

GENERAL NOTES

- APPROXIMATE LOCATION OF EXISTING UTILITIES 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 EXPENSE.
- TOPOGRAPHIC FIELD SURVEYS WERE PERFORMED IN AUGUST 2011 BY KCI TECHNOLOGIES, INC. BUILDINGS SHOWN ON PLAN ARE FROM HOWARD COUNTY GIS AND ARE FOR REFERENCE ONLY.
- HORIZONTAL AND VERTICAL SURVEY CONTROLS:
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. 36EA AND 0070. ALL VERTICAL CONTROLS ARE BASED ON NAVD'88. VERTICAL CONTROLS PROVIDED ON THE DRAWINGS ARE IRON BARS.
- 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 THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION). THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION 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.
- 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
BG&E (CONSTRUCTION SERVICES).....410-637-8713
BG&E - (EMERGENCY).....410-685-0123
BUREAU OF UTILITIES (DPW).....410-313-4900
COLONIAL PIPELINE CO.410-795-1390
MISS UTILITY1-800-257-7777
STATE HIGHWAY ADMINISTRATION410-531-5533
VERIZON.1-800-743-0033
- 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.
- CONTRACTOR SHALL REMOVE TREES, STUMPS AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, AT (410)313-7450 AT LEAST FIVE WORKING DAYS BEFORE ANY 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.

SEWER NOTES

- ALL SEWER MAINS SHALL BE PVC UNLESS OTHERWISE NOTED.
- ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- FORCE MAINS SHALL BE D.I.P. ONLY
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- 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 DRAWINGS.
- HOUSE (S) WITH THE SYMBOL "C.N.S" INDICATES THAT CELLAR CANNOT BE SERVED.
- THE CONTRACTOR SHALL PROVIDE SURVEY CONSTRUCTION STAKEOUT FOR ALL NECESSARY LINES, GRADES AND ELEVATION OF THE PROPOSED FACILITIES.

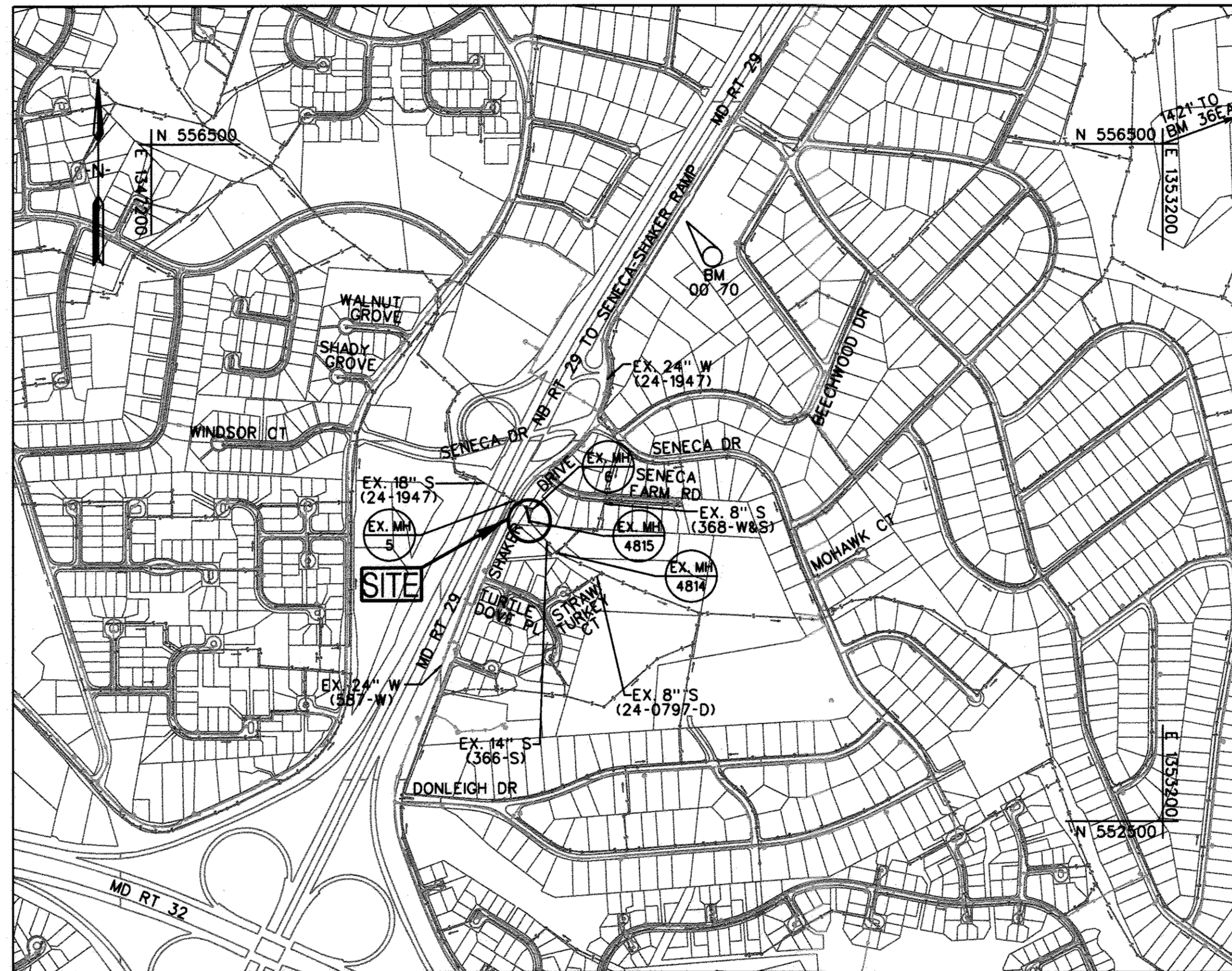
HANDLING ASBESTOS CONTAINING MATERIAL

- THE EXISTING SEWER MAIN IS ASBESTOS CEMENT PIPE (ACP). IT MUST BE REMOVED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS, INCLUDING BUT NOT LIMITED TO: 29 CFR1926.1101, 40CFR61.262 AND 263 AND COMAR 21.11.21. THIS WORK REQUIRES SUBMISSION AND ACCEPTANCE OF AN ASBESTOS ABATEMENT WORK PLAN THAT DESCRIBES IN DETAIL THE METHODS THE CONTRACTOR WILL USE TO COMPLY WITH APPLICABLE REGULATIONS, INCLUDING TRAINING, RESPIRATORY PROTECTION AND WASTE DISPOSAL. THIS ITEM ALSO INCLUDES DESIGN AND IMPLEMENTATION OF ENGINEERING CONTROLS AND DUST CONTROL MEASURES TO REDUCE VISIBLE EMISSIONS WHILE PERFORMING ASBESTOS ABATEMENT. THE CONTRACTOR SHALL DISPOSE OF ALL ACP IN A PERMITTED FACILITY.
- THE WORK MAY REQUIRE ENTRY INTO PERMIT-REQUIRED CONFINED SPACES. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH APPLICABLE REGULATIONS INCLUDING 29 CFR1910.146.

SHAKER DRIVE SEWER REHABILITATION HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

CAPITAL PROJECT No. S-6268
CONTRACT No. 20-4870



LOCATION MAP

SCALE: 1" = 600'

TYPE OF BUILDING: RESIDENTIAL/ COMMERCIAL
NUMBER OF PARCELS: 1
NUMBER OF SEWER HOUSE CONNECTIONS: NA
DRAINAGE AREA: LITTLE PATUXENT

HOWARD COUNTY GEODETIC SURVEY CONTROL
THE HORIZONTAL AND VERTICAL DATUM BASED ON
NAD83/91 (HORIZONTAL)
NAVD88 (VERTICAL)
36 EA N 556986.81 00 70 N 556041.78
E 1354535.19 E 1350374.64
ELEV.354.86 ELEV.406.35

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. 31363 EXPIRATION DATE: 1/16/2018

INDEX OF SHEETS	
SHEET No.	DESCRIPTION
1	TITLE SHEET
2	18" SEWER PLAN AND PROFILE
3	DETAILS AND NOTES
4	EROSION AND SEDIMENT CONTROL PLAN
5	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

QUANTITIES				
ITEM	UNIT	ESTIMATE	AS-BUILT	MATERIAL SUPPLIER
18" PVC SEWER	L.F.	86	86	PVC
6' DIA. PRECAST DOGHOUSE MH	EA.	1	1	ATLANTIC/ATLANTIC
4' DIA. PRECAST MH	EA.	1	1	ATLANTIC/ATLANTIC
TEMPORARY BYPASS PIPE	L.F.	355	355	THOMPSON PUMP

