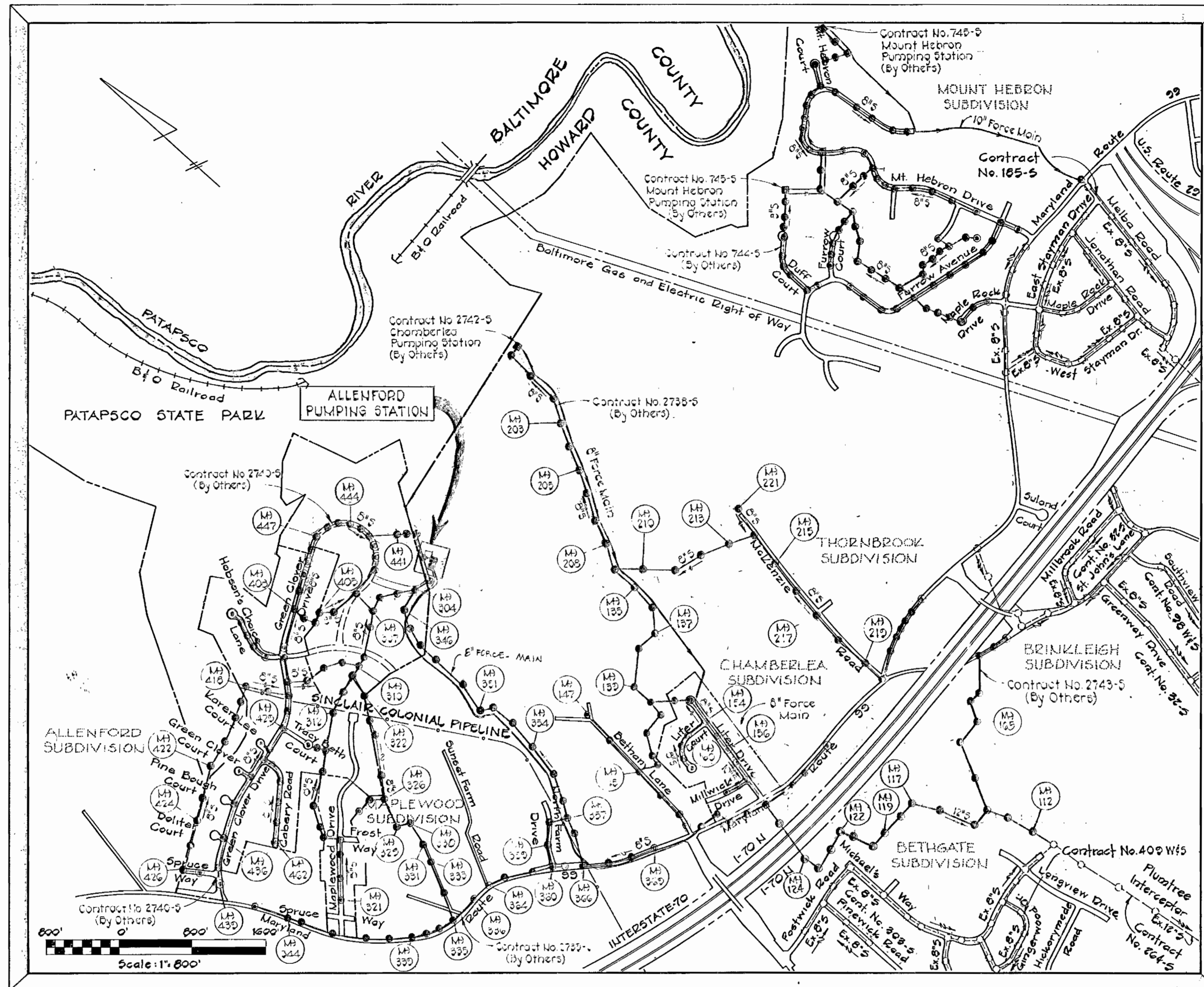


INDEX OF DRAWINGS	
NO.	DESCRIPTION
1	Vicinity Map
2	Site Development Plan
3	Site Development Plan
4	Site Development Plan
5	Architectural Details
6	Architectural Details
7	Structural Plans
8	Structural Sections
9	Structural Details
10	Mechanical Plans
11	Mechanical Sections
12	Mechanical Details
13	Mechanical Details
14	Miscellaneous Details
15	Electrical Plans
16	Electrical Details



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 horizontal controls are based on Maryland State Coordinates.
- All vertical controls are based on U.S.G.S. Datum.
- All pipe elevations shown are invert elevations.
- Clear all utilities by a minimum of 6". Clear all poles by 2'-0" minimum or tunnel as required. Any cost incurred to the Contractor for tunneling or bracing at poles shall be included in unit price bid for excavation and backfill.
- For details not shown on the drawings use Howard County Standard Details.
- For materials and construction methods use Howard County Standard Specifications.
- Contractor shall locate existing utilities a minimum of two (2) weeks in advance of construction operations in the vicinity of proposed utilities at his own expense.
- Contractor shall notify the following utilities or agencies at least five (5) working days before starting work shown on these plans;
  - State Highway Administration: 531-5533
  - Baltimore Gas & Electric Company Underground Electric Distribution Customer Service: 685-0123
  - Baltimore Gas & Electric Company Underground Gas Distribution Customer Service: 685-0123
  - Engineering "Damage Control": 231-5621
  - "Miss Utility": 1-559-0100
  - Chesapeake & Potomac (C & P) Telephone Company: 725-8976
  - American Telephone and Telegraph: Cable Location Division: 393-3553
  - Colonial Pipeline Company: 931-4641
  - Bureau of Utilities-Howard County: 692-2366
- 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 the unit price bid for excavation and backfill.
- 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.
- Top of all force mains to have a minimum of 3-1/2' cover unless otherwise noted.
- Block all force main fittings with concrete.
- All sewer mains shall be C.S.P.X. V.C.P.X. or A.C.P. Class 2400 unless otherwise noted.
- Contractor shall provide a joint in all sewer mains within 2' 0" of exterior manhole wall.
- All manholes shall be 4'-6" inside diameter, unless otherwise noted.
- Force mains shall be D.I.P. Class 54.
- Manholes shown with 12" and 18" walls are brick manholes only, unless precast manholes are approved by the Engineer for the full depth of the manhole.
- Manholes designated W.T. in plan and shall have watertight frame and covers, Standard Detail S-12 (RCR-63A). Where watertight frame and cover is used, set top of frame 1'-6" above finished grade.

CONTRACT NO. 2741-S  
**CHAMBERLEA SANITARY SEWERS**  
**ALLENFORD PUMPING STATION**  
**HOWARD COUNTY, MARYLAND**  
 DEPARTMENT OF PUBLIC WORKS

ITEM	AS-BUILT	TYPE	SUPPLIER
SEWER MHS	82.7'	PRECAST	CP&P CO
8" SEWER	16593'	DIP	A&P
6" SCH	280.0'	PVC	A&P



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: *F. Newman* 8-28-81  
 Chief Bureau of Engineering: *Kevin J. Keiser* 8-28-81  
 Chief Bureau of Utilities: *Kevin J. Keiser* 8-28-81  
 Chief Utility Division: *Kevin J. Keiser* 8-28-81

PURDUM & JESCHKE  
 ENGINEERS  
 1023 N. CALVERT ST.  
 BALTIMORE, MARYLAND

CONTRACT NO. 2741-S  
 CAPITAL PROJECT NO. S-4-6067

VICINITY MAP

AS-BUILT  
 CHAMBERLEA SANITARY SEWERS  
 ALLENFORD PUMPING STATION  
 ELECTION DISTRICT NO. 2  
 HOWARD COUNTY, MARYLAND

DRAWING NO. 1 OF 16  
 SCALE 1" = 800'

EPA NO. C-240594-01(14)  
 CONTRACT NO. 2741-S  
 CAPITAL PROJECT NO. S-4-6067  
 CHAMBERLEA SANITARY SEWERS  
 ALLENFORD PUMPING STATION

# ALLENFORD PUMPING STATION 2018 UPGRADES

## HOWARD COUNTY, MARYLAND

### DEPARTMENT OF PUBLIC WORKS

#### CAPITAL PROJECT NO. S6264

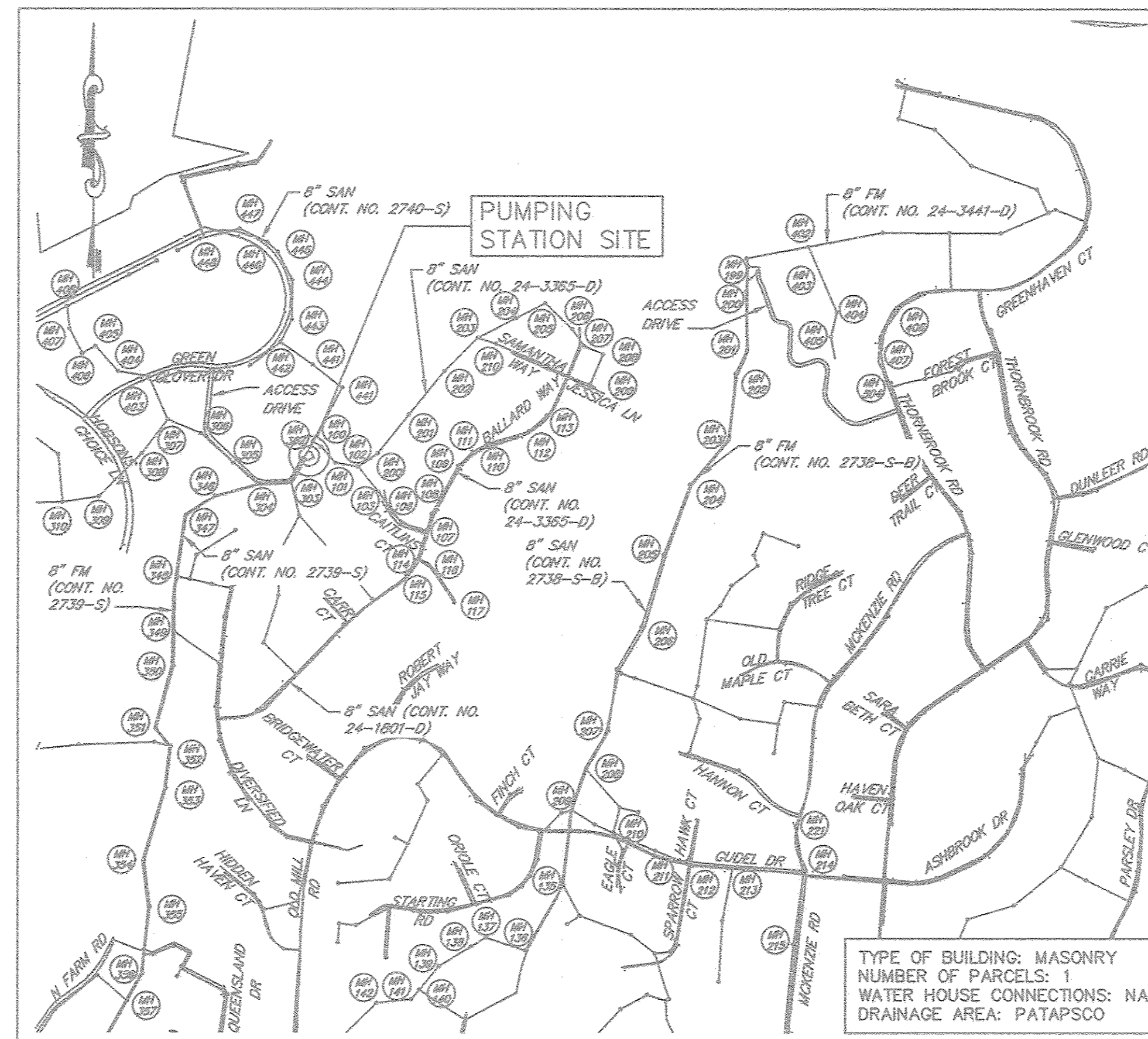
#### CONTRACT NO. 741-S

**GENERAL NOTES:**

1. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL BE LIABLE FOR ALL SEWAGE OVERFLOW AND/OR SPILL CLEAN UP COSTS INCURRED BY THE OWNER AND/OR STATE OF MARYLAND AND ALSO SHALL BE LIABLE FOR ANY CIVIL AND/OR CRIMINAL PENALTIES ASSOCIATED WITH SUCH OVERFLOWS AND/OR SPILLS.
2. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
3. FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS NOT SPECIFIED, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB SITE.
4. TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS NECESSARY FOR CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER OF ANY CHANGES OR CONDITIONS REQUIRED BY ANY PERMIT.
6. THESE DRAWINGS WERE PREPARED BASED ON AS-BUILT AND OTHER CONSTRUCTION DOCUMENTS, WHICH MAY OR MAY NOT BE COMPLETELY ACCURATE. SCALING OF THESE DRAWINGS SHALL BE FOR ESTIMATING PURPOSES ONLY AND ALL DIMENSIONS SCALED SHALL BE CONSIDERED APPROXIMATE AND SHALL BE FIELD VERIFIED.
7. CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES, REGULATIONS, STANDARDS, SPECIFICATIONS AND REQUIREMENTS.
8. THE EXISTING BUILDING ELEVATIONS SHOWN ON THE ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS ARE BASED ON ORIGINAL CONSTRUCTION PLANS ENTITLED "CHAMBERLEA SANITARY SEWERS, ALLENFORD PUMPING STATION" DATED 8/28/81, AS PROVIDED BY HOWARD COUNTY AND ARE BASED ON THE U.S.G.S. DATUM.
9. CONTRACTOR SHALL ASSUME THAT ALL CAULK, FLANGE GASKETS, ROOFING MATERIALS, ETC. ARE ASBESTOS-CONTAINING MATERIALS (ACM). ANY DISTURBANCE OR REMOVAL OF THESE MATERIALS SHALL BE DONE IN ACCORDANCE WITH OSHA 29CFR1926.1101 FOR CLASS II WORK. CONTRACTOR SHALL REMOVE AND DISPOSE OF ACM PRIOR TO RENOVATION ACTIVITIES THAT MAY MAKE THEM EPA REGULATED.
10. CONTRACTOR SHALL ASSUME THAT ALL EXISTING PAINT IS LEAD-BASED PAINT (LBP). THIS PAINT MUST BE HANDLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EPA AND THE OSHA LEAD IN CONSTRUCTION STANDARD WITH MARYLAND AMENDMENTS (29CFR1926.62). IF COMPONENTS ARE TO BE REMOVED AND DISPOSED OF, CONTRACTOR SHALL FOLLOW THE REQUIREMENTS OF THE RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) 40CFR261 AND ANY OTHER APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND REGULATIONS. PROHIBITED METHODS OF LEAD PAINT REMOVAL INCLUDE: SANDING (EXCEPT WITH EQUIPMENT FITTED WITH HEPA FILTERS), BURNING WITH AN OPEN FLAME TORCH, OR ANY METHODS WHICH PRODUCE UNCONTROLLED DUST OR FUMES. WHENEVER RENOVATION OR DEMOLITION IS PERFORMED ON PAINTED COMPONENTS, CONTRACTOR SHALL CONTROL DUST. NON-REGULATED PAINT HAS THE ABILITY TO PRODUCE LEAD DUST WHEN IT IS DISTURBED.
11. A FULL PUMPING STATION DEMONSTRATION TEST SHALL BE COMPLETED BEFORE THE CONTRACTOR CAN START THE THIRTY DAY OPERATIONAL PERIOD. THE ABOVE SHALL BE WITNESSED AND ACCEPTED BY THE COUNTY. THE CONTRACTOR SHALL NOTIFY THE COUNTY AT LEAST SEVEN DAYS PRIOR TO CONDUCTING ANY TESTING SO THE PROPER PERSONNEL CAN BE SCHEDULED TO WITNESS THE TESTING.
12. EXISTING FEATURES DENOTED BY SLANTED TEXT.
13. CONTRACTOR SHALL SUBMIT A PROPOSED SEQUENCE OF CONSTRUCTION FOR REVIEW PRIOR TO COMMENCEMENT OF ANY WORK. SEQUENCE OF CONSTRUCTION SHALL INCLUDE TEMPORARY BYPASS PUMPING, AS NECESSARY, AND ALL PROPOSED WORK, INCLUDING HOW THE WORK BETWEEN THE ALLENFORD AND CHAMBERLEA PUMPING STATIONS WILL BE SEQUENCED.
14. THE SCOPE OF WORK TO BE DONE UNDER THIS CONTRACT CONSISTS OF THE FURNISHING OF ALL MATERIALS AND THE CONSTRUCTION, COMPLETE IN PLACE, FOR THE 2018 UPGRADES TO THE ALLENFORD SEWAGE PUMPING STATION, INCLUDING BUT NOT LIMITED TO: PUMPS, VALVES, FLOWMETER, HVAC, PLUMBING, ELECTRICAL DISTRIBUTION, INSTRUMENTATION AND CONTROL, MASONRY, ROOFING AND MISCELLANEOUS APPURTENANCES AND INCIDENTAL ITEMS.
15. THE EXISTING PUMPING STATION CAPACITY OF 560 GPM MUST REMAIN AVAILABLE FOR THE DURATION OF THE PROJECT, WITH THE EXCEPTION OF THE TEMPORARY STATION SHUTDOWN PERIOD AS DESCRIBED IN SPECIFICATION 02750. PROVIDE TEMPORARY BYPASS PUMPING, AS NECESSARY, TO ENSURE THAT THE PUMPING STATION HAS A PRIMARY AND BACKUP PUMP OPERATIONAL AT ALL TIMES.
16. PUMPING STATION ADDRESS: 10071 GREEN CLOVER DR. ELLICOTT CITY, MD 21042

**PURPOSE STATEMENT:**

A PROJECT TO UPGRADE VARIOUS COMPONENTS OF THE EXISTING ALLENFORD SEWAGE PUMPING STATION, INCLUDING BUT NOT LIMITED TO: PUMPS, VALVES, FLOWMETERS, PIPING, HVAC, PLUMBING, ELECTRICAL DISTRIBUTION, INSTRUMENTATION AND CONTROLS, AND MISCELLANEOUS APPURTENANCES.

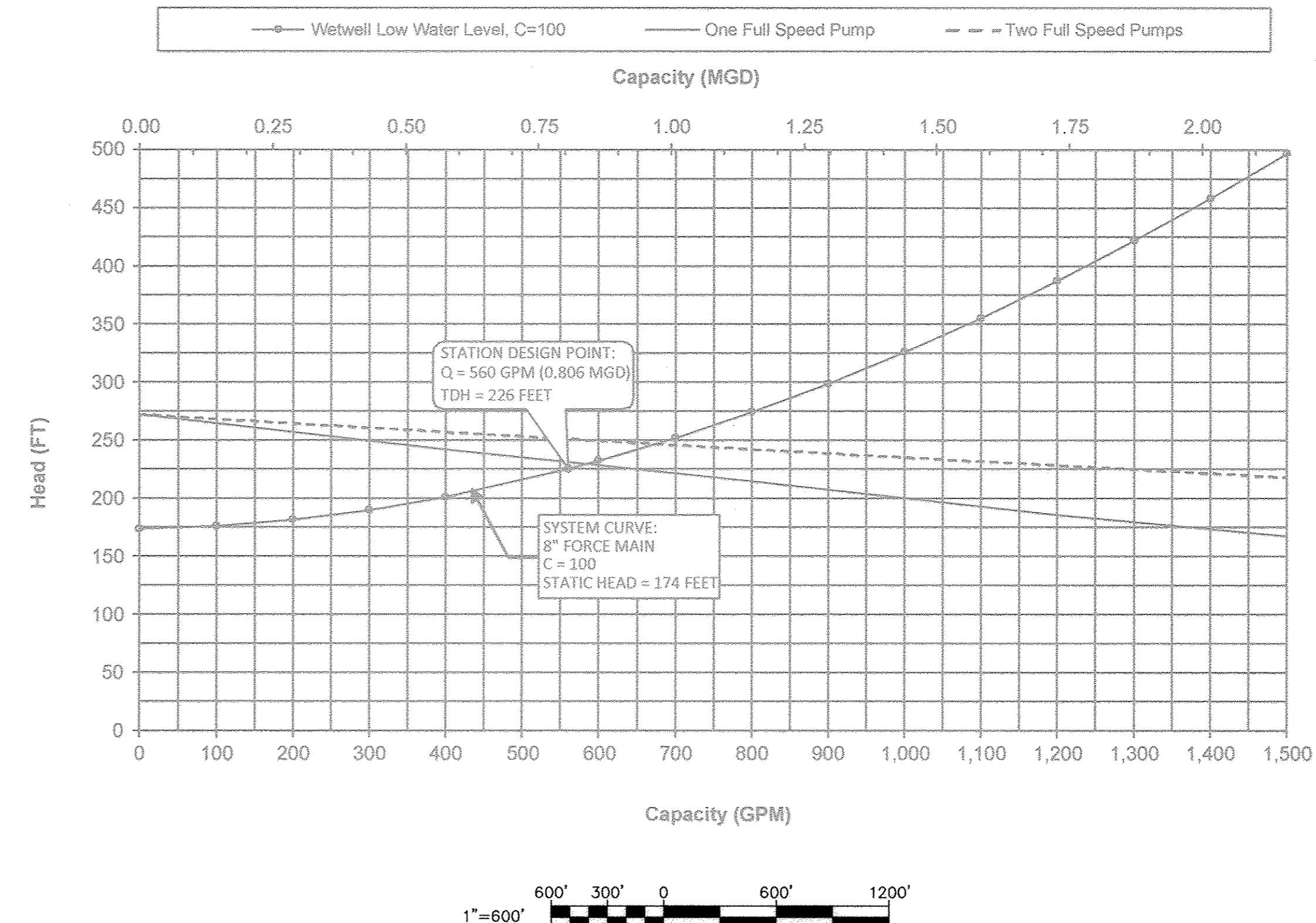


LOCATION MAP  
SCALE: 1"=600'

**ABBREVIATIONS**

ATS	AUTOMATIC TRANSFER SWITCH	LR	LONG RADIUS
ALUM	ALUMINUM	MCC	MOTOR CONTROL CENTER
CIP	CAST IRON PIPE	MJ	MECHANICAL JOINT
CISP	CAST IRON SOIL PIPE	MOD	MOTOR OPERATED DAMPER
CLR	CLEAR	P	PUMP
CMU	CONCRETE MASONRY UNIT	PE	PLAIN END
CONC	CONCRETE	PV	PLUG VALVE
CV	CHECK VALVE	PVC	POLYVINYL CHLORIDE
D	DOOR	RED	REDUCER
DA	DAMPER	RET	RETAINER
DIP	DUCTILE IRON PIPE	RTU	REMOTE TELEMETRY UNIT
ECC	ECCENTRIC	S	SEAT SIDE (PLUG VALVE)
EF	EXHAUST FAN	SF	SUPPLY FAN
ELL	ELBOW	SS	STAINLESS STEEL
EXT	EXTENSION	TYP	TYPICAL
FLG	FLANGE	UH	UNIT HEATER
FRP	FIBERGLASS REINFORCED PLASTIC	W/	WITH
GV	GATE VALVE		
HM	HOLLOW METAL		

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1	TITLE SHEET
2	SITE DEVELOPMENT PLAN
3	SITE DEVELOPMENT PLAN ACCESS DRIVE
4	SITE DEVELOPMENT PLAN ACCESS DRIVE
5	ARCHITECTURAL DETAILS
6A	ARCHITECTURAL DETAILS - 2018 UPGRADES
6	ARCHITECTURAL DETAILS
7	STRUCTURAL PLAN AND SECTIONS
8	STRUCTURAL SECTIONS
9A	STRUCTURAL DETAILS & GENERAL NOTES - 2018 UPGRADES
9B	STRUCTURAL DETAILS - 2018 UPGRADES
9	STRUCTURAL DETAILS
10A	DEMOLITION PLANS - 2018 UPGRADES
10B	IMPROVEMENT PLANS - 2018 UPGRADES
10	MECHANICAL PLANS
11A	DEMOLITION SECTIONS - 2018 UPGRADES
11B	IMPROVEMENT SECTIONS - 2018 UPGRADES
11	MECHANICAL SECTIONS
12A	MECHANICAL DETAILS - 2018 UPGRADES
12	MECHANICAL DETAILS
13	MECHANICAL DETAILS
14	MISCELLANEOUS DETAILS
15	ELECTRICAL PLANS
16A	ELECTRICAL DETAILS - 2018 UPGRADES
16B	ELECTRICAL DETAILS - 2018 UPGRADES
16C	MCC SCHEDULE, ELEVATION & ONE-LINE DIAGRAM - 2018 UPGRADES
16	ELECTRICAL DETAILS



RK&K SYS - C:\Users\jvann\OneDrive\Documents\16640\17154\FPS-001A-CP-1-16.dwg Apr 12, 2018 - 11:46am Plot Scale 1:1

<b>DEPARTMENT OF PUBLIC WORKS</b> <b>HOWARD COUNTY, MARYLAND</b>	<p style="text-align: center;"><b>PROFESSIONAL CERTIFICATION</b></p> <p>I HEREBY CERTIFY THAT THE REDLINE REVISIONS INCLUDED IN THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.</p> <p>LICENSE NO. 22472      EXPIRATION DATE 9/15/2019</p> <p style="text-align: center;"><b>RK&amp;K</b>      RUMMEL, KLEPPER &amp; KAHL, LLP          700 EAST PRATT STREET, SUITE 600          BALTIMORE, MARYLAND 21202</p>	<p><b>DES: DAO</b></p> <p><b>DRN: TJS</b></p> <p><b>CHK: RAL</b></p> <p><b>DATE: 3/30/18</b></p>	<p><b>TITLE SHEET - 2018 UPGRADES</b></p> <p>MAP NO. 17      BLOCK NO. 8</p>	<p><b>ALLENFORD PUMPING STATION</b>  <b>2018 UPGRADES</b>          CAPITAL PROJECT NO. S6264          CONTRACT NO. 741-S</p> <p>ELECTION DISTRICT NO. 2      HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 1A OF 28</p>
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### SEDIMENT CONTROL NOTES

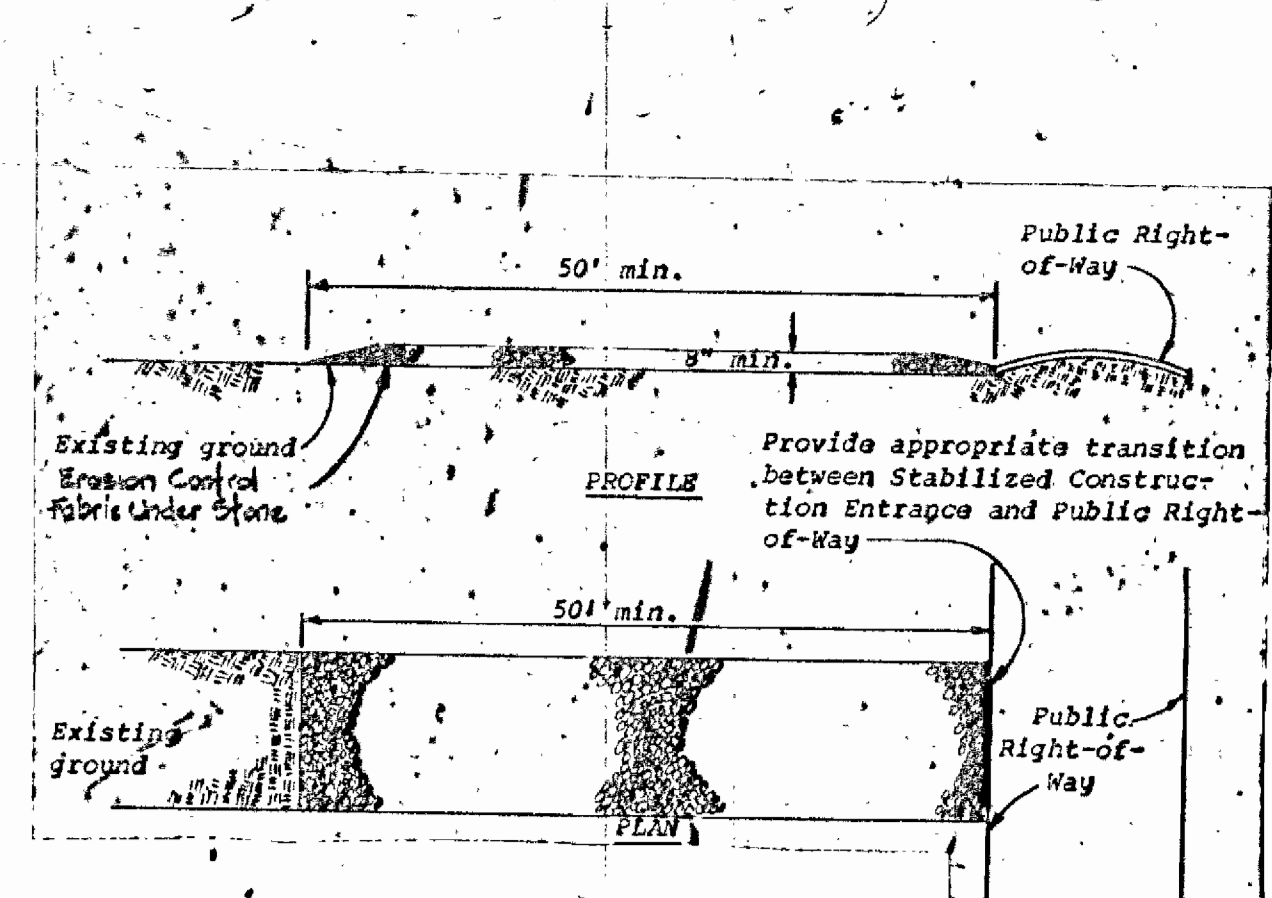
Specifications for the Sediment Control Details shown herein are included in the U.S.D.A. Soil Conservation Service "Standards and Specifications for Soil Erosion and Sediment Control in Developing Areas."

The developer shall notify the Howard County Office of Inspection and Permits at least 24 hours prior to beginning any construction shown herein (992-2435 or 992-2436). All sediment control structures to remain in place until permission for their removal has been obtained from the Howard County Office of Inspection and Permits (992-2435 or 992-2436). All graded areas shall be stabilized in accordance with the following requirements:

- Site Preparation:
  - Throw or disc the area 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 10-10-10 at 3/4 tons/acre.
    - Sugar phosphate at 600 lbs./acre.
- Seeding:
  - Seed the following seed mixture at the specified rate with a mechanical spreader:
    - Temporary - Italian or Perennial Ryegrass (1 lb./1000 sq. ft.)
    - Permanent - (Slopes flatter than 3:1) - Common Kentucky Bluegrass 40%  
Mennon Bluegrass 40%, Red Fescue 20% (3 lb./1000 sq. ft.)  
(Slopes steeper than 3:1) - Ground Cover
  - The seeded area shall be raked with a York Rake (minimum of 2 passes), covered and compacted with a 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 down with liquid asphalt at 0.1 gal./s.y. or emulsified asphalt at 0.04 gal./s.y.
- Sodding:
  - Apply 10-10-10 fertilizer at 1000 lbs./acre. (25 lbs./1000 s.f.)
  - Apply ground agricultural limestone at 2000 lbs./acre. (50 lbs./1000 s.f.)
  - Incorporate both lime and fertilizer into soil by disking. Firm up after incorporation.
  - Lay sod to a tight fit. Roll to insure contact with underlying soil. Water as necessary for first two weeks (in summer) to ensure establishment.
- Ground Cover:
  - Crown vetch (inoculated) at 15 lbs./acre, and Kentucky 31 Tall Fescue (certified) at 40 lbs./acre. (2:1 maximum slope)

The contractor shall place plywood braced with sand bags at the inlet end of unfinished drain pipes at the end of each work day.

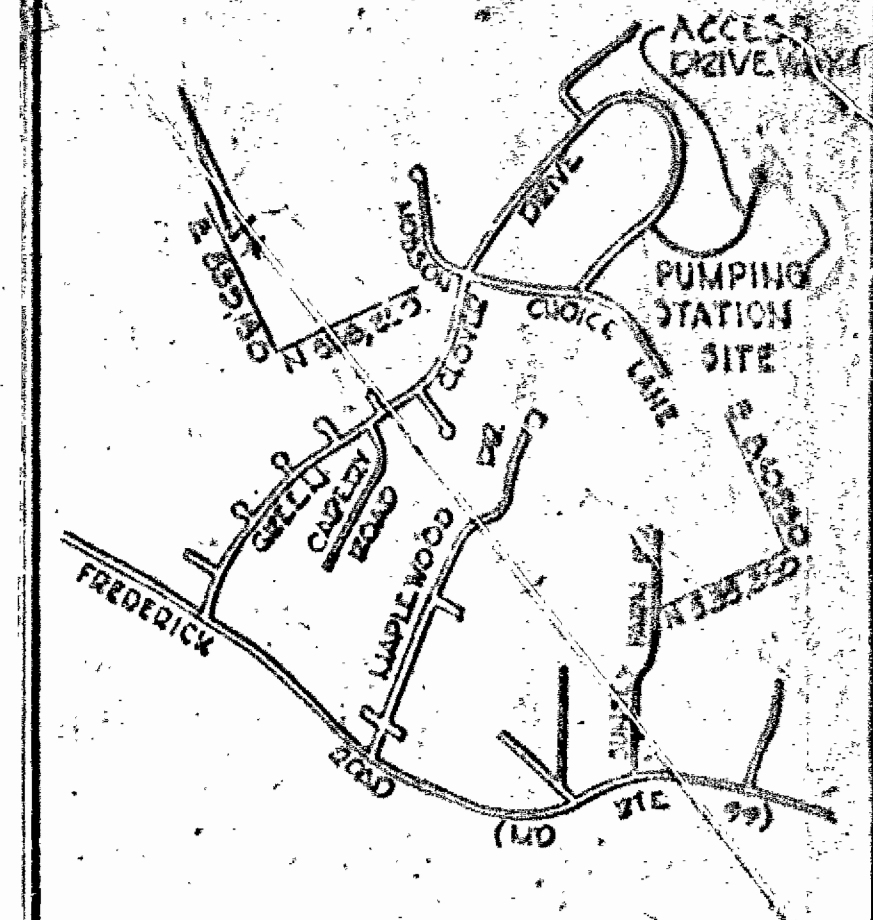
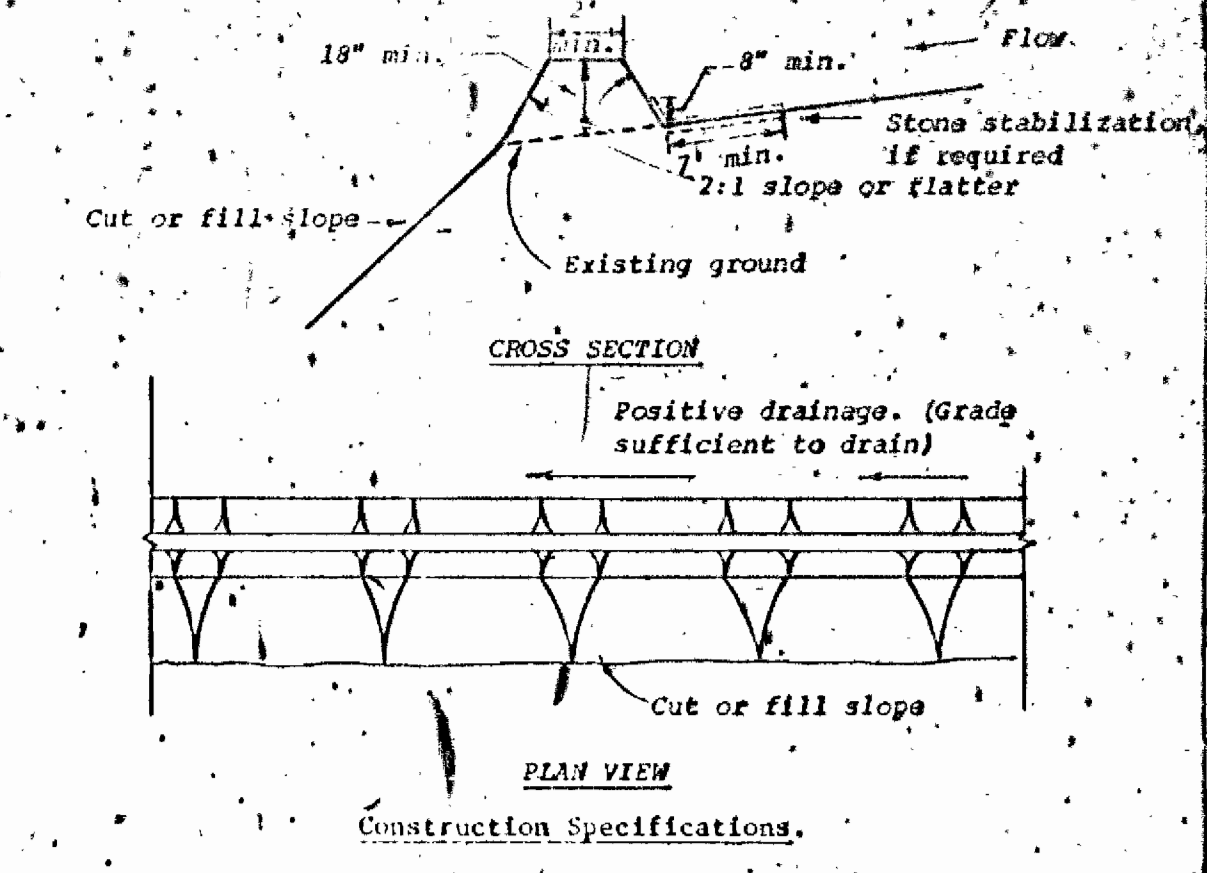
All stockpiles shall be protected with straw bale dikes, silt fences, or other approved sediment control devices.



### Construction Specifications

- Stone size - Use HSHA 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 rights-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.

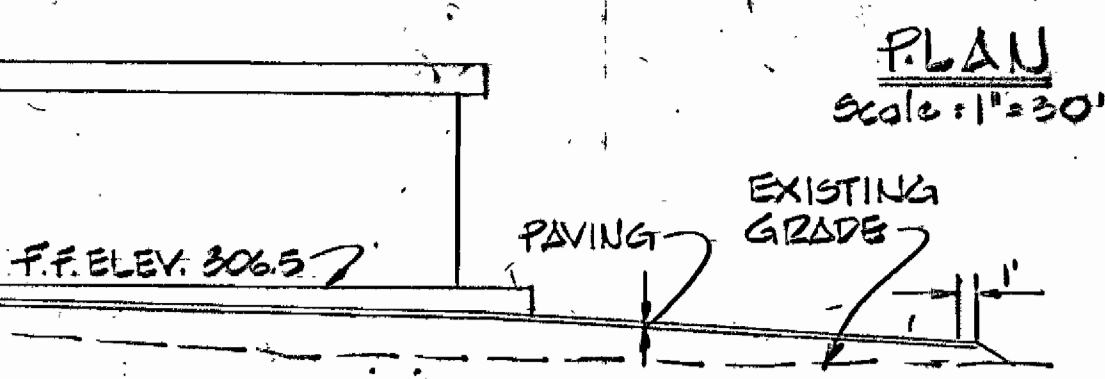
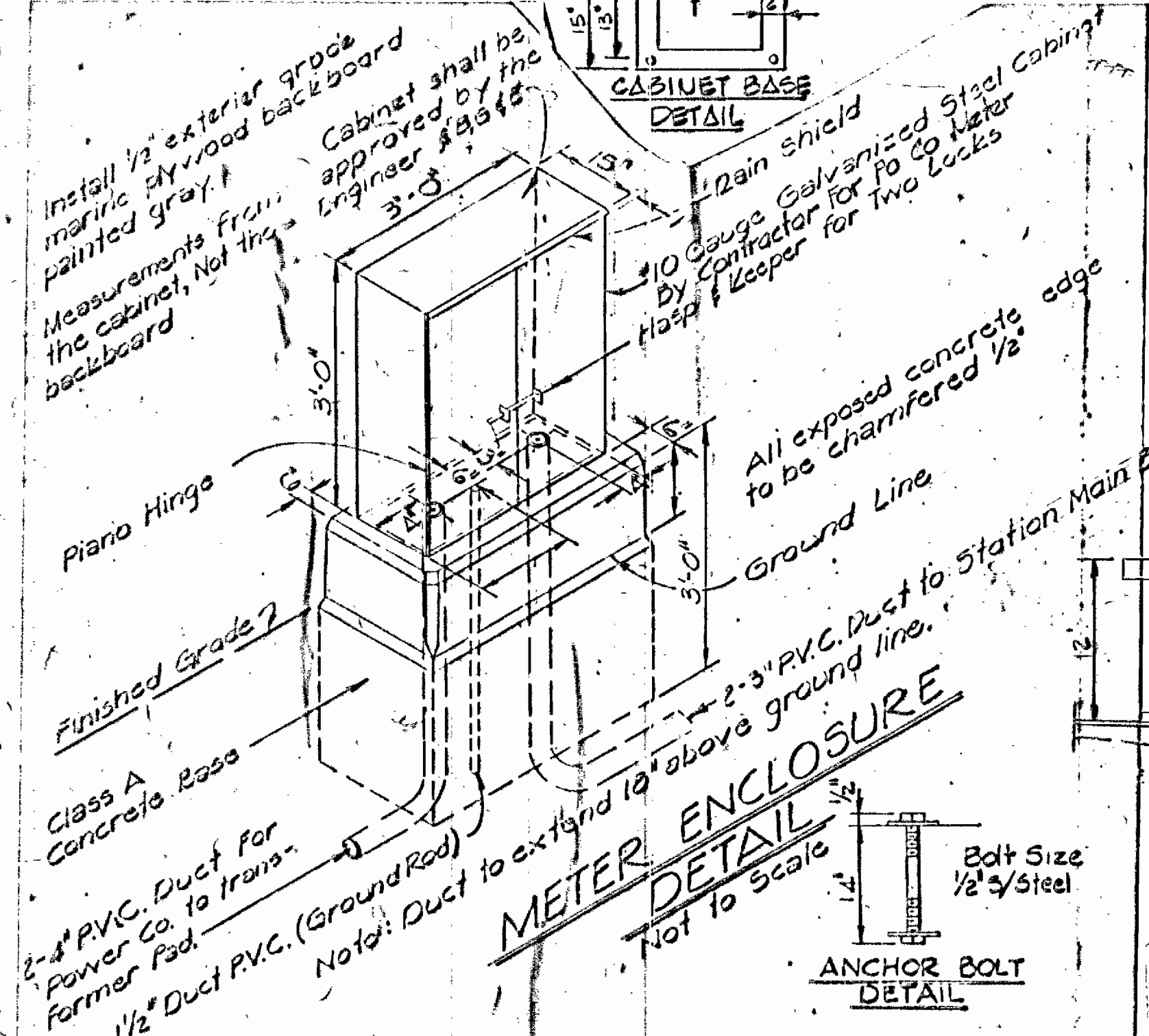
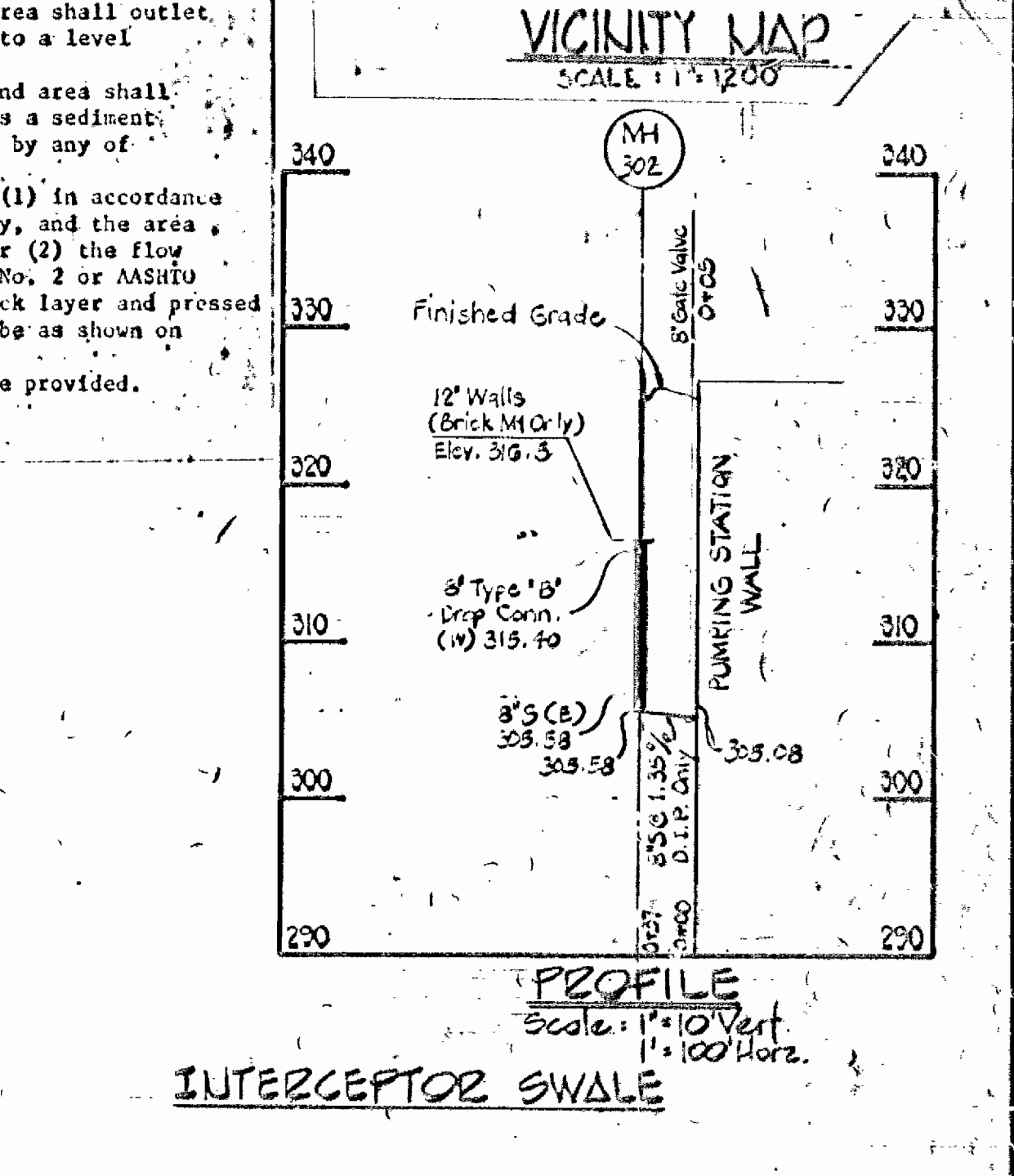
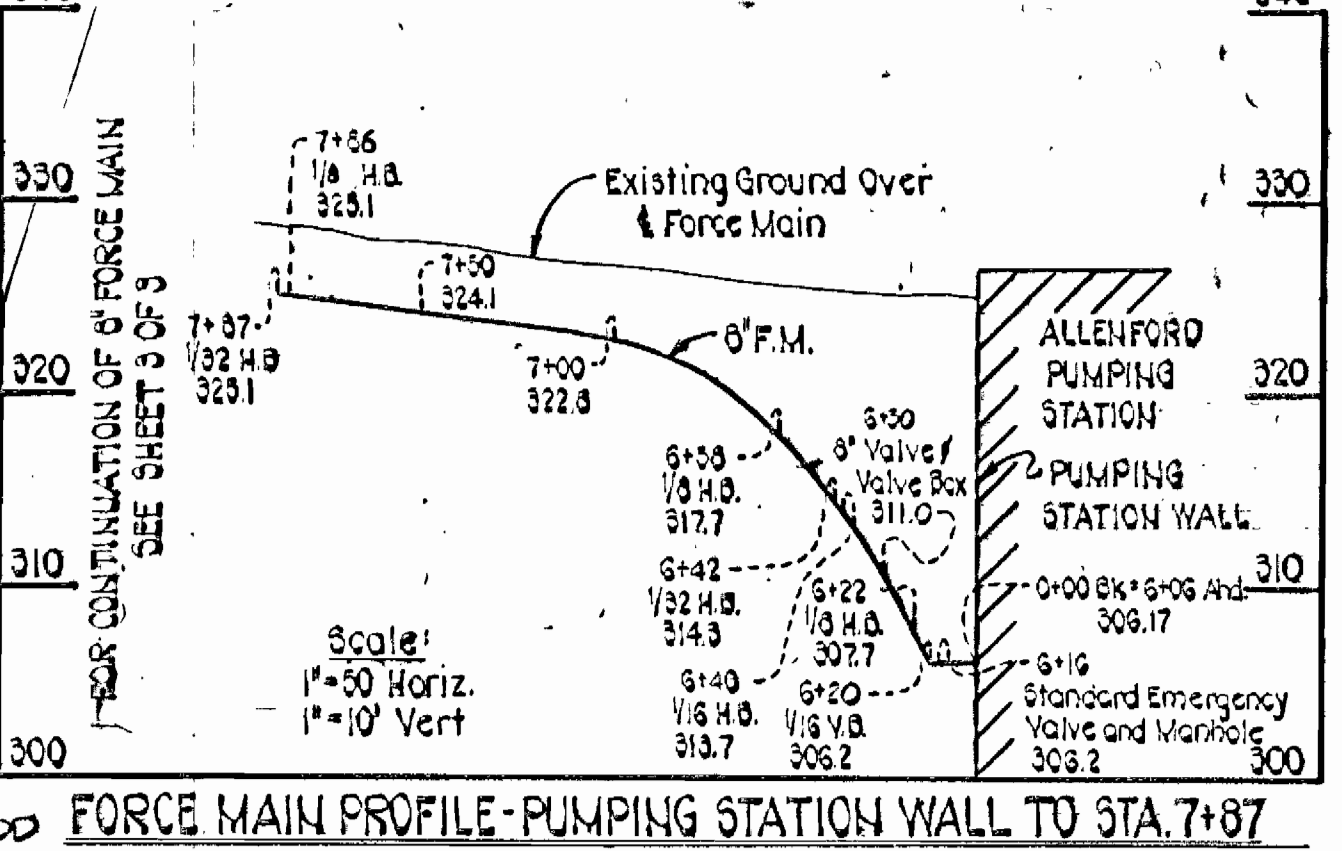
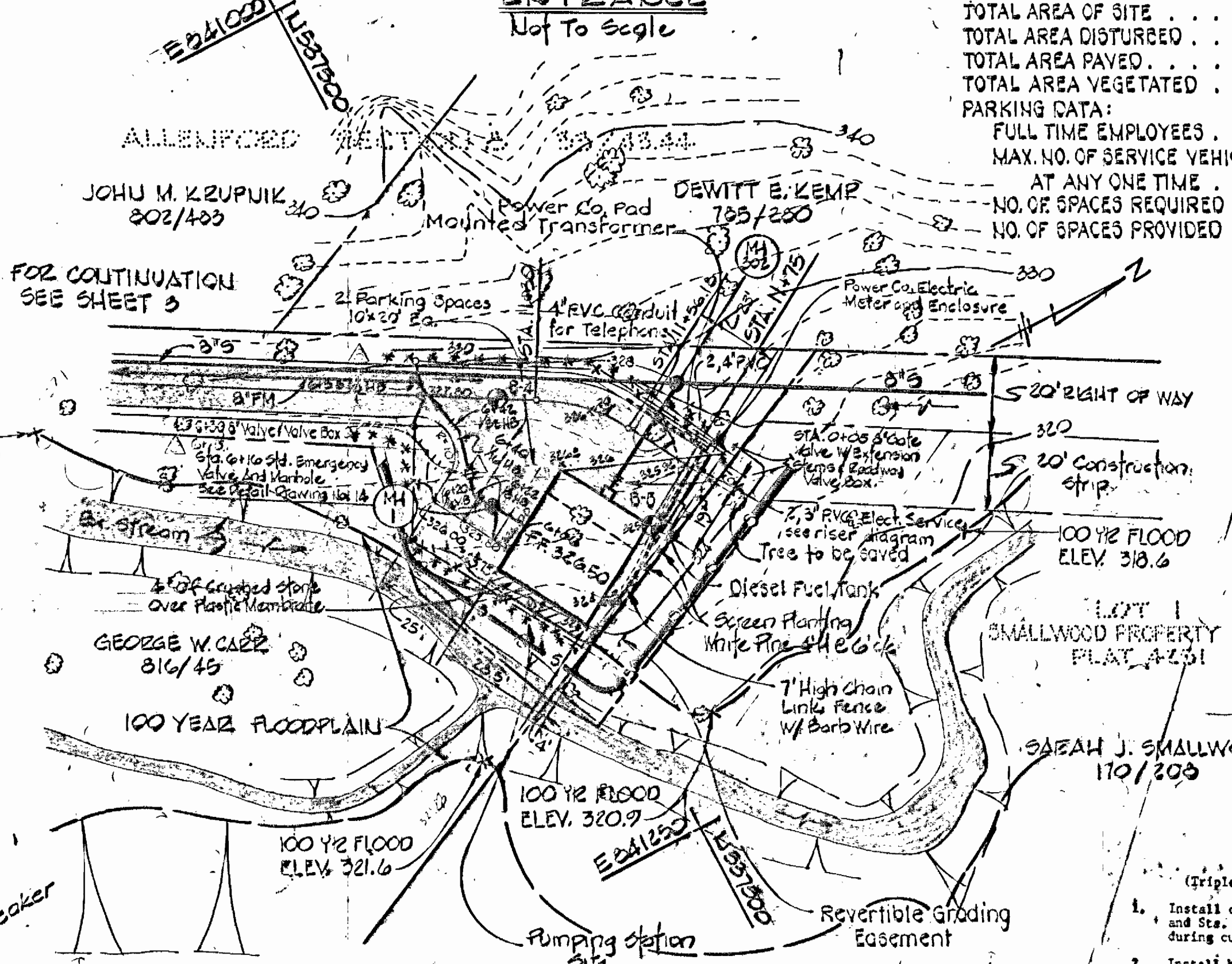
Standard Symbol: SCR



### STABILIZED CONSTRUCTION ENTRANCE

### SITE ANALYSIS

PRESENT ZONING	R-20
PROPOSED USE	PUMPING STATION
TOTAL AREA OF SITE	1.719 AC.
TOTAL AREA DISTURBED	1.544 AC.
TOTAL AREA PAVED	0.353 AC.
TOTAL AREA VEGETATED	1.191 AC.
PARKING DATA:	
FULL TIME EMPLOYEES	0
MAX. NO. OF SERVICE VEHICLES	2
AT ANY ONE TIME	2
NO. OF SPACES REQUIRED	2
NO. OF SPACES PROVIDED	2



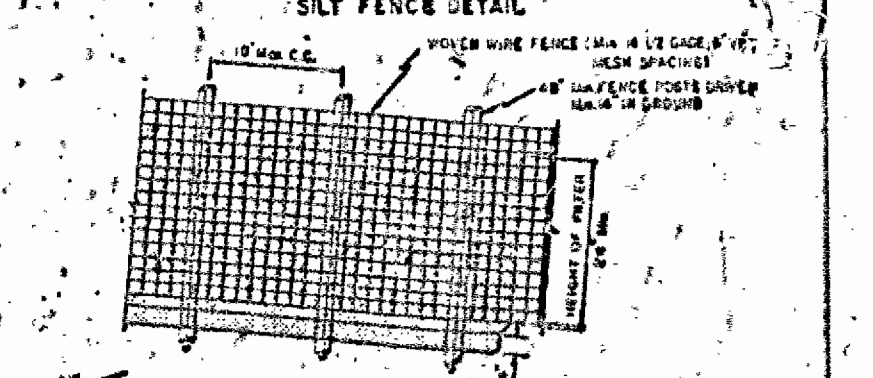
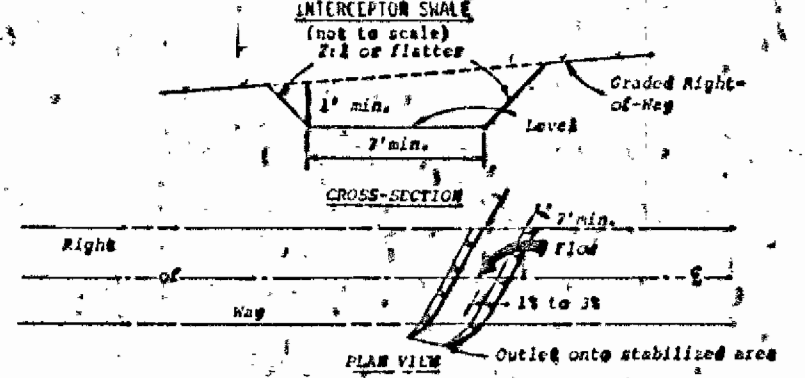
### GENERAL NOTES

- Total Property Area: 0.264 Ac.
- Drawing and Page Numbers Shown Herein are Referenced to Howard County Design Manual Vol. IV Standard Specification and Details for Construction.
- The location of existing utilities shown herein are based on the latest available information. The contractor shall, however, determine the exact location before making any connections.
- The contractor shall notify Miss Utility at least (3) days prior to beginning any work shown herein.
- All Workmanship and Materials shall be in accordance with the Howard County Design Manual Vol. IV Standard Specification and Details for Construction.

### CONSTRUCTION SEQUENCE

- Obtain grading permit.
- Clear and grub for installation of sediment control devices.
- Install stabilized construction entrance, sediment traps, diversion dikes, and silt fence.
- Grade roadway to subgrade elevation, stabilize finished cut and fill slopes in accordance with siltment control dikes.
- Install culverts and gabion slope protection.
- Begin construction of pumping station.
- Install utilities. Repair any sediment control devices disturbed during installation of utilities.
- Finish roadway construction and stabilize all disturbed areas in accordance with the Sediment Control Notes. Complete construction at Pumping Station Site. Upon approval of the Office of Inspections and Permits, remove sediment control devices.

- ### CULVERT CONSTRUCTION SEQUENCE
- (Triple 48\"/>
  - Install culverts on left side of channel at Sta. 5+75 and Sta. 7+00. Maintain stream in existing channel during culvert installation.
  - Install half-width gabion channel lining on left side, channel from HW to HW.
  - Divert stream through culverts. Maintain streamflow in gabion channel from HW to HW.
  - Install two remaining culverts at Sta. 3+75 and Sta. 7+00. Install remaining gabion channel lining from HW to HW.
  - Install gabion aprons upstream of HW and downstream of HW. Build half-width of apron while maintaining stream flow out of construction area.



- ### CONSTRUCTION SPECIFICATIONS
- All trees, brush, stumps, obstructions, and other objectionable material shall be removed and disposed of so as not to interfere with the proper functioning of the swale.
  - The swale shall be excavated or shaped to line, grade, and cross section as required to meet the criteria specified herein and be free of both protrusions or other irregularities which will impede flow.
  - Interceptor swales shall have a minimum grade of one percent and the bottom shall be level.
  - An interceptor swale shall have an outlet that functions with a minimum of erosion.
  - Runoff shall be conveyed to a sediment trapping device such as a sediment trap or sediment basin.
  - The swale location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet.
  - Stabilization shall be: (1) in accordance with the Standard Specifications for Grassed Waterway; or (2) by listing the flow area with stone that meets HSHA size No. 2 or AASHTO M43 size No. 2 or 2 1/2 in a layer at least 3 inches in thickness and pressed into the soil. The lining shall extend across the bottom and up both sides of the channel a height of at least 8 inches vertically above the bottom.
  - Periodic inspection and required maintenance shall be provided.

APPROVED For public water and public sewerage systems  
Howard County Health Department.  
John M. Boyd, M.P.E., 12/30/82  
COUNTY HEALTH OFFICE DATE

HOWARD SOIL CONSERVATION DISTRICT  
Reviewed for Howard Soil Conservation District and meets technical requirements.  
Signature: [Signature] DATE: 12-31-82  
This development plan is approved for Soil Erosion and Sediment Control by the Howard Soil Conservation District.  
APPROVED: [Signature] DATE: 12/18/82  
HOWARD SOIL CONSERVATION DIST. DATE

APPROVED For public water, public sewerage, storm drainage systems and roads Howard County Department of Public Works.  
Signature: [Signature] DATE: 1/22/83  
DIRECTOR DATE

APPROVED: Howard County Office of Planning and Zoning  
Signature: [Signature] DATE: 1/22/83  
CHIEF DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE  
Signature: [Signature] DATE: 1/22/83  
PLANNING DIRECTOR DATE

DEVELOPER  
I certify that all development and/or construction will be done according to this plan of construction and plan for erosion and sediment control and I also authorize periodic on-site inspection by the Howard Soil Conservation District or their authorized agents as deemed necessary. Deviation from this plan will not be made unless authorized by the Howard Soil Conservation District.  
Signature: [Signature] DATE: 1/18/83

PROFESSIONAL ENGINEER  
I certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.  
Signature: [Signature] DATE: 1/18/83  
WILLIAM R. RASCH, P.E.

