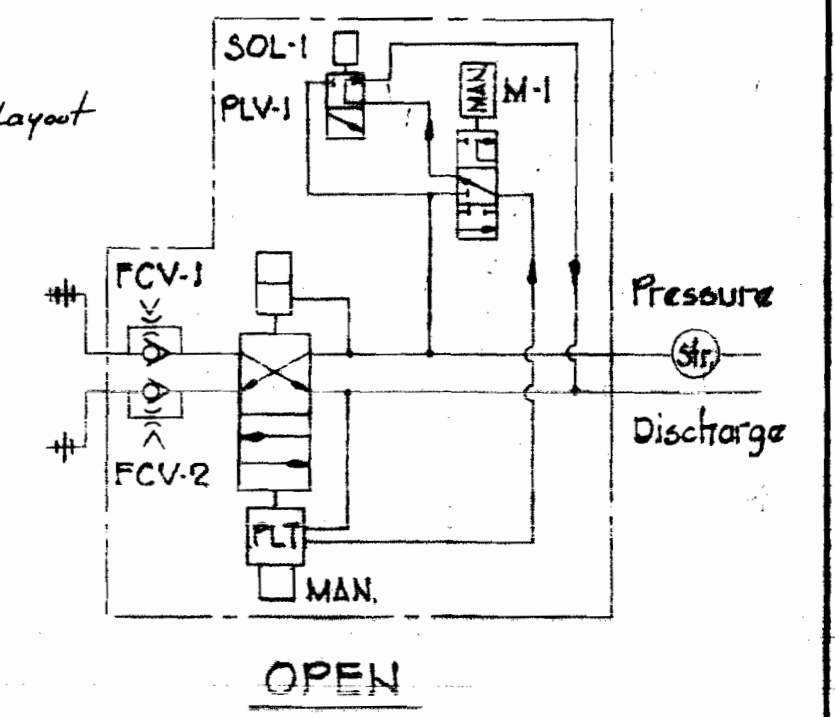
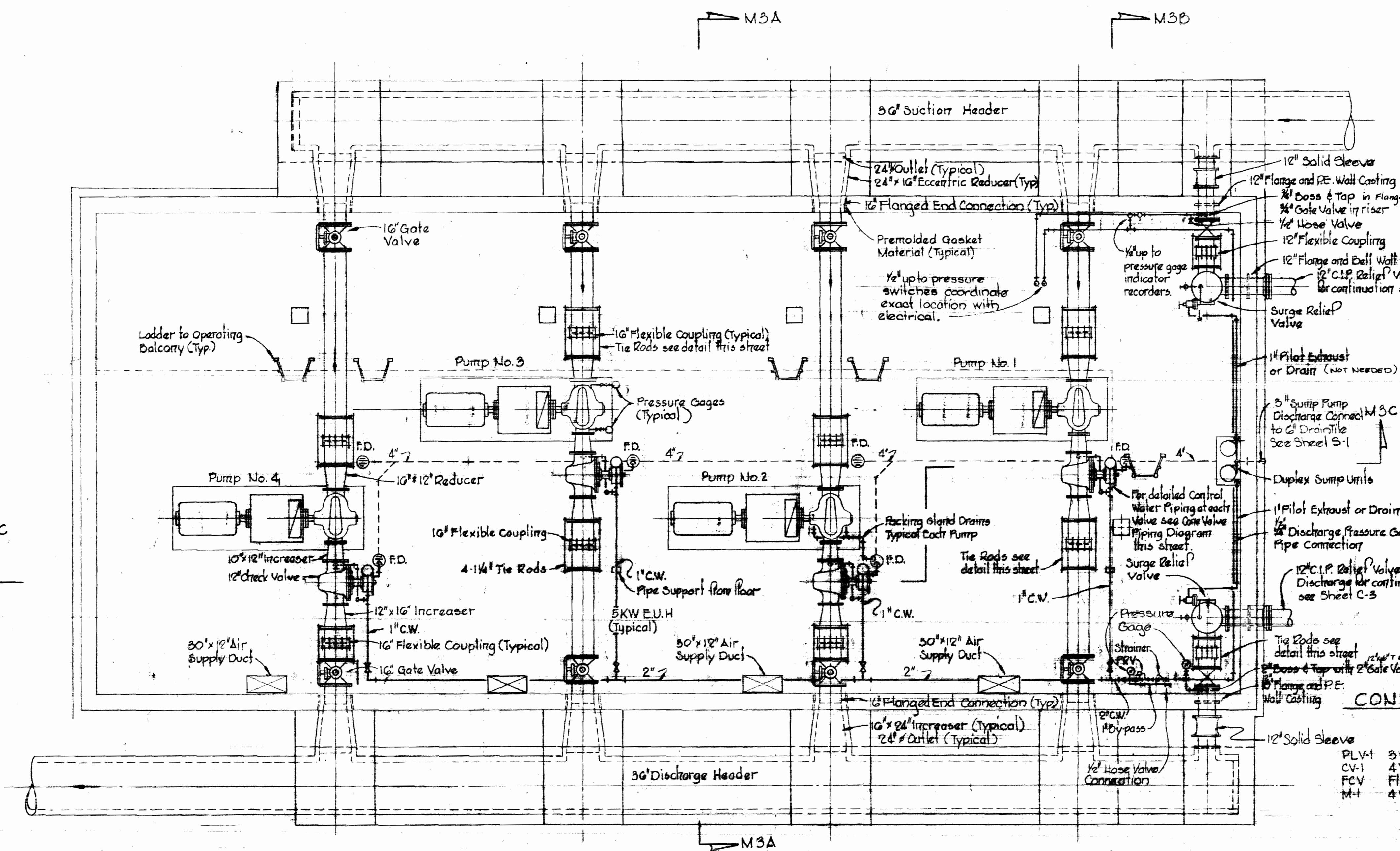
W. O. 6257-2

As Built February 21, 1980

WS 399-W/12



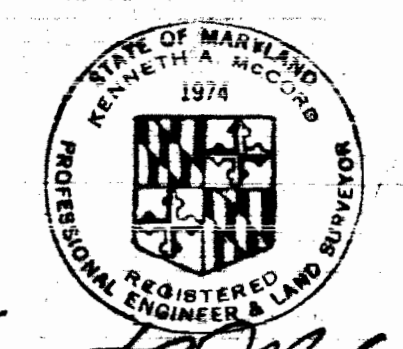
TIE ROD TABLE				
Pipe Size	Press. (PSI)	No. and Size of Tie Rods	Plate Width	Plate Thk.
12"	250	4 - 1/2"	8"	3/4"
16"	300	4 - 1 1/4"	8"	7/8"
16"	250	4 - 1 1/4"	7" 8"	1 1/8"



CONE VALVE PIPING DIAGRAM

- LEGEND
- PLV-1 3 Way Solenoid Operated Pilot Valve
  - CV-1 4 Way Pilot Operated Control Valve
  - FCV 4 Way Flow Control Valve
  - M-1 4 Way 5 Position Manual Valve

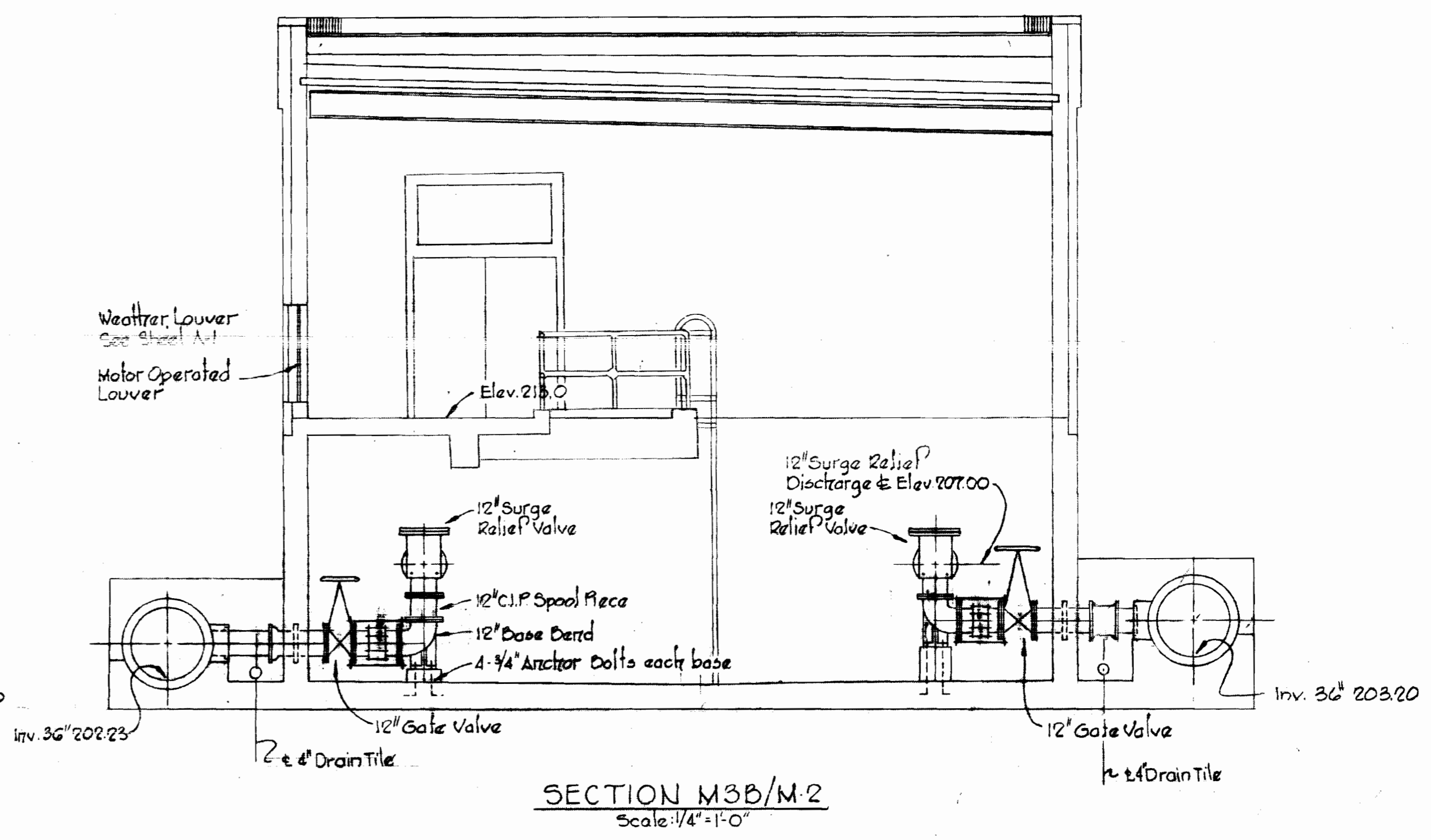
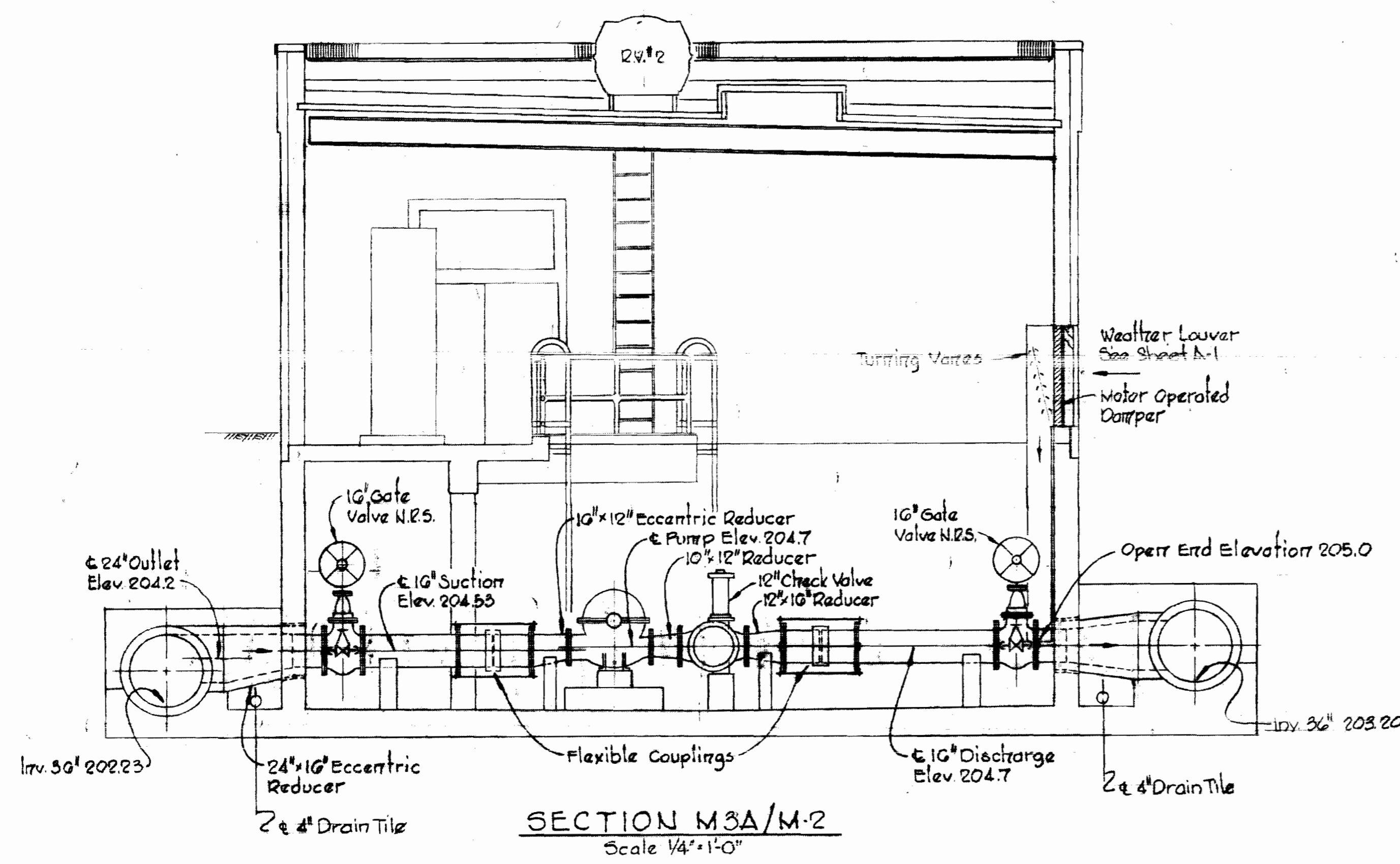
Note: For buttress details see Sheet 3-1



Kenneth M. Wood  
SHEET M-2  
Contract No. 399-W

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 10-14-74 DATE	CONTRACT NO. 399-W	MECHANICAL PLAN, DIAGRAM AND DETAIL	ELKRIDGE WATER PUMPING STATION	DRAWING NO. 13 OF 24 SCALE AS SHOWN
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WS 399-W/13



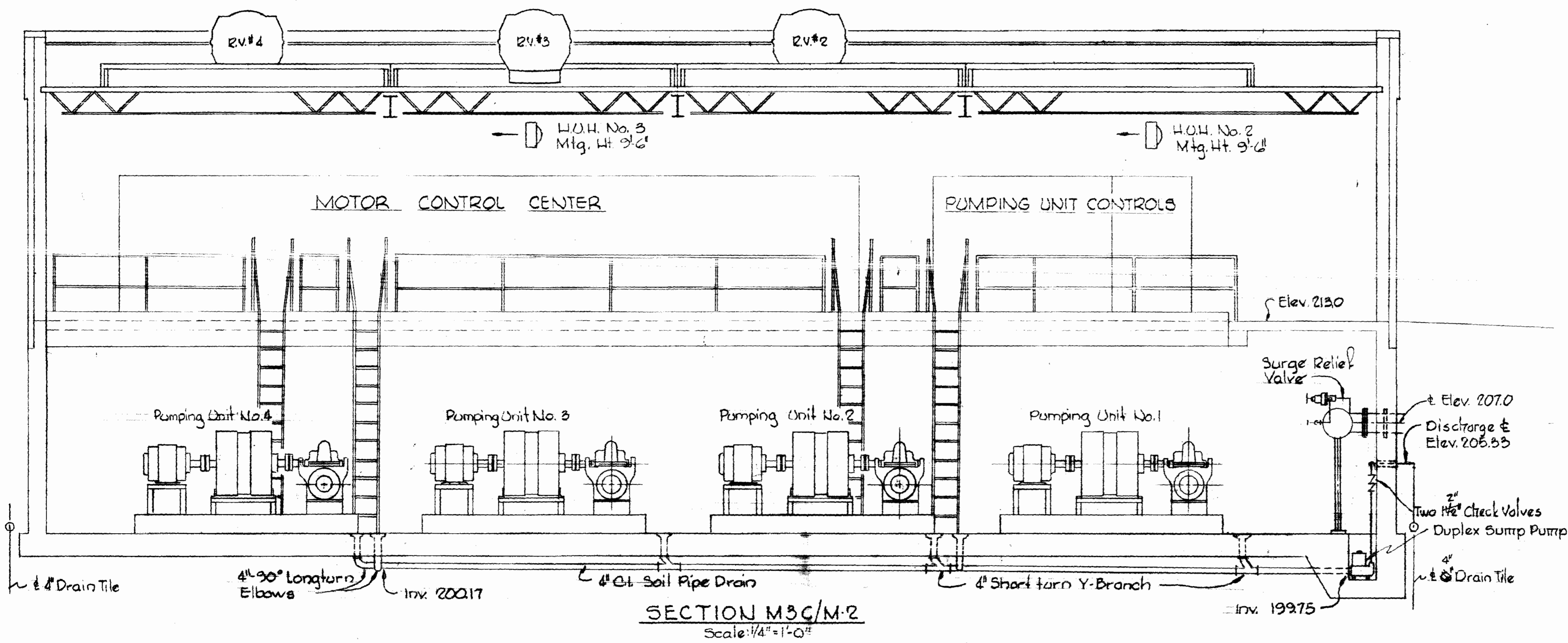
*Kenneth A. McCord*

SHEET M-3  
Contract No. 399-W

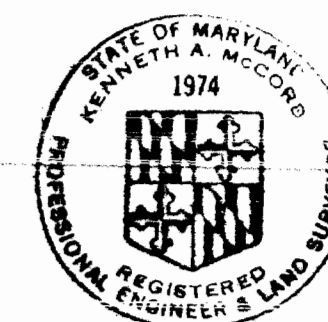
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DATE <u>10-14-75</u> <i>W. O. Salbert</i> CHIEF-BUREAU OF ENGINEERING	CONTRACT NO. <u>399-W</u>	MECHANICAL- SECTIONS	ELKRIDGE WATER PUMPING STATION	DRAWING NO. <u>14</u> OF <u>24</u> SCALE AS SHOWN
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October 14, 1975

WS 399-W/14



SECTION M3C/M.2  
Scale: 1/4" = 1'-0"



*Kenneth A. McCord*

SHEET M-4  
Contract No. 399-W

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

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
10-14-75  
DATE  
*W. O. Libbert*  
CHIEF-BUREAU OF ENGINEERING

