

ROCKBURN WASTEWATER PUMPING STATION

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

GENERAL NOTES

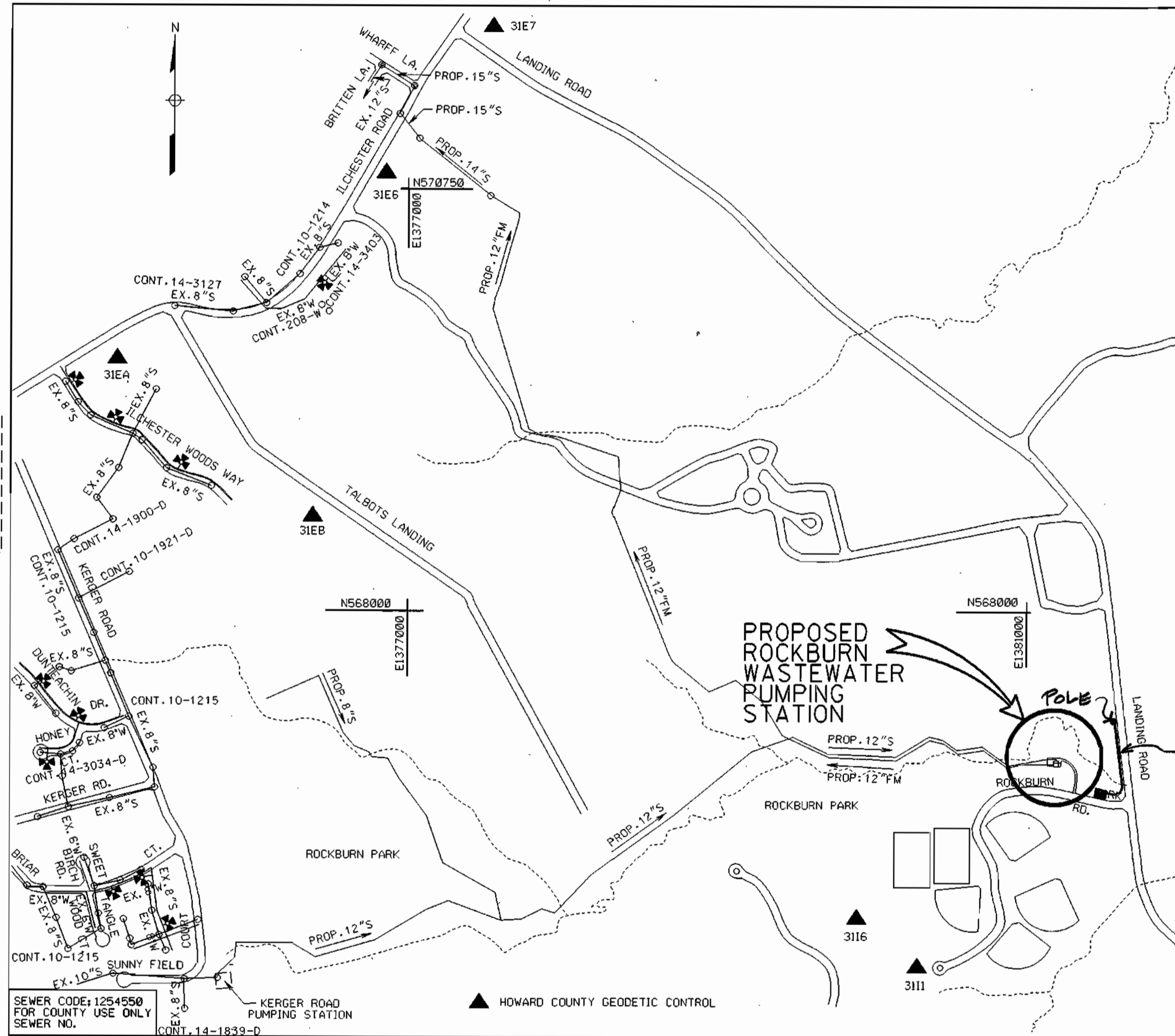
- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SUPPLY. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- THE COORDINATES 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	410-313-1888
STATE HIGHWAY ADMINISTRATION	410-531-5533
BGE (CONTRACTOR SERVICES)	410-850-4620
BGE (UNDERGROUND DAMAGE CONTROL)	410-787-9068
BUREAU OF UTILITIES, HOWARD CO. DPW	1-800-257-7777
MISS UTILITY	410-313-4900
AT&T	410-865-3888
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 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(a) 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



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	0.981 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	1500 CU YDS
WASTE SITE	APPROVED
NUMBER OF EMPLOYEES	0
NUMBER OF PARKING SPACES	5

INDEX OF DRAWINGS

SHEET NO.	DRAWING NO.	DESCRIPTION	SDP SHEET	OF	TOTAL
1	G-1	TITLE SHEET, VICINITY MAP, INDEX OF DRAWINGS & GENERAL NOTES	SDP SHEET 1	OF	6
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 4	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			
16	S-2	PLANS AND DETAILS			
17	S-3	PLANS, SECTIONS AND DETAILS			
18	S-4	SECTIONS AND DETAILS			
19	S-5	SECTIONS AND DETAILS			
20	S-6	BEAM AND COLUMN ELEVATIONS AND SECTIONS			
21	S-7	STAIR SECTIONS AND DETAILS			
22	S-8	TYPICAL DETAILS			
23	M-1	PLANS			
24	M-2	SECTIONS			
25	M-3	PLAN AND DETAILS			
26	M-4	DETAILS			
27	E-1	ELECTRICAL LEGEND, ABBREVIATIONS, GENERAL NOTES			
28	E-2	ELECTRICAL SITE PLAN			
29	E-3	ONE-LINE DIAGRAM			
30	E-4	POWER PLANS			
31	E-5	LIGHTING PLANS			
32	E-6	MOTOR CONTROL CENTER - ELEVATION SCHEDULE			
33	E-7	PANEL AND LIGHTING SCHEDULES			
34	I-1	INSTRUMENTATION PLANS AND RISER			
35	I-2	PUMP CONTROL DIAGRAMS			
36	I-3	ELECTRICAL CONTROL DIAGRAMS			
36-A	I-4	PROCESS AND INSTRUMENT DIAGRAM			

SDP DENOTES SITE DEVELOPMENT PLAN

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.
DATE: 1/15/99
SIGNATURE OF DEVELOPER: [Signature]

REVIEWED FOR HOWARD S.C.D. AND MEETS THE TECHNICAL REQUIREMENTS.
DATE: 1/21/99
SIGNATURE: [Signature]

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
DATE: 1/21/99
SIGNATURE: [Signature]

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.
DATE: 1-15-99
SIGNATURE: [Signature]

PREVIOUS SUBMITTALS CHART		
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	
LOT/PARCEL*	ADDRESS
640	5390 LANDING ROAD, ELK RIDGE, MARYLAND 21227

DPZ REFERENCE NO.
SDP 99-14
APPROVAL DATE:

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

RECORD DRAWING
11/18/02
G-1

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DATE: 1-15-99
SIGNATURE: [Signature]

DATE: 1-15-99
SIGNATURE: [Signature]

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

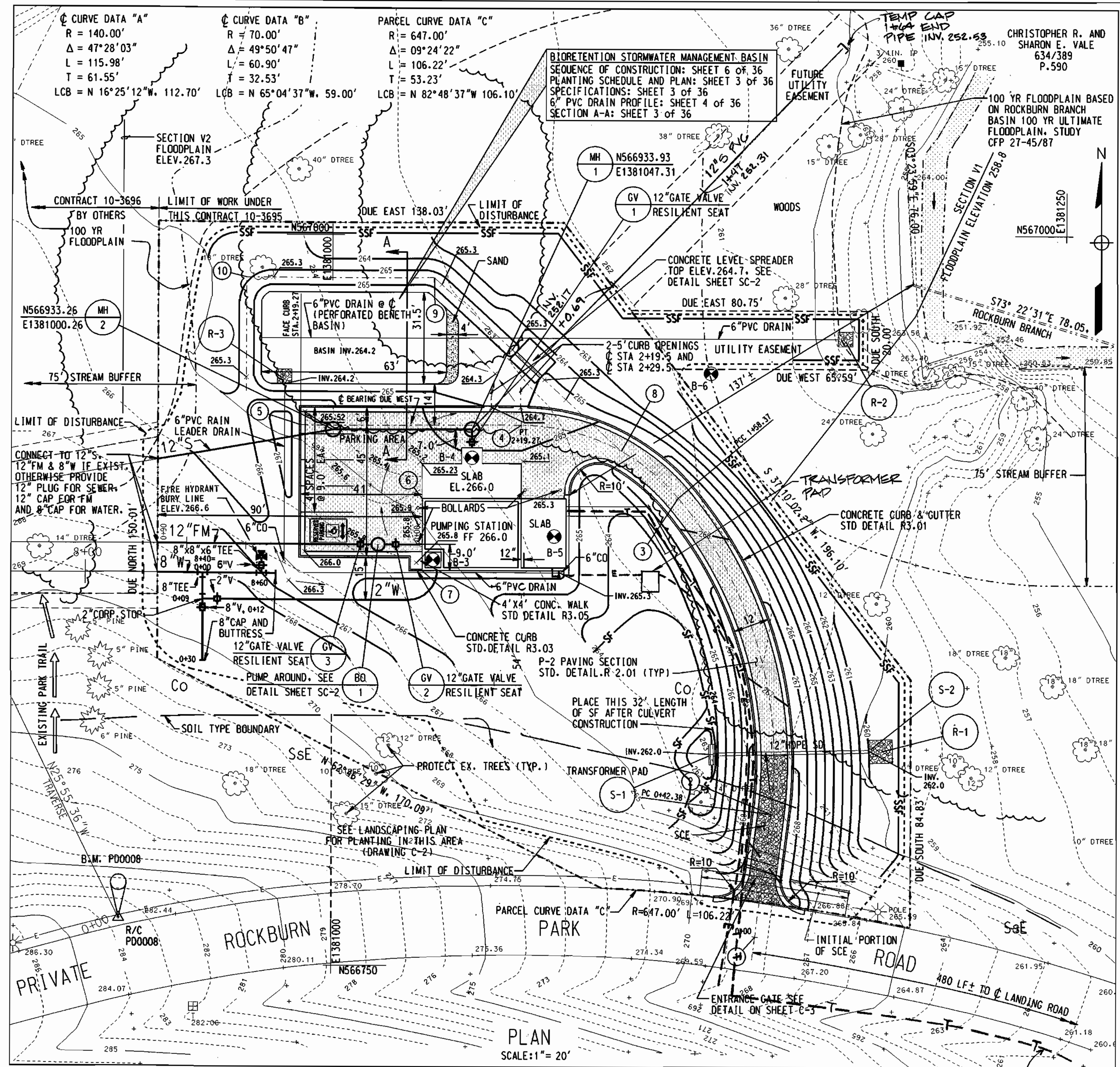


DES	DRN	CHK	DATE	BY	NO.	REVISION	DATE
WRD/EJM			12/28/98				
EJM/GWG							
JAA							

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

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

SCALE AS SHOWN
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

- GENERAL NOTES**
- THERE ARE NO WETLANDS ON THIS SITE.
 - 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.
 - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS & SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS & SPECIFICATIONS, IF APPLICABLE.
 - 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.
 - THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800- 257-7777 AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION WORK.
 - 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.
 - THE CONTRACTOR SHALL KEEP THE PRIVATE PARK ROAD SWEEP CLEAN AT ALL TIMES.
 - THE HOWARD COUNTY SOIL SURVEY MAP SHOWS TWO SOILS ON THIS SITE: Co OR CODORUS, A HYDROLOGICAL TYPE C SOIL, AND SsE OR SASSAFRASS, A HYDROLOGICAL TYPE B SOIL.
 - THE SEQUENCE OF CONSTRUCTION NOTES AND SEDIMENT CONTROL NOTES ARE ON DRAWING SC-2

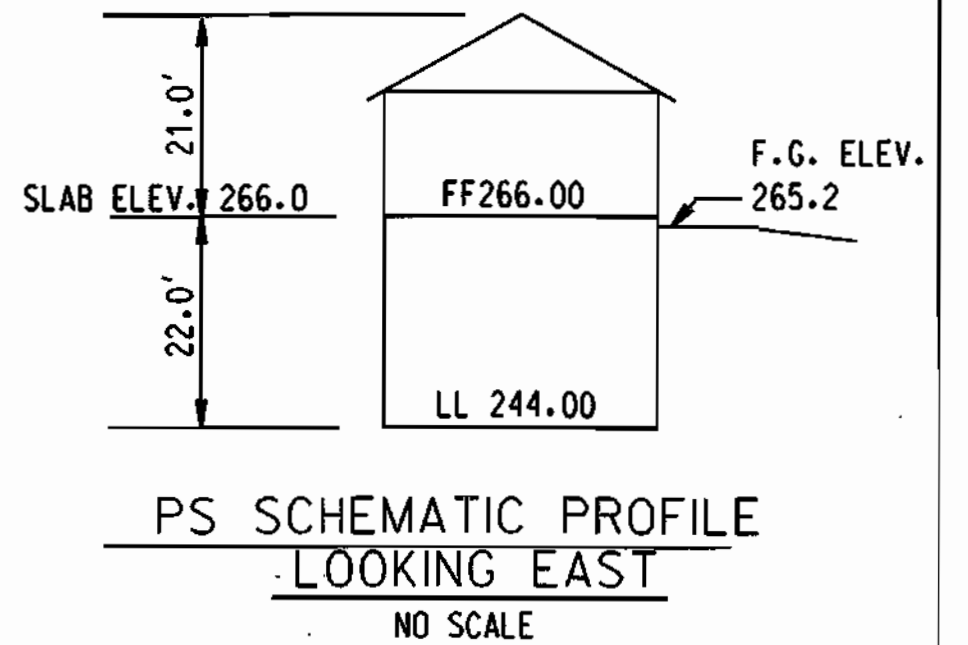
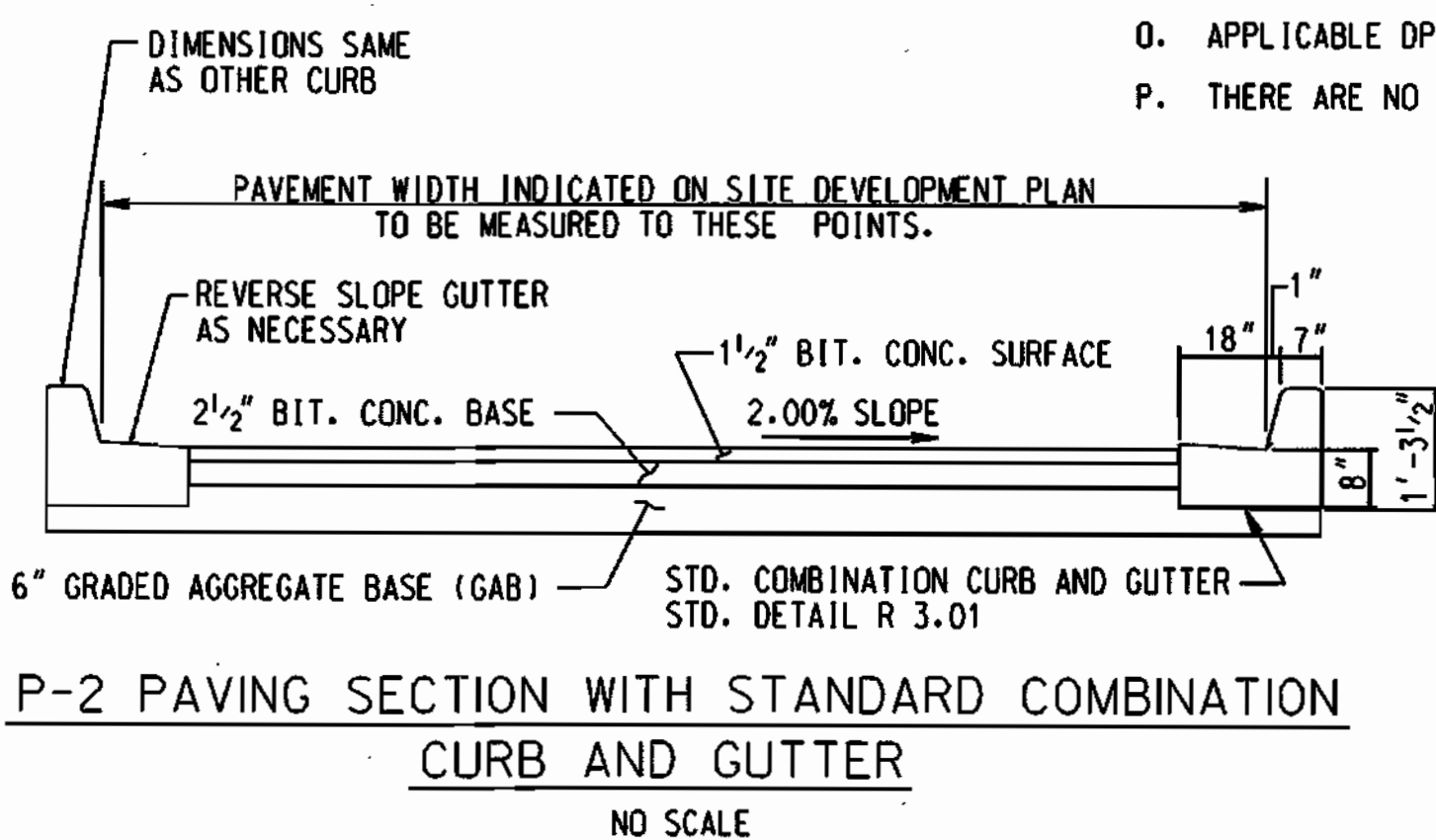
WATER MAIN LOCATION DATA

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" X 6" 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

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

- SITE ANALYSIS DATA CHART**
- TOTAL PROJECT AREA : ROCKBURN BRANCH PARK 401 AC.± OR 17467560 S.F.±
 - AREA OF PLAN SUBMISSION. WASTEWATER PUMPING STATION PARCEL 43,842 S.F. OR 1.006 AC.±
 - LIMIT OF DISTURBED AREA. 41881 S.F. OR 0.961 AC.±
 - PRESENT ZONING. R-20
 - PROPOSED USE FOR SITE AND STRUCTURES: WASTEWATER PUMPING STATION.
 - FLOOR SPACE ON EACH LEVEL OF BUILDINGS PER USE (RETAIL, OFFICE, WAREHOUSE, ETC.) 613 S.F. (FIRST FLOOR ONLY)
 - TOTAL NUMBER OF UNITS ALLOWED FOR PROJECT AS SHOWN ON FINAL PLAT. N/A
 - TOTAL NUMBER OF UNITS PROPOSED ON SUBMISSION. N/A
 - MAXIMUM NUMBER OF EMPLOYEES TENANTS ON SITE PER USE. 2
 - NUMBER OF PARKING SPACES REQUIRED BY HOWARD COUNTY ZONING REGULATIONS AND /OR FDP CRITERIA: 2
 - 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.)
 - OPEN SPACE ON SITE: 400AC. AND 99.7% OF GROSS AREA.
 - AREA OF RECREATION OPEN SPACE REQUIRED BY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
 ACRES REQUIRED N/A ACRES PROVIDED N/A
 - BUILDING COVERAGE OF SITE: 1128 S.F. OR 0.026AC.± 0.006% OF GROSS AREA.
 - APPLICABLE DPZ FILE REFERENCES: SDP 75-99, SDP 79-172, SDP 85-232, SDP 98-107
 - 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
 - SOIL BORING
 - Co SOIL TYPE: CODORUS SILT LOAM
 - SsE SOIL TYPE: SASSAFRASS SOILS
 - TREE LINE

ADDRESS CHART

LOT/PARCEL #	ADDRESS
640	5390 LANDING ROAD, ELK RIDGE, MARYLAND 21227

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL #
ROCKBURN BRANCH PARK	LANDING ROAD ENTRANCE	640
PLAT # OR L/F	BLOCK #	ZONING
784/646	23	R-20
TAX MAP	ELECT. DIST.	CENSUS TRACT
31	1	6011
WATER CODE	SEWER CODE	
W-5	S-5	

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

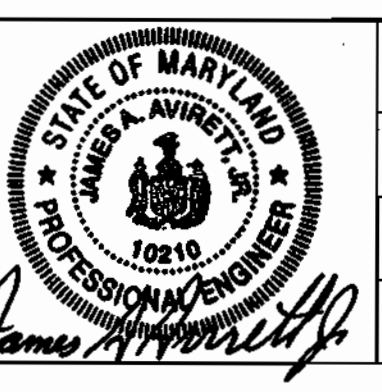
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 [Signature] 1-15-99 DATE

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 [Signature] 1/21/99 DATE
 [Signature] 1/21/99 DATE
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DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND.
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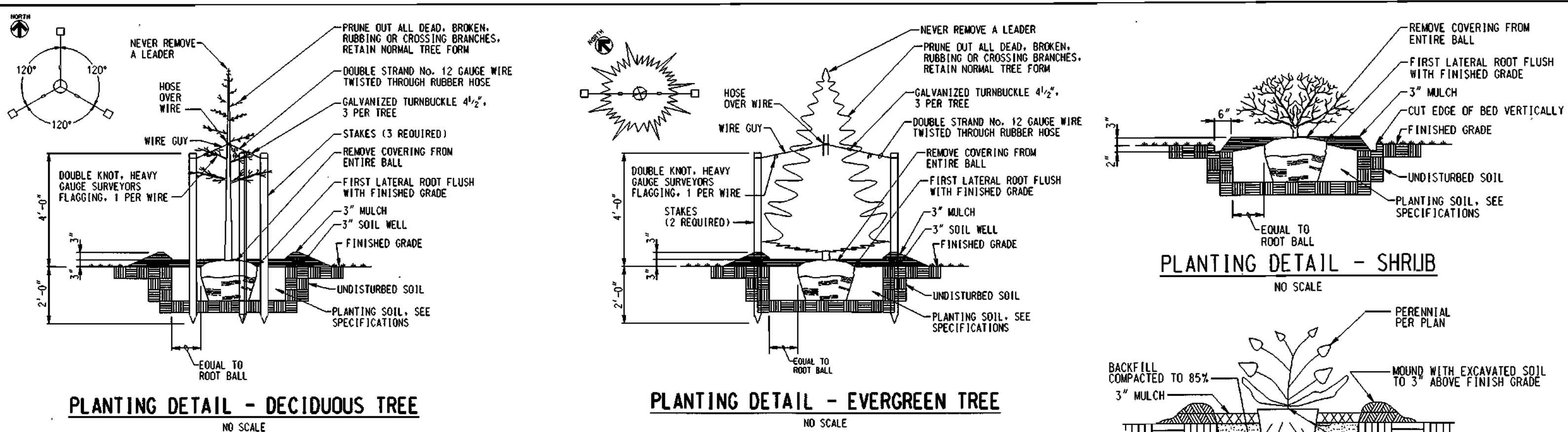
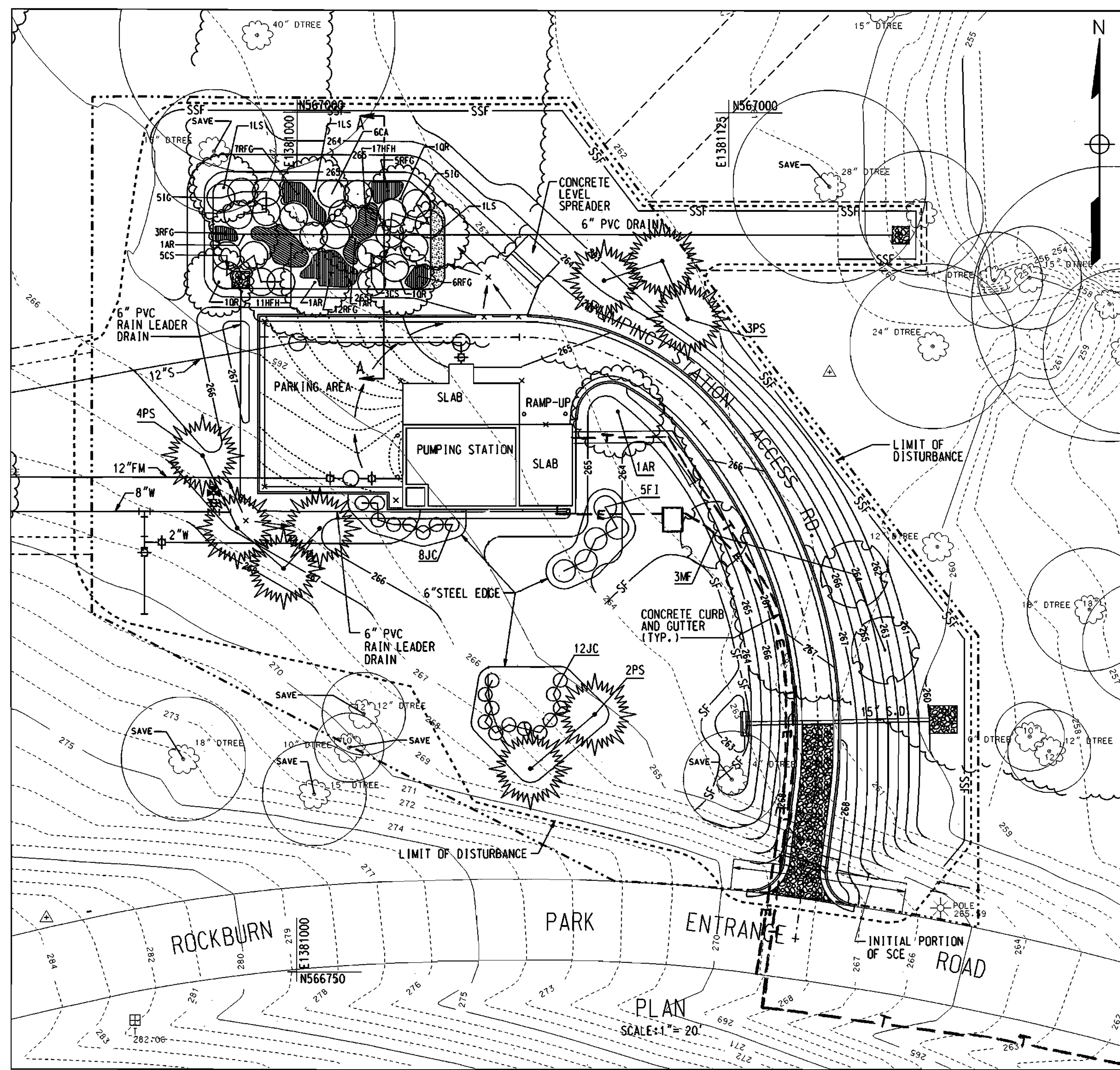
PREPARED BY:
WR&A
 Whitman, Reardon and Associates, LLP.
 [Signature] 1-15-99 DATE



DES: WRD/EJM
 DRN: EJM/GWG
 CHK: JAA
 DATE: 12/09/98
 BY: [Signature]
 NO. [] REVISION [] DATE: 6/25/02

PUMPING STATION SITE PLAN
 SDP SHEET 2 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 2 OF 36

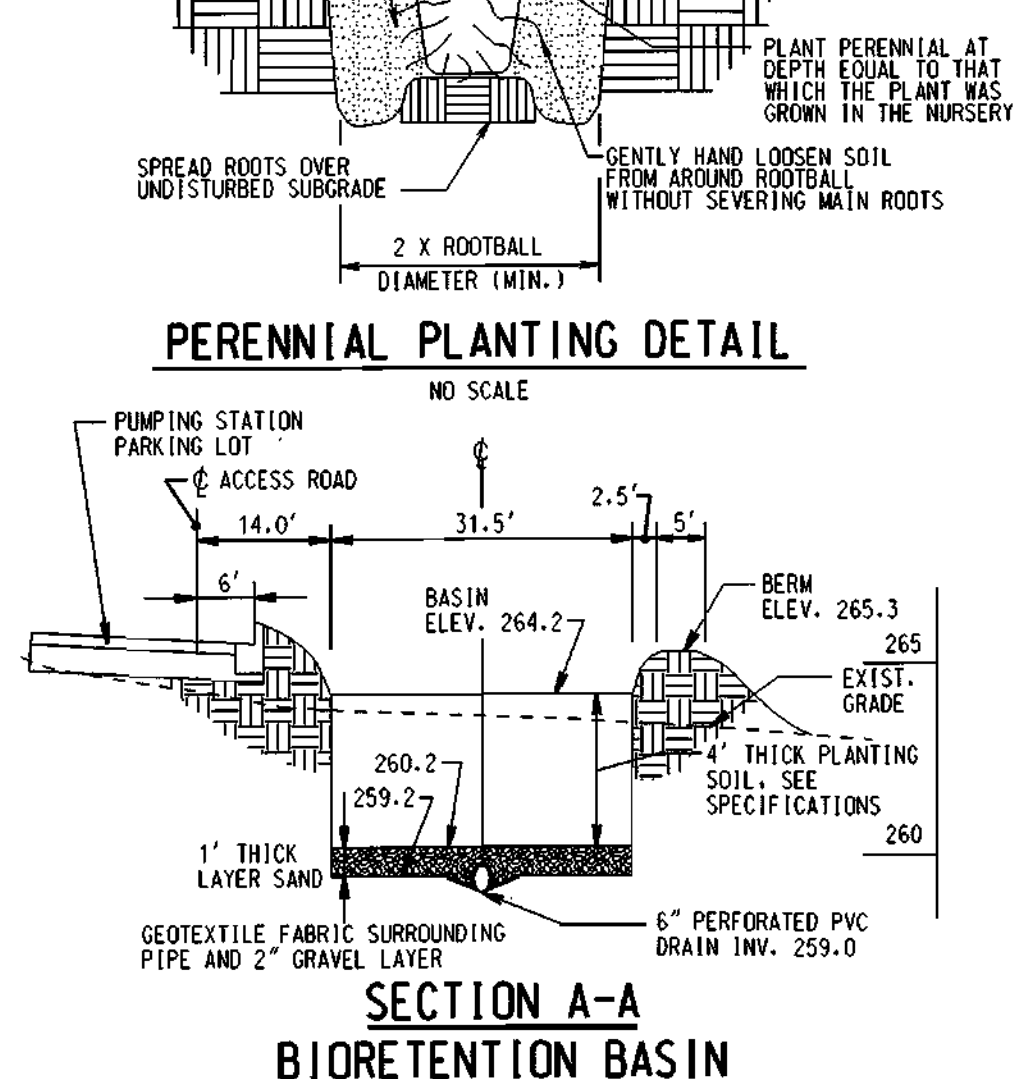


GENERAL LANDSCAPING PLANTING SCHEDULE

QTY.	ABBR.	SCIENTIFIC NAME	COMMON NAME	SIZE	HEIGHT	SPRED	ROOT
20	JC	JUNIPERUS CHINESE "SEA GREEN"	BLUE PFITZER JUNIPER	#3	24"-30"	24"-30"	CONTAINER
5	FI	FORSYTHIA XINTERMEDIA "MORNING GLORY"	MORNING GLORY FORSYTHIA		3'-4'	3'-4'	B&B
3	MF	MALUS FLORIBUNDA	JAPANESE FLOWERING CRABAPPLE	1 3/4"-2"	10'-12'	10'-12'	B&B
1	AR	ACER RUBRUM	RED MAPLE	1 3/4"-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	LIGULIDAMBER 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	RUBBECKIA FULGIDA "GOLDSTRUM"	BLACK EYED SUSANS	1 GAL.			CONTAINER



1. 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, WIGWORT, 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-205: 100 LBS./ACRE
 POTASSIUM - K-20: 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 90 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.
 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. 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-205) - 10%
 SOLUBLE POTASH (K-20) - 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.

- 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.

11. 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 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.

ADDRESS CHART

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

- GENERAL NOTES:**
- ALL PLANTING BEDS (EXCEPT BIORETENTION AREA) SHALL BE ROTO-TILLED TO A DEPTH OF 12 INCHES.
 - ALL PLANTING BEDS ARE TO BE MULCHED AT AN AVERAGE THICKNESS OF 3 INCHES.
 - ALL PLANTING BEDS ARE TO BE MULCHED WITH PINE BARK MULCH.
 - ALL PLANTINGS SHALL BE DONE BETWEEN MARCH 1 AND MAY 15 OR BETWEEN AUGUST 15 AND NOVEMBER 15.
 - ALL PLANTINGS SHALL BE WARRANTED FOR A PERIOD OF ONE YEAR AFTER DATE OF SUBMITTAL COMPLETION, AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM LACK OF ADEQUATE MAINTENANCE, NEGLECT, OR ABUSE BY OWNER. ABNORMAL WEATHER CONDITIONS UNUSUAL FOR WARRANTY PERIOD, OR INCIDENTS WHICH ARE BEYOND CONTRACTOR'S CONTROL.
 - REMOVE AND REPLACE DEAD TREES AND SHRUBS IMMEDIATELY UNLESS REQUIRED TO PLANT IN THE SUCCEEDING PLANTING SEASON.

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL*
ROCKBURN BRANCH PARK	LANDING ROAD ENTRANCE	640
PLAT # OR L/F BLOCK #	ZONING	TAX MAP
784/646	23	R-20
		ELECT. DISTR.
		1
		CENSUS TRACT
		6011
WATER CODE	SEWER CODE	
W-5	S-5	

REVIEWED FOR HOWARD S.C.D. AND MEETS THE TECHNICAL REQUIREMENTS.
Chad Sumner 1/21/99 DATE
 USA-NATURAL RESOURCES CONSERVATION SERVICE
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
John H. Burton 1/21/99 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 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

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 D. Spon 1-15-99 DATE
 SIGNATURE OF DEVELOPER

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

MAINTENANCE SCHEDULE FOR BIORETENTION AREAS*

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

* TO BE COMPLETED BY CONTRACTOR FOR ONE YEAR FOLLOWING PROJECT COMPLETION. AFTER ONE YEAR FROM THE PROJECT COMPLETION DATE MAINTENANCE OF THE BIORETENTION AREA SHALL BE MAINTAINED BY HOWARD COUNTY'S DEPARTMENT OF PUBLIC WORKS.

RECORD DRAWING
 11/18/02

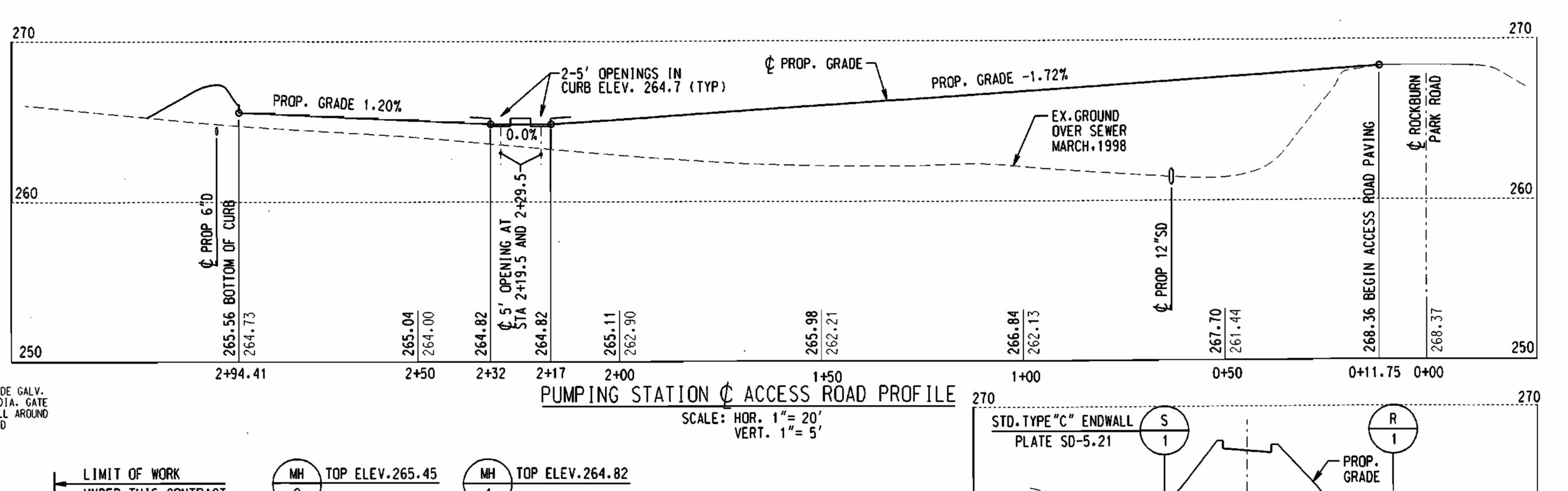
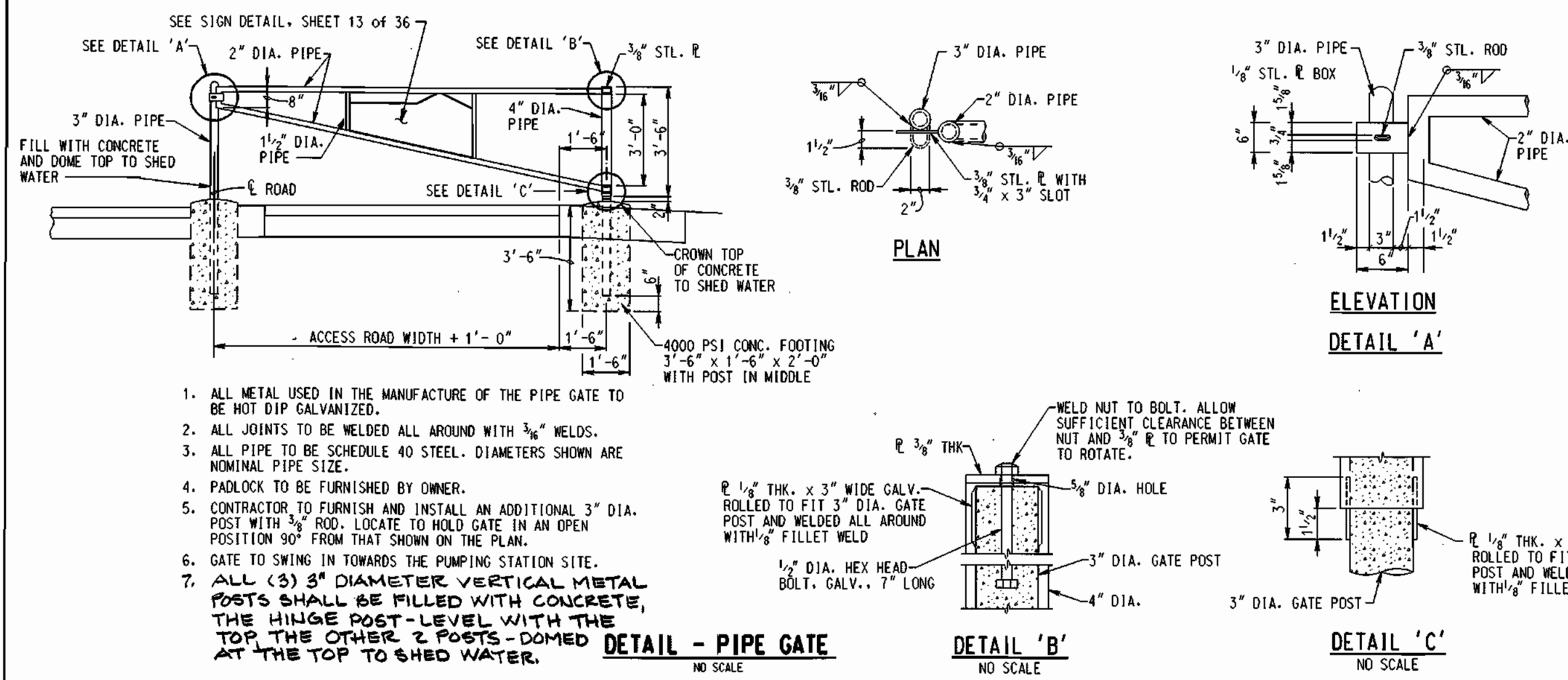
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND.
James A. Avirett, Jr. 1-15-99 DATE
 DIRECTOR OF PUBLIC WORKS
Robert J. ... 1-15-99 DATE
 CHIEF, BUREAU OF UTILITIES

PREPARED BY:
WR&A
 Whitman, Reardon and Associates, LLP.
 STATE OF MARYLAND PROFESSIONAL ENGINEER 10210
James A. Avirett, Jr.

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

LANDSCAPE PLAN,
 BIORETENTION BASIN PLANTING
 PLAN AND SPECIFICATIONS
 SDP SHEET 3 OF 6

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

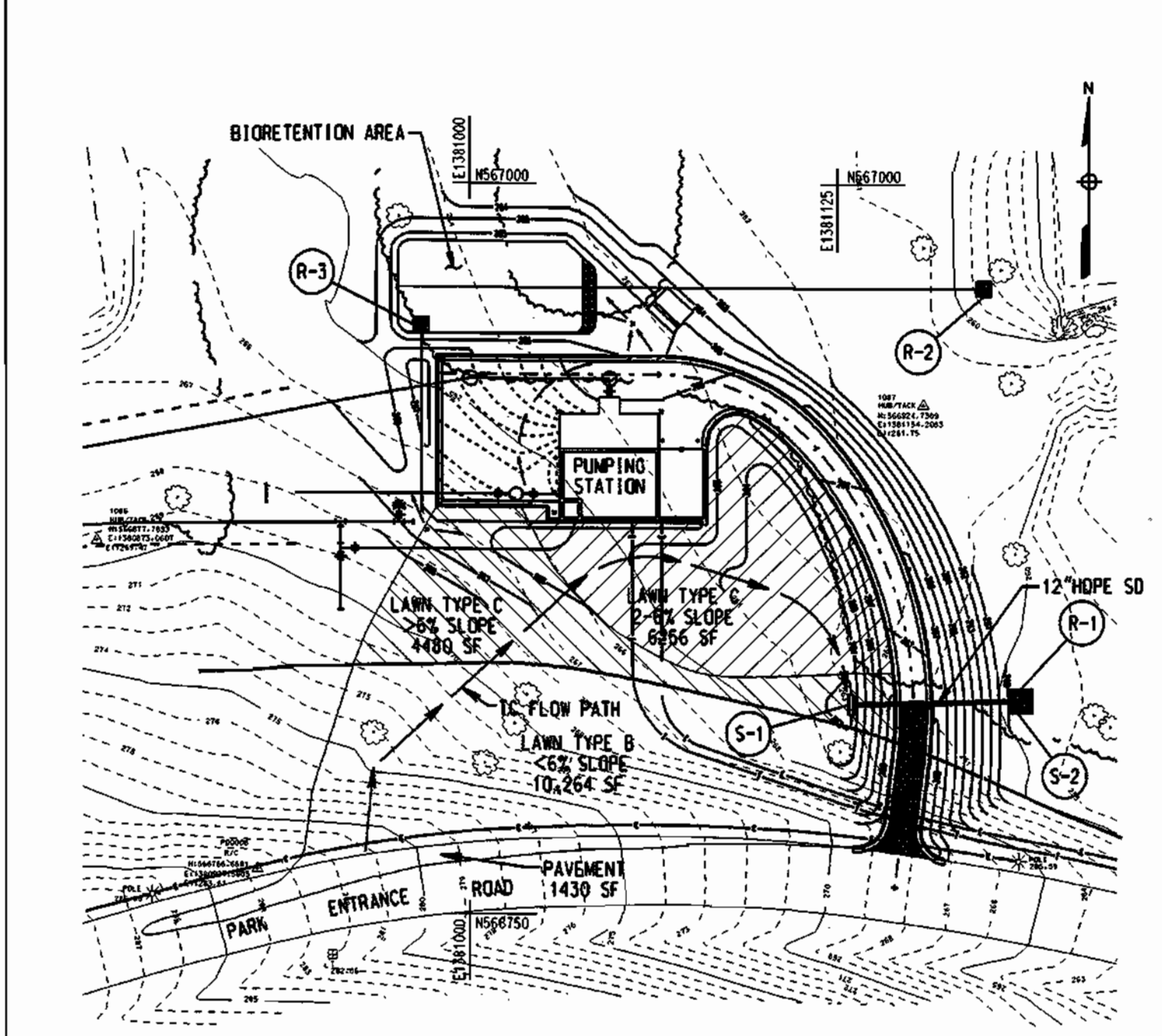


STORM DRAIN FLOW TABULATION FORM

STORM FREQUENCY 10YR. EXCEPT AS NOTED

LOCATION	FROM	TO	ACRES	COEFF. "C"	CA	CA	TIME CONC. -MIN.	INTEN. "I"	Q-CIA C.F.S.	PIPE SIZE	PIPE SLOPE	VEL. FPS	LGTH.	TIME	REMARKS
S-1	S-2	0.515	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

* 25 YEAR STORM INTENSITY



STRUCTURE SCHEDULE

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

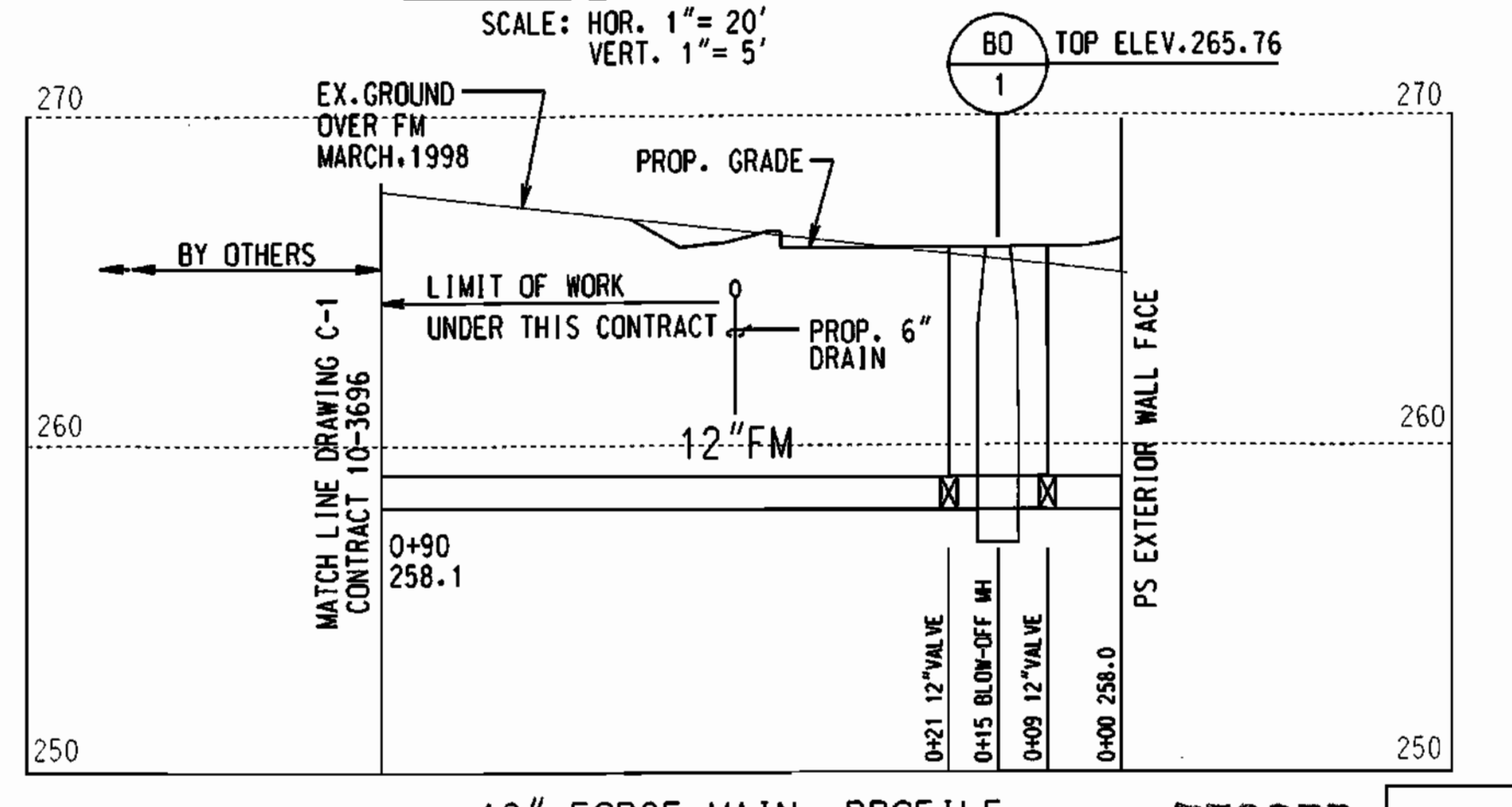
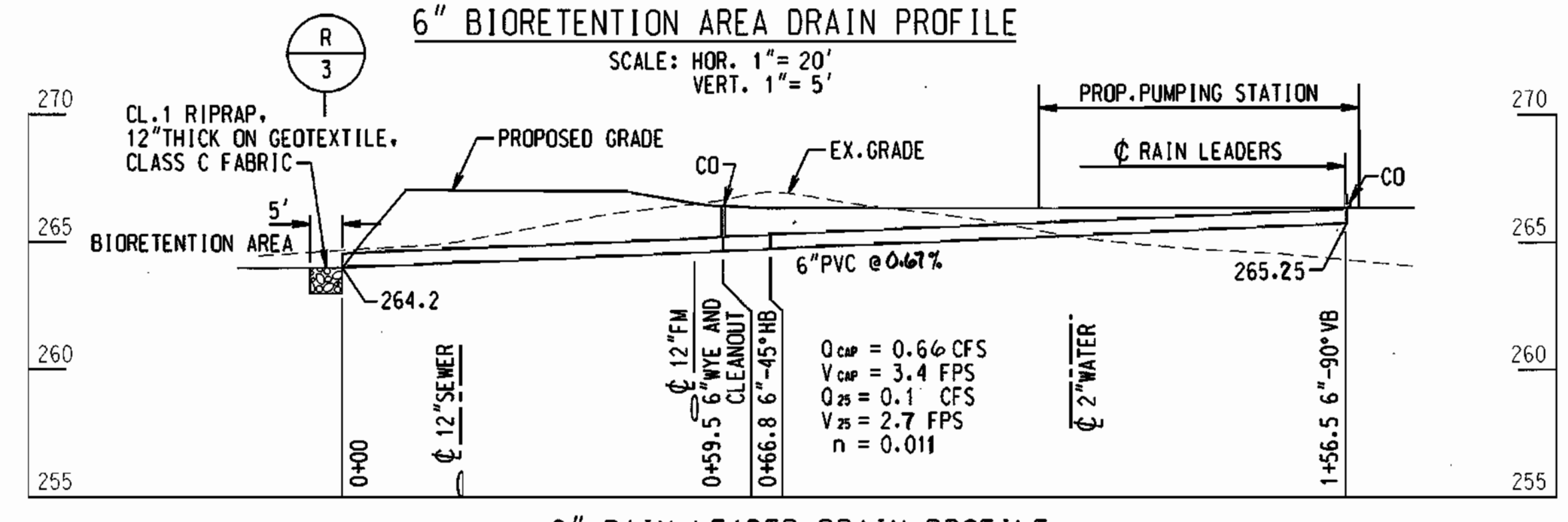
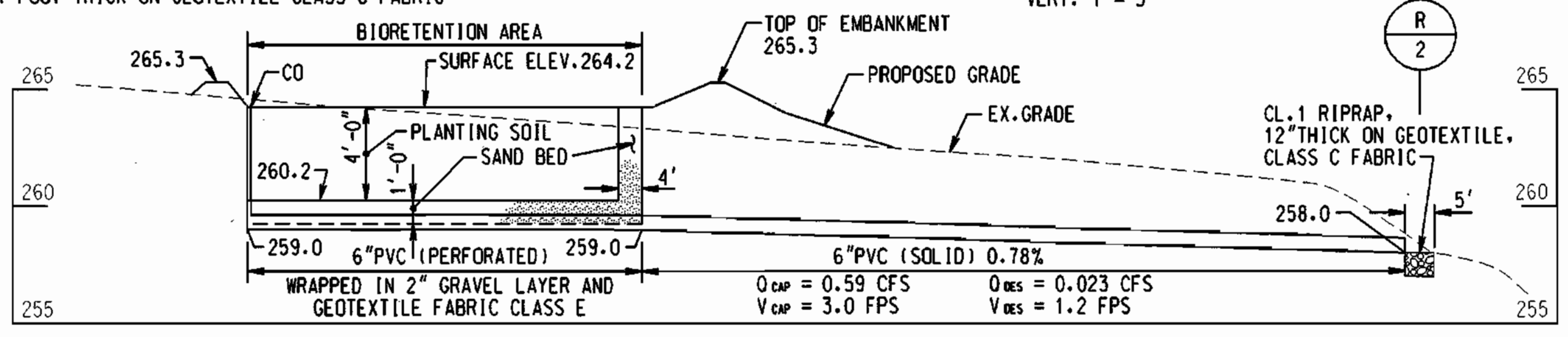
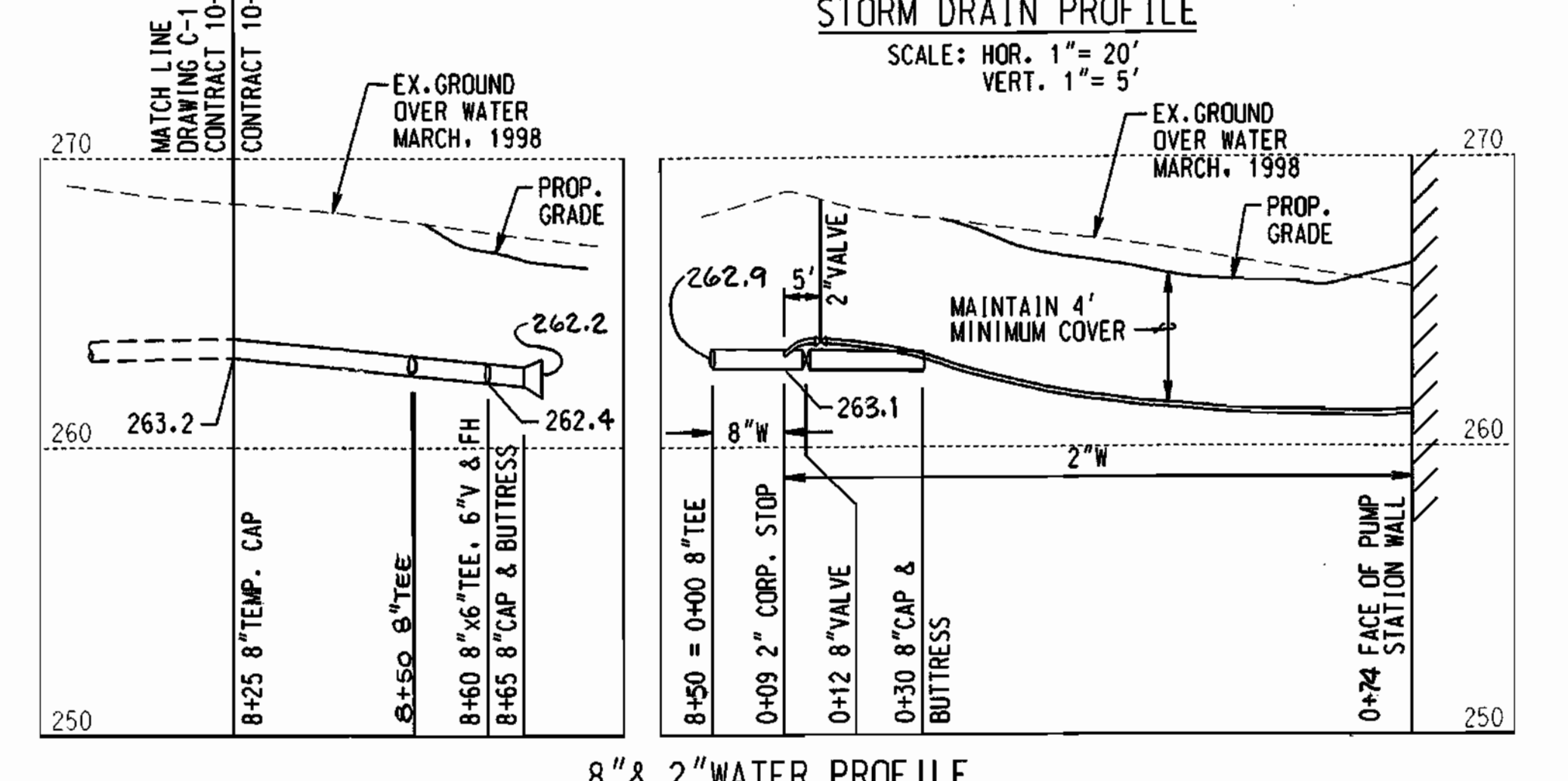
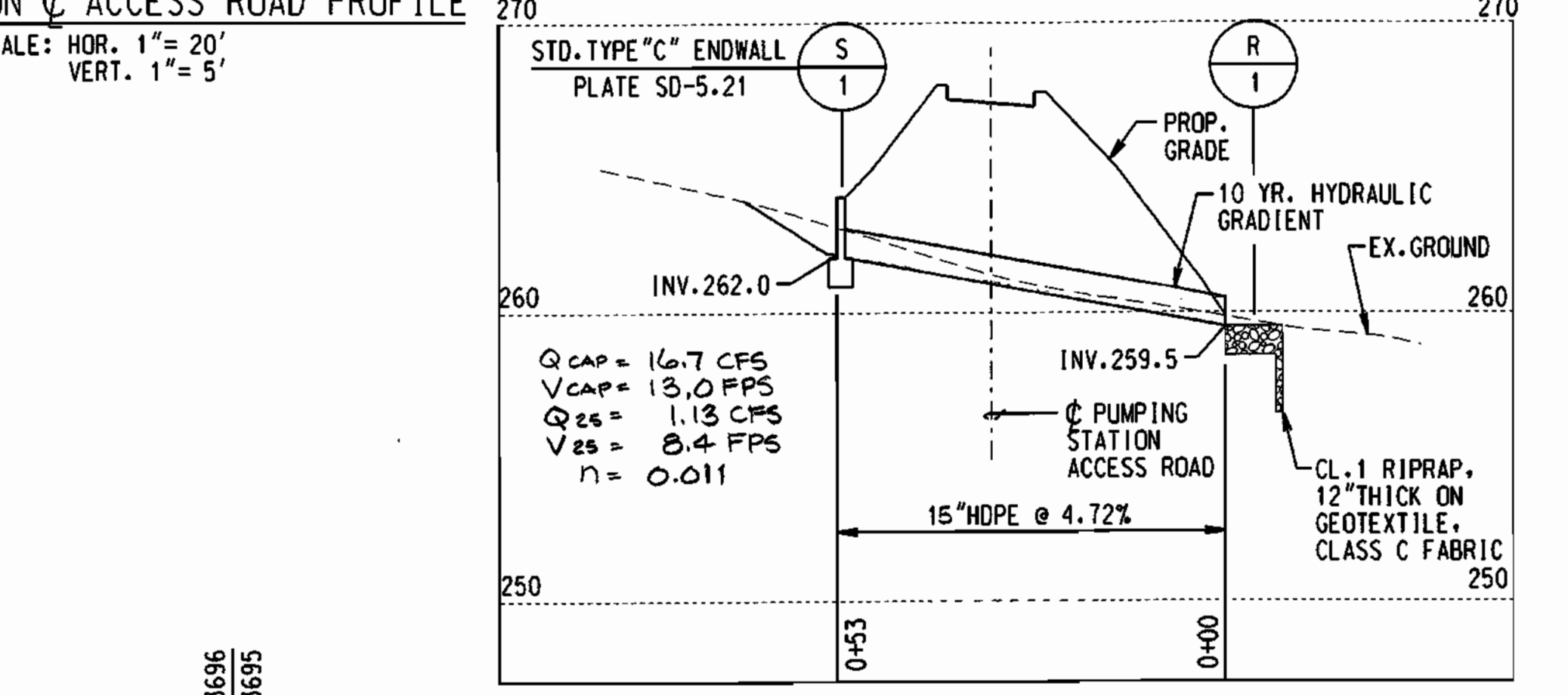
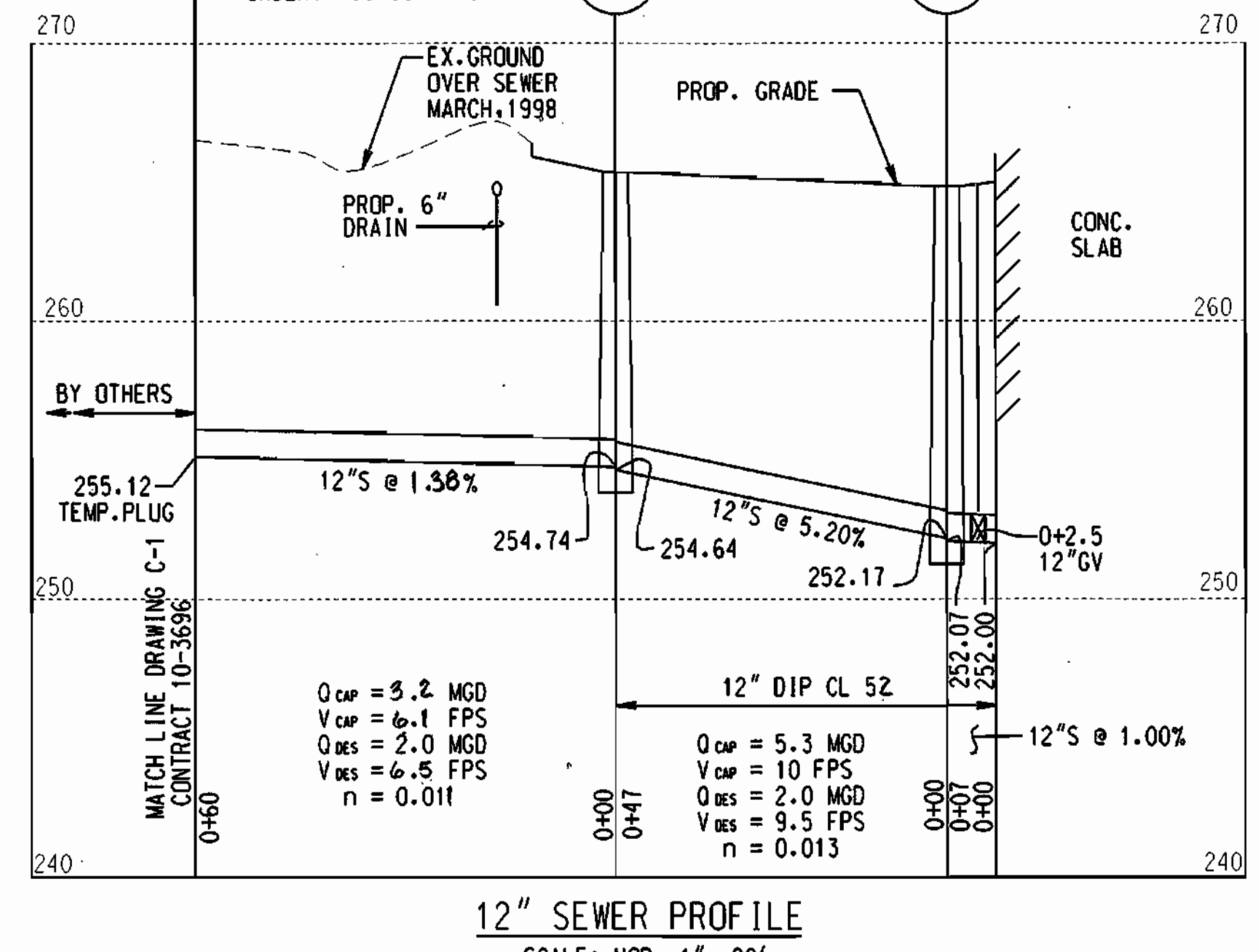
PIPE SCHEDULE

SIZE	TYPE	CLASS	LENGTH	LOCATION
12"	HOPE	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 (#50=9") LAID 1 FOOT THICK ON GEOTEXTILE CLASS C FABRIC



REVIEWED FOR HOWARD S.C.D. AND MEETS THE TECHNICAL REQUIREMENTS.
 [Signature] 1/2/99 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.
 [Signature] 1-15-99 DATE
 JAMES A. AVIRETT JR., P.E. 10210

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

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

PREPARED BY:
WR&A
 Whitman, Reardon and Associates, LLP.
 [Signature]

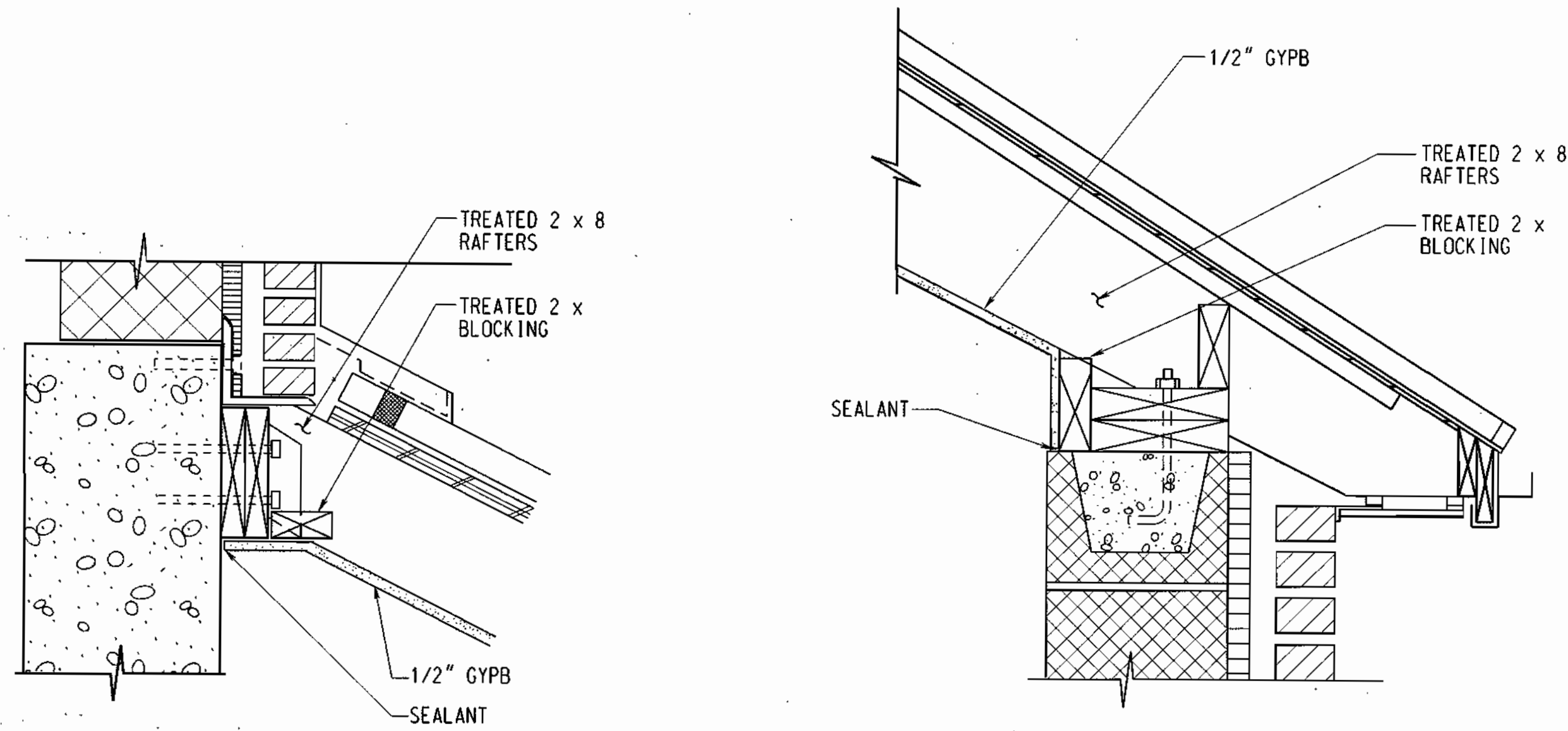


DES: WRD/EJM	
DRN: EJM/GWG	
CHK: JAA	
DATE: 1/2/99	
BY: [Signature]	
NO. []	
REVISION []	
DATE: 1/2/99	

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

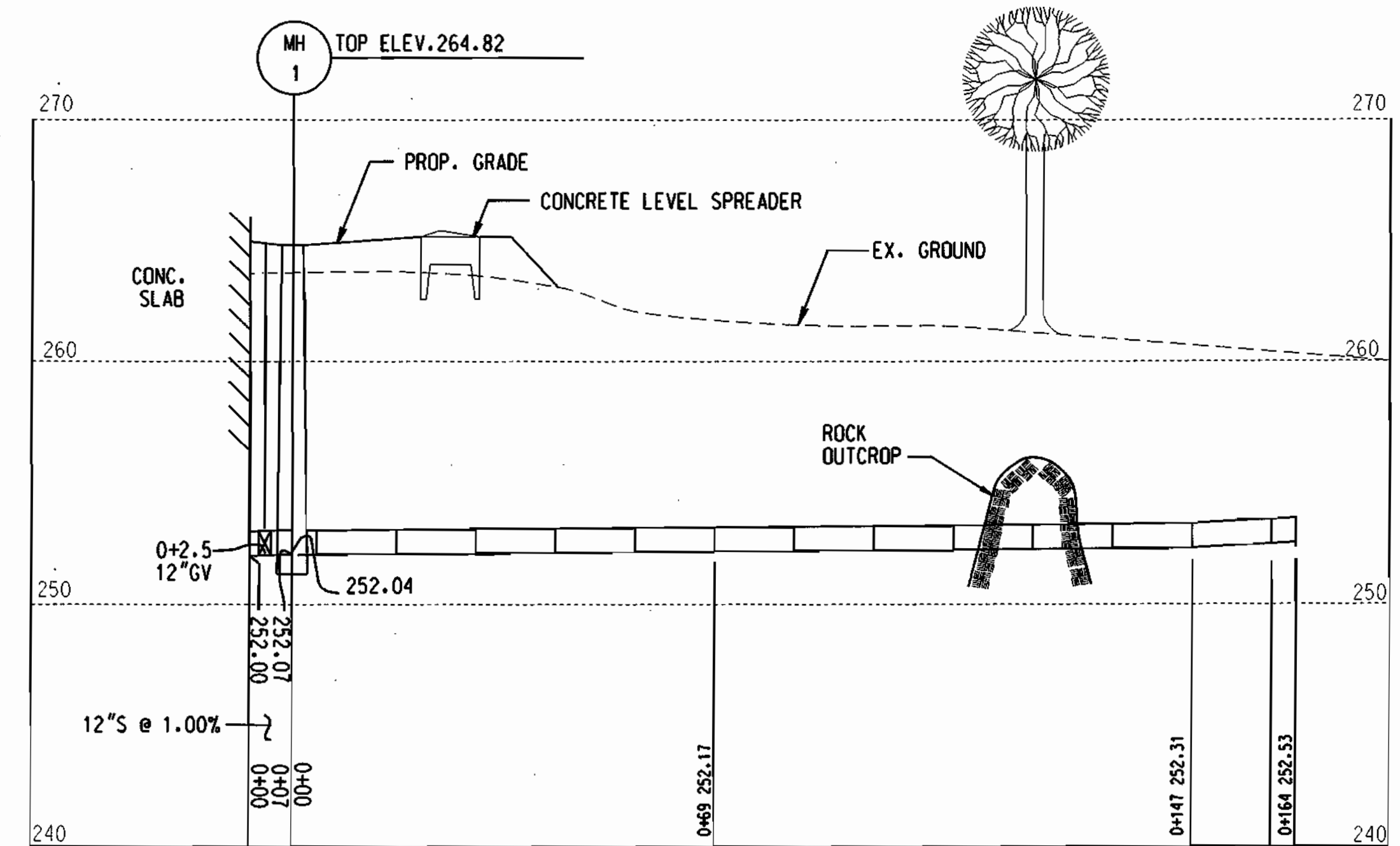
ROCKBURN WASTEWATER PUMPING STATION
 CAPITAL PROJECT NO. S-6200
 CONTRACT NO. 10-3695
 FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 4 OF 36



CEILING DETAILS @ MCC

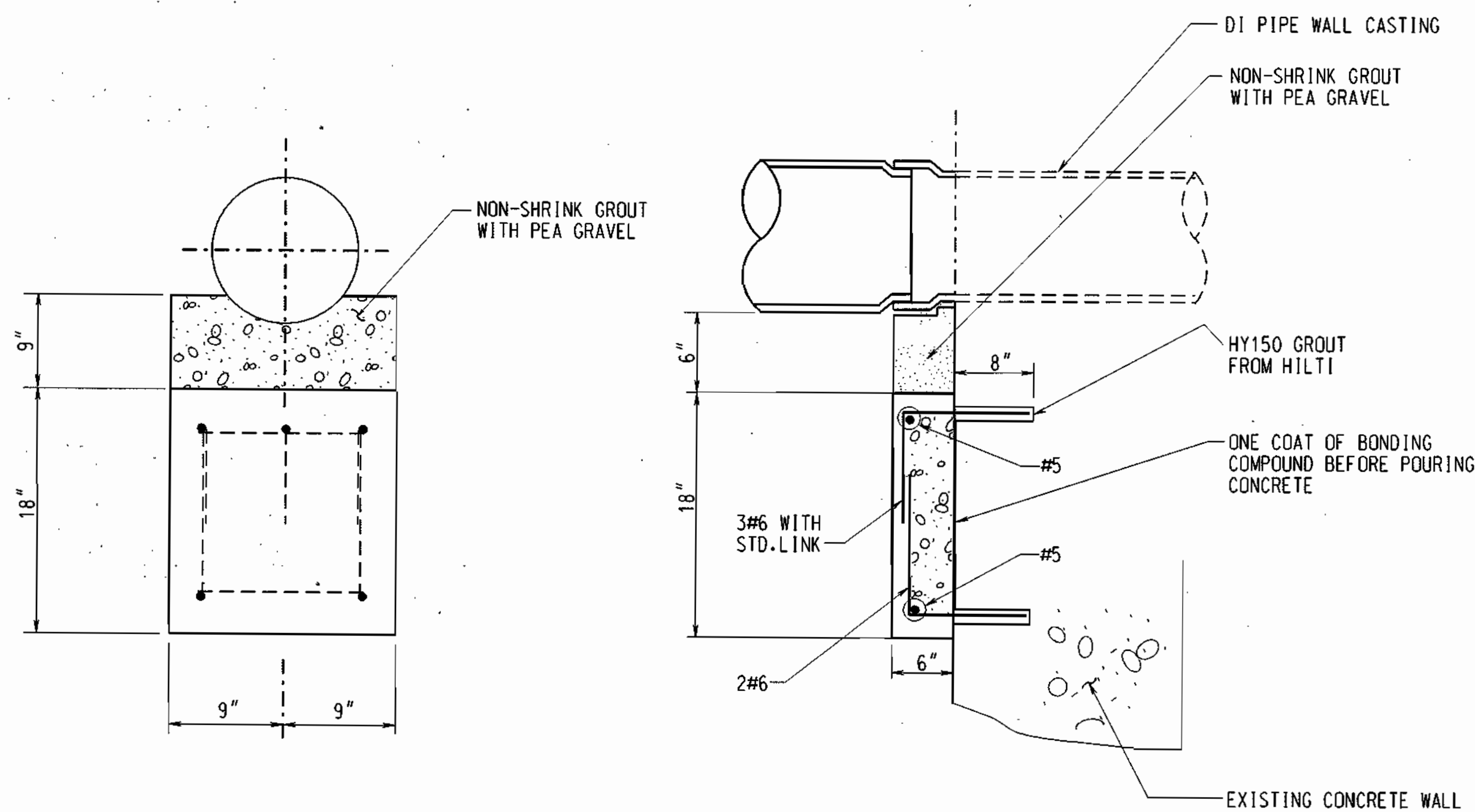
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NOTE: REFER TO SHEET A-4



12\"/>

SCALE: HOR. 1\"/>

NOTE: REFER TO SHEET C-3



PIPE HAUNCH DETAIL

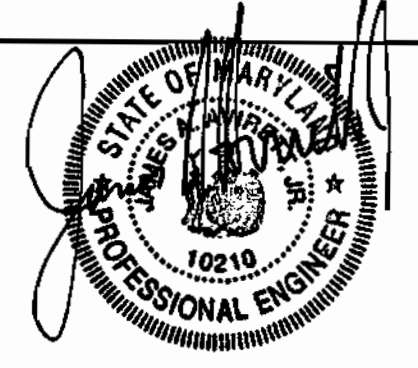
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NOTE: REFER TO SHEET S-8

RECORD
DRAWING
11/18/02

C-4

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.
John Van 1/30/03
DIRECTOR OF PUBLIC WORKS DATE
Ruth B... 1-30-03
CHIEF, BUREAU OF UTILITIES DATE
Paul H. Johnson 1/29/03
CHIEF, BUREAU OF ENGINEERING DATE
O. J. ... 1-29-03
CHIEF, UTILITY DESIGN DIVISION 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

20.0 STANDARDS AND SPECIFICATIONS

FOR VEGETATIVE STABILIZATION

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

Vegetative Stabilization specifications are used to promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas.

Effects on Water Quality and Quantity

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters.

Sediment control devices must remain in place during grading, seeded preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

Section I - Vegetative Stabilization Methods and Materials

A. Site Preparation

- i. Install erosion and sediment control structures (either temporary or permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.

B. Soil Amendments (Fertilizer and Lime Specifications)

- i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres.

C. Seeded Preparation

- i. Temporary Seeding
a. Seeded preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment.

ii. Permanent Seeding

- a. Minimum soil conditions required for permanent vegetative establishment:
1. Soil pH shall be between 6.0 and 7.0
2. Soluble salts shall be less than 500 parts per million (ppm).

D. Seed Specifications

- i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory.

E. Methods of Seeding

- i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeder, or a cultipacker seeder.
a. If fertilizer is being applied at the time of seeding, the application rates amount will not exceed the following: nitrogen maximum of 100 lbs. per acre total of soluble nitrogen (P205 (phosphorous): 200 lbs/acre K2O (potassium): 200 lbs/acre.

- ii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
a. Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering.

- iii. Mulch Specifications (In order of preference)
i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonably bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.

F. Mulch Specifications (In order of preference)

- ii. Wood Cellulose Fiber Mulch (WCFM)
a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.

Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.

- i. If grading is completed outside of the seeding season, mulch alone shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.
ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre.

Section II - Temporary Seeding

Vegetation - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

A. Seed Mixtures - Temporary Seeding

- i. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Temporary Seeding Summary below, along with application rates, seeding dates and seeding depths. If this Summary is not put on the plans and completed, then Table 26 must be put on the plans.

TEMPORARY SEEDING SUMMARY

Table with columns: NO., SPECIES, APPLICATION RATE (lb/acre), SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE (10-10-10), LIME RATE. Includes row for ANNUAL RYEGRASS.

Section III: Permanent Seeding

Seeding grass and legumes to establish ground cover for a minimum period of one year on disturbed areas generally receiving low maintenance.

A. Seed Mixtures - Permanent Seeding

- i. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26.

PERMANENT SEEDING SUMMARY

Table with columns: NO., SPECIES, APPLICATION RATE (lb/acre), SEEDING DATES, SEEDING DEPTHS, FERTILIZER RATE (10-20-20), LIME RATE. Includes rows for KENTUCKY BLUEGRASS 50%, CREEPING RED FESCUE 40%, and RED TOP 10%.

Section IV - Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

A. General Specifications

- i. Class of turfgrass sod shall be Maryland or Virginia State Certified or Approved. Sod labels shall be made available to the job foreman and inspector.
ii. Sod shall be machine cut at a uniform soil thickness of 3/4", plus or minus 1/8", at the time of cutting.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. Includes signatures and dates for Director, Chief of Development Engineering Division, and Chief of 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.

REVIEWED FOR HOWARD S.C.D. AND MEETS THE TECHNICAL REQUIREMENTS. Includes signature of Steve Simmons and date 1/24/99.

ADDRESS CHART. Table with columns: LOT/PARCEL, ADDRESS. Includes entry for 640, 5398 LANDING ROAD, ELKBRIDGE, MARYLAND 21227.

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.

PERMIT INFORMATION CHART. Table with columns: SUBDIVISION NAME, SECTION/AREA, LOT/PARCEL, PLAT # OR L/F, BLOCK #, ZONING, TAX MAP, ELECT. DIST., CENSUS TRACT, WATER CODE, SEWER CODE.

RECORD DRAWING 11/18/02 SC-1

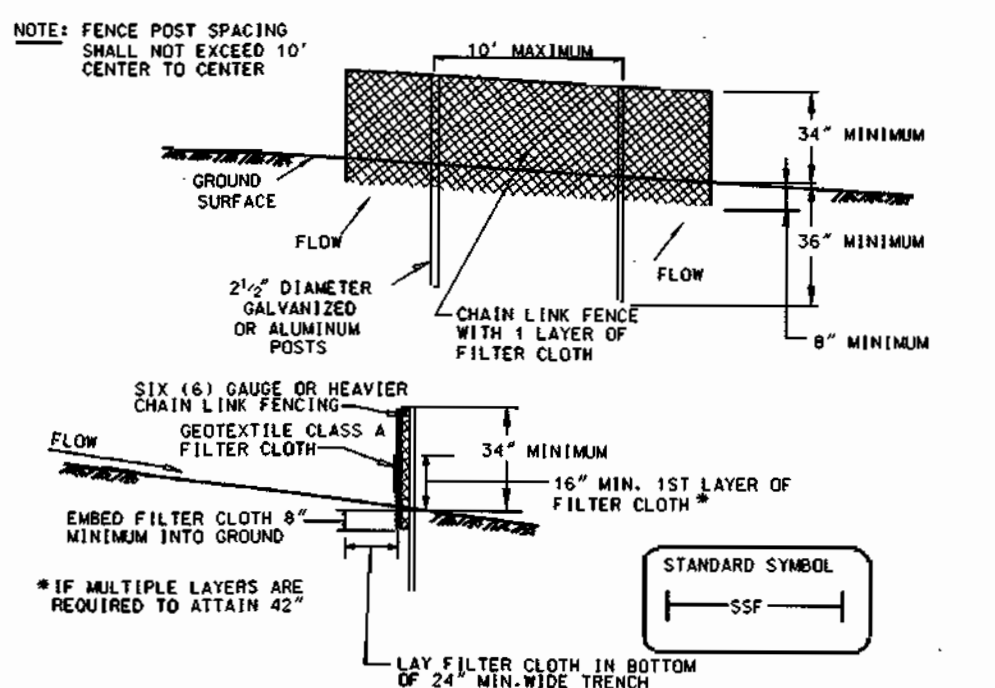
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. Includes signatures and dates for Director of Public Works, Chief of Bureau of Engineering, and Chief of Bureau of Utilities.

PREPARED BY: Whitman, Reardon and Associates, LLP. Includes logo and signature of Robert Reardon.

SEDIMENT CONTROL NOTES AND SCHEDULES. Includes table with columns: DES, DRN, CHK, DATE, BY, NO., REVISION, DATE.

SEDIMENT CONTROL NOTES AND SCHEDULES. Includes table with columns: 600' SCALE MAP NO., BLOCK NO., SHEET NO.

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



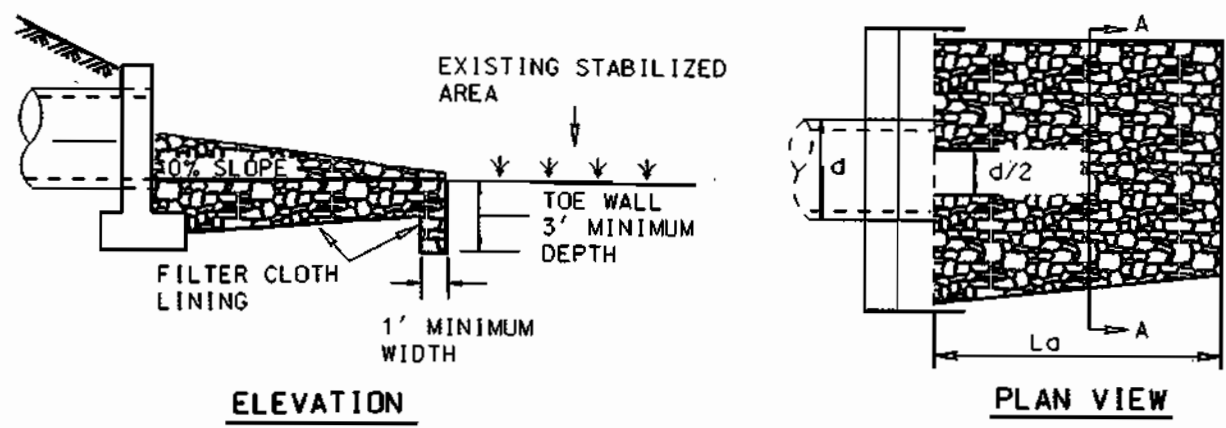
CONSTRUCTION SPECIFICATIONS

- FENCING SHALL BE 42" IN HEIGHT AND CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY DETAILS FOR CHAIN LINK FENCING. THE SPECIFICATION FOR A 6" FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 6" LENGTH POSTS.
- CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, DRIVE ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE. THE CHAIN LINK FENCING SHALL BE SIX (6) GAUGE OR HEAVIER.
- FILTER CLOTH SHALL BE FASTENED SECURELY TO THE CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT THE TOP AND MID SECTION.
- FILTER CLOTH SHALL BE EMBEDDED A MINIMUM OF 8" INTO THE GROUND.
- WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVER LAPPED BY 6" AND FOLDED.
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND SILT BUILDUPS REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SILT REACHES 50% OF FENCE HEIGHT.
- FILTER CLOTH SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP AND MID SECTION AND SHALL MEET THE REQUIREMENTS FOR GEOTEXTILE CLASS A:

Design Criteria

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

SUPER SILT FENCE



NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

ROCK OUTLET PROTECTION III

REVIEWED FOR HOWARD S.C.D. AND MEETS THE TECHNICAL REQUIREMENTS.

Cheryl Simmons 10/19/99
USDA-NATURAL RESOURCES CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

James A. Avirett Jr. 11/19/99
HOWARD S.C.D.

DEVELOPER 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."

Robert J. Seaton 1-15-99
HOWARD COUNTY DEPT. OF PUBLIC WORKS DIV. OF WATER AND SEWER

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.

