

GENERAL NOTES:

- APPROXIMATE LOCATIONS OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- TOPOGRAPHIC FIELD SURVEYS FOR THE PUMP STATION SITE WERE PERFORMED IN MAY 2014 BY WHITMAN, REQUARDT & ASSOCIATES LLP.
- ALL PROPOSED DEVELOPMENT PLANS, CONTOURS AND BASE TOPOGRAPHY FOR THE DEVELOPMENT INCLUDING EXISTING ENVIRONMENTAL FEATURES (I.E. WETLANDS/STREAM BUFFERS) WERE RECEIVED FROM GUTSCHICK, LITTLE & WEBER, P.A. AS PREPARED FOR THE SUNNELL PROPERTY DEVELOPMENT.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS:
THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE COORDINATE SYSTEM NAD '83/'91 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 18GA AND NO. 17ED. SEE SURVEY INFORMATION TABLE.
- ALL VERTICAL CONTROLS ARE BASED ON NAVD '88 AND WERE DERIVED FROM SURVEY CONTROL STATION NO. 18GA AND NO. 17ED. SEE SURVEY INFORMATION TABLE ON THIS DRAWING.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 18". CLEAR ALL POLES BY 5'-0" MINIMUM, OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF THE 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 FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED TO THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE 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.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATIONS OF THE TEST PITS. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWINGS. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE LOCATED BY THE CONTRACTOR BY TEST PIT TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.
AT&T 1-800-252-1133
BGE (CONSTRUCTION SERVICES) 410-637-8713
BGE (EMERGENCY) 410-685-0123
BUREAU OF UTILITIES 410-313-4900
COLONIAL PIPELINE CO. 410-795-1390
MISS UTILITY 1-800-257-7777
STATE HIGHWAY ADMINISTRATION 410-531-5533
VERIZON 1-800-743-0033/410-224-9210
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT PRACTICAL.
- THE CONTRACTOR SHALL REMOVE TREES, STUMPS, AND ROOTS ALONG THE LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE SEWER.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410) 313-7450 AT LEAST FIVE WORKING DAYS BEFORE OPEN CUTTING OR BORING/JACKING OF ANY COUNTY ROAD FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.114(g) OF THE HOWARD COUNTY CODE.

SANITARY SEWER NOTES:

- ALL GRAVITY SEWER MAINS SHALL BE SDR-35 PVC UNLESS OTHERWISE NOTED.
- ALL FORCE MAIN SHALL BE C-900 PVC UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" UNLESS OTHERWISE NOTED.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED "WT" IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAILS G5.52.
- TOPS OF ALL FORCE MAINS SHALL HAVE A MINIMUM OF 4' COVER UNLESS OTHERWISE NOTED.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED IN CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- TRACER WIRES AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL DIP AND PVC FORCE MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL. CONTINUITY TEST STATIONS SHALL BE PLACED AT A MAXIMUM OF 400 FEET APART IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS AND DETAILS.
- FOR PVC FORCE MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPE SHALL BE SUBMITTED WITH THE PIPE MATERIAL CERTIFICATIONS OR SHOP DRAWINGS PRIOR TO APPROVAL OF THE MATERIAL FOR USE. THE TEST RECORDS SHALL BE FOR THE PIPE TO BE INSTALLED UNDER THIS CONTRACT. ALL PVC PIPE SHALL CONTAIN MARKINGS TO ALLOW CROSS REFERENCING OF THE PIPE SUPPLIED TO THE TEST RECORDS RECEIVED.
- UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS SACRIFICIAL ANODES SHALL BE INSTALLED ON ALL VALVES AND METALLIC FITTINGS USED WITH PVC FORCE MAINS IN ACCORDANCE WITH VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. SEVENTEEN (17) POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSSES. TWELVE (12) POUND ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC SHALL BE DUCTILE IRON.
- PROPER ASSEMBLY OF GASKETED PVC PIPE JOINTS: THE MANUFACTURER'S INSERTION LINE OF GASKETED PVC PIPE JOINTS INDICATES THE MAXIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. AFTER ASSEMBLY OF THE JOINT, THE INSERTION LINE SHALL REMAIN VISIBLE. DUAL INSERTION LINES ON GASKETED PVC PIPE INDICATE THE MAXIMUM AND MINIMUM DEPTH OF INSERTION OF THE SPIGOT INTO THE BELL. THE CONTRACTOR SHALL NOT OVER INSERT OR OVER HOME THE SPIGOT INTO THE BELL OF PVC PIPE.
- ALL CHANGES IN HORIZONTAL OR VERTICAL DIRECTION OF PVC SEWER PIPE SHALL BE MADE WITH STANDARD BENDS, 5-DEGREE SWEEPS OR HIGH DEFLECTION (HD) COUPLINGS. NO BENDING OF THE PIPE OR DEFLECTING OF PVC PIPE JOINTS IS PERMITTED. WHERE HIGH DEFLECTION COUPLINGS OR 5-DEGREE SWEEPS ARE PERMITTED, THE CONTRACTOR SHALL PROVIDE ONE FULL LENGTH (20-FOOT LONG) ON EITHER SIDE OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP. THE CONTRACTOR SHALL USE A VIBRATORY PLATE COMPACTOR OR OTHER APPROVED MEANS TO THOROUGHLY COMPACT THE #57 STONE ON BOTH SIDES OF THE HIGH DEFLECTION COUPLING OR 5-DEGREE SWEEP, TAKING CARE NOT TO USE COMPACTOR EQUIPMENT DIRECTLY OVER THE FITTING. PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL DEFLECTION OF 3-DEGREES (1/2-DEGREE ON EITHER END OF THE COUPLING), SHALL BE RATED FOR A MINIMUM 200 PSI MEETING THE REQUIREMENTS OF AWWA C900, SHALL HAVE A MINIMUM LAY LENGTH OF 9-INCHES AND SHALL HAVE CENTER STOPS. PVC HIGH DEFLECTION COUPLINGS SHALL BE CERTAINTIED PVC HIGH DEFLECTION (HD) STOP COUPLINGS OR EQUAL. FIVE DEGREE SWEEPS SHALL BE BELL BY SPIGOT, RATED FOR A MINIMUM 225 PSI, DR18 MEETING THE REQUIREMENTS OF AWWA C900 AND SHALL BE MULTI FITTINGS (PEX) BLUE BRUTE DR18 OR EQUAL.
- WHEN PVC HIGH DEFLECTION COUPLINGS OR PVC 5-DEGREE SWEEPS ARE USED TO FACILITATE CHANGES IN HORIZONTAL OR VERTICAL ALIGNMENTS OF AWWA C-900 PVC PIPELINES, THE CONTRACTOR SHALL INSTALL DEVICES FOR THE PREVENTION OF OVER-INSERTION OF THE PVC PIPE SPIGOTS OR PLAIN ENDS INTO THE PUSH ON BELL JOINT ON BOTH SIDES OF THE HIGH DEFLECTION COUPLINGS AND 5-DEGREE SWEEPS. BELL STOPS SHALL BE PLACED AT THE PROPER INSERTION LINE FOR THE FITTINGS. THE BELL STOP SHALL BE MANUFACTURED OF DUCTILE IRON AND INCORPORATE AN EXPANSION RETENTION SPRING TO ALLOW FOR PIPE EXPANSION AND CONTRACTION. THE BELL STOPS SHALL BE SERIES 5000 MEGA-STOP, AS MANUFACTURED BY EBAA IRON, INC. OR APPROVED EQUAL.

PROJECT PURPOSE:

THE CONTRACT IS TO CONSTRUCT A WASTEWATER PUMPING STATION AND FORCE MAIN AS REQUIRED TO PROVIDE PUBLIC SEWER SERVICE FOR THE DANIELS AREA EAST OF OLD FREDERICK ROAD.

SURVEY INFORMATION TABLE

GEODETIC CONTROL STA.	NORTHING	EASTING	ELEV.
18GA	591,872.01	1,370,380.43	445.77
17ED	594,315.14	1,357,380.58	478.28

NOTE: GEODETIC CONTROLS INDICATED IN TABLE ABOVE ARE NOT WITHIN THE LIMITS OF THE PROJECT LOCATION MAP ABOVE. THESE GEODETIC CONTROLS WERE USED TO ESTABLISH THE GPS CONTROLS INDICATED ON THE CONTRACT DOCUMENTS.

NAME OF UTILITY CONTRACTOR:

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH F-19-038 FOR THE DEVELOPMENT OF THE ENTRANCE ROAD, SDP-19-51 FOR THE PUMP STATION SITE, THE STANDARD PLAN FOR THE OLD FREDERICK ROAD CONNECTION AND SECTION 308 OF THE SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS.

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27029, EXPIRATION DATE: 01-25-2020."

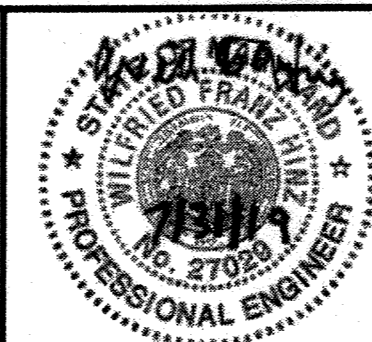
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

[Signature] 8/9/19
DIRECTOR OF PUBLIC WORKS

[Signature] 8/11/19
CHIEF, BUREAU OF UTILITIES

[Signature] 8/11/19
CHIEF, UTILITY DESIGN DIVISION

WRA
Whitman, Requardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231



DES: RW			
DRN: RW			
CHK: WH			
JULY 2019	BY	NO.	
	REVISION		DATE

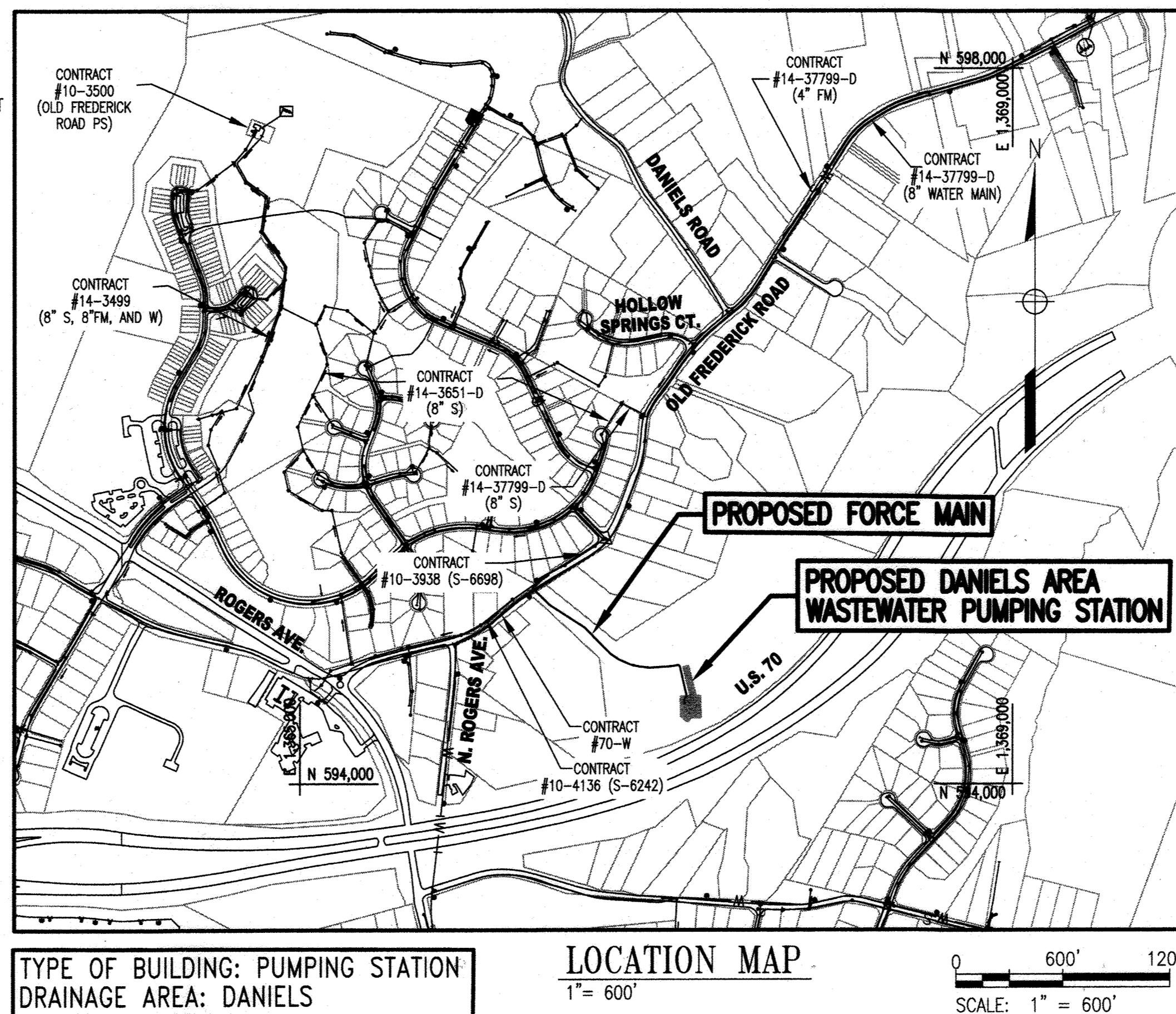
TITLE SHEET, INDEX OF DRAWINGS,
CIVIL NOTES AND LEGEND

600 SCALE MAP NO. 18 BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

AS-BUILT
G-1
SCALE
AS SHOWN
SHEET
1 OF 43

DANIELS AREA WASTEWATER PUMPING STATION CAPITAL PROJECT S-6275 CONTRACT NO. 10-5096 HOWARD COUNTY, MARYLAND



TYPE OF BUILDING: PUMPING STATION
DRAINAGE AREA: DANIELS

LOCATION MAP
1" = 600'

0 600' 1200'
SCALE: 1" = 600'

ABBREVIATIONS

DIA.	DIAMETER	NIC	NOT IN CONTRACT
ELEV.	ELEVATION	PROP/PR	PROPOSED
EX.	EXISTING	PVC	POLYVINYL CHLORIDE
FM	FORCE MAIN	R&C	REBAR AND CAP
GS	GRAVITY SEWER	R/W	RIGHT OF WAY
HDC	HIGH DEFLECTION COUPLING	S	GRAVITY SANITARY SEWER
HORIZ.	HORIZONTAL	SAN	SANITARY
INV.	INVERT	SF	SILT FENCE
LF	LINEAR FOOT	SSF	SUPER SILT FENCE
LOD	LIMIT OF DISTURBANCE	TYP.	TYPICAL
MH	MANHOLE		
MIN.	MINIMUM		
N/A	NOT APPLICABLE		

INDEX OF DRAWINGS

SHEET NO.	DRAWING	DESCRIPTION
1	G-1	TITLE SHEET, INDEX OF DRAWINGS, CIVIL NOTES AND LEGEND
2	C-1	FORCE MAIN PLAN AND PROFILE
3	C-2	PUMPING STATION SITE AND UTILITY PLAN
4	C-3	ENLARGED PLAN AND SEDIMENT & EROSION CONTROL FOR OLD FREDERICK ROAD CONNECTION
5	C-4	CIVIL DETAILS
6	C-5	BORING LOGS
7	A-1	ARCHITECTURE ABBREVIATIONS AND LEGEND
8	A-2	FLOOR AND ROOF PLANS
9	A-3	BUILDING ELEVATIONS AND SECTIONS
10	A-4	WALL SECTIONS AND DETAILS
11	A-5	ARCHITECTURE SCHEDULES AND DETAILS
12	A-6	PAVILION AND DETAILS
13	S-1	GENERAL STRUCTURAL NOTES, BUILDING CODES AND DESIGN LOADS
14	S-2	STRUCTURAL TYPICAL DETAILS
15	S-3	STRUCTURAL TYPICAL DETAILS
16	S-4	FOUNDATION AND GRADE LEVEL PLAN
17	S-5	ROOF FRAMING PLAN
18	S-6	SECTIONS AND DETAILS
19	M-1	MECHANICAL NOTES AND SYSTEM CURVE
20	M-2	PUMPING STATION PLANS AND DETAILS
21	M-3	PUMPING STATION SECTIONS AND DETAILS
22	M-4	MECHANICAL DETAILS
23	E-1	ELECTRICAL GENERAL NOTES, LEGENDS, AND ABBREVIATIONS
24	E-2	PUMPING STATION ELECTRICAL SITE PLAN
25	E-3	PUMPING STATION LIGHTING PLAN
26	E-4	PUMPING STATION POWER PLAN
27	E-5	ELECTRICAL POWER ONE-LINE DIAGRAM, PANEL SCHEDULE, AND GROUNDING DETAILS
28	E-6	ELECTRICAL DETAILS
29	I-1	INSTRUMENTATION LEGENDS, ABBREVIATIONS AND GENERAL NOTES (1 OF 2)
30	I-2	INSTRUMENTATION LEGENDS, ABBREVIATIONS AND GENERAL NOTES (2 OF 2)
31	I-3	PROCESS AND INSTRUMENTATION DIAGRAM
32	I-4	PUMP CONTROL PANEL DIAGRAMS (2 OF 2)
33	I-5	PUMP CONTROL PANEL DIAGRAMS (2 OF 2)
34	I-6	VENTILATION CONTROL DIAGRAMS
35	I-7	INSTRUMENTATION DETAILS
36	I-8	PUMPING STATION INSTRUMENTATION PLANS
37	SDP-1	SITE DEVELOPMENT PLAN - COVER SHEET
38	SDP-2	SDP- SITE DEVELOPMENT PLAN
39	SDP-3	SDP- SITE DETAILS
40	SDP-4	SDP- SEDIMENT CONTROL PLAN
41	SDP-5	SDP- SEDIMENT CONTROL NOTES AND DETAILS
42	SDP-6	SDP- SWM DRAINAGE MAP AND DETAILS
43	SDP-7	SDP- LANDSCAPE PLAN

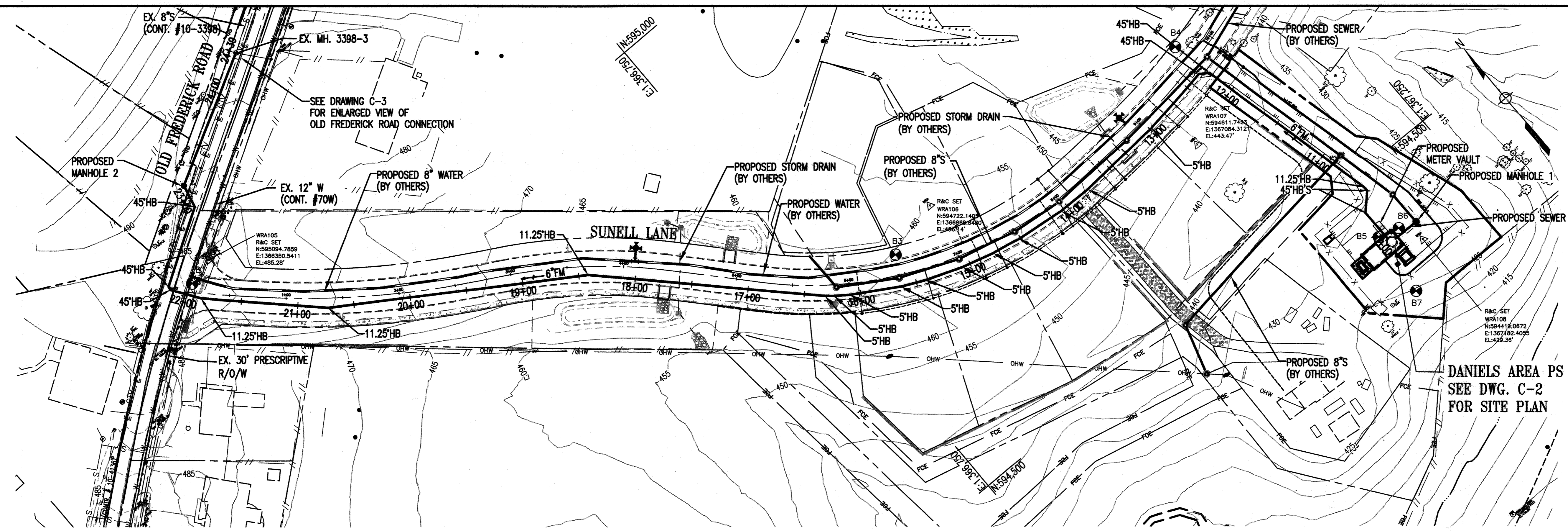
BILL OF MATERIALS

	QUANTITY	MATERIALS	AS-BUILT QUANTITY	MANUFACTURER
6" PVC FORCE MAIN	1,290 LF	DR-18 PVC	1,290 L.F.	NAPCO
8" DIA. SDR 35 PVC GRAVITY SEWER	127 LF	SDR-35	127 L.F.	NAPCO
8" DIA. C-900 PVC GRAVITY SEWER	23 LF	DR-18 PVC	23 L.F.	NAPCO
48" I.D. PRECAST MANHOLES < 6'	2 EA	PRECAST CONC.	1 EA.	GILLESPIE PRECAST
48" I.D. PRECAST MANHOLE ADDITIONAL DEPTH > 6'	6 VF	PRECAST CONC.	0 VF	GILLESPIE PRECAST
1 1/2" WHC (COPPER)	310 LF	TYPE K	310 LF	STREAMLINE

DESCRIPTION	EXISTING	PROPOSED
STORM DRAIN INLET W/ STORM DRAIN PIPE		
FENCE		
PAVED ROADWAY*		
TRAVERSE POINT		
BENCHMARK/SURVEY CONTROL POINT		
PROPERTY LINE		
MAILBOX		
POWER/UTILITY POLE WITH GUY WIRE		
STREET LIGHT		
ELECTRIC METER		
IRON PIPE FOUND		
STREAM BUFFER		
WETLAND BUFFER		

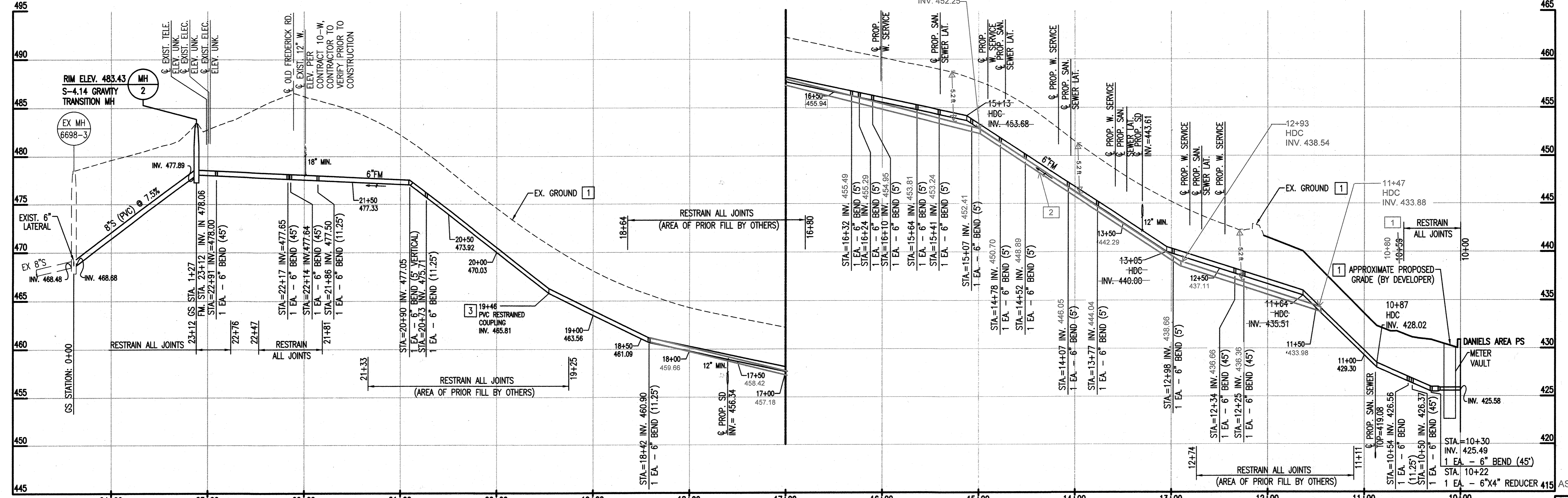
*PROPOSED SYMBOL IS ONLY SHOWN FOR PUMPING STATION ENTRANCE.

THE DRAWINGS IN THIS SET ARE RECORD DRAWINGS. THEY ARE CONSTRUCTION CONTRACT DRAWINGS WHICH HAVE BEEN REVISED ON THE BASIS OF AVAILABLE FIELD INFORMATION RECORDED BY OTHERS DURING CONSTRUCTION OF THE CONTRACT. THERE HAS BEEN NO VERIFICATION OF DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS OR THE ACCURACY/COMPLETENESS OF THE FIELD INFORMATION RECEIVED.

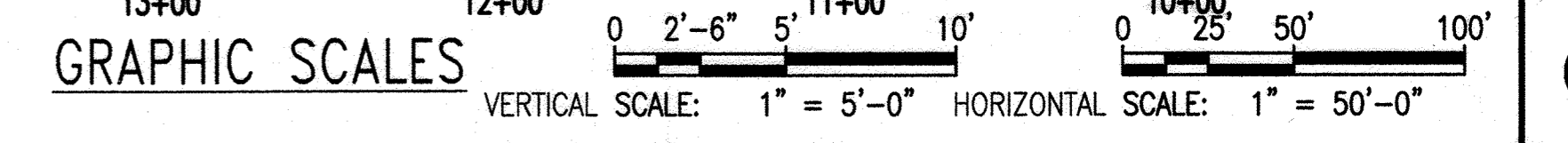


- CONSTRUCTION KEY NOTES**
- 1 PROPOSED WATER, GRAVITY SEWER (EXCEPT WHERE NOTED) AND SITE GRADING TO BE PERFORMED BY OTHERS. FORCE MAIN IS TO BE COORDINATED WITH AND INSTALLED AFTER THE ROUGH GRADING OF THE PROPOSED SUNELL LANE IS COMPLETE.
 - 2 SEE DWG. C-3 FOR FORCE MAIN STAKEOUT TABLE.
 - 3 SEE DWG. C-4 FOR PVC RESTRAINED COUPLING DETAIL.

1 2 PLAN
SCALE: 1" = 50'



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



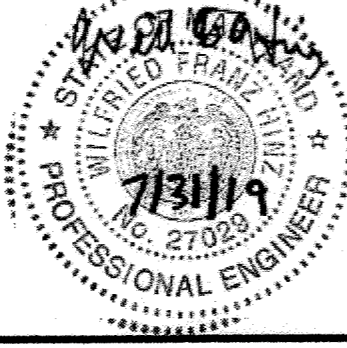
"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27029, EXPIRATION DATE: 01-25-2020."

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Mark D. ... 8/19/19
DIRECTOR OF PUBLIC WORKS

... 8/19/19
CHIEF, BUREAU OF UTILITIES

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231



DES:	RW		
DRN:	RW		
CHK:	WH	2	CHANGE BULLETIN #4 - LOWER FORCE MAIN 8/6/20
		1	CHANGE BULLETIN #1 - RESTRAINED JOINT LIMITS 4/22/20
JULY 2019	BY	NO.	REVISION
			DATE

FORCE MAIN PLAN AND PROFILE

600 SCALE MAP NO. 18
BLOCK NO. 7&13

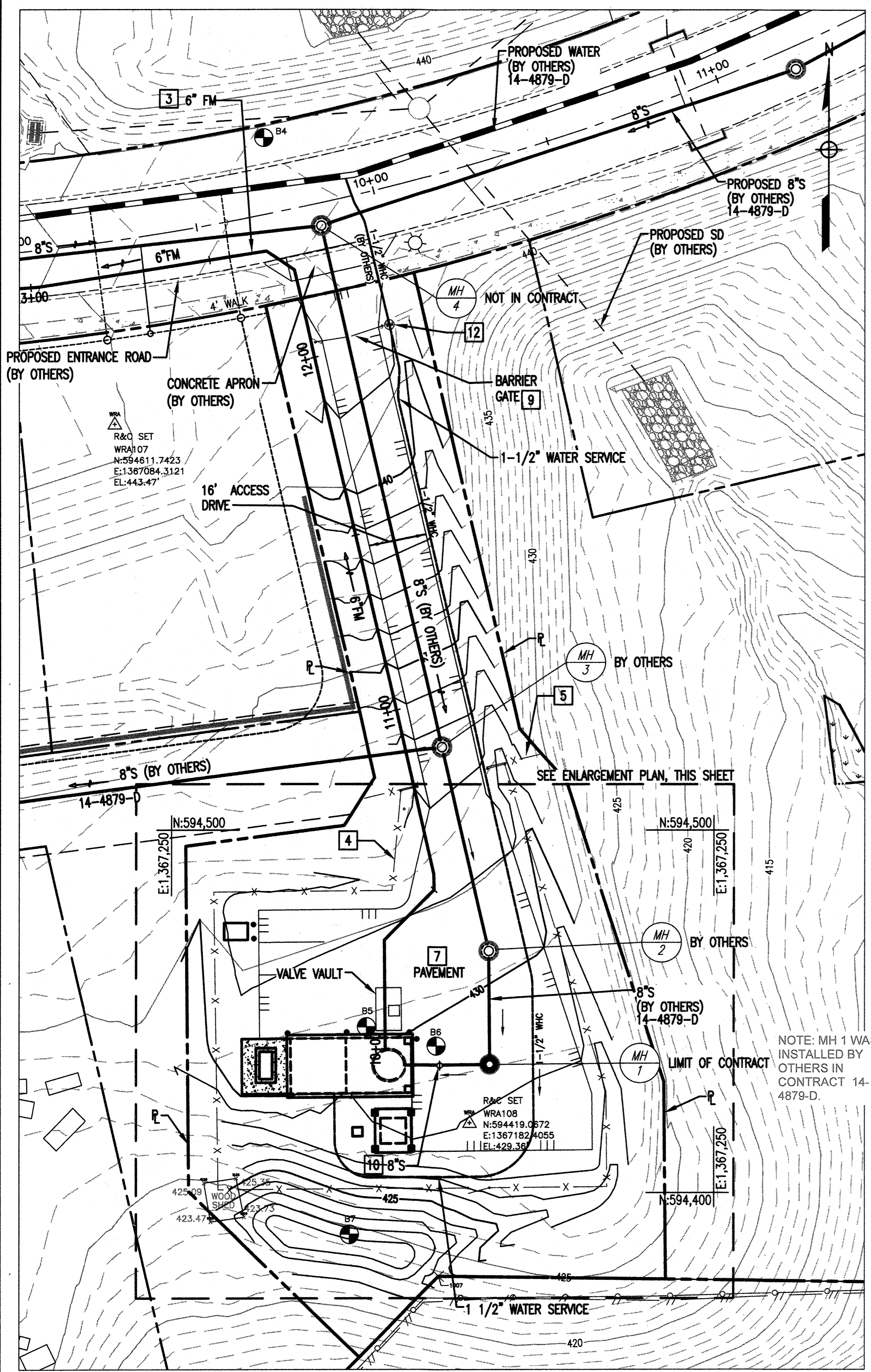
DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096

2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

C-1

SCALE AS SHOWN

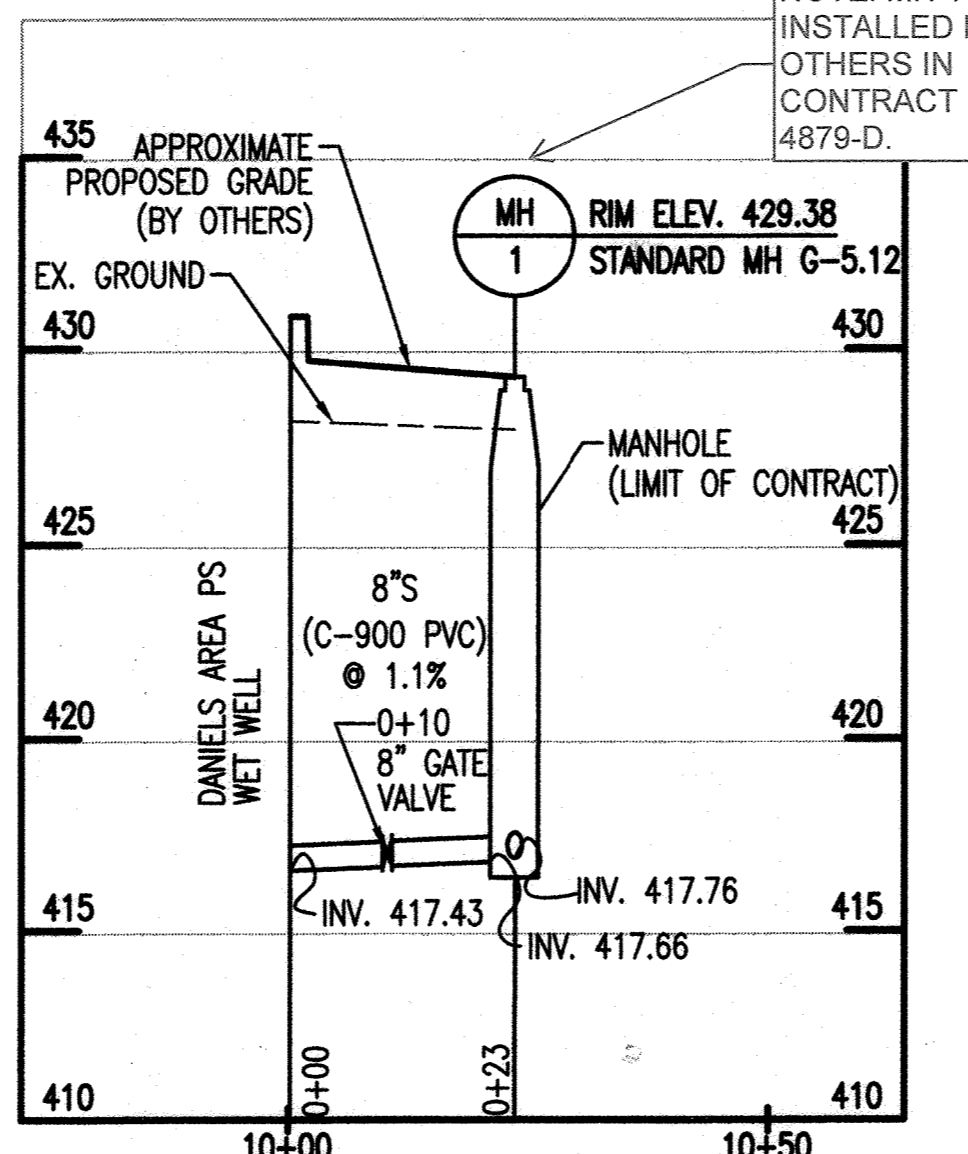
SHEET 2 OF 43



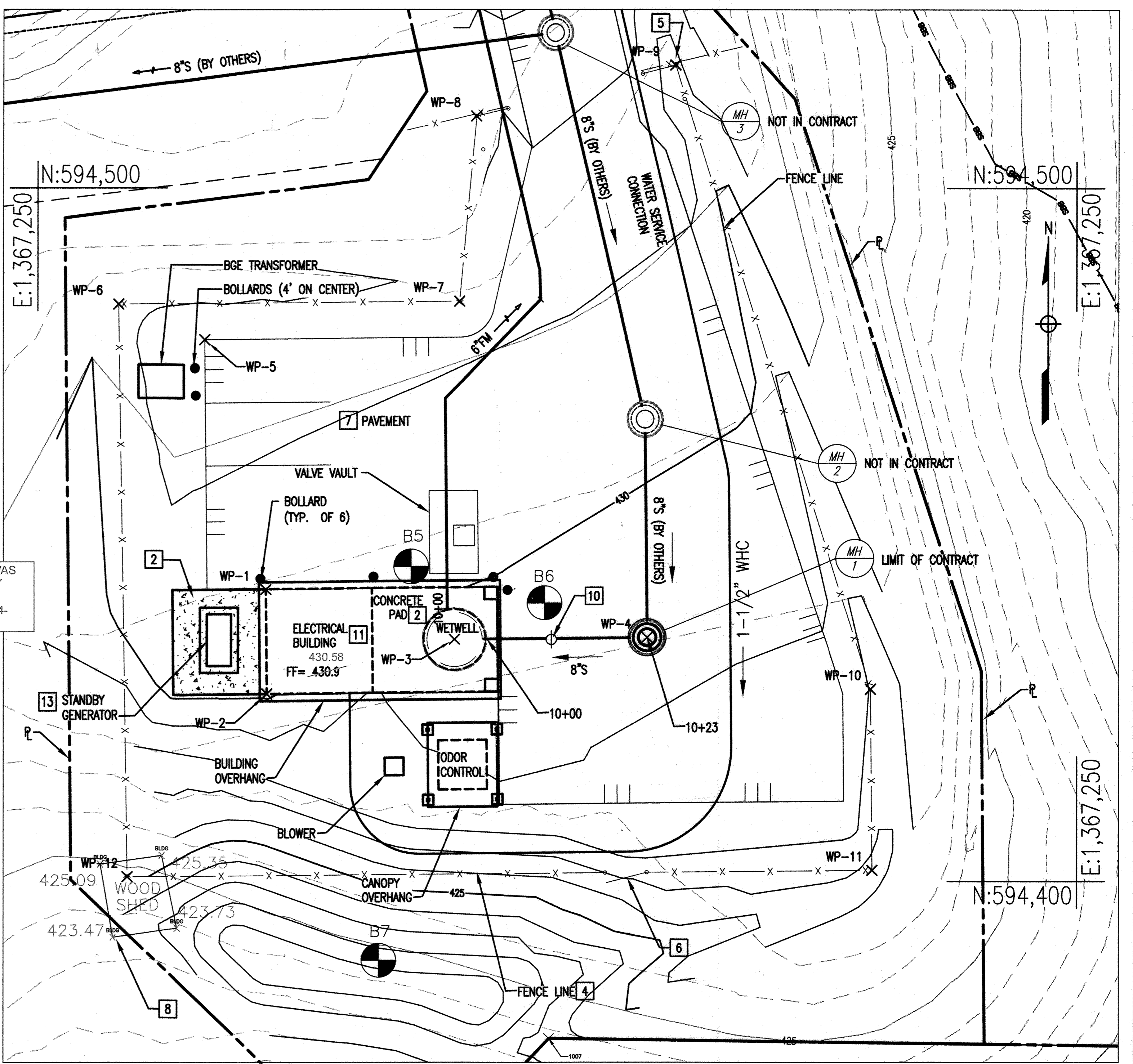
SITE PLAN
SCALE: 1" = 20'

Point Table			
Point #	Description	Northing	Easting
1	WP-1	594442.16	1367132.90
2	WP-2	594426.88	1367133.03
3	WP-3	594434.78	1367160.17
4	WP-4	594435.03	1367187.97
5	WP-5	594478.04	1367124.07
6	WP-6	594483.05	1367111.67
7	WP-7	594483.46	1367160.93
8	WP-8	594510.61	1367163.33
9	WP-9	594517.96	1367192.03
10	WP-10	594427.50	1367220.23
11	WP-11	594401.66	1367220.46
12	WP-12	594400.80	1367112.91

**SITE PLAN
STAKEOUT TABLE**



**GRAVITY SEWER
PROFILE**
HORIZ. SCALE: 1" = 20'
VERT. SCALE: 1" = 5'



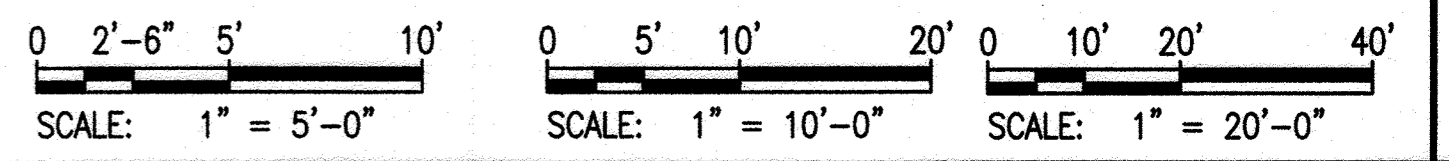
ENLARGEMENT PLAN
SCALE: 1" = 10'

CONSTRUCTION KEY NOTES

- EXISTING CONTOURS INDICATED ON SITE PLAN ARE BASED ON THE APPROXIMATE ROUGH GRADING OF THE SITE TO BE PERFORMED BY OTHERS PRIOR TO NOTICE TO PROCEED FOR THE PUMP STATION CONSTRUCTION. THE COUNTY'S CONTRACTOR WILL BE RESPONSIBLE TO PERFORM ALL FINAL GRADING FOR THE PUMP STATION ENTRANCE ROAD, SITE AND STORMWATER MANAGEMENT, IN ADDITION TO ALL FINAL PAVING AS INDICATED FOR THE PUMP STATION. SEE SITE DEVELOPMENT PLAN FOR FINAL GRADING, SEDIMENT AND EROSION CONTROL AND STORMWATER MANAGEMENT PLAN REQUIREMENTS.
- INSTALL CONCRETE PAD, SEE DRAWING C-4 FOR DETAILS.
- CONSTRUCTION OF FORCE MAIN SHALL BE COORDINATED WITH AND INSTALLED AFTER ROUGH GRADING OF THE ACCESS ROAD BY OTHERS.
- INSTALL 6' TALL FENCE IN ACCORDANCE WITH STANDARD DETAILS G-7.21 THROUGH G-7.25 AND STANDARD COUNTY SPECIFICATIONS, WITH THE EXCEPTION THAT ALL PVC COATED FENCE FABRIC MATERIAL SHALL HAVE A 9 GAUGE (CORE) WITH A 1/4" FABRIC PATTERN.
- INSTALL 20' WIDE ACCESS SLIDE GATE. SEE DRAWING C-4 FOR DETAILS.
- INSTALL 6' ACCESS GATE IN ACCORDANCE WITH STANDARD DETAIL G-7.23.
- PAVEMENT CROSS SECTION FOR PUMP STATION ENTRANCE SHALL BE IN ACCORDANCE WITH P-2 PAVING SECTION ON STANDARD DETAIL R-2.01 (CBR 3 TO <5 W/ GAB).

- EXISTING SHED IS TO BE REMOVED BY OTHERS.
- INSTALL BARRIER GATE. SEE DRAWING C-4 FOR DETAILS.
- INSTALL C-900 INFLUENT SEWER WITH 8" BURIED RESILIENT WEDGE GATE VALVE WITH VALVE BOX. INSTALL VALVE EXTENSION STEM TO WITHIN 8' OF FINISHED GRADE.
- SOIL IN THE VICINITY OF THE PROPOSED PUMP STATION BUILDING FOUNDATION SHALL NOT BE DISTURBED. IF SUBGRADE IS DISTURBED OR CHANGED, THE OWNERS GEOTECHNICAL ENGINEER SHALL VERIFY SUITABILITY OF BEARING SOILS AND SUBGRADE PRIOR TO PLACING FOUNDATION AND FLOOR SLAB. FOR THE CANOPY FOUNDATIONS, ANY DISTURBED MATERIAL SHALL BE EXCAVATED TO A COMPETENT SOIL STRATUM AND REPLACED WITH COMPACTED, ENGINEERED FILL.
- 1-1/2" WATER SERVICE CONNECTION FROM 8" WATER MAIN TO THE METER VAULT AND 1" METER VAULT TO BE CONSTRUCTED BY OTHERS.
- MAINTAIN 5' CLEARANCE FROM STANDBY GENERATOR TO EDGE OF ELECTRICAL BUILDING.

GRAPHIC SCALES



"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27029, EXPIRATION DATE: 01-25-2020."

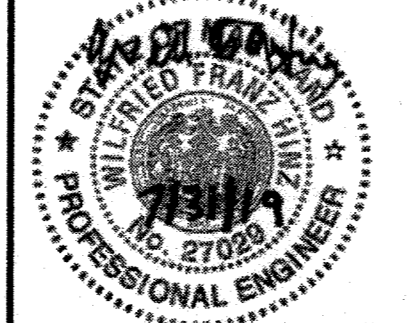
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Michael J. ...
DIRECTOR OF PUBLIC WORKS
DATE: 8-9-19

... ..
CHIEF, BUREAU OF ENGINEERING
DATE: ...

... ..
CHIEF, UTILITY DESIGN DIVISION
DATE: ...

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231



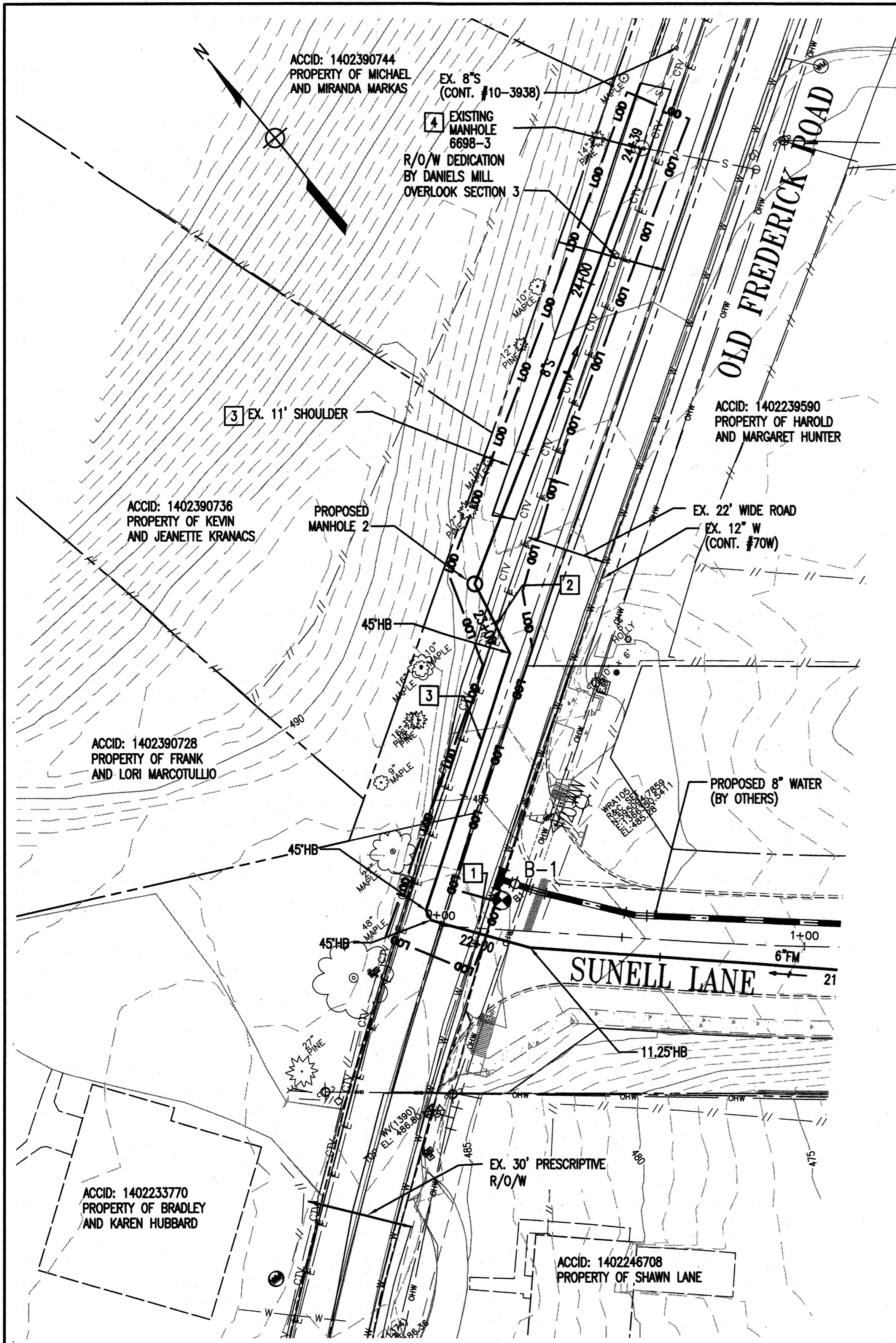
DES:	RW			
DRN:	RW			
CHK:	WH			
JULY 2019				
BY:	NO.			
		1	AS-BUILT NOTES	2/1/22
			REVISION	DATE

PUMPING STATION
SITE AND UTILITY PLAN

600 SCALE MAP NO. 18
BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

AS-BUILT
SCALE AS SHOWN
SHEET 3 OF 43



**OLD FREDERICK ROAD
CONNECTION PLAN**

SCALE: 1" = 20'

GENERAL SEDIMENT CONTROL NOTES

1) ALL SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED IN ACCORDANCE WITH SDP-10-051 AND F-10-038 FOR THE PUMP STATION AND ON-SITE FORCE MAIN WITHIN SUNELL LANE RESPECTIVELY. THE FOLLOWING NOTES ARE IN APPLICABLE TO THE UTILITY CONNECTION MADE WITHIN OLD FREDERICK ROAD THAT ARE OUTSIDE THE LIMITS OF THE ABOVE REFERENCED PLAN.

GENERAL SEDIMENT CONTROL NOTES

- FOR UTILITY INSTALLATIONS, ALL DISTURBED AREAS SHALL BE STABILIZED THE SAME DAY, IF UNFORESEEN CONDITIONS REQUIRE THAT AN EXCAVATION MUST REMAIN OPEN BEYOND THE WORK DAY, THE FOLLOWING PROVISIONS MUST BE FOLLOWED:
 - AT GRADE INLET PROTECTION, CURB INLET PROTECTION, TEMPORARY SILT FENCE SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF ANY AREA INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE DAY; AND
 - ANY PILES OF EXCAVATION SPOILS MATERIALS MUST BE SECURELY COVERED TO ENSURE THAT SEDIMENTS ARE NOT TRANSPORTED FROM THE PILE.
- PAVEMENTS ADJACENT TO THE EXCAVATION MUST REMAIN SEDIMENT FREE. CONTRACTOR SHALL PLACE PLASTIC SHEETING BENEATH THE EXCAVATED MATERIAL PILES, AND SWEEP PAVEMENTS CLEAN OF SEDIMENTS AS REQUIRED.
- A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED AT THE DIRECTION OF THE SEDIMENT AND EROSION CONTROL INSPECTOR.
- ALL SPOILS FROM THE EXCAVATION ARE TO BE PLACED ON THE UPHILL SIDE OF THE TRENCH.

STANDARD SEDIMENT CONTROL NOTES

- A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE CLEARLY MARKED IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES:
 - PRIOR TO THE START OF EARTH DISTURBANCE.
 - UPON COMPLETION OF THE INSTALLATION OF PERIMETER CONTROLS BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
 - PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT.
 - PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.

OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO INSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.

- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DICES, SLOPES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. INCREMENTAL STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT/AND OR FILL STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATTING (SEC. B-4-6).
- 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 CID.

6. SITE ANALYSIS

TOTAL AREA OF SITE:	0.10	ACRES
AREA DISTURBED:	0.10	ACRES
AREA TO BE ROOFED OR PAVED:	0.08	ACRES
AREA TO BE VEGETATIVELY STABILIZED:	0.02	ACRES
TOTAL CUT:	300	CU. YDS.
TOTAL FILL:	300	CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION:	N/A	ACRES

- ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY, AND THE NEXT DAY AFTER EACH RAIN EVENT. A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE BY REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:
 - INSPECTION DATE
 - INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
 - NAME AND TITLE OF INSPECTOR
 - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
 - BRIEF DESCRIPTION OF PROJECT'S STATUS (E.G. PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
 - EVIDENCE OF SEDIMENT DISCHARGES
 - IDENTIFICATION OF PLAN DEFICIENCIES
 - IDENTIFICATION OF SEDIMENT CONTROLS THAT REQUIRE MAINTENANCE
 - IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
 - COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
 - PHOTOGRAPHS
 - MONITORING/SAMPLING
 - MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
 - OTHER INSPECTION ITEMS AS REQUIRED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (HPOES, MDC)

- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED AT THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
- ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY BE ALLOWED BY THE CID PER THE LIST OF APPROVED HSCD-APPROVED FIELD CHANGES.
- DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PROCEEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID. UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
- WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
- TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
- ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IRRIGATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION.
- STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
 - USE I AND II MARCH 1 - JUNE 15
 - USE II AND III OCTOBER 1 - APRIL 30
 - USE IV MARCH 1 - MAY 31
- A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

OVERALL PROJECT SEQUENCE OF CONSTRUCTION

- OBTAIN A GRADING PERMIT FROM HOWARD COUNTY. (1 WEEK)
- CALL 'MISS UTILITY' AT 1-800-257-7777 48 HOURS BEFORE ANY CONSTRUCTION IS TO BEGIN. (1 WEEK)
- NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION AT LEAST 2 DAYS PRIOR TO THE START OF CONSTRUCTION TO ARRANGE A PRE CONSTRUCTION MEETING. (2 DAYS)
- INSTALL AND STABILIZE SEDIMENT CONTROL MEASURES AS REQUIRED BY SEDIMENT AND EROSION CONTROL INSPECTOR. (2 DAYS)
- BEFORE PROCEEDING WITH ANY EARTH DISTURBANCE OR GRADING, NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION UPON INSTALLATION OF SEDIMENT CONTROL MEASURES. (1 WEEK)
- EXCAVATE FOR AND INSTALL SEWER MAINS. EXCAVATION FROM TRENCHING OPERATIONS SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCH. (1 WEEK)
- VEGETATIVELY STABILIZE BACKFILLED TRENCH OR TEMPORARILY STABILIZE ANY PAVED AREAS WITH TEMPORARY HOTMIX THAT IS DISTURBED AS WORK PROGRESSES. (ON-GOING THROUGHOUT PROJECT)
- NOTIFY HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (CID, 410-313-1880) AND OBTAIN APPROVAL TO REMOVE EROSION AND SEDIMENT CONTROL MEASURES. (2 DAYS)
- REMOVE CONTROLS AND PERMANENTLY STABILIZE ANY AREAS DISTURBED DURING REMOVAL OF CONTROLS. (2 DAYS)

SOIL INFORMATION

- PER NRCS SOIL MAPS, ALL SOILS WITHIN THE LOD ARE CLASSIFIED AS GbB - GLADSTONE LOAM 3 TO 8% SLOPES, WITH SOIL EROSION FACTOR OF 0.20.

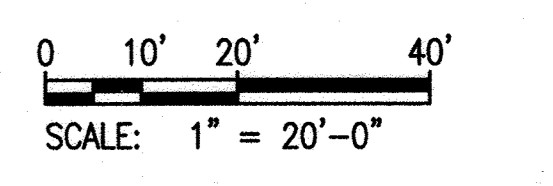
CONSTRUCTION KEY NOTES

- TEST PIT EXISTING 12" WATER MAIN.
- TEST PIT EXISTING ELECTRIC AND COMMUNICATION LINES.
- PERFORM TEMPORARY PAVEMENT IN ACCORDANCE WITH STANDARD DETAIL G-4.01 INCLUDING SURFACE COURSE, FINAL MILL AND OVERLAY OF ROAD OR SHOULDER AS APPLICABLE IS TO BE PERFORMED BY OTHERS.
- CORE INTO EX. MANHOLE, INSTALL A-LOK FIELD GASKET, AND RECONSTRUCT EX. MANHOLE CHANNEL FOR NEW 8" SEWER CONNECTION.

Force Main Stakeout			
Station	Description	Northing	Easting
10+00	Wetwell	594,439.33	1,367,159.13
10+30	45° Bend	594,469.71	1,367,158.86
10+50	45° Bend	594,483.70	1,367,172.60
10+54	11.25° Bend	594,488.04	1,367,172.46
12+25	45° Bend	594,654.04	1,367,133.90
12+34	45° Bend	594,659.24	1,367,126.16
12+98	5° Bend	594,649.15	1,367,063.03
13+77	5° Bend	594,643.56	1,366,984.65
14+07	5° Bend	594,644.05	1,366,954.26
14+52	5° Bend	594,648.66	1,366,909.80
14+78	5° Bend	594,653.57	1,366,884.33
15+07	5° Bend	594,661.71	1,366,855.79
15+41	5° Bend	594,673.76	1,366,824.27
15+64	5° Bend	594,683.77	1,366,803.67
16+10	5° Bend	594,707.42	1,366,764.19
16+24	5° Bend	594,715.47	1,366,753.08
16+32	5° Bend	594,720.75	1,366,746.88
18+42	11.25° Bend	594,869.34	1,366,598.52
20+73	11.25° Bend	594,995.02	1,366,404.39
21+86	11.25° Bend	595,073.49	1,366,323.61
22+14	45° Bend	595,096.62	1,366,307.69
22+17	45° Bend	595,099.55	1,366,308.35
22+91	45° Bend	595,138.64	1,366,371.16
23+12	Prop. MH 2	595,158.97	1,366,375.64
24+39	Exist. MH 6698-3	595,220.45	1,366,486.84

FORCE MAIN STAKEOUT TABLE

GRAPHIC SCALES



AS-BUILT

C-3

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27029, EXPIRATION DATE: 01-25-2020."

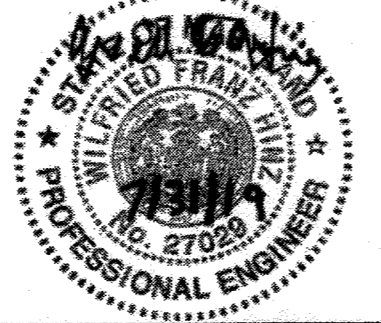
**DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.**

Director of Public Works: *[Signature]* DATE: 7-9-19

Chief, Bureau of Engineering: *[Signature]* DATE: 7-19-19

Chief, Utility Design Division: *[Signature]* DATE: 7-19-19

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231



DES:	RW				
DRN:	RW				
CHK:	WH				
JULY 2019		BY	NO.	REVISION	DATE

ENLARGED PLAN AND SEDIMENT & EROSION CONTROL FOR OLD FREDERICK ROAD CONNECTION

600 SCALE MAP NO. 18 BLOCK NO. 7&13

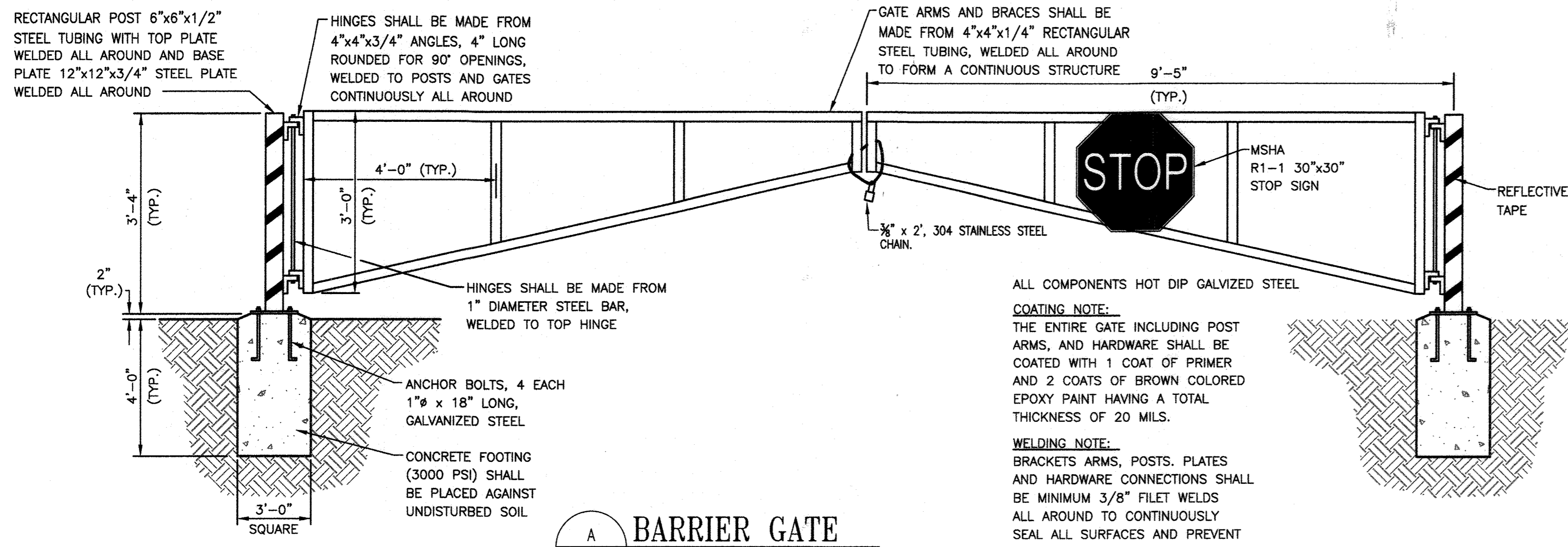
DANIELS AREA WASTEWATER PUMPING STATION

CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096

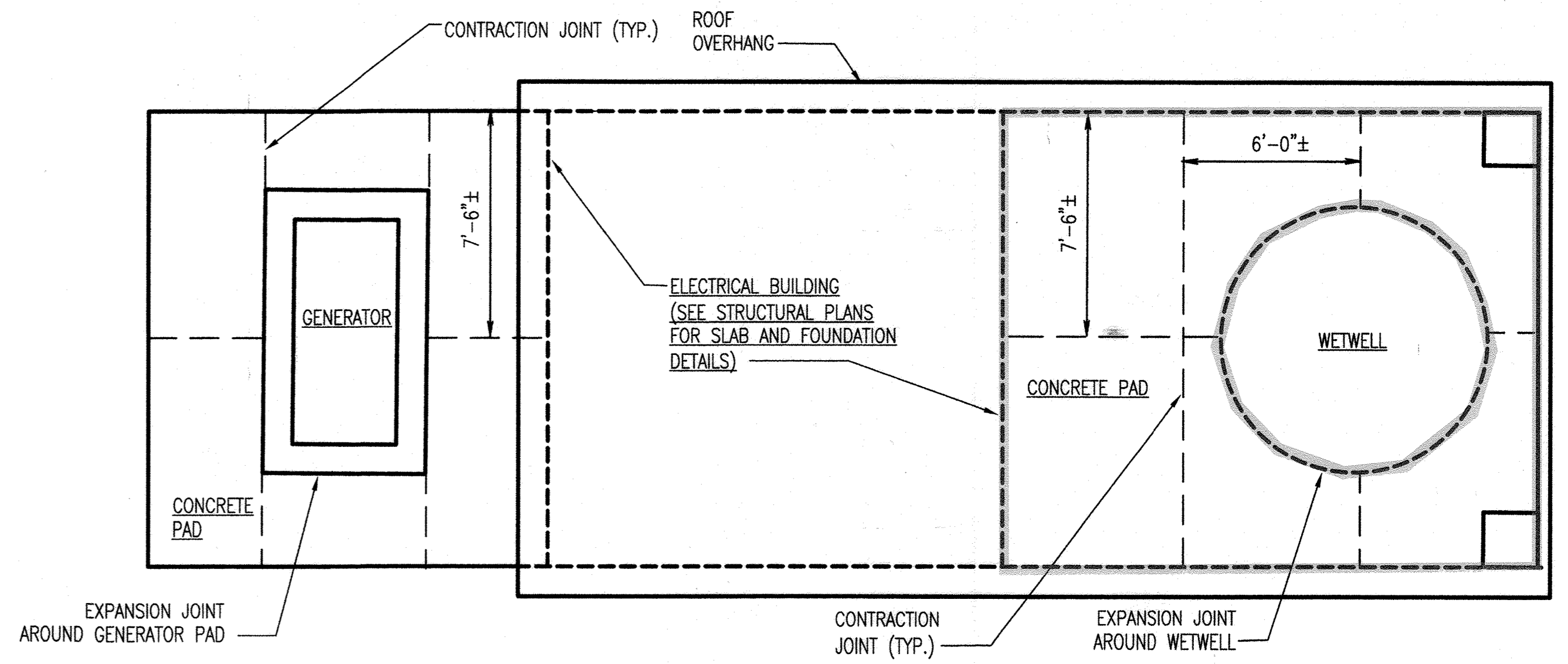
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 4 OF 43

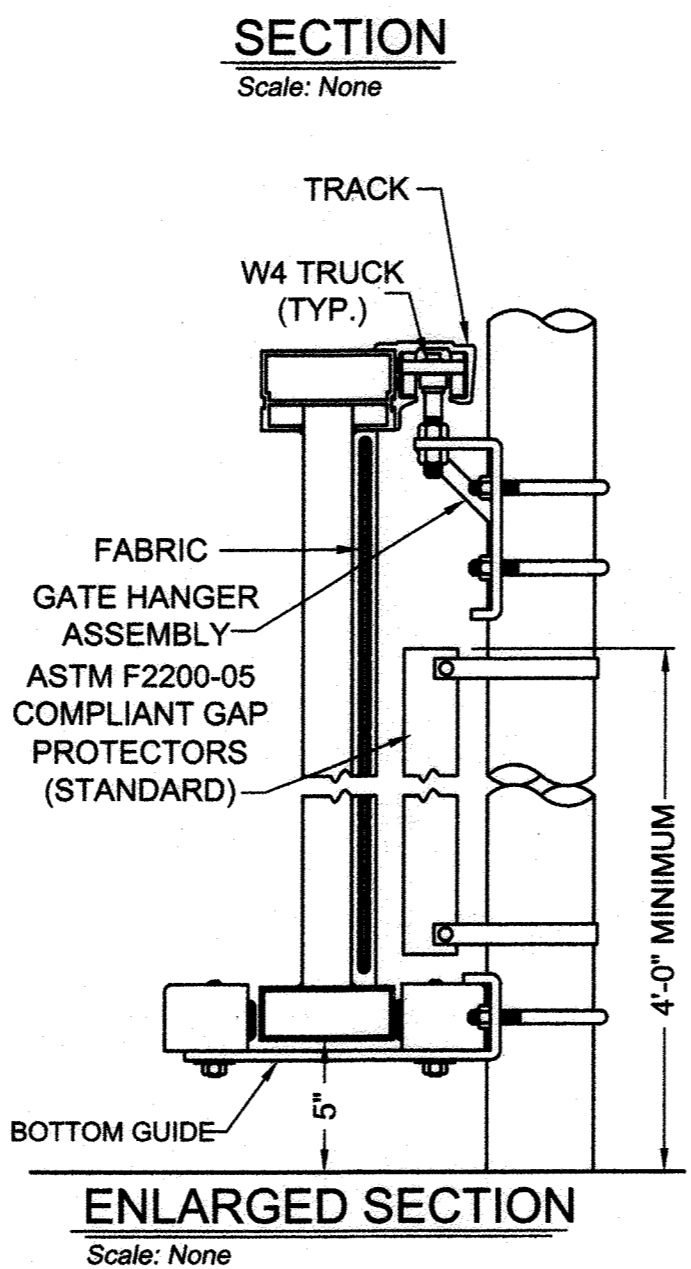
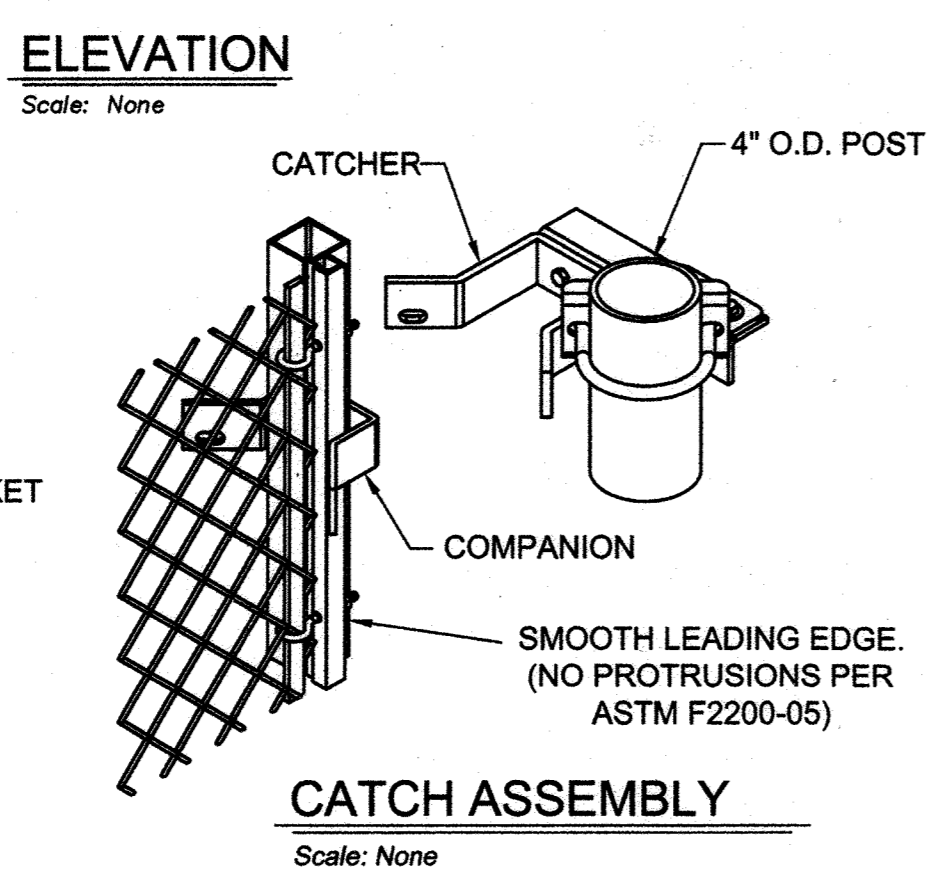
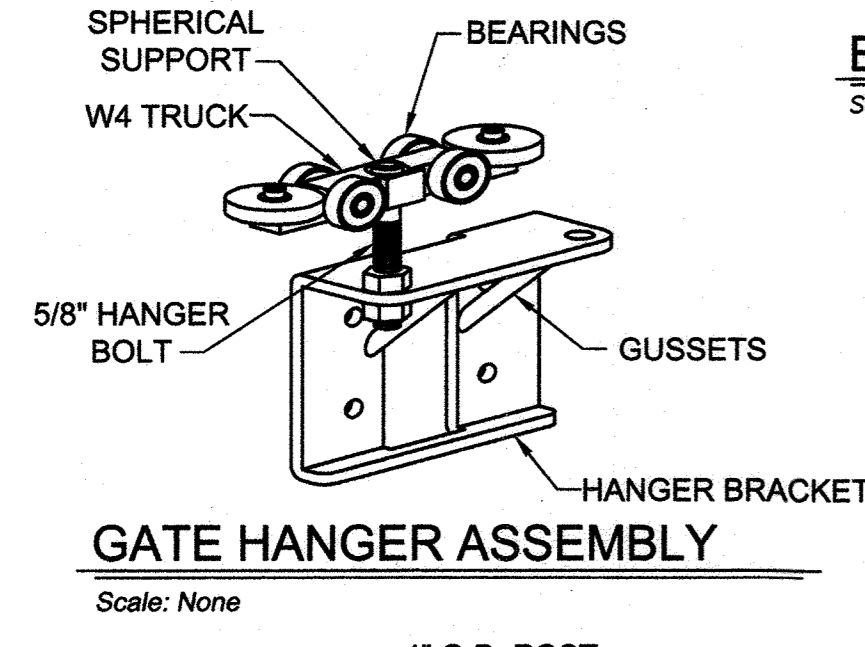


A BARRIER GATE
C-4 SCALE: NTS

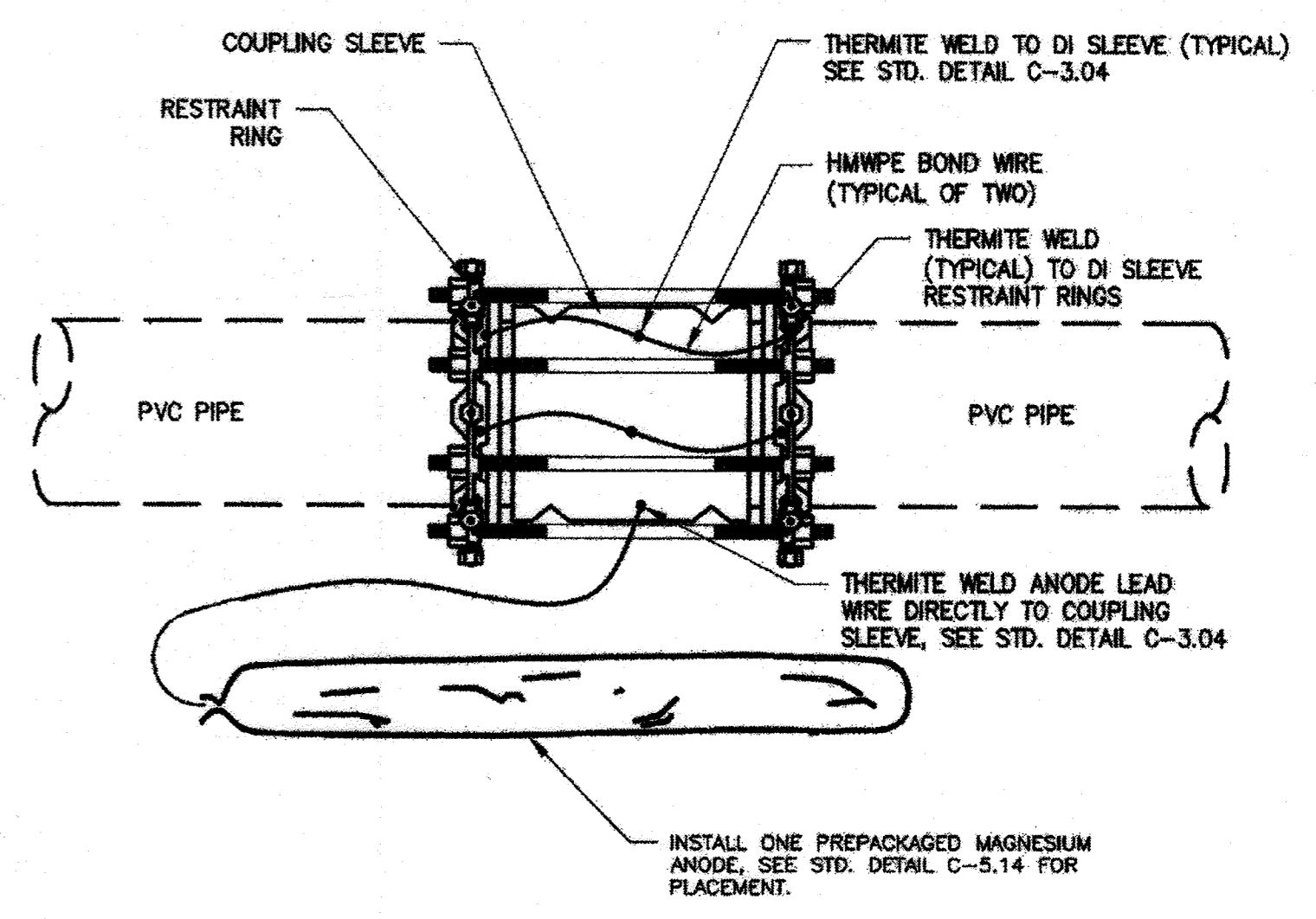


C CONCRETE PAD PLAN
C-4 SCALE: NTS

1 CONCRETE THICKNESS INCREASED TO 10" FOR CONCRETE PAD EAST OF THE PUMP STATION BUILDING

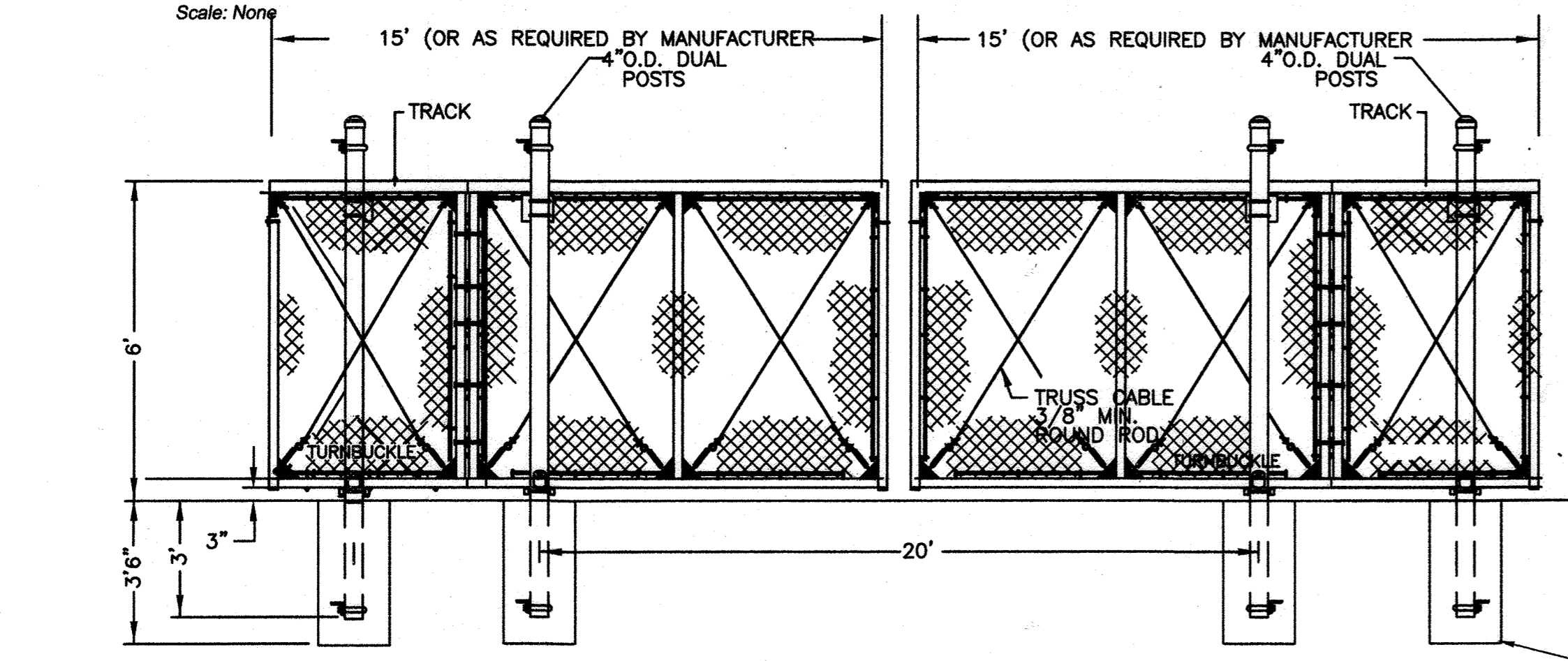


- CANTILEVER GATE NOTES:**
1. ALL GATE FRAMEWORK SHALL BE MADE IN ACCORDANCE WITH ASTM F1184 TYPE II CLASS 2. THE GATE SHALL BE MADE OF ALUMINUM ALLOY 6063-T6.
 2. ALL WHEELS SHALL BE STAINLESS STEEL, AND ALL OTHER HARDWARE (POST BRACKETS, HATCH, AND KEEPERS) SHALL BE GALVANIZED SOLID FORGED STEEL.
 3. DIAGONAL ADJUSTABLE 3/8"-INCH GALVANIZED TRUSS CABLES SHALL BE PROVIDED INSIDE EACH GATE PANEL.
 4. ALL CHAIN LINK FABRIC FILLER SHALL BE INSTALLED USING J-BOLTS THAT ARE INSERTED THROUGH PRE-DRILLED HOLES IN THE FRAME. THE FABRIC WILL BE ATTACHED TO THE J-BOLTS BY MEANS OF A TENSION BAR LACED THROUGH THE LAST LINK OF FABRIC. THE HOOK BOLTS SHALL BE INSTALLED 13" ON CENTER AND ON ALL FOUR SIDES.
 5. TRUCK ASSEMBLIES SHALL BE SWIVEL TYPE WITH GALVANIZED STEEL BASE UNIT AND LUBRICATED AND EIGHT SEALED BALL BEARING ROLLERS. THE TRUCK SHALL HAVE TWO GALVANIZED STEEL SIDE ROLLERS TO ASSURE ALIGNMENT IN TRACK.
 6. SLIDE GATE SHALL BE MANUFACTURED BY IRON WORLD OR APPROVED EQUAL.
 7. FENCE FABRIC MATERIAL ON GATE SHALL MATCH MATERIAL PROVIDED FOR FENCE. ALL FENCE FABRIC MATERIAL SHALL MEET THE STANDARD COUNTY SPECIFICATIONS, WITH THE EXCEPTION THAT ALL PVC COATED FENCE FABRIC MATERIAL SHALL HAVE A 9 GAUGE (CORE) WITH A 1 1/4" FABRIC PATTERN.

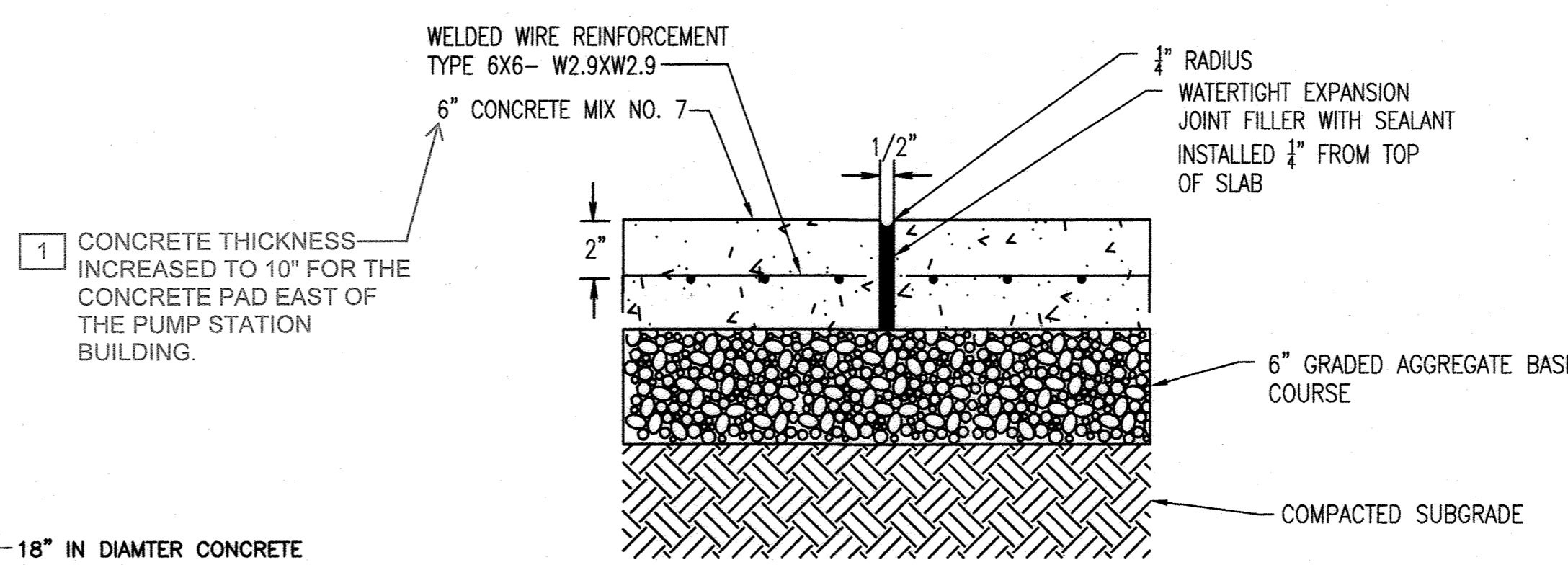


- NOTES:**
1. ANODES PLACED AT SAME DEPTH AS THE BOTTOM OF PIPE AND AT A MINIMUM OF 12" FROM EDGE OF PIPE, SEE STD. DETAIL C-5.14.
 2. DO NOT THERMITE WELD TO PVC PIPE.
 3. ANODE SIZE TO BE DETERMINED IN CONTRACT DOCUMENTS.
 4. IF COUPLING IS EPOXY COATED, REMOVE COATING FROM COUPLING RING WHERE BOLTS ARE MOVED.

E PVC RESTRAINED COUPLING
C-4 SCALE: NTS



B CHAIN LINK CANTILEVERED ACCESS DOUBLE SLIDE GATE DETAIL
C-4 SCALE: NTS



D EXPANSION JOINT AND CONCRETE PAD DETAIL
C-4 SCALE: NTS

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27029, EXPIRATION DATE: 01-25-2020."

