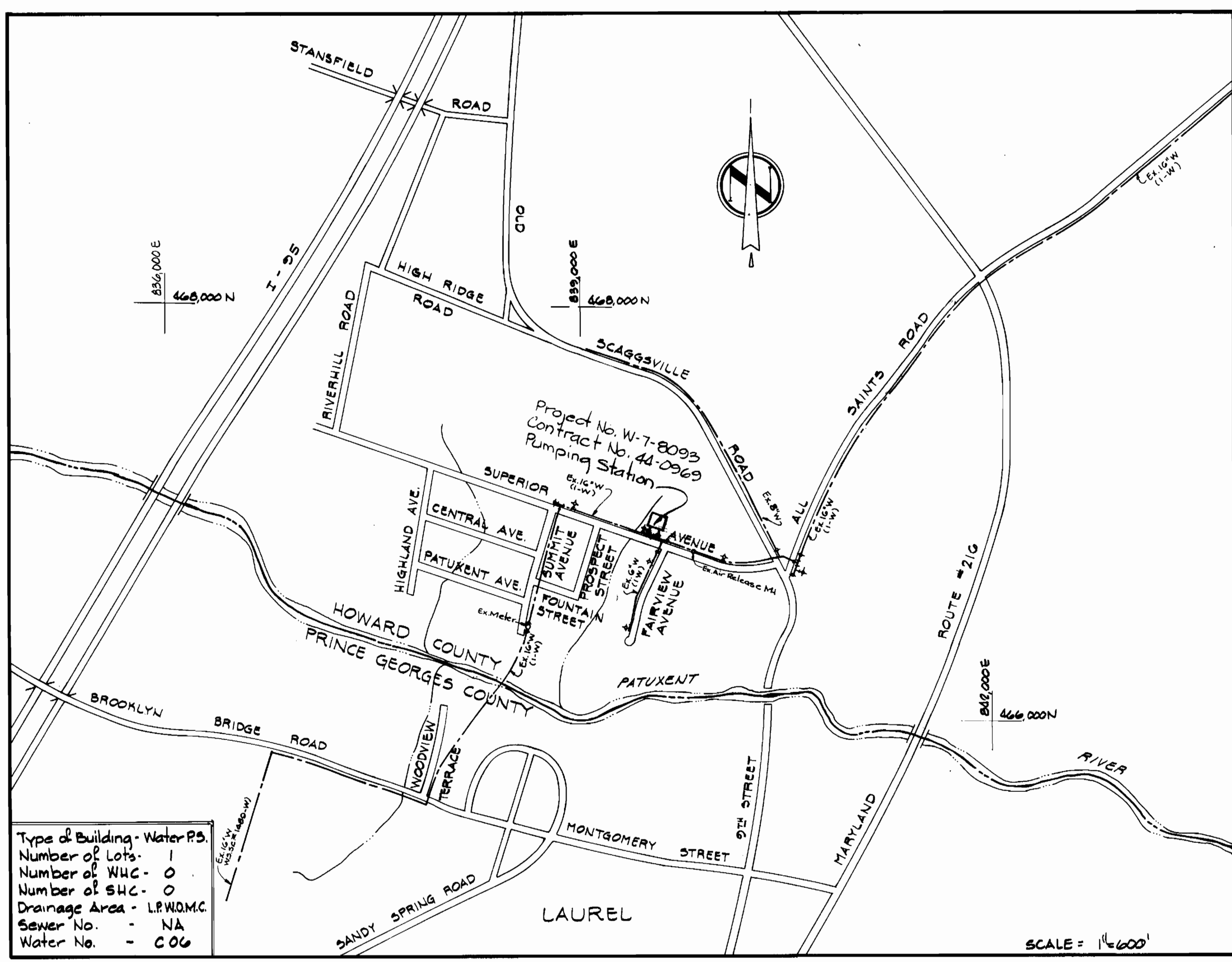


For General Notes, see Drawing No. 5

LIST OF DRAWINGS

DRAWING	NO.	TITLE
C-2	2	SITE DEVELOPMENT PLAN
C-3	3	SEDIMENT CONTROL PLAN
C-4	4	SEDIMENT CONTROL DETAILS
C-5	5	PLAN & PROFILES OF WATER MAINS AND GENERAL NOTES
A-1	6	PLANS AND ELEVATIONS
A-2	7	ROOF PLANS, SECTIONS AND DETAILS
A-3	8	SECTIONS
A-4	9	MISCELLANEOUS DETAILS
S-1	10	PLANS AND GENERAL NOTES
S-2	11	SECTIONS AND DETAILS
S-3	12	SECTIONS AND DETAILS
S-4	13	SECTIONS AND DETAILS
M-1	14	MECHANICAL PLAN AND DETAIL
M-2	15	MECHANICAL PLAN AND DIAGRAMS
M-3	16	MECHANICAL SECTIONS AND DETAILS
M-4	17	MECHANICAL SECTIONS
E-1	18	ELECTRICAL PLANS AND DIAGRAMS
E-2	19	ONE LINE DIAGRAM
E-3	20	ELEMENTARY DIAGRAM SECTION AND DETAILS
ME-1	21	SUPERVISORY CONTROL PANEL AND TELEMETERING DIAGRAMS
ME-2	22	STATION OPERATION MODES



QUANTITIES			
Item	Bid	As-Built	Material / Supplier
16" W	80 LF		
12" W	60 LF		
6" W	25 LF		
12" Valves	3		
12" Surge Drain	50 LF		
4" Sump Drain	50 LF		
Paving	5700 SF		
Fire Hydr.	2		
15" S.D.	105 LF		

CONTRACT NO. 44-0969
PROJECT NO. W-7-8093
ALL SAINTS ROAD WATER PUMPING STATION
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS



All Saints Road
Water Pumping Station
Contract No. 44-0969
Project No. W-7-8093

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Henry F. Neumeier 8-16-82
DIRECTOR OF PUBLIC WORKS - DATE

Robert M. Bringer 8-9-82
CHIEF - BUREAU OF UTILITIES - DATE

William R. Brown 8-16-82
CHIEF - BUREAU OF ENGINEERING - DATE

Allen J. Brown 8/4/82
CHIEF - UTILITIES DIVISION - DATE

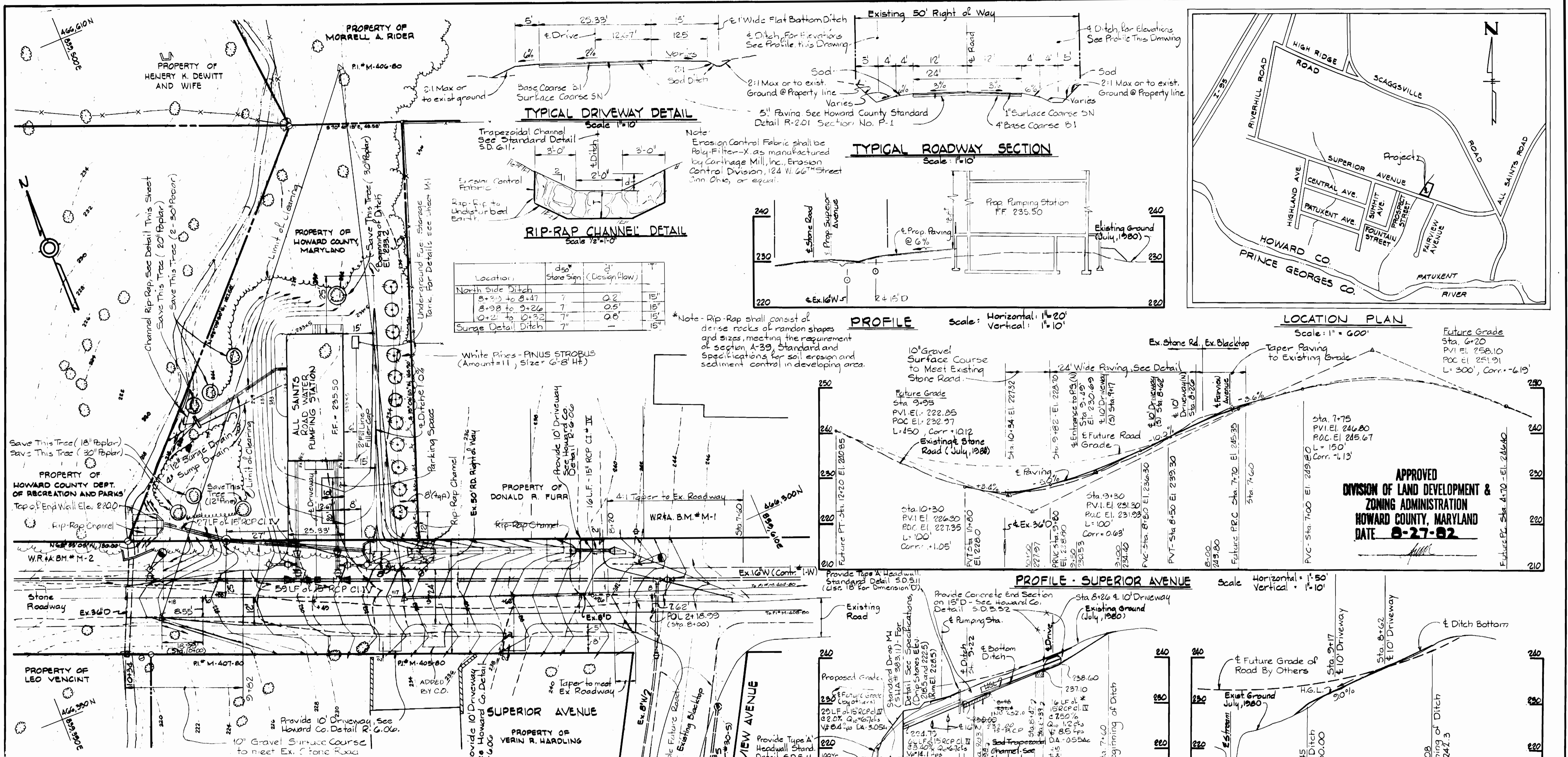
WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

LOCATION MAP

ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 1 OF 22
SCALE AS SHOWN
50' = 1" (15-1)
FB# 6430



Location	ds ² Stone Sign (Design Flow)	d ²	d ¹
North Side Ditch	8+30 to 8+47	7	0.2
	8+98 to 9+26	7	0.5
	0+21 to 0+32	7	0.6
Surge Detail Ditch	7"	-	15"

APPROVED
DIVISION OF LAND DEVELOPMENT &
ZONING ADMINISTRATION
HOWARD COUNTY, MARYLAND
DATE 8-27-82

REQUARD AND ASSOCIATES
ENGINEERS
2515 ST. PAUL STREET
BALTIMORE, MARYLAND
KENNETH A. MCCORD, P.E. & L.S. NO. 1874

HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
LIBER 1037 FOLIO 48
TAX MAP 50 PARCEL 3
ZONED R.S.C.

REVIEWED FOR Howard S.O.D. NAME
AND MEETS TECHNICAL REQUIREMENTS
DATE 8-28-82
U.S. SOIL CONSERVATION SERVICE
APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT
COUNTY HEALTH OFFICER DATE 8/18/82

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
WILLIAM S. ROME 8-20-82
DIRECTOR DATE
CHIEF, BUREAU OF ENGINEERING DATE
CHIEF, BUREAU OF UTILITIES DATE

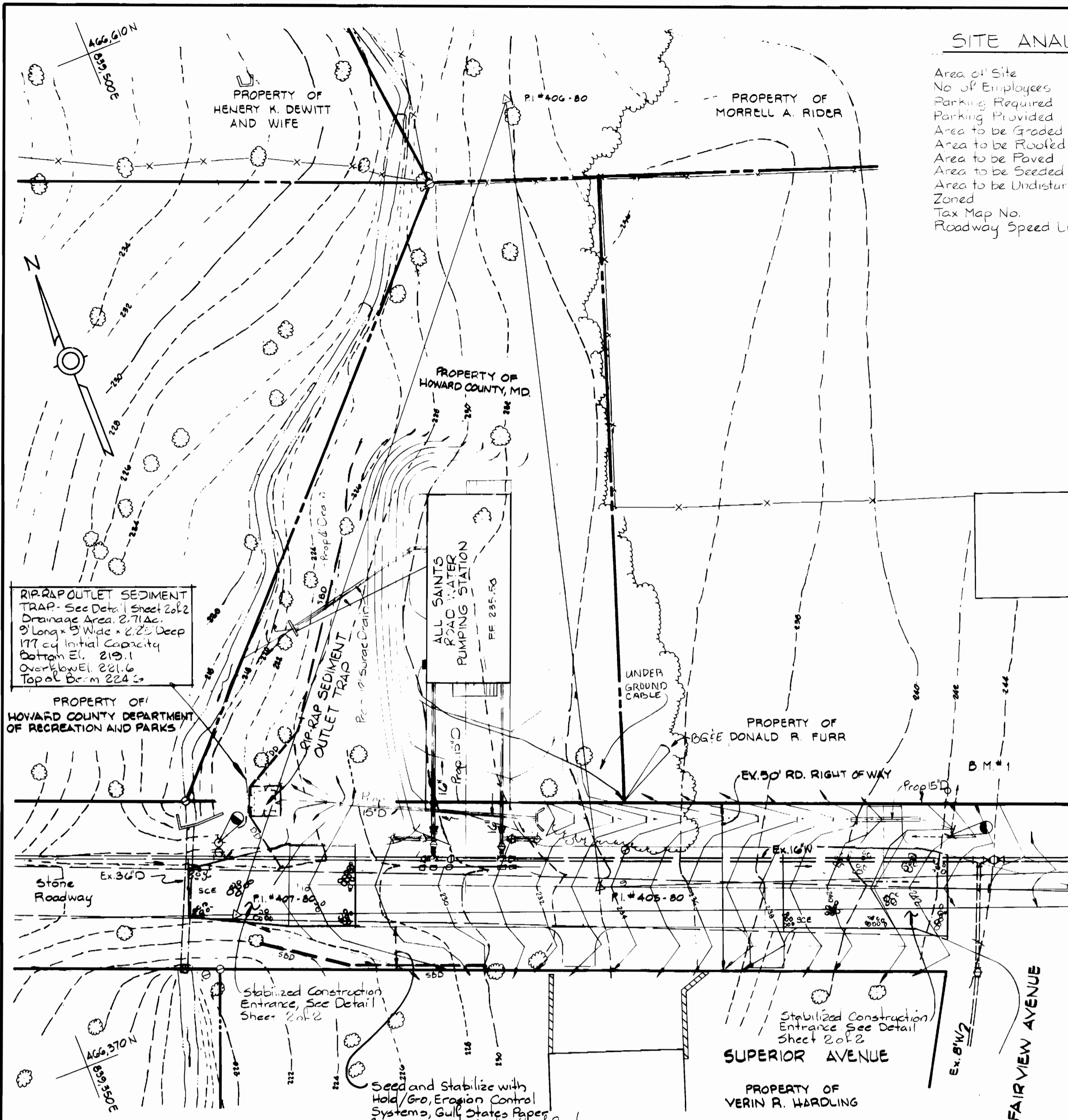
APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND ROADS.
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
JAMES F. NIMMER 8-20-82
DIRECTOR DATE
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE 8-25-82

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
THOMAS J. HANIGAN 8-24-82
PLANNING DIRECTOR DATE
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE 8-25-82

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."
JAMES A. BRINETH 8/21/82
SIGNATURE OF ENGINEER DATE

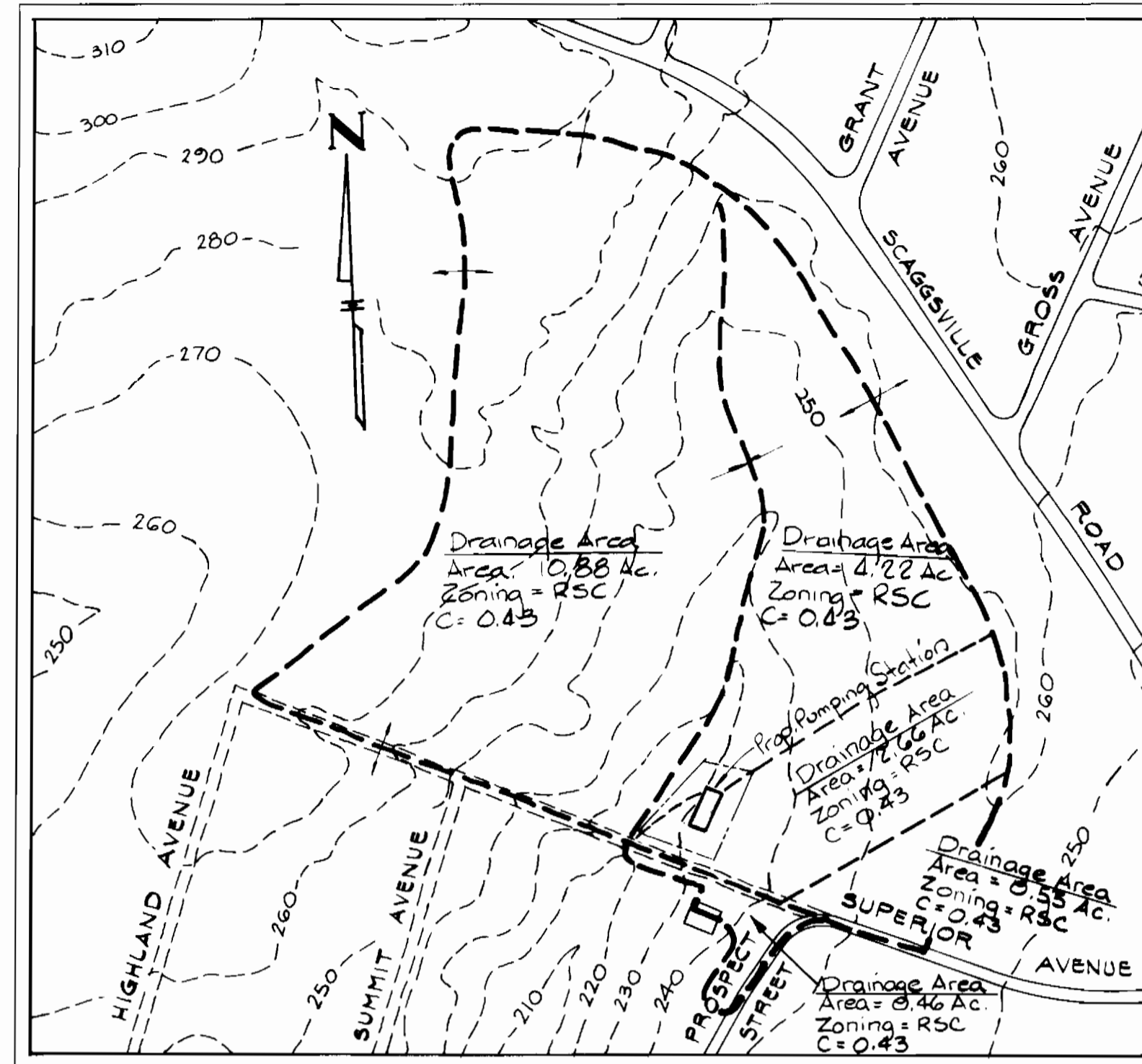
CERTIFICATION BY THE DEVELOPER
"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT AND PLANS FOR EROSION AND SEDIMENT CONTROL AND I ALSO AUTHORIZE PERIODIC OR SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS A DEEMED NECESSARY DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT."
WILLIAM S. ROME 8-20-82
SIGNATURE OF DEVELOPER DATE

SITE DEVELOPMENT PLAN
FOR
ALL SAINTS ROAD WATER PUMPING STATION
PROJECT NO. W-7-8093
CONTRACT NO. 44-0969
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND
DATE: March 12, 1982
SHEET 1 OF 3
SCALE AS SHOWN
DRAWING 2 OF 22



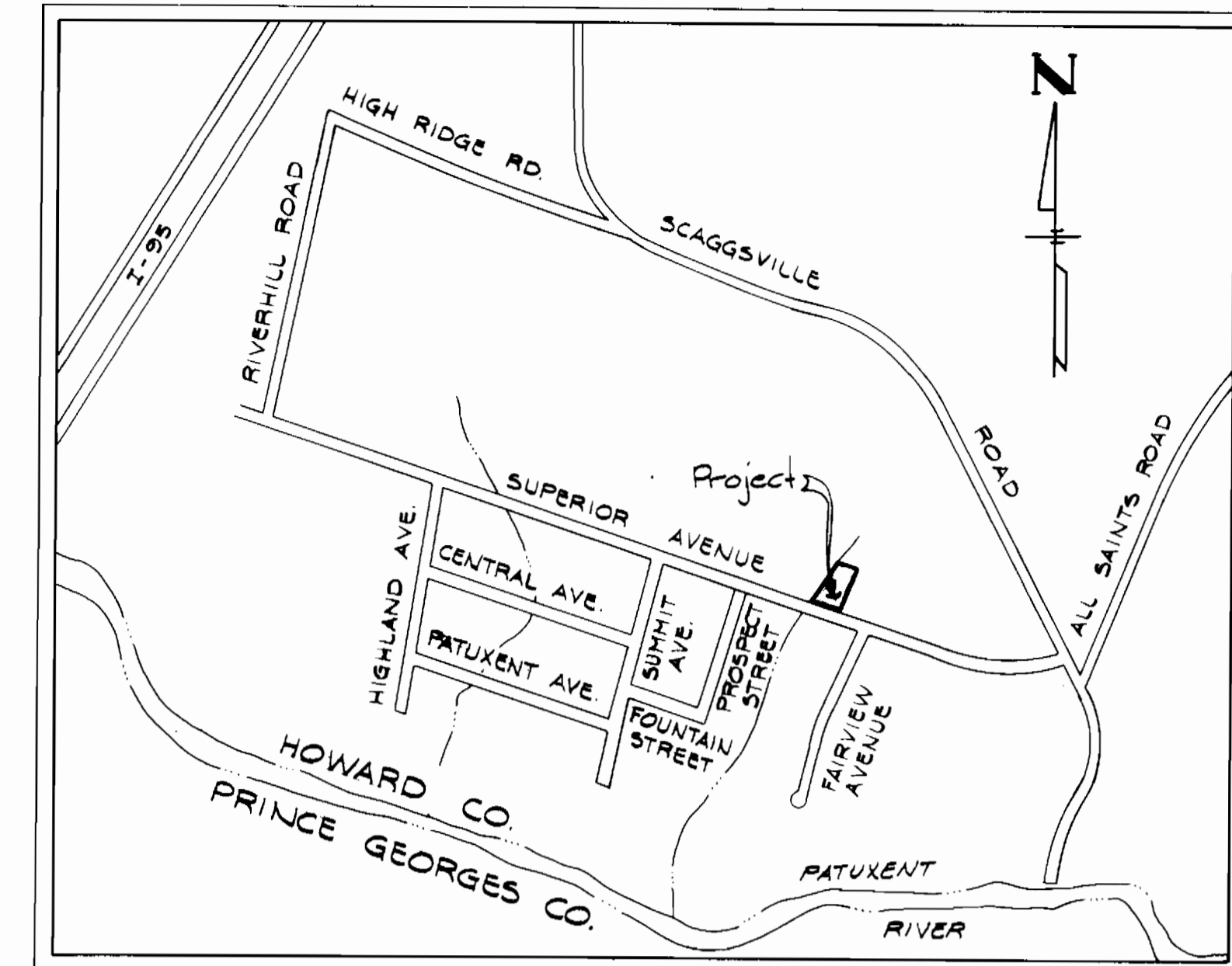
SITE ANALYSIS

Area of Site	0.3787 Ac
No. of Employees	0
Parking Required	0
Parking Provided	1
Area to be Graded	0.141 Ac
Area to be Routed	0.033 Ac
Area to be Paved	0.014 Ac
Area to be Seeded	0.16 Ac
Area to be Undisturbed	0.191 Ac
Zoned	25C
Tax Map No.	50
Roadway Speed Limit	25



DRAINAGE AREA MAP

Scale: 1" = 200'



LOCATION PLAN

Scale: 1" = 600'

RIP-RAP OUTLET SEDIMENT TRAP - See Detail Sheet 2 of 2
 Drainage Area: 2.71 Ac.
 9' Long x 13' Wide x 2.25' Deep
 177 cu. Initial Capacity
 Bottom El. 219.1
 Overflow El. 221.6
 Top of Bottom 224.6

PROPERTY OF HOWARD COUNTY DEPARTMENT OF RECREATION AND PARKS

PROPERTY OF HOWARD COUNTY, MD

PROPERTY OF MORRELL A. RIDER

PROPERTY OF BOGIE DONALD R. FURR

PROPERTY OF VERIN R. WARDLING

SITE PLAN

Scale: 1" = 20'

W.R. & A. BM# M-1 Elev. 243.95
 Cut Nail in BG & E Pole #175808.
 W.R. & A. BM# M-2 Elev. 226.54
 X - Cut in nut - Fire Hydrant.

WHITMAN REQUARDT AND ASSOCIATES
 ENGINEERS
 2315 ST. PAUL STREET
 BALTIMORE, MARYLAND
 Kenneth A. McCord, P.E. & L.S. NO. 1974

HOWARD COUNTY, MARYLAND
 OWNER AND DEVELOPER
 LIBER 1037 FOLIO 48
 TAX MAP 50 PARCEL 3
 ZONED R.S.C.

8-27-82

Note: For Sediment Control Detail and Notes - see Sheet 3 of 3

REVIEWED FOR <u>Howard</u> S.C.D. NAME	AND MEETS TECHNICAL REQUIREMENTS
<u>James M. Hale</u> 8/10/82 NAME DATE	
U.S. SOIL CONSERVATION SERVICE	
APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT	
<u>Wesley M. D. ...</u> 8/10/82 COUNTY HEALTH OFFICER DATE	

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
William T. Lane 8-10-82

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND ROADS. HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
<u>[Signature]</u> DIRECTOR DATE	
<u>[Signature]</u> CHIEF, BUREAU OF ENGINEERING DATE	
<u>[Signature]</u> CHIEF, BUREAU OF UTILITIES DATE	

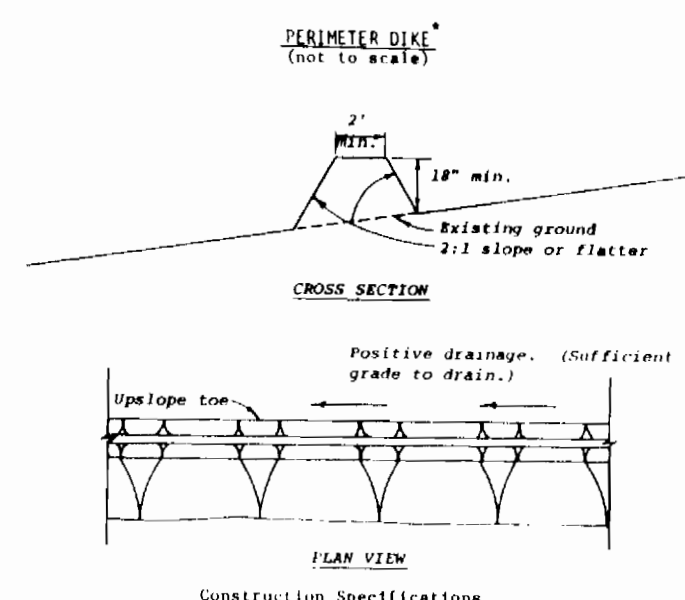
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING	
<u>[Signature]</u> PLANNING DIRECTOR DATE	
<u>[Signature]</u> CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE	

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".
James M. Hale 2/6/81 SIGNATURE OF 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.
[Signature] 8-10-82 SIGNATURE OF DEVELOPER DATE

NO.	DATE	DESCRIPTION OF REVISION

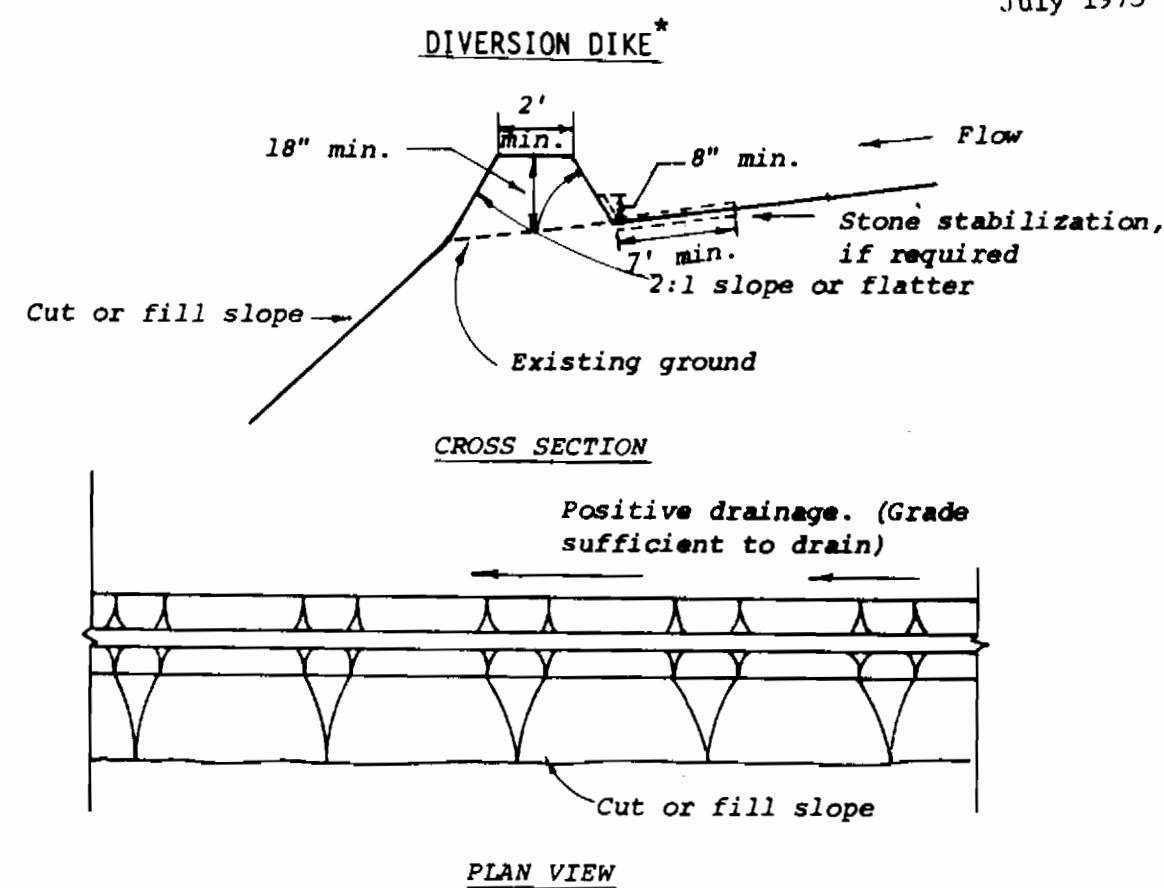
SEDIMENT CONTROL PLAN
 FOR
ALL SAINTS ROAD WATER PUMPING STATION
 PROJECT NO. W-7-8093
 CONTRACT NO. 44-0969
 ELECTION DISTRICT NO. 6
 HOWARD COUNTY, MARYLAND
 DATE March 12, 1982 SHEET 2 OF 3
 SCALE: AS SHOWN DRAWING 3 OF 22



- All dikes shall be machine compacted.
- All perimeter dikes shall have positive drainage to an outlet.
- A. Diverted runoff from a protected or stabilized upland area shall outlet directly into an undisturbed stabilized area or into a level spreader or grade stabilization structure.
- B. Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment trapping device such as a sediment trap or a sediment basin or to an area protected by any of these practices.
- Stabilization, when required, shall be done in accordance with Standard and Specifications for Grassed Waterway. The minimum area to be stabilized shall be the channel flow area.
- Periodic inspection and required maintenance shall be provided.

Standard Symbol DD

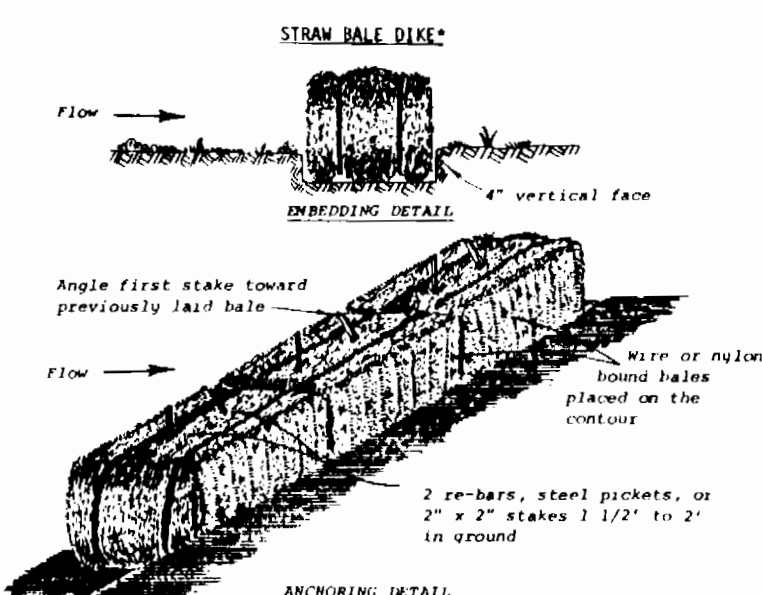
* Drainage area less than 5 acres



- All dikes shall be machine compacted.
- All diversion dikes shall have positive drainage to an outlet.
- A. Diverted runoff from a protected or stabilized area shall outlet directly to an undisturbed stabilized area or into a level spreader or grade stabilization structure.
- B. Diverted runoff from a disturbed or exposed upland area shall be conveyed to a sediment trapping device such as a sediment trap or a sediment basin or to an area protected by any of these practices.
- Stabilization, as specified by the plans, shall be: (1) in accordance with Standard and Specifications for Grassed Waterway, and the area to be stabilized shall be the channel (flow area); or (2) the flow area shall be lined with stone that meets MSHA size No. 2 or AASHTO M43 size No. 2 or 24 which is placed in a 3 inch thick layer and pressed into the soil. The area covered by the stone shall be as shown on the drawing above.
- Periodic inspection and required maintenance shall be provided.

Standard Symbol DD

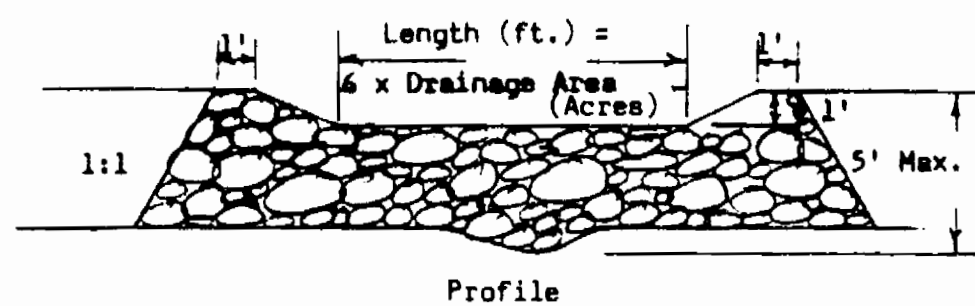
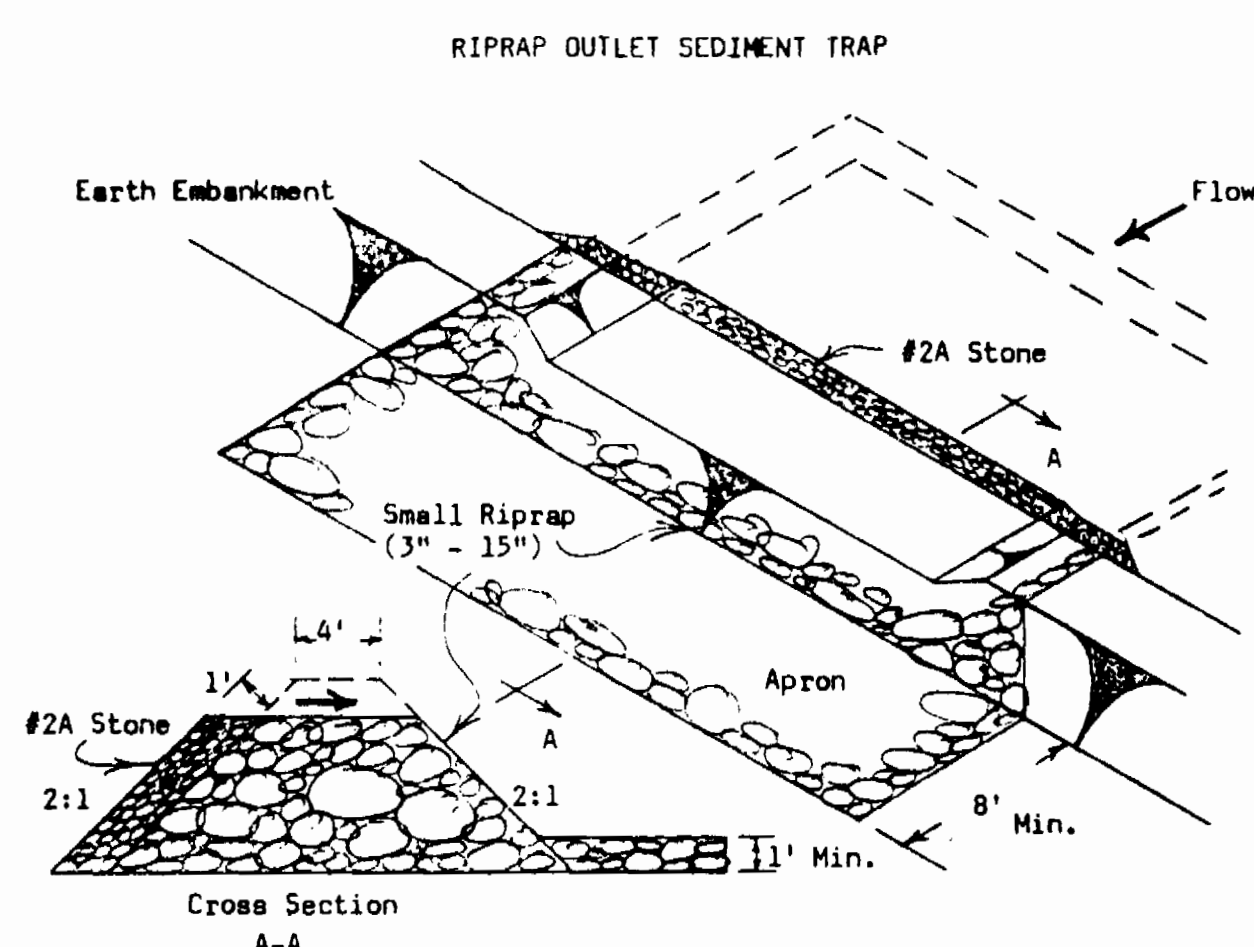
* Drainage area less than 5 acres



- Bales shall be placed in a row with ends tightly abutting the adjacent bales.
- Each bale shall be embedded in the soil a minimum of 4\"/>
- Bales shall be securely anchored in place by stakes or re-bars driven through the bales. The first stake in each bale shall be angled toward previously laid bales to force bales together.
- Inspection shall be frequent and repair or replacement shall be made promptly as needed.
- Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage.

Standard Symbol SBD

* Drainage area less than 1/2 acre.



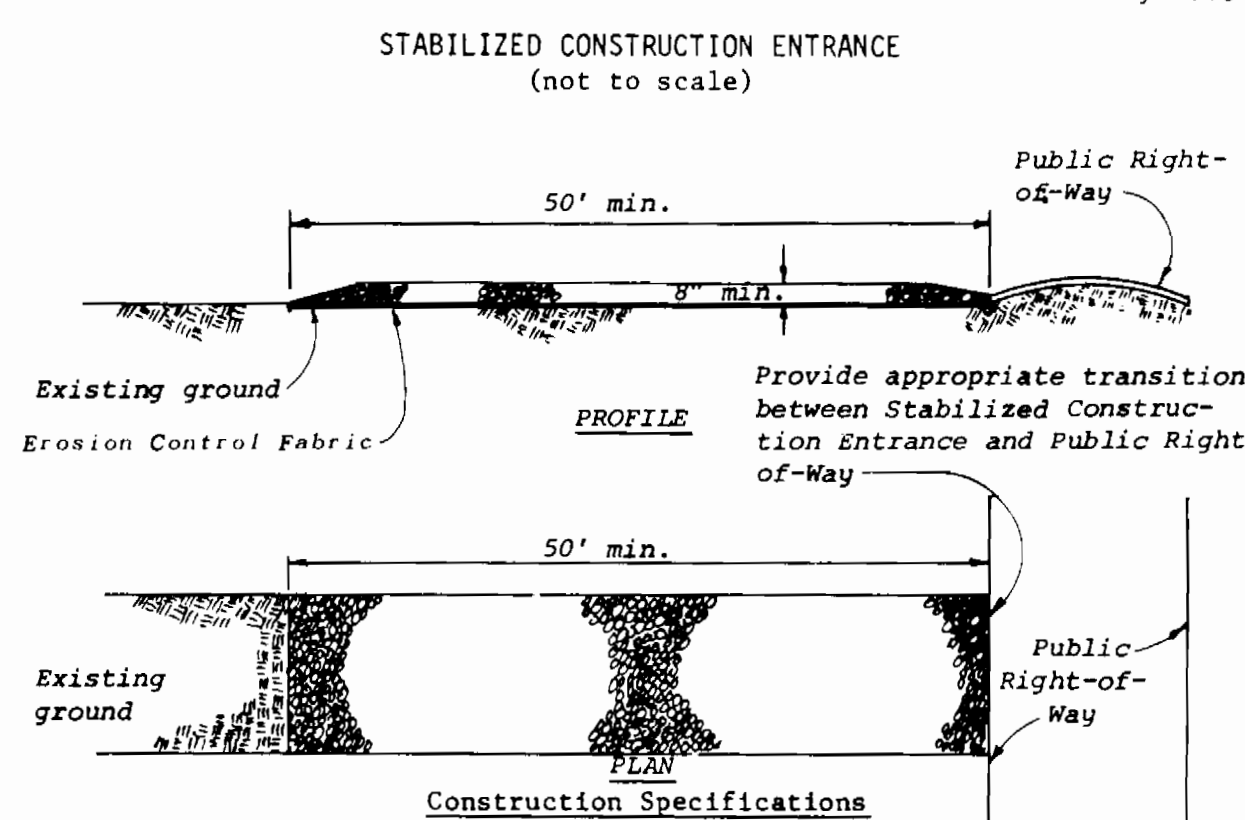
Construction Specifications

The construction specifications for this practice will be the same as the Stone Outlet Sediment Trap except for the following:

- The stone used in the outlet shall be small riprap 3" - 15", with a 1' thickness of #2-A crushed stone placed on the up-grade side of the small riprap.
- Drainage area for this practice is limited to 3 acres or less.
- Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
- Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
- The structure shall be inspected after each rain and repairs made as needed.
- Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
- The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.

