BENCHMARK INFORMATION

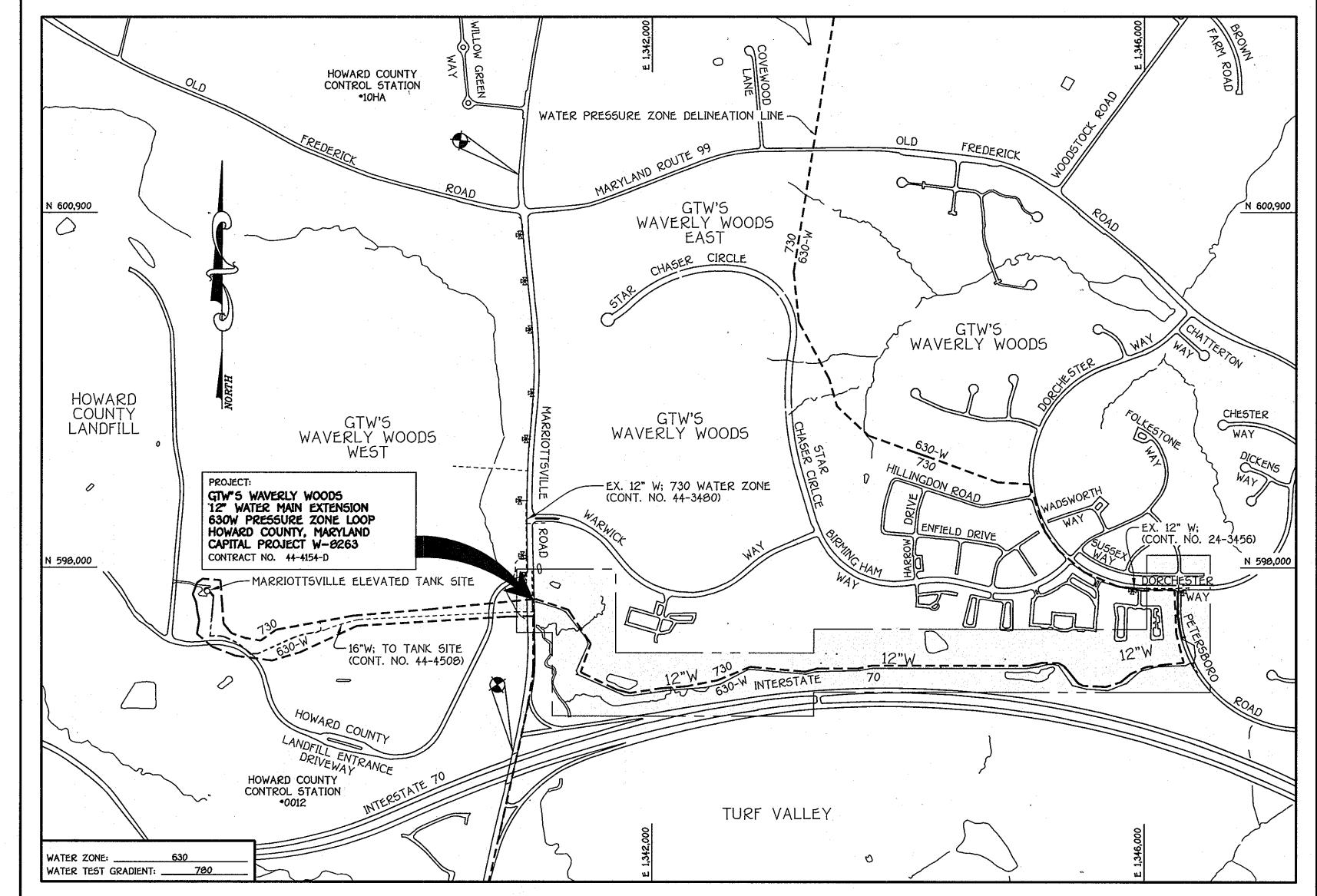
OF THE CENTERLINE OF ROAD)

B.M.•1 - HOWARD COUNTY CONTROL STATION •0012 (LOCATED ALONG THE WEST SIDE OF MARRIOTTSVILLE ROAD; JUST NORTH OF INTERSTATE 70) N 596,502.7604 - HORIZONTAL = (NAD '03) E 1,340,064.3654 - HORIZONTAL = (NAD '03)

ELEVATION = 486.905 - VERTICAL = (NGVD '29) B.M.•2 - HOWARD COUNTY CONTROL STATION •10HA (LOCATED ALONG THE WEST SIDE OF MARRIOTTSVILLE ROAD, JUST NORTH OF OLD FREDERICK ROAD, APPROX. 21' WEST

> N 601,206.59 - HORIZONTAL = (NAD '03)= 1,340,912.325 - HORIZONTAL = (NAD '83)

ELEVATION = 483.888 - VERTICAL = (NGVD '29)



DEVELOPER'S CERTIFICATION

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

Paul W. Kriebel, FOR: WAVERLY WOODS DEVELOPMENT CORP.

12-03-10

# ENGINEER'S CERTIFICATION

\* I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF ENGINEER

SIGNATURE OF DEVELOPER

SEDIMENT CONTROL MEASURES FOR THIS CONTRACT WILL BE IMPLEMENTED IN ACCORDANCE WITH SECTION 308 OF THE HOWARD COUNTY DESIGN MANUAL - VOLUME IV: STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION

WAVERLY WOODS DEVELOPMENT CORP. 12/03/10 SIGNATURE OF DEVELOPER

GP-09-065

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



SHEET INDEX SHEET NO. TITLE WATER MAIN EXTENSION PLAN

WATER MAIN EXTENSION PROPILE & CHART

WATER WATER MAIN EXTENSION PLAN

I MDE LETTER OF AUTHORIZATION NO. 11-NT-0037/2011-GO127

TYPE OF BUILDING:

NUMBER OF UNITS:

NO. OF WATER HOUSE CONNECTIONS:

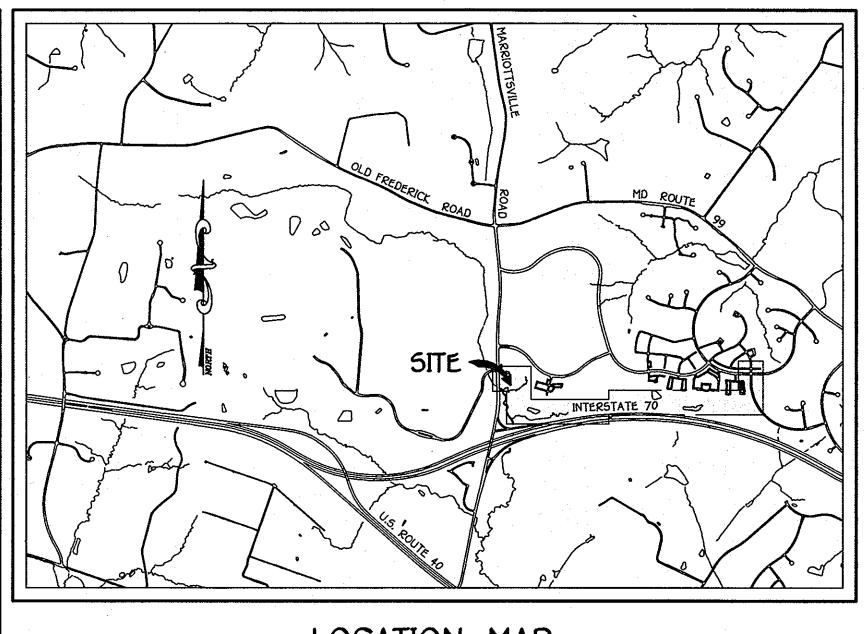
NO. OF SEWER HOUSE CONNECTIONS:

DRAINAGE AREA: LITTTLE PATUXENT

CAPITAL PROJECT W-8263 CONTRACT NO. 44-4154-D

# GTW'S WAVERLY WOODS

12" WATER MAIN EXTENSION 630W PRESSURE ZONE LOOP 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 OR ABOUT JULY, 2005 & 2010 BY FISHER, COLLINS & CARTER, INC. HORIZONTAL AND VERTICAL SURVEY CONTROLS: THE COORDINATES SHOWN ON THE DRAWINGS ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD '03/91' AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 10HA & NO. 0012.

ALL VERTICAL CONTROLS ARE AS INDICATED IN THE BENCHMARK INFORMATION. VERTICAL CONTROLS PROVIDED 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 BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF THE ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONIES OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF

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 SITE. 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 . . . . . . . . . . . . . . . . . 1-000-252-1133 BGE (CONSTRUCTION SERVICES) . . . . 410-637-0713 BGE (EMERGENCY) . . . . . . . . . . . . 410-605-0123 BUREAU OF UTILITIES . . . . . . . . . . . . 410-313-4900 COLONIAL PIPELINE CO . . . . . . . . . . 410-795-1390 . 1-800-257-7777 STATE HIGHWAY ADMINISTRATION . . . . 410-531-5533 

9 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.

10. 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 THE CONSTRUCTION OF THE MAIN.

11. 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

PART B: <u>WATER MAIN GENERAL NOTES</u> **PVC C900**1. ALL WATER MAINS SHALL BE DIP. SLASS-54 UNLESS OTHERWISE NOTED. 2. TOPS OF ALL WATER MAINS SHALL HAVE A MINIMUM OF 3'-6" OF COVER UNLESS OTHERWISE NOTED.

3. VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES. 4. ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS UNLESS OTHERWISE

5. 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. 6. THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM 7. 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 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. 8. UNLESS OTHERWISE NOTED ON THE PLANS OR IN THE SPECIFICATIONS, SEVENTEEN (17) POUND 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. MAGNESIUM ANODES SHALL BE INSTALLED ON ALL VALVES AND DUCTILE IRON FITTINGS INCLUDING

RESTRAINTS AND HARNESSES. 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. 9. ALL DWELLING UNITS SHALL HAVE A 1-1/2" WATER HOUSE CONNECTION WITH A 1" OUTSIDE METER SETTING, STD. DET. W-3.20.

PART C: SEWER MAIN GENERAL NOTES

LE MAP NO. 16 BLOCK NO. 5

WATER MAIN EXTENSION TITLE SHEET

1. ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. AS SPECIFIED ON PLANS.
2. ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.

3. FORCE MAINS SHALL BE D.I.P. ONLY. 4. MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.

5. MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVER, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAMES AND COVERS ARE USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.

6. HOUSE(S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED

DEVELOPER WAVERLY WOODS DEVELOPMENT CORPORATION SUITE 102 5300 DORSEY HALL DRIVE ELLICOTT CITY, MARYLAND 21042 PHONE: 443-367-0422

CAPITAL PROJECT W-0263 CONTRACT NO. 44-4154-D GTW'S WAVERLY WOODS 12" WATER MAIN EXTENSION 630W PRESSURE ZONE LOOP HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

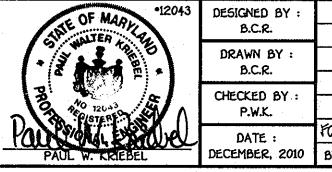
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

LICENSE NO. 12043 EXPIRATION DATE IS 7/16/14. FISHER, COLLINS & CARTER, INC ENGINEERING CONSULTANTS & LAND SURVEYO QUARE OFFICE PARK - 10272 BALTIMORE NATIONAL ELLICOTT CITY, MARYLAND 21042

N/A

N/A

TREATMENT PLANT: LITTLE PATUXENT WATER RECLAMATION CENTER, SAVAGE, MD



B.C.R.					MATER MAIN EXTENCION
DRAWN BY : B.C.R.					WATER MAIN EXTENSION TITLE SHEET
CHECKED BY : P.W.K.					600' SCALE MAP NO16 BLOCK NO
DATE :	FCC	1	ADD LETTER OF AUTHORIZATION NO. E SHEET INDEX PER LIDE COMMENT	1/23/13	F.C.C. WORK ORDER NO542
DECEMBER, 2010	BY	NO.	REVISION	DATE	FILE NAME : WATER MAIN EXTENSION TITLE SHE

GTW'S WAVERLY WOODS 12" WATER MAIN EXTENSION

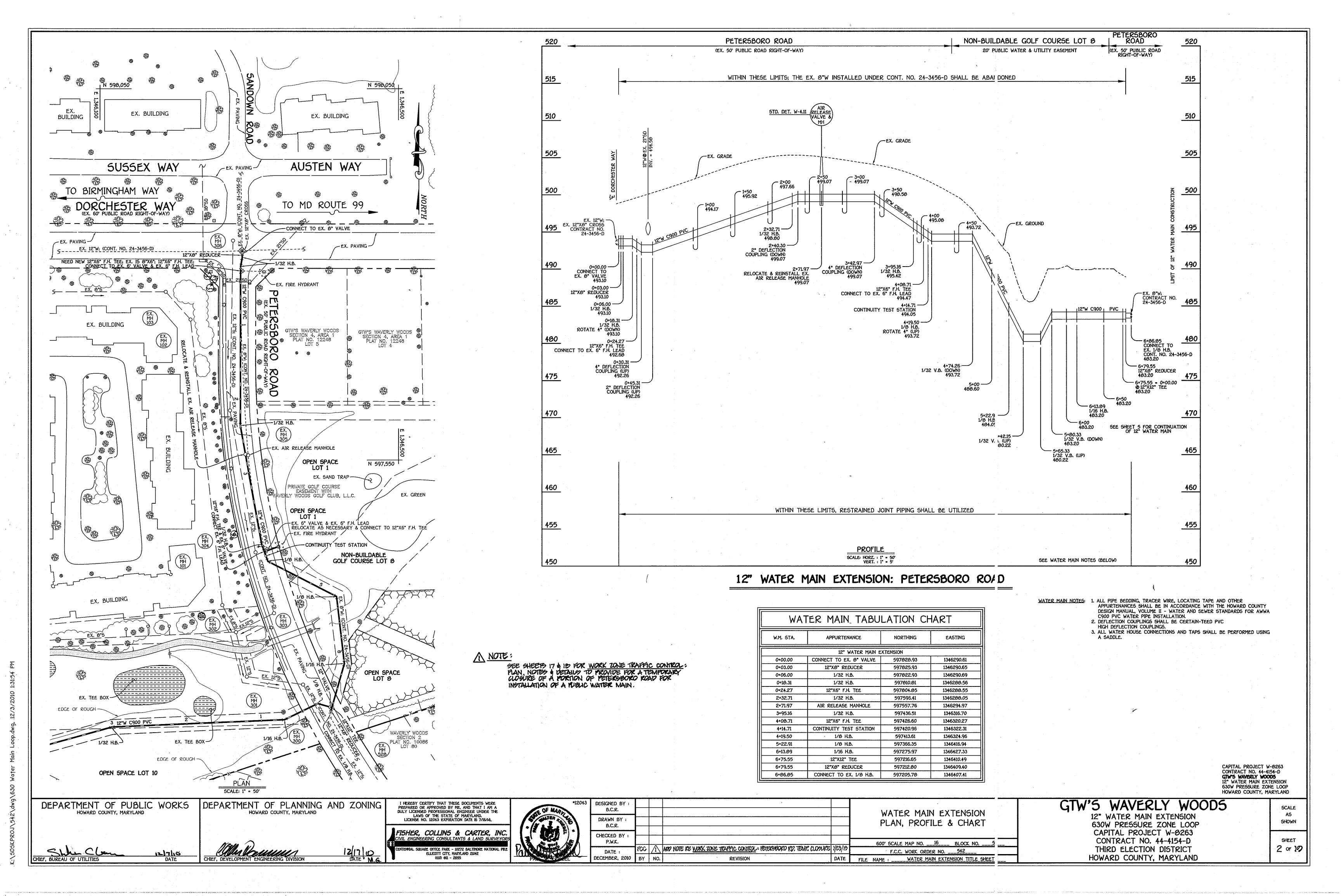
630W PRESSURE ZONE LOOP CAPITAL PROJECT W-8263 CONTRACT NO. 44-4154-D THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