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Michael D. Lane 8/19/19
DIRECTOR OF PUBLIC WORKS DATE

Gregory P. D. 8/19/19
CHIEF, BUREAU OF UTILITIES DATE

Gregory P. D. 8/19/19
CHIEF, UTILITY DESIGN DIVISION DATE

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

PROFESSIONAL ENGINEER
NO. 27029

DES:	RW				
DRN:	RW				
CHK:	WH				
JULY 2019					
BY	NO.	REVISION	DATE		
		1 CHANGE BULLETIN #5: CONCRETE SLAB MODS.	8/18/20		

CIVIL DETAILS

600 SCALE MAP NO. 18

BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION

CAPITAL PROJECT NO. S-6275

CONTRACT NO. 10-5096

2ND ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

AS-BUILT

C-4

SCALE AS SHOWN

SHEET 5 OF 43

VA L4581-001, CDMA (12/2010) C-4.dwg
Aug. 01, 2019 8:48pm

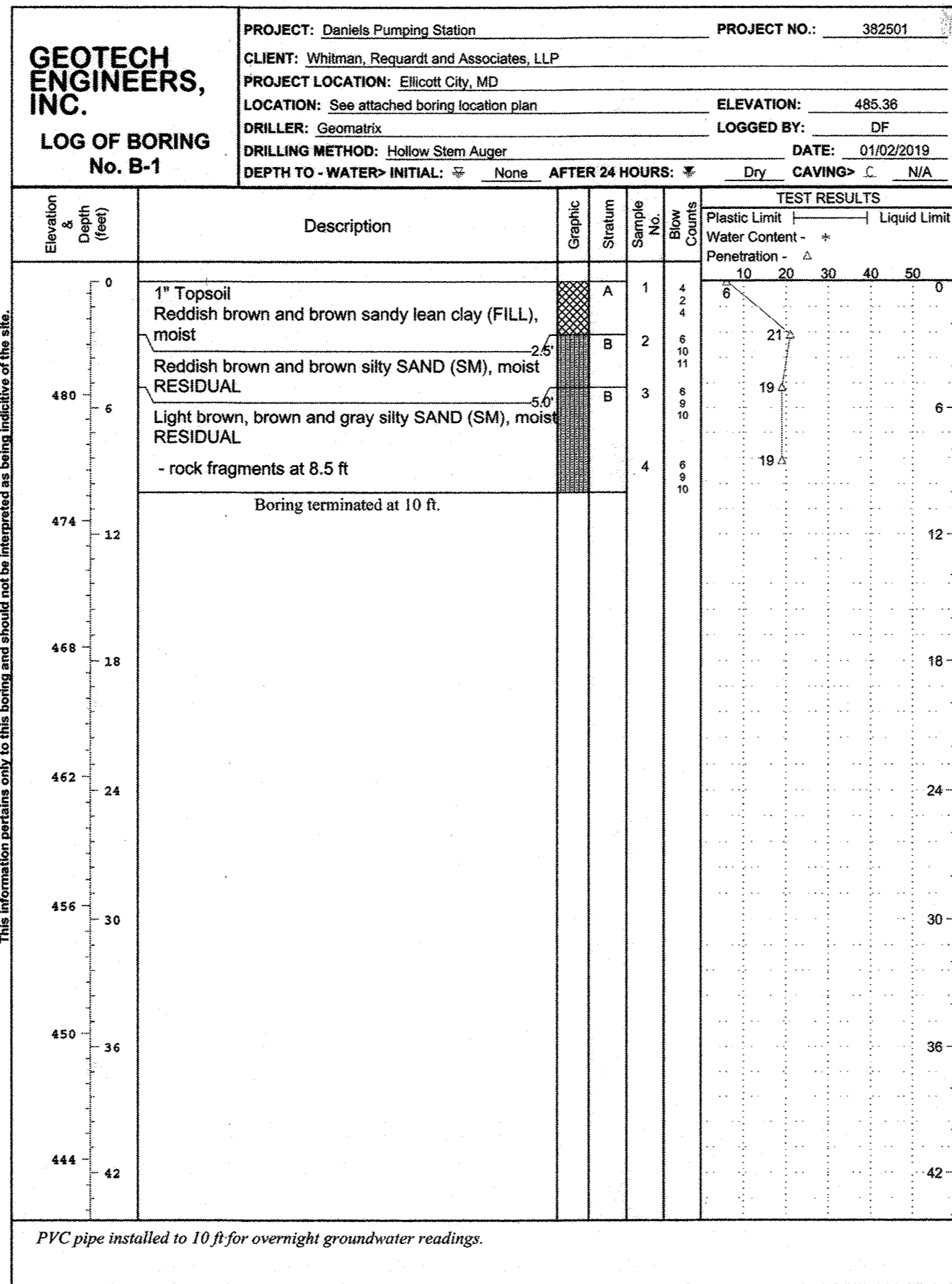


Figure PAGE 1 of 1

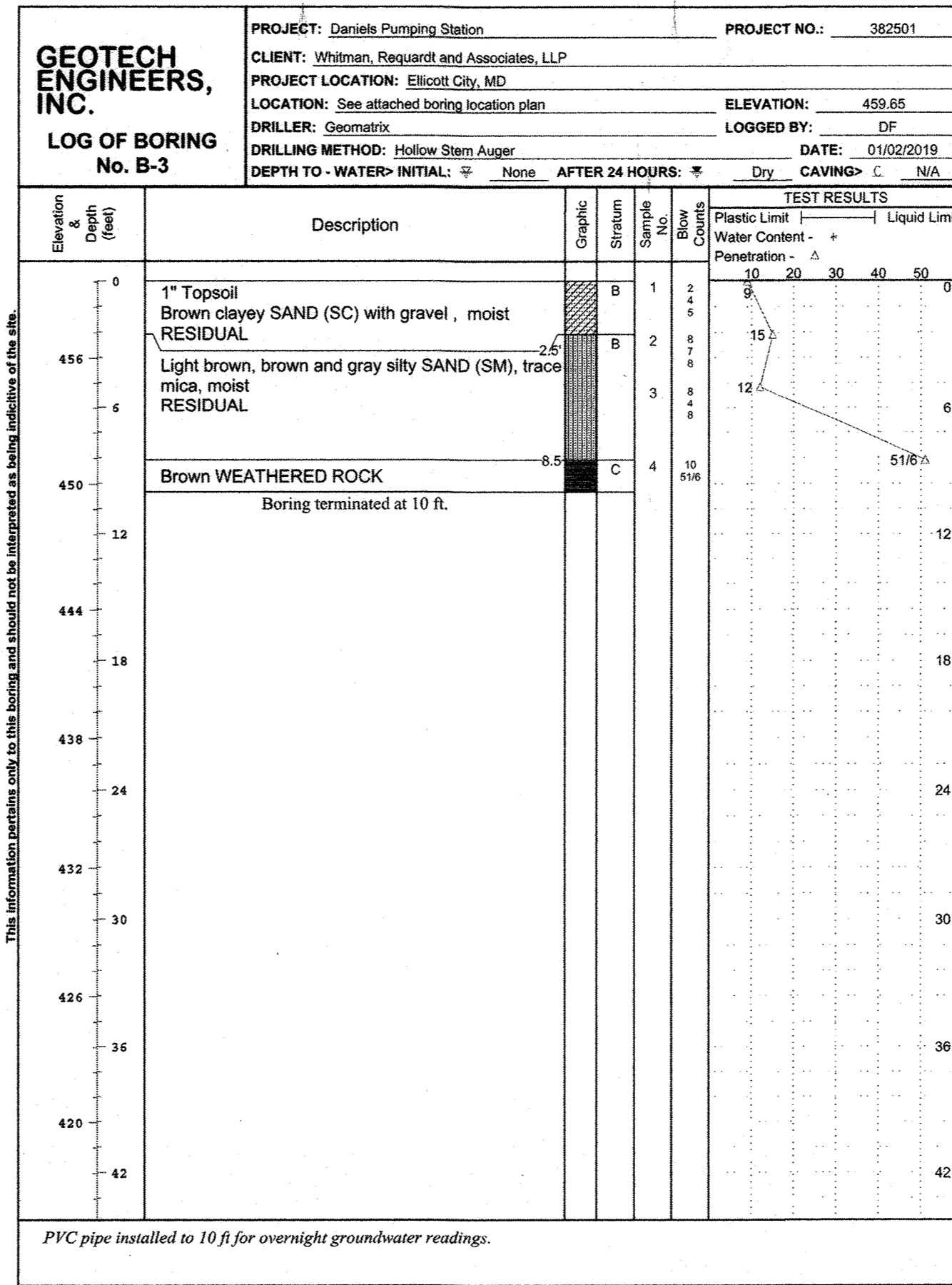


Figure PAGE 1 of 1

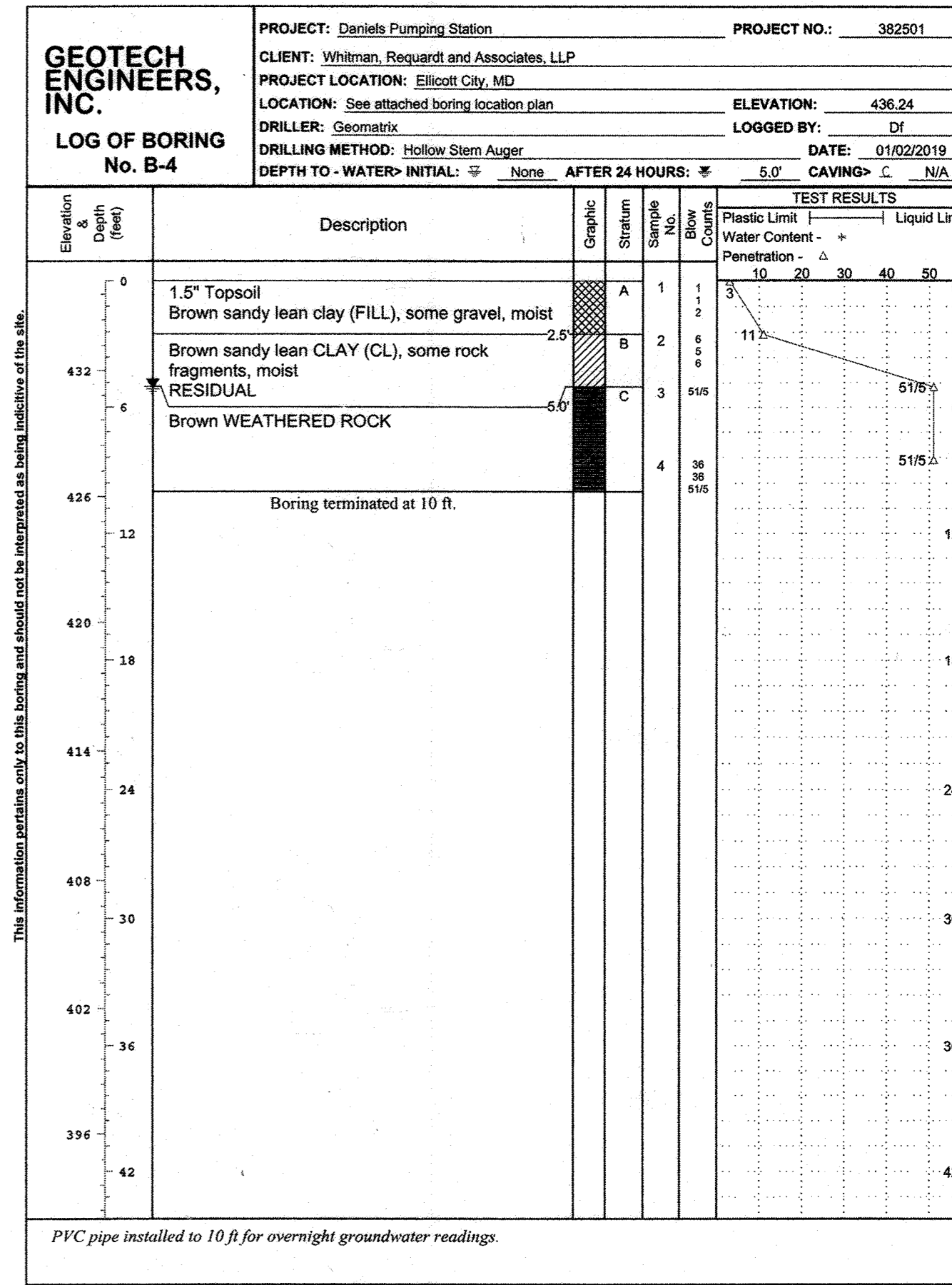


Figure PAGE 1 of 1

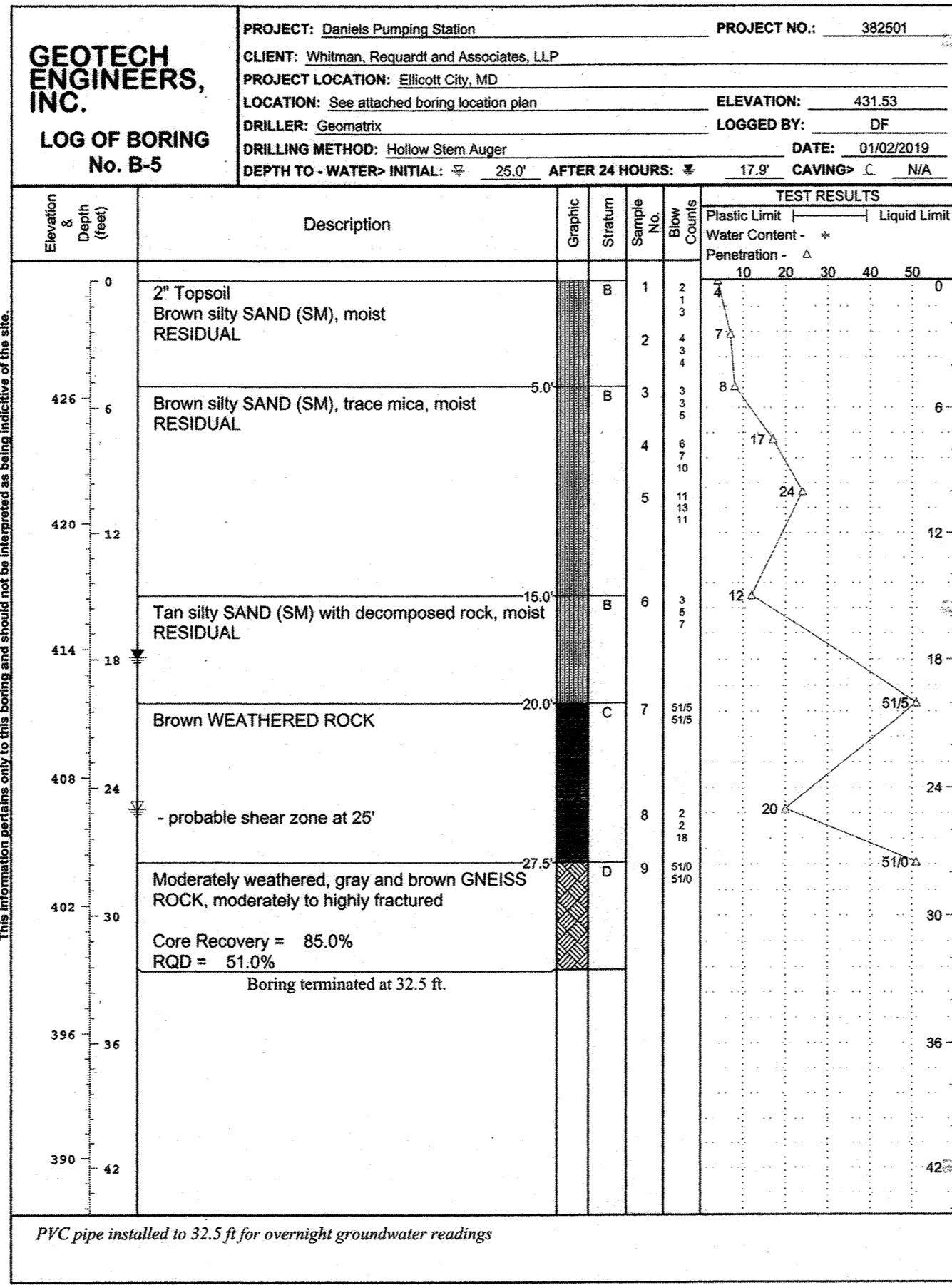


Figure PAGE 1 of 1

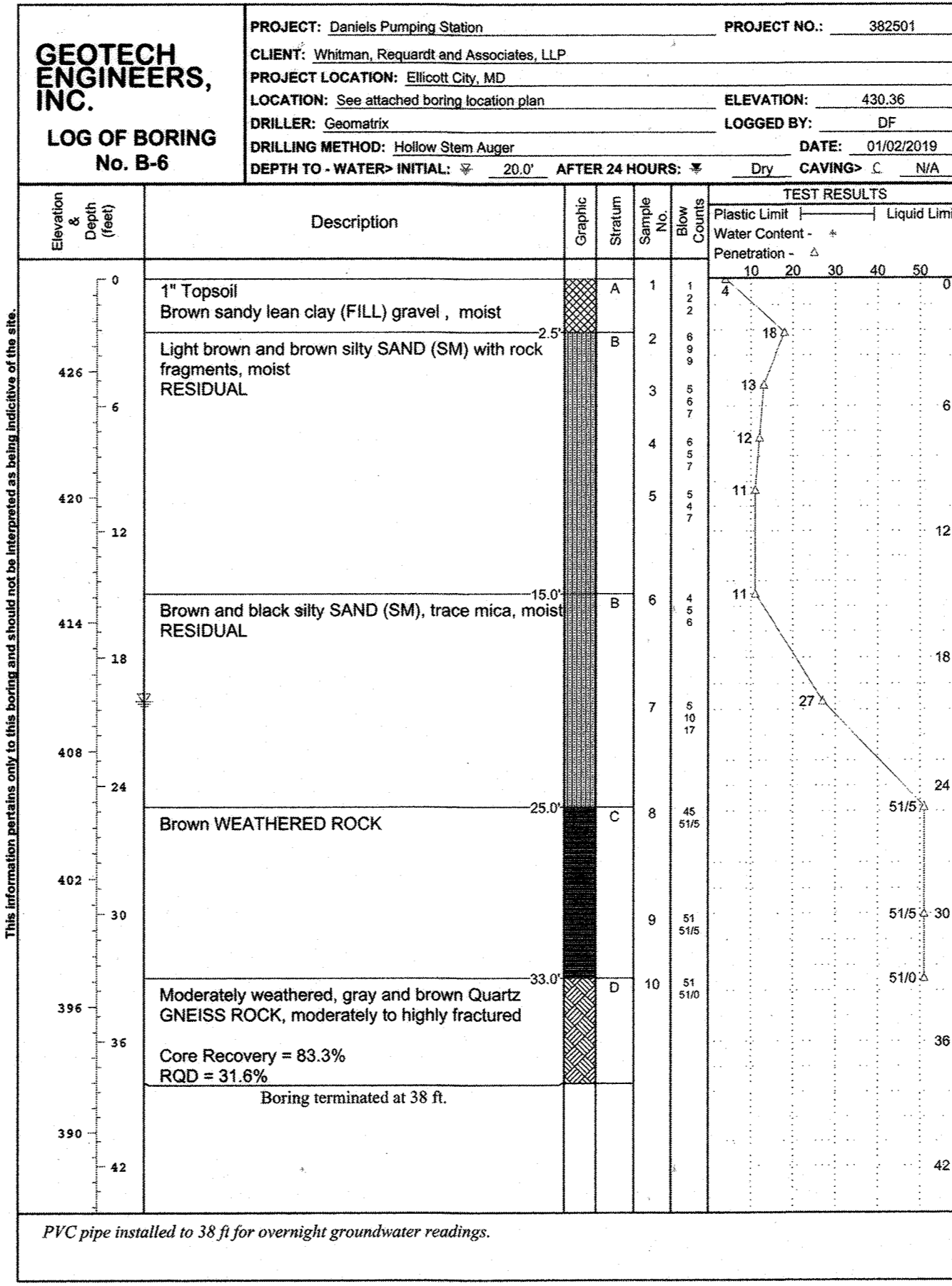


Figure PAGE 1 of 1

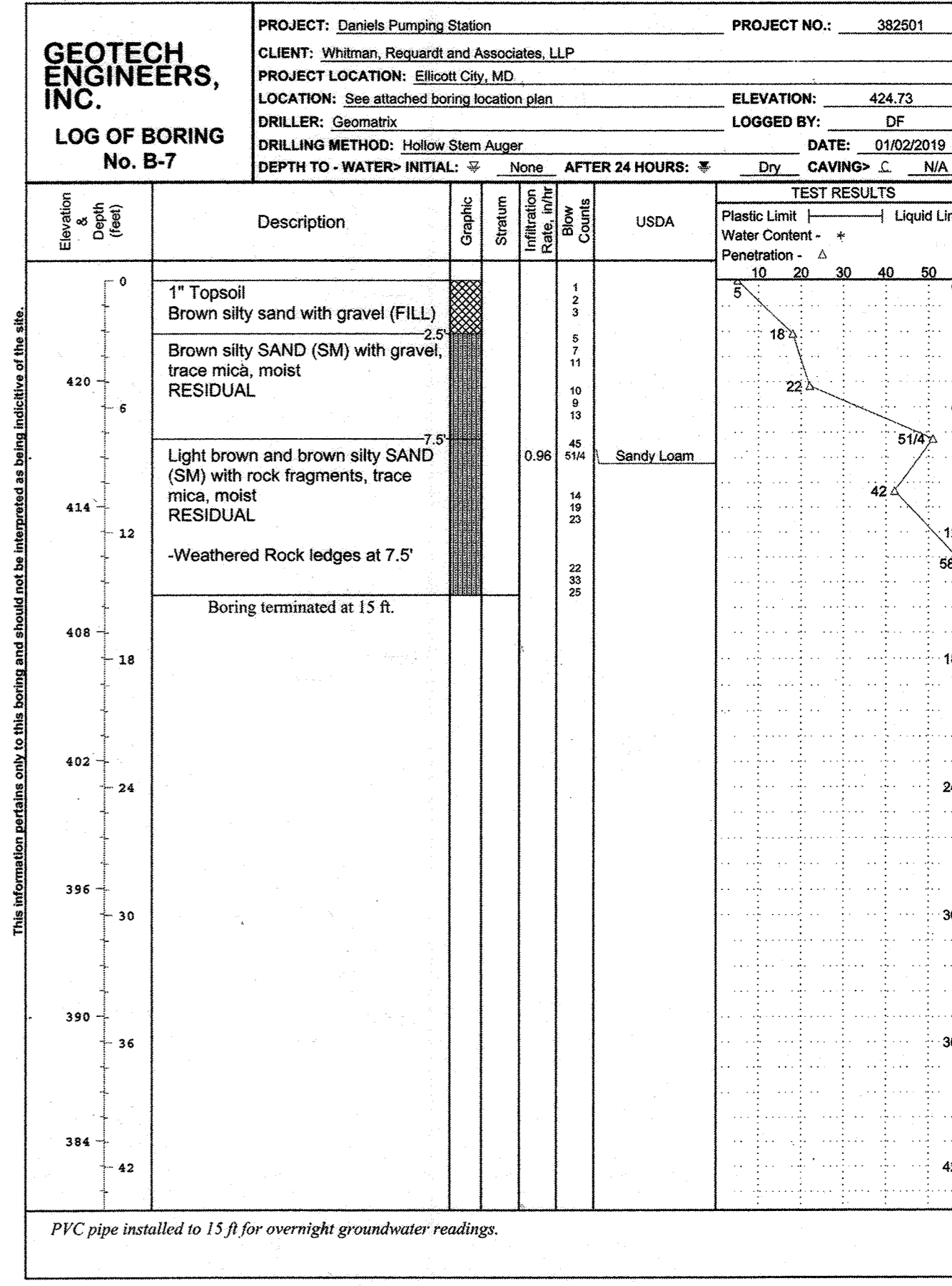


Figure PAGE 1 of 1

C:\Users\whitman\appdata\local\temp\AutoCAD_2019_1\25101011-04.dwg 01/02/2019 11:58:58 AM

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 27029, EXPIRATION DATE: 01-25-2020."

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND.	
 DIRECTOR OF PUBLIC WORKS DATE: 8/9/19	 CHIEF, BUREAU OF ENGINEERING DATE: 8/19/19
 CHIEF, UTILITY DESIGN DIVISION DATE: 8/19/19	 PROFESSIONAL ENGINEER DATE: 8/19/19

Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

DES:	RW			
DRN:	RW			
CHK:	WH			
JULY 2019	BY	NO.	REVISION	DATE

BORING LOGS

600 SCALE MAP NO. 18 BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
 CAPITAL PROJECT NO. S-6275
 CONTRACT NO. 10-5096
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

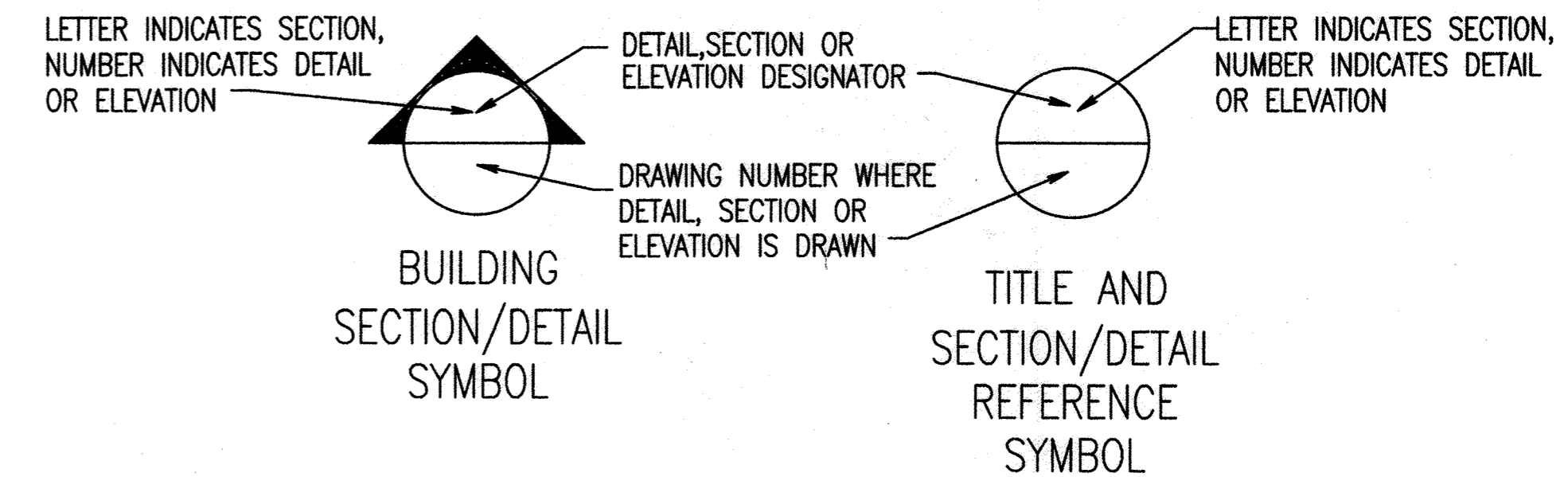
AS-BUILT
C-5
 SCALE AS SHOWN
 SHEET 6 OF 43

ARCHITECTURAL/STRUCTURAL ABBREVIATIONS

ABV ABOVE	F FILLER	OPNG OPNG
AC AIR CONDITIONING (CONDITIONER)	FC FAN COIL UNIT	OPP OPPOSITE
AD ACCESS DOOR (OR PANEL)	FD FLOOR DRAIN OR FIRE DAMPER	OZ OUNCE
ADA AMERICAN WITH DISABILITIES ACT	FDR FOLDING DOOR (WOOD OR FABRIC)	PAV PAVER TILE
ADD ADDENDUM	FE FIRE EXTINGUISHER ON BRACKET	PC PIECE
ADJ ADJACENT	FG FIBERGLASS	PF PLASTIC FABRICATION
AES ABOVE EXISTING SLAB	FE FIRE EXTINGUISHER	PL PLATE
AF ACCESS FLOOR	FEC FIRE EXTINGUISHER CABINET	PLAM PLASTIC LAMINATE
AFF ABOVE FINISHED FLOOR	FIN FINISH OR FINISHED	PLAS PLASTER
AHU AIR HANDLING UNIT	FIX FIXTURE	PREFAB PREFABRICATED
ALT ALTERNATE	FLM FULL LENGTH MIRROR	PRES T PRESSURE TREATED
ALUM ALUMINUM	FLR FLOOR	PT PAINT
APC ACOUSTICAL PANEL CEILING (LAY-IN)	FR FIRE RATED	PTD PAPER TOWEL DISPENSER
APPROX APPROXIMATE	FRC FIBER-REINFORCED COATING	PTN PARTITION
ARCH ARCHITECTURAL	FS FOLDING SHOWER SEAT	PVC POLYVINYL CHLORIDE
ASB ASBESTOS	FSS FOOT OR FEET	QT QUARRY TILE
ASP ASPHALT	FT FOOTING	QTY QUANTITY
ATC ACOUSTICAL TILE CEILING (CONCEALED SUSPENSION)	FTG FABRIC-WRAPPED PANEL (FABRICATED; TACKABLE; ACOUSTICAL PANEL)	R RISER OR RADIUS
AWP ACOUSTICAL WALL PANEL	FWP	RB RESILIENT WALL BASE AND ACCESSORIES (VINYL BASE; RUBBER BASE; TREADS; NOSINGS; EDGINGS)
BB BULLETIN BOARD (GLASS COVERED)	GA GAUGE	RCP REINFORCED CONCRETE PIPE
BC BOTTOM OF CURB	GALV GALVANIZED	RD ROOF DRAIN OR ROUND
BD BOARD	GB GRAB BAR	REQ'D REQUIRED
BEN BENCH	GEN GENERAL	RF RESILIENT FLOORING (VINYL; RUBBER; VINYL COMPOSITION TILE; SHEET FLOORING)
BETW BETWEEN	GL GLASS	REBAR REINFORCING BAR
BLDG BUILDING	GLM GLASS UNIT MASONRY (GLASS BLOCK)	REINF REINFORCED OR REINFORCING
BLKG BLOCKING	GMU GLAZED MASONRY UNIT	RESF RESINOUS FLOORING
BM BEAM	GRD GROUND	REQ'D REQUIRED
BOT BOTTOM	GP GYPSUM PLASTER	RET RETURN
BR BRICK	GRT GROUT	REV REVISION
BR/S BACKER ROD AND SEALANT	GVP GYPSUM VENEER PLASTER	RH ROBE HOOK
C CONDUIT	GYPB GYPSUM BOARD (WALL OR CEILING)	RM ROOM
C/C CENTER TO CENTER	GYPBS GYPSUM BOARD SHAFT-WALL ASSEMBLY	RO ROUGH OPENING
CB CHALKBOARD	H HEAD	RWR RECESSED WASTE RECEPTACLE
CAB CABINET	HB HORIZONTAL BLIND	RV ROOF VENT
CARP CARPET	HDW HARDWARE	RX REMOVE EXISTING
CARPT CARPET TILE	HM HOLLOW METAL	S SILL, SOUTH OR SINGLE
CEM CEMENT	HOR HORIZONTAL	SC SPECIAL COATING (OTHER THAN PAINT SYSTEMS)
CER CERAMIC	HP HIGH POINT	SCH SCHEDULE OR SCHEDULED
CI CAST IRON	HR HOUR	SCR SHOWER CURTAIN ROD
CG CORNER GUARD	HT HEIGHT	SD SOAP DISPENSER OR STORM DRAIN
CH CEILING HEIGHT	HTR HEATER	SECT SECTION
CJ CONTROL JOINT	HVAC HEATING, VENTILATION AND AIR CONDITIONING	SF SQUARE FLOOR
CL CENTERLINE	HW HOT WATER	SFT STRUCTURAL FACING TILE
CLOS CLOSET	ID INSIDE DIAMETER	SH SHOWER
CLG CEILING	IN INCH	SHT SHEET
CLR CLEAR	INSUL INSULATION	SIM SIMILAR
CMP CORRUGATED METAL PIPE	INT INTERIOR	SJ STEEL JOIST
CMU CONCRETE MASONRY UNIT	INV INVERT	SND SANITARY NAPKIN DISPOSAL
CO CLEAR OPENING	J JAMB	SOD SECTIONAL OVERHEAD DOOR
COL COLUMN	JC JANITOR'S CLOSET	SPEC SPECIFICATIONS
COMP COMPACTED	JT JOINT	SP STAND PIPE
CONC CONCRETE	KIT KITCHEN	SQ SQUARE
CONSTR CONSTRUCTION	L LINTEL	SS STAINLESS STEEL OR SERVICE SINK
CONT CONTINUOUS	LAB LABORATORY	SSM SOLID SURFACE MATERIAL
CONV CONVECTOR	LAV LAVATORY	STAT STATIONARY
CR COLD ROLLED	LG LONG	STL STEEL
CSK COUNTERSUNK	LG LONG	STRUCT STRUCTURAL OR STRUCTURE
CSPPE CHLOROSULFONATED POLYETHYLENE ELASTOMER	LIN LINOLEUM FLOOR COVERING	SUSP SUSPENDED
CT CERAMIC TILE	LLV LOG LEG VERTICAL	SWR SURFACE-MOUNTED WASTE RECEPTACLE
CTR COUNTER	LOC LOCATION	SYS SYSTEM
CW COLD WATER	LOCK LOCKER	T TILE
CX CONNECT TO EXISTING	LP LOW POINT	TOB TOWEL BAR
D DOUBLE	LT LIGHT	T&B TOP & BOTTOM
DEG DEGREE	LTG LIGHTING	T&G TONGUE & GROOVE
DEMO DEMOLITION	LV LOUVER	TC TOP OF CURB
DET DETAIL	M MIRROR OR MEN	TBD TO BE DETERMINED
DF DRINKING FOUNTAIN	MACH MACHINE	TEL TELEPHONE
DIA DIAMETER	MAS MASONRY	TER TERRAZZO
DIR DIRECTORY	MATL MATERIAL	TH THICK
DN DOWN	MAX MAXIMUM	TO TOP OF
DO DOOR OPENING	MC MEDICINE CABINET	TOS TOP OF STEEL
DR DOOR	MDF MEDIUM DENSITY FIBERBOARD	TOW TOP OF WALL
DS DOWNSPOUT	MFB FIBERBOARD	TP TOILET PARTITION (WATER CLOSET; URINAL; SHOWER; SCREEN)
DWG DRAWING	MECH MECHANICAL	TR TREAD
E EAST	MET METAL	TYP TYPICAL
EA EACH	MFR MANUFACTURER	U UNIT
EF EACH FACE	MH MANHOLE	UNO UNLESS NOTED OTHERWISE
EFS EXTERIOR FINISH SYSTEM	MIN MINIMUM	UR URINAL
EIFS EXTERIOR INSULATION AND FINISH SYSTEM	MISC MISCELLANEOUS	V VENT
EJ EXPANSION JOINT	MK MARK	VB VERTICAL BLIND
EL ELEVATION	MO MASONRY OPENING	VDB VISUAL DISPLAY BOARD (HINGED CONFERENCE UNIT)
ELEC ELECTRIC OR ELECTRICAL	MP METAL PANEL	VERT VERTICAL
ELEV ELEVATOR	MR MOUNTED	VEST VESTIBULE
EM ENTRY MAT	MTL METAL	VIF VERIFY IN FIELD
EP ETHYLENE PROPYLENE-BASED (SINGLE PLY ROOFING)	N NORTH	VP VAPOR BARRIER
EPB ELECTRICAL PANEL BOX	NA NOT APPLICABLE	VS VERTICAL STANDPIPE
EPDM ETHYLENE-PROPYLENE-DIENE MEMBRANE	ND NOT IN CONTRACT	W WOMEN, WIDTH, WEST OR WOVEN
EPS EXPANDED POLYSTYRENE	NO NUMBER	W/ WITH
EPX EPOXY	NOM NOMINAL	WC WATER CLOSET OR WALL COVERING (VINYL OR TEXTILE COVERING; WALL PAPER)
EQ EQUAL	NTS NOT TO SCALE	WD WOOD
EQUIP EQUIPMENT	OA OVERALL	WH WEEP HOLE
EST ESTIMATE	OC ON CENTER	WHT WHITE
EUH ELECTRIC UNIT HEATER	OD OUTSIDE DIAMETER	WO WINDOW OPENING
EW EACH WAY	OFF OFFICE	WP WATERPROOF OR WORKING POINT
EWCA ELECTRIC WATER COOLER	OHD OVERHEAD COILING DOOR	WR WATER RESISTANT OR WASTE RECEPTACLE
EWCA ELECTRIC WATER COOLER - ACCESSIBLE		
EXIST EXISTING		
EXP EXPANSION OR EXPOSED		
EXT EXTERIOR		

LEGEND

	BRICK
	CONCRETE MASONRY UNITS
	STRUCTURAL CLAY UNITS
	GYPSUM BOARD PARTITIONS
	WOOD-FINISH GRADE
	WOOD BLOCKING
	RIGID WALL/PERIMETER INSULATION
	RIGID ROOF INSULATION
	BATT INSULATION
	CONCRETE
	POROUS FILL
	EARTH
	METAL PATTERN
	DOOR NUMBER SYMBOL
	LOUVER NUMBER SYMBOL
	WINDOW NUMBER SYMBOL
	ROOM NUMBER SYMBOL
	WALL/BUILDING SECTION SYMBOL
	TITLE AND DETAIL REFERENCE SYMBOL
	PARTITION TYPES
	NUMBER-DRAWING NOTE
	REVISION
	NORTH ARROW (CONSTRUCTION NORTH)



" PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3466 , EXPIRATION DATE: 11/24/2019 "

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

W. D. Lee 8/19/19
DIRECTOR OF PUBLIC WORKS

Brendan Lee 8/19/19
CHIEF, BUREAU OF ENGINEERING

W. D. Lee 8/19/19
CHIEF, BUREAU OF UTILITIES

W. D. Lee 8/19/19
CHIEF, UTILITY DESIGN DIVISION

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231



DES: RK			
DRN: PKI			
CHK: DAK			
JULY 31, 2019	BY	NO.	REVISION

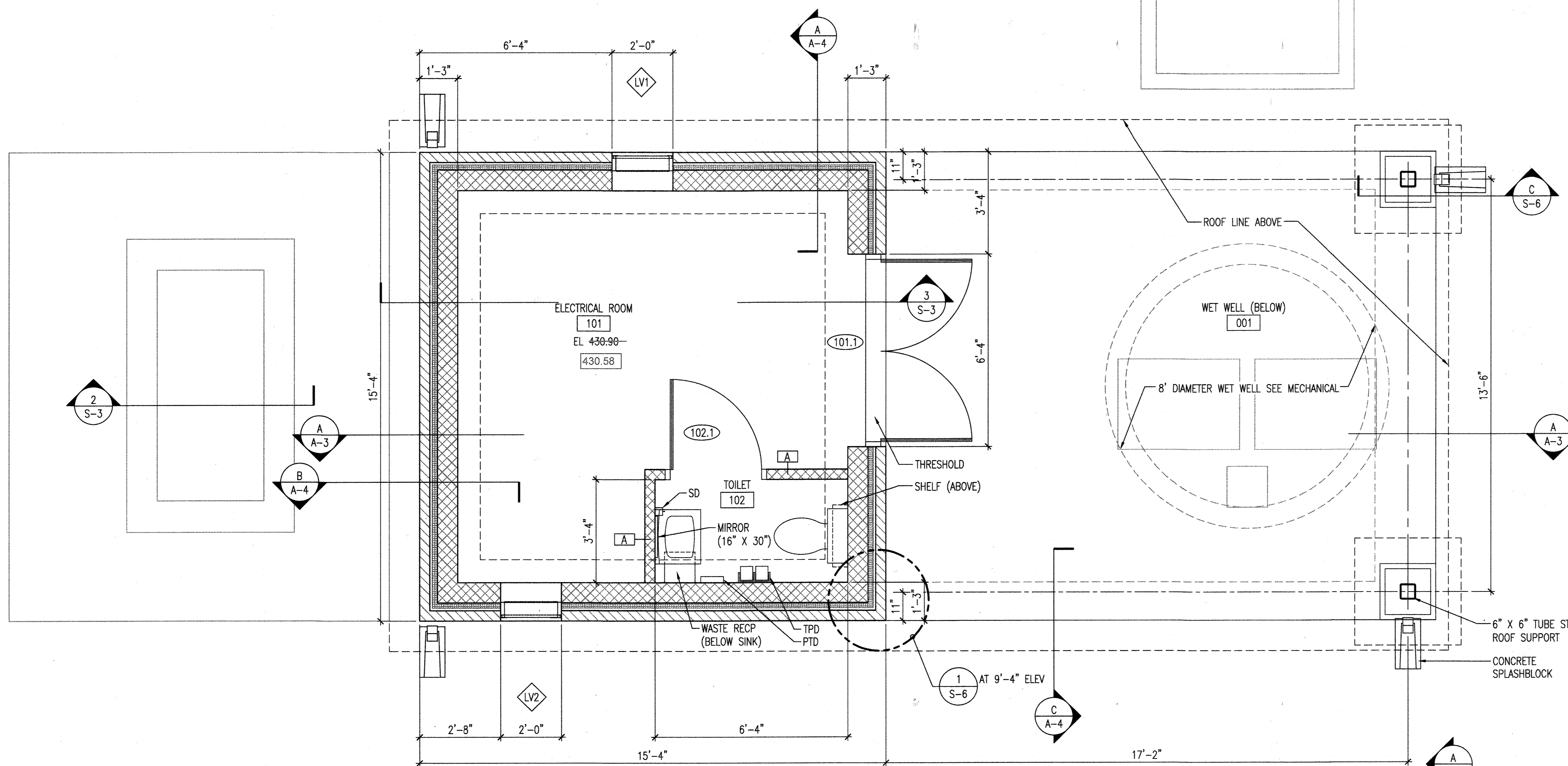
DATE	600 SCALE MAP NO. 18	BLOCK NO. 7&13
------	----------------------	----------------

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

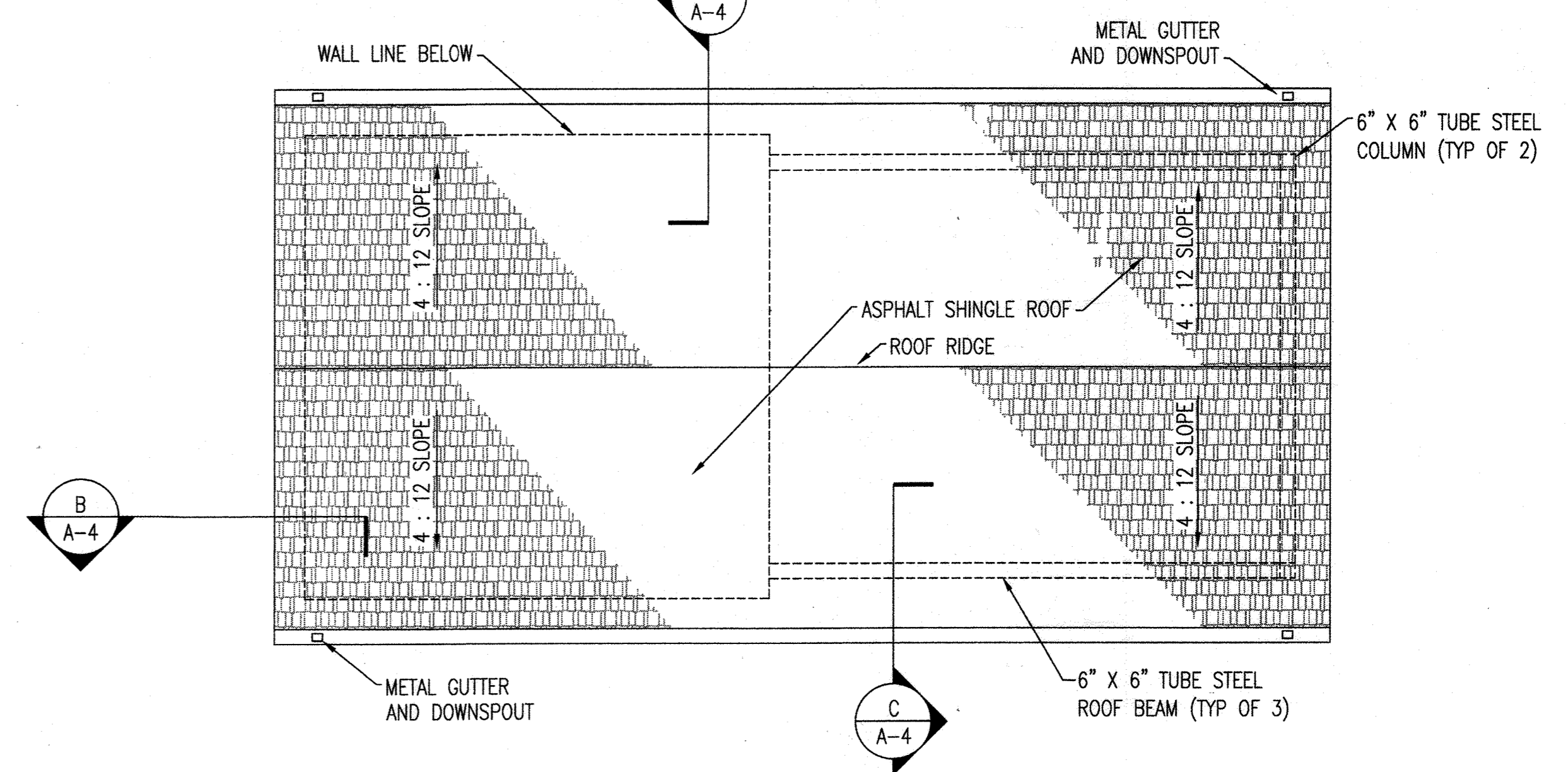
AS-BUILT
A-1
SCALE AS SHOWN
SHEET 7 OF 43

GENERAL NOTES:

1. CONTRACTOR RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS.
2. SEE A-5 FOR DOOR AND LOUVER SCHEDULES.
3. SEE S-6 FOR 6" X 6" TUBE STEEL ROOF SUPPORT.
4. SEE A-3 FOR INTERIOR WALL TYPES.



1 GRADE LEVEL FLOOR PLAN
 A-2 SCALE: 1/2" = 1'-0"
 REF:



2 ROOF PLAN
 A-2 SCALE: 1/4" = 1'-0"
 REF:

" PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3466 , EXPIRATION DATE: 11/24/2019 "

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.
 Director of Public Works: [Signature] 8/2/19
 Chief, Bureau of Engineering: [Signature] 8/2/19
 Chief, Utility Design Division: [Signature] PSD

WRA
Whitman, Requardt & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

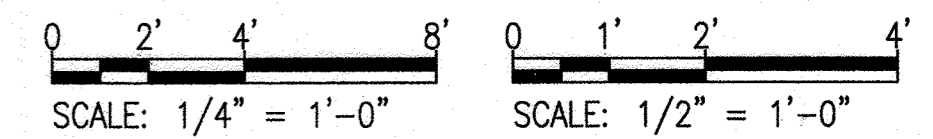


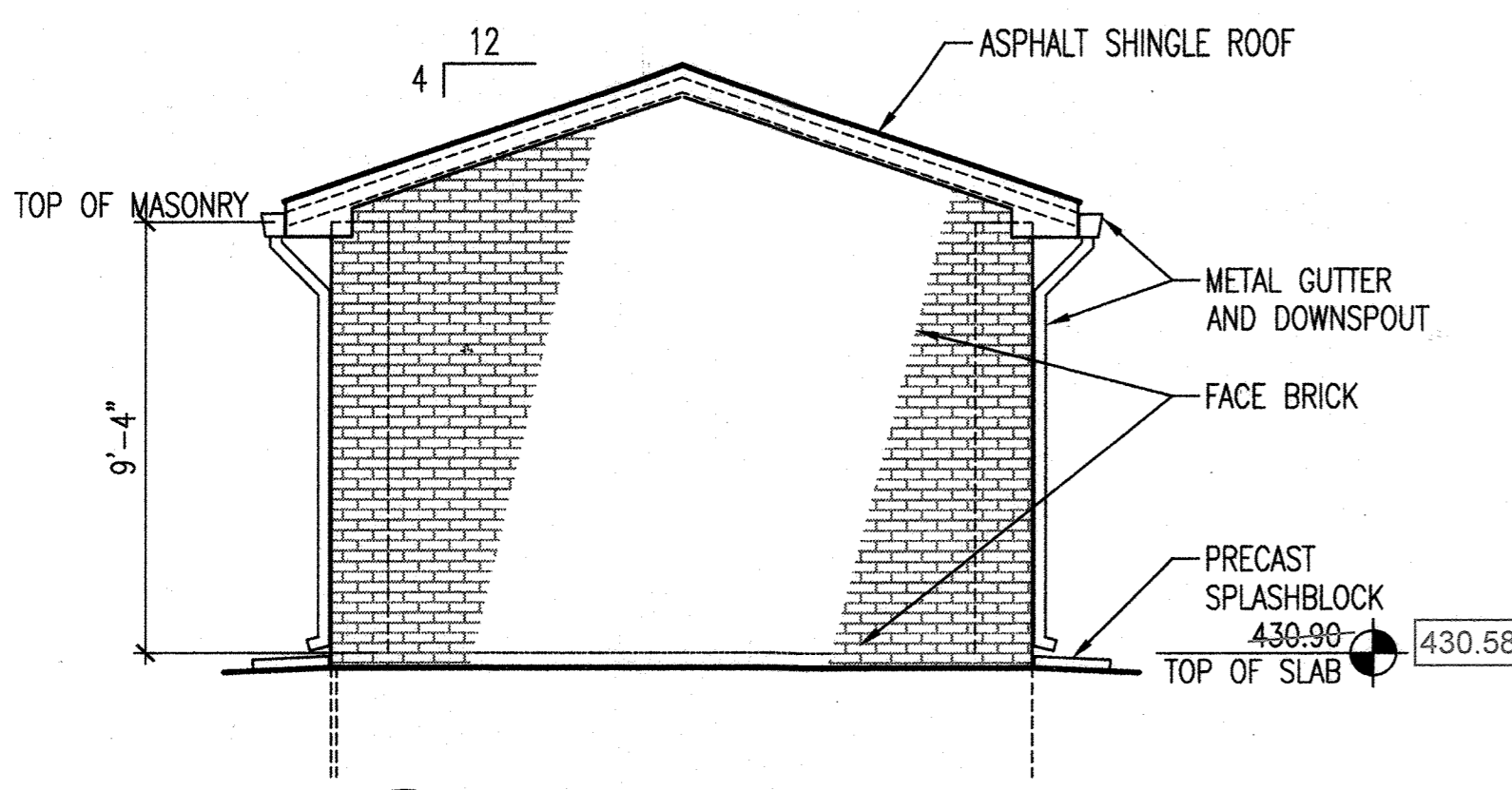
DES:	RK		
DRN:	PKI		
CHK:	DAK		
JULY 31, 2019		1	AS-BUILT NOTES
BY	NO.	REVISION	DATE

FLOOR AND ROOF PLANS
 600 SCALE MAP NO. 18
 BLOCK NO. 7&13

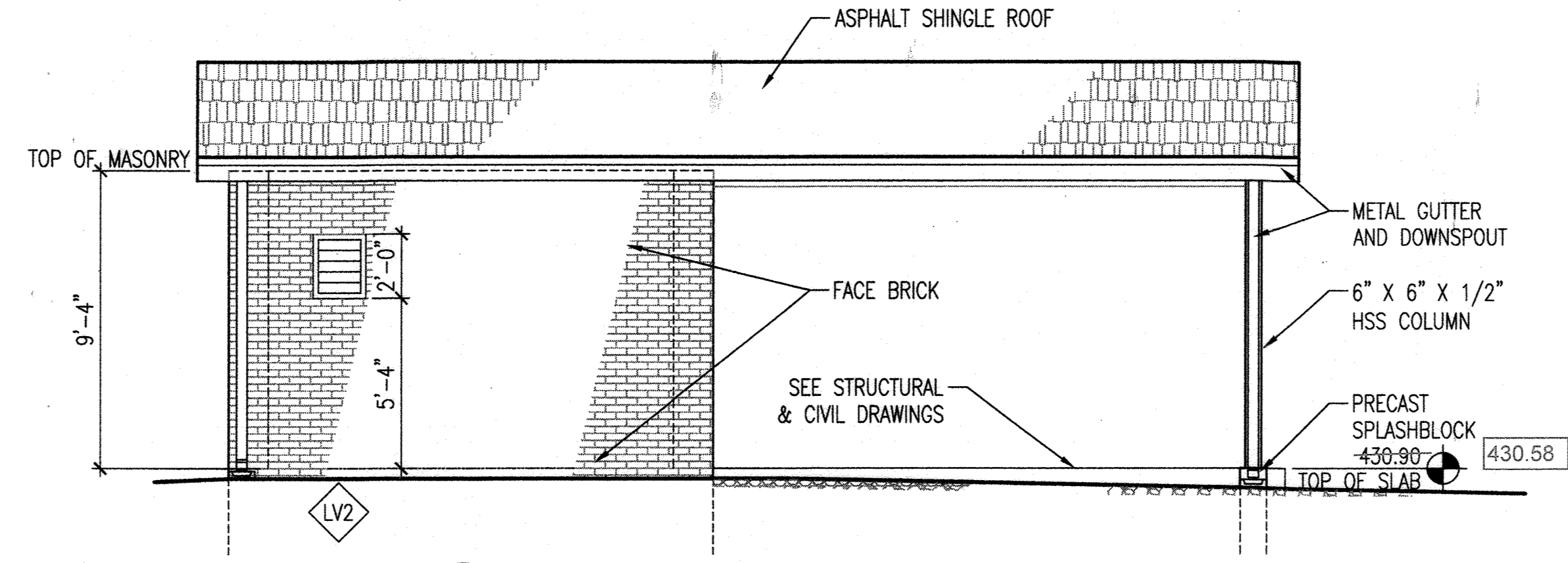
DANIELS AREA WASTEWATER PUMPING STATION
 CAPITAL PROJECT NO. S-6275
 CONTRACT NO. 10-5096
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

AS-BUILT
A-2
 SCALE AS SHOWN
 SHEET **B** OF 43

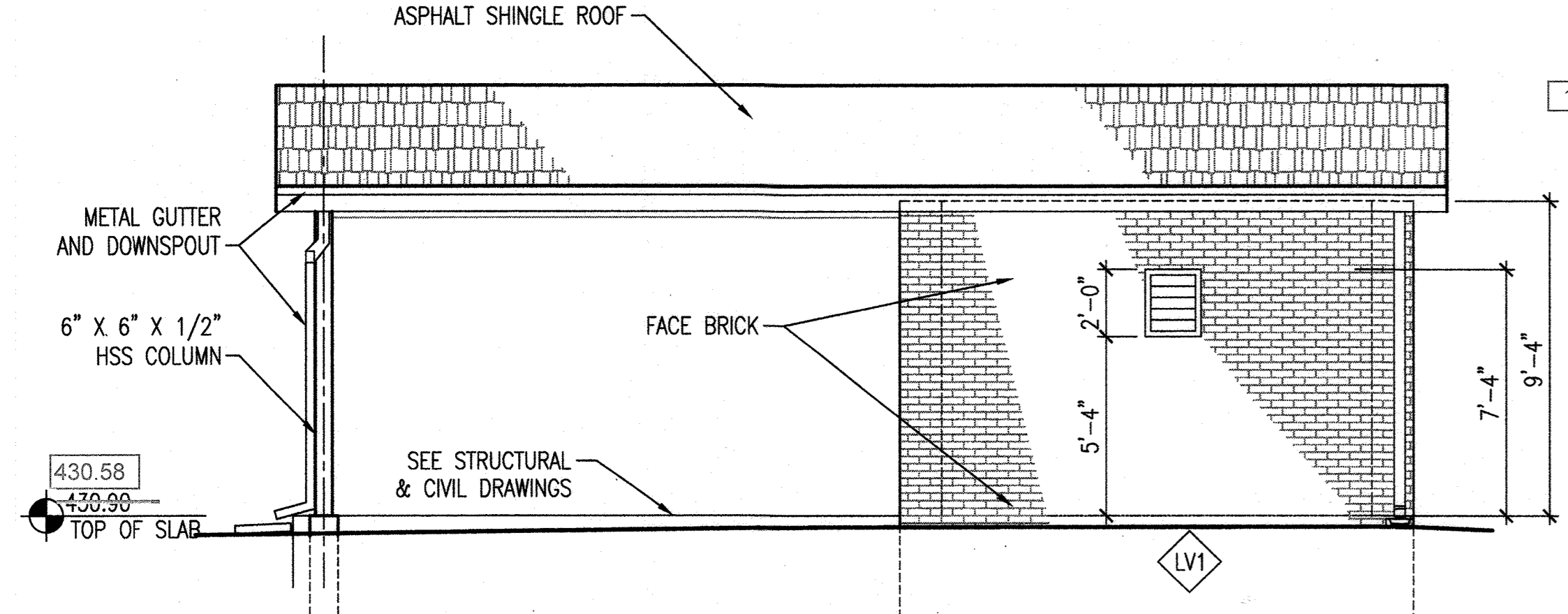




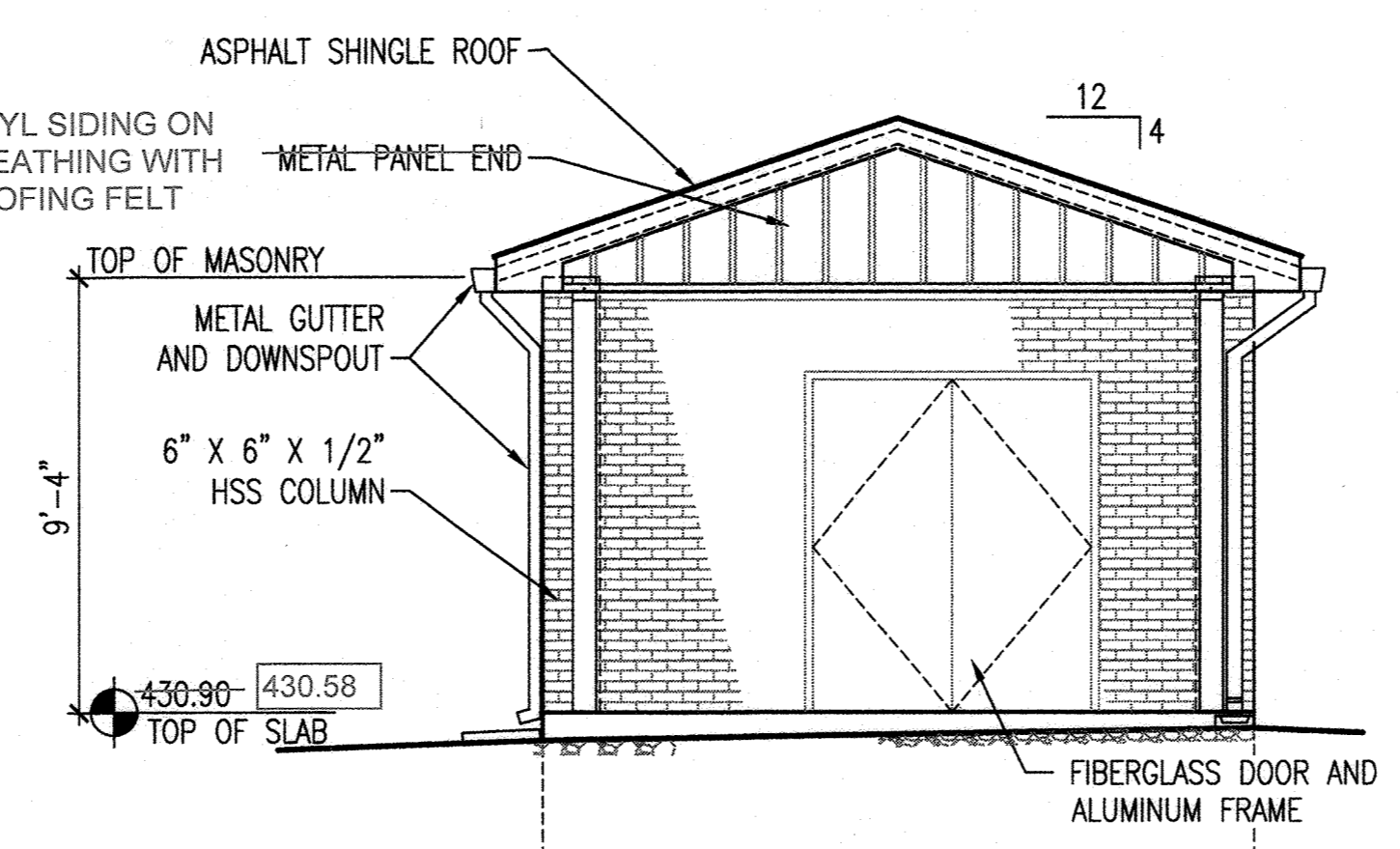
1 WEST ELEVATION
A-3 SCALE: 1/4" = 1'-0"
REF:



2 SOUTH ELEVATION
A-3 SCALE: 1/4" = 1'-0"
REF:

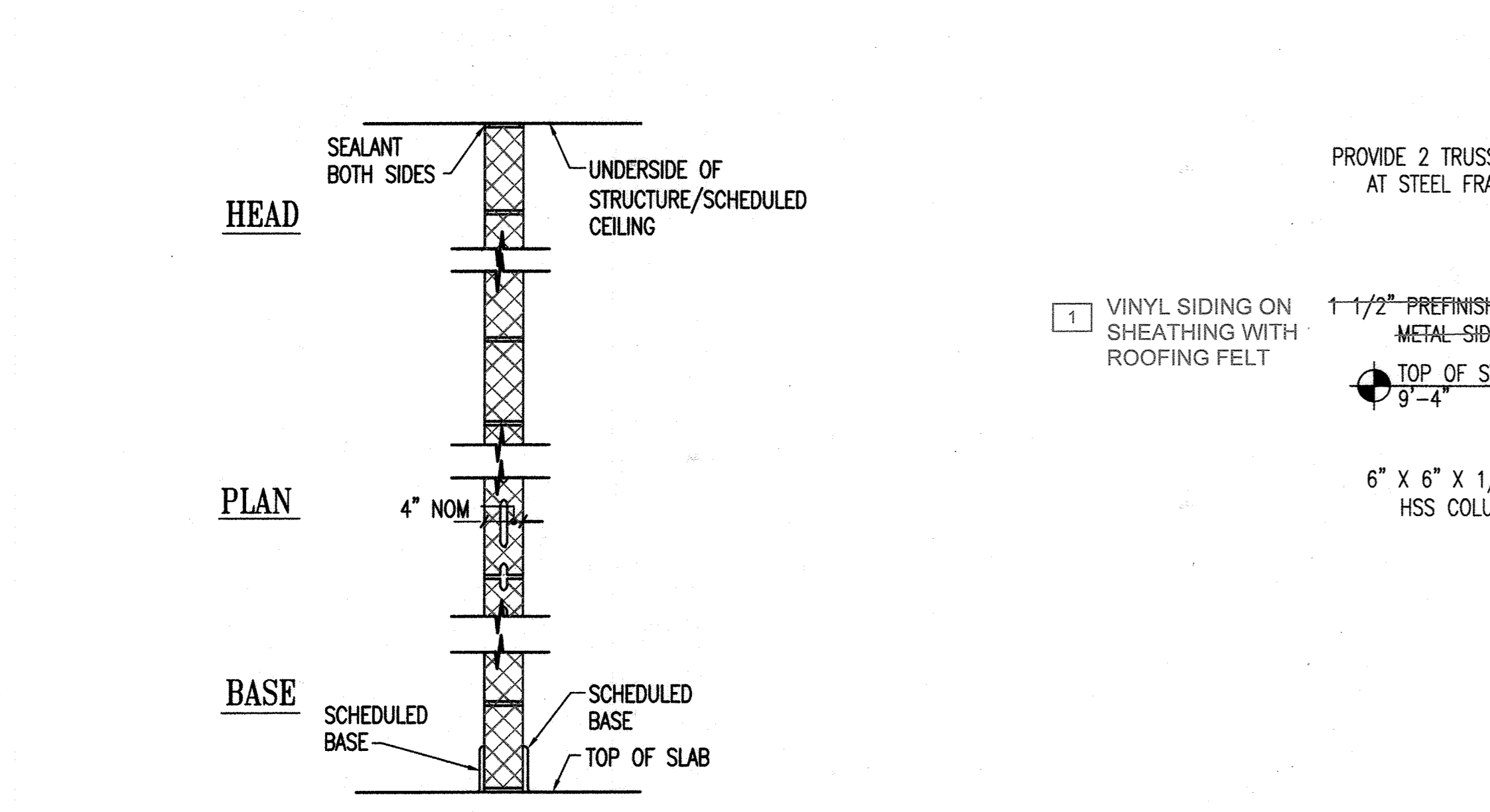


3 NORTH ELEVATION
A-3 SCALE: 1/4" = 1'-0"
REF:



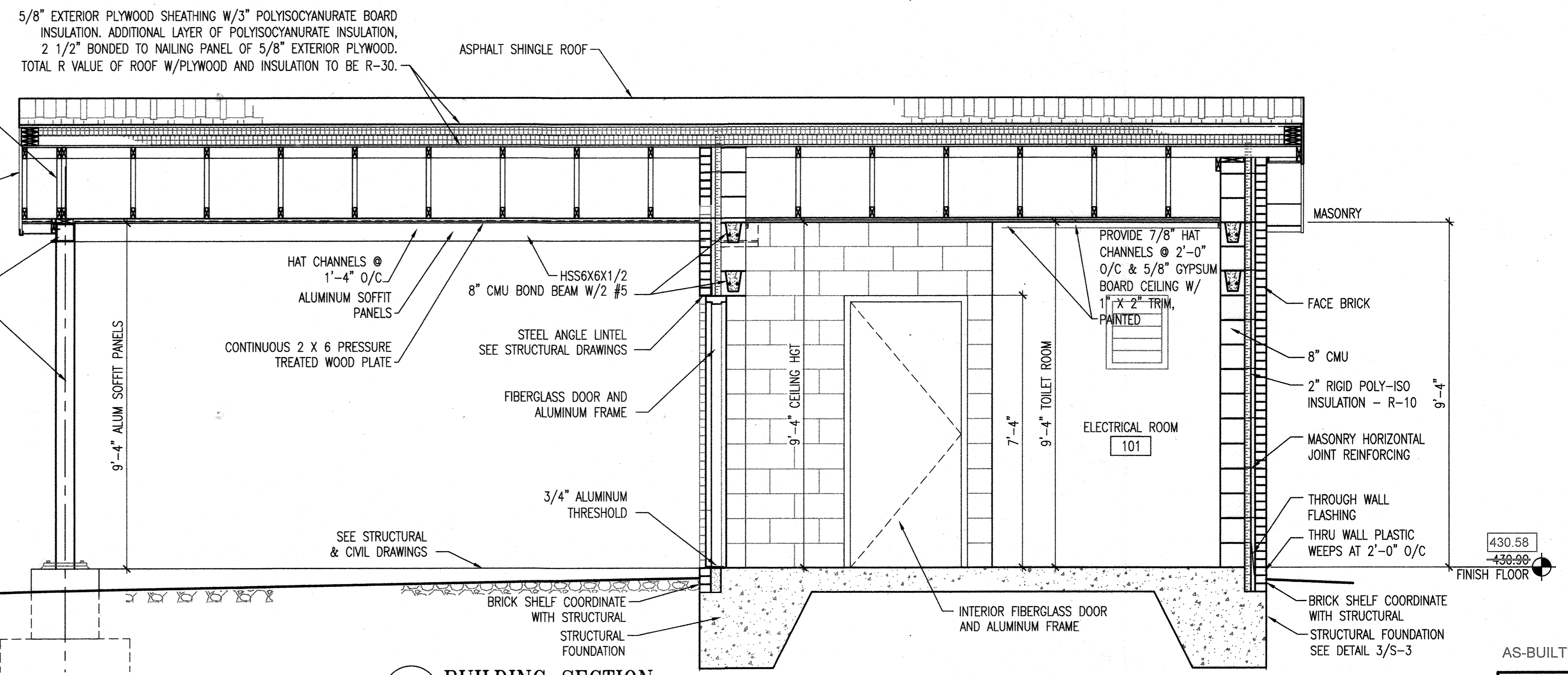
4 EAST ELEVATION
A-3 SCALE: 1/4" = 1'-0"
REF:

- GENERAL NOTES:**
1. CONTRACTOR RESPONSIBLE FOR FIELD VERIFICATION OF ALL DIMENSIONS.
 2. SEE A-5 FOR DOOR AND LOUVER SCHEDULES.

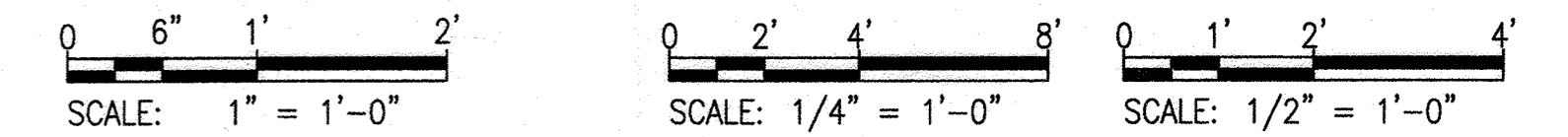


A WALL TYPE

5 WALL TYPES
A-3 SCALE: 1" = 1'-0"
REF: A-2



A BUILDING SECTION
A-3 SCALE: 1/2" = 1'-0"
REF: A-2



"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3466, EXPIRATION DATE: 11/24/2019"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

8/2/19
2-9-19

Whitman, Requardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

WRA
Whitman, Requardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

DES:	RK		
DRN:	PKI		
CHK:	DAK		
JULY 31, 2019	BY	NO.	REVISION
		1	CHANGE BULLETIN #6 - SIDING
			8/5/20

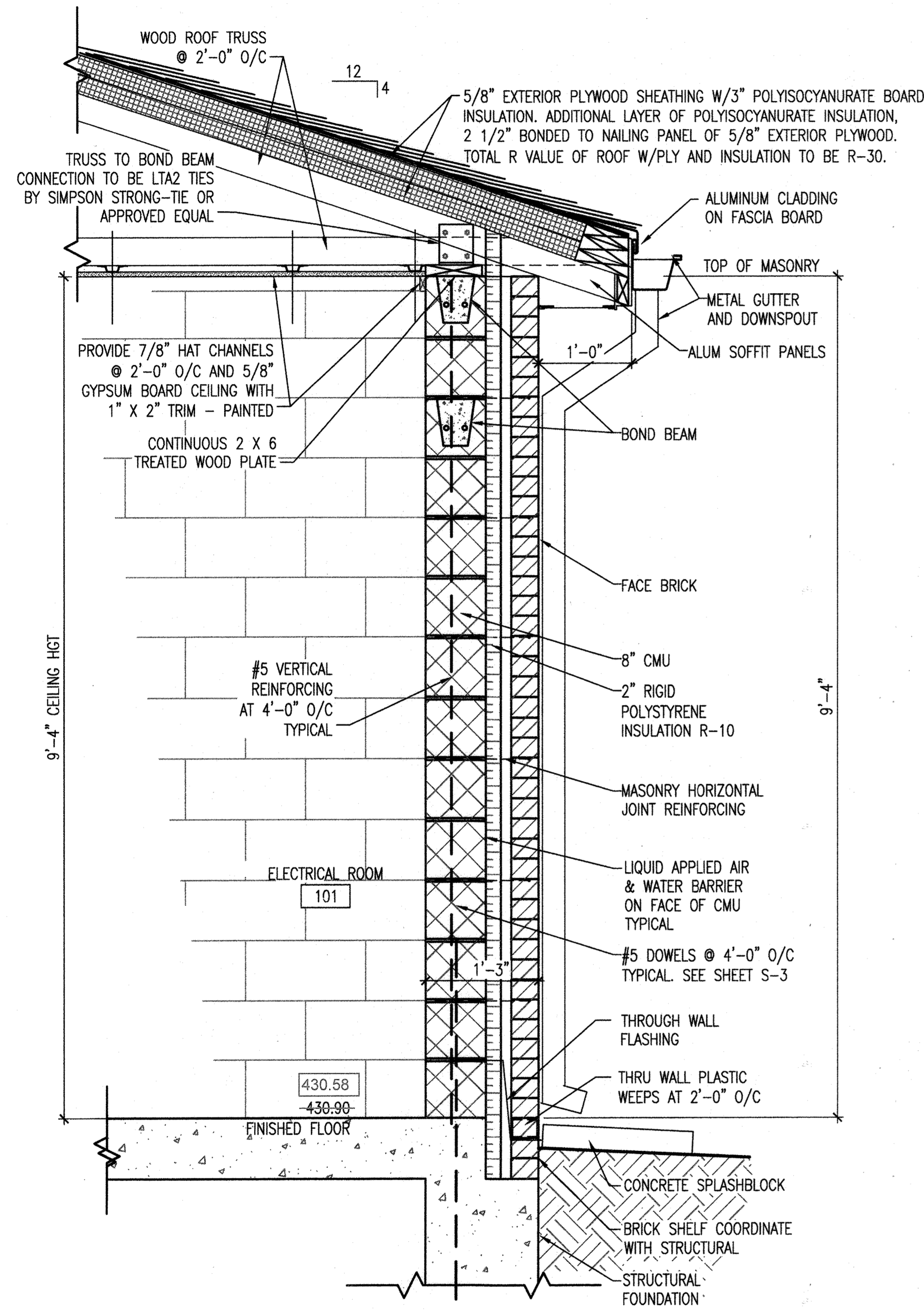
BUILDING ELEVATIONS & BUILDING SECTION
600 SCALE MAP NO. 18
BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

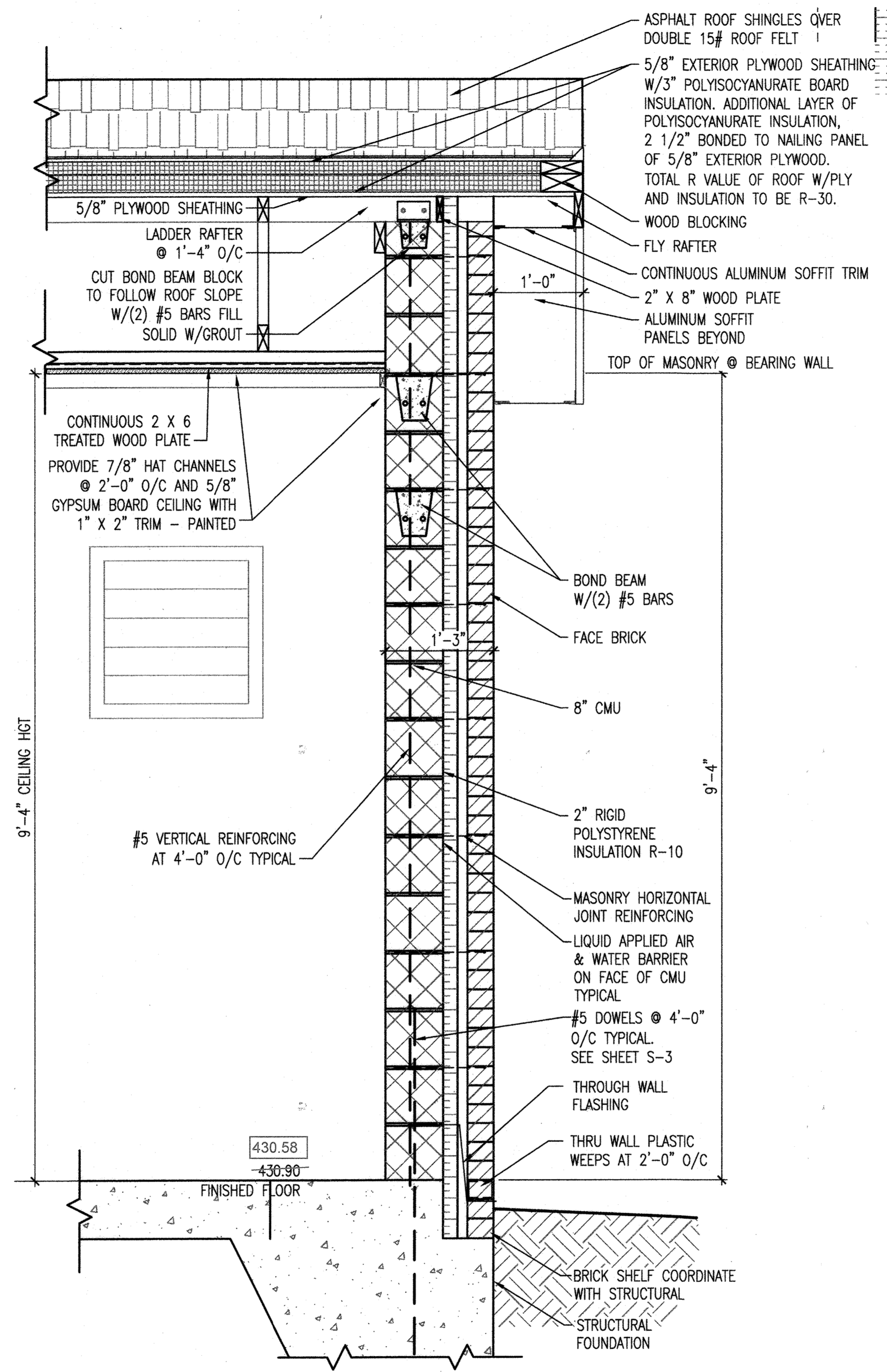
AS-BUILT
A-3
SCALE AS SHOWN
SHEET 9 OF 43

CONSTRUCTION NOTE:

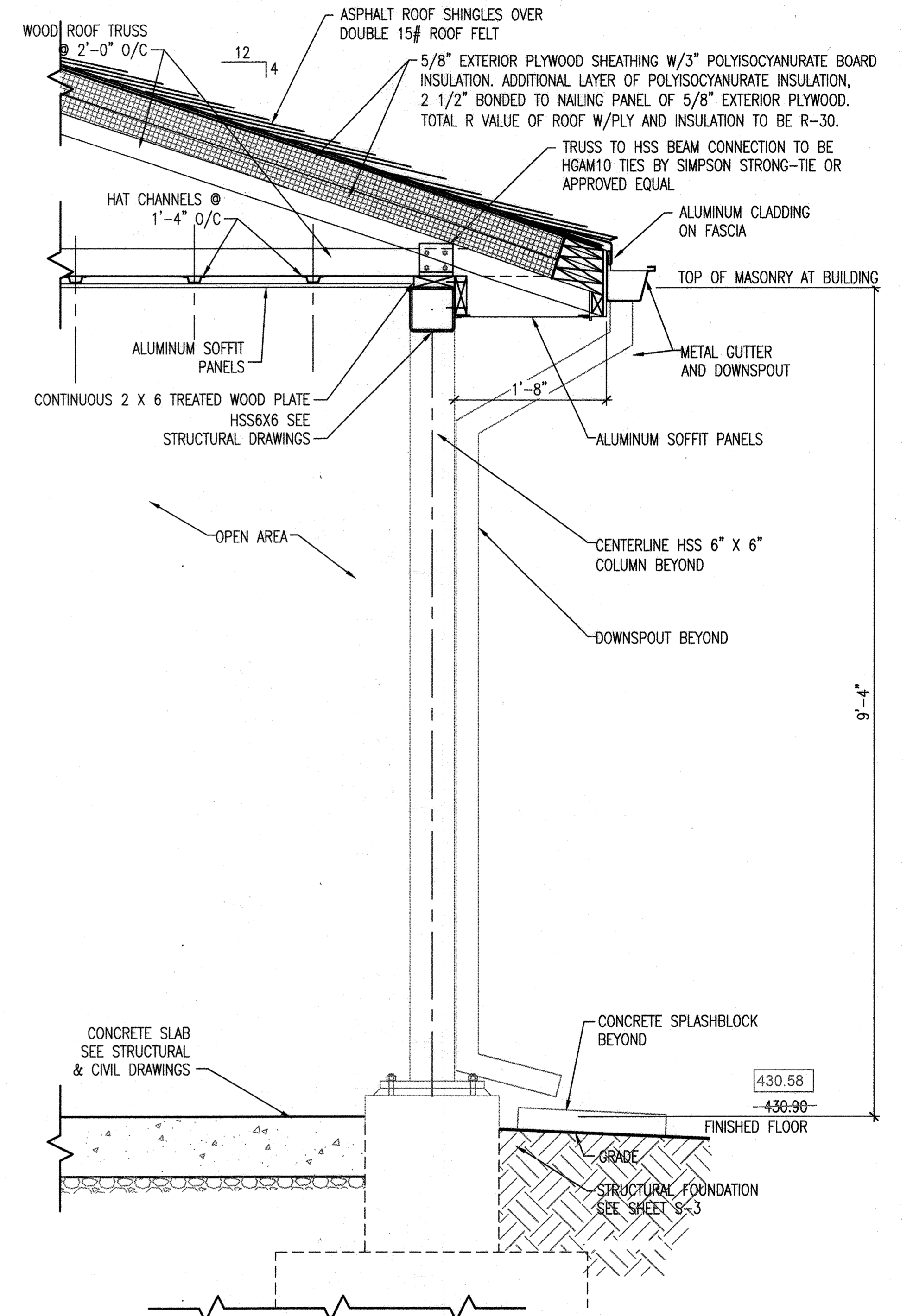
- INTERNATIONAL ENERGY CONSERVATION CODE, TABLE 4.201.3 REQUIRES THE FOLLOWING VALUES OF INSULATION.
 ROOF INSULATION ABOVE DECK: R-30 (CONTINUOUS INSULATION)
 WALL INSULATION: R-10 (CONTINUOUS INSULATION)



A WALL SECTION
 A-4 SCALE: 1" = 1'-0"
 REF: A-2



B WALL SECTION
 A-4 SCALE: 1" = 1'-0"
 REF: A-2



C WALL SECTION
 A-4 SCALE: 1" = 1'-0"
 REF: A-2

" I, PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3466, EXPIRATION DATE: 11/24/2019 "

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND.
 Director of Public Works: [Signature] 8/19/19
 Chief, Bureau of Engineering: [Signature] 8/19/19
 Chief, Utility Design Division: [Signature] 8/19/19

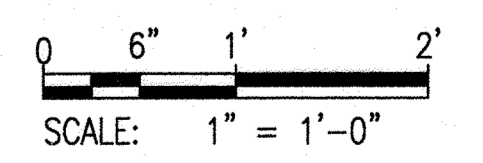
WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231



DES:	RK		
DRN:	PKI		
CHK:	DAK		
DATE:	JULY 31, 2019	BY:	NO.
REVISION:	1 AS-BUILT NOTES	DATE:	2/1/22

WALL SECTIONS AND DETAILS
 600 SCALE MAP NO. 18
 BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
 CAPITAL PROJECT NO. S-6275
 CONTRACT NO. 10-5096
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND



AS-BUILT
A-4
 SCALE AS SHOWN
 SHEET 10 OF 43

DOOR SCHEDULE																
LOCATION	DOOR NO	HARDWARE SET	DOORS				FRAMES				FIRE RATING LABEL	LINTEL	REMARKS	FINISH		
			WIDTH X HEIGHT (NOMINAL)	LOCATION	TYPE	MATERIAL	TYPE	MATERIAL	HEAD	JAMB				SILL	DOOR	FRAME
	101.1	HW-1	(2) 3'-0" X 7'-2"	ELECTRICAL ROOM 101	A	FG	2	ALUM	3/A-5	3/A-5	3/A-5	-	-	-	PT	PT
	102.1	HW-2	3'-0" X 7'-2"	TOILET ROOM 102	A	FG	1	ALUM	4/A-5	4/A-5	4/A-5	-	-	-	PT	PT

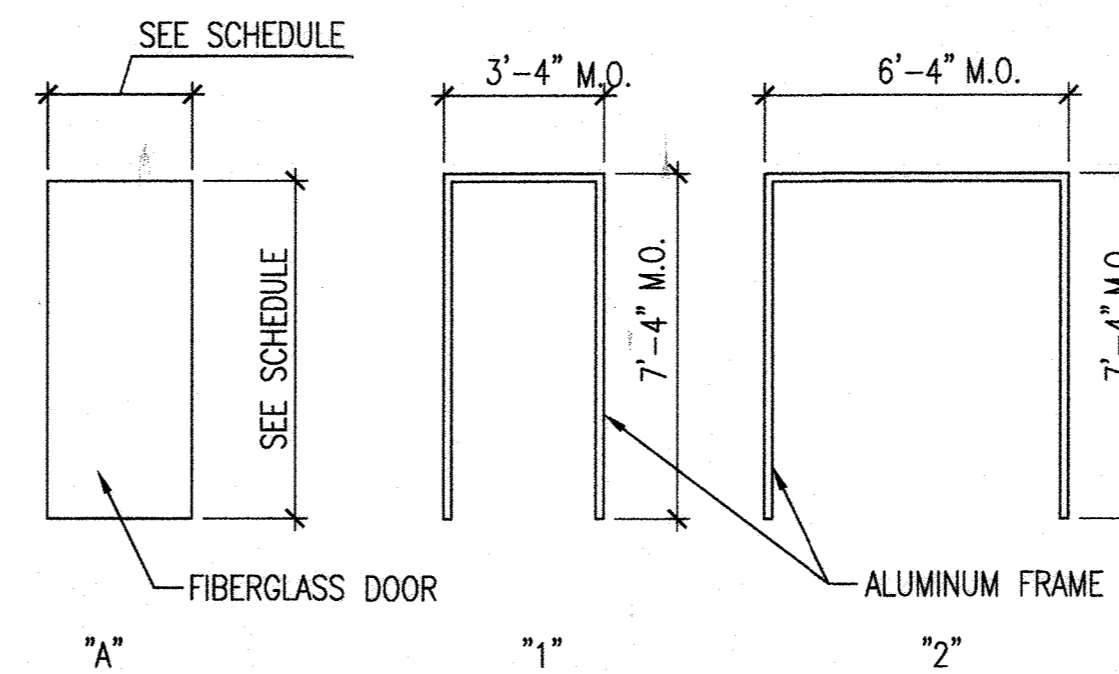
LOUVER SCHEDULE									
LOUVER NO	SIZE (W X H)	TYPE	MATERIAL	DEPTH	DETAILS			LINTEL	REMARKS
					HEAD	JAMB	SILL		
LV-1	2'-0" X 2'-0"	45 DEG	ALUM	6"	5/A-5	5/A-5	5/A-5	-	-
LV-2	2'-0" X 2'-0"	45 DEG	ALUM	6"	5/A-5	5/A-5	5/A-5	-	-

ROOM FINISH SCHEDULE												
LOCATION	ROOM NO	DESCRIPTION	FLOOR	BASE	WALLS				CEILING			REMARKS
					NORTH	EAST	SOUTH	WEST	FINISH	HEIGHT	COLOR	
	101	ELECTRICAL ROOM	CONC-S	CMU-P-3	P-2	P-2	P-2	P-2	GYP-BD-P	9'-4"	P-1	-
	102	TOILET ROOM	CONC-S	CMU-P-3	P-2	P-2	P-2	P-2	GYP-BD-P	9'-4"	P-1	-
	001	WET WELL	EXP-1	EXP-1	EXP-1	EXP-1	EXP-1	EXP-1	CONC	-	EXP-1	-

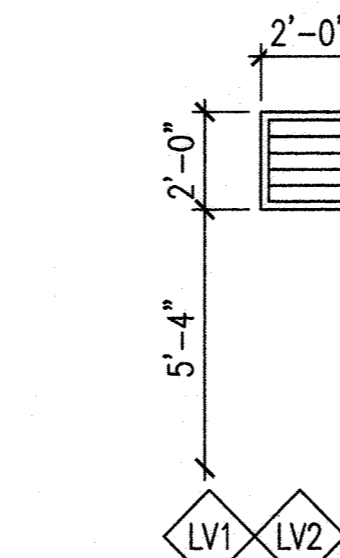
ROOM FINISH LIST			
LOCATION	DESIGNATION	MANUFACTURER	DESCRIPTION
FLOOR	CONC-S	EUCLID CHEMICAL CO.	SURFHARD CHEMICAL HARDENER/DUST PROOF
FLOOR	EXP-1	TNEMEC	EPOXY PAINT
BASE	P-3	TNEMEC	TBD
BASE	EXP-1		
WALLS	P-1	TNEMEC	
WALLS	P-2	TNEMEC	
WALLS	P-3	TNEMEC	TBD
WALLS	P-4		
WALLS	EXP-1	TNEMEC	EPOXY PAINT
CEILING	P-1	TNEMEC	TBD
CEILING	EXP-1	TNEMEC	EPOXY PAINT

FINISH SCHEDULE ABBREVIATIONS

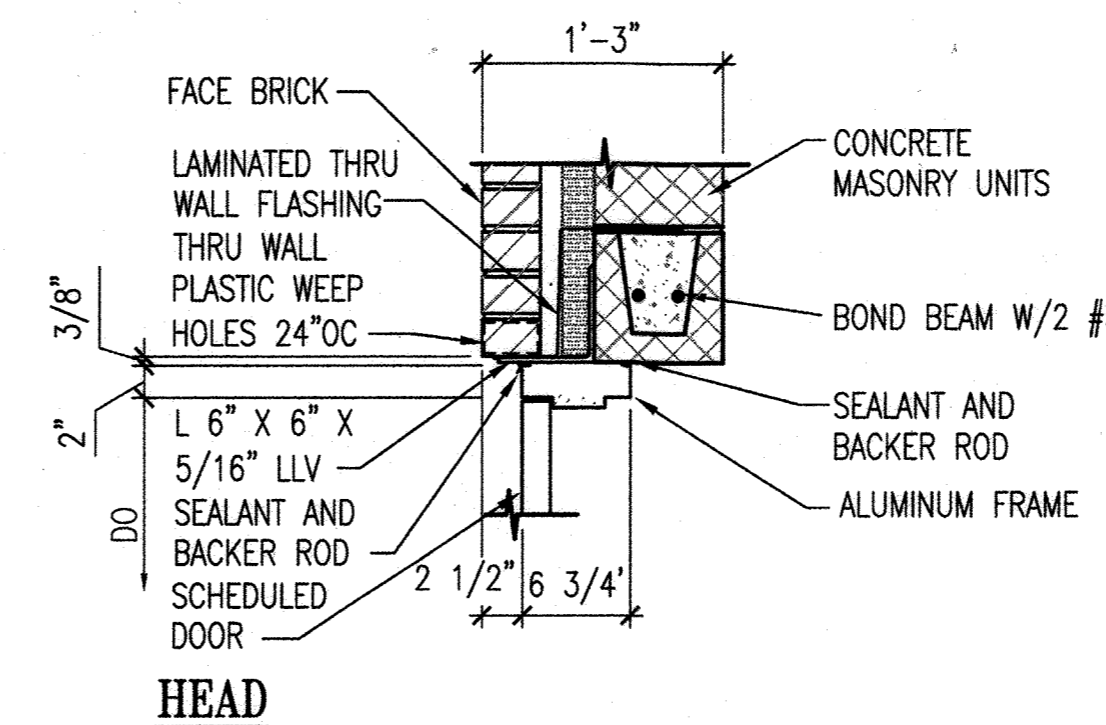
CONC-S CONCRETE - SEALED WITH SURFACE HARDNER
 B BASE
 P-# PAINT - # = COLOR SELECTED
 EXP-1 EPOXY PAINT - 2 COATS



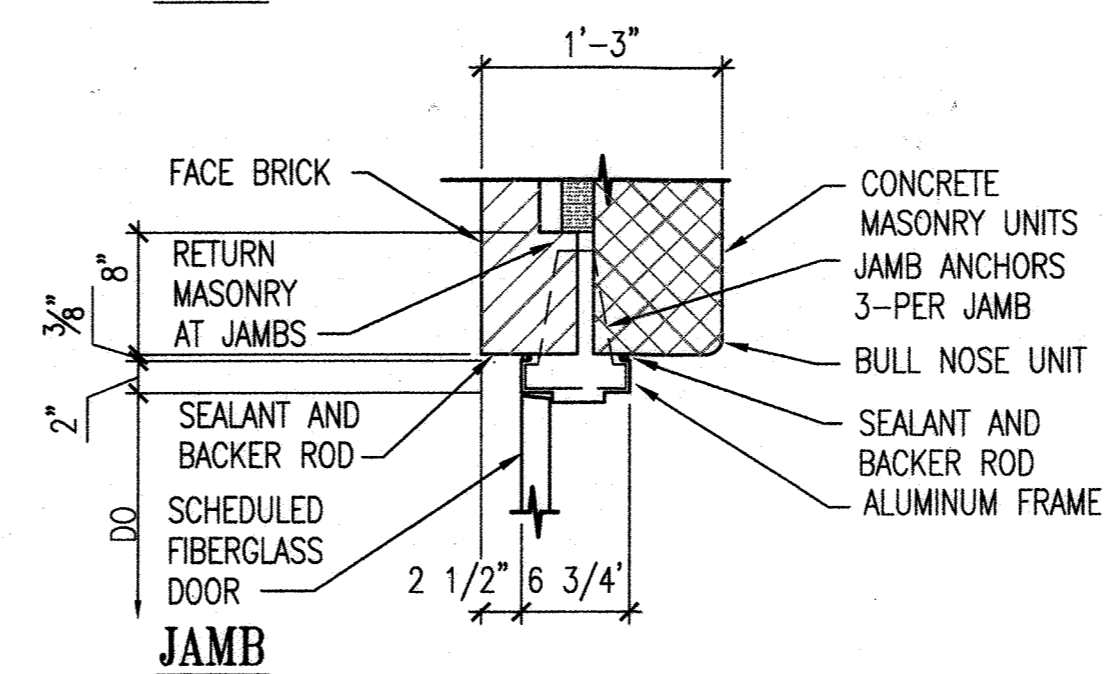
1 DOOR AND FRAME TYPES
 A-5 SCALE: 1/4" = 1'-0"



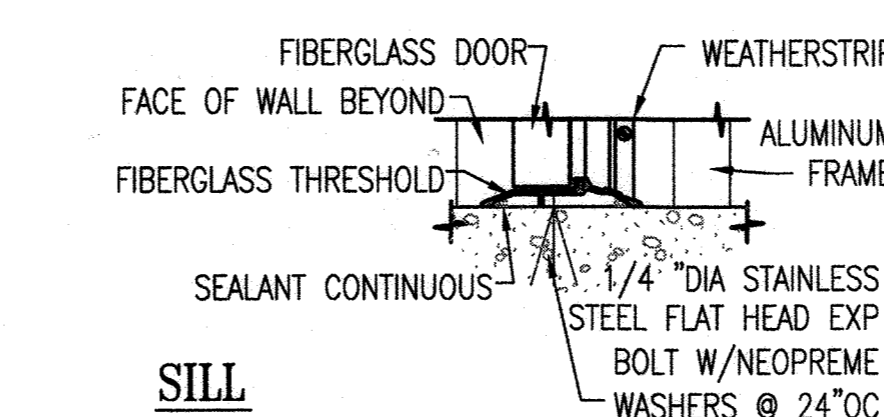
2 LOUVER TYPES
 A-5 SCALE: 1/4" = 1'-0"



HEAD

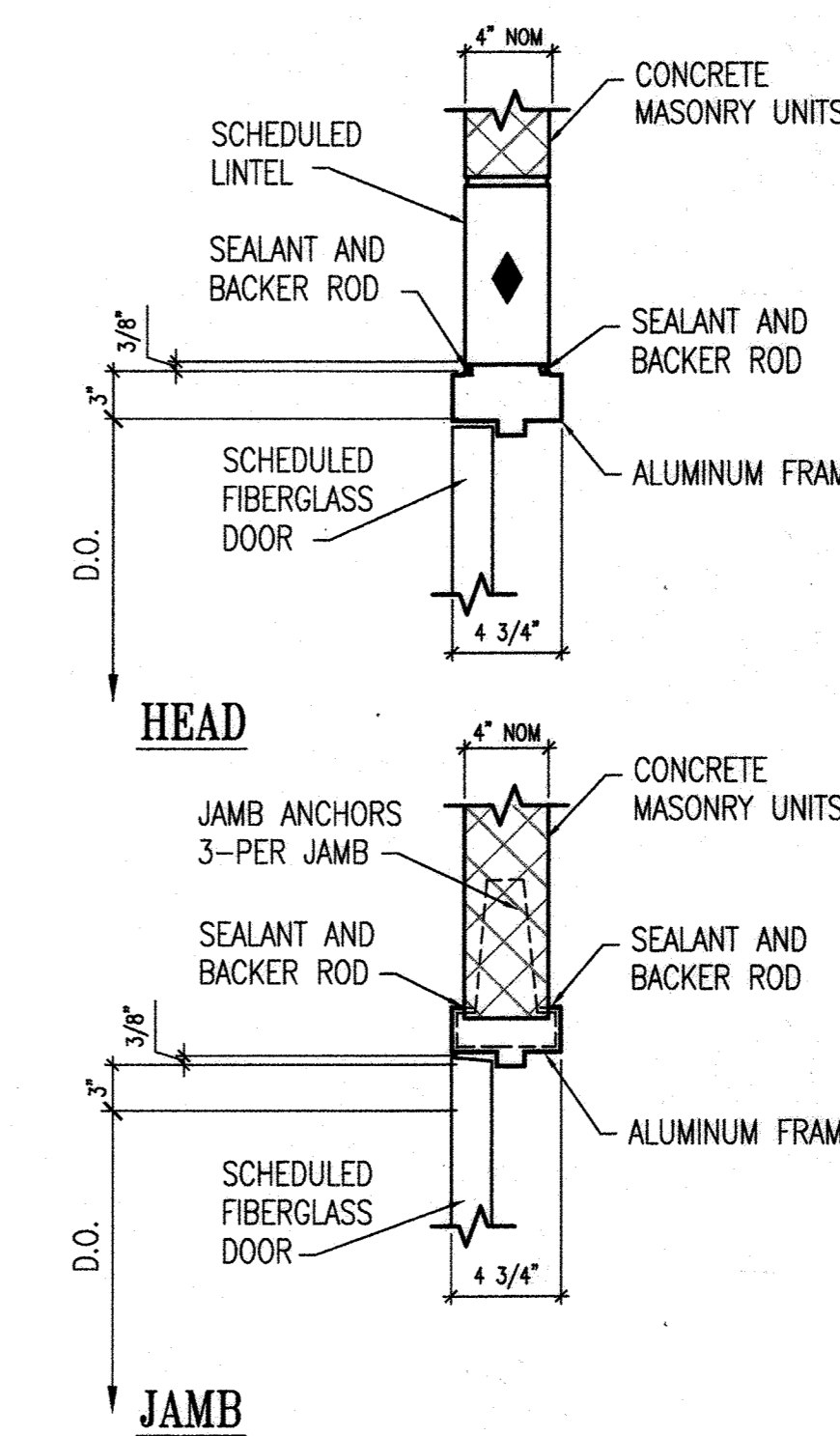


JAMB

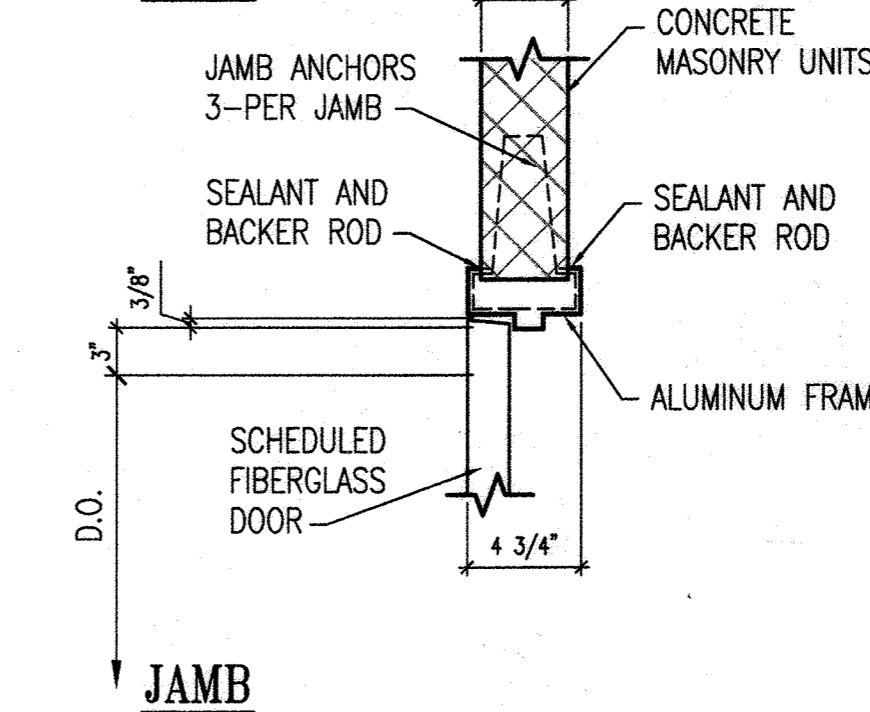


SILL

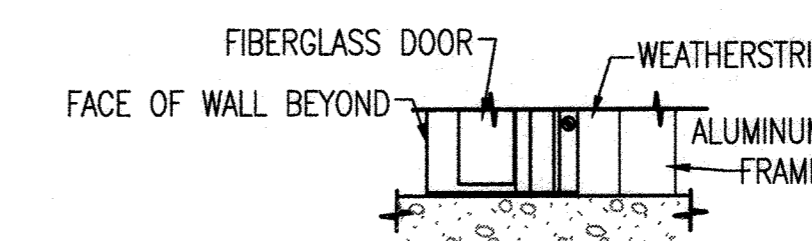
3 DOOR DETAIL
 A-5 SCALE: 1" = 1'-0"



HEAD

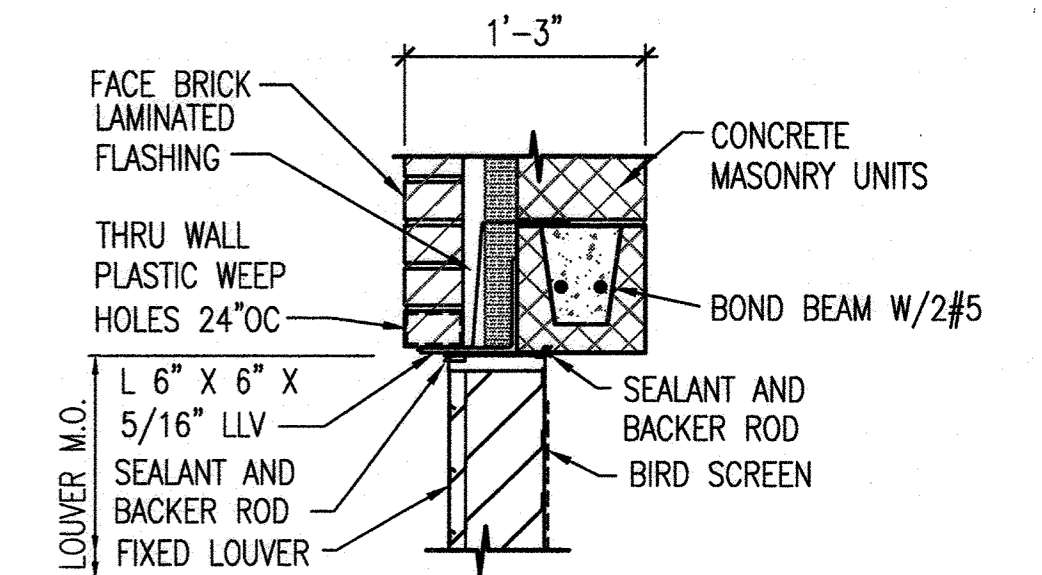


JAMB

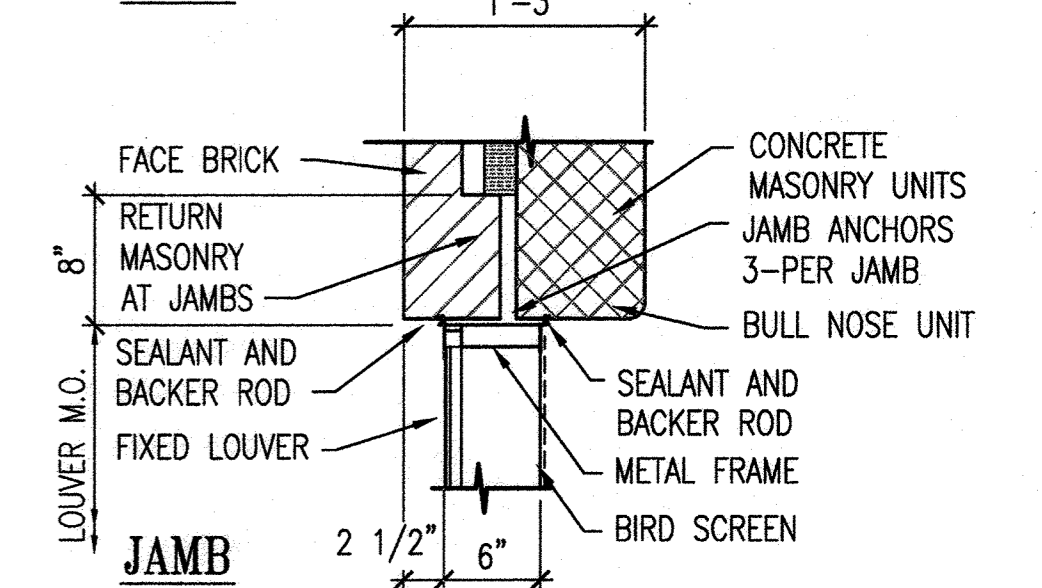


SILL

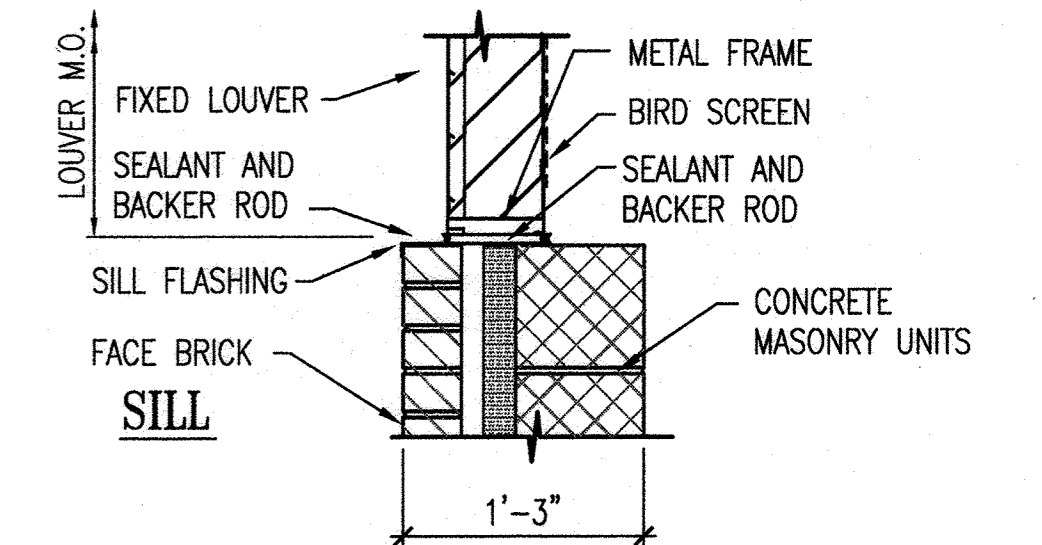
4 DOOR DETAIL
 A-5 SCALE: 1" = 1'-0"



HEAD

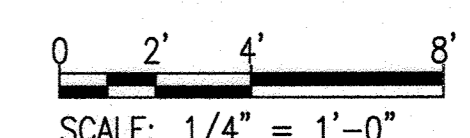
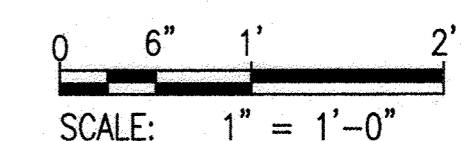


JAMB



SILL

5 LOUVER DETAIL
 A-5 SCALE: 1" = 1'-0"



" PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3466 , EXPIRATION DATE: 11/24/2019 "

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND.