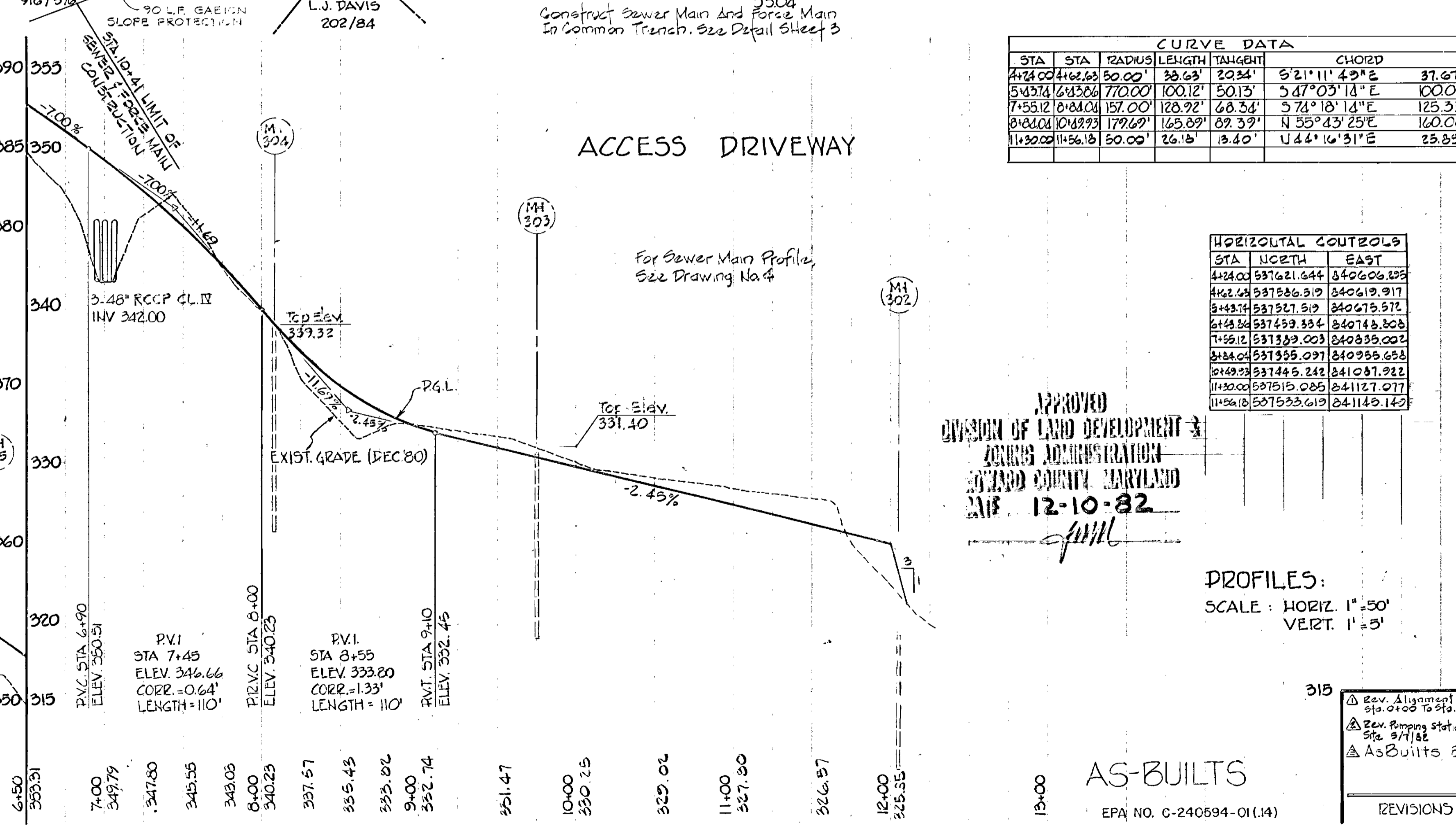
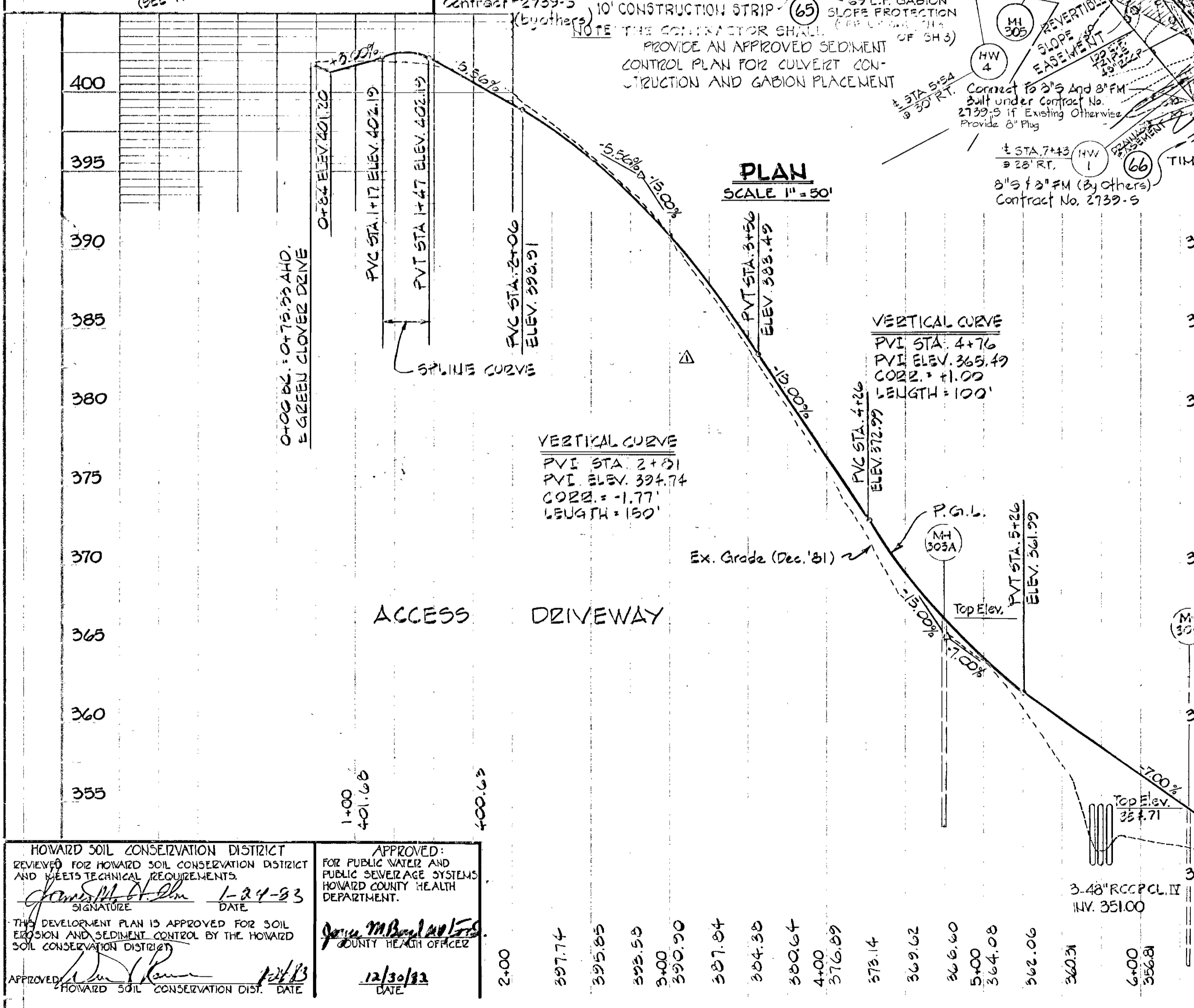
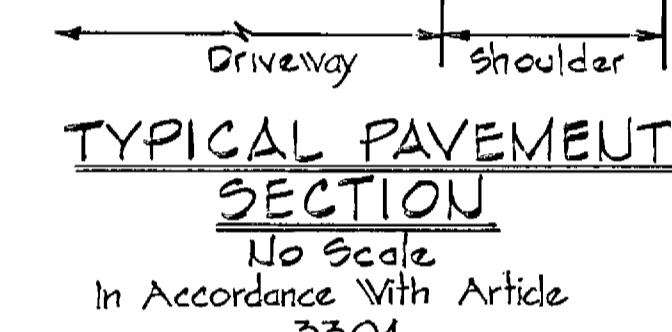
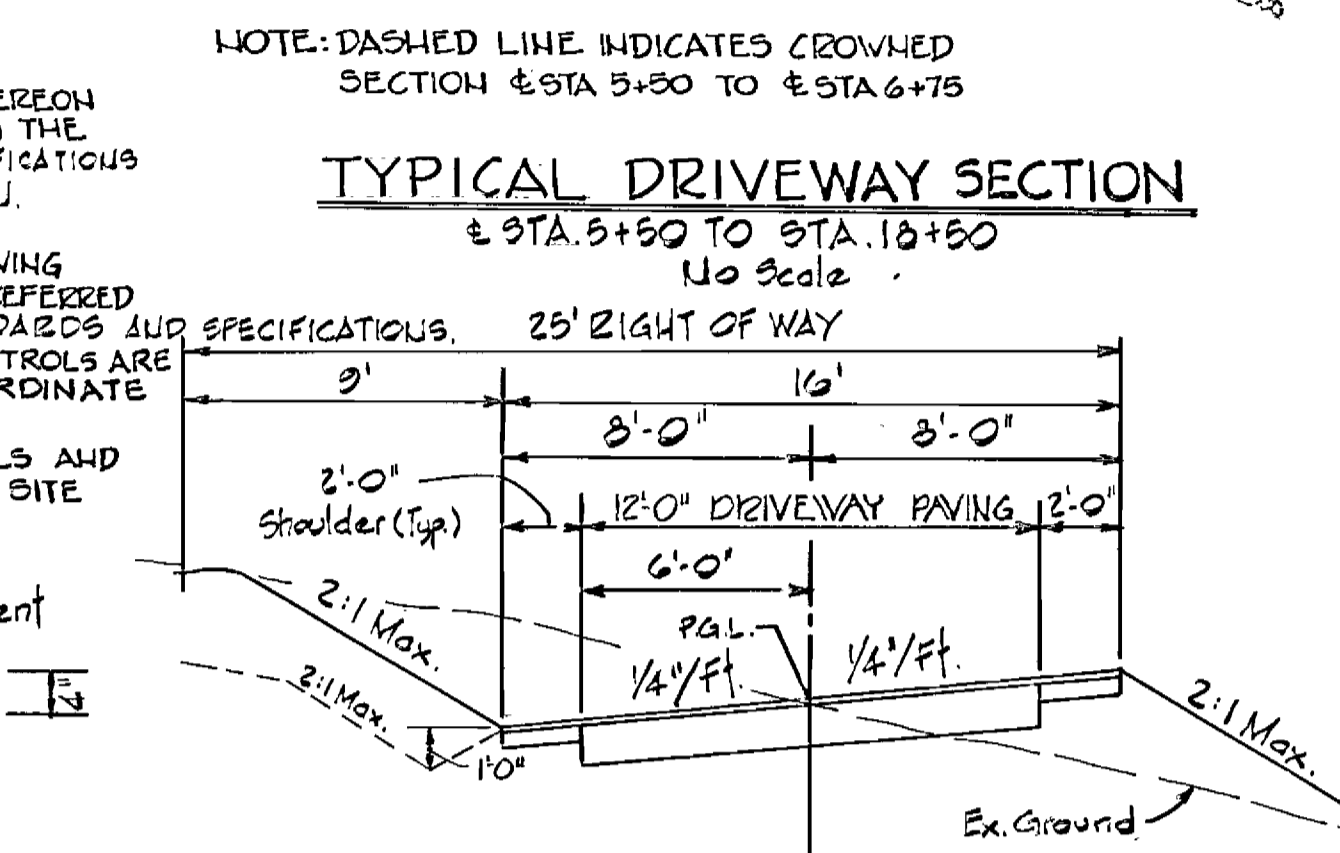
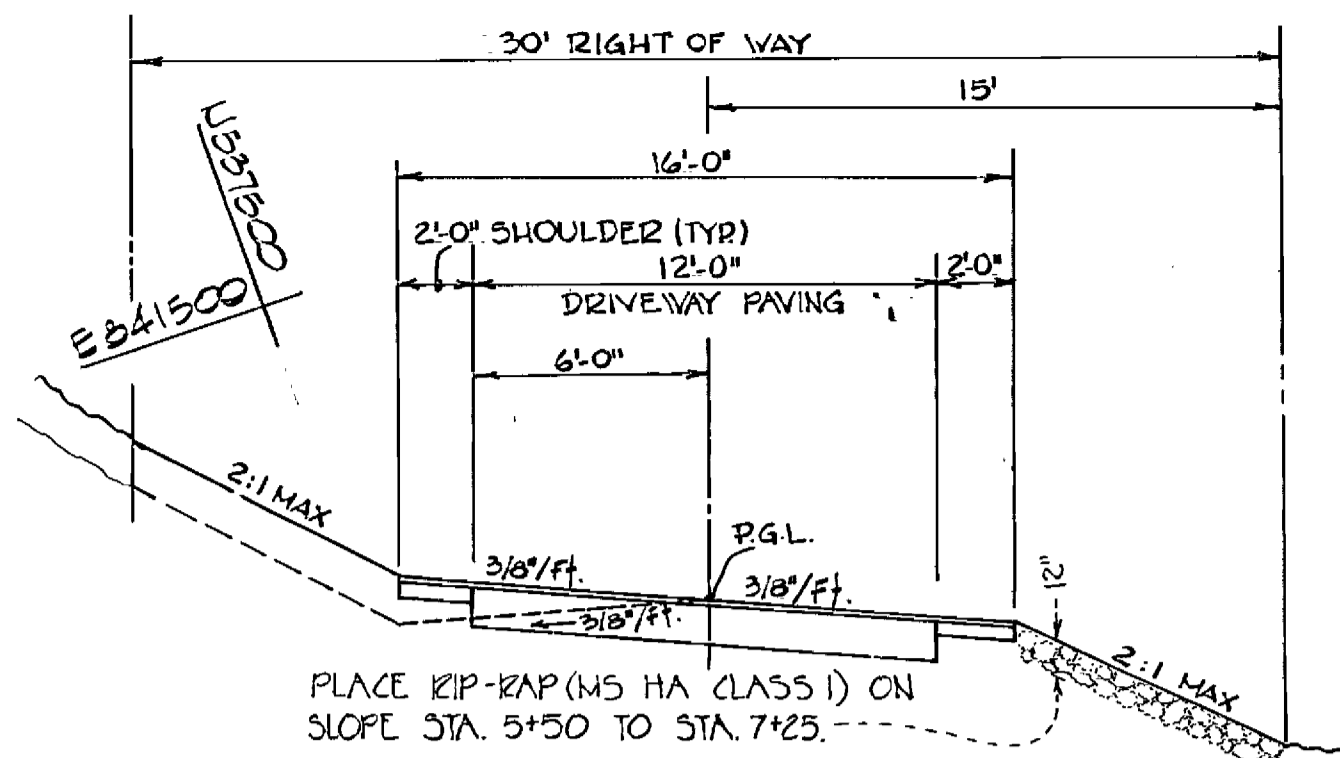
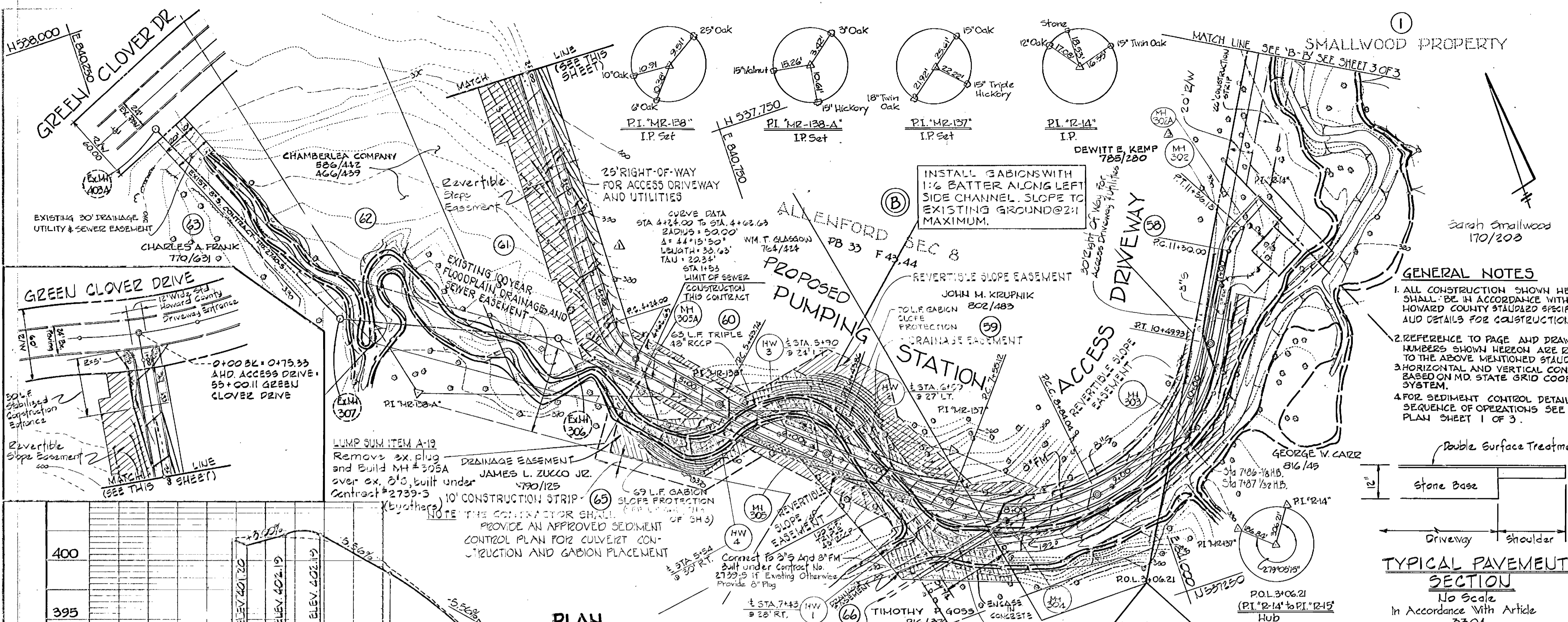
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
CAPITAL PROJECT # 8-6007  
CONTRACT # 2741-5  
CHARLES E. A. SEVERO  
ALLENFORD PUMPING STATION  
SITE DEVELOPMENT PLAN  
ELECTION DISTRICT NO. 2  
HOWARD COUNTY, MD  
PARCEL

Designed: DCE  
Drawn: SDB  
Checked: BCE  
DRWG. NO. 2 OF 16  
SITE PLAN SH. 1 OF 3  
Scale: As Shown  
SDP-83-54

PURDUM & JESCHKE  
CONSULTING ENGINEERS  
LAND SURVEYORS  
1023 North Calvert Street  
Baltimore, Maryland 21202  
301/837-0194

AS-BUILTS

EPA No. G-240334-01 (14)



STA	STA	RADIUS	LENGTH	TANGENT	CHORD
4+24.00	4+62.63	50.00	38.63	20.34'	5'21"11"49"E 37.67'
5+37.44	6+30.61	770.00	100.12'	50.13'	5'47"03"14"E 100.05'
7+55.12	8+64.04	157.00	128.92'	68.34'	5'74"18"14"E 125.33'
8+84.04	10+43.23	179.69'	165.89'	82.39'	N 55°43'25"E 160.06'
11+30.00	11+56.18	50.00'	26.15'	13.40'	U 44°16'31"E 25.89'

HORIZONTAL CONTROLS		
STA	NORTH	EAST
4+24.00	537621.644	840606.895
4+62.63	537886.919	840619.917
5+37.44	537521.519	840675.572
6+30.61	537459.554	840746.506
7+55.12	537389.003	840838.002
8+64.04	537355.097	840955.658
9+10.00	537445.242	841081.922
10+43.23	537515.085	841127.077
11+30.00	537533.619	841145.140

APPROVED  
 DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION  
 HOWARD COUNTY, MARYLAND  
 DATE 12-10-82

PROFILES:  
 SCALE: HORIZ. 1" = 50'  
 VERT. 1" = 5'

HOWARD SOIL CONSERVATION DISTRICT  
 REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.  
 APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT.  
 DATE 1-24-83

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
 DATE 12/30/82

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING.  
 DATE 1-25-83

DEVELOPER:  
 I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.  
 DATE 1-14-83

PROFESSIONAL ENGINEER:  
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.  
 DATE 1/8/83

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 CAPITAL PROJECT 3-4-8057  
 CONTRACT #741-5  
 CHAMBERLEA SEWERS  
 ALLENFORD PUMPING STATION  
 SITE DEVELOPMENT PLAN  
 ACCESS DRIVE  
 ELECTION DISTRICT NO. 2  
 TAX MAP 17  
 PARCEL  
 DESIGNED: R.J.T.  
 DRAWN: O.P.  
 CHECKED: R.J.T.  
 DWG. NO. 3 OF 16  
 SITE PLAN SH.2 OF 3  
 SCALE: AS SHOWN

PURDUM & JESCHKE  
 CONSULTING ENGINEERS  
 LAND SURVEYORS  
 3111 North Calvert Street  
 Baltimore, Maryland 21212  
 301/337-0111

APPROVED: FOR PUBLIC WATER, PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
 DATE 12/29/82

APPROVED: HOWARD COUNTY OFFICE OF PLANNING AND ZONING.  
 DATE 1-25-83

DEVELOPER:  
 I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS DEEMED NECESSARY. DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.  
 DATE 1-14-83

PROFESSIONAL ENGINEER:  
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.  
 DATE 1/8/83

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 CAPITAL PROJECT 3-4-8057  
 CONTRACT #741-5  
 CHAMBERLEA SEWERS  
 ALLENFORD PUMPING STATION  
 SITE DEVELOPMENT PLAN  
 ACCESS DRIVE  
 ELECTION DISTRICT NO. 2  
 TAX MAP 17  
 PARCEL  
 DESIGNED: R.J.T.  
 DRAWN: O.P.  
 CHECKED: R.J.T.  
 DWG. NO. 3 OF 16  
 SITE PLAN SH.2 OF 3  
 SCALE: AS SHOWN

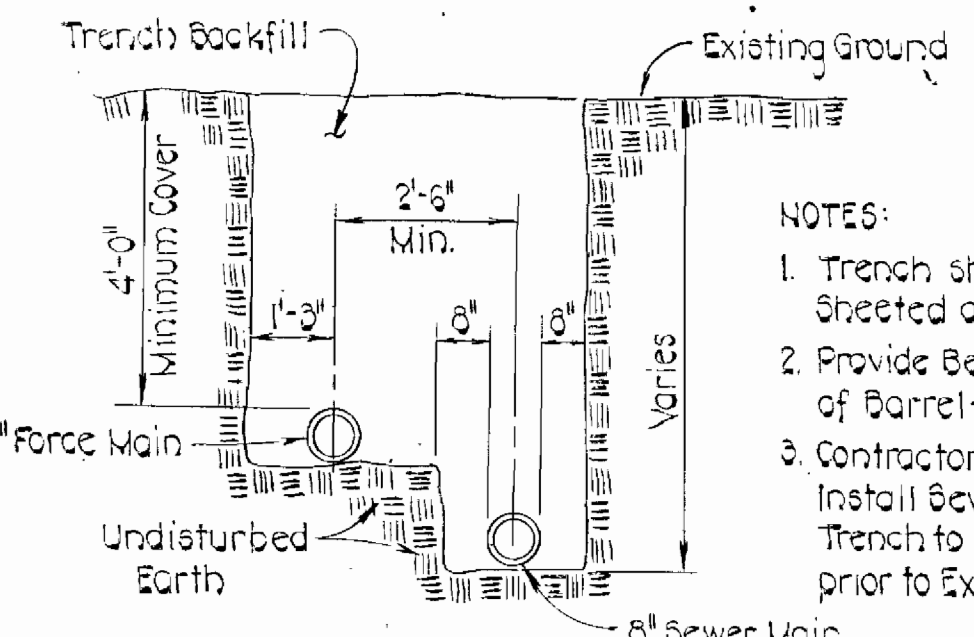
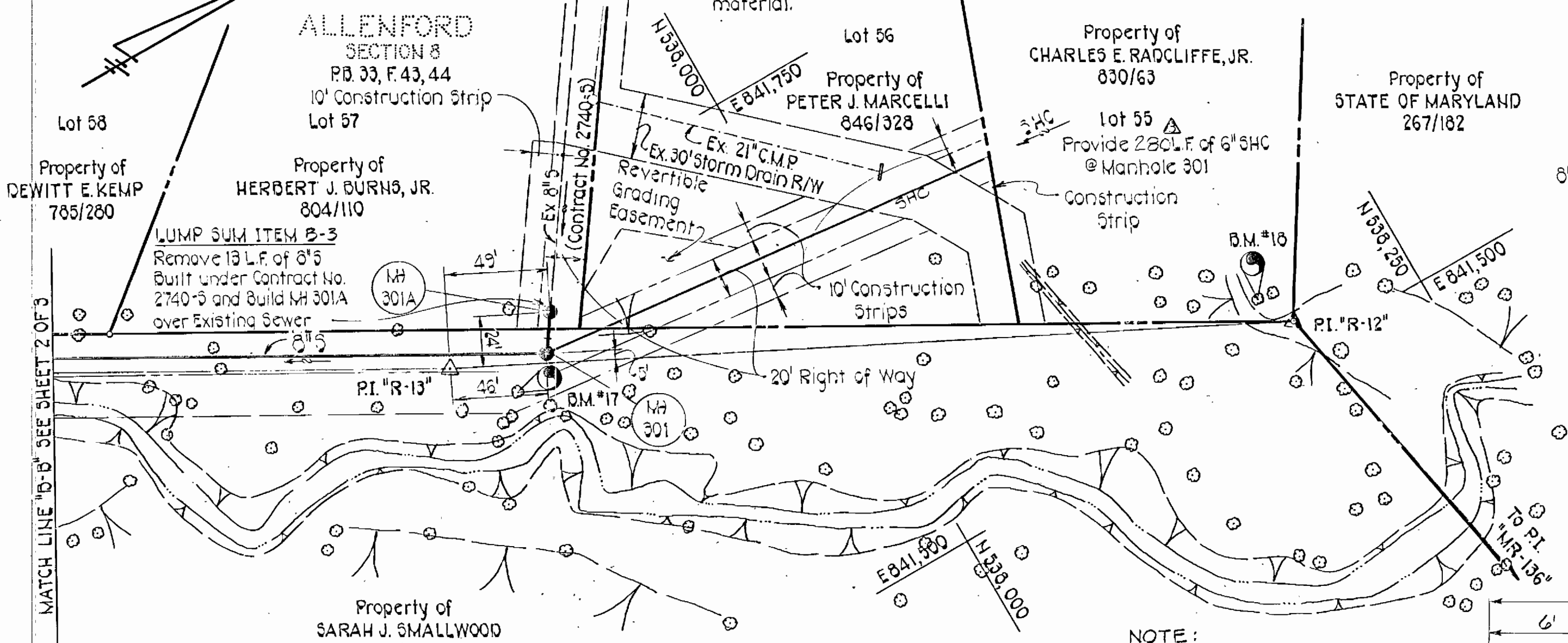
**BENCH MARKS**

BM #17 ELEV. 313.34  
Railroad Spike set in 20' Poplar, 35' North of P.I. "R-13"

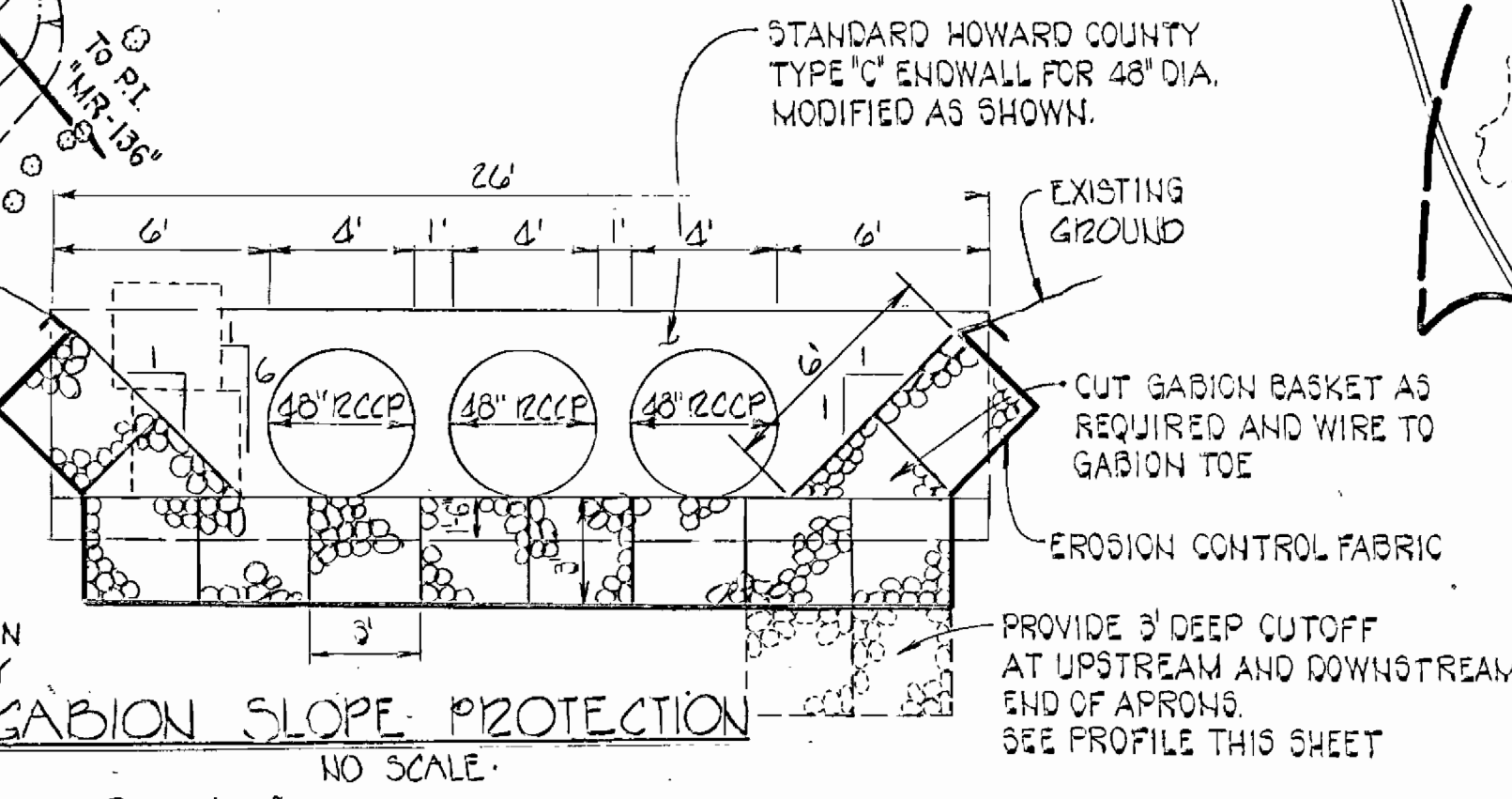
BM #18 ELEV. 307.03  
Railroad Spike set in 20' Beech, 20' South-west of P.I. "R-12"

**NOTES:**

- Contractor shall locate Existing 8" Sewer in vicinity of Manhole No. 301A prior to constructing Manhole 301.
- Contractor shall furnish and place select backfill to maintain 4'-0" minimum cover over 6" SHC to the Radcliffe Property between Sta. 0+00 and 1+10. Backfill shall be placed so as to maintain positive drainage. Payment for this item shall be made under the stipulated item for furnishing and placing special backfill material.

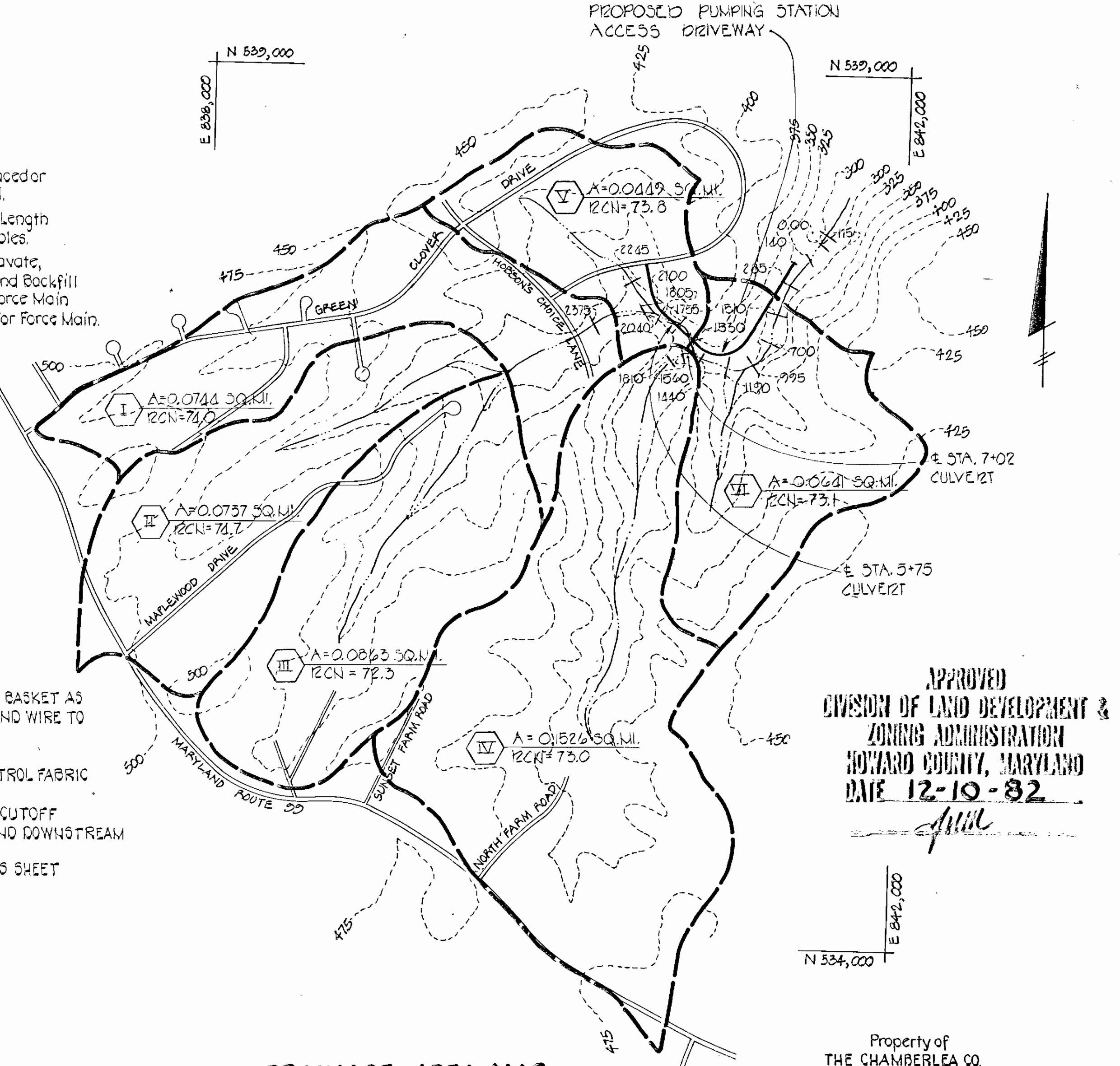


**FORCE MAIN AND SEWER MAIN IN COMMON TRENCH**  
Not to Scale

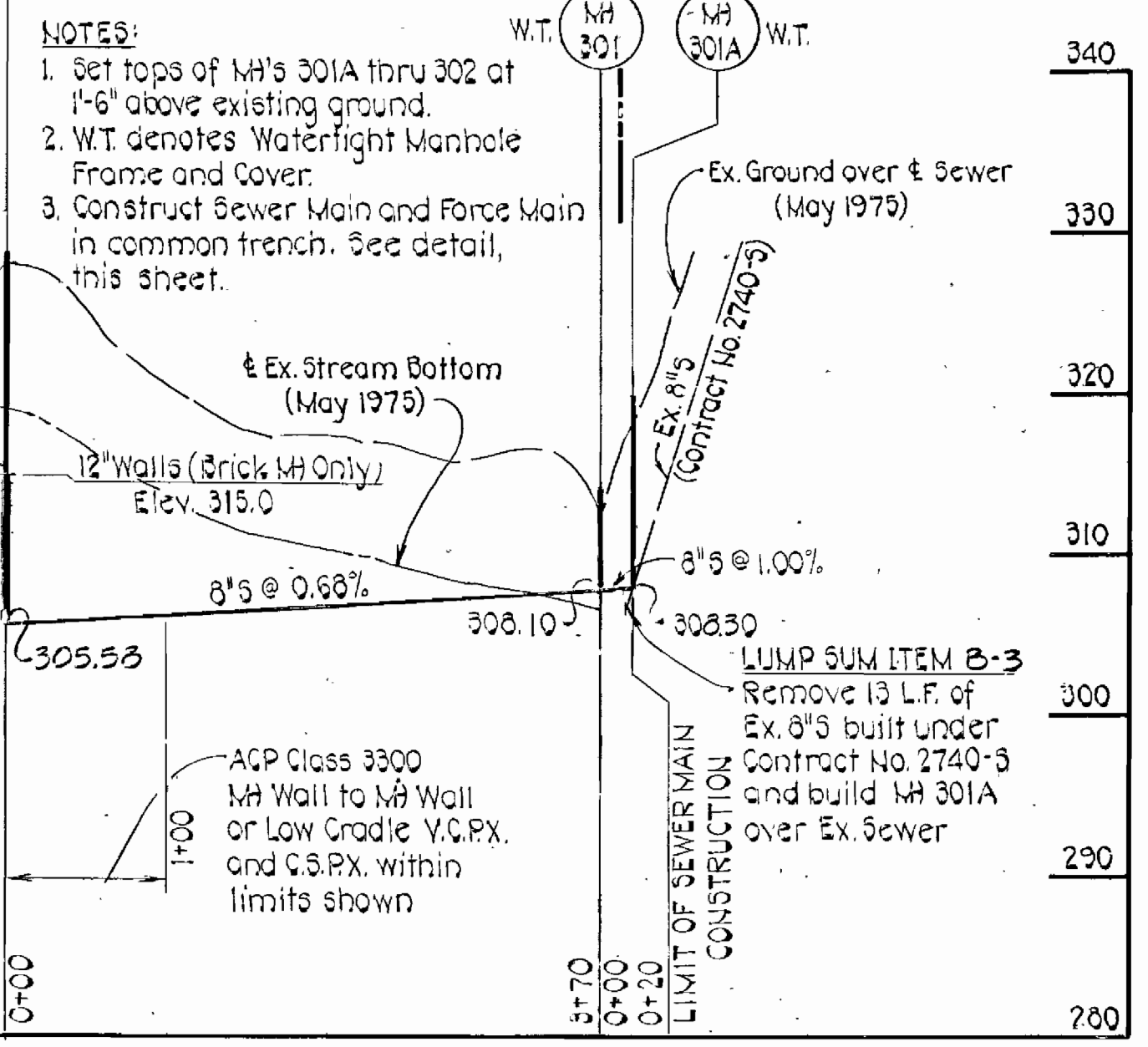
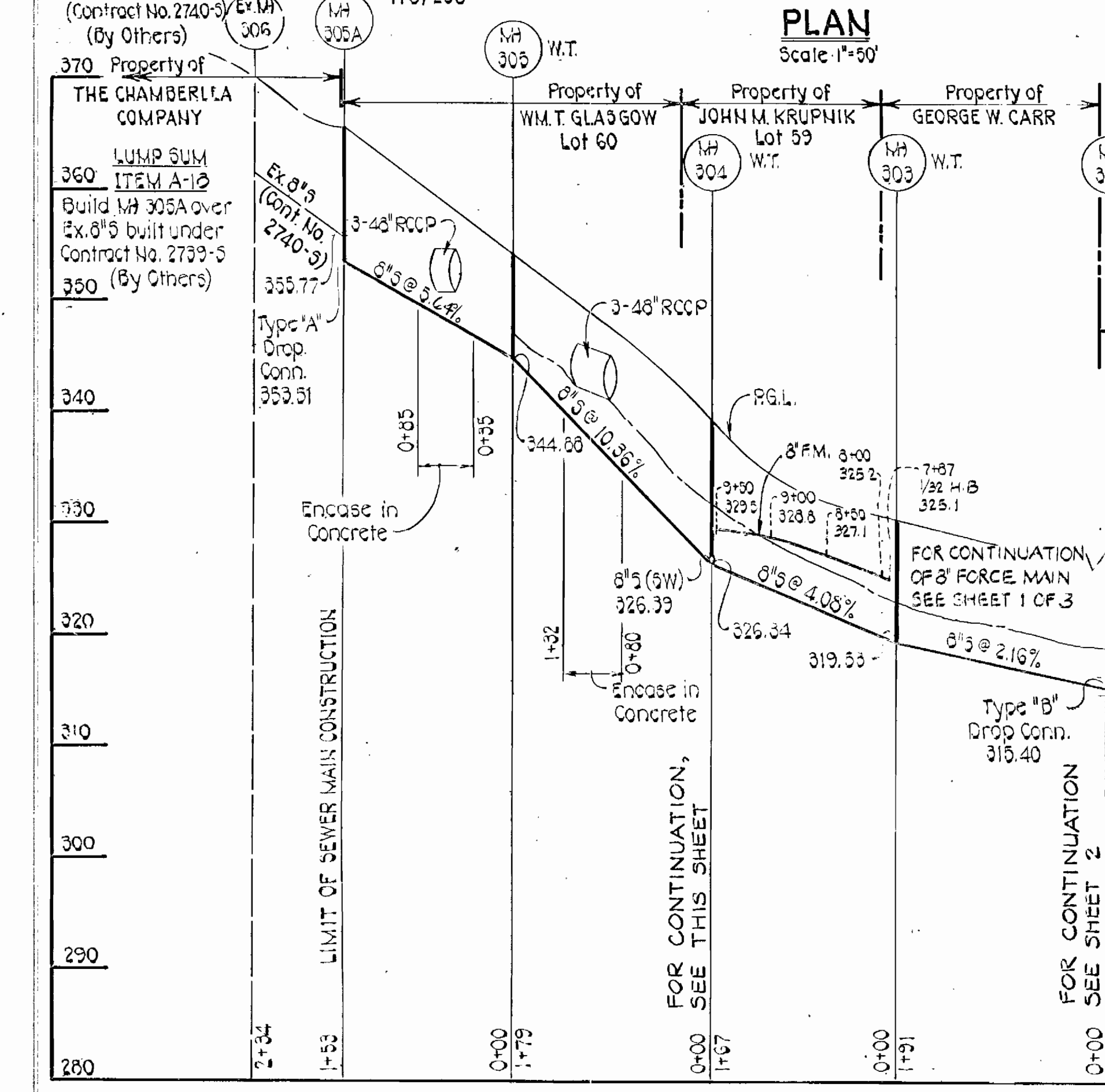


**NOTE:**

- MAXIMUM ALLOWABLE GABION SLOPE 1:1 UNLESS OTHERWISE NOTED.
- GABIONS SHALL BE SERIES 300 HEAVY DUTY GALVANIZED GABIONS AS MANUFACTURED BY MACCAFERRI GABIONS INC. BELVAERT GABIONS AS MANUFACTURED BY TERZA AQUA CONSTRUCTION OR EQUAL.
- GABIONS MAY BE OMITTED IN ROCK CUT IF APPROVED BY HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

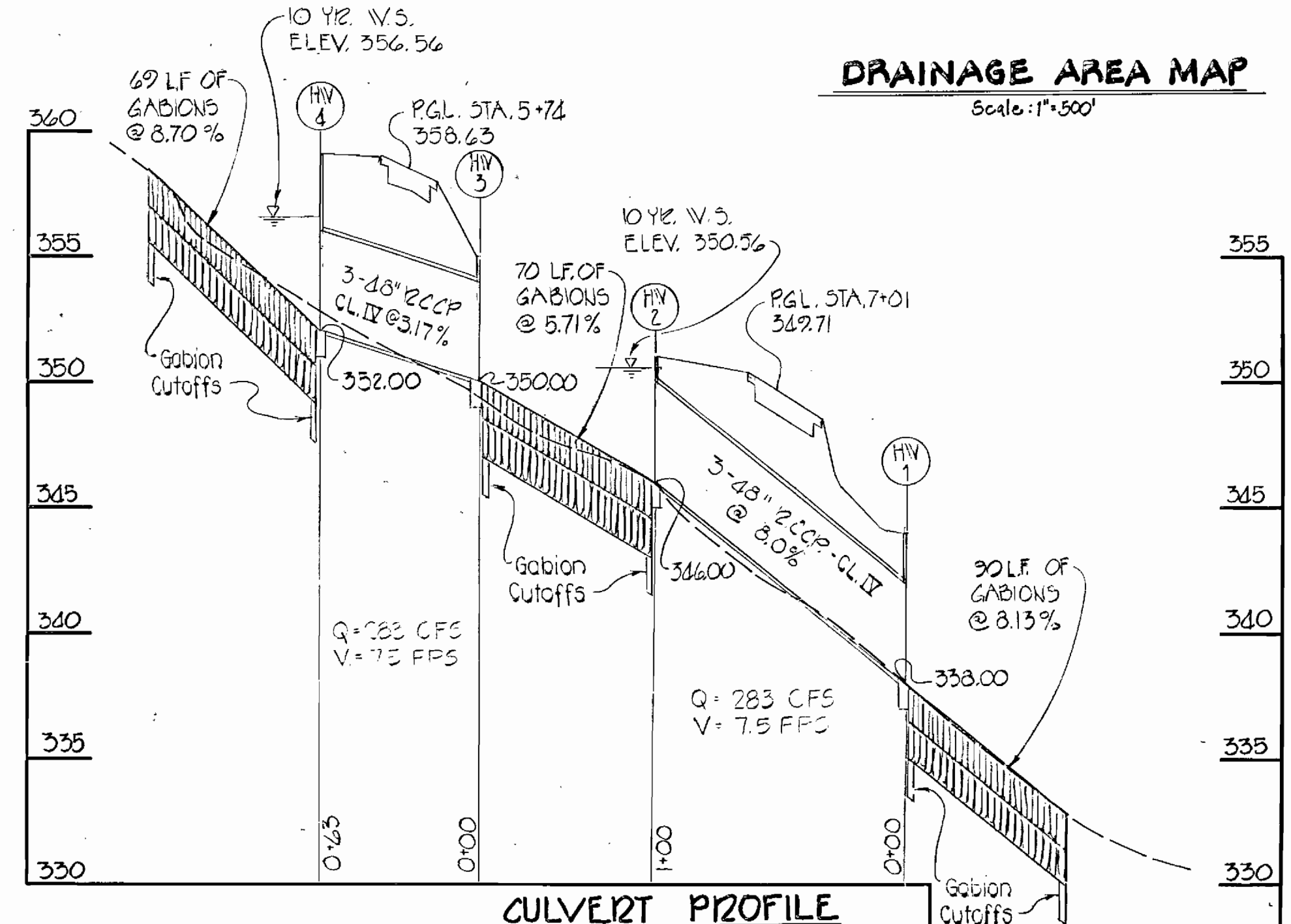


APPROVED  
DIVISION OF LAND DEVELOPMENT & ZONING ADMINISTRATION  
HOWARD COUNTY, MARYLAND  
DATE 12-10-82

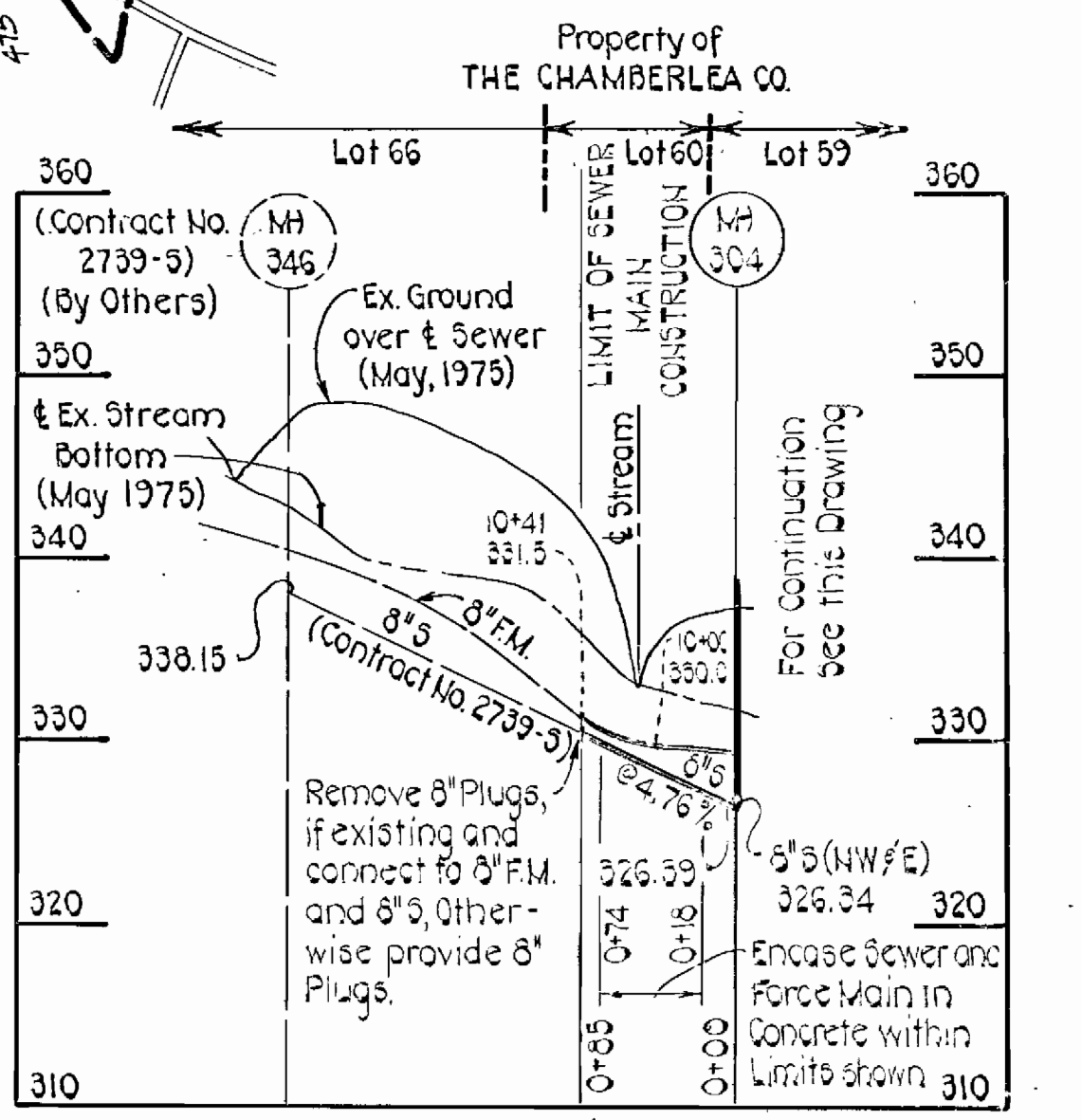


**PROFILE**  
SCALE: HORIZ. 1"=50'  
VERT. 1"=10'

STRUCTURE		SCHEDULE	
NO.	INV. ELEV.	TOP ELEV.	TYPE
1	338.00	343.00	24" (C.I. 252, PG. 107)
2	346.00	351.00	" " " "
3	350.00	355.00	" " " "
4	352.00	357.00	" " " "



**CULVERT PROFILE**  
SCALE: HORIZ. 1"=50'  
VERT. 1"=5'



**AS-BUILTS**

HOWARD SOIL CONSERVATION DISTRICT REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.  
DATE 1-20-83  
SIGNATURE [Signature]  
THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
DATE 1/2/83  
APPROVED [Signature] HOWARD SOIL CONSERVATION DIST. DATE

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT  
DATE 12/20/82  
SIGNATURE [Signature] COUNTY HEALTH OFFICER DATE

APPROVED FOR PUBLIC WATER, PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.  
DATE 1-20-83  
SIGNATURE [Signature] DIRECTOR DATE

APPROVED HOWARD COUNTY OFFICE OF PLANNING AND ZONING.  
DATE 1-26-83  
SIGNATURE [Signature] CHIEF DIVISION OF LAND DEVELOPMENT AND ZONING ADMINISTRATION DATE

DEVELOPER:  
I CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD COUNTY SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS DEEMED NECESSARY, DEVIATION FROM THIS PLAN WILL NOT BE MADE UNLESS AUTHORIZED BY THE HOWARD SOIL CONSERVATION DISTRICT.  
DATE 1-20-83  
SIGNATURE [Signature] DATE

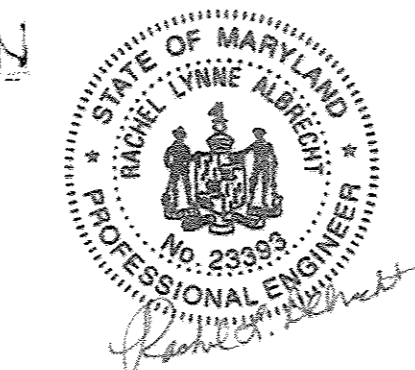
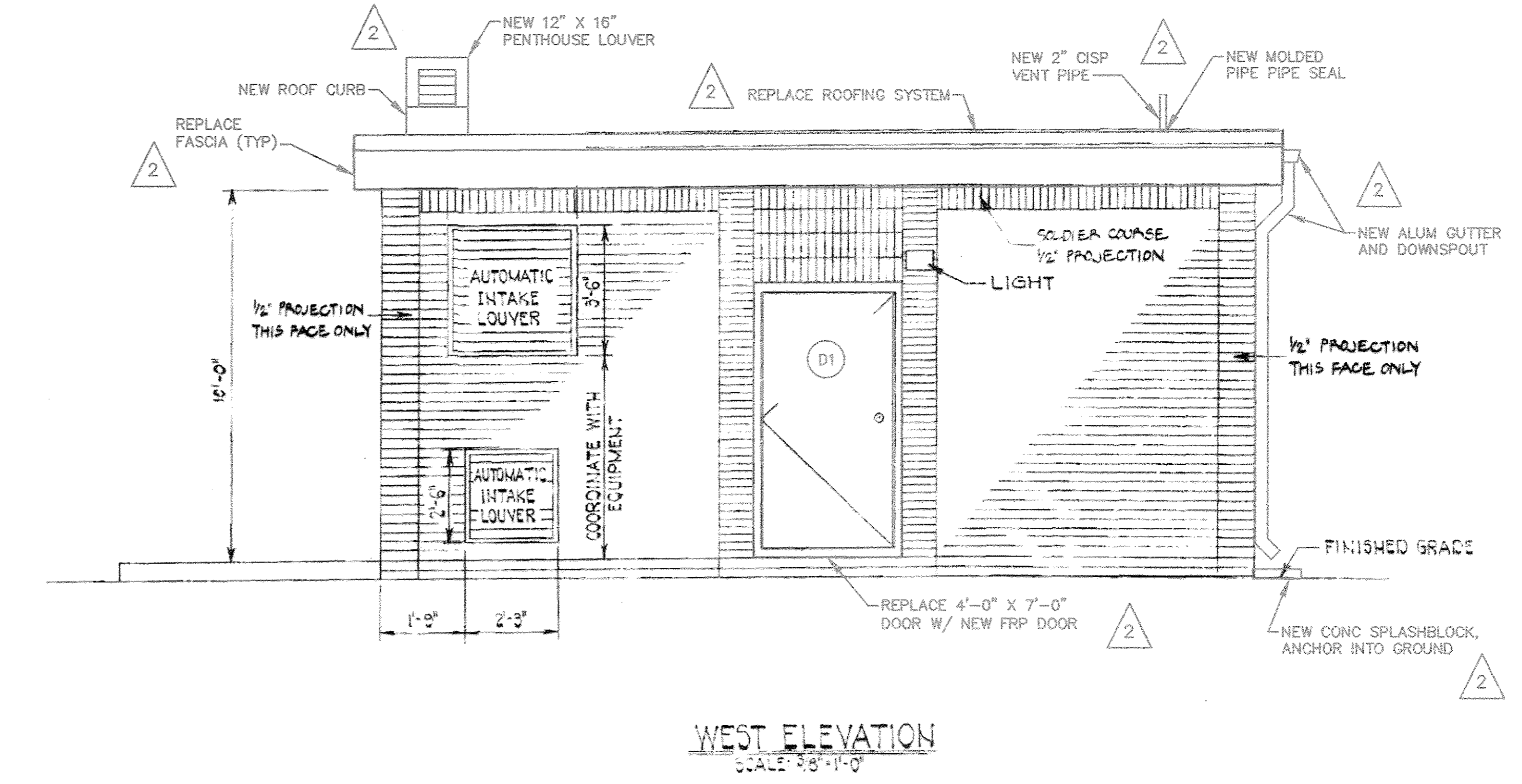
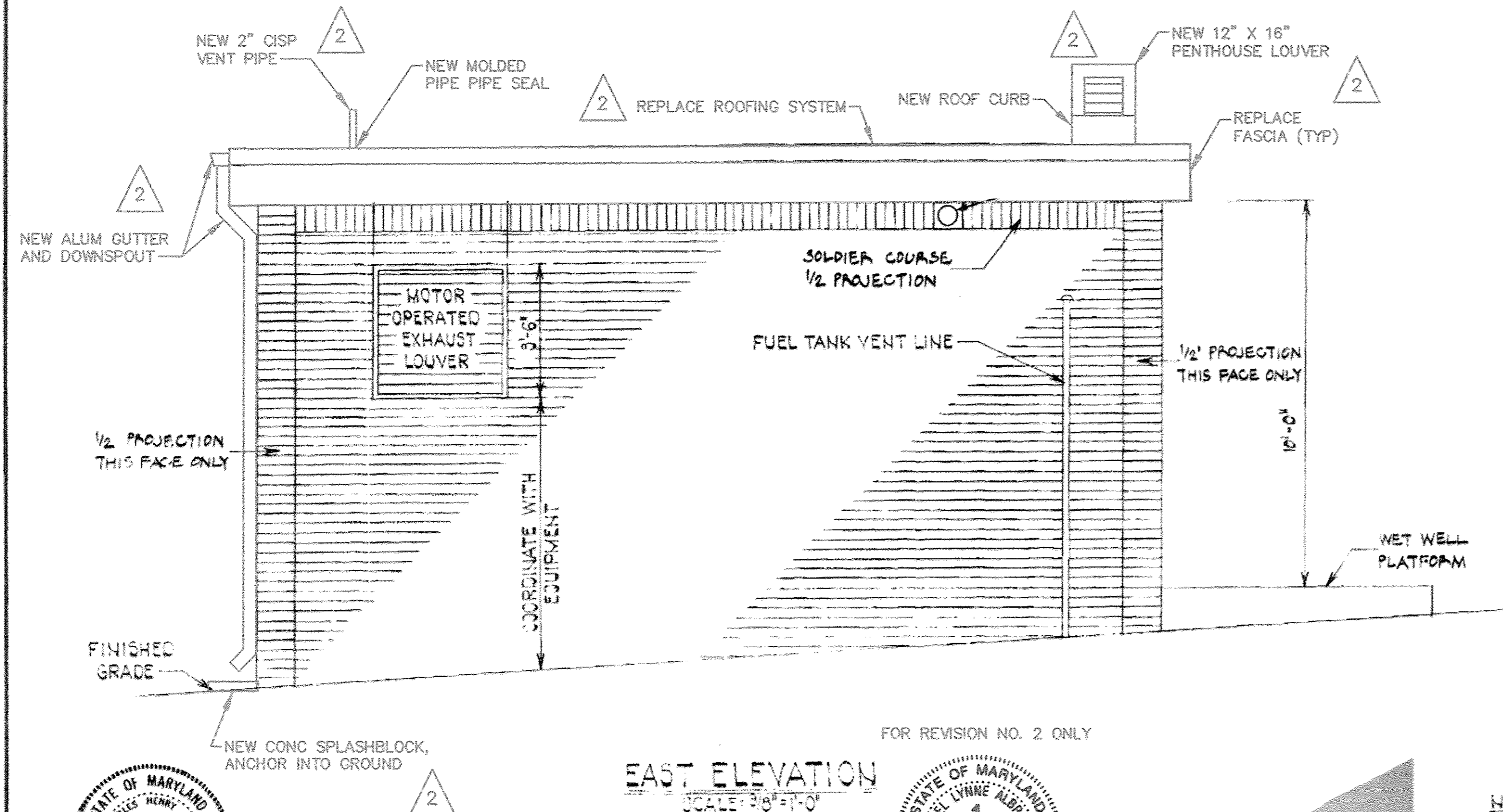
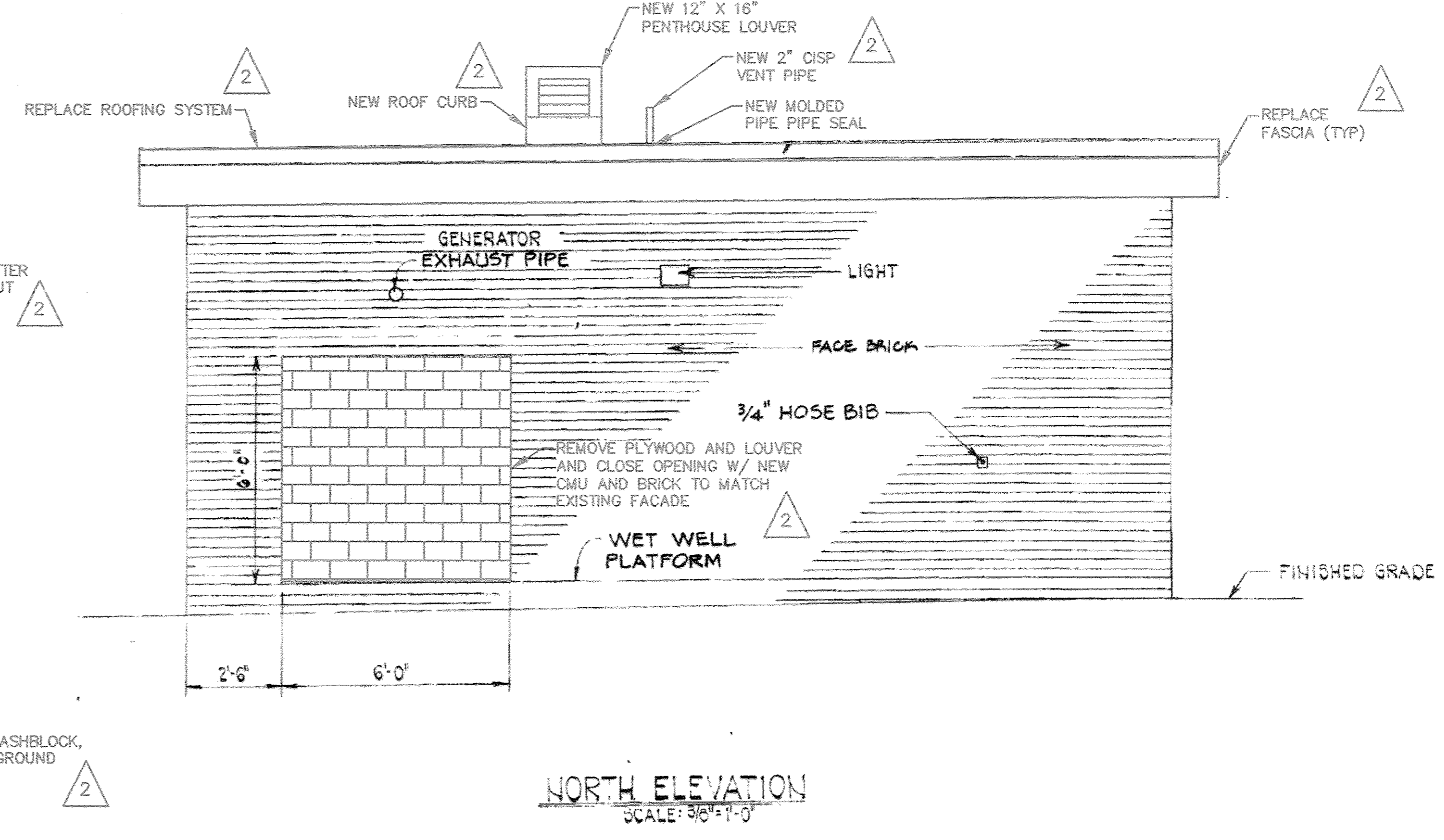
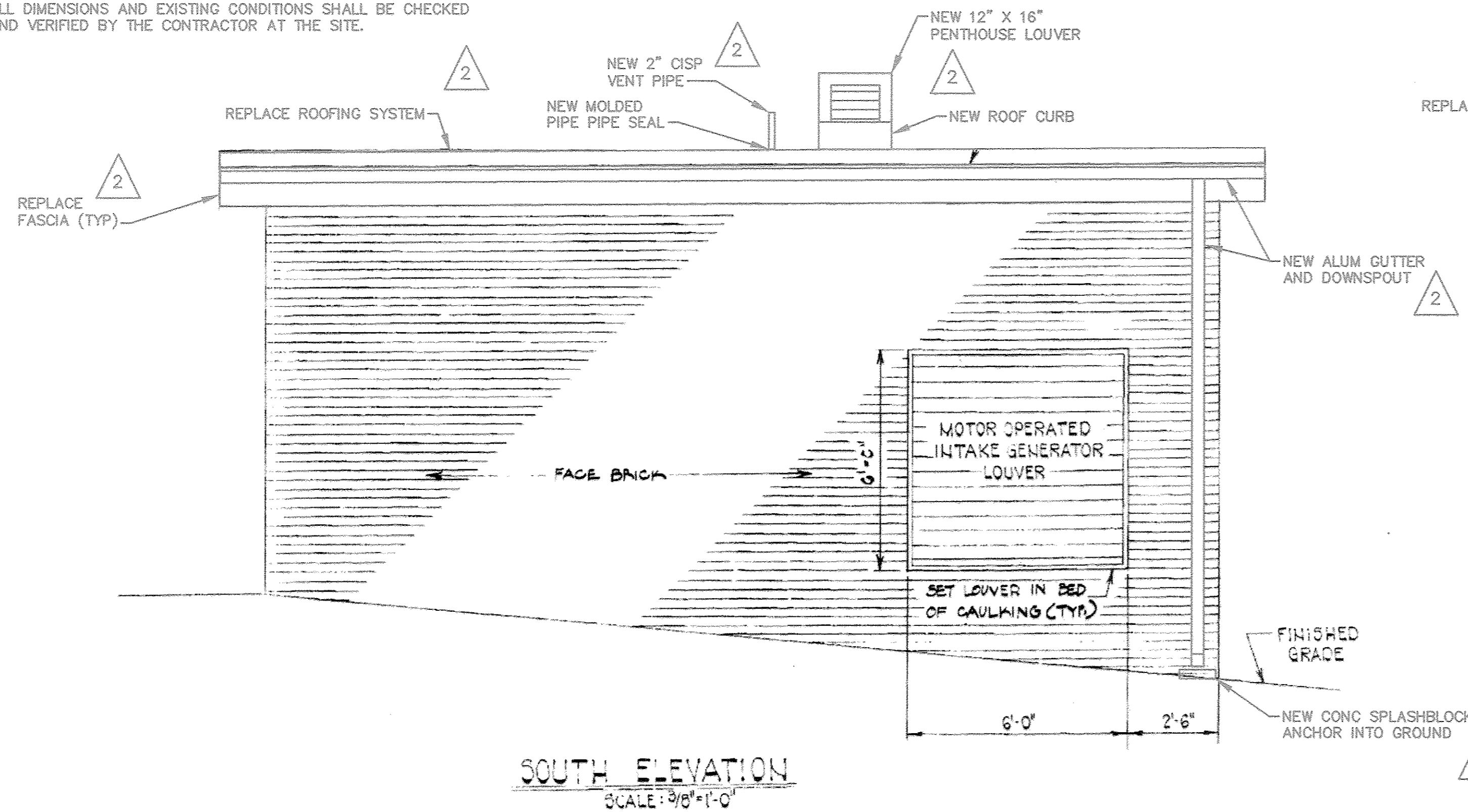
**PURDUM & JESCHKE CONSULTING ENGINEERS LAND SURVEYORS**  
1023 North Calvert Street  
Baltimore, Maryland 21202 301/837-0194

PROFESSIONAL ENGINEER:  
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT.  
DATE 1/8/83  
SIGNATURE [Signature] REG. NO. 4375

HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
CAPITAL PROJECT 3-4-6067  
CONTRACT #741-5  
CHAMBERLEA SEWERS  
ALLENFORD PUMPING STATION  
SITE DEVELOPMENT PLAN  
ACCESS DRIVE  
ELECTION DISTRICT NO. 2 HOWARD COUNTY, MD. PARCEL TAX MAP 17  
DESIGNED: D.E.  
DRAWN: J.I.Z.B.  
CHECKED: D.E.  
DRWG. NO. 4 OF 16  
SITE PLAN SH.30F.3  
SCALE: AS SHOWN  
REVISIONS

**NOTE:**

1. ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.