NAME OF UTILITY CONTRACTOR: W.F. WILSON, INC.
CHECKBOX
AS-BUILT DATE: 1-11-2017
SURVEY AND DRAFTING DIVISION

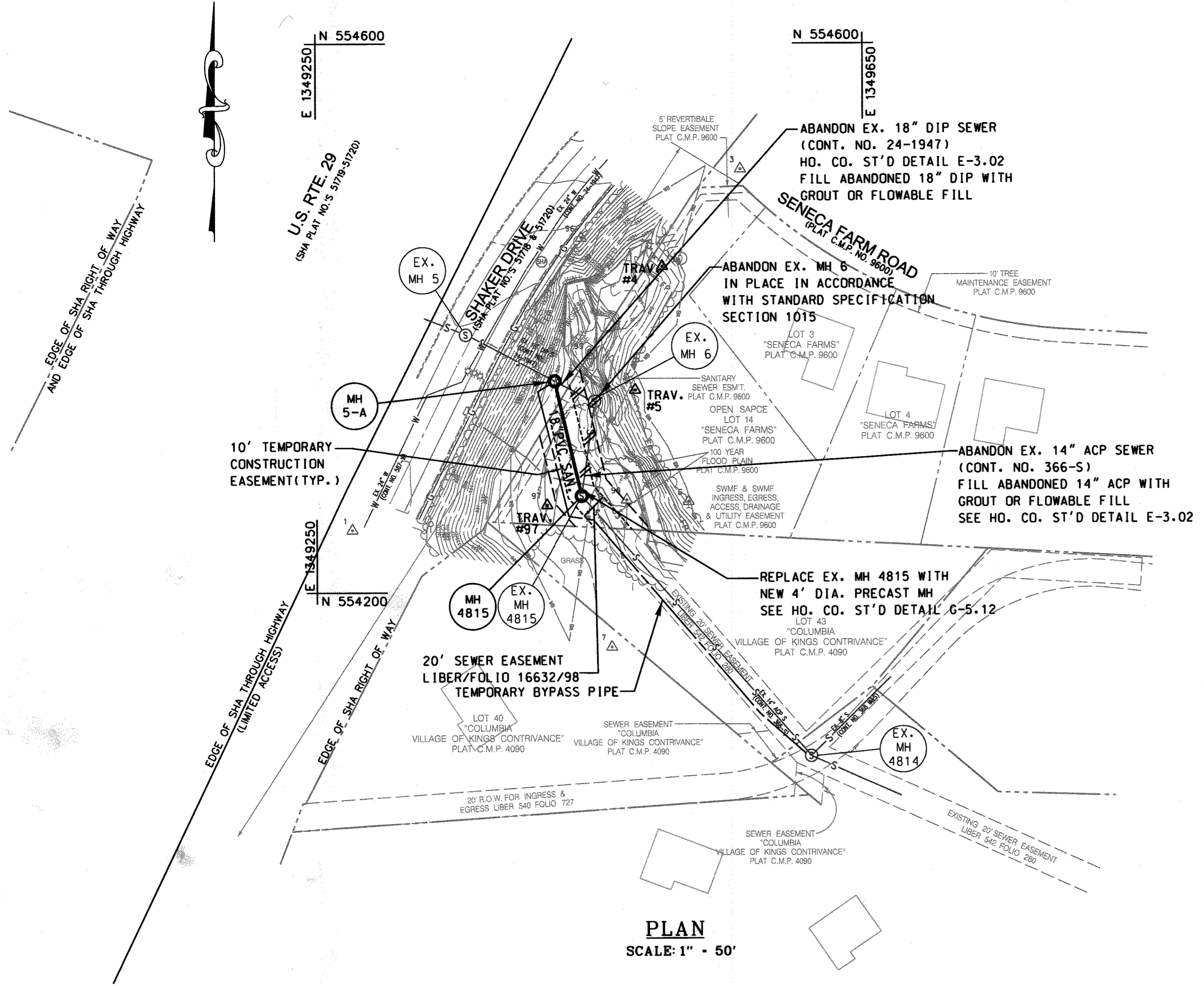
RESTORATION SCHEDULE		
LOCATION	DISTANCE	TYPE
L.O.D. FROM MH 5-A TO MH 4815	120'	SEED & MULCH

LEGEND	
	DECIDUOUS TREE
	CONIFEROUS TREE
	TRAVERSE POINT
	SEWER MAIN
	MANHOLE
	SEWER HOUSE CONNECTION
	BORING LOCATION
	EXISTING FIRE HYDRANT
	EXISTING VALVE
	EXISTING WATER MAIN
	EXISTING GAS MAIN
	EXISTING OVERHEAD SERVICE
	EXISTING SEWER MAIN
	LIMIT OF DISTURBANCE
	SILT FENCE
	WETLAND EDGE
	WETLAND BUFFER
	TEMPORARY BYPASS PIPE
	TEMPORARY CONSTRUCTION EASEMENT
	PERMANENT SEWER EASEMENT

AS-BUILT
DATE 1-12-2017

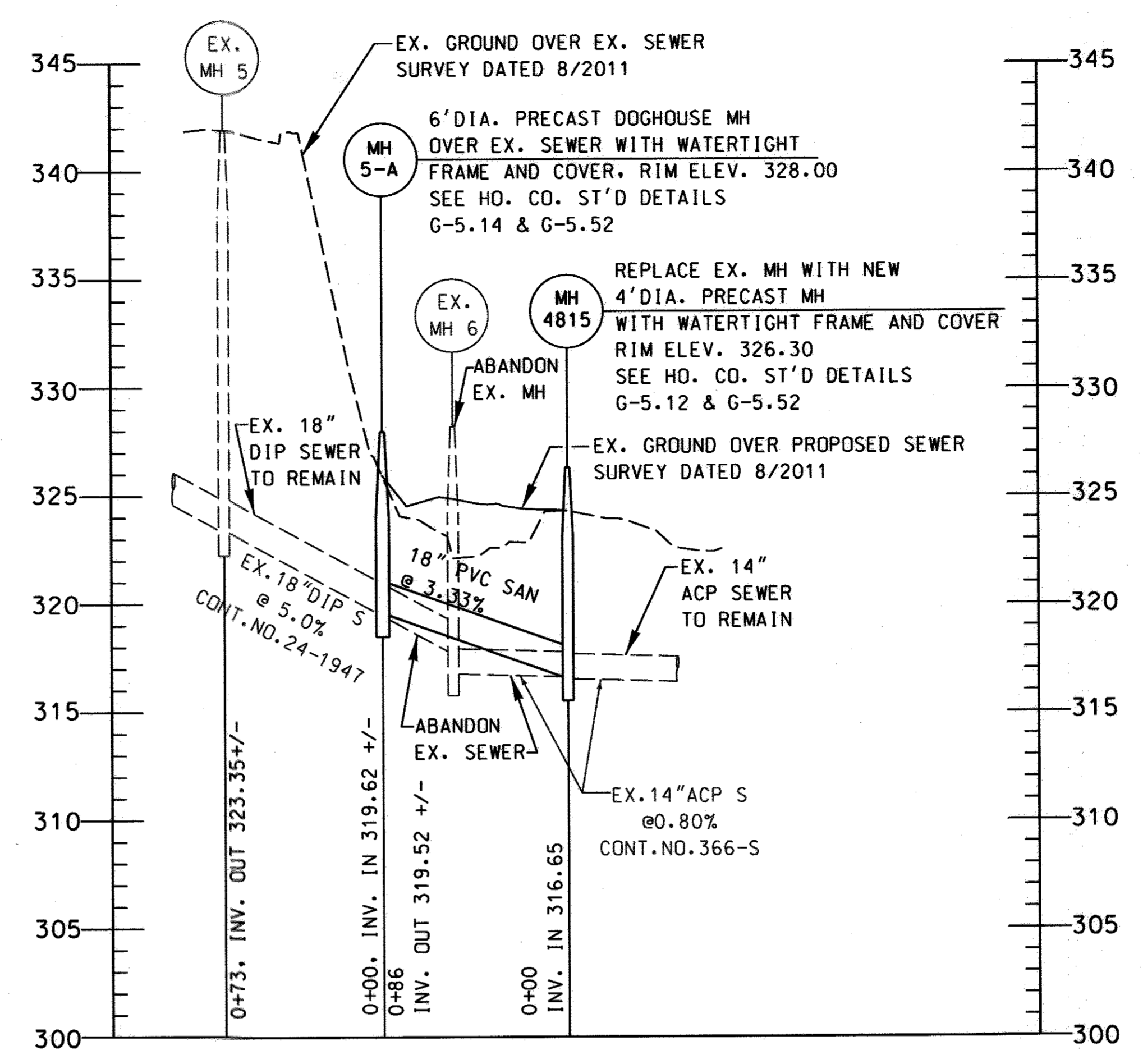
PLOTTED: 12:08 PM on Thursday, November 17, 2016
BY: Kevin Jackson
FILE: M:\2007\01071378_32 Drawings\0107137832-C-01-TITLE.dgn