Michael P. ... 8/9/19
 DIRECTOR OF PUBLIC WORKS DATE

... 8/9/19
 CHIEF, BUREAU OF UTILITIES DATE

... 8/9/19
 CHIEF, UTILITY DESIGN DIVISION DATE

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

ARCHITECTURAL REGISTRATION BOARD
 3466-A
 STATE OF MARYLAND
 7/31/2019

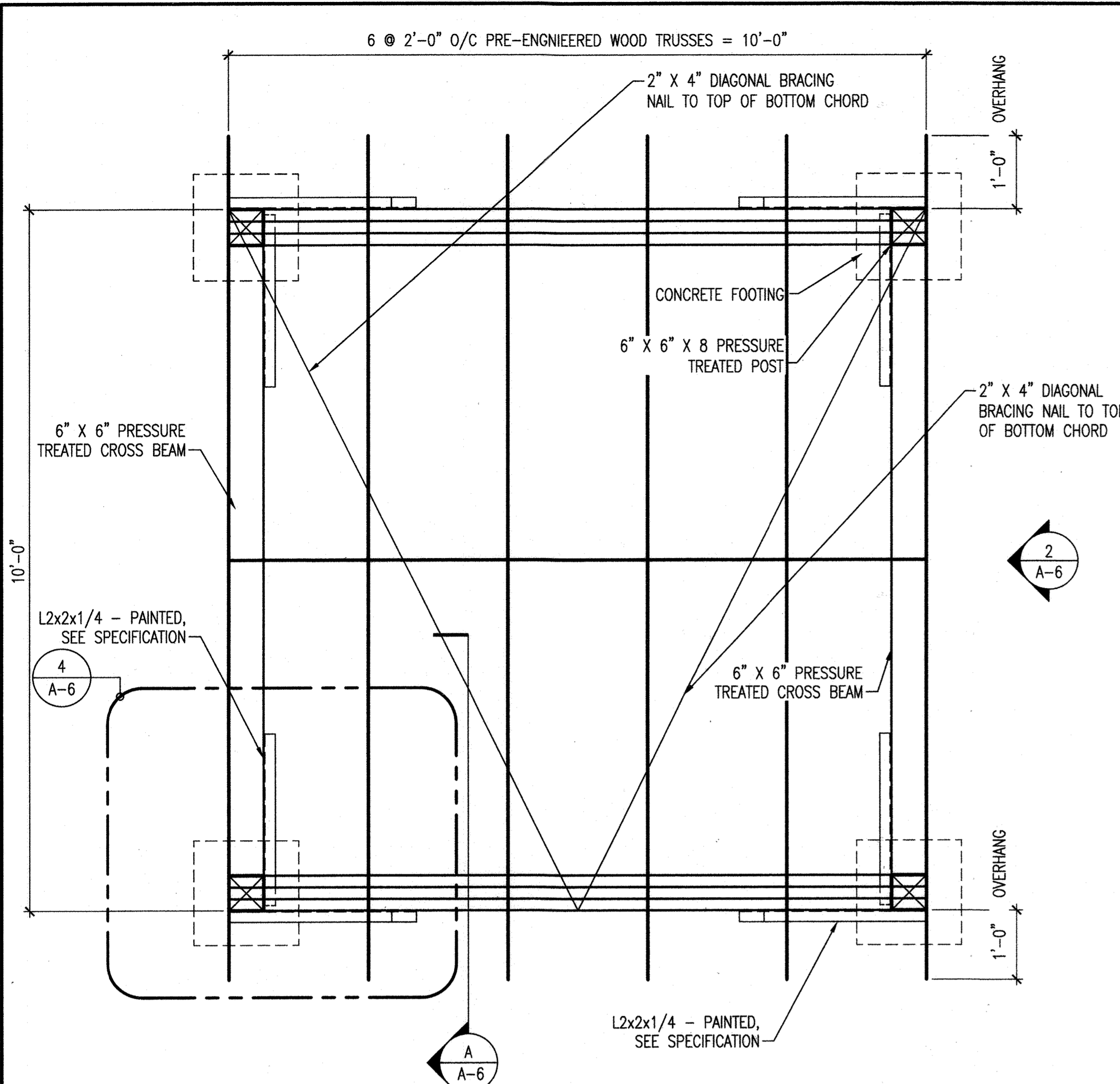
DES:	RK				
DRN:	PKI				
CHK:	DAK				
JULY 31, 2019	BY	NO.	REVISION	DATE	

ARCHITECTURE SCHEDULES AND DETAILS
 600 SCALE MAP NO. 18
 BLOCK NO. 7&13

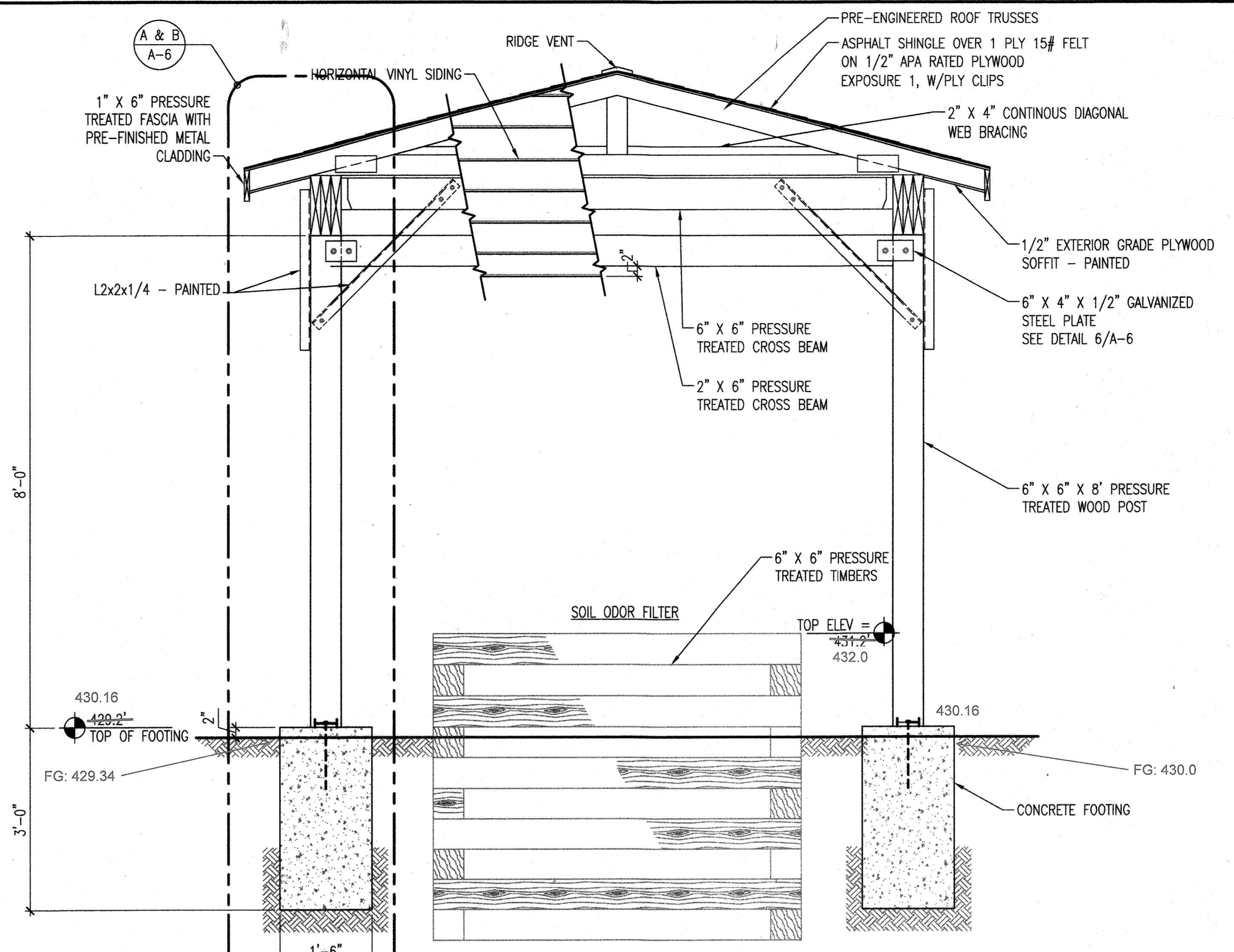
DANIELS AREA WASTEWATER PUMPING STATION
 CAPITAL PROJECT NO. S-6275
 CONTRACT NO. 10-5096
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

AS-BUILT
 A-5
 SCALE AS SHOWN
 SHEET 11 OF 43

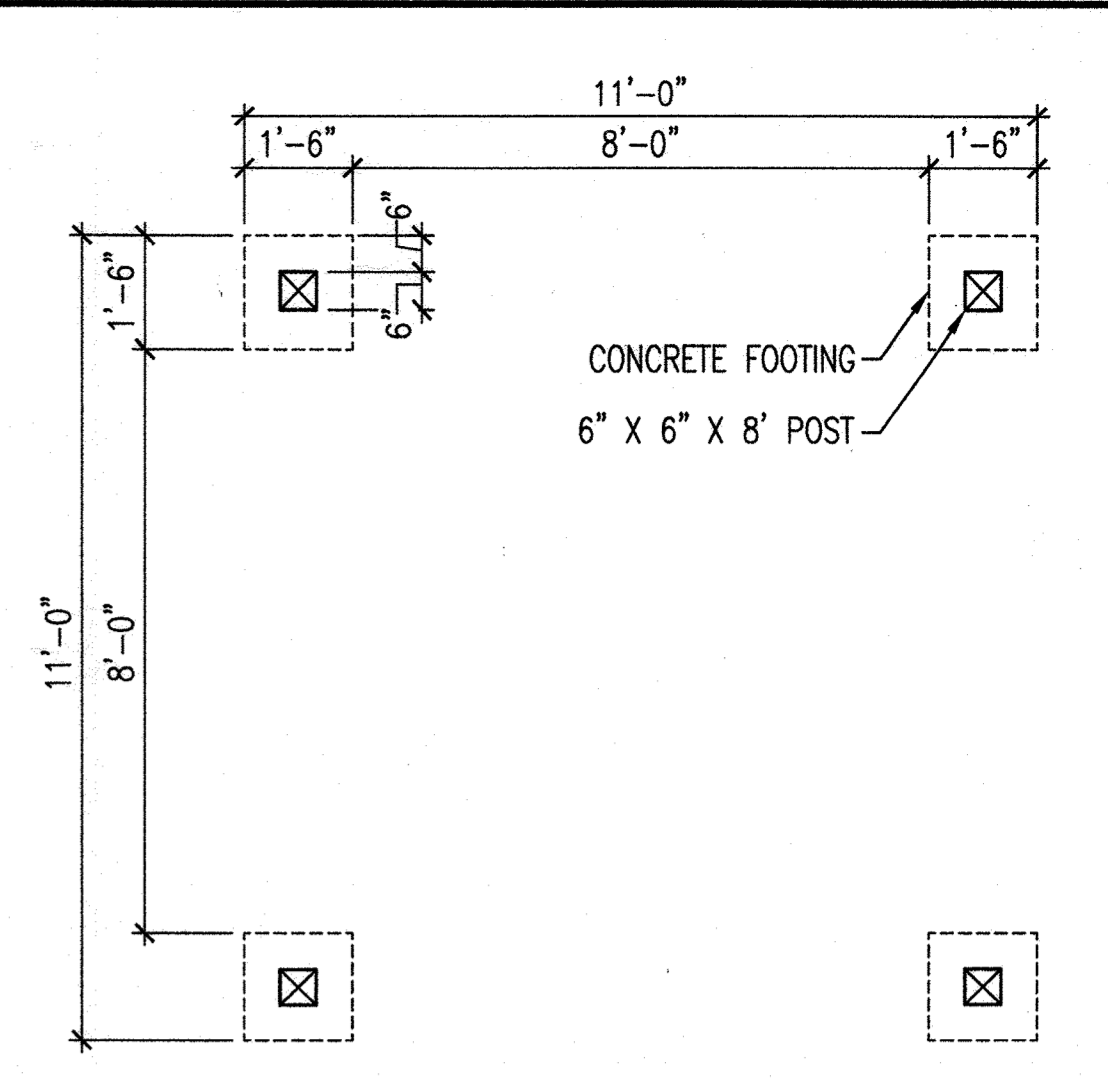
FILENAME: W:\AS-BUILT\AS-BUILT\AS-BUILT-18-05096



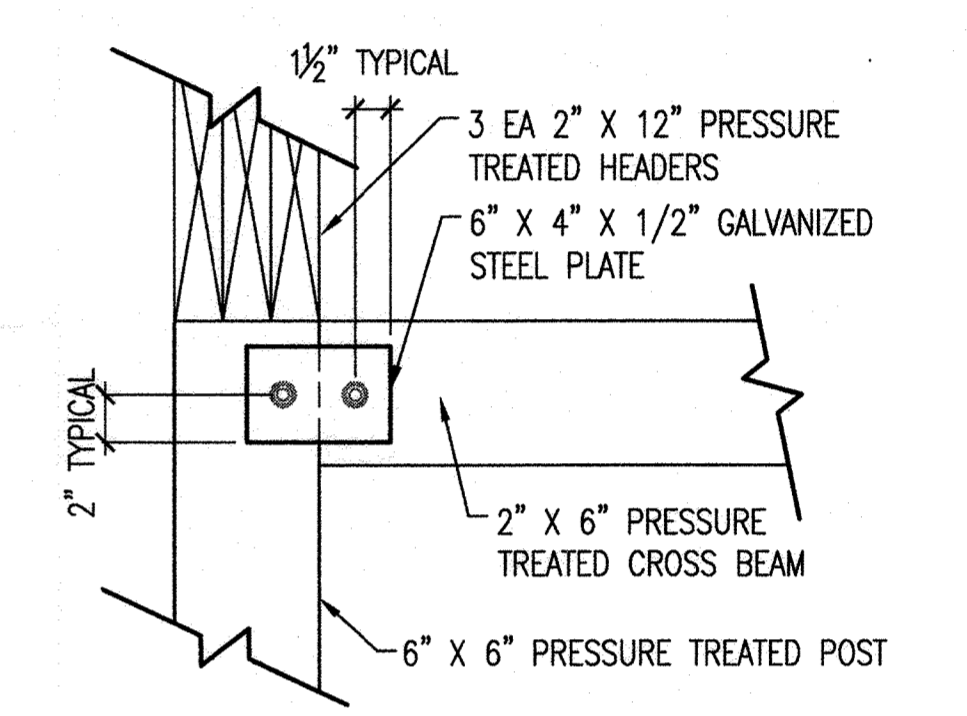
1 ROOF FRAMING PLAN
A-6 SCALE: 3/4" = 1'-0"



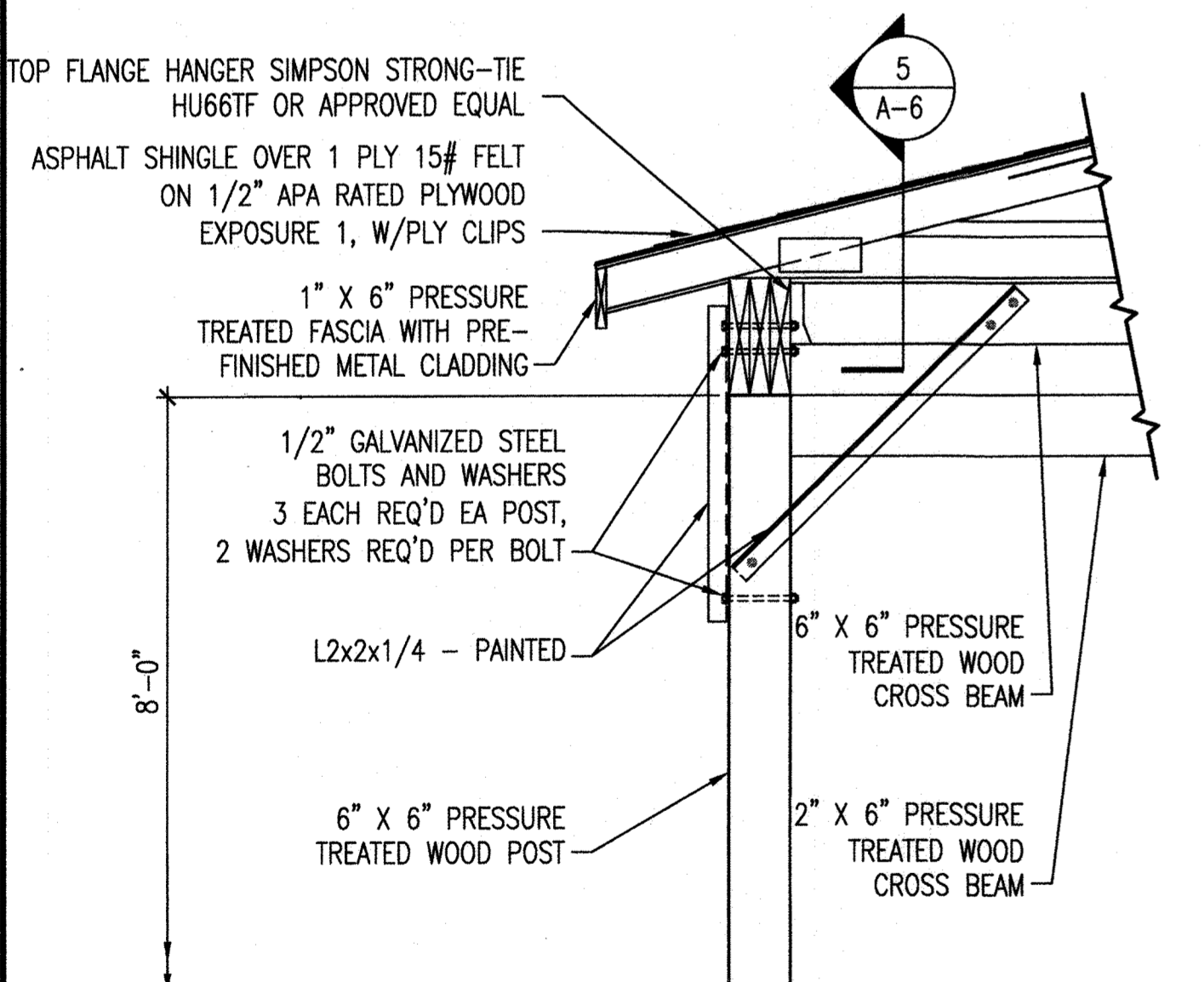
2 END VIEW ELEVATION
A-6 SCALE: 3/4" = 1'-0"



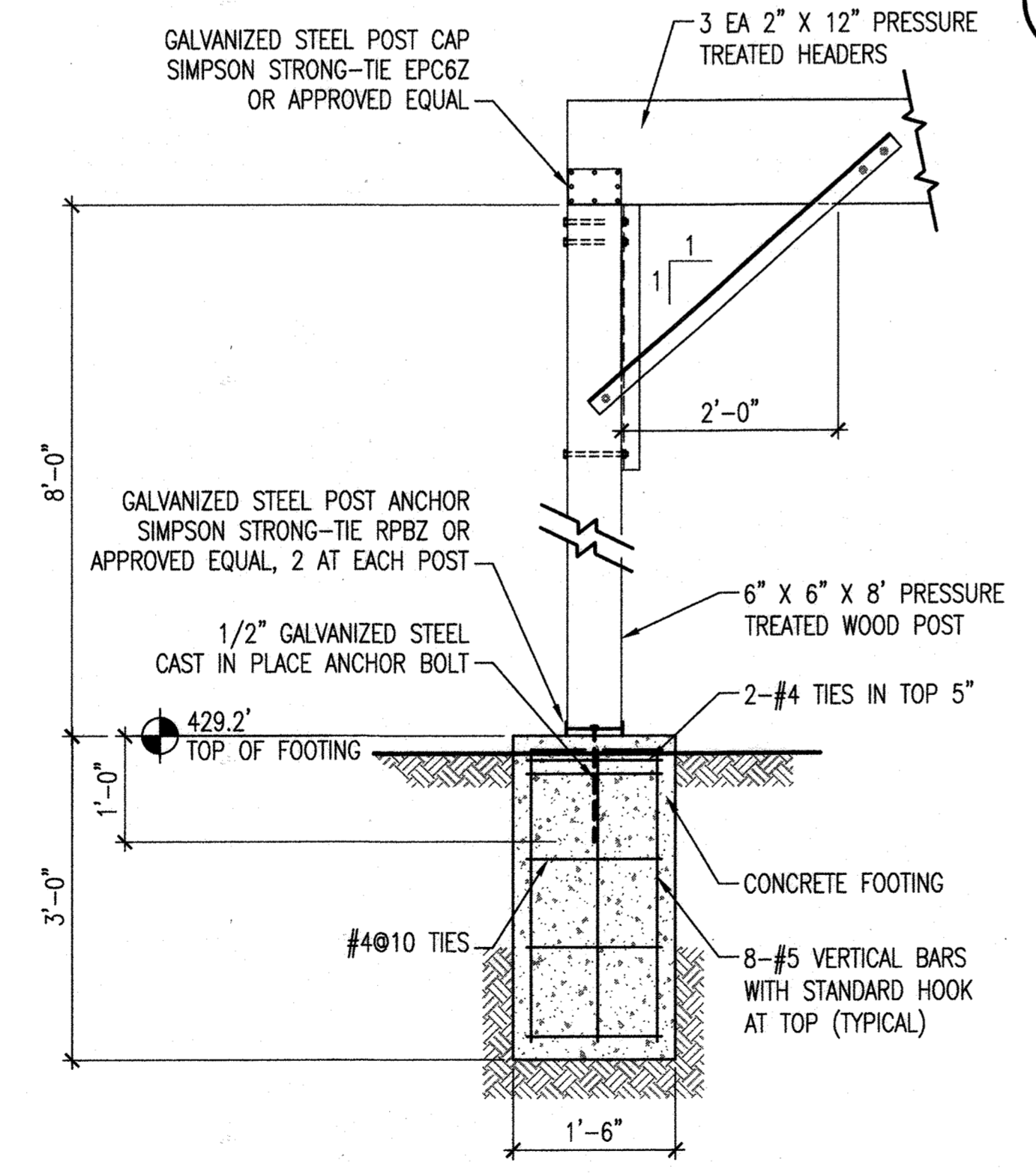
3 FOUNDATION PLAN
A-7 SCALE: 3/8" = 1'-0"



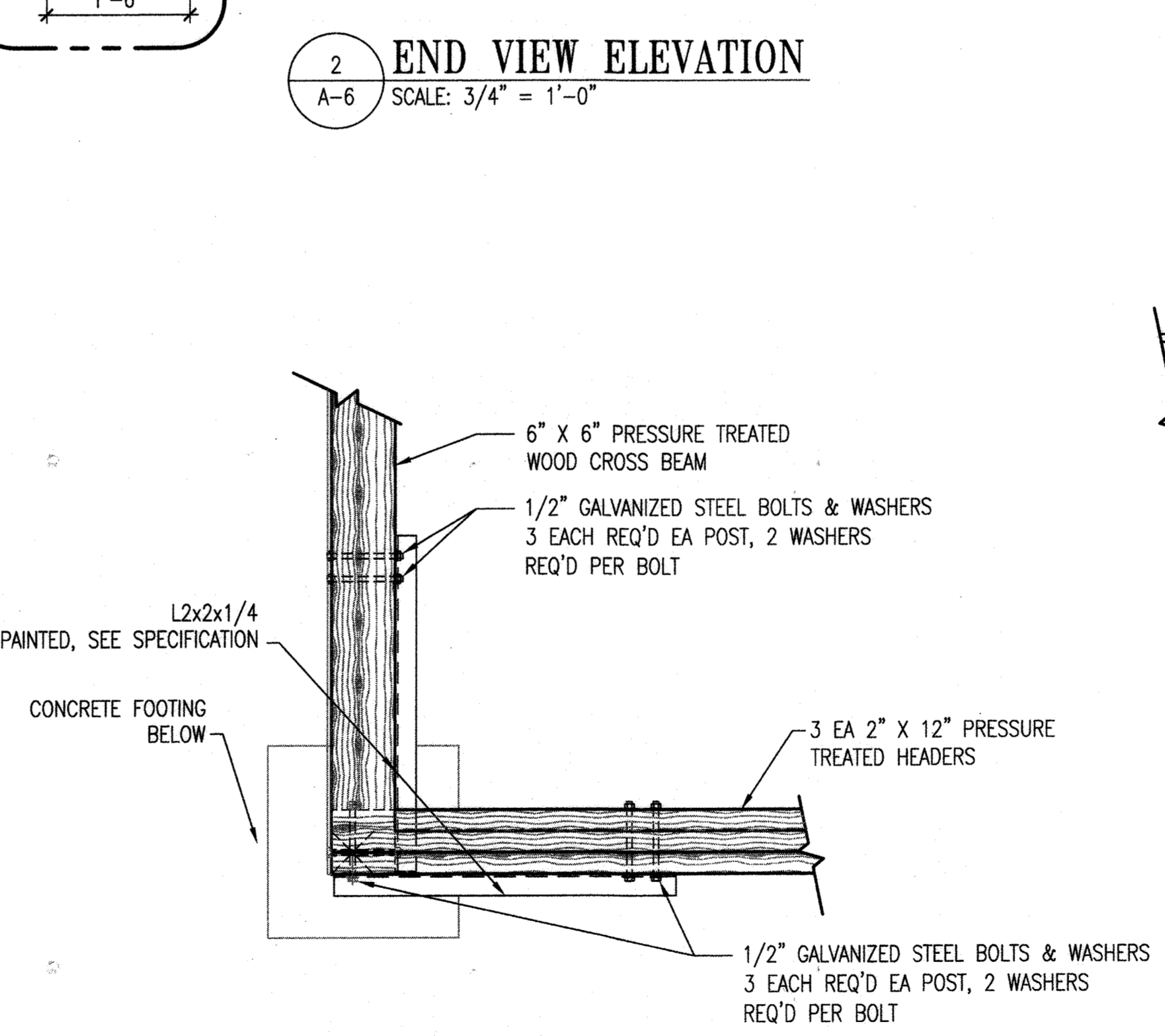
6 PLATE DETAIL
A-6 SCALE: 3/4" = 1'-0"



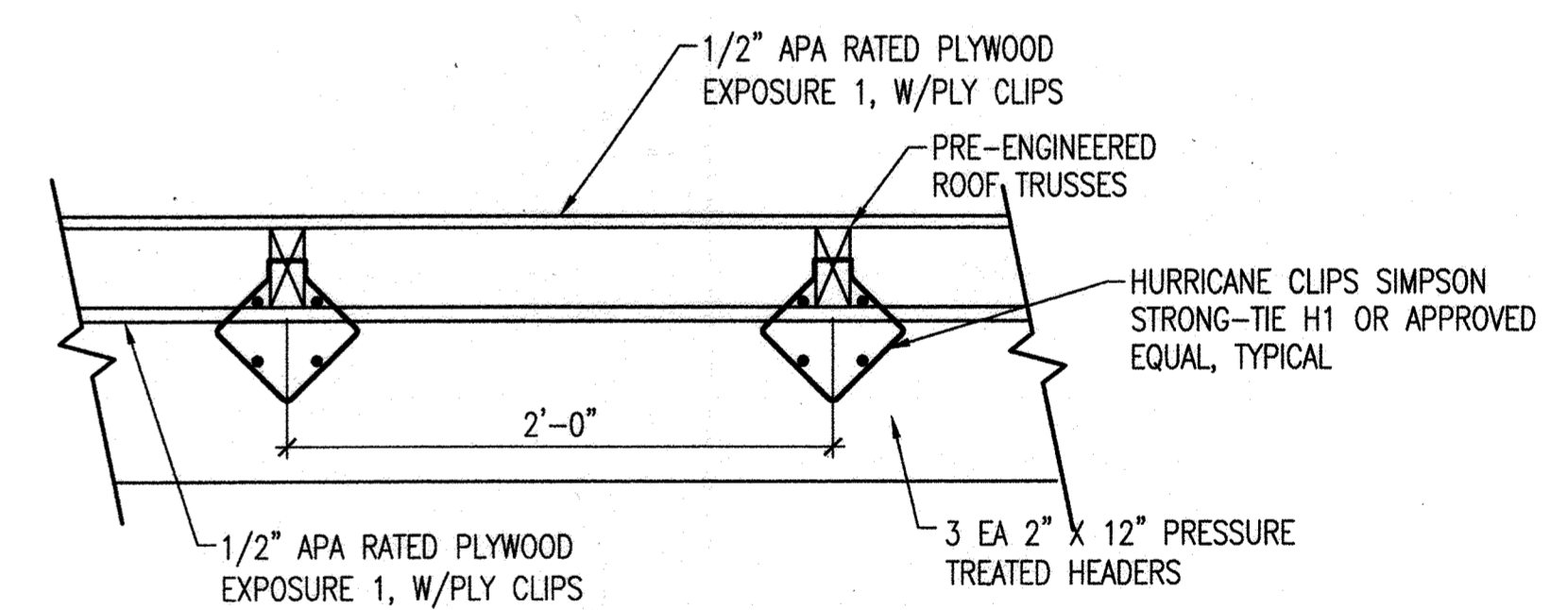
A SECTION DETAIL
A-6 SCALE: 3/4" = 1'-0"



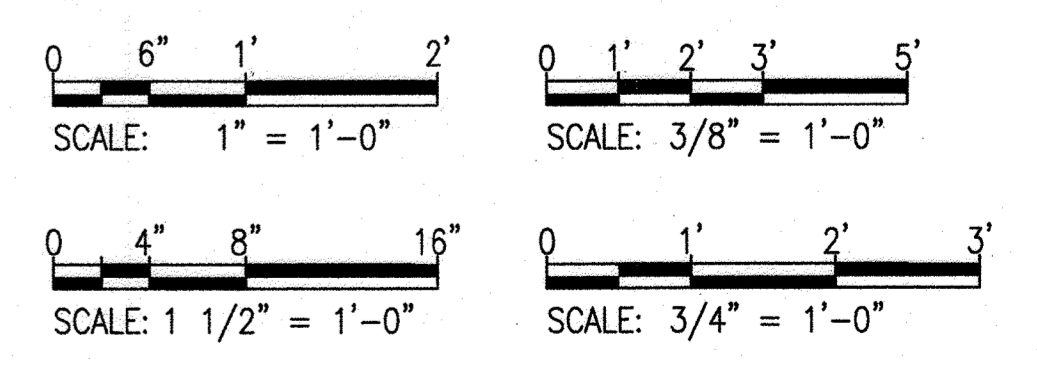
B SECTION DETAIL
A-6 SCALE: 3/4" = 1'-0"



4 PLAN - CONNECTION DETAIL
A-6 SCALE: 1" = 1'-0"



5 HEADER / TRUSS CONNECTION DETAIL
A-6 SCALE: 1 1/2" = 1'-0"



" PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3466 , EXPIRATION DATE: 11/24/2019 "

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Director of Public Works: *[Signature]* 8/7/19
Chief, Bureau of Utilities: *[Signature]* 8-9-19

Chief, Bureau of Engineering: *[Signature]* 8/9/19
Chief, Utility Design Division: *[Signature]* PSD

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231



DES:	RK			
DRN:	PKI			
CHK:	DAK			
JULY 31, 2019	BY	NO.	REVISION	DATE
		1	RFI #9: PAVILION HEIGHT	10/11/20

PAVILION AND DETAILS

600 SCALE MAP NO. 18
BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION

CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096

2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

AS-BUILT
A-6
SCALE AS SHOWN
SHEET 12 OF 43

GENERAL STRUCTURAL NOTES

GENERAL:

- FIELD VERIFY ALL DIMENSIONS, LOCATIONS AND ELEVATIONS SHOWN ON CONTRACT DRAWINGS FOR EXISTING STRUCTURES. 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 WALL OPENINGS, ARE DEPENDENT ON THE ACTUAL EQUIPMENT FURNISHED. VERIFY AND COORDINATE ALL SUCH ITEMS. DIMENSIONS INDICATED ON THESE DRAWINGS SHALL NOT BE ALTERED WITHOUT APPROVAL OF THE ENGINEER. STRUCTURAL DRAWINGS MAY NOT SHOW ALL EQUIPMENT PADS AND OTHER EQUIPMENT SUPPORTS REQUIRED. REFER TO CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS.
- LOCATIONS OF BORINGS ARE SHOWN ON CIVIL DRAWINGS. BORING LOGS ARE INCLUDED IN SPECIFICATIONS.
- FOR NOTES PERTAINING TO INDIVIDUAL STRUCTURES, SEE DRAWINGS FOR THOSE STRUCTURES.
- COORDINATE ALL ACTIVITIES, INCLUDING THOSE OF SUBCONTRACTORS, WITH THE OWNER'S ACTIVITIES.

FOUNDATION:

- FOUNDATIONS SHALL BEAR UPON UNDISTURBED SOIL OR COMPACTED ENGINEERED FILL WITH A MINIMUM ALLOWABLE BEARING CAPACITY OF 1800 PSF. THE CONTRACTOR SHALL OBTAIN THE SERVICES OF A GEOTECHNICAL ENGINEER LICENSED IN THE STATE OF MARYLAND WHO IS RESPONSIBLE FOR VERIFICATION OF THE SPECIFIED MINIMUM ALLOWABLE BEARING CAPACITY.
- PLACE A LAYER OF A 6" LAYER OF NO. 57 AGGREGATE UNDER ALL SLABS ON GRADE. SUBGRADE FOR SLABS ON GRADE SHALL BE INSPECTED AND APPROVED BY THE CONTRACTOR'S GEOTECHNICAL ENGINEER BEFORE PLACING ANY CONCRETE OR CRUSHED STONE.
- SHALLOW FOUNDATION ELEVATIONS SHOWN ON THE DRAWINGS ARE TO BE CONSIDERED MINIMUM EXCAVATION DEPTHS. EXCAVATE FURTHER AS REQUIRED TO REMOVE ALL UNSATISFACTORY SOILS TO A LAYER WITH THE MINIMUM SPECIFIED ALLOWABLE BEARING CAPACITY. WHERE REQUIRED, PROVIDE COMPACTED ENGINEERED FILL TO ACHIEVE THE REQUIRED SUBGRADE ELEVATIONS. NOTIFY THE ENGINEER OF ANY CONDITIONS THAT REQUIRE CHANGES IN FOUNDATION ELEVATIONS.
- PLACE SHALLOW FOUNDATIONS ON THE SAME DAY THAT THE BEARING SURFACE IS INSPECTED BY THE CONTRACTOR'S GEOTECHNICAL ENGINEER. ANY BEARING SURFACE NOT PLACED ON THE SAME DAY OF INITIAL INSPECTION MUST BE RE-INSPECTED BY THE CONTRACTOR'S GEOTECHNICAL ENGINEER ON THE DAY CONCRETE IS PLACED.
- ALL UNSATISFACTORY SOILS BELOW FOOTINGS, GRADE BEAMS AND SLABS-ON-GRADE SHALL BE REMOVED TO A COMPETENT SOIL STRATUM AND REPLACED WITH COMPACTED ENGINEERED FILL.
- WHERE REQUIRED, COMPACTED ENGINEERED FILL IS TO BE USED TO ACHIEVE THE REQUIRED SUBGRADE ELEVATIONS.
- MINIMUM DEPTH BELOW GRADE FOR FOUNDATIONS FOR FROST PROTECTION IS 30".
- FOR MECHANICAL AND ELECTRICAL WORK TO BE INCORPORATED IN FOUNDATION WORK, SEE MECHANICAL AND ELECTRICAL DRAWINGS.
- KEEP ALL EXCAVATIONS DRY.

CONCRETE MASONRY:

- CONSTRUCT MASONRY IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE ACI-530/ ASCE 5/ TMS 402, (2013) "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES."
- PROVIDE HOLLOW LIGHTWEIGHT LOAD-BEARING CONCRETE MASONRY UNITS MEETING THE REQUIREMENTS OF ASTM C 90, WITH A SPECIFIED MINIMUM NET AREA COMPRESSIVE STRENGTH OF 2,800 PSI.
- PROVIDE MORTAR CONFORMING TO THE REQUIREMENTS OF ASTM C-270, TYPE M OR S. CEMENT USED FOR MORTAR SHALL BE PORTLAND CEMENT.
- PROVIDE GROUT CONFORMING TO THE REQUIREMENTS OF ASTM C 476 COARSE GROUT, WITH A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI AT 28 DAYS.
- PROVIDE CONCRETE MASONRY WITH A MINIMUM COMPRESSIVE STRENGTH (F'm) OF 2,000 PSI.
- PROVIDE REINFORCING BARS CONFORMING TO ASTM A 615, GRADE 60.
- IN ADDITION TO THE MASONRY WALL REINFORCEMENT SHOWN ON THE DRAWINGS, FURNISH THE FOLLOWING:
#5 VERTICAL REINFORCEMENT SHALL BE PROVIDED AT CORNERS, WITHIN 16 INCHES OF EACH SIDE OF OPENINGS, WITHIN 8 INCHES OF EACH SIDE OF MOVEMENT JOINTS AND WITHIN 8 INCHES OF THE ENDS OF THE WALLS.
- LAP SPICE FOR #5BAR IN CMU SHALL BE 30" MINIMUM. LEGS FOR #5 BAR STANDARD HOOK SHALL BE 9" MINIMUM.
- PROVIDE DOWEL AT BOTTOM OF CMU MATCHING SIZE AND SPACING AT WALL REINFORCING. LAP DOWEL BARS WITH VERTICAL BARS, AND PROVIDE DOWEL STANDARD HOOK INTO SUPPORTING CONCRETE BELOW.

CONCRETE:

- PROVIDE CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 4500 PSI AT 28 DAYS.
- DETAIL AND CONSTRUCT REINFORCED CONCRETE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE."
- DETAIL REINFORCING STEEL IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE SP-66, "ACI DETAILING MANUAL," WHICH INCLUDES ACI 315, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT."
- PROVIDE REINFORCING CONFORMING TO ASTM A 615, GRADE 60, DEFORMED BARS.
- PROVIDE WELDED WIRE FABRIC CONFORMING TO ASTM A 1064.
- UNLESS NOTED OTHERWISE ON THE DRAWINGS, THE CONCRETE COVER FOR REINFORCING SHALL BE AS FOLLOWS:
A. BOTTOM BARS IN FOOTINGS AND IN SLABS ON EARTH OR GRAVEL: 3".
B. BEAMS, SLABS, COLUMNS AND WALLS EXPOSED TO GROUND, WEATHER, PROCESS LIQUID OR VAPORS AFTER REMOVAL OF FORMS: 2".
- SUBMIT REINFORCING STEEL DETAILS (SHOP DRAWINGS) AND RECEIVE APPROVAL BEFORE PROCEEDING WITH FABRICATION.
- CHAMFER ALL EXPOSED CONCRETE EDGES 3/4" UNLESS OTHERWISE NOTED.
- DETAIL ALL SPLICES FOR REINFORCING BARS NOT DIMENSIONED ON THE DRAWINGS AS TABULATED ON THIS DRAWING.
- POUR CONCRETE SLABS AND WALLS BETWEEN INDICATED JOINTS, ALLOWING A MINIMUM ELAPSED PERIOD OF 3 DAYS BETWEEN ADJACENT POURS.
- PROVIDE JOINTS AS DETAILED ON THE DRAWINGS. NO ADDITIONAL JOINTS SHALL BE USED NOR ANY OMITTED EXCEPT BY WRITTEN AUTHORIZATION FROM THE ENGINEER. APPROVED ADDITIONAL JOINTS SHALL NOT RESULT IN ADDITIONAL EXPENSE TO THE OWNER.
- WHERE A SLAB IS SLOPED (TOP AND/OR BOTTOM), PROVIDE SLOPED REINFORCING PARALLEL TO THE CONCRETE SURFACE.
- SIZE AND LOCATE ANCHOR BOLTS AND EQUIPMENT PADS OR PEDESTALS TO SUIT EQUIPMENT FURNISHED.
- REVIEW ALL DRAWINGS FROM OTHER DISCIPLINES AND COORDINATE ALL OPENINGS AND EMBEDDED ITEMS SUCH AS SLEEVES, ANCHORS, CONDUIT, ETC. THAT WILL BE INCORPORATED INTO CONCRETE WORK.

PRECAST CONCRETE:

- PRECAST CONCRETE STRUCTURES AND COMPONENTS OF STRUCTURES SHALL MEET THE REQUIREMENTS OF SPECIFICATION SECTION 03410 "PRECAST CONCRETE STRUCTURES."
- PROVIDE CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS.
- DETAIL AND CONSTRUCT REINFORCED CONCRETE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE ACI 310, "SPECIFICATION FOR STRUCTURAL CONCRETE."
- DETAIL REINFORCING STEEL IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE SP-66, "ACI DETAILING MANUAL," WHICH INCLUDES ACI 315, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT."
- PROVIDE REINFORCING CONFORMING TO ASTM A 615, GRADE 60, DEFORMED BARS.
- PROVIDE WELDED WIRE FABRIC CONFORMING TO ASTM A 1064.
- PROVIDED NORMAL WEIGHT AGGREGATES CONFORMING TO ASTM C33, CLASS 3S.
- UNLESS NOTED OTHERWISE ON THE DRAWINGS, THE CONCRETE COVER FOR REINFORCING SHALL BE AS FOLLOWS:
A. BOTTOM BARS IN FOOTINGS AND IN SLABS ON EARTH OR GRAVEL: 3".
B. BEAMS SLABS, COLUMNS AND WALLS: 1 1/2".
- SUBMIT REINFORCING STEEL DETAILS (SHOP DRAWINGS) AND RECEIVE APPROVAL BEFORE PROCEEDING WITH FABRICATION.
- CHAMFER ALL EXPOSED CONCRETE EDGES 3/4" UNLESS OTHERWISE NOTED.

PREFABRICATED WOOD TRUSSES

- PROVIDE METAL-PLATE CONNECTED PREFABRICATED WOOD TRUSSES.
- METAL-PLATE-CONNECTED WOOD TRUSSES SHALL BE DESIGNED IN ACCORDANCE WITH THE AMERICAN FOREST AND PAPER ASSOCIATION, "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION," AND THE TRUSS PLATE INSTITUTE "DESIGN SPECIFICATION FOR METAL-PLATE-CONNECTED WOOD TRUSSES" AND "DESIGN SPECIFICATION FOR METAL PLATE CONNECTED PARALLEL CHORD WOOD TRUSSES."
- TOP AND BOTTOM CHORDS SHALL CONFORM TO THE PROFILE AS INDICATED ON THE ARCHITECTURAL AND STRUCTURAL DRAWINGS. THE TRUSS MANUFACTURER MAY VARY TRUSS TYPE AND MEMBER SIZE AS REQUIRED TO ACHIEVE SPAN AND ROOF PITCH SPECIFIED.
- LIMIT MIDSPAN DEFLECTION OF THE BOTTOM CHORD OF EACH TRUSS DUE TO LIVE LOAD TO SPAN/360. LIMIT MIDSPAN DEFLECTION OF THE BOTTOM CHORD OF EACH TRUSS DUE TO TOTAL LOAD TO SPAN/240.
- PROVIDE ALL TEMPORARY AND PERMANENT BRACING AS REQUIRED FOR SAFE ERECTION OF THE TRUSSES.

PREFABRICATED WOOD TRUSSES (CONTINUED)

- PROVIDE PERMANENT, CONTINUOUS LATERAL BRACING OF THE WEB AND CHORD MEMBERS AT THE LOCATIONS SPECIFIED BY THE DELEGATED DESIGN ENGINEER ON THE TRUSS SHOP DRAWINGS.
- PROVIDE CONNECTION OF ROOF TRUSSES TO THE BEARING WALL TO RESIST UPLIFT AND DOWNWARD FORCES AS DETERMINED BY THE DELEGATED DESIGN ENGINEER. CONNECTIONS INDICATED ON THE DRAWINGS ARE SUGGESTED BASED ON THE ROOF AND BUILDING ASSEMBLY.

POST-INSTALLED ANCHORS:

- EXCEPT WHERE INDICATED ON THE DRAWINGS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES:
A. ANCHORAGE TO SOLID GROUTED MASONRY AND CONCRETE - "ADHESIVE" ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
HILTI HIT-HY 200 ADHESIVE ANCHORING SYSTEM PER ICC ESR-3187 OR EQUIVALENT, SEE NOTE 3 BELOW.
B. ANCHORAGE TO SOLID GROUT MASONRY AND CONCRETE - "EXPANSION" ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
HILTI KWIK BOLT TZ EXPANSION ANCHORING SYSTEM PER ICC ESR-31917 OR EQUIVALENT, SEE NOTE 3 BELOW.
- INSTALL ANCHORS PER THE MANUFACTURER'S INSTRUCTIONS.
- OBTAIN WRITTEN APPROVAL FROM CONTRACTING OFFICER FOR SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS PRIOR TO USE. PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.
- ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
- INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
- ALL ANCHORS TO BE STAINLESS STEEL TYPE 316.

STRUCTURAL STEEL:

- FABRICATE AND ERECT STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), "STEEL CONSTRUCTION MANUAL", 14TH EDITION, AISC 360-10.
- SUBMIT ERECTION PLANS AND SHOP DETAILS AND RECEIVE APPROVAL BEFORE PROCEEDING WITH FABRICATION.
- PROVIDE STRUCTURAL STEEL WIDE-FLANGE SHAPES CONFORMING TO ASTM A992 (Fy=50 KSI), HSS MEMBERS CONFORMING TO ASTM A500, GRADE B (RECTANGULAR/SQUARE HSS, Fy=46 KSI; ROUND HSS, Fy=42 KSI) AND ALL OTHER MEMBERS CONFORMING TO ASTM A36 (Fy=36KSI).
- ALL BOLTED SHEAR CONNECTIONS ARE HIGH-STRENGTH BOLTS, 3/4" DIAMETER MINIMUM, CONFORMING TO ASTM F3125, GRADE A325, UNLESS OTHERWISE NOTED.
- WELD IN COMPLIANCE WITH AMERICAN WELDING SOCIETY AWS D1.1, "STRUCTURAL WELDING CODE." WELD ALL SHOP CONNECTIONS WITH CLASS E-70 SERIES ELECTRODES. PROVIDE FIELD CONNECTIONS WITH HIGH STRENGTH BOLTED CONNECTIONS EXCEPT WHERE NOTED.
- MILL BOTTOM OF ALL COLUMNS AND FINISH TOP OF ALL BASE PLATES IN ACCORDANCE WITH AISC SPECIFICATIONS. WELD BASE PLATES TO BOTTOM OF COLUMNS.
- DO NOT SHOP-PRIME STEEL SURFACES TO BE EMBEDDED IN CONCRETE, OR AT DESIGNATED FIELD-WELD LOCATIONS.
- ALL STRUCTURAL STEEL TO RECEIVE PROTECTIVE COATINGS IN ACCORDANCE WITH SPECIFICATION SECTION 09960, "HIGH PERFORMANCE COATINGS".

WOOD:

- MANUFACTURER QUALIFICATIONS MUST INCLUDE CERTIFICATION BY THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (AITC) OR THE AMERICAN PLYWOOD ASSOCIATION (APA).
- SAWN TIMBER MEMBERS MUST BE SOUTHERN PINE GRADE SELECT STRUCTURAL, VISUALLY GRADED, OR APPROVED EQUAL. THE REFERENCE DESIGN VALUES MUST MEET OR EXCEED THE VALUES FOR "SOUTHERN PINE SELECT STRUCTURAL" AS INDICATED IN NDS-2015 "DESIGN VALUES FOR WOOD CONSTRUCTION."
- PROVIDE HOT-DIP GALVANIZED STEEL BOLTS, HEX HEAD NUTS, AND WASHERS FOR ALL BEAM AND GIRDER CONNECTIONS, CONFORMING TO ASTM A307, A563 AND F844 RESPECTIVELY.
- PROVIDE STEEL SHAPES CONFORMING TO ASTM A992 AND PLATES CONFORMING TO ASTM A36 FOR ALL CONNECTION FABRICATIONS.
- ALL STRUCTURAL WOOD MEMBERS (DECKING, COLUMNS, BEAMS, JOISTS, AND RAFTERS) MUST BE TREATED WITH PRESERVATIVES.

WOOD (CONTINUED):

- UNLESS OTHERWISE NOTED ON DRAWINGS, CONNECTIONS FOR WOOD MEMBERS MUST BE IN ACCORDANCE WITH IBC 2015, TABLE 2304.10.1.
- SIMPSON STRONG-TIE CONNECTORS (OR APPROVED EQUAL) SPECIFIED IN DRAWINGS MUST BE FASTENED TO WOOD MEMBERS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. ALWAYS USE THE LARGEST SIZE AND NUMBER OF MANUFACTURER-SPECIFIED FASTENERS.
- ROOF PLYWOOD (STRUCTURAL PANEL) CONSTRUCTION:
A. PLYWOOD THICKNESS: 3/4"
B. PLYWOOD GRADE: STRUCTURAL I
C. PLYWOOD PANEL LAYOUT: CASE I AS SPECIFIED IN IBC 2015 TABLE 2306.2(1)
D. NAIL SIZE: 10d (GALVANIZED)
E. MAXIMUM NAIL SPACING: 6" AT DIAPHRAGM BOUNDARY AND ALL SUPPORTED PANEL EDGES; 12" AT ALL INTERMEDIATE FRAMING MEMBERS.
F. FASTENER PENETRATION INTO SUPPORTING FRAMING: MINIMUM 1-1/2".

DELEGATED DESIGN:

- DESIGN RESPONSIBILITY FOR THE FOLLOWING ENGINEERING SYSTEMS AND COMPONENTS IS DELEGATED TO A QUALIFIED PROFESSIONAL ENGINEER, SELECTED AND HIRED BY THE CONTRACTOR. THESE SYSTEMS AND COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO:
A. PRECAST CONCRETE WETWELL, ACCESS HATCHES, AND DAVIT CRANE
B. PRECAST CONCRETE VALVE VAULT, ACCESS HATCHES, LADDER, AND HINGE PLATE
C. WOOD TRUSSES
D. TEMPORARY SUPPORT OF EXCAVATION AND STRUCTURES
E. CONCRETE FORMWORK AND SHORING
- COORDINATE WITH THE CONTRACT DOCUMENTS FOR PROFESSIONAL LICENSURE AND SEALING REQUIREMENTS, DESIGN CRITERIA, DETAILS OF THE SYSTEMS AND COMPONENTS, SUBMITTAL REQUIREMENTS, AND CALCULATION REQUIREMENTS.

CODES AND STANDARDS:

- INTERNATIONAL BUILDING CODE IBC (2015) INCLUDING THE MODIFICATIONS MADE BY LOCAL JURISDICTION.
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC 360) (2010) "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS."
- AMERICAN CONCRETE INSTITUTE ACI-318 (2014), "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE."
- AMERICAN CONCRETE INSTITUTE ACI-350 (2006), "ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES."
- AMERICAN SOCIETY OF CIVIL ENGINEERS ASCE 7 (2010), "MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES."
- AMERICAN CONCRETE INSTITUTE ACI 530 (2013), "BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES."

DESIGN LOADS:

- ALL LOADS INDICATED BELOW ARE UNFACTORED LOADS.
- DEAD LOADS:
A. STRUCTURES: ACTUAL WEIGHT
B. BOTTOM CHORD OF TRUSS HANGING (MEP) - 20 PSF
 - LIVE LOADS:
A. FLOORS - 150 PSF IN AREAS NOT OCCUPIED BY EQUIPMENT OR TRUCK LOADING.
B. EQUIPMENT - ACTUAL WEIGHT OF EQUIPMENT OR 150 PSF, WHICHEVER IS GREATER.
C. LADDERS: 300 PSF
D. SLAB ON GRADE: 250 PSF
 - ROOF LIVE LOAD: 30-PSF 40 PSF
 - ROOF SNOW LOAD:
A. GROUND SNOW LOAD (Pg): 25 PSF.
B. REQUIRED FLAT-ROOF SNOW LOAD (Pf): 23 PSF
C. SNOW EXPOSURE FACTOR (Ce): 1.0
D. SNOW LOAD IMPORTANCE FACTOR (I): 1.10
E. THERMAL FACTOR (Ct): 1.2
 - WIND LOAD:
A. ULTIMATE WIND SPEED (Vult) = 120 MPH
B. NOMINAL WIND SPEED (Vasd): 89 MPH
C. RISK CATEGORY: III
D. EXPOSURE CATEGORY: C
E. INTERNAL PRESSURE COEFFICIENT: +/- 0.18
F. COMPONENTS AND CLADDING: PER ASCE 7-10
 - SEISMIC LOAD:
A. RISK CATEGORY : III
B. SEISMIC IMPORTANCE FACTOR Ie: 1.25
C. MAPPED SPECTRAL RESPONSE ACCELERATIONS: Ss= 0.139 g, AND S1= 0.043 g.
D. SITE CLASS: C
E. SPECTRAL RESPONSE COEFFICIENT: SDS = 0.121 g; SD1 = 0.043 g.
F. SEISMIC DESIGN CATEGORY: A
G. BASIC SEISMIC-FORCE RESISTING SYSTEM(S): ORDINARY REINFORCED MASONRY SHEAR WALLS

AS-BUILT

S-1

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25879, EXPIRATION DATE: 2-26-2021"

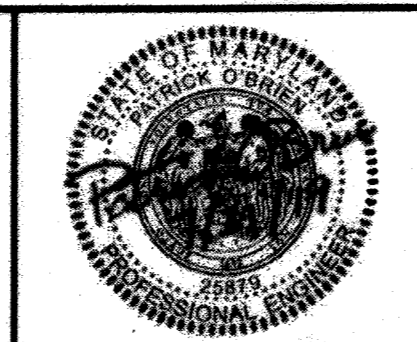
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

[Signature] 8/19/19
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 8/19/19
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 8/19/19
CHIEF, UTILITY DESIGN DIVISION DATE

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231



DES:	CMS		
DRN:	SLJ		
CHK:	PSO		
JULY 2019		1	CHANGE BULLETIN #3: ROOF LOADING 5/1/2020
BY	NO.	REVISION	DATE

GENERAL STRUCTURAL NOTES,
BUILDING CODES AND DESIGN LOADS

600 SCALE MAP NO. 18 BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION

CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096

2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

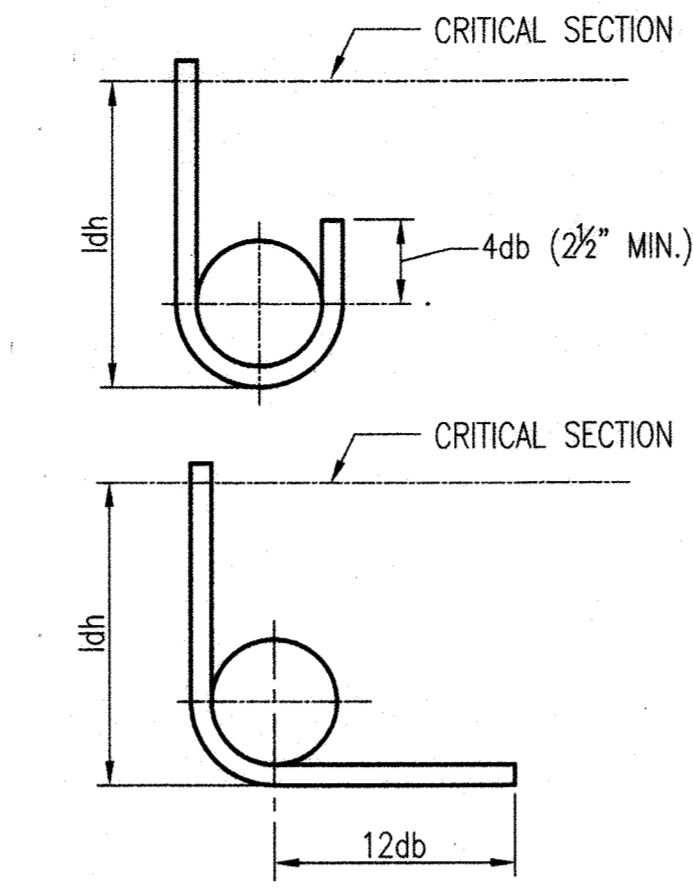
SCALE AS SHOWN

SHEET 13 OF 43

LAP SPLICE LENGTH						MINIMUM TENSION EMBEDMENTS			
BAR SIZE		SLAB AND WALL		BEAM		STD 90° HOOK		STD 180° HOOK	
SOFT METRIC	ENGLISH	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	ldh	12db	ldh	4db
#10	#3	12"	14"	12"	12"	5"	5"	5"	2"
#13	#4	14"	19"	12"	15"	7"	6"	7"	2"
#16	#5	18"	23"	18"	23"	8"	8"	8"	3"
#19	#6	21"	28"	26"	33"	10"	9"	10"	3"
#22	#7	35"	45"	43"	56"	11"	11"	11"	4"
#25	#8	44"	57"	56"	73"	13"	12"	13"	4"
#29	#9	54"	70"	66"	86"	15"	14"	15"	5"
#32	#10	66"	86"	74"	96"	16"	16"	16"	6"
#36	#11	79"	103"	82"	107"	18"	17"	18"	6"

LAP SPLICE ASSUMPTIONS:

CONCRETE: 4500 PSI COMPRESSIVE STRENGTH (NORMALWEIGHT CONCRETE)
 SLAB AND WALL: 6" MINIMUM REBAR SPACING WITH CONCRETE COVER = 1.5" CLEAR
 BEAM: MINIMUM CLEAR SPACING BETWEEN BARS = 1.5 db (1.5" MIN). MINIMUM CONCRETE COVER = 1.5" CLEAR. MINIMUM STIRRUP #4@12" 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.



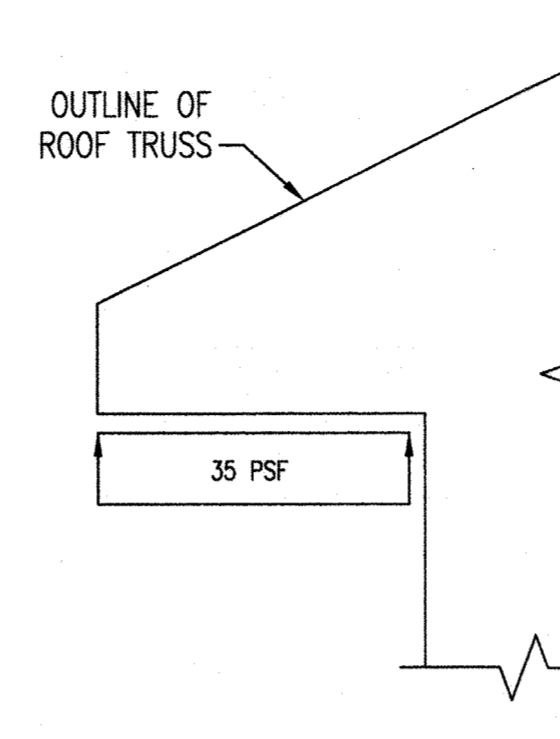
STANDARD HOOK ASSUMPTIONS:

SIDE COVER SHALL NOT BE LESS THAN 2.5"
 END COVER ON 90° HOOK SHALL NOT BE LESS THAN 2"

STANDARD 180° AND 90° END HOOKS

TENSION LAP SPLICE AND STANDARD HOOK LENGTH (ACI 318-14/ACI 350-06)

(NON-EPOXY COATED)

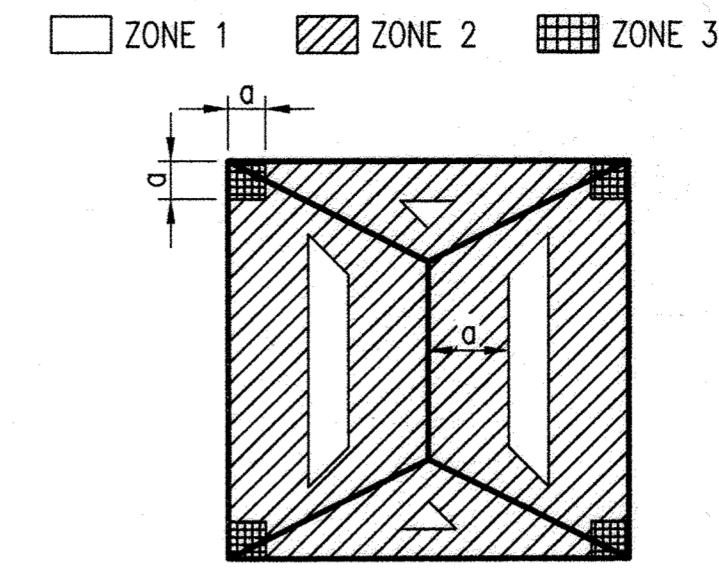


NOTES:

- LOAD MUST BE COMBINED WITH WIND LOADING SHOWN IN TRUSS LOADING DIAGRAM.
- LOAD SHOWN IS SERVICE LOAD.
- LOAD SHOWN IS TO BE APPLIED TO WINDWARD SIDE OF STRUCTURE AND CAN OCCUR AT ALL OVERHANG LOCATIONS.

ROOF OVERHANG WIND LOADING DIAGRAM

SCALE: NTS



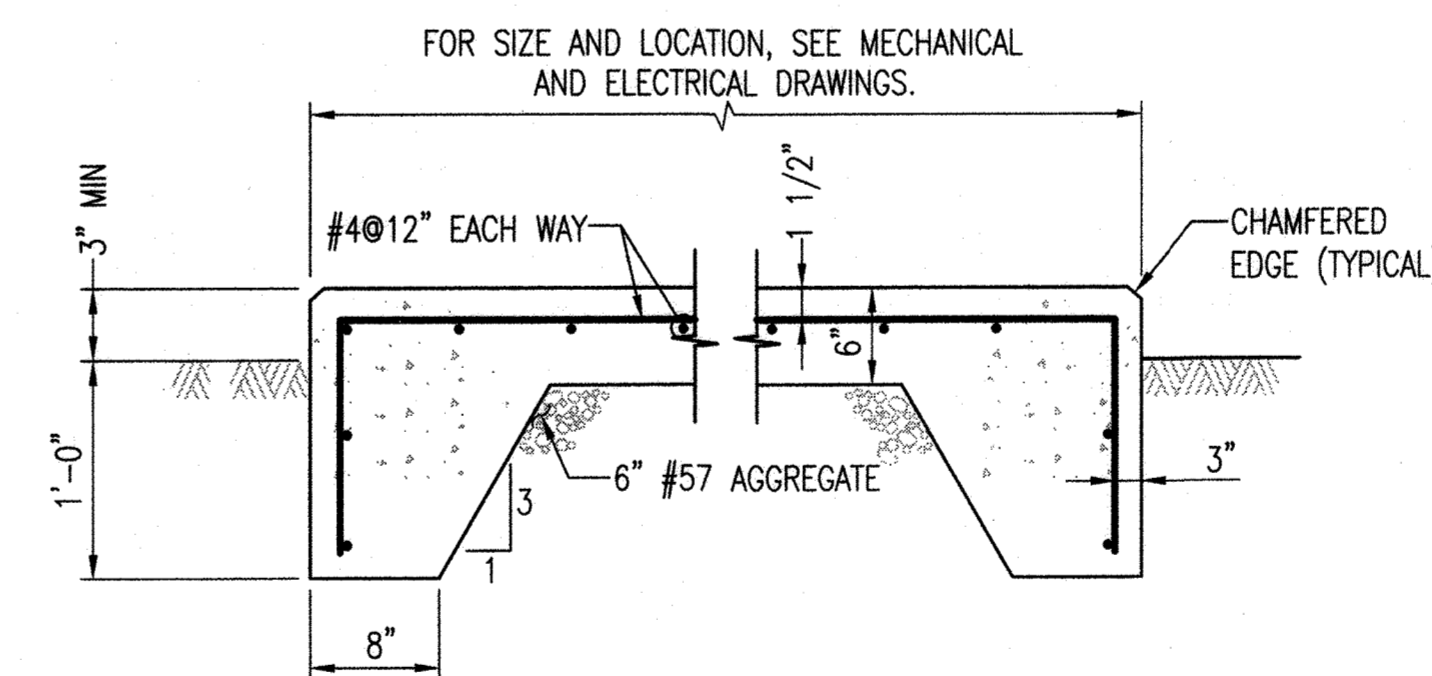
DESIGN WIND PRESSURES			
ZONE	(-) PRESSURE (PSF)	(+) PRESSURE (PSF)	LOCATION
1	-25	9	ROOF
2	-30	9	ROOF
3	-30	9	ROOF
4	-27	25	WALLS
5	-32	25	WALLS

NOTES:

- $a = 3'-0"$
- PLUS AND MINUS SIGNS SIGNIFY PRESSURES ACTING TOWARD AND AWAY FROM THE SURFACES, RESPECTIVELY.
- UNFACTORED WIND PRESSURES ARE SHOWN. USE LOADS PROVIDED IN THIS TABLE AND LOAD COMBINATIONS IN ACCORDANCE WITH ASCE 7-10 TO DETERMINE TOTAL FACTORED COMBINED LOADS.

COMPONENTS AND CLADDING WIND LOADS

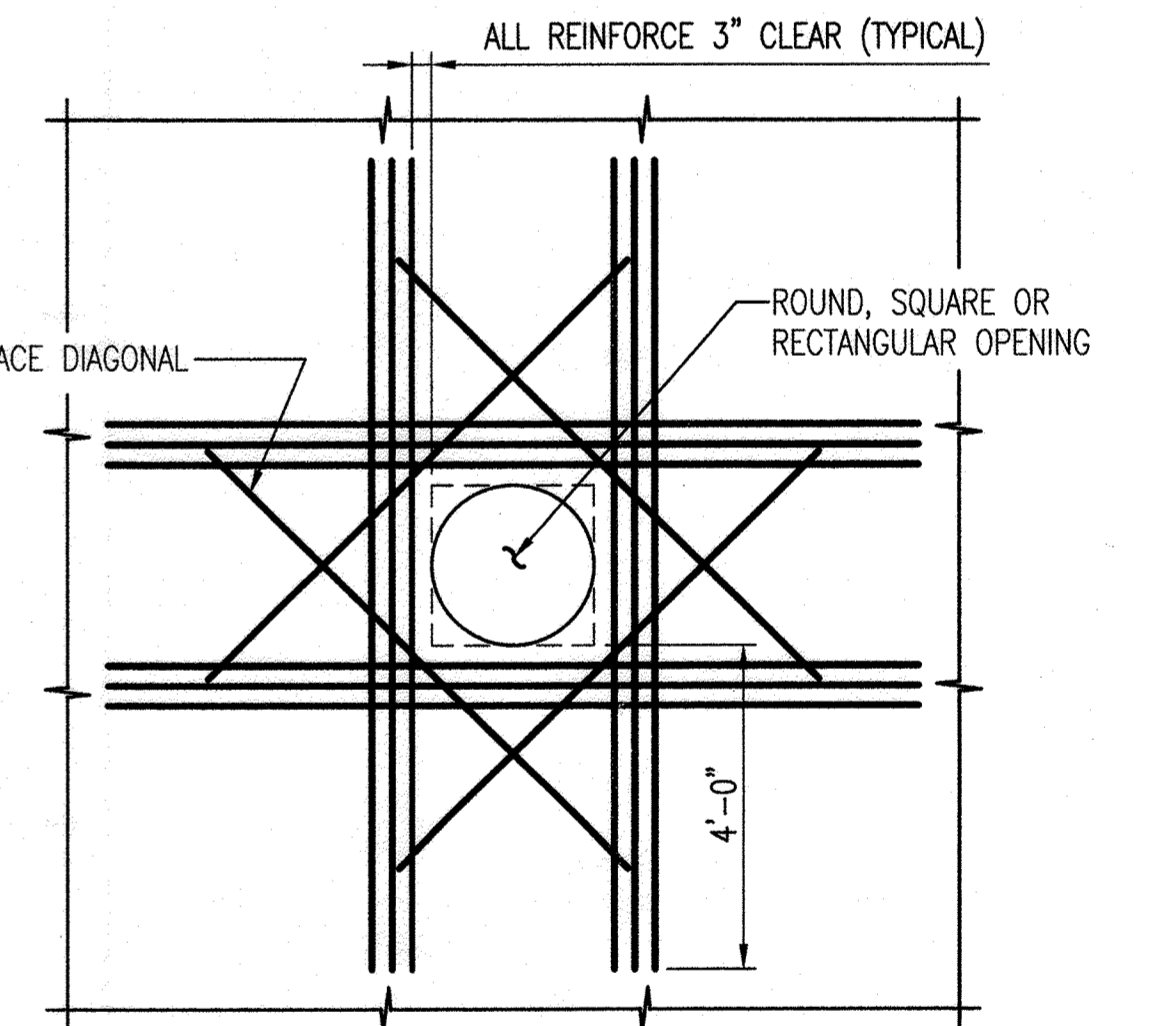
SCALE: NTS



TYPICAL EQUIPMENT PAD

SCALE: NTS

NOTE:
 FOR OPENINGS LESS THAN 12" DIAMETER, NO ADDITIONAL REINFORCING IS REQUIRED PROVIDED NO REINFORCING IS INTERRUPTED BY THE OPENING.



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.

ADDITIONAL REINFORCING AROUND OPENINGS IN CONCRETE

SCALE: NTS

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25879, EXPIRATION DATE: 2-26-2021"

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND.

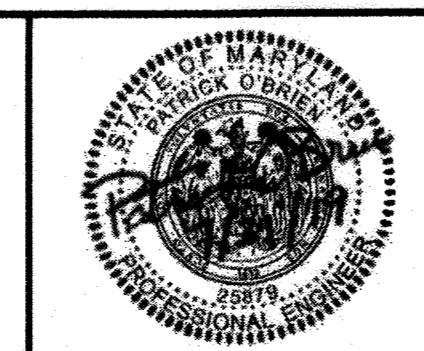
Michael J. Deane 8/9/19
 DIRECTOR OF PUBLIC WORKS DATE

Bradley Lee 8/19/19
 CHIEF, BUREAU OF ENGINEERING DATE

PSD 8/19/19
 CHIEF, UTILITY DESIGN DIVISION DATE

WRA

Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231



DES: CMS					
DRN: SLJ					
CHK: PSO					
JULY 2019	BY	NO.	REVISION	DATE	

STRUCTURAL TYPICAL DETAILS

600 SCALE MAP NO. 18

BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION

CAPITAL PROJECT NO. S-6275
 CONTRACT NO. 10-5096

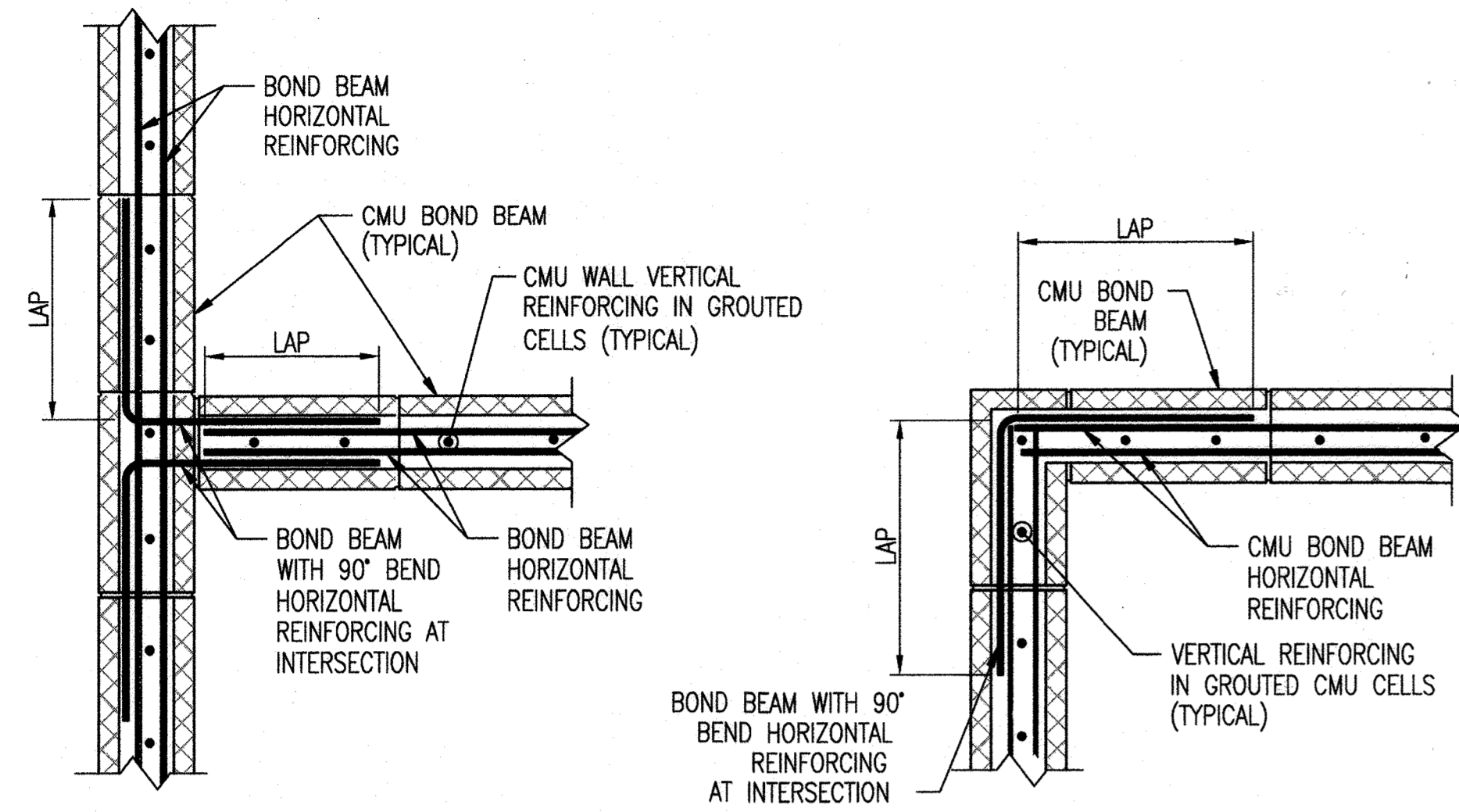
2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

AS-BUILT

S-2

SCALE AS SHOWN

SHEET 14 OF 43

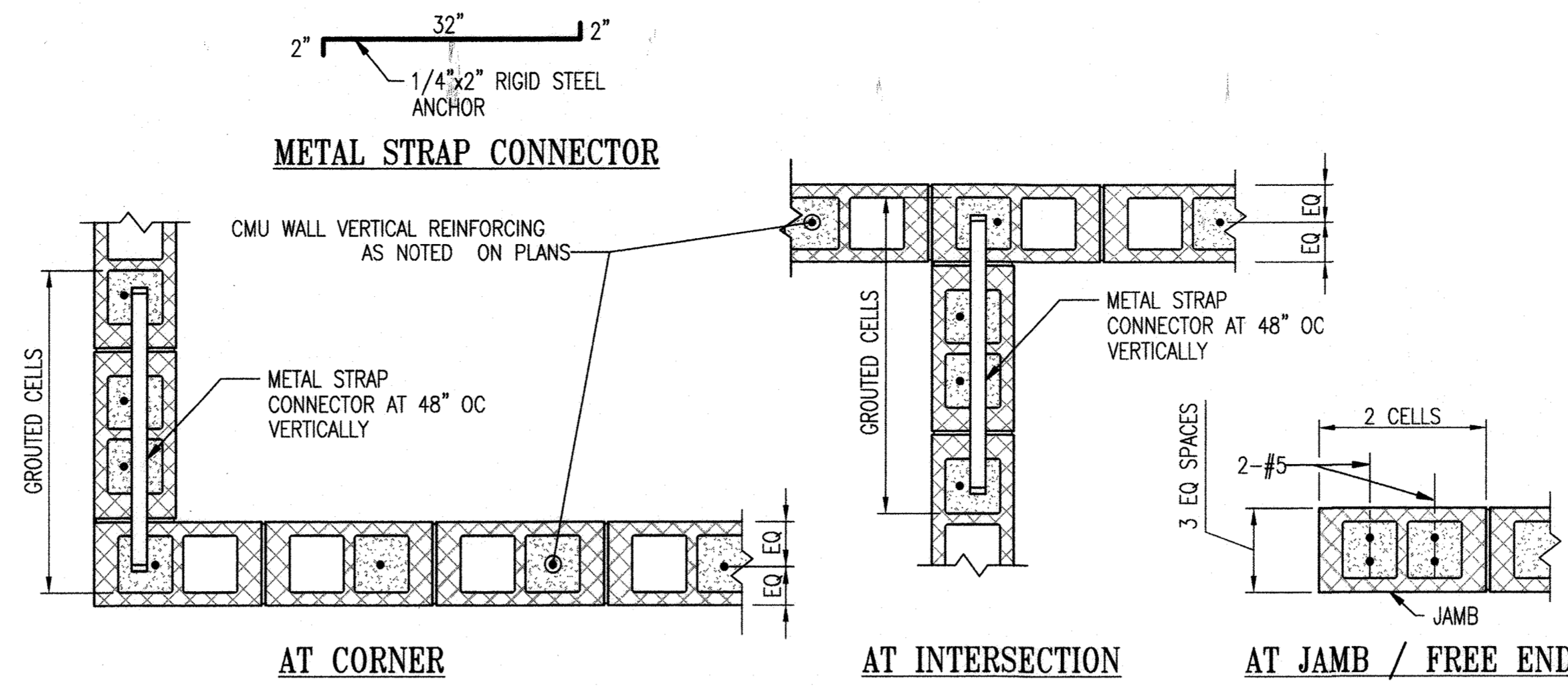


AT WALL INTERSECTIONS

AT CORNERS

TYPICAL CMU BOND BEAM REINFORCING DETAIL

SCALE: NTS



AT CORNER

AT INTERSECTION

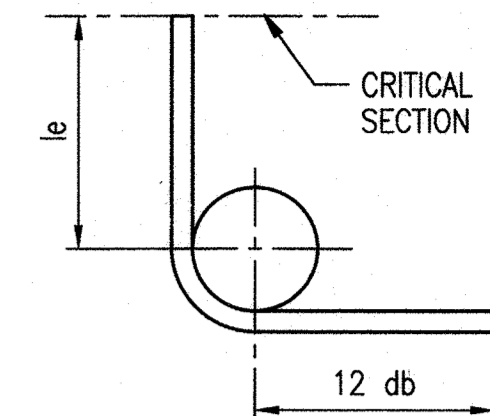
AT JAMB / FREE END

NOTE:
ALTERNATIVE TO THE METAL STRAP CONNECTOR, AT LEAST FIFTY PERCENT OF MASONRY UNITS AT THE INTERSECTION SHALL INTERLOCK.