**ALBRECHT ENGINEERING INC**

**NOTE:**  
EXACT LOCATIONS OF LOUVERS TO BE COORDINATED WITH LOCATION OF EQUIPMENT IN STATION.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
DIRECTOR OF PUBLIC WORKS  
CHIEF BUREAU OF ENGINEERS

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THE CHANGES ASSOCIATED WITH THIS REVISION WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NO. 23993 EXPIRATION DATE 2/28/18  
**PURDUM & JESCHKE ENGINEERS**  
1023 N. CALVERT ST.  
BALTIMORE, MARYLAND

REV	DATE	DESCRIPTION
3-18	2018 UPGRADE	
8-85	AS-BUILTS	

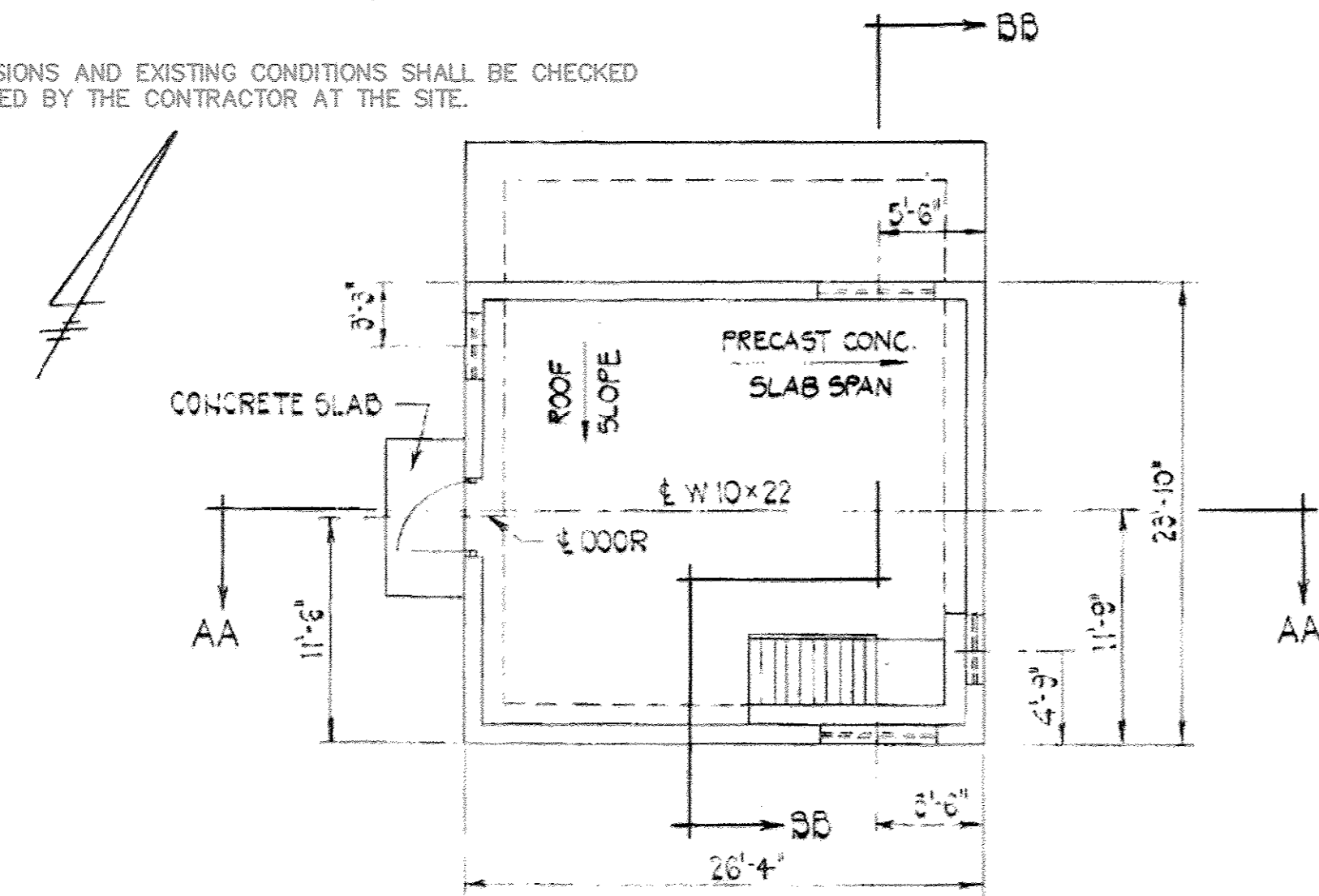
CONTRACT NO. 2741-S  
CAPITAL PROJECT NO. S-4-6067

ARCHITECTURAL DETAILS

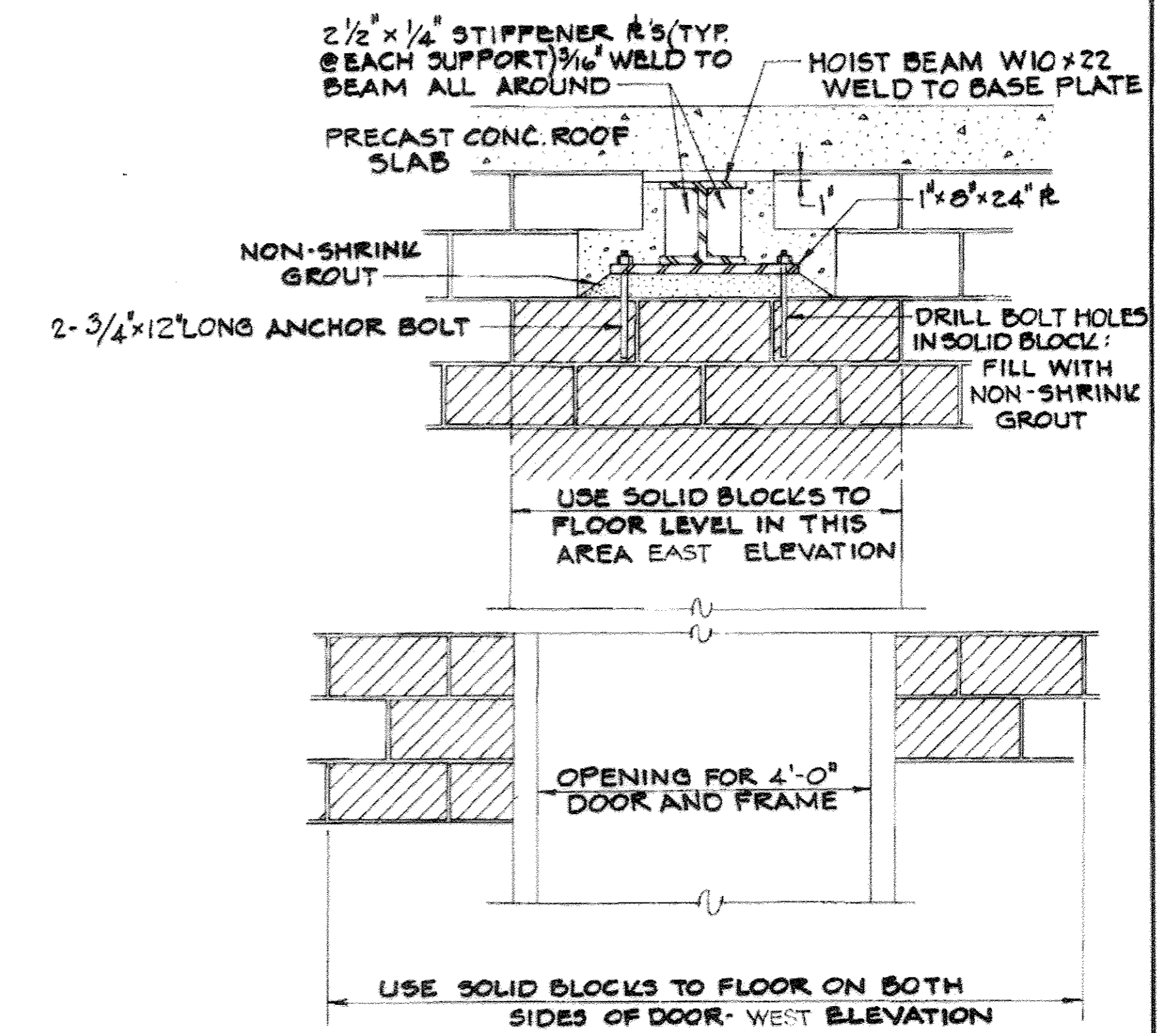
**AS-BUILTS**  
REVISED PUMPING STATION LOCATION 5-2-82  
**CHAMBERLEA SANITARY SEWERS ALLENFORD PUMPING STATION ELECTION DISTRICT NO. 2**

EPA NO. C-240594-01(14)  
CONTRACT NO. 2741-S  
CAPITAL PROJECT NO. S-4-6067  
CHAMBERLEA SANITARY SEWERS ALLENFORD PUMPING STATION  
DRAWING NO. 5 OF 16  
SCALE AS SHOWN  
Designed: REP  
Drafted:  
Checked: REP

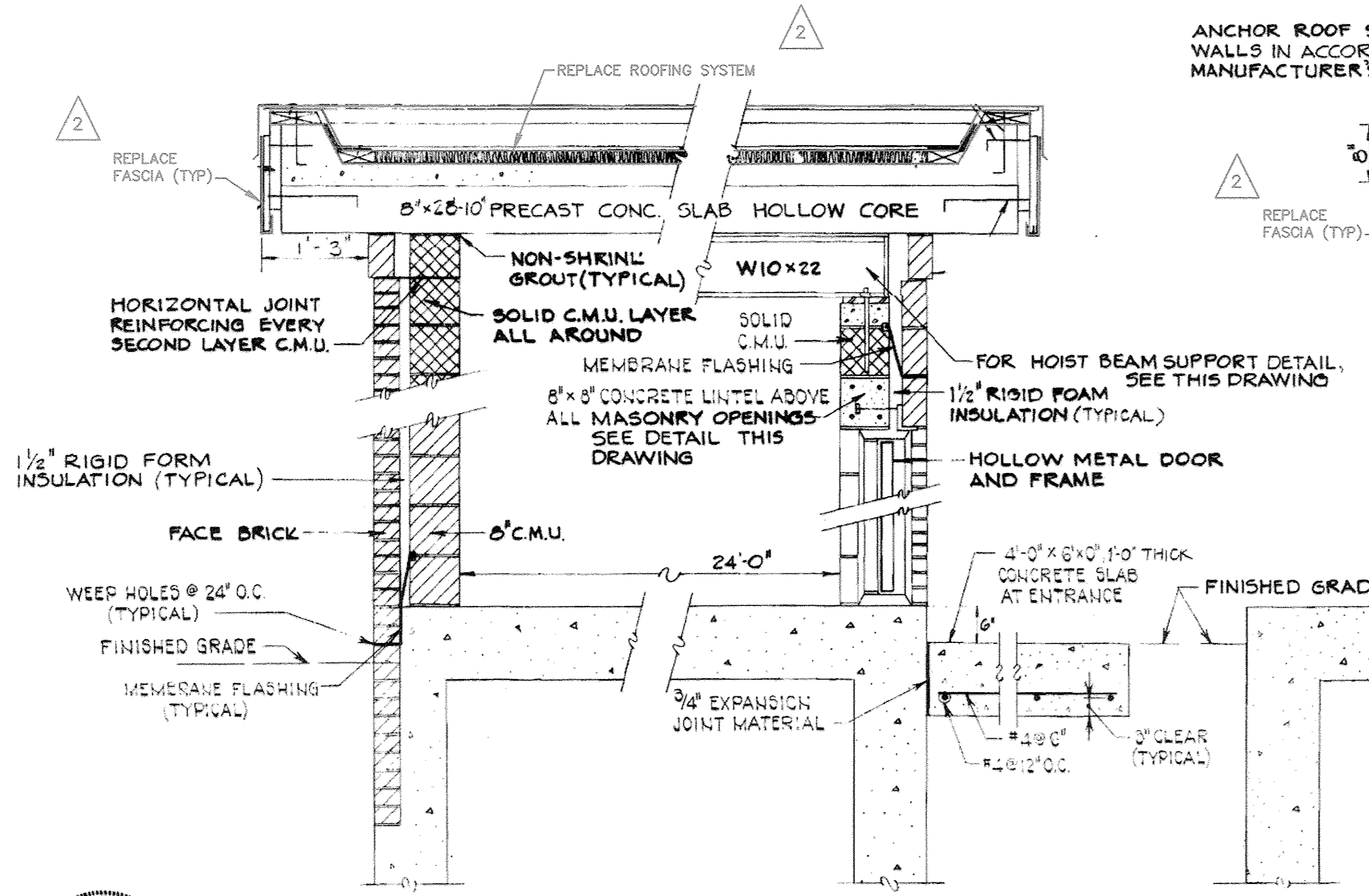
NOTE:  
1. ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.



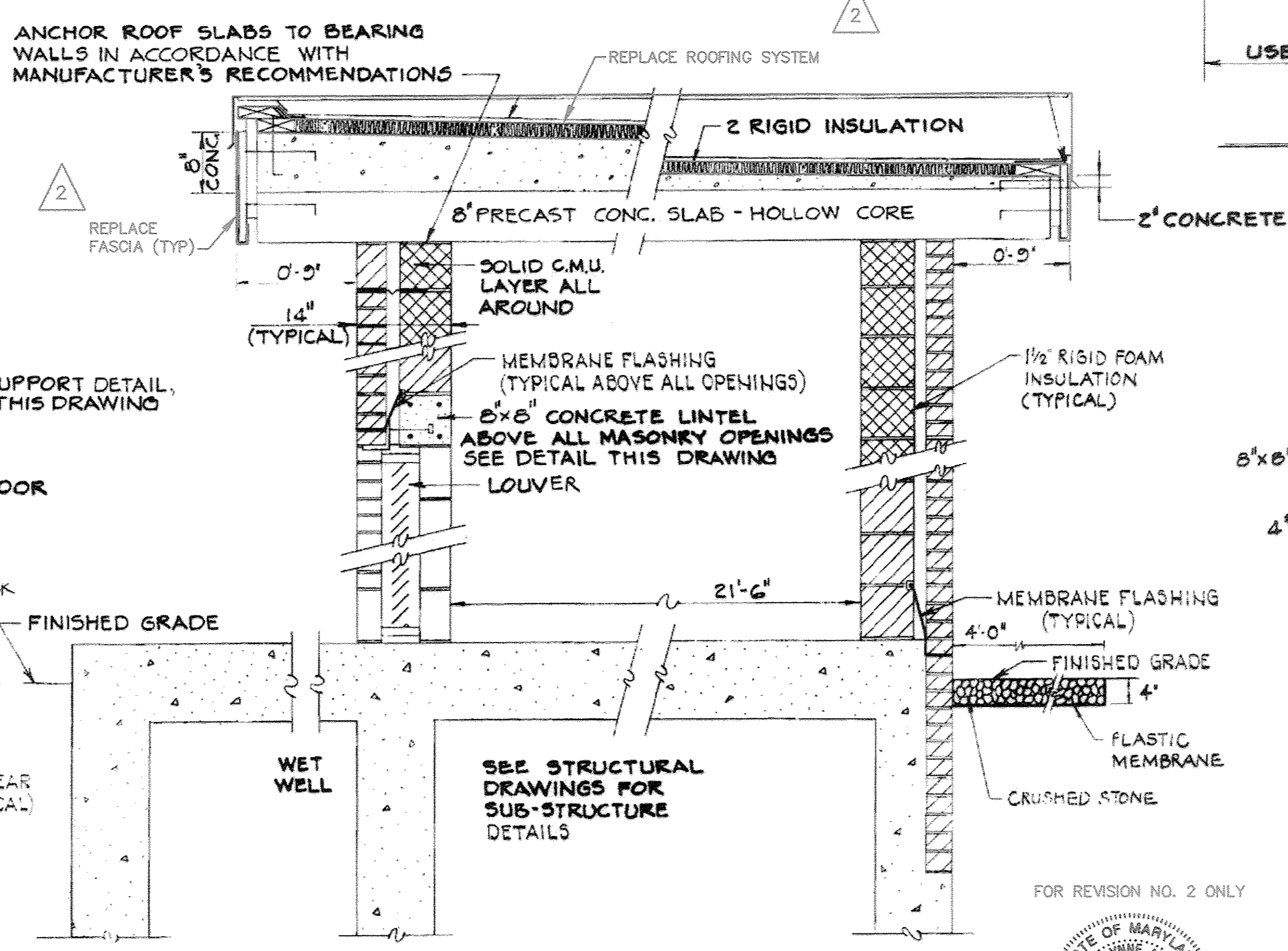
PLAN  
SCALE: 1/8" = 1'-0"



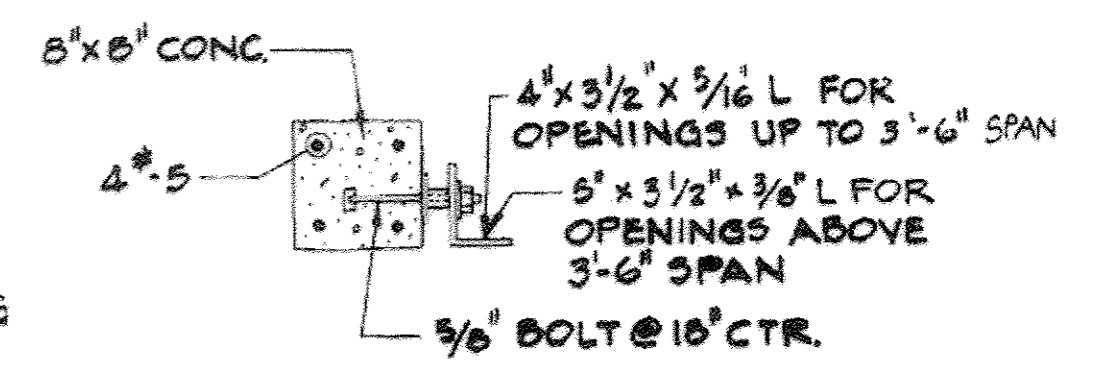
HOIST BEAM SUPPORT DETAIL  
SCALE: 3/4" = 1'-0"



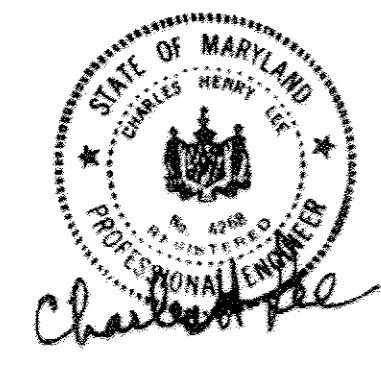
SECTION 'AA-AA'  
Scale: 3/4" = 1'-0"



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



LINTEL DETAIL  
SCALE: 1" = 1'-0"



FOR REVISION NO. 2 ONLY



**ALBRECHT**  
ENGINEERING INC

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THE CHANGES ASSOCIATED WITH REVISION #2 ONLY WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NO. 25362 EXPIRATION DATE 8/26/18

EPA NO. C-240594-01(14)  
CONTRACT NO. 2741-S  
CAPITAL PROJECT NO. S-4-6067  
CHAMBERLEA SANITARY SEWERS  
ALLENFORD PUMPING STATION

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
DIRECTOR OF PUBLIC WORKS DATE  
CHIEF BUREAU OF UTILITIES DATE

PURDUM & JESCHKE  
ENGINEERS  
1023 N. CALVERT ST.  
BALTIMORE MARYLAND

REV.	DATE	DESCRIPTION
3-18	2018 UPGRADE	

CONTRACT NO. 2741-S  
CAPITAL PROJECT NO. S-4-6067

REVISED PUMPING STATION LOCATION 5-7-82  
ARCHITECTURAL DETAILS

CHAMBERLEA SANITARY SEWERS  
ALLENFORD PUMPING STATION  
ELECTION DISTRICT NO. 2

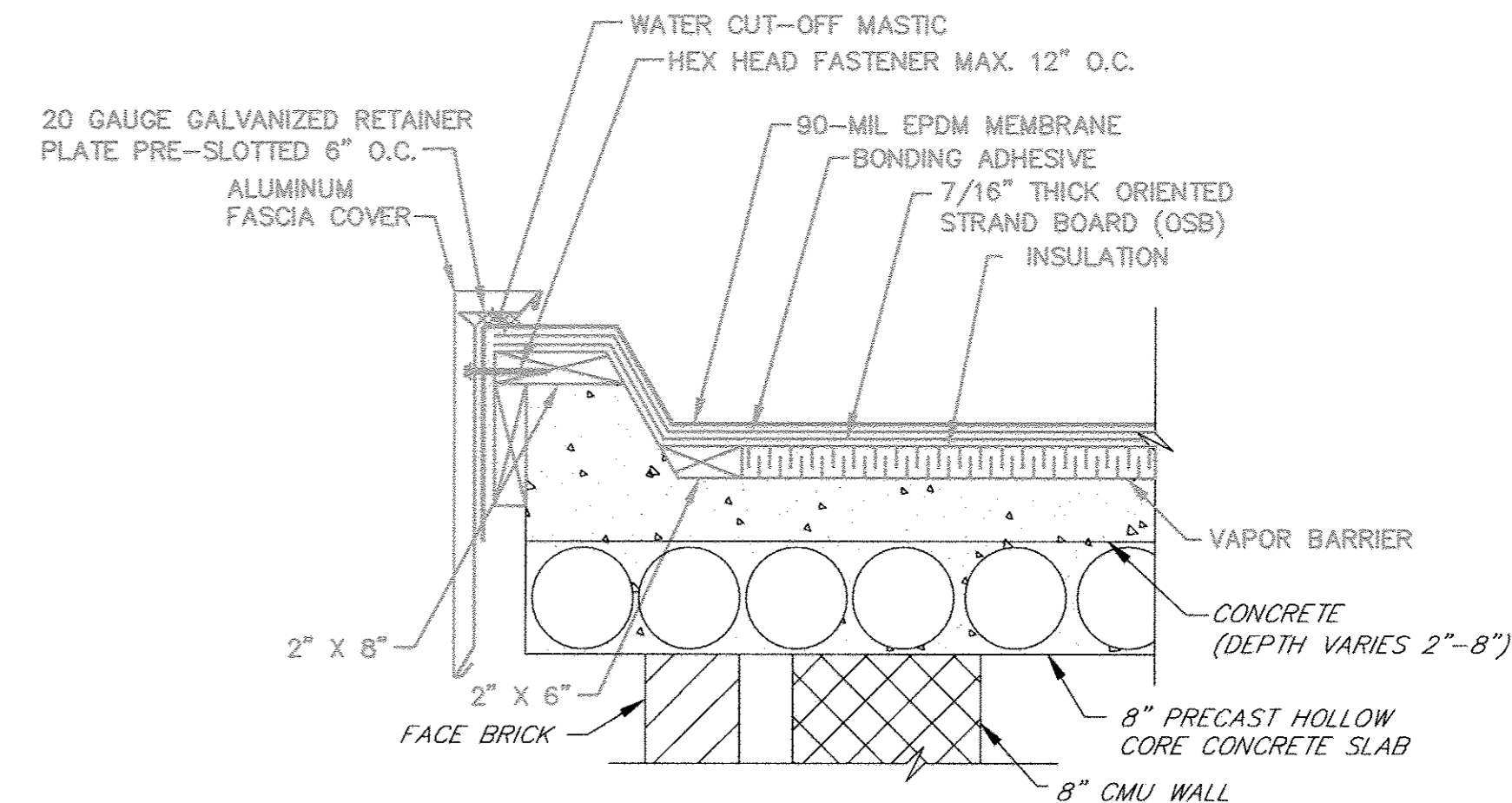
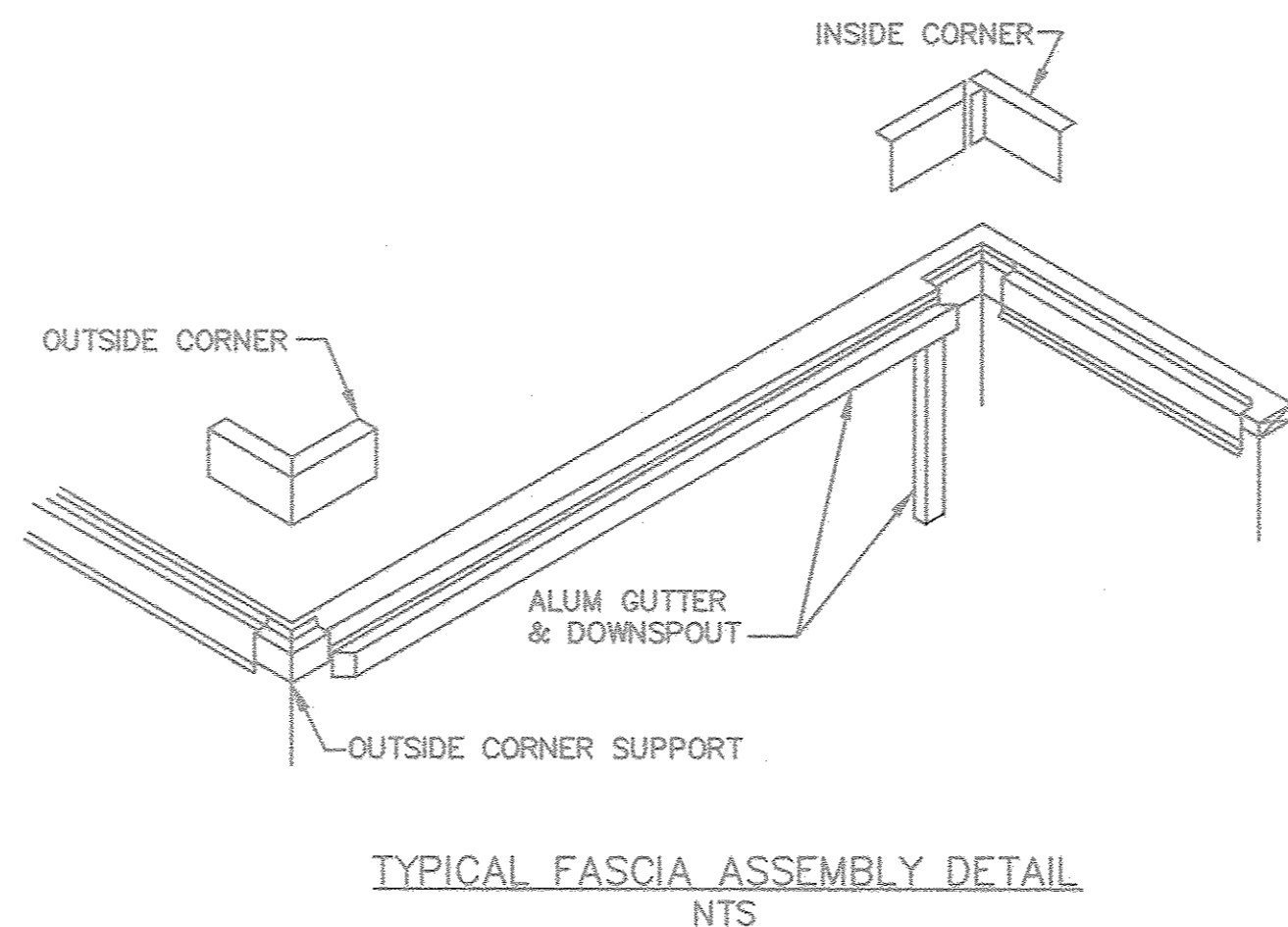
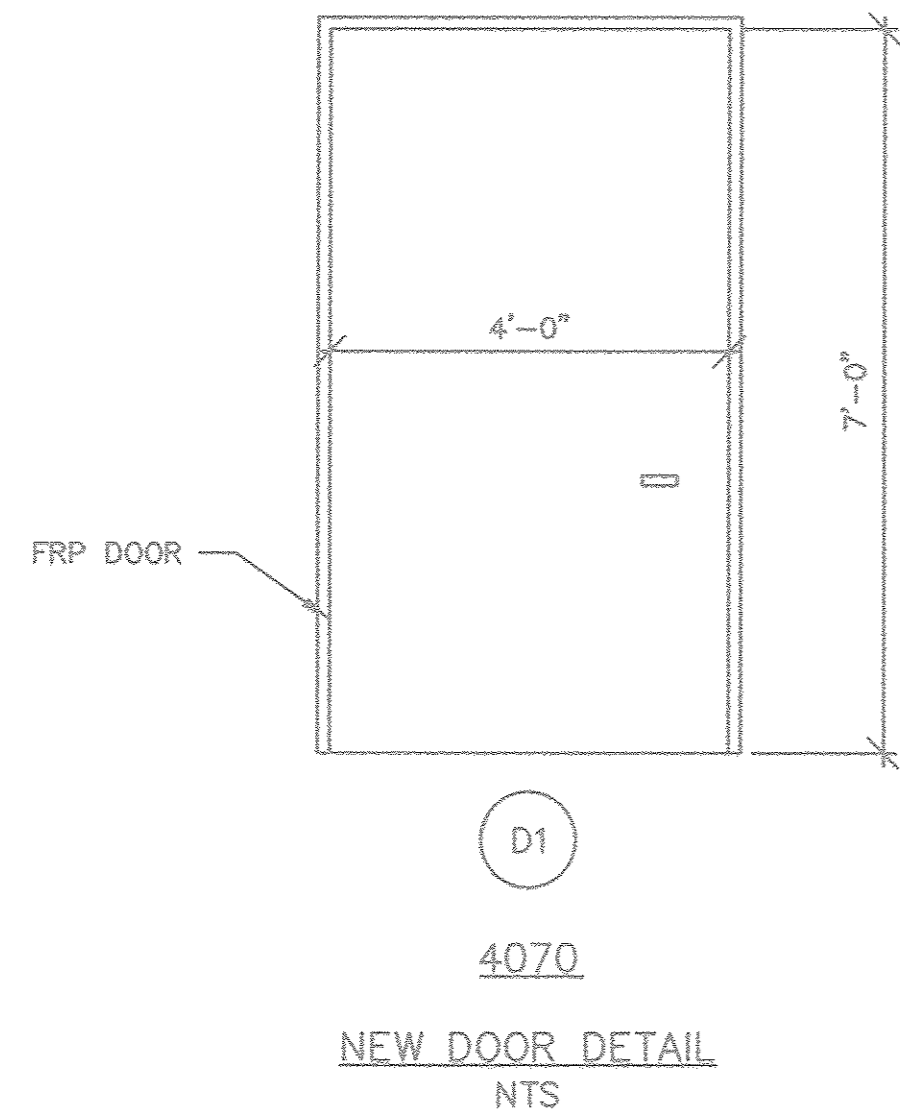
DRAWING NO.	SCALE	Designed: REP
OF 16	AS SHOWN	Drafted: REP
		Checked: REP

NOTES:

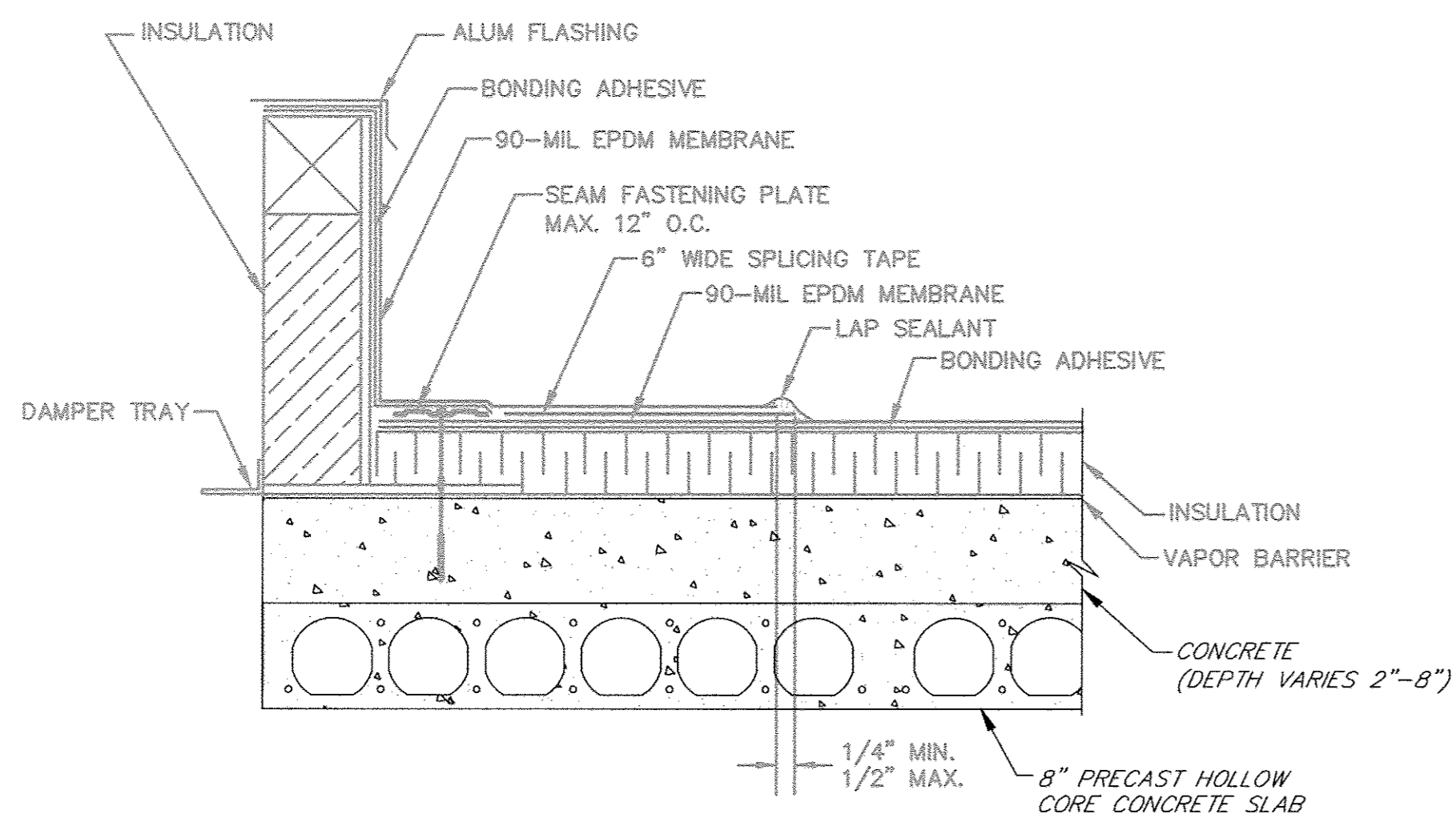
1. ALL EXISTING FEATURES DENOTED BY SLANTED TEXT.
2. ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.

DOOR SCHEDULE								
ID.	DOOR SIZES *	MASONRY OPENING * (±)	DOOR MATERIAL	FRAME (TYPE)	HARDWARE	ACCESSORIES	ACTIVE LEAF	REMARKS
D1	4'-0" X 7'-0"	4'-4" X 7'-2"	FRP	F-3	3,4,6,7,9	5,6,8	RHR	NEW 4070 DOOR
HARDWARE:								
1. LOCKS (ENTRANCE)		3. HINGES		5. BOLTS		7. DOOR STOP		9. PANIC DEVICE
2. PRIVACY LOCKS		4. CLOSER		6. KICKPLATE		8. PUSH/PULL		
ACCESSORIES:								
1. WINDOW		3. TRANSOM		5. THRESHOLD		7. ASTRAGAL		
2. LOUVER		4. CUTOUT		6. WEATHERSTRIP		8. DOOR SWEEP		

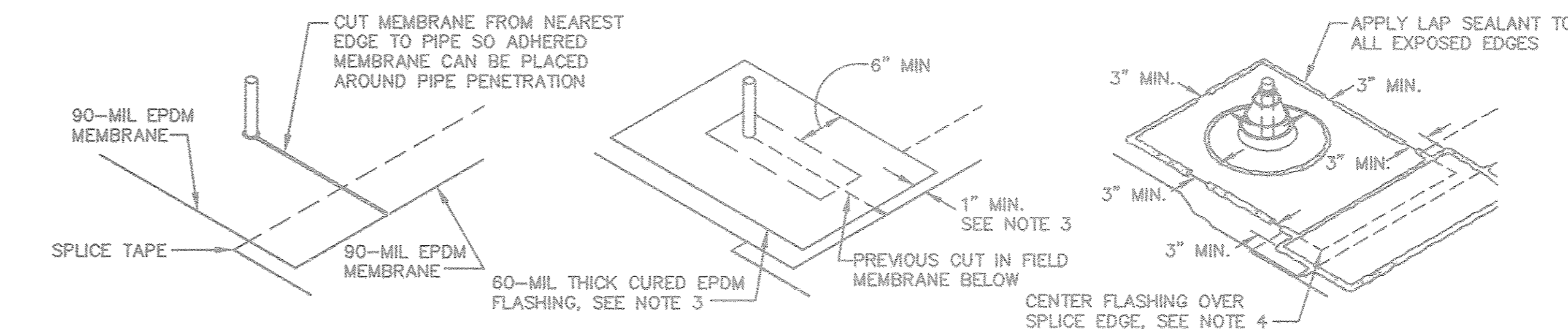
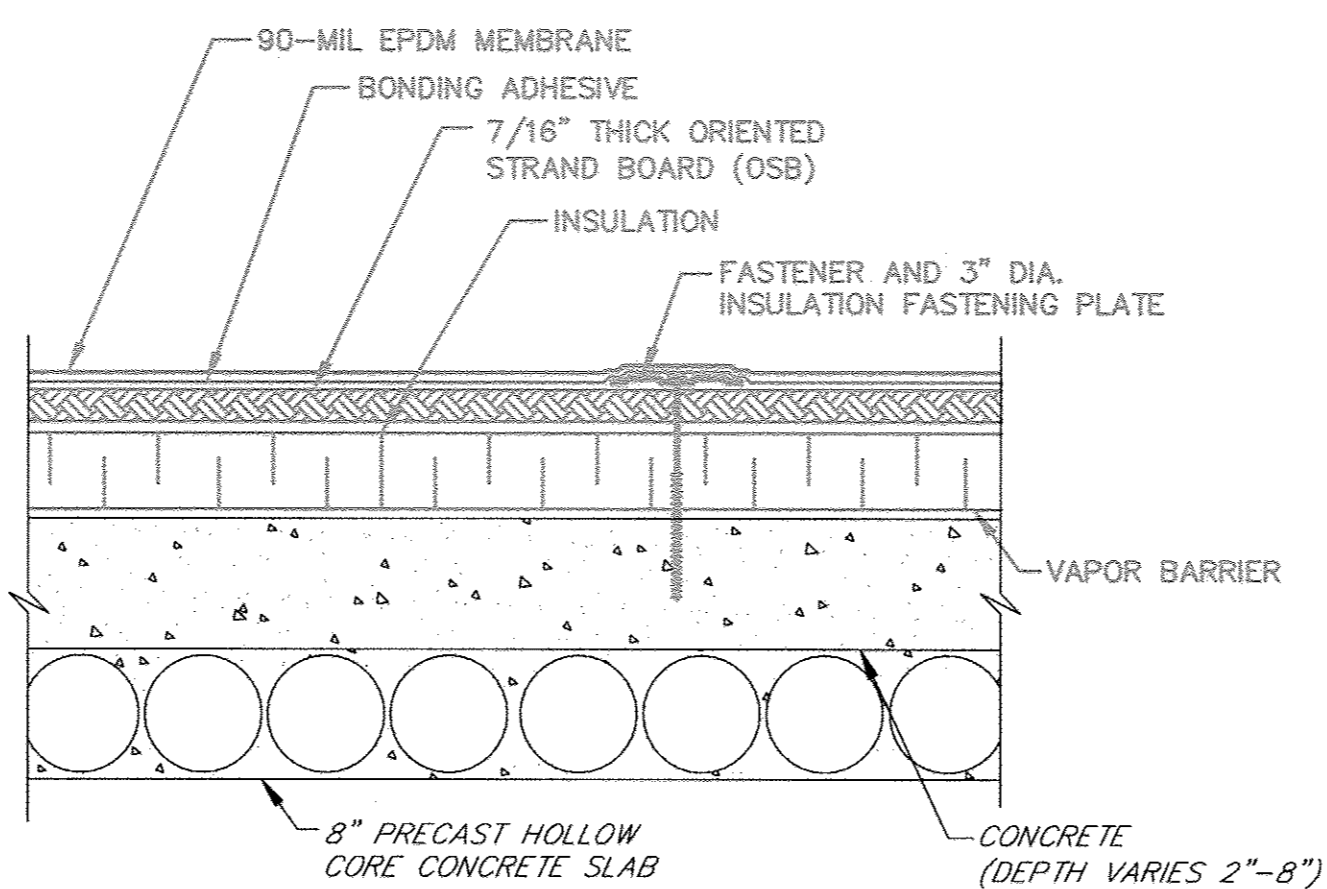
\* CONTRACTOR SHALL FIELD VERIFY THE DIMENSIONS OF THE EXISTING MASONRY OPENING PRIOR TO SUBMITTING UPON THE NEW FRP DOOR.



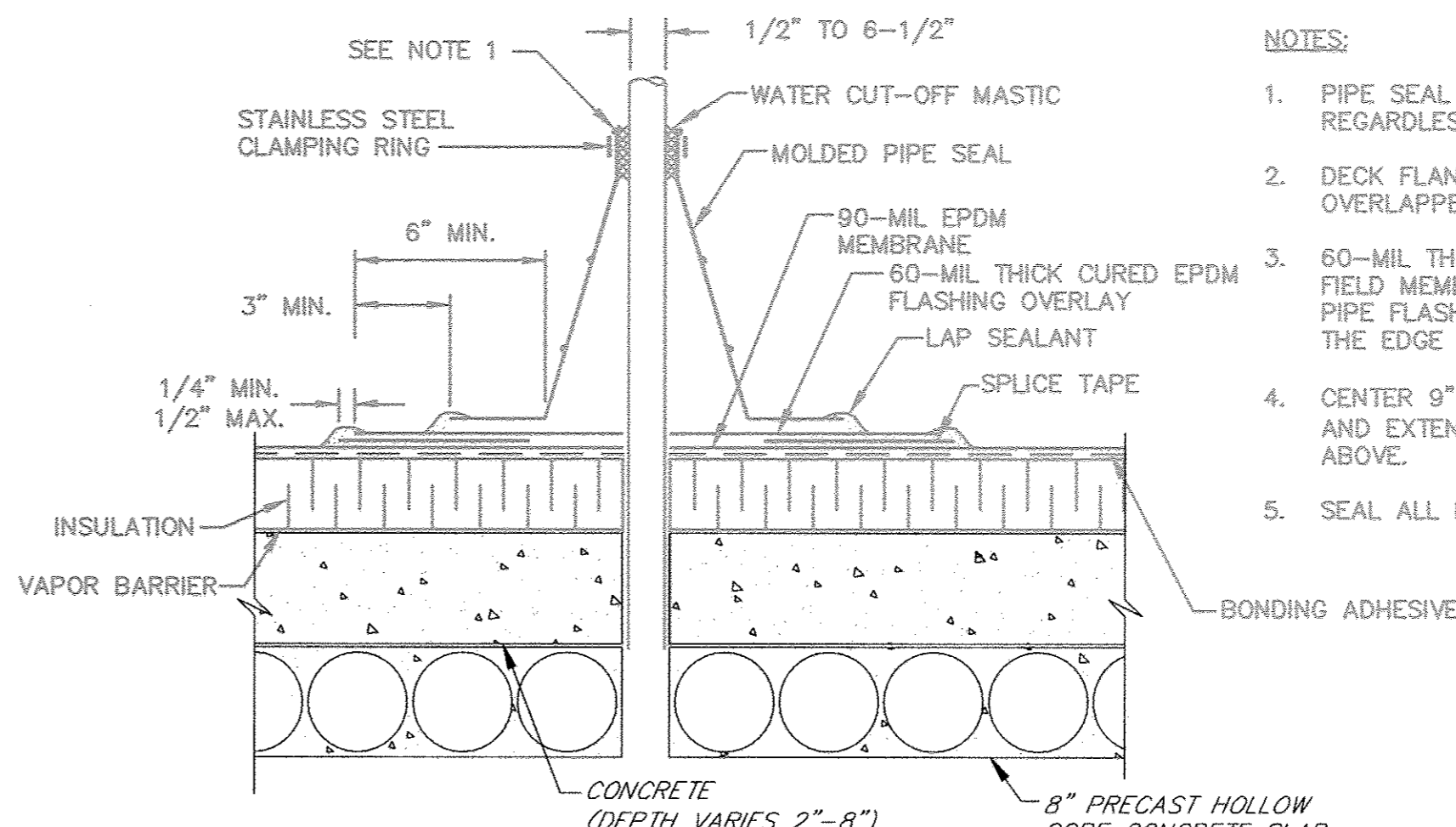
- NOTES:
1. BUILT-UP ROOFING INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.



- NOTES:
1. IF VERTICAL SPLICE IS NOT LOCATED AT CORNER, A 4.5" X 6" AND A 9" X 12" PIECE OF FLASHING MUST BE CENTERED OVER FIELD SPLICE AT ANGLE CHANGES.
  2. APPLY PRIMER PRIOR TO INSTALLING SPLICING TAPE.
  3. APPLY LAP SEALANT ALONG THE EDGE OF THE CURB FLASHING FLANGES EXTENDING 2" MINIMUM FROM THE CORNER OF THE CURB.
  4. LAP SEALANT IS REQUIRED ON ALL EXPOSED FLASHING EDGES.



- NOTES:
1. PIPE SEAL MUST HAVE INTACT RIB AT TOP EDGE, REGARDLESS OF PIPE DIAMETER.
  2. DECK FLANGES OF THE MOLDED PIPE SEAL SHALL NOT BE OVERLAPPED, CUT OR APPLIED OVER ANY ANGLE CHANGE.
  3. 60-MIL THICK CURED EPDM FLASHING OVERLAY AT CUT IN FIELD MEMBRANE MUST EXTEND 3 INCHES BEYOND MOLDED PIPE FLASHING FLANGE ON 3 SIDES AND WITHIN 1 INCH OF THE EDGE OF THE FIELD MEMBRANE, AS SHOWN ABOVE.
  4. CENTER 9" WIDE FLASHING OVER THE MEMBRANE SPLICE EDGE AND EXTEND 3" BEYOND THE MEMBRANE OVERLAY AS SHOWN ABOVE.
  5. SEAL ALL EDGES WITH LAP SEALANT AS SHOWN ABOVE.



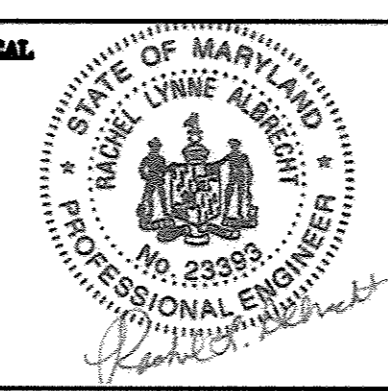
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John J. ...* 4/13/18  
DIRECTOR, PUBLIC WORKS  
*...* 4/13/18  
CHIEF, BUREAU OF UTILITIES

*Morgan ...* 4/13/18  
CHIEF, BUREAU OF ENGINEERING  
*...* 4/13/18  
CHIEF, UTILITY DIVISION

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THE REDLINE REVISIONS INCLUDED IN THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NO. 28269. EXPIRATION DATE 8/26/18

**ALBRECHT ENGINEERING INC**



DES:	RCC			
DRN:	TJS			
CHK:	RLA			
DATE:	3/30/18			
BY:	RK&K	1	2018 UPGRADES - ADD SHEET 6A	3/18
NO.				
REVISIONS				
DATE				

ARCHITECTURAL DETAILS -  
2018 UPGRADES

MAP NO. 17 BLOCK NO. 8

ALLENFORD PUMPING STATION  
2018 UPGRADES  
CAPITAL PROJECT NO. S6264  
CONTRACT NO. 741-S  
ELECTION DISTRICT NO. 2  
HOWARD COUNTY, MARYLAND

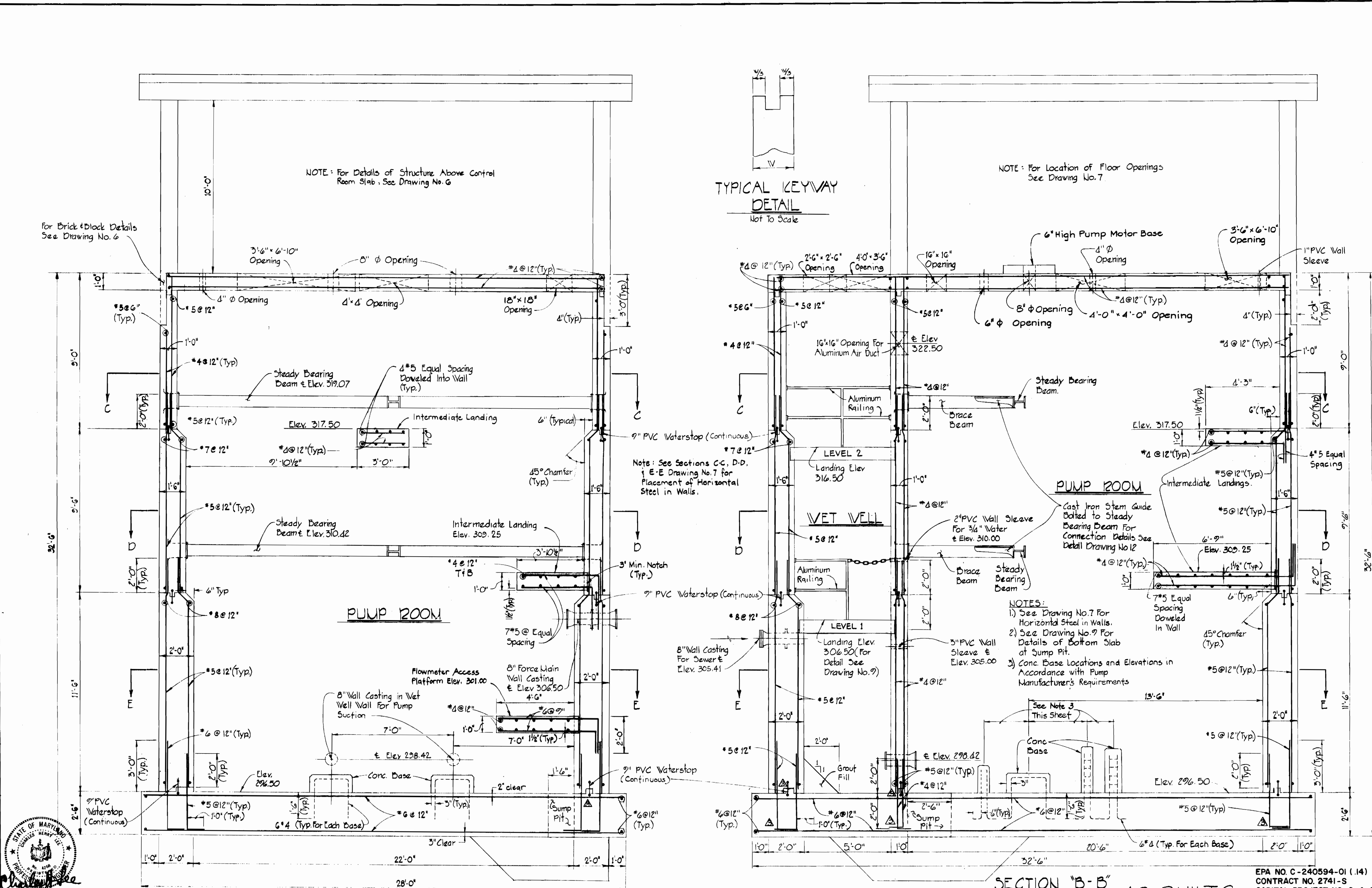
SCALE AS SHOWN  
SHEET 6A OF 28

R:\Projects\2018\2018\_04\_12\_2018 - 11:47am Plot Scale 1:1





WS 741 S/B



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works DATE 1-10-83  
 Chief Bureau of Engineering DATE 12/21/83  
 Chief Bureau of Utilities DATE 1-6-83  
 Chief Utility Division DATE 12/21/83

SECTION "A-A" AS-BUILTS  
 Scale: 3/8"=1'-0"  
 PURDUM & JESCHKE  
 ENGINEERS  
 1023 N. CALVERT ST.  
 BALTIMORE, MARYLAND

REV.	DATE	DESCRIPTION
1	8-85	AS-BUILTS

CONTRACT NO. 2741-S  
 CAPITAL PROJECT NO. S-4-6067

REVISED PUMPING STATION LOCATION 5-7-82  
 REVISED PUMPING STATION LOCATION 5-2-82

STRUCTURAL SECTIONS

CHAMBERLEA SANITARY SEWERS  
 ALLENFORD PUMPING STATION  
 ELECTION DISTRICT NO. 2  
 HOWARD COUNTY, MARYLAND

EPA NO. C-240594-01 (14)  
 CONTRACT NO. 2741-S  
 CAPITAL PROJECT NO. S-4-6067  
 CHAMBERLEA SANITARY SEWERS  
 ALLENFORD PUMPING STATION

DRAWING NO. 8 OF 16  
 SCALE AS SHOWN

Designed: BCC  
 Drafted: SRB  
 Checked: BCC

**DESIGN CRITERIA**

- STRUCTURAL DESIGN SHALL BE IN ACCORDANCE WITH THE GOVERNING PROVISIONS OF THE FOLLOWING CODE, STANDARDS AND SPECIFICATIONS:
  - INTERNATIONAL BUILDING CODE (IBC) 2015.
  - ASCE 7-10 MIN. DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES.
  - ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.
  - ACI 350-06 CODE REQUIREMENTS FOR ENVIRONMENTAL CONCRETE STRUCTURES.
  - ACI 530-11 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES.
  - ASCE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, A.S.D., 14TH EDITION
  - AWS D1.1 "STRUCTURAL WELDING CODE - STEEL".
  - AWS D1.6 "STRUCTURAL WELDING CODE - STAINLESS STEEL".

**EXISTING CONSTRUCTION**

- ALL MEMBER SIZES AND DIMENSIONS AND ELEVATIONS OF EXISTING STRUCTURES SHOWN ON THE DRAWINGS ARE OBTAINED FROM AVAILABLE SOURCES, AND ARE NOT GUARANTEED TO BE TRUE AND EXACT. THE CONTRACTOR SHALL VERIFY THESE DIMENSIONS AND ELEVATIONS BY ACTUAL FIELD MEASUREMENTS PRIOR TO FABRICATION OF ANY MATERIALS AND START OF WORK, AND REPORT ANY DISCREPANCIES TO THE ARCHITECT/ENGINEER.
- THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY SHORING, SUPPORT, NEEDLING AND BRACING AS REQUIRED TO SUPPORT THE EXISTING STRUCTURE. THE CONTRACTOR SHALL EXAMINE THE EXISTING STRUCTURE TO DETERMINE THE EXTENT OF THE NECESSARY SHORING/NEEDLING. THE CAPACITY AND METHOD FOR SHORING AND NEEDLING SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

**DEMOLITION**

- REMOVE EXISTING CONSTRUCTION AS SHOWN ON 2018 UPGRADE PLANS. SEE PLANS, SECTIONS, AND DETAILS FOR EXTENT OF STRUCTURE TO BE REMOVED.
- EXISTING STRUCTURAL FRAMING SHALL REMAIN UNLESS SPECIFICALLY NOTED ON PLAN TO BE REMOVED.
- IF FIELD CONDITIONS DIFFER FROM THOSE SHOWN ON DRAWINGS, NOTIFY ENGINEER BEFORE PROCEEDING.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE THE EXISTING BUILDING DURING THE COURSE OF CONSTRUCTION AND IMMEDIATELY NOTIFY THE ENGINEER OF ANY AREAS WHERE THE STRUCTURE EXHIBITS DISTRESS OR FAILURE.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO SATISFY HIMSELF AS TO THE LOCATION OF ANY UTILITIES IN THE IMMEDIATE VICINITY OF CONSTRUCTION SO AS TO PREVENT DAMAGE TO THEM. SHOULD ANY DAMAGE TO SUCH UTILITIES OCCUR, THE CONTRACTOR SHALL BE REQUIRED TO REPAIR SUCH DAMAGE AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER.

**MASONRY**

- DESIGN CRITERIA: ACI 530-11/ASCE 5-11
- CONCRETE MASONRY UNITS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1900 PSI ON THE NET AREA AND SHALL CONFORM TO THE LATEST EDITION OF ASTM C90.
- TYPE "M" MORTAR SHALL BE USED FOR ALL MASONRY CONSTRUCTION, TYPE "S" ABOVE GRADE.
- GROUT: ASTM C476, MIN. 3,000 PSI @ 28 DAYS, 3/8" AGGREGATE MAX., 8"-10" SLUMP.
- REINFORCEMENT:
  - HORIZONTAL JOINTS: STD. DUR-O-WALL @ 16" OC, USE PREFABRICATED CORNERS AND TEES @ WALL INTERSECTIONS, OVERLAP DISCONTINUED ENDS AND EXTEND INTO COLUMNS 6" MIN.
  - VERTICAL AND HORIZONTAL REINFORCEMENT: ASTM 615, GRADE 60, EPOXY COATED, PROVIDE MIN. #4 BARS TYP @ WALL INTERSECTIONS, EACH SIDE OF OPENINGS, AND @ WALL ENDS, HOOK TOP OF ALL DISCONTINUED BARS, LAP CONT. REINF 48 BAR DIA. UNO.
  - USE BAR SPACERS IN EVERY 4TH COURSE WHERE CELLS ARE TO BE GROUTED. PROVIDE CLEANOUT OPENINGS FOR EACH GROUTED CELL.
- ALL BRICK SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,400 PSI ON THE NET AREA.

