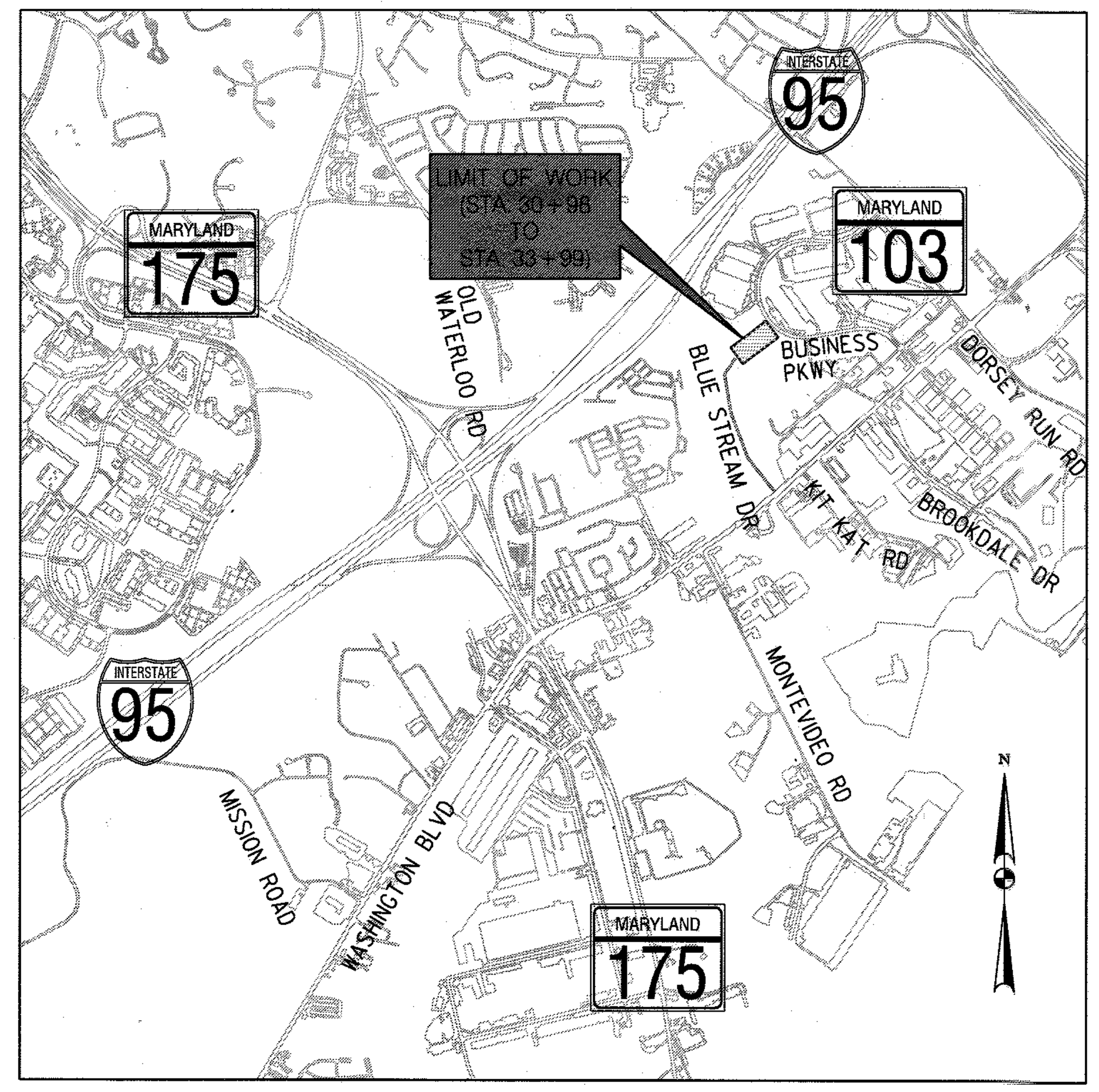
EMERGENCY ACCESS ROAD BETWEEN BLUE STREAM DRIVE AND BUSINESS PARKWAY

CAPITAL PROJECT No. J4244



VICINITY MAP

2000' 0' 2000' 4000'

SCALE: 1" = 2000'