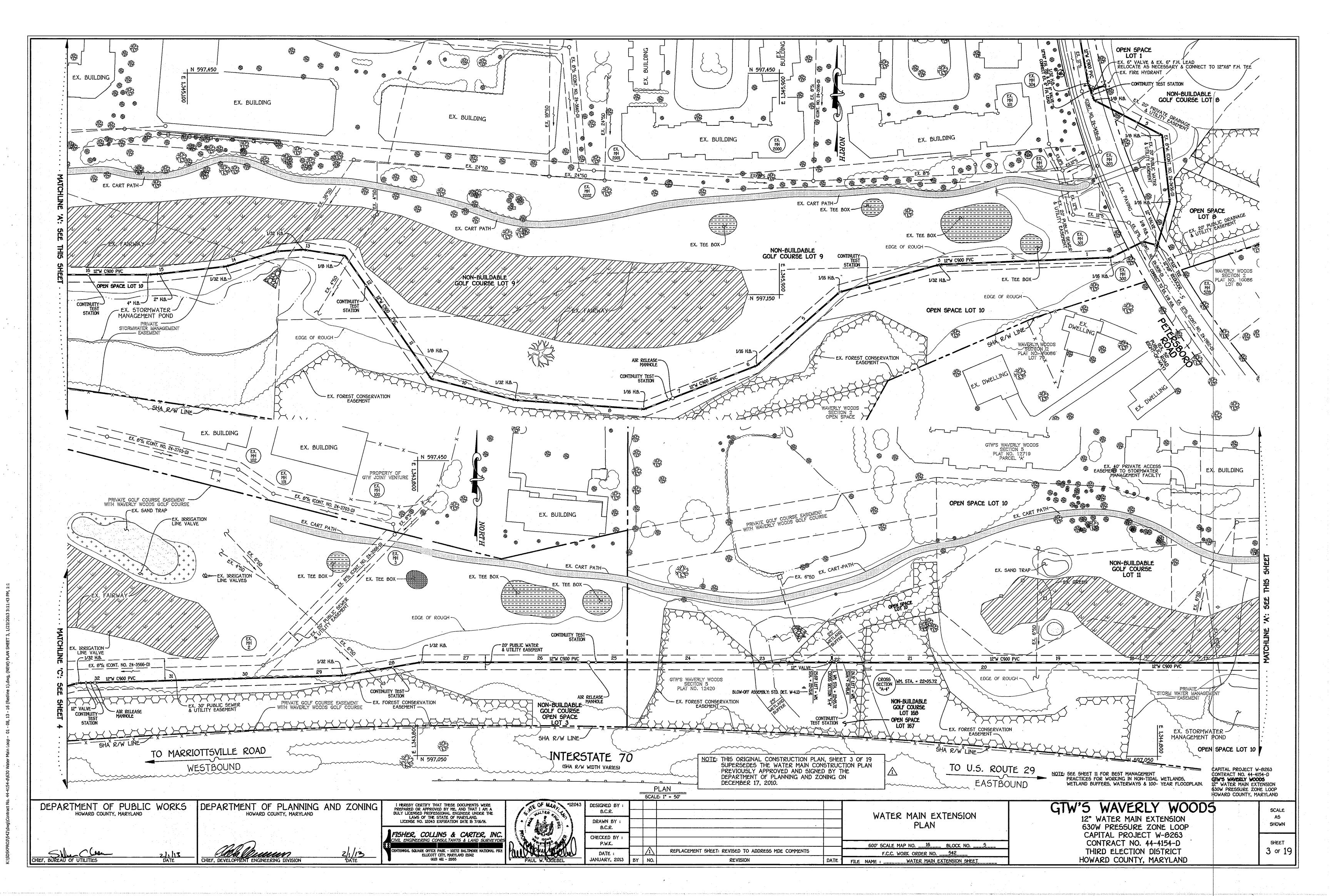
SHEET

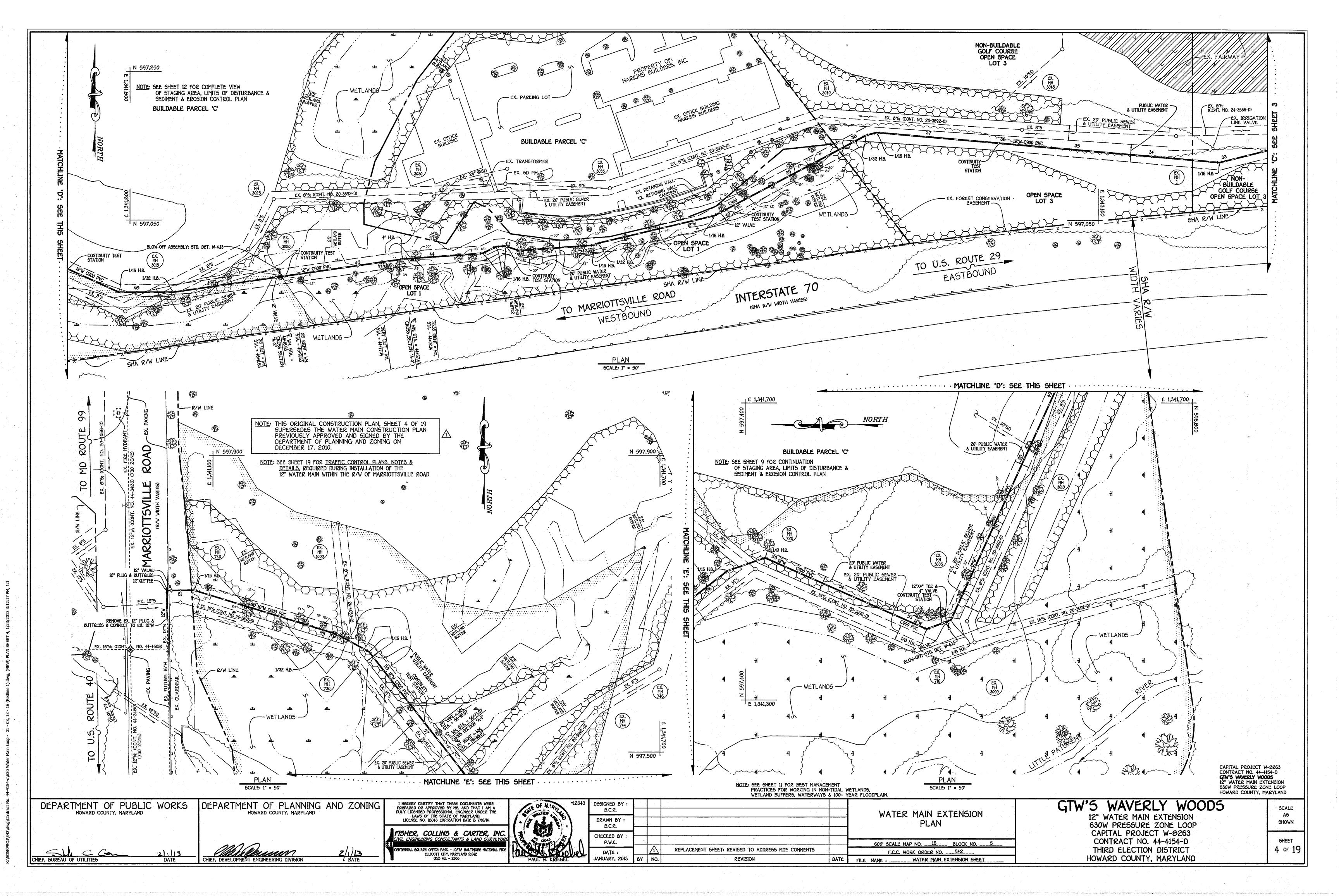
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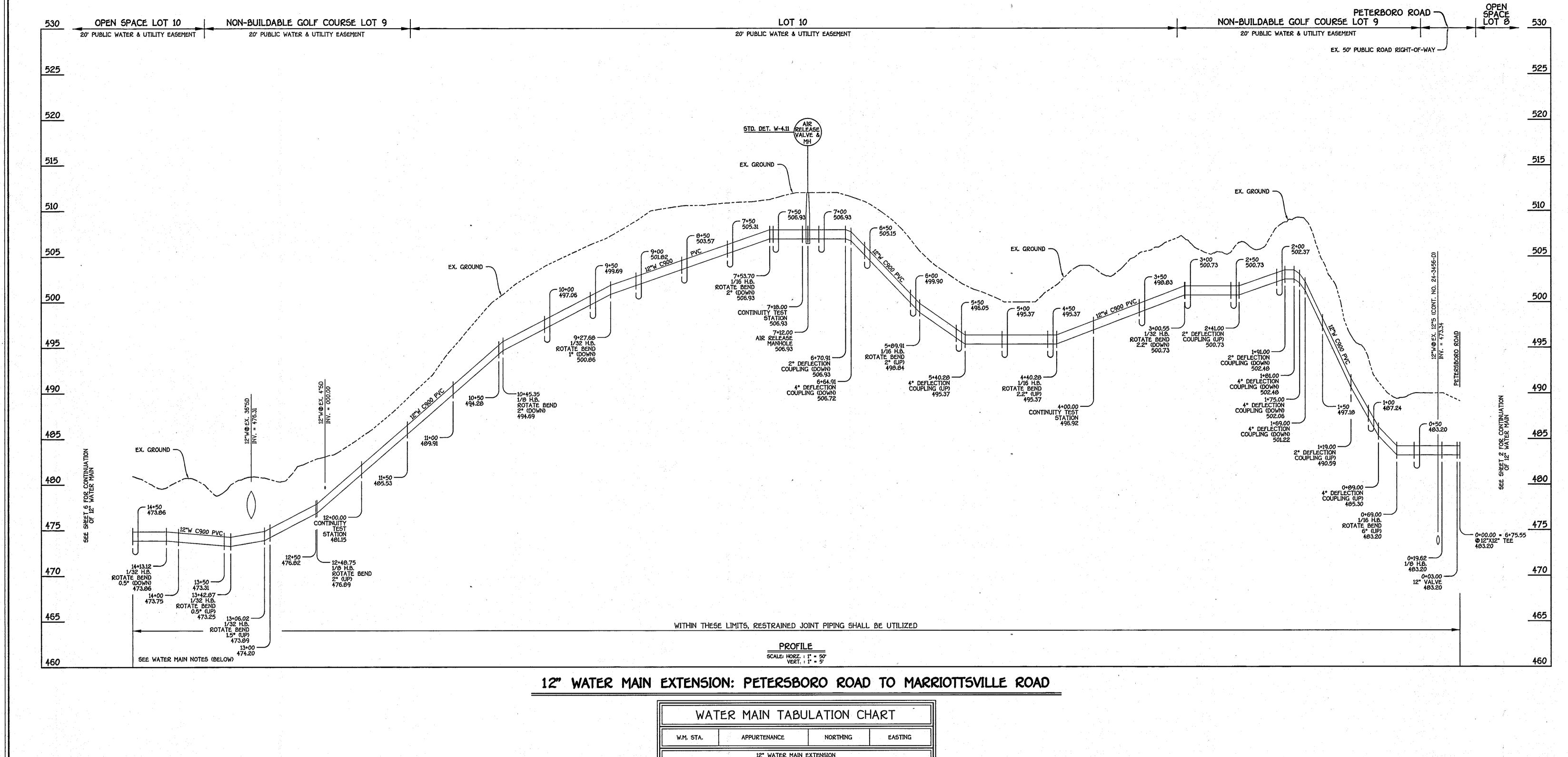
SCALE

OF 19









WATER MAIN TABULATION CHART								
W.M. STA.	APPURTENANCE	PRTENANCE NORTHING						
	12" WATER MAIN EXTENSION							
0+00.00	12"X12" TEE	597216.65	1346410.49					
0+03.00	12" VALVE	597217.47	1346407.61					
0+19.62	1/0 H.B.	597222.00	1346391.62					
0+69.00	1/16 H.B.	597200.38	1346347.22					
3+00.55	1/32 H.B.	597190.71	1346115.00					
4+00.00	CONTINUITY TEST STATION	597164.10	1346020.05					
4+40.28	1/16 H.B.	597153.32	1345981.24					
5+89.91	1/16 H.B.	597053.4	1345069.65					
7+12.00	AIR RELEASE MANHOLE	597009.45	1345755.04					
7+10.00	CONTINUITY TEST STATION	597007.28	1345750.25					
7+53.70	1/16 H.B.	596994.36	1345716.96					
9+27.60	1/32 H.B.	597006.65	1345543.42					
10+45.35	1/8 H.B.	597035.45	1345429.33					
12+00.00	CONTINUITY TEST STATION	597162.37	1345340.96					
12+40.75	1/0 H.B.	597202.38	1345313.11					
13+06.02	1/32 H.B.	597210.70	1345256.45					
13+42.07	1/32 H.B.	597208.21	1345219.69					

597187.92

NOTE: THIS ORIGINAL CONSTRUCTION PLAN, SHEET 5 OF 19
SUPERSEDES THE WATER MAIN CONSTRUCTION PLAN
PREVIOUSLY APPROVED AND SIGNED BY THE
DEPARTMENT OF PLANNING AND ZONING ON DECEMBER 17, 2010.

CAPITAL PROJECT W-0263
CONTRACT NO. 44-4154-D
GTW'S WAVERLY WOODS
12" WATER MAIN EXTENSION
630W PRESSURE ZONE LOOP
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

WATER MAIN NOTES: 1. ALL PIPE BEDDING, TRACER WIRE, LOCATING TAPE AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY

2. DEFLECTION COUPLINGS SHALL BE CERTAIN-TEED PVC

C900 PVC WATER PIPE INSTALLATION.

HIGH DEFLECTION COUPLINGS.

A SADDLE.