CONTRACT NO. 399-W

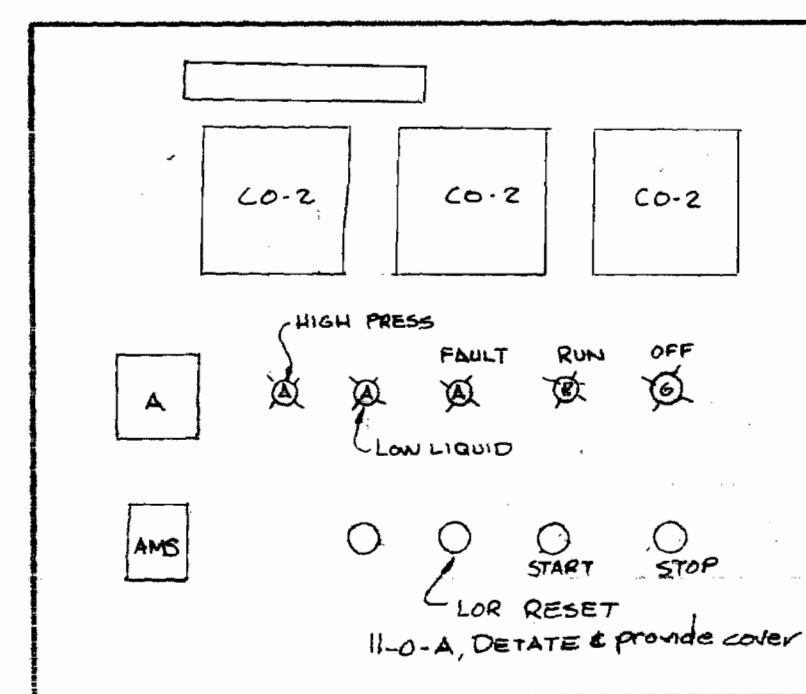
MECHANICAL-SECTIONS

ELKRIDGE WATER PUMPING STATION

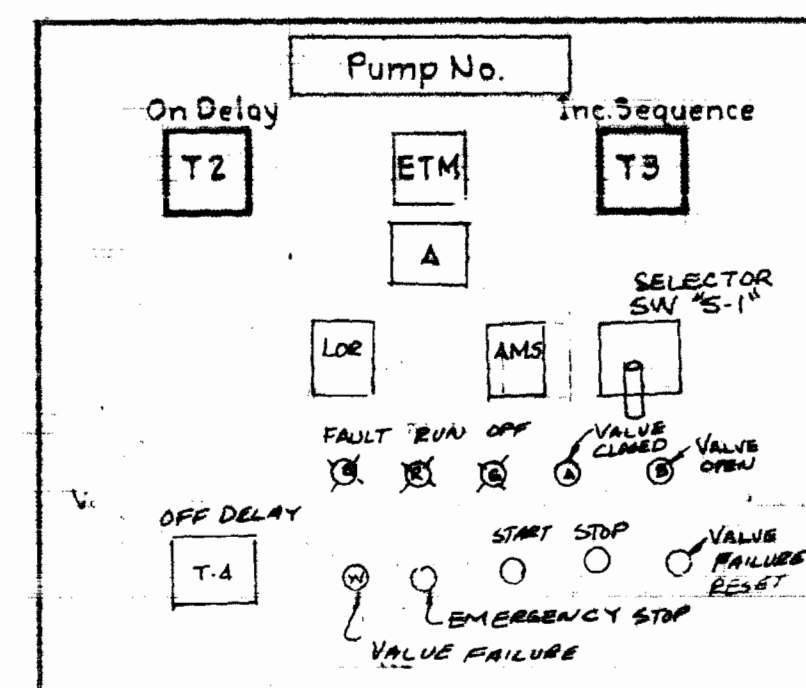
DRAWING NO. 15 OF 24  
SCALE AS SHOWN

**NOTES**

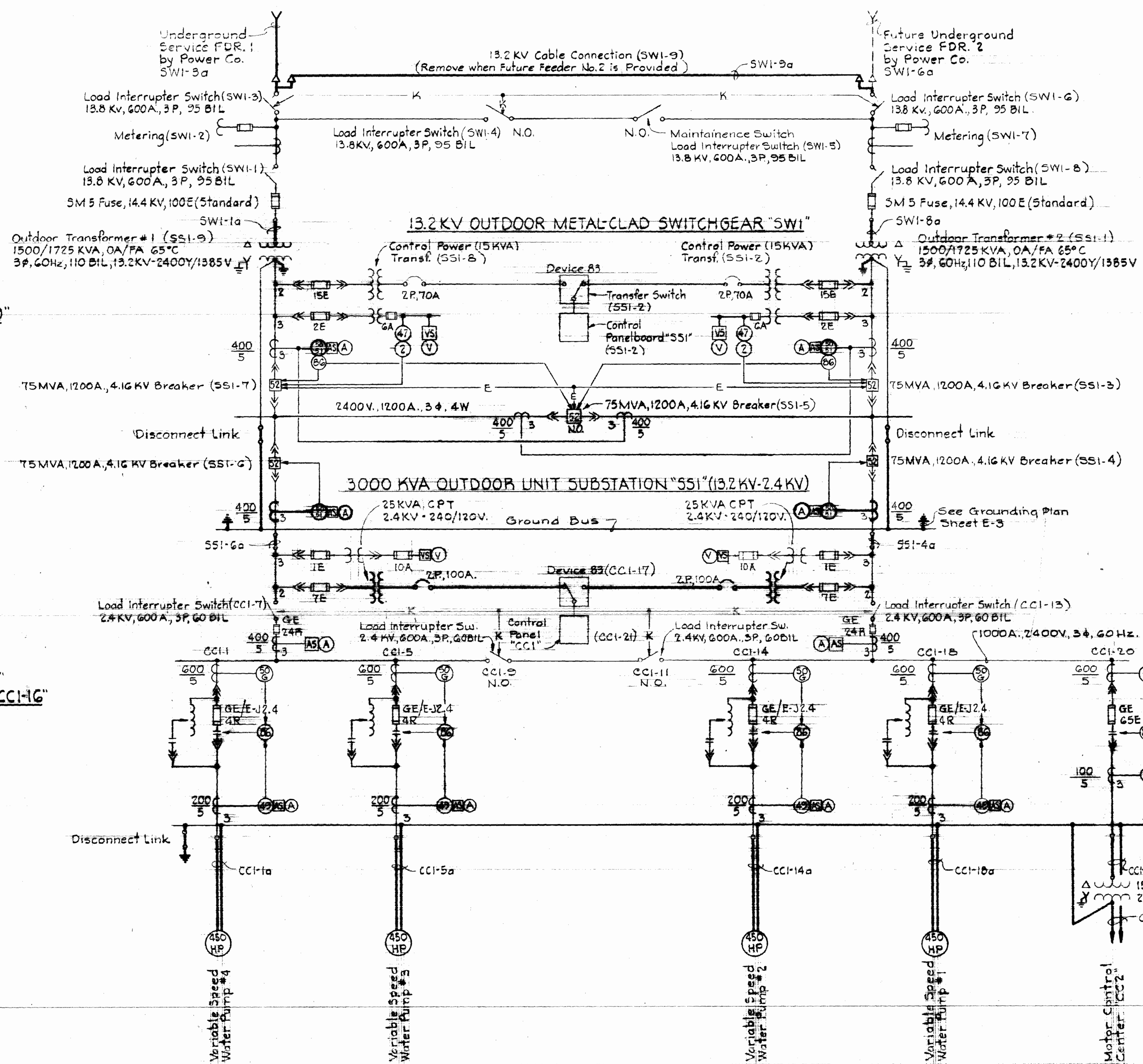
1. For General Electrical Notes and Legend, see Sheet E-2.
2. In One Line Diagram light lines denote existing factory wiring and dark lines denote revisions and/or additions to wiring by Contractor.
3. In Motor Control Center "CCI" Details, light lines denote existing factory wiring and dark lines denote revisions and/or additions to wiring by Contractor.



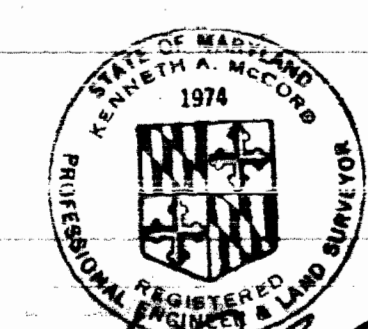
**ELEVATION DETAIL FOR UNIT "CCI-19"**  
MOTOR CONTROL CENTER "CCI"  
No Scale



**ELEVATION DETAIL FOR UNIT "CCI-2"**  
TYPICAL FOR UNITS "CCI-3", "CCI-15", "CCI-16"  
MOTOR CONTROL CENTER "CCI"  
No Scale



**2400 V. INDOOR MOTOR CONTROL CENTER "CCI" & 150 KVA TRANSFORMER (24KV-480Y/277V)**



SHEET E-1  
Contract No. 399-W

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

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND  
10-14-75  
DATE  
W.D. Laibert  
CHIEF, BUREAU OF ENGINEERING

CONTRACT NO. 399-W

**ELECTRICAL POWER**  
ONE LINE WIRING DIAGRAM

**ELKRIDGE WATER PUMPING STATION**

**DRAWING NO. 16**  
**OF 24**  
**SCALE AS SHOWN**

October 14, 1975

W.O. 6257-2

WS 399-W/16



**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 S<sub>2</sub> Switch Single Pole Double Pole With Pilot Light
- S<sub>3</sub> S<sub>4</sub> Switch Three Way Four Way
- S<sub>K</sub> S<sub>O</sub> Switch Key Operated Door Operated
- S<sub>MC</sub> S<sub>RC</sub> Switch Momentary Contact Remote Control
- Ca Contactor Letter As Indicated
- Th Q<sub>1</sub> Q<sub>2</sub> Thermostat Heating Cooling Freeze Stat
- A Aquastat
- Unit Heater
- Generator

- Starters Manual Combination
- Starters Magnetic (FVNR) Magnetic (FVR)
- Starters Magnetic (FVNR-2S (Two Speed))
- Disconnector Outlets Fused Unfused
- Selector Switch Two Position
- Secondary Motor Controls
- Motor Constant Speed Variable Speed Size As Indicated
- Telemetry Transmitter
- 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 On Ceiling or Wall
- Conduit Under Floor
- Conduit Telephone
- PT Conduit Private Telephone
- FA Conduit Fire Alarm
- c Conduit Communication
- Conduit In Slob Wall or Ceiling
- Conduit Stub-Up Stub-Down
- Conduit seat
- Disconnect Circuit Breaker
- Outlet Incandescent Floodlight
- Pushbutton Station One Two & Three Pushbutton
- Horn - Bell
- Unit Heater - Size As Indicated
- CCSA-6 Motor Control Center Wire & Cable Run Number
- SWI-1a Switchgear Wire & Cable Run Number
- SSI-1a Unit Substation Wire & Cable Run Number
- CC-5 Control Cable Wire & Cable Run Number

**UNDERGROUND**

- $\frac{N}{W}$  Ductbank Number Of Ducts As Indicated
- 2" C Existing Conduit Size As Indicated
- DB-E- Direct Buried Power Cable
- DB-T- Direct Buried Telemetry Cable
- 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 respective motor control center
- Device located at respective unit
- ▲ Device located at respective motor
- Device located at starter
- ⊕ Device located at Valve
- ⊕ Device located in O.D. Substation "SSI"
- ⊕ Device located in Control Center Cabinet
- Device located in Drive Control Cabinets

**MOTOR CONTROL CENTERS & UNIT SUBSTATIONS AUXILIARY DESCRIPTION**

- a - Indicating Lights - Color as shown
- b - Hand-Off - Automatic Selector Switch
- c - Elapsed Time Meter
- d - 480-120V Control Transformer
- e - Start - Stop Pushbutton Station
- f - 2400-120V Control Transformer

**ONE LINE/ELEMENTARY**

- Molded Case Circuit Breaker
- Oil Circuit Breaker
- Selector Switch
- Disconnecting Switch
- Interrupter Switch
- Selector Interrupter Switch
- Knife Switch
- Contacts - Normally Open
- Contacts - Normally Closed
- Current Transformer
- Potential Transformer
- Power Transformer
- Ground
- Resistor
- FUSE
- Pathead
- Pushbutton
- Pressure Switch
- Float Switch
- Flow Switch
- Limit Switch
- Thermostat
- Disconnect Link
- Lightning Arrestor
- Incoming Line
- Outgoing Line
- Tie Line
- Capacitor
- Rectifier
- Mechanical Interlock
- Electrical Interlock
- Key Interlock
- Overcurrent Trip Thermal type
- Relay Instantaneous Overcurrent
- Relay Time Overcurrent
- A.C. Power Circuit Breaker
- Starter Operating Coil
- Starter Magnetic (FVNR) Magnetic (FVR)
- Starter Magnetic (FVNR-2S (Two Speed))
- Elapsed Time Meter
- Indicating Light Color As Indicated By Letter
- Solenoid Motor (Single Phase)
- Contactor Coil Starter Coil Number As Indicated
- Ammeter Ammeter Switch
- Voltmeter Voltmeter Switch
- Wattmeter Kilowatt Meter
- Test block Test Switch
- Recording Recording Demand Meter
- Relay Number As Indicated
- Instrument Switch Control Switch
- Ground Lamps
- Power Factor Meter
- Timer Number As Indicated
- Watt - Hour Meter Watthour Meter
- Phase Sequence Voltage Relay
- Tripping Relay Lock-out Type Differential Relay
- Automatic Transfer Switch
- Electric Radiant Heaters
- Contactor
- Relay Time Overcurrent w/Instantaneous Trip
- Ground Overcurrent Relay
- Tripping Relay

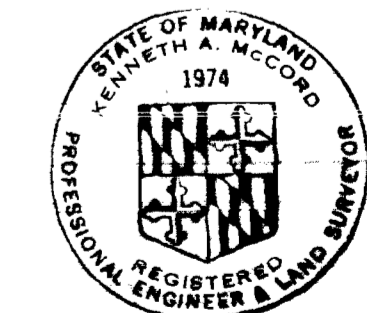
- Demand Meter
- Frequency Meter
- Phase Meter
- Position Indicator
- Ground Sensing Relay
- A.C. Power Circuit Breaker With Solid State Trip & Ground Device
- Receptacle & Plug Polarized
- Horsepower Meter
- Permissive Control Switch
- Reverse Phase Or Phase Balance Current Relay
- Time Delay Relay
- Voltage Unbalance Relay
- Liquid or Gas Pressure Relay
- Single Phase Motor

**GENERAL ELECTRICAL NOTES**

1. For Panelboard Schedules, see Specifications "Detailed Electrical Requirements."
2. For Lighting Fixture Types, see Specifications "Detailed Electrical Requirements."
3. Mounting heights for interior lighting fixtures shall be from finished floor to bottom of fixture unless otherwise noted.
4. Mounting heights for lighting fixtures mounted on exterior walls of buildings shall be from finished floor to centerline of recessed junction box unless otherwise noted.
5. Verify all door swings before installing switch boxes.
6. Receptacles shall be mounted 2' 0" above finished floor unless otherwise noted.
7. All Elementary Control Diagrams are shown de-energized.

**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 Drop Number & Size Of Wires As Indicated
- Weatherhead & Rack



*Kenneth M. Lord*  
SHEET E-7  
Contract No. 399-W

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

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND  
10-14-75  
DATE

CONTRACT NO. 399-W

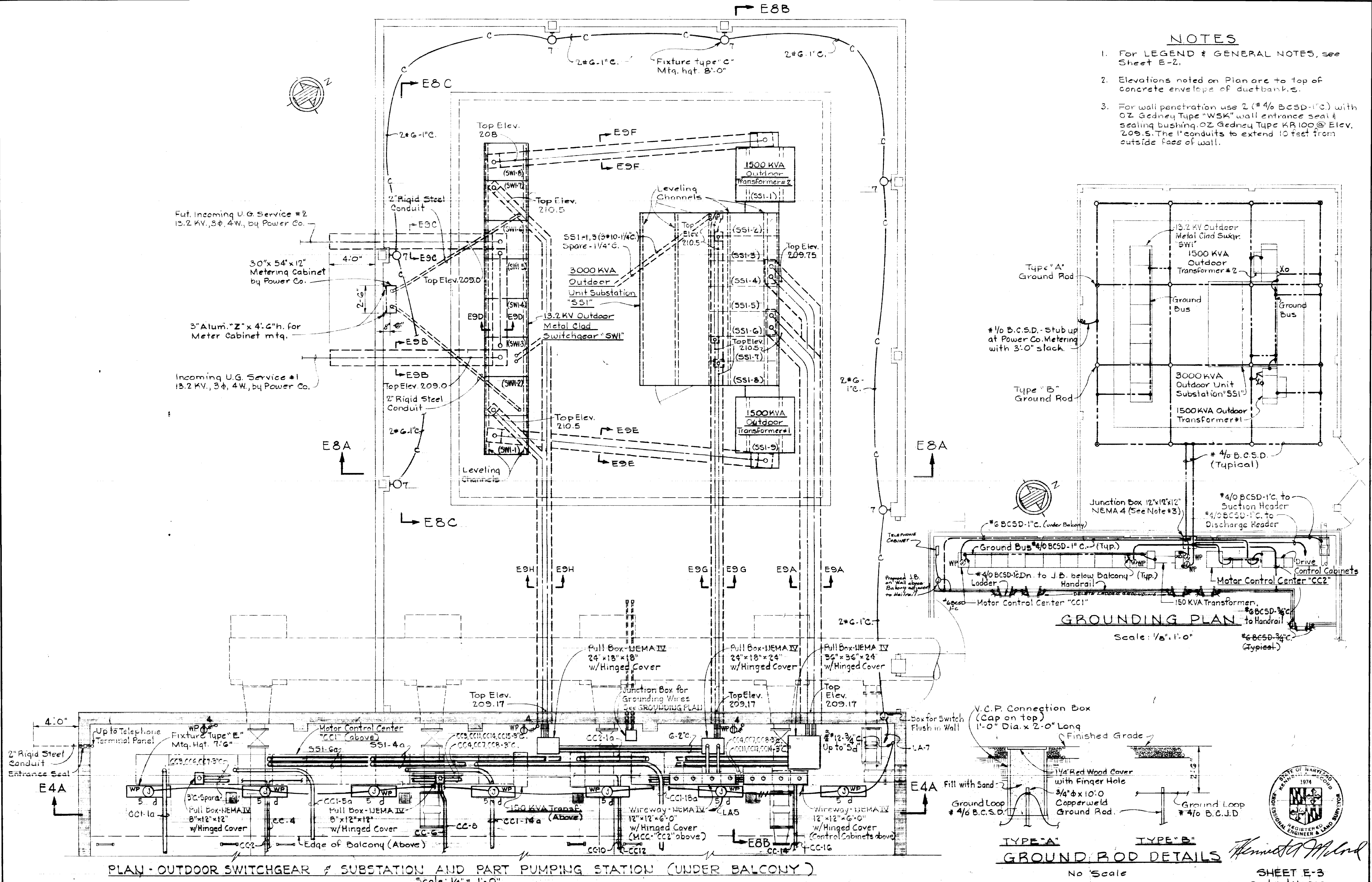
**ELECTRICAL LEGEND**  
**GENERAL ELECTRICAL NOTES**

**ELKRIDGE WATER PUMPING STATION**

**DRAWING NO. 17 OF 24**  
**SCALE AS SHOWN**

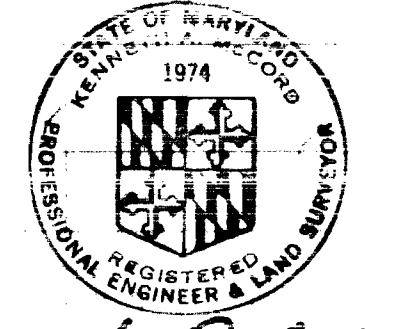
**NOTES**

1. For LEGEND & GENERAL NOTES, see Sheet E-2.
2. Elevations noted on Plan are to top of concrete envelope of ductbanks.
3. For wall penetration use 2 (#4/8 BCSD-1" C.) with OZ Gedney Type "WSK" wall entrance seal & sealing bushing, OZ Gedney Type KR 100 @ Elev. 209.5. The 1" conduits to extend 10 feet from outside face of wall.



