


# SCAGGSVILLE ELEVATED WATER TANK OVERFLOW IMPROVEMENTS

## CAPITAL PROJECT NO. W8600 CONTRACT NO. 44-5145 HOWARD COUNTY, MARYLAND

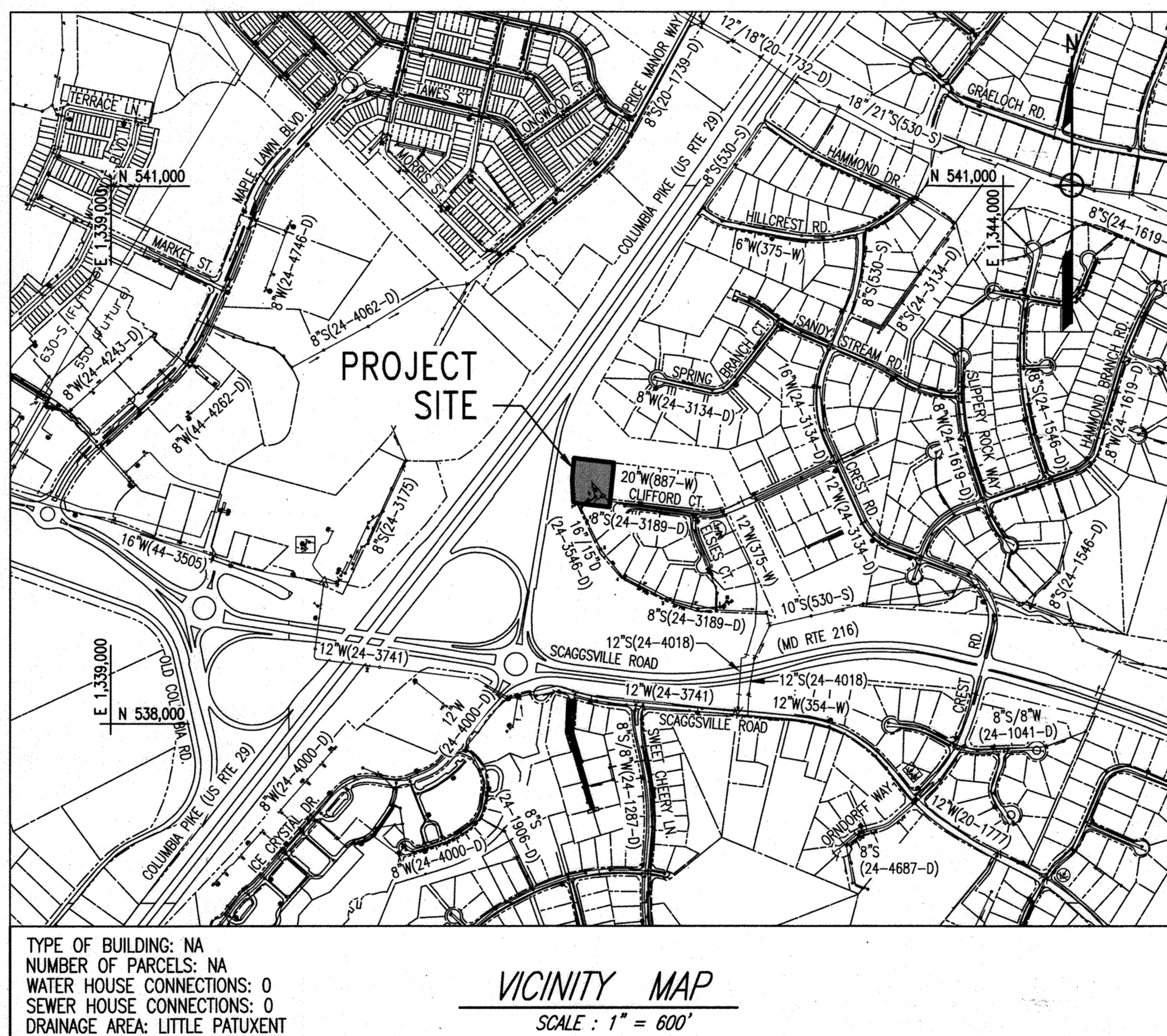
### GENERAL NOTES:

- 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 WERE PERFORMED ON SEPTEMBER, 2019 BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
- THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '83/91' AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. DG01, NO. DG08 AND NO.43EC.
- ALL VERTICAL CONTROLS ARE BASED ON NAVD'88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE AS INDICATED ON THE DRAWINGS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
- CLEAR ALL UTILITIES BY A MINIMUM OF 12 INCHES. CLEAR ALL POLES BY 5'-0" MINIMUM OR TUNNEL AS REQUIRED UNLESS OTHERWISE NOTED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWING, 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 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).....	410-850-4620
BGE (EMERGENCY).....	410-685-1400
BUREAU OF UTILITIES.....	410-313-4900
COLONIAL PIPELINE COMPANY.....	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. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- 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 MAIN.
- 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(A) OF THE HOWARD COUNTY CODE.

### GENERAL WATER NOTES:

- ALL WATER MAINS SHALL BE D.I.P. CLASS 54 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TREES.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS. THE SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- TRACER WIRE AND CONTINUITY TEST STATIONS SHALL BE INSTALLED ON ALL DIP AND PVC WATER MAINS IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL.
- FOR PVC WATER MAINS, ALL RECORDS FOR THE QUALITY CONTROL AND QUALIFICATION TEST REQUIREMENTS NOTED IN SECTION 5.1 OF THE AWWA STANDARD C900 FOR PVC PRESSURE PIPES 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 WATER MAINS IN ACCORDANCE WITH VOLUME IV STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. 17 POUND MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING RESTRAINTS AND HARNESSSES. 12 POUND ZINC ANODES SHALL BE INSTALLED ON ALL STAINLESS STEEL FITTINGS AND SADDLES USED WITH PVC MAINS. ALL "TEES" USED WITH PVC MAINS 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 THE PVC PIPE.



### GENERAL WATER NOTES (CONT.):

- ALL CHANGES IN HORIZONTAL OR VERTICAL DIRECTION OF PVC WATER 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 PIPE LENGTH (20'-FEET 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 COMPACTION EQUIPMENT DIRECTLY OVER THE FITTING.
 

PVC HIGH DEFLECTION COUPLINGS SHALL BE LIMITED TO A TOTAL DEFLECTION OF 3-DEGREES (1 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, DR 18 MEETING THE REQUIREMENTS OF AWWA C900 AND SHALL BE MULTI FITTINGS (IPEX) 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 FITTING. THE BELL STOP SHALL BE MANUFACTURED OF DUCTILE IRON AND INCORPORATES 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.

### INDEX OF DRAWINGS

SHEET NO.	DRAWING	DESCRIPTION
1	G-1	TITLE SHEET
2	G-2	GENERAL NOTES, ABBREVIATIONS AND LEGEND
3	C-1	TANK SITE PLAN
4	C-2	CIVIL DETAILS
5	SC-1	EROSION AND SEDIMENT CONTROL PLAN AND GENERAL NOTES
6	SC-2	EROSION AND SEDIMENT CONTROL GENERAL NOTES
7	SC-3	EROSION AND SEDIMENT CONTROL GENERAL NOTES AND DETAILS
8	S-1	GENERAL STRUCTURAL NOTES AND DETAILS
9	M-1	OVERFLOW DETAILS

### PURPOSE STATEMENT

THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT A NEW OVERFLOW STRUCTURE OUTSIDE OF THE EXISTING TANK COLUMN TO REPLACE THE EXISTING INTERIOR OVERFLOW STRUCTURE.

**NAME OF UTILITY CONTRACTOR:**


SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE SPECIFICATIONS AND AS SHOWN ON THE DRAWINGS.

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

HOWARD SOIL CONSERVATION DISTRICT \_\_\_\_\_ DATE \_\_\_\_\_

**DESIGN CERTIFICATION**


"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS, THAT IT REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

 12/2/2021  
DESIGNER'S SIGNATURE DATE

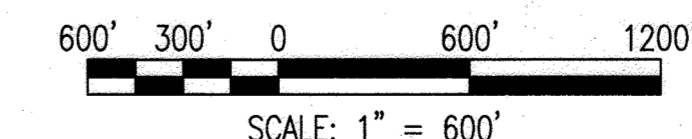
PHILIP ANDREW COOPER 1994/1  
PRINTED NAME & TITLE MDE REGISTRATION NO. P.E., RLS, OR R.L.A.

**OWNERS/DEVELOPER CERTIFICATION:**

"I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT-OF-ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

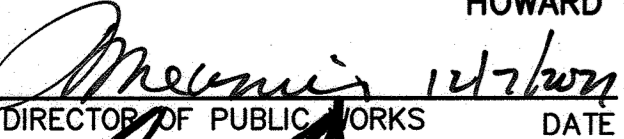
 12/3/2021 AS-BUILT  
OWNER'S/DEVELOPER'S SIGNATURE DATE

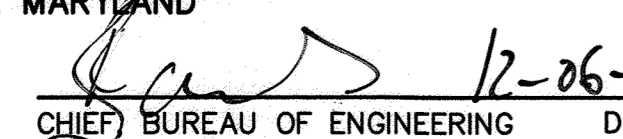
Sanjay Kulkarni, Project Manager  
PRINTED NAME & TITLE





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. 29228, EXPIRATION DATE: 06/17/2023.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

 12-26-21  
DIRECTOR OF PUBLIC WORKS DATE

 12-26-21  
CHIEF, BUREAU OF ENGINEERING DATE

 12-2-21  
CHIEF, BUREAU OF UTILITIES DATE

 12-2-21  
CHIEF, UTILITY DESIGN DIVISION DATE

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



DES:	FJB	WRA	AS-BUILTS	8/22
DRN:	JAM			
CHK:	DCC			
BY	NO.	REVISION	DATE	

600' SCALE MAP NO. 46  
BLOCK NO. XX

SCAGGSVILLE ELEVATED STORAGE TANK OVERFLOW IMPROVEMENTS

CAPITAL PROJECT NO. W8600  
CONTRACT NO. 44-5145

4TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 1 OF 9

**ABBREVIATIONS**

**LEGEND**

DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION
AMERICAN CONCRETE INSTITUTE	ACI	NATIONAL PIPE THREAD	NPT
ALTERNATE	ALT	NON-REINFORCED CIRCULAR CONCRETE PIPE	NRCP
ALUMINUM ALLOY	AA	NOT TO SCALE	NTS
ALUMINIZED CORRUGATED METAL PIPE	ACMP	ON CENTER	O/C
AREA OF STEEL	A	OUTSIDE DIAMETER	OD
AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	AASHTO	OVERALL	OA
AMERICAN SOCIETY OF TESTING AND MATERIALS	ASTM	PRESTRESSED CONCRETE CYLINDER PIPE	PCCP
AMERICAN WIRE GAUGE	AWG	POLYTHYLENE PRE-COATED CORRUGATED STEEL PIPE	PESCP
AMERICAN WATER WORKS ASSOCIATION	AWWA	PRESSURE REDUCING VALVE	PRV
BITUMINOUS COATED CORRUGATED METAL PIPE	BCCMP	POUNDS PER SQUARE INCH	PSI
CAST IRON	CI	POLYVINYL CHLORIDE	PVC
CENTER TO CENTER	C/C	RADIUS	R.
CURB AND GUTTER	C&G	REINFORCED CONCRETE	R.C.
CENTERLINE	CL	REINFORCED CONCRETE ARCH PIPE	RCAP
CLEAR	CLR	REINFORCED CIRCULAR CONCRETE PIPE	RCCP
CLEARANCE	CL	REINFORCED CONCRETE ELLIPTICAL PIPE	RCEP
CONCRETE	CONC	REINFORCED CONCRETE PIPE	RCP
COUNTERSINK	CSK	REINFORCEMENT	REINF
CUBIC	CU	RIGHT OF WAY	R/W
CUBIC YARD	CY	STABILIZED CONSTRUCTION ENTRANCE	SCE
DRY FILM THICKNESS	DFT	SCHEDULE	SCH
DEGREE	°	MARYLAND STATE HIGHWAY ADMINISTRATION	SHA
DIAMETER	DIA	SEWER HOUSE CONNECTION	SHC
DIAMETER	Ø	STEEL PIPE	SP
DIAGONAL	DIAG	STRUCTURAL PLATE PIPE	SPP
DUCTILE IRON	DI	SQUARE	SQ
DUCTILE IRON PIPE	DIP	STAINLESS STEEL	SS
DEPARTMENT OF PUBLIC WORKS	DPW	STORM WATER MANAGEMENT	SWM
EACH WAY	EW	TERMINAL	TERM
EXISTING	EX	TOP OF SLAB	T/S
EXPANSION	EXP	TYPICAL	TYP
FEET	FT	VOLTS	V
FEET	'	COEFFICIENT OF FRICTION BETWEEN FILL MATERIAL AND SIDES OF TRENCH	μ
GRADED AGGREGATE BASE	GAB	SQUARE MEMBER	□
GALVANIZED	GALV	C SHAPED MEMBER	┌
GAUGE	GA		
HIGH DENSITY POLYTHYLENE	HDPE		
HOT MIX ASPHALT	HMA		
INSIDE DIAMETER	ID		
INCH	IN.		
INCH	"		
JOINT	JT		
RATIO OF ACTIVE LATERAL UNIT PRESSURE TO VERTICAL UNIT PRESSURE	K		
POUNDS	LBS		
LINEAR FOOT	LF		
MANHOLE	MH		
MAXIMUM	MAX		
MECHANICAL	MECH		
MECHANICAL JOINT	MJ		
MILLIMETERS	MIL		
MINIMUM	MIN		
NUMBER	NO.		
NUMBER	#		