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY AND THE MARYLAND STATE HIGHWAY ADMINISTRATIONS STANDARDS AND SPECIFICATIONS, WHERE APPLICABLE.
2. CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE WORKING DAYS PRIOR TO START OF WORK.
3. THE EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD RUN SURVEY PREPARED BY HOWARD COUNTY'S SURVEY DIVISION ON FEBRUARY 2016.
4. CLEARING SHALL BE LIMITED TO THE LOD (LIMIT OF DISTURBANCE) AS SHOWN ON THE SEDIMENT AND EROSION CONTROL PLAN. GRADING SHALL BE DONE IN SUCH A MANNER AS TO PROVIDE POSITIVE DRAINAGE. CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED AREAS UNLESS OTHERWISE NOTED IN THESE PLANS.
5. ANY DAMAGE CAUSED BY THE CONTRACTOR TO EXISING PUBLIC RIGHT OF WAY, PAVING CURB AND GUTTER, UTILITIES, ETC. SHALL BE CORRECTED AT THE CONTRACTORS EXPENSE.
6. CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1 (800) 257-7777 AT LEAST 48 HRS PRIOR TO ANY EXCAVATION WORK BEING DONE. THE CONTRACTOR SHALL CONTACT THE FOLLOWING UTILITIES AT LEAST 5 DAYS PRIOR TO BEGINNING ANY WORK:

BUREAU OF UTILITIES, HOWARD COUNTY:	(410) 313-4900
BGE GAS DIVISION:	(410) 291-5834
BGE ELECTRIC:	(410) 855-6958
VERIZON:	(410) 224-9980
COMCAST:	(410) 427-9600

7. PROJECT SITE SHALL BE CONTROLLED IN ACCORDANCE WITH THE HOWARD SOIL CONSERVATION DISTRICT STANDARD EROSION AND SEDIMENT CONTROL PLAN FOR MINOR EARTH DISTURBANCE.

SHEET INDEX

OWNER'S CERTIFICATION:

I hereby certify that any clearing, grading, construction, or development will be done pursuant to this approved erosion and sediment control plan, including inspecting and maintaining controls, and that the responsible personnel involved in the construction project will have a Certificate of Training at a Maryland Department of the Environment (MDE) approved training program for the control on erosion and sediment prior to beginning the project. I certify right-of-entry for periodic on-site evaluation by Howard County, the Howard Soil Conservation District and/or MDE.

Owner's Signature ____________ Date ____________

Printed Name & Title ____________

DESIGN CERTIFICATION

I hereby certify that this plan has been designed in accordance with current Maryland erosion and sediment control laws, regulations, and standards, that it represents a practical and workable plan based on my personal knowledge of the site, and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

[signature] Designer's Signature — 10-19-16 Date

Brandon N Love Printed Name — MD Registration No. 27045 (P.E.), R.L.S., or R.L.A. (circle one)

AS-BUILT FEB 2017

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[signature] DIRECTOR OF PUBLIC WORKS	10-21-16 DATE	[signature] CHIEF, BUREAU OF ENGINEERING	10-19-16 DATE
[signature] CHIEF, BUREAU OF HIGHWAYS	10/24/2016 DATE	[signature] CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION	10-19-16 DATE

HC

"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. 27045, EXPIRATION DATE: 01/24/2018"