SEQUENCE OF CONSTRUCTION

- Clear, grub and strip area required for Rip Rap Outlet Sediment Trap.
- Construct Rip Rap Outlet Sediment Trap and Stabilize Excess excavated material shall be disposed of off-site.
- Construct Straw Bale Dike, Diversion Dikes, Stabilized Construction Entrance and Stone Ditch Swale.
- Construct Storm Drain.
- Construct Building and Pipe Lines.
- Complete site work within confines of Diversion Dike.
- Remove Stabilized Construction Entrance and construct road.
- Remove temporary sediment trap only after site is completely stabilized with ground cover.
- Complete Storm Drain System from Manhole to Stream as shown on Site Development Plan and Sod.



- Stone size - Use MSHA size No. 2 (2-1/2" to 1") or AASHTO designation M43, size No. 2 (2-1/2" to 1-1/2"). Use crushed stone.
- Length - As effective, but not less than 50 feet.
- Thickness - Not less than eight (8) inches.
- Width - Not less than full width of all points of ingress or egress.
- Washing - When necessary, wheels shall be cleaned to remove sediment prior to entrance onto public right-of-way. When washing is required, it shall be done on an area stabilized with crushed stone which drains into an approved sediment trap or sediment basin. All sediment shall be prevented from entering any storm drain, ditch, or watercourse through use of sand bags, gravel, boards or other approved methods.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.

Standard Symbol SCE

SEDIMENT CONTROL NOTES:

- The Developer shall notify the Howard County Office of Inspections and Permits at least 24 Hours prior to beginning any construction shown hereon (992-2433).
- Dikes, Sediment Traps, Etc., to be constructed prior to any onsite grading or disturbance to any existing surface material and are to be stabilized as soon as constructed.
- All sediment structures to remain in place until permission for their removal has been obtained from the Howard County Office of Inspections and Permits (992-2433).
- All Graded Areas shall be stabilized by seeding and mulching in accordance with the following:
 - SITE PREPARATION:**
 - Harrow or Disc. in areas proposed to be seeded with the following materials at the specified rate, to a depth of 3"
 - Pulverized Limestone at 1-1/2 Tons/Acre.
 - Commercial Fertilizer 5-10-5 at 3/Tons/Acre.
 - Super Phosphate of 600 LBS./Acre.
 - SEEDING:**
 - Sow the following seed mixture.
 - Temporary: Italian Rye Grass (60 LBS/Acre).
 - Permanent: Ky.31 Tall Fescue 100% (125 LBS/Acre).
 - The seeded area shall then be raked with a Yoke Rake (Minimum of 2 Passes), covered and compacted with cultipacker or other approved method.
 - MULCHING:**
 - Seeded areas shall be uniformly mulched immediately after seeding with unweathered small grain straw at the rate of 1-1/2 to 2 tons/acre.
 - Tie-Mulch sown with liquid asphalt or emulsified asphalt at 0.04 Gal./S.Y. on mulch netting.
- Access road shall be gravel surface immediately after grading to prevent soil erosion.
- All areas disturbed by grading shall be seeded & mulched with temporary seed mixture.

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL STREET
BALTIMORE, MARYLAND
KENNETH A. MCCORD P.E. & L.S. NO. 1974

HOWARD COUNTY, MARYLAND
OWNER AND DEVELOPER
LIBER 1037 FOLIO 48
TAX MAP 50 PARCEL 3
ZONED R.S.C.

8-27-82

REVIEWED FOR Howard S.C.D. NAME
AND MEETS TECHNICAL REQUIREMENTS
James A. Smith DATE 8-20-82
U.S. SOIL CONSERVATION SERVICE
APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT
[Signature] DATE [Date]
COUNTY HEALTH OFFICER

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
William T. Rome 8-20-82

APPROVED FOR STORM DRAINAGE SYSTEMS AND ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
[Signature]
DIRECTOR DATE
[Signature] DATE
CHIEF, BUREAU OF ENGINEERING
[Signature] DATE
CHIEF, BUREAU OF UTILITIES

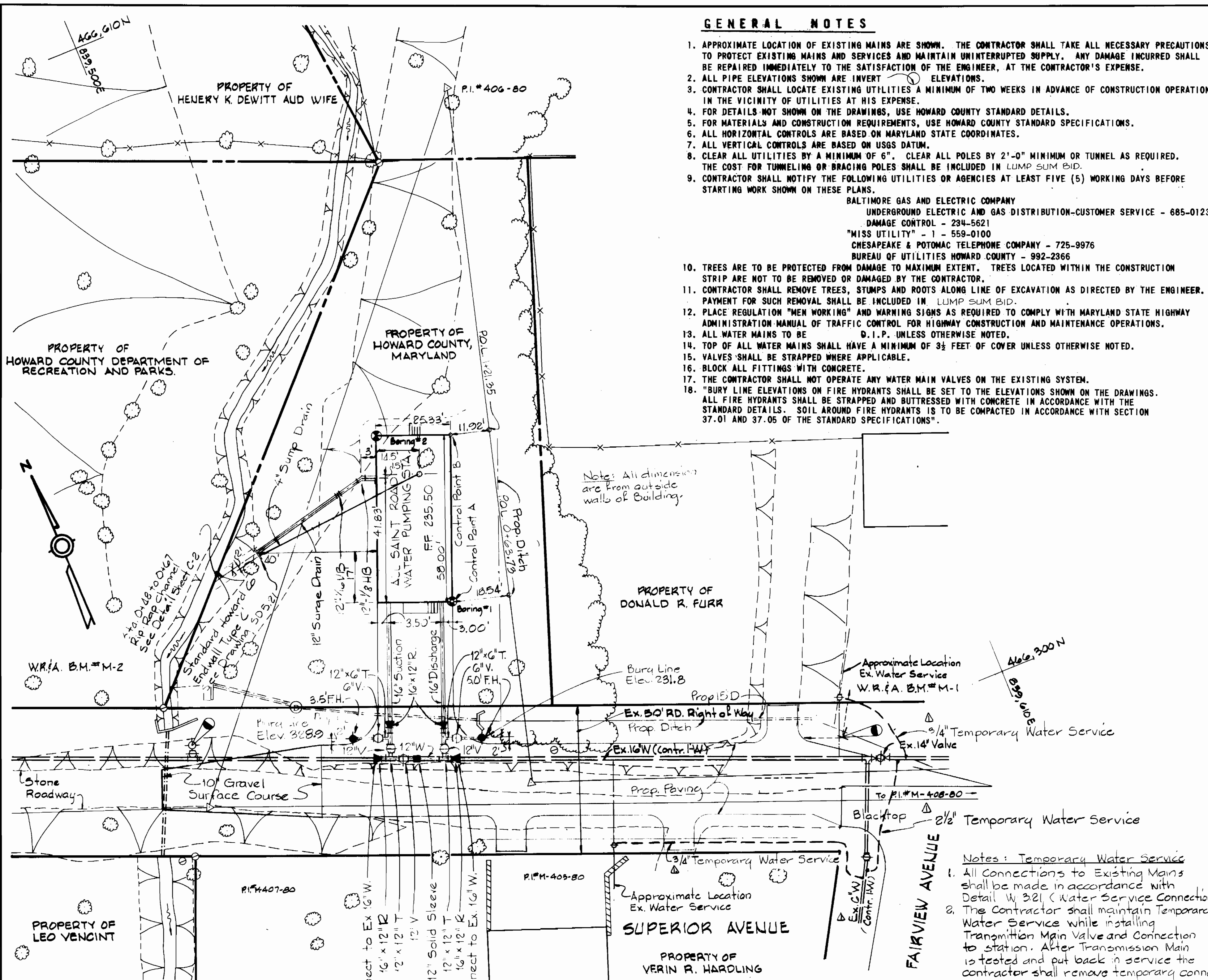
APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING
[Signature] 7-24-82
PLANNING DIRECTOR DATE
[Signature] DATE
CHIEF, DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION

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."
James A. Smith 7/24/81
SIGNATURE OF ENGINEER DATE

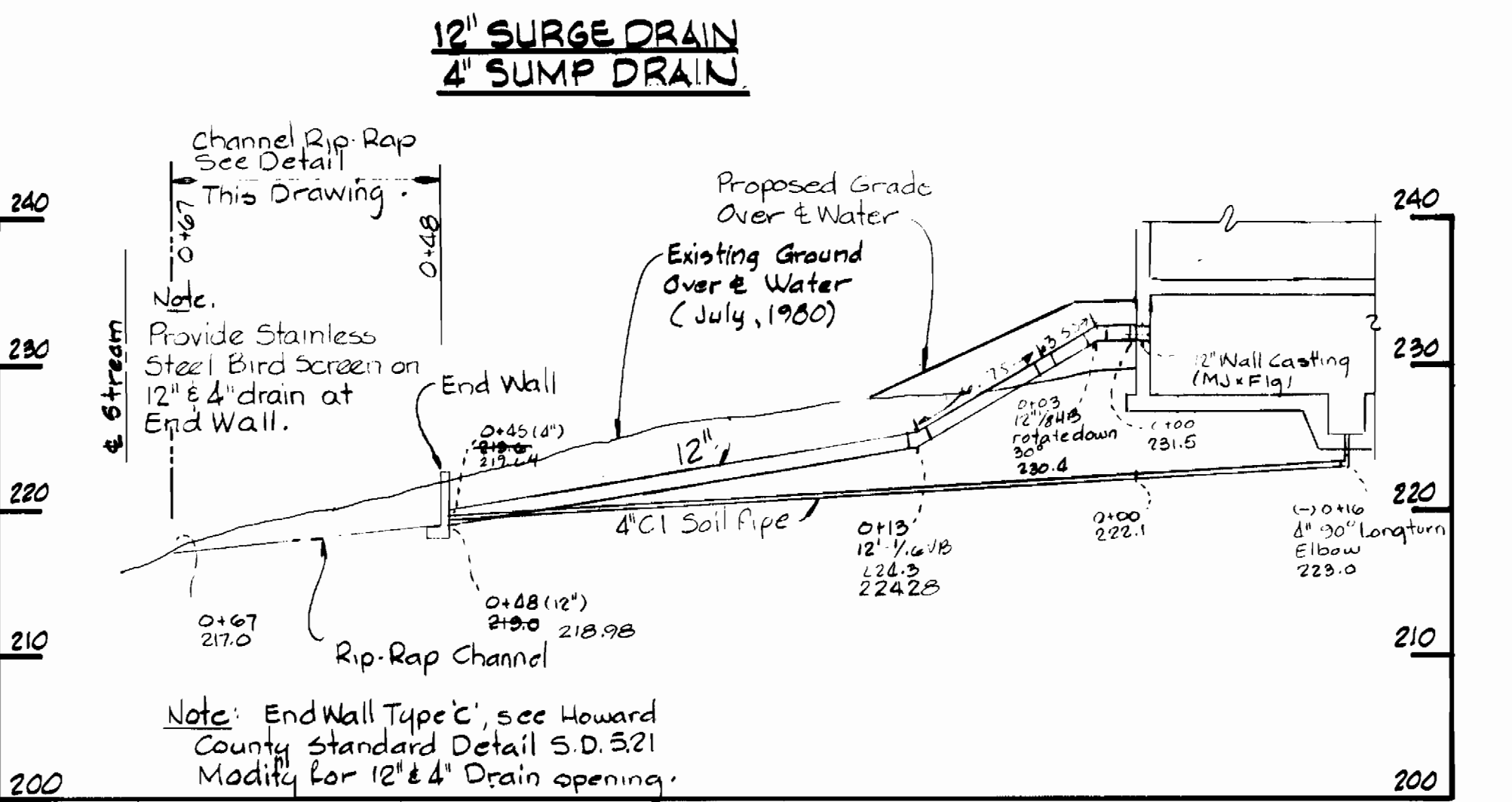
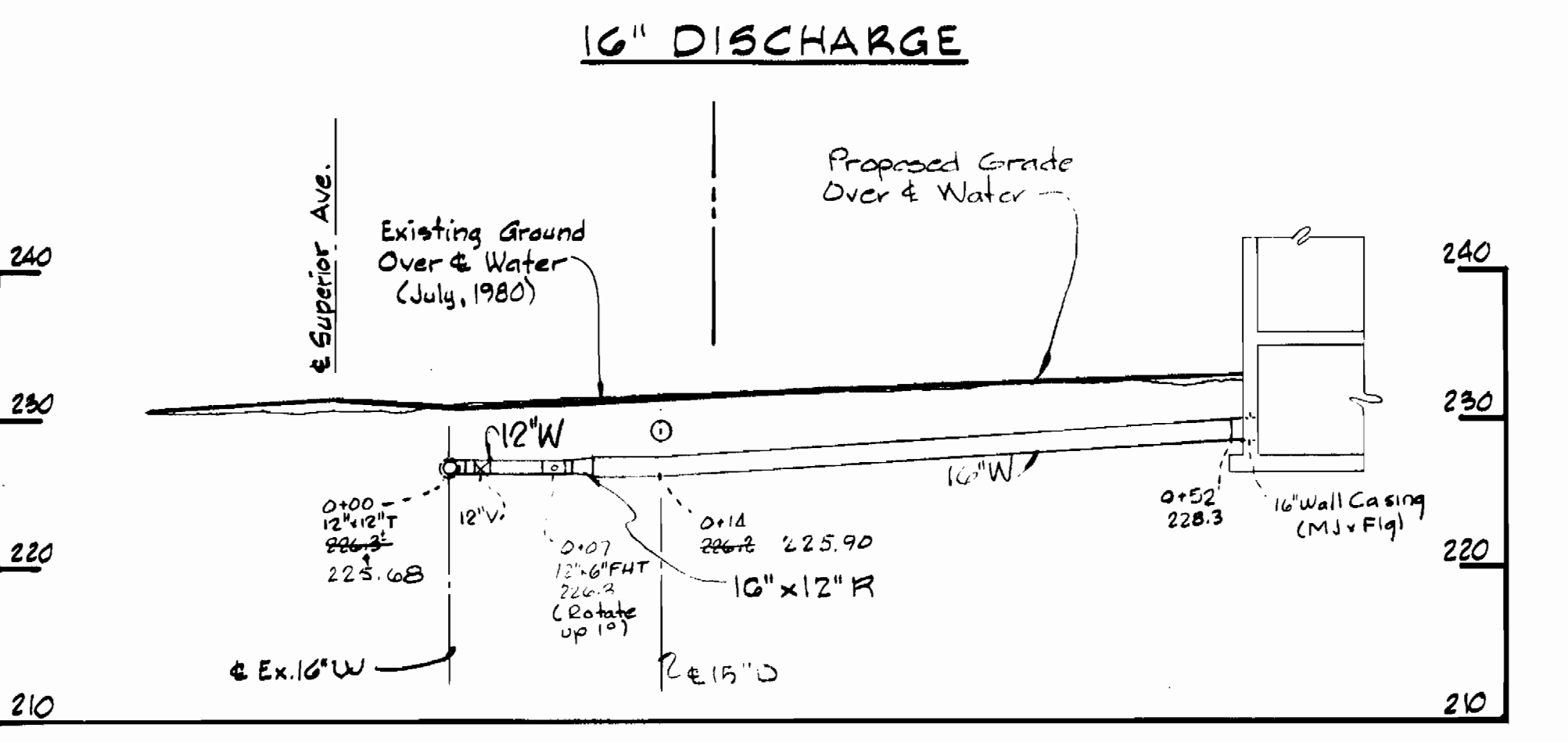
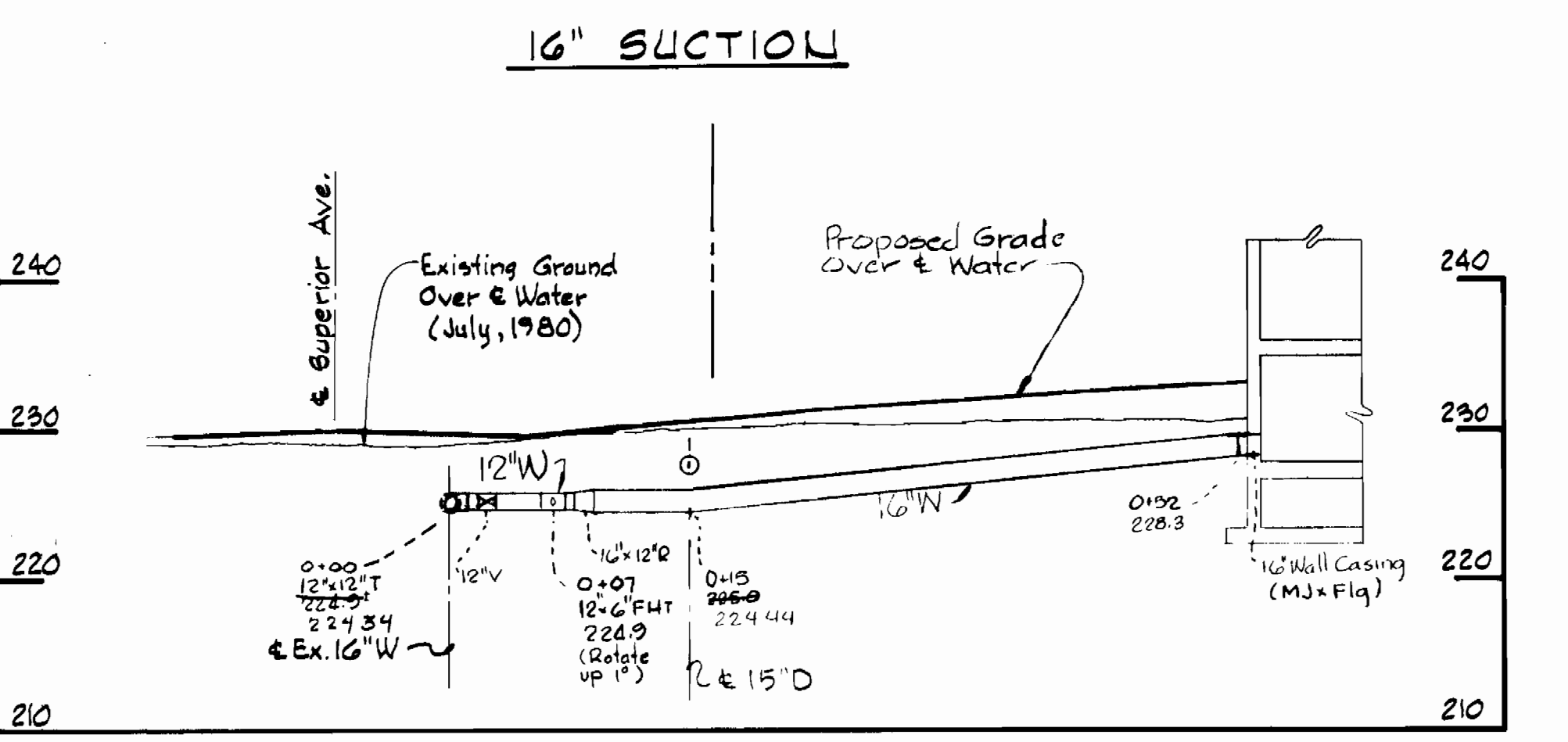
CERTIFICATION BY THE DEVELOPMENT
"I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS OF DEVELOPMENT AND PLANS FOR EROSION AND SEDIMENT CONTROL AND I ALSO AUTHORIZE PERIODIC ON SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS ARE DEEMED NECESSARY" DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT.
[Signature] 8-20-82
SIGNATURE OF DEVELOPER DATE

NO.	DATE	DESCRIPTION OF REVISION

SEDIMENT CONTROL DETAILS
FOR
ALL SAINTS ROAD WATER PUMPING STATION
PROJECT NO. W-7-8093
CONTRACT NO. 44-0969
ELECTION DISTRICT NO. 6
HOWARD COUNTY, MARYLAND
DATE: March 1985
SHEET 3 OF 3



- ### GENERAL NOTES
- APPROXIMATE LOCATION OF EXISTING MAINS 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 TO THE SATISFACTION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
 - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
 - CONTRACTOR SHALL LOCATE EXISTING UTILITIES A MINIMUM OF TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS IN THE VICINITY OF UTILITIES AT HIS EXPENSE.
 - FOR DETAILS NOT SHOWN ON THE DRAWINGS, USE HOWARD COUNTY STANDARD DETAILS.
 - FOR MATERIALS AND CONSTRUCTION REQUIREMENTS, USE HOWARD COUNTY STANDARD SPECIFICATIONS.
 - ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
 - ALL VERTICAL CONTROLS ARE BASED ON USGS DATUM.
 - CLEAR ALL UTILITIES BY A MINIMUM OF 6". CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED.
 - THE COST FOR TUNNELING OR BRACING POLES SHALL BE INCLUDED IN LUMP SUM BID.
 - CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.
 - BALTIMORE GAS AND ELECTRIC COMPANY
 - UNDERGROUND ELECTRIC AND GAS DISTRIBUTION-CUSTOMER SERVICE - 685-0123
 - DAMAGE CONTROL - 234-5621
 - "MISS UTILITY" - 1 - 559-0100
 - CHESAPEAKE & POTOMAC TELEPHONE COMPANY - 725-9976
 - BUREAU OF UTILITIES HOWARD COUNTY - 992-2366
 - TREES ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
 - CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION AS DIRECTED BY THE ENGINEER. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN LUMP SUM BID.
 - PLACE REGULATION "MEN WORKING" AND WARNING SIGNS AS REQUIRED TO COMPLY WITH MARYLAND STATE HIGHWAY ADMINISTRATION MANUAL OF TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS.
 - ALL WATER MAINS TO BE D.I.P. UNLESS OTHERWISE NOTED.
 - TOP OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3 1/2 FEET OF COVER UNLESS OTHERWISE NOTED.
 - VALVES SHALL BE STRAPPED WHERE APPLICABLE.
 - BLOCK ALL FITTINGS WITH CONCRETE.
 - THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING SYSTEM.
 - "BURY LINE ELEVATIONS ON FIRE HYDRANTS SHALL BE SET TO THE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE STRAPPED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS. SOIL AROUND FIRE HYDRANTS IS TO BE COMPACTED IN ACCORDANCE WITH SECTION 37.01 AND 37.05 OF THE STANDARD SPECIFICATIONS".



Notes: Temporary Water Service

- All connections to Existing Mains shall be made in accordance with Detail W-321 (Water Service Connection).
- The Contractor shall maintain Temporary Water Service while installing Transmission Main Valve and Connection to station. After Transmission Main is tested and put back in service the contractor shall remove temporary connections.

PROFILES
Scale: H: 1" = 10'
V: 1" = 10'



Kenneth A. McLeod

All Saint Road Water Pumping Station
Contract No. 44-0969
Project No. W-7-8093

No.	Date	Revision
Δ	12-6-82	Revised Size of Ex. Water in Fairview and Added Temporary Water Service

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert M. Swanger
DIRECTOR OF PUBLIC WORKS - DATE 8-10-82
CHIEF - BUREAU OF UTILITIES - DATE

Allen J. Brown
CHIEF - BUREAU OF ENGINEERING - DATE 8/14/82
CHIEF - UTILITIES DIVISION - DATE

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

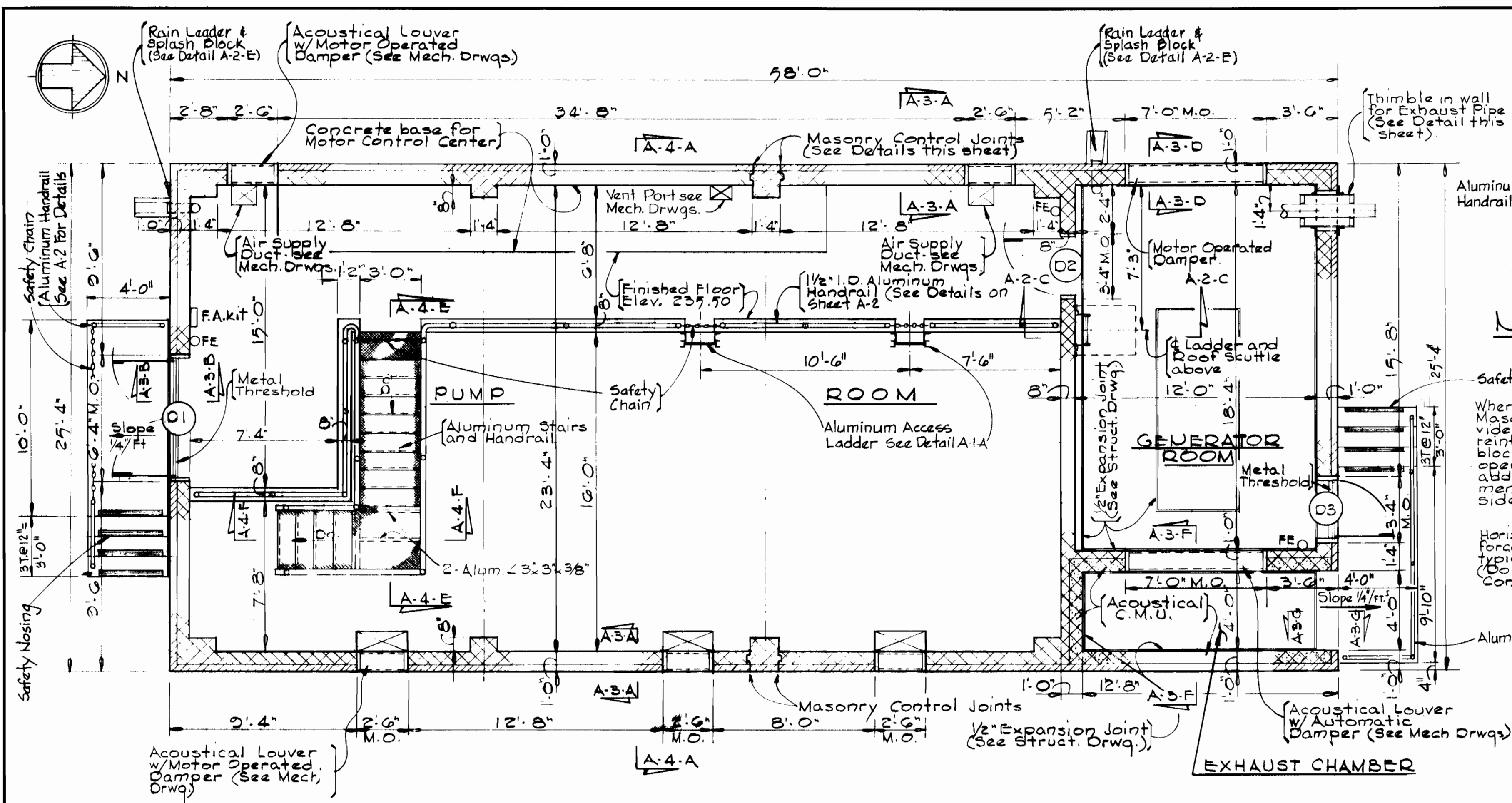
CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

PLAN & PROFILES OF
WATER MAINS

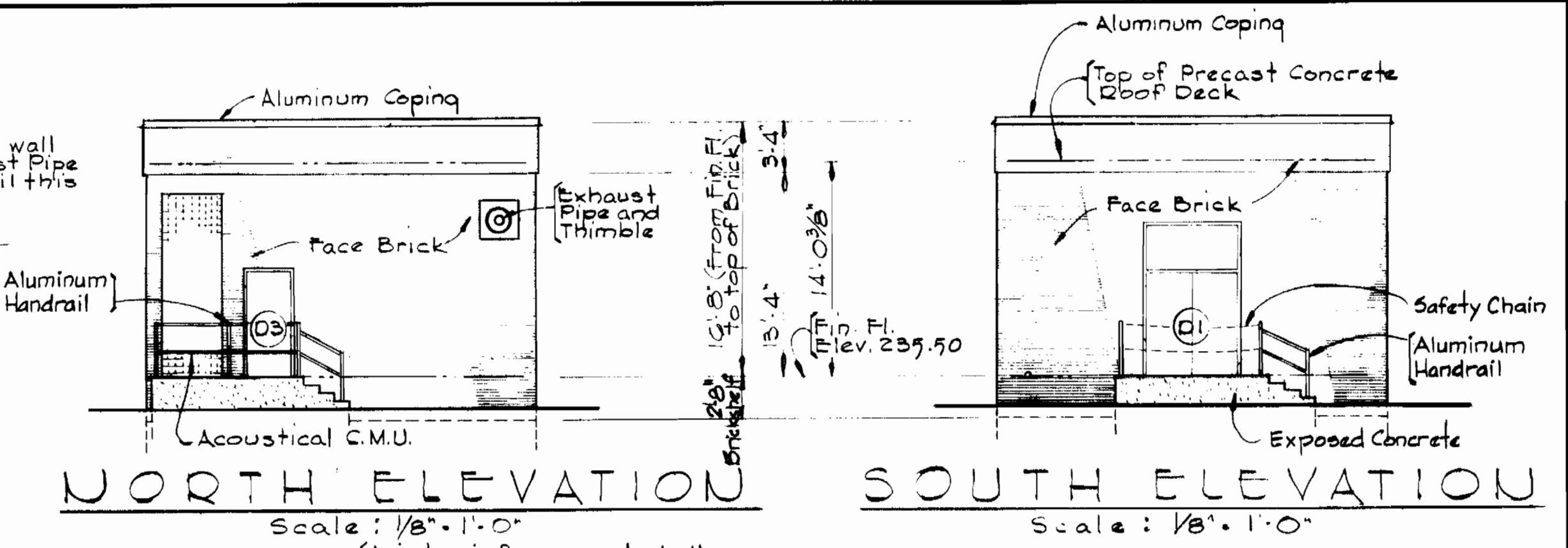
ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 5 OF 22
SCALE AS SHOWN
30-466-805
41-NE 15-1
FB-6480

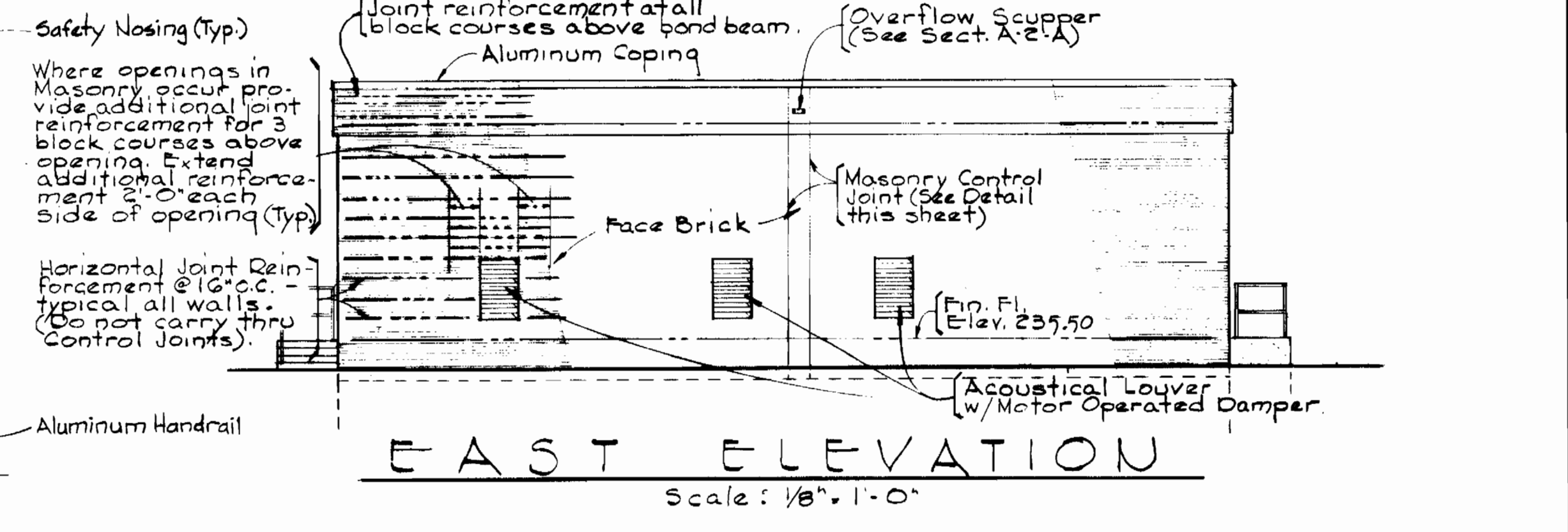
0969/5 W



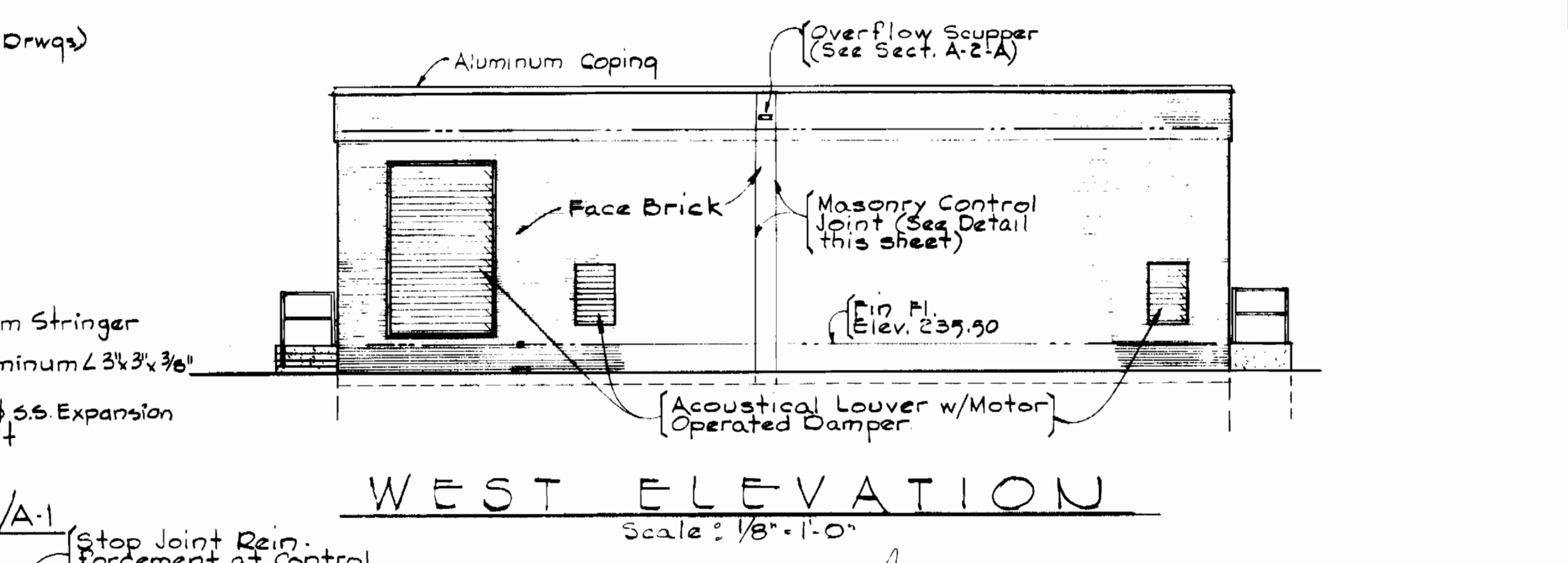
PLAN - OPERATING LEVEL
Scale: 1/4" = 1'-0"



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



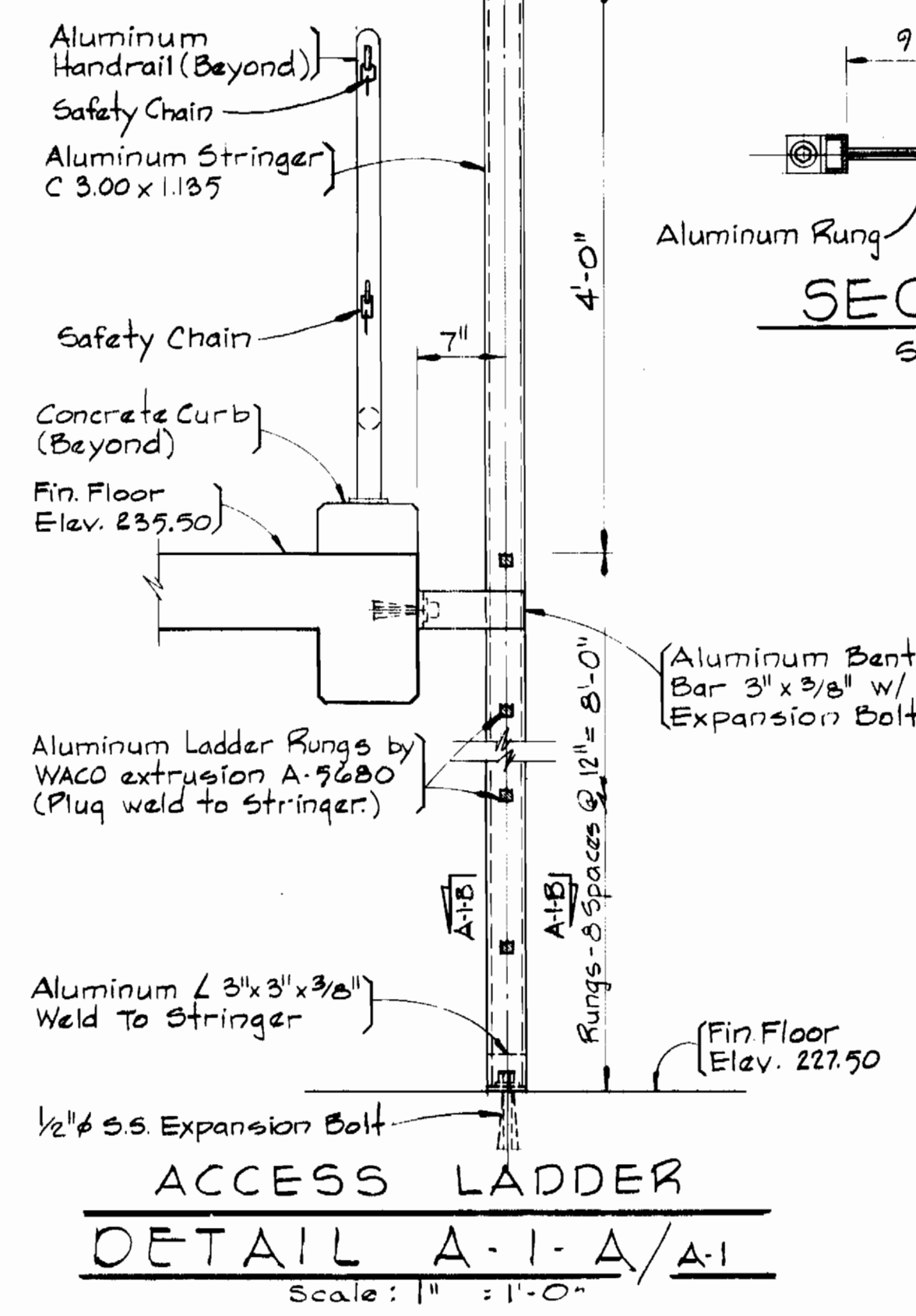
EAST ELEVATION
Scale: 1/8" = 1'-0"



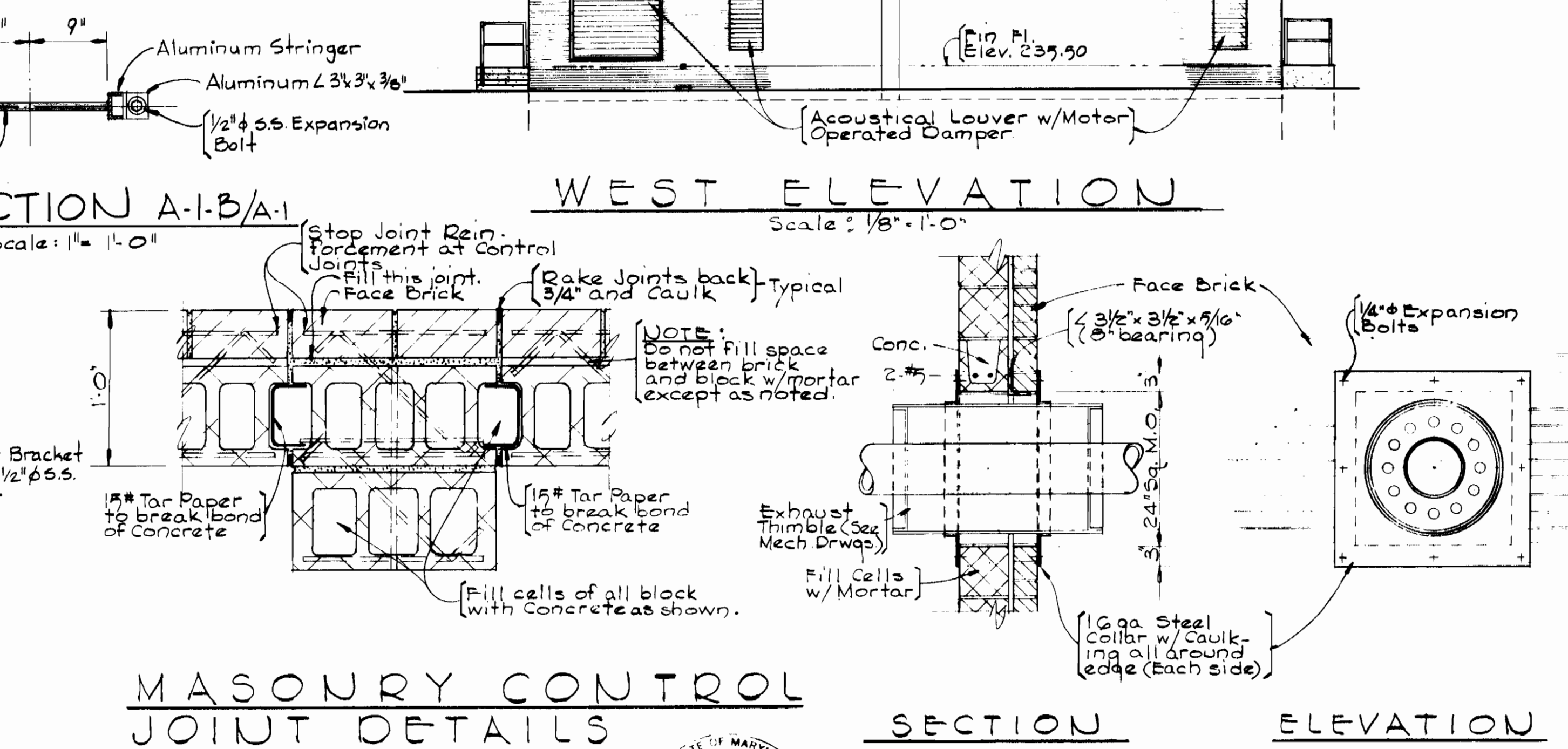
WEST ELEVATION
Scale: 1/8" = 1'-0"

FINISH SCHEDULE				
ROOM LOCATION	LOCATION & CONSTRUCTION MATERIAL	FINISH MATERIAL	COLOR	REMARKS
PUMP AND GENERATOR ROOMS	Walls - Concrete Masonry Units	Epoxy Paint (See Specs)	Tnemec #2022 Parchment	Base of Wall (only where there is a floor slab) - bottom 8" shall be Tnemec #2023 Stoneridge color.
	Ceiling - Precast Concrete Plank	Epoxy Paint (See Specs)	Tnemec #2022 Parchment	
	Floor - Concrete	Clear Floor Hardener	Natural	
	Door & Frame, DE and Crane Beams & Rails - Ferrous Metal	Alkyd Paint (See Specs)	Tnemec #2023 Stoneridge	
EXHAUST CHAMBER	Edge of Concrete Base Under Motor Control Center	Epoxy Paint (See Specs)	Tnemec #2022 Parchment	
	Walls - Acoustical Concrete Masonry Units	Epoxy Paint (See Specs)	Tnemec #2022 Parchment	Do not paint any brick. Base of wall same as above.
	Ceiling - Precast Concrete Plank	Epoxy Paint (See Specs)	Tnemec #2022 Parchment	
	Floor - Concrete	Clear Floor Hardener	Natural	

Safety Nosings shall be equivalent to 3" wide Wooster Type 101, safe T Metal style AX.
Safety Chains shall be galv. wrought iron, 3/16" dia, w/ 12 links per foot and S.S. Snap @ each end. Eye bolts shall be galv. 3/8" dia bolt w/ 3/4" dia eye. Provide 2 chains, 2" longer than opening @ each opening.