EXISTING	PROPOSED	DESCRIPTION
-----	-----	CONTOUR LINES - INTERMEDIATE INDEX
-----400-----		TREELINE
~~~~~		SANITARY SEWER AND MANHOLE
-----S-----S		WATER REDUCER, TEE, VALVE & FIRE HYDRANT
-----W-----W		WATER AND NON-POTABLE WATER MAIN
-----D-----D		STORM DRAIN AND MANHOLE
-----G-----G		GAS MAIN AND MANHOLE
-----E-----E		ELECTRICAL CONDUIT AND MANHOLE
-----T-----T		TELEPHONE CONDUIT AND MANHOLE
-----CTV-----		CABLE TELEVISION
-----X-----		FENCE WIRE
	-----LOD-----	LIMIT OF DISTURBANCE
	-----SF-----	SILT FENCE
	▲	TRAVERSE POINT
	⊕	TEST PIT HOLE
	-----	PROPERTY LINE
	-----	PERMANENT EASEMENT
	-----	GRAVEL/RIPRAP
Xs-X-Xs-X-X		EXISTING PIPE OR MANHOLE TO BE REMOVED

AS-BUILT

G-2

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. 29228, EXPIRATION DATE: 06/17/2023.

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HOWARD COUNTY, MARYLAND

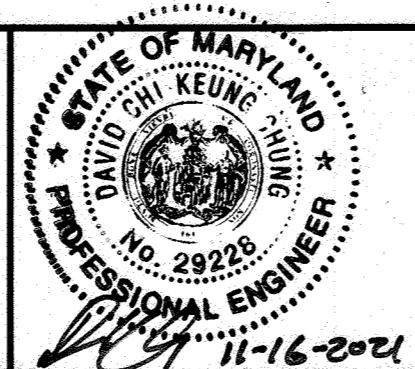
*[Signature]* 12/7/2021  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 11-06-21  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 12-2-21  
CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 12/2/21  
CHIEF, UTILITY DESIGN DIVISION DATE

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



DES:	FJB	WRA	AS-BUILTS	8/22
DRN:	JAM			
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GENERAL NOTES, ABBREVIATIONS, AND LEGEND

SCAGGSVILLE ELEVATED STORAGE TANK OVERFLOW IMPROVEMENTS

CAPITAL PROJECT NO. W8600  
CONTRACT NO. 44-5145

4TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 2 OF 9

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 Nov 16, 2021 - 2:28pm

**PLAN NOTES:**

1. STOCKPILE SPOILS FROM TRENCHING OPERATIONS ON THE UPHILL SIDE OF THE TRENCH, EXCEPT DO NOT STORE OR WASTE ANY SPOILS WITHIN 100-YEAR FLOOD PLAIN. ALL EXCESS MATERIALS SHALL BE REMOVED BY CONTRACTOR.
2. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY LINES, GRADES AND ELEVATIONS, AND CUT SHEETS SHALL BE PREPARED BASED ON THE LINES AND GRADES SHOWN ON THE CONTRACT DRAWINGS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING STAGING AND STOCKPILE AREAS.

**X CONSTRUCTION NOTE:**

1. ABANDON EXISTING BURIED 16" OVERFLOW FROM DOGHOUSE RISER TO INSIDE TANK COLUMN FLUSH WITH FLOOR WITH NON-SHRINK FLOWABLE FILL. SEE M-1 FOR LIMITS OF ABANDONMENT IN THE CENTER COLUMN AND THE NEW OVERFLOW PIPE ABOVE GROUND.
2. INSTALL DOGHOUSE RISER OVERFLOW RECEIVING STRUCTURE OVER EXISTING OUTFALL PIPE. SEE SHEET C-2 FOR DETAILS.
3. INSTALL BOLLARD (TYP. OF 6). SEE DETAIL 2 ON C-2.
4. ANY EXISTING STONE DISTURBED SHALL BE RESTORED IN KIND TO ORIGINAL CONDITIONS.

**BENCHMARK DATA**

TRAV. PT.	NORTHING	EASTING	ELEV.	DESC.
TRAV 101	539,200.070	1,341,822.100	434.49'	MAG SPIKE
TRAV 102	539,294.895	1,341,742.436	434.95'	RE-BAR & CAP
TRAV 103	538,654.107	1,342,416.843	389.37'	RE-BAR & CAP

**STAKEOUT GEOMETRY**

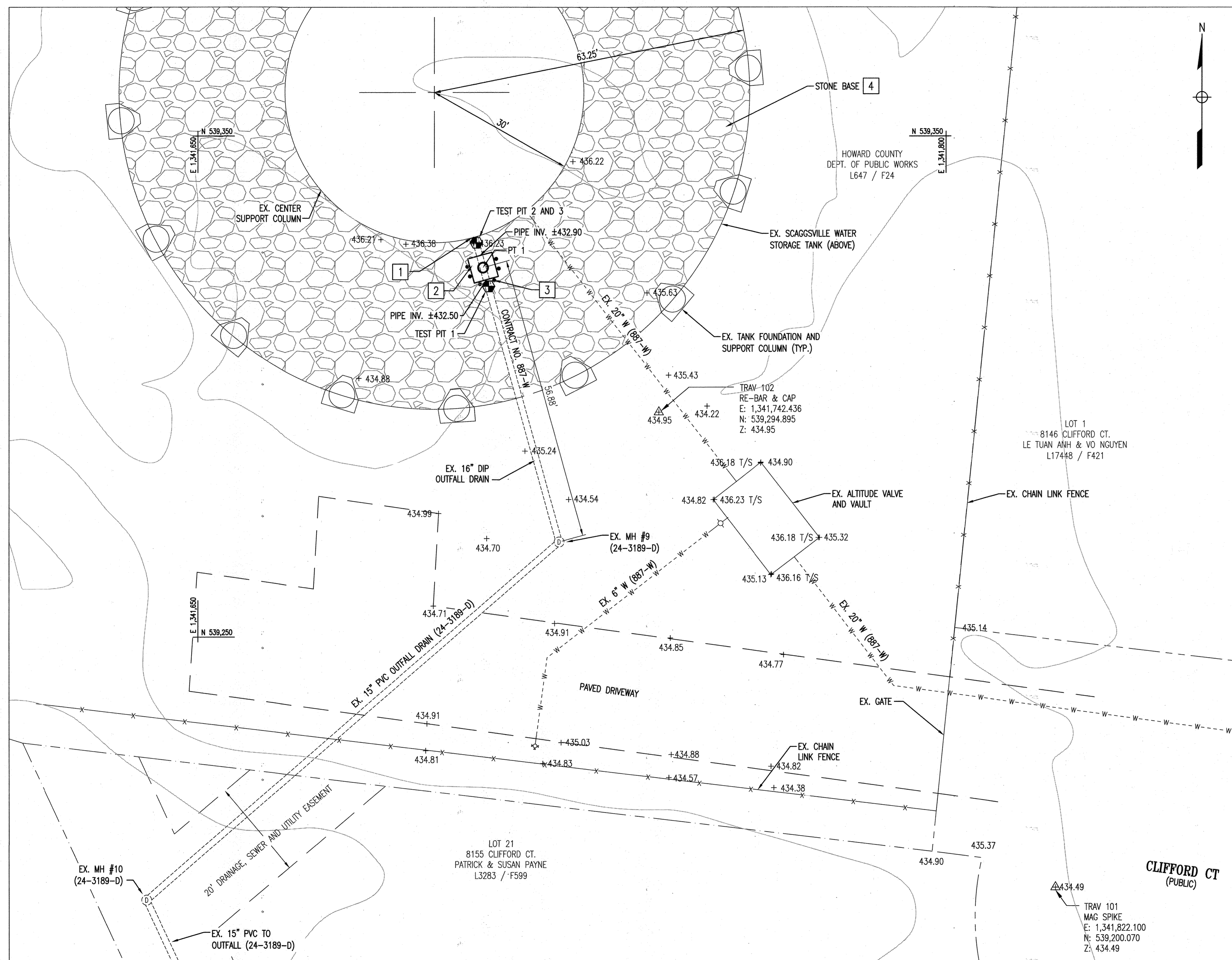
NAME	NORTHING	EASTING	DESCRIPTION
PT-1	539,323.733	1,341,707.161	CENTER OF OVERFLOW STRUCTURE

**TEST PIT RESULTS**

NAME	DEPTH BELOW GRADE	DESCRIPTION
TEST PIT 1	2.41'	18" STORM DRAIN
TEST PIT 2	3.70'	24" CONCRETE FOOTER
TEST PIT 3	2.00'	18" STORM DRAIN

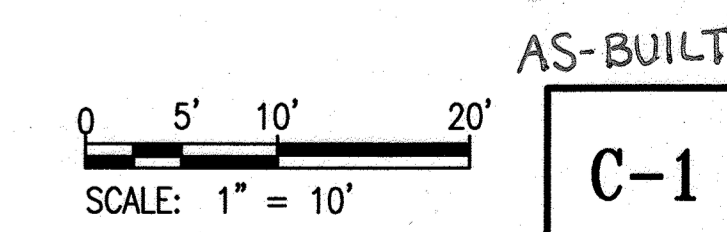
**GENERAL NOTE:**

1. FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO BEGINNING ANY WORK, AND ORDERING ANY MATERIAL. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH WORK.



**TANK SITE PLAN**

SCALE: 1" = 10'



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. 29228, EXPIRATION DATE: 06/17/2023.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 12/2/2021  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 12-06-21  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 12-07-21  
CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* SRK  
CHIEF, UTILITY DESIGN DIVISION DATE

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



DES:	FJB	WRA	AS-BUILTS	8/22
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BY:	NO.	REVISION	DATE	

TANK SITE PLAN

600' SCALE MAP NO. 46 BLOCK NO. XX

SCAGGSVILLE ELEVATED STORAGE TANK OVERFLOW IMPROVEMENTS

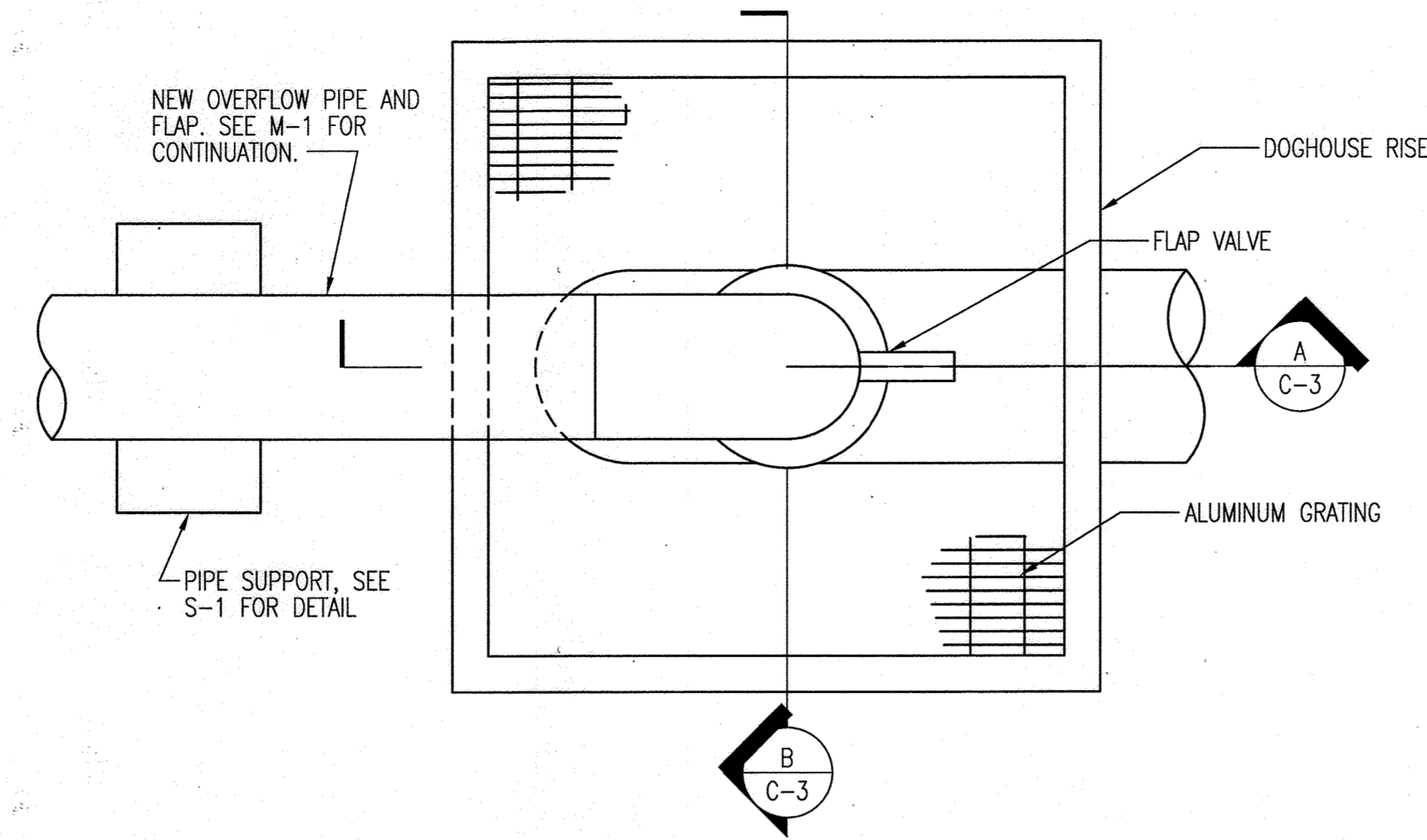
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4TH ELECTION DISTRICT  
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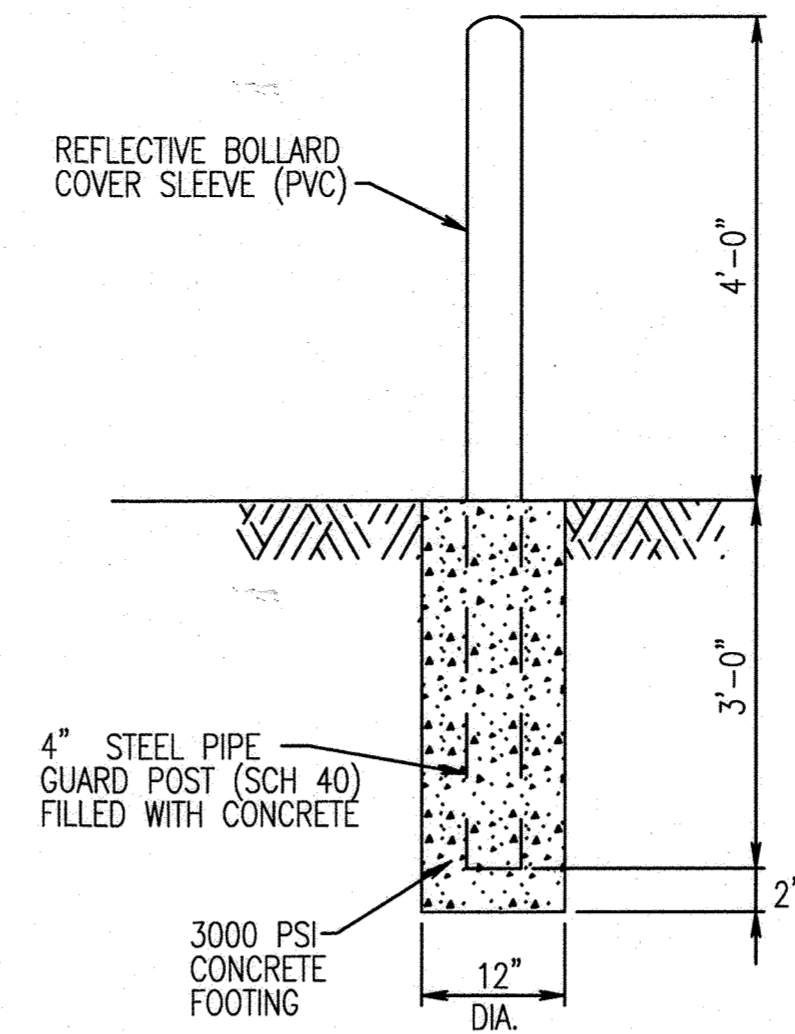
AS-BUILT  
**C-1**  
SCALE AS SHOWN  
SHEET 3 OF 9