STATE OF MARYLAND — BRANDON NOLAN LOVE — 27045 — PROFESSIONAL ENGINEER — 10-19-16

DES: BNL				
DRN: BNL				
CHK: SDS				
DATE: 10/2016	BY	NO.	REVISION	DATE

TITLE SHEET

600' SCALE MAP NO. ______ BLOCK NO. ______

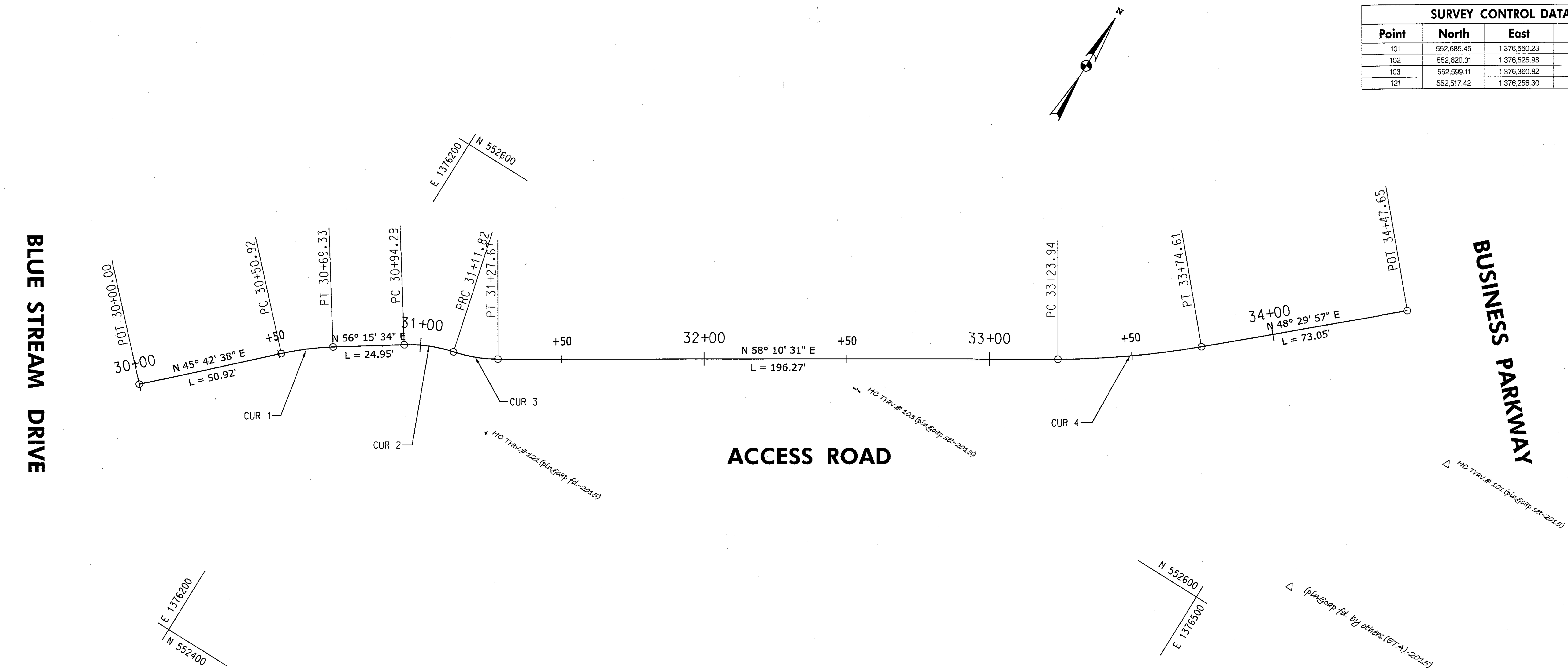
EMERGENCY ACCESS ROAD BETWEEN BLUE STREAM DRIVE AND BUSINESS PKWY

CAPITAL PROJECT J4244

ELECTION DISTRICT NO. 2
ELKRIDGE, MARYLAND

SCALE: AS SHOWN

SHEET 1 OF 9



SURVEY CONTROL DATA			
Point	North	East	Elevation
101	552,685.45	1,376,550.23	245.86
102	552,620.31	1,376,525.98	245.31
103	552,599.11	1,376,360.82	243.96
121	552,517.42	1,376,258.30	239.73

BASELINE COORDINATES		
Station	North	East
POT 30+00.00	552,467.48	1,376,146.11
PC 30+50.92	552,503.04	1,376,182.57
PT 30+69.33	552,514.61	1,376,196.85
PC 30+94.29	552,528.47	1,376,217.60
PRC 31+27.67	552,541.58	1,376,248.13
PT 33+23.94	552,645.08	1,376,414.90
PC 33+74.61	552,675.30	1,376,455.49
PT 34+47.65	552,723.70	1,376,510.20
POT 31+11.82	552,535.48	1,376,233.57

CURVE DATA						
Curve	Delta	Degree	Radius	Tangent	Length	External
CUR 1	10° 32' 55.44" (RT)	57° 17' 44.81"	100.00'	9.23	18.41	0.43
CUR 2	20° 5' 12.01" (RT)	114° 35' 29.61"	50.00'	8.86	17.53	0.78
CUR 3	18° 10' 14.56" (LT)	114° 35' 29.61"	50.00'	8.00	15.86	0.64
CUR 4	9° 40' 34.09" (LT)	19° 5' 54.94"	300.00'	25.39	50.66	1.07

20' 0 20' 40'
SCALE: 1" = 20'