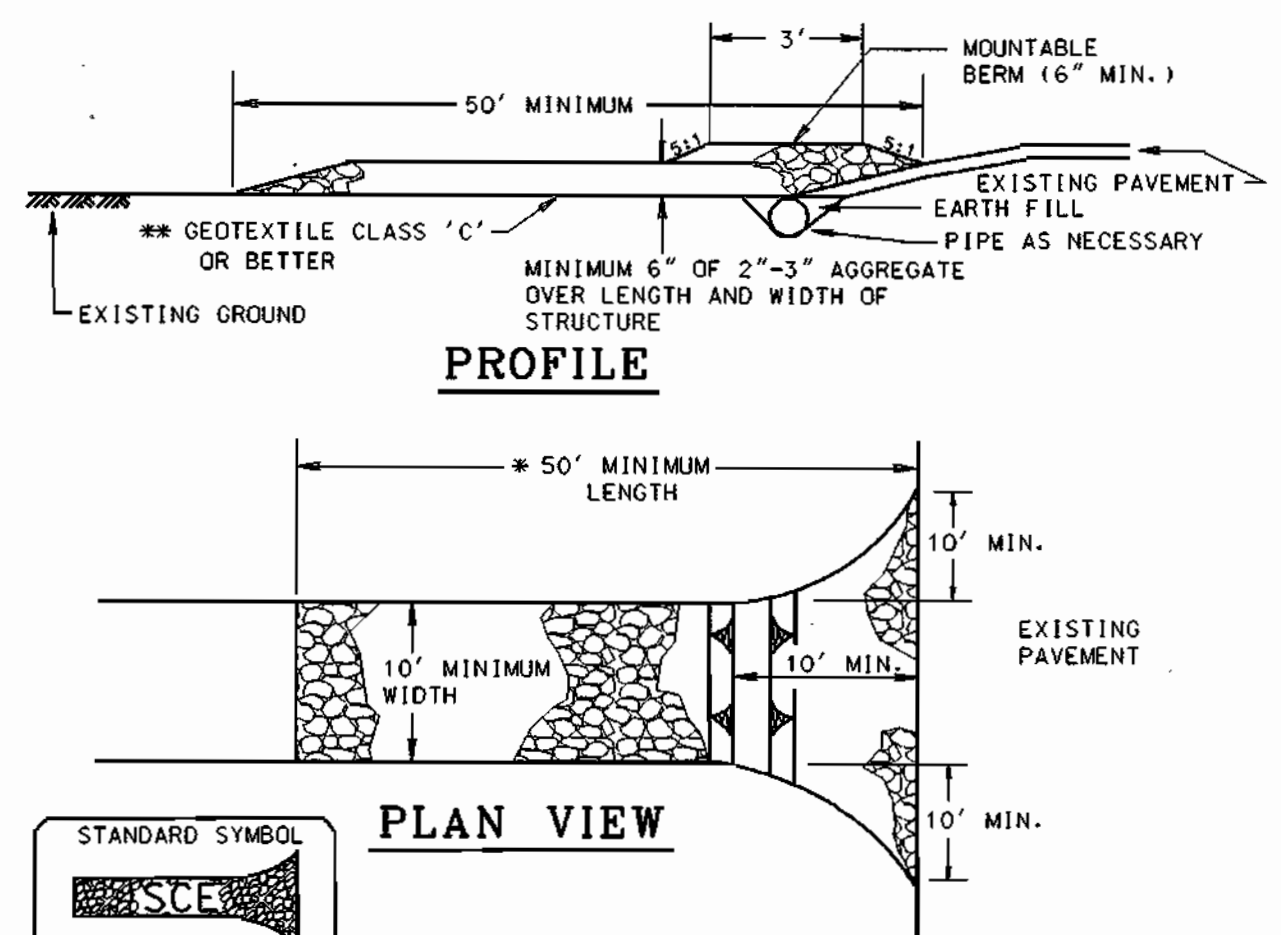
James A. Avirett Jr. 1-15-99
JAMES A. AVIRETT JR., P.E. 10210

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

James A. Avirett Jr. 1/21/99
DIRECTOR

Robert J. Seaton 1/21/99
CHIEF, DEVELOPMENT ENGINEERING DIVISION

Cindy Woodley 1/21/99
CHIEF, DIVISION OF LAND DEVELOPMENT



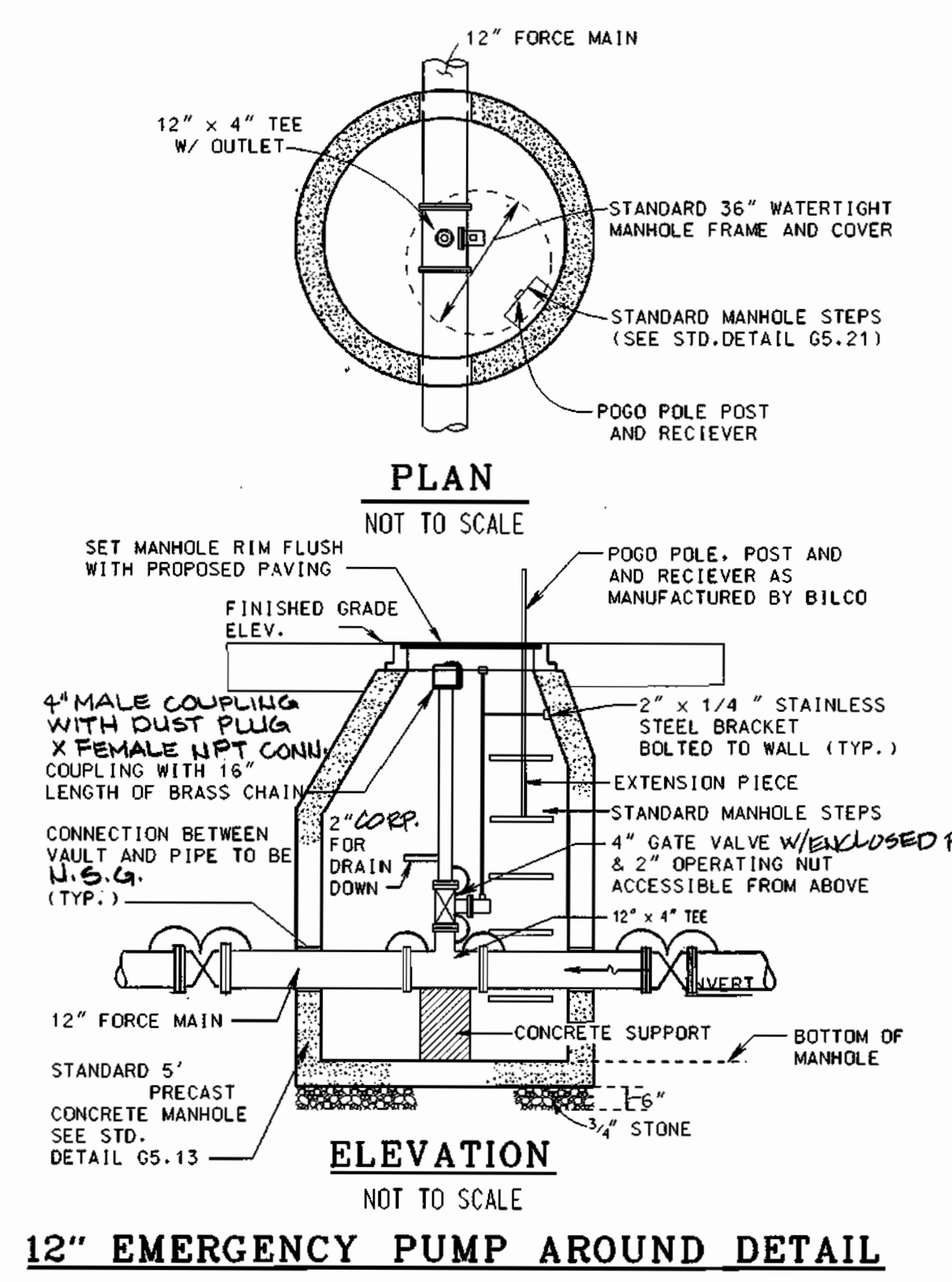
CONSTRUCTION SPECIFICATIONS

- LENGTH - MINIMUM OF 50' (30' FOR SINGLE RESIDENCE LOT).
- WIDTH - 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.
- STONE - CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
- SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PLACED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.
- LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

STABILIZED CONSTRUCTION ENTRANCE

CONSTRUCTION SPECIFICATIONS

- THE SUBGRADE FOR THE FILTER, RIP-RAP, OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
- THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.
- GEOTEXTILE SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. ALL OVERLAPS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE SHALL BE A MINIMUM OF ONE FOOT.
- STONE FOR THE RIP-RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT. THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR RIP-RAP OR GABION OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
- THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.



21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION
PLACEMENT OF TOP SOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

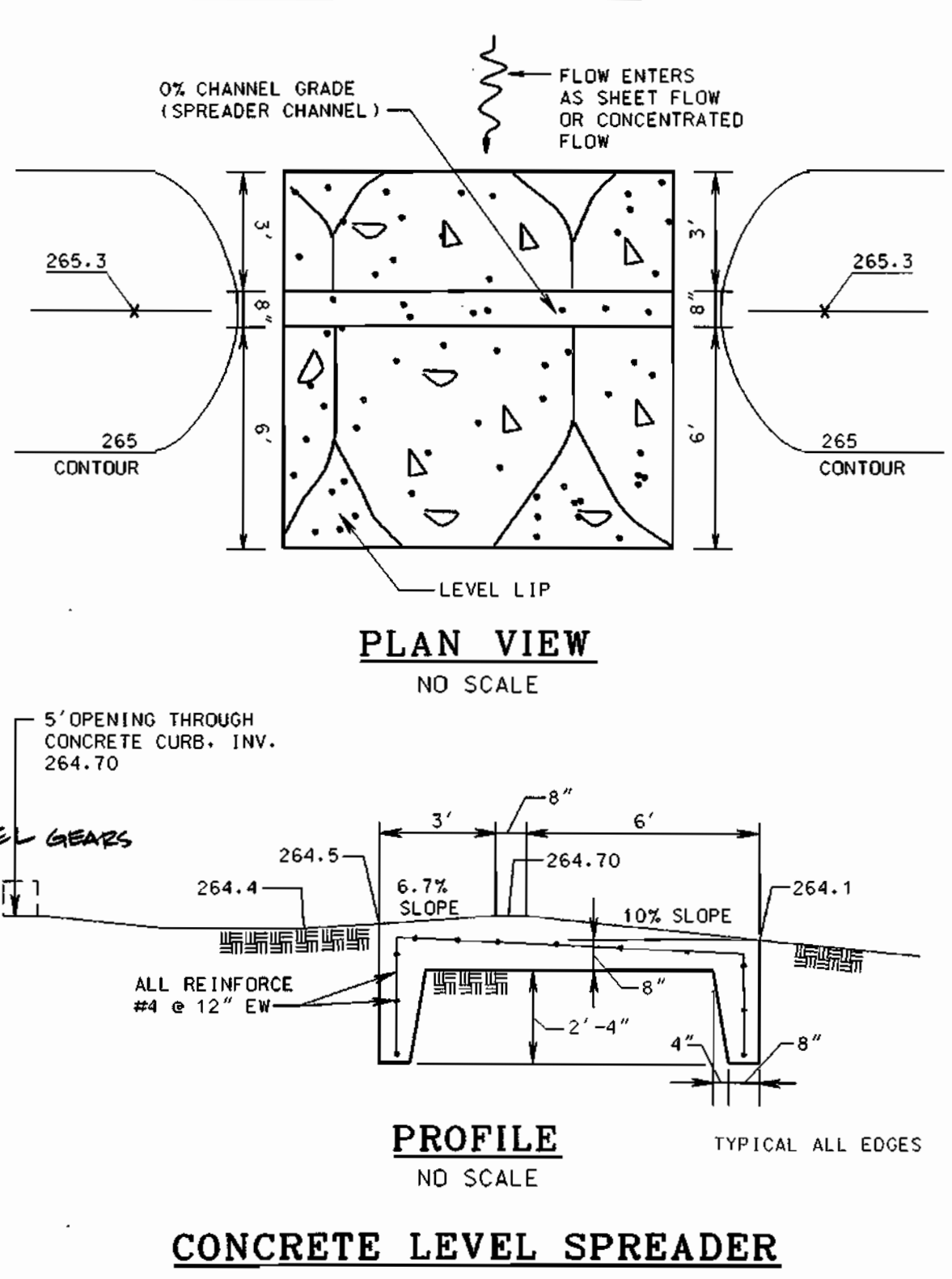
PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITION WHERE PRACTICE APPLIES

- THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
- FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

- TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
- TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
 - TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, LOAMY SAND, OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
 - TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BURMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - WHERE THE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4-8 TONS/ACRE (200-400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
- FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
 - PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
- FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
 - ON SOIL MEETING TOPSOIL SPECIFICATIONS, BRING TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
 - PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE POLYBENTONITE TO RAISE THE PH TO 6.5 OR HIGHER.



CONCRETE LEVEL SPREADER

SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS. SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (131-1855)
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN (a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, (b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 11, CHAPTER 7 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. IS SHOWING CONSTRUCTION PERMANENT EROSION AND SEDIMENT CONTROL. SOIL TEMPORARY SEEDING AND MULCHING (SECTION G)- TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:
TOTAL AREA OF SITE: 1,006 ACRES
AREA DISTURBED: 0.961 ACRES
AREA TO BE ROOFED OR PAVED: 0.179 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 1.177 ACRES
TOTAL CUT: 3500 CU. YDS.
TOTAL FILL: 2500 CU. YDS.
APPROXIMATE SITE OFFSITE WASTE AREA LOCATION
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR THE PERIOD OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY HOWARD COUNTY DPW SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROL. BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITH ONE WORKING DAY, WHICHEVER IS SHORTER.

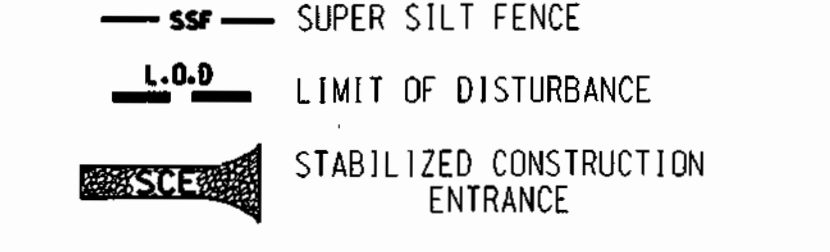
REQUIRED SEQUENCE OF CONSTRUCTION

- OBTAIN THE REQUIRED GRADING PERMIT. (10 DAYS)
- NOTIFY MISS UTILITY 48 HOURS BEFORE BEGINNING ANY WORK @ (1-800-257-7777). NOTIFY HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION 24 HOURS BEFORE STARTING ANY WORK @ 410-313-1810. (2 DAYS)
- INSTALL THE REQUIRED SEDIMENT AND EROSION CONTROL DEVICES AND STABILIZED CONSTRUCTION ENTRANCE (SCS) IN THE INITIAL POSITION SHOWN ON THE PLAN, SHEET 2. (THE FINAL POSITION OF THE SCE REQUIRES FILL FROM THE BUILDING EXCAVATION).
- CLEAR AND GRUB SITE, AND GRADE TO SUBGRADE. (10 DAYS) DO NOT PERFORM ANY GRADING IN THE AREA OF THE SWM BIORETENTION FACILITY.
- INSTALL THE 12 INCH CULVERT, PERFORM EXCAVATION FOR THE PUMPING STATION AND CONSTRUCT ROADWAY FILL WITH THIS MATERIAL, WHEN FILL ATTAINS SUBGRADE ELEVATION, RELOCATE THE SCE TO ITS FINAL LOCATION AT ACCESS ROAD ENTRANCE. (20 DAYS)
- CONSTRUCT PUMPING STATION, UTILITIES AND ACCESS DRIVEWAY (12 MONTHS) DO NOT DISTURB EXISTING AREA SOMEWHERE IN THE BIORETENTION BASIN CONSTRUCTION. DO NOT CONSTRUCT 6" PVC RAIN LEADER DRAIN AT THIS TIME.
- AFTER THE COMPLETION OF STEP 6 ABOVE CONSTRUCT BIORETENTION FACILITY AND LEVEL SPREADER ACCORDING TO BIORETENTION AND LEVEL SEQUENCE OF CONSTRUCTION, BELOW ON THIS SHEET. AFTER BIORETENTION AREA IS COMPLETE AND STABILIZED, CONSTRUCT 6" PVC RAIN LEADER DRAIN (10 DAYS)
- FINE GRADE PERIMETER AREAS AROUND PARKING LOT AND ACCESS DRIVEWAY. STABILIZE WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH. PERFORM LANDSCAPING PLANTING. (8 DAYS)
- THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON THE SEDIMENT AND EROSION CONTROL DEVICES SHOWN HEREIN, AFTER EACH RAINFALL AND ON A DAILY BASIS. (1 DAY)
- REMOVE SEDIMENT FROM ROADWAY AND DRESS STONE CONSTRUCTION ENTRANCE AS REQUIRED. (1 DAY)
- FOLLOWING SUCCESSFUL STABILIZATION OF ALL DISTURBED AREAS, AND AFTER PERMISSION HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, CONSTRUCT THE SEDIMENT CONTROL MEASURES AND STABILIZE REMAINING DISTURBED AREAS WITH PERMANENT SEEDING MIXTURE AND STRAW MULCH. (3 DAYS)

BIORETENTION AREA SEQUENCE OF CONSTRUCTION

- (SEE ITEM 6 IN REQUIRED SEQUENCE OF OPERATIONS ABOVE)
- EXCAVATE BIORETENTION AREA TO PROPOSED DEPTH. (1 DAY) DO NOT CONSTRUCT BERM ON EAST SIDE OF AREA.
 - FILL BIORETENTION AREA WITH PLANTING SOIL AND SAND, AS SHOWN IN THE PLANS AND DETAILED IN THE SPECIFICATIONS. (2 DAYS)
 - PLANT VEGETATION SPECIFIED IN THE PLANTING PLAN FOR BIORETENTION AREA (SEE SHEET C-2) (2 DAYS)
 - CONSTRUCT CONCRETE LEVEL SPREADER (SEE DETAIL THIS SHEET), CONSTRUCT BERM ON EAST SIDE OF BIORETENTION FACILITY, FINE GRADE ALL AREAS AROUND BIORETENTION FACILITY AND STABILIZE. (5 DAYS)

LEGEND



ADDRESS CHART

LOT/PARCEL*	ADDRESS
648	5398 LANDING ROAD, ELK RIDGE, MARYLAND 21227

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL*			
ROCKBURN BRANCH PARK	LANDING ROAD ENTRANCE	648			
PLAT * OR L/F/BLOCK #	ZONING	TAX MAP	ELECT. DIST.	CENSUS TRACT	
704/646	23	R-20	31	1	6811
WATER CODE	SEWER CODE				
W-5	S-5				

RECORD DRAWING
11/18/02
SC-2

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

James J. Seaton 1-15-99
DIRECTOR OF PUBLIC WORKS

Robert J. Seaton 1-15-99
CHIEF, BUREAU OF ENGINEERING

Robert J. Seaton 1-15-99
CHIEF, BUREAU OF UTILITIES

Robert J. Seaton 1-15-99
ACT. CHIEF, UTILITY DESIGN DIVISION

PREPARED BY:

WR&A
Whitman, Requardt and Associates, LLP.

James A. Avirett Jr.
PROFESSIONAL ENGINEER

DES :	WRD/EJM	DATE
DRN :	EJM/GWG	
CHK :	JAA	
DATE :	12/09/98	
BY :	NO.	REVISION
		RECORD DRAWING
		8-28-02

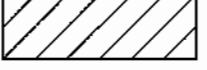

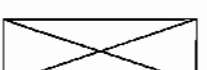



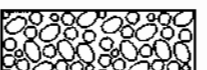

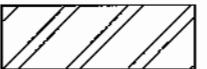



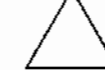
SEDIMENT CONTROL DETAILS
12" FORCEMAIN BLOW-OFF DETAIL
SDP SHEET 6 OF 6

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 6 OF 36
SDP 99-14

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

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

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

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

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

Robert J. Sessom 1-15-99
CHIEF, UTILITY DESIGN DIVISION DATE

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	8-28-00

LEGENDS AND ABBREVIATIONS

600' SCALE MAP NO. _____ BLOCK NO. _____

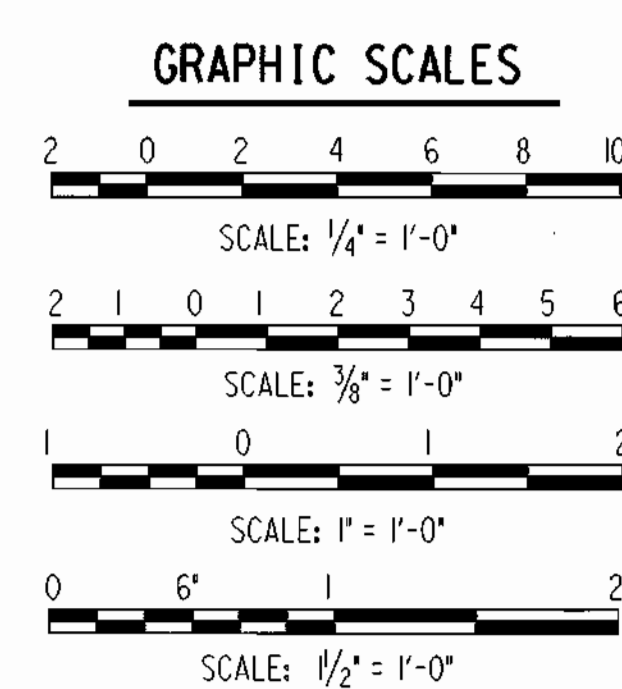
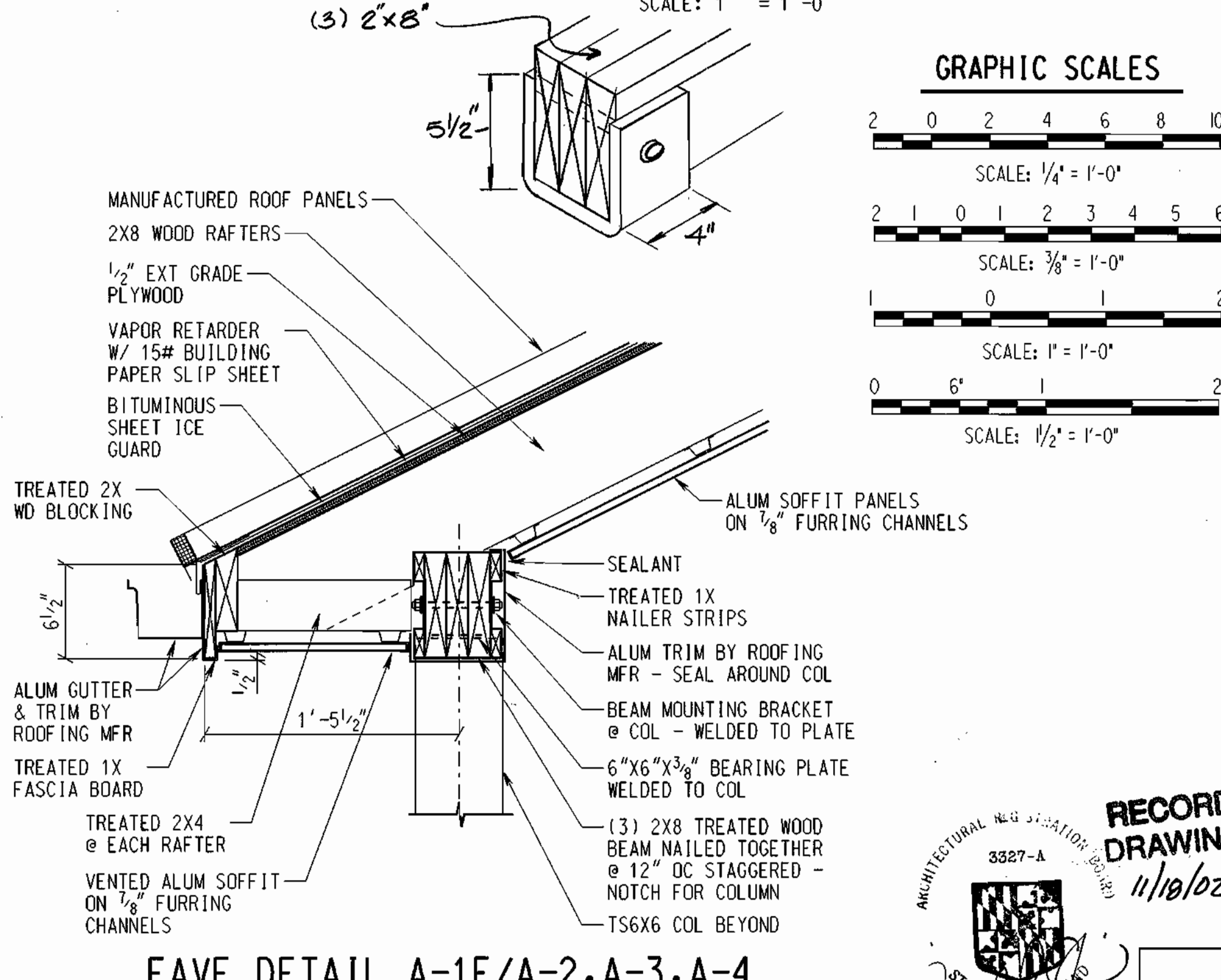
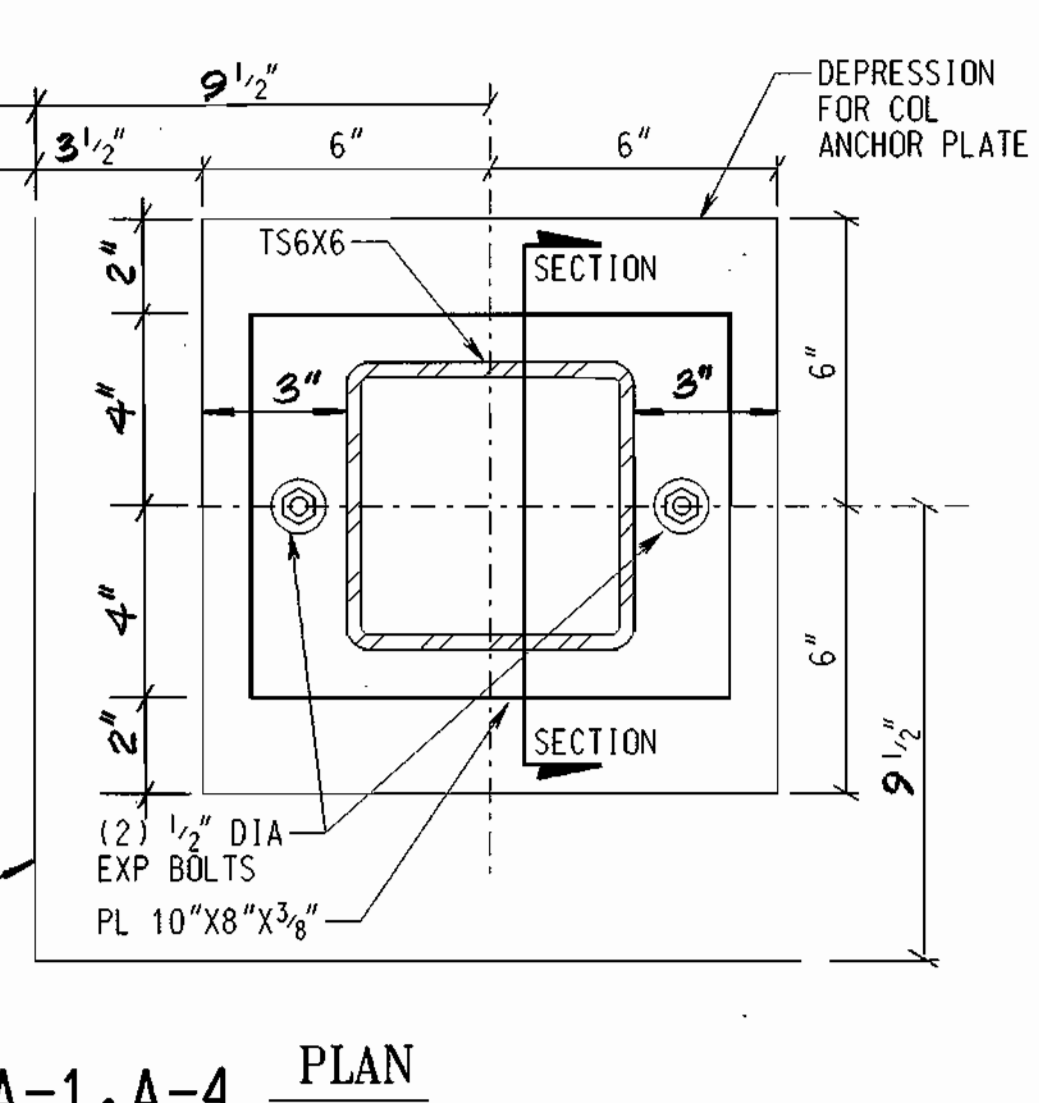
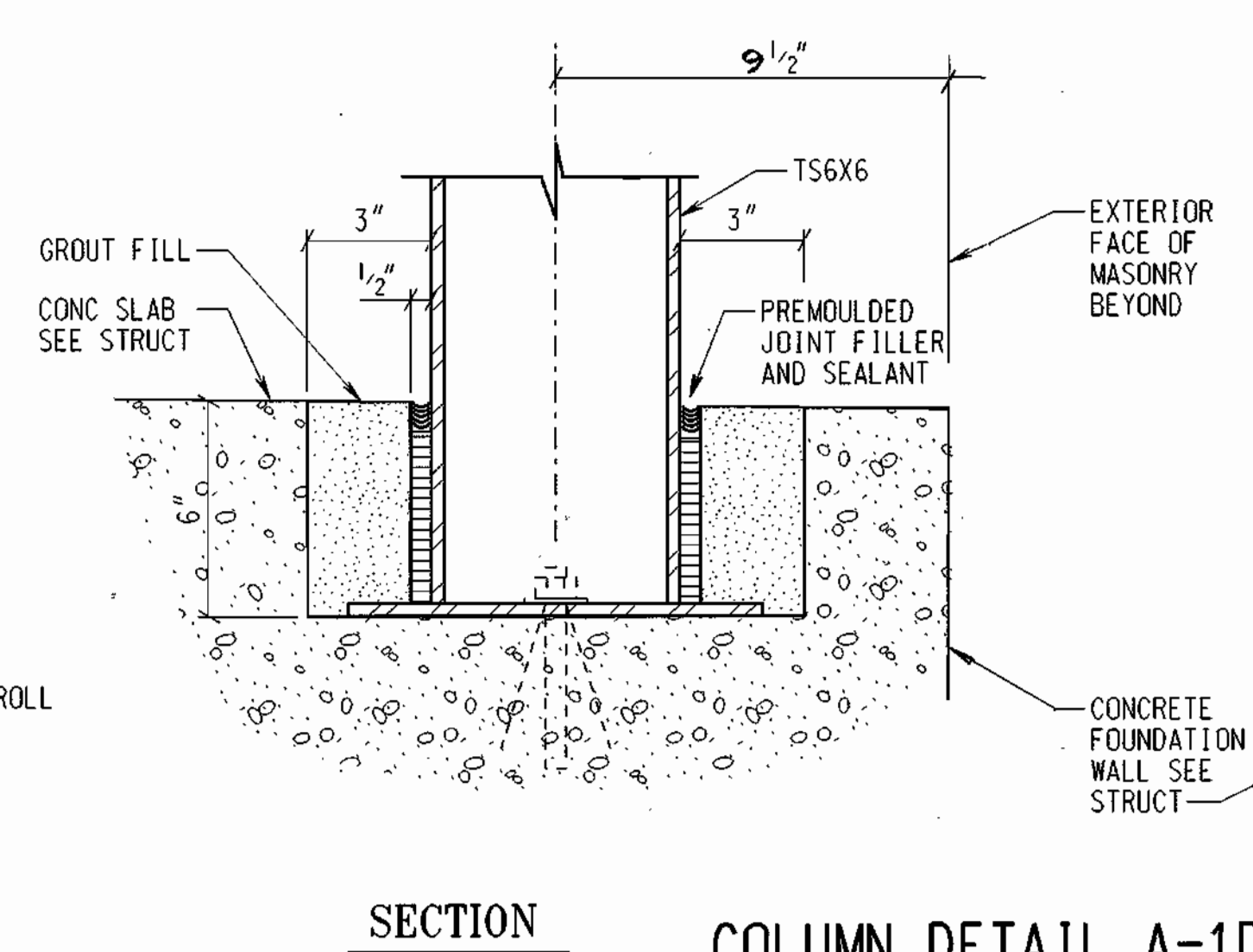
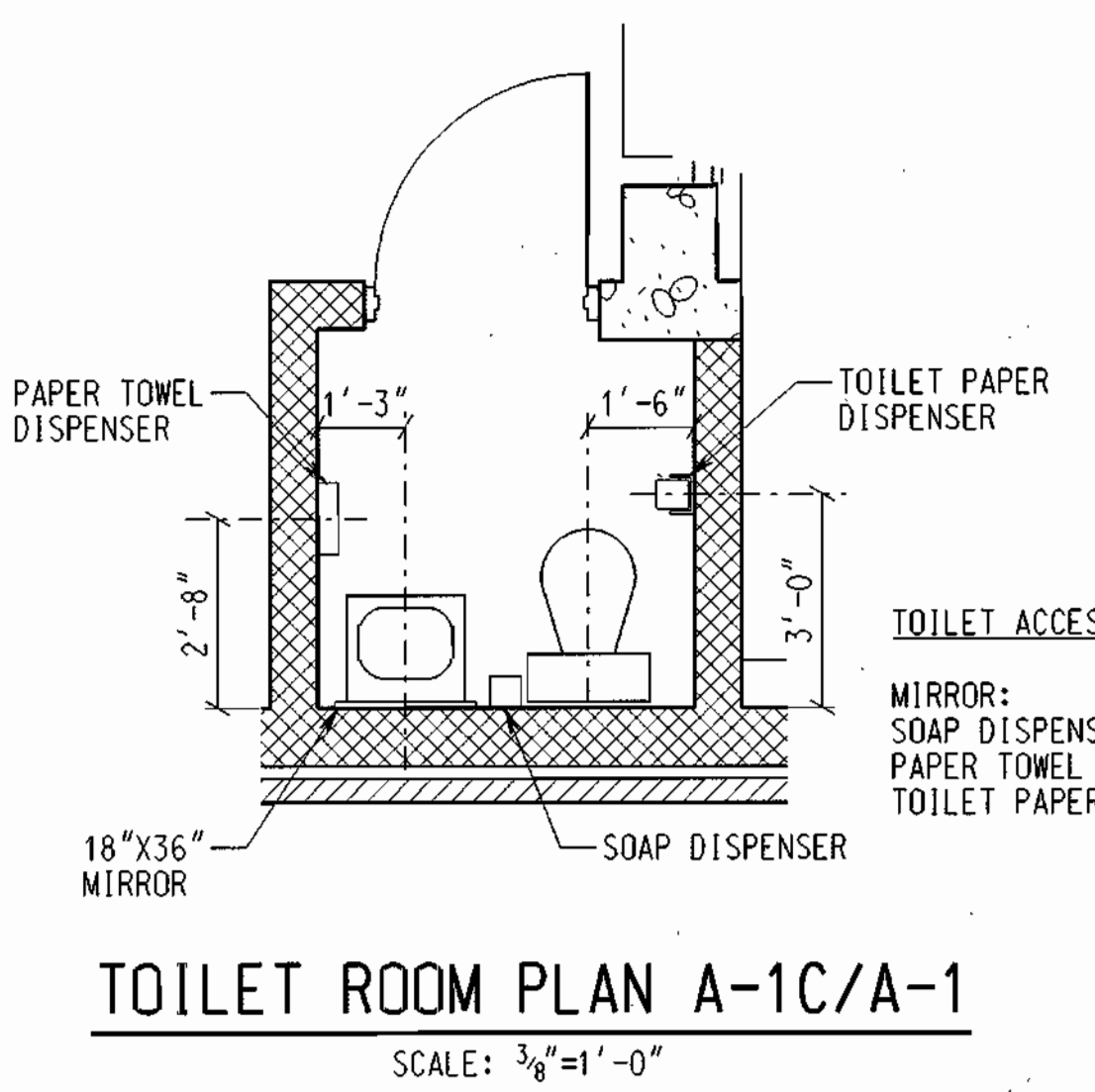
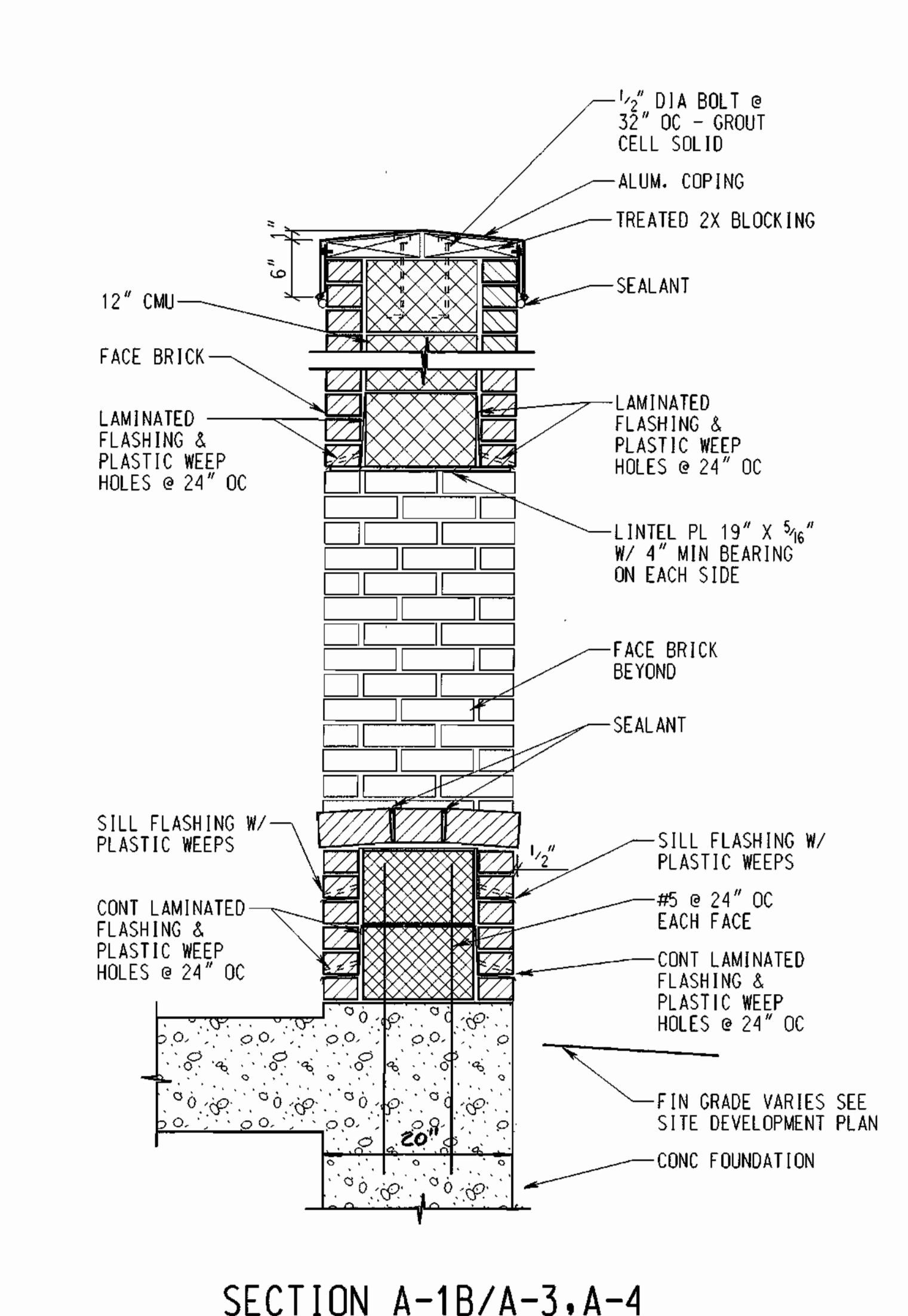
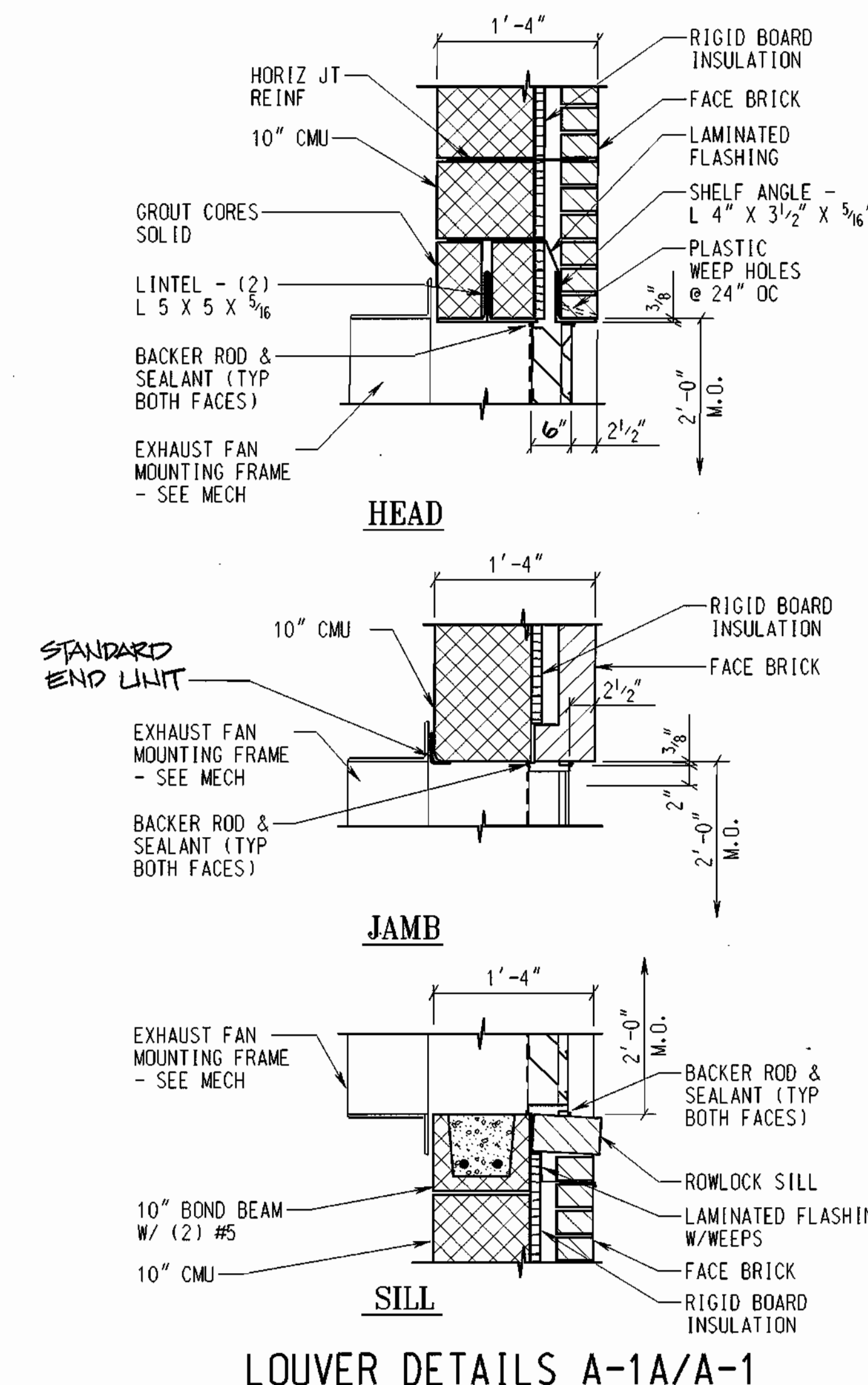
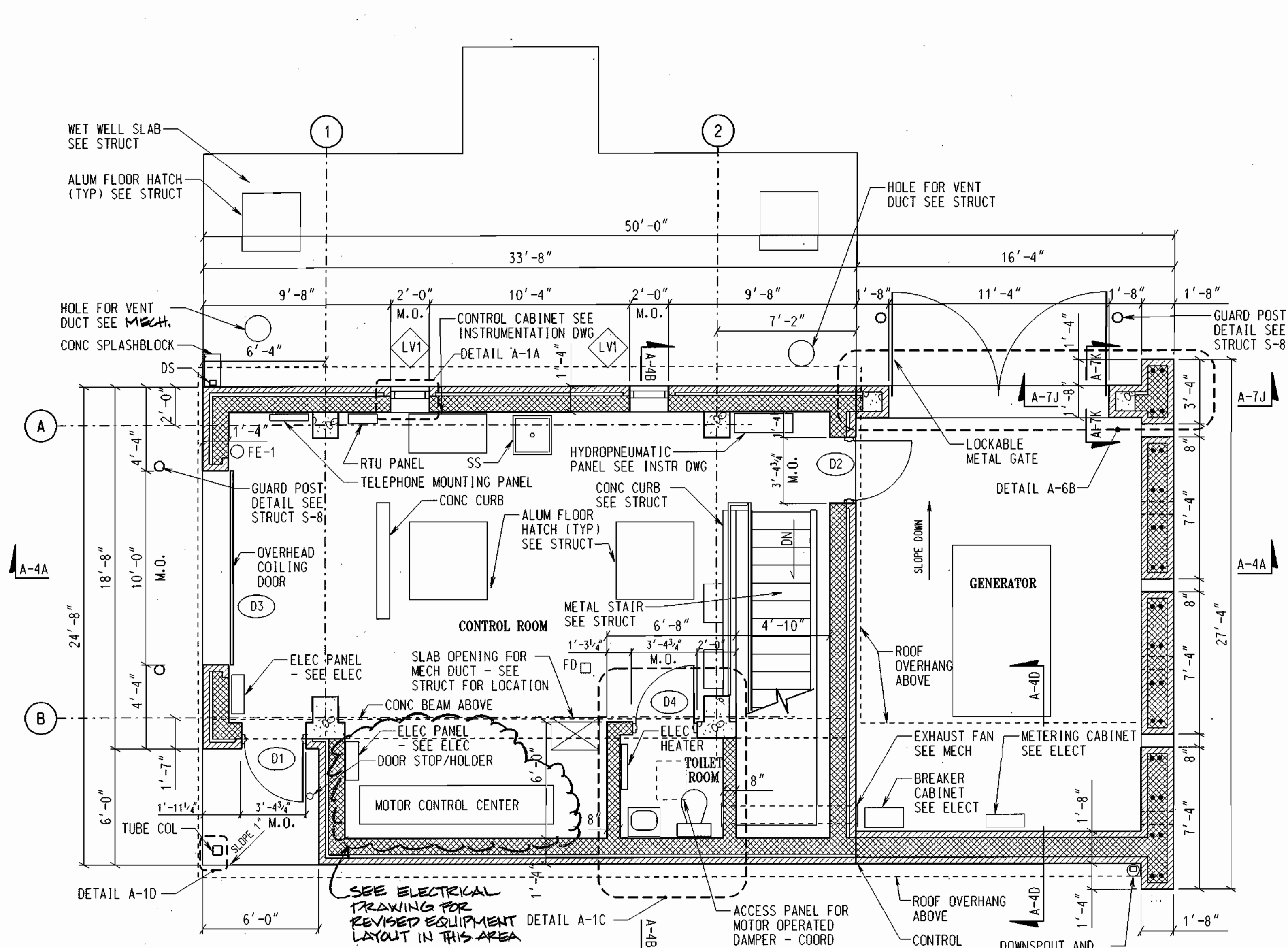
ROCKBURN WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6200
CONTRACT NO. 10-3695
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 7 OF 36

RECORD DRAWING
11/18/02

ARCHITECTURAL REGISTRATION BOARD
5827-A

Robert J. Sessom



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

PLANS AND DETAILS

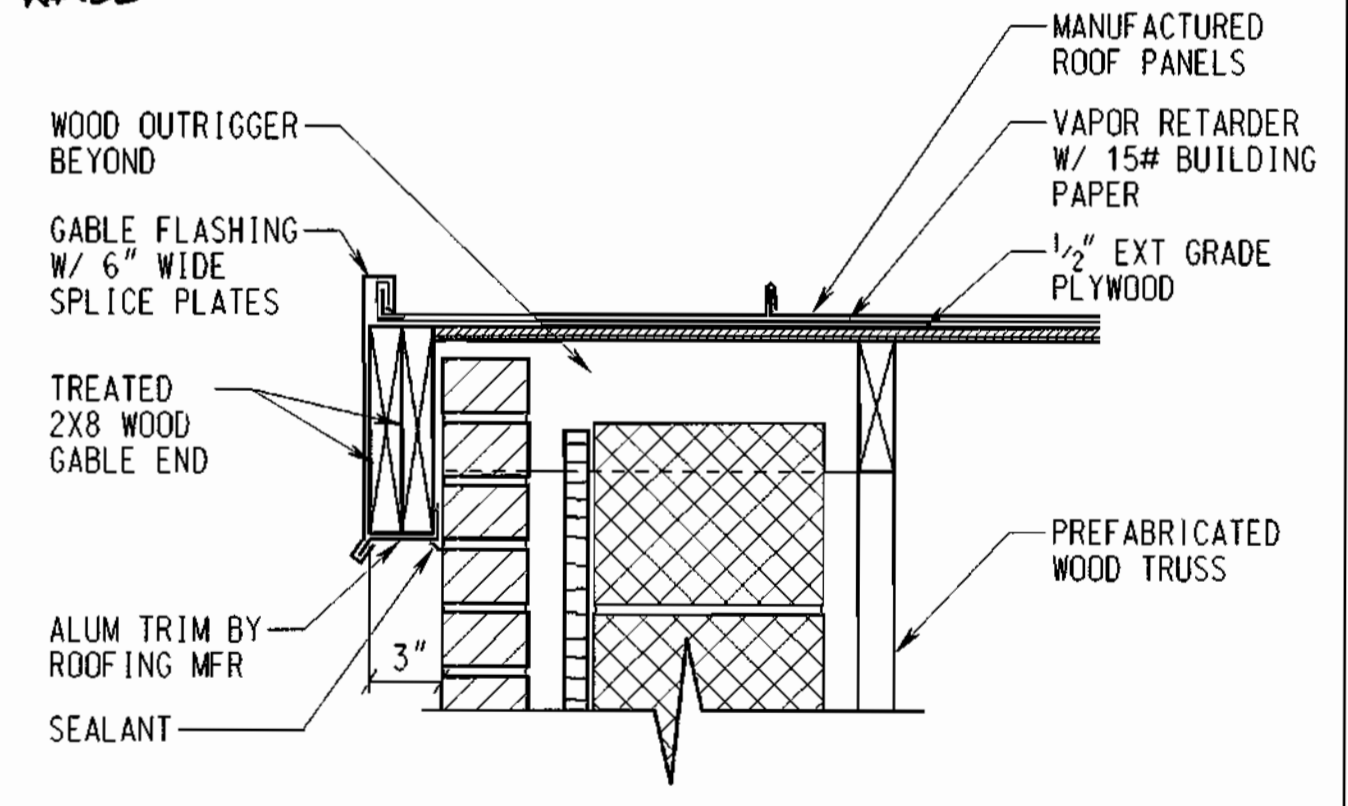
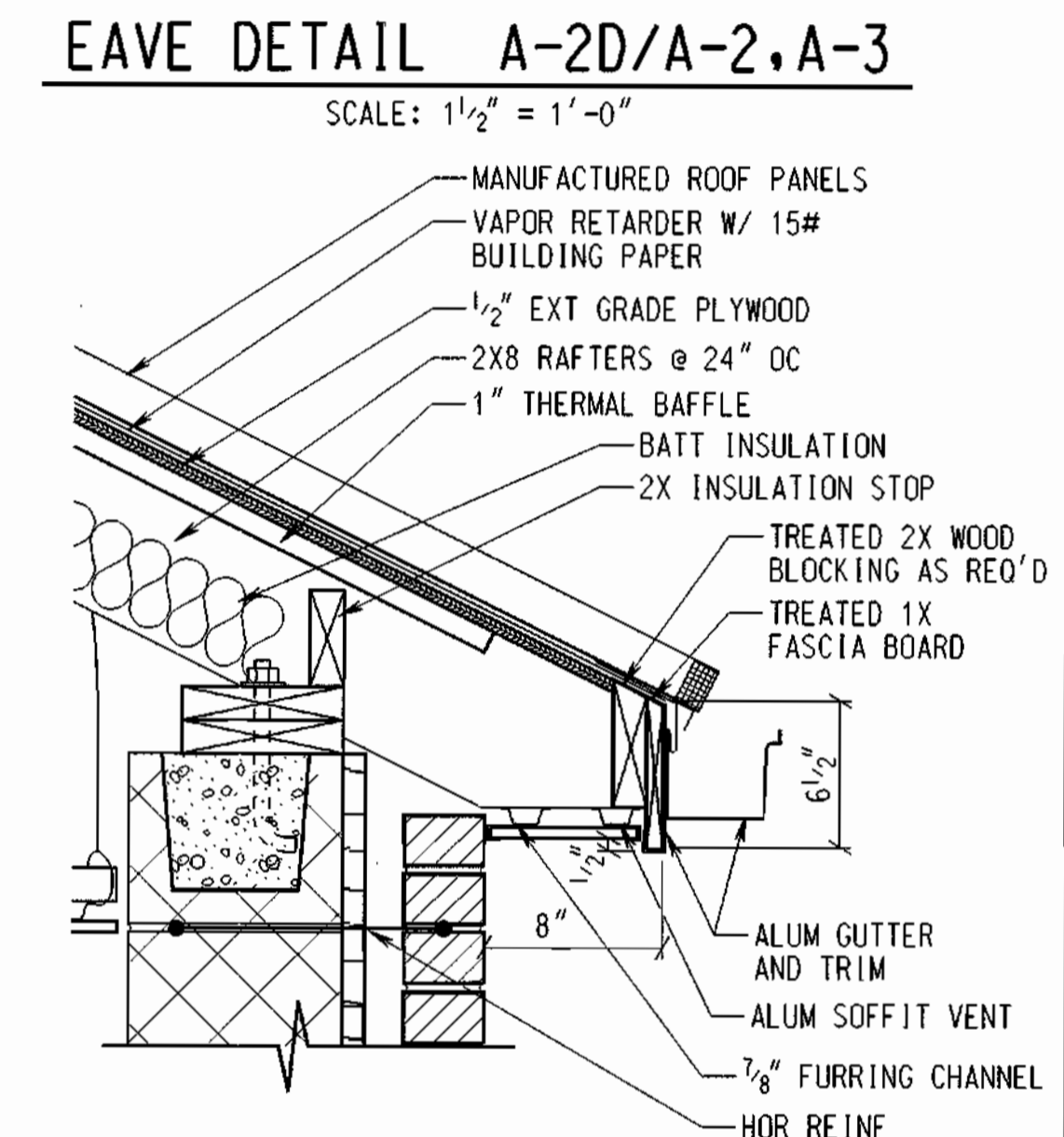
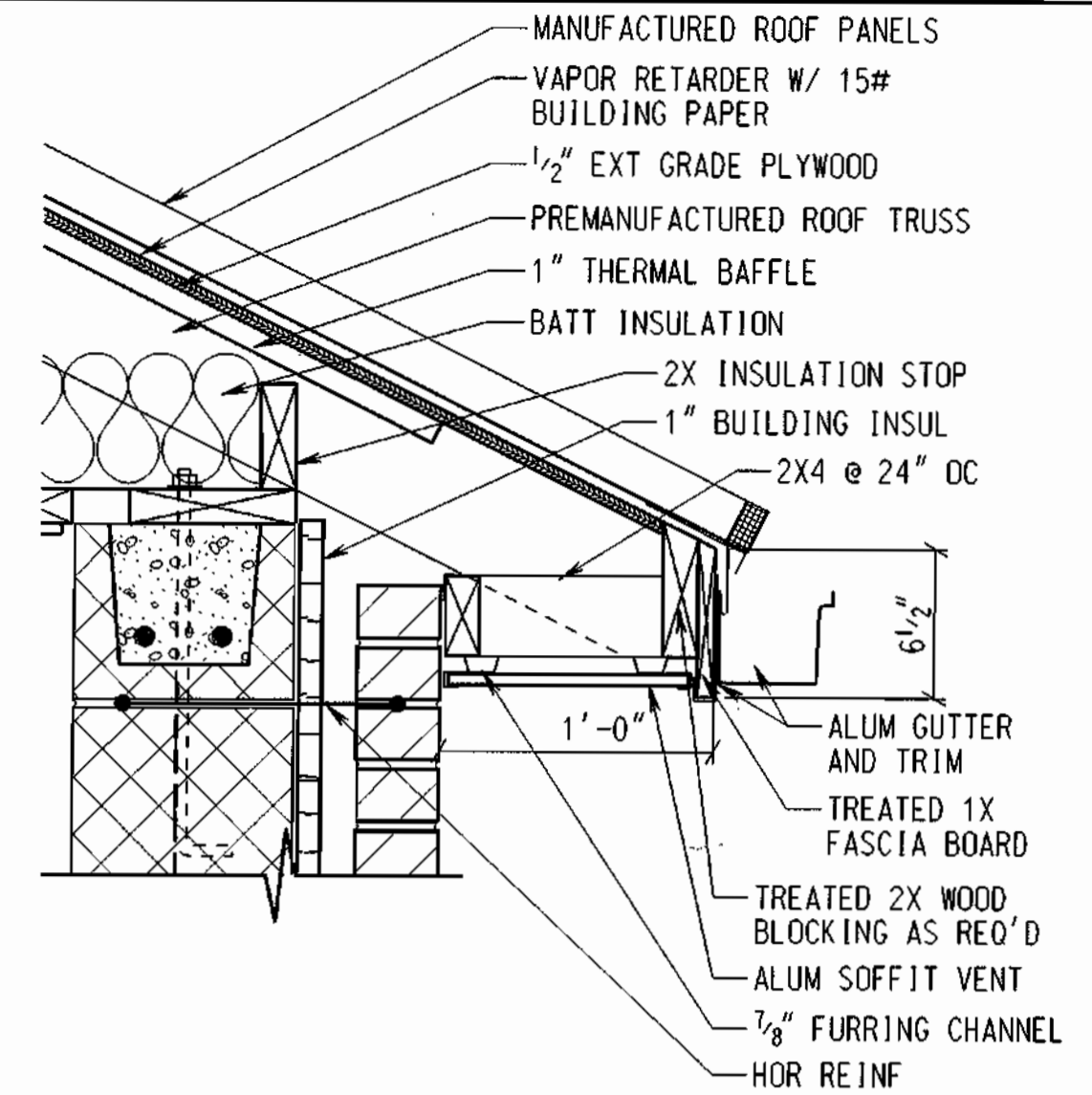
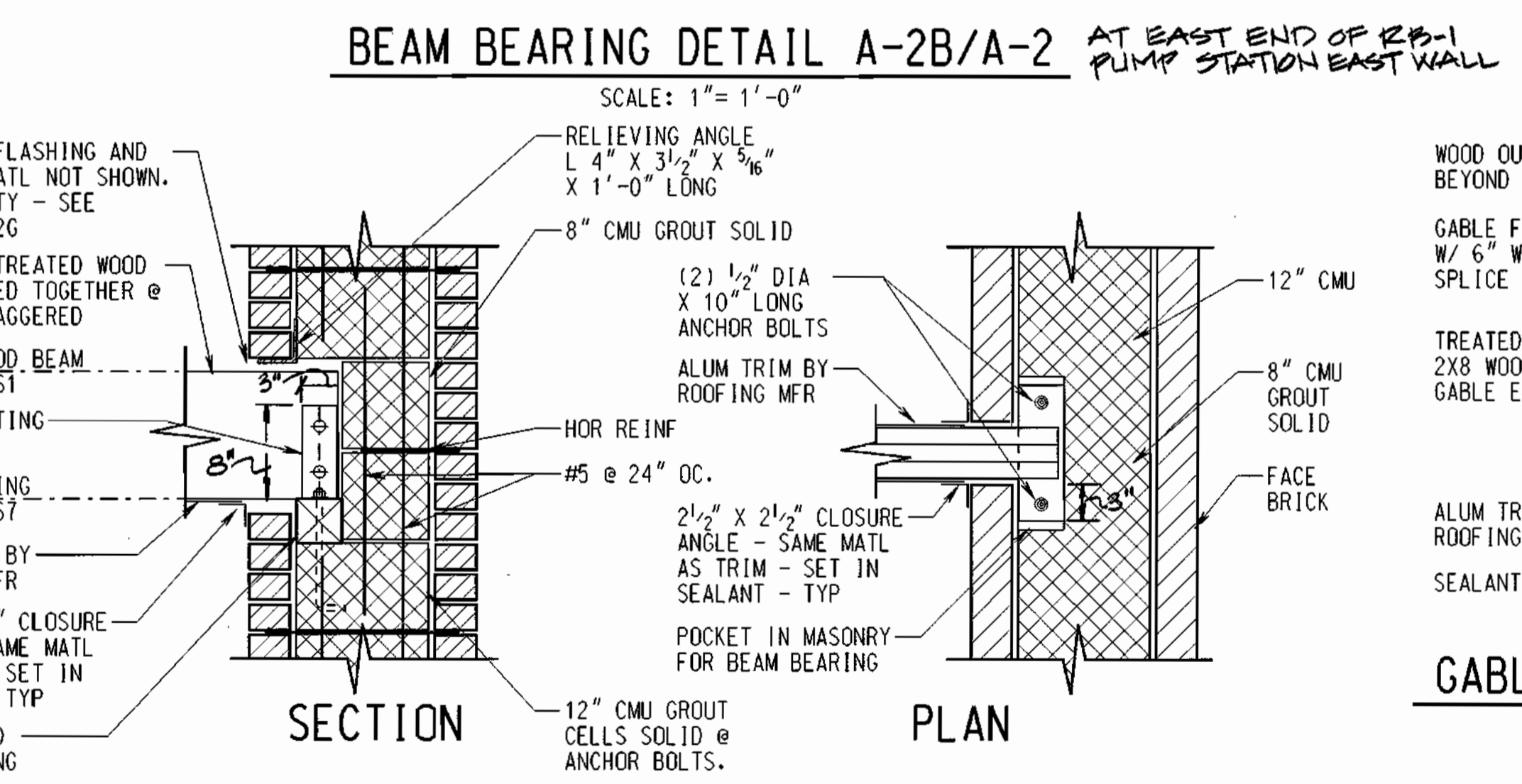
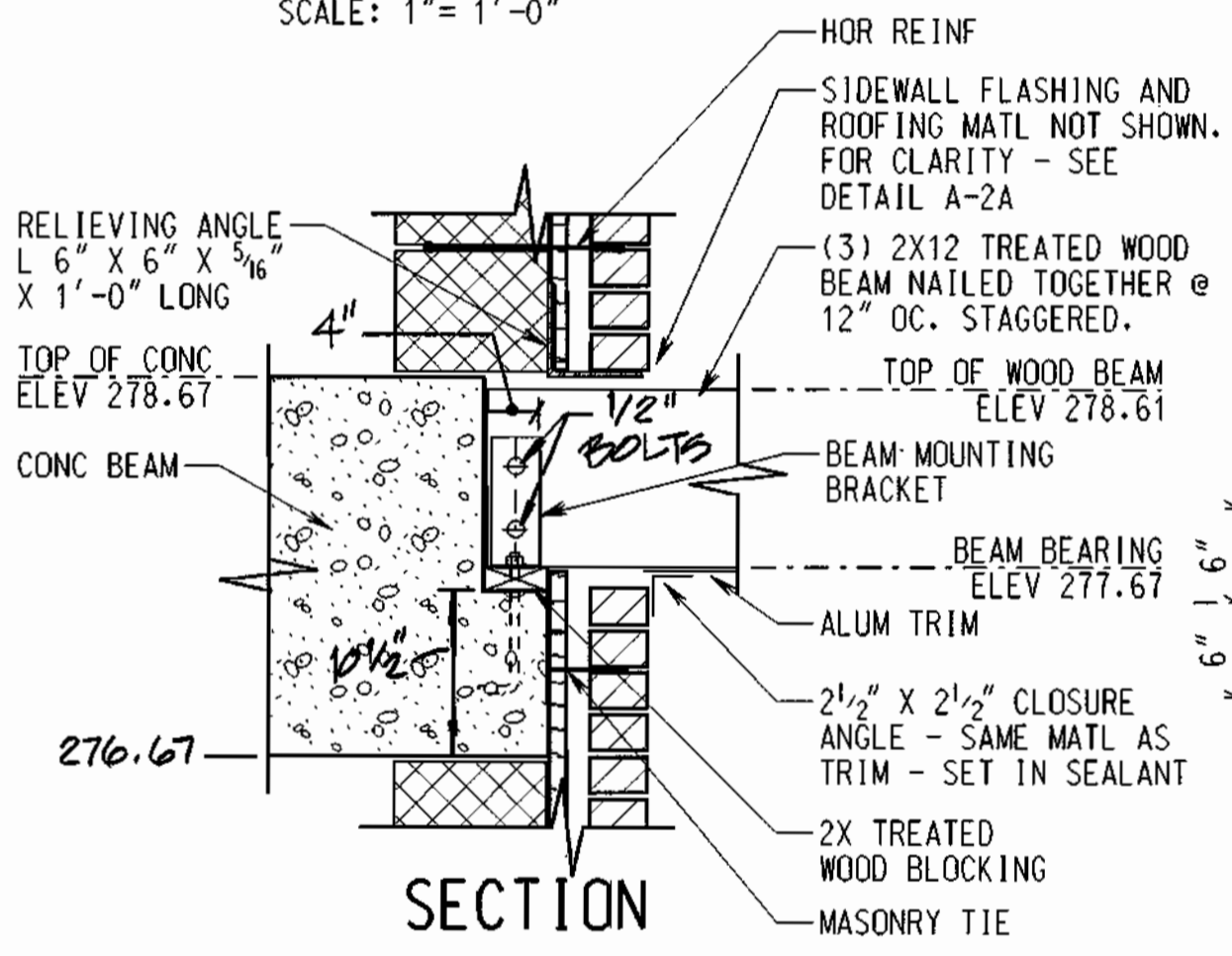
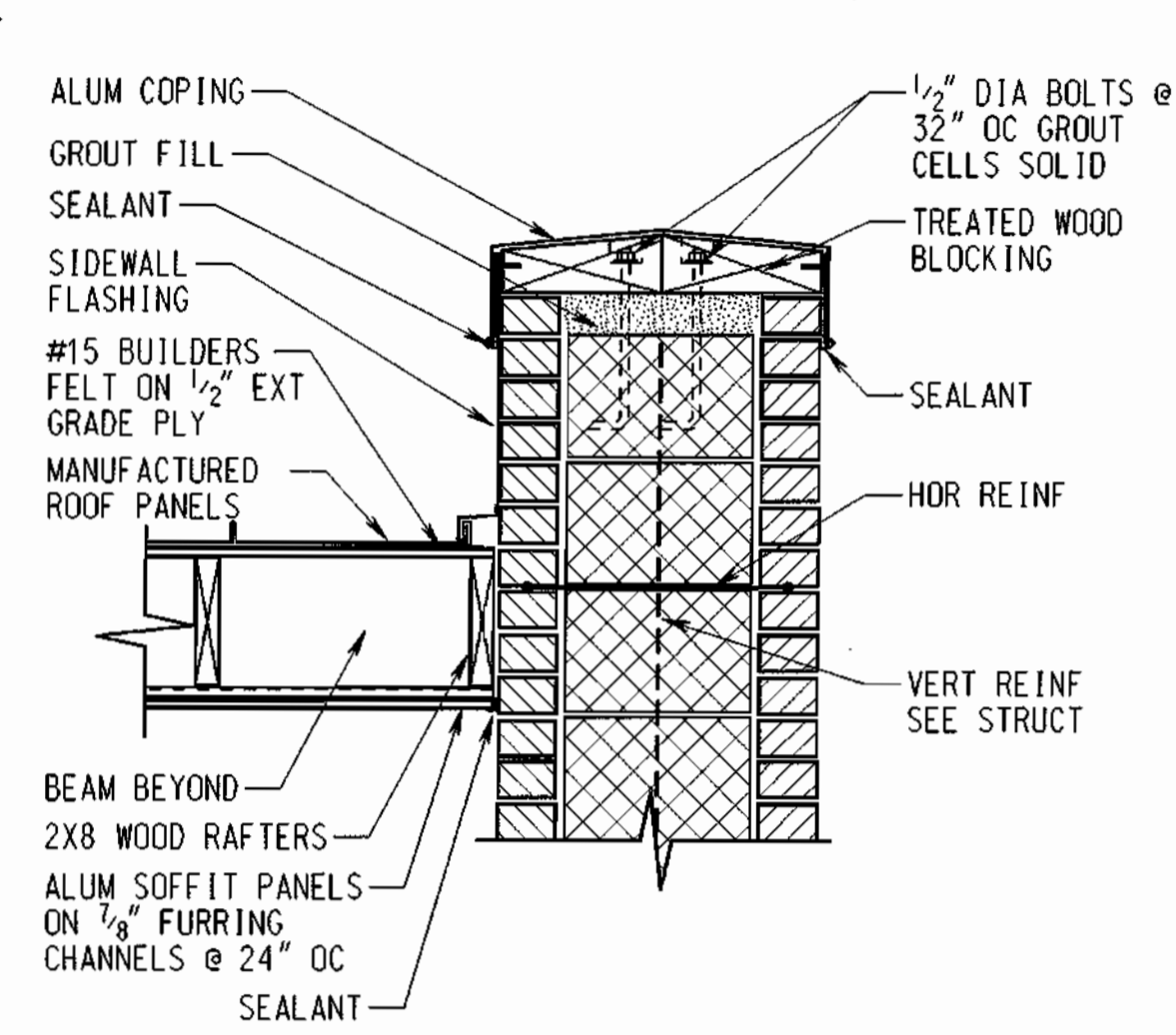
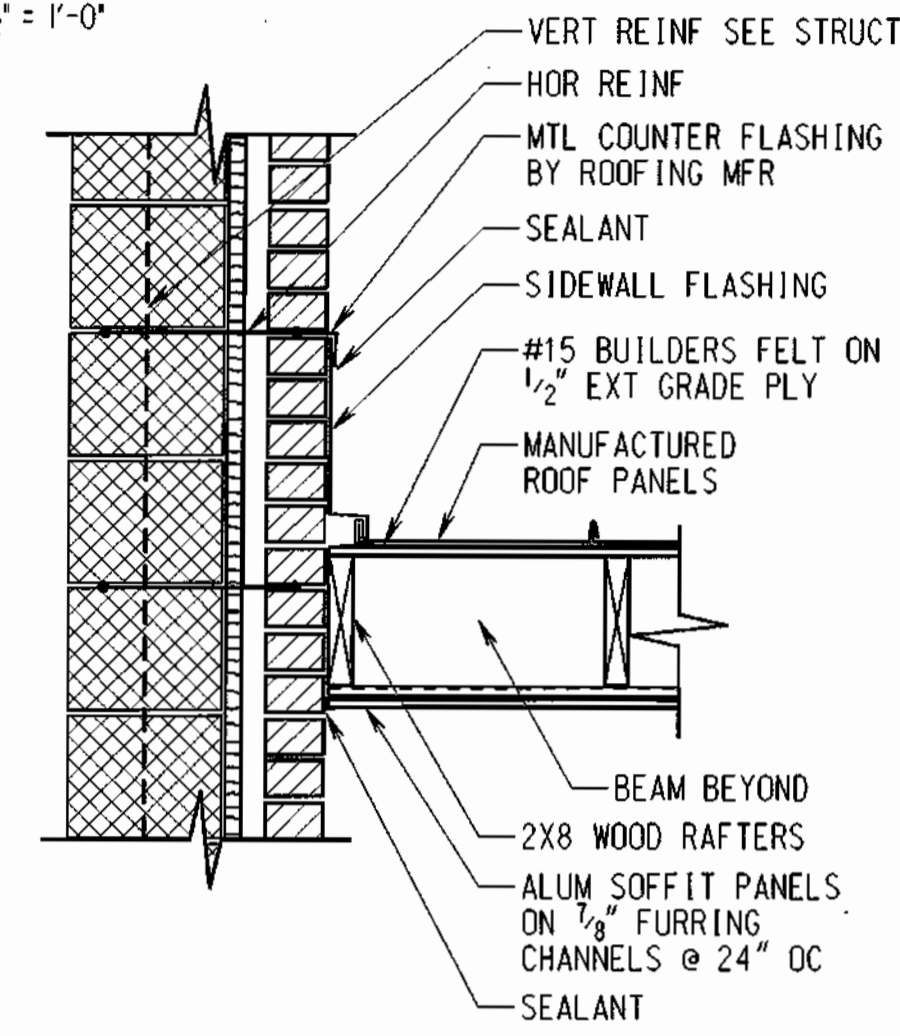
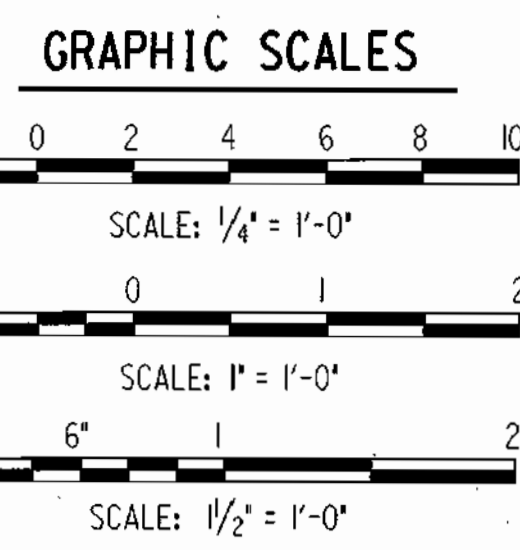
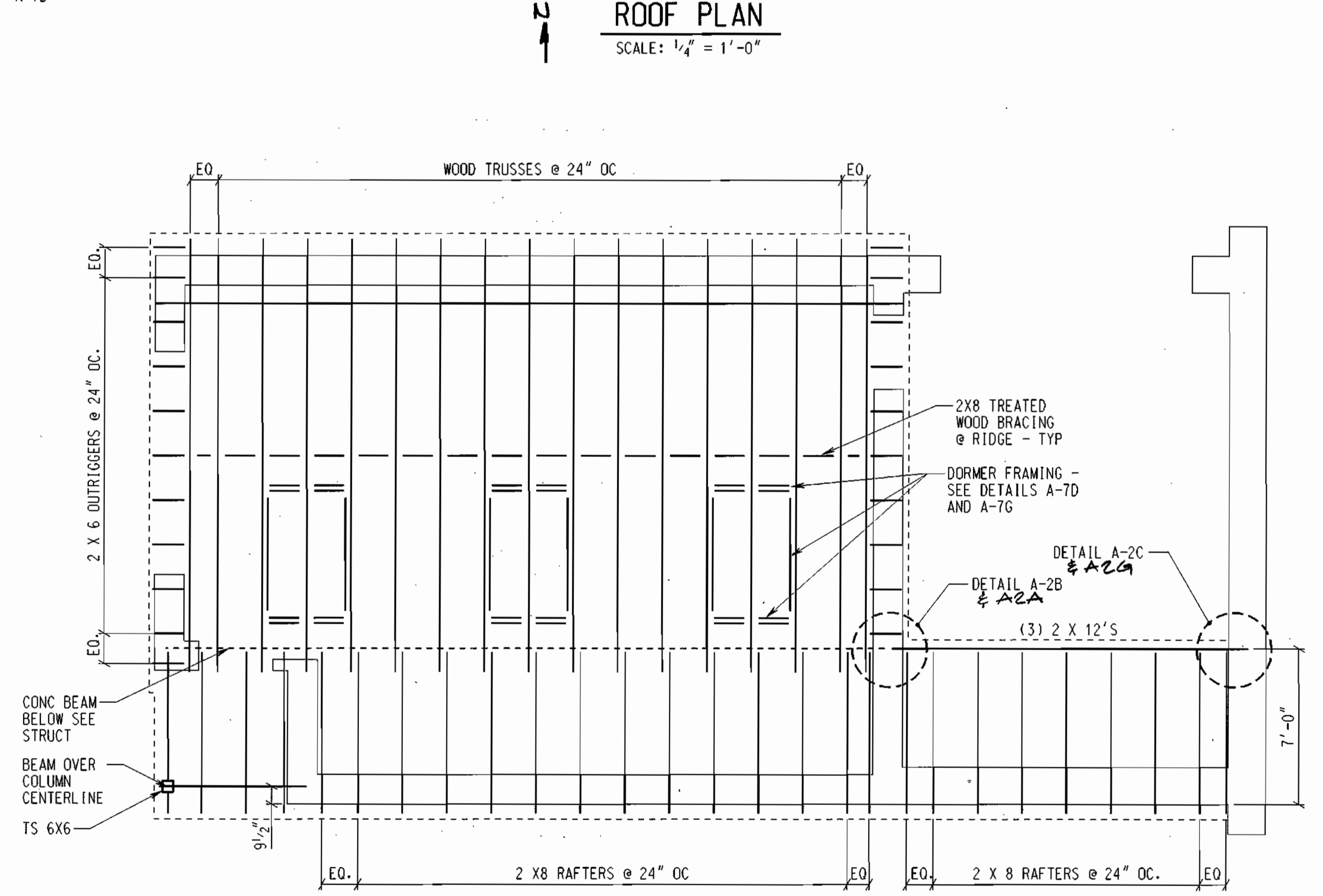
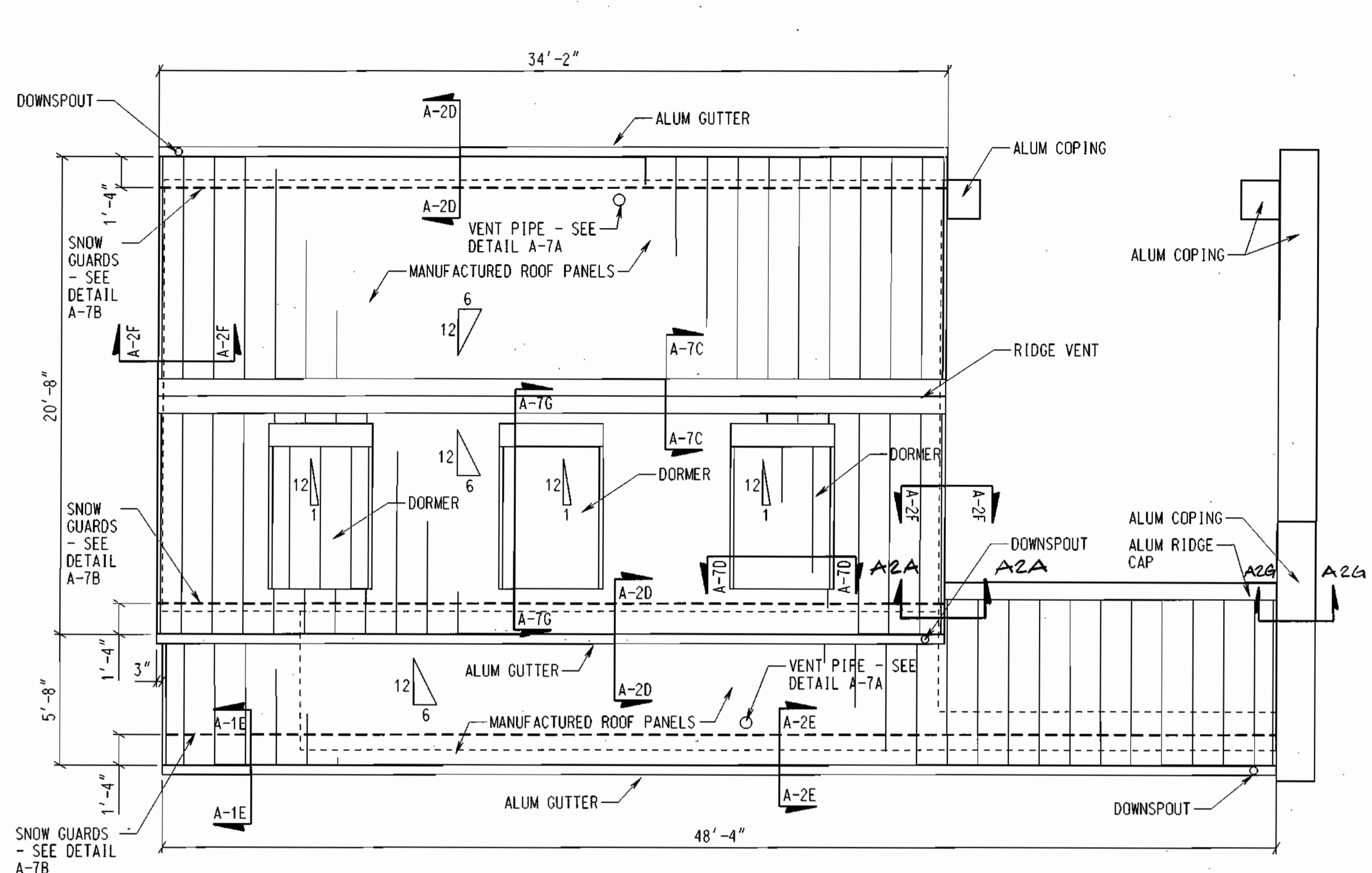
RECORD DRAWING

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

SCALE AS SHOWN
SHEET 8 OF 36

NOVEMBER 12, 1998



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James P. [Signature] 11/15/99
DIRECTOR OF PUBLIC WORKS DATE

Robert A. [Signature] 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: [Signature]			
NO. [Signature]			
REVISION [Signature]			
DATE: 8/23/02			

ROOF PLAN AND FRAMING PLAN

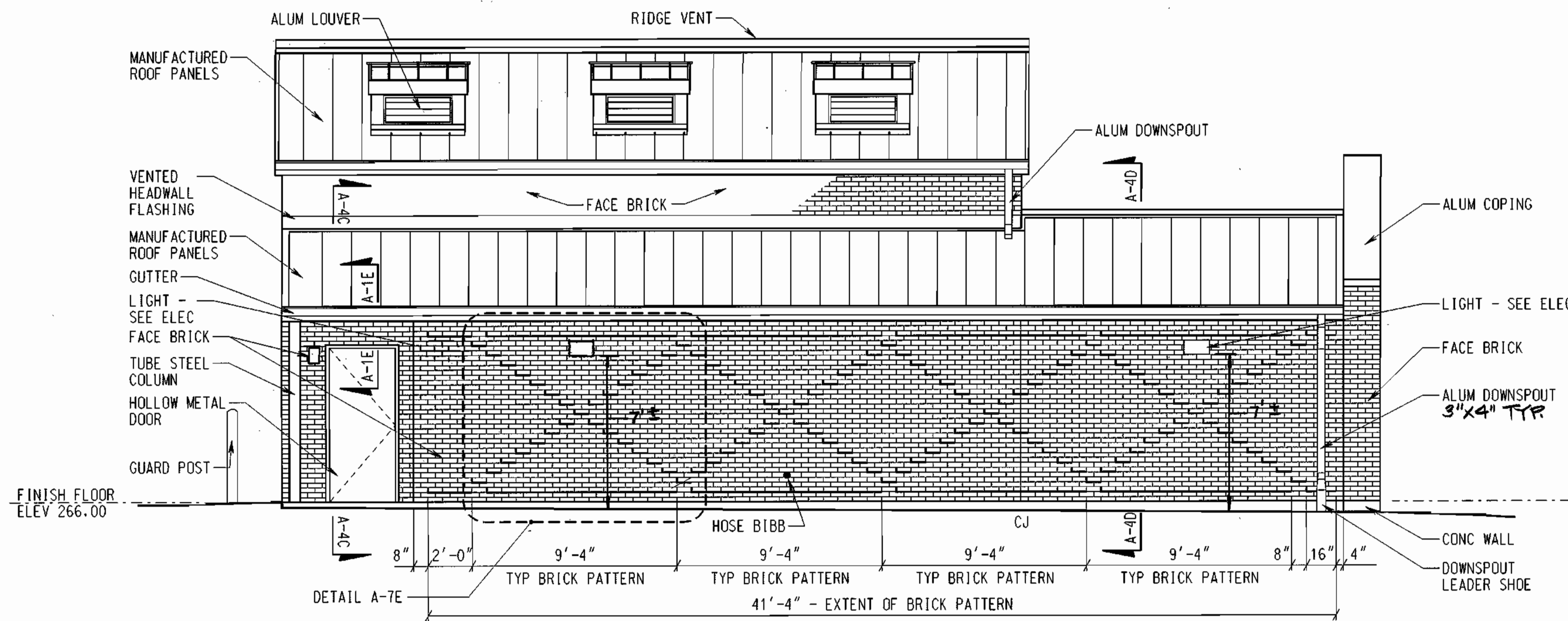
600' SCALE MAP NO. _____ BLOCK NO. _____

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

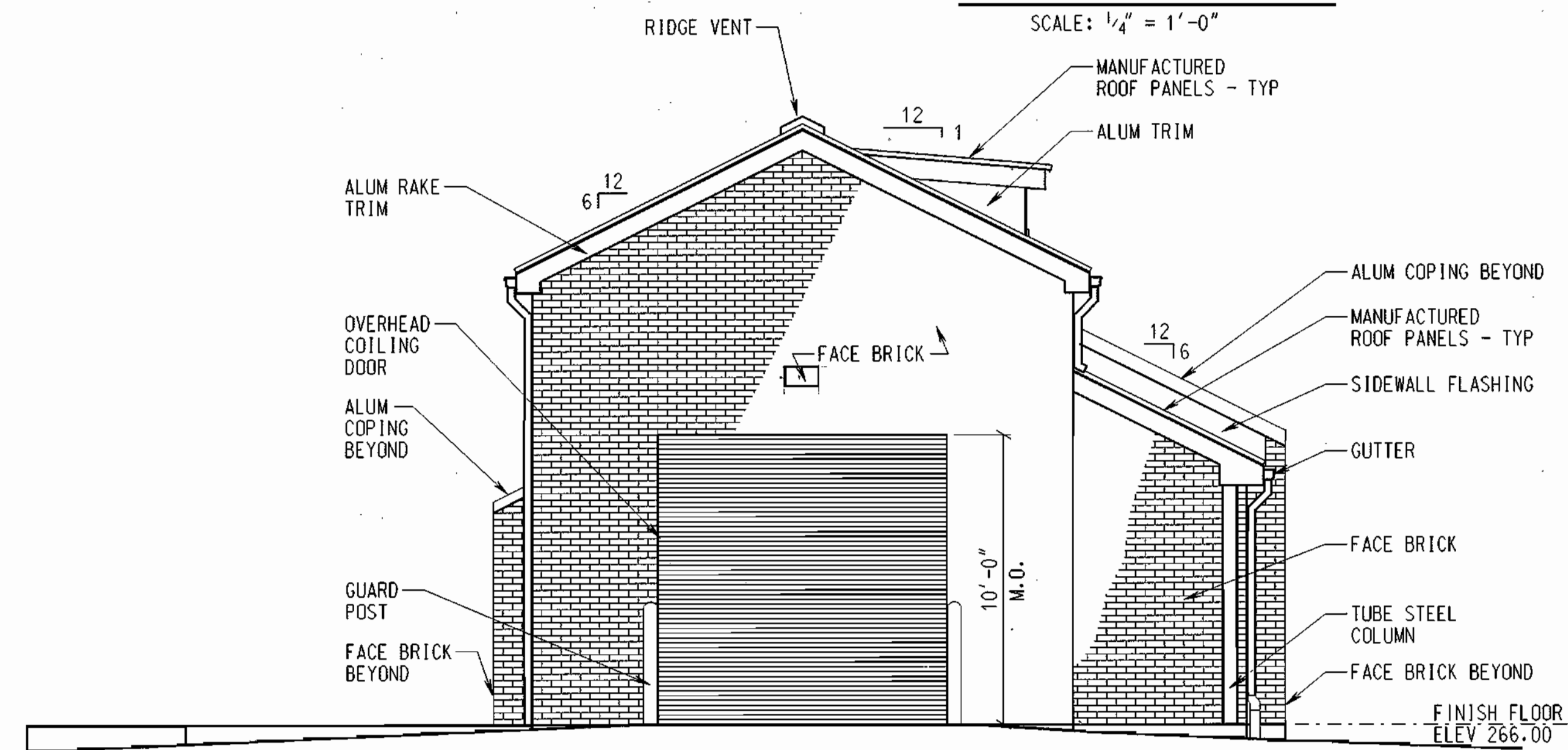
RECORD DRAWING
3327-A
11/18/02

ARCHITECTURAL REGISTRATION NO. 3327-A
[Signature]