**GENERAL NOTE:**

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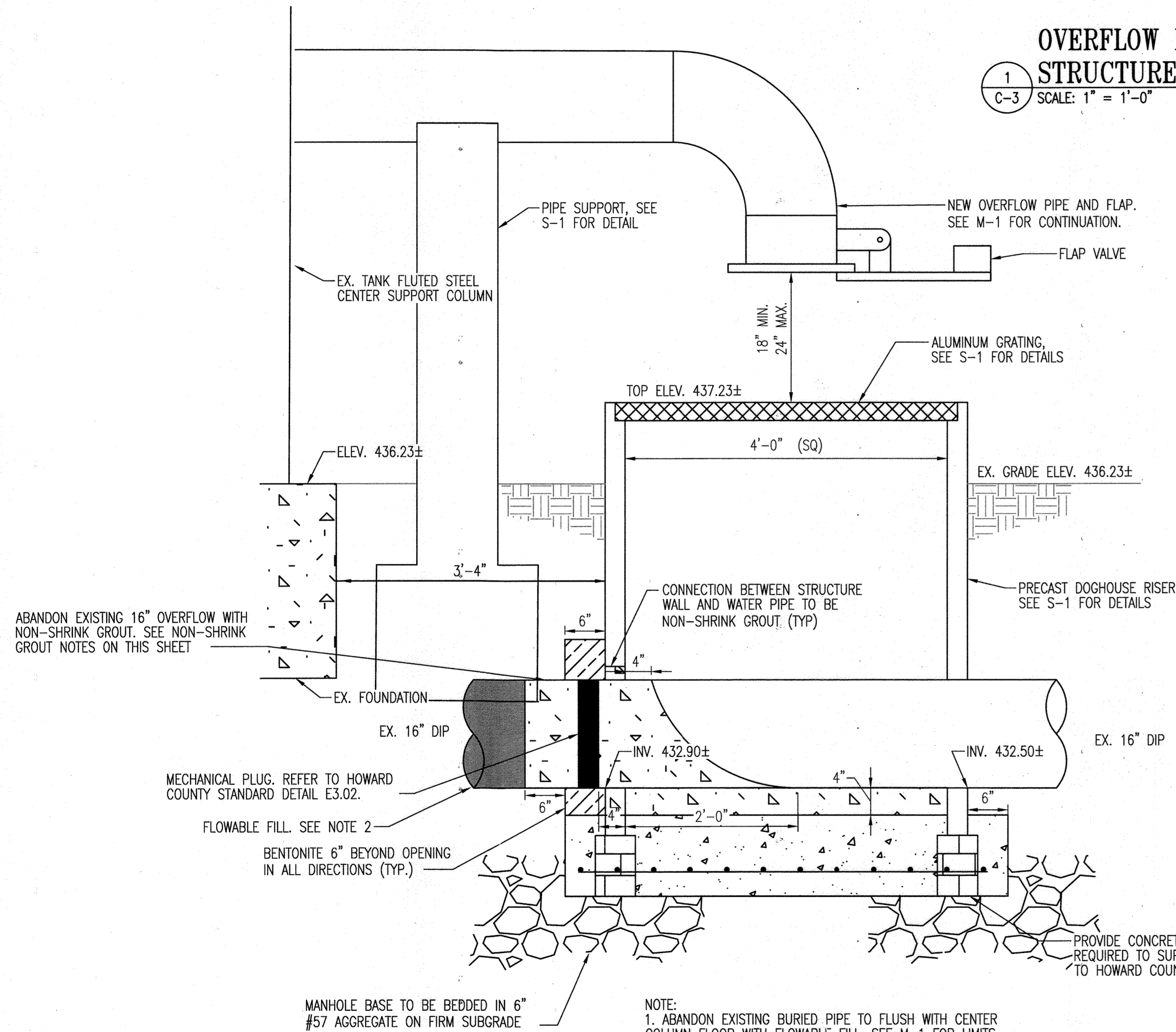
**OVERFLOW RECEIVING STRUCTURE PLAN**  
SCALE: 1" = 1'-0"



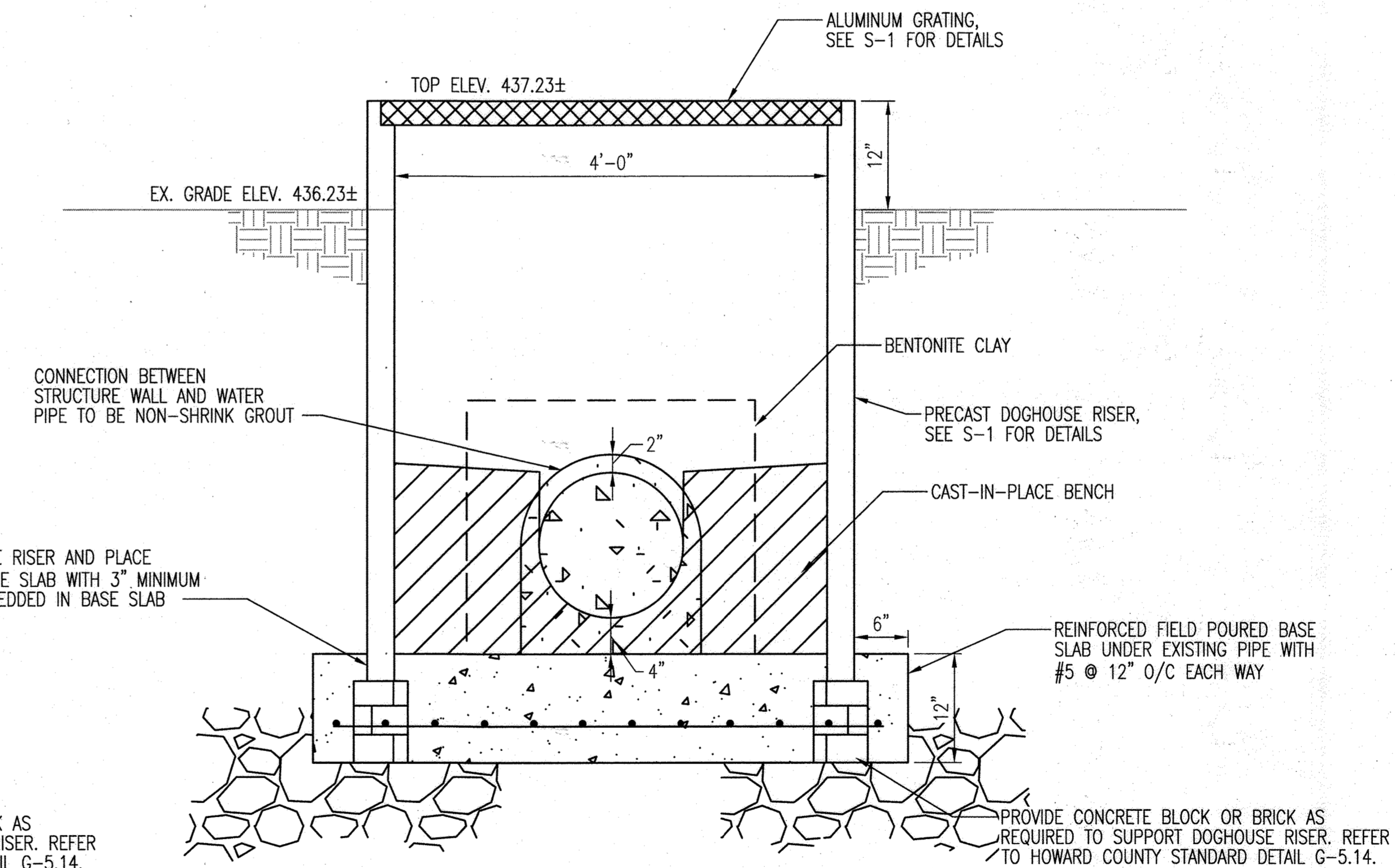
**BOLLARD DETAIL**  
SCALE: 3/4" = 1'-0"

**NOTES**

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH HOWARD COUNTY STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION.
- ALL FLOWABLE FILL SHALL MEET THE REQUIREMENTS OF SECTION 3.14 OF HOWARD COUNTY STANDARD SPECIFICATIONS. ALL NON-SHRINK GROUT SHALL MEET THE REQUIREMENTS OF 902.11.
- ALL BENTONITE SHALL BE GRANULAR, FREE FLOWING, WYOMING TYPE; NOT LESS THAN 90% MONTMORILLONITE AND NOTE MORE THAN 10% EITHER UNALTERED VOLCANIC ASH OR OTHER NATIVE SEDIMENTS.



**SECTION A**  
SCALE: 1" = 1'-0"



**SECTION B**  
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 PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 29228, EXPIRATION DATE: 06/17/2023.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*M. J. [Signature]* 12/7/2021  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 12-06-21  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 12-7-21  
CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 12/16/2021  
CHIEF, UTILITY DESIGN DIVISION DATE

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

STATE OF MARYLAND  
DIVISION OF PROFESSIONAL ENGINEERING  
LICENSE NO. 29228  
12-16-2021

DES: FJB	WRA	AS-BUILTS	8/22
DRN: JAM			
CHK: WFH			
BY NO.	REVISION	DATE	

**CIVIL DETAILS**

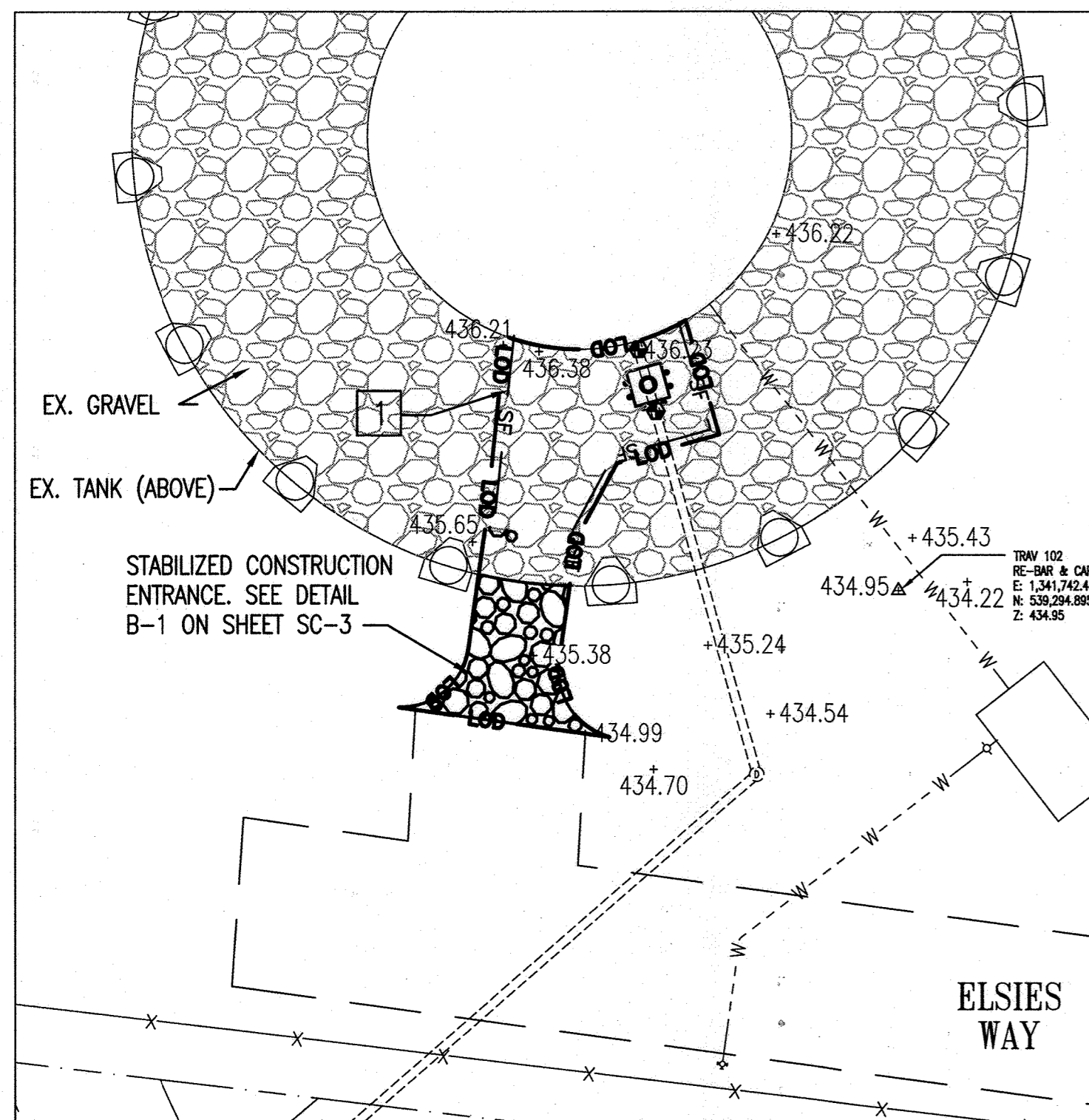
600' SCALE MAP NO. 46  
BLOCK NO. XX

SCAGGSVILLE ELEVATED STORAGE TANK OVERFLOW IMPROVEMENTS

CAPITAL PROJECT NO. W8600  
CONTRACT NO. 44-5145

4TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

AS-BUILT  
C-2  
SCALE AS SHOWN  
SHEET 4 OF 9



**TANK SITE PLAN**  
SCALE: 1" = 20'

**CONSTRUCTION NOTE:**

- INSTALL SILT FENCE. SEE MDE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL STD. DET. E-1. CONTRACTOR CAN PROVIDE SAME DAY STABILIZATION IN LIEU OF SILT FENCE.

**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:
  - 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.
- ALL SPOILS FROM THE EXCAVATION ARE TO BE PLACED ON THE UPHILL SIDE OF THE EXCAVATION.

**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, DIKES, SWALES, 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	1.23	63,574
TOTAL AREA OF SITE:	0.02	ACRES (1,022 SF)
AREA DISTURBED:	0.02	ACRES (1,022 SF)
AREA TO BE ROOFED OR PAVED:	0.00	ACRES
AREA TO BE VEGETATIVELY STABILIZED:	0	ACRES
TOTAL CUT:	N/A	CU. YDS.
TOTAL FILL:	N/A	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 (NPDES, MDE)
- 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.

**STANDARD SEDIMENT CONTROL NOTES (CONT.)**

- 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 IMBRICATED 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 IP MARCH 1 - JUNE 15
  - USE III AND IIIP 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 AND NPDES PERMITS FROM MDE. (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. (7 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 OVERFLOW STRUCTURE. MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF THE EXCAVATION. (2 WEEKS)
- VEGETATIVELY STABILIZE THE SITE. (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. (5 DAYS)

**BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, AND 100-YEAR FLOODPLAIN**

- NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- PLACE MATERIALS IN A LOCATION AND MANNER WHICH DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
- PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
- REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOOD PLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
- RECTIFY ANY NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOOD PLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
- ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOLA SP.), AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY REVEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED. SEE DWG. RP-1 FOR SEEDMIX APPROVED FOR NON-TIDAL WETLAND AND NONTIDAL WETLAND BUFFER AREAS.
- AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
- TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY CLASSIFICATION OF THE STREAM: DORSEY RUN IS A USE 1P WATERS; USE 1P WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OF MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.
- STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF AS-BUILT DEBRIS INTO THE WATERWAY.
- CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF THE AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

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. 29228, EXPIRATION DATE: 06/17/2023.

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

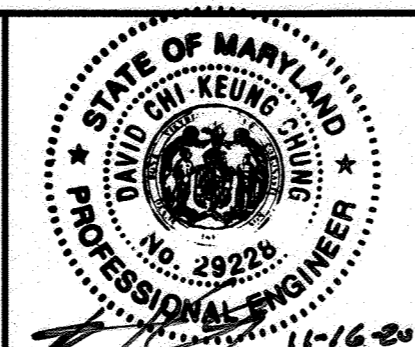
*M. M. M. M.* 12/7/2021  
DIRECTOR OF PUBLIC WORKS DATE

*K. K. K. K.* 12-06-21  
CHIEF, BUREAU OF ENGINEERING DATE

*S. S. S. S.* 12-7-21  
CHIEF, BUREAU OF UTILITIES DATE

*U. U. U. U.* 12/01/21  
CHIEF, UTILITY DESIGN DIVISION DATE

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



DES:	FJB	WRA	AS-BUILTS	8/22
DRN:	JAM			
CHK:	WFH			
BY	NO.	REVISION	DATE	

EROSION AND SEDIMENT CONTROL  
PLAN AND GENERAL NOTES

600' SCALE MAP NO. 46 BLOCK NO. XX

SCAGGSVILLE ELEVATED STORAGE TANK OVERFLOW IMPROVEMENTS

CAPITAL PROJECT NO. W8600  
CONTRACT NO. 44-5145

4TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

SC-1

SCALE  
AS SHOWN

SHEET  
5 OF 9

**B-4-2 STANDARDS 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.

**Conditions Where Practice Applies**

Where vegetative stabilization is to be established.

**Criteria**

- A. Soil Preparation
  - 1. Temporary Stabilization
    - a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
    - b. Apply fertilizer and lime as prescribed on the plans.
    - c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
  - 2. Permanent Stabilization
    - a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
      - i. Soil pH between 6.0 and 7.0.
      - ii. Soluble salts less than 500 parts per million (ppm).
      - iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 20 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
      - iv. Soil contains 1.5 percent minimum organic matter by weight.
      - v. Soil contains sufficient pore space to permit adequate root penetration.
    - b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
    - c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.

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- d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
- e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

**B. Topsoiling**

- 1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
- 2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
- 3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
  - a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
  - b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
  - c. The original soil to be vegetated contains material toxic to plant growth.
  - d. The soil is so acidic that treatment with limestone is not feasible.
- 4. Areas having slopes steeper than 2:1 require special consideration and design.
- 5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
  - a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 inches in diameter.
  - b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
  - c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
- 6. Topsoil Application
  - a. Erosion and sediment control practices must be maintained when applying topsoil.
  - b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
  - c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading

B.13

and seedbed preparation.

**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 fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
- 2. Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
- 3. Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #20 mesh sieve.
- 4. Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
- 5. Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

**PROPOSED SEQUENCE OF CONSTRUCTION**

1. INSTALL E&S CONTROLS.
2. COORDINATE WITH OWNER ANY TEMPORARY SHUTDOWNS AND CONTROLS TO PREVENT OVERFLOWS FROM OCCURRING DURING THE EXECUTION OF THE WORK.
3. PERFORM ALL FIELD SURVEYS TO LAYOUT WORK.
4. CLEAN OUT THE OUTFALL AND REARRANGE RIP RAP APRON TO CLEAR WATERWAY.
5. INSTALL STRUCTURE AROUND EXISTING PIPE.
6. USE LICENSED SURVEYOR TO ACCURATELY LOCATE THE POSITION OF THE HOLE TO BE CUT INTO THE TANK SHAFT FOR THE NEW OVERFLOW.