ACCESS LADDER DETAIL A-1-A/A-1
Scale: 1" = 1'-0"



MASONRY CONTROL JOINT DETAILS Scale: 1/2" = 1'-0"
SECTION ELEVATION EXHAUST PIPE WALL THIMBLE DETAIL Scale: 3/4" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works - DATE
Chief - Bureau of Engineering - DATE
Chief - Bureau of Utilities - DATE

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

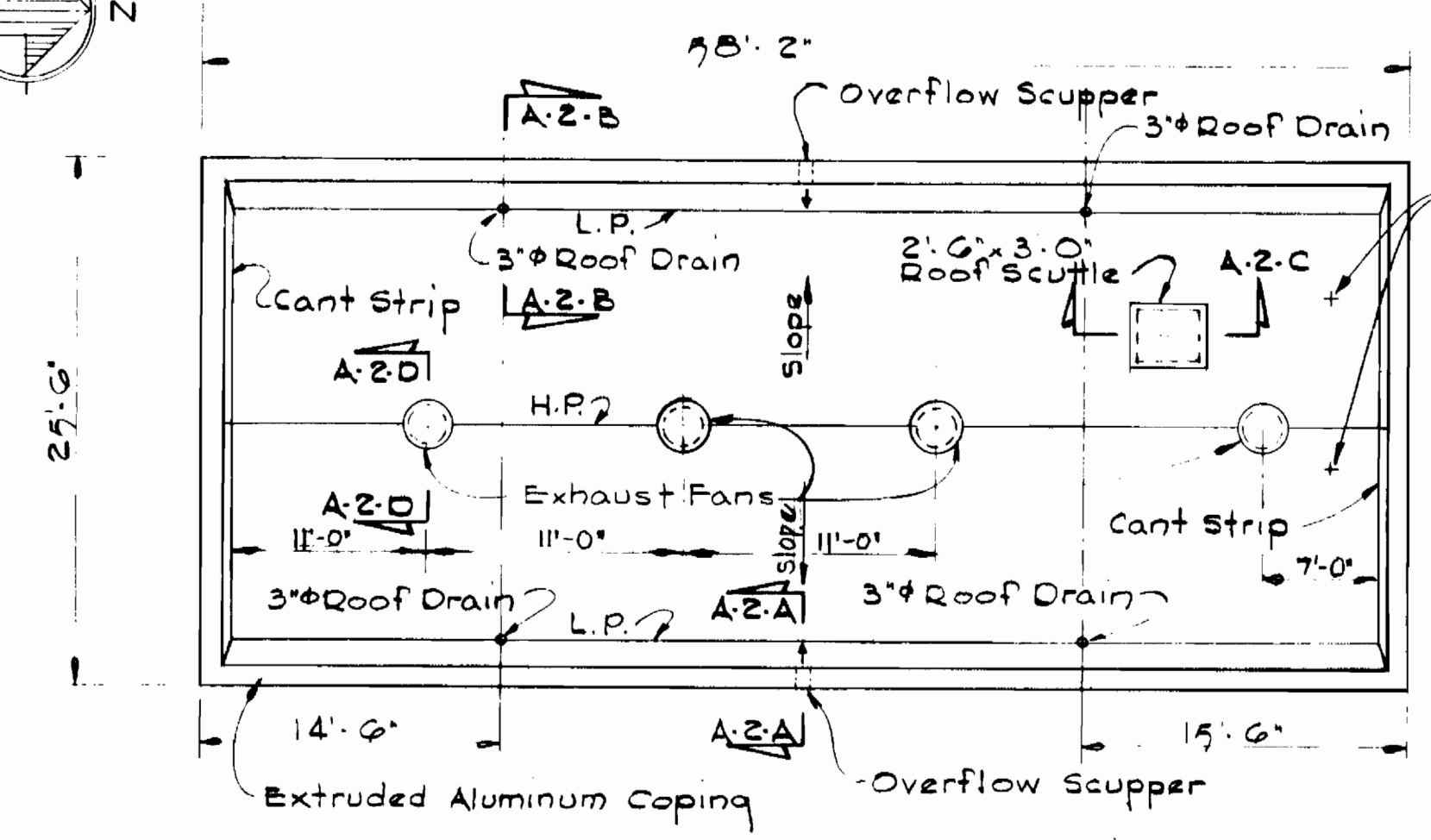
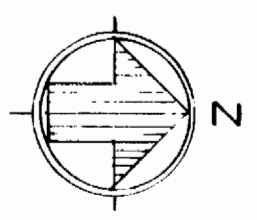
CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

PLANS AND ELEVATIONS

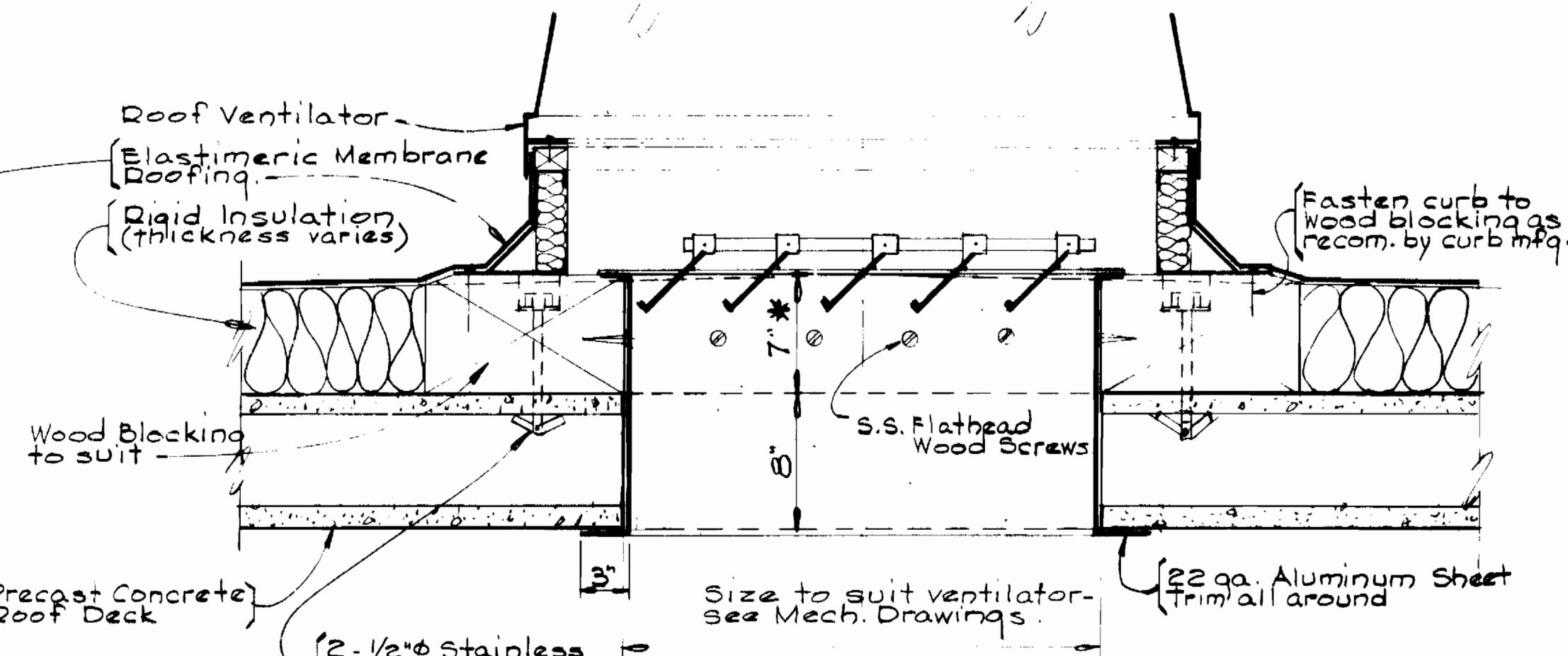
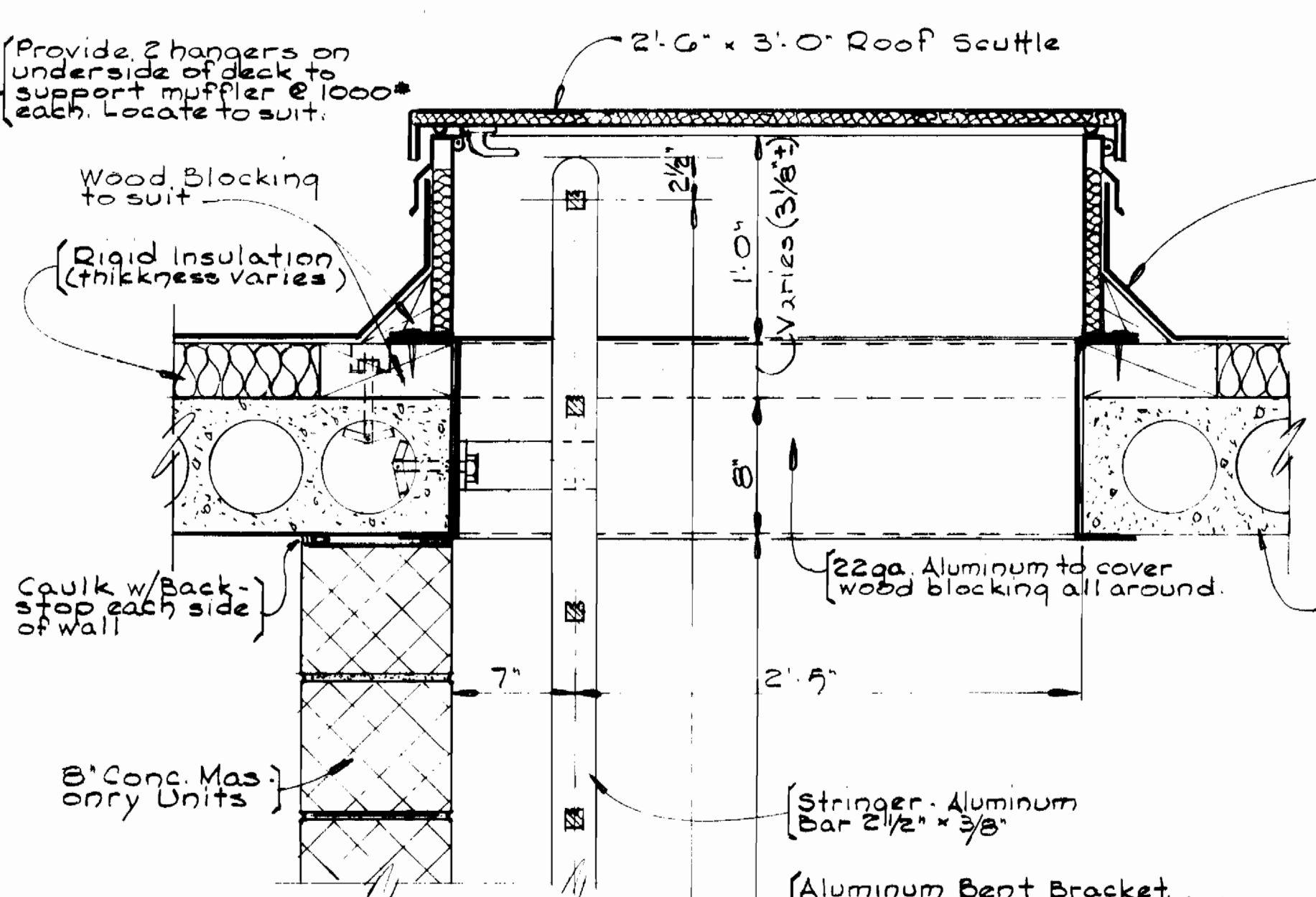
ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 6 OF 22
SCALE AS SHOWN

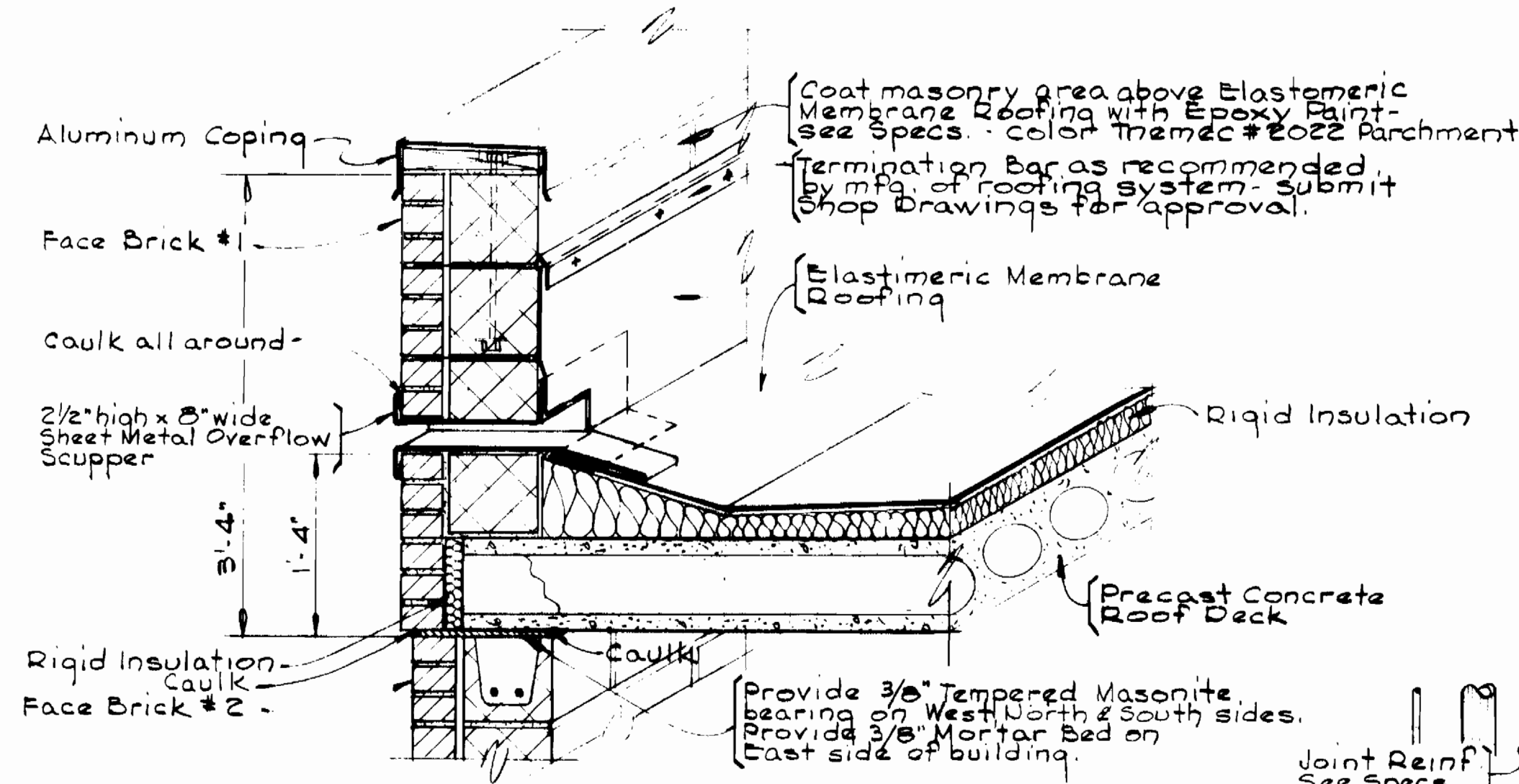
076716 W



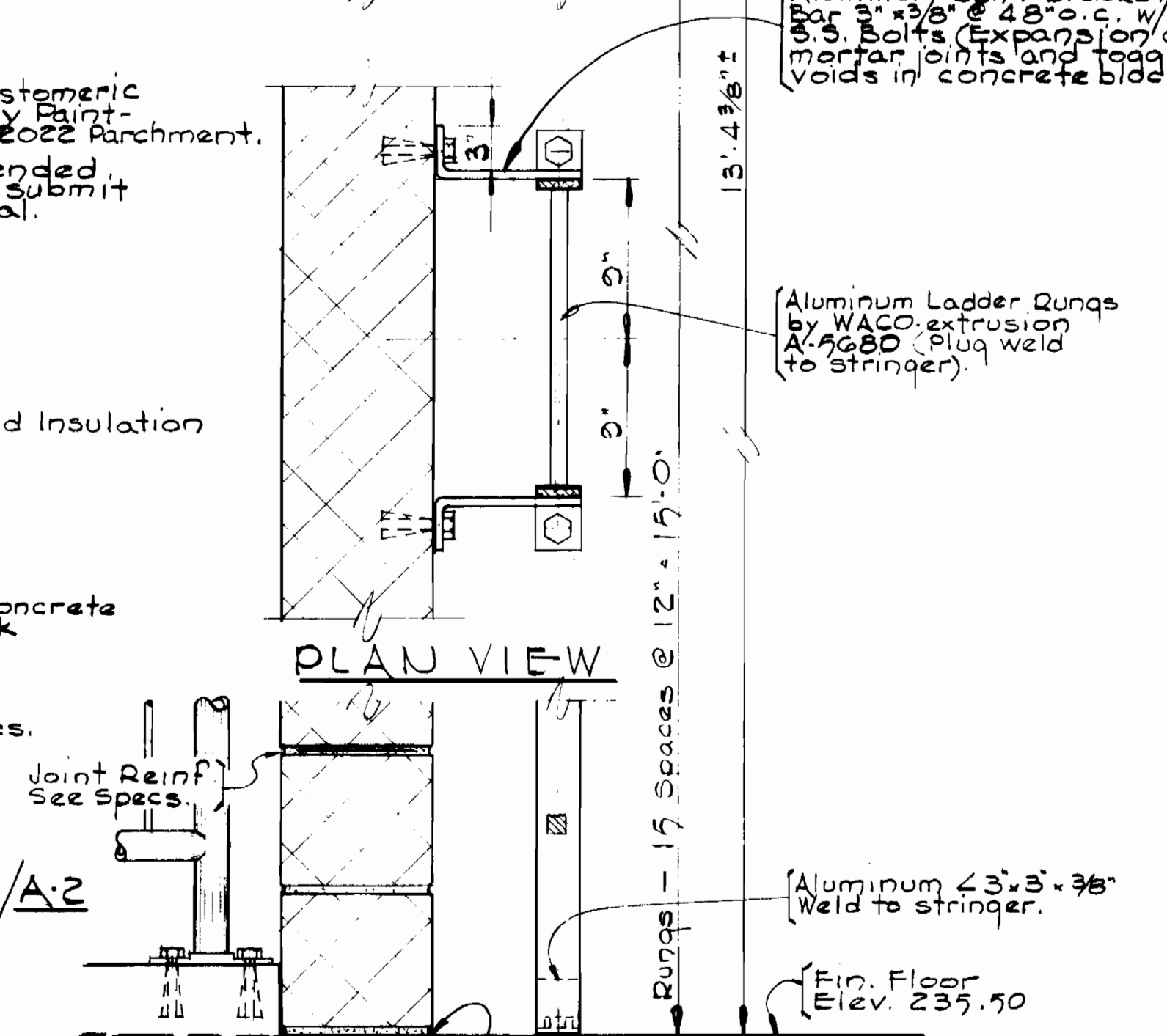
ROOF PLAN
Scale: 1/8" = 1'-0"



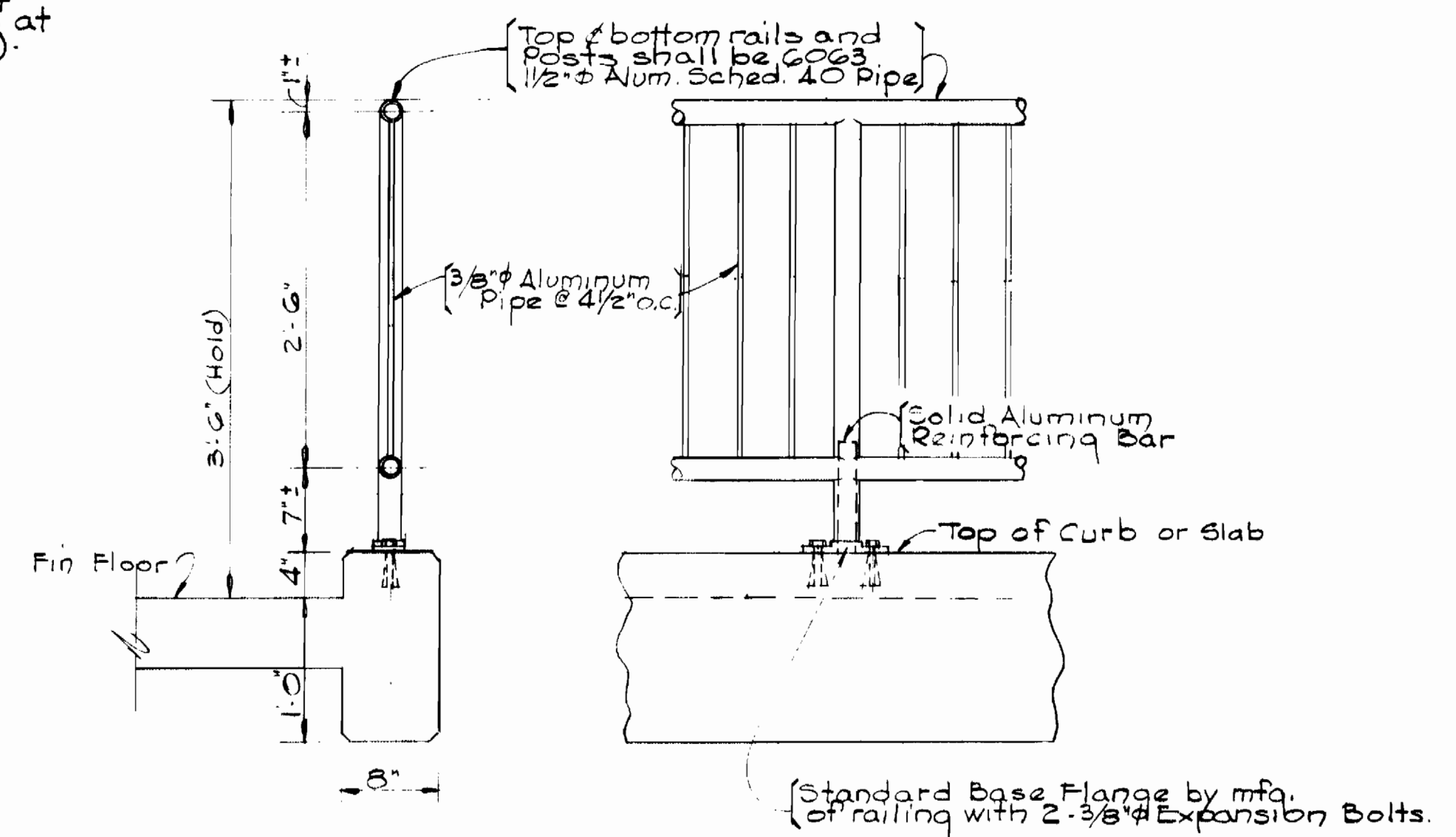
SECTION A-2-D/A-2
Scale: 1/2" = 1'-0"



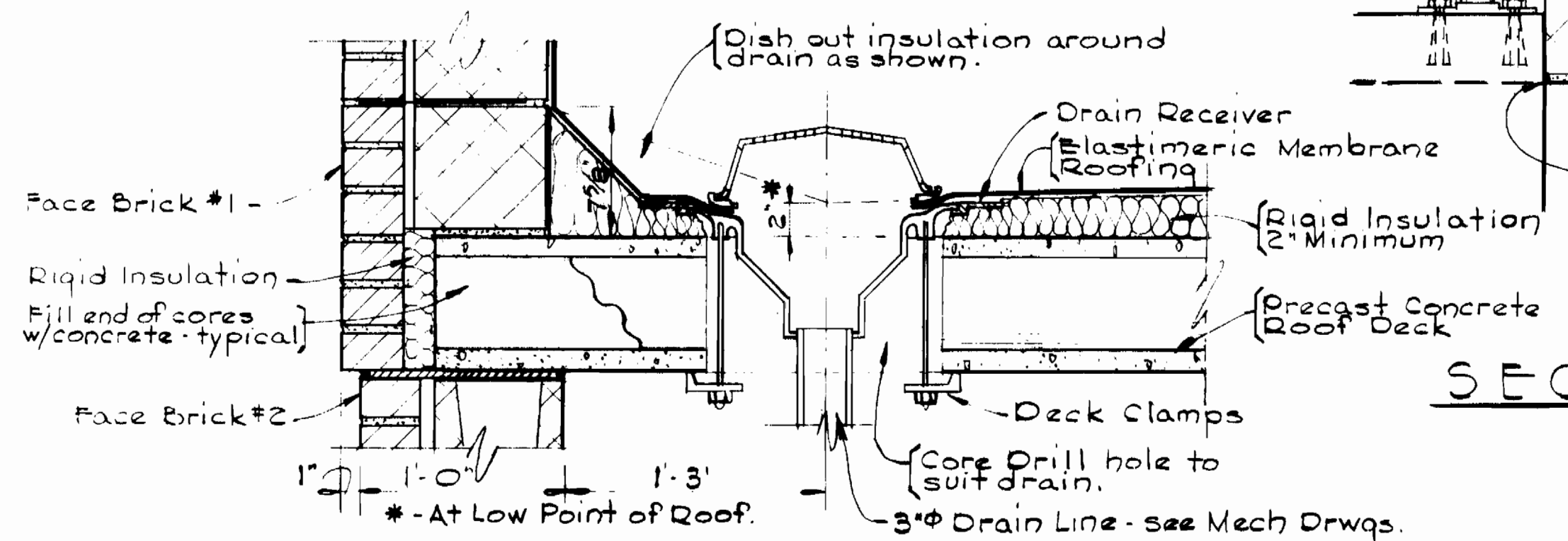
ISOMETRIC SECTION A-2-A/A-2
Scale: 1" = 1'-0"



PLAN VIEW

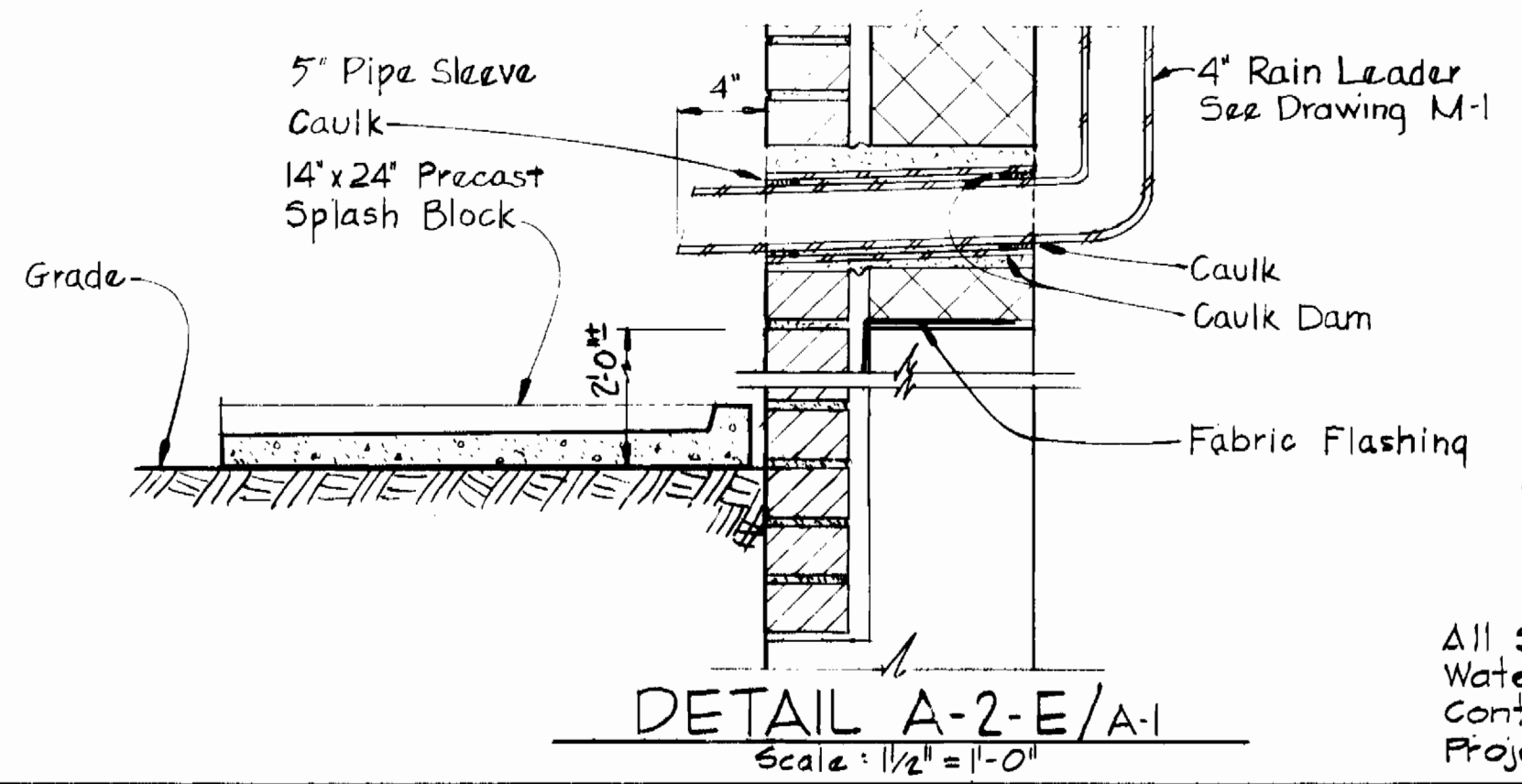


SECTION ELEVATION ALUMINUM HANDRAIL DETAILS
Scale: 1" = 1'-0"

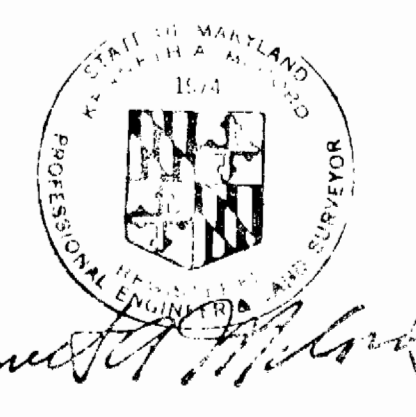


SECTION A-2-B/A-2
Scale: 1/2" = 1'-0"

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



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



All Saints Road
Water Pumping Station
Contract No. 44-0969
Project No. W-7-8093

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Henry F. Newman 8/10/82
DIRECTOR OF PUBLIC WORKS - DATE
Robert H. Berger 8-9-82
CHIEF - BUREAU OF UTILITIES - DATE
Alfred L. Brown 8/14/82
CHIEF - UTILITIES DIVISION - DATE

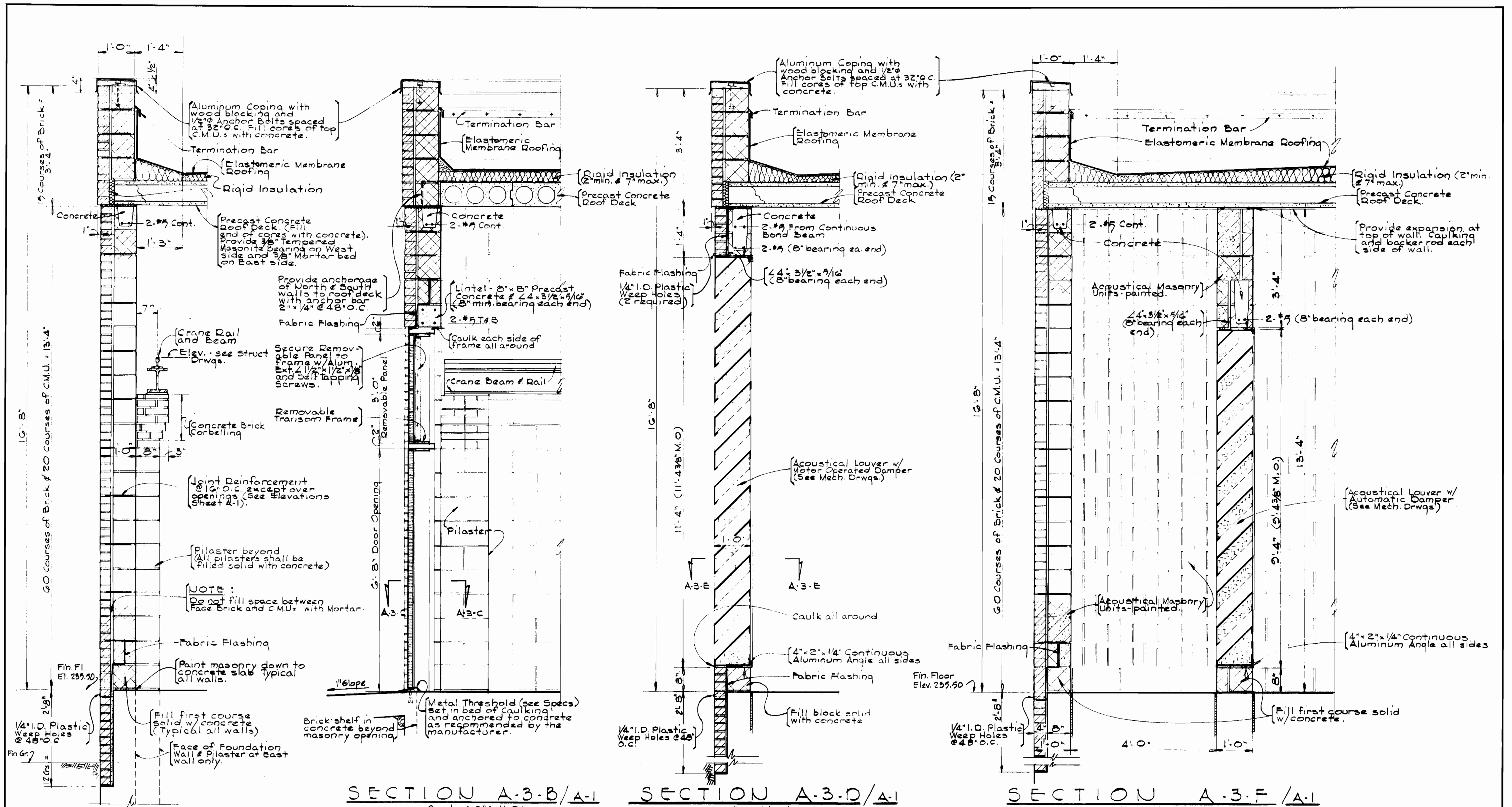
WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

ROOF PLANS, SECTIONS
AND DETAILS

ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 7 OF 22
SCALE AS SHOWN

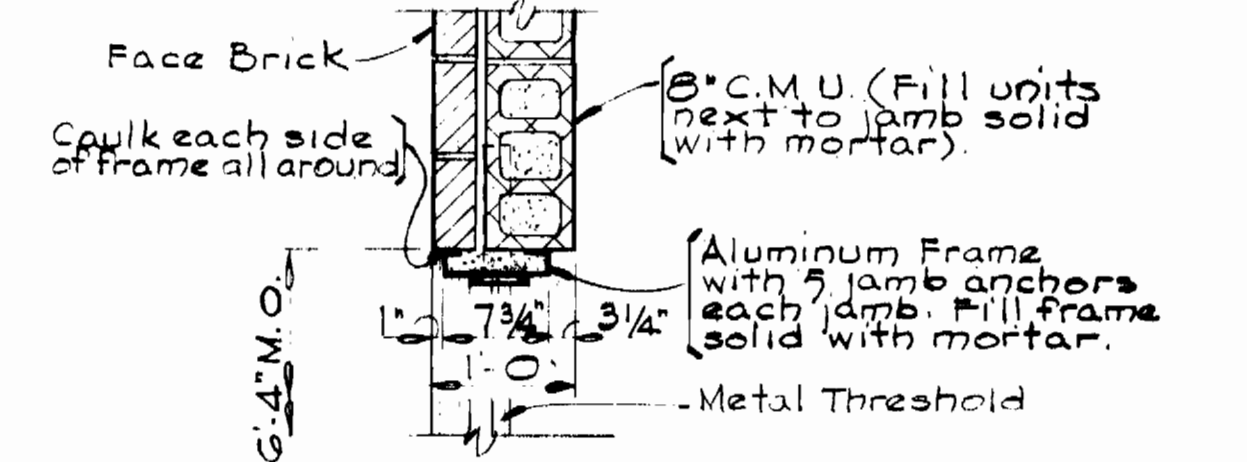


SECTION A-3-A/A-1
Scale: 3/4" = 1'-0"

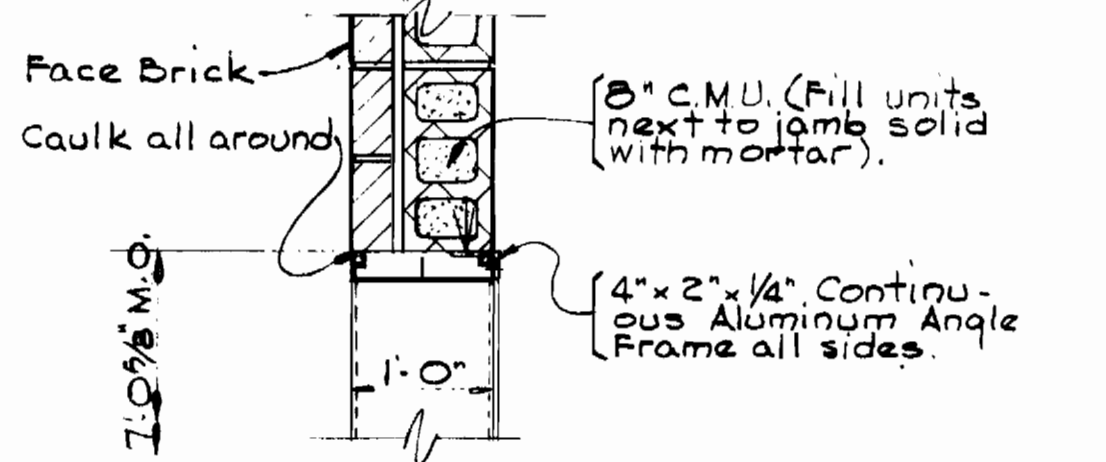
SECTION A-3-B/A-1
Scale: 3/4" = 1'-0"

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

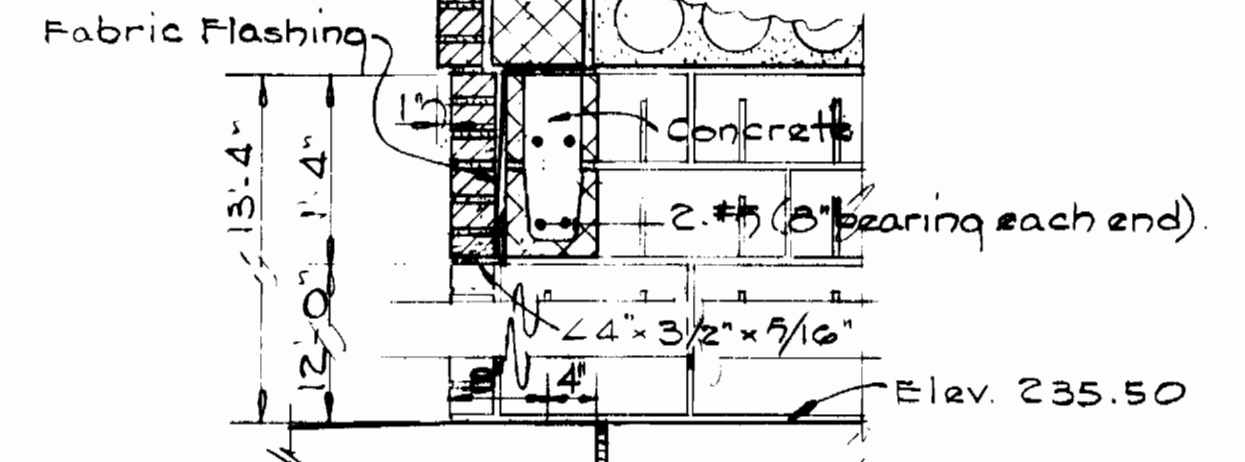
SECTION A-3-F/A-1
Scale: 3/4" = 1'-0"



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



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



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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works - DATE
Chief - Bureau of Engineering - DATE
Chief - Bureau of Utilities - DATE