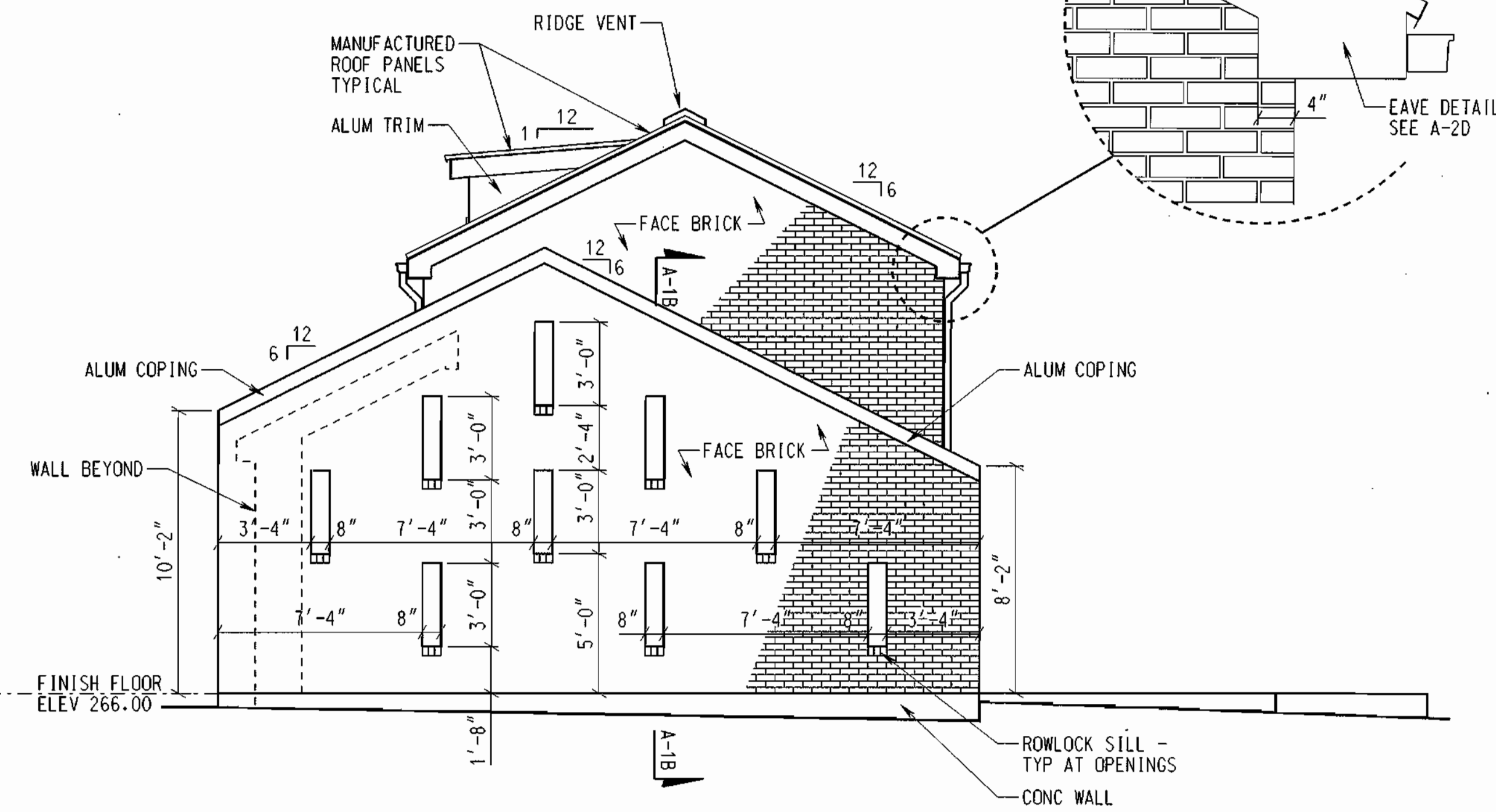
SOUTH ELEVATION

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



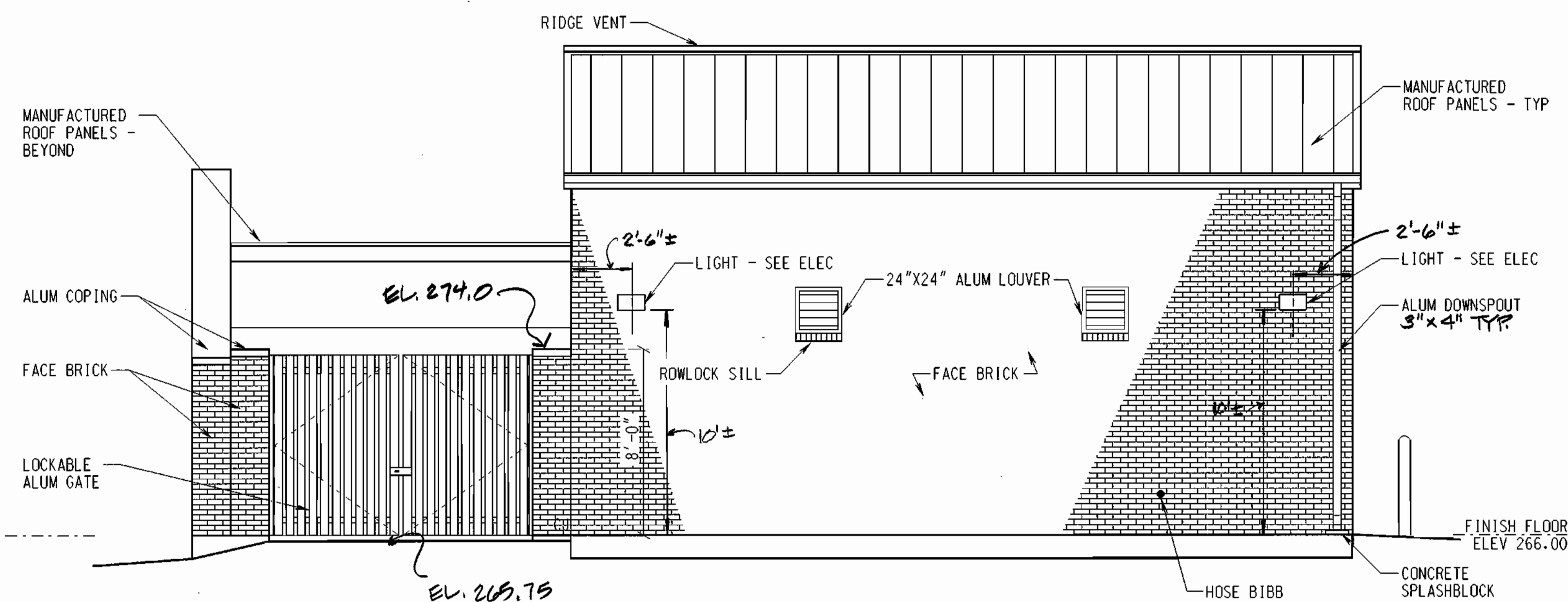
WEST ELEVATION

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



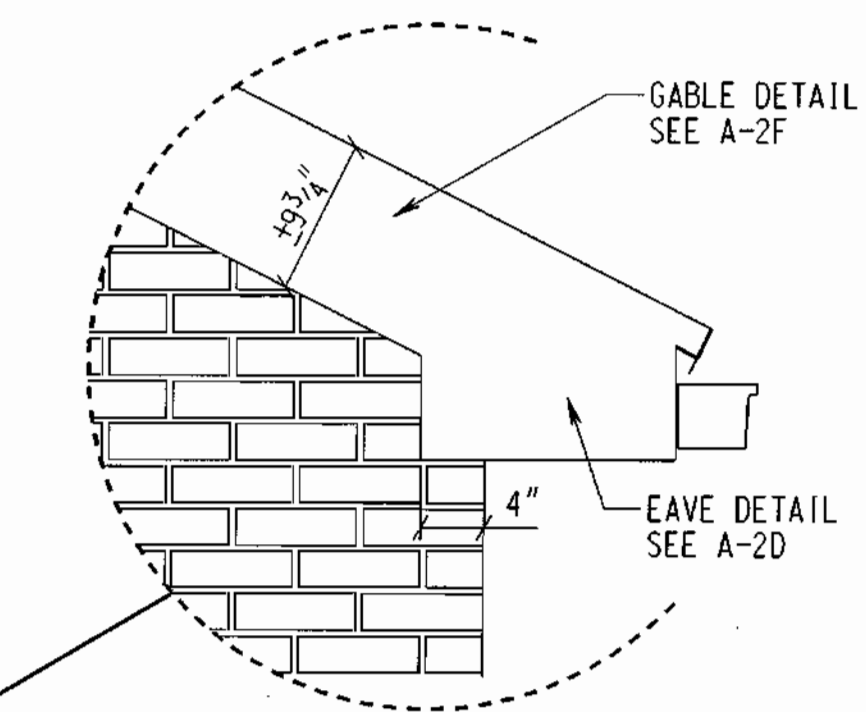
EAST ELEVATION

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



NORTH ELEVATION

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



ARCHITECTURAL REGULATION BOARD
3327-A
Richard Beard
RECORD DRAWING
11/18/02
GRAPHIC SCALE
0 2 4 6 8 10
SCALE: 1/4" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.
James P. Lewis 1-15-99
DIRECTOR OF PUBLIC WORKS
Robert J. DeWitt 1-15-99
CHIEF, BUREAU OF UTILITIES

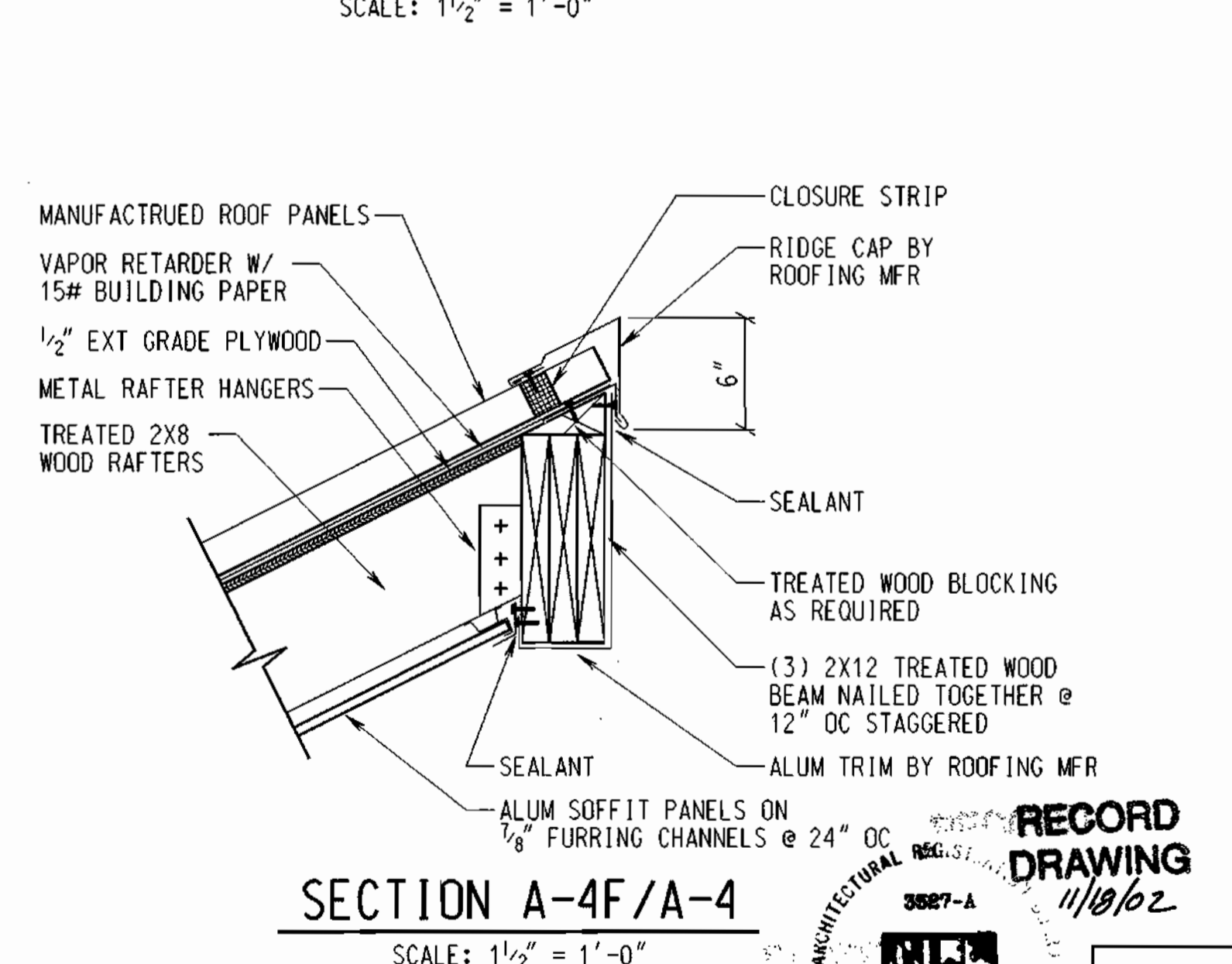
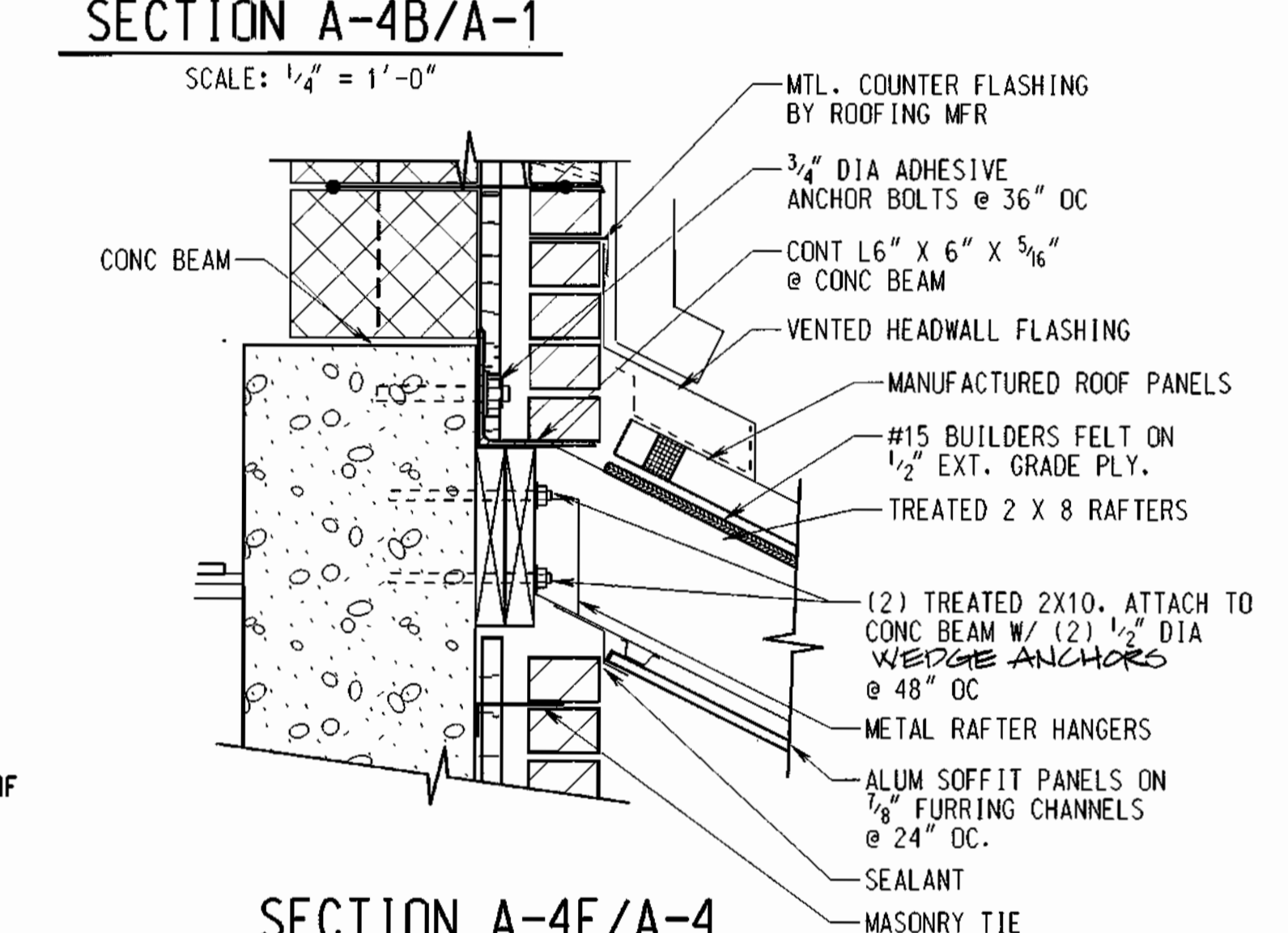
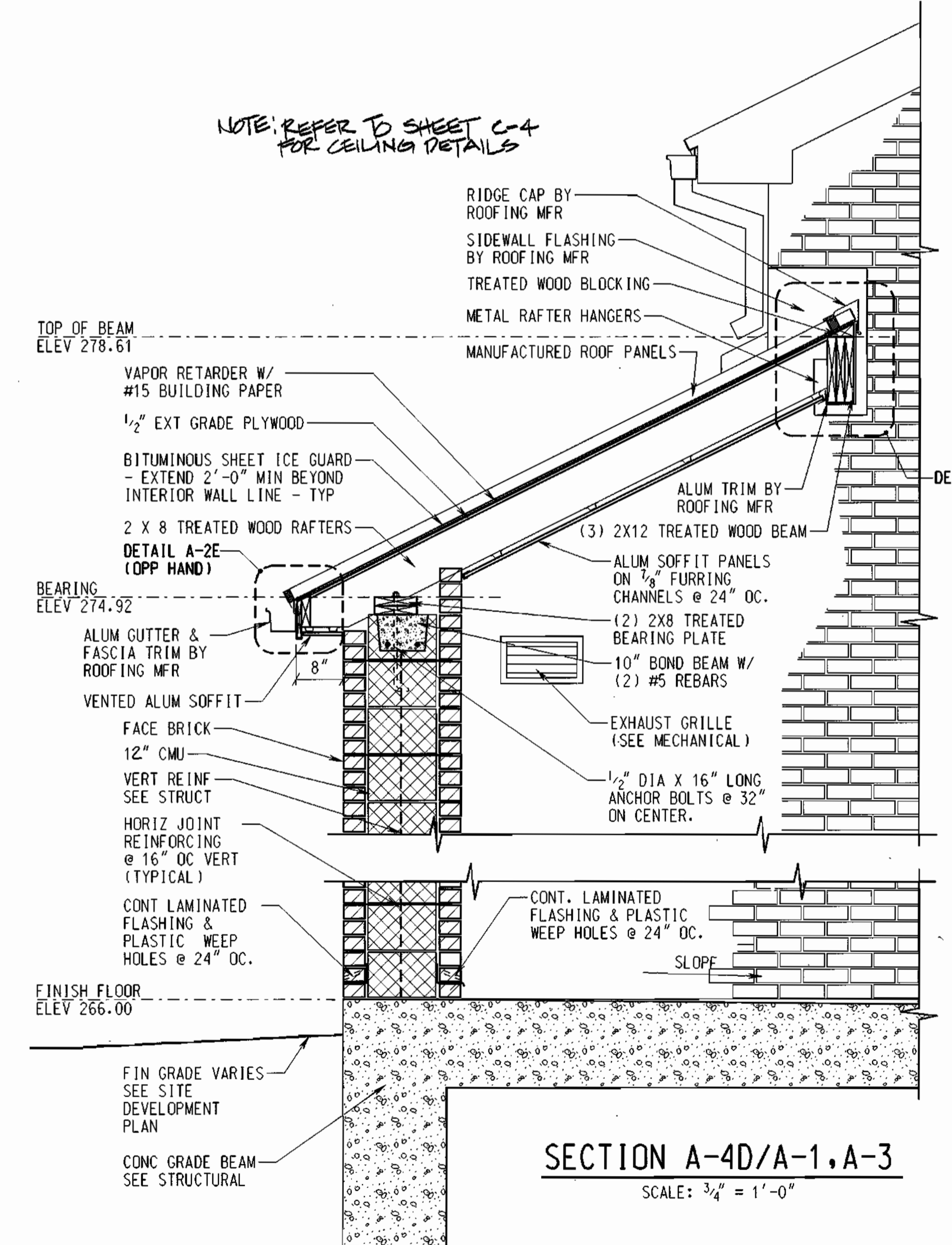
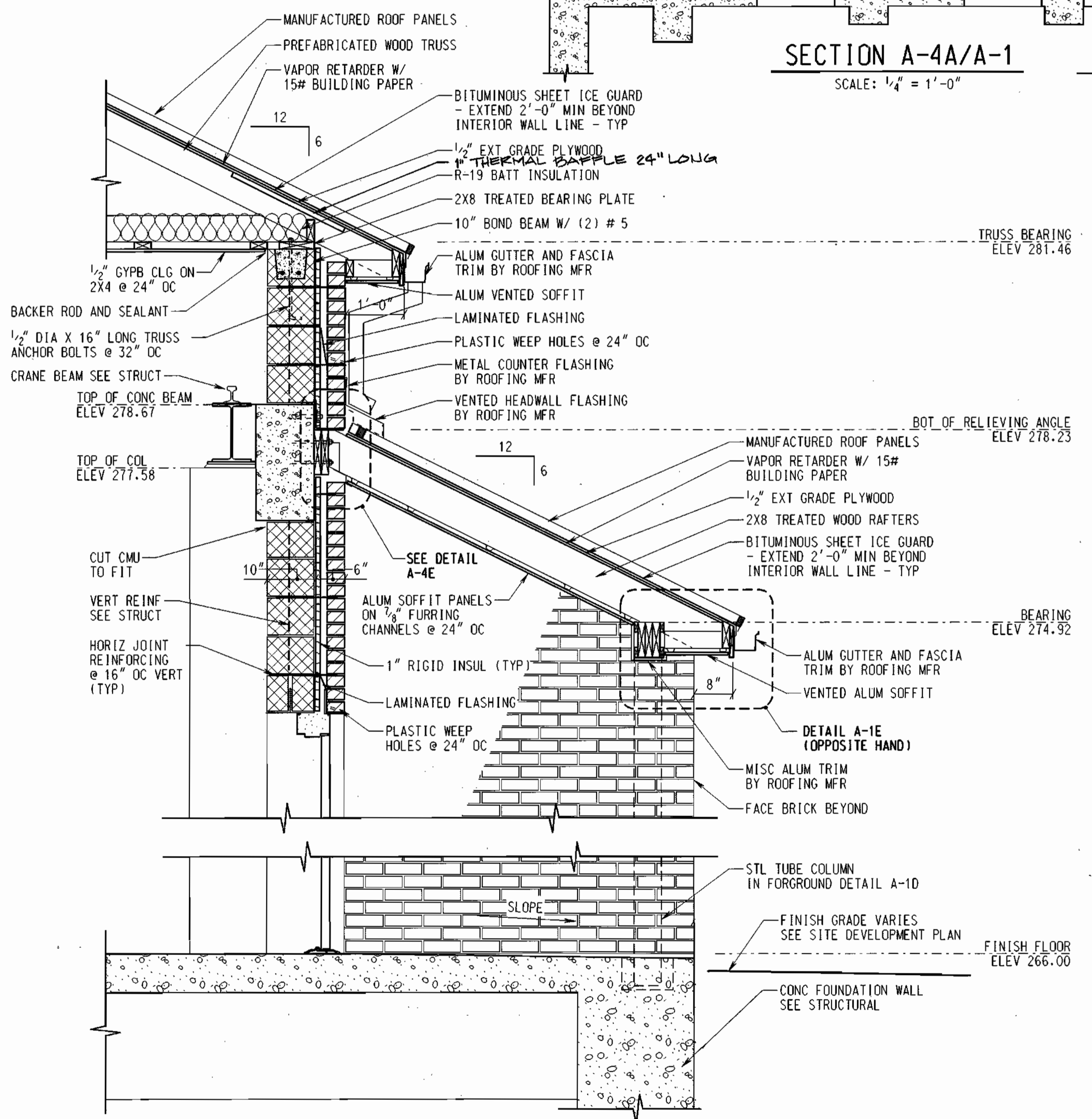
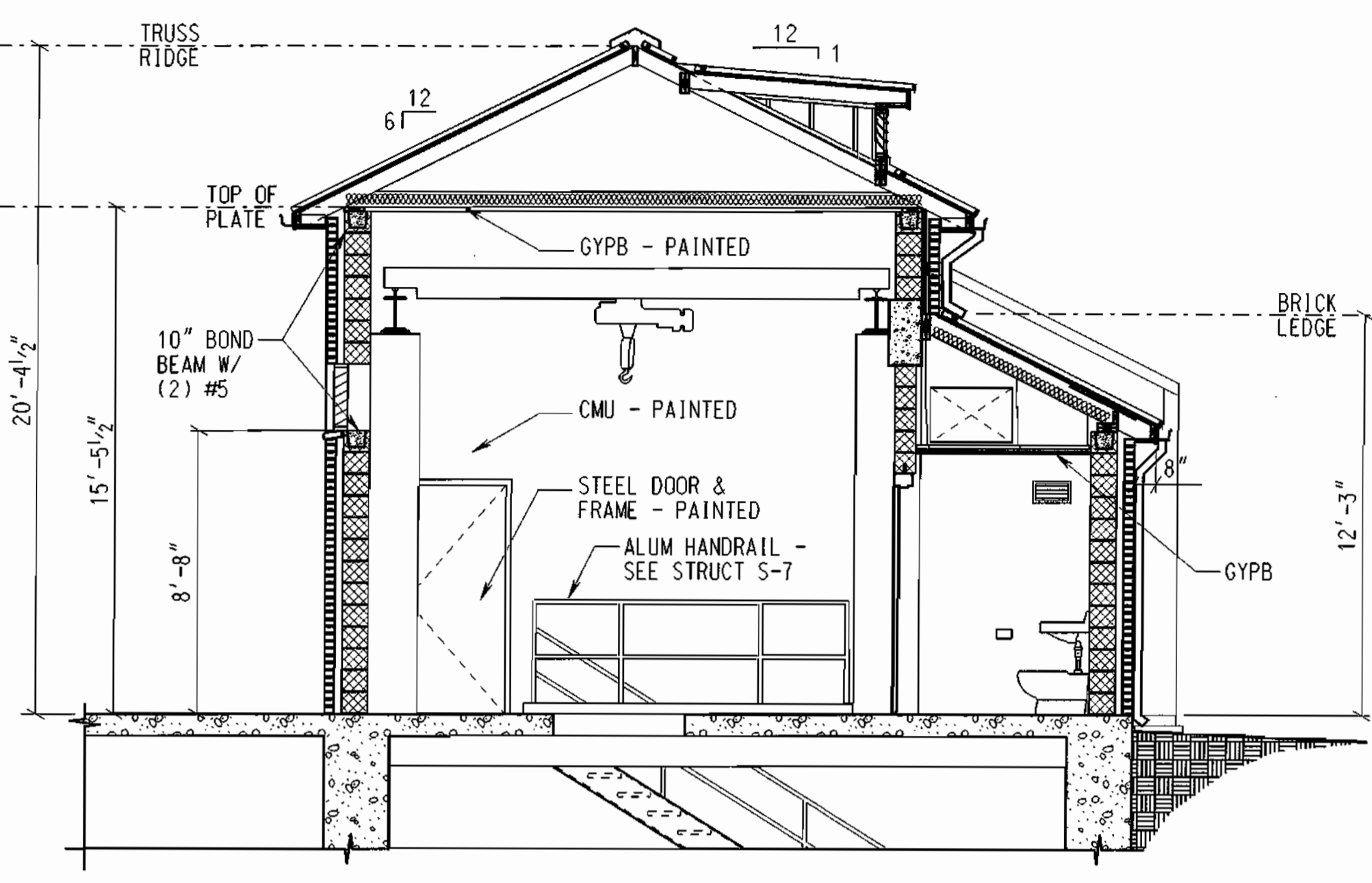
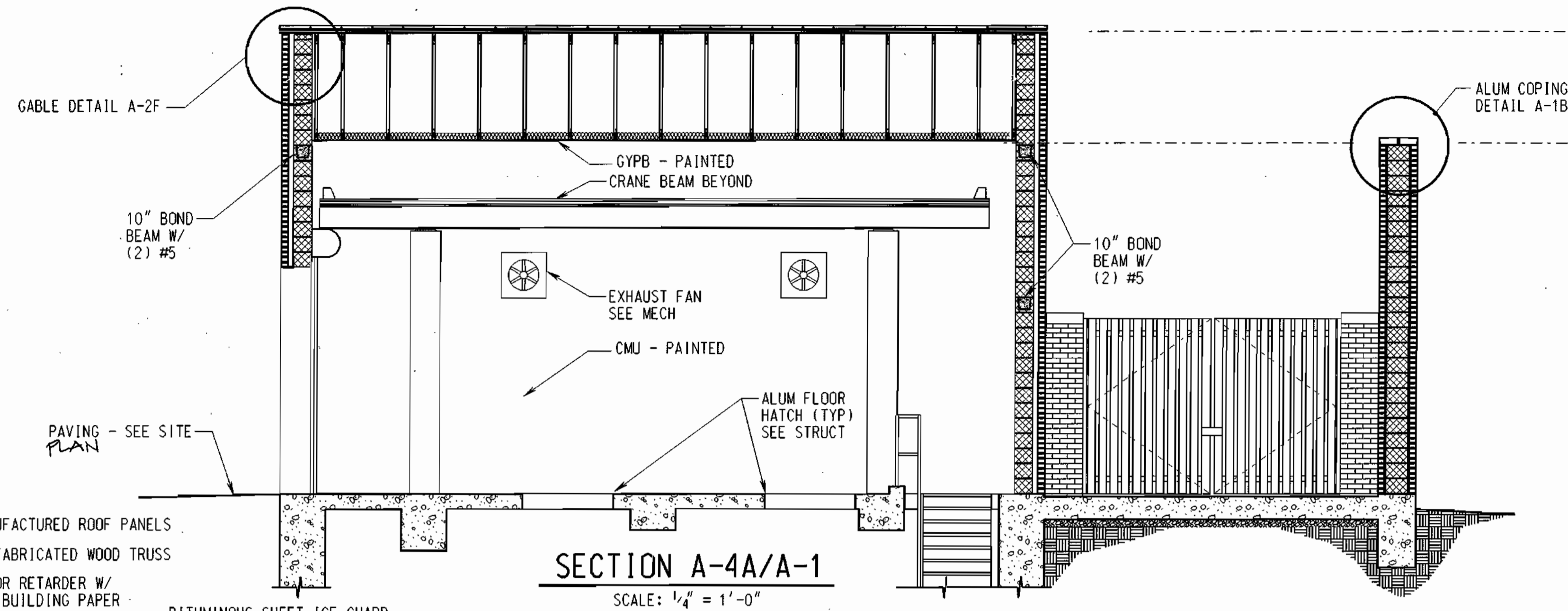
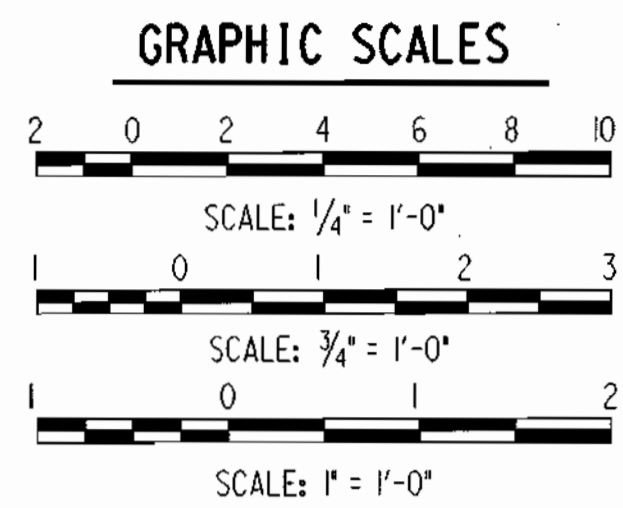
PREPARED BY:
WR&A
Whitman, Reardon and Associates, LLP.
Robert J. DeWitt 1-15-99
CHIEF, UTILITY DESIGN DIVISION

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

ELEVATIONS
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 10 OF 36



RECORD DRAWING
11/18/02
ARCHITECTURAL REG. NO. 3887-A
Rockburn Wastewater Pumping Station

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Director of Public Works: *James J. Lewis* 11/15/99
Chief, Bureau of Engineering: *Robert J. Sporn* 11/15/99
Chief, Bureau of Utilities: *Robert J. Sporn* 11/15/99
Asst. Chief, Utility Design Division: *West J. Sign* 11/15/99

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 :					

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

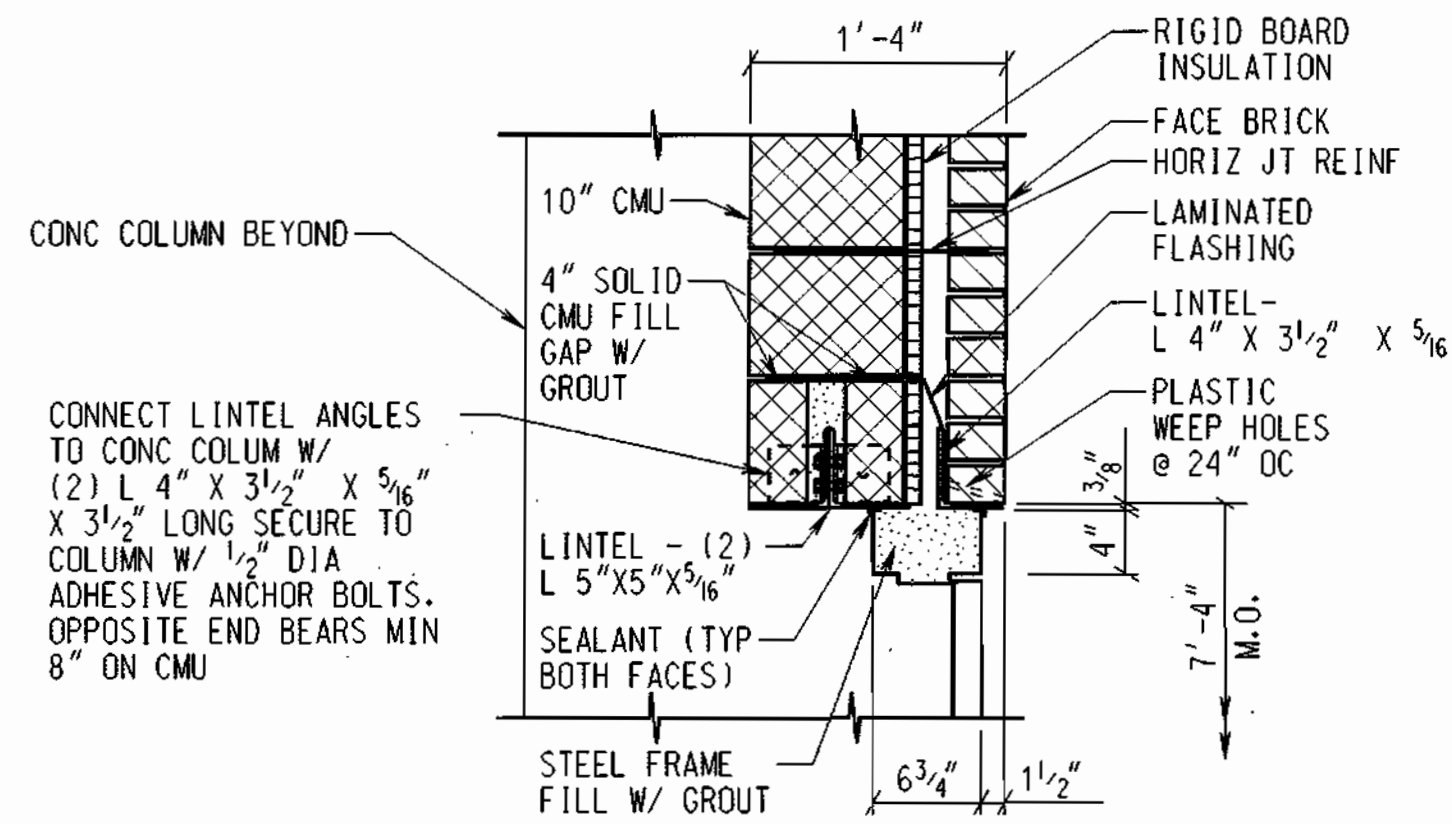
SCALE AS SHOWN
SHEET 11 OF 36
NOVEMBER 12, 1998

NO.	SIZE (L X H)	MATL	DEPTH	DETAILS			LINTEL	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

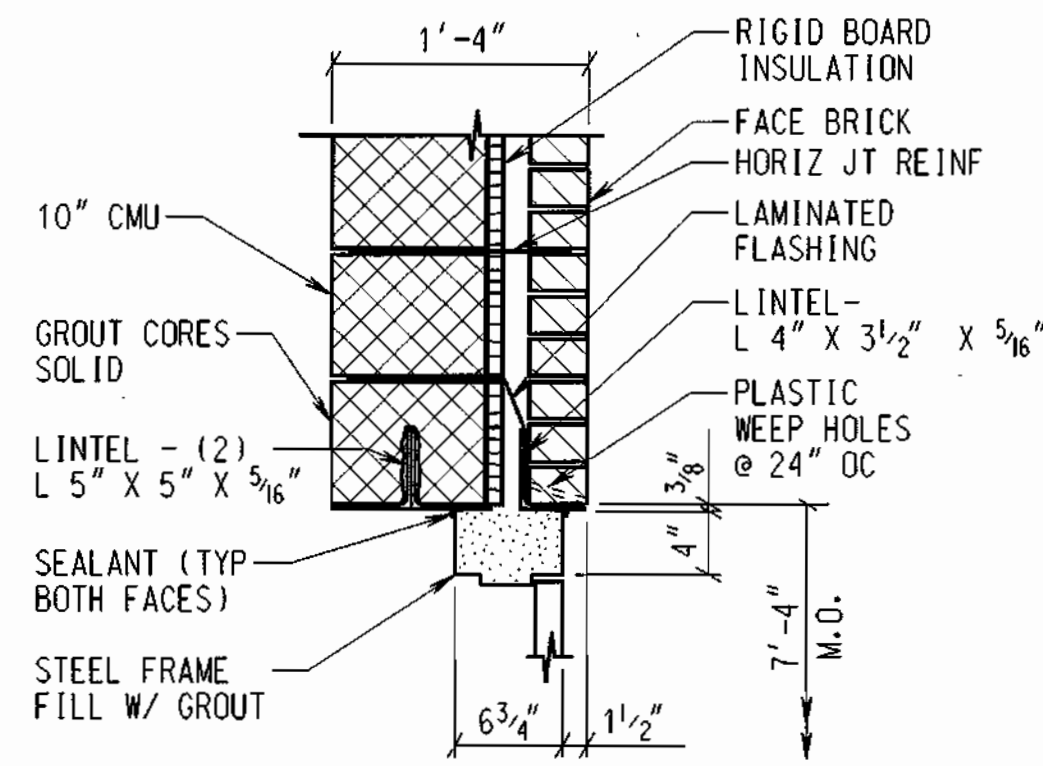
- NOTES:
- ALL LINTELS SHALL HAVE 8" MINIMUM BEARING ON EACH END UNLESS NOTED OTHERWISE.
 - LINTELS SPANNING MASONRY OPENINGS 10'-0" AND GREATER SHALL HAVE 12" MINIMUM BEARING ON EACH END.
 - ADDITIONAL MASONRY, PRECAST AND/OR STEEL LINTELS MAY BE REQUIRED FOR MECHANICAL AND ELECTRICAL SERVICES. THESE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

LOCATION	MK	HDW SET	DOORS			FRAMES					REMARKS	
			WIDTH (NOM)	LOCATION	TYPE	MATL	TYPE	MATL	HEAD	JAMB		SILL
	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"

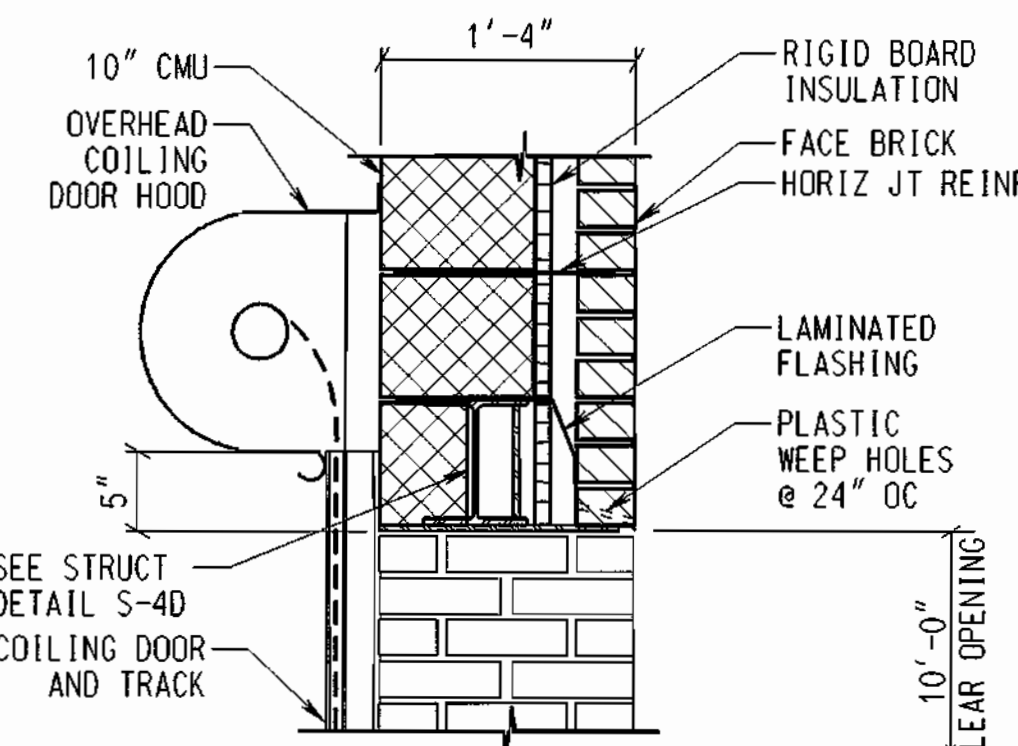
- DOOR SCHEDULE NOTES:
- * TYPICAL DOOR HEIGHT: 7'-0" NOM UNLESS OTHERWISE NOTED
 - * TYPICAL DOOR THICKNESS: 1 3/4" UNLESS OTHERWISE NOTED
 - * OVERHEAD COILING DOOR: 10'-0" OPENING HEIGHT



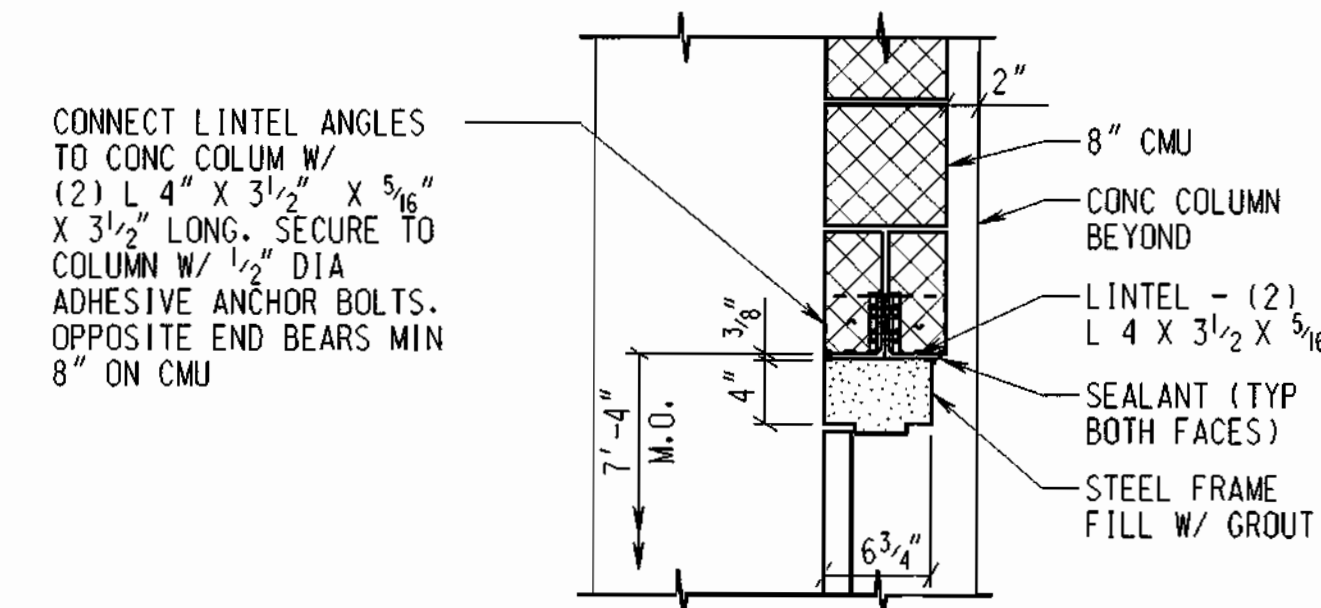
HEAD DETAIL - H1
SCALE: 1" = 1'-0"



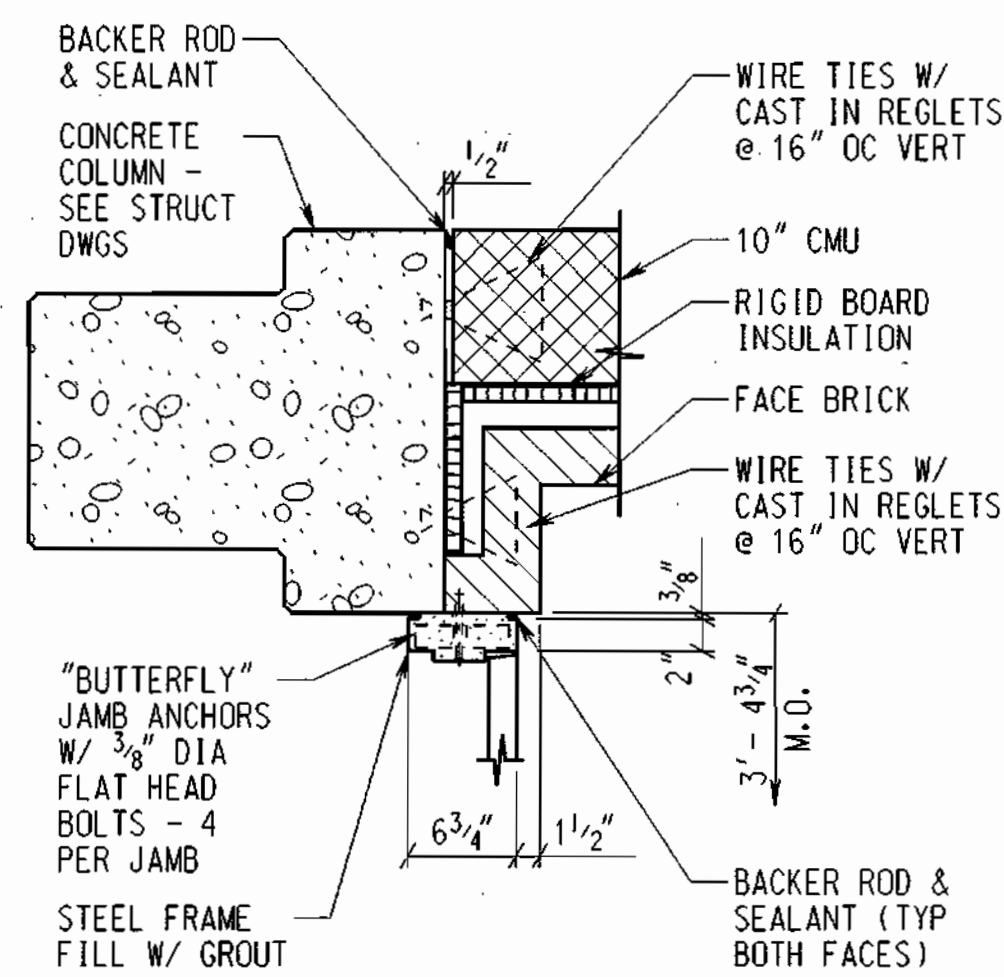
HEAD DETAIL - H2
SCALE: 1" = 1'-0"



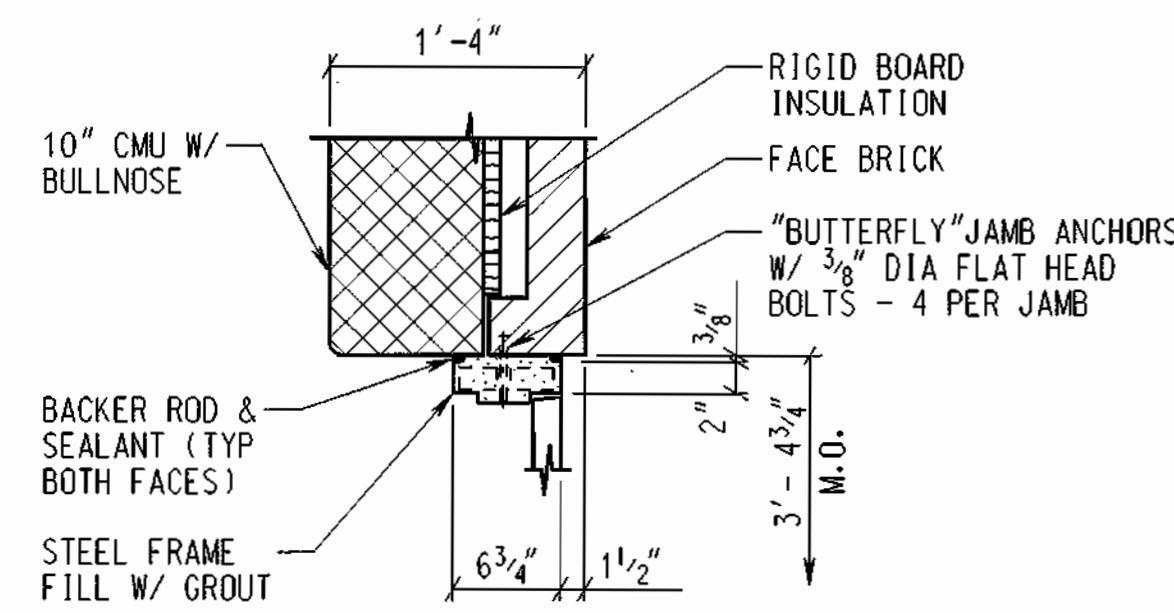
HEAD DETAIL - H3
SCALE: 1" = 1'-0"



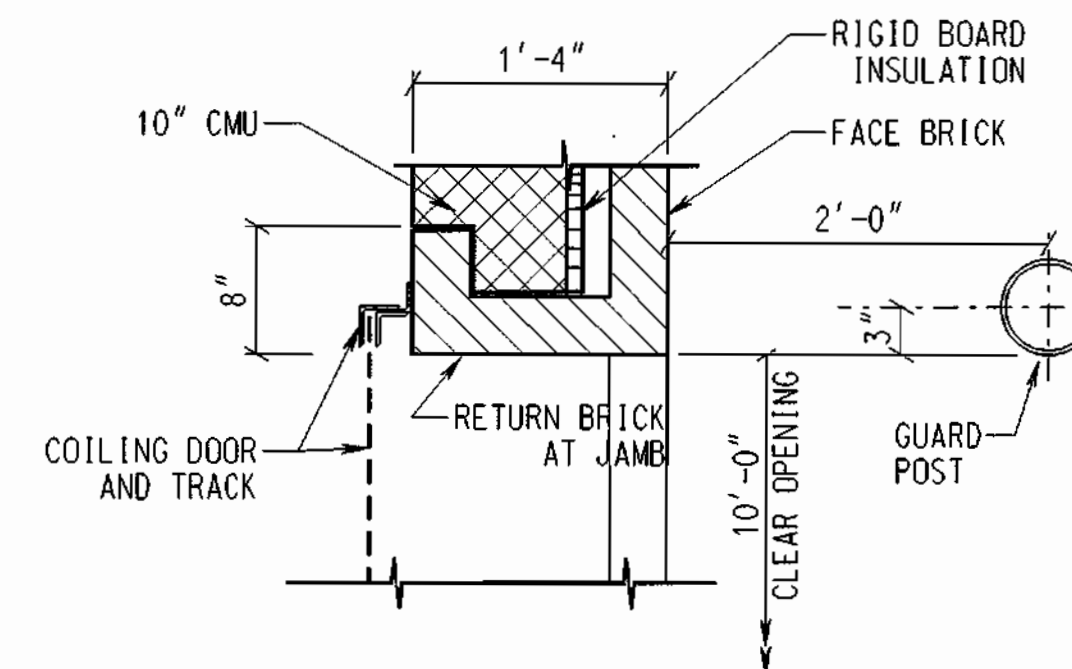
HEAD DETAIL - H4
SCALE: 1" = 1'-0"



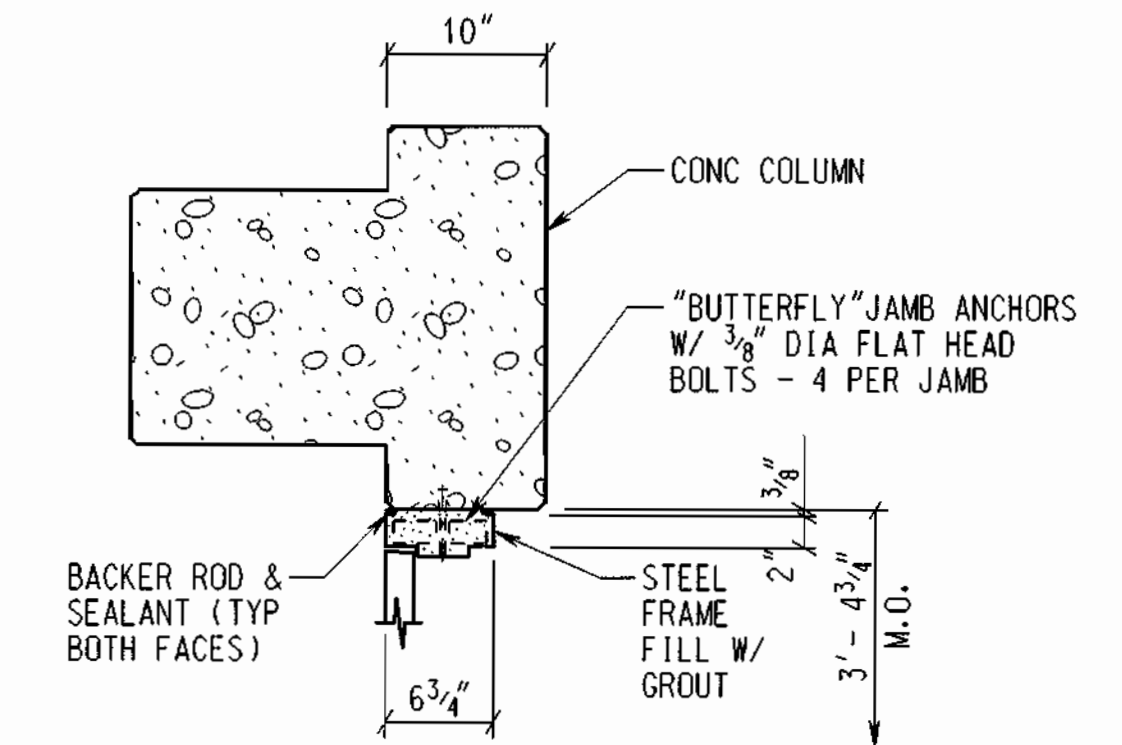
JAMB DETAIL - J1
SCALE: 1" = 1'-0"



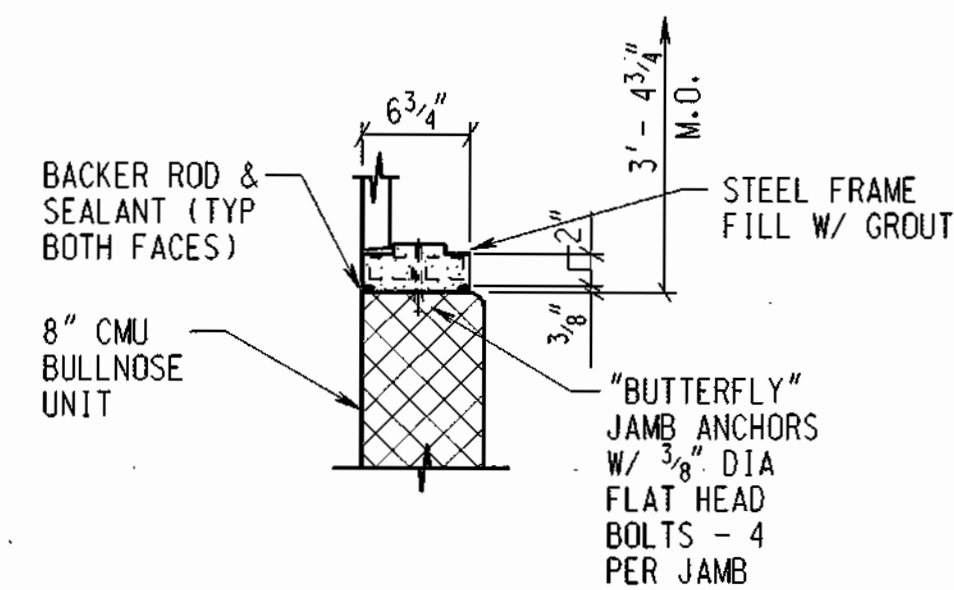
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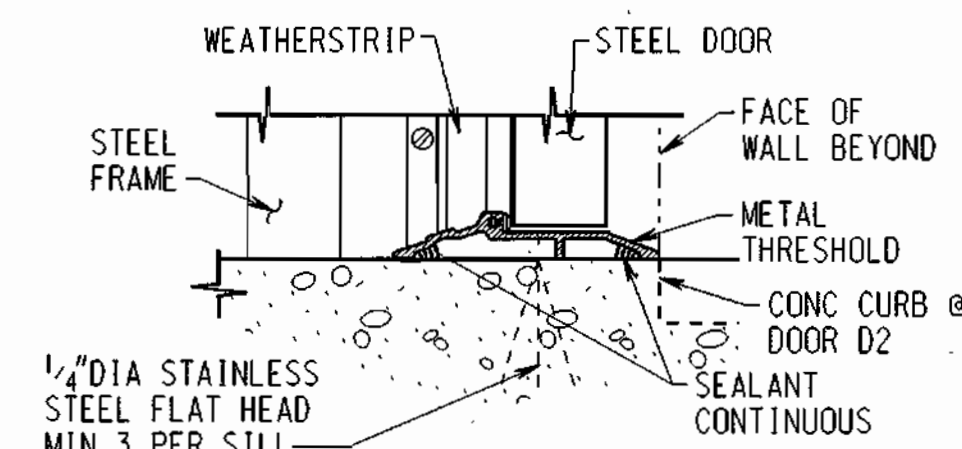
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SCALE: 1" = 1'-0"



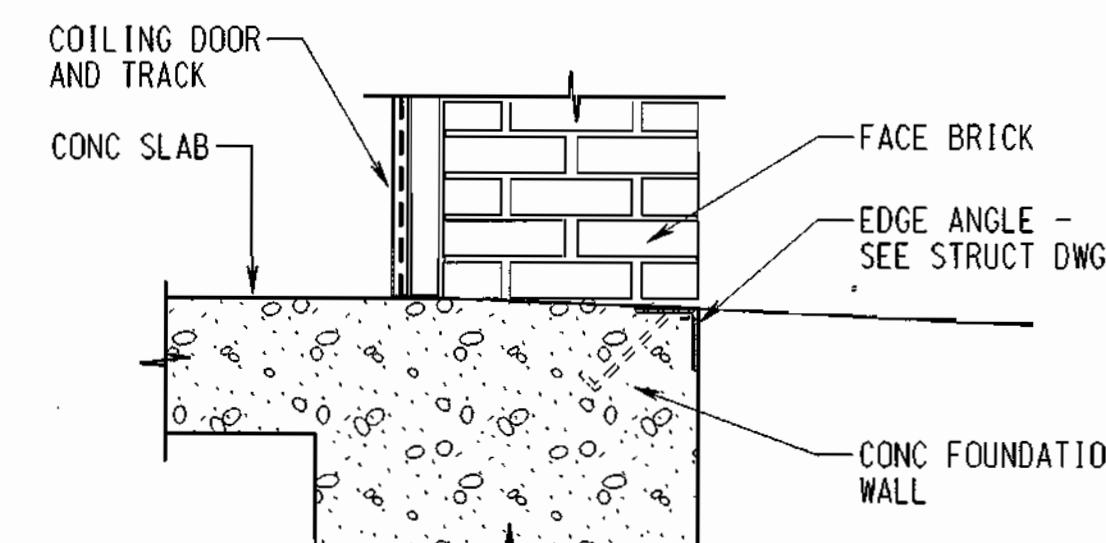
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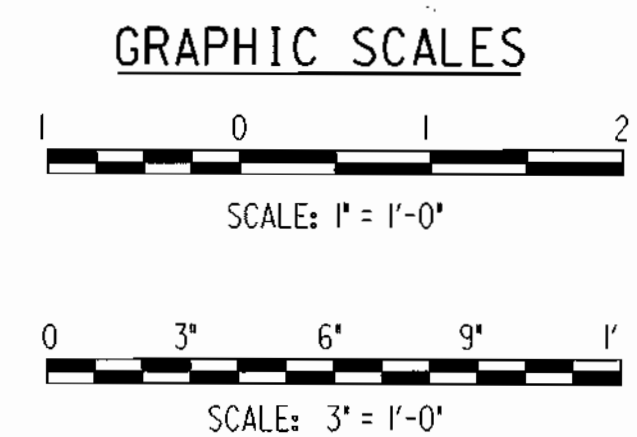
JAMB DETAIL - J5
SCALE: 1" = 1'-0"



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



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



RECORD DRAWING
11/18/02

A-5

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Director of Public Works: *Robert M. Benjamin* 1-15-99
 Chief, Bureau of Utilities: *Robert M. Benjamin* 1-15-99
 Chief, Bureau of Engineering: *Robert M. Benjamin* 1-15-99
 Chief, Utility Design Division: *Robert M. Benjamin* 1-15-99

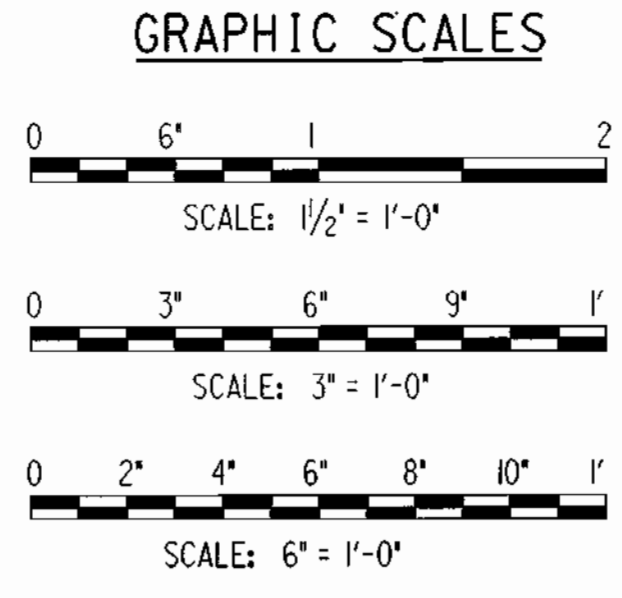
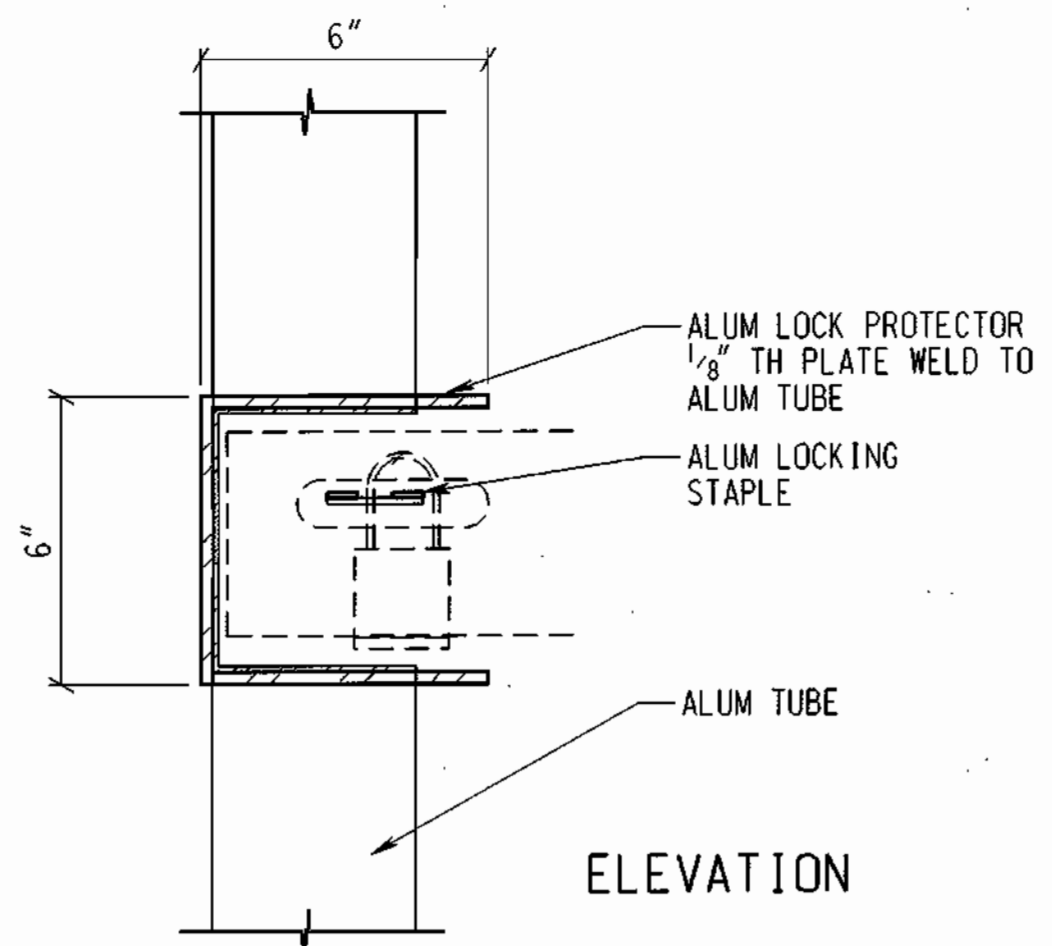
PREPARED BY:
WR&A
 Whitman, Reardon and Associates, LLP.

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

DOOR SCHEDULE AND DETAILS

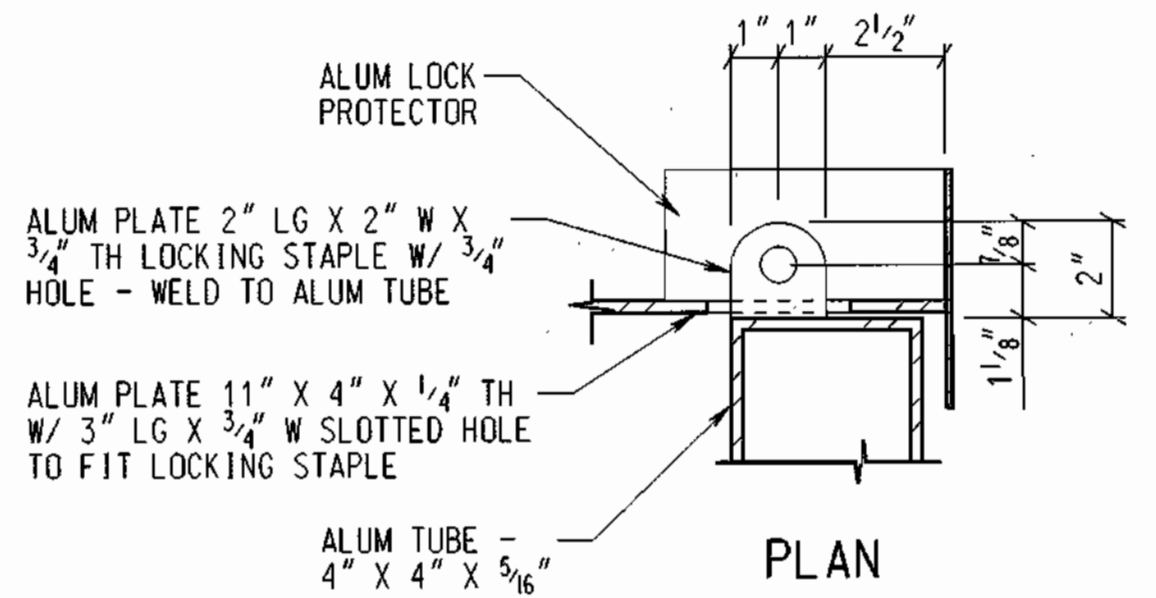
ROCKBURN WASTEWATER PUMPING STATION
 CAPITAL PROJECT NO. S-6200
 CONTRACT NO. 10-3695
 FIRST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 12 OF 36



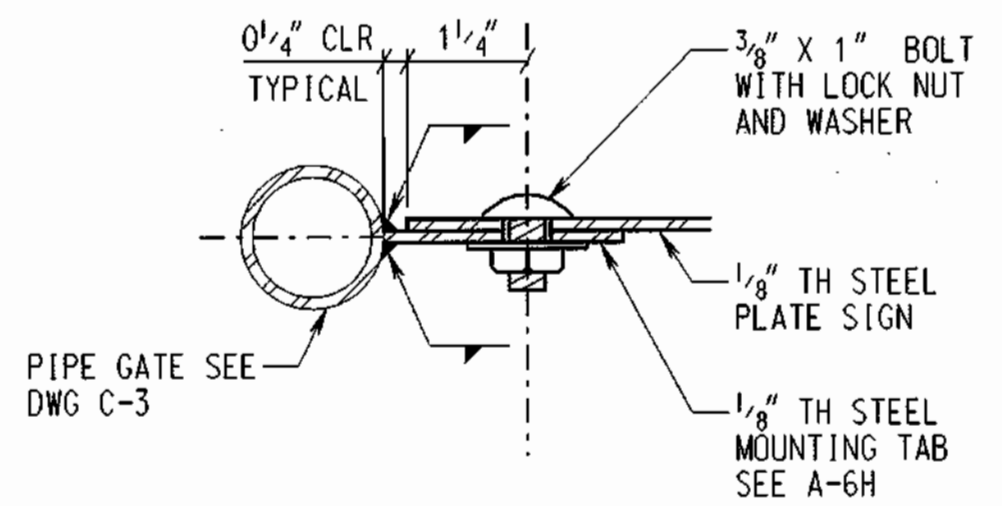
LOCK PROTECTOR DETAIL A6-A/A6

SCALE: 3" = 1'-0"



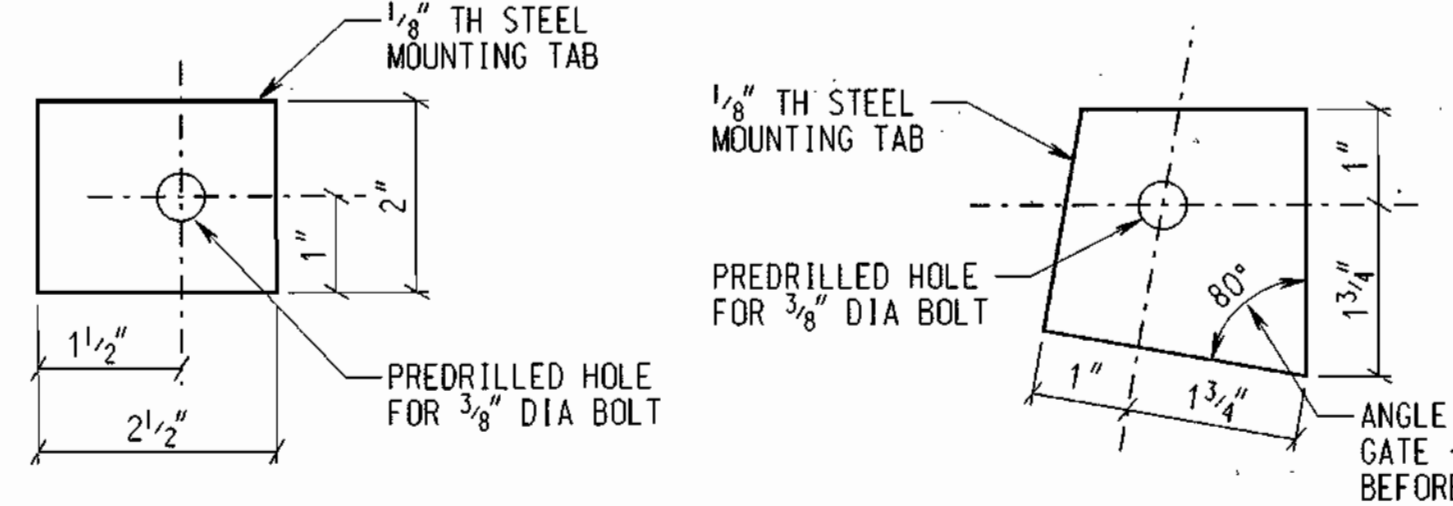
LOCKING STAPLE DETAIL A6-A/A6

SCALE: 3" = 1'-0"



PIPE GATE SIGN CONNECTION DETAIL A-6G/A6

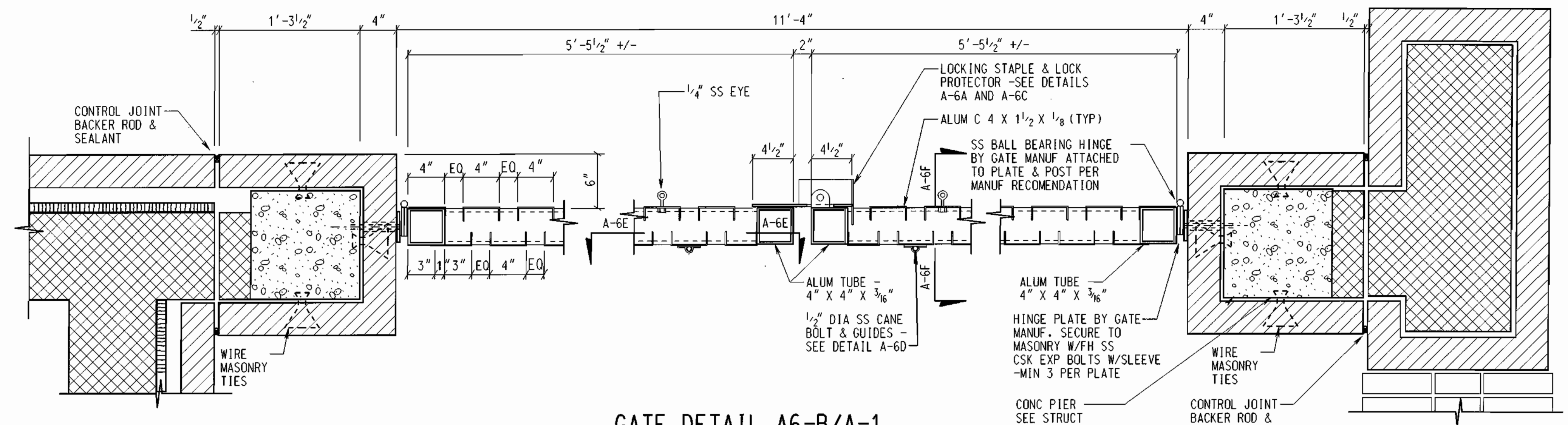
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PIPE GATE SIGN MOUNTING TAB DETAILS A-6H/A6

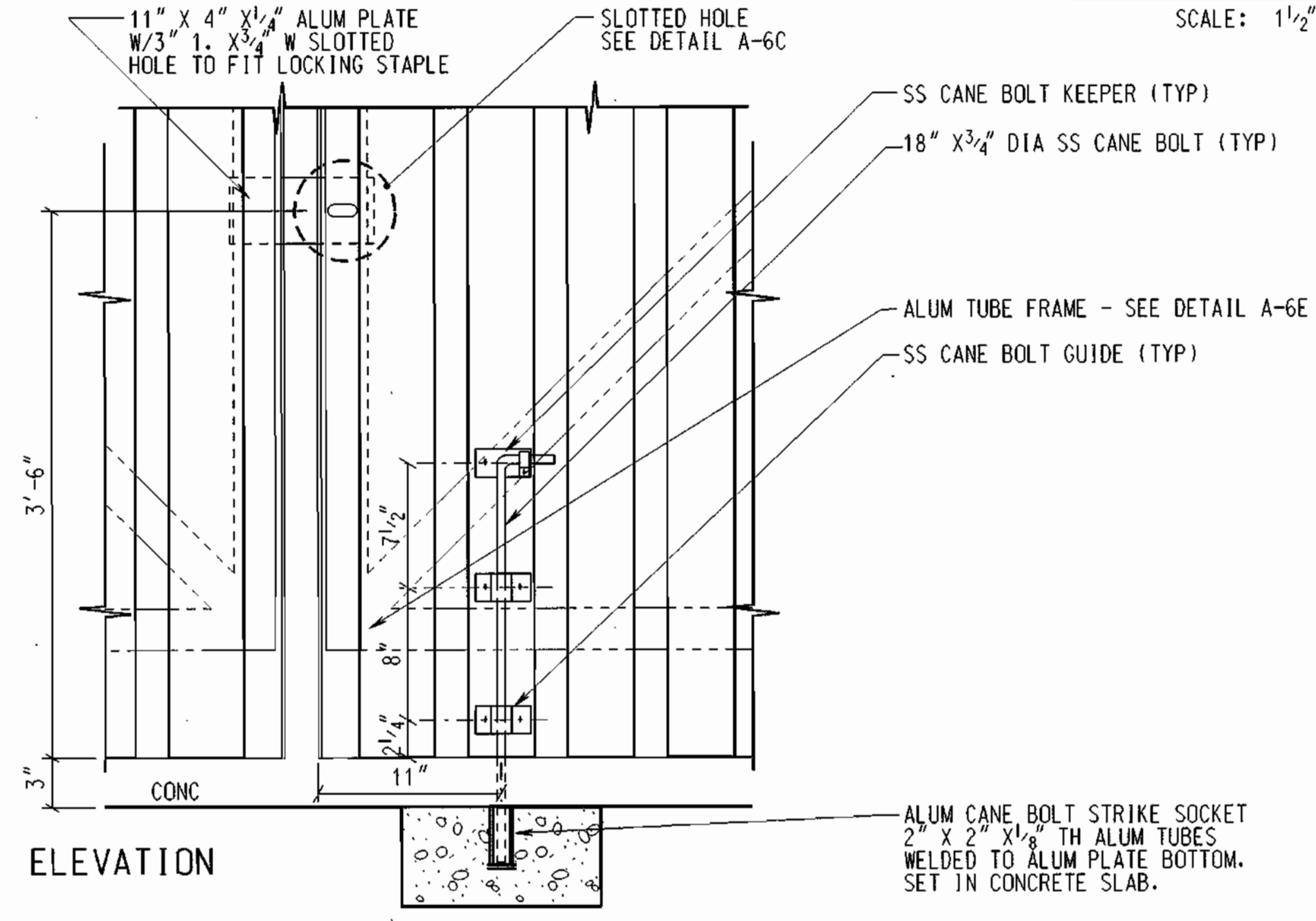
PIPE GATE SIGN MOUNTING TAB DETAILS A-6H/A6

SCALE: 6" = 1'-0"



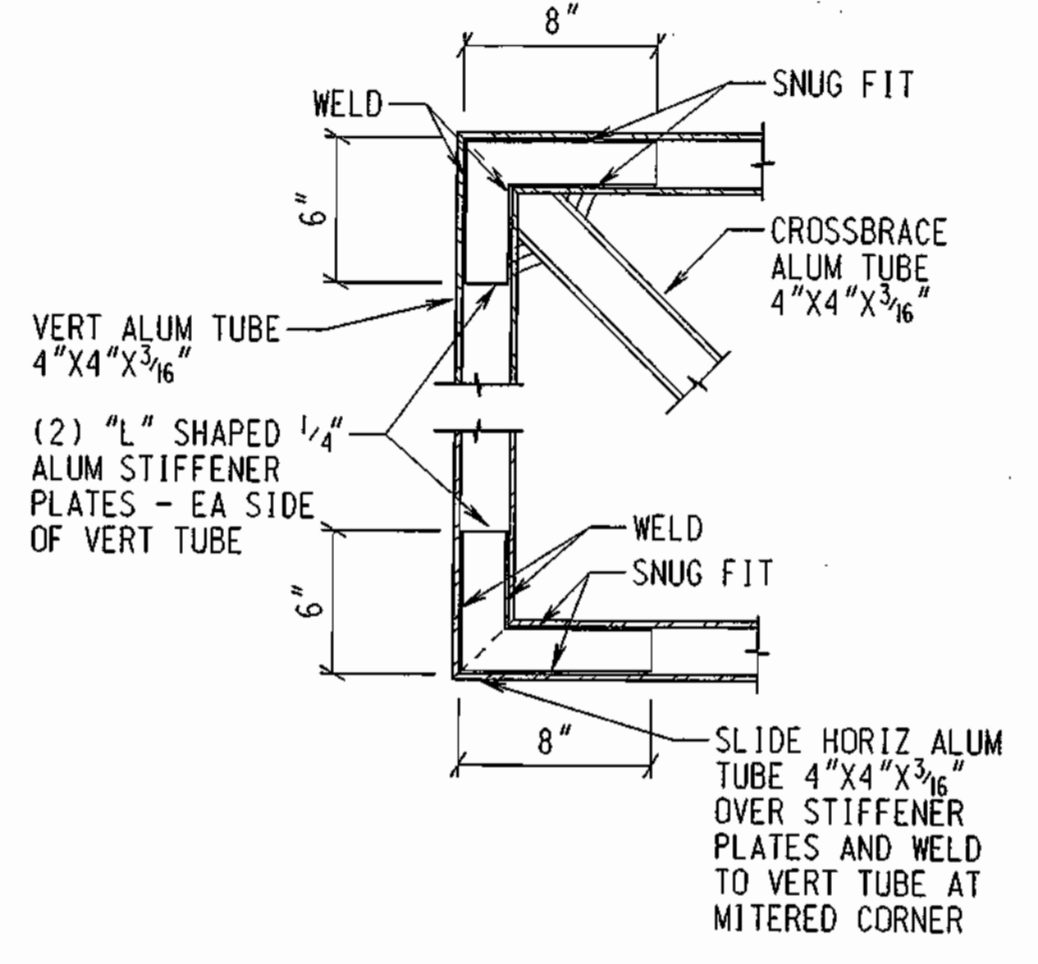
GATE DETAIL A6-B/A-1

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



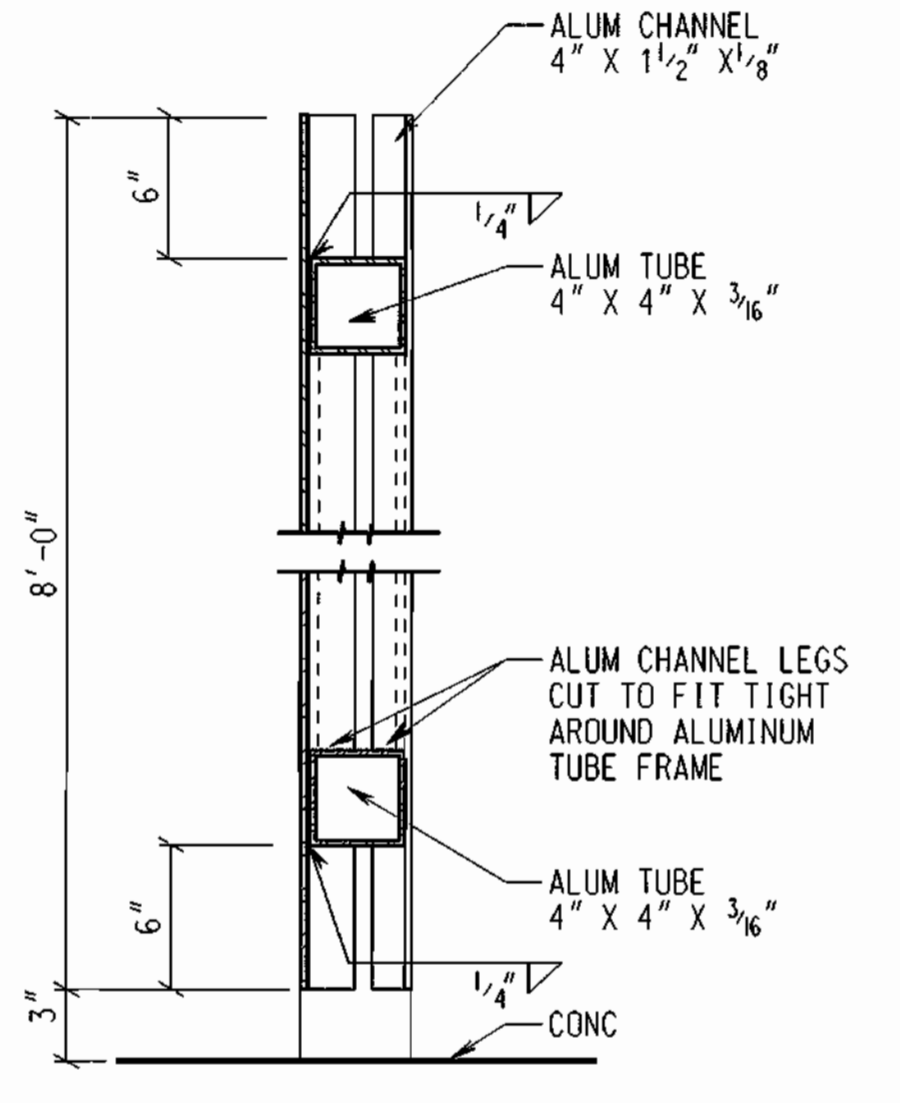
CANE BOLT DETAIL A-6D/A6

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



FRAME DETAIL A-6E/A6

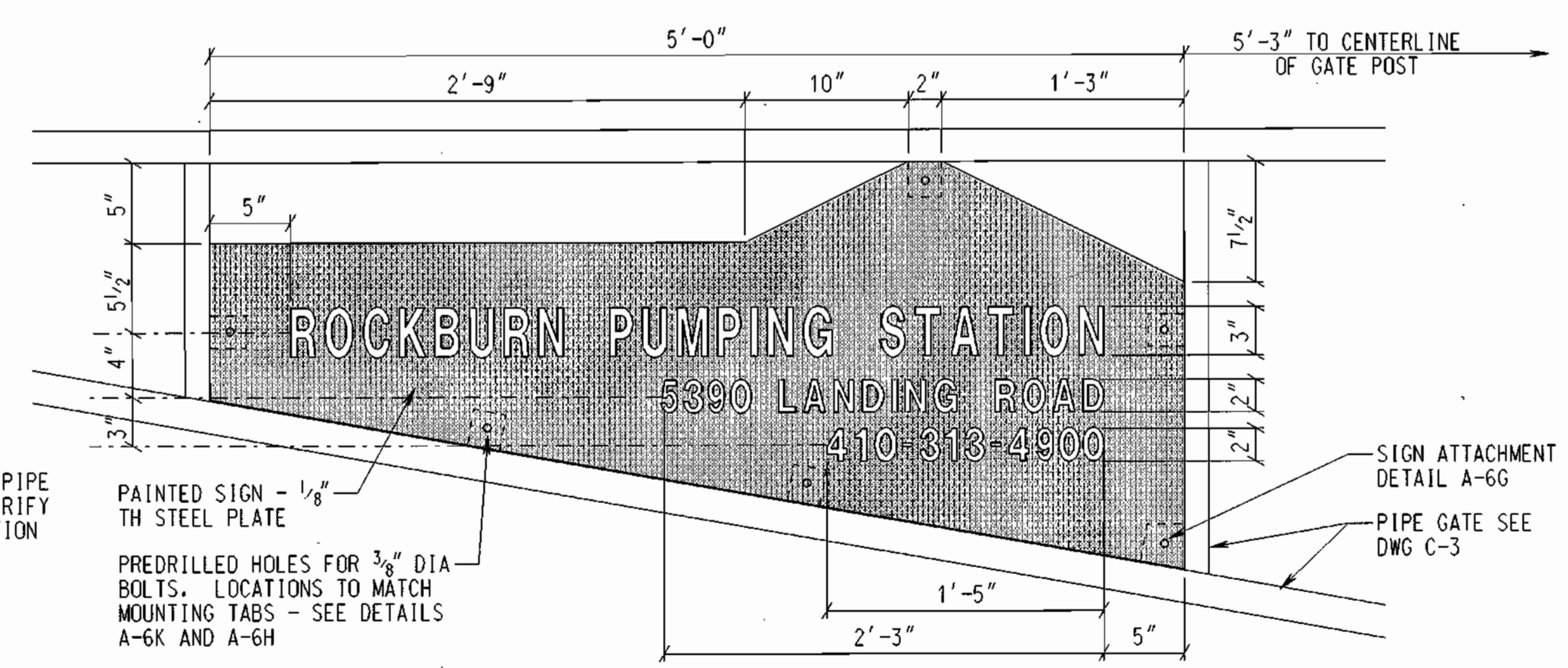
SCALE: 1/2" = 1'-0"



FRAME DETAIL A-6F/A6

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

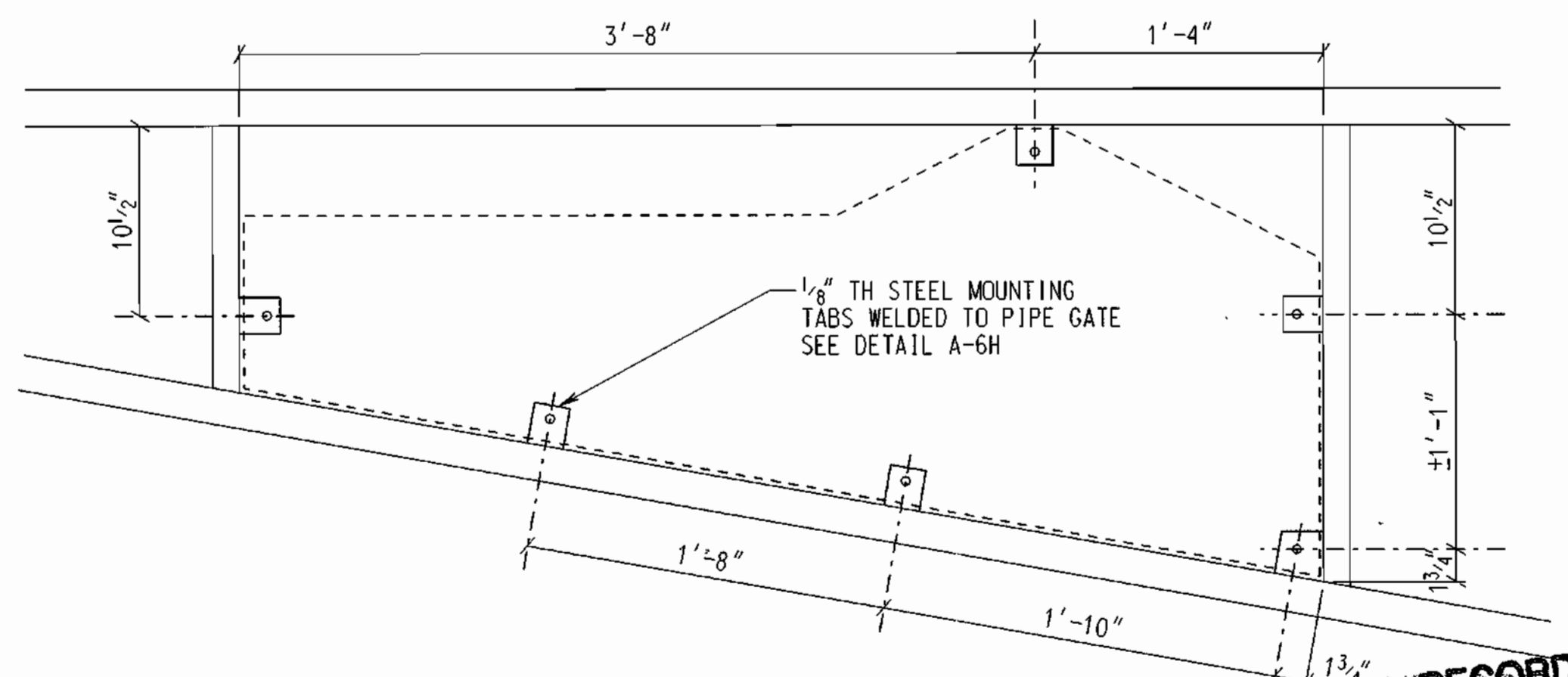
NOTE: UNLESS OTHERWISE NOTED ALL CONNECTIONS ON GATE SHALL BE WELDED AND ALL EXPOSED WELDS SHALL BE GROUND SMOOTH



PIPE GATE SIGN A-6J/C3

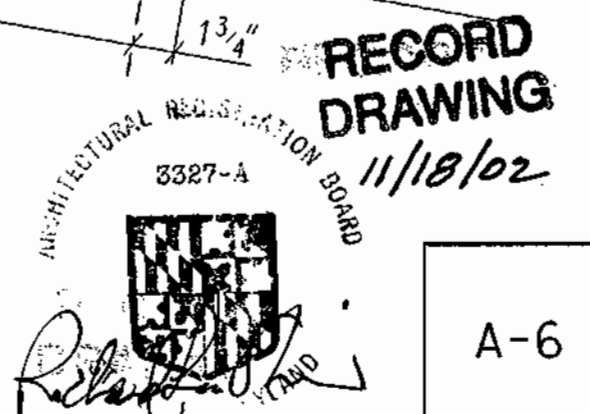
SCALE: 1/2" = 1'-0"

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



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

James J. Lew 11-5-99
DIRECTOR OF PUBLIC WORKS

Robert J. Dwyer 1-15-99
CHIEF, BUREAU OF ENGINEERING

Robert J. Dwyer 1-15-99
CHIEF, UTILITY DESIGN DIVISION

PREPARED BY:

WR&A
Whitman, Reardon and Associates, LLP.

