

# ROCKBURN WASTEWATER PUMPING STATION

CONTRACT NO. 10-3695  
CAPITAL PROJECT NO. S-6200

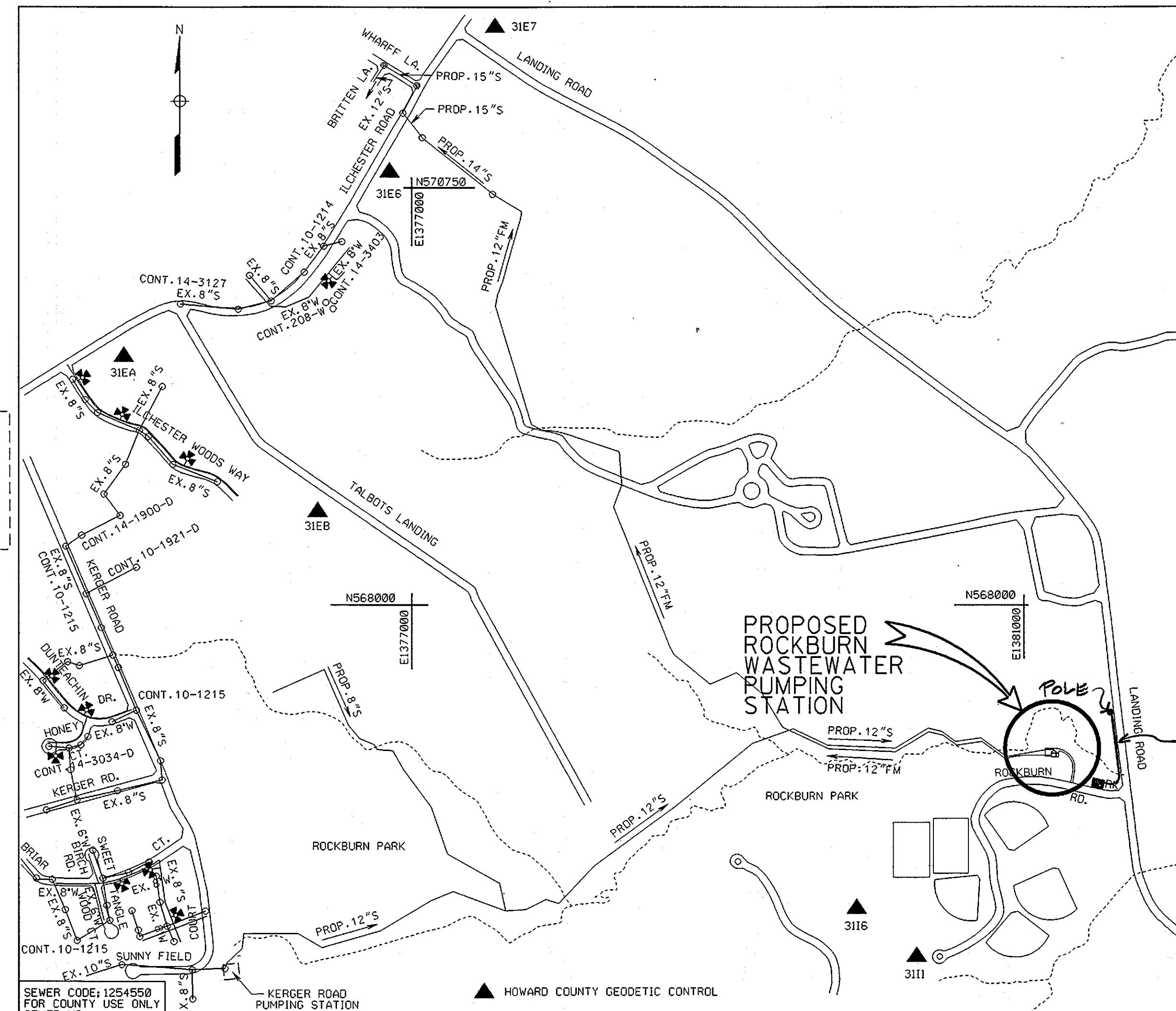
## GENERAL NOTES

- 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.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC COUNTY CONTROL WHICH IS BASED UPON THE MARYLAND PLANE COORDINATE SYSTEM, HOWARD COUNTY MONUMENT NOS. 3116 AND 3111 WERE USED FOR THIS PROPERTY.
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATUM.
- ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 6' CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. THE OWNER HAS CONTACTED THE UTILITIES COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER OF THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONEY OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, 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.
- EXISTING UTILITIES IN THE VICINITY OF PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION. ANY DAMAGE TO EXISTING FACILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 

BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION, HOWARD CO. DPW	410-313-1880
STATE HIGHWAY ADMINISTRATION	410-531-5533
BGE (CONTRACTOR SERVICES)	410-850-4620
BGE (UNDERGROUND DAMAGE CONTROL)	410-787-9088
BUREAU OF UTILITIES, HOWARD CO. DPW	1-800-257-7777
MISS UTILITY	410-313-4900
AT&T	410-865-3808
COLONIAL PIPELINE CO.	410-795-1390
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT POSSIBLE. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP OR OUTSIDE THE UTILITY EASEMENT BUT WITHIN THE LIMIT OF DISTURBANCE IN ROCKBURN PARK ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- ALL SANITARY SEWER PIPING SHALL BE PVC OR DIP UNLESS OTHERWISE NOTED ON DRAWINGS.
- ALL WATER AND SEWER MAIN PIPING SHALL BE DIP UNLESS OTHERWISE NOTED ON DRAWINGS.
- ALL WATER AND SEWER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED ON DRAWINGS
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER. STANDARD DETAIL G-5.52.
- WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON PLANS OR IN THE SPECIFICATIONS.
- IN OPEN FIELD SET SEWER MANHOLE TOP OF FRAME 1'-0" ABOVE GROUND, UNLESS NOTED DIFFERENTLY ON CONSTRUCTION DRAWINGS.
- ALL DIP FITTINGS SHALL BE IN ACCORDANCE WITH AWWA SPECIFICATIONS C-153; DUCTILE IRON COMPACT FITTINGS. 3-INCH THROUGH 12-INCH FOR WATER AND SEWER MAIN.
- ALL CONSTRUCTION WITHIN WETLANDS WILL HAVE A PERMIT RELEASED AND APPROVED BY THE PROPER AGENCY BOUND IN SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER VALVES ON THE EXISTING WATER SYSTEM. THE CONTRACTOR SHALL CONTACT HOWARD COUNTY DPW WATER & SEWER DIVISION IF OPERATION OF VALVES ARE NEEDED.
- MANHOLES LOCATED WITHIN ROADWAY SHALL HAVE STANDARD HEAVY TRAFFIC MANHOLES FRAMES AND COVERS.
- ALL FITTINGS ON FORCE MAIN SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE COUNTY STANDARD DETAILS UNLESS OTHERWISE NOTED ON DRAWINGS OR SPECIFICATIONS.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT 410-313-2450 AT LEAST FIVE DAYS BEFORE OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER AND SEWER MAIN OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH THE DPW REQUIREMENTS PER SECTION 18.114(b) OF THE HOWARD COUNTY CODE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREETS AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH ONE FOOT CONTOUR INTERVALS PREPARED BY WHITMAN, REQUARDT AND ASSOCIATES, LLP DATED FEBRUARY, 1998.
- PROPOSED WATER IS PUBLIC, CONTRACT NO. 10-3696 WATER ZONE IS 550. (THERE IS NO EXISTING PUBLIC WATER OR SEWER)
- PROPOSED SEWER IS PUBLIC, CONTRACT NOS. 10-3695, -3696, AND -3697. DRAINAGE AREA IS PATAPSCO.
- STORMWATER MANAGEMENT, BOTH QUANTITY AND QUALITY CONTROL, WILL BE A BIORETENTION FACILITY, OWNED AND MAINTAINED BY HOWARD COUNTY DEPT. OF PUBLIC WORKS
- THERE ARE NO WETLANDS ON THIS SITE.
- NO TRAFFIC STUDY IS REQUIRED FOR THIS SITE.
- THE FLOOD PLAIN SHOWN ON THE SITE PLAN; HOWARD COUNTY WATERSHED STUDY CFP 27-45/87, IS THE 100 YEAR ULTIMATE FLOOD PLAIN BOUNDARY AND WAS PREPARED BY SHELADIA ASSOCIATES, INC., DATED AUGUST 1987, FOR THE DEPARTMENT OF NATURAL RESOURCES WATER RESOURCES ADMINISTRATION FLOOD MANAGEMENT DIVISION.
- FOREST CONSERVATION OBLIGATIONS INCURRED BY THIS SDP ARE ADDRESSED WITH RELATED CAPITAL IMPROVEMENT. PROJECT CIP NO. S-6200, CONTRACT NO. 10-3695.

QUANTITIES				
ITEM	ESTIMATED	AS-BUILT		
		QUANTITIES	TYPE	SUPPLIER
PUMPING STATION COMPLETE, IN PLACE	1 EACH			
12" SEWER	114 LF			
MANHOLES 4' DIA.	2 EACH			
12" FORCE MAIN	98 LF			
8" WATER	54 LF			
6" WATER	6 LF			
6" VALVE & FH	1 EACH			
2" WATER	87 LF			
12" STORM DRAIN	53 LF			
6" DRAIN	353 LF			
12" GATE VALVE	3 EACH			
PUMP AROUND M.H.	1 EACH			

## FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND



### INDEX OF DRAWINGS

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2	C-1	PUMPING STATION SITE PLAN	SDP SHEET 2 OF 6
3	C-2	LANDSCAPE PLAN, BIORETENTION BASIN PLANTING PLAN AND SPECIFICATIONS	SDP SHEET 3 OF 6
4	C-3	ROAD PROFILES, STORM DRAIN AND UTILITY PROFILES	SDP SHEET 4 OF 6
4A	C-4	DETAILS AND SECTIONS	SDP SHEET 5 OF 6
5	SC-1	SEDIMENT CONTROL NOTES AND SCHEDULES	SDP SHEET 5 OF 6
6	SC-2	SEDIMENT CONTROL DETAILS, 12-INCH FORCEMAIN BLOW-OFF DETAIL	SDP SHEET 6 OF 6
7	A-0	LEGENDS AND ABBREVIATIONS	
8	A-1	PLANS AND DETAILS	
9	A-2	ROOF PLAN AND FRAMING PLAN	
10	A-3	ELEVATIONS	
11	A-4	BUILDING SECTIONS AND WALL SECTIONS	
12	A-5	DOOR SCHEDULE AND DETAILS	
13	A-6	GATE DETAILS & PIPE GATE SIGN DETAILS	
14	A-7	DETAILS	
15	S-1	STRUCTURAL NOTES	
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21	S-7	STAIR SECTIONS AND DETAILS	
22	S-8	TYPICAL DETAILS	
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25	M-3	PLAN AND DETAILS	
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33	E-7	PANEL AND LIGHTING SCHEDULES	
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35	I-2	PUMP CONTROL DIAGRAMS	
36	I-3	ELECTRICAL CONTROL DIAGRAMS	
36-A	I-4	PROCESS AND INSTRUMENT DIAGRAM	

SEWER CODE: 1254550  
FOR COUNTY USE ONLY  
SEWER NO.

TYPE OF BUILDING: WASTEWATER PUMPING STATION  
NUMBER OF LOTS: 0 (BUILDABLE)  
NO. OF WATER HOUSE CONNECTION: N/A  
NO. OF SEWER HOUSE CONNECTION: 0  
DRAINAGE AREA: PATAPSCO  
TREATMENT PLANT: PATAPSCO WWTP, BALTI. CITY

### VICINITY MAP

SCALE: 1" = 600'

SITE ANALYSIS	
TOTAL AREA OF SITE	1.006 ACRES
AREA DISTURBED	0.961 ACRES
AREA TO BE ROOFED OR PAVED	0.257 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.708 ACRES
TOTAL CUT	1500 CU YDS
TOTAL FILL	1800 CU YDS
WASTE SITE	APPROVED
NUMBER OF EMPLOYEES	0
NUMBER OF PARKING SPACES	5

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 1/2/99 DATE  
 DIRECTOR

[Signature] 1/2/99 DATE  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

[Signature] 1/2/99 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT

**DEVELOPER'S CERTIFICATION**  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 1-15-99 DATE  
 SIGNATURE OF DEVELOPER

REVIEWED FOR HOWARD S.C.D. AND MEETS THE TECHNICAL REQUIREMENTS.  
 [Signature] 1/2/99 DATE  
 USDA-NATURAL RESOURCES CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 [Signature] 1/2/99 DATE  
 HOWARD S.C.D.

**ENGINEER CERTIFICATION**  
 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. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 1-15-99 DATE  
 JAMES A. AVIRETT JR., P.E. 10210

DPZ FILE	NAME	DATE APPROVED
SDP 75-99	ROCKBURN BRANCH PARK	8/18/75
SDP 79-172	CONCESSION BLDG. ROCKBURN PARK	10/22/79
SDP 85-232	ROCKBURN BRANCH PARK, AREA H	7/3/85

OWNER OF PARCEL: HOWARD COUNTY RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046

ADDRESS CHART		DPZ REFERENCE NO.
LOT/PARCEL*		SDP 99-14
640	5390 LANDING ROAD, ELK RIDGE, MARYLAND 21227	APPROVAL DATE:

PERMIT INFORMATION CHART		
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL*
ROCKBURN BRANCH PARK	LANDING ROAD ENTRANCE	640
PLAT # OR L/F	BLOCK #	ZONING
704/646	23	R-20
TAX MAP	ELECT. DIST.	CENSUS TRACT
31	1	6011
WATER CODE	SEWER CODE	
W-5	S-5	

**RECORD DRAWING**  
 11/18/02  
 G-1

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

[Signature] 1-15-99 DATE  
 DIRECTOR OF PUBLIC WORKS

[Signature] 1-15-99 DATE  
 CHIEF, BUREAU OF ENGINEERING

[Signature] 1-15-99 DATE  
 CHIEF, BUREAU OF UTILITIES

PREPARED BY:  
**WR&A**  
 Whitman, Requardt and Associates, LLP.

[Signature] 1-15-99 DATE  
 PROFESSIONAL ENGINEER

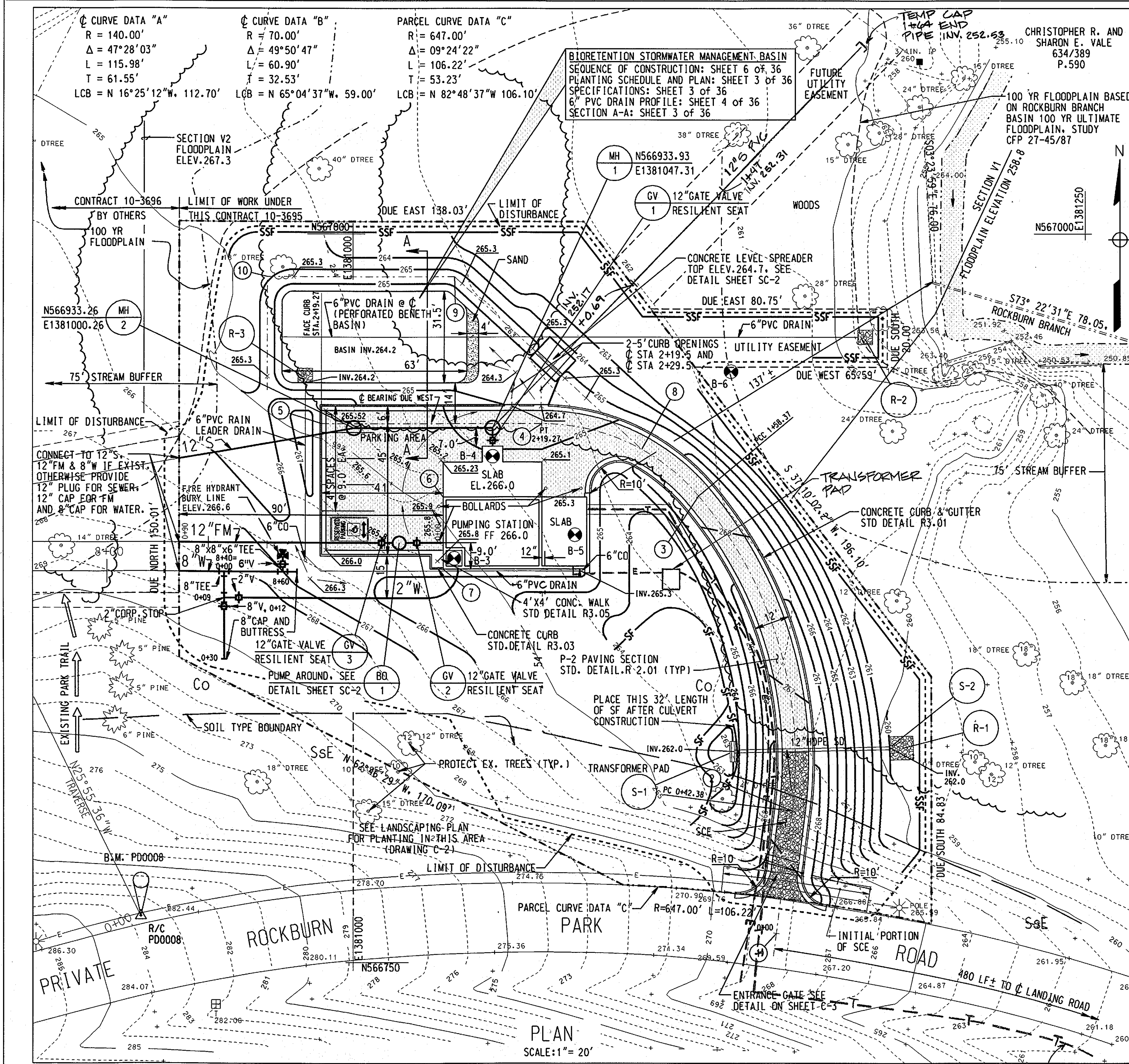
DES	DRN	CHK	DATE	BY	NO.	REVISION	DATE
WRD/EJM	EJM/GWG	JAA	12/09/98			RECORD DRAWING	8-29-02

TITLE SHEET- VICINITY MAP  
 INDEX OF DRAWINGS  
 GENERAL NOTES  
 SDP SHEET 1 OF 6

600' SCALE MAP NO. 31 BLOCK NO. 23

ROCKBURN WASTEWATER PUMPING STATION  
 CAPITAL PROJECT NO. S-6200  
 CONTRACT NO. 10-3695  
 FIRST ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SHEET  
 1 OF 36



B.M. PD0008 ELEV. 283.68 (USC & GS) R & C  
 N 566765.54 E 1380927.54

COORDINATES TABLE

PT. NO.	NORTH	EAST
1	566759.76	1381144.37
2	566801.80	1381149.76
3	566909.90	1381117.91
4	566934.76	1381064.41
5	566934.76	1380989.26
6*	566909.43	1381030.74
7*	566884.76	1381030.74
8	566925.89	1381098.52
9	566985.26	1381034.61
10	566985.26	1380970.76

6\* NORTHWEST BLDG. CORNER(OUTSIDE)  
 7\* SOUTHWEST BLDG. CORNER(OUTSIDE)

WATER MAIN LOCATION DATA

STATION	DESCRIPTION	NORTH	EAST
8+25	CONNECTION W/CONTRACT NO.10-3696	566883.76	1380940.74
8+40 = 0+00	8" TEE	566883.76	1380956.04
8+60	8"x6" TEE, 6" V & FH	566883.76	1380976.04
8+65	8" CAP & BUTTRESS	566883.76	1380981.04
0+09	2" CORP. STOP	566874.76	1380956.04
0+12	8" VALVE	566871.76	1380956.04
0+30	8" CAP & BUTTRESS	566853.76	1380956.04

FIRE HYDRANT BURY LINE ELEVATION: 266.6  
 FIRE HYDRANT BURY LENGTH: 4.5'

FORCE MAIN LOCATION DATA

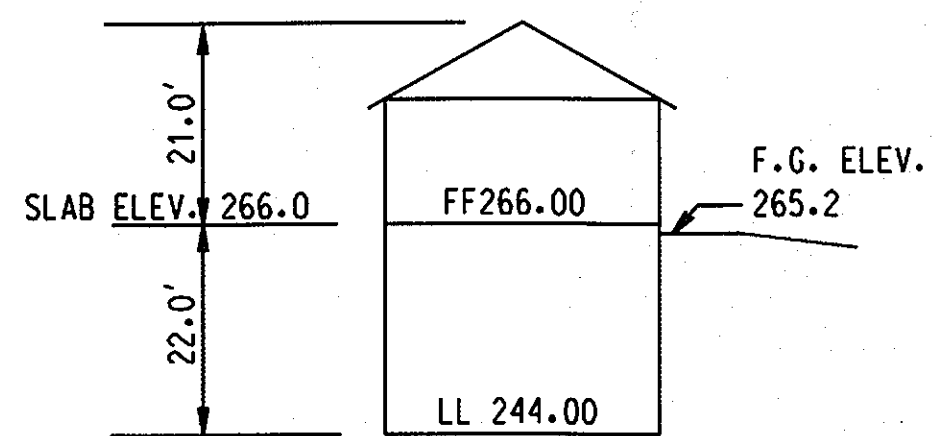
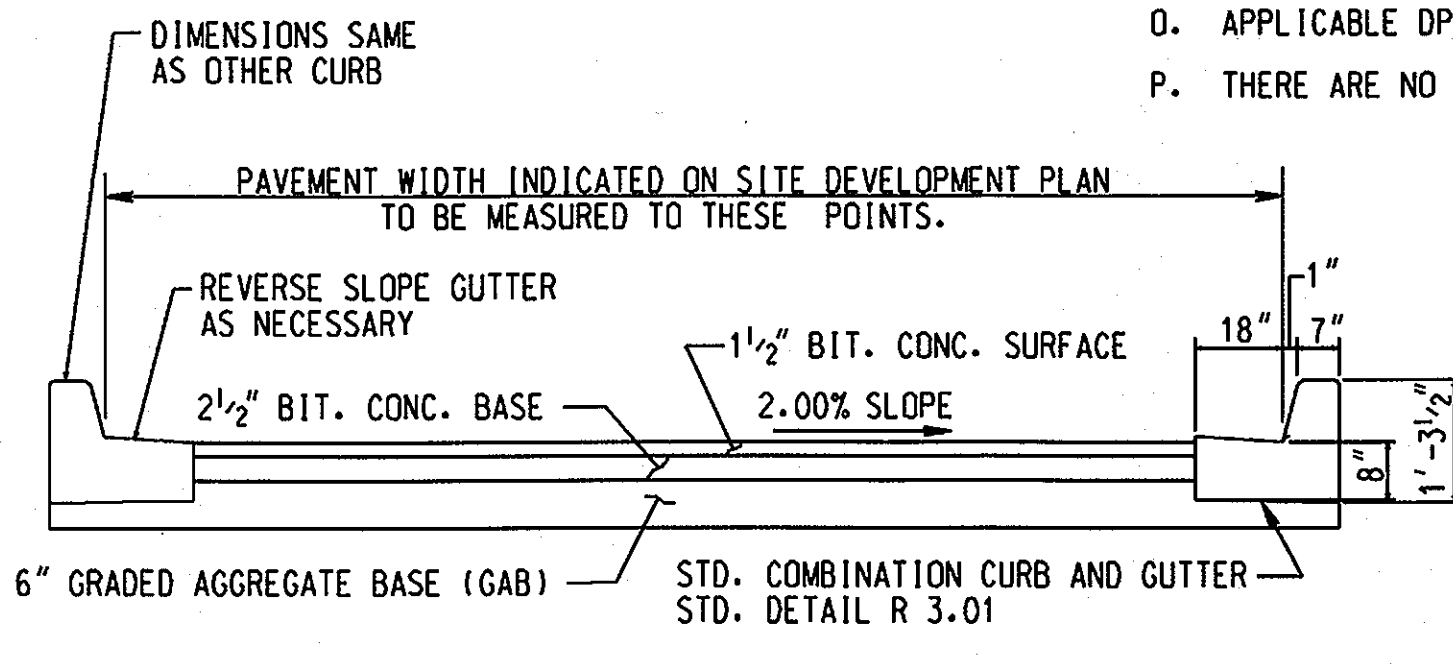
STATION	DESCRIPTION	NORTH	EAST
0+00	LIMIT OF WORK-TEMP. CAP	566893.76	1381030.74
0+09	12" VALVE	566893.76	1381021.74
0+15	BLOW-OFF MANHOLE	566893.76	1381015.74
0+21	12" VALVE	566893.76	1381009.74
0+90	CONNECTION W/CONTRACT NO.10-3696	566893.76	1380940.74

GENERAL NOTES

1. THERE ARE NO WETLANDS ON THIS SITE.
2. ALL CONSTRUCTION LIES OUTSIDE THE 100 YEAR FLOODPLAIN AND A MINIMUM OF 75 FEET FROM THE EDGE OF STREAM WITH THE EXCEPTION OF THE 6-INCH PVC BIORETENTION DRAIN.
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS & SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS & SPECIFICATIONS, IF APPLICABLE.
4. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS DIVISION OF CONSTRUCTION INSPECTION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
5. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800- 257-7777 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION WORK.
6. THE CONTRACTOR SHALL SAVE AND PROTECT ALL TREES SIX (6) INCHES DIAMETER AND GREATER WITHIN THE LIMIT OF DISTURBANCE THAT ARE NOT DIRECTLY IN THE WAY OF NEW CONSTRUCTION AND GRADING.
7. THE CONTRACTOR SHALL KEEP THE PRIVATE PARK ROAD SWEEP CLEAN AT ALL TIMES.
8. THE HOWARD COUNTY SOIL SURVEY MAP SHOWS TWO SOILS ON THIS SITE: CO OR CODORUS, A HYDROLOGICAL TYPE C SOIL, AND S6E OR SASSAFRASS, A HYDROLOGICAL TYPE B SOIL.
9. THE SEQUENCE OF CONSTRUCTION NOTES AND SEDIMENT CONTROL NOTES ARE ON DRAWING SC-2

SITE ANALYSIS DATA CHART

- A. TOTAL PROJECT AREA : ROCKBURN BRANCH PARK 401 AC.± OR 17467560 S.F.±
- B. AREA OF PLAN SUBMISSION, WASTEWATER PUMPING STATION PARCEL 43.842 S.F. OR 1.006 AC.±
- C. LIMIT OF DISTURBED AREA. 41881 S.F. OR 0.961 AC±
- D. PRESENT ZONING, R-20
- E. PROPOSED USE FOR SITE AND STRUCTURES: WASTEWATER PUMPING STATION.
- F. FLOOR SPACE ON EACH LEVEL OF BUILDINGS PER USE (RETAIL, OFFICE, WAREHOUSE, ETC.) 613 S.F.(FIRST FLOOR ONLY)
- G. TOTAL NUMBER OF UNITS ALLOWED FOR PROJECT AS SHOWN ON FINAL PLAT. N/A
- H. TOTAL NUMBER OF UNITS PROPOSED ON SUBMISSION. N/A
- I. MAXIMUM NUMBER OF EMPLOYEES TENANTS ON SITE PER USE. 2
- J. NUMBER OF PARKING SPACES REQUIRED BY HOWARD COUNTY ZONING REGULATIONS AND /OR FDP CRITERIA: 2
- K. NUMBER OF PARKING SPACES PROVIDED ON SITE:  
 EXISTING SPACES 343 (INCLUDES 13 H.C. SPACES AND 85 OVERFLOW SPACES.)  
 PROPOSED SPACES 5 (INCLUDES 1 H.C. SPACE.)  
 TOTAL SPACES 348 (INCLUDES 14 H.C. SPACES.)
- L. OPEN SPACE ON SITE: 400AC. AND 99.7% OF GROSS AREA.
- M. AREA OF RECREATION OPEN SPACE REQUIRED BY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.  
 ACRES REQUIRED N/A ACRES PROVIDED N/A
- N. BUILDING COVERAGE OF SITE: 1128 S.F. OR 0.026AC.± 0.006% OF GROSS AREA.
- O. APPLICABLE DPZ FILE REFERENCES: SDP 75-99, SDP 79-172, SDP 85-232, SDP 98-107
- P. THERE ARE NO WETLANDS ON THIS PROJECT SITE.



STORM WATER MANAGEMENT SUMMARY TABLE

FREQUENCY	2-YEAR	10-YEAR	100-YEAR
DRAINAGE AREA TO FACILITY	0.262 AC.	0.262 AC.	0.262 AC.
COMPUTED INFLOW TO FACILITY	0.90 CFS	1.65 CFS	2.51 CFS
DISCHARGE FROM FACILITY	0.34 CFS	0.87 CFS	2.51 CFS
ELEVATION IN FACILITY AT DISCHARGE	264.7	264.7	264.7
STORAGE VOLUME 63'x31.5'x0.5'	992 CF	992 CF	NA

- LEGEND
- PARCEL BOUNDARY
  - - - EASEMENT BOUNDARY
  - - - LIMIT OF DISTURBANCE
  - SF — SILT FENCE
  - SSF — SUPER SILT FENCE
  - SCE ○ STABILIZED CONSTRUCTION ENTRANCE
  - SOE ● SOIL BORING
  - Co ○ SOIL TYPE: CODORUS SILT LOAM
  - S6E ○ SOIL TYPE: SASSAFRASS SOILS
  - TREE LINE

OWNER OF PARCEL : HOWARD COUNTY RECREATION AND PARKS  
 7120 OAKLAND MILLS ROAD  
 COLUMBIA, MARYLAND 21046

ADDRESS CHART

LOT/PARCEL #	ADDRESS
640	5398 LANDING ROAD, ELK RIDGE, MARYLAND 21227

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL #			
ROCKBURN BRANCH PARK	LANDING ROAD ENTRANCE	640			
PLAY # OR L/F	BLOCK #	ZONING	TAX MAP	ELECT. DIST.	CENSUS TRACT
704/646	23	R-20	31	1	6811
WATER CODE	W-5	SEWER CODE	S-5		

RECORD DRAWING  
 11/18/02

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
 [Signature] 1/21/99 DATE  
 [Signature] 1/21/99 DATE  
 [Signature] 1/21/99 DATE

DEVELOPER'S CERTIFICATION  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 [Signature] 1-15-99 DATE  
 SIGNATURE OF DEVELOPER

REVIEWED FOR HOWARD S.C.D. AND MEETS THE TECHNICAL REQUIREMENTS.  
 [Signature] 1/21/99 DATE  
 [Signature] 1/21/99 DATE  
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 [Signature] 1/21/99 DATE  
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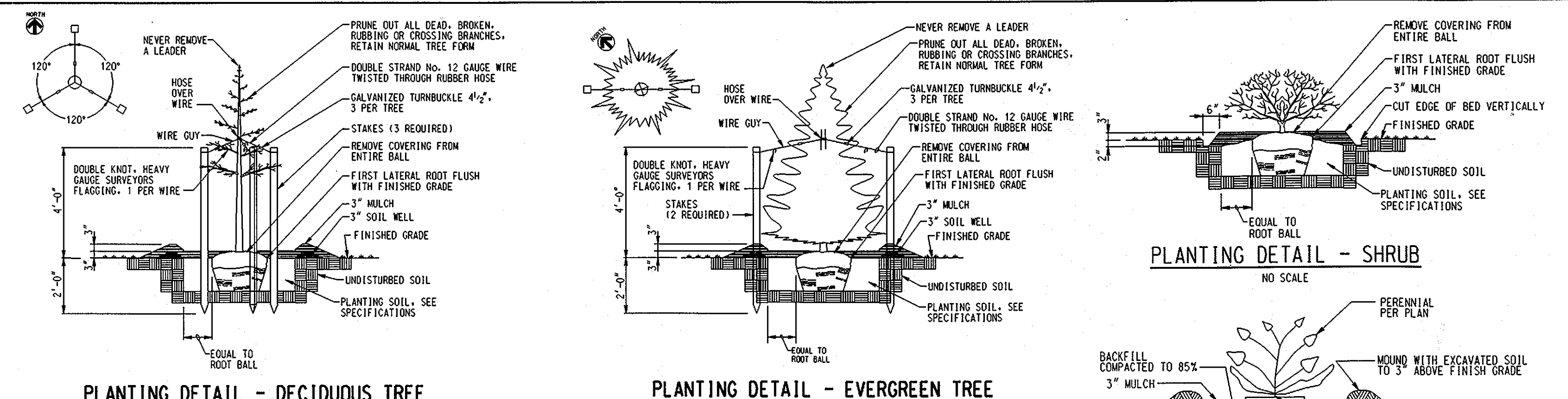
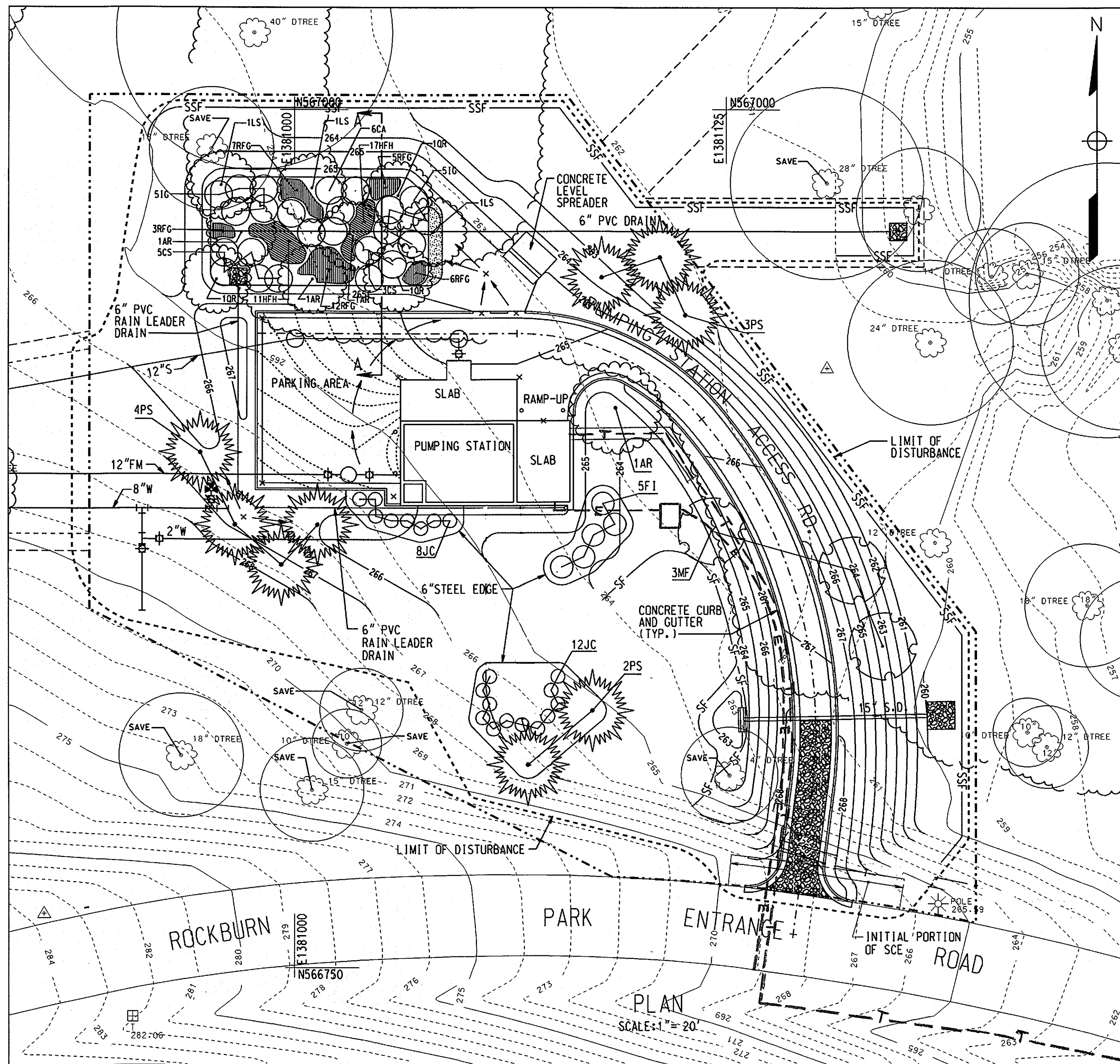
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 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
 [Signature] 1-15-99 DATE  
 JAMES A. AVIRETT JR. P.E. 10210

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND.  
 [Signature] 1-15-99 DATE  
 [Signature] 1-15-99 DATE  
 [Signature] 1-15-99 DATE

PREPARED BY :  
**WR&A**  
 Whitman, Requardt and Associates, LLP.  
 [Signature] 1-15-99 DATE

DES : WRD/EJM  
 DRN : EJM/GWG  
 CHK : JAA  
 DATE : 12/09/98  
 BY NO. REVISION DATE  
 600' SCALE MAP NO. 31 BLOCK NO. 23

ROCKBURN WASTEWATER PUMPING STATION  
 CAPITAL PROJECT NO. S-6200  
 CONTRACT NO. 10-3695  
 FIRST ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND  
 SCALE AS SHOWN  
 SHEET 2 OF 36  
 SDP99-14

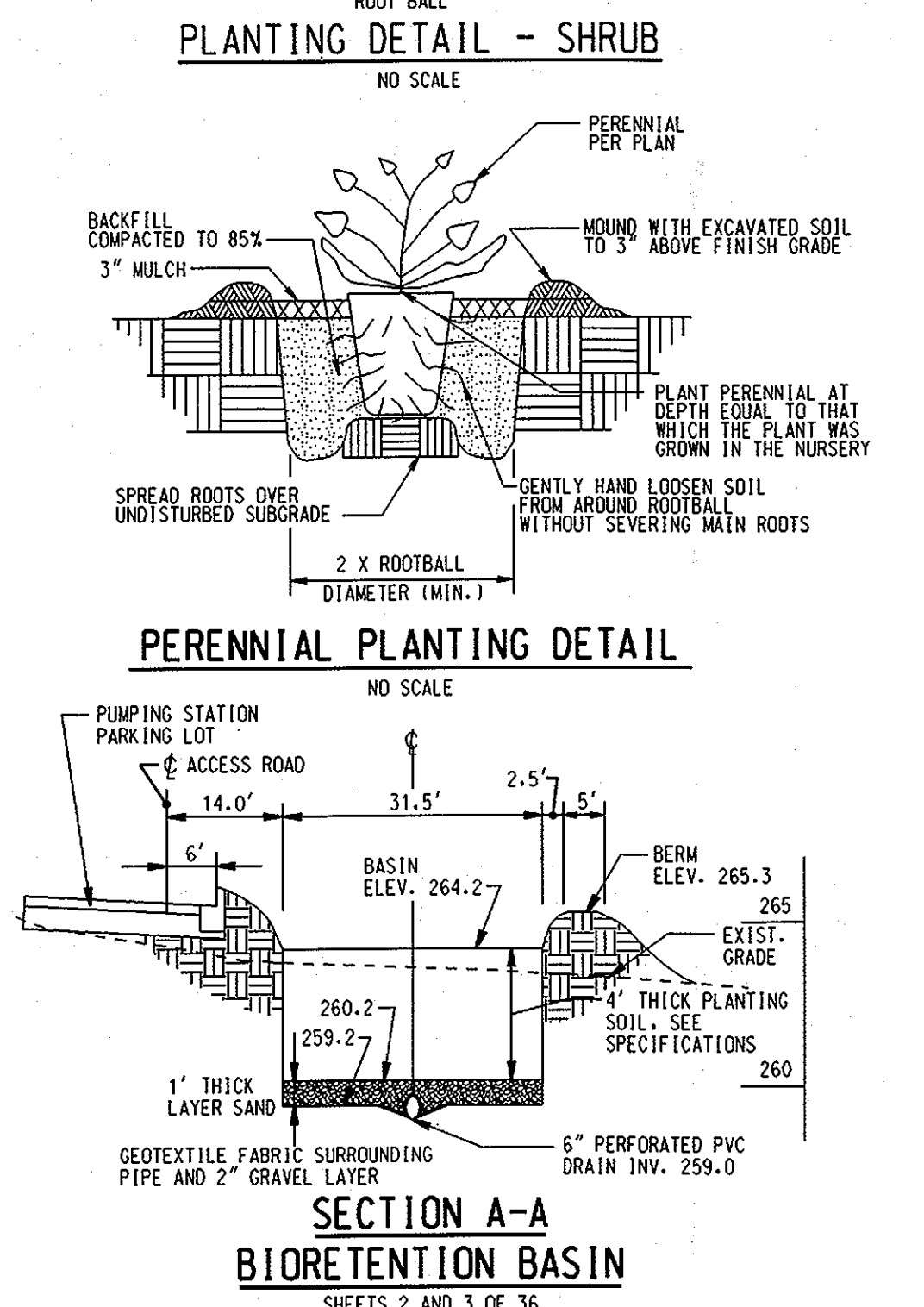


**GENERAL LANDSCAPING PLANTING SCHEDULE**

QTY.	ABBR.	SCIENTIFIC NAME	COMMON NAME	SIZE	HEIGHT	SPRED	ROOT
20	JC	JUNIPER CHINESE "SEA GREEN"	BLUE PFITZER JUNIPER	#3	24"-30"	24"-30"	CONTAINER
5	FJ	FORSYTHIA XINTERMEDIA "MORNING GLORY"	MORNING GLORY FORSYTHIA	3'-4'	3'-4'	3'-4'	B&B
3	MF	MALUS FLORIBUNDA	JAPANESE FLOWERING CRABAPPLE	13/4"-2"	10'-12'	10'-12'	B&B
1	AR	ACER RUBRUM	RED MAPLE	13/4"-2"	10'-12'	6'-7'	B&B
9	PS	PINUS STROBUS	WHITE PINE	-	6'-7'	4'-5'	B&B

**BIO-RETENTION BASIN PLANTING SCHEDULE**

QTY.	ABBR.	SCIENTIFIC NAME	COMMON NAME	SIZE	HEIGHT	SPRED	ROOT
3	AR	ACER RUBRUM	RED MAPLE	2"-2 1/2" CAL.	10'-12'	-	B&B
3	OR	QUERCUS RUBRA	RED OAK	2"-2 1/2" CAL.	10'-12'	-	B&B
3	LS	LIQUIDAMBER STYRACIFLUA	SWEET GUM	2"-2 1/2" CAL.	10'-12'	-	B&B
8	CS	CORNUS SERICEA	RED OSIER DOGWOOD	-	3'-4'	-	B&B/CONT.
6	CA	CLETHRA ALNIFOLIA	SWEET PEPPER BUSH	-	3'-4'	-	B&B/CONT.
10	IG	ILEX GLABRA	INKBERRY	-	3'-4'	-	B&B/CONT.
28	HFH	HOSTA FORTUNEI "HYACINTHINA"	"HYACINTHINA" HOSTA	1 GAL.	-	-	CONTAINER
33	RFG	RUDECKIA FULGIDA "GOLDSTRUM"	BLACK EYED SUSANS	1 GAL.	-	-	CONTAINER



- I. BIORETENTION AREA SOIL SPECIFICATIONS**
- A. PLANTING SOIL**
- THE BIORETENTION AREAS SHALL CONSIST OF A PLANTING SOIL HAVING A COMPOSITION OF AT LEAST 10 TO 25 PERCENT CLAY AND SHALL BE OF A SANDY LOAM OR LOAMY SAND TEXTURE. LOAMY SOILS MAY BE UTILIZED FOR THE PLANTING SOIL BUT MUST CONSIST OF 35% SAND. IN ADDITION, THE FURNISHED PLANTING SOIL SHALL BE OF UNIFORM COMPOSITION, FREE OF STONES, STUMPS, ROOTS OR SIMILAR OBJECTS LARGER THAN ONE INCH, BRUSH, OR ANY OTHER MATERIAL OR SUBSTANCE WHICH MAY BE HARMFUL TO PLANT GROWTH, OR A HINDERANCE TO PLANTING OR MAINTENANCE OPERATIONS.
  - THE PLANTING SOIL SHALL BE FREE OF PLANTS OR PLANT PARTS OF BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, MUGWORT, NUTSEDGE, POISON IVY, CANADIAN THISTLE OR OTHERS AS SPECIFIED. IT SHALL NOT CONTAIN TOXIC SUBSTANCES HARMFUL TO PLANT GROWTH.
  - THE PLANTING SOIL SHALL BE TESTED AND MEET THE FOLLOWING CRITERIA:  
 pH RANGE: 5.5 - 6.5  
 ORGANIC MATTER: 1.5 - 3.0%  
 MAGNESIUM - Mg: 35 LBS./ACRE  
 PHOSPHORUS - P<sub>2</sub>O<sub>5</sub>: 100 LBS./ACRE  
 POTASSIUM - K<sub>2</sub>O: 85 LBS./ACRE  
 SOLUBLE SALTS: NOT TO EXCEED 500 PPM
  - THE FOLLOWING TESTING FREQUENCIES SHALL APPLY TO THE ABOVE SOIL CONSTITUENTS:  
 pH, ORGANIC MATTER: 1 TEST PER 500 CUBIC YARDS, BUT NO MORE THAN 1 TEST PER BIORETENTION AREA.  
 MAGNESIUM, PHOSPHORUS, POTASSIUM, SOLUBLE SALTS: 1 TEST PER 500 CUBIC YARDS, BUT NO LESS THAN 1 TEST PER BORROW SOURCE.  
 ONE GRAIN SIZE ANALYSIS SHALL BE PERFORMED PER 90 CUBIC YARDS OF PLANTING SOIL, BUT NO LESS THAN 1 TEST PER BIORETENTION AREA.
- B. MULCH LAYER SPECIFICATIONS**
- A MULCH LAYER SHALL BE PROVIDED ON TOP OF THE PLANTING SOIL. THE MULCH SHALL BE PINE BARK MULCH AND SHALL BE MULCHED TO A UNIFORM THICKNESS OF 3 INCHES. THE PINE BARK MULCH SHALL BE WELL AGED, UNIFORM IN COLOR, AND FREE OF FOREIGN MATERIAL INCLUDING PLANT MATERIAL. WELL AGED MULCH IS DEFINED AS MULCH THAT HAS BEEN STOCKPILED OR STORED FOR AT LEAST TWELVE (12) MONTHS.
- C. SAND SPECIFICATIONS**
- THE SAND SHALL BE FREE OF DELETERIOUS MATERIAL AND ROCKS GREATER THAN 1 INCH IN DIAMETER.
- D. COMPACTION**
- SOIL SHALL BE PLACED IN LIFTS LESS THAN 18 INCHES AND LIGHTLY COMPACTED (MINIMAL COMPACTIVE EFFORT) BY TAMPING WITH A BUCKET FROM A DOZER OR A BACKHOE.
- II. BIORETENTION AREA PLANT SPECIFICATIONS**
- A. GENERAL PLANTING SPECIFICATIONS**
- ROOT STOCK OF THE PLANT MATERIAL SHALL BE KEPT MOIST DURING TRANSPORT FROM THE SOURCE TO THE JOB SITE AND UNTIL PLANTED.
  - WALLS OF PLANTING PIT SHALL BE DUG SO THAT THEY ARE VERTICAL. THE DIAMETER OF THE PLANTING PIT MUST BE A MINIMUM OF SIX INCHES (6") LARGER THAN THE DIAMETER OF THE BALL OF THE TREE. THE PLANTING PIT SHALL BE DEEP ENOUGH TO ALLOW 1/4" OF THE BALL TO BE ABOVE THE EXISTING GRADE. LOOSE SOIL AT THE BOTTOM OF THE PIT SHALL BE TAMPED BY HAND. THE APPROPRIATE AMOUNT OF FERTILIZER IS TO BE PLACED AT THE BOTTOM OF THE PIT (SEE BELOW FOR FERTILIZATION RATES).
  - THE PLANT SHALL BE REMOVED FROM THE CONTAINER AND PLACED IN THE PLANTING PIT BY LIFTING AND CARRYING THE PLANT BY ITS BALL (NEVER LIFT BY BRANCHES OR TRUNK). SET THE PLANT STRAIGHT AND IN THE CENTER OF THE PIT SO THAT THE TOP OF THE BALL IS APPROXIMATELY 1/4" ABOVE THE FINAL GRADE. BACKFILL PLANTING PIT WITH EXISTING SOIL. MAKE SURE PLANT REMAINS STRAIGHT DURING BACKFILLING PROCEDURE. NEVER COVER THE TOP OF THE BALL WITH SOIL. MOUND SOIL AROUND THE EXPOSED BALL 1/4".
  - TREES SHALL BE BRACED BY USING 2" BY 2" WHITE OAK STAKES. STAKES SHALL BE PLACED PARALLEL TO WALKWAYS AND BUILDINGS. STAKES ARE TO BE EQUALLY SPACED ON THE OUTSIDE OF THE TREE BALL. UTILIZING HOSE AND WIRE THE TREE IS BRACED TO THE STAKES.
- B. FERTILIZATION**
- TREE AND SHRUB FERTILIZER SHALL BE A 21 GM. TIGHTLY COMPRESSED, LONG LASTING, SLOW RELEASE (2 YEAR) FERTILIZER TABLET WITH A MINIMUM GUARANTEED ANALYSIS OF 20-10-5:  
 TOTAL NITROGEN (N) - 20%  
 WATER SOLUBLE ORGANIC NITROGEN - 7%  
 WATER IN SOLUBLE ORGANIC NITROGEN - 13%  
 AVAILABLE PHOSPHORIC ACID (P<sub>2</sub>O<sub>5</sub>) - 10%  
 SOLUBLE POTASH (K<sub>2</sub>O) - 5%
  - FOR CONTAINERIZED TREES AND SHRUBS, PLACE THE SPECIFIED FERTILIZER TABLET(S) IN THE BOTTOM OF THE PLANTING PIT ACCORDING TO THE FOLLOWING RATES:  
 1 GALLON CONTAINER: 1 EACH 21 GM. TABLET  
 3 GALLON CONTAINER: 2 EACH 21 GM. TABLET  
 5 GALLON CONTAINER: 3 EACH 21 GM. TABLET  
 7 GALLON CONTAINER: 5 EACH 21 GM. TABLET
- C. PLANTING NON-GRASS GROUND COVER**
- THE GROUND COVER PLANTING HOLES SHALL BE DUG THROUGH THE MULCH WITH ONE OF THE FOLLOWING: HAND TROWEL, SHOVEL, BULB PLANTER, OR HOE (THIS DOES NOT APPLY TO GRASSES OR LEGUMES).
  - BEFORE PLANTING BIODEGRADABLE POTS SHALL BE SPLIT, AND NON-BIODEGRADABLE POTS SHALL BE REMOVED. ROOT SYSTEMS OF ALL POTTED PLANTS SHALL BE SPLIT OR CRUMBLED. THE GROUND COVER SHALL BE PLANTED SO THAT THE ROOTS ARE SURROUNDED BY THE SOIL BELOW THE MULCH. POTTED PLANTS SHALL BE SET SO THAT THE TOP OF THE POT IS EVEN WITH THE EXISTING GRADE. THE ROOTS OF BARE ROOT PLANTS SHALL BE COVERED TO THE CROWN.
  - THE ENTIRE GROUND COVER BED SHALL BE THOROUGHLY WATERED.
- D. FERTILIZER**
- ALL GROUND COVERS SHALL BE FERTILIZED WITH A 10-6-4 ANALYSIS FERTILIZER AS A WET APPLICATION AT THE RATE OF 3 LBS. PER 100 SQUARE FEET OF THE BIORETENTION AREA PRIOR TO PLANTING NON-GRASS GROUND COVER OR AS PART OF THE GRASS SEED GROUND COVER.

**MAINTENANCE SCHEDULE FOR BIORETENTION AREAS\***

ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.

DESCRIPTION	METHOD	FREQUENCY	TIME OF THE YEAR
SOIL			
INSPECT AND REPAIR EROSION	VISUAL	MONTHLY AND AFTER HEAVY STORM EVENTS	MONTHLY
MULCH LAYER			
INSPECTION	BY HAND	ONCE A YEAR	SPRING
REMOVE AND REPLACE	BY HAND	ONCE EVERY 2 TO 3 YEARS	SPRING
PLANTS			
REMOVAL AND REPLACEMENT OF ALL DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT	SEE PLANTING SPECIFICATIONS	TWICE A YEAR	SPRING AND FALL
TREAT ALL DISEASED TREES AND SHRUBS. REPLACE ANY DEFICIENT STAKES OR WIRES	MECHANICAL OR BY HAND	TWICE A YEAR	SPRING AND FALL
WATERING OF PLANT MATERIAL SHALL TAKE PLACE AT THE END OF EACH DAY FOR FOURTEEN CONSECUTIVE DAYS AFTER PLANTING HAS BEEN COMPLETED	BY HAND	IMMEDIATELY AFTER COMPLETION OF PROJECT	N/A

REVIEWED FOR HOWARD S.C.D. AND MEETS THE TECHNICAL REQUIREMENTS.  
*Cheryl Sumner* 11/21/99  
 USA-NATURAL RESOURCES CONSERVATION SERVICE

**ENGINEER CERTIFICATION**  
 I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
*James A. Avirett, Jr.* 1-15-99  
 JAMES A. AVIRETT, JR., P.E. 10210

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*John P. ...* 1/21/99  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
*... ..* 1/15/99  
 CHIEF, DIVISION OF LAND DEVELOPMENT

**DEVELOPER'S CERTIFICATION**  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*... ..* 1-15-99  
 SIGNATURE OF DEVELOPER

**PERMIT INFORMATION CHART**

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL*			
ROCKBURN BRANCH PARK	LANDING ROAD ENTRANCE	640			
PLAT * OR L/F	BLOCK *	ZONING	TAX MAP	ELECT. DISTR.	CENSUS TRACT
704/646	23	R-20	31	1	6011
WATER CODE	SEWER CODE				
W-5	S-5				

**ADDRESS CHART**

LOT/PARCEL	ADDRESS CHART
640	5390 LANDING ROAD, ELK RIDGE, MD. 21227

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND.  
*John P. ...* 1/15/99  
 DIRECTOR OF PUBLIC WORKS  
*Robert J. ...* 1-15-99  
 CHIEF, BUREAU OF UTILITIES

PREPARED BY:  
**WR&A**  
 Whitman, Requardt and Associates, LLP.  
 DES: WRD/EJM  
 DRN: EJM/GWG  
 CHK: JAA  
 DATE: 12/09/98  
 BY NO. REVISION DATE: 8-23-02

**LANDSCAPE PLAN, BIORETENTION BASIN PLANTING PLAN AND SPECIFICATIONS**

SDP SHEET 3 OF 6

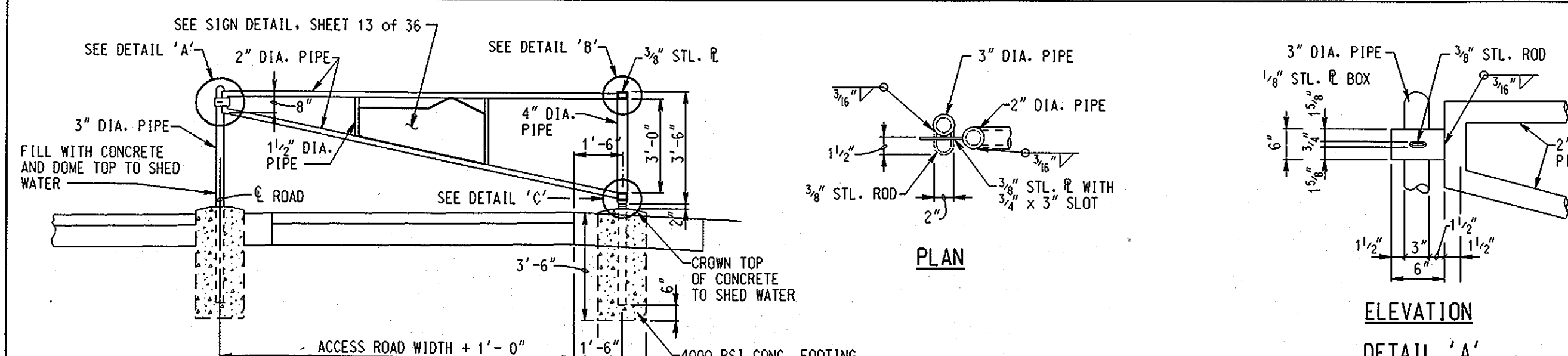
600' SCALE MAP NO. 31 BLOCK NO. 23

**ROCKBURN WASTEWATER PUMPING STATION CAPITAL PROJECT NO. S-6200 CONTRACT NO. 10-3695 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND**

SCALE AS SHOWN  
 SHEET 3 OF 36  
 SDP99-14

**RECORD DRAWING**  
 11/18/02

C-2



1. ALL METAL USED IN THE MANUFACTURE OF THE PIPE GATE TO BE HOT DIP GALVANIZED.
2. ALL JOINTS TO BE WELDED ALL AROUND WITH 3/16" WELDS.
3. ALL PIPE TO BE SCHEDULE 40 STEEL. DIAMETERS SHOWN ARE NOMINAL PIPE SIZE.
4. PADLOCK TO BE FURNISHED BY OWNER.
5. CONTRACTOR TO FURNISH AND INSTALL AN ADDITIONAL 3" DIA. POST WITH 3/8" ROD. LOCATE TO HOLD GATE IN AN OPEN POSITION 90° FROM THAT SHOWN ON THE PLAN.
6. GATE TO SWING IN TOWARDS THE PUMPING STATION SITE.
7. ALL (3) 3" DIAMETER VERTICAL METAL POSTS SHALL BE FILLED WITH CONCRETE, THE HINGE POST-LEVEL WITH THE TOP THE OTHER 2 POSTS-DOMED AT THE TOP TO SHED WATER.

**STORM DRAIN FLOW TABULATION FORM**

STORM FREQUENCY 10YR. EXCEPT AS NOTED

LOCATION	ACRES	COEFF. "C"	CA	±CA	TIME CONC. MIN.	INTEN. "I"	O=CIA C.F.S.	PIPE SIZE	PIPE SLOPE	VEL.	LGTH.	TIME	REMARKS
S-1	0.515	0.29	0.15	0.15	10.0	7.5	1.13	12"	0.0472	7.2 FPS	53'	1 MIN.	PARTIAL FLOW VELOCITY

**STRUCTURE SCHEDULE**

NO.	TYPE	SIZE	INV.	TOP ELEV.
S-1	"C" ENDWALL	12"	262.0	263.75
S-2	HDPE FLARED END SECTION	12"	259.5	260.5

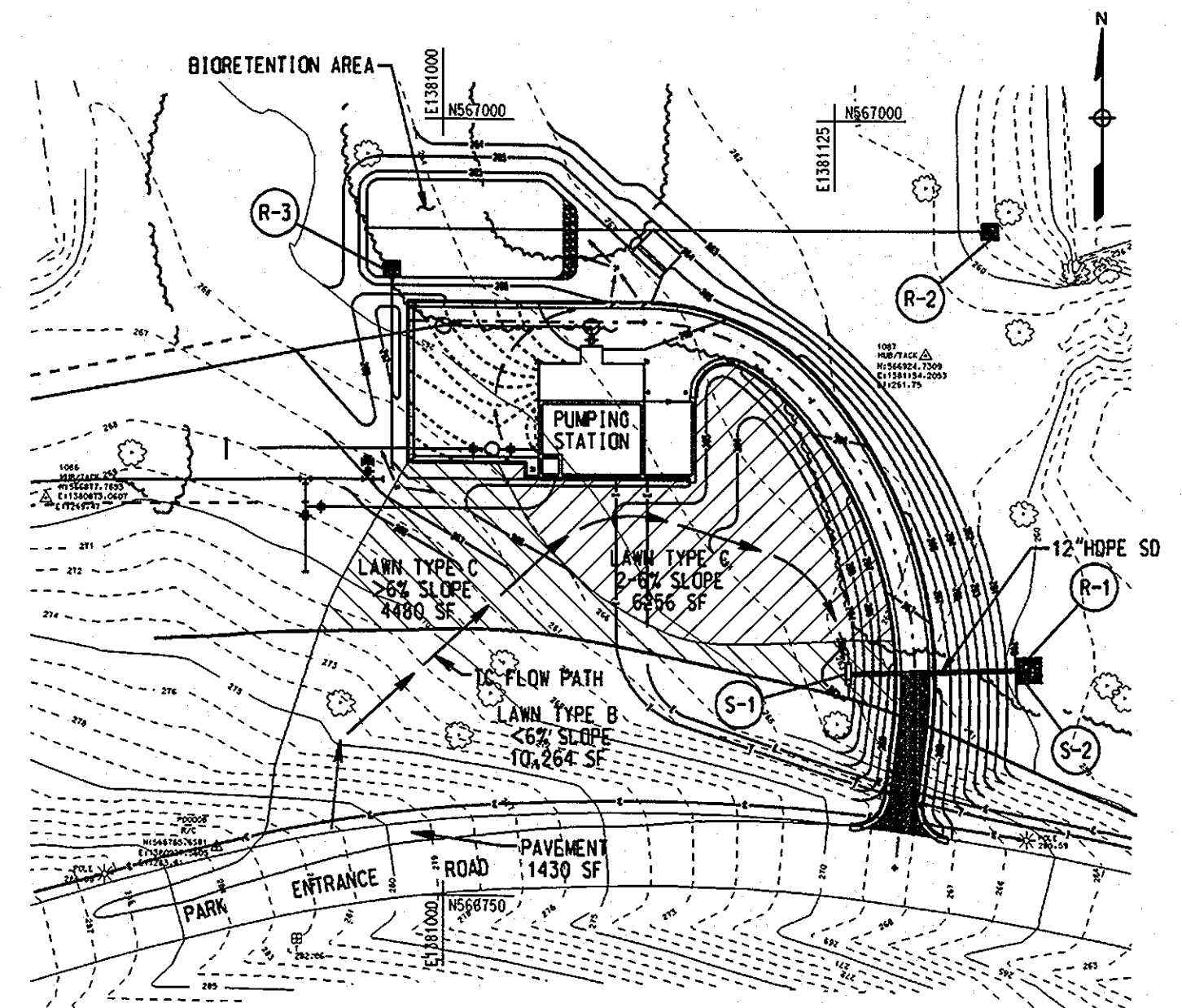
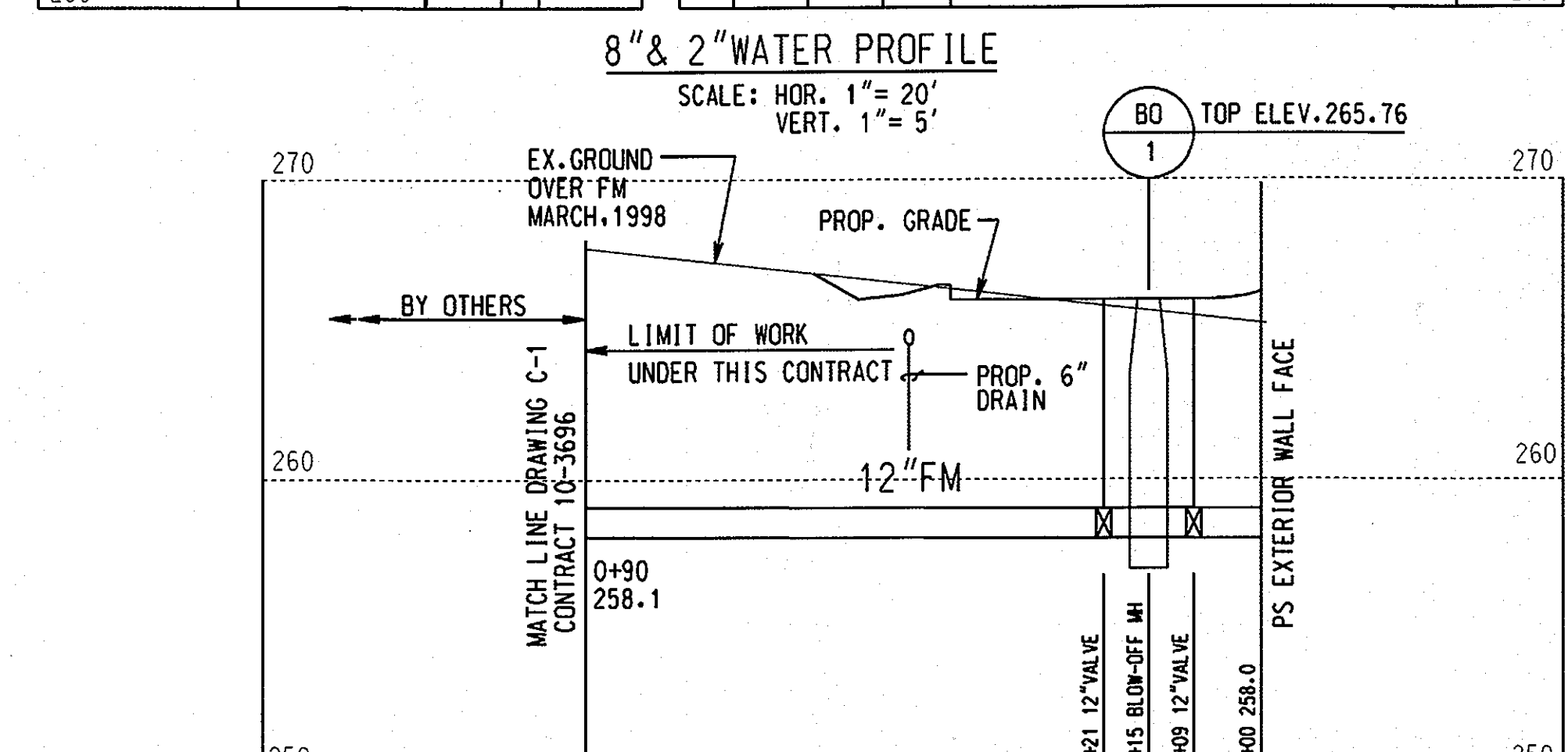
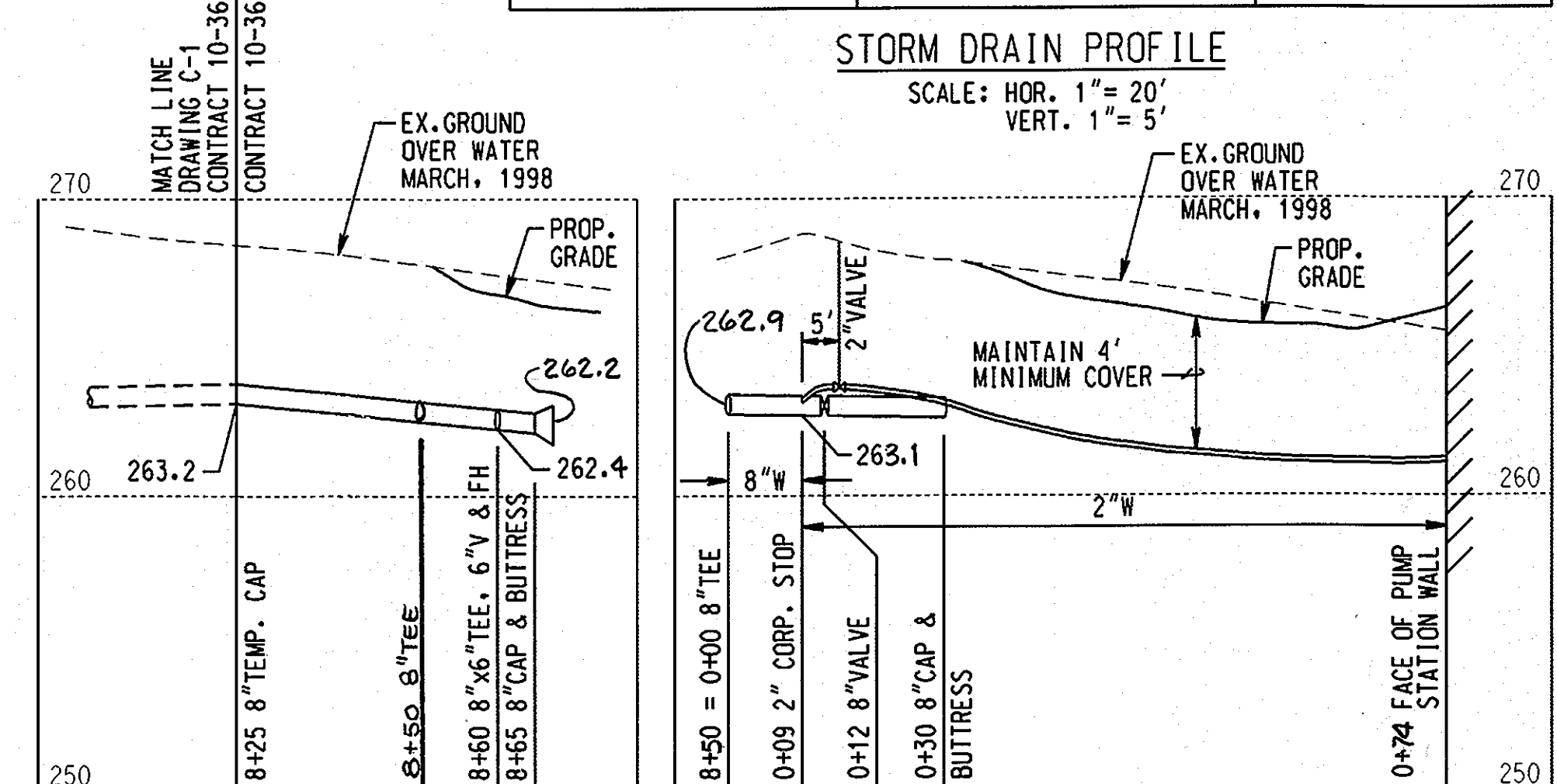
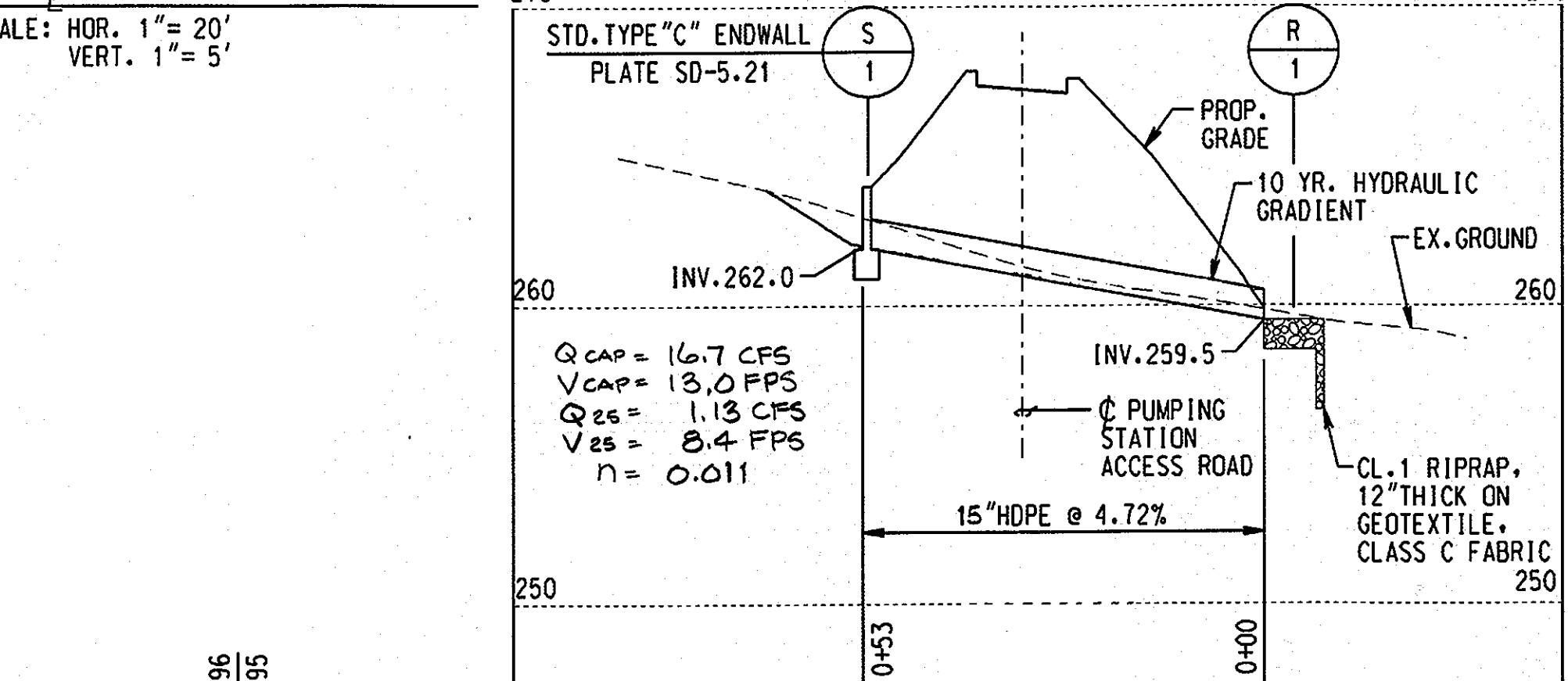
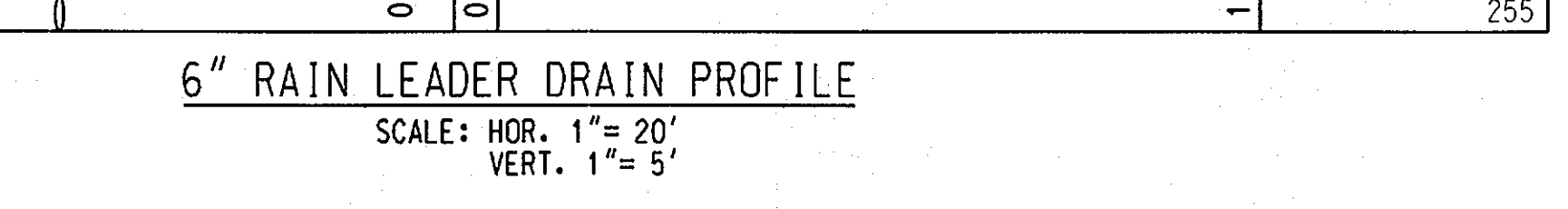
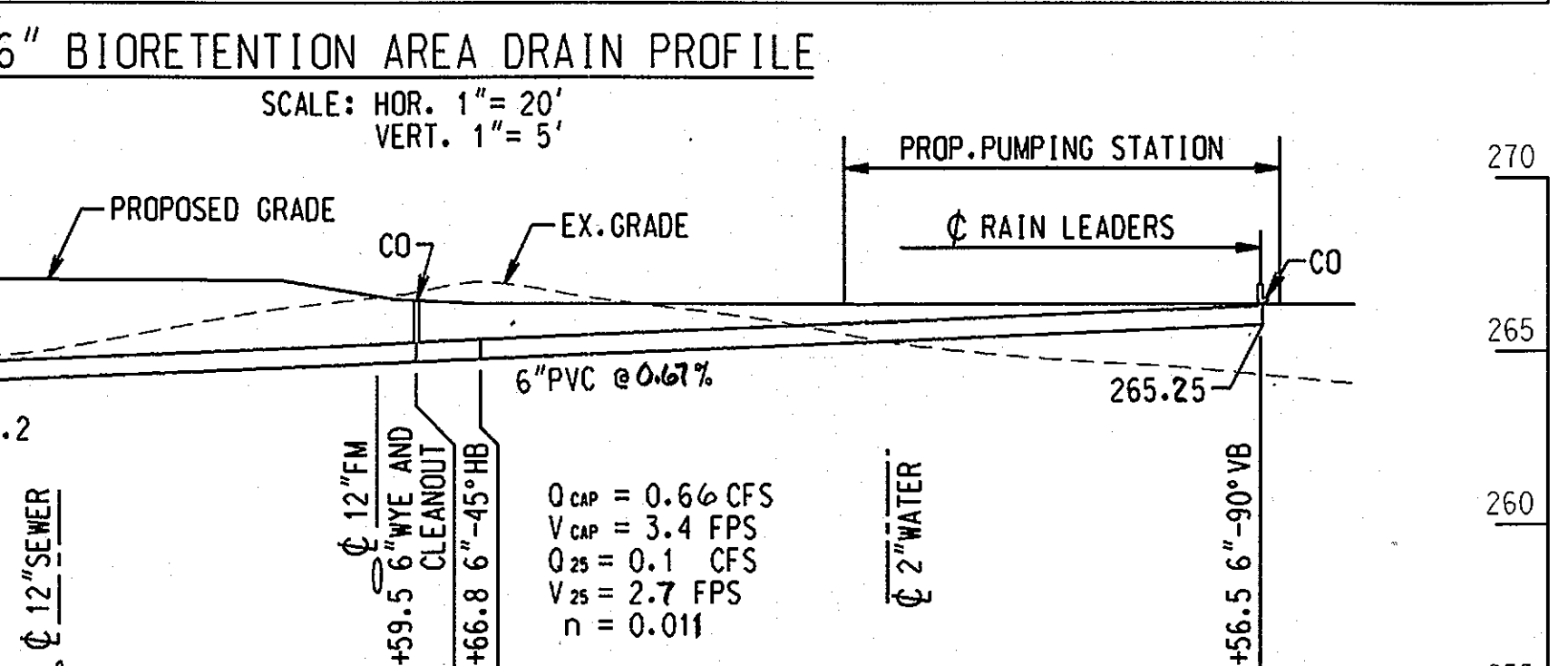
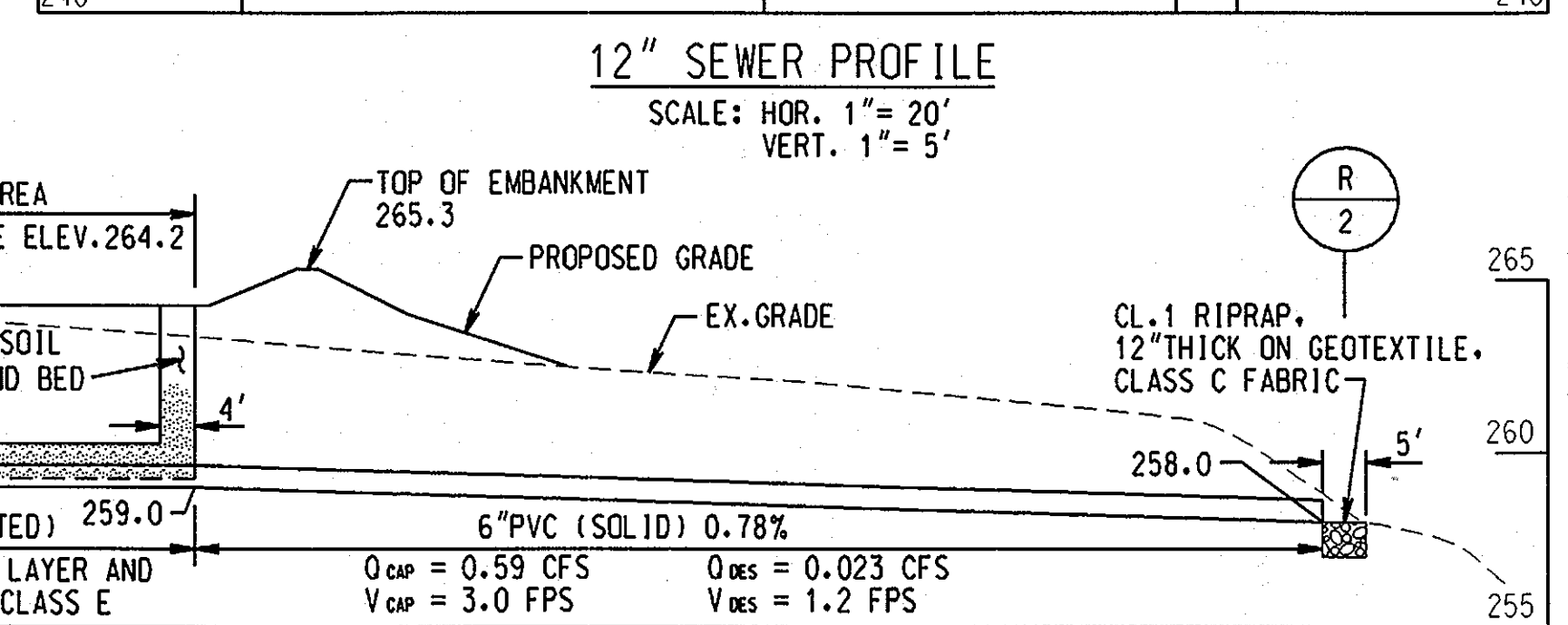
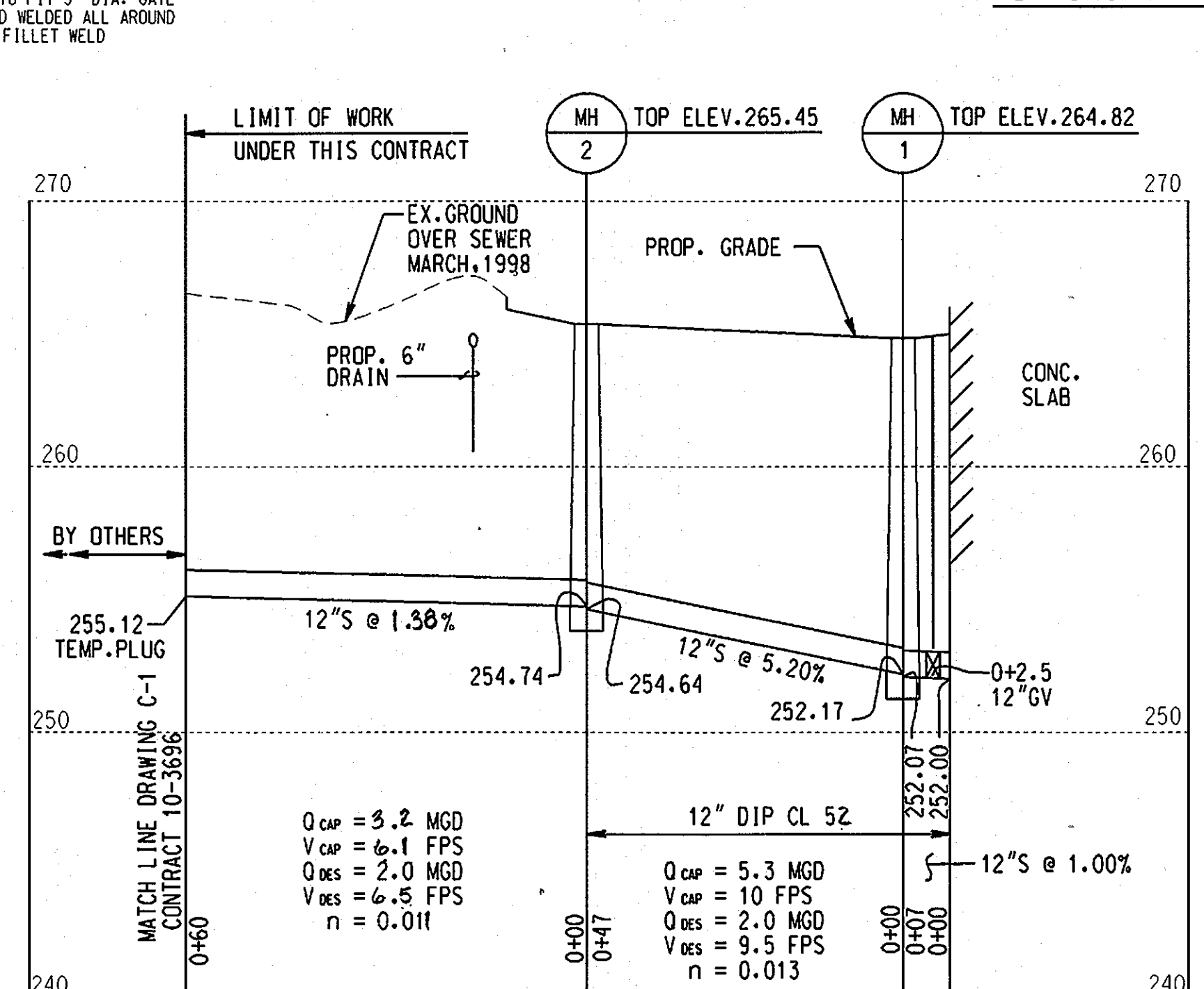
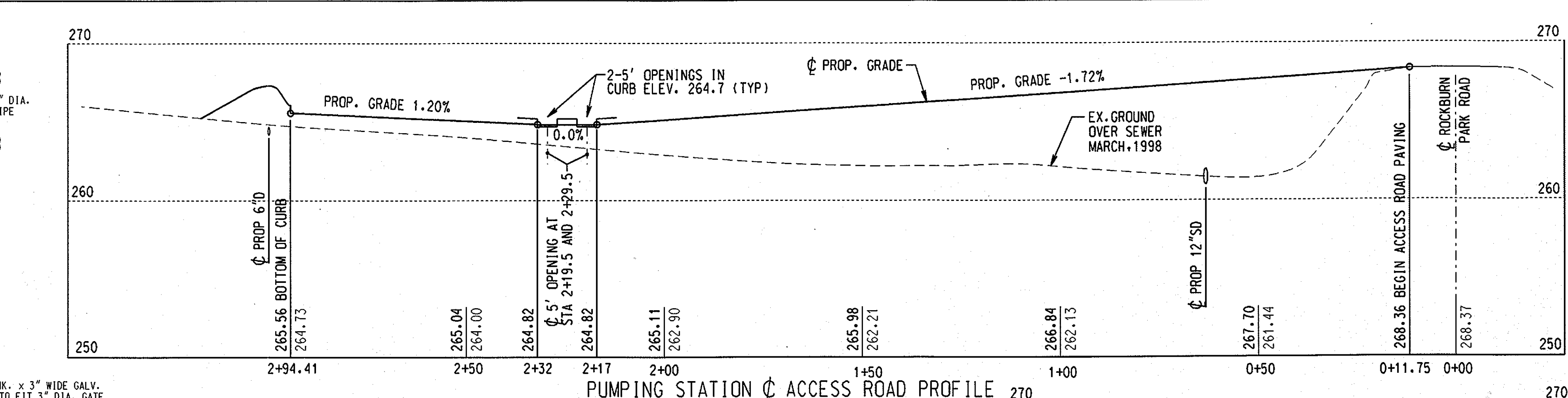
**PIPE SCHEDULE**

SIZE	TYPE	CLASS	LENGTH	LOCATION
12"	HDPE	N-12	53'	S-1 TO S-2

**ROCK OUTLET SCHEDULE \***

NO.	FLOW DEPTH	VEL.	LxW	ELEV.	TOE WALL
R-1	0.26'	7.7 FPS	8x8	259.5	YES
R-2	0.01'	1.2 FPS	5x5	258.0	NO
R-3	0.13'	2.0 FPS	5x5	264.2	NO

\* ALL ROCK OUTLETS SHALL USE CLASS 1 RIP-RAP (d50=9") LAID 1 FOOT THICK ON GEOTEXTILE CLASS C FABRIC



**DRAINAGE AREA MAP**  
SCALE: 1" = 50'

REVIEWED FOR HOWARD S.C.D. AND MEETS THE TECHNICAL REQUIREMENTS.  
*John Simmons* 1/21/99 DATE  
USDA-NATURAL RESOURCE CONSERVATION SERVICE

ENGINEER CERTIFICATION  
I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
*James A. Avirett Jr.* 1-15-99 DATE  
JAMES A. AVIRETT JR., P.E. 10210

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
*Paul R. Smith* 1/21/99 DATE  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

DEVELOPER'S CERTIFICATION  
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*Paul R. Smith* 1-15-99 DATE  
SIGNATURE OF DEVELOPER

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.  
*Paul R. Smith* 1-15-99 DATE  
DIRECTOR OF PUBLIC WORKS

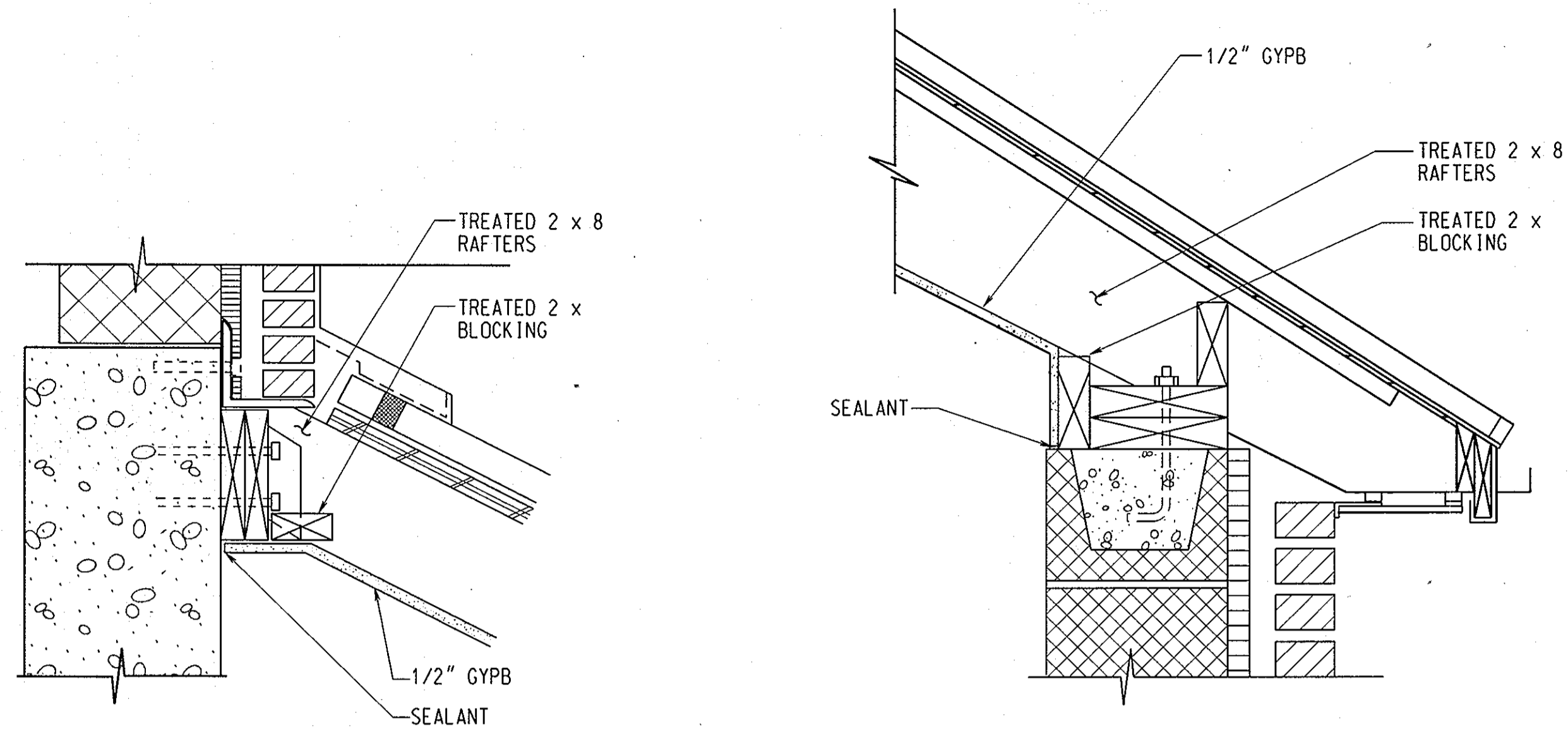
PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.  
*James A. Avirett Jr.*

DES: WRD/EJM  
DRN: EJM/GWG  
CHK: JAA  
DATE: 12/09/98  
RECORD DRAWING  
BY NO. REVISION DATE

ROAD PROFILE, STORM DRAIN AND UTILITY PROFILES  
SDP SHEET 4 OF 6  
600' SCALE MAP NO. 31 BLOCK NO. 23

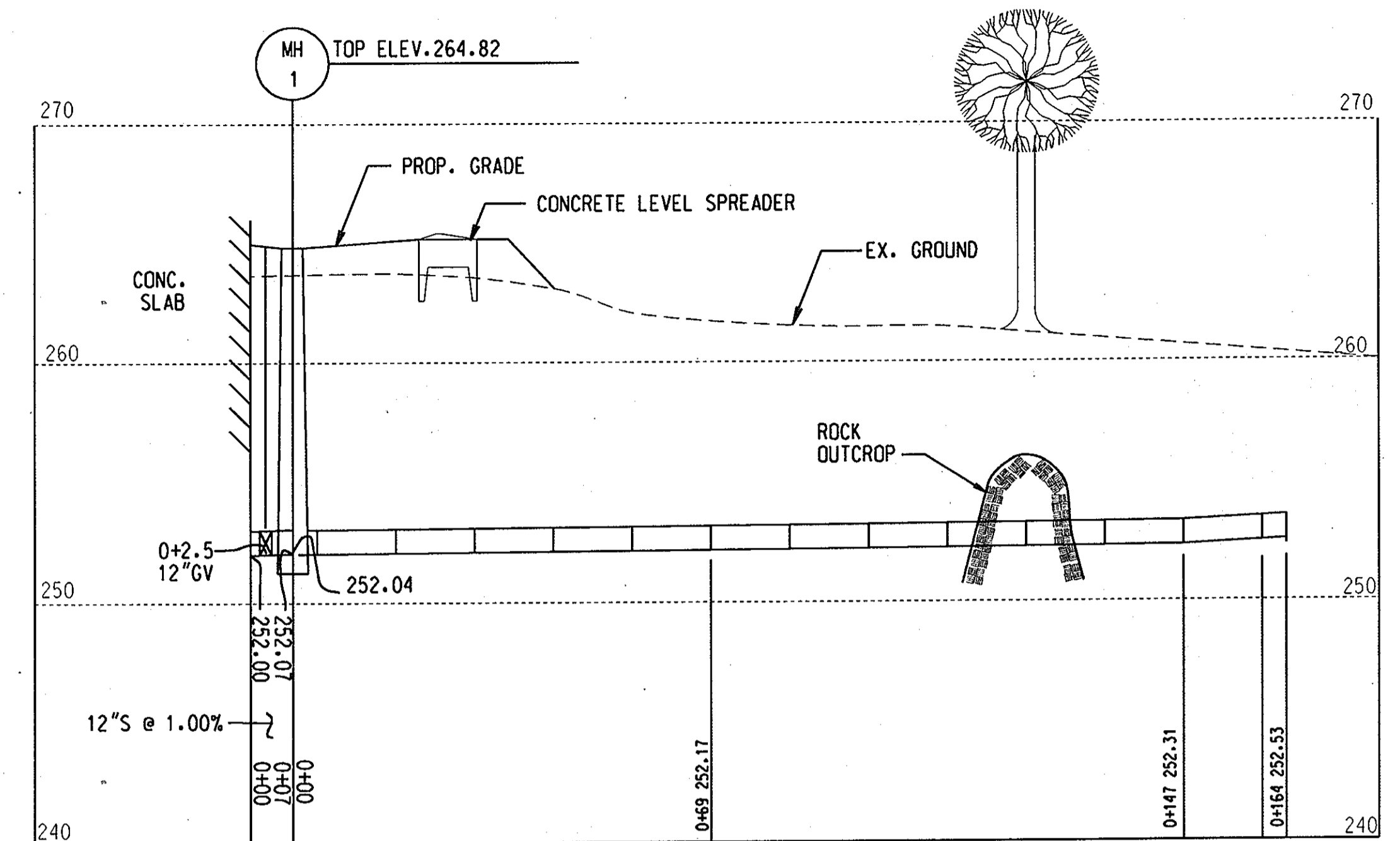
ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
SCALE AS SHOWN  
SHEET 4 OF 36

RECORD DRAWING  
11/19/02  
C-3



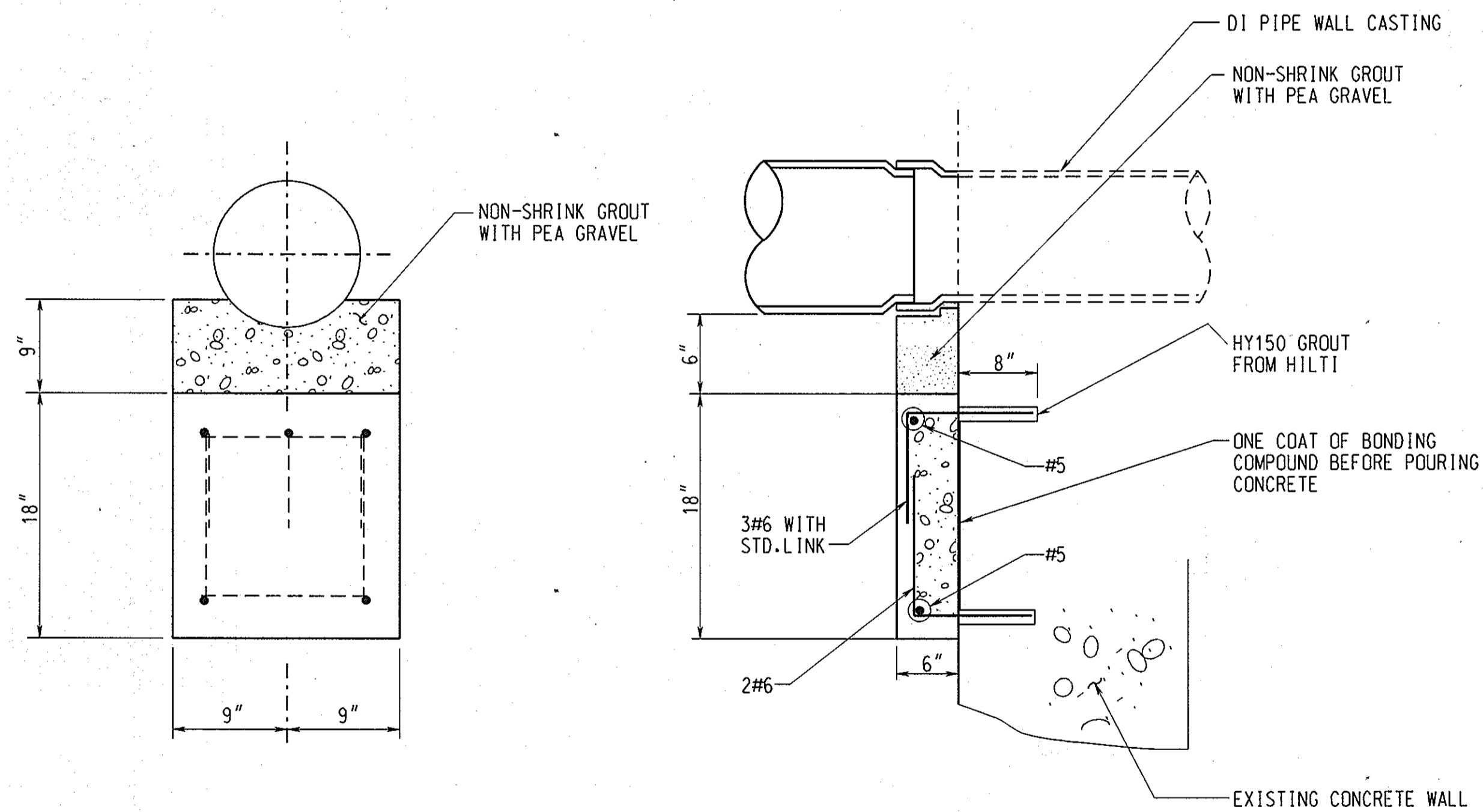
**CEILING DETAILS @ MCC**

NO SCALE  
NOTE: REFER TO SHEET A-4



**12" SEWER PROFILE**

SCALE: HOR. 1"=20'  
VERT 1"=5'  
NOTE: REFER TO SHEET C-3



**PIPE HAUNCH DETAIL**

NO SCALE  
NOTE: REFER TO SHEET S-8

RECORD  
DRAWING  
11/18/02

C-4

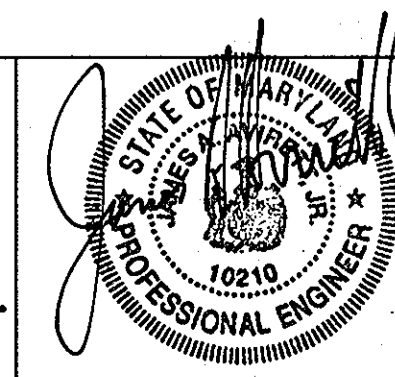
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.