AS-BUILT FEB 2017

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

for DIRECTOR OF PUBLIC WORKS — DATE 10.21.16

CHIEF, BUREAU OF ENGINEERING — DATE 10/19/16

CHIEF, BUREAU OF HIGHWAYS — DATE 10/24/2016

CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — DATE 10-19-16

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STATE OF MARYLAND — BRANDON NOLAN LOVE — 27045 — PROFESSIONAL ENGINEER — 10-19-16

DES: BNL
DRN: BNL
CHK: SDS
DATE: 10/2016

BY	NO.	REVISION	DATE

GEOMETRY SHEET

600' SCALE MAP NO. ______ BLOCK NO. ______

EMERGENCY ACCESS ROAD BETWEEN BLUE STREAM DRIVE AND BUSINESS PKWY

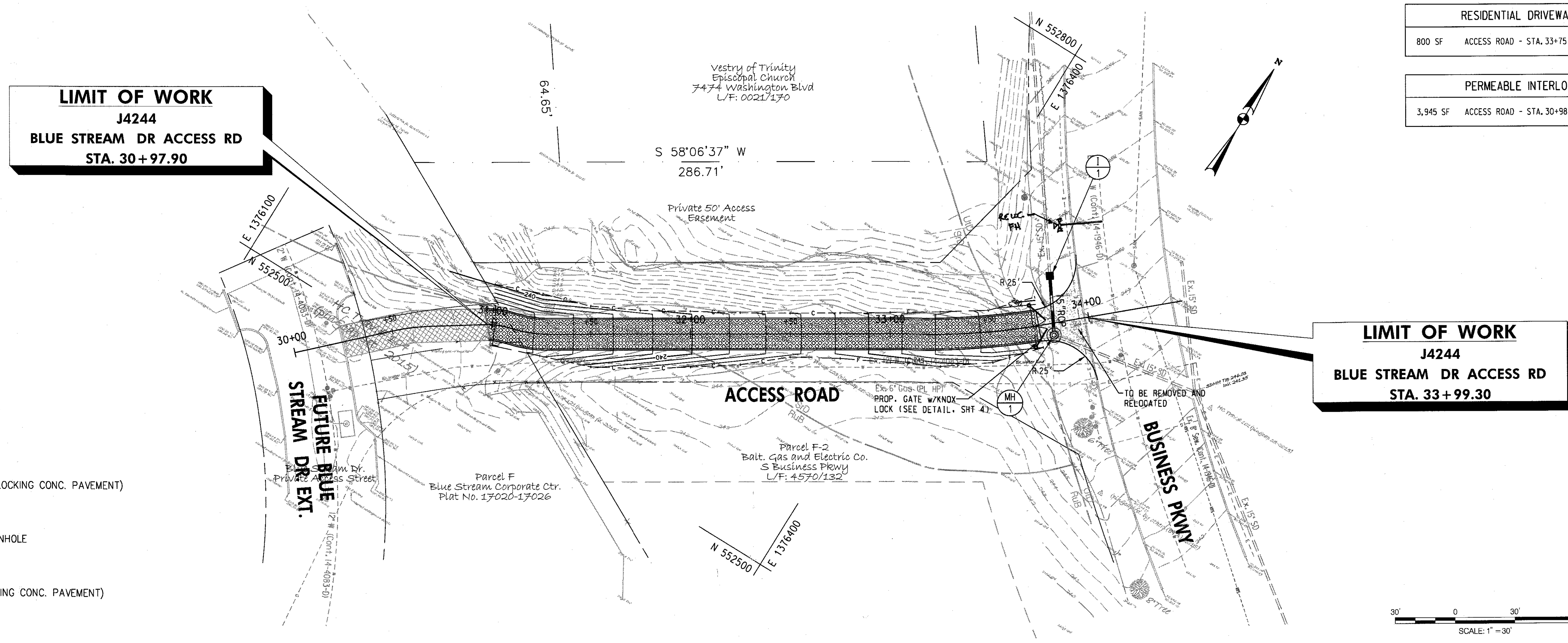
CAPITAL PROJECT J4244

ELECTION DISTRICT NO. 2
ELKRIDGE, MARYLAND

SCALE: AS SHOWN

RESIDENTIAL DRIVEWAY ENTRANCE, R-6.05	
800 SF	ACCESS ROAD - STA. 33+75 TO STA. 33+99