DESIGN MANUAL, VOLUME II - WATER AND SEWER STANDARDS FOR AWWA

3. ALL WATER HOUSE CONNECTIONS AND TAPS SHALL BE PERFORMED USING

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. 12043 EXPIRATION DATE IS 7/16/14. FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

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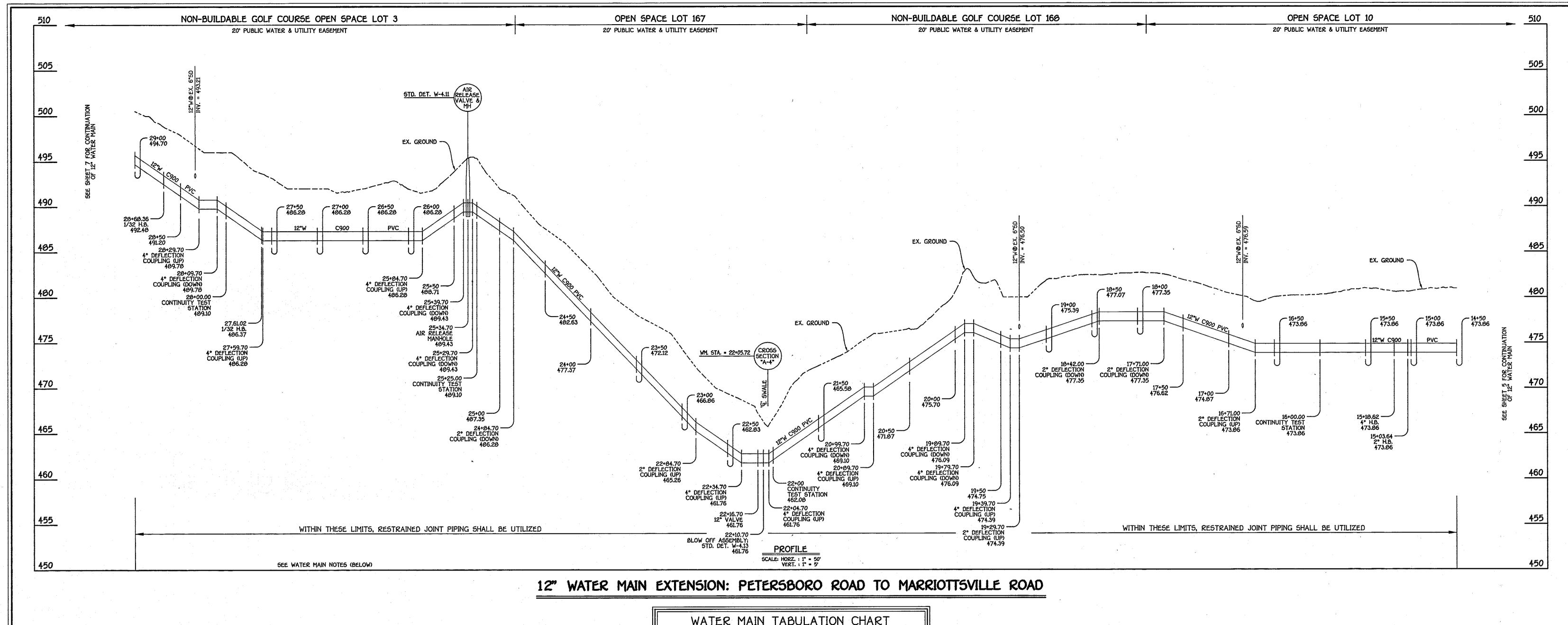
					<u> </u>
DESIGNED BY :					
B.C.R.					WATER MAIN EXTENSION
DRAWN BY : B.C.R.					PROFILE & CHART
	<b>.</b>				
CHECKED BY : P.W.K.					16
F.W.K.	<u> </u>	<del>  _                                   </del>		+	600' SCALE MAP NO. <u>16</u> BLOCK NO. <u>5</u>
DATE :			REPLACEMENT SHEET: REVISED TO ADDRESS MDE COMMENTS		F.C.C. WORK ORDER NO542
JANUARY, 2013	вү	NO.	REVISION	DATE	FILE NAME : WATER MAIN EXTENSION SHEET

GTW'S WAVERLY WOODS

12" WATER MAIN EXTENSION 630W PRESSURE ZONE LOOP CAPITAL PROJECT W-8263 CONTRACT NO. 44-4154-D THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE SHOWN 5 of 19

ennial square office park - 10272 Baltimore national pix Ellicott city, maryland 21042 (410) 461 - 2855



WATER MAIN NOTES:

1. ALL PIPE BEDDING, TRACER WIRE, LOCATING TAPE AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME II - WATER AND SEWER STANDARDS FOR AWWA C900 PVC WATER PIPE INSTALLATION.

2. DEFLECTION COUPLINGS SHALL BE CERTAIN-TEED PVC HIGH DEFLECTION COUPLINGS.

A SADDLE.

3. ALL WATER HOUSE CONNECTIONS AND TAPS SHALL BE PERFORMED USING

WATER MAIN TABULATION CHART								
W.M. STA. APPURTENANCE NORTHING EASTING								
12" WATER MAIN EXTENSION								
15+03.64	2° H.B.	597177. <i>6</i> 1	1345062.47					
15+10.62	4° H.B.	597176.69	1345047.53					
16+00.00	CONTINUITY TEST STATION	597176.69	1344966.15					
22+00.00	CONTINUITY TEST STATION	597176.69	1344366.15					
22+10.70	BLOW OFF ASSEMBLY	597176.69	1344360.15					
22+16.70	12" VALVE	597176.69	1344354.15					
25+25.00	CONTINUITY TEST STATION	597176.69	1344041.15					
25+34.70	AIR RELEASE MANHOLE	597176.69	1344031.45					
27+61.02	1/32 H.B.	597176.69	1343005.13					
28+00.00	CABLE TEST STATION	597170.05	1343766.72					
20+60.36	1/32 H.B.	597150.42	1343699.36					

NOTE: THIS ORIGINAL CONSTRUCTION PLAN, SHEET 6 OF 19 SUPERSEDES THE WATER MAIN CONSTRUCTION PLAN PREVIOUSLY APPROVED AND SIGNED BY THE DEPARTMENT OF PLANNING AND ZONING ON DECEMBER 17, 2010.

CAPITAL PROJECT W-0263
CONTRACT NO. 44-4154-D
GTW'S WAVERLY WOODS
12" WATER MAIN EXTENSION
630W PRESSURE ZONE LOOP
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

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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. 12043 EXPIRATION DATE IS 7/16/14.

FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELLICOTT CITY, MARYLAND 21042

(190) 461 - 2855

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	PAUL W. KRIEBEL	الأهار

DESIGNED BY : B.C.R.					WATER MAIN EXTENSION
DRAWN BY : B.C.R.					PROFILE & CHART
CHECKED BY : P.W.K.					600' SCALE MAP NO. 16 BLOCK NO. 5
DATE : JANUARY, 2013	вү	NO.	REPLACEMENT SHEET: REVISED TO ADDRESS MDE COMMENTS REVISION	DATE	F.C.C. WORK ORDER NO542 FILE NAME : WATER MAIN EXTENSION SHEET

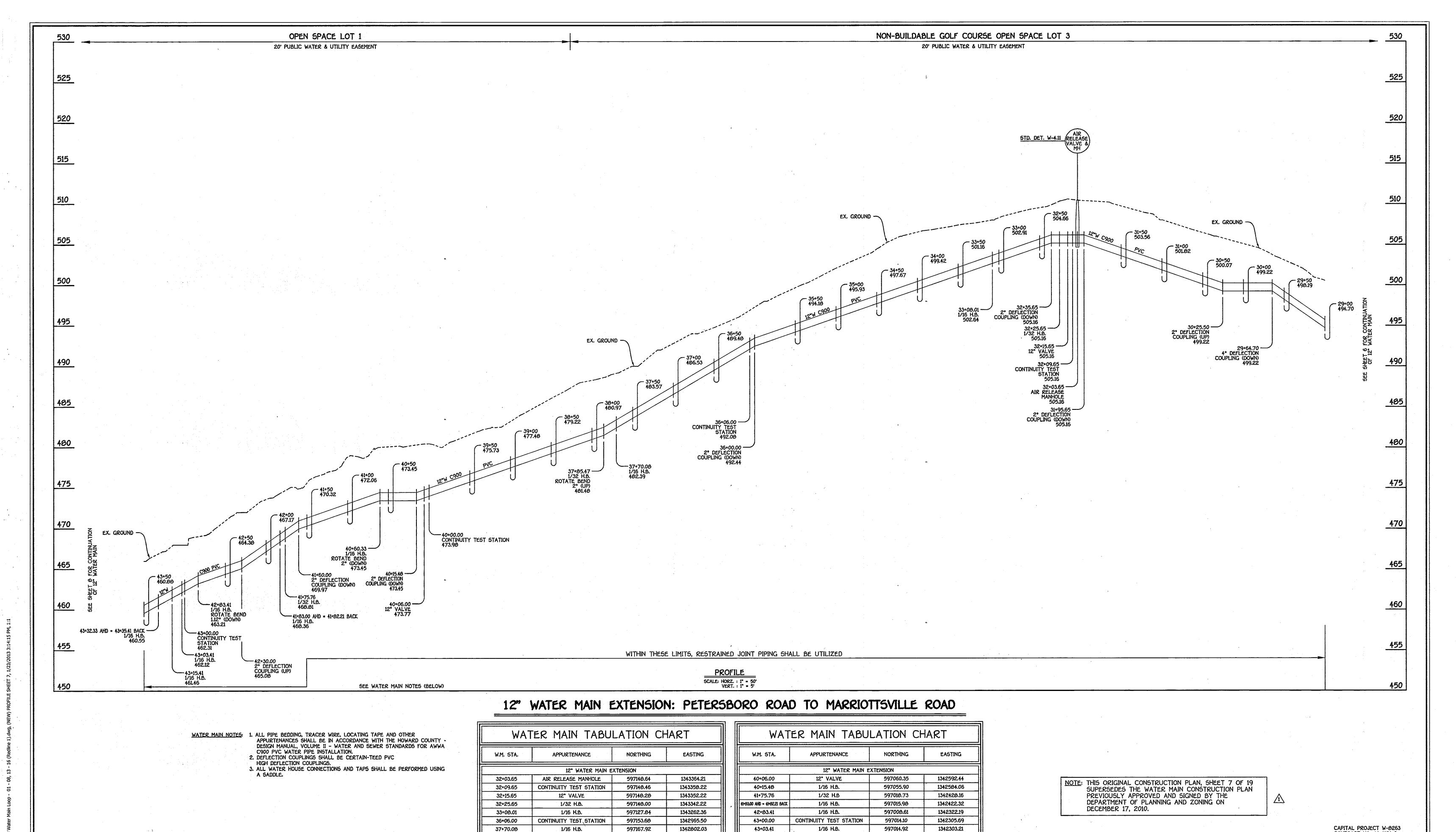
GTW'S WAVERLY WOODS

12" WATER MAIN EXTENSION
630W PRESSURE ZONE LOOP
CAPITAL PROJECT W-0263
CONTRACT NO. 44-4154-D
THIRD ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE
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SHOWN
SHEET
6 OF 19

K:\SDSKPROJ\542\dwg\Contract No. 44-4154-d\630 Water Main Loop - 01 - 08, 13 - 16 (Redline 1).dwg



DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

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. 12043 EXPIRATION DATE IS 7/16/14. FISHER, COLLINS & CARTER, INC.

1/32 H.B.

CONTINUITY TEST STATION

B.C.R. DRAWN BY : B.C.R. CHECKED BY P.W.K. DATE: JANUARY, 2013

597163.75

597063.16

1342707.27

1342597.74

DESIGNED BY REPLACEMENT SHEET: REVISED TO ADDRESS MDE COMMENTS

43+15.41

43+3233 AHD = 43+3541 BACK

1/16 H.B.

1/16 H.B.

REVISION

597014.04

597005.01

1342291.24

1342273.40

DATE FILE NAME :

WATER MAIN EXTENSION PROFILE & CHARTS

600' SCALE MAP NO. \_\_16 \_\_\_ BLOCK NO. \_\_ 5 F.C.C. WORK ORDER NO. 542 WATER MAIN EXTENSION SHEET

CAPITAL PROJECT W-0263
CONTRACT NO. 44-4154-D
GTW'S WAVERLY WOODS
12" WATER MAIN EXTENSION
630W PRESSURE ZONE LOOP
HOWARD COUNTY, MARYLAND