*[Signature]* 1/30/03  
DIRECTOR OF PUBLIC WORKS  
DATE

*[Signature]* 1/20/03  
CHIEF, BUREAU OF ENGINEERING  
DATE

PREPARED BY :

**WR&A**  
Whitman, Reardon and Associates, LLP.



DES :	
DRN :	
CHK :	
DATE : 12/09/98	
BY NO.	REVISION
DATE	600' SCALE MAP NO. BLOCK NO.

DETAILS AND SECTIONS

ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE  
AS  
SHOWN

SHEET  
4A OF 36





**ARCHITECTURAL LEGEND**

	BRICK
	CONCRETE MASONRY UNITS
	WOOD BLOCKING
	RIGID WALL/PERIMETER INSULATION
	BATT INSULATION
	CONCRETE
	POROUS FILL
	EARTH
	METAL PATTERN
	DOOR NUMBER SYMBOL
	LOUVER NUMBER SYMBOL
	WALL/BUILDING SECTION SYMBOL
	REVISION

ABV	ABOVE
AC	AIR CONDITIONING (CONDITIONER)
AD	ACCESS DOOR (OR PANEL)
ADA	AMERICANS WITH DISABILITIES ACT
ADD	ADDENDUM
ADJ	ADJACENT
AES	ABOVE EXISTING SLAB
AF	ACCESS FLOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
ALT	ALTERNATE
ALUM	ALUMINUM
APC	ACOUSTICAL PANEL CEILING (LAY-IN)
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ASB	ASBESTOS
ASP	ASPHALT
ATC	ACOUSTICAL TILE CEILING (CONCEALED SUSPENSION)
AWP	ACOUSTICAL WALL PANEL
BB	BULLETIN BOARD (GLASS COVERED)
BC	BOTTOM OF CURB
BD	BOARD
BEN	BENCH
BETW	BETWEEN
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BOT	BOTTOM
BR	BRICK
BR/S	BACKER ROD AND SEALANT
C	CONDUIT
C/C	CENTER TO CENTER
CB	CHALK BOARD
CAB	CABINET
CARP	CARPET
CARPET	CARPET TILE
CEM	CEMENT
CER	CERAMIC
CI	CAST IRON
CG	CORNER GUARD
CH	CEILING HEIGHT
CJ	CONTROL JOINT
CL	CENTERLINE
CLOS	CLOSET
CLG	CEILING
CLR	CLEAR
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEAR OPENING
COL	COLUMN
COMP	COMPACTED
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CONV	CONVECTOR
CR	COLD ROLLED
CSK	COUNTERSUNK
CSPE	CHLOROSULFONATED POLYETHYLENE ELASTOMER
CT	CERAMIC TILE
CTR	COUNTER
CW	COLD WATER
CX	CONNECT TO EXISTING
D	DOUBLE
DEG	DEGREE
DEMO	DEMOLITION
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIR	DIRECTORY
DN	DOWN
DO	DOOR OPENING
DR	DOOR
DS	DOWNSPOUT
DWG	DRAWING
E	EAST
EA	EACH
EF	EACH FACE
EFS	EXTERIOR FINISH SYSTEM
EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATOR
EM	ENTRY MAT
EP	ETHYLENE PROPYLENE-BASED (SINGLE PLY ROOFING)
EPB	ELECTRIC PANEL BOX
EPDM	ETHYLENE-PROPYLENE-DIENE MEMBRANE
EPS	EXPANDED POLYSTYRENE
EPX	EPOXY
EO	EQUAL
EQUIP	EQUIPMENT
EST	ESTIMATE
EUH	ELECTRIC UNIT HEATER
EW	EACH WAY
EWCA	ELECTRIC WATER COOLER
EWCA	ELECTRIC WATER COOLER - ACCESSIBLE
EXIST	EXISTING
EXP	EXPANSION OR EXPOSED
EXT	EXTERIOR

**ARCHITECTURAL/STRUCTURAL ABBREVIATIONS**

F	FILLER	OA	OVERALL
FC	FAN COIL UNIT	OC	ON CENTER
FD	FLOOR DRAIN OR FIRE DAMPER	OD	OUTSIDE DIAMETER
FDR	FOLDING DOOR (WOOD OR FABRIC)	OFF	OFFICE
FE	FIRE EXTINGUISHER ON BRACKET	OHD	OVERHEAD COILING DOOR
FEC	FIRE EXTINGUISHER CABINET	OHG	OVERHEAD COILING GRILLE
FH	FLAT HEAD	OP	OPERABLE PANEL PARTITION (HUNG FROM OVERHEAD TRACK)
FIRE T	FIRE TREATED	OPNG	OPENING
FIN	FINISH OR FINISHED	OPP	OPPOSITE
FIX	FIXTURE	OZ	OUNCE
FL	FLASHING	PAV	PAVER TILE
FLM	FULL LENGTH MIRROR	PC	PIECE
FLR	FLOOR	PF	PLASTIC FABRICATION
FR	FIRE RATED	PL	PLATE
FRC	FIBER-REINFORCED COATING	PLAM	PLASTIC LAMINATE
FS	FOLDING SHELF	PLAS	PLASTER
FSS	FOLDING SHOWER SEAT	PREFAB	PREFABRICATED
FT	FOOT OR FEET	PRES T	PRESSURE TREATED
FTG	FOOTING	PT	PAINT
FWP	FABRIC-WRAPPED PANEL (FABRICATED; TACKABLE; ACOUSTICAL PANEL)	PTD	PAPER TOWEL DISPENSER
GA	GAUGE	PTN	PARTITION
GALV	GALVANIZED	PVC	POLYVINYL CHLORIDE
GB	GRAB BAR	OT	QUARRY TILE
GEN	GENERAL	QTY	QUANTITY
GL	GLASS	R	RISER OR RADIUS
GLM	GLASS UNIT MASONRY (GLASS BLOCK)	RB	RESILIENT WALL BASE AND ACCESSORIES (VINYL BASE; RUBBER BASE; TREADS; NOSINGS; EDGINGS)
GMU	GLAZED MASONRY UNIT	RCP	REINFORCED CONCRETE PIPE
GRD	GROUND	RD	ROOF DRAIN OR ROUND
GP	GYPSTUM PLASTER	REQ'D	REQUIRED
GRT	GROUT	RE	RESILIENT FLOORING (VINYL; RUBBER; VINYL COMPOSITION; SHEET FLOORING)
GVP	GYPSTUM VENEER PLASTER	REBAR	REINFORCING BAR
GYPB	GYPSTUM BOARD (WALL OR CEILING)	REINF	REINFORCED OR REINFORCING
GYPBS	GYPSTUM BOARD SHAFT-WALL ASSEMBLY	RESF	RESINOUS FLOORING
H	HEAD	REQ	REQUIRED
HB	HORIZONTAL BLIND	RET	RETURN
HDW	HARDWARE	REV	REVISION
HM	HOLLOW METAL	RH	ROBE HOOK
HOR	HORIZONTAL	RM	ROOM
HP	HIGH POINT	RO	ROUGH OPENING
HR	HOUR	RWR	RECESSED WASTE RECEPTACLE
HT	HEIGHT	RV	ROOF VENT
HTR	HEATER	RX	REMOVE EXISTING
HVAC	HEATING, VENTILATING AND AIR CONDITIONING	S	SILL, SOUTH OR SINGLE
HW	HOT WATER	SC	SPECIAL COATING (OTHER THAN PAINT SYSTEMS)
ID	INSIDE DIAMETER	SCH	SCHEDULE OR SCHEDULED
IN	INCH	SCR	SHOWER CURTAIN ROD
INSUL	INSULATION	SD	SOAP DISPENSER OR STORM DRAIN
INT	INTERIOR	SECT	SECTION
INV	INVERT	SF	SQUARE FOOT
J	JAMB	SFT	STRUCTURAL FACING TILE
JC	JANITOR'S CLOSET	SH	SHOWER
JT	JOINT	SHT	SHEET
KIT	KITCHEN	SIM	SIMILAR
L	LINTEL	SJ	STEEL JOIST
LAB	LABORATORY	SND	SANITARY NAPKIN DISPOSAL
LAV	LAVATORY	SOD	SECTIONAL OVERHEAD DOOR (STEEL; ALUMINUM; PLASTIC PANEL)
LG	LONG	SPEC	SPECIFICATION
LIN	LINOLEUM FLOOR COVERING	SP	STAND PIPE
LLV	LONG LEG VERTICAL	SQ	SQUARE
LOC	LOCATION	SS	STAINLESS STEEL OR SERVICE SINK
LOCK	LOCKER	SSM	SOLID SURFACING MATERIAL
LP	LOW POINT	STAT	STATIONARY
LT	LIGHT	STL	STEEL
LTG	LIGHTING	STRUCT	STRUCTURAL OR STRUCTURE
LV	LOUVER	SUSP	SUSPENDED
M	MIRROR OR MEN	SWR	SURFACE-MOUNTED WASTE RECEPTACLE
MACH	MACHINE	SYS	SYSTEM
MAS	MASONRY	T	TILE
MATL	MATERIAL	TOB	TOWEL BAR
MAX	MAXIMUM	T&B	TOP & BOTTOM
MC	MEDICINE CABINET	T&G	TONGUE & GROOVE
MET	METAL	TC	TOP OF CURB
MDF	MEDIUM DENSITY FIBERBOARD	TCD	TOILET SEAT COVER DISPENSER
MFB	MINERAL FIBER BLANKET	TEL	TELEPHONE
MECH	MECHANICAL	TER	TERRAZZO
MET	METAL	TH	THICK
MFR	MANUFACTURER	TO	TOP OF
MH	MANHOLE	TOS	TOP OF STEEL
MIN	MINIMUM	TOW	TOP OF WALL
MISC	MISCELLANEOUS	TP	TOILET PARTITION (WATER CLOSET; URINAL; SHOWER; SCREEN)
MK	MARK	TPD	TOILET PAPER DISPENSER
MO	MASONRY OPENING	TR	TREAD
MP	METAL PANEL	TYP	TYPICAL
MR	MOP RACK	U	UNIT
MTD	MOUNTED	UNO	UNLESS NOTED OTHERWISE
MTL	METAL	UR	URINAL
N	NORTH		
NA	NOT APPLICABLE		
ND	SANITARY NAPKIN DISPENSER		
NIC	NOT IN CONTRACT		
NO	NUMBER		
NOM	NOMINAL		
NTS	NOT TO SCALE		

V	VENT
VB	VERTICAL BLIND
VDB	VISUAL DISPLAY BOARD (HINGED CONFERENCE UNIT)
VERT	VERTICAL
VEST	VESTIBULE
VIF	VERIFY IN FIELD
VP	VAPOR BARRIER
VS	VERTICAL STANDPIPE
W	WOMEN, WIDTH, WEST OR WOVEN
W/	WITH
WC	WATER CLOSET OR WALL COVERING (VINYL OR TEXTILE WALL COVERING; WALL PAPER)
WD	WOOD
WH	WEEP HOLE
WHT	WHITE
WO	WINDOW OPENING
WP	WATERPROOF OR WORKING POINT
WR	WATER RESISTANT OR WASTE RECEPTACLE
WT	WEIGHT
WWF	WOVEN WIRE FABRIC
YD	YARD
YR	YEAR

ARCHITECTURAL REGISTRATION BOARD  
 3327-A  
**RECORD DRAWING**  
 11/18/02

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND.

*Cam P. Lew* 1-15-99 DATE  
 DIRECTOR OF PUBLIC WORKS

*Robert J. Jenson* 1-15-99 DATE  
 CHIEF, BUREAU OF ENGINEERING

*Robert A. Berger* 1-15-99 DATE  
 CHIEF, BUREAU OF UTILITIES

*Robert A. Berger* 1-15-99 DATE  
 ACT. CHIEF, UTILITY DESIGN DIVISION

PREPARED BY:

**WR&A**  
 Whitman, Requardt and Associates, LLP.

DES : ERB				
DRN : ERB				
CHK : JD				
DATE : 11/12/98				
BY	NO.	REVISION	DATE	
		RECORD DRAWING	8-23-02	

LEGENDS AND ABBREVIATIONS

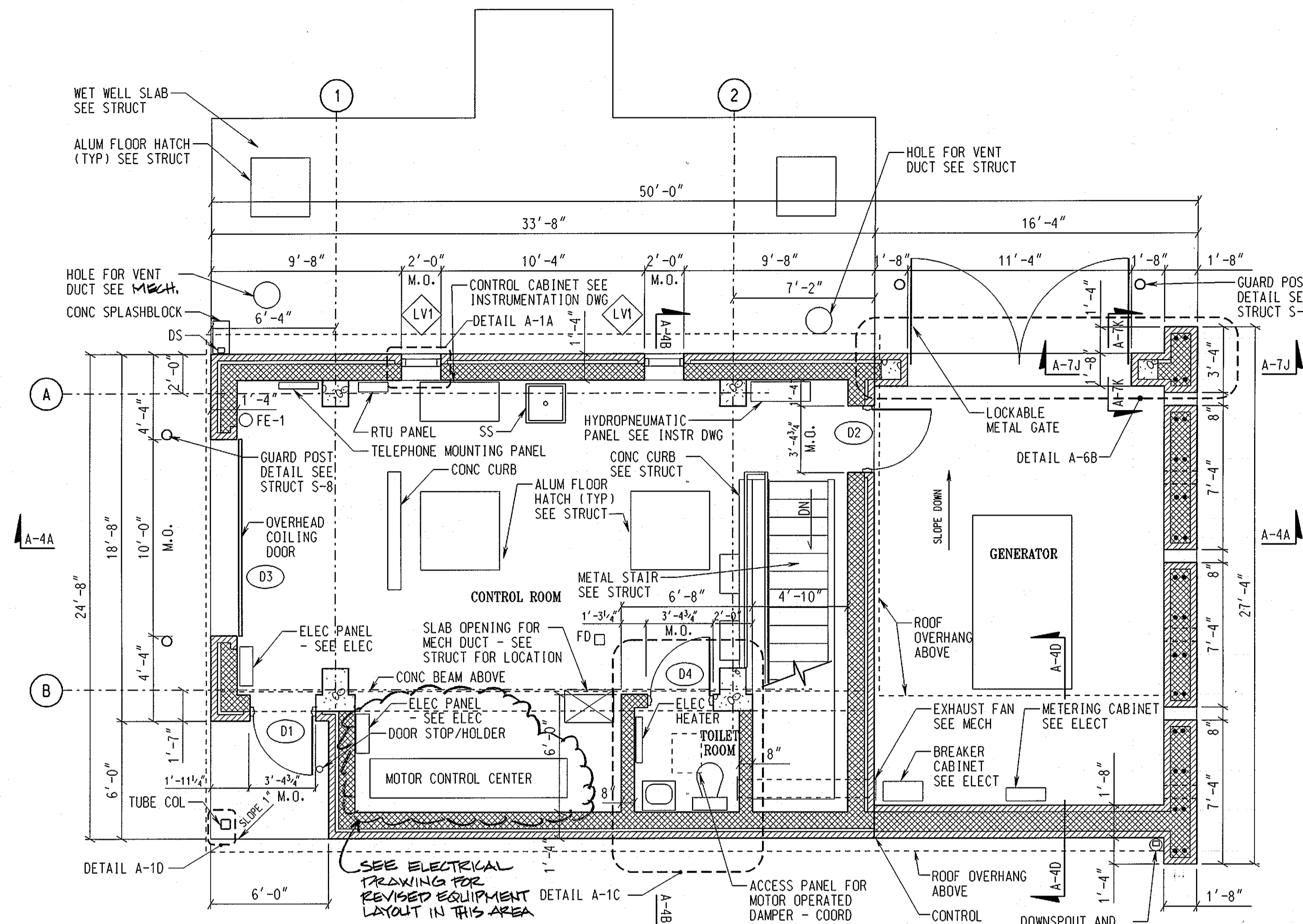
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

ROCKBURN WASTEWATER PUMPING STATION  
 CAPITAL PROJECT NO. S-6200  
 CONTRACT NO. 10-3695  
 FIRST ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 7 OF 36

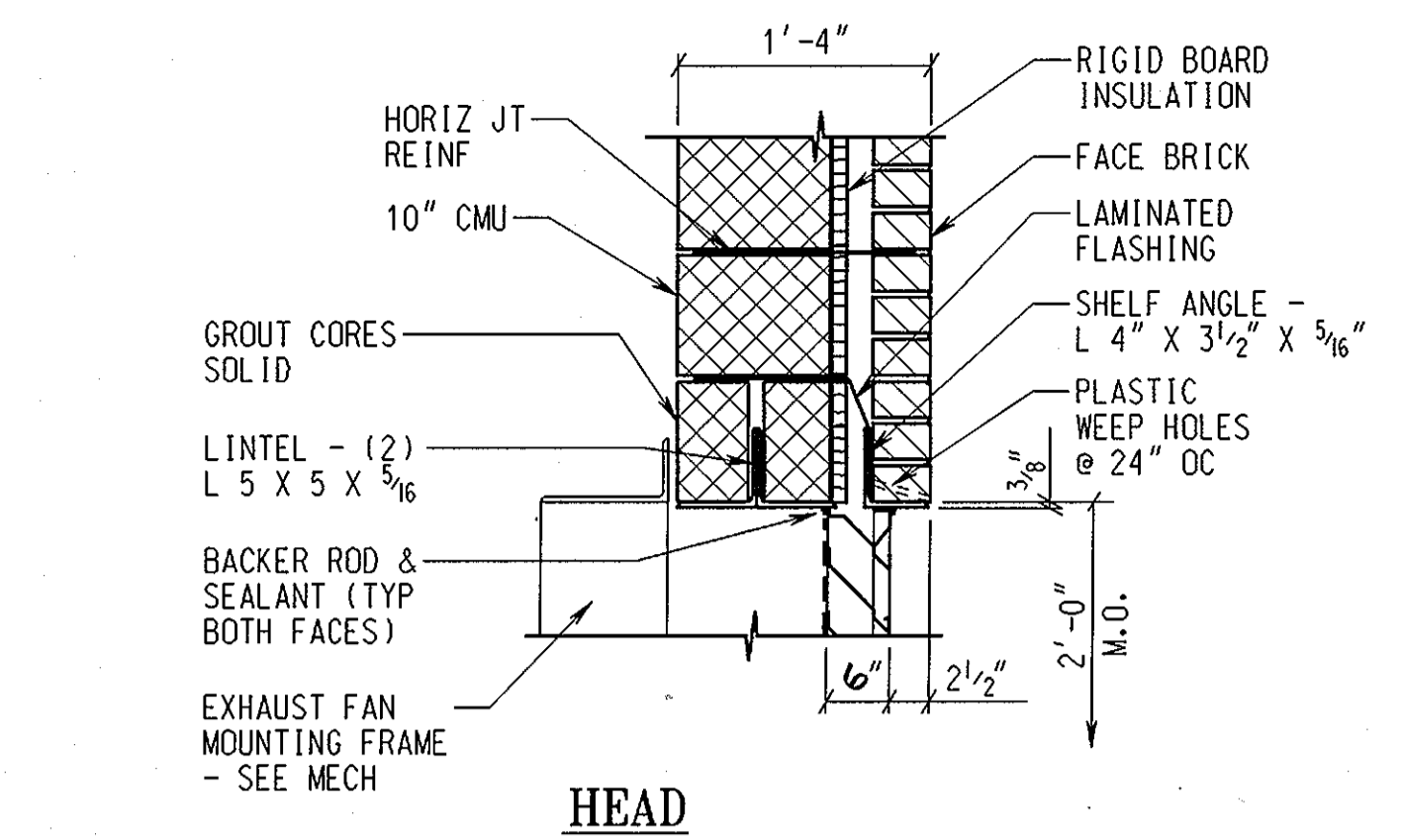
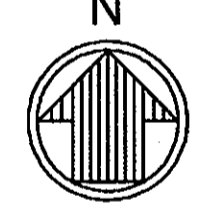




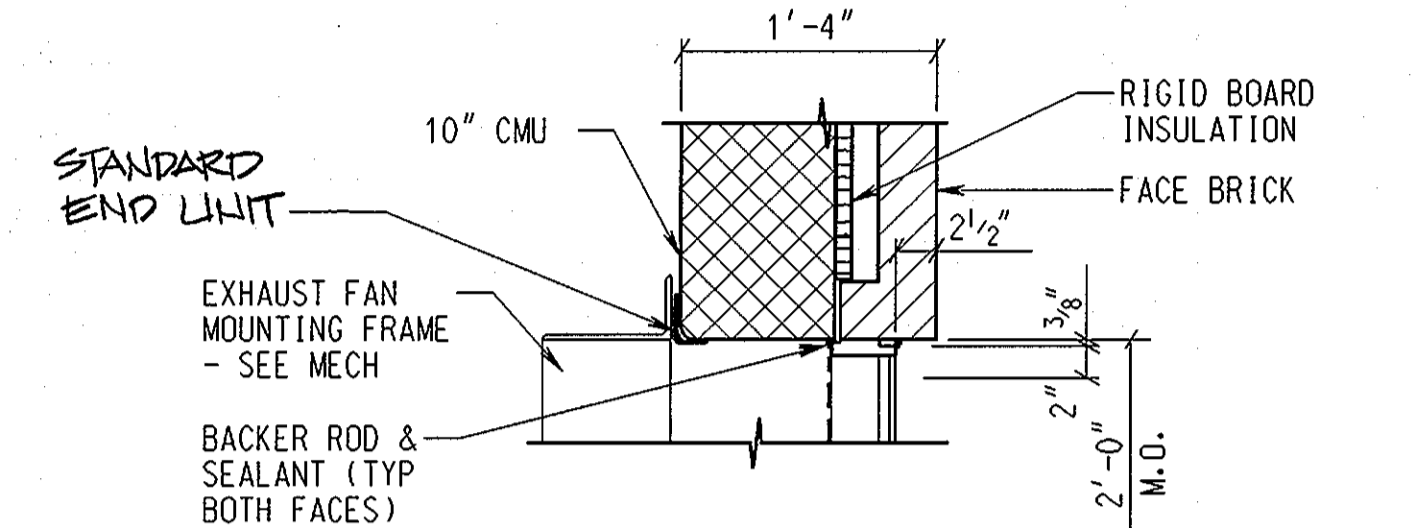
**FLOOR PLAN - CONTROL ROOM**

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

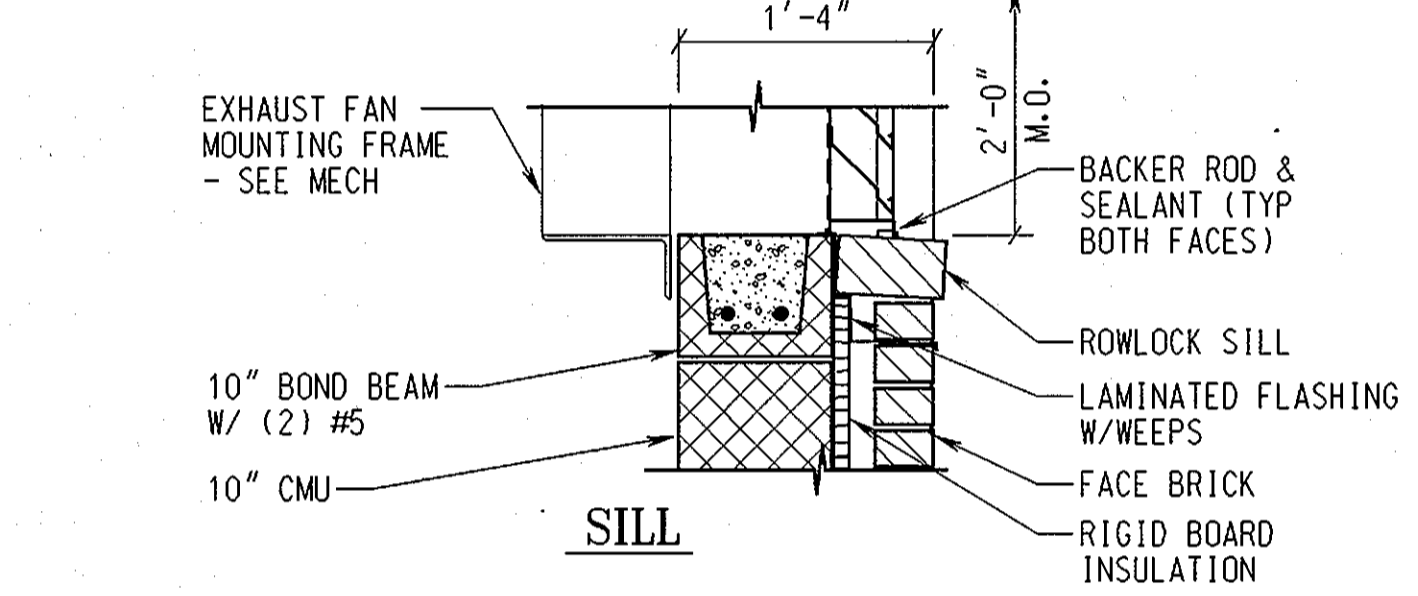
**NOTE:**  
SECOND FIRE EXTINGUISHER TO BE LOCATED IN PUMP ROOM AT BOTTOM OF STAIRS.



**HEAD**



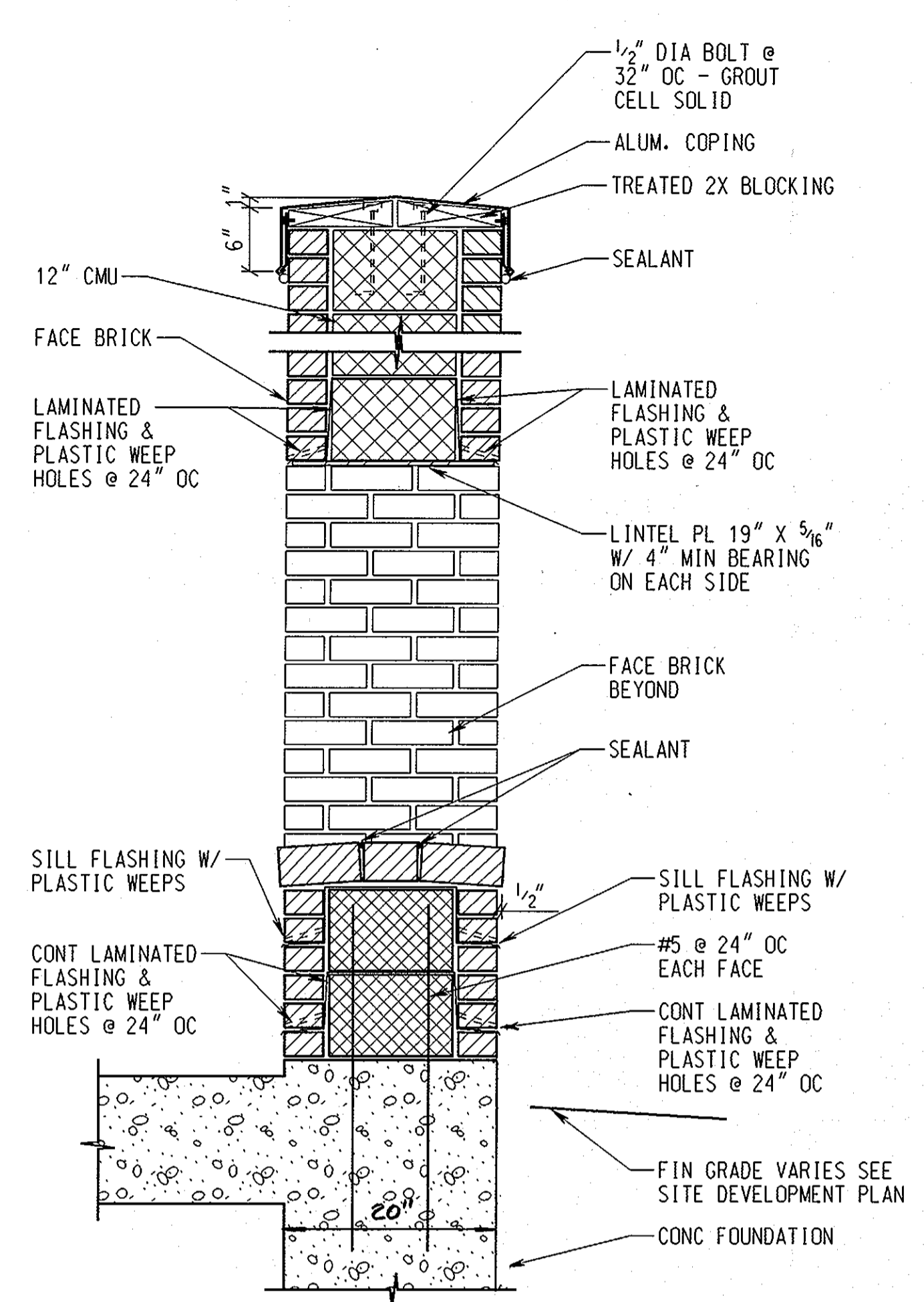
**JAMB**



**SILL**

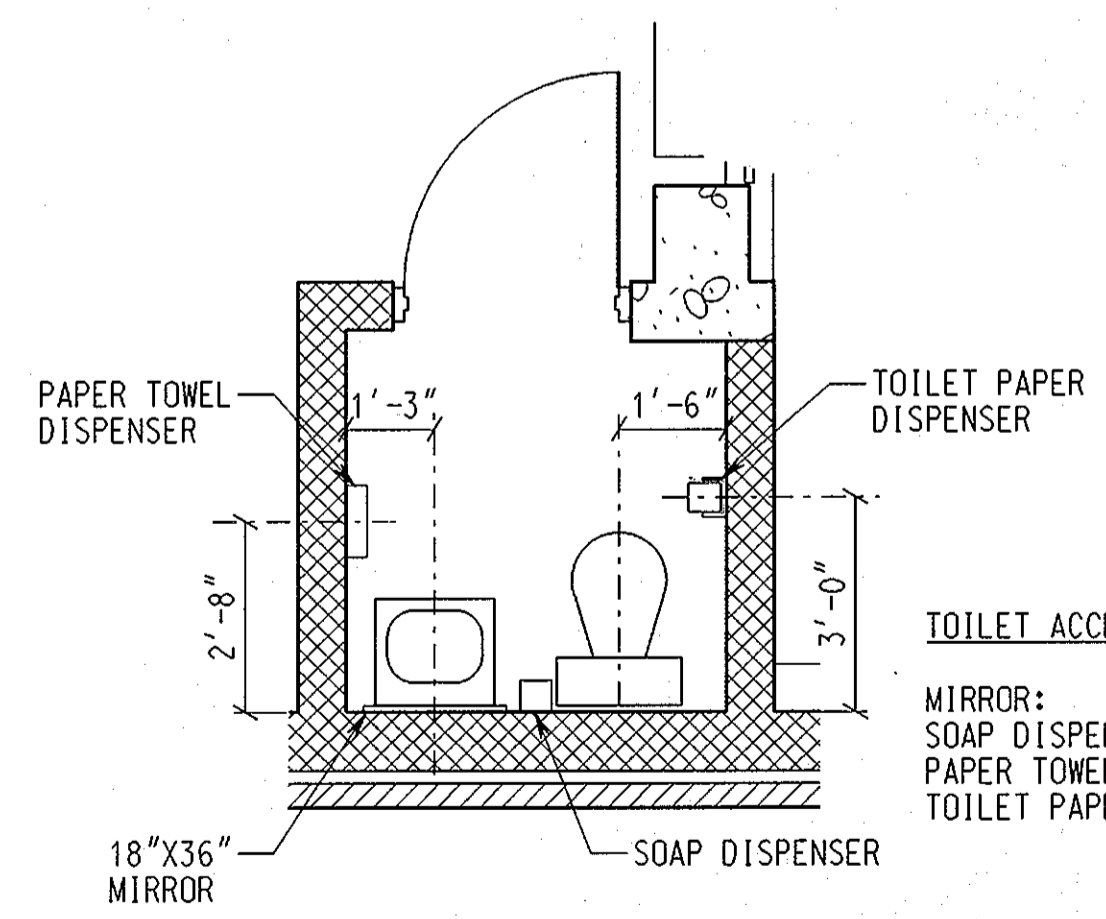
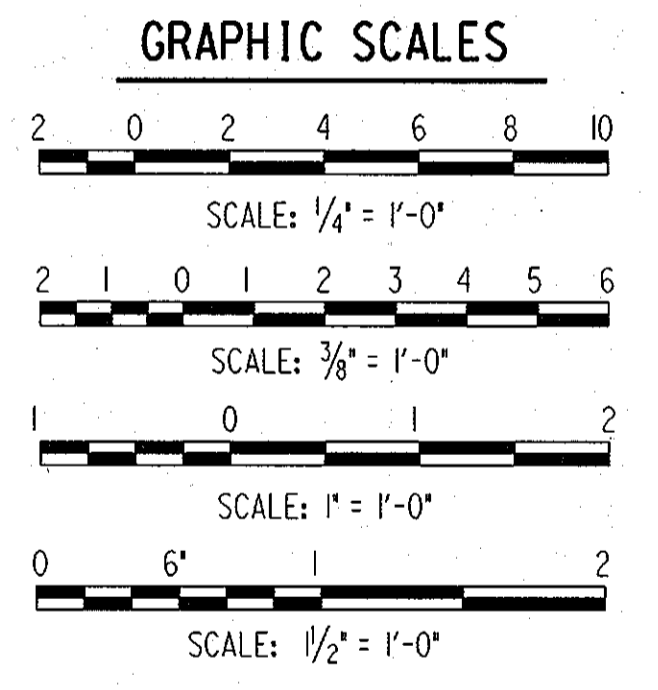
**LOUVER DETAILS A-1A/A-1**

SCALE: 1" = 1'-0"



**SECTION A-1B/A-3, A-4**

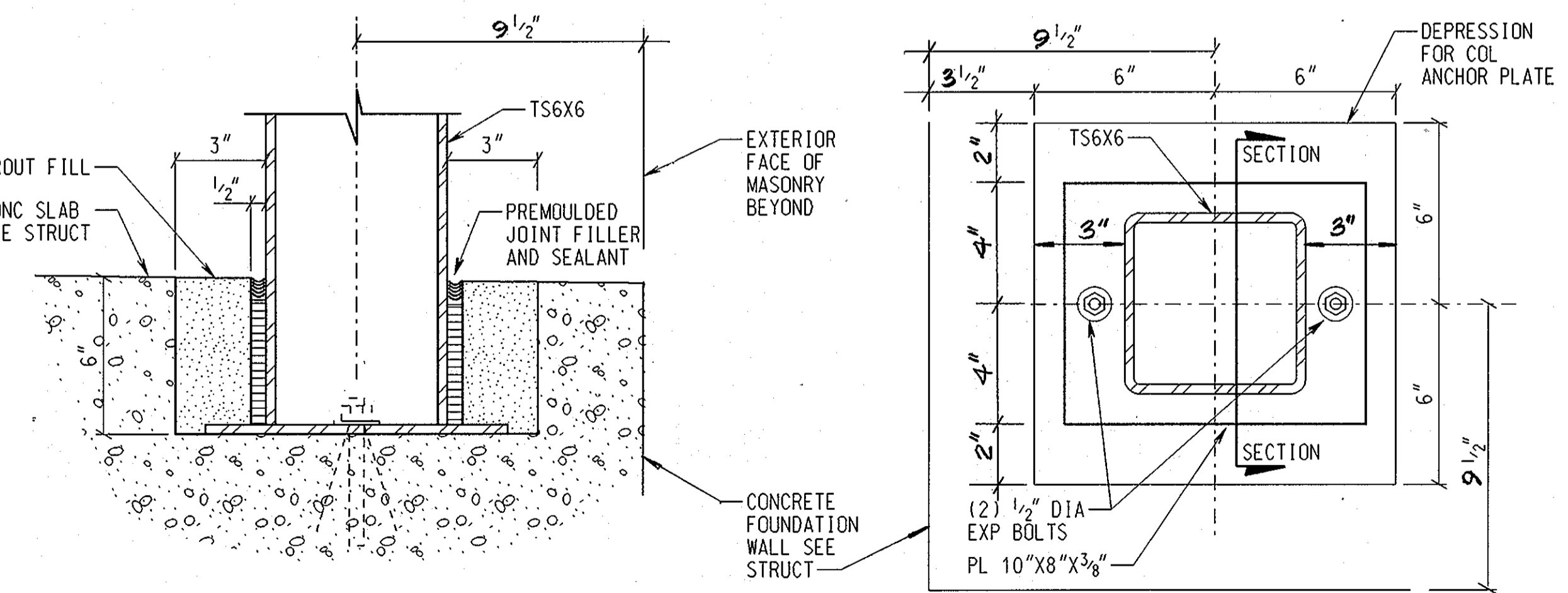
SCALE: 1" = 1'-0"



**TOILET ROOM PLAN A-1C/A-1**

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

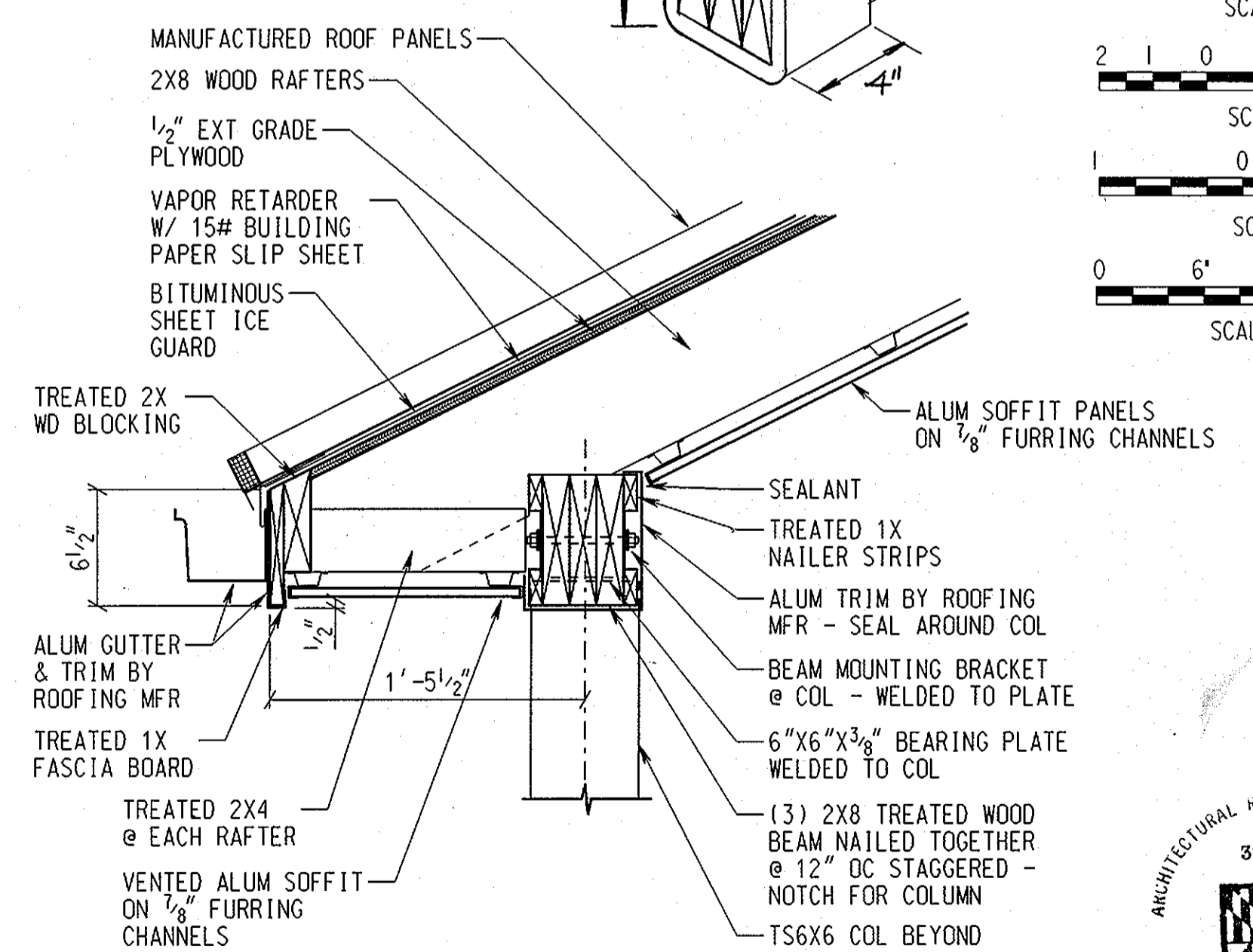
**TOILET ACCESSORY MOUNTING HEIGHTS:**  
MIRROR: 39" TO BOTTOM EDGE  
SOAP DISPENSER: 44" TO SOAP OUTLET  
PAPER TOWEL DISPENSER: 40" TO PAPER OUTLET  
TOILET PAPER DISPENSER: 30" TO CENTERLINE OF ROLL



**SECTION**

**COLUMN DETAIL A-1D/A-1, A-4**

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



**EAVE DETAIL A-1E/A-2, A-3, A-4**

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

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.

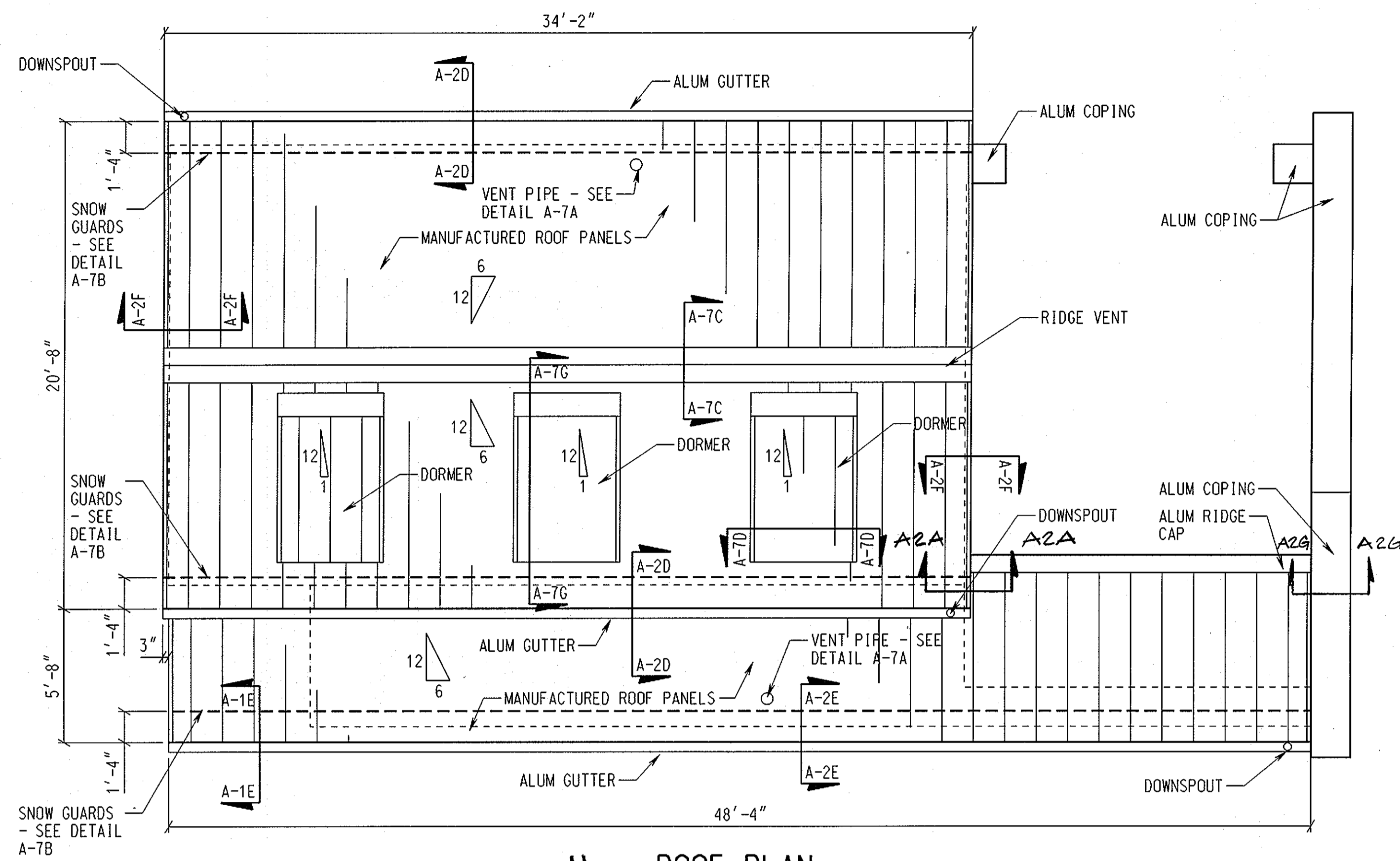
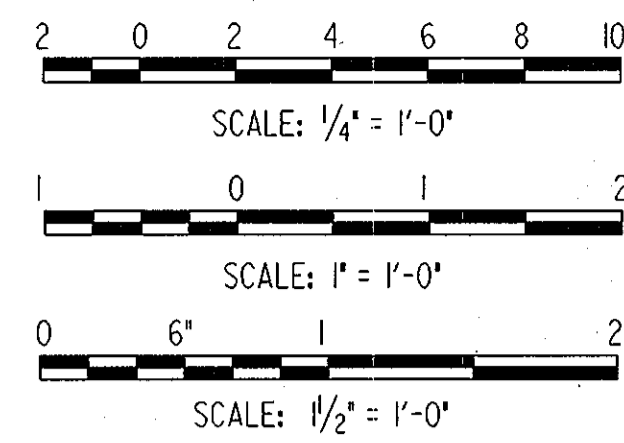
DES : ERB			
DRN : ERB			
CHK : JD			
DATE : 11/12/98	BY	NO.	REVISION

PLANS AND DETAILS

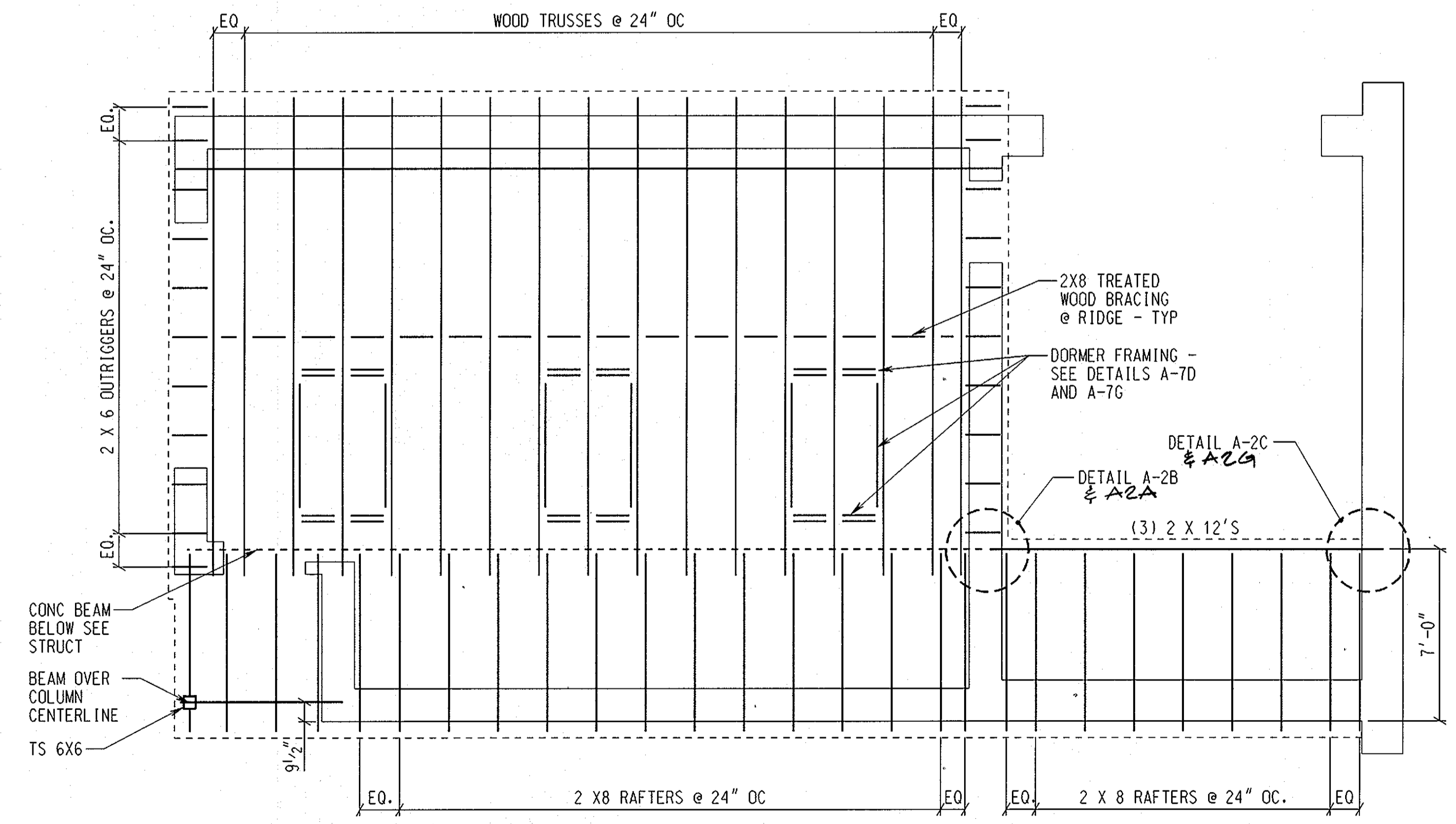
ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 8 OF 36

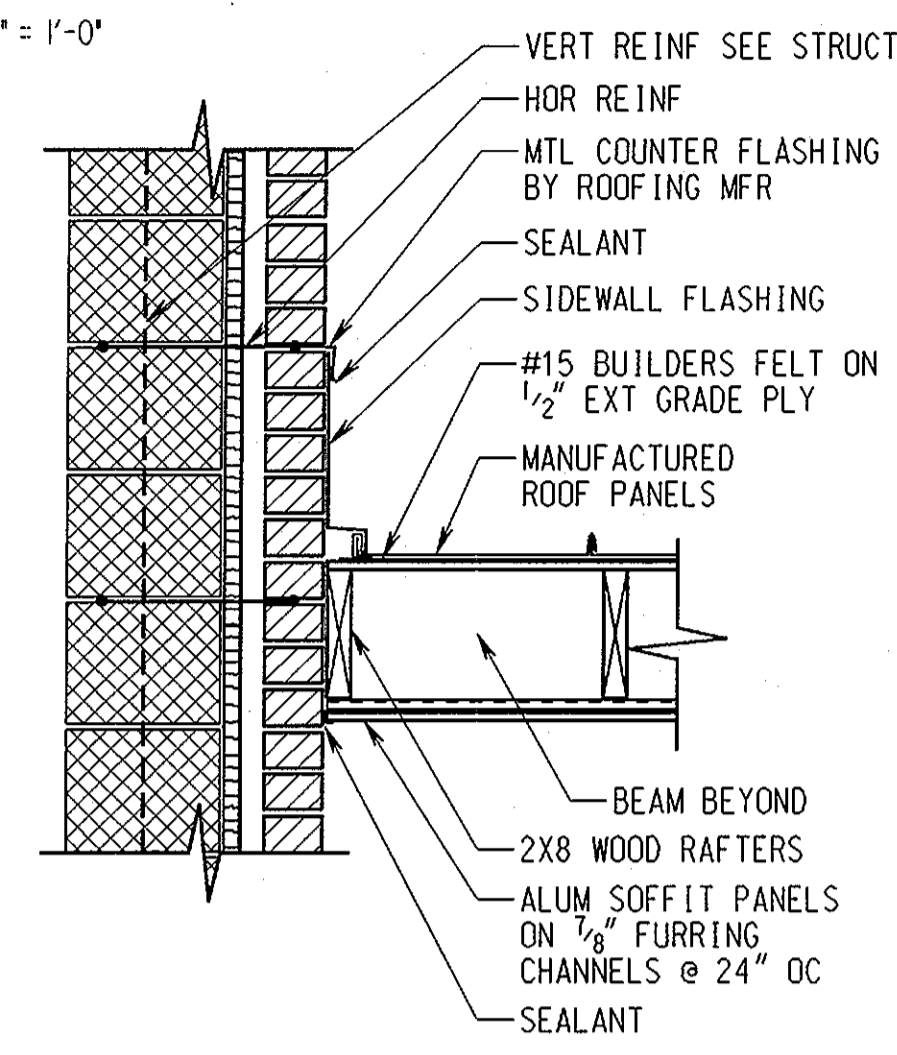
**GRAPHIC SCALES**



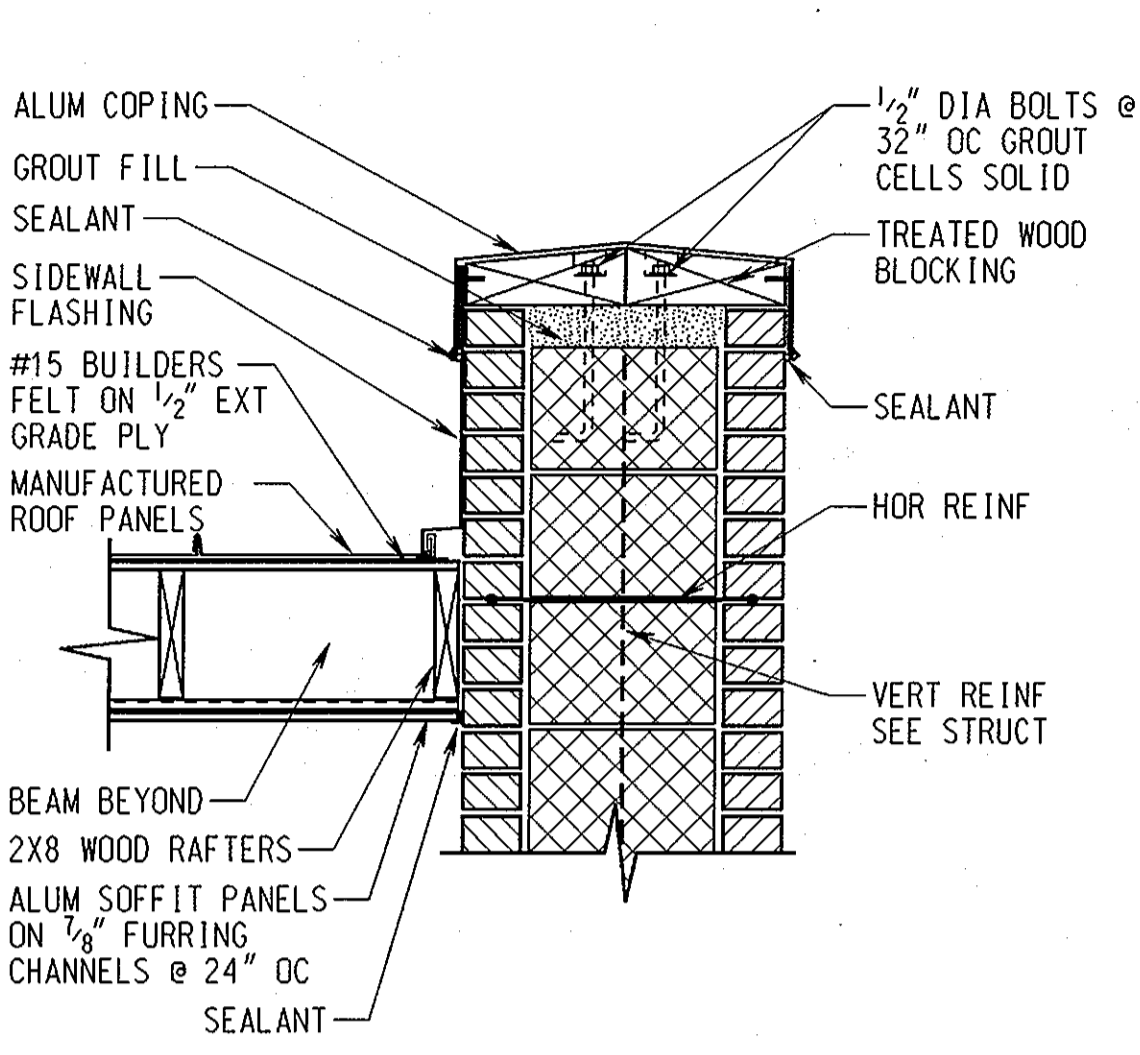
**ROOF PLAN**  
SCALE: 1/4" = 1'-0"



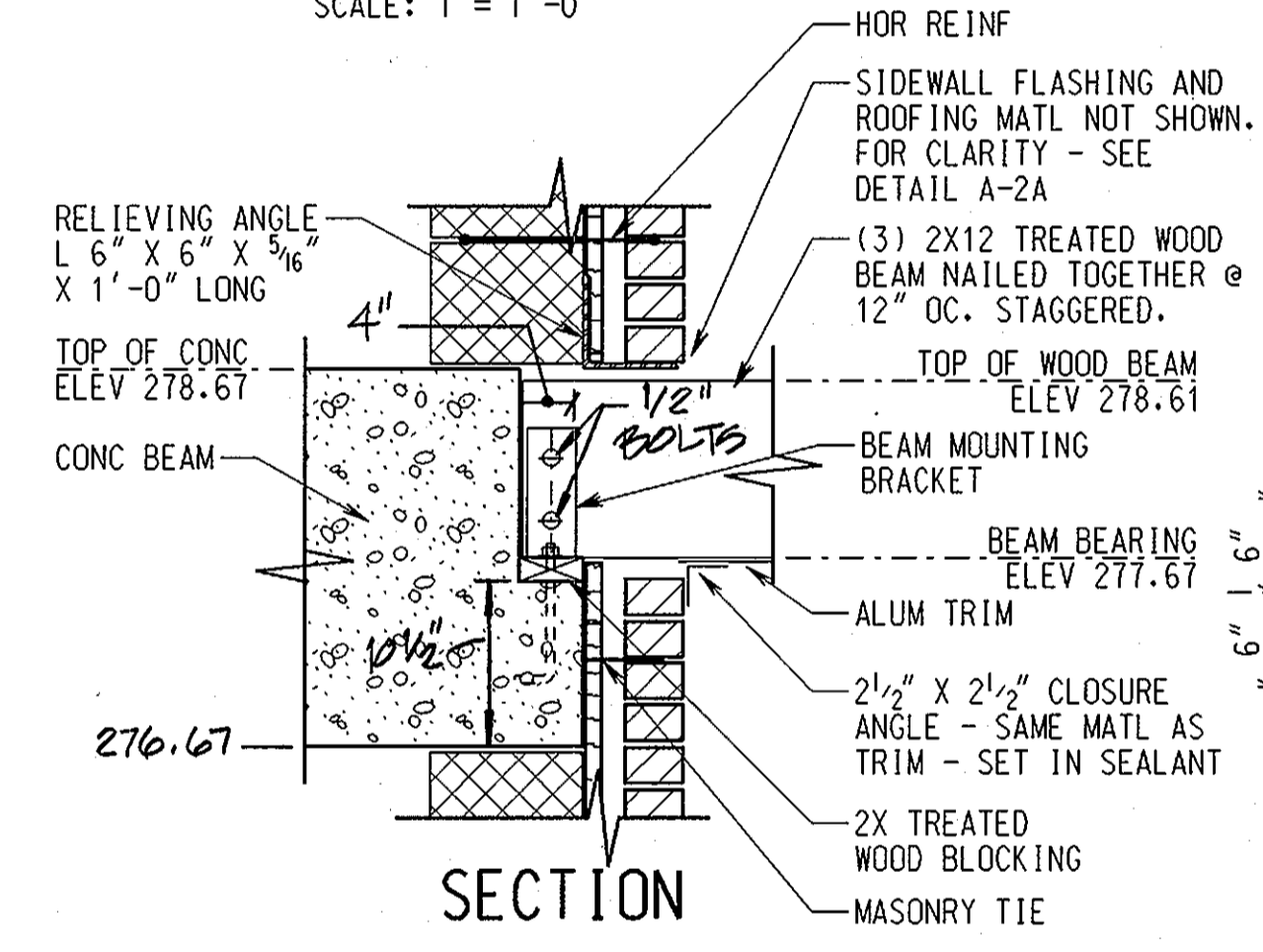
**FRAMING PLAN**  
SCALE: 1/4" = 1'-0"



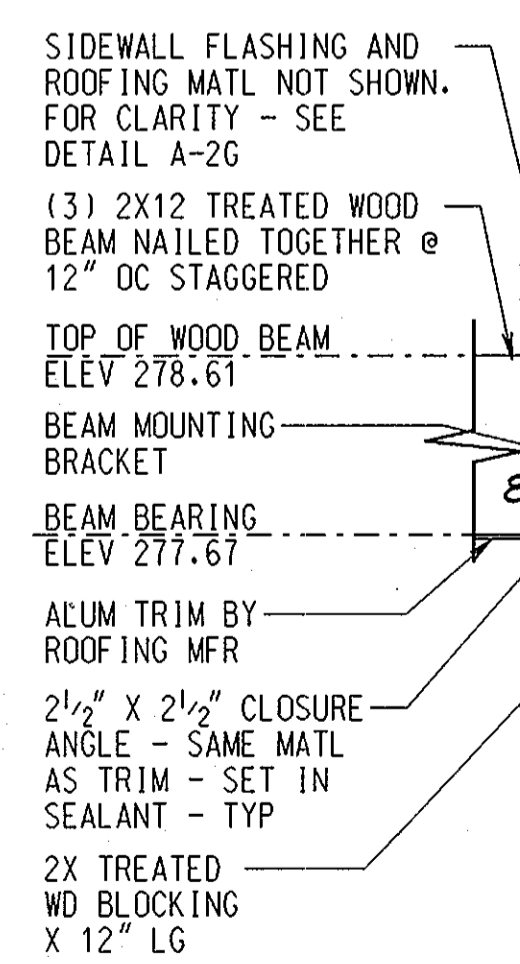
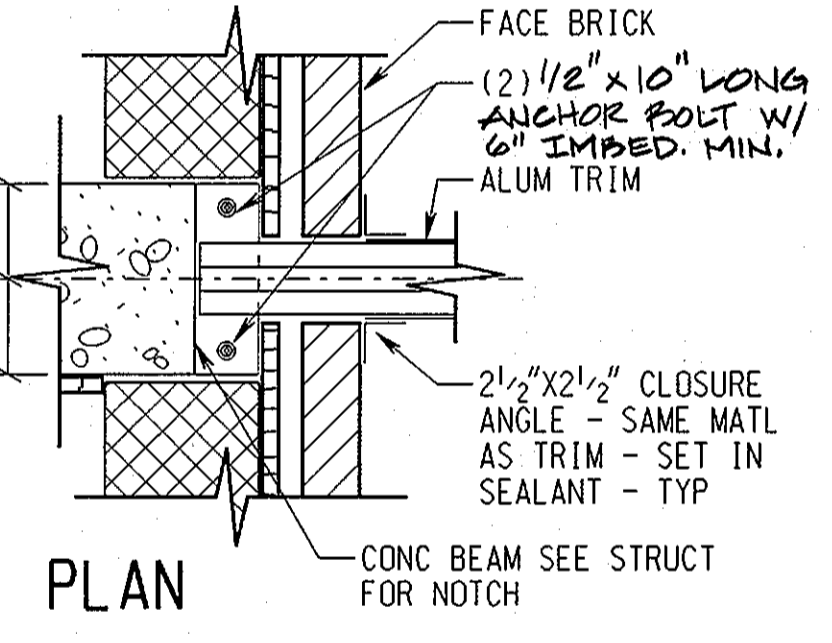
**SIDEWALL FLASHING DETAIL A-2A/A-2**  
SCALE: 1" = 1'-0"



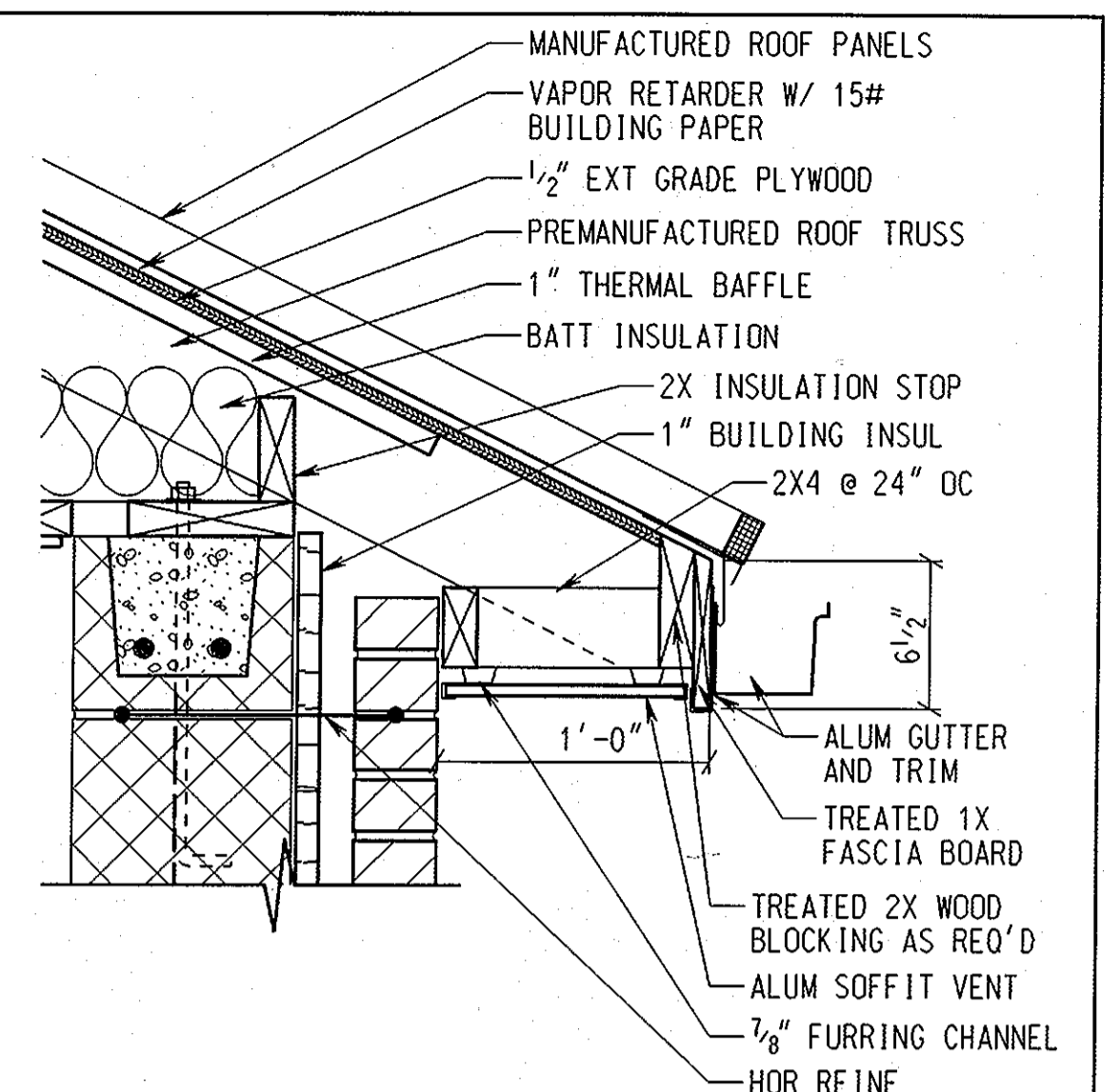
**SIDEWALL FLASHING DETAIL A-2G/A-2**  
SCALE: 1" = 1'-0"



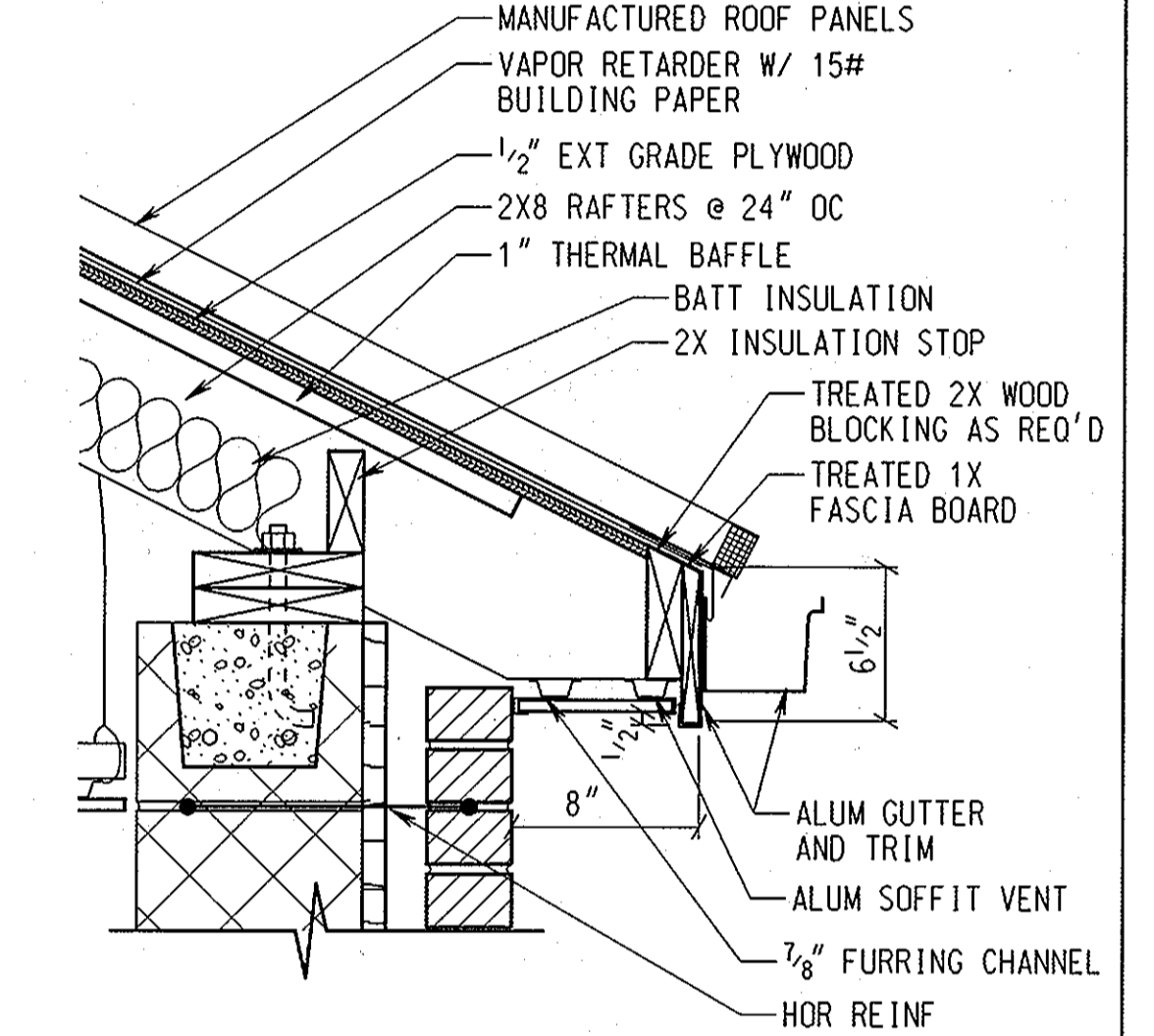
**BEAM BEARING DETAIL A-2B/A-2** AT EAST END OF #2-1 PUMP STATION EAST WALL  
SCALE: 1" = 1'-0"



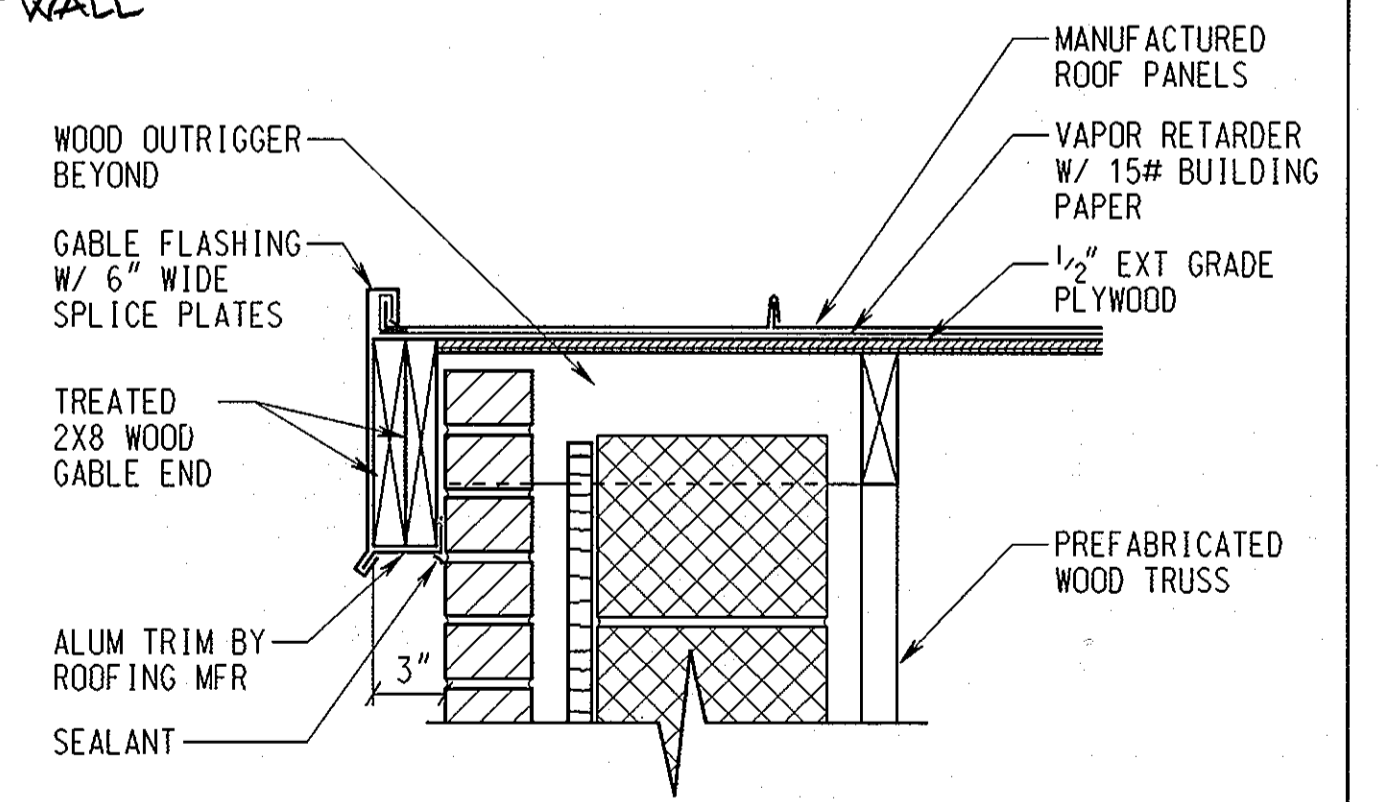
**BEAM BEARING DETAIL A-2C/A-2** AT GENERATOR EAST WALL  
SCALE: 1" = 1'-0"



**EAVE DETAIL A-2D/A-2, A-3**  
SCALE: 1 1/2" = 1'-0"



**EAVE DETAIL A-2E/A-2, A-4**  
SCALE: 1 1/2" = 1'-0"



**GABLE DETAIL A-2F/A-2, A-3, A-4**  
SCALE: 1 1/2" = 1'-0"

ARCHITECTURAL RECORD DRAWING  
3327-A  
11/18/02  
A-2

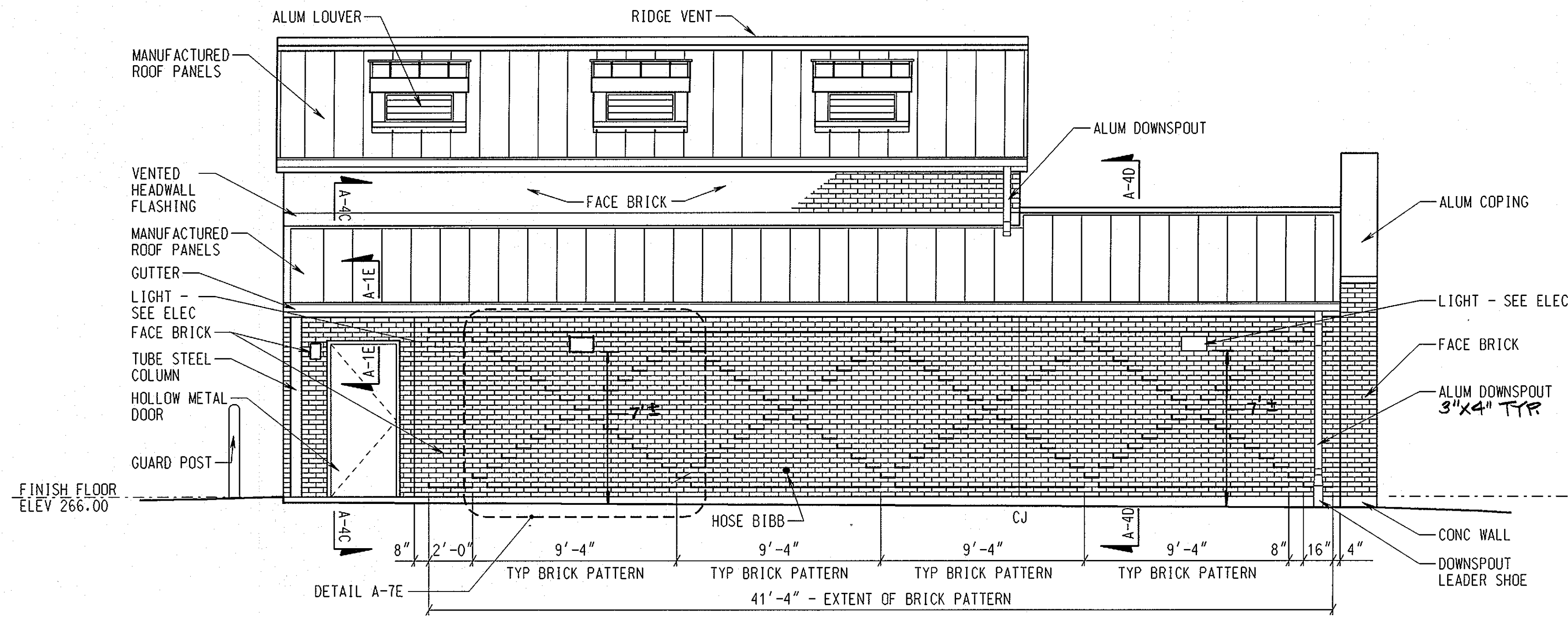
DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.  
1/15/99  
1-15-99

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.