PLAN - OUTDOOR SWITCHGEAR & SUBSTATION AND PART PUMPING STATION (UNDER BALCONY)  
Scale: 1/4" = 1'-0"

GROUND ROD DETAILS  
No Scale

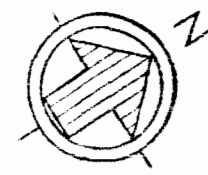


<p><b>WHITMAN, REQUARDT &amp; ASSOCIATES</b> ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND</p>	<p><b>DEPARTMENT OF PUBLIC WORKS</b> HOWARD COUNTY, MARYLAND 10-14-75 DATE</p> <p><i>W.O. Farrant</i> CHIEF BUREAU OF ENGINEERING</p>	<p>CONTRACT NO. 399-W</p>	<p>PLAN &amp; DETAILS-OUTDOOR SWITCHGEAR &amp; SUBSTATION</p>	<p>ELKRIDGE WATER PUMPING STATION</p>	<p>DRAWING NO. 18 OF 24 SCALE AS SHOWN</p>
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W.O. 6257-2

As-Built February 21, 1980  
October 14, 1975

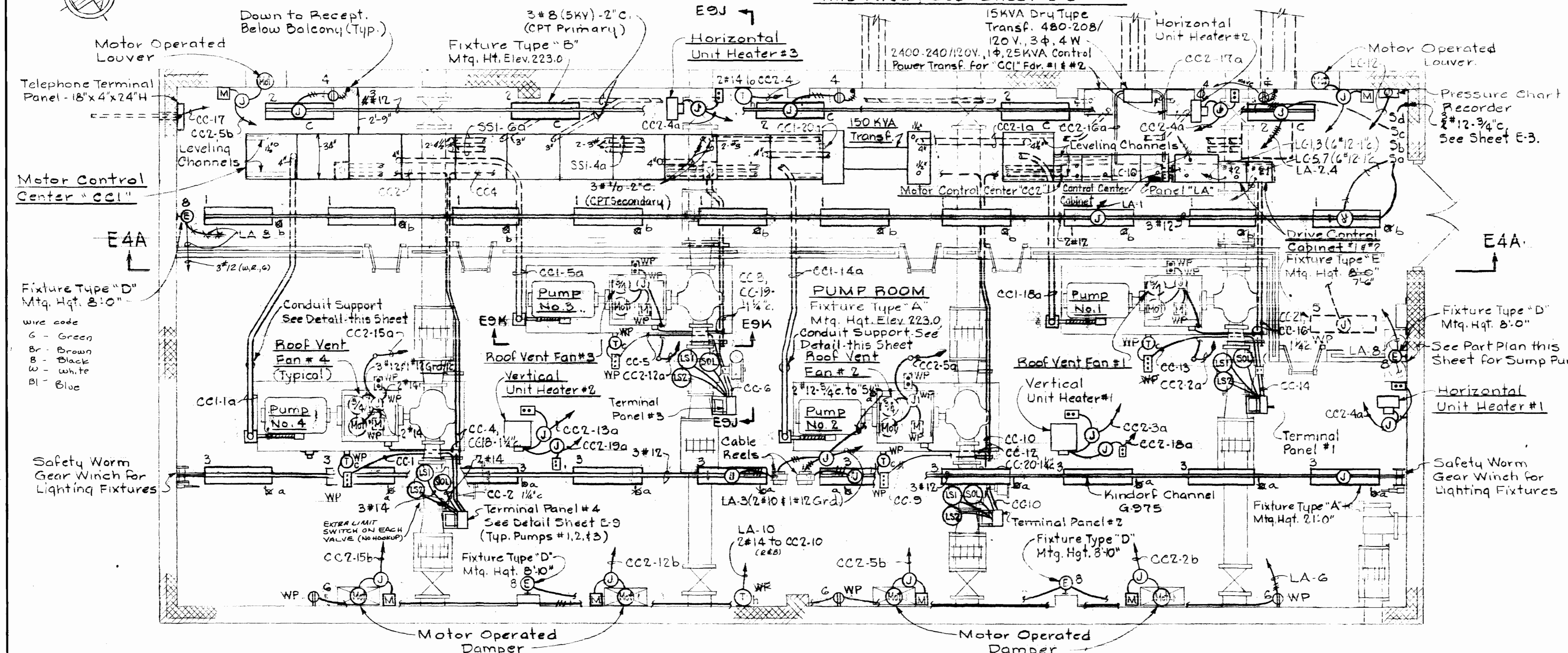
WS 399-W/18



For Outdoor Substation & Ductbanks  
This Area See Sheet E-3

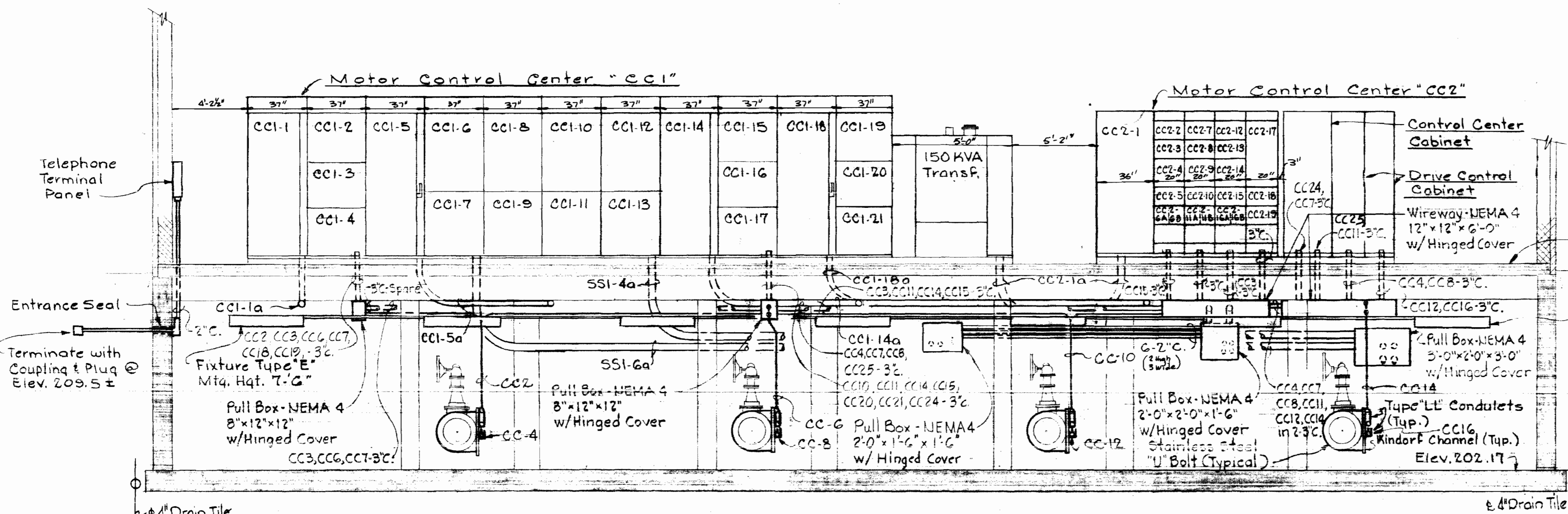
### NOTES

1. For Electrical Legend & General Notes, see Sheet E-2.
2. Conduits shall be kept clear of the space below the hatch openings that are provided thru the roof of the station.



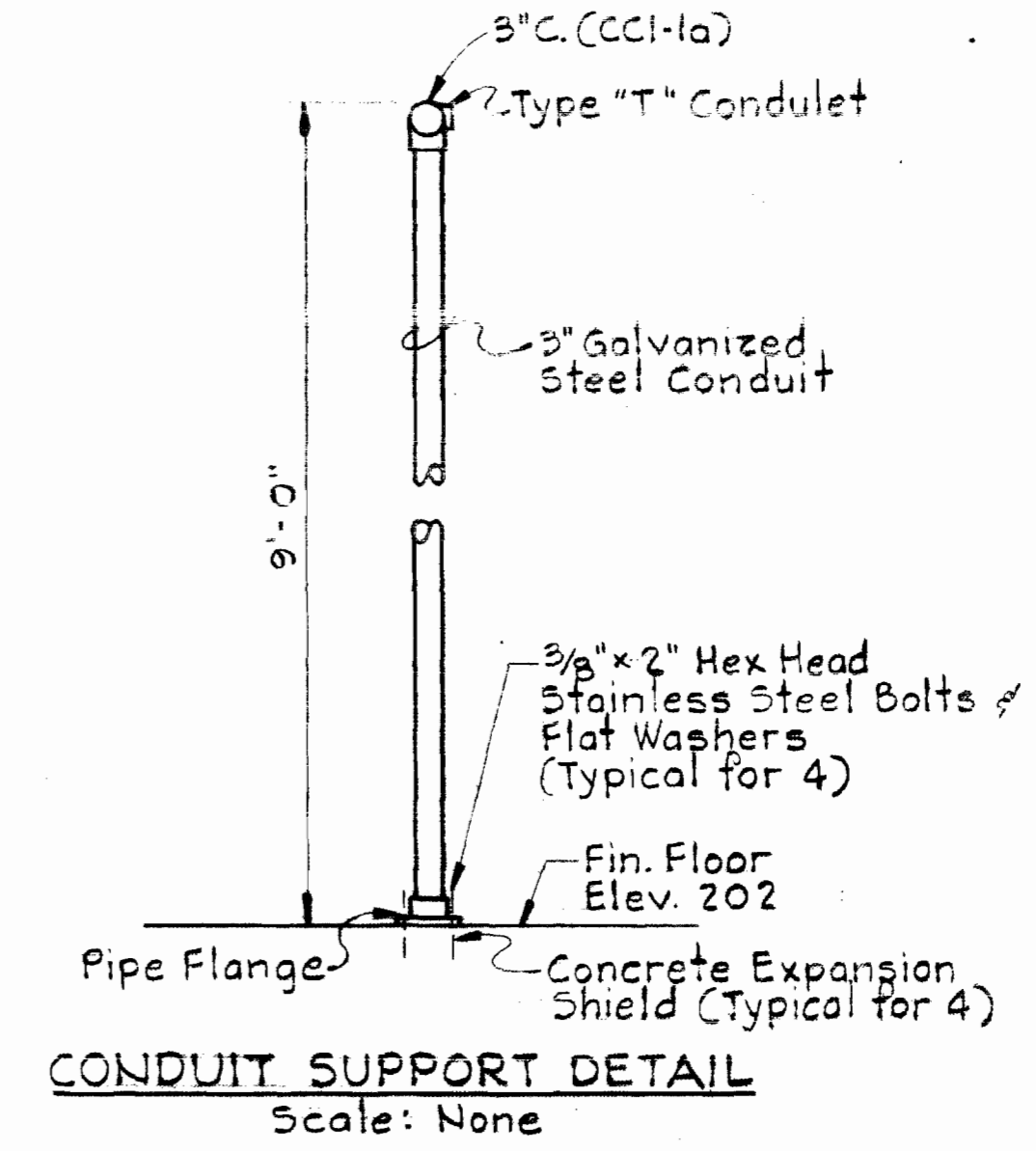
### PLAN-PUMP ROOM & BALCONY

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

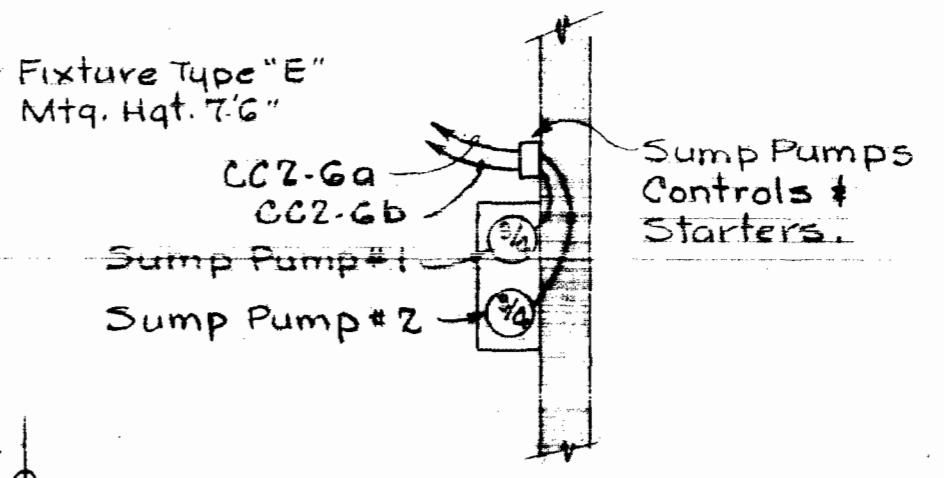


### SECTION E4A/E4.E3

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

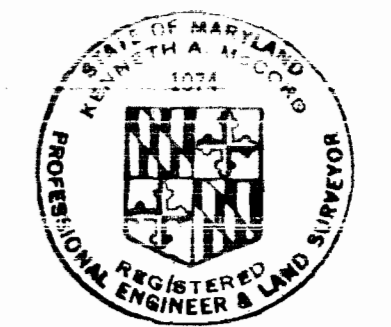


### CONDUIT SUPPORT DETAIL



### PART PLAN BELOW BALCONY

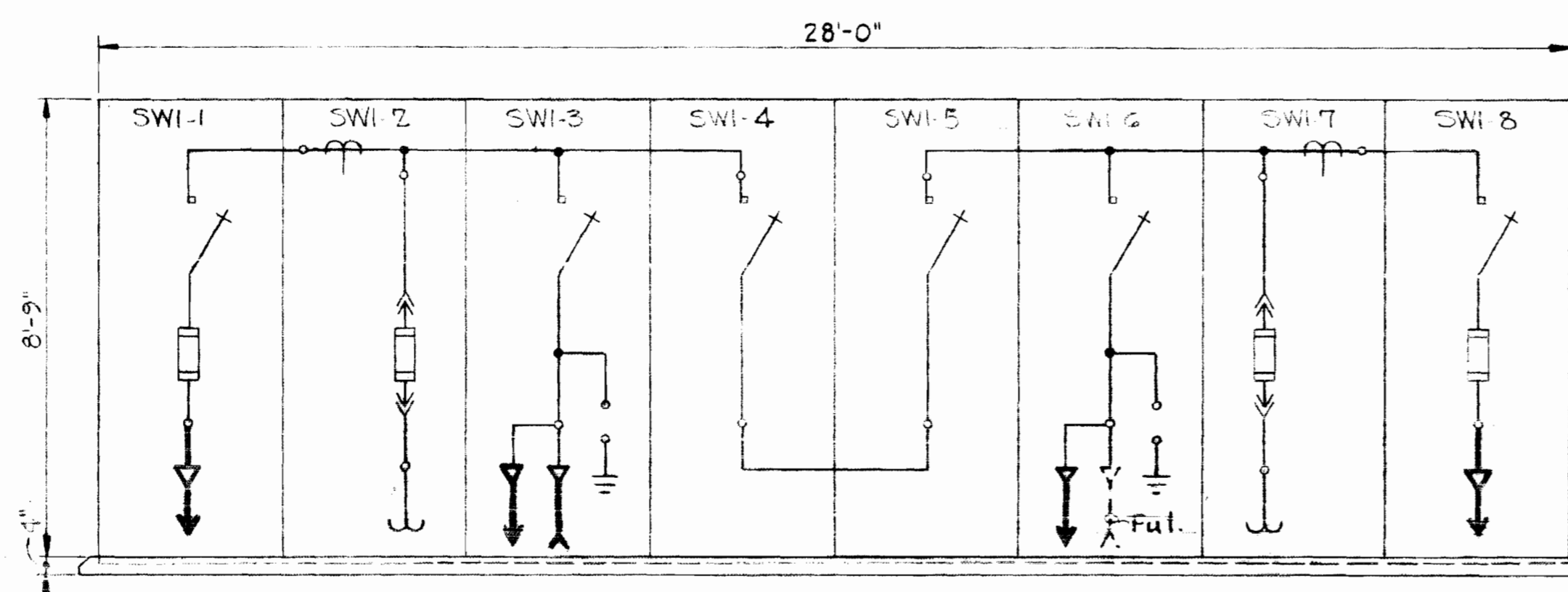
Scale: 1/4" = 1'-0"



*Kenneth J. McLeod*

SHEET E-4  
Contract No. 399-W

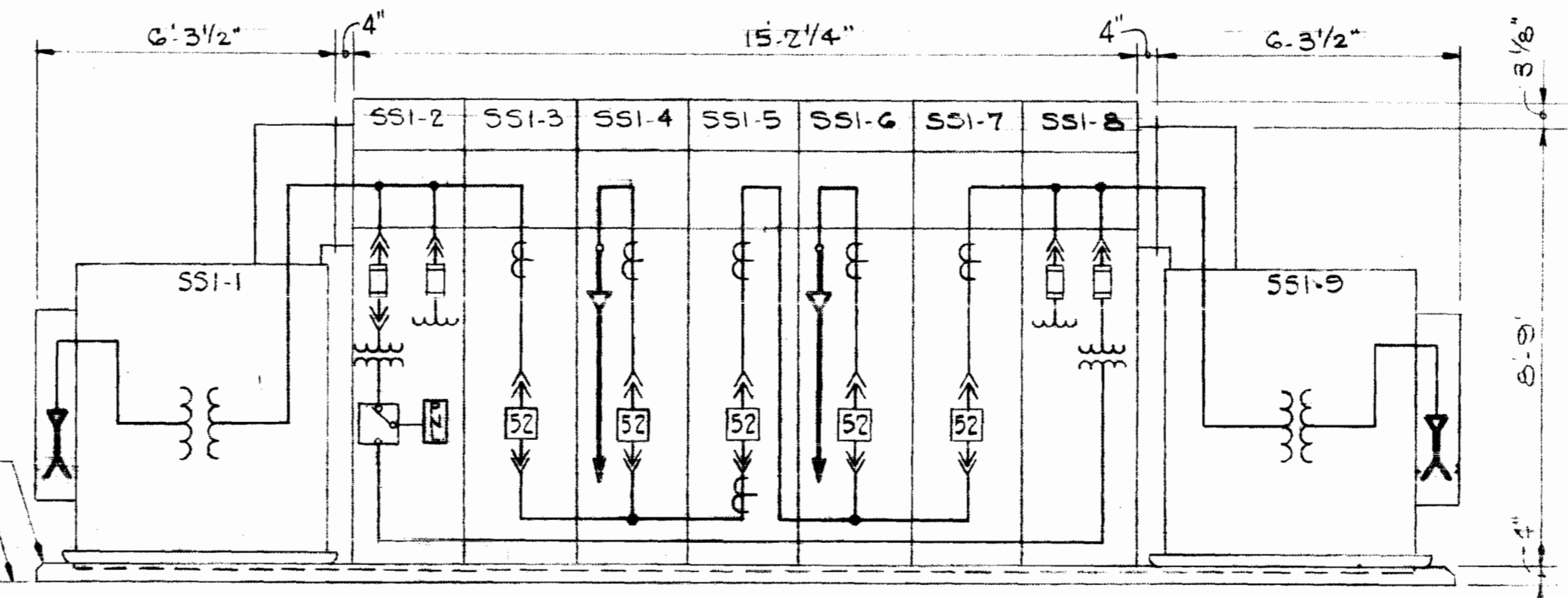
<b>WHITMAN, REQUARDT &amp; ASSOCIATES</b> ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	<b>DEPARTMENT OF PUBLIC WORKS</b> HOWARD COUNTY, MARYLAND 10-14-75 <i>W.O. Gilbert</i> CHIEF BUREAU OF ENGINEERING	<b>CONTRACT NO. 399-W</b>	<b>PLAN &amp; DETAILS-PUMP ROOM &amp; EQUIPMENT BALCONY</b>	<b>ELKRIDGE WATER PUMPING STATION</b>	<b>DRAWING NO. 19 OF 24</b> <b>SCALE AS SHOWN</b>
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13.2 KV O.D. SWITCHGEAR "SWI"  
Scale: 3/8"=1'-0"

Mounting Pad  
Finished Slab

THERMOSTATS - ALL SAME  
4 COND #14 controller to starters



3000KVA O.D. UNIT SUBSTATION "SSI" (13.2KV-2400Y/1385V)  
Scale: 3/8"=1'-0"