GTW'S WAVERLY WOODS 12" WATER MAIN EXTENSION 630W PRESSURE ZONE LOOP CAPITAL PROJECT W-8263

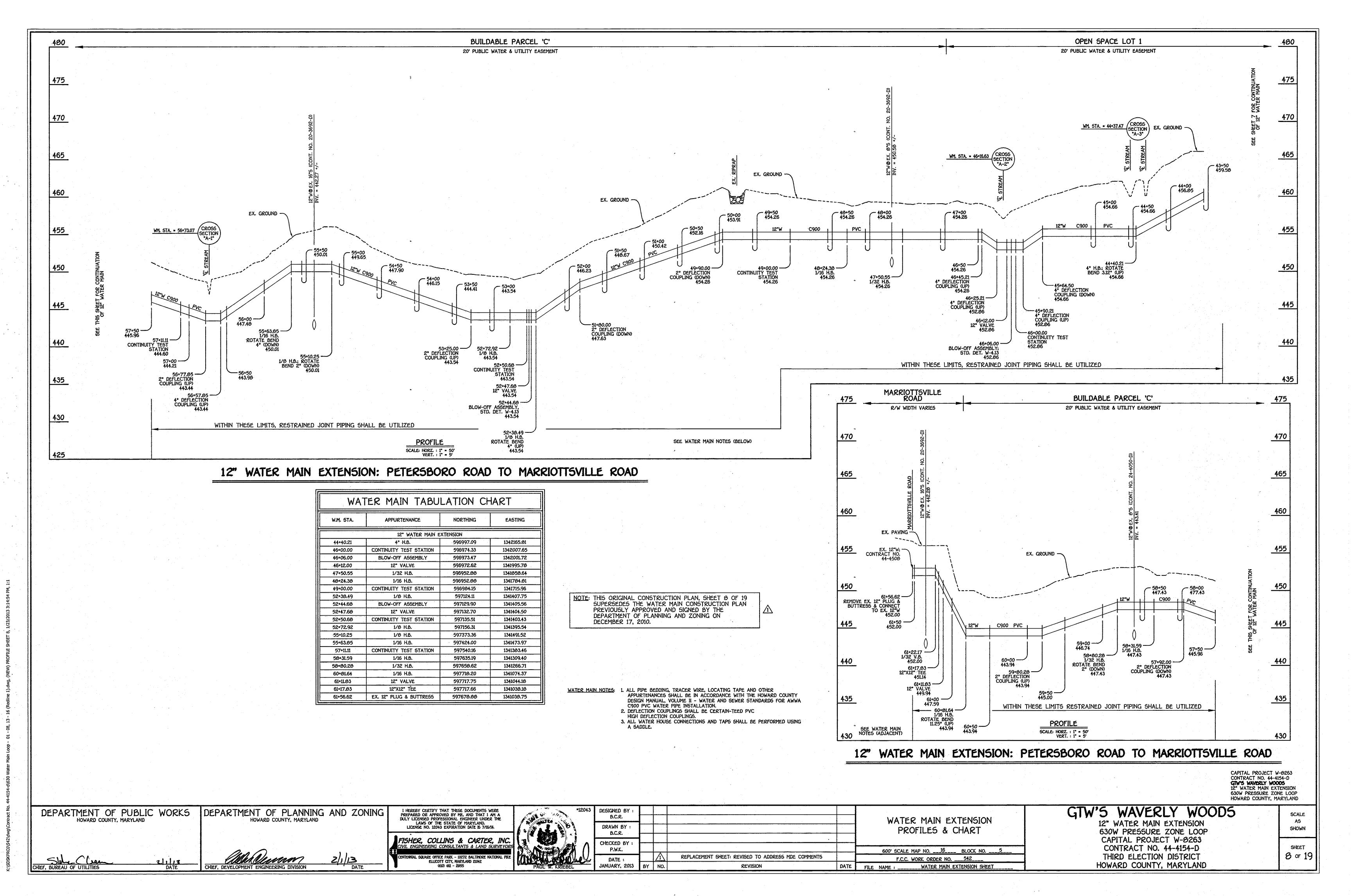
SCALE. SHOWN 7 of 19

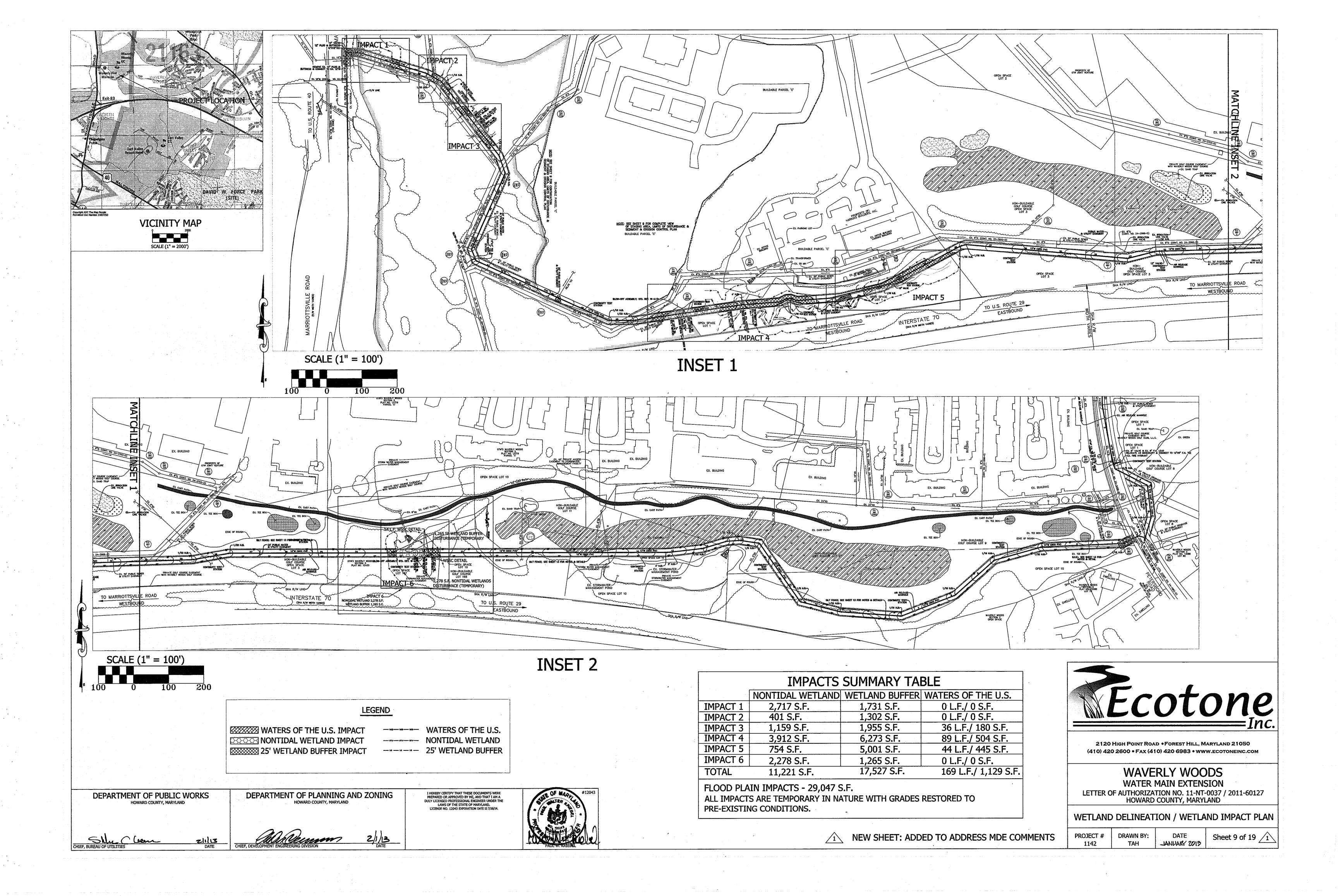
CONTRACT NO. 44-4154-D THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

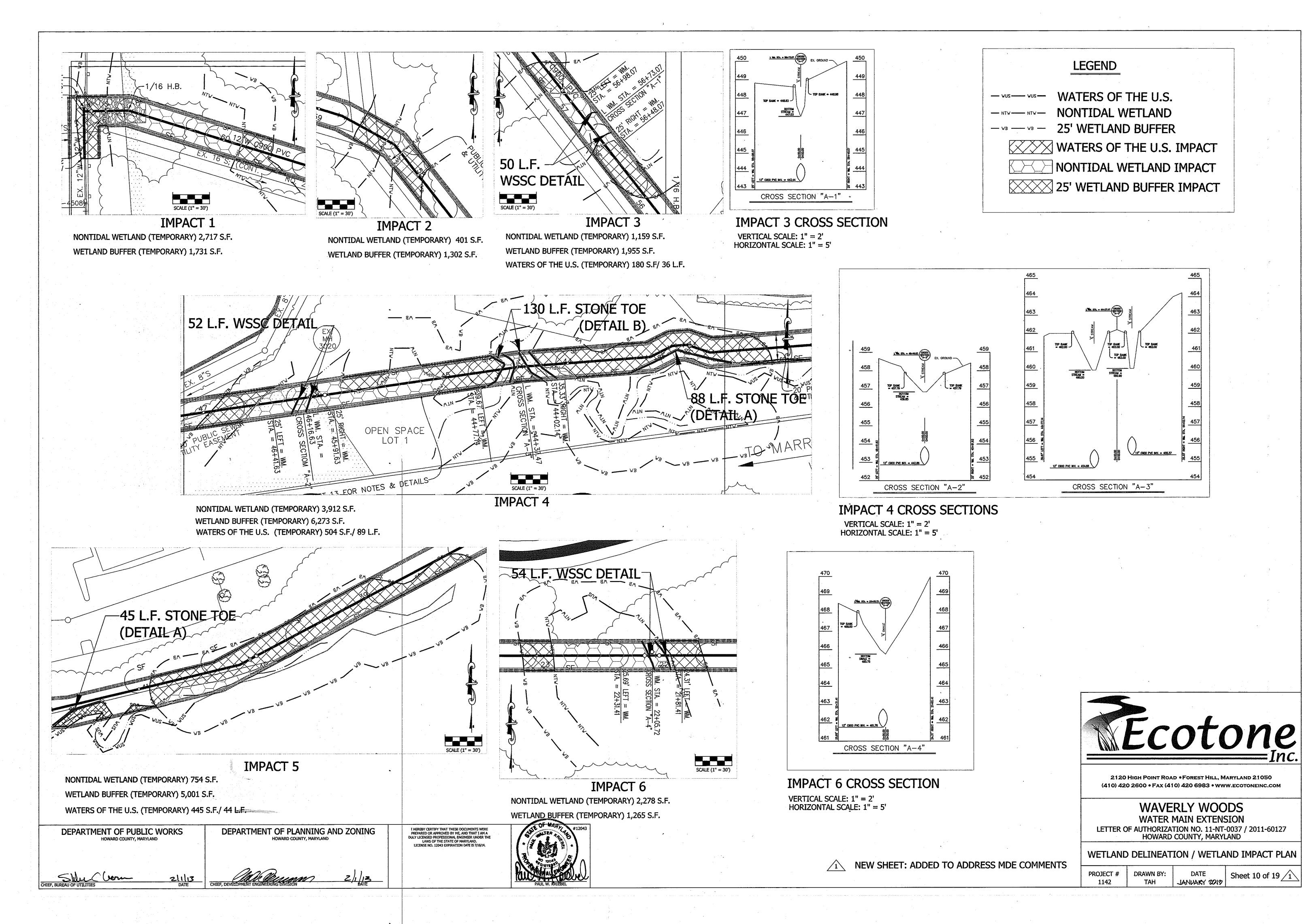
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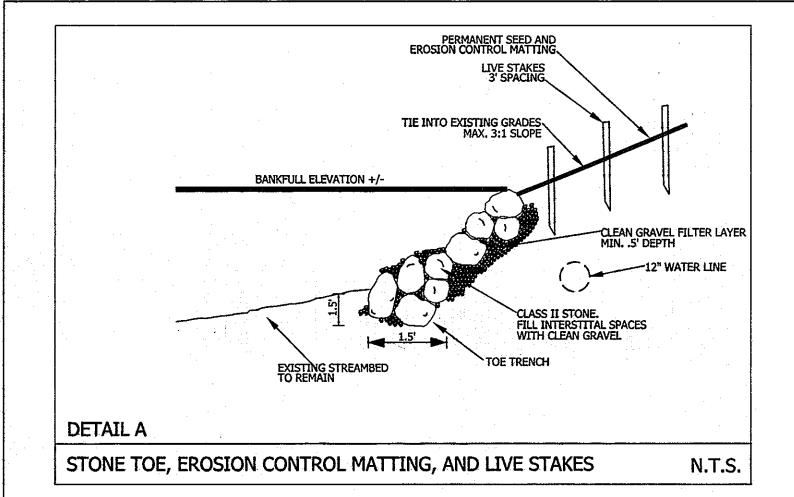
37+85.47

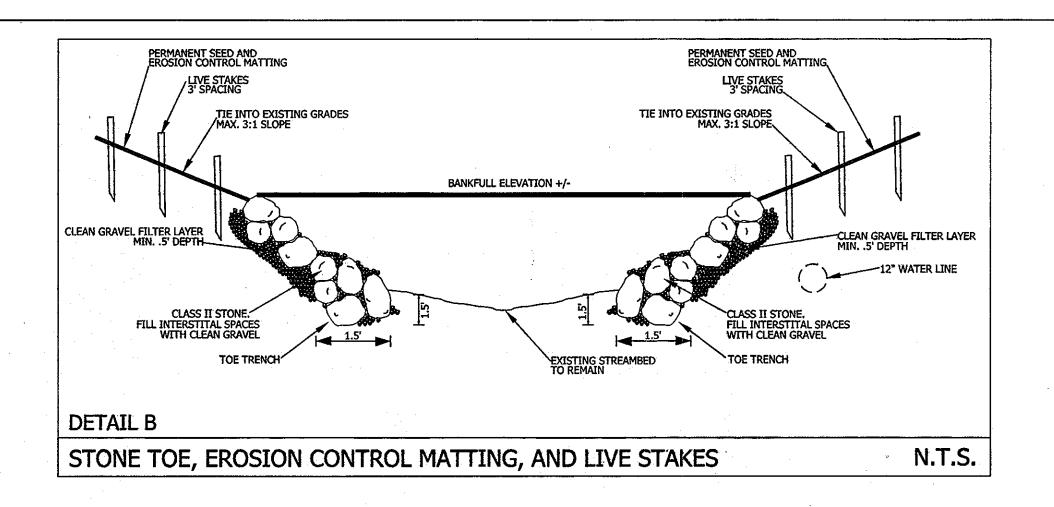
40+00.00

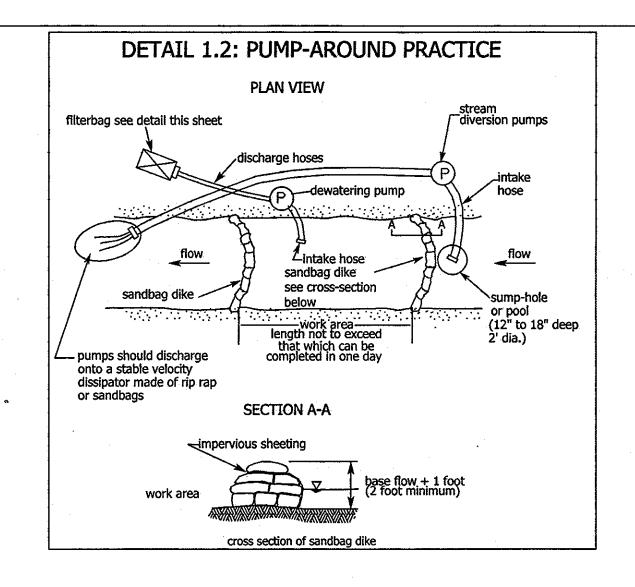


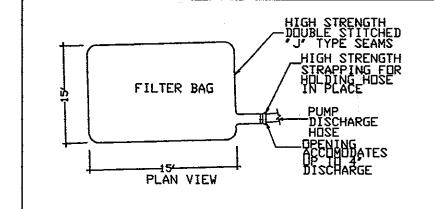












BARAHAMBERE

SPECIFICATIONS

1. Filter bag shall be made of non-woven geotextile

ELEVATION VIEW

with a minimum surface area of 225 square feet per 2. All structural seams shall be sewn with a double stitch using a double needle machine with high strength thread. Seam strength shall withstand 100 lb/in using ASTM B-4884 test method.

3. Filter bag shall have a nozzle large enough to accommodate a four (4) inch diameter pump discharge

4. Nozzle shall be sealed tightly around the pump discharge hose with a strap or similar device to prevent unfiltered water from escaping. . Filter bag shall be placed on a level or gently sloping (5% maximum) area.

Filter bag shall be placed upon a base of straw bales or three (3) inches of clean #57 stone to promote dewatering through bottom surface of the filter bag. Pumping rate shall be controlled to prevent excessive pressure within the filter bag. As the bag becomes filled with sediment the pumping rate shall be

8. The filter bag shall be dewatered, removed and disposed of upon completion of pumping operations or after it has reached capacity, whichever occurs first. The dewatered sediment from the bag shall be spread in an upland area and stabilized within 24 hours. 9. The geotextile fabric shall meet the following

minimum requirements with properties determined in accordance with the following procedures: manufacturer.

	<u> </u>	
Weight	10oz/yd	ASTM D-3776
Grab Tensile	210 lbs	ASTM D-4632
Puncture	150 lbs	ASTM D-4833
Flow Rate	70/gal/min/ft2	ASTM D-4491
Permitivity(sec?")	1. 3	ASTM D-4991
UV resistance	70%	ASTM D-4355
Apparent opening size	(AUS) 40-80	ASTM D-4751
FILTER BAG	TYPICAL	DETAIL

### STONE TOE, EROSION CONTROL MATTING, AND LIVE STAKE INSTALLATION

1. This work shall consist of placing toe protection, harvesting, transporting, installing and maintaining live stake materials, and the installation of erosion control matting to the grades specified on

2. Harvesting, transporting, and installation shall take place when plants are dormant (December 1 through April 1).

### 2. MATERIALS

1. Stone shall be Class II in size and of appropriate color (e.g., green, gray, brown/gray, dark gray, and/or dark brown in color) obtained from an approved source. Stone shall be obtained from a commercial quarry operation..

### Live Stakes

1. Live stakes shall be between one 1/2 inch and 2 inches in diameter. 2. Stakes shall be 3 to 5 feet in length and all side branckes shall be clipped flush with stem.

3. Live stakes shall consist of the species and quantity per the "Live Stake Plant List" table found on this sheet.

1. Matting shall be woven machine spun bristle coir twine made of coir fiber obtained from fresh water cured coconut husks.

2. Soil stabilization matting shall conform to the following specifications: Weight: 29 oz/sy (ASTM D 3776)

Thickness: 0.35 In. (ASTM D 1777)

Dry Tensile Strength: Machine Direction - 2024 lbs/sf Cross Direction - 1160 lbs/sf

(ASTM D 4595) Wet Tensile Strength: Machine Direction - 1776 lbs/st

Cross Direction - 936 lbs/sf (ASTM D 4595)

### Open Area: 38%

### 3. CONSTRUCTION

. Excavate trench at channel edge on outside bend of pool/meander such that the bottom of the stone toe protection is set at a minimum two foot below the channel invert elevation.

2. Install class II stone with long axis oriented parallel with the stream profile and the short axis aligned vertically. 3. Install a second row of stone on top of and slightly behind bottom boulders, ensuring that joints between the stone are staggered. Continue to bankfull elevation.