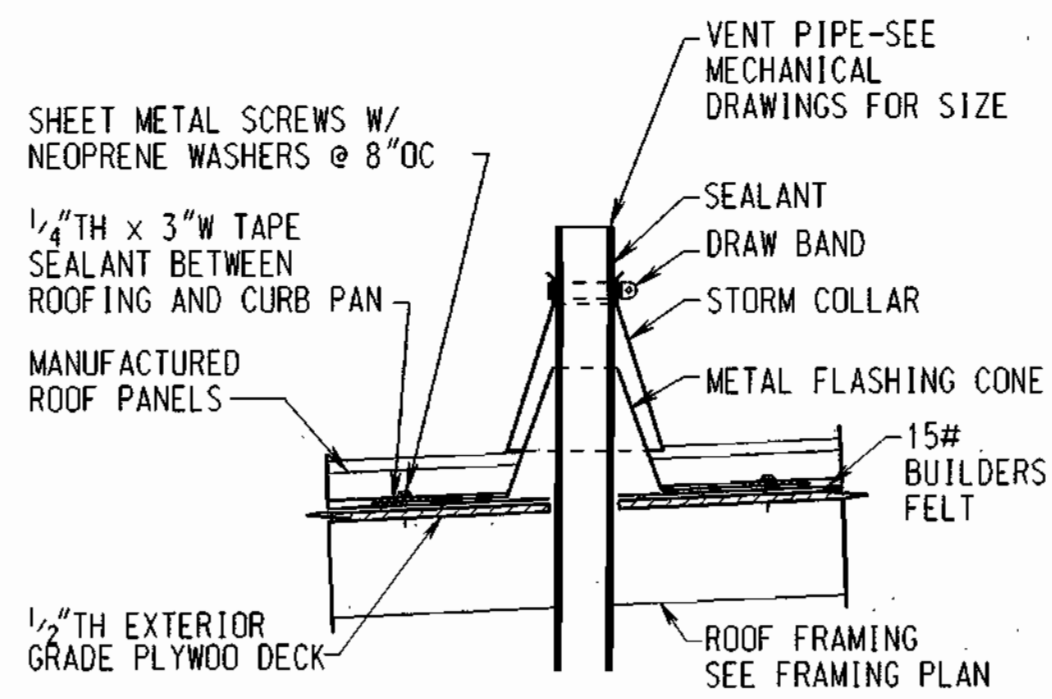
DES :	ERB				
DRN :	ERB				
CHK :	JD				
DATE :	11/12/98				
BY :					
NO. :					
REVISION :					
DATE :					

GATE DETAILS & PIPE GATE SIGN DETAILS

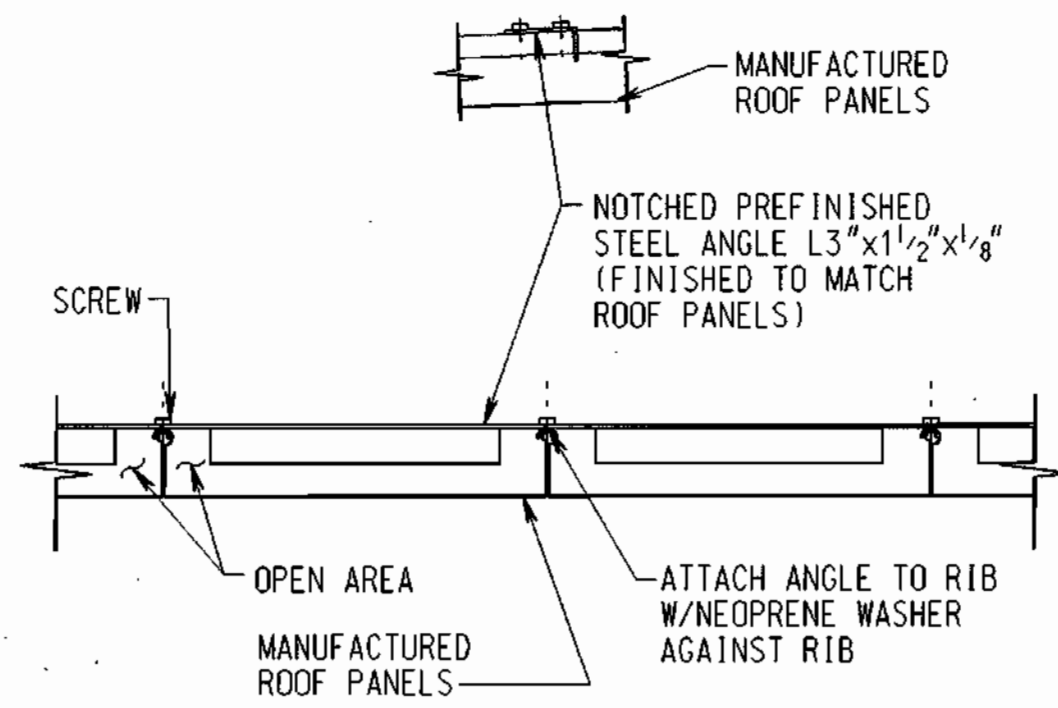
600' SCALE MAP NO. _____ BLOCK NO. _____

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

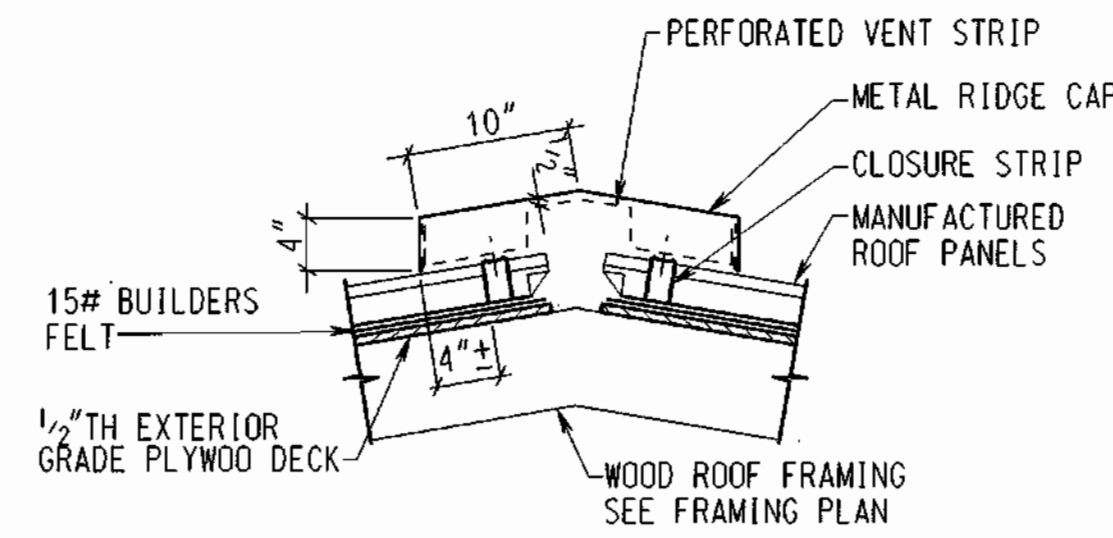
SCALE AS SHOWN
SHEET 13 OF 36
NOVEMBER 12, 1998



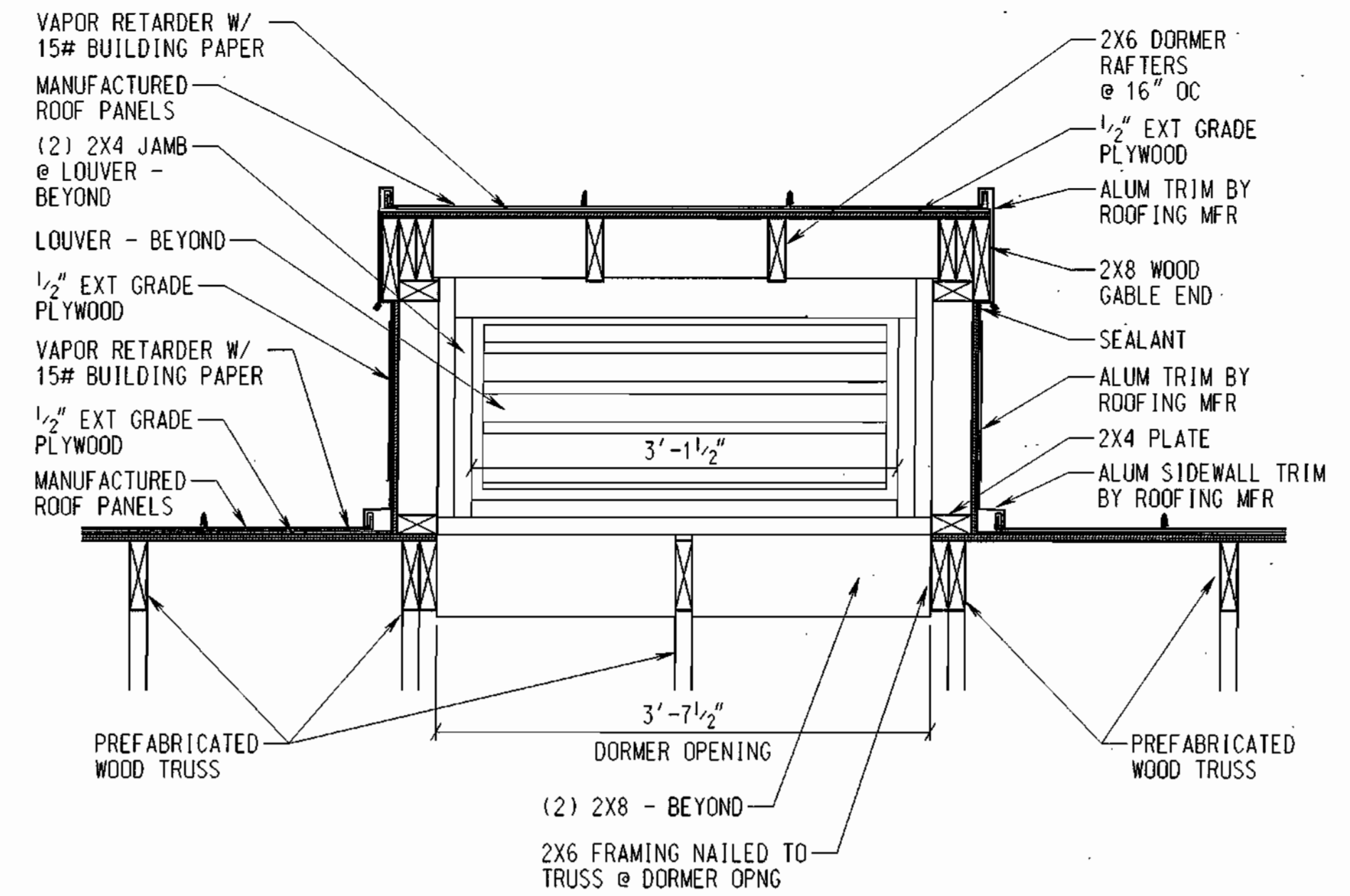
VENT PIPE DETAIL A-7A/A-2
SCALE: 1" = 1'-0"



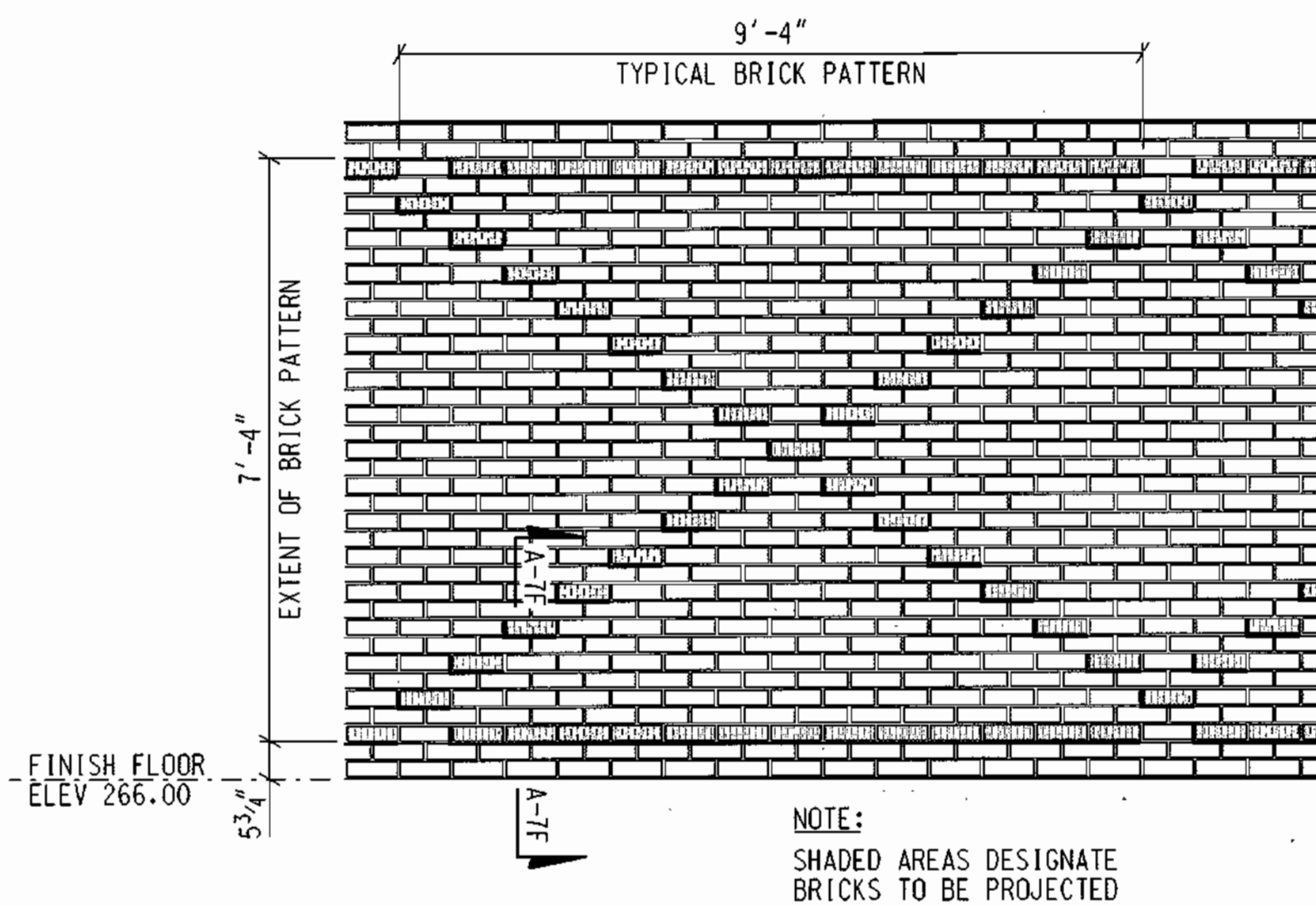
SNOW GUARD DETAIL A-7B/A-2
SCALE: 1" = 1'-0"



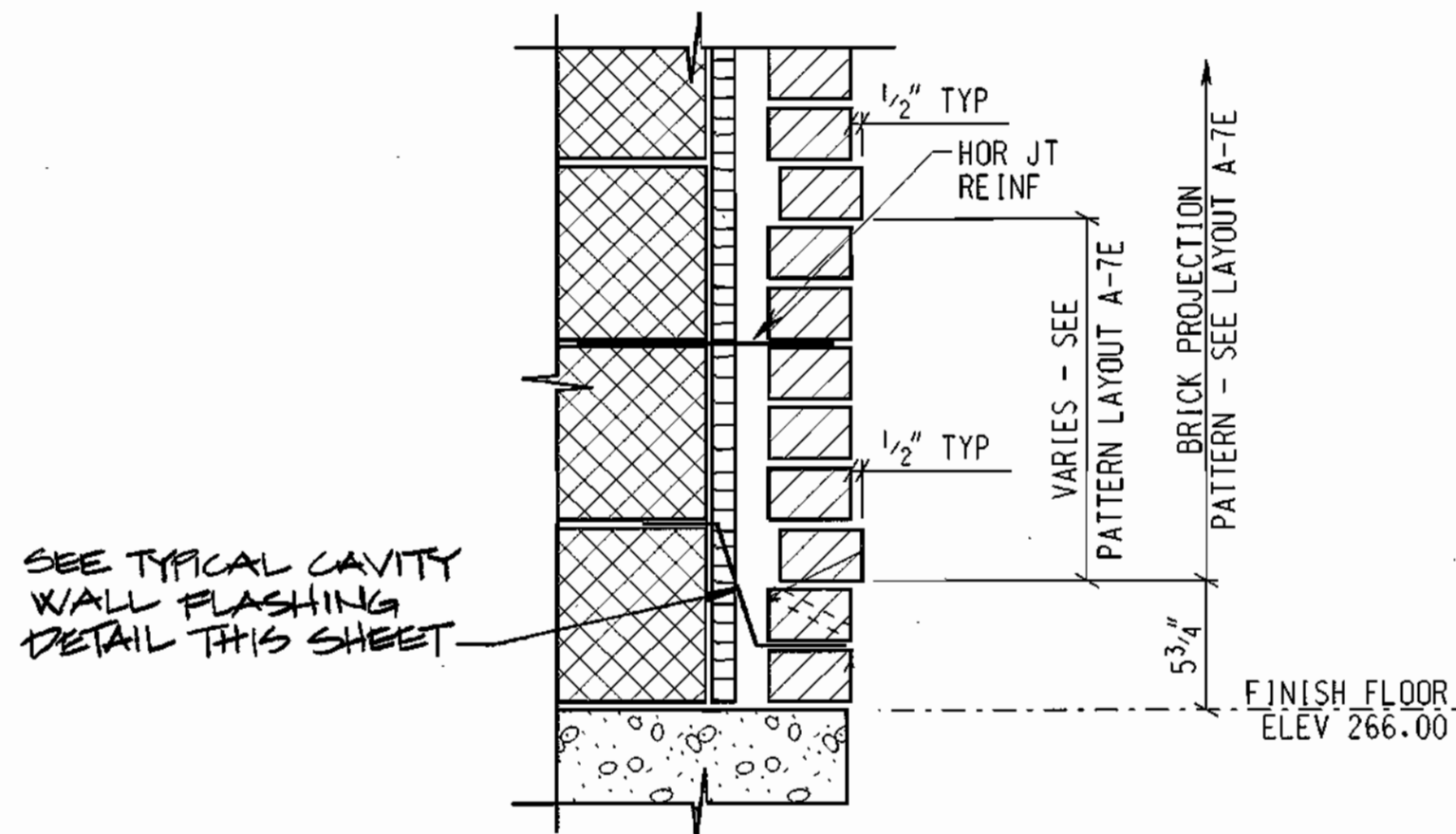
RIDGE VENT DETAIL A-7C/A-2
SCALE: 1" = 1'-0"



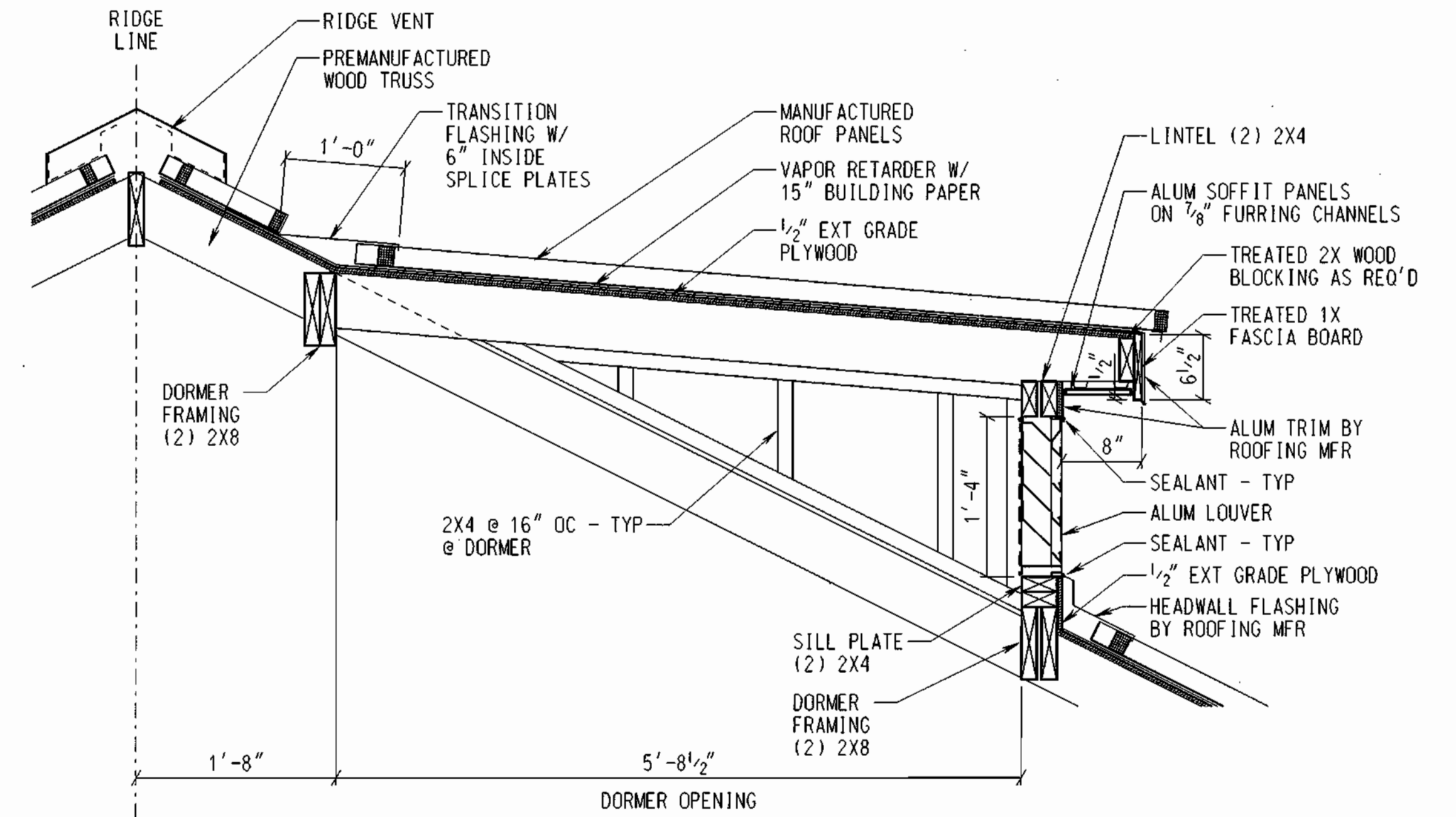
DORMER SECTION A-7D/A-2
SCALE: 1" = 1'-0"



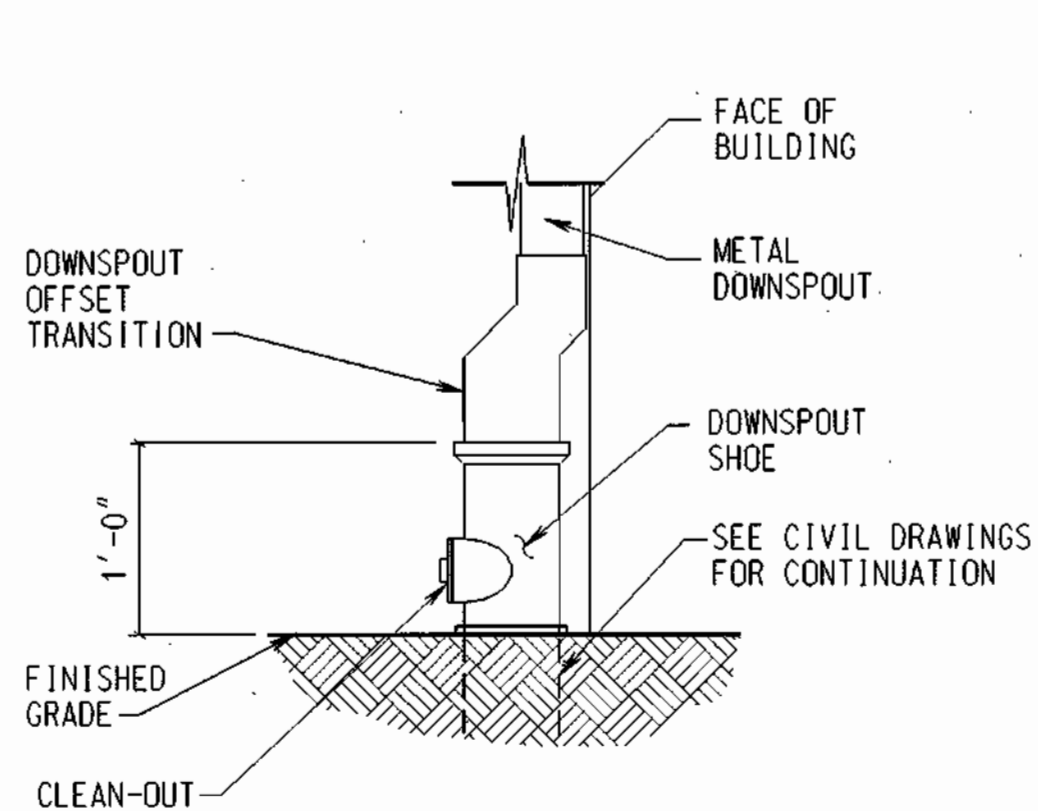
BRICK PATTERN LAYOUT A-7E/A-3, A-7
SCALE: 1/2" = 1'-0"



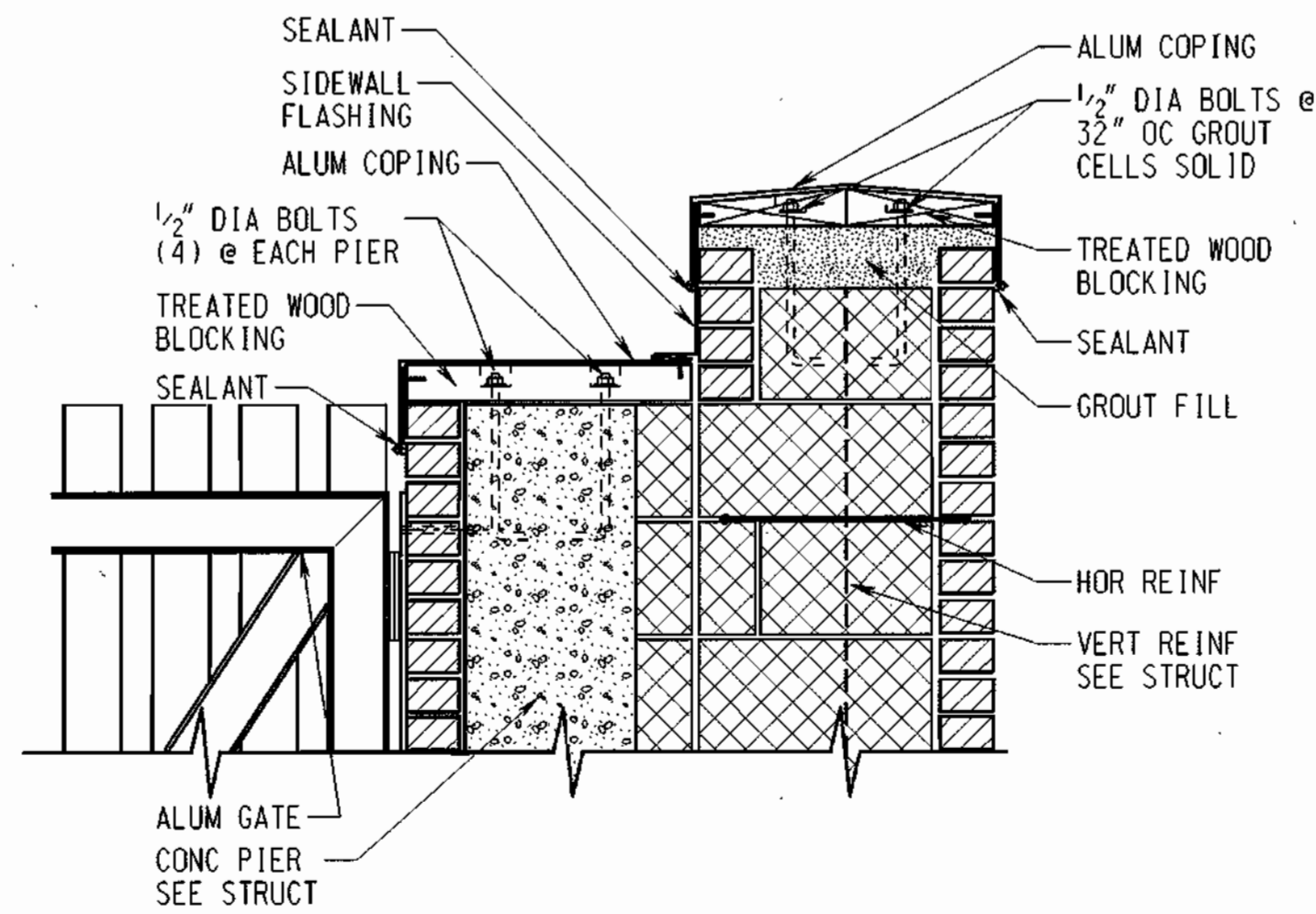
BRICK PROJECTION DETAIL A-7F/A-7
SCALE: 1 1/2" = 1'-0"



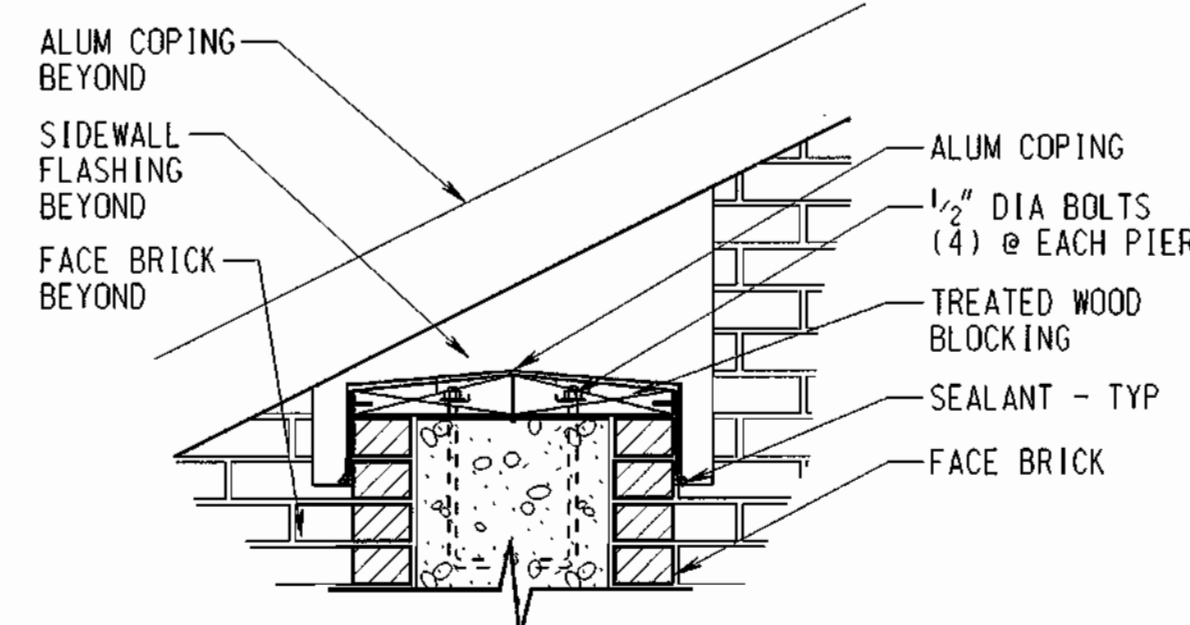
DORMER SECTION A-7G/A-2
SCALE: 1" = 1'-0"



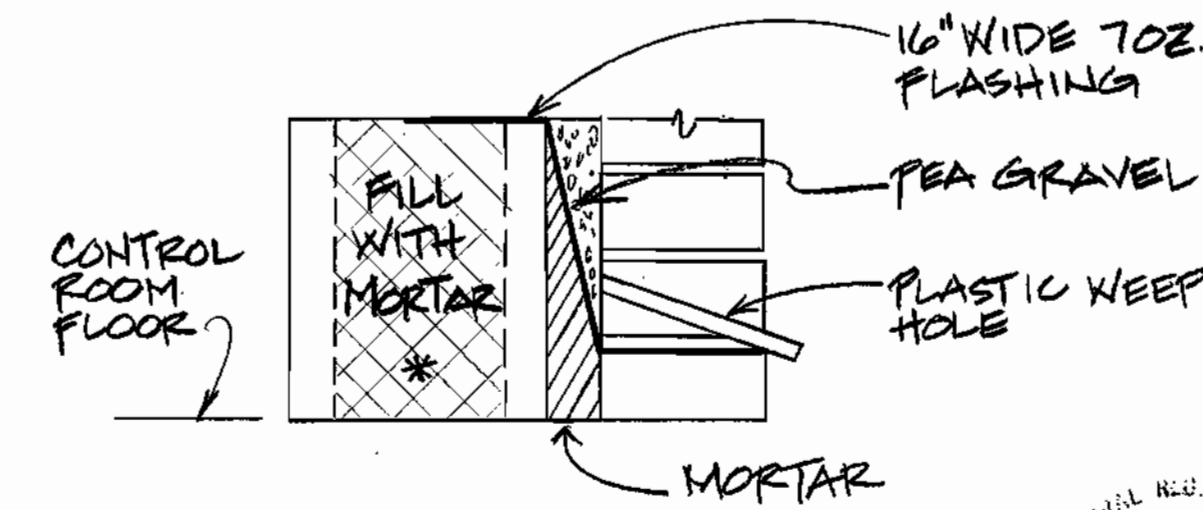
DOWNSPOUT LEADER SHOE A-7H/A-1
SCALE: 1" = 1'-0"



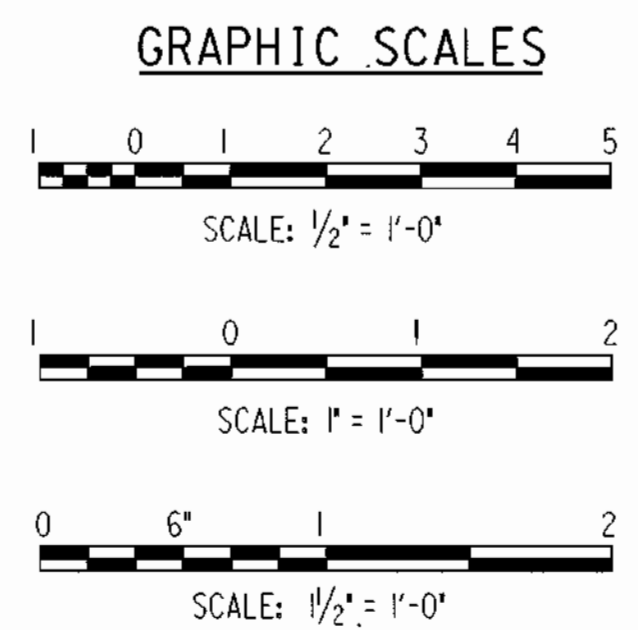
COPING DETAIL A-7J/A-1
SCALE: 1" = 1'-0"



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



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



RECORD DRAWING
11/18/02

A-7

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

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

DES: ERB
DRN: ERB
CHK: JD
DATE: 11/12/98
RECORD DRAWING
8-23-02

DETAILS

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

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:

A. UNFORMED CONCRETE BOTTOM BARS IN FOOTINGS AND SLABS ON EARTH, OR GRAVEL	3"
B. BEAMS, SLABS, COLUMNS AND WALLS EXPOSED TO GROUND, WEATHER OR PROCESS LIQUID AFTER THE REMOVAL OF FORMS	2"
C. BEAMS, COLUMNS AND PIERS NOT EXPOSED TO WEATHER OR PROCESS LIQUID	1 1/2"
D. STRUCTURAL SLABS NOT EXPOSED TO GROUND, WEATHER, PROCESS LIQUID OR TRUCK TRAFFIC	1"
E. STRUCTURAL SLAB NOT EXPOSED TO GROUND, WEATHER OR PROCESS LIQUID BUT SUBJECT TO TRUCK TRAFFIC	1 1/2"
TOP OF SLAB	1 1/8"
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_x 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 BANDED.
- 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

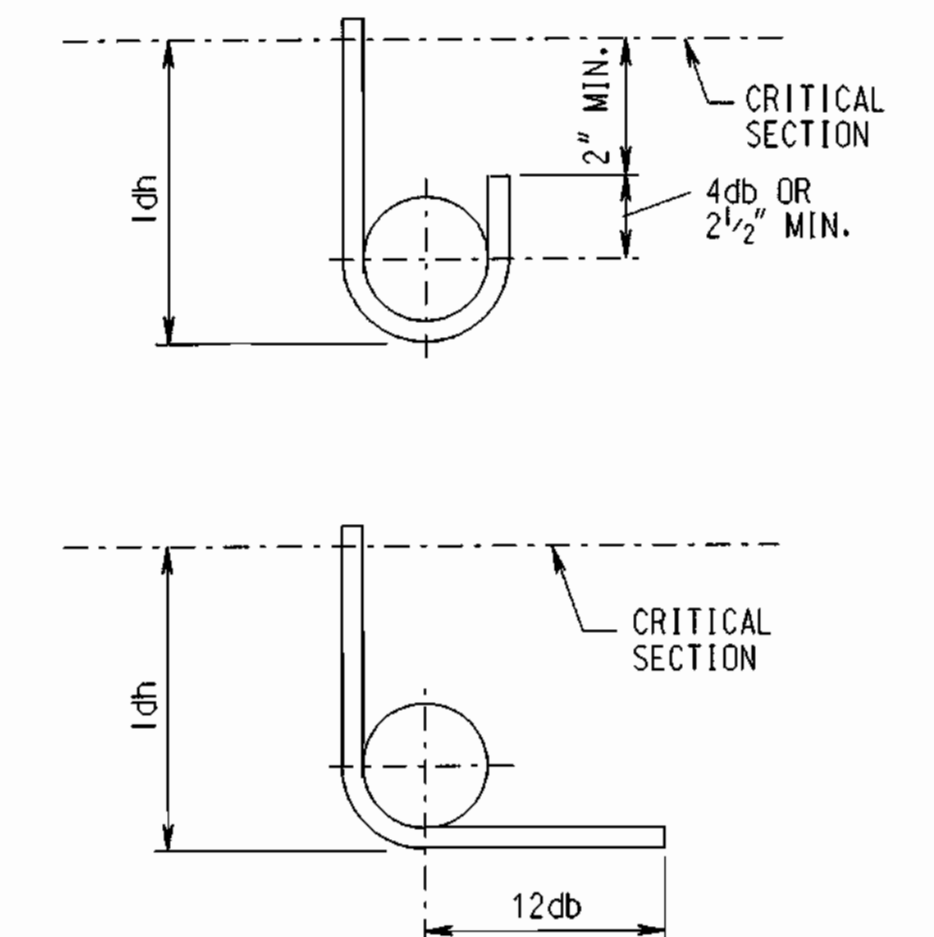
- FOR MECHANICAL AND ELECTRICAL WORK TO BE INCORPORATED IN FOUNDATION WORK, SEE MECHANICAL AND ELECTRICAL DRAWINGS.
- ALL EXCAVATIONS SHALL BE KEPT DRY. STANDING WATER SHALL NOT BE ALLOWED IN EXCAVATIONS.
- BEFORE PLACING ANY POROUS FILL OR CONCRETE ON SUBGRADE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.
- 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	37"	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.



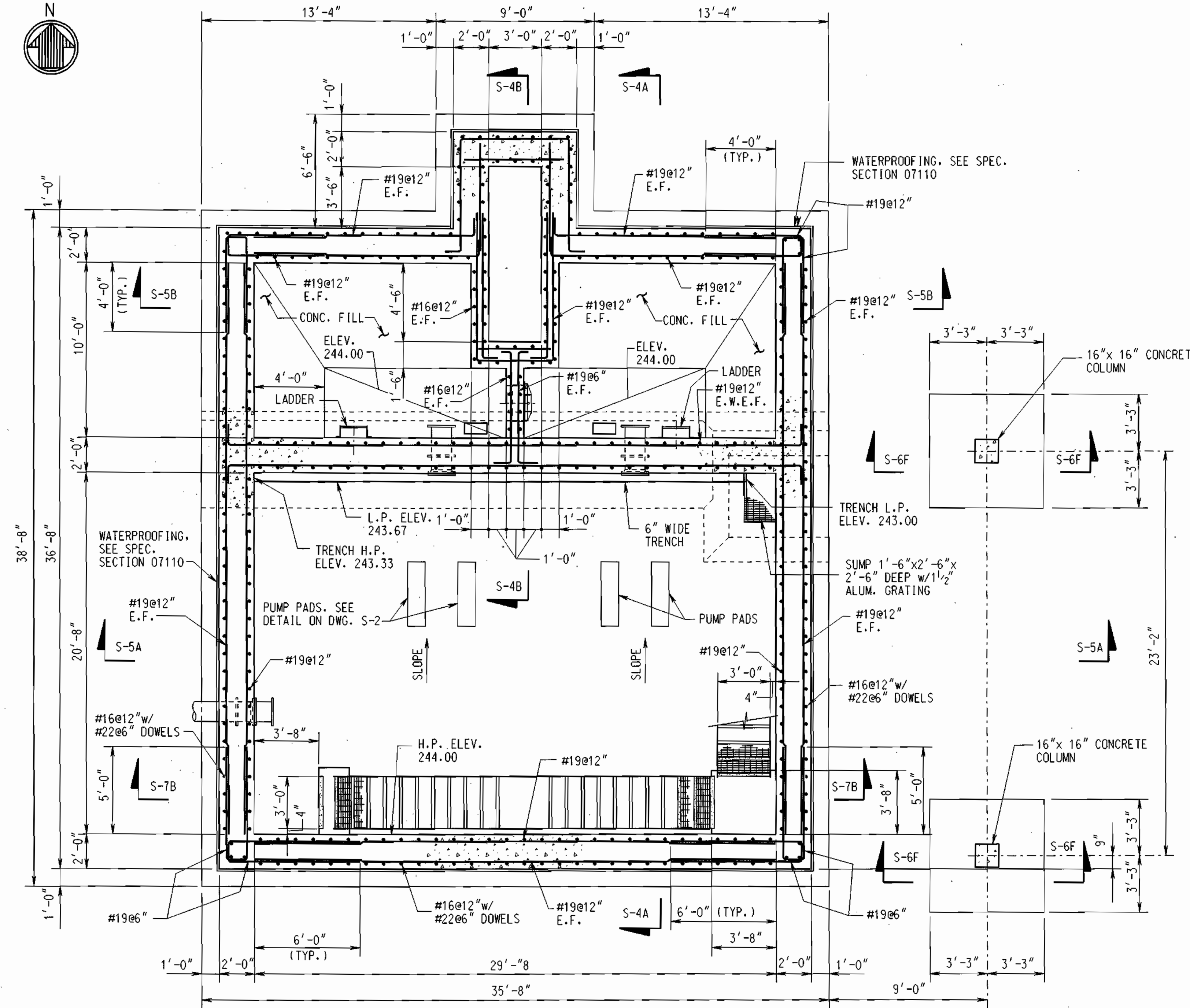
STANDARD HOOKS: SIDE COVER MORE THAN 2.5"
END COVER (90° HOOK) MORE THAN 2"
MINIMUM COVER TO TAIL = 2"

STANDARD 180° AND 90° END HOOKS

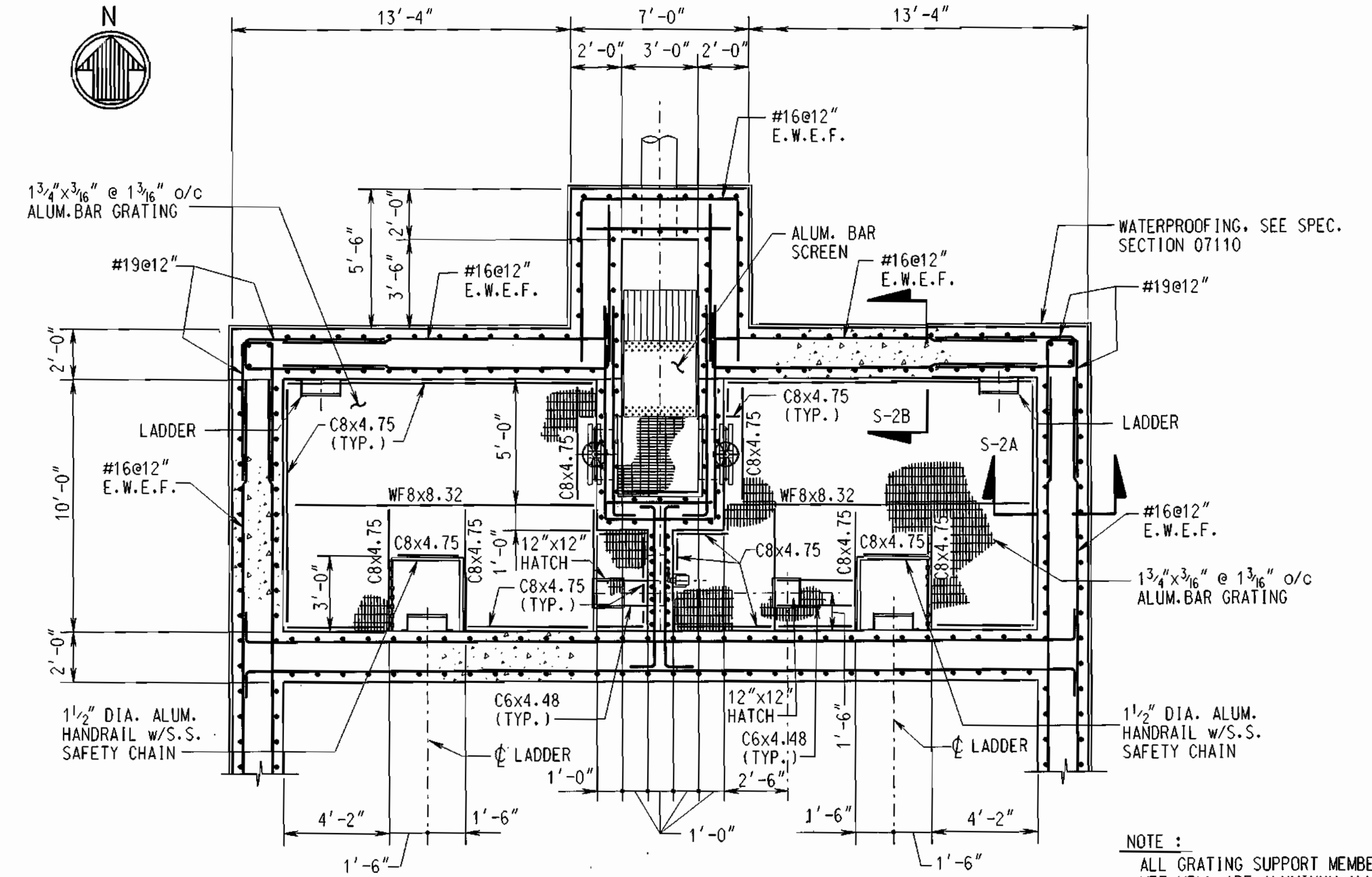
TENSION LAP SPLICE AND STANDARD HOOK LENGTH

(NON-EPOXY COATED)

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. Director of Public Works: <i>Robert J. ...</i> 11-5-99 Chief, Bureau of Engineering: <i>Robert J. ...</i> 1-15-99 Chief, Bureau of Utilities: <i>Robert J. ...</i> 1-15-99 Act. Chief, Utility Design Division: <i>Robert J. ...</i> 1-15-99	PREPARED BY: WR&A Whitman, Reardon and Associates, LLP.		DES: JGL DRN: LAR CHK: JDA DATE: 11/12/98	RECORD DRAWING 8-23-02	STRUCTURAL NOTES 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-1 SCALE AS SHOWN SHEET 15 OF 36
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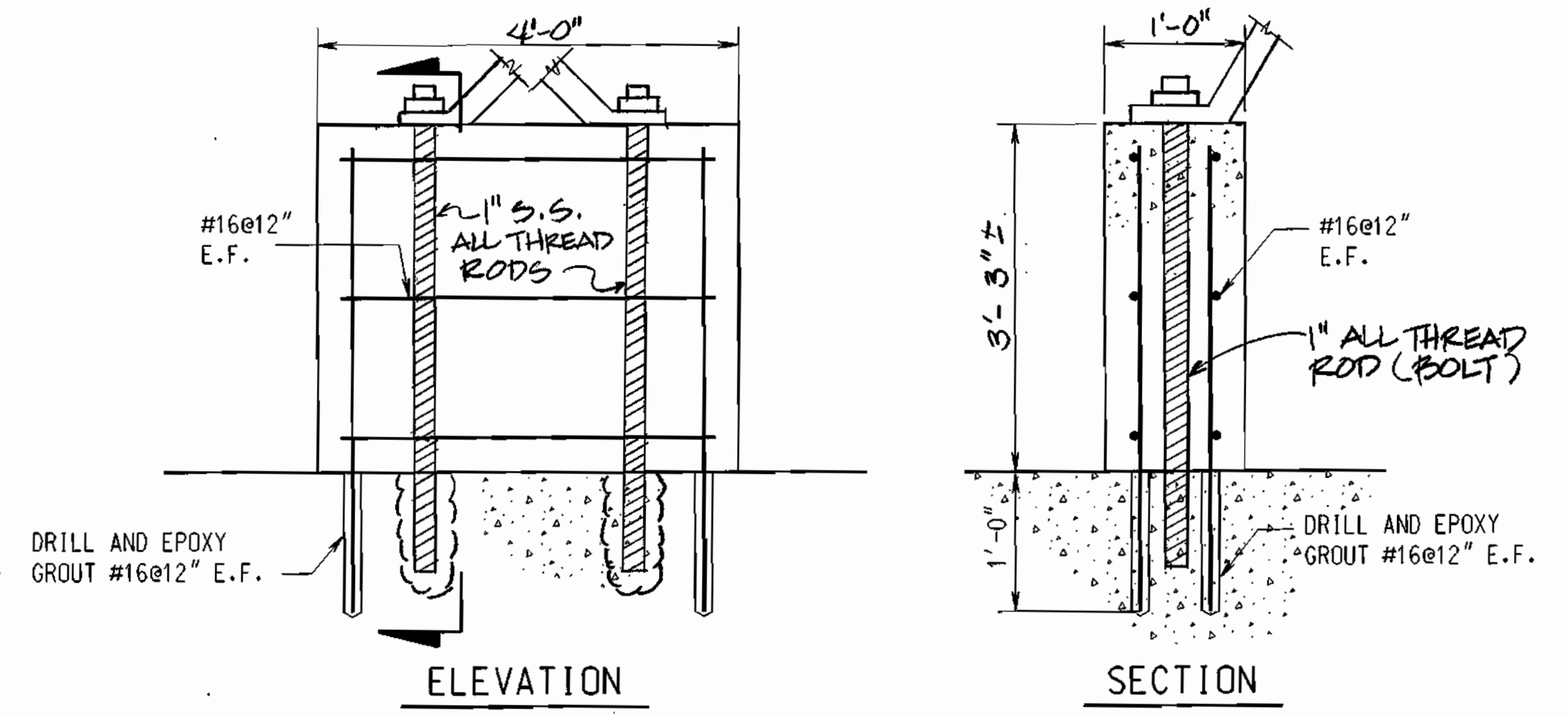


PUMP ROOM AND WET WELL PLAN
SCALE: 1/4" = 1'-0"

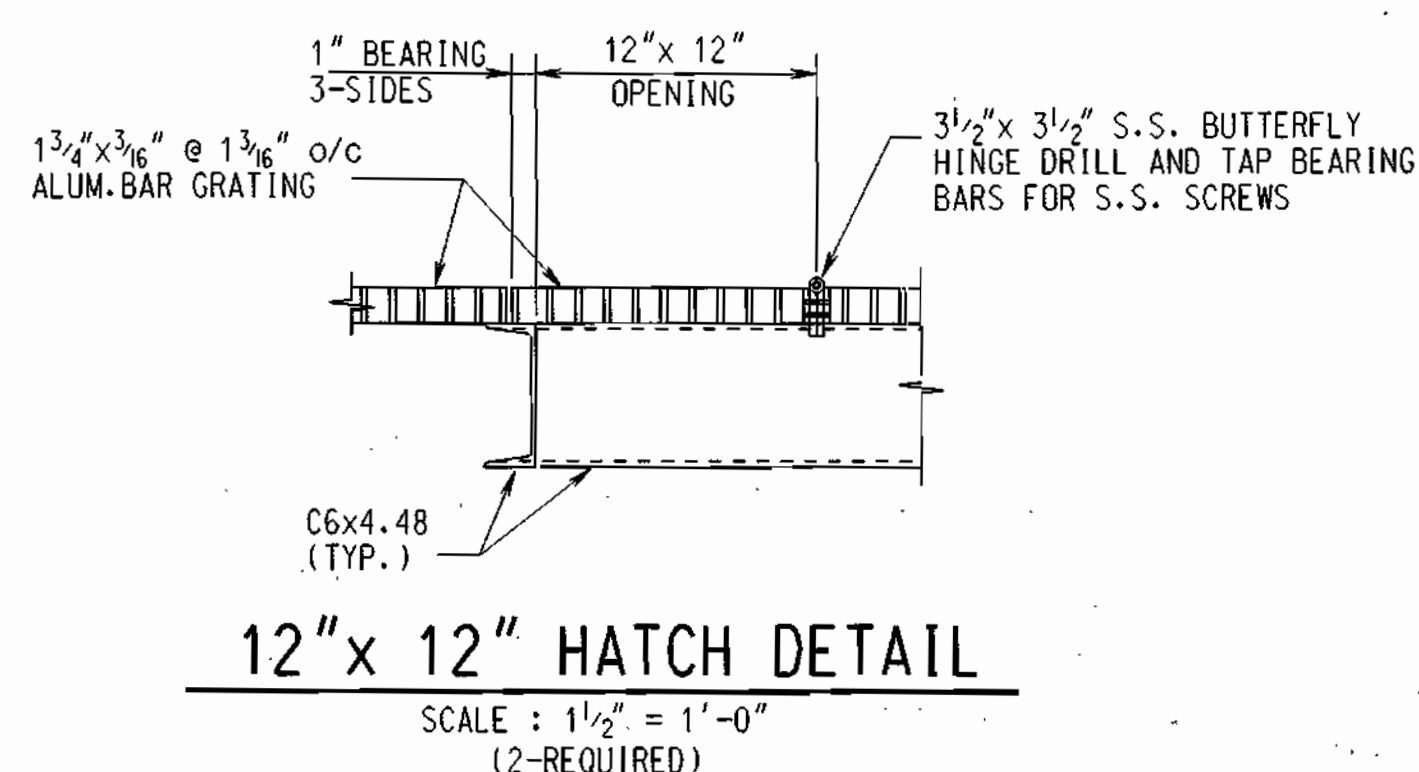


WET WELL GRATING PLAN
SCALE: 1/4" = 1'-0"

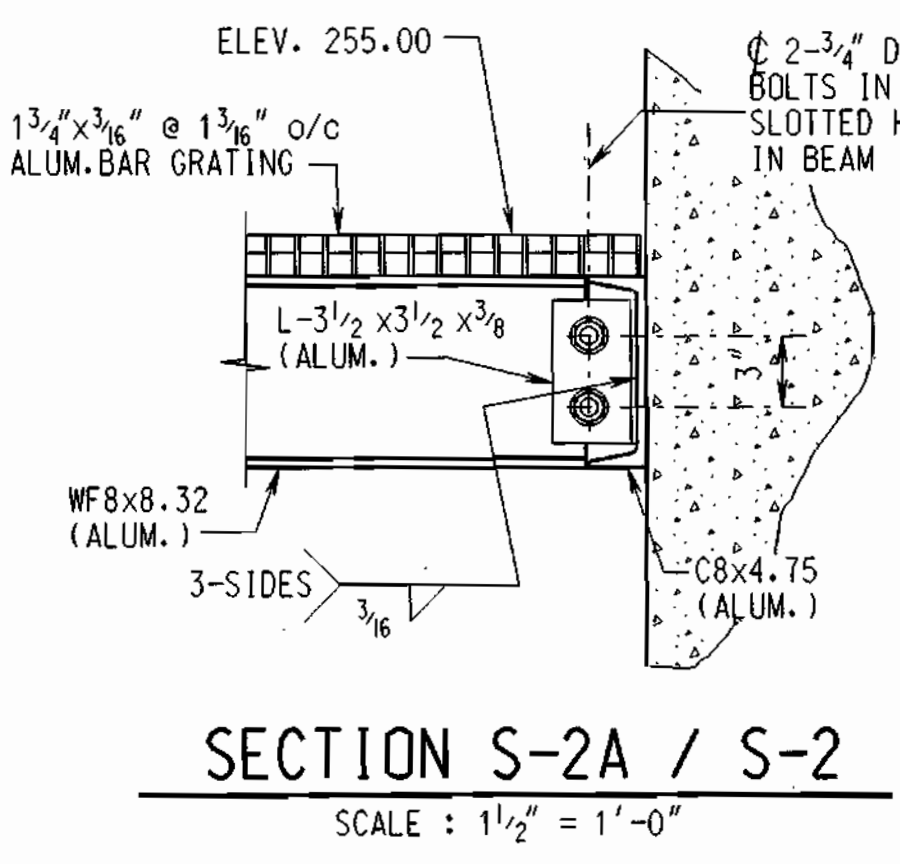
NOTE:
ALL GRATING SUPPORT MEMBERS IN WET WELL ARE ALUMINUM ALLOY 6061-T6



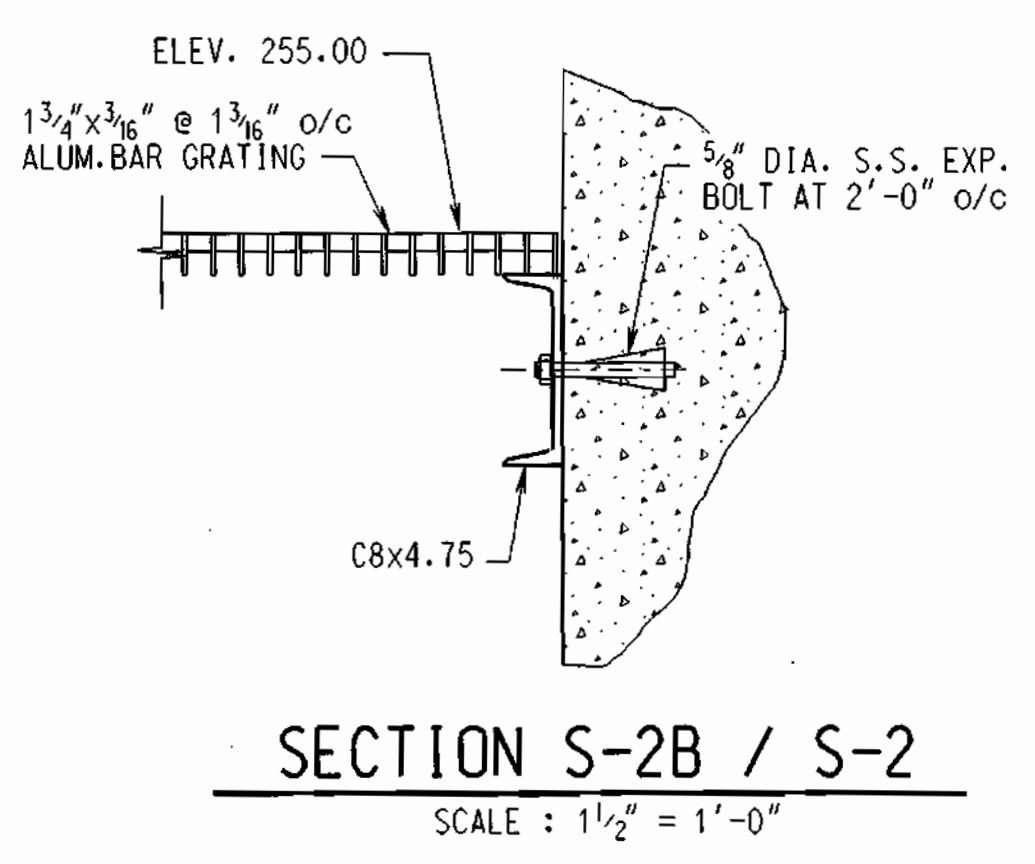
PUMP SUPPORT DETAIL
SCALE: 1" = 1'-0"



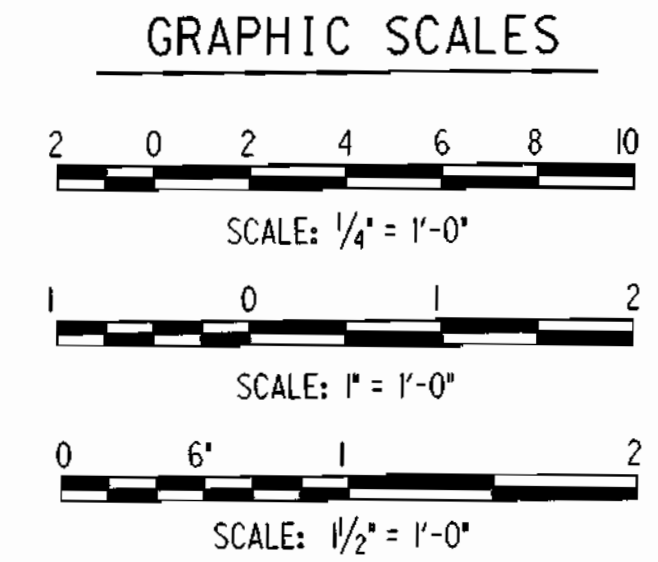
12" x 12" HATCH DETAIL
SCALE: 1 1/2" = 1'-0"
(2-REQUIRED)



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

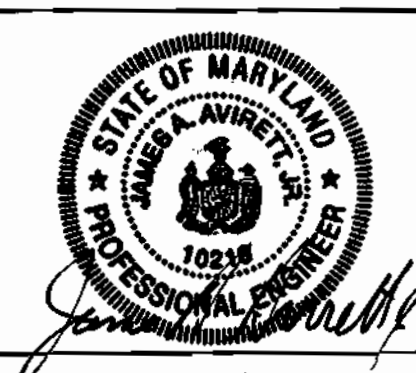


SECTION S-2B / S-2
SCALE: 1 1/2" = 1'-0"



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.
Director of Public Works: Robert J. Berman
Chief, Bureau of Engineering: Robert J. Berman
Chief, Bureau of Utilities: Robert J. Berman

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

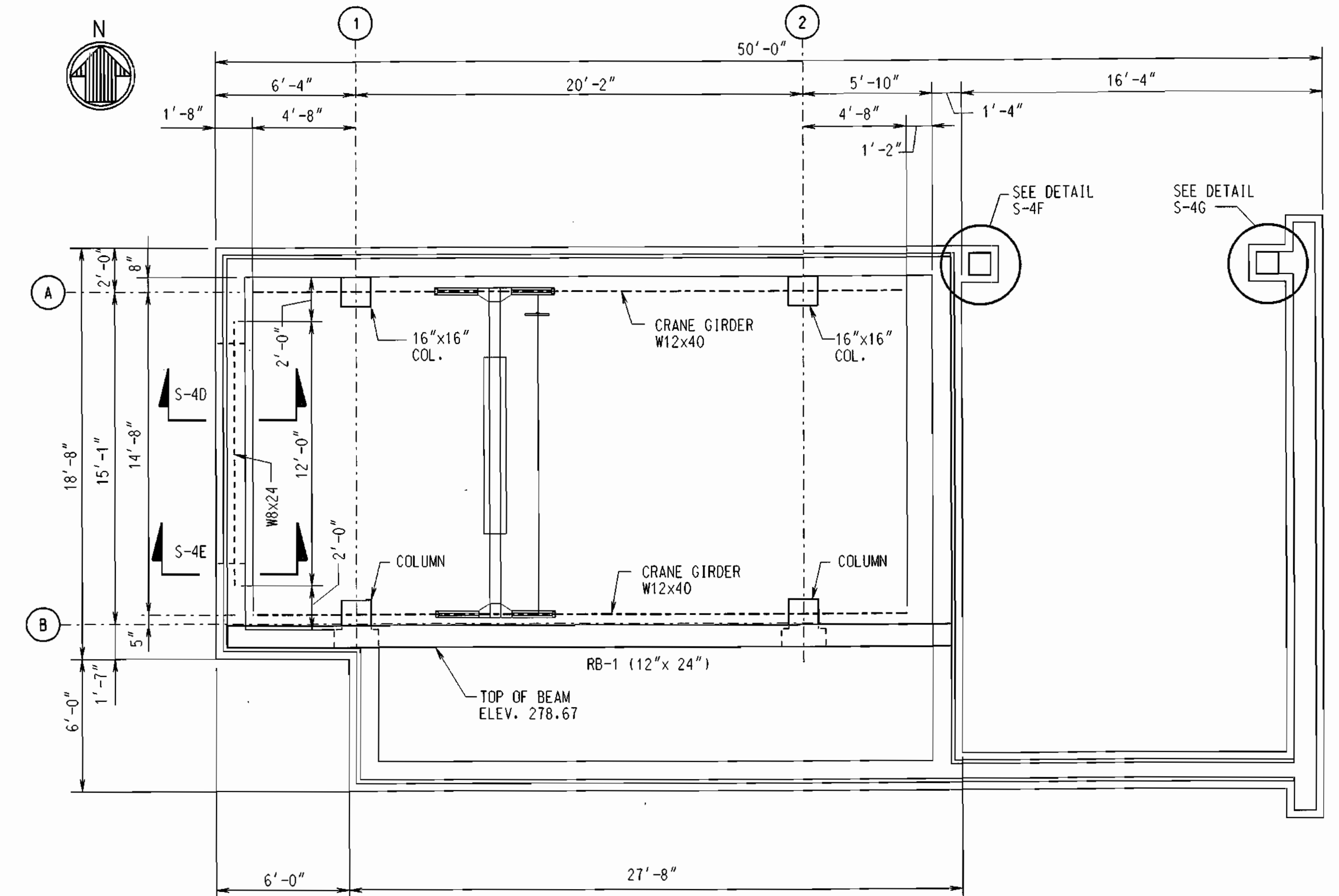
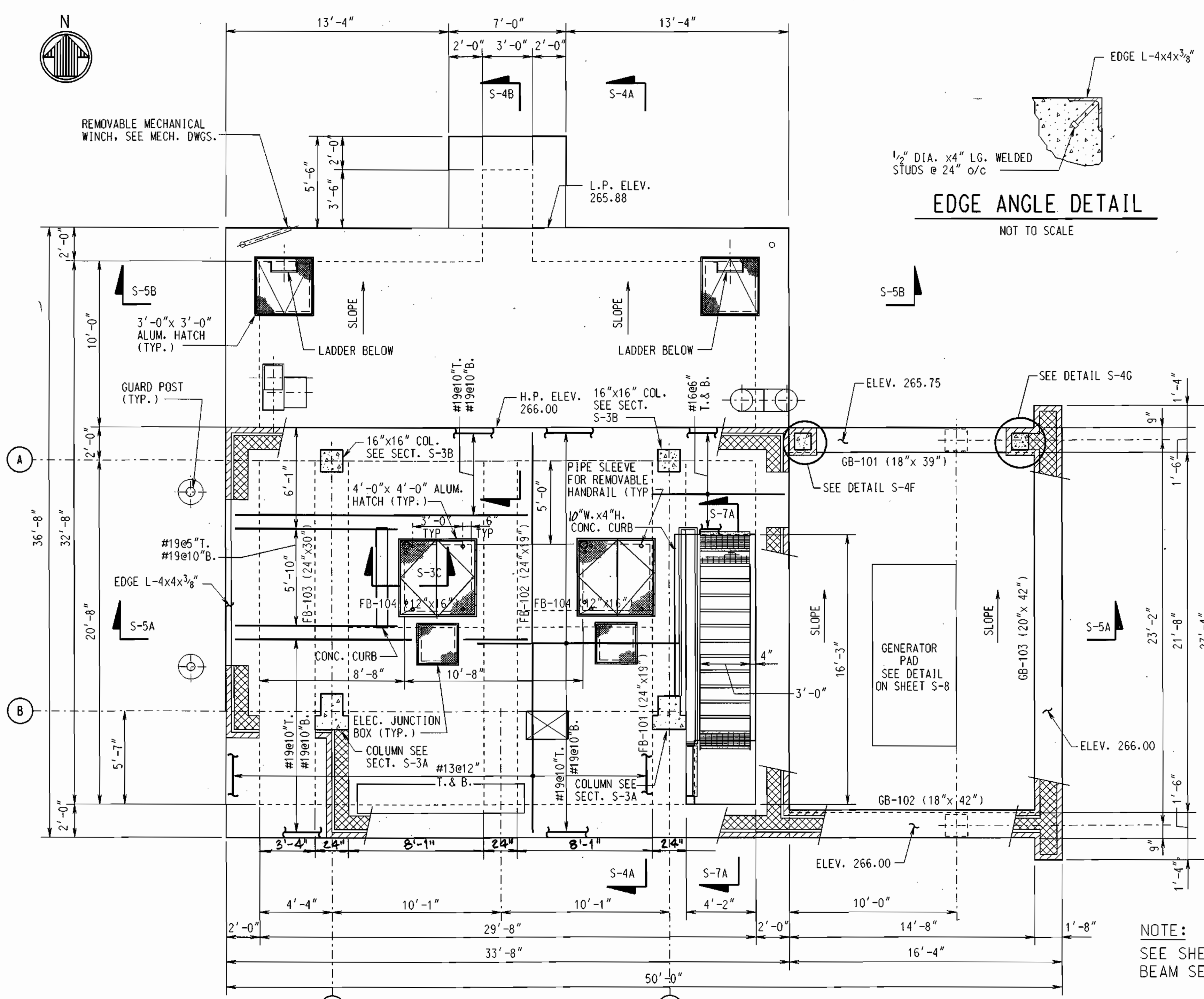


DES: JGL	DATE: 11/12/98
DRN: LAR	BY: NO.
CHK: JOA	REVISION: 8-2300

PLANS 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

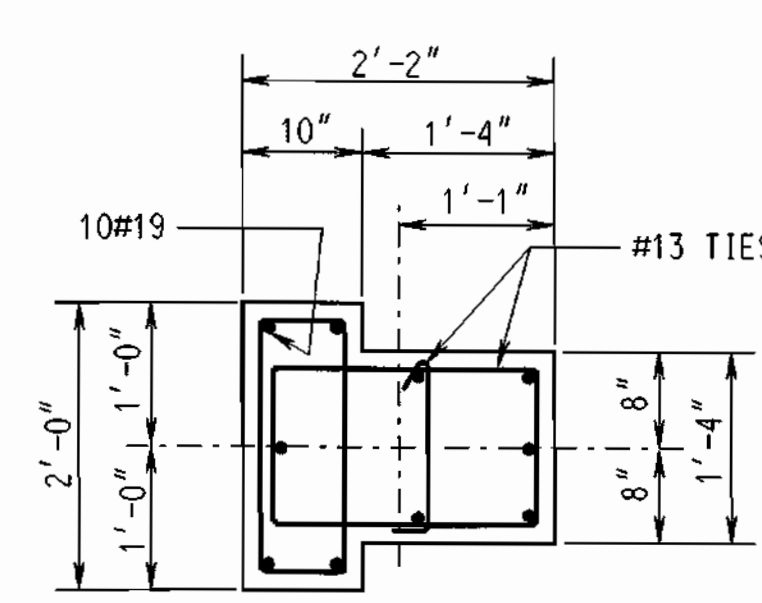
RECORD DRAWING
11/18/98
S-2
SCALE AS SHOWN
SHEET 16 OF 36
NOVEMBER 12, 1998



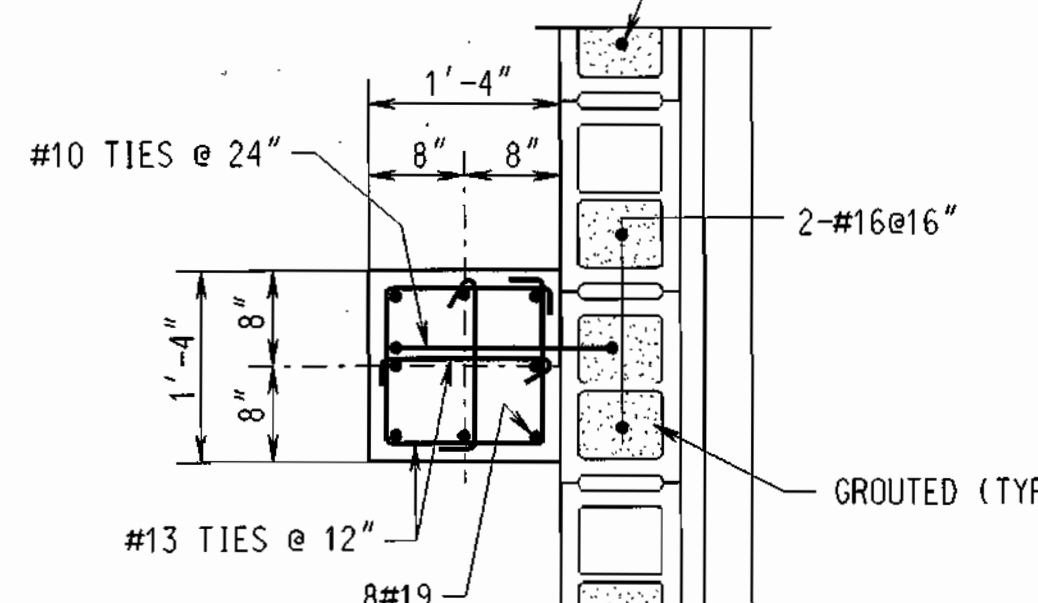
PLAN AT ELEVATION 284.00
SCALE: 1/4" = 1'-0"

FLOOR PLAN - CONTROL ROOM
SCALE: 1/4" = 1'-0"

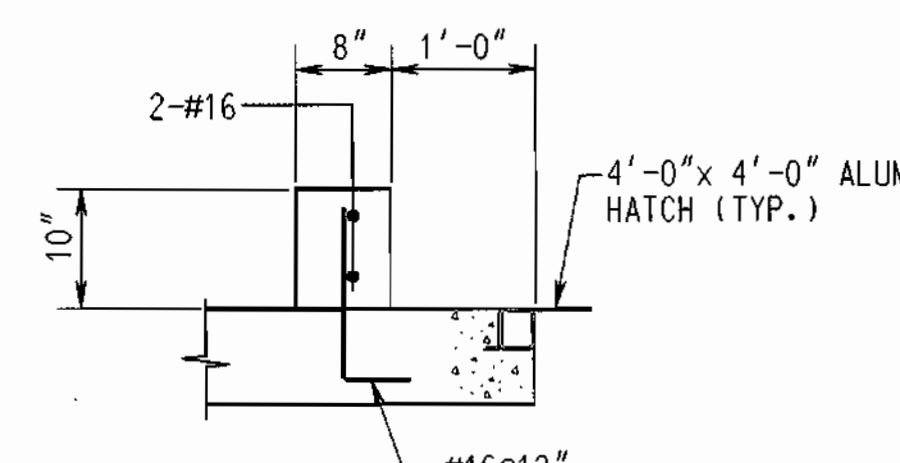
NOTE:
SEE SHEET S-6 FOR
BEAM SECTIONS



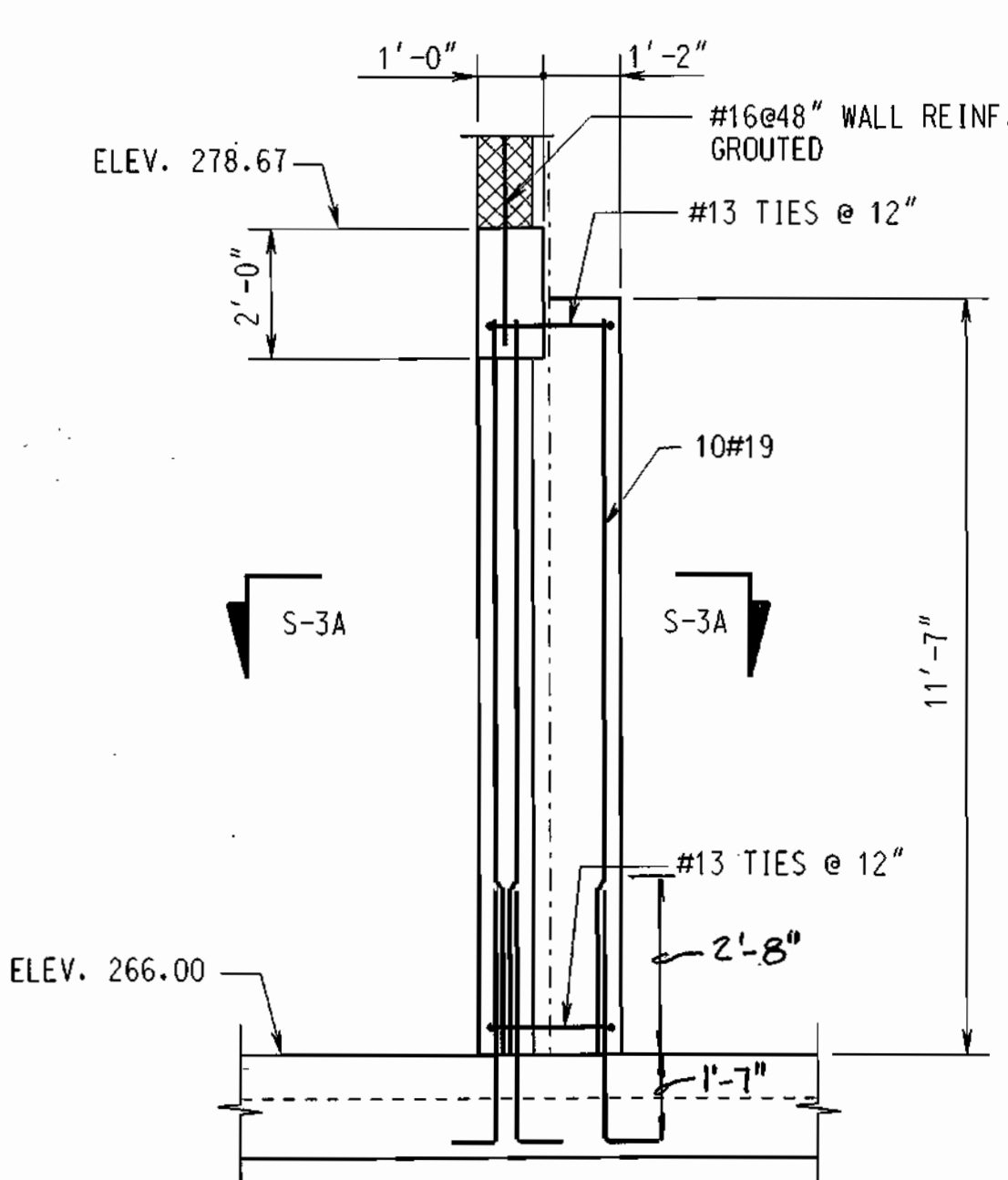
SECTION S-3A / S-3
SCALE: 3/4" = 1'-0"