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS CHIEF, BUREAU OF UTILITIES		 ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS 936 RIDGEBROOK ROAD SERRIS, MARYLAND 21152 TELEPHONE: (410) 316-7800 FAX: (410) 316-7818 www.kci.com		 STATE OF MARYLAND GUYA WANG PROFESSIONAL ENGINEER LICENSE NO. 31363 EXPIRATION DATE: 1/16/2018		DES: KJ DRN: KJ CHK: GW DATE: NOV. 2016		AS BUILT QUANTITIES REVISION DATE: 1/12/17		TITLE SHEET SHAKER DRIVE SEWER REHABILITATION CAPITAL PROJECT No. S-6268 CONTRACT No. 20-4870 ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND		SCALE AS SHOWN SHEET 1 OF 5
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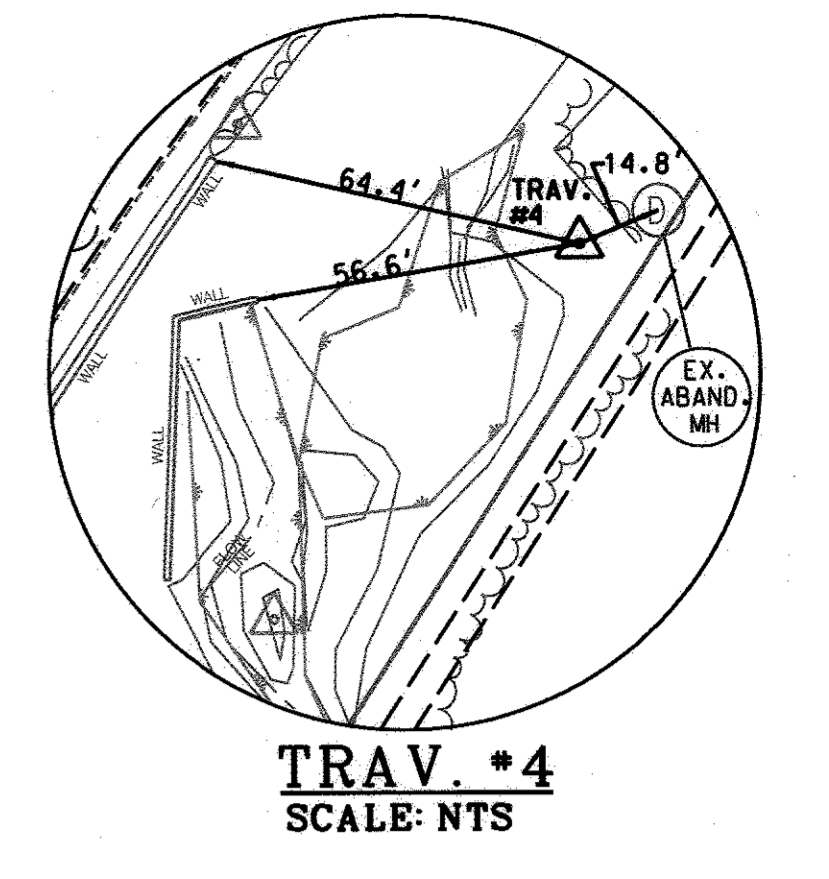
PLAN
SCALE: 1" = 50'

MANHOLE STAKE-OUT TABLE		
MANHOLE NUMBER	NORTHING	EASTING
5-A	554354.08	1349424.18
4815	554270.29	1349443.70

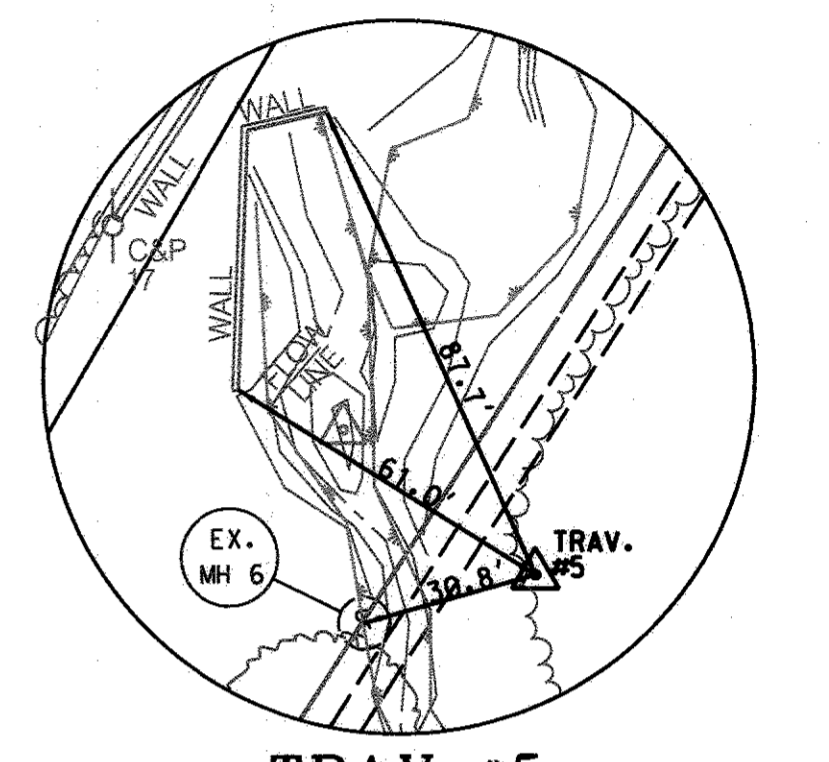


PROFILE
SCALE: HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

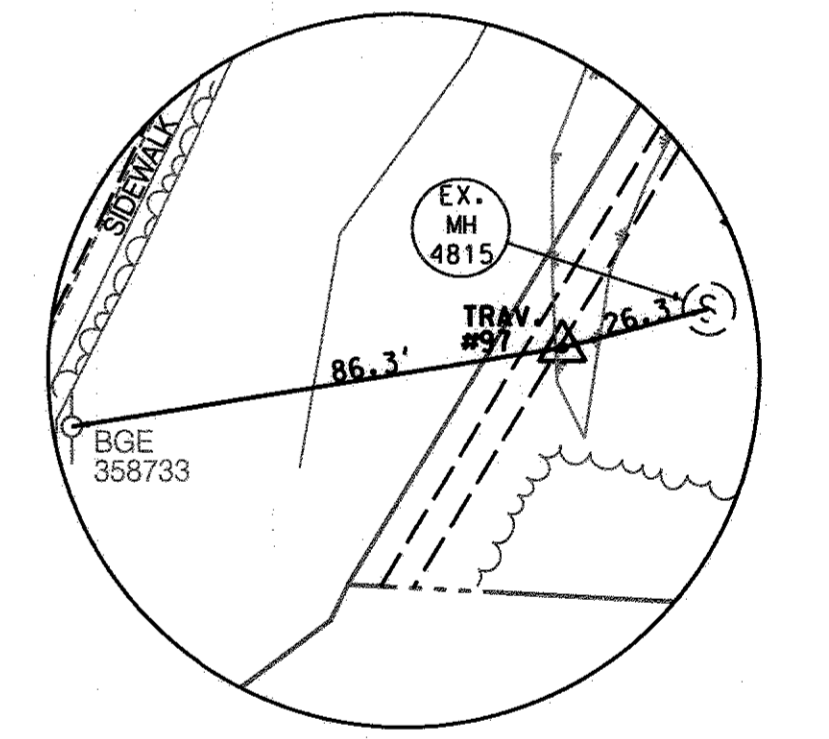
TRAVERSE COORDINATE SCHEDULE				
NUMBER	DESCRIPTION	NORTHING	EASTING	ELEVATION
TRAV.#4	REBAR & CAP	554437.54	1349503.14	329.39
TRAV.#2	REBAR & CAP	554347.45	1349483.08	329.90
TRAV.#3	REBAR & CAP	554263.62	1349418.23	324.76



TRAV. #4
SCALE: NTS

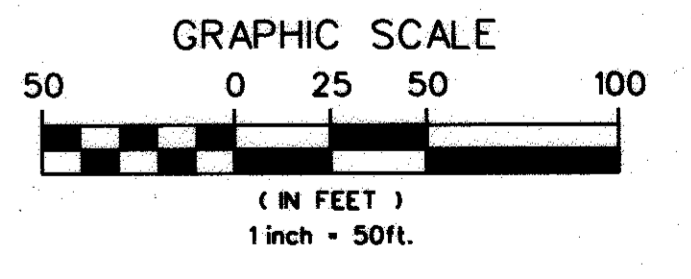


TRAV. #5
SCALE: NTS



TRAV. #97
SCALE: NTS

AS-BUILT
DATE: 11-12-2017



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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 11/16/17
DIRECTOR OF PUBLIC WORKS DATE