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DRN :	ERB		
CHK :	JD		
DATE :	11/12/98		
BY :			
NO. :			
REVISION :			
DATE :			

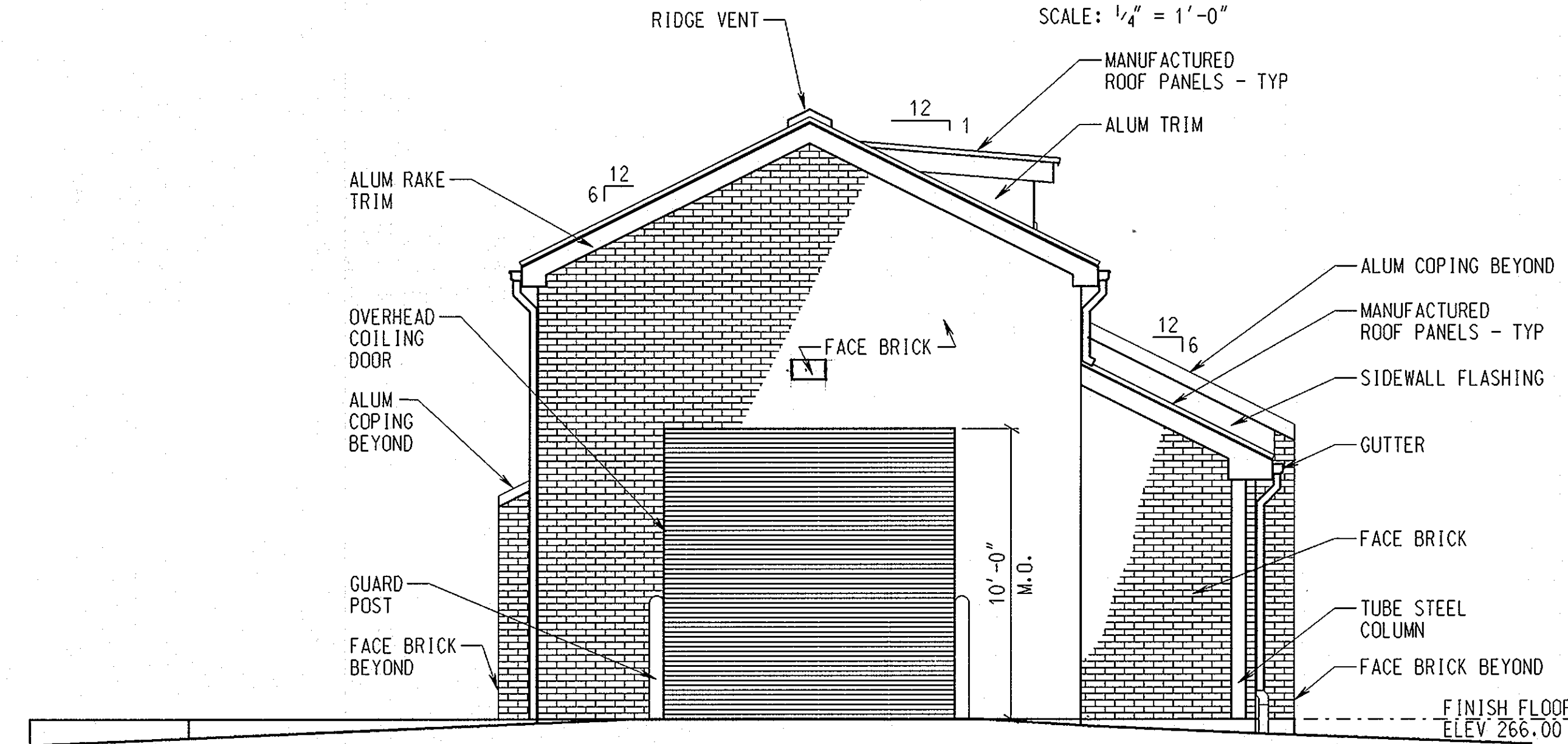
ROOF PLAN AND FRAMING PLAN  
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND  
SCALE AS SHOWN  
SHEET 9 OF 36  
NOVEMBER 12, 1998



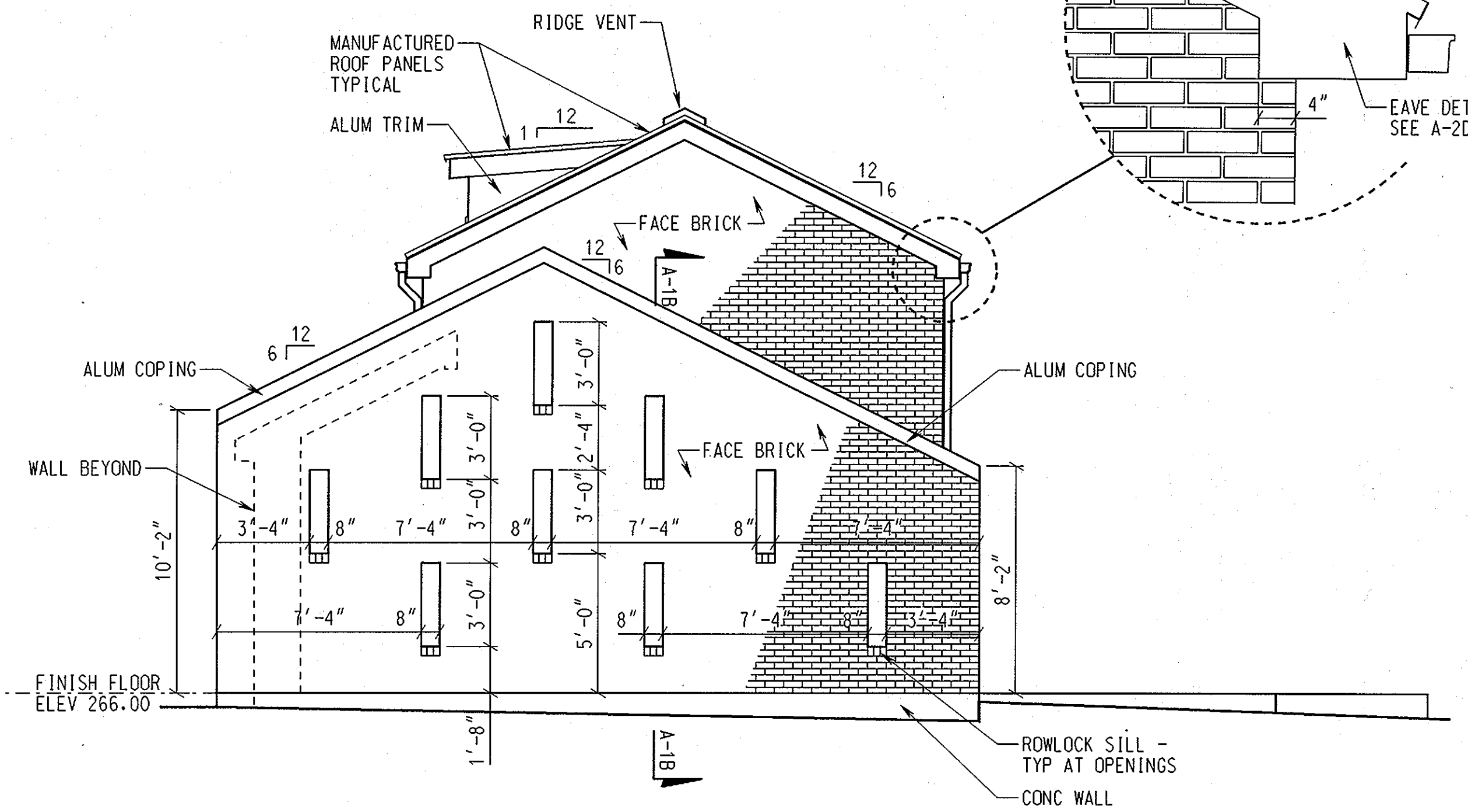
**SOUTH ELEVATION**

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



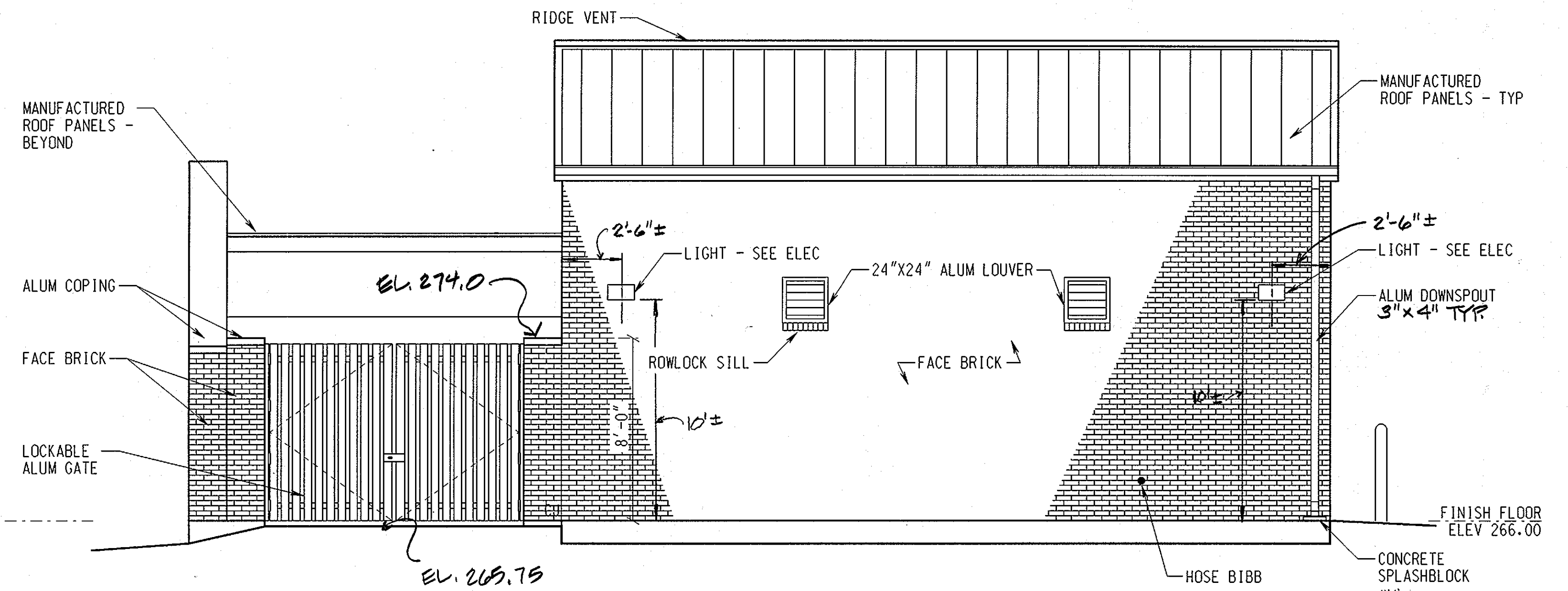
**WEST ELEVATION**

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



**EAST ELEVATION**

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



**NORTH ELEVATION**

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

ARCHITECTURAL RECORD DRAWING  
 8327-A  
  
**RECORD DRAWING**  
 11/18/02  
 GRAPHIC SCALE  
  
 SCALE: 1/4" = 1'-0"

A-3

DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*James P. Llewellyn* 1-15-99  
 DIRECTOR OF PUBLIC WORKS  
 DATE

*Robert J. Dyer* 1-15-99  
 CHIEF, BUREAU OF ENGINEERING  
 DATE

*Robert J. Dyer* 1-15-99  
 CHIEF, BUREAU OF UTILITIES  
 DATE

PREPARED BY:

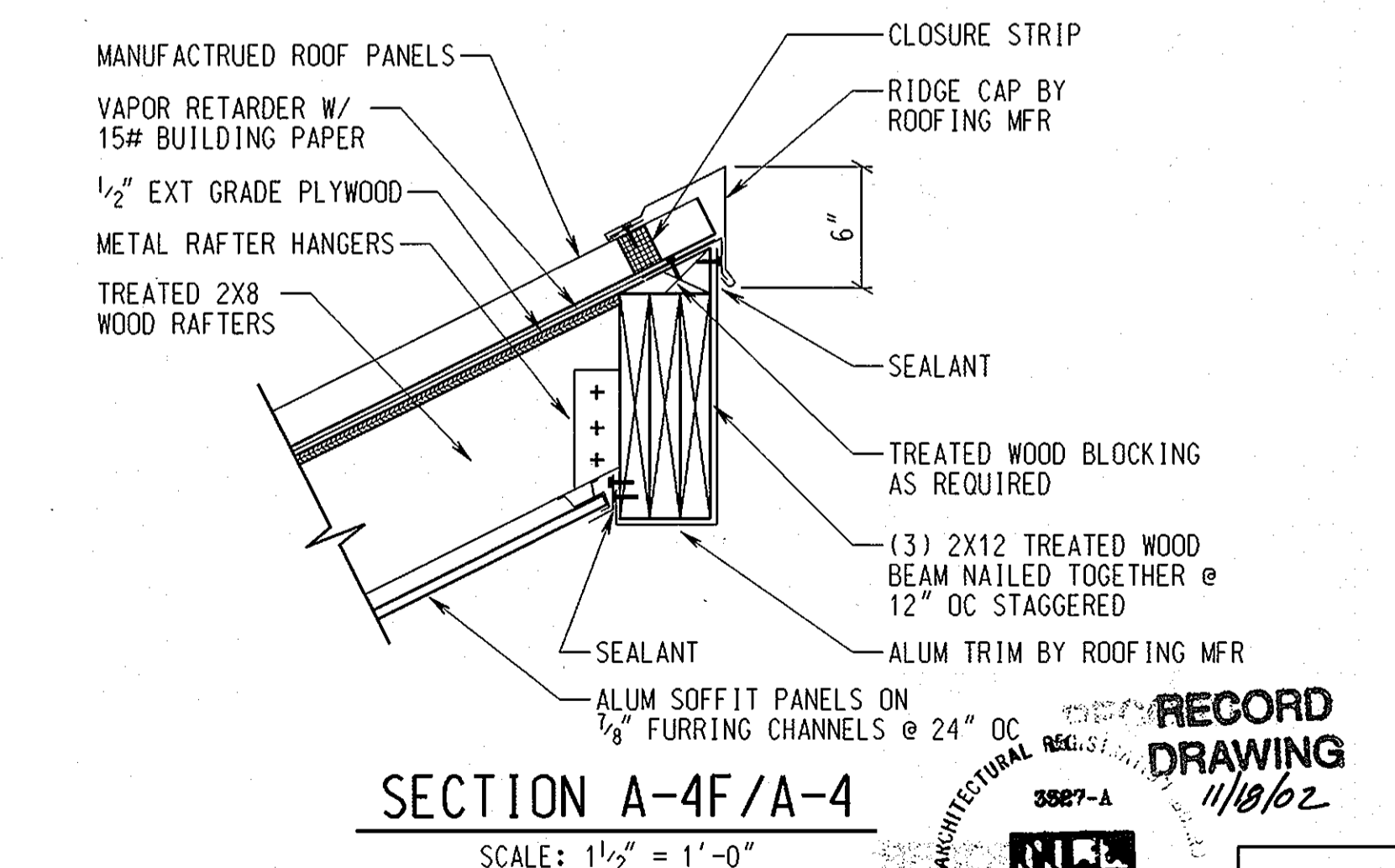
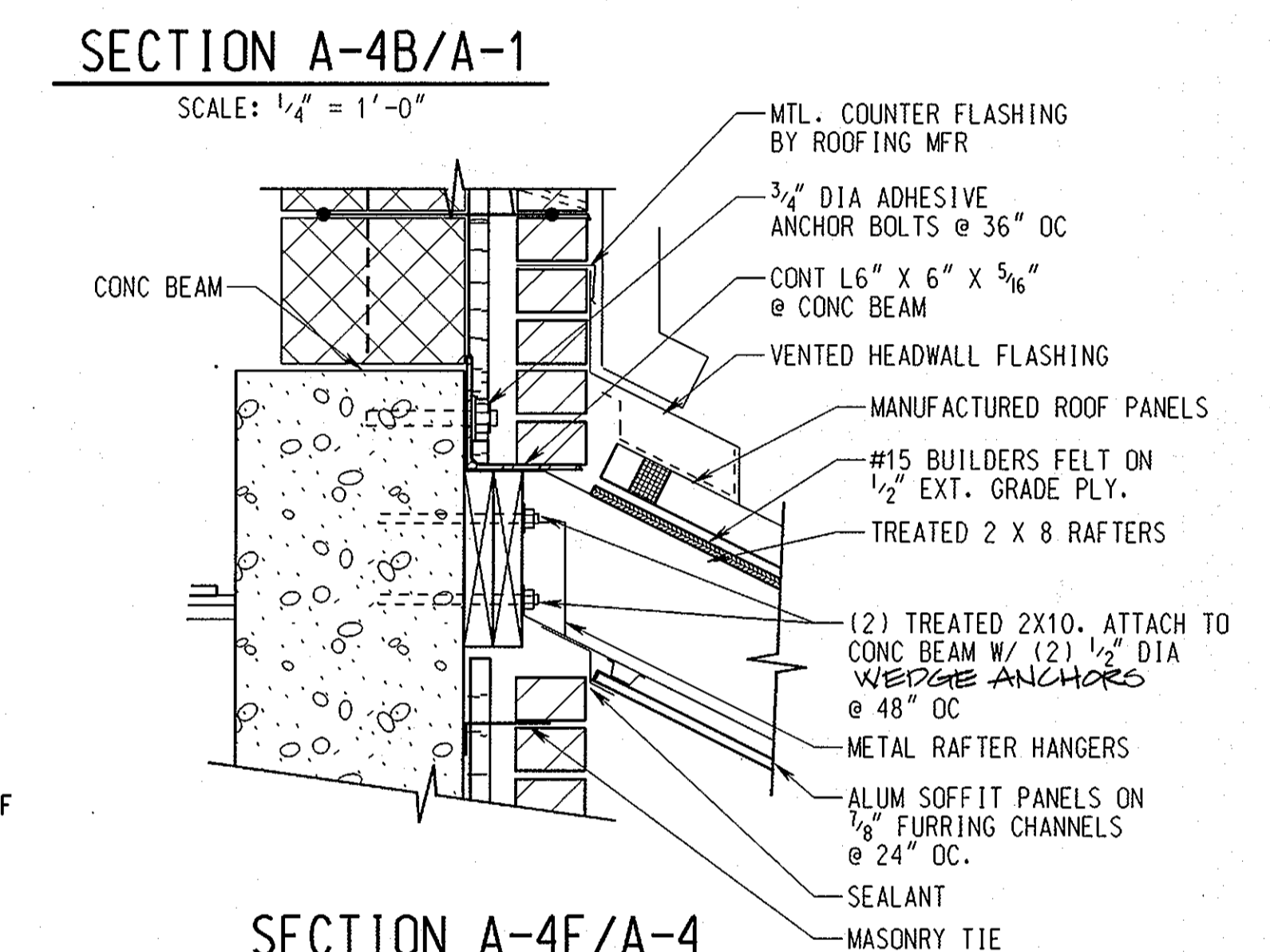
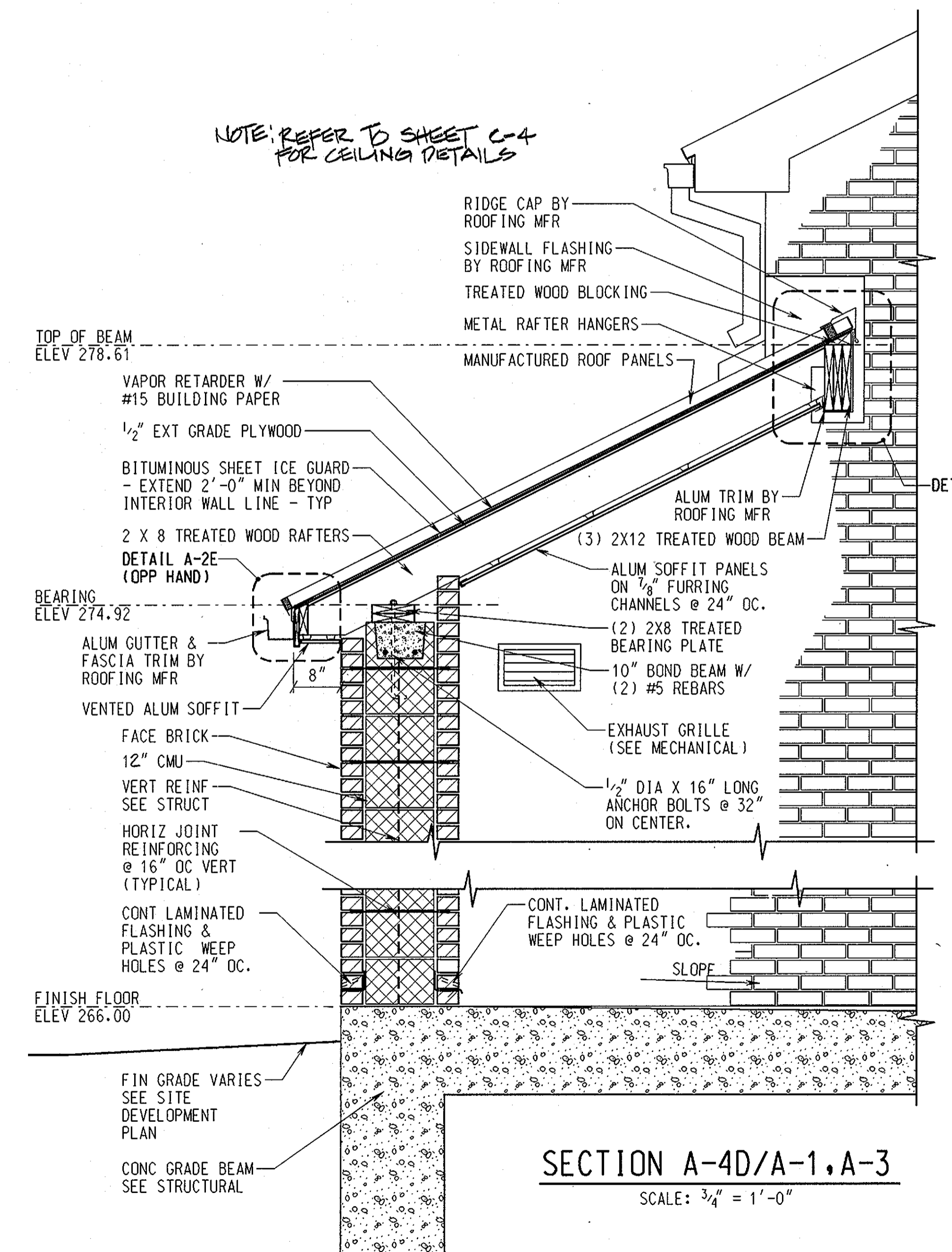
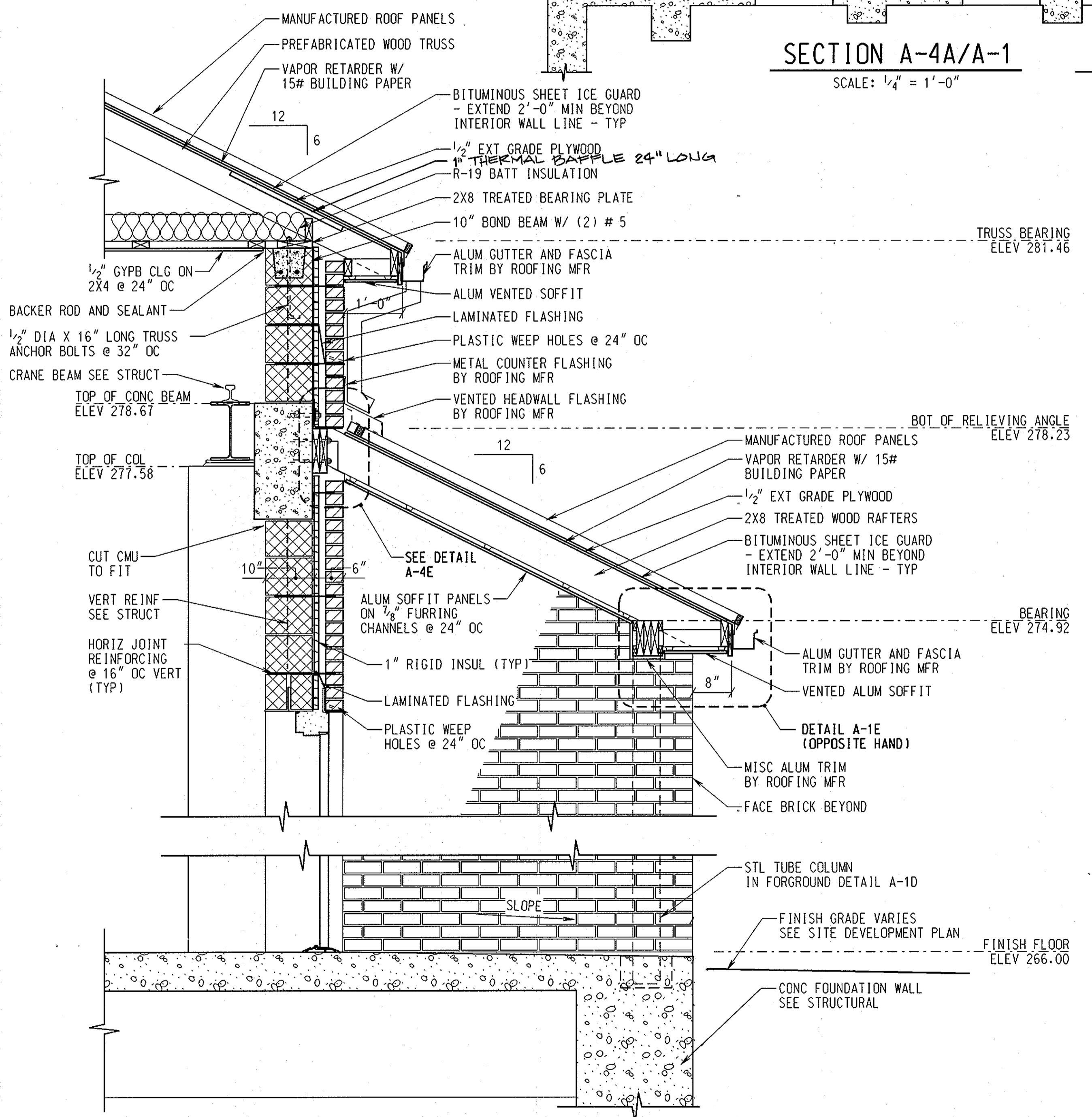
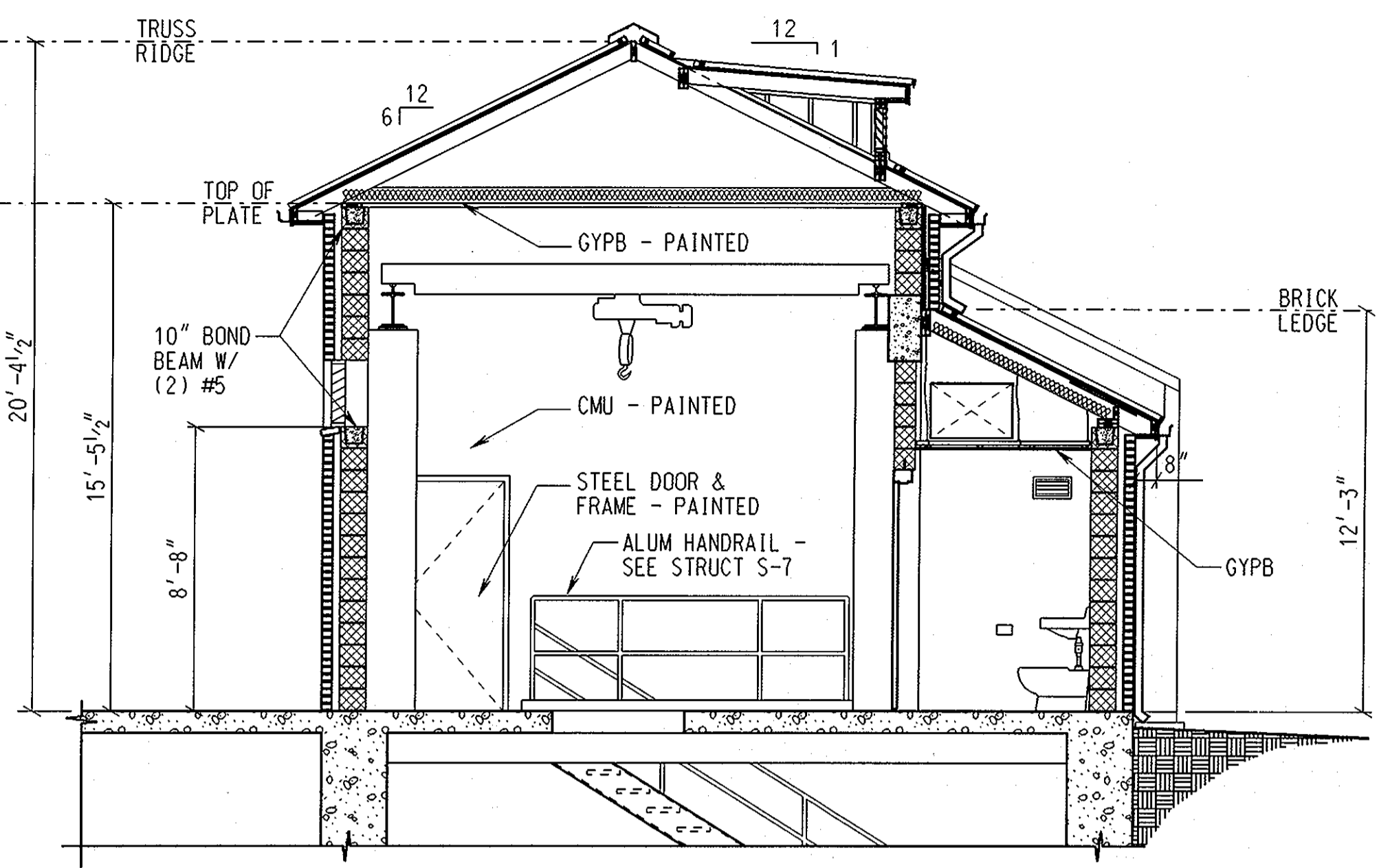
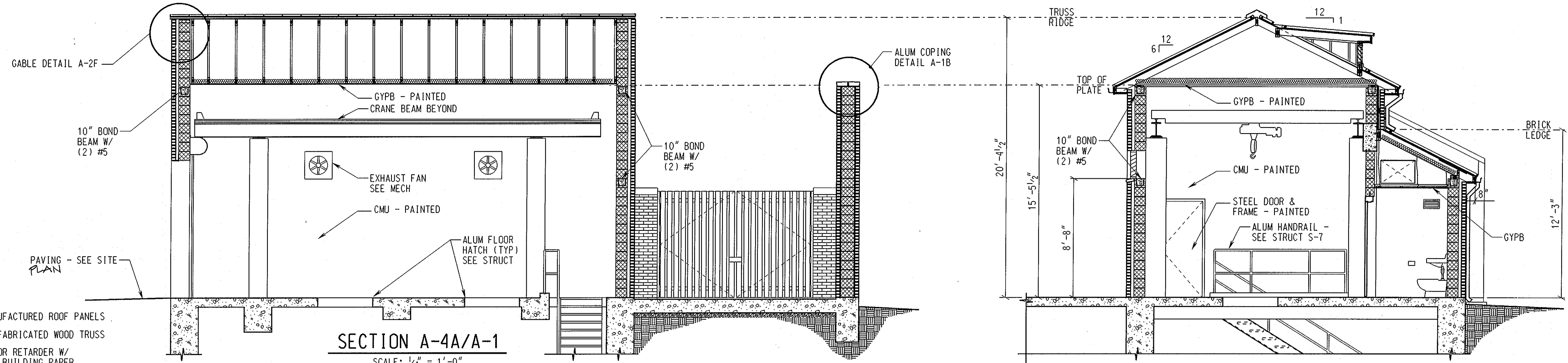
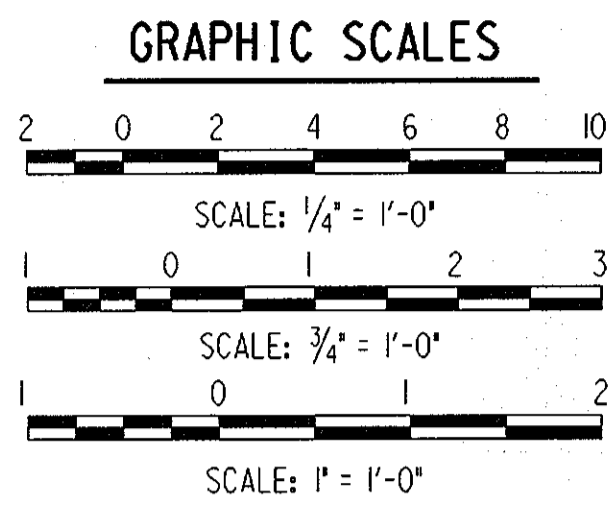
**WR&A**  
 Whitman, Reardon and Associates, LLP.

DES :	ERB				
DRN :	ERB				
CHK :	JD				
DATE :	11/12/98				
BY :					
NO. :					
REVISION :					
DATE :	8-23-02				
DATE :	600' SCALE MAP NO.				
DATE :	BLOCK NO.				

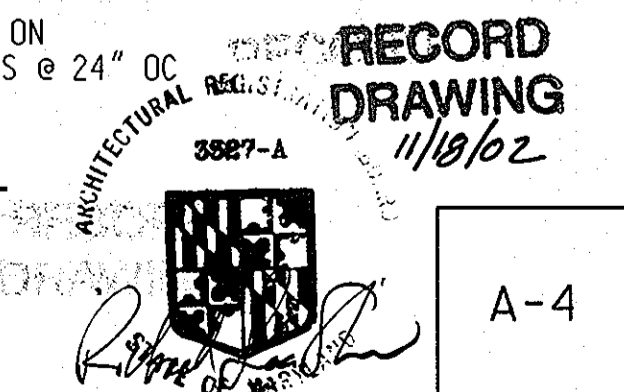
ELEVATIONS

ROCKBURN WASTEWATER PUMPING STATION  
 CAPITAL PROJECT NO. S-6200  
 CONTRACT NO. 10-3695  
 FIRST ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
 SHEET 10 OF 36



NOTE: REFER TO SHEET C-4 FOR CEILING DETAILS



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.

Director of Public Works: *James J. ...* 11/15/99  
Chief, Bureau of Engineering: *Robert J. ...* 1-15-99  
Chief, Bureau of Utilities: *Robert J. ...* 1-15-99

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.

DES : ERB			
DRN : ERB			
CHK : JD			
DATE : 11/12/98			
BY	NO.	REVISION	DATE
		RECORD DRAWING	8-25-02

BUILDING SECTIONS AND WALL SECTIONS

600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

A-4  
SCALE AS SHOWN  
SHEET 11 OF 36  
NOVEMBER 12, 1998

NO.	SIZE (L X H)	MATL	DEPTH	DETAILS			L-INTEL	REMARKS
				HEAD	JAMB	SILL		
LV1	24" X 24"	ALUM	6"	A-1A	A-1A	A-1A	A-1A	
LV2	37 1/2" X 16"	ALUM	6"	A-7G	-	A-7G	A-7G	TYP AT EACH OF (3) DORMERS

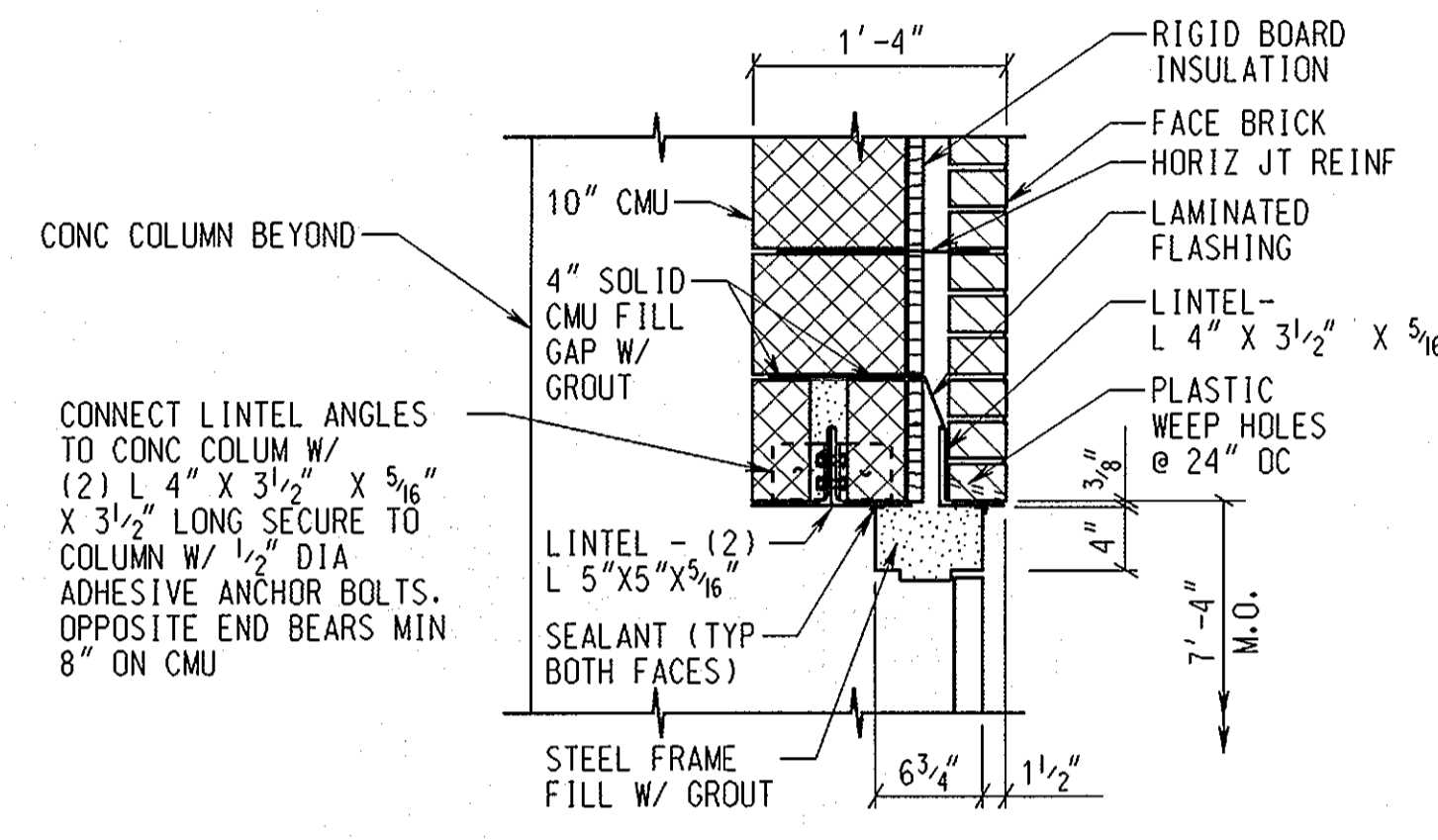
NOTES:

- ALL LINTELS SHALL HAVE 8" MINIMUM BEARING ON EACH END UNLESS NOTED OTHERWISE.
- LINTELS SPANNING MASONRY OPENINGS 10'-0" AND GREATER SHALL HAVE 12" MINIMUM BEARING ON EACH END.
- ADDITIONAL MASONRY, PRECAST AND/OR STEEL LINTELS MAY BE REQUIRED FOR MECHANICAL AND ELECTRICAL SERVICES. THESE LINTELS SHALL MATCH TYPE, REINFORCING, SIZE AND BEARING REQUIREMENTS INDICATED.

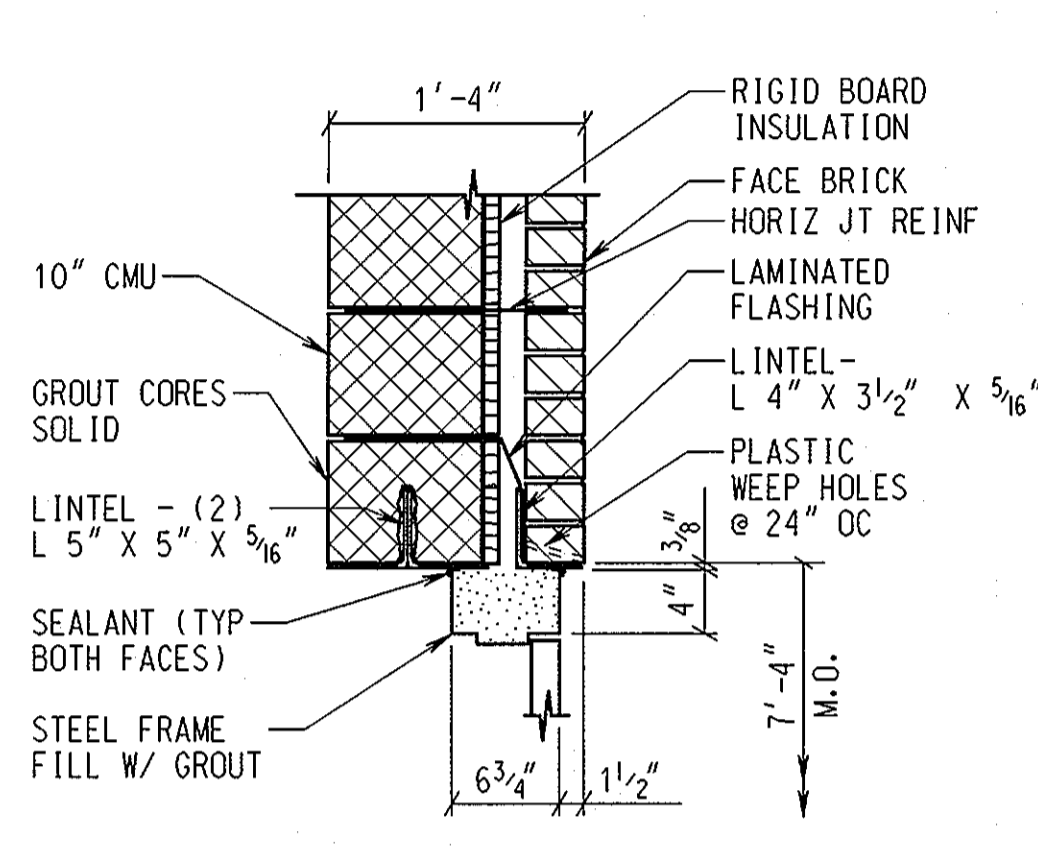
LOCATION	SAMPLE-SYMBOL		DOOR SCHEDULE								REMARKS
	MK	HDW SET	DOORS				FRAMES				
			WIDTH (NOM)	LOCATION	TYPE	MATL	TYPE	MATL	HEAD	JAMB	
D1	H1	3'-0"	CONTROL ROOM	FLUSH	STL	SEE DETAIL	STL	H1	J1/J2	S1	
D2	H2	3'-0"	CONTROL ROOM	FLUSH	STL	SEE DETAIL	STL	H2	J2	S1	
D3	-	10'-0"	CONTROL ROOM	OHD	STL	SEE DETAIL	-	H3	J3	S2	OVERHEAD COILING DOOR
D4	H3	3'-0"	TOILET ROOM	FLUSH	STL	SEE DETAIL	STL	H4	J4/J5	-	DOOR SHALL BE UNDERCUT 3/4"

DOOR SCHEDULE NOTES:

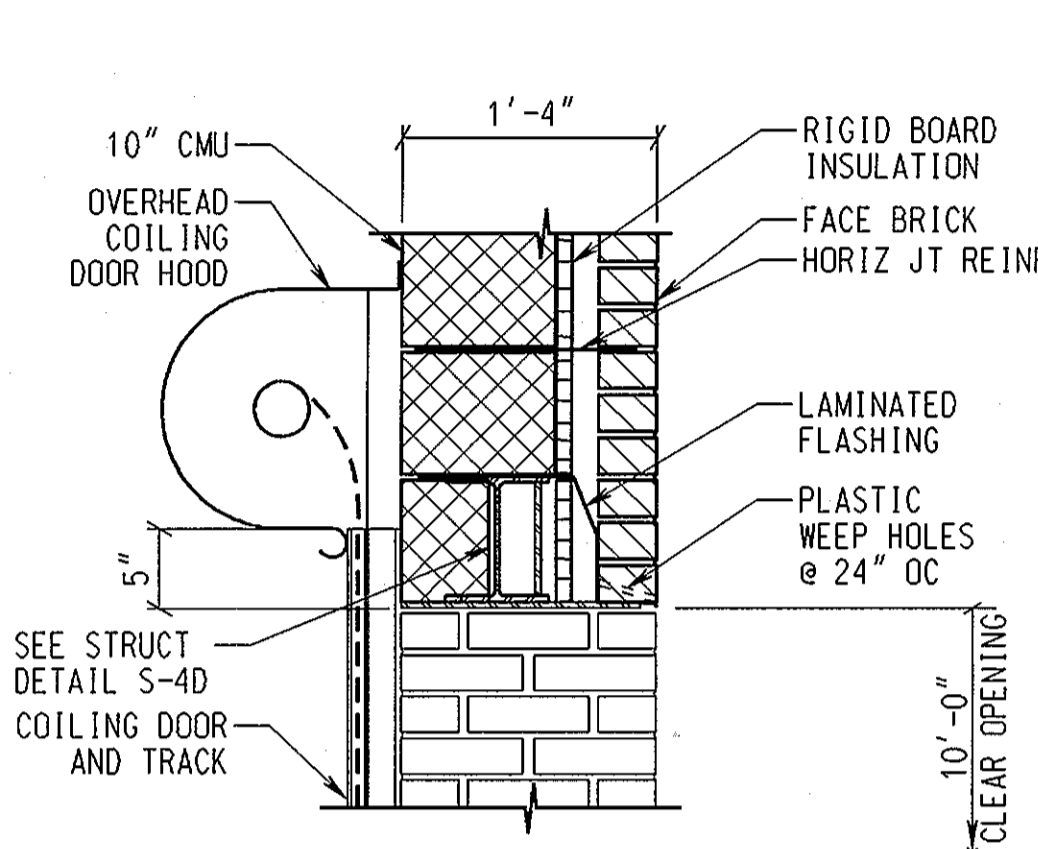
- \* TYPICAL DOOR HEIGHT: 7'-0" NOM UNLESS OTHERWISE NOTED
- \* TYPICAL DOOR THICKNESS: 1 3/4" UNLESS OTHERWISE NOTED
- \* OVERHEAD COILING DOOR: 10'-0" OPENING HEIGHT



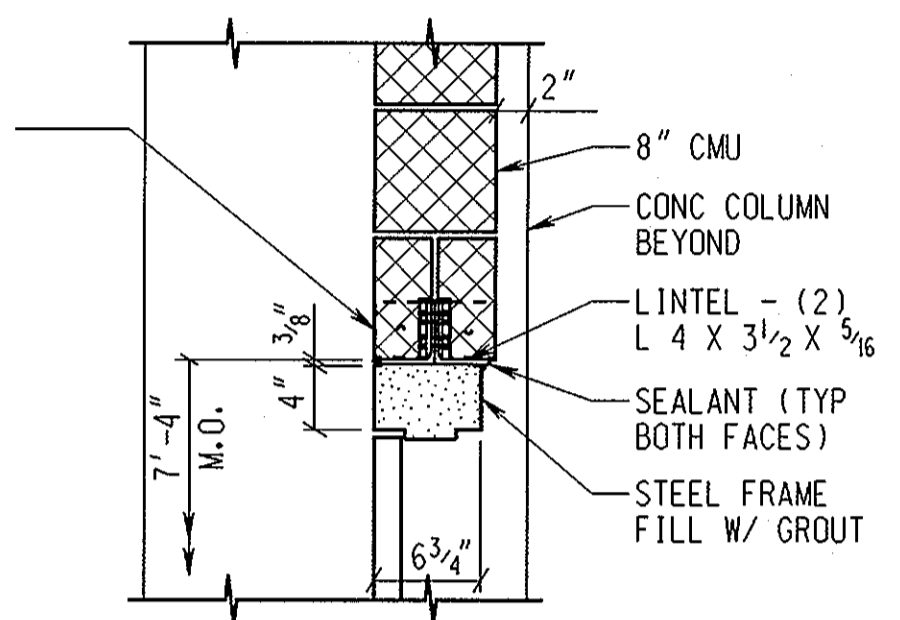
HEAD DETAIL - H1  
SCALE: 1" = 1'-0"



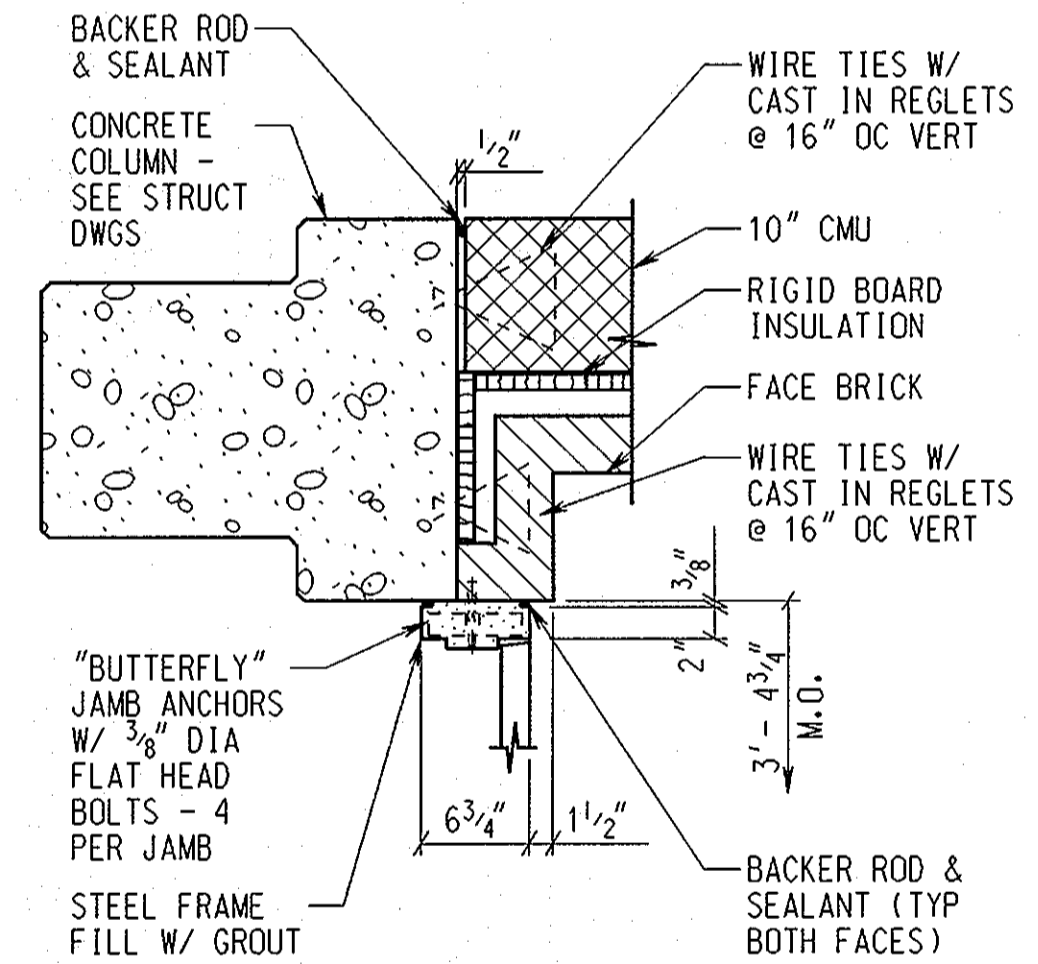
HEAD DETAIL - H2  
SCALE: 1" = 1'-0"



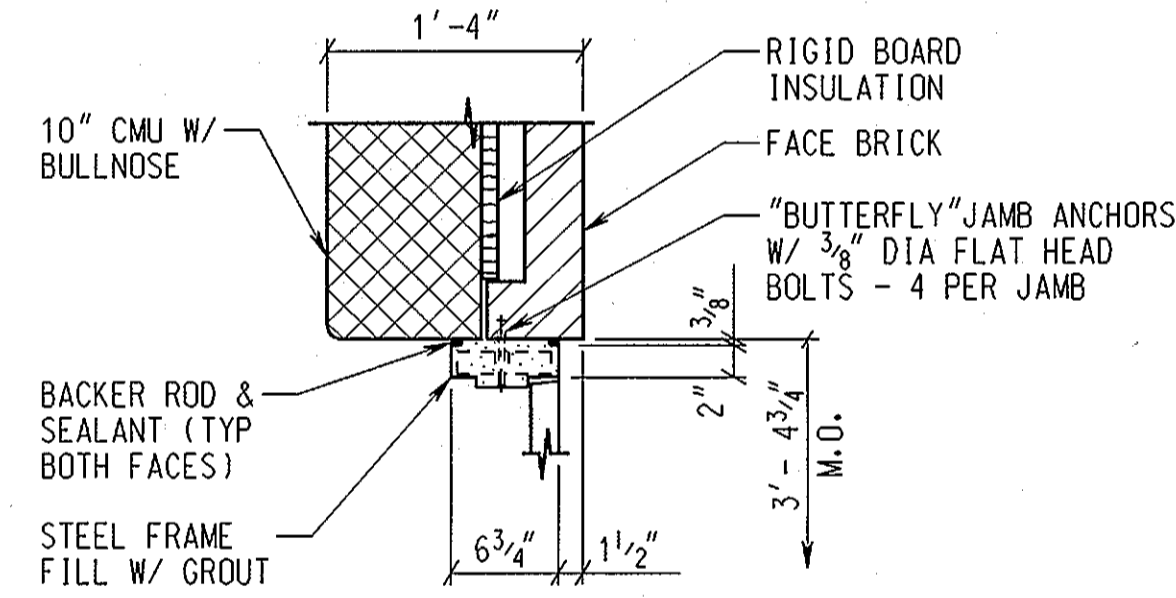
HEAD DETAIL - H3  
SCALE: 1" = 1'-0"



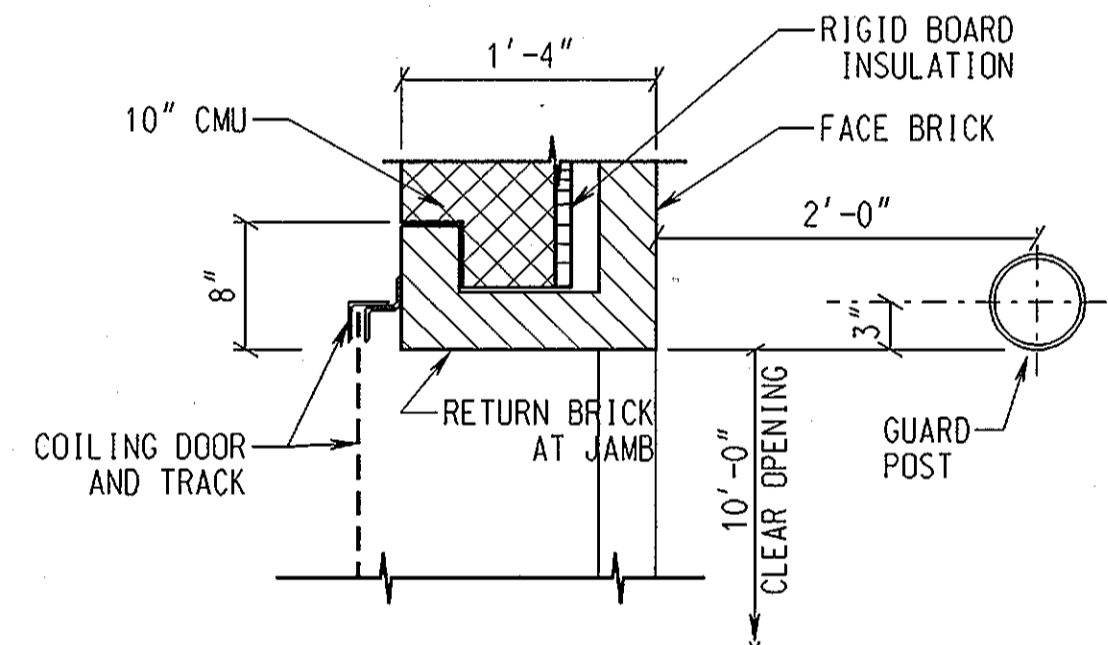
HEAD DETAIL - H4  
SCALE: 1" = 1'-0"



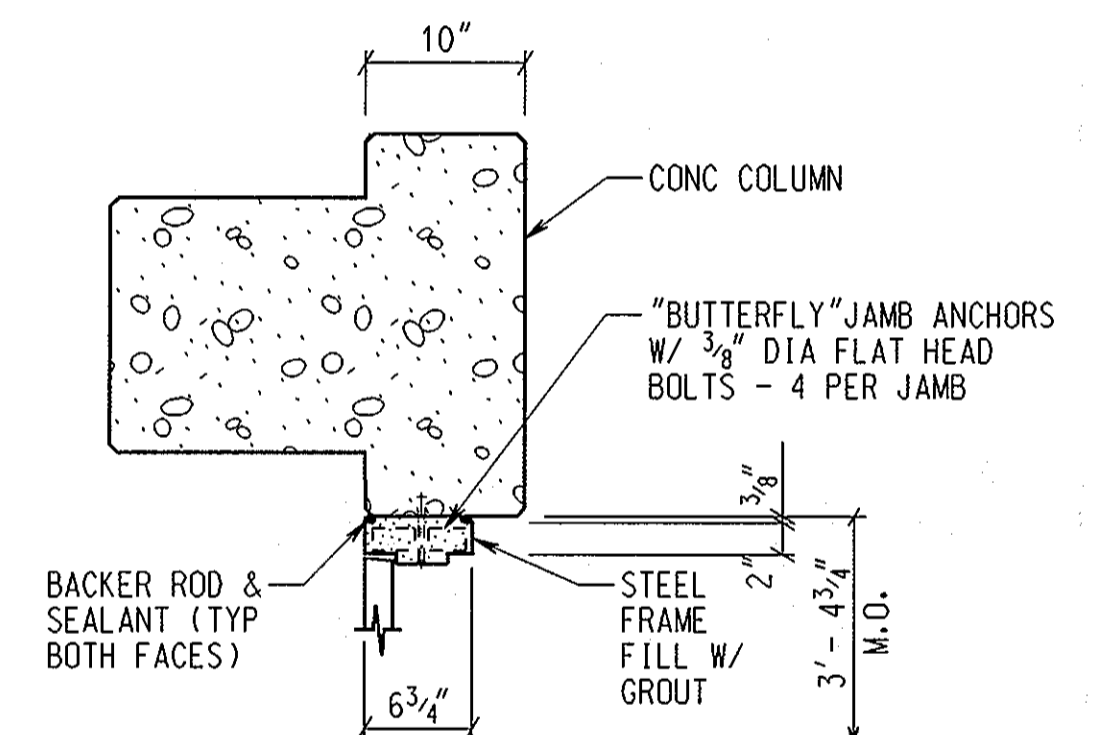
JAMB DETAIL - J1  
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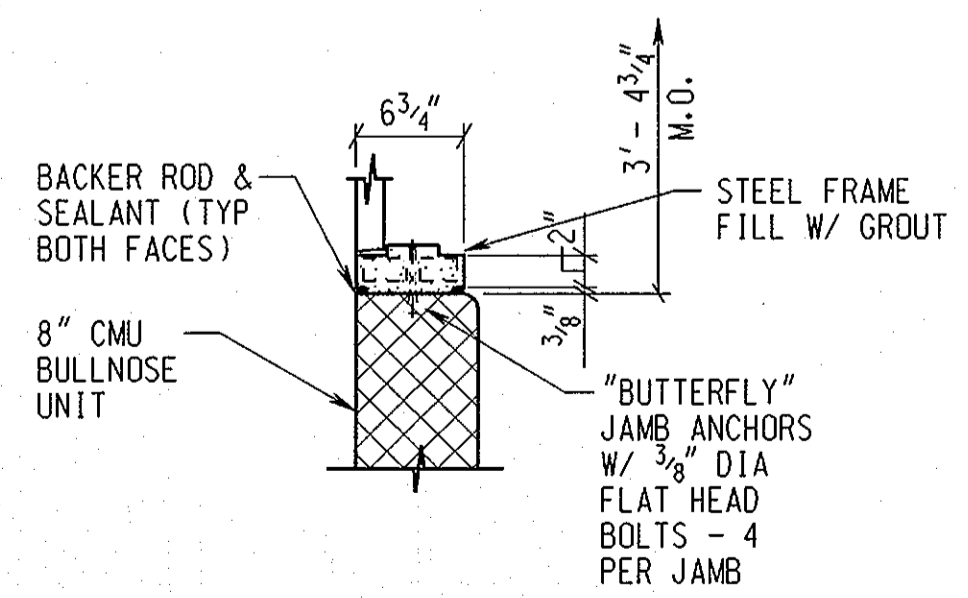
JAMB DETAIL - J2  
SCALE: 1" = 1'-0"



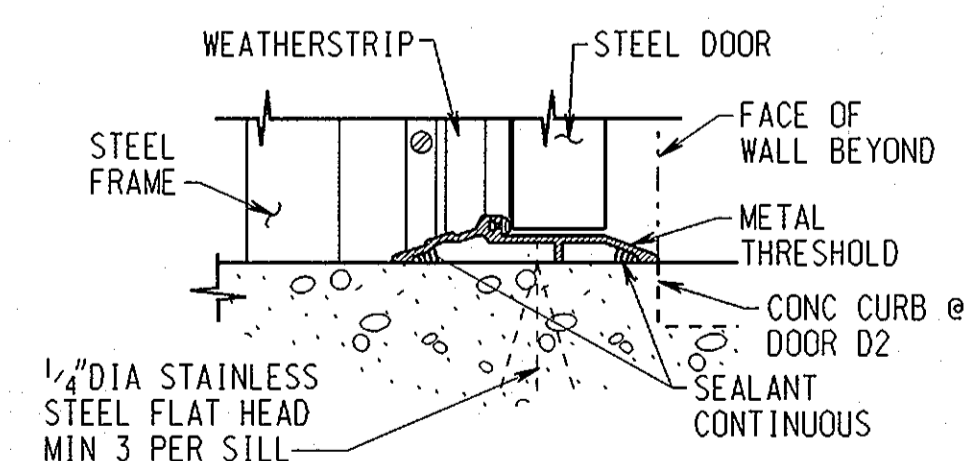
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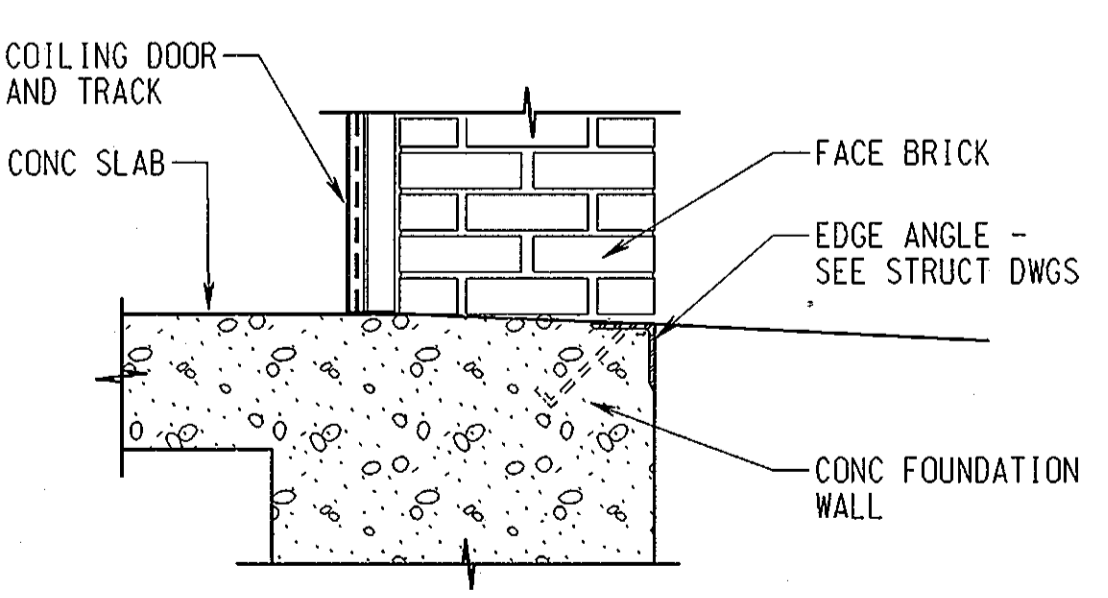
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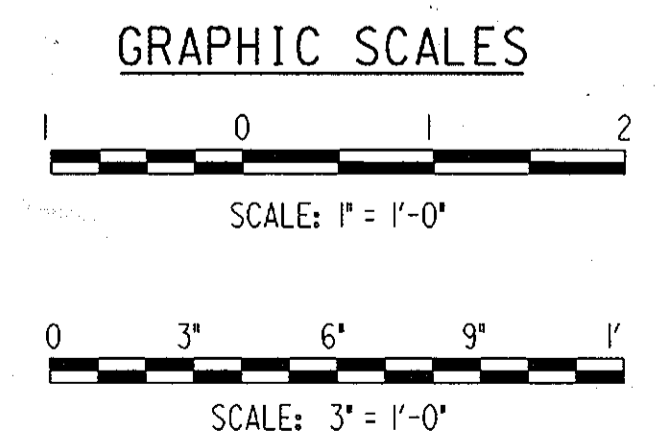
JAMB DETAIL - J5  
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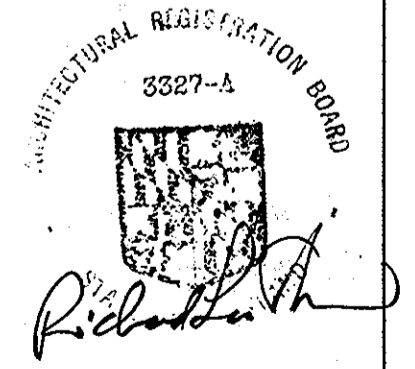
SILL DETAIL - S1  
SCALE: 3" = 1'-0"



SILL DETAIL - S2  
SCALE: 1" = 1'-0"



RECORD DRAWING  
11/18/02



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.

Director of Public Works: *James J. Lee* 1-15-99  
Chief, Bureau of Engineering: *Robert J. Dea* 1-15-99  
Chief, Bureau of Utilities: *Robert J. Dea* 1-15-99  
Act. Chief, Utility Design Division: *Robert J. Dea* 1-15-99

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.

DES: ERB  
DRN: ERB  
CHK: JD  
DATE: 11/12/98

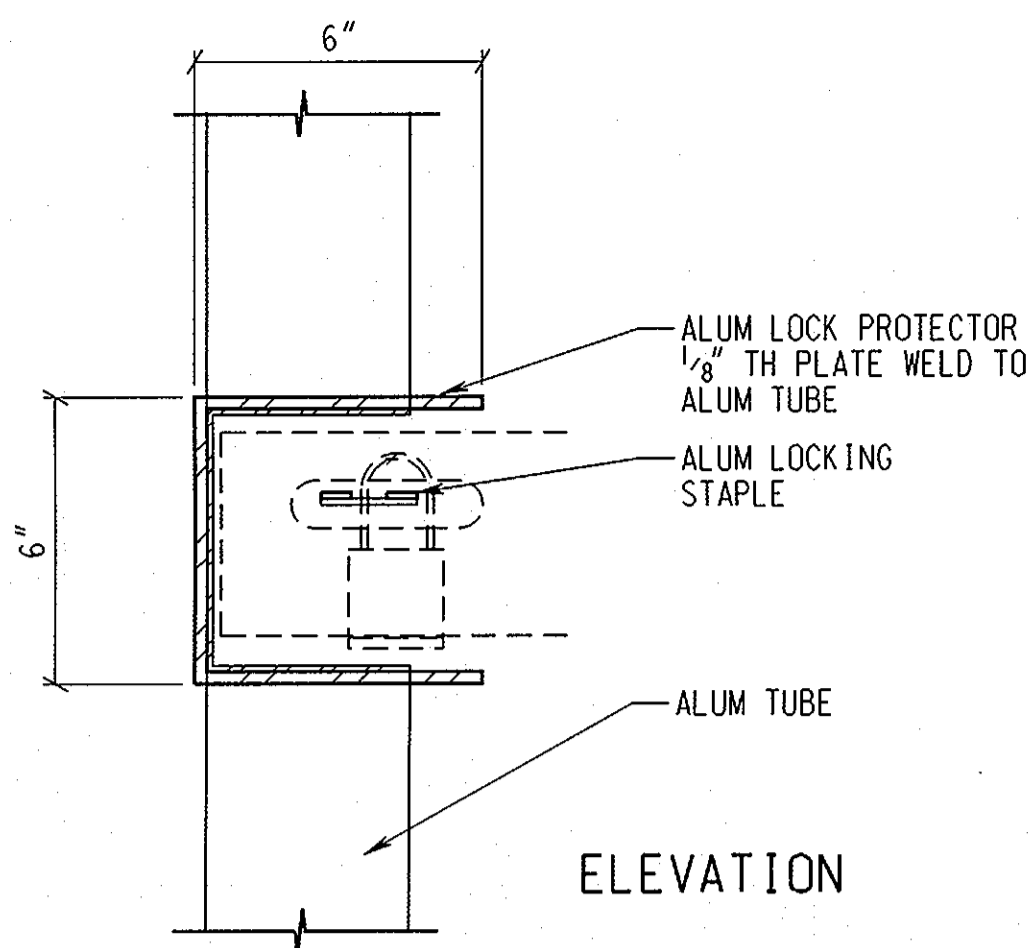
RECORD DRAWING  
BY: NO. REVISION DATE: 8-23-02

DOOR SCHEDULE AND DETAILS

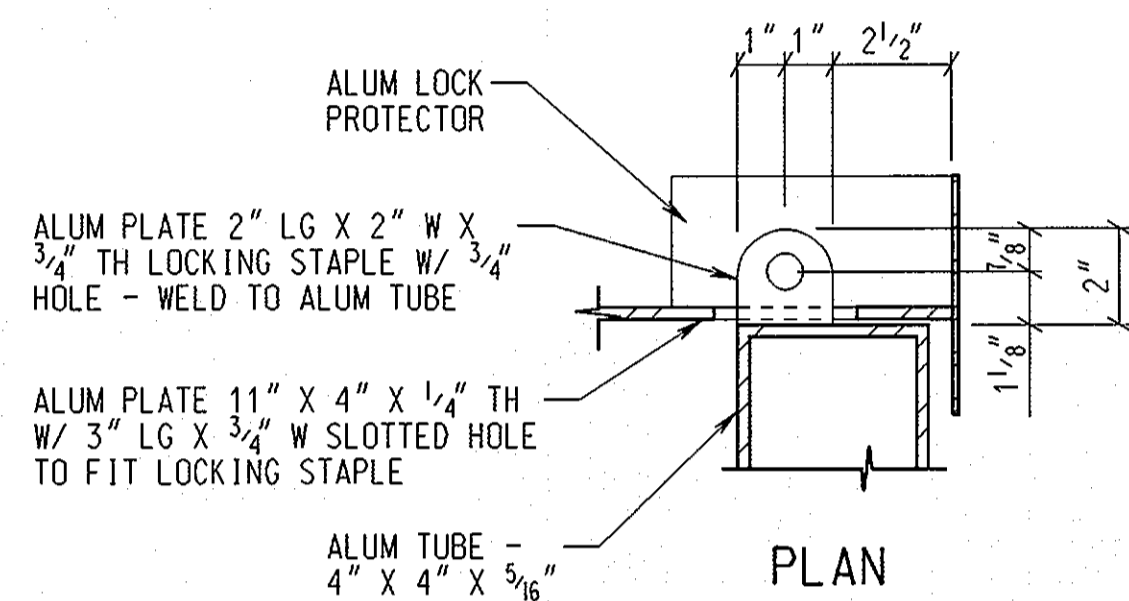
600' SCALE MAP NO. BLOCK NO.

ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

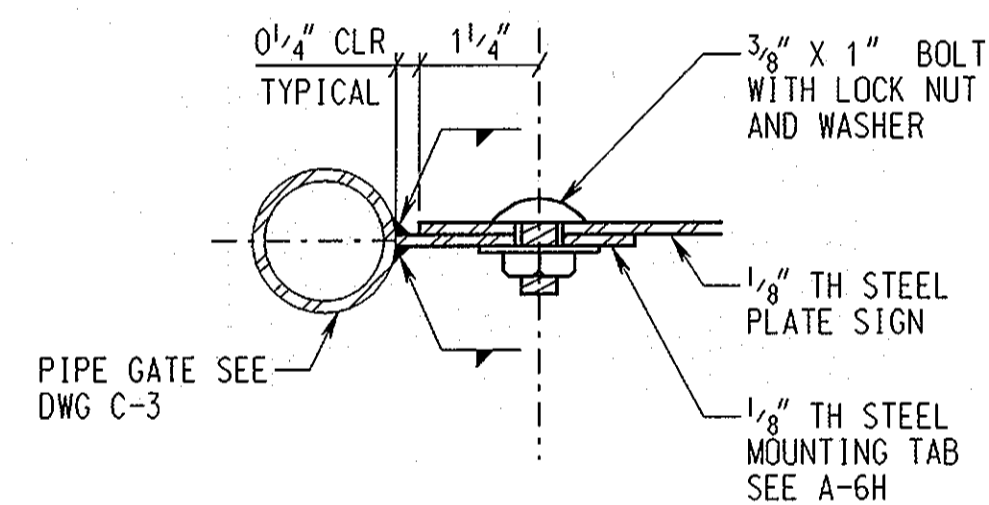
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SHEET 12 OF 36



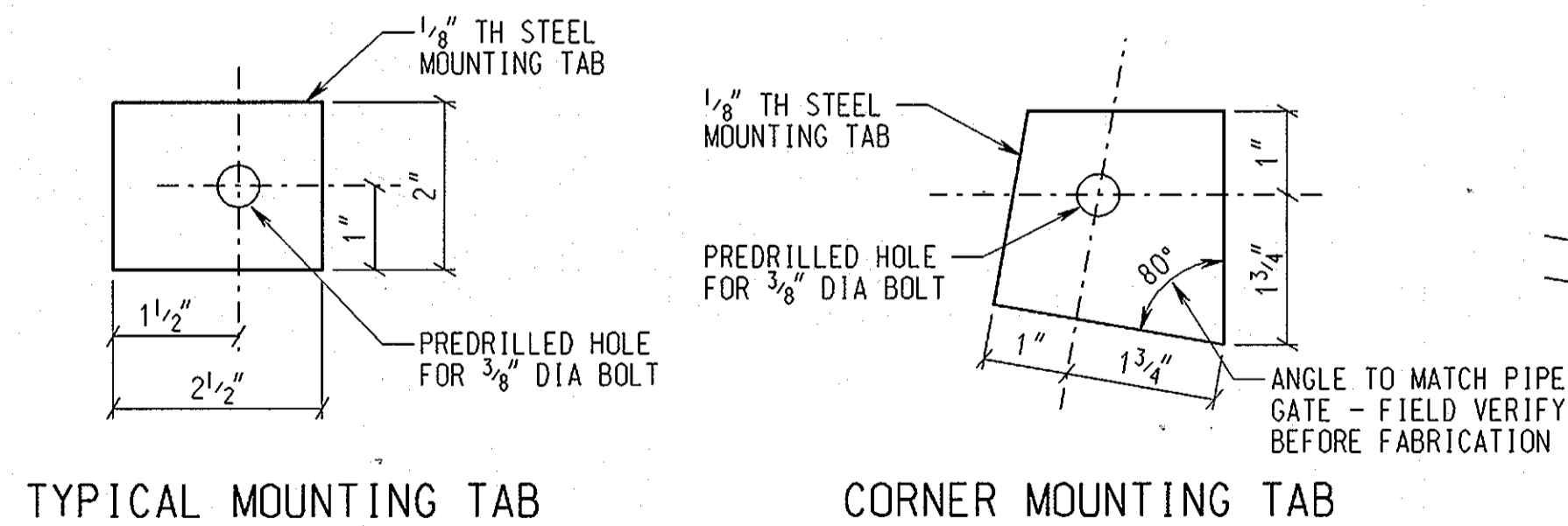
**LOCK PROTECTOR DETAIL A6-A/A6**  
SCALE: 3" = 1'-0"



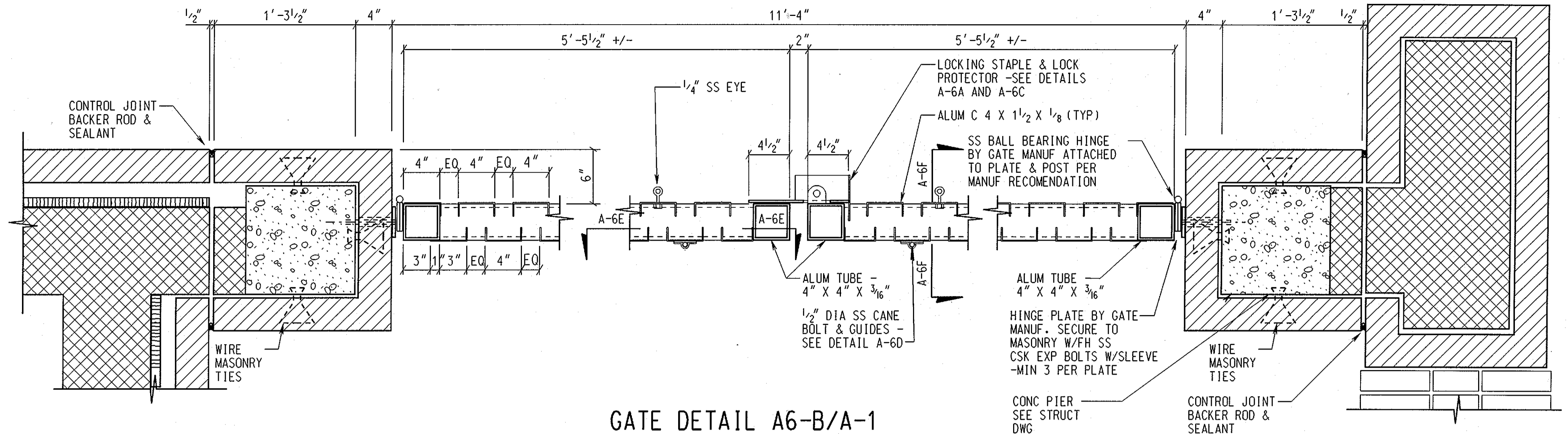
**LOCKING STAPLE DETAIL A6-A/A6**  
SCALE: 3" = 1'-0"



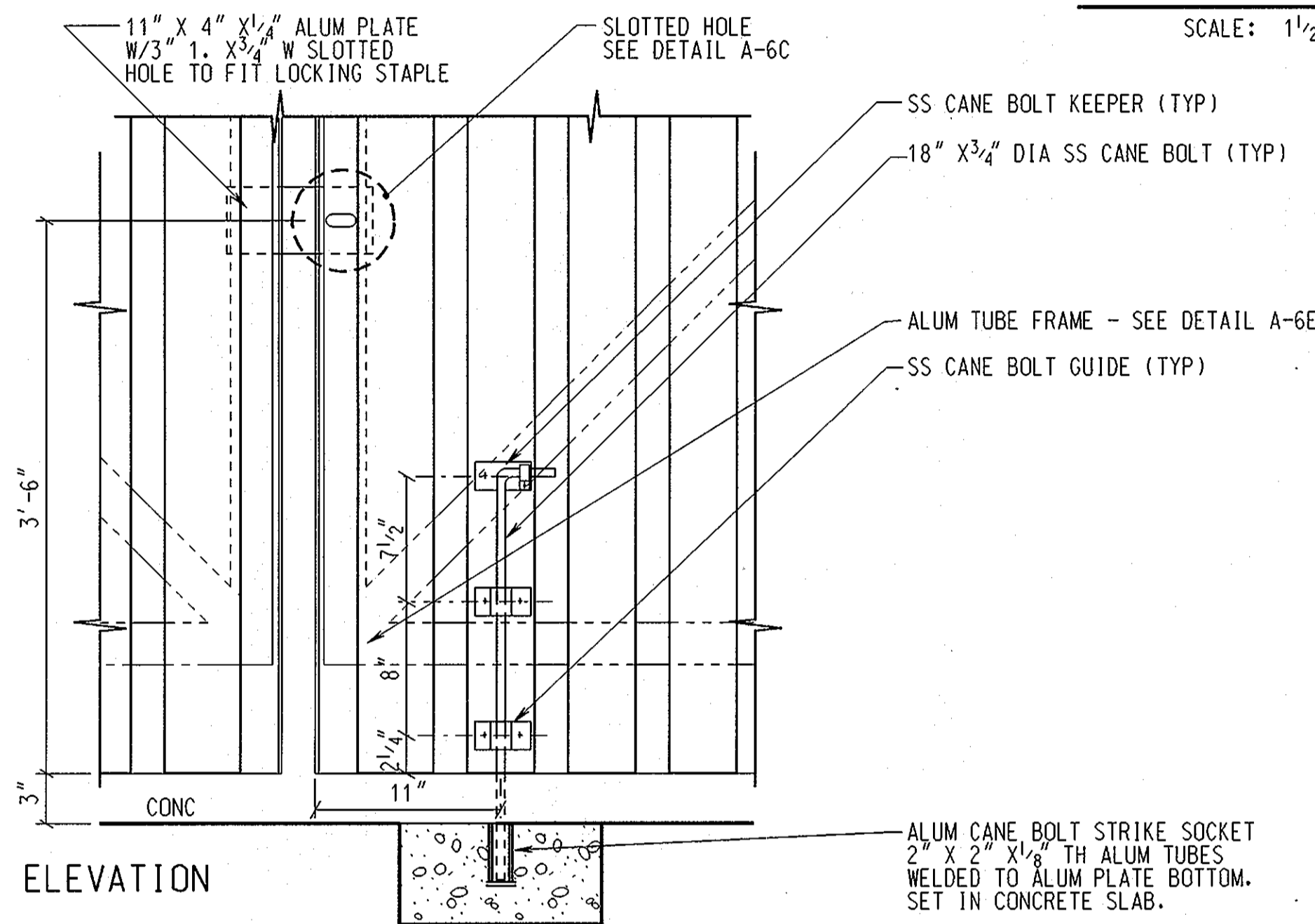
**PIPE GATE SIGN CONNECTION DETAIL A-6G/A6**  
SCALE: 6" = 1'-0"



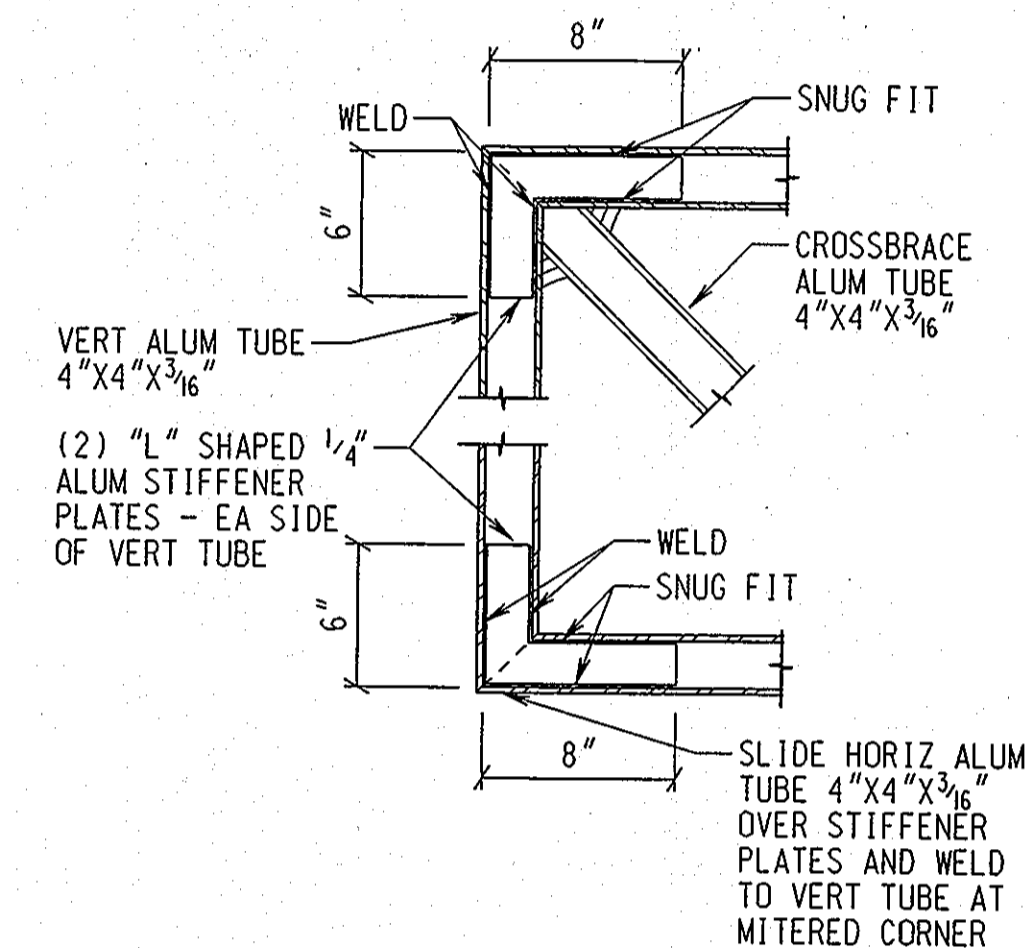
**PIPE GATE SIGN MOUNTING TAB DETAILS A-6H/A6**  
SCALE: 6" = 1'-0"



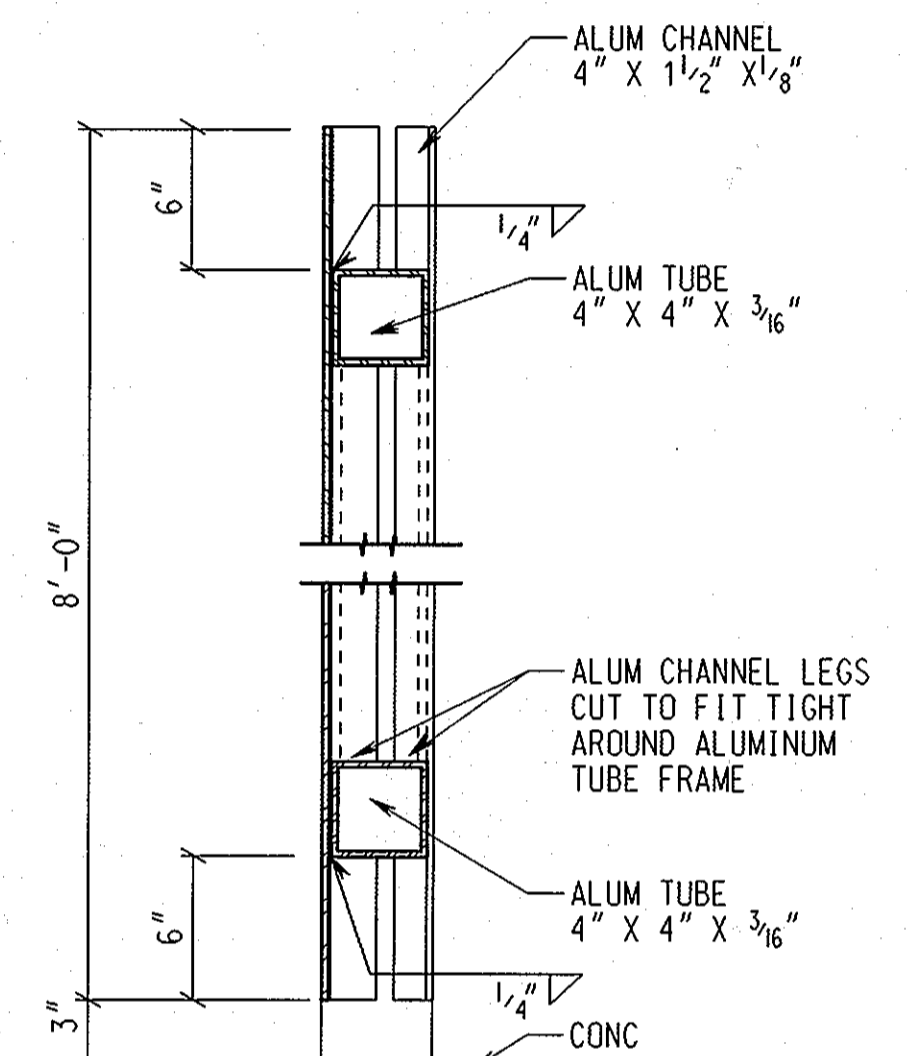
**GATE DETAIL A6-B/A-1**  
SCALE: 1 1/2" = 1'-0"



**CANE BOLT DETAIL A-6D/A6**  
SCALE: 1 1/2" = 1'-0"

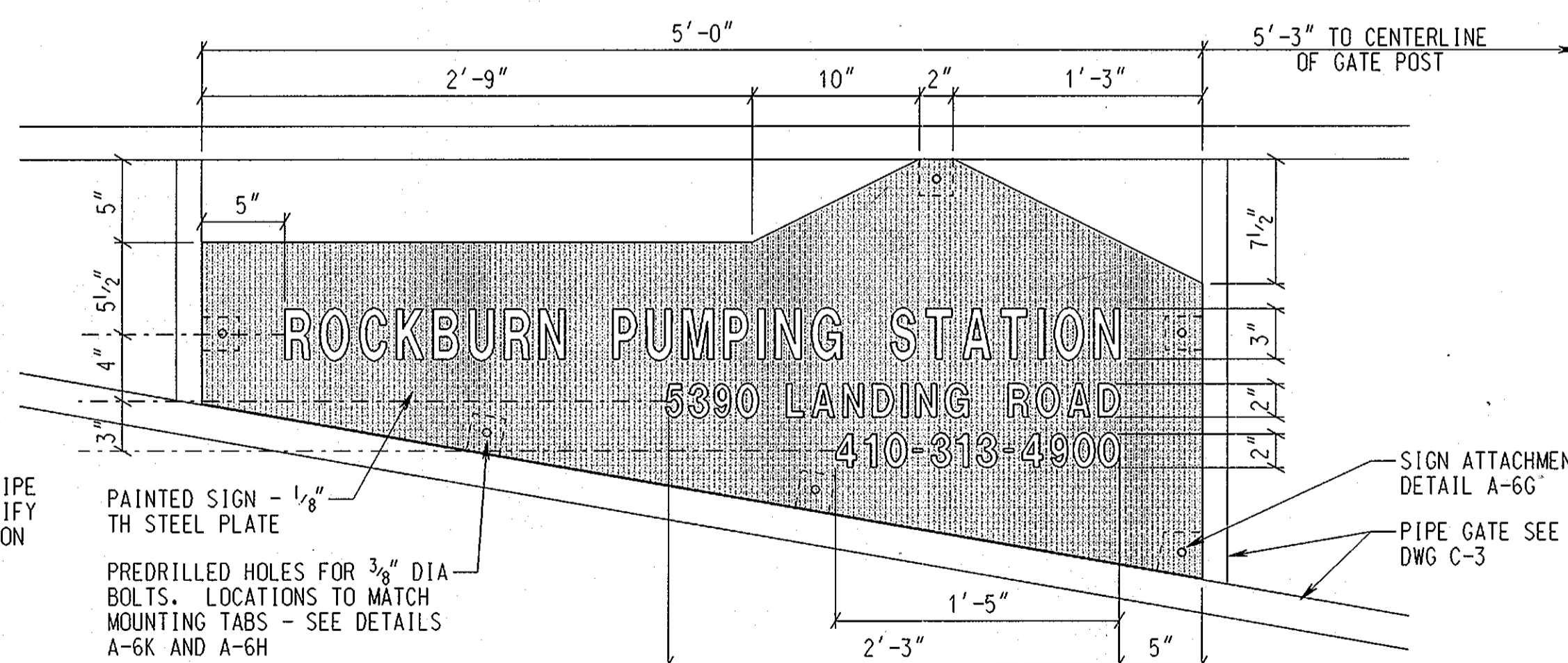


**FRAME DETAIL A-6E/A6**  
SCALE: 1 1/2" = 1'-0"



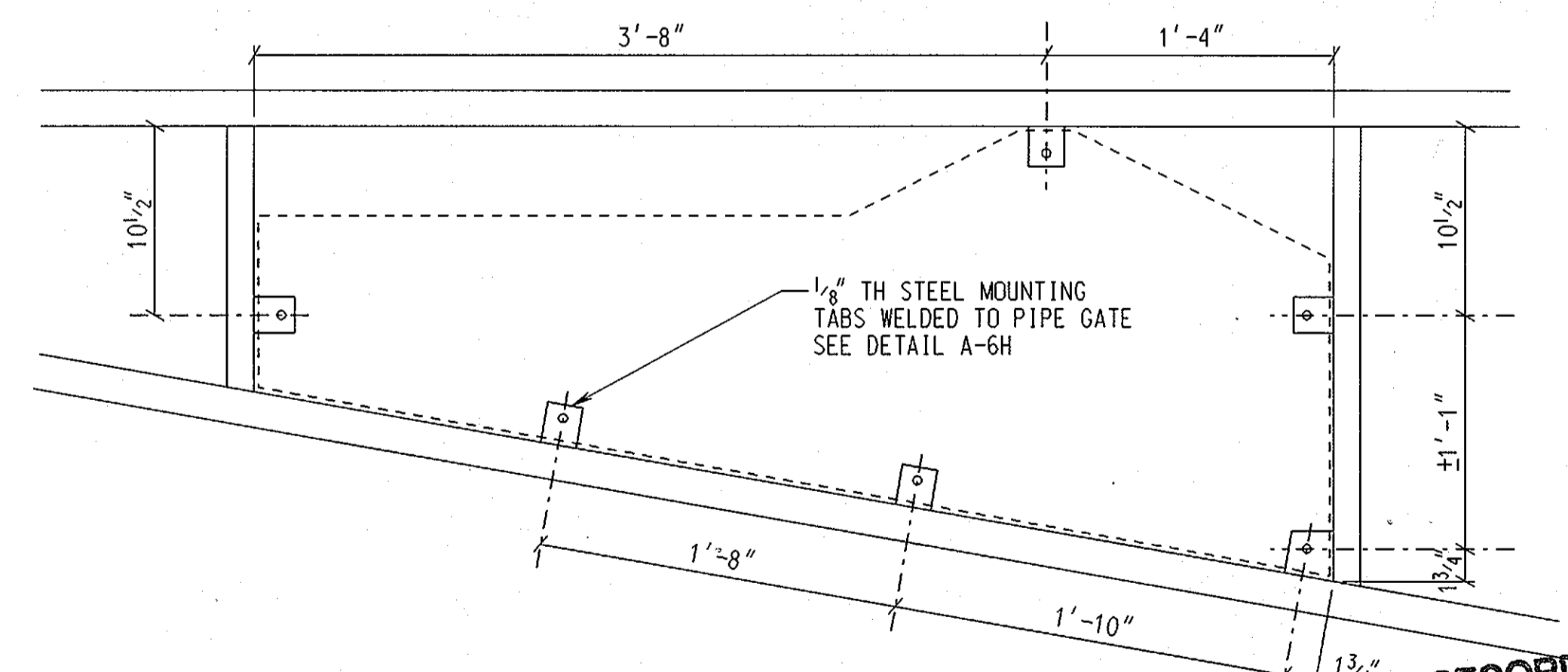
**FRAME DETAIL A-6F/A6**  
SCALE: 1 1/2" = 1'-0"

NOTE: UNLESS OTHERWISE NOTED ALL CONNECTIONS ON GATE SHALL BE WELDED AND ALL EXPOSED WELDS SHALL BE GROUND SMOOTH



**PIPE GATE SIGN A-6J/C3**  
SCALE: 1 1/2" = 1'-0"

- NOTES:
- CONTRACTOR TO FIELD VERIFY ALL GATE DIMENSIONS AND MOUNTING TAB LOCATIONS BEFORE FABRICATING SIGN.
  - BACKGROUND PAINTED TO MATCH MANUFACTURED ROOF PANELS.
  - LETTERING TO BE HELVETICA MEDIUM - PAINTED WHITE WITH BLACK OUTLINE



**PIPE GATE SIGN MOUNTING TAB LOCATIONS A-6K/A6**  
SCALE: 1 1/2" = 1'-0"

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.