TYPICAL CMU WALL REINFORCING DETAILS AT ENDS CORNERS AND INTERSECTIONS

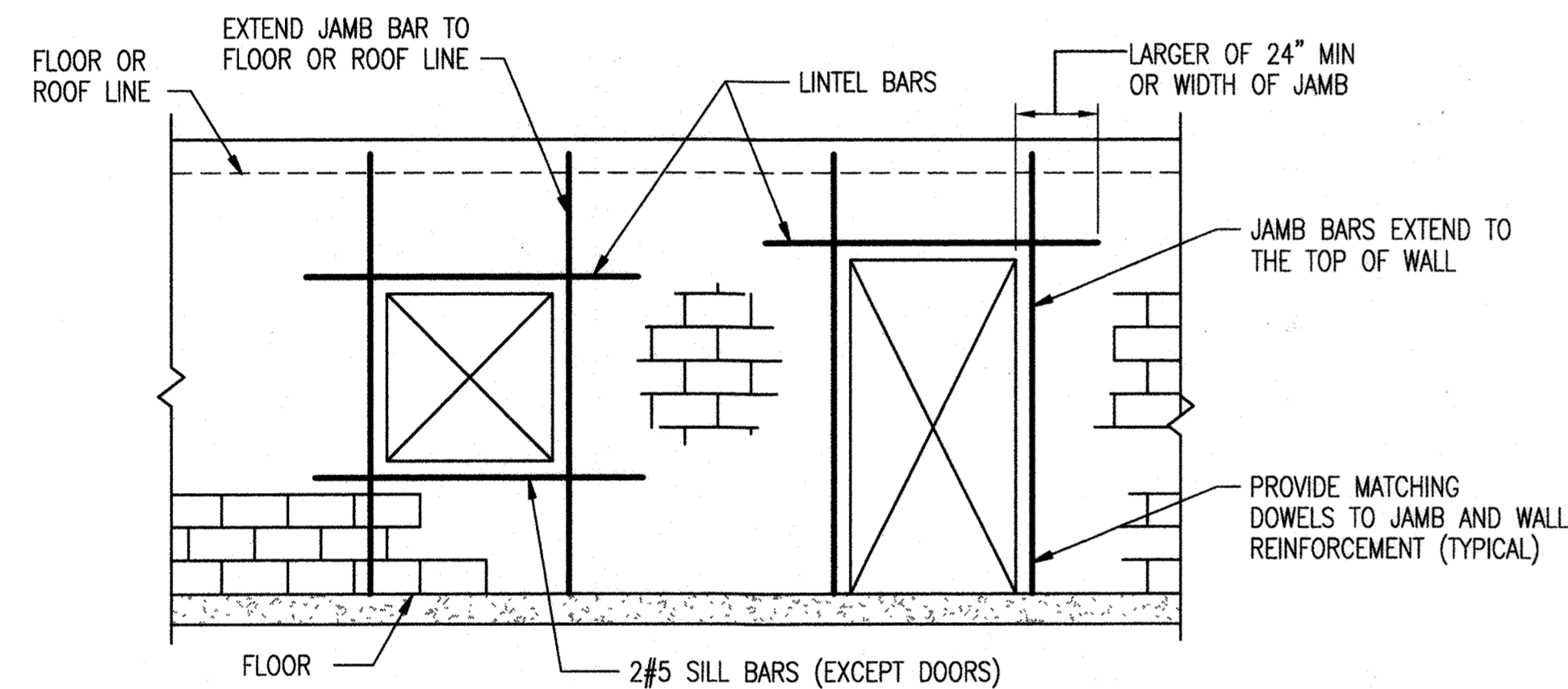
SCALE: NTS

BAR SIZE	8" CMU		HOOK EMBEDMENT LENGTH (le)
	A	B	
#3	14"	15"	5"
#4	18"	25"	7"
#5	24"	39"	9"
#6	49"	78"	10"
#7	52"	100"	12"



NOTES:

- A= ONE BAR PLACED AT THE CENTER OF MASONRY UNIT CELL FOR VERTICAL WALL.
- B= TWO BARS IN A MASONRY UNIT CELL FOR VERTICAL WALL WITH 1 3/4" MINIMUM COVER FOR 8" CMU, AND REINFORCEMENT IN LINTEL BLOCK WITH MINIMUM 3" COVER.
- BAR SPLICED BY NON-CONTACT LAP SPLICES SHALL NOT BE SPACED FARTHER THAN ONE-FIFTH THE REQUIRED LENGTH OF LAP (LD) NOR MORE THAN 8".
- MINIMUM GROUT BETWEEN THE REINFORCEMENT AND MASONRY UNIT WALL SHALL NOT BE LESS THAN 1/2".
- REFER TO CONCRETE TENSION LAP SPLICE AND STANDARD HOOK LENGTH FOR STANDARD HOOK LENGTH AND DIAMETER. MINIMUM BENT DIAMETER = 6 db.
- F'm = 2,000 psi
- GRADE 60 REINFORCEMENT BAR.

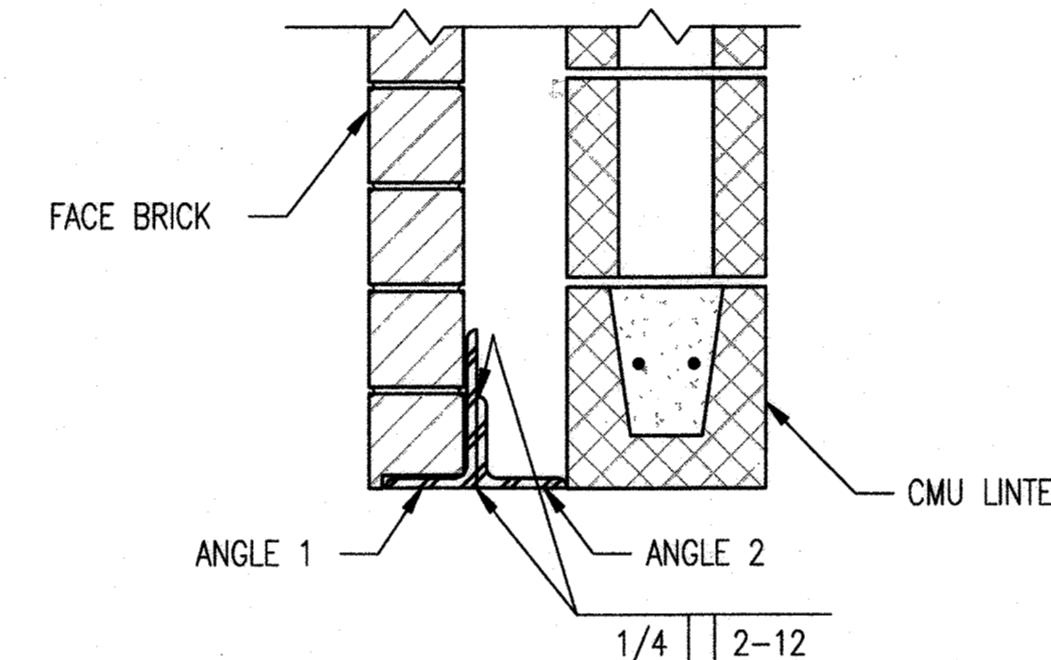


NOTES:

- GROUT LINTEL BLOCKS SOLID FOR 24" (MIN) OR WIDTH OF JAMB BEYOND OPENING.
- NOT ALL BOND BEAM REINFORCEMENT AND VERTICAL WALL REINFORCEMENT SHOWN FOR CLARITY.
- REFER TO SPECIFICATION SECTION 04 22 00 FOR HORIZONTAL JOINT REINFORCEMENT REQUIREMENTS.

TYPICAL CMU WALL OPENING REINFORCING DETAIL

SCALE: NTS



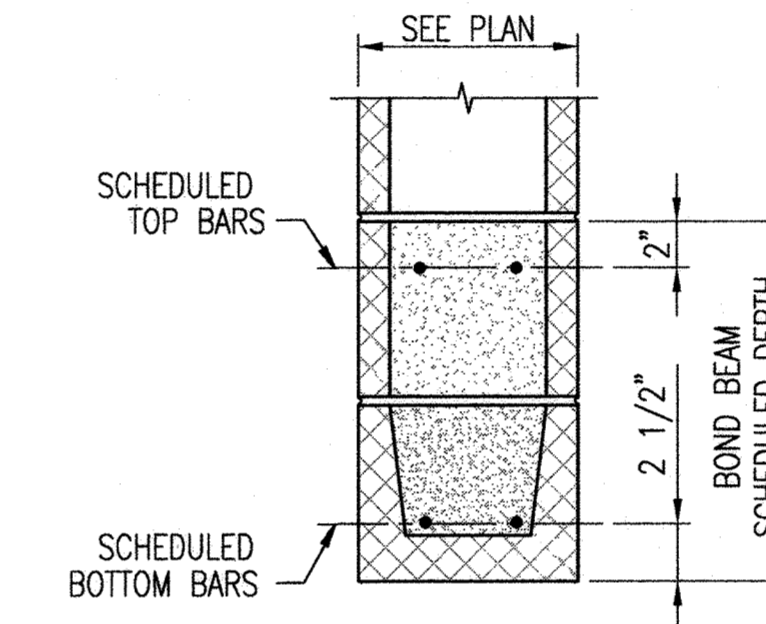
NOTES:

- LOOSE LINTEL MUST BE GALVANIZED.
- PROVIDE LINTEL SIZE WITH MINIMUM BEARING LENGTH INDICATED BELOW.

OPENING WIDTH	ANGLE 1	ANGLE 2	MIN BEARING
UP TO 2'-6"	L3 1/2x3 1/2x1/4 (LLH)	L2 1/2x2 1/2x1/4	4"
2'-7" TO 8'-0"	L3 1/2x3 1/2x5/16	L2 1/2x2 1/2x1/4	6"

TYPICAL LOOSE LINTEL AT CMU WALL DETAIL

SCALE: NTS



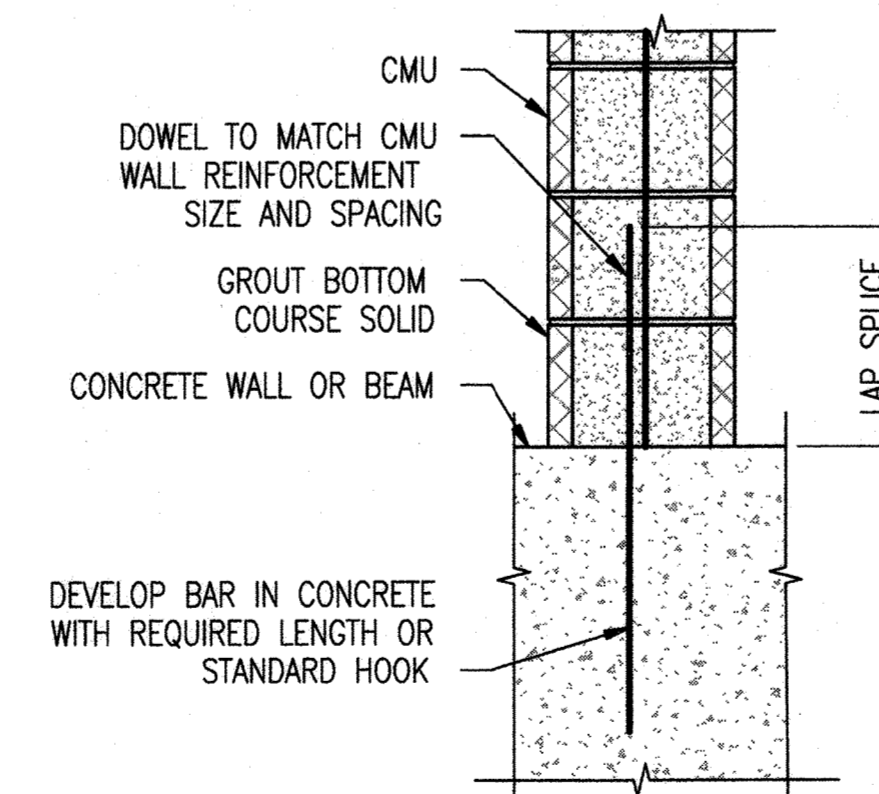
NOTE:

PROVIDE 8" MINIMUM END BEARING FOR LINTELS UP TO 8'-0".

LENGTH (FT)	DEPTH (IN)	BOTTOM BARS	TOP BARS
UP TO 2'-6"	8	2-#5	-
2'-7" TO 8'-0"	16	2-#6	2-#5

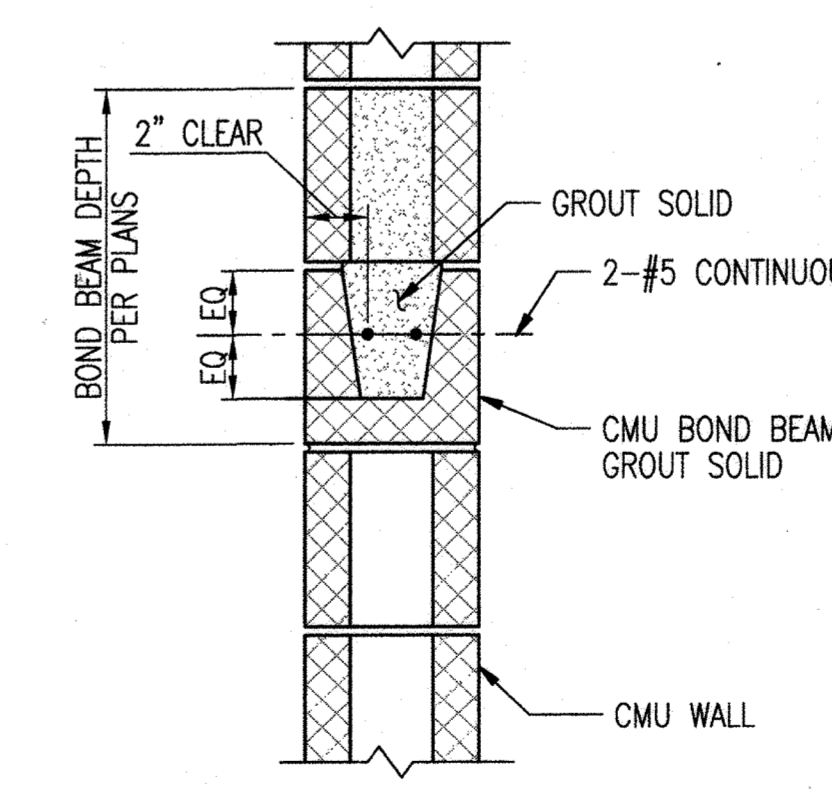
TYPICAL CMU LINTELS

SCALE: NTS



TYPICAL BASE OF CMU WALL DETAIL

SCALE: NTS



TYPICAL CMU BOND BEAM DETAIL

SCALE: NTS

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25879, EXPIRATION DATE: 2-26-2021"

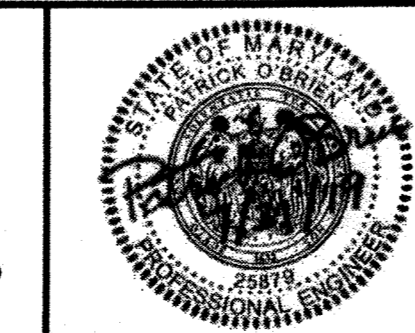
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

[Signature] 8/2/19
DIRECTOR OF PUBLIC WORKS

[Signature] 8/2/19
CHIEF, BUREAU OF ENGINEERING

[Signature] 8/2/19
CHIEF, UTILITY DESIGN DIVISION

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21201



DES: CMS			
DRN: SLJ			
CHK: PSO			
JULY 2019	BY NO.	REVISION	DATE

STRUCTURAL TYPICAL DETAILS	
600 SCALE MAP NO. 18	BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

AS-BUILT

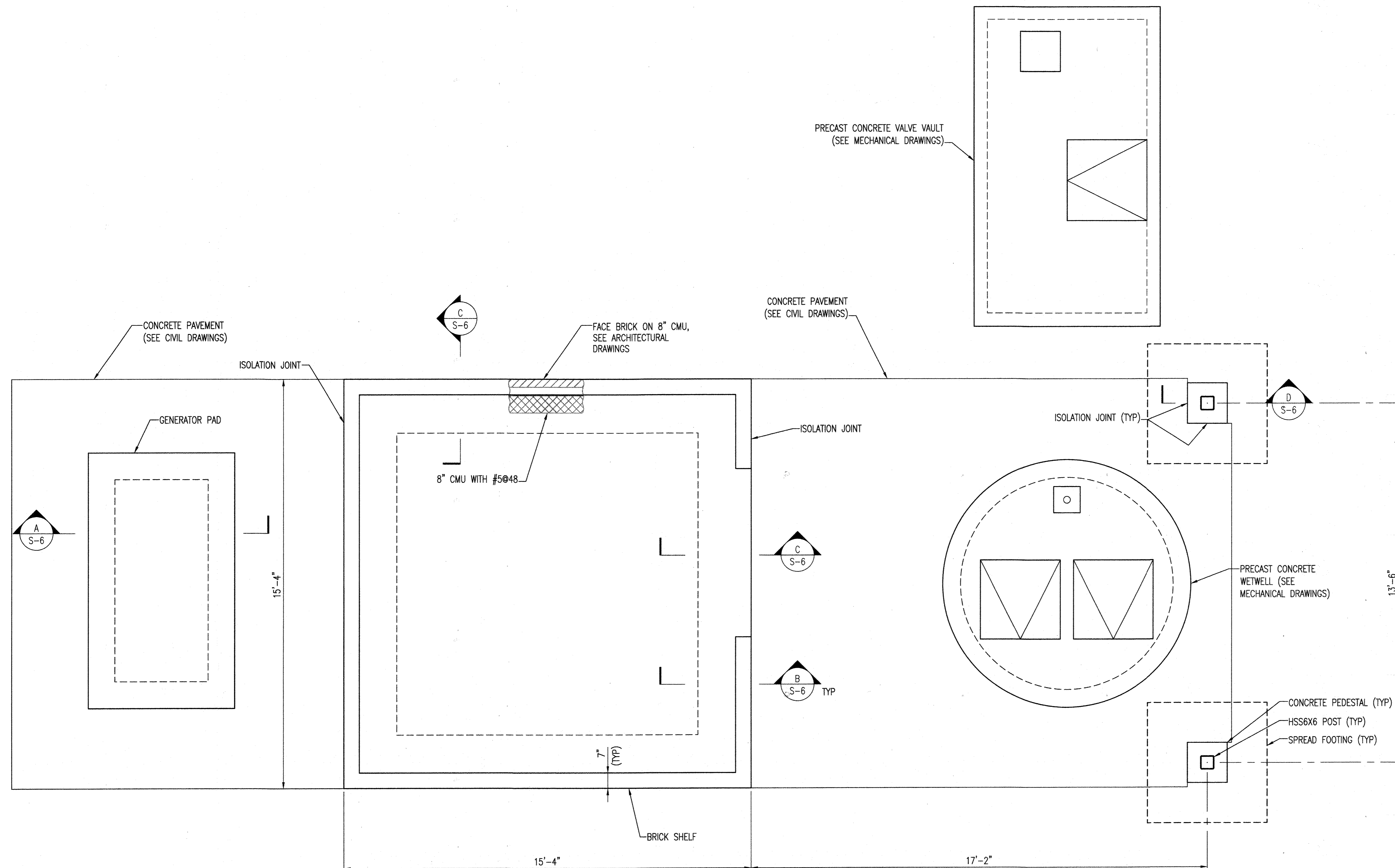
S-3

SCALE AS SHOWN

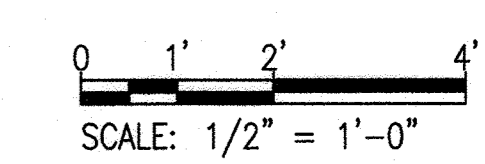
SHEET 15 OF 43

GENERAL SHEET NOTES:

1. SEE S-1 FOR GENERAL STRUCTURAL NOTES, BUILDING CODES, AND DESIGN LOADS.
2. SEE S-2 AND S-3 FOR TYPICAL DETAILS.
3. SEE CIVIL DRAWINGS FOR CONCRETE PAVEMENT DETAILS.
4. THE DESIGN OF THE PRECAST CONCRETE WETWELL AND VALVE VAULT IS DELEGATED TO THE CONTRACTOR, INCLUDING ALL FEATURES AND APPURTENANCES SHOWN IN THE CONTRACT DRAWINGS.



1 FOUNDATION AND GRADE LEVEL PLAN
 S-4 SCALE: 1/2" = 1'-0"



"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25879, EXPIRATION DATE: 2-26-2021"

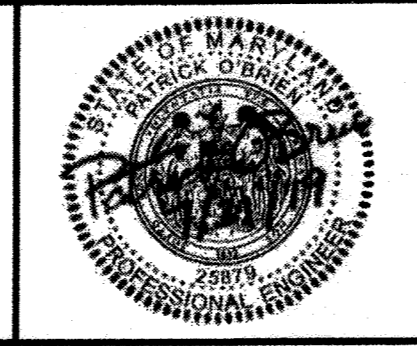
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND.

[Signature] 8/2/19
 DIRECTOR OF PUBLIC WORKS DATE

[Signature] 8/16/19
 CHIEF, BUREAU OF ENGINEERING DATE

[Signature] PSD
 CHIEF, UTILITY DESIGN DIVISION DATE

WRA
 Whitman, Requardt & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231



DES: CMS			
DRN: SLJ			
CHK: PSO			
JULY 2019	BY	NO.	REVISION

FOUNDATION AND GRADE LEVEL PLAN

600 SCALE MAP NO. 18 BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION

CAPITAL PROJECT NO. S-6275
 CONTRACT NO. 10-5096

2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

AS-BUILT

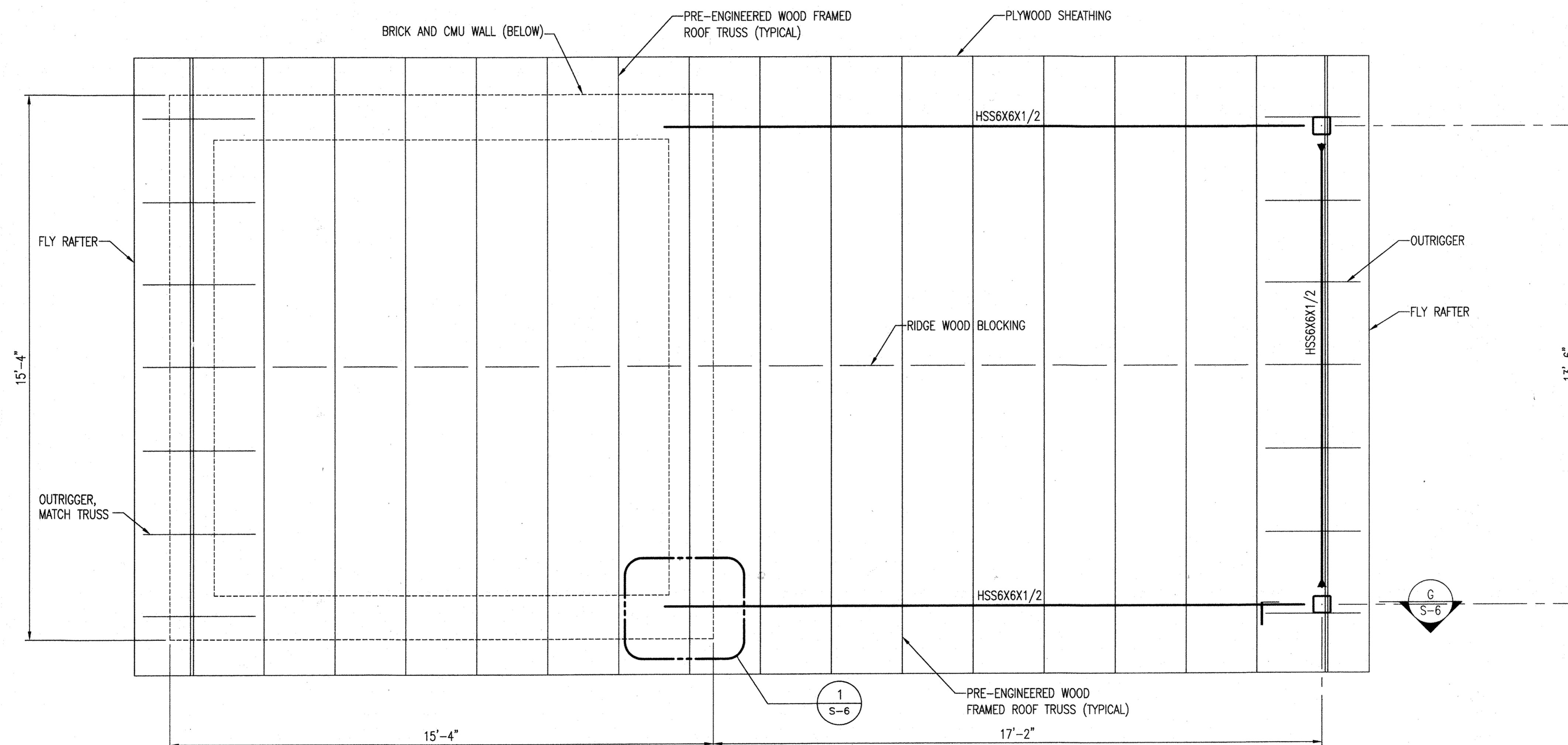
S-4

SCALE AS SHOWN

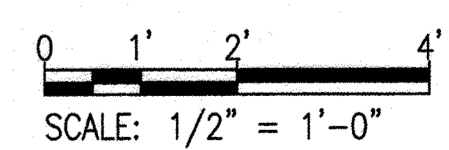
SHEET 18 OF 43

GENERAL SHEET NOTES:

1. SEE S-1 FOR GENERAL STRUCTURAL NOTES, BUILDING CODES, AND DESIGN LOADS.
2. SEE S-2 AND S-3 FOR TYPICAL DETAILS.
3. WOOD TRUSS DESIGN IS DELEGATED TO THE CONTRACTOR. SEE ARCHITECTURAL DRAWINGS FOR WOOD ROOF DETAILS.



1 ROOF FRAMING PLAN
S-5 SCALE: 1/2" = 1'-0" ↑



AS-BUILT

S-5

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25879, EXPIRATION DATE: 2-26-2021"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

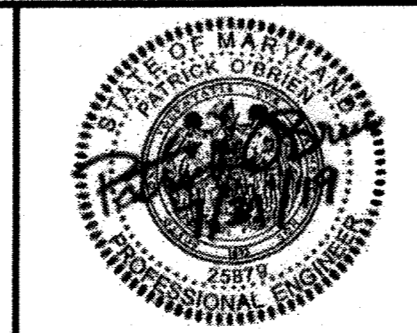
Whitman, Requardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

DES: CMS
DRN: SLJ
CHK: PSO
JULY 2019

BY: NO. REVISION DATE

600 SCALE MAP NO. 18 BLOCK NO. 7&13

WRA
Whitman, Requardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

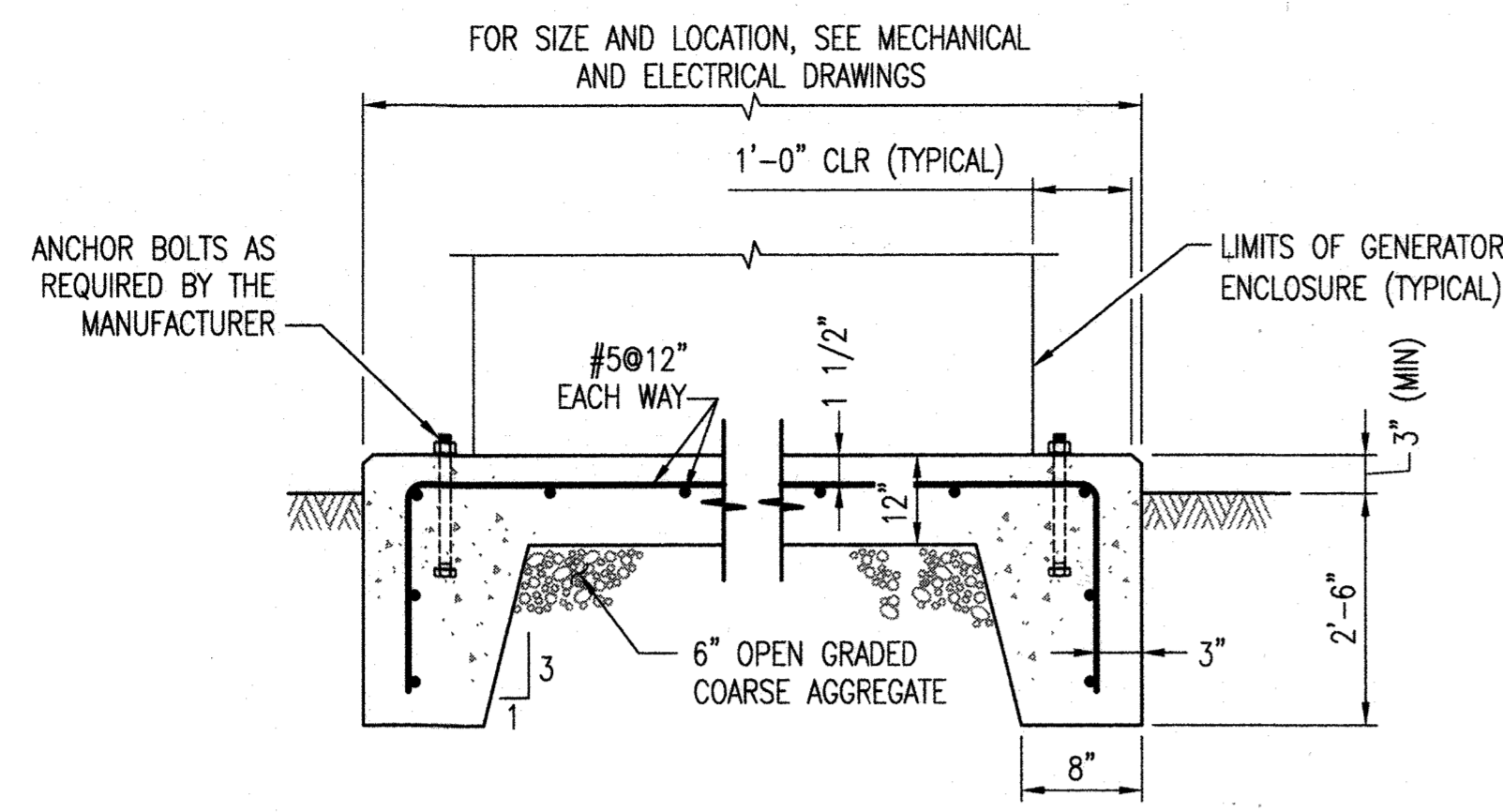


ROOF FRAMING PLAN

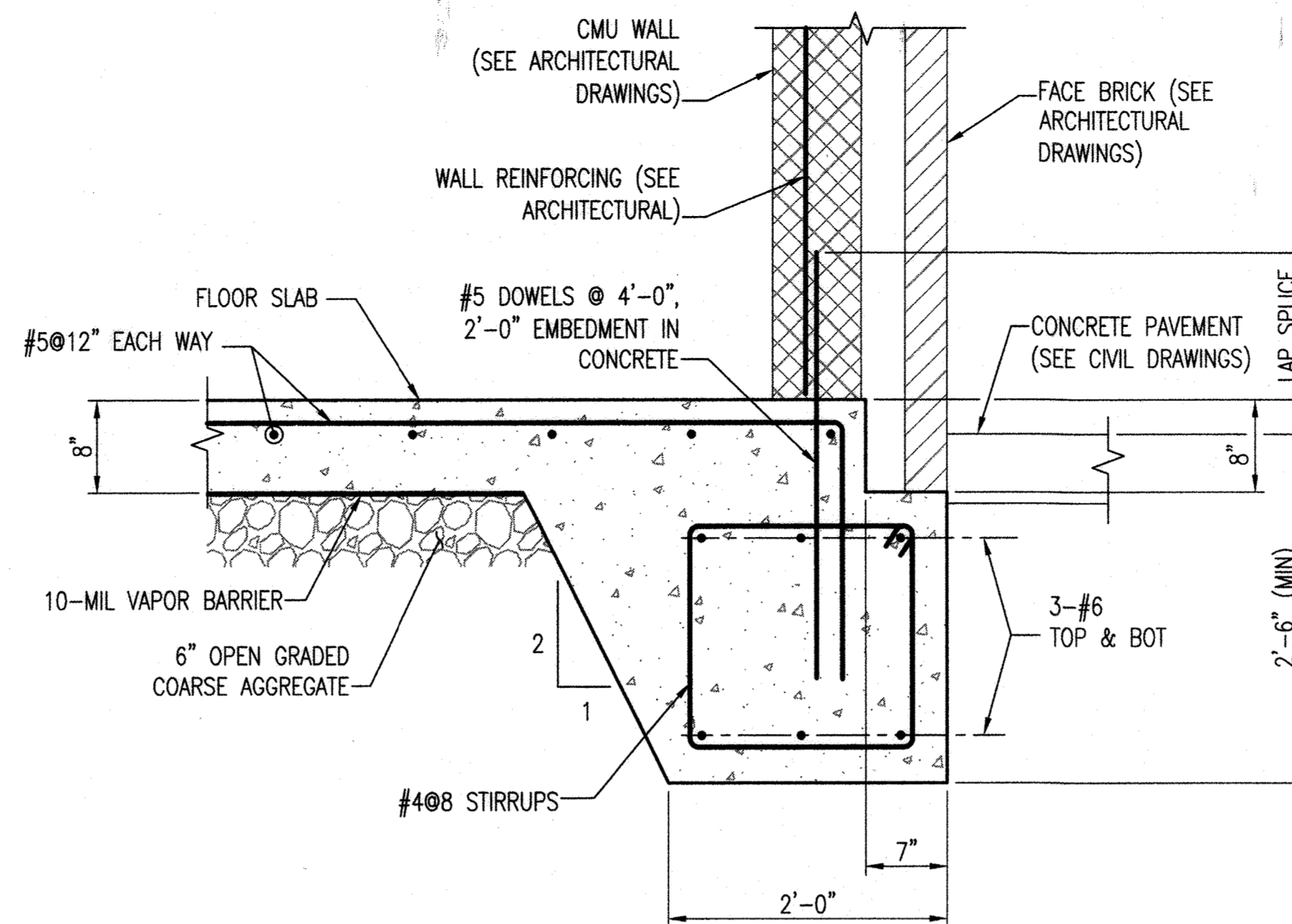
DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

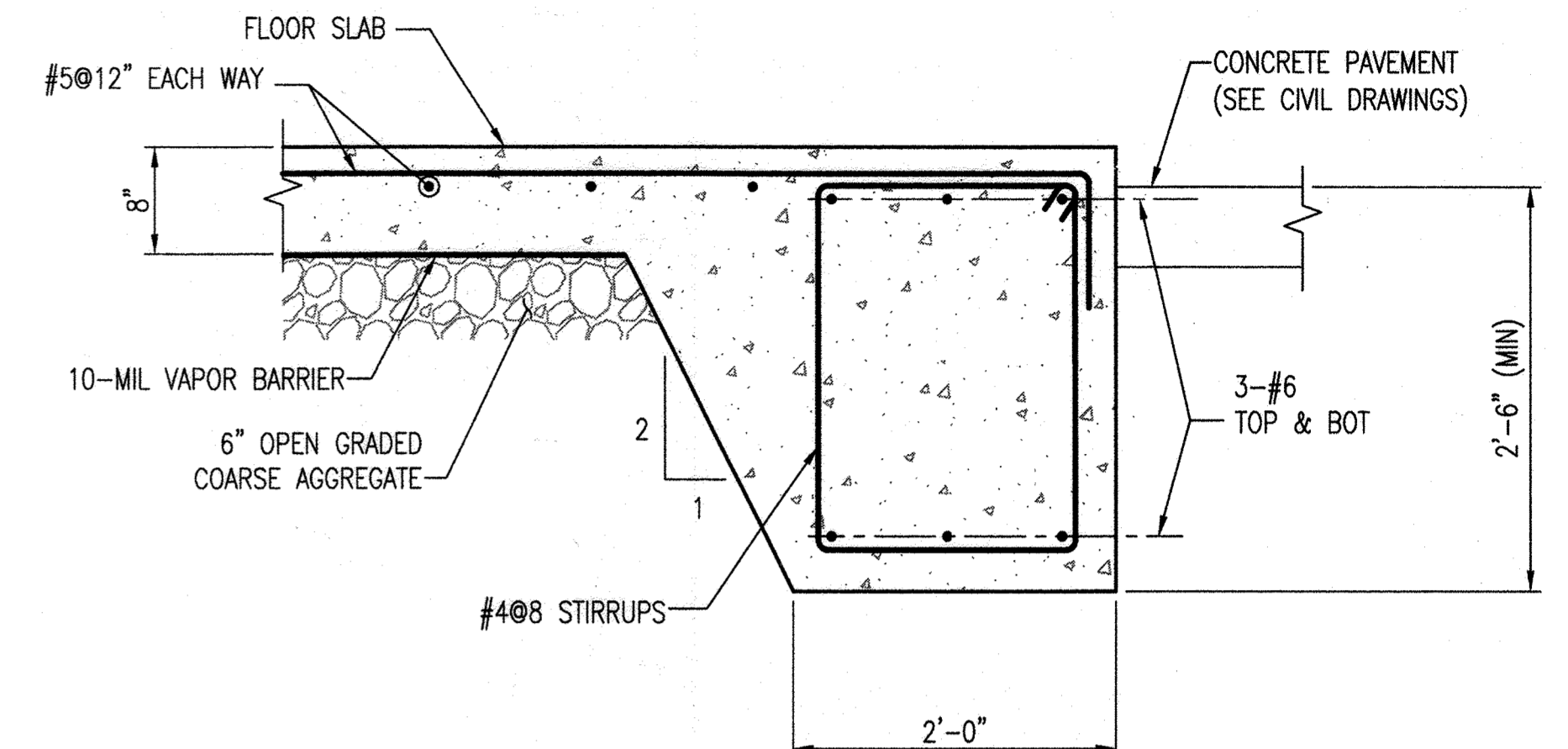
SHEET 17 OF 43



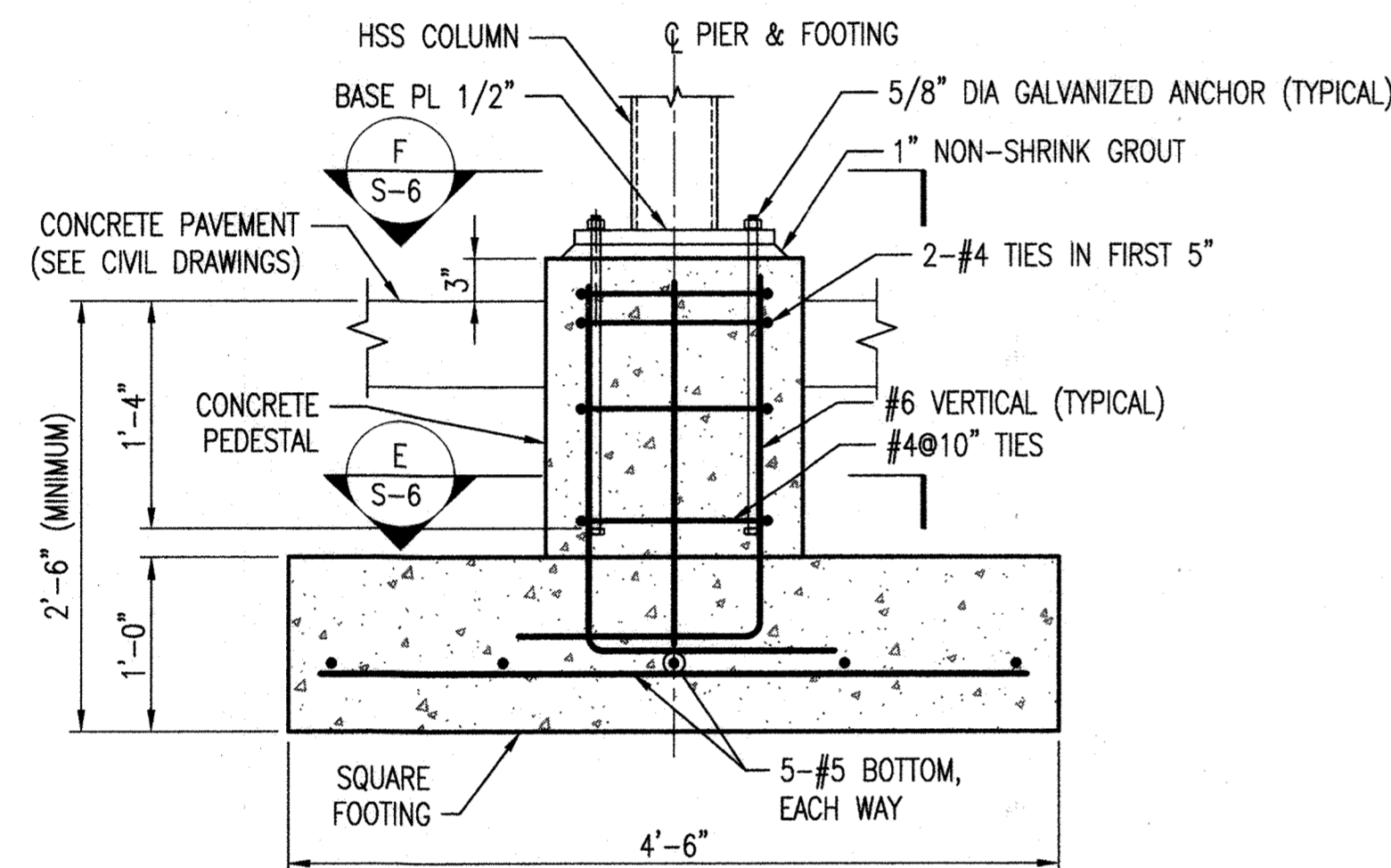
A SECTION
S-6 SCALE: NTS
REF: S-4



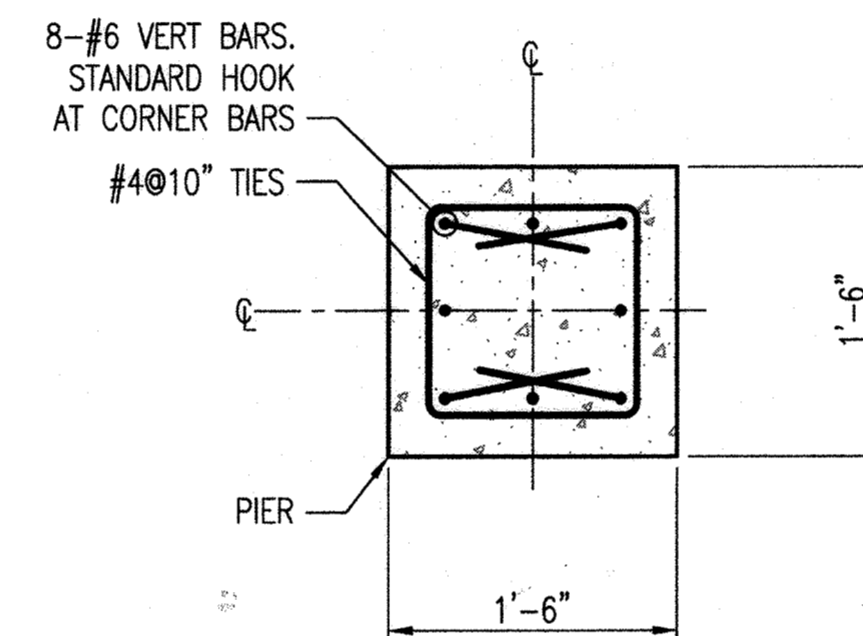
B SECTION
S-6 SCALE: 1" = 1'-0"
REF: S-4



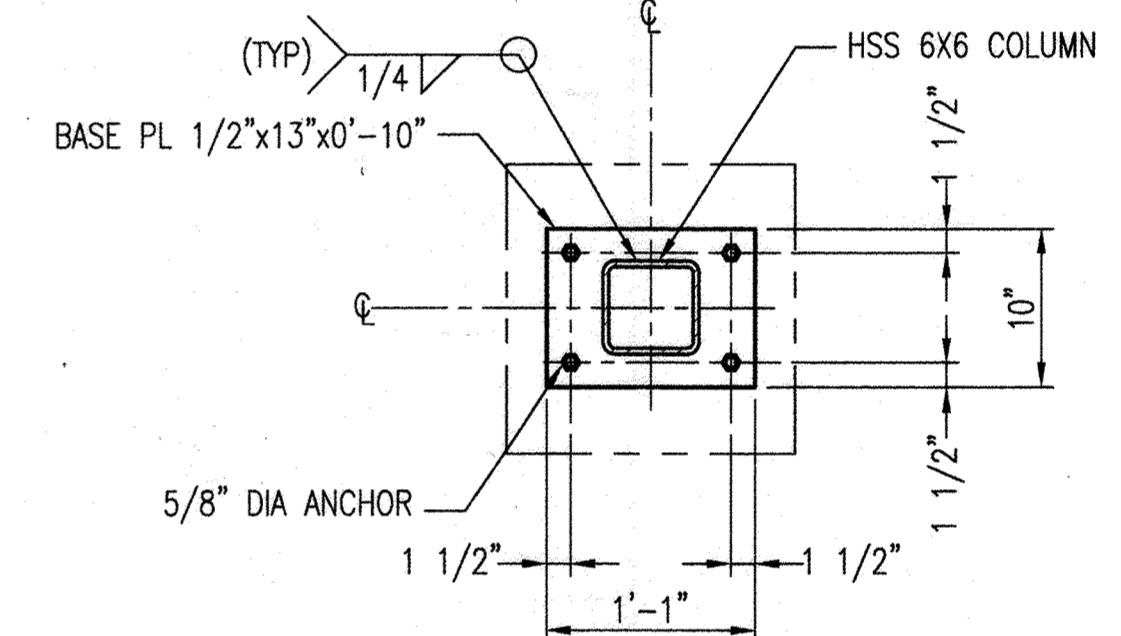
C SECTION
S-6 SCALE: 1" = 1'-0"
REF: S-4



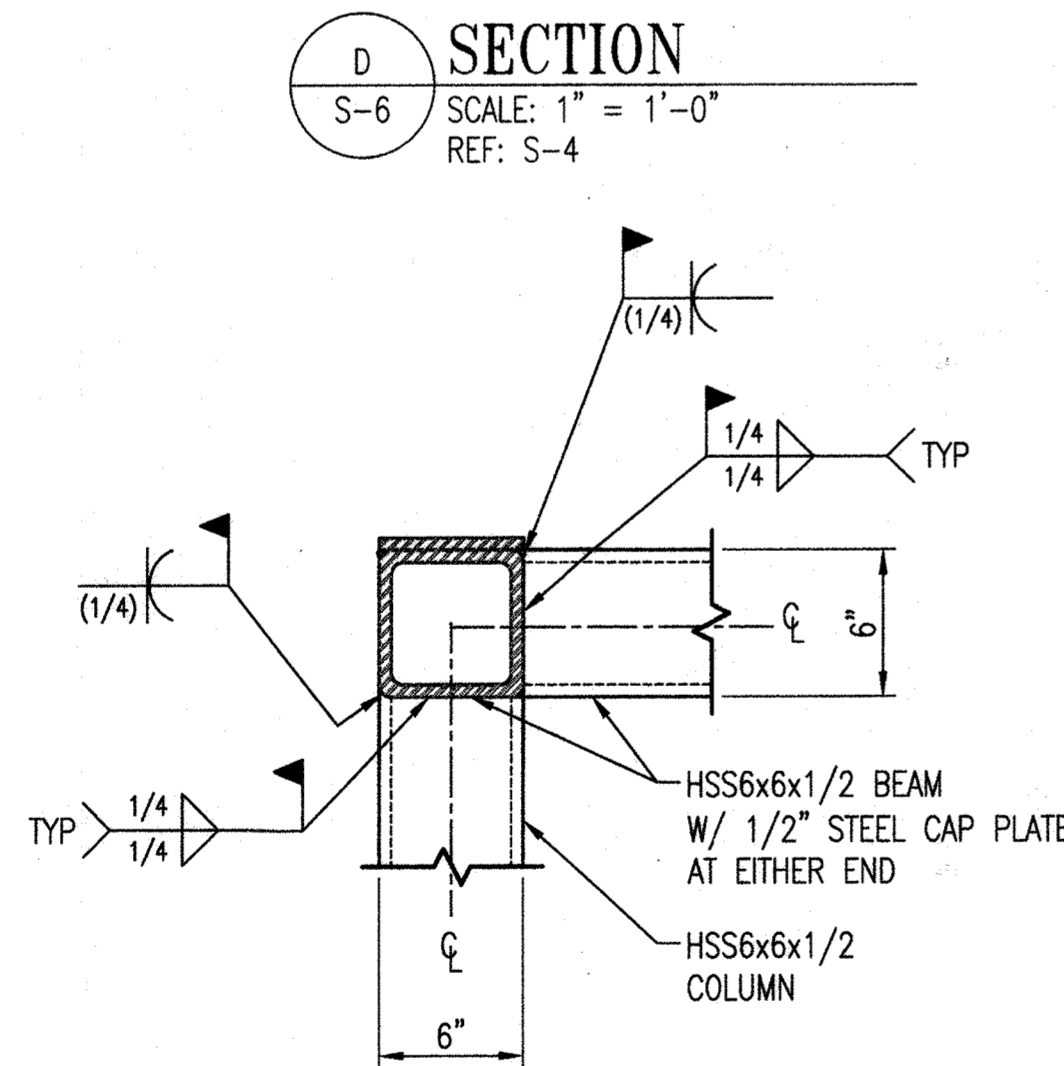
D SECTION
S-6 SCALE: 1" = 1'-0"
REF: S-4



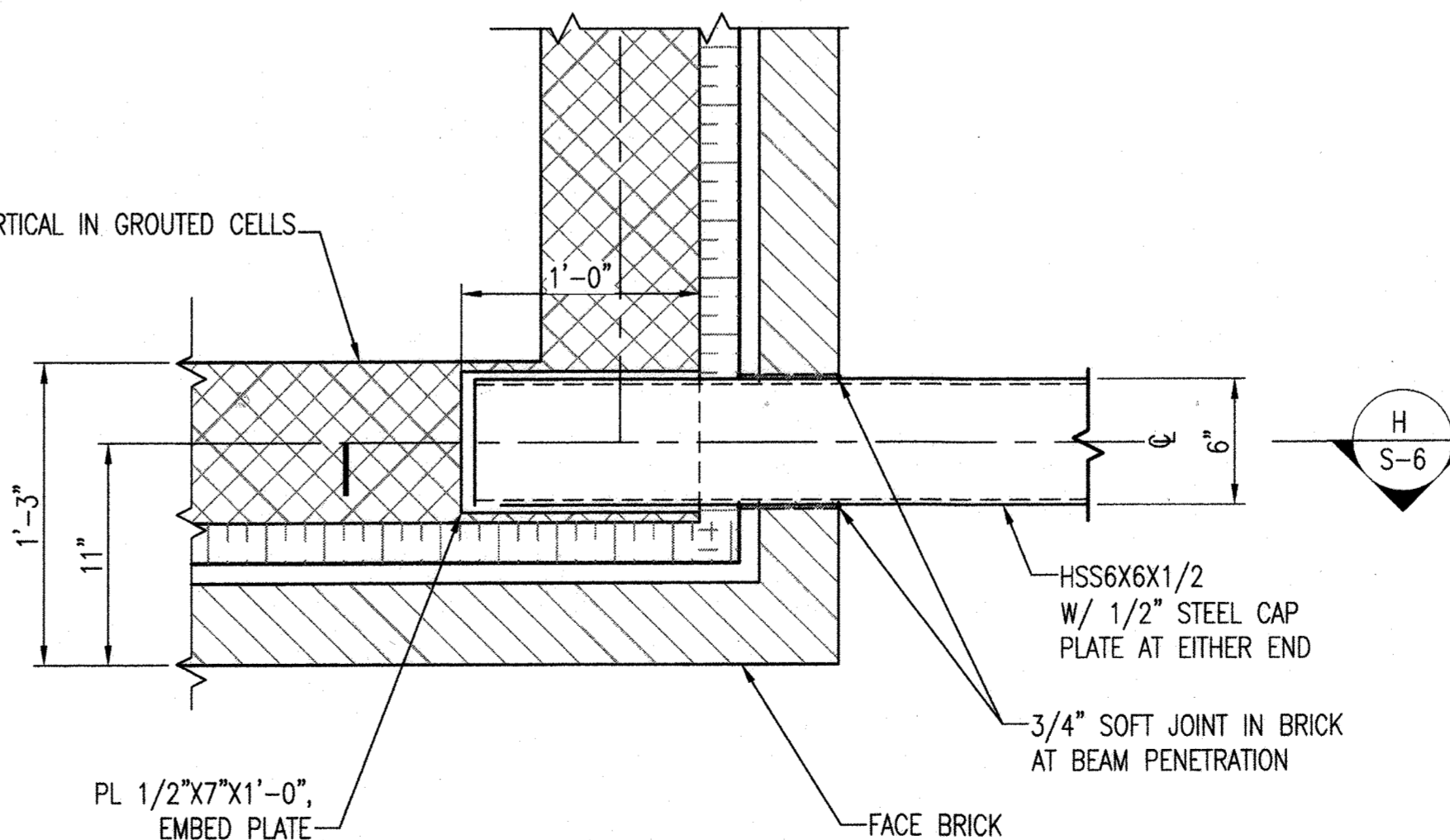
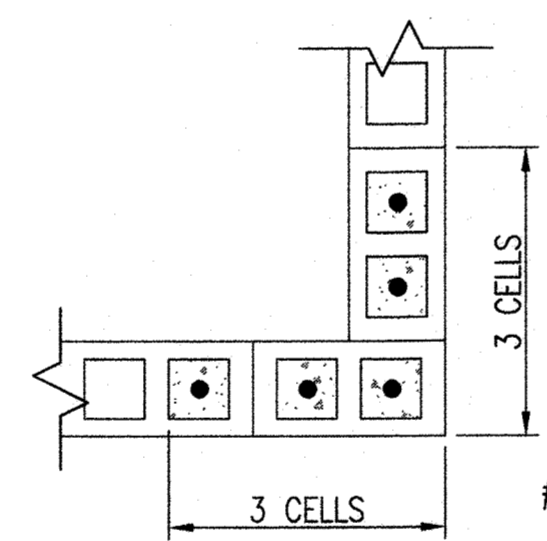
E SECTION
S-6 SCALE: 1" = 1'-0"
REF: S-6



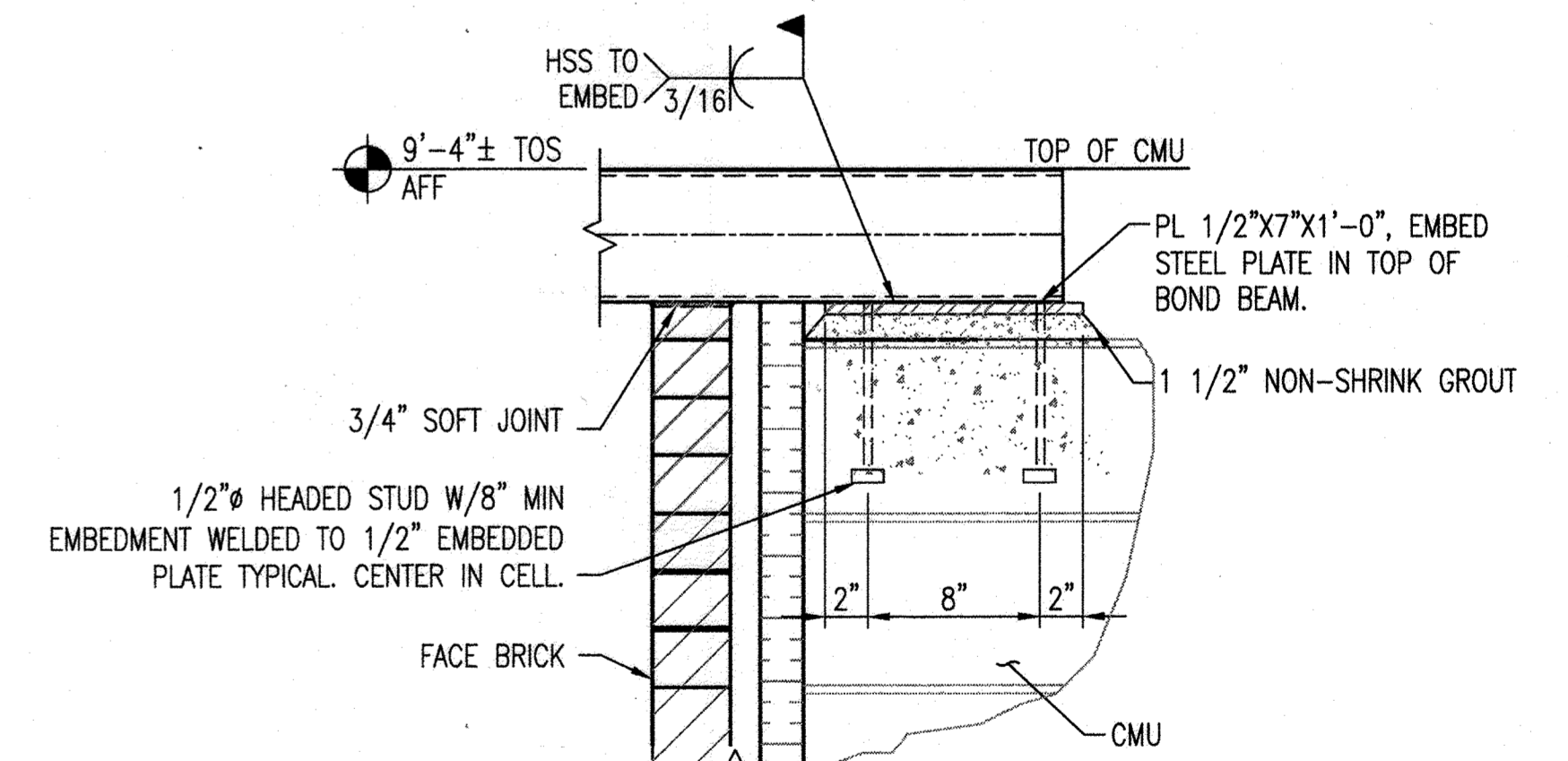
F SECTION
S-6 SCALE: 1" = 1'-0"
REF: S-6



G SECTION
S-6 SCALE: 1 1/2" = 1'-0"



I PLAN DETAIL AT 9'-4" AFF
S-6 SCALE: 1 1/2" = 1'-0"
REF: S-5



J SECTION
S-6 SCALE: 1 1/2" = 1'-0"
REF: S-6

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25879, EXPIRATION DATE: 2-26-2021"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.
8/2/19
2/19/19
PSD

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

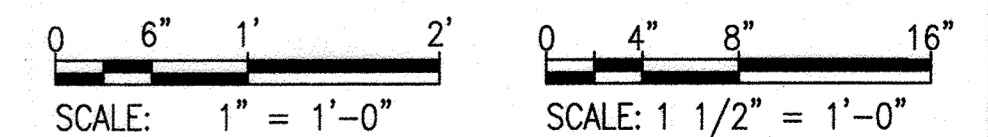


DES:	CMS				
DRN:	SLJ				
CHK:	PSO				
JULY 2019					
BY	NO.	REVISION	DATE	600 SCALE MAP NO. 18	BLOCK NO. 7&13

SECTIONS AND DETAILS

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

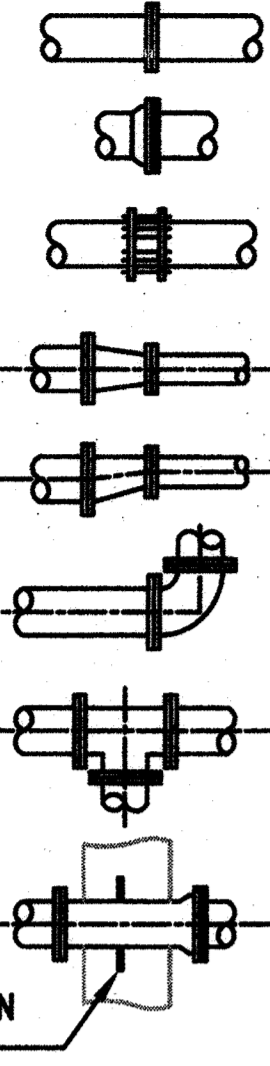
AS-BUILT
S-6
SCALE AS SHOWN
SHEET 18 OF 43



PIPING SYMBOLS

DOUBLE LINE

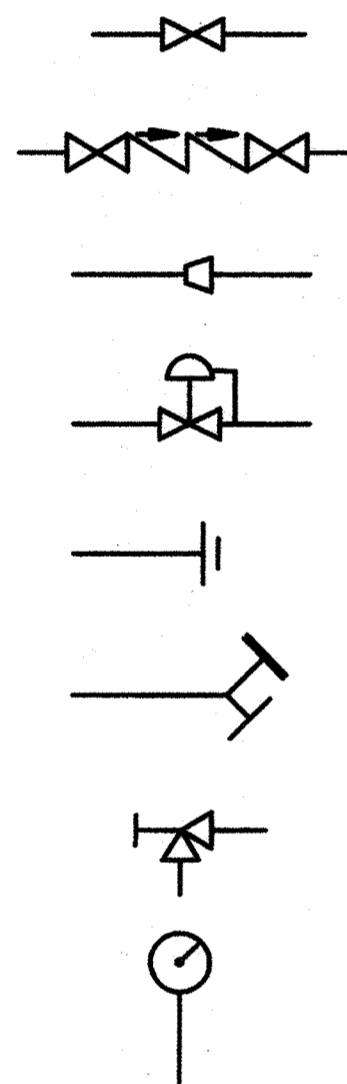
DESCRIPTION



FLANGED JOINT
MECHANICAL JOINT
FLEXIBLE COUPLING
CONCENTRIC REDUCER
ECCENTRIC REDUCER
ELBOW, 90 DEGREE
TEE
WALL CASTING WITH VARIOUS CONNECTIONS TYPES AS INDICATED ON PLANS OR SECTIONS
WATERSTOP OR THRUST COLLAR AS INDICATED ON PLANS OR SECTIONS

SINGLE LINE

DESCRIPTION



GATE VALVE
BACKFLOW PREVENTER
REDUCER
PRESSURE REDUCING VALVE
HOSE BIBB
NON-FREEZE WALL HYDRANT
ANGLE VALVE
PRESSURE GAUGE

ABBREVIATIONS

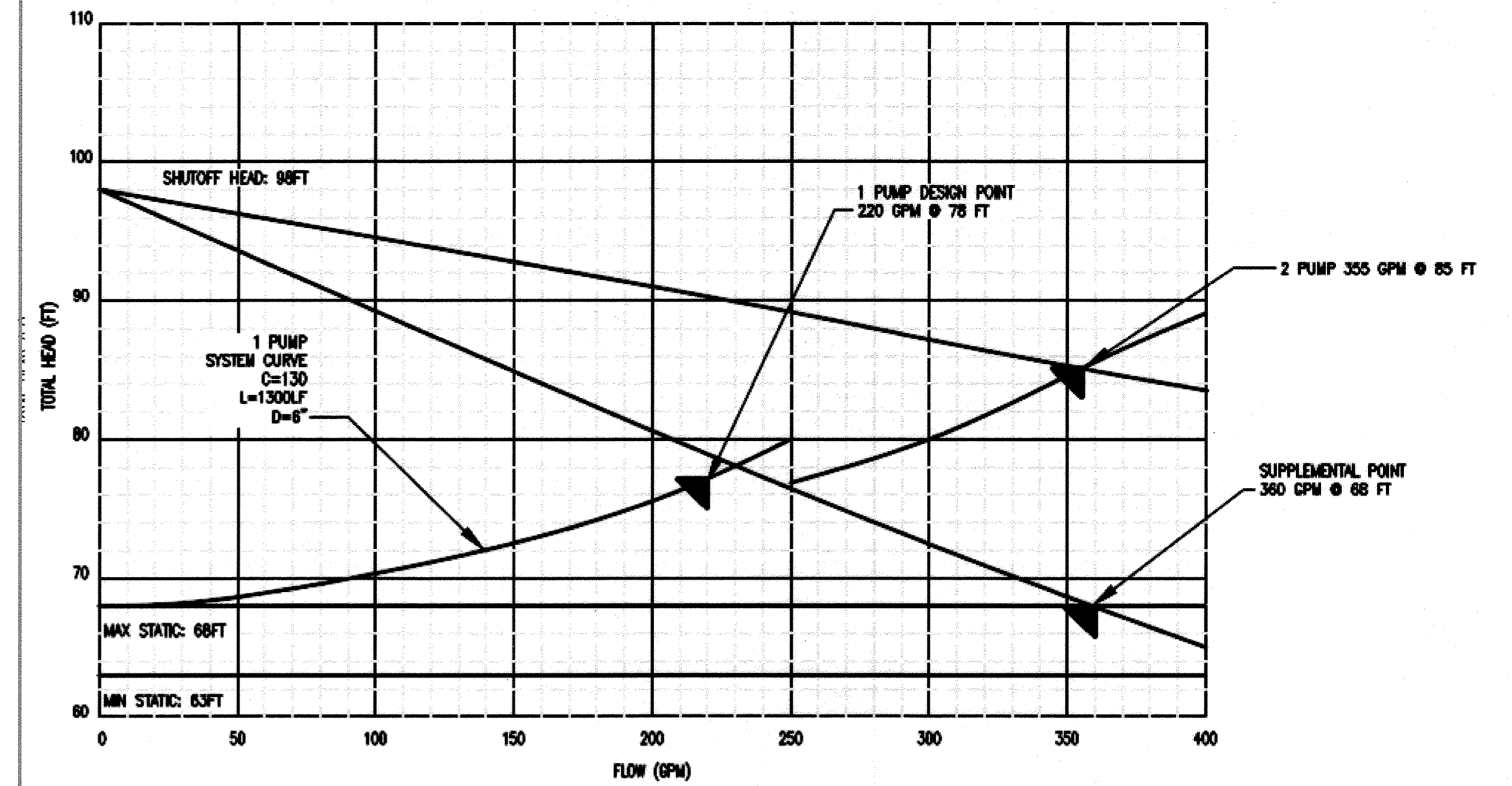
ABBREVIATION

DESCRIPTION

ASTM AMERICAN STANDARD FOR TESTING AND MATERIALS
B BELT
CF CENTRIFUGAL
CFM CUBIC FEET PER MINUTE
CL CENTER LINE
EF EXHAUST FAN
EL ELEVATION
EUH ELECTRIC UNIT HEATER
ET CETERA
EX EXISTING
FLG FLANGE
FT. FEET
GBD GRAVITY BACKDRAFT DAMPER
GPM GALLONS PER MINUTE
HP HORSEPOWER
HZ HERTZ
ID IDENTIFICATION
I.D. INSIDE DIAMETER
MAX. MAXIMUM
MGD MILLION GALLONS PER DAY
MIN. MINIMUM
NO. NUMBER
OCF ODOR CONTROL FAN
OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
P PROPPELLER
PE PLAIN END
PH PHASE
PSI POUNDS PER SQUARE INCH
RPM REVOLUTIONS PER MINUTE
S.P. STATIC PRESSURE
S.S. STAINLESS STEEL
SF SUPPLY FAN
TYP. TYPICAL
W/ WITH
W.C. WATER COLUMN

GENERAL NOTES

- PIPING CONNECTIONS 3 INCH AND SMALLER HAVE BEEN SCHEMATICALLY SHOWN ON PLAN AND SECTION DRAWINGS. PROVIDE DETAILED PIPE ROUTING AND ALL APPURTENANCES IN ACCORDANCE WITH RESPECTIVE SCHEMATICS. PROVIDE ALL NECESSARY FITTINGS TO MAKE CONNECTIONS.
- ALL EXPANSION JOINTS, FLANGE ADAPTERS AND FLEXIBLE COUPLINGS SHALL HAVE TIE-RODS AS SHOWN ON TYPICAL DETAILS.
- UNLESS OTHERWISE NOTED, ECCENTRIC REDUCERS SHALL BE INSTALLED FLAT SIDE ON TOP.
- UNLESS OTHERWISE NOTED, ALL DUCTILE IRON PIPING INTERNAL TO FACILITY(ES) SHALL HAVE FLANGED CONNECTIONS.
- VALVES ARE NORMALLY OPEN (N.O.) UNLESS NOTED AS NORMALLY CLOSED (N.C.).
- UNLESS OTHERWISE NOTED, ALL EQUIPMENT SHALL BE PROVIDED WITH A MINIMUM 4-INCH CONCRETE HOUSEKEEPING PAD SIZED TO SUIT EQUIPMENT.
- SUPPORTS AND HANGERS ARE ONLY SHOWN WHERE SPECIFIC TYPES OR LOCATIONS ARE REQUIRED. ADDITIONAL SUPPORTS AND HANGERS SHALL BE REQUIRED AS SPECIFIED.
- SEE STRUCTURAL DRAWINGS FOR CONCRETE PIPE SUPPORT AND PEDESTAL DETAILS.



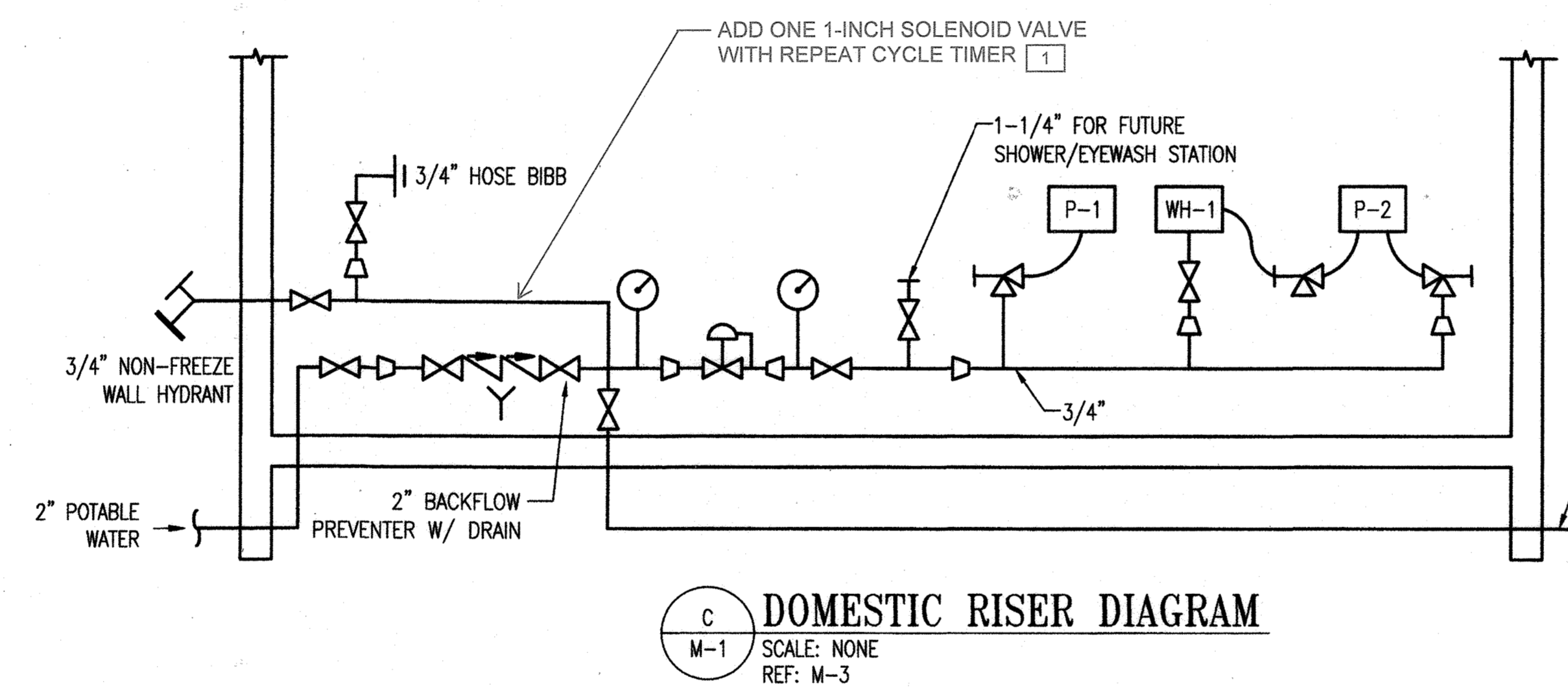
SUBMERSIBLE PUMP CURVE

TOTAL NUMBER OF PUMPS	2	SUPPLEMENTARY POINT CAPACITY	360 GPM
NUMBER OF PUMPS OPERATING	1	SUPPLEMENTARY POINT TOTAL HEAD	68 FT
MOTOR NOMINAL RPM	1800 RPM	SUPPLEMENTARY POINT EFFICIENCY (MIN)	55%
HP (MAX)	12	NPSHR (MAX)	13 FT
SHUT OFF HEAD (MIN)	98 FT		
DESIGN POINT CAPACITY	220 GPM		
DESIGN POINT TOTAL HEAD	78 FT		
DESIGN POINT EFFICIENCY (MIN)	46%		
NPSHR (MAX)	14 FT		

1 MODIFIED PUMP CURVE AND PUMP DATA

PUMP STATION DESIGN INFORMATION: PER THE DANIELS AREA PUMP STATION REPORT (JUNE 2013) WITH REVISION FOR FINAL 39 LOTS WITHIN SUNNELL PROPERTY, THE PUMPING STATION DESIGN FLOW INFORMATION IS AS FOLLOWS:

- TOTAL SERVED AT BUILD-OUT: 621 CAPITA
- ADF (1/1 @ 40 GPD/CAP) = 24,480 GPD.
- ADF (WASTEWATER @ 72 GPD/CAP) = 44,712 GPD
- MIN. DESIGN FLOW = 44,712 * 4 (PEAKING FACTOR) + 24,480 = 203,328 GPD = 141 GPM
- MIN. DESIGN FLOW FOR SCOUR (6" FM @ 2.5 FT/S) = 220 GPM



DOMESTIC RISER DIAGRAM

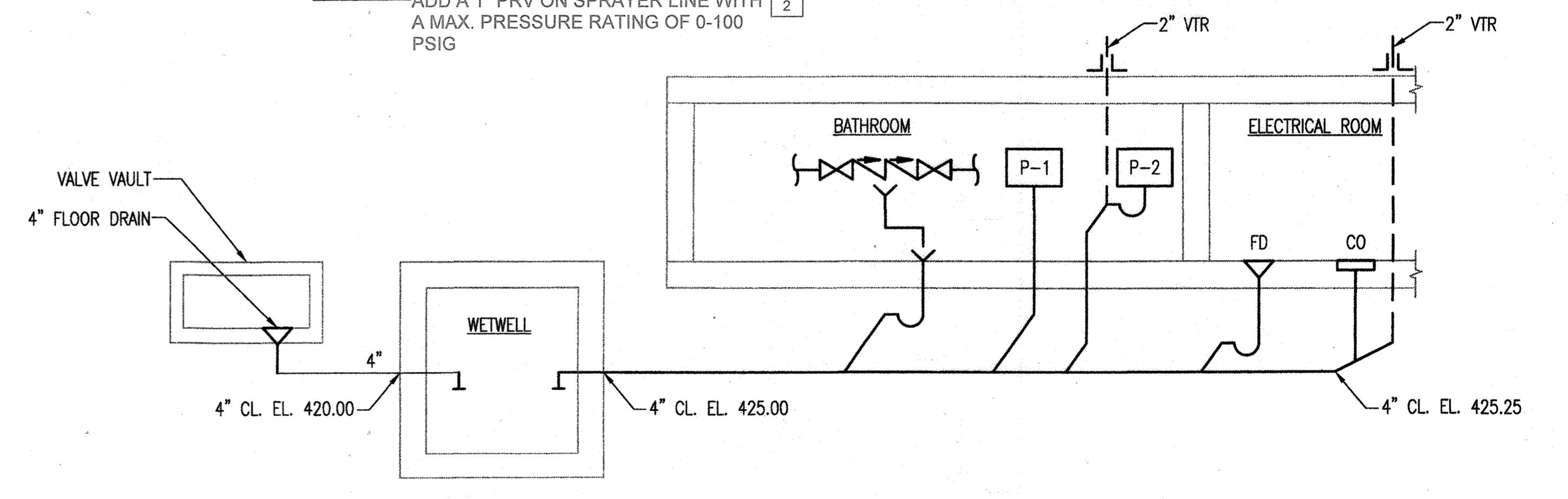
PUMP AND SYSTEM CURVE

UNIT I.D.	TYPE	DRIVE	TOTAL CAPACITY CFM	TOTAL S.P. IN W.C.	MAX. FAN RPM	ELECTRICAL CHARACTERISTICS VOLTS/PH/Hz	MAX MOTOR HP	DAMPER	(LOCATION, CLASSIFICATION, ETC.)
EF-1	P	D	750	0.25	1800	120/1/60	0.25	BDD	ELECTRIC ROOM, NEMA 12
EF-2	P	D	290	0.25	877	120/1/60	0.25	BDD	BATHROOM FAN
OCF-1	CF	B	210	1.85	5000	120/1/60	0.25	-	OUTSIDE

FIXTURE	DESCRIPTION	CW	HW	VENT	SAN	REMARKS
P-1	TOILET	1/2"	-	4"	4"	BATHROOM, BOTTOM OUTLET
P-2	SERVICE SINK	1/2"	1/2"	1 1/2"	1 1/2"	-

UNIT I.D.	KW	AMPS	ELECTRICAL CHARACTERISTICS VOLTS/PH/Hz	THERMOSTAT INTEGRAL(I) OR REMOTE WALL(R)	REMARKS (LOCATION, TYPE, ETC.)
EUH-1	5	12.0	208/3/60	I	NEMA 12, ELECTRICAL ROOM

UNIT I.D.	TYPE	TEMP. RISE	VOLTS/PHASE	KW	AMPS	REMARKS (LOCATION, CLASSIFICATION, ETC.)
WH-1	INST.	56 DEG AT 0.5 GPM	208/3	5	20	BATHROOM



SANITARY RISER DIAGRAM

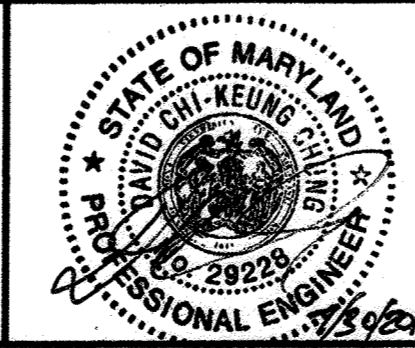
"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25378, EXPIRATION DATE: 7-14-2020"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Michael J. ... 8/19/19
DIRECTOR OF PUBLIC WORKS

... 8/19/19
CHIEF, UTILITY DESIGN DIVISION

WRA
Whitman, Requardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231



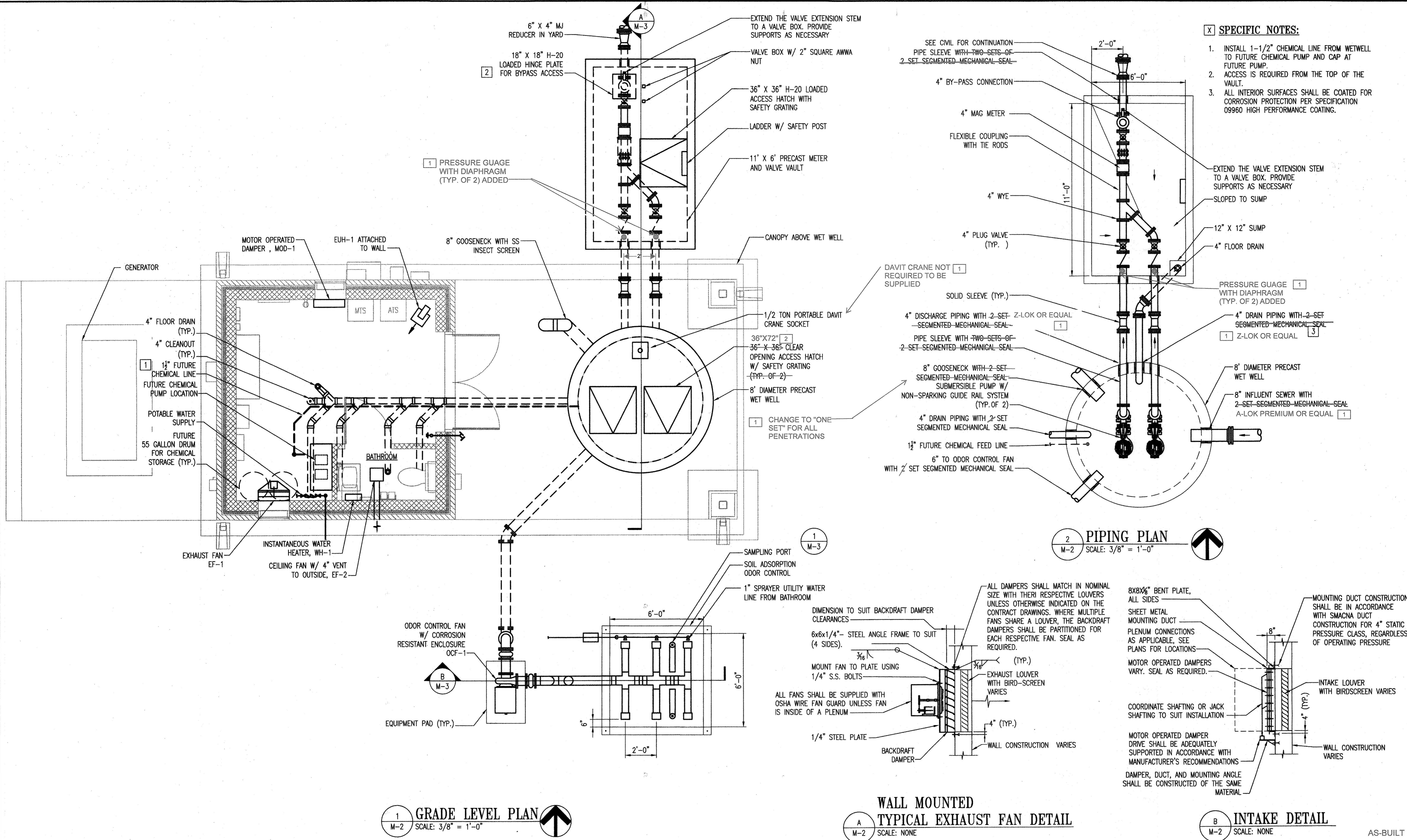
DES:	MH		
DRN:	MH		
CHK:	DCC	2	RF#14: PRESSURE REDUCING VALVE 1/16/21
		1	ADDENDUM #1 9/18/19
JULY 2019	BY NO.	REVISION	DATE

MECHANICAL NOTES AND SYSTEM CURVE

600 SCALE MAP NO. 18 BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

AS-BUILT
M-1
SCALE AS SHOWN
SHEET 19 OF 43



- SPECIFIC NOTES:**
1. INSTALL 1-1/2" CHEMICAL LINE FROM WETWELL TO FUTURE CHEMICAL PUMP AND CAP AT FUTURE PUMP.
 2. ACCESS IS REQUIRED FROM THE TOP OF THE VAULT.
 3. ALL INTERIOR SURFACES SHALL BE COATED FOR CORROSION PROTECTION PER SPECIFICATION 09960 HIGH PERFORMANCE COATING.

1 GRADE LEVEL PLAN
M-2 SCALE: 3/8" = 1'-0"

2 PIPING PLAN
M-2 SCALE: 3/8" = 1'-0"

WALL MOUNTED TYPICAL EXHAUST FAN DETAIL
A M-2 SCALE: NONE

B INTAKE DETAIL
M-2 SCALE: NONE

0 1' 2' 3' 5'
SCALE: 3/8" = 1'-0"

"I, THE UNDERSIGNED, A PROFESSIONAL ENGINEER, HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 25308. EXPIRES: 12/31/2024. DATE: 12/24/2020"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

[Signature] 8/2/19
DIRECTOR OF PUBLIC WORKS

[Signature] 8-9-19
CHIEF, BUREAU OF UTILITIES

[Signature] 8/19/19
CHIEF, UTILITY DESIGN DIVISION

WRA
Whitman, Requardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND
DAVID G. KEENE, JR.
PROFESSIONAL ENGINEER

DES:	MH			
DRN:	MH			
CHK:	DCC	2	CHANGE BULLETIN #2: HATCH MODIFICATIONS	4/23/20
		1	ADDENDUM #1	9/18/19
BY:	NO.			