**CAST-IN-PLACE REINFORCED CONCRETE**

- ALL CONCRETE WORK SHALL CONFORM TO ACI-350-06 CODE REQUIREMENTS FOR ENVIRONMENTAL CONCRETE STRUCTURES.
- MINIMUM 28 DAY COMPRESSIVE STRENGTH, MAX WATER TO CEMENTITIOUS MATERIAL RATIOS & AGGREGATE SIZE:
  - PADS & SLABS: 4,500 PSI, NORMAL WEIGHT, W/C=0.42, #57 AGGREGATE, UNLESS OTHERWISE NOTED.
  - SLUMP 3" MAX FOR CONCRETE PADS, UNLESS OTHERWISE NOTED.
- REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60, EPOXY COATED.
- CHAMFER ALL EDGES OF BEAMS, COLUMNS, HAUNCHES, WALLS EQUIPMENT PADS AND SLABS EXPOSED TO VIEW 3/4" UNLESS OTHERWISE NOTED.

**REINFORCEMENT**

- ALL DEVELOPMENT AND SPLICES OF REINFORCEMENT SHALL CONFORM TO THE PROVISIONS OF ACI BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318-LATEST EDITION).
- REINFORCING STEEL SHALL BE DEFORMED BARS OF INTERMEDIATE GRADE NEW BILLET STEEL CONFORMING TO CURRENT REQUIREMENTS OF ASTM A615 GRADE 60, EPOXY COATED EXCEPT TIES MAY BE GRADE 40. ALL HOOKS SHALL BE STANDARD HOOKS, UNLESS OTHERWISE NOTED.
- REINFORCING BAR SUPPORTS AND SPACERS SHALL CONFORM TO ACI 315-(LATEST EDITION) DETAILING MANUAL.
- SHOP DRAWINGS SHOWING ALL NECESSARY SECTIONS AND DETAILS FOR THE PROPER POSITIONING OF ALL REINFORCING STEEL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW BEFORE FABRICATION OR PLACEMENT OF THE STEEL.
- ALL REINFORCEMENT SHALL HAVE 3" COVER UNLESS OTHERWISE NOTED.

**STRUCTURAL STEEL**

- ALL STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS FOR THE DESIGN FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:
  - STRUCTURAL STEEL W-SHAPES: A992 HAVING A MINIMUM YIELD STRENGTH OF 50 KSI.
  - STRUCTURAL STEEL ANGLES: A36 HAVING A MINIMUM YIELD STRENGTH OF 36 KSI.
  - SQUARE AND RECTANGULAR TUBING: A500, GRADE B HAVING MINIMUM YIELD STRENGTH OF 46 KSI.
  - ROUND PIPE: A53, GRADE B HAVING A MINIMUM YIELD STRENGTH OF 35 KSI.
- APPROVAL OF THE ENGINEER SHALL BE MANDATORY FOR THE USE OF CUTTING TORCH IN THE FIELD.
- ALL GROUT UNDER STEEL PLATES (LINTELS) SHALL BE NON-SHRINK "PRE-MIX" TYPE AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 8,500 PSI, UNLESS OTHERWISE NOTED.
- STRUCTURAL STEEL SHALL BE INSPECTED IN THE FIELD BY AN INDEPENDENT TESTING AGENCY APPROVED BY THE ENGINEER AND PAID FOR BY THE CONTRACTOR.

**ALUMINUM STRUCTURAL SHAPES**

- ALUMINUM STRUCTURAL SHAPES SHALL BE ASTM B-308, 6061.T6.
- ALLOWABLE TOLERANCES FOR MILLED ALUMINUM STANDARD STRUCTURAL SHAPES SHALL BE IN ACCORDANCE WITH ANSI H35.2. COMPLY WITH THE ALUMINUM DESIGN MANUAL (ADM-1) LATEST EDITION.
- ALUMINUM SURFACES IN CONTACT WITH CONCRETE AND ANY OTHER MATERIAL SHALL BE GIVEN A HEAVY COAT OF ALKALI RESISTANT BITUMINOUS PAINT OR OTHER COATING PROVIDING EQUIVALENT PROTECTION BEFORE INSTALLATION.

**MISCELLANEOUS**

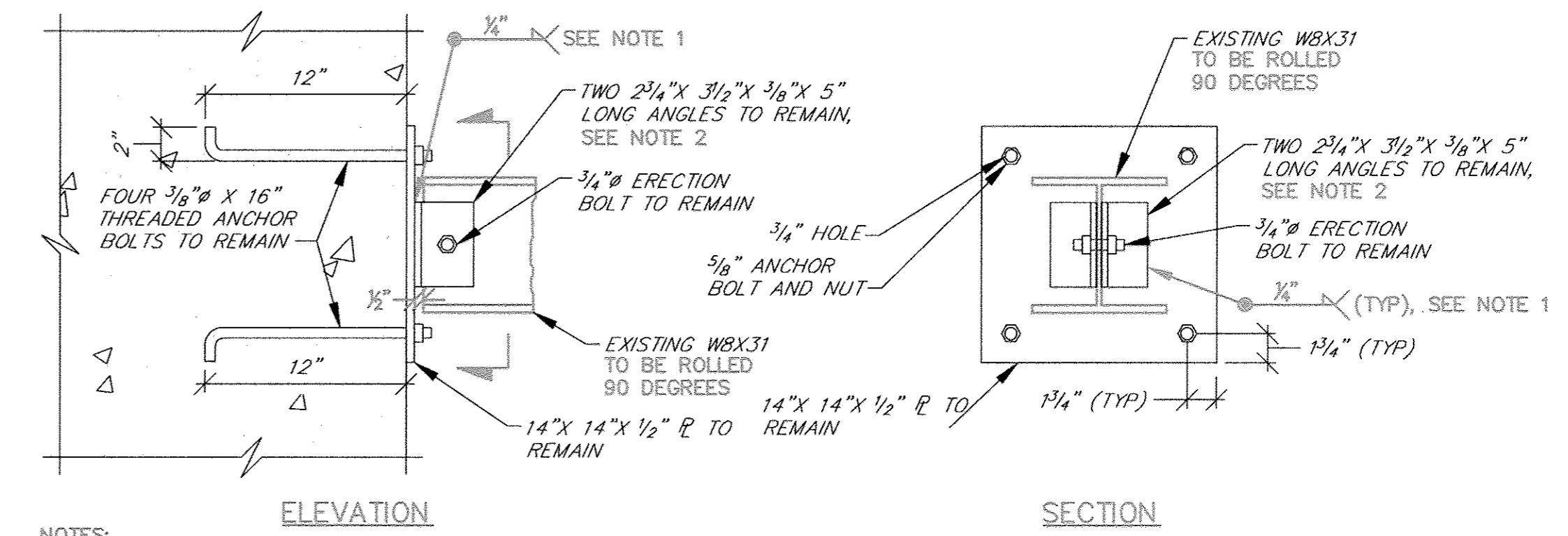
- ALL EXISTING FEATURES DENOTED BY SLANTED TEXT.
- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND TRANSPORTATION INTACT OF ALL DEMOLISHED EQUIPMENT.
- ALL OPENINGS THRU CONCRETE SHALL BE WATERTIGHT.
- CONTRACTOR SHALL COORDINATE ALL REQUIRED OPENINGS WITH MEP DRAWINGS.
- CONTRACTOR SHALL COORDINATE FINAL SIZES AND LOCATIONS OF ALL OPENINGS WITH THE ACTUAL FIELD.

**SPECIAL INSPECTION**

- SPECIAL INSPECTIONS IBC 1704.2
- STEEL CONSTRUCTION IBC 1705.2
- CONCRETE CONSTRUCTION IBC 1705.3
- MASONRY CONSTRUCTION IBC 1705.4

**STAINLESS STEEL SPECIFICATIONS**

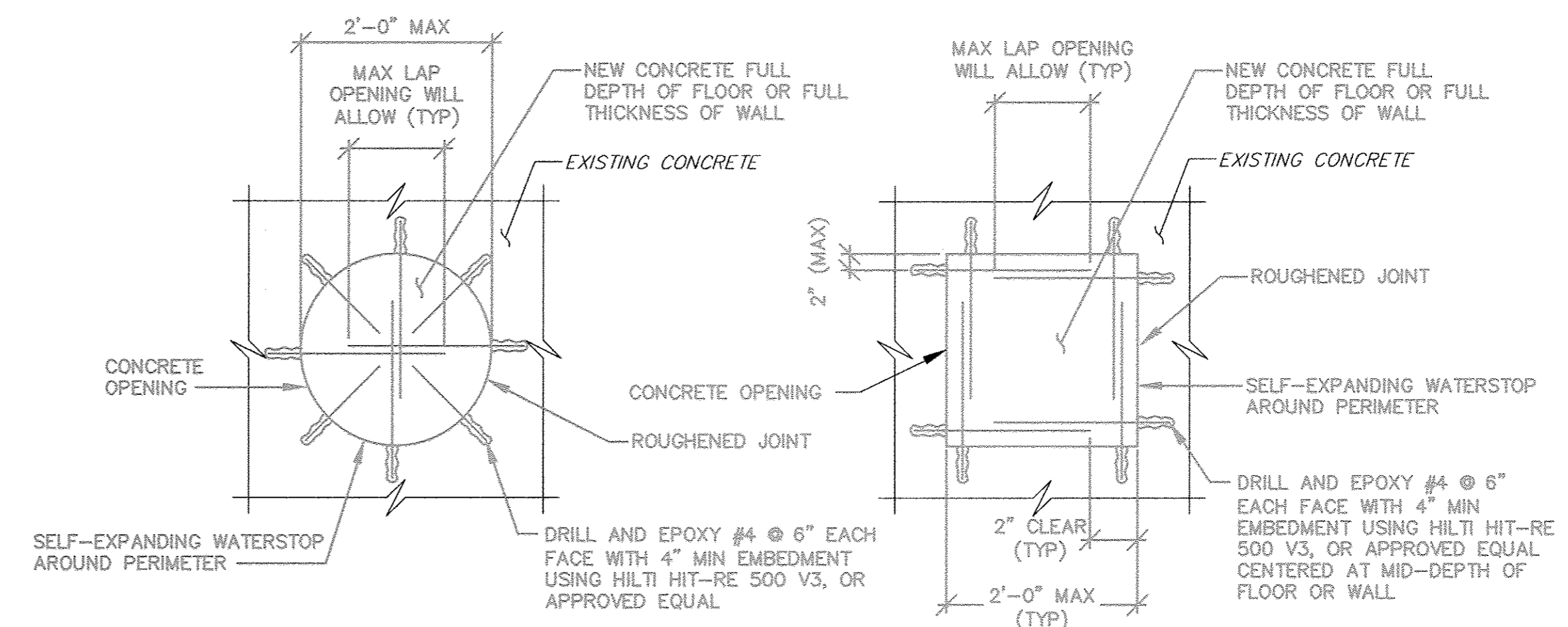
- ALL STRUCTURAL STEEL SHALL BE AS FOLLOWS:
  - STRUCTURAL STEEL SHAPES SHALL BE ASTM 276, TYPE 316L WITH A MINIMUM YIELD OF 42 KSI.
  - STAINLESS STEEL PLATES SHALL BE ASTM A666, TYPE 316L.
  - ALL BOLTS SHALL BE ASTM F593 STAINLESS STEEL TYPE 316, GRADE B8, ALL NUTS SHALL BE ASTM F594 STAINLESS STEEL GRADE B8, AND ALL WASHERS SHALL BE ASTM F352 STAINLESS STEEL.
- ALL STAINLESS STEEL SHALL BE #4 INDUSTRIAL FINISH.
- CONTRACTOR SHALL COMPLY WITH THE FOLLOWING:
  - "AMERICAN WELDING SOCIETY" (AWS) D1.1 "STRUCTURAL" WELDING CODE - STEEL, LATEST EDITION.
  - AWS D1.6 "STRUCTURAL WELDING CODE - STAINLESS STEEL", LATEST EDITION



- NOTES:**
- GRIND WELDS ATTACHING THE 2 3/4"x3 3/8"x3/8" ANGLES TO THE 14"x14" ANCHOR PLATE, THEN ROLL THE STEEL BEAM 90 DEGREES AND REWELD THE ANGLES TO THE ANCHOR PLATE AS SHOWN.
  - IF ANGLES ARE DAMAGED DURING REMOVAL, PROVIDE A 5"x5"x5/8" THICK PLATE WELDED WITH A 1/4" FILLET WELD TO EXISTING PLATE AROUND AND AT 3 SIDES OF BEAM'S WEB.

**STEADY BEARING BEAM WALL CONNECTION DETAIL**

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



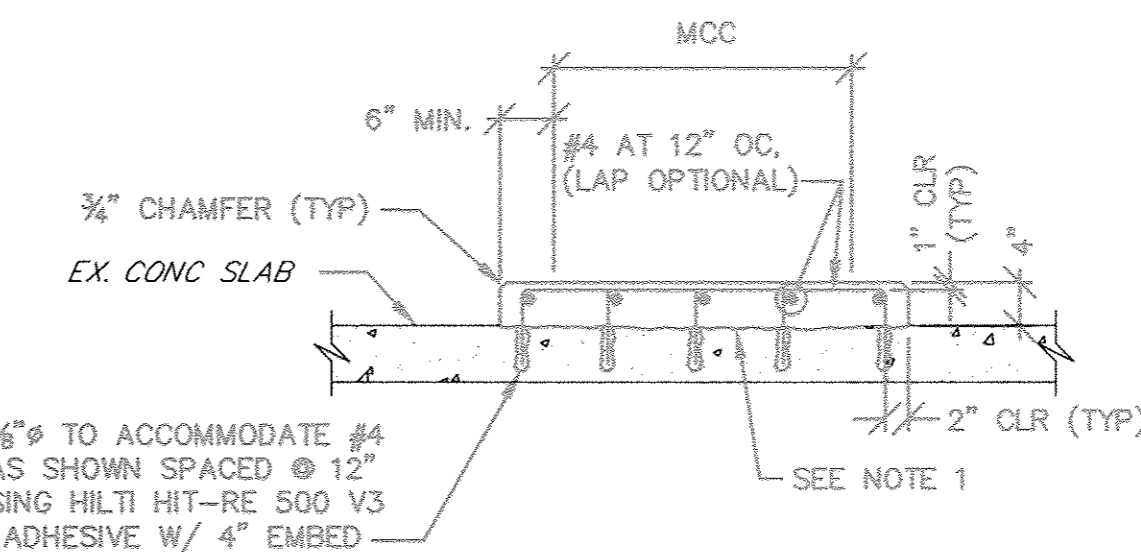
**CIRCULAR PATCH**

**SQUARE/RECTANGULAR PATCH**

- NOTES:**
- SURFACE OF EXISTING CONCRETE SHALL BE ROUGHENED TO A FULL AMPLITUDE OF 1/8" AND SCRUBBED WITH A COARSE WIRE BRUSH TO REMOVE ALL LAITANCE AND TO PROVIDE A ROUGHENED SURFACE FOR BONDING NEW CONCRETE TO EXISTING CONCRETE. APPLY BONDING COMPOUND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. EPOXY BONDING AGENT SHALL BE "SIKADUR 32, HI MOD" OR APPROVED EQUAL.
  - COMPRESSIVE STRENGTH OF THE CONCRETE SHALL BE 4,500 PSI AT 28 DAYS.

**CONCRETE PATCH DETAIL**

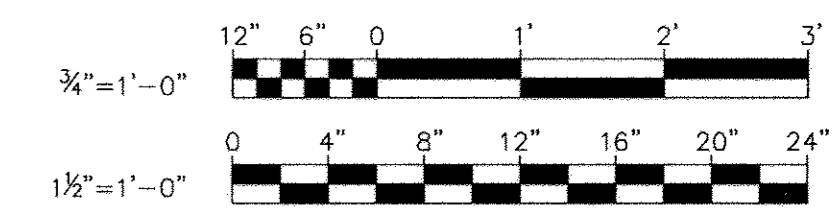
SCALE: 3/4" = 1'-0"



- NOTES:**
- SURFACE OF EXISTING CONCRETE SHALL BE ROUGHENED TO A FULL AMPLITUDE OF 1/8" AND SCRUBBED WITH A COARSE WIRE BRUSH TO REMOVE ALL LAITANCE AND TO PROVIDE A ROUGHENED SURFACE FOR BONDING NEW CONCRETE TO EXISTING CONCRETE. APPLY BONDING COMPOUND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. EPOXY BONDING AGENT SHALL BE FX-752 BY SIMPSON STRONG-TIE COMPANY, OR APPROVED EQUAL.
  - COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 4,500 psi AT 28 DAYS.

**CONCRETE PAD DETAIL**

NTS



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**DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND**

*Director of Public Works* DATE *4/13/18*  
*Chief Bureau of Utilities* DATE *4/13/18*

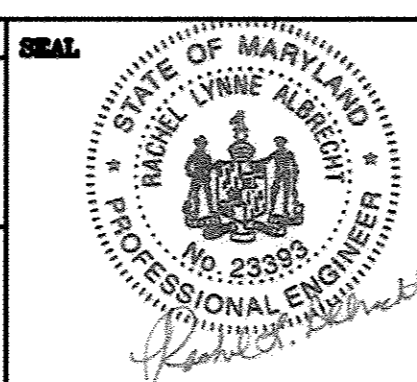
*Thomas E. Butler* 4/13/18  
*Chief, Bureau of Engineering* DATE

*J. J. ...* 4/13/18  
*Chief, Utility Division* DATE

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THE DESIGN REVISIONS INCLUDED IN THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NO. 25589. EXPIRATION DATE 8/25/18.

**ALBRECHT ENGINEERING INC**



DES:	RCC			
DRN:	TJS			
CHK:	ELA			
DATE:	9/30/18			
BY:	NO.	REVISIONS	DATE	MAP NO.
				17
				BLOCK NO. 8
				ELECTION DISTRICT NO. 2

**STRUCTURAL DETAILS & GENERAL NOTES - 2018 UPGRADES**

RK&K 1 2018 UPGRADES - ADD SHEET 9A 3/18

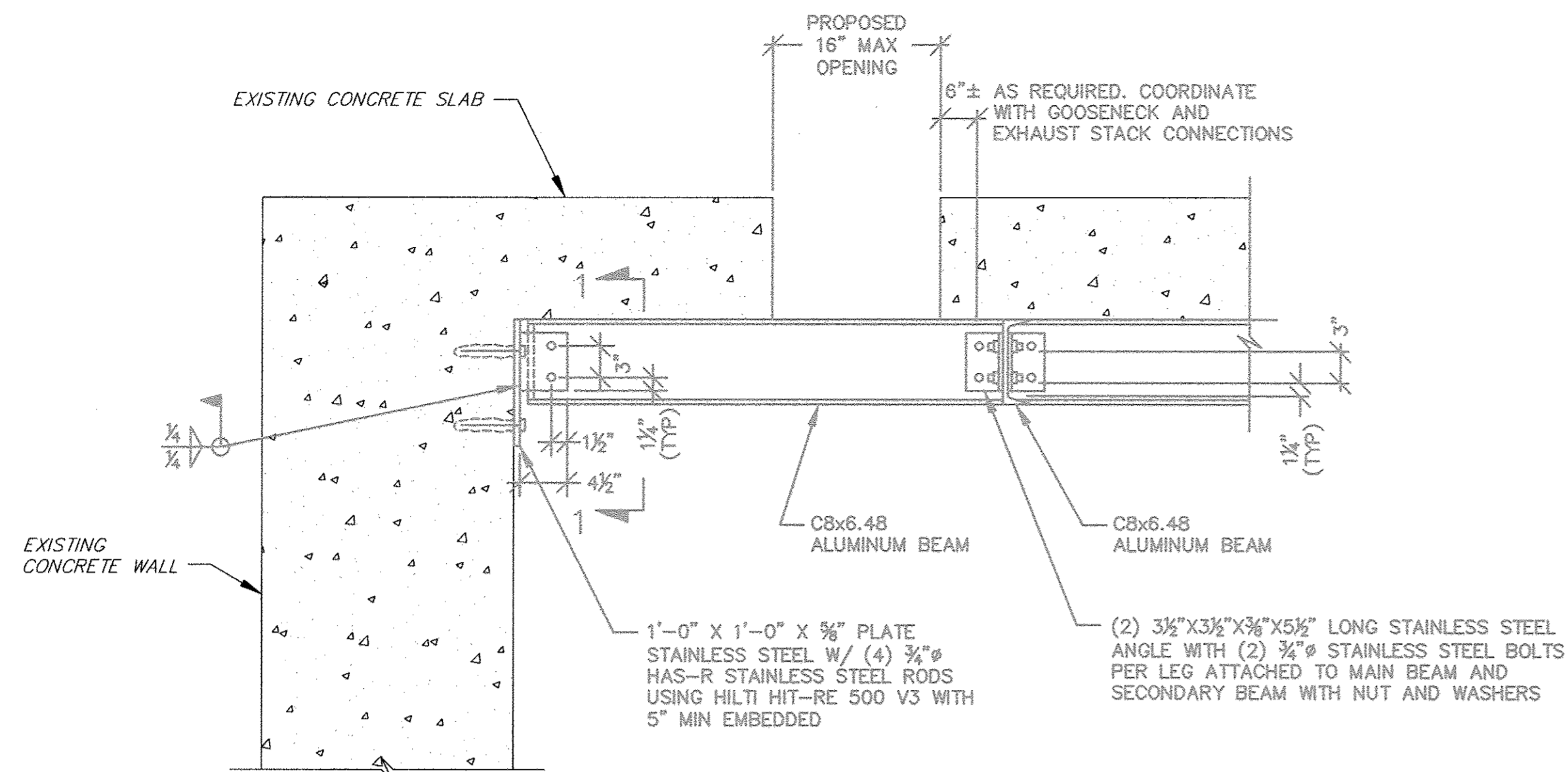
**ALLENFORD PUMPING STATION  
2018 UPGRADES**

CAPITAL PROJECT NO. S6264  
CONTRACT NO. 741-S

SCALE AS SHOWN  
SHEET 9A OF 28  
HOWARD COUNTY, MARYLAND

**NOTE:**

1. ALL EXISTING FEATURES DENOTED BY SLANTED TEXT.
2. ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.

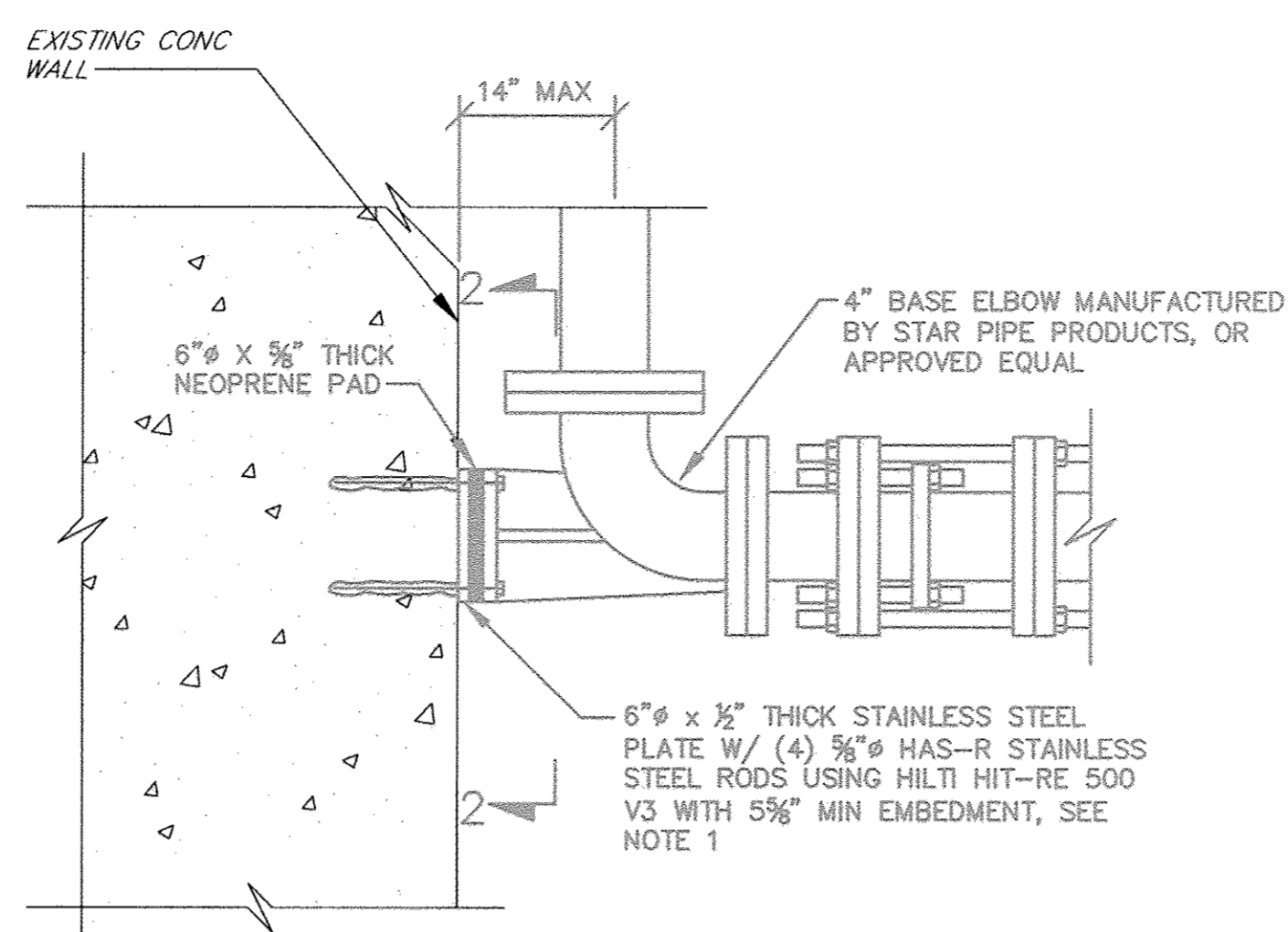


**NOTES:**

1. SEE CONTROL ROOM PLAN, SHEET 10B, FOR INSTALLATION LOCATION.
2. USE PLASTIC OR RUBBER WASHERS, SLEEVES, NEOPRENE PADS AND/OR BITUMINOUS PAINT, AS NECESSARY, TO CREATE A BARRIER BETWEEN DISIMILAR METALS.
3. CONTRACTOR SHALL SHIM CBX6.48 ALUMINUM BEAM TIGHT TO BOTTOM OF CONCRETE SLAB WITH ALUMINUM SHIMS (AS REQUIRED). WELD SHIMS TO TOP FLANGE OF BEAM.
4. COPE FLANGES OF CBX6.48 ALUMINUM BEAMS THAT RUN IN THE NORTH/SOUTH DIRECTION AS REQUIRED TO MAKE CONNECTION TO CBX6.48 BEAMS IN EAST/WEST DIRECTION.

**WETWELL TOP SLAB OPENING SUPPORT BEAM DETAIL**

SCALE: 1" = 1'-0"

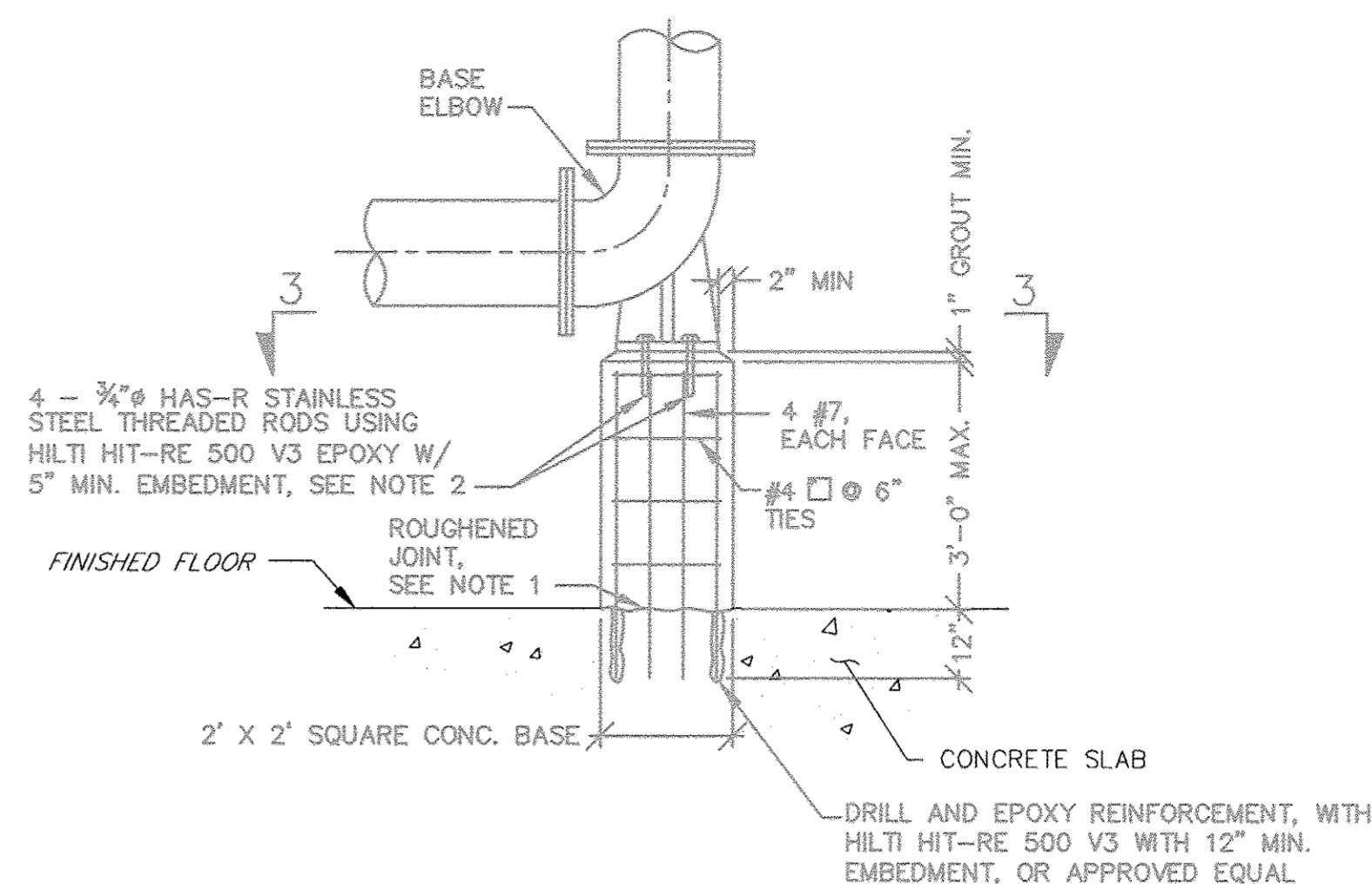


**NOTES:**

1. SEE PUMP ROOM PLAN, SHEET 10B, FOR INSTALLATION LOCATION.
2. COORDINATE BOLT HOLE LOCATIONS WITH THE BASE ELBOW PROVIDED.
3. USE A NON-CONDUCTIVE PLASTIC WASHER AND SLEEVE TO FIT ON THE SHAFT OF THE ANCHOR, OR BITUMINOUS PAINT TO CREATE A BARRIER BETWEEN DISSIMILAR METALS

**BASE ELBOW THRUST SUPPORT DETAIL**

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

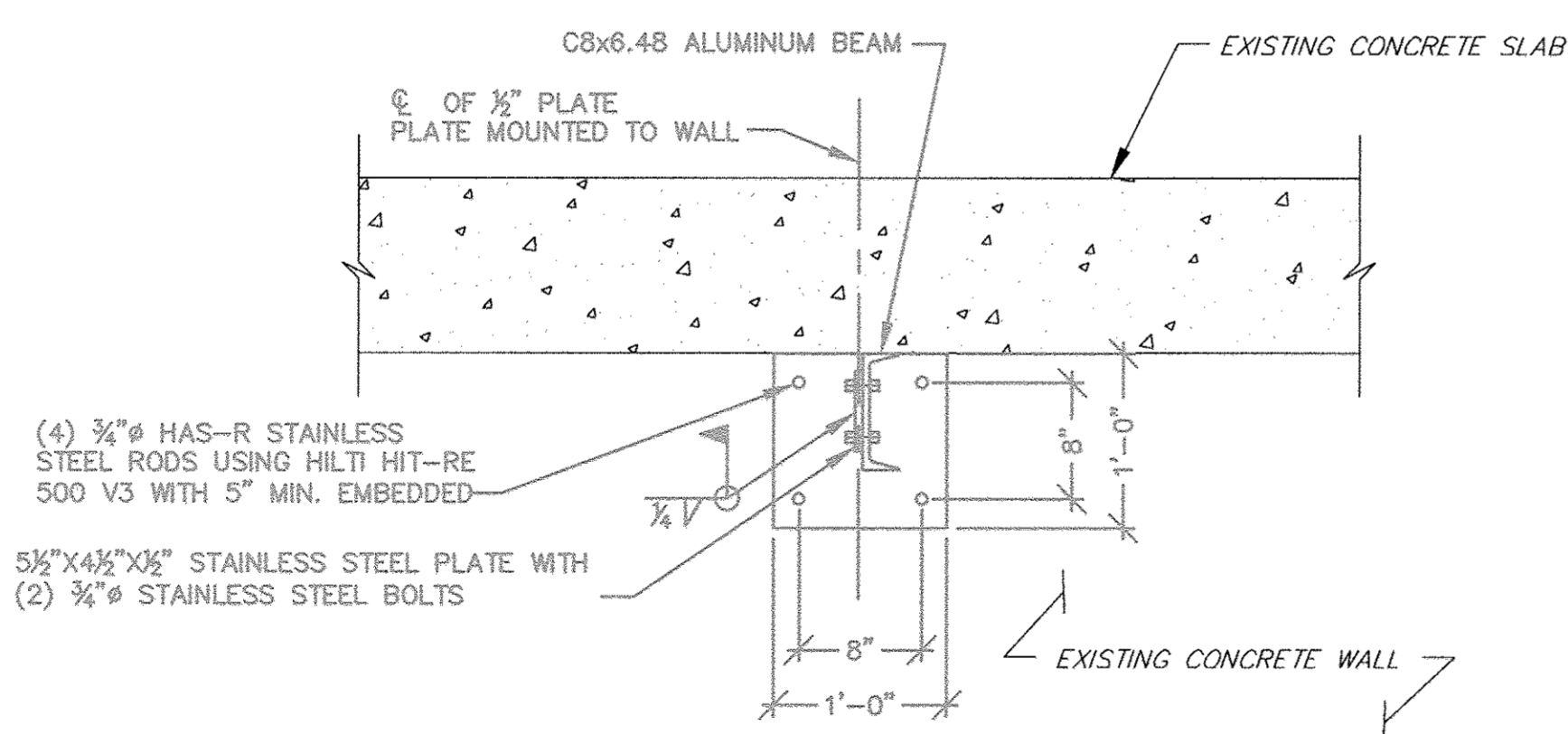


**NOTES:**

1. SEE IMPROVEMENT SECTION 2, SHEET 11B, FOR INSTALLATION LOCATION.
2. SURFACE OF EXISTING CONCRETE SHALL BE ROUGHENED TO A FULL AMPLITUDE OF 1/4" AND SCRUBBED WITH A COARSE WIRE BRUSH TO REMOVE ALL LANTANCE AND TO PROVIDE A ROUGHENED SURFACE FOR BONDING NEW CONCRETE TO EXISTING CONCRETE. APPLY BONDING COMPOUND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. EPOXY BONDING AGENT SHALL BE "SIKADUR 32, HI-MOD", OR APPROVED EQUAL.
3. USE A NON-CONDUCTIVE PLASTIC WASHER AND SLEEVE TO FIT ON THE SHAFT OF THE ANCHOR, OR BITUMINOUS PAINT TO CREATE A BARRIER BETWEEN DISSIMILAR METALS

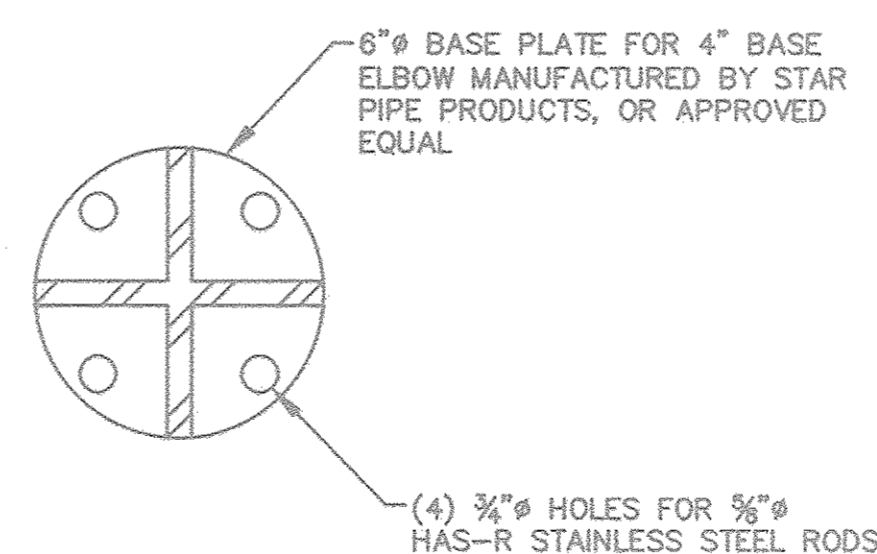
**BASE ELBOW SUPPORT DETAIL**

SCALE: NTS



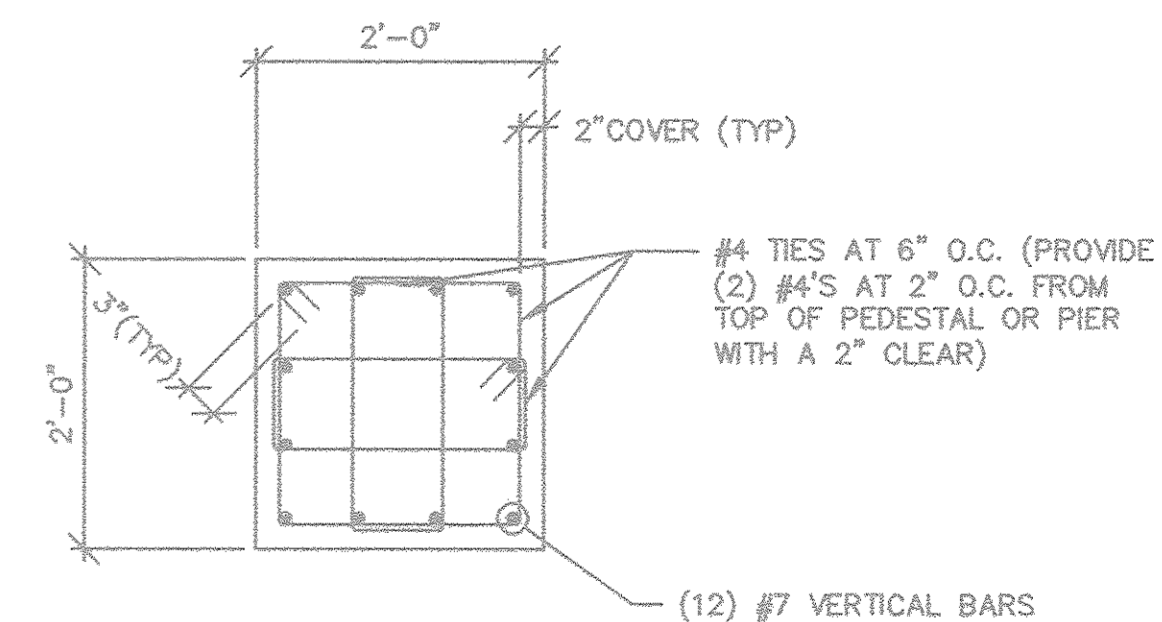
**SECTION 1**

SCALE: 1" = 1'-0"



**SECTION 2**

SCALE: 3" = 1'-0"

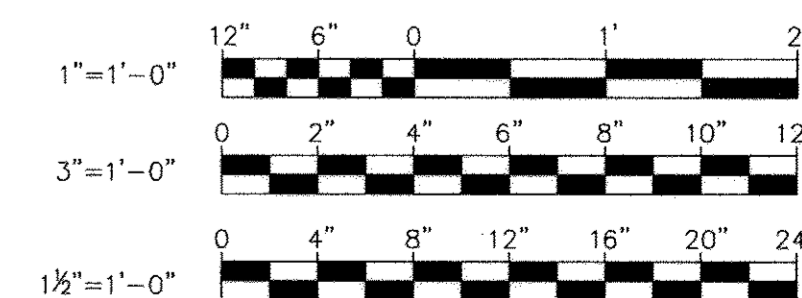


**NOTE:**

1. COMPRESSIVE STRENGTH OF CONCRETE SHALL BE f'c=4,500 psi.

**SECTION 3**

SCALE: NTS

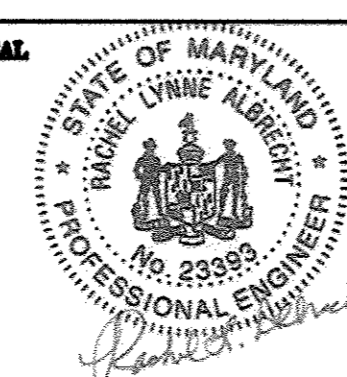


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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*John J. K...* 4/13/18  
DIRECTOR OF PUBLIC WORKS DATE  
*Marcus S. Subler* 4/13/18  
CHIEF, BUREAU OF ENGINEERING DATE  
*[Signature]* 4/13/18  
CHIEF, BUREAU OF UTILITIES DATE  
*[Signature]* 4/13/18  
CHIEF, UTILITY DIVISION DATE

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THE REDLINE REVISIONS INCLUDED IN THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NO. 23392 EXPIRATION DATE 9/26/18  
**ALBRECHT ENGINEERING INC**



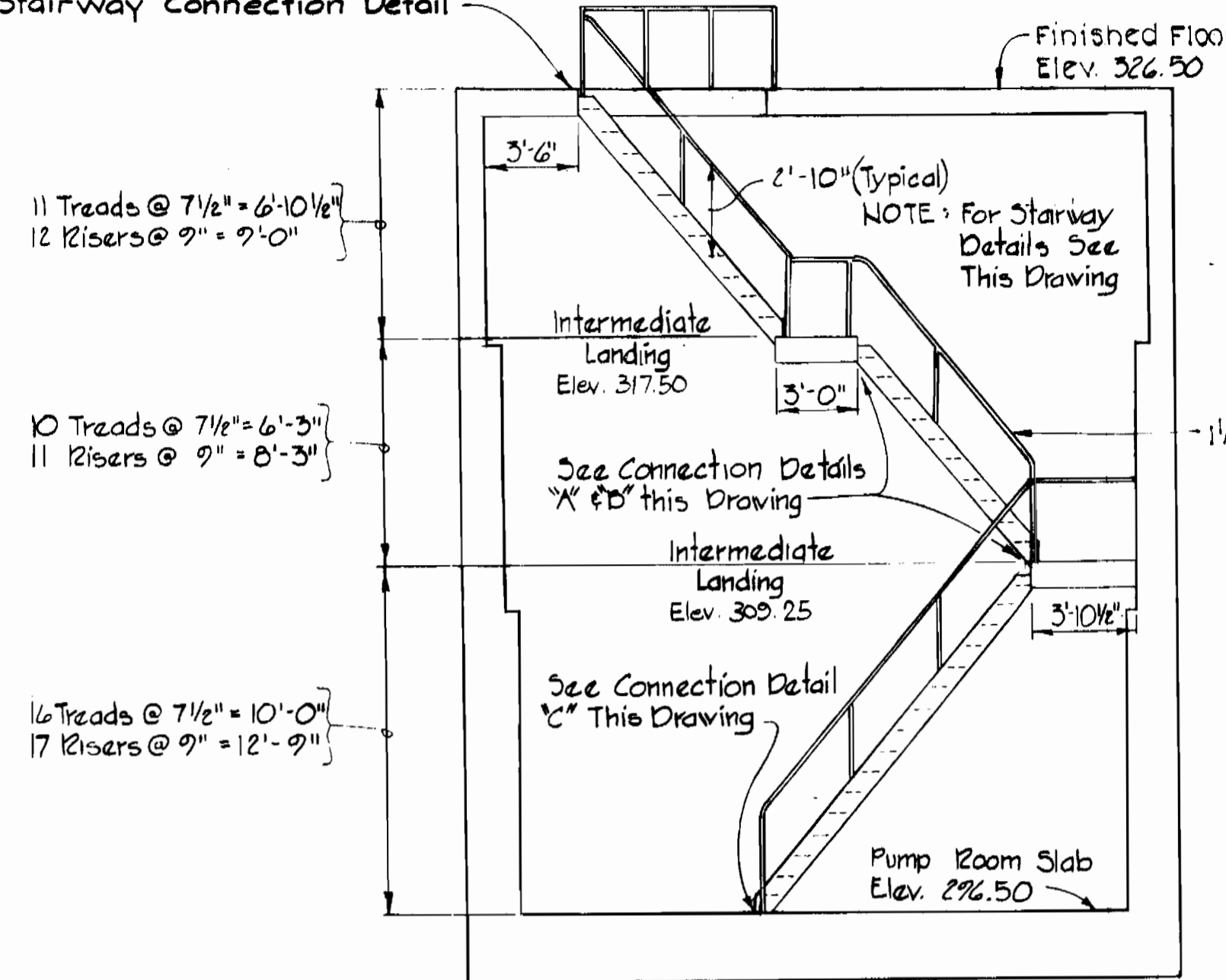
DES:	RCC		
DRN:	TJS		
CHK:	RLA		
DATE:	3/30/18		
BY:	RK&K	1	2018 UPGRADES - ADD SHEET 9B
NO.:			
REVISIONS:			
DATE:			

MAP NO.:	17
BLOCK NO.:	8

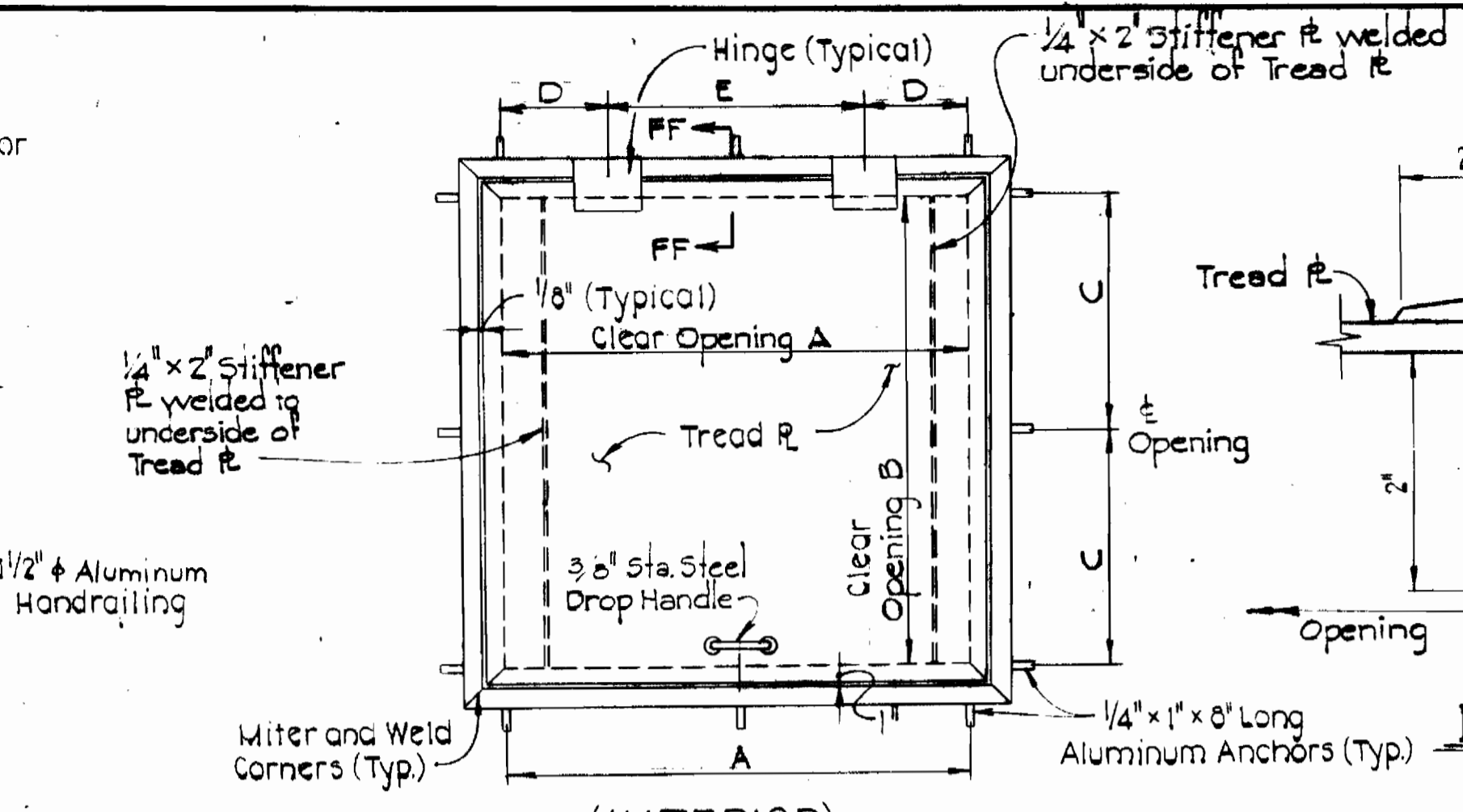
ALLENFORD PUMPING STATION  
2018 UPGRADES  
CAPITAL PROJECT NO. S6264  
CONTRACT NO. 741-S  
ELECTION DISTRICT NO. 2  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 9B OF 28

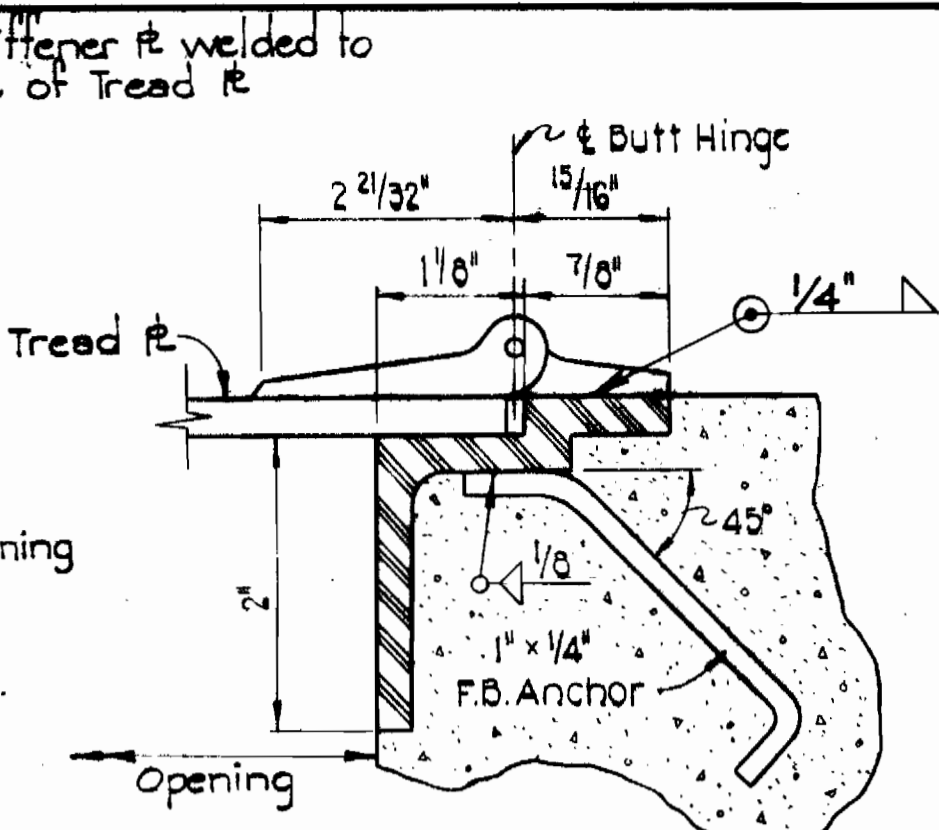
See Detail "A" this Drawing for Stairway Connection Detail



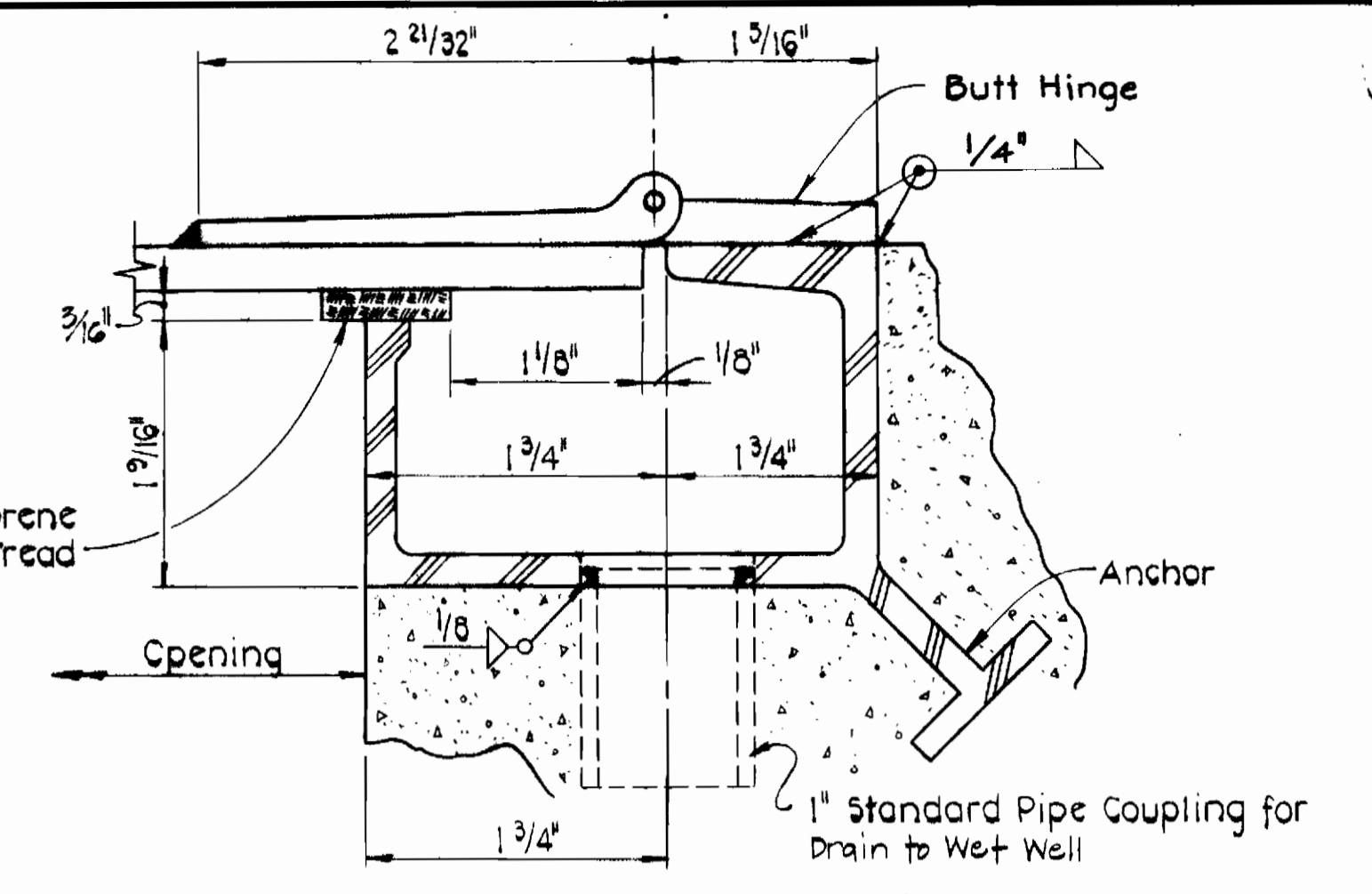
**PUMP ROOM STAIRWAY**  
Scale 3/4" = 1'-0"



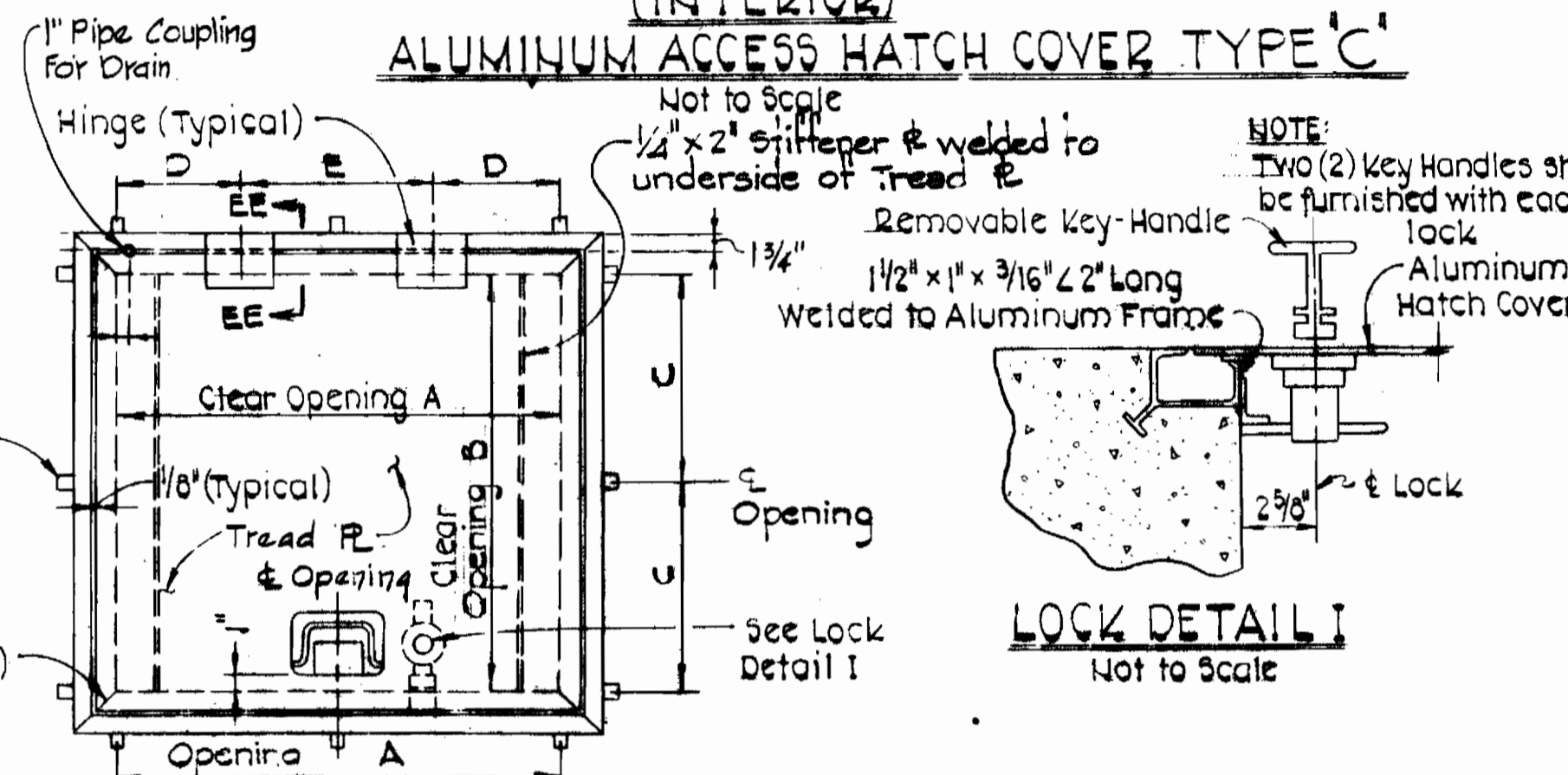
**INTERIOR ALUMINUM ACCESS HATCH COVER TYPE 'C'**  
Not to Scale



**INTERIOR HATCH SECTION 'FF-FF'**  
Not to Scale



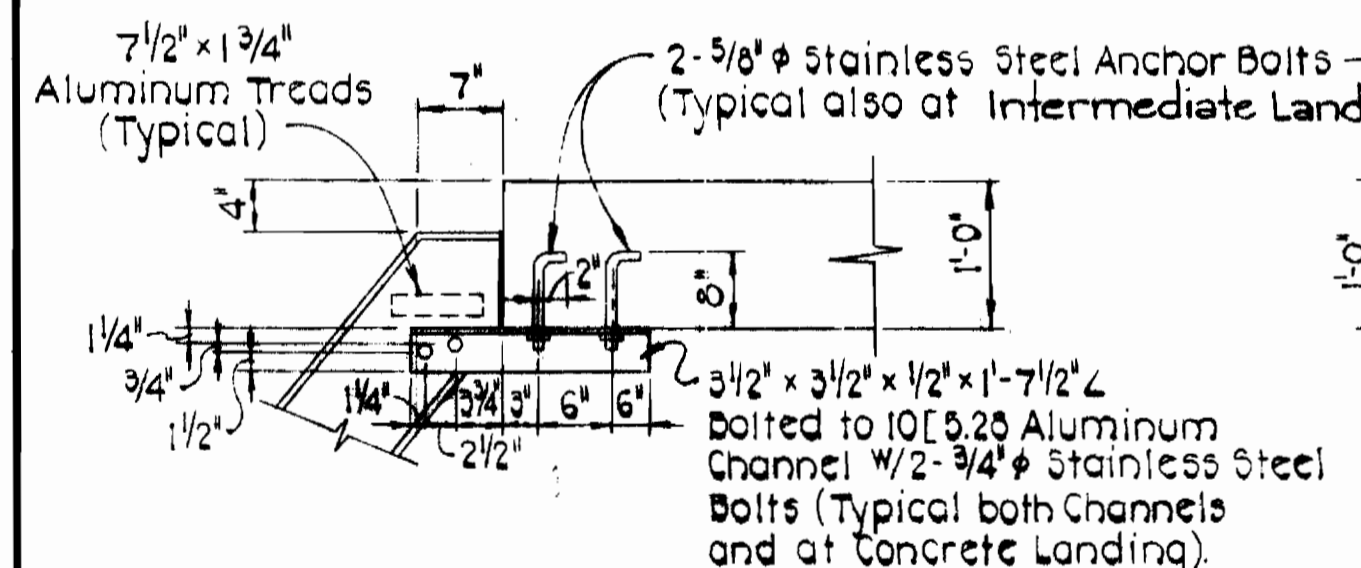
**EXTERIOR HATCH AT HINGE SECTION 'EE-EE'**  
Scale: Actual