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

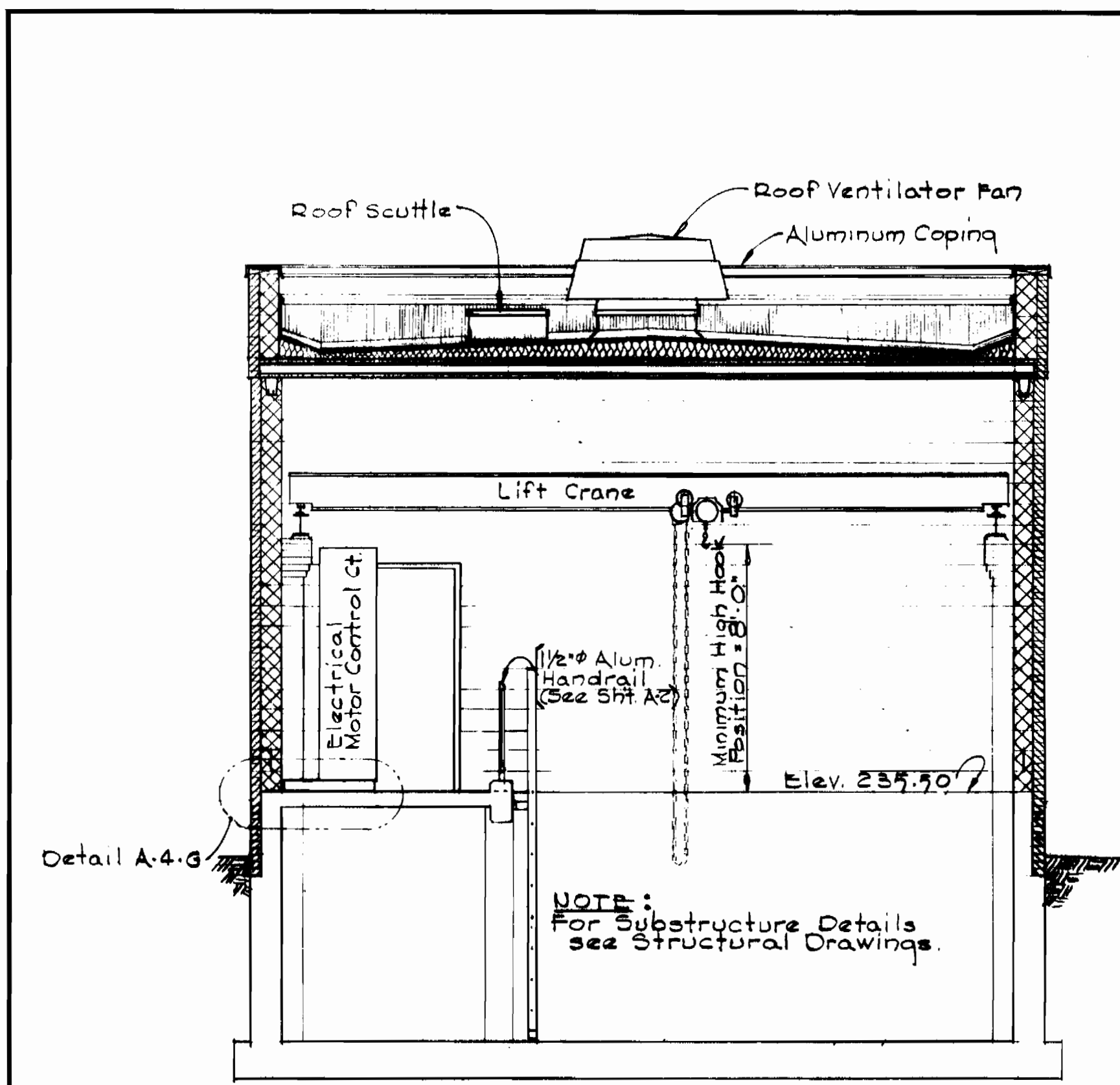
CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

SECTIONS

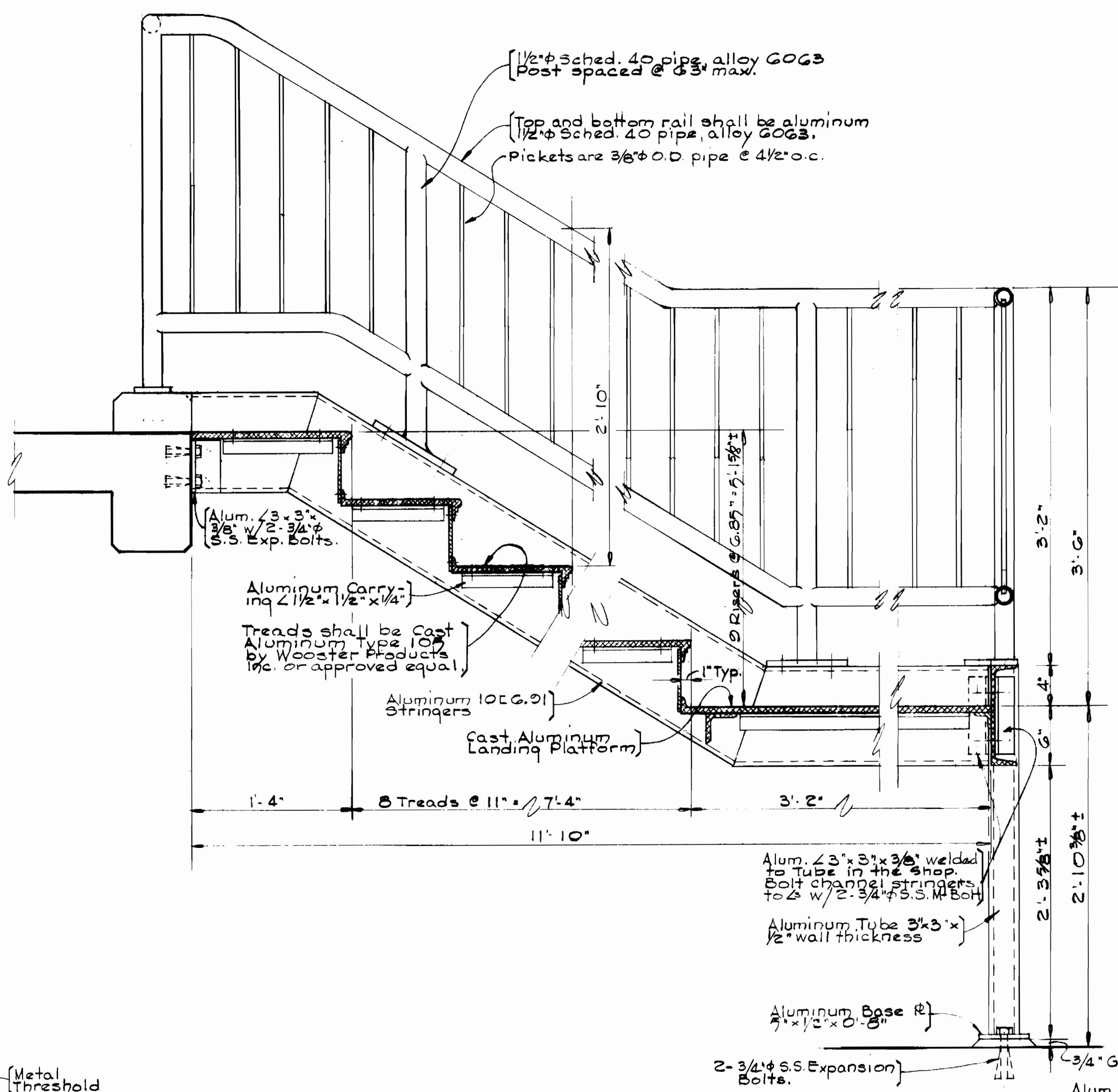
ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 8 OF 22
SCALE AS SHOWN

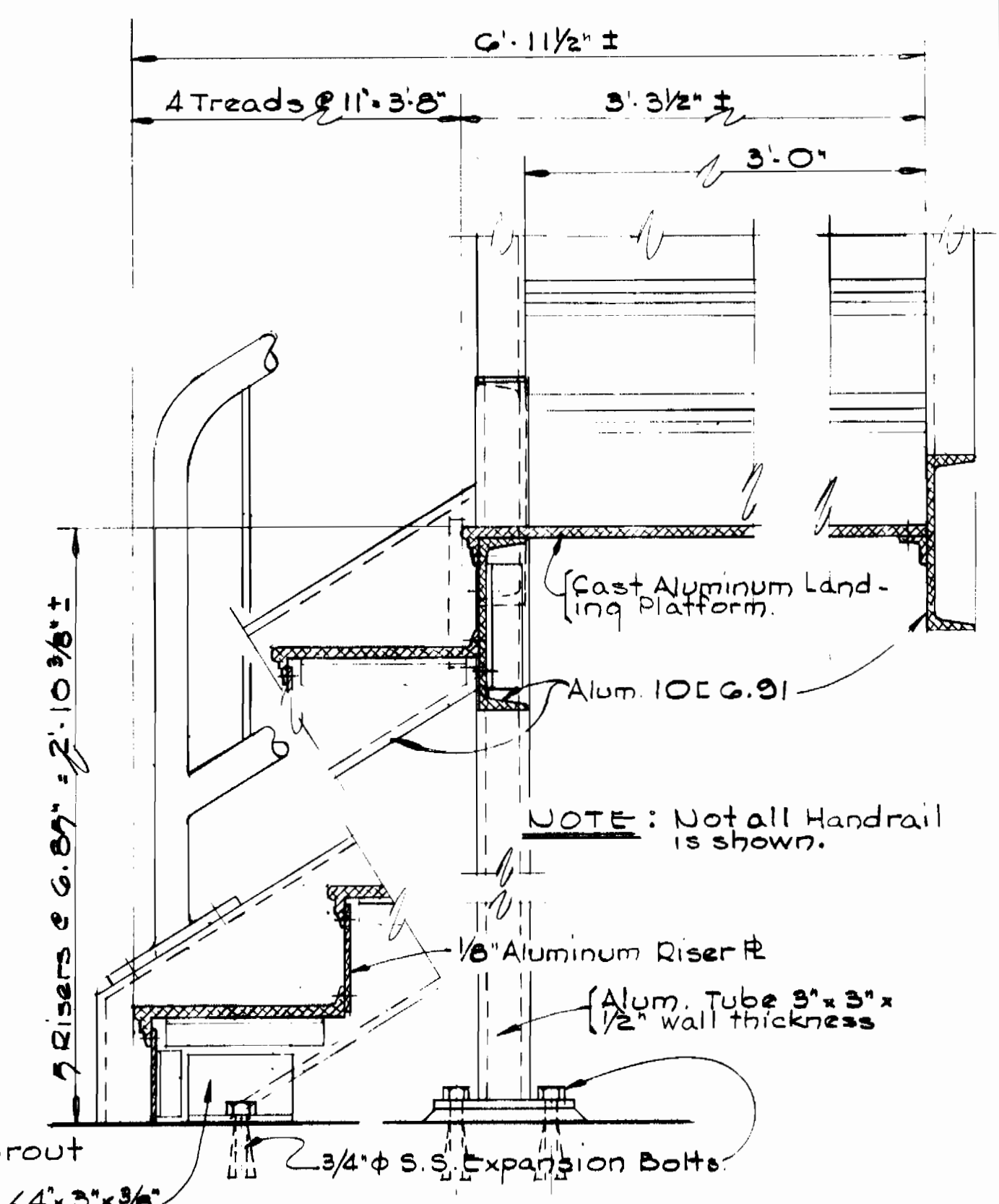
All Saints Road
Water Pumping Station
Contract No. 44-0969
Project No. W-7-8093



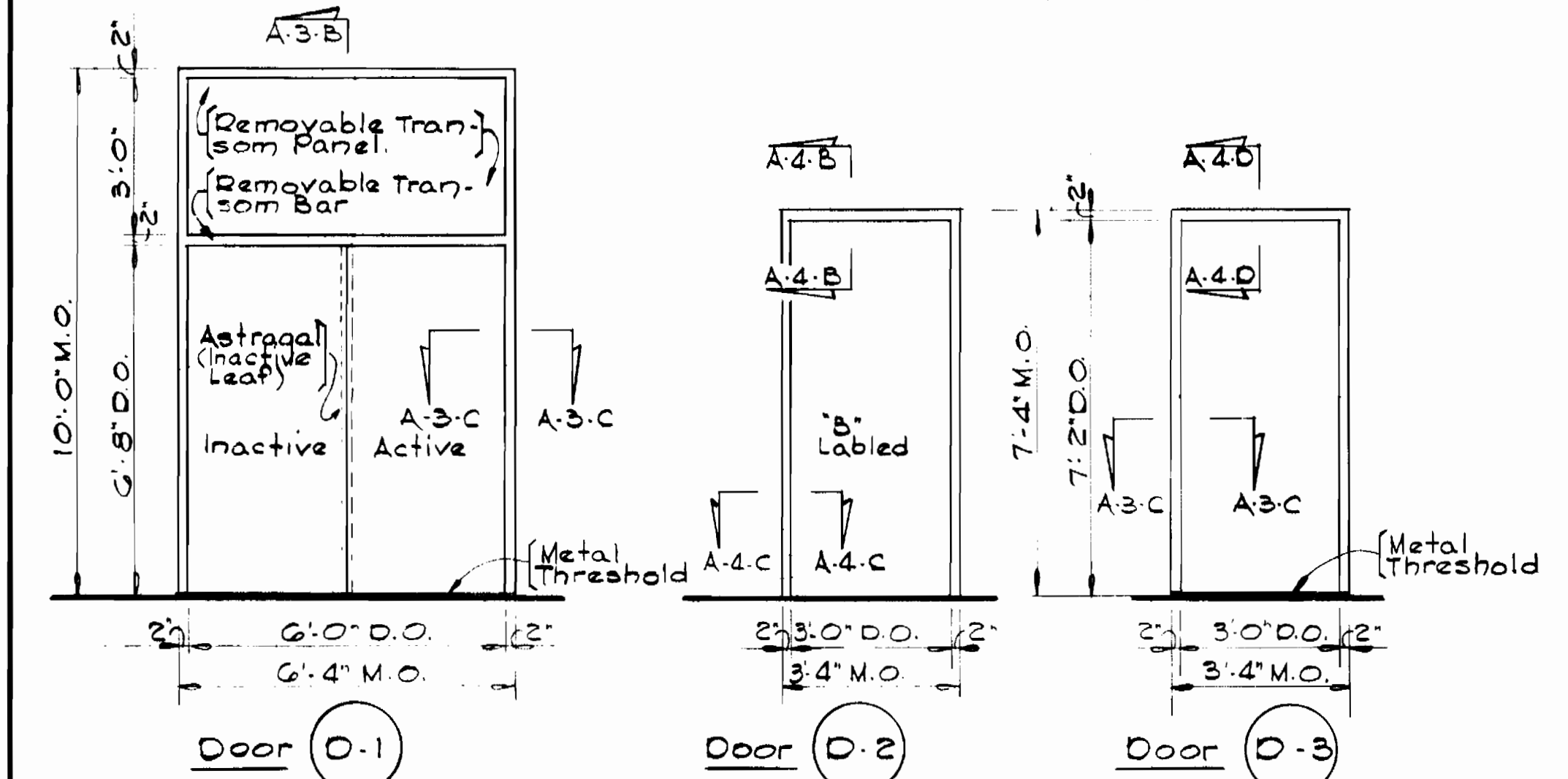
SECTION A-4-A/A-1
Scale: 1/4" = 1'-0"



SECTION A-4-E/A-1
Scale: 1/2" = 1'-0"



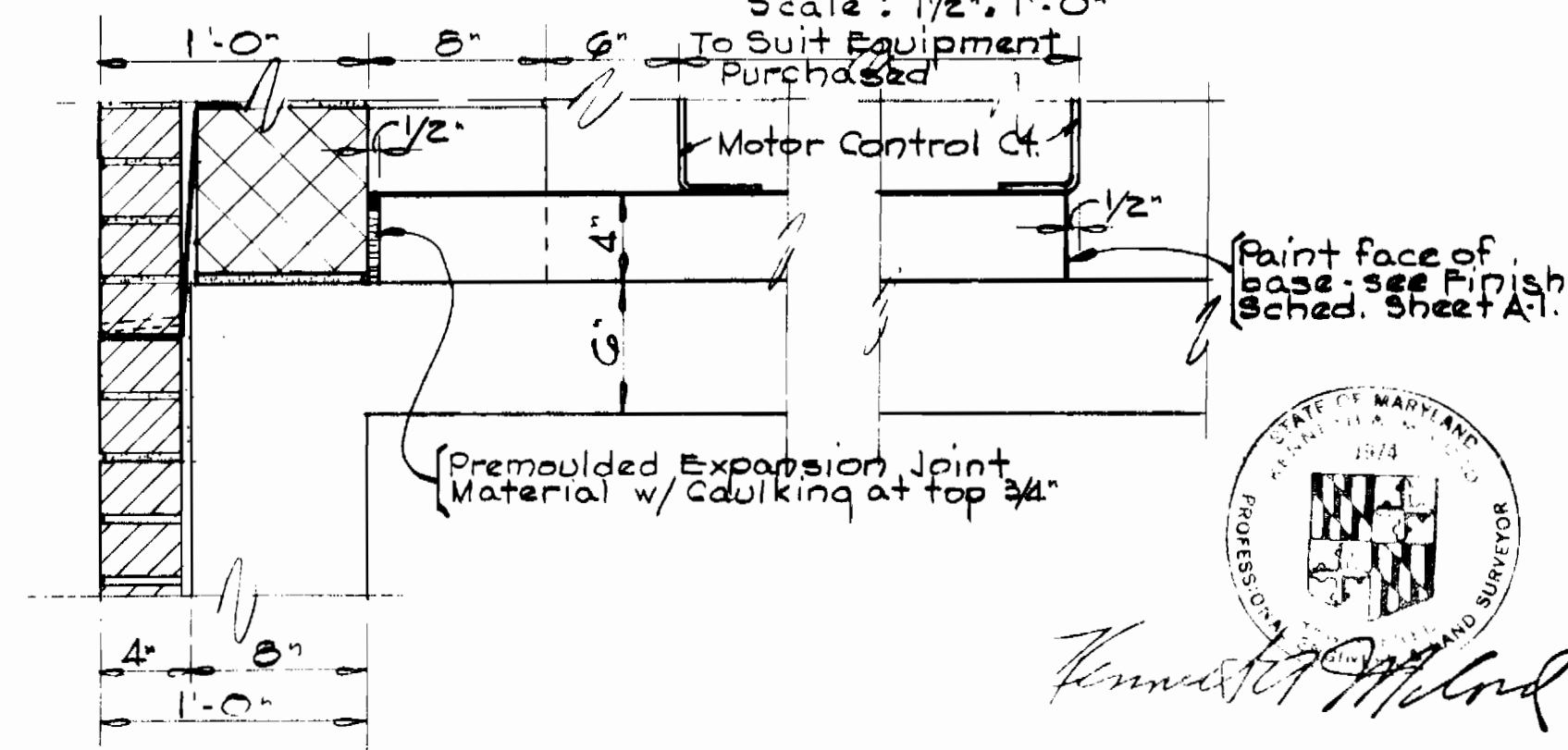
SECTION A-4-F/A-1
Scale: 1/2" = 1'-0"



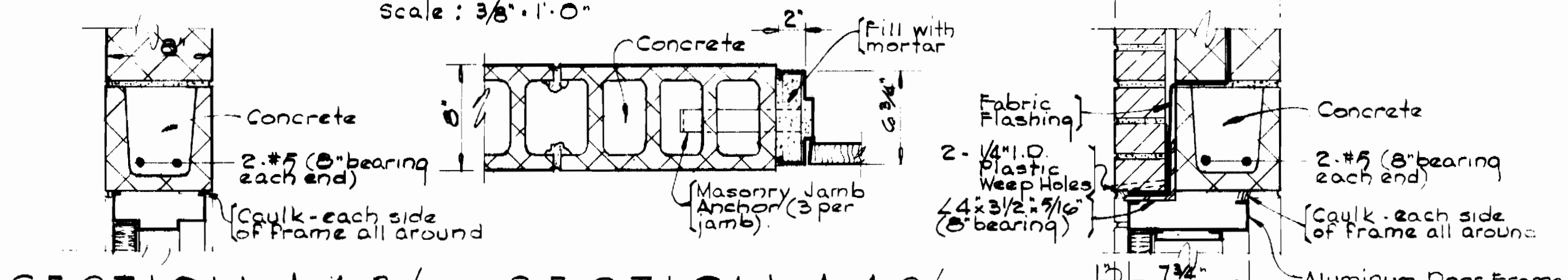
DOOR ELEVATIONS
Scale: 3/8" = 1'-0"

HARDWARE SCHEDULE

- Door D-1 shall have:
 - 3 - Pr. Butts FBB 100 URP, 4 1/2" x 4 1/2" US32D - Stanley
 - 1 - Lock w/Strike A2024/4 BKCS Rockford US32D - Russwin
 - 2 - Flush Bolts 2597, 1 1/2" US10 - Russwin
 - 2 - Door Stops 176 US10 RH&LH - Russwin
 - 1 - Threshold 3252A x TL7A - Russwin
 - 1 - Astragal 87 - Russwin
- Weatherstripping is called for under Article 41.09-Specs.
- Door D-2 shall have:
 - 1/2 - Pr. Butts FBB 100 URP, 4 1/2" x 4 1/2" USP - Stanley
 - 1 - Exit Device #NT 706 US32D - Russwin
 - 1 - Closer 2800-4 USP - Russwin
- Door D-3 shall have:
 - 1/2 - Pr. Butts FBB 100 URP, 4 1/2" x 4 1/2" US32D - Stanley
 - 1 - Lock w/Strike A2024 BKCS Rockford US32D - Russwin
 - 1 - Closer 2800-4 USP - Russwin
 - 1 - Threshold 3252A x TL7A - Russwin
- Weatherstripping is called for under Article 41.09-Specs.
- Accessories:
 - 3 - Fire Extinguishers #10KS-3 by Walter Kidde & Co., Inc. or equal.
 - 1 - First Aid Kit #811G by Johnson & Johnson or equal.
 - * Keyway to be S DIR - Russwin.



DETAIL A-4-G/A-4
Scale: 1/2" = 1'-0"



SECTION A-4-B/A-4 Scale: 1/2" = 1'-0"
SECTION A-4-C/A-4 Scale: 1/2" = 1'-0"
SECTION A-4-D/A-4 Scale: 1/2" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works - DATE
Chief - Bureau of Engineering - DATE
Chief - Bureau of Utilities - DATE

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

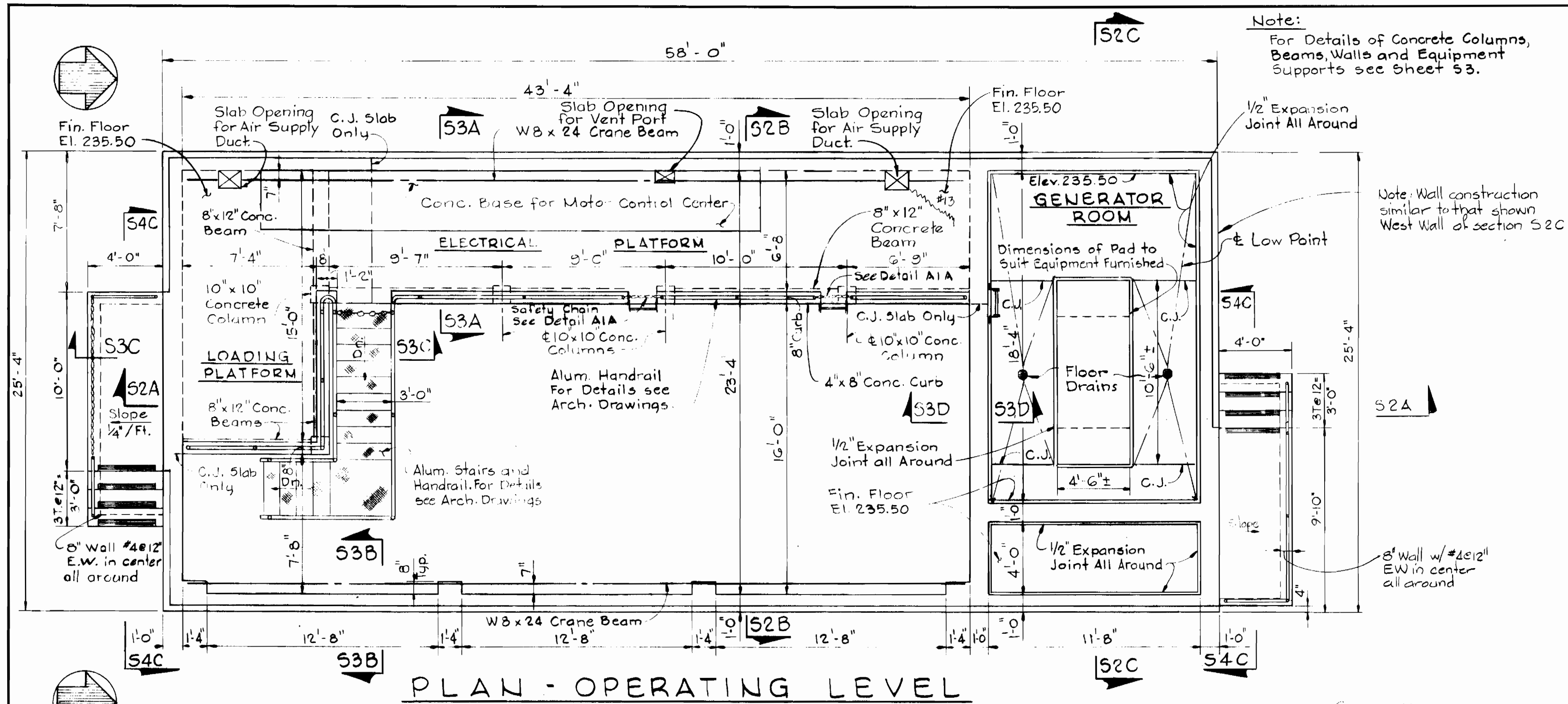
CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

MISCELLANEOUS DETAILS

ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 9 OF 22
SCALE AS SHOWN

U10717 W



Note:
For Details of Concrete Columns,
Beams, Walls and Equipment
Supports see Sheet 53.

GENERAL STRUCTURAL NOTES

1. Exterior walls around pump room shall have dampproofing. See specifications for details.
2. All excavations shall be inspected and approved by the Engineer before placing any gravel, crushed stone and/or concrete.
3. Bottom of all excavations shall receive a minimum of 6" of well compacted crushed stone or gravel. For other requirements see specifications.
4. Any excess excavation below the elevations of crushed stone or gravel, shall be filled with compacted stone or gravel. All excavations shall be kept dry. Water shall not be allowed to stand in excavations.

FOUNDATION NOTES

1. All concrete shall be mix No. 5 with # 6 Max. gravel or crushed stone.
2. Reinforced concrete shall be detailed and constructed in accordance with ACI Building Code 318-77 and all supplements.
3. All reinforcing steel shall conform to ASTM A615 grade 60 (w/ supplement 51).
4. Concrete cover for reinforcing shall be as follows unless otherwise noted on the drawings.
 - a. Unformed concrete, bottom bars in footings and slabs on earth, gravel or crushed stone - 3"
 - b. Beams, slabs and columns exposed to ground, weather or process liquid after the removal of forms - 2"
 - c. Beams and columns not exposed to weather - 1 1/2"
 - d. Structural slabs not exposed to earth or weather - 3/4"
 - e. Top of base slab and walls - 2"
 - f. Top of slab at Elev. 233.25 - 1"

5. All exposed concrete edges shall be chamfered 3/4" unless otherwise noted.
6. Reinforcing steel shall be detailed in accordance with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" except where shown otherwise.
7. Splices in reinforcement shall be Class "C" splices as per ACI 318 unless otherwise shown on the drawings.
8. Embedment length shall be equal to the development length for open top or bottom in accordance with ACI 318 unless otherwise shown on the drawings.
9. Horizontal bars in walls shall be considered as top bars.
10. Slabs and walls shall be poured between indicated joints, allowing a minimum period of 3 days to elapse between adjacent pours.
11. Construction joints shall be as shown on the drawings. No additional joints shall be used nor any omitted except by the written authorization by the Engineer.
12. Anchor bolts, pipe supports and equipment pedestals shall be sized and located to suit equipment furnished.
13. See Civil, Mechanical and Electrical drawings for all embedded items such as sleeves, anchors, electrical conduits, openings, chases, etc., which are embedded in the concrete.
14. The Contractor shall submit shop details of reinforcing steel before proceeding with fabrication.

STRUCTURAL STEEL NOTES

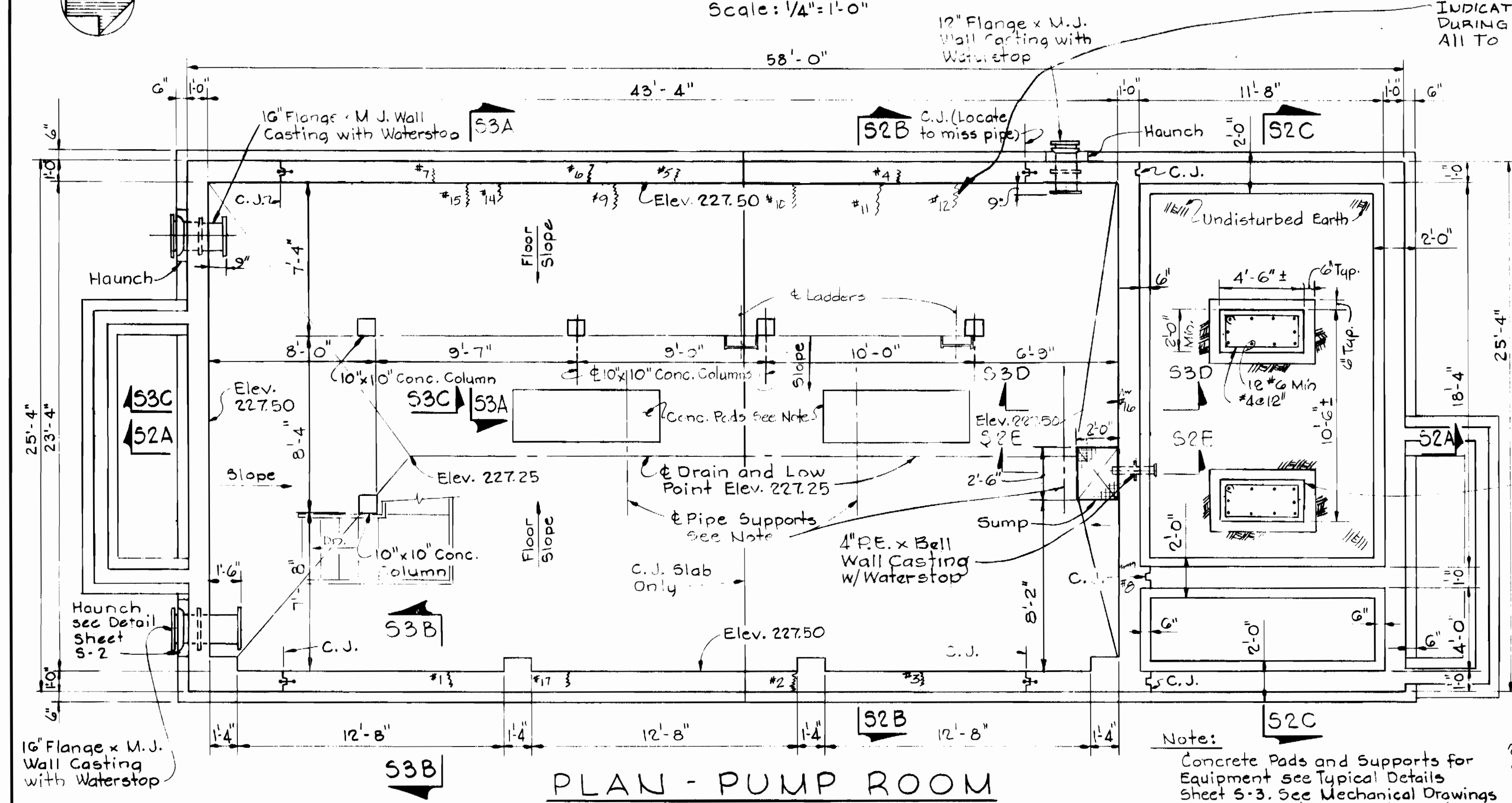
1. All structural steel shall conform to ASTM A-36.
2. All shop connections shall be welded. All field connections shall be bolted using 3/4" diameter A-325 bolts except where noted otherwise.
3. Except where otherwise noted on the drawings, connections of framing members shall be capable of transferring the full strength of the member.
4. All structural steel is designed by elastic analysis and shall be fabricated with the current AISC specifications for buildings.

STRUCTURAL ALUMINUM NOTES

1. All aluminum in contact with concrete shall be coated as specified.
2. All structural aluminum shall be alloy 6061-T6.
3. All grating sections shall be capable of supporting a live load of 125 PSF with a maximum deflection of 1/4" at 100 PSF.
4. Each section of grating shall be mechanically fastened to supports with 2 fasteners at each end and be banded.

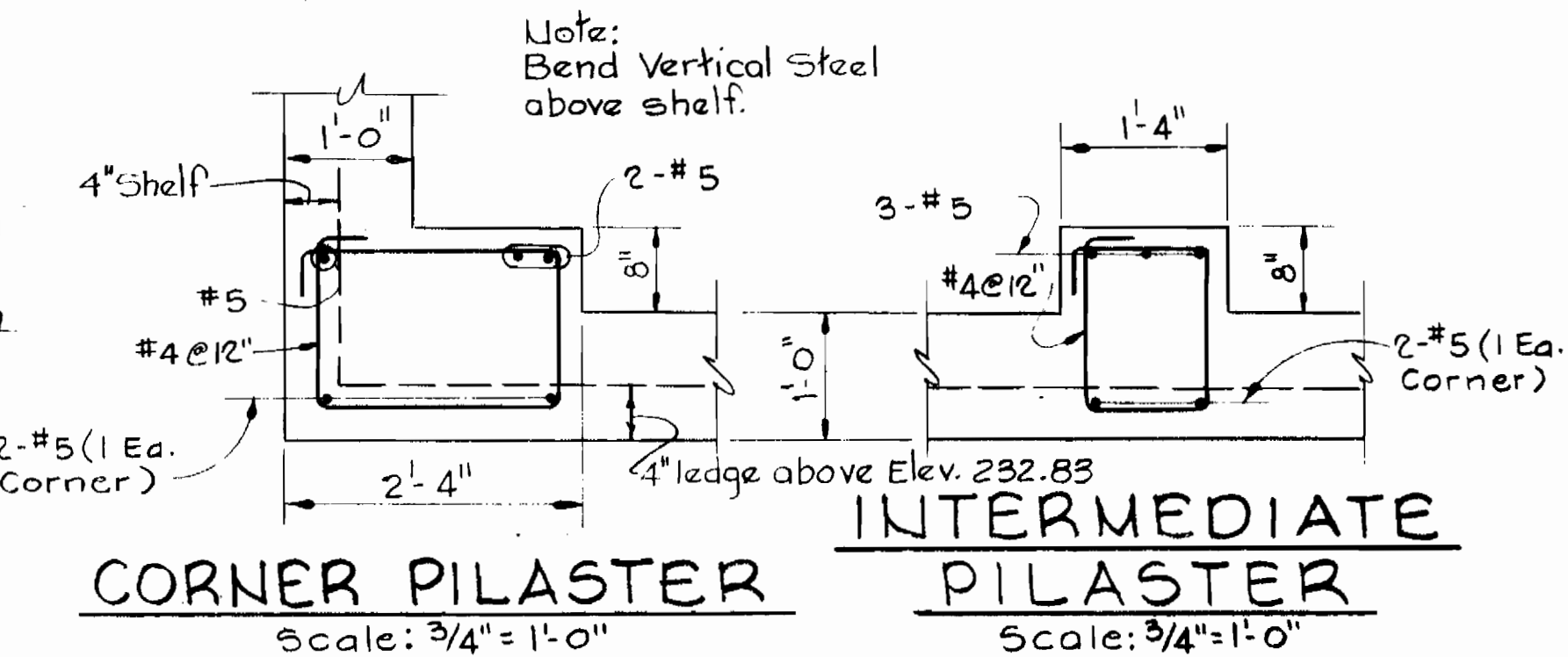
MISCELLANEOUS

1. Provide 6" two bulb waterstops in all construction joints in walls and base slab of pump room below Elev. 232.0



INDICATE CRACKS NOTED
DURING CONSTRUCTION
ALL TO BE FILLED IN.

Dimensions of Pad to
Suit Equipment Furnished
See Sheet 53 for Details



Note:
Bend Vertical Steel
above shelf.

Note:
Concrete Pads and Supports for
Equipment see Typical Details
Sheet 5-3. See Mechanical Drawings
for Equipment, Pipes and Appertenances
to be Supported. All Supports not shown.
C.J. indicates Construction Joint
Provide W.S. where noted.

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
J. F. Newman 8-6-82
DIRECTOR OF PUBLIC WORKS - DATE
R. M. Brown 8-9-82
CHIEF - BUREAU OF UTILITIES - DATE

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND
R. M. Brown 8/4/82
CHIEF - UTILITIES DIVISION - DATE

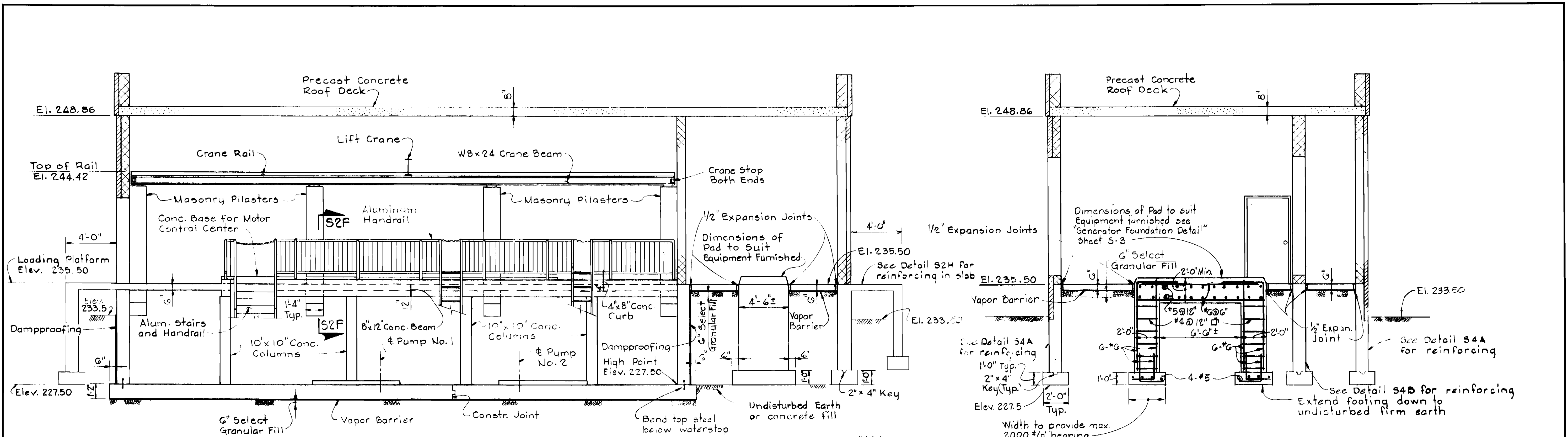
CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

PLANS AND
GENERAL NOTES

ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

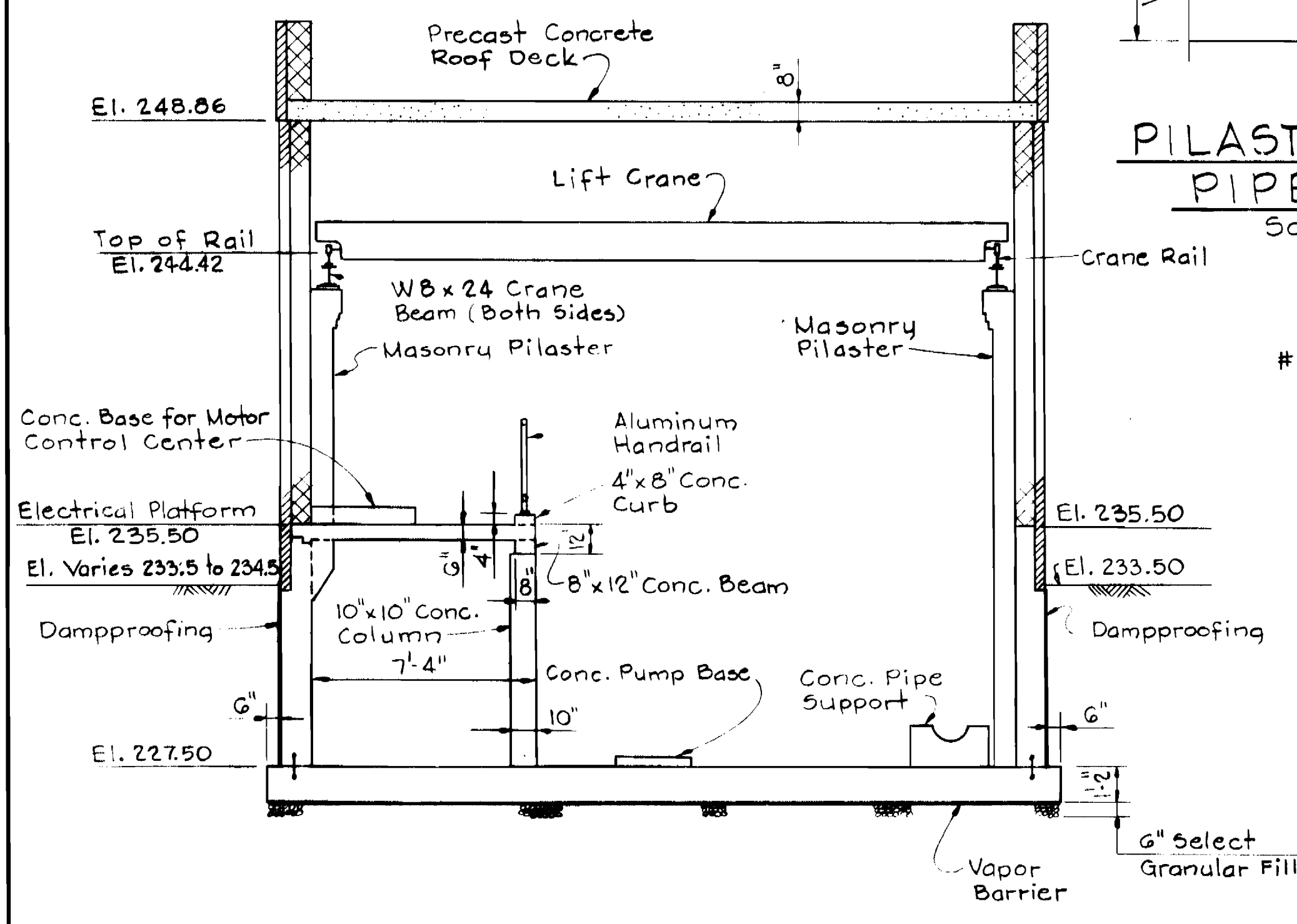
DRAWING NO. 10 OF 22
SCALE AS SHOWN

5707110 W

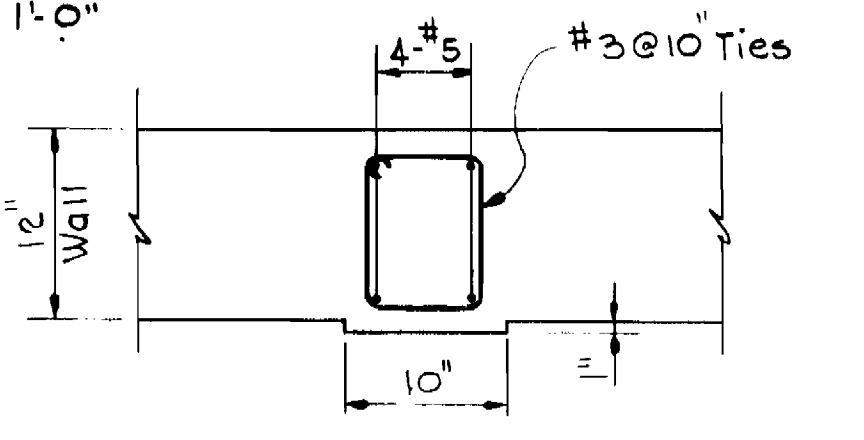


SECTION S2A/S1
Scale: 1/4" = 1'-0"