7. REMOVE EXISTING OVERFLOW STRUCTURE INSIDE BASE OF TANK DOWN TO THE TOP OF THE PAD.
8. INSTALL NEW OVERFLOW LINE AND SUPPORTS WITH FLAP GATE VALVE AND SCREENS AND APPURTENANCES WITH TEMPORARY BYPASS AS NECESSARY.
9. DEMOLISH EXISTING PIPE IN NEW STRUCTURE.
10. COMPLETE WORK WITHIN NEW STRUCTURE AND PIPE.
11. IF USED, REMOVE TEMPORARY BYPASS AND INSTALL ELBOW AND FLAP GATE VALVE.
12. CLEAN AND PAINT INTERIOR AND EXTERIOR SURFACES OF THE STEEL SUPPORT SHAFT IN THE HEAT EFFECTED ZONE DUE CUTTING AND WELDING AS WELL AS PIPE, FITTINGS AND VALVES.
13. PERFORM SITE RESTORATION AND FINAL STABILIZATION AND REMOVE ALL E&S CONTROLS.

**Temporary Seeding Summary**

No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20)		Lime Rate
					N	P <sub>2</sub> O <sub>5</sub>	
1	ANNUAL Ryegrass ( <i>Lolium perenne</i> sp. seed)	40	MAR 1 - MAY 15 AUG 1 - SEPT 30	0.5	436 lb/acre (10 lb/1000 sf)	2 tons/acre (90 lb/1000 sf)	
	ORIS ( <i>Lolium oris</i> )	72	MAR 1 - MAY 15 AUG 1 - SEPT 30	1.0			
2	FOXTAIL MILLET ( <i>Setaria fabryi</i> )	30	JUNE 1 - JULY 30	0.5			
	PEARL MILLET ( <i>Pennisetum glaucum</i> )	20	JUNE 1 - JULY 30	0.5			

**PERMANENT STABILIZATION**

No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20)			Lime Rate
					N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	
1	SWITCHGRASS	10	MAR 1 TO MAY 15	1/4-1/2 in	45 pounds per acre (1.0 lb/1000 sf)	90 lb/acre (2 lb/1000 sf)	90 lb/acre (2 lb/1000 sf)	2 tons/acre (90 lb/1000 sf)
	CREeping RED FESCUE	15	AND	1/4-1/2 in				
	BUSH CLOVER	2	MAY 16 TO JUNE 15	1/4-1/2 in				

No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20)			Lime Rate
					N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O	
12	CREeping RED FESCUE	25	MAR 1 TO MAY 15	1/4-1/2 in	45 pounds per acre (1.0 lb/1000 sf)	90 lb/acre (2 lb/1000 sf)	90 lb/acre (2 lb/1000 sf)	2 tons/acre (90 lb/1000 sf)
	WHITE CLOVER	3	AND	1/4-1/2 in				
			AUG 1 TO OCT 15	1/4-1/2 in				

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- b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
  - i. Cultipacker seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
  - ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
- c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
  - i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P<sub>2</sub>O<sub>5</sub> (phosphorus), 200 pounds per acre; K<sub>2</sub>O (potassium), 200 pounds per acre.
  - ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
  - iii. Mix seed and fertilizer on site and seed immediately and without interruption.
  - iv. When hydroseeding do not incorporate seed into the soil.

**B. Mulching**

- 1. Mulch Materials (in order of preference)
  - a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. **Note: Use only sterile straw mulch in areas where one species of grass is desired.**
  - b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
    - i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
    - ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
    - iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
    - iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
    - v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.

B.17

**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.

**Conditions Where Practice Applies**

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

**Criteria**

- A. Seeding
  - 1. Specifications
    - a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
    - b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
    - c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
    - d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
  - 2. Application
    - a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
      - i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
      - ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.

B.15

**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.

**Conditions Where Practice Applies**

Stockpile areas are utilized when it is necessary to salvage and store soil for later use.

**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 side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
3. Runoff from the stockpile area must drain to a suitable sediment control practice.
4. Access the stockpile area from the upgrade side.
5. Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary swale or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