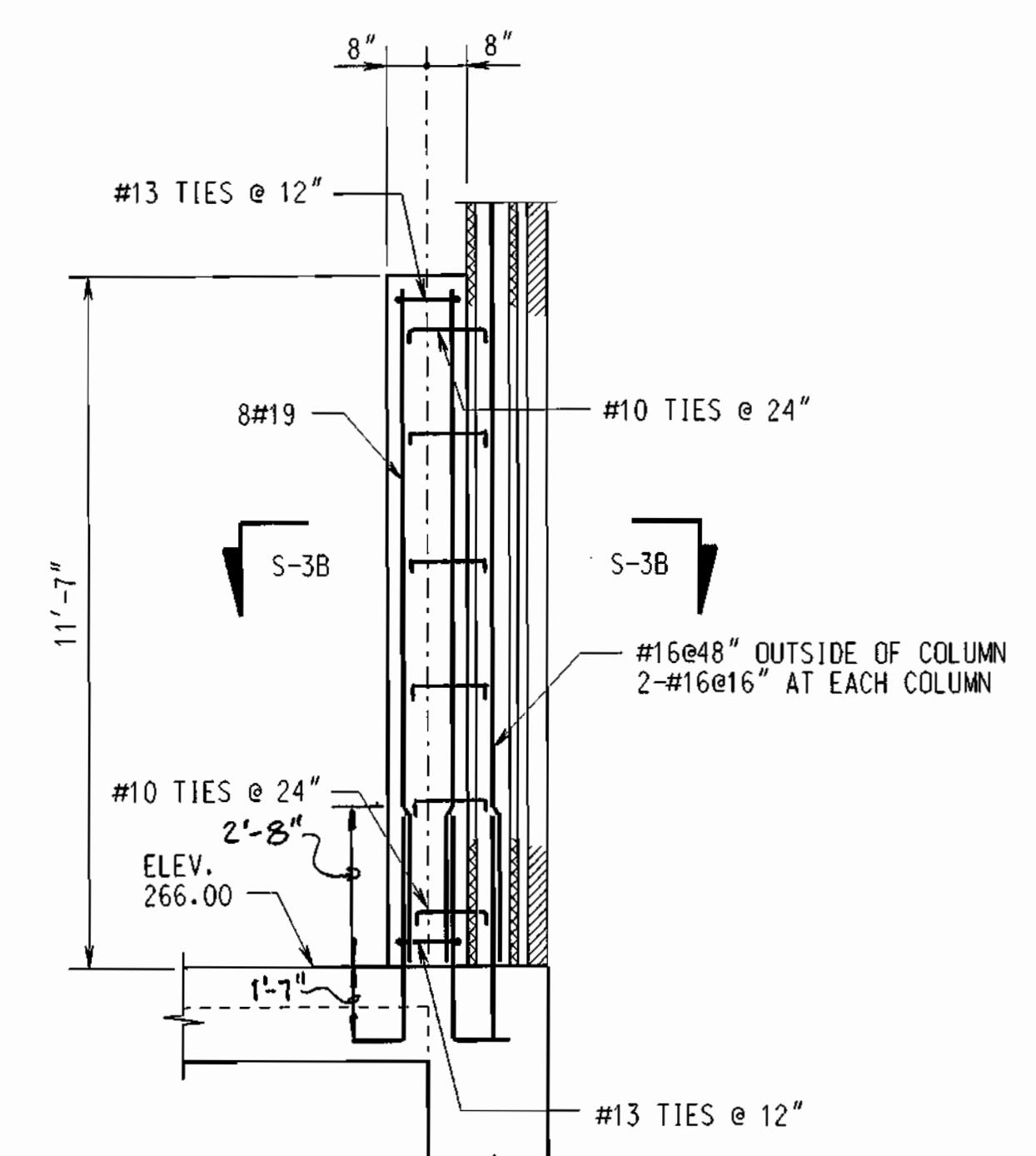
SECTION S-3B / S-3
SCALE: 3/4" = 1'-0"



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



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

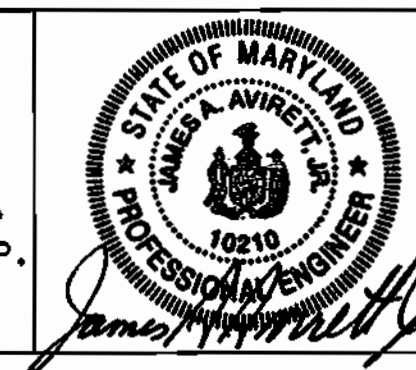


ELEVATION COLUMNS A-1, A-2
SCALE: 3/8" = 1'-0"



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.
Director of Public Works: Robert M. Bauman
Chief, Bureau of Utilities: Robert M. Bauman
DATE: 1-15-99

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

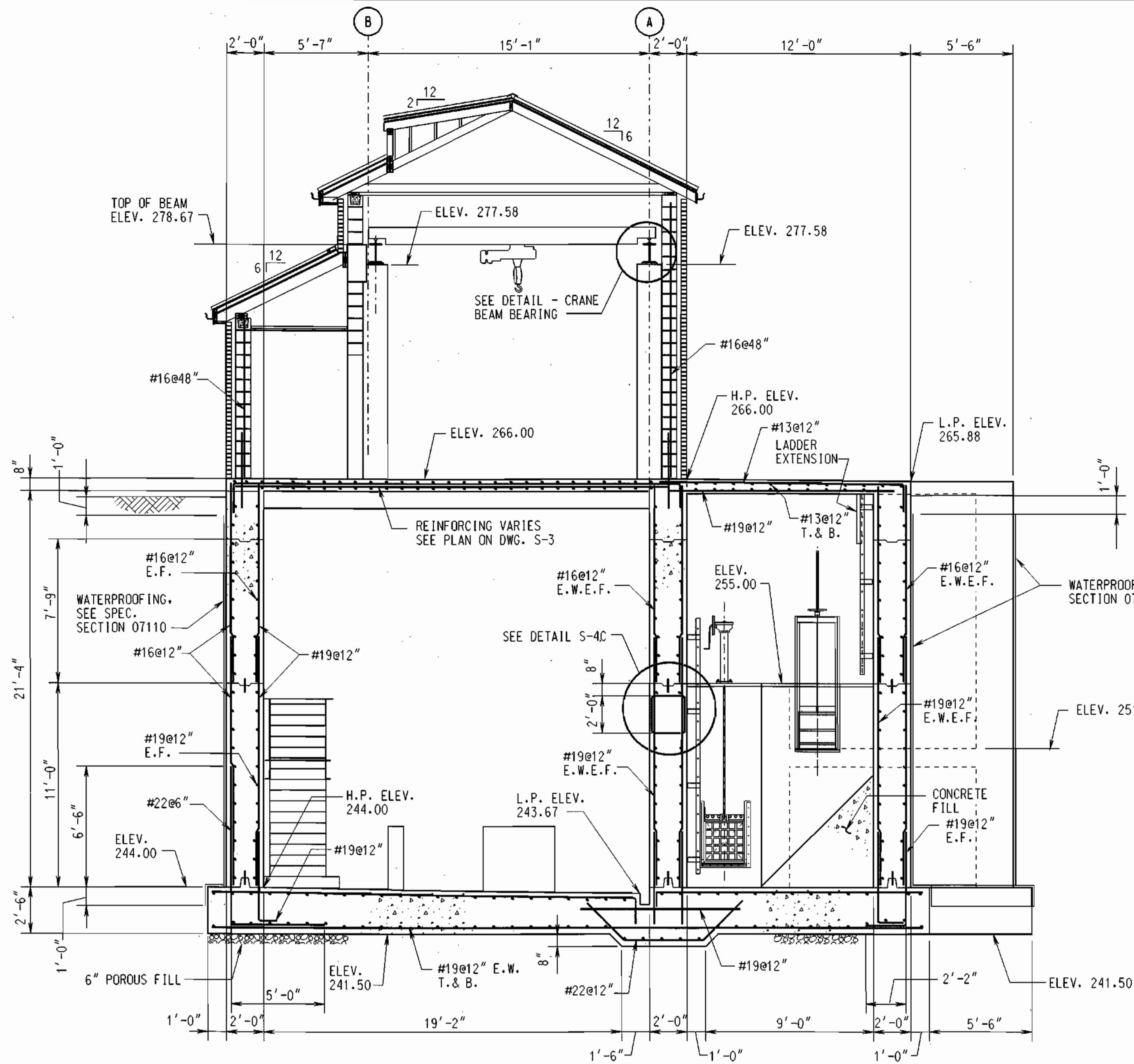


DES: WR&EJM			
DRN: EUMRWG			
CHK: JGB			
DATE: 12/09/98	BY: NO.	REVISION	DATE

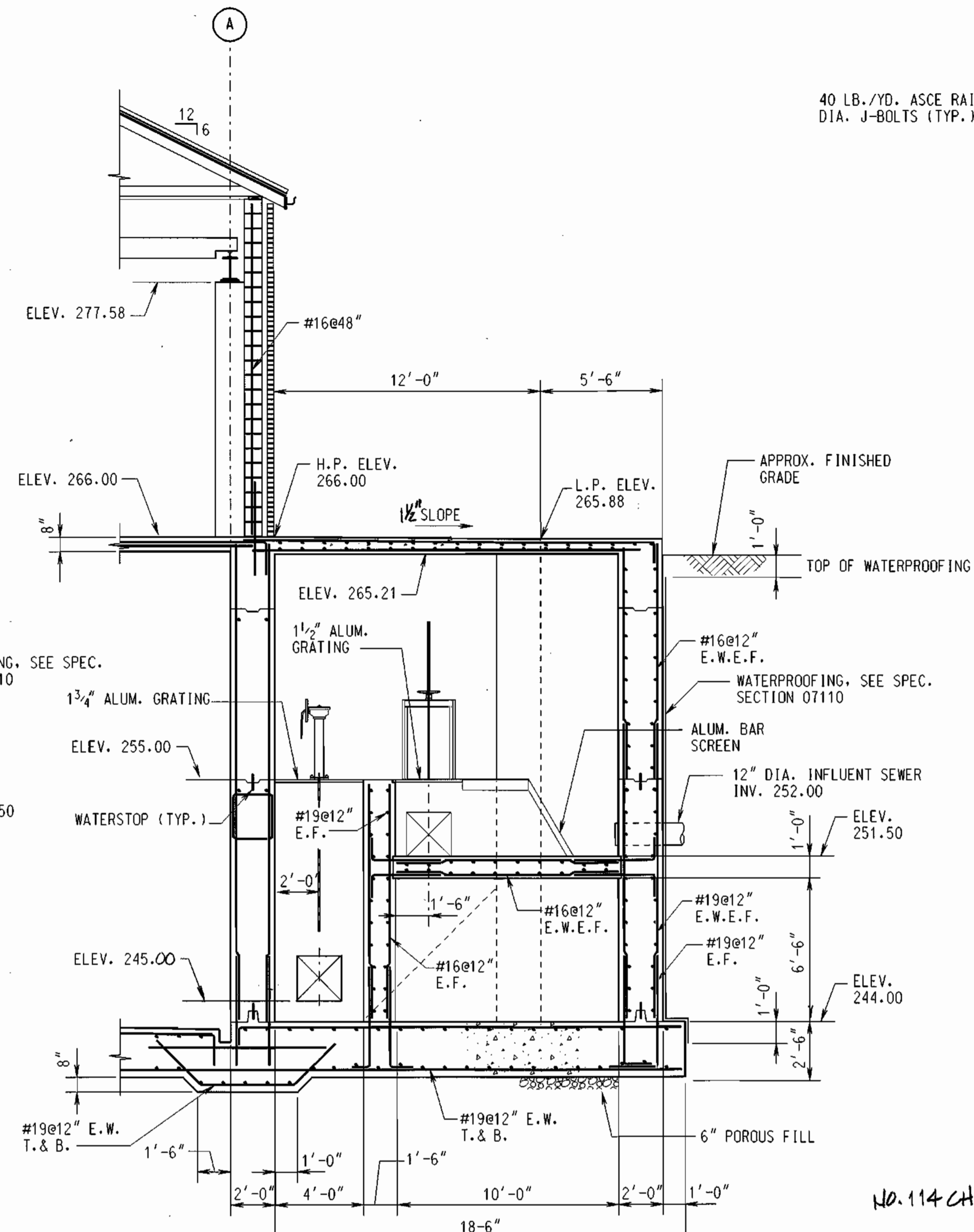
PLANS SECTIONS AND DETAILS
600' SCALE MAP NO. _____ BLOCK NO. _____

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

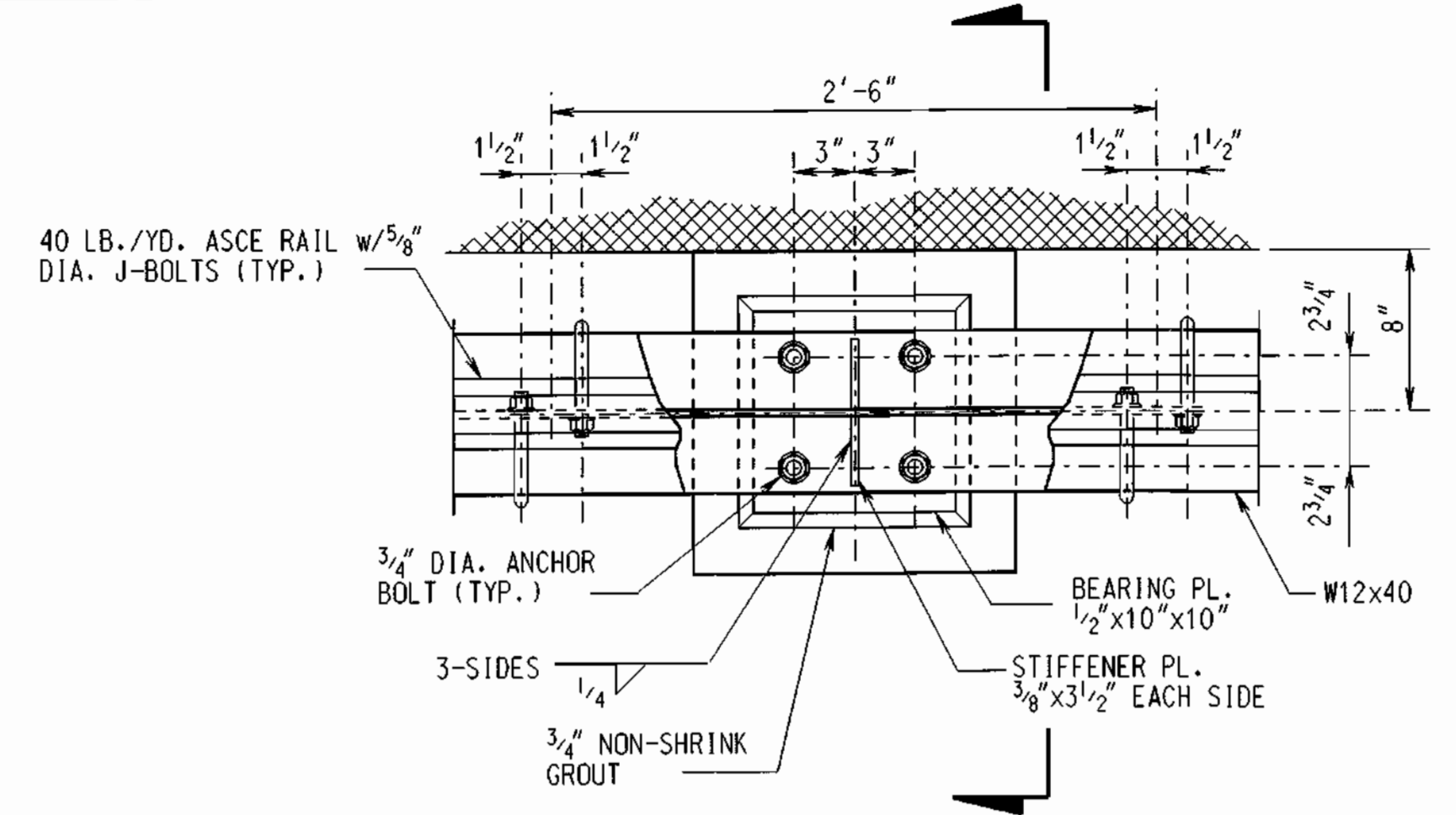
RECORD DRAWING
11/18/02
S-3
SCALE AS SHOWN
SHEET 17 OF 36



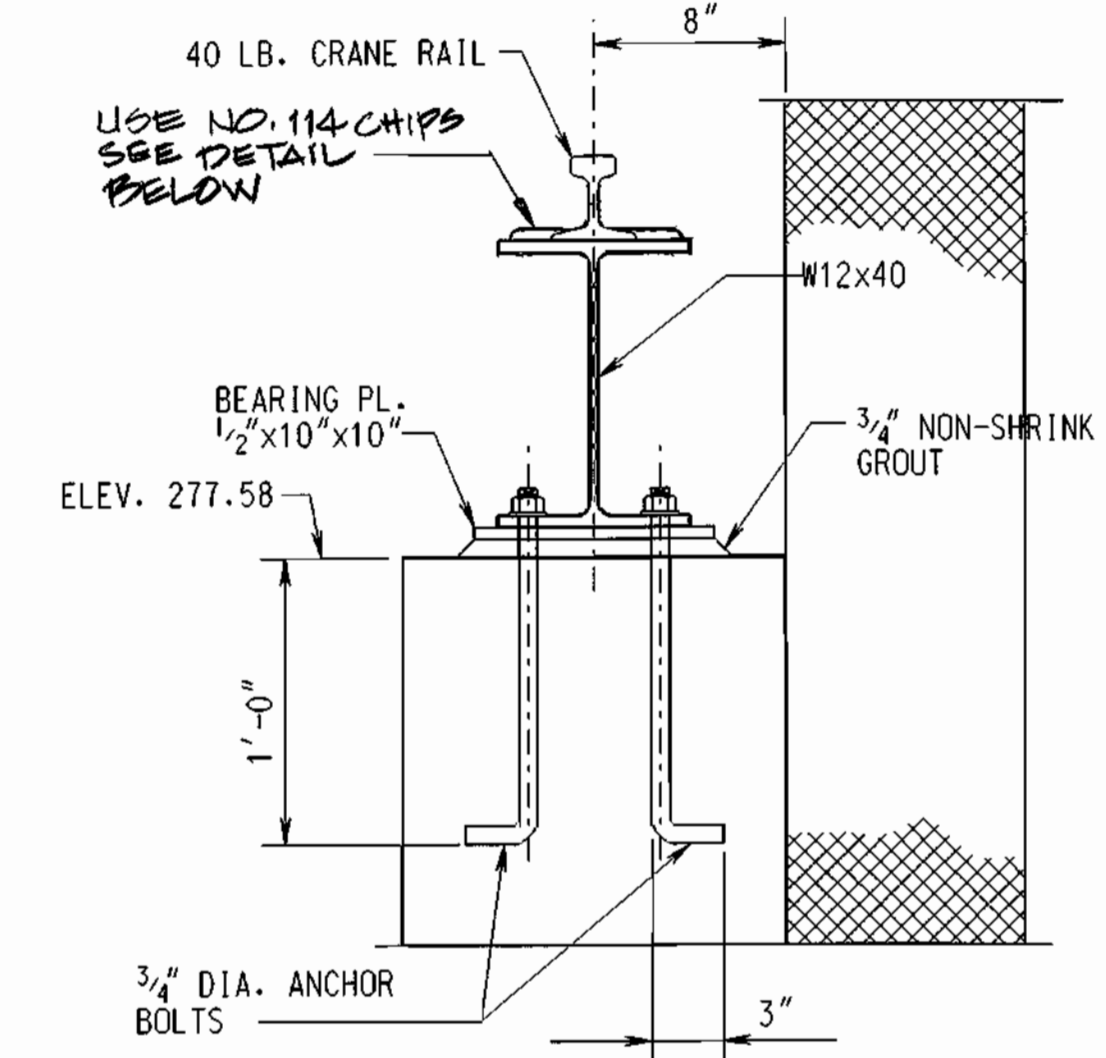
SECTIONS S-4A/S-2, S-3
SCALE: 1/4" = 1'-0"



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

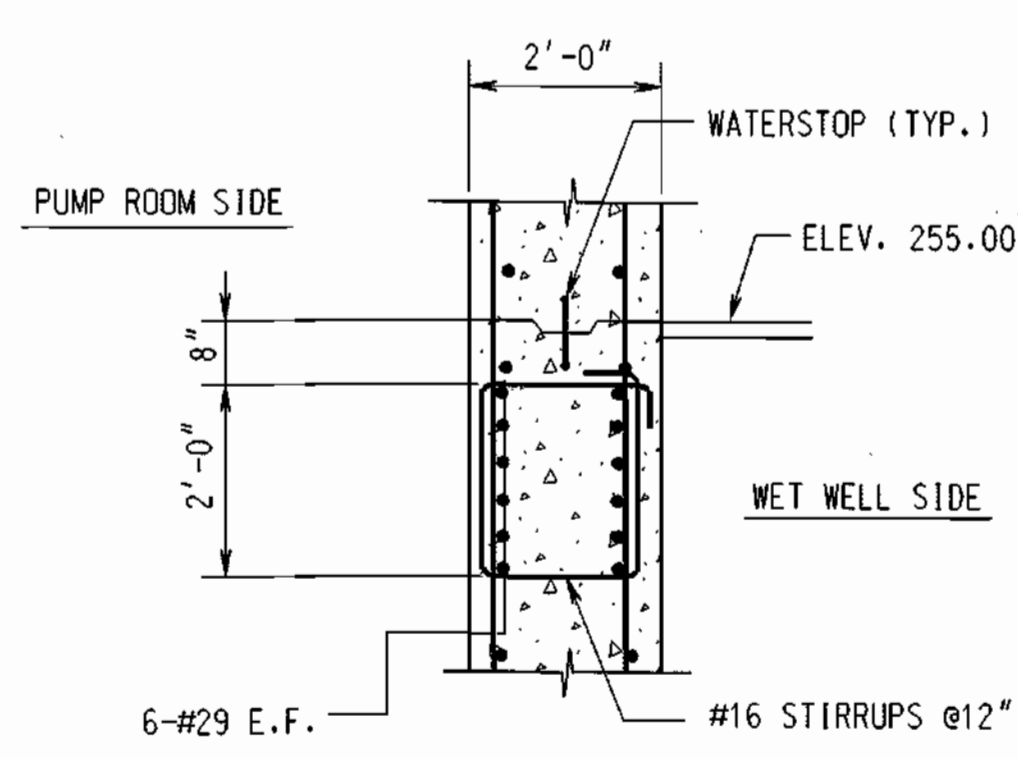


PLAN - CRANE BEAM BEARING

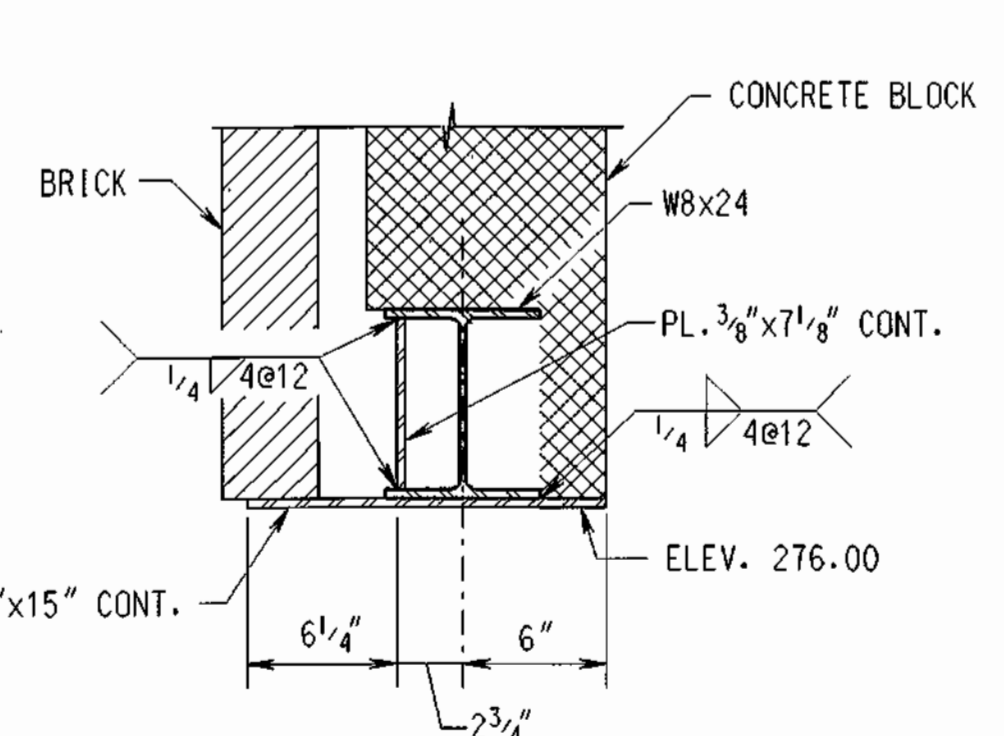


SECTION

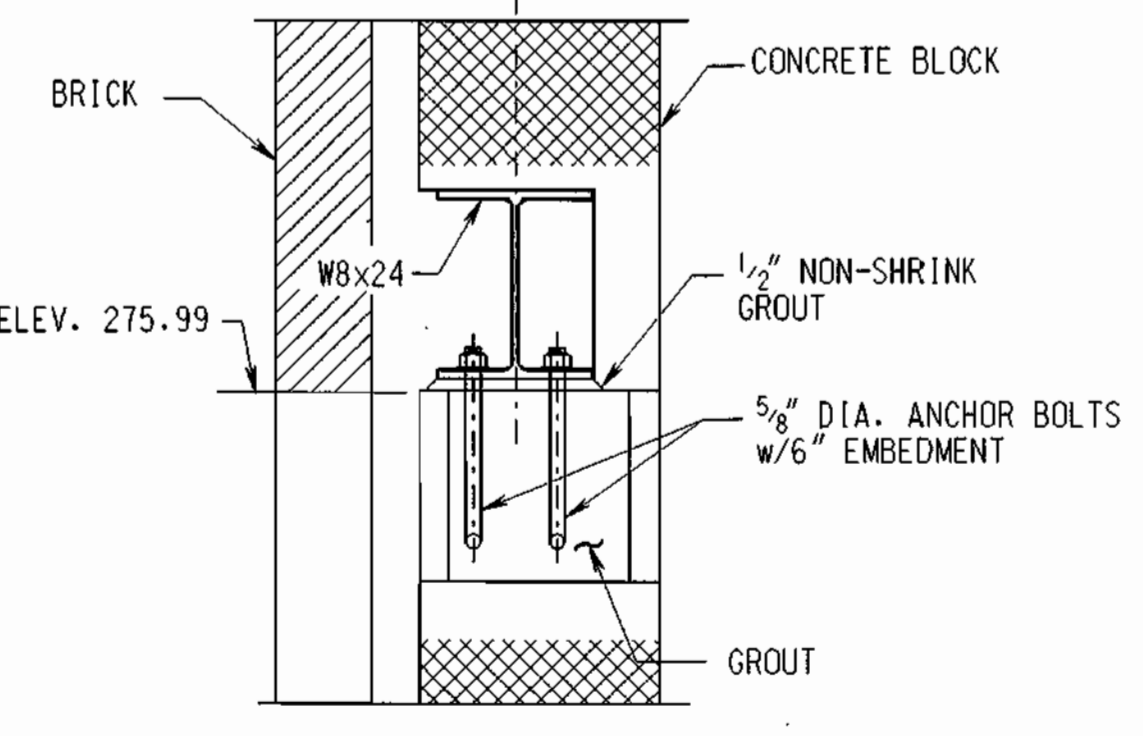
DETAIL - CRANE BEAM BEARING
SCALE: 1 1/2" = 1'-0"



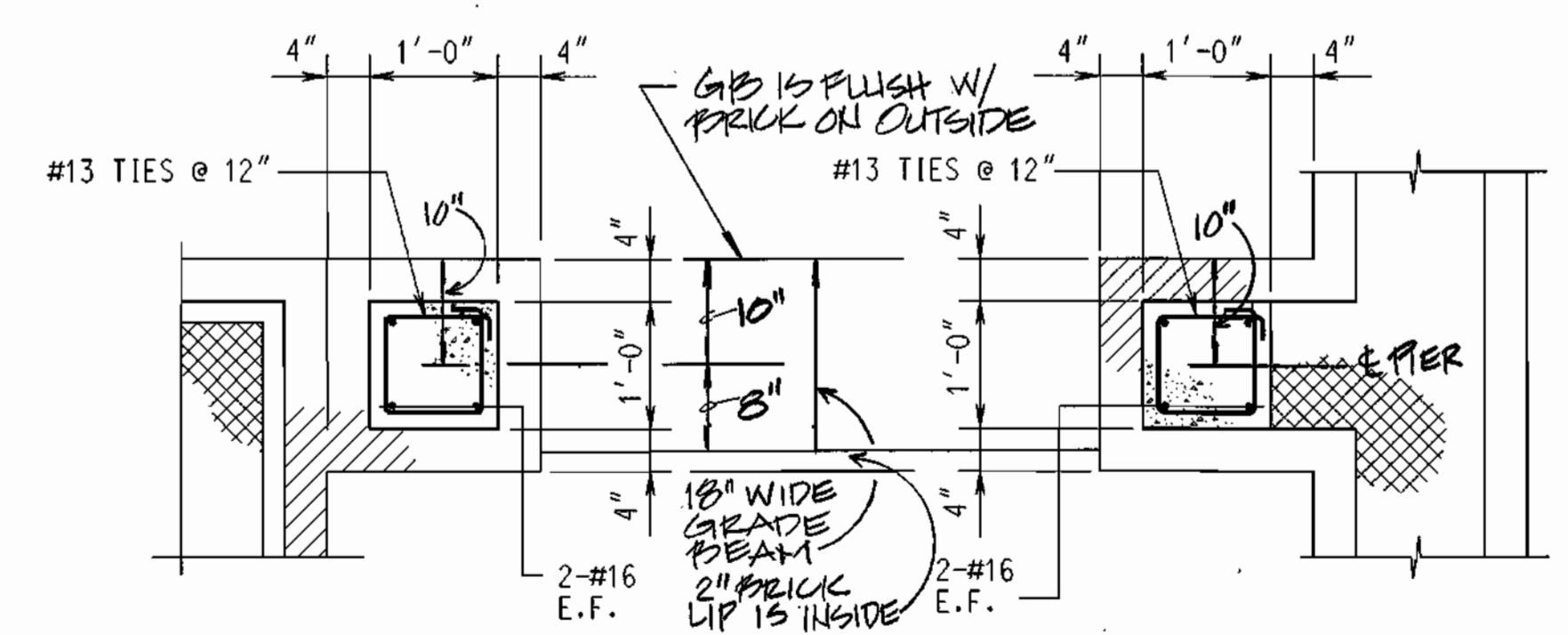
DETAIL S-4C / S-4
SCALE: 1/2" = 1'-0"



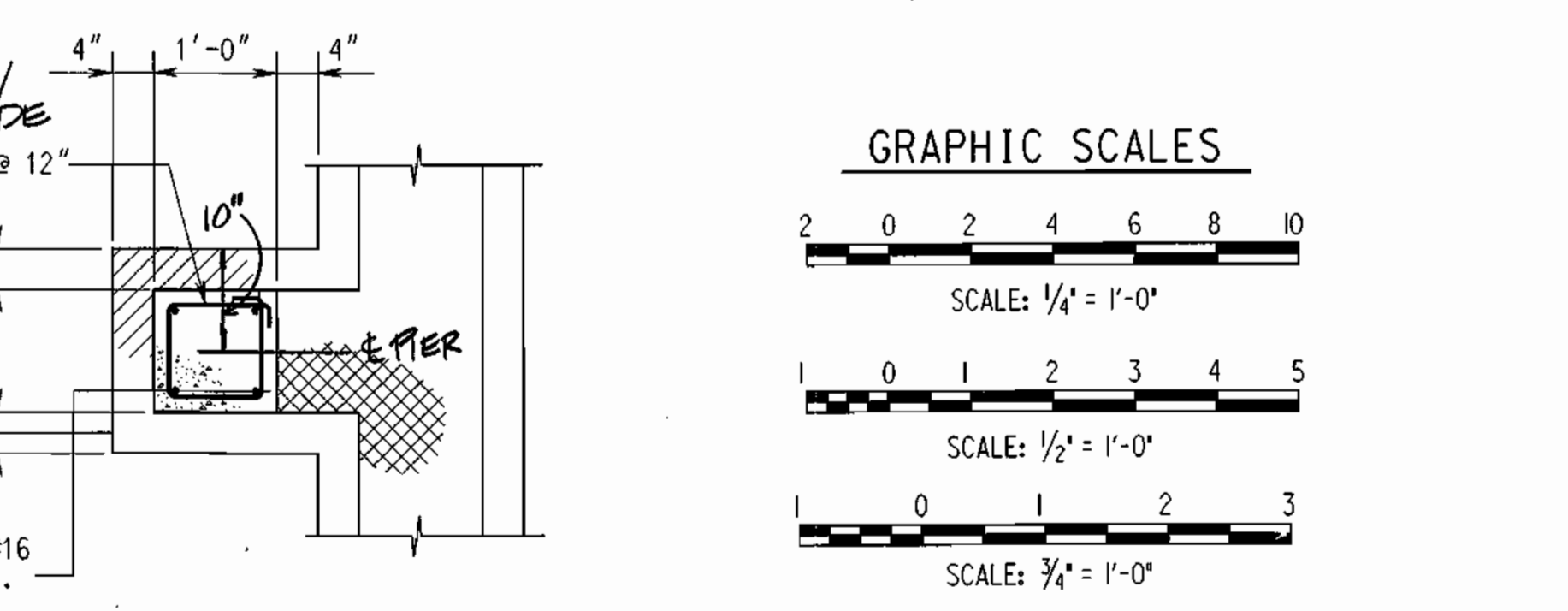
SECTION S-4D / S-3
SCALE: 1 1/2" = 1'-0"



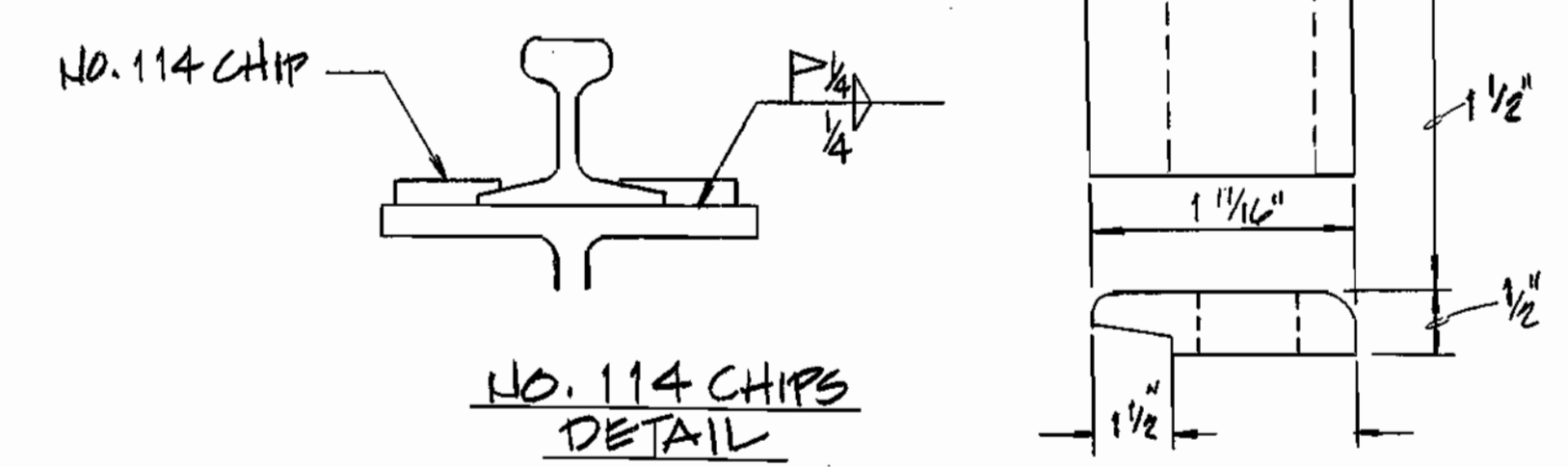
SECTION S-4E / S-3
SCALE: 1 1/2" = 1'-0"



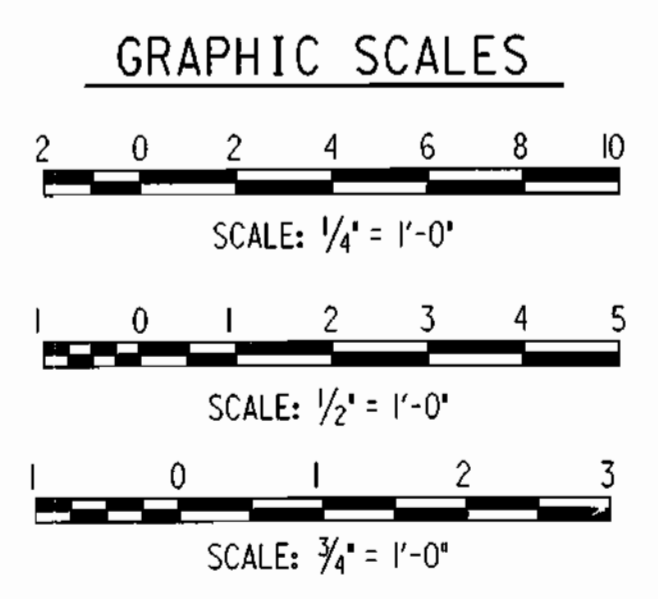
DETAIL S-4F / S-3
SCALE: 3/4" = 1'-0"



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



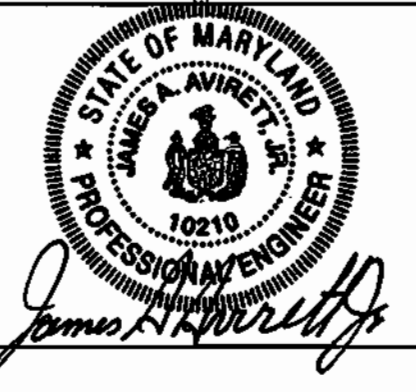
NO. 114 CHIPS
DETAIL



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

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

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

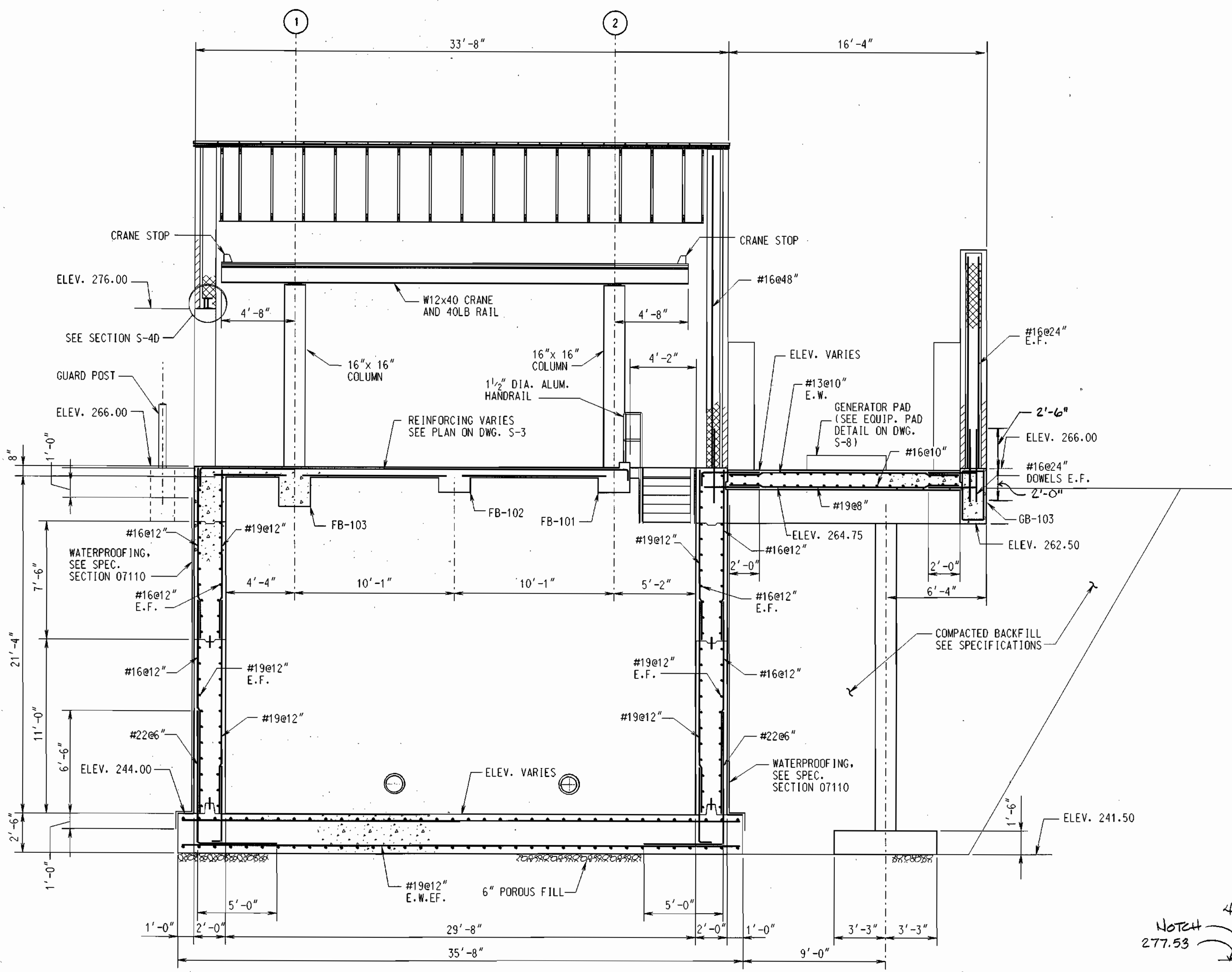


DES: WR&EJM
DRN: EUMFGWG
CHK: JAB
DATE: 12/09/98
BY: NO. REVISION DATE: 8-23-02

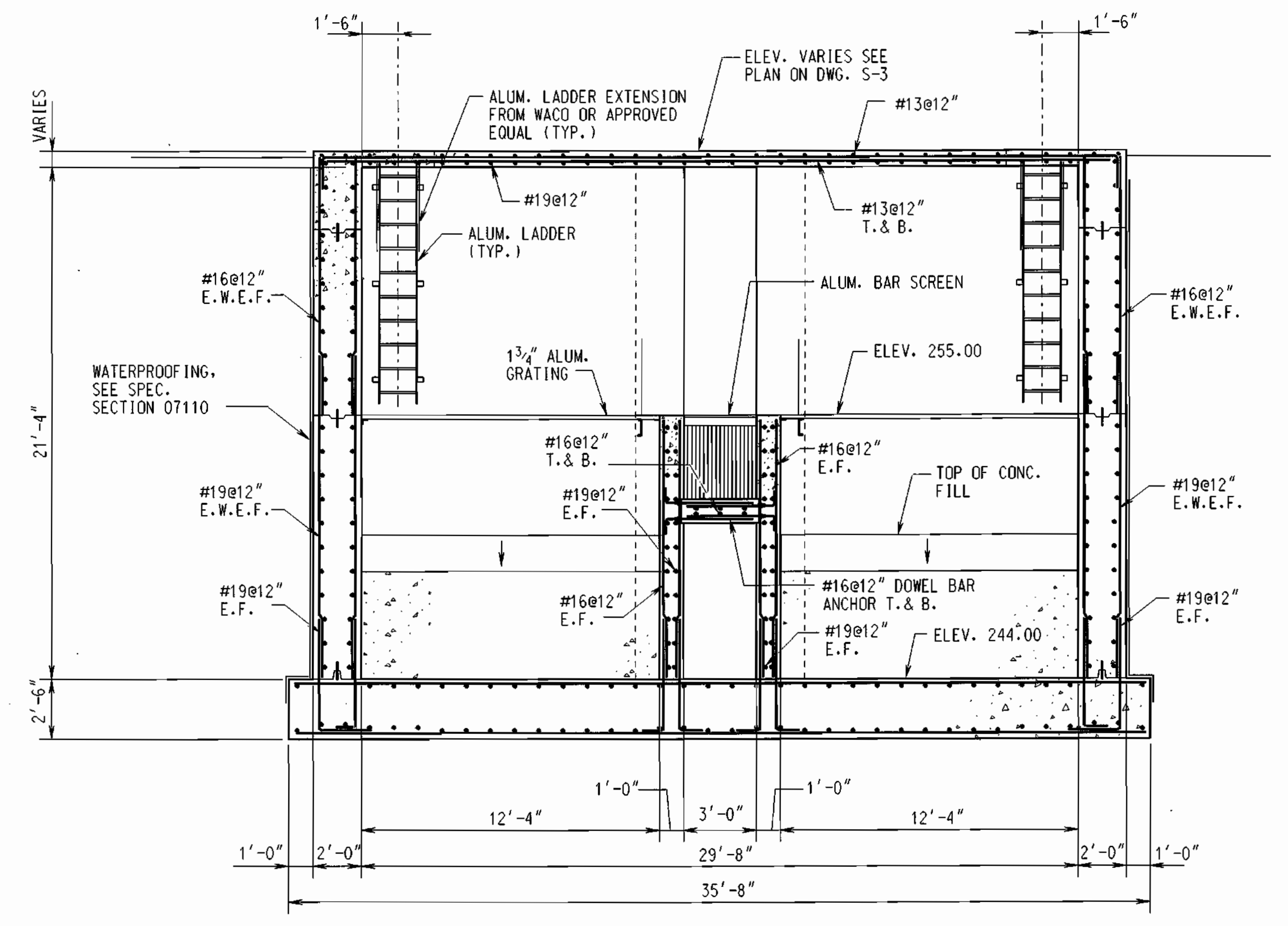
RECORD DRAWING
600' SCALE MAP NO. _____ BLOCK NO. _____

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

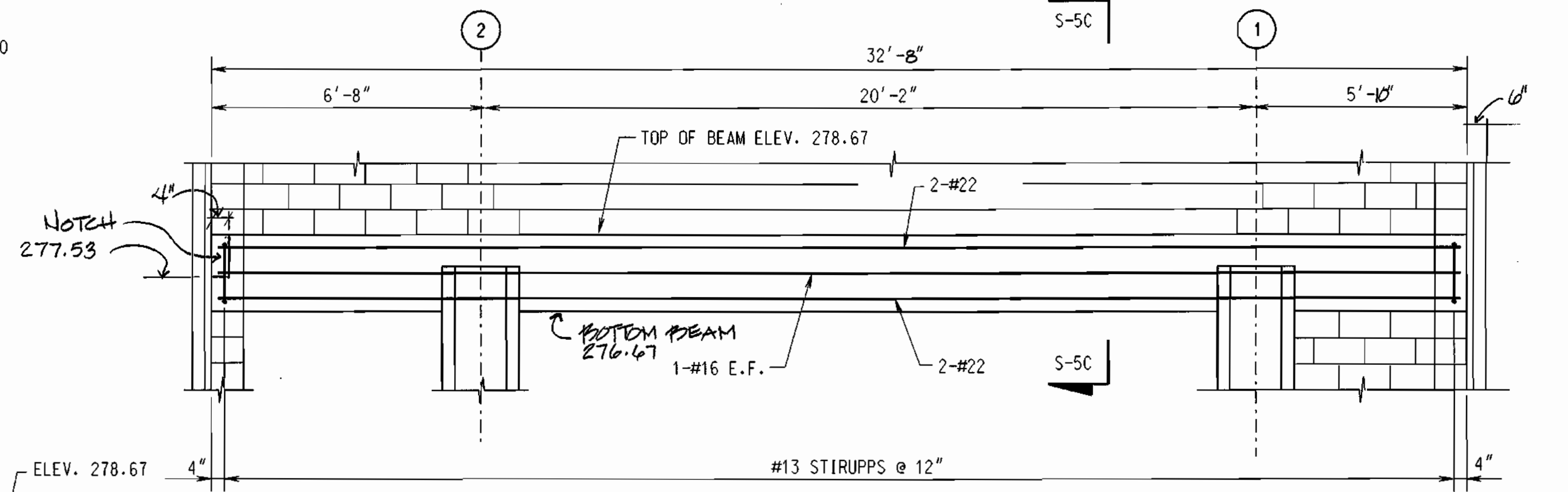
RECORD DRAWING
11/18/02
S-4
SCALE AS SHOWN
SHEET 18 OF 36



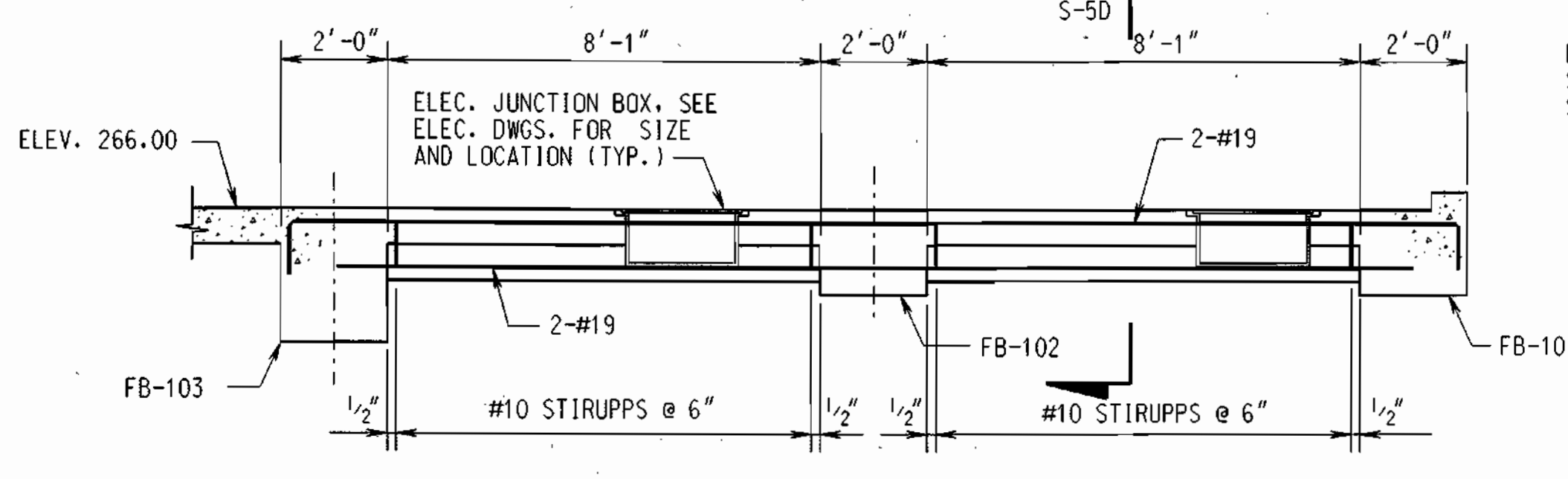
SECTION S-5A/S-2,S-3
SCALE: 1/4" = 1'-0"



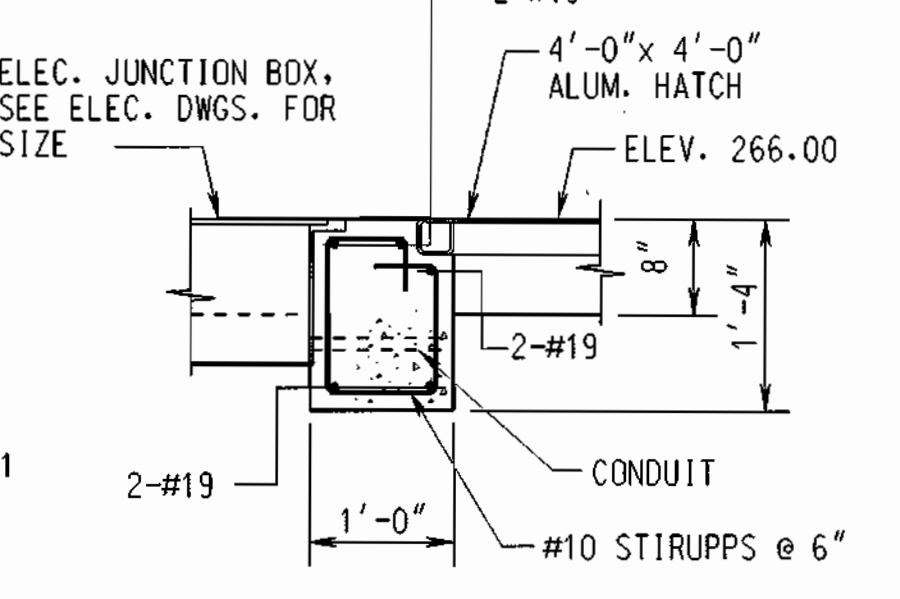
SECTION S-5B/S-2,S-3
SCALE: 1/4" = 1'-0"



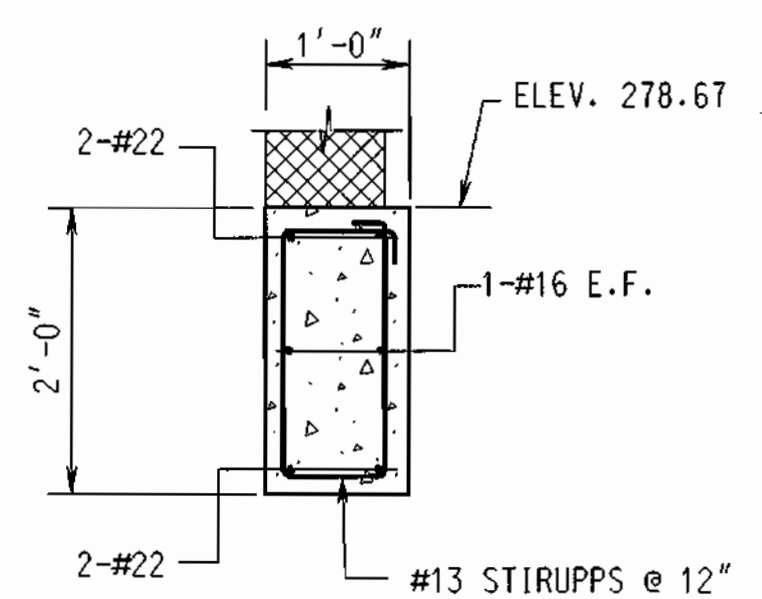
RB-1 (12" x 24")
SCALE: 3/8" = 1'-0"



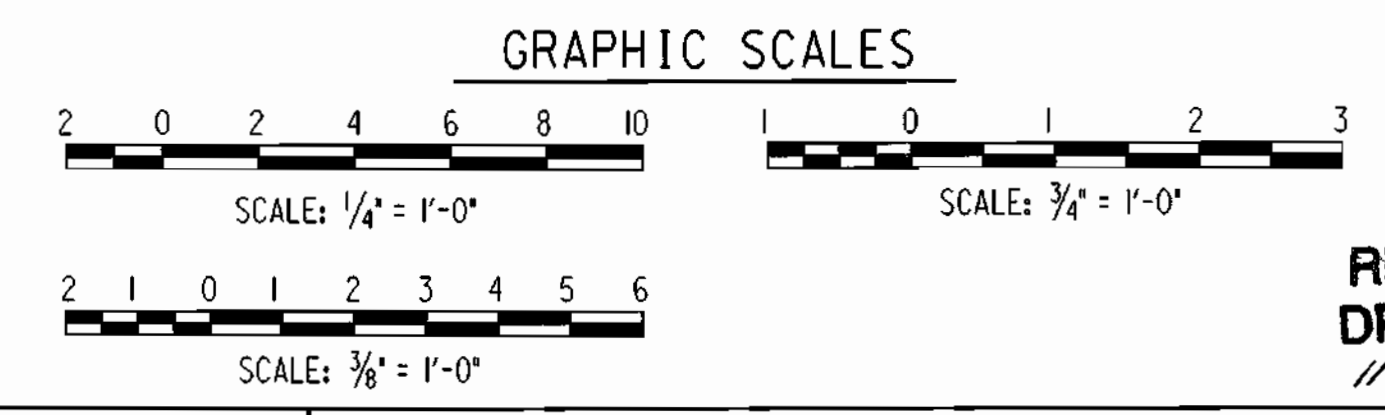
FB-104 (12" x 16")
SCALE: 3/8" = 1'-0"



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

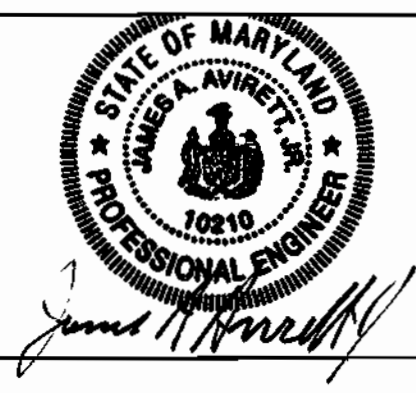


SECTION S-5C/S-5
SCALE: 3/4" = 1'-0"



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

PREPARED BY:
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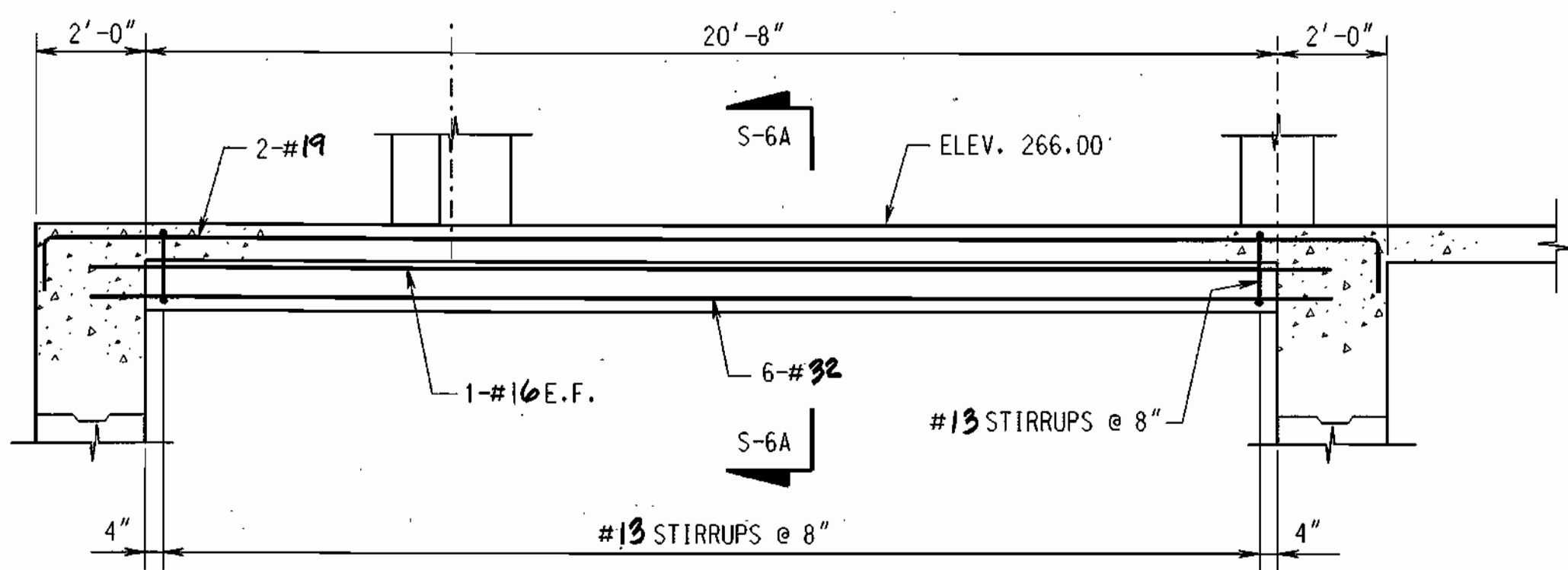


DES: JGL			
DRN: LAR			
CHK: JOA			
DATE: 11/12/98			
BY: [Signature]	NO.	REVISION	DATE

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

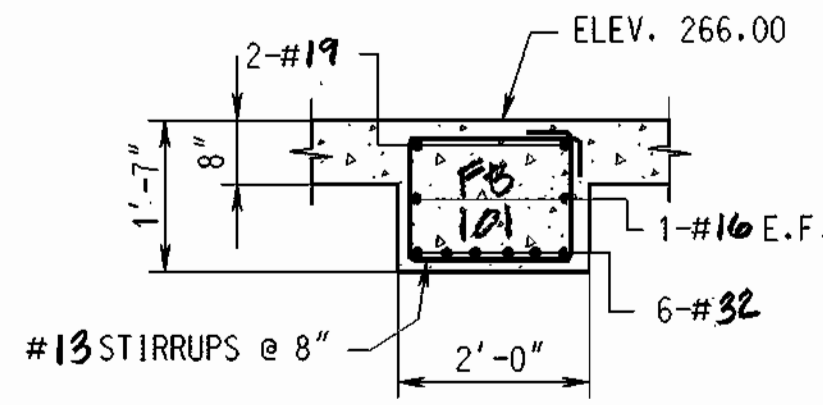
ROCKBURN WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6200
CONTRACT NO. 10-3695
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

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



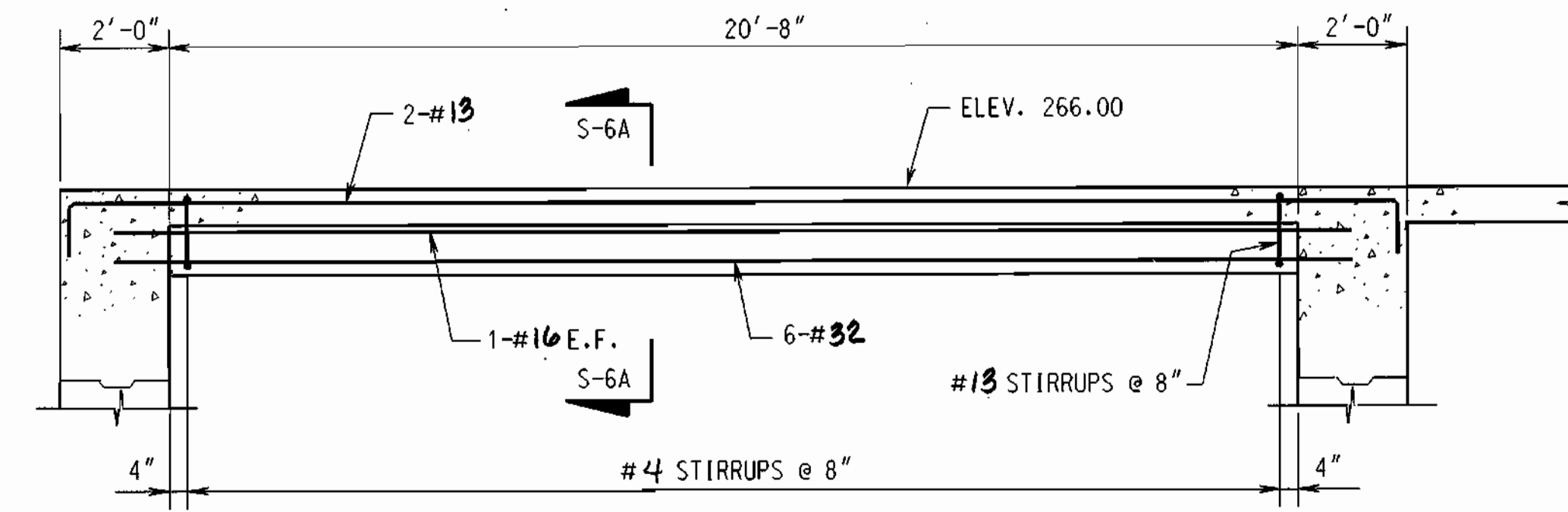
FB-101 (24" x 19")

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



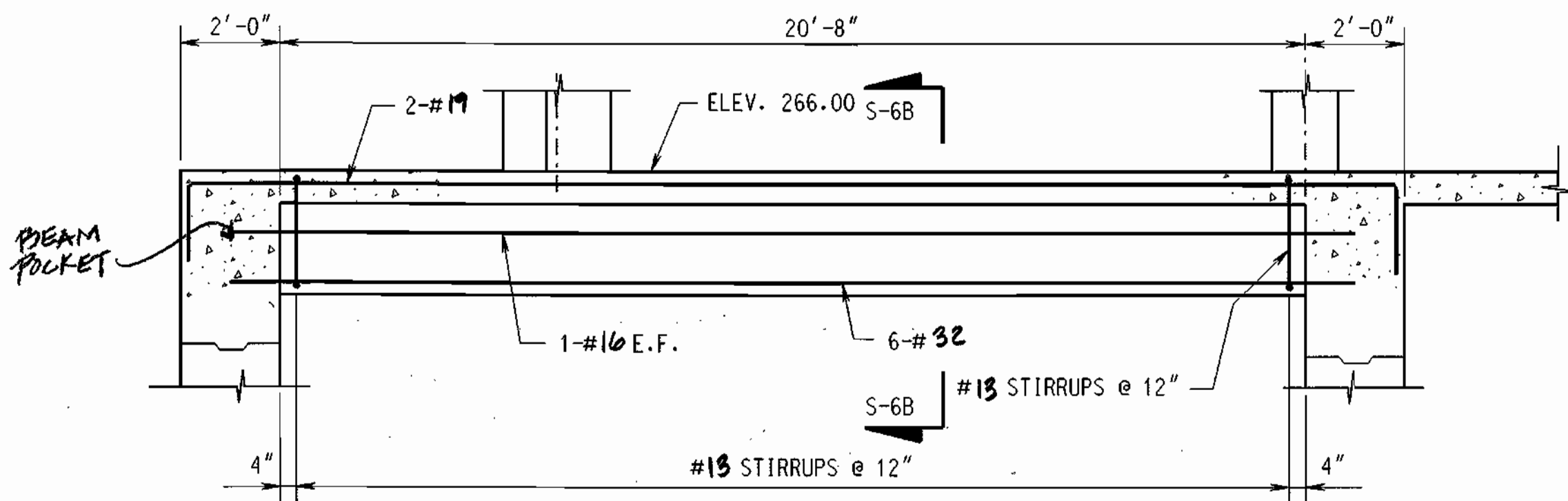
SECTION S-6A/S-6

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



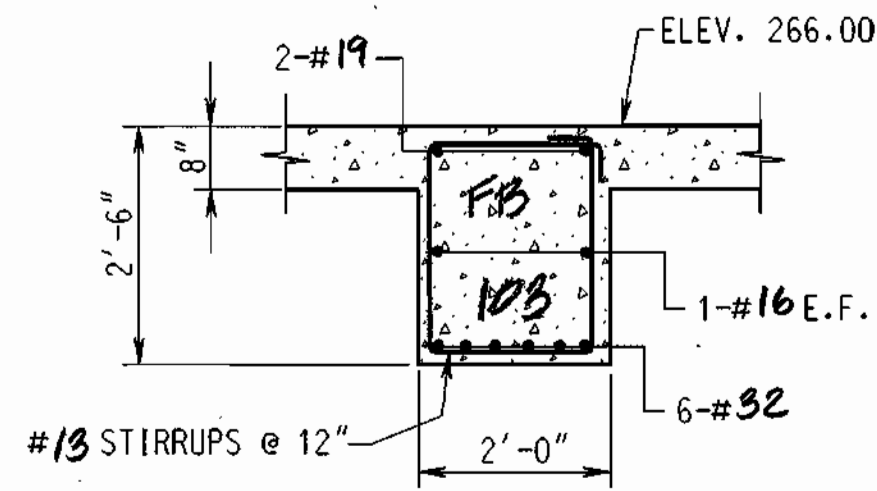
FB-102 (24" x 19")

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



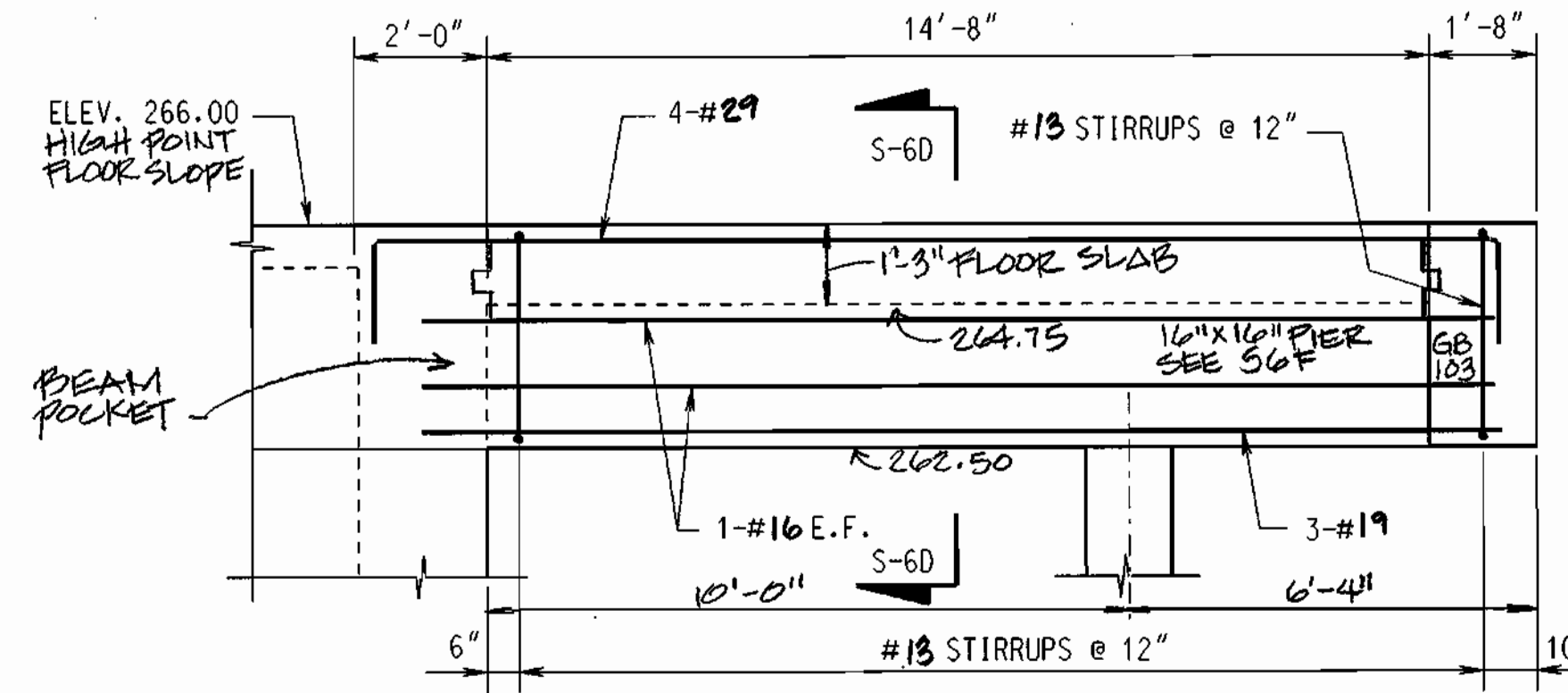
FB-103 (24" x 30")

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



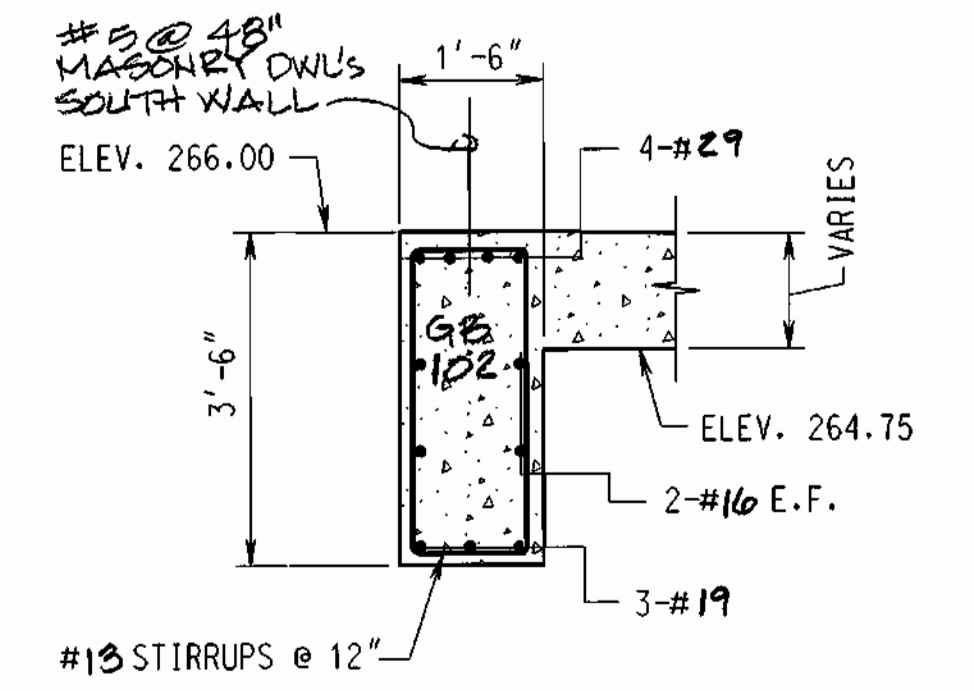
SECTION S-6B/S-6

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



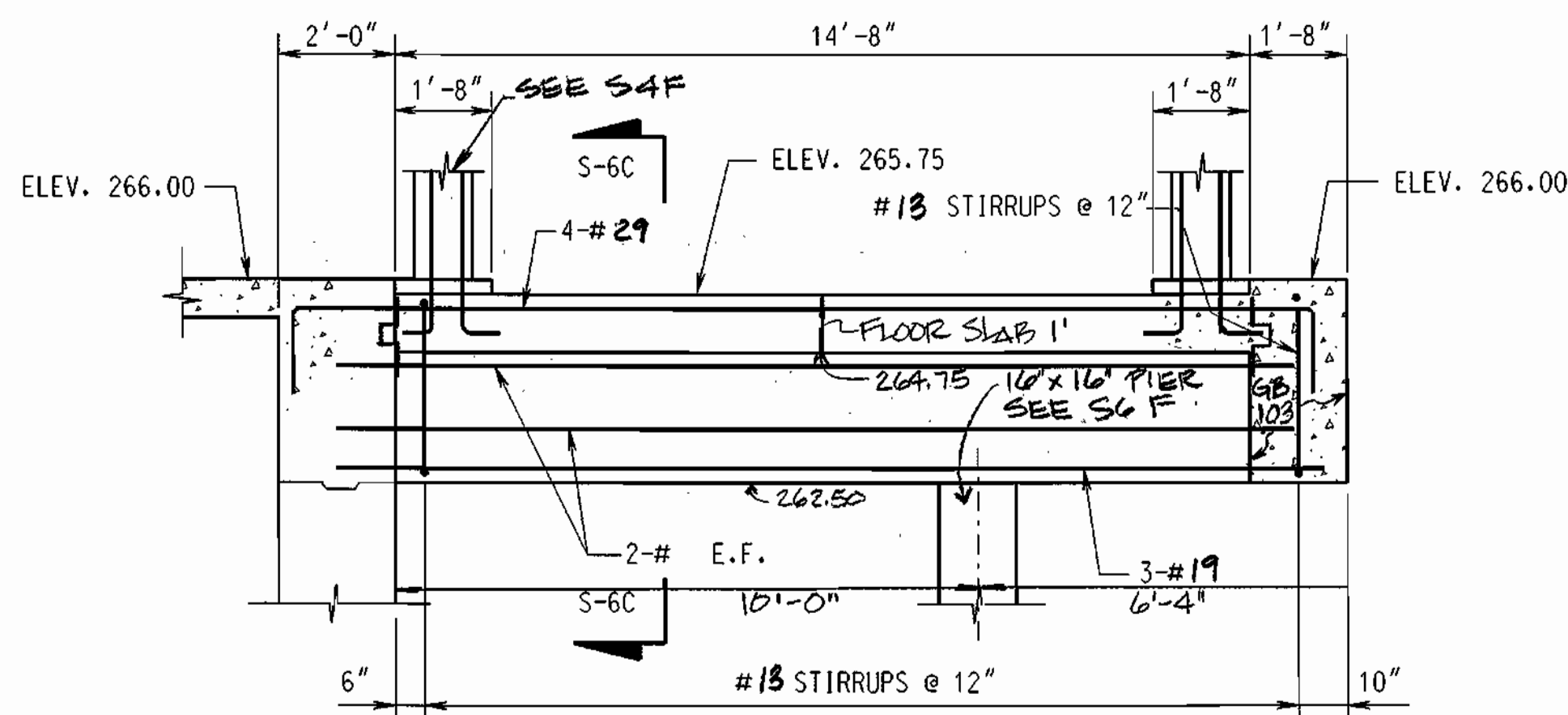
GB-102 (18" x 42")

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



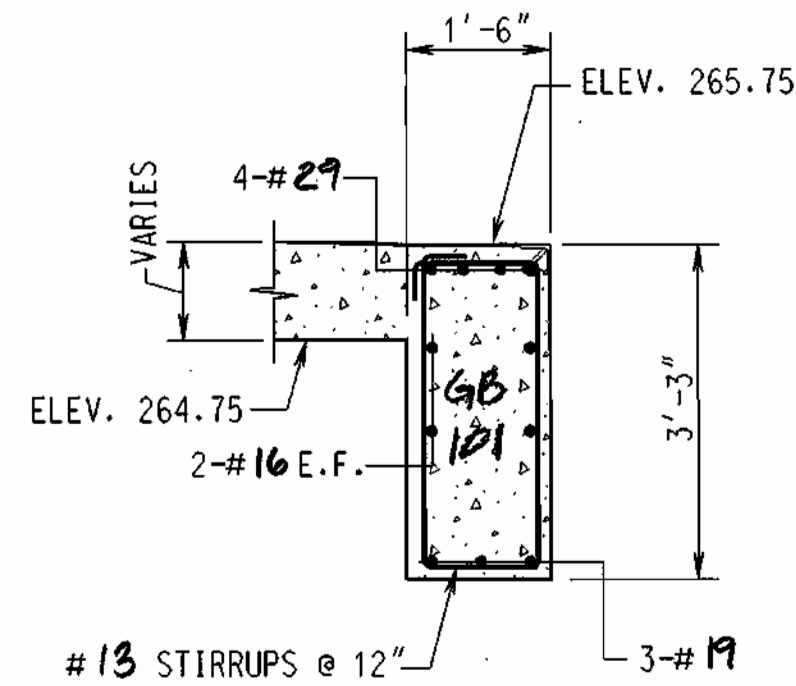
SECTION S-6D/S-6

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



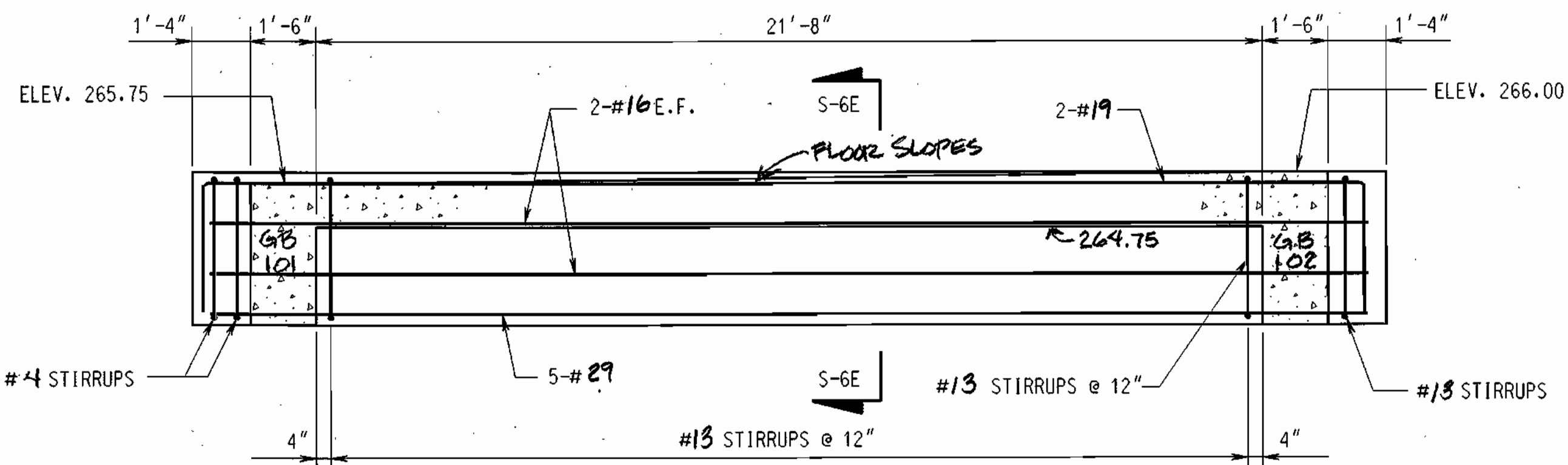
GB-101 (18" x 39")

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



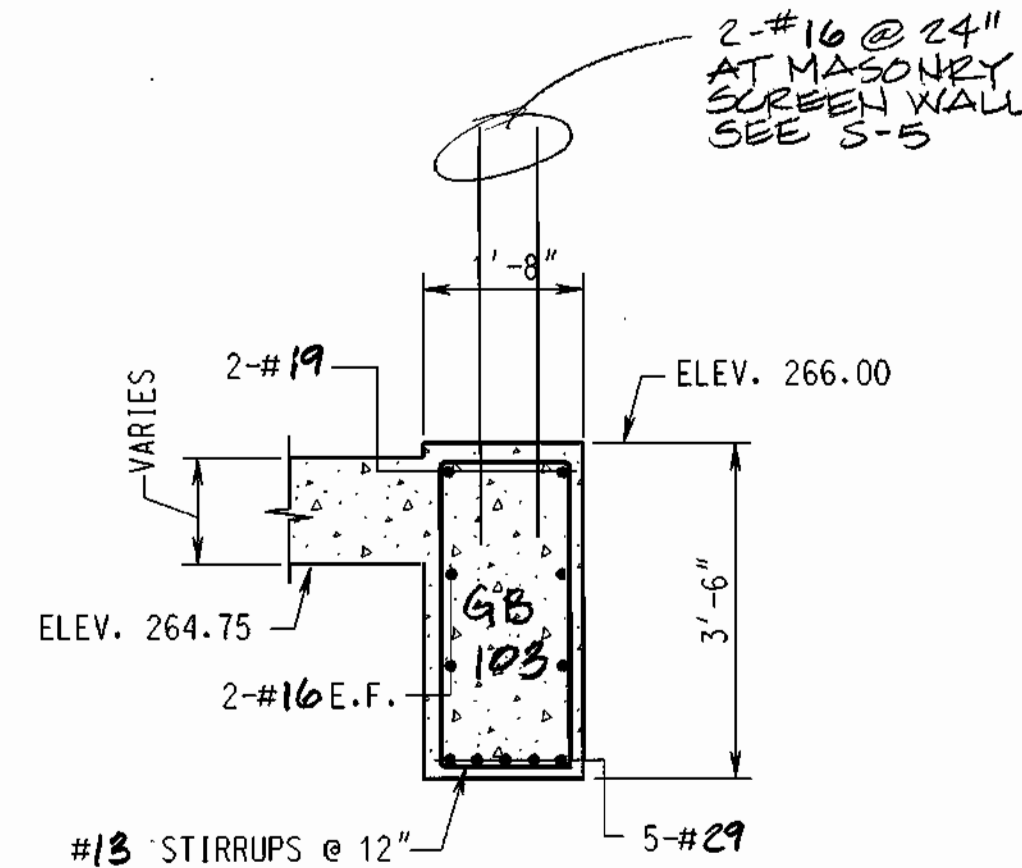
SECTION S-6C/S-6

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



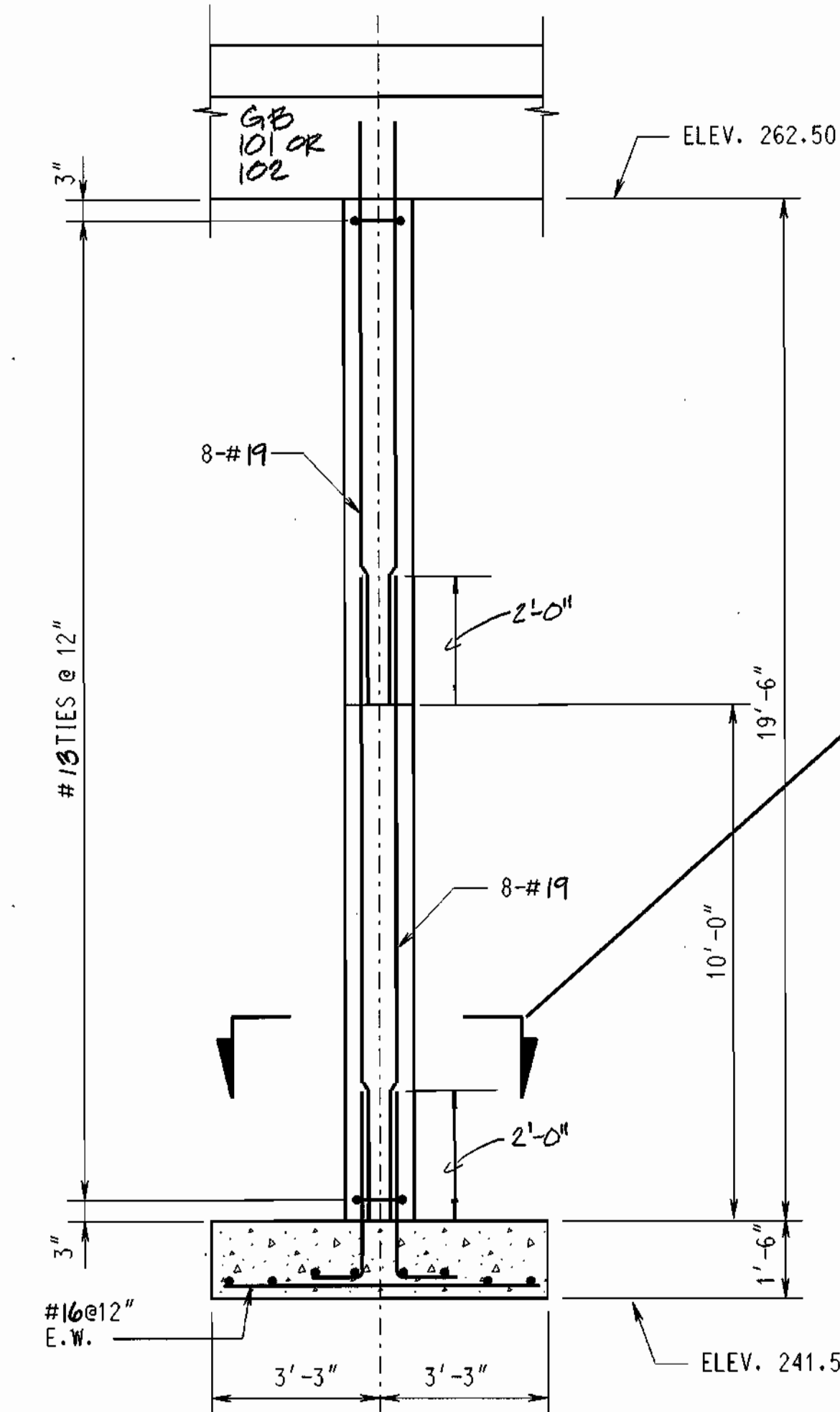
GB-103 (20" x 42")

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



SECTION S-6E/S-6

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



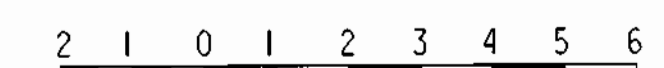
SECTION S-6F/S-2

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

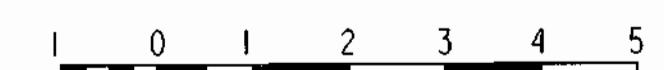
NOTES :

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

GRAPHIC SCALES



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



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

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-6

SCALE AS SHOWN

SHEET 20 OF 36

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Cam P. Elw 11/15/99
DIRECTOR OF PUBLIC WORKS DATE
Robert J. Berman 1-15-99
CHIEF, BUREAU OF UTILITIES DATE
Robert A. Siga 1-15-99
ACT. CHIEF, UTILITIES DESIGN DIVISION DATE

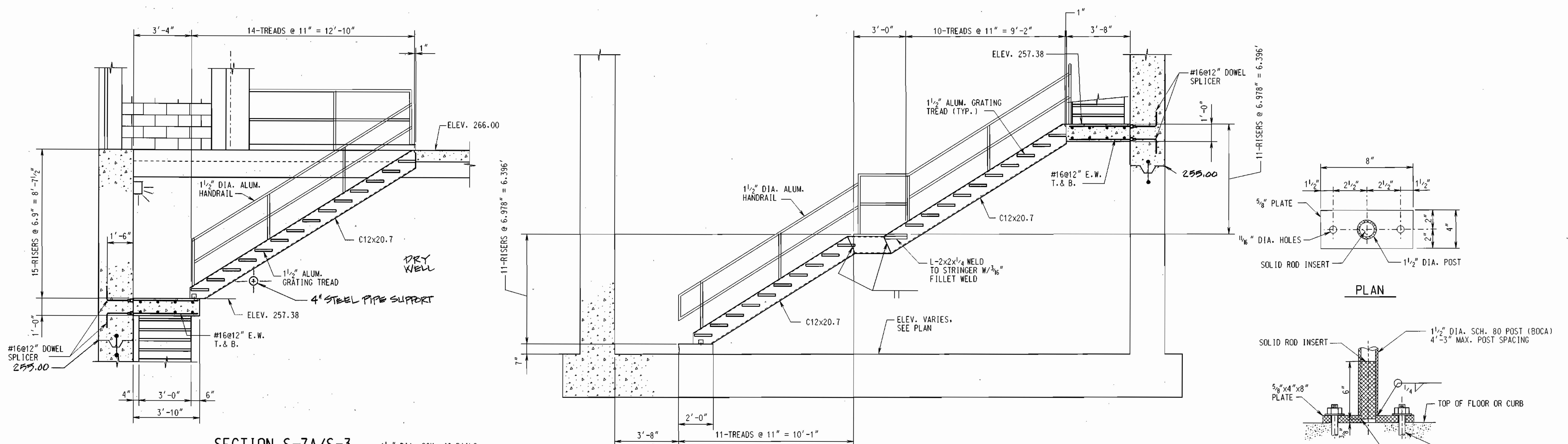
PREPARED BY :
WR&A
Whitman, Reardon and Associates, LLP.