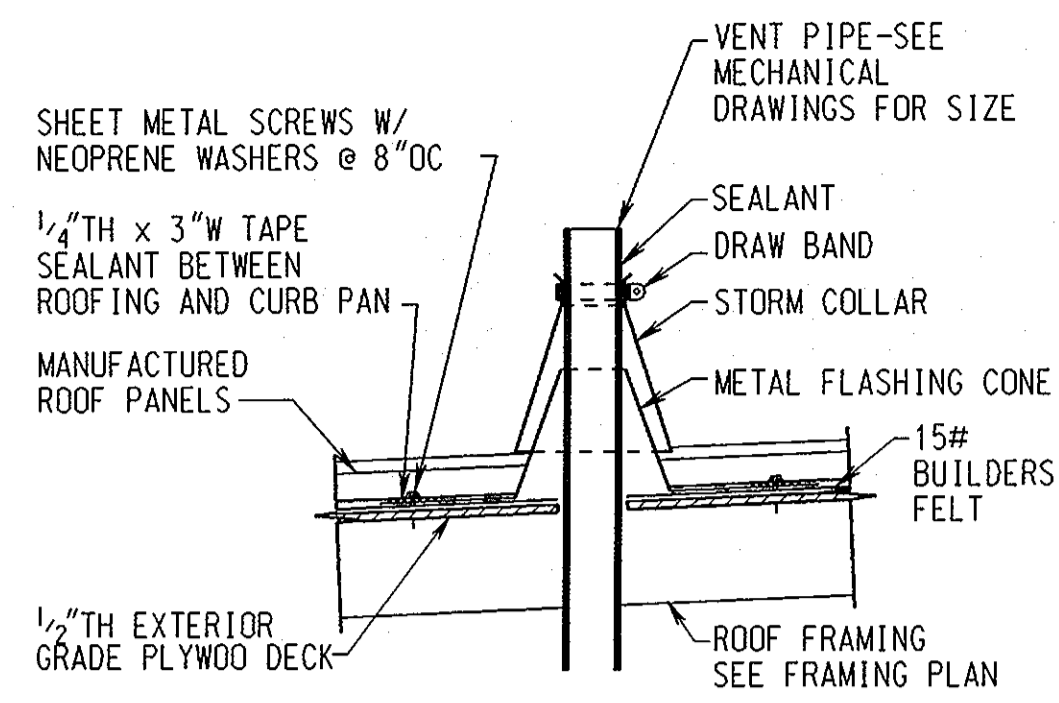
DES : ERB			
DRN : ERB			
CHK : JD			
DATE : 11/12/98			
BY	NO.	REVISION	DATE
		RECORD DRAWING	8-23-02

GATE DETAILS & PIPE GATE SIGN DETAILS

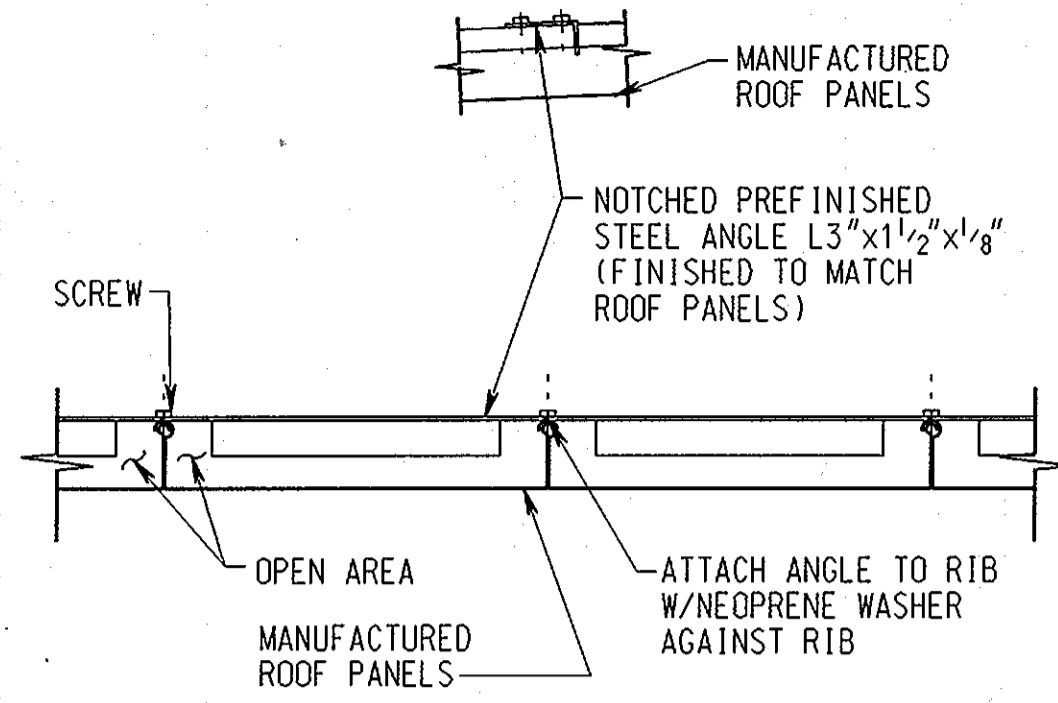
ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

A-6

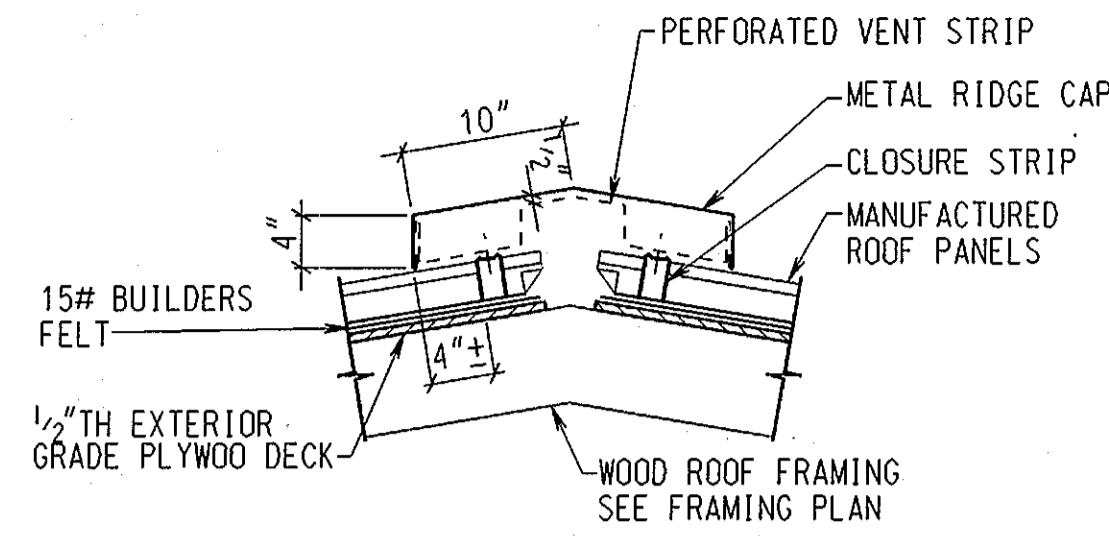
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SHEET 13 OF 36



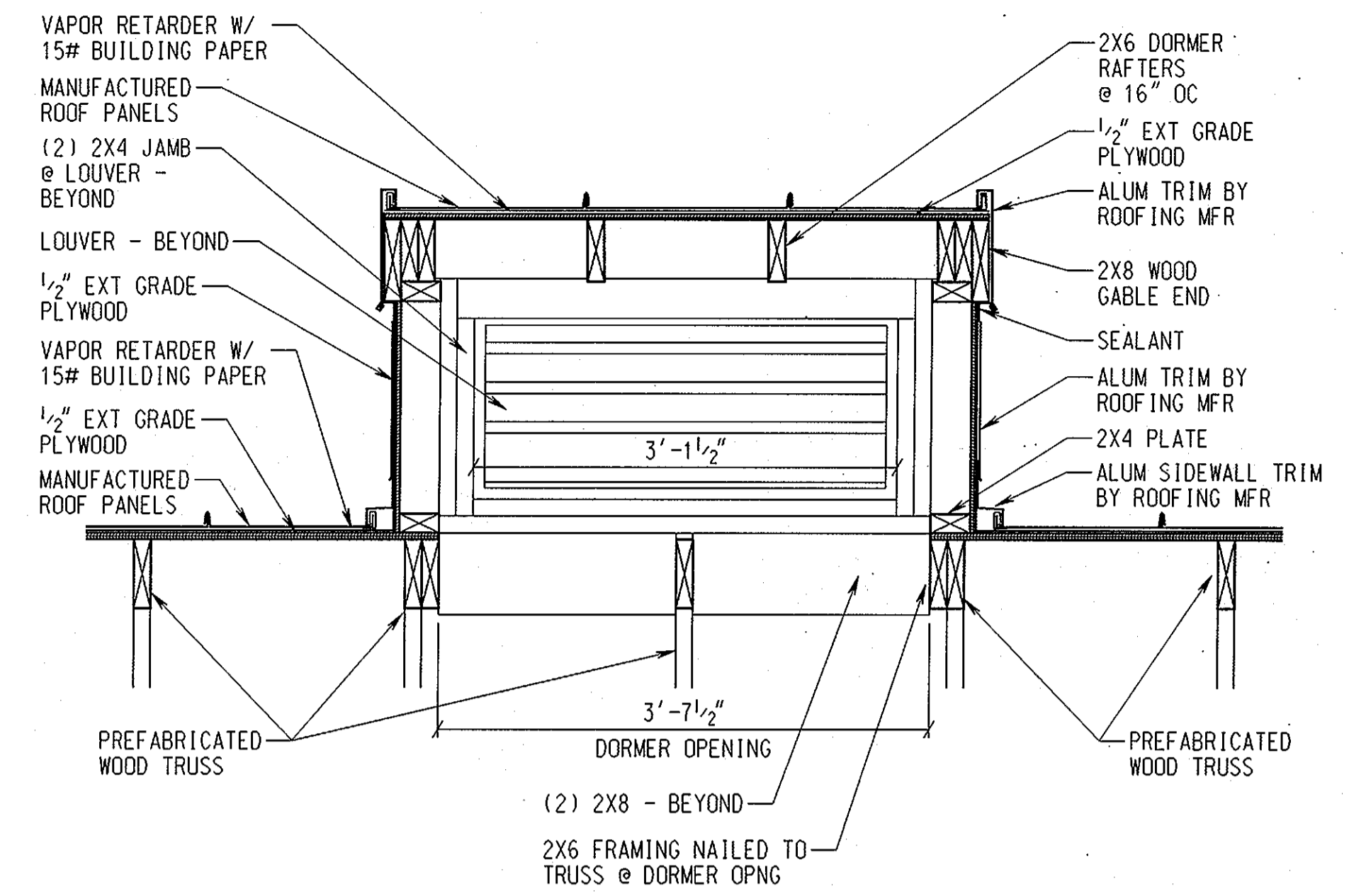
VENT PIPE DETAIL A-7A/A-2  
SCALE: 1" = 1'-0"



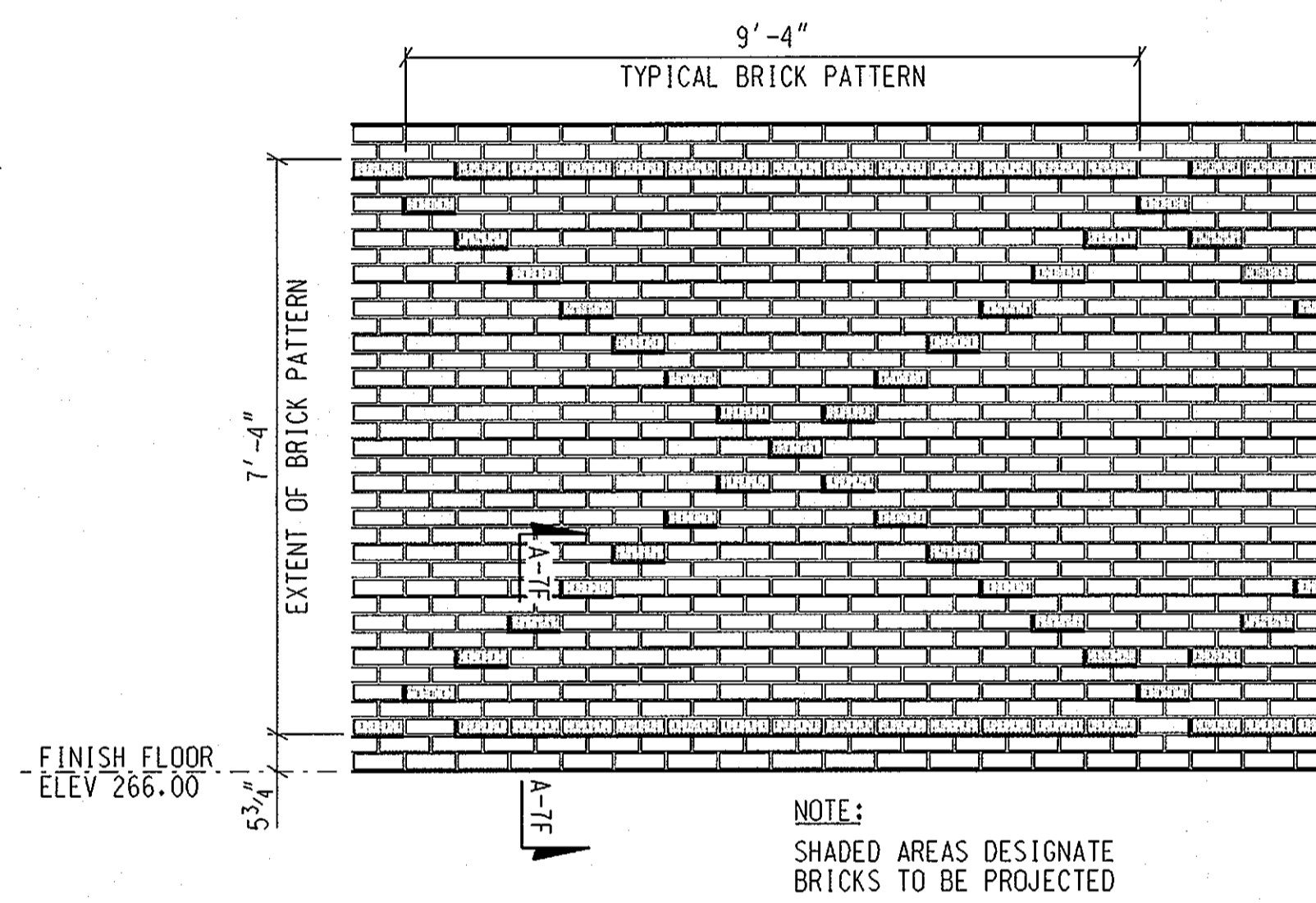
SNOW GUARD DETAIL A-7B/A-2  
SCALE: 1" = 1'-0"



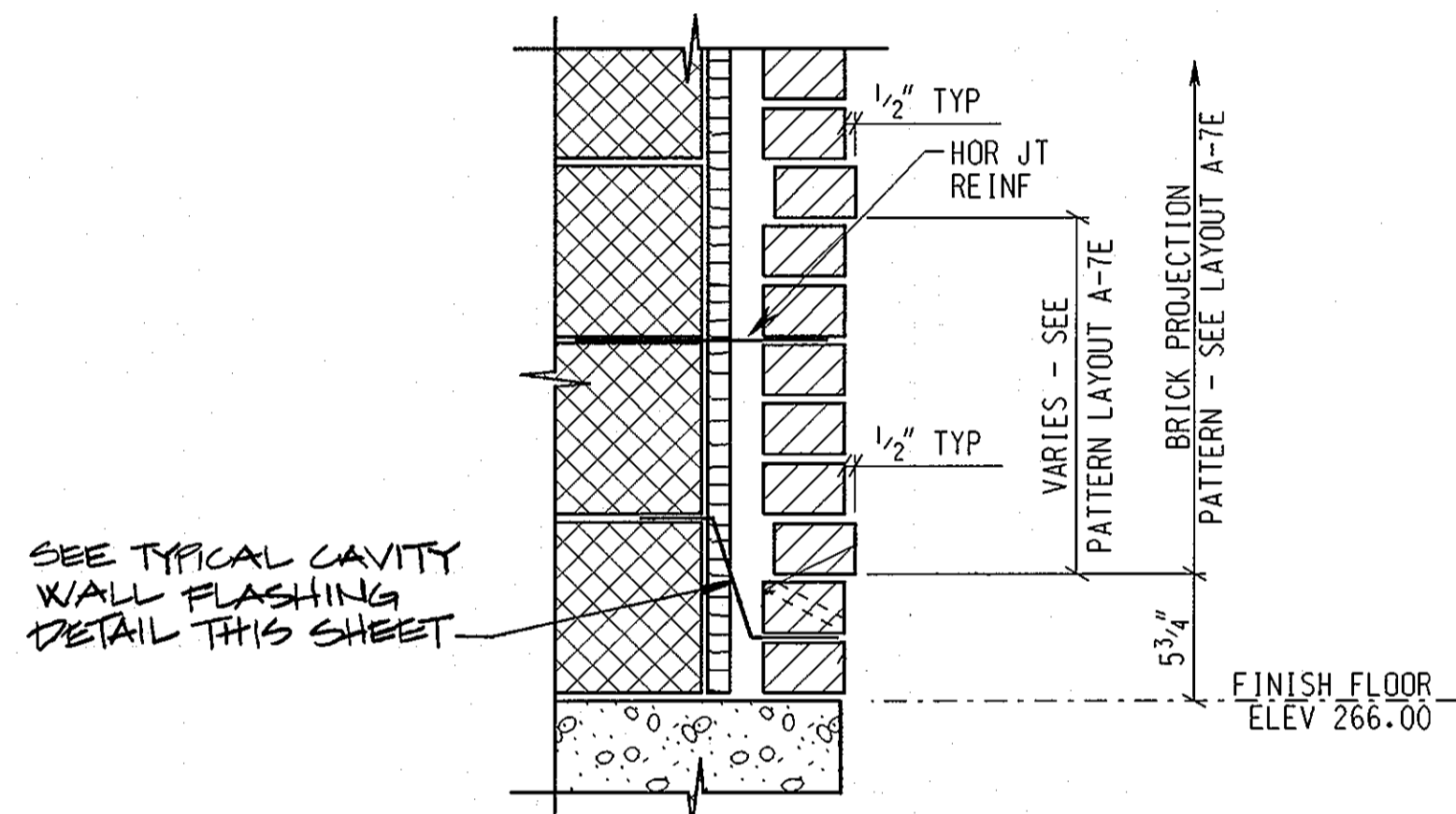
RIDGE VENT DETAIL A-7C/A-2  
SCALE: 1" = 1'-0"



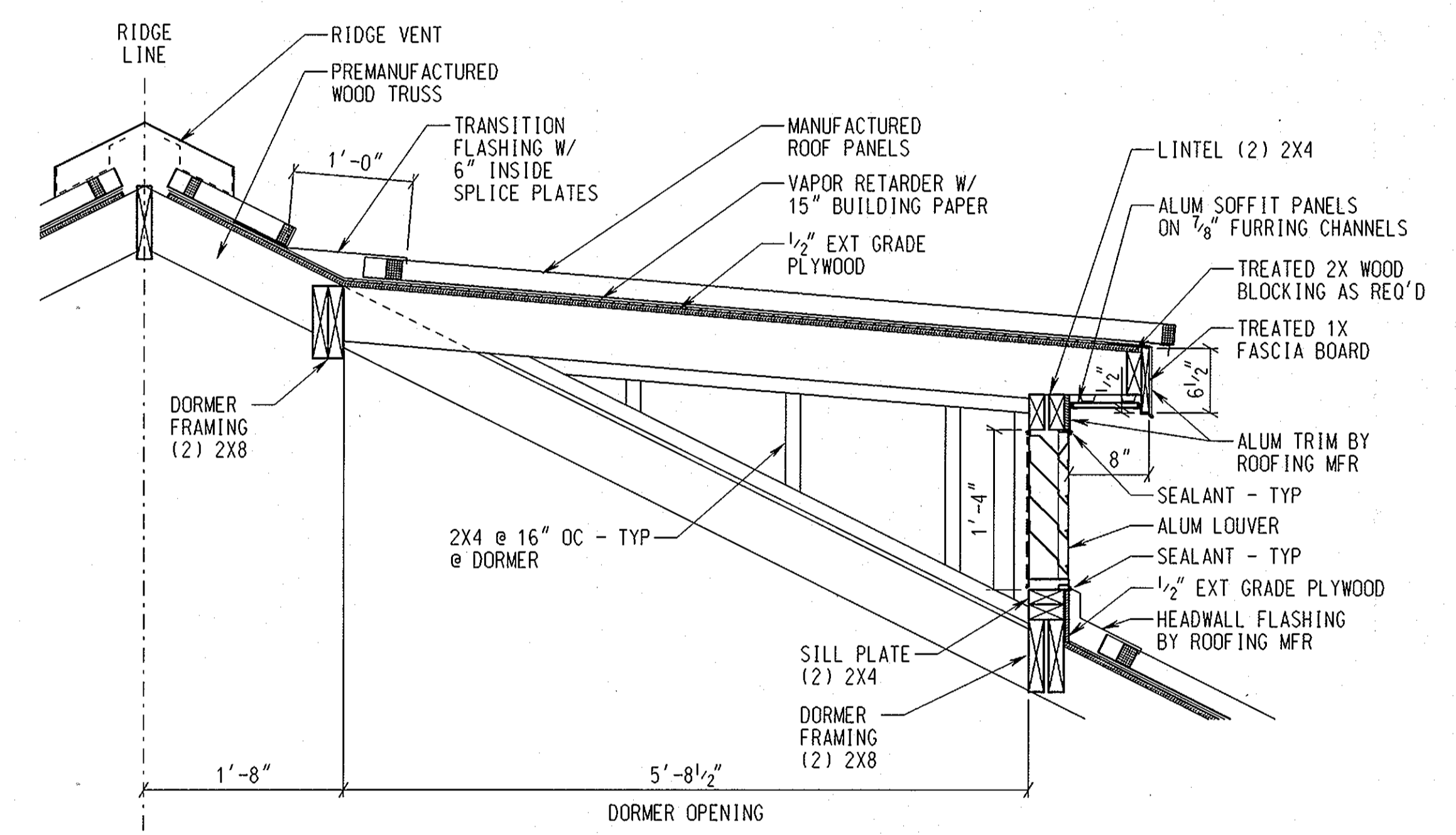
DORMER SECTION A-7D/A-2  
SCALE: 1" = 1'-0"



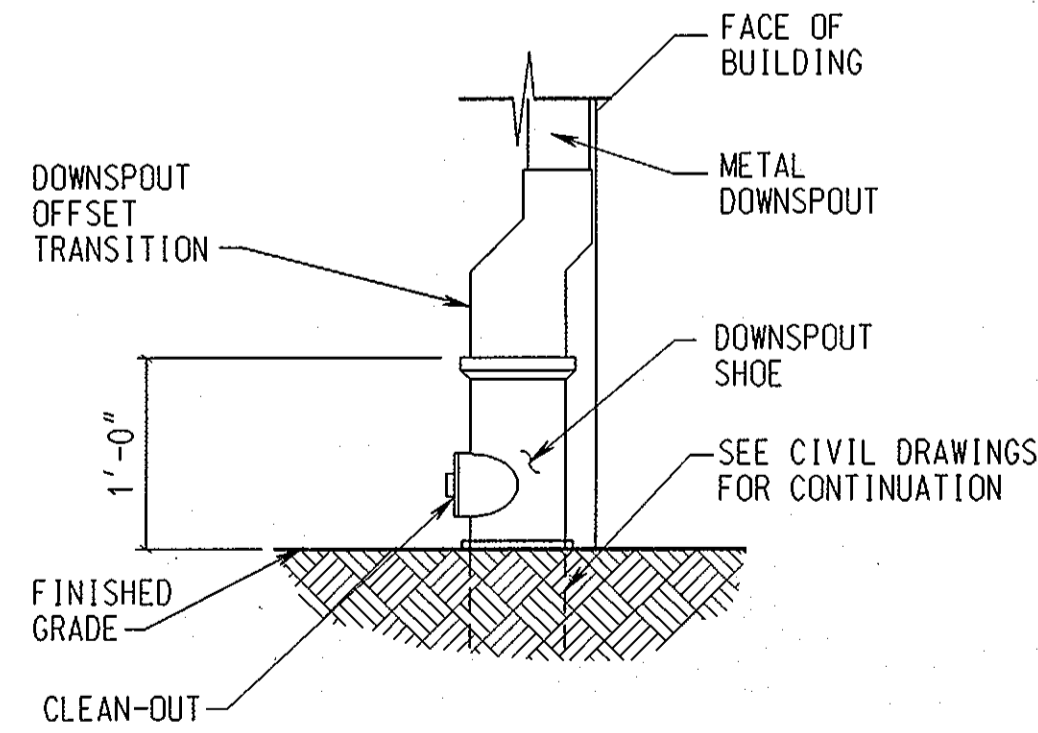
BRICK PATTERN LAYOUT A-7E/A-3.A-7  
SCALE: 1/2" = 1'-0"



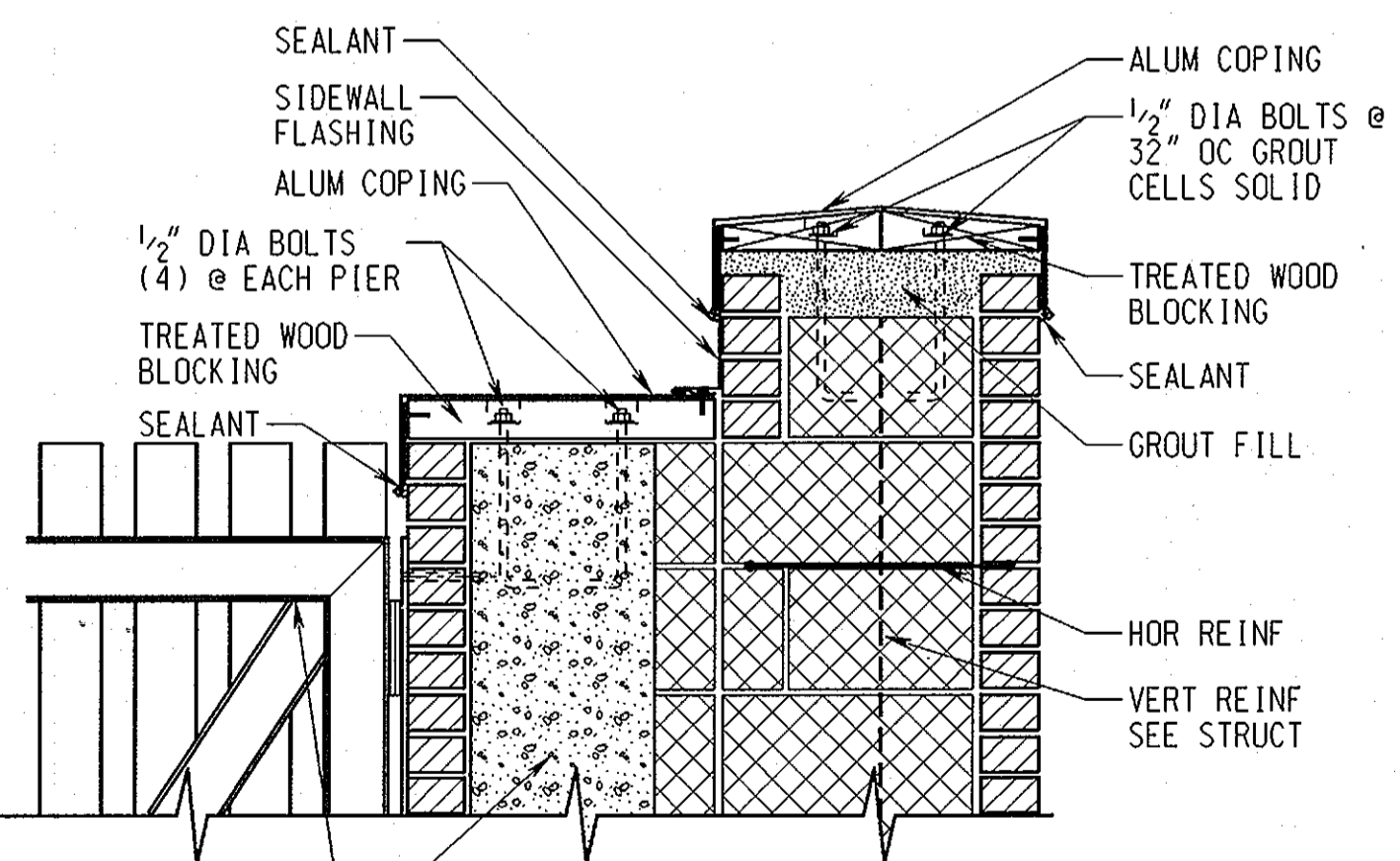
BRICK PROJECTION DETAIL A-7F/A-7  
SCALE: 1 1/2" = 1'-0"



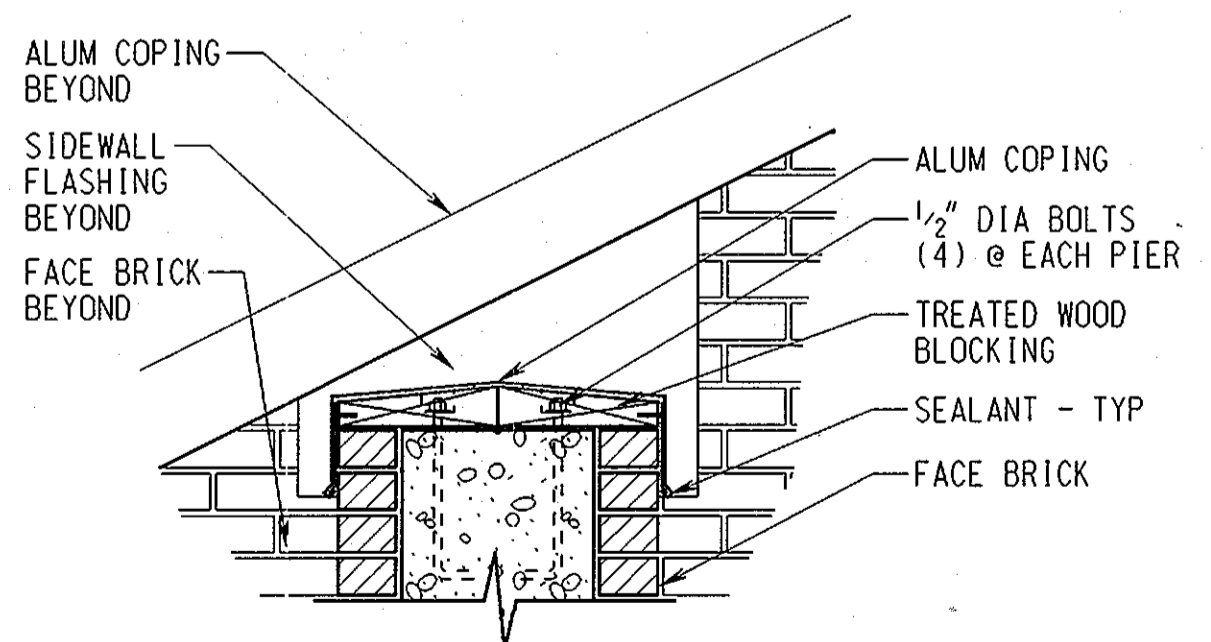
DORMER SECTION A-7G/A-2  
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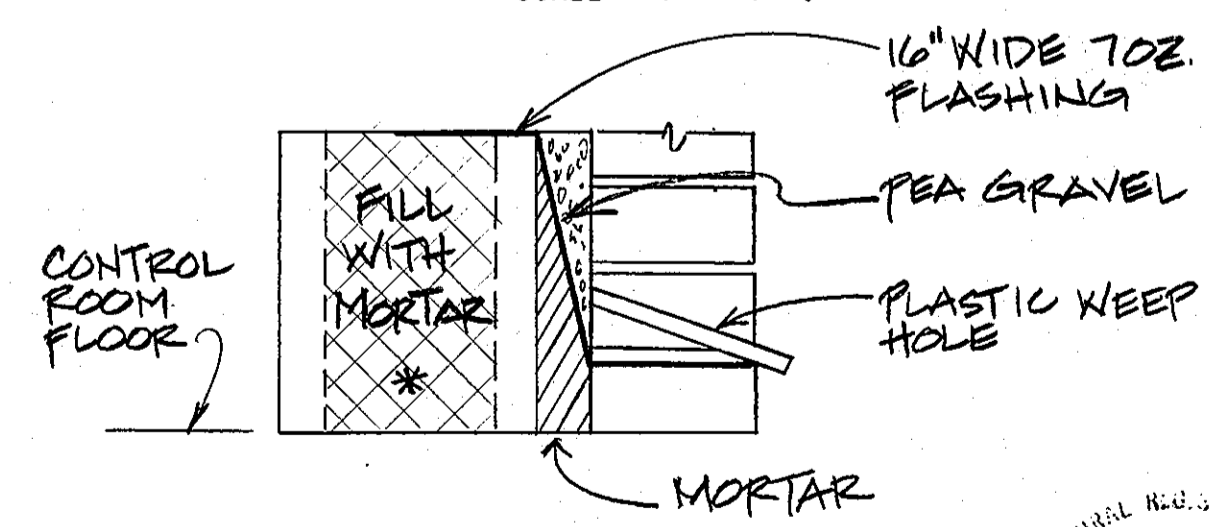
DOWNSPOUT LEADER SHOE A-7H/A-1  
SCALE: 1" = 1'-0"



COPING DETAIL A-7J/A-1  
SCALE: 1" = 1'-0"

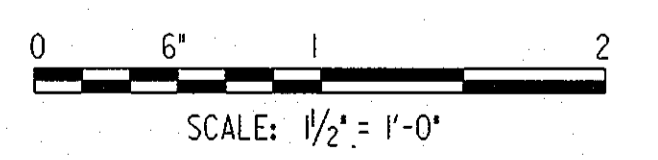
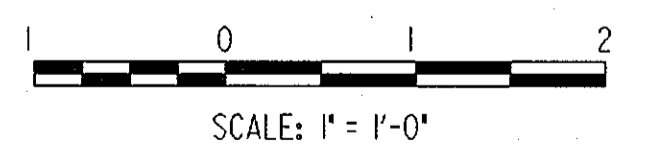
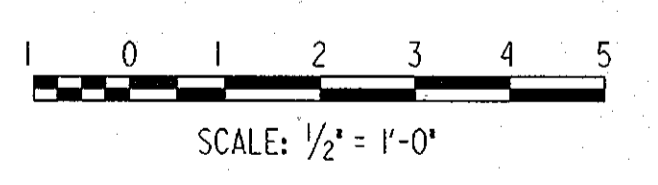


COPING DETAIL A-7K/A-1  
SCALE: 1" = 1'-0"



TYPICAL CAVITY WALL FLASHING  
NO SCALE  
\* EXCEPT AT EVERY 4' ON COURSE GROUTED REBAR CORES INTERRUPT FLASHING & FILL FLOOR TO BOND BEAM.

GRAPHIC SCALES



RECORD DRAWING  
11/18/02

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.

DES : ERB			
DRN : ERB			
CHK : JD			
DATE : 11/12/98			
BY NO.		RECORD DRAWING	8-23-02
		REVISION	DATE

DETAILS

ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

A-7  
SCALE AS SHOWN  
SHEET 14 OF 36

# STRUCTURAL GENERAL NOTES

## GENERAL NOTES

- ALL DIMENSIONS, LOCATIONS AND ELEVATIONS OF EXISTING STRUCTURES SHOWN ON THE CONTRACT DRAWINGS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- THE SIZES AND LOCATIONS OF EQUIPMENT PADS AND PEDESTALS, AS WELL AS EQUIPMENT RELATED FLOOR AND SLAB OPENINGS ARE DEPENDENT UPON THE ACTUAL EQUIPMENT FURNISHED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND COORDINATE ALL SUCH ITEMS. NO DIMENSIONS INDICATED ON THESE DRAWINGS SHALL BE ALTERED WITHOUT THE ENGINEER'S APPROVAL. ALL EQUIPMENT PADS AND OTHER EQUIPMENT SUPPORTS REQUIRED MAY NOT HAVE BEEN SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO CIVIL, ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR SIZES AND LOCATIONS OF SUCH PADS AND SUPPORTS.
- LOCATIONS OF BORINGS ARE SHOWN ON CIVIL DRAWINGS. BORING LOGS ARE INCLUDED IN THE SPECIFICATION.
- FOR NOTES PERTAINING TO INDIVIDUAL STRUCTURES, SEE DRAWINGS FOR THOSE STRUCTURES.

## CONCRETE NOTES

- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
- REINFORCED CONCRETE SHALL BE DETAILED AND CONSTRUCTED IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE, (ACI 301) "STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE".
- ALL REINFORCEMENT SHALL CONFORM TO ASTM SPECIFICATION A615, DEFORMED, GRADE 60. ALL REINFORCEMENT SHOWN ON STRUCTURAL DRAWINGS ARE IN **SOFT METRIC** DESIGNATION.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM SPECIFICATION A185.
- UNLESS OTHERWISE NOTED ON THE DRAWINGS, CONCRETE COVER FOR REINFORCEMENT SHALL BE AS FOLLOWS:
  - UNFORMED CONCRETE BOTTOM BARS IN FOOTINGS AND SLABS ON EARTH, OR GRAVEL. ----- 3"
  - BEAMS, SLABS, COLUMNS AND WALLS EXPOSED TO GROUND, WEATHER OR PROCESS LIQUID AFTER THE REMOVAL OF FORMS ----- 2"
  - BEAMS, COLUMNS AND PIERS NOT EXPOSED TO WEATHER OR PROCESS LIQUID ----- 1 1/2"
  - STRUCTURAL SLABS NOT EXPOSED TO GROUND, WEATHER, PROCESS LIQUID OR TRUCK TRAFFIC ----- 1"
  - STRUCTURAL SLAB NOT EXPOSED TO GROUND, WEATHER OR PROCESS LIQUID BUT SUBJECT TO TRUCK TRAFFIC.
 

TOP OF SLAB -----	1 1/2"
BOTTOM OF SLAB -----	1"
- ALL EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL SUBMIT SHOP DETAILS OF REINFORCING STEEL BEFORE PROCEEDING WITH FABRICATION.
- REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH ACI DETAILING MANUAL.
- ALL SPLICES FOR REINFORCING BARS NOT DIMENSIONED ON THE DRAWINGS SHALL BE DETAILED AS TABULATED ON DRAWING S-1.
- CONCRETE SLAB AND WALLS SHALL BE POURED BETWEEN INDICATED JOINTS ALLOWING A MINIMUM PERIOD OF 2 DAYS TO ELAPSE BETWEEN ADJACENT POURS. FOR CONSTRUCTION JOINTS NOT SHOWN REFER TO SPECIFICATION SECTION 03300.
- ENGINEER APPROVED ADDITIONAL CONSTRUCTION JOINTS SHALL NOT RESULT IN ADDITIONAL EXPENSE TO THE OWNER.
- WATERSTOPS SHALL BE :A) R<sub>x</sub> TYPE, "LOCK STOP" AS MANUFACTURED BY GREENSTREAK OR APPROVED EQUAL AS INDICATED ;B) 3/8" THICK PVC, 9" WIDE OF THE 2-BULB OR 3-BULB TYPE AS NOTED ON THE DRAWINGS SEE SPECIFICATIONS FOR OTHER REQUIREMENTS.
- ANCHOR BOLTS AND EQUIPMENT PEDESTALS SHALL BE SIZED AND LOCATED AS REQUIRED TO SUIT EQUIPMENT FURNISHED.
- SEE ARCHITECTURAL, CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL EMBEDDED ITEMS SUCH AS SLEEVES, ANCHORS, ELECTRICAL CONDUITS, OPENINGS, WHICH MAY INTERFERE WITH CONCRETE CONSTRUCTION. ALL PIPING AND OTHER EMBEDDED ITEMS ARE NOT SHOWN ON STRUCTURAL DRAWINGS.
- WHERE A BEAM FRAMES INTO A WALL, IF A CONSTRUCTION JOINT IS NOT INDICATED AT THE BOTTOM OF THE BEAM, A POCKET SHALL BE PROVIDED IN THE WALL FOR BEAM BEARING. THE DEPTH OF THE POCKET SHALL BE FULL THICKNESS OF THE WALL.

## CONCRETE MASONRY NOTES

- MASONRY CONSTRUCTION SHALL CONFORM TO AMERICAN CONCRETE INSTITUTE (ACI 530.1/ASCE 6/TMS 602), "SPECIFICATION FOR CONCRETE MASONRY STRUCTURES".
- ALL CONCRETE MASONRY UNITS SHALL BE HOLLOW LIGHTWEIGHT LOAD BEARING UNITS MEETING THE REQUIREMENTS OF ASTM C90.
- MORTAR SHALL MEET THE REQUIREMENTS OF ASTM C270 TYPE M OR S. CEMENT SHALL BE PORTLAND CEMENT.
- GROUT SHALL MEET THE REQUIREMENTS OF ASTM C476 COARSE GROUT, AND SHALL REACH A MINIMUM COMPRESSIVE STRENGTH OF 2000 POUNDS PER SQUARE INCH AT 28 DAYS.
- MINIMUM COMPRESSIVE STRENGTH OF THE MASONRY F'm SHALL BE 1350 POUNDS PER SQUARE INCH.
- REINFORCING BARS SHALL MEET THE REQUIREMENTS OF ASTM A615, GRADE 60.
- CONCRETE FOR PRECAST LINTELS SHALL COMPLY WITH SPECIFICATION SECTION 03300, "CAST-IN-PLACE CONCRETE", AND SHALL REACH A MINIMUM COMPRESSIVE STRENGTH OF 3000 POUNDS PER SQUARE INCH.

## PIPE SUPPORT

- ALL PIPES CONNECTING TO OUTSIDE WALL OF STRUCTURES SHALL HAVE CONCRETE HAUNCH AND/OR CRADLE CONSTRUCTED BENEATH THE PIPE IN ACCORDANCE WITH DETAILS ON DRAWINGS.

## STRUCTURAL STEEL NOTES

- FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF AMERICAN INSTITUTE OF STEEL CONSTRUCTION, (AISC) "MANUAL OF STEEL CONSTRUCTION".
- THE CONTRACTOR SHALL SUBMIT ERECTION PLANS AND SHOP DETAILS BEFORE PROCEEDING WITH FABRICATION.
- ALL STRUCTURAL STEEL AND PLATE SHALL COMPLY WITH A.S.T.M. DESIGNATION A36.
- ANCHOR BOLTS (A.B.) SHALL COMPLY WITH ASTM A307.
- HIGH STRENGTH BOLTS (HS) SHALL COMPLY WITH ASTM A325.
- ALL WELDING SHALL COMPLY WITH AMERICAN WELDING SOCIETY, (AWS D1.1) "STRUCTURAL WELDING CODE".
- ALL SHOP CONNECTIONS SHALL BE WELDED WITH CLASS E-70 SERIES ELECTRODES. FIELD CONNECTIONS SHALL BE HIGH STRENGTH BOLTED EXCEPT WHERE OTHERWISE NOTED.
- CONNECTIONS NOT INDICATED SHALL BE DESIGNED BY THE FABRICATOR. BEAM CONNECTIONS SHALL BE DESIGNED FOR ONE-HALF THE TOTAL ALLOWABLE UNIFORM LOAD GIVEN IN PART 2 OF THE AISC "MANUAL OF STEEL CONSTRUCTION". OTHER CONNECTIONS SHALL BE DESIGNED FOR THE LOADS INDICATED. ALL CONNECTIONS SHALL BE A MINIMUM OF TWO 3/4" H.S. BOLTS OR WELDS OF EQUAL STRENGTH.
- MILL BOTTOM OF ALL COLUMNS AND FINISH TOP OF ALL BASE PLATES IN ACCORDANCE WITH A.I.S.C SPECIFICATIONS. BASE PLATES SHALL BE WELDED TO BOTTOM OF COLUMNS.

## ALUMINUM NOTES

- ALL STRUCTURAL ALUMINUM IS DESIGNED AND SHALL BE FABRICATED IN ACCORDANCE WITH THE CURRENT SPECIFICATION OF THE ALUMINUM ASSOCIATION.
- ALL STRUCTURAL ALUMINUM SHALL BE ALLOY 6061-T6.
- ALL ALUMINUM IN CONTACT WITH CONCRETE AND DISSIMILAR METALS SHALL, BEFORE ERECTION, BE HEAVILY COATED AS SPECIFIED.
- ALL ALUMINUM GRATING SHALL BE CAPABLE OF SUPPORTING A LIVE LOAD OF 150 PSF.
- ALL OUTSIDE EDGES OF GRATING AND OPENINGS IN GRATING SHALL BE BANNED.
- FOR OTHER MISCELLANEOUS METALS SEE SPECIFICATIONS.

## CODES

- BUILDING OFFICIALS AND CODE ADMINISTRATORS, "BOCA BUILDING CODE".
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION, (AISC) "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS - ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN".
- AMERICAN CONCRETE INSTITUTE, (ACI-318) "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
- AMERICAN CONCRETE INSTITUTE, (ACI-350) "ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES".
- AMERICAN CONCRETE INSTITUTE, (ACI-530/ASCE 5/TMS 402) "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES".

## DESIGN LOADS

- DEAD LOADS - ACTUAL WEIGHT OF STRUCTURE, WEIGHT OF SOIL - 100 P.C.F. TO RESIST UPLIFT, 120 P.C.F. DEAD LOAD
- LIVE LOADS - FLOOR - 150 P.S.F. IN AREAS NOT OCCUPIED BY EQUIPMENT OR SUBJECT TO TRUCK LOADING.
  - EQUIPMENT - ACTUAL WEIGHT - 150 P.S.F. MINIMUM.
  - TRUCK - H20-44 AASHTO LOADING
  - WALKWAYS - 150 P.S.F.
  - STAIRWAY - 100 P.S.F.
  - ROOF - 30 P.S.F.
- SNOW LOAD - GROUND SNOW LOAD - 30 PSF
- WIND LOAD - BASIC WIND SPEED - 80 MPH (EXPOSURE C)
- SEISMIC LOAD - SEISMIC ZONE 0

EARTH PRESSURES - LATERAL EARTH PRESSURES ARE BASED ON A FRICTION ANGLE OF 30°. BACKFILL MATERIAL SHALL NOT BE PLACED AGAINST FOUNDATION WALLS UNTIL THE UPPER BRACING FLOORS ARE IN PLACE FOR AT LEAST 7 DAYS.

GROUND WATER ASSUMED AT ELEVATION 266.00. WATER IS ASSUMED TO BE BELOW THE BASE OF STRUCTURES DURING CONSTRUCTION.

## FOUNDATION NOTES

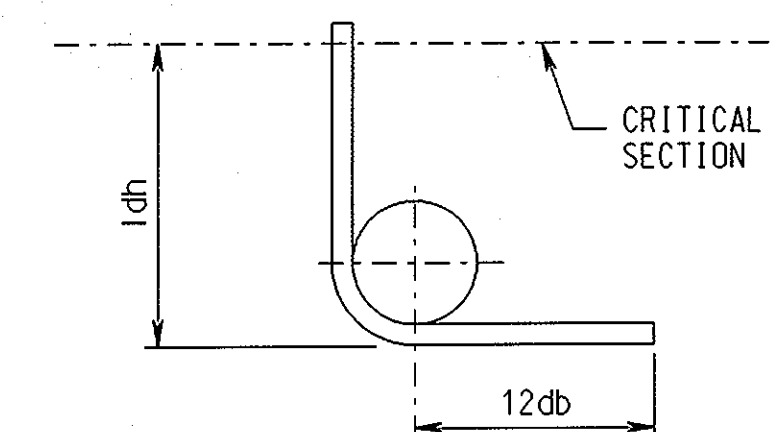
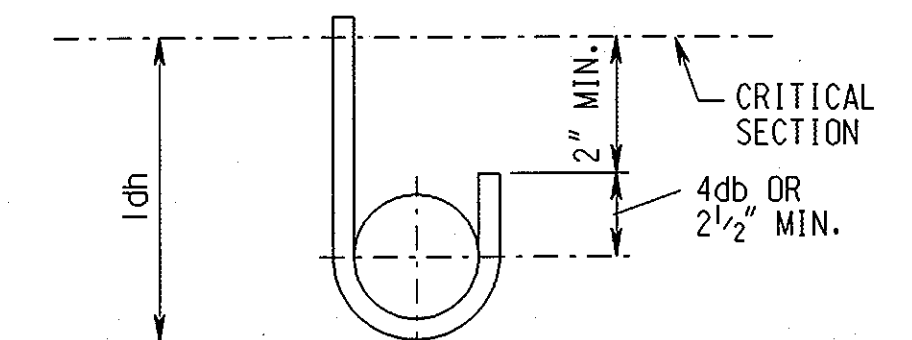
- FOR MECHANICAL AND ELECTRICAL WORK TO BE INCORPORATED IN FOUNDATION WORK, SEE MECHANICAL AND ELECTRICAL DRAWINGS.
- ALL EXCAVATIONS SHALL BE KEPT DRY. STANDING WATER SHALL NOT BE ALLOWED IN EXCAVATIONS.
- BEFORE PLACING ANY POROUS FILL OR CONCRETE ON SUBGRADE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.
- A SIX INCH LAYER OF POROUS FILL STONE SHALL BE PROVIDED UNDER ALL SLABS ON GRADE WHERE INDICATED.

LAP SPLICE LENGTH						MINIMUM TENSION EMBEDMENTS			
BAR SIZE		SLAB AND WALL		BEAM		STANDARD 90° HOOK		STANDARD 180° HOOK	
SOFT METRIC	ENGLISH	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	ldh	12db	ldh	4db
#10	#3	12"	16"	12"	16"	6"	5"	6"	2 1/2"
#13	#4	15"	20"	18"	24"	7"	6"	7"	2 1/2"
#16	#5	20"	24"	26"	33"	9"	8"	9"	3"
#19	#6	22"	30"	33"	42"	10"	9"	10"	3"
#22	#7	31"	48"	50"	64"	12"	11"	12"	4"
#25	#8	48"	60"	59"	76"	14"	12"	14"	4"
#29	#9	58"	74"	68"	88"	15"	14"	15"	5"
#32	#10	69"	90"	78"	101"	17"	16"	17"	5"
#36	#11	83"	108"	88"	114"	19"	17"	19"	6"

SLAB AND WALL: 6" MINIMUM REBAR SPACING  
MINIMUM COVER = 1.5"

BEAM: MINIMUM CLEAR SPACING BETWEEN BARS = 1.5 db (BAR DIAMETER) OR 1" MINIMUM  
MINIMUM CONCRETE COVER = 1.5" CLEAR  
MINIMUM STIRRUP PROVIDED

TOP BAR: TOP BAR FOR SLAB AND BEAM SHALL BE DEFINED AS REINFORCEMENT SO PLACED THAT MORE THAN 12" OF CONCRETE IS CAST BELOW THE SPLICE.



STANDARD HOOKS: SIDE COVER MORE THAN 2.5"  
END COVER (90° HOOK) MORE THAN 2"  
MINIMUM COVER TO TAIL = 2"

## STANDARD 180° AND 90° END HOOKS

## TENSION LAP SPLICE AND STANDARD HOOK LENGTH

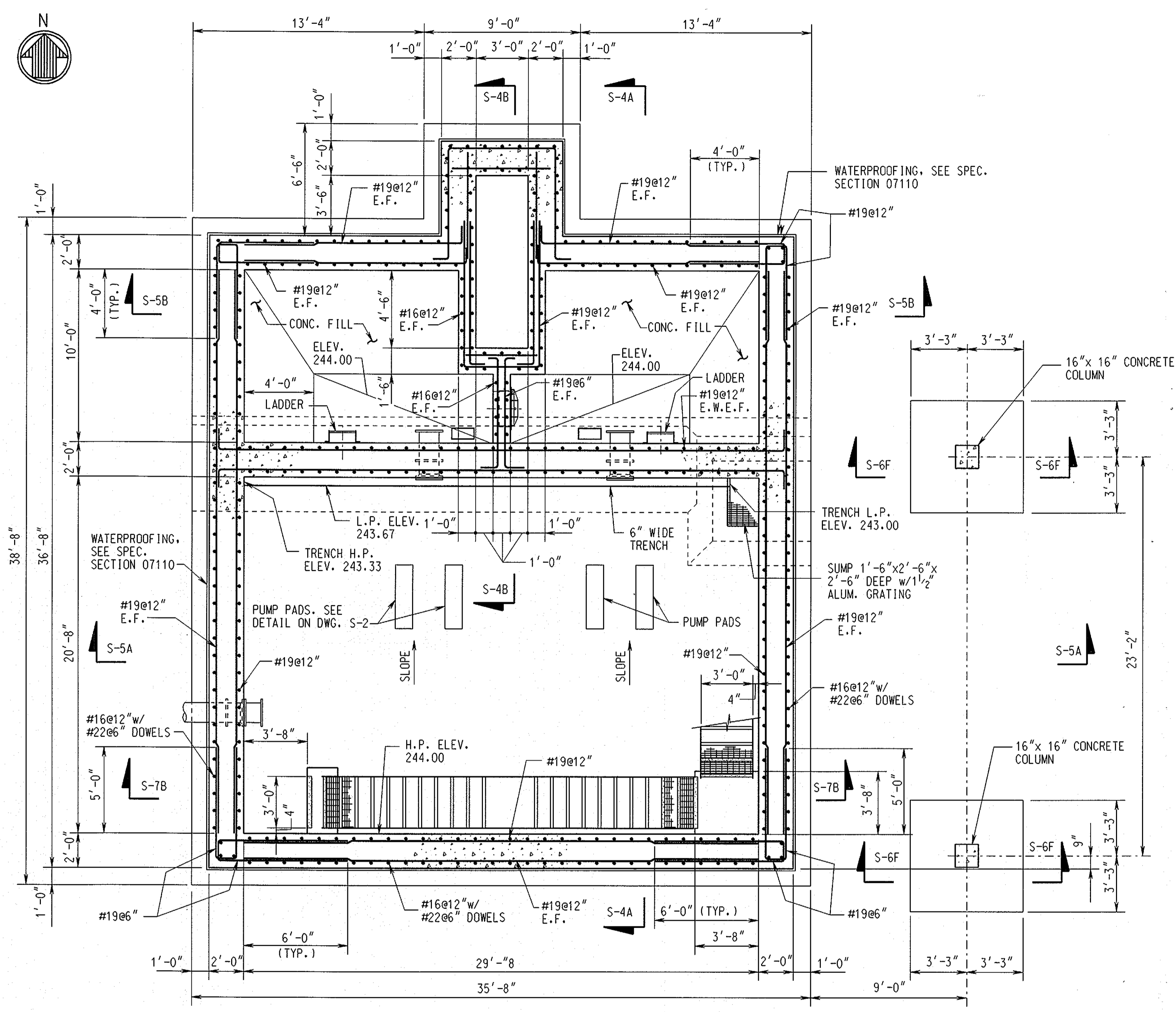
(NON-EPOXY COATED)

**RECORD  
DRAWING**  
11/18/98

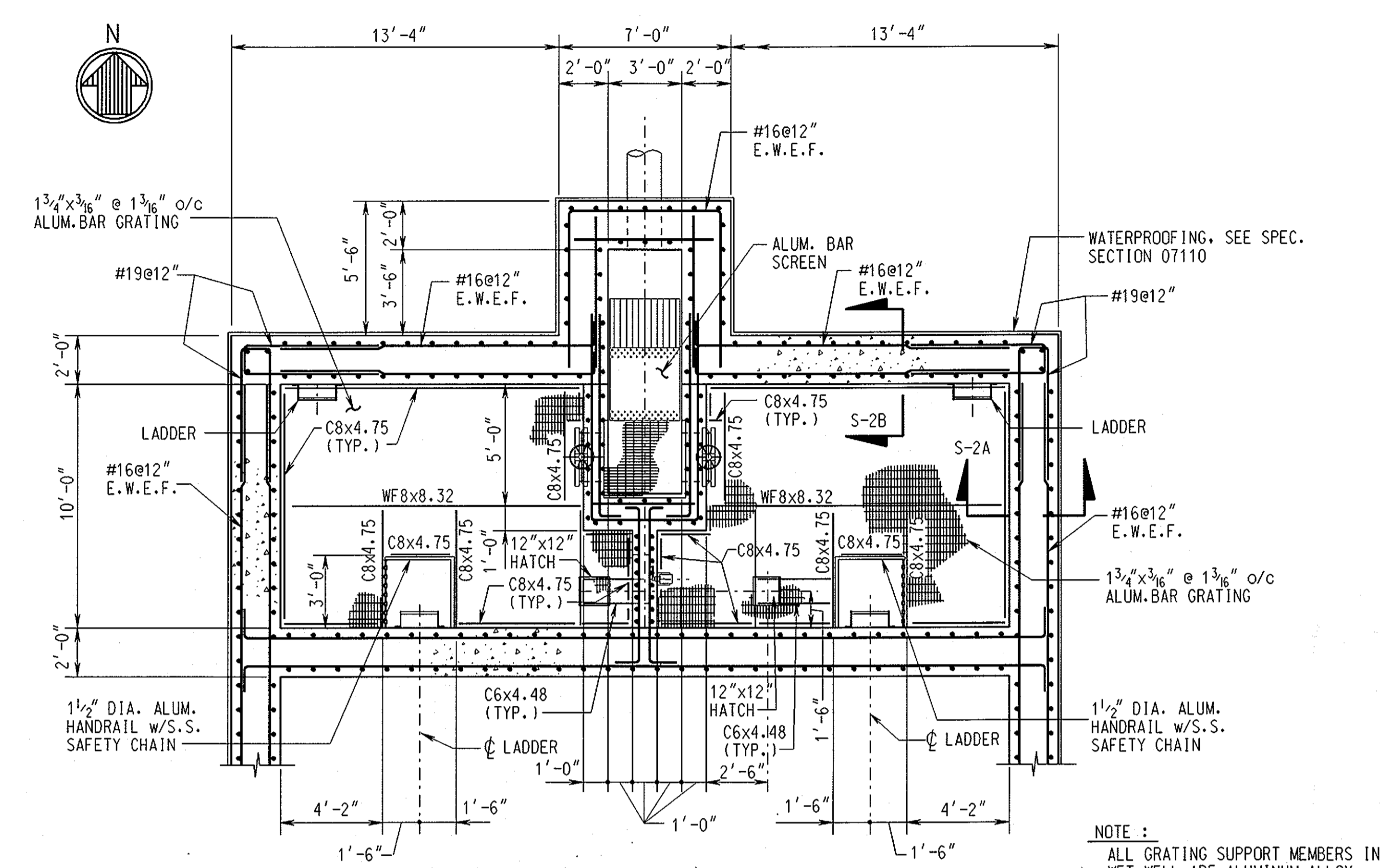
S-1

<p style="text-align: center;">DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND.</p> <p>Director of Public Works: <i>James J. Lee</i> 1-15-99          Chief, Bureau of Engineering: <i>Robert D. Reppert</i> 1-15-99          Chief, Bureau of Utilities: <i>Robert D. Reppert</i> 1-15-99          Chief, Utility Design Division: <i>Robert D. Reppert</i> 1-15-99</p>	<p>PREPARED BY:</p> <p style="text-align: center;"><b>WR&amp;A</b></p> <p>Whitman, Reardon and Associates, LLP.</p>	<p style="text-align: center;">STATE OF MARYLAND PROFESSIONAL ENGINEER 10219</p> <p style="text-align: center;"><i>James J. Lee</i></p>	<p>DES: JGL DRN: LAR CHK: JOA DATE: 11/12/98</p>	<p style="text-align: center;">RECORD DRAWING 8-23-02</p>	<p style="text-align: center;">STRUCTURAL NOTES</p> <p>600' SCALE MAP NO. _____ BLOCK NO. _____</p>	<p style="text-align: center;">ROCKBURN WASTEWATER PUMPING STATION CAPITAL PROJECT NO. S-6200 CONTRACT NO. 10-3695 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 15 OF 36</p>
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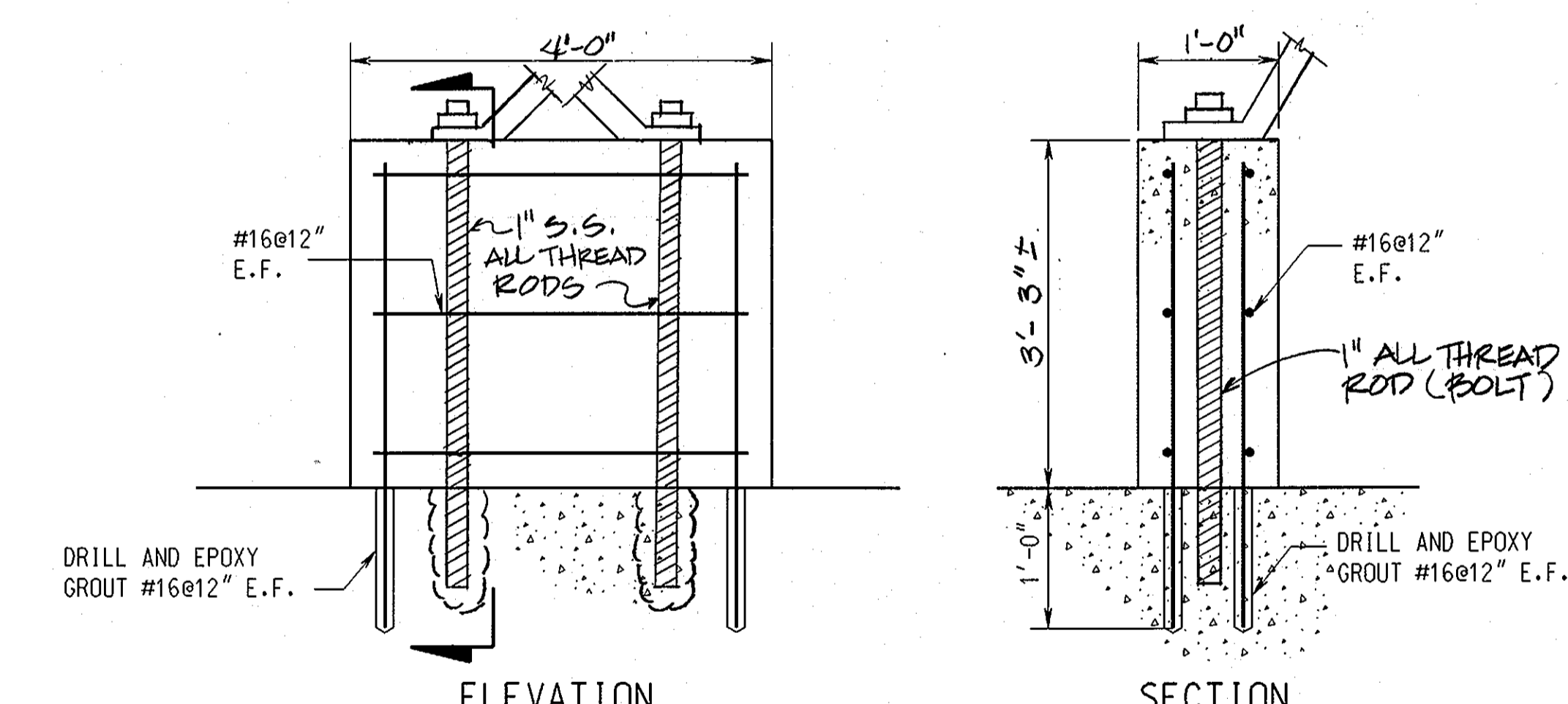


**PUMP ROOM AND WET WELL PLAN**  
SCALE: 1/4" = 1'-0"

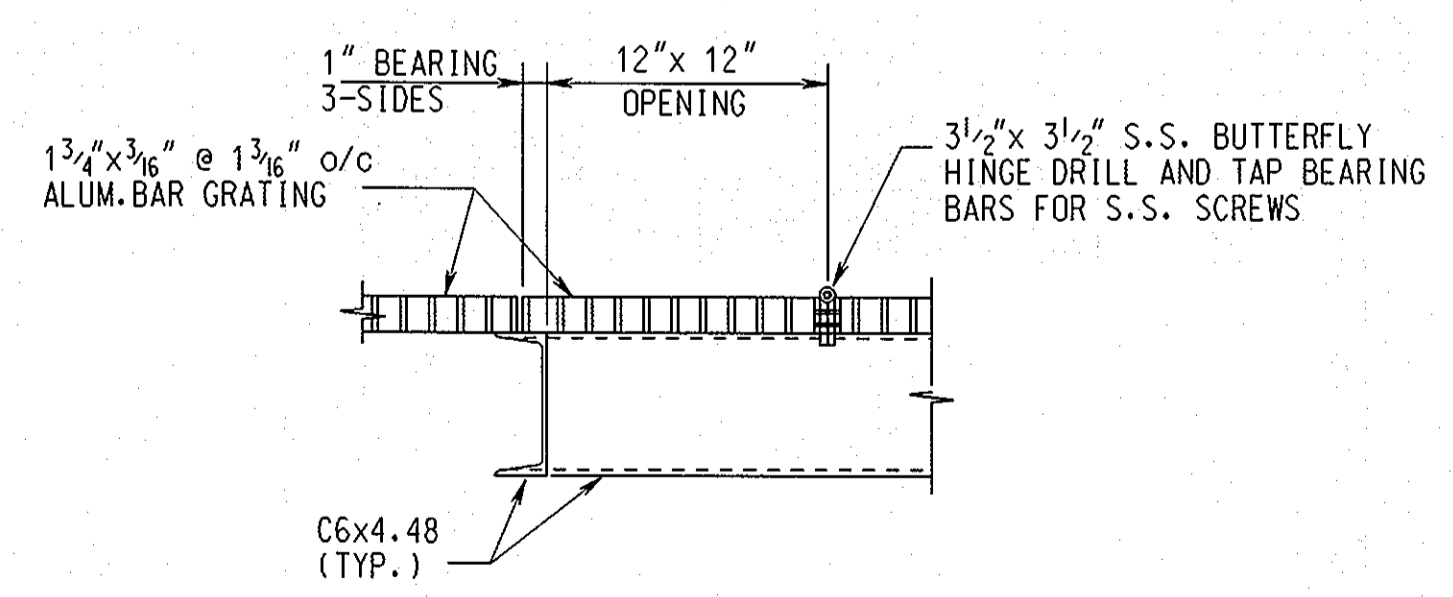


**WET WELL GRATING PLAN**  
SCALE: 1/4" = 1'-0"

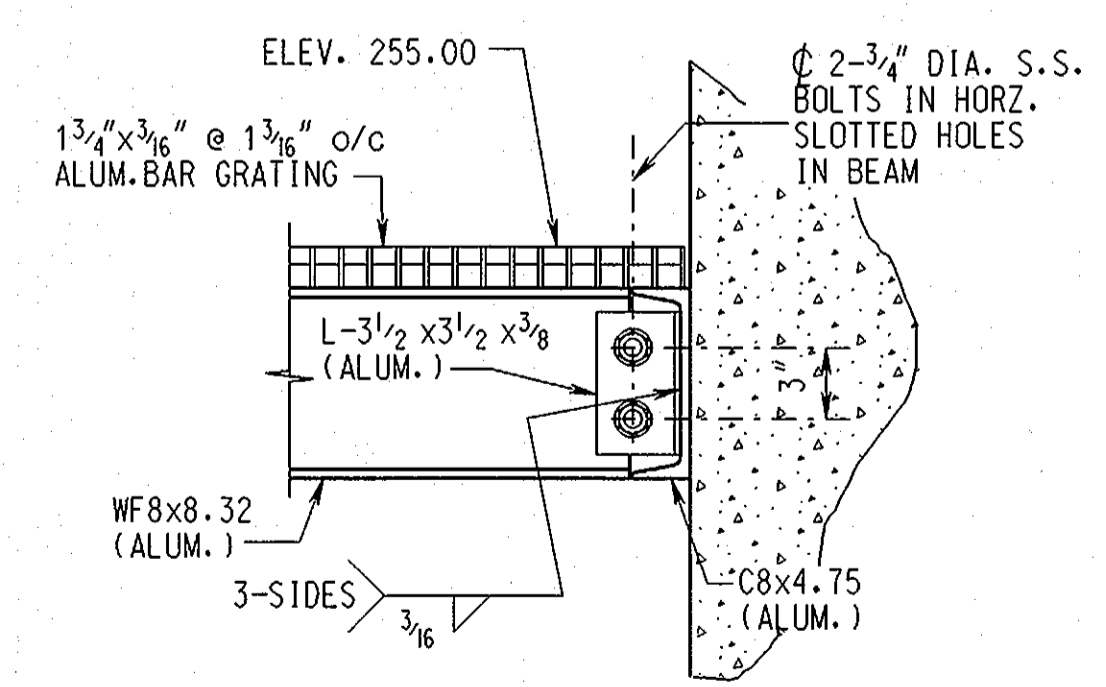
**NOTE:**  
ALL GRATING SUPPORT MEMBERS IN WET WELL ARE ALUMINUM ALLOY 6061-T6



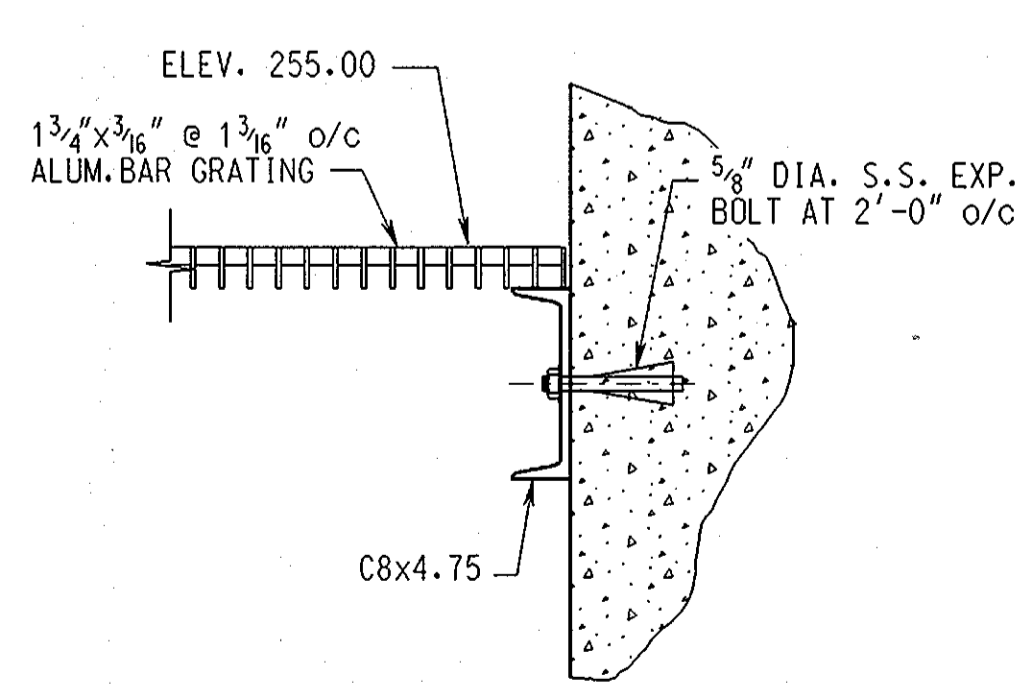
**PUMP SUPPORT DETAIL**  
SCALE: 1" = 1'-0"



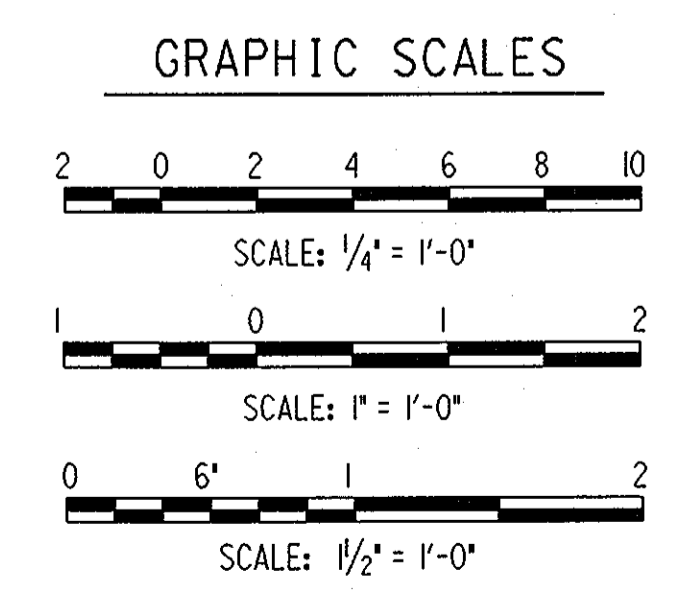
**12" x 12" HATCH DETAIL**  
SCALE: 1 1/2" = 1'-0"  
(2-REQUIRED)



**SECTION S-2A / S-2**  
SCALE: 1 1/2" = 1'-0"

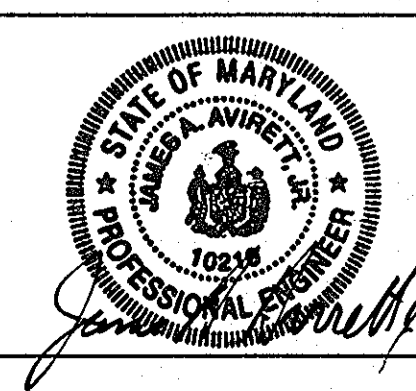


**SECTION S-2B / S-2**  
SCALE: 1 1/2" = 1'-0"



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.  
11/15/99  
1-15-99

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.

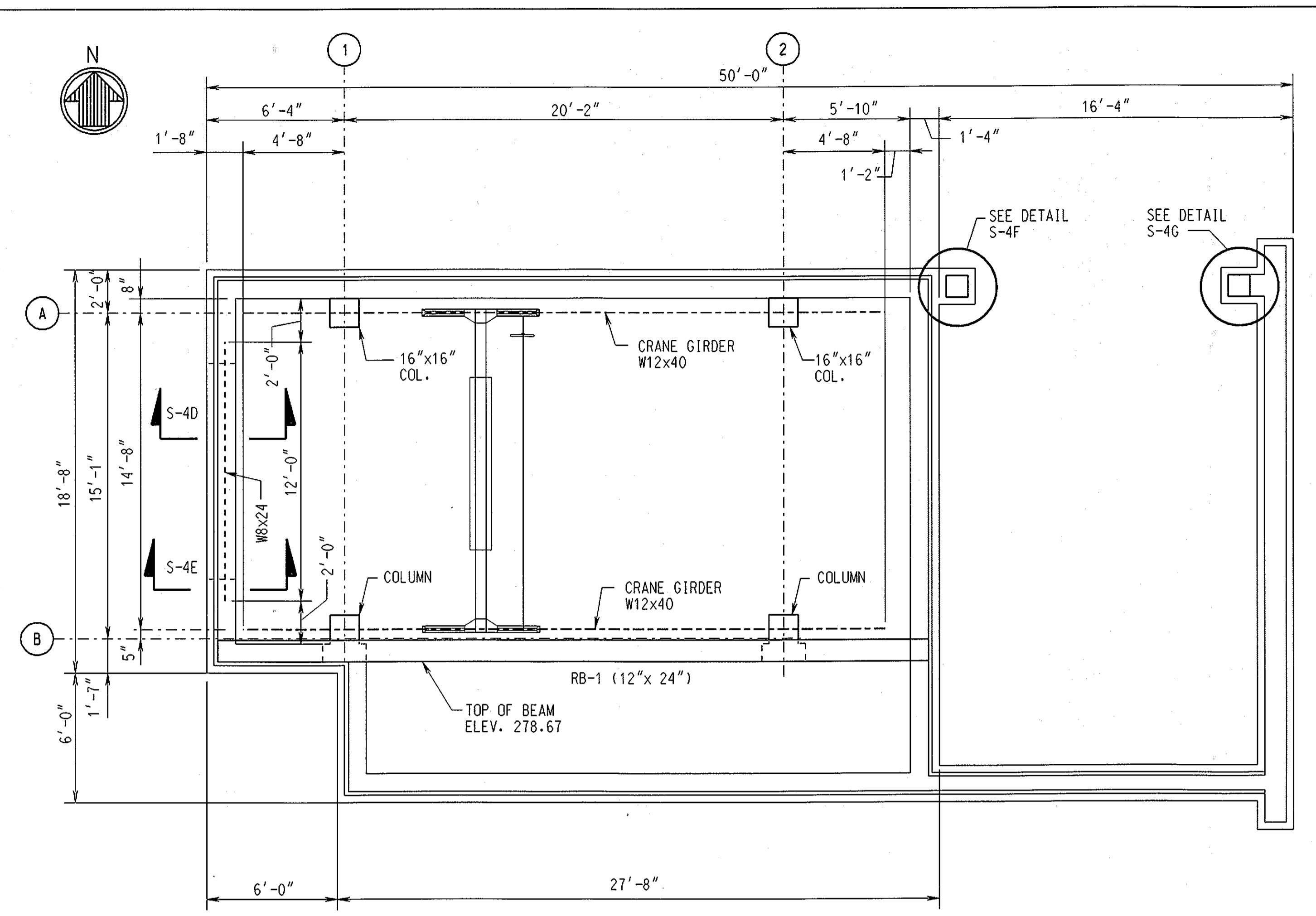
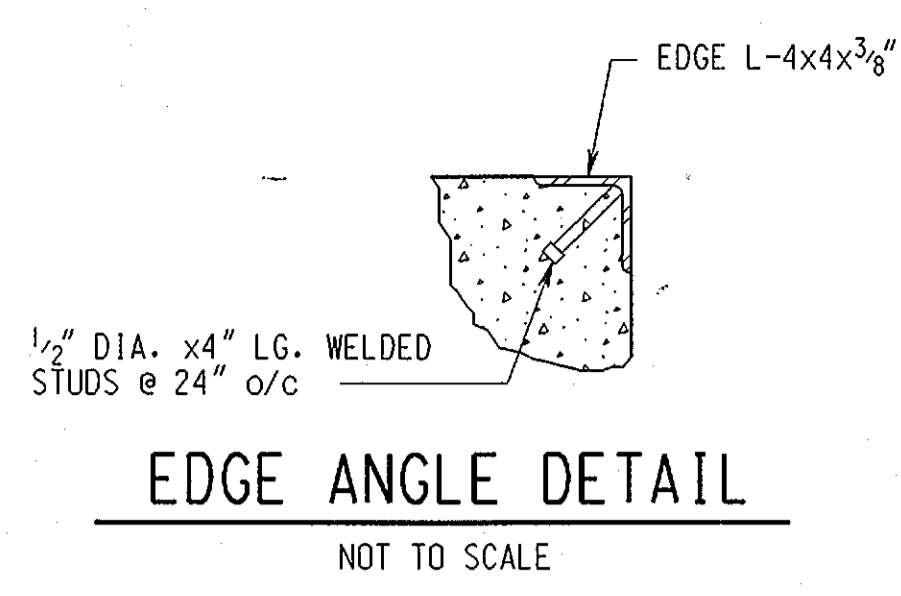
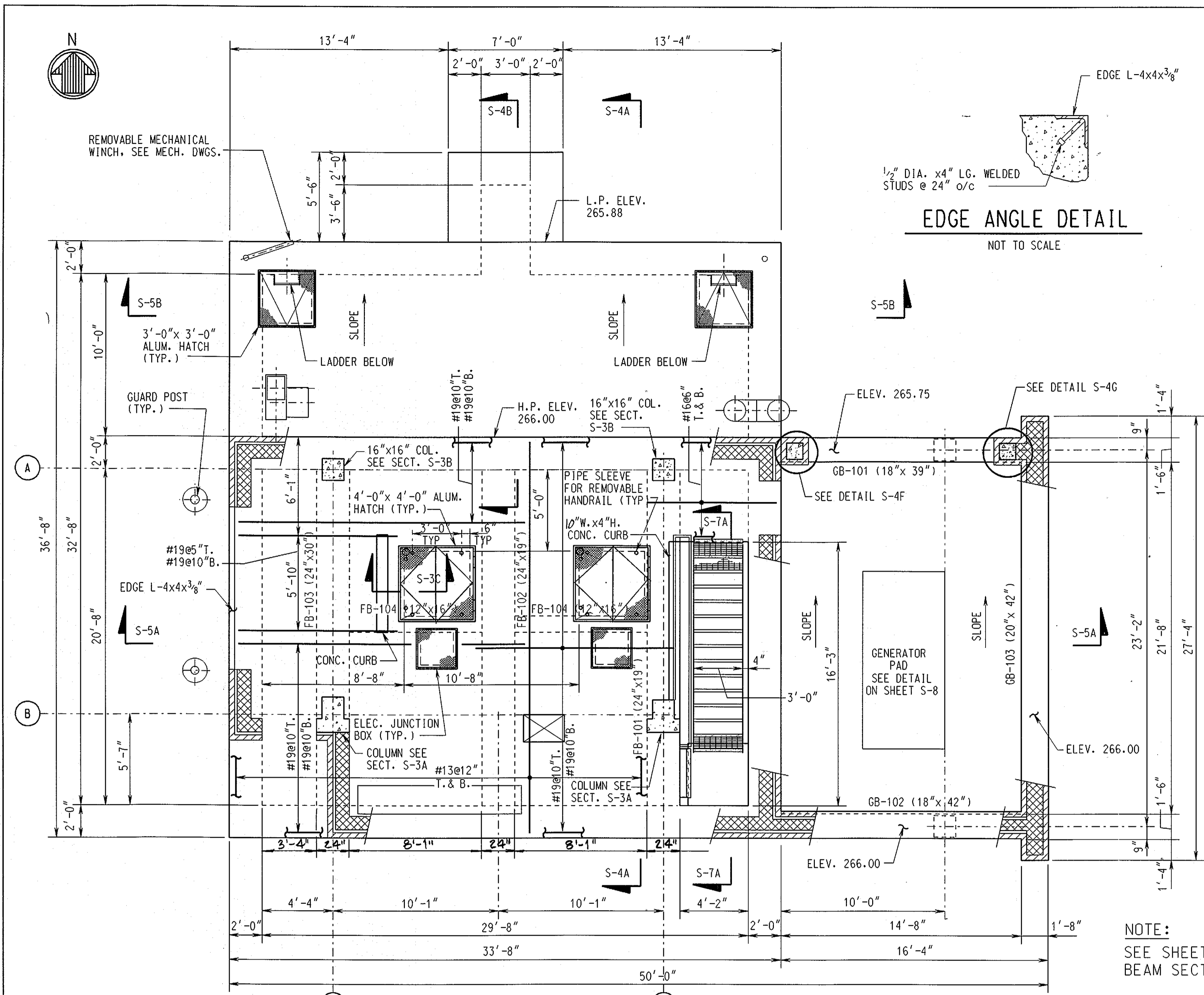


DES: JGL			
DRN: LAR			
CHK: JOA			
DATE: 11/12/98			
BY: [Signature]			

PLANS AND DETAILS  
RECORD DRAWING  
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

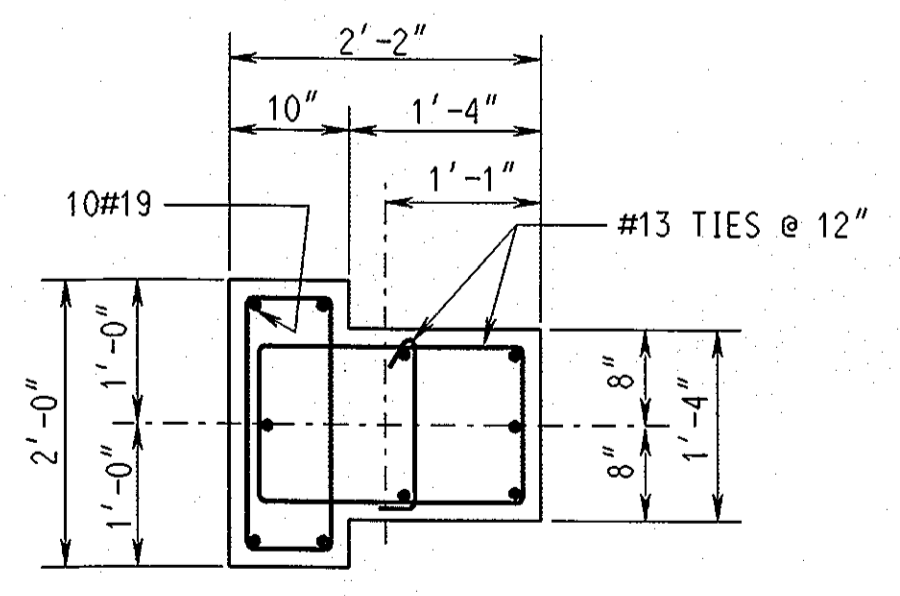
ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

**RECORD DRAWING**  
11/18/99  
S-2  
SCALE AS SHOWN  
SHEET 16 OF 36  
NOVEMBER 12, 1998

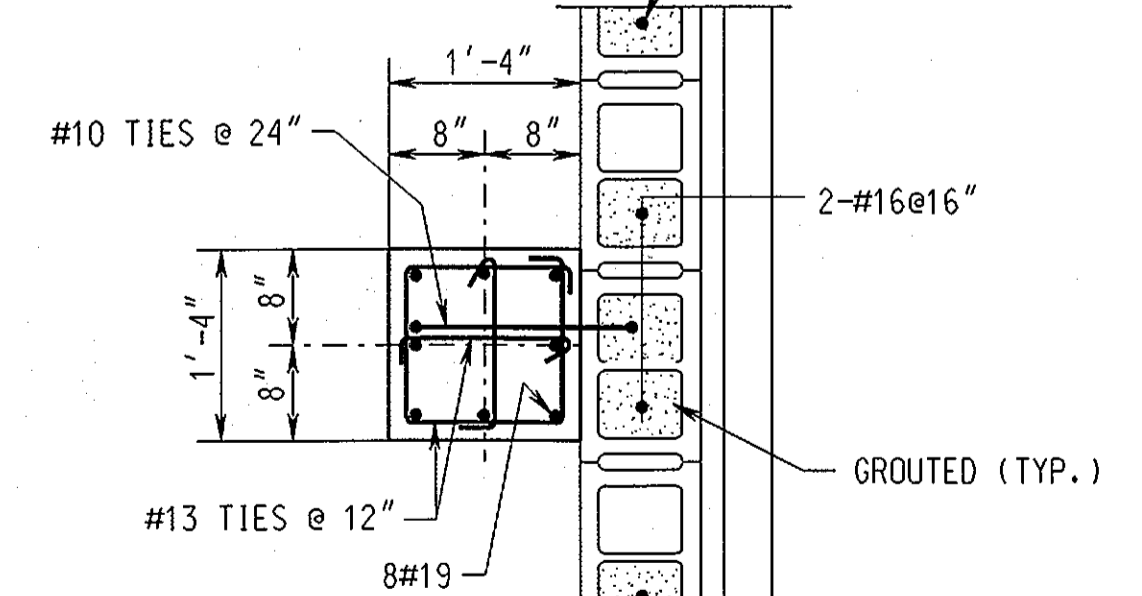


FLOOR PLAN - CONTROL ROOM

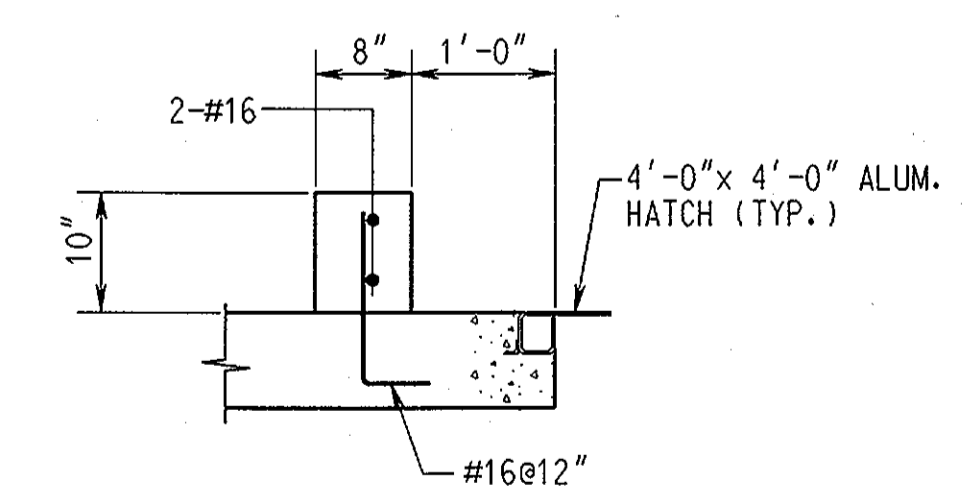
SCALE: 1/4" = 1'-0"



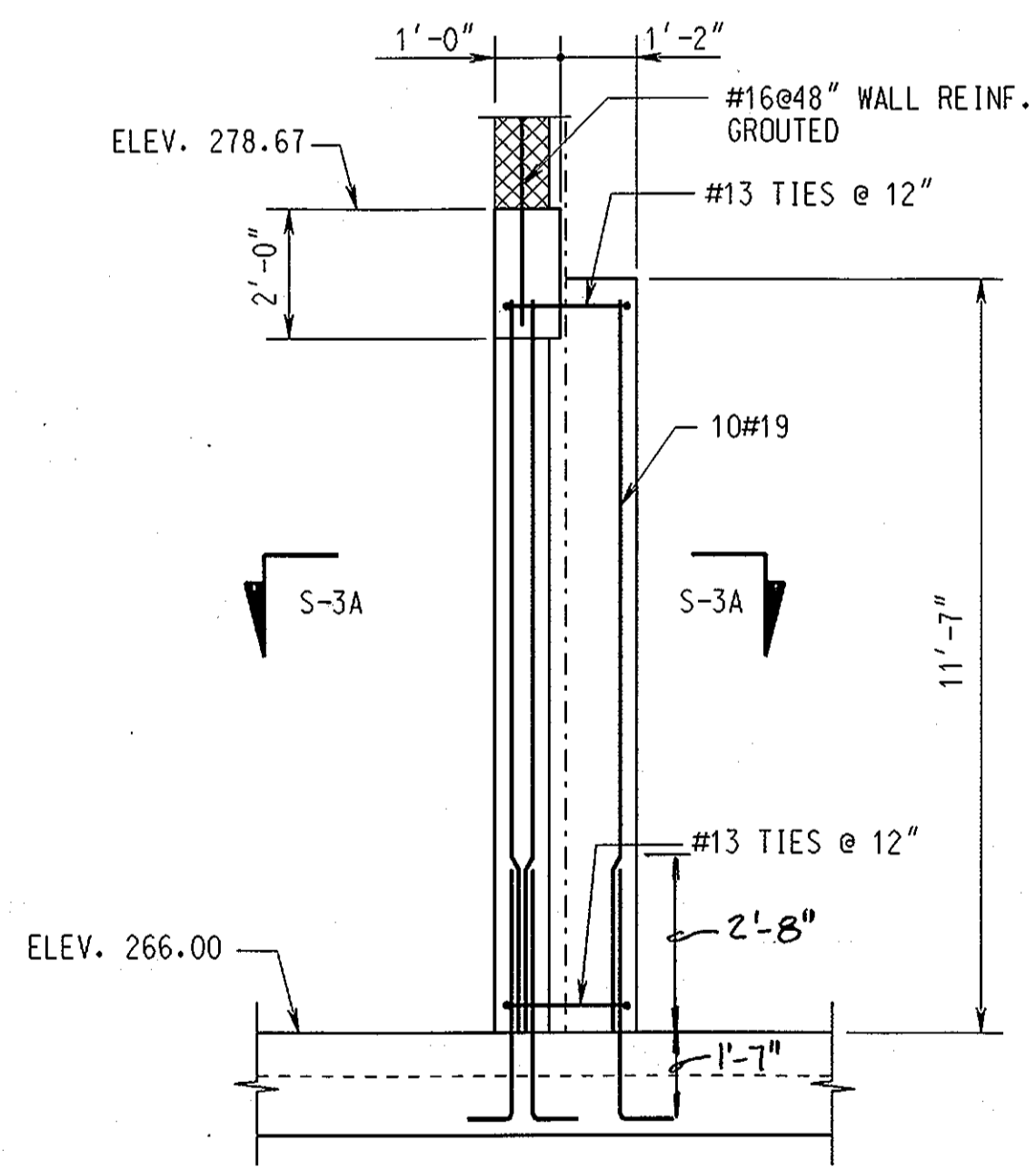
SECTION S-3A / S-3  
SCALE: 3/4" = 1'-0"



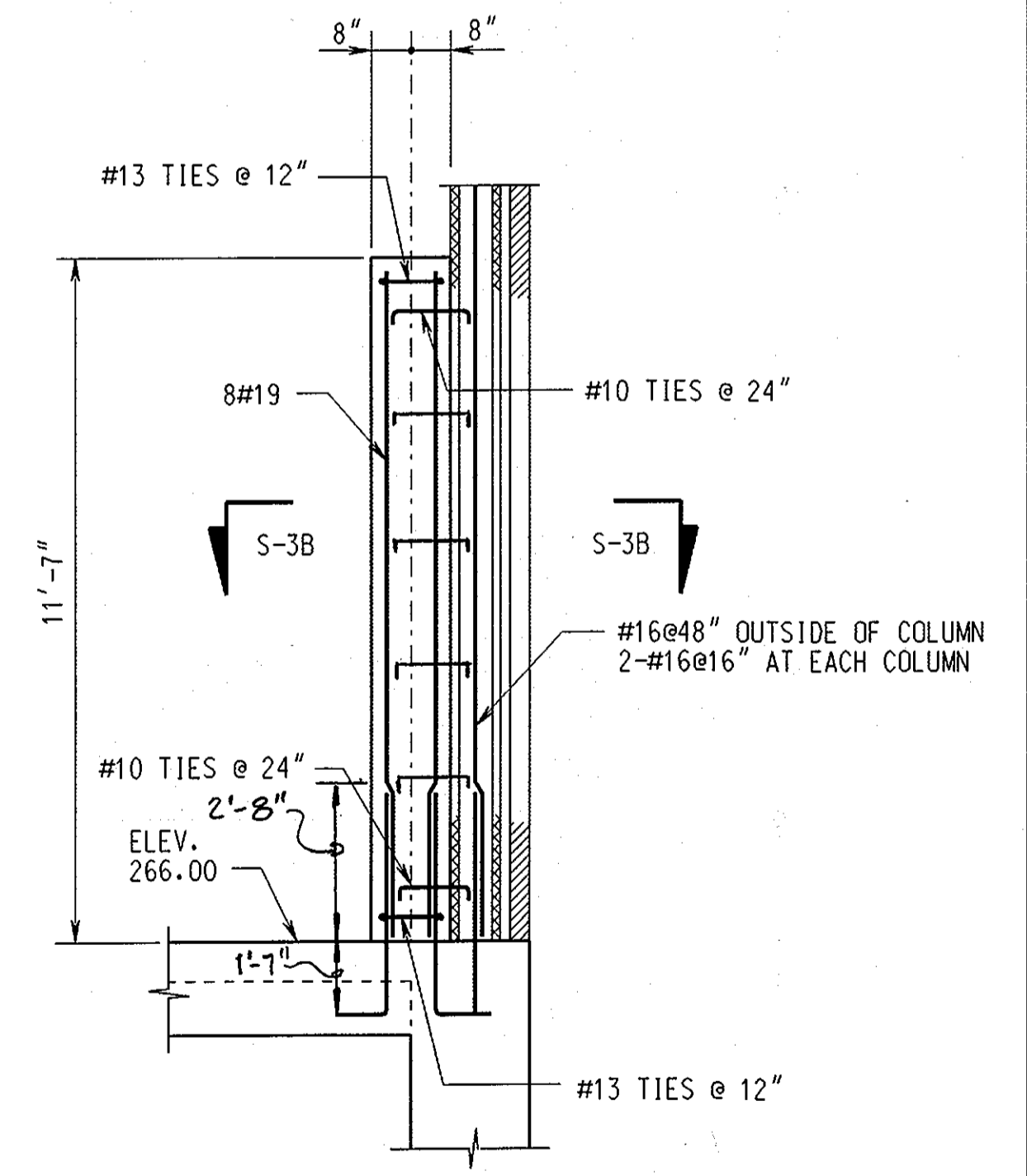
SECTION S-3B / S-3  
SCALE: 3/4" = 1'-0"



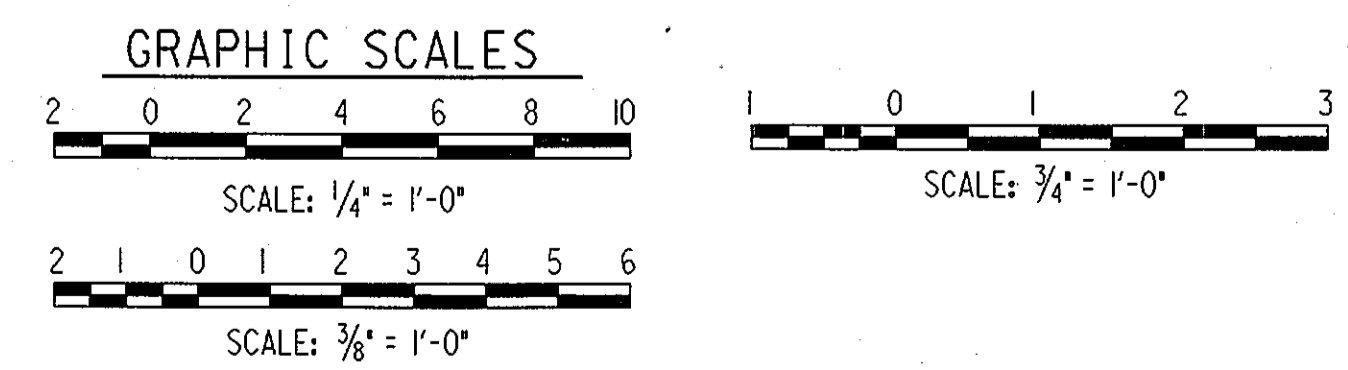
SECTION S-3C / S-3  
SCALE: 3/4" = 1'-0"



ELEVATION COLUMNS B-1, B-2  
SCALE: 3/8" = 1'-0"

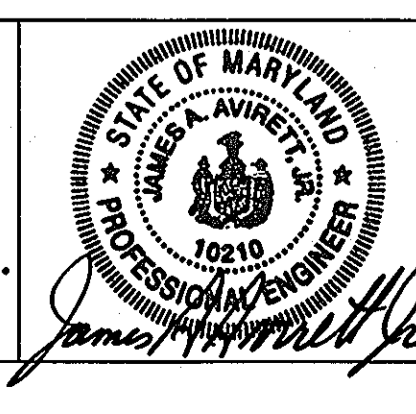


ELEVATION COLUMNS A-1, A-2  
SCALE: 3/8" = 1'-0"



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.  
1-15-99  
1-15-99  
1-15-99

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.