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

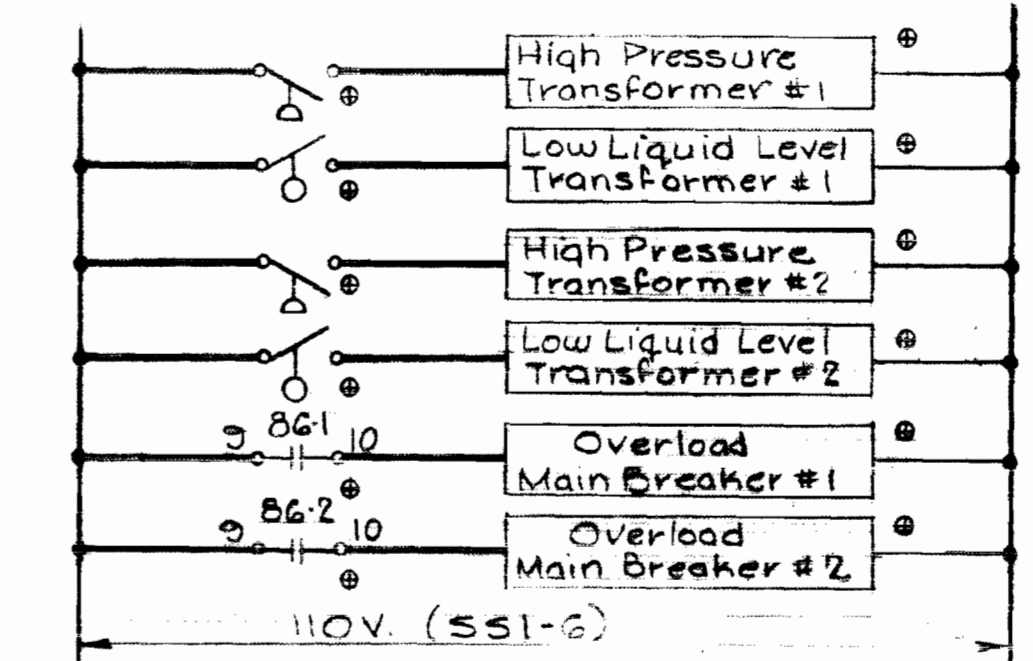
13.2 KV O.D. METAL ENCLOSED SWITCHGEAR "SWI" SCHEDULE

UNIT NO.	NAMEPLATE DATA	DEVICE DESCRIPTION	AUX. DESC.	SWITCH and/or FUSE			RUN NO.	WIRE or BUS			GRD COND.		
				FRAME	POLE	RATING		TYPE	S.I.C.	NO.		SIZE	TYPE
SWI-1	FDR. SWITCH #1 1500 KVA TRANSF. #1	Fused Interrupter Switch	See Spec.	600	3	100E Standard	SMS	40	SWI-1a	3	#4/0	See Spec.	4"
SWI-2	METERING SER. FDR. #1	Potential Transformers, Current Transformers	See Spec.	-	-	-	-	-	-	-	-	-	-
SWI-3	SER. SWITCH #1 PWR. CO. FDR.	Interrupter Switch, Surge Arresters	See Spec.	600	3	-	-	40	SWI-3a	By Power Co.	-	-	4"
SWI-4	BUS-TIE SWITCH #1	Interrupter Switch	See Spec.	600	3	-	-	40	-	-	-	-	-
SWI-5	BUS-TIE SWITCH #2	Interrupter Switch	See Spec.	600	3	-	-	40	-	-	-	-	-
SWI-6	SER. SWITCH #2 PWR. CO. FDR.	Interrupter Switch, Surge Arresters	See Spec.	600	3	-	-	40	SWI-6a	Future by Power Co.	-	-	4"
SWI-7	METERING SER. FDR. #2	Potential Trans. Current Trans. Surge Arresters	See Spec.	-	-	-	-	-	-	-	-	-	-
SWI-8	FDR. SWITCH #2 1500 KVA TRANSF. #2	Fused Interrupter Switch	See Spec.	600	3	100E Standard	SMS	40	SWI-8a	3	#4/0	See Spec.	4"
SWI-9	TEMPORARY 13.2 KV. CABLE BUS	-	-	-	-	-	-	-	SWI-9a	3	#4/0	See Spec.	See Dwg.

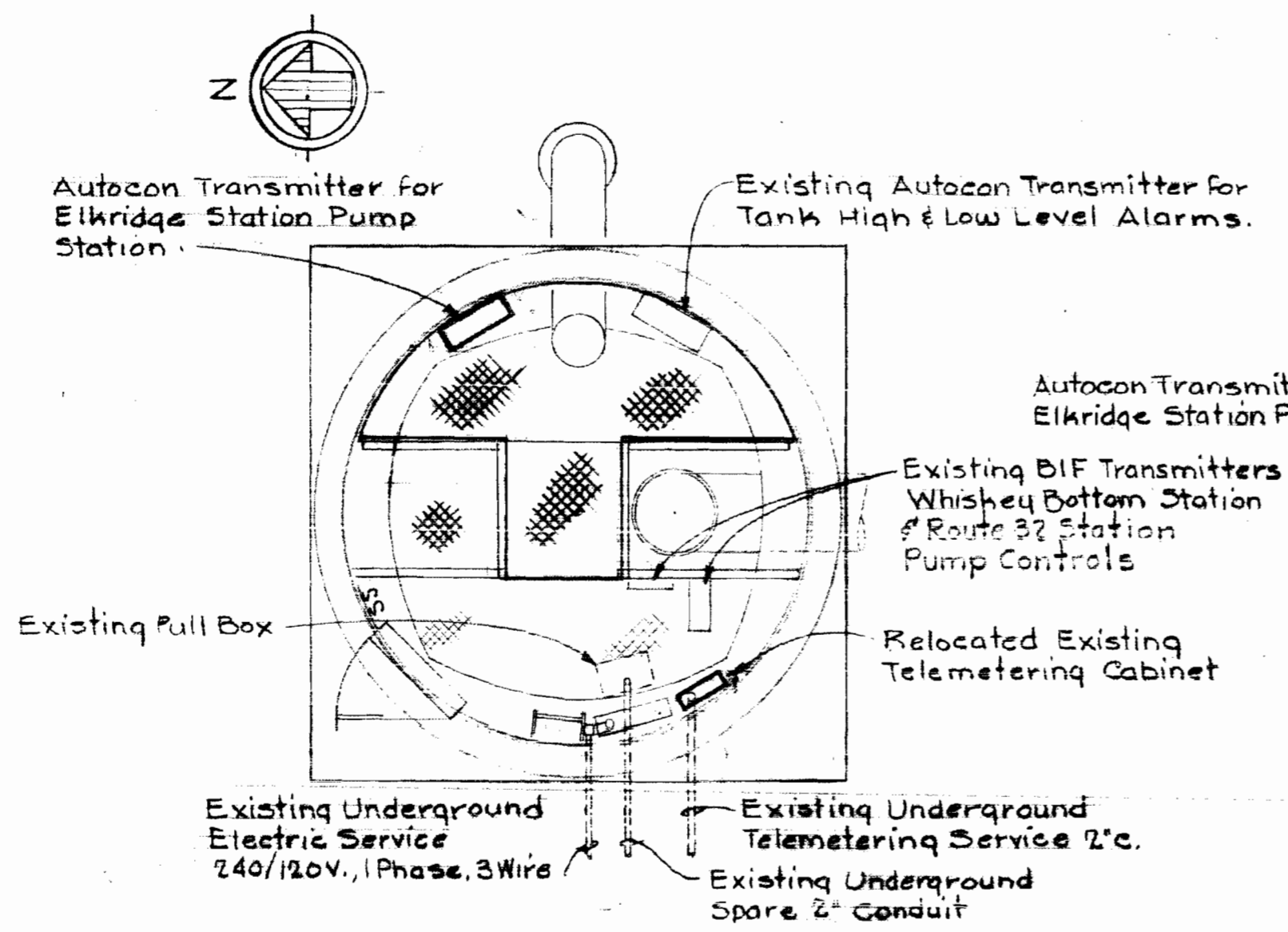
Aluminum (furnished by power co)

3000 KVA O.D. UNIT SUBSTATION "SSI" SCHEDULE (13.2KV-2400Y/1385V, 3Φ, 3W, 60HZ)

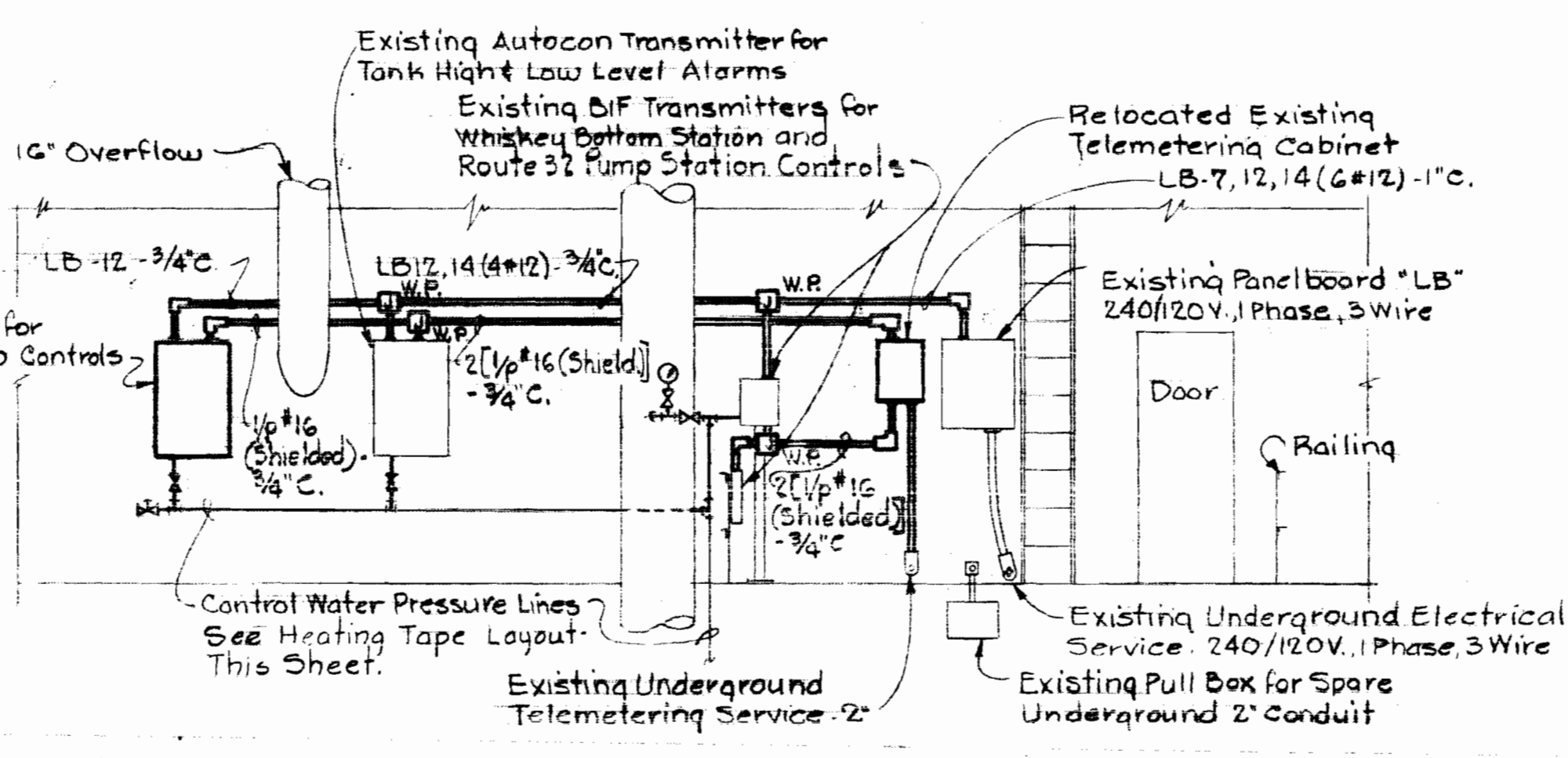
UNIT NO.	NAMEPLATE DATA	DEVICE DESCRIPTION	AUX. DESC.	BREAKER			RUN NO.	WIRE or BUS			GRD COND.
				FRAME	POLE	CALIB. RATING		NO.	SIZE	TYPE	
SSI-1	1500 KVA TRANSF. #2 13.2KV-2400/1385V, 3Φ	1500Kva Transformer OA, 55%/65°C, 60Hz, 3Φ	See Spec.	-	-	-	SWI-8a	3	4/0	See Spec.	4"
SSI-2	AUXILIARY SER. FDR. #2	Voltmeter, Sw, PTs, 15Kva, CPT Panelboard, Auto. Transfer Sw	See Spec.	-	-	-	-	-	-	-	-
SSI-3	MAIN BREAKER SER. FDR. #2	Power Circuit Breaker Drawout Mounting	See Spec.	1200	3	600 MVA	-	-	-	-	-
SSI-4	FEEDER BREAKER #2 2400 V. MCC	Power Circuit Breaker Drawout Mounting	See Spec.	1200	3	600 MVA	SSI-4a	2(3)	350 MCM	See Spec.	2(4")
SSI-5	TIE BREAKER	Power Circuit Breaker Drawout Mounting	See Spec.	1200	3	600 MVA	-	-	-	-	-
SSI-6	FEEDER BREAKER #1 2400 V. MCC	Power Circuit Breaker Drawout Mounting	See Spec.	1200	3	600 MVA	SSI-6a	2(3)	350 MCM	See Spec.	2(4")
SSI-7	MAIN BREAKER SER. FDR. #1	Power Circuit Breaker Drawout Mounting	See Spec.	1200	3	600 MVA	-	-	-	-	-
SSI-8	AUXILIARY SER. FDR. #1	Voltmeter, Sw, PTs, 15 Kva CPT, Annunciator	See Spec.	-	-	-	-	-	-	-	-
SSI-9	1500 KVA TRANSF. #1 13.2KV-2400/1385V, 3Φ	1500 Kva Transformer OA, 55%/65°C, 60Hz, 3Φ	See Spec.	-	-	-	SWI-1a	3	4/0	See Spec.	4"



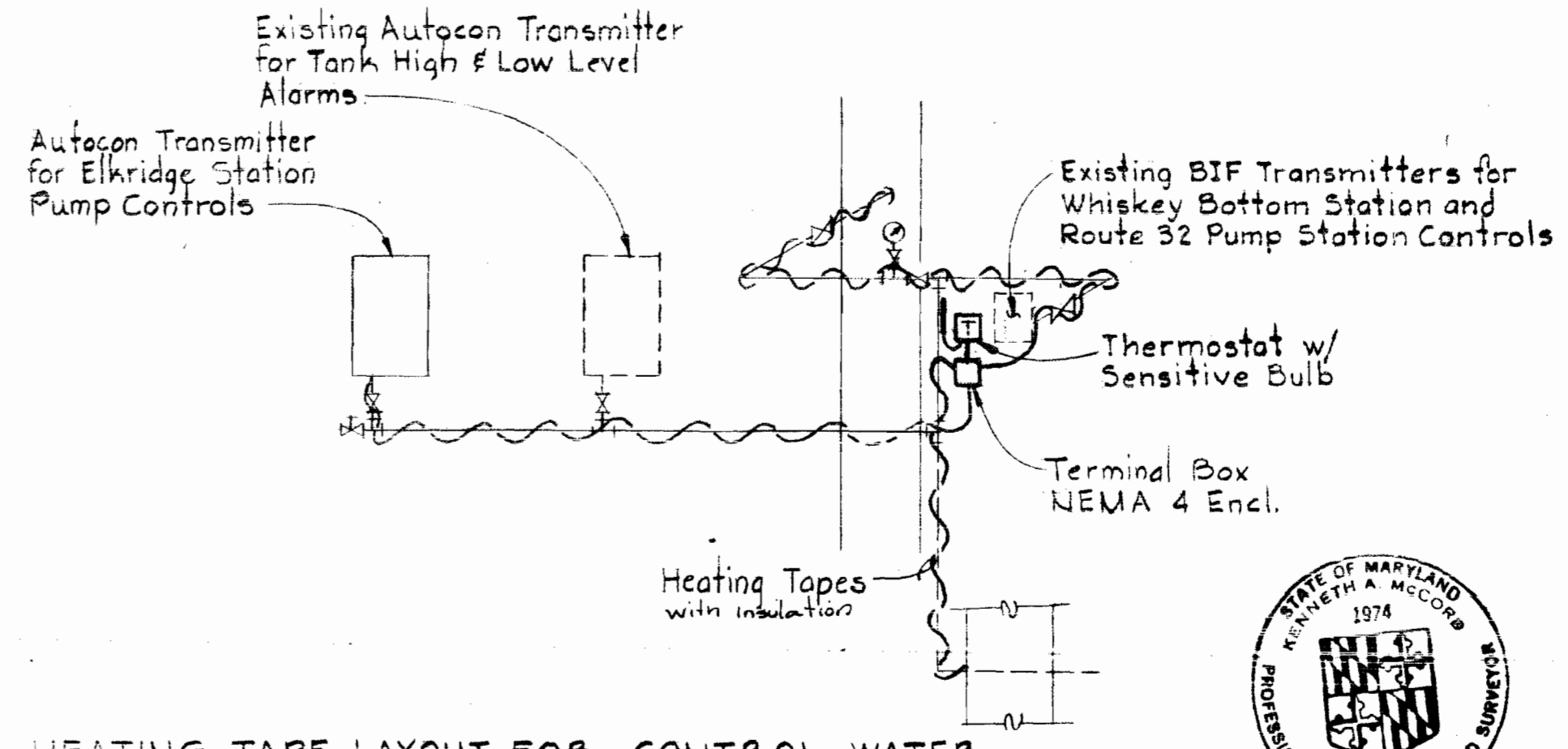
ANNUNCIATOR CONTROL DIAGRAM  
IN O.D. SUBSTATION "SSI"



PLAN - EXISTING CENTER COLUMN BASE  
Scale: 1/4"=1'-0"

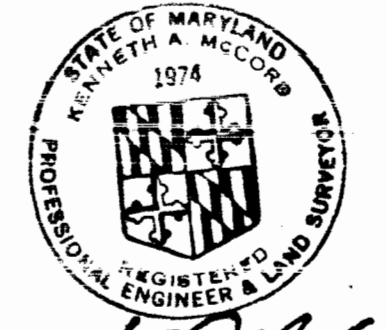


EXPANDED ELEVATION OF INSIDE CENTER COLUMN BASE  
Scale: 1/4"=1'-0"



HEATING TAPE LAYOUT FOR CONTROL WATER PRESSURE LINES  
No Scale

EXISTING SNOWDEN RIVER ELEVATED WATER TANK.  
Scale: As Shown



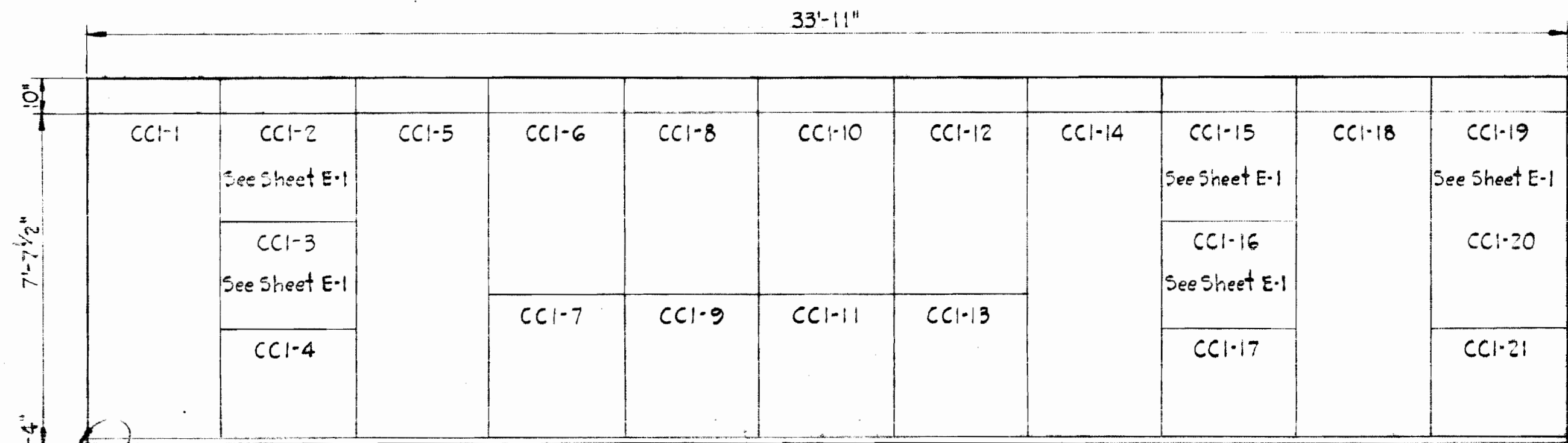
Kenneth A. McCord

SHEET E-5  
Contract No. 399-W

WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 10-14-75 DATE	CONTRACT NO. 399-W W. O. Falbert CHIEF - BUREAU OF ENGINEERING	SWITCHGEAR & SUBSTATION & ELEVATED TANK DETAILS	ELKRIDGE WATER PUMPING STATION	DRAWING NO. 20 OF 24	SCALE AS SHOWN
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W.O. 6257-2