[Signature] 11/16/17
CHIEF, BUREAU OF UTILITIES DATE

ENGINEERS
PLANNERS
SCIENTISTS
CONSTRUCTION MANAGERS

KCI
TECHNOLOGIES

936 RIDGEBROOK ROAD
SPARKS, MARYLAND 21152
TELEPHONE: (410) 316-7800
FAX: (410) 316-7818
WWW.KCI.COM

STATE OF MARYLAND
QUIRINA WALKER
PROFESSIONAL ENGINEER
11/21/16

DES: KJ			
DRN: KJ			
CHK: GW			
DATE: NOV. 2016	BY NO.	REVISION	DATE

**18" SEWER
PLAN AND PROFILE**

600' SCALE MAP NO. 36 BLOCK NO. 19

SHAKER DRIVE SEWER REHABILITATION

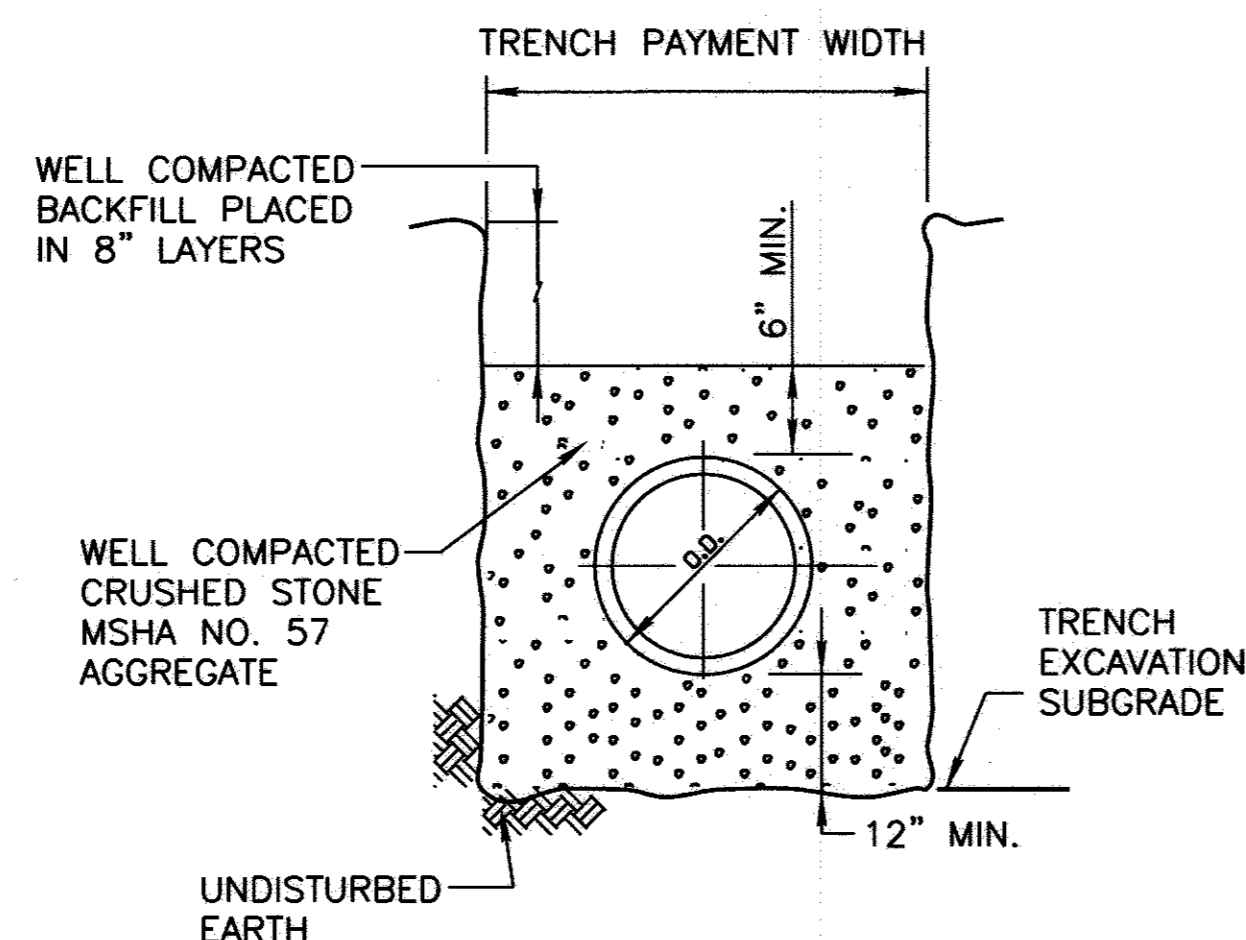
CAPITAL PROJECT No. S-6268
CONTRACT No. 20-4870

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 5

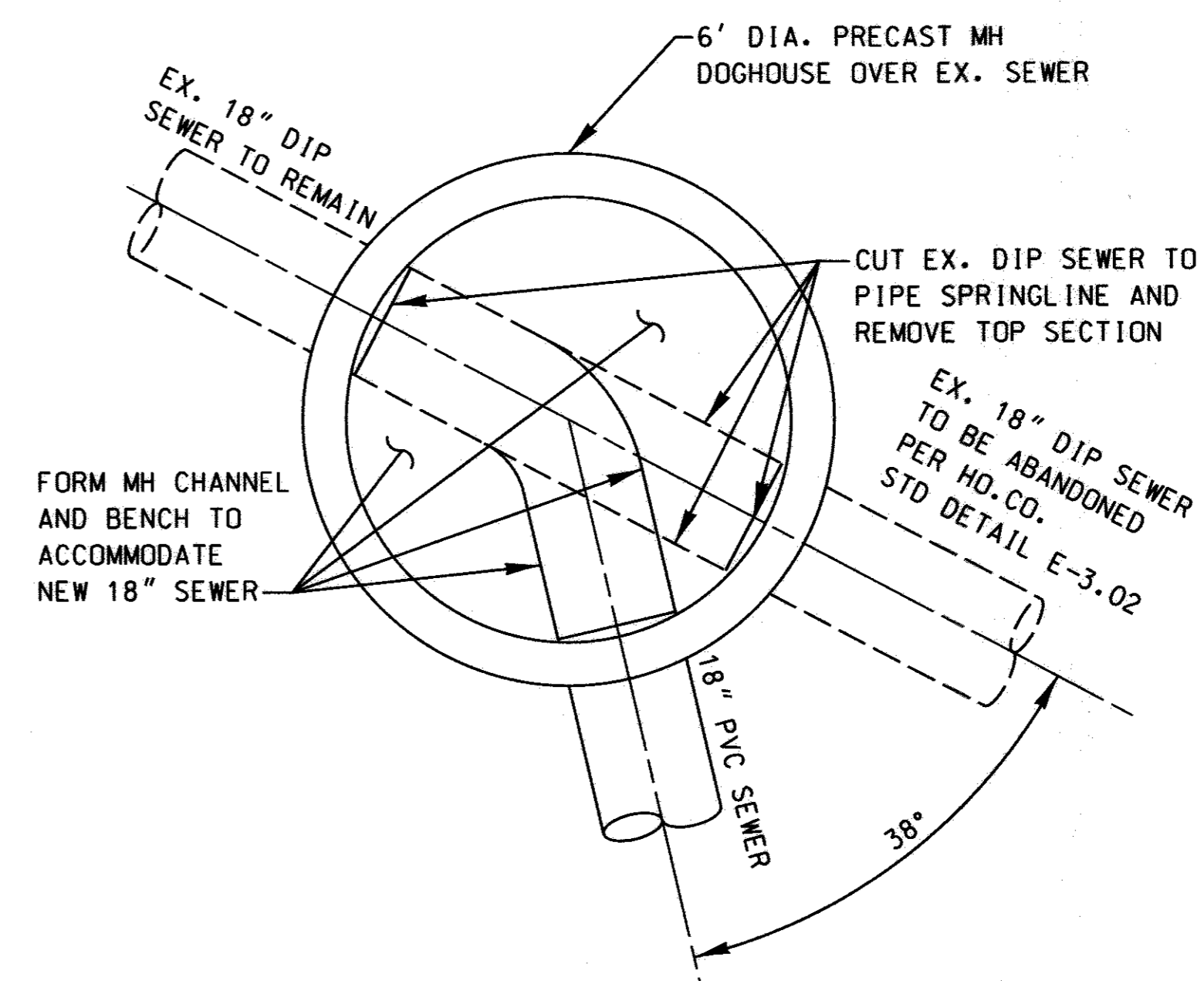
SUGGESTED SEQUENCE OF CONSTRUCTION:

1. THE CONTRACTOR SHALL FULFILL THE PRECONSTRUCTION REQUIREMENTS IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND PERMITS.
2. INSTALL DOGHOUSE MANHOLE 5-A.
3. SET UP BYPASS PUMPING IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND SPECIAL PROVISIONS.
 - a. THE PEAK FLOW UNDER RAINFALL EVENT IS 1.63 MGD.
 - b. THE MAXIMUM DRY WEATHER FLOW IS 1.0 MGD.
4. CONSTRUCT NEW 18" SANITARY SEWER AND INSTALL NEW MANHOLE 4815.
5. ABANDON EXISTING FACILITIES AS NOTED ON THE PLAN.
6. STABILIZE THE CONSTRUCTION AREA IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. REMOVE BYPASS PUMPING.
8. FOLLOW THE EROSION AND SEDIMENT CONTROL REQUIREMENTS PRIOR TO LEAVING THE CONSTRUCTION SITE.