### 4. Backfill stone with native material to fill interstitial spaces.

Soil Stabilization Matting:

1. Seed streambank areas with permanent seed mix. 2. Matting shall be placed within 48 hours after seeding operations have been completed. Matting shall be laid smoothly and firmly upon the seeded bed in the direction of the water flow with *i*nslope edge keyed a minimum of 0.5 feet behind stone toe

3. Where more than one width of matting is required, the ends and edges of each strip shall overlap at least 1 foot for both vertical and horizontal overlaps. Overlapping shall be done with the up-slope matting overlapping the down-slope matting and the upstream matting overlapping the downstream matting.

4. Matting shall be firmly fastened in place with staples driven vertically into the soil and flush with the surface. Staples shall be placed on 2- foot centers throughout the matting and along the 5. The contractor shall excavate a shallow trench along the up-slope, down-slope, and vertical edges of the matting at the upstream edges of the matting. The matting shall be keyed into the trench

1. Cuttings shall be installed two (2) feet apart using random, triangular spacing. The density of the spacing will range from two (2) to four (4) cuttings per square yard. Site variations may require spacing adjustments.

2. The basal end of the cutting shall be cleanly cut at an angle immediately before insertion into the soil. The top of the cutting shall be cut square for tamping. 3. Install the cuttings top side up, with any buds pointing upward. The cuttings shall be tamped into the ground for approximately four-fifths (4/5) of their length. The cuttings shall be tamped into the ground at vertical angle of ninety (90) degrees to the slope and at a horizontal angle of forty-five (45) degrees downstream. A three-eighths (3/8) of an inch iron bar can be used to make a pilot hole in compacted or rocky soils, or between impricated rip rap boulders.

4. Foot compact around each cutting after it has been installed. Any cuttings that split during tamping shall be pulled out and replaced.

a minimum of 6 inches. Following the installation of the staples, the key trenches shall be backfilled with soil and tamped firmly.

5. The top of the cutting shall be cut square again after installation, to remove the damaged mushroom top. 6. See "Live Stake Plant List", this sheet for species and quantity specifications.

### STONE SPECIFICATIONS FOR STONE TOE PROTECTION

Stone shall consist of angular flat rock with a blocky shape so that it is easily stacked, and of appropriate color (e.g., green, gray, brown/gray, dark gray, and/or dark brown in color) obtained from an approved source. Stone shall be obtained from a commercial quarry operation. All stone shall be free from laminations, weak cleavages and will not disintegrate from the action of air, salt water and in handling and placing. Granular sedimentary stone will generally be unacceptable. Concrete will not be considered as an alternative for stone. White stone is not acceptable.

1. For Step Pool and Stone Toe structures, the dimensions of all the rock will be a minimum of 3 feet and maximum of 3 feet along the long (a) axis, a minimum of 1.5 feet and maximum of 2.5 feet along the median (b) axis, a minimum of 0.75 foot and a maximum of 1.5 feet along the short (c) axis. Rock shall have a minimum density of 150 lbs/cu.ft.

2. The Contractor will locate potential sources for the rocks. The Contractor will not be granted an extension of time or extra compensation due to delay caused by sampling, testing, approval or disapproval of stone protection material under the requirements of these specifications. The Contractor shall obtain from the quarry and submit to the OWNER or its agent a certificate verifying the

### a. Stone Classification. b. Weight of Stone Being Supplied.

c. Stone quality shall meet all of the above specifications.

		→ CBOTTOM OF STREAM → 를
	TOP OF STREAM BANK BOTTOM OF STREAM	B ◀
C'-A' Aimmili	BANK	
OF DISTURBE	D AREA WHICHEVER IS	
GREATER. (1)	YP. BOTH BANKS)	
	$\mathbf{A}$	
	T - \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
	$\mathcal{H}$	
	6'0" MENIMUM EACH SIDE	
	OF PIPE OR TO LIMIT OF DISTURBED AREA WHICH-	B B ■
	EVER IS GREATER. (TYP. BOTH BANKS)	<u>PLAN</u>
	UNDISTURBED STREAM OF DISTURBED A	EACH SIDE OF PIPE OR TO LIMIT
AUTO AUTO A	DANK OREATER (TYP.	BOTH BANKS) TOP OF BANK
TO THE STATE OF TH		RIP RAP
		THE DOT
<b>2</b> 2	GEOTEXTRE STREAM BANK	EXISTING STREAM
380	SECTION C-C	BOTTOM
EXISTING GROUND	MAXIMUM SLOPE	
***************************************	2	
		TOE TRENCH 2
•	(NOTE 1) RIP RAP	
1'-6" Min.	THICKNESS	SECTION B-B
50000	N CONTROL	
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TOF T	TRENCH (NOTE 2)	NOTES:
ive		<u>1 -                                   </u>
	2°-0° min.	USE UNGROUTED CLASS 2 STONE UNLESS OTHERWISE NOTED.      NO RIP RAP SHALL BE PLACED WITHIN
	S mury	1' CLEAR ABOVE THE TOP OF THE PIPE.
	SECTION A-A	3. TOP OF THE RIP RAP SHALL BE FLUSH WITH THE EXISTING
		UNDISTURBED STREAM BANK.
WASHINGTO	N APPROVED: JULY 1, 2005	STANDARD DETAIL SC
SUBURBAN		STREAM BANK
SANITARY COMMISSION		PROTECTION AT UTILITY STREAM CROSSING
3-01	Chief Engineer	O DE IEMAN O HOOOHRO

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

1. No excess fill, construction material, or debris shall be stockpiled or stored in nontidal wetlands, nontidal wetland buffers, waterways, or the 100-year floodplain.

2. 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. 3. 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.

4. 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. 5. 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 floodplain in excess of that lost under the originally authorized structure or fill. 6. Rectify any nontidal wetlands, wetland buffers, waterways, or 100-year floodplain temporarily impacted by any construction 7. 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 the 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.

8. After installation has been completed, make post-construction grades and elevations the same as the original grades and elevations in temporarily impacted areas.

9. To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream:

Use I waters: In-stream work shall not be conducted during the period March 1 through June 15, inclusive, during any year. Use III waters: In-stream work shall not be conducted during the period October 1 through April 30, inclusive, during any year. Use IV waters: In-stream work shall not be conducted during the period March 1 through May 31, inclusive, during any year.

10. Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway. 11. Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless the purpose of the activity is

12. A dewatering pump will be utilized in conjunction with a dirt bag (see detail this sheet) to remove standing water in the project area during construction. The dirt bag will be placed on a vegetated area a sufficent distance from subject reach so that any sediment leaving the dirt bag has time/distance to settle out before reaching the waterway.

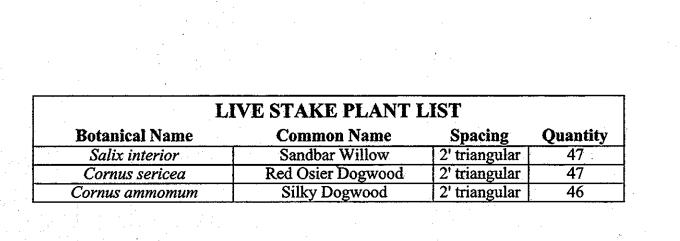


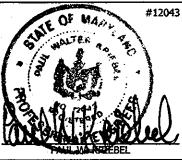
2120 HIGH POINT ROAD • FOREST HILL, MARYLAND 21050 (410) 420 2600 • FAX (410) 420 6983 • WWW.ECOTONEINC.COM

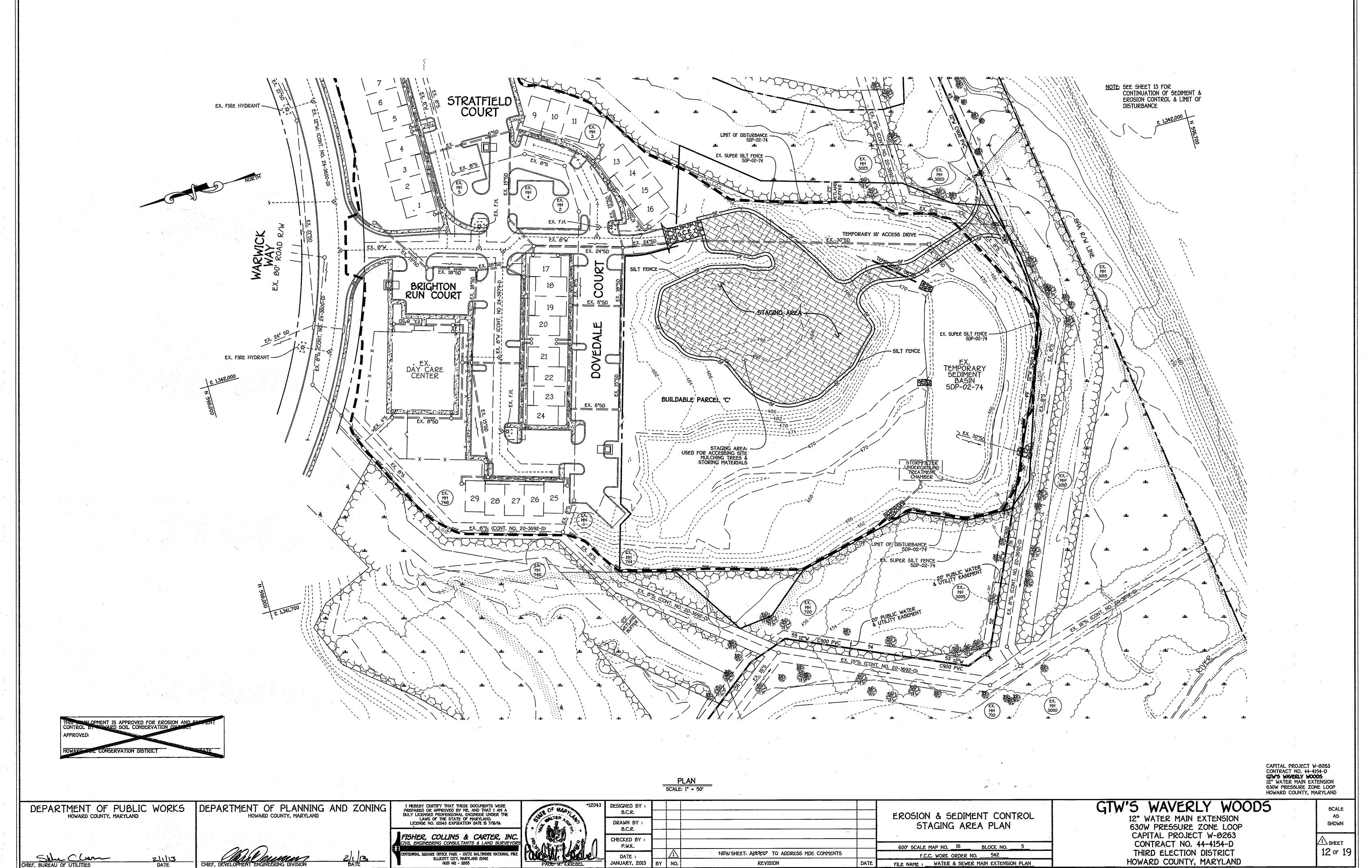
**WAVERLY WOODS** WATER MAIN EXTENSION LETTER OF AUTHORIZATION NO. 11-NT-0037 / 2011-60127 HOWARD COUNTY, MARYLAND

DETAILS AND SPECIFICATIONS

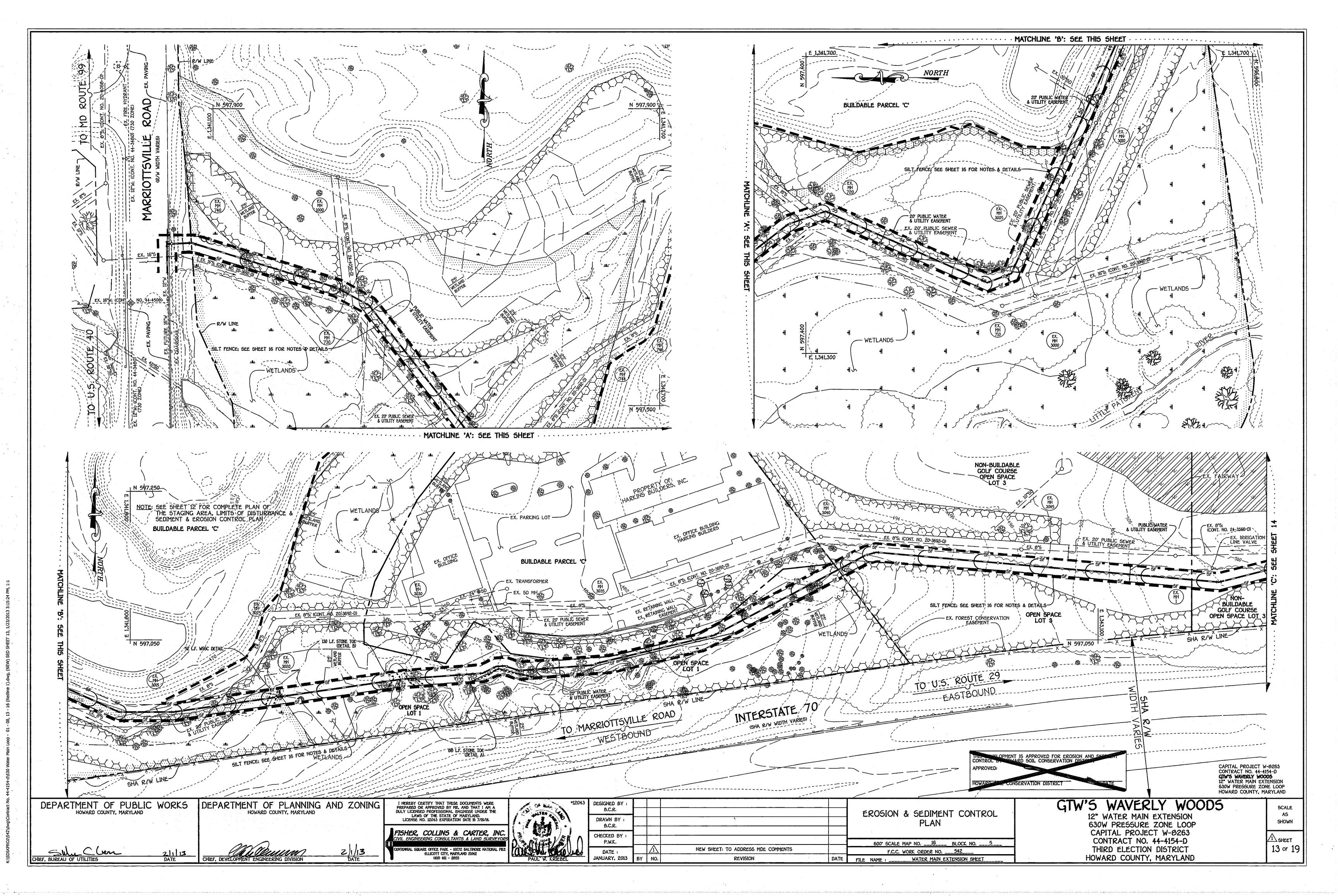
PROJECT # DRAWN BY: Sheet 11 of 19 /1 TAH JANUARY 2013 1142