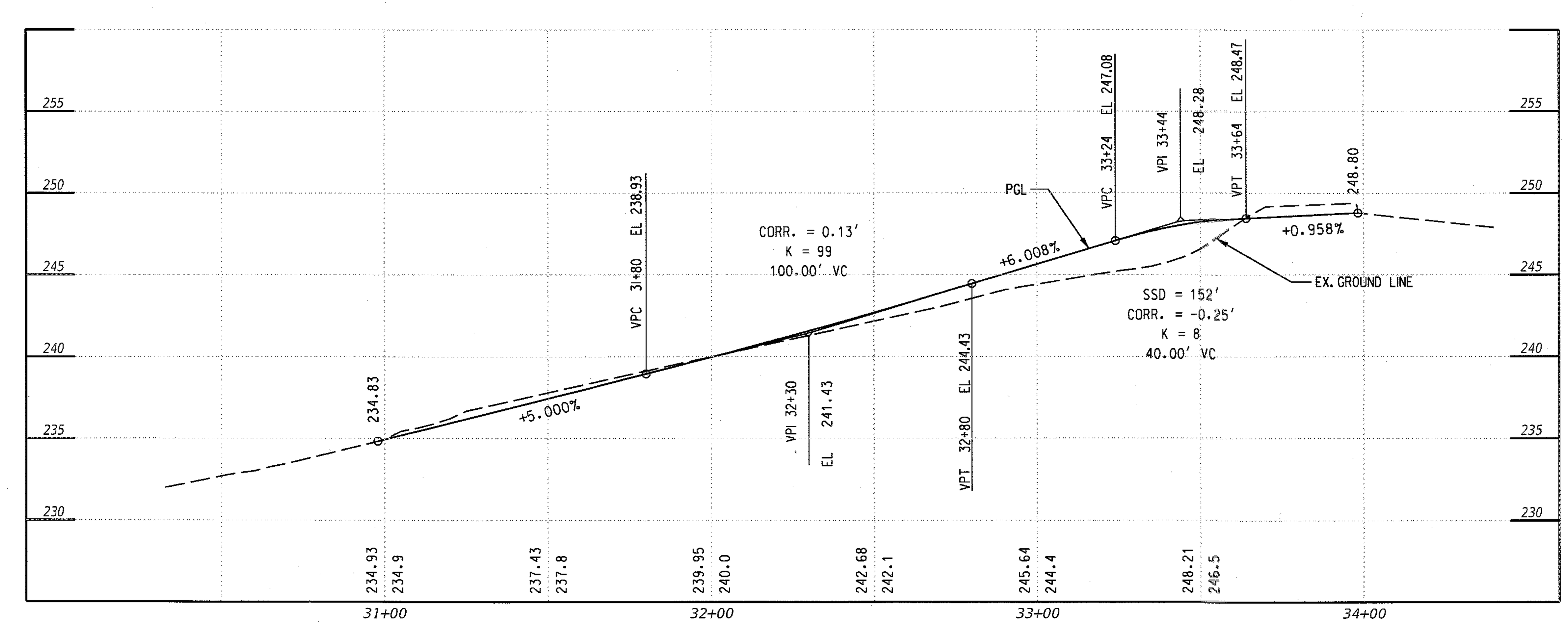
PERMEABLE INTERLOCKING CONC. PAVERS	
3,945 SF	ACCESS ROAD - STA. 30+98 TO STA. 33+75



LEGEND

- EX. PROPERTY LINE
- EX. 1' CONTOURS
- EX. 5' CONTOURS
- EX. STORM DRAIN
- EX. WOODSLINE
- EX. WATER LINE
- EX. PICP (PERMEABLE INTERLOCKING CONC. PAVEMENT)
- PROPOSED STORMDRAIN
- PROPOSED STORM DRAIN MANHOLE
- LIMITS OF CUT
- LIMITS OF FILL
- PICP (PERMEABLE INTERLOCKING CONC. PAVEMENT)
- PROPOSED CONCRETE

30' 0 30' 60'
SCALE: 1" = 30'



ACCESS ROAD PROFILE

SCALE: 1" = 5'

30' 0 30' 60'
SCALE: 1" = 30'

AS-BUILT FEB 2017

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS 10-21-16 DATE
CHIEF, BUREAU OF ENGINEERING 10-19-16 DATE
CHIEF, BUREAU OF HIGHWAYS 10/24/2016 DATE
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION 10-19-16 DATE