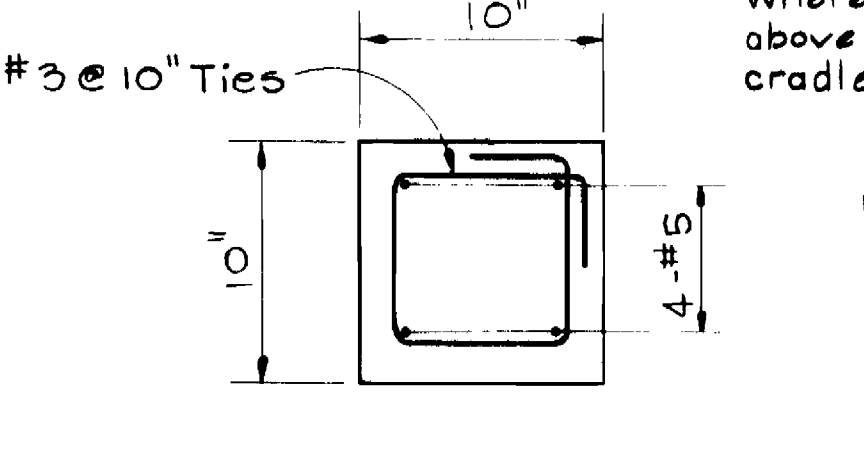
SECTION S2C/S1
Scale: 1/4" = 1'-0"



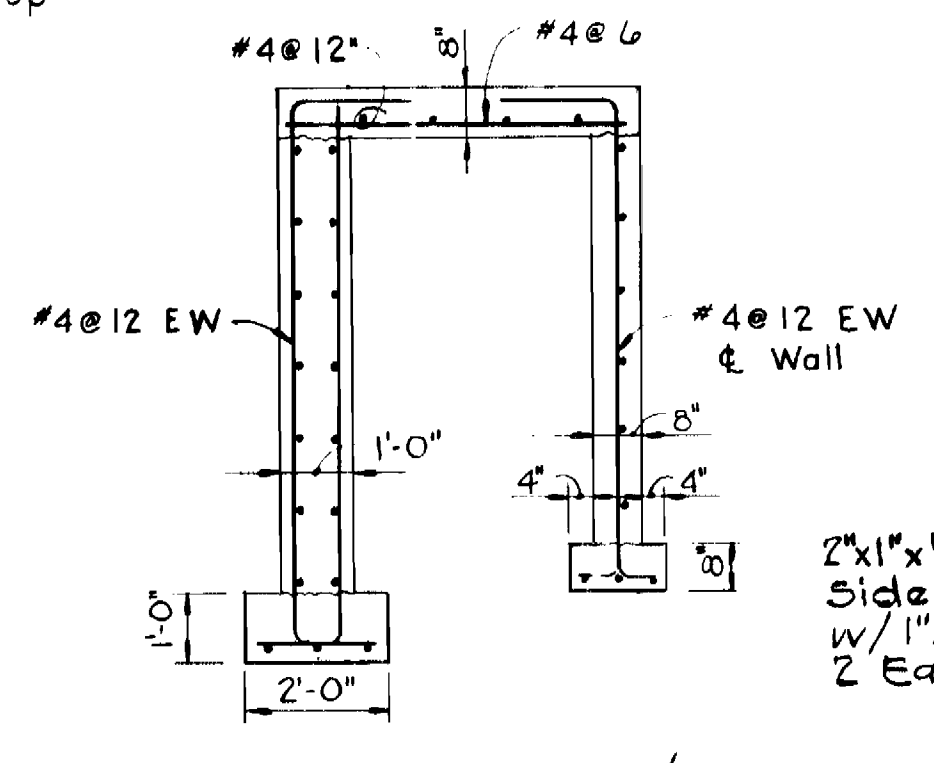
SECTION S2B/S1
Scale: 1/4" = 1'-0"



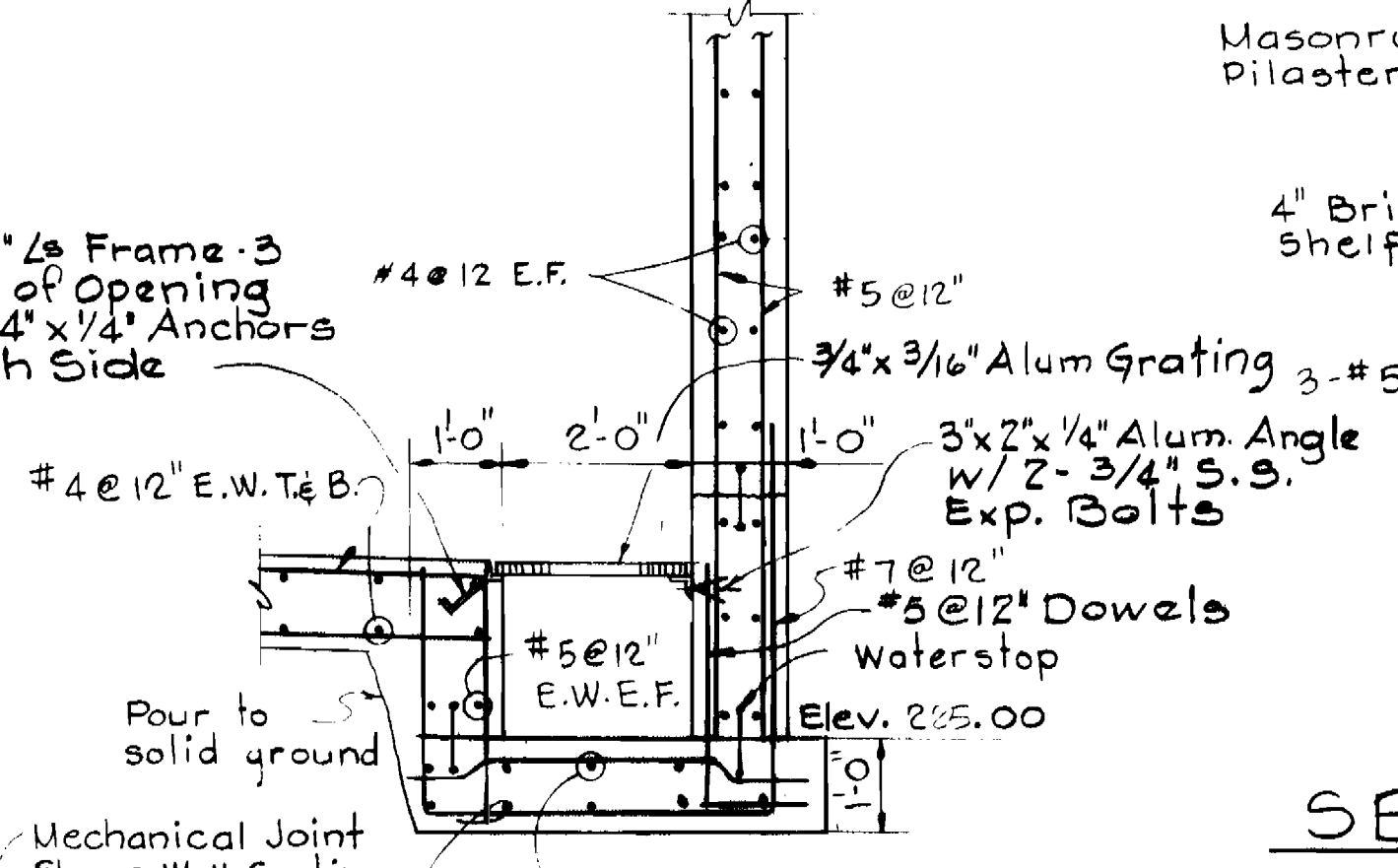
PILASTER AROUND PIPE TRENCH
Scale: 1" = 1'-0"



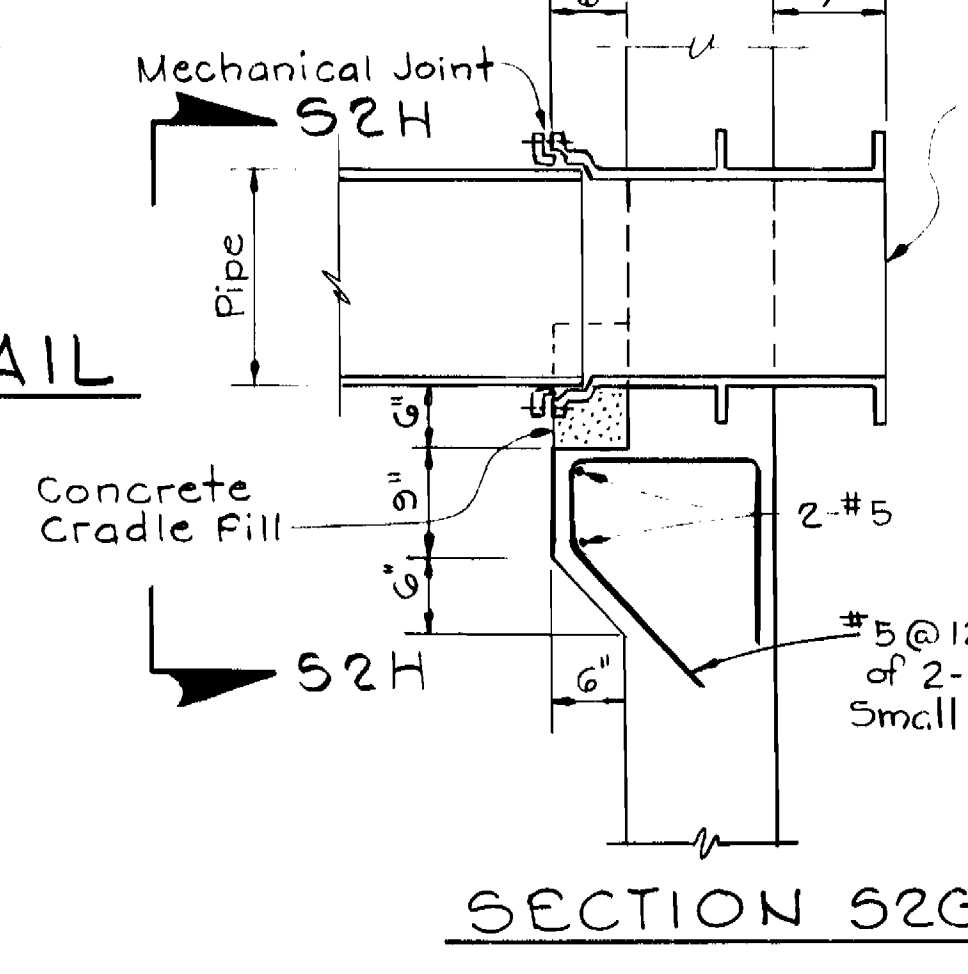
COLUMN DETAIL
Scale: 1/2" = 1'-0"



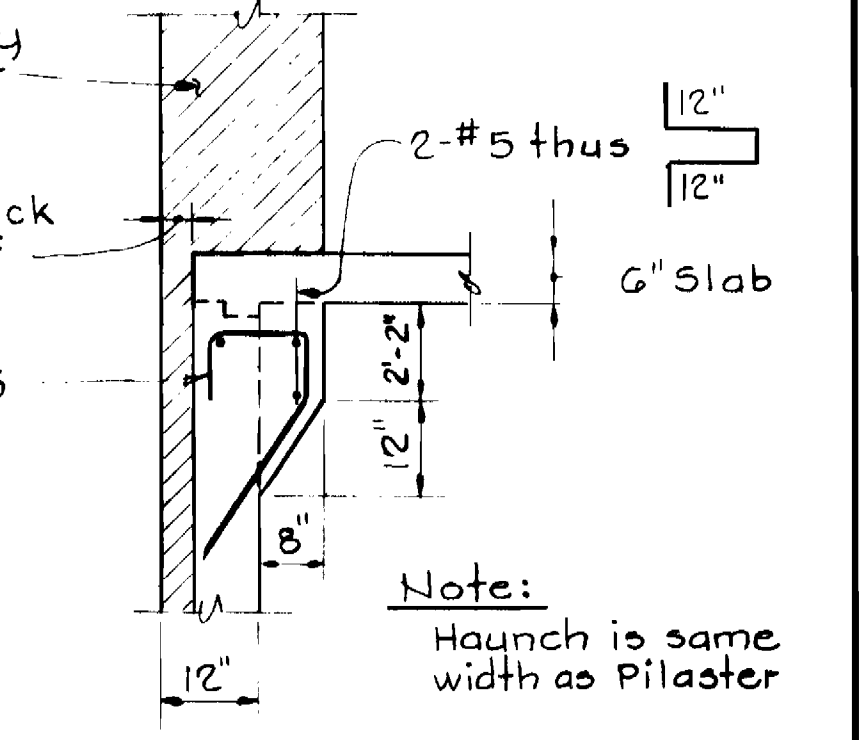
DETAIL S2H/S2
Scale: 3/8" = 1'-0"
Note: Where invert of pipe is 2'-0" or less above footing omit haunch and built cradle on extension of footing.



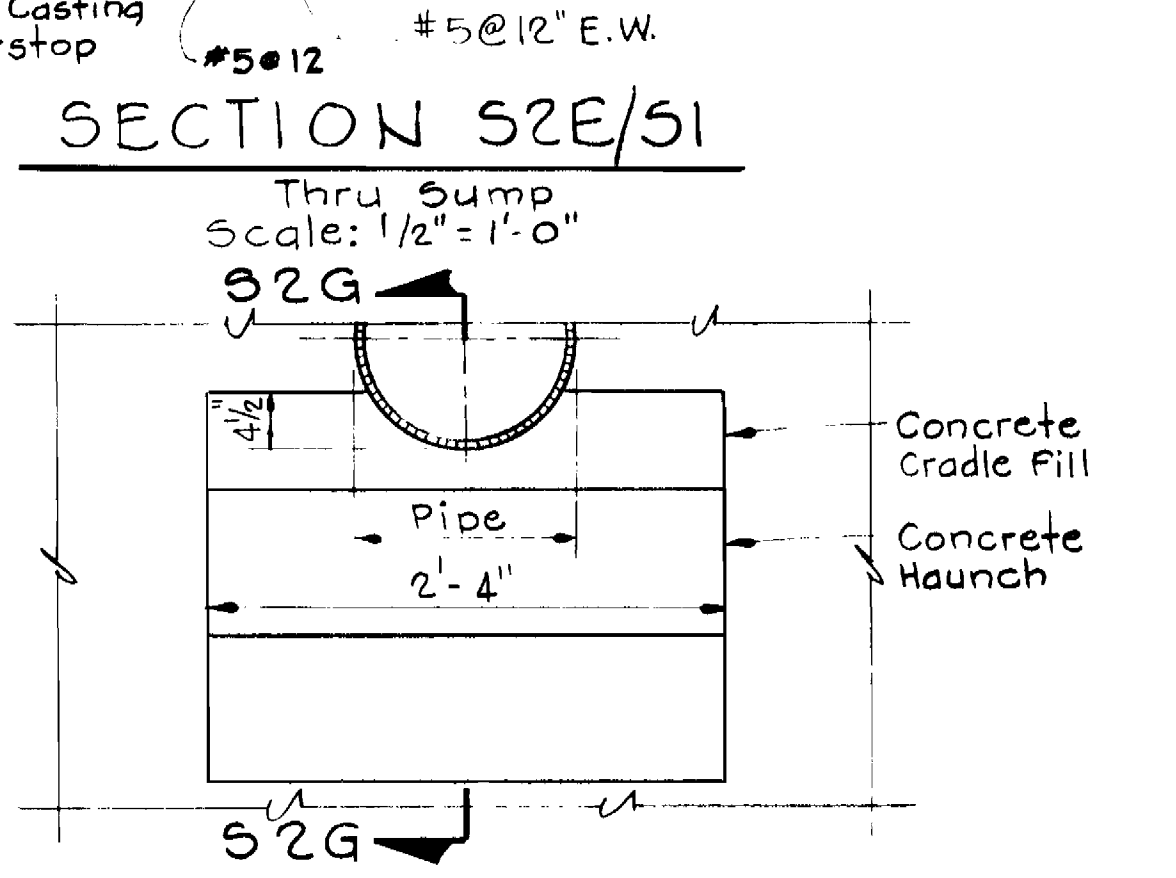
SECTION S2E/S1
Thru Sump
Scale: 1/2" = 1'-0"



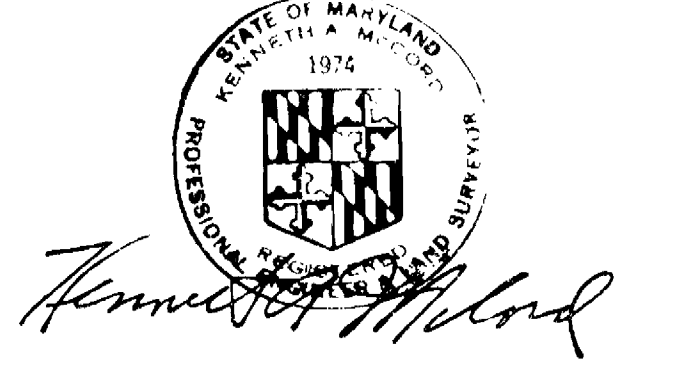
SECTION S2G



SECTION S2F/S2
Scale: 1/2" = 1'-0"
Note: Haunch is same width as Pilaster



ELEVATION H-H
HAUNCH DETAIL
Not to Scale



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works - DATE 8-10-82
Chief - Bureau of Engineering - DATE 8/1/82
Chief - Bureau of Utilities - DATE 8/1/82

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

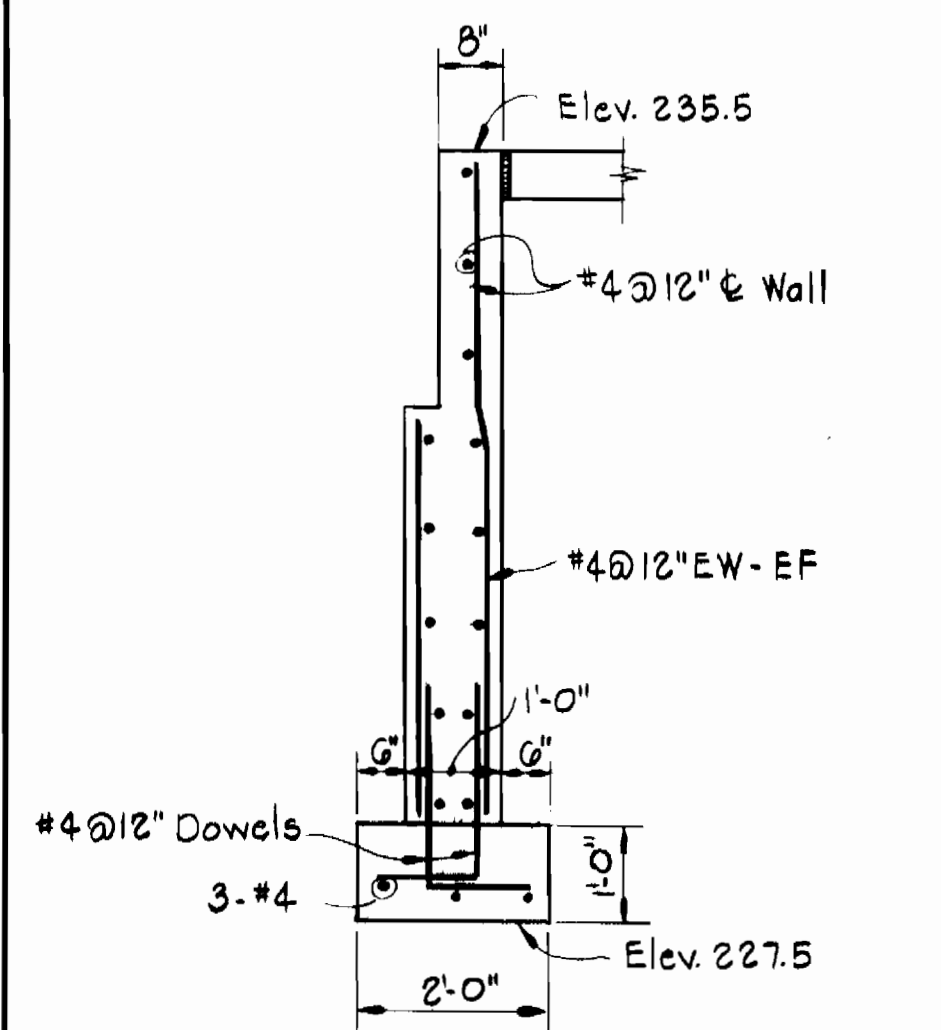
CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

SECTIONS AND DETAILS

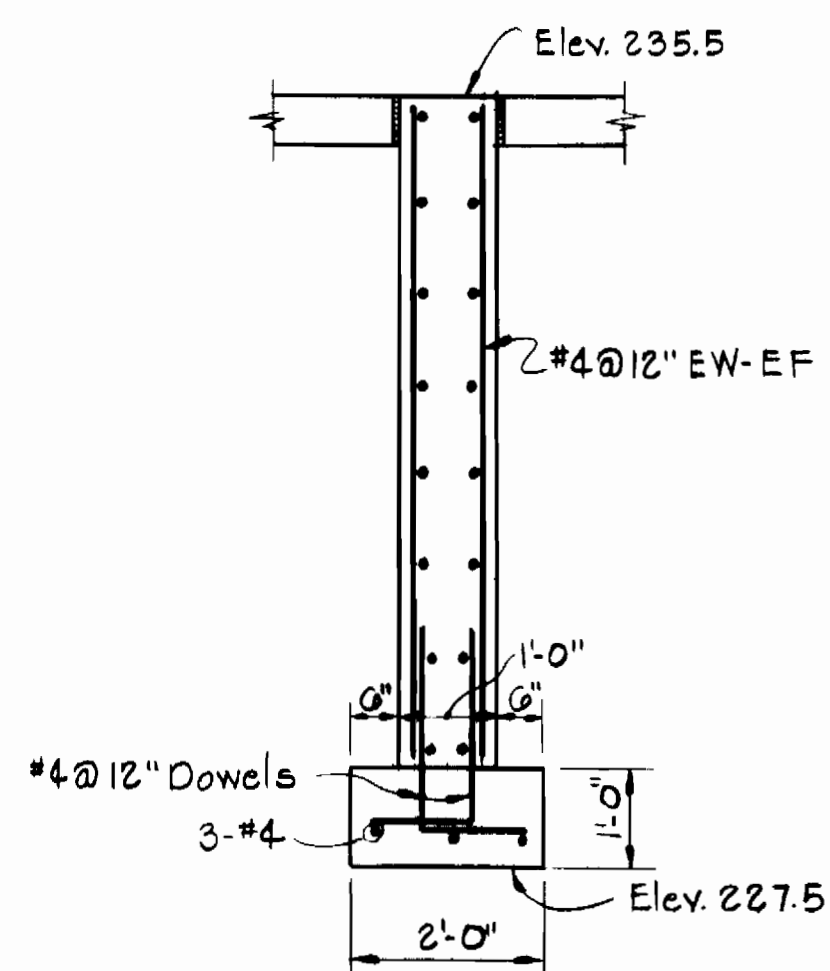
ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 11 OF 22
SCALE AS SHOWN

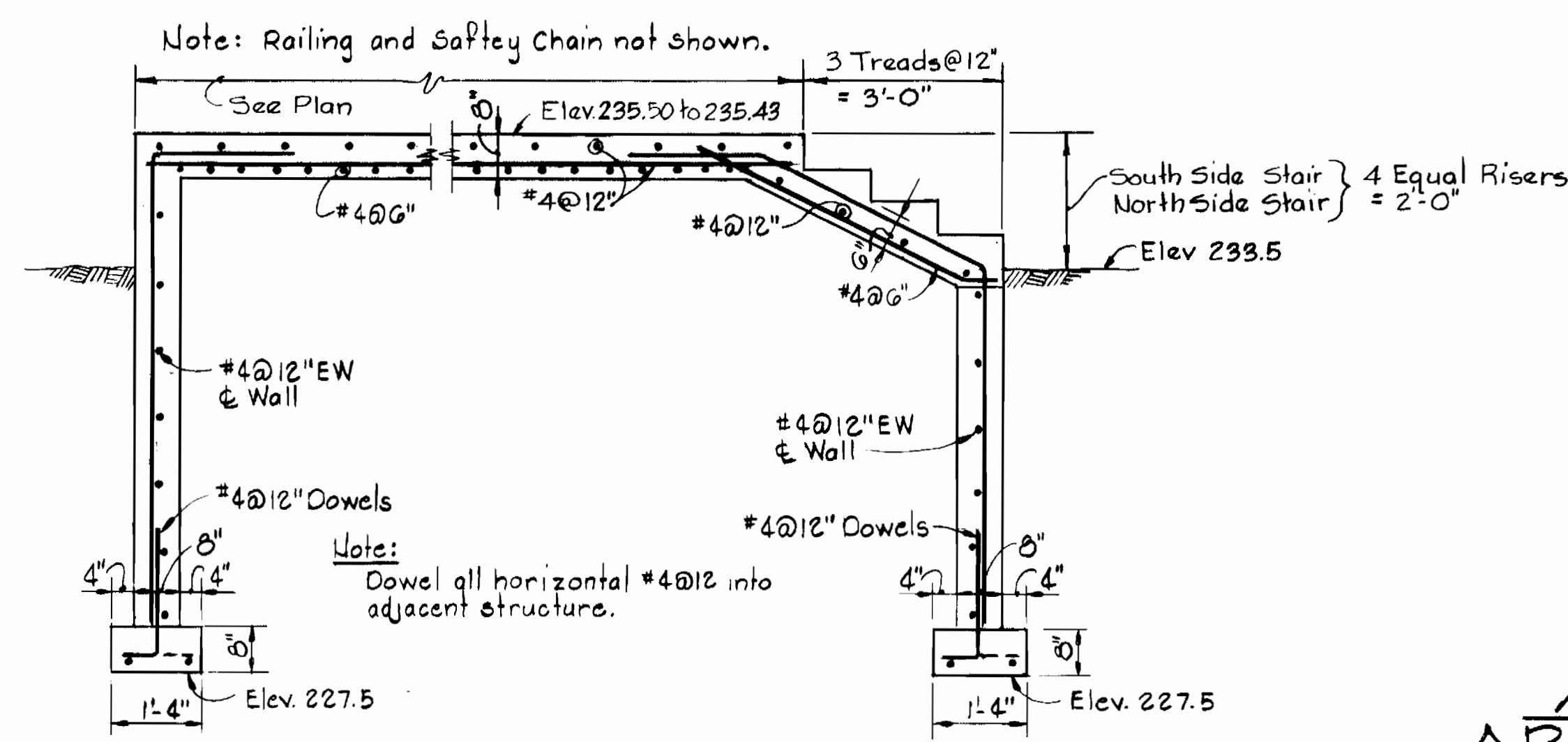
0769/11



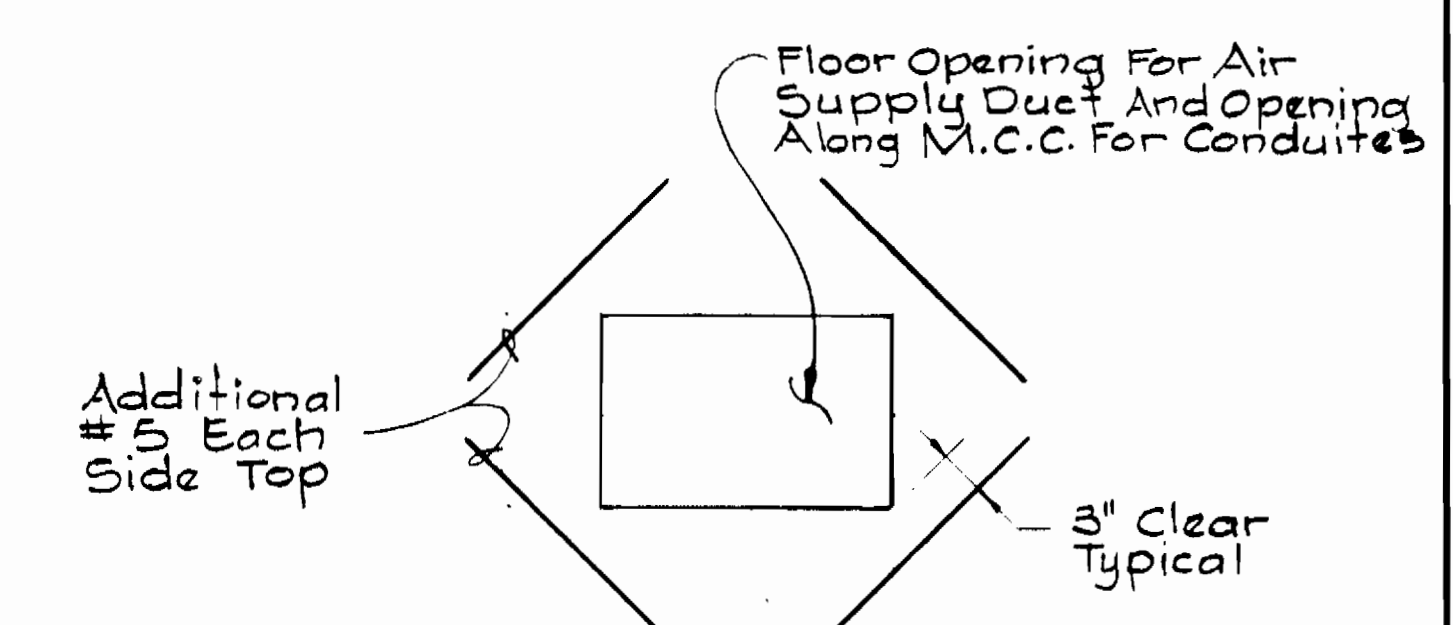
DETAIL 64A/S2
Scale: 1/2" = 1'-0"



DETAIL 64B/S2
Scale: 1/2" = 1'-0"



SECTION 64C/S1
Scale: 1/2" = 1'-0"



ADDITION REINFORCING AROUND OPENINGS IN FLOOR
No Scale

0969/13 W



Kenneth W. Lord

All Saints Road
Water Pumping Station
Contract No. 44-0969
Project No. W-7-8093

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
George F. Namm 8-6-82
DIRECTOR OF PUBLIC WORKS - DATE
Richard Brown 8-9-82
CHIEF - BUREAU OF UTILITIES - DATE
Whitman & Reardon 8/1/82
CHIEF - BUREAU OF ENGINEERING - DATE
Allen S. Brown 8/1/82
CHIEF - UTILITIES DIVISION - DATE

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

MISCELLANEOUS DETAILS

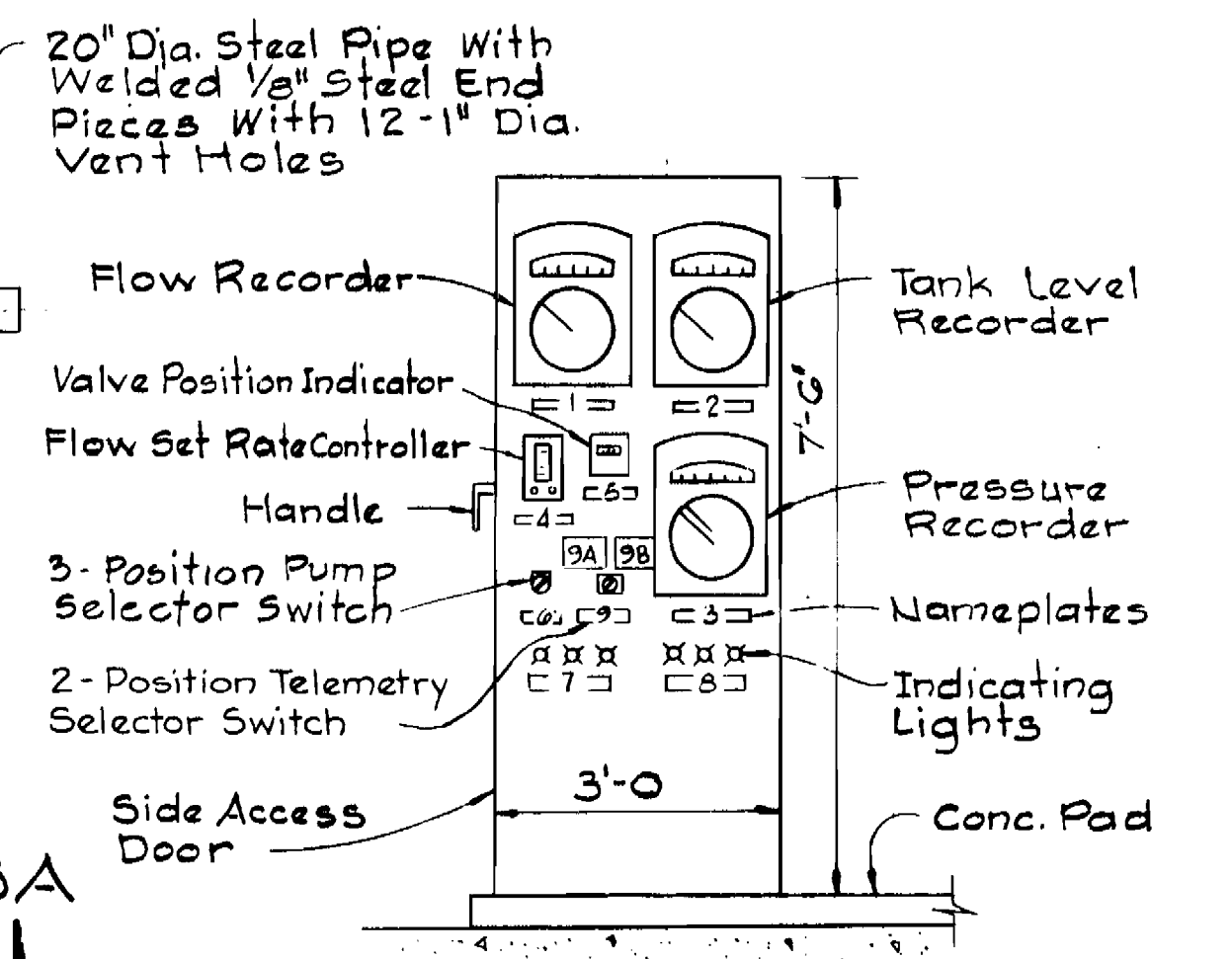
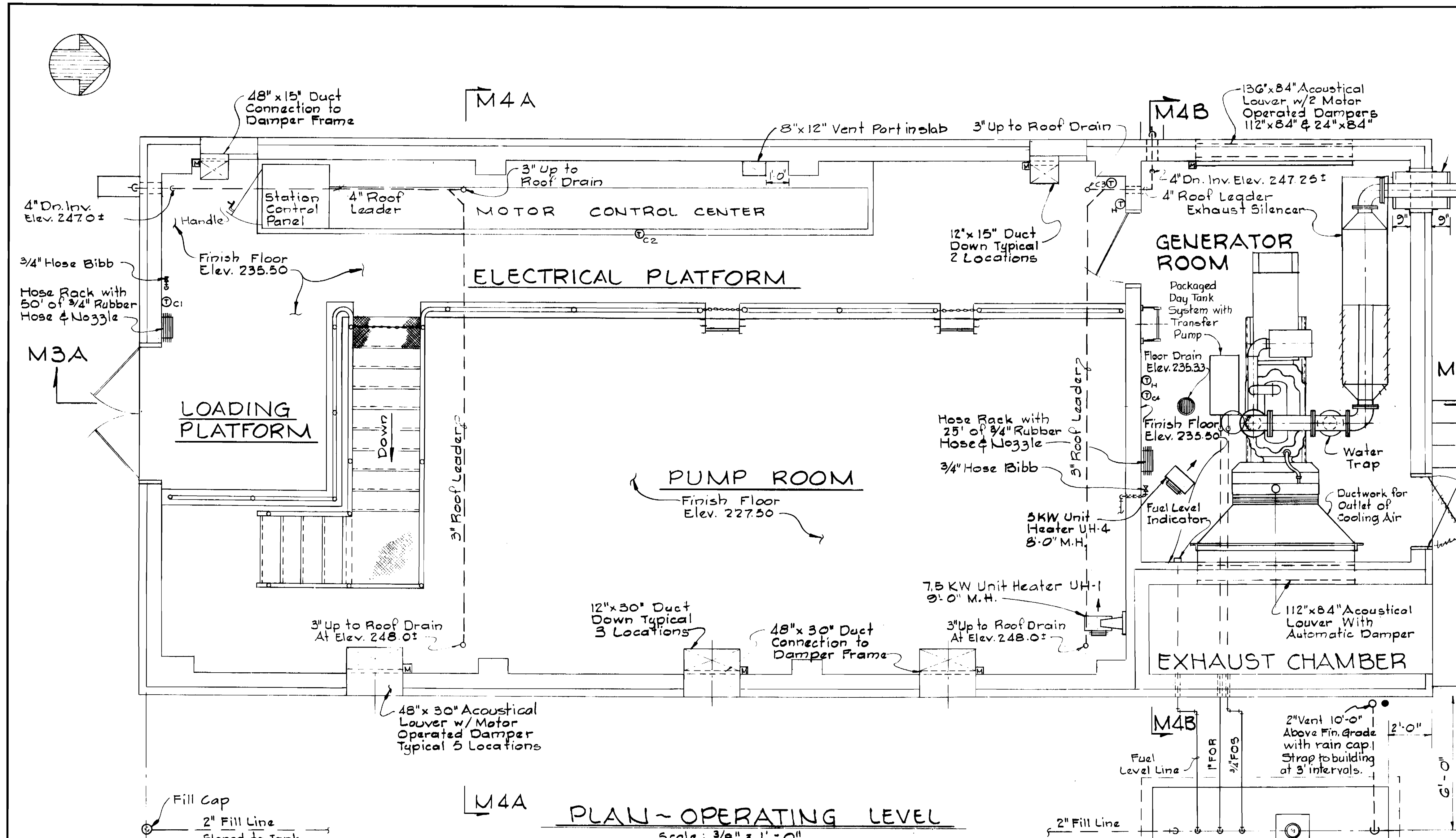
ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 13 OF 22
SCALE AS SHOWN

W. O. 7586-2

BUILT 7-22-80

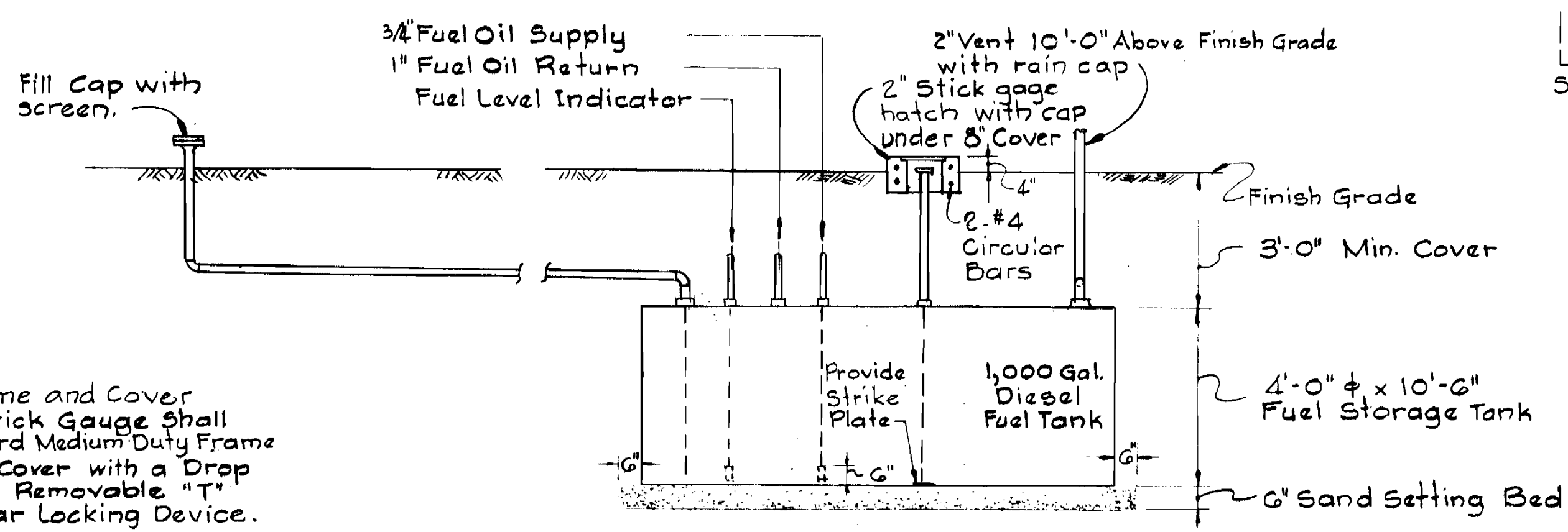
5-4 March 12, 1982



- NAMEPLATE LEGEND**
- SYSTEM FLOW - MGD
 - GUILFORD RD. STORAGE TANK LEVEL
 - STATION SUCTION AND DISCHARGE PRESSURE
 - FLOW SET RATE - M.G.D.
 - VALVE POSITION
 - PUMP SELECTOR
No. 1 - OFF - No. 2
 - PUMP NO. 1 CONE VALVE
OPEN - FAILURE - CLOSED
(Blue) (White) (Amber)
 - PUMP NO. 2 CONE VALVE
OPEN - FAILURE - CLOSED
(Blue) (White) (Amber)
 - TELEMETRY SOURCE
9A. FROM MAINTENANCE BUILDING
9B. FROM GUILFORD TANK

STATION CONTROL PANEL

Note:
Access Frame and Cover for the Stick Gauge shall be a Standard Medium Duty Frame and Solid Cover with a Drop Handle and Removable "T" Handle Bar Locking Device.