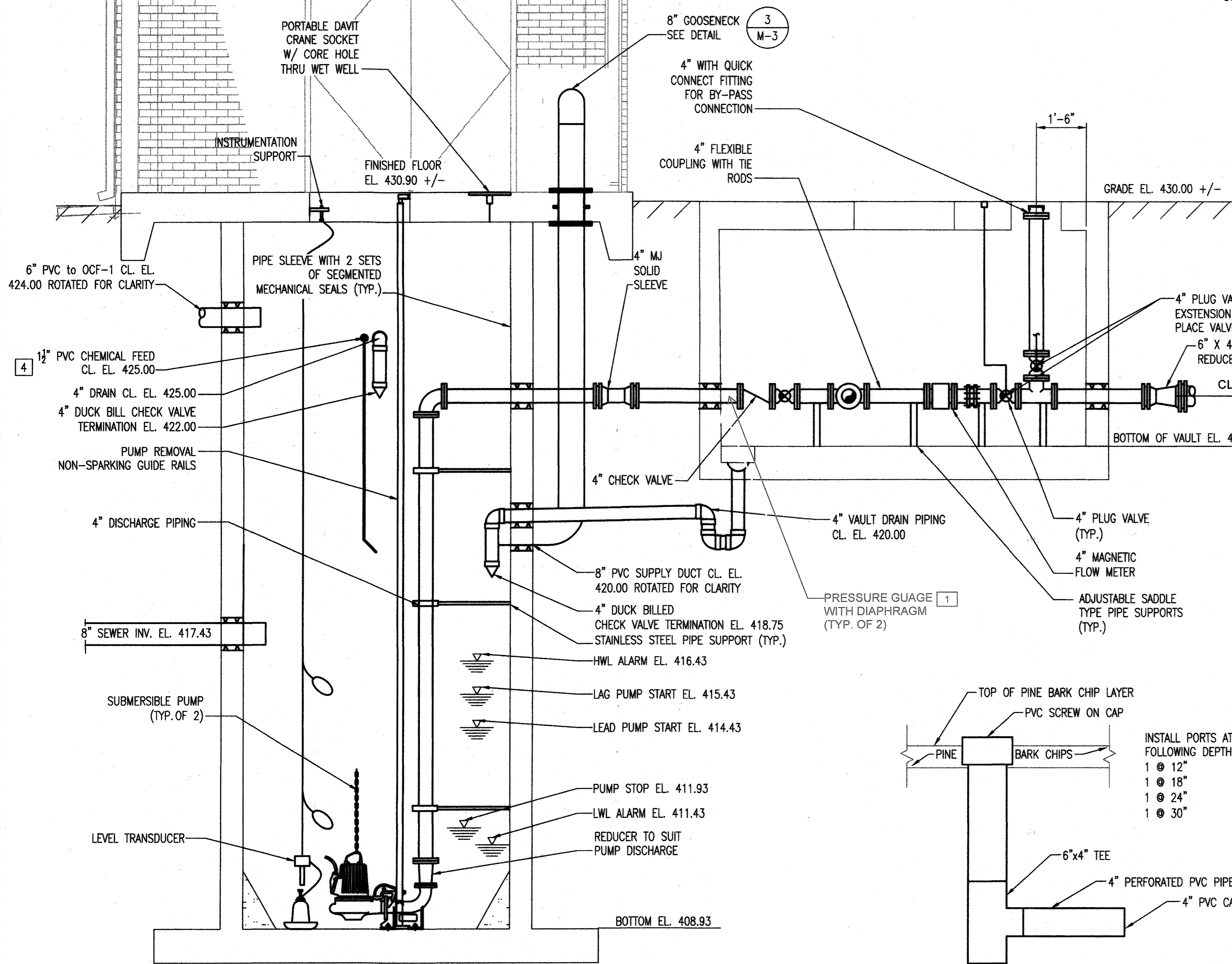
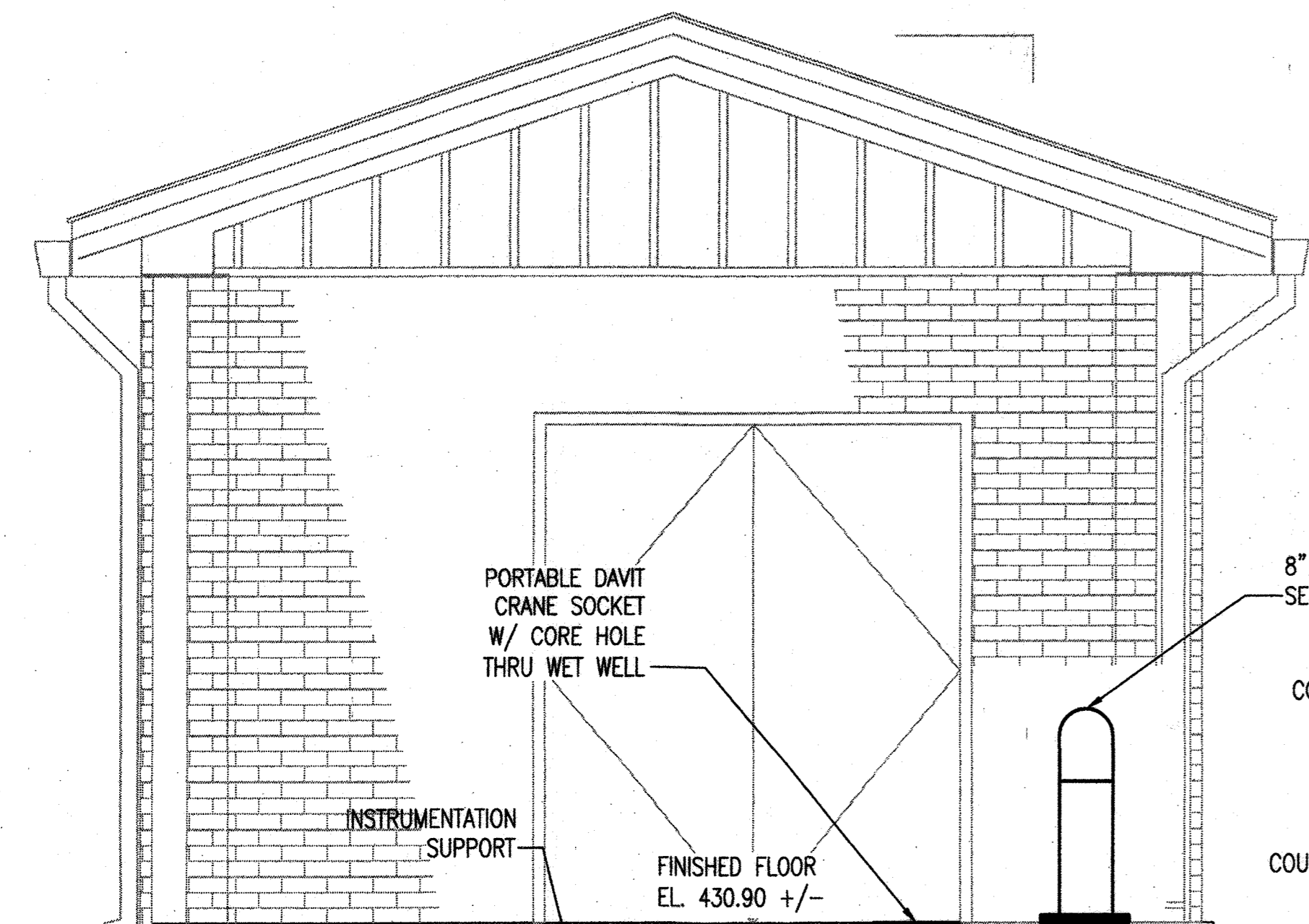
PUMPING STATION PLANS AND DETAILS

600 SCALE MAP NO. 18
BLOCK NO. 7&13

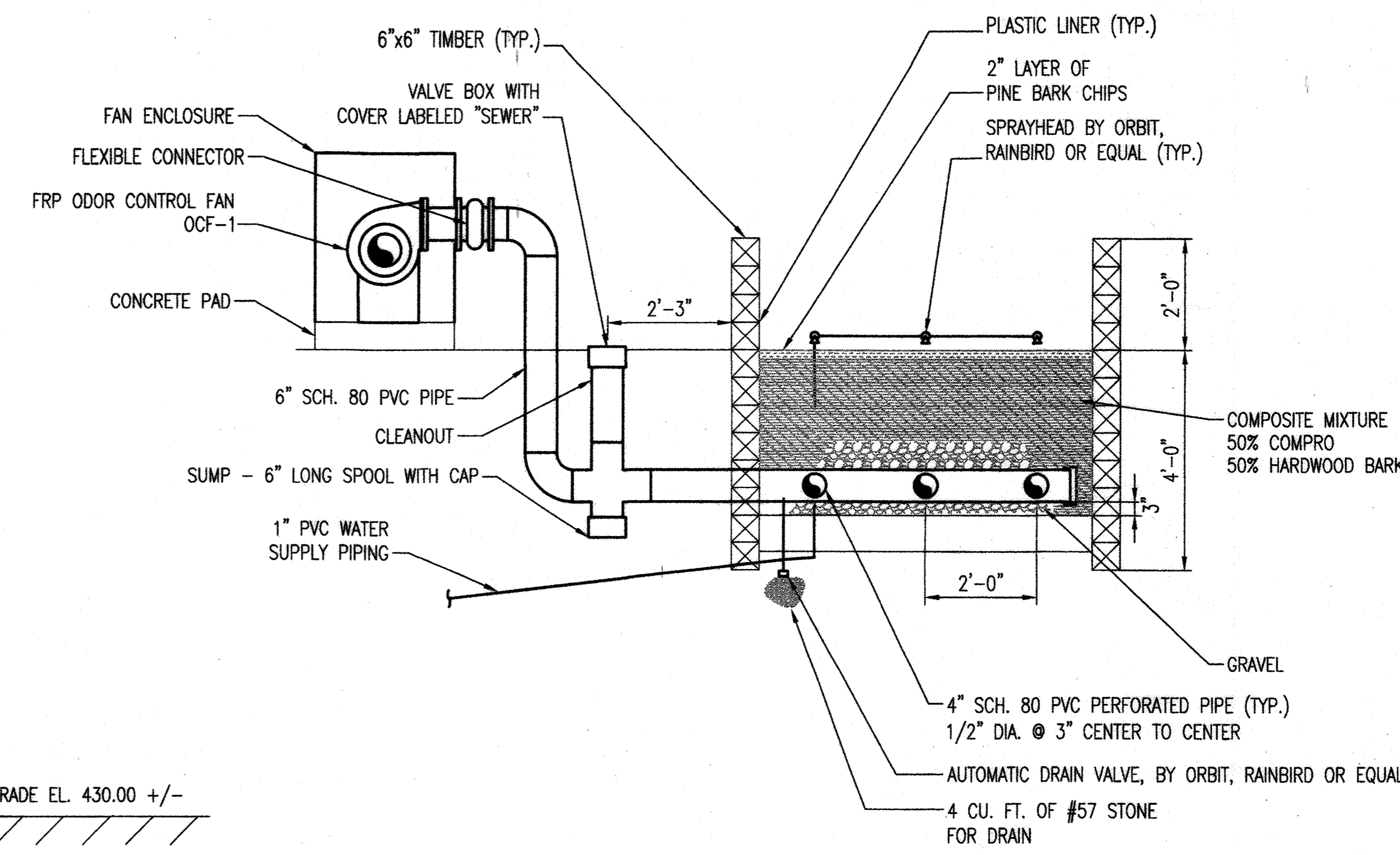
DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096

2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

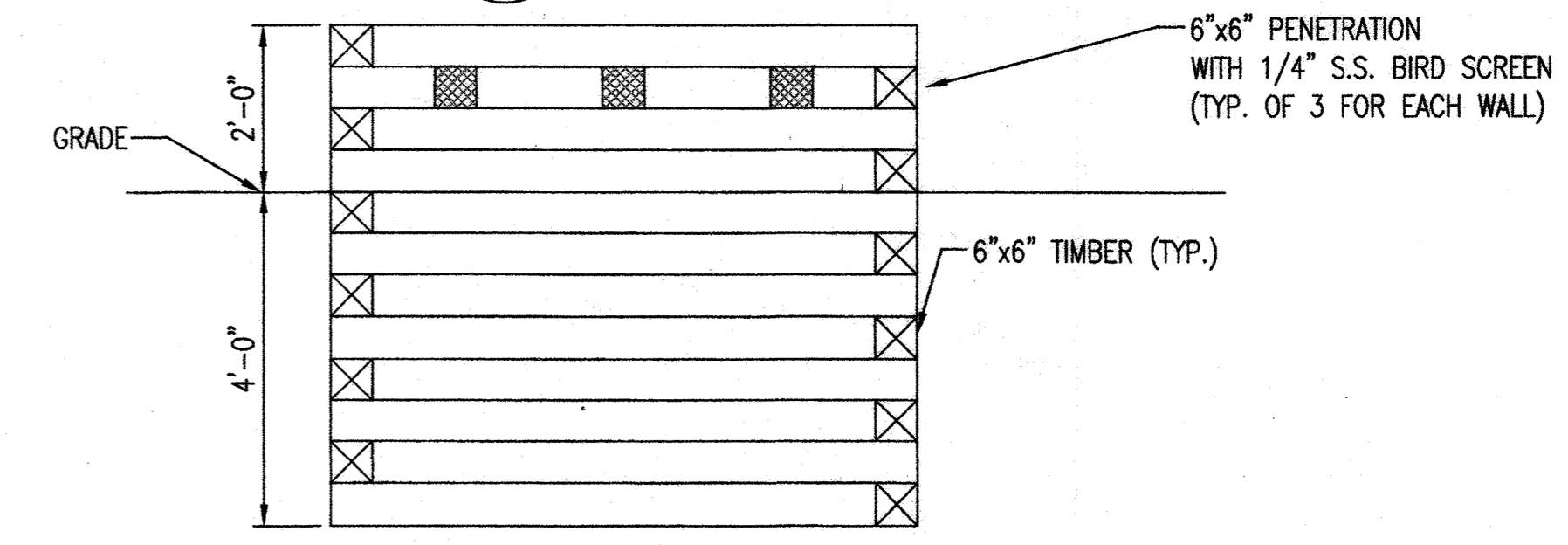
AS-BUILT
M-2
SCALE AS SHOWN
SHEET 20 OF 43



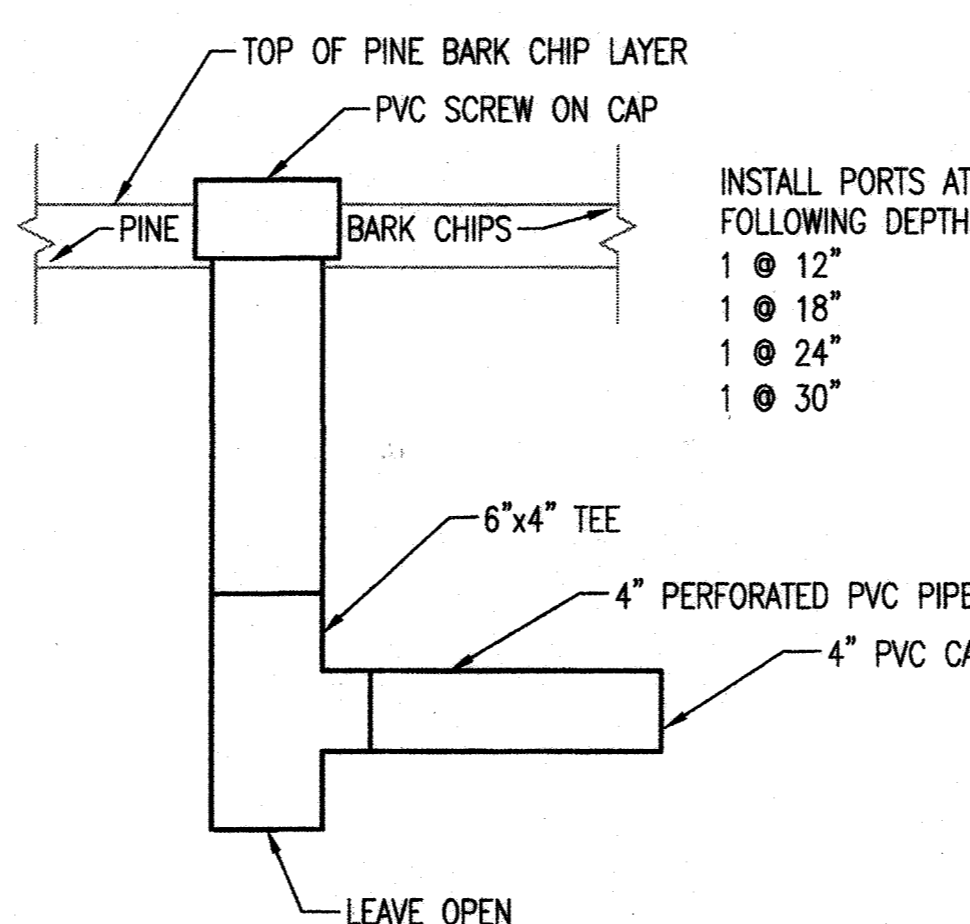
A SECTION
M-3 SCALE: 1/2" = 1'-0"



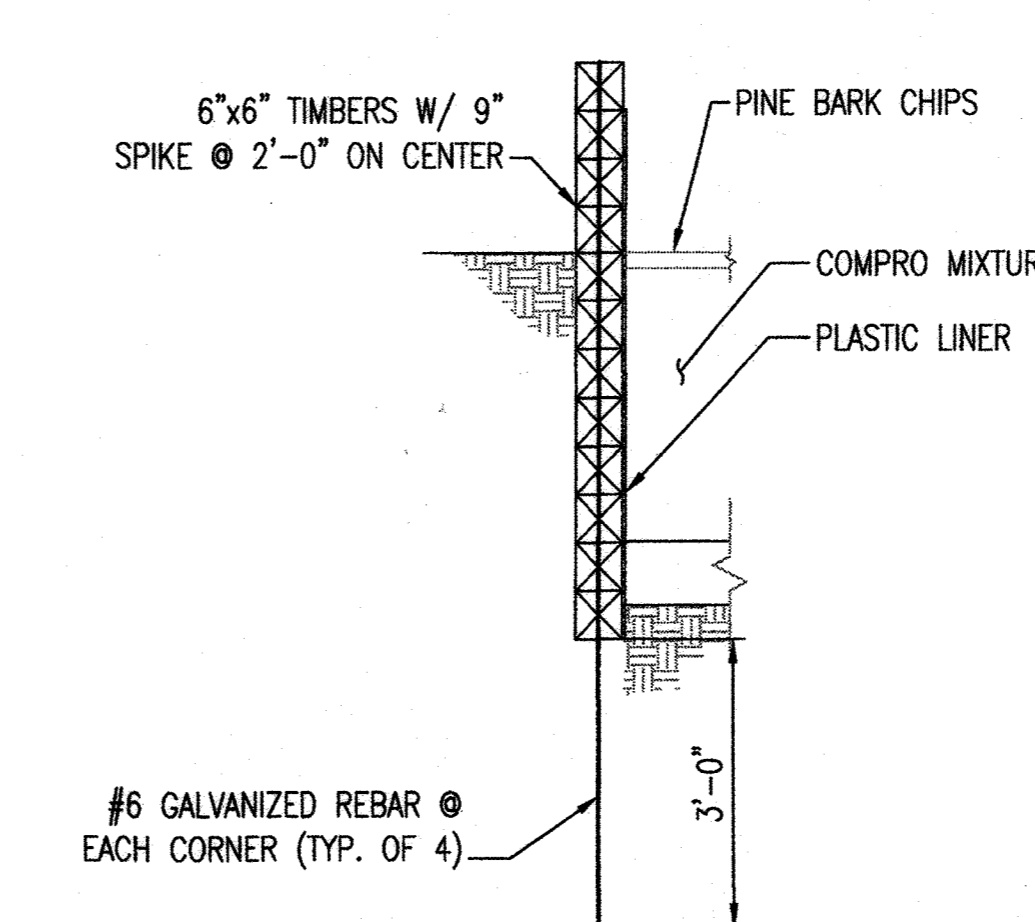
B SECTION
M-3 SCALE: 1/2" = 1'-0"



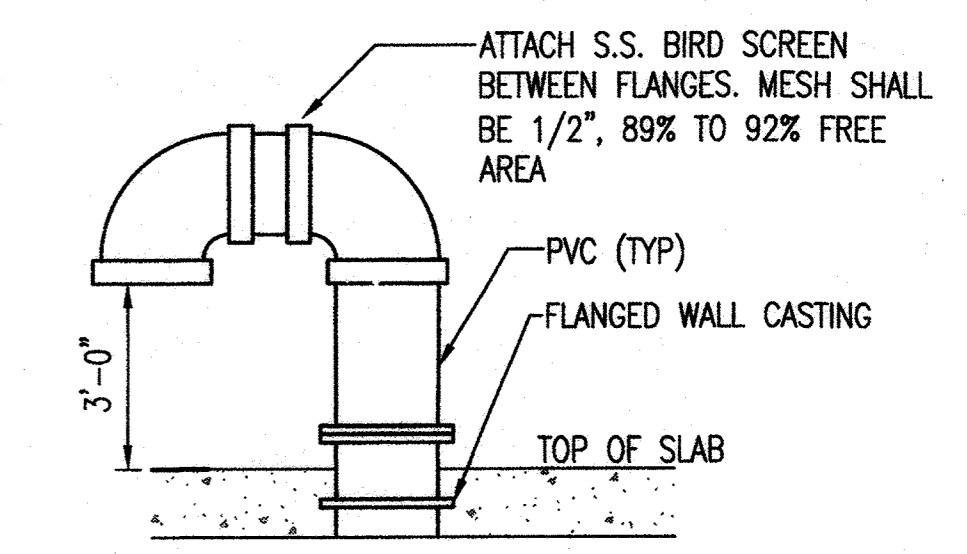
C SECTION
M-3 SCALE: 1/2" = 1'-0"



1 SAMPLING PORT DETAIL
M-3 SCALE: 1" = 1'-0"



2 CORNER DETAIL
M-3 SCALE: 1/2" = 1'-0"



3 WETWELL GOOSENECK DETAIL
M-3 SCALE:

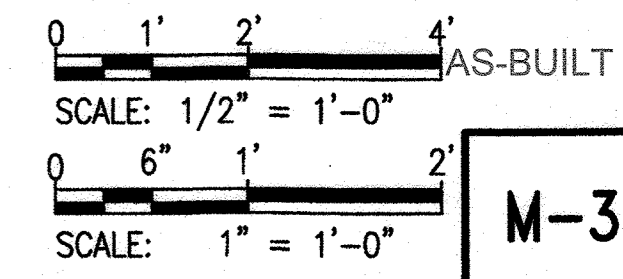
[X] SPECIFIC NOTES:

1. PROVIDE MINIMUM 18" MULCH MIXTURE BETWEEN GRAVEL AND TIMBER STRUCTURE.
2. CONTAIN GRAVEL DURING PLACEMENT WITH TEMPORARY FRAMEWORK. REMOVE TEMPORARY FRAMEWORK AFTER COMPOSITE MIXTURE IS IN PLACE AROUND GRAVEL.
3. 6"x6" TIMBERS SHALL MEET AASHTO M168 MARINE GRADE, TREATED WITH CHROMATED COPPER ARSENATE (CCA) AT A RATE OF 2.5 LBS PER CU. FT. OF WOOD AND SHALL MEET AASHTO M133.
4. 1 1/2" PVC LINE SHALL BE SUPPORTED ON THE WET WELL WALL WITH A 45 ELBOW DISCHARGE ANGLING TOWARDS THE WET WELL CENTER.
5. USE STAINLESS STEEL FASTENERS ON ALL EXPOSED AND SUBMERGED PIPING AND FITTINGS.

[2] BASIS OF DESIGN

- SPRAY HEAD: RAINBIRD 15EST.
- AUTOMATIC DRAIN VALVE: RAINBIRD 16A-FDV
- CYCLIC TIMER: RAINBIRD SST600OUT
- SOLENIOD VALVE: ASCO SERIES 210

NOTES:
1. SEE PLANS AND SECTIONS FOR VENT SIZES.



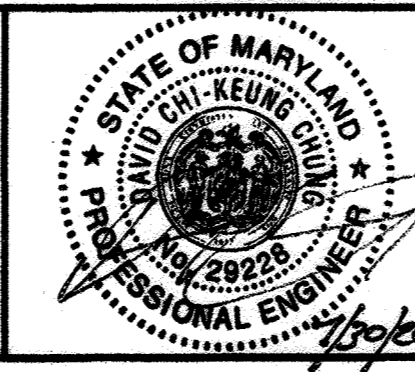
"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25378, EXPIRATION DATE: 7-14-2020"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Michael J. ...
DIRECTOR OF PUBLIC WORKS
DATE: 01/11/19

...
CHIEF, BUREAU OF UTILITIES
DATE: 01/11/19

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231



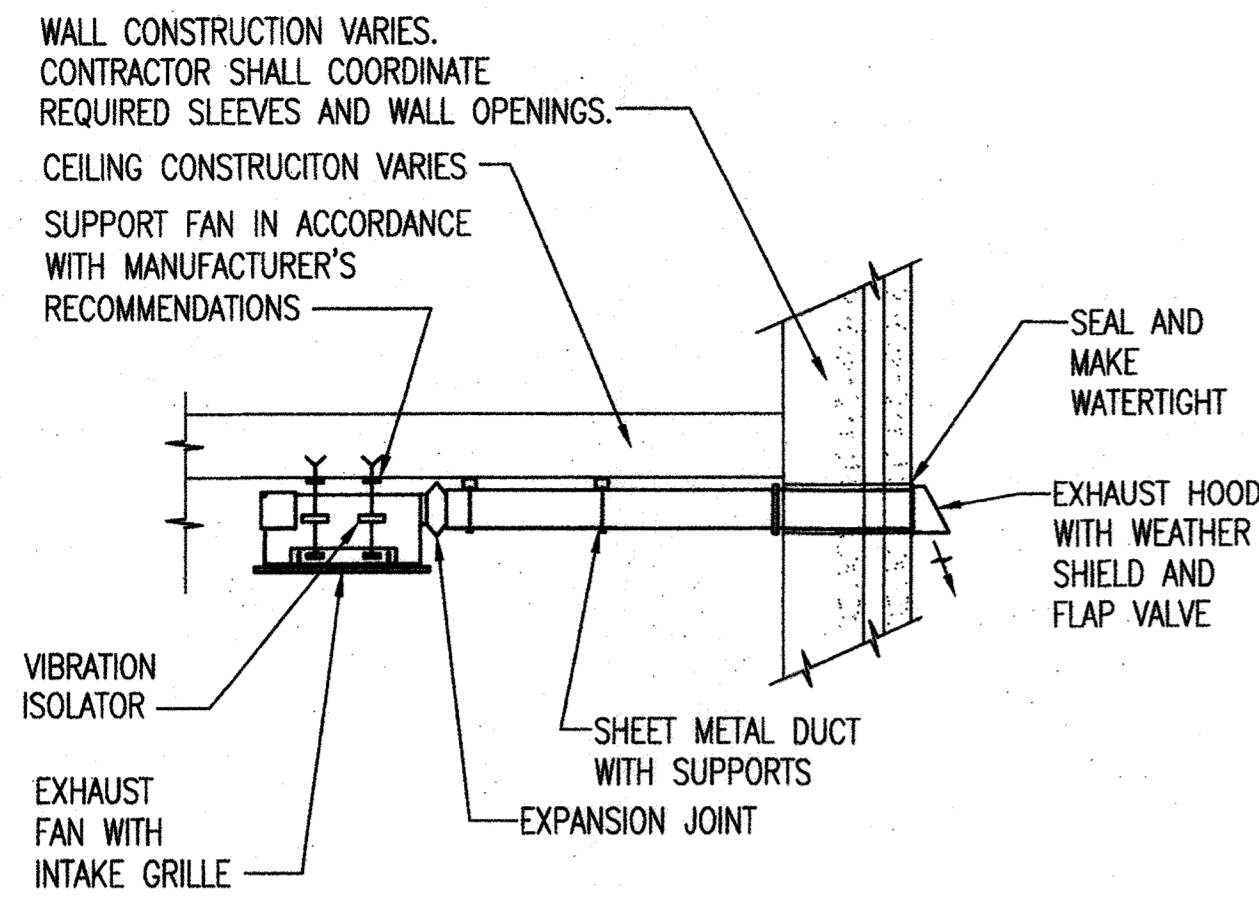
DES:	MH		
DRN:	MH		
CHK:	DJN	2	RFI#12: ODOR CONTROL SPRAYERS 10/23/20
		1	ADDENDUM #1 9/18/19
JULY 2019	BY NO.	REVISION	DATE

PUMPING STATION SECTIONS AND DETAILS

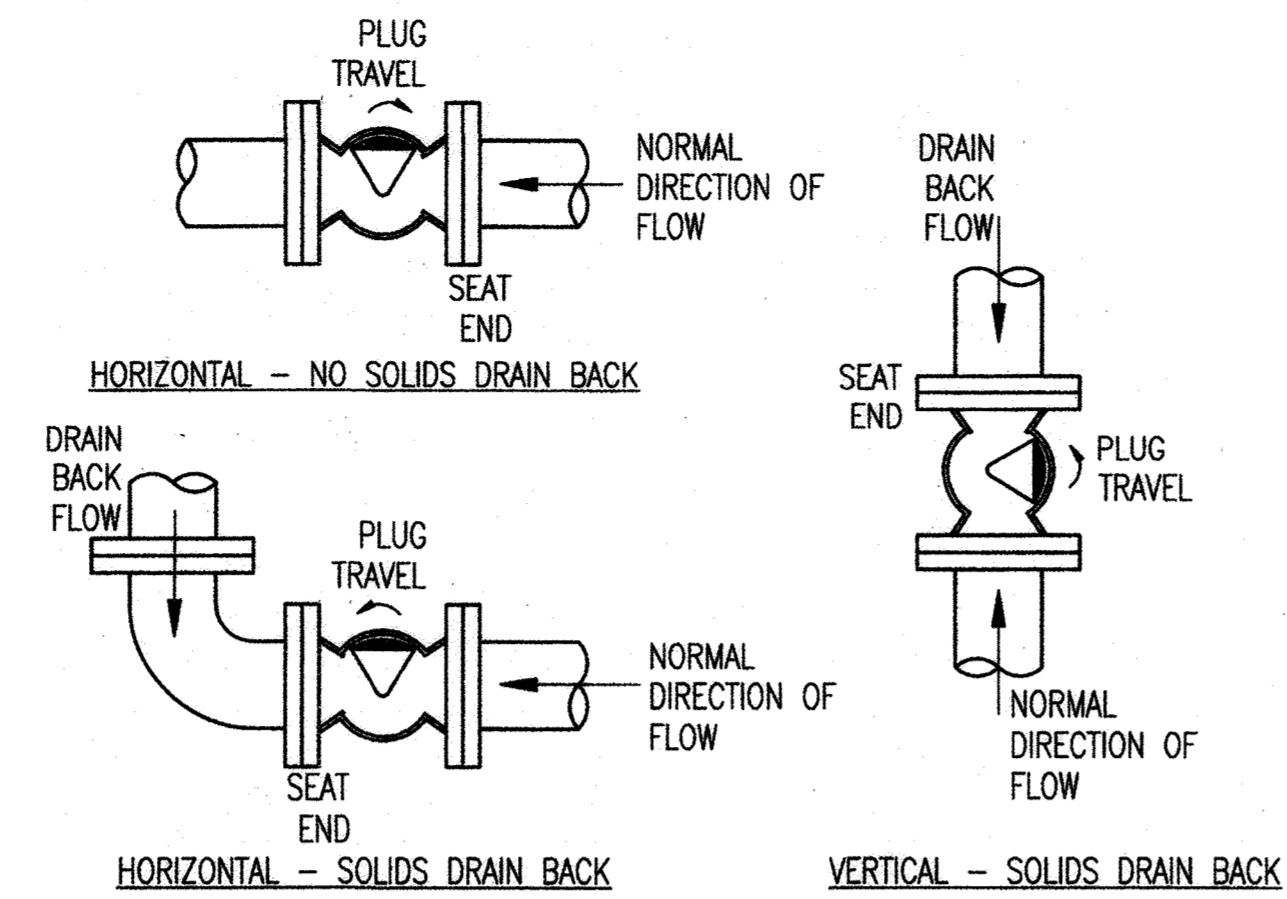
600 SCALE MAP NO. 18 BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

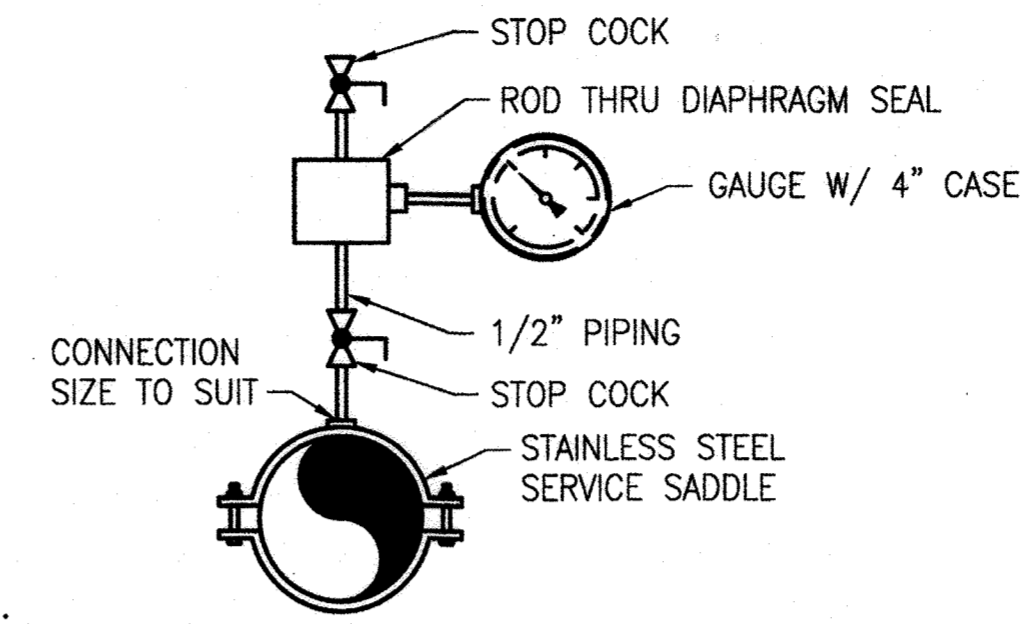
M-3
SCALE AS SHOWN
SHEET 21 OF 43



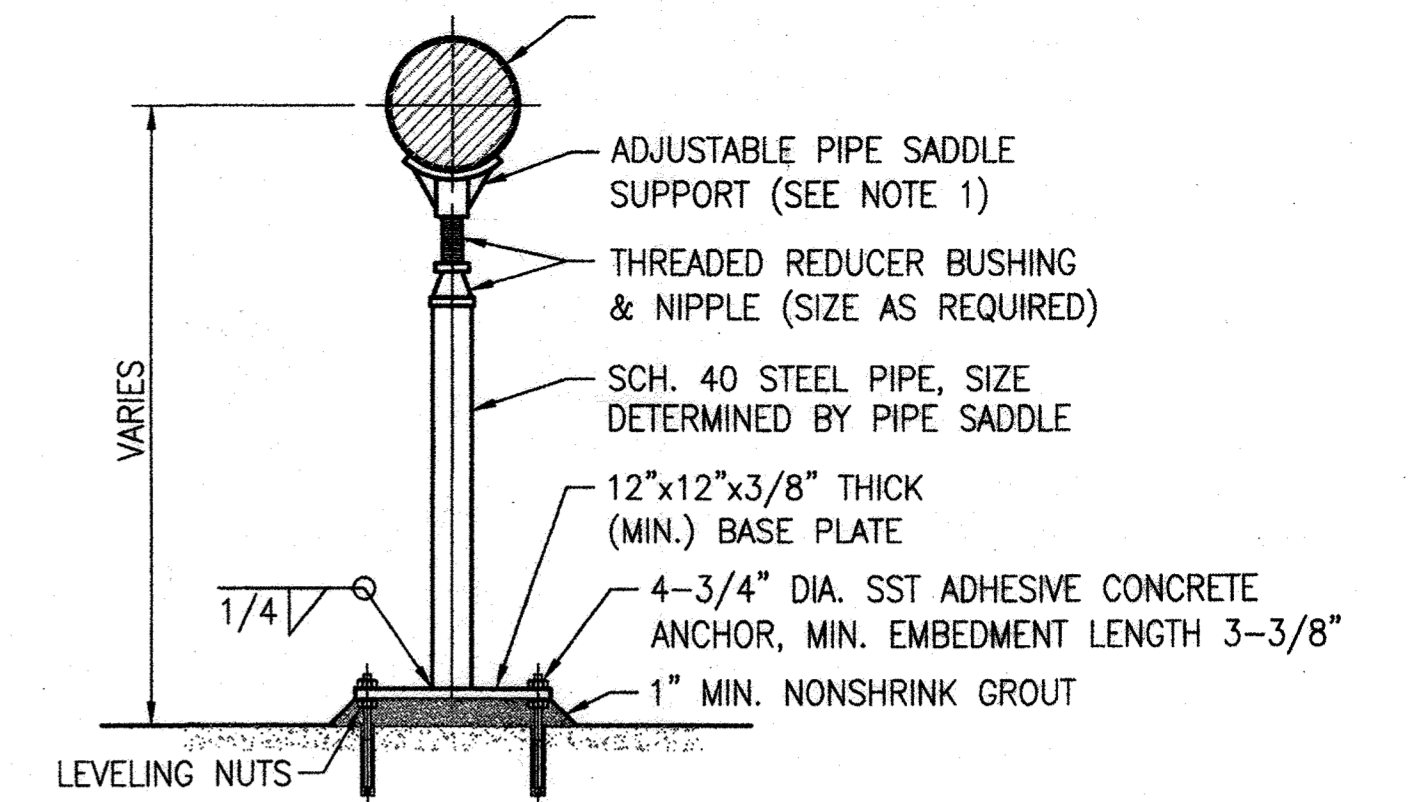
1 TOILET ROOM EXHAUST FAN
M-4 SCALE: NONE
REF: M-2, M-3



2 PLUG VALVE SEAT DETAIL
M-4 SCALE: NONE
REF: M-2, M-3

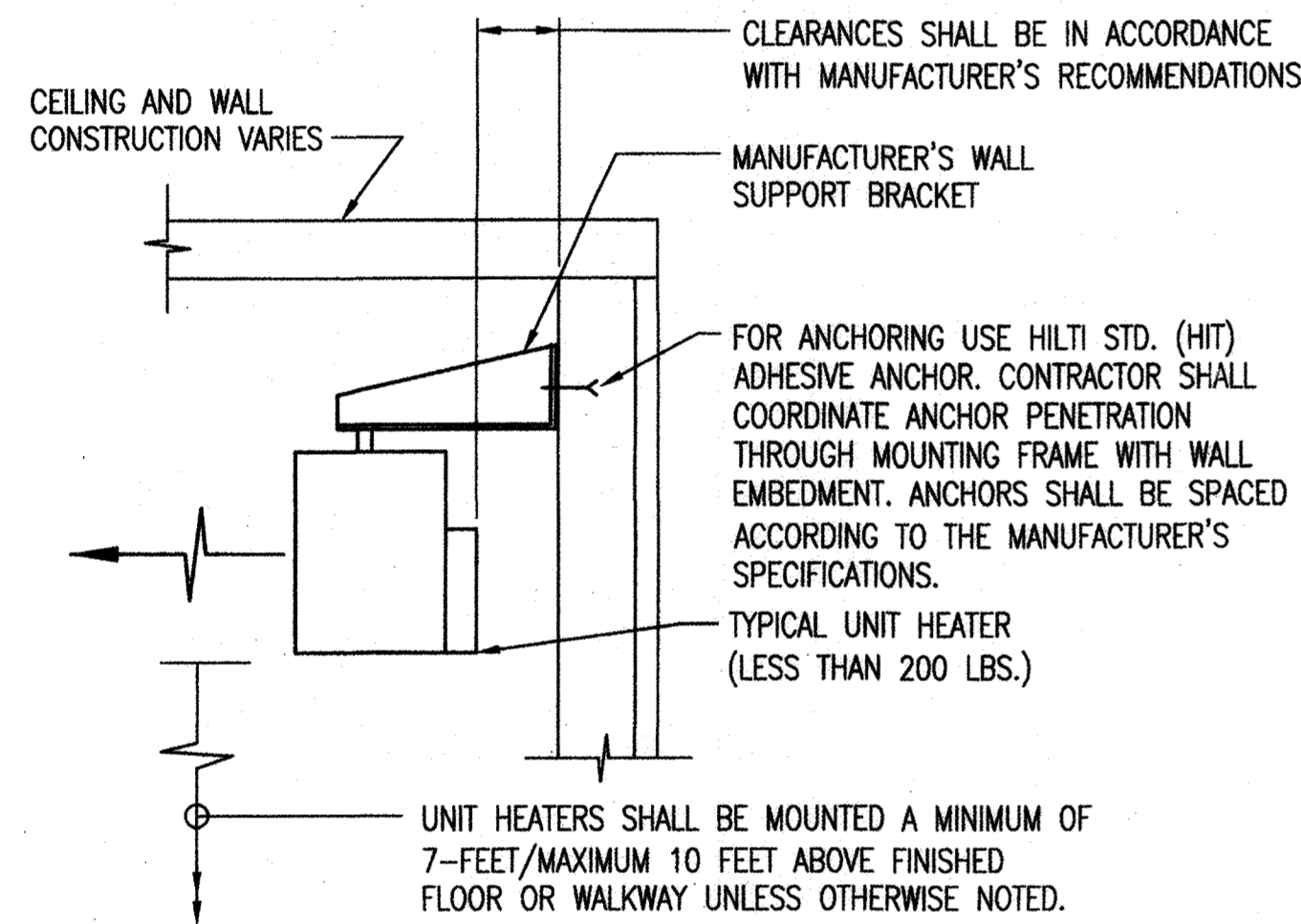


3 PRESSURE GAUGE W/ DIAPHRAGM SEAL
M-4 SCALE: NONE
REF: M-2, M-3



4 TYPICAL PIPE SUPPORT
M-4 SCALE: NONE
REF: M-2, M-3

NOTES:
1. WHERE PIPE SUPPORT IS INDICATED TO BE LOCATED UNDER VALVE, PROVIDE ADJUSTABLE PLATE SUPPORT IN LIEU OF SADDLE SUPPORT.
2. ALL PIPE SUPPORT COMPONENTS TO BE HOT DIP GALVANIZED.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE PIPE SUPPORT. ADDITIONAL LOCATIONS MAY BE REQUIRED BEYOND THOSE INDICATED ON PLANS.



5 TYPICAL WALL MOUNT UNIT HEATER DETAIL
M-4 SCALE: NONE
REF: M-2, M-3

AS-BUILT

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25378, EXPIRATION DATE: 7-14-2020"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Michael D. Luce 8/9/19
DIRECTOR OF PUBLIC WORKS DATE

Brendan Lutz 8/19/19
CHIEF, BUREAU OF ENGINEERING DATE

[Signature] 8/19/19
CHIEF, BUREAU OF UTILITIES DATE

[Signature] P&D
CHIEF, UTILITY DESIGN DIVISION DATE

WRA
Whitman, Requardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND
PROFESSIONAL ENGINEER
NO. 29224
Michael D. Luce

DES:	MH				
DRN:	MH				
CHK:	DJN				
JULY 2019	BY	NO.	REVISION	DATE	

MECHANICAL DETAILS

600 SCALE MAP NO. 18

BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

M-4
SCALE AS SHOWN
SHEET 22 OF 43

GENERAL NOTES:

- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK WITH ELECTRIC POWER AND TELEPHONE UTILITY COMPANY.
- ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST EDITION OF NATIONAL ELECTRICAL CODE AND APPLICABLE LOCAL CODES, RULES AND REGULATIONS.
- ALL CONDUITS AND EQUIPMENT SHALL BE INSTALLED, WIRED AND GROUNDED IN ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF NATIONAL ELECTRICAL CODE (NEC) AND LOCAL CODES.
- CONDUIT RUNS ARE SHOWN DIAGRAMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH OTHER EQUIPMENT. EXPOSED CONDUITS SHALL BE RUN ON THE WALLS HORIZONTALLY AND VERTICALLY.
- CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTION TO EQUIPMENT. CONDUIT ENDS SHALL BE SUITABLY SEALED TO PREVENT TRANSGRESS OF MOISTURE THROUGH CONDUITS FROM ONE EQUIPMENT TO OTHER.
- CONDUITS AND WIRES SHALL BE SIZED IN ACCORDANCE WITH NEC UON. MINIMUM CONDUIT SIZE SHALL BE 3/4" UON, AND MINIMUM WIRE SIZE SHALL BE #12 AWG UON FOR POWER CIRCUITS.
- CONDUITS INSTALLED EXPOSED ON EXTERIOR OF BUILDING AND IN THE VALVE VAULT SHALL BE RGS, CONDUITS INSTALLED UNDERGROUND SHALL BE PVC SCH 40, AND CONDUITS INSTALLED INTERIOR OF THE BUILDING SHALL BE EMT.
- WALL AND FLOOR PENETRATIONS FOR ELECTRICAL CONDUITS SHALL BE CORE DRILLED. PROVIDE SEGMENTED RUBBER COMPRESSION SEALS ON BOTH SIDES.
- PROVIDE ALL REQUIRED PULL AND JUNCTION BOXES FOR INSTALLATION OF THE WIRING IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS THOUGH THE BOXES MAY NOT BE INDICATED ON THE DRAWINGS. ALL JUNCTION AND PULL BOXES SHALL BE LABELED WITH THEIR VOLTAGE AND USAGE.
- FINAL LOCATION FOR ALL ELECTRICAL EQUIPMENT, INCLUDING RECEPTACLES, JUNCTION BOXES FOR SPECIFIED EQUIPMENT, LIGHTING FIXTURES, SWITCHES, ETC. SHALL BE APPROVED BY THE OWNER PRIOR TO INSTALLATION.
- THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUITS ARE BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS APPROVED BY THE COUNTY MAY BE MADE BY THE CONTRACTOR AT HIS EXPENSE TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED.
- ALL ALARM INDICATION AND CONTROL WIRING IN JUNCTION BOXES SHALL BE WIRED TO NUMBERED TERMINAL STRIPS AND IDENTIFIED AS TO START AND END OF RUN.
- ALL ELECTRICAL EQUIPMENT INSTALLED AGAINST CONCRETE OR MASONRY WALLS SHALL BE INSTALLED WITH 1/4" SPACERS BETWEEN THE EQUIPMENT AND THE MOUNTING SURFACE. SPACERS SHALL BE STAINLESS STEEL, PVC, OR NYLON.
- ELECTRICAL ENCLOSURES LOCATED OUTDOORS SHALL BE WEATHERPROOF NEMA 4X SS, UON.
- ALL CONDUIT TERMINATIONS IN PULL BOXES OR EQUIPMENT SHALL BE MADE USING "MYERS HUBS" FOR EQUIPMENT RATED OTHER THAN NEMA 1 OR 11.
- REFER TO "I" DRAWINGS FOR ADDITIONAL REQUIREMENTS REGARDING CONTROL CONDUITS AND CONDUCTORS.

LEGEND:

- JUNCTION BOX
- MOTOR; HP AS NOTED
- GROUND ROD 3/4" X 10' LONG
- FUSE
- ELECTRIC GROUND GRID DIRECT BURIED
- CONDUIT UNDER FLOOR SLAB OR EMBEDDED, STUB-UP ENDS AT 4" AFF
- CIRCUIT BREAKER
- WALL SWITCH 20A, 120V IN NEMA-12 ENCLOSURE, UON
- MANUAL MOTOR STARTER IN NEMA-12 ENCLOSURE UON, COMPATIBLE WITH MOTOR
- DISCONNECT SWITCH NON-FUSED, SIZE AS NOTED
- COMBINATION STARTER, DISCONNECT TYPE, SIZE AS NOTED
- DISCONNECT SWITCH FUSED, SIZE AS NOTED
- GROUND ROD WELL
- DUPLEX RECEPTACLE 20A, 125V, NEMA 5-20R, MH 1'-6" AFF, U.O.N.
- GROUND FAULT DUPLEX RECEPTACLE 20A, 125V, NEMA 5-20R, 6" ABOVE SINK, U.O.N.
- GROUND FAULT DUPLEX RECEPTACLE WITH IN-USE WEATHER PROOF COVER, 20A, 125V, NEMA 5-20R, 18" AFF, U.O.N.
- EXPLOSION PROOF DUPLEX RECEPTACLE, 20A, 125V, NEMA 5-20R, 18" AFF, U.O.N.
- ELECTRICAL HOMERUN TO PANELBOARD/SWITCHBOARD; HATCH MARKS DENOTE THE QUANTITY OF #12 AWG CONDUCTORS U.O.N.; NO HATCH MARKS INDICATE 2#12 AWG AND #12G CONDUCTORS U.O.N.
- CONDUCTOR TO ANOTHER ELECTRICAL EQUIPMENT; HATCH MARKS DENOTE THE QUANTITY OF #12 AWG CONDUCTORS U.O.N.; NO HATCH MARKS INDICATE 2#12 AWG AND #12G CONDUCTORS U.O.N.
- EXISTING ELECTRICAL MANHOLE
- EMERGENCY BATTERY PACK, 2 HEADS
- SURFACE MOUNTED LUMINAIRE
- WALL MOUNTED LUMINAIRE
- WALL MOUNTED EXTERIOR LUMINAIRE

ELECTRICAL ABBREVIATIONS:

A, AMP	AMPERE	N	NEUTRAL, NORMAL
AC	ALTERNATING CURRENT	NEC	NATIONAL ELECTRICAL CODE
AF	AMPERE FRAME	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
AFF	ABOVE FINISHED FLOOR	NFSS	NON FUSED SAFETY SWITCH
AIC	AMPS INTERRUPTING CAPACITY	NO/NC	NORMALLY OPEN/NORMALLY CLOSED
AT	AMPERE TRIP	OC	OVER CURRENT
ATS	AUTOMATIC TRANSFER SWITCH	OCF	ODOR CONTROL FAN
AWG	AMERICAN WIRE GAUGE	P	POLE
C	CONDUIT	PB	PULL BOX
CB	CIRCUIT BREAKER	PCP	PUMP CONTROL PANEL
CKT	CIRCUIT	PH	PHASE
CO.	COMPANY	PNL	PANEL
CONN	CONNECTION OR CONNECT	PWR	POWER
CP	CONTROL PANEL	PVC	POLYVINYL CHLORIDE
DET.	DETAIL	REC/RECP	RECEPTACLE
DIV	DIVISION	RMC	RIGID METAL CONDUIT
DWG	DRAWING	RTU	REMOTE TERMINAL UNIT
E	EMERGENCY	SCH	SCHEDULE
EF	EXHAUST FAN	SF	SUPPLY FAN
EL	ELEVATION	SPD	SURGE PROTECTION DEVICE
ELEC/ELECT	ELECTRICAL	SS	STAINLESS STEEL
EMT	ELECTRICAL METALLIC TUBING	TP	TRIP
ENT	ELECTRICAL NON-METALLIC TUBING	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
EUH	ELECTRIC UNIT HEATER	TYP.	TYPICAL
EX./EXIST.	EXISTING	UG, U/G	UNDERGROUND
FR	FRAME	UH	UNIT HEATER
GENCP	GENERATOR CONTROL PANEL	U.L.	UNDERWRITERS LABORATORY
GFEP	GROUND FAULT EQUIPMENT PROTECTION	U.O.N.	UNLESS OTHERWISE NOTED
GFI/GFCI	GROUND FAULT CURRENT INTERRUPTER	V	VOLTS
G, GND	GROUND	VA	VOLT AMPERE
GRS/RGS	RIGID GALVANIZED STEEL CONDUIT	VCP	VENTILATION CONTROL PANEL
HOA	HAND-OFF-AUTO	W	WATTS, WIRE
HP	HORSEPOWER	WH	WATER HEATER
HWH	HOT WATER HEATER	WP	WEATHER PROOF
HZ	HERTZ	XFMR	TRANSFORMER
I	INSTRUMENTATION		
JB	JUNCTION BOX		
KA	KILO AMPERES		
KAIC	KILOAMPERES INTERRUPTING CAPACITY		
KCMIL	THOUSAND CIRCULAR MILS		
KW	KILOWATT		
KV	KILOVOLT		
KVA	KILOVOLT AMPERE		
M	MECHANICAL		
MAX	MAXIMUM		
MCCB	MOLDED CASE CIRCUIT BREAKER		
MCP	MOTOR CIRCUIT PROTECTOR		
MECH	MECHANICAL		
MH	MANHOLE, MOUNTING HEIGHT		
MIN	MINIMUM		
MOD	MOTOR OPERATED DAMPER		
MOT	MOTOR		
MSC	MANUFACTURER SUPPLIED CABLE		
MTS	MANUAL TRANSFER SWITCH		

15. REGULATORY BUREAU COUNTY OF DANIELS AREA PSD (A) MANUFACTURING PRODUCTION E-1.dwg
 Aug. 04, 2019 - 5:09pm

DHILLON
ENGINEERING, INC.
10902 REISTERSTOWN ROAD, # 204
91105 HILLS, MD 21117
(P) 410.356.1095 (F) 410.363.4675

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 8050, EXPIRATION DATE: 08/19/2019"

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND.</p> <p><i>[Signature]</i> 8/19/19 DIRECTOR OF PUBLIC WORKS</p> <p><i>[Signature]</i> 8/19/19 CHIEF, UTILITY DESIGN DIVISION</p>	<p>Whitman, Reardon & Associates, LLP 801 South Caroline Street, Baltimore, Maryland 21231</p>
--	---

DES: RS							
DRN: OM							
CHK: RDK							
JULY 2019	BY	NO.	REVISION	DATE	ELECTRICAL GENERAL NOTES, LEGENDS AND ABBREVIATIONS		
					600 SCALE MAP NO. 18	BLOCK NO. 7&13	

DANIELS AREA WASTEWATER PUMPING STATION

CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096

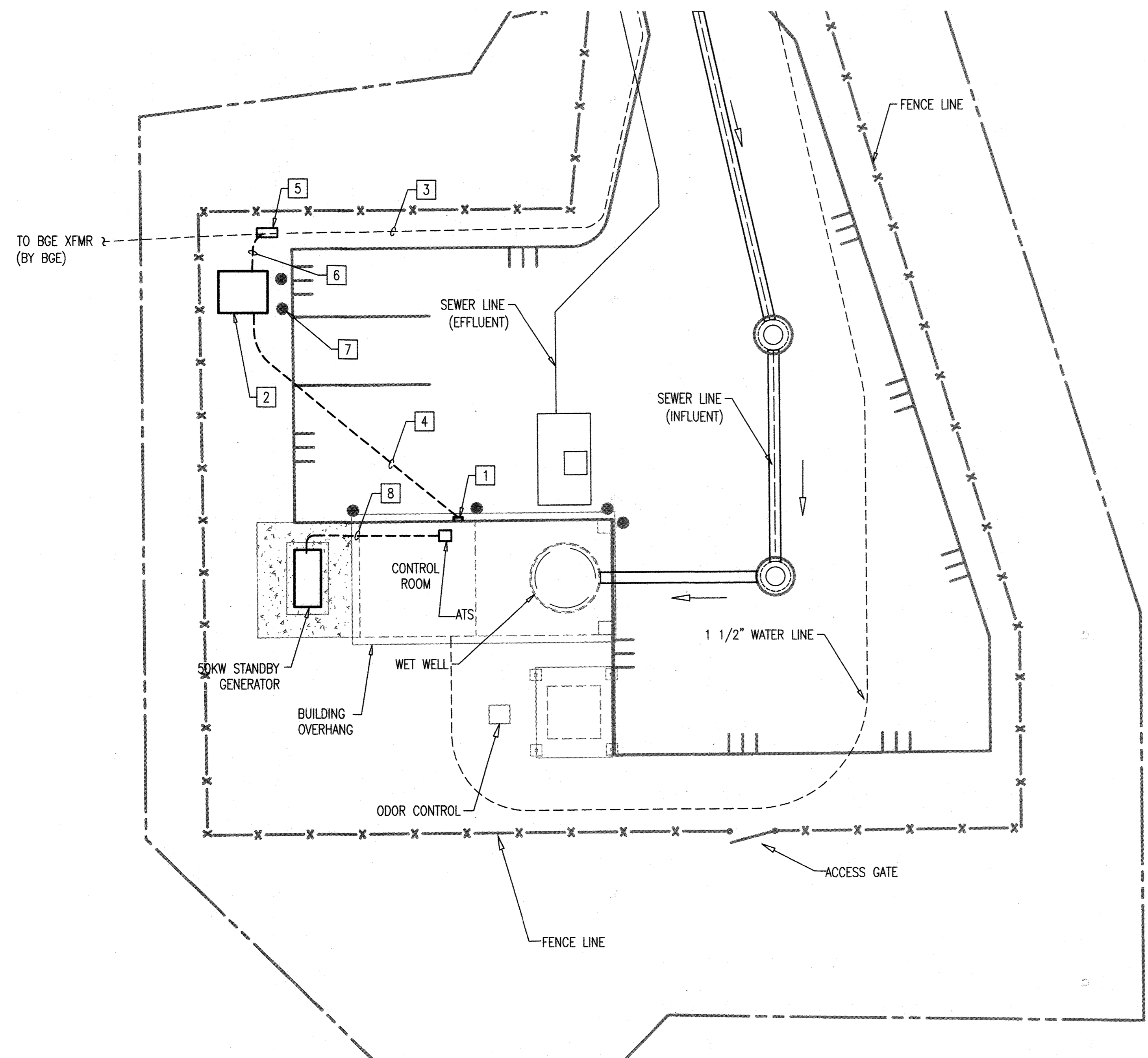
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

AS-BUILT

E-1

SCALE AS SHOWN

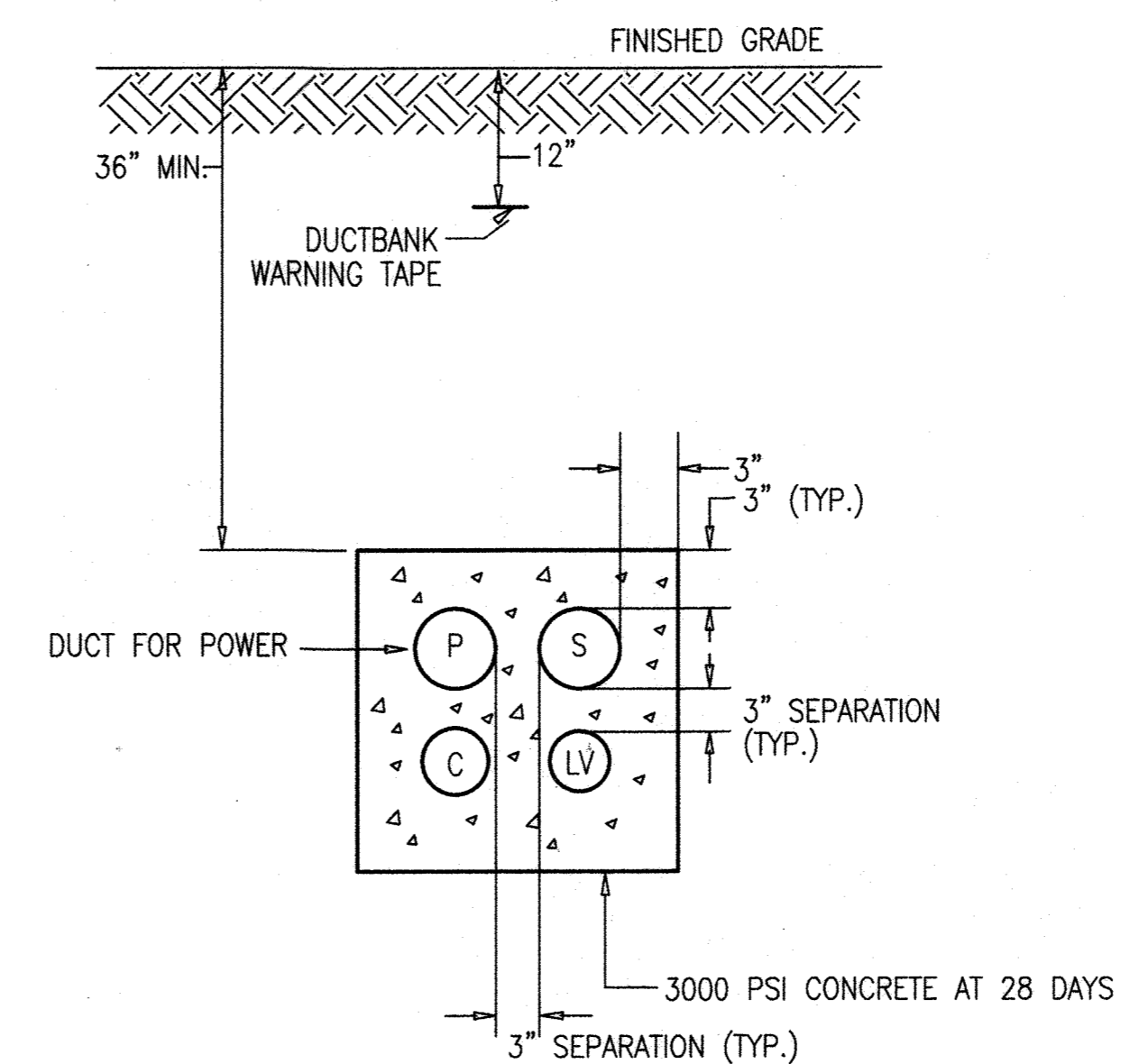
SHEET 23 OF 43



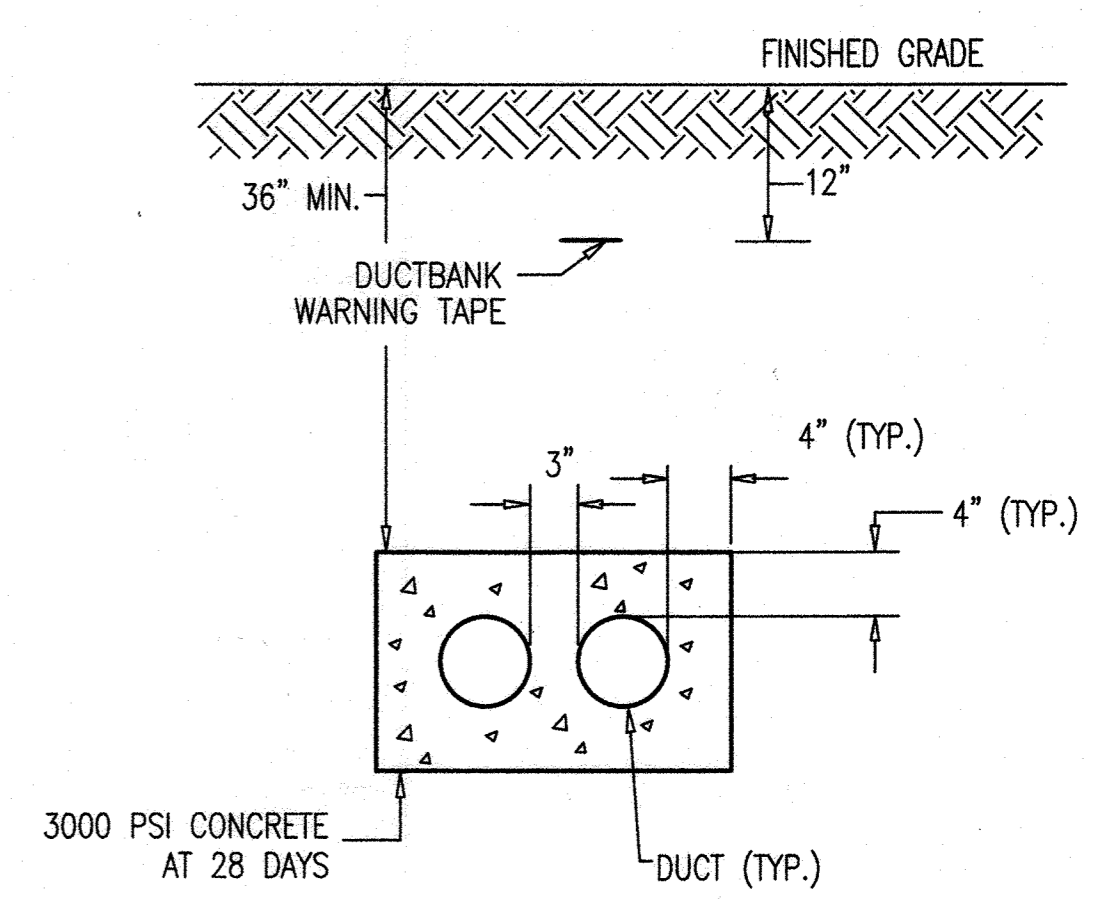
ELECTRICAL SITE PLAN
SCALE: 1" = 10'

[X] SPECIFIC NOTES:

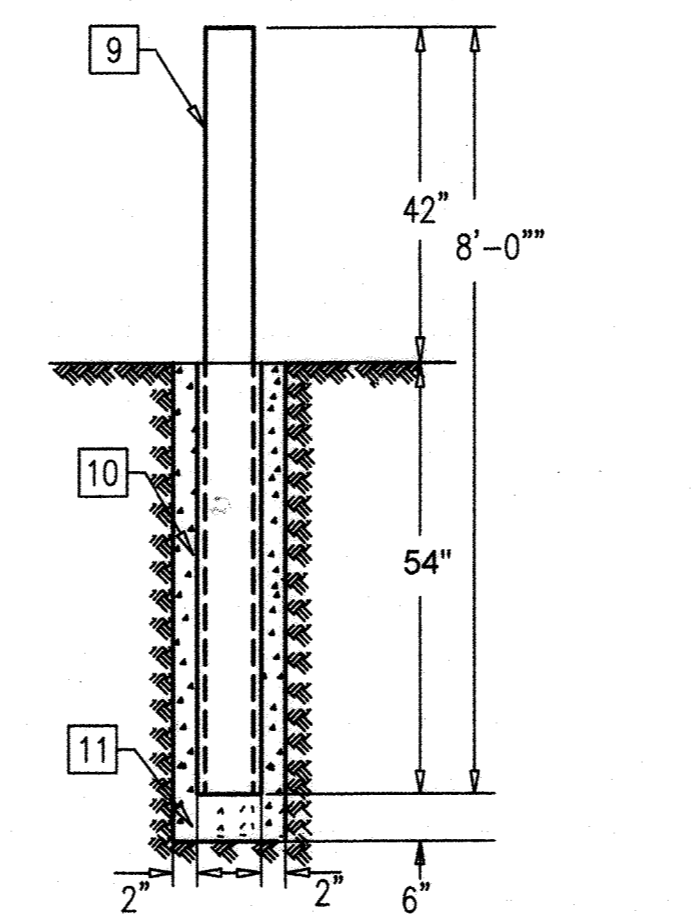
1. PROVIDE WALL MOUNTED 200A METER SOCKET PER BGE REQUIREMENTS, SUITABLE FOR USE ON A 120/208V, 3PH, 4W SERVICE. METER TO BE PROVIDED AND INSTALLED BY BGE.
2. APPROXIMATE LOCATION OF NEW BGE TRANSFORMER. CONTRACTOR TO COORDINATE FINAL LOCATION OF TRANSFORMER WITH BGE (BALTIMORE GAS & ELECTRIC) AND SHALL PROVIDE ALL EQUIPMENT AND BGE REQUIRED APPURTENANCES INCLUDING TRANSFORMER PAD, GROUNDING, BOLLARDS, ETC. TRANSFORMER TO BE PROVIDED AND INSTALLED BY BGE.
3. EXISTING ELECTRICAL PRIMARY FEEDER BY BGE.
4. PROVIDE 2 WAY 4" PVC SCH 40 CONCRETE ENCASED DUCTBANK FOR BGE. REFER THIS DRAWING FOR DUCTBANK DETAILS. CONDUCTORS TO BE SUPPLIED AND INSTALLED BY BGE.
5. SPLICE BOX PROVIDED AND INSTALLED BY BGE. COORDINATE WITH BGE FOR LOCATION OF SPLICE BOX AND PROVIDING DUCTBANK FOR PRIMARY AND SECONDARY FEEDERS
6. PROVIDE 2 WAY 6" PVC SCH 40 DIRECT BURIED CONDUIT FROM SPLICE BOX TO BGE TRANSFORMER AS PER THEIR REQUIREMENTS.
7. REMOVABLE BOLLARD FOR UTILITY TRANSFORMER, TYP. OF 2. REFER THIS DRAWING FOR DETAILS.
8. 4 WAY CONCRETE ENCASED DUCTBANK FOR GENERATOR POWER, CONTROL WIRING AND BRANCH FEEDER WIRING FOR GENERATOR JACKET HEATER AND BATTERY CHARGER. REFER THIS SHEET FOR DUCTBANK DETAILS.
9. USE 5" RIGID GALVANIZED STEEL CONDUIT CUT TO 8" AND FILL WITH CONCRETE. ENCASE IN 2" OF CONCRETE AS SHOWN.
10. FOR REMOVABLE BOLLARD, USE 6" PVC SCHEDULE 40 CONDUIT CUT TO 54" AND ENCASED IN CONCRETE.
11. USE 6" OF COMPACT STONE OR GRAVEL FOR SUMP.



DETAIL - TYPICAL 2 HIGH X 2 WIDE CONCRETE ENCASED DUCTBANK FOR GENERATOR
NOT TO SCALE

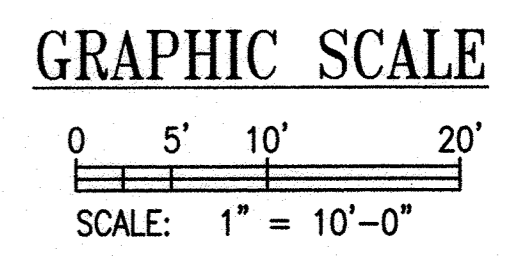


DETAIL - TYPICAL 1 HIGH X 2 WIDE CONCRETE ENCASED DUCTBANK FOR BGE PRIMARY AND SECONDARY FEEDERS
NOT TO SCALE



DETAIL - REMOVABLE BOLLARD
NOT TO SCALE

- (P) 3" DUCT FOR POWER TO ATS
- (S) 3" DUCT SPARE
- (C) 1" DUCT FOR CONTROL CIRCUIT
- (LV) 1" DUCT FOR JACKET HEATER AND BATTERY CHARGER



AS-BUILT

E-2

24. PROJECTS: HOWARD COUNTY (4) Daniels Area PS (4) DANIELS PRODUCTION (2-2) 2019

DHILLON
ENGINEERING, INC.
10902 REISTERSTOWN ROAD, # 204
OWINGS MILLS, MD 21117
(P)410.356.1095 (F)410.363.4675

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 8050, EXPIRATION DATE: 08/19/2019"

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND.</p> <p><i>Allyson DeLeon</i> 8/9/19 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>CP</i> 8-9-19 CHIEF, BUREAU OF UTILITIES DATE</p>	<p>Whitman, Requardt & Associates, LLP 801 South Caroline Street, Baltimore, Maryland 21231</p> <p><i>Chris Burdette</i> 8/9/19 CHIEF, BUREAU OF ENGINEERING DATE</p> <p><i>PEO</i> 8/9/19 CHIEF, UTILITY DESIGN DIVISION DATE</p>
--	---

DES: RS				
DRN: OM				
CHK: RDK				
JULY 2019	BY	NO.	REVISION	DATE

**PUMPING STATION
ELECTRICAL SITE PLAN**

600 SCALE MAP NO. 18 BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

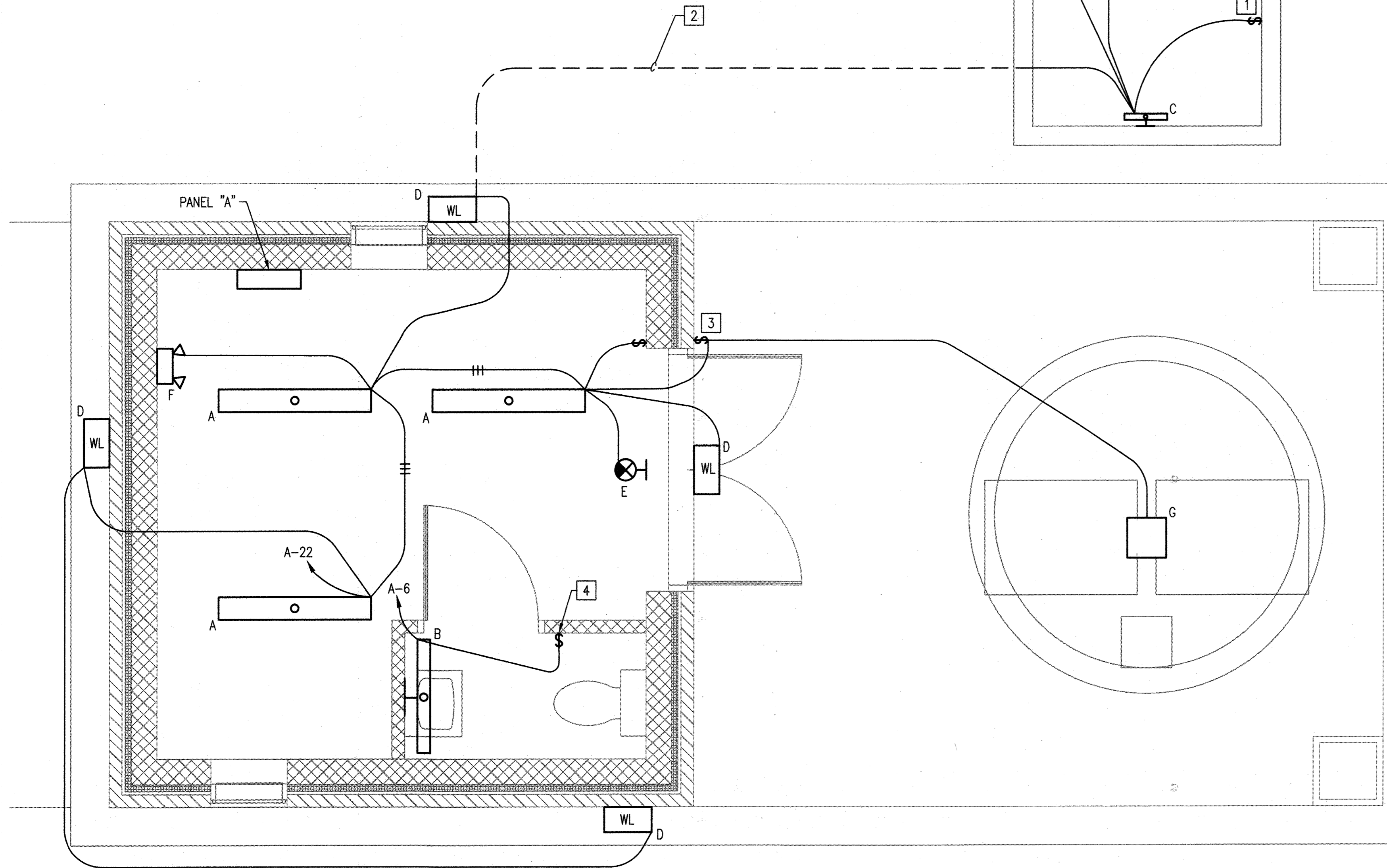
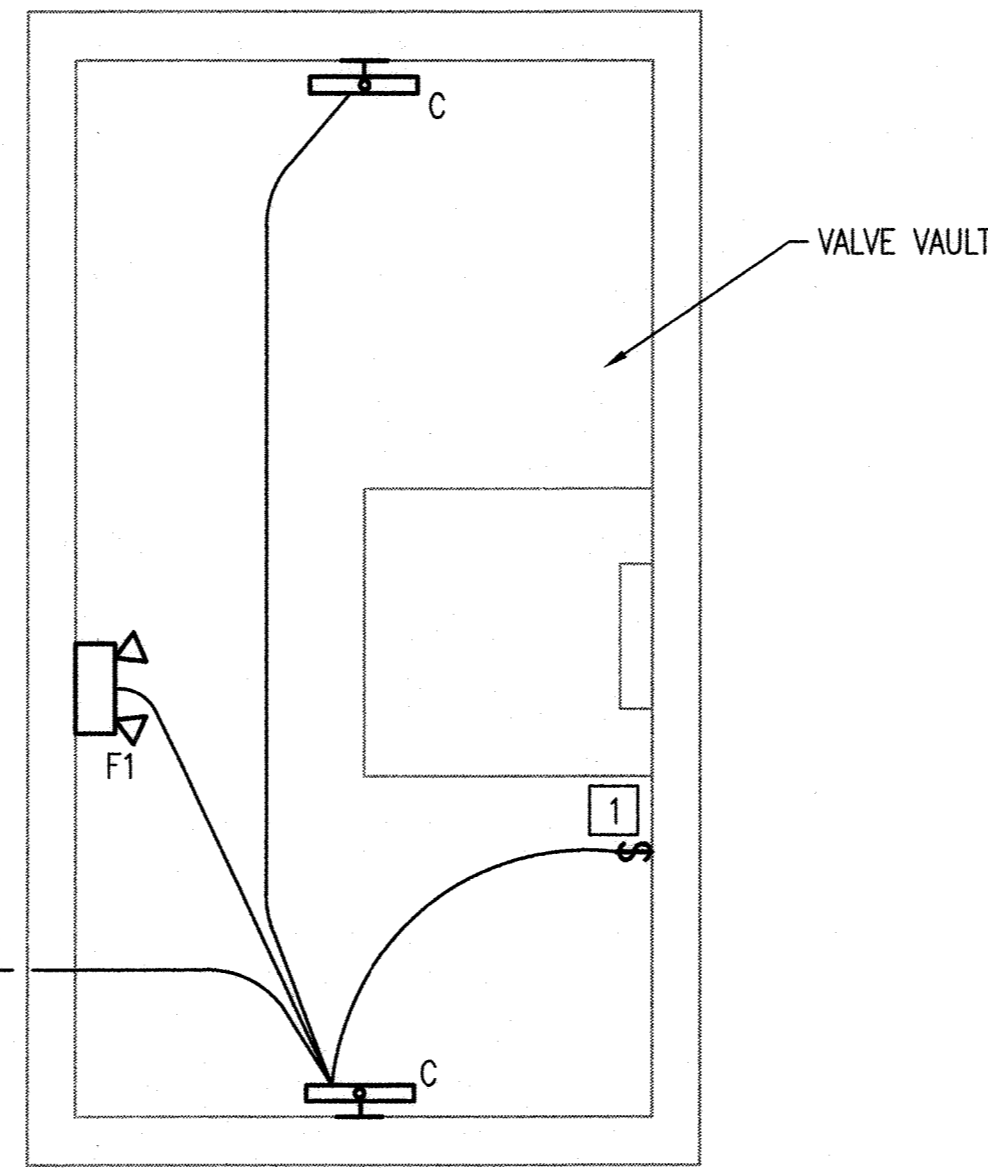
SCALE AS SHOWN
SHEET 24 OF 43

GENERAL SHEET NOTES:

1. ALL RACEWAY AND WIRING INSIDE WET WELL AND VALVE VAULT SHALL BE SUITABLE FOR NEC CLASS 1 DIVISION 2 APPLICATIONS. PROVIDE EXPLOSION PROOF SEALS WHEREVER REQUIRED AS PER NEC.

[X] SPECIFIC NOTES:

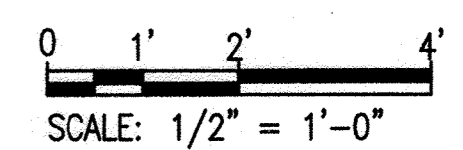
1. PROVIDE SWITCH IN NEMA-7 EXPLOSION PROOF ENCLOSURE AT VAULT ENTRANCE NEAR CEILING.
2. 1" PVC SCH 40 DIRECT BURIED MINIMUM 30" UNDERGROUND.
3. SWITCH IN NEMA-4X WEATHER PROOF COVERED ENCLOSURE 4' AFF.
4. CONNECT TO EXHAUST FAN CIRCUIT IN BATHROOM.



1 PUMPING STATION LIGHTING PLAN
 E-3 SCALE: 1/2" = 1'-0"

TYPE	MANUFACTURER	CATALOG NO.	LAMP				MOUNTING	REMARKS
			TYPE	NO.	WATT	VOLT		
A	COLUMBIA OR EQUAL	LXEM4-40ML-RFA-EU	LED	-	42	120	SURFACE	LED ENCLOSED AND GASKETED
B	LITHONIA OR EQUAL	FMVCSLS 36IN 120 30K 90CRI BN	LED	-	26.6	120	WALL MOUNT	VANITY LED. TO BE MOUNTED ABOVE MIRROR
C	HOLOPHANE OR EQUAL	HW4G-10C-1000-40K-T3 M-120-GYSDP	LED	-	39	120	WALL MOUNT	WALL PACK CLASS 1, DIVISION 2 LISTED
D	HUBBELL OR EQUAL	PVL3-180L-1-3K-BZ-PC	LED	-	70.5	120	WALL MOUNT	WALL PACK WET LOCATION LISTED WITH PHOTOCCELL
E	LITHONIA OR EQUAL	LE SW (1 OR 2) G ELN	LED	2	3	120	UNIVERSAL	DIE CAST ALUMINUM LED TYPE EXIT LIGHT WITH NI-CAD BATTERY BACK-UP
F	LITHONIA OR EQUAL	ELM2 LED	LED	2	1.5	120	UNIVERSAL	WALL MOUNT EMERGENCY LIGHT WITH NI-CAD BATTERY BACK-UP
F1	HUBBELL OR EQUAL	HLEBS-23DH-P-N-EG	LED	-	23	120	WALL MOUNT	EMERGENCY LIGHT SUITABLE FOR CLASS 1, DIVION 2 AREA
G	LITHONIA OR EQUAL	VRC-LED-1-50K-MVOLT	LED	-	41	120	SURFACE	ENCLOSED AND GASKETED, MOUNTED UNDER THE CANOPY

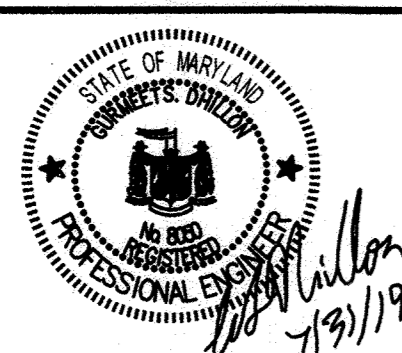
GRAPHIC SCALE



AS-BUILT

E-3

DHILLON
 ENGINEERING, INC.
 10902 REISTERSTOWN ROAD, # 204
 OWINGS MILLS, MD 21117
 (P)410.356.1095 (F)410.363.4675



"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 8050, EXPIRATION DATE: 08/19/2019"

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND.

[Signature] 8/9/19
 DIRECTOR OF PUBLIC WORKS
 CHIEF, BUREAU OF UTILITIES

[Signature] 8/19/19
 CHIEF, UTILITY DESIGN DIVISION
 PSD

WRA
 Whitman, Requardt & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

DES: RDK			
DRN: OM			
CHK: AKM			
JULY 2019	BY	NO.	REVISION
			DATE

PUMPING STATION
 LIGHTING PLAN

DANIELS AREA WASTEWATER PUMPING STATION

CAPITAL PROJECT NO. S-6275
 CONTRACT NO. 10-5096

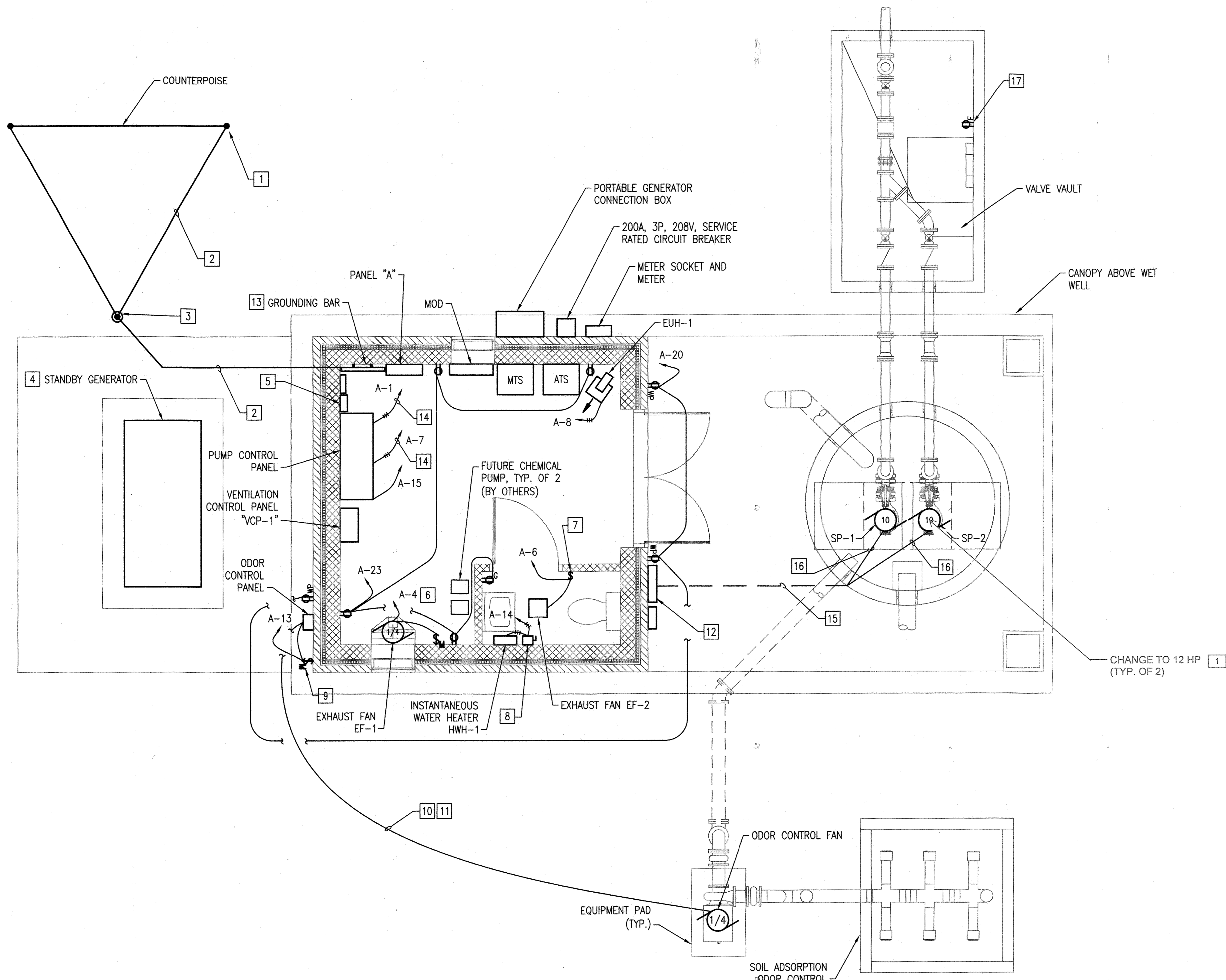
2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SCALE

AS SHOWN

SHEET
 25 OF 43

24. PRODUCE HOWARD COUNTY, MD. Details Area PSD 04 DRAWINGS PRODUCTION E-3.dwg
 Aug 04, 2019 10:50am



GENERAL SHEET NOTES:

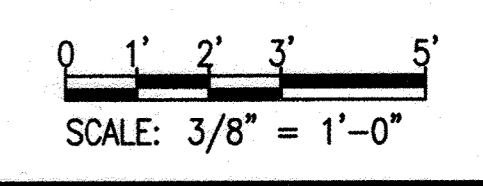
1. ALL RACEWAY AND WIRING INSIDE THE WET WELL AND VALVE VAULT SHALL BE SUITABLE FOR NEC CLASS 1 DIVISION 2 APPLICATIONS.
2. ALL ENCLOSURES IN THE CONTROL ROOM SHALL BE NEMA-12, UON.
3. SEE DRAWING E-5 FOR POWER ONE-LINE DIAGRAM AND EQUIPMENT RATINGS.
4. SEE INSTRUMENTATION DRAWINGS FOR CONTROL DIAGRAMS. MOTOR MANUAL STARTERS ARE PROVIDED IN ASSOCIATED CONTROL PANELS WHEREVER NOT SHOWN.

[X] SPECIFIC NOTES:

1. PROVIDE 3-10' LONG COPPER CLAD STEEL GROUND RODS 10'-0" ON CENTER AND INTERCONNECTED WITH #2 GROUNDING CONDUCTOR. SEE GROUNDING DETAIL ON DRAWING E-5.
2. MINIMUM 30" COVER.
3. GROUND ROD WELL. SEE DETAIL ON DRAWING E-6.
4. 50KW, 120/208V, 3PH, 4W LEGALLY REQUIRED STANDBY GENERATOR WITH U.L. LISTED 48 HOUR RUNTIME SUB BASE DUAL WALLED DIESEL FUEL TANK, PAD MOUNT.
5. GENERATOR ANNUNCIATOR PANEL AND GENERATOR E-STOP PUSHBUTTON STACKED.
6. ROUTE CIRCUIT THRU VCP-1. PROVIDE CONTROL WIRING TO MOTOR OPERATED DAMPER PER MANUFACTURER REQUIREMENTS.
7. MOTOR RATED TOGGLE SWITCH. CONNECT TO LIGHT CIRCUIT IN BATHROOM.
8. ~~30A, 208V, 2P~~ ~~30A, 208V, 3P~~ DISCONNECT IN NEMA-3R ENCLOSURE FOR INSTANTANEOUS WATER HEATER HWH-1.
9. MANUAL MOTOR STARTER IN NEMA-4X SS ENCLOSURE FOR ODOR CONTROL FAN, 4' AFF.
10. RUN CIRCUIT THRU ODOR CONTROL PANEL.
11. 1" PVC SCH-40 30" U/G DIRECT BURIED.
12. POWER AND CONTROL NEMA-4X JUNCTION BOX AND 2-60A, 208V, 3P DISCONNECTS. SEE DRAWING E-6 FOR DETAILS. DISCONNECT SHALL BE LOCKABLE IN OPEN AND CLOSED POSITION.
13. 2' GROUNDING BAR. SEE DRAWING E-6 FOR DETAILS.
14. 3#8 & #8G IN 1" PVC SCH 40 CONDUIT 30" UNDERGROUND. RUN CIRCUIT THROUGH PUMP CONTROL PANEL IN ELECTRICAL ROOM. REFER CONTROL DRAWINGS FOR DETAILS.
15. 3-1" PVC SCHEDULE 40 CONDUIT, 30" UNDERGROUND DIRECT BURIED.
16. MANUFACTURER SUPPLIED CABLE.
17. CONNECT TO UNSWITCHED LEG OF LIGHTING CIRCUIT FEEDING THIS AREA.
18. REMOVE EXISTING ACROSS THE LINE STARTERS FOR PUMPS SP-1 AND SP-2 FROM EXISTING PUMP CONTROL PANEL AND PROVIDE 208V, 3 PH, OPEN TYPE REDUCED VOLTAGE STARTER, TYP. FOR EACH PUMP IN THE SAME PUMP CONTROL PANEL. THE RVSS SHALL BE EATON MODEL SB11+N6N3S OR APPROVED EQUAL, SUITABLE FOR USE ON A 12 HP, 208V, 3HP PUMP. SEE INSTRUMENTATION DRAWINGS FOR CONTROL REQUIREMENTS.