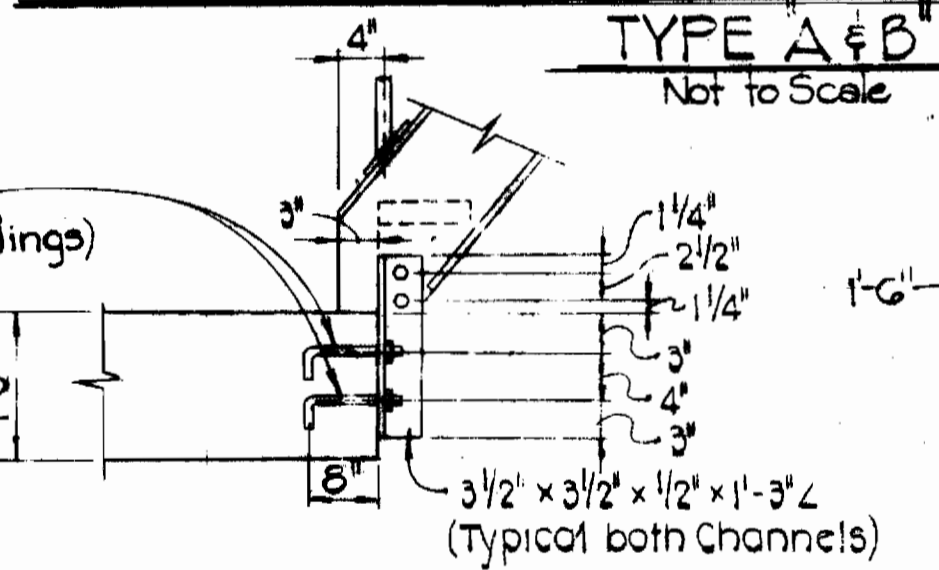
**EXTERIOR ALUMINUM ACCESS HATCH COVER TYPE 'A & B'**  
Not to Scale

ACCESS HATCH DESIGNATION	ACCESS HATCH LOCATION	ACCESS HATCH FUNCTION	ACCESS HATCH DIMENSIONS - IN.					TREAD PLATE	ADDITIONAL APPLICABLE REQUIREMENTS
			A	B	C	D	E		
A	Top Slab of Wet Well	Personnel Access to Wet Well	4'-0"	3'-0"	1'-9"	1'-0"	2'-0"	3/8"	Exterior, Watertight Hatch See Section EE-EE & Lock Detail I
B	Top Slab of Wet Well	Operation of Debris Access to Basket	2'-0"	2'-0"	1'-3"	0'-10"	2'-0"	3/8"	Exterior, Watertight Hatch See Section EE-EE & Lock Detail I
C	Bottom Slab of Control Room	Equipment Access to Pump Room	4'-0"	4'-0"	2'-0"	1'-0"	2'-0"	3/8"	Interior Hatch See Section FF-FF

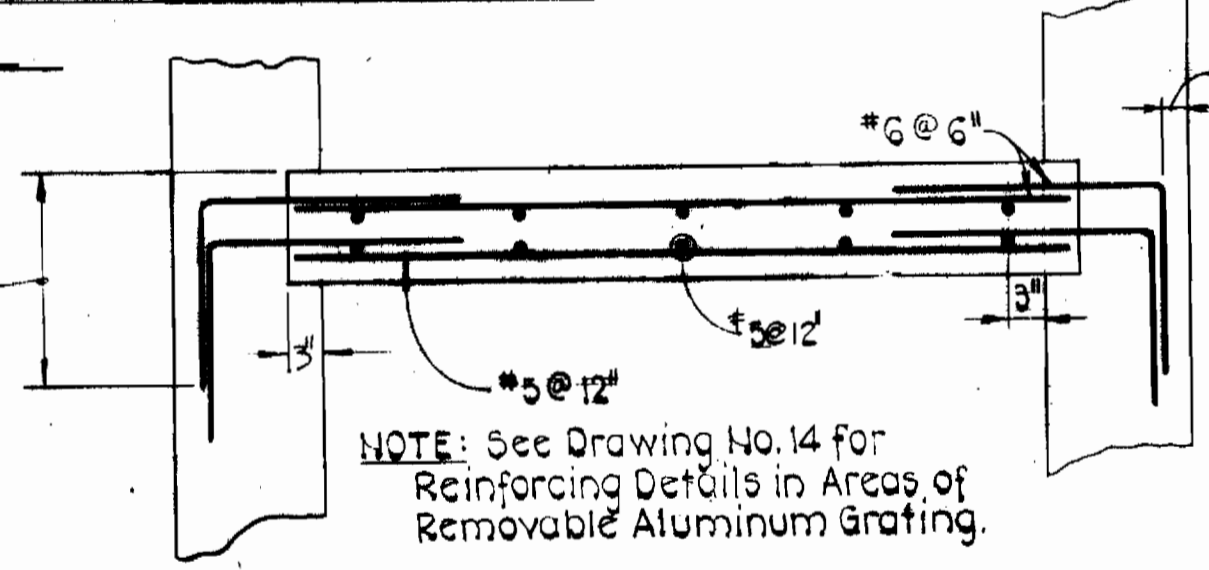
**ACCESS HATCH SCHEDULE**



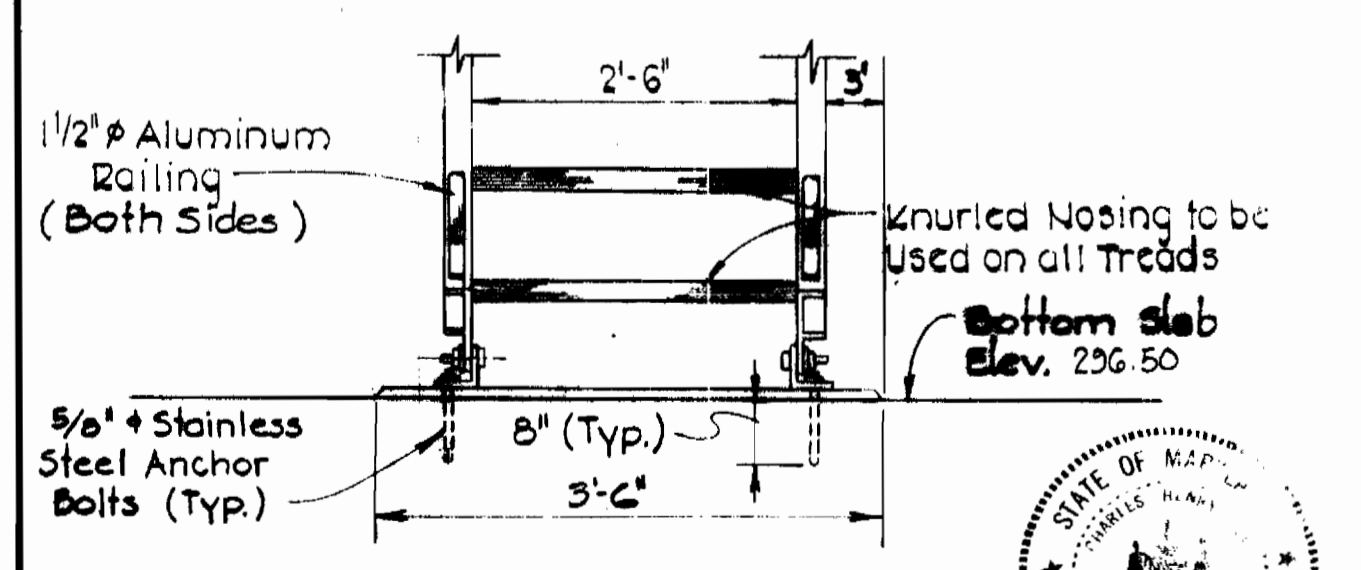
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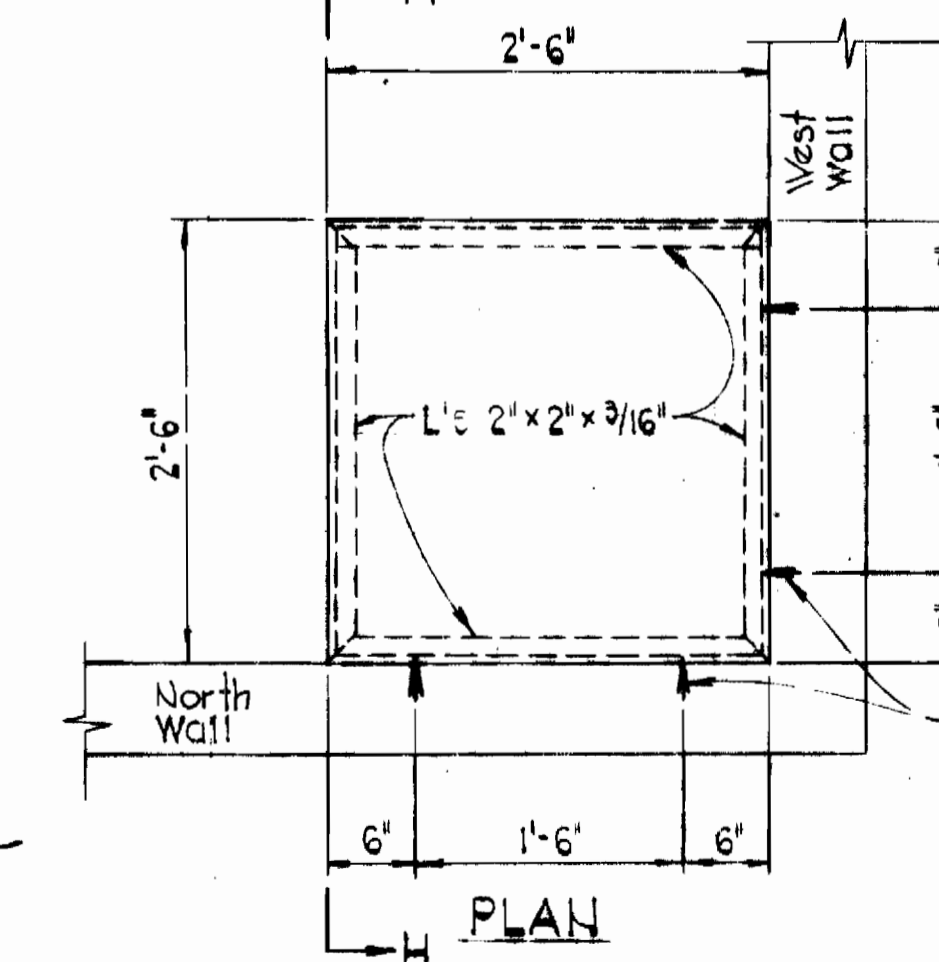
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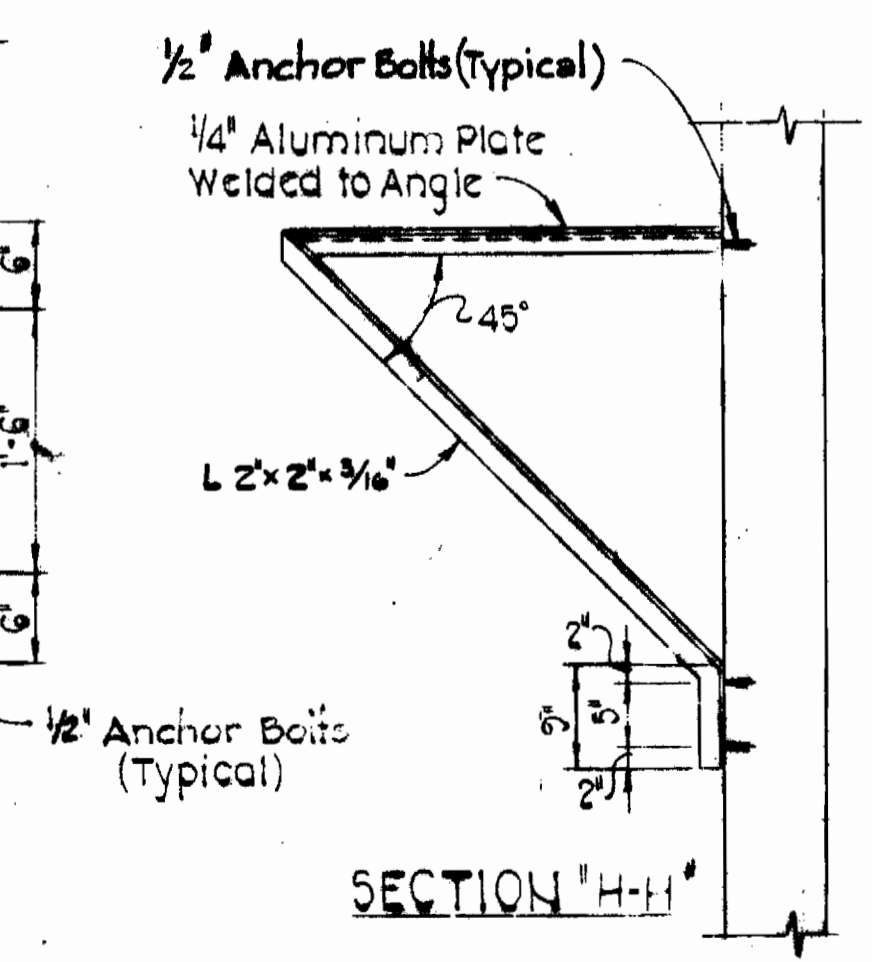
**WET WELL LANDING DETAIL - LEVELS 1 & 2**  
Scale: 3/4" = 1'-0"



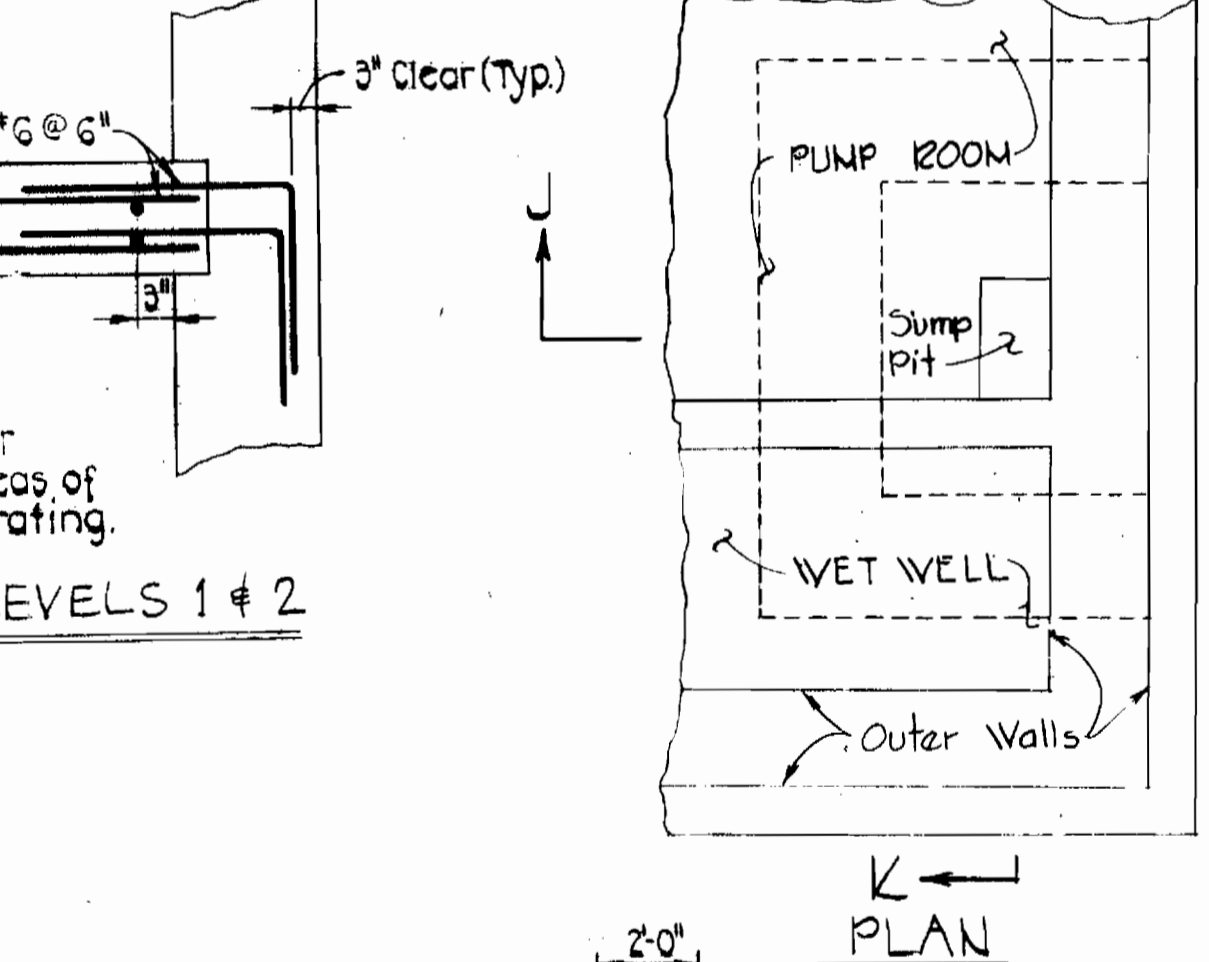
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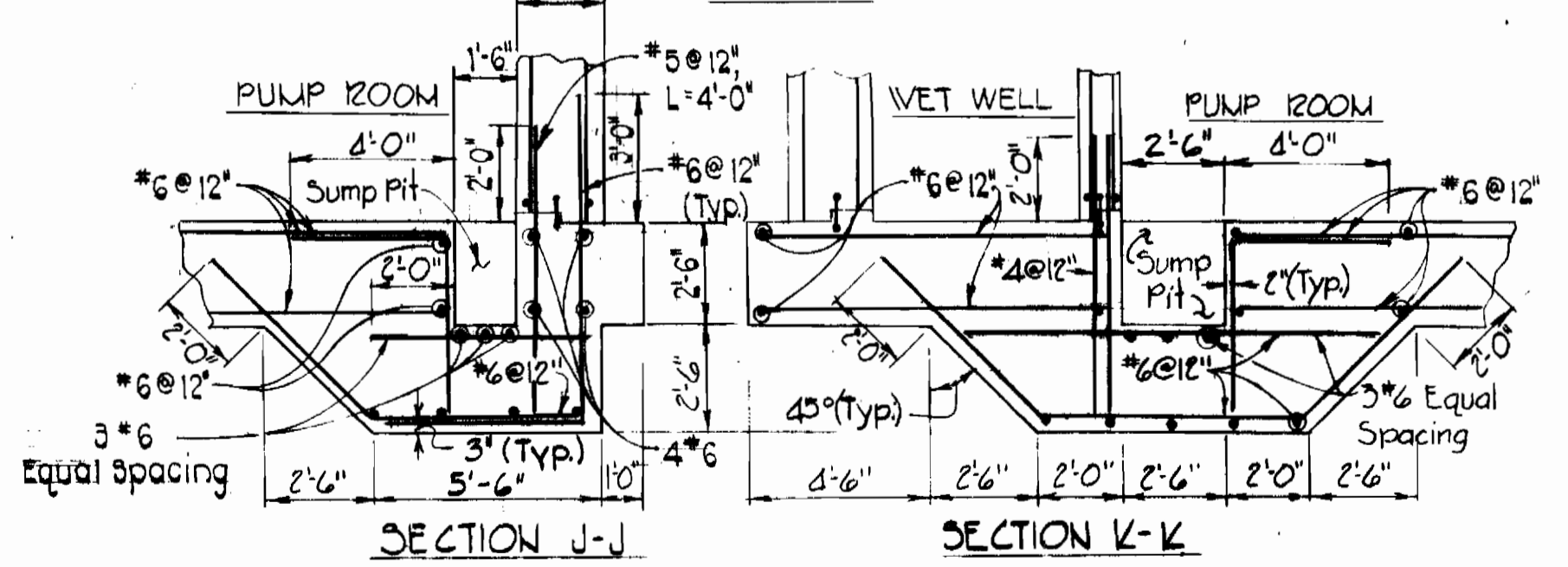
**BLOWER PLATFORM DETAILS**  
Not to Scale



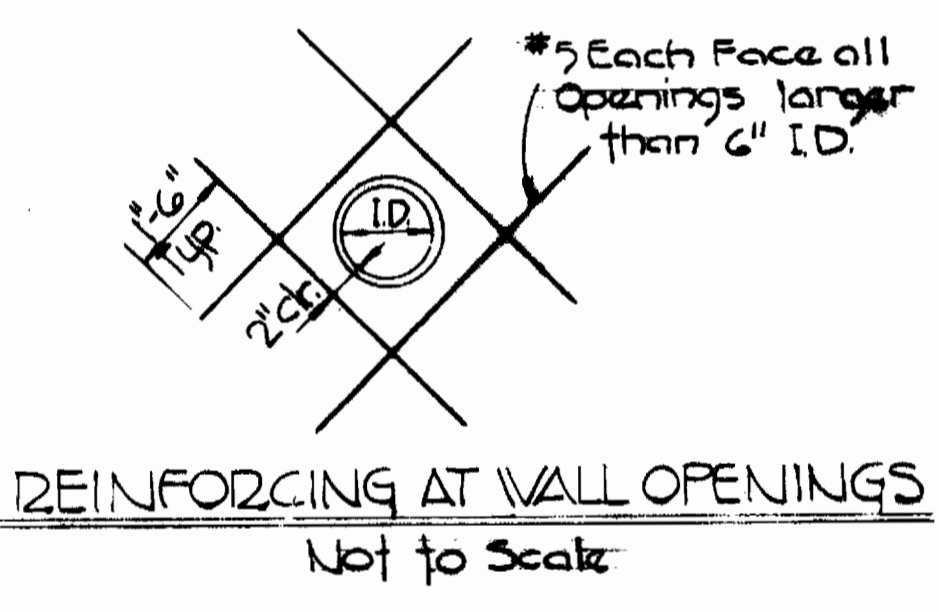
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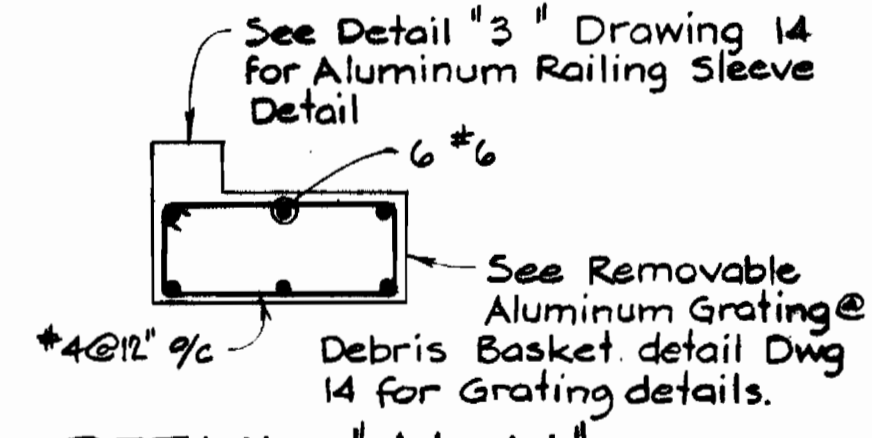
**PLAN**  
Not to Scale



**SUMP PIT DETAIL**  
Scale: 1/4" = 1'-0"



**REINFORCING AT WALL OPENINGS**  
Not to Scale



**DETAIL 'A1-A1'**  
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  
CHIEF UTILITY DIVISION DATE

PURDUM & JESCHKE  
ENGINEERS  
1023 N. CALVERT ST.  
BALTIMORE, MARYLAND

CONTRACT NO. 2741-S  
CAPITAL PROJECT NO. S-4-8087

REVISED PUMPING STATION LOCATION 5-7-82  
STRUCTURAL DETAILS

CHAMBERLEA SANITARY SEWERS  
ALLENFORD PUMPING STATION  
ELECTION DISTRICT NO. 2

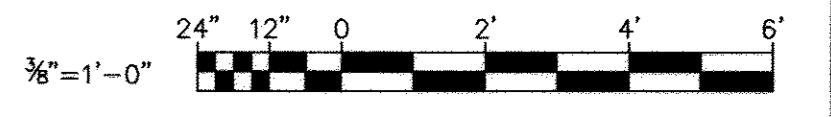
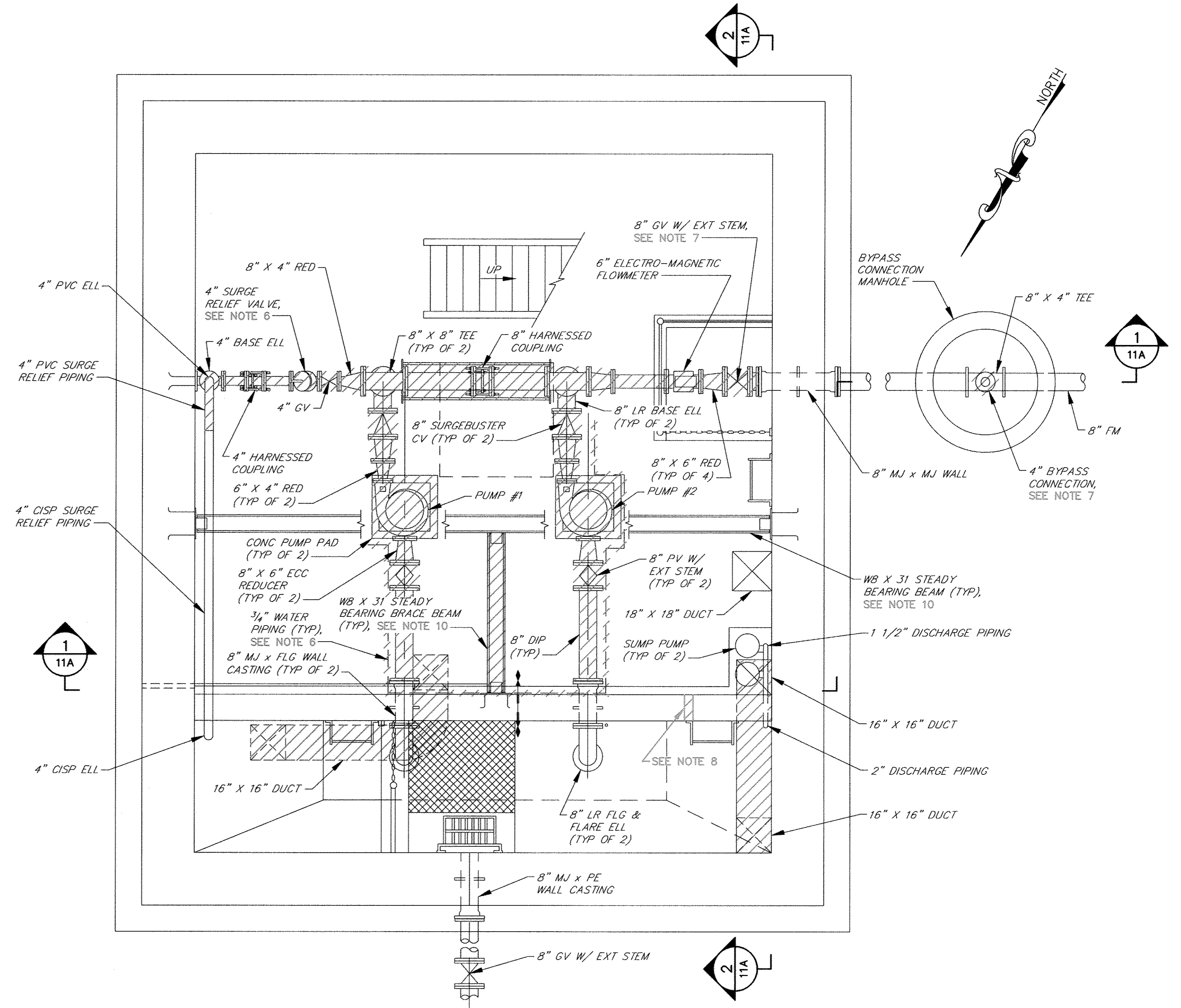
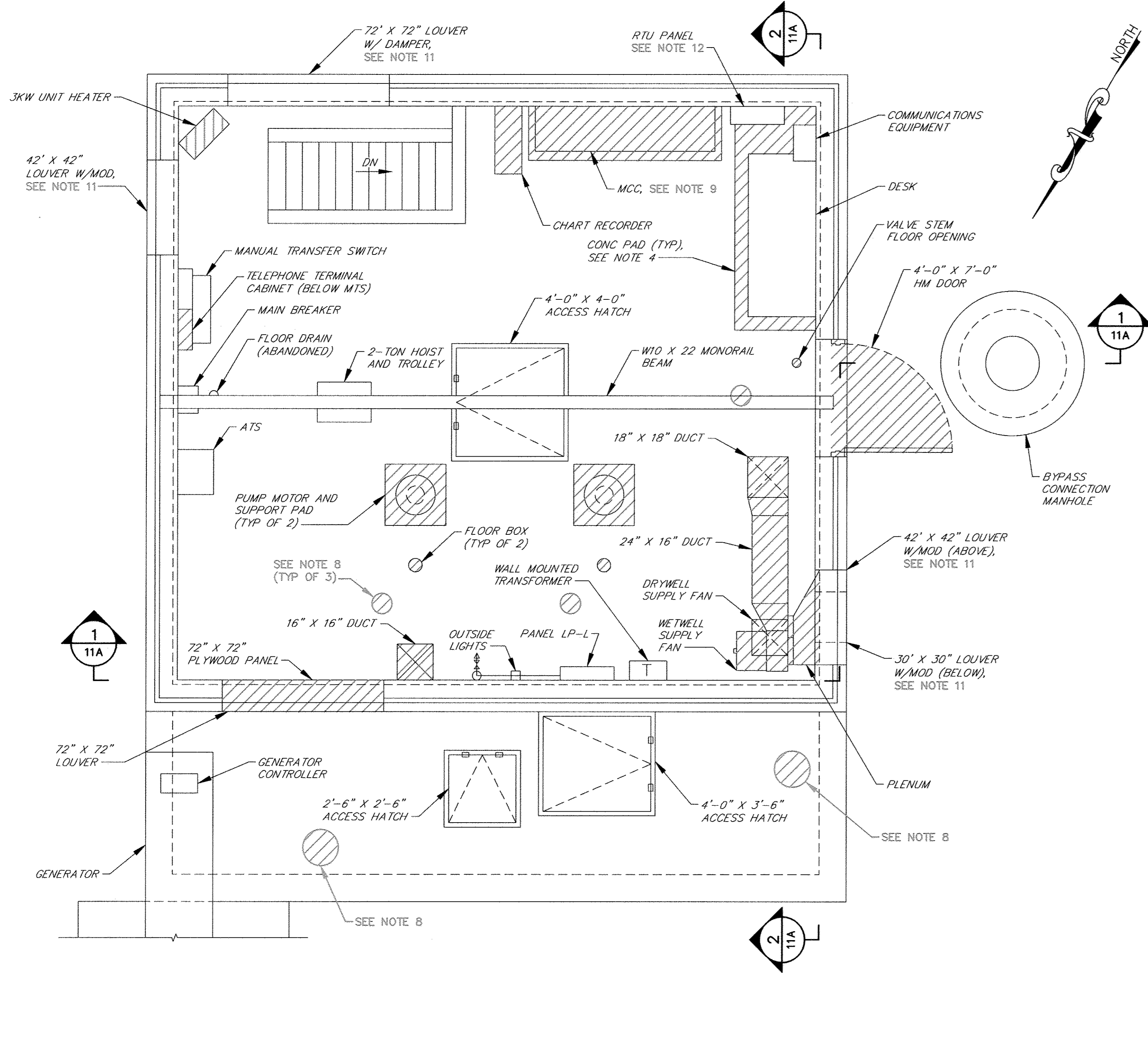
DRAWING NO. 9 OF 16  
SCALE AS SHOWN  
Designed: DJD  
Drafted: ANW  
Checked: REP

EPA NO. C-240594-01(14)  
CONTRACT NO. 2741-S  
CAPITAL PROJECT NO. S-4-6067  
CHAMBERLEA SANITARY SEWERS  
ALLENFORD PUMPING STATION



NOTES:

- ALL EXISTING FEATURES DENOTED BY SLANTED TEXT.
- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.
- PATCH ALL EXISTING HOLES IN CONCRETE FLOOR SLABS AND WALLS THAT ARE NOT USED IN THE NEW WORK WITH MIN. 9000 PSI COMPRESSIVE STRENGTH NON-SHRINKING GROUT. THE GROUT SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS FOR THIS APPLICATION. GROUT SHALL BE KAUFMAN PRODUCTS SURE GROUT, OR APPROVED EQUAL. HOLES THAT CONTAIN EXISTING WALL SLEEVES SHALL BE PATCHED BY FIRST INSTALLING A CAST IRON OR DUCTILE IRON PLUG AND FILLING THE REMAINING OPENING WITH NON-SHRINK GROUT.
- REMOVE CONCRETE EQUIPMENT PADS AND PIPE & VALVE SUPPORTS FOR ALL REMOVED EQUIPMENT AND PIPING, AND RESTORE CONCRETE FLOOR TO MATCH EXISTING.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND TRANSPORTATION, INTACT OF ALL DEMOLISHED EQUIPMENT DESIGNATED BY THE COUNTY TO BE SALVAGED, TO THE COUNTY'S LITTLE PATUXENT WATER RECLAMATION PLANT (LPWRP) MAINTENANCE SHOP, LOCATED AT 8900 GREENWOOD PLACE, 410-313-1200. CONTRACTOR SHALL PROVIDE THE COUNTY WITH FIVE (5) DAYS ADVANCE NOTICE PRIOR TO DELIVERY OF EQUIPMENT. CONTRACTOR SHALL DISPOSE OF ALL NON-SALVAGED EQUIPMENT AND MATERIAL DEMOLISHED.
- REMOVE SURGE RELIEF VALVE AND ALL ASSOCIATED HYDRAULIC CONTROLS, PIPING AND OTHER APPURTENANCES.
- CONTRACTOR SHALL TEMPORARILY SHUT DOWN THE PUMPING STATION TO REMOVE AND REPLACE THE 8" STATION ISOLATION GATE VALVE AND 4" BYPASS CONNECTION GATE VALVE AND ASSOCIATED PIPING. REFER TO SPECIFICATION 02750 FOR TEMPORARY SHUT DOWN REQUIREMENTS.
- CORE DRILL HOLES IN CONCRETE WALLS AND FLOOR SLABS TO ACCOMMODATE NEW VALVE BOXES, EXHAUST FAN, GOOSENECK VENT AND DRAIN PIPING. INSTALL FRAMING AROUND HOLES IN WETWELL TOP SLAB AS SHOWN ON SHEET 11B.
- EXISTING POWER AND CONTROL EQUIPMENT SHALL REMAIN IN SERVICE TO SUPPORT PUMPING OPERATIONS UNTIL ALL NEW SYSTEMS ARE INSTALLED AND FULLY OPERATIONAL AND APPROVAL IS GRANTED BY OWNER AND ENGINEER. REMOVAL OF EQUIPMENT SHALL INCLUDE ALL CONDUIT AND WIRING ASSOCIATED WITH EQUIPMENT TO BE REMOVED.
- REMOVE THE LOWER STEADY BEARING BEAM FROM THE WALLS AND PREPARE IT TO BE ROLLED 90 DEGREES AND REINSTALLED. REMOVE LOWER STEADY BEARING BRACE BEAM ENTIRELY.
- REMOVE DAMPER ACTUATOR AND PREPARE DAMPER FOR INSTALLATION OF NEW ACTUATOR.
- EXISTING RTU PANEL TO REMAIN IN SERVICE. PANEL CONTAINS THE EXISTING LC150 PRIMARY PUMP CONTROLLER, WHICH IS ALSO TO REMAIN IN SERVICE, TO GENERATE THE PRIMARY PUMP CONTROLS BY THE SYSTEM INTEGRATOR IN THE PROPOSED PCP. REFER TO WIRING SCHEMATICS PROVIDED.



RK\21\SYS - A\_Vprojects\2012\1154\_JacC80A\Task 9 - Microbore Pumping Station\Allenford\_PSD\Cadd\Plan\Proposed\121544PPE-010A-09-10A.dwg Apr 12, 2018 - 11:47am Plot Scale 1:1

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 4/12/18  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 4/12/18  
CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 4/13/18  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 4/13/18  
CHIEF, UTILITY DIVISION DATE

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THE REDLINE REVISIONS INCLUDED IN THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. 28472 EXPIRATION DATE 9/15/2019

**RK&K**  
RUMMEL, KLEPPER & KAHL, LLP  
700 EAST PRATT STREET  
SUITE 500  
BALTIMORE, MARYLAND 21202

*[Professional Seal]*

DES:	DAO		
DRN:	TJS		
CHK:	RAL		
DATE:	3/30/18		
BY:	RK&K 1	2018 UPGRADES - ADD SHEET 10A	3/18
NO.:			
REVISIONS:			
DATE:			

MAP NO.:	17
BLOCK NO.:	8

ALLENFORD PUMPING STATION  
2018 UPGRADES

DEMOLITION PLANS -  
2018 UPGRADES

CAPITAL PROJECT NO. S6264  
CONTRACT NO. 741-S

ELECTION DISTRICT NO. 2  
HOWARD COUNTY, MARYLAND

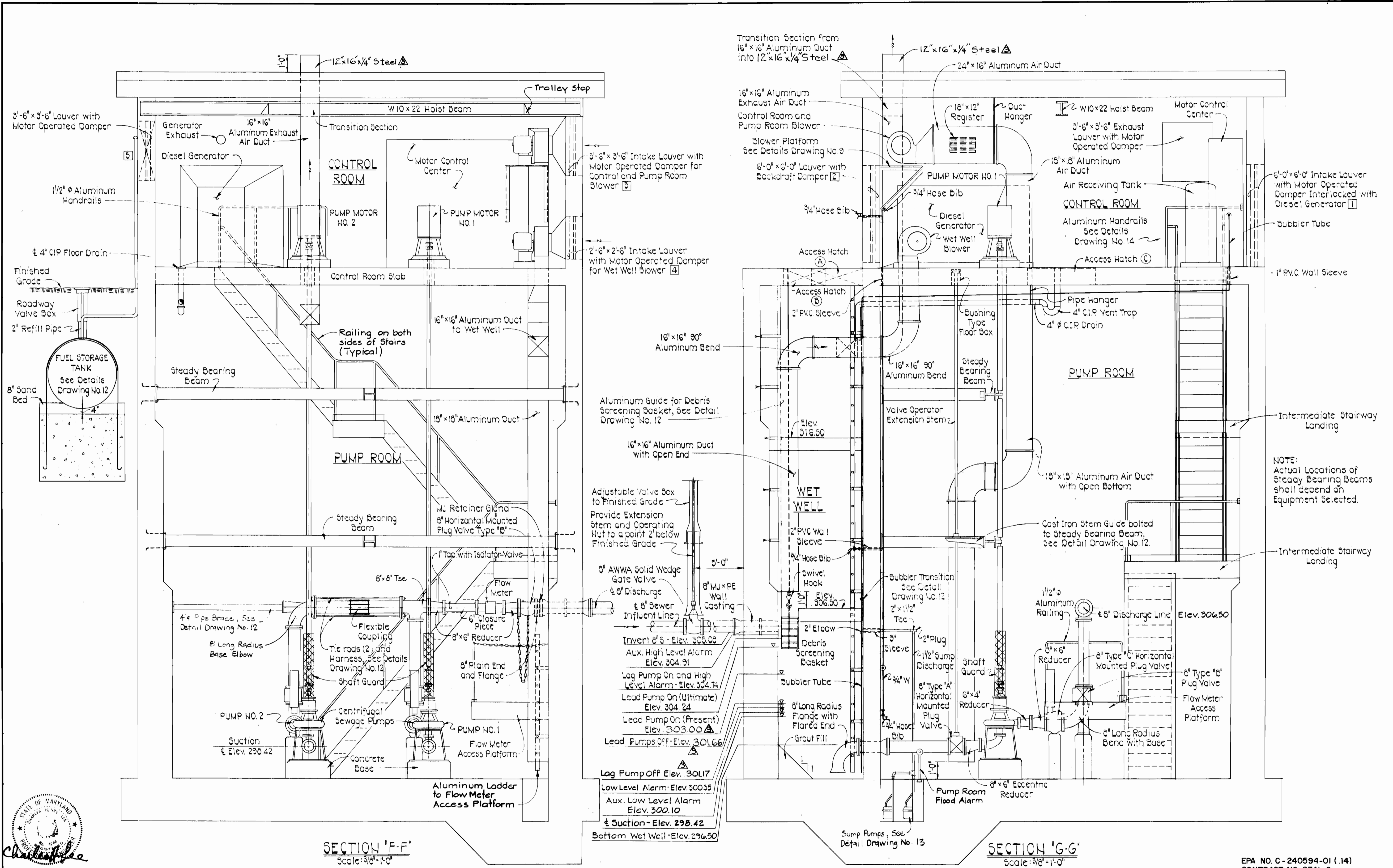
SCALE  
3/8"=1'-0"

SHEET  
10A OF 28





WS 741 S/11



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: *Robert M. Bruner* 1-6-83  
 Chief Bureau of Engineering: *Allen E. Bruner* 1-6-83  
 Chief Bureau of Utilities: *Allen E. Bruner* 1-6-83

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

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

PURDUM & JESCHKE  
 ENGINEERS  
 1023 N. CALVERT ST.  
 BALTIMORE, MARYLAND

REV.	DATE	AS-BUILTS DESCRIPTIONS
1	8-85	AS-BUILTS

CONTRACT NO. 741-S  
 CAPITAL PROJECT NO. S-4-6067

REVISED PUMPING STATION LOCATION 5-7-82

MECHANICAL SECTIONS

AS-BUILTS

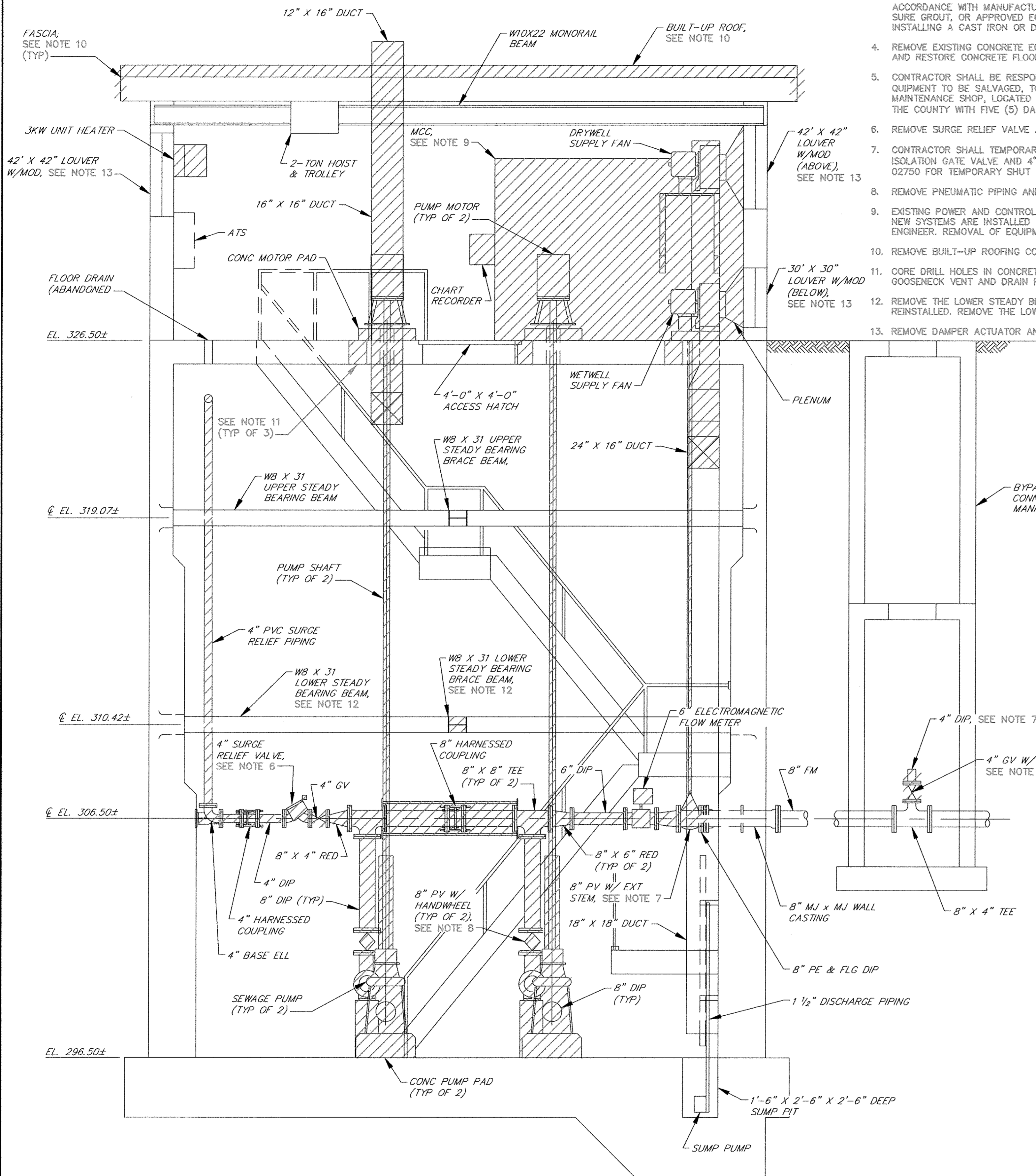
CHAMBERLEA SANITARY SEWERS  
 ALLENFORD PUMPING STATION  
 ELECTION DISTRICT NO. 2  
 HOWARD COUNTY, MARYLAND

EPA NO. C-240594-01 (14)  
 CONTRACT NO. 2741-S  
 CAPITAL PROJECT NO. S-4-6067  
 CHAMBERLEA SANITARY SEWERS  
 ALLENFORD PUMPING STATION

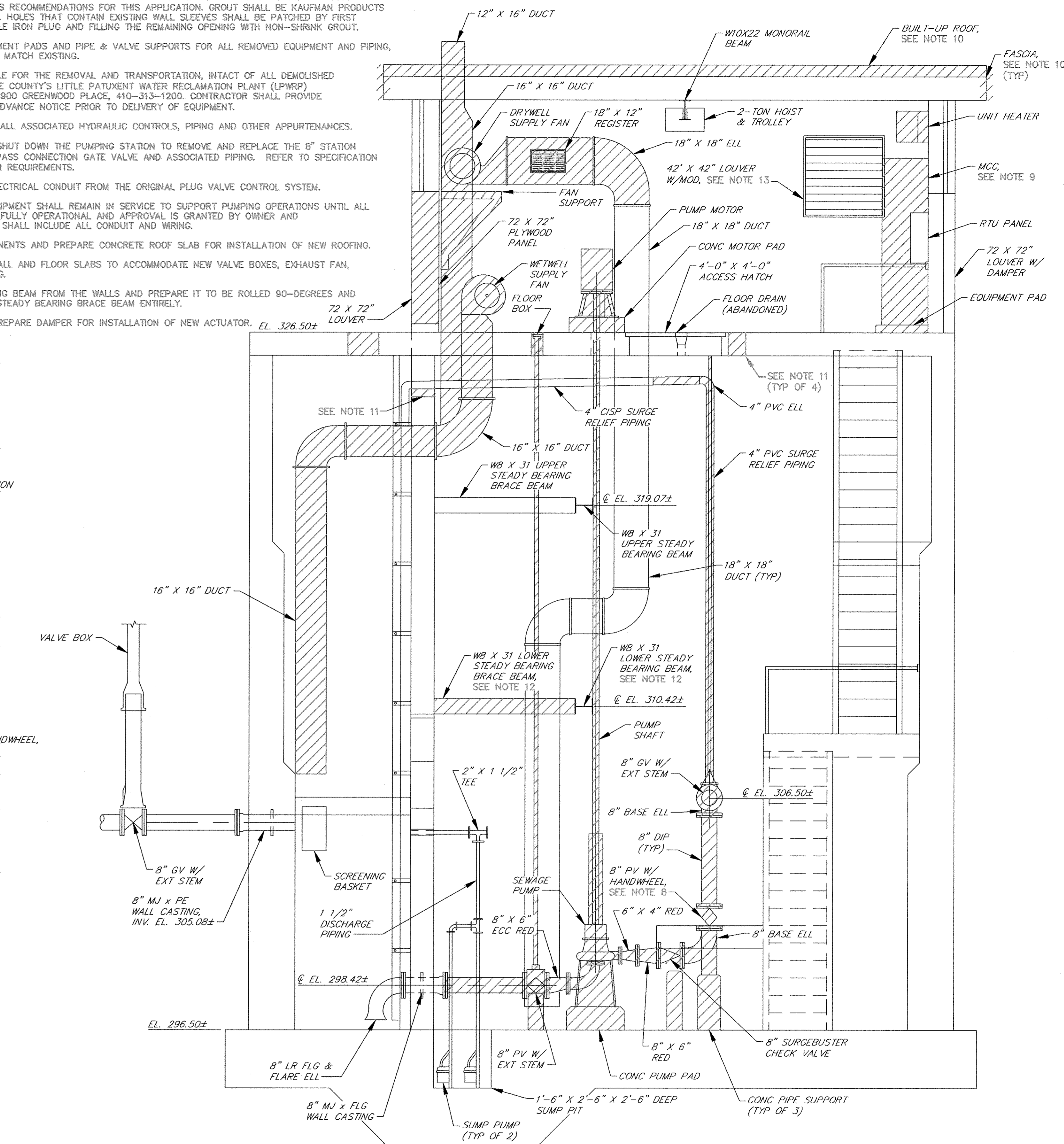
DRAWING NO. 11 OF 16	SCALE AS SHOWN	Designed: REP Drafted: ARW Checked: REP
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**NOTES:**

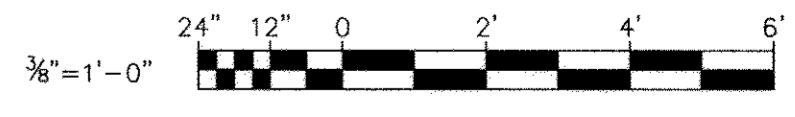
1. ALL EXISTING FEATURES DENOTED BY SLANTED TEXT.
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4. REMOVE EXISTING CONCRETE EQUIPMENT PADS AND PIPE & VALVE SUPPORTS FOR ALL REMOVED EQUIPMENT AND PIPING, AND RESTORE CONCRETE FLOOR TO MATCH EXISTING.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND TRANSPORTATION, INTACT OF ALL DEMOLISHED EQUIPMENT TO BE SALVAGED, TO THE COUNTY'S LITTLE PATUXENT WATER RECLAMATION PLANT (LWRP) MAINTENANCE SHOP, LOCATED AT 8900 GREENWOOD PLACE, 410-313-1200. CONTRACTOR SHALL PROVIDE THE COUNTY WITH FIVE (5) DAYS ADVANCE NOTICE PRIOR TO DELIVERY OF EQUIPMENT.
6. REMOVE SURGE RELIEF VALVE AND ALL ASSOCIATED HYDRAULIC CONTROLS, PIPING AND OTHER APPURTENANCES.
7. CONTRACTOR SHALL TEMPORARILY SHUT DOWN THE PUMPING STATION TO REMOVE AND REPLACE THE 8" STATION ISOLATION GATE VALVE AND 4" BYPASS CONNECTION GATE VALVE AND ASSOCIATED PIPING. REFER TO SPECIFICATION 02750 FOR TEMPORARY SHUT DOWN REQUIREMENTS.
8. REMOVE PNEUMATIC PIPING AND ELECTRICAL CONDUIT FROM THE ORIGINAL PLUG VALVE CONTROL SYSTEM.
9. EXISTING POWER AND CONTROL EQUIPMENT SHALL REMAIN IN SERVICE TO SUPPORT PUMPING OPERATIONS UNTIL ALL NEW SYSTEMS ARE INSTALLED AND FULLY OPERATIONAL AND APPROVAL IS GRANTED BY OWNER AND ENGINEER. REMOVAL OF EQUIPMENT SHALL INCLUDE ALL CONDUIT AND WIRING.
10. REMOVE BUILT-UP ROOFING COMPONENTS AND PREPARE CONCRETE ROOF SLAB FOR INSTALLATION OF NEW ROOFING.
11. CORE DRILL HOLES IN CONCRETE WALL AND FLOOR SLABS TO ACCOMMODATE NEW VALVE BOXES, EXHAUST FAN, GOOSENECK VENT AND DRAIN PIPING.
12. REMOVE THE LOWER STEADY BEARING BEAM FROM THE WALLS AND PREPARE IT TO BE ROLLED 90-DEGREES AND REINSTALLED. REMOVE THE LOWER STEADY BEARING BRACE BEAM ENTIRELY.
13. REMOVE DAMPER ACTUATOR AND PREPARE DAMPER FOR INSTALLATION OF NEW ACTUATOR.



SECTION 1  
SCALE: 3/8"=1'-0" 10A



SECTION 2  
SCALE: 3/8"=1'-0" 10A



R:\Projects\2018\2154\_Howard\Proposed\PS\Station\Station\2154MPS-011A-05-11A.dwg, Apr 12, 2018 - 11:47am, Plot Scale 1:1

**DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND**

Director: *John P. Van...* DATE: *4/16/18*  
 Chief, Bureau of Engineering: *Morgan S. Butler* DATE: *4/16/18*  
 Chief, Bureau of Utilities: *[Signature]* DATE: *4/13/18*  
 Chief, Utility Division: *[Signature]* DATE: *4/13/18*

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THE REDLINE REVISIONS INCLUDED IN THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
 LICENSE NO. 22472 EXPIRATION DATE 9/15/2019

**RK&K**  
 RUMMEL, KLEPPER & KAHL, LLP  
 700 EAST PRATT STREET  
 SUITE 600  
 BALTIMORE, MARYLAND 21202

DES:	DAO
DRN:	TJS
CHK:	RAL
DATE:	3/30/18
BY:	RK&K 1
NO.:	2018 UPGRADES - ADD SHEET 11A
REVISIONS:	
DATE:	3/18

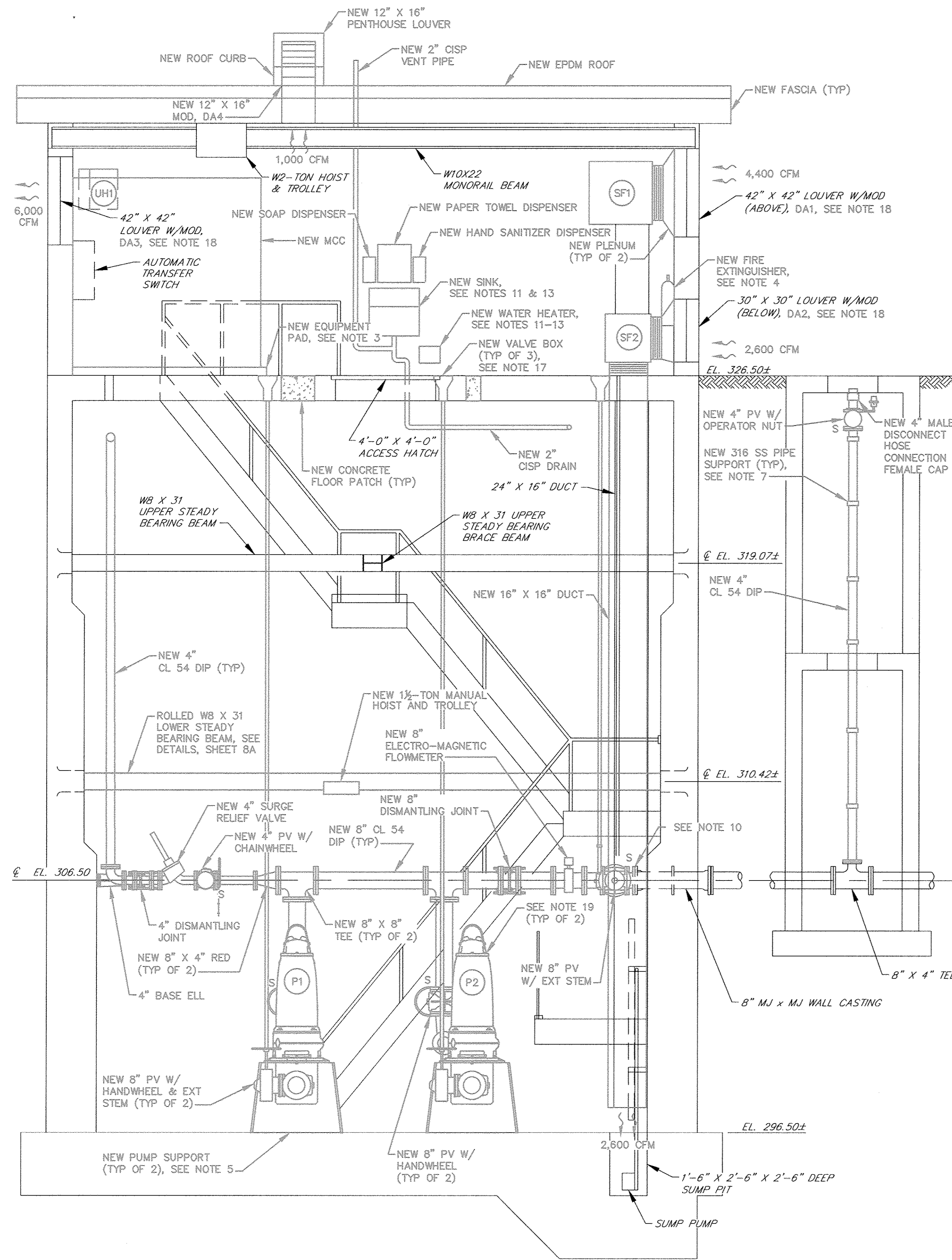
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BLOCK NO.:	8
ELECTION DISTRICT NO.:	2

**ALLENFORD PUMPING STATION  
2018 UPGRADES**

CAPITAL PROJECT NO. S6264  
 CONTRACT NO. 741-S

SCALE: 3/8"=1'-0"  
 SHEET 11A OF 28

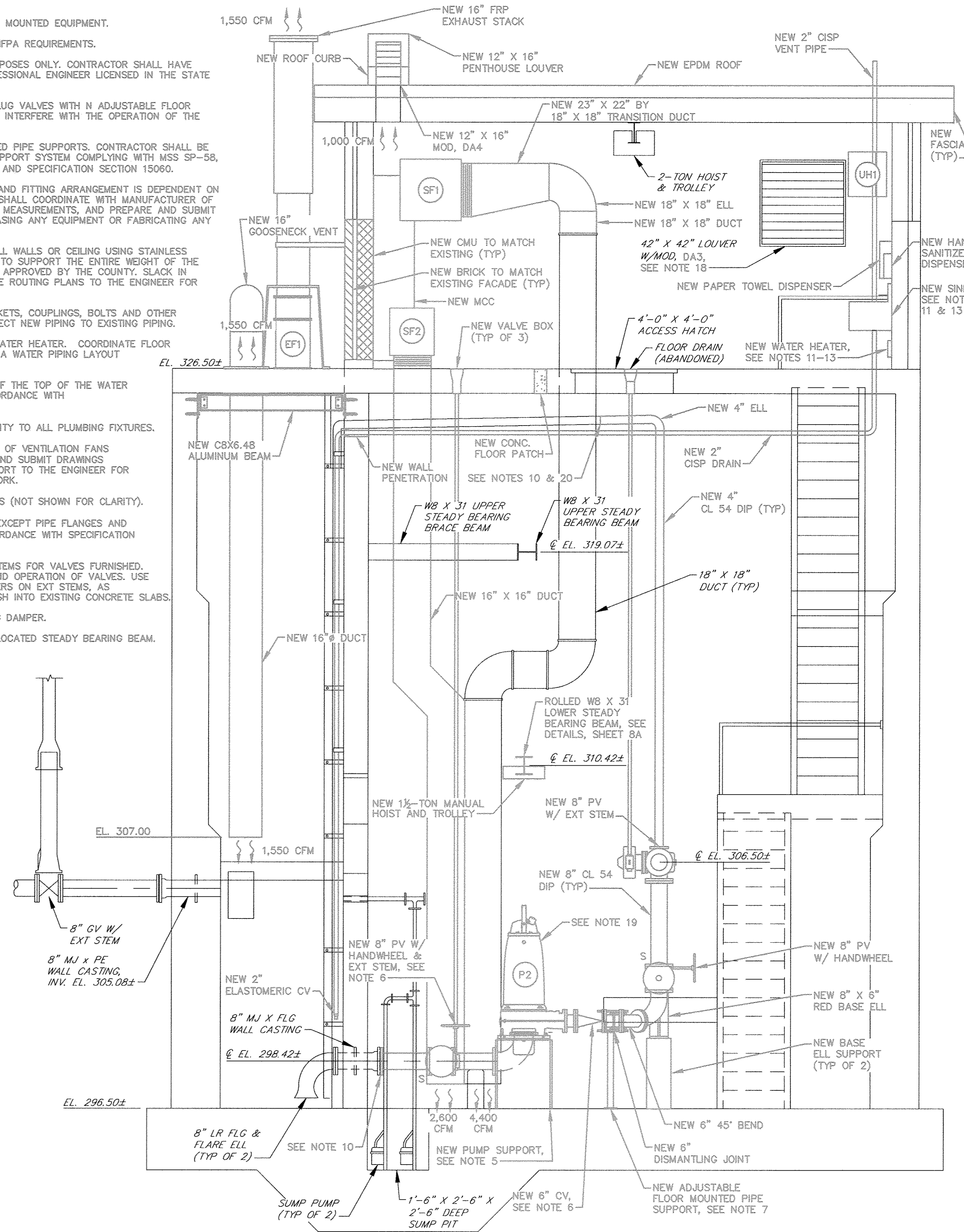
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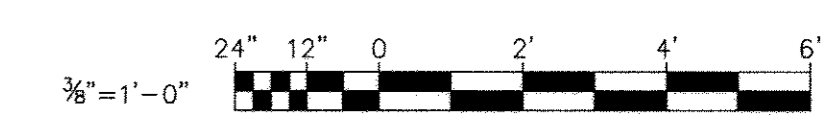
SECTION 1  
SCALE: 3/8"=1'-0" 10B

- NOTES:
- ALL EXISTING FEATURES DENOTED BY SLANTED TEXT.
  - ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.
  - INSTALL CONCRETE EQUIPMENT PADS FOR ALL FLOOR MOUNTED EQUIPMENT.
  - INSTALL FIRE EXTINGUISHERS IN ACCORDANCE WITH NFPA REQUIREMENTS.
  - PUMP SUPPORTS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. CONTRACTOR SHALL HAVE PUMP SUPPORTS DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MARYLAND FOR PUMPS FURNISHED.
  - SUPPORT ALL CHECK VALVES AND PUMP SUCTION PLUG VALVES WITH AN ADJUSTABLE FLOOR MOUNTED PIPE SUPPORTS, INSTALLED SO AS NOT TO INTERFERE WITH THE OPERATION OF THE VALVES.
  - NO ATTEMPT HAS BEEN MADE TO SHOW ALL REQUIRED PIPE SUPPORTS. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A COMPLETE PIPING SUPPORT SYSTEM COMPLYING WITH MSS SP-58, ANSI/MSS SP-69, FEDERAL SPECIFICATION WW-H171, AND SPECIFICATION SECTION 15060.
  - NEW PUMP SUCTION AND DISCHARGE PIPING, VALVE AND FITTING ARRANGEMENT IS DEPENDENT ON ACTUAL PUMP EQUIPMENT FURNISHED. CONTRACTOR SHALL COORDINATE WITH MANUFACTURER OF PUMP EQUIPMENT FURNISHED, TAKE ACCURATE FIELD MEASUREMENTS, AND PREPARE AND SUBMIT LAYOUT DRAWINGS FOR APPROVAL PRIOR TO PURCHASING ANY EQUIPMENT OR FABRICATING ANY PIPING.
  - PUMP CABLES SHALL BE SUPPORTED BY THE DRYWELL WALLS OR CEILING USING STAINLESS STEEL KELLUM GRIPS, AT INTERVALS AS NECESSARY TO SUPPORT THE ENTIRE WEIGHT OF THE CABLES, IN ACCESSIBLE LOCATIONS WHICH SHALL BE APPROVED BY THE COUNTY. SLACK IN CABLES SHALL NOT BE COILED. SUBMIT PUMP CABLE ROUTING PLANS TO THE ENGINEER FOR REVIEW PRIOR TO ORDERING PUMPS.
  - FURNISH AND INSTALL ALL GLANDS, RETAINERS, GASKETS, COUPLINGS, BOLTS AND OTHER MISCELLANEOUS MATERIALS AS NECESSARY TO CONNECT NEW PIPING TO EXISTING PIPING.
  - EXTEND EXISTING WATER PIPING TO NEW SINK AND WATER HEATER. COORDINATE FLOOR SLEEVE LOCATION WITH ALL EQUIPMENT AND SUBMIT A WATER PIPING LAYOUT DRAWING TO THE ENGINEER FOR REVIEW.
  - MOUNT WATER HEATER SUCH THAT THE ELEVATION OF THE TOP OF THE WATER HEATER IS BELOW THE SINK ELEVATION AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
  - GATE VALVES SHALL BE INSTALLED IN CLOSE PROXIMITY TO ALL PLUMBING FIXTURES.
  - CONTRACTOR SHALL COORDINATE W/ MANUFACTURER OF VENTILATION FANS FURNISHED, TAKE ACCURATE FIELD MEASUREMENTS AND SUBMIT DRAWINGS SHOWING DUCT LAYOUTS AND METHOD OF FAN SUPPORT TO THE ENGINEER FOR REVIEW. FANS SHALL NOT BE SUPPORTED BY DUCTWORK.
  - FURNISH 2-DRAWER FILE CABINET FOR O&M MANUALS (NOT SHOWN FOR CLARITY).
  - CLEAN AND PAINT ALL EXPOSED FERROUS METALS (EXCEPT PIPE FLANGES AND FASTENERS), NEW CMU AND NEW CONCRETE IN ACCORDANCE WITH SPECIFICATION SECTION 09900.
  - COORDINATE LOCATION OF VALVE BOXES WITH EXT STEMS FOR VALVES FURNISHED. ENSURE THAT VALVE BOXES PERMIT FULL ACCESS AND OPERATION OF VALVES. USE UNIVERSAL JOINTS, RIGHT ANGLE GEARS AND ADAPTERS ON EXT STEMS, AS NECESSARY. NEW VALVE BOXES SHALL BE CAST FLUSH INTO EXISTING CONCRETE SLABS.
  - PROVIDE NEW ACTUATOR SIZED TO OPERATE EXISTING DAMPER.
  - PUMPS SHALL BE LOCATED DIRECTLY BELOW THE RELOCATED STEADY BEARING BEAM.
  - CONNECT NEW 4" DIP TO EXISTING 4" CISP.
  - SEE DWG. 12A FOR ALL MECHANICAL SCHEDULES.