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Robert M. Brunch 8-10-82
DIRECTOR OF PUBLIC WORKS - DATE
CHIEF - BUREAU OF UTILITIES - DATE

Robert M. Brunch 8-9-82
CHIEF - BUREAU OF UTILITIES - DATE

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

MECHANICAL
PLAN AND DETAIL

ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

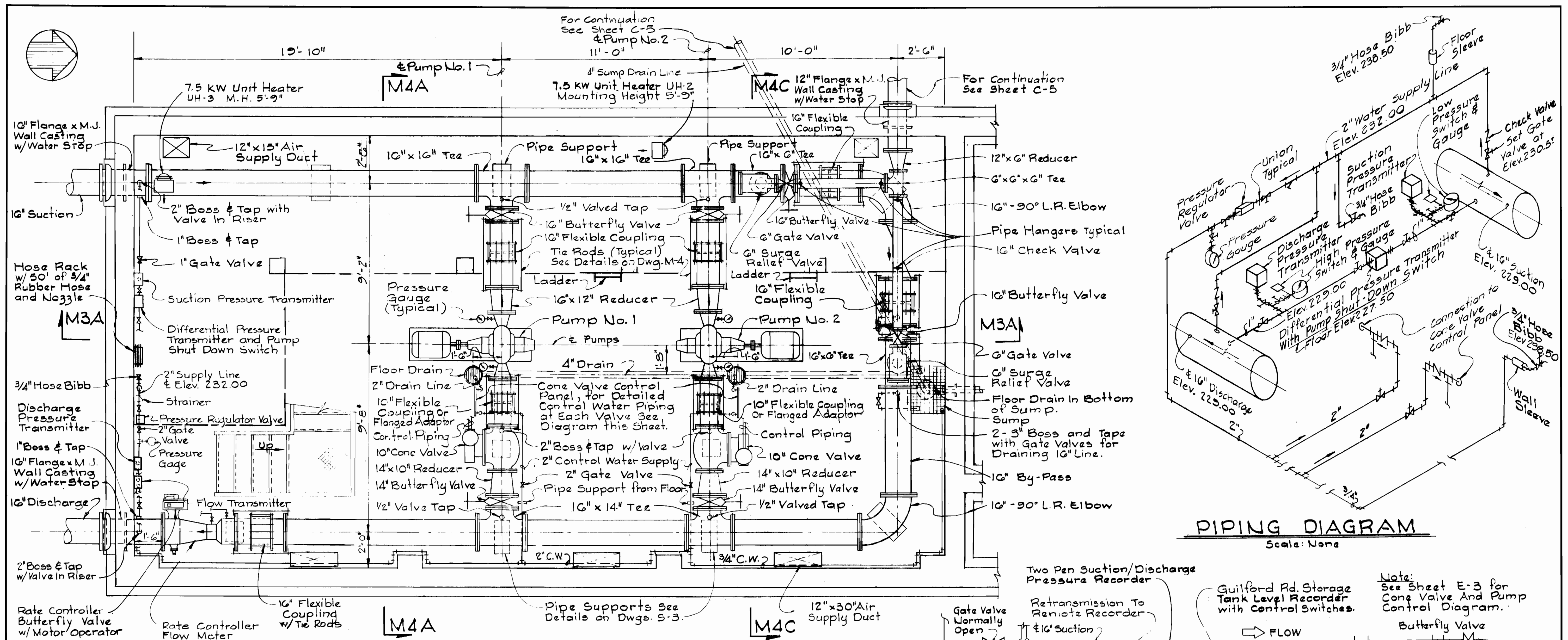
DRAWING NO. 14 OF 22	SCALE AS SHOWN
----------------------	----------------

0969/14 W



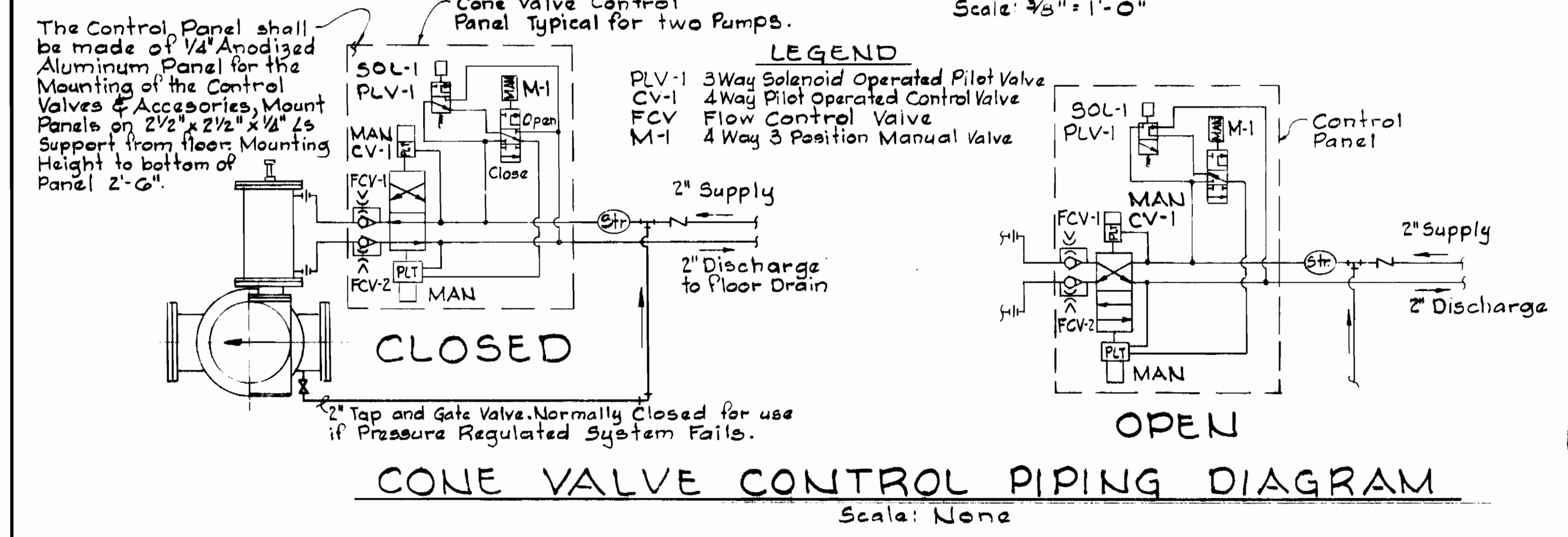
Robert M. Brunch

All Saints Road
Water Pumping Station
Contract No. 44-0969
Project No. W-7-8093

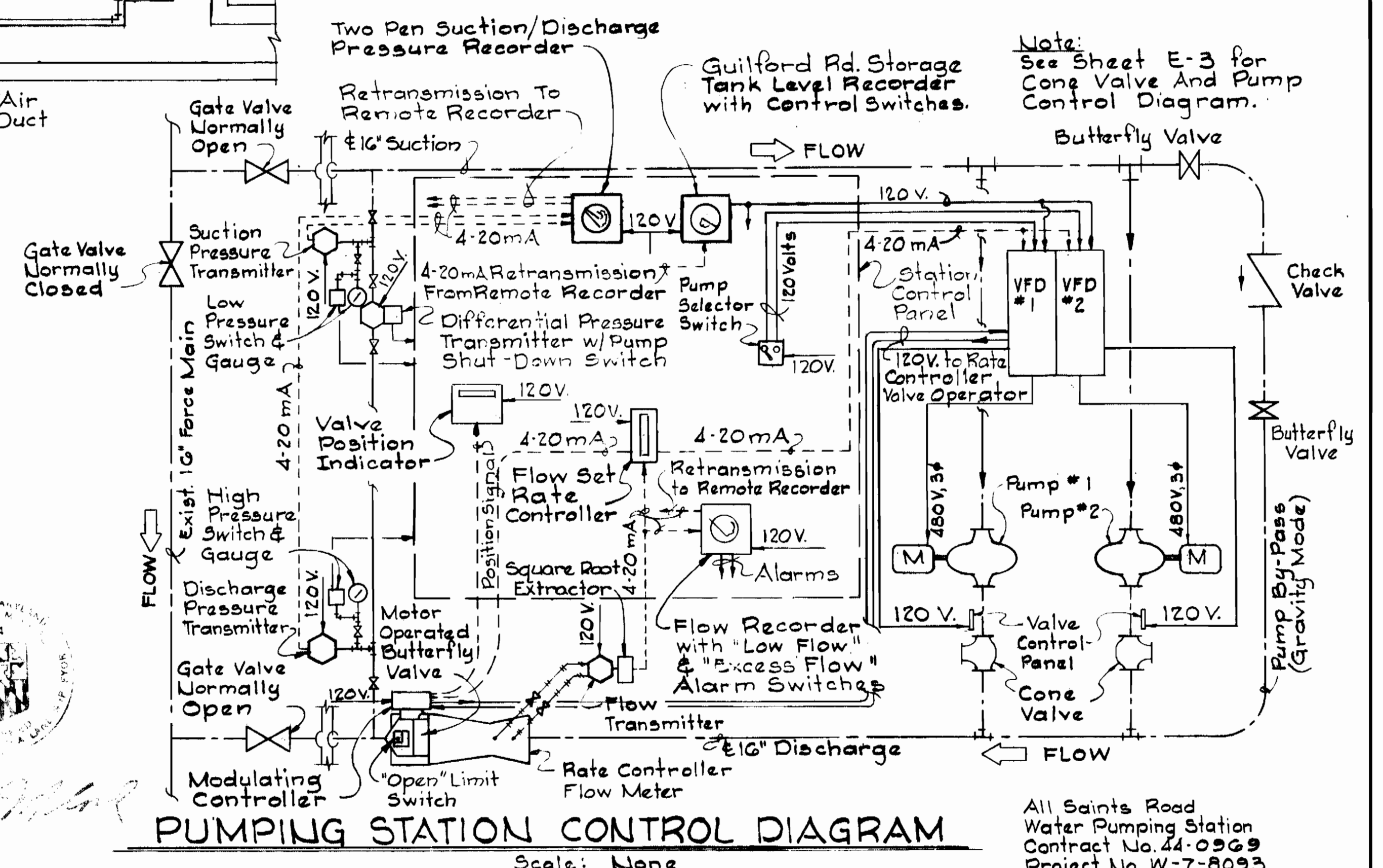


PIPING DIAGRAM
Scale: None

PLAN - PUMP ROOM
Scale: 3/8" = 1'-0"



CONE VALVE CONTROL PIPING DIAGRAM
Scale: None



PUMPING STATION CONTROL DIAGRAM
Scale: None

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
8-0-84
8/4/82

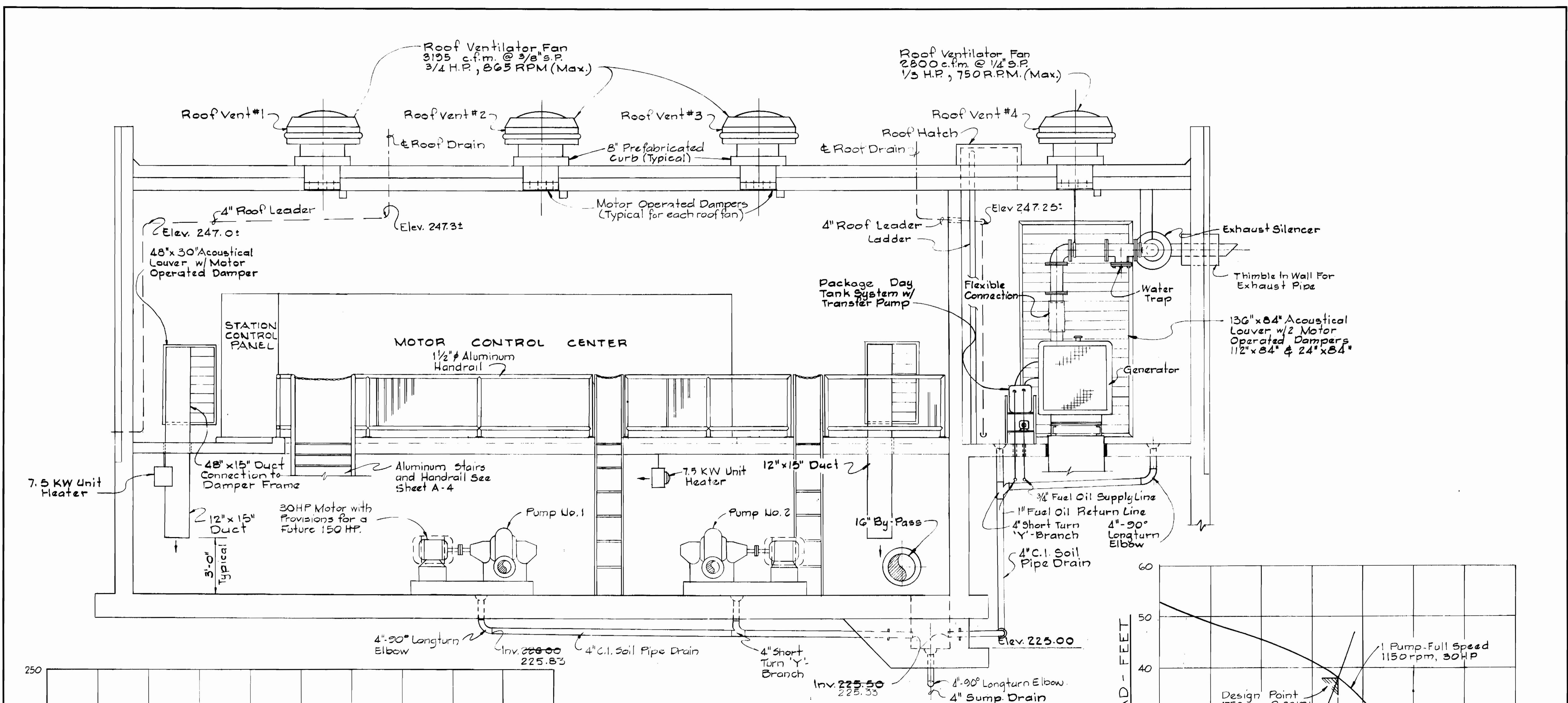
WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

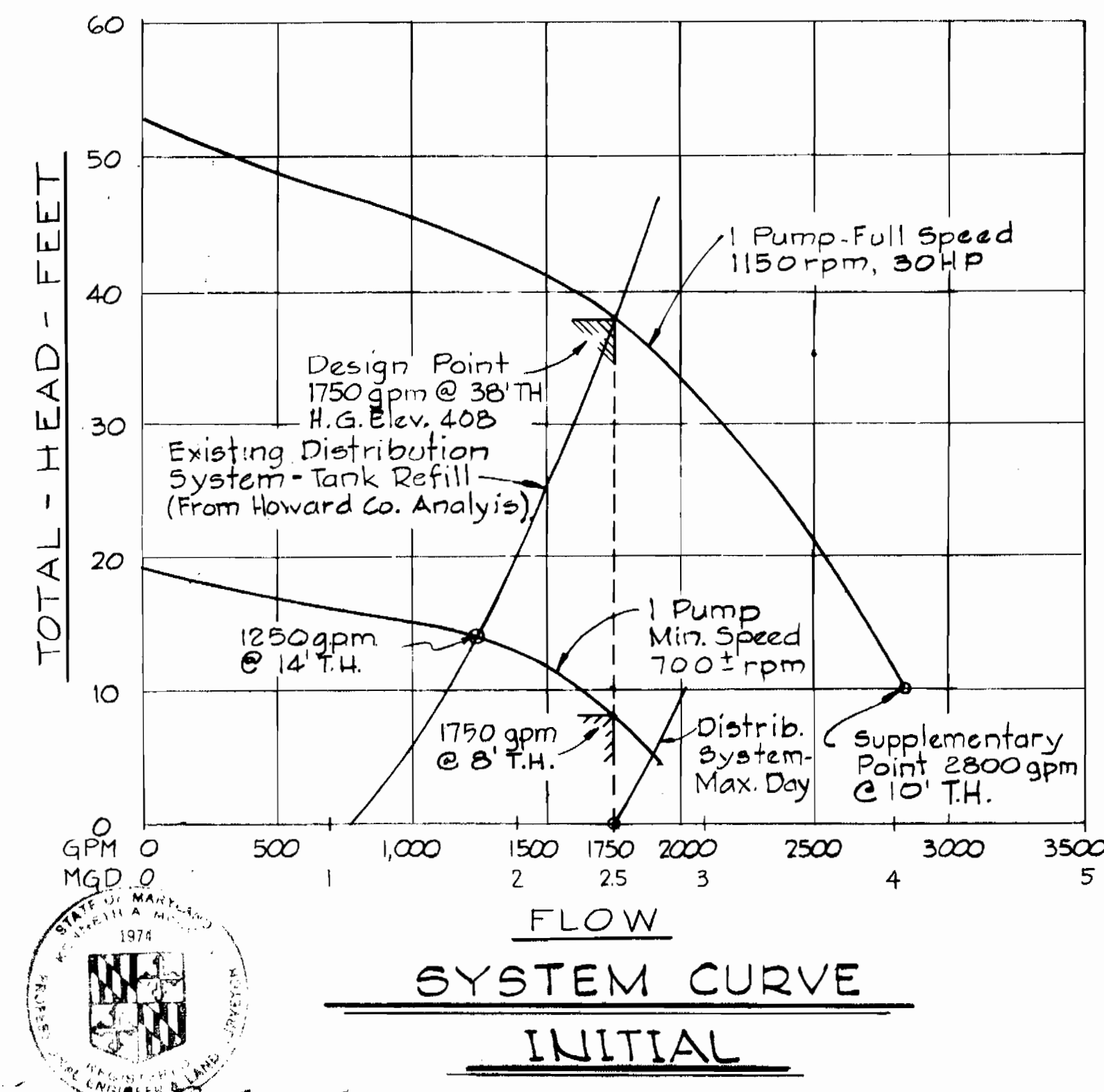
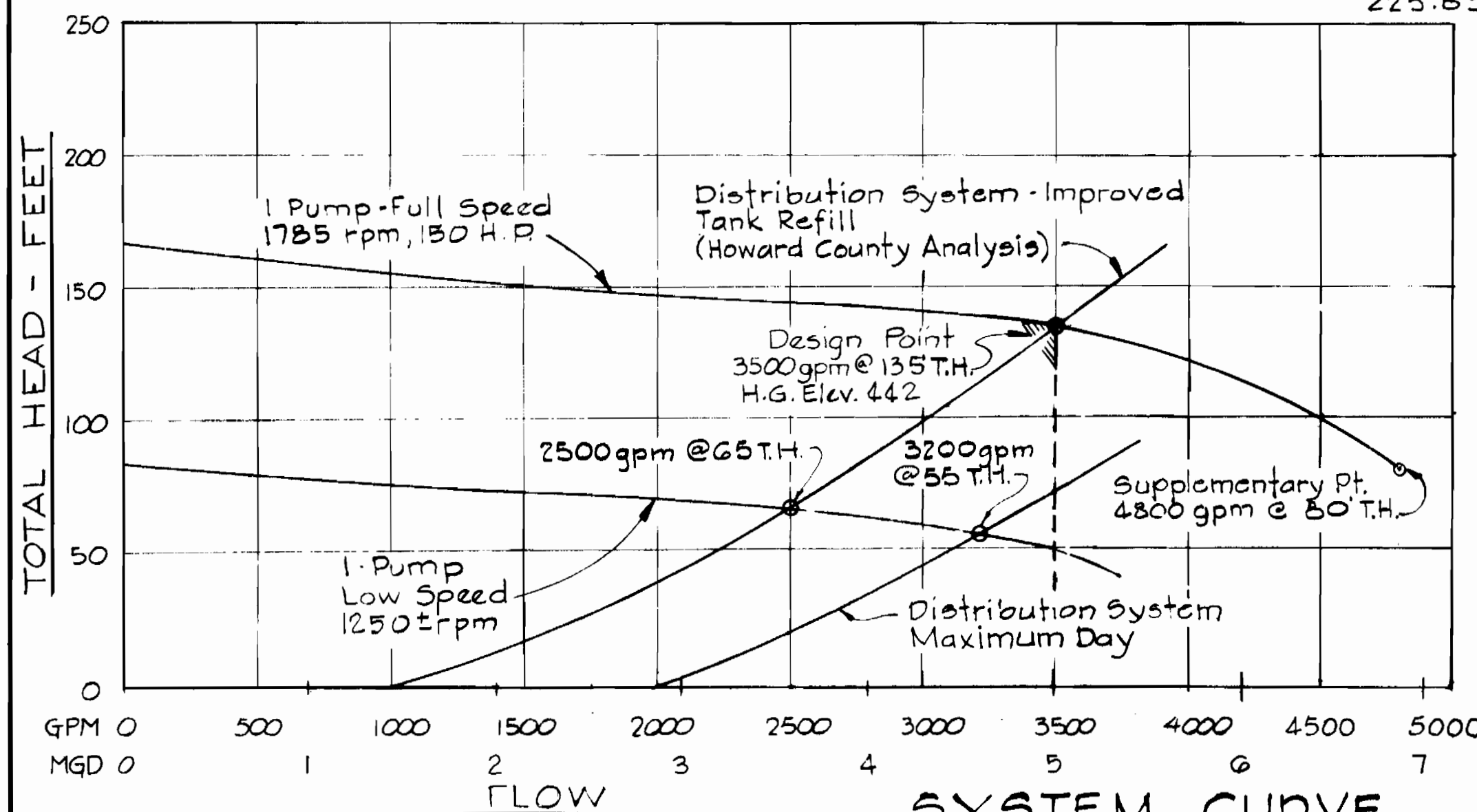
MECHANICAL
PLAN AND DIAGRAMS

ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 15 OF 22
SCALE AS SHOWN



SECTION M3A/M1M2
Scale: 3/8" = 1'-0"



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Henry F. Neuman 8-0-82
DIRECTOR OF PUBLIC WORKS - DATE
Robert A. Brunner 8-2-82
CHIEF - BUREAU OF UTILITIES - DATE

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

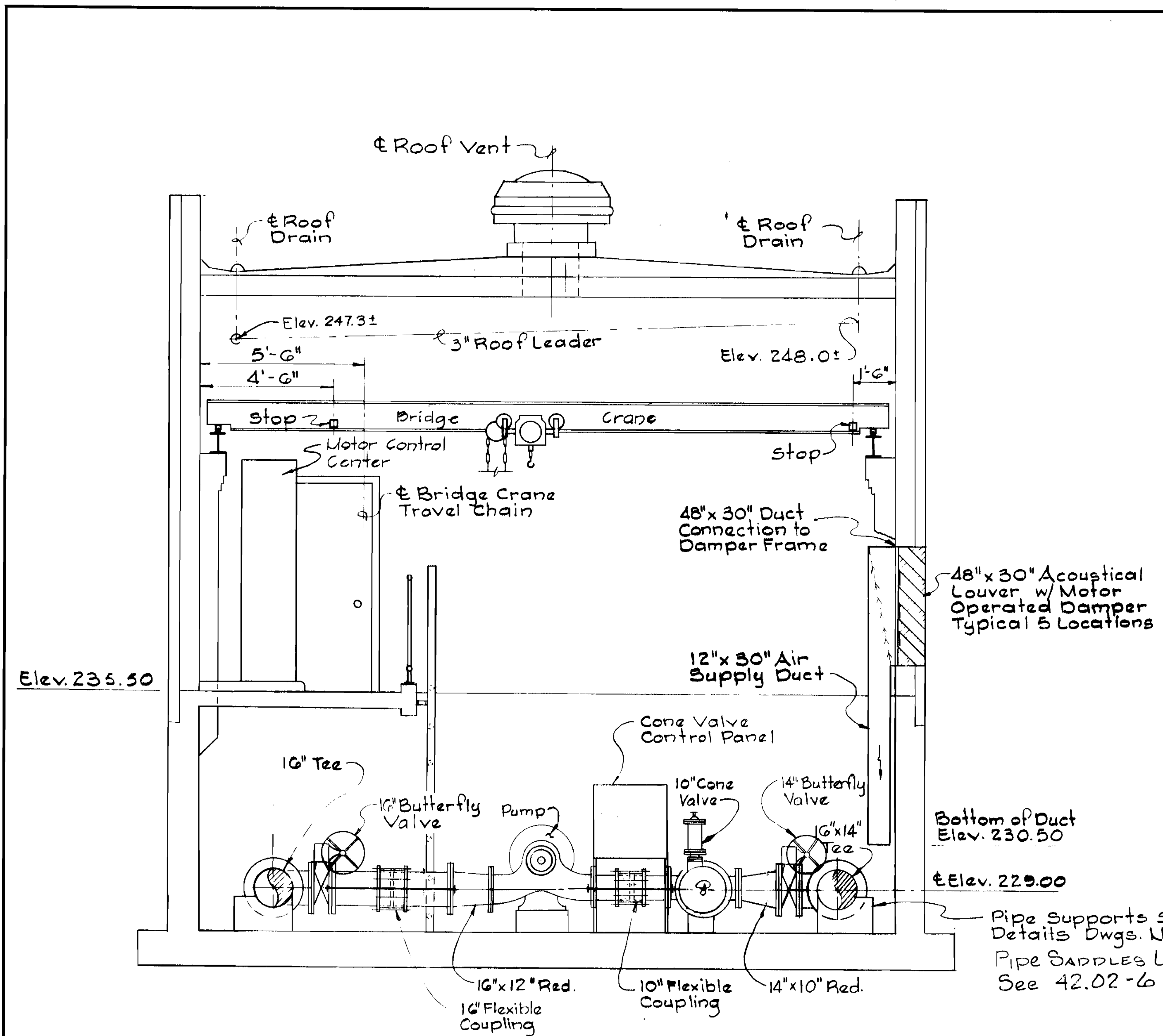
CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

MECHANICAL
SECTIONS AND DETAILS

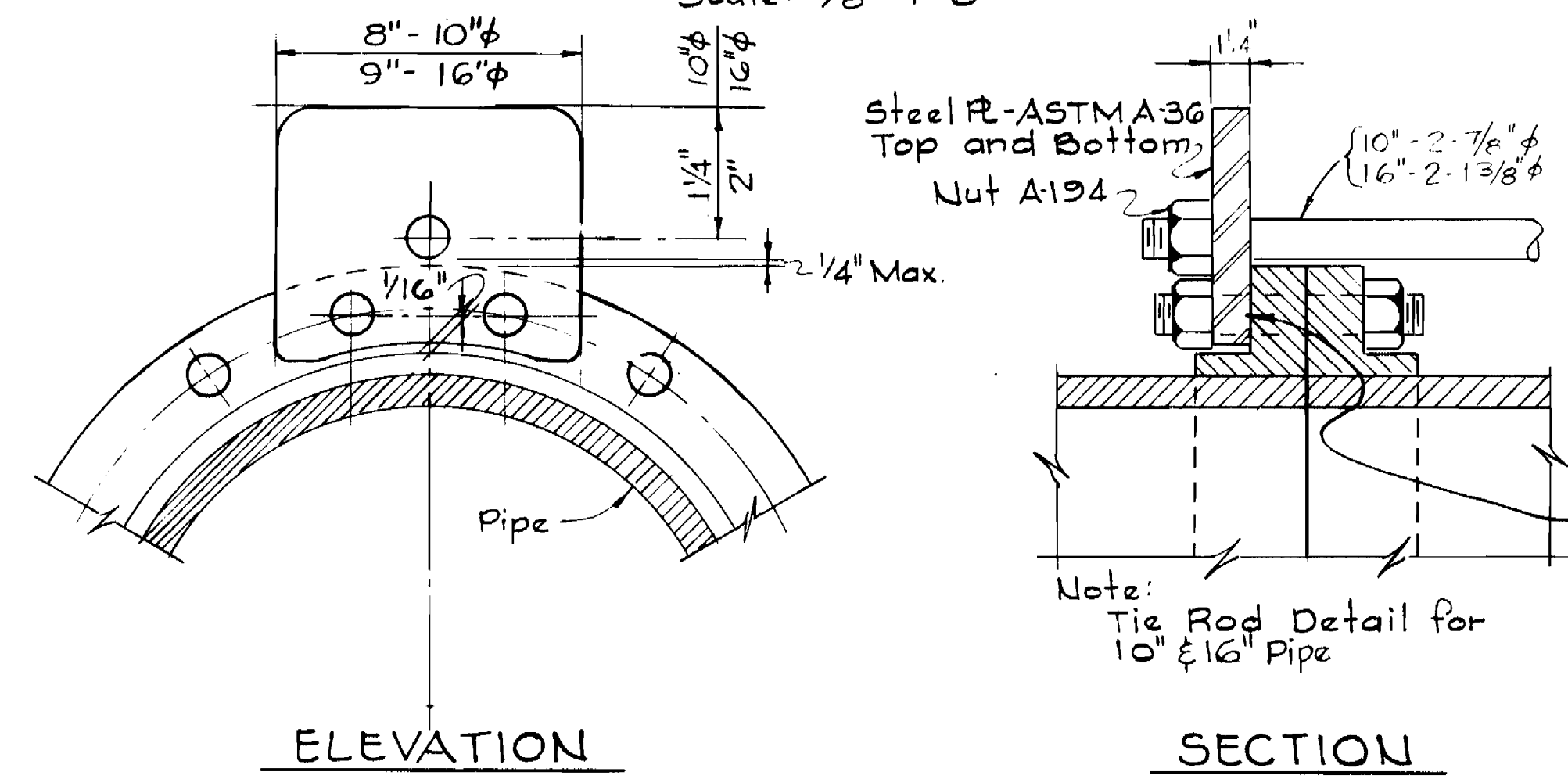
ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 16 OF 22
SCALE AS SHOWN

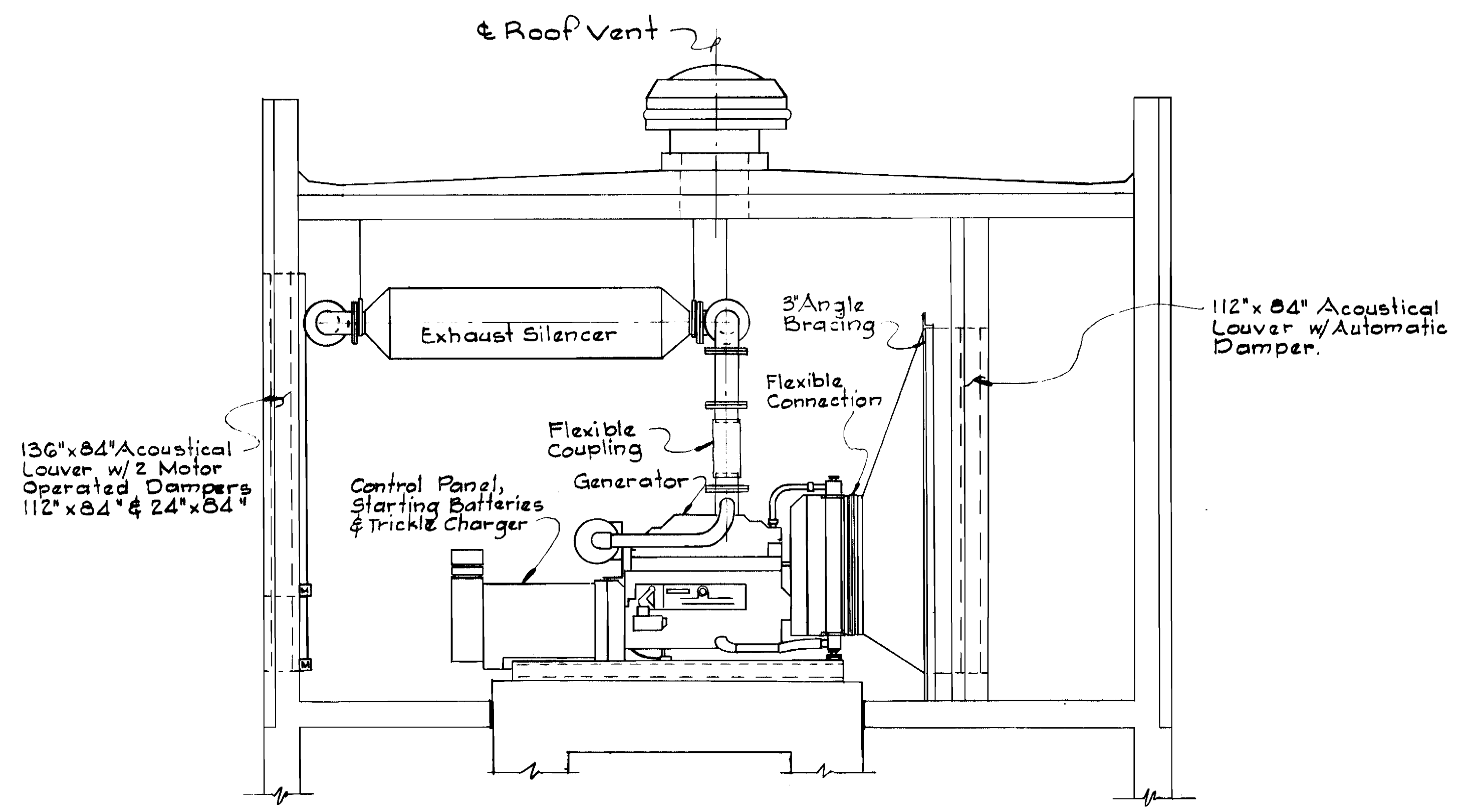
0767/10 W



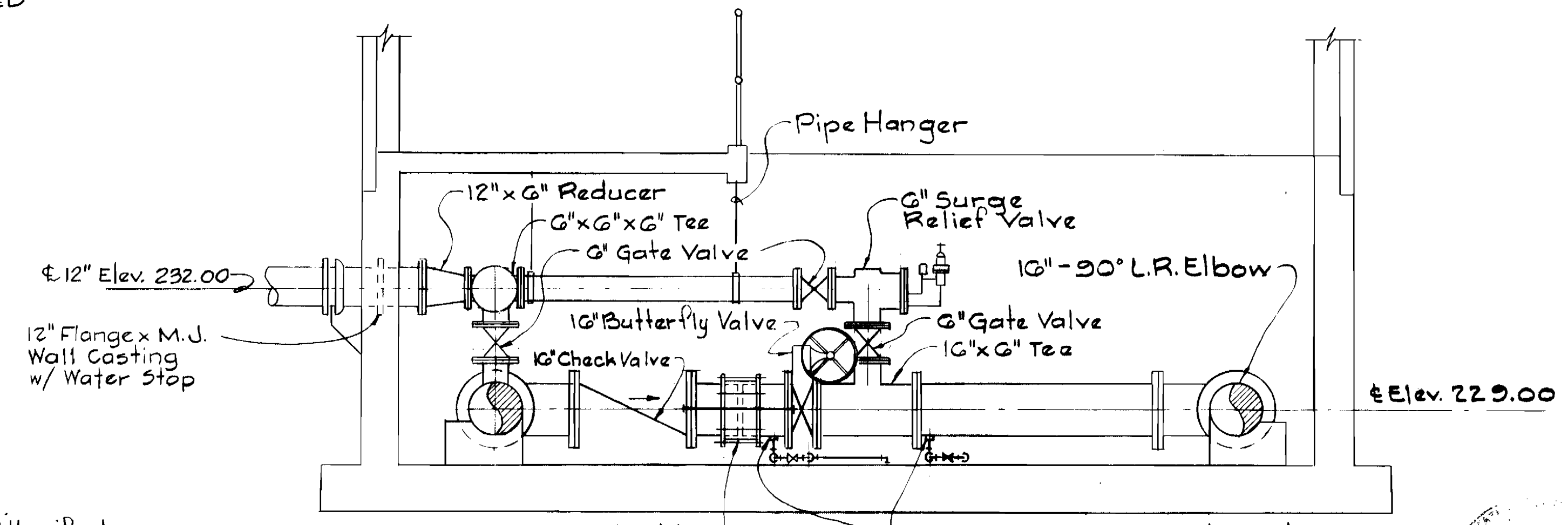
SECTION M4A/M1, M2
Scale: 3/8" = 1'-0"



TIE ROD DETAILS
Scale: 3" = 1'-0"



SECTION M4B/M1
Scale: 3/8" = 1'-0"



SECTION M4C/M2
Scale: 3/8" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works: *Ray F. Newman* 8-10-82
Chief - Bureau of Engineering: *William B. Ryan* 8/10/82
Chief - Bureau of Utilities: *Robert Beniger* 8-9-82
Chief - Utilities Division: *Allen L. Brown* 8/4/82

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

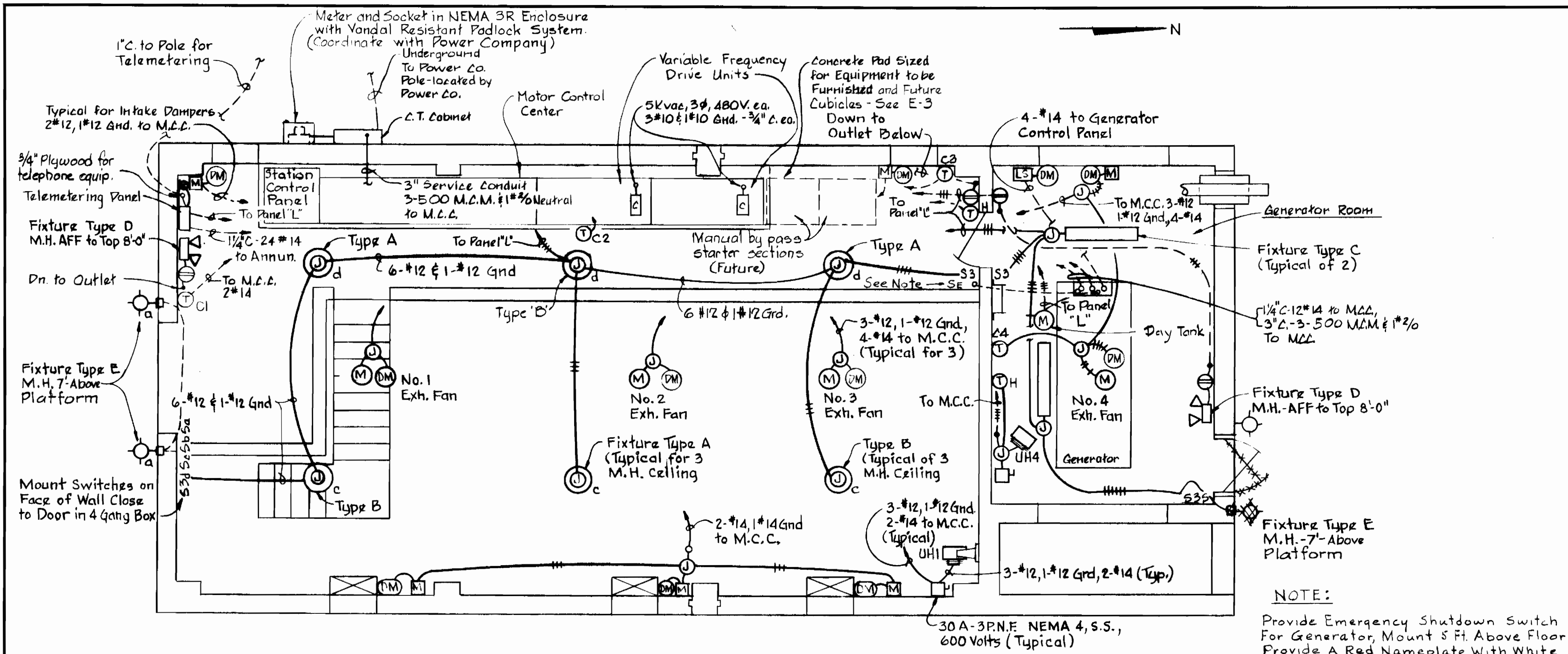
CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

MECHANICAL SECTIONS

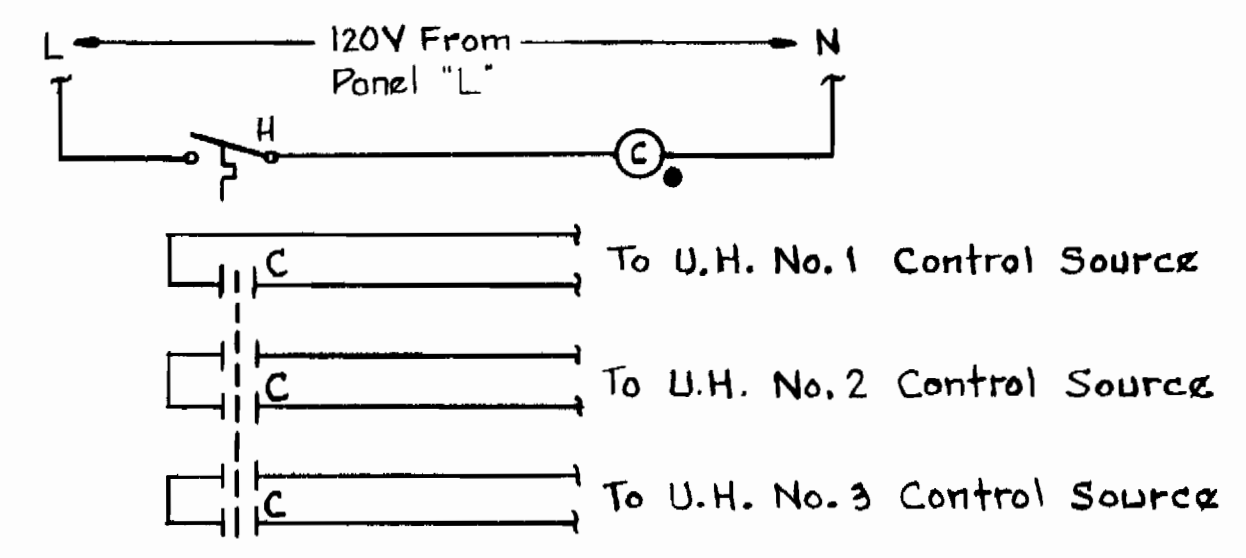
ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 17 OF 22
SCALE AS SHOWN