DES :	JGL			
DRN :	LAR			
CHK :	JDA			
DATE :	11/12/98			
BY :				
NO. :				
REVISION :				
DATE :				

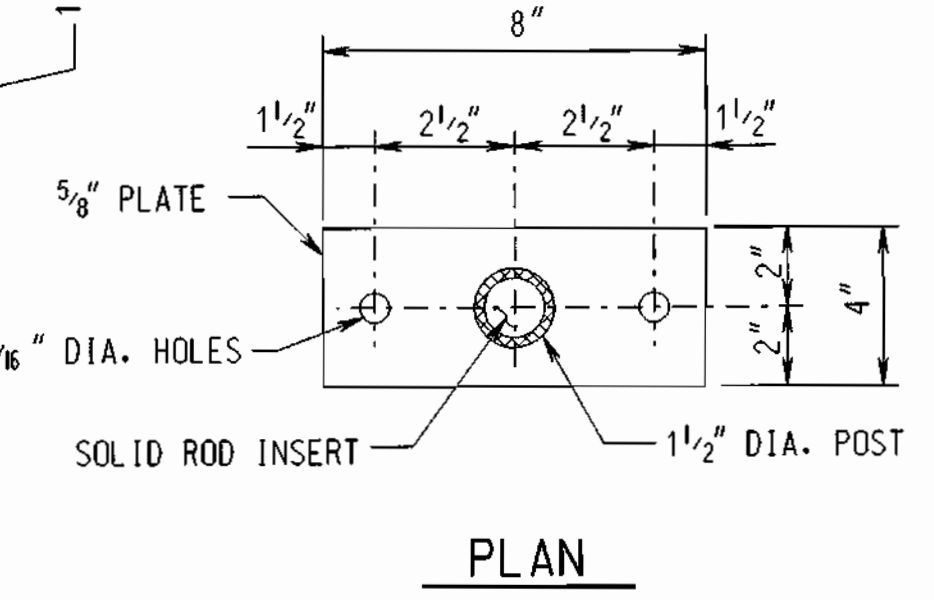
BEAM AND COLUMN ELEVATIONS
AND SECTIONS

600' SCALE MAP NO. _____ BLOCK NO. _____

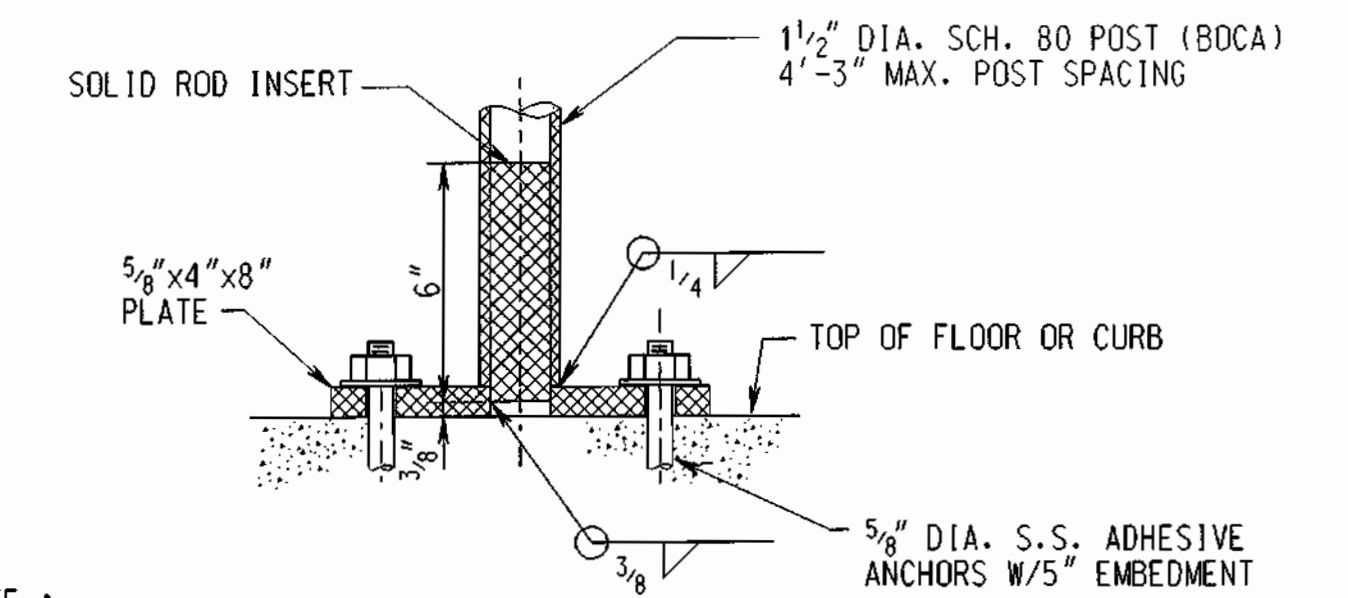


SECTION S-7A/S-3
SCALE: 3/8" = 1'-0"

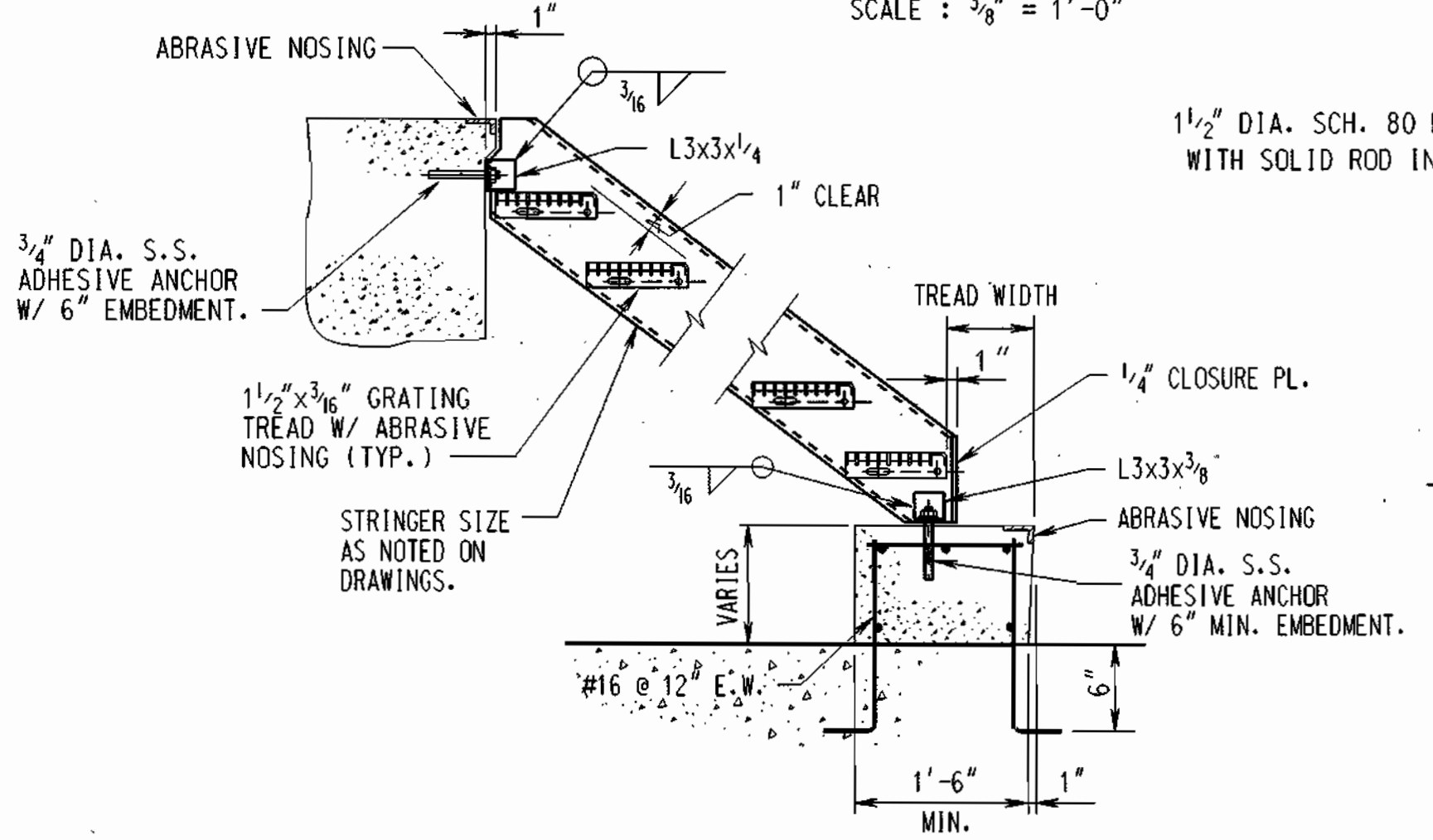
SECTION S-7B/S-2
SCALE: 3/8" = 1'-0"



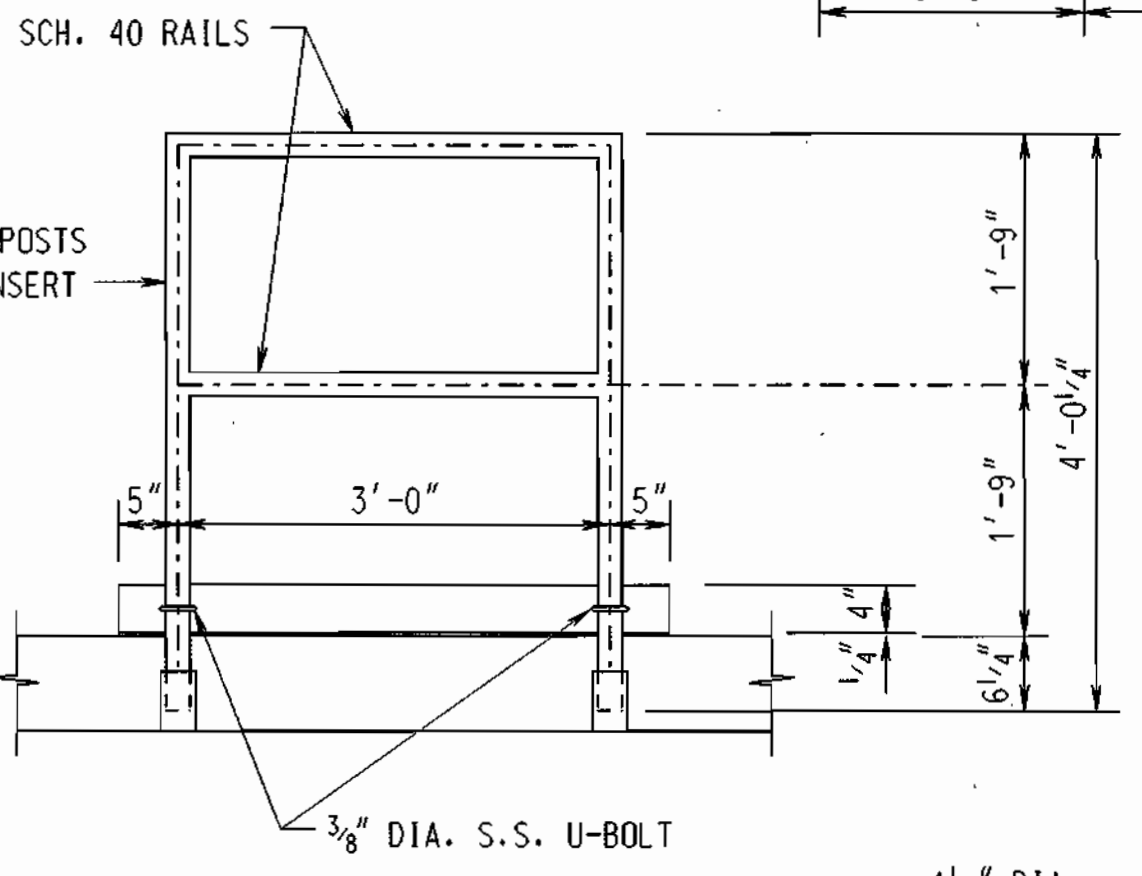
PLAN



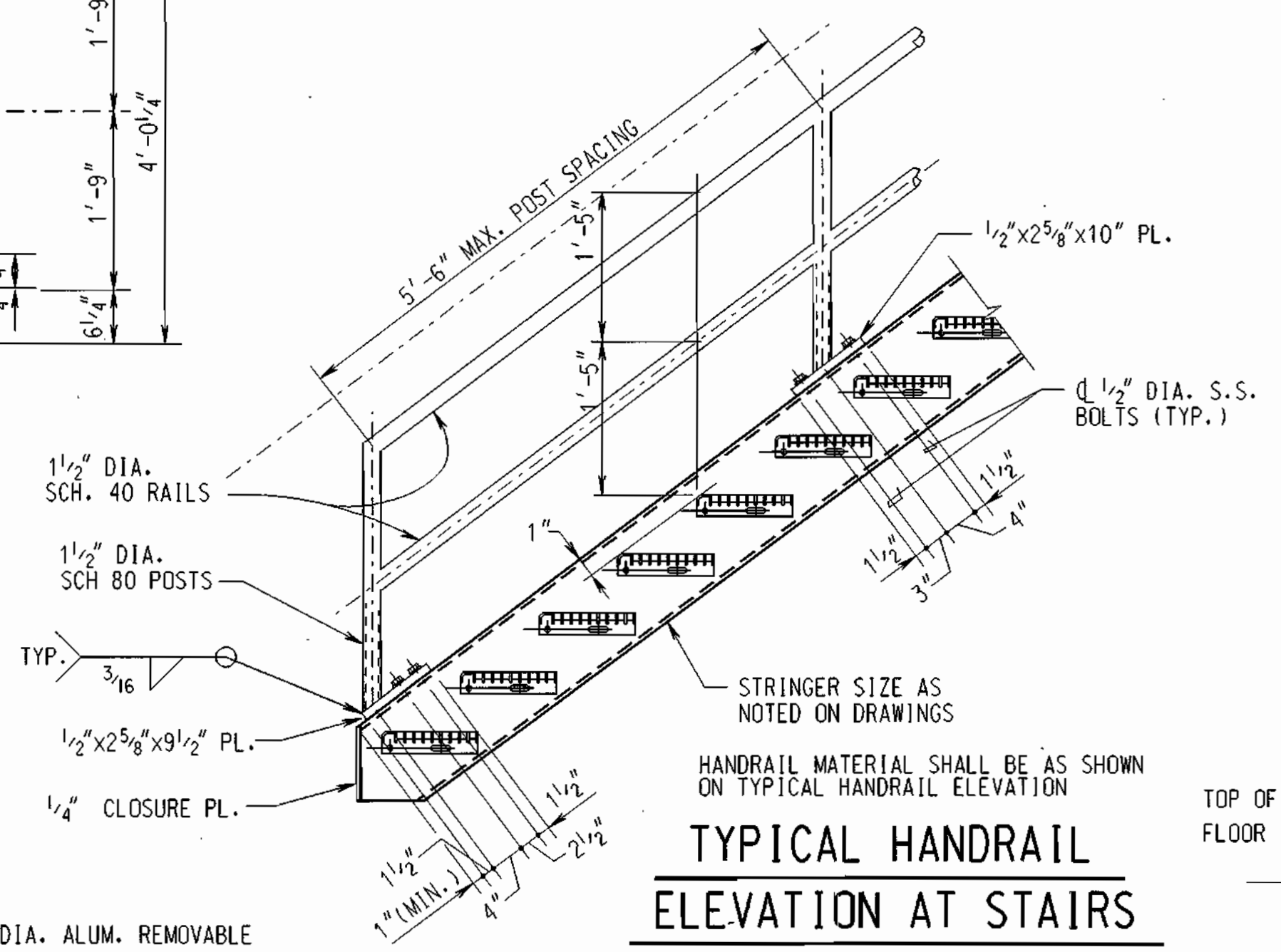
SECTION
POST CONNECTION TO CONCRETE - ALUMINUM
SCALE: NONE



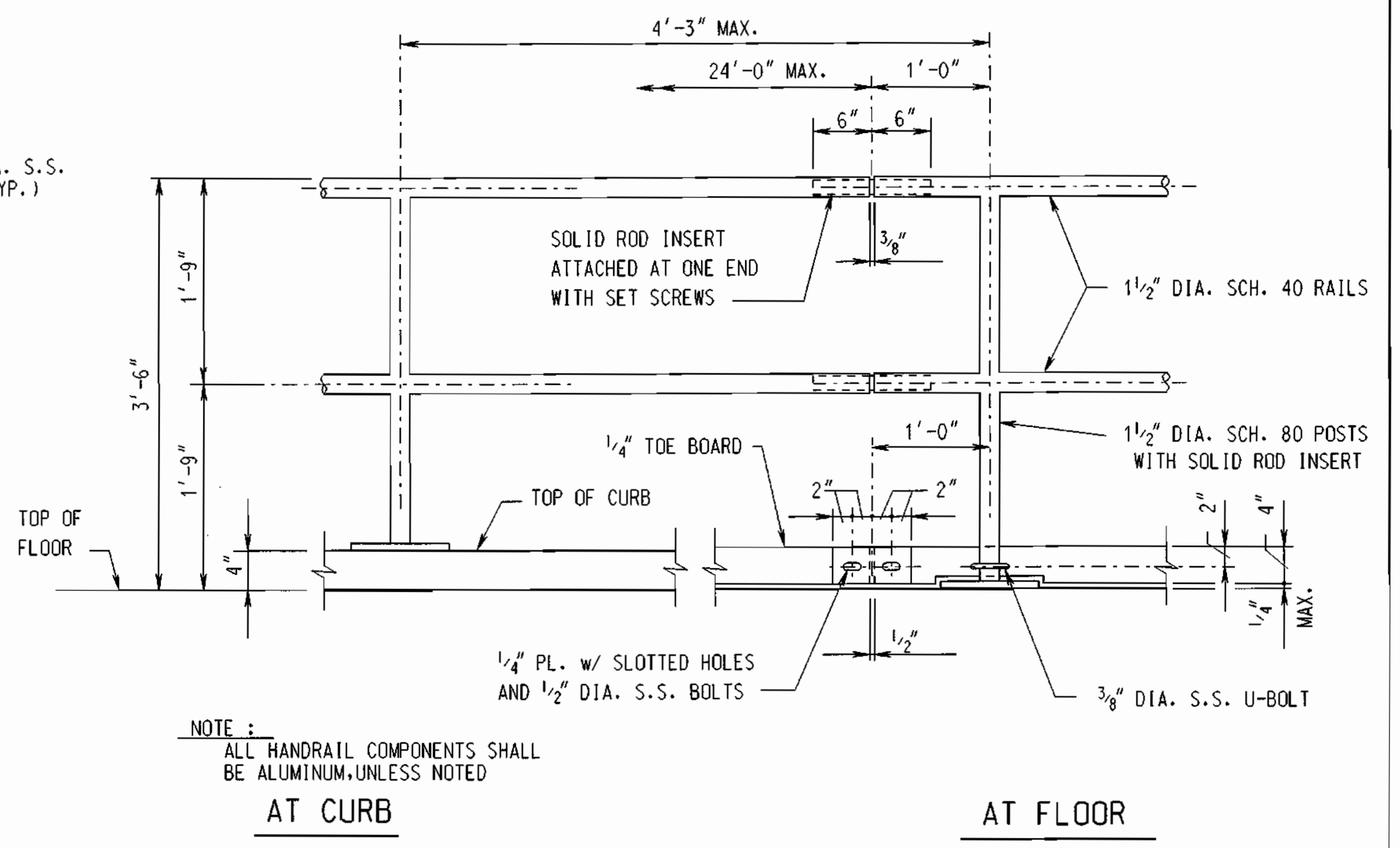
STAIR CONNECTION TO CONCRETE
SCALE: NONE



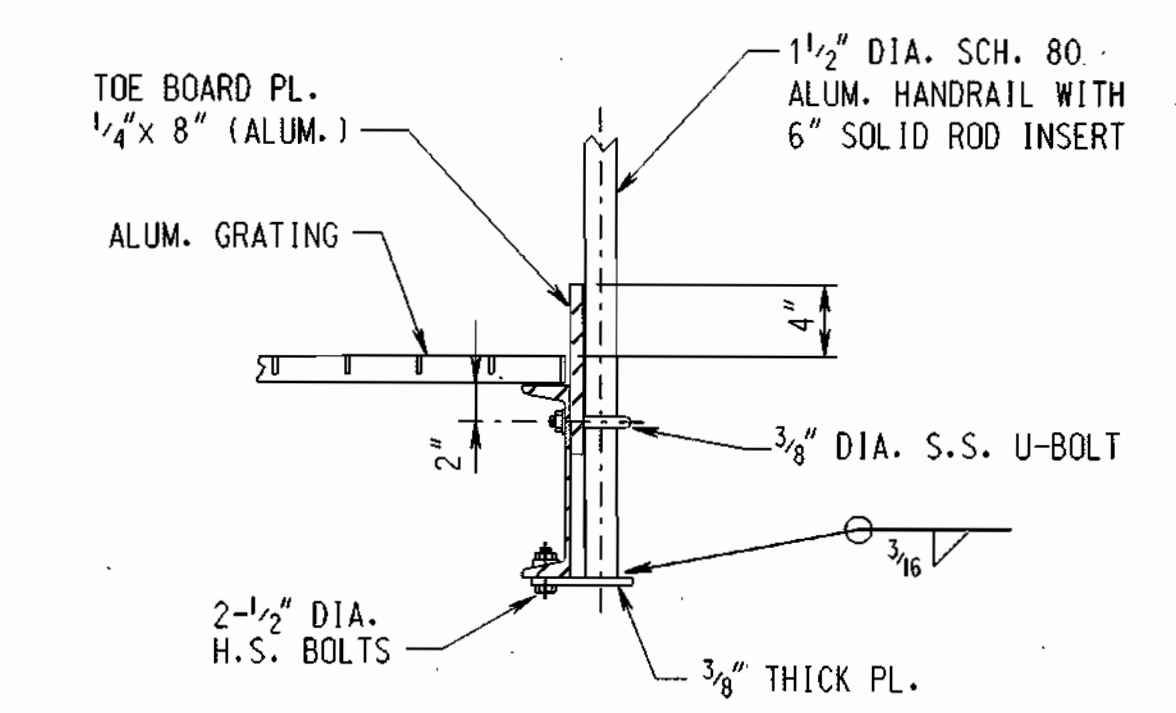
TYPICAL REMOVABLE HANDRAIL ELEVATION
SCALE: NONE



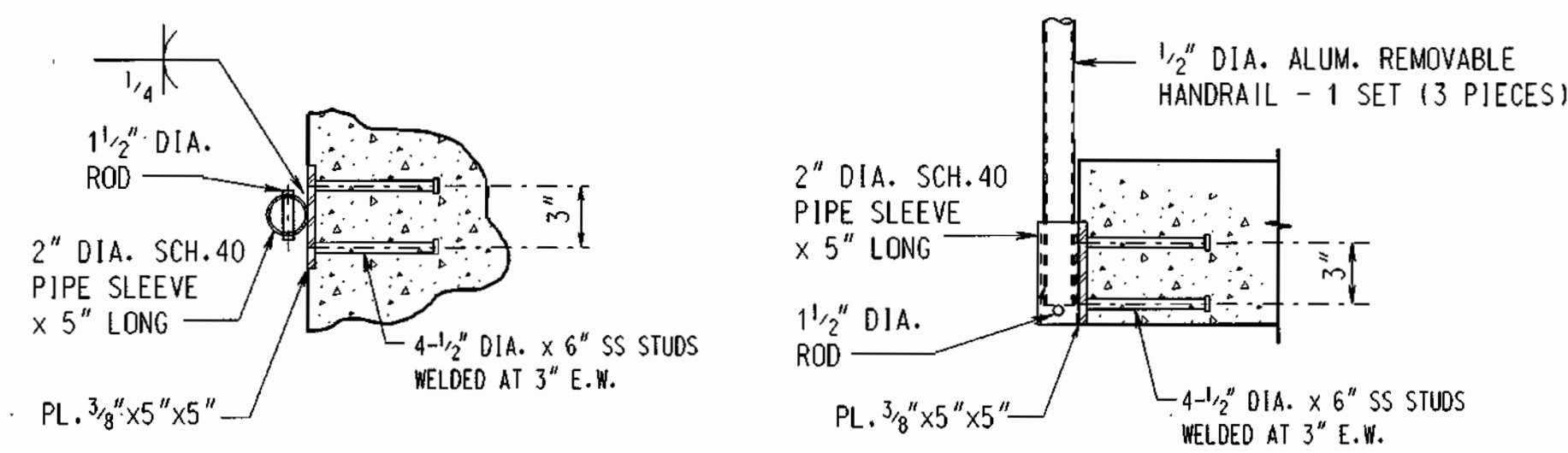
TYPICAL HANDRAIL ELEVATION AT STAIRS
SCALE: NONE



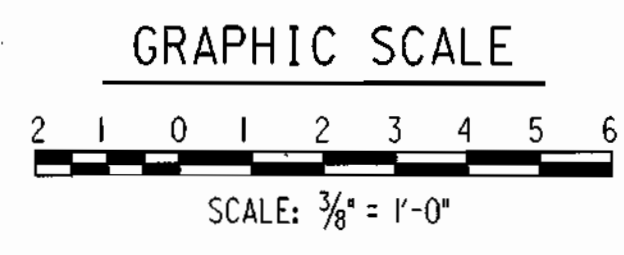
TYPICAL HANDRAIL ELEVATION - ALUMINUM
SCALE: NONE



POST CONNECTION TO CHANNEL
SCALE: NONE

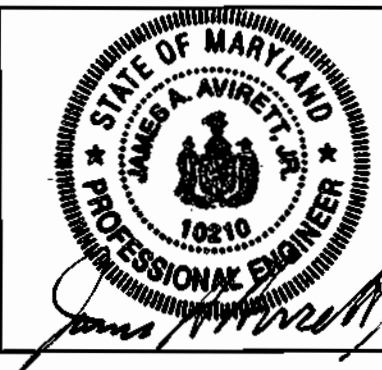


TYPICAL HANDRAIL SLEEVE DETAIL
SCALE: NONE



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

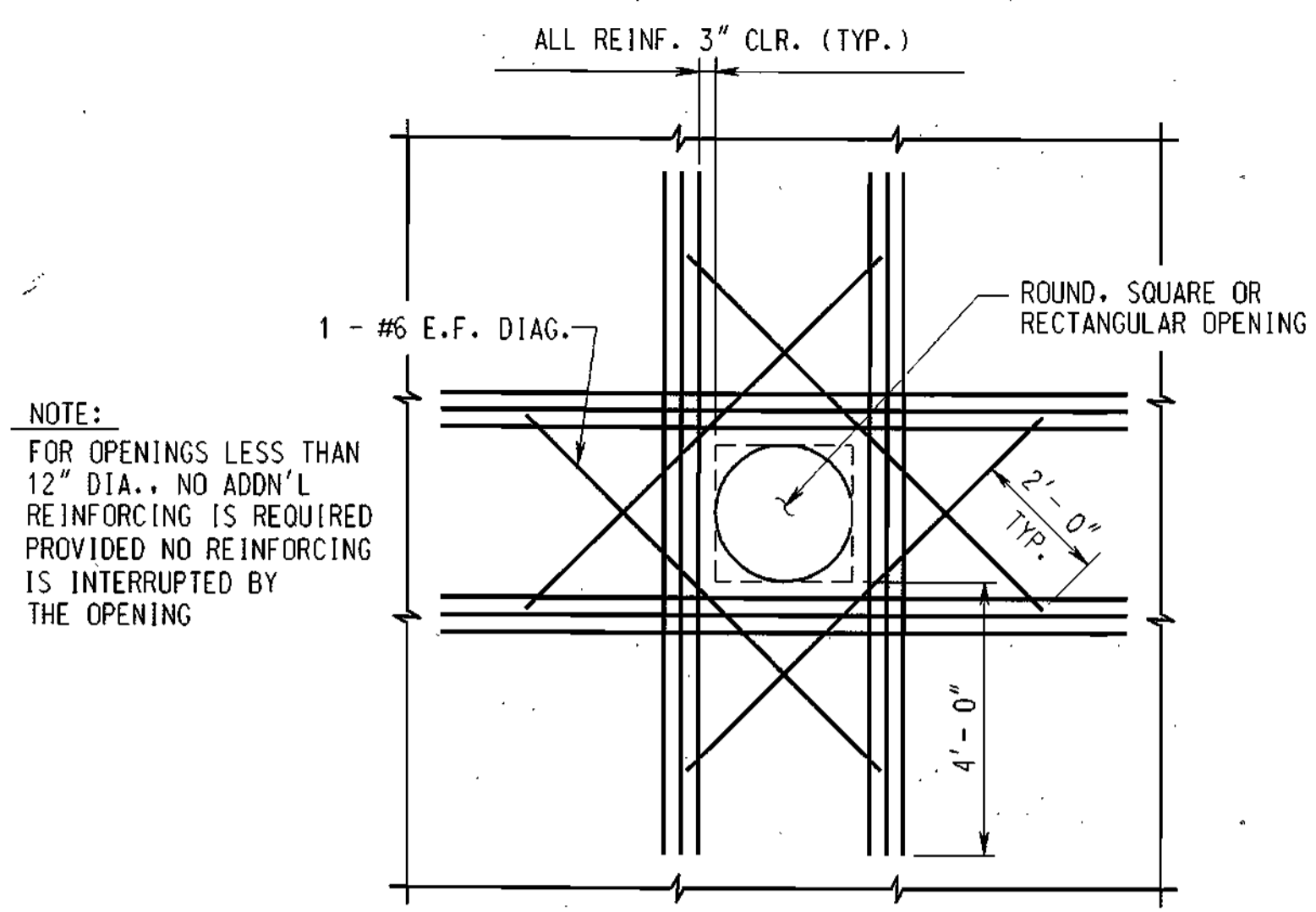
PREPARED BY:
WR&A
Whitman, Reardon and Associates, LLP.



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

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

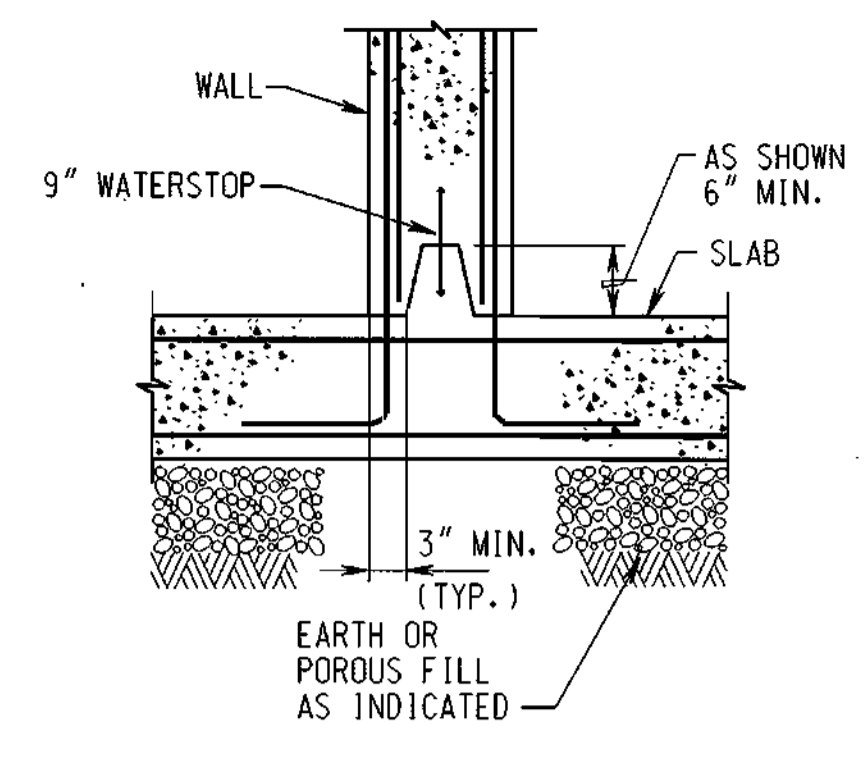
ROCKBURN WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6200
CONTRACT NO. 10-3695
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE AS SHOWN
SHEET 21 OF 36
RECORD DRAWING 11/18/02



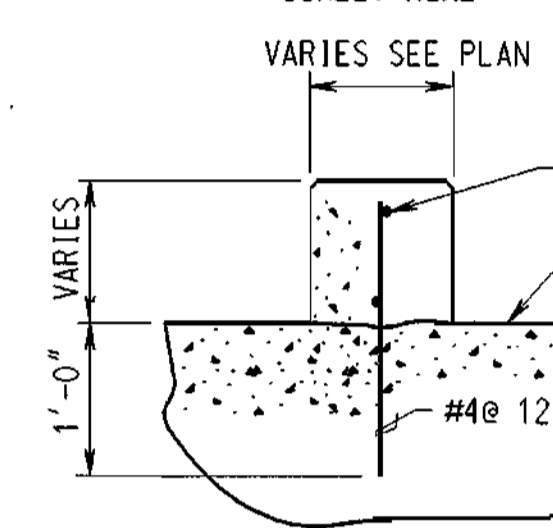
NOTE:
FOR OPENINGS LESS THAN 12" DIA., NO ADD'L REINFORCING IS REQUIRED PROVIDED NO REINFORCING IS INTERRUPTED BY THE OPENING

ADDITIONAL REINFORCING AROUND OPENINGS
SCALE: NONE

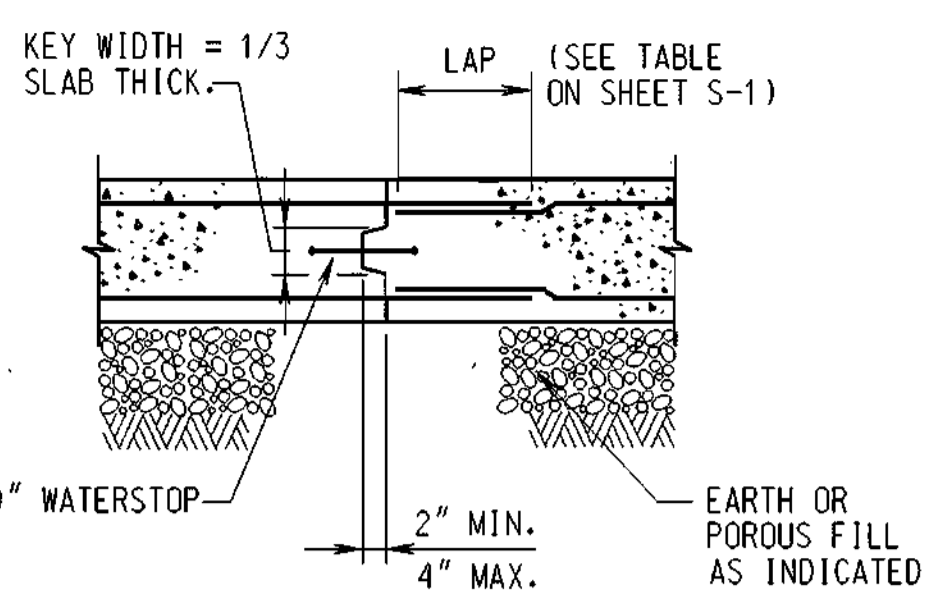
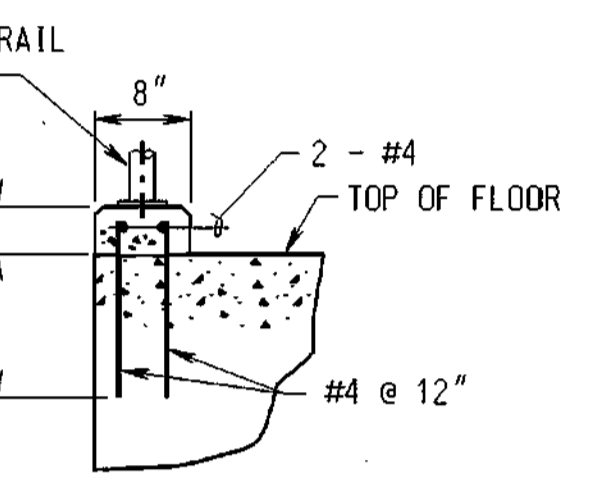
PROVIDE ADDITIONAL REINFORCING, (MINIMUM OF ONE-HALF THE NUMBER OF PRINCIPLE REINFORCING BARS INTERRUPTED BY THE OPENING) ON EACH SIDE AND EACH FACE OF THE OPENING.



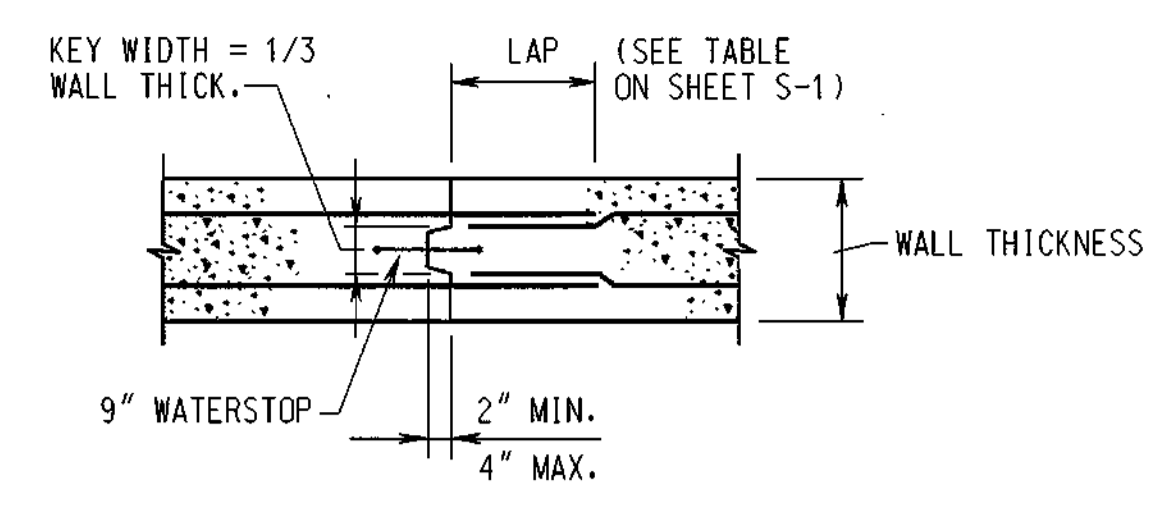
HORIZONTAL CONSTRUCTION JOINT IN WALLS
SCALE: NONE



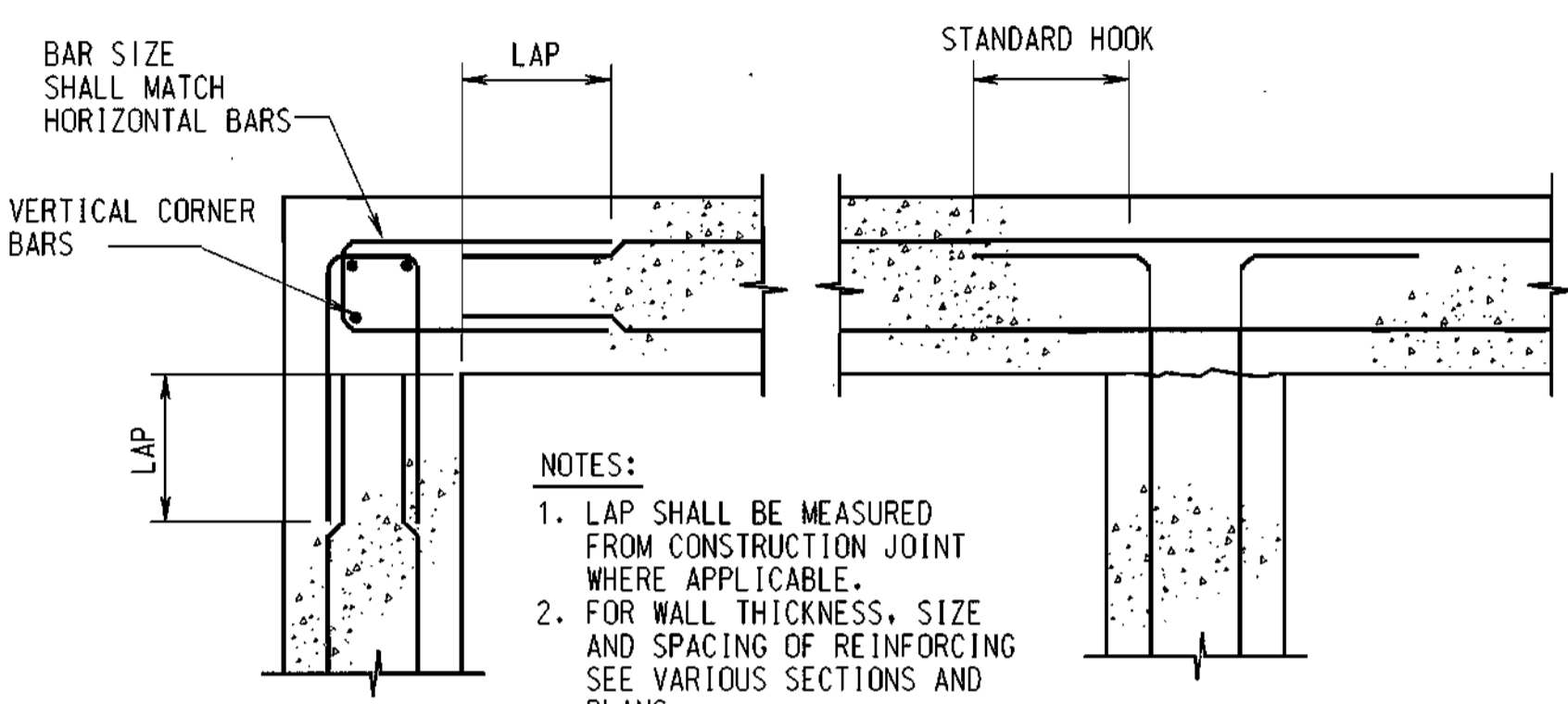
TYPICAL CURB DETAILS
SCALE: NONE



CONSTRUCTION JOINT IN SLAB ON GRADE
SCALE: NONE

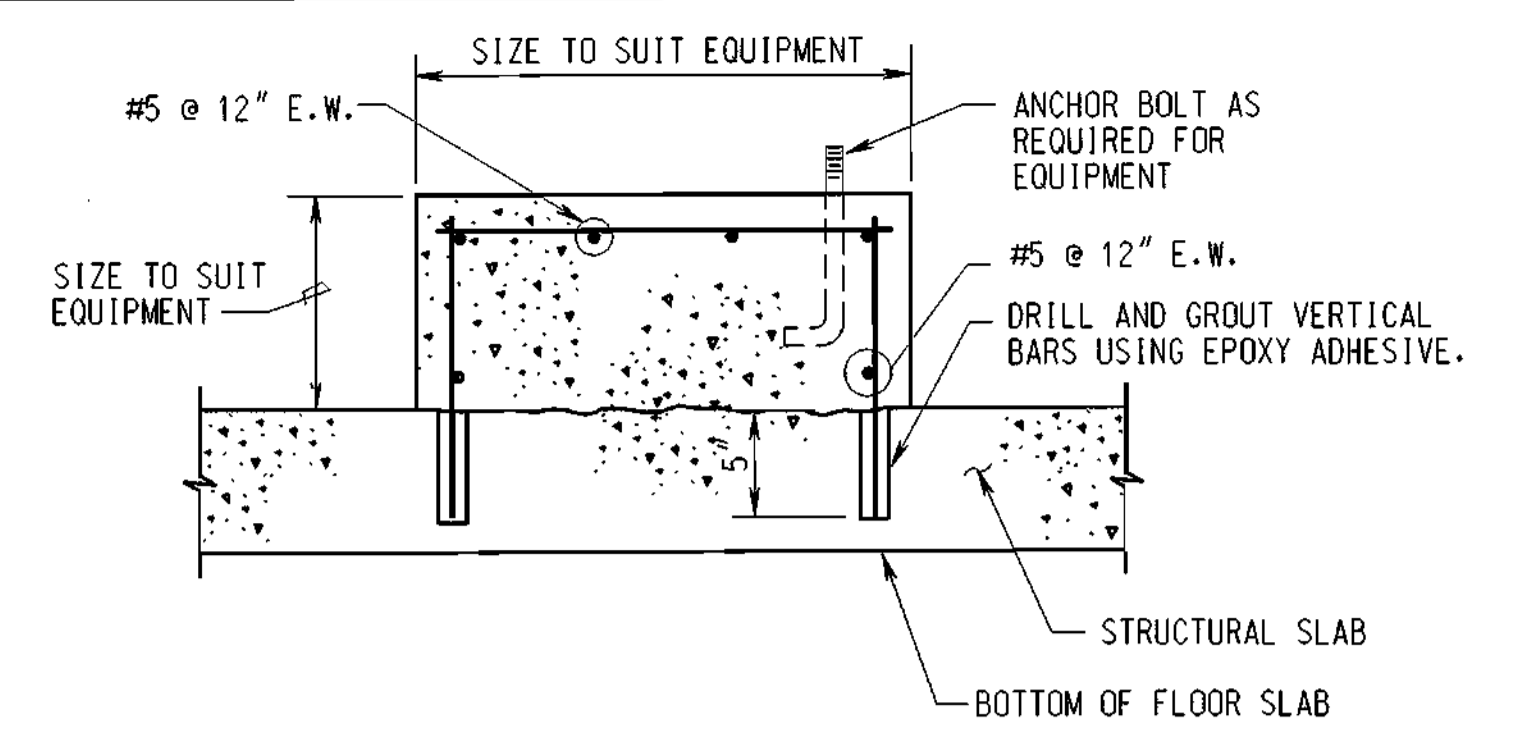


VERTICAL CONSTRUCTION JOINT IN WALL
SCALE: NONE

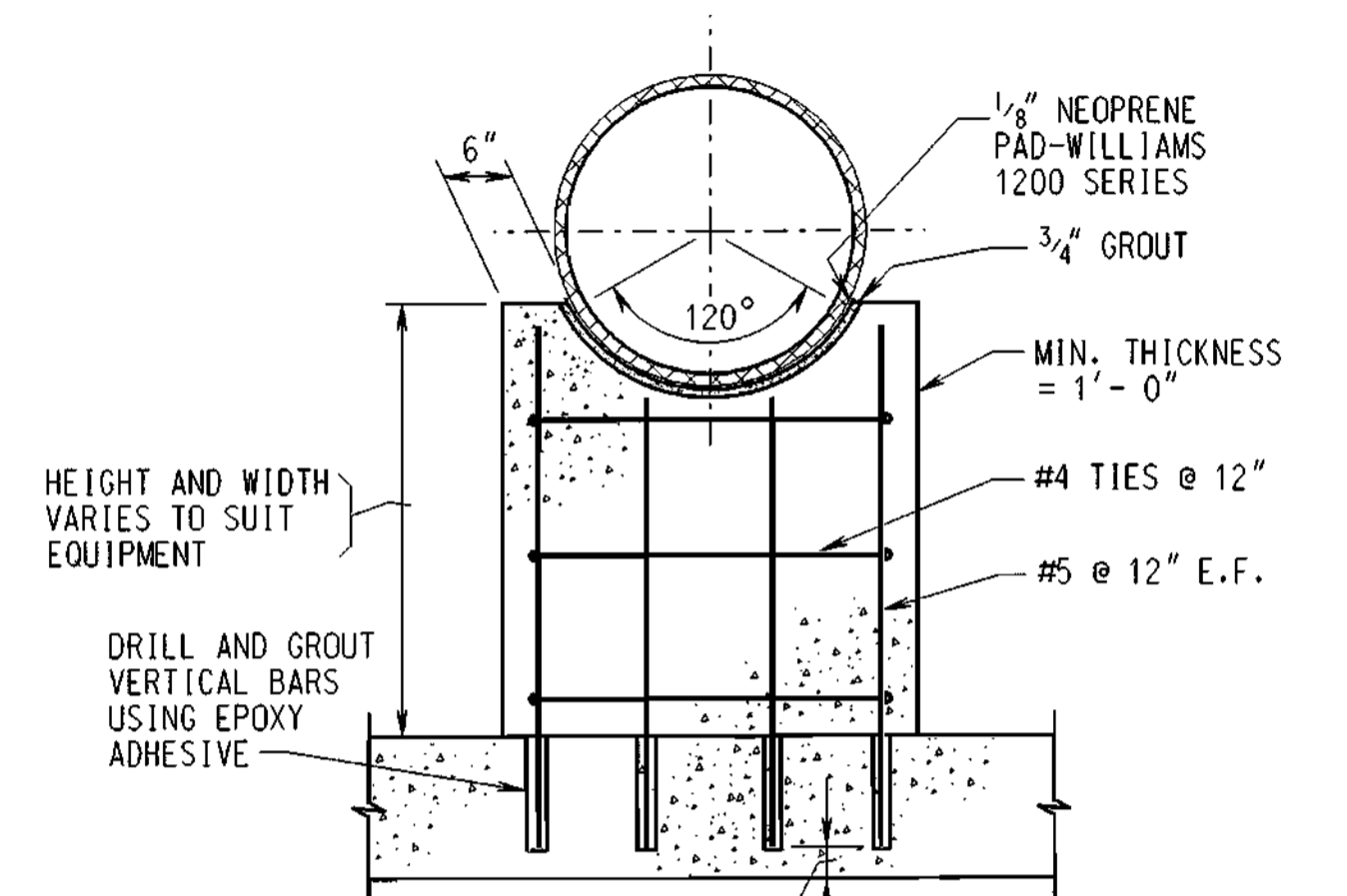


REINFORCING DETAILS AT WALL INTERSECTIONS
SCALE: NONE

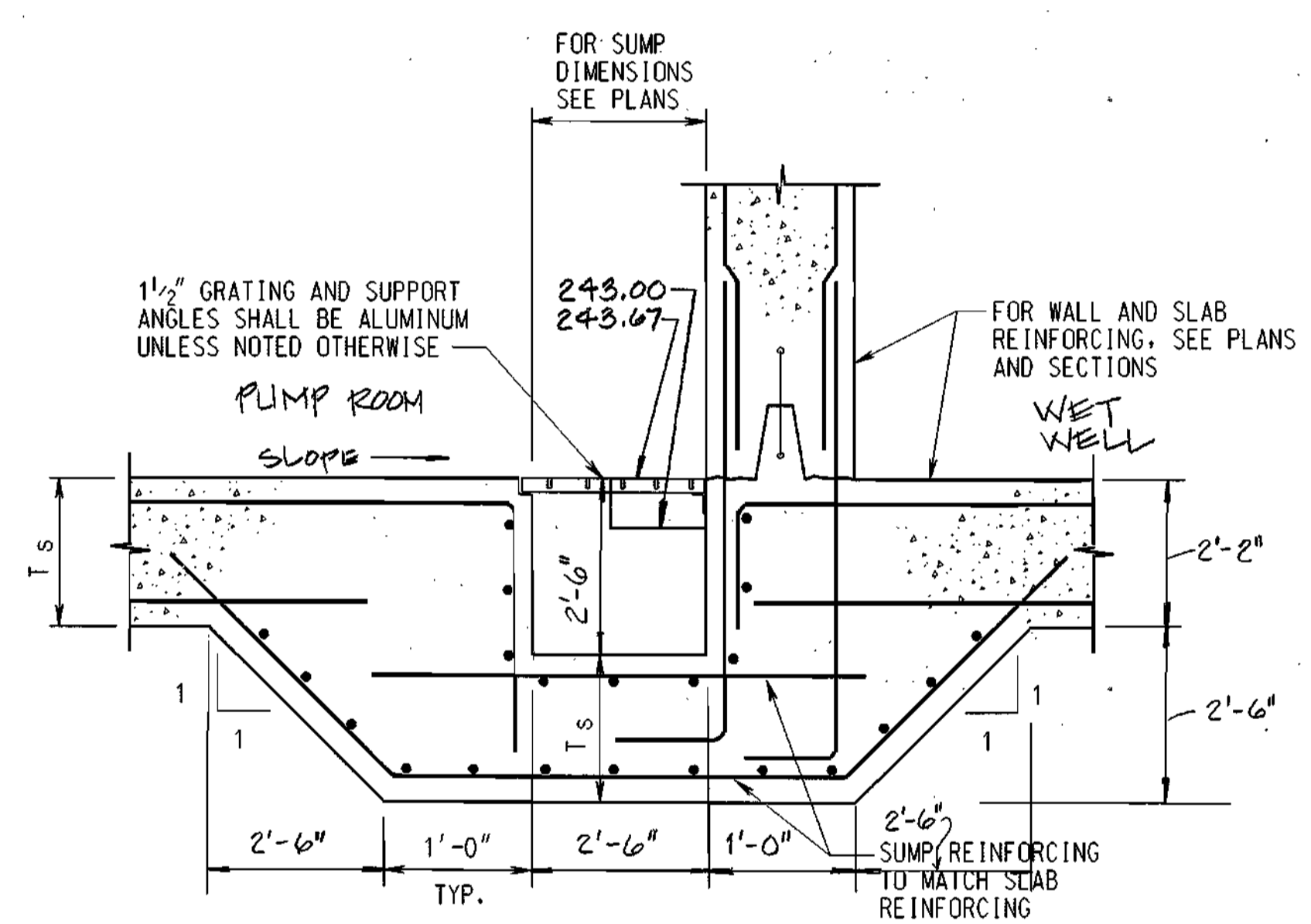
NOTES:
1. LAP SHALL BE MEASURED FROM CONSTRUCTION JOINT WHERE APPLICABLE.
2. FOR WALL THICKNESS, SIZE AND SPACING OF REINFORCING SEE VARIOUS SECTIONS AND PLANS.
3. VERTICAL REINFORCING NOT SHOWN FOR CLARITY.



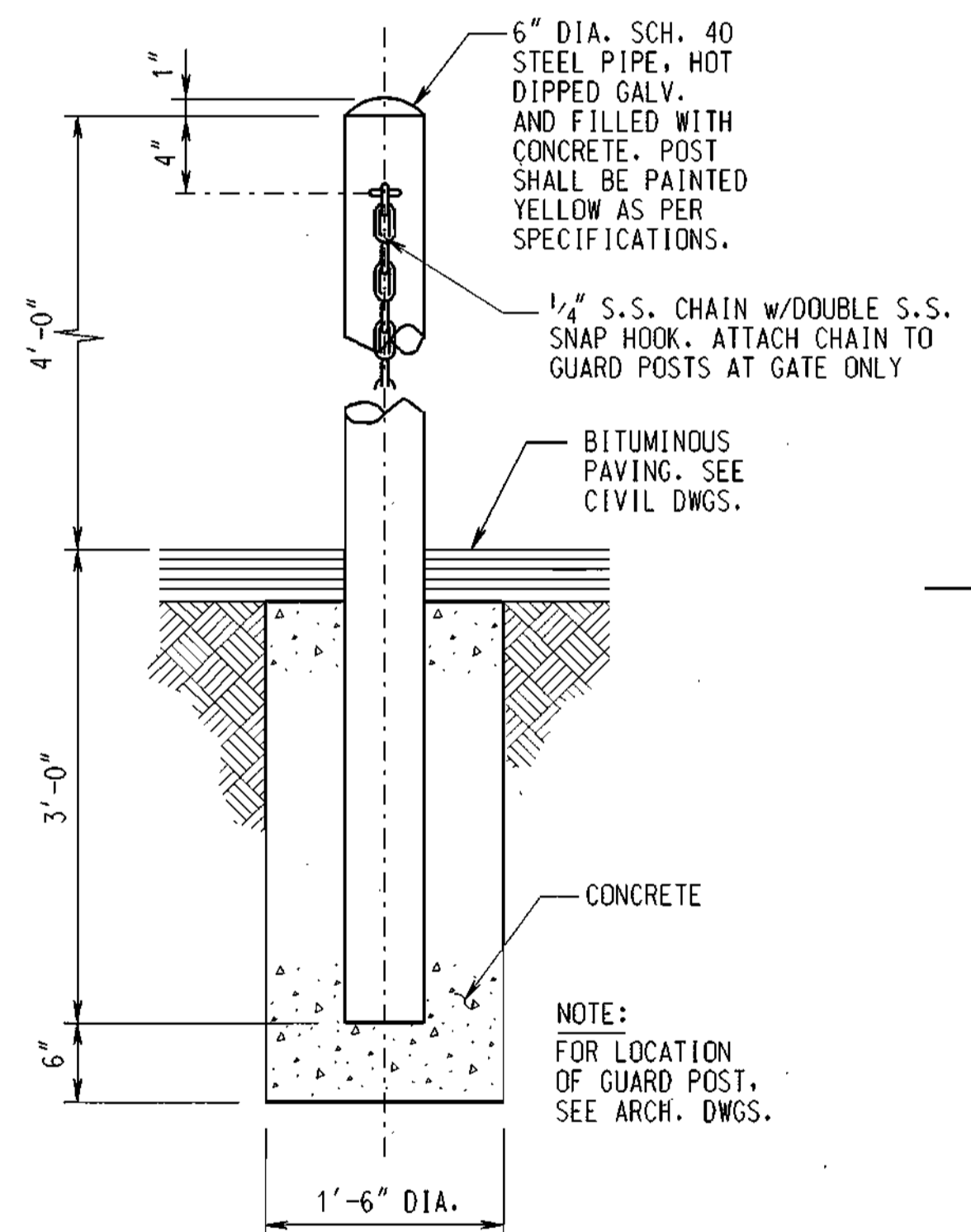
TYPICAL EQUIPMENT SUPPORT
SCALE: NONE



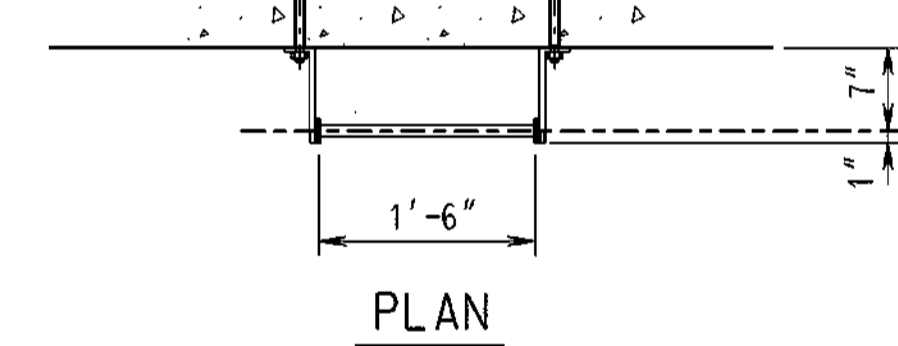
TYPICAL PIPE AND VALVE SUPPORT
SCALE: NONE



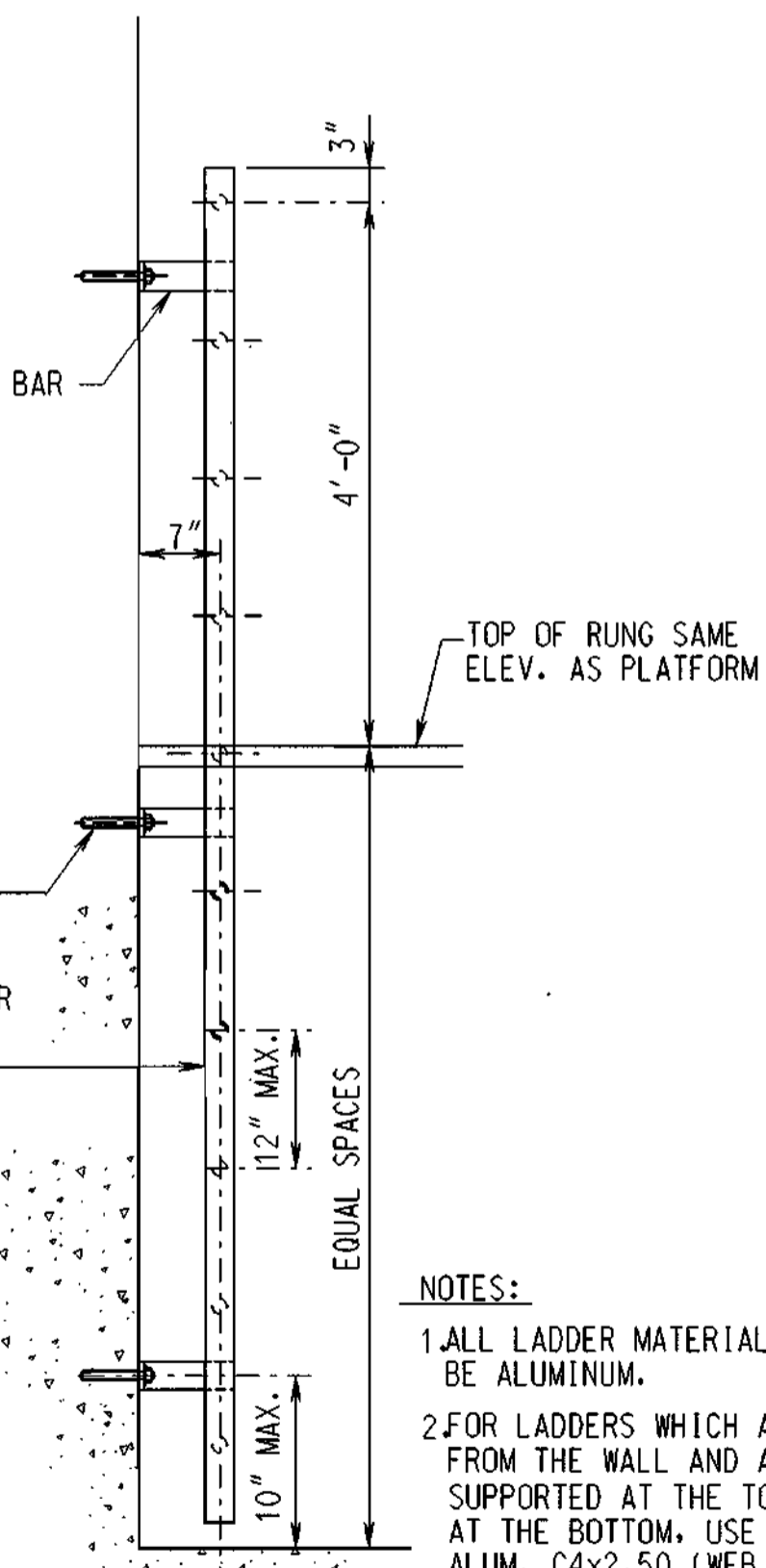
SECTION TYPICAL SUMP DETAIL
SCALE: NONE



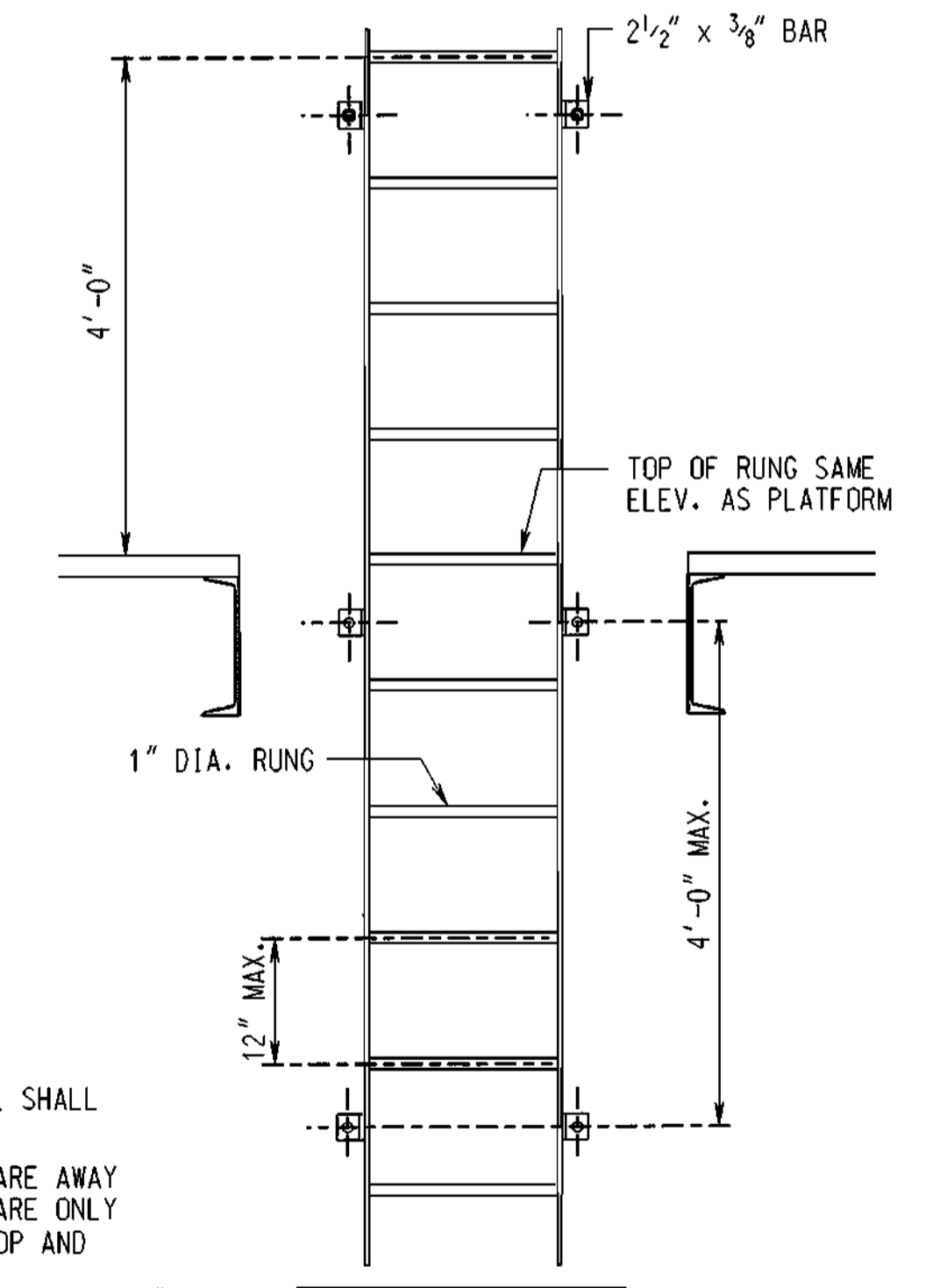
TYPICAL GUARD POST DETAIL
SCALE: NONE



TYPICAL RUNG DETAIL
SCALE: NONE

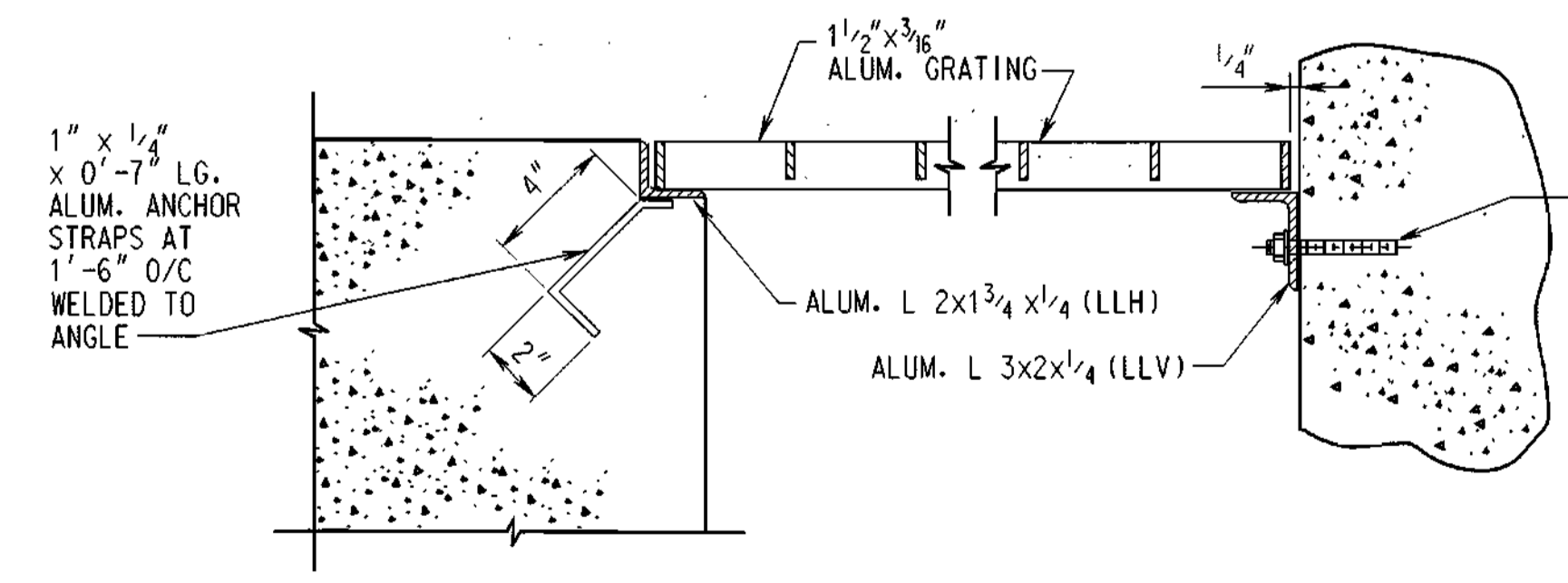


TYPICAL LADDER DETAILS
SCALE: 3/4" = 1'-0"



ELEVATION

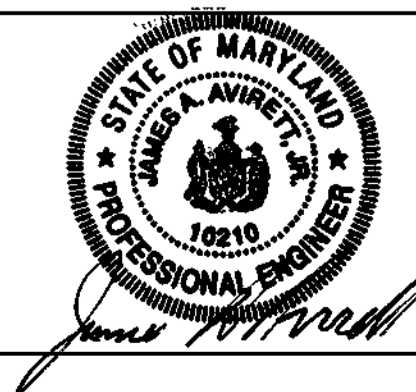
NOTES:
1. ALL LADDER MATERIAL SHALL BE ALUMINUM.
2. FOR LADDERS WHICH ARE AWAY FROM THE WALL AND ARE ONLY SUPPORTED AT THE TOP AND AT THE BOTTOM, USE ALUM. C4x2.50 (WEB THICK. .32") AS RAILS



TYPICAL EDGE ANGLE DETAIL
SCALE: NONE

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

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

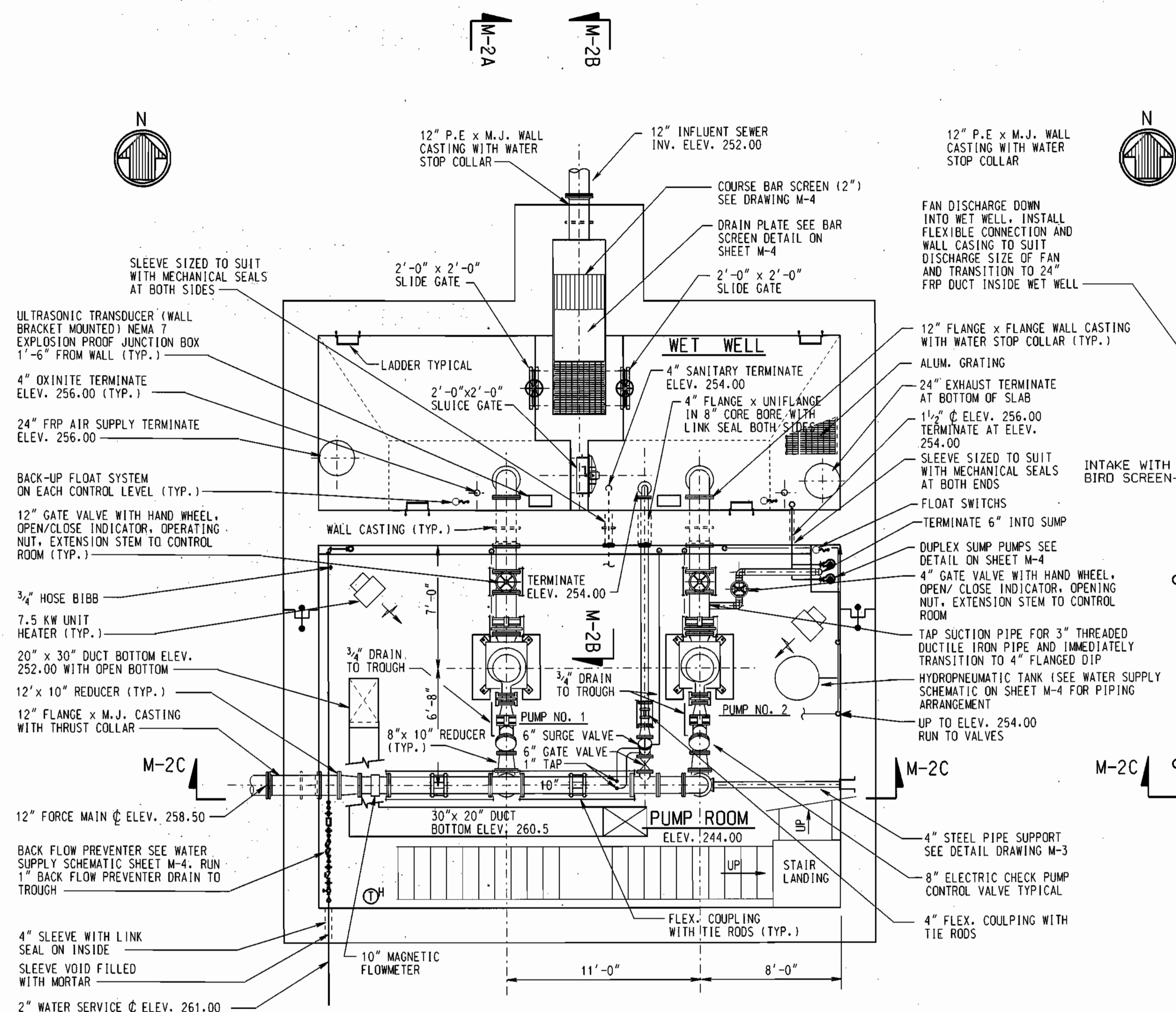


DES: JGL			
DRN: LAR			
CHK: JOA			
DATE: 11/12/98			
BY: NO.		REVISION	DATE
		RECORD DRAWING	8-25-00

TYPICAL DETAILS
600' SCALE MAP NO. _____ BLOCK NO. _____

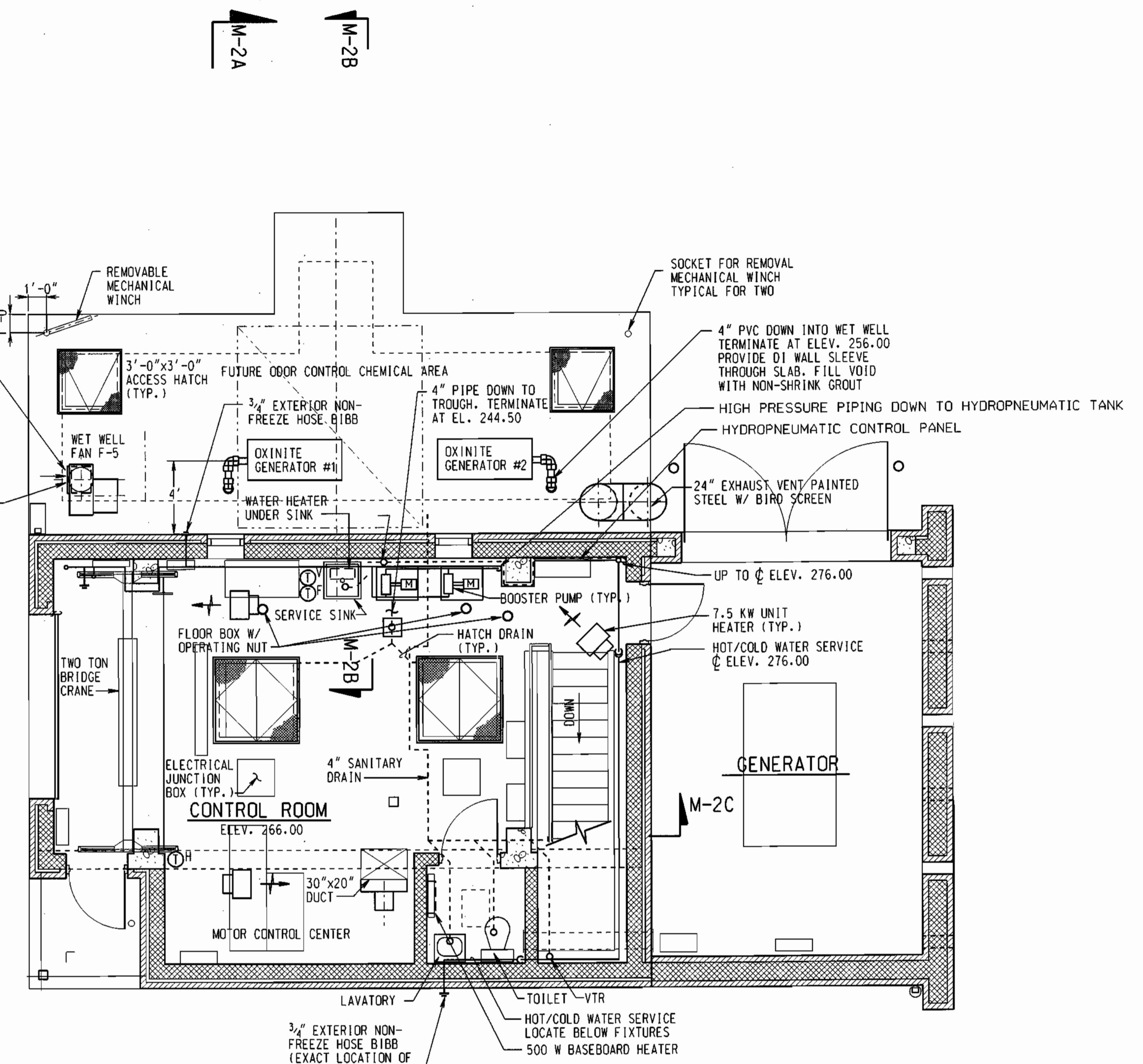
RECORD DRAWING
11/16/02
ROCKBURN WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6200
CONTRACT NO. 10-3695
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

S-8
SCALE AS SHOWN
SHEET 22 OF 36
NOVEMBER 12, 1998



FLOOR PLAN - PUMP ROOM AND WET WELL

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

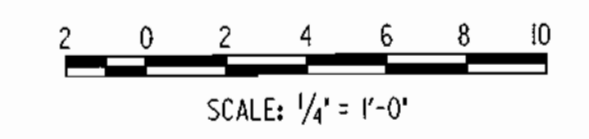


FLOOR PLAN - CONTROL ROOM

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

NOTE:
THE CONTRACTOR SHALL SUPPLY ONE FLANGE X FLANGE SECTION OF 10" DUCTILE IRON PIPE OF APPROPRIATE LENGTH TO INSERT IN PLACE OF MAGNETIC FLOWMETER.

GRAPHIC SCALES

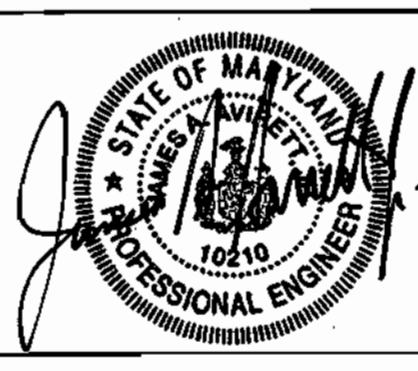


RECORD DRAWING
11/12/02

M-1
SCALE AS SHOWN
SHEET 23 OF 36

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

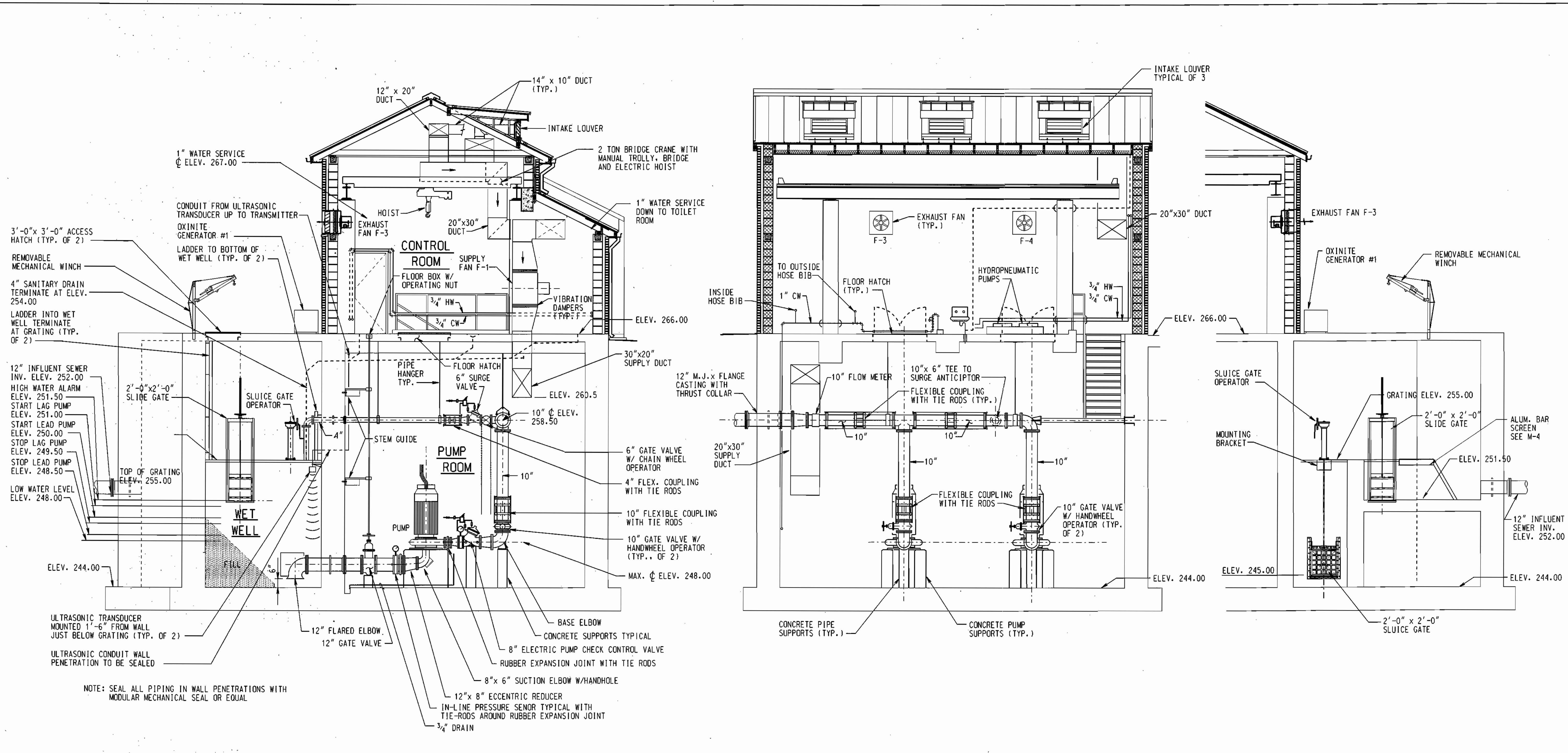
PREPARED BY:
WR&A
Whitman, Reardon and Associates, LLP.