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STATE OF MARYLAND — BRANDON NOLAN LOVE — 27045 — PROFESSIONAL ENGINEER — 10-19-16

DES: BNL
DRN: BNL
CHK: SDS
DATE: 10/2016

BY	NO.	REVISION	DATE

Roadway Plan and Profile

600' SCALE MAP NO. ______ BLOCK NO. ______

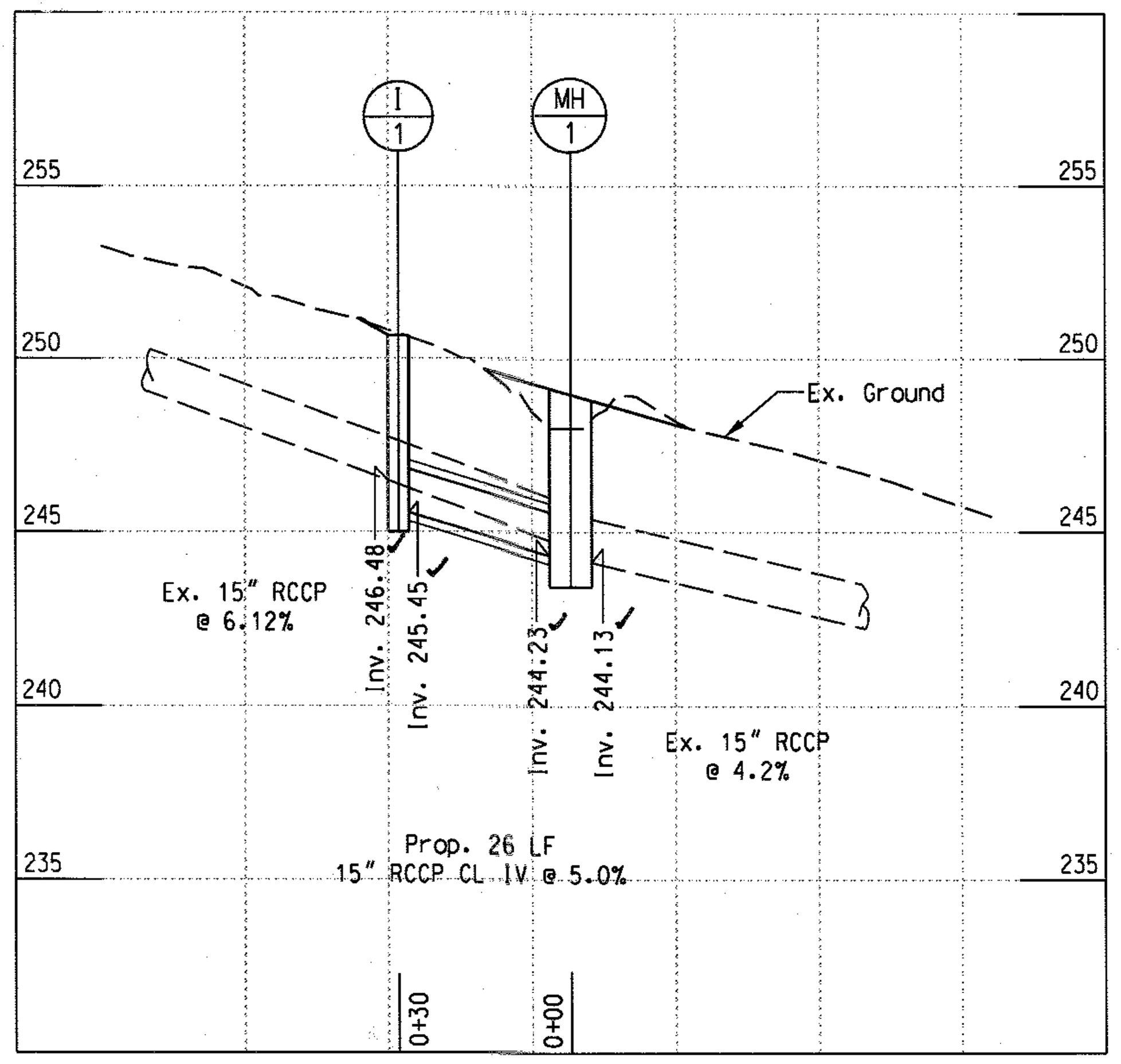
EMERGENCY ACCESS ROAD BETWEEN
BLUE STREAM DRIVE AND BUSINESS PKWY

CAPITAL PROJECT J4244

ELECTION DISTRICT NO. 2
ELKRIDGE, MARYLAND

SCALE: AS SHOWN

T:\Engineering\Transportation\BLove\Capital Projects\Roadway\J 4244 Blue Stream Dr Emerg Access\CAD\plans\ps01bsd.dgn
Tuesday, October 18, 2016 AT 12:18 PM
blove