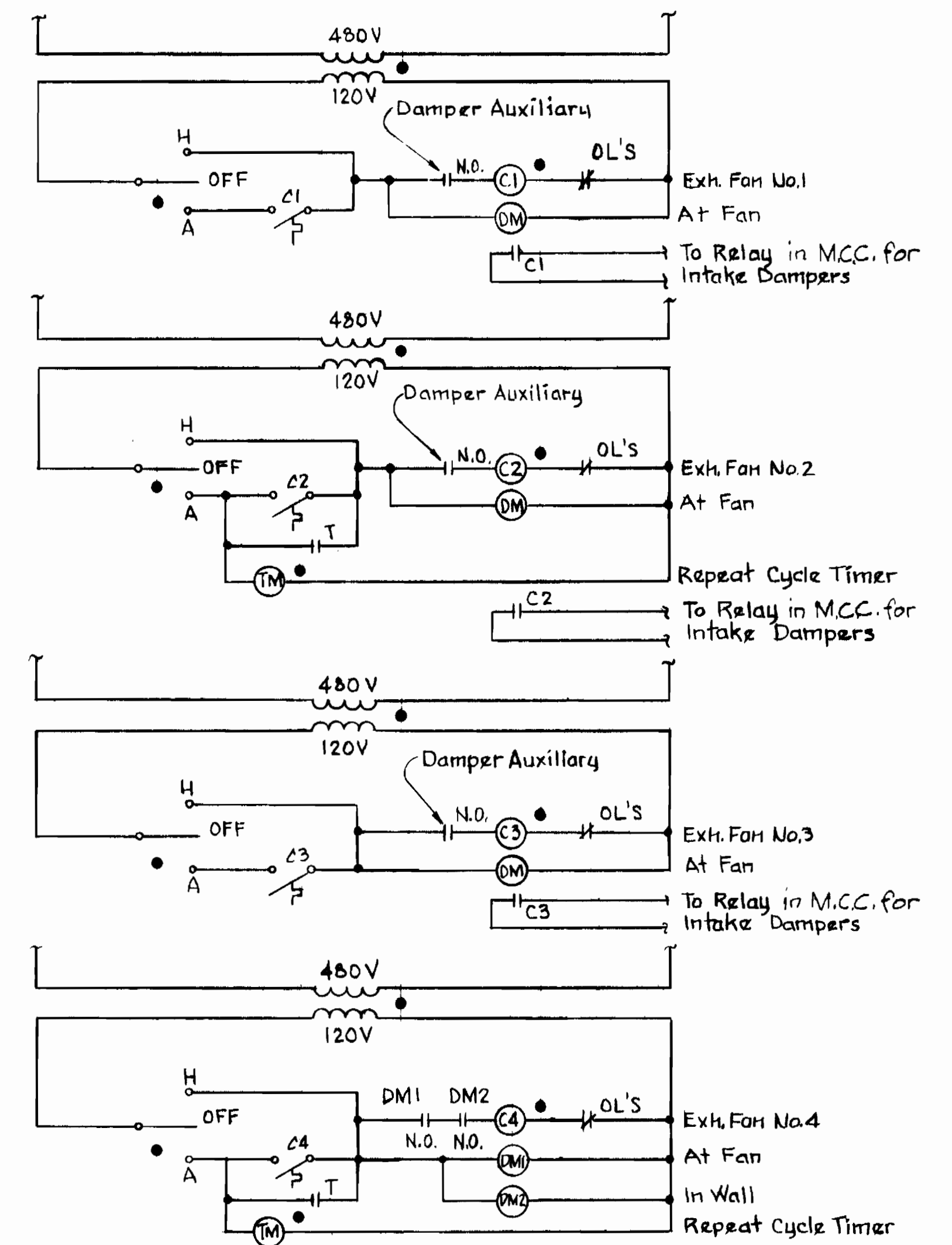
All Saints Road
Water Pumping Station
Contract No. 44-0969
Project No. W-7-8093



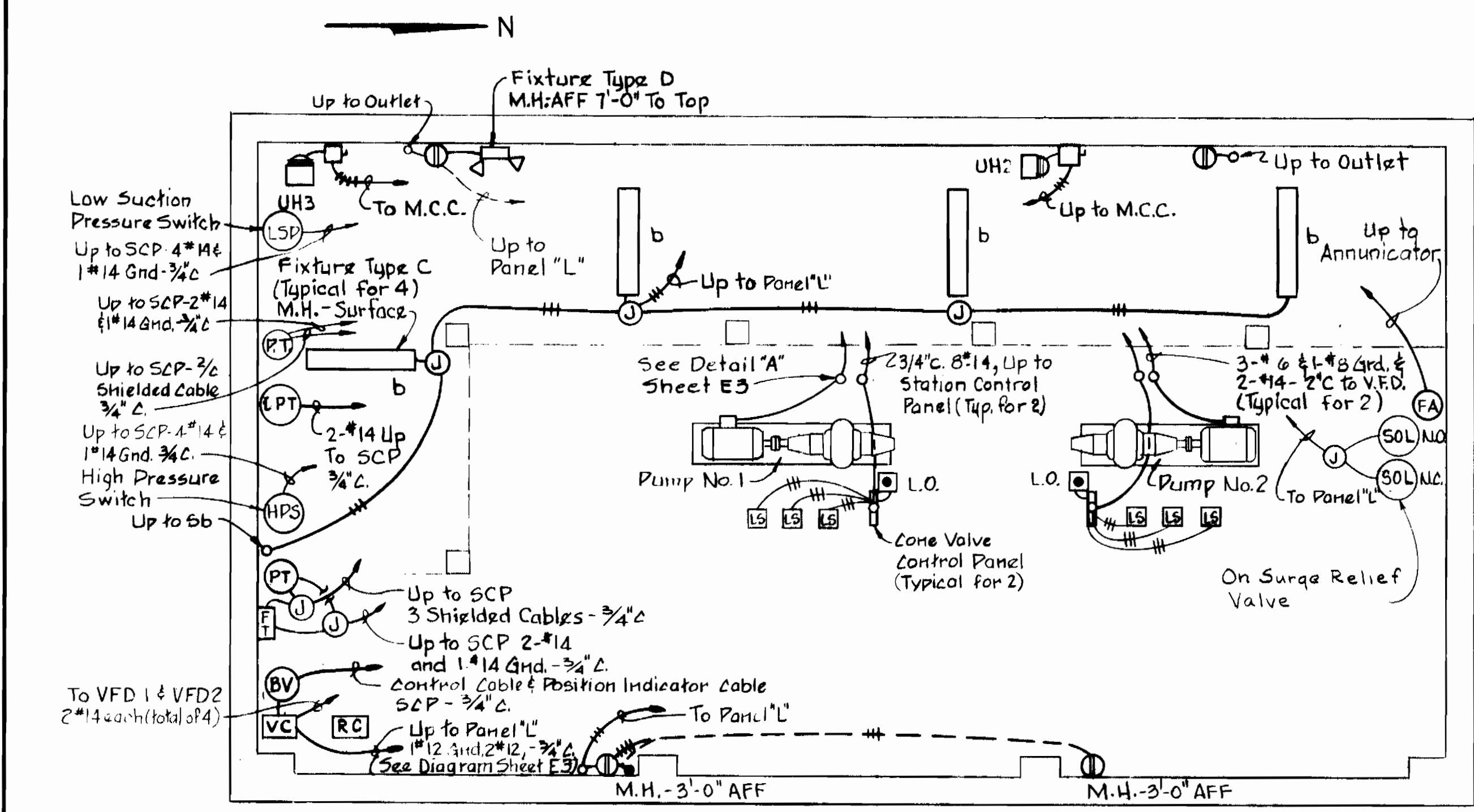
PLAN - OPERATING LEVEL
Scale: 1/4" = 1'-0"



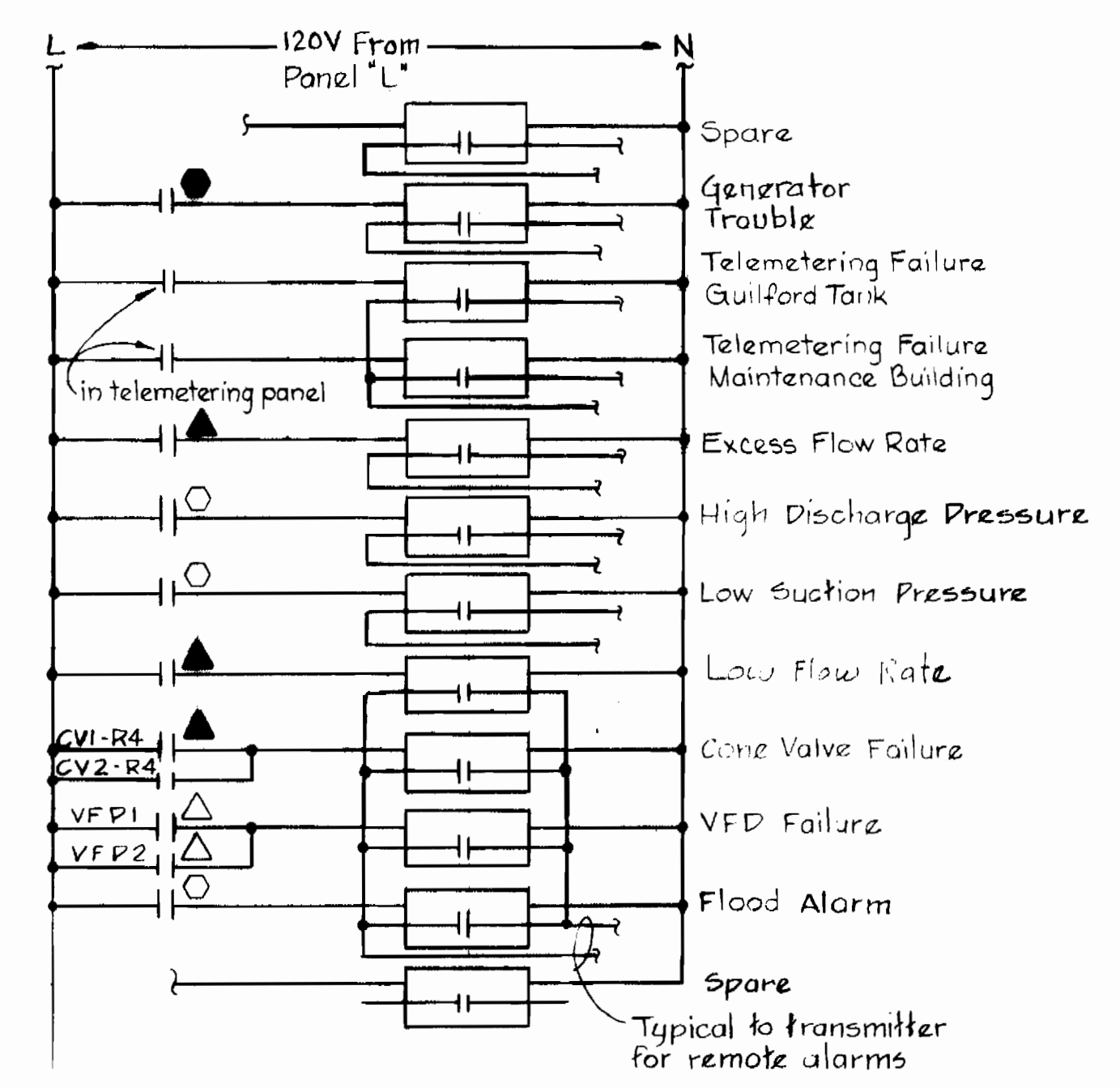
UNIT HEATER CONTROL DIAGRAM



EXHAUST FANS - CONTROL DIAGRAMS



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



ANNUNCIATOR PANEL SCHEDULE
(See Dwg. No 21 for telemetering)



Kenneth M. Lord
All Saints Road
Water Pumping Station
Contract No. 44-0969
Project No. W-7-8093

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
W. F. Neuman 8-10-82
DIRECTOR OF PUBLIC WORKS - DATE
Alban J. Brown 8/1/82
CHIEF - BUREAU OF UTILITIES - DATE

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

PLANS AND DIAGRAMS

ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 18 OF 22
SCALE AS SHOWN

0464/18 W

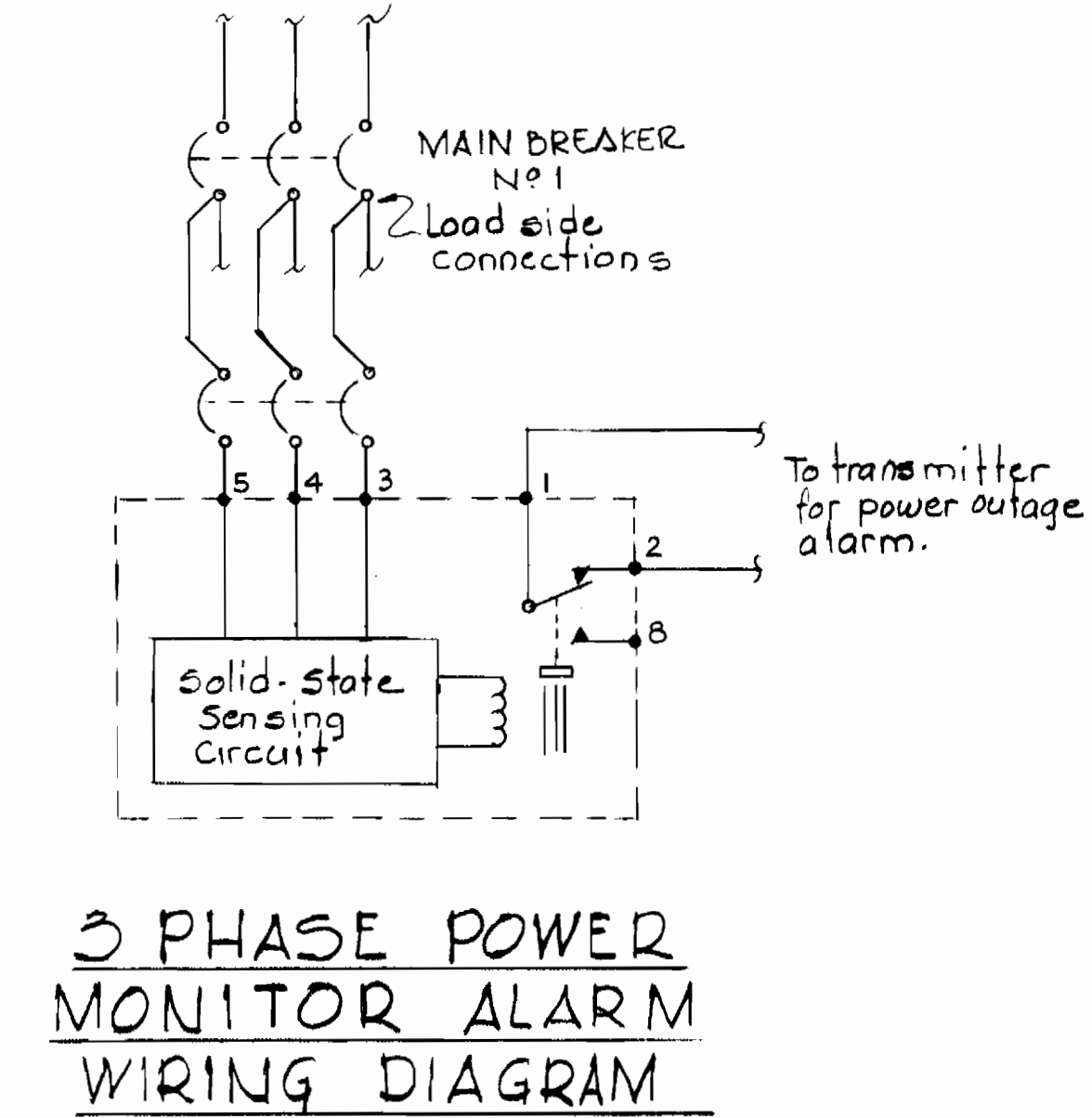
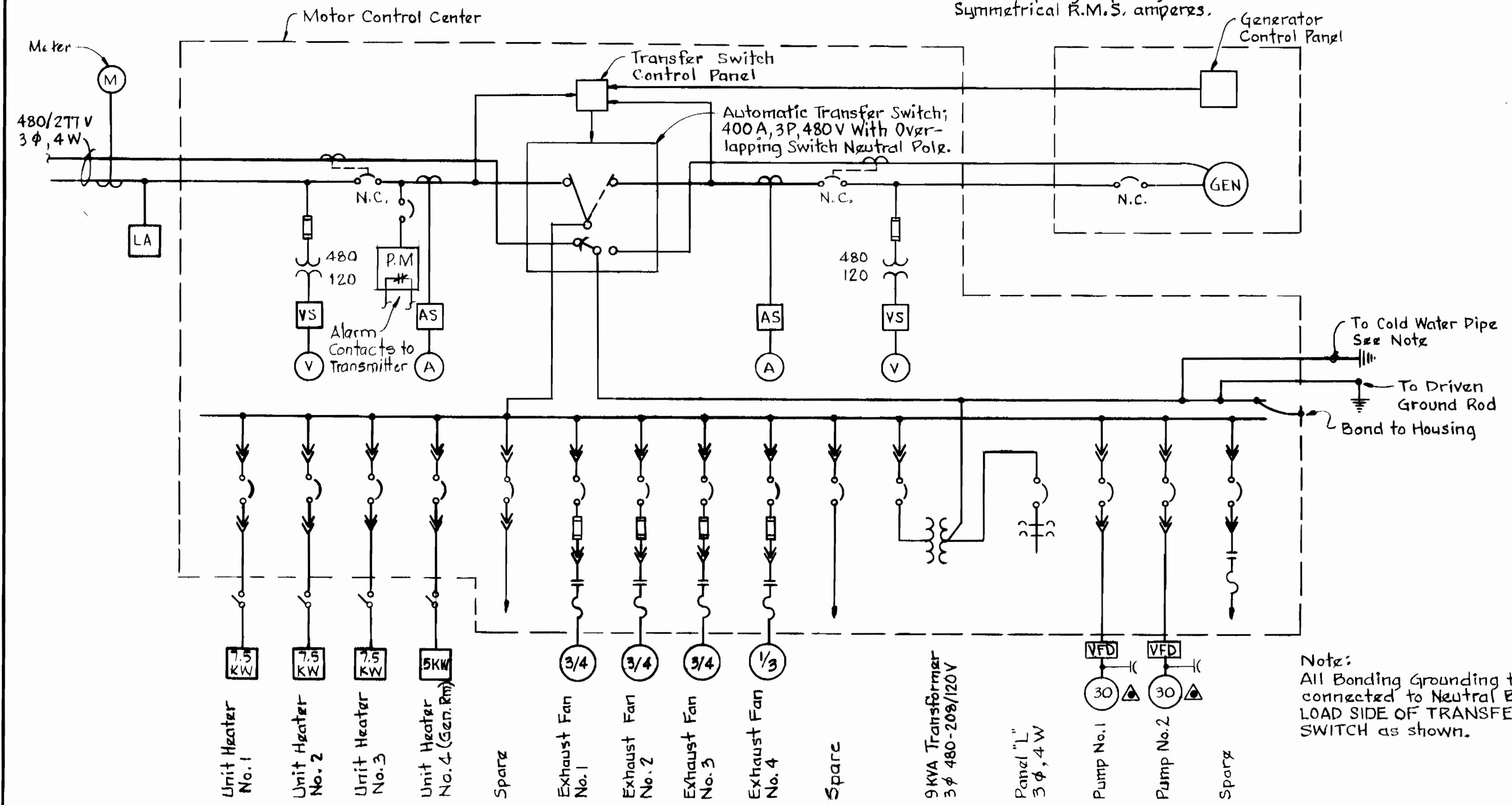
MOTOR CONTROL CENTER														
480/277V, 3 ϕ , 4W, 60HZ, 600A HORIZ. BUS 300A VERTICAL BUS BRACED FOR 42000 A.S.T.C.														
SECTION NO.	NAMEPLATE DATA	DEVICE DESCRIPTION	HP/KW	AUX. DESCRIP.	BREAKER OR MCP FRAME	MCP POLES	SIC Calib.	WIRE-POWER #	WIRE-CONTROL	GRD WIRE	COND SIZE	REMARKS		
1A	SPACE	Incoming Feeder Space												
2A	Standard Nameplates	Meters, Switches, Etc. P.M.		See Spec	100	3	15	25	3	12		connect breakers to load side of Main Brk.		
3A	MAIN BREAKER NO. 1	Circuit Breaker (See Specs)		gh	400	3	400	35	3	500	1 $\frac{1}{2}$ "			
4A	SERVICE FEEDER	Incoming Feeder Space												
1B	SPACE													
2B	ANNUNCIATOR	12 Point		See Spec										
3B	TRANSFER SWITCH	Automatic Transfer Switch 400A		See Spec		4	400	25						
1C	SPACE	Circuit Breaker			100	3	20	25						
2C	Standard Nameplates	Meters, Switches, Etc.		See Spec										
3C	MAIN BREAKER NO. 2	Circuit Breaker (See Specs)		gh	400	3	400	35	3	500	1 $\frac{1}{2}$ "	To Generator		
4C	GENERATOR FEEDER	Incoming Feeder Space												
1D	SPACE	Combination Starter		a,b,c,d	100	3	15	25						
2D	Panel "L"	Circuit Breaker Panel w/Main Brk		See Spec	100	3	40	25						
3D	TRANSFORMER-CIRCUIT BREAKER	Circuit Breaker			100	3	20	25						
4D	KVA TRANSFORMER	Transformer-480-208/120-3 ϕ 4W		See Spec	100	3								
1E	ROOF EXHAUST FAN NO. 1	Size 1 Combination Starter	3/4	a,b,c,d	100	3	15	25	3	12	4	14	12	3/4
2E	ROOF EXHAUST FAN NO. 2	Size 1 Combination Starter	3/4	a,b,c,d	100	3	15	25	3	12	4	14	12	3/4
3E	ROOF EXHAUST FAN NO. 3	Size 1 Combination Starter	3/4	a,b,c,d	100	3	15	25	3	12	4	14	12	3/4
4E	ROOF EXHAUST FAN NO. 4	Size 1 Combination Starter	1/3	a,b,c,d	100	3	15	25	3	12	2	14	12	3/4
5E1	UNIT HEATER NO. 1	Circuit Breaker	7.5		100	3	15	25	3	12	2	14	12	3/4
5E2	UNIT HEATER NO. 2	Circuit Breaker	7.5		100	3	15	25	3	12	2	14	12	3/4
5E3	UNIT HEATER No. 3	Circuit Breaker	7.5		100	3	15	25	3	12	2	14	12	3/4
5E4	UNIT HEATER, No. 4	Circuit Breaker	5		100	3	15	25	3	12	2	14	12	3/4
1F1	SPACE	Circuit Breaker			100	3	15	25						
1F2	SPACE													
2F	RELAYS INTAKE DAMPERS/UNIT HEATERS	Control Relays & Timers		f, f, g, g										1-3 pole, 1-1 pole relays
3F	PUMP NO. 1	Circuit Breaker	30		100	3	90	25	3	4	2	14	12	2"
4F	PUMP NO. 2	Circuit Breaker	30		100	3	90	25	3	4	2	14	12	2"

AUXILIARY DESCRIPTION

- a - Control Transformer 480-120 Volt.
- b - Red "ON" Indicating Light.
- c - Green "OFF" Indicating Light.
- d - HAND-OFF-AUTO Selector Switch.
- e - Auxiliary Switch on breaker or mechanism.
- f - Control Relay
- g - Repeat Cycle Timer
- h - Ground Sensor Relay

LEGEND

- (PT) Pressure Transmitter
- (BV) Butterfly Valve Operator
- (FT) Flow Transmitter
- (RC) Ratz Controller
- (DPT) Differential Pressure Transmitter & Switch
- (VFD) Variable Frequency Drive Unit
- (VC) Valve Control Panel
- (J) Junction Box
- T — Telephone Conduit
- Surface Mounted Conduit
- — — Concealed Conduit in Slab or Underground
- ⊕ Duplex Convenience Outlet Surface Cast Box M.H. 18" AFF unless noted otherwise.
- (DM) Damper Motor
- (M) Manual Motor Starter
- (□) Disconnect Switch
- (M) Motor
- (LS) Limit Switch
- S/S Switches - Toggle Single Pole, 3 Way - Surface Mounted M.H. AFF - 4'-6"
- (T) Thermostats - Heat, Cool - M.H. AFF 5'-0" ±
- (FA) Flood Alarm
- Conduit Up
- Conduit Down
- (C) Capacitor
- M.C.C. Motor Control Center
- M.H.-AFF Mounting Height Above Finish Floor
- (⊙) Lighting Fixtures
- Located in Motor Control Center
- Located at pump location
- Located in or on equipment
- △ Located in V.F.D. control Cabinet
- Located on Valve
- Located on Generator
- ▲ Located in Station Control Panel
- (L.O.) Lock out Stop Station
- Located in Pump Room
- (□) Disconnect Switch
- (A) (V) Ammeter - Voltmeter
- (AS) (VS) Ammeter - Voltmeter Selector Switch
- (LA) Lightning Arrestor
- (PM) 3 ϕ Power Monitor



Notz: All Bonding Grounding to be connected to Neutral Bus on LOAD SIDE OF TRANSFER SWITCH as shown.

POWER ONE LINE DIAGRAM

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works - DATE
 Chief - Bureau of Engineering - DATE
 Chief - Bureau of Utilities - DATE

WHITMAN, REQUARDT AND ASSOCIATES
 ENGINEERS
 2315 ST. PAUL ST.
 BALTIMORE, MARYLAND

CONTRACT NO. 44-0969
 PROJECT NO. W-7-8093

ONE LINE DIAGRAM

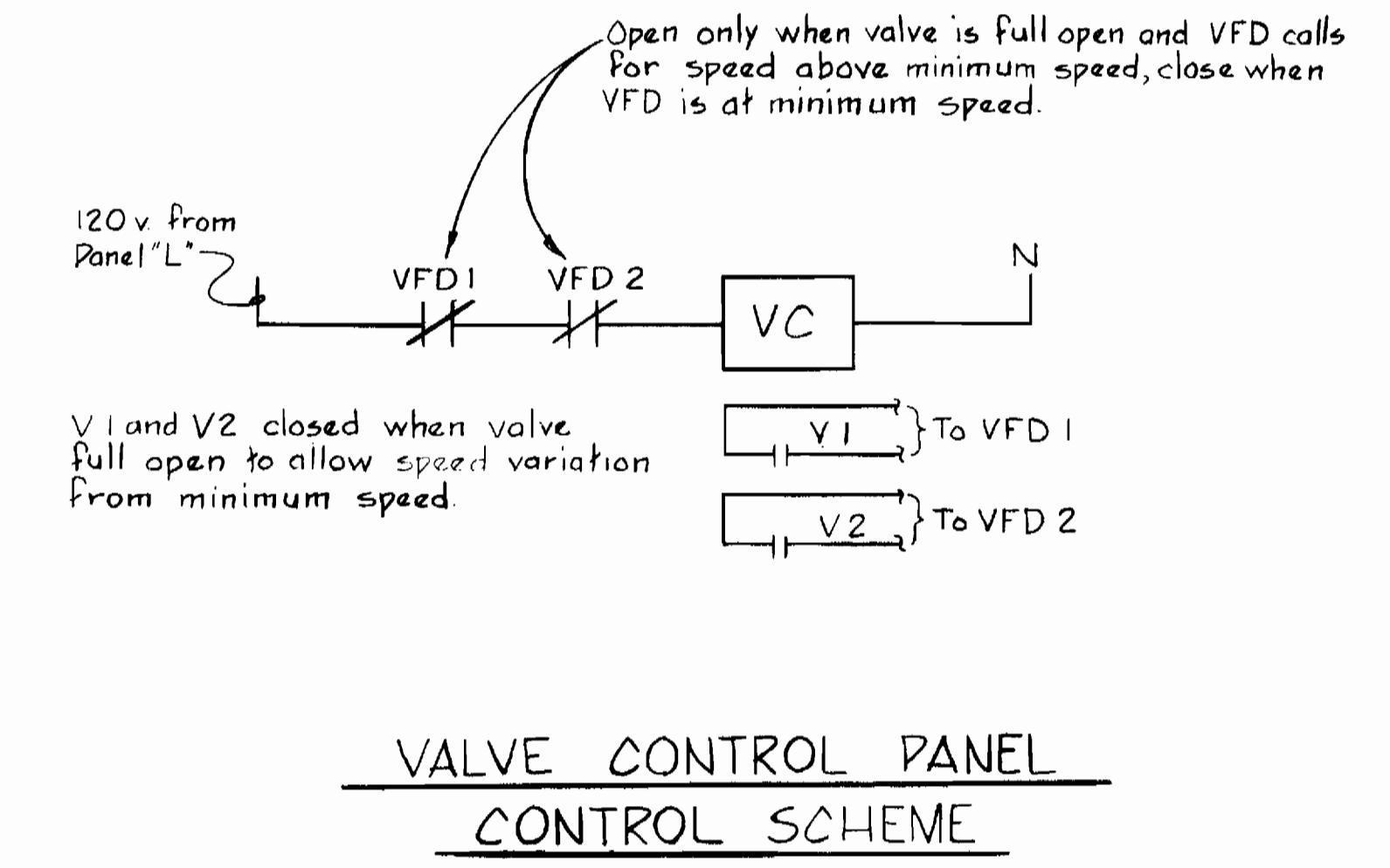
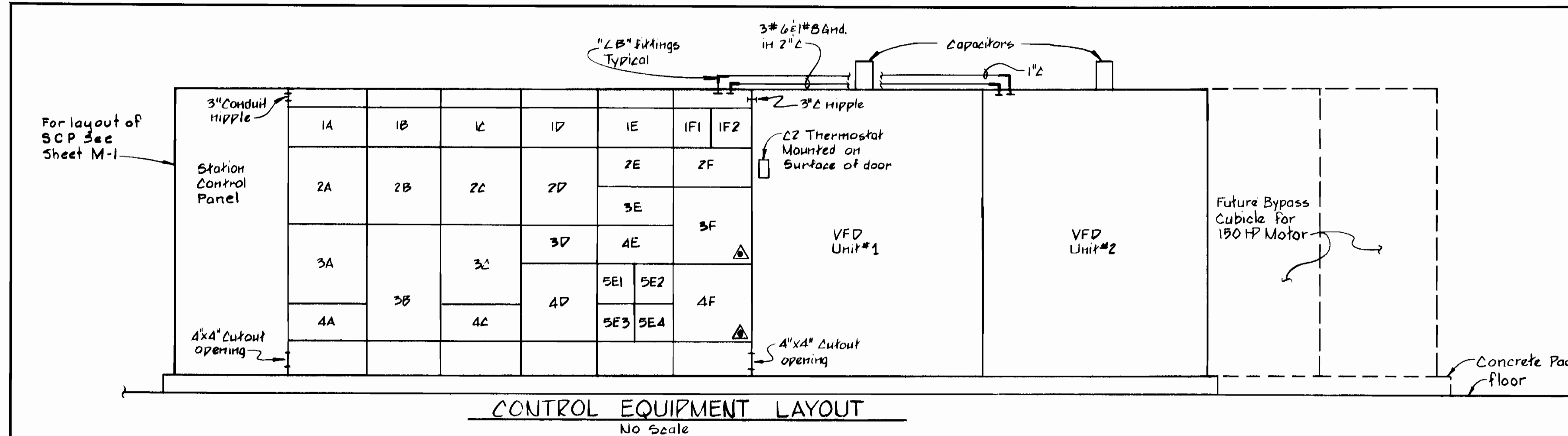
ALL SAINTS ROAD WATER PUMPING STATION
 ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 19 OF 22
 SCALE AS SHOWN



Kenneth A. Melrod
 All Saints Road
 Water Pumping Station
 Contract No. 44-0969
 Project No. W-7-8093

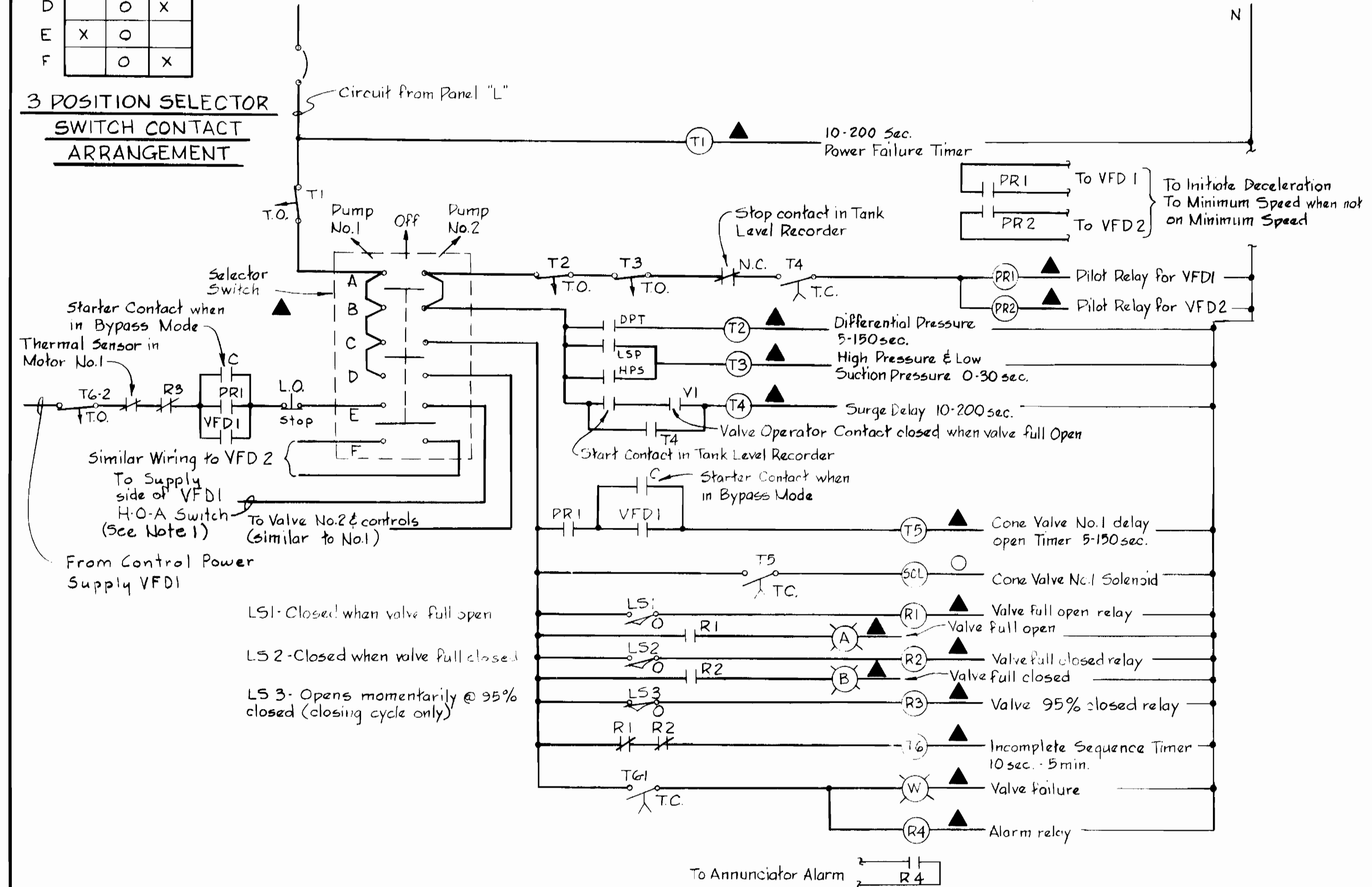
0767/11 W



Pump No.1 Off Pump No.2

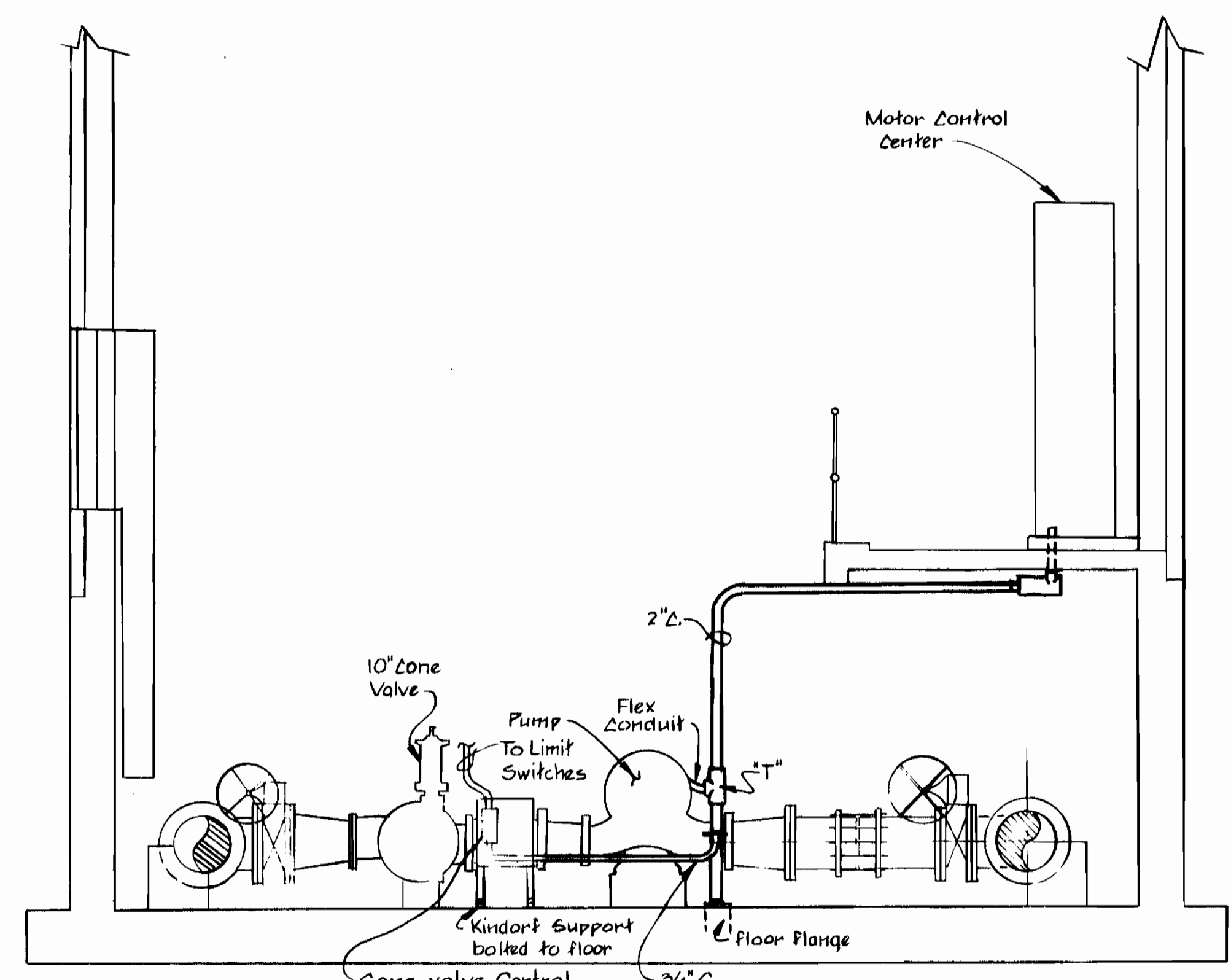
A	X	O	
B		O	X
C	X	O	
D		O	X
E	X	O	
F		O	X

3 POSITION SELECTOR SWITCH CONTACT ARRANGEMENT



CONTROL DIAGRAM FOR CONE VALVE & PUMP NO. 1 (Similar for Cone Valve & Pump No.2)

Notes:
 1. "Hand" mode - pump runs automatically but at a manually selected constant speed.
 "Auto" mode - pump runs automatically but at a variable speed as determined by the set point controller.