PUMP CONTROL SYSTEM LEVELS	
HWA	EL. 306.00
LAG PUMP ON	EL. 305.50
LEAD PUMP ON	EL. 305.00
LAG PUMP OFF	EL. 303.00
LEAD PUMP OFF	EL. 302.50
LWA	EL. 302.00



SECTION 2  
SCALE: 3/8"=1'-0" 10B



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*James A. ...* 4/13/18  
DIRECTOR OF PUBLIC WORKS DATE  
CHIEF, BUREAU OF ENGINEERING DATE

*...* 4/13/18  
CHIEF, BUREAU OF UTILITIES DATE  
CHIEF, UTILITY DIVISION DATE

PROFESSIONAL CERTIFICATION

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LICENSE NO. 22472 EXPIRATION DATE 9/15/2019

**RK&K** RUMMEL, KLEPPER & KAHL, LLP  
700 EAST PRATT STREET SUITE 600 BALTIMORE, MARYLAND 21202

DES:	DAO
DRN:	TJS
CHK:	RAL
DATE:	3/30/18
BY:	RK&K
NO.:	1
REVISIONS:	2018 UPGRADES - ADD SHEET 11B
DATE:	3/18
MAP NO.:	17
BLOCK NO.:	8

ALLENFORD PUMPING STATION  
2018 UPGRADES  
IMPROVEMENT SECTIONS - 2018 UPGRADES

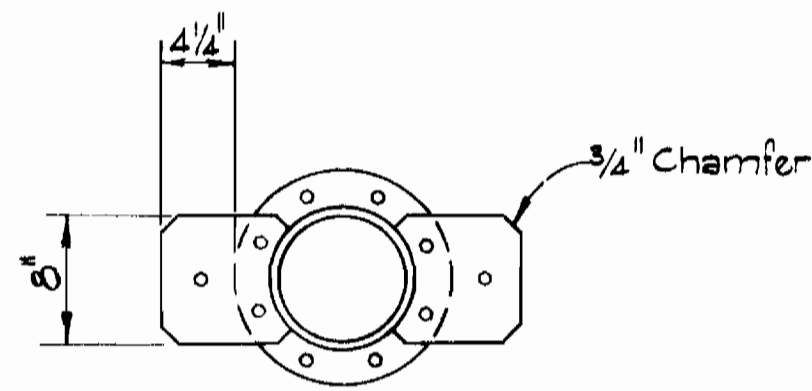
CONTRACT NO. 741-S

ELECTION DISTRICT NO. 2

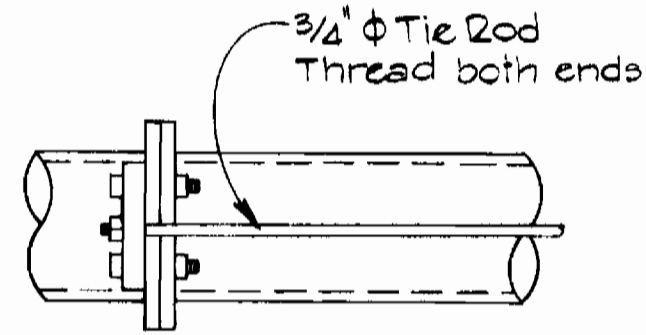
SCALE: 3/8"=1'-0"

SHEET 11B OF 28

NOTES:  
 1. Two Tie Rods Required for Coupling.  
 2. Thread bolt ends for Hex Head Nuts.

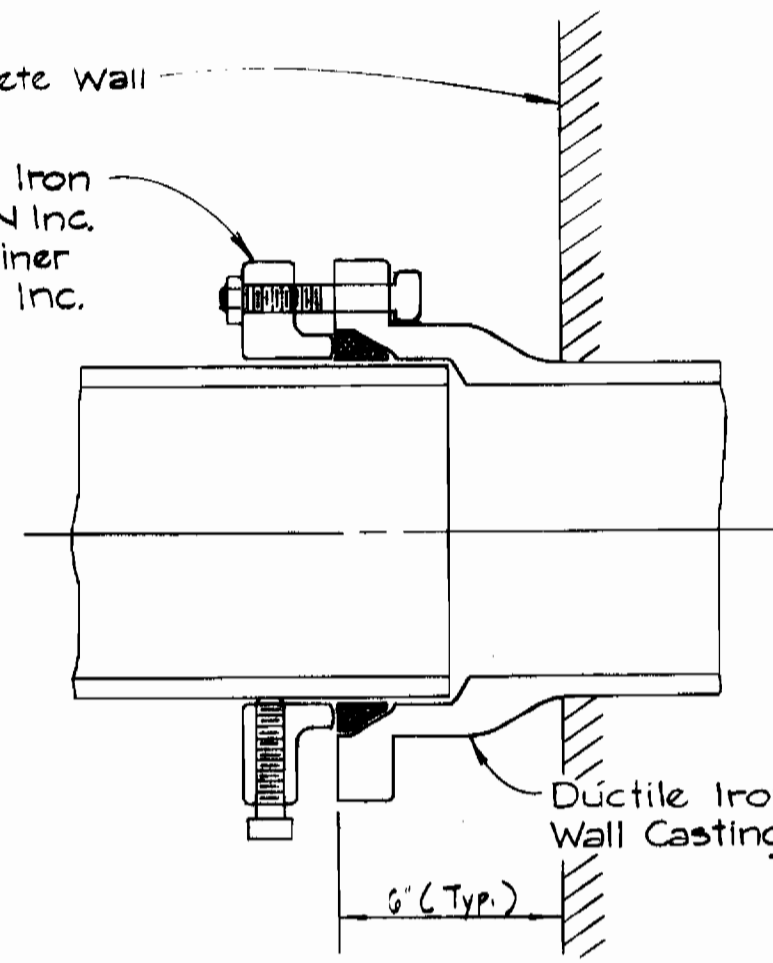


**PIPE HARNZESS DETAIL**  
 Not to Scale

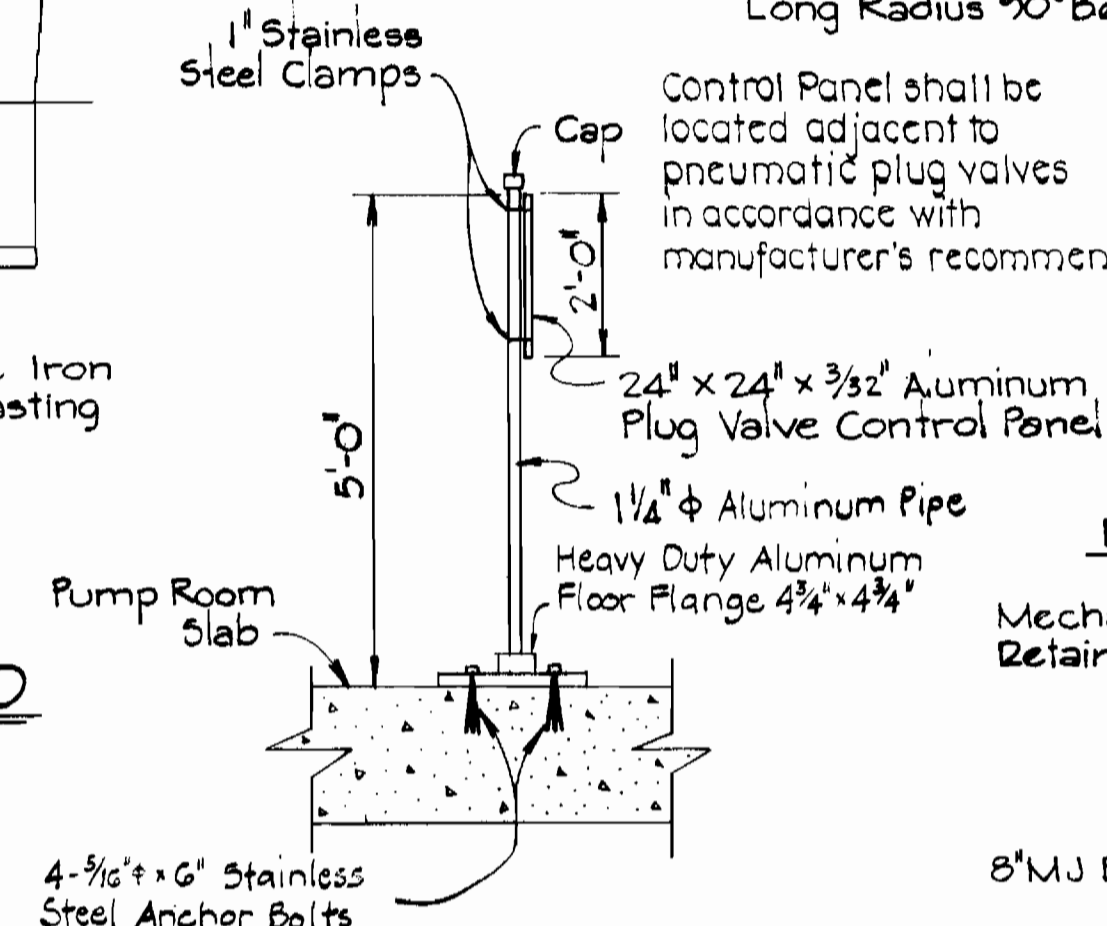


**TYPICAL DUCT INSTALLATION**  
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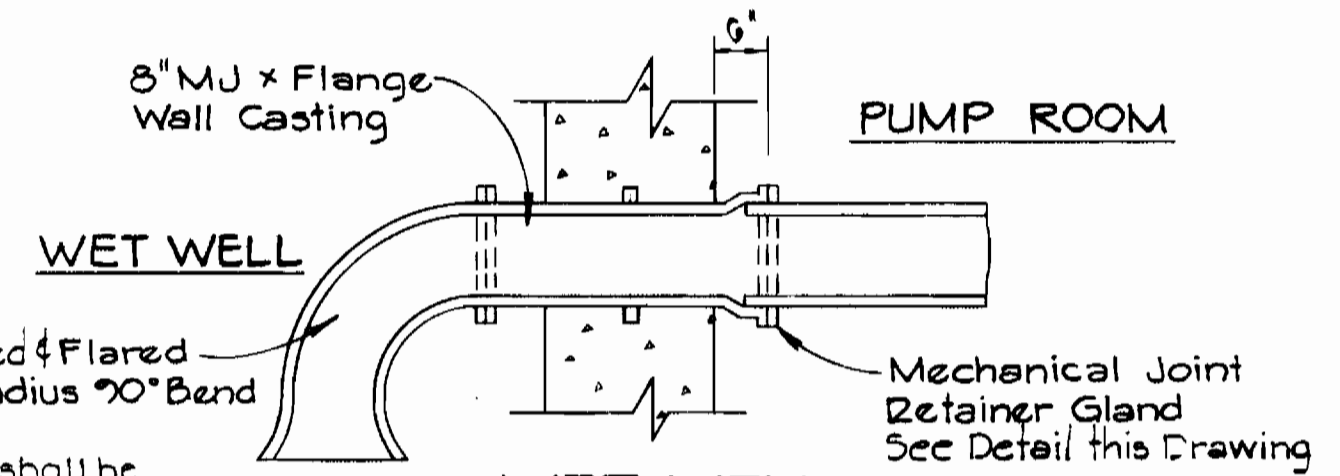
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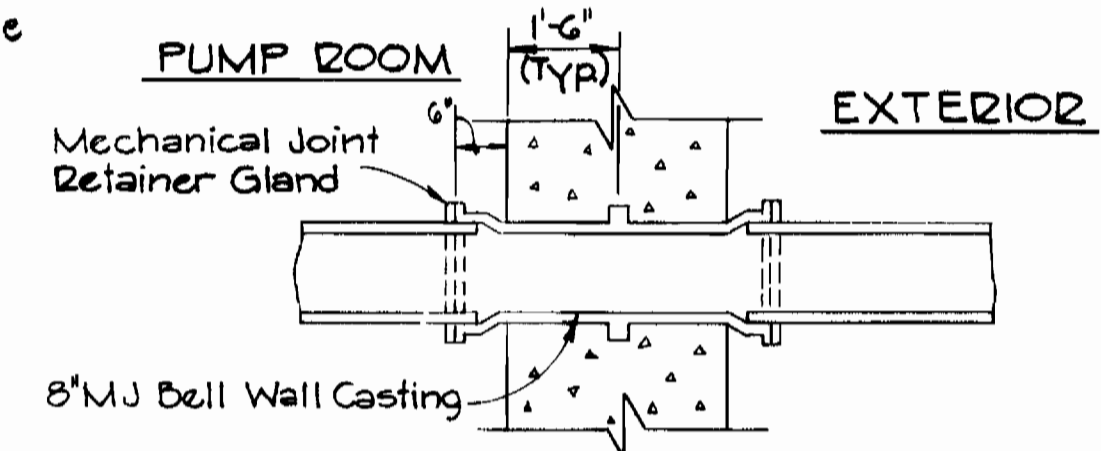
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 Not to Scale



**PLUG VALVE CONTROL PANEL STAND**  
 Not to Scale

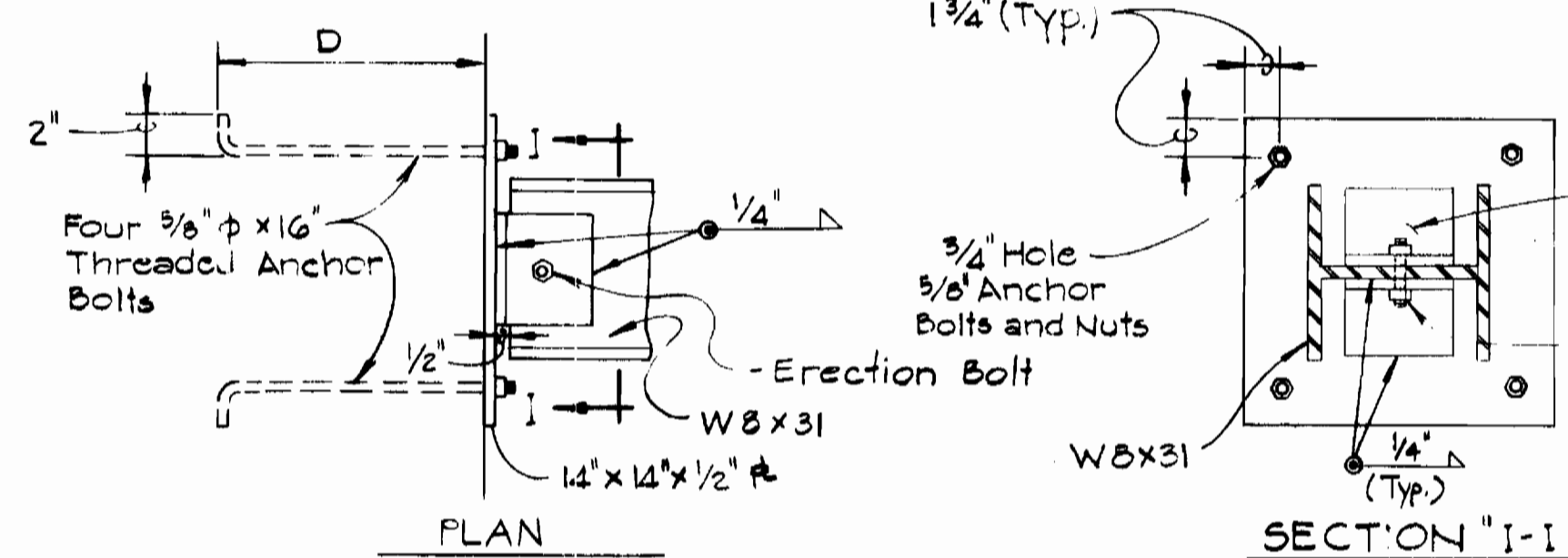


**WET WELL WALL CASTING DETAIL**  
 Not to Scale

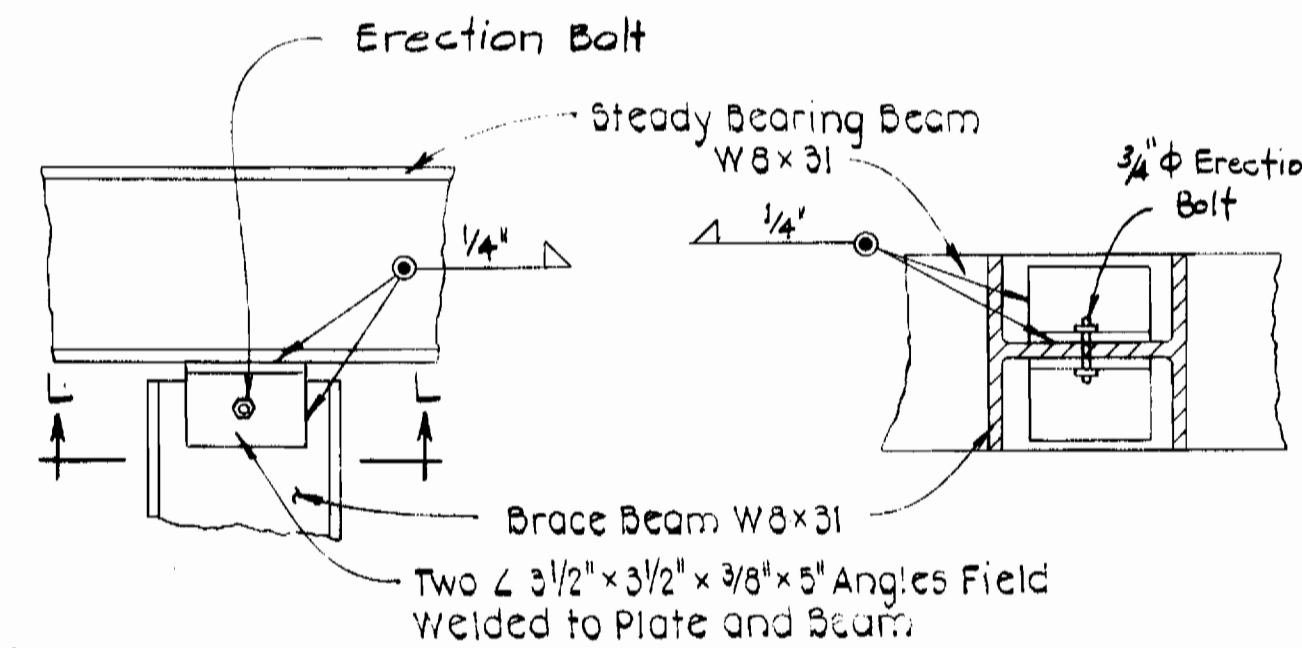


**FORCE MAIN WALL CASTING DETAIL**  
 Not to Scale

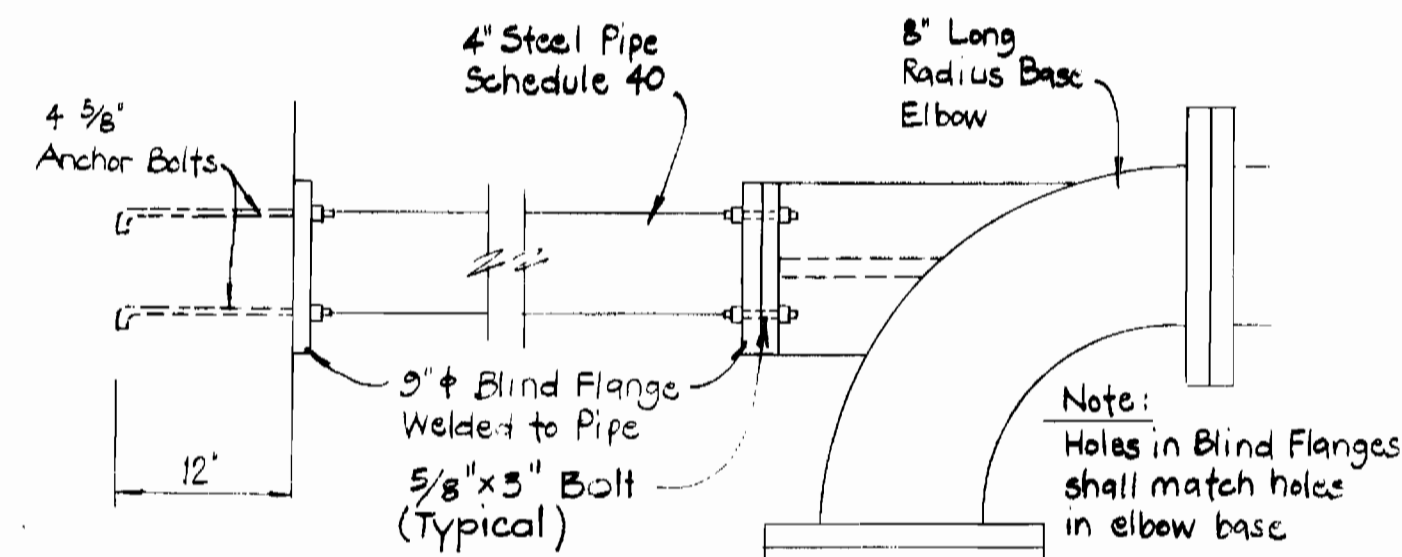
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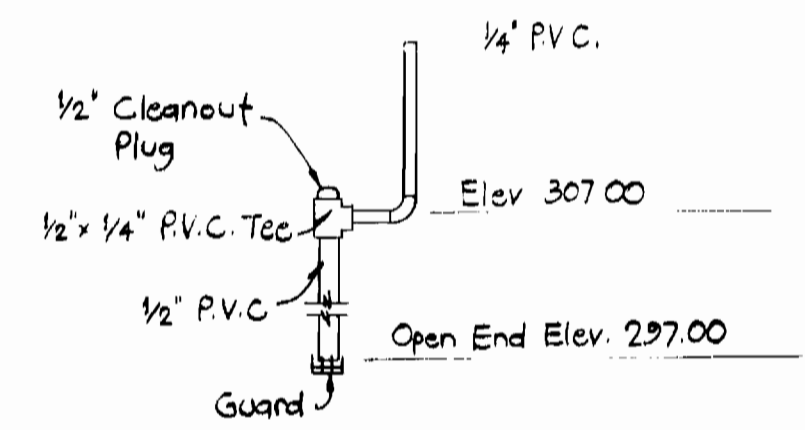
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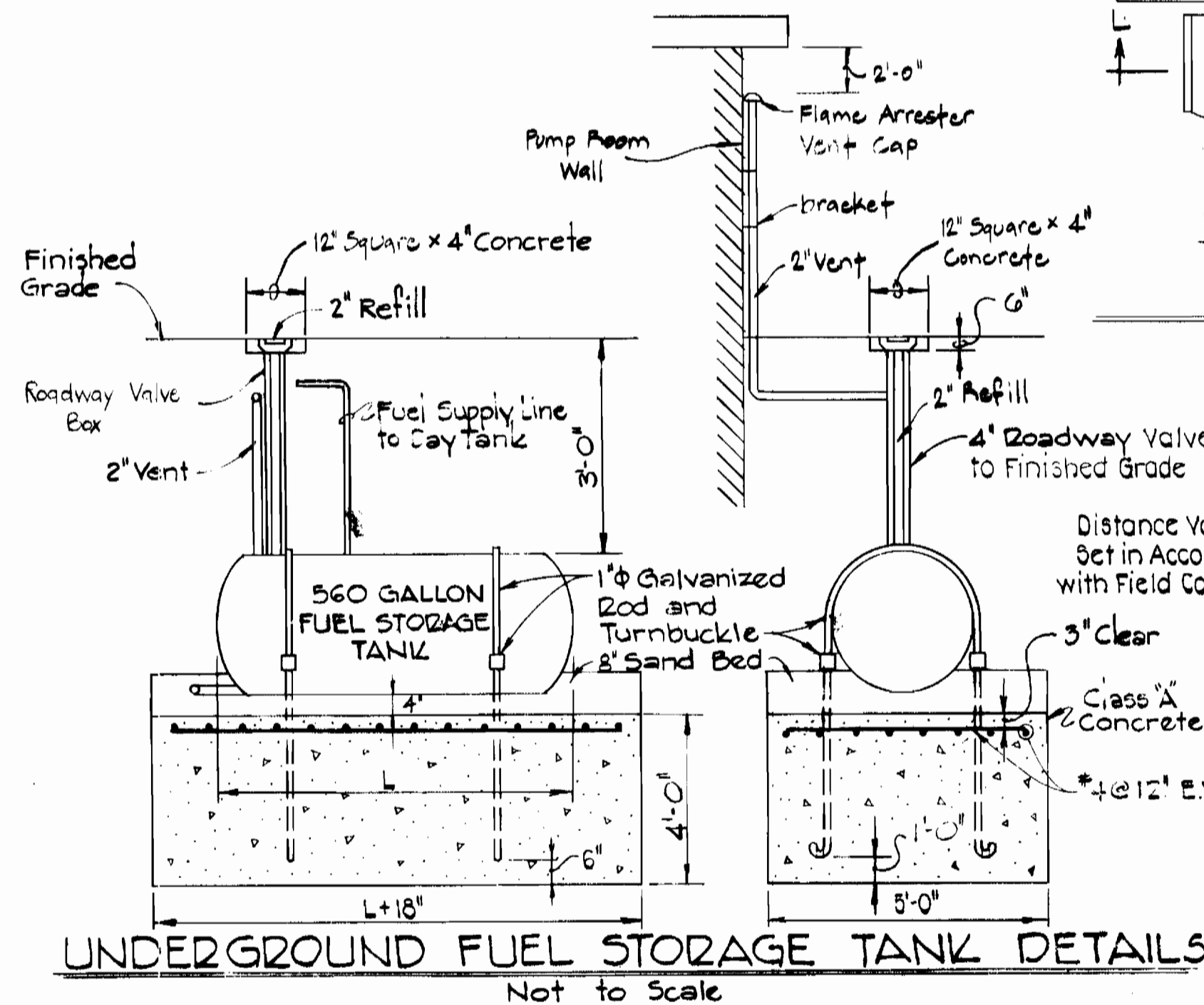
**STEADY BEARING BEAM CONNECTION**  
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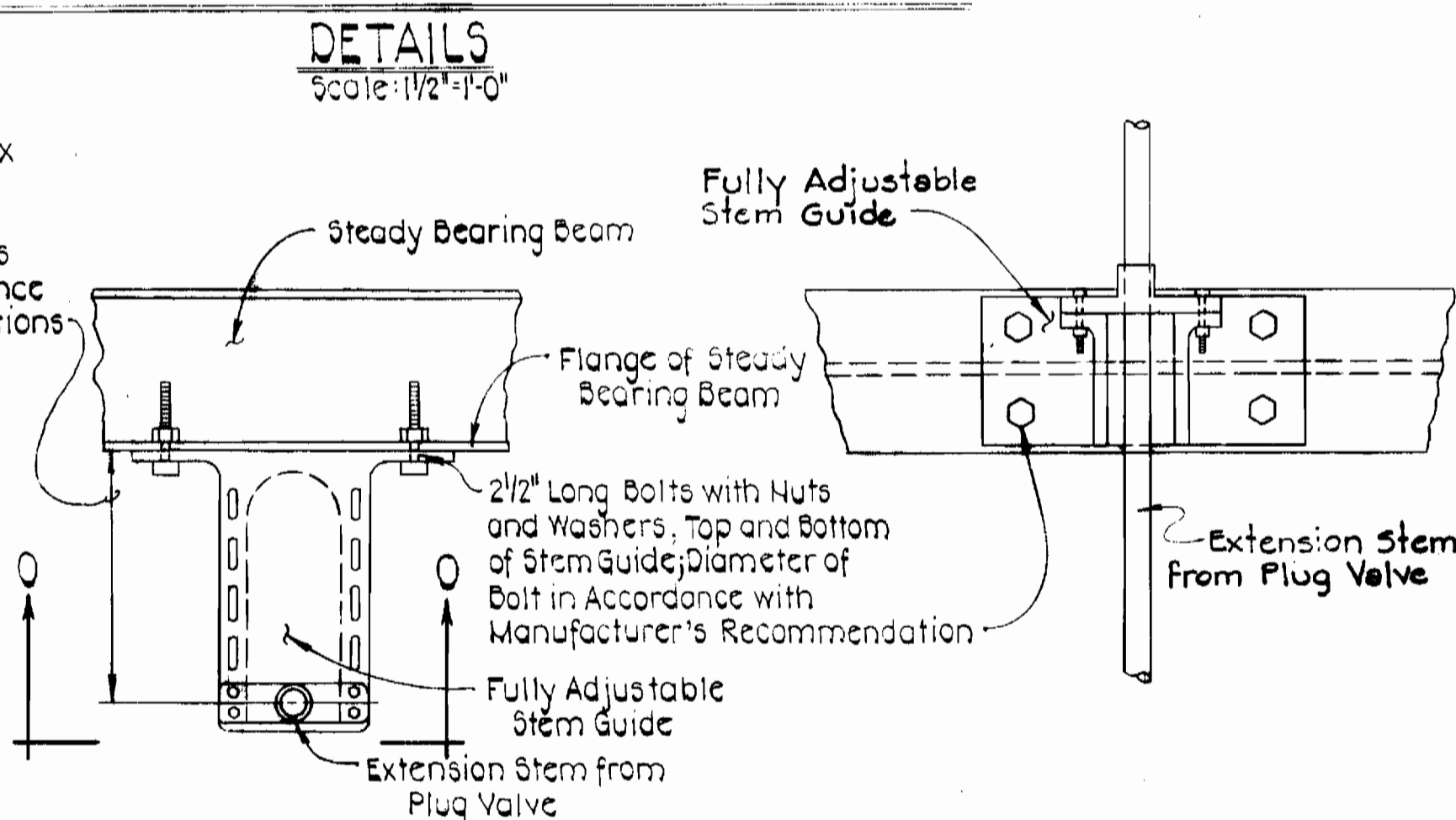
**STEEL PIPE BRACE DETAIL**  
 Not to Scale



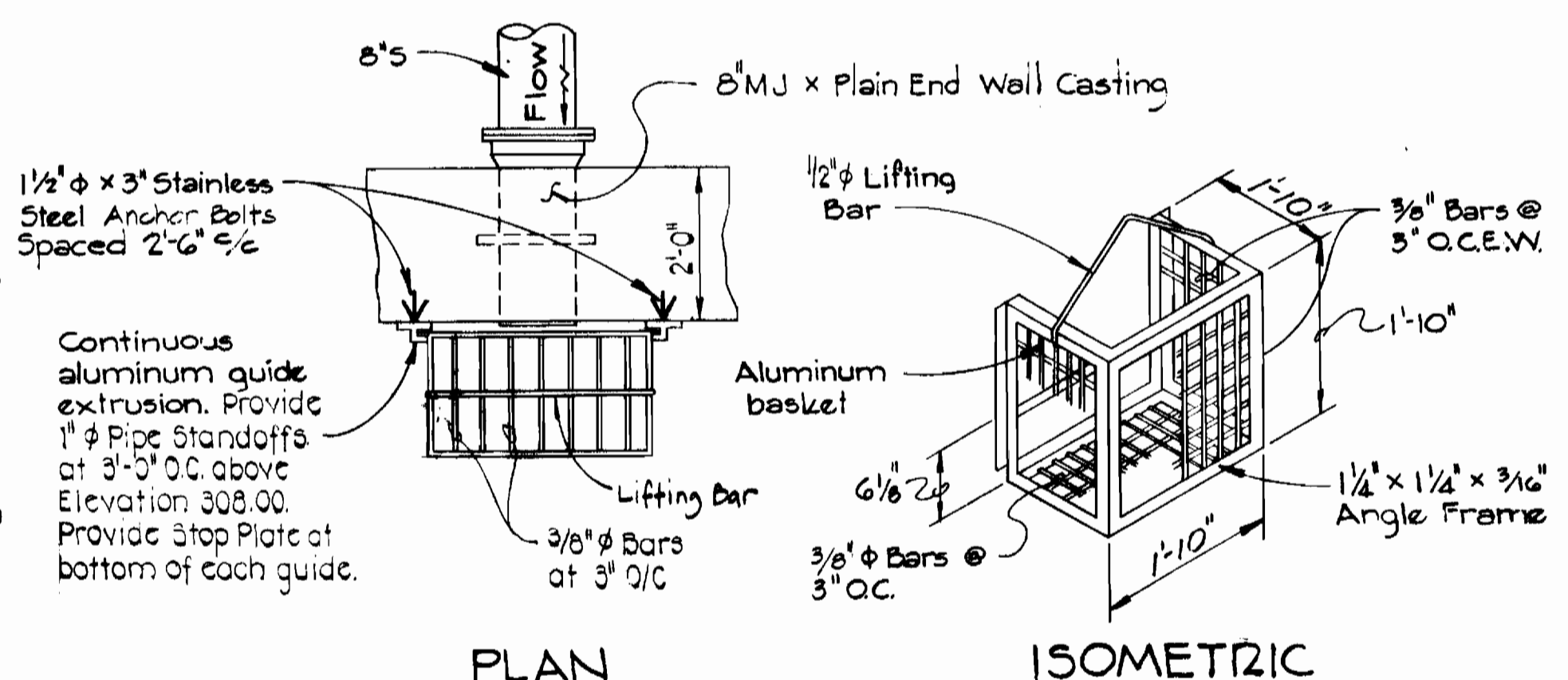
**BUBBLER TRANSITION DETAIL**  
 Not to Scale



**UNDERGROUND FUEL STORAGE TANK DETAILS**  
 Not to Scale



**STEM GUIDE CONNECTION DETAIL**  
 Not to Scale



**DEBRIS SCREENING BASKET DETAILS**  
 Not to Scale

EPA NO. C-240594-01(14)  
 CONTRACT NO. 2741-S  
 CAPITAL PROJECT NO. S-4-6067  
 CHAMBERLEA SANITARY SEWERS  
 ALLENFORD PUMPING STATION



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: [Signature] DATE: 8-21-91  
 Chief Bureau of Engineering: [Signature] DATE: 8/20/91  
 Chief Bureau of Utilities: [Signature] DATE: 8/20/91

REVISED PUMPING STATION LOCATION 5-7-82

PURDUM & JESCHKE  
 ENGINEERS  
 1023 N. CALVERT ST.  
 BALTIMORE, MARYLAND

CONTRACT NO. 2741-S  
 CAPITAL PROJECT NO. S-4-6067

MECHANICAL DETAILS

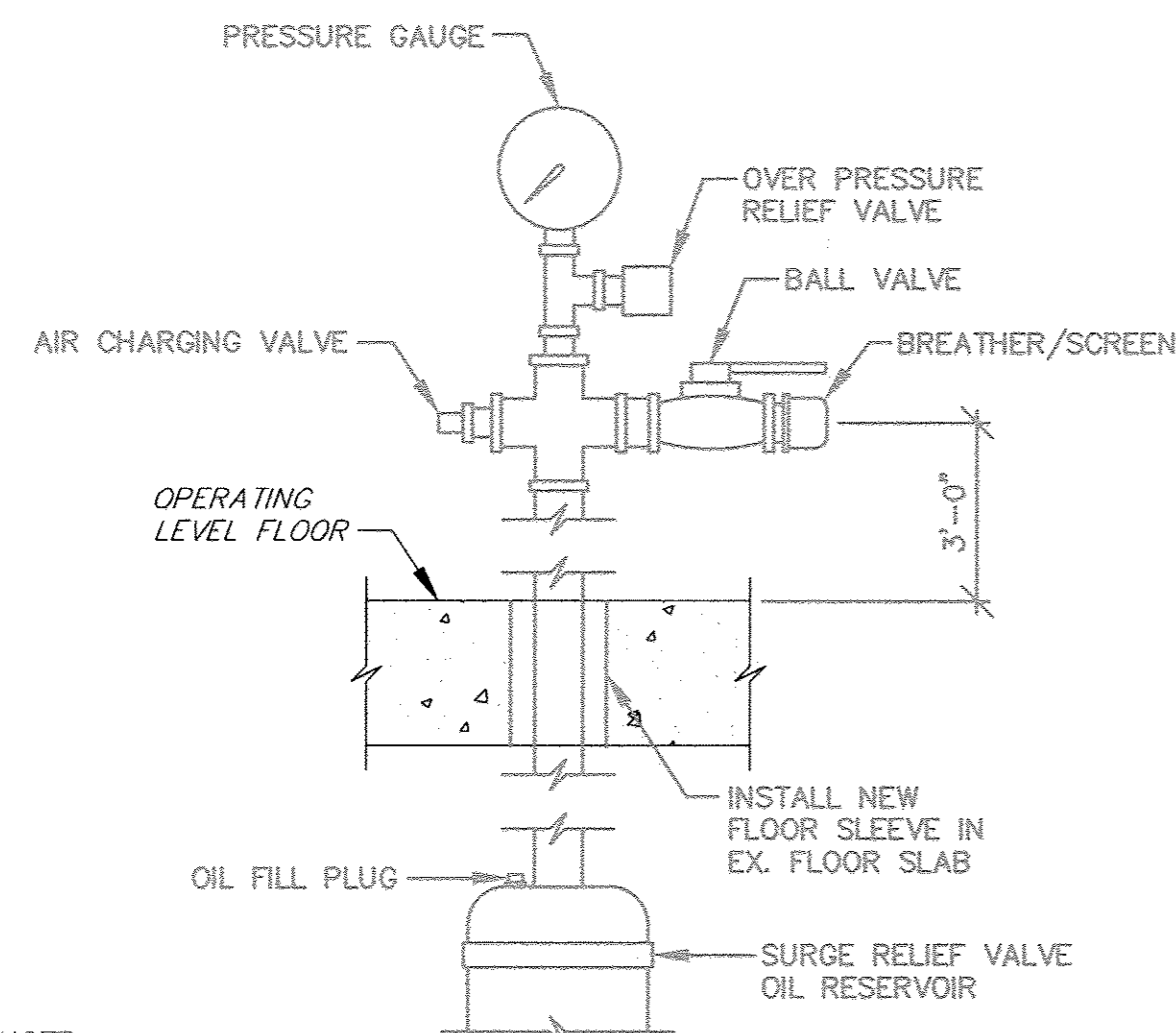
CHAMBERLEA SANITARY SEWERS  
 ALLENFORD PUMPING STATION  
 ELECTION DISTRICT NO. 2

DRAWING NO. 12 OF 16  
 SCALE AS SHOWN

Designed: DJD  
 Drafted: [Signature]  
 Checked: REP

**NOTES:**

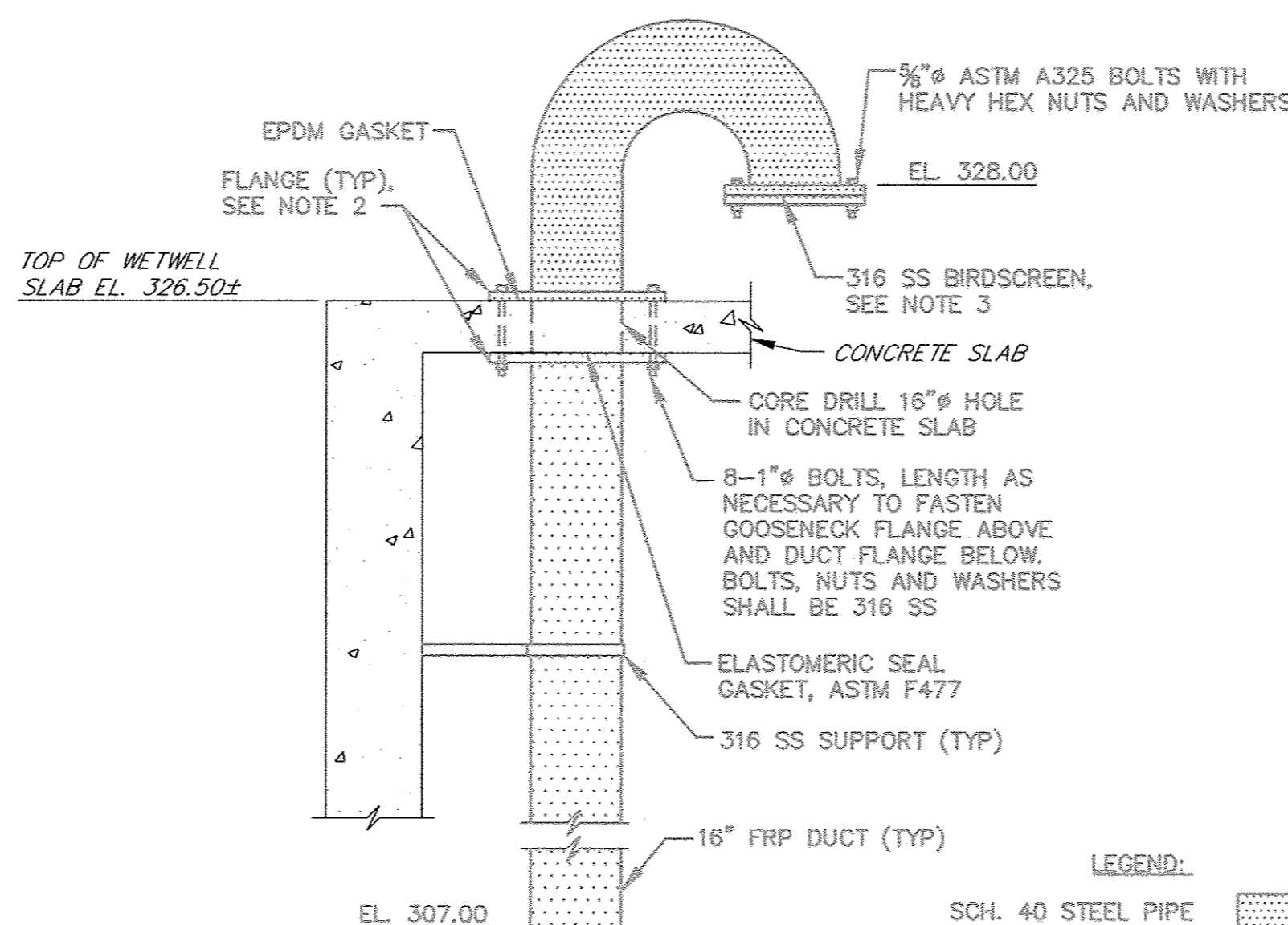
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- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.



**NOTE:**

- TEST ASSEMBLY SHALL BE COMPRISED OF 1/2" 316 SS PIPE, FITTINGS, AND VALVES. TEST ASSEMBLY PIPING SHALL BE CONSTRUCTED TO WITHSTAND 5 TIMES THE OPERATING PRESSURE DEFINED BY THE MANUFACTURER.

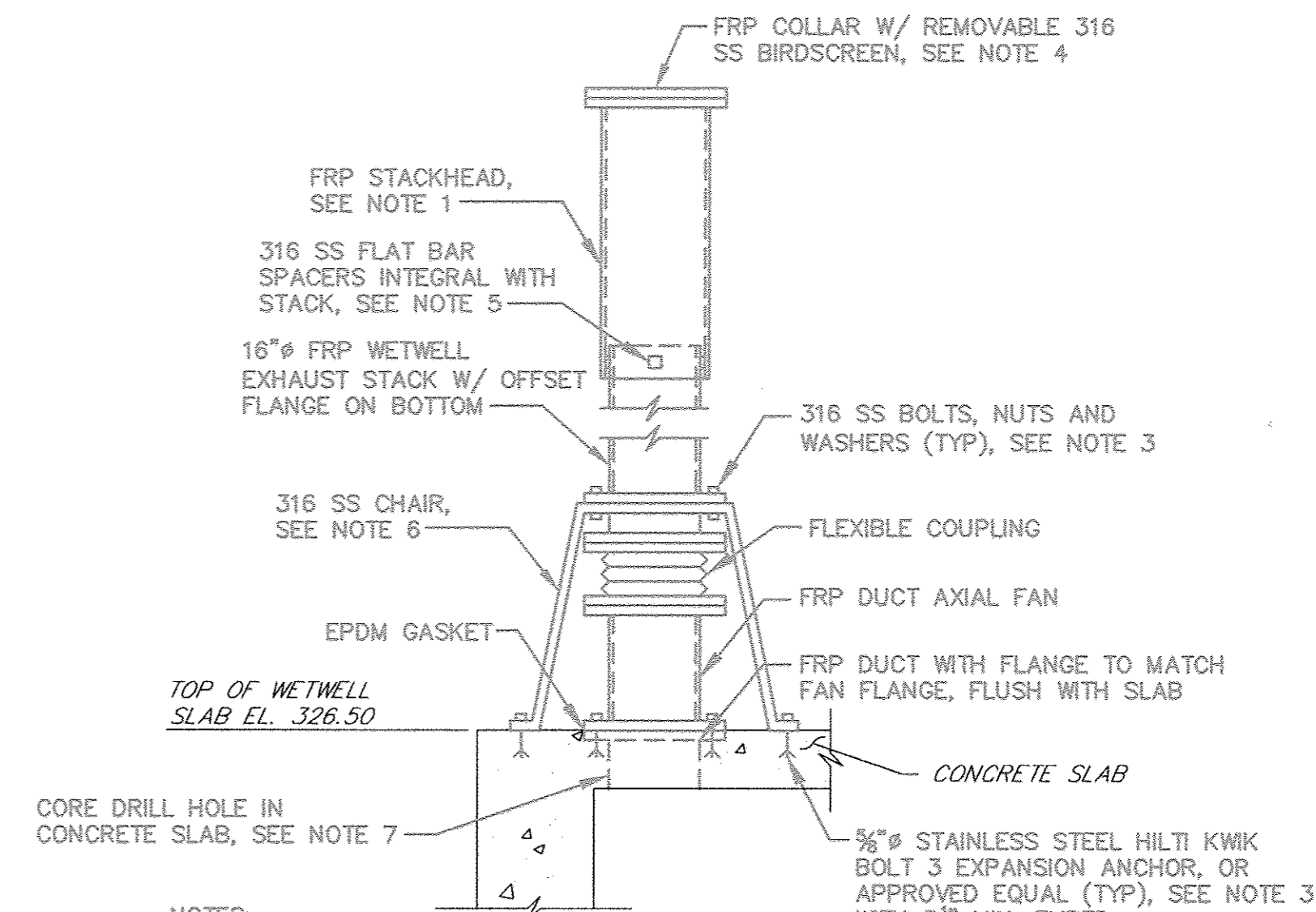
**SURGE RELIEF VALVE REMOTE TEST ASSEMBLY DETAIL**  
NTS



**NOTES:**

- GOOSENECK VENT ABOVE SLAB SHALL BE SCH 40 STEEL PIPE, HOT DIP GALVANIZED AFTER FABRICATION.
- PROVIDE OVERSIZED FLANGES SO THAT THE BOLT HOLES ARE A MINIMUM OF 3" FROM THE DUCT OPENING IN THE CONCRETE SLAB.
- BIRDSCREEN SHALL BE 1/2" SQ. MESH X 0.047" WIRE.

**16" GOOSENECK VENT DETAIL**  
NTS



**NOTES:**

- INTERIOR DIAMETER OF STACKHEAD SHALL BE 1-INCH LARGER THAN THE OUTSIDE DIAMETER OF THE STACK.
- STACK AND STACKHEAD SHALL BE FREE STANDING, MEETING THE REQUIREMENTS SPECIFIED.
- BOLTS SHALL BE OF SUFFICIENT NUMBER, LENGTH, AND DIAMETER TO TRANSFER APPLIED LOADS TO THE STRUCTURE, AND MEET ALL OF THE REQUIREMENTS SPECIFIED.
- BIRDSCREEN SHALL BE 1/2" MESH WELDED SS T316 - 0.063 WIRE DIAMETER AS MANUFACTURED BY TWP INC., OR APPROVED EQUAL.
- FLAT BAR SPACERS SHALL BE OF SUFFICIENT SIZE AND NUMBER TO TRANSFER ALL STACKHEAD LOADS TO THE STACK, WITHOUT IMPEDING DRAINAGE.
- CHAIR SHALL BE OF SUFFICIENT SIZE AND STRENGTH TO SUPPORT THE LOADS APPLIED BY THE FRP STACK, AND SHALL ALLOW THE REMOVAL/INSTALLATION OF FAN WITHOUT REMOVING THE STACK.
- COORDINATE SIZE OF HOLE IN CONCRETE SLAB WITH MANUFACTURER OF FAN FURNISHED.

**16" FRP EXHAUST STACK DETAIL**  
NTS

UNIT HEATER SCHEDULE					
ID	SIZE (H X W X D)	KW	MOUNTING HEIGHT	NOTES	MANUFACTURER & MODEL NO.
UH1	21 1/2" X 19" X 12 3/4"	20	7'-0" AFF	1,2,3,4	QMARK MODEL MUH-20

**NOTES:**

- PROVIDE INTEGRAL THERMOSTAT
- MOUNTING HEIGHT IS TO BOTTOM OF UNIT
- PROVIDE INTEGRAL DISCONNECT
- SEE ELECTRICAL DETAILS FOR CONNECTION REQUIREMENTS

PUMP SCHEDULE						
ID	DESCRIPTION	LOCATION	Q (GPM)	TDH (FT)	RPM (MAX)	REMARKS
P1	PUMP #1	DRYWELL	560	226	1800	NEW DRY-PIT SUBMERSIBLE
P2	PUMP #2	DRYWELL	560	226	1800	NEW DRY-PIT SUBMERSIBLE

DAMPER SCHEDULE						
ID	SIZE (INCHES)	DEPTH (INCHES)	MATERIAL	NOTES	TYPE	REMARKS
DA1	42" x 42"	NA	NA	3	EXISTING	OPEN WHEN SUPPLY FAN SF1 IS OPERATING, OTHERWISE CLOSED
DA2	30" x 30"	NA	NA	3	EXISTING	OPEN WHEN SUPPLY FAN SF2 IS OPERATING, OTHERWISE CLOSED
DA3	42" x 42"	NA	NA	3	EXISTING	OPEN WHEN SUPPLY FAN SF2 IS OPERATING, OTHERWISE CLOSED
DA4	16" x 12"	4	ALUMINUM	1,3,4,6,9	THIN LINE CONTROL DAMPER	OPEN WHEN SUPPLY FAN SF1 IS OPERATING, OTHERWISE CLOSED

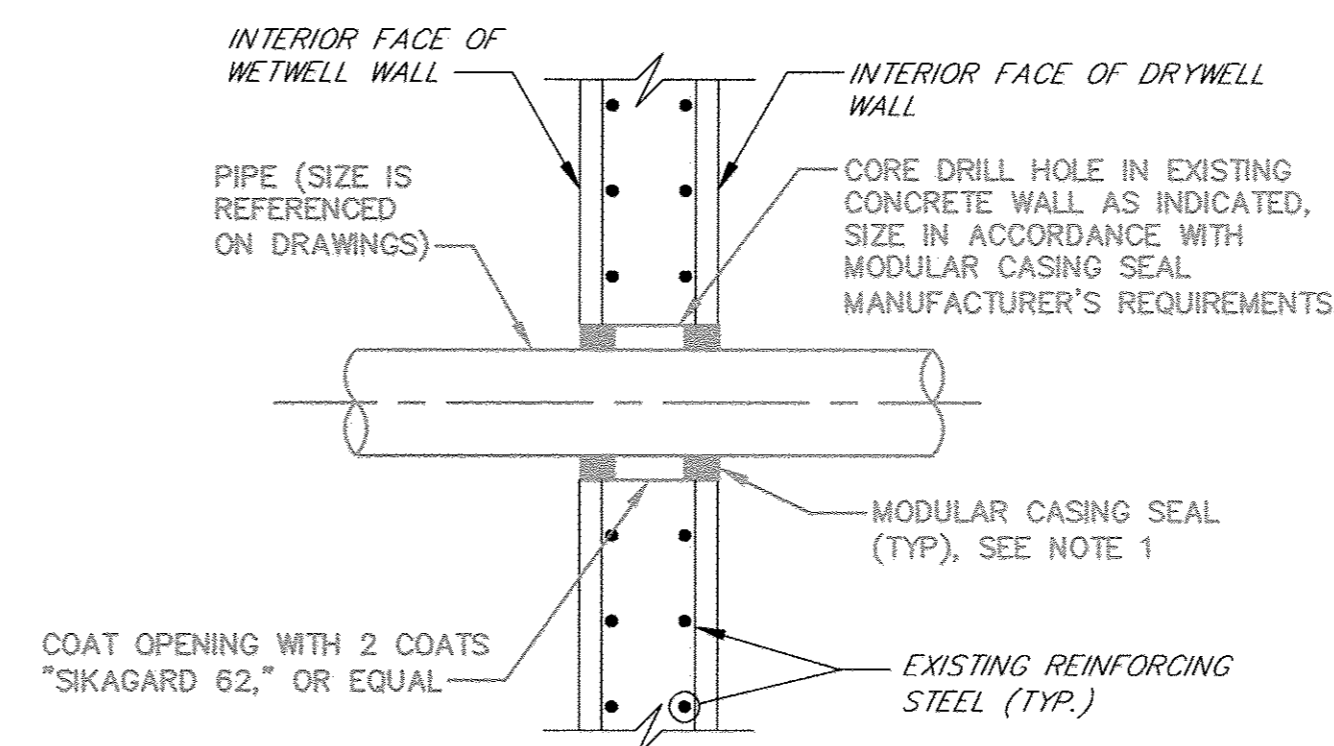
**NOTES:**

- CLEAR ANODIZED FINISH
- PNEUMATIC ACTUATOR
- ELECTRIC ACTUATOR
- ACTUATOR MOUNTING BRACKET
- SWITCH PACKAGE
- FRONT FLANGE FRAME
- REAR FLANGE FRAME
- SPRING LOADED OPEN
- SPRING LOADED CLOSED

CENTRIFUGAL SQUARE INLINE FAN SCHEDULE											
ID	SERVICE	LOCATION	DRIVE	CFM	S.P. (IN W.G.)	FAN RPM	MOTOR HP	VOLTAGE/PHASE	SOUND (MAX AT 5')	NOTES	MANUFACTURER & MODEL NO.
SF1	SUPPLY	OPERATING ROOM	BELT	4,400	1.00	1204	2.0	460/3	72 dBA	4,7,11,12,13,17,19,21,25,26,27	LOREN COOK MODEL NO. 195SQN-B, OR APPROVED EQUAL
SF2	SUPPLY	OPERATING ROOM	BELT	2,600	0.75	1469	1.0	460/3	71 dBA	4,7,11,12,13,18,19,21,25,26,27,28	LOREN COOK MODEL NO. 150SQN-B, OR APPROVED EQUAL

**NOTES:**

- NEMA 4 DISCONNECT
- GRAVITY BACKDRAFT DAMPER
- MOTORIZED BACKDRAFT DAMPER
- SIDE DISCHARGE PACKAGE
- DUEL SIDE DISCHARGE PACKAGE
- BELT GUARD
- OSHA GUARD/MOTOR COVER
- INSULATED HOUSING
- INLET GUARD
- OUTLET GUARD
- INLET FLEXIBLE CONNECTOR
- OUTLET FLEXIBLE CONNECTOR
- FLANGED INLET CONNECTION WITH COMPANION FLANGE
- FLANGED OUTLET CONNECTION WITH COMPANION FLANGE
- CEILING MOUNTED RUBBER-IN-SHEAR INSULATORS
- FLOOR MOUNTED RUBBER-IN-SHEAR INSULATORS
- CEILING MOUNTED SPRING ISOLATORS
- FLOOR MOUNTED SPRING ISOLATORS
- LORENZED COATING
- EPOXY POWDER COATING
- REINFORCED WHEEL
- EXTERNAL INLET VANE DAMPER - ALUMINUM
- FILTER BOX WITH ALUMINUM FILTER
- FILTER BOX WITH 30% ALUMINUM FILTER
- EXTENDED LUBE LINES
- SPARE BELT KIT
- BELT TENSIONER-ROTARY
- THERMOSTATICALLY CONTROLLED



**NOTES:**

- MODULAR CASING SEAL SHALL BE LINKSEAL, OR APPROVED EQUAL.
- PIPE AT MODULAR CASING SEAL LOCATION SHALL BE LEVEL.
- ON EXTERIOR WALLS WHERE PIPING IS BURIED, ONLY ONE MODULAR CASING SEAL IS REQUIRED, ON INTERIOR SIDE.