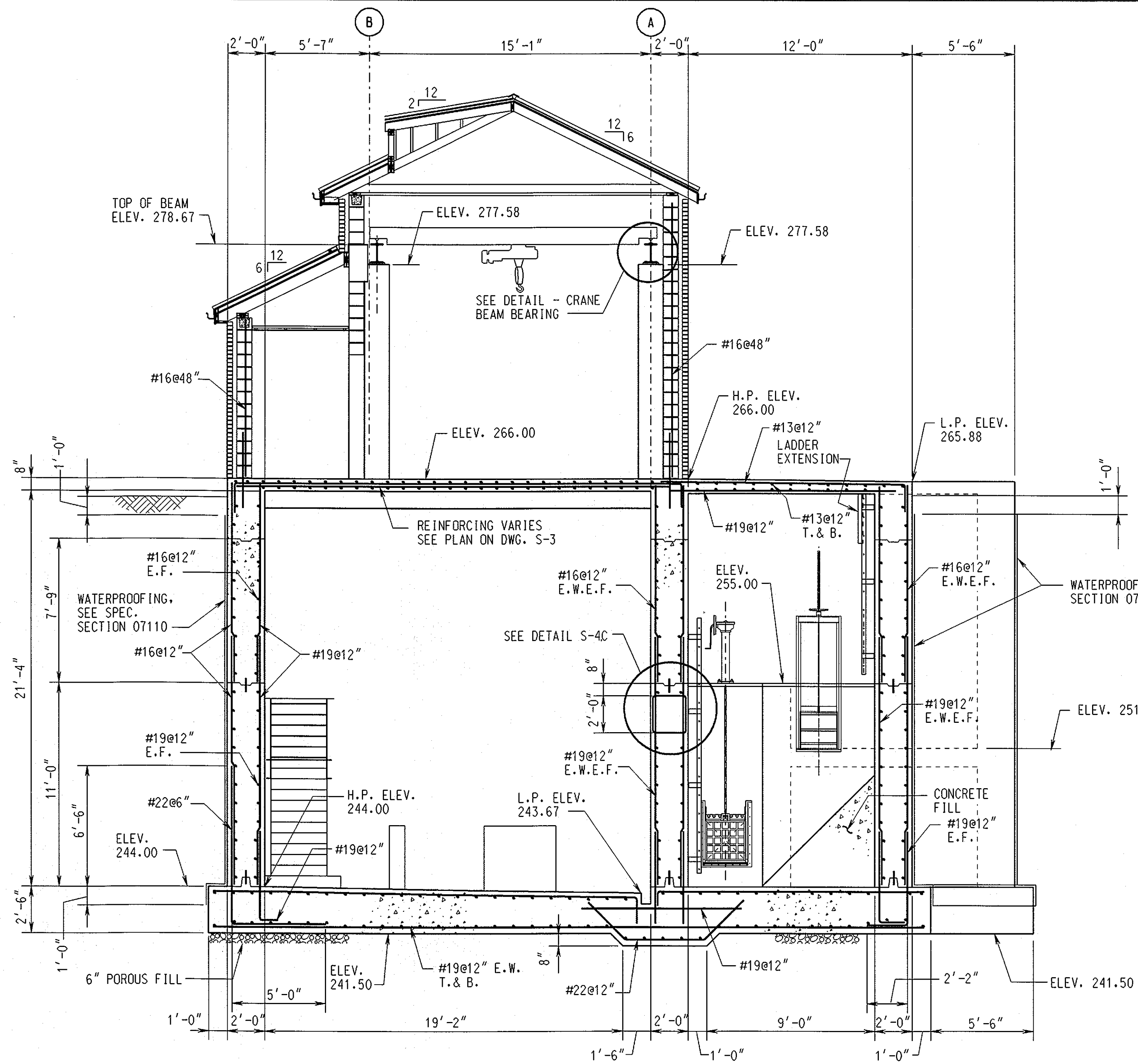
DES: WRS/JM			
DRN: ELM/PWG			
CHK: JBA			
DATE: 12/09/98			
BY: [Signature]	NO.	REVISION	DATE
		RECORD DRAWING	8-23-02

PLANS SECTIONS AND DETAILS  
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

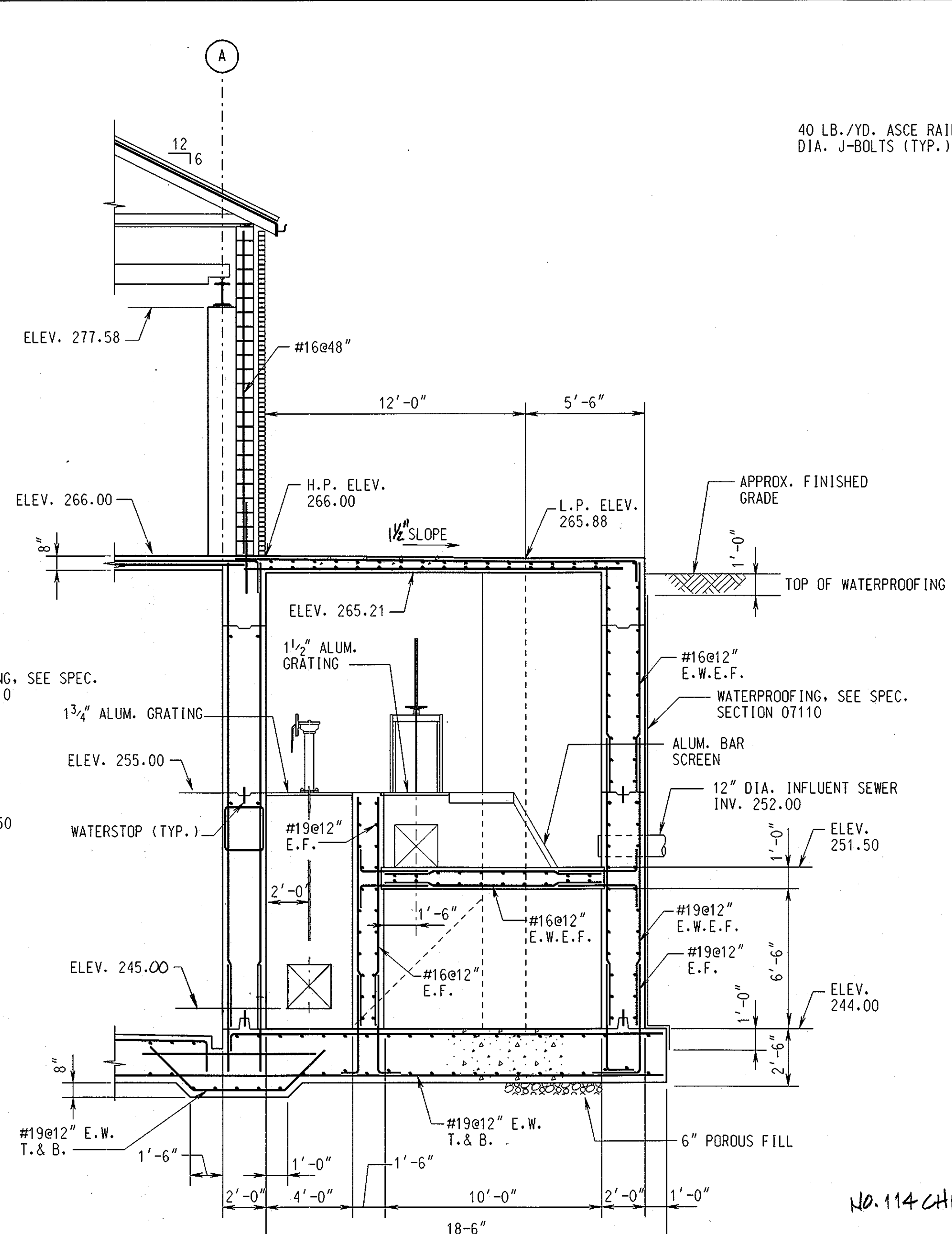
ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

RECORD DRAWING  
11/18/02

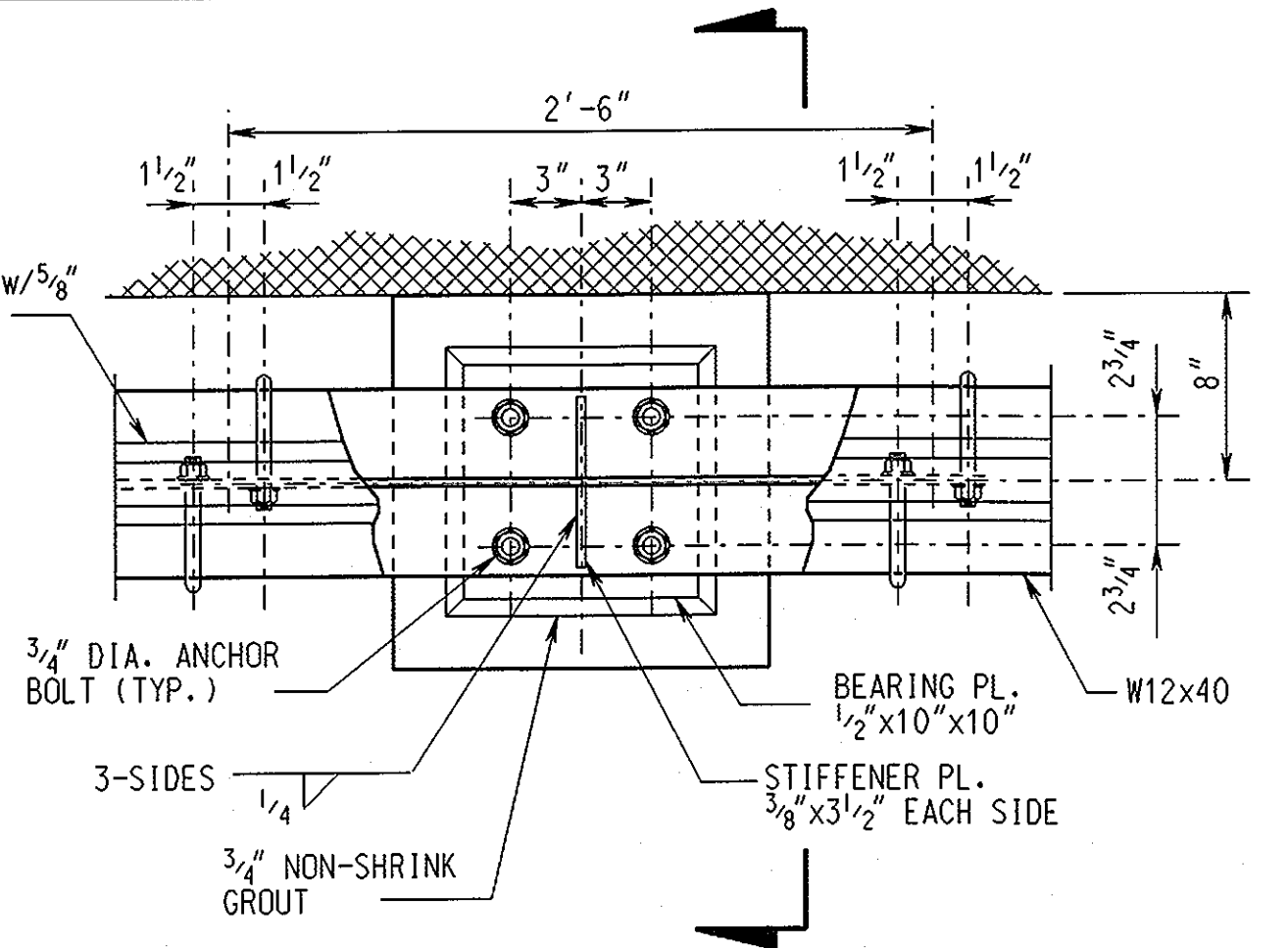
S-3  
SCALE AS SHOWN  
SHEET 17 OF 36



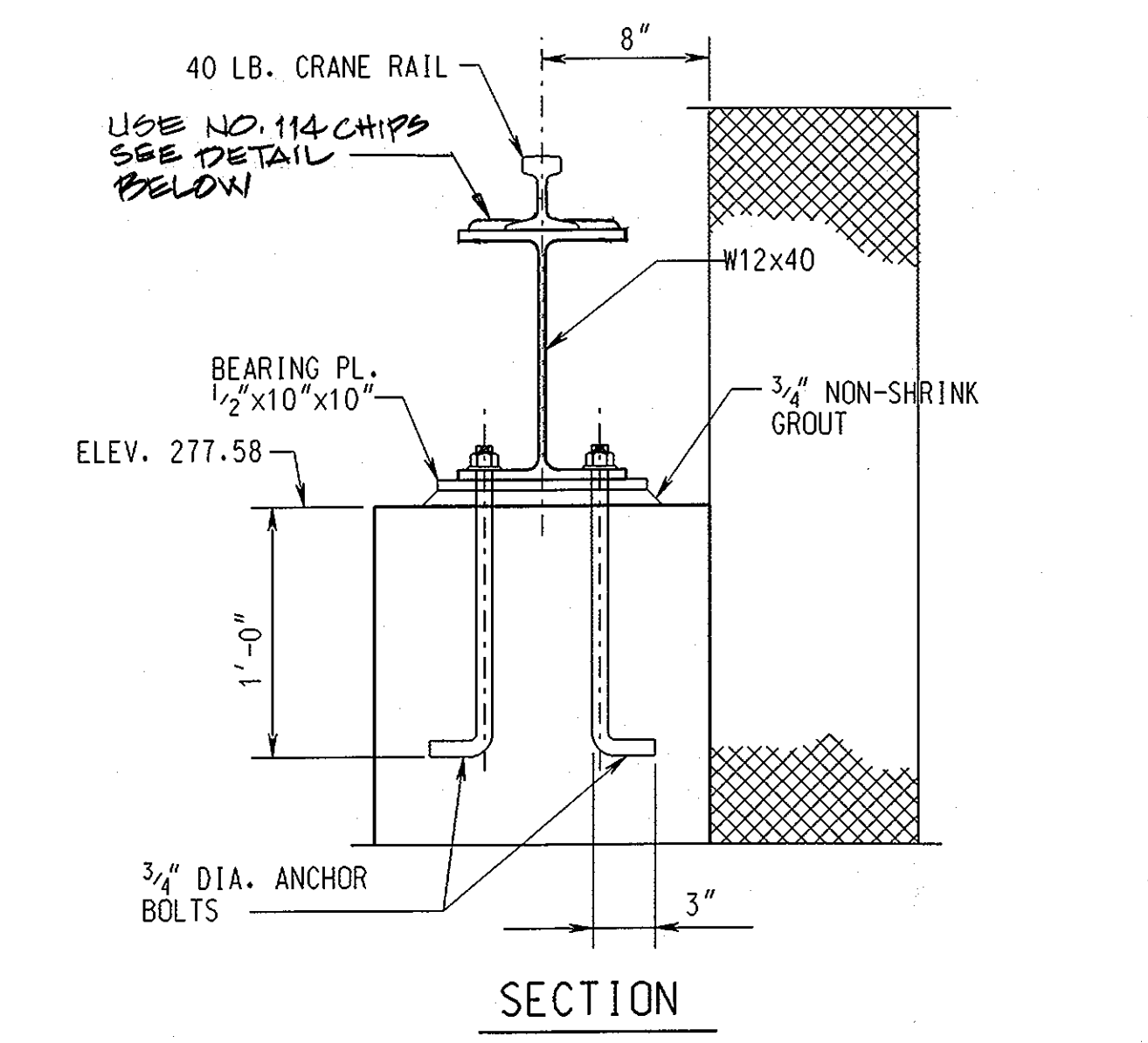
SECTIONS S-4A/S-2, S-3  
SCALE: 1/4" = 1'-0"



SECTIONS S-4B/S-2, S-3  
SCALE: 1/4" = 1'-0"

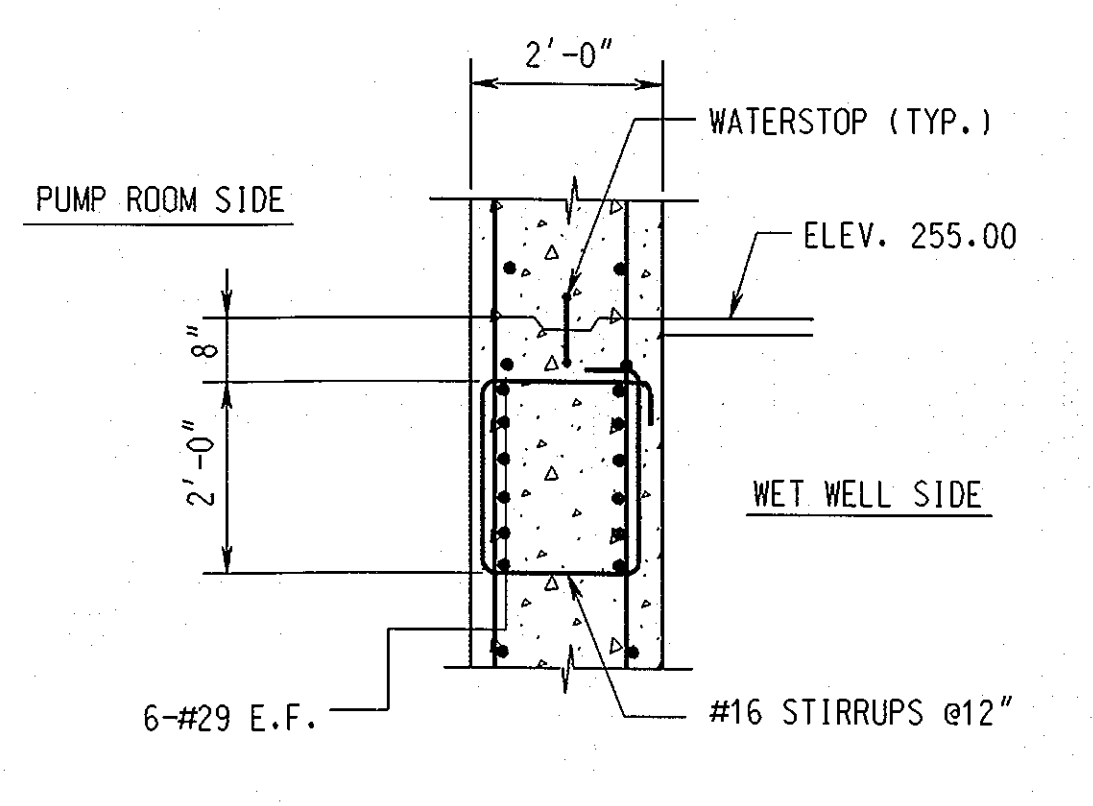


PLAN - CRANE BEAM BEARING

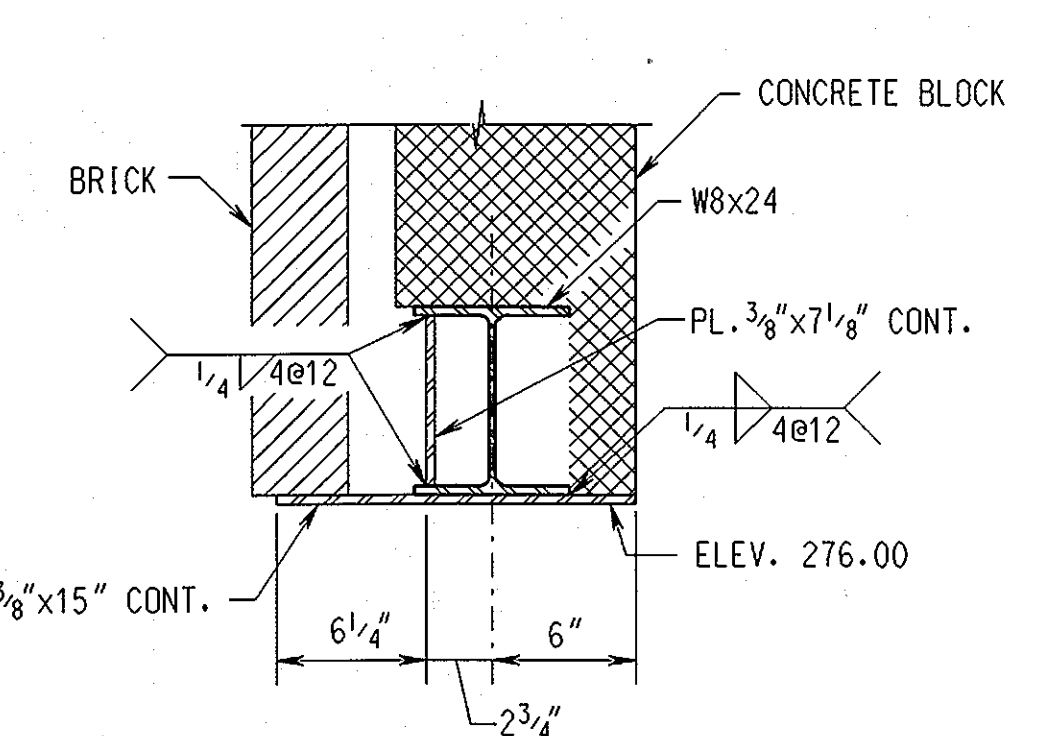


SECTION

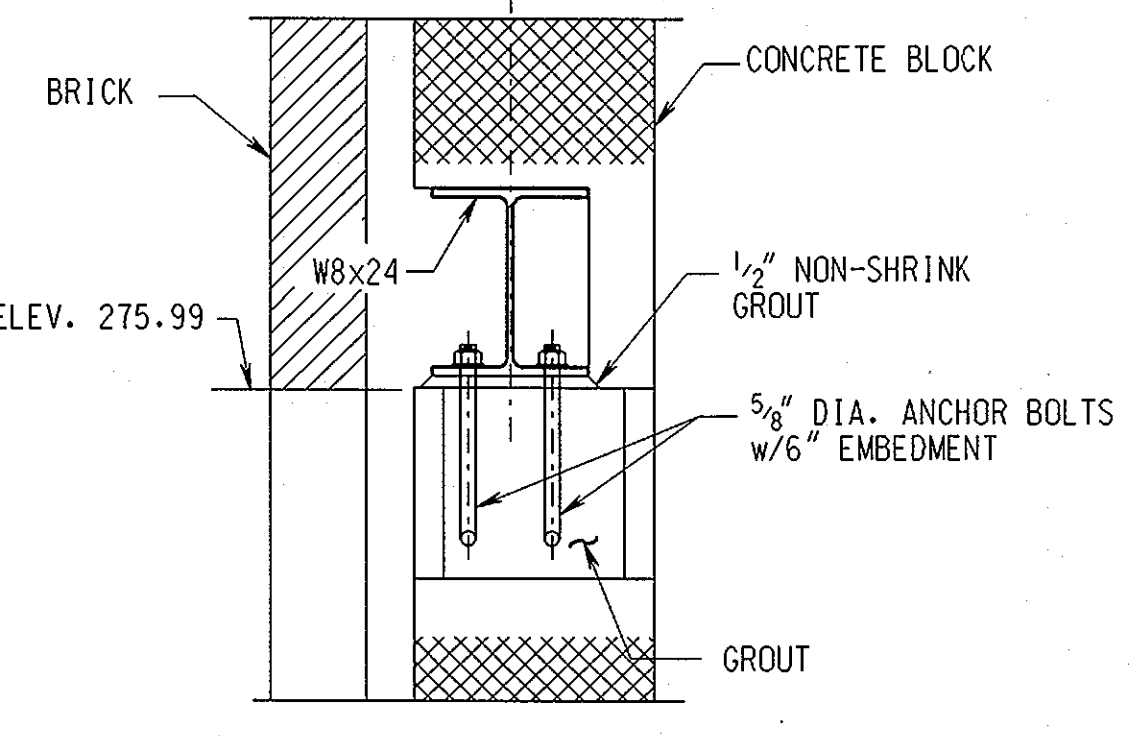
DETAIL - CRANE BEAM BEARING  
SCALE: 1/2" = 1'-0"



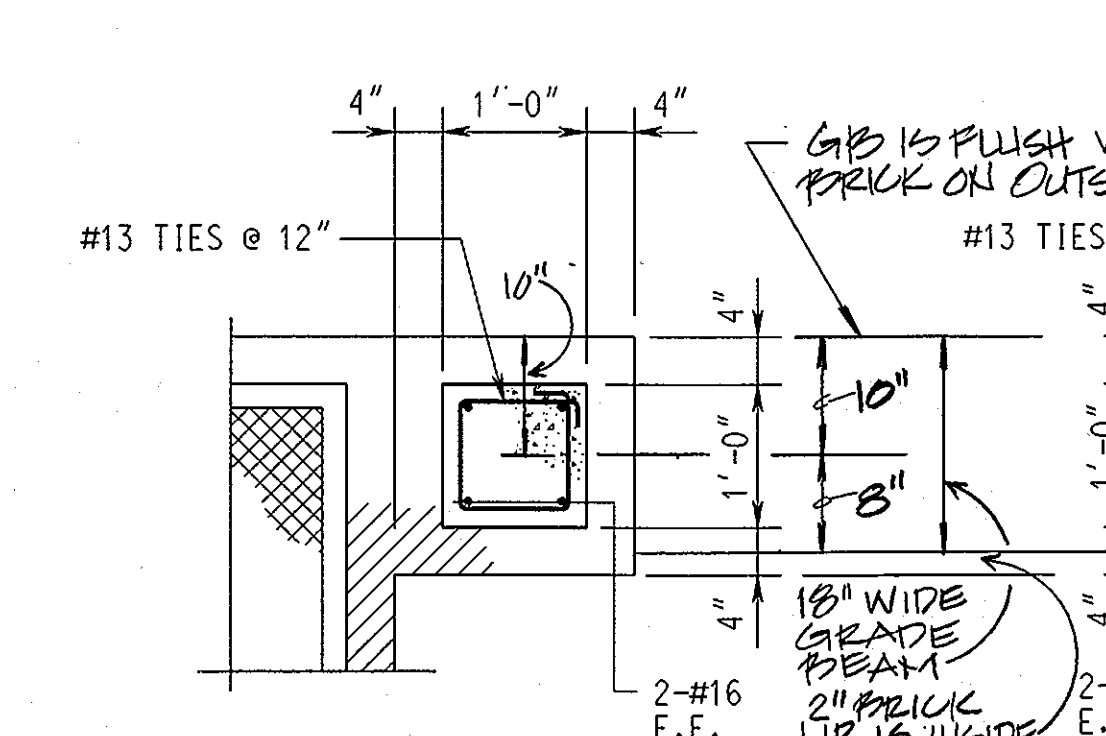
DETAIL S-4C / S-4  
SCALE: 1/2" = 1'-0"



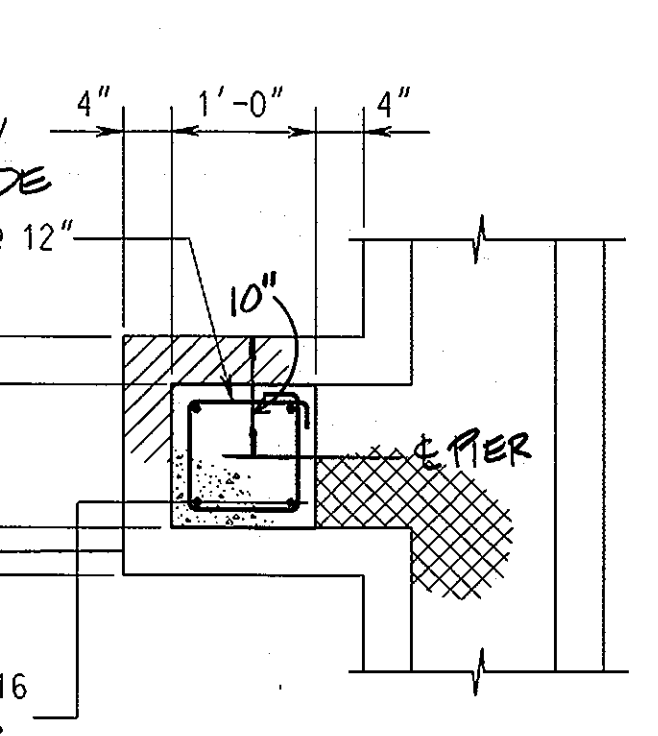
SECTION S-4D / S-3  
SCALE: 1 1/2" = 1'-0"



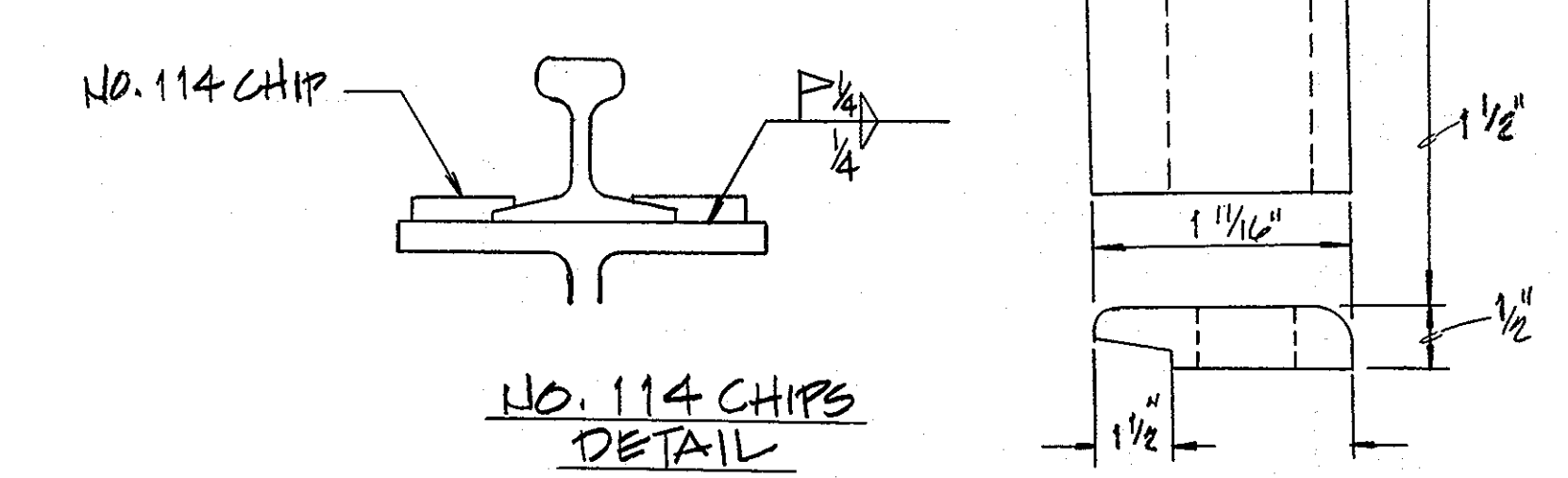
SECTION S-4E / S-3  
SCALE: 1 1/2" = 1'-0"



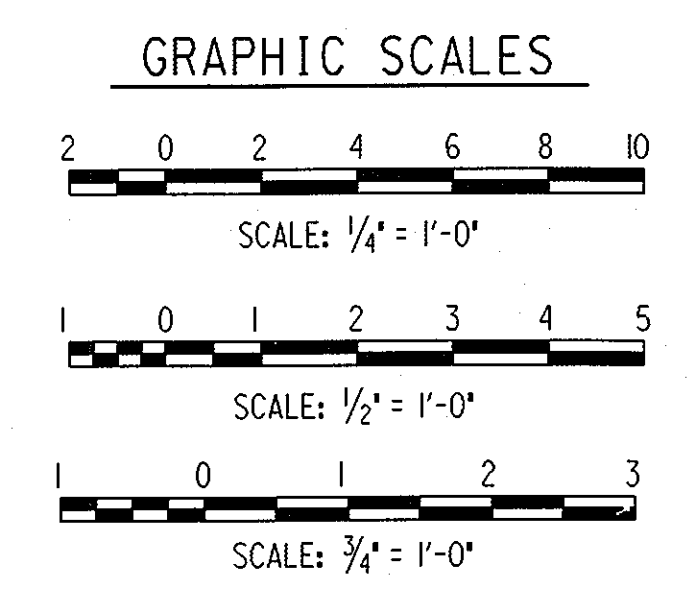
DETAIL S-4F / S-3  
SCALE: 3/4" = 1'-0"



DETAIL S-4G / S-3  
SCALE: 3/4" = 1'-0"



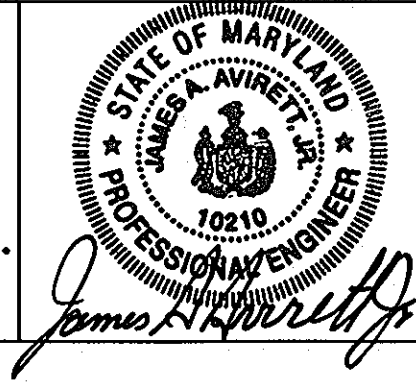
NO. 114 CHIPS  
DETAIL



GRAPHIC SCALES

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.  
Director of Public Works: *James L. ...* 1-15-99  
Chief, Bureau of Utilities: *Robert ...* 1-15-99  
Chief, Bureau of Engineering: *Robert ...* 1-15-99  
Chief, Util. Design Division: *Robert ...* 1-15-99

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.

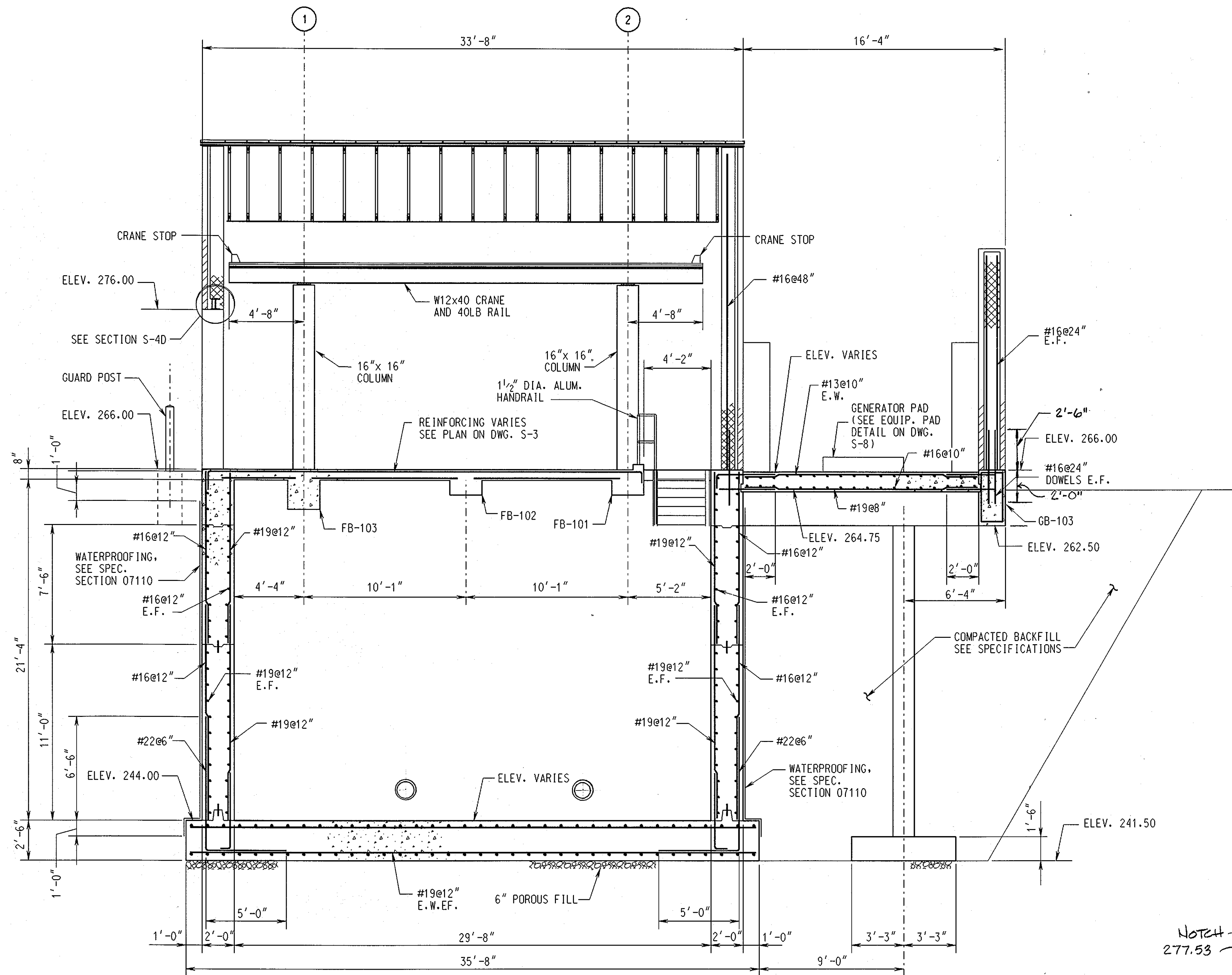


DES: WRS/EJM	
DRN: EJM/PWG	
CHK: JBA	
DATE: 12/09/98	
BY: [Signature]	
NO.:	
REVISION:	
DATE: 8-23-02	

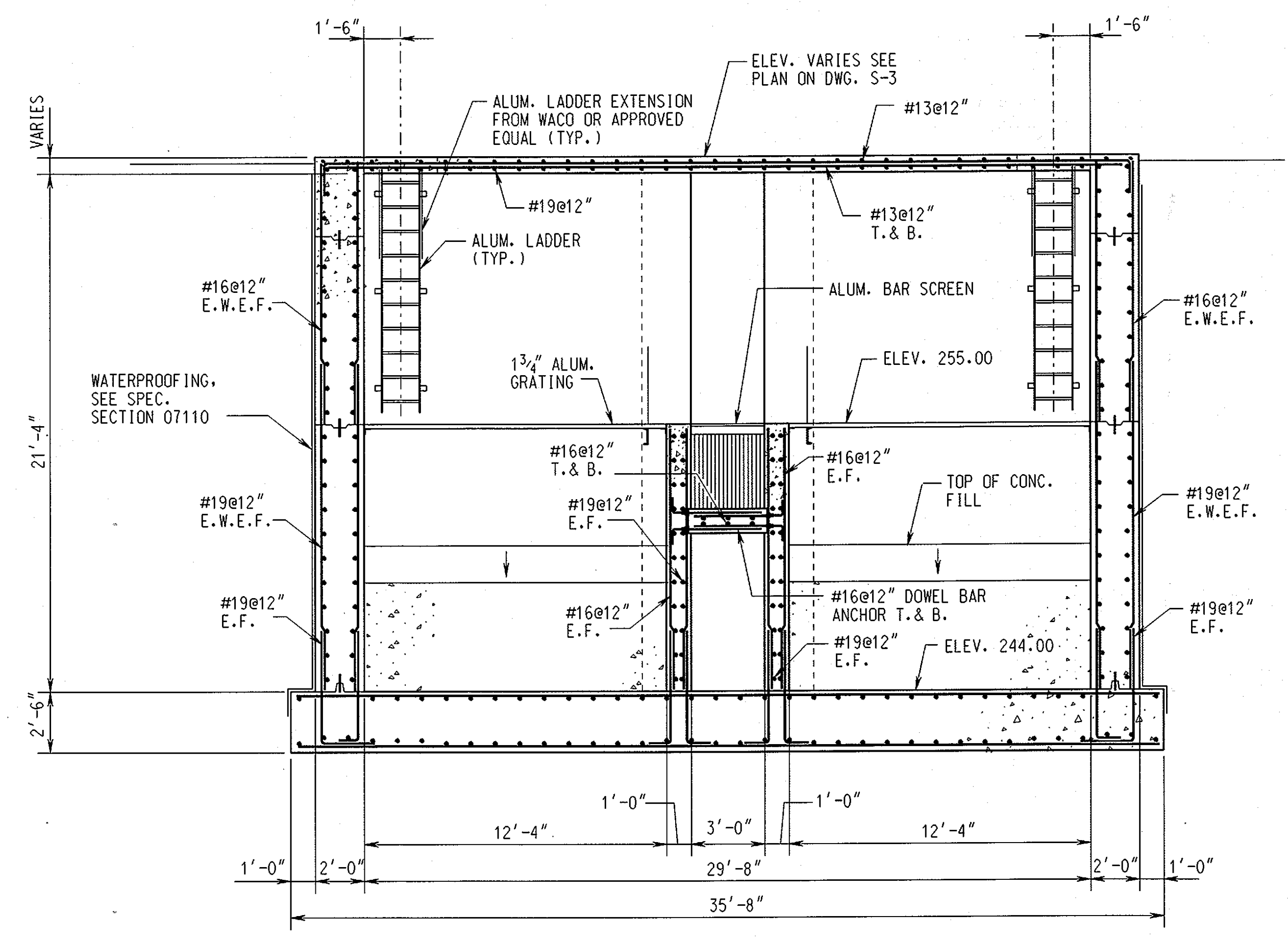
RECORD DRAWING  
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

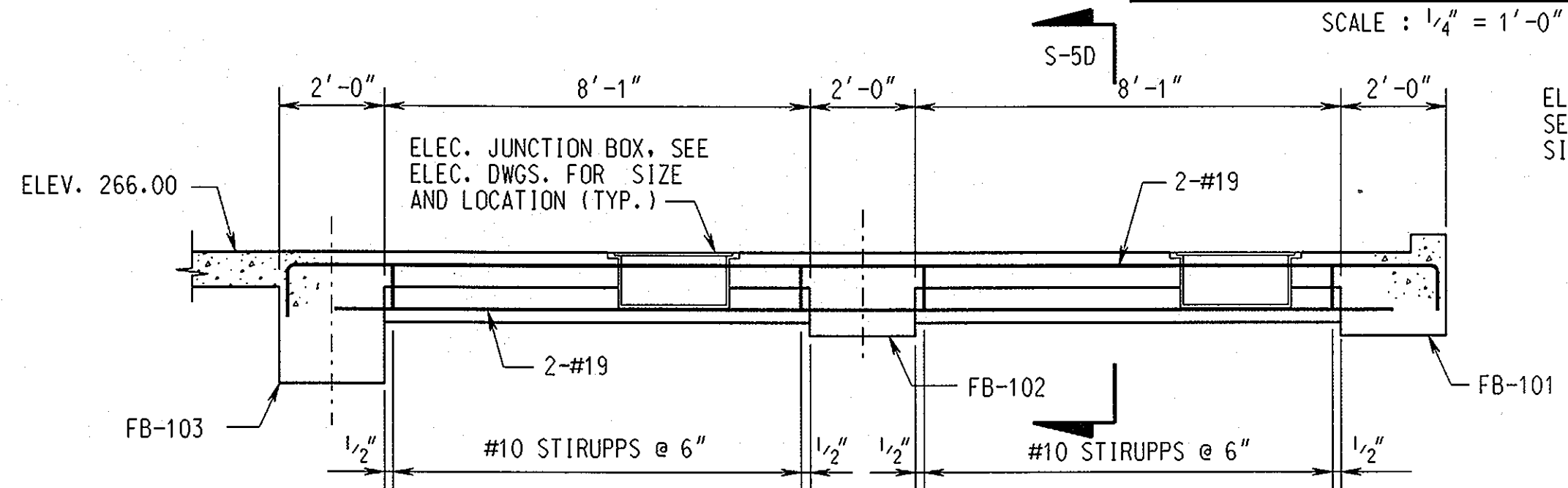
RECORD DRAWING  
11/10/02  
S-4  
SCALE AS SHOWN  
SHEET  
18 OF 36



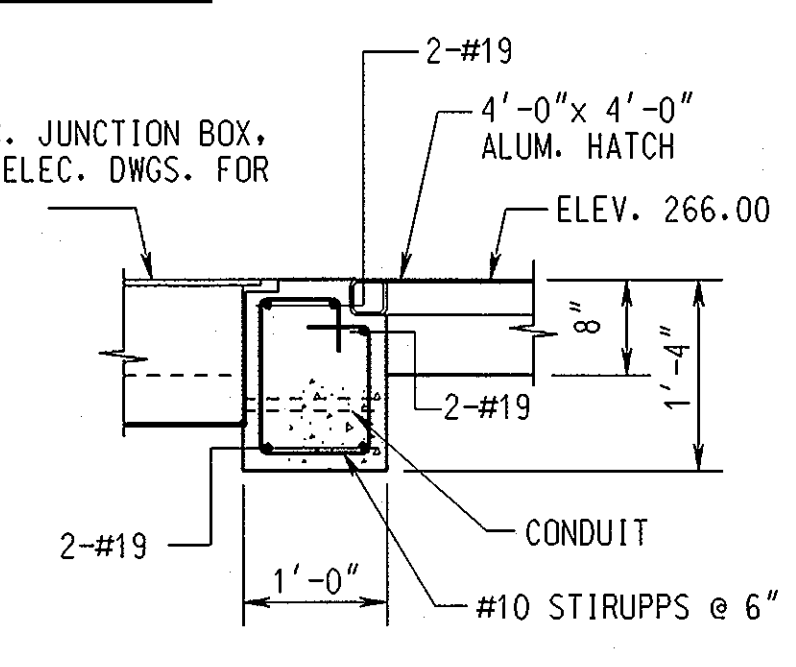
**SECTION S-5A/S-2,S-3**  
SCALE: 1/4" = 1'-0"



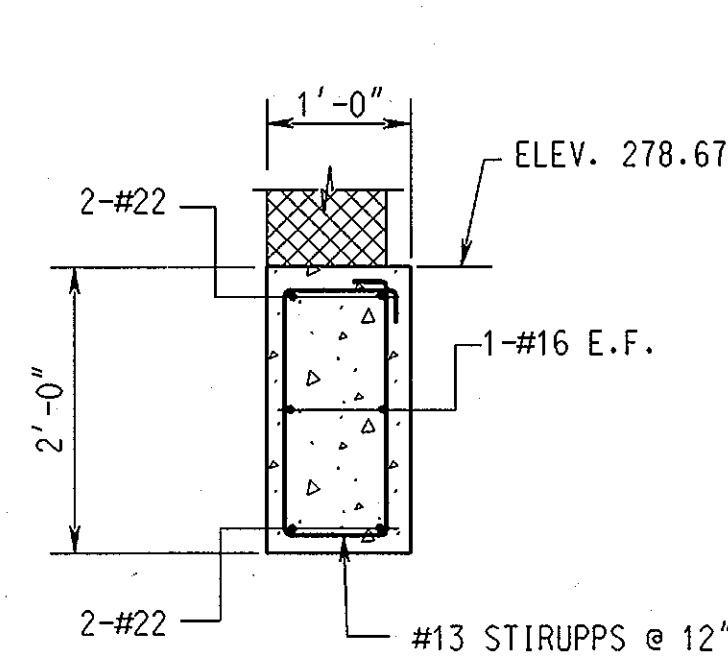
**SECTION S-5B/S-2,S-3**  
SCALE: 1/4" = 1'-0"



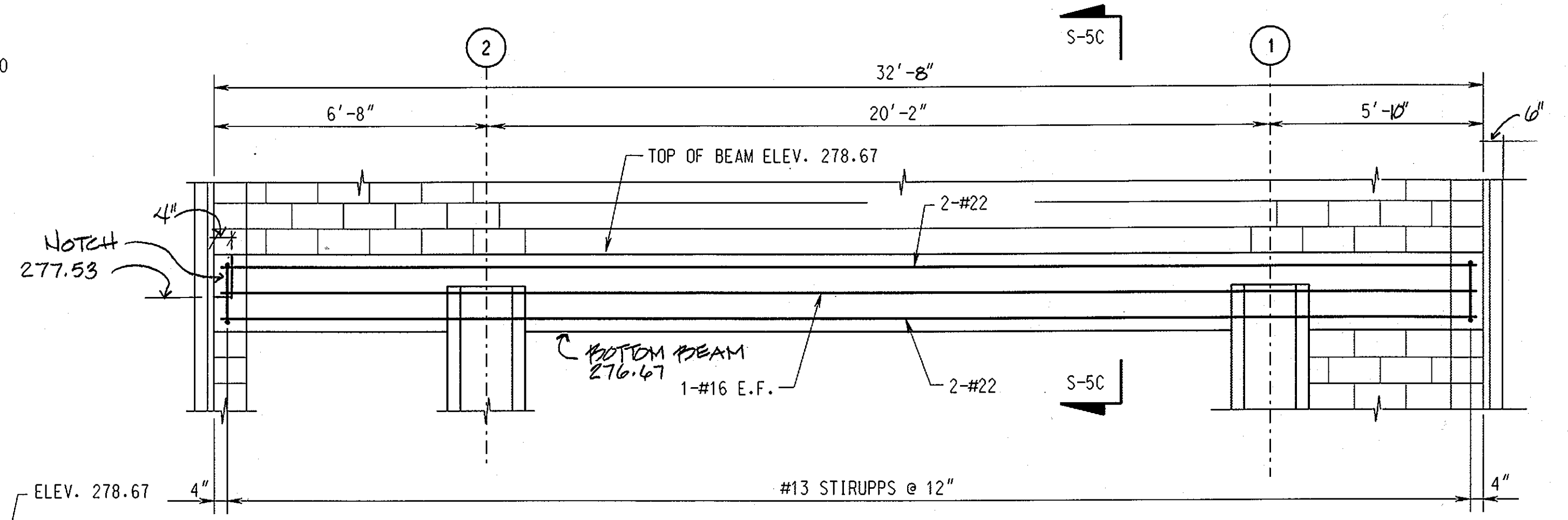
**FB-104 (12"x16")**  
SCALE: 3/8" = 1'-0"



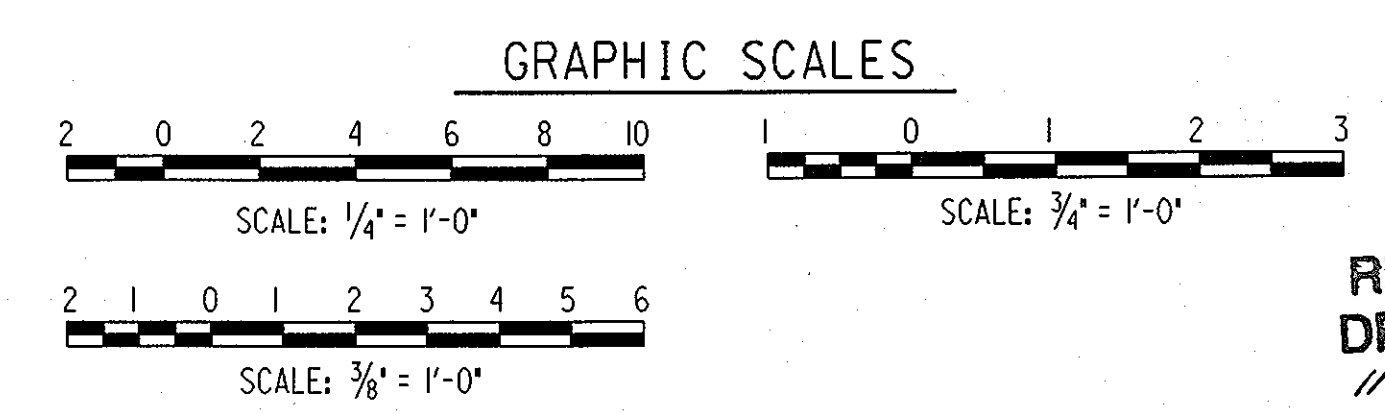
**SECTION S-5D/S-5**  
SCALE: 3/4" = 1'-0"



**SECTION S-5C/S-5**  
SCALE: 3/4" = 1'-0"

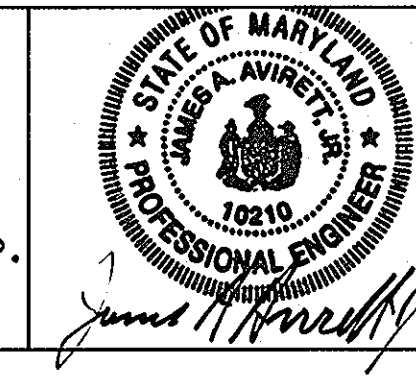


**RB-1 (12"x24")**  
SCALE: 3/8" = 1'-0"



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.  
1-15-99  
1-15-99  
1-15-99

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.

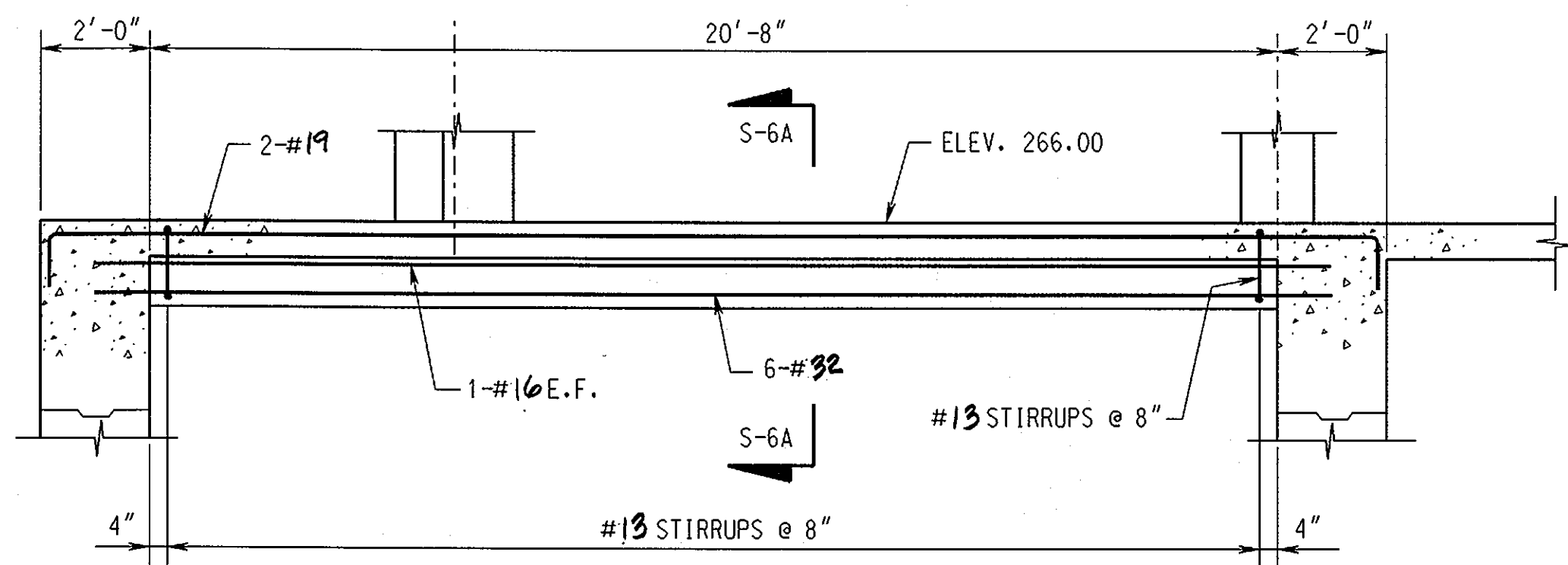


DES: JGL	
DRN: LAR	
CHK: JOA	
DATE: 11/12/98	
BY: [Signature]	
NO.:	
REVISION:	
DATE:	

RECORD DRAWING  
8-23-02  
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

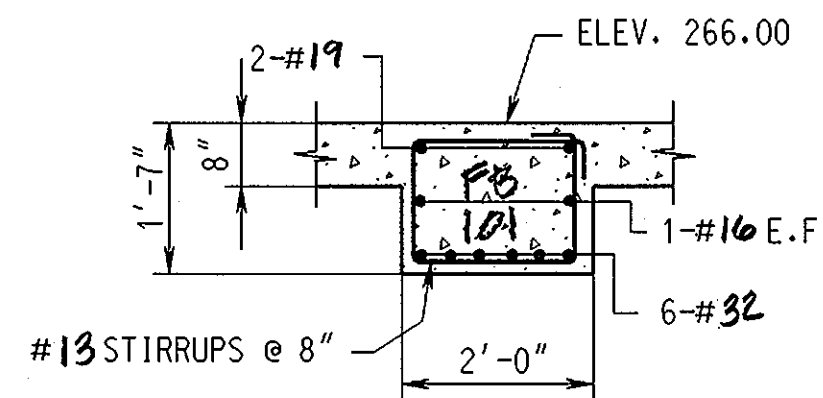
ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

RECORD DRAWING  
11/18/02  
S-5  
SCALE AS SHOWN  
SHEET  
19 OF 36  
NOVEMBER 12, 1998



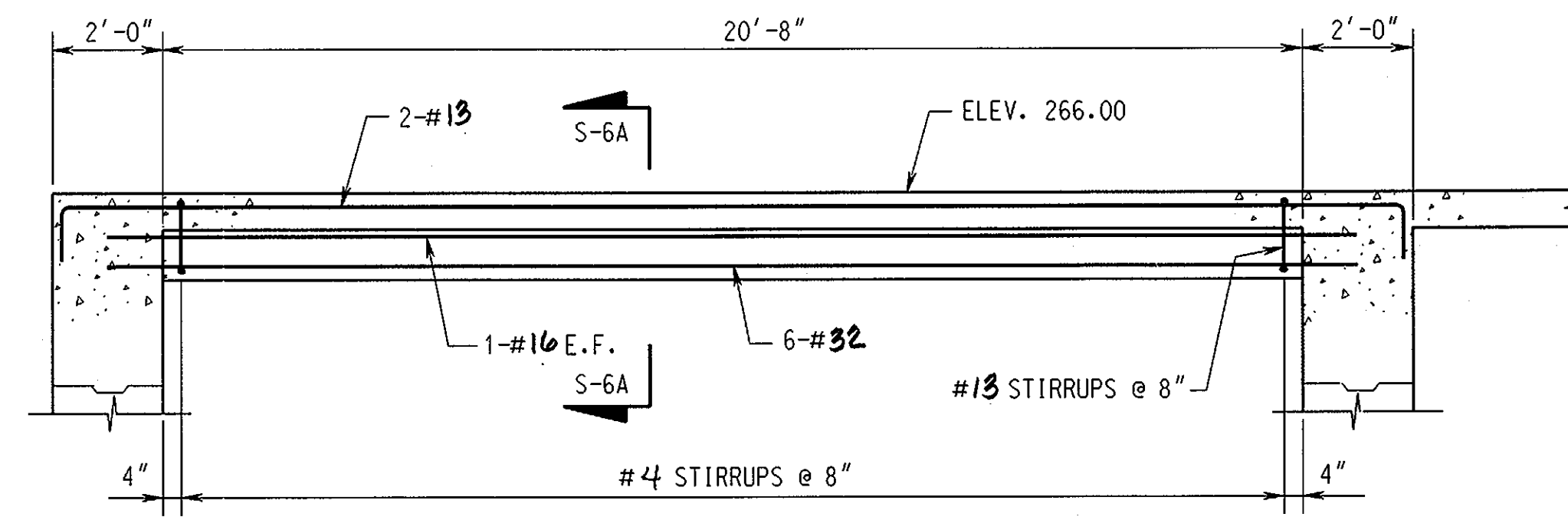
FB-101 (24" x 19")

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



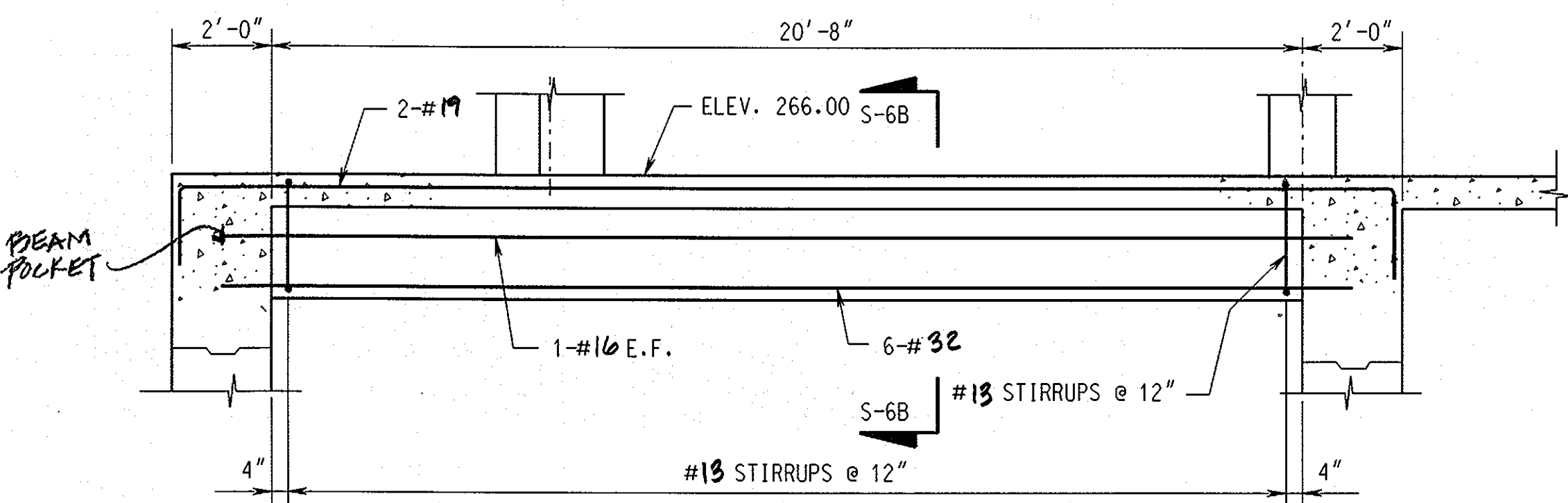
SECTION S-6A/S-6

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



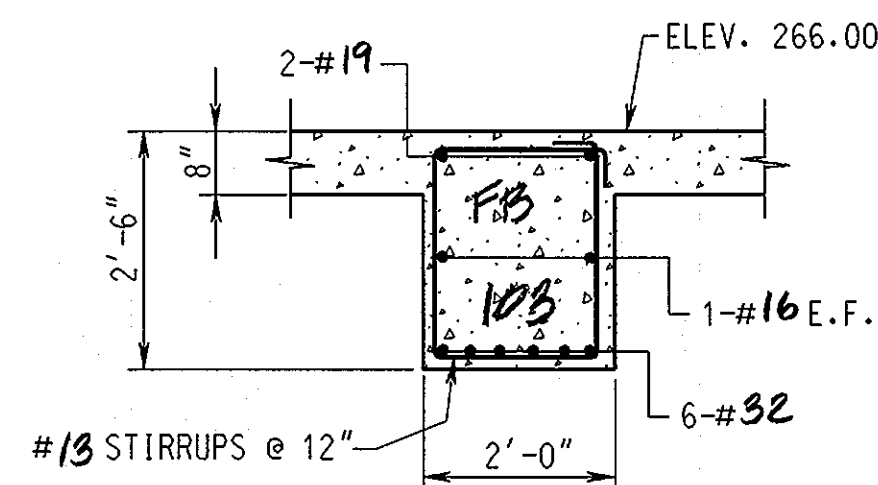
FB-102 (24" x 19")

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



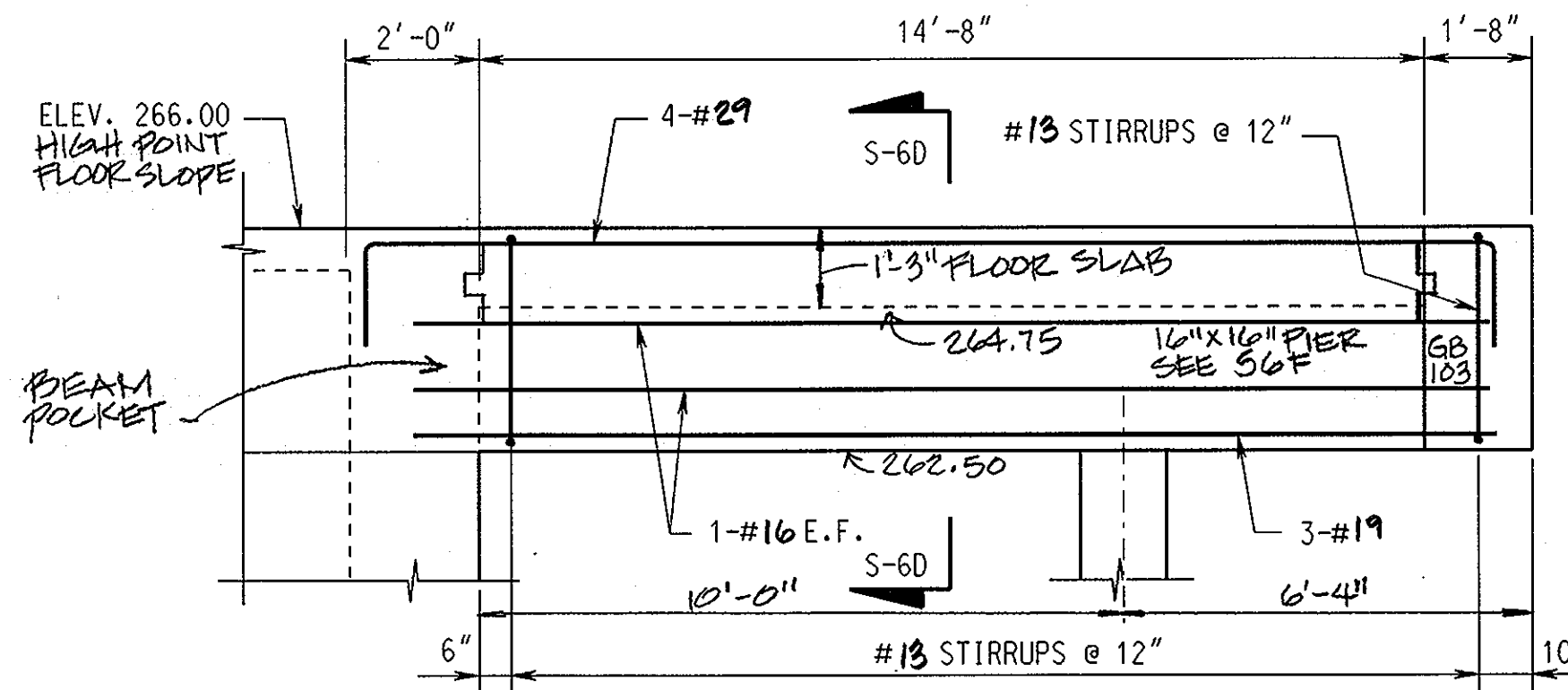
FB-103 (24" x 30")

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



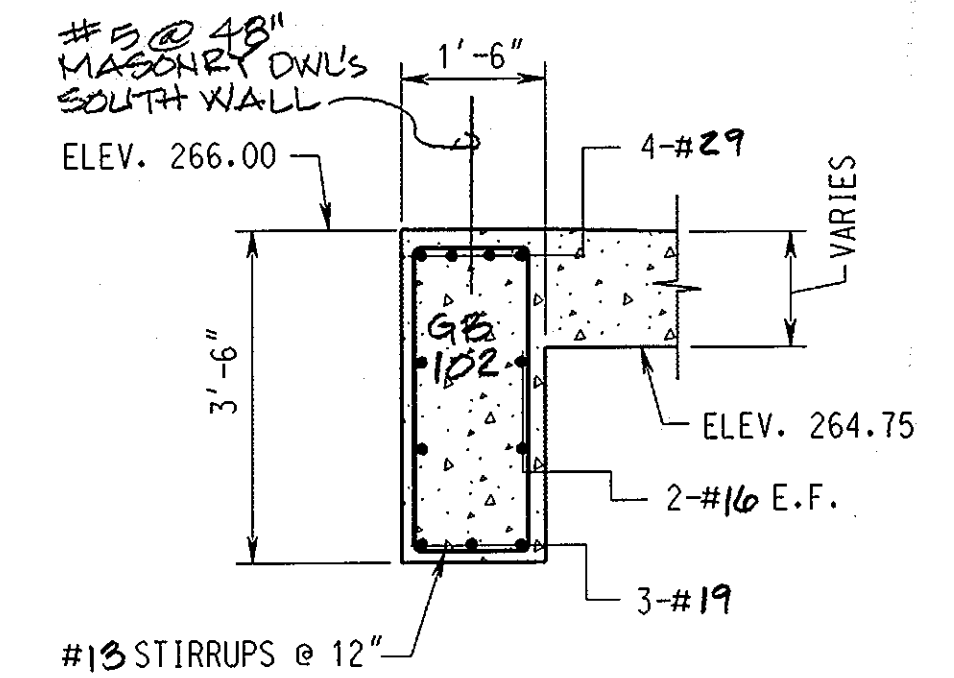
SECTION S-6B/S-6

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



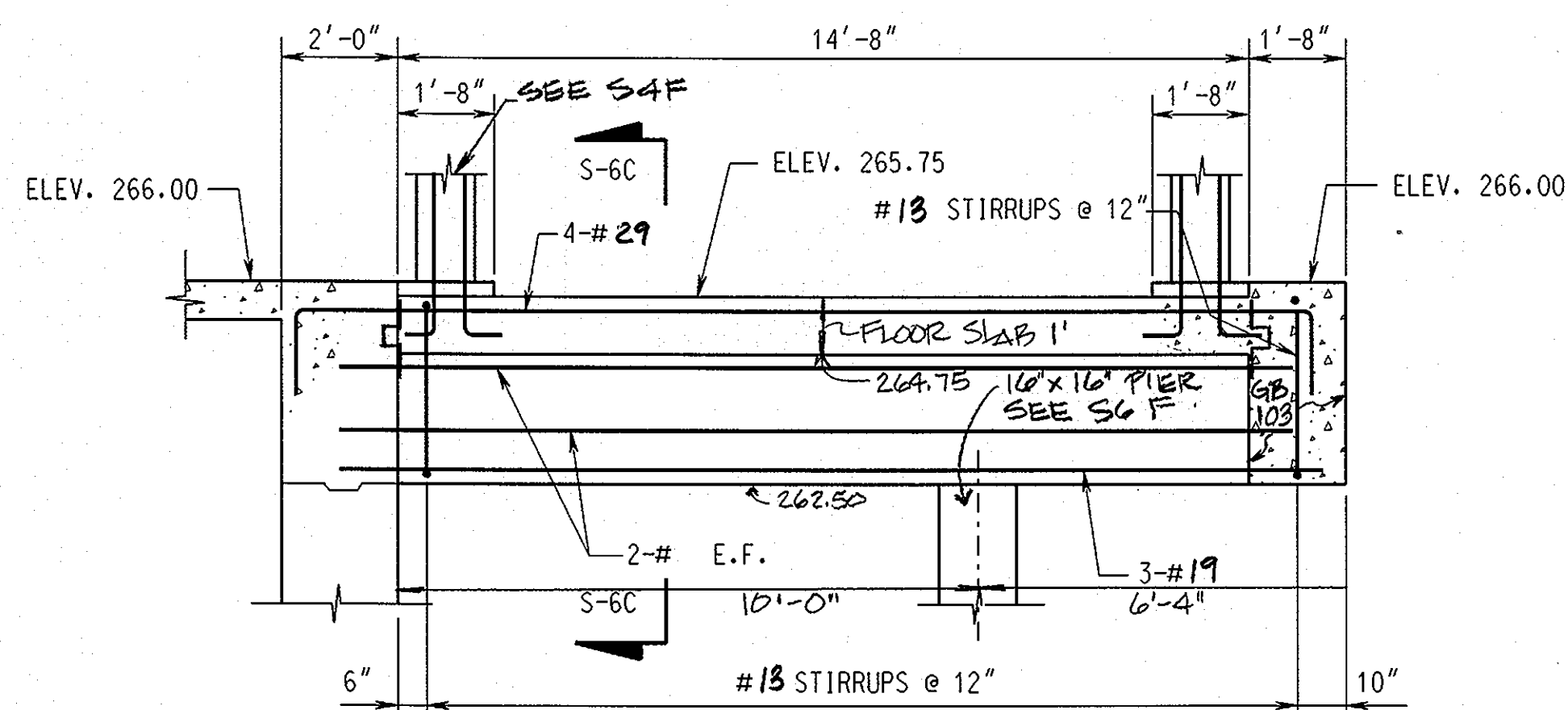
GB-102 (18" x 42")

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



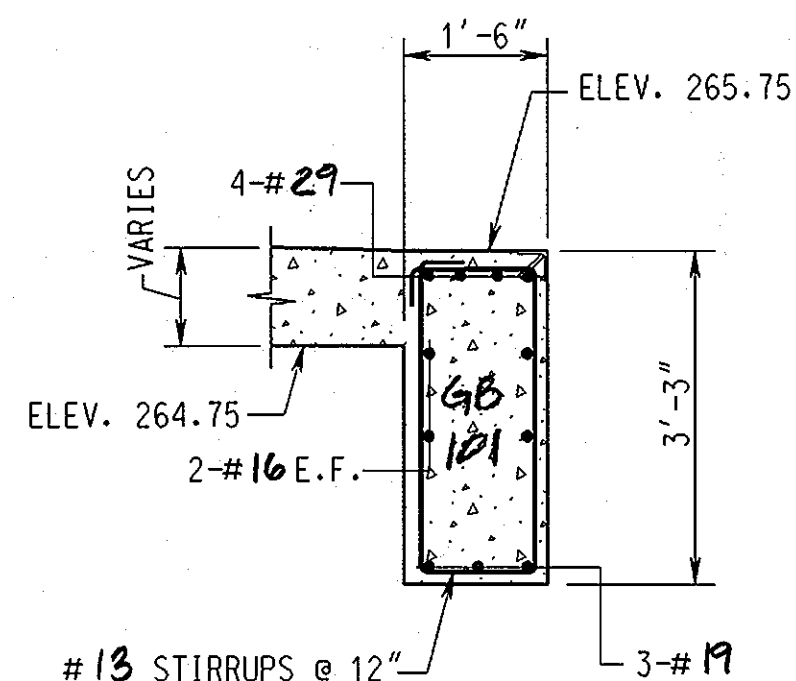
SECTION S-6D/S-6

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



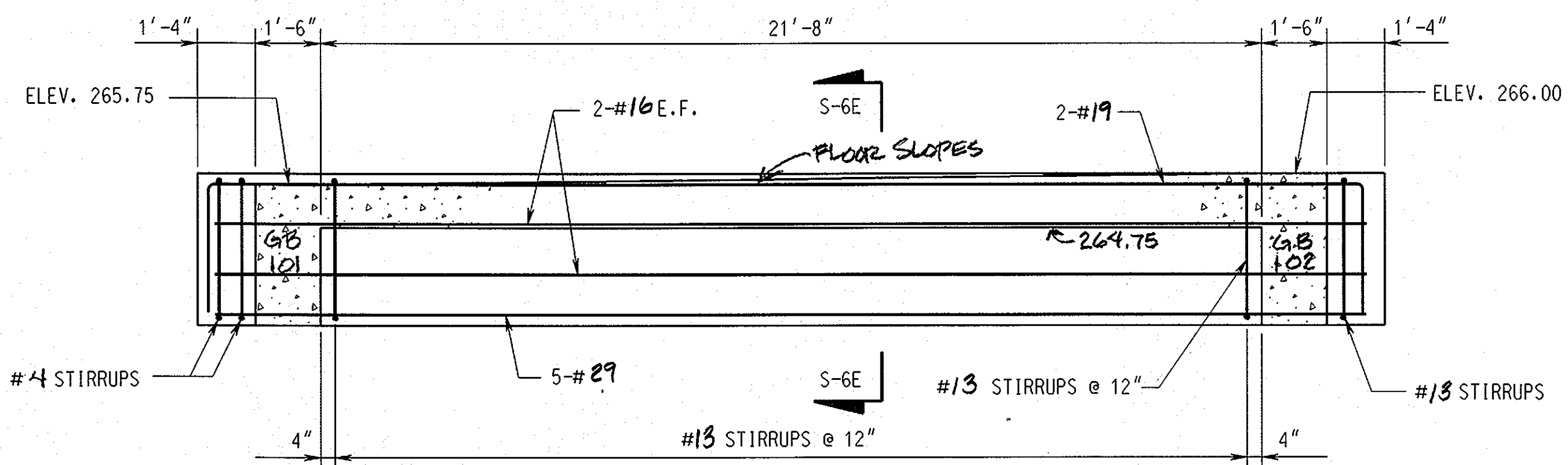
GB-101 (18" x 39")

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



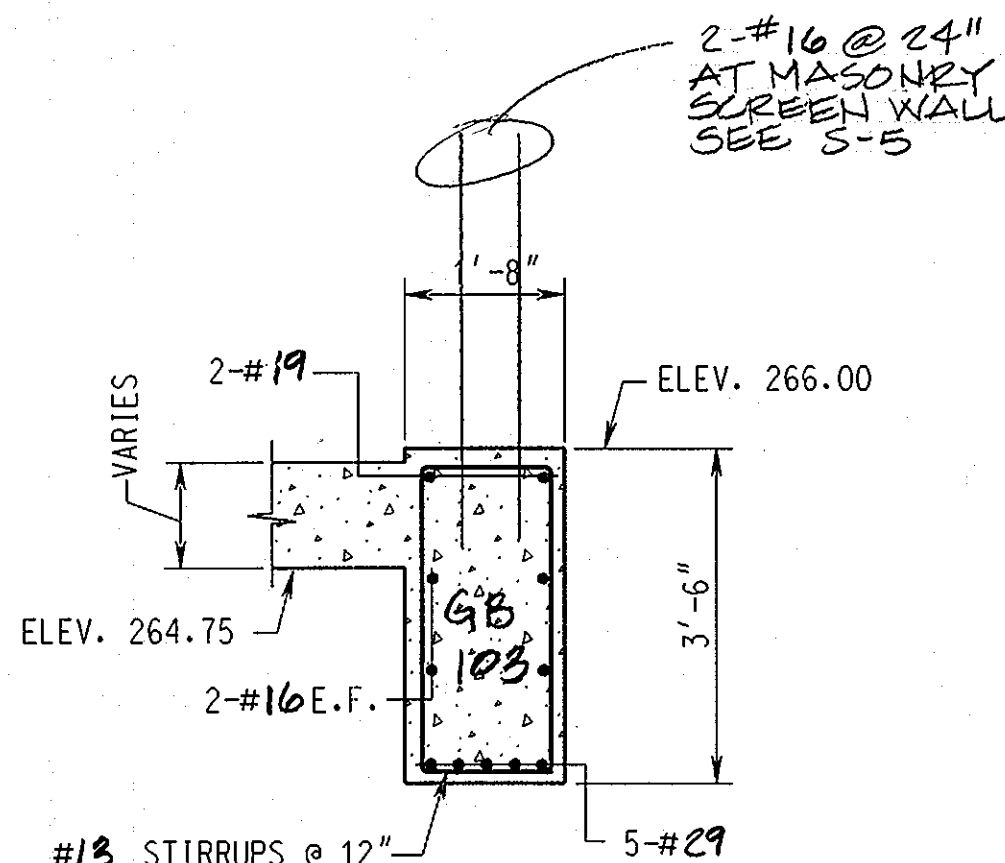
SECTION S-6C/S-6

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



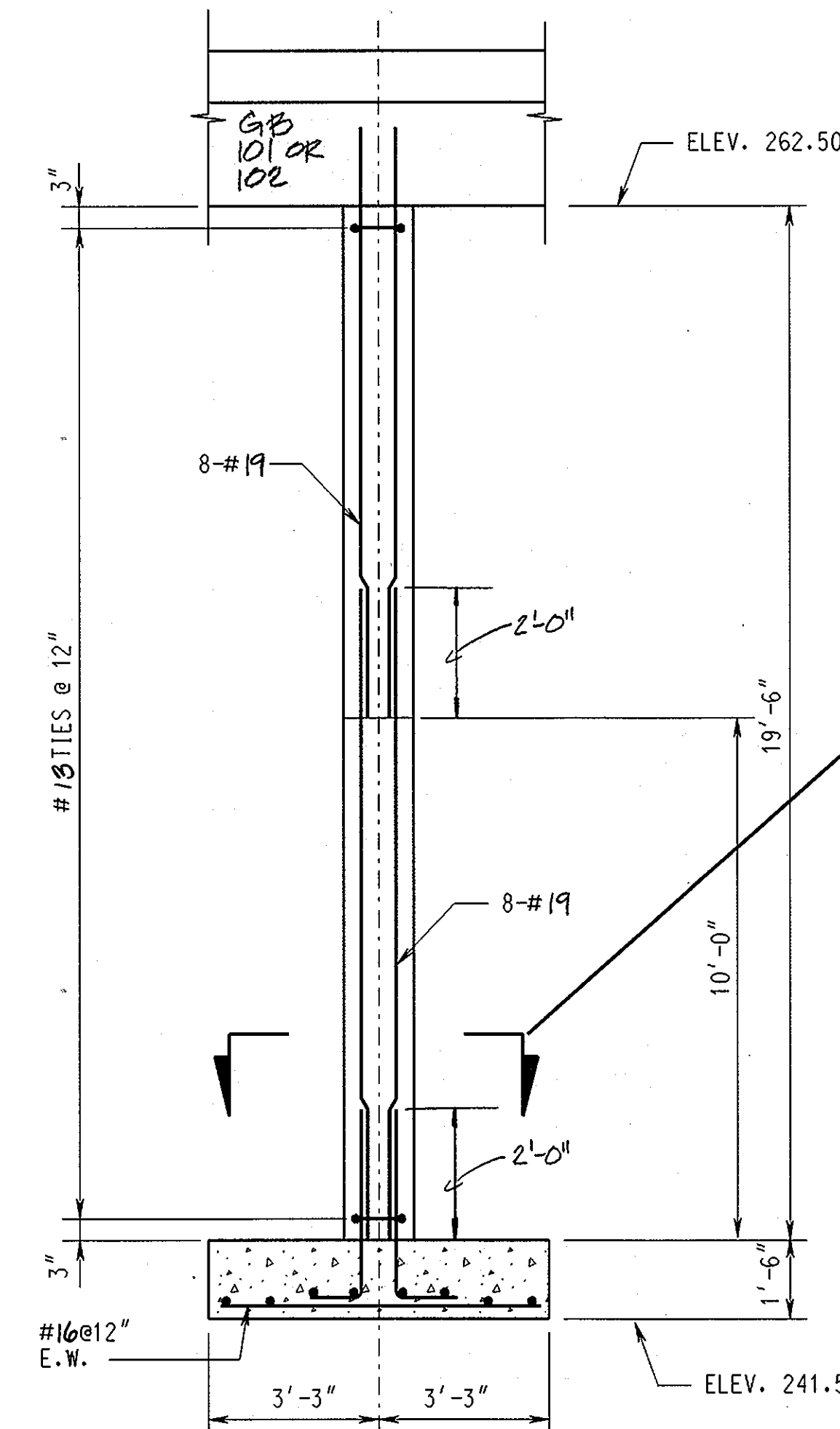
GB-103 (20" x 42")

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



SECTION S-6E/S-6

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



SECTION S-6F/S-2

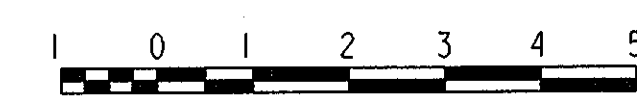
SCALE: 3/8" = 1'-0"

- NOTES:
- SEE DRAWING S-3 FOR LOCATION OF BEAMS.
  - FLOOR SLAB REBAR NOT SHOWN ON THIS SHEET.

GRAPHIC SCALES



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



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

RECORD DRAWING  
11/18/02

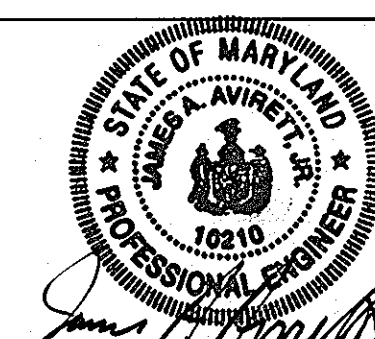
S-6

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.

Cam P. Lew 11/5/99  
DIRECTOR OF PUBLIC WORKS  
Robert M. Bennett 1-15-99  
CHIEF, BUREAU OF UTILITIES

PREPARED BY:

WR&A  
Whitman, Reardon and Associates, LLP.