1 PUMPING STATION POWER PLAN
E-4 SCALE: 3/8" = 1'-0"

GRAPHIC SCALE



AS-BUILT

E-4

3A PRODUCTION HOWARD COUNTY, MD. Includes Area PSD. 04. 2019 - 5:11pm

DHILLON
ENGINEERING, INC.
10002 REISTERSTOWN ROAD, # 204
OWINGS MILLS, MD 21117
(P)410.356.1095 (F)410.363.4675

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 8050, EXPIRATION DATE: 08/19/2019"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Mark De Luca 8/19/19
DIRECTOR OF PUBLIC WORKS
DATE

Chris Wilson 8/19/19
CHIEF, UTILITY DESIGN DIVISION
DATE

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

DES: KK			
DRN: KK			
CHK: RDK			
JULY 2019	BY	NO.	REVISION
			DATE
			600 SCALE MAP NO. 18
			BLOCK NO. 7&13

**PUMPING STATION
POWER PLAN**

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SCALE
AS SHOWN
SHEET
26 OF 43

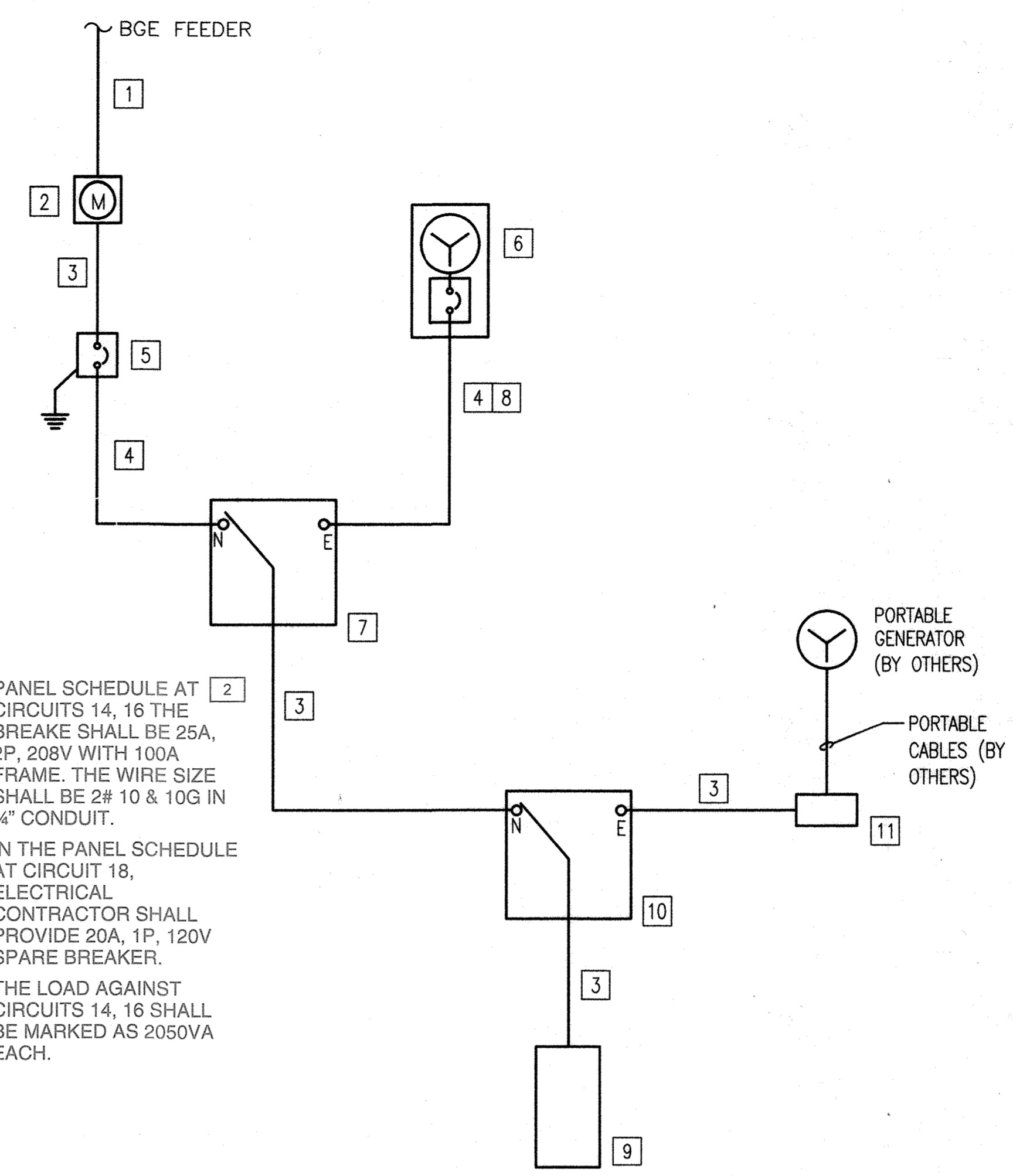
PANEL SCHEDULE																				
PANELBOARD: 'A'		BUS RATING 225A		PHASE 3		MAIN OC DEVICE 200A, 3P														
MIN. AIC 22KAIC		VOLTS 120/208V				WIRE 4														
ENCL. NEMA 12		MOUNTING SURFACE				BRANCH CKT. DEVICE BOLT ON														
LOCATION ELECTRICAL ROOM		NOTES SOLID NEUTRAL AND GROUND BUS																		
CKT NO	DESCRIPTION	LOAD (VA)	COND.	WIRE		C.B.			C.B.			WIRE		COND.	LOAD (VA)	DESCRIPTION	CKT NO			
				GND	POWER	FR	TP	P	A	B	C	P	TP	FR	POWER	GND				
1	SP-1 (10HP) (12HP)	4323	1"	#8	3#8	100	70	3				1	15	100	2#12	#12	3/4"	500	BATTERY CHARGER	2
3		4323	-	-	-	-	-	-				1	15	100	2#12	#12	3/4"	750	EF-1 AND MOD ELECTRICAL ROOM	4
5		4323	-	-	-	-	-	-				1	15	100	2#12	#12	3/4"	727	EF-2 & TOILET LIGHTING	6
7	SP-2 (10HP) (12HP)	4323	1"	#8	3#8	100	70	3				3	20	100	3#12	#12	3/4"	1667	EUH-1	8
9		4323	-	-	-	-	-	-				-	-	-	-	-	-	1667		10
11		4323	-	-	-	-	-	-				-	-	-	-	-	-	1667		12
13	ODOR CONTROL FAN	700	1"	#12	2#12	100	15	1				3	20	100	3#12	#12	3/4"	1667	WH-1	14
15	PUMP CONTROL PANEL	1000	3/4"	#12	2#12	100	20	1				-	-	-	-	-	-	1667		16
17	GENERATOR BLOCK HEATER	750	3/4"	#12	2#12	100	15	2				-	-	-	-	-	-	1667		18
19		750	-	-	-	-	-	-				1	20	100	2#12	#12	3/4"	360	RECEPTACLE OUTDOOR	20
21	SPARE	-	-	-	-	-	-	-				1	20	100	2#12	#12	3/4"	482	LIGHTING ELECTRICAL ROOM, OUTDOOR & VAULT	22
23	RECEPTACLE ELECTRICAL ROOM & TOILET	900	3/4"	#12	2#12	100	20	1				1	15	100	-	-	-	-	SPARE	24
25	SPARE	-	-	-	-	-	-	-				1	15	100	-	-	-	-	SPARE	26
27	SPARE	-	-	-	-	-	-	-				1	20	100	-	-	-	-	SPARE	28
29	SPARE	-	-	-	-	-	-	-				1	20	100	-	-	-	-	SPARE	30
31	SPACE	-	-	-	-	-	-	-				-	-	-	-	-	-	-	SPACE	32
33	SPACE	-	-	-	-	-	-	-				-	-	-	-	-	-	-	SPACE	34
35	SPACE	-	-	-	-	-	-	-				-	-	-	-	-	-	-	SPACE	36
37	SPACE	-	-	-	-	-	-	-				3	30	100	-	-	-	-	SPD	38
39	SPACE	-	-	-	-	-	-	-				-	-	-	-	-	-	-		40
41	SPACE	-	-	-	-	-	-	-				-	-	-	-	-	-	-		42

CONNECTED LOAD PHASE

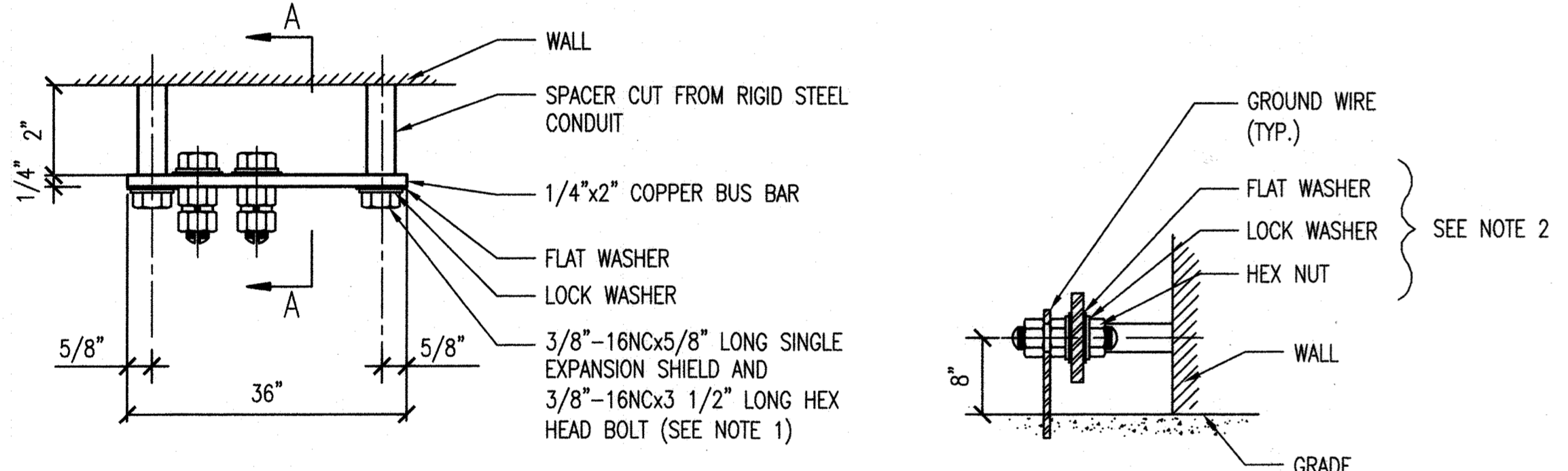
A= 13042 14290
 B= 12964 14212
 C= 12929 14177

TOTAL CONNECTED VA: 38935 42679
 TOTAL CONNECTED AMPS: 108.08 118.47

REMARKS: COPPER BUSING

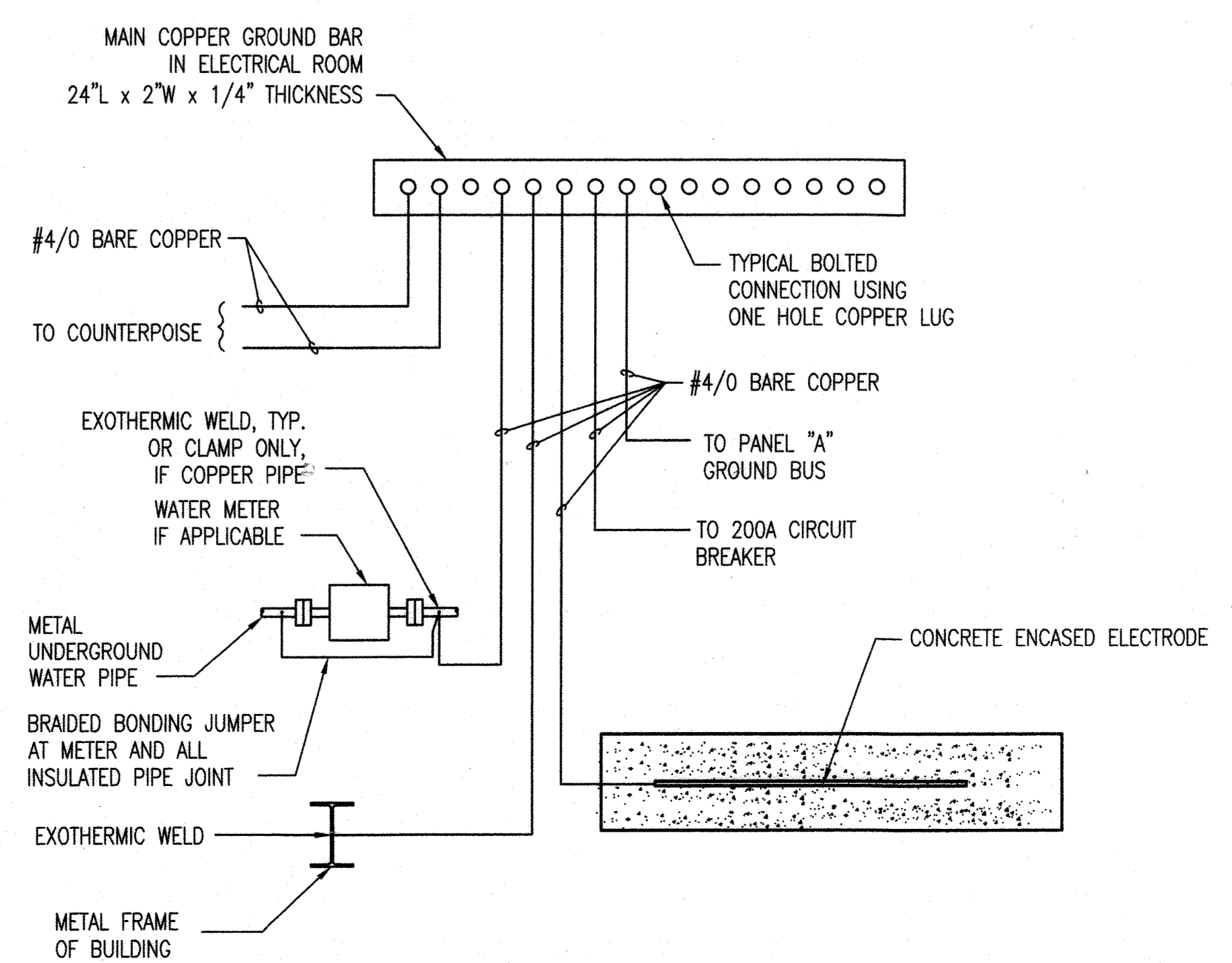


- SPECIFIC NOTES:**
- 2 WAY 4" DUCTBANK FOR BGE USE. CONTACT BGE FOR NEW SERVICE.
 - PROVIDE AND INSTALL METER SOCKET AS PER BGE REQUIREMENTS. METER TO BE PROVIDED AND INSTALLED BY BGE.
 - 4#4/0 AND #4G IN 3".
 - 4#4/0 AND #6G IN 3".
 - 200A, 3P, 208V CIRCUIT BREAKER IN NEMA-4X SS ENCLOSURE, SUITABLE FOR SERVICE.
 - STANDBY GENERATOR 50KW, 120/208V, 3PH, 4W IN LOCKABLE WEATHER PROOF SOUND ATTENUATED ENCLOSURE, PAD MOUNTED. GENERATOR SHALL HAVE 229 GALLON (48 HR RUNTIME) SUB-BASE DOUBLE WALL DIESEL TANK. ALSO PROVIDE 200A, 3P, 208V BREAKER INSIDE THE ENCLOSURE FOR GENERATOR PROTECTION.
 - AUTO TRANSFER SWITCH 200A, 120/208V, 3P, 4W IN NEMA-12 ENCLOSURE, 25 KAIC WITH BUILT IN SPD.
 - 4 WAY CONCRETE DUCTBANK. REFER DRAWING E-2 FOR DUCTBANK DETAILS.
 - ELECTRICAL PANEL "A", 225A, 120/208V, 3P, 4W IN NEMA-12 ENCLOSURE WITH BUILT-IN SPD. SEE PANEL SCHEDULE THIS DRAWING.
 - MANUAL TRANSFER SWITCH 200A, 120/208V, 3PH, 4W IN NEMA-12 ENCLOSURE, 25 KAIC WITH BUILT IN SPD.
 - PORTABLE GENERATOR CONNECTION BOX WITH 4-300A FEMALE RECEPTACLES SIMILAR TO HUBBELL "HBLFRO" OR EQUIVALENT. CONNECTION BOX SHALL HAVE A NEMA-4X ENCLOSURE. RECEPTACLES SHALL BE COMPATIBLE WITH THE HOWARD COUNTY PORTABLE GENERATOR MALE PLUG CONNECTORS.

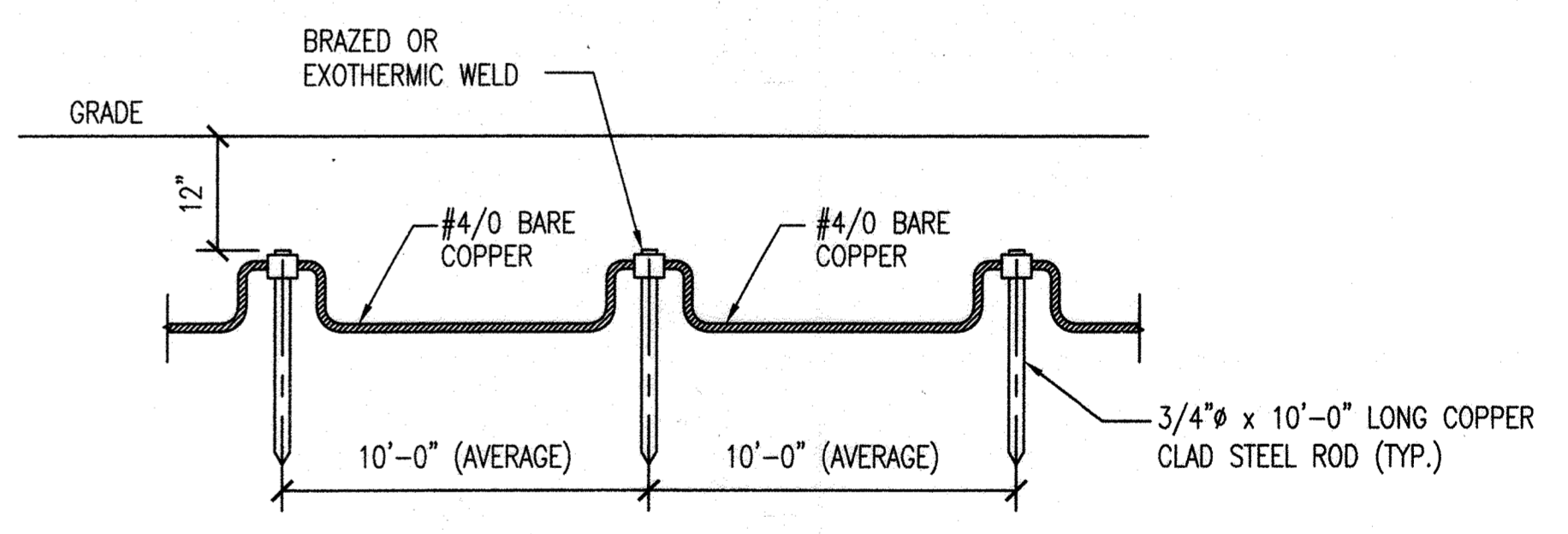


GROUNDING BAR DETAILS
NOT TO SCALE

- NOTES:**
- BOLTS AND WASHERS USED TO SECURE THE GROUND BUS TO THE WALL SHALL BE CADMIUM STEEL OR 304 STAINLESS STEEL.
 - BOLTS, NUTS, WASHERS TO CONNECT GROUND WIRE TO GROUND BUS SHALL BE STAINLESS STEEL.



TYPICAL BUILDING GROUND ELECTRODE SYSTEM DETAIL
NOT TO SCALE



GROUNDING ROD INSTALLATION DETAIL
NOT TO SCALE

DHILLON ENGINEERING, INC.
 10902 REISTERSTOWN ROAD, # 204
 OWINGS MILLS, MD 21117
 (P) 410.356.1095 (F) 410.363.4675

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 License No. 8050
 Expiration Date: 08/19/2019

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 8050, EXPIRATION DATE: 08/19/2019"

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Director of Public Works
 Date: 8/19/19

Chief, Bureau of Engineering
 Date: 8/19/19

Chief, Utility Design Division
 Date: 8/19/19

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

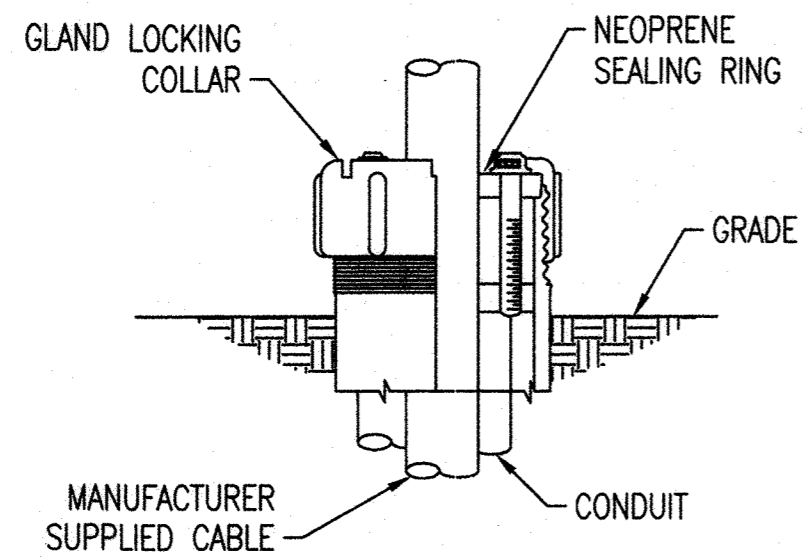
DES: RDK			
DRN: OM			
CHK: AKM	2	RFI #11: WATER HEATER ELECTRICAL RATING	10/28/20
	1	ADDENDUM #1	9/18/19
JULY 2019	BY NO.	REVISION	DATE

ELECTRICAL POWER ONE-LINE DIAGRAM, PANEL SCHEDULE AND GROUNDING DETAILS

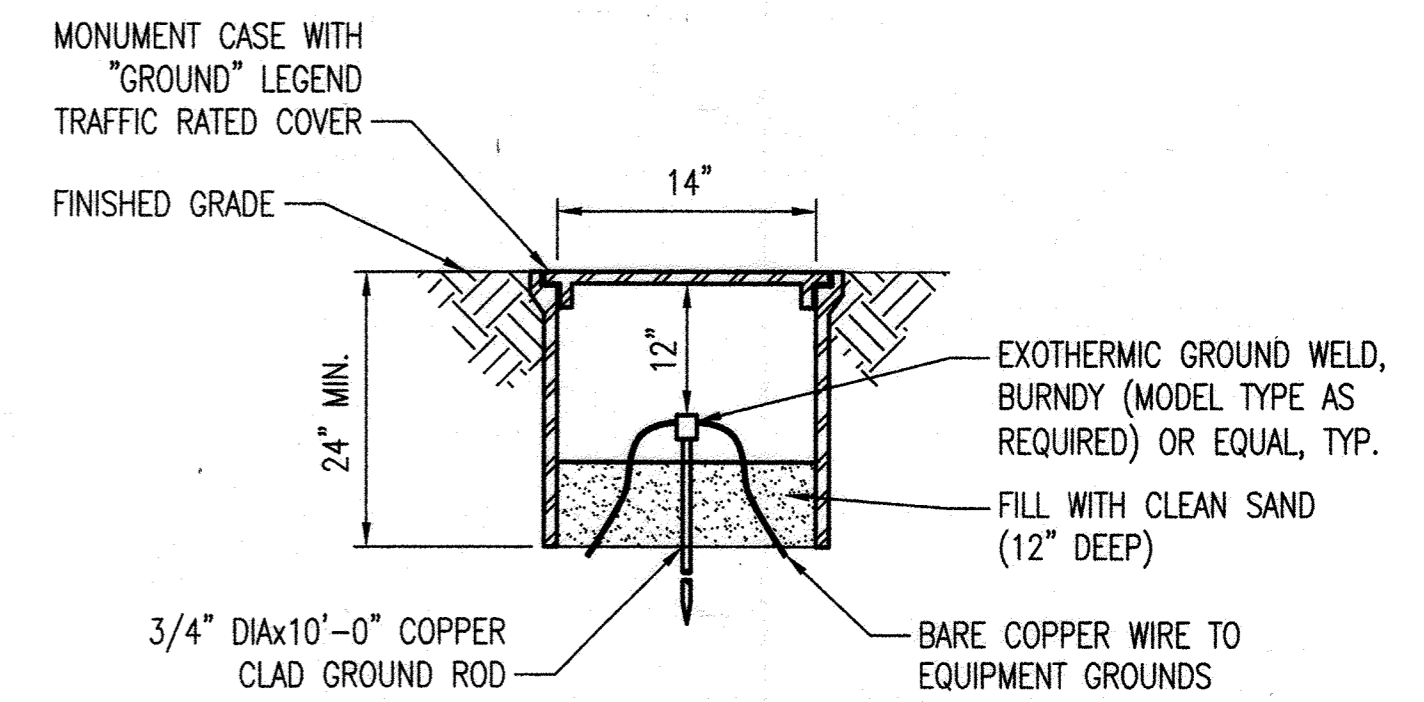
600 SCALE MAP NO. 18
 BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
 CAPITAL PROJECT NO. S-6275
 CONTRACT NO. 10-5096
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

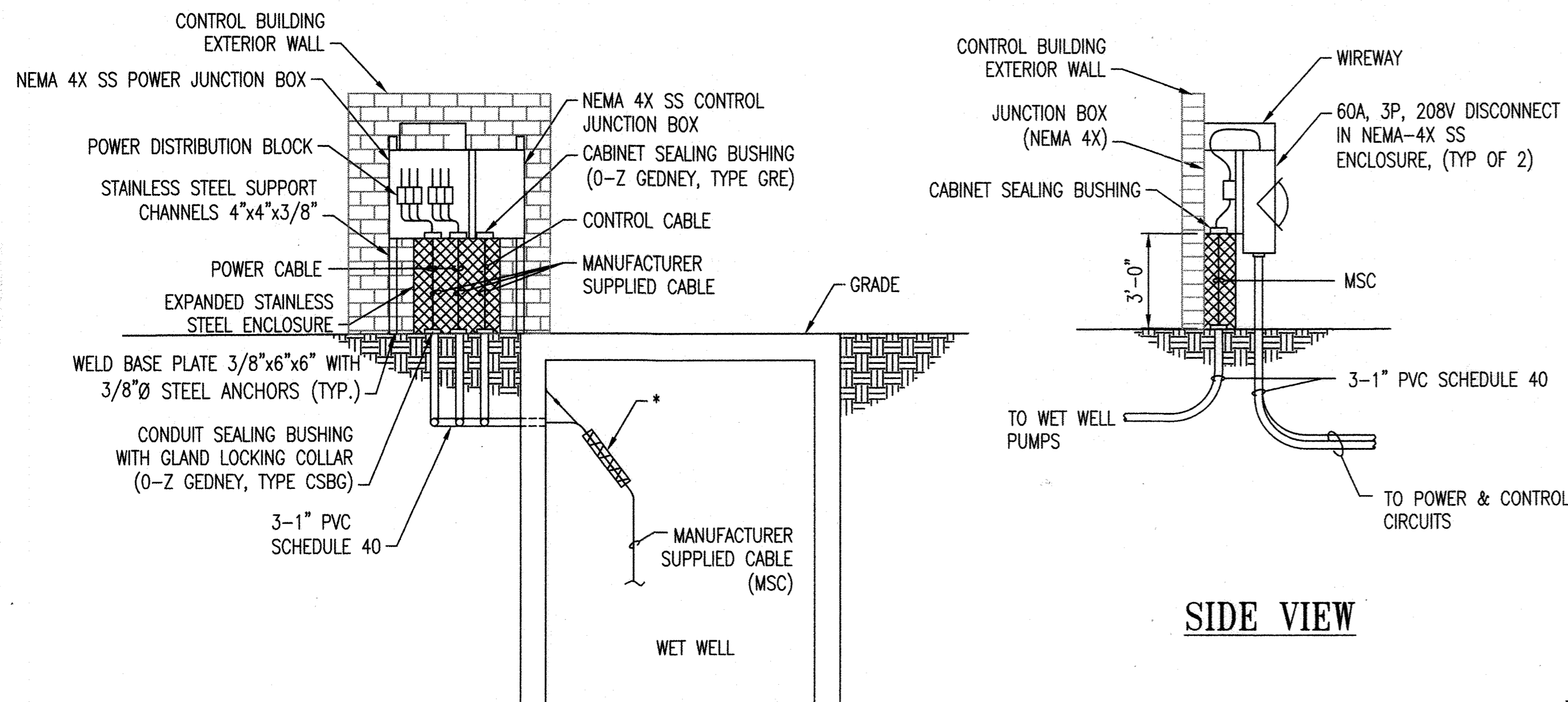
AS-BUILT
 E-5
 SCALE AS SHOWN
 SHEET 27 OF 43



CONDUIT SEALING BUSHING DETAIL
NOT TO SCALE



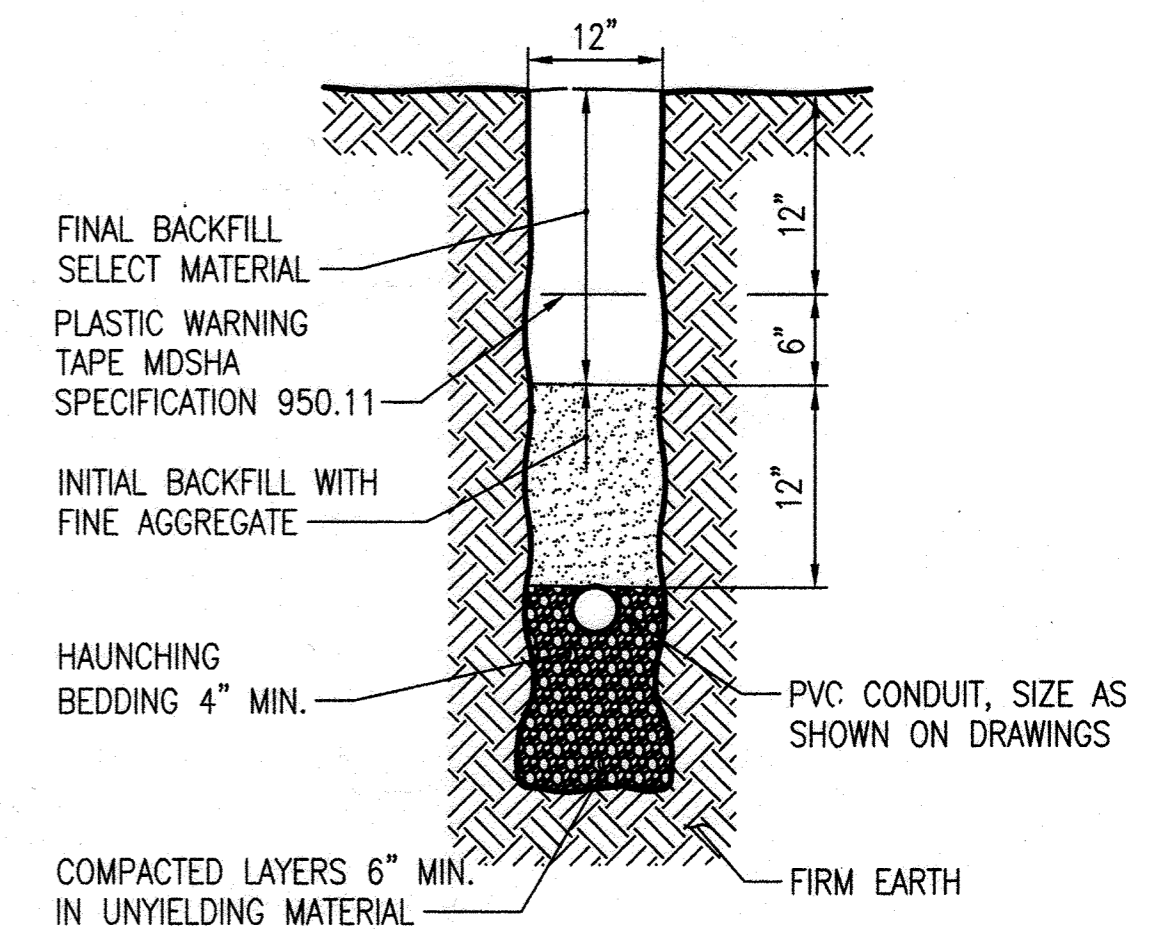
DETAIL - GROUND ROD WELL
SCALE: NOT TO SCALE



GENERAL NOTE:
* - HEAVY DUTY SS SUPPORT DOUBLE TYPE EYE SPLIT MESH LACE CLOSING CABLE SUPPORT. LOCATE CABLE SUPPORT ADJACENT TO ACCESS HATCH TO ALLOW REMOVAL FROM ABOVE WET WELL.

FRONT VIEW

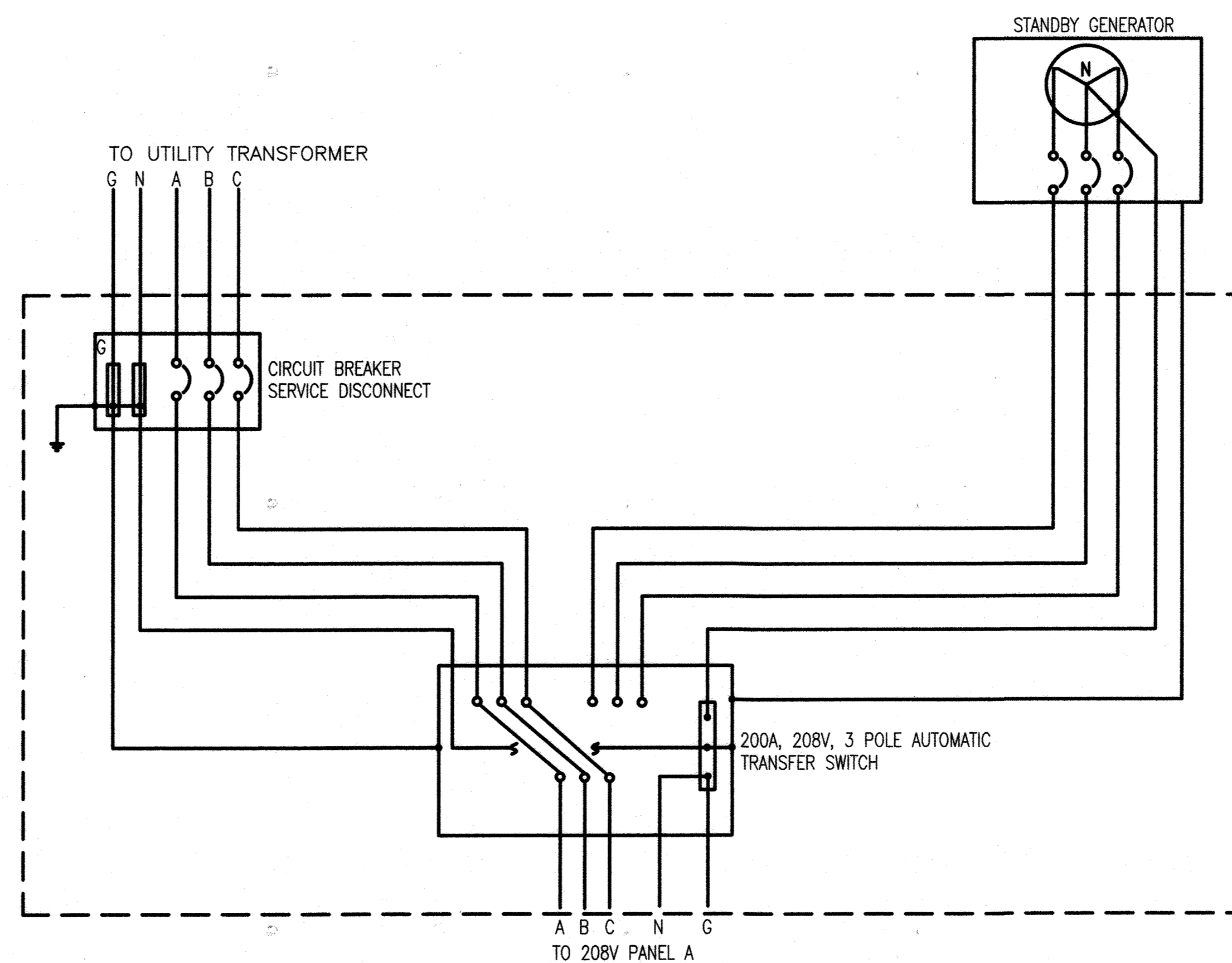
SIDE VIEW



NOTE:
1. TRENCHING AND BACKFILLING TO BE DONE PER MDSA SPECIFICATION SECTION 809.

DETAIL - DIRECT BURIED CONDUIT
SCALE: NOT TO SCALE

DETAIL - TERMINATE SUBMERSIBLE PUMP CABLE WITHOUT USING CONDUIT SEAL
SCALE: NOT TO SCALE



STANDBY GENERATOR, ATS GROUNDING CONNECTION
SCALE: NOT TO SCALE

DHILLON ENGINEERING, INC.
10902 REISTERSTOWN ROAD, # 204
DUNN MILLS, MD 21117
(P) 410.356.1095 (F) 410.363.4675

STATE OF MARYLAND
PROFESSIONAL ENGINEER
D. Dhillon
1/19/19

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 8050, EXPIRATION DATE: 08/19/2019"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Director of Public Works: [Signature] 8/19/19
Chief, Bureau of Utilities: [Signature] 8-9-19

Chief, Bureau of Engineering: [Signature] 8/19/19
Chief, Utility Design Division: [Signature] PSD

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

DES: RDK					
DRN: OM					
CHK: AKM					
JULY 2019	BY	NO.	REVISION	DATE	
				600 SCALE MAP NO. 18	BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

AS-BUILT
E-6
SCALE AS SHOWN
SHEET 28 OF 43

P:\PROJECTS\HOWARD COUNTY\4. Daniels Area PSD\4. DANIELS PUMPING STATION\E-6.dwg
Aug 04, 2019 8:56pm

GENERAL NOTES

- SEE ELECTRICAL DRAWINGS FOR POWER DISTRIBUTION, DISCONNECT REQUIREMENTS, EQUIPMENT LOCATIONS AND FEEDER REQUIREMENTS.
- MOTOR STARTER ELEMENTARIES SHOWN ARE INTENDED TO DEPICT THE GENERAL CONTROLS REQUIREMENT FOR THAT PARTICULAR PIECE OF EQUIPMENT AND DO NOT NECESSARILY INDICATE ALL THE REQUIREMENTS OF THE MOTOR STARTER.
- SEE ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR MOTOR STARTER REQUIREMENTS. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR EQUIPMENT LOCATIONS AND POWER REQUIREMENTS. CONTRACTOR SHALL COORDINATE EQUIPMENT LOCATIONS SUCH AS NOT TO CAUSE INTERFERENCE WITH NEW AND/OR EXISTING EQUIPMENT.
- ENCLOSURE DIMENSIONS SHOWN ARE MINIMUM REQUIREMENTS. ENCLOSURES SHALL BE SIZED TO ACCOMMODATE EQUIPMENT, CONTROLS AND COMPONENTS AS SHOWN, SPECIFIED AND REQUIRED FOR AN OPERABLE SYSTEM.
- CIRCUITS SHOWN SHALL BE INSTALLED IN CONDUIT SIZES AS INDICATED IN THE GENERAL CIRCUIT/CONDUIT TAG IDENTIFICATION SCHEDULE.
- ALL PENETRATIONS THROUGH EXISTING SOLID CONCRETE STRUCTURES WHERE SLEEVES HAVE NOT BEEN PROVIDED SHALL BE CORE DRILLED AND SIZED TO ACCEPT MECHANICAL LINK SEALS. THROUGH FIRE RATED WALLS, CORE HOLES AND SEAL AROUND CONDUIT WITH NON-SHRINK GROUT.
- DISCRETE OUTPUTS SHALL BE PROVIDED WITH INTERPOSING RELAYS COMPATIBLE FOR USE WITH PLC OUTPUTS.
- CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. EXPOSED CONDUITS ABOVE SUSPENDED CEILINGS AND FURRED WALLS SHALL BE INSTALLED PARALLEL TO THE BEAMS AND WALLS.
- PROVIDE ALL REQUIRED PULL BOXES AND JUNCTION BOXES FOR INSTALLATION OF THE WIRING IN ACCORDANCE WITH CONTRACT SPECIFICATIONS THOUGH THE BOXES MAY NOT BE INDICATED ON THE DRAWINGS.
- ALL INDICATION AND CONTROL WIRING IN JUNCTION BOXES SHALL BE WIRED TO NUMBERED TERMINAL STRIPS AND IDENTIFIED AS TO START AND END OF RUN.
- AREAS DESIGNATED AS HAZARDOUS LOCATIONS ARE SPECIFIED AND/OR SHOWN ON THE CONTRACT DRAWINGS. WORK INSTALLED IN AREAS DESIGNATED AS CLASS 1, GROUP D, DIVISION 1 OR CLASS 1, GROUP D, DIVISION 2 HAZARDOUS LOCATIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLE 500 OF THE NATIONAL ELECTRIC CODE. REFER TO "E" AND "M" DRAWINGS FOR ADDITIONAL INFORMATION ON AREA CLASSIFICATIONS.
- CABLE AND CONDUCTOR REQUIREMENTS VARY BETWEEN DIFFERENT MANUFACTURERS OF EQUIPMENT AND INSTRUMENTATION. CONTRACTOR SHALL VERIFY MANUFACTURERS REQUIREMENTS AND PROVIDE CONDUIT AND CABLES AS REQUIRED.
- EXISTING EQUIPMENT AND WIRE IS SHOWN IN A LIGHT GRAY SCALE, NEW EQUIPMENT AND WIRING IS SHOWN BOLD. ALL WORK SHALL BE ASSUMED TO BE NEW UNLESS OTHERWISE INDICATED.
- NO PENETRATIONS SHALL BE ALLOWED THROUGH TOP OR SIDES OF CABINETS.
- ALL CONTROL WIRING SHALL CONFORM TO THE FOLLOWING:

1	LINE AND LOAD CIRCUITS (AC OR DC POWER)	BLACK	#14 AWG (MIN) STRANDED
2	NEUTRAL	WHITE	#14 AWG (MIN) STRANDED
3	AC CONTROL CIRCUITS	RED	#16 AWG (MIN) STRANDED
4	DC CONTROL CIRCUITS (+)	BLUE	#16 AWG (MIN) STRANDED
5	DC CONTROL CIRCUITS (-)	BLUE/BLACK	#16 AWG (MIN) STRANDED
6	INTERLOCK CONTROL CIRCUITS ON THE PANEL ENERGIZED FROM EXTERNAL SOURCE	YELLOW	#16 AWG (MIN) STRANDED
7	EQUIPMENT GROUNDING CONDUCTORS	GREEN	#16 AWG (MIN) STRANDED
8	ANALOG SIGNALS TWISTED SHIELDED PAIR	BLACK/RED	#18 AWG (MIN) STRANDED

ABBREVIATIONS

- A/C = AIR CONDITIONING
 AI = ANALOG INPUT
 AMP = AMPERE
 AO = ANALOG OUTPUT
 AUTO = AUTOMATIC
 AUX = AUXILIARY
 ATS = AUTOMATIC TRANSFER SWITCH
 BMS = BUILDING MANAGEMENT SYSTEM
 BTM = BEARING TEMPERATURE MONITORING RTD
 BOU = BUREAU OF UTILITIES
 BP = BOOSTER PUMP
 CIM = COMMUNICATION INTERFACE MODULE
 COMM = COMMUNICATION
 CP = CONTROL PANEL
 CPT = CONTROL POWER TRANSFORMER
 CR = CONTROL RELAY
 DI = DISCRETE INPUT
 DO = DISCRETE OUTPUT
 DP = DIFFERENTIAL PRESSURE
 DPDT = DOUBLE POLE-DOUBLE THROW
 DV = DISCHARGE VALVE
 EF = EXHAUST FAN
 E-STOP = EMERGENCY STOP
 ETM = ELAPSE TIME METER
 ETR = EXISTING TO REMAIN
 EX = EXISTING
 F/B = FEEDBACK
 F/C = FIBER/COPPER
 FM = FLOW METER
 FO = FIBER OPTIC
 FPP = FIBER OPTIC PATCH PANEL
 F-STAT = FREEZE-STAT
 GFI = GROUND FAULT INTERRUPTER
 GND = GROUND
 HMI = HUMAN MACHINE INTERFACE
 HOA = HAND-OFF-AUTO
 HX = HEAT EXCHANGER
 I/O = INPUT/OUTPUT
 ISB = INTRINSICALLY SAFE BARRIER
 ISR = INTRINSICALLY SAFE RELAY
 ISL = INTERLOCKS
 J-BOX = JUNCTION BOX
 L/F = LEVEL FLOAT
 L LEL = LINE LOWER EXPLOSIVE LIMIT
 LLS = LEAD-LAG-STANDBY
 LOR = LOCK OUT RELAY
 L/R = LOCAL/REMOTE
 LS = LIMIT SWITCH
 LS = MAXIMUM
 MCC = MOTOR CONTROL CENTER
 MFR = MANUFACTURER
 MIN = MINIMUM
 MMS = MANUAL MOTOR STARTER
 MPR = MOTOR PROTECTION RELAY
 MOD = MOTOR OPERATED DAMPER
 MOV = MOTOR OPERATED VALVE
 N = NEUTRAL
 NC = NORMALLY CLOSED
 NEMA = NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION
 NO = NORMALLY OPEN
 NTS = NOT TO SCALE
 OIT = OPERATOR INTERFACE TERMINAL
 OL = OVERLOAD
 PC = PERSONAL COMPUTER
 PCP = PUMP CONTROL PANEL
 PCS = PLANT CONTROL SYSTEM
 PIO = POINT I/O
 PLC = PROGRAMMABLE LOGIC CONTROLLER
 PS = POWER SUPPLY
 PSCP = PUMP STATION CONTROL PANEL
 PSI = POUNDS PER SQUARE INCH
 PVCC = PVC COATED
 QTY = QUANTITY
 RAS = RETURN ACTIVATED SLUDGE
 RCT = REPEAT CYCLE TIMER
 RGS = RIGID GALVANIZED STEEL
 RIO = REMOTE I/O
 RL = RADAR LEVEL
 RSP = RAW SEWAGE PUMP
 RSSP = RETURN SECONDARY SLUDGE PUMP
 RTD = RESISTANCE TEMPERATURE DEVICE
- RTU = REMOTE TELEMETRY UNIT
 RVSS = REDUCED VOLTAGE SOFT STARTER
 SCADA = SUPERVISORY CONTROL AND DATA ACQUISITION
- SF = SUPPLY FAN
 SPD = SURGE PROTECTIVE DEVICE
 STM = STATOR TEMPERATURE MONITORING RTD
 SV = SUCTION VALVE
 TEMP = TEMPERATURE
 TR = TIMING RELAY
 TSP = TWISTED SHIELDED PAIR
 TST = TWISTED SHIELDED TRIAD
 T-STAT = THERMOSTAT
 TVSS = TRANSIENT VOLTAGE SURGE SUPPRESSOR
- TYP = TYPICAL
 UL = ULTRASONIC LEVEL
 UON = UNLESS OTHERWISE NOTED
 UPS = UNINTERRUPTIBLE POWER SUPPLY
 VAC = VOLTS/ALTERNATING CURRENT
 VCP = VENTILATION CONTROL PANEL
 VDC = VOLTS/DIRECT CURRENT
 VFD = VARIABLE FREQUENCY DRIVE

EQUIPMENT TAG

THE 3 LETTER EQUIPMENT TAG WILL BE DEVELOPED FROM THE LETTERS REPRESENTING THE DIFFERENT FUNCTIONS IN THE INSTRUMENTATION IDENTIFICATION SCHEDULE.

LOOP NUMBER IDENTIFICATION SCHEDULE

- THE FIRST DIGIT WILL EQUATE TO THE TYPE OF EQUIPMENT. EACH TYPE OF EQUIPMENT AND ITS ASSOCIATED DEVICE WILL HAVE A SEPARATE IDENTIFIER THAT EQUATES TO THE FOLLOWING CODES:

1	PUMP/MOTOR
2	VALVE
3	NOT USED
4	NOT USED
5	NOT USED
6	NOT USED
7	TEMPORARY BYPASS PUMPING
8	MISC. DEVICE (GENERATOR, ATS, TANKS, ETC.)
9	ANALOG AND DISCRETE INSTRUMENTS

- SECOND AND THIRD NUMBERS EQUATE TO A SEQUENTIAL NUMBERING OF THE TYPES OF DEVICE. EX. LSL-101, LSH-101. IF A PROCESS AREA HAS TWO SETS OF THE SAME TYPE OF DEVICE THE SECOND NUMBER SHALL BE INCREMENTED ACCORDINGLY. EX. LSH-101, LSH-111.
- A LETTER SUFFIX CAN BE ADDED IF REQUIRED TO DIFFERENTIATE BETWEEN DIFFERENT BUT SIMILAR POINTS. EX. LSH-101A.

INSTRUMENTATION IDENTIFICATION SCHEDULE

	FIRST LETTER		SUCCEEDING LETTER		
	VARIABLE	MODIFIER	PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		AUTOMATIC
B	BREAKER		USER'S CHOICE		BYPASS
C	COMMUNICATIONS		USER'S CHOICE	CONTROL	
D	DENSITY	DIFFERENTIAL		OPEN OR START	
E	VOLTAGE (EMF)		PRIMARY ELEMENT	SENSOR	
F	FLOW RATE	RATIO	FAIL	FAIL	FAIL
G	GAUGING		GALSS	GATE	LOCAL/MANUAL/HAND
H	HAND				HIGH OR OPEN
I	CURRENT		INDICATE		INTERMEDIATE
J	POWER	SCAN			
K	TIME	TIME RATE			
L	LEVEL		LIGHT	CONTROL STATION	LOW OR CLOSE
M	MOTOR	MOMENTARY		MOTOR	MIDDLE
N	TORQUE		INPUT	FORWARD	ON OR OPERATE
O				OFF	OVERLOAD
P	PRESSURE	PNEUMATIC	POINT (TEST)	POSITION	
Q	QUANTITY OR EVENT	TOTALIZE		EMERGENCY/ABNORMAL	
R	RADIOACTIVITY		RECORD OR PRINT	REMOTE	RUN
S	SPEED OR FREQUENCY	SUM	SWITCH	SWITCH	STOP
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VARIABLE OR VISCOSITY			VALVE OR DAMPER	VFD/VALVE
W	WEIGHT OR FORCE		WELL		
X	MOD. LIGHT OR VALVE		UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	INTERLOCK			RELAY OR COMPUTE	RESET
Z	POSITION			DRIVE OR ACTUATOR	

INSTRUMENT, EQUIPMENT AND CONTROL DEVICE EXAMPLES

- FE = FLOW ELEMENT
 FIT = FLOW INDICATING TRANSMITTER
 PE = PRESSURE ELEMENT
 PIT = PRESSURE INDICATING TRANSMITTER
 PI = PRESSURE INDICATOR
 PSH = PRESSURE SWITCH HIGH
 TSH = TEMPERATURE SWITCH HIGH
 ZSC = POSITION SWITCH CLOSED
 ZSO = POSITION SWITCH OPEN
 FS = FLOW SWITCH
 LSL = LEVEL SWITCH LOW
 LSH = LEVEL SWITCH HIGH

AS-BUILT

I-1

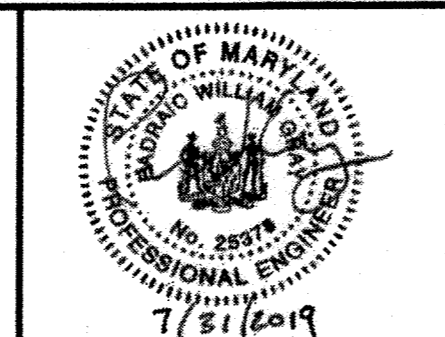
"I, PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25378, EXPIRATION DATE: 7-14-2020"

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND.

[Signature] 8/9/19
 CHIEF, BUREAU OF ENGINEERING

[Signature] 8/19/19
 CHIEF, UTILITY DESIGN DIVISION

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231



DES:	JUN				
DRN:	JUN				
CHK:	PWG				
JULY 2019	BY	NO.	REVISION	DATE	

INSTRUMENTATION LEGENDS, ABBREVIATIONS AND GENERAL NOTES (1 OF 2)

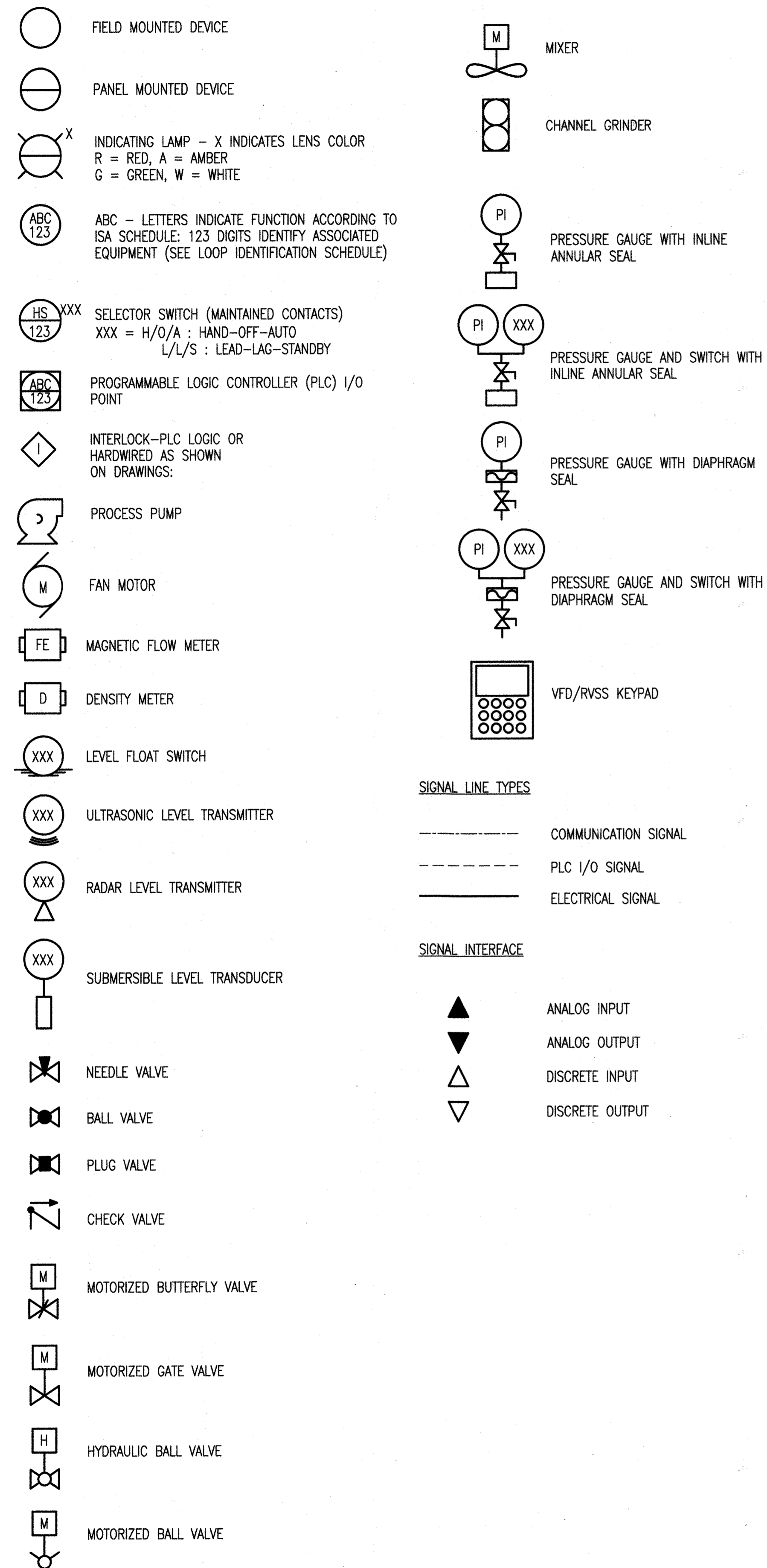
600 SCALE MAP NO. 18
 BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
 CAPITAL PROJECT NO. S-6275
 CONTRACT NO. 10-5096
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

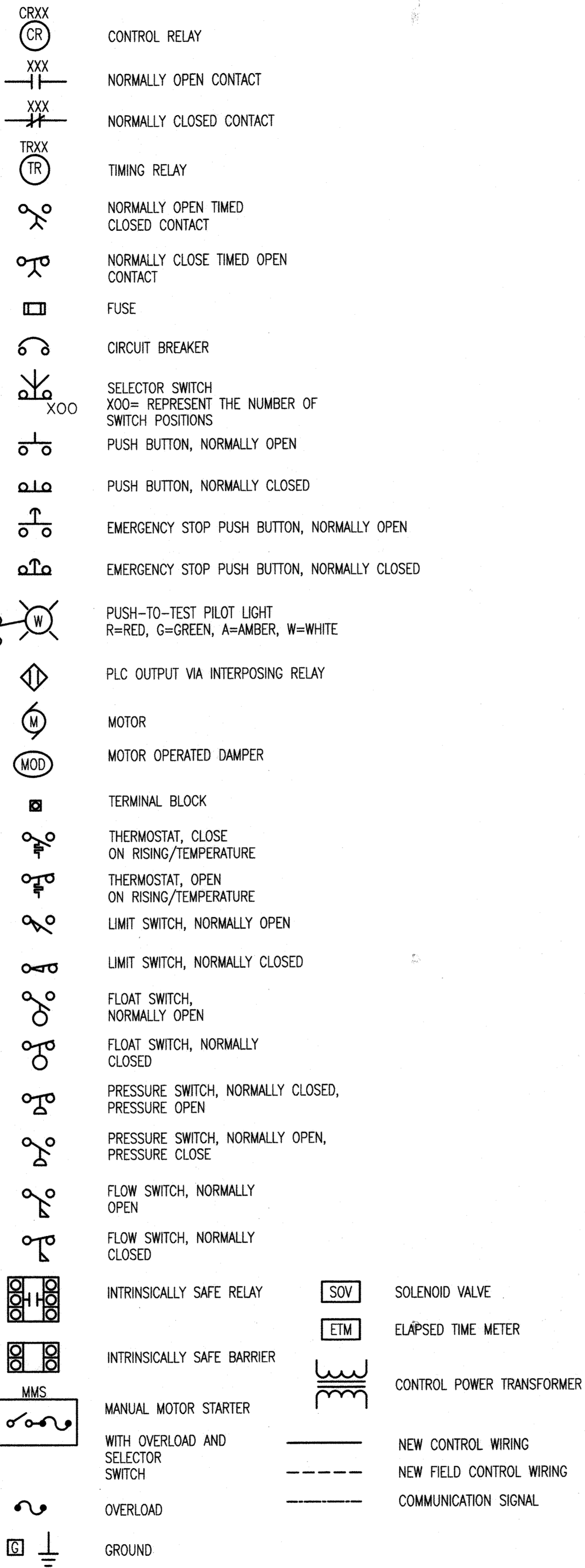
SCALE AS SHOWN
 SHEET 29 OF 43

C:\Users\ahm\appdata\local\temp\AutoPublish_11616_1425100111-00.dwg Aug 01, 2019 2:58pm

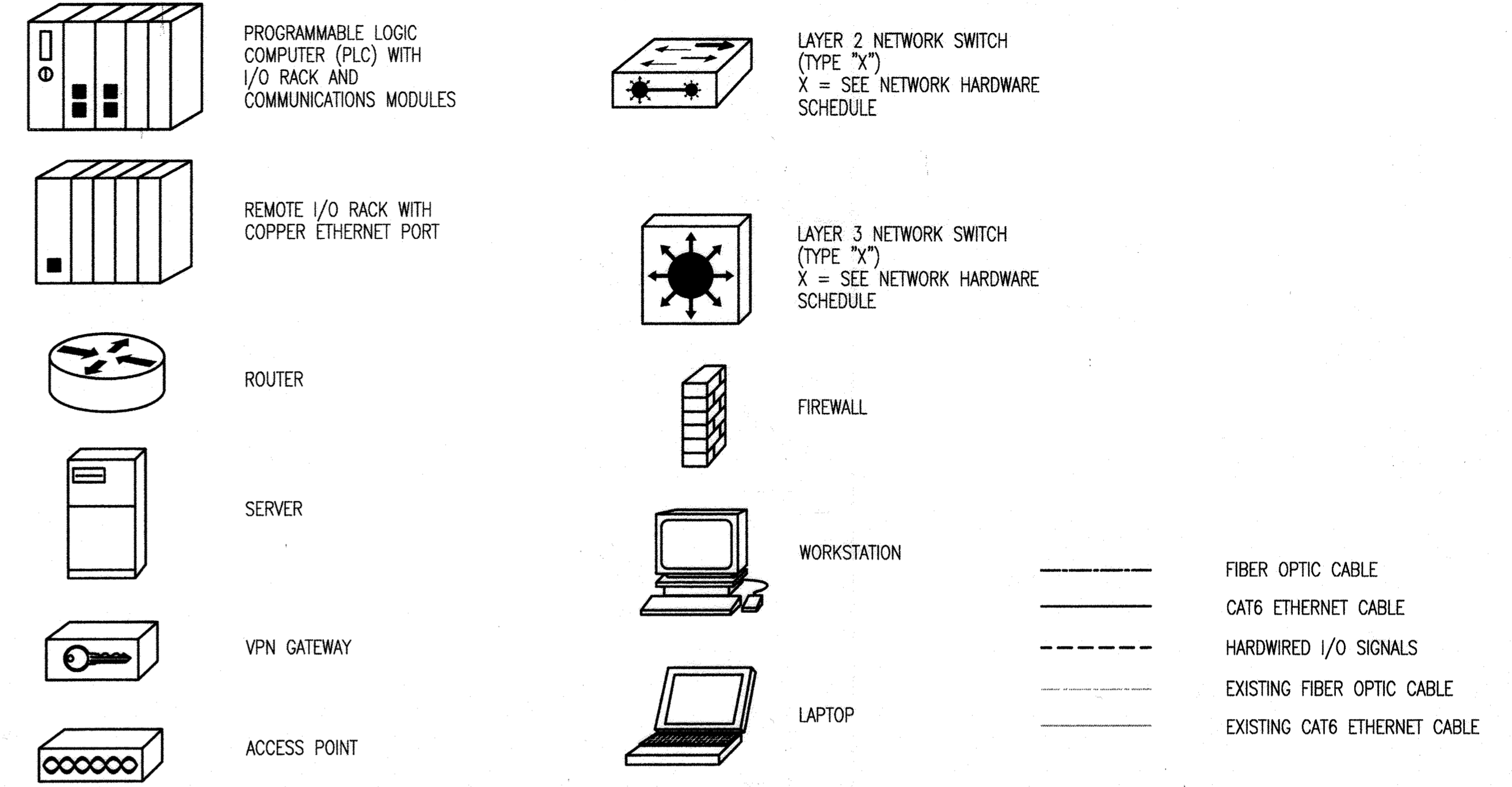
PROCESS AND INSTRUMENTATION DIAGRAM SYMBOLS



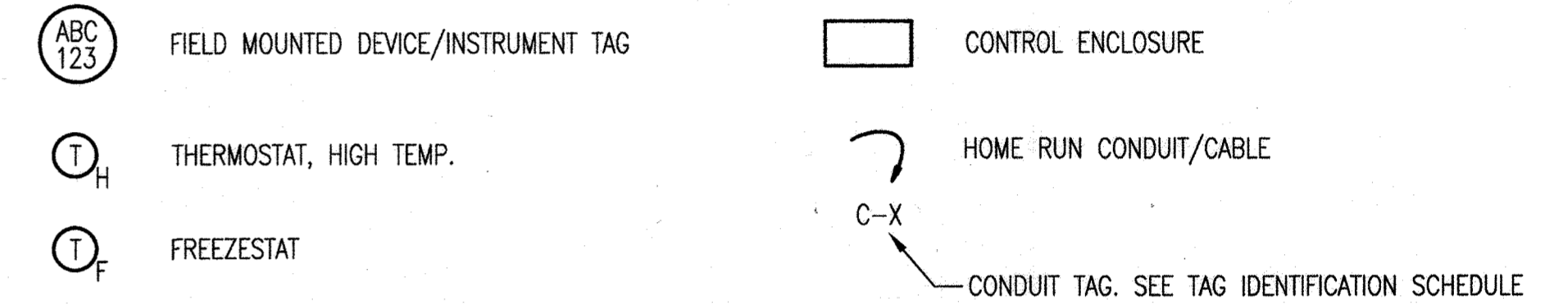
ELEMENTARY WIRING SYMBOLS



PCS ARCHITECTURE SYMBOLS



PLAN SYMBOLS



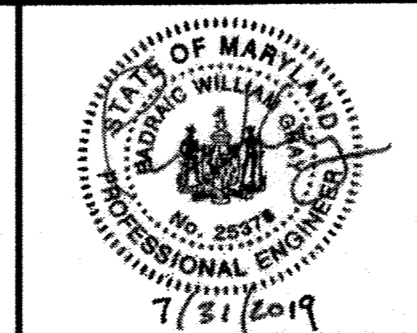
GENERAL CIRCUIT/CONDUIT TAG IDENTIFICATION

TAG	CONDUIT SIZE	CONDUCTORS	NOTES
C-X (Y)	3/4" (X=2 THRU 18) 1" (X=19 THRU 30) 2" (X=31 THRU 100)	X-#14, 1-#14G	(Y) DENOTES ADDITIONAL SPARES
P-X (Y)	3/4" (X=2 THRU 14) 1" (X=15 THRU 24) 2" (X=25 THRU 80)	X-#12, 1-#12G	(Y) DENOTES ADDITIONAL SPARES
RTD-X (Y)	3/4" (X=1 THRU 4) 1" (X=2 THRU 7) 1 1/2" (X=8 THRU 14)	X-#14 SHIELDED PAIR	(Y) DENOTES ADDITIONAL SPARES
TSP-X (Y)	3/4" (X=1,2) 1" (X=3,4) 2" (X=5 THRU 16)	X-#18 TWISTED SHIELDED PAIR	(Y) DENOTES ADDITIONAL SPARES
TST-X (Y)	3/4" (X=1,2) 1" (X=3,4) 2" (X=5 THRU 16)	X-#18 TWISTED SHIELDED TRIAD	(Y) DENOTES ADDITIONAL SPARES
ETH-X (Y)	1" (X=1 THRU 4)	X-# OF CAT6 CABLES	(Y) DENOTES ADDITIONAL SPARES
FO-X	1" (X=2-12) 2" (X=12-48)	X-# OF MULTIMODE FIBER OPTIC STRANDS	COORDINATE CONDUIT AND INSTALLATION REQUIREMENTS WITH F.O. CABLE MANUFACTURER'S CABLE SIZE AND BEND RADIUS REQUIREMENTS.
M-X	CONDUIT SIZE AS REQUIRED	X-MANUFACTURER SUPPLIED CABLE	CABLE AS PROVIDED OR RECOMMENDED BY EQUIPMENT MANUFACTURER. COORDINATE CONDUIT AND INSTALLATION REQUIREMENTS WITH MANUFACTURER.
AC-X (Y)	1" (X=1,2)	X-ANTENNA CABLE	(Y) DENOTES ADDITIONAL SPARES
TOTAL CONDUCTORS REQUIRED = X + Y			

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25378, EXPIRATION DATE: 7-14-2020"

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND.
 Director of Public Works
 Chief, Bureau of Engineering
 Chief, Utility Design Division

WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231

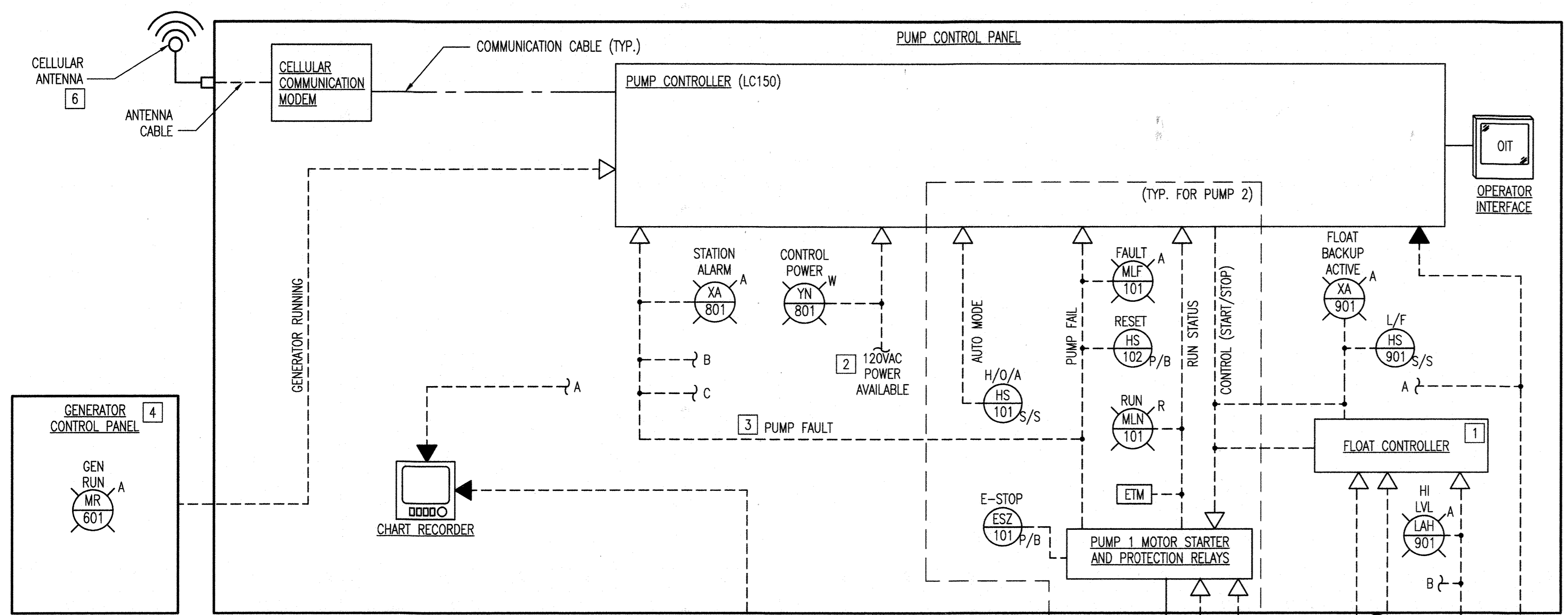


DES: JUN			
DRN: JUN			
CHK: PWG			
JULY 2019	BY	NO.	REVISION

INSTRUMENTATION LEGENDS, ABBREVIATIONS AND GENERAL NOTES (2 OF 2)
 DATE 600 SCALE MAP NO. 18 BLOCK NO. 7&13

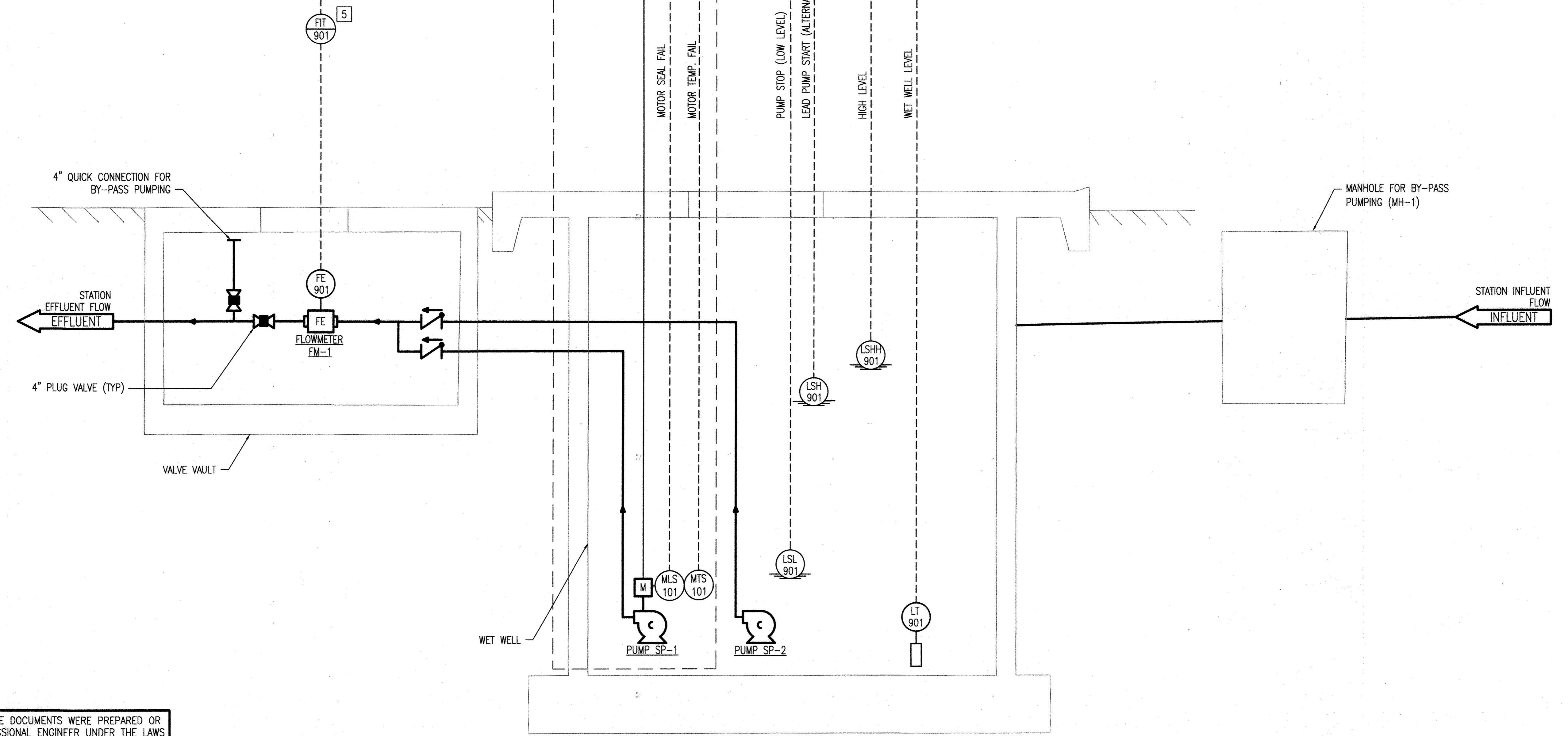
DANIELS AREA WASTEWATER PUMPING STATION
 CAPITAL PROJECT NO. S-6275
 CONTRACT NO. 10-5096
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

AS-BUILT
 1-2
 SCALE AS SHOWN
 SHEET 30 OF 43



- GENERAL NOTES:**
1. SEE I&C SYMBOLS, LEGENDS AND ABBREVIATIONS SHEET FOR DETAILS.
 2. UNLESS OTHERWISE INDICATED EACH SIGNAL BROUGHT FROM THE FIELD TO THE PUMP CONTROL PANEL SHALL BE PROVIDED WITH AN INTERPOSING RELAY TO ISOLATE THE DEVICE FROM THE PANEL CONTROL POWER, WHERE APPLICABLE.
 3. SIGNALS SHOWN TO THE SCADA SYSTEM SHALL BE VIA THE CELLULAR NETWORK CONNECTION.
 4. P&ID SHOWN TO INDICATE CONTROL SYSTEM REQUIREMENTS AND DOES NOT REPRESENT A COMPLETE REFLECTION OF ALL PROCESS SYSTEM REQUIREMENTS. SEE MECHANICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.

- [X] SPECIFIC NOTES:**
1. FLOAT CONTROLLER TO PROVIDE LEAD/LAG CONTROL FOR PUMPS WHEN OPERATING ON FLOAT CONTROL.
 2. 120VAC POWER CIRCUIT FROM THE ELECTRICAL POWER PANEL. SEE ELECTRICAL DRAWINGS FOR PANEL DETAILS AND CIRCUIT IDENTIFICATION.
 3. TYPICAL PUMP FAULT SIGNAL FROM EACH PUMP TO THE "STATION ALARM" SCADA SIGNAL.
 4. PANEL PROVIDED BY GENERATOR MANUFACTURER.
 5. STATION FLOW TRANSMITTER WALL MOUNTED IN PUMPING STATION. REFER TO DRAWING I-8 FOR LOCATION.
 6. CELLULAR ANTENNA MOUNTED ON THE BUILDING EXTERIOR. SEE I-DRAWINGS FOR LOCATION AND ADDITIONAL DETAILS.



"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25378, EXPIRATION DATE: 7-14-2020"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

[Signature] 8/3/19
DIRECTOR OF PUBLIC WORKS

[Signature] 8/3/19
CHIEF, BUREAU OF ENGINEERING

[Signature] 8/3/19
CHIEF, UTILITY DESIGN DIVISION

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231



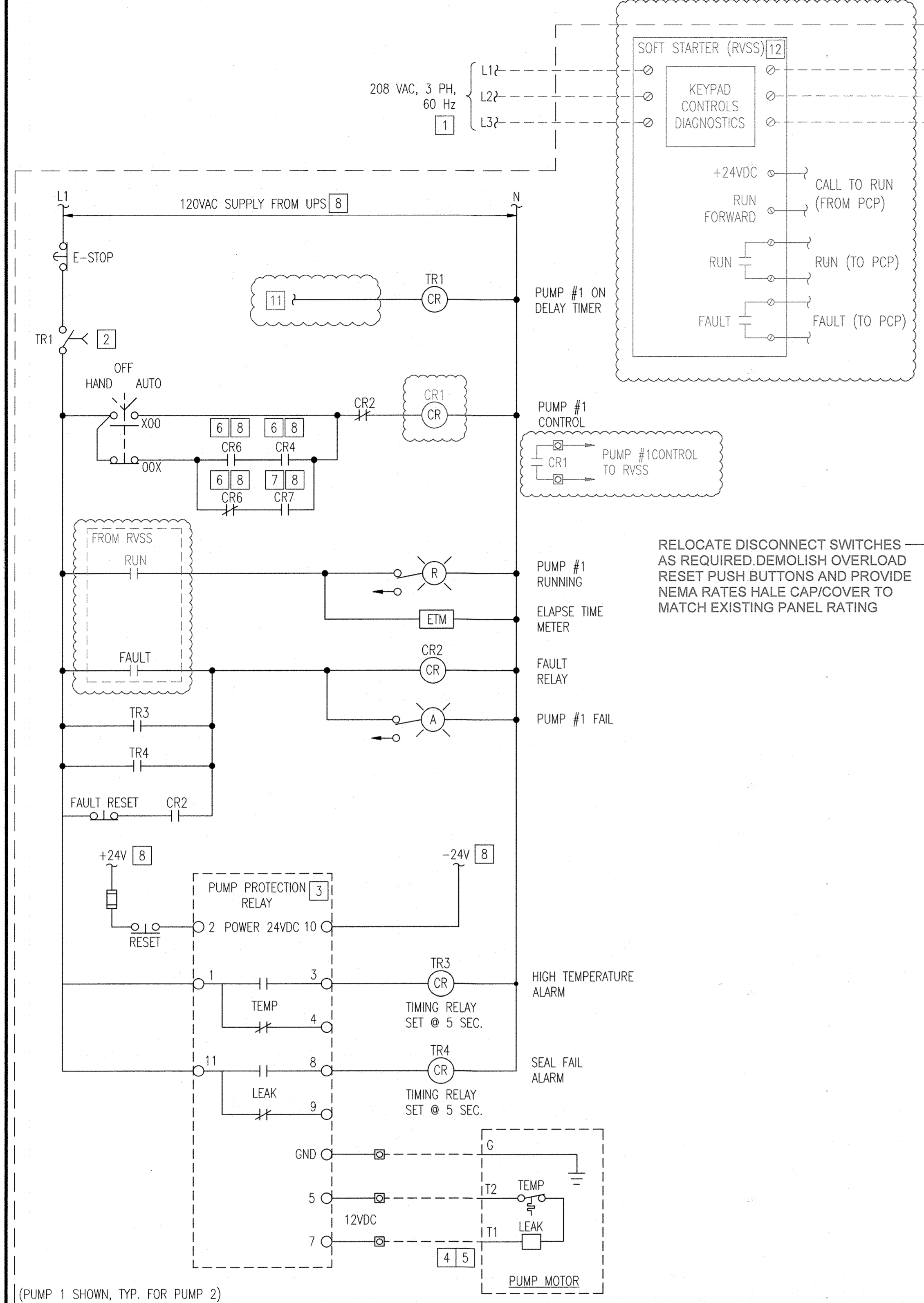
DES: JUN					
DRN: JUN					
CHK: PWG					
JULY 2019	BY	NO.	REVISION	DATE	

PROCESS AND INSTRUMENTATION DIAGRAM

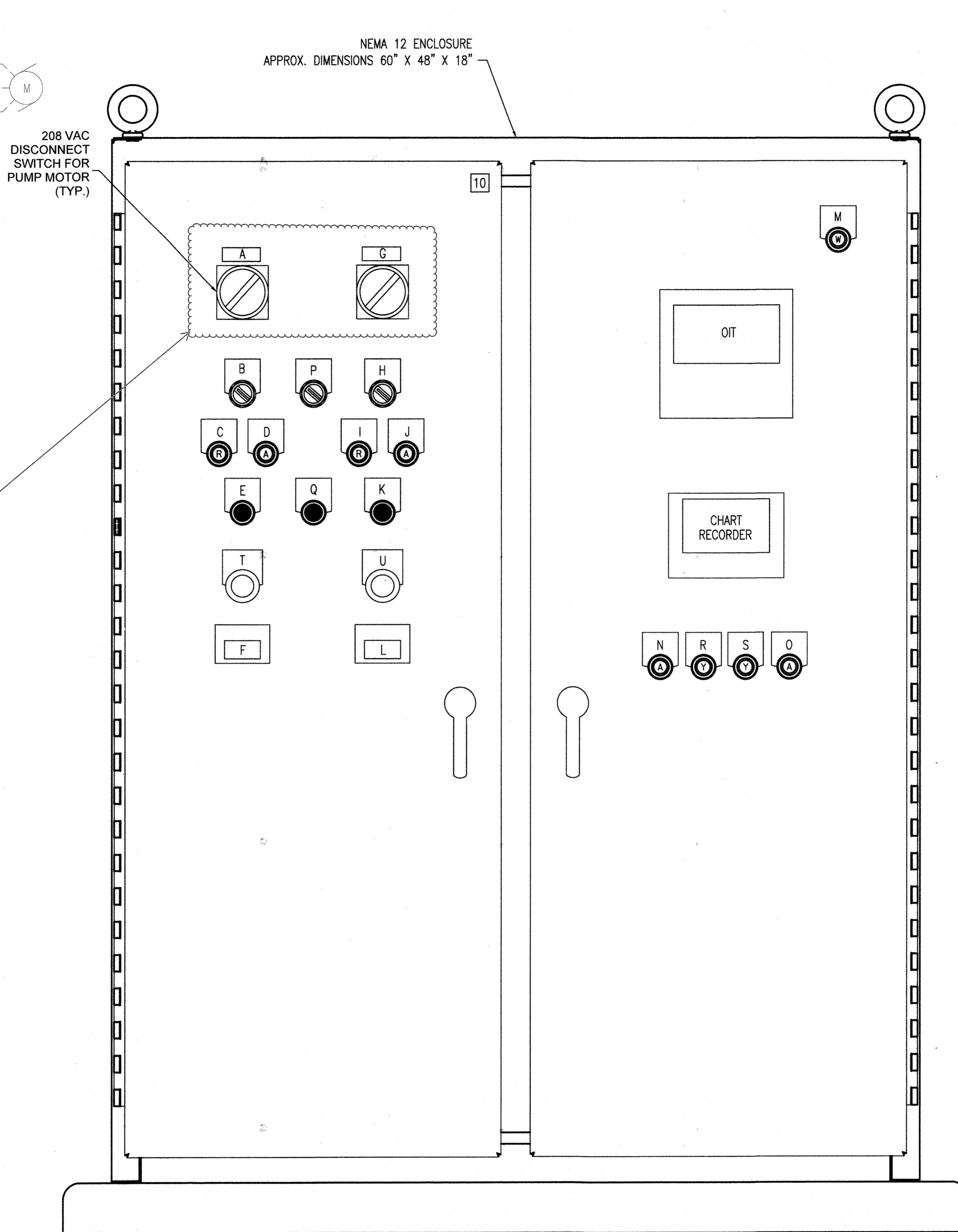
600 SCALE MAP NO. 18 BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

AS-BUILT
1-3
SCALE AS SHOWN
SHEET 31 OF 43



1 MOTOR CONTROL ELEMENTARY
1-4 NOT TO SCALE



2 PUMP CONTROL PANEL ELEVATION
1-4 NOT TO SCALE

- GENERAL NOTES:**
- REFER TO ELECTRICAL DRAWINGS FOR PANELBOARD CIRCUITS.
 - LABEL ALL EQUIPMENT WITHIN THE CONTROL PANEL INCLUDING TERMINAL BLOCKS, RELAYS, AND CIRCUIT BREAKERS WITH ASSOCIATED CIRCUIT OR ID NUMBER.
 - MOTOR STARTER, CONTROLS AND SCADA LOCATED IN PUMP CONTROL PANEL.

- SPECIFIC NOTES:**
- 3-PHASE POWER FROM PANELBOARD.
 - SET AT 10 SECONDS FOR PUMP #1 AND 20 SECONDS FOR PUMP #2.
 - MOTOR PROTECTION RELAY SUPPLIED BY MOTOR/PUMP MANUFACTURER TO THE PUMP CONTROL SYSTEM SUPPLIER FOR INTEGRATION INTO THE PUMP CONTROL PANEL.
 - MOTOR SENSOR FURNISHED WITH AND LOCATED AT MOTOR. SENSORS ARE FACTORY CONNECTED TO CONTROL CABLE WITH THE PUMP.
 - PROVIDE SHIELDED CABLE FOR THE CONNECTION AT PROTECTION SHIELDED RELAY. CONNECT SHIELDS ON CONDUCTORS PER MANUFACTURER RECOMMENDATIONS.
 - PUMP 1 FLOAT CONTROL CONTACT FROM FLOAT CONTROLLER.
 - PUMP 1 CONTROL RELAY CONTACT FROM PUMP CONTROLLER.
 - SEE DRAWING 1-5 FOR CONNECTIONS.
 - CIRCUIT BREAKER LOCATED IN PUMP CONTROL PANEL WITH THROUGH-THE-DOOR ROTARY OPERATED HANDLE.
 - PUMP CONTROL PANEL MUST BE NOTED THAT THERE ARE MULTIPLE SOURCES OF POWER.
 - CONNECT TO LINE SIDE OF UPS.
 - DISCONNECT AND REMOVE THE EXISTING MOTOR STARTERS AND INSTALL NEW SOFT STARTERS IN THE PUMP CONTROL PANEL.

PUMP CONTROL PANEL NAMEPLATE SCHEDULE	
ID LETTER	DESCRIPTION
A	PUMP 1
B	PUMP 1 H/O/A
C	PUMP 1 RUN
D	PUMP 1 FAIL
E	PUMP 1 RESET
F	PUMP 1 RUN TIME METER
G	PUMP 2
H	PUMP 2 H/O/A
I	PUMP 2 RUN
J	PUMP 2 FAIL
K	PUMP 2 RESET
L	PUMP 2 RUN TIME METER
M	CONTROL POWER ON
N	BACKUP ACTIVE ALARM
O	STATION ALARM
P	FLOAT/LEVEL MODE SELECT
Q	FLOAT CONTROLLER RESET
R	HIGH LEVEL
S	LOW LEVEL
T	PUMP 1 E-STOP
U	PUMP 2 E-STOP

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25378, EXPIRATION DATE: 7-14-2020"

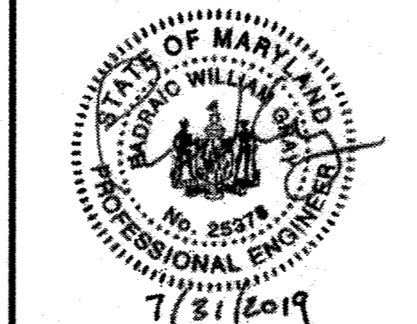
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Michael J. Quinn 8/19/19
DIRECTOR OF PUBLIC WORKS
DATE

Brandon Lee 8/19/19
CHIEF, BUREAU OF ENGINEERING
DATE

PSD 8/19/19
CHIEF, UTILITY DESIGN DIVISION
DATE

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

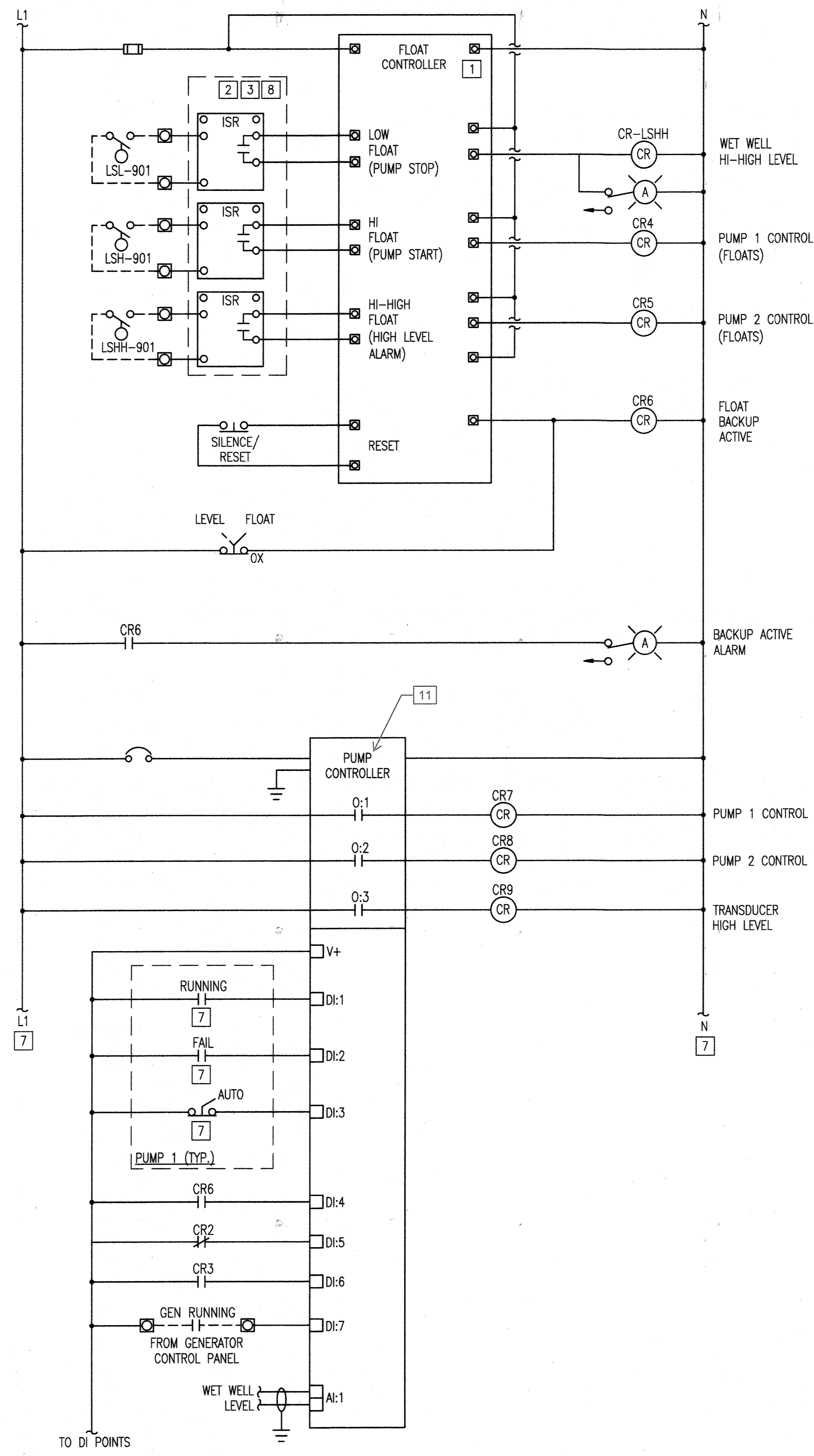
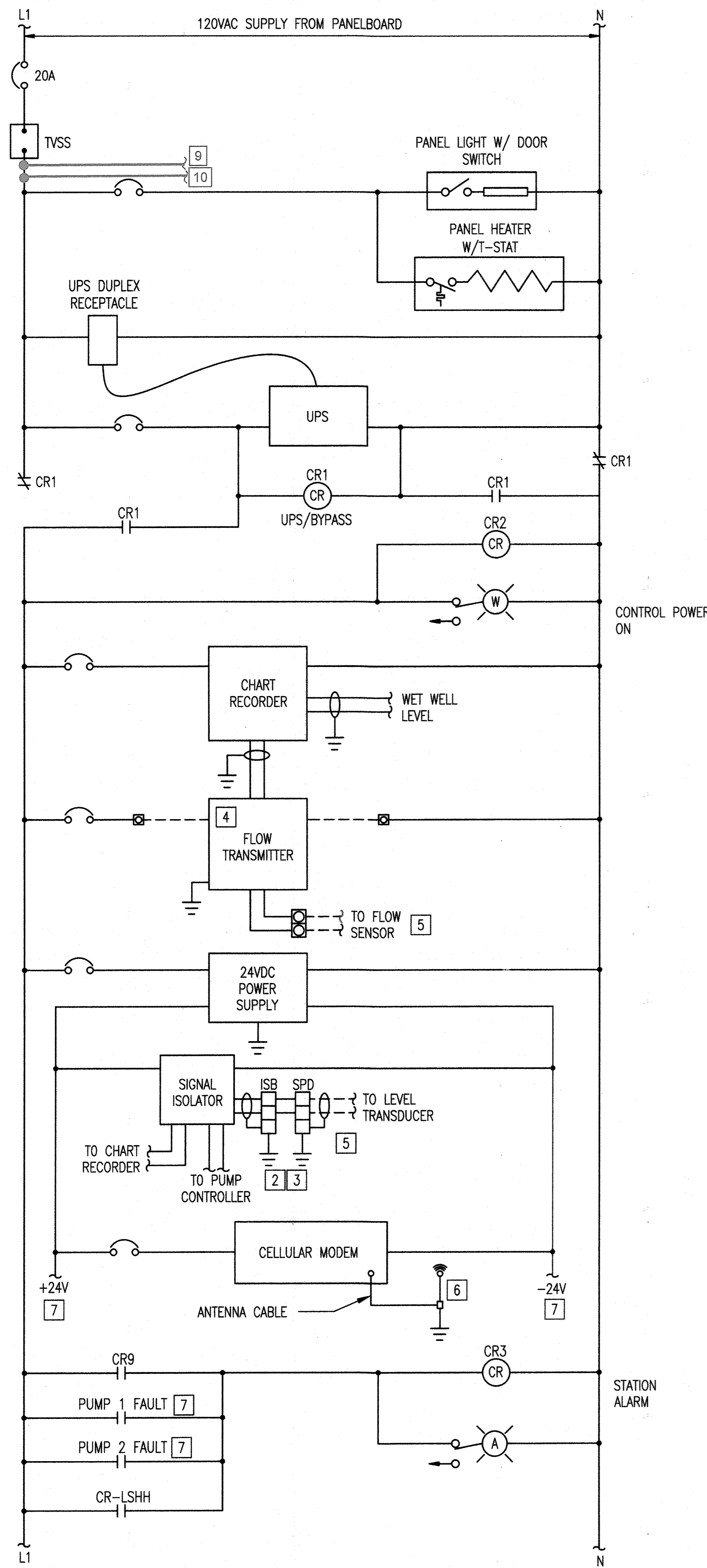


DES:	GAH				
DRN:	JUN				
CHK:	PWG				
JULY 2019					
BY:	NO.				
REVISION					
DATE	9/24/21				
600 SCALE MAP NO. 18					
BLOCK NO. 7&13					

PUMP CONTROL PANEL
DIAGRAMS (1 OF 2)

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

AS-BUILT
1-4
SCALE
AS SHOWN
SHEET
32 OF 43



- GENERAL NOTES:**
- REFER TO ELECTRICAL DRAWINGS FOR PANELBOARD CIRCUITS.
 - LABEL ALL EQUIPMENT WITHIN THE CONTROL PANEL INCLUDING TERMINAL BLOCKS, RELAYS, AND CIRCUIT BREAKERS WITH ASSOCIATED CIRCUIT OR ID NUMBER.
 - MOTOR STARTER, CONTROLS AND SCADA LOCATED IN PUMP CONTROL PANEL.

- X SPECIFIC NOTES:**
- FLOAT CONTROLLER SHALL PROVIDE ALTERNATING PUMP START CONTROL FOR PUMPS AND HIGH-HIGH ALARM INDICATION.
 - ALL INTRINSICALLY SAFE BARRIER RELAYS SHALL BE MOUNTED IN THE SAME LOCATION WITHIN THE PUMP CONTROL PANEL AND SHALL BE PHYSICALLY SEPARATED BY A METAL BARRIER FROM CONTROL PANEL COMPONENTS. PROVIDE PERMANENT NAMEPLATE IN ACCORDANCE WITH UL-698A AT LOCATION INDICATING "INTRINSICALLY SAFE RELAYS AND CIRCUITRY".
 - INTRINSICALLY SAFE WIRING CIRCUITS SHALL ENTER THE CONTROL PANEL AT THE SAME LOCATION, SHALL BE PHYSICALLY SEPARATED FROM ALL OTHER PANEL WIRING BY A MINIMUM OF 2" AND SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE NEC AND UL-698A REQUIREMENTS. PROVIDE POWER AND GROUNDING IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
 - FLOW TRANSMITTER LOCATED OUTSIDE THE PUMP CONTROL PANEL.
 - MANUFACTURERS CABLE, PROVIDE VAPOR TIGHT SEALS AT POINTS WHERE INDIVIDUAL CONDUCTORS ARE SEPARATED FROM THE SHEATH.
 - CELLULAR ANTENNA TO BE MOUNTED ON THE EXTERIOR OF THE BUILDING.
 - SEE DRAWING I-4 FOR CONNECTIONS.
 - POWER FOR INTRINSICALLY SAFE RELAYS NOT SHOWN FOR CLARITY. PROVIDE 120VAC POWER AND FUSED CIRCUIT PROTECTION FOR EACH ISR.
 - TO PUMP #1 CONTROL CIRCUIT TIMING RELAY TR-1.
 - TO PUMP #2 CONTROL CIRCUIT TIMING RELAY TR-2.
 - CONFIGURE THE PUMP CONTROLLER TO ONLY ALLOW ONE (1) PUMP TO RUN WHEN OPERATING VIA GENERATOR POWER.