**CONCRETE WALL PENETRATION DETAIL**  
NTS

FIBERGLASS DUCT AXIAL FAN SCHEDULE											
ID	SERVICE	LOCATION	DRIVE	CFM	S.P. (IN W.G.)	FAN RPM	MOTOR HP	VOLTAGE/PHASE	SOUND (MAX AT 5 FEET)	NOTES	MANUFACTURER & MODEL NO.
EF1	EXHAUST	WETWELL TOP SLAB	BELT	1,550	0.75	1887	3/4	460/3	72 dBA	3,4,5,6,7,10,11,18,19	HARTZELL FAN INC. FRP DUCT AXIAL MODEL NO. A35-166E, OR APPROVED EQUAL

**NOTES:**

- DISCONNECT SWITCH
- VANE SECTION
- 316 SS HARDWARE AND SHAFT
- ACCESS DOOR
- STATIC GROUNDING - CARBON/GRAPHITE IMPREGNATION
- ALL VINYL ESTER CONSTRUCTION
- SURFACE VEIL
- FRP ROOF CURB
- ROOF MOUNT
- 316 SS INLET GUARD
- DUCT MOUNT
- FIBERGLASS MOTOR COVER
- HORIZONTAL MOUNTING ANGLES FOR SUSPENDED MOUNTING
- VERTICAL MOUNTING FEET/ANGLES (FLOOR/CEILING MOUNTING)
- HORIZONTAL BASE FOR FLOOR MOUNTING
- VIBRATION ISOLATOR
- INLET BELL
- 316 SS INLET GUARD
- EXPLOSION PROOF
- INVERTER DUTY MOTOR

R&K\SYS - K:\projects\2018\1214\_HJC80A\Task 9 - Miscellaneous Pumping Station\Allenford\_PSP\Drawings\2018\ME-0218-01214.dwg Apr 12, 2018 - 11:47am Plot Scale 1:1

**DEPARTMENT OF PUBLIC WORKS**  
**HOWARD COUNTY, MARYLAND**

*John P. Kline* 4/13/18  
DIRECTOR OF PUBLIC WORKS DATE

*James L. Butler* 4/13/18  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 4/13/18  
CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 4/13/18  
CHIEF, UTILITY DIVISION DATE

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THE REVISIONS INCLUDED IN THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NO. 29472 EXPIRATION DATE 9/15/2019

**R&K** RUMMEL, KLEPPER & KAHL, LLP  
700 EAST PRAIRY STREET SUITE 600 BALTIMORE, MARYLAND 21202

**SEAL**  
STATE OF MARYLAND  
PROFESSIONAL ENGINEER  
No. 29472

DES: DAO

DRN: TJS

CHK: RAL

DATE: 3/30/18

R&K 1 2018 UPGRADES - ADD SHEET 12A 3/18

BY NO. REVISIONS DATE

**ALLENFORD PUMPING STATION**  
**2018 UPGRADES**

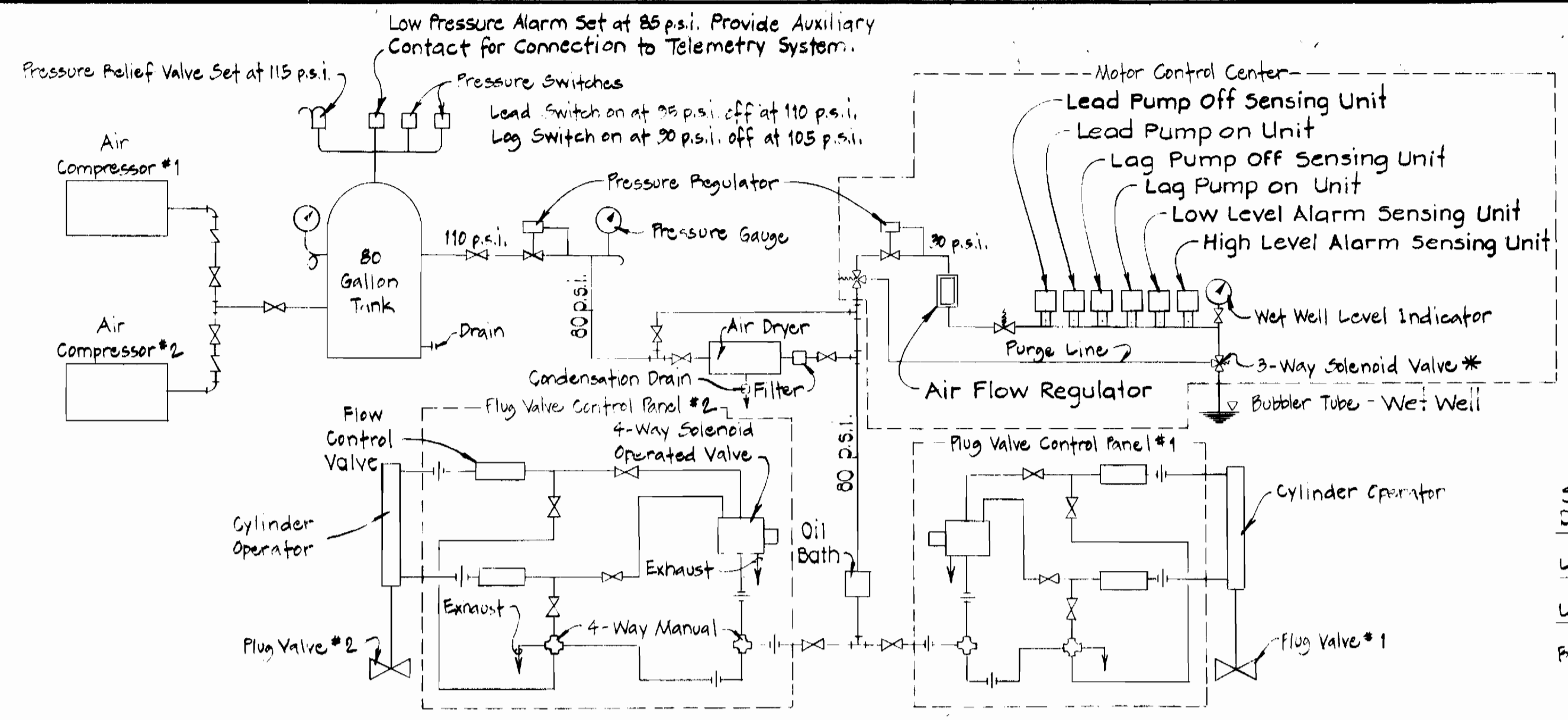
**MECHANICAL DETAILS - 2018 UPGRADES**

CAPITAL PROJECT NO. S6264  
CONTRACT NO. 741-S

MAP NO. 17 BLOCK NO. 8 ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND

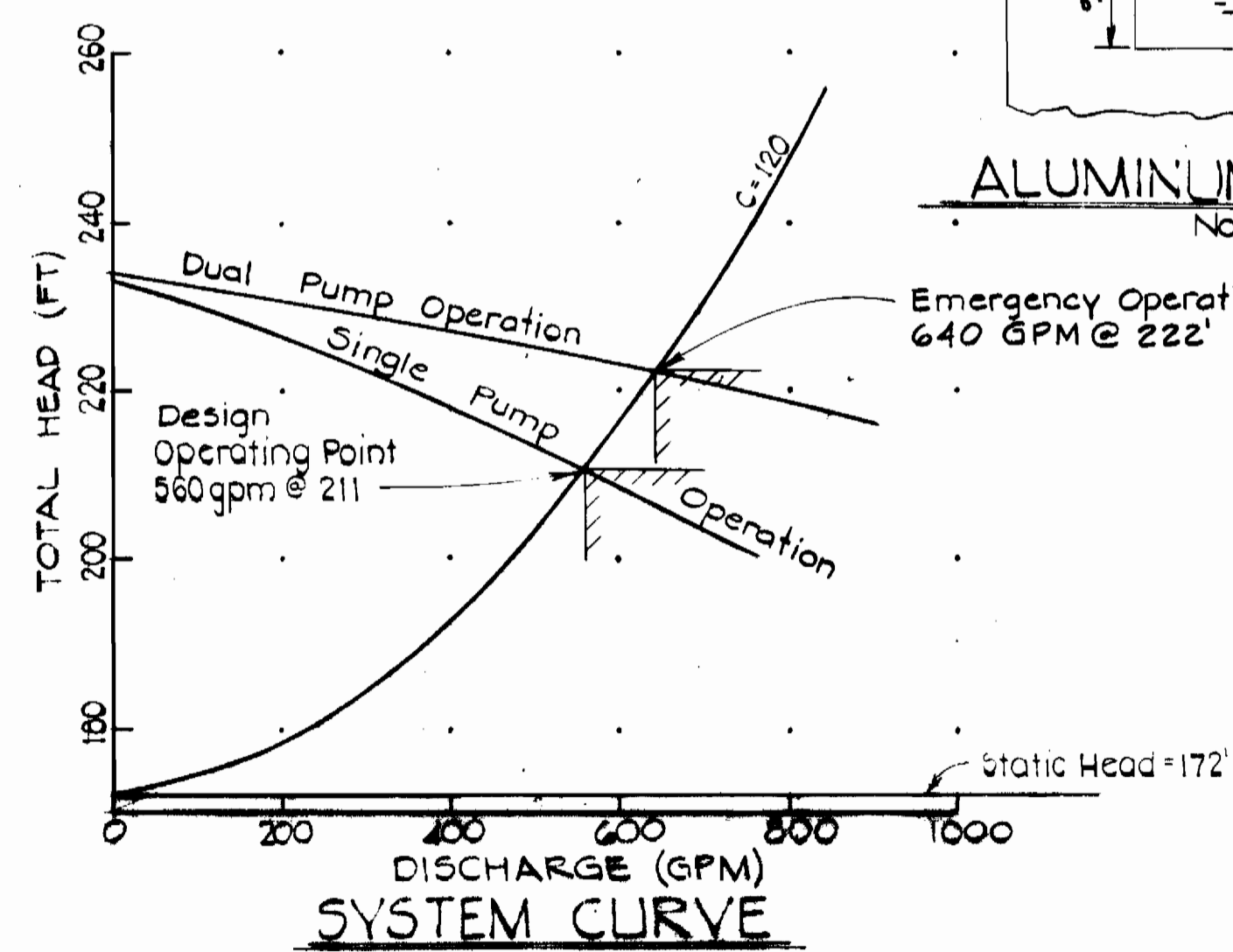
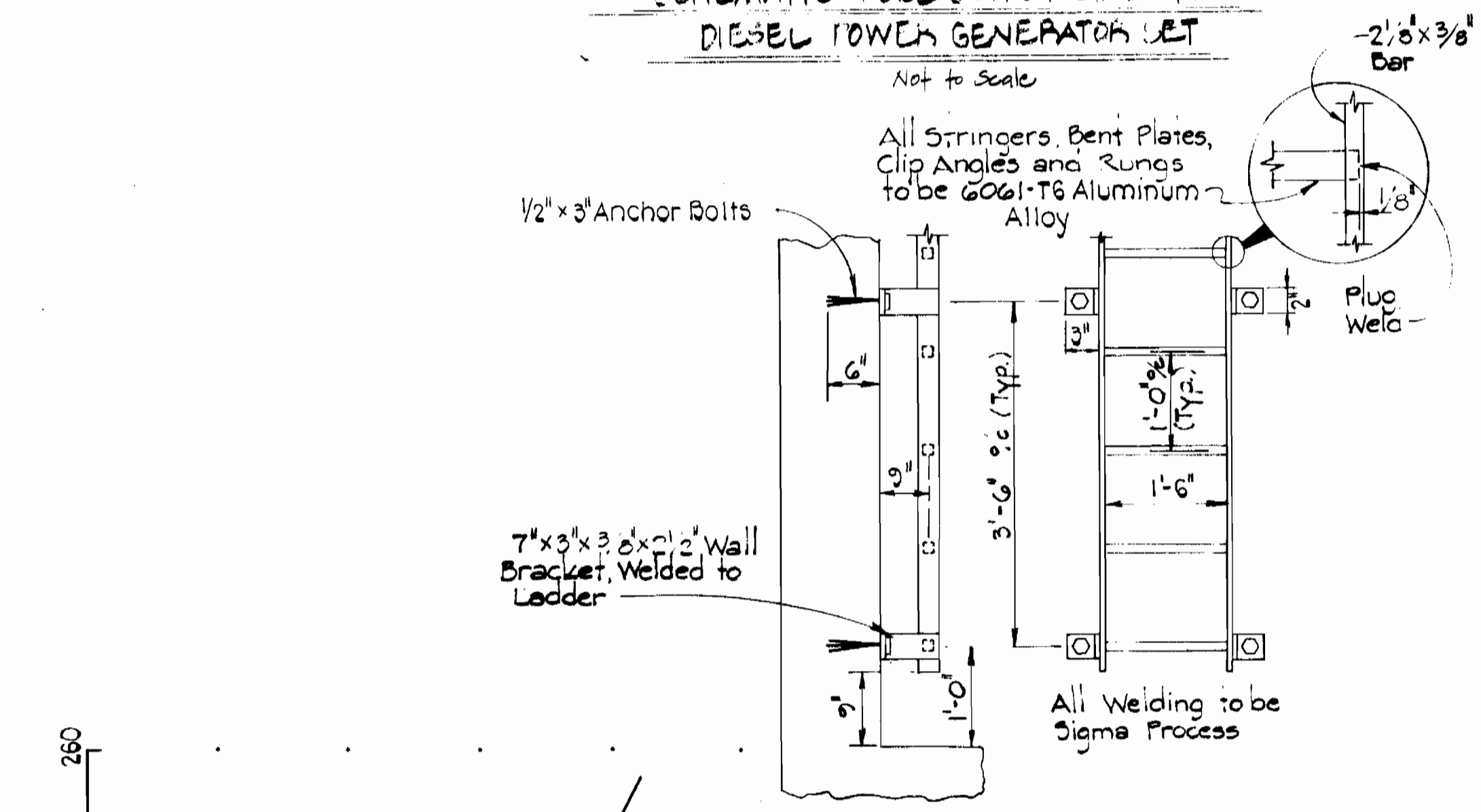
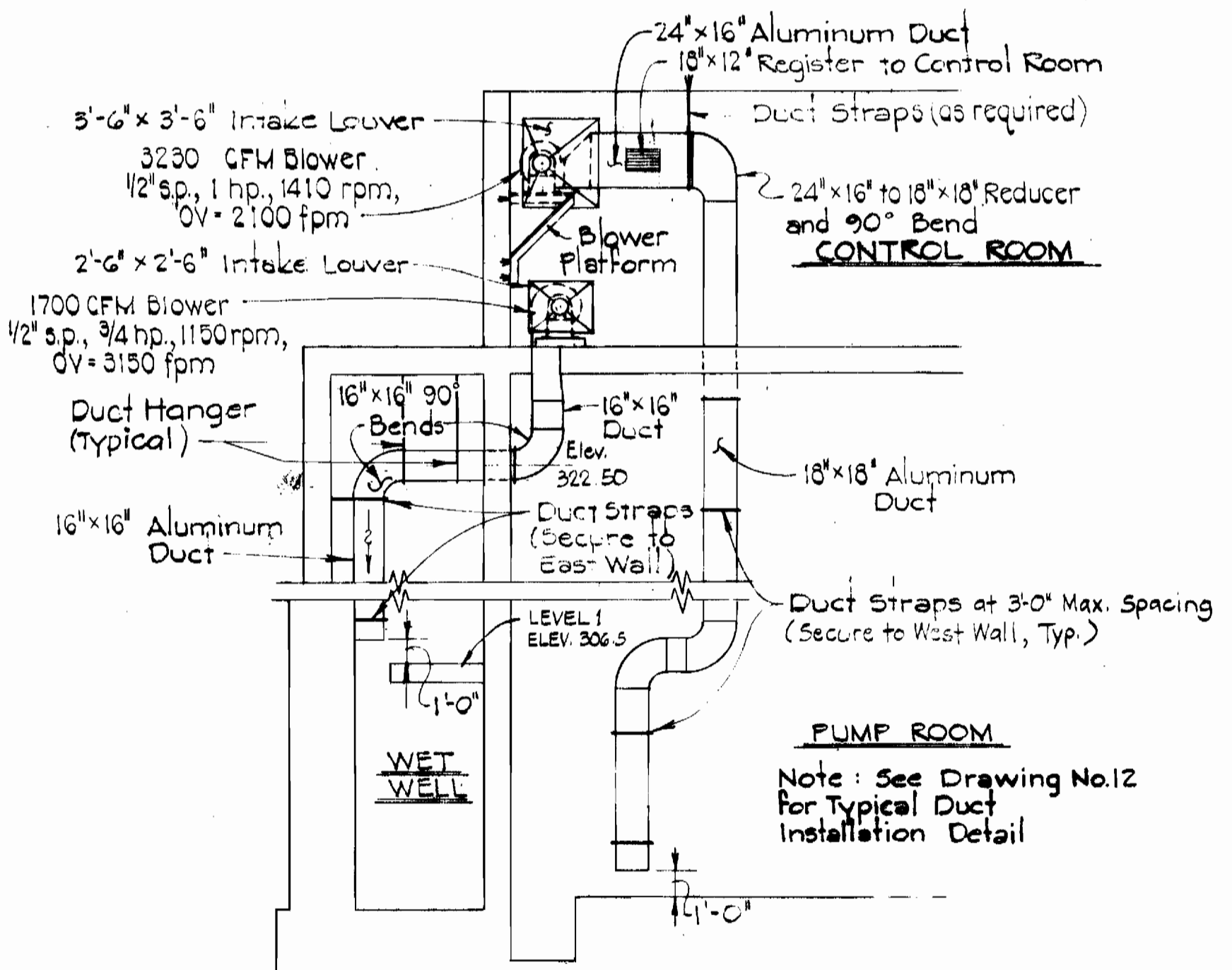
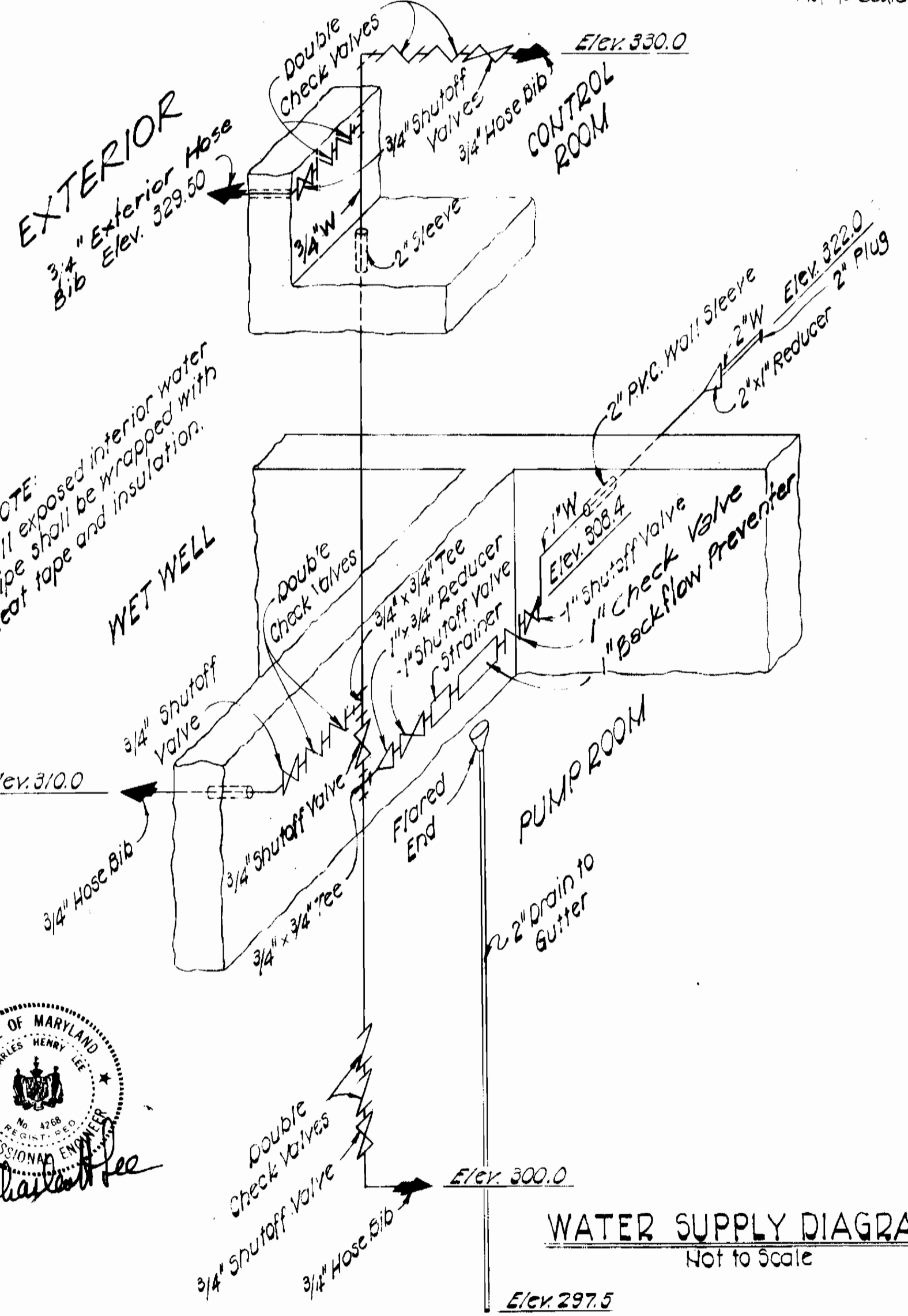
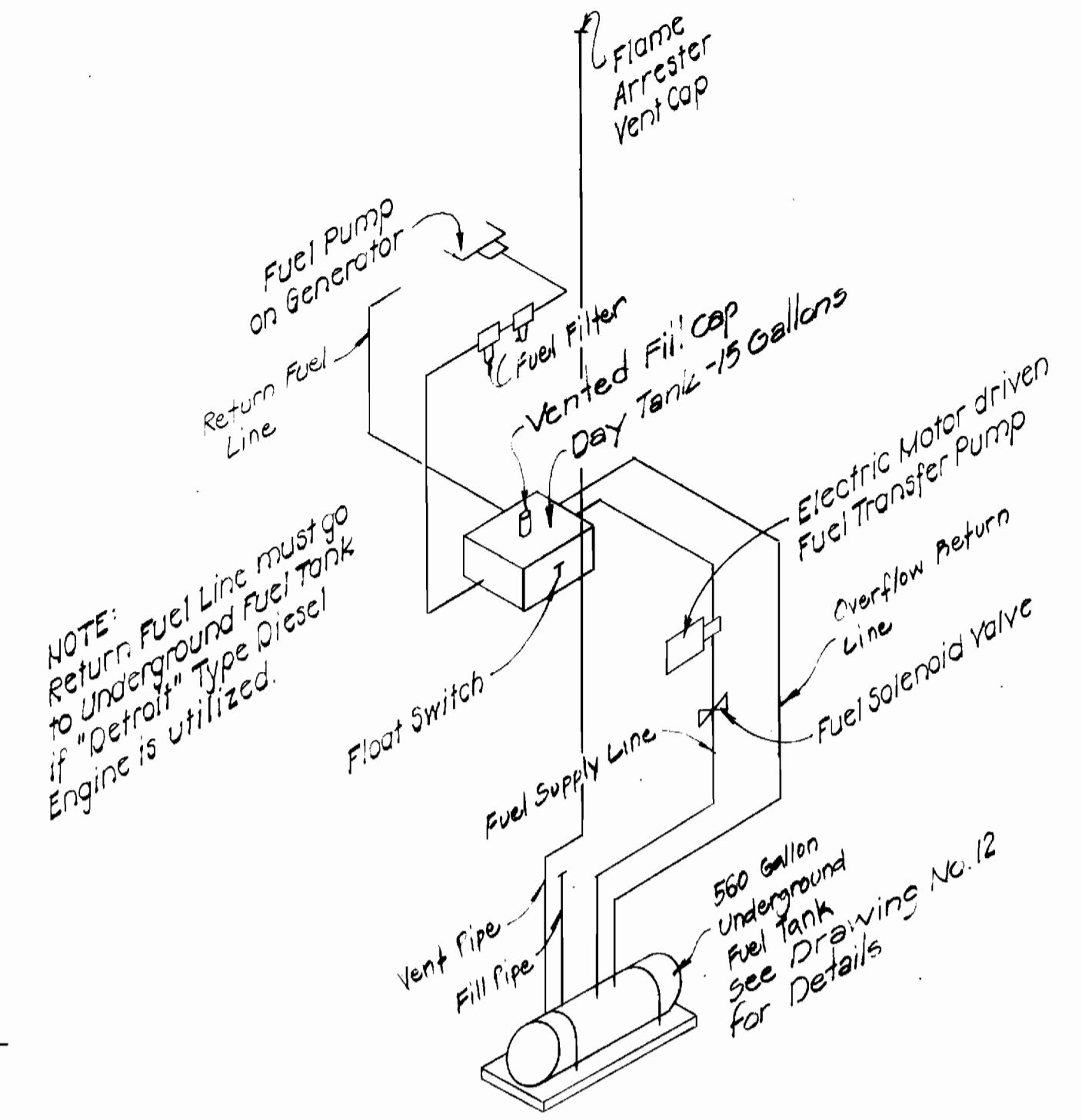
SCALE AS SHOWN

SHEET 12A OF 28



Sump Pump #1  
Dry Well Flood Alarm - Elev. 296.30  
Lag Pump On - Elev. 295.50  
Lead Pump On - Elev. 295.10  
Both Pumps Off - Elev. 294.30

**SUMP PUMP DISCHARGE PIPING DIAGRAM**  
Not to Scale



EPA NO. C-240594-01(14)  
CONTRACT NO. 2741-S  
CAPITAL PROJECT NO. S-4-6067  
CHAMBERLEA SANITARY SEWERS  
ALLENFORD PUMPING STATION

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
DIRECTOR OF PUBLIC WORKS  
CHIEF BUREAU OF UTILITIES

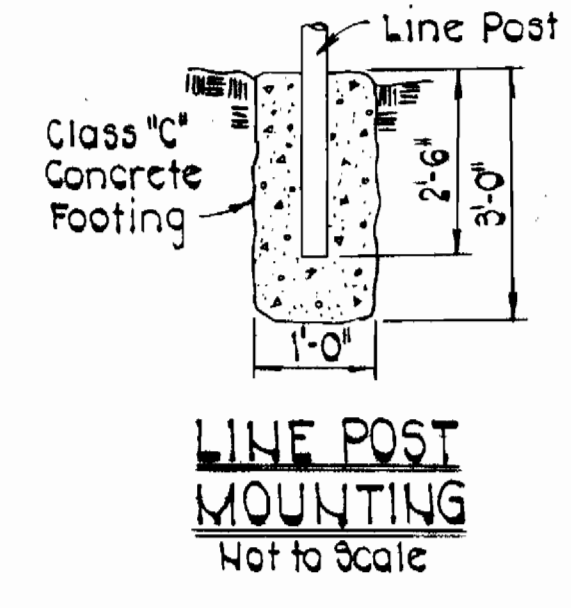
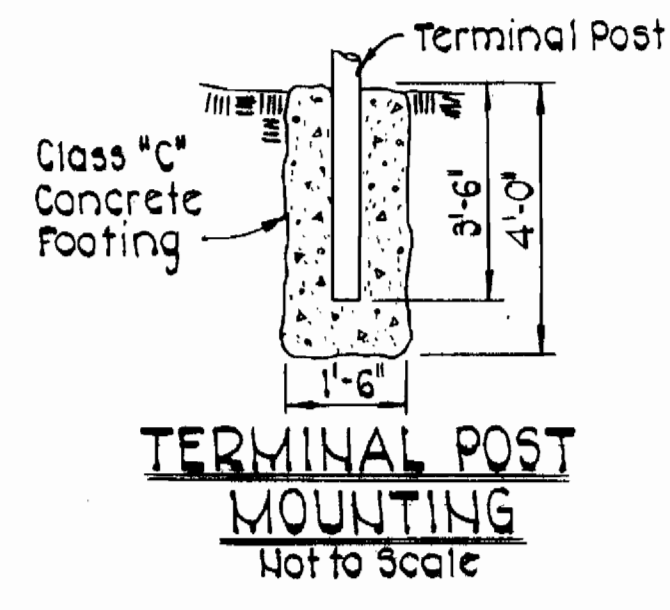
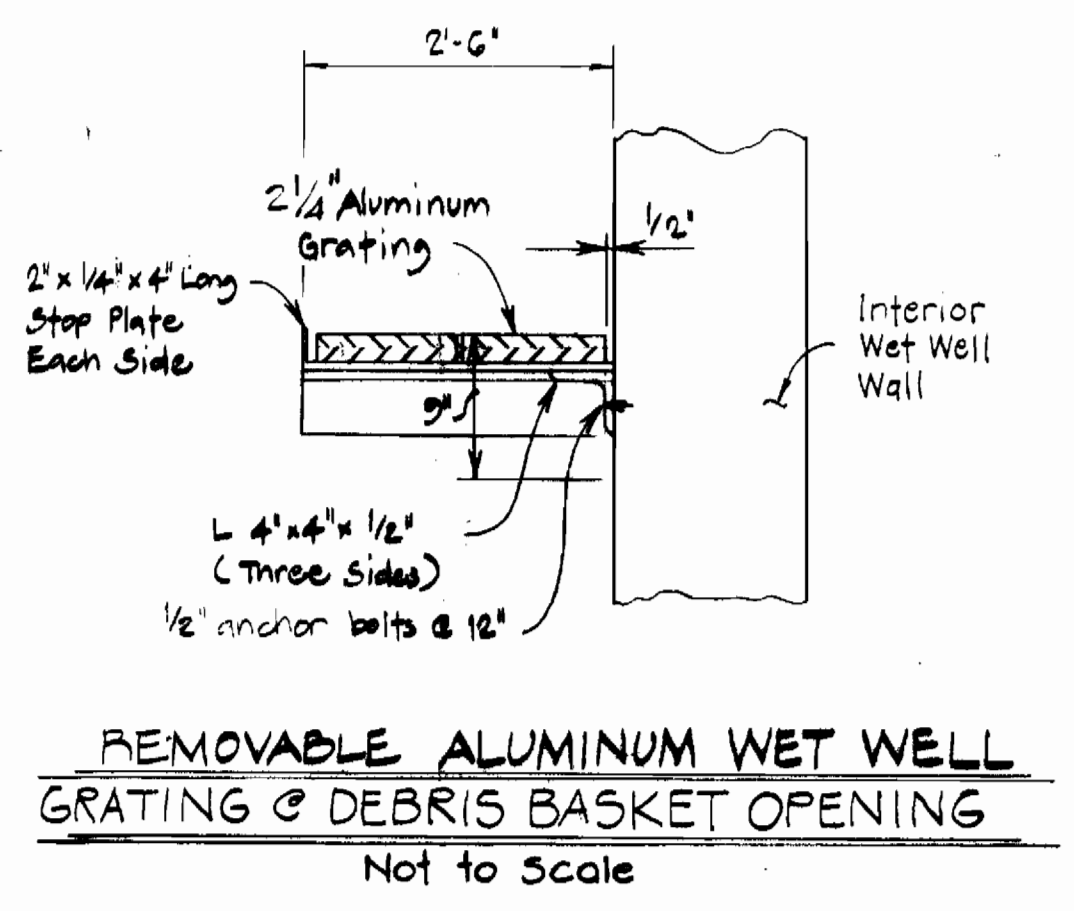
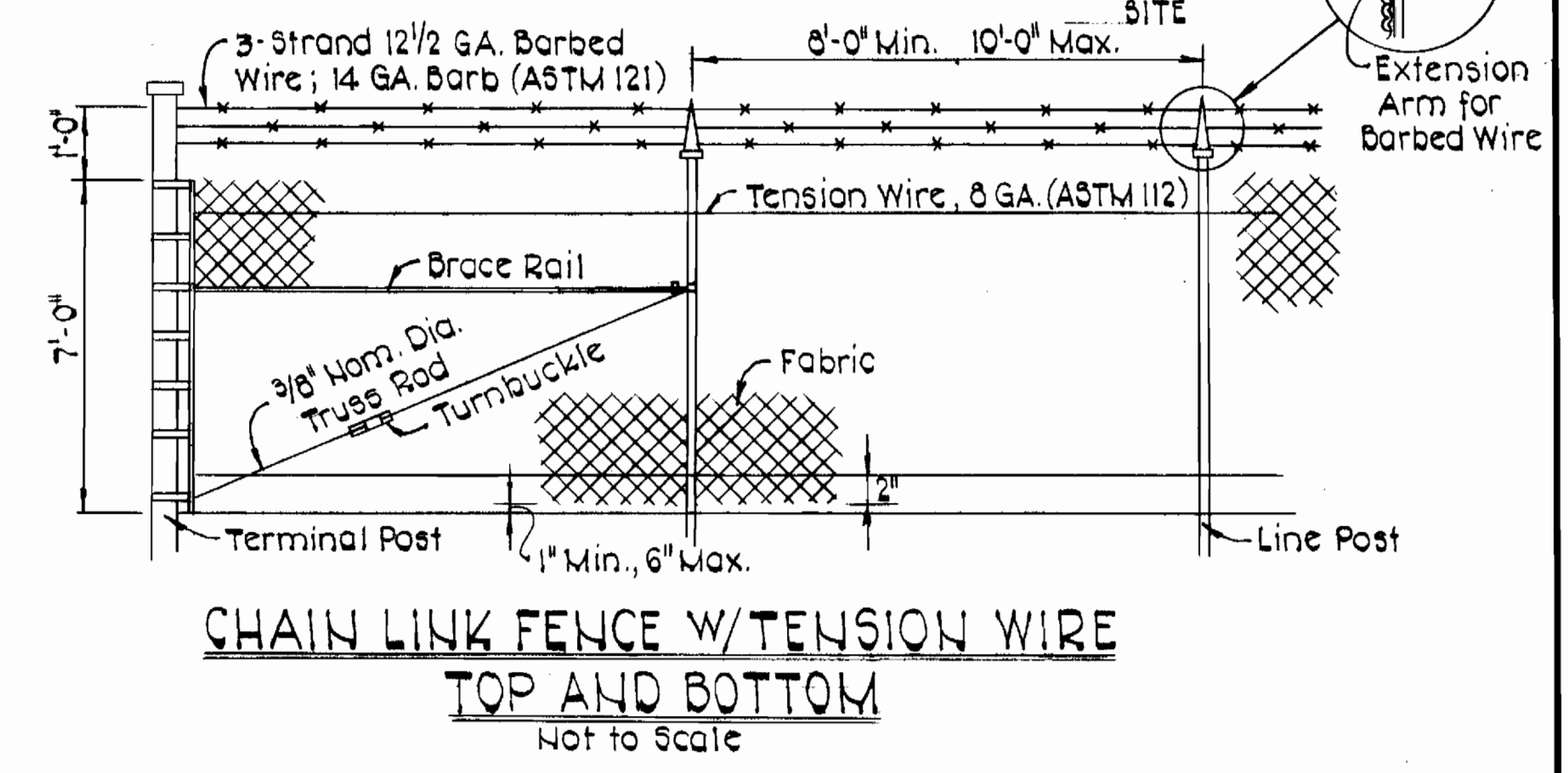
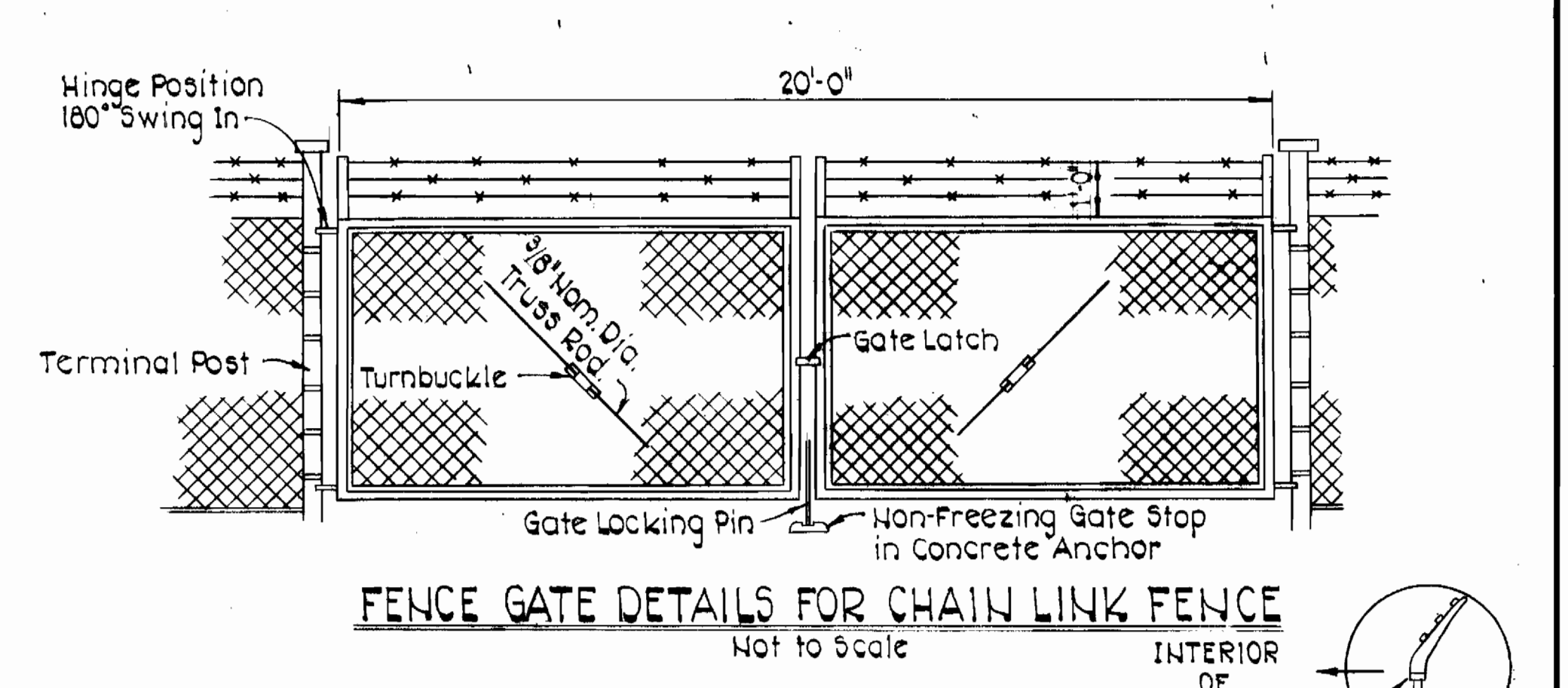
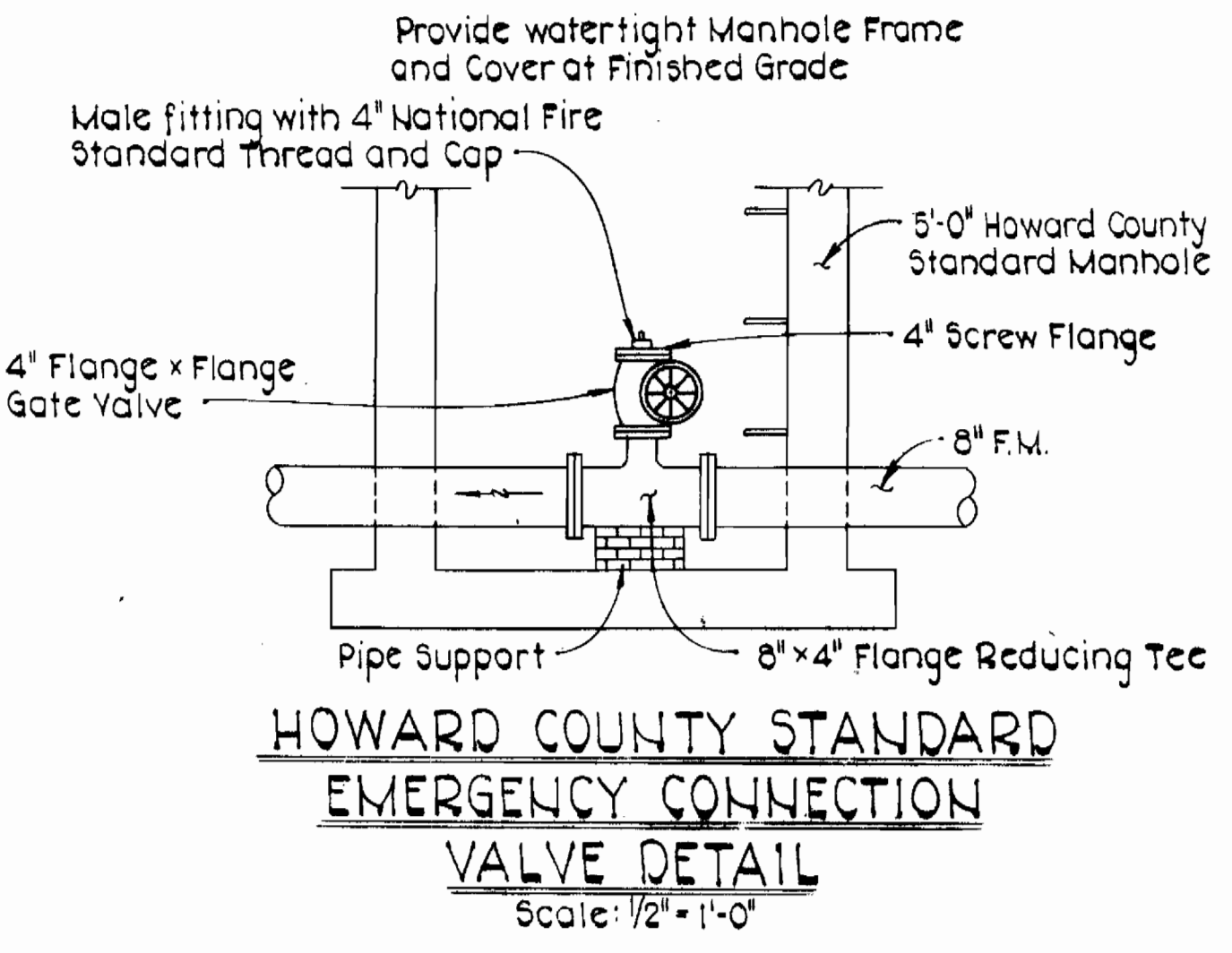
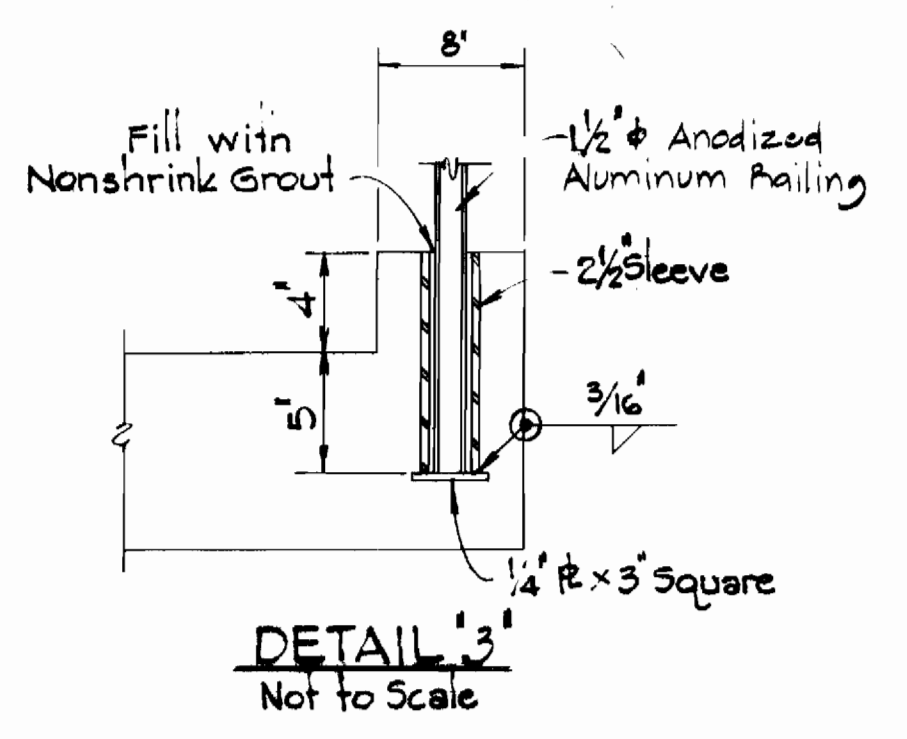
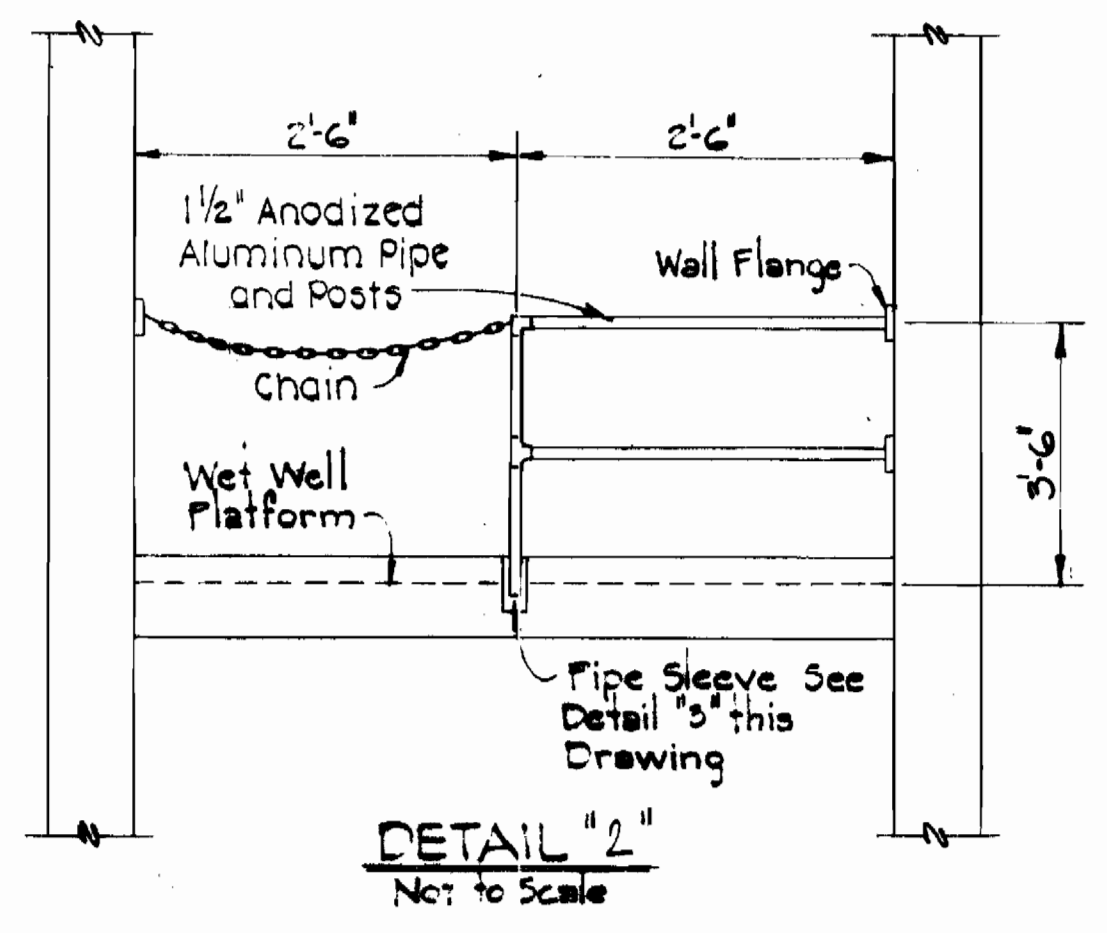
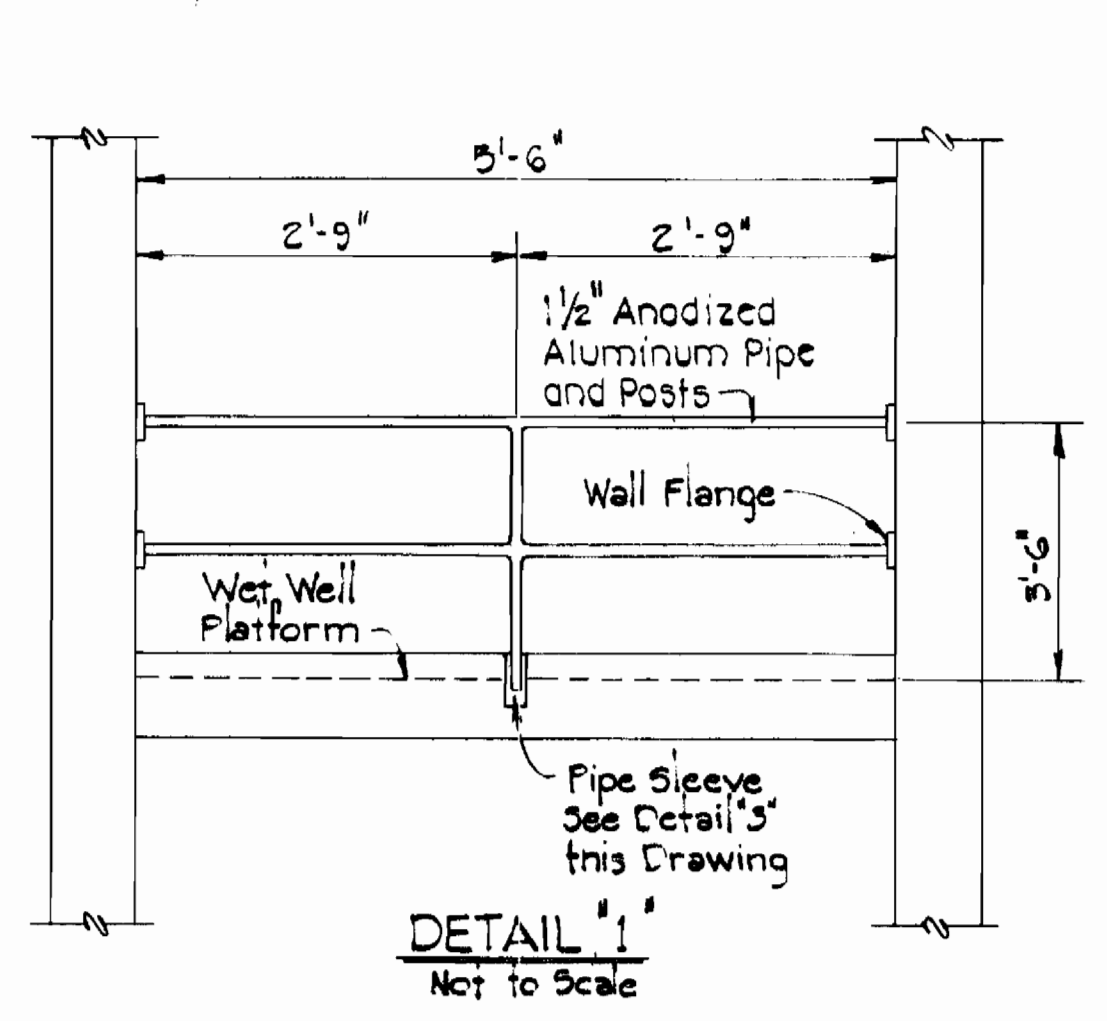
REVISOR: PURDUM & JESCHKE  
PURDUM & JESCHKE ENGINEERS  
1023 N. CALVERT ST. BALTIMORE, MARYLAND

CONTRACT NO. 2741-S  
CAPITAL PROJECT NO. S-4-6067

MECHANICAL DETAILS

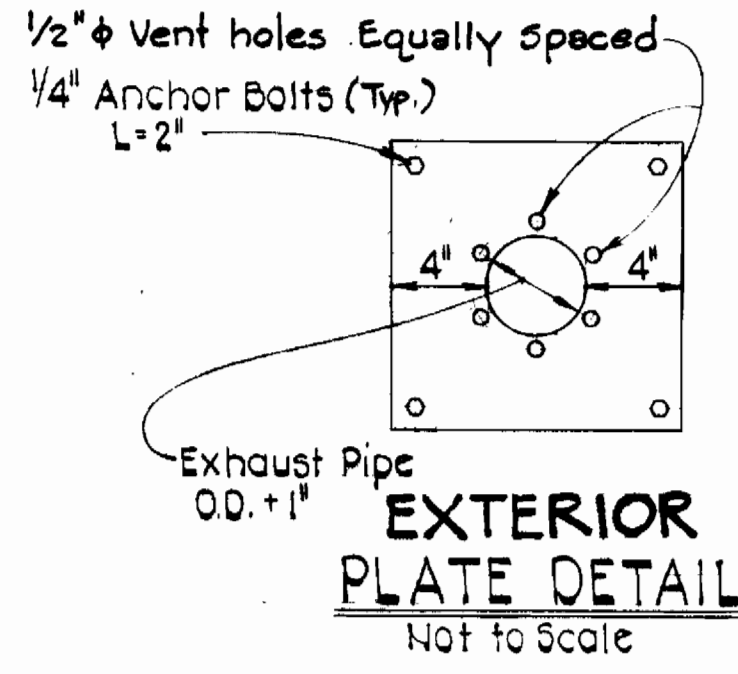
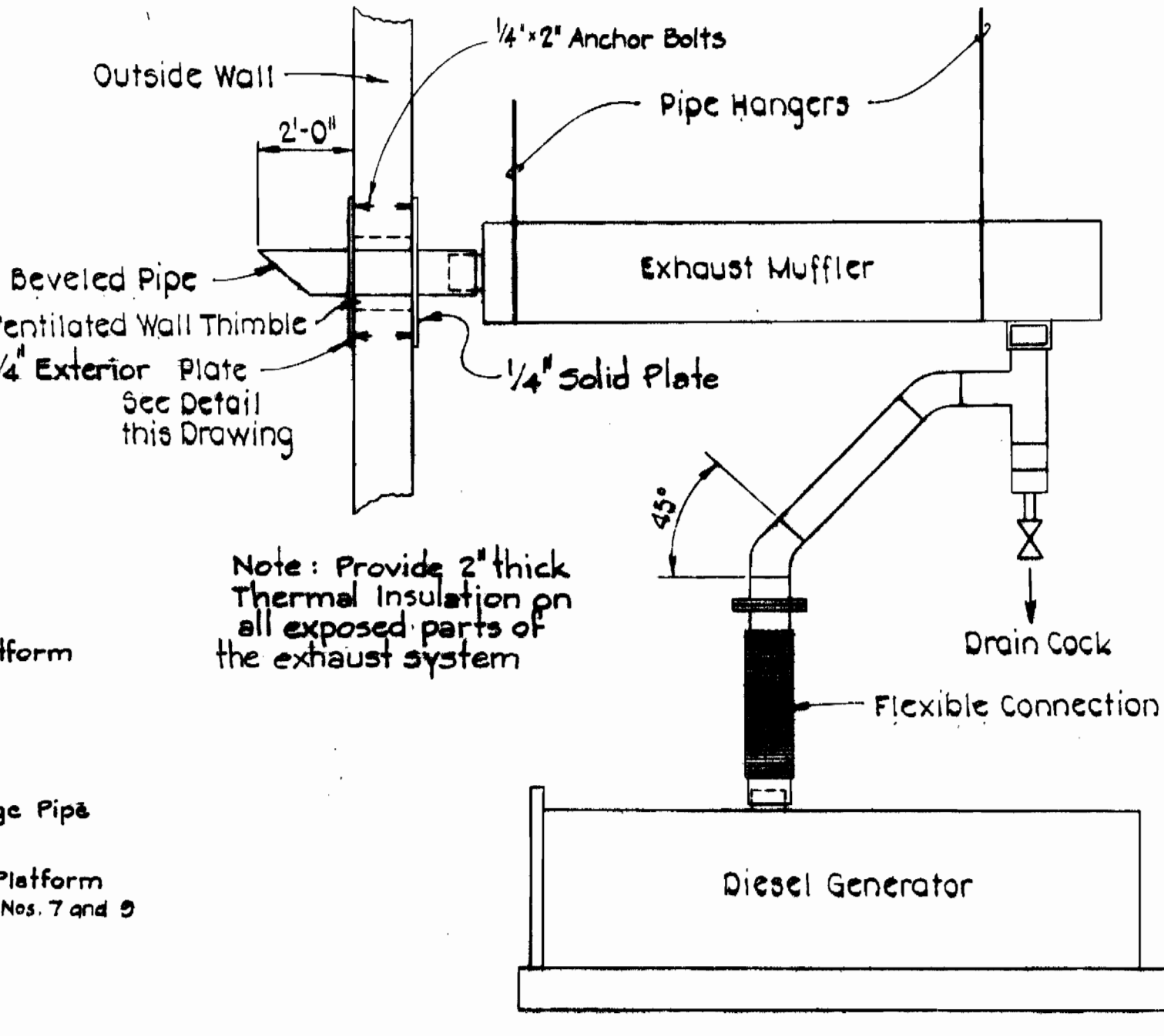
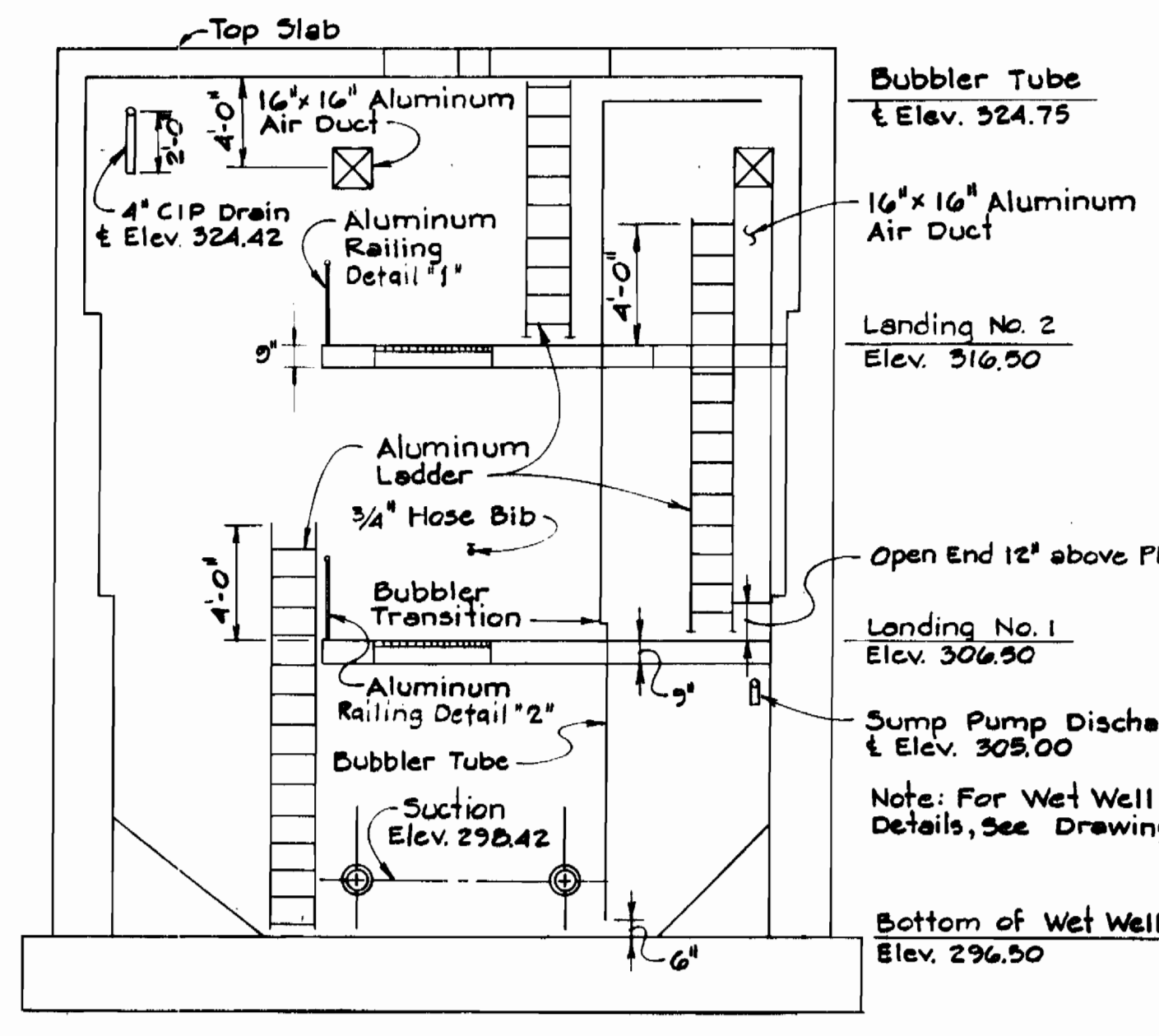
CHAMBERLEA SANITARY SEWERS  
ALLENFORD PUMPING STATION  
ELECTION DISTRICT NO. 2

DRAWING NO. 13 OF 16  
SCALE AS SHOWN  
Designed: DJD  
Drafted:  
Checked: REP



NO.	LOCATION	TYPE	SIZE (H x W)
1	Generator Intake	Weather/Motorized	6'-0" x 6'-0"
2	Generator Exhaust	Weather/Motorized	6'-0" x 6'-0"
3	Control Room, Pump Room Blower Intake	Weather/Motorized	3'-6" x 3'-6"
4	Wet Well Blower Intake	Weather/Motorized	2'-6" x 2'-6"
5	Control Room Exhaust	Weather/Motorized	3'-6" x 3'-6"

LOUVER SCHEDULE



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: *Charles Lee* 8/2/81  
 Chief Bureau of Engineering: *John J. Davis* 3/22/81  
 Chief Bureau of Utilities: *John J. Davis* 3/22/81