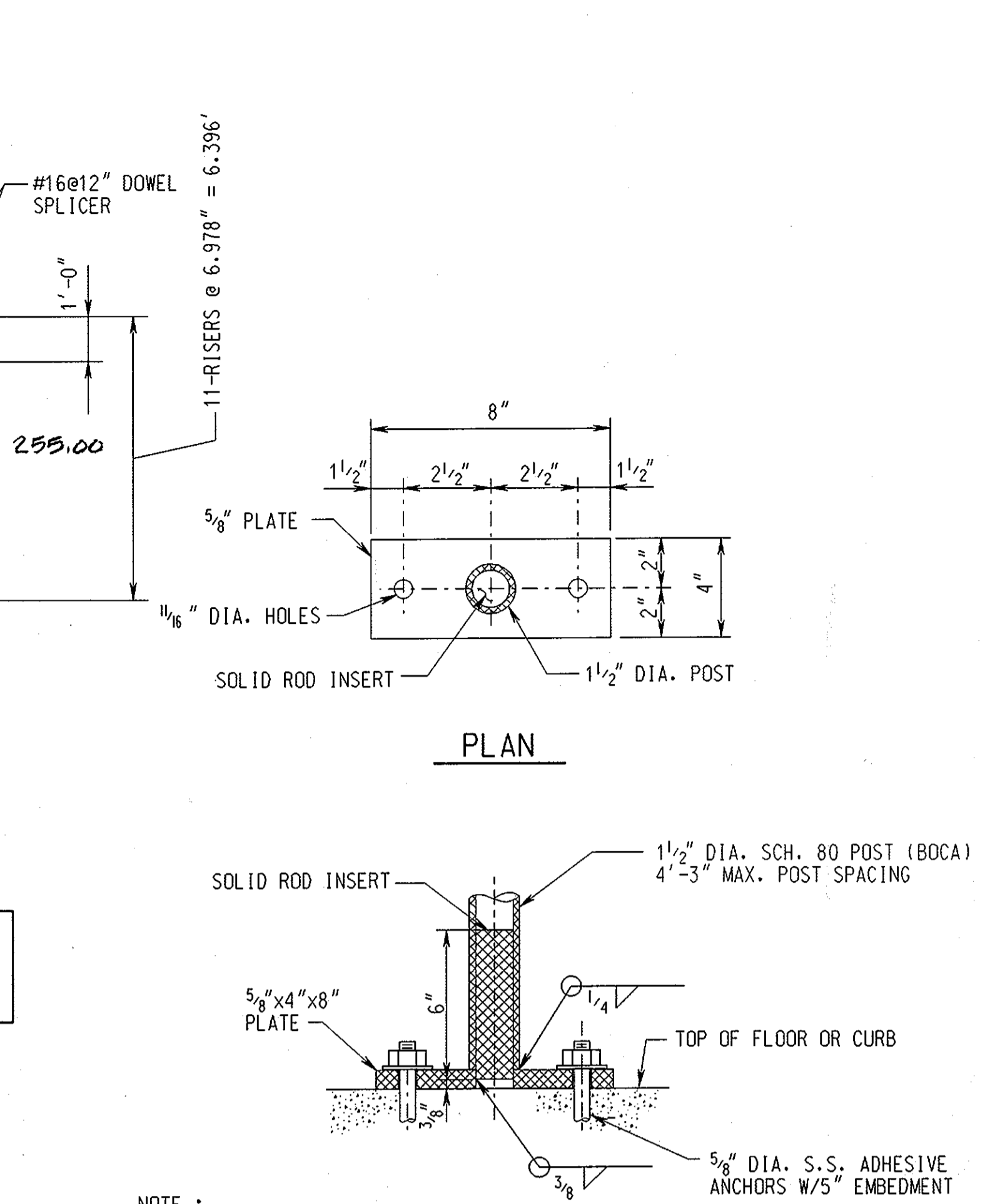
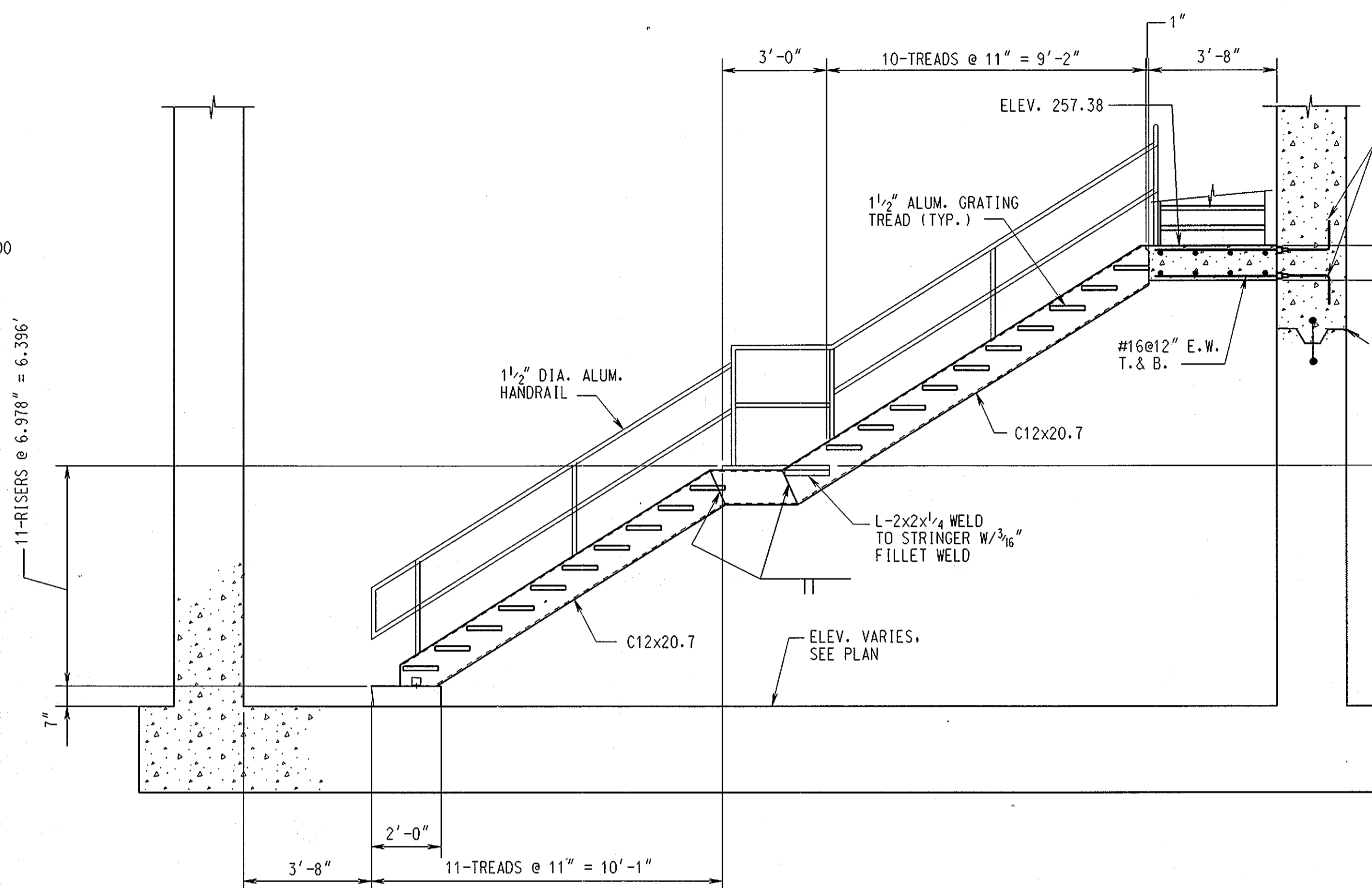
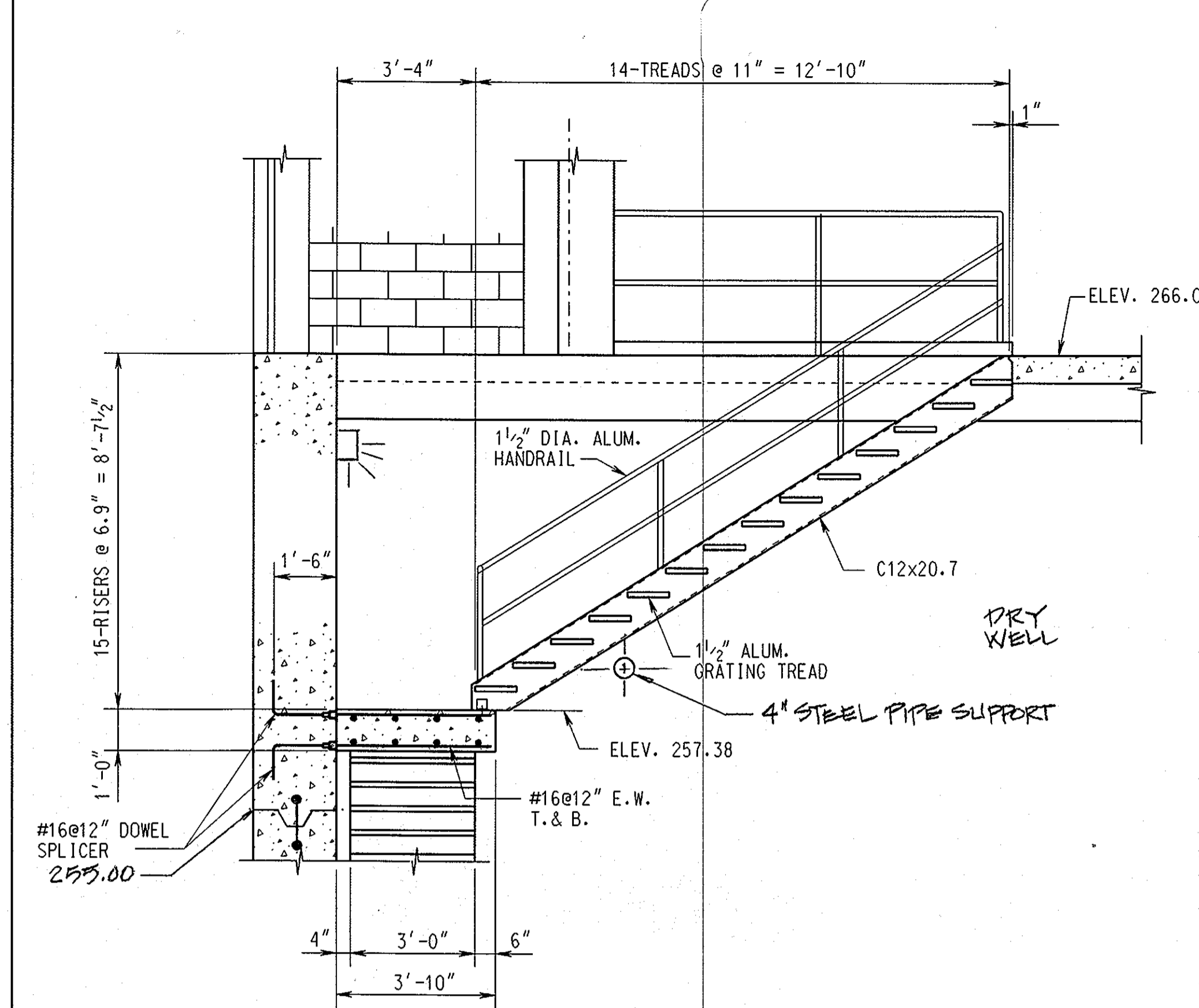
DES: JCL	
DRN: LAR	
CHK: JOA	
DATE: 11/12/98	
BY: [Signature]	
NO.:	
REVISION:	
DATE:	

BEAM AND COLUMN ELEVATIONS  
AND SECTIONS

600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

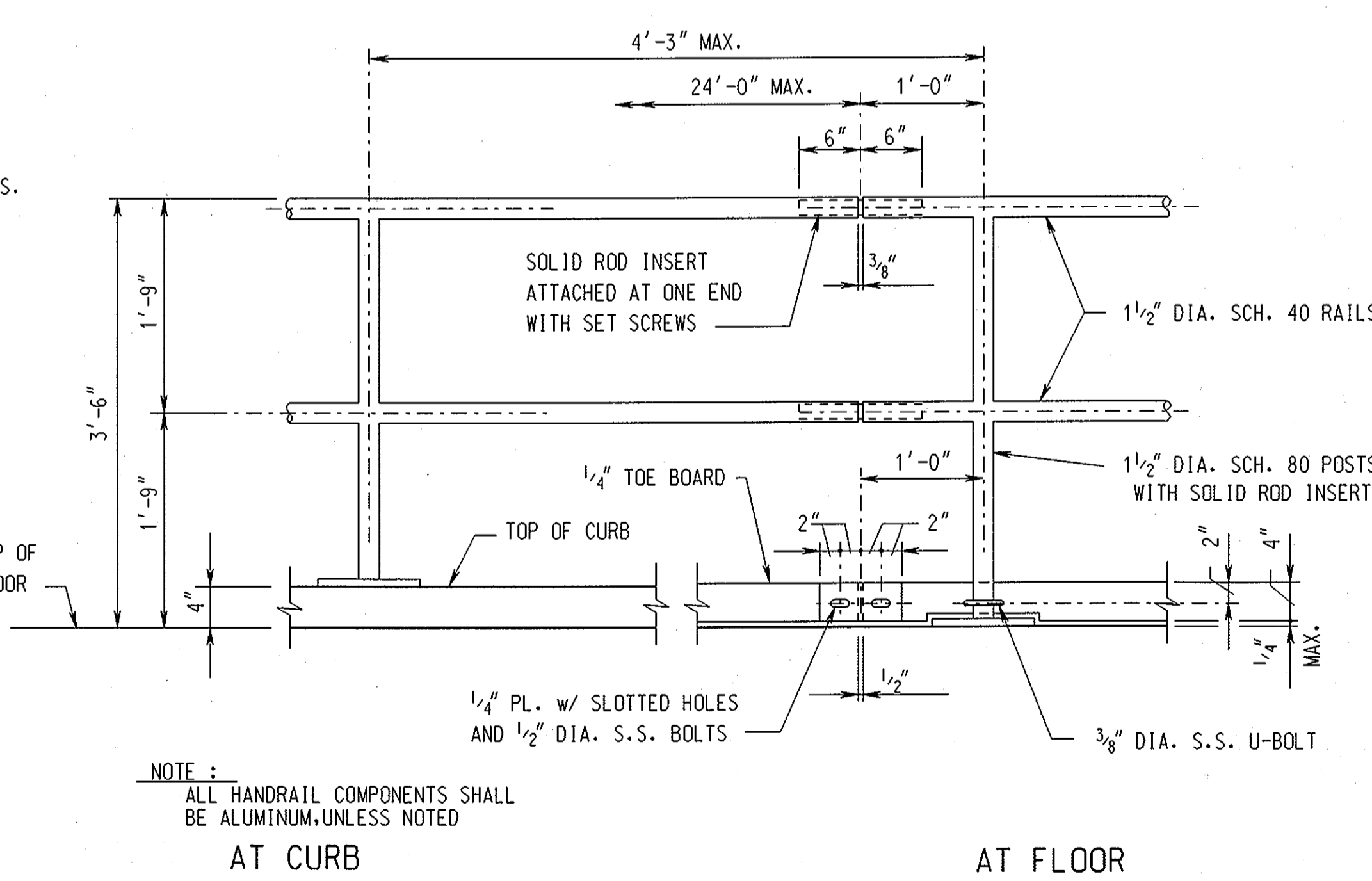
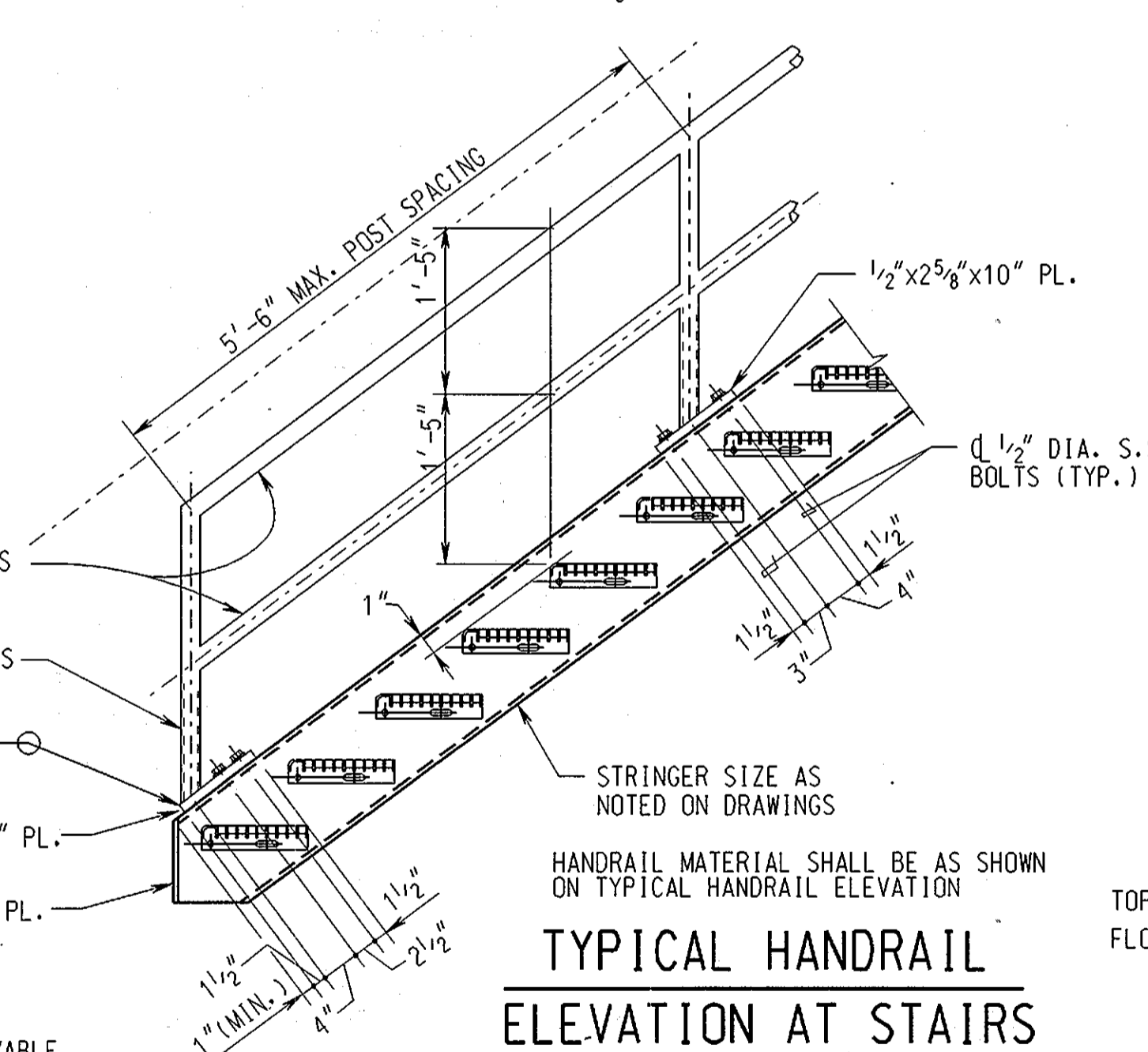
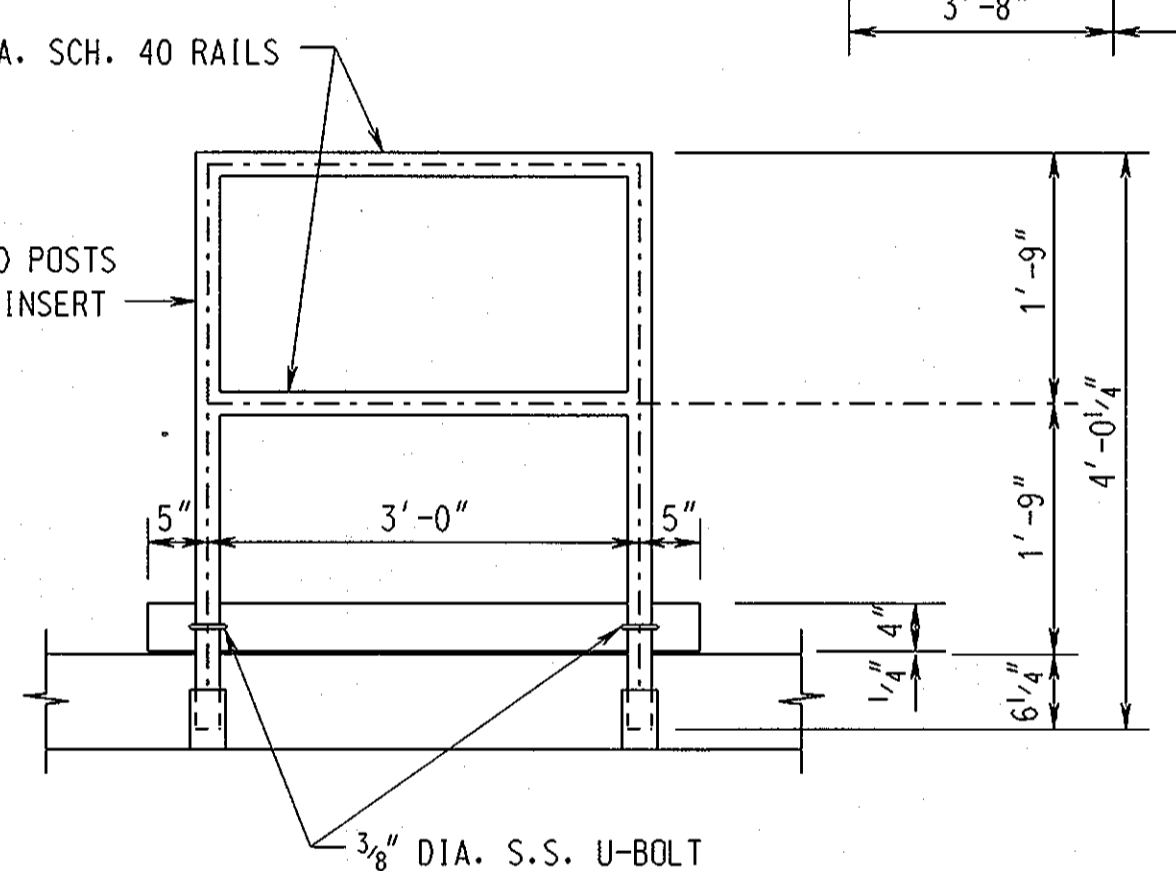
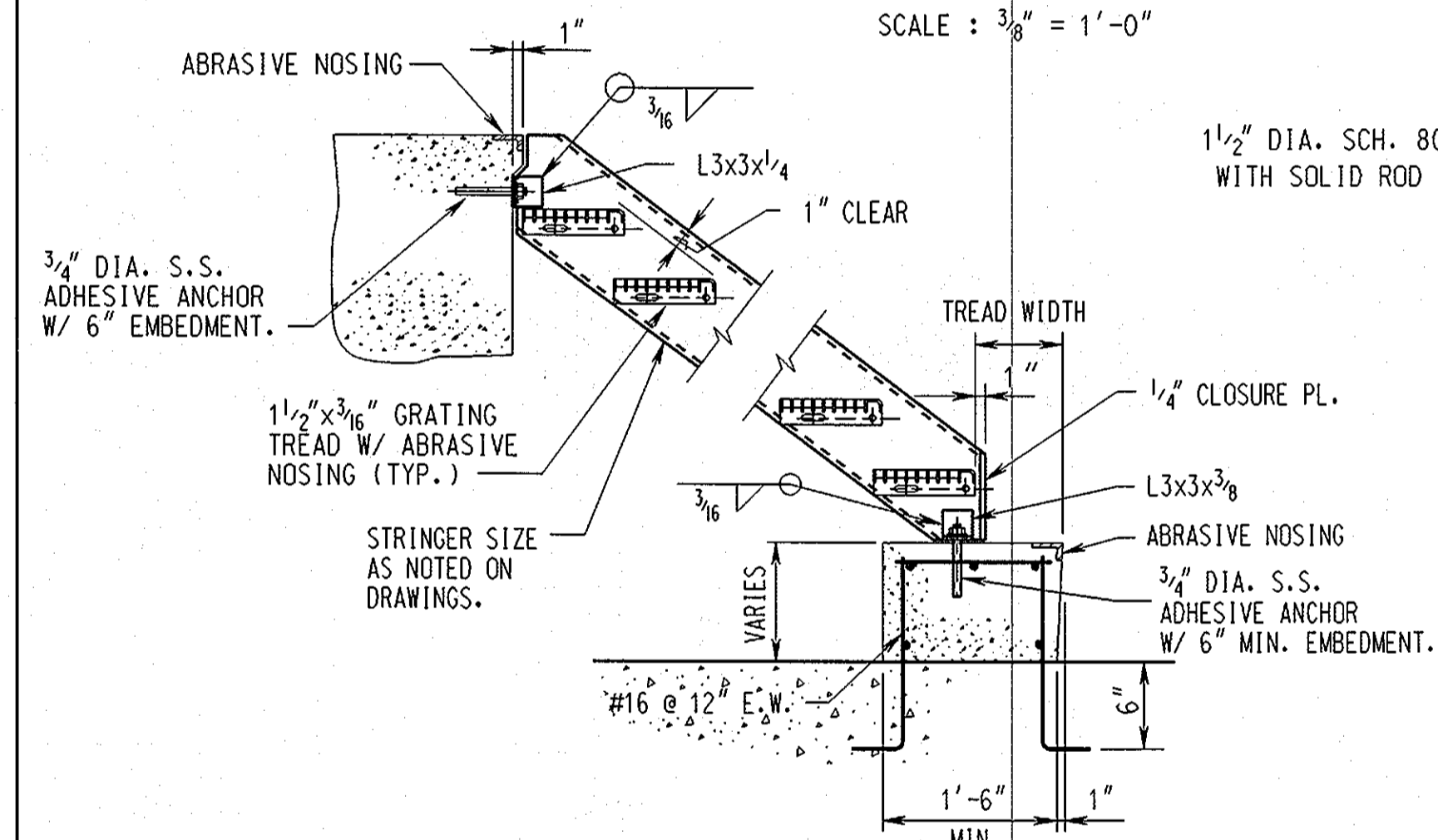
SCALE AS SHOWN  
SHEET  
20 OF 36



**SECTION S-7A/S-3**  
SCALE: 3/8" = 1'-0"

**SECTION S-7B/S-2**  
SCALE: 3/8" = 1'-0"

**SECTION POST CONNECTION TO CONCRETE - ALUMINUM**  
SCALE: NONE

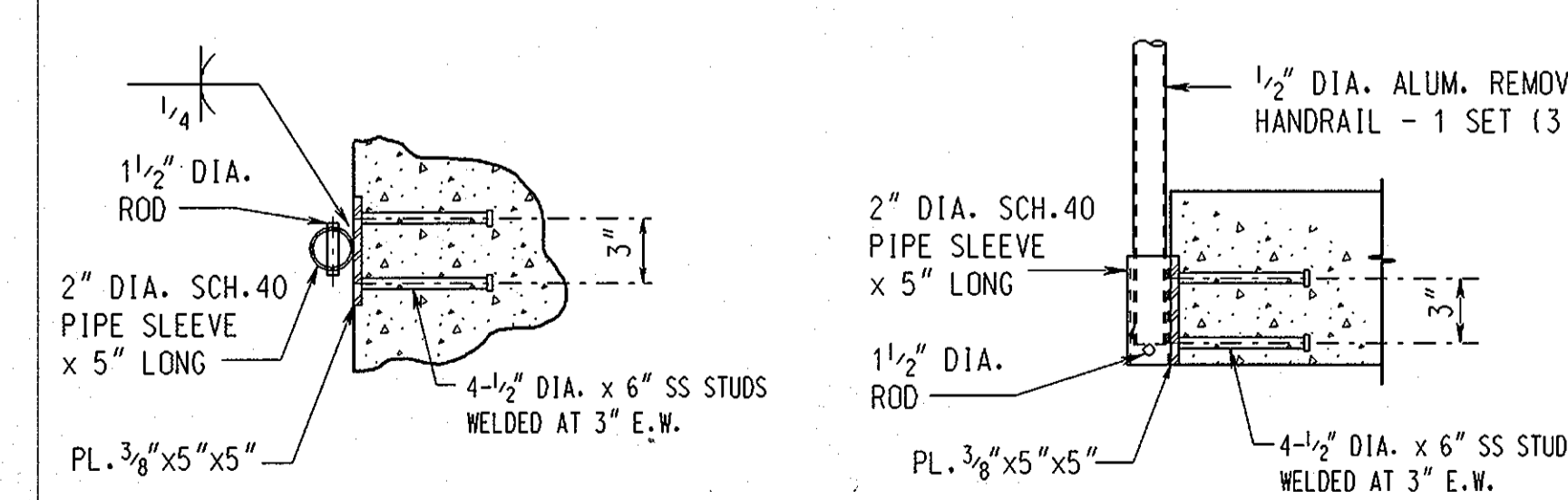
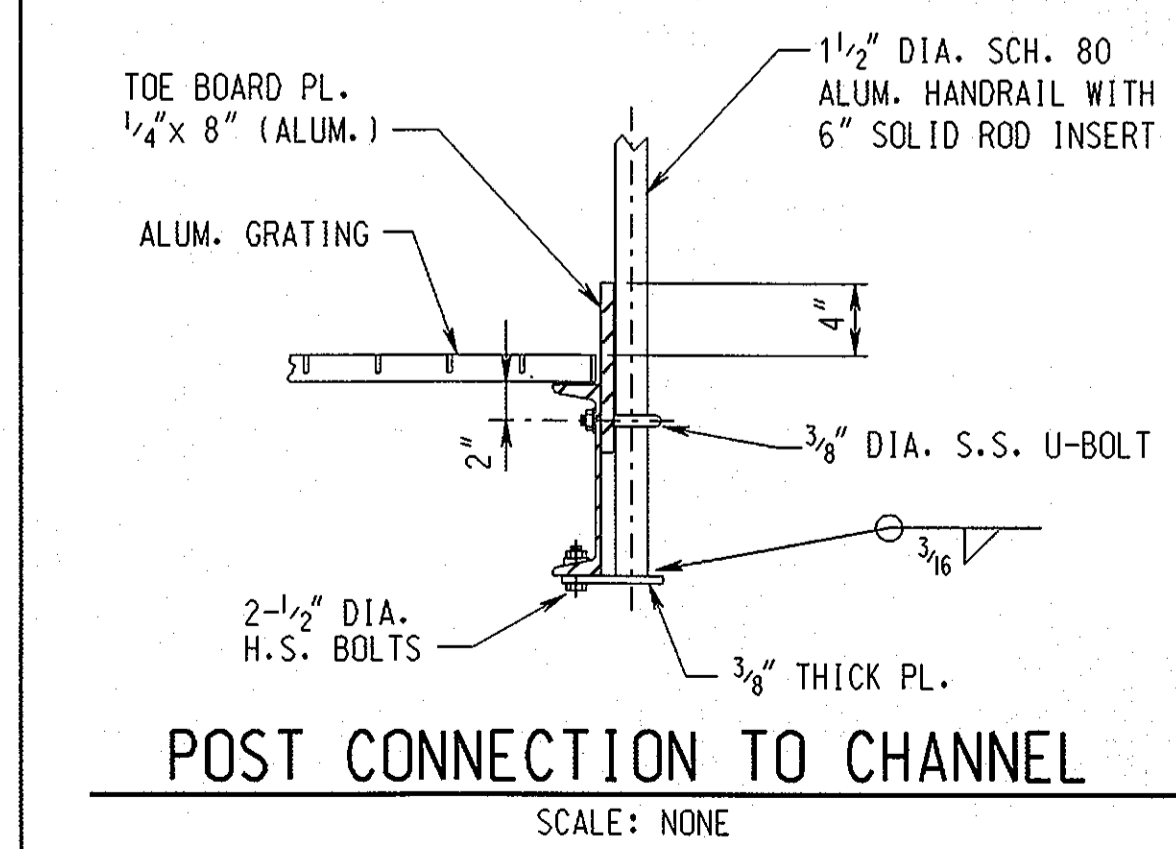


**STAIR CONNECTION TO CONCRETE**  
SCALE: NONE

**TYPICAL REMOVABLE HANDRAIL ELEVATION**  
SCALE: NONE

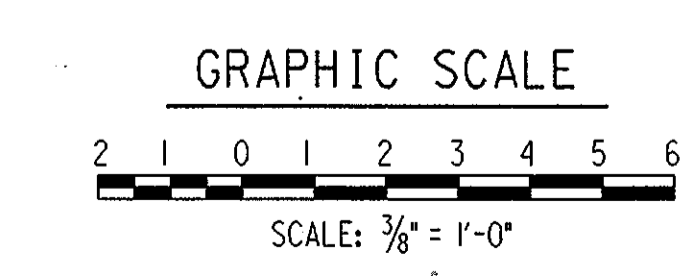
**TYPICAL HANDRAIL ELEVATION AT STAIRS**  
SCALE: NONE

**TYPICAL HANDRAIL ELEVATION - ALUMINUM**  
SCALE: NONE



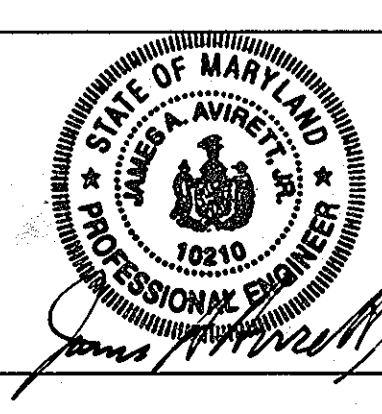
**POST CONNECTION TO CHANNEL**  
SCALE: NONE

**TYPICAL HANDRAIL SLEEVE DETAIL**  
SCALE: NONE



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.  
 Director of Public Works: *Carroll J. Clavin* 1-15-99  
 Chief, Bureau of Engineering: *Robert J. Sporn* 1-15-99  
 Chief, Bureau of Utilities: *Robert J. Sporn* 1-15-99  
 Chief, Utility Design Division: *Robert J. Sporn* 1-15-99

PREPARED BY:  
**WR&A**  
 Whitman, Reardon and Associates, LLP.

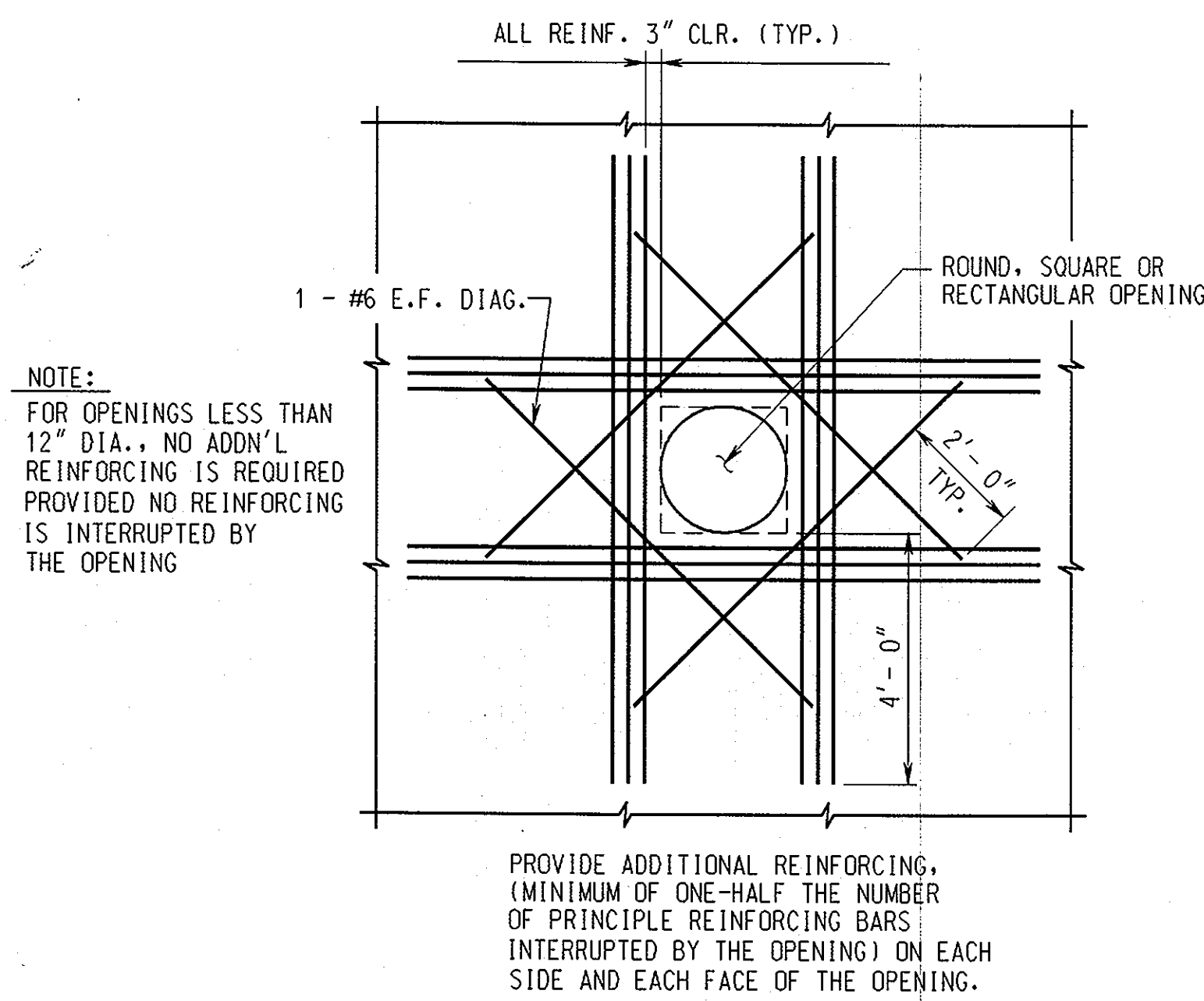


DES: JGL			
DRN: LAR			
CHK: JOA			
DATE: 11/12/98			
BY: NO.			
REVISION			
DATE: 8-23-02			

STAIR SECTIONS AND DETAILS  
 600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

ROCKBURN WASTEWATER PUMPING STATION  
 CAPITAL PROJECT NO. S-6200  
 CONTRACT NO. 10-3695  
 FIRST ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

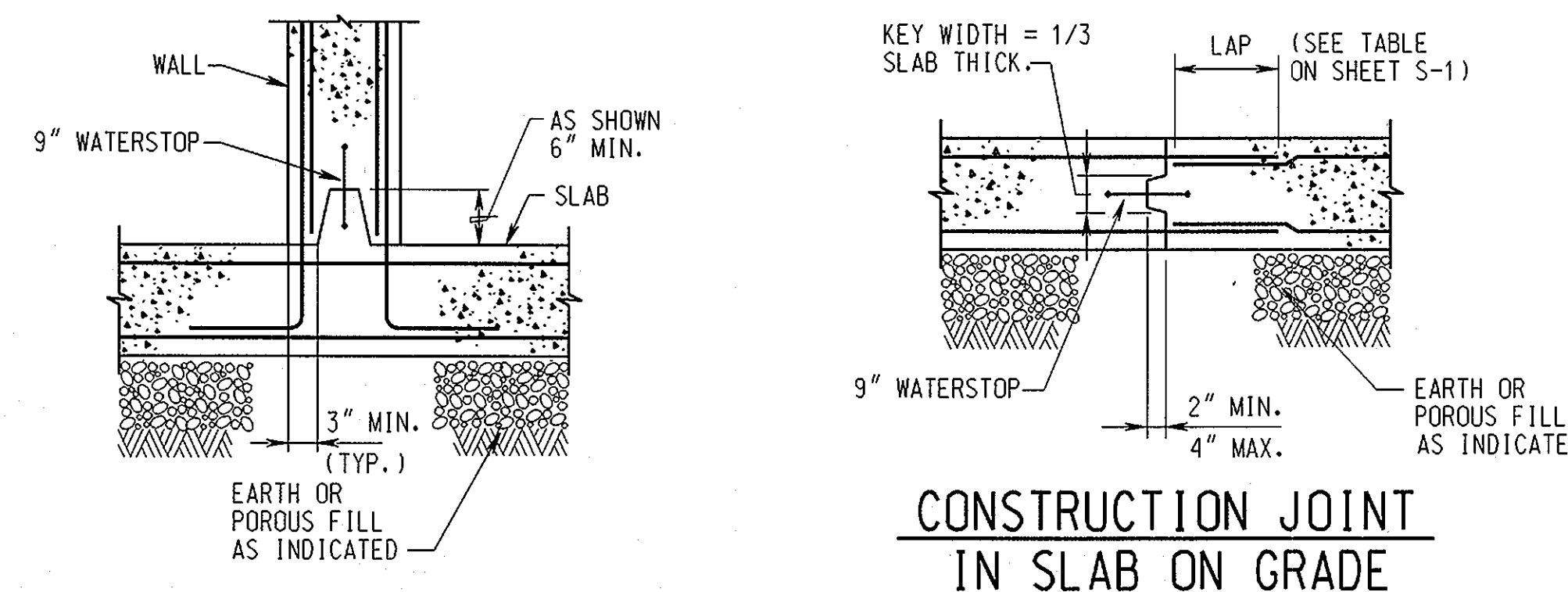
RECORD DRAWING  
 11/16/02  
 S-7  
 SCALE AS SHOWN  
 SHEET 21 OF 36  
 NOVEMBER 12, 1998



NOTE:  
FOR OPENINGS LESS THAN 12" DIA., NO ADD'L REINFORCING IS REQUIRED PROVIDED NO REINFORCING IS INTERRUPTED BY THE OPENING

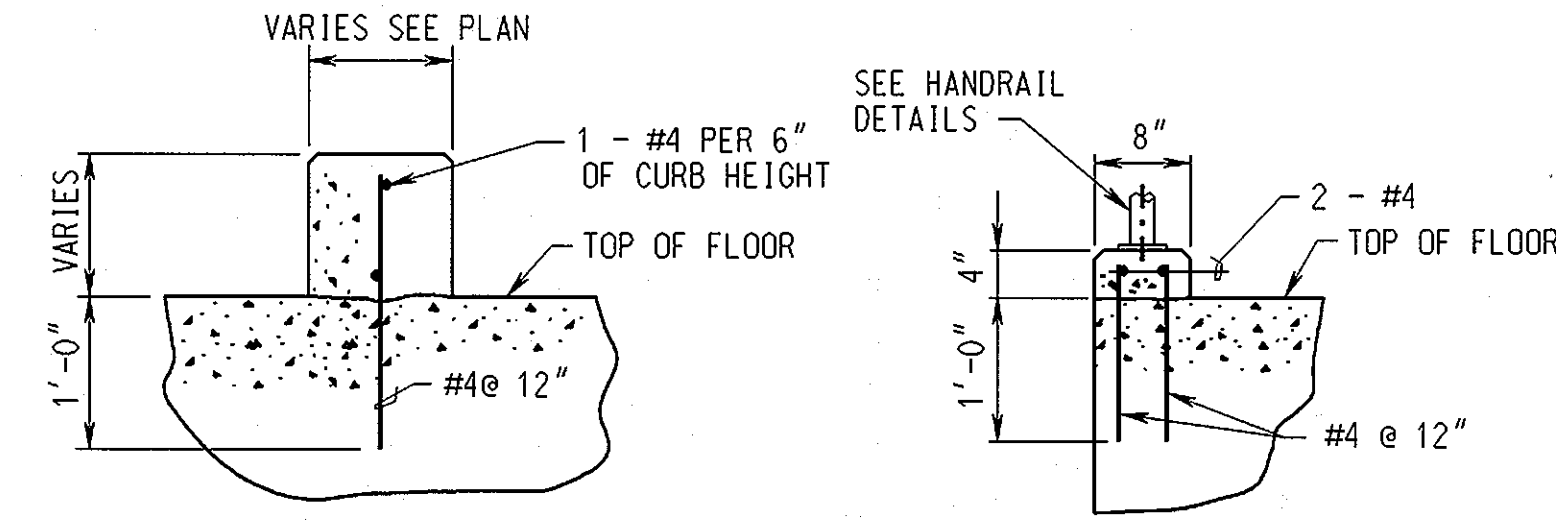
**ADDITIONAL REINFORCING AROUND OPENINGS**  
SCALE: NONE

PROVIDE ADDITIONAL REINFORCING, (MINIMUM OF ONE-HALF THE NUMBER OF PRINCIPLE REINFORCING BARS INTERRUPTED BY THE OPENING) ON EACH SIDE AND EACH FACE OF THE OPENING.

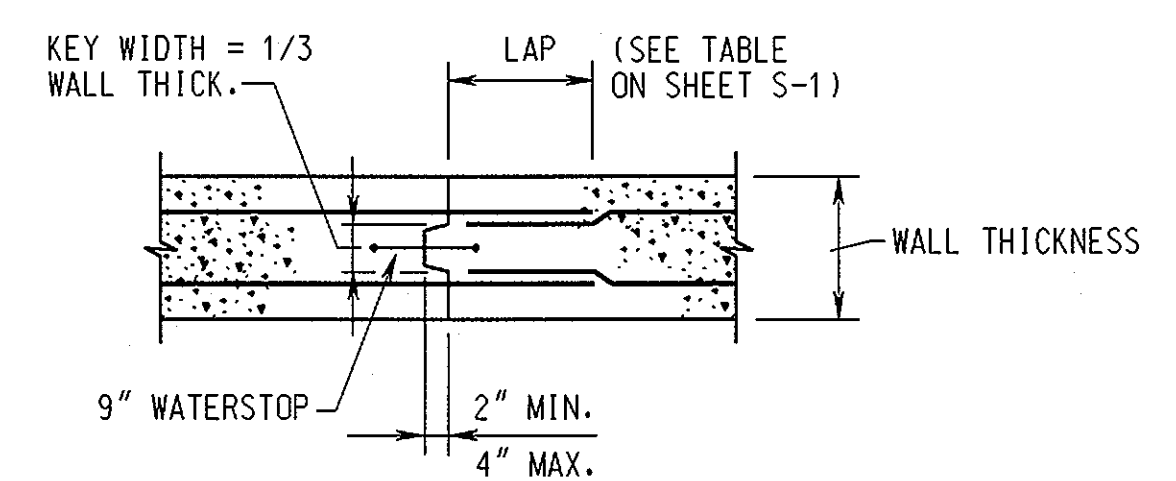


**HORIZONTAL CONSTRUCTION JOINT IN WALLS**  
SCALE: NONE

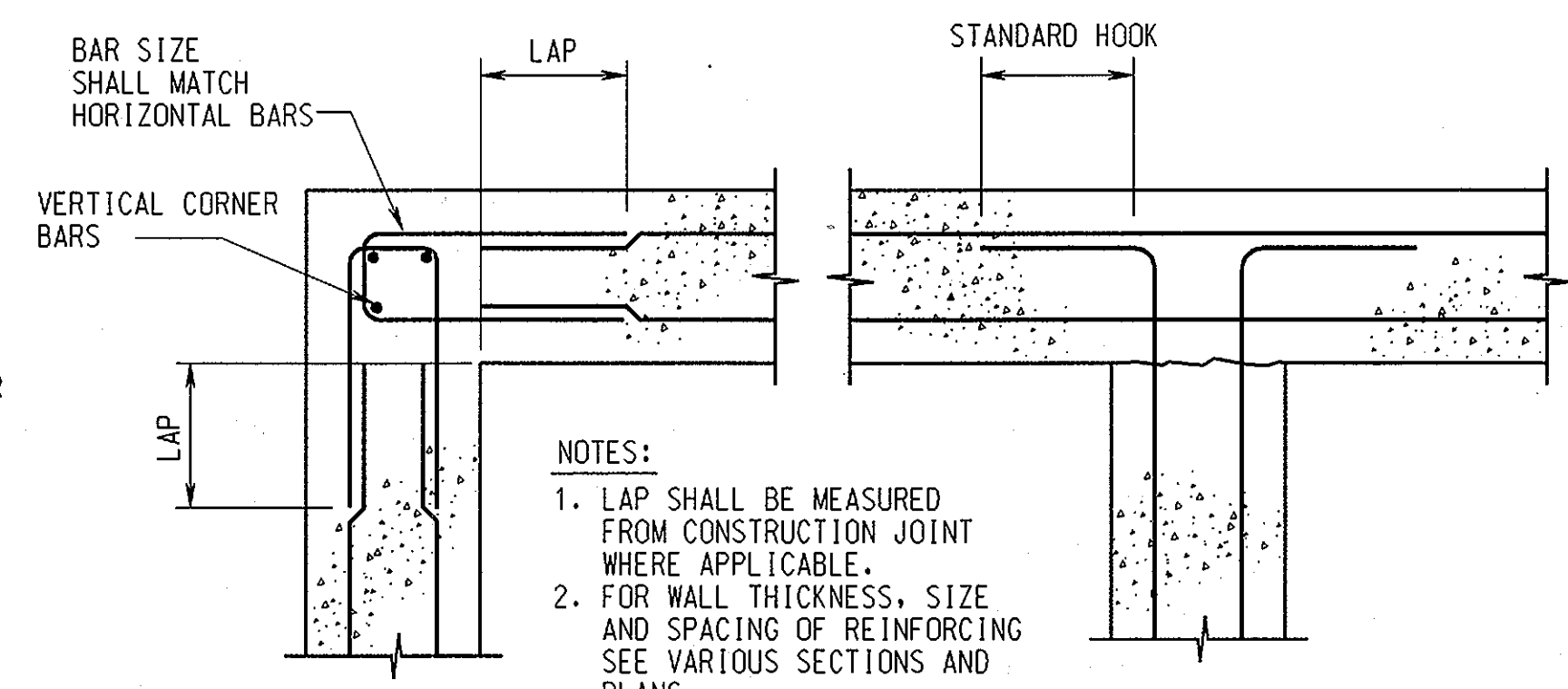
**CONSTRUCTION JOINT IN SLAB ON GRADE**  
SCALE: NONE



**TYPICAL CURB DETAILS**  
SCALE: NONE

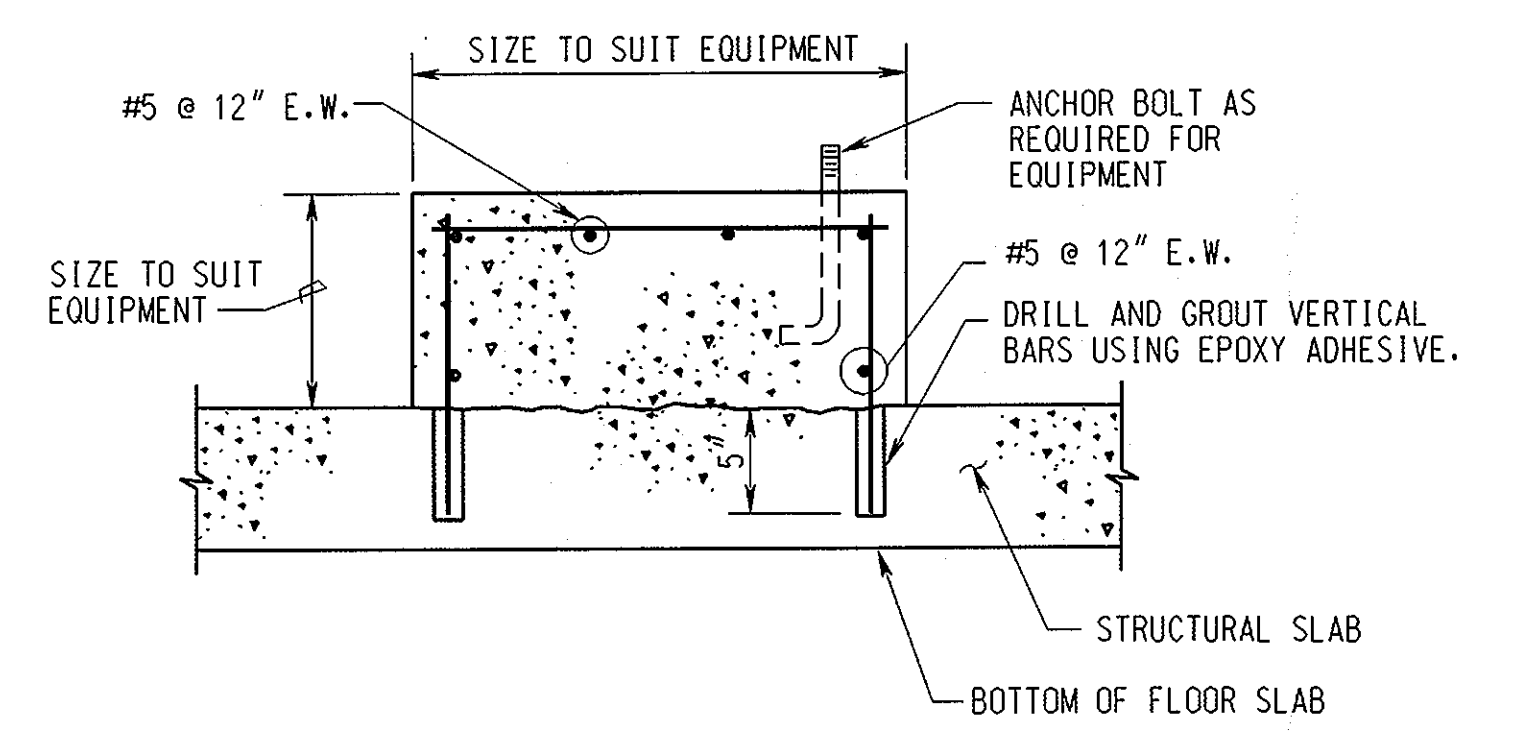


**VERTICAL CONSTRUCTION JOINT IN WALL**  
SCALE: NONE

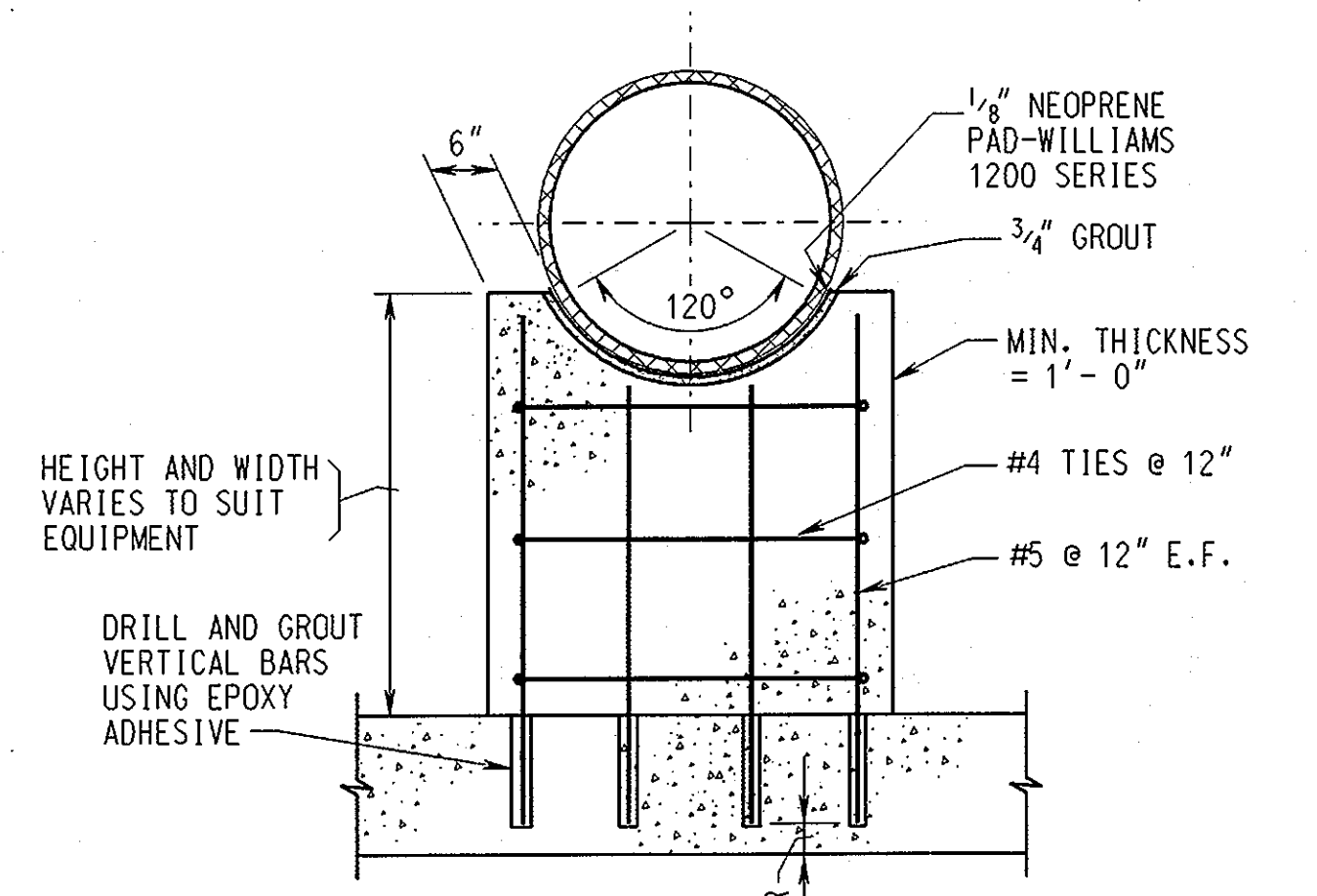


**REINFORCING DETAILS AT WALL INTERSECTIONS**  
SCALE: NONE

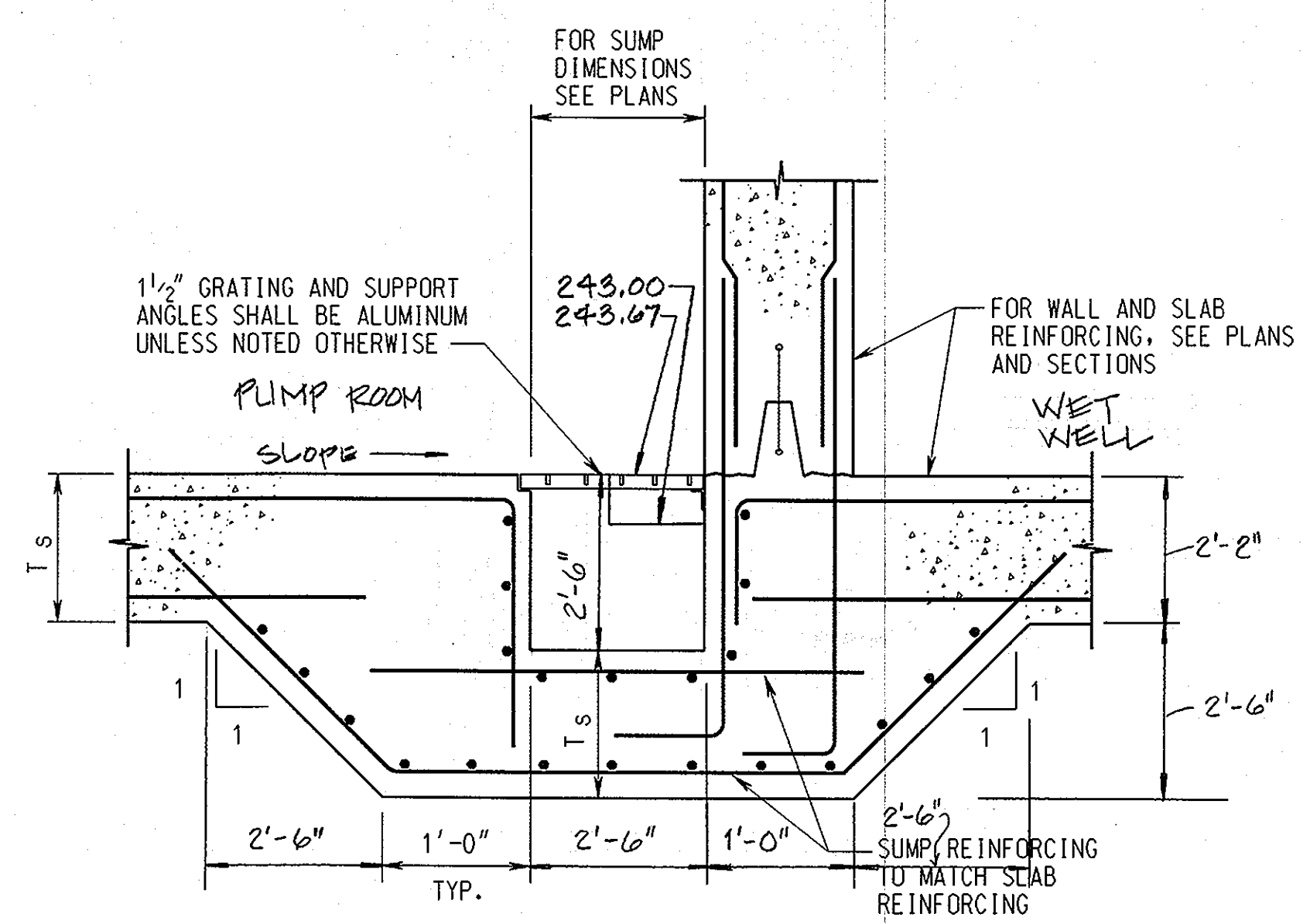
NOTES:  
1. LAP SHALL BE MEASURED FROM CONSTRUCTION JOINT WHERE APPLICABLE.  
2. FOR WALL THICKNESS, SIZE AND SPACING OF REINFORCING SEE VARIOUS SECTIONS AND PLANS.  
3. VERTICAL REINFORCING NOT SHOWN FOR CLARITY.



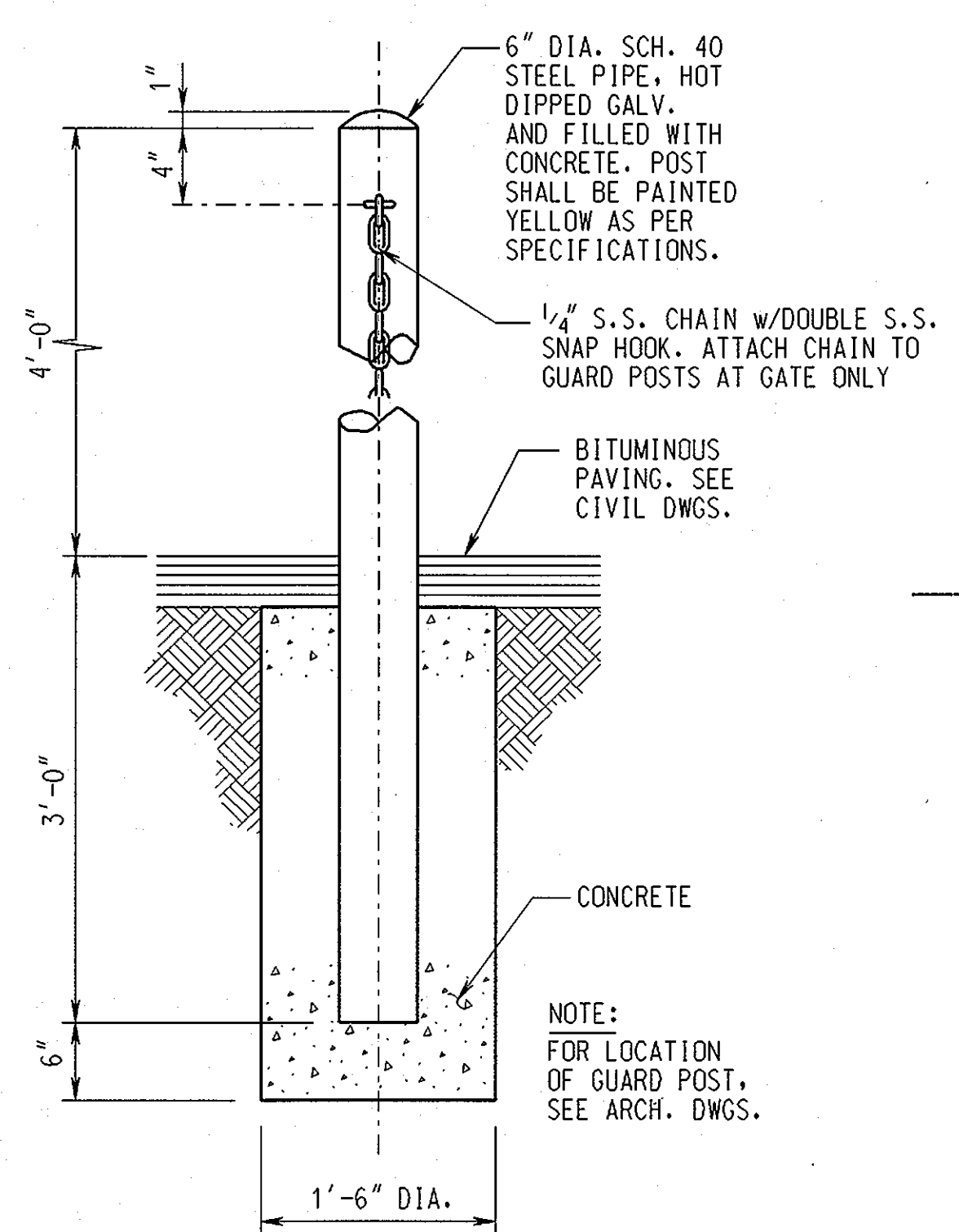
**TYPICAL EQUIPMENT SUPPORT**  
SCALE: NONE



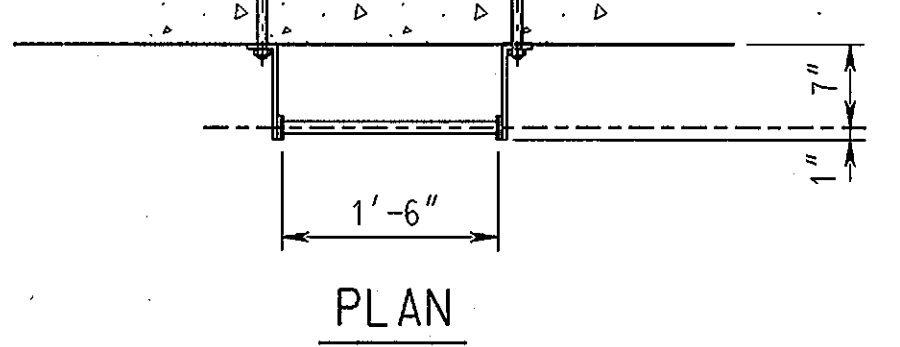
**TYPICAL PIPE AND VALVE SUPPORT**  
SCALE: NONE



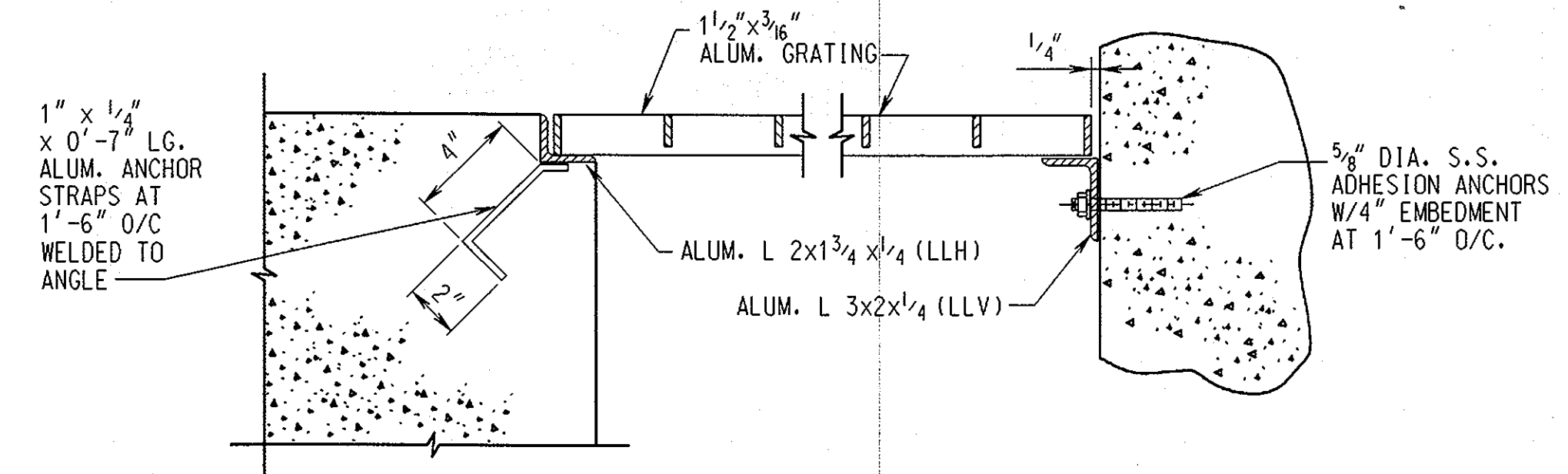
**SECTION TYPICAL SUMP DETAIL**  
SCALE: NONE



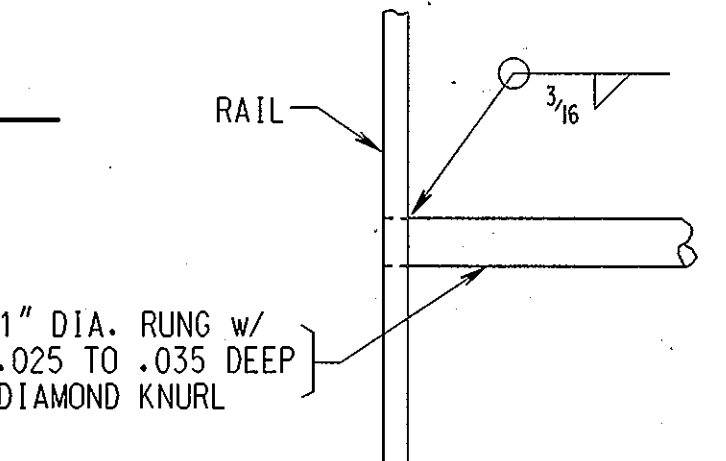
**TYPICAL GUARD POST DETAIL**  
SCALE: NONE



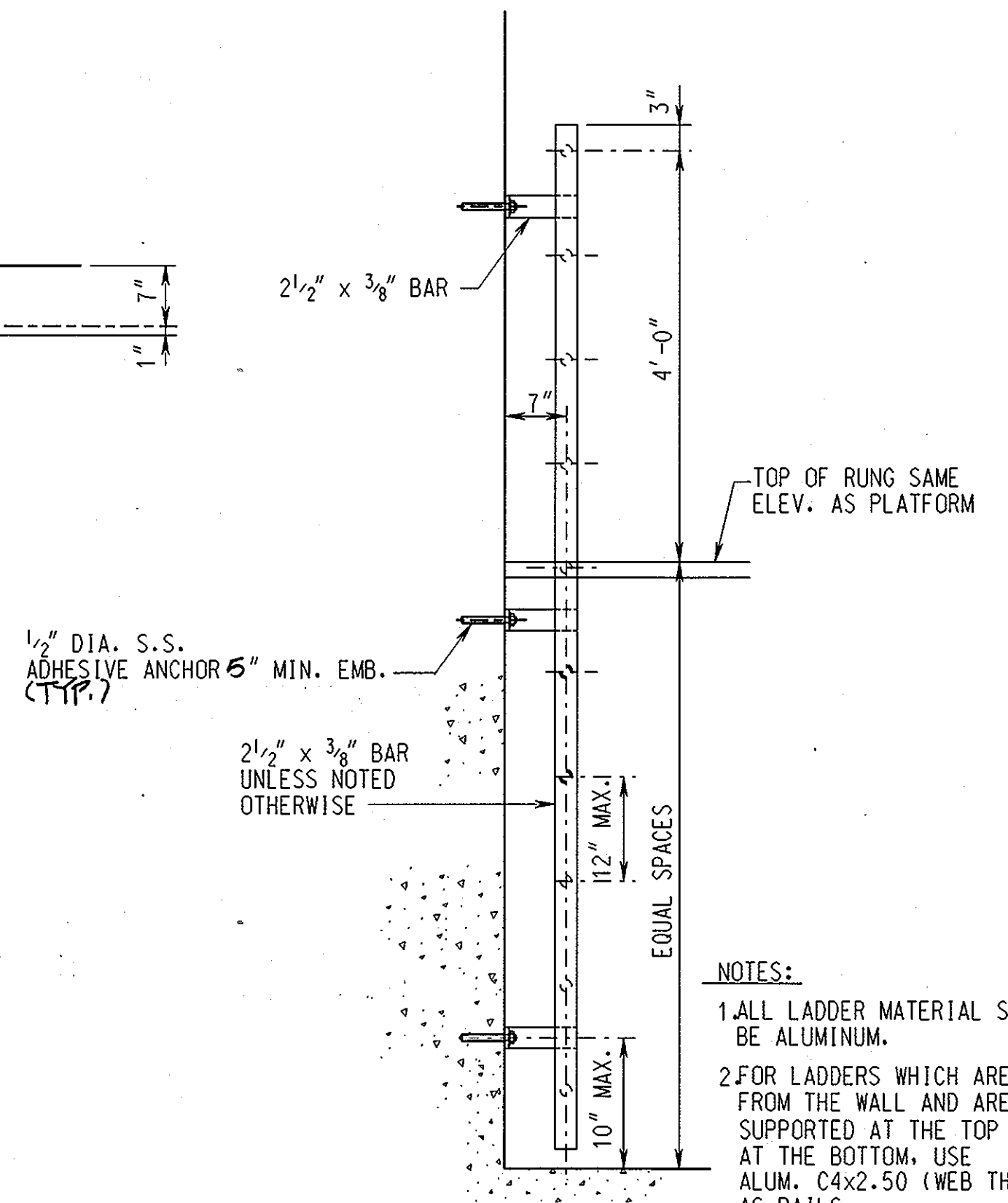
PLAN



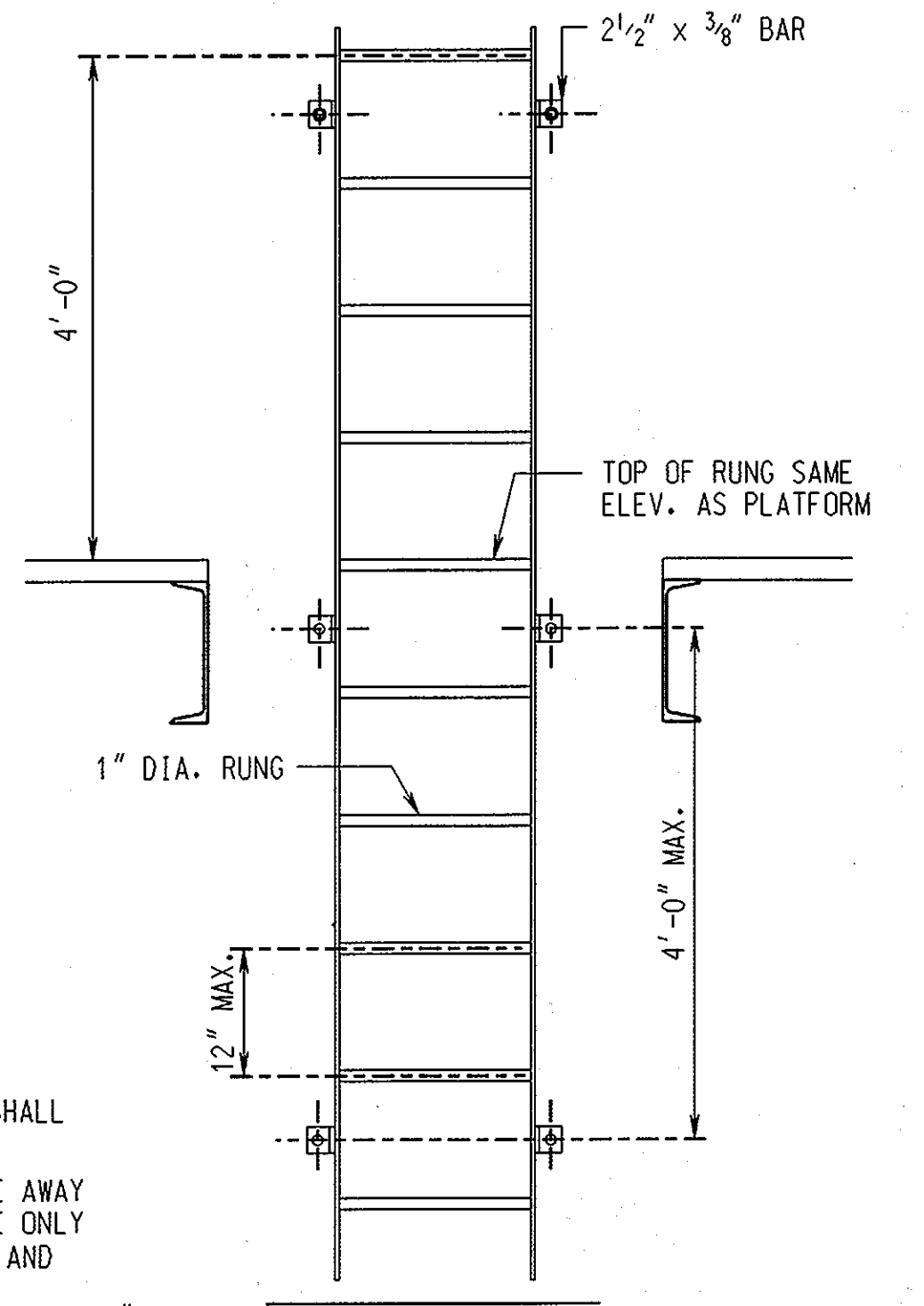
**TYPICAL EDGE ANGLE DETAIL**  
SCALE: NONE



**TYPICAL RUNG DETAIL**  
SCALE: NONE



**TYPICAL LADDER DETAILS**  
SCALE: 3/4" = 1'-0"

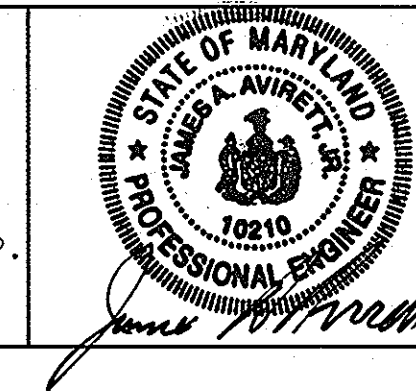


ELEVATION

NOTES:  
1. ALL LADDER MATERIAL SHALL BE ALUMINUM.  
2. FOR LADDERS WHICH ARE AWAY FROM THE WALL AND ARE ONLY SUPPORTED AT THE TOP AND AT THE BOTTOM, USE ALUM. C4x2.50 (WEB THICK. .32") AS RAILS

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.  
Cam J. Lee 1-15-99  
DIRECTOR OF PUBLIC WORKS  
Robert Beninger 1-15-99  
CHIEF, BUREAU OF UTILITIES

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.  
1-15-99  
1-15-99

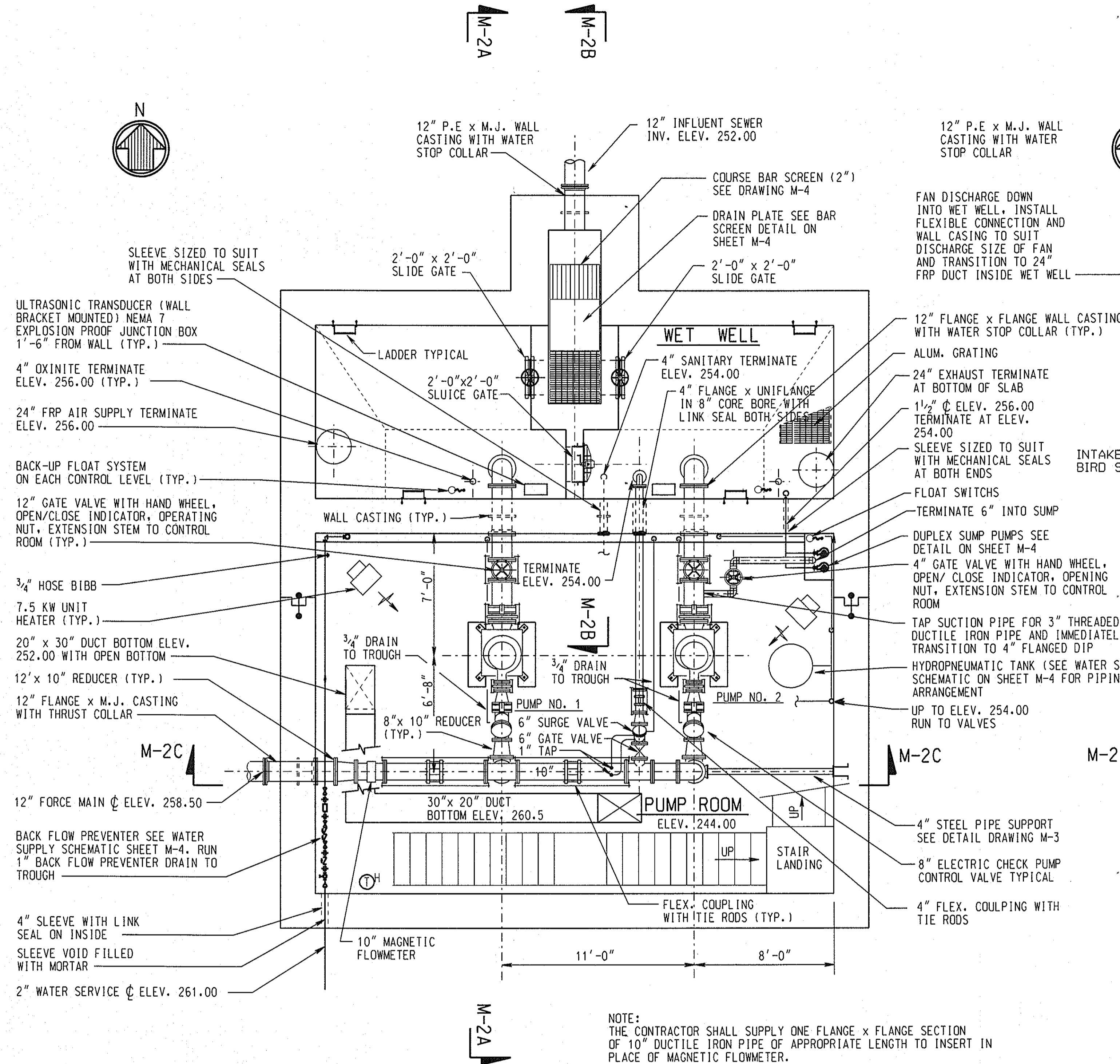


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DRN: LAR	
CHK: JOA	
DATE: 11/12/98	
BY: [Signature]	
NO. [Signature]	
REVISION	
DATE: 8-25-02	

TYPICAL DETAILS  
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

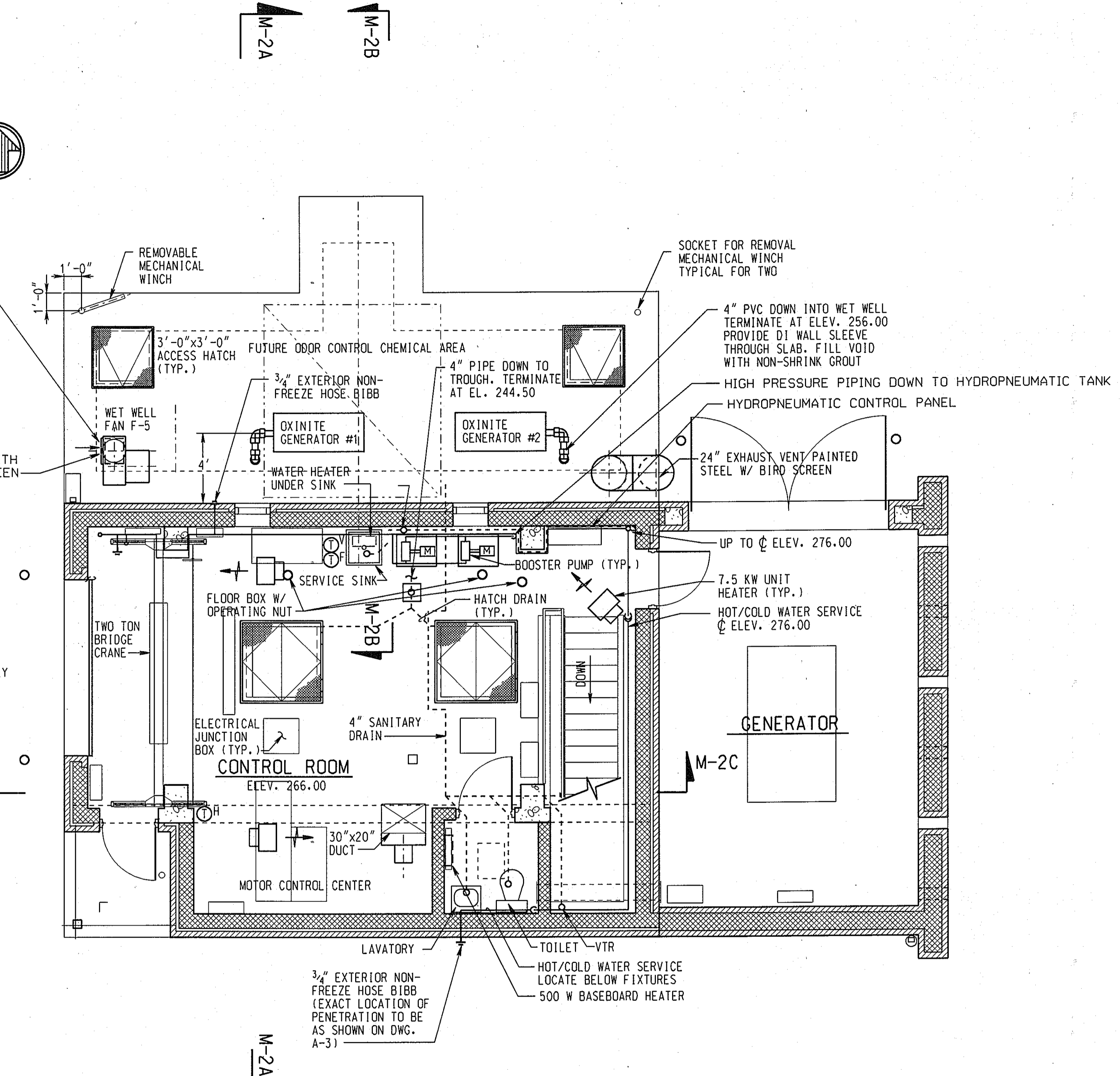
RECORD DRAWING  
11/18/02  
ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 22 OF 36  
NOVEMBER 12, 1998



FLOOR PLAN - PUMP ROOM AND WET WELL

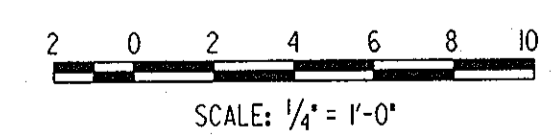
SCALE: 1/4" = 1'-0"



FLOOR PLAN - CONTROL ROOM

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

GRAPHIC SCALES



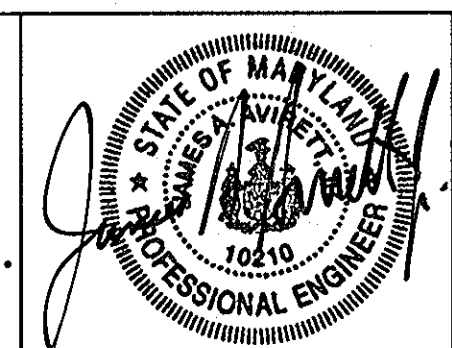
**RECORD DRAWING**  
11/12/02

M-1  
SCALE AS SHOWN  
SHEET 23 OF 36

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.

Director of Public Works: *La...* 1/30/03  
 Chief, Bureau of Engineering: *Paul...* 1/29/03  
 Chief, Bureau of Utilities: *R...* 1-30-03  
 Chief, Utility Design Division: *O...* 1-29-03

PREPARED BY:  
**WR&A**  
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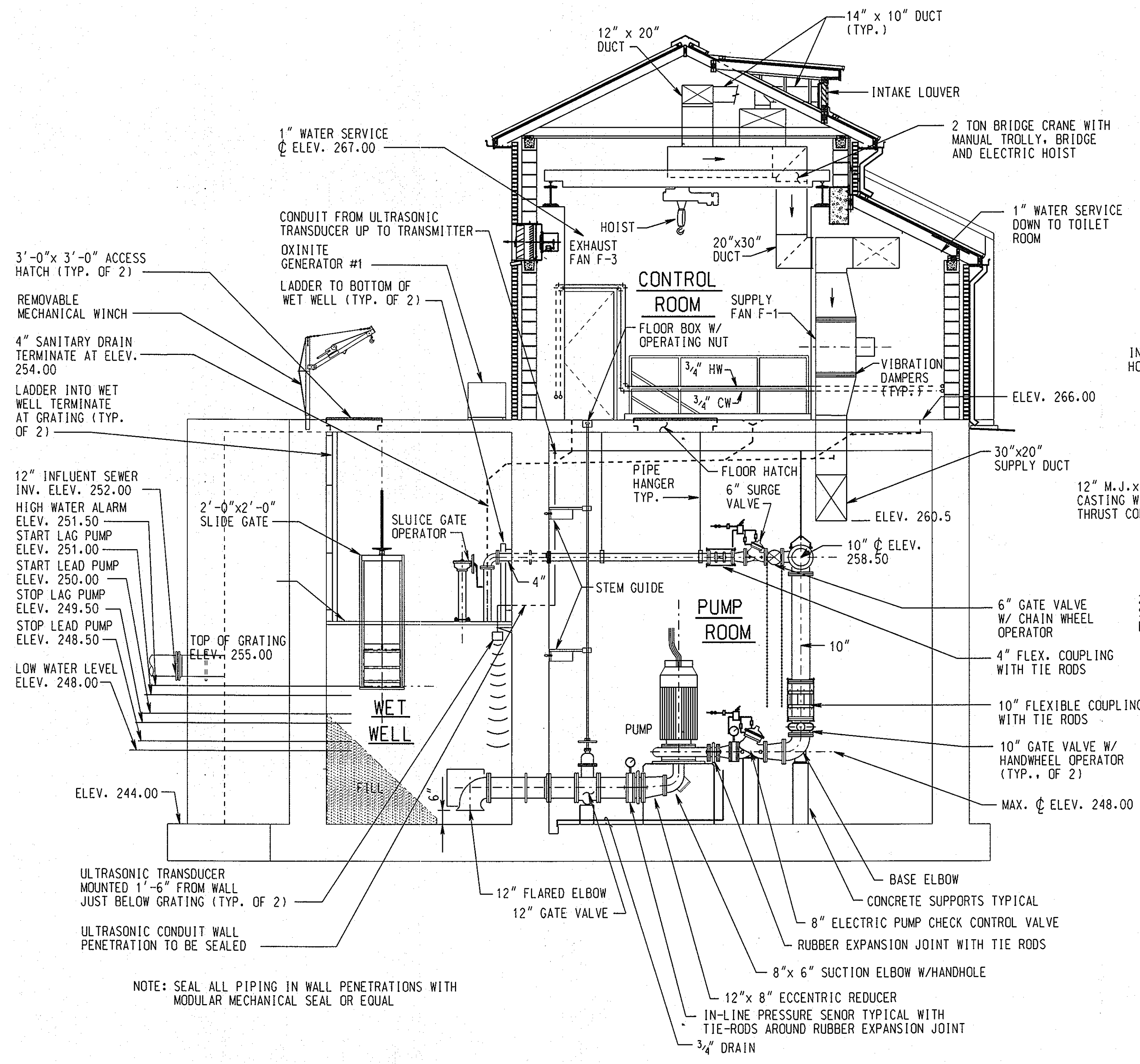
DES: WRD/EJM				
DRN: EJM/GWG				
CHK: JAA				
DATE: 12/09/99	BY:	NO.	REVISION	DATE
			RECORD DRAWING	8/02

PLANS

600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

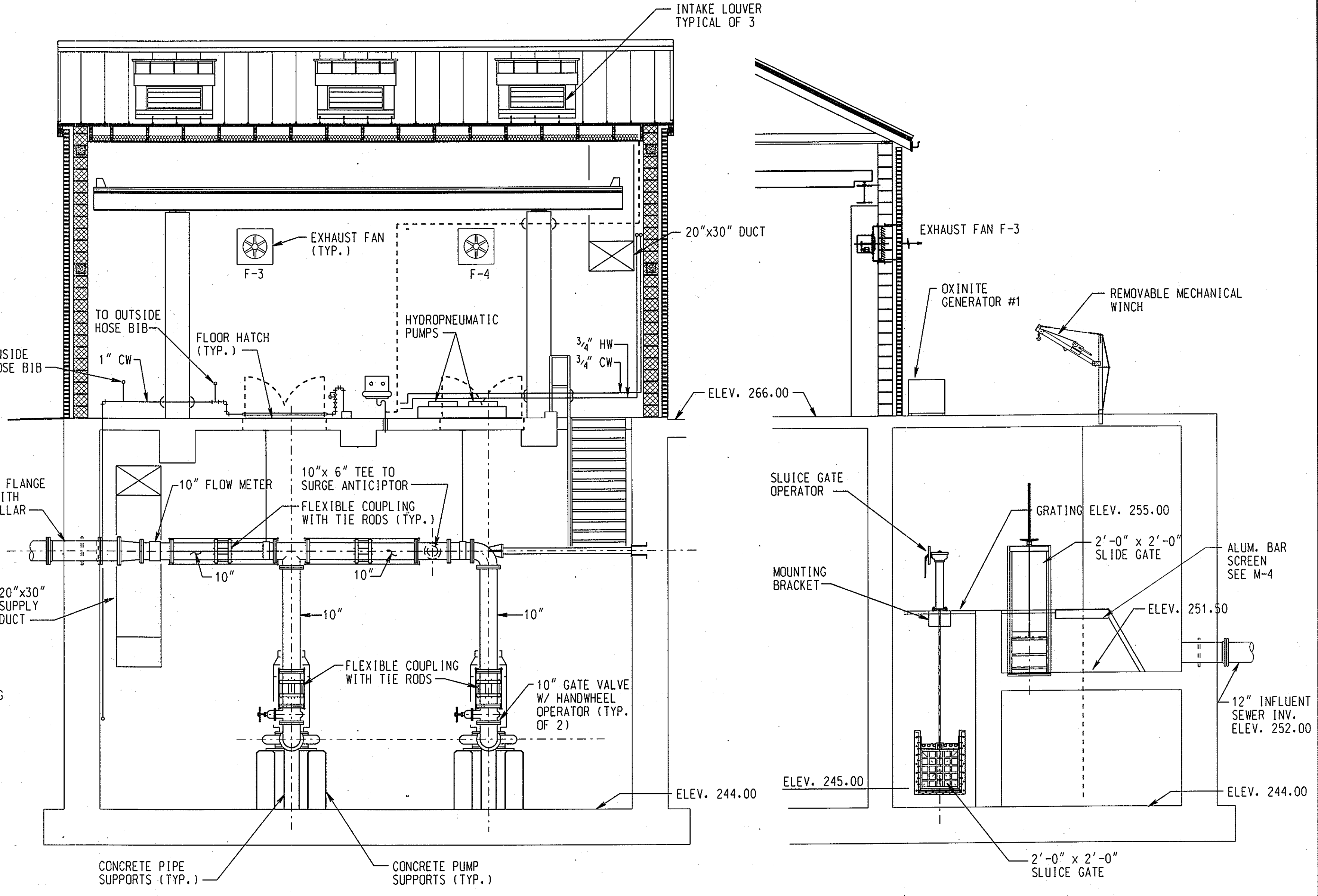
ROCKBURN WASTEWATER PUMPING STATION  
 CAPITAL PROJECT NO. S-6200  
 CONTRACT NO. 10-3695  
 FIRST ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND





SECTION M-2A / M-1

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



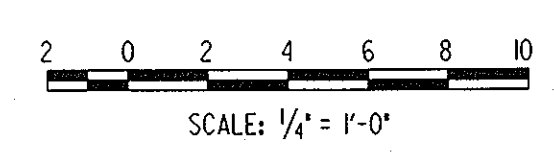
SECTION M-2C / M-1

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

SECTION M-2B / M-1

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

GRAPHIC SCALES

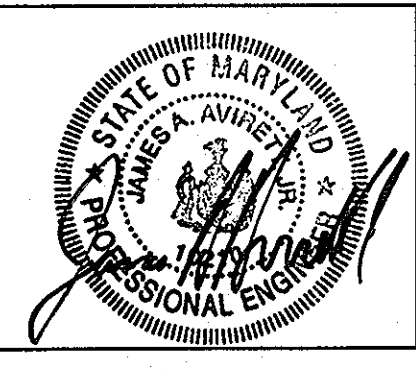


RECORD DRAWING  
11/12/02

M-2

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.  
1/30/03  
1-29-03

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.