DETAIL *
TRENCH FOR PVC PIPE
AND HIGH DENSITY POLYETHYLENE PIPE
 NO SCALE

* BASED ON HOWARD COUNTY STANDARD DETAIL G2.12



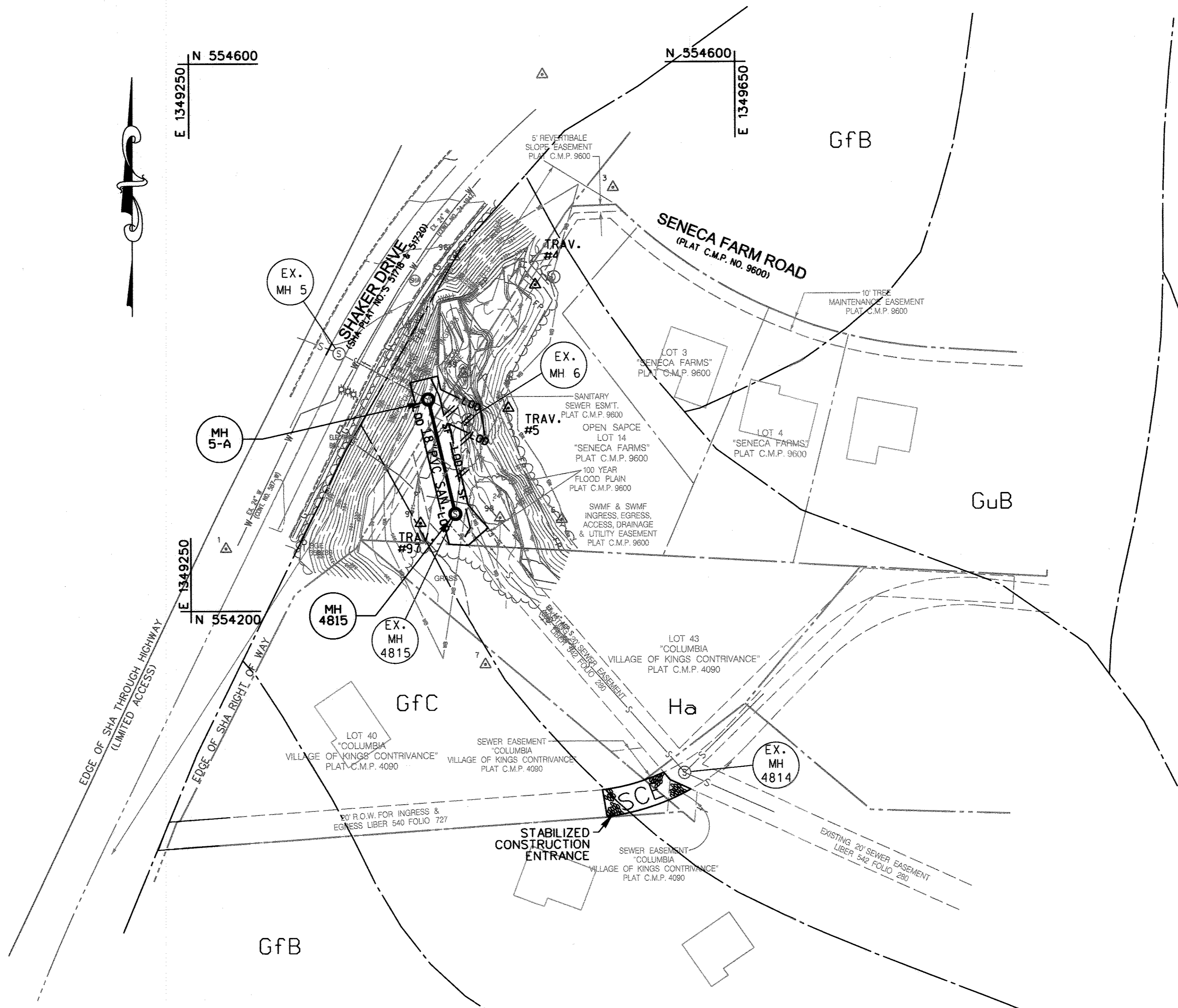
DETAIL- DOGHOUSE MH 5-A
 SCALE: 1/2" = 1'

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AS-BUILT
 DATE 1-12-2017

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 BY: Kevin Jackson
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DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS DATE	CHIEF, BUREAU OF ENGINEERING DATE	CHIEF, UTILITY DESIGN DIVISION DATE	ENGINEERS PLANNERS SCIENTISTS CONSTRUCTION MANAGERS 936 RIDGEBROOK ROAD SPARKS, MARYLAND 21152 TELEPHONE: (410) 316-7800 FAX: (410) 316-7818 WWW.KCI.COM	JOSHUA WANG NO. 31363 PROFESSIONAL ENGINEER 11/21/16	DES: KJ DRN: KJ CHK: GW DATE: NOV. 2016	DETAILS AND NOTES	SHAKER DRIVE SEWER REHABILITATION CAPITAL PROJECT No. S-6268 CONTRACT No. 20-4870 ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND	SCALE AS SHOWN SHEET 3 OF 5
600' SCALE MAP NO. 36 BLOCK NO. 19								



NOTE:
 SOIL INFORMATION IS BASED ON HOWARD COUNTY GIS SOIL MAP
 GfB: GLADSTONE - LOAM, 3 TO 8 PERCENT SLOPE
 GfC: GLADSTONE - LOAM, 8 TO 15 PERCENT SLOPE
 GuB: GLENVILLE - URBAN LAND - UDORTMENT COMPLX, 0 TO 8 PERCENT SLOPES
 Ha: HATBORO - CODORUS SILT LOAMS, 0 TO 3 PERCENT SLOPES

EROSION AND SEDIMENT CONTROL PLAN
 SCALE: 1" = 50'

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. 31363 EXPIRATION DATE: 1/16/2018

AS-BUILT
 DATE 1-12-2017

PLOTTED: 12:18 PM on Thursday, November 17, 2016
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DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

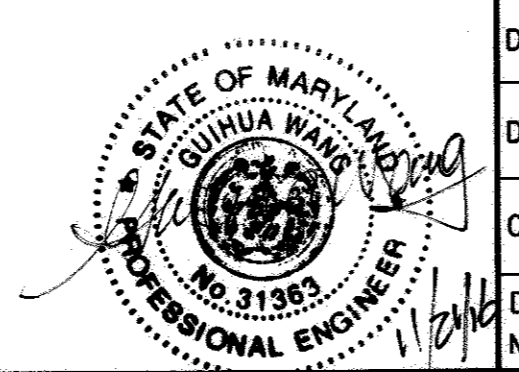
John G. ...
 DIRECTOR OF PUBLIC WORKS
 DATE 11/22/16

Thomas P. ...
 CHIEF, BUREAU OF UTILITIES
 DATE 11/22/16

Thomas P. ...
 CHIEF, UTILITY DESIGN DIVISION
 DATE 11/22/16

ENGINEERS
 PLANNERS
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936 RIDGEBROOK ROAD
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 WWW.KCI.COM