6. Where runoff concentrates along the toe of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
7. Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
8. If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

**Maintenance**

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

B.43

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DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*[Signature]* 12/7/2021  
DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 12-06-21  
CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 12-7-21  
CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 12/6/2021  
CHIEF, UTILITY DESIGN DIVISION DATE

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

STATE OF MARYLAND  
DIVISION OF PROFESSIONAL ENGINEERING  
LICENSE NO. 29228  
EXPIRES 06-17-2023

DES: FJB	WRA	AS-BUILTS	8/22
DRN: JAM			
CHK: WFH			
BY NO.	REVISION	DATE	

EROSION AND SEDIMENT CONTROL  
GENERAL NOTES

600' SCALE MAP NO. 46 BLOCK NO. XX

SCAGGSVILLE ELEVATED STORAGE TANK OVERFLOW IMPROVEMENTS

CAPITAL PROJECT NO. W8600  
CONTRACT NO. 44-5145

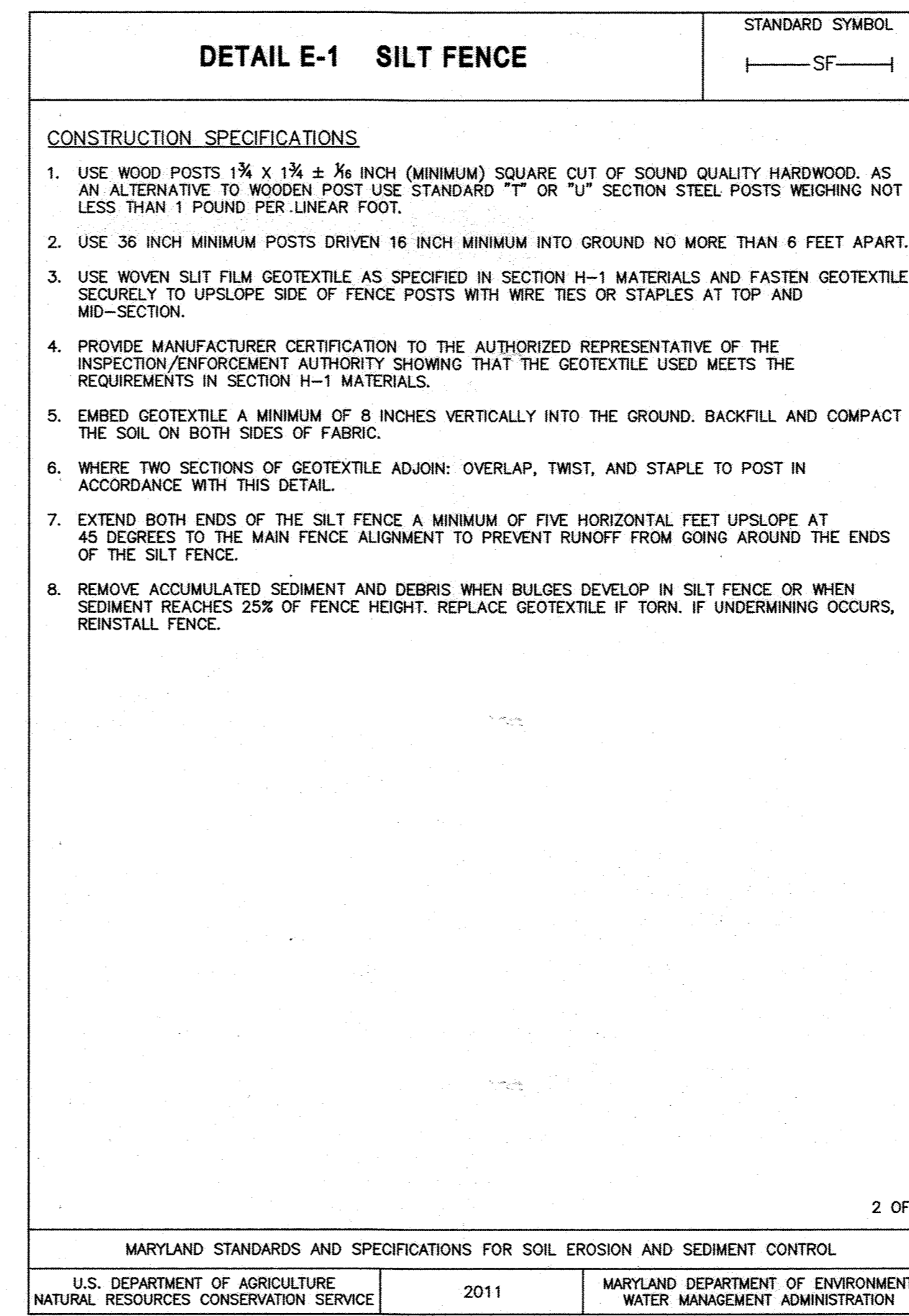
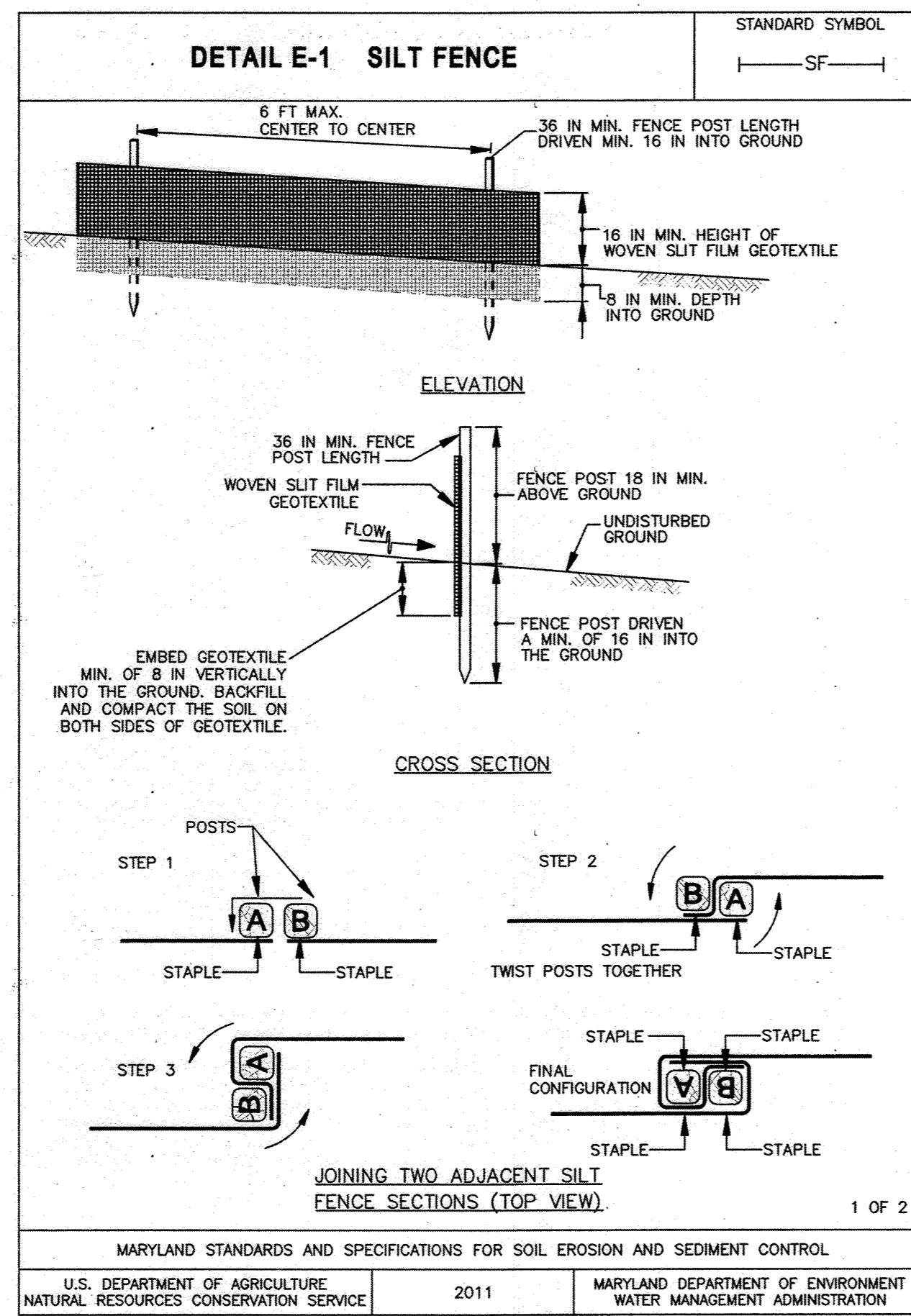
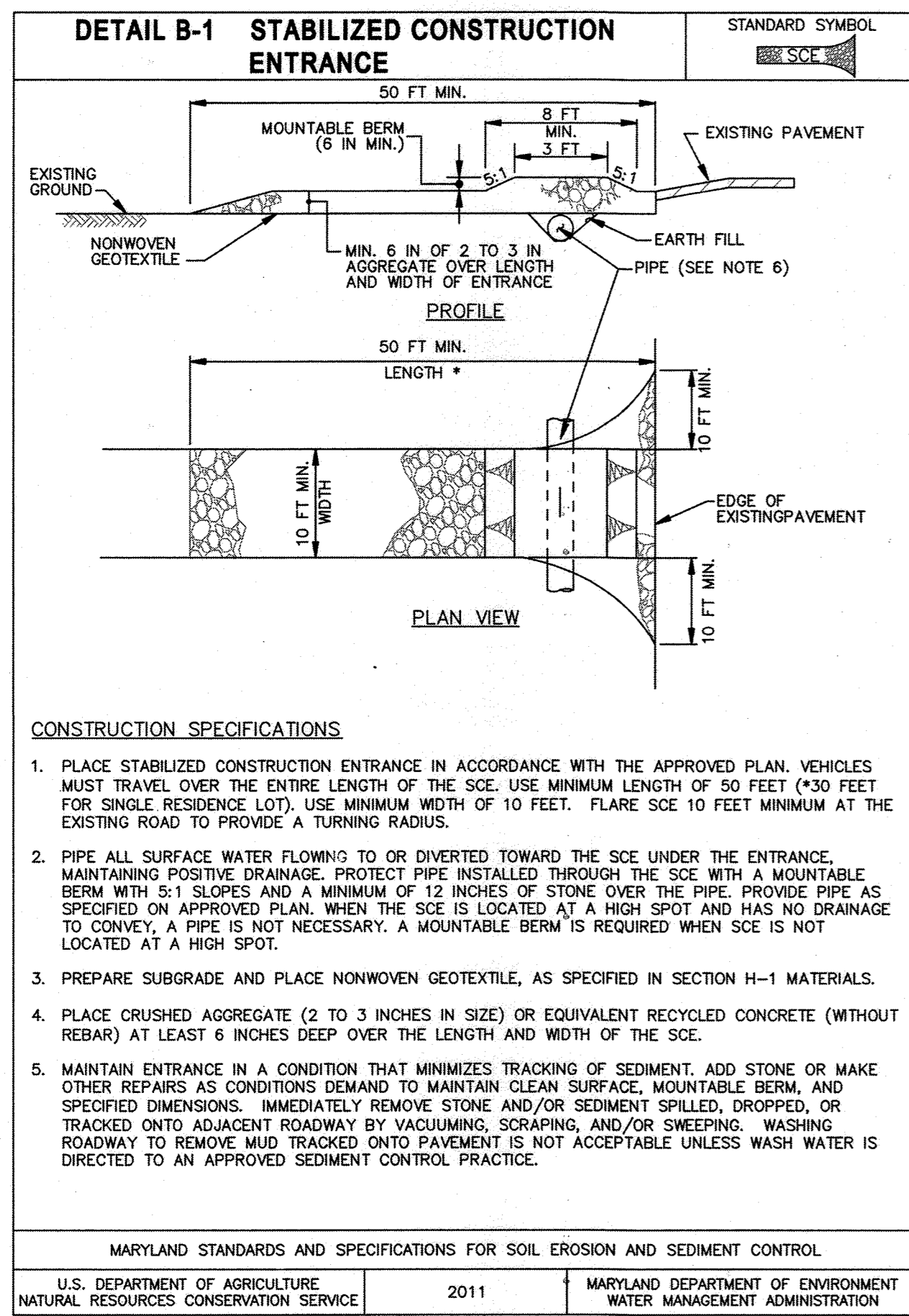
4TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

AS-BUILT

SC-2

SCALE AS SHOWN

SHEET 6 OF 9



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 HOWARD COUNTY, MARYLAND

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*[Signature]* 12/07/2021  
 CHIEF, BUREAU OF ENGINEERING DATE

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 CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 12/07/2021  
 CHIEF, UTILITY DESIGN DIVISION DATE

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

STATE OF MARYLAND  
 DIVISION OF PROFESSIONAL ENGINEERING  
 NO. 29228  
 PROFESSIONAL ENGINEER  
 11-16-2021

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DRN:	JAM			
CHK:	WFH			
BY:	NO.	REVISION	DATE	

EROSION AND SEDIMENT CONTROL  
 GENERAL NOTES AND DETAILS

600' SCALE MAP NO. 46 BLOCK NO. XX

SCAGGSVILLE ELEVATED STORAGE TANK OVERFLOW IMPROVEMENTS

CAPITAL PROJECT NO. W8600  
 CONTRACT NO. 44-5145

4TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

AS-BUILT  
 SC-3  
 SCALE AS SHOWN  
 SHEET 7 OF 9

**GENERAL NOTES**

- FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO BEGINNING ANY WORK, AND ORDERING ANY MATERIAL. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH WORK.
- COORDINATE ALL ACTIVITIES, INCLUDING THOSE OF SUBCONTRACTORS; WITH THE OWNER.

**CONCRETE NOTES**

- CONCRETE MIX DESIGN MUST MEET THE FOLLOWING SPECIFICATIONS:
  - MINIMUM 28-DAY COMPRESSIVE STRENGTH ( $f'_c$ ): 4500 PSI
  - PORTLAND CEMENT: ASTM C150, TYPE I/II OR TYPE II
  - FLY ASH: ASTM C618, CLASS F
  - SLAG CEMENT: ASTM C989, GRADE 100 OR 120
  - COARSE AND FINE AGGREGATE: ASTM C33
  - ALKALI-SILICA REACTION: 0.10 MAXIMUM EXPANSION AT 16 DAYS PER ASTM C1567 FOR EACH AGGREGATE USED IN CONCRETE
  - WATER: ASTM C94 AND POTABLE
  - WATER-CEMENTITIOUS MATERIAL RATIO: 0.45 MAXIMUM
  - NOMINAL MAXIMUM AGGREGATE SIZE: 1 INCH
  - AIR CONTENT: 6%
  - MAXIMUM WATER-SOLUBLE CHLORIDE ION CONTENT IN CONCRETE: 0.30% BY WEIGHT OF CEMENT
  - SLUMP: 3 TO 5 INCHES
  - SHRINKAGE REDUCING ADMIXTURE: ASTM C494 TYPE S
  - AIR ENTRAINING ADMIXTURES: ASTM C260
  - WATER REDUCING ADMIXTURE: ASTM C494, TYPE A
- DETAIL, CONVEY, PLACE, FINISH, AND CURE REINFORCED CONCRETE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE ACI 301, "SPECIFICATION FOR STRUCTURAL CONCRETE."
- READY-MIXED CONCRETE SHALL CONFORM WITH ASTM C94.
- CHAMFER ALL EXPOSED CONCRETE EDGES 3/4" UNLESS NOTED OTHERWISE.
- 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 STEEL CONFORMING TO ASTM A 615, GRADE 60, DEFORMED BARS.
- REINFORCING STEEL SHALL BE FREE FROM LOOSE, FLAKY RUST AND SCALE, AND FREE FROM OIL, GREASE, OR OTHER COATING WHICH MIGHT DESTROY OR REDUCE THE REINFORCING'S BOND WITH THE CONCRETE.
- UNLESS NOTED OTHERWISE ON THE DRAWINGS, PROVIDE CONCRETE 3" COVER FOR REINFORCING STEEL.
- MINIMUM LAP SPLICE LENGTHS FOR REINFORCING BARS SHALL BE AS FOLLOWS:
  - #4 BAR: 19 INCHES
- COORDINATE ALL OPENINGS AND EMBEDDED ITEMS SUCH AS SLEEVES, ANCHORS, CONDUIT, DRAINS, ETC. THAT WILL BE INCORPORATED INTO CONCRETE WORK.