October 14, 1975  
As-Built February 21, 1980

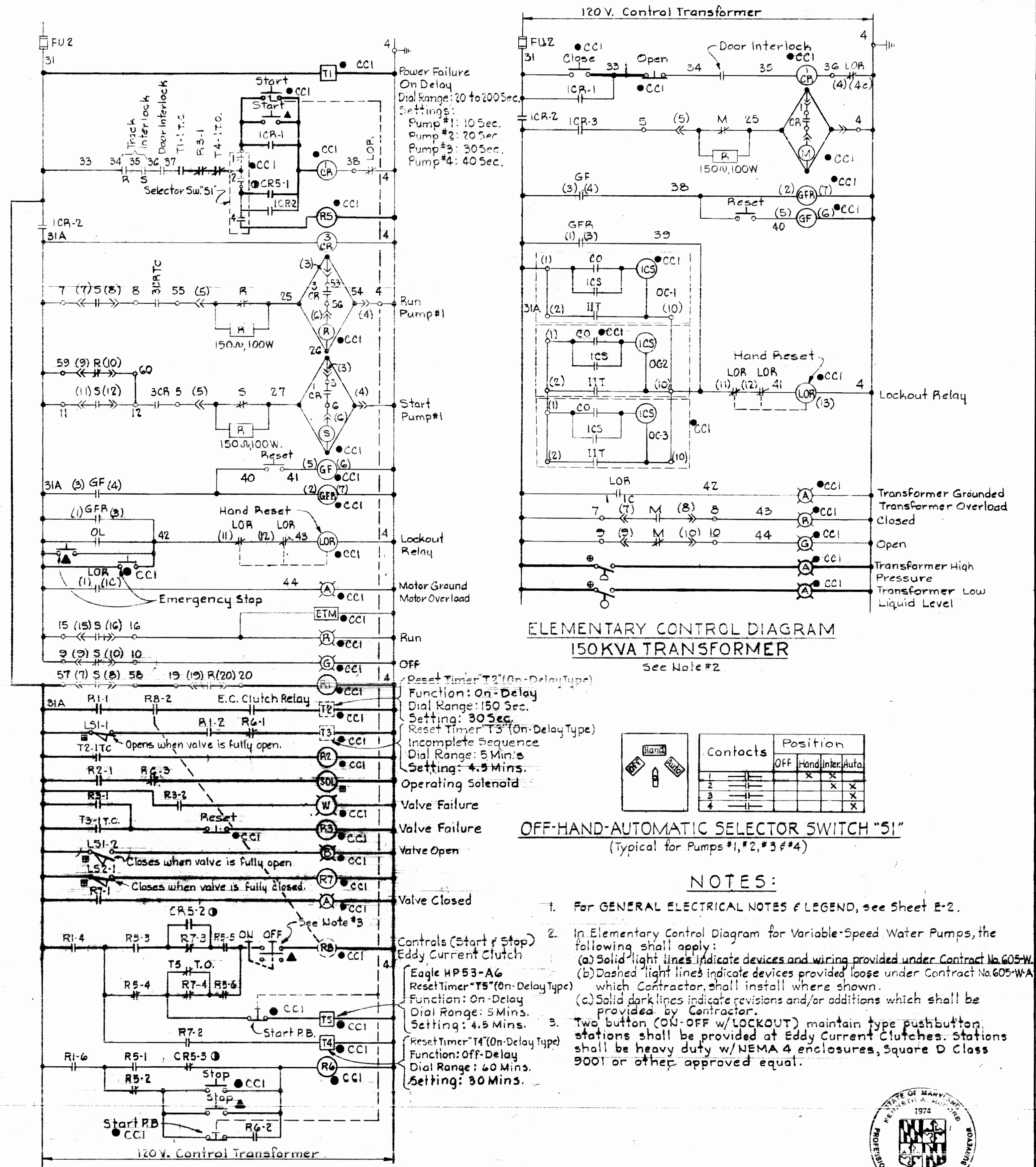


FRONT ELEVATION  
MOTOR CONTROL CENTER "CCI"

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

MOTOR CONTROL CENTER "CCI" SCHEDULE - 2400V-3φ-3W-60HZ

UNIT NUMBER	NAMEPLATE DATA	DEVICE DESCRIPTION	HP or KVA	AUX. DESC.	SWITCH and/or FUSE			RUN NO.	WIRE - POWER		WIRE - CONTROL		GRD. WIRE	COND. SIZE	
					FRAME	POLE	RATING		TYPE	SIC	NO.	SIZE			NO.
CCI-1	PUMP NO. 4	Comb. Motor Starter 450 HP Size, RVNR	450	-	3	GE 4R	CL	200	CCI-1a	3	2/0	See Spec.	-	#1	3"
CCI-2	L.V. COMPT. PUMP NO. 4	Ammeter, Amm. Sw., Grd. Fault, etc.	-	a,b,c, e,f	-	-	-	-	-	-	-	-	-	-	-
CCI-3	L.V. COMPT. PUMP NO. 3	Ammeter, Amm. Sw., Grd. Fault, etc.	-	a,b,c, e,f	-	-	-	-	-	-	-	-	-	-	-
CCI-4	SPACE	INSTRUMENT FOR V.M. WITH FEEDER#1	-	-	-	-	-	-	-	-	-	-	-	-	-
CCI-5	PUMP NO. 3	Comb. Motor Starter 450 HP Size, RVNR	450	-	3	GE 4R	CL	CCI-5a	3	2/0	See Spec.	-	#1	3"	
CCI-6	L.V. COMPT. MAIN SW #1	Ammeter, Voltmeter, Switches	-	-	-	-	-	-	-	-	-	-	-	-	(By Manufacturer)
CCI-7	MAIN SW #1	Load Interrupter Sw.	-	-	600	3	GE 24R	-	CCI-7a	2(3)	350 MCM	See Spec.	-	-	4"
CCI-8	5KVA TRANS. WITH MAIN SW #1	Control Power Transf. 2400-240/120V, 1φ	-	-	3	7	-	-	-	-	-	-	-	-	-
CCI-9	600A. TIE SW. #1	Load Interrupter Sw.	-	-	600	3	-	-	-	-	-	-	-	-	-
CCI-10	5KVA TRANS. WITH MAIN SW #2	Control Power Transf. 2400-240/120V, 1φ	-	-	3	7	-	-	-	-	-	-	-	-	-
CCI-11	600A. TIE SW. #2	Load Interrupter Sw.	-	-	600	3	-	-	-	-	-	-	-	-	-
CCI-12	L.V. COMPT. MAIN SW #2	Ammeter, Voltmeter, Switches	-	-	-	-	-	-	-	-	-	-	-	-	-
CCI-13	MAIN SW #2	Load Interrupter Sw.	-	-	600	3	GE 24R	CL	SSI-4a	2(3)	350 MCM	See Spec.	-	-	4"
CCI-14	PUMP NO. 2	Comb. Motor Starter 450 HP Size, RVNR	450	-	3	GE 4R	CL	CCH4a	3	2/0	See Spec.	-	#1	3"	
CCI-15	L.V. COMPT. PUMP NO. 2	Ammeter, Amm. Sw., Grd. Fault, etc.	-	a,b,c, e,f	-	-	-	-	-	-	-	-	-	-	-
CCI-16	L.V. COMPT. PUMP NO. 1	Ammeter, Amm. Sw., Grd. Fault, etc.	-	a,b,c, e,f	-	-	-	-	-	-	-	-	-	-	-
CCI-17	AUTOMATIC TRANSFER SW.	Automatic Transfer Switch	-	-	100	2	-	-	-	-	-	-	-	-	-
CCI-18	PUMP NO. 1	Comb. Motor Starter 450 HP Size, RVNR	450	-	3	GE 4R	CL	CCI-18a	3	2/0	See Spec.	-	#1	3"	
CCI-19	L.V. COMPT. 150 KVA TRANS.	Ammeter, Amm. Sw., C.O. Relays, etc.	-	a, e,f	-	-	-	-	-	-	-	-	-	-	(By Manufacturer)
CCI-20	STARTER 150 KVA TRANS.	Comb. Motor Starter 150KVA Size, RVNR	150	-	3	GE 4SE	CL	CCI-20a	3	4	See Spec.	-	#1	2 1/2"	
CCI-21	CIRCUIT BREAKER PANELBOARD	Circuit Breakers Type QOB-H	-	-	-	-	-	-	-	-	-	-	-	-	-



ELEMENTARY CONTROL DIAGRAM FOR VARIABLE SPEED WATER PUMP NO. 1 TYPICAL FOR V.S. WATER PUMPS NO'S 2, 3 & 4 (See Note #2)

DATE	No.	REVISION	BY
10-10-77	1	Revised E.C. Diagram for V.S. Water Pumping Units	R.E.M.

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

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
10-14-75  
W.D. Gilbert  
CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 399-W

MOTOR CONTROL CENTER CCI & CONTROL WIRING DIAGRAMS

ELKRIDGE WATER PUMPING STATION

DRAWING NO. 21 OF 24 SCALE AS SHOWN

SHEET E-C  
Contract No. 399-W

October 14, 1975

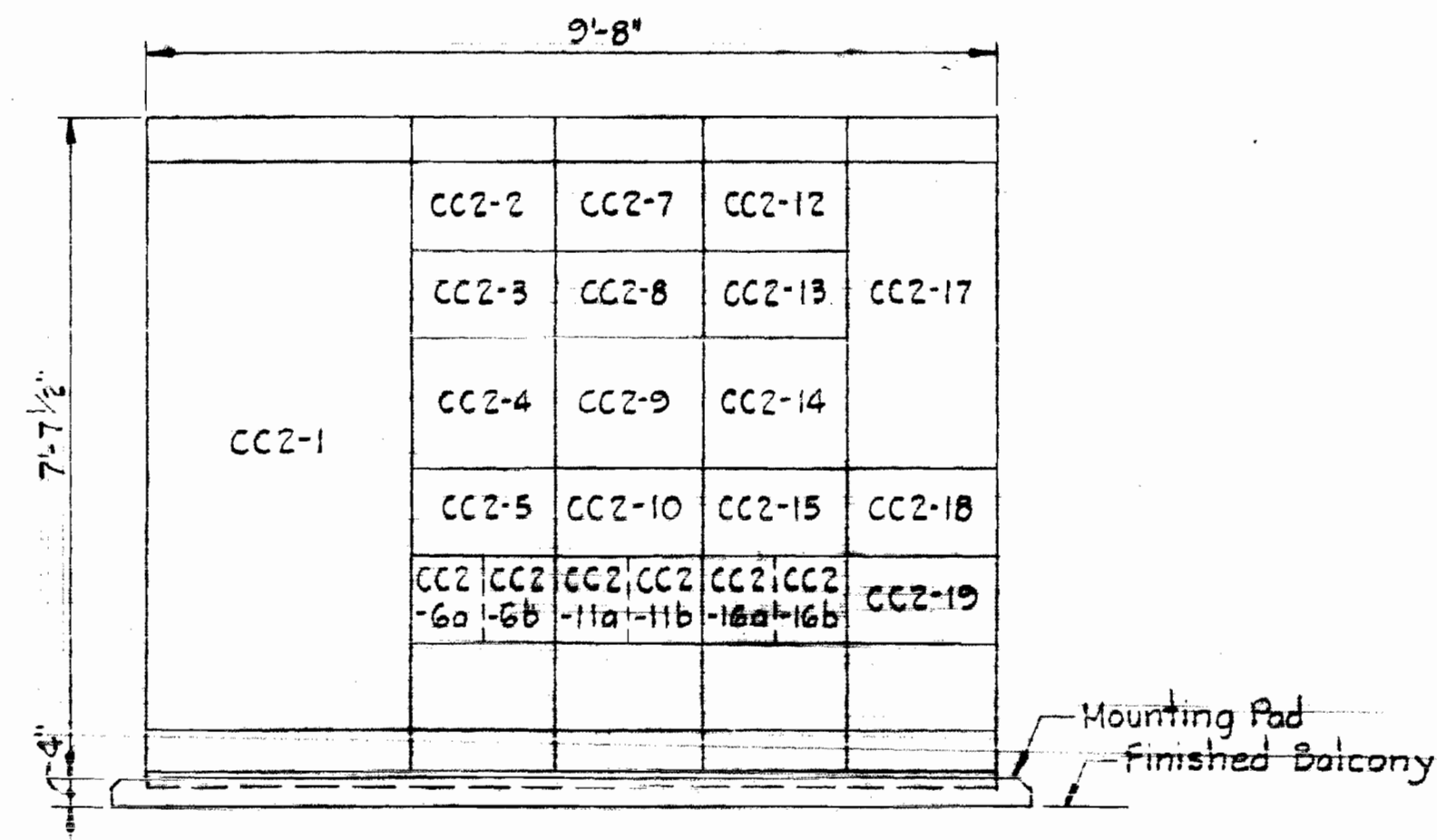


Kenneth M. Melrod

WS 399-W/21

W.O. 6257-2

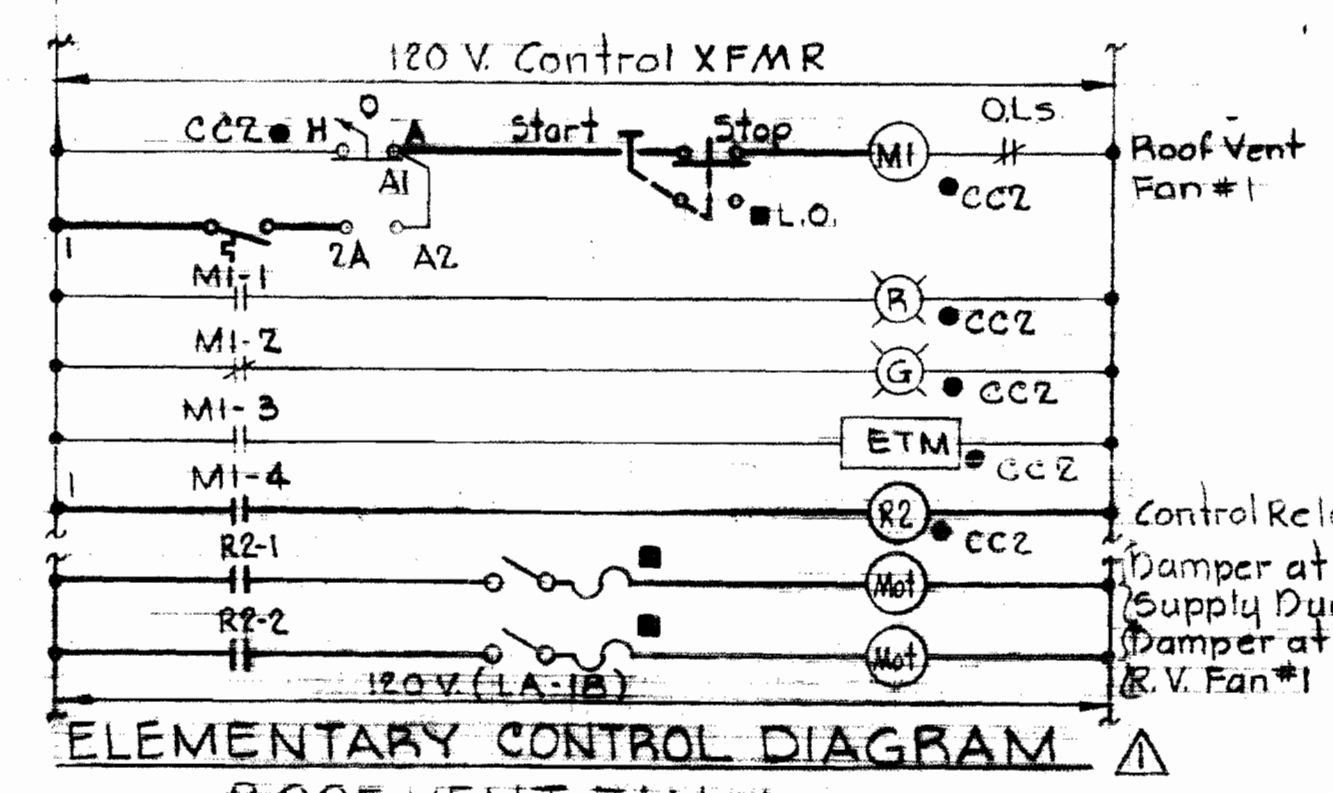
As-Built February 21, 1980



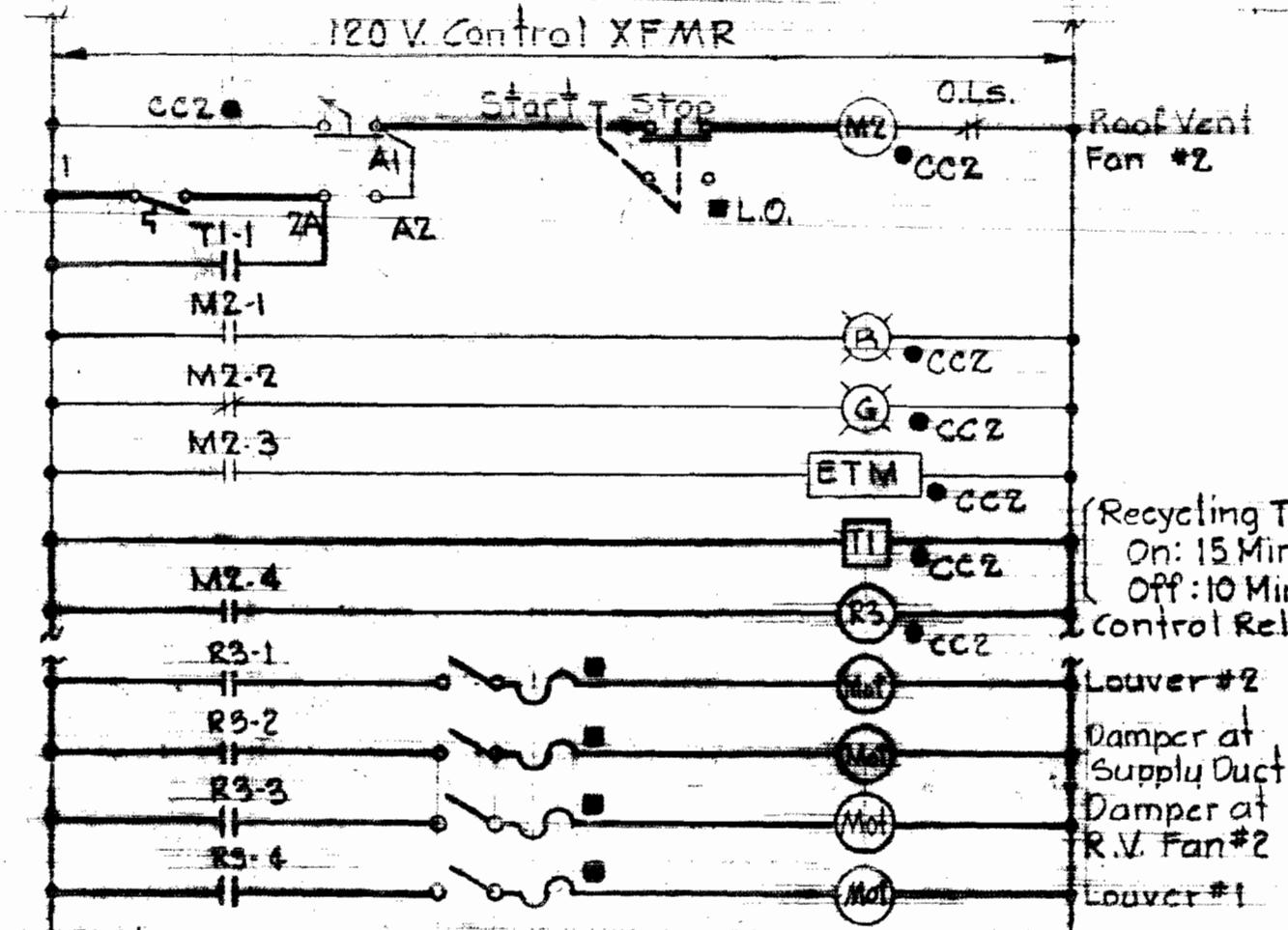
FRONT ELEVATION  
MOTOR CONTROL CENTER "CC2"  
Scale: 1/2" = 1'-0"