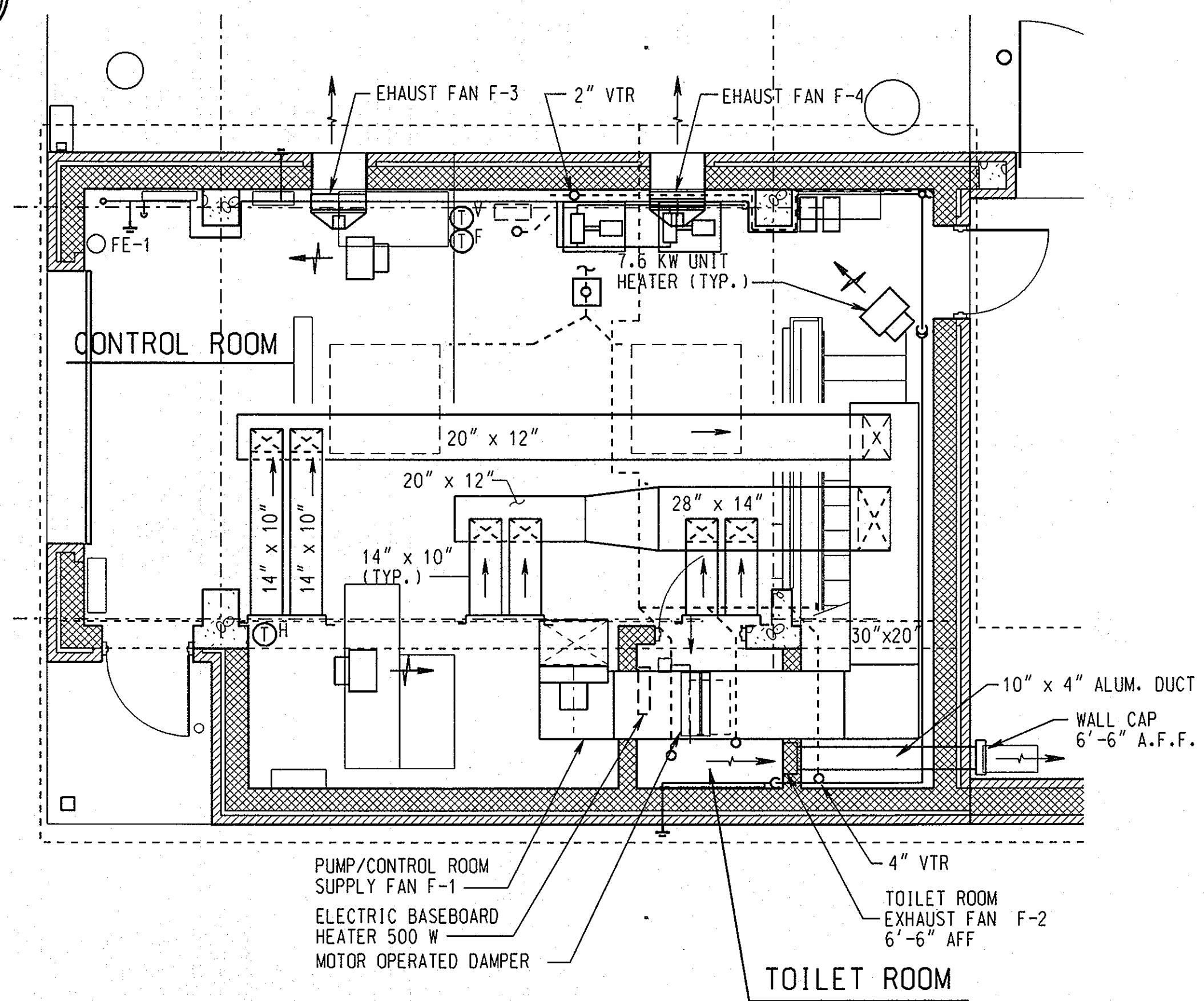
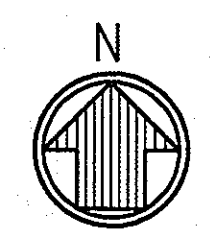


DES :	WRD/EJM				
DRN :	EJM/GWG				
CHK :	JAA				
DATE :	12/09/98				
BY :					
NO. :					
REVISION :					
DATE :					

SECTIONS  
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

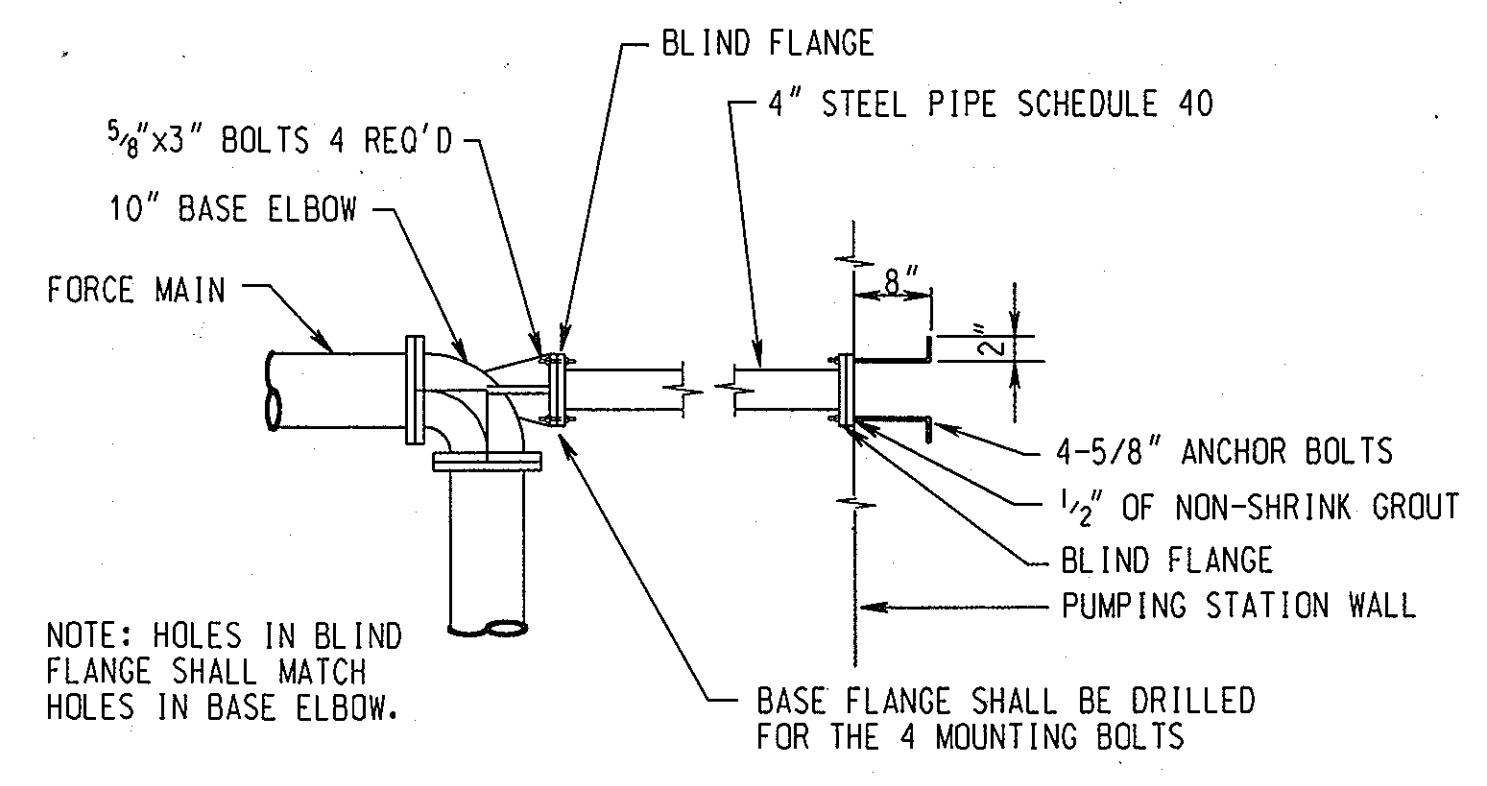
SCALE AS SHOWN  
SHEET 24 OF 36



CONTROL ROOM - HEATING AND VENTILATION PLAN

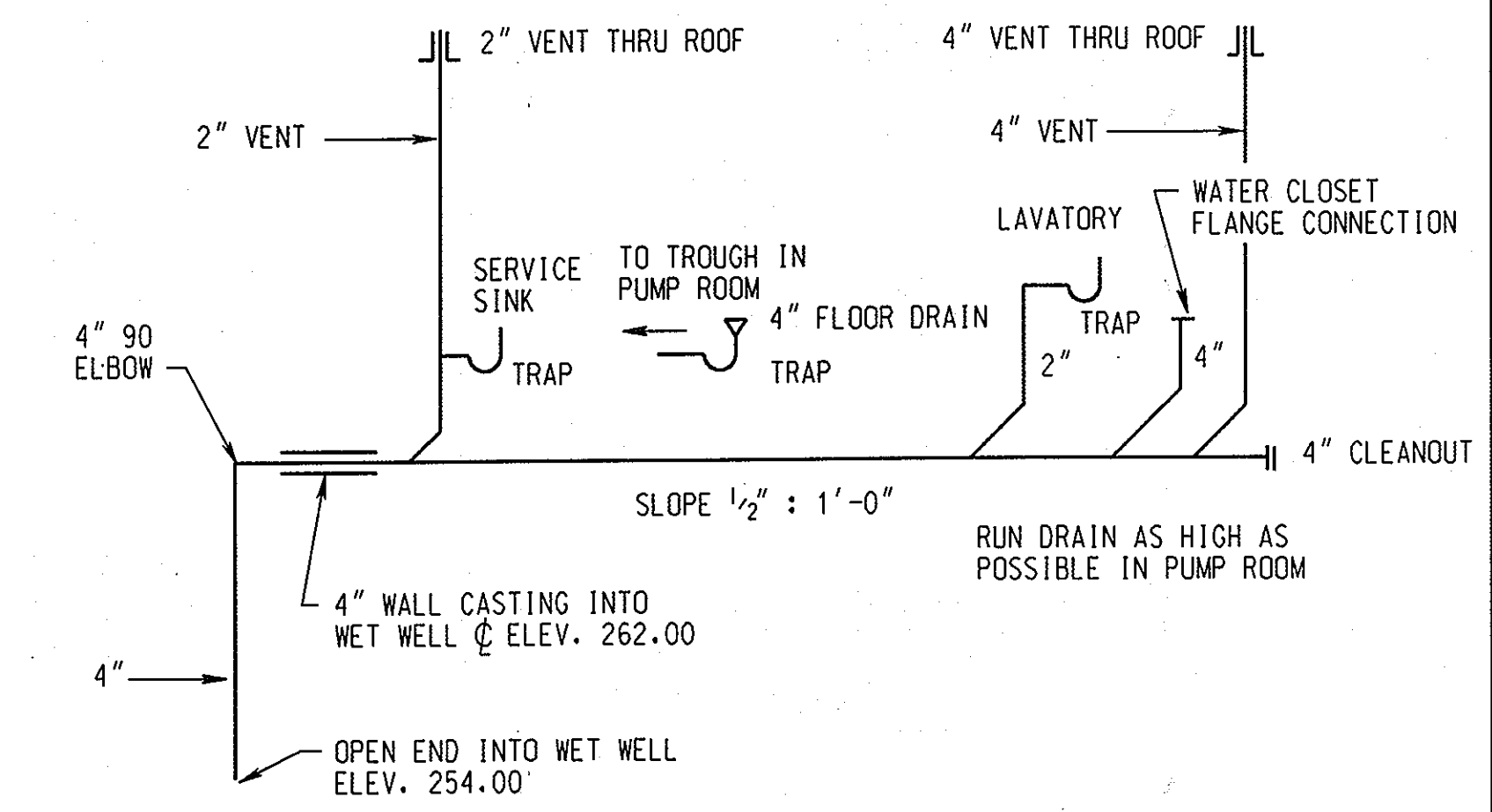
SCALE 1/4" = 1'-0"

FAN SCHEDULE								
UNIT I.D.	TYPE	SERVICE	CFM	S.P. IN W.G.	FAN RPM	MOTOR HP	ELECTRICAL VOLT/PH/Hz	NOTES
F-1	IN-LINE / BELT DRIVE	PUMP / CONTROL ROOM	3,700	0.50	1522	1 1/2	480/3/60	
F-2	CABINET / DIRECT DRIVE	TOILET ROOM EXHAUST	75	0.375	1280	48 W	120/1/60	BACKDRAFT DAMPER WALL CAP
F-3&4	PROPELLER / DIRECT DRIVE	CONTROL ROOM EXHAUST	1,800	0.250	1725	1/4	120/1/60	BACKDRAFT DAMPER
F-5	UTILITY SET / BELT DRIVE	WET WELL	3,487	0.500	640	1 1/2	480/3/60	BIRDSCREEN INLET EXP. PROOF/CORR. PROTECT.



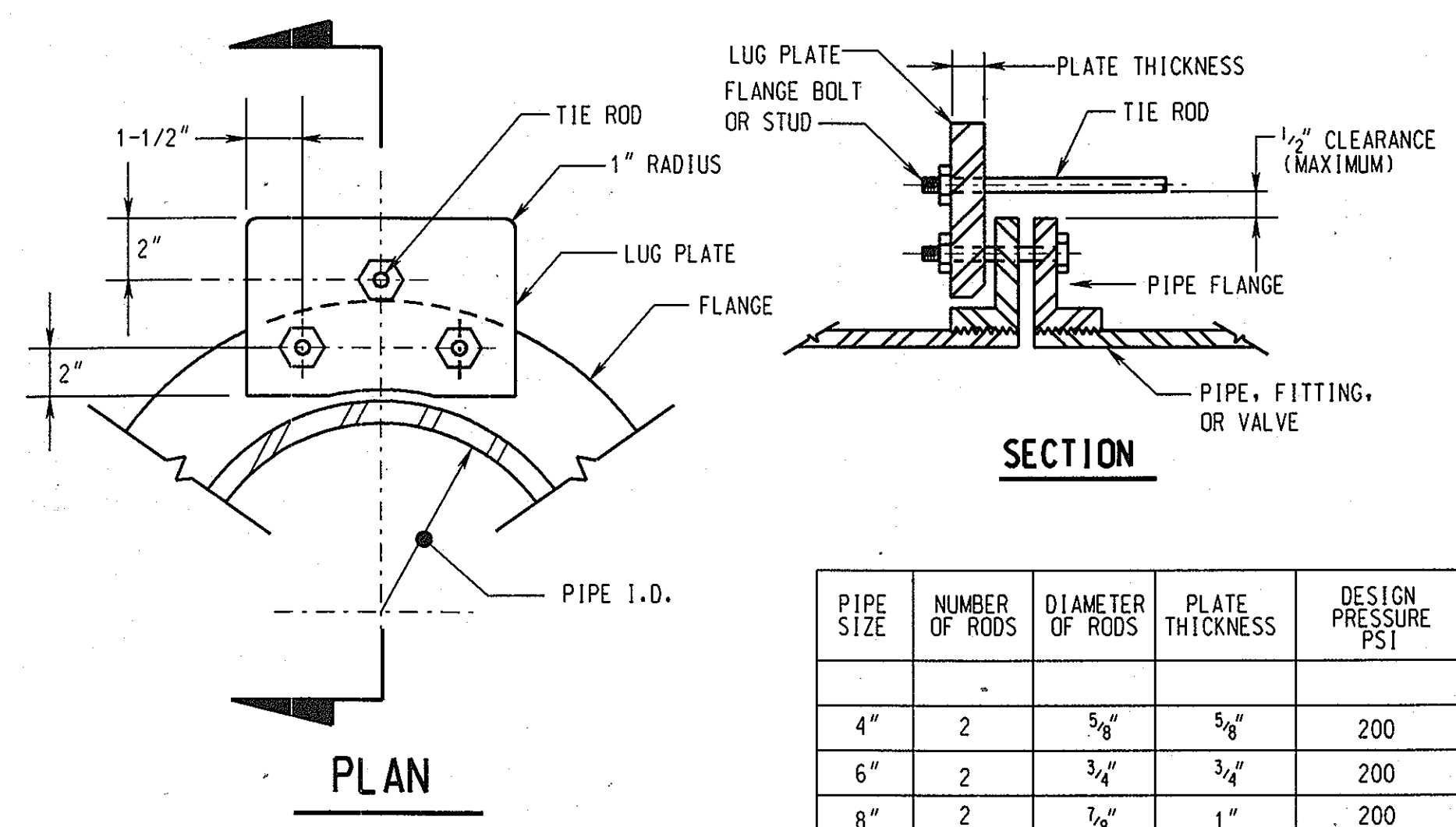
DETAIL 4" PIPE SUPPORT

NO SCALE



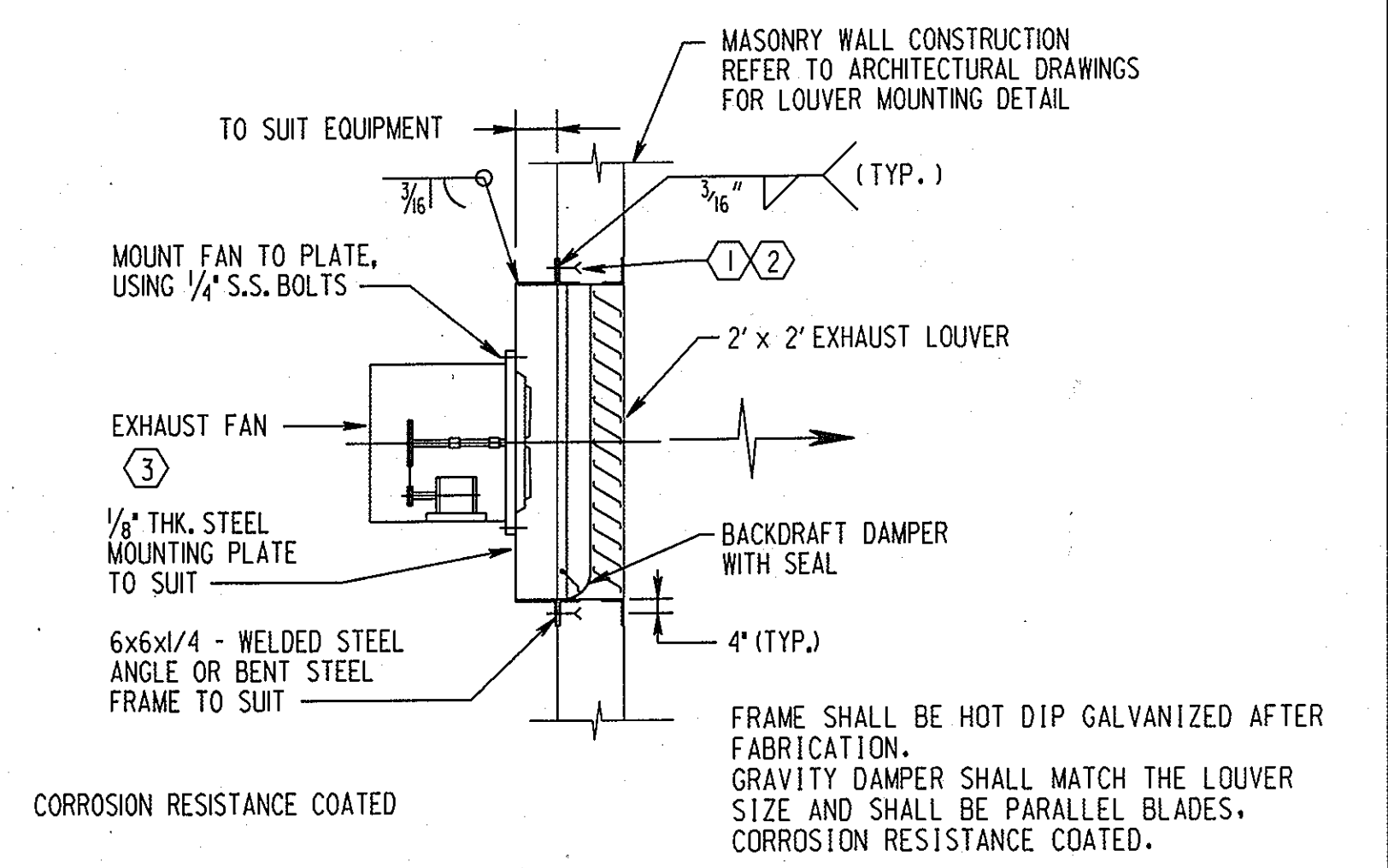
SANITARY WASTE & DRAIN PIPING RISER DIAGRAM

NO SCALE



HARNESING DETAIL

NO SCALE

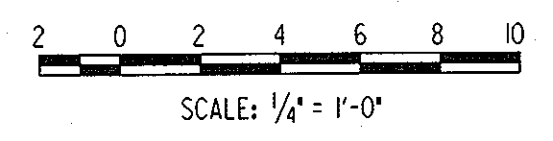


WALL EXHAUST FAN DETAIL

NO SCALE

- ① FOR BLOCK WALL ANCHORING USE HILTI (STD. HIT) ADHESIVE ANCHOR FOR HOLLOW MASONRY, 1/2" DIA. S.S. WITH 6-INCH EMBEDMENT, OR APPROVED EQUAL SPACED AT 12-INCHES ON-CENTER.
- ② FOR CONCRETE WALL ANCHORING USE 1/2" INCH DIA. S.S. EXPANSION BOLTS WITH 6-INCHES EMBEDMENT AT 12-INCHES ON CENTER.
- ③ BELT DRIVEN FAN SHALL BE FURNISHED WITH MOTOR/BELT GUARD PROTECTIVE SCREENS.

GRAPHIC SCALES

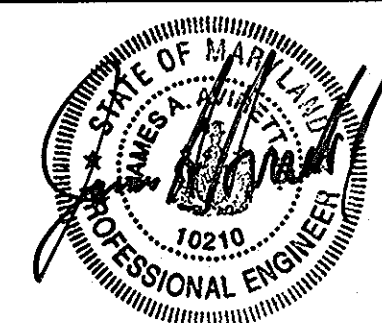


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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.

Director of Public Works: *Robert J. Seaman* 1/29/03  
 Chief, Bureau of Engineering: *Robert J. Seaman* 1/29/03  
 Chief, Bureau of Utilities: *Robert J. Seaman* 1-30-03  
 Chief, Utility Design Division: *Robert J. Seaman* 1-29-03

PREPARED BY:  
**WR&A**  
 Whitman, Reardon and Associates, LLP.

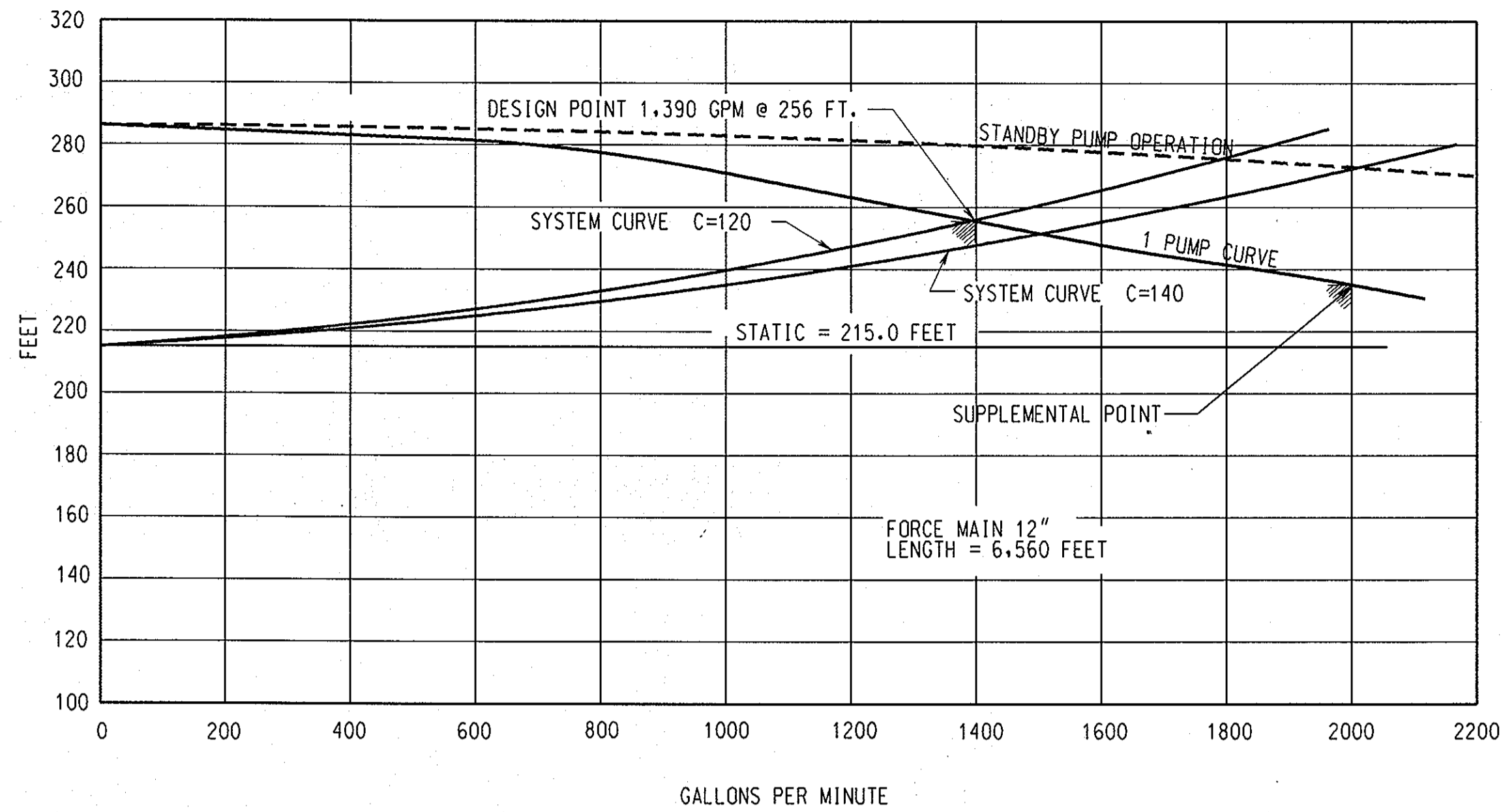


DES: WRD/EJM			
DRN: EJM/GWG			
CHK: JAA			
DATE: 12/09/98			
BY: NO.	REVISION	DATE	

PLAN AND DETAILS

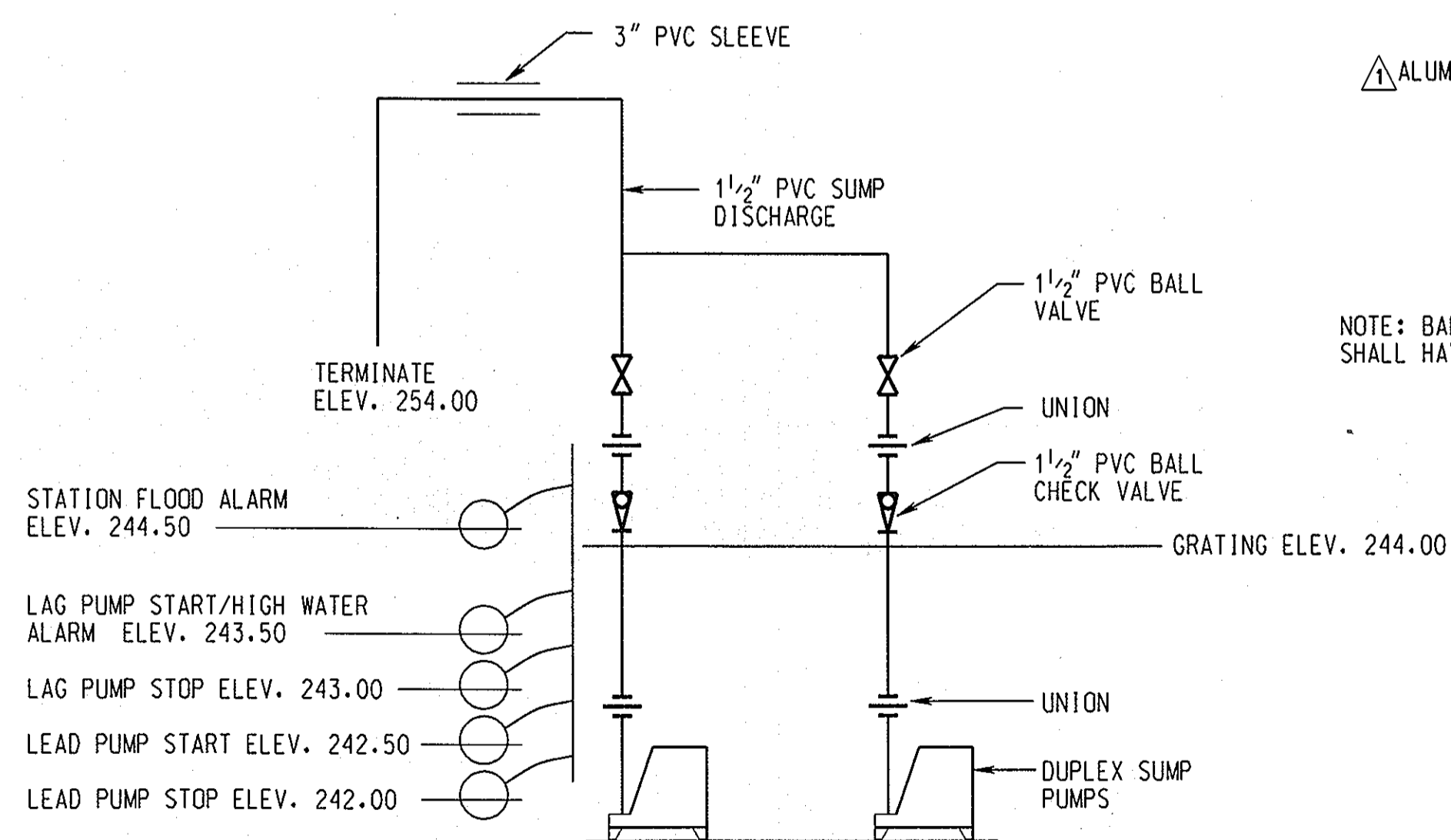
ROCKBURN WASTEWATER PUMPING STATION  
 CAPITAL PROJECT NO. S-6200  
 CONTRACT NO. 10-3695  
 FIRST ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

M-3  
 SCALE AS SHOWN  
 SHEET 25 OF 36

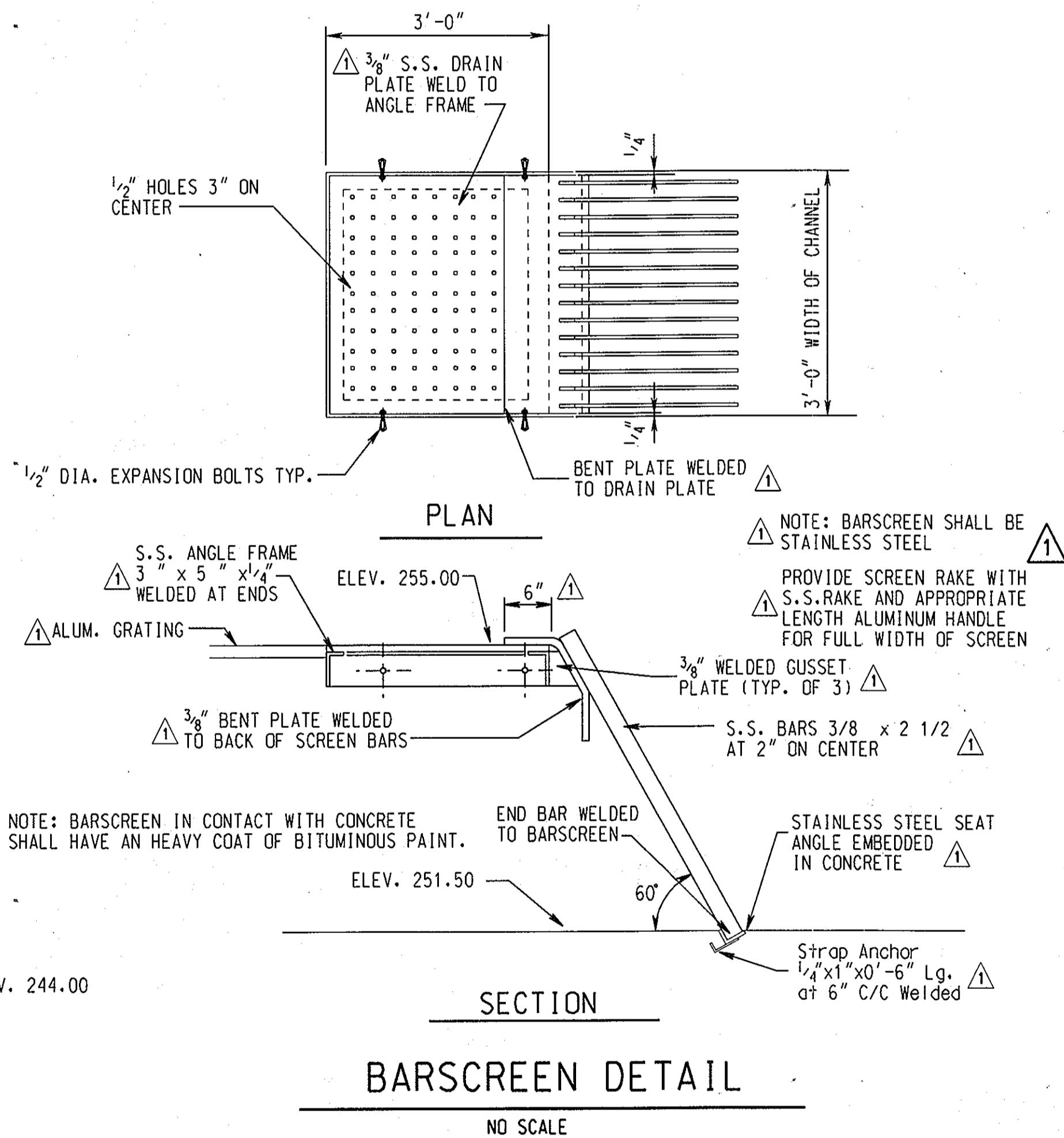


PUMP CRITERIA	
MANUFACTURER.....	CORNELL PUMP COMPANY OR KSB
MODEL.....	6NHTR OR EQUAL OF KSB
DESIGN POINT CAPACITY (MIN.).....	1,390 GPM
DESIGN POINT TOTAL HEAD (MIN.).....	256 FT.
DESIGN POINT EFFICIENCY (MIN.).....	67 PERCENT
SUPPLEMENTARY POINT CAPACITY.....	2,000 GPM
SUPPLEMENTARY POINT TOTAL HEAD.....	235 FEET
SHUTOFF HEAD (MIN.).....	285 FEET
SUPPLEMENTARY POINT EFFICIENCY (MIN.).....	PERCENT
DESIGN POINT NPSHR (MAX.).....	16 FEET
SUPPLEMENTARY POINT NPSHR (MAX.).....	21 FEET
SUCTION SIZE (MIN.).....	6 INCHES
DISCHARGE SIZE (MAX.).....	6 INCHES
MOTOR HORSEPOWER (MAX.).....	200
PUMP/MOTOR (MAX.).....	1800 RPM
SOILS PASSAGE (MIN.).....	3 INCHES DIAMETER

**SYSTEM CHARACTERISTICS**

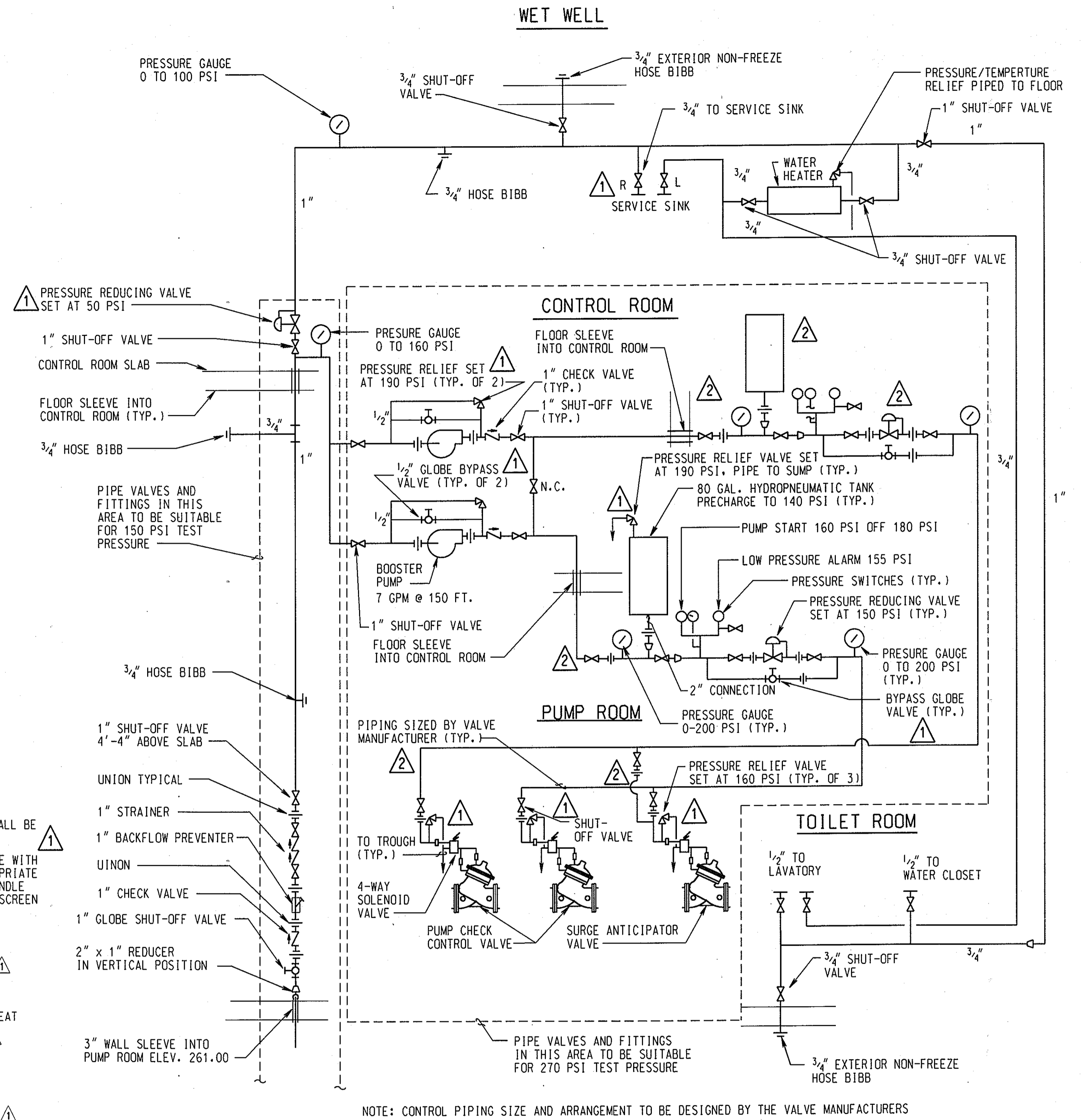


NOTE: ALL VALVES ARE TO BE LOCATED ABOVE GRATING  
**SUMP PUMP PIPING DIAGRAM**  
 NO SCALE



**BARSCREEN DETAIL**

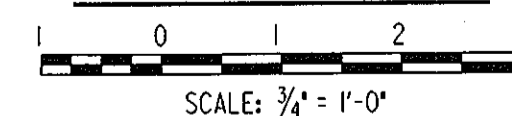
NO SCALE



**WATER SUPPLY SCHEMATIC**

NO SCALE

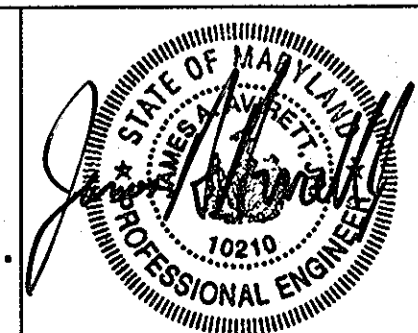
**GRAPHIC SCALES**



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND.

Director of Public Works: *Jan J. Sw* 1/30/03  
 Chief, Bureau of Engineering: *Robert J. Segan* 1/29/03  
 Chief, Bureau of Utilities: *Robert J. Segan* 1/30/03  
 Chief, Utility Design Division: *Debra J. Sw* 1-29-03

PREPARED BY:  
**WR&A**  
 Whitman, Reardon and Associates, LLP.



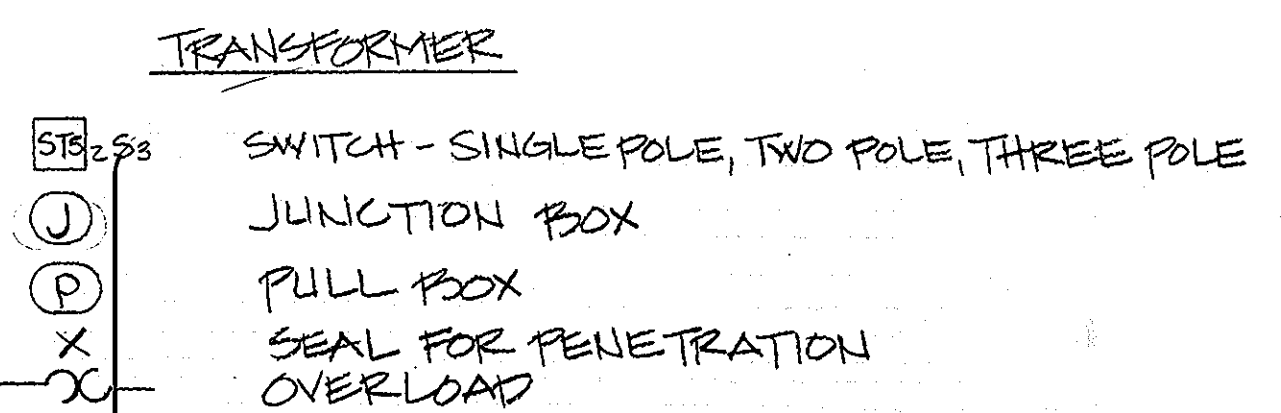
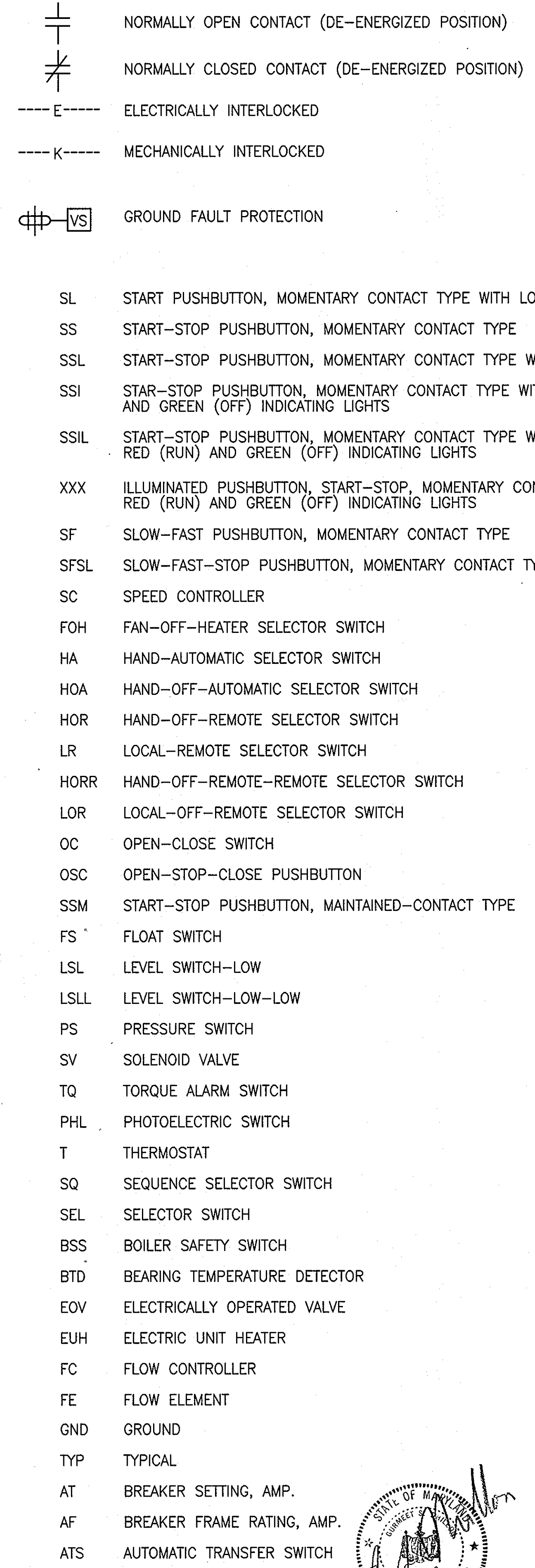
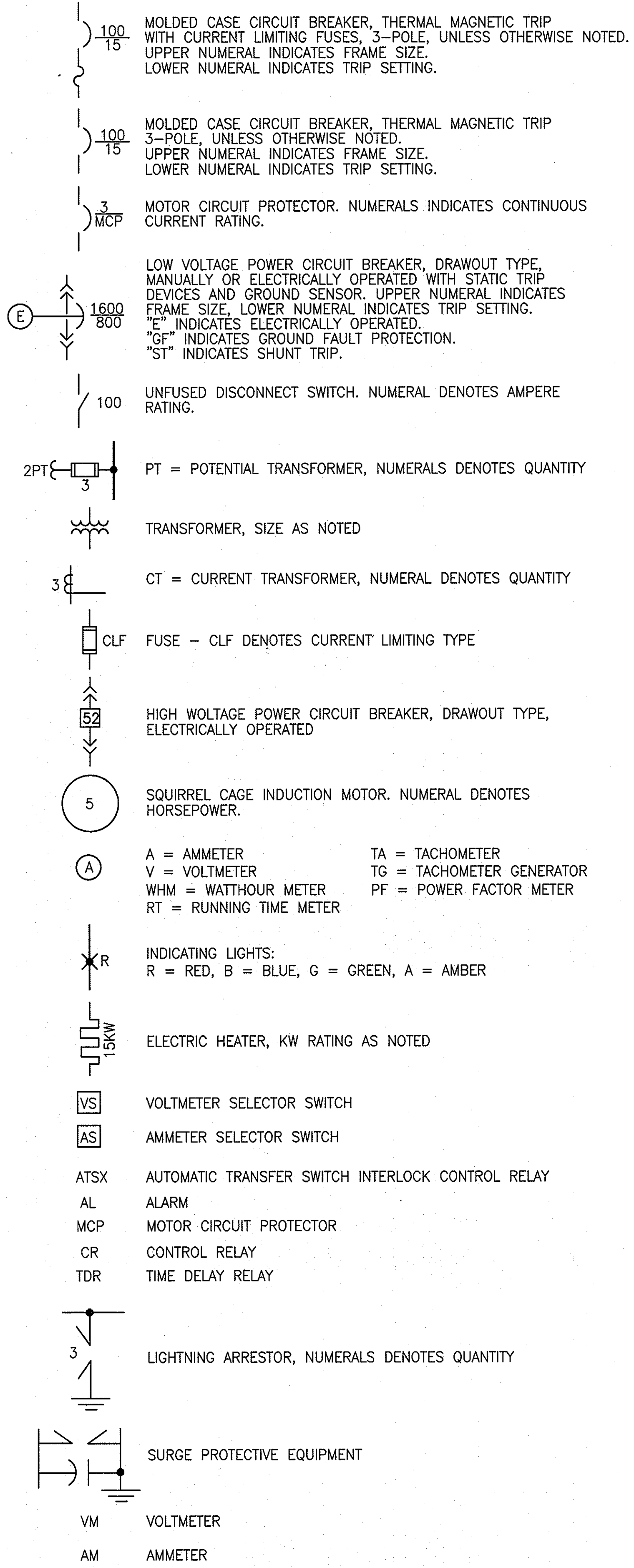
DES: WRD/EJM			
DRN: EJM/GWG			
CHK: JAA			
DATE: 12/09/98			
BY: NO.	REVISION	DATE	8/02

DETAILS  
 600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

ROCKBURN WASTEWATER PUMPING STATION  
 CAPITAL PROJECT NO. S-6200  
 CONTRACT NO. 10-3695  
 FIRST ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

11/10/02  
**RECORDED**  
**DRAWING**  
 M-4  
 SCALE AS SHOWN  
 SHEET  
 26 OF 36

**ELECTRICAL LEGEND:  
FOR SINGLE LINE DIAGRAMS**



**ABBREVIATIONS:**

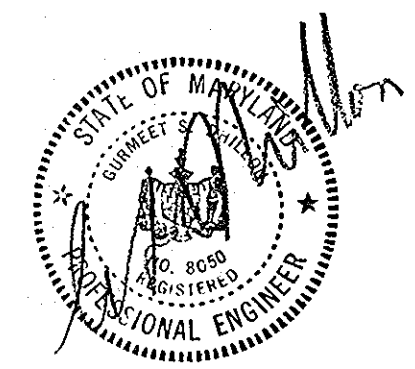
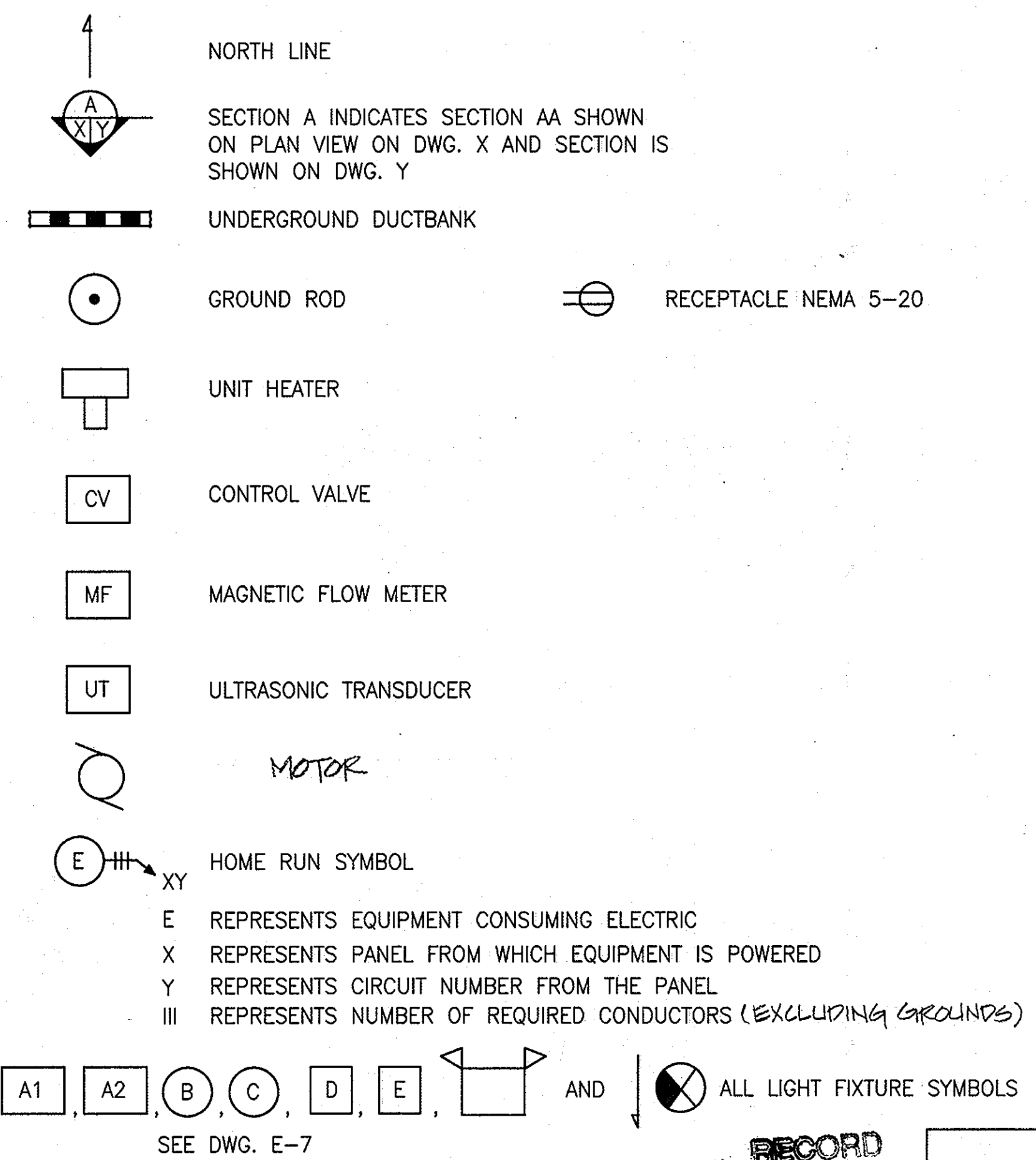
- GRS** GALVANIZED RIGID STEEL  
**XFMR** TRANSFORMER  
**RTU** REMOTE TERMINAL UNIT  
**HMI** HUMAN MACHINE INTERFACE  
**FIT** FLOW INDICATING TRANSMITTER  
**FT** FLOW TRANSMITTER  
**HE** HEAT EXCHANGER  
**HC** HYDROPNEUMATIC CONTROL PANEL  
**HLS** HIGH LEVEL SHUTDOWN  
**TG** TACHOMETER GENERATOR  
**MICC** MAIN INSTRUMENTATION CONTROL CUBICLE  
**LC** LEVEL CONTROLLER  
**LE** LEVEL ELEMENT  
**LI** LEVEL INDICATOR  
**LIT** LEVEL INDICATING TRANSMITTER  
**LLS** LOW LEVEL SHUTDOWN  
**LT** LEVEL TRANSMITTER  
**MCC** MOTOR CONTROL CENTER  
**MDC** MAGNETIC DRIVE CONTROLLER  
**MTP** MOTOR THERMAL PROTECTOR (BUILT-IN)  
**MOV** MOTOR OPERATED VALVE  
**PM** PILOT MOTOR  
**RC** RATE CONTROLLER  
**RB** RESET BUTTON  
**SC** SPEED CONTROLLER  
**ECH** ELECTRIC CONVECTION HEATER  
**OTP** OVER TEMPERATURE PROTECTION  
**EHC** ELECTRIC HEATING COIL  
**DO** DISSOLVED OXYGEN  
**SIC** SPEED INDICATING CONTROLLER  
**SI** SPEED INDICATOR  
**FLS** FLOW SWITCH  
**SCR** SILICON CONTROL RECTIFIER  
**MDC** MAGNETIC DRIVE COUPLING  
**SWSV** SEAL WATER SOLENOID VALVE  
**TM** TIMER  
**HOS** HAND-OFF-STANDBY SELECTOR SWITCH  
**LOC** LOW OIL CONTACT  
**HTR** SPACE HEATER  
**A/M** AUTOMATIC MANUAL SWITCH  
**HOAS** HAND-OFF-AUTOMATIC-STANDBY SELECTOR SWITCH  
**FIC** FLOW INDICATING CONTROLLER  
**PVC** POLYVINYL CHLORIDE  
**FF** FINISHED FLOOR  
**EL** ELEVATION  
**GFI** GROUND FAULT INTERRUPTER  
**WP** WEATHERPROOF - NEMA 4X COVER

MOUNT THERMOSTAT & FREEZESTATS 5'-0" AFF

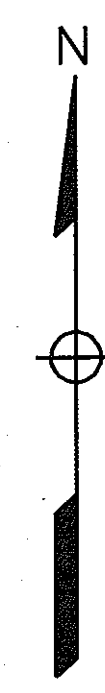
**ELECTRICAL GENERAL NOTES:**

- ALL CONDUITS AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF NATIONAL ELECTRICAL CODE (NEC).
- CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. EXPOSED CONDUITS SHALL BE INSTALLED PARALLEL TO BEAMS AND WALLS.
- CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTIONS TO MOTORS AND OTHER EQUIPMENT.
- NO CONDUIT SMALLER THAN 3/4" PIPE SIZE NOR WIRE SMALLER THAN No.12 A.W.G. SHALL BE USED UNLESS OTHERWISE NOTED.
- SWITCHES SHALL BE MOUNTED 4'-6" ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED. RECEPTACLES SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED, EXCEPT RECEPTACLES IN OFFICES OR AREAS WITH HUNG CEILINGS SHALL BE MOUNTED 1'-6" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
- ALL SURFACE MOUNTED PANELS AND PANELBOARDS ON THE INSIDE OF EXTERIOR WALLS ABOVE GRADE, OR IN OTHER LOCATIONS CONSIDERED AS DAMP, SHALL BE MOUNTED SO AS TO MAINTAIN A 1/4" AIR SPACE BETWEEN THE ENCLOSURE AND THE WALL.
- ALL PANELBOARDS SHALL BE MOUNTED SO THAT THE DISTANCE FROM THE TOP CIRCUIT BREAKER OPERATING HANDLE TO THE FLOOR SHALL NOT EXCEED 6'-6".
- OUTLET, SWITCH, JUNCTION, PULL AND TERMINAL BOXES SHALL BE PROVIDED IN NEMA ENCLOSURES AS INDICATED ON THE EQUIPMENT ENCLOSURE SCHEDULE OR AS SPECIFIED.
- ALL CONDUIT RUNS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION OR EXPANSION AND DEFLECTION TYPE FITTINGS AS REQUIRED. FOR EXACT LOCATION OF EXPANSION JOINTS SEE STRUCTURAL DRAWINGS. VERIFY EXISTING JOINTS BY FIELD MEASUREMENTS.
- ALL MOTOR STARTER CONTROL TRANSFORMERS SHALL BE SIZED TO PROVIDE SUFFICIENT VOLT-AMPERE CAPACITY FOR OPERATION OF ALL ELECTRICAL DEVICES ON THE SECONDARY SIDE OF TRANSFORMER CIRCUIT, IN ADDITION TO THE STARTER COIL, SUCH AS RELAYS, TIMERS, MOTOR HEATERS, PRESSURE SWITCHES, ETC.
- ALL TELEPHONE TERMINAL CABINETS SHALL BE MINIMUM OF 24" HIGH BY 12" WIDE BY 4" DEEP AND SHALL HAVE A FULL SIZE 3/4" PLYWOOD BACKBOARD MOUNTED WITHIN. REFER TO THE NOTES ON SHEET E-7 FOR THE NEMA TYPE ENCLOSURE REQUIRED.

**ELECTRICAL PLAN LEGEND**

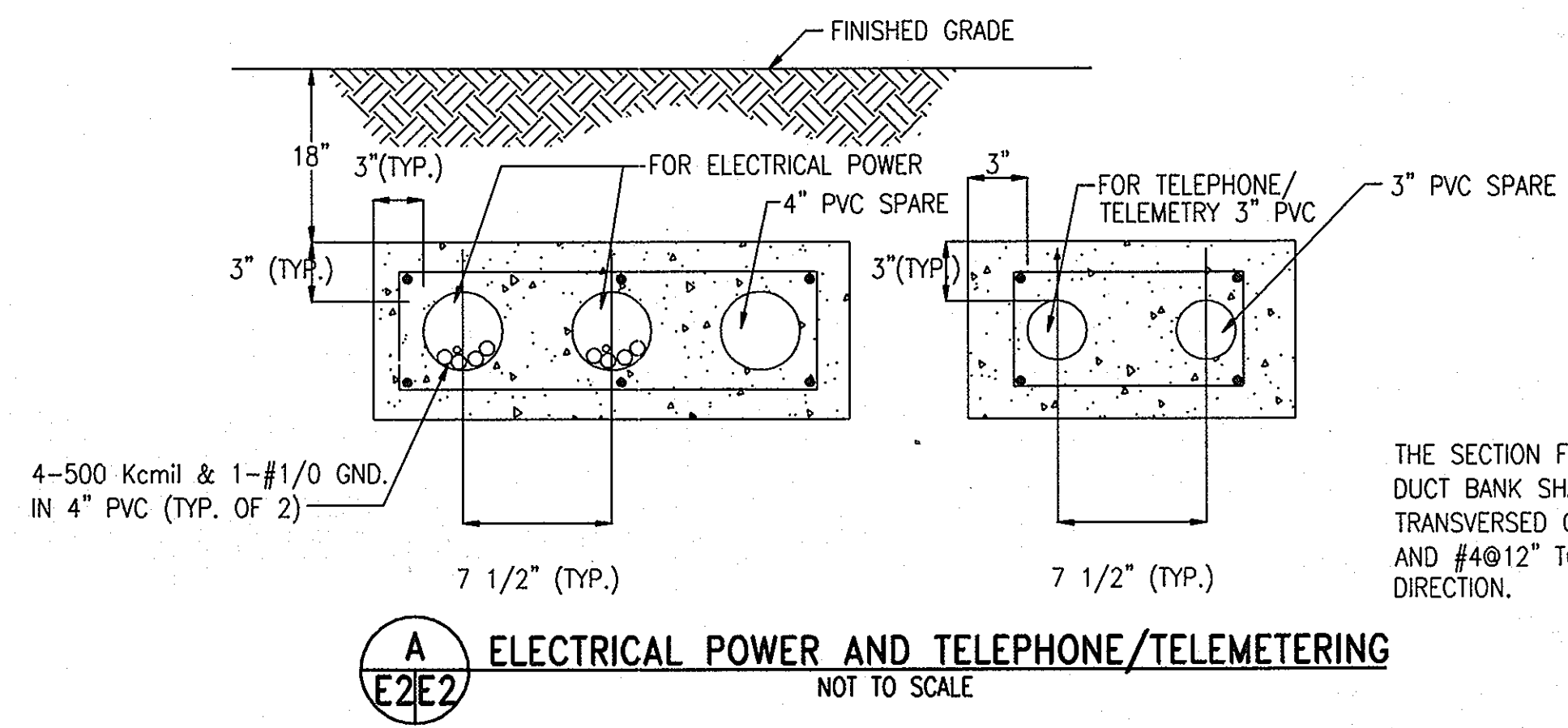
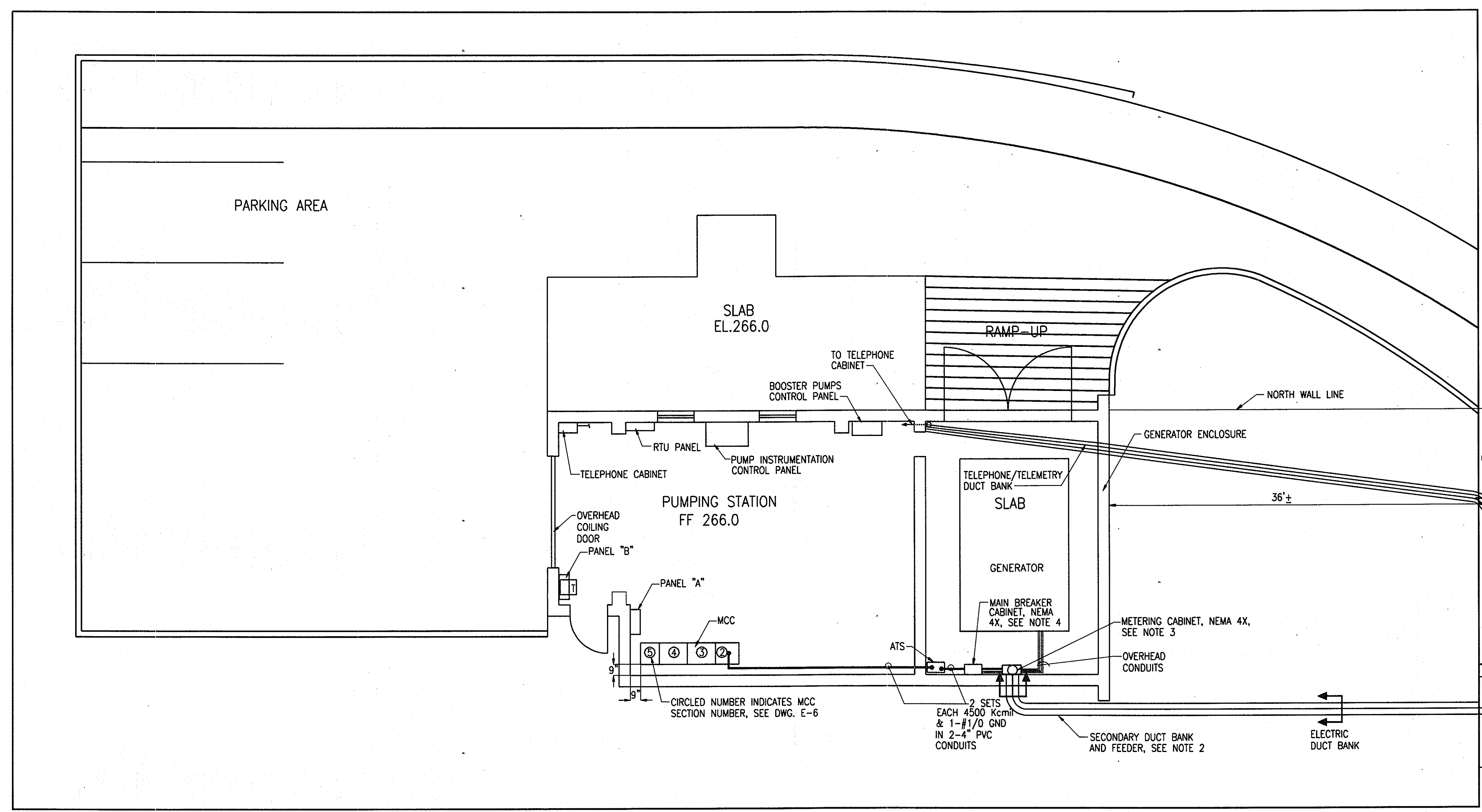


DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. DIRECTOR OF PUBLIC WORKS: <i>Robert J. Berman</i> 1/15/99 CHIEF, BUREAU OF UTILITIES: <i>Robert J. Berman</i> 1-15-99 CHIEF, WATER AND SEWER DESIGN: <i>Robert J. Berman</i> 1-15-99		PREPARED BY: <b>WR&amp;A</b> Whitman, Reardon and Associates, LLP.		DHILLON ENGINEERING, INC. 11400 CROWBRIDGE DRIVE, SUITE D OWINGS MILLS, MD 21117		DES: BJD DRN: VL/DKP CHK: GED DATE: 11/11/98		BY: <i>[Signature]</i> NO.: <i>[Signature]</i> REVISION: <i>[Signature]</i> DATE: 8-23-02		<b>ELECTRICAL LEGEND, ABBREVIATIONS AND GENERAL NOTES.</b>		ROCKBURN WASTEWATER PUMPING STATION CAPITAL PROJECT NO. S-6200 CONTRACT NO. 10-3695 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 27 OF 36
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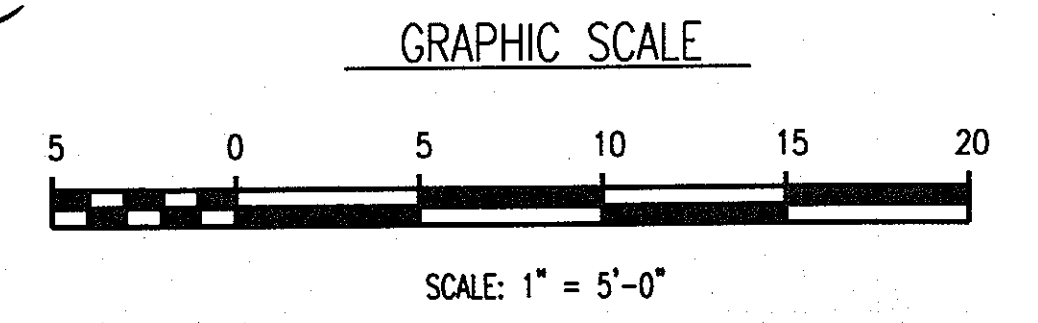
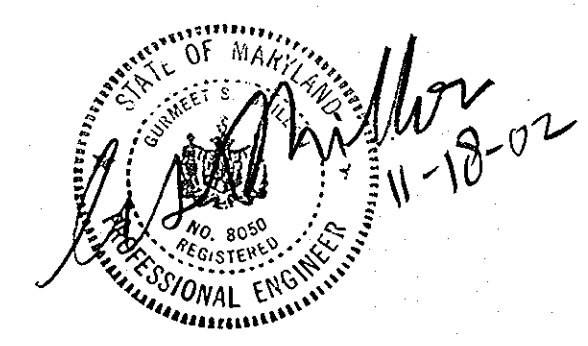


**NOTES:**

- ① TRANSFORMER PAD. CONTRACTOR TO COORDINATE DESIGN OF CONCRETE PAD WITH BG&E AND PROVIDE COMPLETE CONCRETE PAD.
- ② CONTRACTOR TO PROVIDE DUCT BANK AS SHOWN ON THIS DRAWING. BG&E TO INSTALL PRIMARY AND SECONDARY FEEDERS THROUGH THE DUCT BANK.
- ③ METERING CABINET SHALL BE NEMA 4X, AS APPROVED BY BG&E, SHALL BE PROVIDED UNDER THIS CONTRACT. ALL METERING EQUIPMENT, LOCATED IN THE METERING CABINET SHALL BE PROVIDED, INSTALLED AND TESTED BY BG&E. CABINET MAY BE SET AT THE GENERATOR ROOM SLAB ELEVATION OR WALL MOUNTED.
- ④ MAIN BREAKER CABINET SHALL BE NEMA 4X, TO BE WALL MOUNTED.
- ⑤ SEE DRAWING C-1 FOR LIMITS OF CONSTRUCTION FOR TELEPHONE AND PRIMARY FEEDER, PRIMARY AND SECONDARY FEEDER BY BGE.



**PLAN**  
SCALE: 1" = 5'-0"



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.

*[Signature]* 1/20/03  
DIRECTOR OF PUBLIC WORKS  
DATE

*[Signature]* 1-20-03  
CHIEF, BUREAU OF ENGINEERING  
DATE

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.

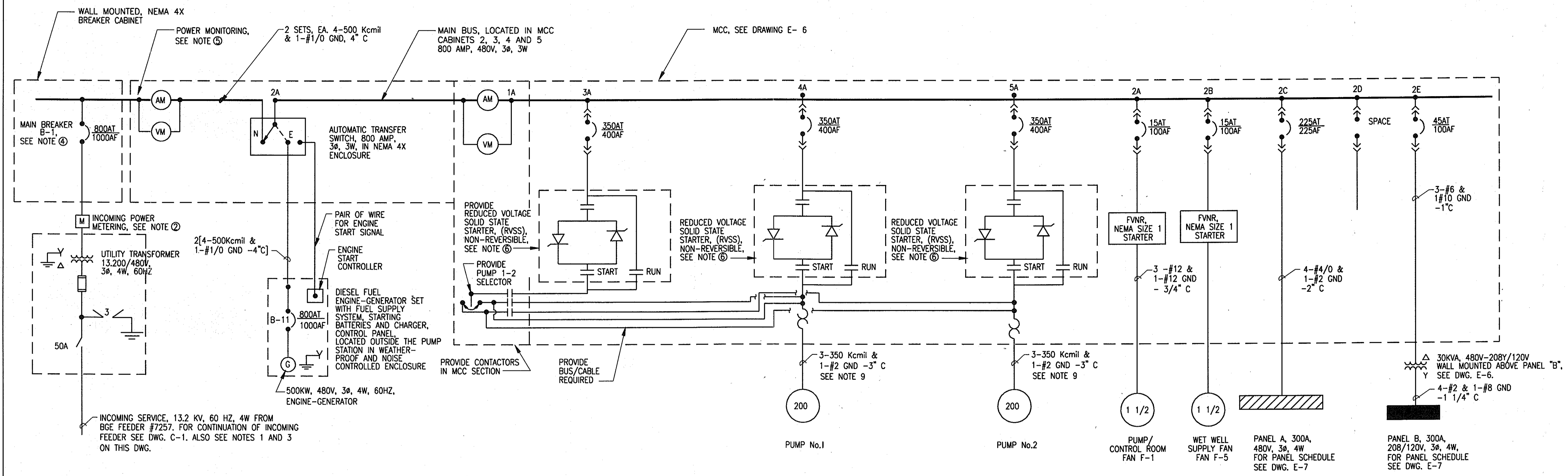
DHILLON ENGINEERING, INC.  
11400 CROWBRIDGE DRIVE, SUITE D  
OWINGS MILLS, MD 21117

DES: BJD					
DRN: [Signature]					
CHK: GED					
DATE: 11/11/98					
BY: [Signature]	NO.	REVISION	DATE	600' SCALE MAP NO.	BLOCK NO.

**ELECTRICAL SITE PLAN**

ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

**RECORD DRAWING**  
E-2  
SCALE AS SHOWN  
SHEET 28 OF 36



ONE LINE DIAGRAM

NOTES:

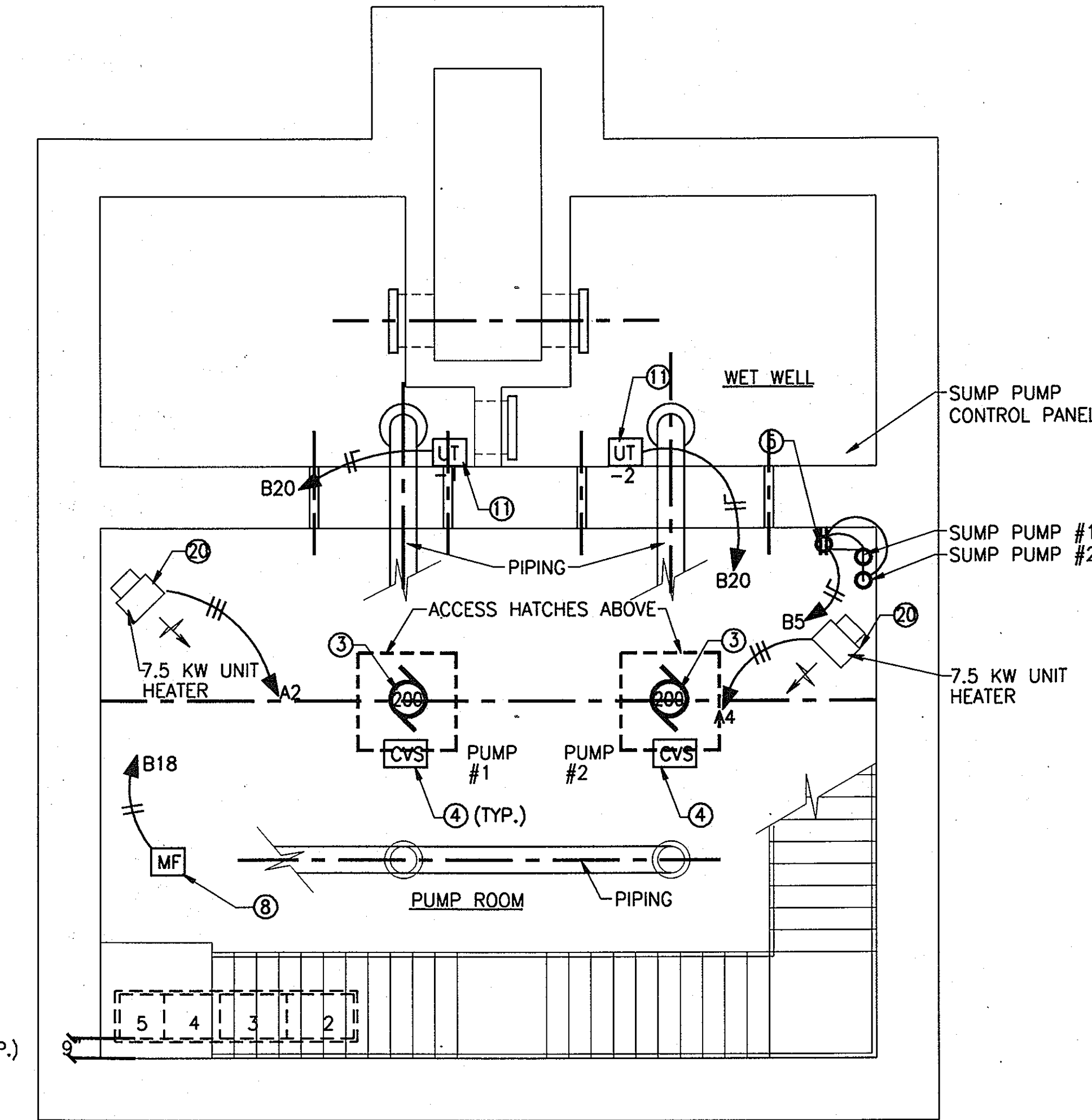
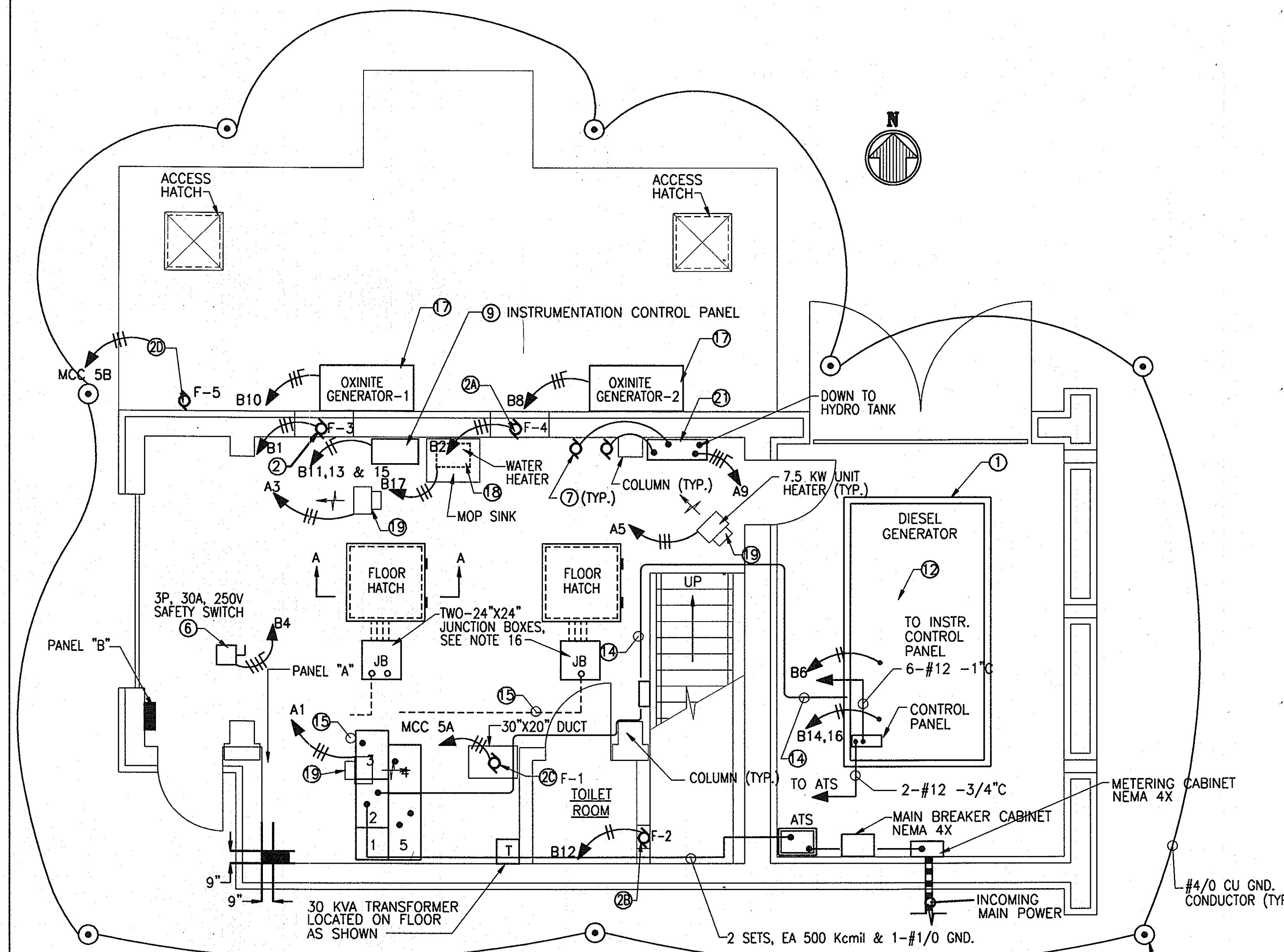
- ① FINAL LOCATION OF THE UTILITY TRANSFORMER SHALL BE COORDINATED WITH BG&E. PROVIDE CONCRETE PAD UNDER THIS CONTRACT, AS APPROVED BY BG&E, TO HOUSE THE BG&E SUPPLIED UTILITY TRANSFORMER.
- ② INCOMING POWER METERING CABINET, SEE DWG. E-2 SHOWING LOCATION. THE METERING CABINET, SHALL BE PROVIDED UNDER THIS CONTRACT AS APPROVED BY BG&E. BG&E SHALL PROVIDE AND INSTALL METERING EQUIPMENT IN THE CABINET.
- ③ INCOMING 13.2 KV PRIMARY UNDERGROUND FEEDER DUCT BANK UP TO AND INCLUDING TRANSFORMER PAD, AS APPROVED BY BG&E, SHALL BE PROVIDED UNDER THIS CONTRACT. BG&E SHALL SUPPLY, INSTALL AND TEST PRIMARY FEEDERS THROUGH THE DUCT BANK. 480V SECONDARY UNDERGROUND FEEDER DUCT BANK, AS SHOWN ON DWG. E-2, SHALL BE PROVIDED FROM THE TRANSFORMER PAD TO THE METERING CABINET UNDER THIS CONTRACT. BG&E SHALL SUPPLY, INSTALL AND TEST THE SECONDARY FEEDER THROUGH THE DUCT BANK.
- ④ PROVIDE MOLDED CASE BREAKER WITH THERMAL-MAGNETIC TRIP AND PROVIDE AUXILIARY "a" AND "b" CONTACTS.
- ⑤ PROVIDE AMMETER AND VOLTMETER SELECTOR SWITCHES.
- ⑥ PROVIDE INDIVIDUAL TRANSFORMER, OVERLOAD RELAY, AUXILIARY INTERLOCK AND H-O-A SELECTOR SWITCH ALONG WITH THE STARTER AS SHOWN ON ELEMENTARY CONTROL WIRING DIAGRAMS ON I-1, I-2 & I-3.
- ⑦ NOT USED.
- ⑧ THE EMERGENCY DIESEL-GENERATOR SET SHALL BE SKID MOUNTED AND FUEL TANK SHALL BE DOUBLE WALLED.
- ⑨ PROVIDE CONTROL WIRES FOR TEMPERATURE OVERLOAD AND LEAK SEAL PROBES IN A SEPARATE CONDUIT, INDEPENDENT OF THE POWER CONDUIT. CONDUITS FOR POWER CONDUCTORS, TEMPERATURE OVERLOAD, AND LEAK SEAL PROBES SHALL BE RUN AS SHOWN ON DRAWING E-4.

*[Professional Engineer Seal]*  
 11-10-02

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. <i>[Signature]</i> 1/30/03 DIRECTOR OF PUBLIC WORKS <i>[Signature]</i> 1-30-03 CHIEF, BUREAU OF UTILITIES	PREPARED BY: <b>WR&amp;A</b> Whitman, Reardon and Associates, LLP.	DHILLON ENGINEERING, INC. 11400 CROWBRIDGE DRIVE, SUITE D OWINGS HILLS, MD 21117	DES : BJD DRN : VC/DKP CHK : GED DATE : 11/11/98 BY : NO. REVISION DATE : 8/02	<b>ONE LINE DIAGRAM</b> 600' SCALE MAP NO. _____ BLOCK NO. _____	ROCKBURN WASTEWATER PUMPING STATION CAPITAL PROJECT NO. S-6200 CONTRACT NO. 10-3695 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND	<b>RECORD DRAWING</b> E-3 SCALE AS SHOWN SHEET <b>29 OF 36</b>
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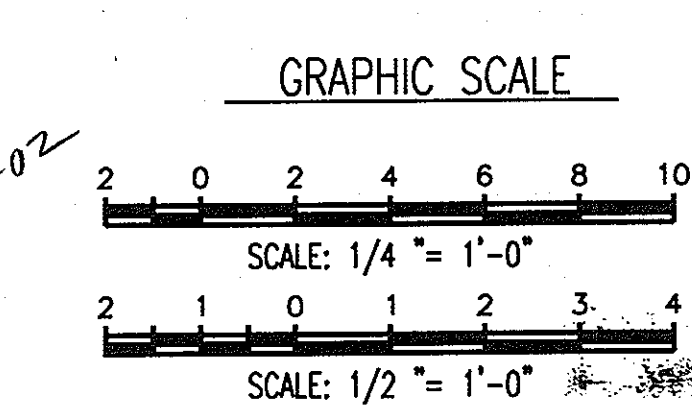
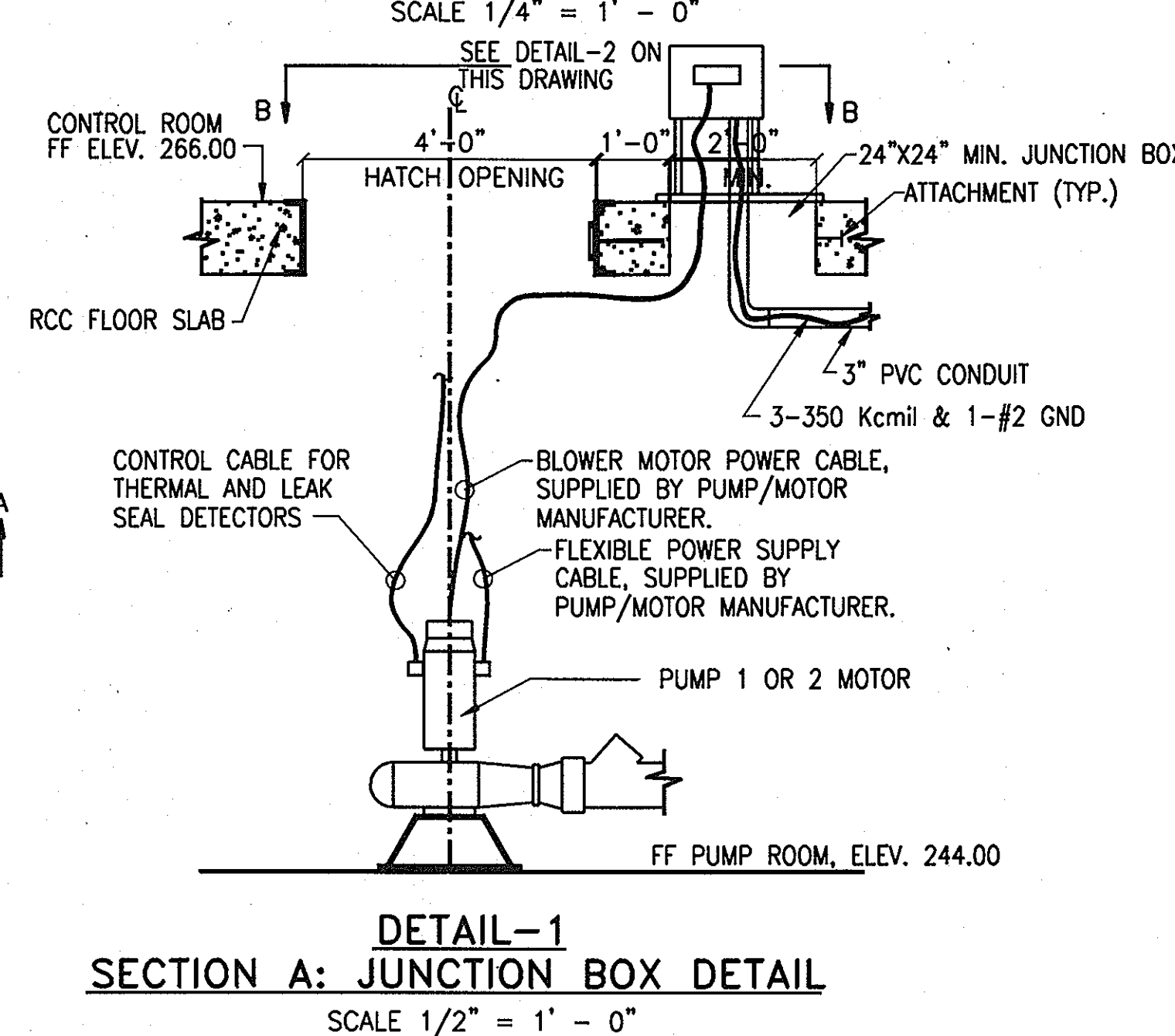
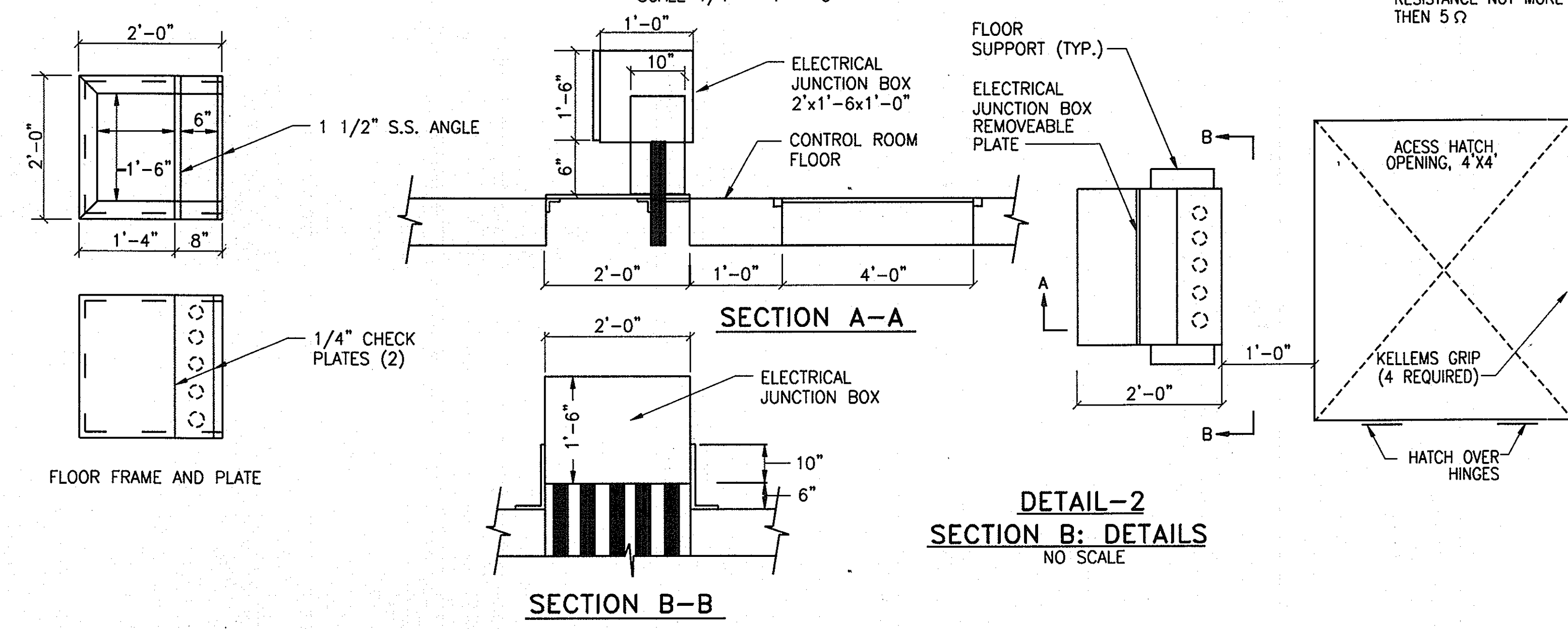
**PLAN NOTES TO IDENTIFY EQUIPMENT LOCATION**

- ① 4 INCH THICK CONCRETE PAD FOR ENGINE GENERATOR SET.
- ② CONTROL ROOM EXHAUST FAN F-3(WEST), 1/4 HP, 120V/1ϕ/60HZ, POWER FROM CIRCUIT #1 OF PANEL B.
- ③ CONTROL ROOM EXHAUST FAN F-4(EAST), 1/4HP, 120V/1ϕ/60HZ POWER FROM CIRCUIT #2 OF PANEL B.
- ④ TOILET ROOM EXHAUST FAN F-2, 48W, 120V/1ϕ/60HZ POWER FROM CIRCUIT #12 OF PANEL B.
- ⑤ CONTROL ROOM INLINE SUPPLY FAN F-1, BUILT IN THE DUCT, 1.5HP, 480V/3ϕ/60HZ, POWER FROM MCC SECTION 5A.
- ⑥ WET WELL SUPPLY FAN F-5, 1 1/2 HP, 480V/3ϕ/60HZ, POWER FROM MCC SECTION 5B.
- ⑦ PUMPS, 1 AND 2, EACH 200HP, 480V/3ϕ/60HZ POWER FROM MCC SECTIONS 3 AND 4.
- ⑧ TWO 8" CHECK VALVES LIMIT SWITCHES, LOCATED IN MANIFOLDING OF THE SEWAGE PUMPS, POWER FROM INSTRUMENTATION PANEL, SUPPLIED FROM PANEL B.
- ⑨ DUPLEX RECEPTACLE FOR SUMP PUMPS 1 & 2, EACH 1/4 HP, 120V/1ϕ/60HZ, POWER FROM CIRCUIT #5 OF PANEL B.
- ⑩ BRIDGE CRANE HOIST, 2HP, 208V/3ϕ/60HZ, POWER FROM CIRCUIT #4 PANEL B.
- ⑪ TWO HYDROPNEUMATIC BOOSTER PUMPS EACH 1 HP, 480V/3ϕ/60HZ . POWER FROM CIRCUIT #9 OF PANEL A. STARTER TO BE LOCATED IN CONTROL PANEL.
- ⑫ 8" MAGNETIC FLOWMETER.
- ⑬ INSTRUMENTATION CONTROL PANEL, CIRCUITS #11, #13 AND #15 OF PANEL B.
- ⑭ NOT USED
- ⑮ ULTRASONIC TRANSDUCERS 120V POWER FROM CIRCUIT #20 OF PANEL B.
- ⑯ PROVIDE SOUND ATTENUATION ENCLOSURE FOR DIESEL GENERATOR . IN ACCORDANCE WITH SPEC SECTION 16480.
- ⑰ 3-350 Kcmil & 1-#2 GND. IN 3" C FOR MAIN PUMPS. DROP DOWN FROM THE MCC TO PUMP ROOM BELOW.
- ⑱ 2 SETS OF 3-500 Kcmil & 1-#1/0 GND- 4"C. ROUTE TO AUTOMATIC TRANSFER SWITCH (ATS) IN MOTOR CONTROL CENTER (MCC). COORDINATE EXACT POINT OF EXIT FROM GENERATOR MANUFACTURER.
- ⑳ FROM SECTIONS 3 & 4 OF MCC, PROVIDE POWER FOR EACH PUMP USING 3-350 Kcmil AND 1-#2 GND IN 3"C. CONDUITS TO BE LOCATED BELOW CONTROL ROOM FLOOR SLAB.
- ㉑ JUNCTION BOXES SHALL BE BUILT FLUSH WITH THE CONTROL ROOM FLOOR, CONDUCTORS FEEDING POWER TO THE SEWAGE PUMPS 1 & 2 SHALL LEAD TO THESE JUNCTION BOXES. SEE DETAIL-1 ON THIS DRAWING FOR CONTINUATION OF THE CONDUCTORS UP TO THE PUMP MOTORS. COORDINATE WITH PUMP SUPPLIER FOR CONTROL WIRING AND IF SUCH CONTROL WIRING IS REQUIRED IT SHALL BE PROVIDED IN INDEPENDENT CONDUITS.
- ㉒ TWO OXINITE GENERATOR, CIRCUIT 8 & 10 OF PANEL B.
- ㉓ WATER HEATER, CIRCUIT 17 OF PANEL B.
- ㉔ THREE CONTROL ROOM UNIT HEATERS EACH 7.5 KW, 480V/3/60HZ, POWER FROM CIRCUITS 1, 3 & 5 OF PANEL A.
- ㉕ TWO PUMP ROOM UNIT HEATERS, EACH 7.5 KW, 480V/3/60HZ, POWER FROM CIRCUITS 2 & 4 OF PANEL A.
- ㉖ HYDROPNEUMATIC BOOSTER PUMP PANEL, POWER FROM CIRCUIT #9, PANEL A.