DES: KJ					
DRN: KJ					
CHK: GW					
DATE: NOV. 2016	BY	NO.	REVISION	DATE	

EROSION AND SEDIMENT CONTROL PLAN

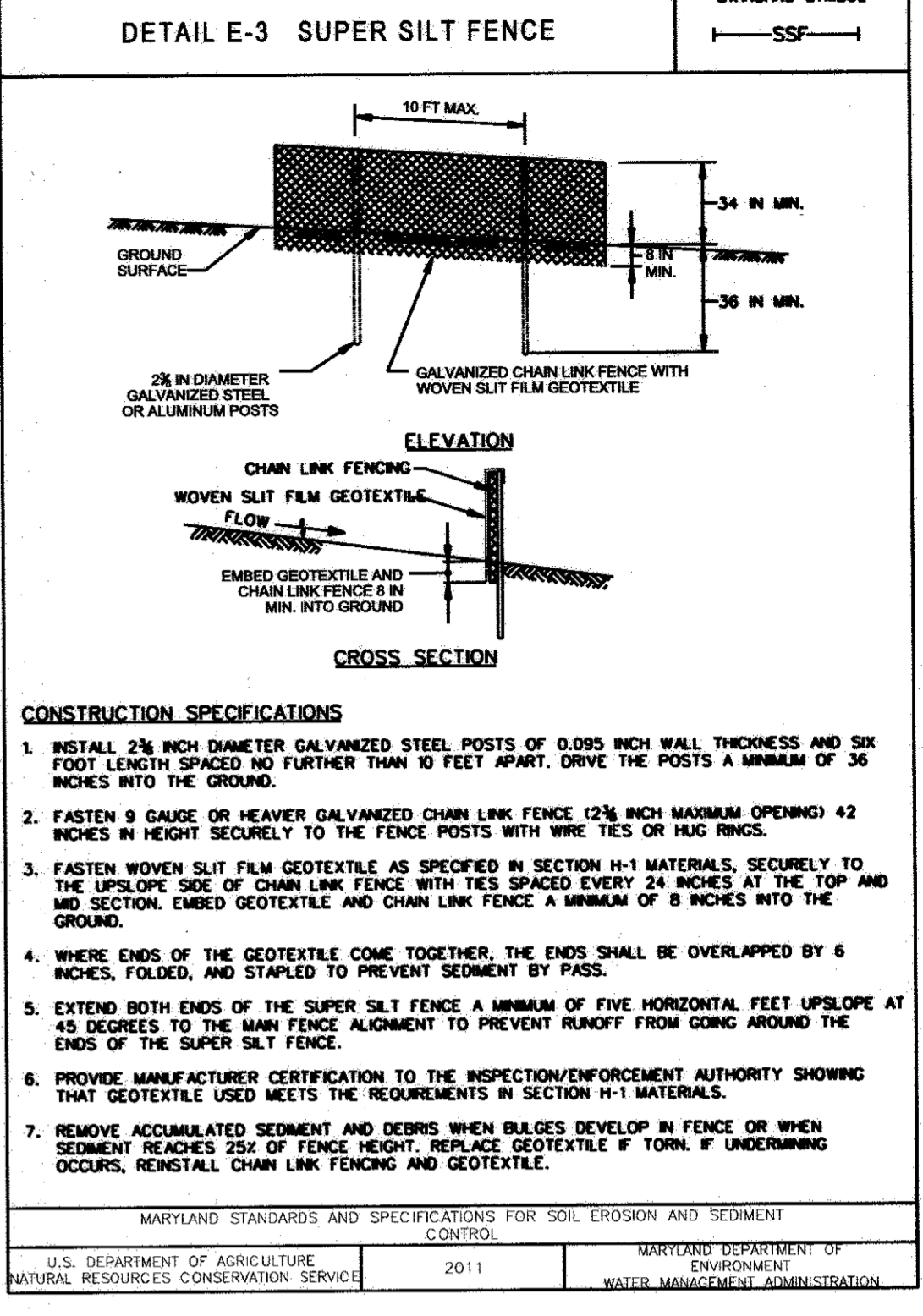
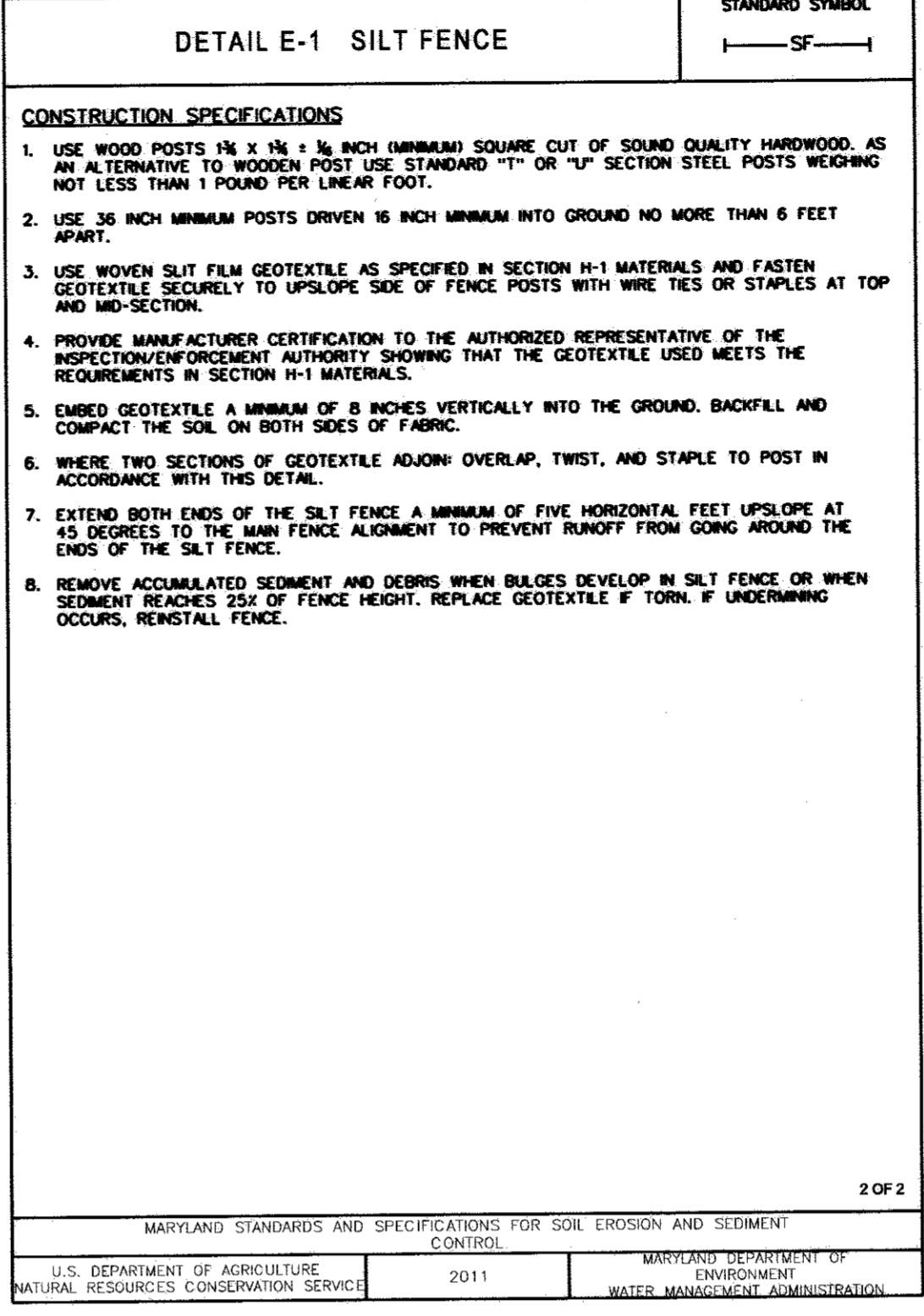