- COLD-WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 306R AND 306.1. HOT-WEATHER CONCRETING SHALL BE IN ACCORDANCE WITH ACI 305R AND 305.1.

**DELEGATED DESIGN**

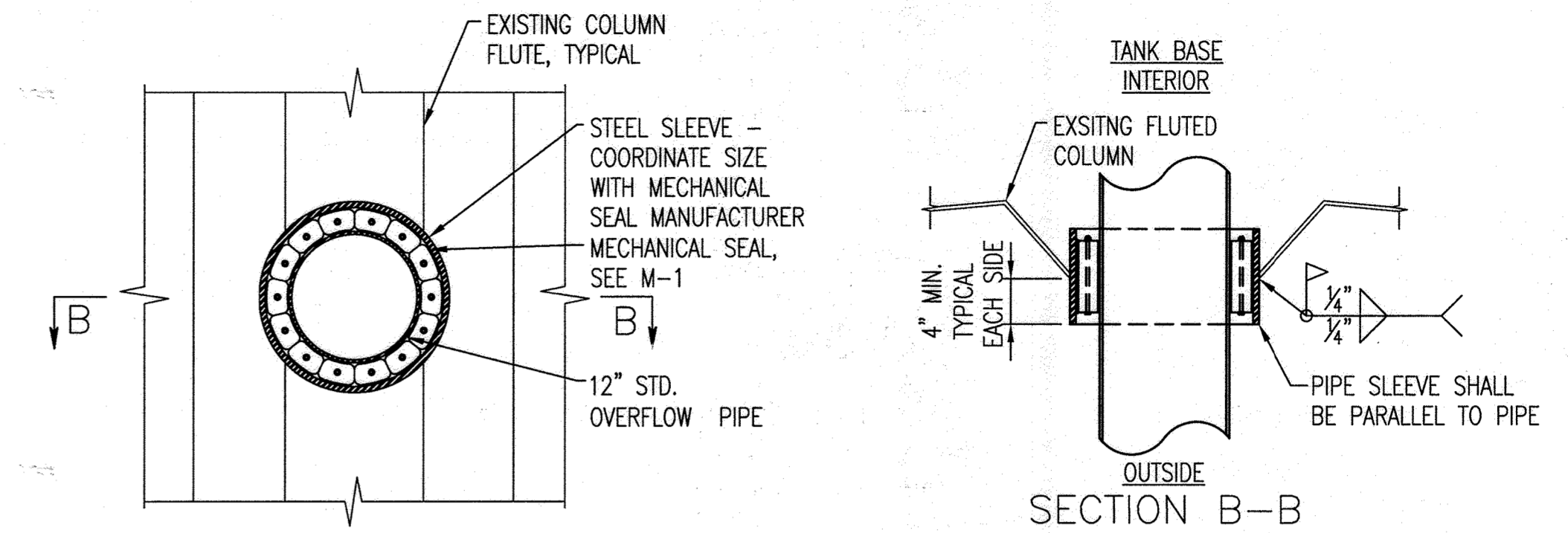
- DESIGN RESPONSIBILITY FOR THE FOLLOWING ENGINEERED SYSTEMS AND COMPONENTS IS DELEGATED TO A QUALIFIED PROFESSIONAL ENGINEER, SELECTED AND HIRED BY THE CONTRACTOR. THESE SYSTEMS AND COMPONENTS INCLUDE, BUT ARE NOT LIMITED TO:
  - PRECAST TANK OVERFLOW RECEIVING STRUCTURE
- DESIGN IN ACCORDANCE WITH ASTM C890 AND ASTM C913.
- SUBMIT SHOP DRAWINGS AND CALCULATIONS SIGNED AND SEALED BY A MARYLAND LICENSED PROFESSIONAL ENGINEER.

**ALUMINUM GRATING NOTES**

- COAT ALL ALUMINUM IN CONTACT WITH CONCRETE AND OTHER DISSIMILAR METALS WITH BITUMINOUS PAINT ON THE CONTACT SURFACE.
- USE TYPE 316 STAINLESS STEEL CONNECTION BOLTS FOR CONNECTING ALUMINUM MEMBERS TO OTHER ALUMINUM MEMBERS OR CONCRETE CONSTRUCTION.
- FABRICATE ALL GRATING IN ACCORDANCE WITH THE NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS, "METAL BAR GRATING MANUAL".
- PROVIDE P-19-4 (1 1/2 x 3/16) ALUMINUM GRATING.
- BAND OUTSIDE EDGES OF ALL GRATING AND THE OPENINGS IN THE GRATING USING ALUMINUM BARS OF THE SAME DEPTH AS THE BEARING BARS.

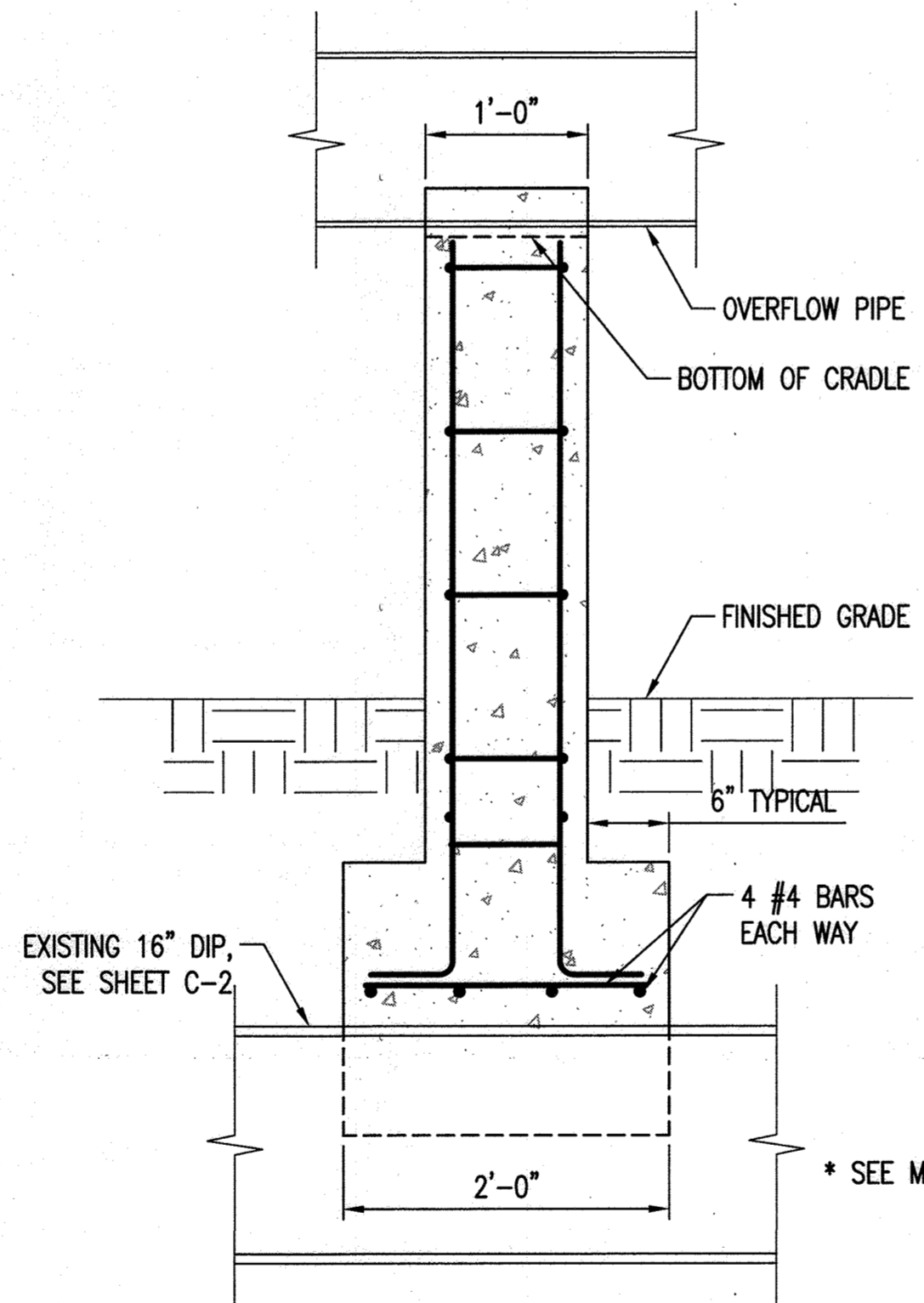
**MISCELLANEOUS METAL NOTES**

- PROVIDE MATERIALS WITH SMOOTH, FLAT SURFACES UNLESS OTHERWISE INDICATED. FOR METAL FABRICATIONS EXPOSED TO VIEW IN THE COMPLETED WORK, PROVIDE MATERIALS WITHOUT SEAM MARKS, ROLLER MARKS, ROLLED TRADE NAMES, OR BLEMISHES.
- METALS MUST CONFORM TO THE FOLLOWING:
  - STEEL PLATES, SHAPES AND BARS: ASTM A 36
  - STEEL TUBING: ASTM A 500, COLD-FORMED STEEL TUBING
  - STEEL PIPE: ASTM A 53, STANDARD WEIGHT (SCHEDULE 40) UNLESS OTHERWISE INDICATED
- WELD CORNERS AND SEAMS CONTINUOUSLY. AT EXPOSED CONNECTIONS, FINISH WELDS AND SURFACES SMOOTH AND BLENDED SO NO ROUGHNESS SHOWS AFTER FINISHING AND CONTOUR OF WELDED SURFACE MATCHES THAT OF ADJACENT SURFACE.

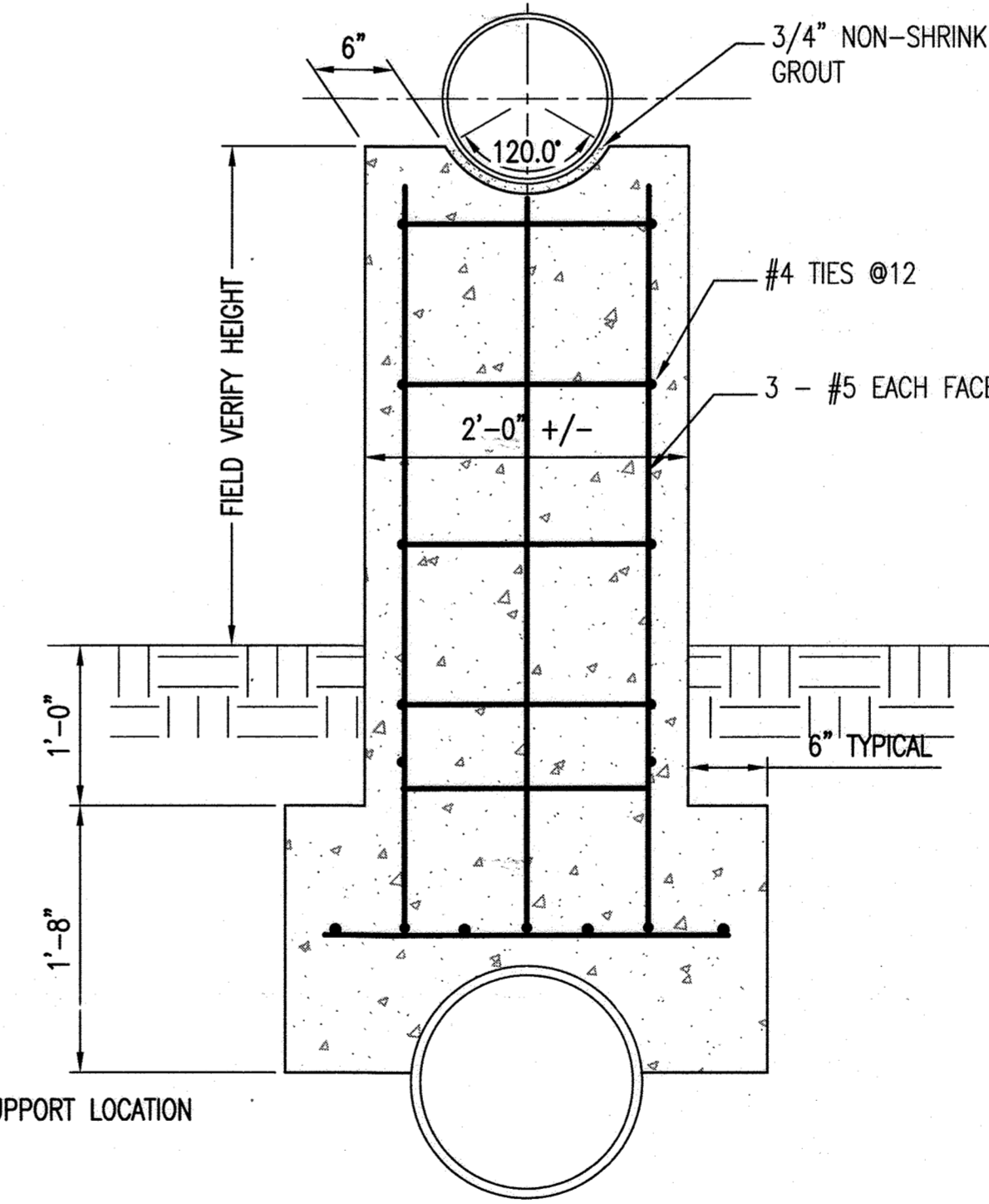


\* SEE M-1 FOR PAINTING REQUIREMENTS FOR STEEL PIPE, STEEL PIPE SLEEVE, AND REPAIR TOUCH UP TO FLUTED COLUMN.

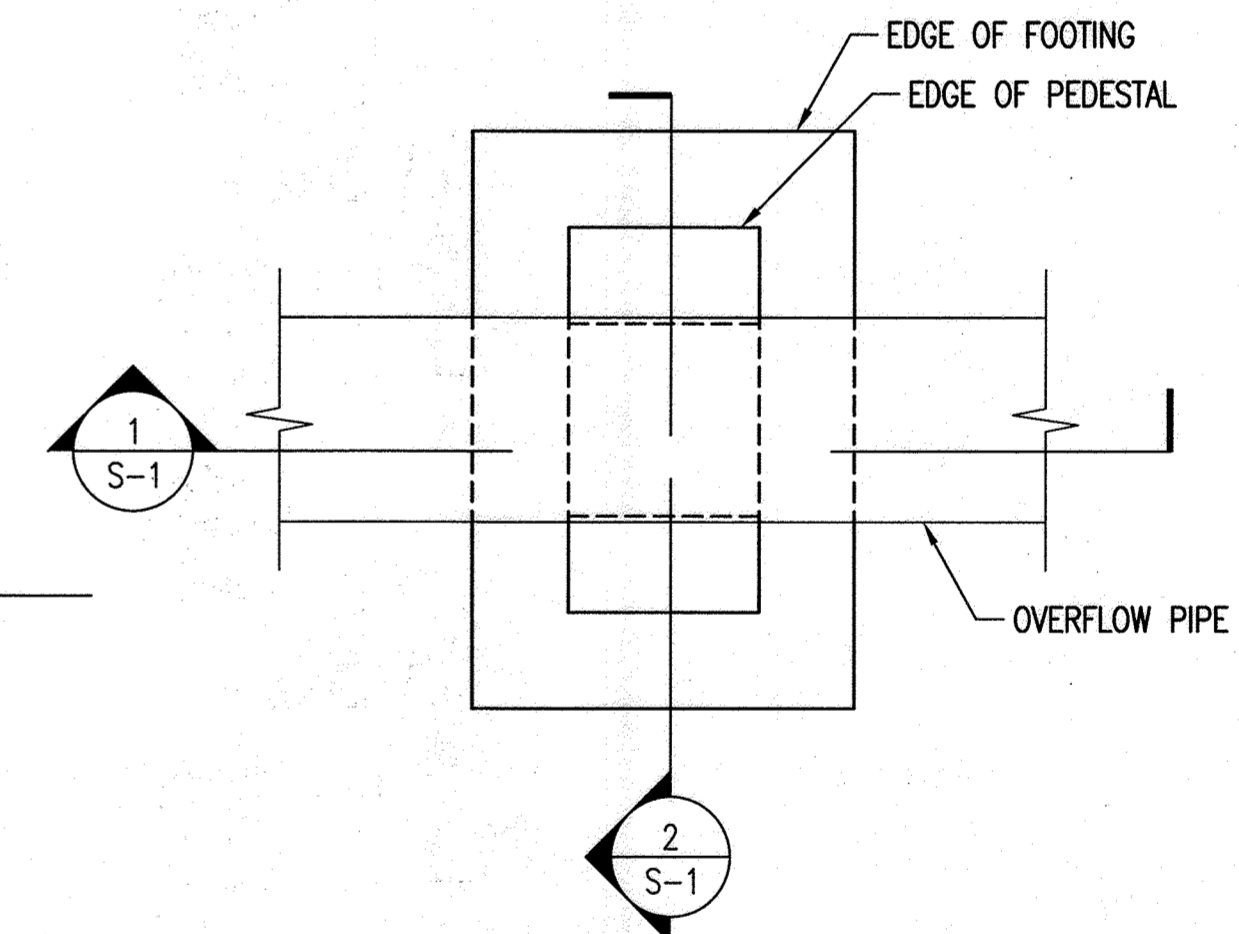
**OVERFLOW PIPE PENETRATION THROUGH FLUTED COLUMN DETAIL**  
SCALE: 1" = 1'-0"



**SECTION 1**  
SCALE: 1" = 1'-0"



**SECTION 2**  
SCALE: 1" = 1'-0"



**PLAN**

**TYPICAL PIPE SUPPORT DETAIL**  
SCALE: 1" = 1'-0"

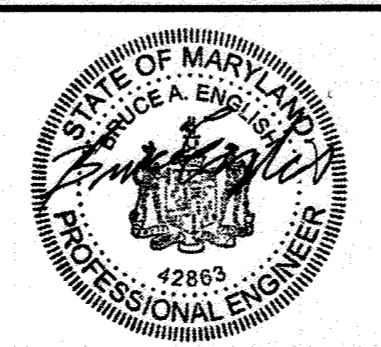
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HOWARD COUNTY, MARYLAND

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DIRECTOR OF PUBLIC WORKS DATE  
CHIEF, BUREAU OF ENGINEERING

*[Signature]* 12-7-21  
CHIEF, BUREAU OF UTILITIES DATE  
CHIEF, UTILITY DESIGN DIVISION

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



DES: CAD	WRA	AS-BUILTS	8/22
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GENERAL STRUCTURAL NOTES AND DETAILS

SCAGGSVILLE ELEVATED STORAGE TANK OVERFLOW IMPROVEMENTS  
CAPITAL PROJECT NO. W8600  
CONTRACT NO. 44-5145  
4TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

AS-BUILT  
S-1  
SCALE NOT TO SCALE  
SHEET 8 OF 9



**PAINTING NOTES**

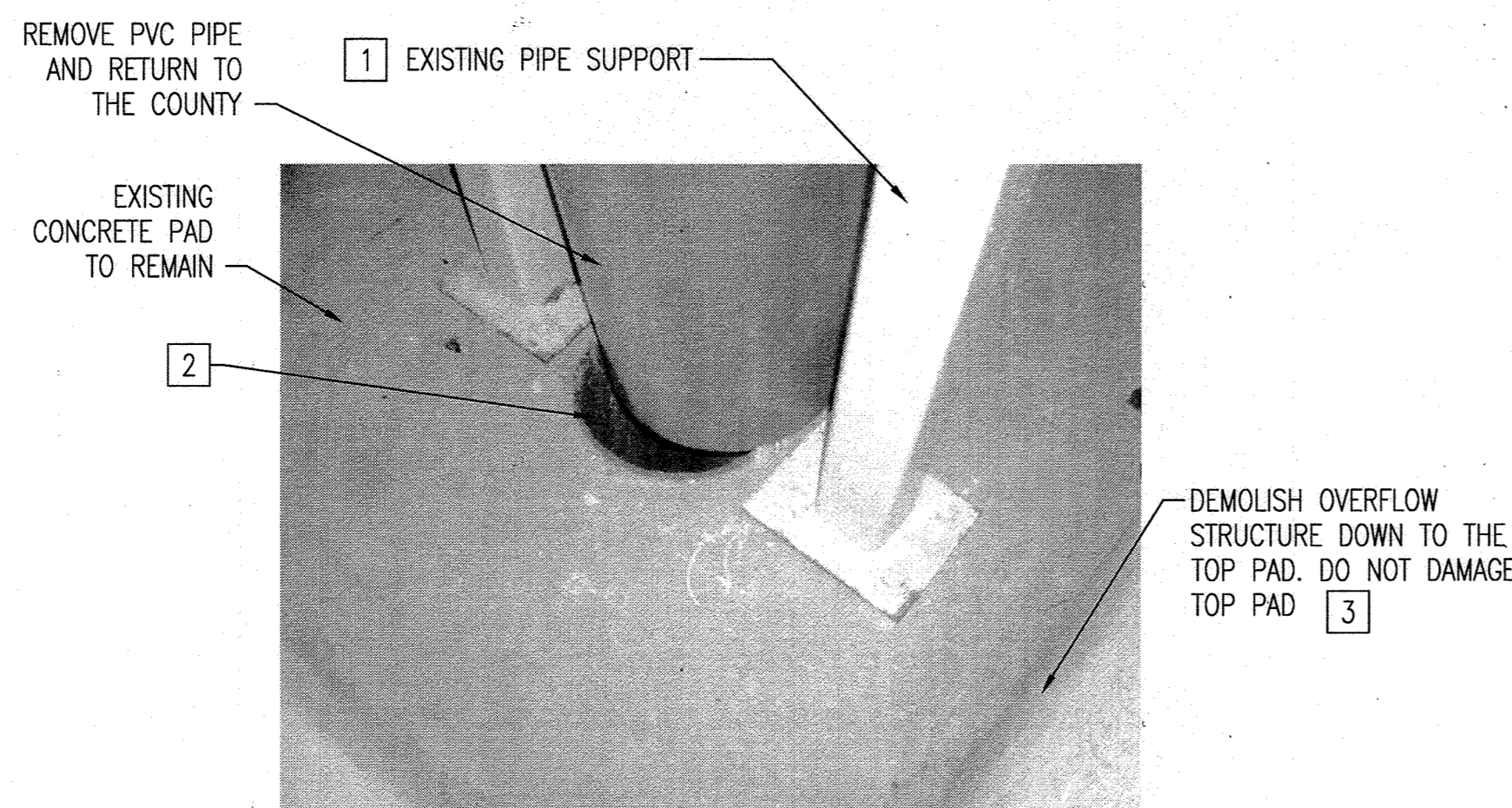
- SUBMIT SHOP DRAWINGS FOR THE PAINT SYSTEM AND SURFACE PREPARATION METHODS FOR REVIEW.
- DAMAGED PAINT DUE TO THE WORK PERFORMED SHALL BE REMOVED, METAL SHALL BE CLEAN OF ALL RESIDUE.
- PAINT ALL DAMAGED SURFACES DUE TO THE WORK, PAINT NEW PIPING, SLEEVE AND METAL SUPPORTS. DO NOT PAINT STAINLESS STEEL, GALVANIZED STEEL. PROVIDE EPOXY COAT TO THE CONCRETE PAD.
- COORDINATE ALL PAINT COLOR REQUIREMENTS WITH THE OWNER AND PAINT THE AREA TO MATCH ADJACENT SURFACES.
- THE FOLLOWING REFERENCES SHALL BE USED TO ESTABLISH THE MINIMUM COATING REQUIREMENTS:
  - AWWA - D102 PAINTING STEEL WATER STORAGE TANKS
  - SSPC - SP11 POWER TOOL GLEANING TO BARE METAL
  - SSPC - SP10 NEAR-WHITE BLAST CLEANING
  - SSPC - SP7 BRUSH-OFF BLAST CLEANING
  - SSPC - SP0 COMMERCIAL BLAST CLEANING
  - SSPC - SP1 SOLVENT CLEANING
  - SSPC - VLS1 VISUAL STANDARDS FOR ABRASIVE BLAST CLEANED STEEL
  - SSPC - VLS3 VISUAL STANDARDS FOR POWER AND HAND TOOL CLEANED STEEL
  - SSPC - PA1 SHOP, FIELD AND MAINTENANCE PAINTING
  - SSPC - PM MEASUREMENT OF DRY PAINT THICKNESS
- THE TOTAL DRY FILM THICKNESS (DFT) OF THE TANK DRY COATING SYSTEM SHALL BE 10 TO 15 MILS EXCLUDING "STRIPE COAT".