MOTOR CONTROL CENTER "CC2" SCHEDULE - 480V-3Ø-3W-60HZ

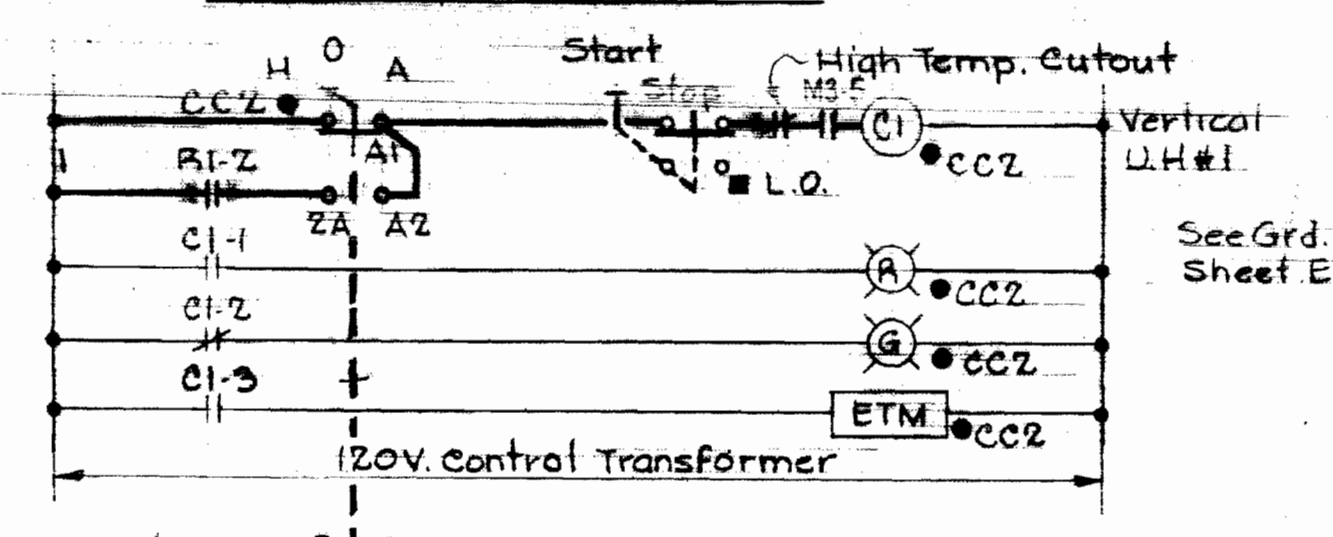
UNIT NUMBER	NAMEPLATE DATA	DEVICE DESCRIPTION	HP or KVA	AUX. DESC.	BREAKER or MCP FRAME POLE CALIB/SET SIC	RUN NO.	WIRE-POWER NO. SIZE TYPE	WIRE-CONTROL NO. SIZE TYPE	GRD. WIRE	COND. SIZE
CC2-1	MAIN BREAKER	Systems Circuit Breaker Drawout Type	-	See Spec.	1200 3 300*	CC2-1a	3 350 MCM THW	- - -	3	4"
CC2-2	ROOF VENT FAN #1	Combination Starter NEMA Size 1, FVNR	3/4	a, b, c, d	100 3 20	CC2-2a CC2-2b	3 12 THW 2 12 THW	4 - -	14 THW	12 1" 3/4"
CC2-3	VERTICAL UNIT HTR.#1	Combination Contactor NEMA Size 2, FVNR	15	a, b, c, d	100 3 30	CC2-3a	3 10 THW	2 14 THW	10	1"
CC2-4	HORIZONTAL UNIT HTRS.#1, #2, #3 - BALCONY	Combination Starter NEMA Size 3, FVNR	15	a, b, c, d	100 3 30	CC2-4a	3 10 THW	2 14 THW	12	1"
CC2-5	ROOF VENT FAN #2	Combination Starter NEMA Size 1, FVNR	3/4	a, b, c, d	100 3 20	CC2-5a CC2-5b	3 12 THW 2 12 THW	4 - -	14 THW	12 1" 3/4"
CC2-6a CC2-6b	SUMP PUMP #1 SUMP PUMP #2	Circuit Breaker	3/4	-	100 3 15	CC2-6a CC2-6b	3 12 THW 3 12 THW	- -	14 THW	12 1" 3/4"
CC2-7	RECYCLING TIMER ROOF VENT FAN #2	Timer	-	See Spec.	-	-	-	-	-	BY MANUFACTURER
CC2-8	BLANK (Space)	-	-	-	-	-	-	-	-	-
CC2-9	BLANK (Space)	Combination Starter NEMA Size 3, FVNR	-	a, b, c, d	100 3 4X	14	-	-	-	-
CC2-10	CONTROL-VERT. U.H.#1#2	Relay	-	See Spec.	-	-	-	-	-	-
CC2-11a CC2-11b	BLANK (Spare) BLANK (Spare)	Circuit Breaker	-	-	100 3 20	14	-	-	-	-
CC2-12	ROOF VENT FAN #3	Combination Starter NEMA Size 1, FVNR	3/4	a, b, c, d	100 3 20	CC2-12a CC2-12b	3 12 THW 2 12 THW	4 - -	14 THW	12 1" 3/4"
CC2-13	VERTICAL UNIT HTR.#2	Combination Contactor NEMA Size 2, FVNR	15	a, b, c, d	100 3 30	CC2-13a	3 10 THW	2 14 THW	12	1"
CC2-14	BLANK (Space)	Combination Starter NEMA Size 3, FVNR	-	a, b, c, d	100 3 4X	14	-	-	-	-
CC2-15	ROOF VENT FAN #4	Combination Starter NEMA Size 1, FVNR	3/4	a, b, c, d	100 3 20	CC2-15a CC2-15b	3 12 THW 2 12 THW	4 - -	14 THW	12 1" 3/4"
CC2-16a CC2-16b	15KVA TRANSF. "LA" BLANK (Spare)	Circuit Breaker	-	-	100 3 30	CC2-16a CC2-16b	3 10 THW	-	10	1"
CC2-17	PANEL BOARD "LA" 20Ø/120V., 3Ø, 4W.	Circuit Breaker Panelboard	-	See Spec.	-	CC2-17a	4 6 THW	-	10	1 1/4"
CC2-18	FAN - VERTICAL UNIT HTR.#1	Combination Starter NEMA Size 1, FVNR	1/4	a, b, c, d	100 3 20	CC2-18a	3 12 THW	2 14 THW	12	1"
CC2-19	FAN - VERTICAL UNIT HTR.#2	Combination Starter NEMA Size 1, FVNR	1/4	a, b, c, d	100 3 20	CC2-19a	3 12 THW	2 14 THW	12	1"



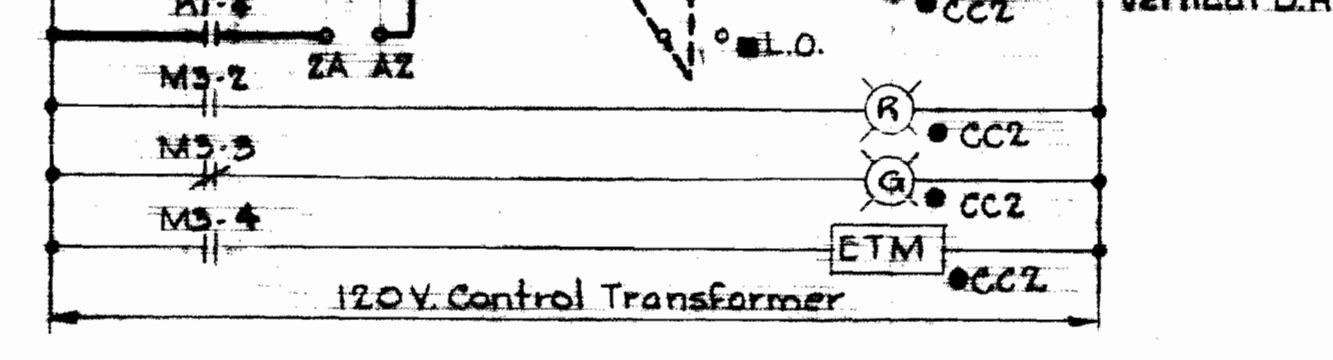
ELEMENTARY CONTROL DIAGRAM  
ROOF VENT FAN #1  
Typical for Roof Vent Fans #3 & #4



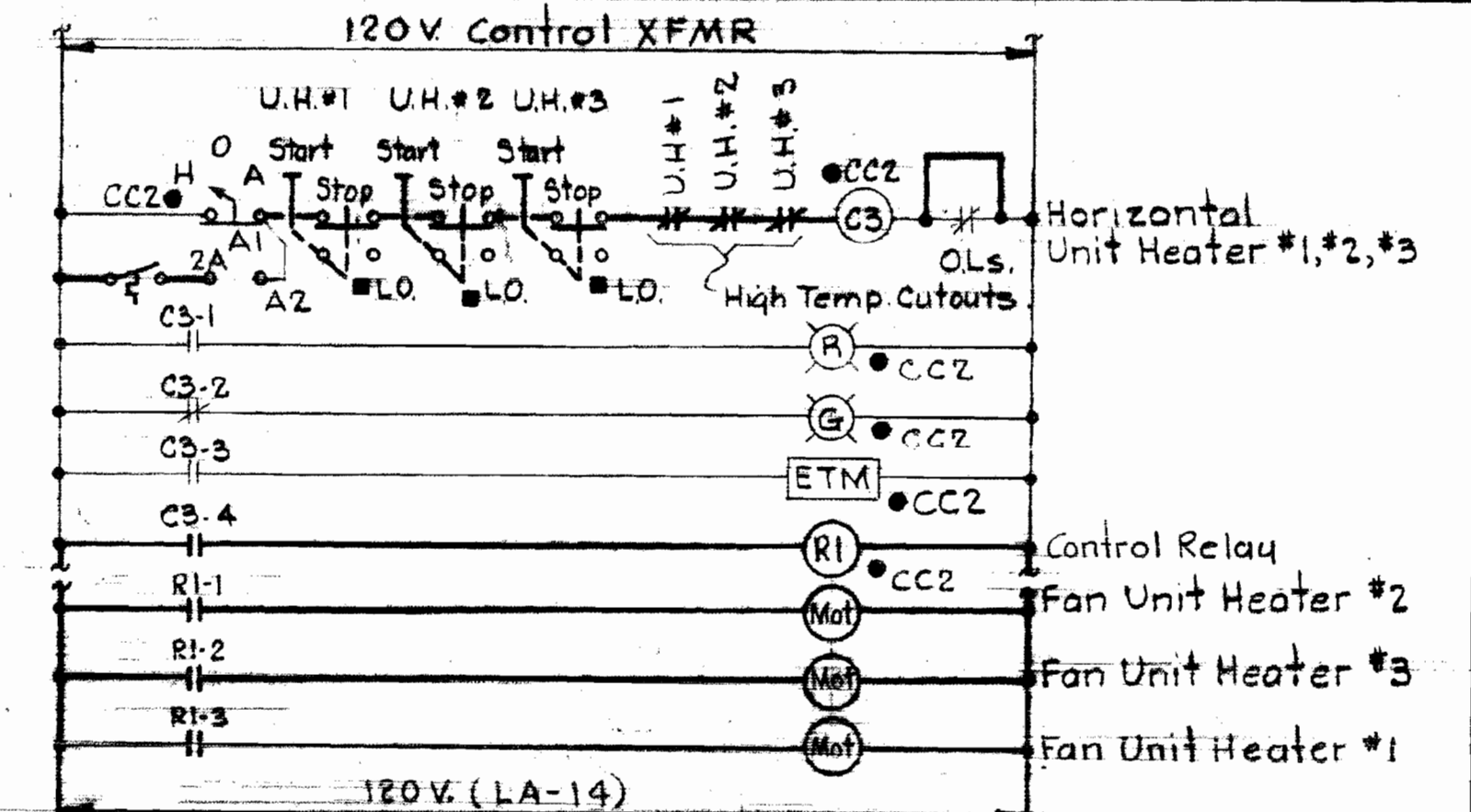
ELEMENTARY CONTROL DIAGRAM  
ROOF VENT FAN #2



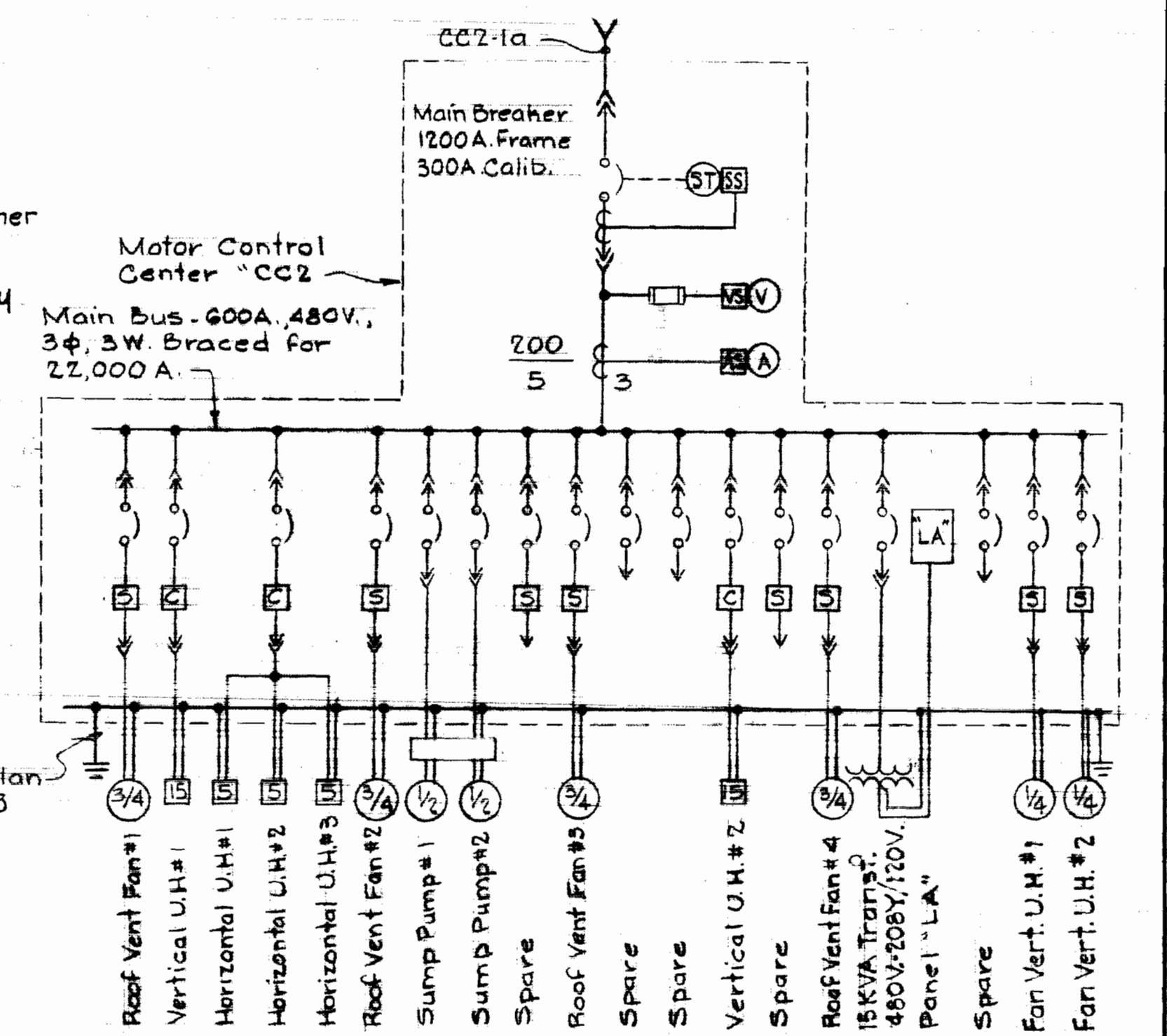
ELEMENTARY CONTROL DIAGRAM  
VERTICAL UNIT HEATER #1  
Typical for Vertical Unit Heater #2



ELEMENTARY CONTROL DIAGRAM  
CONTROL-VERTICAL UNIT HEATERS



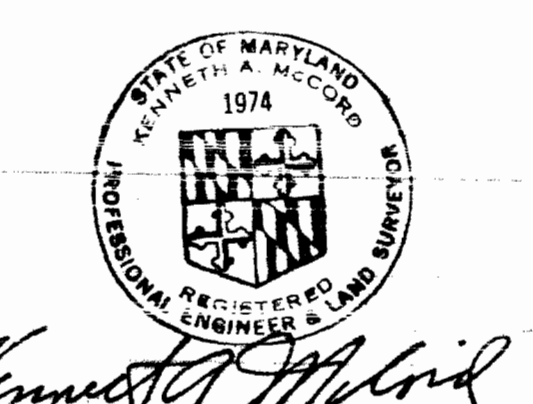
ELEMENTARY CONTROL DIAGRAM  
HORIZONTAL UNIT HEATERS #1, #2 & #3



ONE LINE DIAGRAM

NOTES

- For GENERAL ELECTRICAL NOTES & LEGEND, see Sheet E-2.
- In Elementary Control Diagrams, light lines denote existing factory wiring & dark lines denote revisions and/or additions to wiring by contractor.