DETAIL "A" No Scale

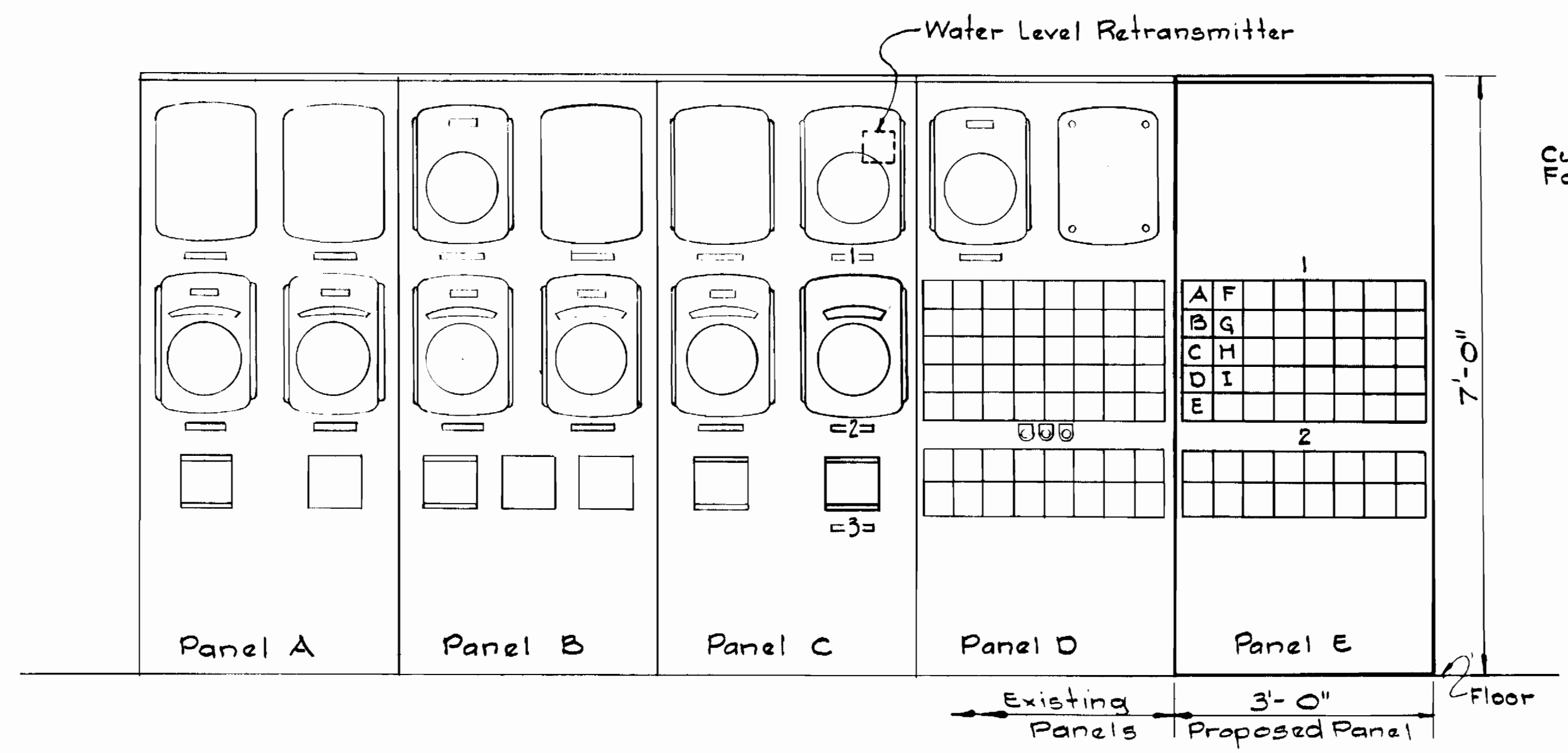


All Saints Road Water Pumping Station
 Contract No. 44-0969
 Project No. W-7-8093

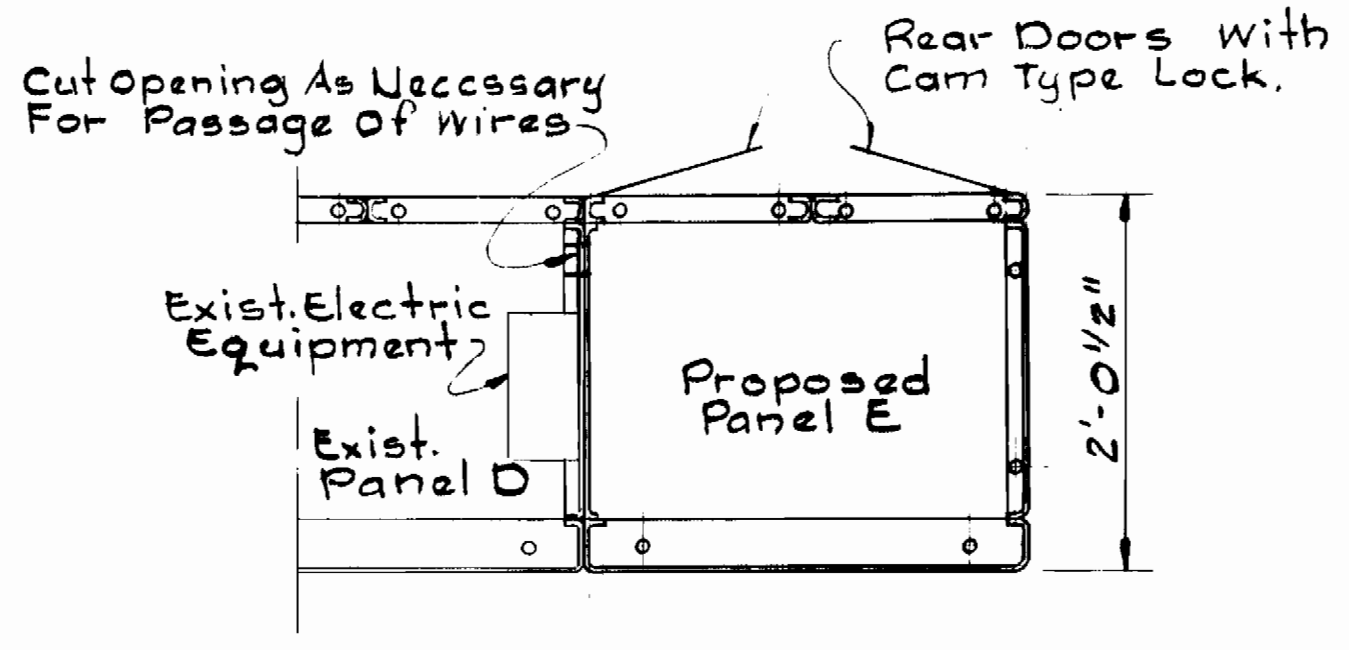
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works: <i>Deane F. Nalley</i> 8-10-82 Chief - Bureau of Engineering: <i>Robert M. Reamer</i> 8-9-82 Chief - Bureau of Utilities: <i>Allen S. Brown</i> 8/4/82	WHITMAN, REQUARDT AND ASSOCIATES ENGINEERS 2315 ST. PAUL ST. BALTIMORE, MARYLAND	CONTRACT NO. 44-0969 PROJECT NO. W-7-8093	ELEMETARY DIAGRAM SECTION AND DETAILS	ALL SAINTS ROAD WATER PUMPING STATION ELECTION DISTRICT GUILFORD NO. 6	DRAWING NO. 20 OF 22 SCALE AS SHOWN
---	---	--	--	---	--

0769120 W

AS BUILT 7-22-80

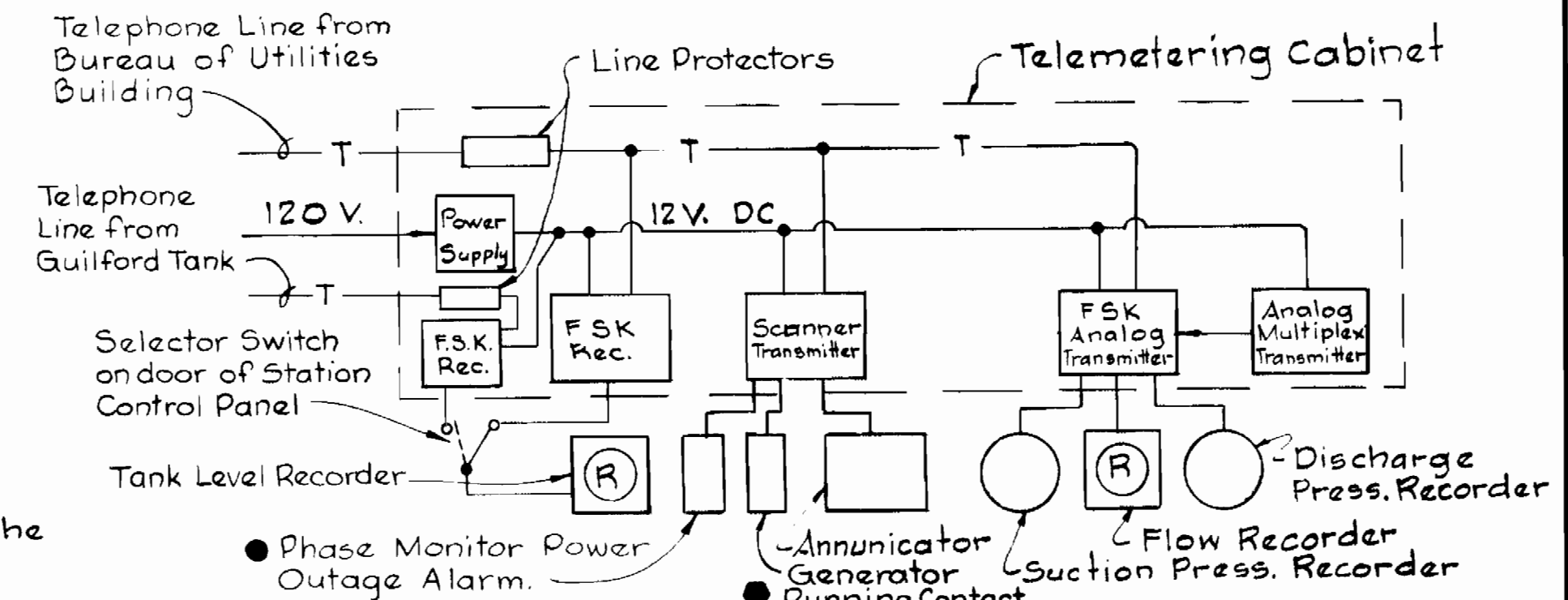
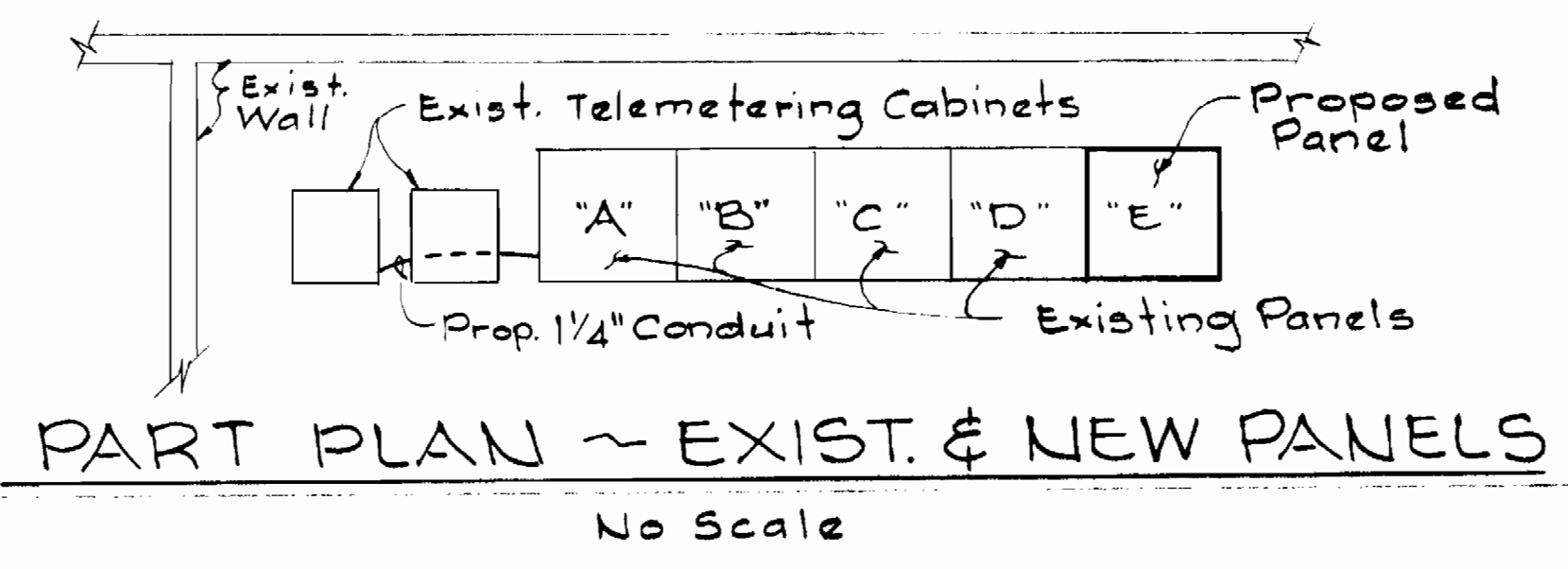


ELEVATION
Scale: 3/4" = 1'-0"

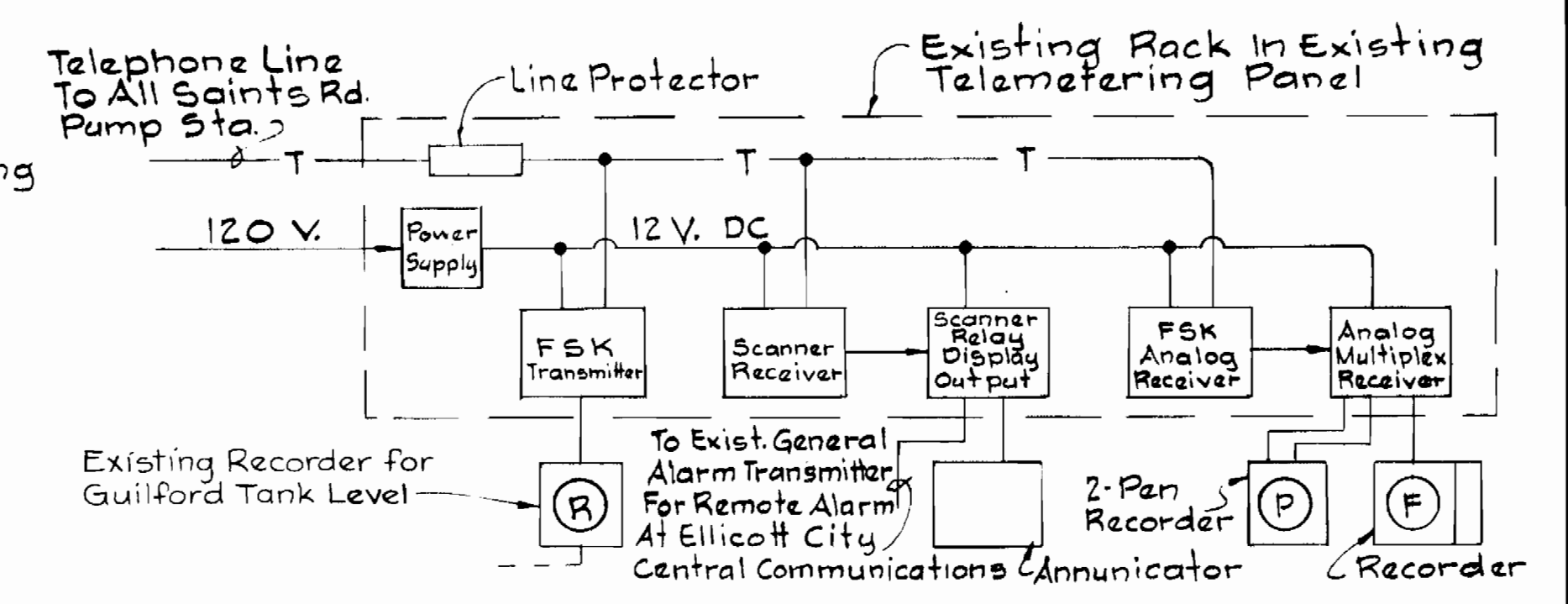


PART PLAN
Scale: 1" = 1'-0"

- Notes:**
1. Panel and Doors of 10 Gage H.R.S. Construct and Finish to Match Existing B.I.F. Panel Drawing No. A-22375B, 1976.
 2. Nameplates to be White Lamicaid with Black Engraving to Match Existing.
 3. Panel "E" Power Supply Shall be connected to the Existing Circuit Supplying Panel "D".
 4. Wiring From Panels "C" & "E" for the Number of Points Used, shall be installed thru the Existing Panels and Extended in Conduit to the Existing Telemetering Cabinet.
 5. Wiring from Panels "C" & "E" to Telemetering Cabinet shall be No. 14 Standed THWN, Identified at Both Ends With Brady Labels. Wiring to be Laced and Straped in Place.
 6. Wiring shall be installed in the Existing Telemetering Cabinet From the Existing Rack to New Terminal Strip in Back of Cabinet.
 7. Window to Indicate Generator Running but without Alarm or Acknowledge Required.



ONE LINE DIAGRAM ~ TELEMETERING ALL SAINTS ROAD PUMPING STATION



ONE LINE DIAGRAM ~ TELEMETERING BUREAU OF UTILITIES MAINTENANCE BLDG.

ITEM No.	DESCRIPTION	NAMEPLATE INSCRIPTION
Panel "C" 1	Water Level Indicator-Recorder (Existing)	GUILFORD RD. E.W.T. (Existing)
2	2-Pen, Pressure Recorder-Indicator	ALL SAINTS RD. W.P.S. RED-SUCTION PRESSURE BLUE-DISCHARGE PRESSURE
3	Flow Indicator-Recorder-Totalizer	ALL SAINTS RD. W.P.S. FLOW
Panel "E" 1	Annunciator (40 Points)	
	Window A	ALL SAINTS W.P.S. POWER OUTAGE
	Window B "See Note No. 7"	ALL SAINTS W.P.S. GENERATOR RUNNING
	Window C	ALL SAINTS W.P.S. GENERATOR TROUBLE
	Window D	ALL SAINTS W.P.S. TELEMETER FAILURE
	Window E	ALL SAINTS W.P.S. TROUBLE
	Window F	ALL SAINTS W.P.S. EXCESS FLOW
	Window G	ALL SAINTS W.P.S. LOW FLOW
	Window H	ALL SAINTS W.P.S. LOW SUCTION
	Window I	ALL SAINTS W.P.S. HIGH DISCHARGE
2	Annunciator (16 Points)	

See Note No. 7

SUPERVISORY CONTROL PANEL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works DATE 8-6-82
Chief - Bureau of Engineering DATE 8/1/82
Chief - Bureau of Utilities - DATE 8/1/82

WHITMAN, REQUARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

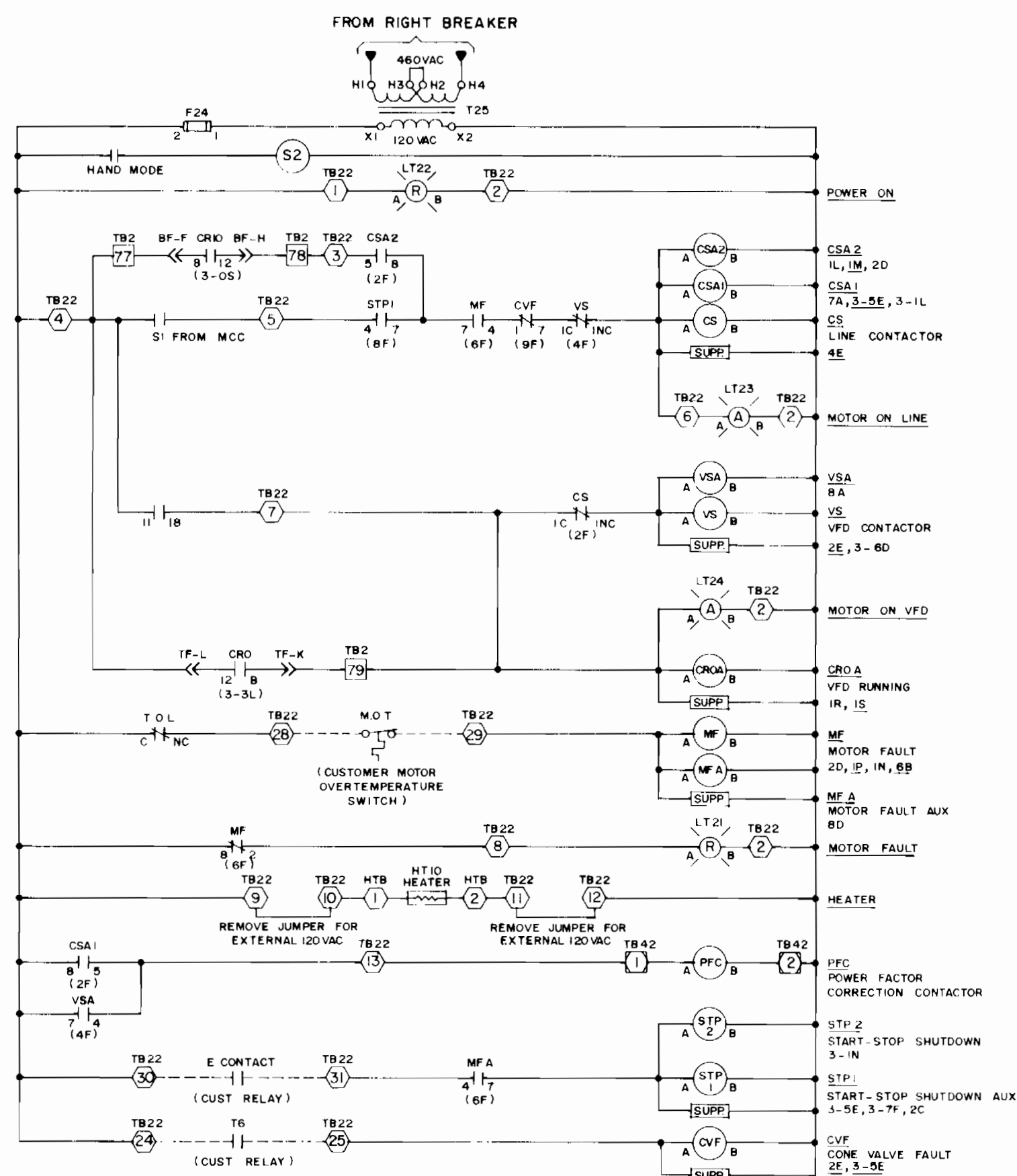
CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

SUPERVISORY CONTROL PANEL AND TELEMETERING DIAGRAMS

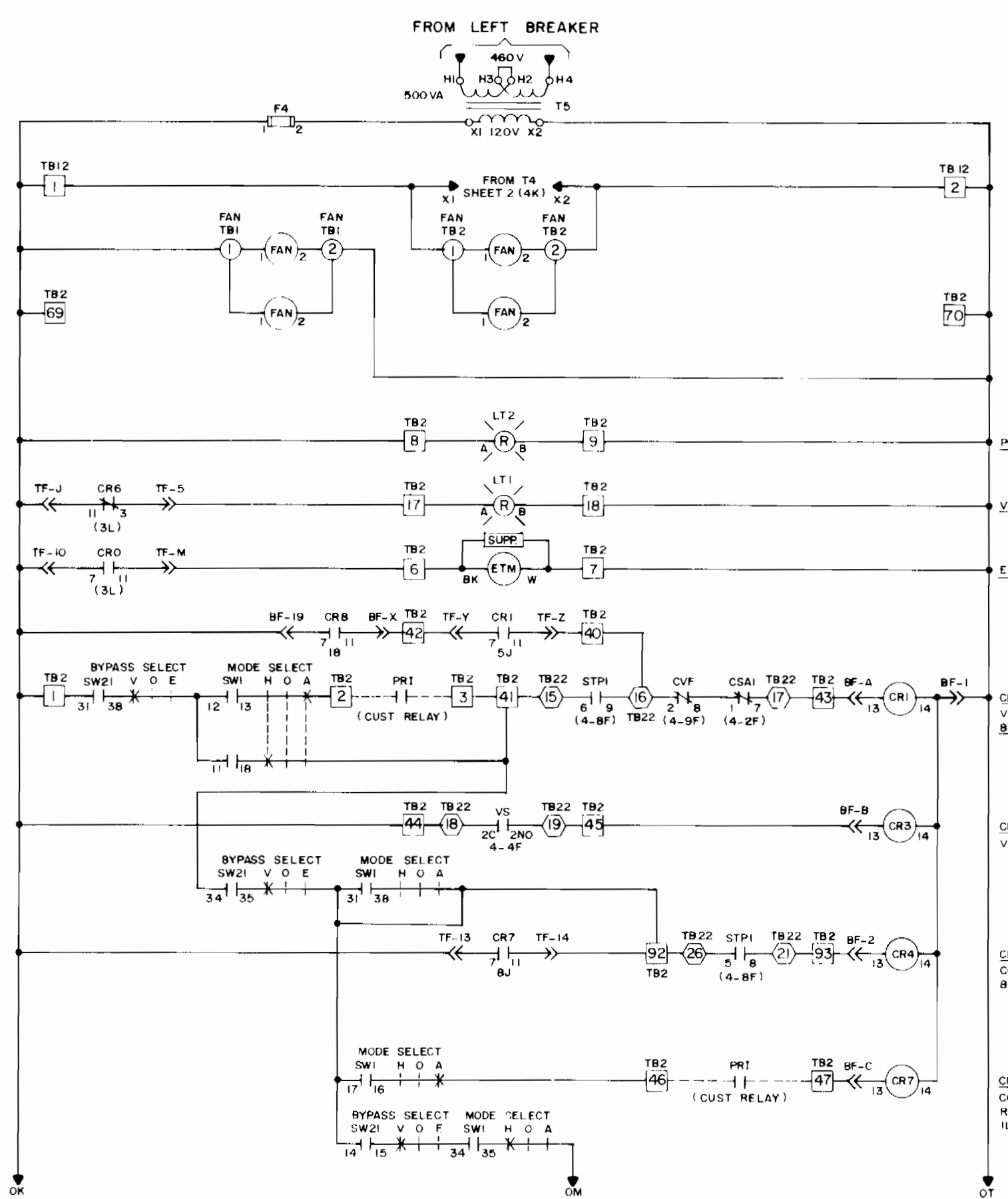
ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 21 OF 22
SCALE AS SHOWN

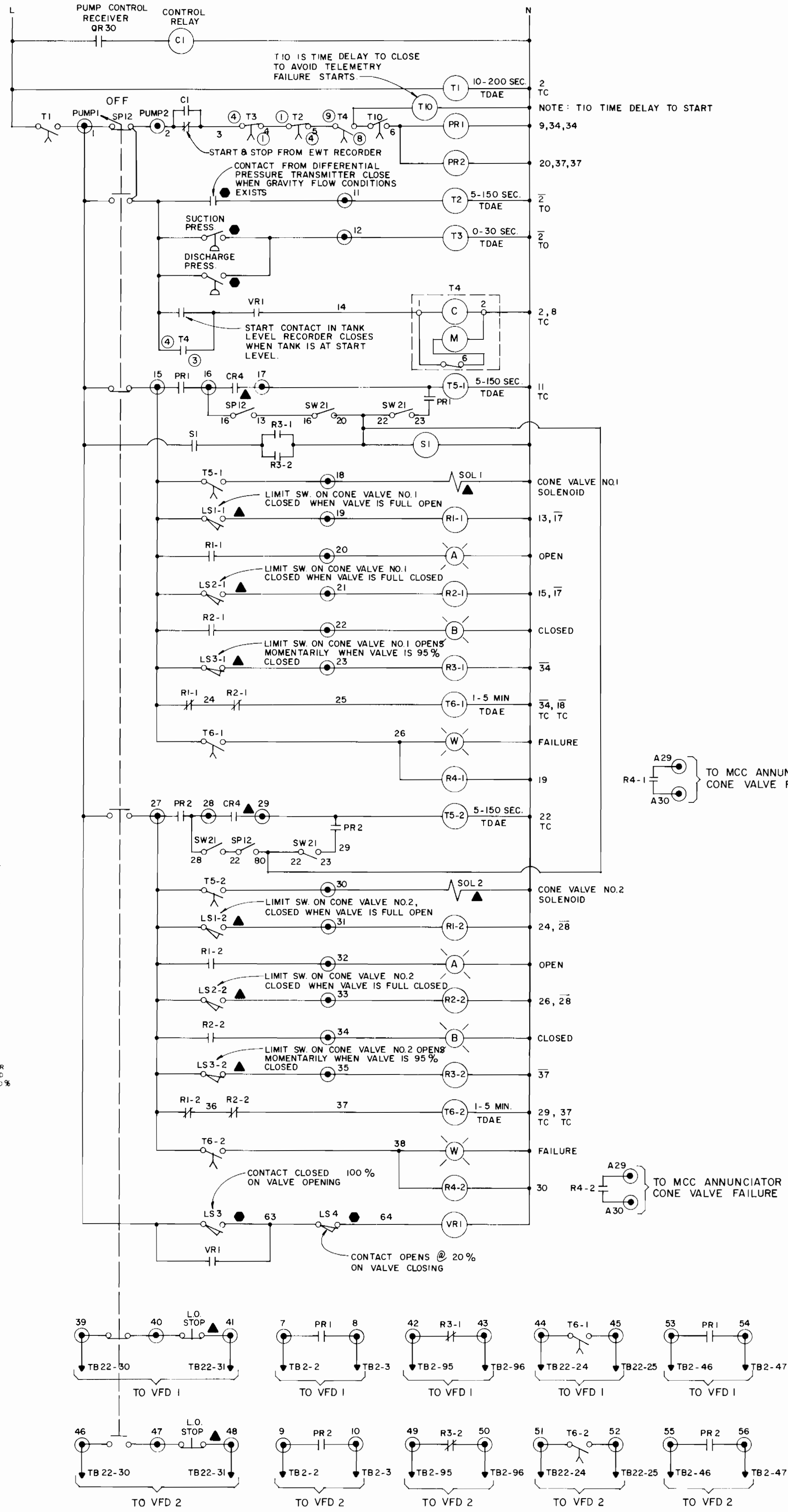
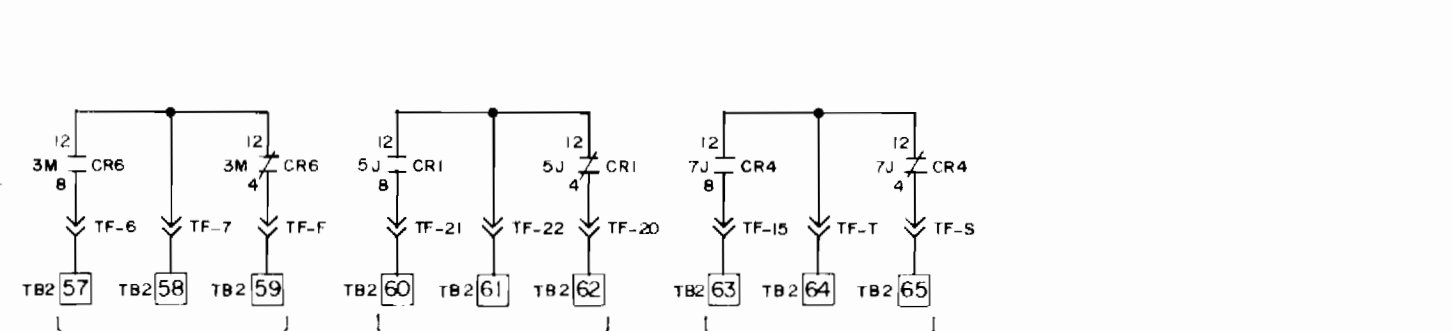
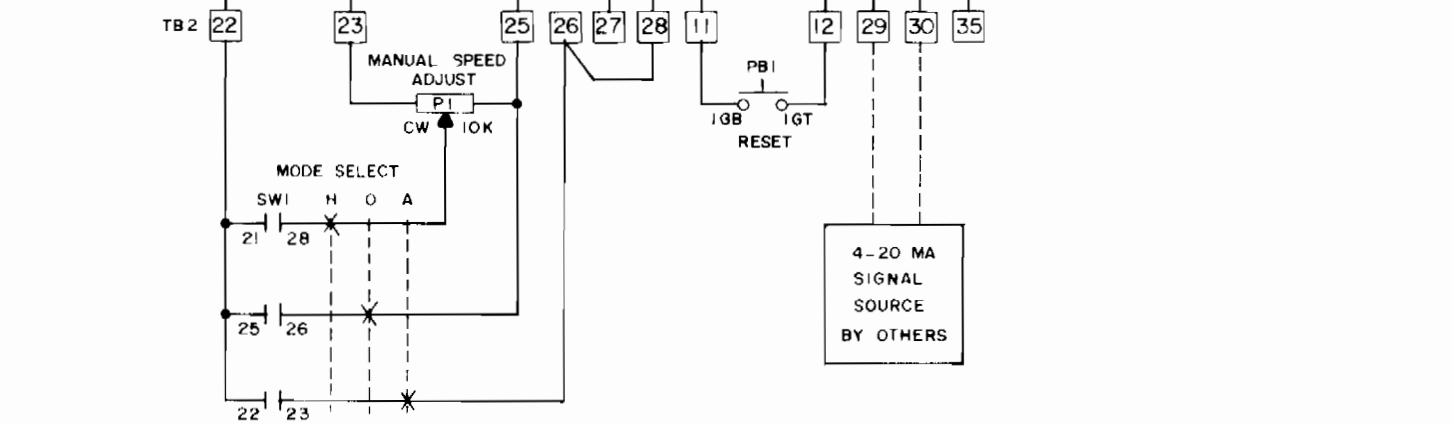
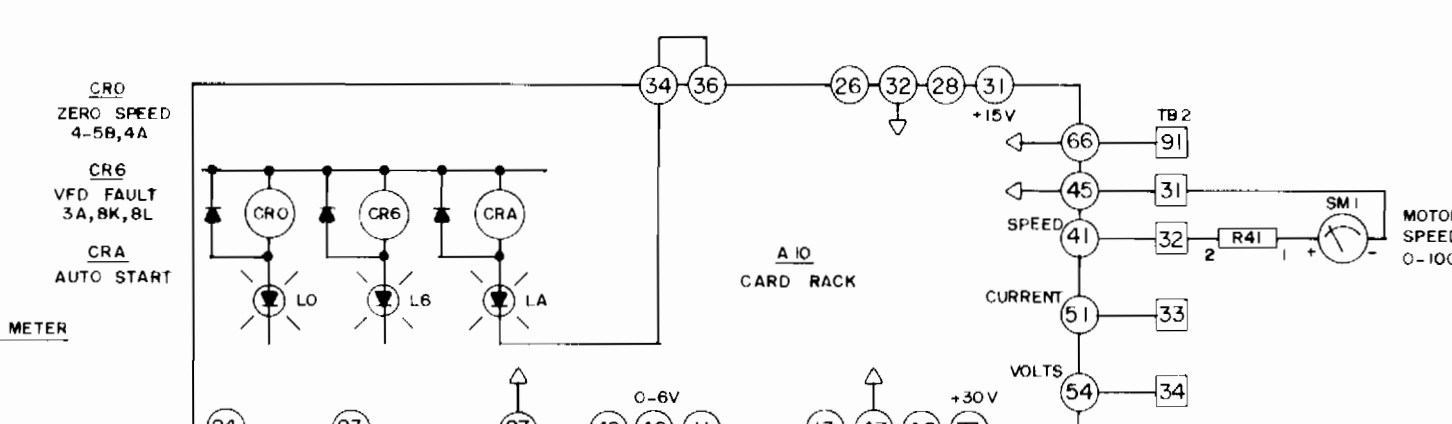
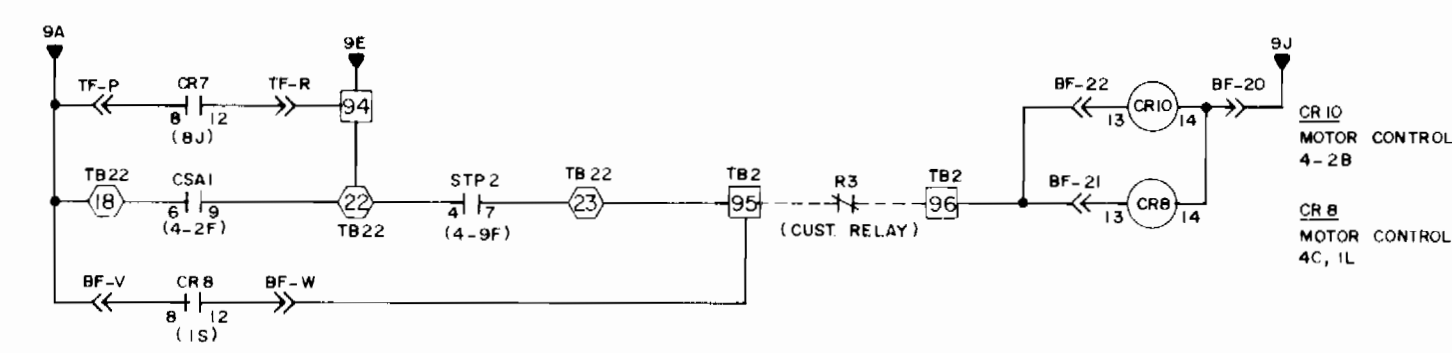
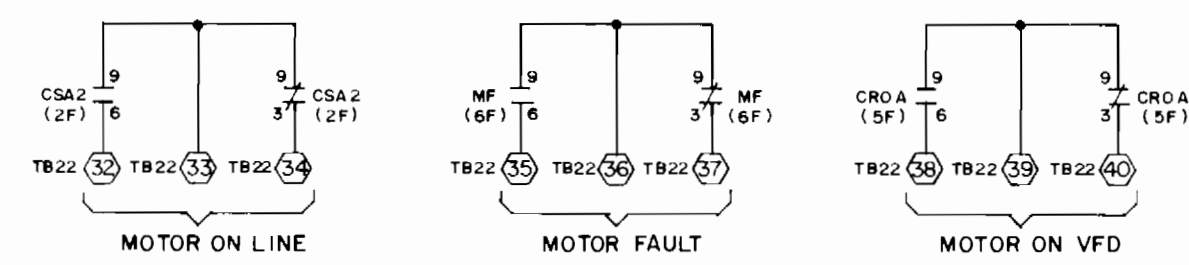
All Saints Road Water Pumping Station
Contract No. 44-0969
Project No. W-7-8093



**SYSTEM SCHEMATIC
30HP SIMPLEX W / BYPASS
BYPASS CONTROL**



**ACI-MOTOR DRIVE
30HP MARK III
CONTROL SCHEMATIC**



PUMP CONTROL DIAGRAM

BILL OF MATERIAL			
ITEM	QTY.	CATALOG NO.	MANUFACTURER
FLOW REC.	1	4331-14C-060-021-IH2-261-P20	BY BRISTOL BABCOCK
PRESSURE REC.	1	433-20C-060-600-002-II2-020	BY BRISTOL BABCOCK
FLOW CONTROLLER	1	2752-21A-221-D11-000	BY BRISTOL BABCOCK
VALVE POS IND	1	OMC-830	BY BRISTOL BABCOCK
FLOW TRANS	1	2408-33B-911-III-211-000	BY BRISTOL BABCOCK
PUMP SEL SW	1	9001-KS 43B	BY SQ-D
TELEMETRY SEL SW	1	9001-KS II B	BY SQ-D
PILOT LIGHTS	6	9001-KP1	BY SQ-D
AMBER LENS	2	9001-A9	BY SQ-D
BLUE LENS	2	9001-B9	BY SQ-D
WHITE LENS	2	9001-W9	BY SQ-D
SEL SW CONT	6	9001-KA1	BY SQ-D
BASE RELAY	10	8501-X0-00 (120 VAC)	BY SQ-D
RELAY CONTACTS	18	8501-XC-1	BY SQ-D
DIFF PRESS TRANS	1	2408-30B-311-III-110	BY BRISTOL BABCOCK
LEVEL REC	1	4331-17C-062-II2-102-K00	BY BRISTOL BABCOCK
PRESSURE TRANS	2	2408-10B-411-III-100	BY BRISTOL BABCOCK
PRESSURE SW	2	DA 31 W/TWO SPST SWITCHES	BY MERCID
ON-OFF SW	4	3190-0001	BY MCGILL
FUSE	4	FNM 1/10	BY BUSSMAN
FUSE BLOCK	4	9080 GF 6	BY SQ-D
TIMER T4	1	322B009A12CS	BY ATC
OTHER TIMERS	7	319016 Q1C	BY ATC
SOCKETS	7	8501-NR 5	BY SQ-D
CEM ENCL	1	MY 814-SC46	BY BRISTOL BABCOCK
CEM	1	3799-75-03-3	BY BRISTOL BABCOCK
TERM BLK	AR	9080-GB 6	BY SQ-D
CARD RACK	1	FEA 5500-8	BY AGM
CUR REPEATOR	2	EA-4000 5	BY AGM
RATIO CARD	1	EA-4028	BY AGM
POWER SUPPLY	1	81-24-180-1	BY SOLA

- LEGEND**
- INDICATES VFD CONNECTIONS
 - ⋈ INDICATES CONNECTIONS TO P.C. CARD
 - INDICATES INTERNAL CABINET CONNECTIONS
 - TW INDICATES TWISTED WIRE
 - INDICATES WIRING BY CUSTOMER
 - INDICATES BYPASS CONNECTIONS
 - INDICATES PFC CONNECTIONS
 - INDICATES DEVICE REMOTE SUPPLIED BY RETRO ELECT.
 - INDICATES TERMINAL BLOCK CONNECTIONS
 - ▲ INDICATES DEVICE REMOTE FURNISHED BY OTHERS

**ALL SAINTS ROAD
WATER PUMPING STATION**

CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

VARIABLE SPEED AND PUMP CONTROL DIAGRAM	DWG. NO.
	21 A
	OF 22

STATION OPERATION MODES												
OPERATION MODE	STATION FLOW CONDITION	PRESSURE SUCTION/DISCHARGE	FLOW	GUILFORD TANK WATER LEVEL	SYSTEM CONTROL LOGIC	PUMP		RATE CONTROLLER VALVE		REMARKS		
						STATE	SPEED	ACTUATOR	POSITION			
AUTOMATIC					Flow Set Point Signal					Continuously Drives Either Valve or Pump		
I	Gravity	$P_s > P_d$	Set Rate	> Start Level	—	OFF	—	ON	Throttling	Flow Through By Pass		
			< Set Rate	> Start Level	RCLS - Closes				Wide Open	Water Drawn From Tank Until Level Drops To "START" Level		
			Set Rate	= Start Level	Tank Switch Closes RCLS - Open				Throttling			
II	Transition Gravity To Pumping	$P_s \geq P_d$	< Set Rate	= Start Level	Tank Switch Closes	START	Min.	ON	Wide Open	Gravity Gradient Inadequate For Set Flow Rate		
					RCLS - Closes CVPR - Energizes						"Pump Start" Conditions Satisfied	
III	Pumping To Fill Tank	$P_s \leq P_d$	Set Rate	\leq Start Level	Tank Switch Closed RCLS - Reopens MSC - Closed MSC - Opens RCLS - Closes	ON	Min.	ON	Throttling	RCV Throttles Constant Speed Pump Flow Until Pump TDH = B' ±		
				$P_s < P_d$	\leq Start Level		ON	> Min.	OFF	Wide Open	Speed Increases To Meet Set Rate RCV - Deactivated	
				$P_s < P_d$	> Start Level		ON	> Min.	OFF	Wide Open		
IV	Full Tank Pump Shut-Down	$P_s < P_d$	Set Rate	Full	Tank Switch Closes RCLS - Closed MSC - Closes CVPR - De-energized	ON	> Min.	OFF	Wide Open	Initiates Shut Down Sequence		
					$P_s < P_d$	< Set Rate		ON	Min.	ON	Wide Open	RCV - Activated Cone Valve Closing
					$P_s > P_d$	< Set Rate		STOP	—	ON	Wide Open	Flow Is That Available By Gravity
V	Transition Pumping To Gravity	$P_s < P_d$	Set Rate	> Start Level	MSC - Closes	ON	Min.	ON	Throttling	RCV Activated And Throttles Pump TDH At B' ± And Below.		
					$P_s \geq P_d$ & $\Delta P < 1 \text{ psi}$		ON	Min.	ON	Throttling		
					$P_s > P_d$ & $\Delta P = 1 \text{ psi}$		ON	Min.	ON	Wide Open	Initiates Shut Down Sequence	
					$P_s > P_d$		STOP	—	ON	Throttling	RCV Responds To Flow Requirement	
SELECTIVE SPEED					Flow Set Point Signal					Continuously Drives Valve Only		
I	Gravity	$P_s > P_d$	Set Rate	> Start Level	—	OFF	—	ON	Throttling			
II	Transition Gravity To Pumping	$P_s \geq P_d$	< Set Rate	= Start Level	RCLS - Closed Tank Switch Closes	START	Hand Set	ON	Wide Open			
III	Constant Speed Pump To Fill Tank	$P_s < P_d$	Set Rate	\geq Start Level	—	ON	Hand Set	ON	Throttling	Selector On VFD Placed In "HAND". Speed Selected On Speed Pot On VFD.		
IV	Full Tank Pump Shut Down	$P_s < P_d$	Set Rate	Full	Tank Switch Closes CVPR - De-energizes	ON	Hand Set	ON	Throttling	Initiates Shut Down Sequence		
					$P_s > P_d$	< Set Rate		STOP	ON	Wide Open	Flow Is That Available By Gravity	
V	Transition Pumping To Gravity	$P_s > P_d$ & $\Delta P < 1 \text{ psi}$	Set Rate	> Start Level	—	ON	Hand Set	ON	Throttling			
					$P_s > P_d$ & $\Delta P = 1 \text{ psi}$		ON		ON	Throttling	Initiates Shut Down Sequence	
					$P_s > P_d$		STOP		ON	Throttling		

- LEGEND**
- RCV - Rate Controller Valve
 - CVPR - Cone Valve Pilot Relay
 - CVLS - Cone Valve Position Limit Switch
 - RCLS - Rate Controller Valve Limit Switch
 - MSC - Minimum Speed Contact In VFD
 - DPS - Differential Pressure Switch
 - P_s - Suction Pressure
 - P_d - Discharge Pressure

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

George F. Neumann 8-10-82
DIRECTOR OF PUBLIC WORKS - DATE

Allen J. Brown 8/11/82
CHIEF - BUREAU OF UTILITIES - DATE

WHITMAN, REUNYARDT AND ASSOCIATES
ENGINEERS
2315 ST. PAUL ST.
BALTIMORE, MARYLAND

CONTRACT NO. 44-0969
PROJECT NO. W-7-8093

STATION OPERATION
MODES

ALL SAINTS ROAD WATER PUMPING STATION
ELECTION DISTRICT GUILFORD NO. 6

DRAWING NO. 22 OF 22
SCALE AS SHOWN



Kenneth J. McLeod

All Saints Road
Water Pumping Station
Contract No. 44-0969
Project No. W-7-8093

0167177 M