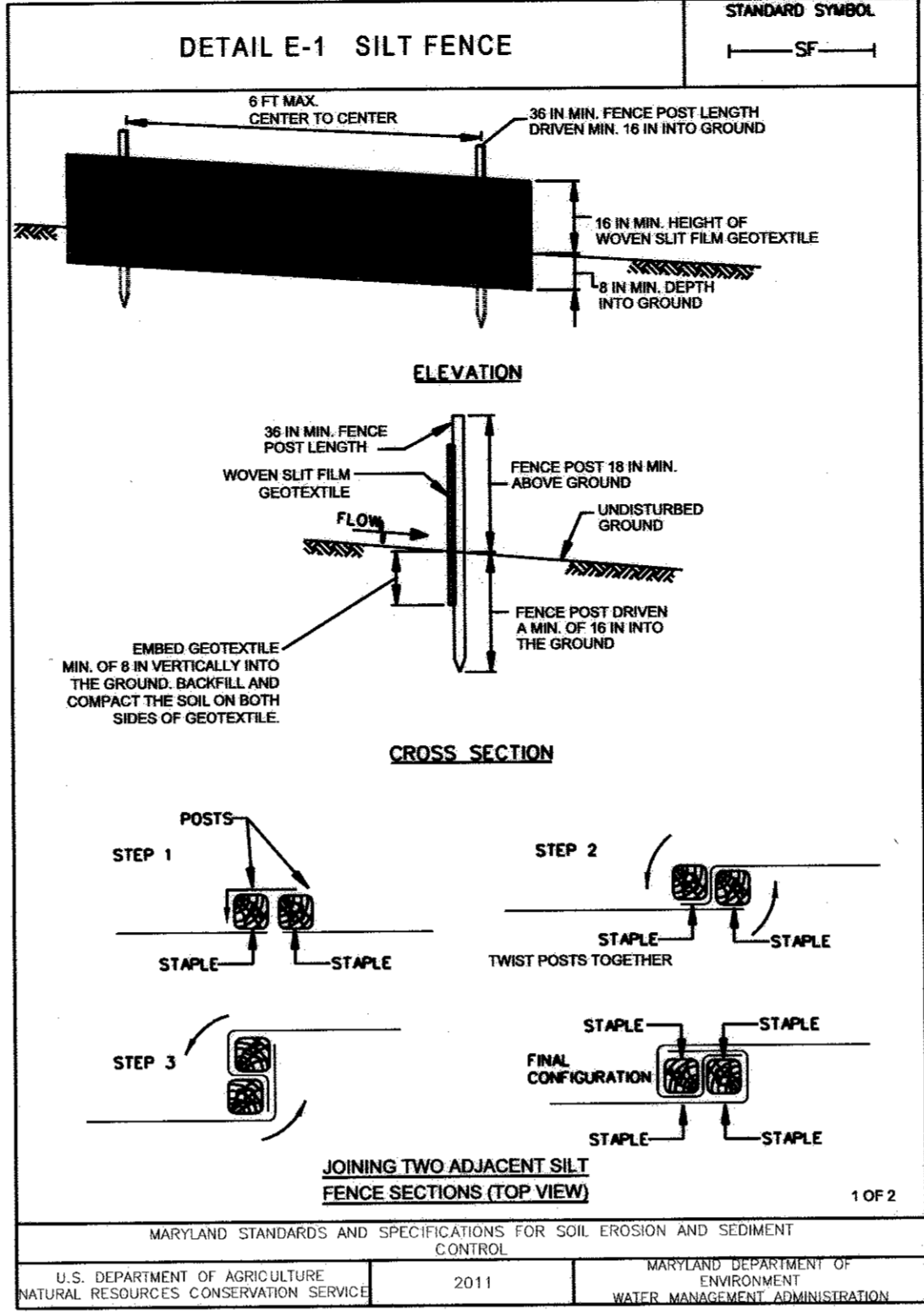
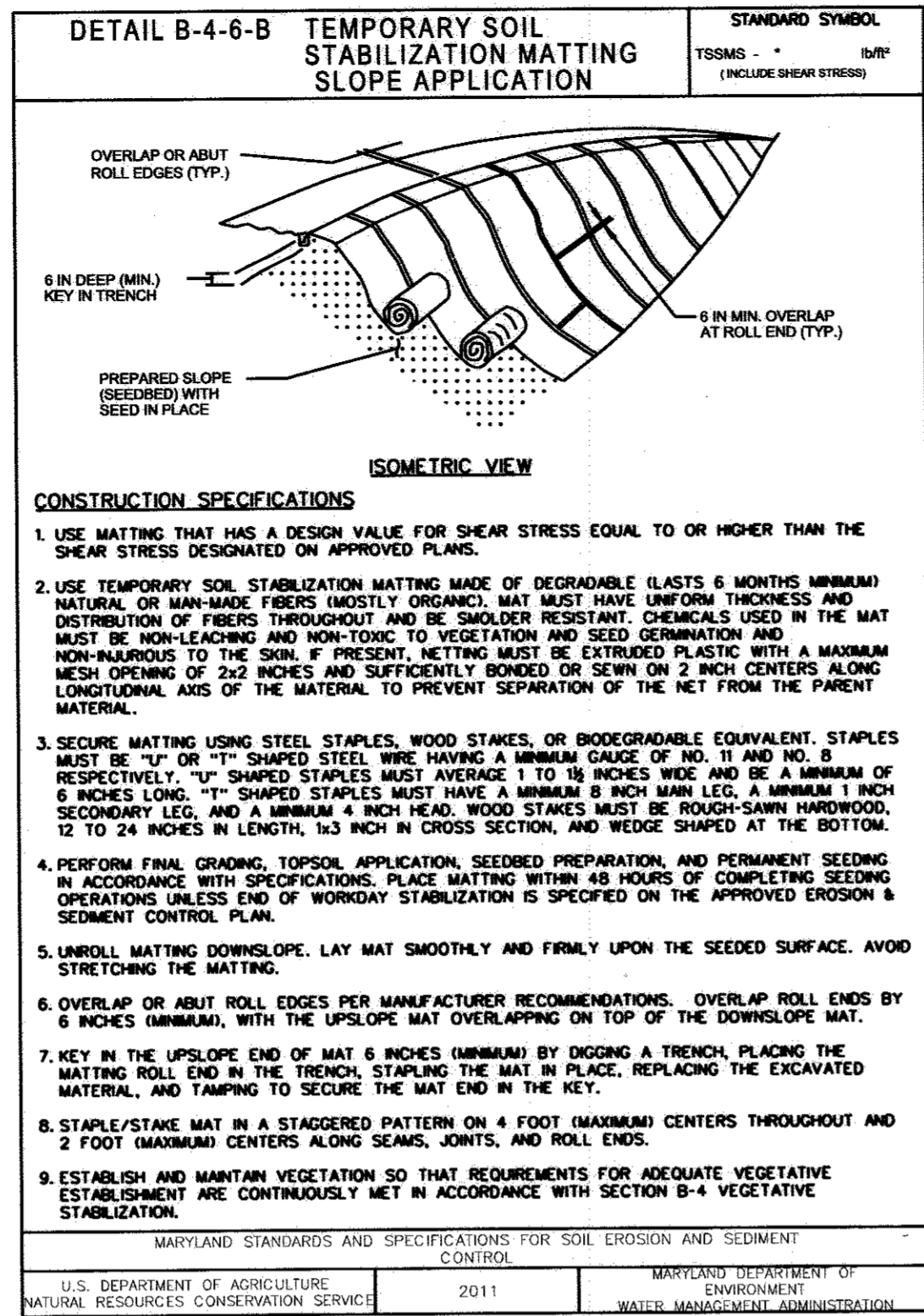
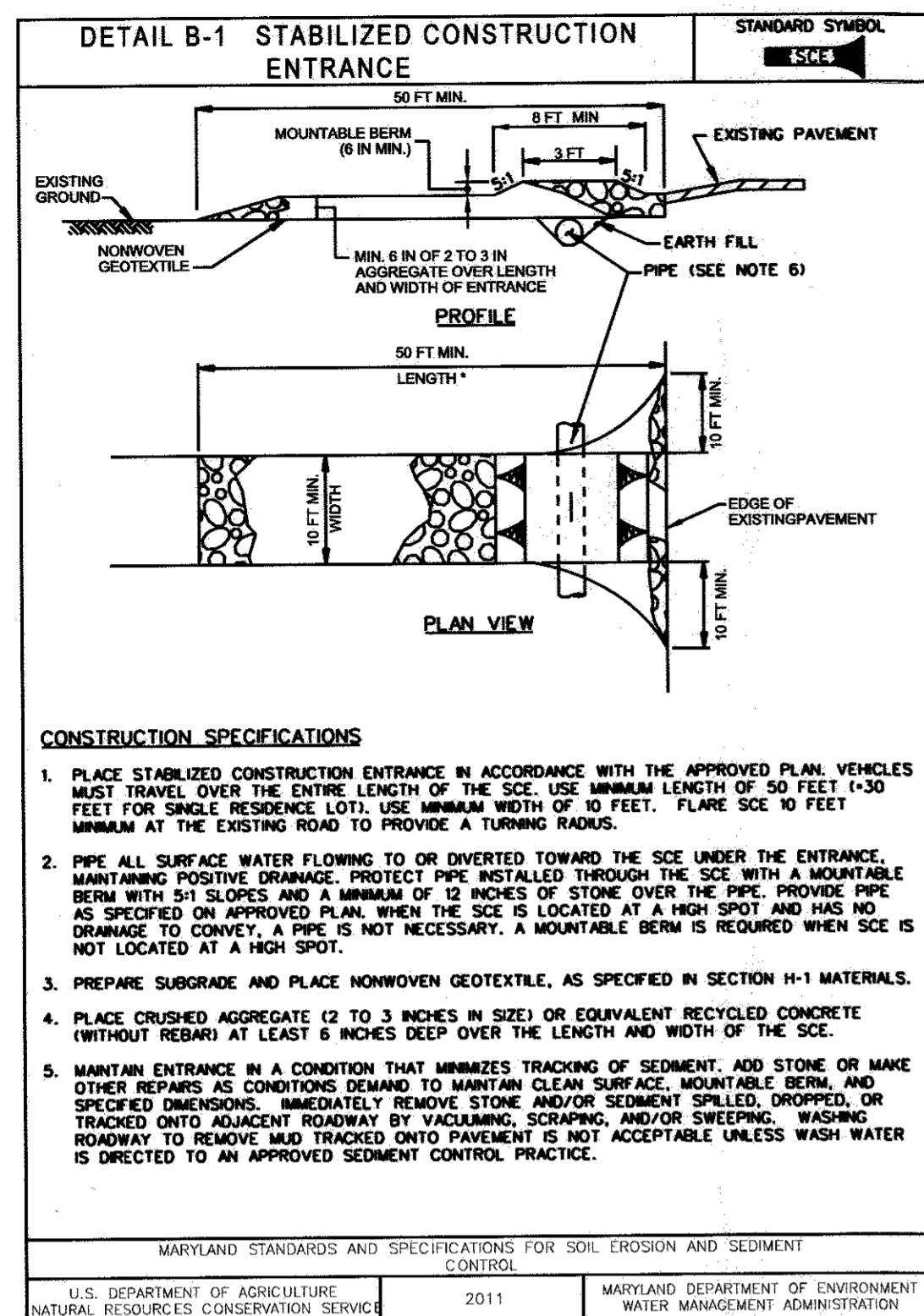
600' SCALE MAP NO. 36 BLOCK NO. 19