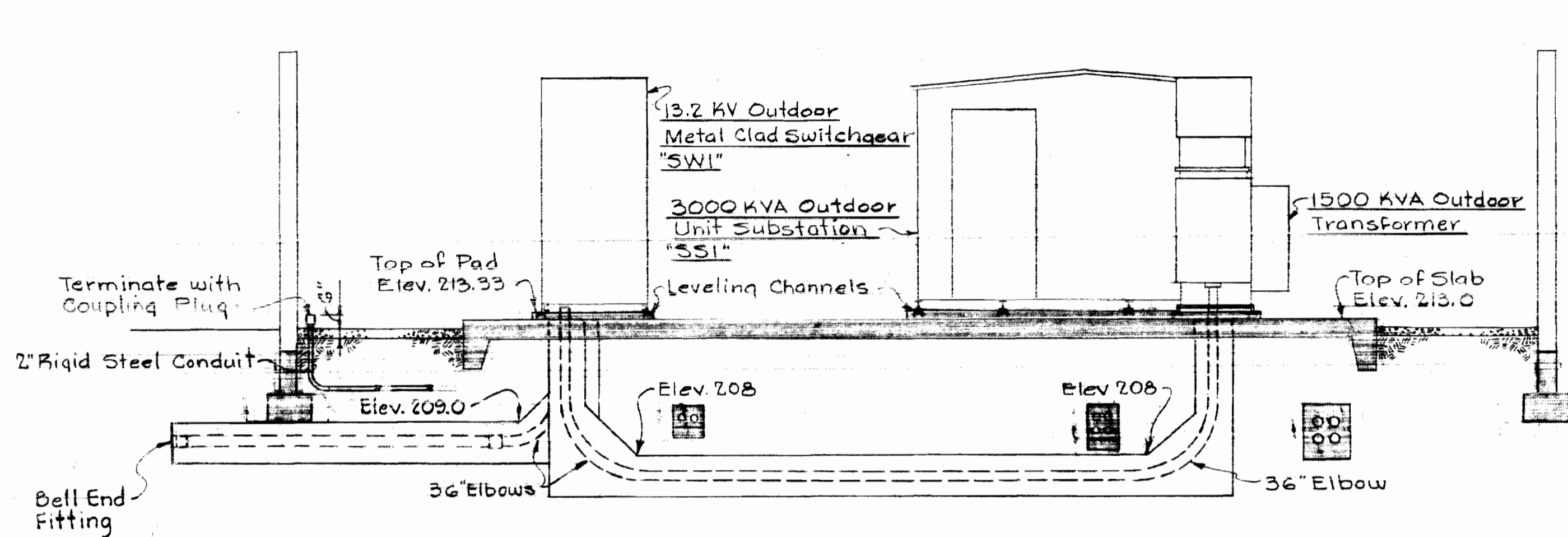
Kenneth A. McLeod  
REGISTERED PROFESSIONAL ENGINEER & LAND SURVEYOR

10/1/76	Revised EC Diagrams for RV#1, 2, 3 & 4 & UH#1, 2 & 3. Deleted Proposed Control XFMRs/Indicated Panel Circuits.	REM
DATE NO.	REVISION	BY

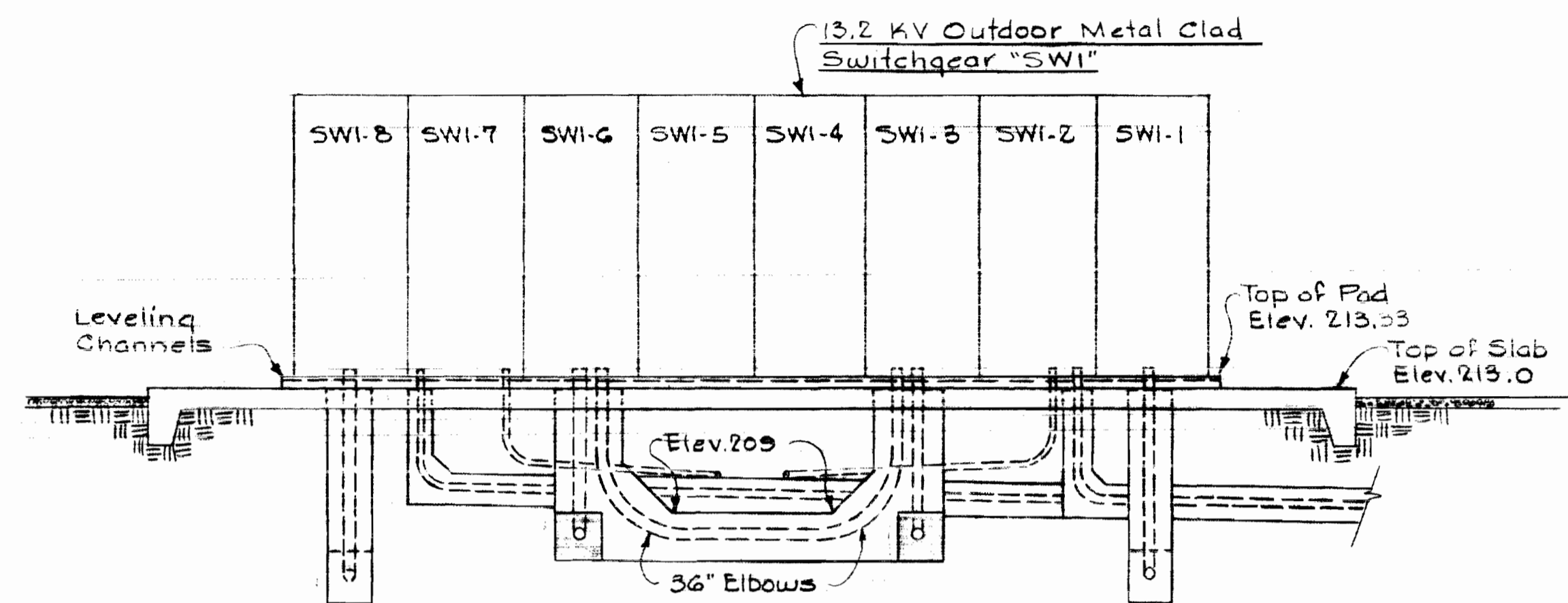
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 10-14-75 DATE	CONTRACT NO. 399-W CHIEF BUREAU OF ENGINEERING	MOTOR CONTROL CENTER CC-2 & CONTROL WIRING DIAGRAMS	ELKRIDGE WATER PUMPING STATION	SHEET E-7 Contract No. 399-W	DRAWING NO. 22 OF 24 SCALE AS SHOWN
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W.O. 6257-2

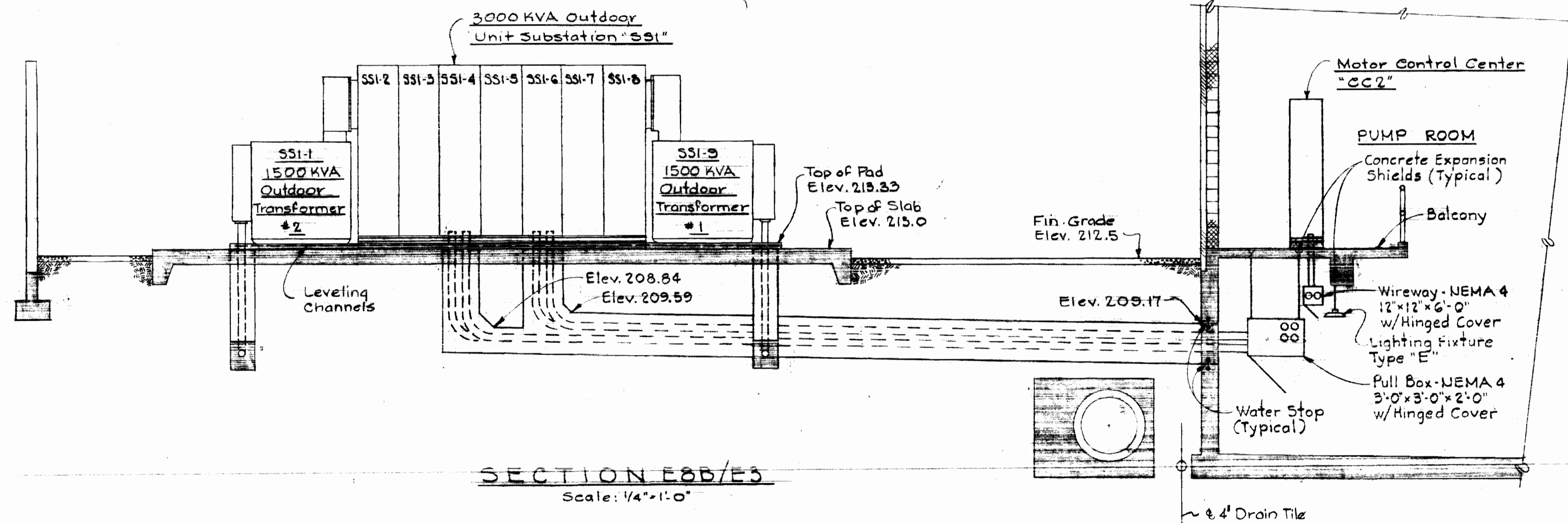
October 14, 1976  
As-Built February 21, 1980



SECTION E8A/E3  
Scale: 1/4" = 1'-0"

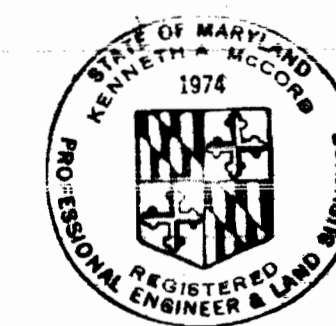


SECTION E8C/E3  
Scale: 1/4" = 1'-0"



SECTION E8B/E3  
Scale: 1/4" = 1'-0"

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



*Kenneth M. M...*

SHEET E-8  
Contract No. 399-W

DRAWING NO. 23 OF 24	SCALE AS SHOWN
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October 14, 1975

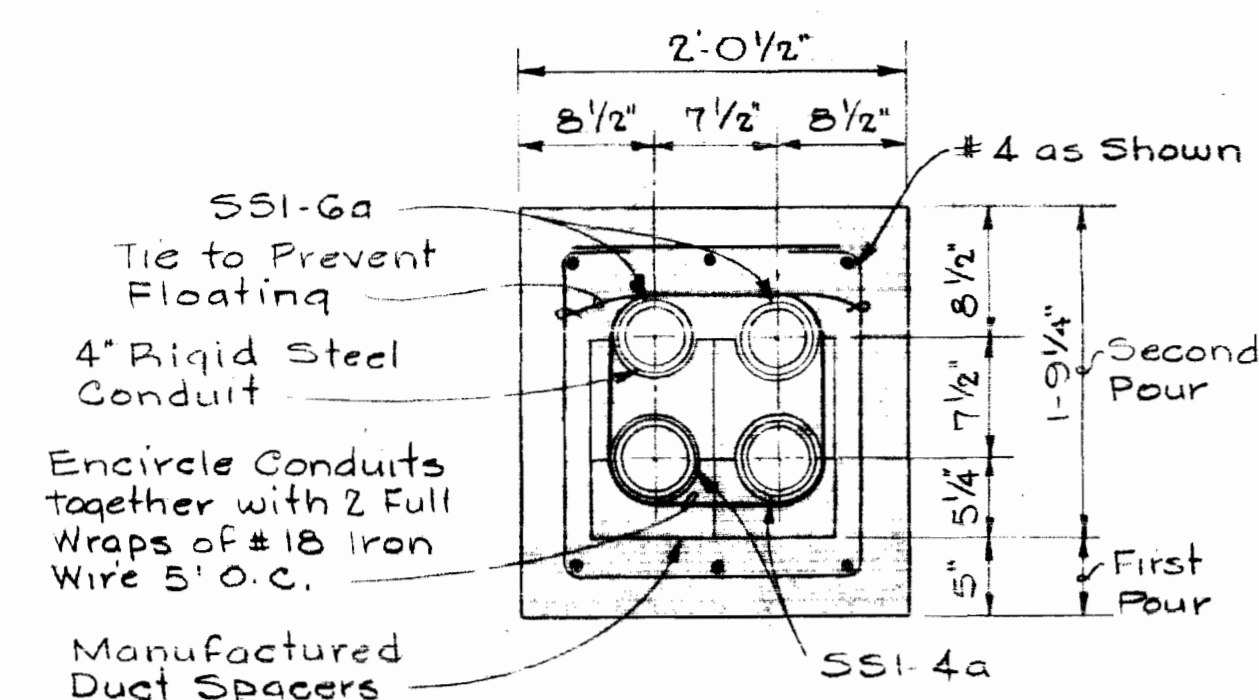
WHITMAN, REQUARDT & ASSOCIATES ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 10-14-75 DATE W.O. Gilbert CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 399-W	UNDERGROUND SECTIONS AND DETAILS	ELKRIDGE WATER PUMPING STATION
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W.O. 6257-2

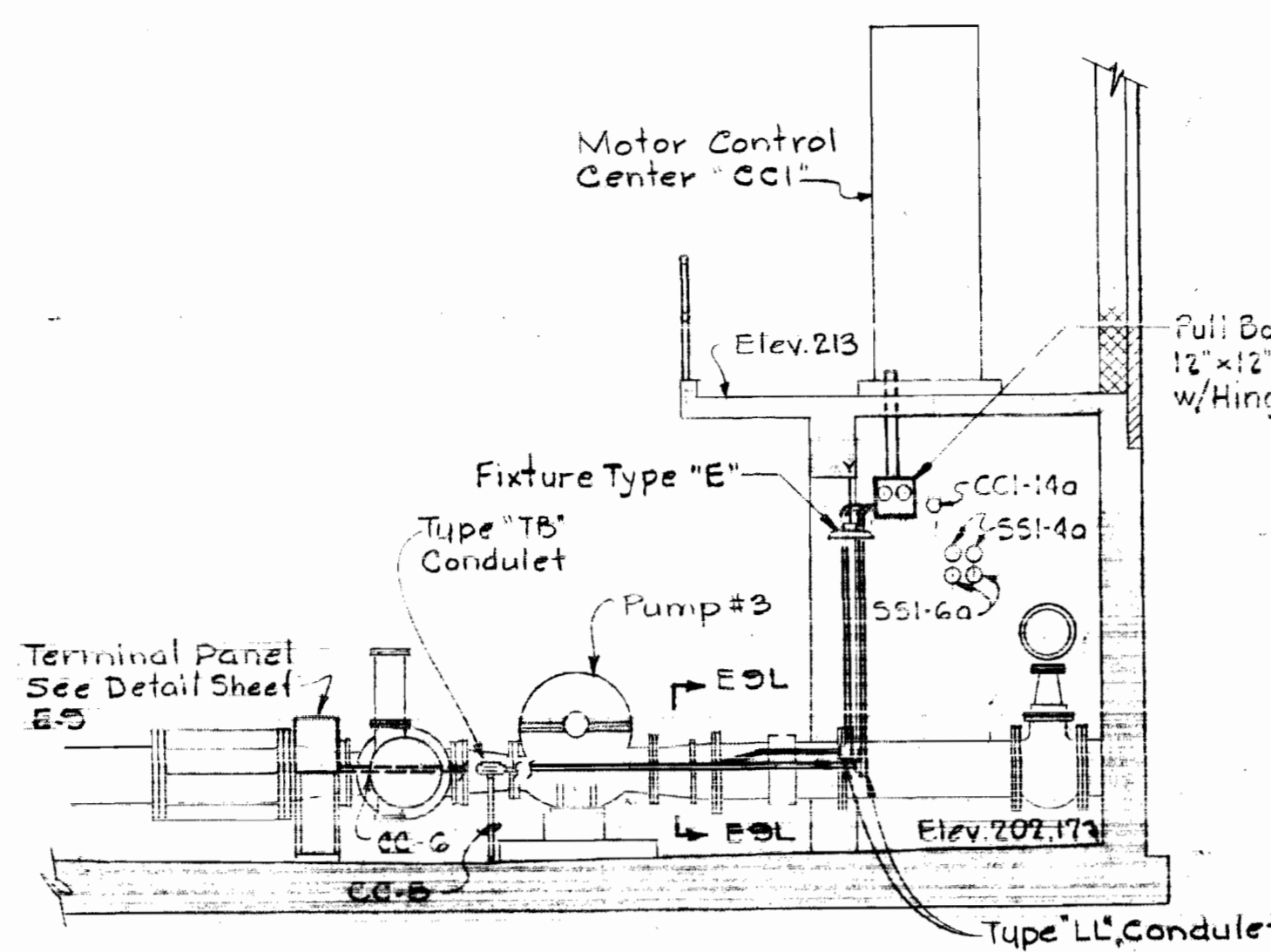
WS 399-W/23

**NOTES**

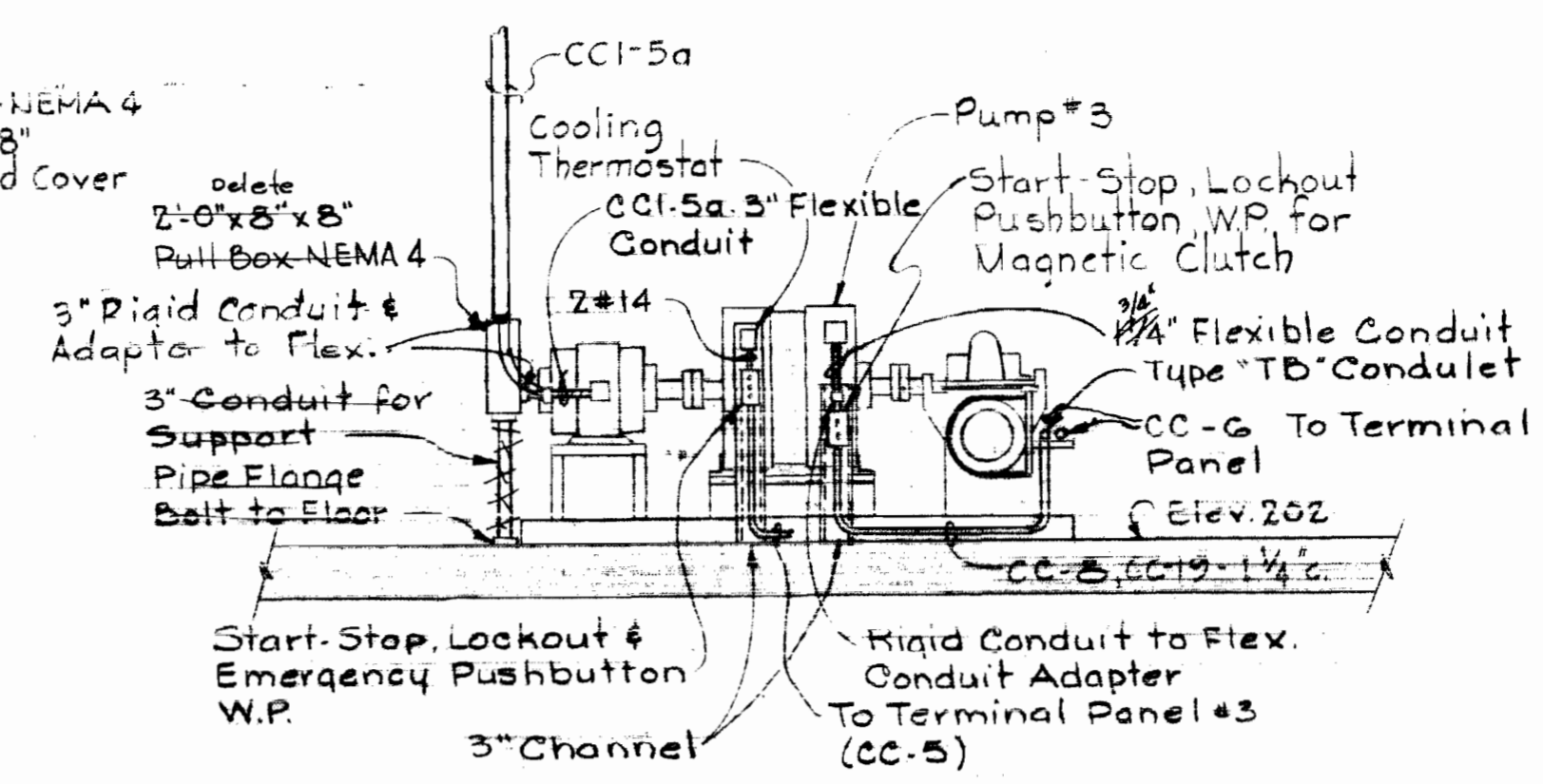
1. For GENERAL ELECTRICAL NOTES & LEGEND, see Sheet E-2.
2. In Section E9A/E3, the duct spacers; the ties to prevent floating of ducts; the method of concrete pours & reinforcing steel are typical for all ductbank sections unless otherwise noted.