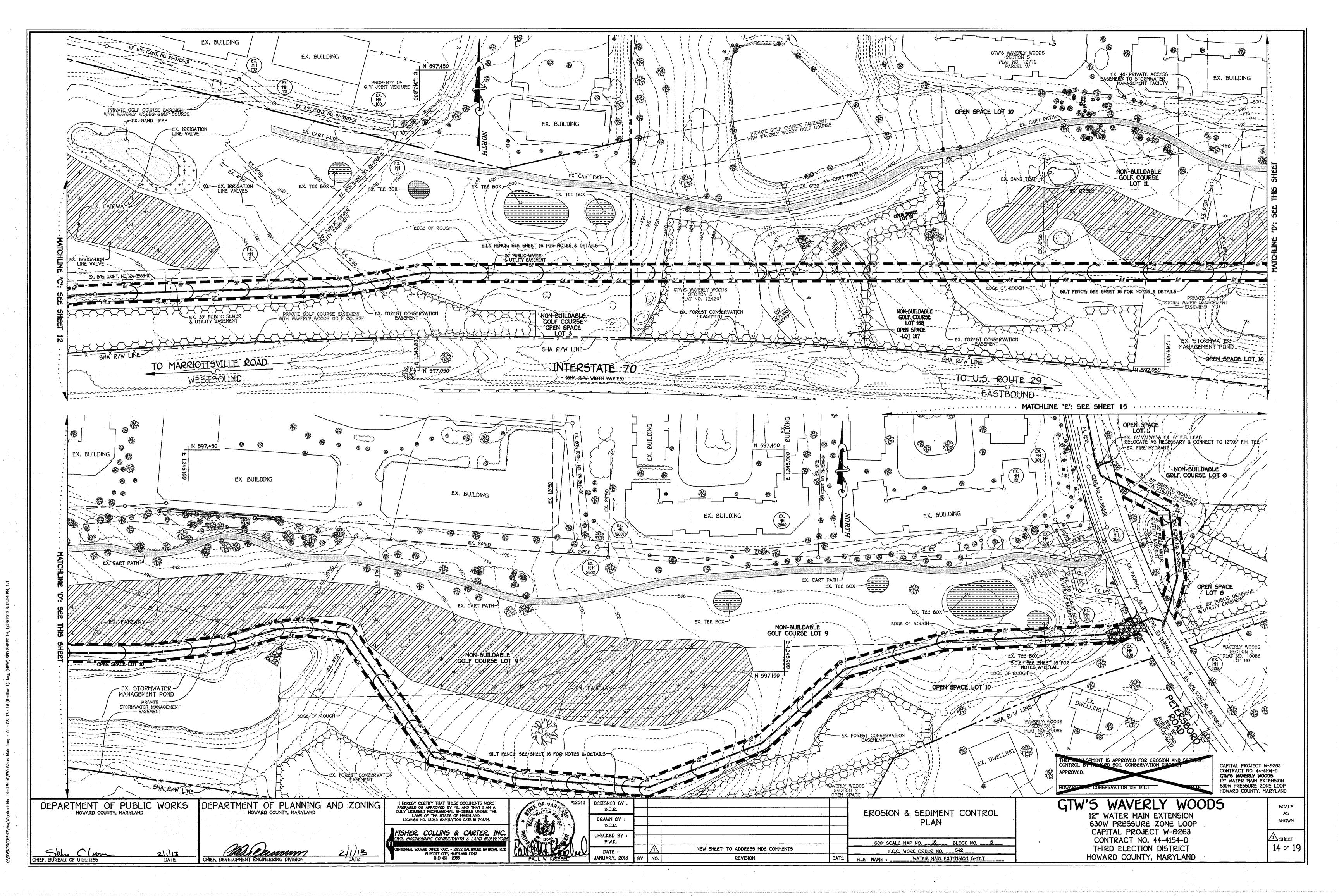


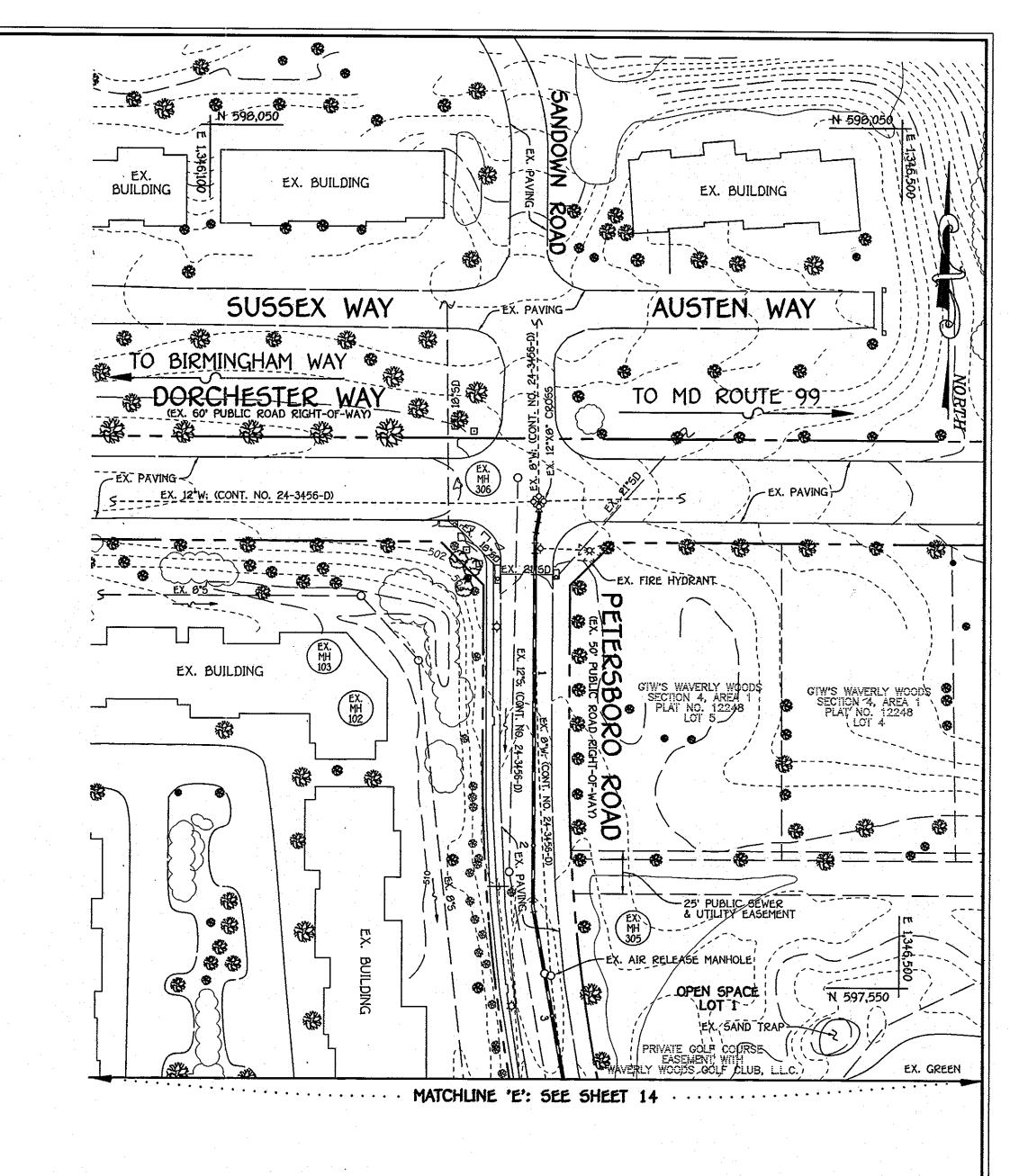


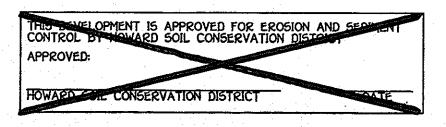


K:\SDSKPROJ\542\dwg\Contract No. 44-4154-d\630 Water Main Loop - 12 - Staging Area Plan.dwg, Plan Sheet 12









CAPITAL PROJECT W-8263
CONTRACT NO. 44-4154-D
GTW'S WAVERLY WOODS
12" WATER MAIN EXTENSION
630W PRESSURE ZONE LOOP
HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

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. 12043 EXPIRATION DATE IS 7/16/14.

12043 DESIGNED BY

B.C.R. DRAWN BY : B.C.R. CHECKED BY : P.W.K. DATE: 1 JANUARY, 2013 BY NO. NEW SHEET: TO ADDRESS MDE COMMENTS

**EROSION & SEDIMENT CONTROL** 600' SCALE MAP NO. 16 BLOCK NO. 5 F.C.C. WORK ORDER NO. \_\_\_\_542 DATE FILE NAME : \_

WATER MAIN EXTENSION SHEET

GTW'S WAVERLY WOODS

12" WATER MAIN EXTENSION
630W PRESSURE ZONE LOOP
CAPITAL PROJECT W-8263
CONTRACT NO. 44-4154-D THIRD ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SHOWN 1 SHEET 15 of 19

SCALE

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

FISHER, COLLINS & CARTER, INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS IAL SQUARE OFFICE PARK - 10272 BALTIHORE NATIONAL PIK ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2035

PURPOSE VEGETATIVE STABILIZATION SPECIFICATIONS ARE USED TO PROMOTE THE ESTABLISHMENT OF VEGETATION ON EXPOSED SOIL. WHEN SOIL IS STABILIZED WITH VEGETATION. THE SOIL IS LESS LIKELY TO ERODE AND MORE LIKELY TO ALLOW INFILTRATION OF RAINFALL, THEREBY REDUCING SEDIMENT LOADS AND RUN-OFF TO DOWNSTREAM AREAS, AND IMPROVING WILDLIFE HABITAT AND VISUAL

CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE SHALL BE USED ON DENUDED AREAS AS SPECIFIED ON THE PLANS AND MAY BE USED ON HIGHLY ERODIBLE OR CRITICALLY ERODING AREAS. THIS SPECIFICATION IS DIVIDED INTO TEMPORARY SEEDING, TO QUICKLY ESTABLISH VEGETATIVE COVER FOR SHORT DURATION (UP TO ONE YEAR), AND PERMANENT SEEDING, FOR LONG TERM VEGETATIVE COVER. EXAMPLES OF APPLICABLE AREAS FOR TEMPORARY SEEDING ARE TEMPORARY SOIL STOCKPILES. CLEARED AREAS BEING LEFT IDLE BETWEEN CONSTRUCTION PHASES, EARTH DIKES, ETC. AND FOR PERMANENT SEEDING ARE LAWNS, DAMS, CUT AND FILL SLOPES AND OTHER AREAS AT FINAL GRADE, FORMER STOCKPILE AND STAGING AREAS, ETC.

EFFECTS ON WATER QUALITY AND QUANTITY

PLANTING VEGETATION IN DISTURBED AREAS WILL HAVE AN EFFECT ON THE WATER BUDGET, ESPECIALLY ON VOLUMES AND RATES OF RUNOFF, INFILTRATION EVAPORATION, TRANSPIRATION, PERCOLATION, AND GROUNDWATER RECHARGE. VEGETATION, OVER TIME, WILL INCREASE ORGANIC MATTER CONTENT AND IMPROVE THE WATER HOLDING CAPACITY OF THE SOIL AND SUBSEQUENT PLANT GROWTH. VEGETATION WILL HELP REDUCE THE MOVEMENT OF SEDIMENT, NUTRIENTS, AND OTHER CHEMICALS CARRIED BY RUNOFF TO RECEIVING WATERS. PLANTS WILL ALSO HELP PROTECT GROUNDWATER SUPPLIES BY ASSIMILATING THOSE SUBSTANCES PRESENT WITH THE ROOT

SEDIMENT CONTROL DEVICES MUST REMAIN IN PLACE DURING GRADING, SEEDBED PREPARATION, SEEDING, MULCHING AND VEGETATIVE ESTABLISHMENT TO PREVENT LARGE QUANTITIES OF SEDIMENT AND ASSOCIATED CHEMICALS AND NUTRIENTS FROM WASHING INTO SURFACE WATERS

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

- A. SITE PREPARATION INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES (EITHER TEMPORARY OF PERMANENT) SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS, OR SEDIMENT CONTROL BASINS. PERFORM ALL GRADING OPERATIONS AT RIGHT ANGLES TO THE SLOPE. FINAL GRADING AND SHAPING IS NOT USUALLY
- ECESSARY FOR TEMPORARY SEEDING III. SCHEDULE REQUIRED SOIL TESTS TO DETERMINE SOIL AMENDMENT COMPOSITION AND APPLICATION RATES FOR SITES HAVING DISTURBED AREA OVER 5 ACRES.
- SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS) SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OVER 5 ACRES, SOIL ANALYSIS MAY BE PERFORMED BY THE UNIVERSITY OF MARYLAND OR A RECOGNIZED COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
- i. FERTILIZERS SHALL BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROVED EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS SHALL ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE STATE FERTILIZER LAWS AND SHALL BEAR THE NAME, TRADEMARK AND WARRANTEE OF THE PRODUCER.
- iii. LIME MATERIALS SHALL BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED) WHICH CONTAINS AT LEAST 50% TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT AT LEAST 50% WILL PASS THROUGH A \*100 MESH SIEVE AND 90-100% WILL PASS THROUGH A \*20 MESH SIEVE. iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means. SEEDBED PREPARATION
- . TEMPORARY SEEDING SEEDBED PREPARATION SHALL CONSIST OF LOOSENING SOIL TO A DEPTH OF 3" TO 5" 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 SHOULD NOT BE ROLLED OR DRAGGED SMOOTH, BUT LEFT IN THE ROUGHENED CONDITION. SLOPED AREAS (GREATER THAN 3:1) SHOULD BE TRACKED LEAVING THE SURFACE IN AN IRREGULAR CONDITION 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 3-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
- PERMANENT SEEDING MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT: SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.
  - SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM). THE SOIL SHALL CONTAIN LESS THAN 40CLAY, BUT ENOUGH FINE GRAINED MATERIAL (>30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOYEGRASS OR SERECIA LESPEDEZAS IS TO BE PLANTED, THEN A SANDY SOIL (<30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.
  - SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT. SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION. IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED N ACCORDANCE WITH SECTION 21 STANDARD AND SPECIFICATION FOR TOPSOIL.
- AREAS PREVIOUSLY GRADED IN CONFORMANCE WITH THE DRAWINGS SHALL BE MAINTAINED IN A TRUE AND EVEN GRADE. THEN SCARIFIED OR OTHERWISE LOOSENED TO A DEPTH OF 3-5" TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREA AND TO CREATE HORIZONTAL EROSION CHECK SLOTS TO PREVENT TOPSOIL FROM SLIDING
- APPLY SOIL AMENDMENTS AS PER SOIL TESTS OR AS INCLUDED ON THE PLANS. MIX SOIL AMENDMENTS INTO THE TOP 3-5" OF TOPSOIL BY DISKING OR OTHER SUITABLE MEANS. LAWN AREAS SHOULD BE RAKED TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED AND APPLICATION. WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED, PREPARATION, LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN SURFACE. STEEP SLOPES (STEEPER THAN 3:1) SHOULD BE TRACKED BY A DOZER LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. THE TOP 1-3" OF SOIL SHOULD BE LOOSE AND FRIABLE. SEEDBED LOOSENING MAY NOT BE NECESSARY ON NEWLY DISTURBED AREAS.
- I. ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED SHALL HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON THIS JOB.
- NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED. II. INOCULATION - THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES SHALL BE A PURE CULTURE OF NITROGEN-FIXING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INOCULANTS SHALL NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INOCULANT AS DIRECTED ON 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°-80° F. CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE. METHODS OF SEEDING
- HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER). BROADCAST OR DROP SEEDED, OR A CULTIPACKER SEDER. a. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES AMOUNTS WILL NOT EXCEED THE FOLLOWING: NITROGEN; MAXIMUM OF 100 LBS. PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS); 200 LBS/AC; K20 (POTASSIUM): 200 LBS/AC.
  - 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.
  - SEED AND FERTILIZER SHALL BE MIXED ON SITE AND SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION
- DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS
- SEED SPREAD DRY SHALL BE INCORPORATED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON THE TEMPORARY OR PERMANENT SEEDING SUMMARIES OR TABLES 265 OR 266. THE SEEDED AREA SHALL THEN BE
- ROLLED WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL. CULTIPACKING 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. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE) STRAW SHALL CONSIST OF THOROUGHLY THRESHED WHEAT, RYE OR OAT STRAW, REASONABLE BRIGHT IN COLOR, AND SHALL NOT BE MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY AND SHALL BE FREE OF NOXIOUS WEED
  - WOOD CELLULOSE FIBER MULCH (WCFM) WCFM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS
  - PHYSICAL STATE. WCFM SHALL BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE
  - COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY. WCFM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS WCFM MATERIALS SHALL 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 SHALL FORM A BLOTTER-LIKE GROUND COVER, ON APPLICATION, HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the GRASS SEEDLINGS.
  - WCFM MATERIAL SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE
  - WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH TO APPROXIMATELY 10 MM., DIAMETER APPROXIMATELY 1 MM., pH RANGE OF 4.0 TO 0.5, ASH CONTENT OF 1.6% MAXIMUM AND WATER HOLDING CAPACITY OF 90% MINIMUM.

- NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED. MULCHING SEEDED AREAS - MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING. IF GRADING IS COMPLETED OUTSIDE OF THE SEEDING SEASON, MULCH ALONE SHALL BE APPLIED AS PRESCRIBED IN
- WITH THESE SPECIFICATIONS. ii. WHEN STRAW MULCH IS USED, IT SHALL BE SPREAD OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS/ACRE. MULCH SHALL BE APPLIED TO A UNIFORM LOOSE DEPTH OF BETWEEN 1" AND 2". MULCH APPLIED SHALL ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH ANCHORING TOOL IS TO BE USED,

this section and maintained until the seeding season returns and seeding can be performed in accordance

- THE RATE SHOULD BE INCREASED TO 2.5 TONS/ACRE. iii. WOOD CELLULOSE FIBER USED AS A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,500 LBS. PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER, AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS. OF WOOD
- CELLULOSE FIBER PER 100 GALLONS OF WATER. SECURING STRAW MULCH (MULCH ANCHORING): MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY
- PREFERENCE). DEPENDING UPON SIZE OF AREA AND EROSION HAZARD: i. A MULCH ANCHORING TOOL IS AS TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF TWO (2) INCHES. THIS PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO
- FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD BE USED ON THE CONTOUR IF POSSIBLE. ii. WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 POUNDS/ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL
- CONTAIN A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER. iii. APPLICATION OF LIQUID BINDERS SHOULD BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND CREST OF BANKS. THE REMAINDER OF AREA SHOULD BE APPEAR UNIFORM AFTER BINDER APPLICATION. SYNTHETIC BINDERS-SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70 PETROSET, TERRA TAX II, TERRA TACK AR OR OTHER APPROVED
- EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH. iv. LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4' TO 15' FEET WIDE AND 300 TO 3,000 FEET LONG.
- INCREMENTAL STABILIZATION CUT SLOPES ALL CUT SLOPES SHALL BE DRESSED, PREPARED, SEEDED AND MULCHED AS THE WORK PROGRESSES. SLOPES SHALL BE EXCAVATED AND STABILIZED IN EQUAL INCREMENTS NOT TO EXCEED 15'.
  - CONSTRUCTION SEQUENCE (REFER TO FIGURE 3 BELOW): a. EXCAVATE AND STABILIZE ALL TEMPORARY SWALES, SIDE DITCHES, OR BERMS THAT WILL BE USED TO CONVEY
  - RUNOFF FROM THE EXCAVATION. PERFORM PHASE 1 EXCAVATION, DRESS, AND STABILIZE. PERFORM PHASE 2 EXCAVATION, DRESS, AND STABILIZE. OVERSEED PHASE 1 AREAS AS NECESSARY. PERFORM FINAL PHASE EXCAVATION, DRESS, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS NECESSARY.
- NOTE: "ONCE EXCAVATION HAS BEGUN THE OPERATION SHOULD FROM GRUBBING THROUGH THE COMPLETION OF GRADING AND PLACEMENT OF TOPSOIL (IF REQUIRED) AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OF COMPLETING THE OPERATION OUT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY INCREMENTAL STABILIZATION OF EMBANKMENTS - FILL SLOPES
- EMBANKMENTS SHALL BE CONSTRUCTED IN LIFTS AS PRESCRIBED ON THE PLANS. SLOPES SHALL BE STABILIZED IMMEDIATELY WHEN THE VERTICAL HEIGHT OF THE MULTIPLE LIFTS REACHES 15", OR
- WHEN THE GRADING OPERATION CEASES AS PRESCRIBED IN THE PLANS. III. AT THE END OF EACH DAY, TEMPORARY BERMS AND PIPE SLOPE DRAINS SHOULD BE CONSTRUCTED ALONG THE TOP EDGE OF THE EMBANKMENT TO INTERCEPT SURFACE RUNOFF AND CONVEY IT DOWN THE SLOPE IN A NON-EROSIVE MANNER
- O A SEDIMENT TRAPPING DEVICE. iv. CONSTRUCTION SEQUENCE: REFER TO FIGURE 4 (BELOW): a. EXCAVATE AND STABILIZE ALL TEMPORARY SWALES, SIDE DITCHES, OR BERMS THAT WILL BE USED TO DIVERT RUNOFF AROUND THE FILL. CONSTRUCT SLOPE SILT FENCE ON LOW SIDE OF FILL AS SHOWN IN FIGURE 5,
  - UNLESS OTHER METHODS SHOWN ON THE PLANS ADDRESS THIS AREA. b. PLACE PHASE 1 EMBANKMENT, DRESS, AND STABILIZE.
- PLACE PHASE 2 EMBANKMENT. DRESS, AND STABILIZE. PLACE FINAL PHASE EMBANKMENT, DRESS, AND STABILIZE. OVERSEED PREVIOUSLY SEEDED AREAS AS NECCESSARY.
- NOTE: ONCE THE PLACEMENT OF FILL HAS BEGUN THE OPERATION SHOULD BE CONTINUOUS FROM GRUBBING THROUGH THE COMPLETION OF AND PLACEMENT OF TOPSOIL (IF REQUIRED) GRADING AND PERMANENT SEED AND MULCH. ANY INTERRUPTIONS IN THE OPERATION OR COMPLETING THE OPERATION UOT OF THE SEEDING SEASON WILL NECESSITATE THE APPLICATION OF TEMPORARY STABILIZATION.

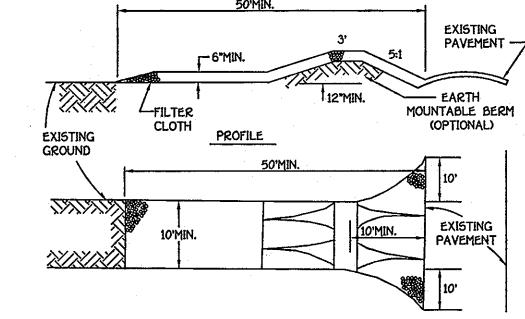
SECTION 2 - TEMPORARY SEEDING

VEGETATION - ANNUAL GRASS OR GRAIN USED TO PROVIDE COVER ON THE DISTURBED AREAS FOR UP TO 12 MONTHS. FOR LONGER DURATION OF VEGETATIVE COVER, PERMANENT SEEDING IS REQUIRED.

SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 26 FOR THE APPROPRIATE PLANT hardiness zone (from figure 5) and enter them in the temporary seeding summary below, along WITH APPLICATION RATES, SEEDING DATES AND SEEDING DEPTHS. IF THIS SUMMARY IS NOT PUT ON THE

PLANS AND COMPLETED, THEN TABLE 26 MUST BE PUT ON THE PLANS. FOR SITES HAVING SOIL TESTS PERFORMED, THE RATES SHOWN ON THE TABLE SHALL BE DELETED AND THE RATES RECOMMENDED BY THE TESTING AGENCY SHALL BE WRITTEN IN. SOIL TESTS ARE NOT REQUIRED FOR TEMPORARY SEEDING.

SE	ED MIXTURE (HAR FROM	FERTILIZER RATE	LIME RATE			
NO.	SPECIES	APPLICATION RATE ( b/ac)	SEEDING DATES	SEEDING DEPTHS	(10-10-10)	
1	BARLEY	122	3/1 - 5/15,	1" - 2"	600 lb/ac	2 tons/ac
1	OAT5	96	8/15 - 10/15	1" - 2"	(15 lb/1000sf)	(100  b/1000sf)
	l rye	140		1" - 2"	יון בטטטו יטן	11 4700 101 1000311



- 1. STONE SIZE USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- 2. LENGTH AS REQUIRED, BUT NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
- 3. THICKNESS NOT LESS THE SIX (6) INCHES.
- 4. WIDTH TEN (10) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
- 5. FILTER CLOTH WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE, FILTER WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT.
- 6. SURFACE WATER ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
- 7. MAINTENANCE THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND /OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- 8. WASHING WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT

9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH

STABILIZED CONSTRUCTION ENTRANCE - 2

NOT TO SCALE

### SECTION 3 - PERMANENT SEEDING

5eeding grass and legumes to establish ground cover for a minimum of one year on disturbed areas generally

- I. SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE 25 FOR THE APPROPRIATE PLANT HARDINESS ZONE (FROM FIGURE 5) AND ENTER THEM IN THE PERMANENT SEEDING SUMMARY BELOW, ALONG WITH APPLICATION RATES AND SEEDING DATES. SEEDING DEPTHS CAN BE ESTIMATED USING TABLE 26. IF THIS SUMMARY IS NOT PUT ON THE CONSTRUCTION PLANS AND COMPLETED, THEN TABLE 25 MUST BE PUT ON THE PLANS. ADDITIONAL PLANTING specifications for exceptional such as shorelines, streambanks, or dunes or special purposes such as WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-SCS TECHNICAL FIELD OFFICE GUIDE, SECTION 342 - CRITICAL AREA PLANTING. FOR SPECIAL LAWN MAINTENANCE AREAS, SEE SECTIONS IV SOD V TURFGRASS
- FOR SITES HAVING DISTURBED AREA OVER 5 AREAS, THE RATES SHOWN ON THIS TABLE SHALL BE DELETED AND THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY SHALL BE WRITTEN IN.
  FOR AREAS RECEIVING LOW MAINTENANCE, APPLY UREAFORM FERTILIZER (46-0-0) AT 3 1/2 LBS/1000 SQ. FT. (LBS./AC.), IN ADDITION TO THE ABOVE SOIL AMENDMENTS SHOWN IN THE TABLE BELOW, TO BE PERFORMED AT THE

	SEED MIXTURE (HARDINESS FROM TABLE		FERTILIZER RATE (10-20-20)			LIME RATE		
NO.	SPECIES	N	P205	K20				
3	TALL FESCUE (05%) PERENNIAL RYE GRASS (10%) KENTUCKY BLUEGRASS (5%)	125 15 10	3/1 - 5/15, 8/15 - 10/15	1" - 2"	90 lb/ac (2.0 lb/	175 lb/ac (4 lb/	(4 lb/	2 tons/ac (100 lb/
10	TALL FESCUE (80%) HARD FESCUE (20%)	120 30	3/1 - 5/15, 8/15 - 10/15	1" - 2"	1000sf)	1000sf)	1000sf)	1000sf)

### SEDIMENT CONTROL NOTES

- 1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL
- DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855). ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR
- SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN; a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER
- DISTURBED OR GRADED AREAS ON THE PROJECT SITE. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12,
- OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52), TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR
- PROPER GERMINATION AND ESTABLISHMENT OF GRASSES. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

SITE ANALYSIS:

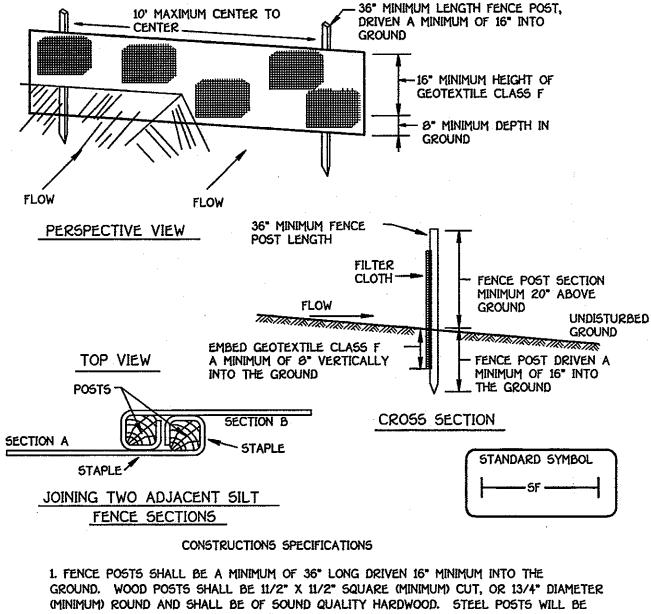
- TOTAL AREA OF SITE ..... NOT APPICABLE TOTAL CUT > N/A; WATER MAIN INSTALLATION ONLY
- OFFSITE WASTE/BORROW AREA LOCATION 8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS. BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- 11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THE THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

## STANDARD AND SPECIFICATIONS FOR TOPSOIL

- 1) DEFINITION: PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.
  2) PURPOSE: TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. 3) SPECIFICATIONS: A.TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. B.TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING SUBSOILS.
- C.TOPSOIL SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1.5° IN DIAMETER.

  A.TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4"- 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4"; AVOID SURFACE IRREGULARITIES.

  B.PLACE TOPSOIL AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS A SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENTS AS A SPECIFIED IN "STANDARDS AND CONTENT AND APPLY SOIL AMENDMENT SPECIFICATIONS FOR VECETATIVE STABILIZATION". C.TOPSOIL SHALL NOT BE PLACED DURING FROZEN, MUDDY, OR EXCESSIVELY WET



STANDARD 'T' OR 'U' SECTION WEIGHTING NOT LESS THAN 1.00 POUND PER LINEAR FOOT.

2. GEOTEXTILE SHALL FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES OR STAPLES AT TOP OR MID-SECTION AND SHALL MEET THE FOLLOWING REQUIREMENTS FOR GEOTEXTILE CLASS 'F':

TENSILE STRENGTH 50 LBS/IN (MIN.) TENSILE MODULUS 20 LB5/IN (MIN.) FLOW RATE 0.3 GAL. FT. / MINUTE (MAX.)2

FILTERING EFFICIENCY

TEST: MSMT 509 TEST: MSMT 509 TEST: MSMT 322 TEST: MSMT 322

3. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS.

75% (MIN.)

4. SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 50% OF THE FABRIC HEIGHT.

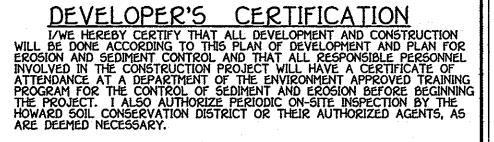
### SEQUENCE OF CONSTRUCTION

- OBTAIN THE REQUIRED GRADING PERMIT. NOTIFY MISS UTILITY 40 HOURS BEFORE ANY WORK (1-800-257-7777). NOTIFY HOWARD COUNTY CONSTRUCTION/INSPECTION DIVISION 24 HOURS BEFORE STARTING ANY WORK ((410)313-1870). INSTALL THE SEDIMENT AND EROSION CONTROL DEVICES AS
- INDICATED ON SHEETS 9, 10 & 11. CLEAR AND GRUB AS NECESSARY, ONLY AS REQUIRED FOR EXCAVATION AND INSTALLATION OF THE WATER MAIN, ONLY WITHIN THE DESIGNATED WATER AND UTILITY EASEMENTS.
- NOTE: THE LENGTH OF OPEN WATER MAIN TRENCH SHALL BE LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH WILL BE BACKFILLED AND STABILIZED WITHIN ONE (I) WORKING DAY. WHICHEVER IS

SHORTER.

SEDIMENT CONTROL DEVICES.

CONSTRUCT THE WATER MAIN EXTENSION. STABILIZE, SEED AND MULCH ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES SHOWN ON THIS SHEET. FOLLOWING SUCCESSFUL STABILIZATION OF ALL DISTURBED AREAS, AND AFTER PERMISSION HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION AND

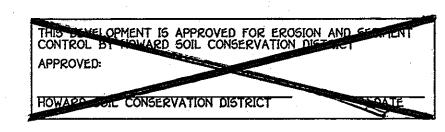


ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL

SIGNATURE OF ENGINEER

SIGNATURE OF DEVELOPER



SEE SHEETS 12, 13, 14 & 15 FOR EROSION & SEDIMENT CONTROL PLAN

CAPITAL PROJECT W-0263 CONTRACT NO. 44-4154-D GTW'S WAVERLY WOODS 12" WATER MAIN EXTENSION 630W PRESSURE ZONE LOOP HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW.

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

CHIEF, DEVELOPMENT ENGINEERING DIVISION

PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NO. 12043 EXPIRATION DATE IS 7/16/14. FISHER, COLLINS & CARTER, INC ENGINEERING CONSULTANTS & LAND SURVEYOR

HEREBY CERTIFY THAT THESE DOCUMENTS WERE

QUARE OFFICE PARK - 10272 BALTIMORE NATIONAL

ELLICOTT CITY, MARYLAND 21042

(410) 461 - 2855



**•12043** DESIGNED BY B.C.R. DRAWN BY B.C.R. CHECKED BY P.W.K. DATE : JANUARY, 2013

**EROSION & SEDIMENT CONTROL** NOTES & DETAILS 600' SCALE MAP NO. 16 BLOCK NO. 5 NEW SHEET: TO ADDRESS MDE COMMENTS F.C.C. WORK ORDER NO. 542 REVISION WATER MAIN EXTENSION SHEET FILE NAME :

GTW'S WAVERLY WOODS 12" WATER MAIN EXTENSION

630W PRESSURE ZONE LOOP CAPITAL PROJECT W-8263 CONTRACT NO. 44-4154-D

THIRD ELECTION DISTRICT

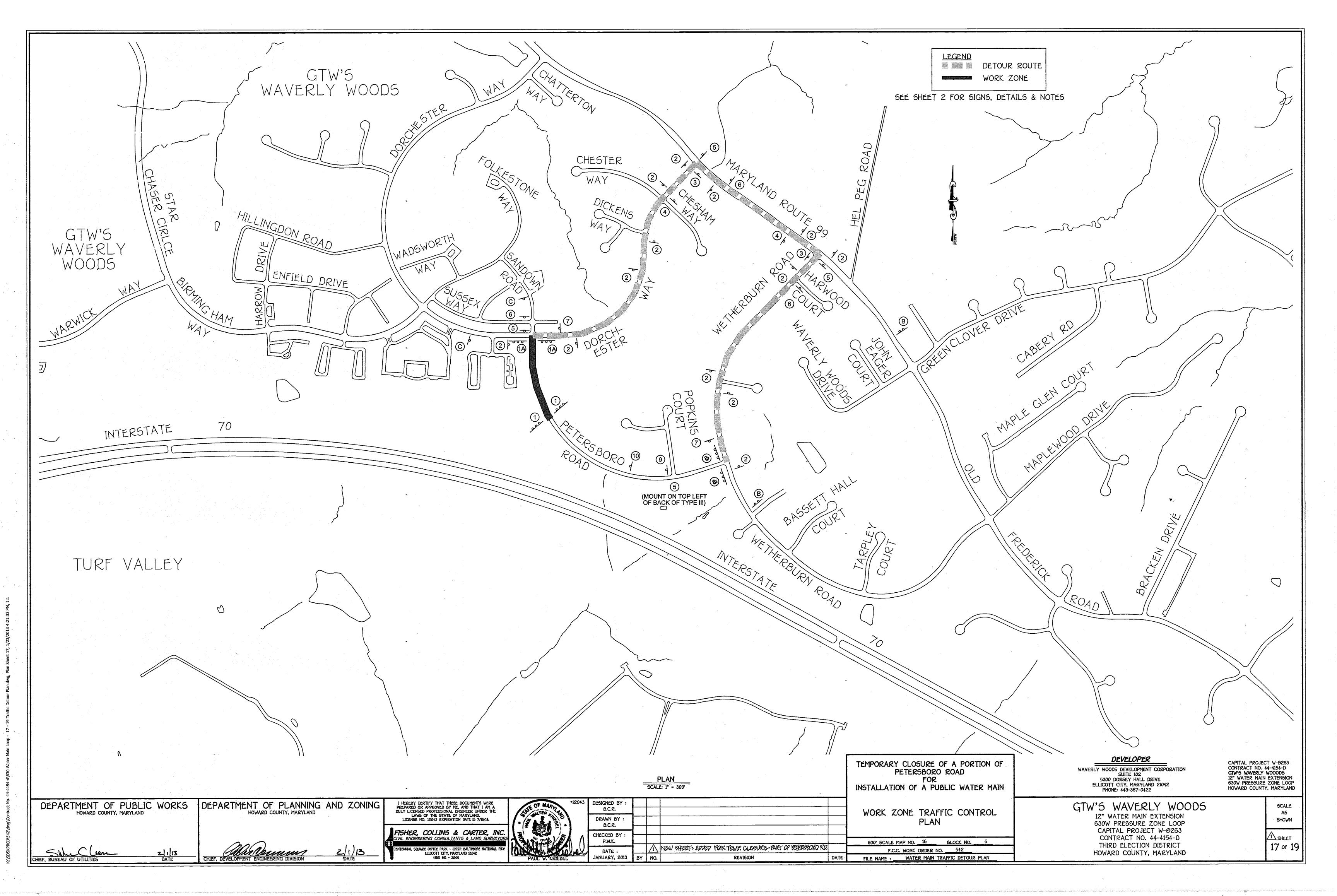
HOWARD COUNTY. MARYLAND

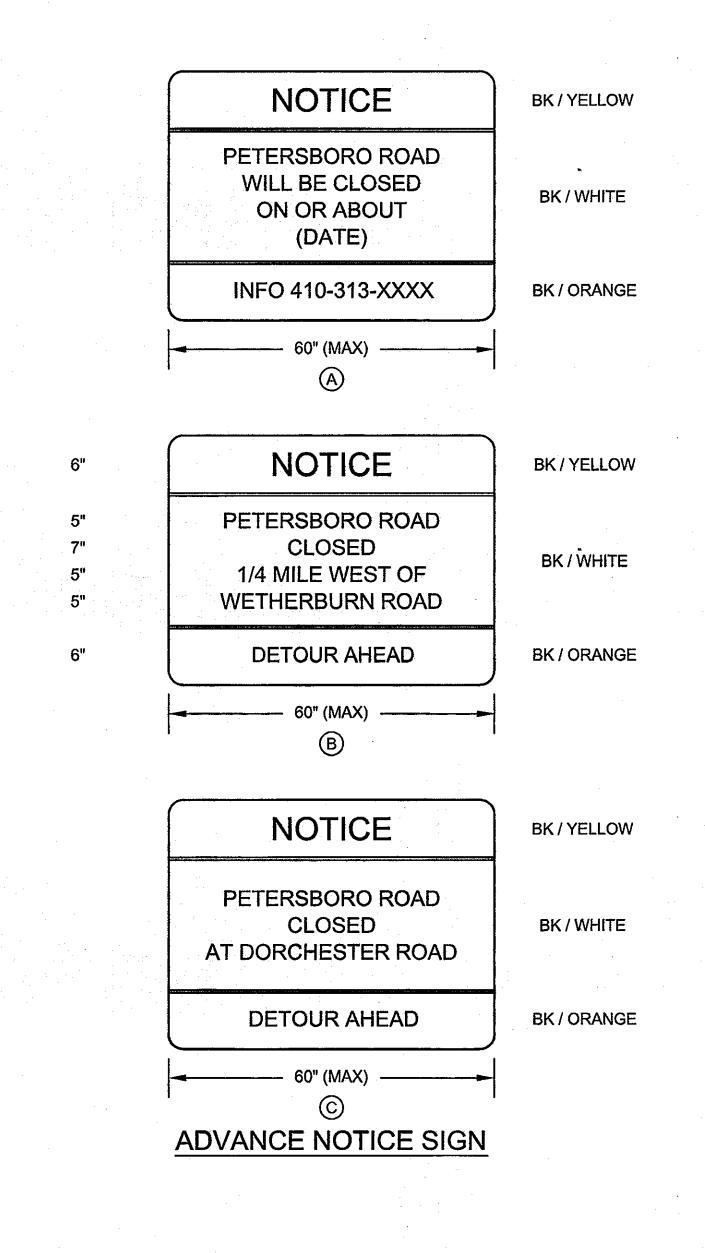
SHOWN ✓¹ SHEET

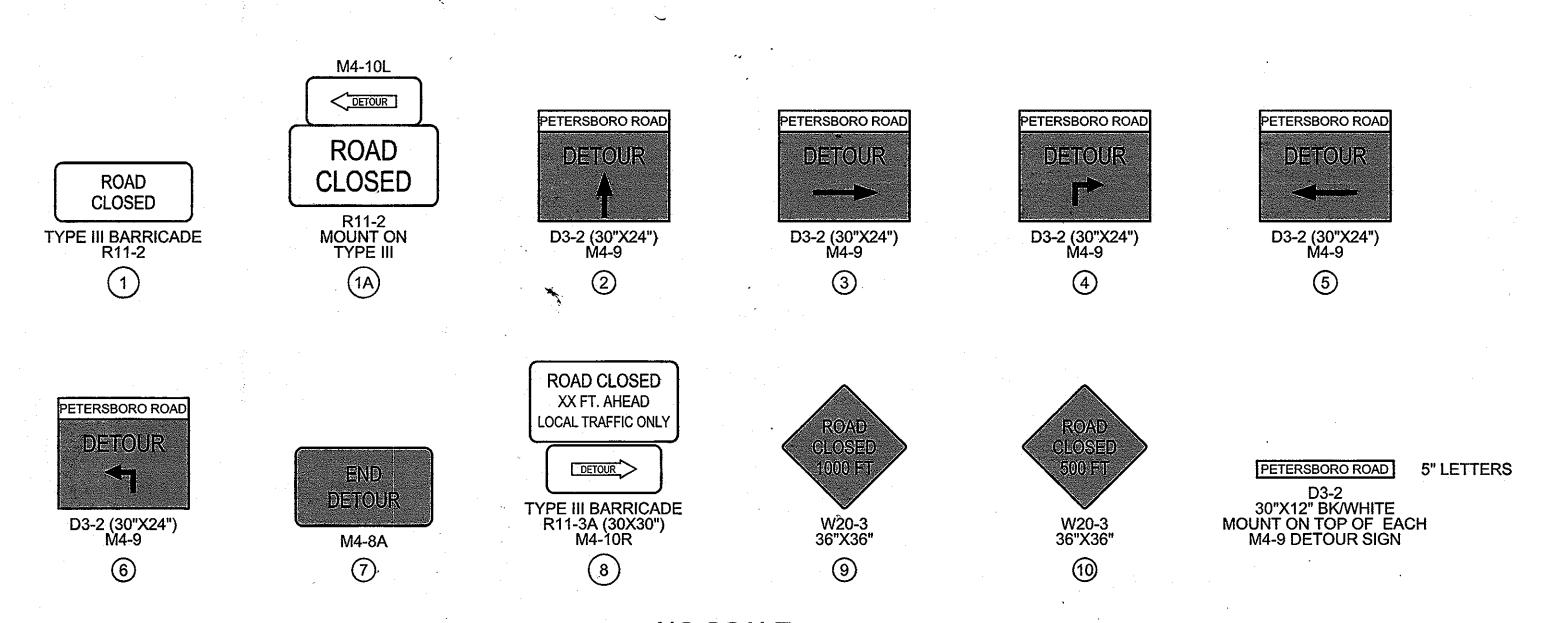
16 of 19

**SCALE** 

łief. Bureau of Utilities







### NO SCALE

1. CONTACT TRAFFIC ENGINEER (410-313-5752) PRIOR TO FABRICATING SIGNS. 2. ALL SIGN LOCATIONS SHALL BE APPROVED BY THE TRAFFIC DIVISION PRIOR TO INSTALLATION OF ANY SIGNS. 3. ALL DETOUR SIGNS SHALL BE COVERED WITH OPAQUE MATERIAL UNTIL DAY ROAD IS CLOSED.

4. EITHER STATIC SIGNS OR VARIABLE MESSAGE SIGNS SHALL BE PLACED 14 DAYS PRIOR TO CLOSING ROAD. MESSAGE ON EITHER SHALL BE APPROVED BY TRAFFIC ENGINEER.

5. ALL SIGN LOCATIONS SHOWN ON THE PLAN ARE APPROXIMATE, EXACT LOCATIONS TO BE DETERMINED IN THE FIELD. 6. TEN (10) TO TWELVE (12) PLASTIC DRUMS SHALL BE PROVIDED. LOCATIONS TO BE DETERMINED BY THE TRAFFIC ENGINEER IN THE FIELD.

> TEMPORARY CLOSURE OF A PORTION OF PETERSBORO ROAD

INSTALLATION OF A PUBLIC WATER MAIN

WORK ZONE TRAFFIC CONTROL NOTES AND DETAILS

600' SCALE MAP NO. \_\_16 \_\_\_ BLOCK NO. \_\_\_ 5 F.C.C. WORK ORDER NO. \_\_\_\_ 542 \_

DEVELOPER WAVERLY WOODS DEVELOPMENT CORPORATION SUITE 102 5300 DORSEY HALL DRIVE ELLICOTT CITY, MARYLAND 21042 PHONE: 443-367-0422

CAPITAL PROJECT W-0263 CONTRACT NO. 44-4154-D GTW'S WAVERLY WOOODS 12" WATER MAIN EXTENSION 630W PRESSURE ZONE LOOP HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DEPARTMENT OF PLANNING AND ZONING HOWARD COUNTY, MARYLAND

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. 12043 EXPIRATION DATE IS 7/16/14. FISHER, COLLINS & CARTER, INC. NNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PI ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2055



DESIGNED BY B.C.R. DRAWN BY : B.C.R. CHECKED BY P.W.K. A NEW SHEET: ADDED FOR TEUP. CLOSURE-PART OF PETERSBORD RD DATE : JANUARY, 2013 REVISION

FILE NAME : WATER MAIN TRAFFIC DETOUR PLAN

GTW'S WAVERLY WOODS 12" WATER MAIN EXTENSION 630W PRESSURE ZONE LOOP CAPITAL PROJECT W-8263 CONTRACT NO. 44-4154-D THIRD ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE SHOWN 1 SHEET

18 of 19