SHAKER DRIVE SEWER REHABILITATION

CAPITAL PROJECT No. S-6268
 CONTRACT No. 20-4870

ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 4 OF 5



TEMPORARY SEEDING SUMMARY

B-4.4 STANDARDS AND SPECIFICATIONS

FOR PERMANENT STABILIZATION

Definition: To stabilize disturbed soils with permanent vegetation.

Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies: Exposed soils where ground cover is needed for 6 months or more.

A. Seed Mixtures

1. General Use

- a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site conditions or purpose listed on Table B.3. (Select selected mixtures), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
- b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
- c. For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency.
- d. For areas receiving low maintenance, apply urea fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (130 square feet) every two weeks of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.

2. Turfgrass Mixtures

- a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
- b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.

1. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the area of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivar Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 25 percent of the total mixture by weight.

2. Kentucky Bluegrass/Perennial Ryegrass: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivar/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

3. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes: Certified Tall Fescue Cultivar 95 to 100 percent, Certified Kentucky Bluegrass Cultivar 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be included.

4. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes: Certified Kentucky Bluegrass Cultivar 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 15 to 3 pounds per 1000 square feet.

Notes:

Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland".

Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

c. Ideal Times of Seeding for Turf Grass Mixtures

Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)

Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 6b)

Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)

d. Till areas to receive seed by diskbar or other approved methods to a depth of 2 to 4 inches, level and add the area to prepare a proper seedbed. Remove stones and debris over 1/4 inches in diameter. The resulting seedbed must be in such condition that future mowing of grass will pose no difficulty.

e. If soil moisture is deficient, supply new seedlings with adequate water for plant growth (1 to 1 inch every 3 to 4 days depending on soil moisture) until they are firmly established. This is especially true when seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

HARDINESS ZONE (FROM FIGURE B.3):				FERTILIZER	
SEED MIXTURE (FROM TABLE B.1):				RATE	LIME RATE
NO.	SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	(10-20-20)	
	COOL-SEASON GRASS				
	ANNUAL RYE GRASS (LOLIUM PERENNE SSP. MULTIFLORUM)	40	MAR 1 TO MAY 15; AUG 1 TO SEP 30	0.5	
	BARLEY (HORDEUM)	96	MAR 15 TO MAY 31; AUG 1 TO SEP 30	1.0	
	OATS (AVENA SATIVA)	72	MAR 15 TO MAY 31; AUG 1 TO SEP 30	1.0	436 LB/AC
	WHEAT (TRITICUM AESTIVUM)	120	MAR 15 TO MAY 31; AUG 1 TO SEP 30	1.0	(10LB/1000 SF)
	CEREAL RYE (SECALE CEREALE)	112	MAR 15 TO MAY 31; AUG 1 TO OCT 30	1.0	(90LB/1000 SF)
	WARM-SEASON GRASS				
	FOXTAIL MILLET (SETARIA ITALICA)	30	JUN 1 TO JUL 31	0.5	
	PEARL MILLET (PENNISETUM GLAUCUM)	20	JUN 1 TO JUL 31	0.5	

NOTES:

1/ Seeding rates for the warm-season grasses are in pounds of Pure Live Seed (PLS). Actual planting rates shall be adjusted to reflect percent seed germination and purity, as tested. Adjustments are usually not needed for the cool-season grasses.

Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for wheat, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than 5% (by weight) of the overall permanent seeding mix. Cereal rye generally should not be used as a nurse crop, unless planting will occur in very late fall beyond the seeding dates for other temporary seedings. Cereal rye has allelopathic properties that inhibit the germination and growth of other plants. It must be used as a nurse crop, seed at 1/3 of the rate listed above.

Oats are the recommended nurse crop for warm-season grasses.

2/ For sandy soils, plant seeds at twice the depth listed above.

3/ The planting dates listed are averages for each zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

HOWARD SOIL CONSERVATION DISTRICT STANDARD 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).

2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL and revisions thereto.

3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 3 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 7 days as to all other disturbed or graded areas on the project site.

4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for 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 done when recommended seeding dates do not allow for proper germination and establishment of grasses.

5. 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.

6. Site Analysis:

Total Area of Site	0.88	Acres
Area Disturbed	0.88	Acres
Area to be roofed or paved	0	Acres
Area to be vegetatively stabilized	0.88	Acres
Total Cut	92	Cu. Yds.
Total Fill	82	Cu. Yds.
Offsite waste/borrow area location	N/A	

7. Any sediment control practice that is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.

8. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.

9. 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.

10. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized by the end of each workday, whichever is shorter.

11. Any changes or revisions to the sequence of construction must be reviewed and approved by the plan approval authority prior to proceeding with construction.

12. A project is to be sequenced so that grading activities begin on one grading unit (maximum average of 20 sq. per grading unit) at a time. Work may proceed on a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the enforcement authority. Unless otherwise specified and approved by the approval authority, no more than 30 acres cumulatively may be disturbed at a given time.

Rev. 4/2013

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT

2. REQUEST PRE-CONSTRUCTION MEETING ON-SITE WITH REPRESENTATIVE OF HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION.

3. LAYOUT ALIGNMENT AT SITE. (2 DAYS)

4. CLEAR AND GRUB AS NEEDED FOR THE INSTALLATION OF THE SEDIMENT CONTROL DEVICES AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR. INSTALL A STABILIZED CONSTRUCTION ENTRANCE AT THE DIRECTION OF INSPECTOR IF NECESSARY.

5. INSTALL TRAFFIC CONTROL SIGNS IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS.

6. EXCAVATE TRENCH TO THE GRADE SPECIFIED ON THE SEWER MAIN PROFILES. INSTALL SEWER MAIN AND STABILIZE OR BACKFILL TRENCH. SEE DETAIL ON THIS SHEET FOR TYPICAL TRENCH DETAIL. DURING THE COURSE OF CONSTRUCTION, TRENCHES FOR THE CONSTRUCTION OF THE NEW SEWER MAIN SHALL BE LIMITED TO THREE (3) PIPE LENGTHS OR THAT WHICH CAN BE BACKFILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER. CONTRACTOR SHALL PLACE EXCAVATED MATERIALS ON UPHILL SIDE OF TRENCH AND PLACE SILT FENCE ON DOWNHILL SIDE OF TRENCH. ALL VEGETATED AREAS DISTURBED DURING THE COURSE OF CONSTRUCTION SHALL BE TEMPORARILY STABILIZED IN ACCORDANCE WITH THE TEMPORARY SEEDING SUMMARY SHOWN ON THIS SHEET AT THE END OF EACH WORK DAY. THE ESTIMATED CONSTRUCTION TIME FOR THE SEWER MAIN IS 30 DAYS.

7. PERMANENTLY STABILIZE ALL DISTURBED VEGETATED AREAS IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS FOR PERMANENT STABILIZATION SHOWN ON THIS SHEET.

8. CLEAN UP CONSTRUCTION SITE. (1 DAY)

9. REMOVE SEDIMENT CONTROL DEVICES AFTER PERMISSION IS GRANTED BY THE HOWARD COUNTY CONSTRUCTION INSPECTOR.

10. STABILIZE OF AREAS THAT ARE DISTURBED BY REMOVAL OF SEDIMENT CONTROL DEVICES.

BEST MANAGEMENT PRACTICE (BMP) NOTES

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 WETLANDS BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.

5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO 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, LILIUM MULTIFLORUM, MILLET (SETARIA ITALICA), BARLEY (HORDEUM), OATS (AVENA SATIVA) AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY VEGETATION 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

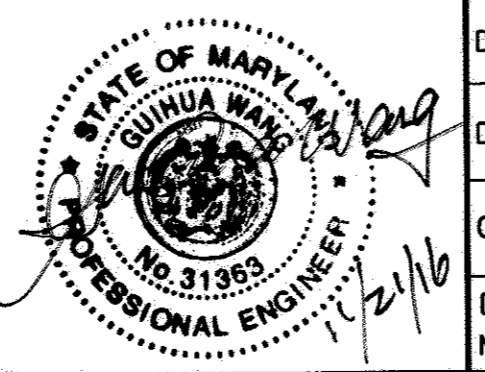
USE 1 WATER# IN STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD MARCH 1 THROUGH JUNE 15, INCLUSIVE, DURING ANY YEAR.

10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAYS.

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 TO IMPOUND WATER.

AS-BUILT
DATE 1-12-2017

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. 31363 EXPIRATION DATE: 1/16/2018



DES: KJ					
DRN: KJ					
CHK: GW					
DATE: NOV. 2016	BY	NO.	REVISION	DATE	

EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

60' SCALE MAP NO. 36 BLOCK NO. 19

SHAKER DRIVE SEWER REHABILITATION
CAPITAL PROJECT No. S-6268
CONTRACT No. 20-4870
ELECTION DISTRICT NO. 3 HOWARD COUNTY, MARYLAND
SCALE AS SHOWN
SHEET 5 OF 5

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John J. Whelan DIRECTOR OF PUBLIC WORKS DATE
Thomas P. Grotter CHIEF, BUREAU OF ENGINEERING DATE
Steve C. Con CHIEF, BUREAU OF UTILITIES DATE
Ilzele CHIEF, UTILITY DESIGN DIVISION DATE

ENGINEERS PLANNERS SCIENTISTS
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