**CONTROL ROOM, POWER AND GROUNDING PLAN**  
SCALE 1/4" = 1' - 0"

**PUMP ROOM/WET WELL POWER PLAN**  
SCALE 1/4" = 1' - 0"



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.  
Director of Public Works  
1/30/03  
Chief, Bureau of Engineering  
1-30-03

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.

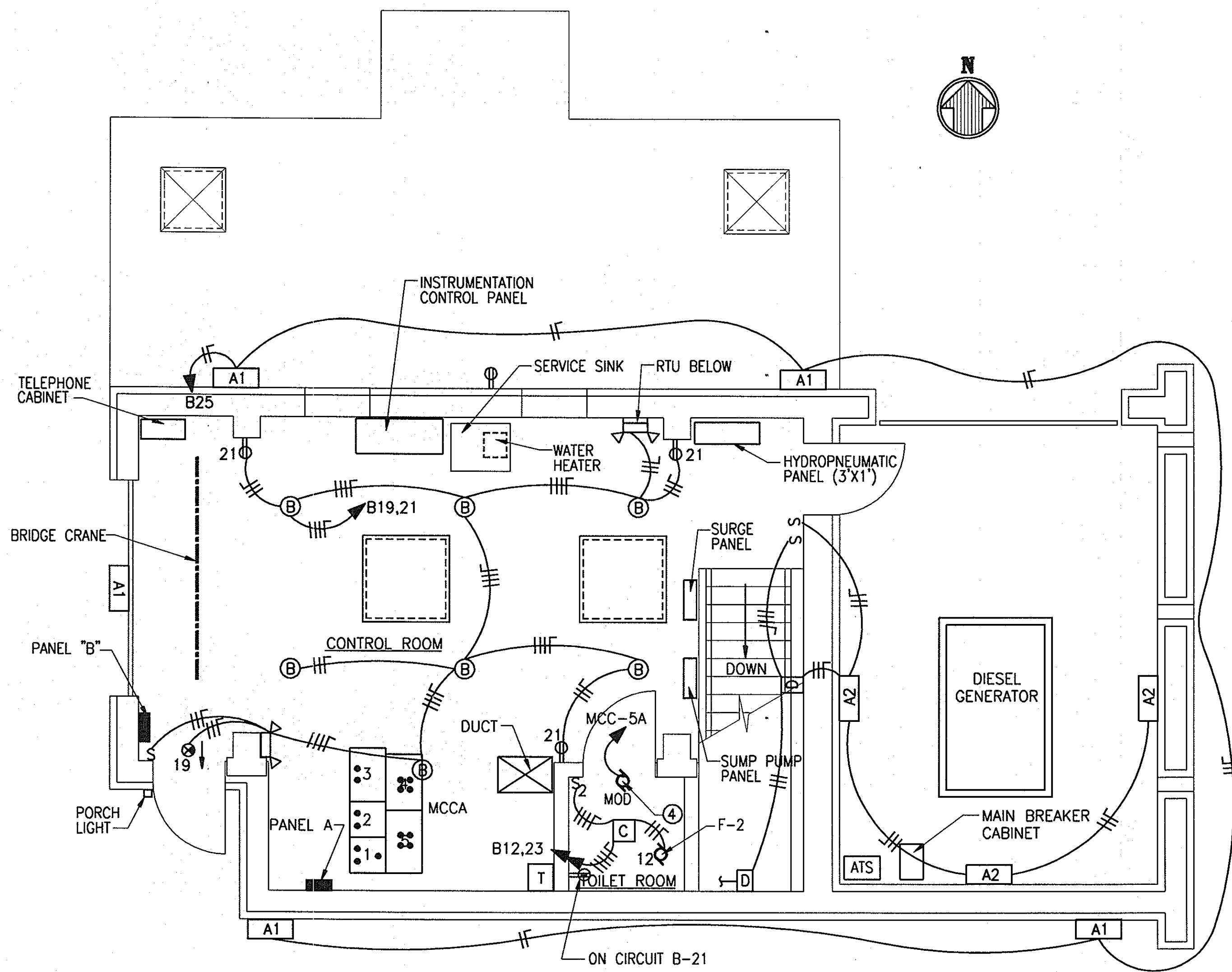
DHILLON ENGINEERING  
11400 CROFTON DRIVE, SUITE D  
OWINGS MILLS, MD 21117

DES : BJD					
CHK : GED					
DATE : 11/11/98	BY	NO.	REVISION	DATE	600' SCALE MAP NO. BLOCK NO.

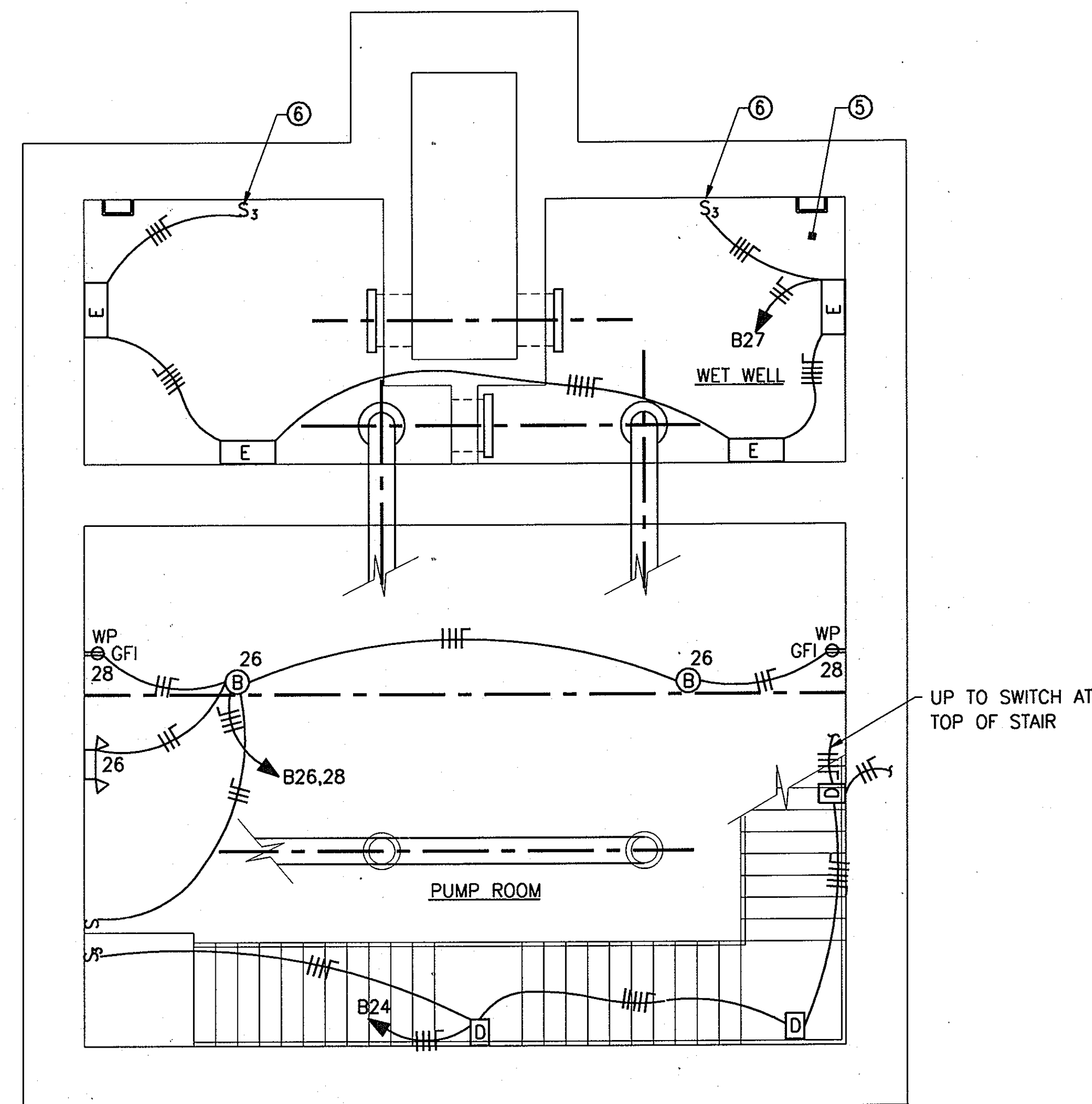
**POWER PLANS**

ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

E-4  
SCALE AS SHOWN  
SHEET 30 OF 36



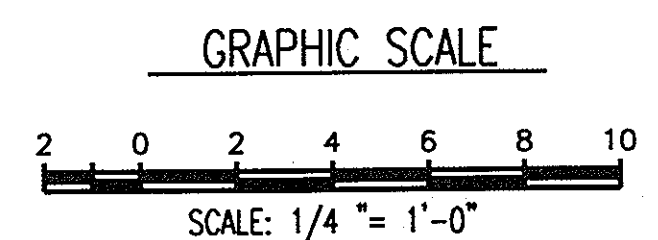
**CONTROL ROOM/GENERATOR LIGHTING PLAN**  
SCALE 1/4" = 1' - 0"



**PUMP ROOM/WET WELL LIGHTING PLAN**  
SCALE 1/4" = 1' - 0"

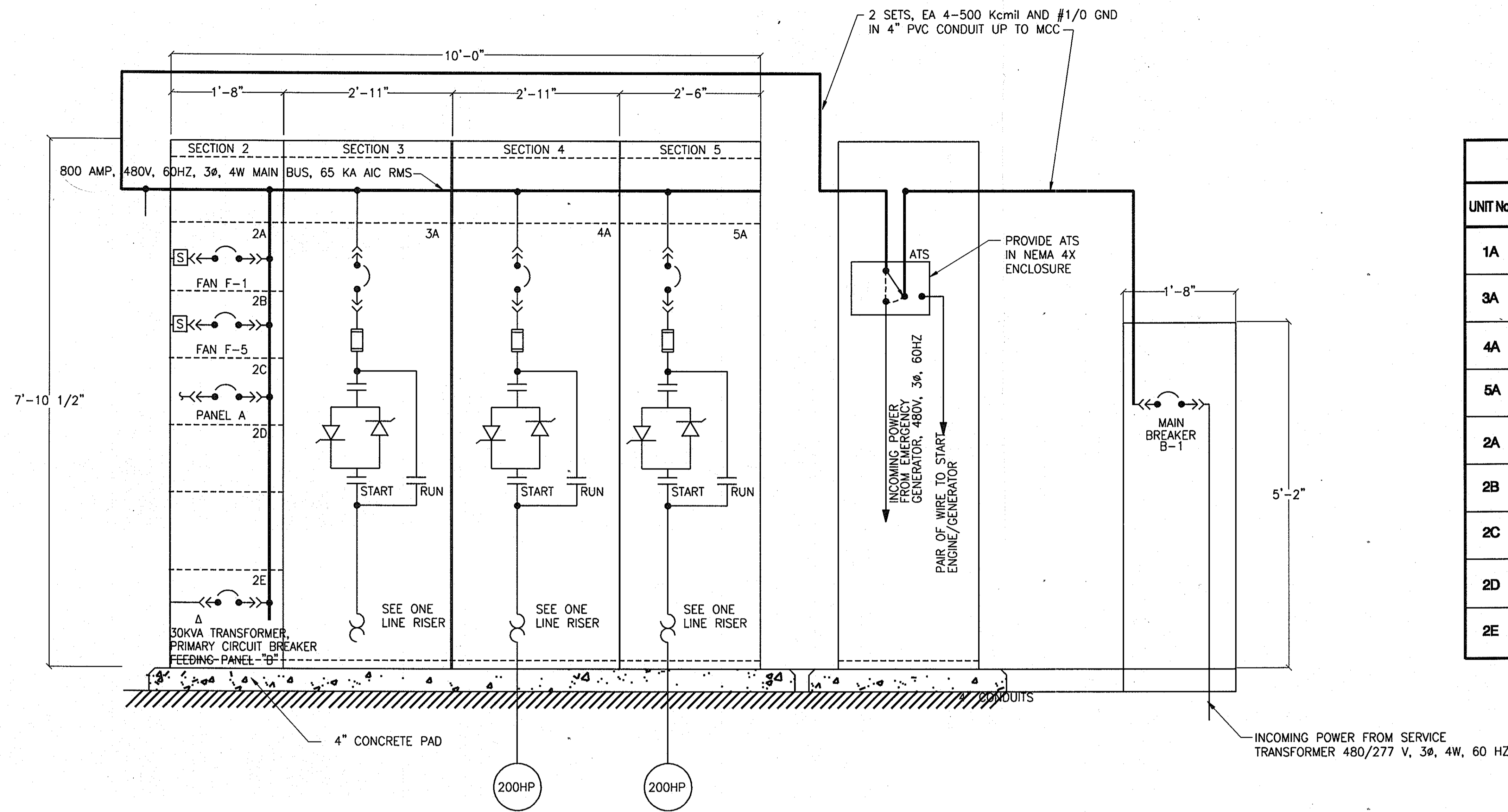
**PLAN NOTES:**

- ① RESTROOM LIGHT.
- ② NOT USED.
- ③ NOT USED
- ④ MOTOR OPERATED DAMPER.
- ⑤ ALL LIGHTING FIXTURES, ELECTRICAL RACEWAY AND SWITCHES IN WET WELL SHALL CONFORM WITH PROVISIONS OF NEC ARTICLE 500. EXPLOSION PROOF, RIGID PVC COATED
- ⑥ LOCATE SWITCH BESIDE ACCESS LADDER (NOT SHOWN) 1'-0" BELOW ACCESS HATCH.
- ⑦ FOR TYPES OF LIGHTING FIXTURES SEE DWG. E-7, LIGHTING FIXTURE AND LAMP WATTAGE SCHEDULE.



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. Director of Public Works: <i>[Signature]</i> 1/30/03 Chief, Bureau of Engineering: <i>[Signature]</i> 1/29/03 Chief, Bureau of Sewer Design: <i>[Signature]</i> 1-29-03		PREPARED BY: <b>WR&amp;A</b> Whitman, Requardt and Associates, LLP.		DHILLON ENGINEERING, INC. 11400 CROWBRIDGE DRIVE, SUITE 8 OWINGS MILLS, MD 21117		DES : BJD DRN : VL/DKP CHK : GED DATE : 11/11/98		RECORD DRAWING 8/02		LIGHTING PLANS 600' SCALE MAP NO. _____ BLOCK NO. _____		ROCKBURN WASTEWATER PUMPING STATION CAPITAL PROJECT NO. S-6200 CONTRACT NO. 10-3695 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND		RECORD DRAWING 11/18/02	E-5 SCALE AS SHOWN SHEET 31 OF 36
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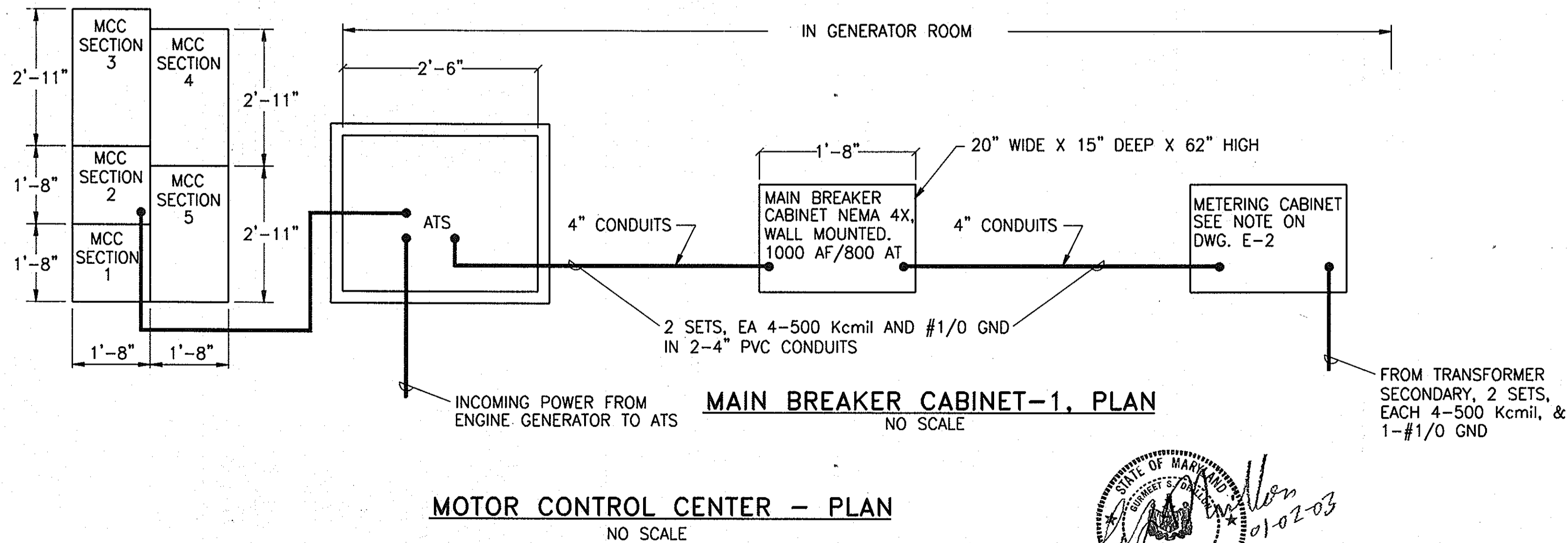


MOTOR CONTROL CENTER - ELEVATION  
NO SCALE

MAIN BREAKER CABINET ELEVATION  
NO SCALE

MOTOR CONTROL CENTER 'A' SCHEDULE						
UNIT No.	NAME TAG DATA	DEVICE DESCRIPTION	HP	ECD No. SHT No.	BREAKER	
					FRAME	TRIP
1A	CONTACTORS	CONTACTORS			1000A	800A
3A	SPARE SEWAGE PUMP	NEMA SIZE 5 REDUCED VOLTAGE SOLID STATE STARTER, BREAKER & CONTROLS	200		350A	300A
4A	SEWAGE PUMP No.1	NEMA SIZE 5 REDUCED VOLTAGE SOLID STATE STARTER, BREAKER & CONTROLS	200		350A	300A
5A	SEWAGE PUMP No.2	NEMA SIZE 5 REDUCED VOLTAGE SOLID STATE STARTER, BREAKER & CONTROLS	200		350A	300A
2A	PUMP/CONTROL ROOM FAN F-1	NEMA SIZE 1 FULL VOLTAGE STARTER, BREAKER & CONTROLS	1 1/2		100A	15A
2B	WET WELL SUPPLY FAN F-5	NEMA SIZE 1 FULL VOLTAGE STARTER, BREAKER & CONTROLS	1 1/2		100A	20A
2C	PANEL A FEED	300A, 3Ø, 4W, 480/277V SUPPLY	-		400A	300A
2D	SPACE					
2E	480VA -208/120VY, 30KVA XFMR, PANEL B FEED	SECONDARY CONDUCTORS 100A, 3Ø, 4W, 208/120V SUPPLY	-		100A	45A

OUTSIDE MCC SEE SITE PLAN



MOTOR CONTROL CENTER - PLAN  
NO SCALE

MAIN BREAKER CABINET-1, PLAN  
NO SCALE



DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.

*Jan 7, 03*  
DIRECTOR OF PUBLIC WORKS  
DATE 1/30/03

*Robert J. Sporn*  
CHIEF, BUREAU OF ENGINEERING  
DATE 1/29/03

*D. J. ...*  
CHIEF, WATER AND SEWER DESIGN  
DATE 1-29-03

PREPARED BY:  
**WR&A**  
Whitman, Requardt and Associates, LLP.

DHILLON ENGINEERING, INC.  
11400 CROWBRIDGE DRIVE, SUITE D  
OWINGS MILLS, MD 21117

DES :	BJD			
DRN :	VL/DKP			
CHK :	GED			
DATE :	11/11/98			
BY :				
NO.				
REVISION				
DATE	8/02			
RECORD DRAWING				

MOTOR CONTROL CENTER - ELEVATION SCHEDULE

600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

RECORD DRAWING  
11/18/02

E-6

SCALE AS SHOWN

SHEET 32 OF 36

PANEL A SCHEDULE (POWER FROM MCC SECTION 5C)																																														
LOCATION		VENDOR GENERAL ELECTRIC																																												
VOLTAGE		CATALOG # ADF3301MT																																												
AMPS		MAIN BRK (Y/N) Y																																												
PHASE/WIRE		AIC RATING 22 KA																																												
MOUNT		SURFACE																																												
CKT.	DESCRIPTION	BKR.	COND.	PH.	GND.	LOAD	PH.A	PH.B	PH.C	LOAD	GND.	PH.	COND.	BKR.	DESCRIPTION	CKT.																														
		POLE	AMP	WIRE	WIRE	(A)				(A)	WIRE	WIRE		POLE	AMP																															
1	CONTROL ROOM UNIT HEATER #1	3	15	1/2"	#14	#14	15		X				15	#14	#14	1/2"	3	15	PUMP ROOM UNIT HEATER #1	2																										
3	CONTROL ROOM UNIT HEATER #2	3	15	1/2"	#14	#14	15		X				15	#14	#14	1/2"	3	15	PUMP ROOM UNIT HEATER #2	4																										
5	CONTROL ROOM UNIT HEATER #3	3	15	1/2"	#14	#14	15		X										SPACE	6																										
7	HYDRO-PNEUMATIC BOOSTER PUMP #1	3	20	3/4"	#12	#12	5		X										SPACE	8																										
9	HYDRO-PNEUMATIC BOOSTER PUMP #2	3	20	3/4"	#12	#12	10		X										SPACE	10																										
TOTAL LOADING (A):		PHASE A		85													PHASE B		85													PHASE C		85												

PANEL B SCHEDULE																																														
LOCATION		MCC SECTION 6A																																												
VOLTAGE		208/120V																																												
AMPS		225																																												
PHASE/WIRE		3P/4W 42 CIRCUIT																																												
MOUNT		IN MCC																																												
CKT.	DESCRIPTION	BKR.	COND.	PH.	GND.	LOAD	PH.A	PH.B	PH.C	LOAD	GND.	PH.	COND.	BKR.	DESCRIPTION	CKT.																														
		POLE	AMP	WIRE	WIRE	(A)				(A)	WIRE	WIRE		POLE	AMP																															
1	CONTROL ROOM EXHAUST FAN F-3	1	15	3/4"	#12	#12	1		X				1	#12	#12	3/4"	1	15	CONTROL ROOM EXHAUST FAN F-4	2																										
3	<del>SPACE</del> ROLL UP DOOR	3	15	3/4"	#12	#12	2		X				1	#12	#12	3/4"	3	20	BRIDGE CRANE HOIST MOTOR	4																										
5	SUMP PUMPS 1 & 2	1	20	3/4"	#12	#12	4	X					5	#12	#12	3/4"	1	20	BATTERY CHARGER	6																										
7	SPARE	1	20						X				2	#12	#12	3/4"	1	15	OXINITE GEN-1	8																										
9	<del>SPARE</del> CONTROL POWER HYDRO-PNEUMATIC BOOSTER SYSTEM PANEL	2	20						X				2	#12	#12	3/4"	1	15	OXINITE GEN-2	10																										
11	INSTRUMENTATION CONTROL PANEL	1	20	3/4"	#12	#12	20	X					1	#12	#12	3/4"	1	15	TOILET ROOM EXH. F-2	12																										
13	INSTRUMENTATION CONTROL PANEL	1	20	3/4"	#12	#12	20		X				8	#10	#10	3/4"	2	15	GEN. WATER JACKET HEATERS	14																										
15	INSTRUMENTATION CONTROL PANEL	1	20	3/4"	#12	#12	20			X			8						SPACE	16																										
17	WATER HEATER	3	20	3/4"	#12	#12	10		X				1	#12	#12	3/4"	1	20	MAGNETIC FLOWMETER	18																										
19	CONTROL ROOM LTG	1	20	3/4"	#12	#12	5	X					1	#12	#12	3/4"	1	20	CONTROL PANEL INSTRUMENTATION	20																										
21	CONTROL ROOM RECEPTACLES	1	20	3/4"	#12	#12	5		X				5	#12	#12	3/4"	1	20	SPACE	22																										
23	MOD FOR F-1	1	20	3/4"	#12	#12				X									SPACE	24																										
25	EXTERIOR LIGHTING	1	20	3/4"	#12	#12	5		X				5	#12	#12	3/4"	1	20	PUMP ROOM LTG	26																										
27	WET WELL LTG	1	20	3/4"	#12	#12	5		X				3	#12	#12	3/4"	1	20	PUMP ROOM RECEPTS	28																										
29	SPACE	1	20					X											SPACE	30																										
TOTAL LOADING (A):		PHASE A		112													PHASE B		112													PHASE C		112												

LIGHTING FIXTURE AND LAMP WATTAGE SCHEDULE

FIXTURE SYMBOL	VOLTAGE	NUMBER OF LAMPS	LAMP WATTAGE	TYPE	MOUNTING	CATALOG * NUMBER	DESCRIPTION
A1	120	1	100	HIGH PRESSURE SODIUM	WALL SURFACE, OUTDOOR 10' 7" ABOVE GRADE	GENERAL ELECT V2FW-10S1-A2PWA-DB	UL1572 LISTED. STANDARD CONSTRUCTION IP55 HEAVY DUTY DIE CAST AL FINISH PHOTO ELECTRIC CELL. DARK BRONZE FINISH.
A2	120	1	70	HIGH PRESSURE SODIUM	WALL SURFACE, 7' ABOVE GRADE	GENERAL ELECT V2FW-07S1 ALPWA-DB	SAME AS ABOVE, EXCEPT NO PHOTO ELECTRIC CELL.
B	120	1	100	HIGH PRESSURE SODIUM	SURFACE, CEILING MOUNT	GENERAL ELECT C1SW-10S1-A41EL	UL 1572 LISTED. IPS2 STANDARD CONSTRUCTION. UV STABILIZED INJECTION MOLDED PRISMATIC REFRACTOR.
C	120	1	38	FLUORESCENT	SURFACE, CEILING MOUNT	RUDD SS02381	10" SQUARE SURFACE LIGHT DIE CAST ALUMINUM HOUSING.
D	120	1	35	HIGH PRESSURE SODIUM	SURFACE, STAIRWAY	LITHONIA VR2C-120-IR	VERTICAL LIGHT, CLEAR PRISMATIC POLYCARBONATE DIFFUSER.
E	120	1	100	HIGH PRESSURE SODIUM	SURFACE, WALL	HOLOPHANE PE TL100HP120 W/TSB	SUITABLE FOR CLASS1, DIVISION 2 USE
	120	2	7.2	T-5 WEDGE TUNGSTEN	SURFACE, WALL	LITHONIA ELM2	EMERGENCY LIGHTING FIXTURE, 24 HR MAINTENANCE FREE LEAD CALCIUM BATTERY RECHARGE AFTER A 90 MINUTE DISCHARGE.
	120	1	< 1	ELECTRO-LUMINESCENT	CEILING SURFACE	LITHONIA ELES1R120	EXIT LIGHT. DARKEND QUARTER INDICATES FACE WITH "EXIT". ARROWS, IF ANY, DIRECTION OF EXIT. DIE CAST AL HOUSING. STENCIL FACE.

SEE ARCHITECTURAL ELEVATIONS FOR EXACT LOCATIONS

ALSO ADDED (1) OVER ROLL UP DOOR

ALSO A BIRCH LIGHT - MODEL 500 C/HP 3 E HPS NPE 120 PC T/PS WITH A CONDUIT CONNECTION CR

DELETED EXIT LT. IN PUMP ROOM

NOTES

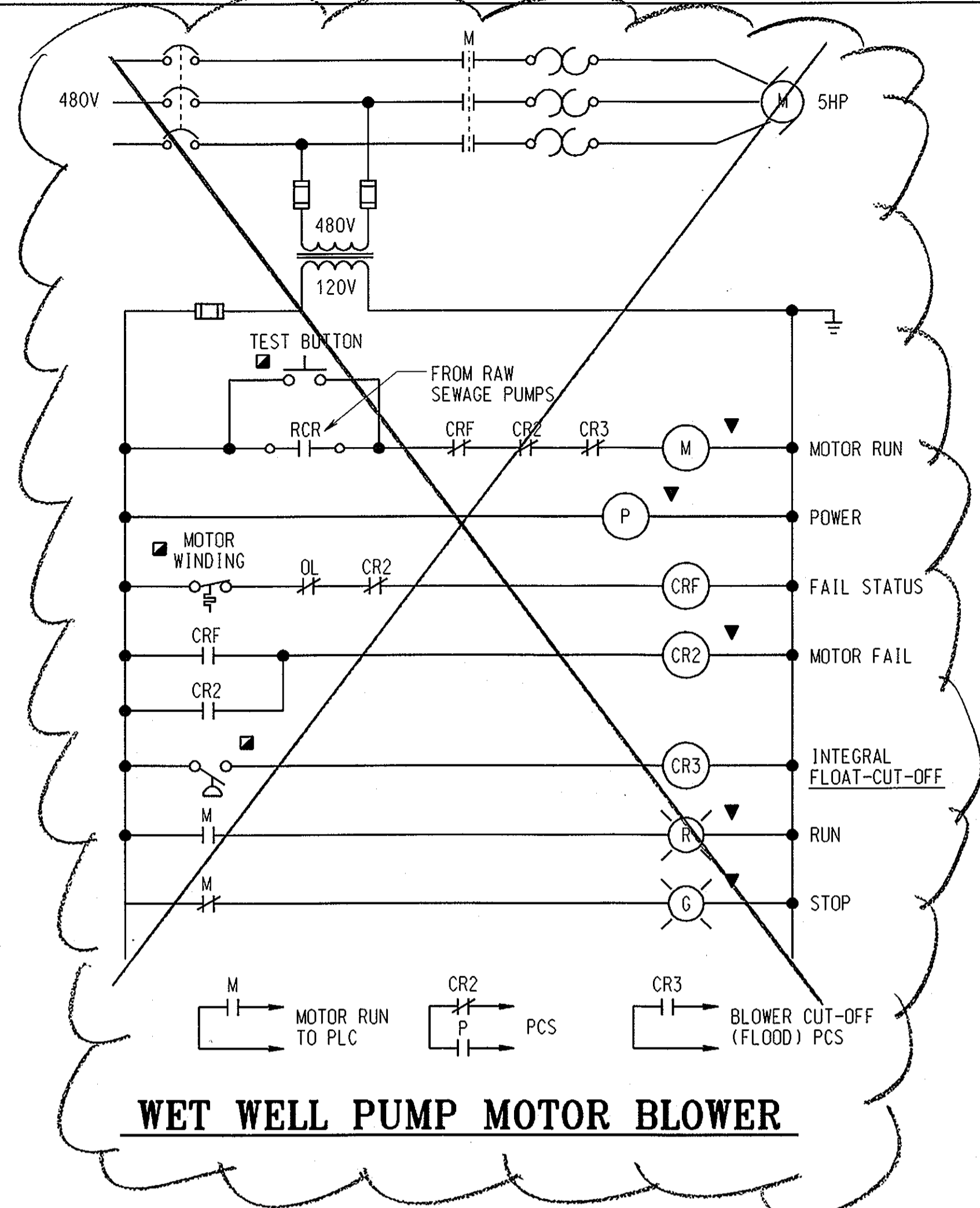
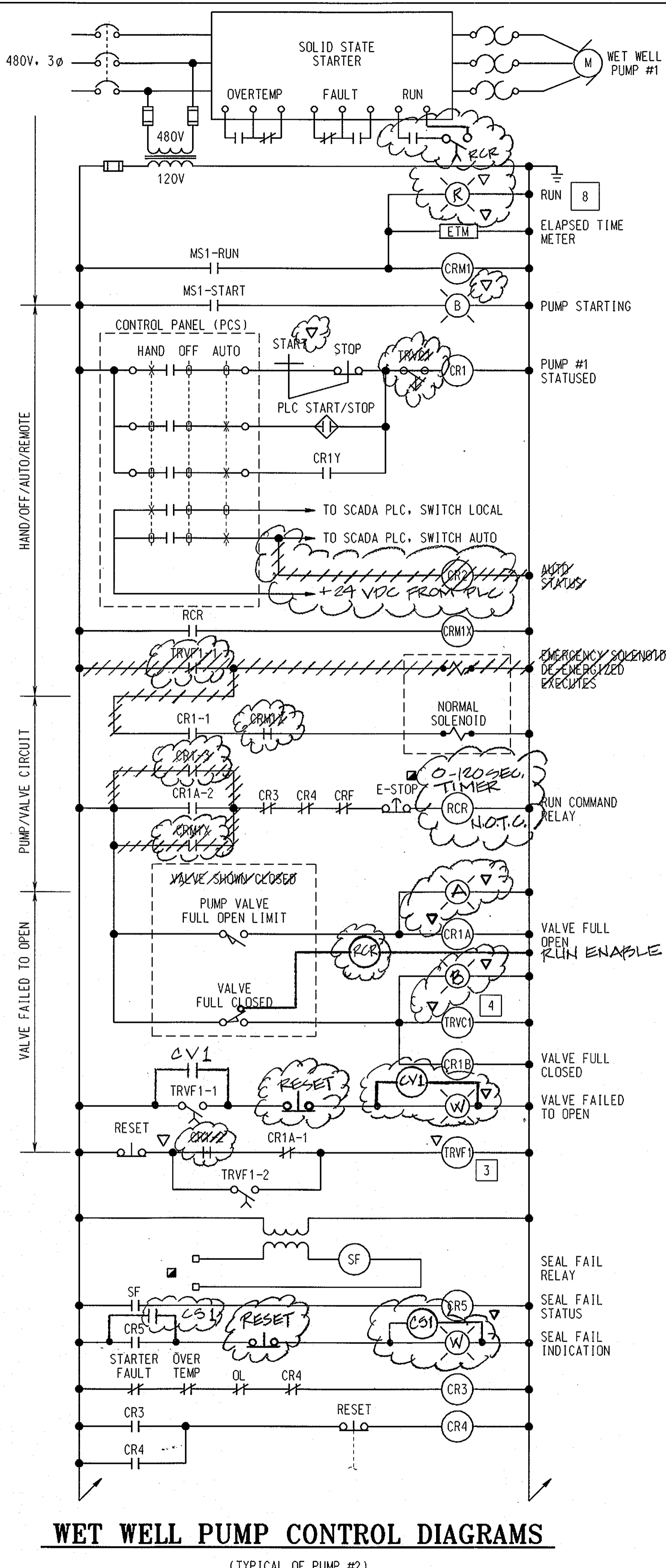
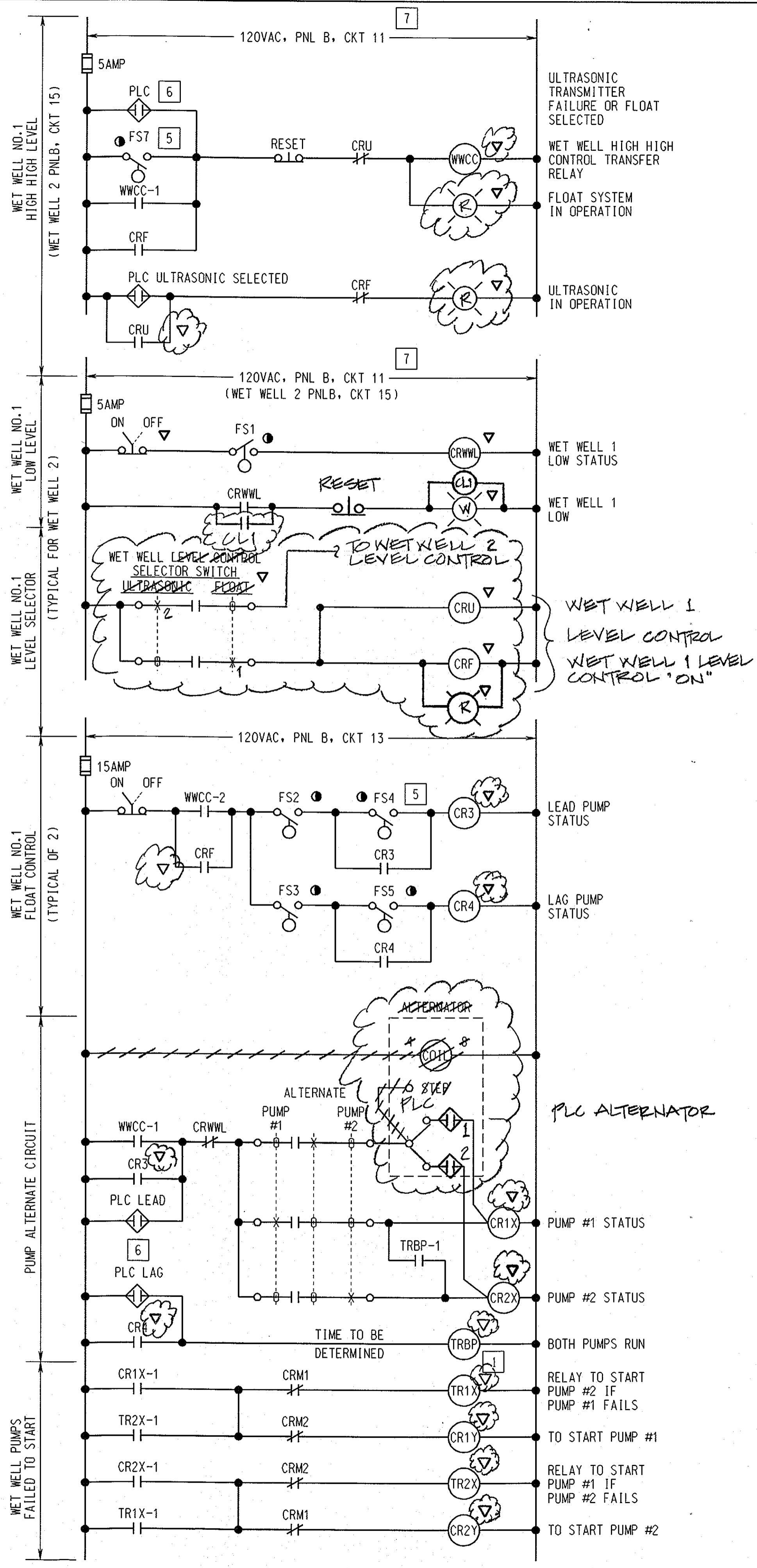
- PANELS A, B, BOOSTER PUMPS CONTROL PANEL, INSTRUMENTATION CONTROL PANEL, RTU PANEL, TELEPHONE CABINET SHALL BE NEMA-12. ALL PANELS LOCATED OUTDOORS AND IN PUMP ROOM SHALL BE NEMA-4X.

\* OR APPROVED EQUAL



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. Director of Public Works: Robert J. Berman, 1-15-99 Chief, Bureau of Engineering: Robert J. Berman, 1-15-99 Chief, Bureau of Utilities: Robert J. Berman, 1-15-99 Chief, Water and Sewer Design: Robert J. Berman, 1-15-99		PREPARED BY: <b>WR&amp;A</b> Whitman, Reardon and Associates, L.L.P.		DHILLON ENGINEERING, INC. 11400 CROFTBRIDGE DRIVE, SUITE D OWINGS MILLS, MD 21117		DES: BJD DRN: VL/DKP CHK: GED DATE: 11/11/98		REVISION RECORD DRAWING DATE: 8-23-02		600' SCALE MAP NO. _____ BLOCK NO. _____		ROCKBURN WASTEWATER PUMPING STATION CAPITAL PROJECT NO. S-6200 CONTRACT NO. 10-3695 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND		RECORD DRAWING 11/18/02		E-7 SCALE AS SHOWN SHEET 33 OF 36	
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**DRAWING NOTES:**

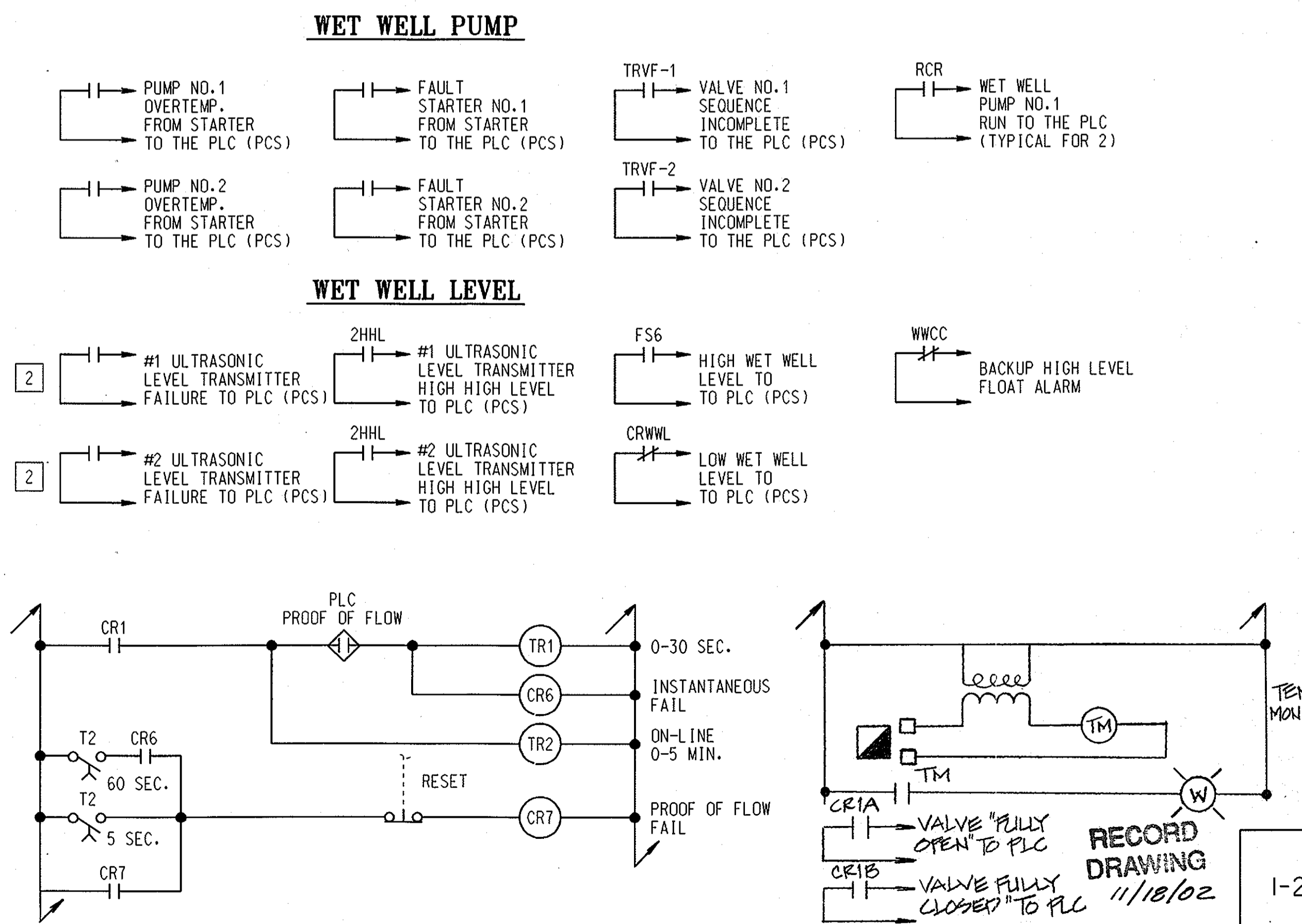
- TRBP (N.O.T.C.) TIME TO BE DETERMINED.
- ULTRASONIC TRANSMITTER FAILURE DUE TO ECHO LOSS OR INTERNAL DISPARITY.
- TRVF1,2 (N.O.T.C.)
- TRVC1,2 (N.O.T.O.)
- ALL WET WELL FLOAT MAST SWITCHES ARE WIRED VIA INTERPOSING RELAY BOARD LOCATED IN THE CONTROL ROOM CONTROL PANEL.
- ALL DIGITAL OUTPUTS VIA INTERPOSING RELAY BOARD LOCATED IN THE CONTROL ROOM CONTROL PANEL.
- PNLB CKT 11 SUPPLIES POWER TO BOTH WET WELL LOW STATUS AND BOTH WET WELL HIGH STATUS TRANSFER RELAYS.
- A PUMP RUN INDICATION SHALL ALSO BE INSTALLED WITH HOA IN THE CONTROL PANEL (PCS).

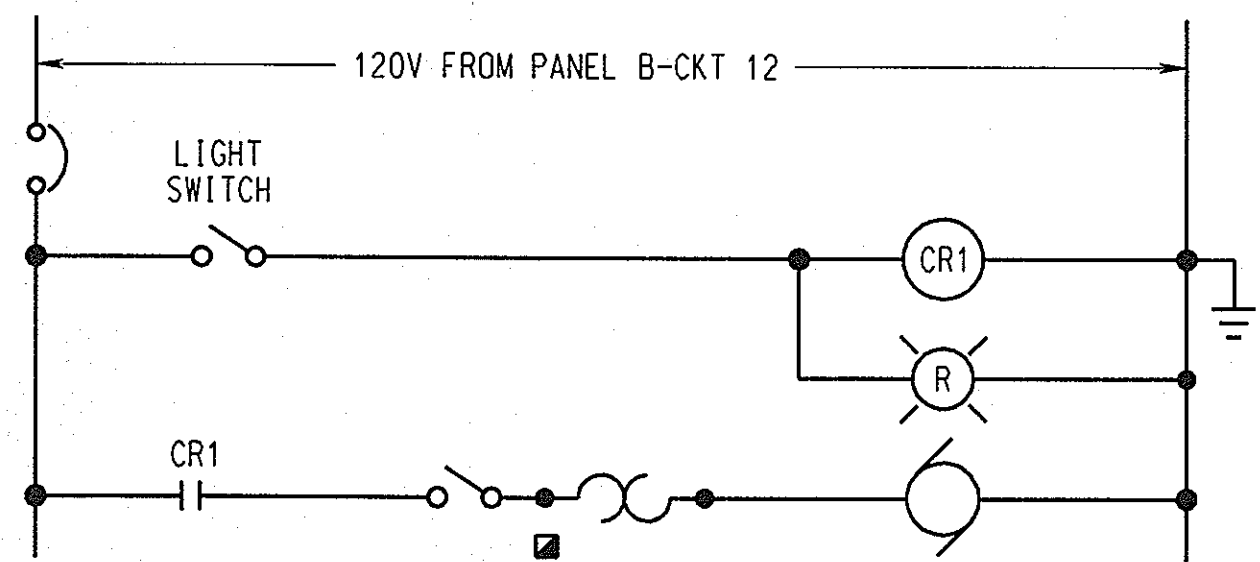
**GENERAL NOTES:**

- ALL LIGHTS PUSH TO TEST.
- PROVIDE ONE FORM "C", SPOT DRY ALARM CONTACT AS PER SPECIFICATION 16695-2.05C.

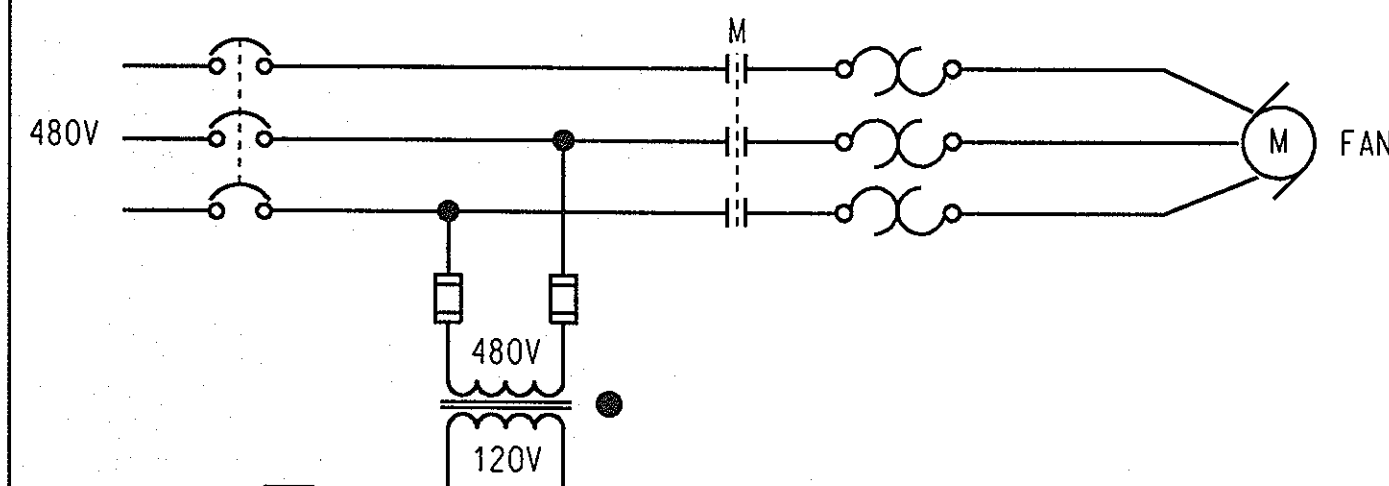
**LEGEND**

- ▲ REMOTE
- ▼ AT MOTOR CONTROL CENTER
- IN DRY WELL
- ▽ AT CONTROL PANELBOARD (PCS)
- IN THE WET WELL (ABOVE GRATING)
- LOCAL AT UNIT
- IN WET WELL

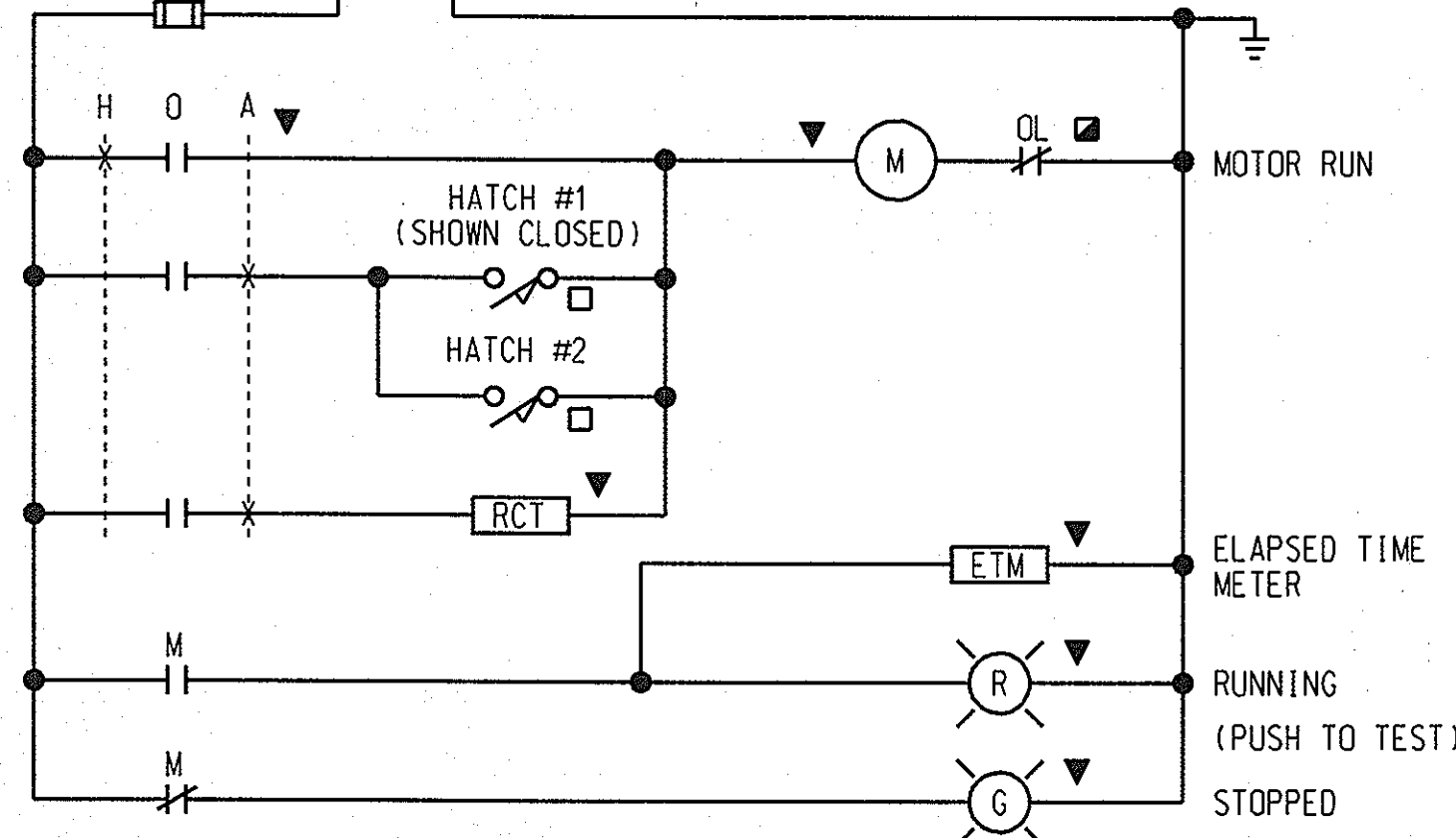




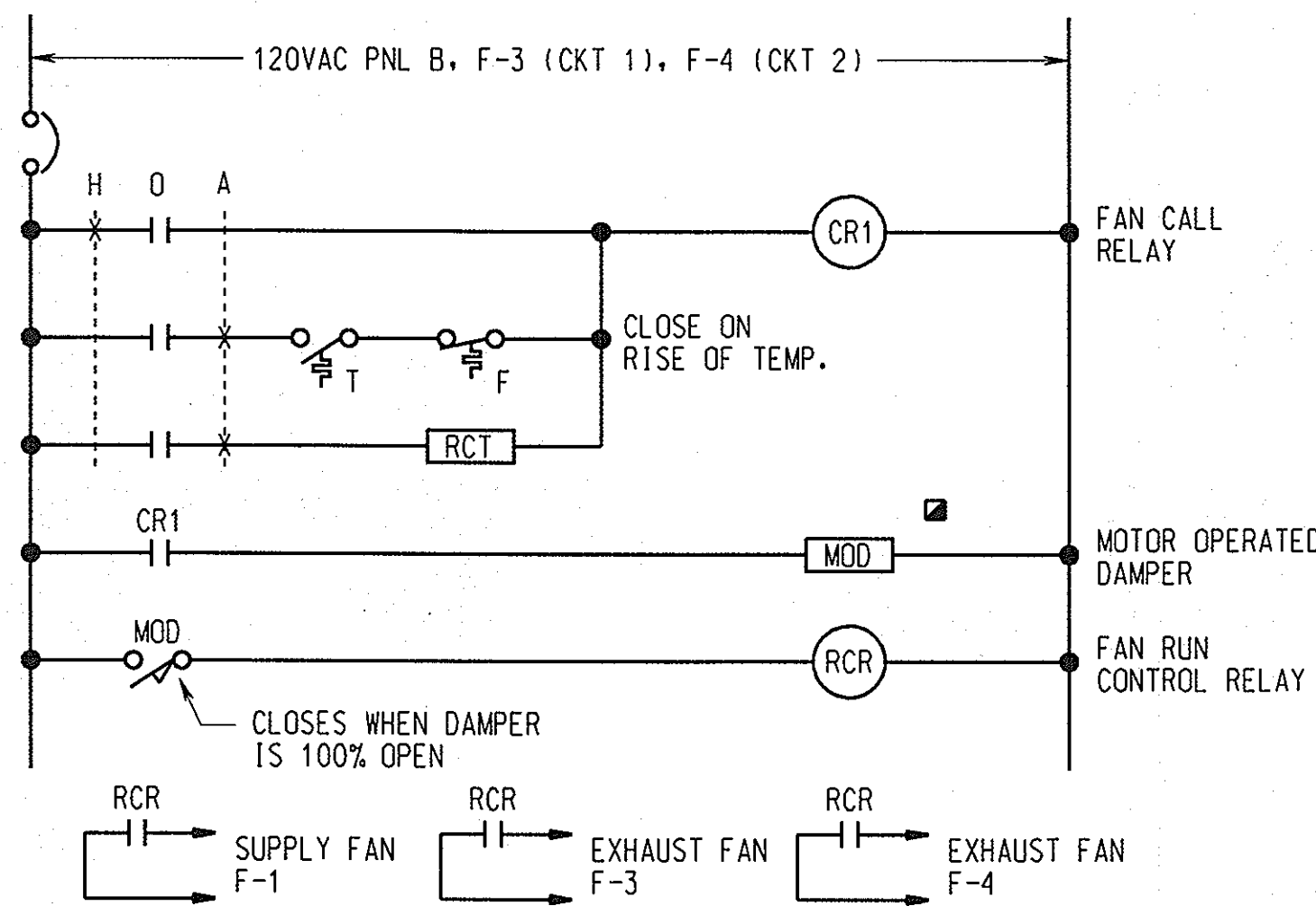
**RESTROOM VENTILATION FAN-2**



**DRY WELL VENTILATION FAN F-1**



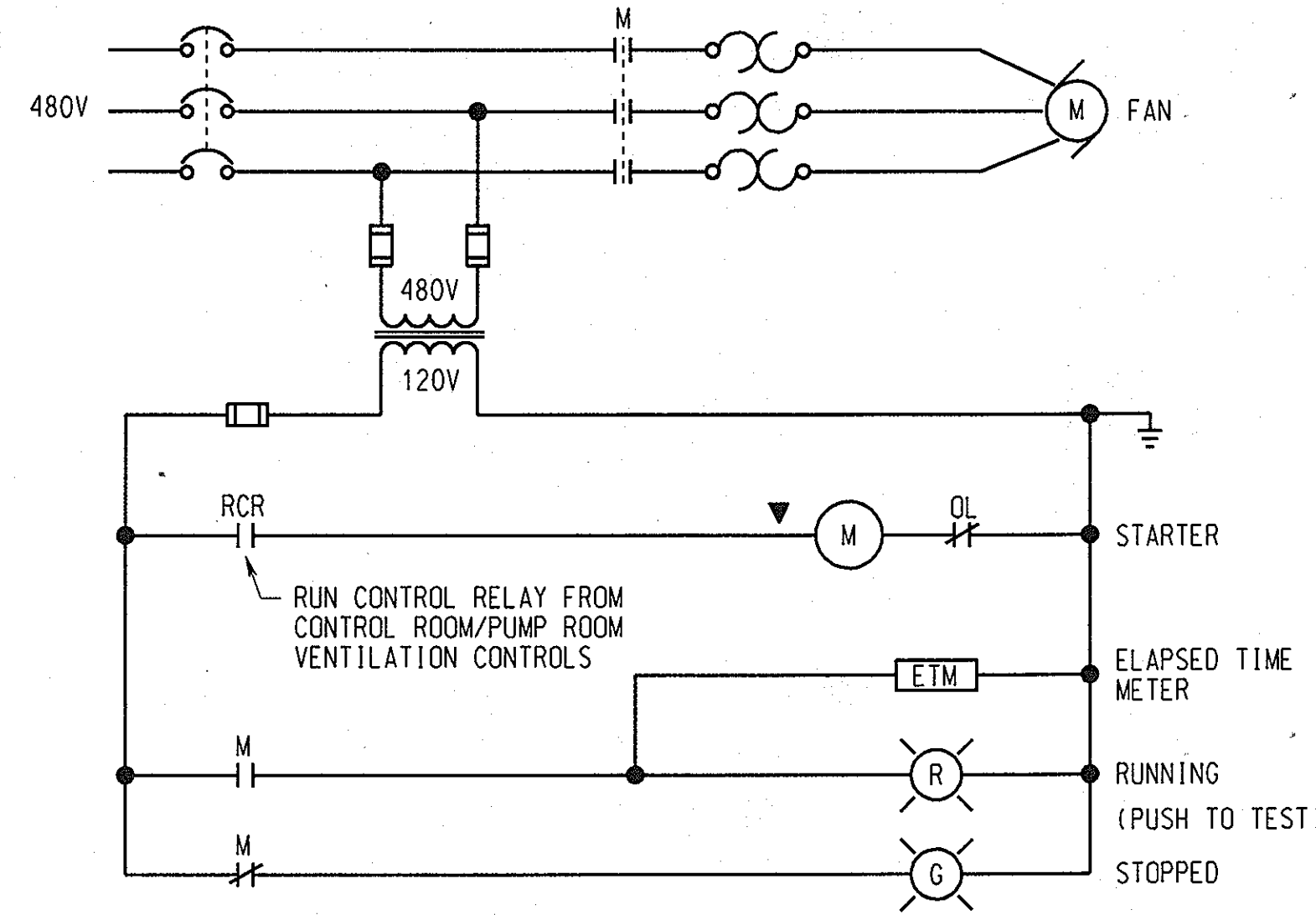
**WET WELL VENTILATION FAN F-5**



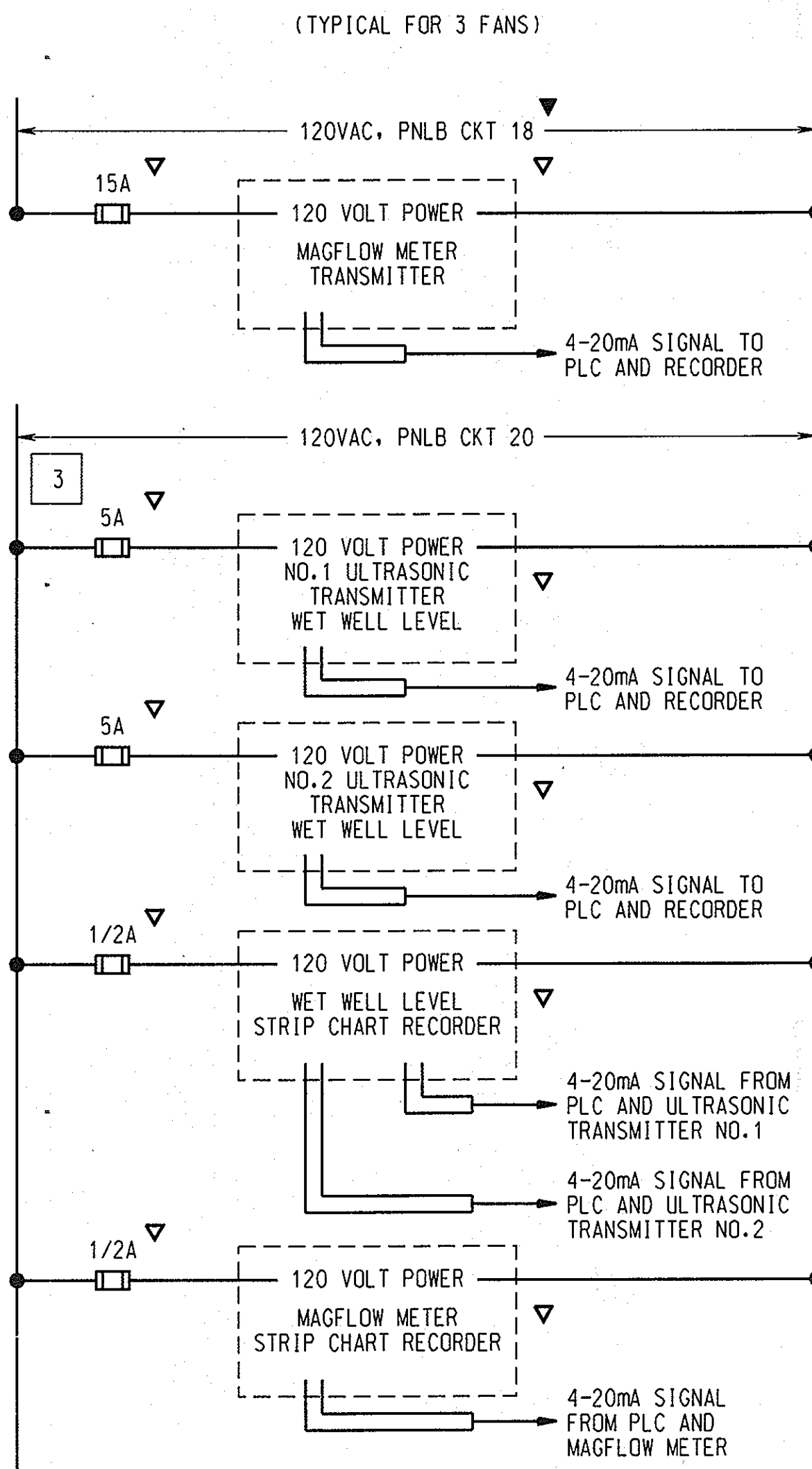
**EXHAUST FAN F-3,4 CONTROL ROOM**

**LEGEND**

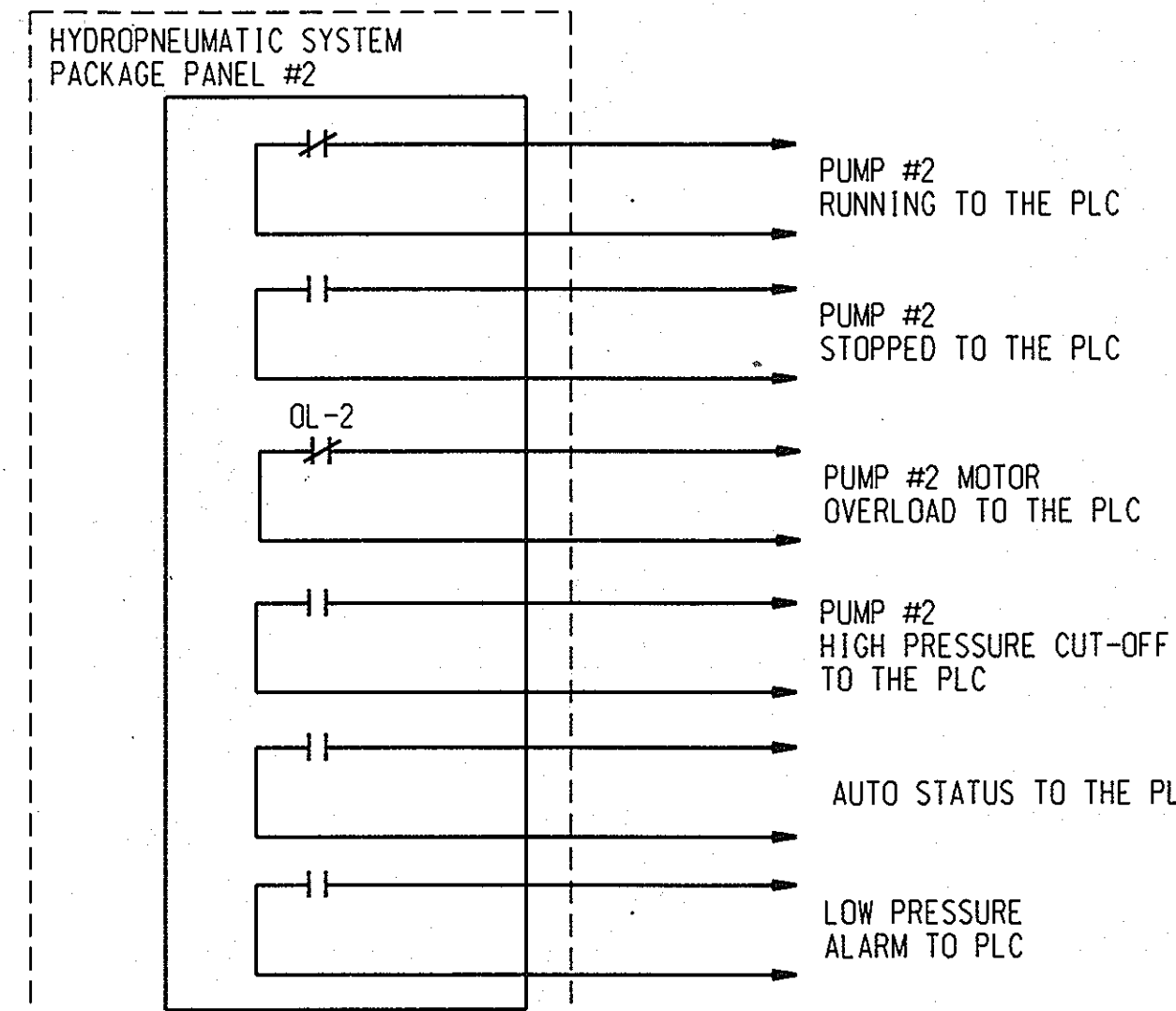
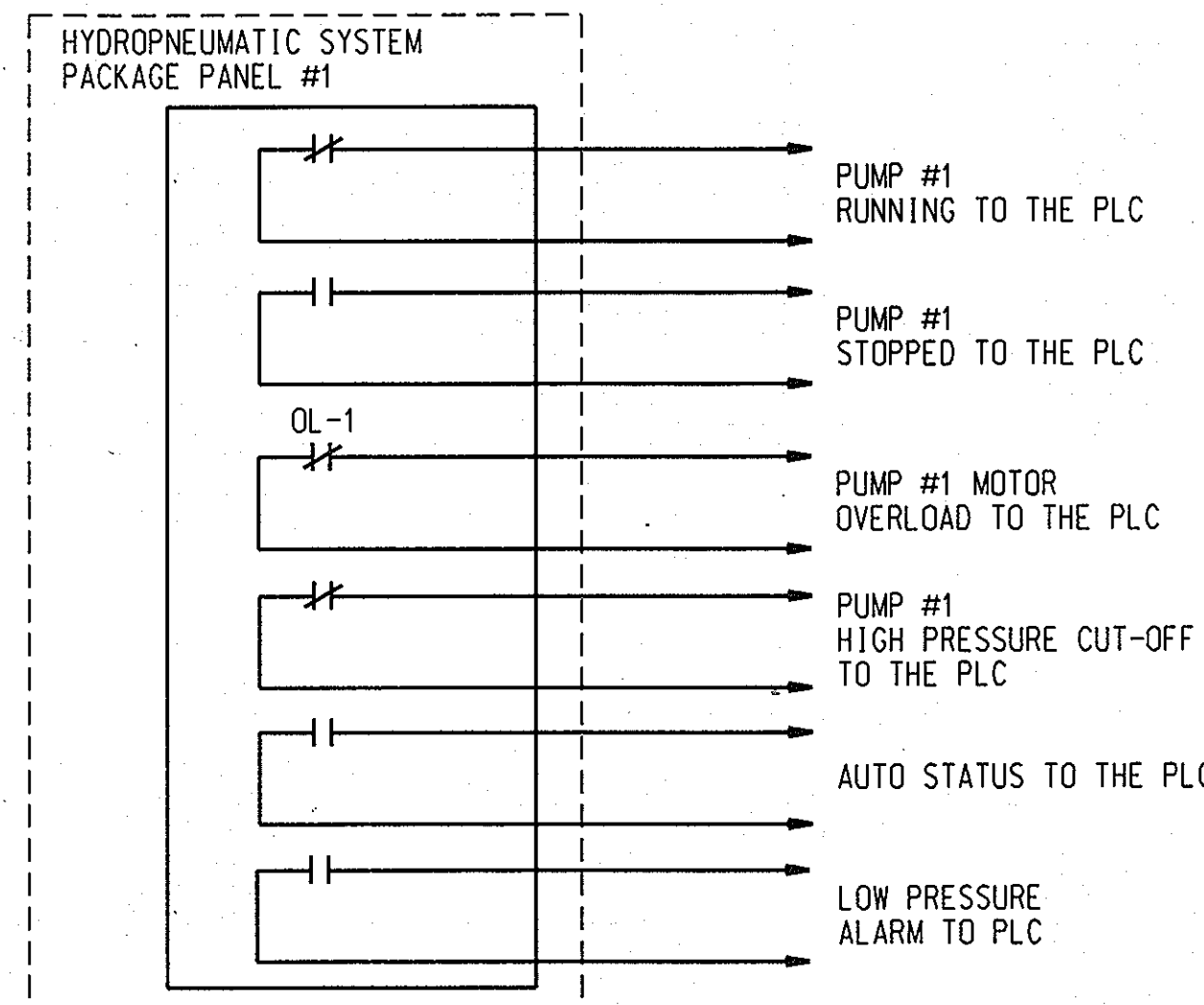
- ▲ REMOTE
- ▼ AT MOTOR CONTROL CENTER
- IN DRY WELL
- ▽ AT CONTROL PANELBOARD (PCS)
- IN THE WET WELL (ABOVE GRATING)
- LOCAL AT UNIT
- IN WET WELL



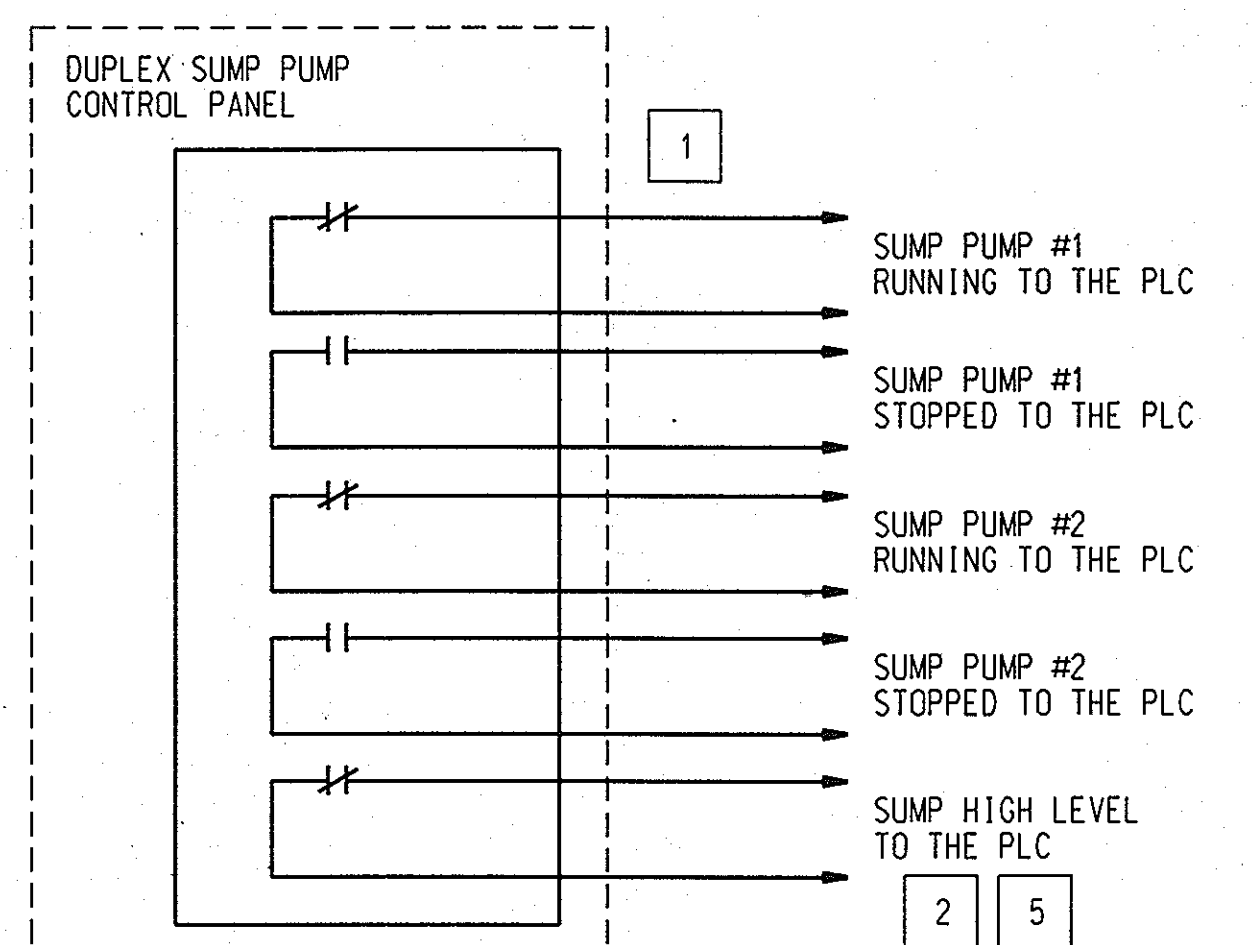
**DRY WELL VENTILATION FAN F-1**



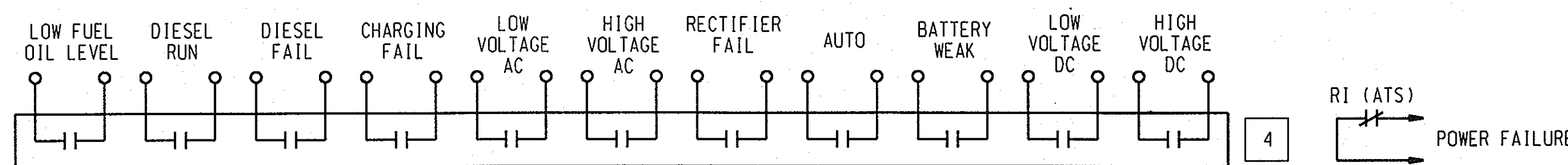
**INSTRUMENTATION POWER**



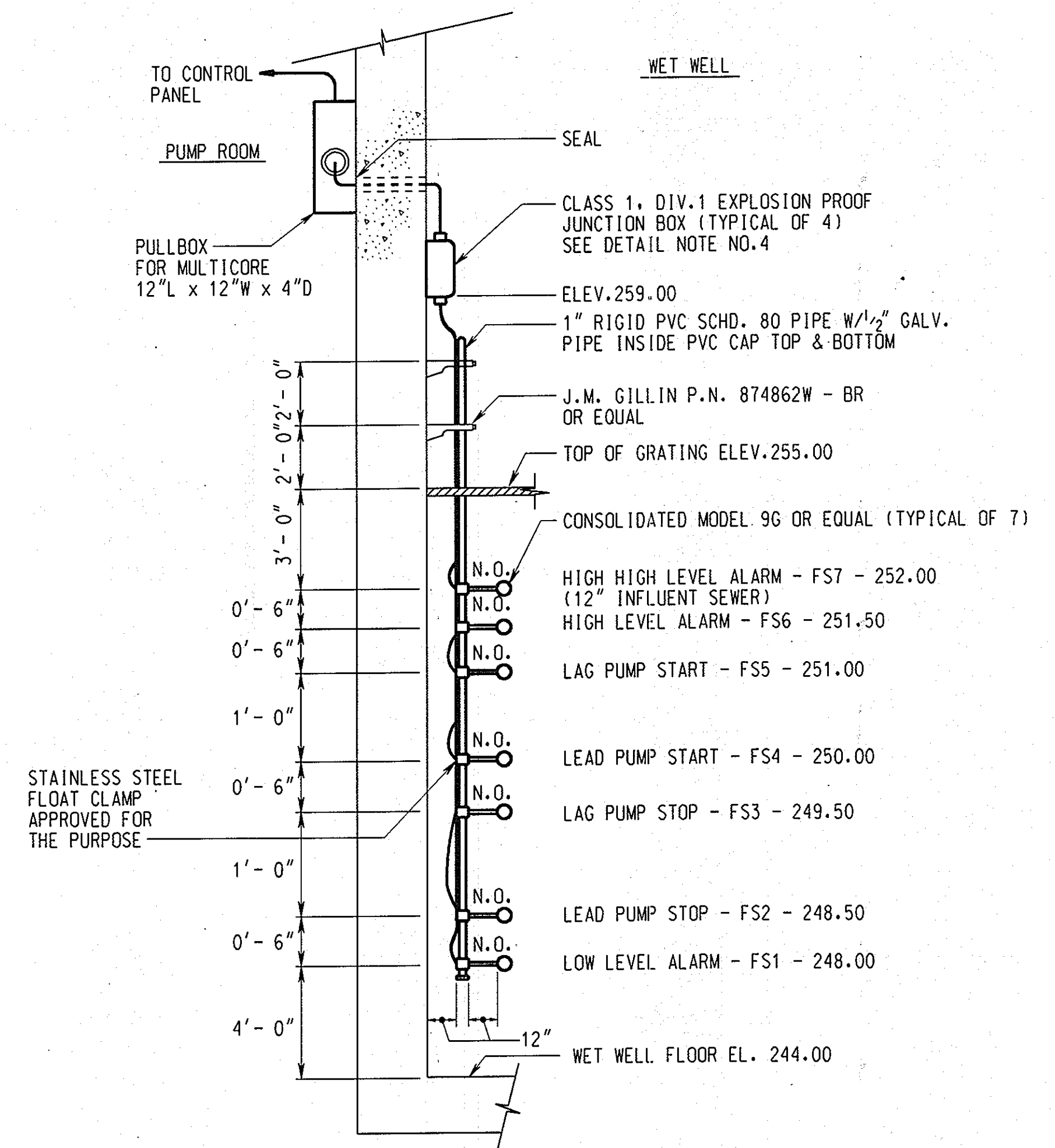
**HYDRO-PNEUMATIC SYSTEM PACKAGE DIGITALS**



**SUMP PUMP SYSTEM PACKAGE DIGITALS**



**DIESEL GENERATOR PACKAGE DIGITALS**



**DETAIL NOTES:**

1. FLOAT MAST GREATER THAN 12" FROM WALL AND MOUNTED SO NO OBSTRUCTION WILL INTERFERE WITH FLOAT MOVEMENT.
2. FLOATS LESS THAN 16" APART SHALL BE IN 90° SEPARATED VERTICAL PLANES.
3. FLOAT MAST SHALL BE LOCATED 18" FROM WET WELL LADDER OR STEPS.
4. JB SHALL CLASS 1, DIV.1. ALL SPLICING FOR THE FLOATS SHALL BE MADE WITHIN THE JB. MULTI-CURE WILL PENETRATE WALL BETWEEN WETWELL AND PUMP ROOM. MULTICORE PULL FROM PUMP ROOM TO CONTROL PANEL INTERPOSING RELAY BOARD.

**FLOAT MAST ASSEMBLY DETAIL**

(TYPICAL OF 2)  
NOT TO SCALE

**GENERAL NOTES:**

1. ALL LIGHTS PUSH TO TEST.
2. PROVIDE ONE FORM "C", SPDT DRY ALARM CONTACT AS PER SPECIFICATION 16695-2.05C.

**DRAWING NOTES:**

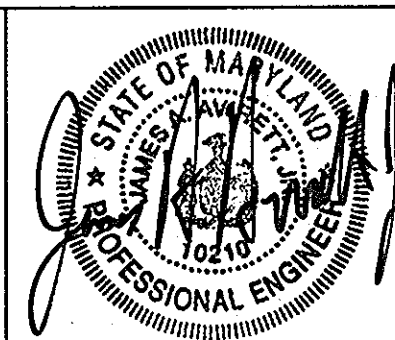
- 1 SUMP PUMP LEAD PUMP  
START: ELEV.243.0  
STOP: ELEV.242.0  
LAG PUMP  
START: ELEV.243.5  
STOP: ELEV.242.5
- 2 SUMP PUMP LAG PUMP START INITIATES SUMP HIGH LEVEL TO THE PLC.
- 3 INSTRUMENTS ARE FUSED FOR DEDICATED CIRCUITS AT THE INSTRUMENT CONTROL PANEL.
- 4 ALL DIGITALS (DIESEL) TO PCS PLC
- 5 PUMP ROOM FLOODED (PRF) POWER VIA SUMP PACKAGE REF: 1-1

**RECORD DRAWING**  
11/21/02

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.

Director of Public Works DATE: 1/20/03  
Chief, Bureau of Engineering DATE: 1/29/03  
Chief, Bureau of Utilities DATE: 1-29-03  
Chief, Utility Design Division

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.

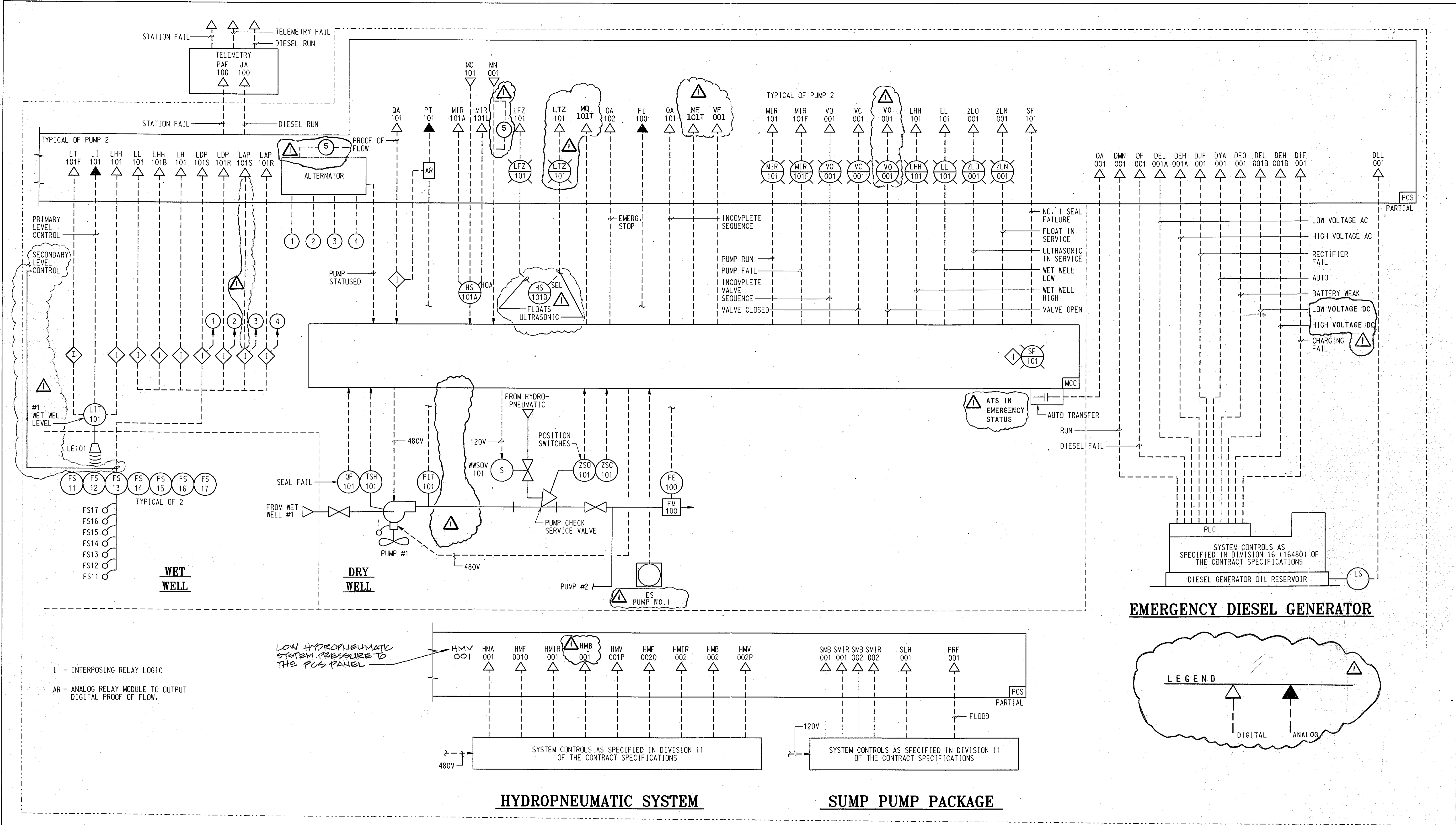


DES: WRD/EJM  
DRN: EJM/GWG  
CHK: JAA  
DATE: 12/09/98

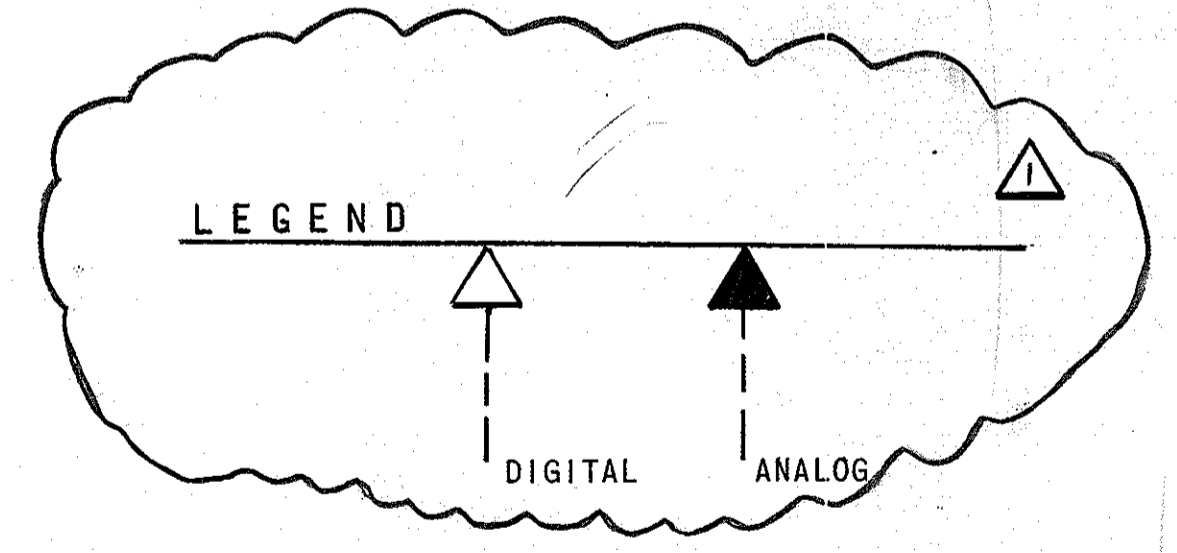
ELECTRICAL CONTROL DIAGRAMS

600' SCALE MAP NO. BLOCK NO.

ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND



**EMERGENCY DIESEL GENERATOR**



**DRAWING NOTES**

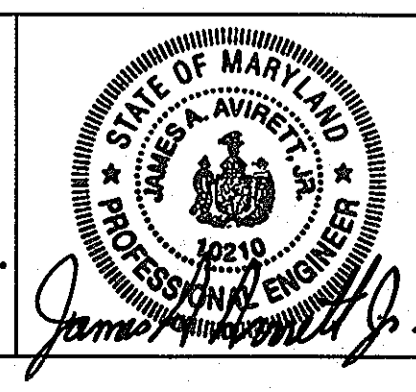
- ④ ALL SYMBOLS ARE ISA STANDARD
- ① SYMBOL FOR INTERPOSING RELAY
- ② SYMBOL FOR ANALOGUE RELAY MODULE
- ③ ① LEAD PUMP FLOAT SWITCH INTERPOSING RELAY AND ② LAG PUMP FLOAT SWITCH INTERPOSING RELAY STATUS ALTERNATOR

**RECORD DRAWING**  
11/18/02

1-4

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND.  
1/15/99  
1-15-99

PREPARED BY:  
**WR&A**  
Whitman, Reardon and Associates, LLP.



DES: WR&A/JM			
DRN: EAB/RD/CWC			
CHK: BAK			
DATE: 12/09/98			
BY: RJK	1	RECORD DRAWING	8-23-00
		ADDENDUM NO. 1	2/18/99
		REVISION	DATE

PROCESS AND INSTRUMENTATION  
DIAGRAM  
600' SCALE MAP NO. \_\_\_\_\_ BLOCK NO. \_\_\_\_\_

ROCKBURN WASTEWATER PUMPING STATION  
CAPITAL PROJECT NO. S-6200  
CONTRACT NO. 10-3695  
FIRST ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN  
SHEET 36A OF 36