PURDUM & JESCHKE  
 ENGINEERS  
 1023 N. CALVERT ST.  
 BALTIMORE, MARYLAND

CONTRACT NO. 741-S  
 CAPITAL PROJECT NO. S-4-6067

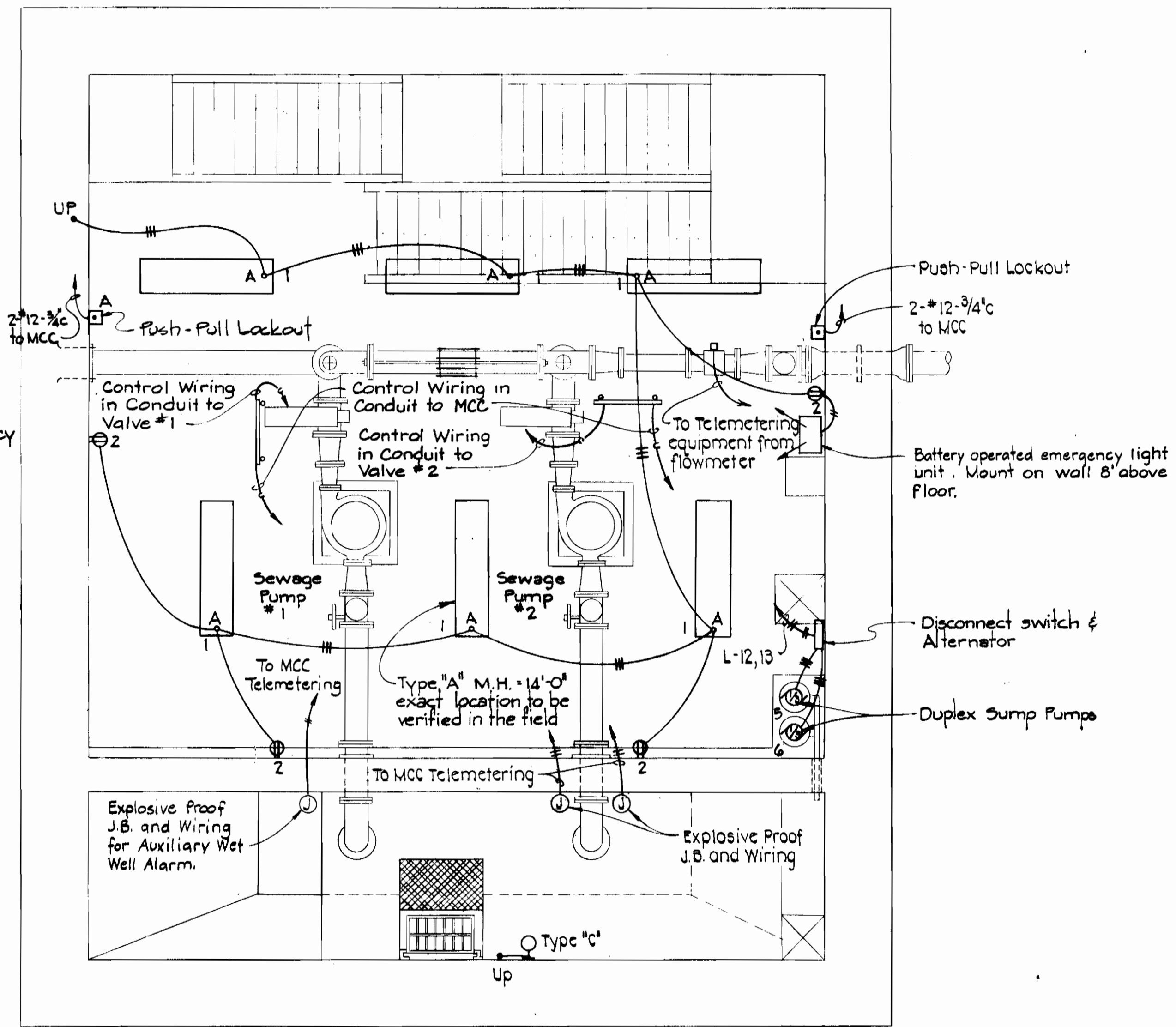
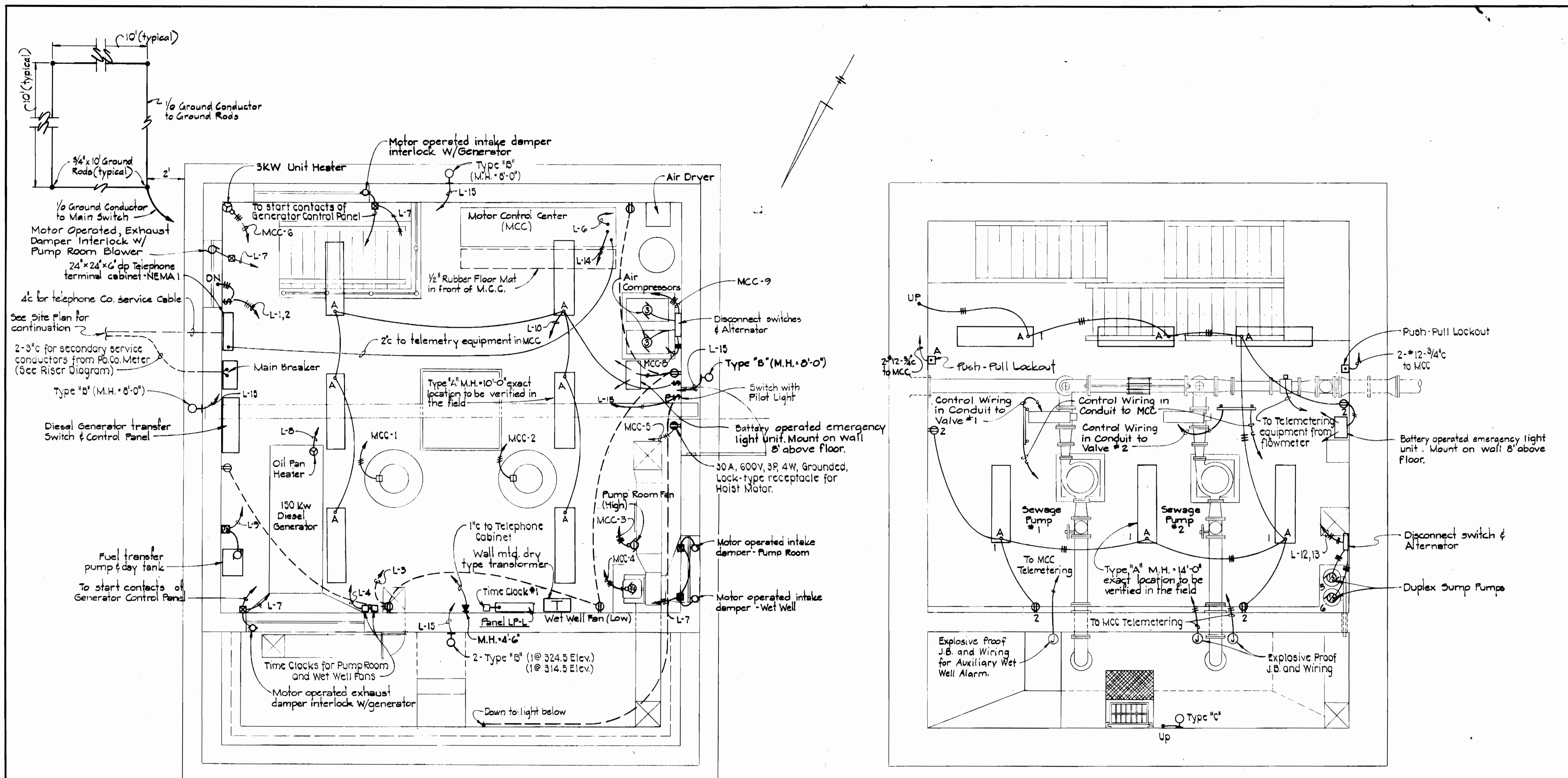
REVISED PUMPING STATION LOCATION 5-7-82

MISCELLANEOUS DETAILS

CHAMBERLEA SANITARY SEWERS  
 ALLENFORD PUMPING STATION  
 ELECTION DISTRICT NO. 2

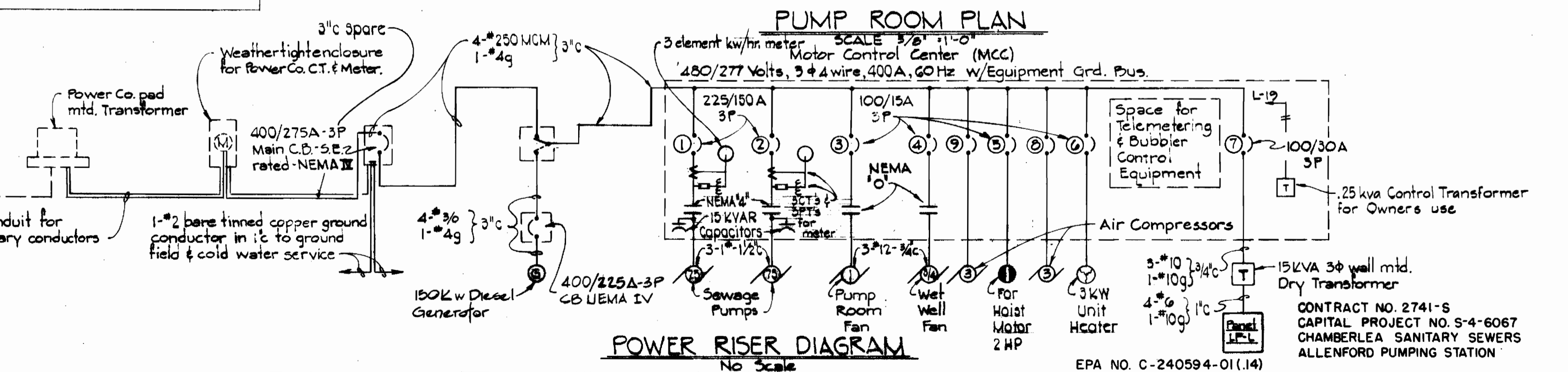
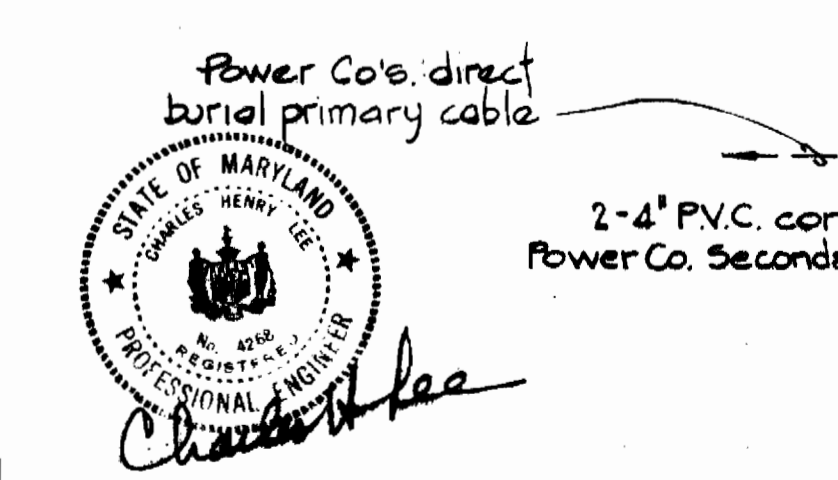
DRAWING NO. 14 OF 16  
 SCALE AS SHOWN  
 Designed: D.J.D.  
 Drafted: *[Signature]*  
 Checked: REP

EPA NO. C-240594-01(14)  
 CONTRACT NO. 2741-S  
 CAPITAL PROJECT NO. S-4-6067  
 CHAMBERLEA SANITARY SEWERS  
 ALLENFORD PUMPING STATION



- NOTES:**
1. Starter size shall be as indicated in MCC. All starters shall be combination circuit breaker type. All starters shall be complete with H.O.A. switches, fused control transformers for 120 volts. Red (running) indicator light and green (stopped) indicator light.
  2. Starters for Sewage Pumps shall be complete with control relay similar to Bulletin 700, Type B, Allen-Bradley for Motor Alternation.
  3. Ground Field shall consist of 4-3/4" x 10'-0" copperweld ground rods in a square pattern near the pad mounted transformer. Top of rods shall be 2'-0" below grade and interconnected w/1-1/2" bare tinned copper ground conductor.
  4. Exterior lights to be connected through Time Clock #1.

**CONTROL ROOM PLAN**  
SCALE 3/8" = 1'-0"



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
DIRECTOR OF PUBLIC WORKS DATE 8/28/81  
CHIEF BUREAU OF ENGINEERING DATE 8/28/81  
CHIEF BUREAU OF UTILITIES DATE 8/28/81  
CHIEF UTILITY DIVISION DATE

PURDUM & JESCHKE  
ENGINEERS  
1023 N CALVERT ST.  
BALTIMORE, MARYLAND

CONTRACT NO. 741-S  
CAPITAL PROJECT NO. S-4-6067

ELECTRICAL PLANS

CHAMBERLEA SANITARY SEWERS  
ALLENFORD PUMPING STATION  
ELECTION DISTRICT NO. 2

DRAWING NO. 15 OF 16  
SCALE AS SHOWN  
Designed: JHT  
Drafted: F...  
Checked: REP

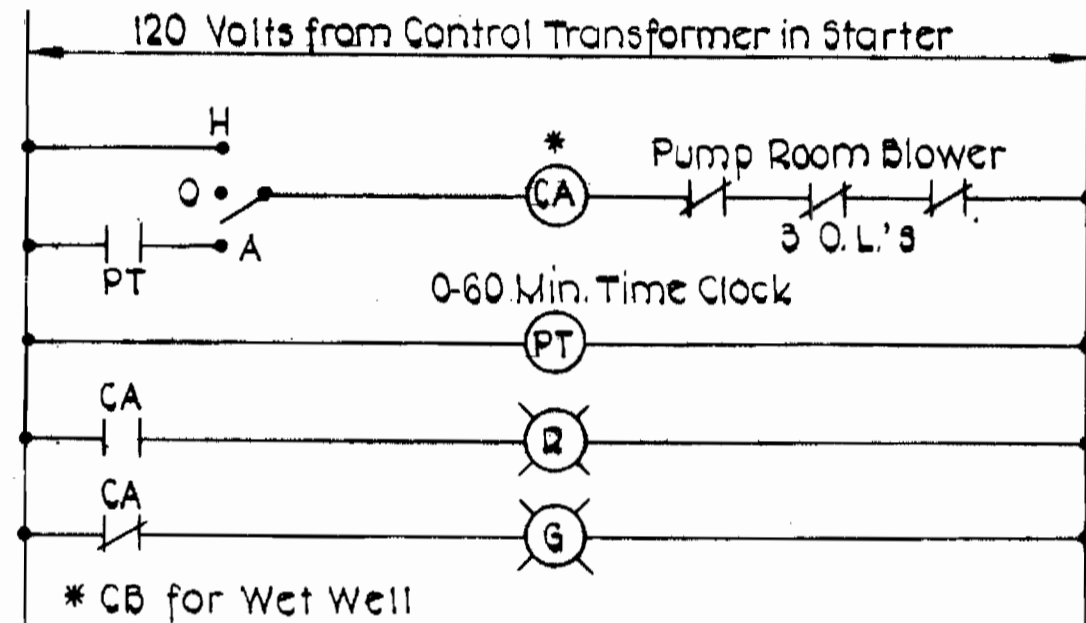


ELECTRICAL LEGEND	
SYMBOL	DESCRIPTION
	Fixture, Fluorescent
	Fixture, Incandescent - Ceiling Wall Bracket
	Switch - Single Pole - M.H. 4'-0" Subscript Denotes Outlets Controlled
	Receptacle - 20A, 125V - Duplex - M.H. 3'-0"
	Receptacle - 20A, 125V - Single - M.H. 3'-0"
	Receptacle - Clock Hanger 15A, 125V, M.H. 7'-6"
	Junction Box
	Motor - Horsepower as Indicated
	Thermostat - M.H. 5'-0"
	Percentage Timer
	Time Clock - M.H. 5'-6" to Top
	Control Device as Indicated on Plans
	Electrical Convector W/Integral Thermostat
	Panelboard - M.H. 6'-6" to Top
	Unfused Disconnect Switch - M.H. 5'-6" to Top
	Thermal Manual Motor Starter W/Hand-Off-Auto Selector Switch - M.H. 5'-0"
	Conduit - In or On Ceiling or Wall 2"12, 3/4"C. Unless Otherwise Noted
	Conduit - In or Under Floor
	Home-run to Panel No. Arrows Indicate No. of Circuits and No. of Crosslines Indicate No. of Conductors.
M.H.	Mounting Height to Center of Outlet Unless Otherwise Indicated
W.P.	Weatherproof
X.P.	Explosion-Proof
	Outlet, Telephone, Wall M.H. 1'-0" Above Floor W/1" to T.C.C.
	Ground Rod, 3/4" x 10'-0" Copperclad
	Exothermically Welded Connection
	Solenoid Valve
	Fixture, Mercury Vapor
	Combination Magnetic Starter (MCC)
	Contactors
	Starter Call (One Line Diagram)
	Indicating Light - Red - Heavy Duty Type
T.C.	Timer Relay Contact (One Line Diagram)
	Time Delay Relay
O.L.	Overload Relay in Starter
NO	Aux. Contact Normally Open
NC	Aux. Contact Normally Closed

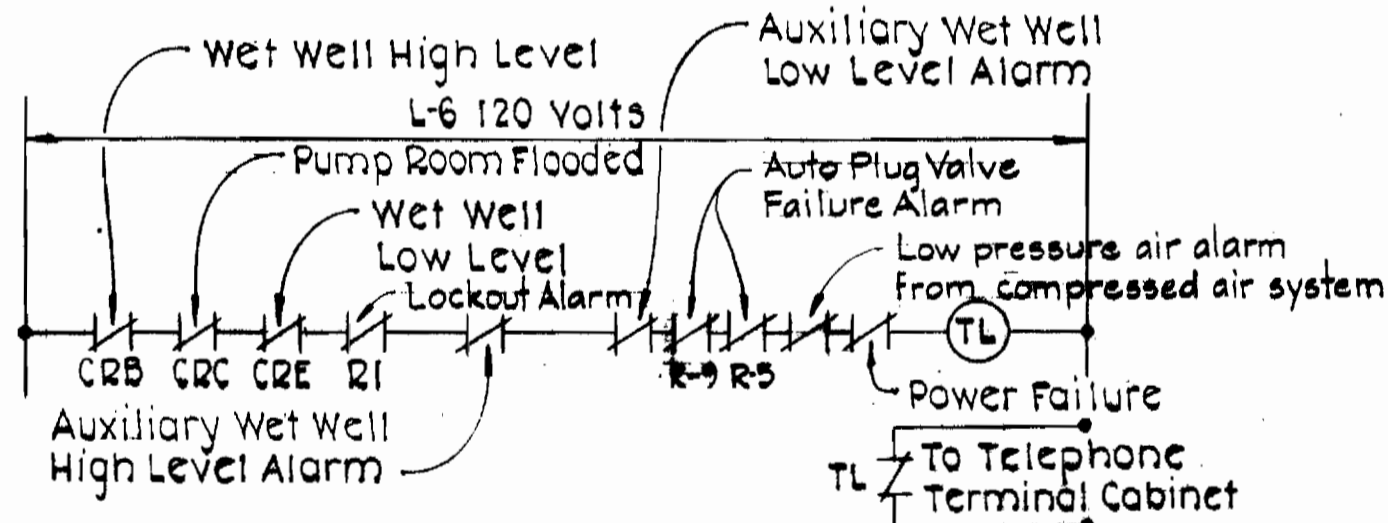
\* Ground Conductor not indicated

**SCHEDULE OF PANEL LP-L**  
208/120 VOLTS, 3 PHASE, 4 WIRE, 60A MAIN BREAKER, W/EQUIPMENT GROUND BUS

CWT. NO.	DESCRIPTION	CIRCUIT BREAKER		REMARKS
		POLES	TRIP FRAME	
1	Lights Pump Room	1	20A 100A	Ground Fault Breakers
2	Pump Room Receptacles	1	20A 100A	
3	Control Room Receptacles	1	20A 100A	
4	Time Clocks for Pump Room and Wet Well Fans	1	20A 100A	
5	Spare	1	20A 100A	
6	Telemetry	1	20A 100A	
7	Motor Operated Dampers	1	20A 100A	
8	Oil Pan Heater	1	20A 100A	
9	Fuel Transfer Pump	1	15A 100A	
10	Lights Control Room	1	15A 100A	
11	Spare	1	15A 100A	
12	Sump Pump	1	15A 100A	
13	Sump Pump	1	15A 100A	
14	Bubbler Controls	1	20A 100A	
15	Exterior and Wet Well Lights	1	20A 100A	
16-19	Controls (see schematic)	1	20A 100A	
20-24	Spares	1	20A 100A	



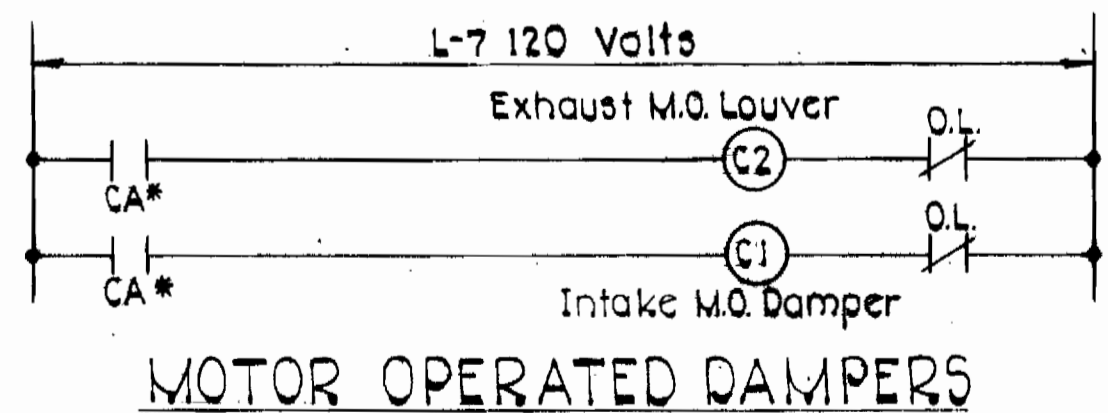
**PUMP ROOM AND WET WELL VENT FANS**



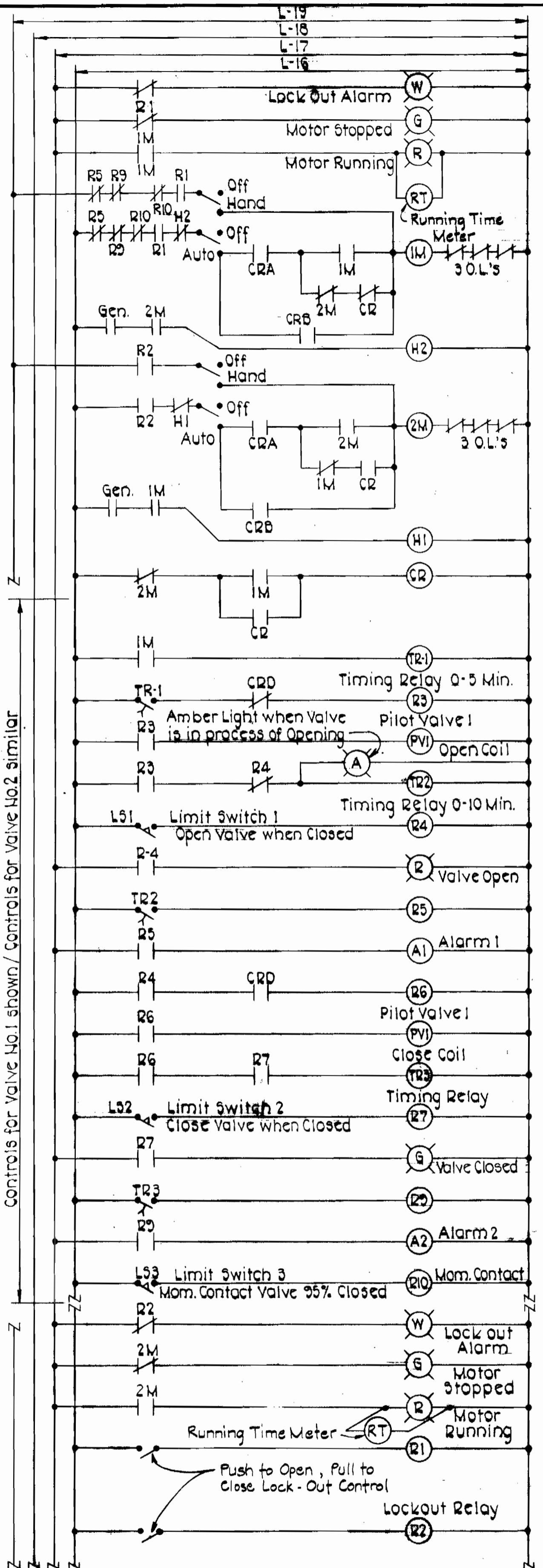
**TELEMETERING ALARM DIAGRAM**

LIGHTING FIXTURE SCHEDULE				
TYPE	DESCRIPTION	LAMP	MOUNTING	CATALOG NO.
A	4' Fluorescent U.L. Listed Enclosed and Gasketed with Clear Acrylic Diffuser and 0°F Ballast	2-40W T-12 Cool White	Stem	Benjamin FA-2224-4R Daybrite TR-41241 or equal.
B	Mercury Vapor-Proof Wall Bracket Cast Al., Prismatic Reflector.	1-100W Hg	Wall Mounting	McPherson 22A224JH Halophene 412-120 or equal.
C	Incandescent Explosive-Proof	1-200W/A-23	Wall Mounting	Benjamin 7604-BX Appleton AU15150 or equal.

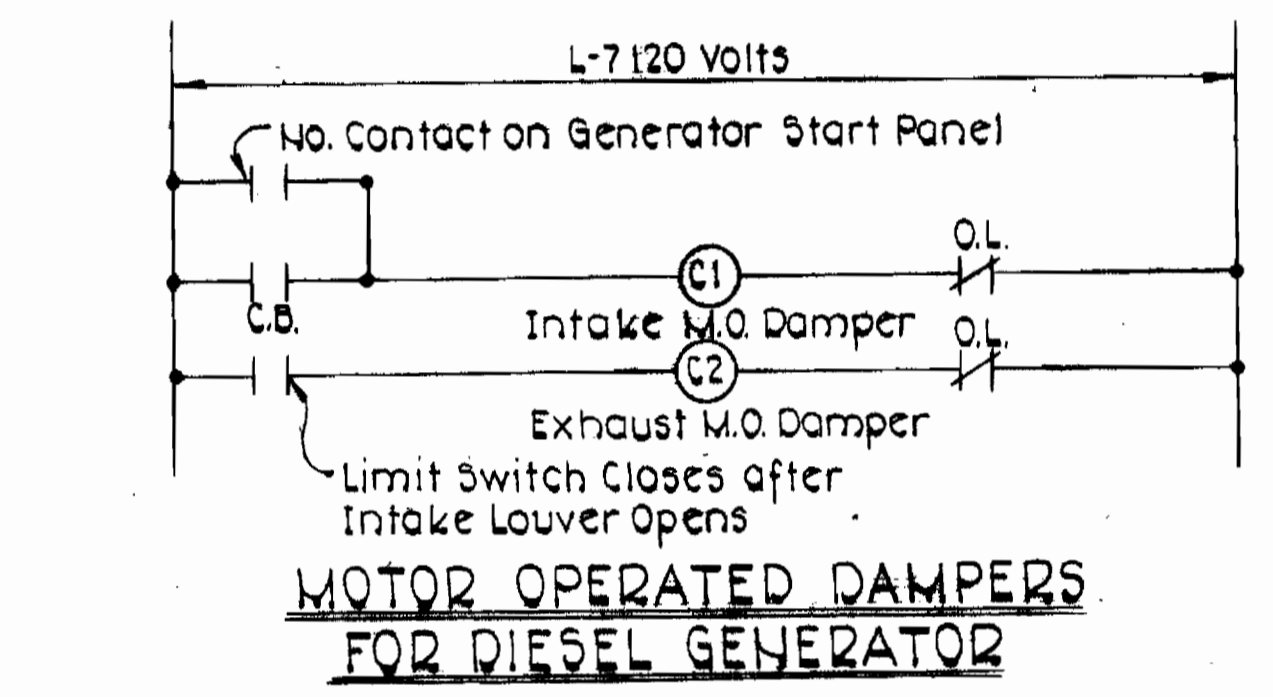
- NOTES:**
- Type "A" Fixtures shall be complete with Swivel Alignment Hangers. Stems and Hangers shall be Painted.
  - Type "B" Fixture shall be Complete with Tamperproof Hardware.



**MOTOR OPERATED DAMPERS FOR VENT FANS**

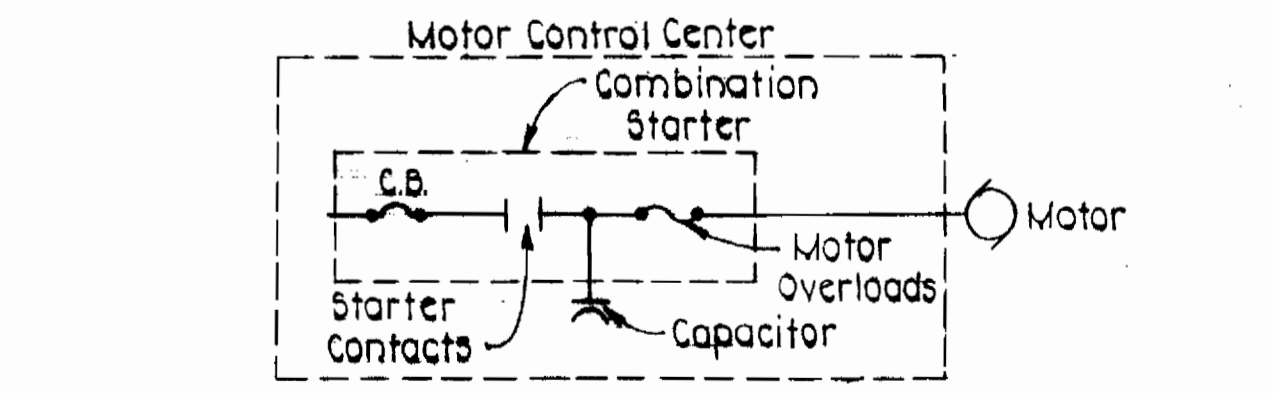


**PUMP MOTORS, VALVES AND BUBBLER SYSTEM CONTROL**



**MOTOR OPERATED DAMPERS FOR DIESEL GENERATOR**

- NOTES:**
- The Contractor shall verify with equipment manufacturers, the exact number of control wire before installing conduits.
  - Check working drawing for conduit stub locations.
  - Control diagrams indicate the system of control required. Exact wiring connections shall be installed per manufacturers wiring diagram.
  - All electrical work in the Wet Well shall be suitable for Class I Division 1 Group D areas. Provide seals on all conduits.
  - All panels shall be mounted to wall utilizing 1/4" kindorf channels.
  - A green insulated ground conductor (min. #12 AWG) shall be installed in all conduits from panel equipment ground bus to particular items of equipment.
  - All conduit exposed in the Wet Well shall be heavy wall P.V.C.



**POWER CORRECTION CAPACITOR INSTALLATION**

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND  
DIRECTOR OF PUBLIC WORKS: [Signature] DATE: 8-28-81  
CHIEF BUREAU OF ENGINEERING: [Signature] DATE: 8/28/81  
CHIEF BUREAU OF UTILITIES: [Signature] DATE: 8/28/81

PURDUM & JESCHKE  
ENGINEERS  
1023 N. CALVERT ST.  
BALTIMORE, MARYLAND

CONTRACT NO. 741-S  
CAPITAL PROJECT NO. S-4-6067

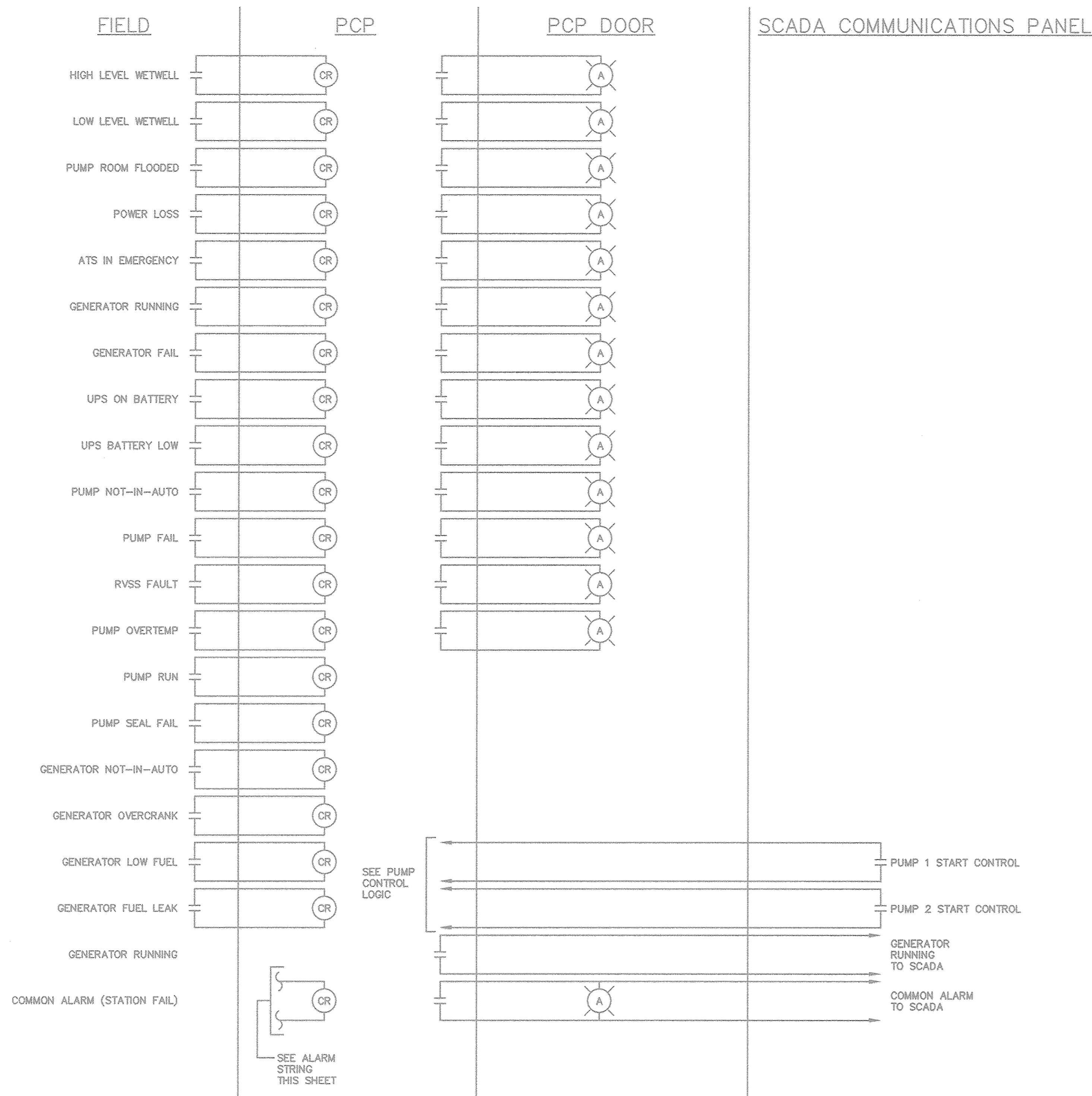
ELECTRICAL DETAILS

CHAMBERLEA SANITARY SEWERS  
ALLENFORD PUMPING STATION  
ELECTION DISTRICT NO. 2

DRAWING NO. 16 OF 16  
SCALE AS SHOWN  
Designed: DUD  
Drafted: [Signature]  
Checked: REP

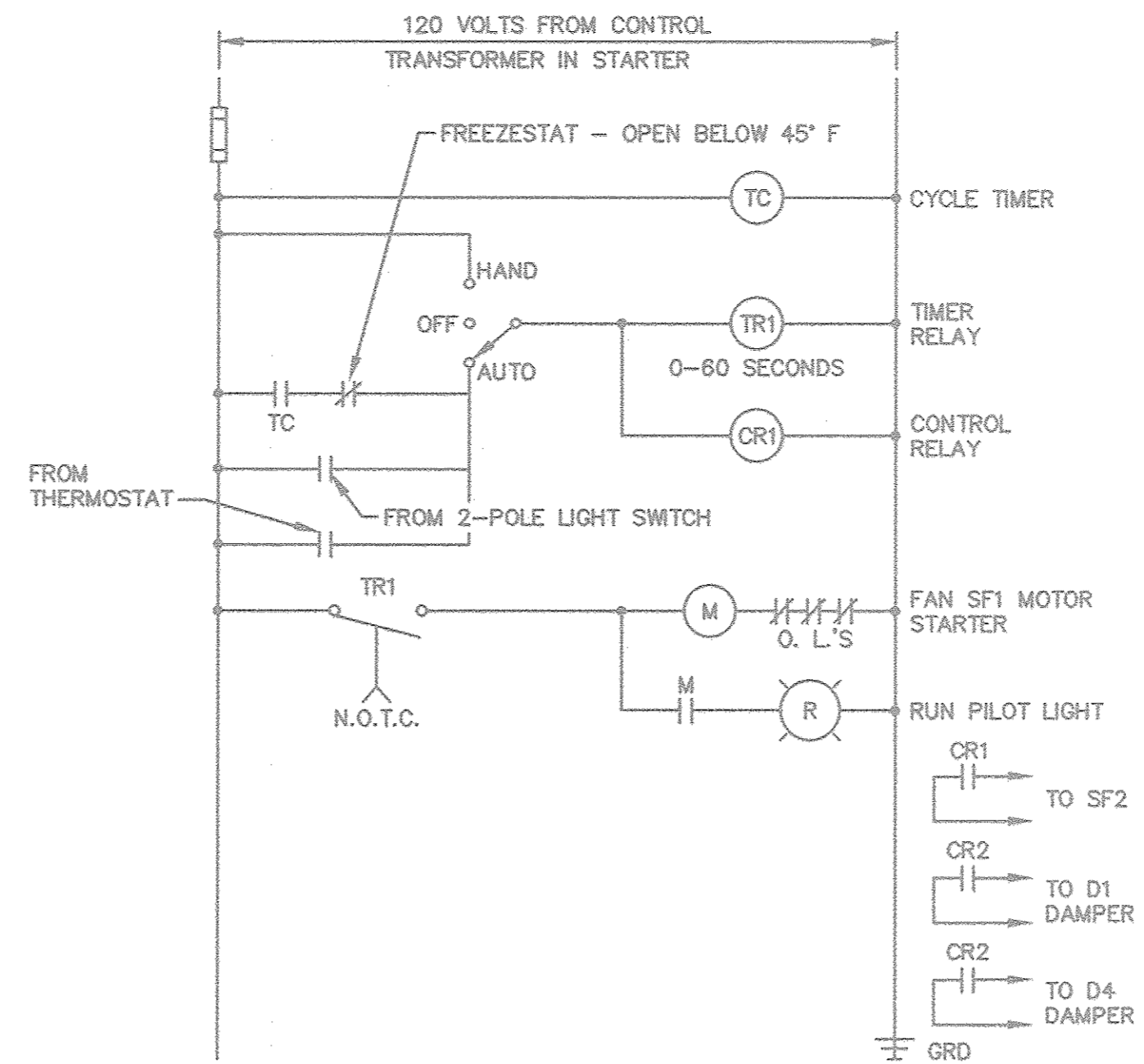
WS 741 S/16

R:\K&K\SYS - K:\proj\2017\2154\_MCCBDA\Task 9 - Miscellaneous Pumping Station\Station\Hatched\PS\Control\Panel\Proposed\2154MPP-016A-PP-16A.dwg Apr 12, 2018 11:48am Plot Scale: 1:1

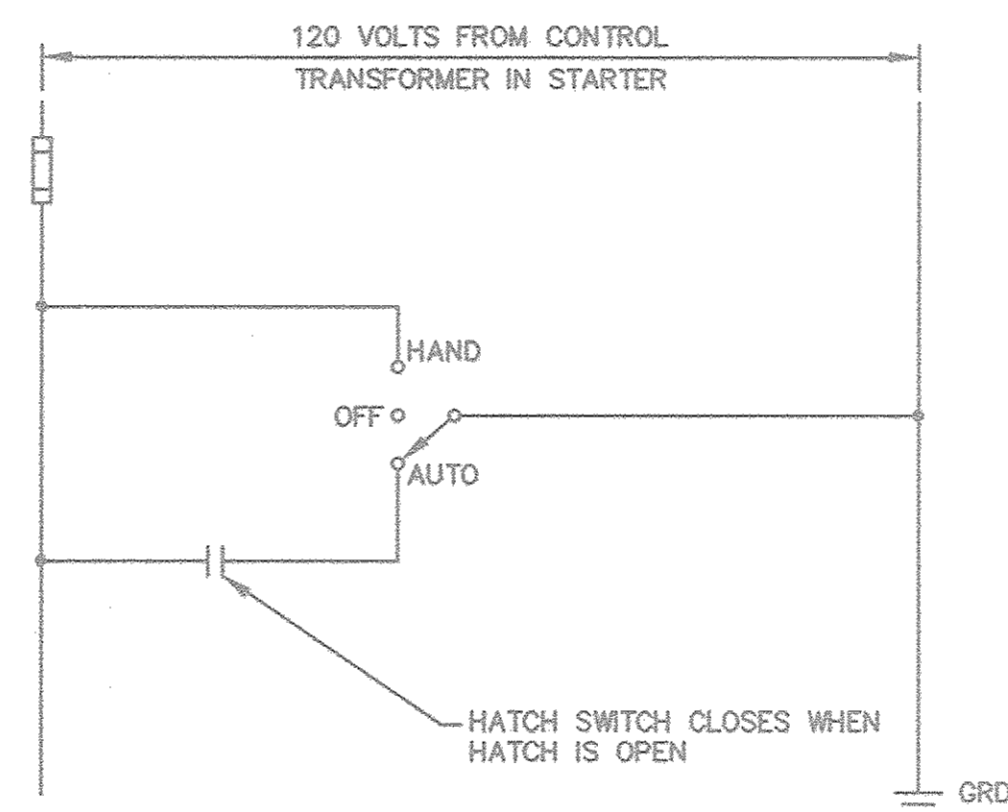


TYPICAL STATUS AND ALARM DIAGRAMS  
NTS

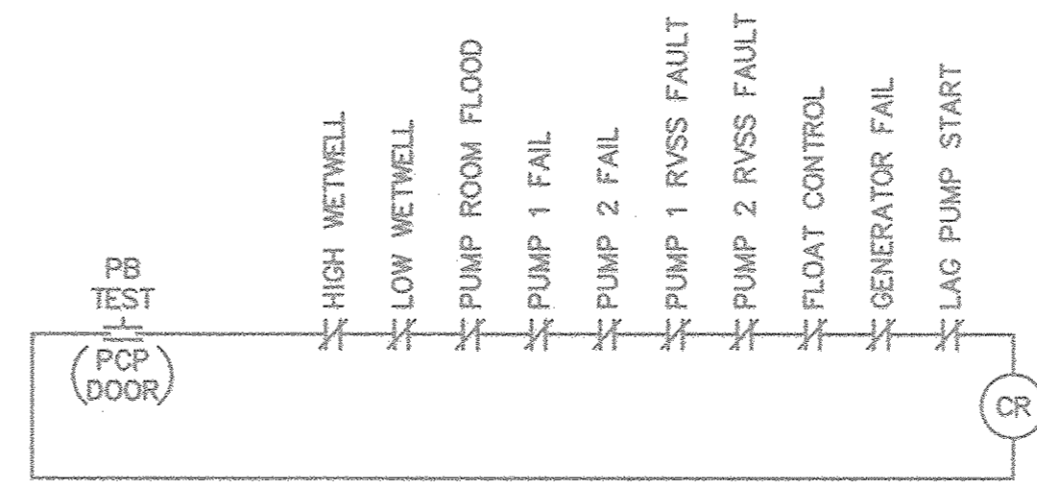
- NOTES:
1. PUMP RELATED SIGNALS ARE TYPICAL FOR BOTH PUMPS.
  2. CONTRACTOR SHALL PROVIDE 2-#14 IN CONDUIT TO PCP FOR EACH SIGNAL (OR INTERNAL TO MCC) AND TERMINATE ON TERMINAL STRIP PRIOR TO EXTENDING TO RELAY.
  3. ALL RELAYS SHALL BE 4-POLE.
  4. DRY CONTACTS (NORMALLY OPEN) SHALL FEED ALARM SIGNALS TO SCADA COMMUNICATIONS PANEL.
  5. PROVIDE A MINIMUM OF SIX 4-POLE RELAYS MOUNTED IN PCP AS SPARES.



CONTROL SCHEMATIC - SUPPLY FAN SF1  
NTS

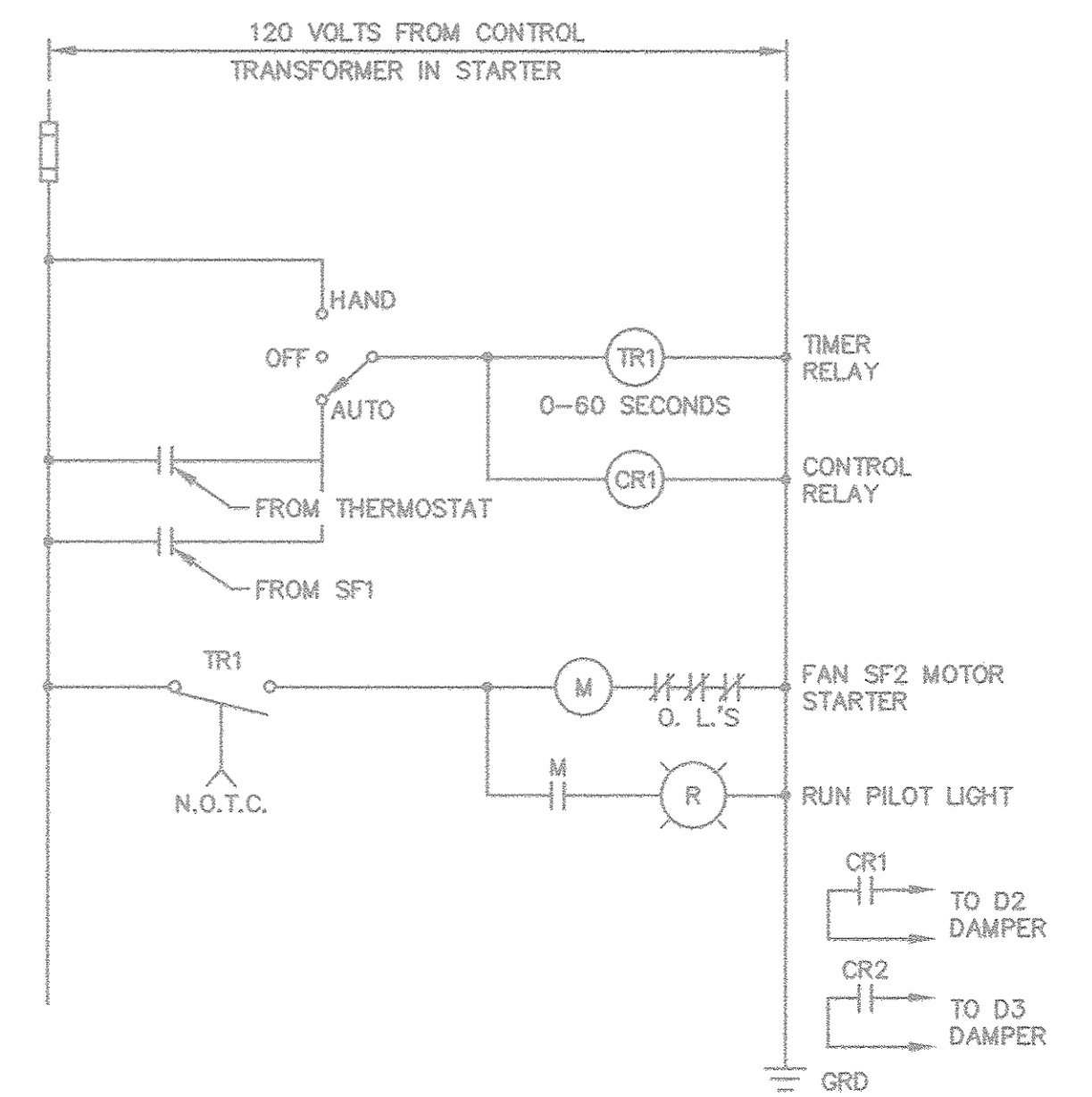


CONTROL SCHEMATIC - EXHAUST FAN EF1  
NTS



COMMON ALARM STRING (STATION FAILURE)  
NTS

- NOTES:
1. CONTRACTOR TO PROVIDE ALL NECESSARY RELAYS TO ACCOMPLISH CONTROLS AS SHOWN, AND PROVIDE A MINIMUM OF TWO SPARE OUTPUTS PER FAN.
  2. ALL MOTOR STARTERS SHALL HAVE PHASE MONITORS (NOT SHOWN) FOR SINGLE PHASE PROTECTION (SEE SPECIFICATION).
  3. MOTOR OPERATED DAMPERS SHALL BE ENERGIZED PRIOR TO FAN MOTORS BASED ON PRESET TIME DELAY WHERE SHOWN.
  4. REFER TO MECHANICAL SPECIFICATIONS FOR VENTILATION OPERATION DESCRIPTIONS.



CONTROL SCHEMATIC - SUPPLY FAN SF2  
NTS

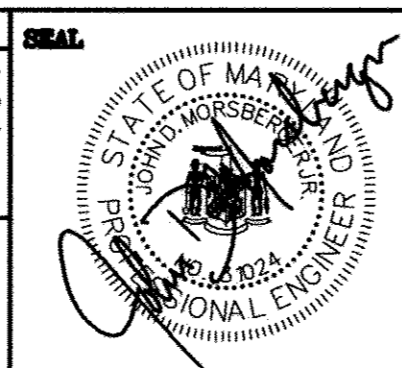
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* DATE *4/13/18*  
DIRECTOR OF PUBLIC WORKS  
*[Signature]* DATE *4/13/18*  
CHIEF BUREAU OF UTILITIES

*[Signature]* DATE *4/13/18*  
CHIEF BUREAU OF ENGINEERING  
*[Signature]* DATE *4/13/18*  
CHIEF, UTILITY DIVISION

PROFESSIONAL CERTIFICATION  
I HEREBY CERTIFY THAT THE REVISIONS INCLUDED IN THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.  
LICENSE NO. 51024 EXPIRATION DATE 10/17/2018

**RK&K** RUMMEL, KLEPPER & KAHL, LLP  
700 EAST PRATT STREET  
SUITE 600  
BALTIMORE, MARYLAND 21202



DES:	JDM		
DRN:	TJS		
CHK:	JDM		
DATE:	3/30/18		
BY:			
NO.			
REVISIONS			
DATE			
MAP NO.	17	BLOCK NO.	8

ELECTRICAL DETAILS -  
2018 UPGRADES

ALLENFORD PUMPING STATION  
2018 UPGRADES

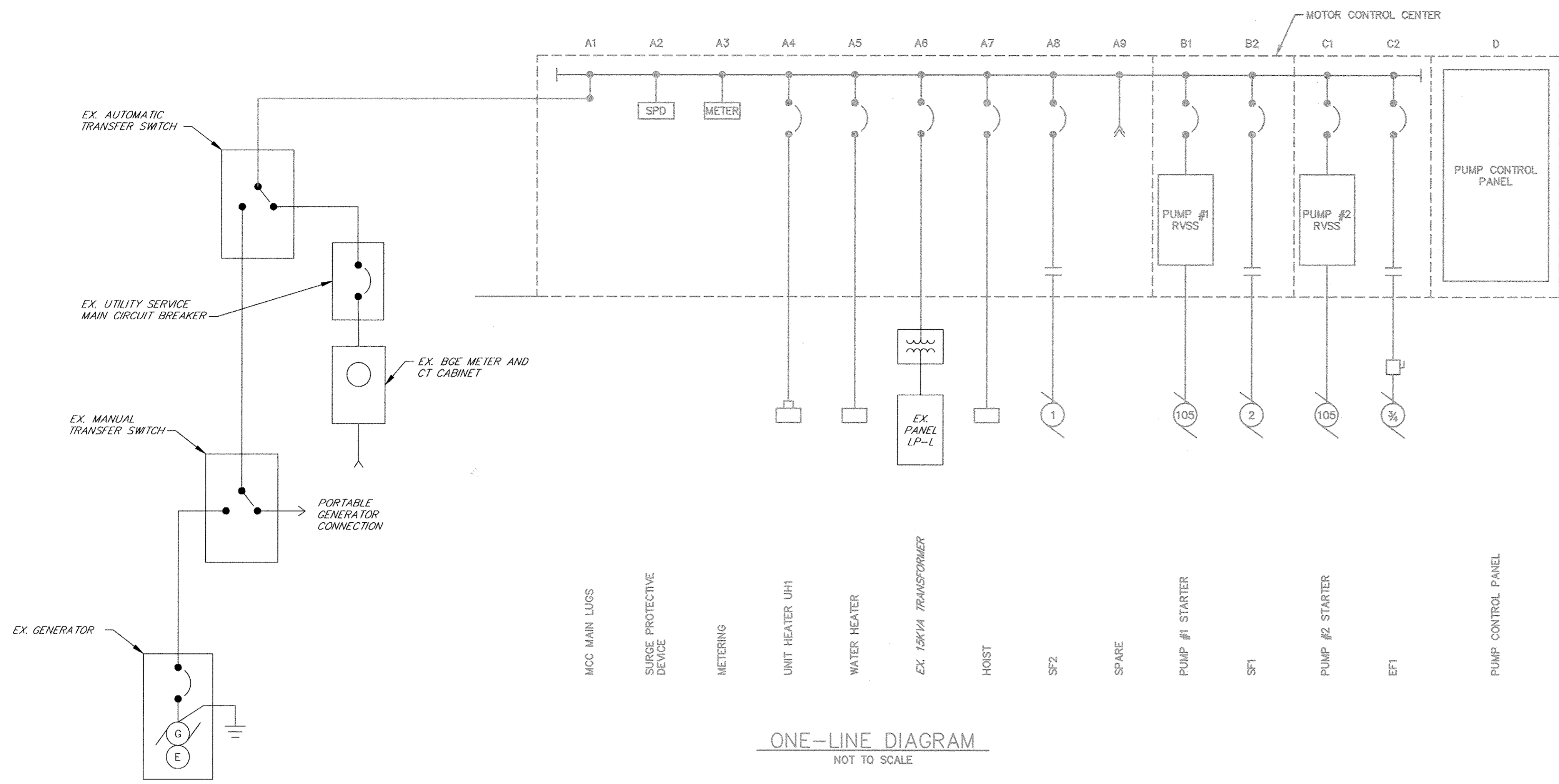
CAPITAL PROJECT NO. S6264  
CONTRACT NO. 741-S

ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND

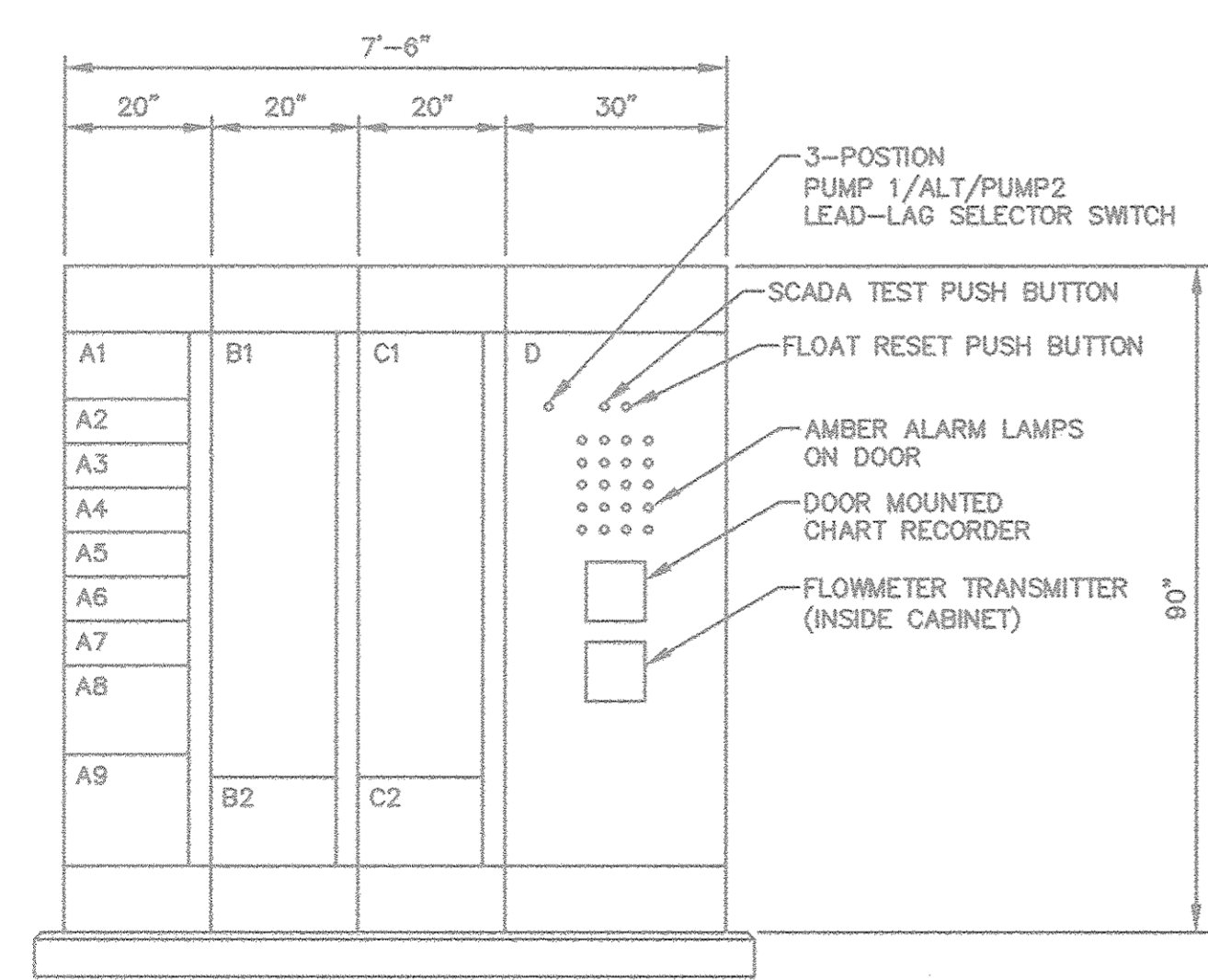
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3/8"=1'-0"  
SHEET  
16A OF 28



RK&K\SYS - K:\projects\2018\2154\_HoCoBDA\Task 9 - Miscellaneous Pumping Station\Allenford\_PSD\CADD\Plan\Proposed\2154MPS-016C-PP-16C.dwg Apr 12, 2018 - 11:47am Plot Scale: 1:1



**ONE-LINE DIAGRAM**  
NOT TO SCALE



**MCC ELEVATION**  
NOT TO SCALE

- ALARM LAMP LEGEND**
- HIGH LEVEL WETWELL
  - LOW LEVEL WETWELL
  - PUMP ROOM FLOODED
  - STATION LOSS OF POWER
  - ATS IN EMERGENCY
  - GENERATOR RUNNING
  - GENERATOR FAILURE
  - UPS ON BATTERY
  - UPS BATTERY LOW
  - PUMP 1 NOT IN AUTO
  - PUMP 2 NOT IN AUTO
  - PUMP 1 FAIL
  - PUMP 2 FAIL
  - PUMP 1 RVSS FAULT
  - PUMP 2 RVSS FAULT
  - PUMP 1 OVERTEMP
  - PUMP 2 OVERTEMP
  - COMMON ALARM
  - SPARE
  - SPARE

MCC SCHEDULE														
480/277 VOLTS, 3 PHASE, 4 WIRE, 600 AMP BUS														
ITEM	DESCRIPTION	BRKR SIZE		FEEDER				STARTER				AUX. DES.	REMARKS	
		AMP	POLE	WIRE	QUAN	GRD	COND	TYPE	SIZE	HP	COIL			
A1	MCC MAIN LUGS	-	-	350	4	3	4"	-	-	-	-	-	-	---
A2	SPD	-	-	-	-	-	-	-	-	-	-	-	-	---
A3	METERING	-	-	-	-	-	-	-	-	-	-	-	-	---
A4	UNIT HEATER UH1	30	3	10	3	10	3/4"	-	-	-	-	-	-	---
A5	WATER HEATER	30	3	10	3	10	3/4"	-	-	-	-	-	-	---
A6	EX. 15KVA TRANSFORMER	30	3	10	3	10	3/4"	-	-	-	-	-	-	---
A7	HOIST	20	3	12	3	12	3/4"	-	-	-	-	-	-	---
A8	SF2	20	3	12	3	12	3/4"	FVNR	1	1	120	1,2,3,5	---	
A9	SPARE	-	-	-	-	-	-	-	-	-	-	-	-	---
B1	PUMP MOTOR #1	250	3	2/0	3	4	2"	RVSS	-	125	-	1,2,3,4,5	SEE NOTES 2 & 3	
B2	SF1	20	3	12	3	12	3/4"	FVNR	1	2	120	1,2,3,5	SEE SCHEMATIC	

**AUXILIARIES FOR MOTOR CONTROL CENTER**

- HAND-OFF-AUTOMATIC SWITCH
- INDICATING LIGHTS
- 120 VOLTS CONTROL POWER TRANSFORMER
- RUNNING TIME METERS AND START COUNTERS
- AUXILIARY RELAYS/CONTACTS

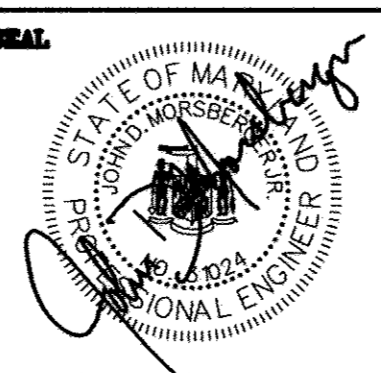
MCC SCHEDULE (CONTINUED)													
480/277 VOLTS, 3 PHASE, 4 WIRE, 600 AMP BUS													
ITEM	DESCRIPTION	BRKR SIZE		FEEDER				STARTER				AUX. DES.	REMARKS
		AMP	POLE	WIRE	QUAN	GRD	COND	TYPE	SIZE	HP	COIL		
C1	PUMP MOTOR #2	250	3	2/0	3	4	2"	RVSS	-	125	-	1,2,3,4,5	SEE NOTES 2 & 3
C2	EF1	20	3	12	3	12	3/4"	FVNR	1	3/4	120	1,2,3,5	SEE SCHEMATIC
D	PUMP CONTROL PANEL	-	-	-	-	-	-	-	-	-	-	-	SEE NOTE 1

- NOTES:**
- PROVIDE EMPTY MOTOR CONTROL CENTER SECTION FOR FABRICATION BY SYSTEM SUPPLIER.
  - CONDUIT SHOWN IS MINIMUM SIZE. MOTORS ARE CONNECTED WITH CABLES PROVIDED BY THE PUMP MANUFACTURER. PROVIDE QUANTITY AND SIZE OF CONDUITS PER MANUFACTURER'S RECOMMENDATIONS. TERMINATE CONDUITS WITH BUSHING, IN LOCATION AS DIRECTED IN THE FIELD AND SUSPEND CABLES USING 3/16 STAINLESS STEEL HOOKS AND CABLE GRIPS.
  - EQUIPMENT SHALL BE RATED FOR A MINIMUM OF 127 FULL LOAD AMPERES, BUT NOT LESS THAN STANDARD HORSEPOWER SHOWN.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS: *[Signature]* DATE: 4/13/18  
 CHIEF, BUREAU OF ENGINEERING: *[Signature]* DATE: 4/13/18  
 CHIEF, BUREAU OF UTILITIES: *[Signature]* DATE: 4/13/18

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 LICENSE NO. 51024 EXPIRATION DATE 10/17/2018  
**RK&K** RUMMEL, KLEPPER & KAHL, LLP  
 700 EAST PRATT STREET SUITE 500  
 BALTIMORE, MARYLAND 21202



DES:	JDM				
DRN:	TJS				
CHK:	JDM				
DATE:	3/30/18				
BY:	RK&K	1	2018 UPGRADES - ADD SHEET 16C	3/18	
NO.:					
REVISIONS:					
DATE:					

MCC SCHEDULE, ELEVATION & ONE-LINE DIAGRAM - 2018 UPGRADES

ALLENFORD PUMPING STATION  
2018 UPGRADES  
CAPITAL PROJECT NO. S6264  
CONTRACT NO. 741-S  
ELECTION DISTRICT NO. 2  
HOWARD COUNTY, MARYLAND

SCALE: 3/8"=1'-0"  
SHEET 16C OF 28