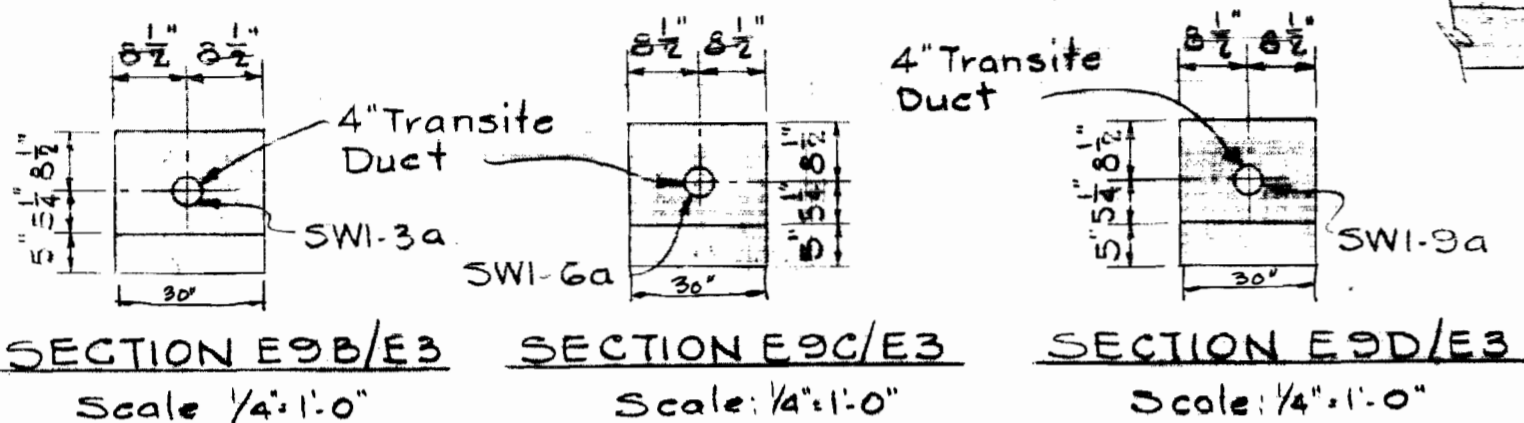
**SECTION E9A/E3**  
Scale: 1/2"=1'-0"  
(See Note 2)



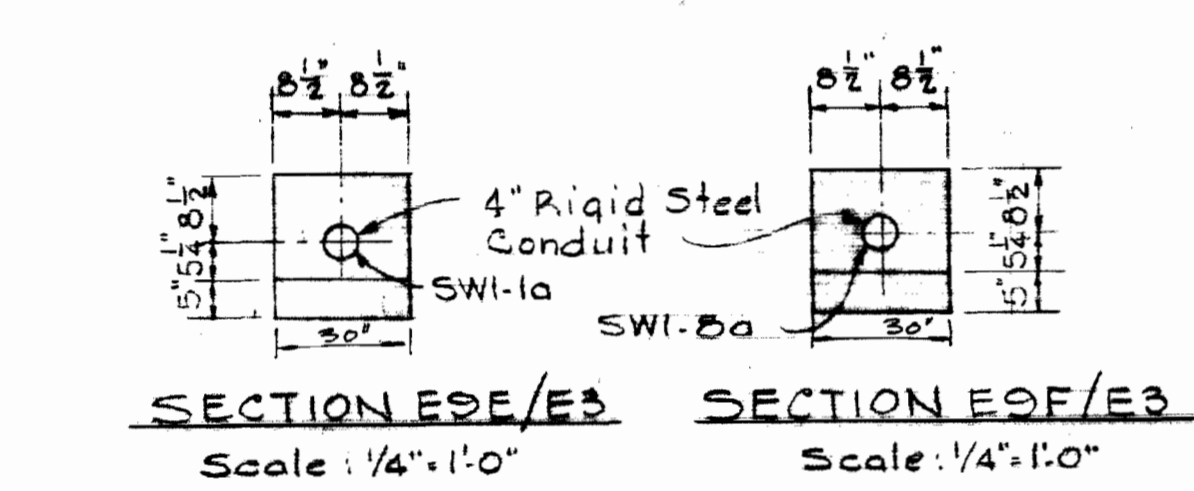
**SECTION E9J/E4**  
Scale: 1/4"=1'-0"



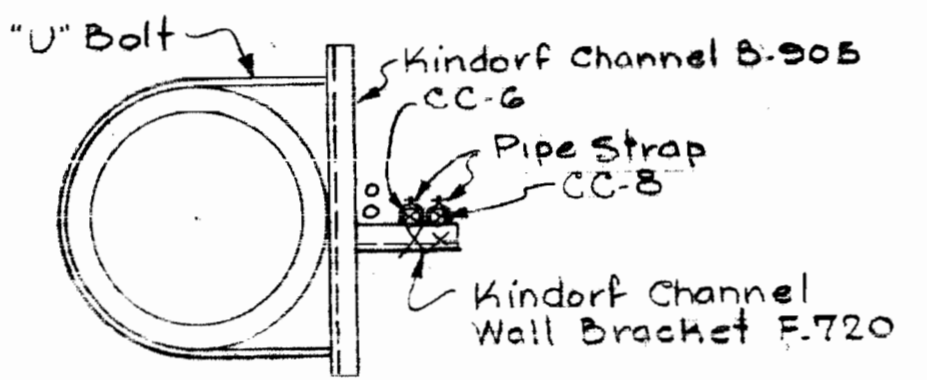
**SECTION E9K/E4**  
Typical for Pumps 1, 2 & 4  
Scale: 1/4"=1'-0"



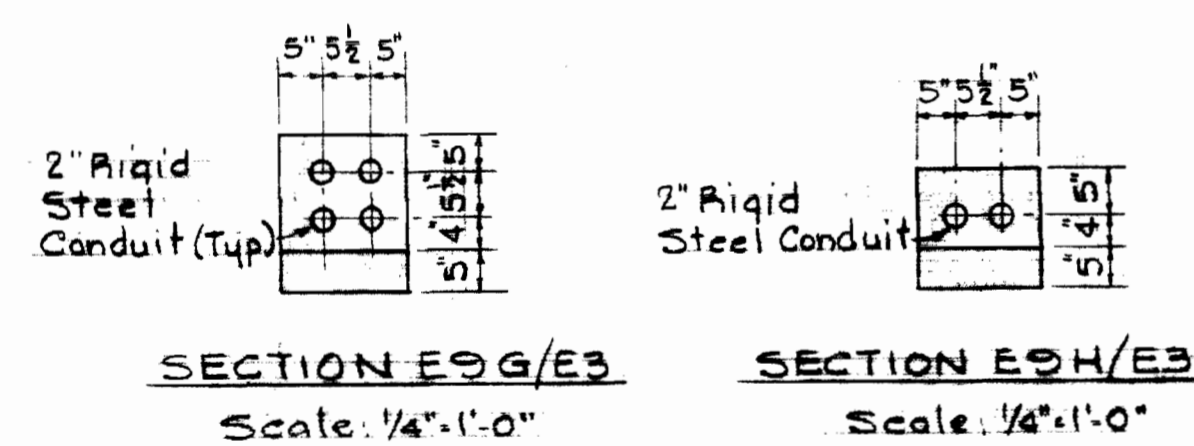
**SECTION E9B/E3** Scale: 1/4"=1'-0"  
**SECTION E9C/E3** Scale: 1/4"=1'-0"  
**SECTION E9D/E3** Scale: 1/4"=1'-0"



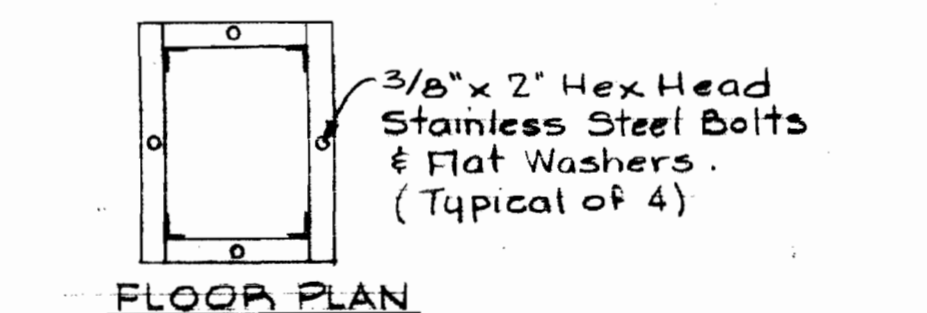
**SECTION E9E/E3** Scale: 1/4"=1'-0"  
**SECTION E9F/E3** Scale: 1/4"=1'-0"



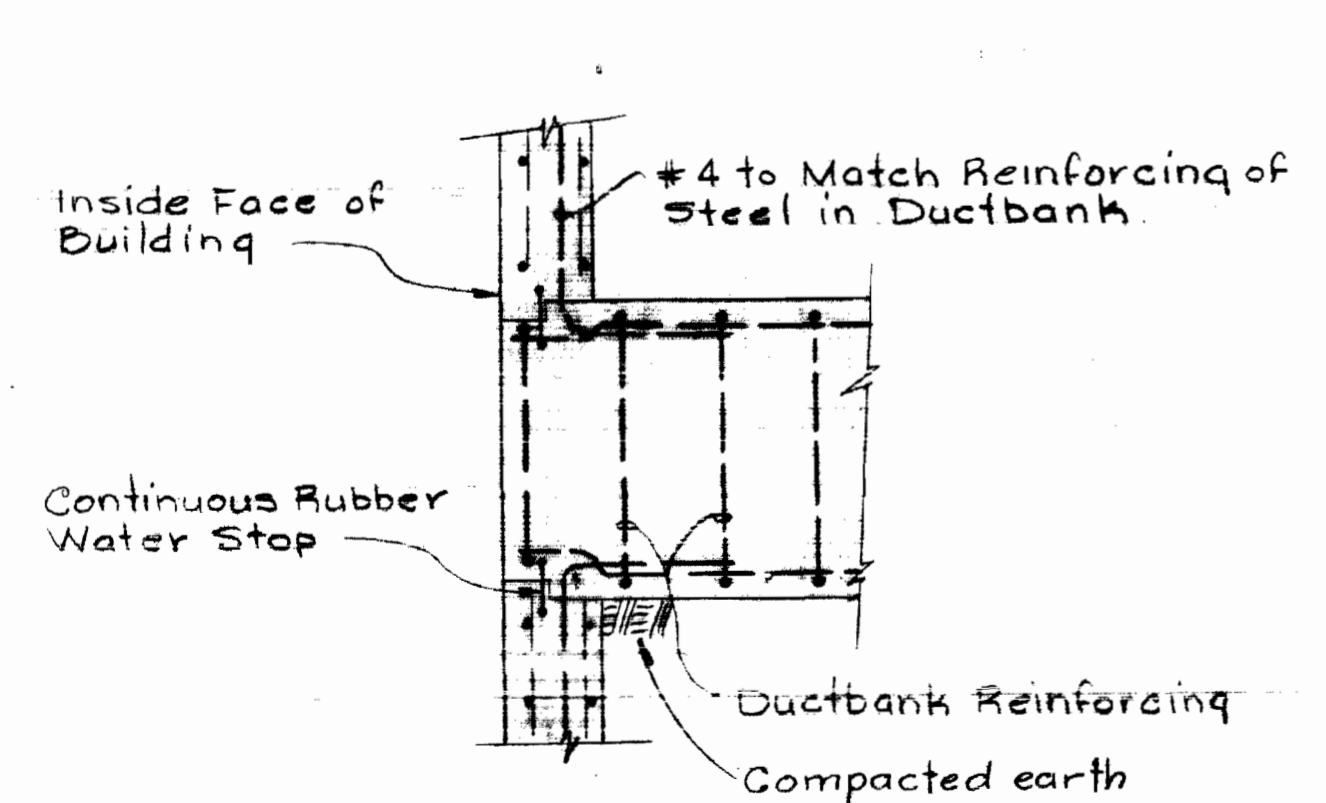
**SECTION E9L/E3**  
Scale: 1"=1'-0"



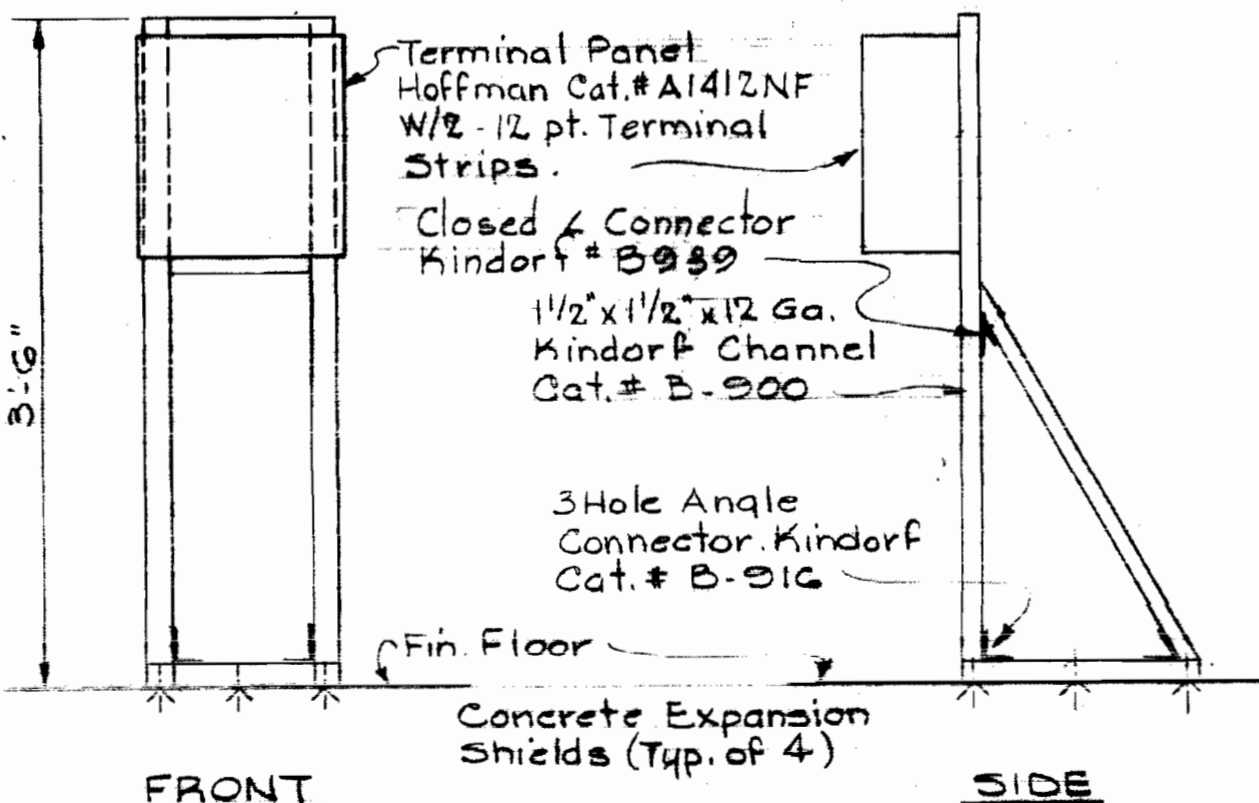
**SECTION E9G/E3** Scale: 1/4"=1'-0"  
**SECTION E9H/E3** Scale: 1/4"=1'-0"



**FLOOR PLAN**

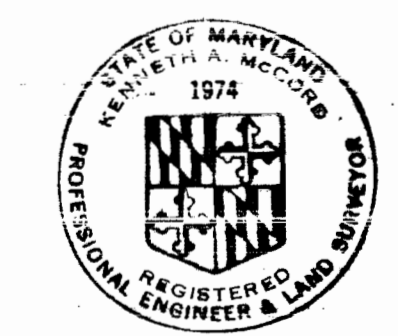


**DETAIL 'J'**  
**DUCTBANK REINFORCING AT BUILDING ENTRANCE**  
Scale: None



**TERMINAL PANEL MOUNTING DETAIL**  
(Typical for Pumps #1, 2, 3 & 4)  
Scale: 1/2"=1'-0"

CONTROL CABLE SCHEDULE							
RUN NO.	FROM	TO	FOR	WIRE NO.	SIZE	TYPE	COND. REMARKS
CC-1	Pump #4 Thermostat & P.B. Station	Terminal Panel #4	Roof Vent Fan #4 & Pump #4	10/c	14	See Spec.	1 1/4"
CC-2	Pumps #4 - Terminal Panel #4	Motor Control Center 'CC1-2'	Pump #4 Valve & Roof Vent Fan #4	10/c	14	See Spec.	See Dwg.
CC-3	Motor Control Center 'CC1-2'	Motor Control Center 'CC2-15' & 'CC2-12'	Roof Vent Fan #4 & Roof Vent Fan #3	9/c	14	See Spec.	1"
CC-4	Pump #4 Magnetic Clutch	Drive Control Cabinet #2	Magnetic Clutch	3	10	See Spec. Shielded	See Dwg. Power & Grd. Tachometer
CC-5	Pump #3 Thermostat & P.B. Station	Terminal Panel #3	Roof Vent Fan #3 & Pump #3	10/c	14	See Spec.	1 1/4"
CC-6	Pump #3 Terminal Panel #3	Motor Control Center 'CC1-3'	Pump #3 Valve & Roof Vent Fan #3	10/c	14	See Spec.	See Dwg.
CC-7	Motor Control Center 'CC1-3'	Control Center Cabinet	Pump #3 Controls	8/c	14	See Spec.	1 1/4"
CC-8	Pump #3 Magnetic Clutch	Drive Control Cabinet #2	Magnetic Clutch	3	10	See Spec. Shielded	See Dwg. Power & Grd. Tachometer
CC-9	Pump #2 Thermostat & P.B. Station	Terminal Panel #2	Roof Vent Fan #2 & Pump #2	10/c	14	See Spec.	1 1/4"
CC-10	Pump #2 Terminal Panel #2	Motor Control Center 'CC1-15'	Pump #2 Valve & Roof Vent Fan #2	10/c	14	See Spec.	See Dwg.
CC-11	Motor Control Center 'CC1-15'	Control Center Cabinet	Pump #2 Controls	8/c	14	See Spec.	1 1/4"
CC-12	Pump #2 Magnetic Clutch	Drive Control Cabinet #1	Magnetic Clutch	3	10	See Spec. Shielded	See Dwg. Power & Grd. Tachometer
CC-13	Pump #1 Thermostat & P.B. Station	Terminal Panel #1	Roof Vent Fan #1 & Pump #1	10/c	14	See Spec.	1 1/4"
CC-14	Pump #1 Terminal Panel #1	Motor Control Center 'CC1-16'	Pump #1 Valve & Roof Vent Fan #1	10/c	14	See Spec.	See Dwg.
CC-15	Motor Control Center 'CC1-16'	Motor Control Center 'CC2-2' & 'CC2-5'	Roof Vent Fan #1 & #2	9/c	14	See Spec.	1"
CC-16	Pump #1 Magnetic Clutch	Drive Control Cabinet #1	Magnetic Clutch	3	10	See Spec. Shielded	See Dwg. Power & Grd. Tachometer
CC-17	Telephone Terminal Panel	Control Center Cabinet	Telemetry	2(1/p)	16	Shielded Grd.	1"
CC-18	Pump #4 Magnetic Clutch	Motor Control Center 'CC1-2'	Magnetic Clutch	3/c	14	See Spec.	See Dwg. Magnetic Clutch Lockout P.B.
CC-19	Pump #3 Magnetic Clutch	Motor Control Center 'CC1-3'	Magnetic Clutch	3/c	14	See Spec.	See Dwg. Magnetic Clutch Lockout P.B.
CC-20	Pump #2 Magnetic Clutch	Motor Control Center 'CC1-15'	Magnetic Clutch	3/c	14	See Spec.	See Dwg. Magnetic Clutch Lockout P.B.
CC-21	Pump #1 Magnetic Clutch	Motor Control Center 'CC1-16'	Magnetic Clutch	3/c	14	See Spec.	See Dwg. Magnetic Clutch Lockout P.B.
CC-22	Control Center Cabinet	Drive Control Cabinet #1	Magnetic Clutch Pumps 1 & 2	2(1/p)	16	Shielded	1" Telemetry
CC-23	Control Center Cabinet	Drive Control Cabinet #2	Magnetic Clutch Pumps 3 & 4	2(1/p)	16	Shielded	1" Telemetry
CC-24	Motor Control Center 'CC1-16'	Control Center Cabinet	Pump #1 Controls	8/c	14	See Spec.	1 1/4" Control
CC-25	Motor Control Center 'CC1-2'	Control Center Cabinet	Pump #4 Controls	8/c	14	See Spec.	1 1/4" Control



*Kenneth A. McLeod*

**SHEET E-3**  
Contract No. 399-W

<b>WHITMAN, REQUARDT &amp; ASSOCIATES</b> ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	<b>DEPARTMENT OF PUBLIC WORKS</b> HOWARD COUNTY, MARYLAND 10-14-75 DATE <i>W. O. Falbert</i> CHIEF BUREAU OF ENGINEERING	<b>CONTRACT NO. 399-W</b>	<b>MISCELLANEOUS DETAILS</b>	<b>ELKRIDGE WATER PUMPING STATION</b>	<b>DRAWING NO. 24 OF 24</b>	<b>SCALE AS SHOWN</b>
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W.O. 6257-2

October 14, 1975

As-Built February 21, 1980