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

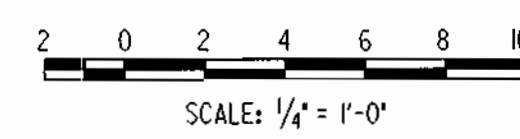
SECTION M-2C / M-1

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

SECTION M-2B / M-1

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

GRAPHIC SCALES



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

John A. ... 1/30/03
DIRECTOR OF PUBLIC WORKS DATE

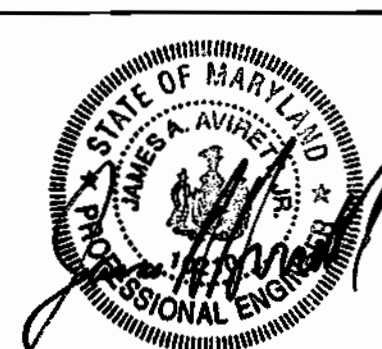
Robert ... 1/29/03
CHIEF, BUREAU OF ENGINEERING DATE

... 1-30-02
CHIEF, BUREAU OF UTILITIES DATE

... 1-29-03
CHIEF, UTILITY DESIGN DIVISION DATE

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

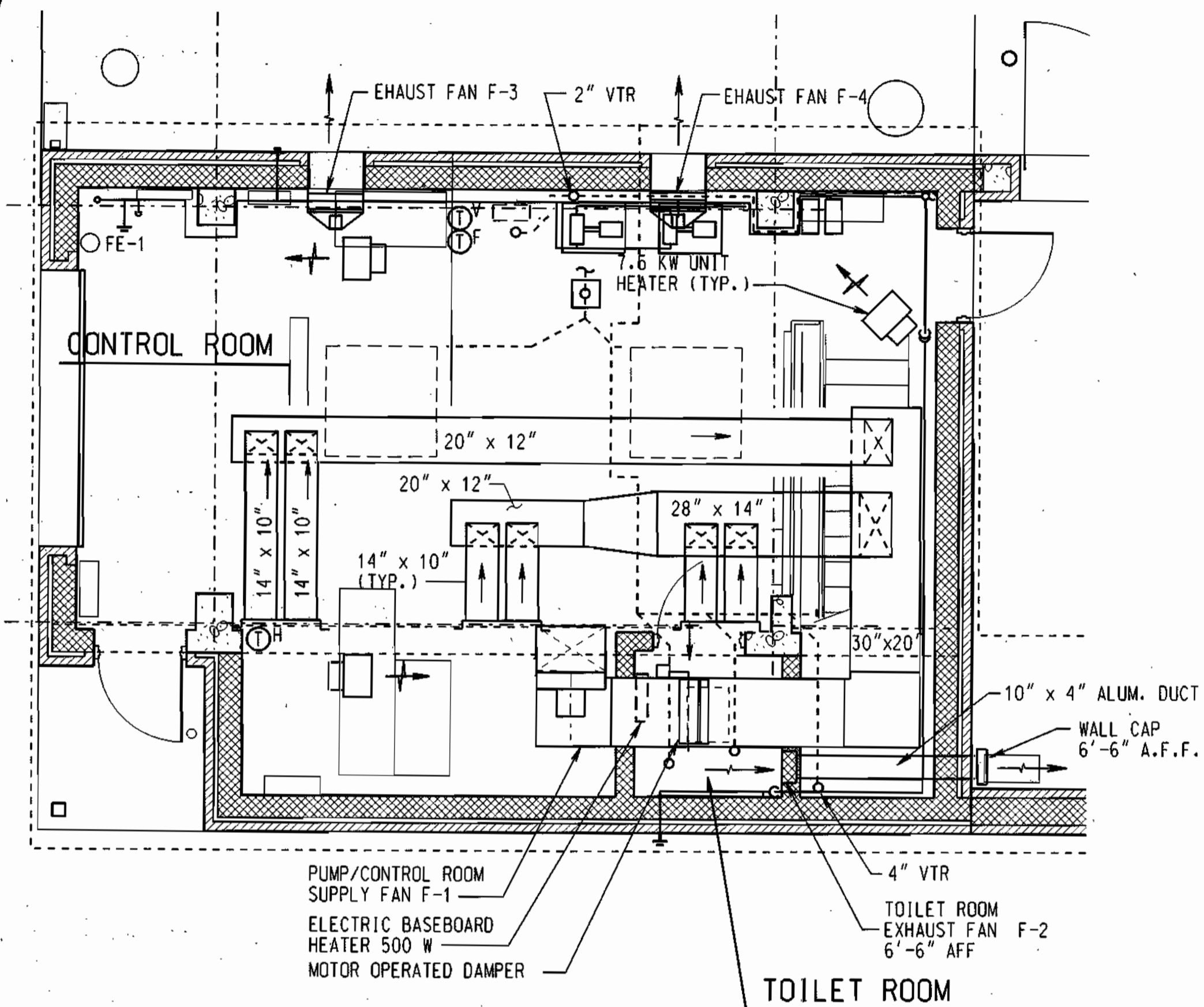
SECTIONS

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

RECORD DRAWING
11/12/02

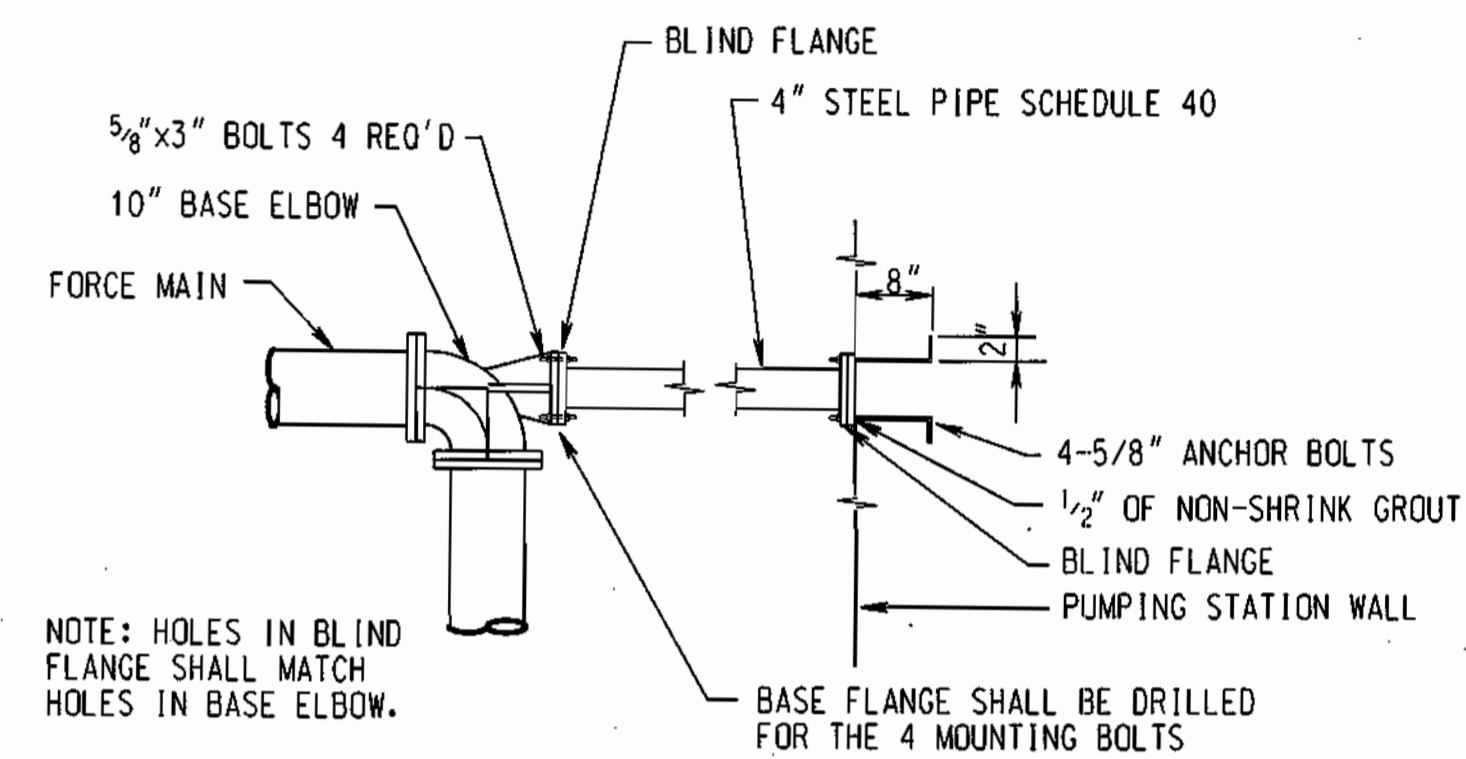
M-2
SCALE AS SHOWN
SHEET 24 OF 36



CONTROL ROOM - HEATING AND VENTILATION PLAN

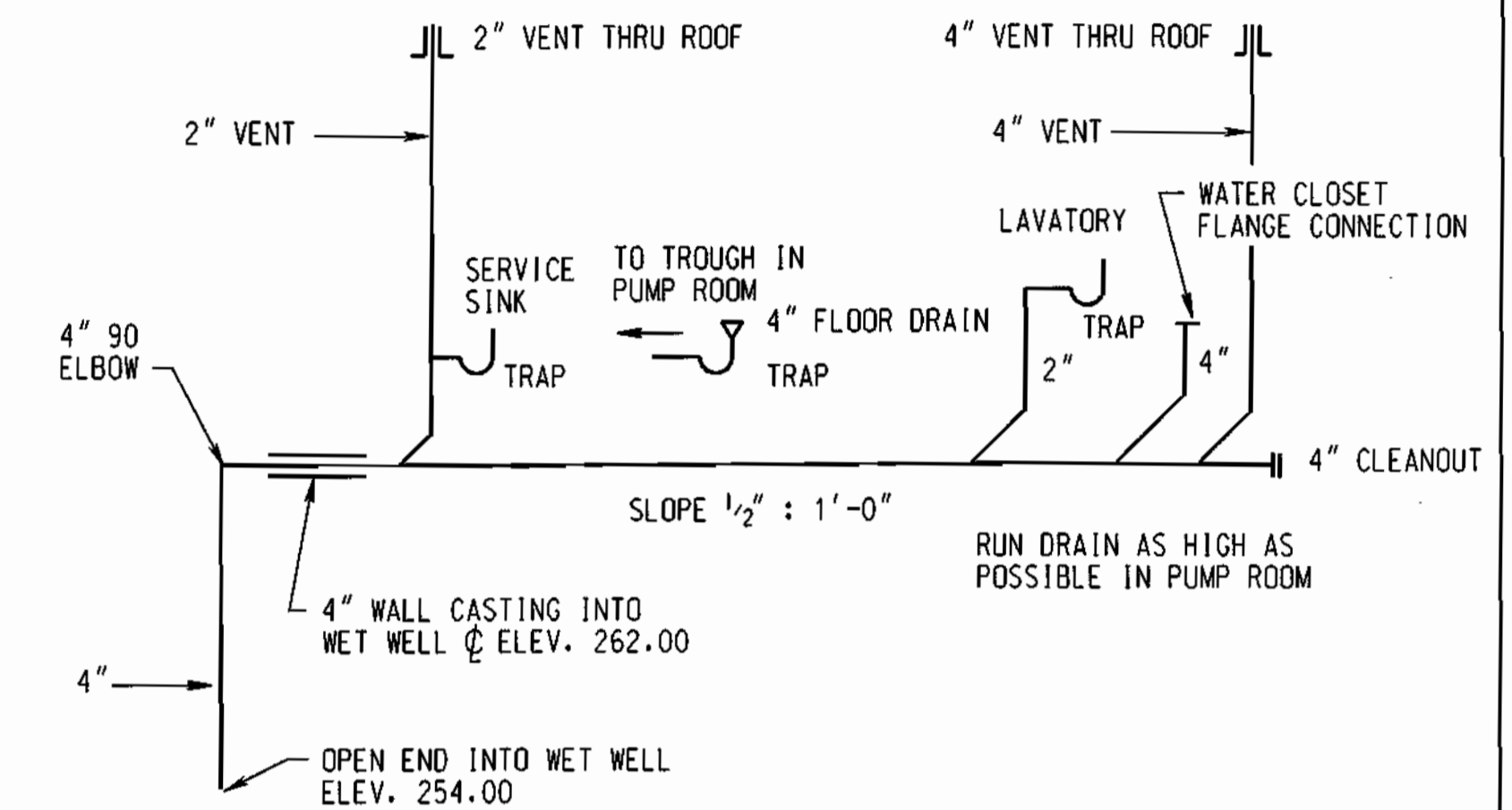
SCALE 1/4" = 1'-0"

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.



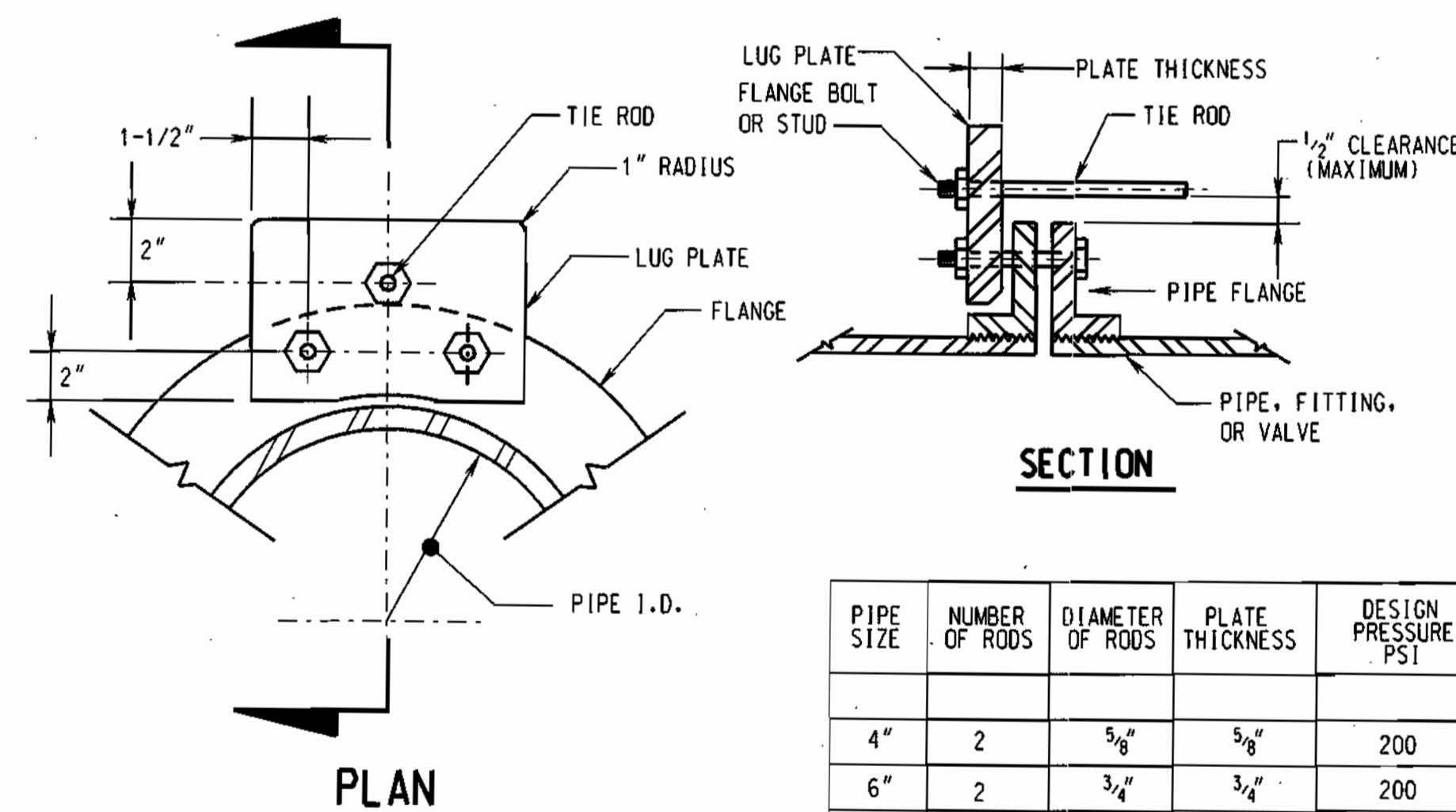
DETAIL 4" PIPE SUPPORT

NO SCALE



SANITARY WASTE & DRAIN PIPING RISER DIAGRAM

NO SCALE

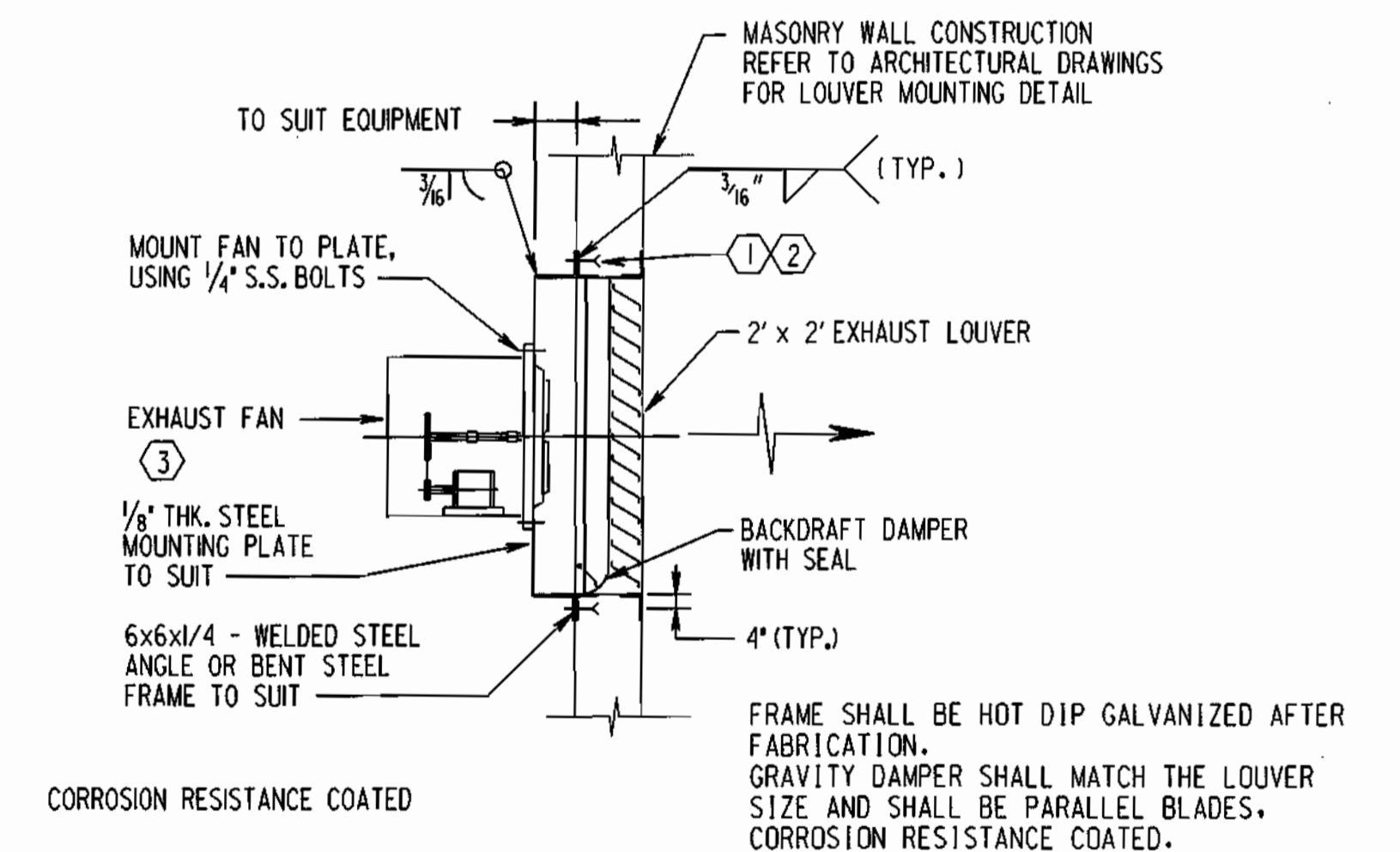


PIPE SIZE	NUMBER OF RODS	DIAMETER OF RODS	PLATE THICKNESS	DESIGN PRESSURE PSI
4"	2	5/8"	5/8"	200
6"	2	3/4"	3/4"	200
8"	2	7/8"	1"	200
10"	4	3/4"	1"	200
12"	4	3/4"	1"	200

ROD MATERIAL - ASTM A307
 PLATE MATERIAL - ASTM A36
 SLEEVE MATERIAL - SCHEDULE 40 STEEL PIPE

HARNESSING DETAIL

NO SCALE

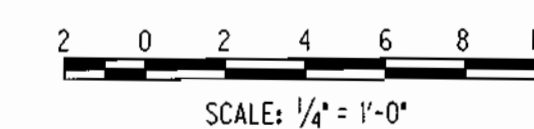


WALL EXHAUST FAN DETAIL

NO SCALE

- ① FOR BLOCK WALL ANCHORING USE HILTI STD. (HT) 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



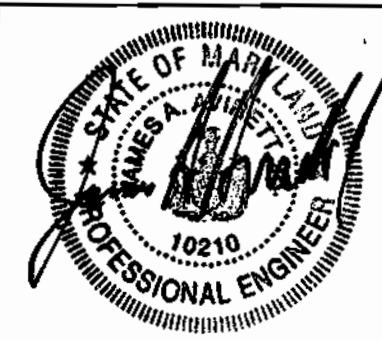
RECORD DRAWING
11/18/02

M-3

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

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

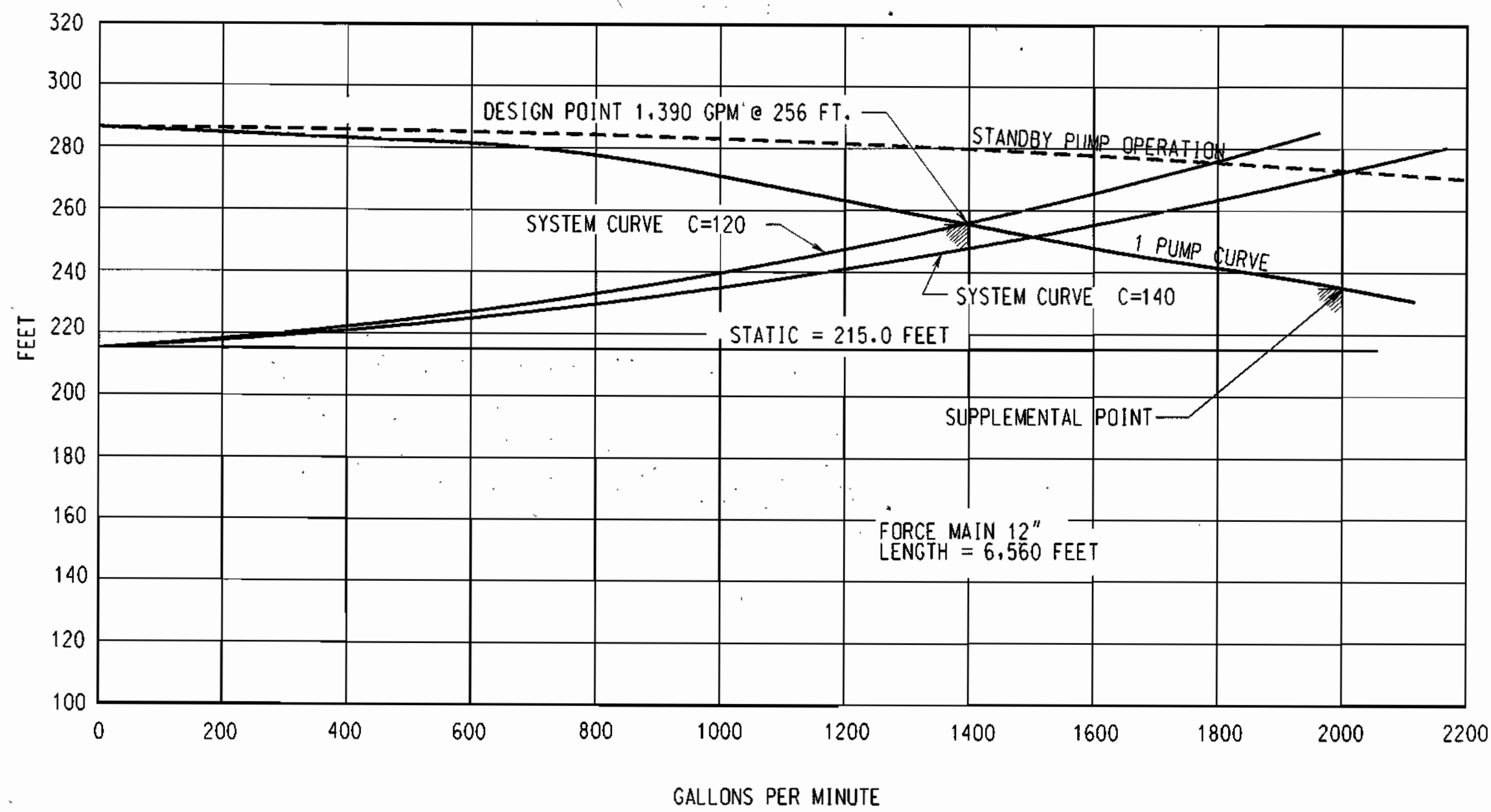
PLAN AND DETAILS

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

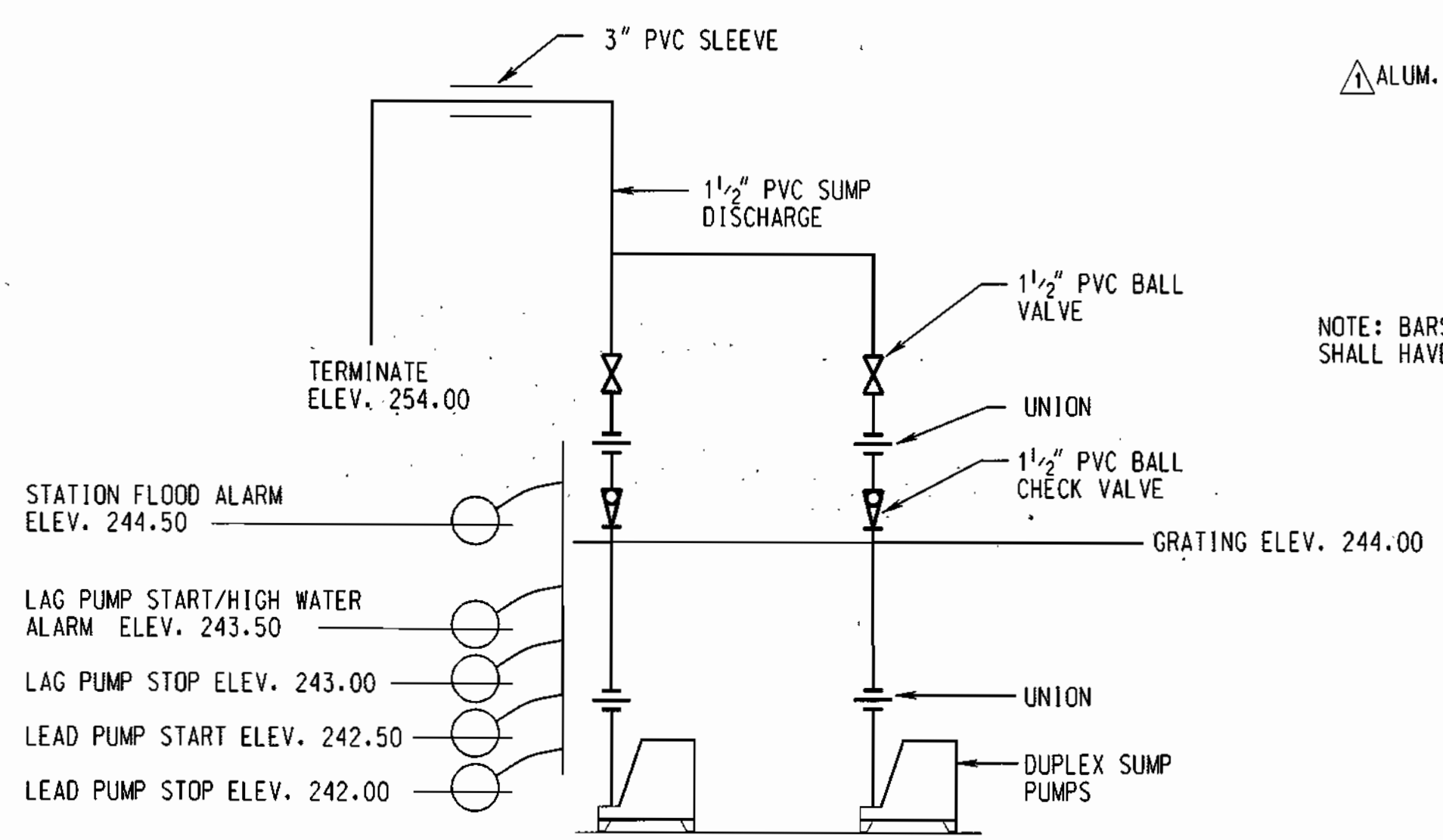
SCALE AS SHOWN

SHEET 25 OF 36



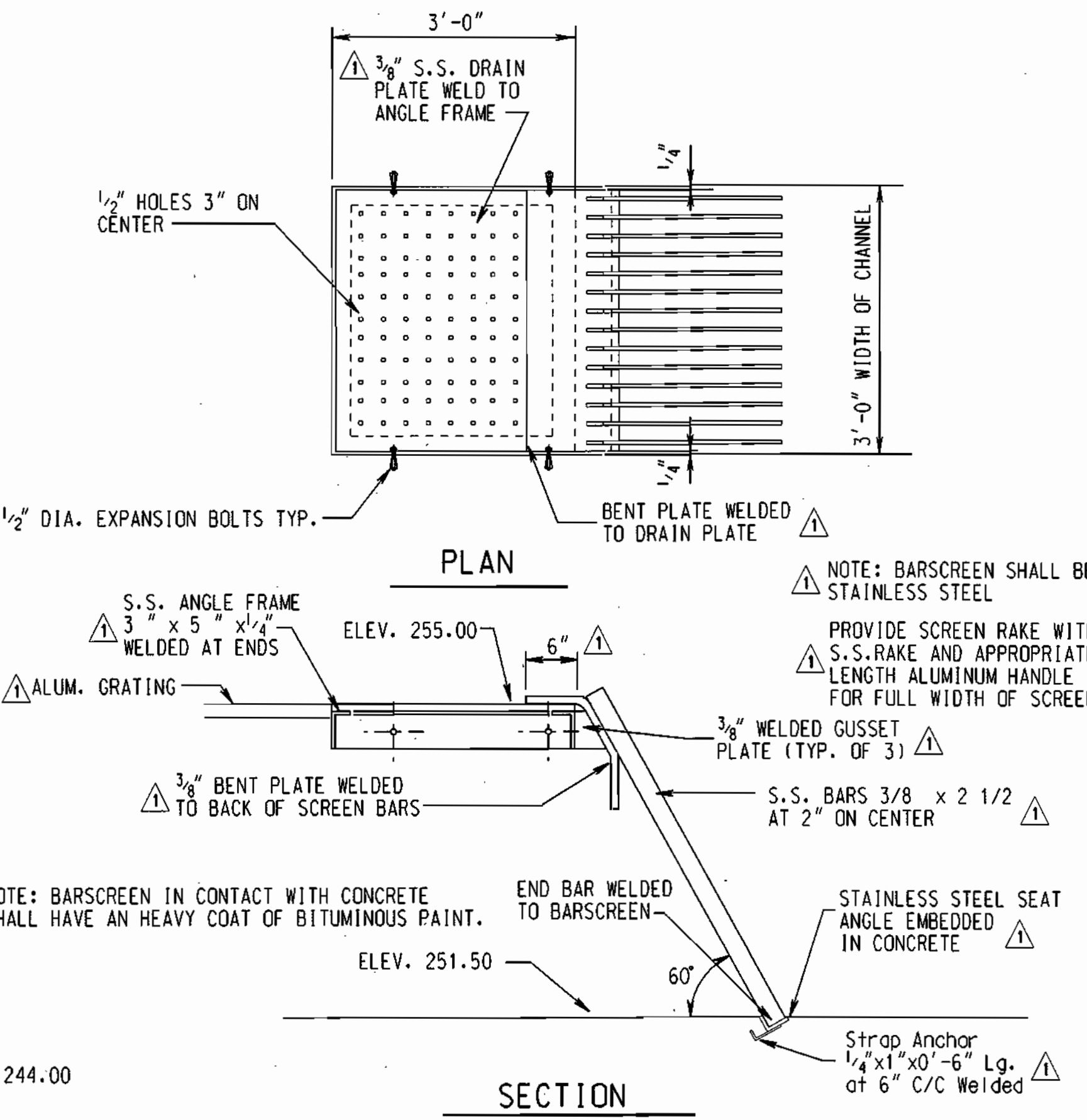
PUMP CRITERIA	
MANUFACTURER.....	CORNELL PUMP COMPANY OR KSB
MODEL.....	6NHTR OR EQUAL OF KSB
DESIGN POINT CAPACITY (MIN.).....	1,390 GPM
DESIGN POINT TOTAL HEAD (MIN.).....	256 FT.
DESIGN POINT EFFICIENCY (MIN.).....	67 PERCENT
SUPPLEMENTARY POINT CAPACITY.....	2000 GPM
SUPPLEMENTARY POINT TOTAL HEAD.....	235 FEET
SHUTOFF HEAD (MIN.).....	285 FEET
SUPPLEMENTARY POINT EFFICIENCY (MIN.).....	PERCENT
DESIGN POINT NPSHR (MAX.).....	16 FEET
SUPPLEMENTARY POINT NPSHR.....	21 FEET
SUCTION SIZE (MIN.).....	6 INCHES
DISCHARGE SIZE (MAX.).....	6 INCHES
MOTOR HORSEPOWER (MAX.).....	200
PUMP/MOTOR (MAX.).....	1800 RPM
SOLIDS PASSAGE (MIN.).....	3 INCHES DIAMETER

SYSTEM CHARACTERISTICS



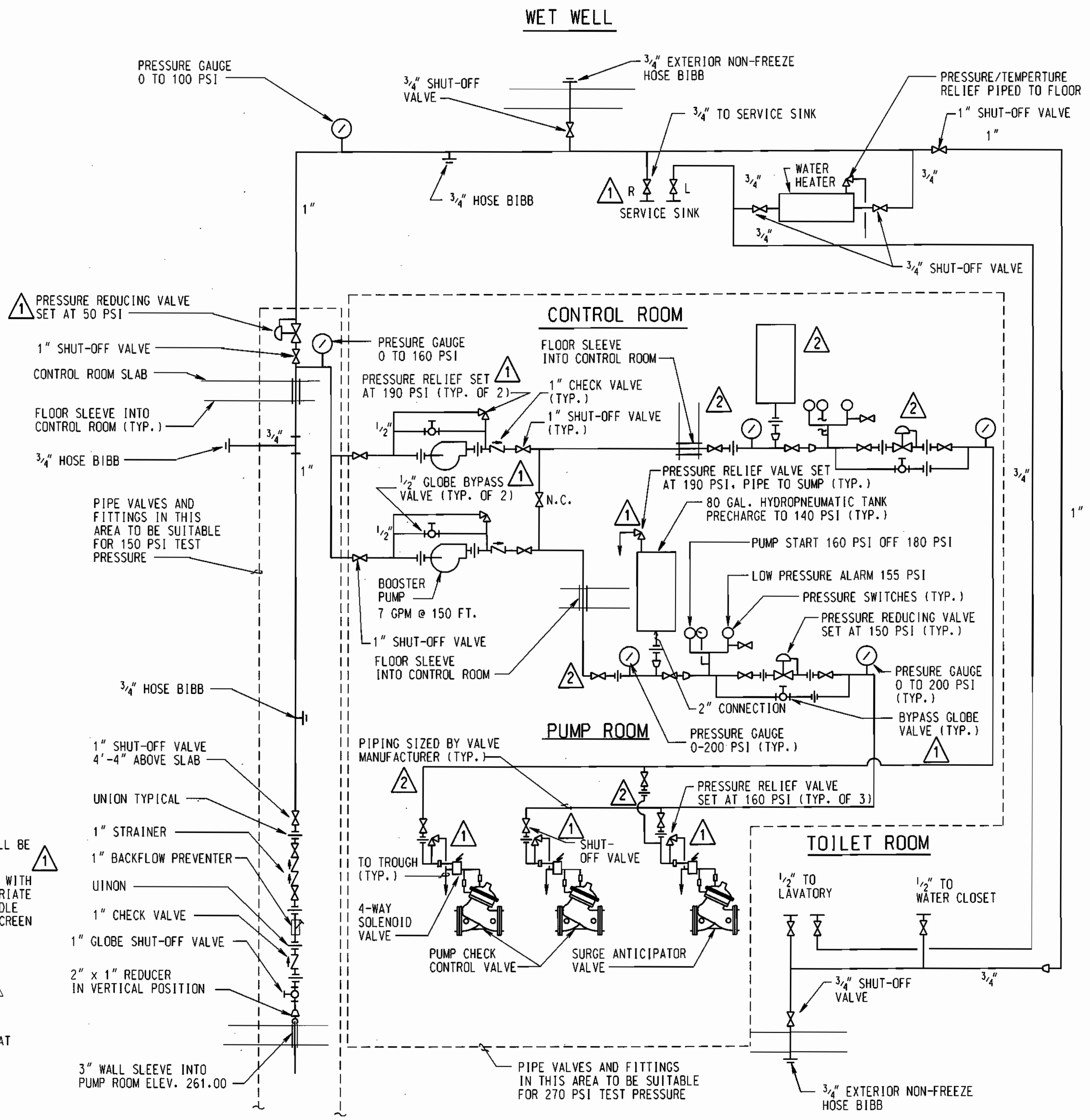
SUMP PUMP PIPING DIAGRAM

NO SCALE



BARSscreen DETAIL

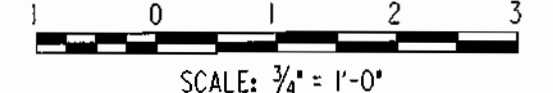
NO SCALE



WATER SUPPLY SCHEMATIC

NO SCALE

GRAPHIC SCALES



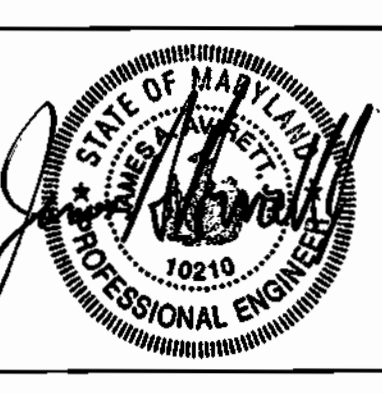
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Jan 7 2003
Director of Public Works

1/30/03
Chief, Bureau of Utilities

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	RECORD DRAWING	8/02
BY :		REVISION	

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

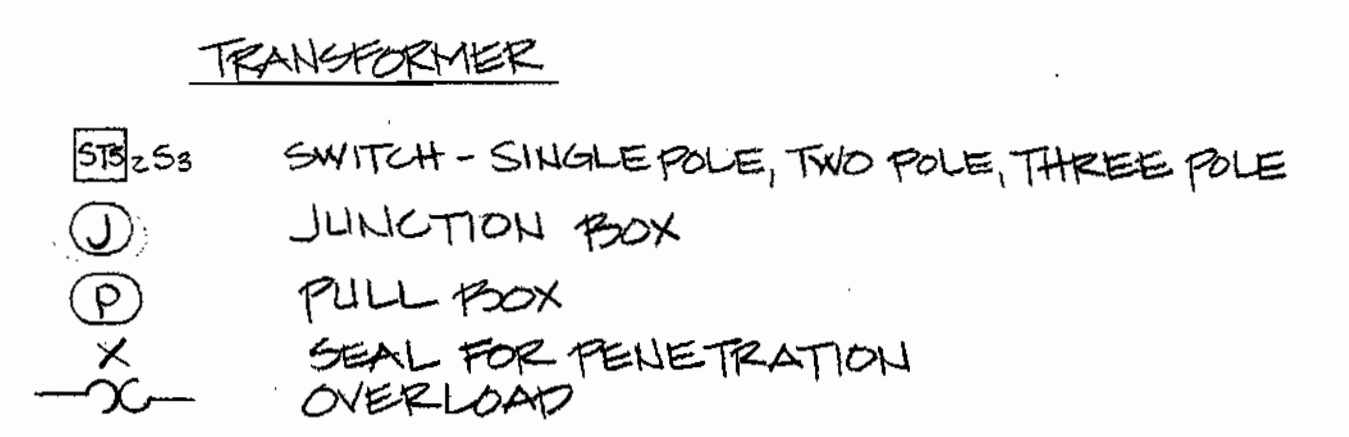
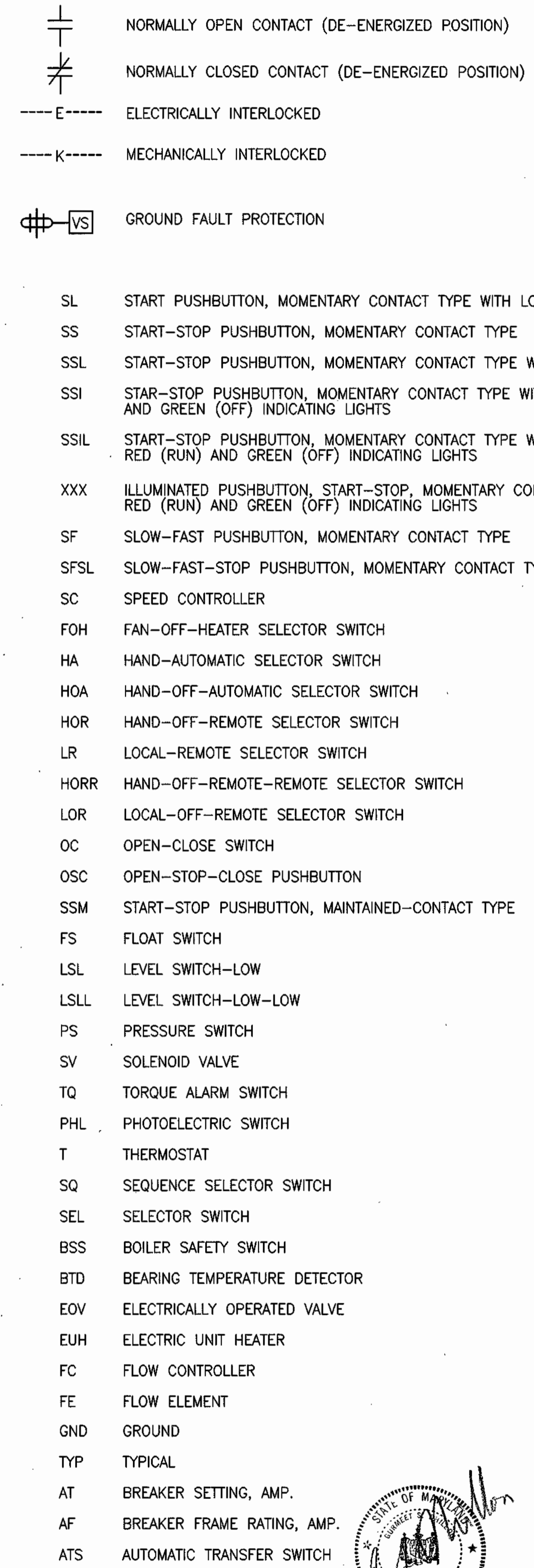
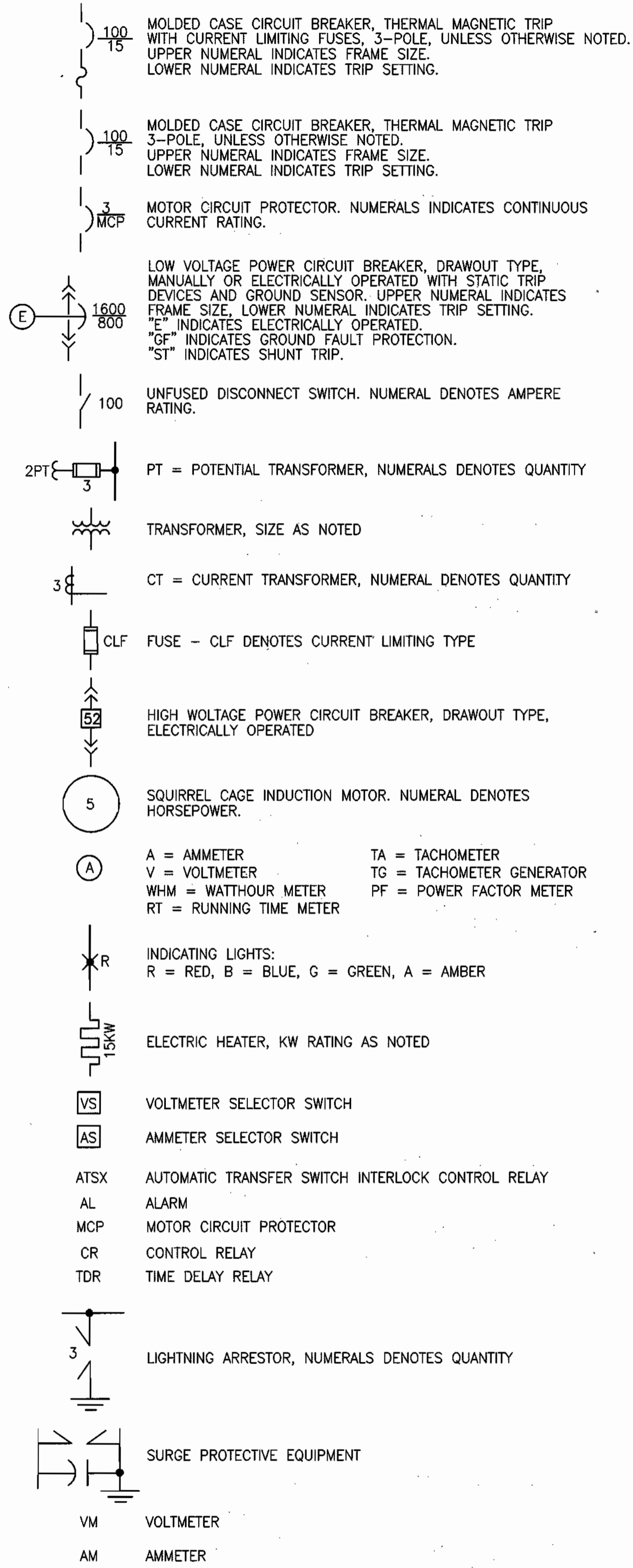
11/10/02
**RECORDED
DRAWING**

M-4

SCALE AS SHOWN

SHEET
26 OF 36

**ELECTRICAL LEGEND:
FOR SINGLE LINE DIAGRAMS**



ABBREVIATIONS:

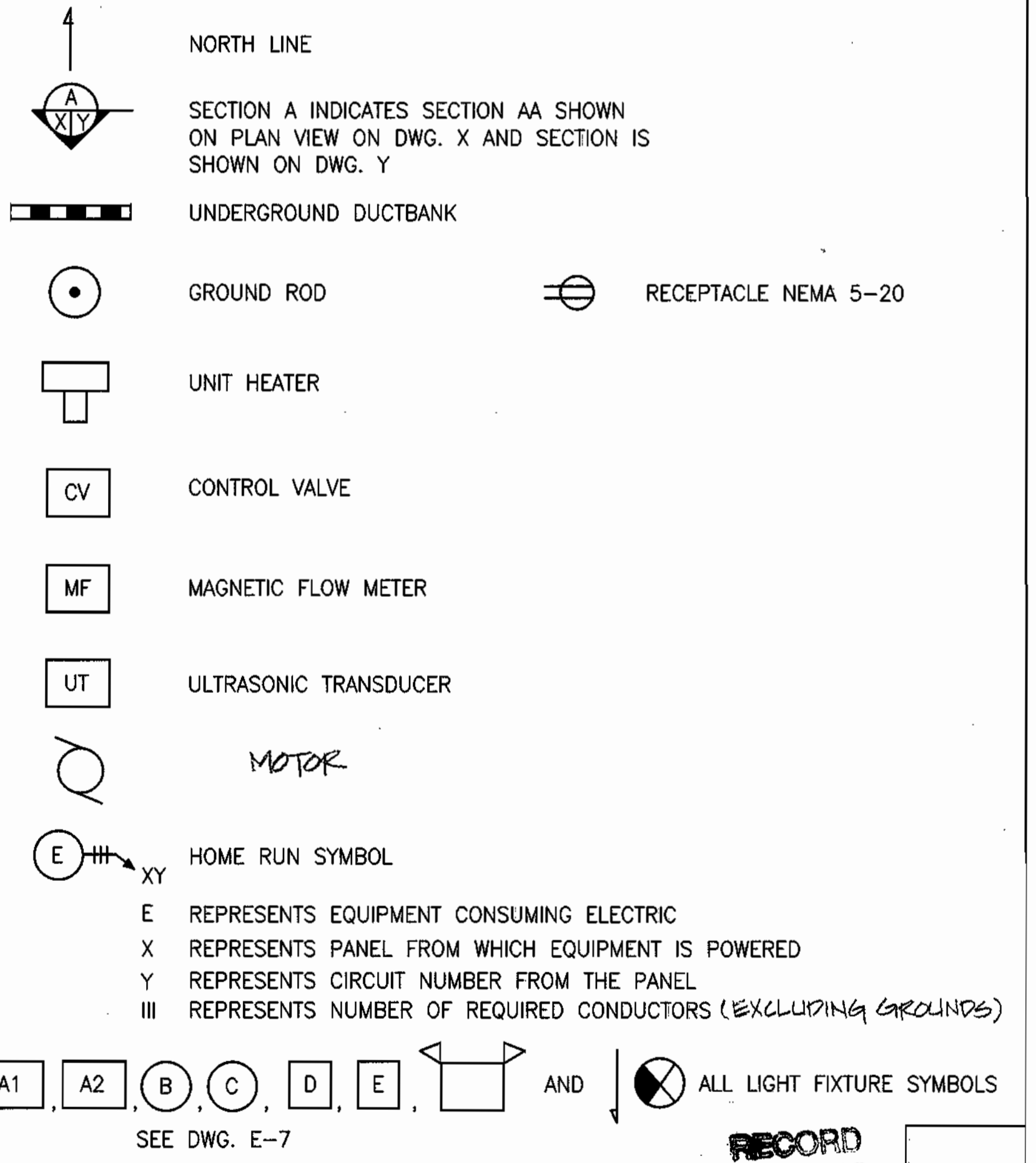
- GRS** GALVANIZED RIGID STEEL
XFMR TRANSFORMER
RTU REMOTE TERMINAL UNIT
HMI HUMAN MACHINE INTERFACE
FIT FLOW INDICATING TRANSMITTER
FT FLOW TRANSMITTER
HE HEAT EXCHANGER
HC HYDROPNEUMATIC CONTROL PANEL
HLS HIGH LEVEL SHUTDOWN
TG TACHOMETER GENERATOR
MICC MAIN INSTRUMENTATION CONTROL CUBICLE
LC LEVEL 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 & FREEZE STAT 5'-0" AFF

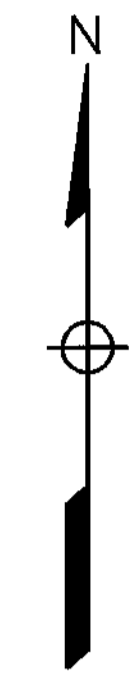
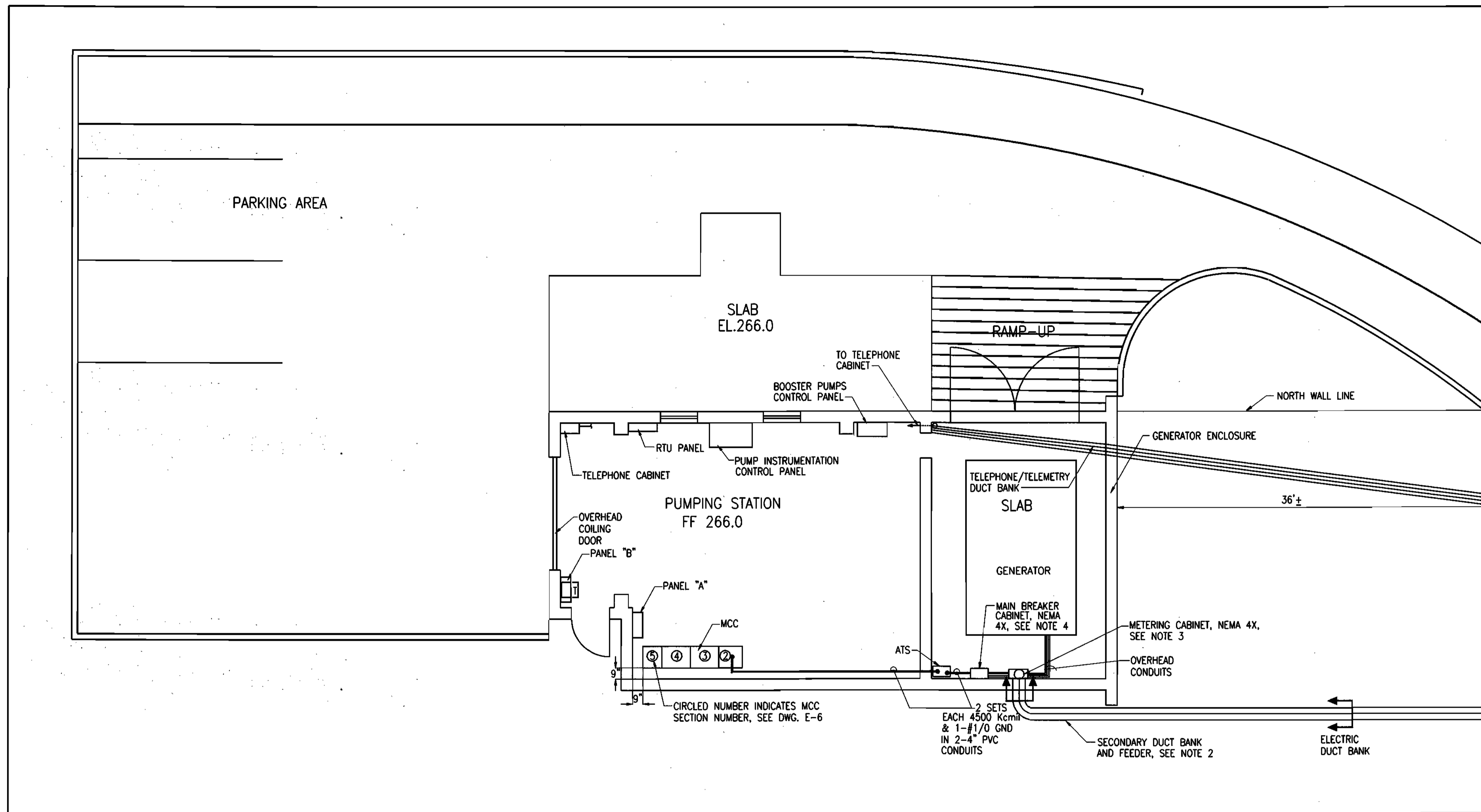
ELECTRICAL GENERAL NOTES:

- 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.

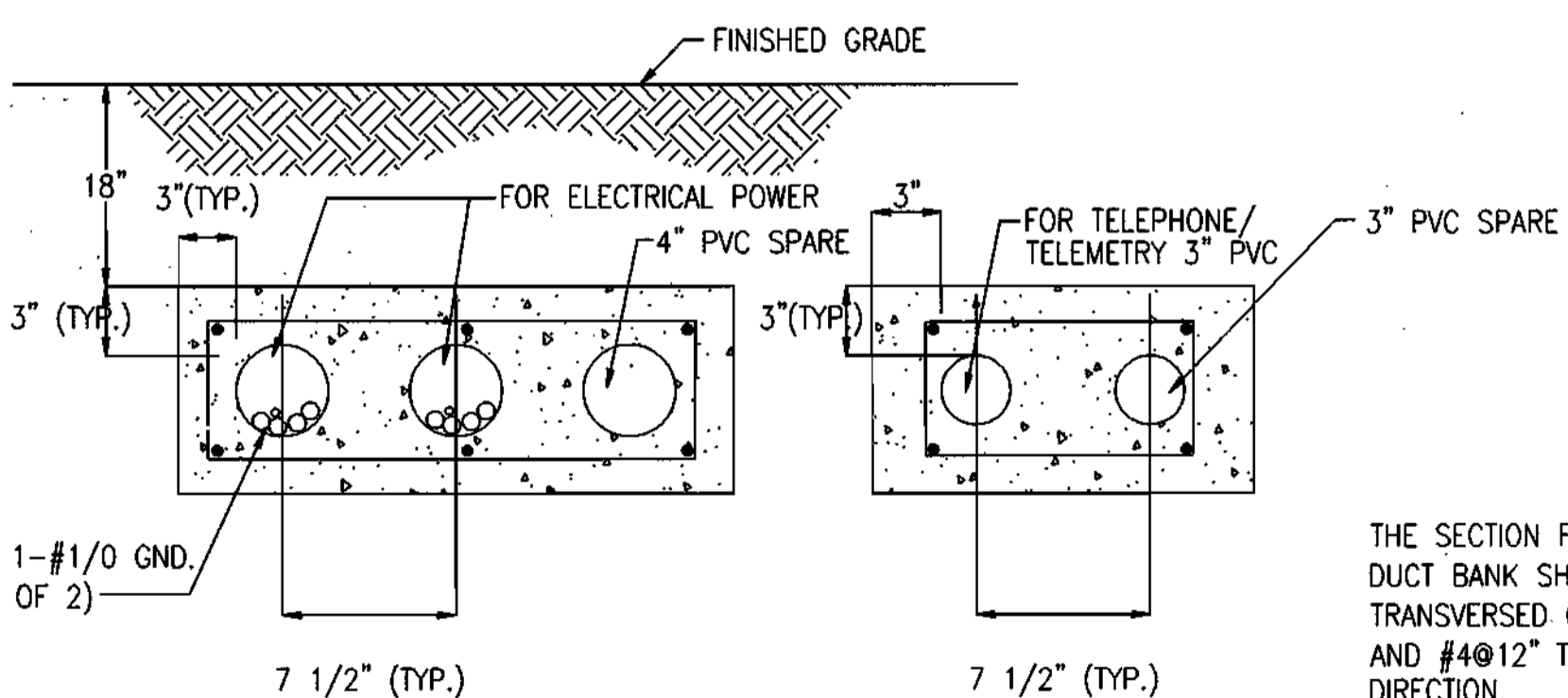
ELECTRICAL PLAN LEGEND



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. Director of Public Works: <i>Robert J. Reardon</i> 1/15/99 Chief, Bureau of Engineering: <i>Robert J. Reardon</i> 1/15/99 Chief, Bureau of Utilities: <i>Robert J. Reardon</i> 1/15/99 ACP Chief, Water and Sewer Design: <i>Robert J. Reardon</i> 1/15/99		PREPARED BY: WR&A Whittan, Requardt and Associates, LLP.	DES: BJD DRN: VL/DKP CHK: GED DATE: 11/11/98	DHILLON ENGINEERING, INC. 11400 CROWDROVE DRIVE, SUITE D OWINGS MILLS, MD 21117	ELECTRICAL LEGEND, ABBREVIATIONS AND GENERAL NOTES.	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
			RECORDED DRAWING 8-23-02		600' SCALE MAP NO. _____ BLOCK NO. _____	RECORD DRAWING 11/16/02	E-1

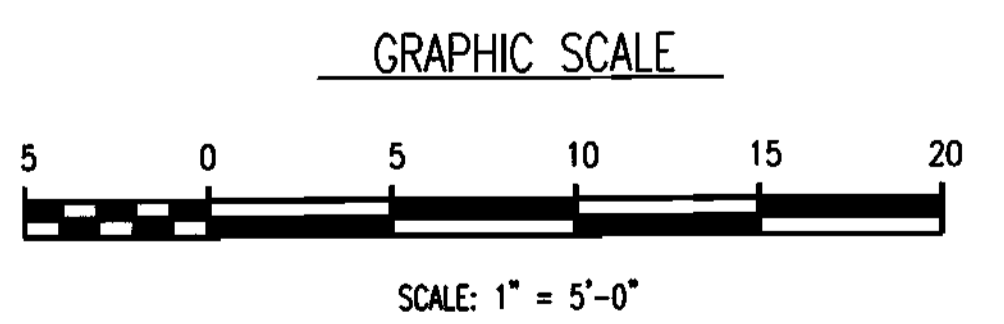


- NOTES:**
- TRANSFORMER PAD. CONTRACTOR TO COORDINATE DESIGN OF CONCRETE PAD WITH BG&E AND PROVIDE COMPLETE CONCRETE PAD.
 - CONTRACTOR TO PROVIDE DUCT BANK AS SHOWN ON THIS DRAWING. BG&E TO INSTALL PRIMARY AND SECONDARY FEEDERS THROUGH THE DUCT BANK.
 - METERING CABINET SHALL BE NEMA 4X, AS APPROVED 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.
 - MAIN BREAKER CABINET SHALL BE NEMA 4X, TO BE WALL MOUNTED.
 - SEE DRAWING C-1 FOR LIMITS OF CONSTRUCTION FOR TELEPHONE AND PRIMARY FEEDER, PRIMARY AND SECONDARY FEEDER BY BGE.



PLAN
SCALE: 1" = 5'-0"

THE SECTION FOR THE POWER AND THE TELEPHONE DUCT BANK SHALL BE REINFORCED WITH #4 TRANSVERSED CLOSED STIRRUPS AT 12" SPACINGS AND #4@12" TOP AND BOTTOM IN LONGITUDINAL DIRECTION.



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

[Signature] 1-29-03
CHIEF, WATER AND SEWER DESIGN 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: JVC/DKP
CHK: GED
DATE: 11/11/98

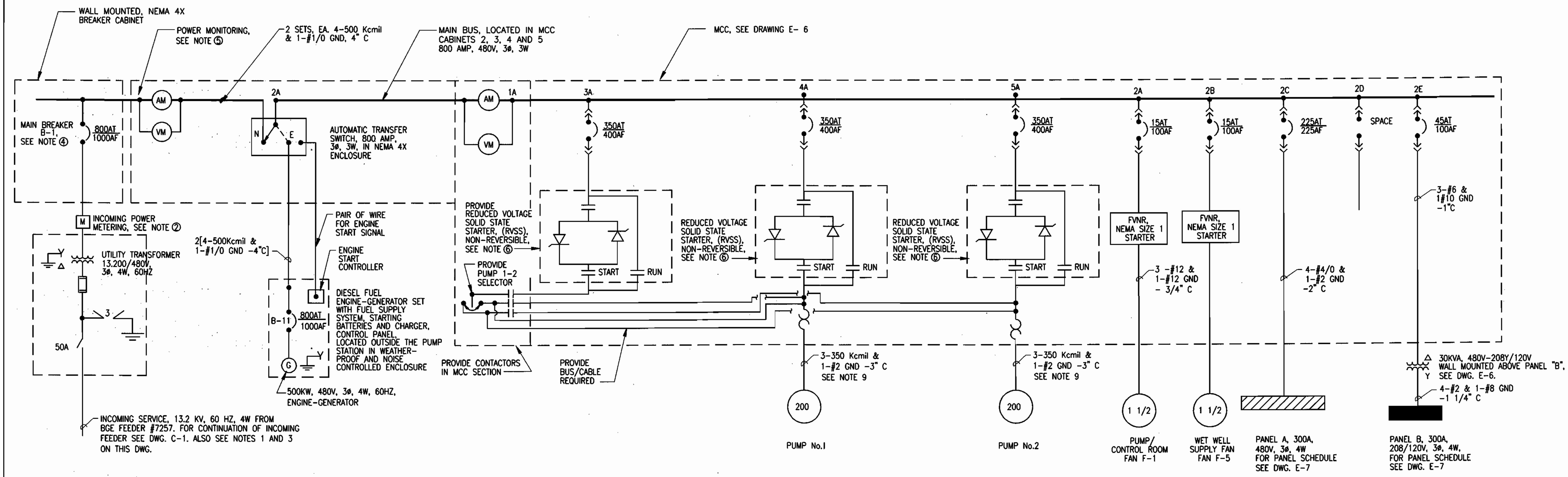
RECORD DRAWING
8/02

ELECTRICAL SITE 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

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.

[Handwritten Signature]
 PROFESSIONAL ENGINEER
 11-18-02

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

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

DHILLON ENGINEERING, INC.
 11400 CROWBRIDGE DRIVE, SUITE D
 OWINGS MILLS, MD 21117
 DES: BJD
 DPN: JES/DKP
 CHK: GED
 DATE: 11/11/98

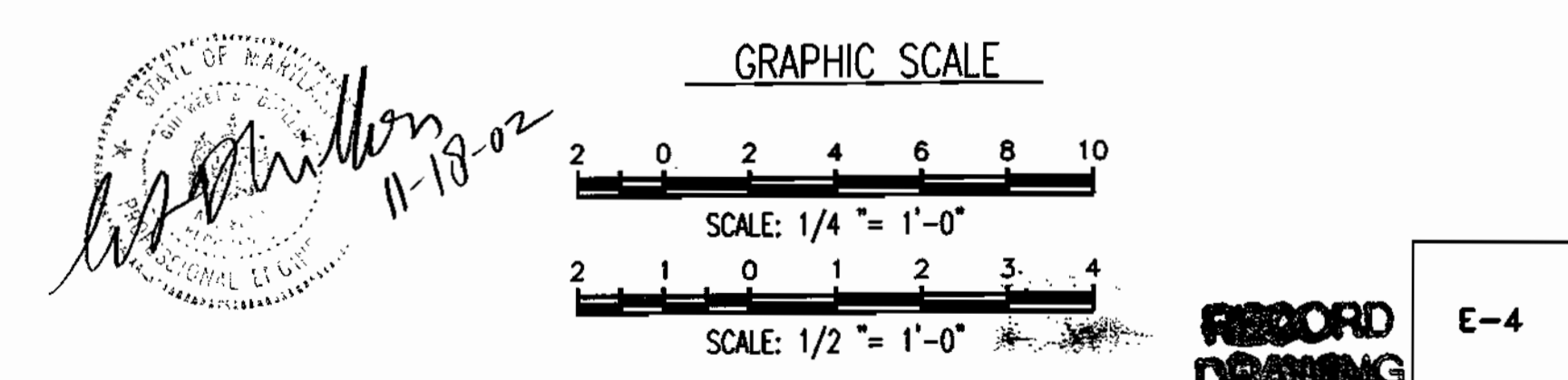
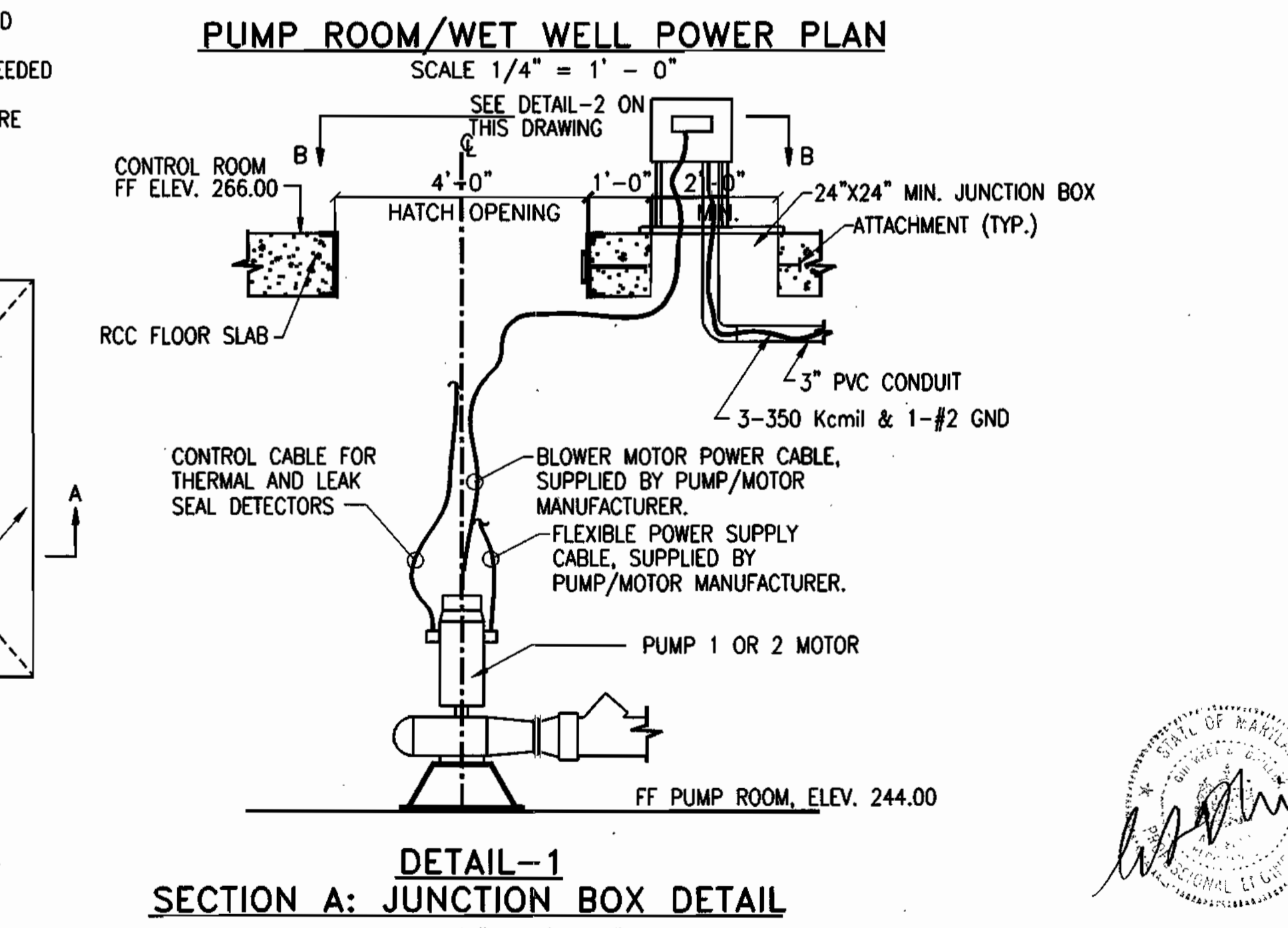
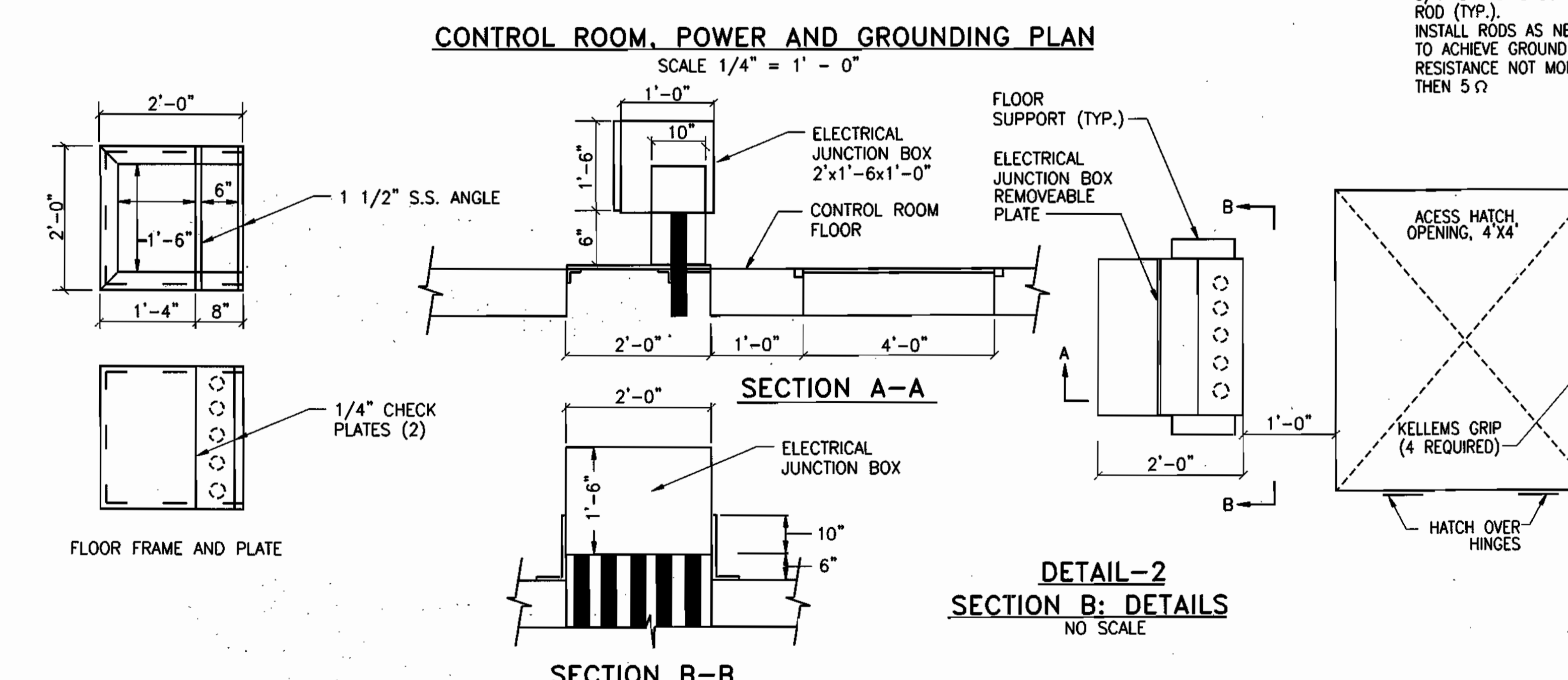
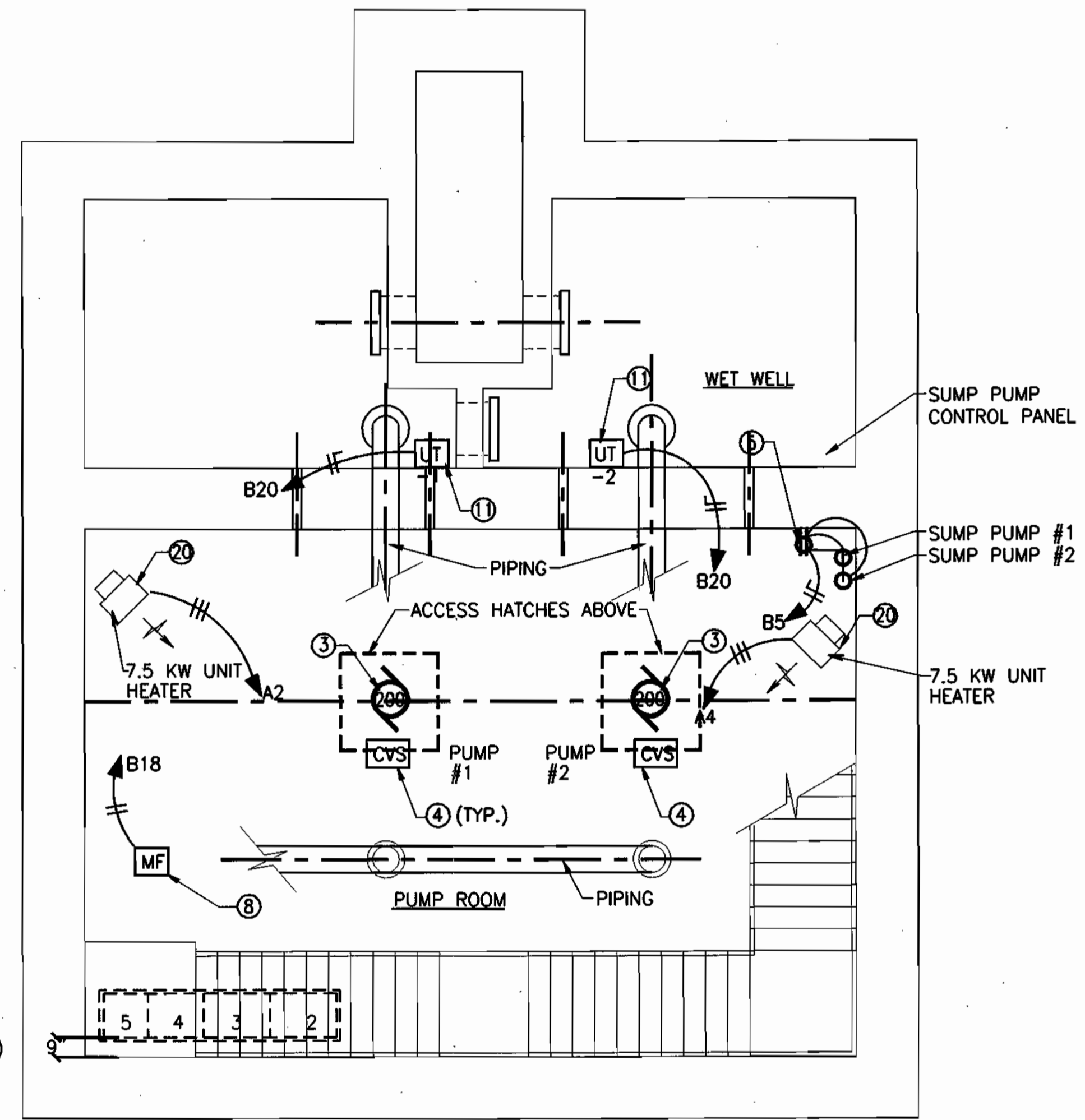
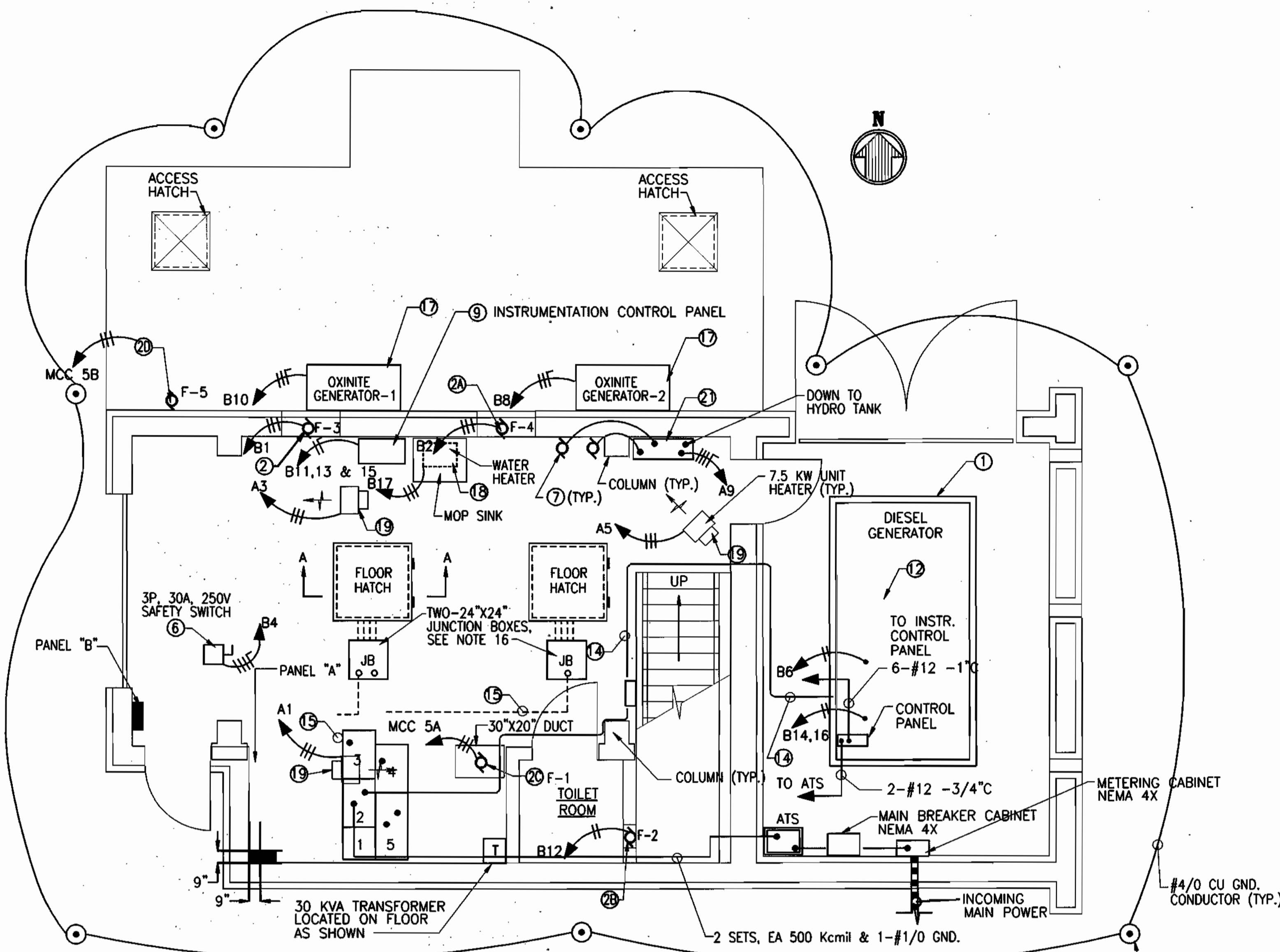
ONE LINE DIAGRAM
 600' SCALE MAP NO. _____ BLOCK NO. _____

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

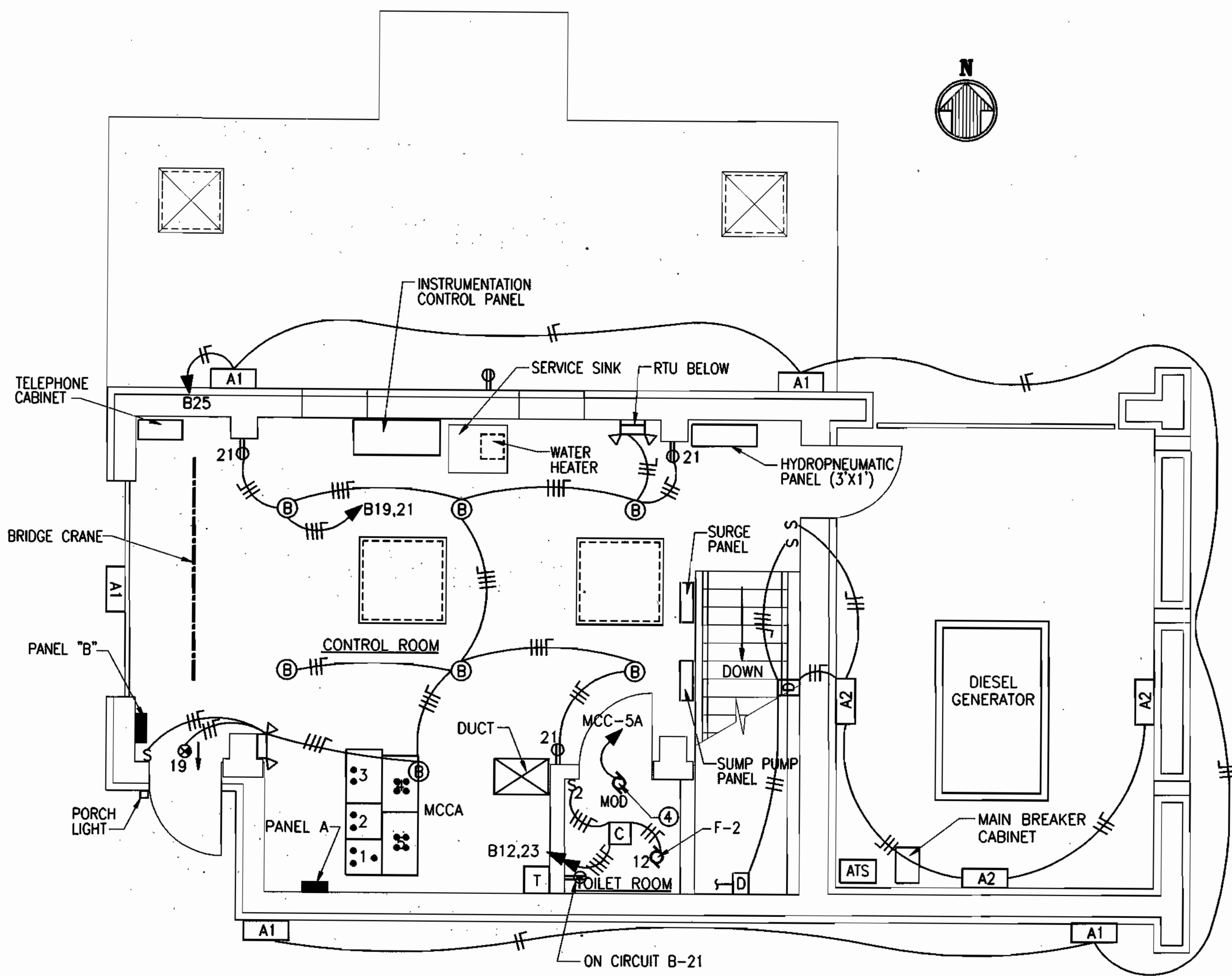
E-3
 SCALE AS SHOWN
 SHEET 29 OF 36

PLAN NOTES TO IDENTIFY EQUIPMENT LOCATION

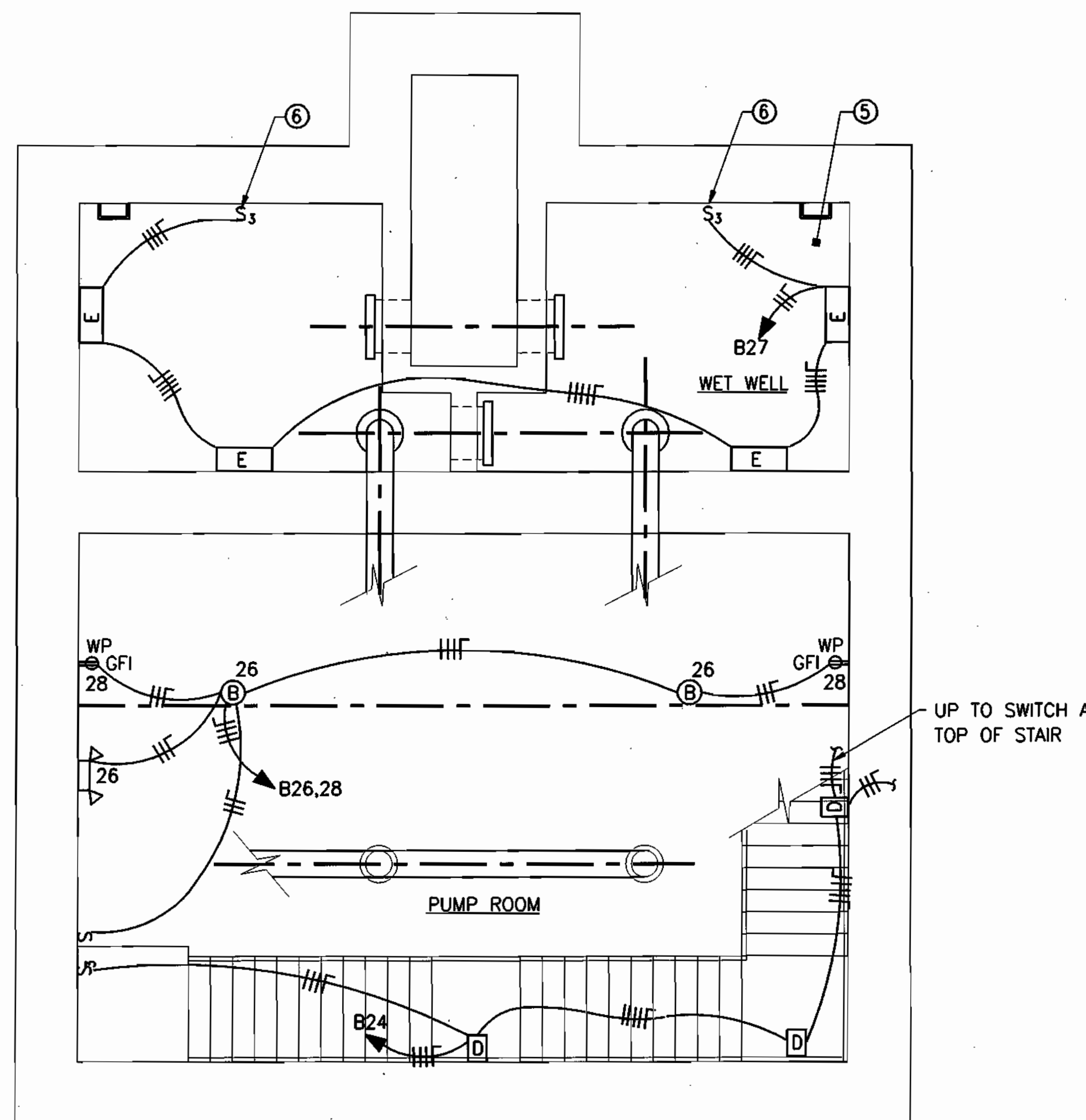
- ① 4 INCH THICK CONCRETE PAD FOR ENGINE GENERATOR SET.
- ② CONTROL ROOM EXHAUST FAN F-3(WEST), 1/4 HP, 120V/1ϕ/60HZ, POWER FROM CIRCUIT #1 OF PANEL B.
- ③ CONTROL ROOM EXHAUST FAN F-4(EAST), 1/4HP, 120V/1ϕ/60HZ, POWER FROM CIRCUIT #2 OF PANEL B.
- ④ TOILET ROOM EXHAUST FAN F-2, 4BW, 120V/1ϕ/60HZ, POWER 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.
- ⑲ 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.
- ⑳ 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 UPTO THE PUMP MOTORS. COORDINATE WITH PUMP SUPPLIER FOR CONTROL WIRING AND IF SUCH CONTROL WIRING IS REQUIRED IT SHALL BE PROVIDED IN INDEPENDENT CONDUITS.
- ㉑ TWO OXINITE GENERATOR, CIRCUIT 8 & 10 OF PANEL B.
- ㉒ WATER HEATER, CIRCUIT 17 OF PANEL B.
- ㉓ THREE CONTROL ROOM UNIT HEATERS EACH 7.5 KW, 480V/3/60HZ, POWER FROM CIRCUITS 1, 3 & 5 OF PANEL A.
- ㉔ TWO PUMP ROOM UNIT HEATERS, EACH 7.5 KW, 480V/3/60HZ, POWER FROM CIRCUITS 2 & 4 OF PANEL A.
- ㉕ HYDROPNEUMATIC BOOSTER PUMP PANEL, POWER FROM CIRCUIT #9, PANEL A.