  - PAINT FIELD REPAIR SPOT PRIMER: 3.0-4.0 MILS (DFT)
  - SPOT SSPC SP-6 COMMERCIAL BLAST ON DAMAGED AND WELD AREAS, 1 TO 3 MILL PROFILE
  - INTERMEDIATE: 4.0-6.0 MILS (DFT)
  - FINISH: 3.0-5.0 MILS (DFT)

**[X] SPECIFIC NOTES**

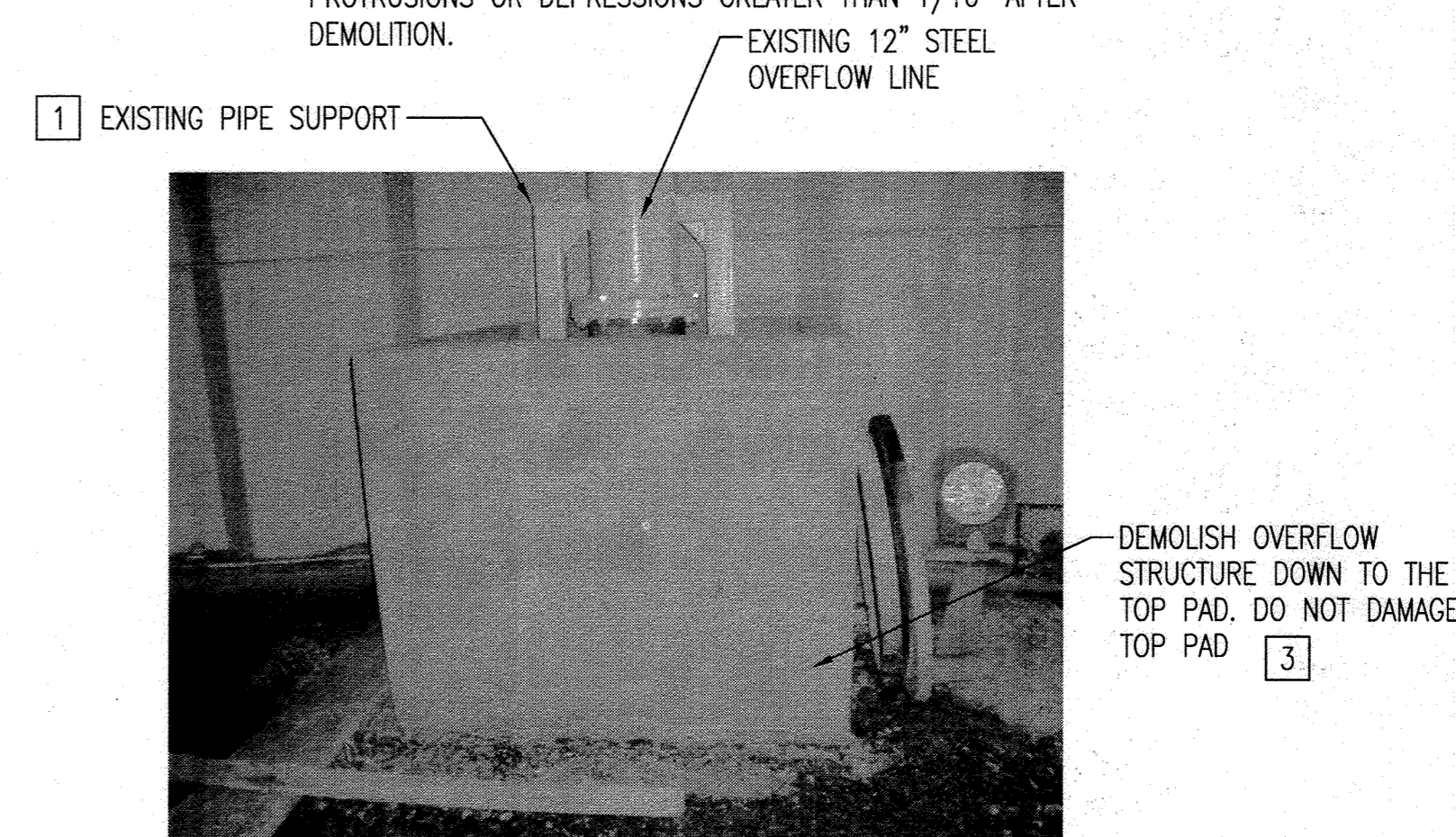
- REPLACE THE EXISTING SUPPORT AND WELDED FLANGE CONNECTION IN KIND AS NEEDED OR PROVIDE A SPOOL PIECE AS NEEDED TO INSTALL THE NEW OVERFLOW PIPE AT THE CORRECT ELEVATION TO ENSURE THAT THE DISCHARGE IS THE PROPER DISTANCE ABOVE THE TOP OF THE DOGHOUSE RISER. WORK SHALL BE PAINTED.
- ABANDON IN PLACE EXISTING BURIED OVERFLOW LINE FROM THE TOP OF THE CONCRETE PAD TO THE NEW DOGHOUSE RISER SHOWN ON C-1 AND C-2. THIS EXISTING OVERFLOW LINE SHALL BE FILLED WITH FLOWABLE FILL AND MADE FLUSH WITH CONCRETE PAD FLOOR. SEE C-2 FOR DETAILS OF FLOWABLE FILL IN THE NEW DOGHOUSE OVERFLOW RECEIVING STRUCTURE.
- DEMOLISH EXISTING OVERFLOW STRUCTURE TO THE TOP OF STRUCTURE CONCRETE PAD. DO NOT DAMAGE PAD.
- COORDINATE THE CENTER LINE LOCATION OF THE OVERFLOW ELBOW AND FLAP GATE WITH THE CENTER OF THE OVERFLOW STRUCTURE. PROVIDE PIPE LENGTH TO SUIT. SEE CIVIL FOR OVERFLOW STRUCTURE LOCATION.
- COORDINATE FLAP GATE OPERATIONAL CLEARANCE SO THAT IT WILL WORK UNOBSTRUCTED WITHOUT HITTING ANYTHING.
- INSTALL THE SECOND S.S. 24 MESH SCREEN BETWEEN THE FLANGES TO AVOID VANDALISM.
- PROVIDE NEVASTANE XS 80 OR EQUAL NSF-61 EPA APPROVED LUBRICATING GREASE, FOR INCIDENTAL FOOD CONTACT AROUND CONTACT POINTS/SURFACES.
- TOP SURFACE OF THE CONCRETE SHALL BE SMOOTH WITH NO PROTRUSIONS OR DEPRESSIONS GREATER THAN 1/16" AFTER DEMOLITION.

**PLAN NOTES**

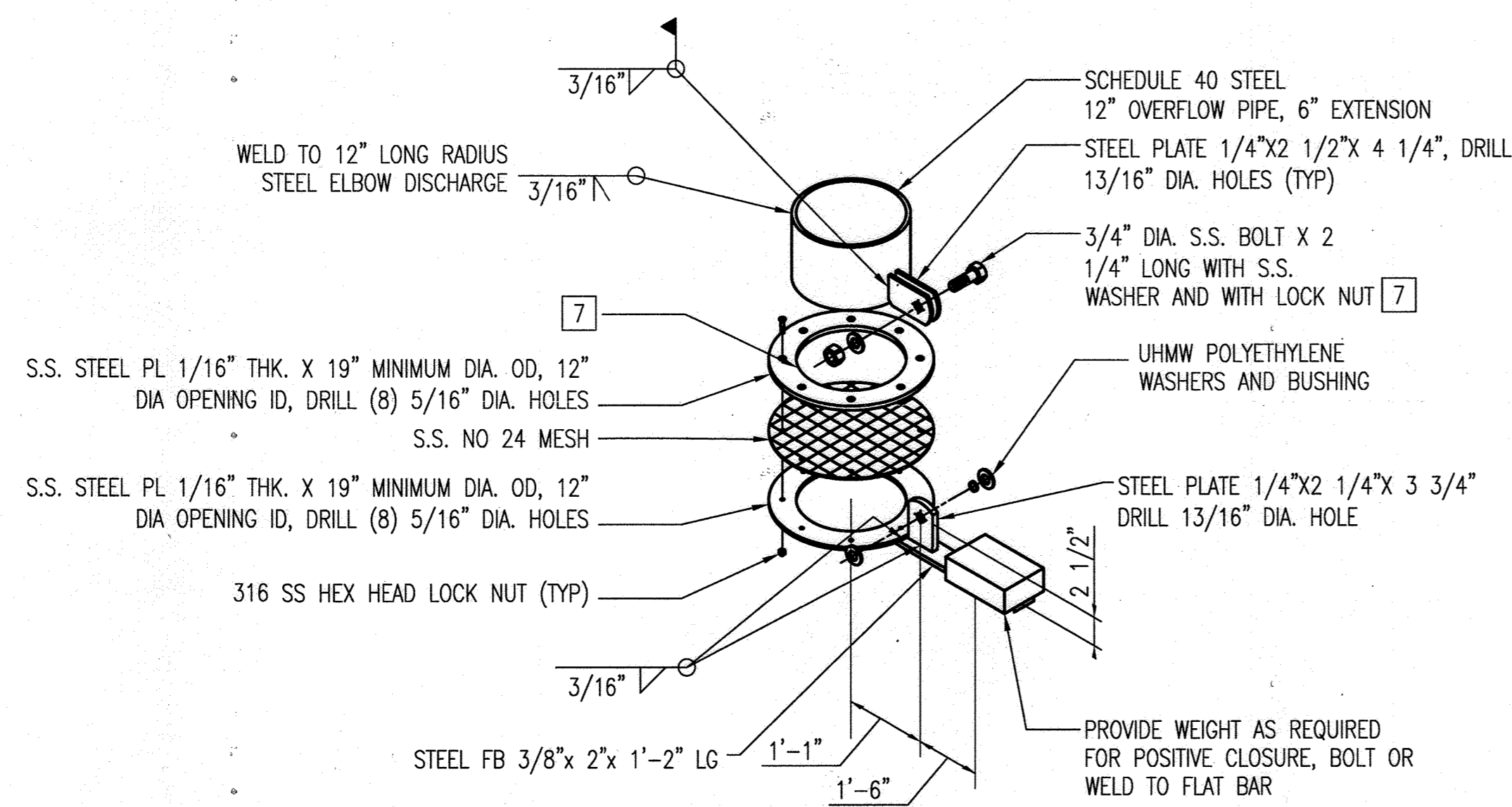
- VERIFY ALL FIELD DIMENSIONS. DIMENSIONS PROVIDED FOR EXISTING STRUCTURES AND EXISTING EQUIPMENT ARE FOR REFERENCE ONLY AND ARE OBTAINED FROM RECORD DRAWINGS.
- COORDINATE ALL SHUTDOWNS WITH THE OWNER.
- SUBMIT THE FOLLOWING FOR ENGINEERS REVIEW AND APPROVAL PRIOR TO PERFORMING WORK: DEMOLITION PLAN, ALL LAYOUT DRAWINGS, PAINT SYSTEM AND SURFACE PERPETRATION, SCHEDULE 40 PIPE AND FITTINGS, LINK SEAL, FULL FACED RED RUBBER GASKETS, STAINLESS STEEL NUTS BOLTS AND WASHERS, PIPE SUPPORTS, FLAP GATE VALVE, OVERFLOW STRUCTURE, PIPE SLEEVE PENETRATIONS AND OTHER MATERIALS AND PRODUCTS USED.
- CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR AND TOOLS NECESSARY FOR THE INSTALLATION AND PROPER OPERATION OF A FLAP GATE VALVE AS DETAILED, OVERFLOW LINE EXTENSION AND FITTINGS, SUPPORTS, SLEEVE, SEALS, DOGHOUSE OVERFLOW RECEIVING STRUCTURE AND OTHER ITEMS AS NECESSARY AND SHALL PAINT THE NEW WORK.
- PRESSURE TEST PIPE AND FITTINGS FOR LEAKS, UP TO 95 PSI FOR 30 MINUTES.
- SUBMIT FOR REVIEW AND APPROVAL: ENGINEERED SUPPORT SYSTEM FOR THE PIPING SYSTEM. SEE SUPPORT DETAILS ON S-1.
- USE DIELECTRIC ISOLATION FOR CONNECTIONS BETWEEN DISSIMILAR METALS.
- MATERIALS SHALL BE IN ACCORDANCE WITH THE FOLLOWING LATEST STANDARD SPECIFICATIONS OF THE ASTM:
  - STRUCTURAL STEEL A-36
  - IRON CASTINGS A-48 OR A-126
  - WELDING STEEL PIPE A-53
  - ZINC (HOT-GALVANIZING) A-123
  - STAINLESS STEEL BOLTS AND HARDWARE - 316



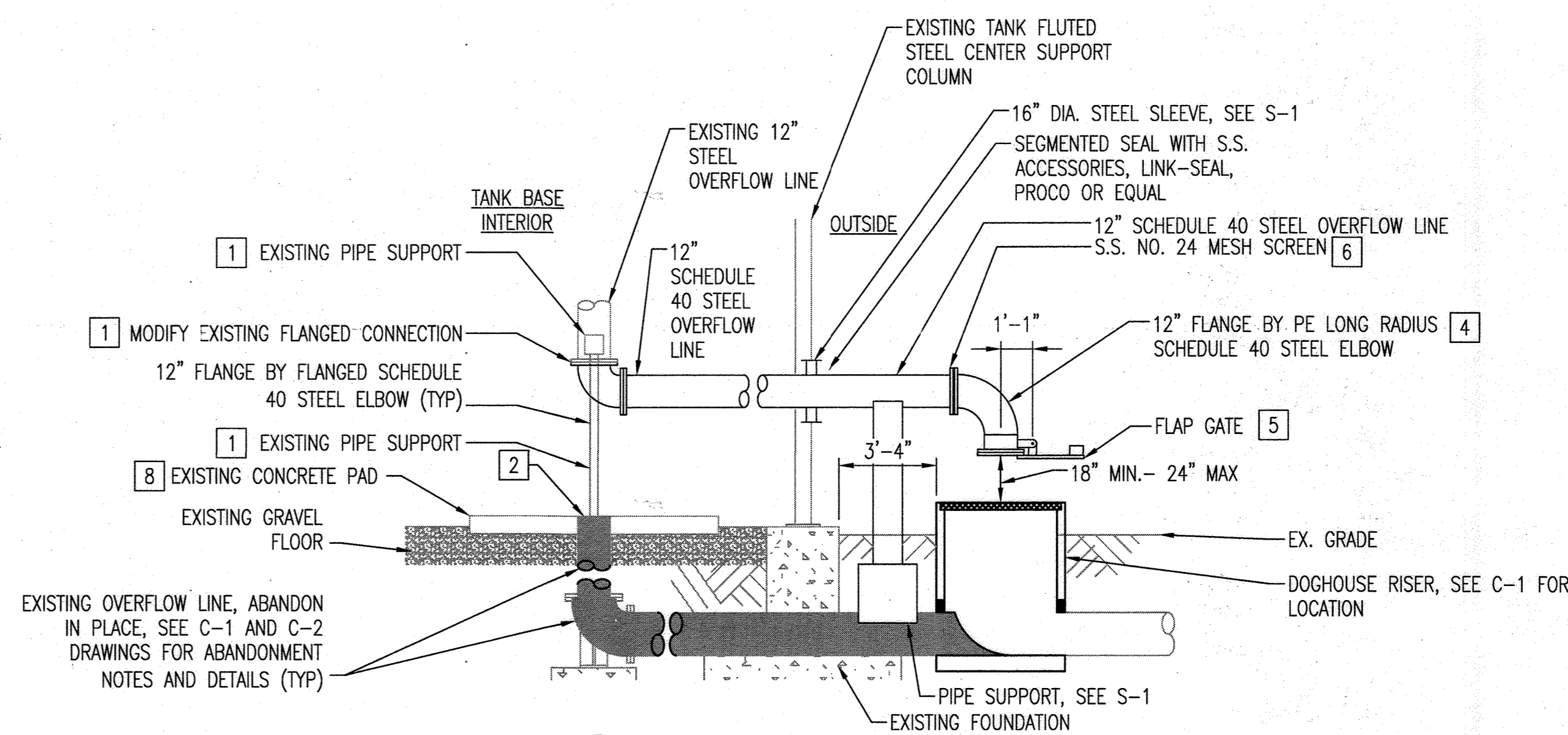
**EXISTING OVERFLOW STRUCTURE INTERIOR DEMOLITION PHOTO**  
 1 M-1 SCALE: NONE



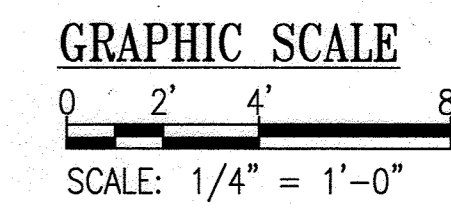
**EXISTING OVERFLOW STRUCTURE EXTERIOR DEMOLITION PHOTO**  
 2 M-1 SCALE: NONE



**3 FLAP GATE DETAIL**  
 3 M-1 SCALE: NONE



**A OVERFLOW SECTION**  
 A M-1 SCALE: 1/4" = 1'-0"



AS-BUILT

M-1

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DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

*[Signature]* 12/7/2022  
 DIRECTOR OF PUBLIC WORKS DATE

*[Signature]* 12-06-21  
 CHIEF, BUREAU OF ENGINEERING DATE

*[Signature]* 12-2-21  
 CHIEF, BUREAU OF UTILITIES DATE

*[Signature]* 12/21/21  
 CHIEF, UTILITY DESIGN DIVISION DATE

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STATE OF MARYLAND  
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 LICENSE NO. 29228  
 PROFESSIONAL ENGINEER  
 11-16-2021

DES: BKM	WRA	AS-BUILTS	8/22
DRN: BKM			
CHK: DCC			
BY	NO.	REVISION	DATE

**OVERFLOW DETAILS**

600' SCALE MAP NO. 46 BLOCK NO. XX

**SCAGGSVILLE ELEVATED STORAGE TANK OVERFLOW IMPROVEMENTS**

CAPITAL PROJECT NO. W8600  
 CONTRACT NO. 44-5145

4TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

SCALE NOT TO SCALE

SHEET 9 OF 9