1 PUMP CONTROL PANEL ELEMENTARY
1-5 NOT TO SCALE

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25378, EXPIRATION DATE: 7-14-2020"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.
Director of Public Works: *Michael P. ...* 8/19/19
Chief, Bureau of Engineering: *...* 8-9-19
Chief, Utility Design Division: *...* PSD

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231
Professional Engineer: *...* 7/31/2019

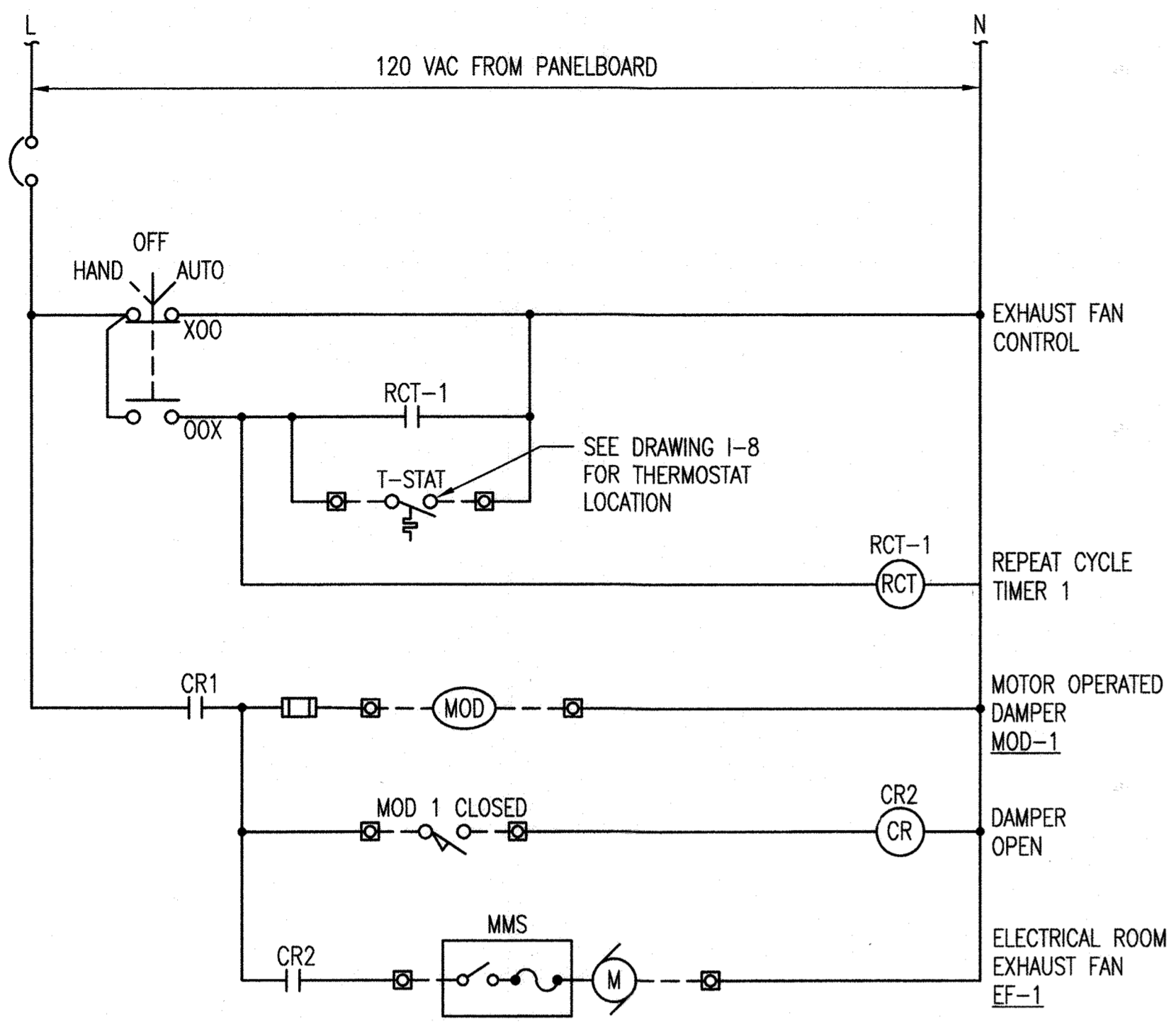


DES: GAH			
DRN: JUN			
CHK: PWG			
JULY 2019			
BY NO.	1	CHANGE ORDER #1: ADDITION OF SOFT STARTS	9/24/21
		REVISION	DATE

PUMP CONTROL PANEL
DIAGRAMS (2 OF 2)
600 SCALE MAP NO. 18
BLOCK NO. 7&13

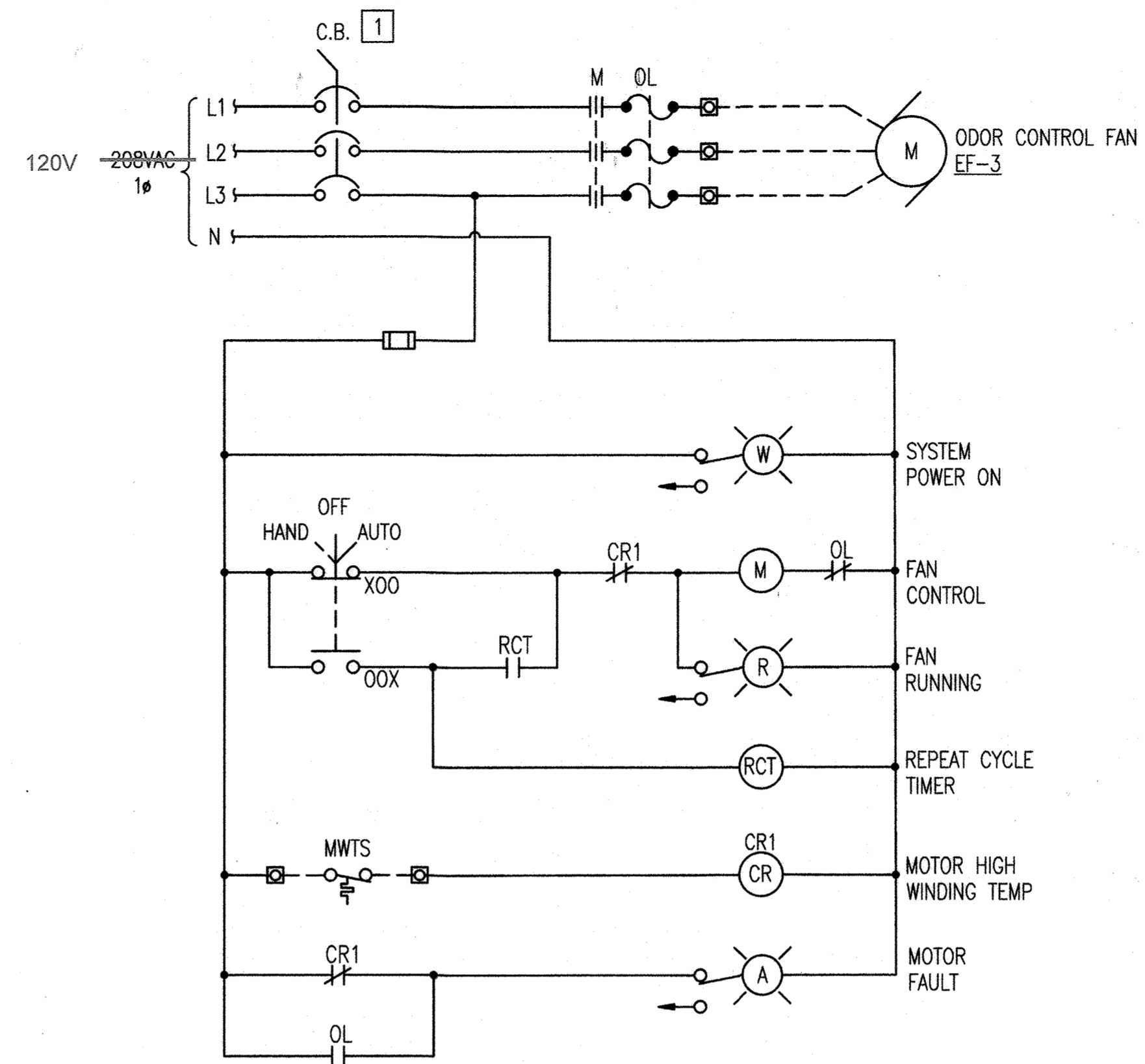
DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

AS-BUILT
I-5
SCALE AS SHOWN
SHEET 33 OF 43



VENTILATION CONTROL PANEL VCP-1 ELEMENTARY

1
I-6
NOT TO SCALE



ODOR CONTROL FAN ELEMENTARY

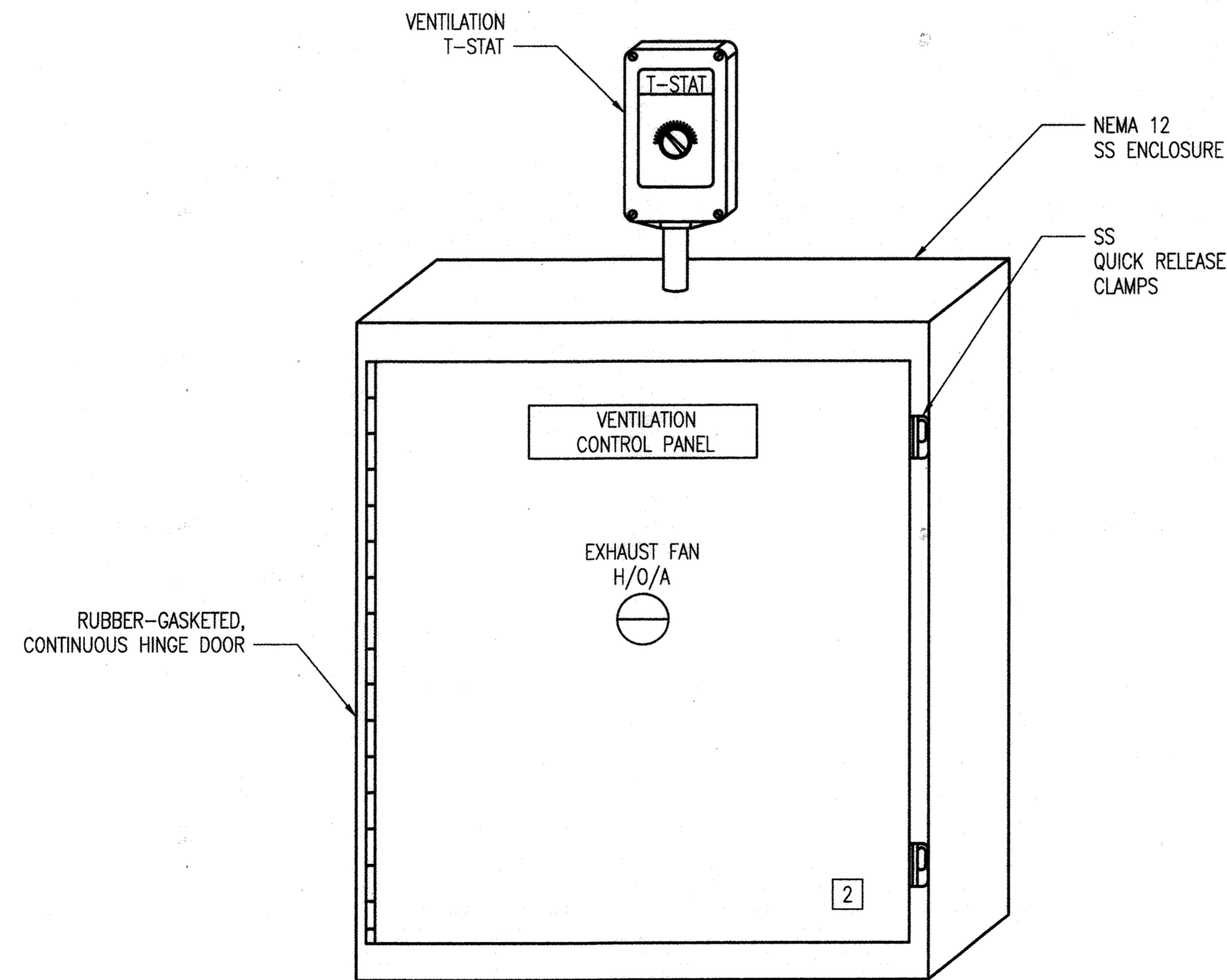
3
I-6
NOT TO SCALE

GENERAL NOTES:

1. REFER TO ELECTRICAL DRAWINGS FOR PANEL BOARD CIRCUITS.
2. LABEL ALL EQUIPMENT WITHIN THE CONTROL PANEL INCLUDING TERMINAL BLOCKS, RELAYS AND CIRCUIT BREAKERS WITH ASSOCIATED CIRCUIT OR ID NUMBER.

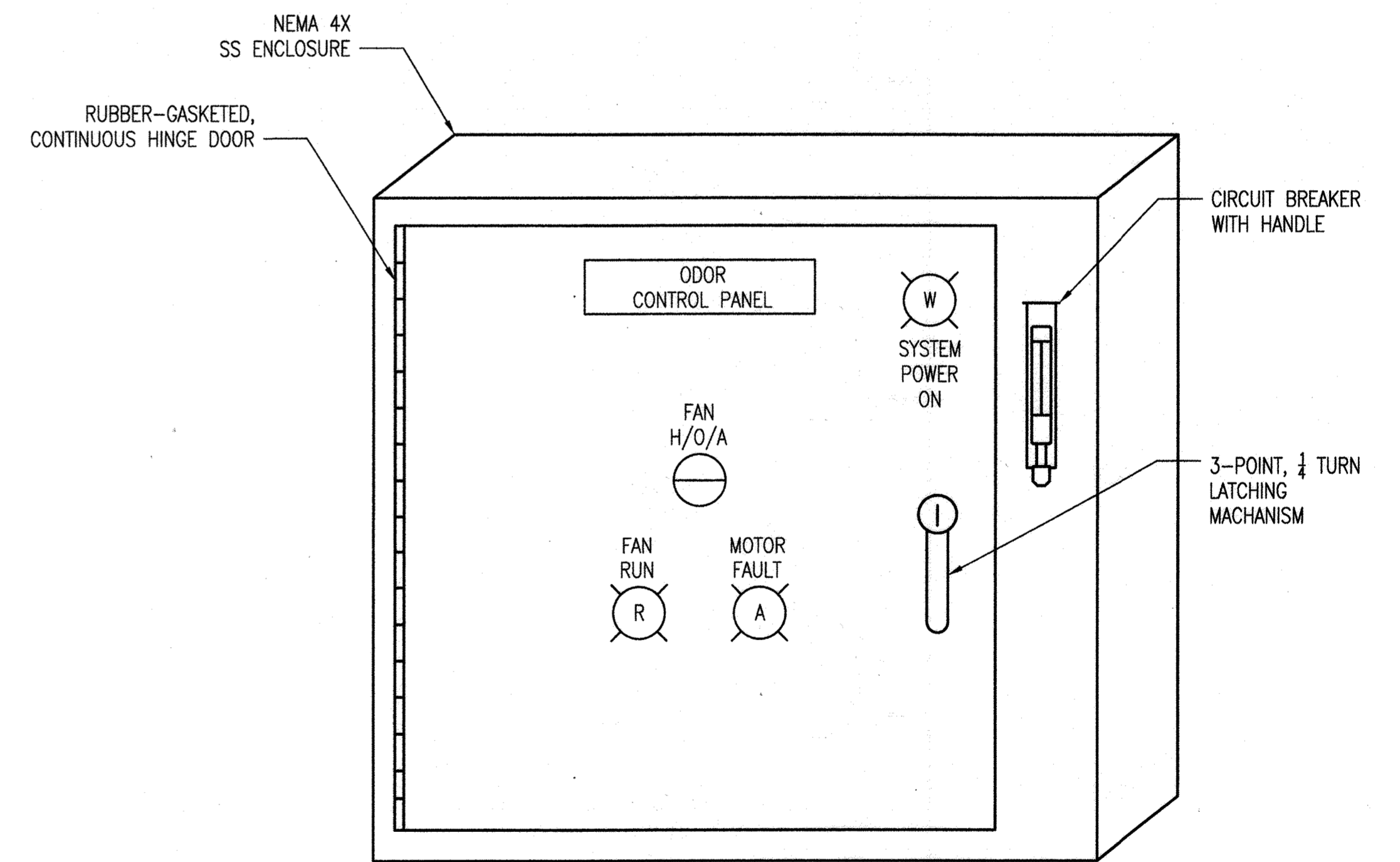
[X] SPECIFIC NOTES:

1. CIRCUIT BREAKER WITH DOOR MOUNTED HANDLE. BREAKER RATING SHALL BE IN ACCORDANCE WITH THE CONNECTED LOAD AND THE NATIONAL ELECTRIC CODE.
2. PROVIDE LABEL ON ENCLOSURE TO INDICATE THE PANEL IS BEING FED FROM MULTIPLE POWER SOURCES.



VENTILATION CONTROL PANEL ELEVATION

2
I-6
NOT TO SCALE



ODOR CONTROL PANEL ELEVATION

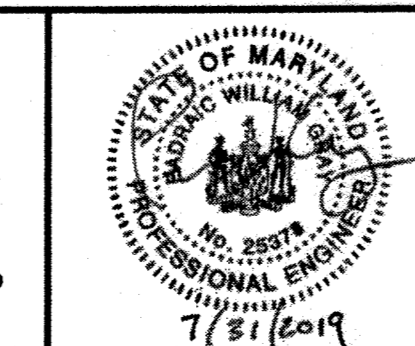
4
I-6
NOT TO SCALE

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25378, EXPIRATION DATE: 7-14-2020"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Whitman, Requardt & Associates, LLP
8/3/19
8/9/19
8/1/19

WRA
Whitman, Requardt & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231



DES:	JUN		
DRN:	JUN		
CHK:	PWG		
JULY 2019			
BY	NO.	REVISION	DATE
		1 R/F#6: ODOR CONTROL FAN VOLTAGE	4/30/2020

VENTILATION CONTROL DIAGRAMS

600 SCALE MAP NO. 18
BLOCK NO. 7&13

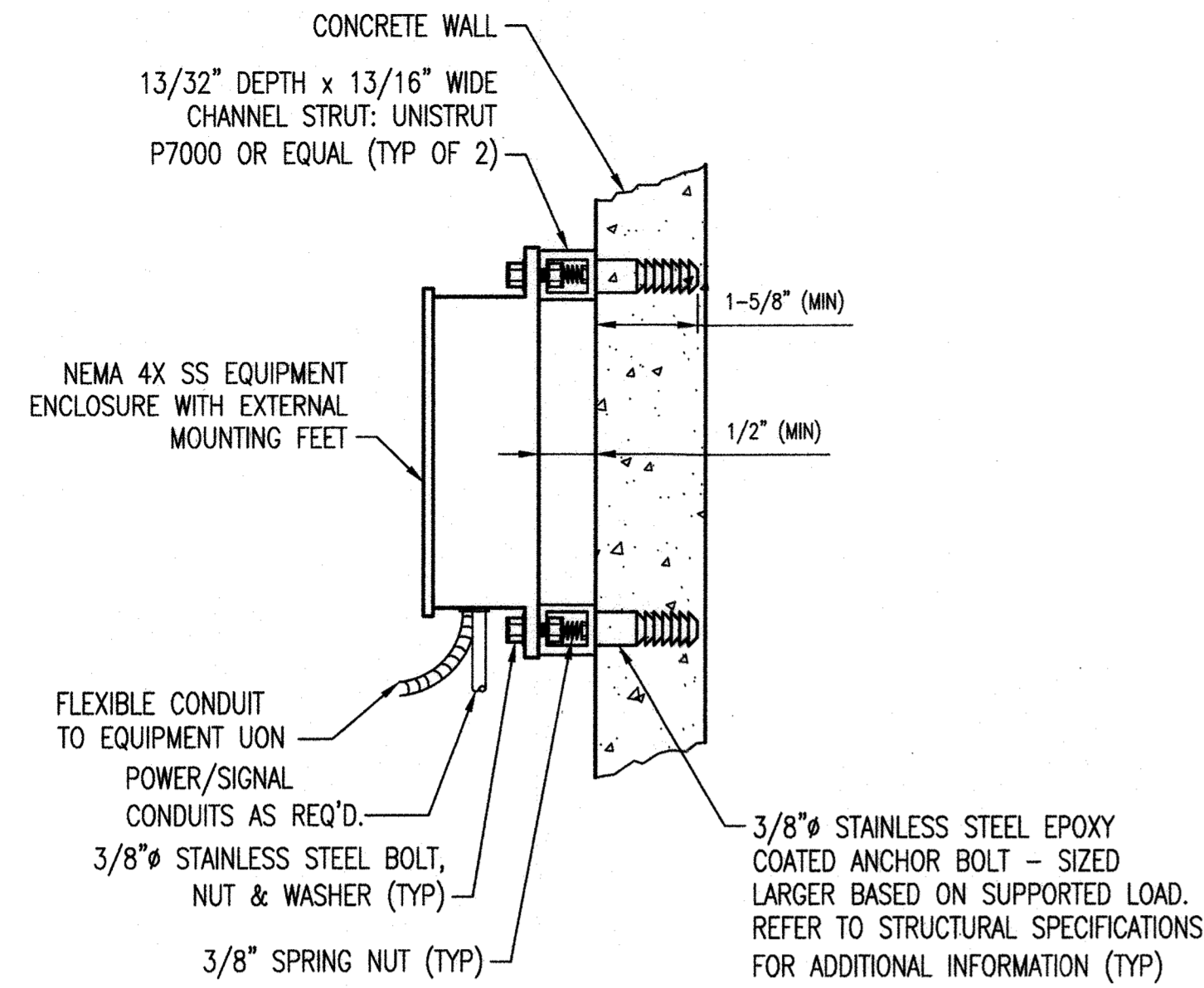
DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

AS-BUILT

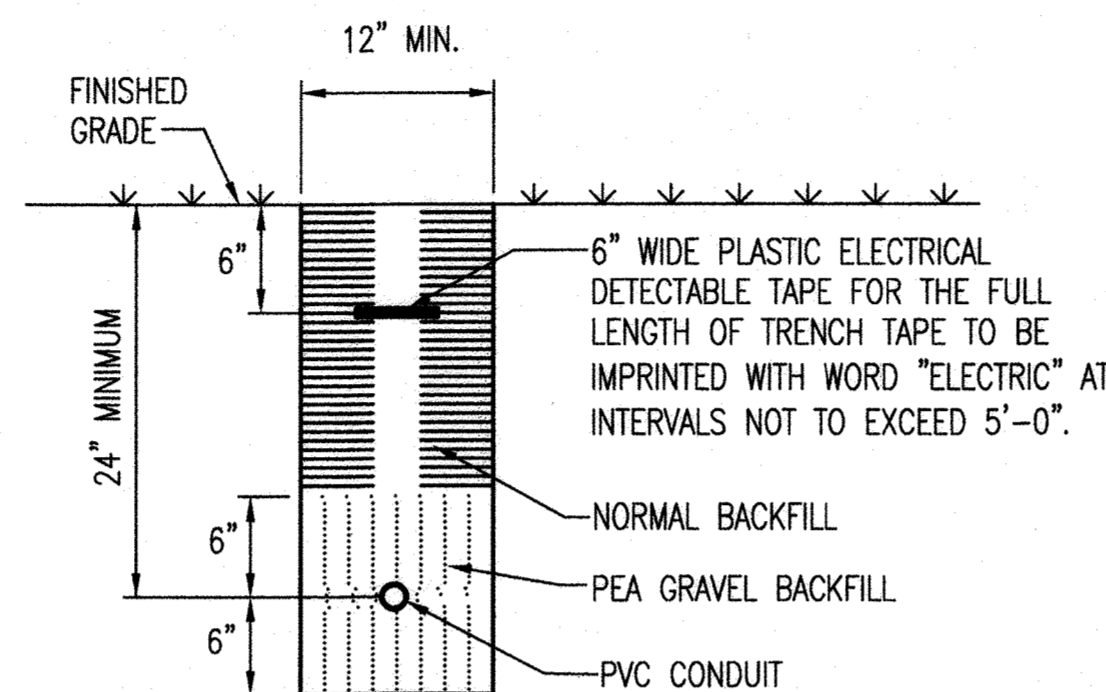
1-6

SCALE AS SHOWN

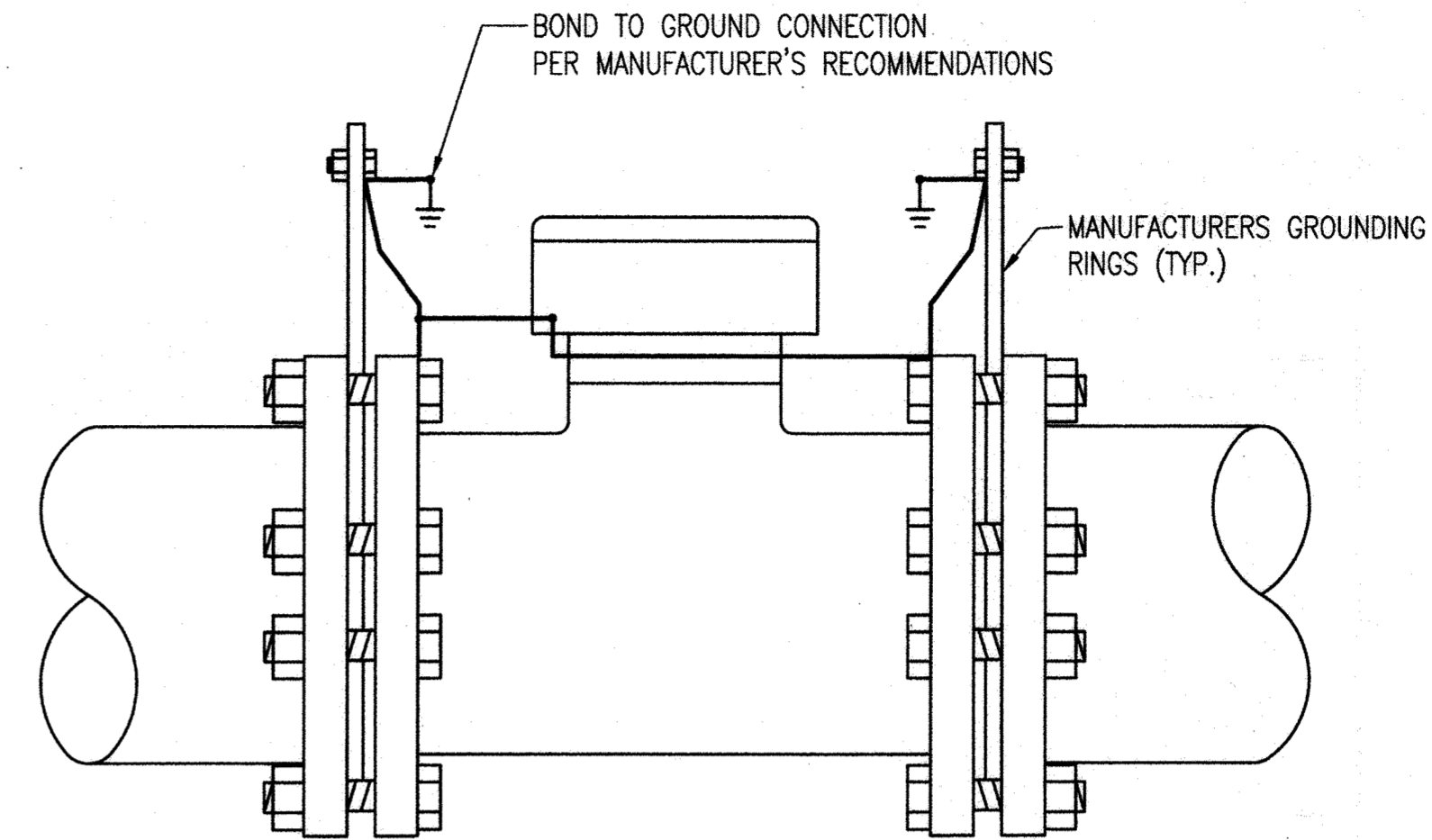
SHEET 34 OF 43



1 ENCLOSURE WALL MOUNTING DETAIL
1-7 NOT TO SCALE

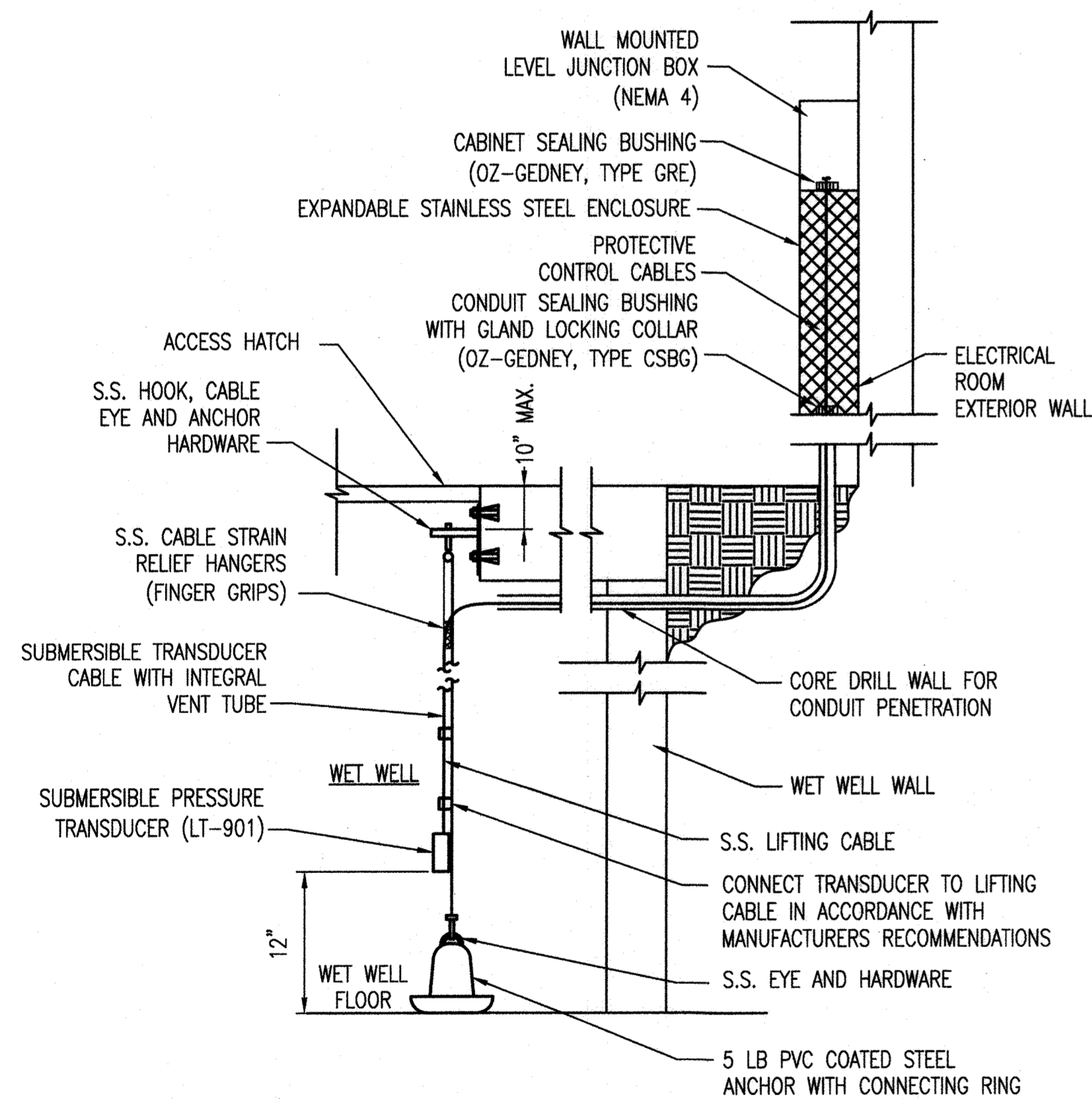


2 DIRECT BURIED CONDUIT DETAIL
1-7 NOT TO SCALE

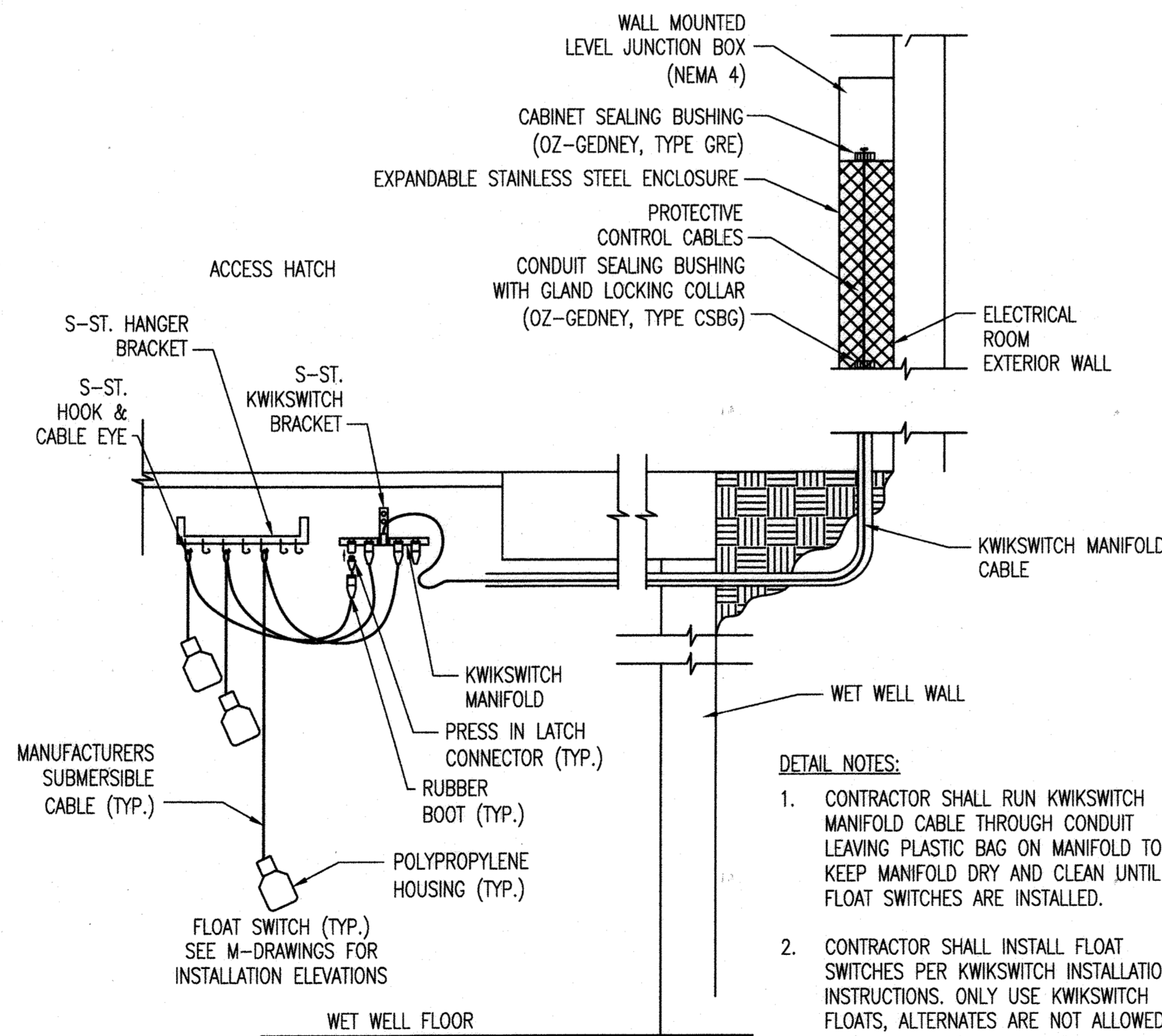


3 FLOWMETER GROUNDING RING DETAIL
1-7 NOT TO SCALE

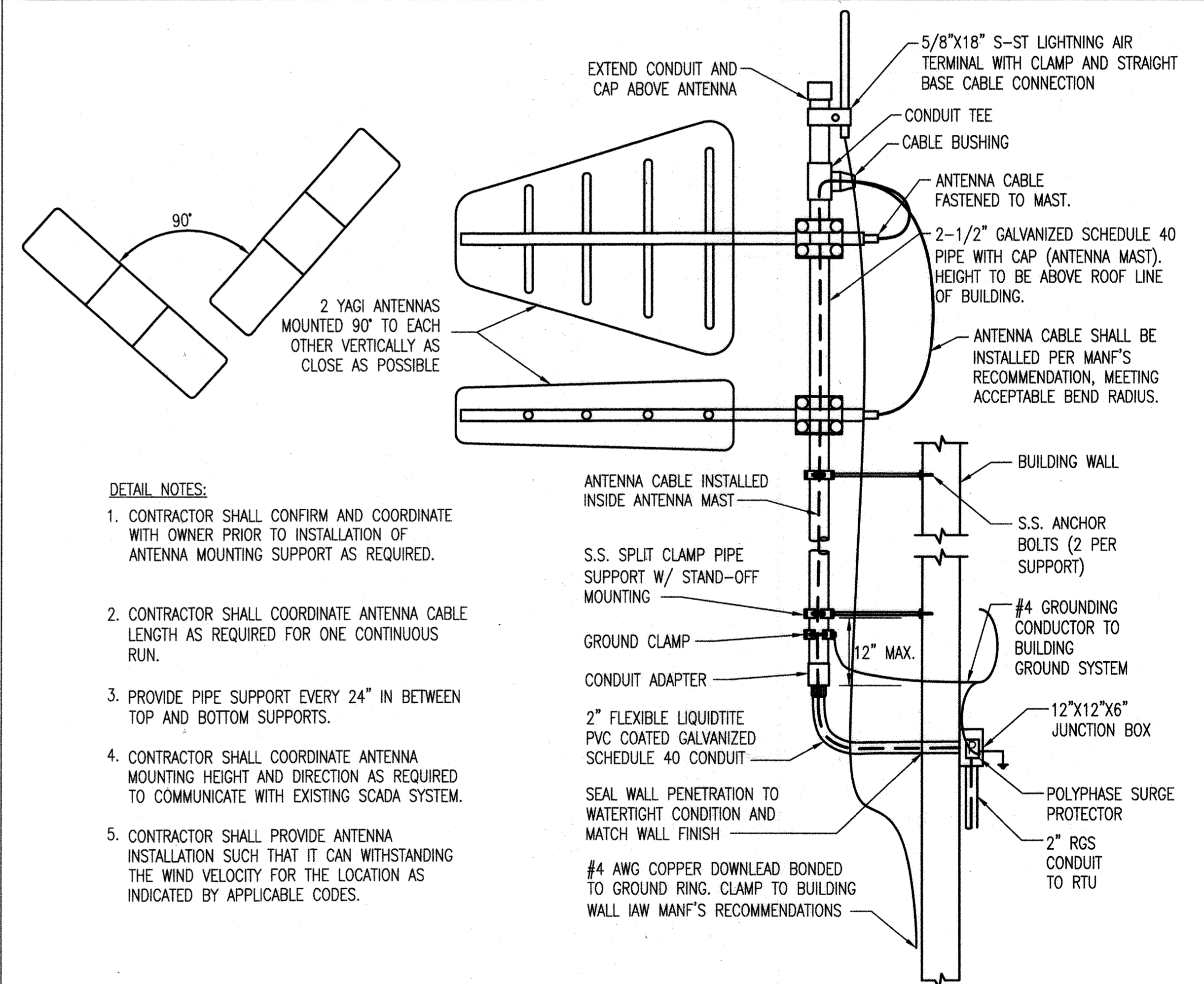
- GENERAL NOTES:**
- REFER TO ELECTRICAL DRAWINGS FOR PANEL BOARD CIRCUITS.
 - LABEL ALL EQUIPMENT WITHIN THE CONTROL PANEL INCLUDING TERMINAL BLOCKS, RELAYS AND CIRCUIT BREAKERS WITH ASSOCIATED CIRCUIT OR ID NUMBER.



4 LEVEL TRANSDUCER INSTALLATION DETAIL
1-7 NOT TO SCALE



5 LEVEL FLOAT INSTALLATION DETAIL
1-7 NOT TO SCALE



- DETAIL NOTES:**
- CONTRACTOR SHALL CONFIRM AND COORDINATE WITH OWNER PRIOR TO INSTALLATION OF ANTENNA MOUNTING SUPPORT AS REQUIRED.
 - CONTRACTOR SHALL COORDINATE ANTENNA CABLE LENGTH AS REQUIRED FOR ONE CONTINUOUS RUN.
 - PROVIDE PIPE SUPPORT EVERY 24" IN BETWEEN TOP AND BOTTOM SUPPORTS.
 - CONTRACTOR SHALL COORDINATE ANTENNA MOUNTING HEIGHT AND DIRECTION AS REQUIRED TO COMMUNICATE WITH EXISTING SCADA SYSTEM.
 - CONTRACTOR SHALL PROVIDE ANTENNA INSTALLATION SUCH THAT IT CAN WITHSTAND THE WIND VELOCITY FOR THE LOCATION AS INDICATED BY APPLICABLE CODES.

6 ANTENNA DETAIL
1-7 NOT TO SCALE

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25378, EXPIRATION DATE: 7-14-2020"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND.

Mark D. ... 8/5/19
DIRECTOR OF PUBLIC WORKS DATE

... 8/1/19
CHIEF, UTILITY DESIGN DIVISION DATE

Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

WRA
Whitman, Reardon & Associates, LLP
801 South Caroline Street, Baltimore, Maryland 21231

STATE OF MARYLAND
PROFESSIONAL ENGINEER
7/31/2019

DES: GAH					
DRN: JJN					
CHK: PWG					
JULY 2019	BY	NO.	REVISION	DATE	

INSTRUMENTATION DETAILS

600 SCALE MAP NO. 18 BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
CAPITAL PROJECT NO. S-6275
CONTRACT NO. 10-5096
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

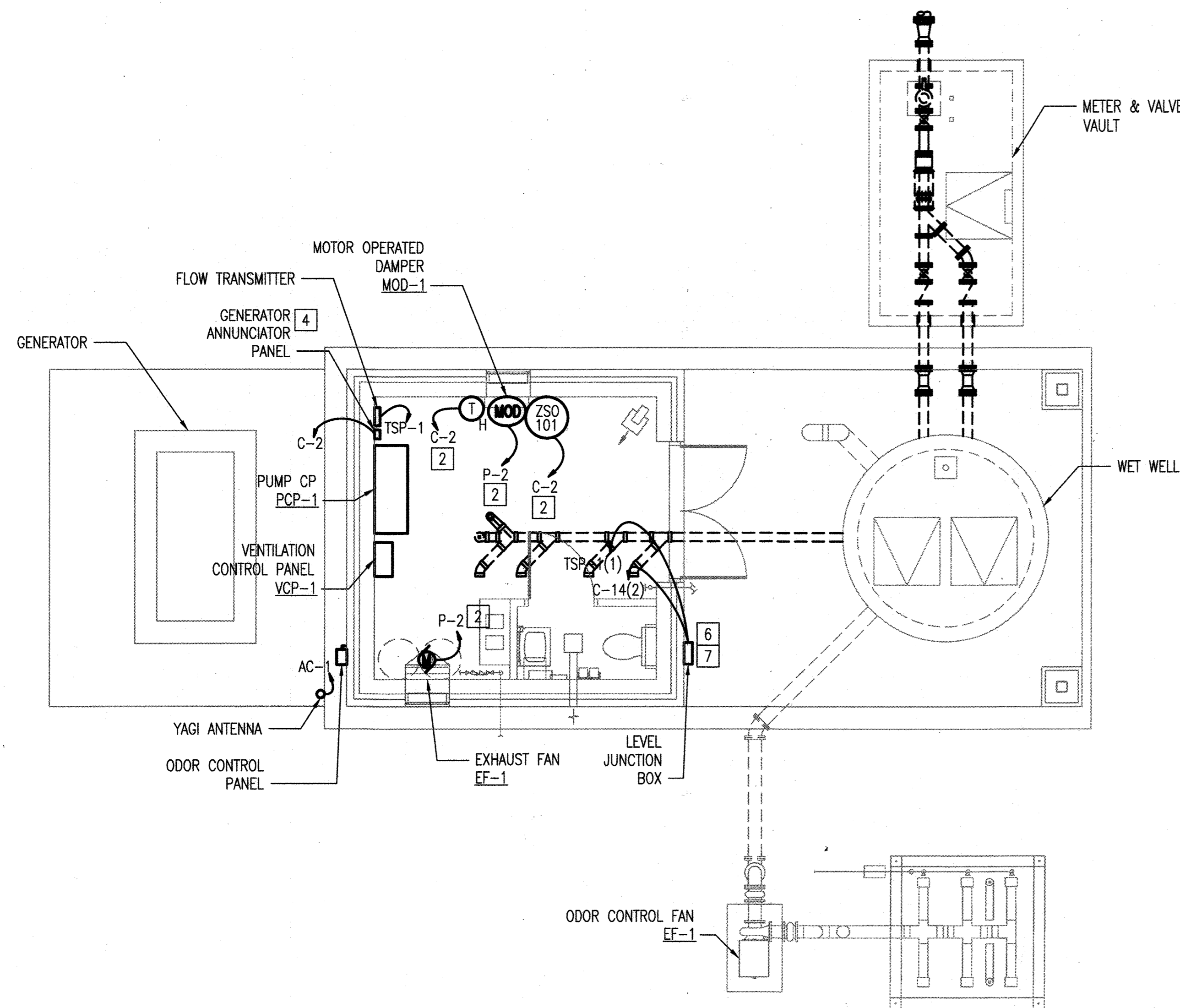
AS-BUILT
1-7
SCALE AS SHOWN
SHEET 35 OF 43

GENERAL NOTES:

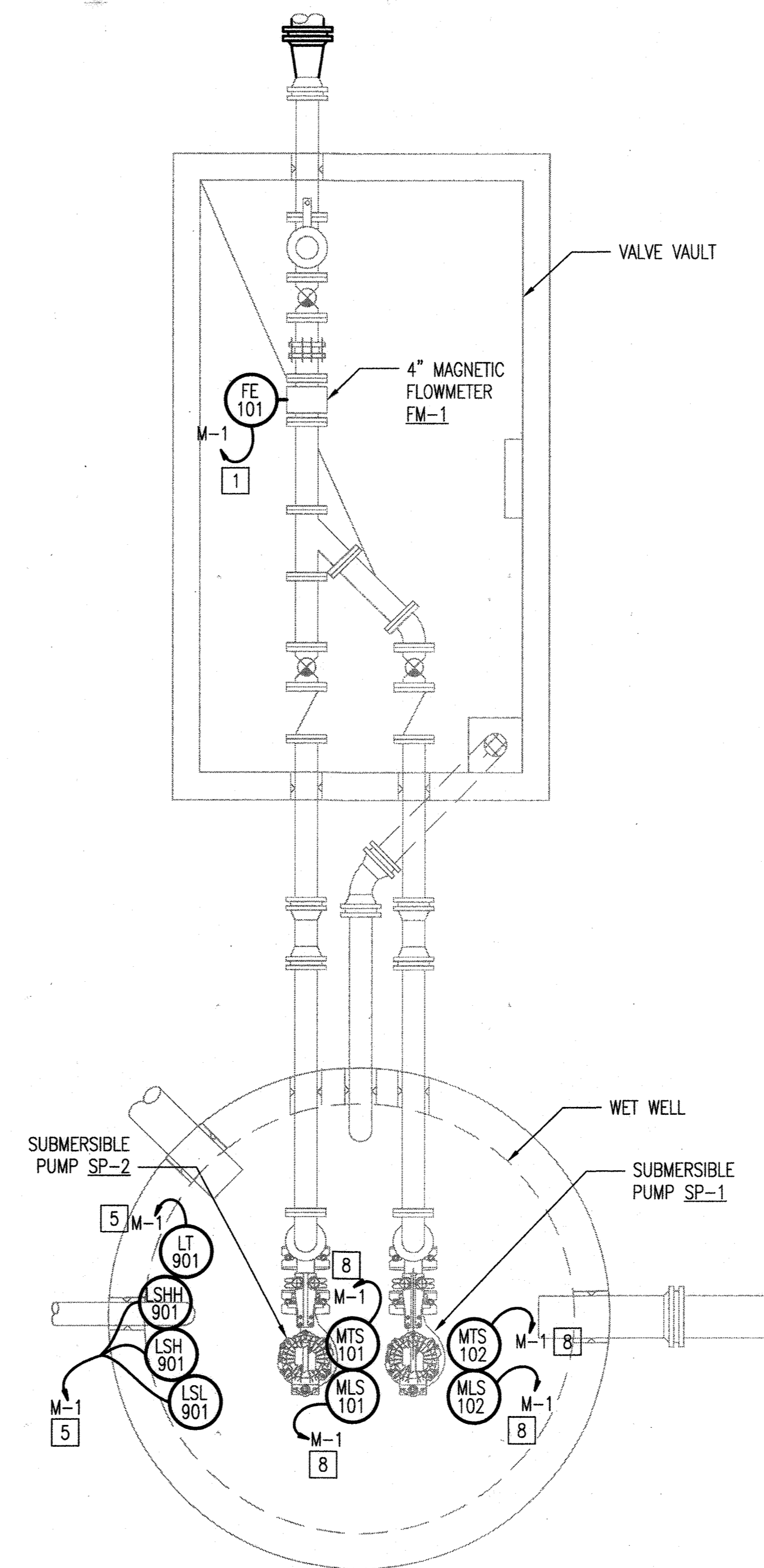
1. SEE I&C SYMBOLS, LEGENDS, AND ABBREVIATIONS SHEETS FOR DETAILS.
2. REFER TO INSTALLATION DETAILS FOR ADDITIONAL REQUIREMENTS.
3. UNLESS OTHERWISE INDICATED, ALL CONDUIT AND CONDUCTOR SHALL BE TERMINATED AT THE PUMP CONTROL PANEL.
4. REFER TO ELECTRICAL DRAWING FOR ADDITIONAL POWER AND CONDUIT REQUIREMENTS.

X SPECIFIC NOTES:

1. TERMINATE CONDUIT AND CONDUCTORS AT ASSOCIATED FLOW TRANSMITTER.
2. TERMINATE CONDUIT AND CONDUCTORS AT ELECTRICAL ROOM VENTILATION CONTROL PANEL.
3. PANEL PROVIDED BY MANUFACTURER AND INSTALLED BY CONTRACTOR.
4. CONTROL PANEL PROVIDED BY GENERATOR MANUFACTURER.
5. REFER TO DETAIL 5 ON I-7 FOR LEVEL FLOAT INSTALLATION DETAIL. TERMINATE CONDUIT AND MULTIPLE CONDUCTOR CABLE AT LEVEL JUNCTION BOX.
6. ANALOG AND DIGITAL CONTROL SIGNAL WIRING MUST BE ISOLATED AT A SAFE DISTANCE FROM EACH OTHER AND CROSS AT RIGHT ANGLES TO MINIMIZE INDUCTION WITHIN THE LEVEL JUNCTION BOX.
7. ANALOG AND DIGITAL CONTROL SIGNAL WIRING SHALL BE ROUTED IN SEPARATE DEDICATED CONDUITS. ANALOG SIGNAL CONDUIT SHALL BE GROUNDED TO ISOLATE AGAINST ELECTRICAL NOISE.
8. TERMINATE CONDUIT AND CABLES AT THE PUMP CONTROL BOX. REFER TO ELECTRICAL DRAWINGS FOR PANEL LOCATIONS AND ADDITIONAL DETAILS.



1 GRADE LEVEL PLAN
 1-8 SCALE: 1/4" = 1'-0"

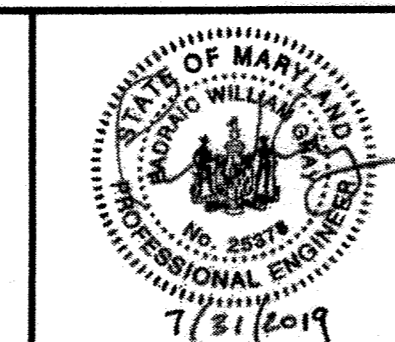


2 WET WELL & VALVE VAULT PLAN
 1-8 SCALE: 1/2" = 1'-0"

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 25378, EXPIRATION DATE: 7-14-2020"

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND.
 Director of Public Works: *[Signature]* 8/9/19
 Chief, Bureau of Utilities: *[Signature]* 8-9-19
 Chief, Bureau of Engineering: *[Signature]* 8/9/2019
 Chief, Utility Design Division: *[Signature]* 8/8/19

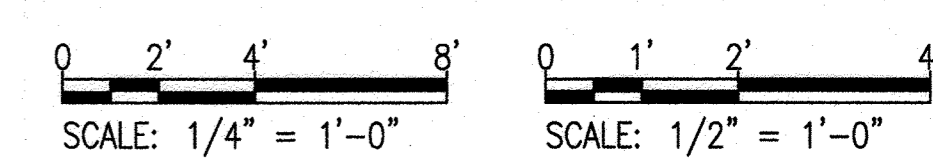
WRA
 Whitman, Reardon & Associates, LLP
 801 South Caroline Street, Baltimore, Maryland 21231



DES:	JUN			
DRN:	JUN			
CHK:	PWG			
JULY 2019				
BY	NO.	REVISION	DATE	

PUMPING STATION
 INSTRUMENTATION PLANS
 600 SCALE MAP NO. 18
 BLOCK NO. 7&13

DANIELS AREA WASTEWATER PUMPING STATION
 CAPITAL PROJECT NO. S-6275
 CONTRACT NO. 10-5096
 2ND ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND



AS-BUILT
1-8
 SCALE AS SHOWN
 SHEET 36 OF 43

SITE DEVELOPMENT PLAN

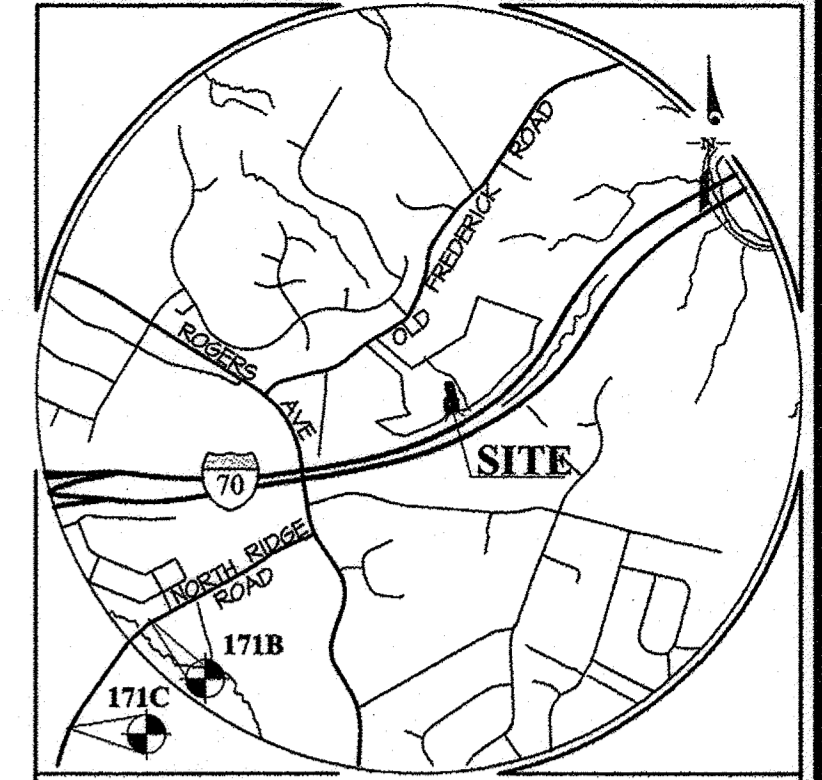
SUNELL PROPERTY

PARCEL A - PUMP STATION

CAPITAL PROJECT S-6275

STORMWATER MANAGEMENT INFORMATION CHART	
LOT NO.	(M-6)/(M-8)
PARCEL A	1

(M-6) MICRO-BIORETENTION
(M-8) SHALES



VICINITY MAP
SCALE: 1" = 2,000'

GEODEIC CONTROL STATIONS			
171B	ELEV. 976.282	N = 542,991.761	E = 1,364,004.914
171C	ELEV. = 415.415	N = 541,056.916	E = 1,363,154.691

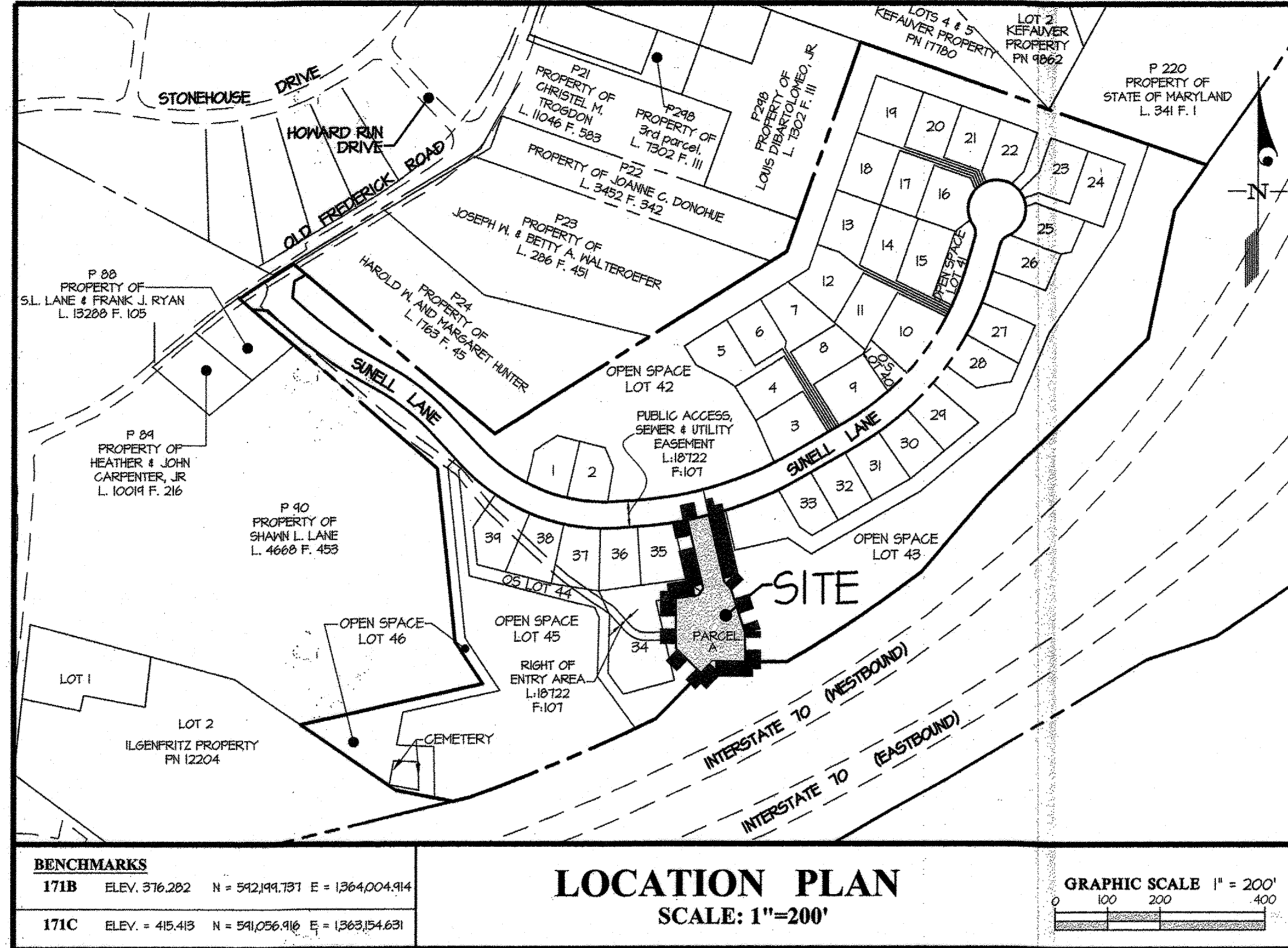
ADC MAP: 21 GRID: B4

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1000 AT LEAST 48 HOURS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-TITI AT LEAST 48-HOURS PRIOR TO ANY EXCAVATION WORK.
- THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS BUREAU OF UTILITIES AT (410) 313-4900 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- IF REQUIRED, ANY "RI-1" ("STOP") SIGN OR THE STREET NAME SIGN (SIS) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
- THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
- ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL PERFORATED (SQUARE PUNCH TYPE) SQUARE TUBE POST (4 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL PERFORATED, SQUARE TUBE SLEEVE (2 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO (2) QUICK PUNCH HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- PROJECT BACKGROUND.

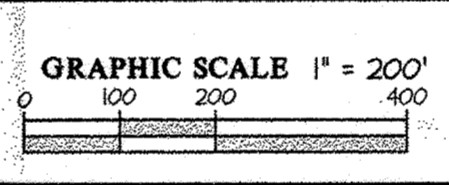
LOCATION:	TAX MAP 10
ZONING:	PROPERTY IS ZONED R-20 PER THE 2015 COMPREHENSIVE ZONING PLAN
ELECTION DISTRICT:	SECOND ELECTION DISTRICT
AREA OF BUILDABLE LOTS:	PARCEL 'A', 0.51 AC.
DPZ REF. FILE NO.:	ECF-14-054, WP-15-011, SP-15-002, F-14-038, CAPITAL PROJECT S-6275
- TOPOGRAPHIC AERIAL SURVEY WAS PERFORMED ON APRIL, 2011 BY MCKENZIE SNYDER.
- COORDINATES ARE BASED ON NAD '83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODEIC CONTROL STATION NUMBERS: 171B AND 171C.
- THE EXISTING UTILITIES SHOWN HEREIN WERE DERIVED FROM AVAILABLE PUBLIC RECORDS. THE CONTRACTOR MUST DIG TEST PITS BY HAND AT ALL UTILITY CROSSINGS AND CONNECTION POINTS TO VERIFY EXACT LOCATION.
- SPOT ELEVATIONS SHOWN FOR CURB ARE BOTTOM OF CURB UNLESS OTHERWISE NOTED.
- ALL PLAN DIMENSIONS ARE TO THE FACE OF BUILDING OR CURB UNLESS OTHERWISE NOTED. DIMENSIONS ARE MEASURED PERPENDICULAR OR RADIAL BETWEEN ITEMS UNLESS NOTED OTHERWISE. CURB RADI ARE 5' UNLESS NOTED OTHERWISE.
- THE CEMETERY INVENTORY MAP DOES NOT SHOW ANY CEMETERIES WITHIN THE SITE (PARCEL A). SEE F-14-038 FOR INFORMATION ON THE CEMETERY WITHIN THE ADJACENT SUBDIVISION.
- THE SCENIC ROADS MAP DOES NOT INDICATE ANY SCENIC ROADS IN THE VICINITY.
- THE HISTORIC SITES MAP DOES NOT SHOW ANY HISTORICAL SITES WITHIN THE PROJECT LIMITS.
- THE GEO-TECHNICAL REPORT WAS PROVIDED BY GEOTECH ENGINEERS, INC. DATED JANUARY, 2014.
- A NOISE STUDY IS NOT REQUIRED FOR THIS USE.
- THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY KLEBASKO ENVIRONMENTAL, LLC., DATED OCTOBER 2, 2012 AND APPROVED WITH SP-15-002 ON JULY 30, 2015. THERE ARE NO STREAMS, WETLANDS, OR BUFFERS WITHIN THE LIMITS OF THIS SDP.
- SOIL DATA WAS TAKEN FROM THE SOIL SURVEY OF HOWARD COUNTY, MARYLAND ISSUED MARCH, 2008.
- A TRAFFIC STUDY IS NOT REQUIRED FOR THIS SDP. A TRAFFIC STUDY FOR THE SURROUNDING DEVELOPMENT WAS PROVIDED WITH F-14-038.
- BOUNDARY INFORMATION IS FROM BOUNDARY SURVEYS BY GUTSCHICK, LITTLE, AND WEBER, P.A., DATED MAY, 2013.
- THERE IS NO FLOODPLAIN ON SITE.
- NO GRADING, REMOVAL OF VEGETATIVE COVER OR TREES, OR PLACEMENT OF NEW STRUCTURES IS PERMITTED WITHIN LIMITS OF WETLANDS, STREAMS OR THEIR REQUIRED BUFFERS, OR 100 YEAR FLOODPLAIN AREAS, UNLESS PERMITTED UNDER AN APPROVED WAIVER PETITION OR DETERMINED TO BE ESSENTIAL OR NECESSARY BY DPZ.
- THE PROJECT IS WITHIN THE METROPOLITAN DISTRICT. WATER SERVICE IS PUBLIC (CONTR. #14-4874-D) AND SEWER SERVICE IS PUBLIC (14-4874-D & 10-5046-D).
- THE FOREST CONSERVATION REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SITE ARE PROVIDED BY F-14-038. NO ADDITIONAL FOREST CONSERVATION OR SURETY IS REQUIRED FOR THIS SDP.
- ALL OUTDOOR LIGHTING SHALL BE ORIENTED TO DIRECT LIGHT INWARDS AND DOWNWARDS ON-SITE AWAY FROM ALL ADJOINING PUBLIC ROADS AND IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS.
- REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.
- THE REQUIRED LANDSCAPE BUFFER PLANTINGS ARE PROVIDED IN ACCORDANCE WITH SECTION 16.124 AND THE HOWARD COUNTY LANDSCAPE MANUAL. THE PERIMETER LANDSCAPE PLANTING ADJACENT TO I-70 FOR THIS SITE IS PROVIDED BY F-14-038. NO SURETY IS REQUIRED FOR THIS SDP DUE TO GOVERNMENT OWNERSHIP.
- MINIMUM BUILDING SETBACK RESTRICTIONS FROM PUBLIC ROADS AND PROPERTY LINES WILL BE PROVIDED IN ACCORDANCE WITH THE ZONING REGULATIONS ADOPTED OCTOBER, 2013.
- APPROVAL OF THIS SITE DEVELOPMENT PLAN (SDP) DOES NOT ENSURE APPROVAL OF BUILDING PERMIT APPLICATIONS ASSOCIATED WITH THIS PLAN.
- STORMWATER MANAGEMENT FOR THIS SITE WILL BE PROVIDED IN ACCORDANCE WITH CHAPTER 5 OF THE MDE STORMWATER DESIGN MANUAL. BASED ON TABLE 5.3, THIS SITE HAS A TARGET PE OF 1.0". IN ORDER TO FULFILL THE STORMWATER MANAGEMENT REQUIREMENTS A COMBINATION OF BIO-SHALES (M-8) AND MICRO-BIORETENTION (M-6) WILL BE USED. ALL FACILITIES WILL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER.
- PARCEL A IS SUBJECT TO A RIGHT OF ENTRY AGREEMENT ACROSS THE SUNELL PROPERTY, PARCEL 25, RECORDED L. 18122 F107.
- A PRE-SUBMISSION COMMUNITY MEETING WAS HELD FOR THIS PROJECT ON 07/18/2015 IN COMPLIANCE WITH SECTION 16.128 OF THE AMENDED 5TH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- THE PLANNING BOARD APPROVED SP-15-002 AND CEMETERY BOUNDARY DOCUMENTATION ON 6/23/2015.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO ISSUANCE OF A USE AND OCCUPANCY PERMIT FOR ANY NEW DWELLINGS TO INSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - WIDTH - 12' (6' SERVING MORE THAN ONE RESIDENCE)
 - SURFACE - 6" OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATINGS (1-1/2" MIN)
 - GEOMETRY - MAX 15% GRADE, MAX 10% GRADE CHANGE AND MIN 45' TURNING RADIUS
 - STRUCTURE (GULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADINGS)
 - DRAINAGE ELEMENTS - SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
 - MAINTENANCE - SUFFICIENT TO INSURE ALL WEATHER USE
- ALL IMPROVEMENTS PROPOSED BY F-14-038 ARE SHOWN AS EXISTING ON THIS PLAN SET HOWEVER THESE FEATURES MAY BE CONSTRUCTED SIMULTANEOUSLY WITH THE IMPROVEMENTS SHOWN ON THIS SITE PLAN. COORDINATE ALL CONSTRUCTION WITH THE CONTRACTOR FOR F-14-038.
- PURSUANT TO SECTION 16.102(b) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS FOR HOWARD COUNTY MARYLAND, A DEED WAS RECORDED IN LIBER 18112 AT FOLIO 393 CONVEYING PARCEL 'A' FROM WILLIAM EUGENE SUNELL TO THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS FOR THE PURPOSE OF A PUBLIC UTILITY.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE

NOTE: HEALTH DEPARTMENT APPROVAL CONTINGENT ON THE EXISTING SUNELL HOUSE ON PROPOSED LOT 34 BEING VACATED PRIOR TO THE START OF CONSTRUCTION. THE WELL AND SEPTIC FOR THE EXISTING HOUSE MUST BE ABANDONED AND DOCUMENTATION SUBMITTED AND APPROVED BY THE HEALTH DEPARTMENT PRIOR TO RECORDATION OF THE PLAT (F-14-038) FOR THE SURROUNDING SUB-DIVISION.



BENCHMARKS			
171B	ELEV. 976.282	N = 542,991.761	E = 1,364,004.914
171C	ELEV. = 415.415	N = 541,056.916	E = 1,363,154.691

LOCATION PLAN
SCALE: 1"=200'



- SITE ANALYSIS DATA CHART
 - TOTAL PROJECT AREA: 0.51 AC. (22,246 SF)
 - LIMIT OF DISTURBED AREA: 0.5 AC.
 - ZONING: R-20
 - APPLICABLE DPZ FILE REFERENCES: ECF-14-054, WP-15-011, SP-15-002, F-14-038, CAPITAL PROJECT S-6275
 - PROPOSED USE OF SITE: GOVERNMENT STRUCTURE - PUBLIC UTILITY - WASTEWATER PUMPING STATION
 - FLOOR SPACE:

CONTROL ROOM	182 SF (GOVERNMENT STRUCTURE)
TOTAL	182 SF (GOVERNMENT STRUCTURE)
 - PARKING REQUIRED: 2 (PER H.C.D.M. Vol 2, Section 6.9.A.12)
 - PARKING PROVIDED: 2

100.0.D. BULK REGULATIONS (R-20)

- THE FOLLOWING MAXIMUM HEIGHT LIMITATIONS SHALL APPLY:
 - PRINCIPAL STRUCTURE 34 FEET
 - ACCESSORY STRUCTURE 15 FEET
- MINIMUM LOT SIZE (EXCEPT AS PROVIDED IN SECTION 100.0.F. OF THESE REGULATIONS FOR MANDATORY OPEN SPACE) 20,000 SF
- MINIMUM LOT WIDTH AT BUILDING RESTRICTION LINE 60 FEET
- MINIMUM SETBACK REQUIREMENTS:
 - FROM ARTERIAL OR COLLECTOR PUBLIC STREET RIGHT-OF-WAY
 - STRUCTURES
 - FRONT OR SIDE
 - LOTS THAT FRONT A PUBLIC STREET CONSTRUCTED AFTER 10/10/43 40 FEET
 - ALL OTHER LOTS 50 FEET
 - REAR
 - PRINCIPAL STRUCTURE 50 FEET
 - ACCESSORY STRUCTURE 10 FEET
 - USES (OTHER THAN STRUCTURES) IN ALL DEVELOPMENT PROJECTS EXCEPT SINGLE-FAMILY DETACHED 20 FEET
 - FROM OTHER PUBLIC STREET RIGHT-OF-WAY
 - STRUCTURES
 - FRONT OR SIDE
 - LOTS THAT FRONT A PUBLIC STREET CONSTRUCTED AFTER 10/10/43 30 FEET
 - ALL OTHER LOTS 50 FEET
 - REAR
 - PRINCIPAL STRUCTURE 30 FEET
 - ACCESSORY STRUCTURE 10 FEET
 - USES (OTHER THAN STRUCTURES) IN ALL DEVELOPMENT PROJECTS EXCEPT SINGLE-FAMILY DETACHED 20 FEET
- FROM LOT LINES
 - STRUCTURES
 - FRONT 20 FEET
 - EXCEPT PIPESTEM LOTS FACING AND ADJOINING THE PROJECT BOUNDARY 30 FEET
 - SIDE 10 FEET
 - REAR
 - PRINCIPAL STRUCTURE 30 FEET
 - ACCESSORY STRUCTURE 10 FEET
 - USES (OTHER THAN STRUCTURES) IN ALL DEVELOPMENT PROJECTS EXCEPT SINGLE-FAMILY DETACHED 20 FEET

LEGEND

- PROPERTY LINE
- - - - - EXISTING CONTOUR
- 400 --- PROPOSED CONTOUR
- EXISTING TREELINE
- EX. 8" --- EXISTING SANITARY SEWER
- 8" --- EXISTING SANITARY SEWER
- EX. 8" --- EXISTING WATERLINE
- 8" --- PROPOSED WATERLINE
- PROPOSED FIRE HYDRANT
- STORM DRAIN PER F-14-038
- LIMIT OF SITE
- CONCRETE SIDEWALK PER F-14-038
- CURB AND GUTTER PER F-14-038
- PROPOSED EDGE OF PAVEMENT
- LIMIT OF WETLAND
- WETLAND AREA
- SBB --- STREAM BANK BUFFER
- WB --- WETLAND BUFFER
- FOREST CONSERVATION EASEMENT
- STREAM BANK CENTERLINE OF STREAM
- STEEP SLOPES - 25% AND GREATER
- STREET LIGHT
- EASEMENTS
- 2' PBL --- PROPOSED BUILDING RESTRICTION LINE
- EXISTING BUILDING
- PROPOSED BUILDING
- SOIL BOUNDARY
- SOIL TYPE
- LIMIT OF DISTURBANCE

BUILDING	ADDRESS CHART
CONTROL ROOM	8528 SUNELL LANE

SHEET INDEX

- COVER SHEET
- SITE DEVELOPMENT PLAN
- SITE DETAILS
- SEDIMENT CONTROL PLAN
- SEDIMENT CONTROL DETAILS
- SWM DRAINAGE AREA MAP AND DETAILS
- LANDSCAPE PLAN, NOTES, AND DETAILS

PERMIT INFORMATION CHART							
SUBDIVISION NAME:		SUNELL PROPERTY		SECTION/AREA	N/A		
RECORDING L. 18112 F. 353		PARCEL	25	ZONE	R-20	TAX MAP	1B
WATER CODE:		SEWER CODE:		AS-BUILT			
SDP-1							

APPROVED: FOR PUBLIC WATER & SEWERAGE SYSTEM HOWARD COUNTY HEALTH DEPARTMENT	
<i>B. D. Mason</i> County Health Officer	7/15/2019 Date
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING	
<i>Walter J. J. J.</i> Director	7-30-19 Date
<i>Karl S. J.</i> Chief, Division of Land Development	7-25-19 Date
<i>D. J. J.</i> Chief, Development Engineering Division	7-23-19 Date

GLW
PLANNING | ENGINEERING | SURVEYING

3809 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20886 | GLWPA.COM
PHONE: 301-421-4024 | BALTO. 410-880-1820 | DCVA: 301-888-2824 | FAX: 301-421-4186

DESIGNED BY:	DATE:	REVISION:	BY:	APP'R:
dds				
dds				

OWNER:
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MD
9250 BENDIX ROAD
COLUMBIA, MD 21045
410-313-2040

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12875.

EXPIRATION DATE: May 28, 2020

6/24/19

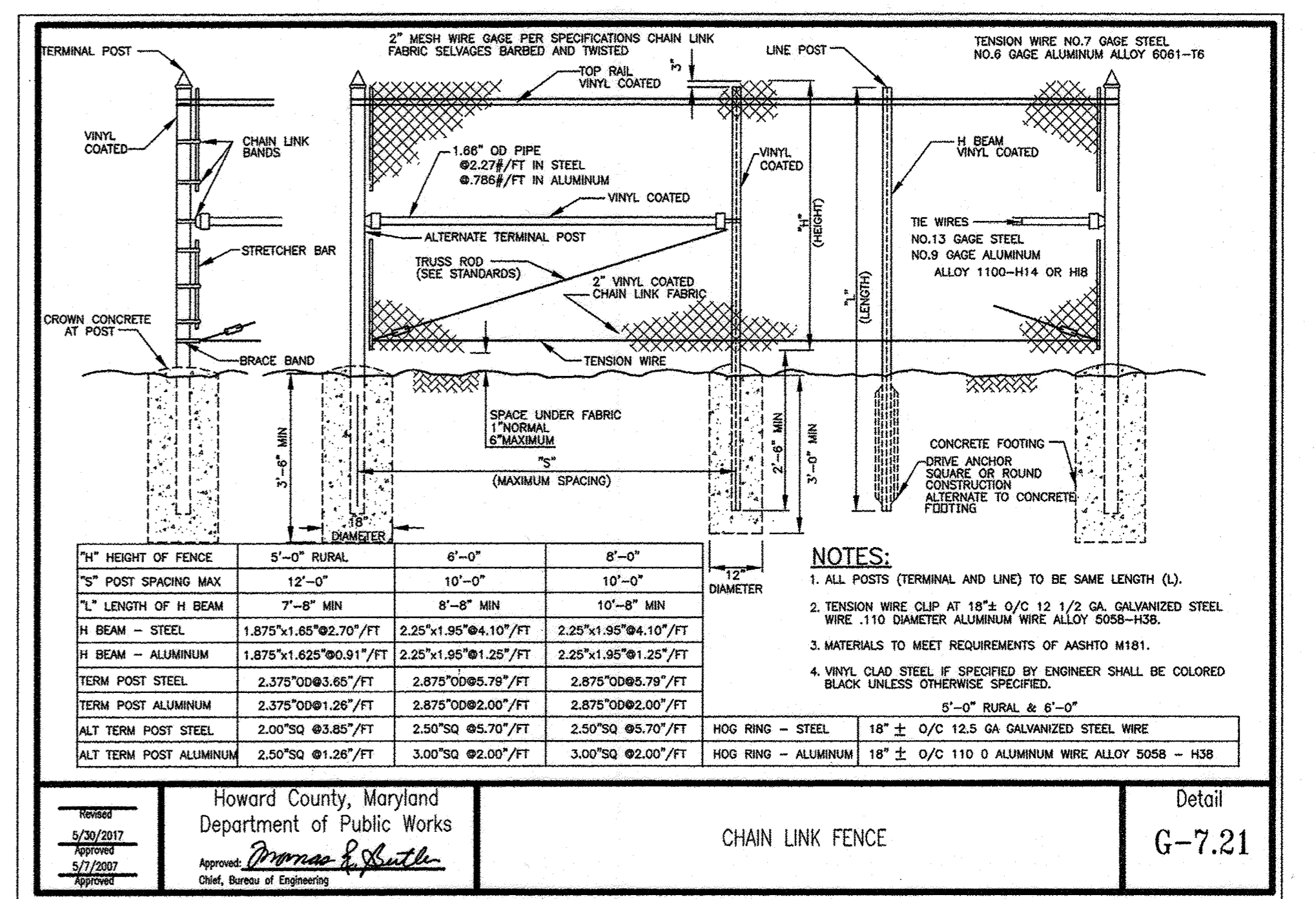
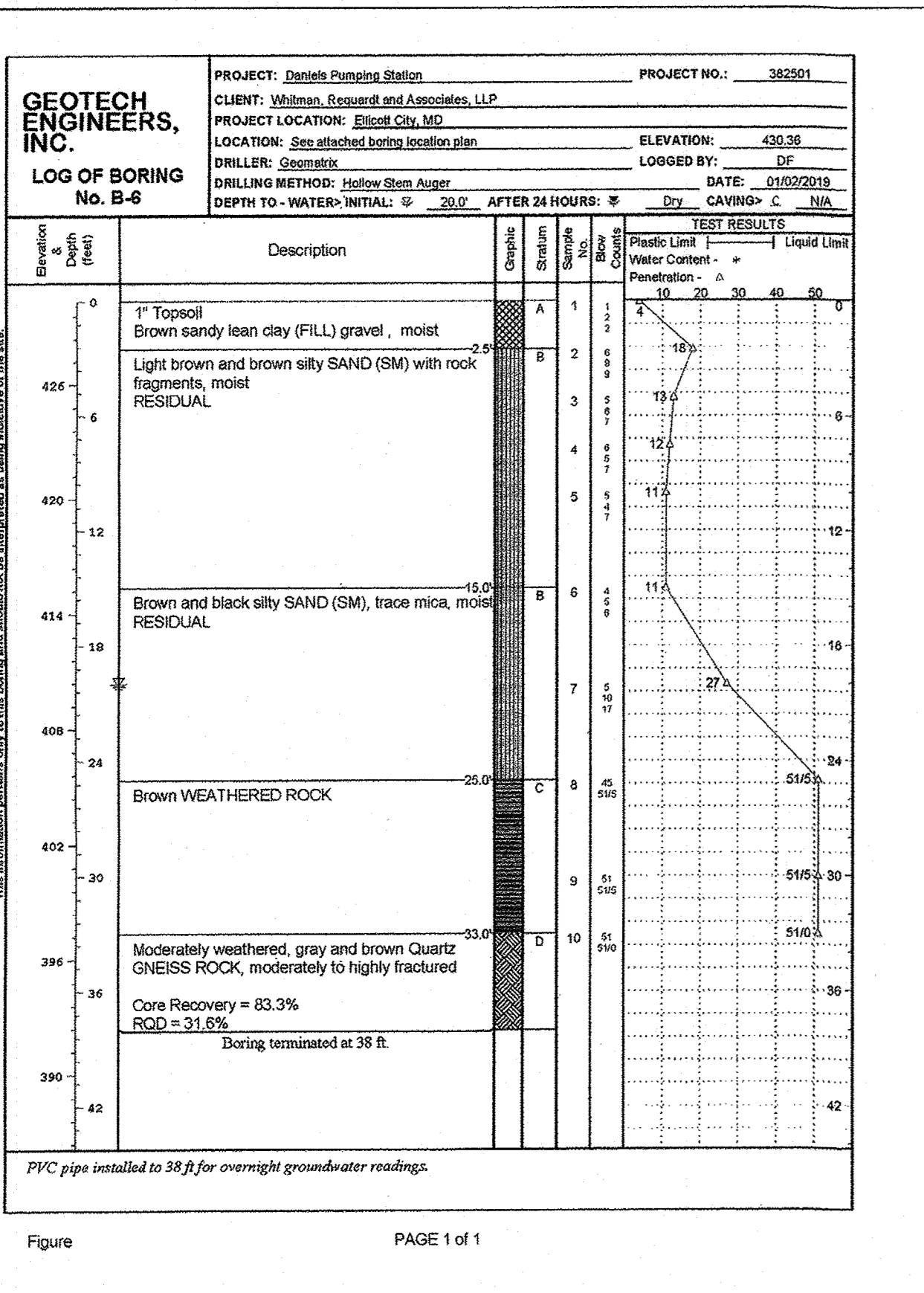
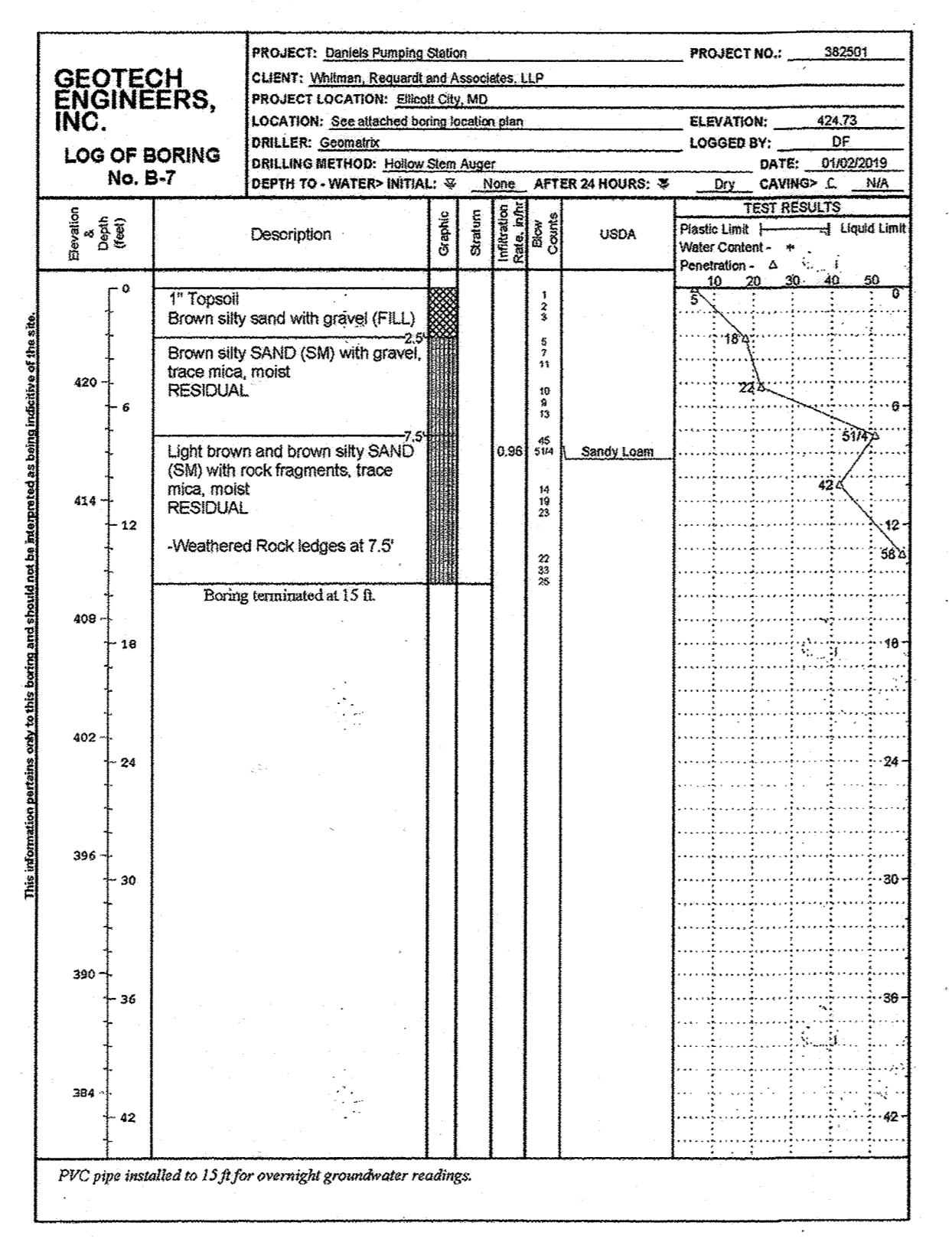
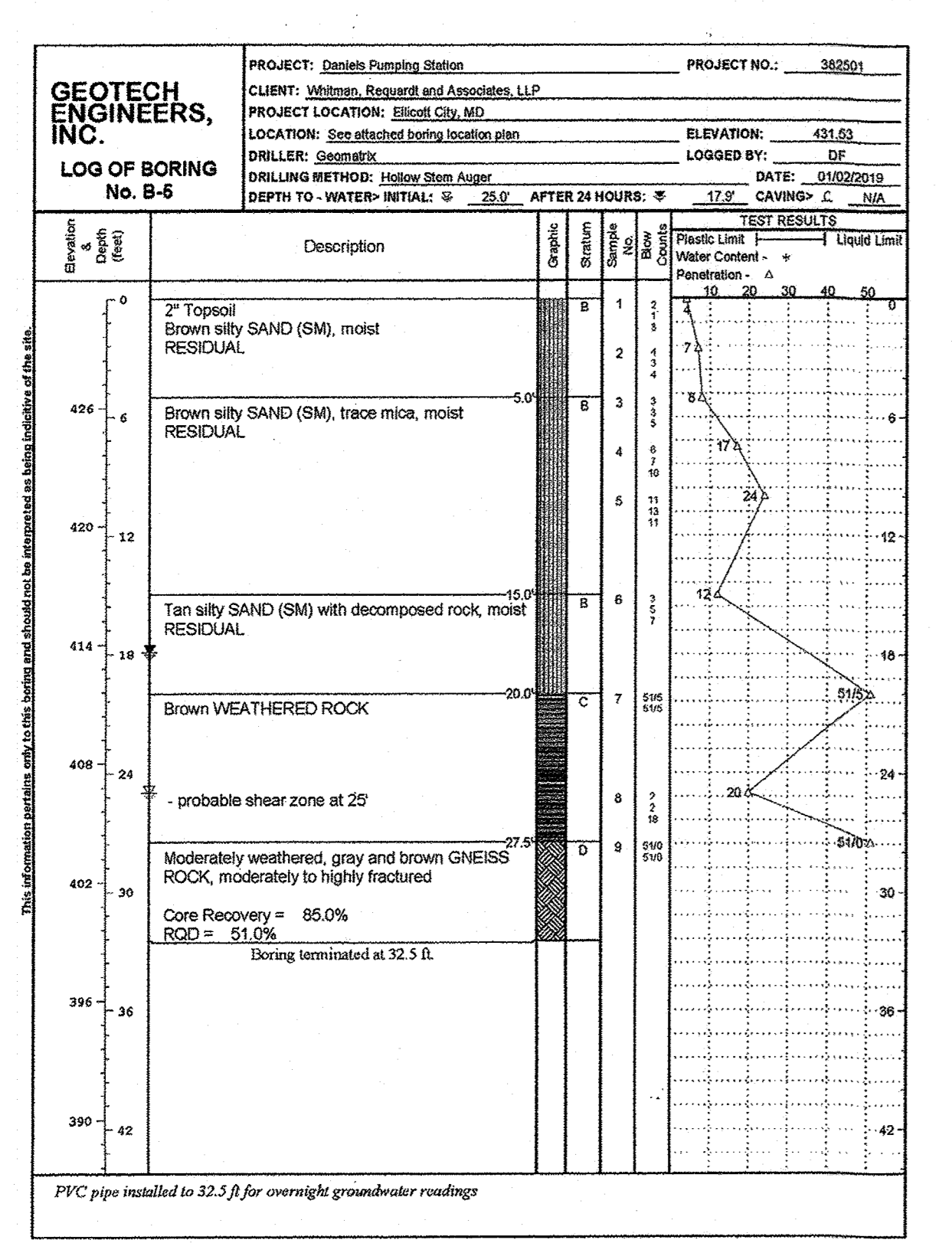
COVER SHEET

SUNELL PROPERTY
PARCEL A
WASTEWATER PUMP STATION
CAPITAL PROJECT S-6275
Liber: 18112 Folio: 353

HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-20	18107
DATE	TAX MAP - GRID	SHEET
JUNE, 2019	18 - 13	37 OF 43

ELECTION DISTRICT No. 2



NOTES:

- SEE HOWARD COUNTY DETAILS G-121 THRU G-121 FOR FENCE DETAILS. FENCE TO BE 6 FOOT BLACK VINYL COATED CHAINLINK FENCING, BLACK VINYL COATED POST AND BLACK HARDWARE.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Nathan Ellis 7-30-19
 Director Date

Wendy Land 7-25-19
 Chief, Division of Land Development Date

Wendy Land 7-23-19
 Chief, Development Engineering Division Date

GLW
 PLANNING | ENGINEERING | SURVEYING

3909 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20886 | GLWPA.COM
 PHONE: 301-421-4024 | BALT: 410-980-1820 | DC/VA: 301-489-2524 | FAX: 301-421-4196

DESIGNED BY:		OWNER:	HOWARD COUNTY, MD 9250 BENDIX ROAD COLUMBIA, MD 21045 410-313-2040
DRAWN BY:	dds	PROFESSIONAL CERTIFICATION:	I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19275 EXPIRATION DATE: MAY 26, 2025 6/24/19
CHECKED BY:			
DATE:	REVISION	BY	APPR.

STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 THOMAS R. SMITH
 LICENSE NO. 19275
 EXPIRATION DATE: MAY 26, 2025

SITE DETAILS

SUNELL PROPERTY
 PARCEL A
 WASTEWATER PUMP STATION
 CAPITAL PROJECT S-6275

Libel: Folio: HOWARD COUNTY, MARYLAND

SCALE	ZONING	G. L. W. FILE No.
AS SHOWN	R-20	18107
DATE	TAX MAP - GRID	SHEET
JUNE, 2019	18	39 OF 43

L:\CAD\DRAWINGS\WPA\BIBOT (Open Station) PLANS BY CLW\SDP\BIBOT-SDP.dwg
 PLOTTED: 6/27/2019 11:53 AM, LAST SAVED: 6/16/2019 8:39 AM, PLOTTED BY: Don Swannery

B-4-2 STANDARD AND SPECIFICATIONS FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

DEFINITION: THE PROCESS OF PREPARING THE SOILS TO SUSTAIN ADEQUATE VEGETATIVE STABILIZATION. PURPOSE: TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH.

CRITERIA: SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS. SOIL PREPARATION: 1. TEMPORARY STABILIZATION...

2. SEEDING: a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. b. MULCH ALONE MAY BE APPLIED... c. SOIL PREPARATION AND SEEDING: 1. SOIL PREPARATION... 2. SEEDING...

B. TOPSOILING

1. TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION... 2. TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED IT MEETS THE STANDARDS AS SET FORTH...

C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)

1. SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZERS... 2. FERTILIZERS MUST BE UNIFORM IN COMPOSITION... 3. LIME MATERIALS MUST BE GROUND LIMESTONE...

H-5 STANDARDS AND SPECIFICATIONS FOR DUST CONTROL

DEFINITION: CONTROLLING THE SUSPENSION OF DUST PARTICLES FROM CONSTRUCTION ACTIVITIES. PURPOSE: TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES... 1. MULCHING: SEE SECTION B-4-2... 2. VEGETATIVE COVER: SEE SECTION B-4-4...

DEVELOPER'S/BUILDER'S CERTIFICATE: I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN...

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING. Director: [Signature] Date: 7-30-19. Chief, Division of Land Development: [Signature] Date: 7-25-19. Chief, Development Engineering Division: [Signature] Date: 7-23-19.

GLW PLANNING ENGINEERS SURVEYING. 2600 NATIONAL DRIVE | SUITE 250 | BURTONTOWNSHIP, MD 20686 | GLWPA.COM

B-4-3 STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING

DEFINITION: THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER. PURPOSE: TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

CRITERIA: SEEDING. 1. SPECIFICATIONS: a. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW...

2. APPLICATION: a. DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SEEDERS... b. DRILL OR MULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL...

3. HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER). 4. MULCHING: a. MULCH MATERIALS (IN ORDER OF PREFERENCE): 1. STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY...

b. WOOD CELLULOSE FIBER MUST BE USED AS MULCH FOR ALL AREAS WHERE PERMANENT VEGETATION IS TO BE ESTABLISHED... 5. ANCHORING: a. PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER...

6. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE. 7. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.

8. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IRRIGATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION. 9. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE): - USE I AND IP (MARCH 1 - JUNE 15) - USE II AND IIP (OCTOBER 1 - APRIL 30) - USE IV (MARCH 1 - MAY 31)

ENGINEER'S CERTIFICATE: I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS... [Signature] DATE: 4/24/19. CARL GUTSCHICK ENGINEER'S SIGNATURE. DATE: 7/16/19. HOWARD SOIL CONSERVATION DISTRICT.

OWNER: DEPARTMENT OF PUBLIC WORKS, HOWARD COUNTY, MD, 9250 BENDIX ROAD, COLUMBIA, MD 21045, 410-313-2040. PROFESSIONAL CERTIFICATION: I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12975. EXPIRATION DATE: MAY 26, 2020.

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

DEFINITION: TO STABILIZE DISTURBED SOILS WITH VEGETATION FOR UP TO 6 MONTHS. PURPOSE: TO USE FAST-GROWING VEGETATION THAT PROVIDES COVER ON DISTURBED SOILS. CONDITIONS WHERE PRACTICE APPLIES EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR A PERIOD OF 6 MONTHS OR LESS...

CRITERIA: 1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3)...

2. URGENT MIXTURES: a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE. b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE...

TEMPORARY SEEDING SUMMARY. TABLE with columns: HARDNESS ZONE: 6b, SEED MIXTURE, SPECIES, APPLICATION RATE (lb/1000 sq ft), SEEDING DEPTHS, FERTILIZER RATE (10-10-10), LIME RATE.

SEDIMENT CONTROL NOTES: 1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1855... 2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL"...

3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a. 3 CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND b. 7 CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.

4. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-3), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-5). 5. ALL SEDIMENT CONTROL STRUCTURES ARE TO BE REMAINED IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.

TEMPORARY SEEDING SUMMARY. TABLE with columns: HARDNESS ZONE: 6b, SEED MIXTURE, SPECIES, APPLICATION RATE (lb/1000 sq ft), SEEDING DEPTHS, FERTILIZER RATE (10-10-10), LIME RATE, REMARKS.

6. SITE ANALYSIS: TOTAL AREA OF SITE: 0.28 AC. AREA DISTURBED: 0.21 AC. AREA TO BE REEDED OR PAVED: 0.21 AC. AREA TO BE VEGETATIVELY STABILIZED: 0.28 AC. TOTAL CUT: 400 CY. TOTAL FILL: 400 CY. OFF-SITE MASS/BORROW AREA LOCATION: NA.

7. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE. 8. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID. THE SITE AND ALL CONTROLS SHALL BE INSPECTED BY THE CONTRACTOR WEEKLY, AND THE NEXT DAY AFTER EACH RAIN EVENT... 10. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION...

11. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE LOD. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGON ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY CID, UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE HSCD, NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME. 12. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.

13. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE. 14. ALL SILT FENCE AND SUPER SILT FENCE SHALL BE PLACED ON-THE-CONTOUR, AND BE IRRIGATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURLED UPHILL BY 2' IN ELEVATION. 15. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE): - USE I AND IP (MARCH 1 - JUNE 15) - USE II AND IIP (OCTOBER 1 - APRIL 30) - USE IV (MARCH 1 - MAY 31)

16. A COPY OF THIS PLAN, THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL," AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THIS SITE IS ACTIVE.

B-4-5 STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION

DEFINITION: TO STABILIZE DISTURBED SOILS WITH PERMANENT VEGETATION. PURPOSE: TO USE LONG-LIVED PERENNIAL GRASSES AND LEGUMES TO ESTABLISH PERMANENT GROUND COVER ON DISTURBED SOILS. CONDITIONS WHERE PRACTICE APPLIES EXPOSED SOILS WHERE GROUND COVER IS NEEDED FOR 6 MONTHS OR MORE.

CRITERIA: 1. GENERAL USE: a. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3)...

2. URGENT MIXTURES: a. AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE. b. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE...

3. TURFGRASS SPECIFICATIONS: 1. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 2. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 3. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

4. TURFGRASS SPECIFICATIONS: 1. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 2. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 3. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

5. TURFGRASS SPECIFICATIONS: 1. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 2. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 3. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

6. TURFGRASS SPECIFICATIONS: 1. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 2. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 3. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

7. TURFGRASS SPECIFICATIONS: 1. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 2. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 3. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

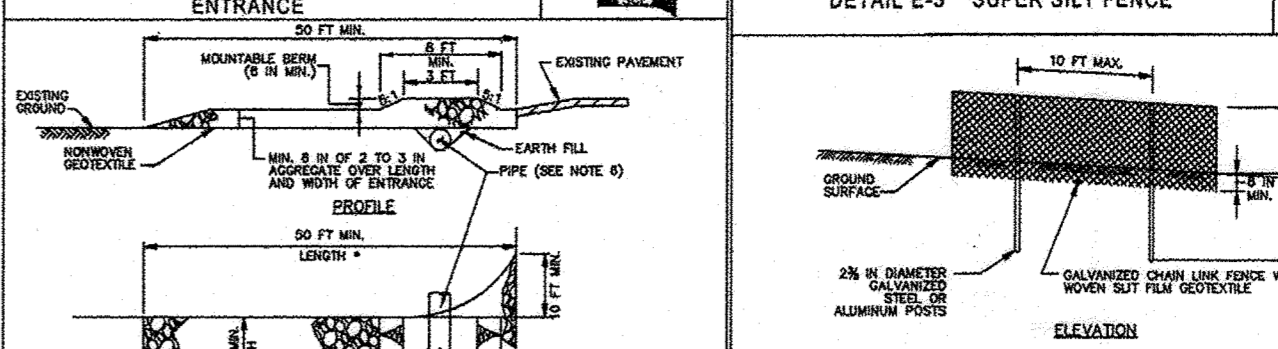
8. TURFGRASS SPECIFICATIONS: 1. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 2. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 3. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

9. TURFGRASS SPECIFICATIONS: 1. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 2. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 3. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

10. TURFGRASS SPECIFICATIONS: 1. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 2. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 3. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

11. TURFGRASS SPECIFICATIONS: 1. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 2. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 3. PLACE TURFGRASS PLANTS IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE



CONSTRUCTION SPECIFICATIONS: 1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 2. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

3. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 4. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

5. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 6. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

7. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 8. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

9. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 10. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

11. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 12. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

13. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 14. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

15. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 16. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

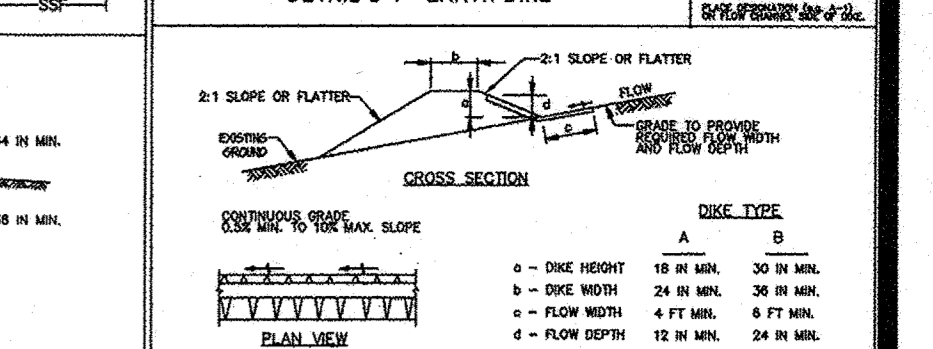
17. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 18. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

19. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 20. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

21. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 22. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

23. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 24. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

DETAIL C-1 EARTH DIKE



CONSTRUCTION SPECIFICATIONS: 1. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 2. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

3. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 4. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

5. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 6. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

7. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 8. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

9. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 10. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

11. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 12. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

13. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 14. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

15. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 16. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

17. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 18. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

19. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 20. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

21. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 22. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

23. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 24. PLACE EARTH DIKE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

B-4-8 STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA

DEFINITION: A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES. PURPOSE: TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

CRITERIA: 1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN. 2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SOIL SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-1-3 (LAND GRADING)...

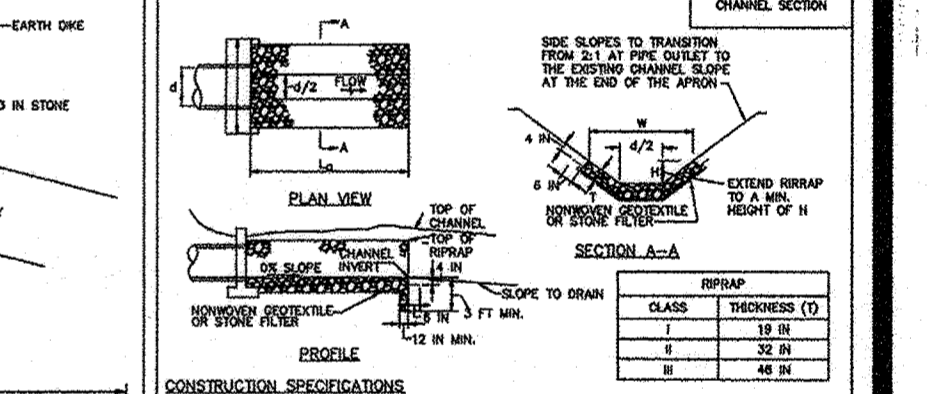
3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE. 4. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/4" DAILY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION. 5. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/4" DAILY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION. 6. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/4" DAILY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.

7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/4" DAILY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION. 8. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/4" DAILY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION. 9. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/4" DAILY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.

10. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/4" DAILY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION. 11. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/4" DAILY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION. 12. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/4" DAILY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.

13. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/4" DAILY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION. 14. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/4" DAILY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION. 15. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/4" DAILY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.

DETAIL C-2 TEMPORARY SWALE



CONSTRUCTION SPECIFICATIONS: 1. PLACE TEMPORARY SWALE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 2. PLACE TEMPORARY SWALE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

3. PLACE TEMPORARY SWALE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 4. PLACE TEMPORARY SWALE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

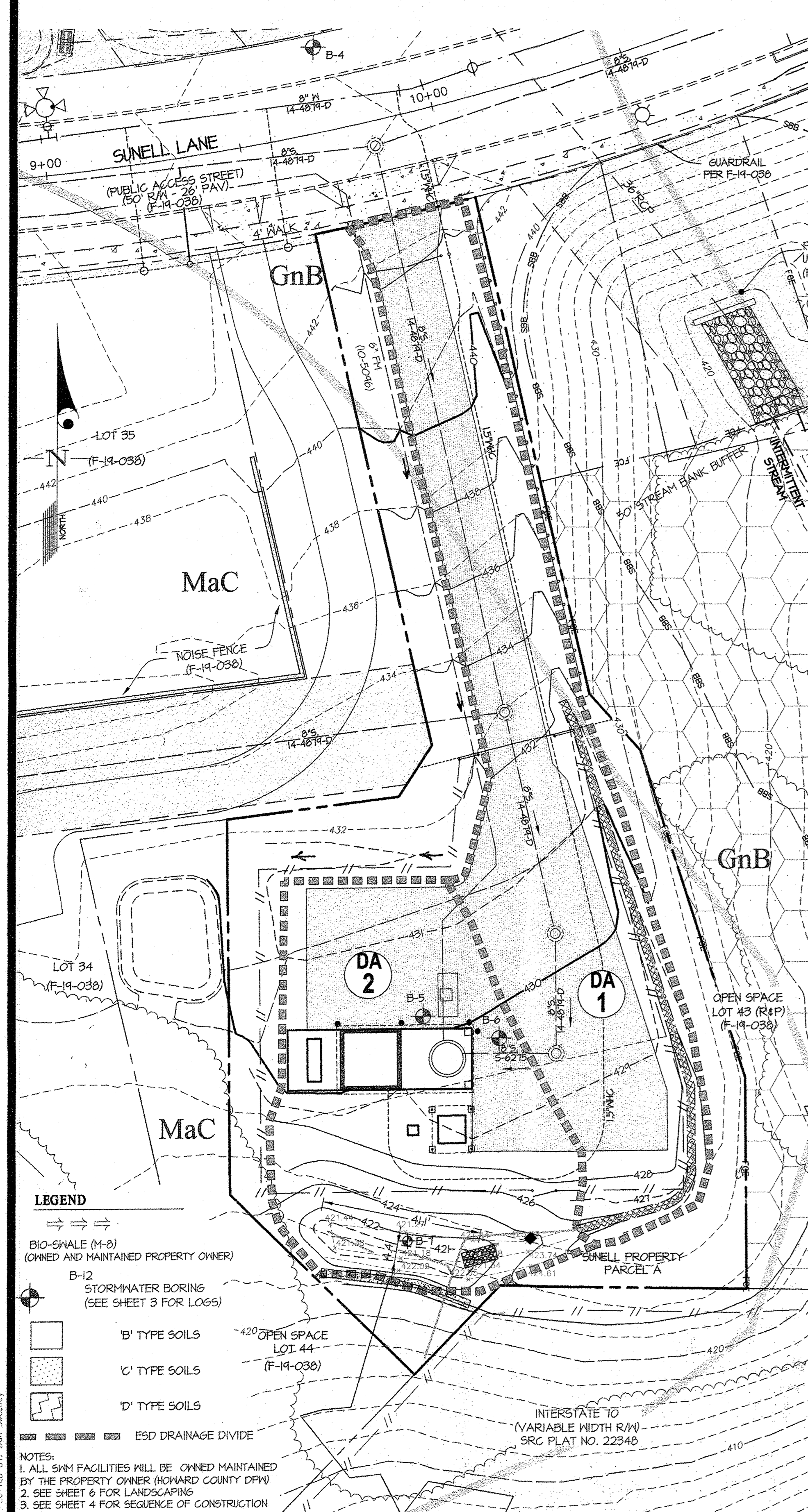
5. PLACE TEMPORARY SWALE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 6. PLACE TEMPORARY SWALE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

7. PLACE TEMPORARY SWALE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 8. PLACE TEMPORARY SWALE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

9. PLACE TEMPORARY SWALE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL... 10. PLACE TEMPORARY SWALE IN ACCORDANCE WITH THE APPROVED PLAN, WHICH MAY TRAVEL OVER THE DRIVE LENGTHS OF THE SOIL...

THIS PLAN IS FOR SEDIMENT CONTROL PURPOSES ONLY

SEDIMENT CONTROL NOTES AND DETAILS. SCALE: 1"=20'. ZONING: R-20. G. L. W. FILE NO.: 18107. DATE: JUNE, 2019. TAX MAP - GRID: 18-13. SHEET: 41 OF 43. SUNELL PROPERTY PARCEL A WASTEWATER PUMP STATION. CAPITAL PROJECT S-6275. Libr: 8114. Folio: 252.



STORMWATER MANAGEMENT REQUIREMENT

DEVELOPMENT AREA :	0.41 Ac.
% IMPERVIOUS:	41%
TARGET P _e :	1.8"
ESDV REQUIRED:	1,289 CF
RECHARGE FACTOR (S):	0.23
RECHARGE REQUIRED:	193 CF

STORMWATER MANAGEMENT PROVIDED BY DEVICE

MICRO-BIORETENTION (M-6):	524 CF*
BIO-SWALES (M-8):	1,001 CF
TOTAL:	1,525 CF
P _e Provided = 2.12"	

*THE RECHARGE REQUIREMENT IS MET BY THE VOLUME PROVIDED IN THE MICRO-BIORETENTION

ESD SUMMARY TABLE

AREA NO.	AREA (SF)	IMPERVIOUS	ESDV (CF)	P _e PROVIDED
DA 1	8,585	59%	1,001	2.40"
MBR 2	6,513	51%	524	1.89"
TOTAL	15,098	56%	1,525	

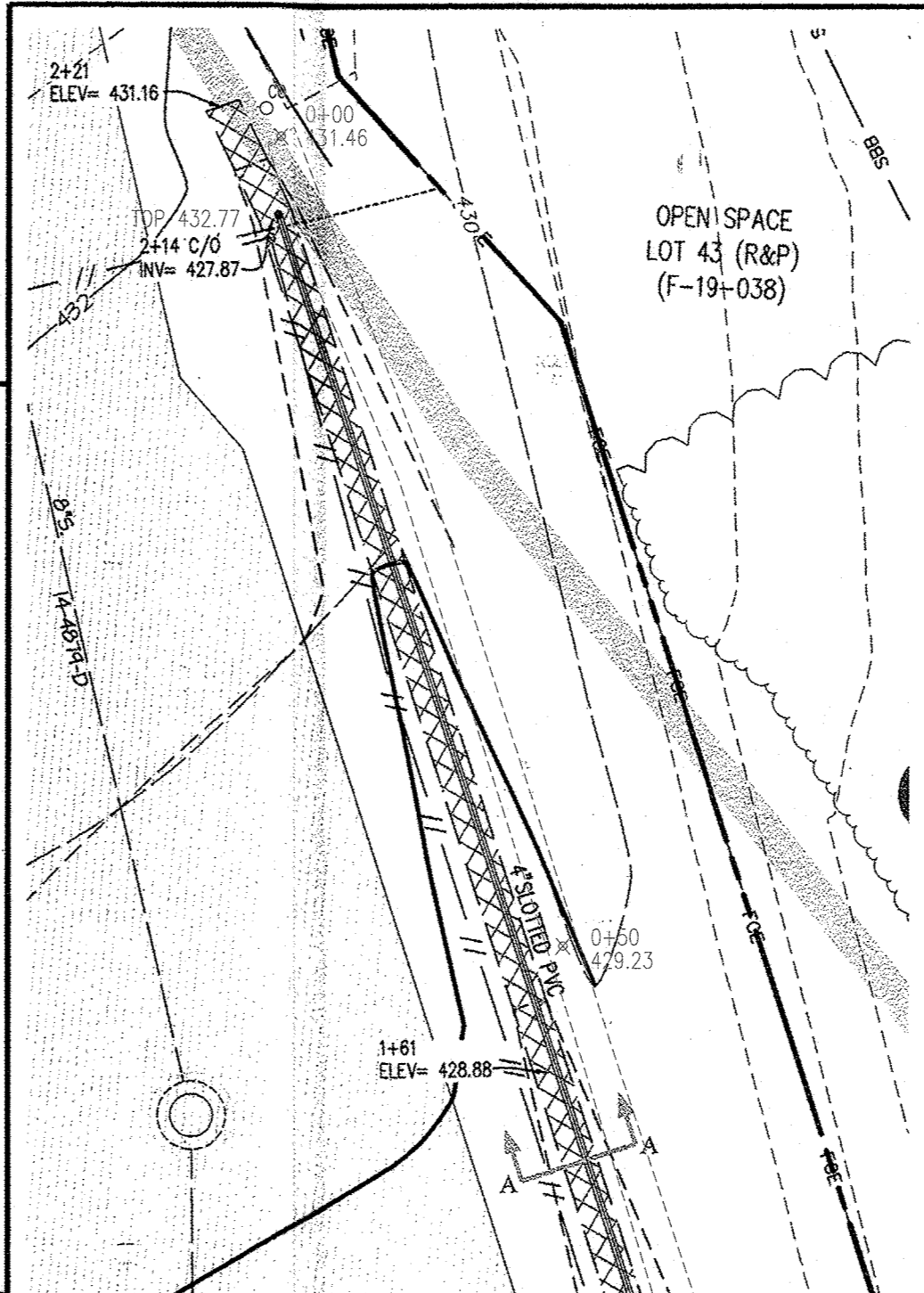
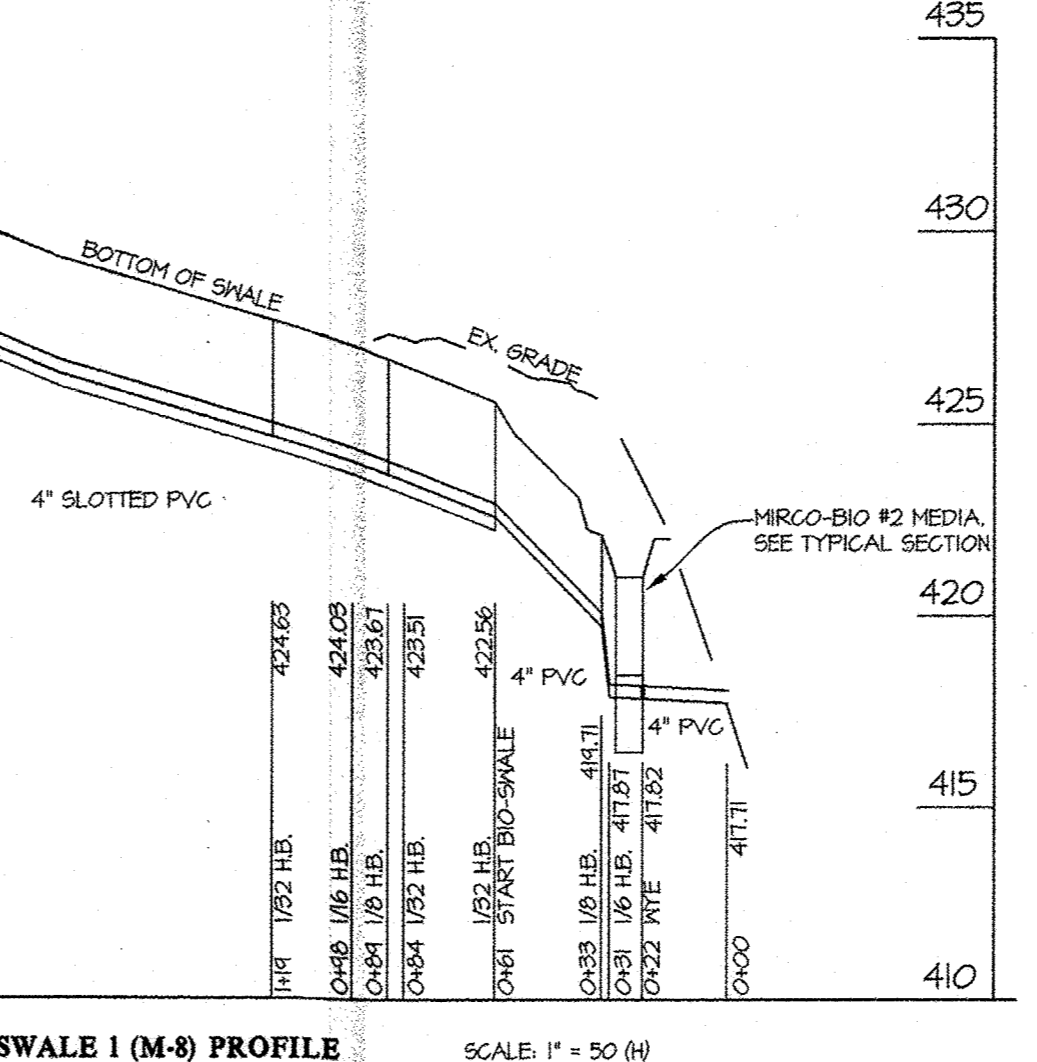
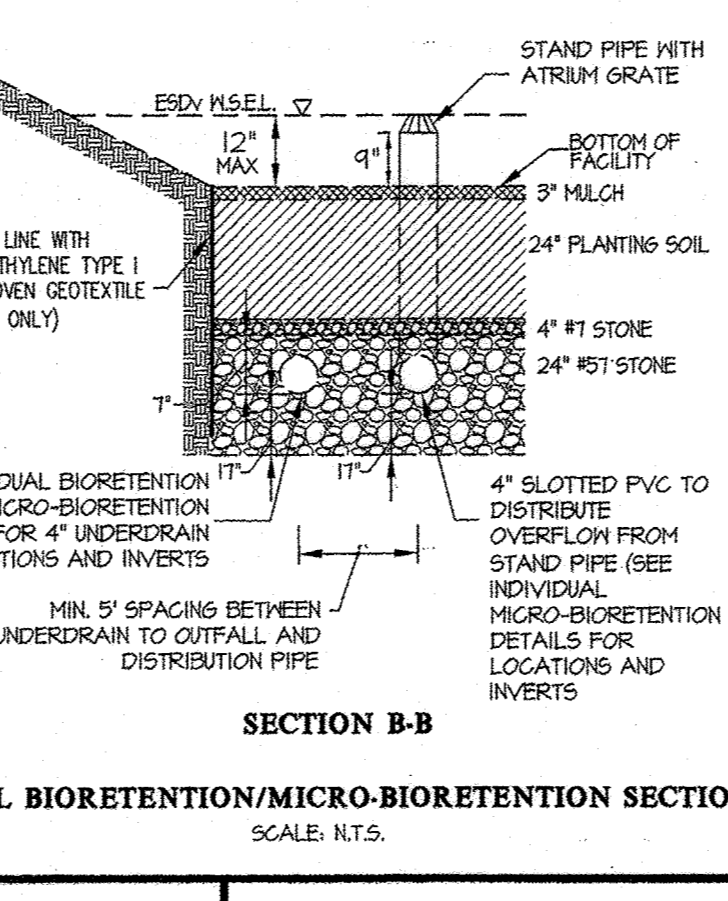
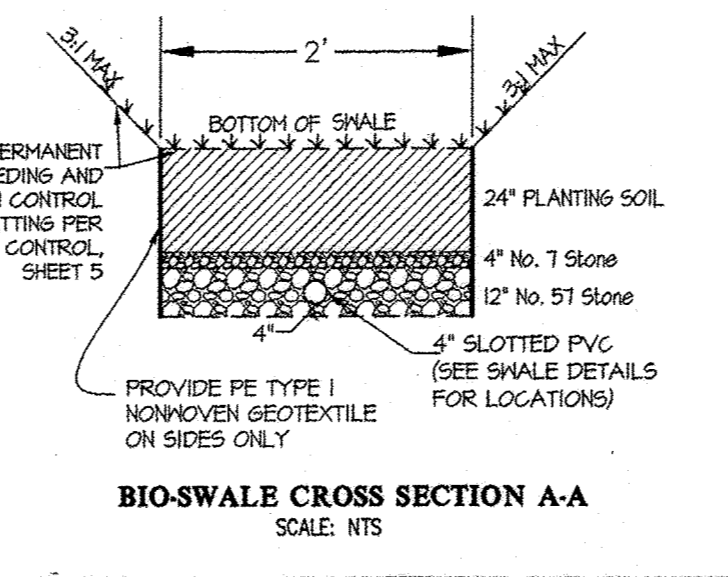
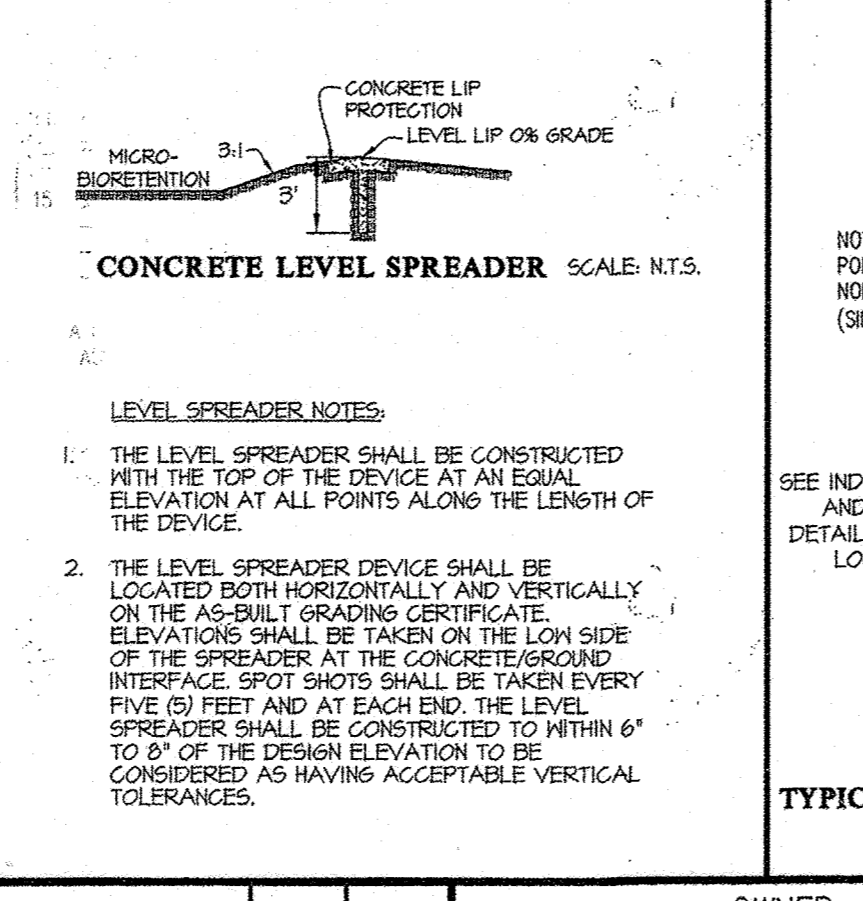
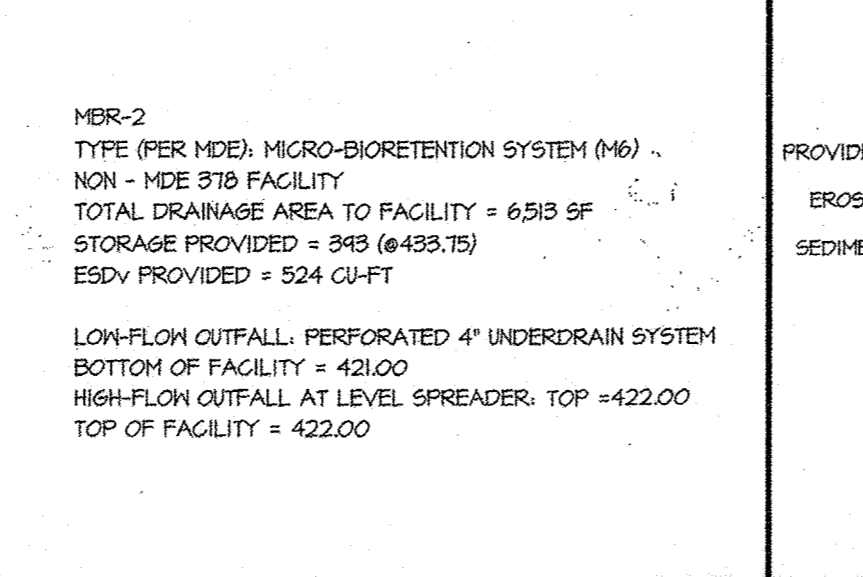
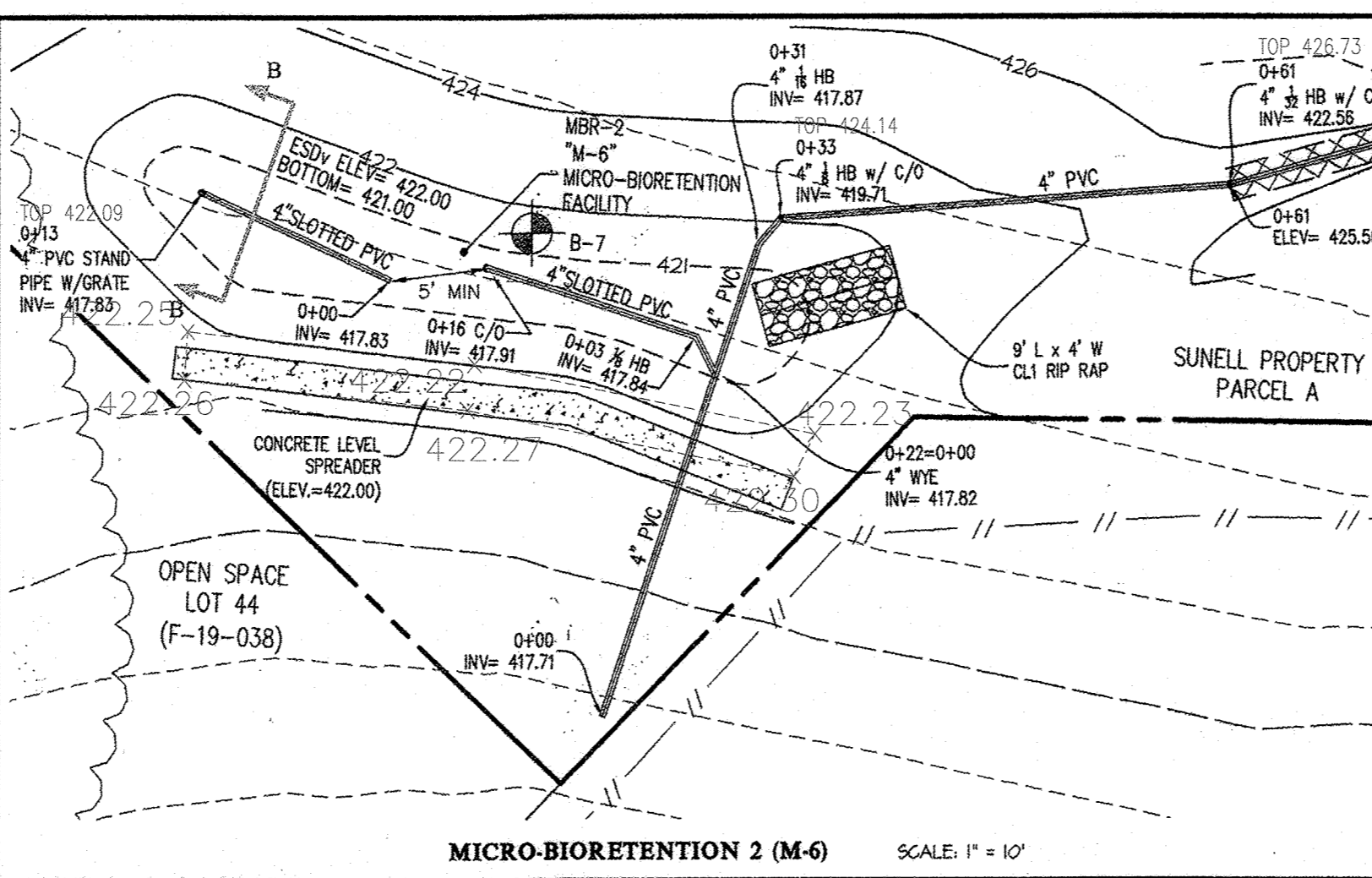
REQUIRED ESDV: 1,289 cf PROVIDED ESDV: 1,525 cf

STORMWATER MANAGEMENT INFORMATION CHART

LOT NO. (M-6)(M-8)	
PARCEL A	
PARCEL B	

UNDERDRAIN SUMMARY TABLE

SIZE (INCHES)	TYPE	QUANTITY (LF)	REMARKS
4	SLOTTED PVC	182	
4	PVC	64	



GENERAL NOTES

1. MATERIAL SPECIFICATIONS
 THE ALLOWABLE MATERIALS TO BE USED IN THESE PRACTICES ARE DETAILED IN TABLE B.4.1.

2. PLANTING SOIL
 THE SOIL SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER SIMILAR OBJECTS LARGER THAN TWO INCHES. NO OTHER MATERIALS OR SUBSTANCES SHALL BE MIXED OR DUMPED WITHIN THE MICRO-BIORETENTION PRACTICE THAT MAY BE HARMFUL TO PLANT GROWTH, OR PROVE A HINDERANCE TO THE PLANTING OR MAINTENANCE OPERATIONS. THE PLANTING SOIL SHALL BE FREE OF BERMUDA GRASS, QUACKGRASS, JOHNSON GRASS, OR OTHER NOXIOUS WEEDS AS SPECIFIED UNDER COMAR 15.08.01.05.

THE PLANTING SOIL SHALL BE TESTED AND SHALL MEET THE FOLLOWING CRITERIA:
 • SOIL COMPONENT - LOAMY SAND OR SANDY LOAM (USDA SOIL TEXTURAL CLASSIFICATION) ORGANIC MATTER 1.5 - 4% (BY WEIGHT)
 • ORGANIC CONTENT - MINIMUM 10% BY DRY WEIGHT (ASTM D 2974). IN GENERAL, THIS CAN BE MET WITH A MIXTURE OF LOAMY SAND (60%-65%) AND COMPOST (35% TO 40%) OR SANDY LOAM (30%), COARSE SAND (30%), AND COMPOST (40%).
 • CLAY CONTENT - MEDIA SHALL HAVE A CLAY CONTENT OF LESS THAN 5%.
 • PH RANGE - SHOULD BE BETWEEN 5.5 - 7.0. AMENDMENTS (E.G., LIME, IRON SULFATE PLUS SULFUR) MAY BE MIXED INTO THE SOIL TO INCREASE OR DECREASE PH.

THERE SHALL BE AT LEAST ONE SOIL TEST PER SITE. EACH TEST SHALL CONSIST OF BOTH THE STANDARD SOIL TEST FOR PH AND ADDITIONAL TESTS OF ORGANIC MATTER, AND SOLUBLE SALTS. A TEXTURAL ANALYSIS IS REQUIRED FROM THE SITE STOCKPILED SOIL. IF TOPSOIL IS IMPORTED, THEN A TEXTURE ANALYSIS SHALL BE PERFORMED FOR EACH LOCATION WHERE THE TOPSOIL WAS EXCAVATED.

3. COMPACTION
 IT IS VERY IMPORTANT TO MINIMIZE COMPACTION OF BOTH THE BASE OF BIORETENTION PRACTICES AND THE REQUIRED BACKFILL. WHEN POSSIBLE, USE EXCAVATION HOES TO REMOVE ORIGINAL SOIL. IF PRACTICES ARE EXCAVATED USING A LOADER, THE CONTRACTOR SHOULD USE WIDE TRACK OR MARSH TRACK SHOES, OR LIGHT EQUIPMENT WITH TURF TIRE TREADS. USE OF EQUIPMENT WITH NARROW TRACKS OR NARROW TIRES, RUBBER TIRES WITH LARGE LUGS, OR HIGH-PRESSURE TIRES WILL CAUSE EXCESSIVE COMPACTION RESULTING IN REDUCED INFILTRATION RATES AND IS NOT ACCEPTABLE. COMPACTION WILL SIGNIFICANTLY CONTRIBUTE TO DESIGN FAILURE.

COMPACTION CAN BE ALLEVATED AT THE BASE OF THE BIORETENTION FACILITY BY USING A PRIMARY TILLING OPERATION SUCH AS A CHISEL PLOW, REPPER, OR SUBSOILER. THESE TILLING OPERATIONS ARE TO REFRACURE THE SOIL PROFILE THROUGHOUT THE 12 INCH COMPACTION ZONE. SUBSTITUTE METHODS MUST BE APPROVED BY THE ENGINEER. ROTOTILLERS TYPICALLY DO NOT TILL DEEP ENOUGH TO REDUCE THE EFFECTS OF COMPACTION FROM HEAVY EQUIPMENT.

ROTOTILL 2 TO 3 INCHES OF SAND INTO THE BASE OF THE BIORETENTION FACILITY BEFORE BACKFILLING THE OPTIONAL SAND LAYER. PUMP ANY PONDED WATER BEFORE PREPARING (ROTOTILLING) BASE.

WHEN BACKFILLING THE TOPSOIL OVER THE SAND LAYER, FIRST PLACE 3 TO 4 INCHES OF TOPSOIL OVER THE SAND, THEN ROTOTILL THE SAND/TOPSOIL TO CREATE A GRADATION ZONE. BACKFILL THE REMAINDER OF THE TOPSOIL TO FINAL GRADE. WHEN BACKFILLING THE BIORETENTION FACILITY, PLACE SOIL IN LIFTS 12 TO 18\"/>

4. PLANT MATERIAL
 RECOMMENDED PLANT MATERIAL FOR MICRO-BIORETENTION PRACTICES CAN BE FOUND IN APPENDIX A, SECTION A.2.3.

5. PLANT INSTALLATION
 COMPOST IS A BETTER ORGANIC MATERIAL SOURCE, IS LESS LIKELY TO FLOAT, AND SHOULD BE PLACED IN THE INVERT AND OTHER LOW AREAS. MULCH SHOULD BE PLACED IN SURROUNDING TO A UNIFORM THICKNESS OF 2\"/>

ROOTSTOCK OF THE PLANT MATERIAL SHALL BE KEPT MOST DURING TRANSPORT AND ON-SITE STORAGE. THE PLANT ROOT BALL SHOULD BE PLANTED SO 1/8TH OF THE BALL IS ABOVE FINAL GRADE SURFACE. THE DIAMETER OF THE PLANTING PIT SHALL BE AT LEAST SIX INCHES LARGER THAN THE DIAMETER OF THE PLANTING BALL. SET AND MAINTAIN THE PLANT STRAIGHT DURING THE ENTIRE PLANTING PROCESS. THOROUGHLY WATER GROUND BED COVER AFTER INSTALLATION.

TREES SHALL BE BRACED USING 2\"/>

GRASSES AND LEGUME SEED SHOULD BE DRILLED INTO THE SOIL TO A DEPTH OF, AT LEAST ONE INCH. GRASS AND LEGUME PLOWS SHALL BE PLANTED FOLLOWING THE NON-GRASS GROUND COVER PLANTING SPECIFICATIONS.

THE TOPSOIL SPECIFICATIONS PROVIDE ENOUGH ORGANIC MATERIAL TO ADEQUATELY SUPPLY NUTRIENTS FROM NATURAL CYCLING. THE PRIMARY FUNCTION OF THE BIORETENTION STRUCTURE IS TO IMPROVE WATER QUALITY, ADDING FERTILIZERS DEFERS, OR AT A MINIMUM, IMPEDES THIS GOAL. ONLY ADD FERTILIZER IF WOOD CHIPS OR MULCH ARE USED TO AMEND THE SOIL. ROTOTILL UREA FERTILIZER AT A RATE OF 2 POUNDS PER 1000 SQUARE FEET.

6. UNDERDRAINS
 UNDERDRAINS SHOULD MEET THE FOLLOWING CRITERIA:
 • PIPE - SHOULD BE 4\"/>

7. MISCELLANEOUS
 THESE PRACTICES MAY NOT BE CONSTRUCTED UNTIL ALL CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED MICRO-BIORETENTION (M-6) AND BIO-SWALES (M-8)

A. THE OWNER SHALL MAINTAIN THE PLANT MATERIAL, MULCH LAYER AND SOIL LAYER ANNUALLY. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD PLANT MATERIAL AND PRUNING. ACCEPTABLE REPLACEMENT PLANT MATERIAL IS LIMITED TO THE FOLLOWING: 2000 MARYLAND STORMWATER DESIGN MANUAL VOLUME II, TABLE A.4.1 AND 2.

B. THE OWNER SHALL PERFORM A PLANT INSPECTION IN THE SPRING AND IN THE FALL OF EACH YEAR. DURING THE INSPECTION, THE OWNER SHALL REMOVE DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT, REPLACE DEAD PLANT MATERIAL WITH ACCEPTABLE REPLACEMENT PLANT MATERIAL, TREAT DISEASED TREES AND SHRUBS, AND REPLACE ALL DEFICIENT STAKES AND WIRES.

C. THE OWNER SHALL INSPECT THE MULCH EACH SPRING. THE MULCH SHALL BE REPLACED EVERY TWO TO THREE YEARS. THE PREVIOUS MULCH LAYER SHALL BE REMOVED BEFORE THE NEW LAYER IS APPLIED.

D. THE OWNER SHALL CORRECT SOIL EROSION ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER EACH HEAVY STORM.

E. THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE UNDERDRAINS WITHIN THE BIO-RETENTION LAYERS.

F. THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL STORM DRAIN PIPES AND STRUCTURES WITHIN PUBLIC EASEMENTS.

APPENDIX B.1.1 - SUPPLEMENTAL POND SPECIFICATIONS (NON-378)

SUPPLEMENTAL STORMWATER PONDS AND WETLAND SPECIFICATIONS (NON-378)

THESE NOTES AND SPECIFICATIONS ARE IN ADDITION TO THE MD-378 SPECIFICATIONS. IF THERE IS ANY QUESTIONS AS TO THE APPLICABILITY, THE MD-378 SPECIFICATIONS SUPERSEDE.

1. IT IS PREFERRED TO USE THE SAME MATERIAL IN THE EMBANKMENT AS IS BEING INSTALLED FOR THE CORE TRENCH. IF THIS IS NOT POSSIBLE BECAUSE THE APPROPRIATE MATERIAL IS NOT AVAILABLE, A DAM CORE WITH A SHELL MAY BE USED. THE CROSS-SECTION OF THE STORMWATER FACILITY SHOULD SHOW THE LIMITS OF THE DAM CORE (UP TO 10-FOOT WATER SURFACE ELEVATION) AS WELL AS THE ACCEPTABLE MATERIALS FOR THE SHELL. THE SHAPE OF THE DAM CORE AND THE MATERIAL TO BE USED IN THE SHELL SHOULD BE PROVIDED BY THE GEOTECHNICAL ENGINEER.

2. IF THE COMPACTION TESTS FOR THE SITE IMPROVEMENTS IS USING MODIFIED PROCTOR (AASHTO T-180), THEN TO MAINTAIN ON-SITE CONSISTENCY, THE MODIFIED PROCTOR MAY BE USED IN LIEU OF A STANDARD PROCTOR (AASHTO T-99). THE MINIMUM DENSITY USING THE MODIFIED PROCTOR TEST METHOD SHALL BE AT LEAST 92% OF THE MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT OF ±2% OF THE OPTIMUM. THE MINIMUM REQUIRED DENSITY USING THE STANDARD PROCTOR TEST METHOD SHALL BE AT LEAST 95% OF THE MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT OF ±2% OF THE OPTIMUM.

3. FOR ALL STORMWATER MANAGEMENT FACILITIES, A GEOTECHNICAL ENGINEER OR THEIR REPRESENTATIVE MUST BE PRESENT TO VERIFY COMPACTION IN ACCORDANCE WITH THE SELECTED TEST METHOD. THIS INFORMATION NEEDS TO BE PROVIDED IN A REPORT TO THE DESIGN ENGINEER, SO THAT CERTIFICATION OF THE CONSTRUCTION OF THE FACILITY, IN ACCORDANCE WITH MD-378 SPECIFICATIONS, CAN BE MADE.

4. A 4-INCH LAYER OF TOPSOIL SHALL BE PLACED ON ALL DISTURBED AREAS OF THE DAM EMBANKMENT. SEEDING, LIMING, FERTILIZING, MULCHING, ETC. SHALL BE IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SERVICE MD-342 OR THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. PERMANENT SEEDING, SECTION IN CHAPTER 20. THE PURPOSE OF THE TOPSOIL IS TO ESTABLISH A GOOD GROWTH OF GRASS, WHICH IS NOT ALWAYS POSSIBLE WITH SOME OF THE MATERIALS THAT MAY BE PLACED FOR THE EMBANKMENT FILL.

5. GEOTEXTILE PLACED BENEATH RIP-RAP SHALL BE CLASS \"C\" GEOTEXTILE OR BETTER (SEE SECTION 24.0, MATERIAL SPECIFICATIONS, 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL (MDE, 1994). SOME ACCEPTABLE GEOTEXTILES THAT MEET THE CLASS \"C\" CRITERIA INCLUDE:

AMOCO 4552 CARTRIDGE EX-705
 GEOLON 470 MERRI 180-4
 WESTEC N07

THIS IS ONLY A PARTIAL LISTING OF AVAILABLE GEOTEXTILES BASED ON INFORMATION PROVIDED BY THE MANUFACTURERS OF THE 1997 SPECIFIER'S GUIDE DATED DECEMBER 1996. IT IS THE RESPONSIBILITY OF THE ENGINEER TO VERIFY THE ADEQUACY OF THE MATERIAL, AS THERE ARE CHANGES IN THE MANUFACTURING PROCESS AND THE TYPE OF FABRIC USED, WHICH MAY AFFECT THE CONTINUED ACCEPTANCE.

6. A RULE OF THUMB TO DETERMINE WHEN AN EXCAVATED POND MAY NEED TO BE CONSIDERED AN EMBANKMENT POND IS AS FOLLOWS:
 PROVIDE CALCULATION OF 10H + 20 FEET = L, WHERE H HEIGHT FROM POND BOTTOM TO TOP OF DAM. IF THE PROJECTION OF L, DOWNSTREAM IS A HORIZONTAL LINE FROM THE UPSTREAM TOE OF SLOPE IS BELOW EXISTING GROUND, THE POND CAN BE CONSIDERED AN EXCAVATED POND. IN ADDITION, THE EXISTING GROUND SLOPE, DOWNSTREAM OF THE TOE, MUST BE LESS THAN 10%.

7. THE DESIGN ENGINEER AND GEOTECHNICAL ENGINEER SHOULD MAKE THE DETERMINATION THAT THE SETTLEMENT OF THE POND WILL NOT CAUSE EXCESSIVE JOINT EXTENSION. FOR FURTHER INFORMATION ON JOINT ANALYSIS, SEE NRCE PUBLICATION IR-18.

8. FILL PLACEMENT SHALL NOT EXCEED A MAXIMUM 8-INCH. EACH LIFT SHALL BE CONTINUOUS FOR THE ENTIRE LENGTH OF THE EMBANKMENT.

9. THE EMBANKMENT FILL SHALL NOT BE PLACED HIGHER THAN THE CENTERLINE OF THE PRINCIPAL SPILLWAY UNTIL AFTER THE PRINCIPAL SPILLWAY HAS BEEN INSTALLED. IF THE EMBANKMENT NEEDS TO BE EXCAVATED TO INSTALL THE PRINCIPAL SPILLWAY, THE SIDE SLOPE SHALL BE NO LESS THAN 2:1.

10. THE SIDE SLOPES OF A CUT TO REPAIR A DAM, INSTALL A PRINCIPAL SPILLWAY FOR AN EXCAVATED POND, OR OTHER REPAIR WORK, SHALL BE NO LESS THAN 2:1.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING

Valerie Ellis 7-30-19
 Director Date

Kristen Lewis 7-25-19
 Chief, Division of Land Development Date

Will 7-22-19
 Chief, Development Engineering Division Date

GLW
 PLANNING | ENGINEERING | SURVEYING

3909 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20896 | GLWPA.COM
 PHONE: 301-421-4024 | BALT: 410-880-1820 | DC&VA: 301-989-2524 | FAX: 301-421-4186

AS-BUILT INFORMATION BASED ON WRA SURVEY PERFORMED ON JANUARY 6, 2022.

GRAPHIC SCALE

0 10 20 40

DESIGNED BY: DDS
 DRAWN BY: JRC
 CHECKED BY: CKG
 DATE: 07/20/22

AS-BUILT REVISION

WRA WFH
 BY APPR.

OWNER:
 DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MD
 9250 BENDIX ROAD
 COLUMBIA, MD 21045
 410-313-2040

PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 12975.
 EXPIRATION DATE: MAY 26, 2020
 02/19

STATE OF MARYLAND
 PROFESSIONAL ENGINEER

SWM DRAINAGE AREA MAP AND DETAILS

SUNELL PROPERTY PARCEL A WASTEWATER PUMP STATION

CAPITAL PROJECT S-6275
 Liber: 100A Folio: 952

ELECTION DISTRICT No. 2

SCALE: 1"=20'

ZONING: R-20

DATE: JUNE, 2019

TAX MAP - GRID: 18 - 13

SHEET: 42 OF 43

G. L. W. FILE NO. 18107

AS-BUILT

SDP-6

SCALE: 1"=20'

ZONING: R-20

DATE: JUNE, 2019

TAX MAP - GRID: 18 - 13

SHEET: 42 OF 43

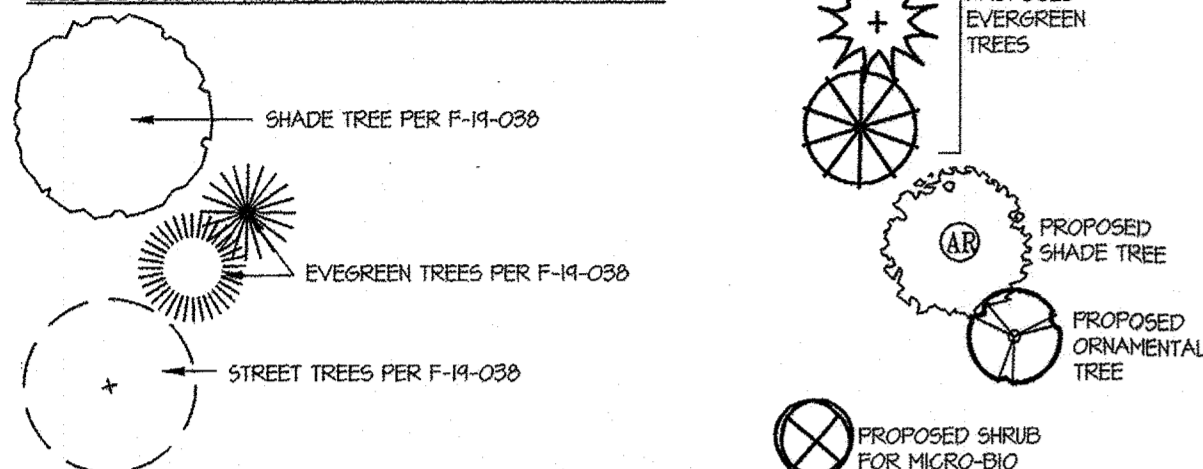
G. L. W. FILE NO. 18107

HOWARD COUNTY, MARYLAND

LANDSCAPE & FOREST CONSERVATION NOTES

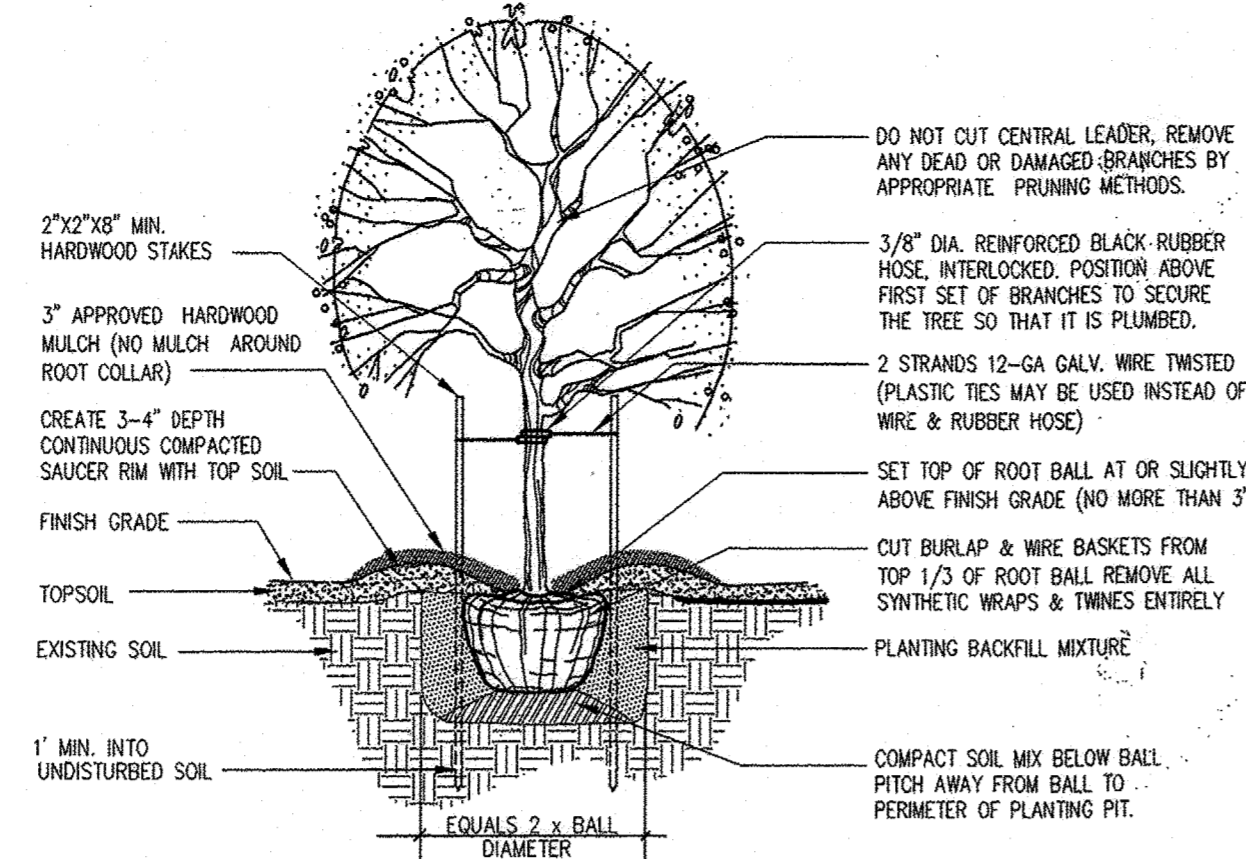
- THIS SITE DEVELOPMENT PLAN COMPLIED WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY F-14-034 HIGH ADDRESSED AND ACCOUNTED THE BUILD OUT OF PARCEL-A.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY IS NOT REQUIRED FOR THIS SITE DEVELOPMENT PLAN DUE TO GOVERNMENT OWNERSHIP OF THIS PROPERTY AND CAPITAL PROJECT.
- ALL PLANT MATERIAL SHALL BE IN CONFORMANCE WITH THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z600), NO SUBSTITUTIONS OR RELOCATIONS OF THE PLANTINGS MAY BE MADE WITHOUT THE PRIOR REVIEW AND APPROVAL FROM THE OWNER AND GLW.
- ALL AREA DISTURBED BY CONSTRUCTION ACTIVITIES BUT NOT OTHERWISE PLANTED, PAVED OR MULCHED SHALL BE SOODED OR SEEDED IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS (SEE SEDIMENT & EROSION CONTROL PLAN SHEET 4).
- SEE DPH 6-121 THRU 6-121(I) FOR CHAIN LINK FENCE DETAILS AS APPLICABLE.
- THE B-BUFFER ALONG I-10 IS BY F-14-038.

LANDSCAPE LEGEND:

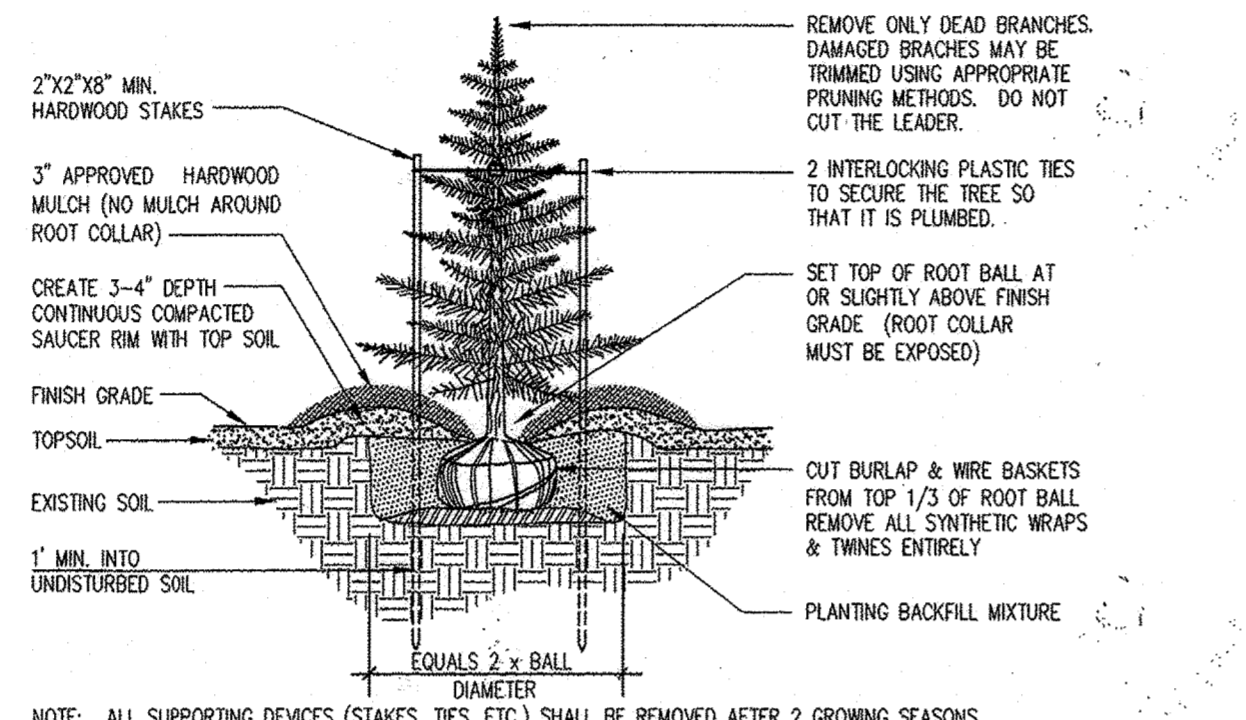


SYMBOL	QTY.	NAMES (BOTANICAL / SCIENTIFIC)	SIZE	ROOT/COMMENTS
SHADE TREES				
(Symbol)	6	ACER RUBRUM / ARMSTRONG COLUMNAR RED MAPLE	2 1/2"-3" CAL.	B4B
EVERGREEN TREES				
(Symbol)	6	ILEX OPACA / AMERICAN HOLLY	6'-8" HT.	B4B, SINGLE INTACT LEADER
(Symbol)	3	PICEA OMORICA / SERBIAN SPRUCE	6'-8" HT.	B4B, SINGLE INTACT LEADER
ORNAMENTAL TREE				
(Symbol)	0	CERCIS CANADENSIS / EASTERN REDBUD	2 - 2 1/2" CAL. 8-10' HT.	B4B, TREE FORM W/ 4" MIN. CLEAR TRUNK

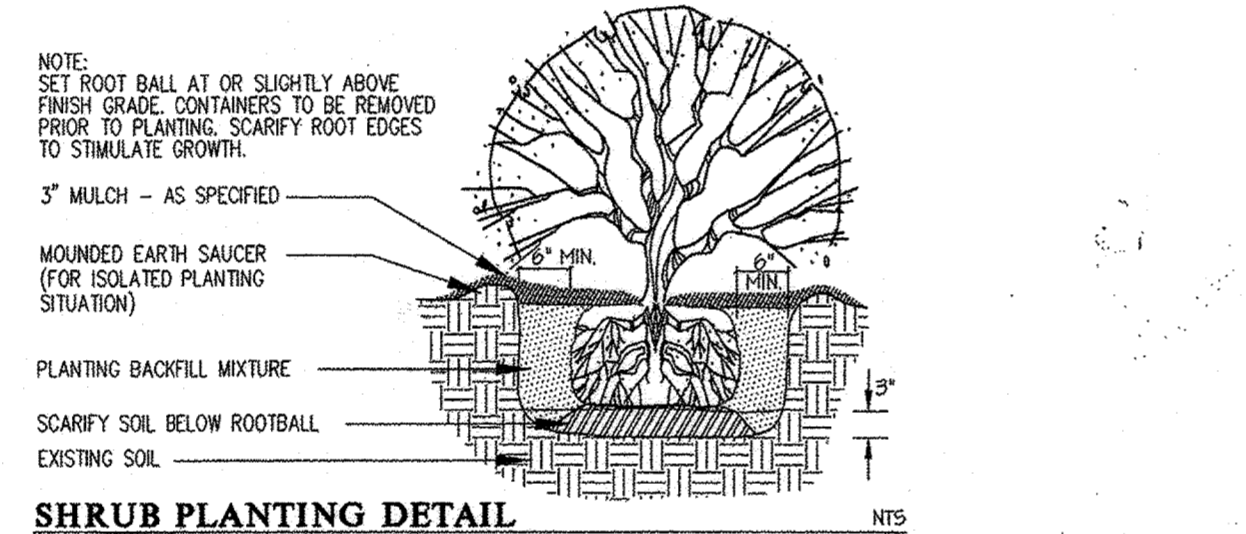
SYMBOL	QTY.	NAMES (BOTANICAL / SCIENTIFIC)	SIZE	ROOT/COMMENTS
MICRO-BIORETENTION PLANT LIST				
(Symbol)	4	CORNUS SERICEA / RUBY RUBY RED OSIER DOGWOOD	18"-24" SPR.	CONTAINER



DECIDUOUS TREE PLANTING DETAIL



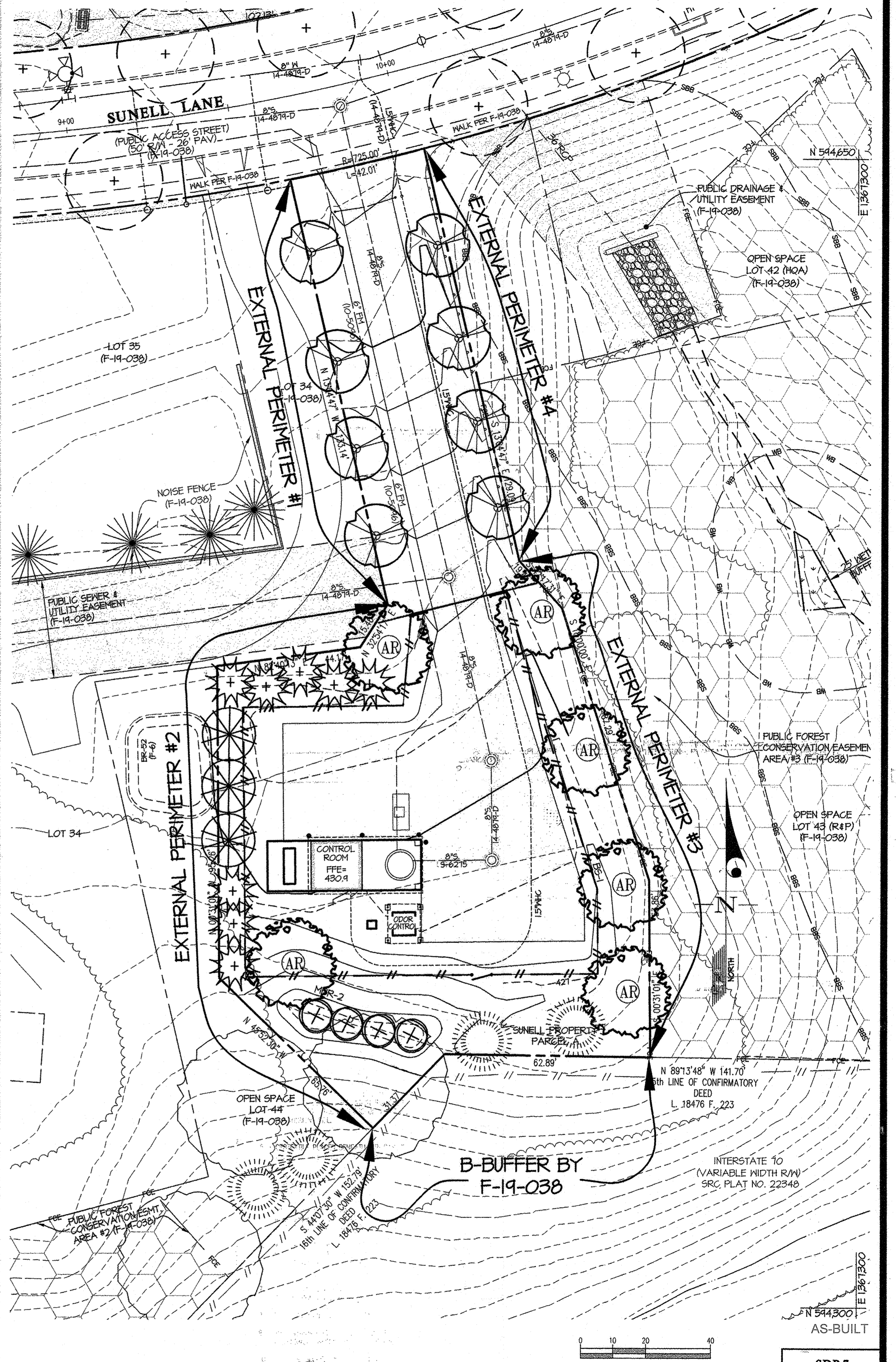
EVERGREEN TREE PLANTING DETAIL



SHRUB PLANTING DETAIL

LANDSCAPE SPECIFICATIONS

- GENERAL CONDITIONS**
 - SCOPE OF WORK: THE LANDSCAPE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT TO COMPLETE ALL LANDSCAPE WORK AS SHOWN ON THE PLANS AND SPECIFICATIONS.
 - STANDARDS: ALL PLANT MATERIAL SHALL CONFORM TO THE CURRENT ISSUE OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z600). ALL TREES TO BE BRANCHED SYMMETRICALLY AROUND CENTRAL LEADER.
 - SUBMITTALS: WHEN REQUESTED BY THE OWNER OR OWNER'S REPRESENTATIVE, SAMPLES OF ALL MATERIAL OTHER THAN PLANTS SHALL BE SUBMITTED TO THE OWNER'S DESIGNATED REPRESENTATIVE FOR APPROVAL.
 - APPROVALS: ALL APPROVALS WILL BE IN WRITING.
 - SUBSTITUTIONS: IT IS THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO MAKE EVERY REASONABLE EFFORT TO FIND THE MATERIAL SPECIFIED BY THE LANDSCAPE ARCHITECT. THE LANDSCAPE CONTRACTOR MAY OFFER SUBSTITUTIONS TO THE LANDSCAPE ARCHITECT FOR HIGHER CONSIDERATION. THE LANDSCAPE CONTRACTOR WILL NOTIFY THE LANDSCAPE ARCHITECT IF THERE ARE KNOWN DISEASE OR INSECT RESISTANT SPECIES THAT CAN BE SUBSTITUTED FOR A SELECTED PEST-FREE PLANT. ALL SUBSTITUTIONS SHALL BE APPROVED BY HOWARD COUNTY GOVERNMENT.
 - UTILITIES: THE LANDSCAPE CONTRACTOR SHALL NOTIFY UTILITY COMPANIES AND/OR THE GENERAL CONTRACTOR IN ADVANCE OF CONSTRUCTION TO LOCATE UTILITIES.
 - DRAINAGE: IF PLANTS ARE TO BE INSTALLED IN AREAS THAT SHOW OBVIOUS POOR DRAINAGE, AND THE PLANTS ARE INAPPROPRIATE FOR THAT CONDITION, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND OWNER. IF THEY DEEM NECESSARY, THE PLANTS SHALL BE RELOCATED, THE CONTRACT SHALL BE ADJUSTED TO ALLOW FOR DRAINAGE CORRECTION AT A NEGOTIATED COST, OR THE PLANT SELECTION MODIFIED BY THE LANDSCAPE ARCHITECT TO ACCOMMODATE THE POOR DRAINAGE SITUATION.
 - WORKMANSHIP: DURING DELIVERY AND INSTALLATION, THE LANDSCAPE CONTRACTOR SHALL PERFORM IN A WORKMANLIKE MANNER, COORDINATING HIS ACTIVITIES SO AS NOT TO INTERFERE UNNECESSARILY WITH THE WORK OF OTHER TRADES AND LEAVING HIS WORK AREAS CLEAN OF LETTER AND DEBRIS AT THE CLOSE OF EACH WORKDAY.
 - PLANTING: DURING PLANTING, ALL AREAS SHALL BE KEPT NEAT AND CLEAN. PRECAUTIONS SHALL BE TAKEN TO AVOID DAMAGE TO EXISTING PLANTS, LARGE TREES, TURTLES AND STRUCTURES. WHERE EXISTING TREES ARE TO BE PRESERVED, ADDITIONAL PRECAUTIONS SHOULD BE TAKEN TO AVOID UNNECESSARY ACCUMULATION OF EXCAVATED MATERIALS, SOIL COMPACTION OR ROOT DAMAGE. UPON COMPLETION ALL DEBRIS AND WASTE MATERIAL RESULTING FROM PLANTING OPERATIONS SHALL BE REMOVED FROM THE PROJECT AND THE AREA CLEANED UP.
 - WATER: ANY DAMAGE TO THE EXISTING UTILITIES, BUILDINGS, PAVING, CURBS AND WALLS, AND VEGETATION NOT SO DESIGNATED FOR REMOVAL ON THESE PLANS SHALL BE REPAIRED TO PREVIOUS CONDITION OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE.
 - WARRANTY: THE OWNER SHALL SUPPLY WATER ON SITE AT NO COST. IF THE LANDSCAPE CONTRACTOR HAS TO SUPPLY WATER TO THE SITE, IT SHALL BE AT AN ADDITIONAL COST.
 - PLANTING SEASONS: A. RED OAK, WHITE OAK, HILLTOP OAK, SCARLET OAKS, DOGWOOD, SWEET GUM, CONIFERS, AND BROAD LEAF EVERGREENS WILL NOT BE PLANTED BETWEEN NOVEMBER 15 AND MARCH 1 UNLESS THE LANDSCAPE CONTRACTOR STATES IN WRITING THAT HE/SHE WILL GUARANTEE PLANTS.
 - INSPECTIONS AND ACCEPTANCE: A. INITIAL INSPECTION PRIOR TO PLANTING ALL PLANT LOCATIONS SHALL BE STAKED IN THE FIELD BY THE CONTRACTOR. THE LANDSCAPE ARCHITECT SHALL APPROVE ALL PLANT LOCATIONS BEFORE PLANTING. B. FINAL ACCEPTANCE INSPECTION: A VERIFICATION OF PERFORMANCE FOR WORK BY CONTRACT DOCUMENTS TO BE CONDUCTED BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE ON-SITE AND IN THE PRESENCE OF THE LANDSCAPE CONTRACTOR FOR THE PURPOSE OF ACCEPTANCE. C. FINAL WARRANTY INSPECTION: THE LANDSCAPE CONTRACTOR SHALL CONDUCT A FINAL INSPECTION WITH THE OWNER OR OWNER'S REPRESENTATIVE AT THE END OF THE ONE YEAR PERIOD.
 - WARRANTY: THE STANDARD WARRANTY IS FOR ONE (1) YEAR PERIOD, EXCLUDING BULBS AND ANNUALS, COMMENCING ON THE DATE OF INITIAL ACCEPTANCE. ALL PLANTS SHALL BE ALIVE AND IN SATISFACTORY GROWTH AT THE END OF THE GUARANTEE PERIOD. A. ANY MATERIAL THAT IS 25% DEAD OR MORE SHALL BE CONSIDERED DEAD AND MUST BE REPLACED AT NO CHARGE. A TREE SHALL BE CONSIDERED DEAD WHEN THE MAIN LEADER HAS DIED BACK OR 25% OF THE CROWN IS DEAD. B. PERENNIALS SHALL BE GUARANTEED FOR ONE YEAR AFTER INITIAL ACCEPTANCE.
 - PLANT MATERIALS: THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL PLANT MATERIAL SHOWN ON THE DRAWINGS AND PLANT LIST.
 - INSPECTION: A. PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE OWNER OR OWNER'S REPRESENTATIVE AT THE PLACE OF GROWTH BEFORE DIGGING. TREES OR HOLDING YARD (SHRUBS) FOR CONFORMITY TO SPECIFICATION REQUIREMENTS AS TO QUALITY, SIZE, AND VARIETY.
 - PRODUCTS: A. QUALITY ASSURANCE: MANUFACTURER'S CERTIFIED ANALYSIS SHALL ACCOMPANY PACKAGED STANDARD PRODUCTS. B. ORGANIC MATTER: 1. MEAT BONES - TYPE I SPHAGNUM PEAT MOSS FINELY DIVIDED WITH A PH OF 3.1 TO 5.0. 2. SEDGE PEAT - DECOMPOSES PEAT CONTAINING NO IDENTIFIABLE FIBERS. C. LEAF COMPOST THAT IS SCREENED AND FREE TO TRASH. D. COMPOSTED SEWAGE SLUDGE - APPROVED, SCREENED, FOLYMER-DEWATERED SEWAGE SLUDGE WITH A PH OF 4.2 - 12.0 MA.
 - SOIL: A. SHALL BE FREE OF STONES, LIMPS, PLANTS, ROOTS AND OTHER DEBRIS OVER 1/2". TOPSOIL MUST ALSO BE FREE OF PLANTS OR PLANT PARTS OF BERBERGRASS, QUACKGRASS, LONGGRASS, FISHHOOK, NUISANCE, FISHHOOK, CANADIAN THISTLE OR OTHERS AS SPECIFIED. B. IT SHALL NOT CONTAIN TOXIC SUBSTANCES HARMFUL TO PLANT GROWTH I.E. PESTICIDE RESIDUES. C. BACKFILL MIXTURE: 1. BACKFILL MIXTURE FOR TREES AND SHRUBS SHALL BE 3/4 EXISTING SOIL MIXED WITH 1/4 ORGANIC MATERIAL, PLUS GRANULAR FERTILIZER. 2. MATERIAL SHALL BE COMPOSTED, SHREDDED HARDWOOD BARK, WITH LESS THAN 10% SAPHWOOD, DARK BROWN IN COLOR, OR APPROVED EQUAL. D. MATERIAL SHALL BE UNIFORM IN SIZE AND FREE OF FOREIGN MATTER.
 - PLANTING PROCEDURE FOR TREES: A. TREE PLANTING: 1. WALL OF TREE PIT SHALL BE DUG SO THAT THEY ARE VERTICAL OR SLOPING OUTWARD IN HEAVY SOILS, BE AND SCARIFIED. 2. THE TREE PIT MUST BE A MINIMUM OF 4" LARGER ON EVERY SIDE THAN THE BALL OF THE TREE. 3. THE TREE IS TO BE PLACED IN THE PIT CARRYING THE BALL AND THEN LOWERING IT INTO THE PIT. NEVER LIFT THE TREE BY THE TRUNK OR BRANCHES. 4. SET THE TREE STRAIGHT AND IN THE CENTER OF THE PIT WITH THE MOST DESIRABLE SIDE FACING THE PROMINENT VIEW. 5. BACKFILL TREE PIT WITH A SOIL MIXTURE STATED IN THE SPECIFICATIONS. 6. CUT AND REMOVE ROPE OR WIRE OFF THE TOP SOIL OF ROOTBALL AND PULL BURLAP BACK TO THE EDGE OF THE BALL. REMOVE AS MUCH BURLAP, WOVEN PRODUCTS AND TWINE AS POSSIBLE. ALL PLASTIC OR SYNTHETIC FILM MUST BE REMOVED FROM THE TREE PIT. CUT ALL TWINE AWAY FROM TRUNK. 7. FORM A SAUCER ABOVE EXISTING GRADE, AROUND THE OUTER RIM OF THE TREE PIT, ESPECIALLY ON SLOPES AND IN HEAVY SOILS. 8. MULCH TOP OF ROOT BALL AND SAUCER TO A MINIMUM DEPTH OF 2"; NOT TO EXCEED 3". DO NOT PLACE MULCH AGAINST THE TRUNK. 9. WATER THOROUGHLY ON THE INTERIOR OF THE TREE SAUCER UNTIL IT IS FILLED, EVEN IF IT IS RAINING. A SECOND WATERING MAY BE NECESSARY TO INSURE SATURATION OF THE ROOT BALL AND ELIMINATION OF AIR POCKETS. 10. PRUNING SHOULD BE RESTRICTED TO CORRECTIVE PRUNING TO IMPROVE FORM ONLY. 11. STAKE TREE PER PLANTING DETAIL.
 - PLANTING PROCEDURES FOR SHRUBS: A. FOR A SINGLE SHRUB, THE PIT SHALL BE DUG 1" WIDER THAN THE ROOTBALL AND DEEP ENOUGH TO ALLOW 10% OF THE ROOTBALL TO SET ABOVE EXISTING GRADE. (SINGLE SHRUB PLANTINGS ONLY IF NOTED ON PLANS). B. FOR A SHRUB MASS PLANTING, THE ENTIRE BED AREA SHALL BE TILLED 4-6" DEEP. TILLING SHOULD ONLY BE DONE IN DRY SOIL TO AVOID COMPACTION. IF THE SOIL IS HEAVY IN CLAY AND SET ORGANIC MATERIAL SHOULD BE ADDED. EACH SHRUB PIT SHALL BE EXCAVATED FOR THE PROPER SETTING OF THE ROOTBALL. C. PLACE THE SHRUBS IN THE PIT BY LIFTING AND CARRYING IT BY THE ROOTBALL. REMOVE CONTAINERS FROM ALL CONTAINER-GROWN SHRUBS; SLASH THE EDGES OF THE ROOTBALL FROM TOP TO BOTTOM, AT LEAST 1" DEEP. D. SET THE SHRUBS AND IN THE CENTER OF THE PIT WITH THE MOST DESIRABLE SIDE FACING TOWARD THE PROMINENT VIEW. E. CUT AND REMOVE ROPE OR WIRE OFF THE TOP SOIL OF ROOTBALL AND PULL BURLAP BACK TO THE EDGE OF THE ROOTBALL. REMOVE AS MUCH BURLAP, WOVEN PRODUCTS AND TWINE AS POSSIBLE. ALL PLASTIC OR SYNTHETIC FILM MUST BE REMOVED FROM THE ROOTBALL. CUT ALL TWINE AWAY FROM TRUNK. F. FORM A SAUCER ABOVE THE EXISTING GRADE AND COMPLETELY AROUND THE PLANTING PIT. G. MULCH TOP OF ROOTBALL AND SAUCER A MAXIMUM DEPTH OF 2". H. WATER SHRUBS MASS THOROUGHLY, EVEN IF IT IS RAINING. A SECOND WATERING MAY BE NECESSARY TO INSURE SATURATION OF THE ROOT BALL AND ELIMINATION OF AIR POCKETS. 6.0 PLANTING PROCEDURES FOR GROUND COVER, PERENNIALS AND ANNUALS: A. THE PLANTING BED SHALL BE LOOSENED WHEN THE SOIL IS DRY PRIOR TO PLANTING BY TILLING. SOIL SHALL BE LOOSENED TO A DEPTH OF 4" TO 6". B. ORGANIC MATTER SHALL BE SPREAD OVER THE BED TO A DEPTH OF 2" FOR PEAT MOSS OF 1" DEEP FOR COMPOST, I.E. NOT TO EXCEED 4 CUBIC YARDS OF COMPOST/1000 SQUARE FEET, AFTER THE SOIL HAS BEEN LOOSENED. THE ORGANIC MATTER SHALL BE WORKED INTO THE BED BY TILLING. C. FERTILIZER SHALL BE TOP-DRESSED OVER BED AREA. D. THE PLANT EITHER POTTED OR BARE ROOT, SHALL BE INSTALLED SO THAT THE ROOTS ARE SURROUNDED BY 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 GROUND. E. SPACING OF PLANTS SHALL BE INSTALLED AS NOTED ON THE LANDSCAPE PLAN. F. THE ENTIRE BED SHALL BE MULCHED TO A MINIMUM DEPTH OF 1", 2" MAXIMUM, WITH APPROVED MULCH. G. THE ENTIRE PLANTING BED SHALL BE THOROUGHLY WATERED.



PERIMETER PLANTING - SCHEDULE A

PERIMETER	LAND USE	ADJACENT LAND USE	TYPE OF BUFFER	LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) DESCRIBE BELOW IF NEEDED.	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) DESCRIBE BELOW IF NEEDED.	NUMBER OF PLANTS REQUIRED			NUMBER OF PLANTS PROVIDED		
							SHADE TREES	EVERGREEN TREES	SHRUBS	SHADE TREES	EVERGREEN TREES	SHRUBS
EXTERNAL PERIMETER 1	SPD	RESIDENTIAL (SPD)	'A' Buffer	133.14'	NO	NO	3	0	0	3**	0	0
EXTERNAL PERIMETER 2	SPD	RESIDENTIAL (SPD)	'C' Buffer	220.65'	NO	NO	6	11	0	6*	11	0
EXTERNAL PERIMETER 3	SPD	RESIDENTIAL (SPD)	'C' Buffer	106.74'	YES, 106.74' CREDIT = 0 LF	NO	0	0	0	0	0	0
EXTERNAL PERIMETER 4	SPD	RESIDENTIAL (SPD)	'A' Buffer	124.04'	YES, 55' CREDIT (24.04-54) = 74 LF	NO	1	0	0	1	0	0

* 2 ORNAMENTAL TREES WERE SUBSTITUTED PER SHADE TREE
 ** DUE TO LIMITED SPACE 4 SHADE TREES WERE RELOCATED TO EXTERNAL PERIMETER #3.
 *** DUE TO LIMITED SPACE AND TO BALANCE THE TREES ALONG THE DRIVEWAY, 2 ORNAMENTAL TREES (1 SHADE TREE EQUIVALENT) WERE RELOCATED TO EXTERNAL PERIMETER #4.
 NOTES:
 1. SUBSTITUTION FOR DIFFERENT TYPE OF PLANT MATERIALS ARE AS FOLLOWS:
 - 10 SHRUBS FOR 1 SHADE TREE OR EVERGREEN TREE.
 - 2 ORNAMENTAL TREES FOR 1 SHADE TREE.

DEVELOPER'S/BULDER'S CERTIFICATE

I (WE) CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I (WE) FURTHER CERTIFY THAT UPON COMPLETION A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

Paul DiMarco June 19, 2019
 NAME DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING
 Director 7-30-19
 Chief, Division of Land Development 7-25-19
 Chief, Development Engineering Division 7-23-19

STATE OF MARYLAND
 Michael B. Tran
 LANDSCAPE ARCHITECT

DESIGNED BY: KLP
 DRAWN BY: KLP
 CHECKED BY: CKG

OWNER:
 DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MD
 9250 BENIX ROAD
 COLUMBIA, MD 21045
 410-313-2040

GLW
 PLANNING [ENGINEERING] SURVEYING
 3808 NATIONAL DRIVE | SUITE 250 | BURTONSVILLE, MD 20886 | GLWPA.COM
 PHONE: 301-421-4024 | BALT.: 410-880-1820 | DC&VA: 301-988-2824 | FAX: 301-421-4188

DATE	REVISION	BY	APP'R.

LANDSCAPE PLAN

SUNELL PROPERTY
PARCEL A
WASTEWATER PUMP STATION
 CAPITAL PROJECT 8-675
 Liber: 18112 Folio: 222

SCALE: 1"=20'
 ZONING: R-20
 DATE: JUNE, 2019
 TAX MAP - GRID: 18 - 13
 SHEET: 43 OF 43

SDP-7
 G. L. W. FILE No. 18107

HOWARD COUNTY, MARYLAND
 ELECTION DISTRICT No. 2