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND. Director of Public Works: [Signature] 1/30/03 Chief, Bureau of Engineering: [Signature] 1/29/03 Chief, Water and Sewer Design: [Signature] 1-29-03		PREPARED BY: WR&A Whitman, Reardon and Associates, LLP.		DHILLON ENGINEERING, INC. 11400 CROMBIE DRIVE, SUITE D OWINGS MILLS, MD 21117		DES: BJD CHK: GED DATE: 11/11/98		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
RECORD DRAWING 11/12/02												



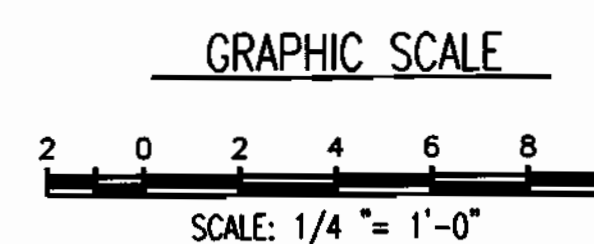
CONTROL ROOM/GENERATOR LIGHTING PLAN
SCALE 1/4" = 1' - 0"



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: *[Signature]* 1/30/03
 Chief, Bureau of Engineering: *[Signature]* 1/29/03
 Chief, Bureau of Construction: *[Signature]* 1-30-03
 Chief, Water and Sewer Design: *[Signature]* 1-29-03

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

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

DES : BJD			
DRN : VL/DKP			
CHK : GED			
DATE : 11/11/98	BY NO.	REVISION	DATE
			8/02
		RECORD DRAWING	
			600' SCALE MAP NO. _____ BLOCK NO. _____

LIGHTING PLANS

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

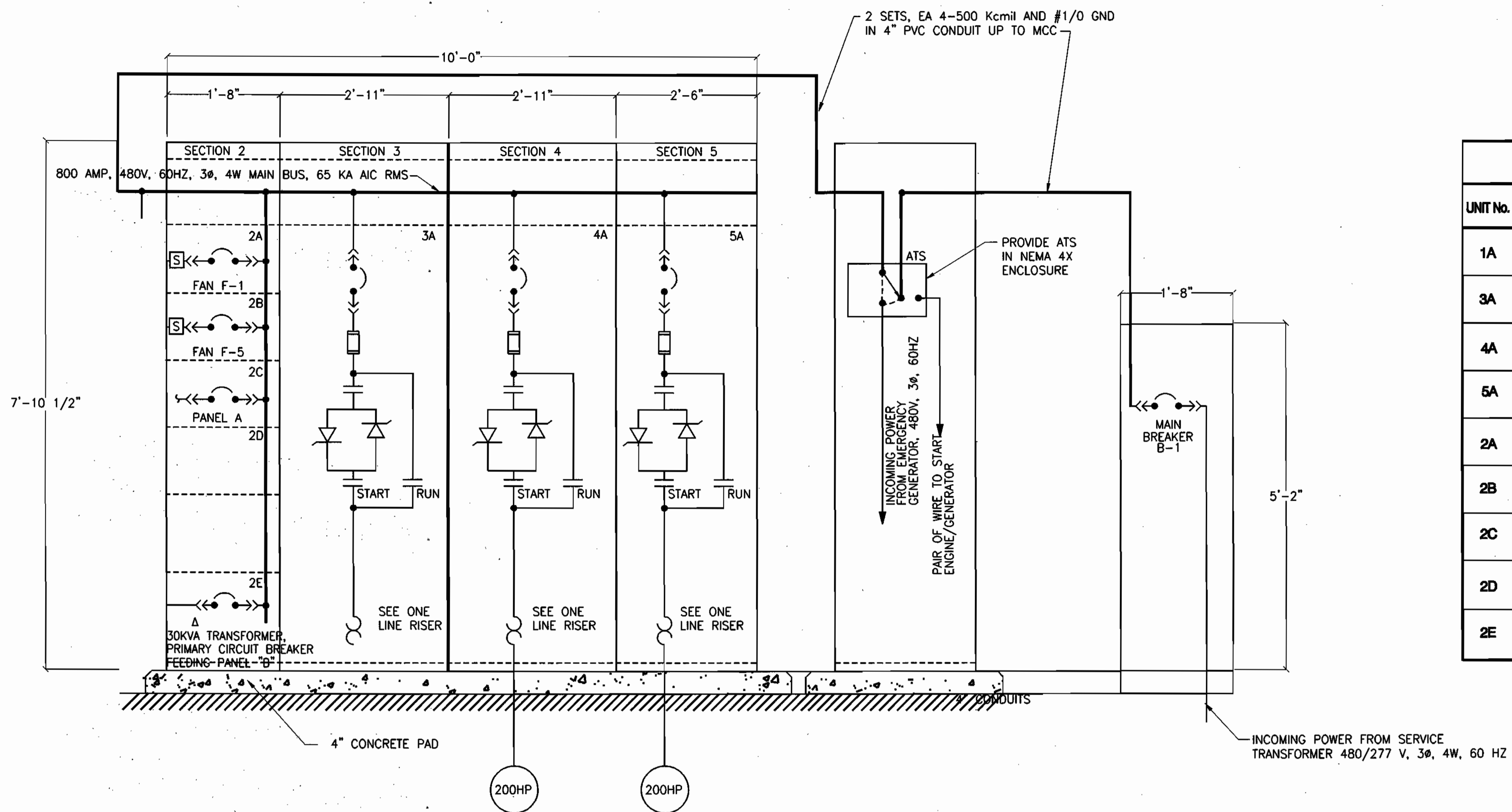
RECORD DRAWING
 11/19/02

E-5

SCALE AS SHOWN

SHEET

31 OF 36

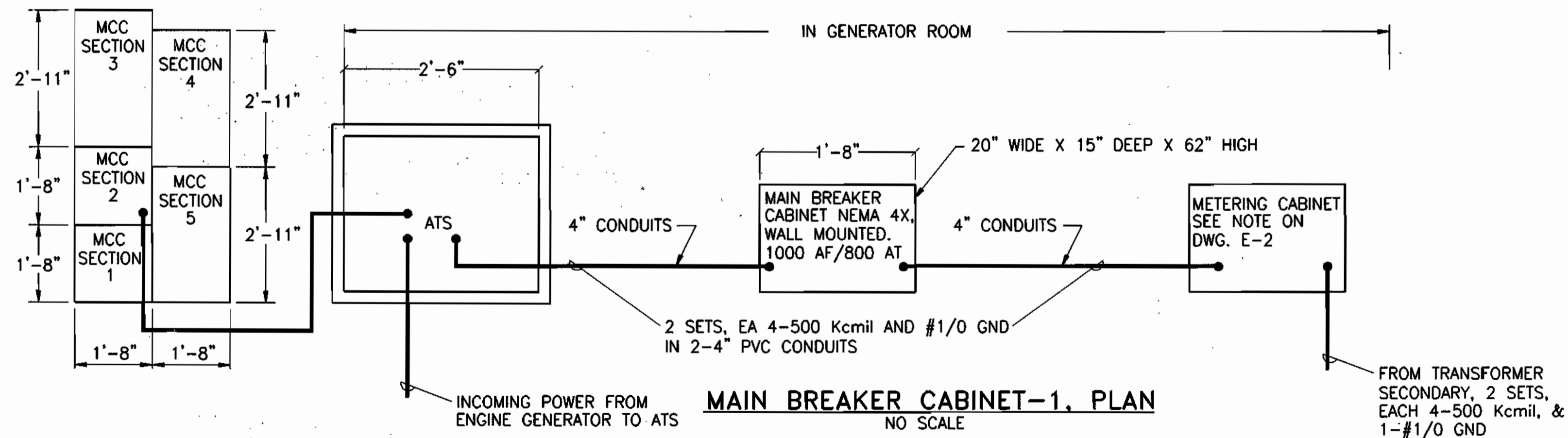


MOTOR CONTROL CENTER - ELEVATION
NO SCALE

MAIN BREAKER CABINET ELEVATION
NO SCALE

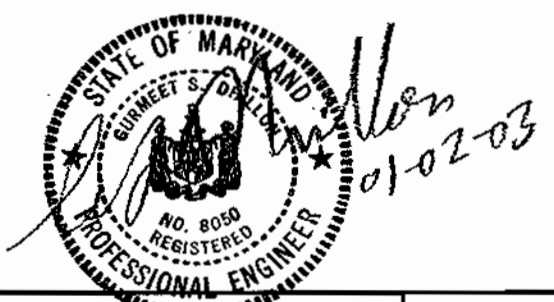
MOTOR CONTROL CENTER 'A' SCHEDULE						
UNIT No.	NAME TAG DATA	DEVICE DESCRIPTION	HP	ECD No. SHT No.	BREAKER	
					FRAME	TRIP
1A	CONTACTORS	CONTACTORS			1000A	800A
3A	SPARE SEWAGE PUMP	NEMA SIZE 5 REDUCED VOLTAGE SOLID STATE STARTER, BREAKER & CONTROLS	200		350A	300A
4A	SEWAGE PUMP No.1	NEMA SIZE 5 REDUCED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

OUTSIDE MCC SEE SITE PLAN



MOTOR CONTROL CENTER - PLAN
NO SCALE

MAIN BREAKER CABINET-1, PLAN
NO SCALE



RECORD DRAWING
11/18/02
E-6

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.
Director of Public Works: [Signature] 1/30/03
Chief, Bureau of Engineering: [Signature] 1/29/03
Chief, Water and Sewer Design: [Signature] 1-29-03

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

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

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

MOTOR CONTROL CENTER - ELEVATION SCHEDULE

ROCKBURN WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6200
CONTRACT NO. 10-3695
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
SCALE AS SHOWN
SHEET 32 OF 36

PANEL A SCHEDULE (POWER FROM MCC SECTION 5C)																		
LOCATION CONTROL ROOM		VENDOR GENERAL ELECTRIC																
VOLTAGE 480		CATALOG # ADF3301MT																
AMPS 225		MAIN BRK (Y/N) Y																
PHASE/WIRE 3P/4W		AIC RATING 22 KA																
MOUNT SURFACE																		
CKT.	DESCRIPTION	BKR.		COND.		PH. GND. LOAD (A)	PH.A	PH.B	PH.C	LOAD (A)	GND.		PH. COND.	BKR.		DESCRIPTION	CKT.	
		POLE	AMP	WIRE	WIRE						WIRE	WIRE		POLE	AMP			
1	CONTROL ROOM UNIT HEATER #1	3	15	1/2"	#14	#14	15		X								PUMP ROOM UNIT HEATER #1	2
3	CONTROL ROOM UNIT HEATER #2	3	15	1/2"	#14	#14	15		X								PUMP ROOM UNIT HEATER #2	4
5	CONTROL ROOM UNIT HEATER #3	3	15	1/2"	#14	#14	15		X								SPACE	6
7	HYDROPNEUMATIC BOOSTER PUMP #1	3	20	3/4"	#12	#12	5		X								SPACE	8
9	HYDROPNEUMATIC 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		VENDOR																
VOLTAGE 208/120V		CATALOG #																
AMPS 225		MAIN BRK (Y/N) Y																
PHASE/WIRE 3P/4W 42 CIRCUIT		AIC RATING 22 KA																
MOUNT IN MCC																		
CKT.	DESCRIPTION	BKR.		COND.		PH. GND. LOAD (A)	PH.A	PH.B	PH.C	LOAD (A)	GND.		PH. COND.	BKR.		DESCRIPTION	CKT.	
		POLE	AMP	WIRE	WIRE						WIRE	WIRE		POLE	AMP			
1	CONTROL ROOM EXHAUST FAN F-3	1	15	3/4"	#12	#12	1		X								CONTROL ROOM EXHAUST FAN F-4	2
3	SPARE ROLL UP DOOR	3	15	3/4"	#12	#12	2		X								BRIDGE CRANE HOIST MOTOR	4
5	SUMP PUMPS 1 & 2	1	20	3/4"	#12	#12	4	X									BATTERY CHARGER	6
7	SPARE	1	20	3/4"	#12	#12	1		X								OXINITE GEN-1	8
9	SPARE CONTROL POWER-HYDROPNEUMATIC BOOSTER SYSTEM PANEL	1	20	3/4"	#12	#12	1		X								OXINITE GEN-2	10
11	INSTRUMENTATION CONTROL PANEL	1	20	3/4"	#12	#12	20	X									TOILET ROOM EXH. F-2	12
13	INSTRUMENTATION CONTROL PANEL	1	20	3/4"	#12	#12	20		X								GEN. WATER JACKET HEATERS	14
15	INSTRUMENTATION CONTROL PANEL	1	20	3/4"	#12	#12	20		X								SPACE	16
17	WATER HEATER	3	20	3/4"	#12	#12	10		X								MAGNETIC FLOWMETER	18
19	CONTROL ROOM LTG	1	20	3/4"	#12	#12	5	X									SPACE	20
21	CONTROL ROOM RECEPTACLES	1	20	3/4"	#12	#12	5		X								GENERATOR ROOM LTG.	24
23	MOD FOR F-1	1	20	3/4"	#12	#12	1		X								SPACE	20
25	EXTERIOR LIGHTING	1	20	3/4"	#12	#12	5		X								PUMP ROOM LTG	26
27	WET WELL LTG	1	20	3/4"	#12	#12	5		X								PUMP ROOM RECEPTS	28
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 PORCH LIGHT - MODEL 300 CPHB 35 HPS NFP 120 PC TFS 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

Robert W. Bevinger 1-15-99
DIRECTOR OF PUBLIC WORKS DATE

Robert W. Bevinger 1-15-99
CHIEF, BUREAU OF UTILITIES DATE

Robert W. Bevinger 1-15-99
CHIEF, BUREAU OF ENGINEERING DATE

Robert W. Bevinger 1-15-99
ACT. CHIEF, WATER AND SEWER DESIGN 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: VL/DKP
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RECORD DRAWING
REVISION
DATE: 8-23-02

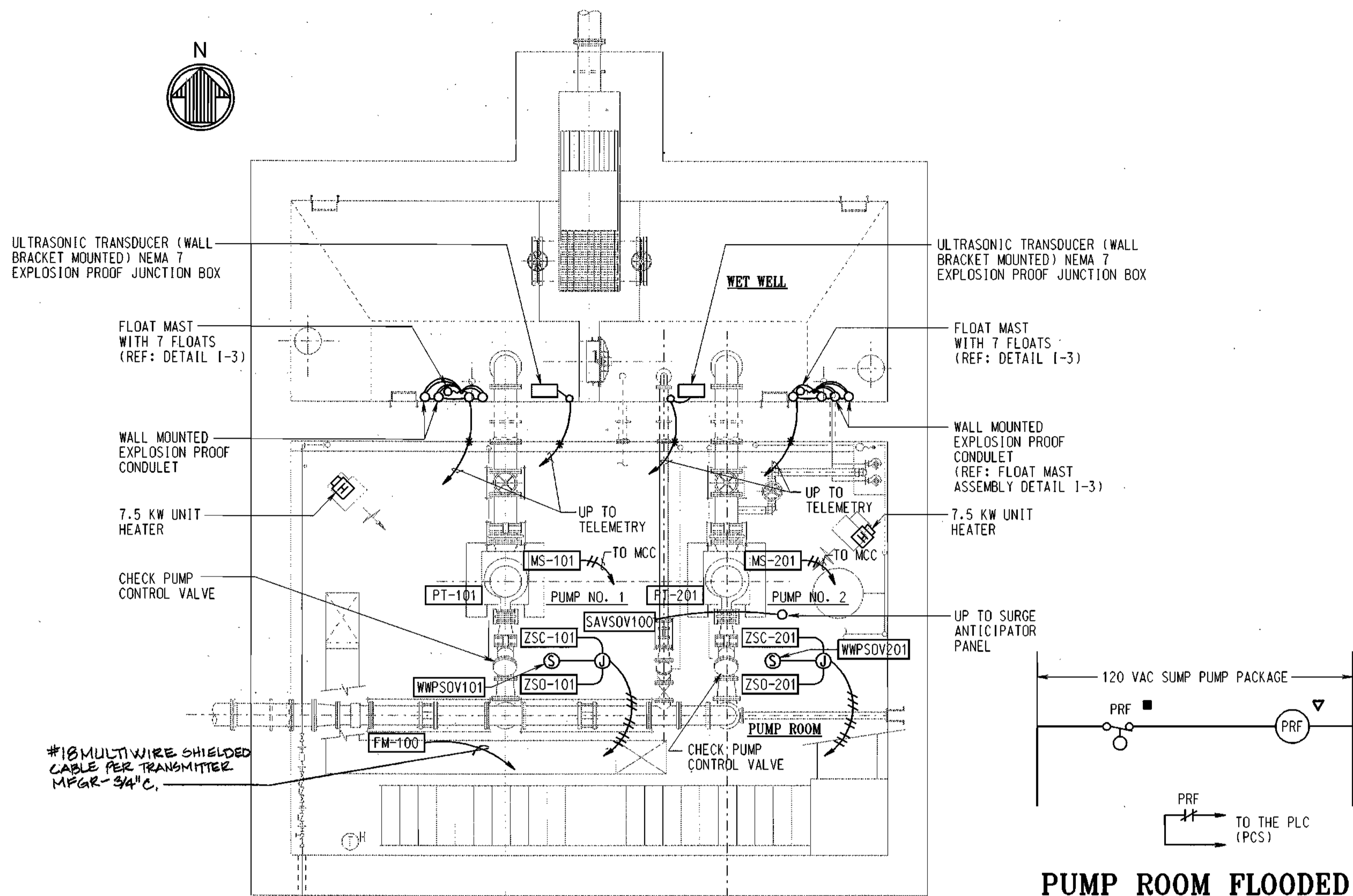
PANEL AND LIGHTING SCHEDULES

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

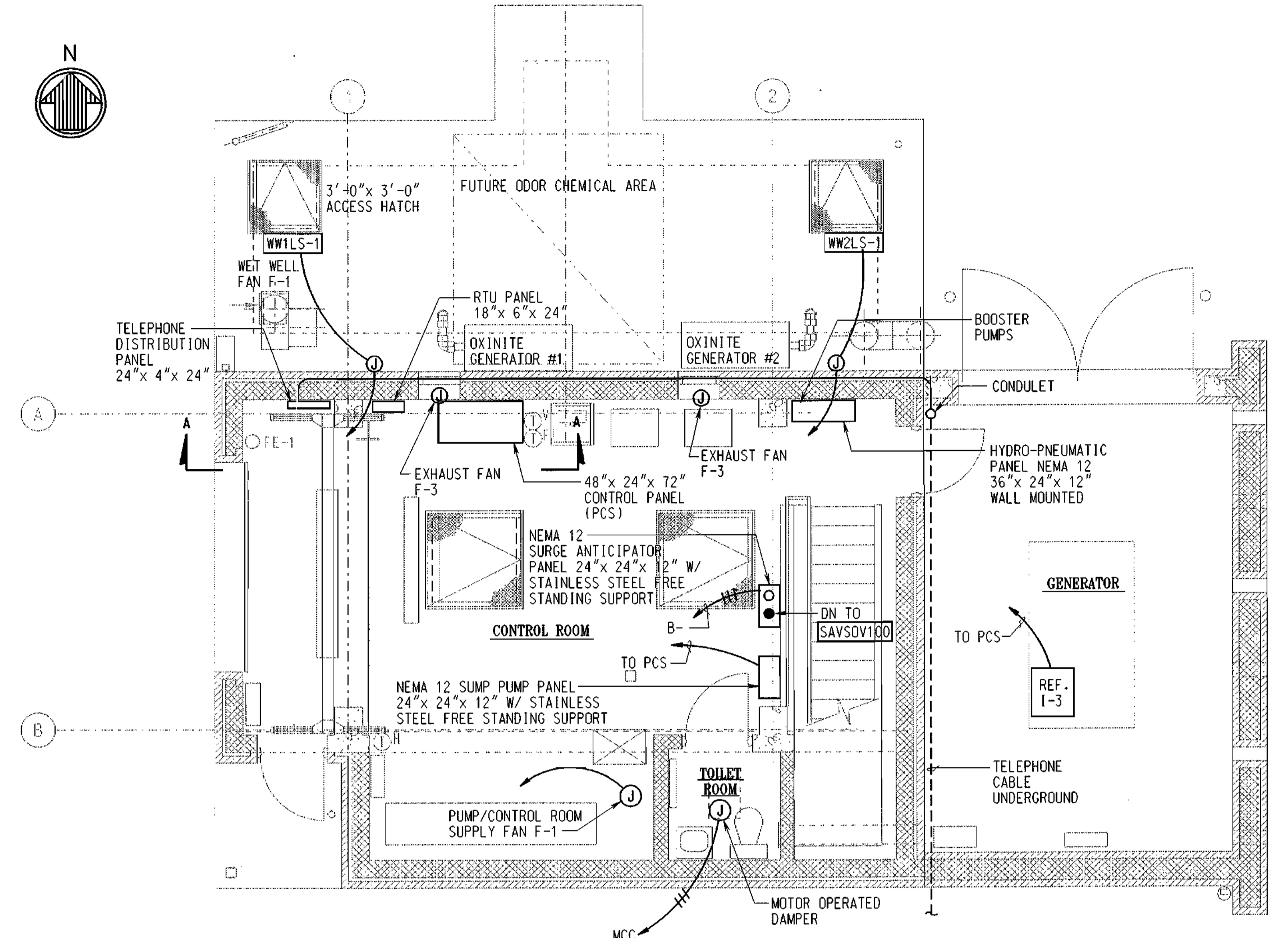
RECORD DRAWING
11/18/02

E-7

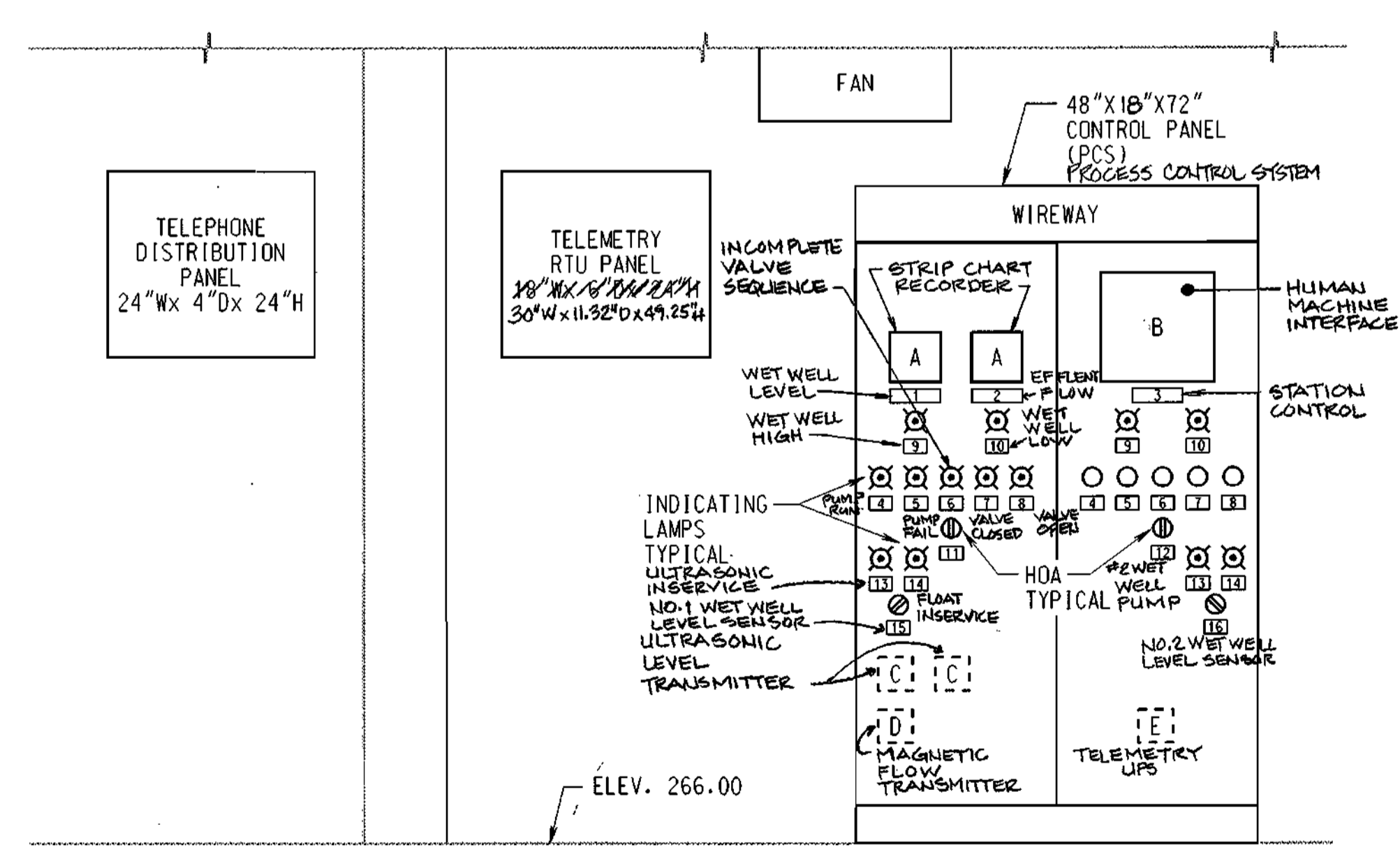
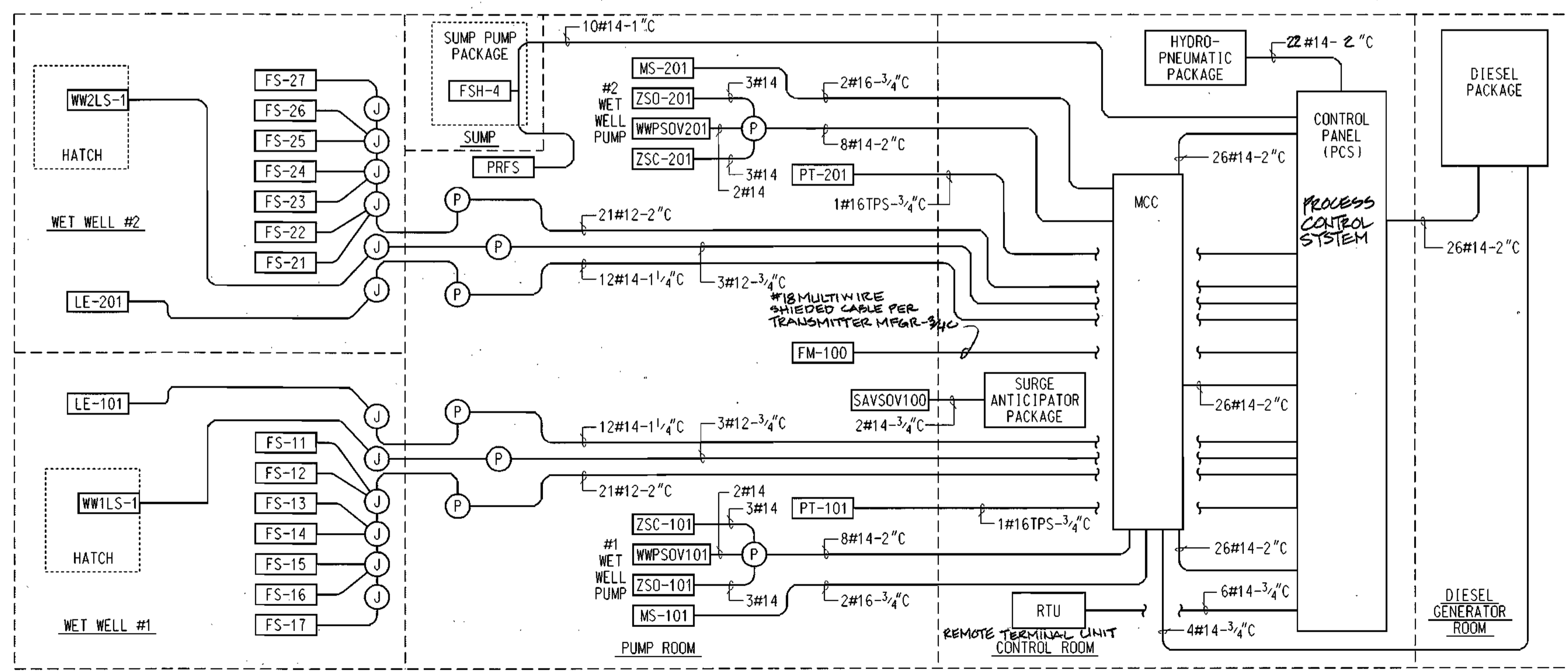
SCALE AS SHOWN
SHEET 33 OF 36



**CONTROLS AND INSTRUMENTATION RISER DIAGRAM
FLOOR PLAN - PUMP ROOM AND WET WELL**
SCALE: 1/4" = 1'-0"



**CONTROLS AND INSTRUMENTATION
PLAN - CONTROL ROOM**
SCALE: 1/4" = 1'-0"



NORTHWALL VIEW A-A
NO SCALE

INSTRUMENT SCHEDULE	
DESIGN	DESCRIPTION
A	STRIP CHART RECORDER
B	HMI (HUMAN MACHINE INTERFACE)
C	ULTRASONIC LEVEL TRANSMITTER
D	MAGNET FLOW TRANSMITTER
E	TELEMETRY UPS (UNINTERRUPTIBLE POWER SUPPLY)

NAMEPLATE SCHEDULE	
DESIGN	DESCRIPTION
1	WET WELL LEVEL
2	EFFLUENT FLOW
3	STATION CONTROL
4	PUMP RUN
5	PUMP FAIL
6	INCOMPLETE VALVE SEQUENCE
7	VALVE CLOSED
8	VALVE OPEN
9	WET WELL HIGH
10	WET WELL LOW
11	NO.1 WET WELL PUMP
12	NO.2 WET WELL PUMP
13	ULTRASONIC IN SERVICE
14	FLOAT IN SERVICE
15	NO.1 WET WELL LEVEL SELECTOR
16	NO.2 WET WELL LEVEL SELECTOR

CONTROL PANEL NOTES:
1 ULTRASONIC TRANSMITTER, MAGNETER TRANSMITTER (MOUNTED INTERNALLY)
RECORD DRAWING
11/18/02

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

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

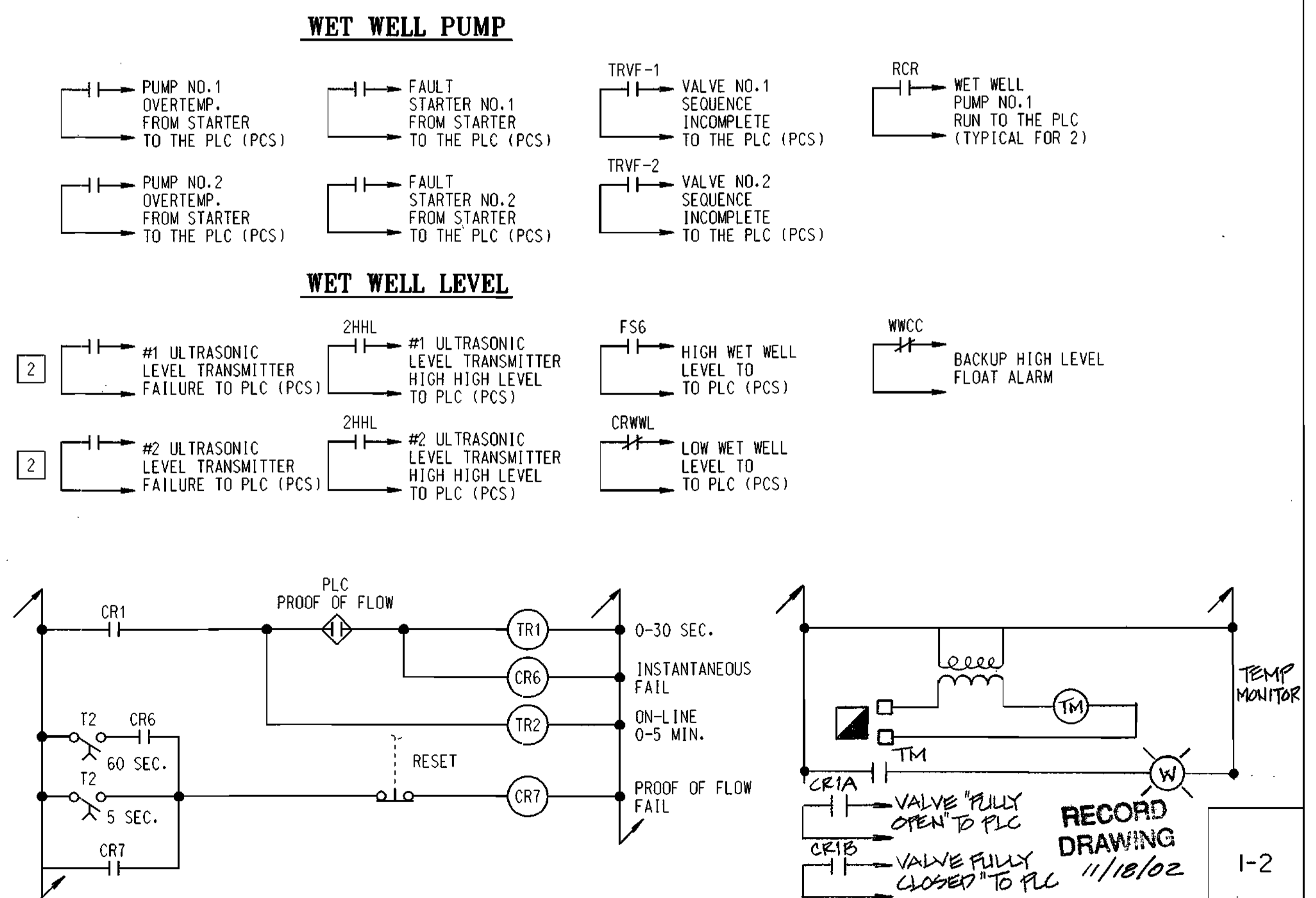
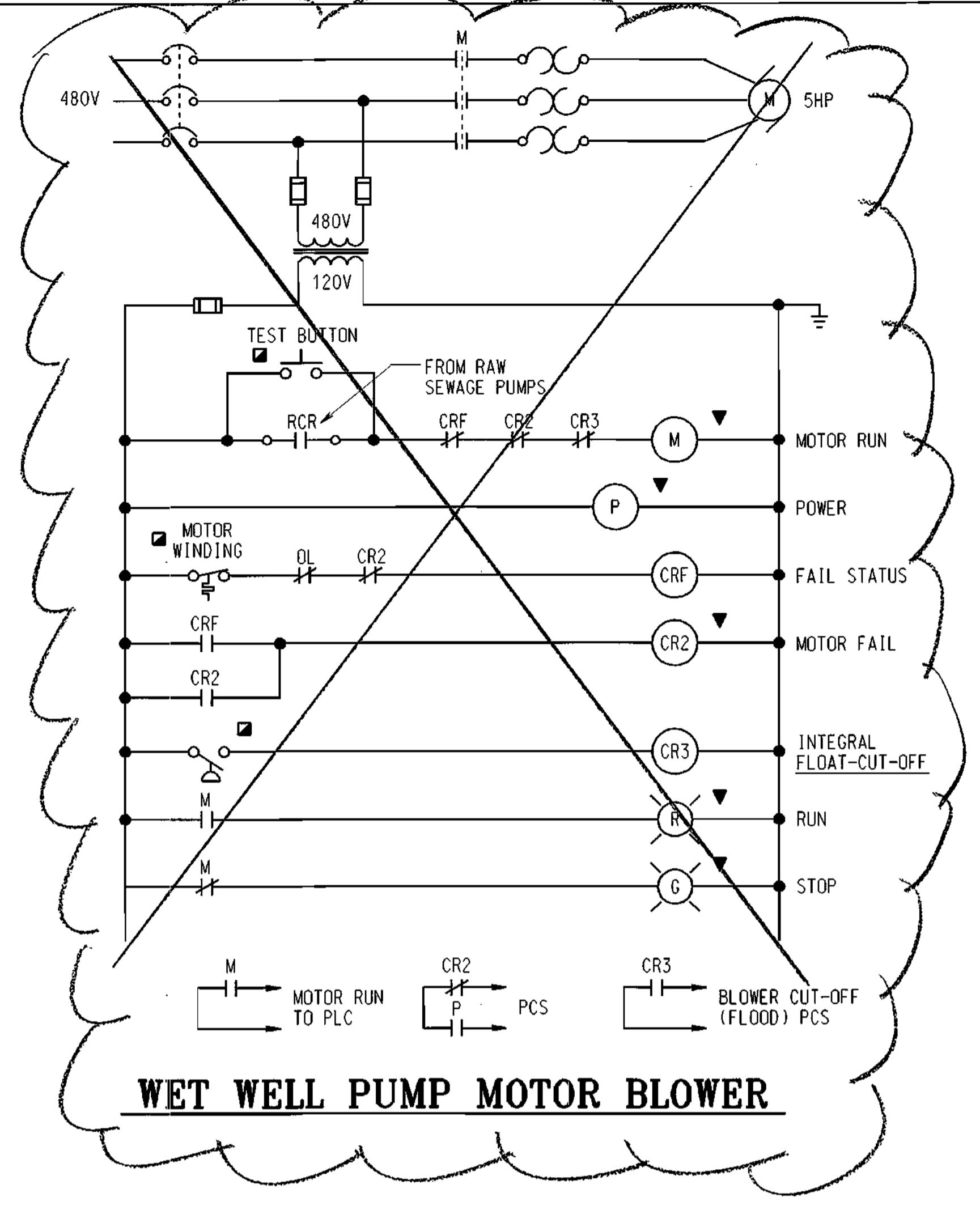
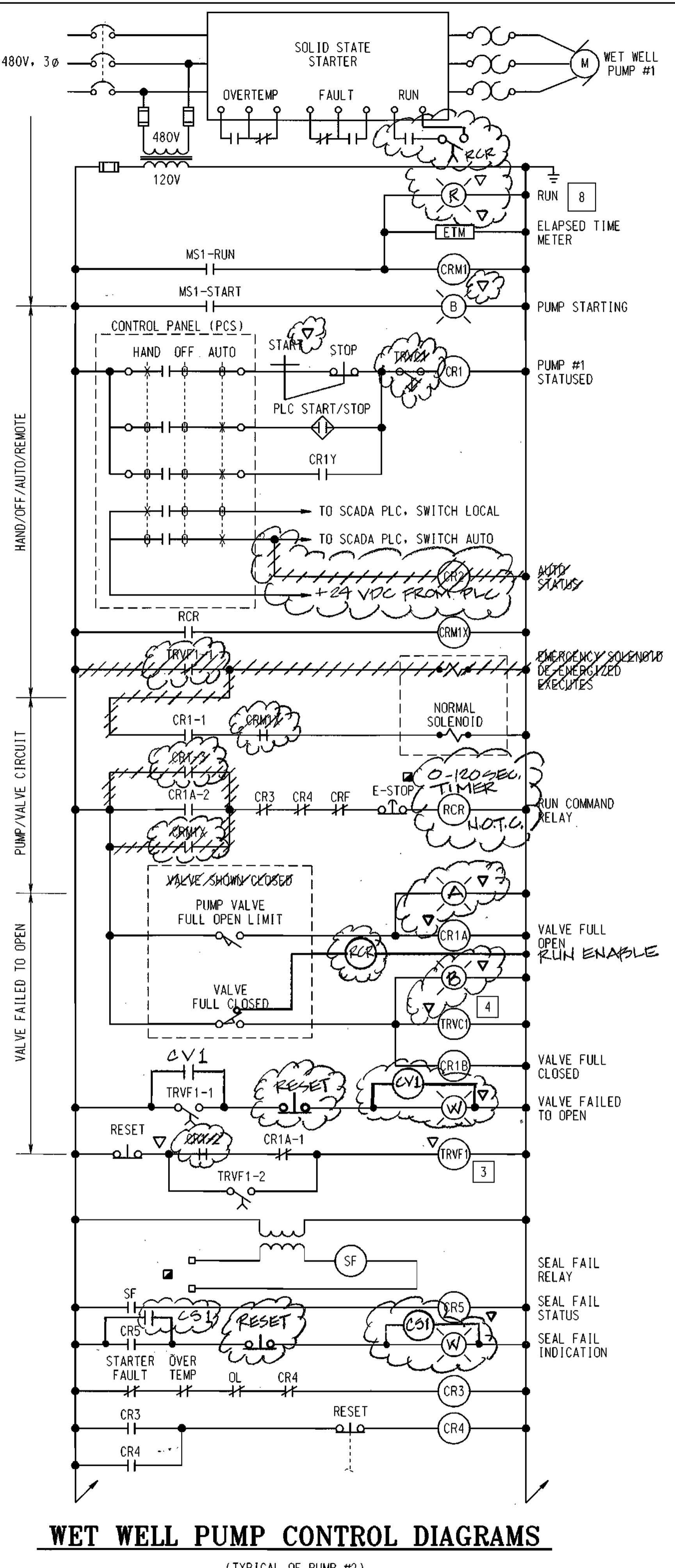
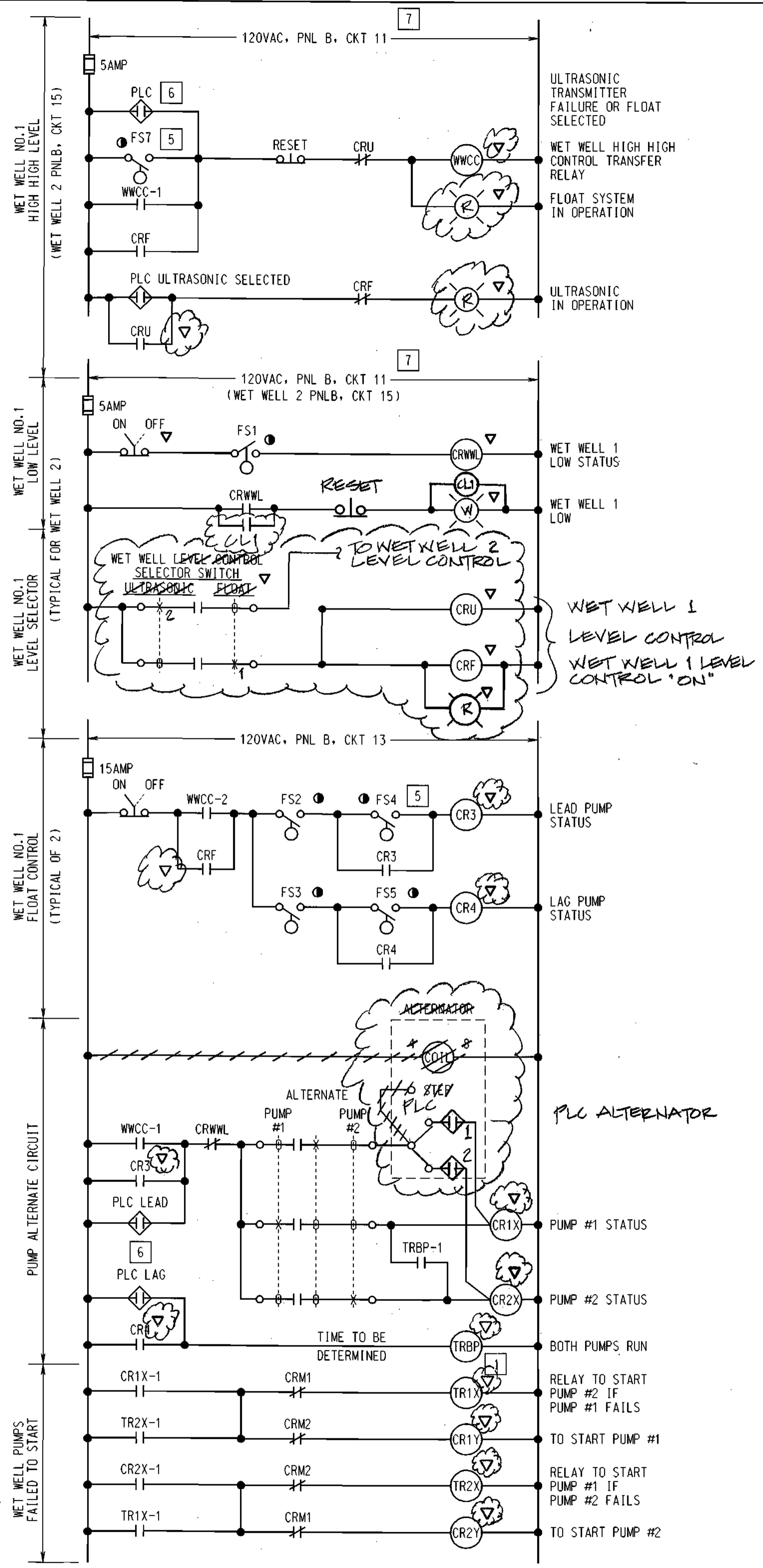
PREPARED BY:
WR&A
Whitman, Reardon and Associates, LLP.

DES: PCD
DRN: AGT
CHK: RJK
DATE: 11/12/98
BY: NO.
REVISION
DATE: 8-23-00

INSTRUMENTATION PLANS
AND RISER

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

SCALE AS SHOWN
SHEET 34 OF 36
NOVEMBER 12, 1998



DRAWING NOTES:

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

GENERAL NOTES:

1. ALL LIGHTS PUSH TO TEST.
2. 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

WET WELL PUMP CONTROL DIAGRAMS

(TYPICAL OF PUMP #2)

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

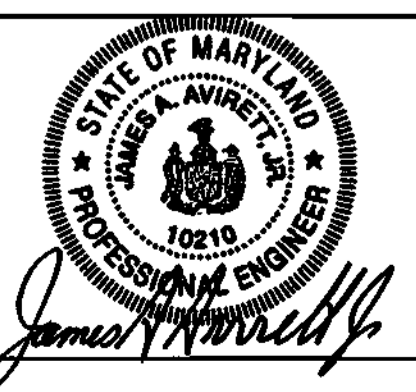
January 11, 1999
Director of Public Works

Robert J. Seaman 1-15-99
Chief, Bureau of Engineering

Robert J. Seaman 1-15-99
Chief, Bureau of Utilities

1-15-99
Chief, Utility Design Division

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



DES: WJW/JJM			
DRN: EAB/BWG			
CHK: BAK			
DATE: 12/09/98			
BY: [Signature]			
N.O.			
REVISION			
DATE: 8-23-02			

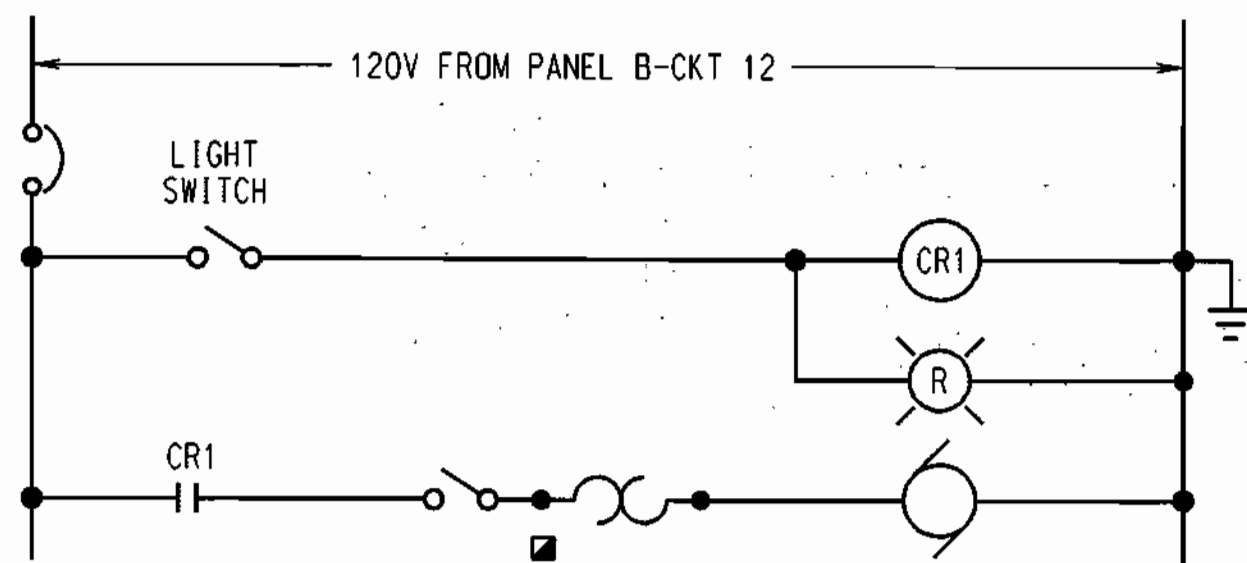
PUMP CONTROL DIAGRAMS

600' SCALE MAP NO. _____ BLOCK NO. _____

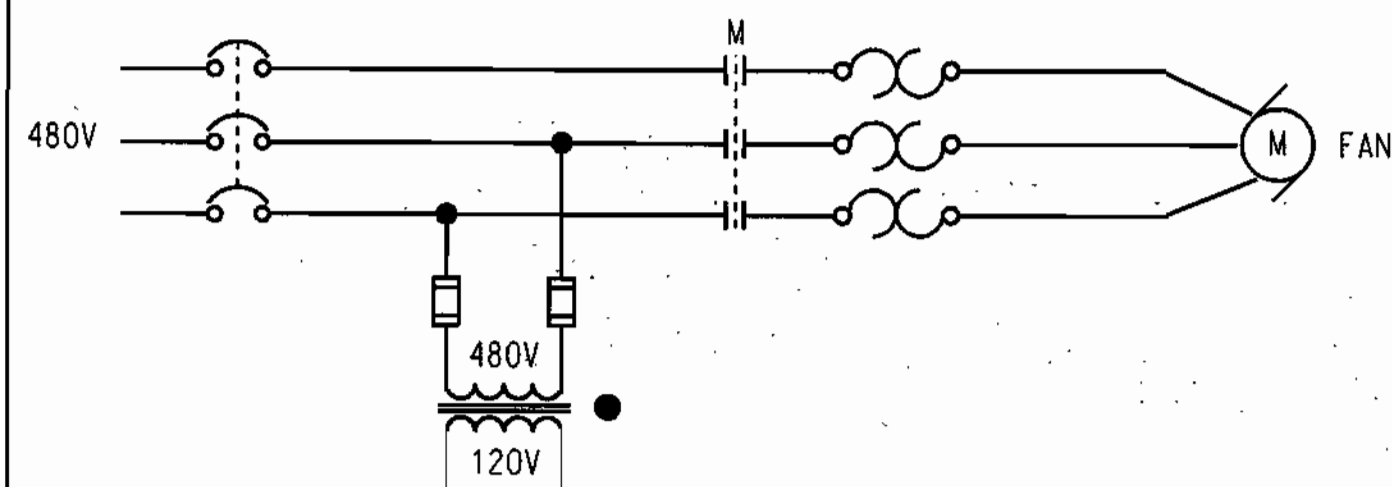
ROCKBURN WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6200
CONTRACT NO. 10-3695
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 35 OF 36

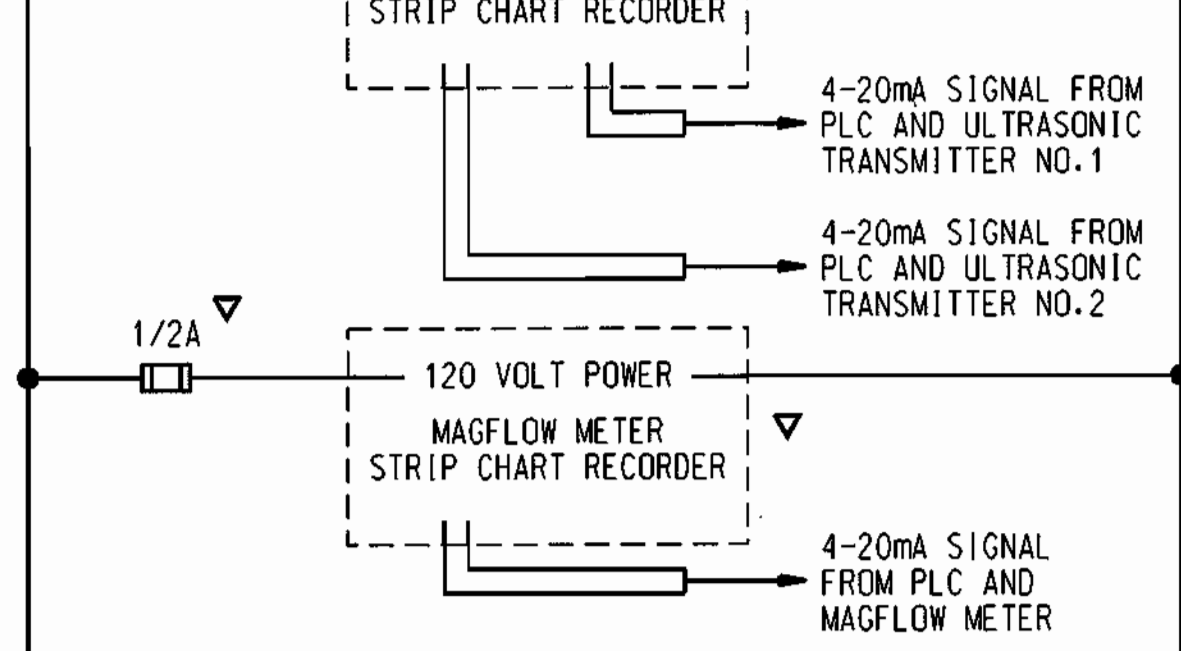
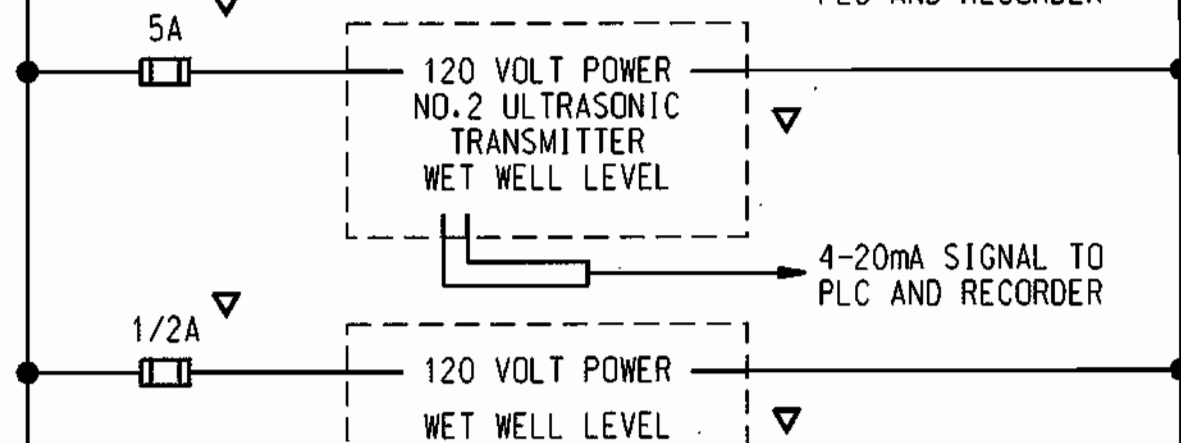
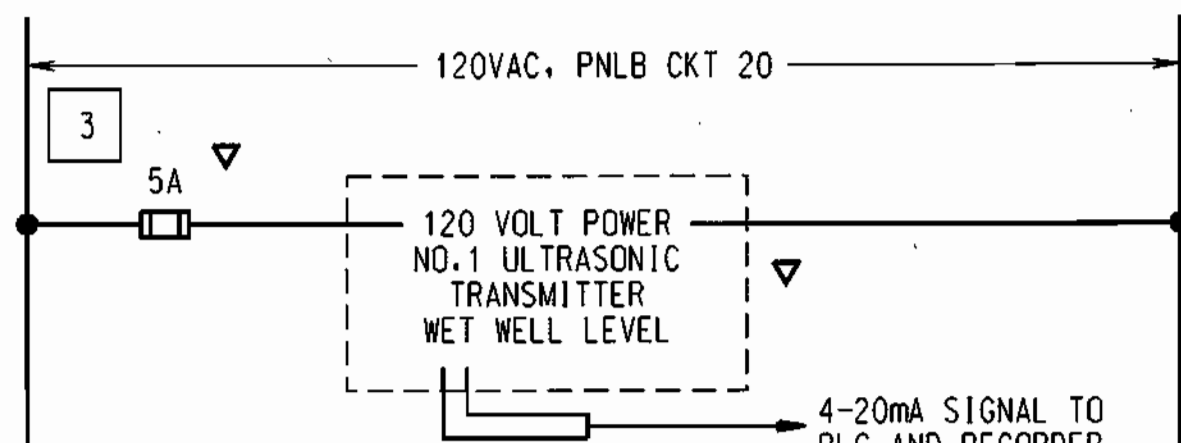
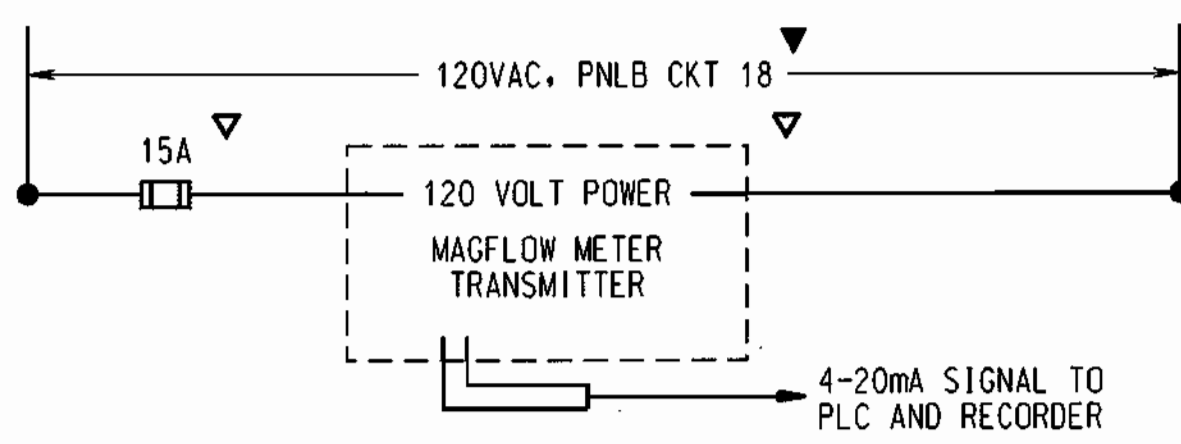


RESTROOM VENTILATION FAN-2

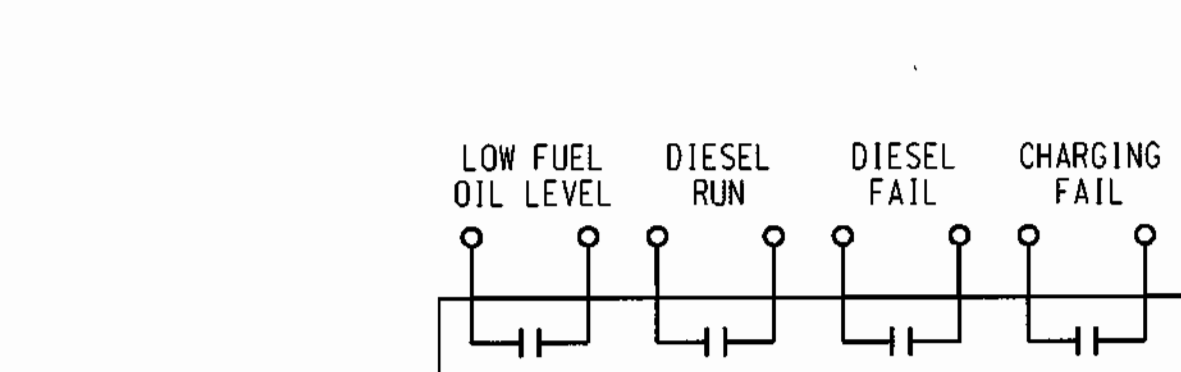


DRY WELL VENTILATION FAN F-1

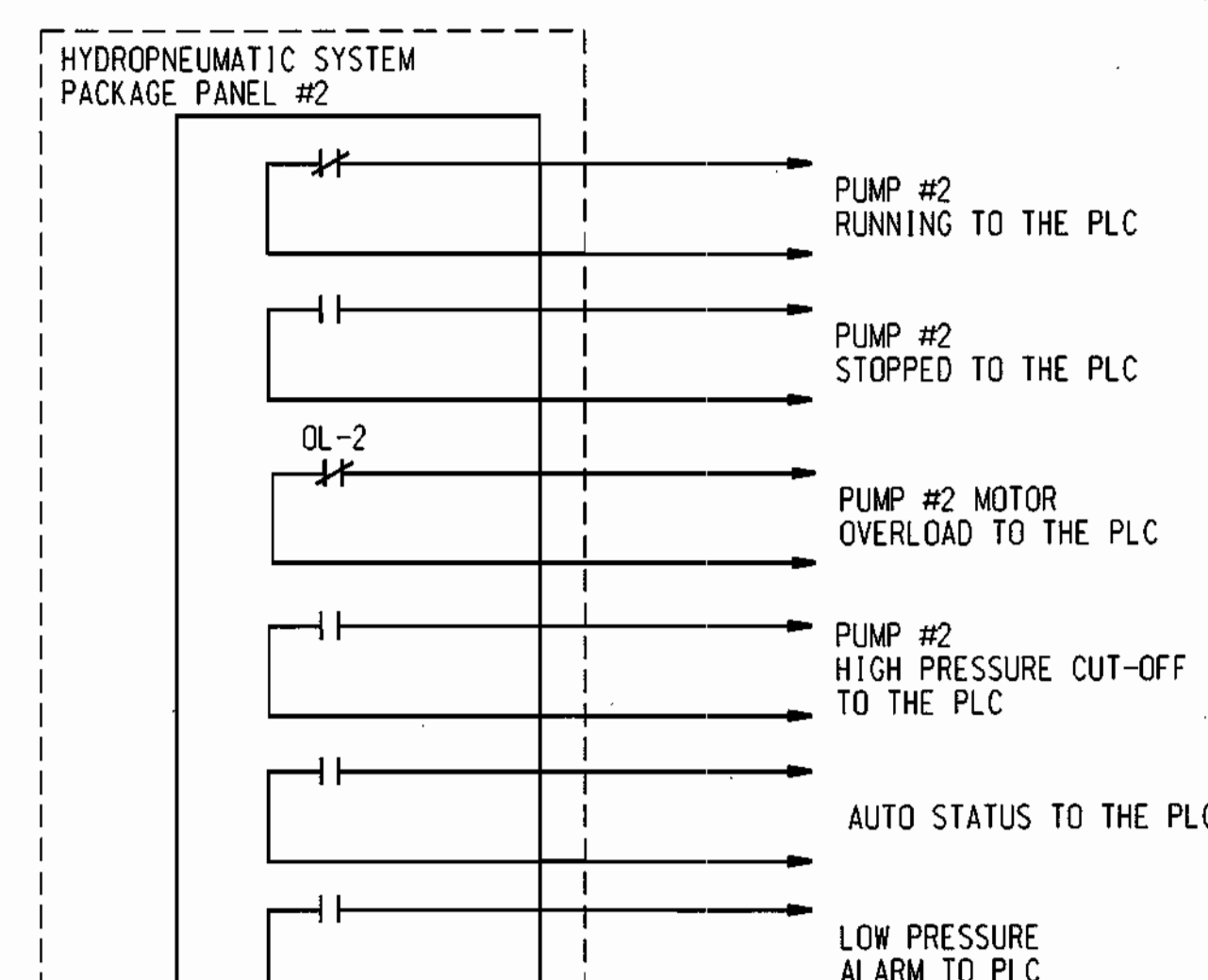
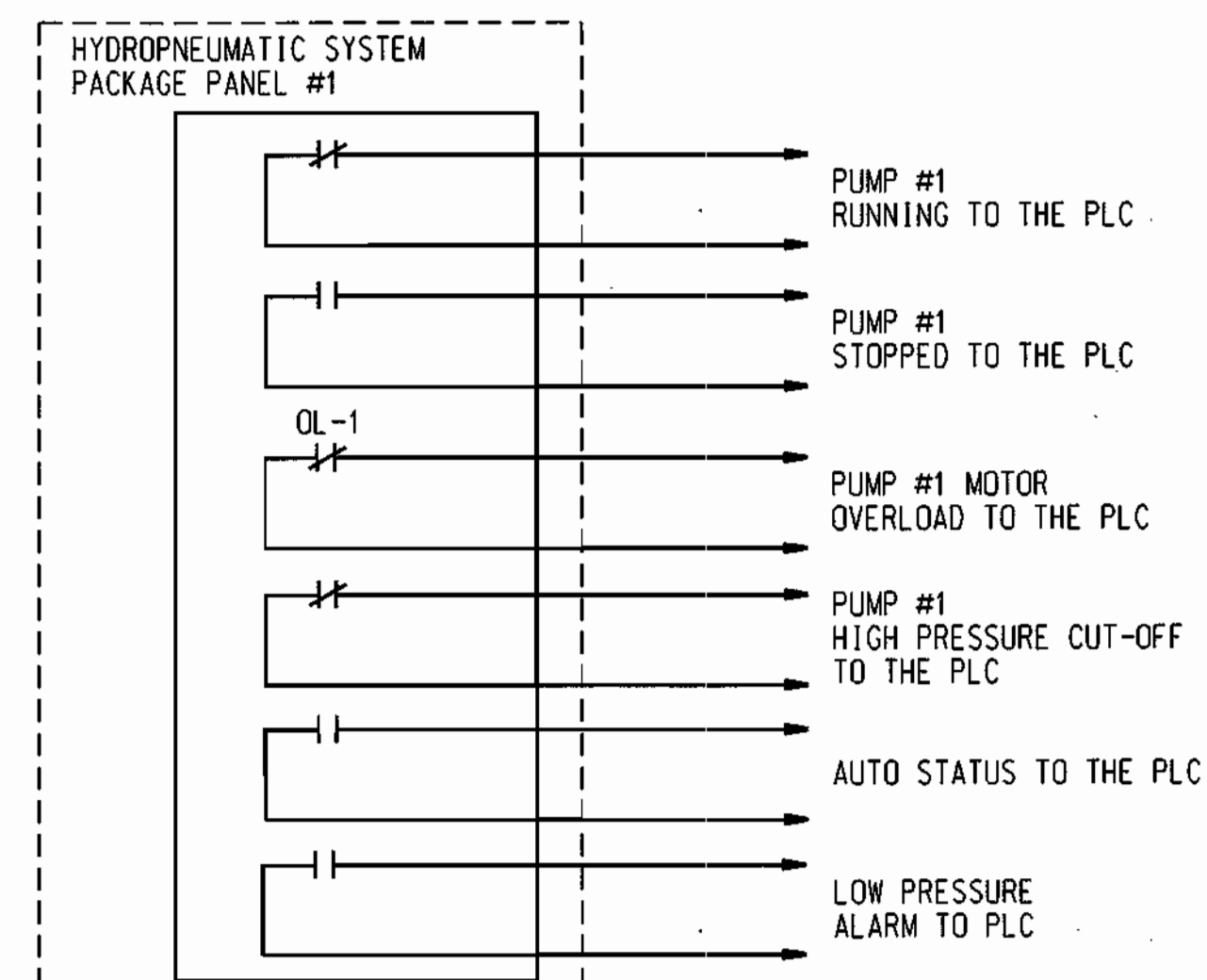
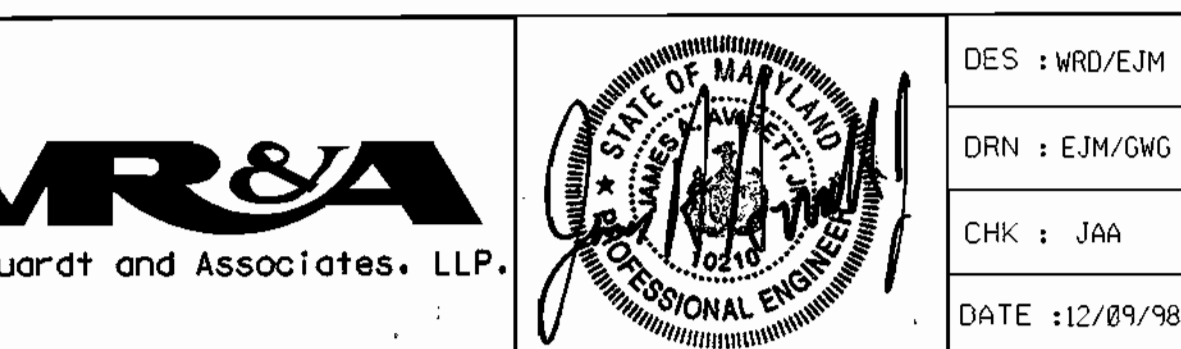
(TYPICAL FOR 3 FANS)



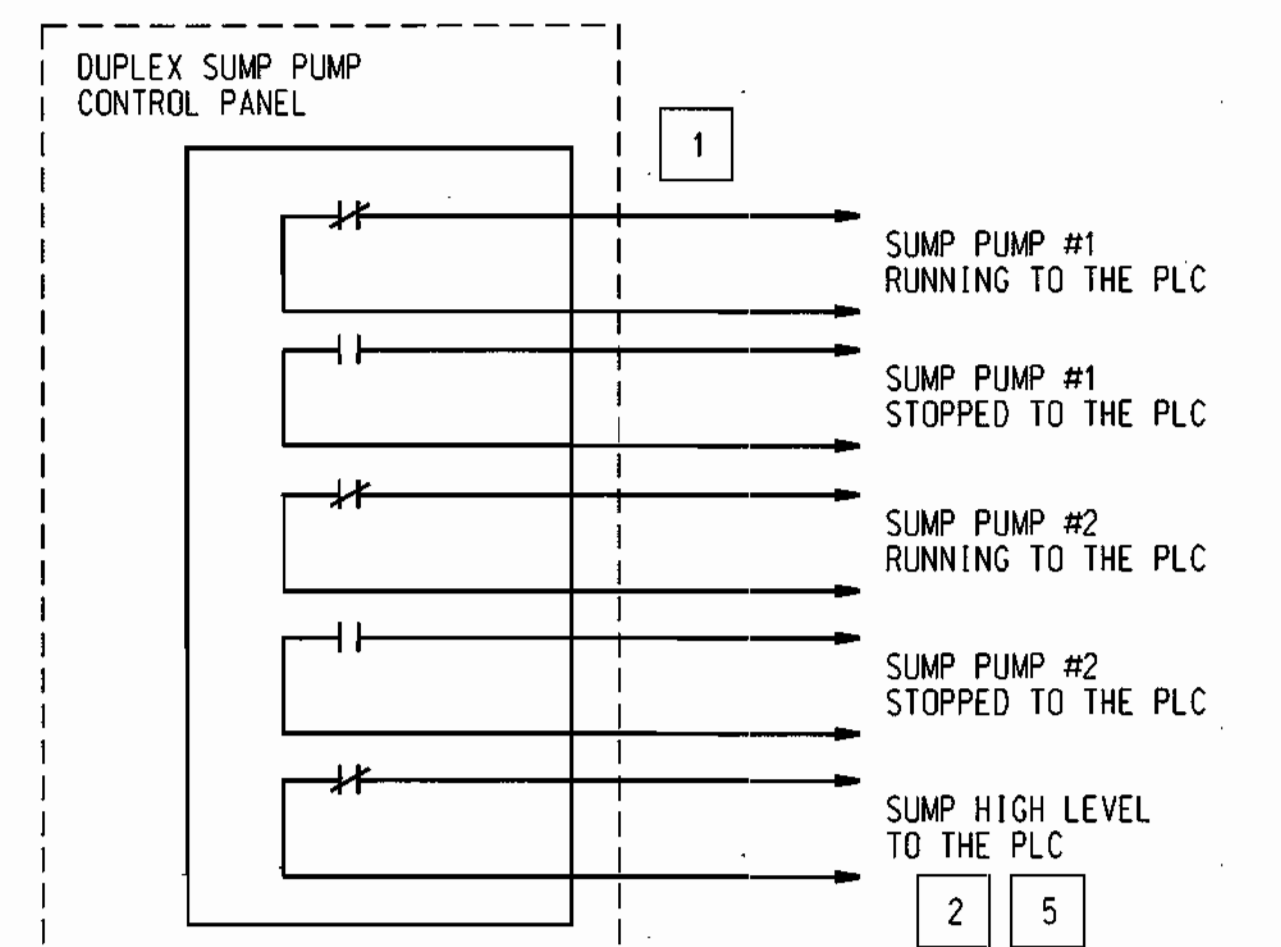
INSTRUMENTATION POWER



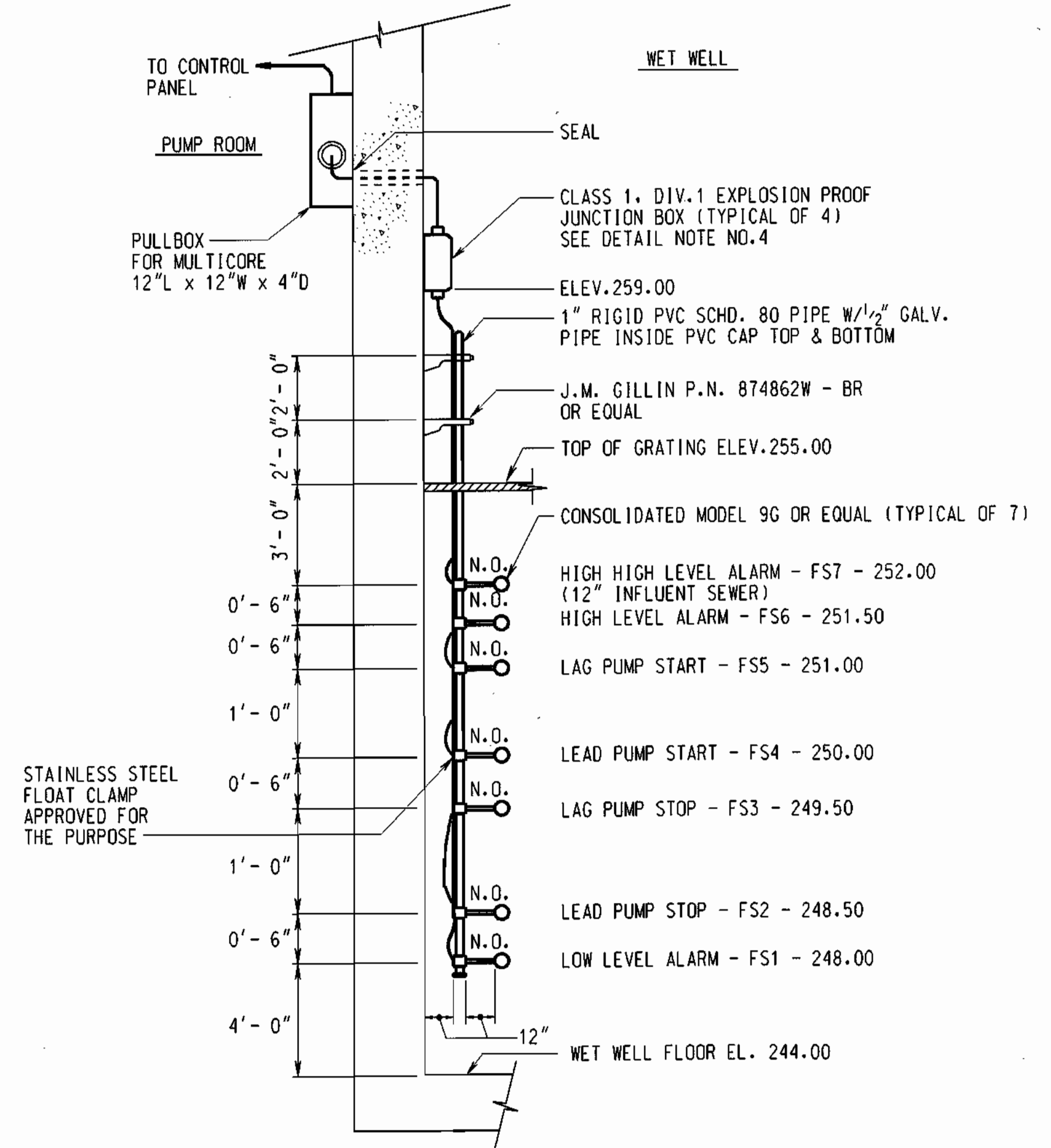
DIESEL GENERATOR PACKAGE DIGITALS



HYDRO-PNEUMATIC SYSTEM PACKAGE DIGITALS



SUMP PUMP SYSTEM 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. MULTICURE 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", SPOT 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



1-3

LEGEND

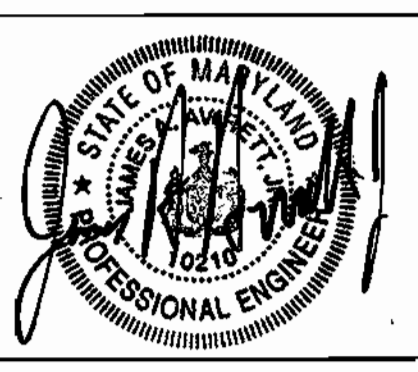
- ▲ REMOTE
- ▼ AT MOTOR CONTROL CENTER
- IN DRY WELL
- ▽ AT CONTROL PANELBOARD (PCS)
- IN THE WET WELL (ABOVE GRATING)
- LOCAL AT UNIT
- IN WET WELL

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Prepared by: [Signature] DATE: 1/29/03
 Director of Public Works
 Chief, Bureau of Engineering

[Signature] DATE: 1-29-03
 Chief, Bureau of Utilities
 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

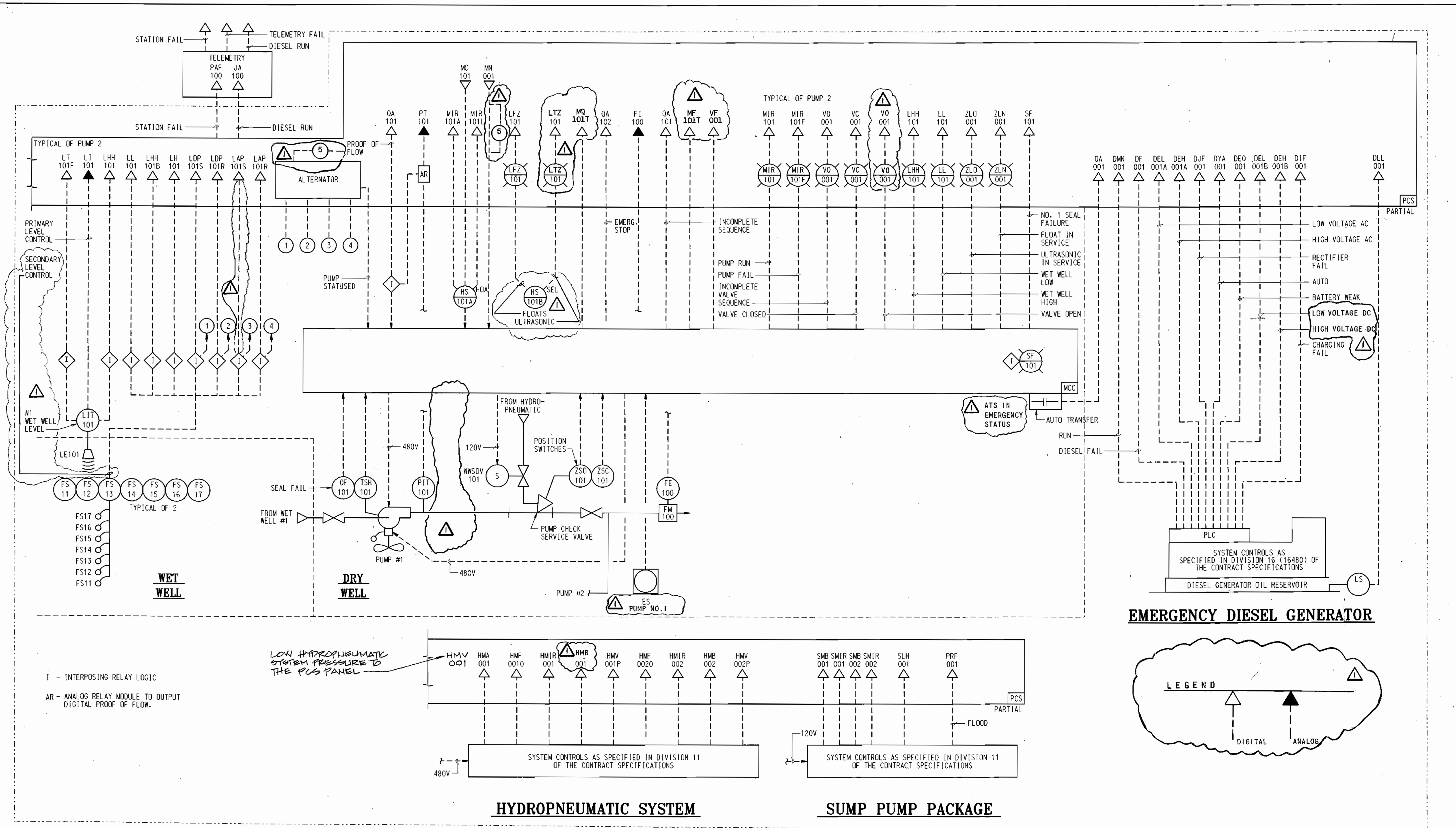
REVISION: 2 RECORD DRAWING 8/02

ELECTRICAL CONTROL DIAGRAMS

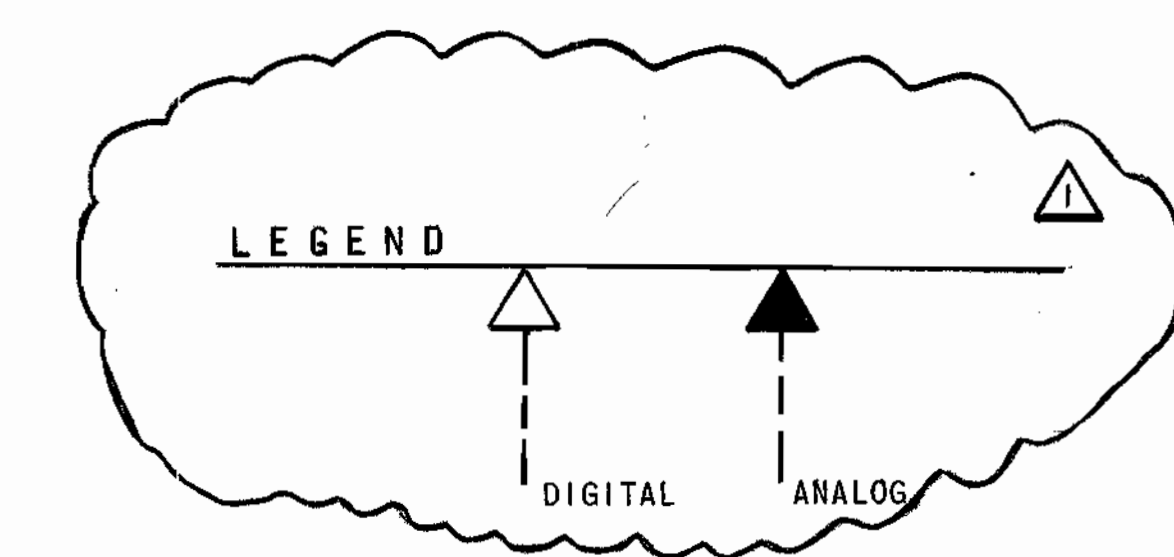
600' SCALE MAP NO. _____ BLOCK NO. _____

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

SCALE AS SHOWN
 SHEET 36 OF 36



EMERGENCY DIESEL GENERATOR



HYDROPNEUMATIC SYSTEM

SUMP PUMP PACKAGE

DRAWING NOTES

- (1) 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
11/16/02

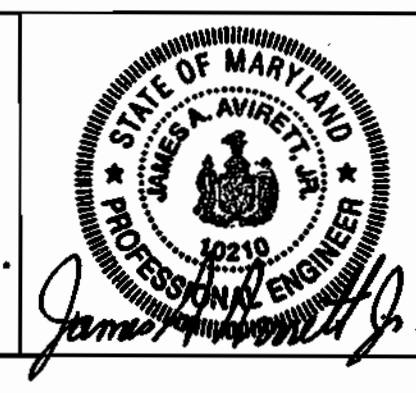
I-4

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Jan 11, 1999 DATE
Robert J. Brown CHIEF, BUREAU OF UTILITIES

1-15-99 DATE
Robert J. Brown CHIEF, UTILITY DESIGN DIVISION

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



DES: WR&A/JM			
DRN: EAB/RGW			
CHK: BJK			
DATE: 12/09/98			
RJK BY NO.	1	RECORD DRAWING	8-23-02
		ADDENDUM NO. 1	2/18/99

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