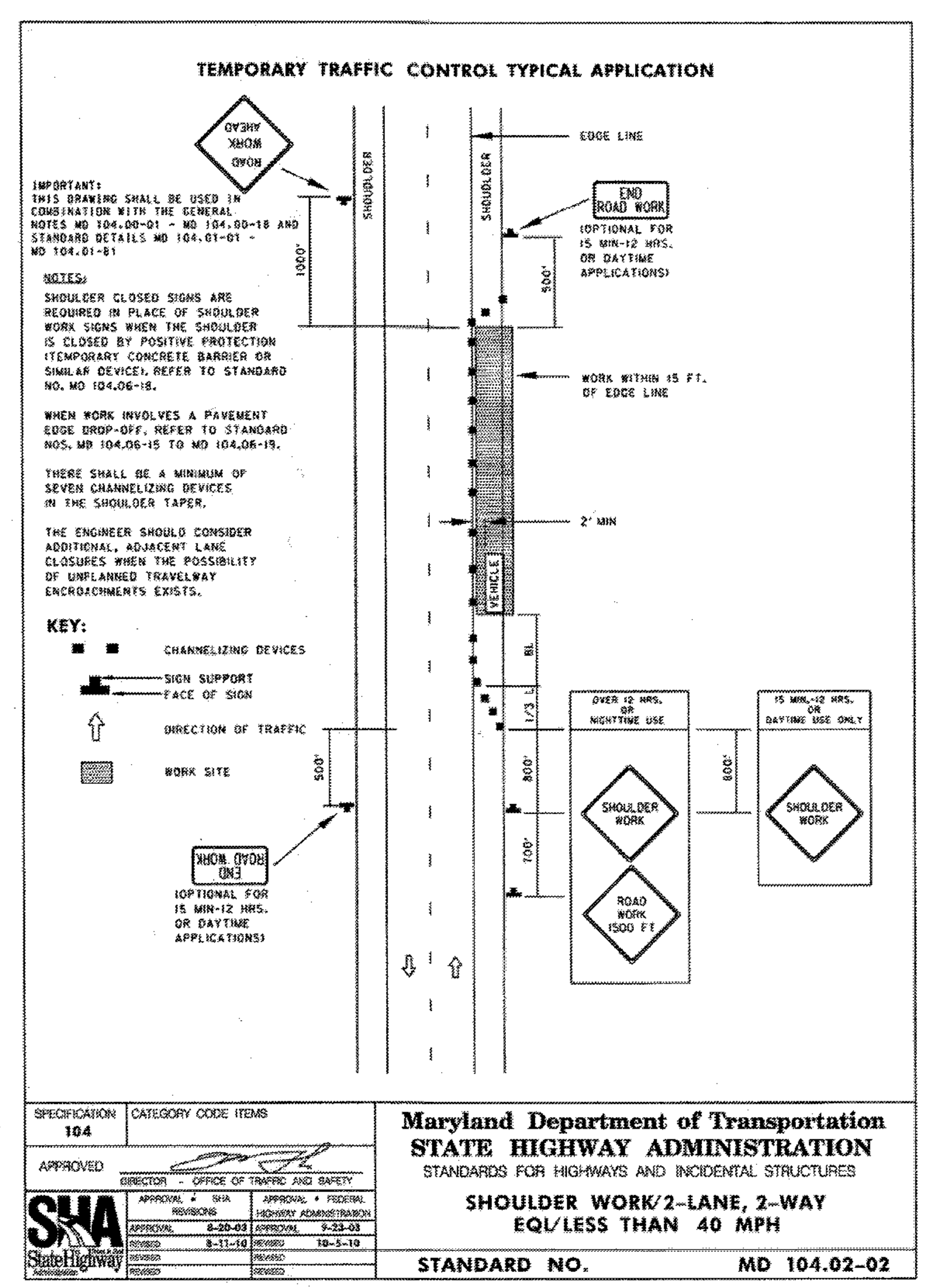


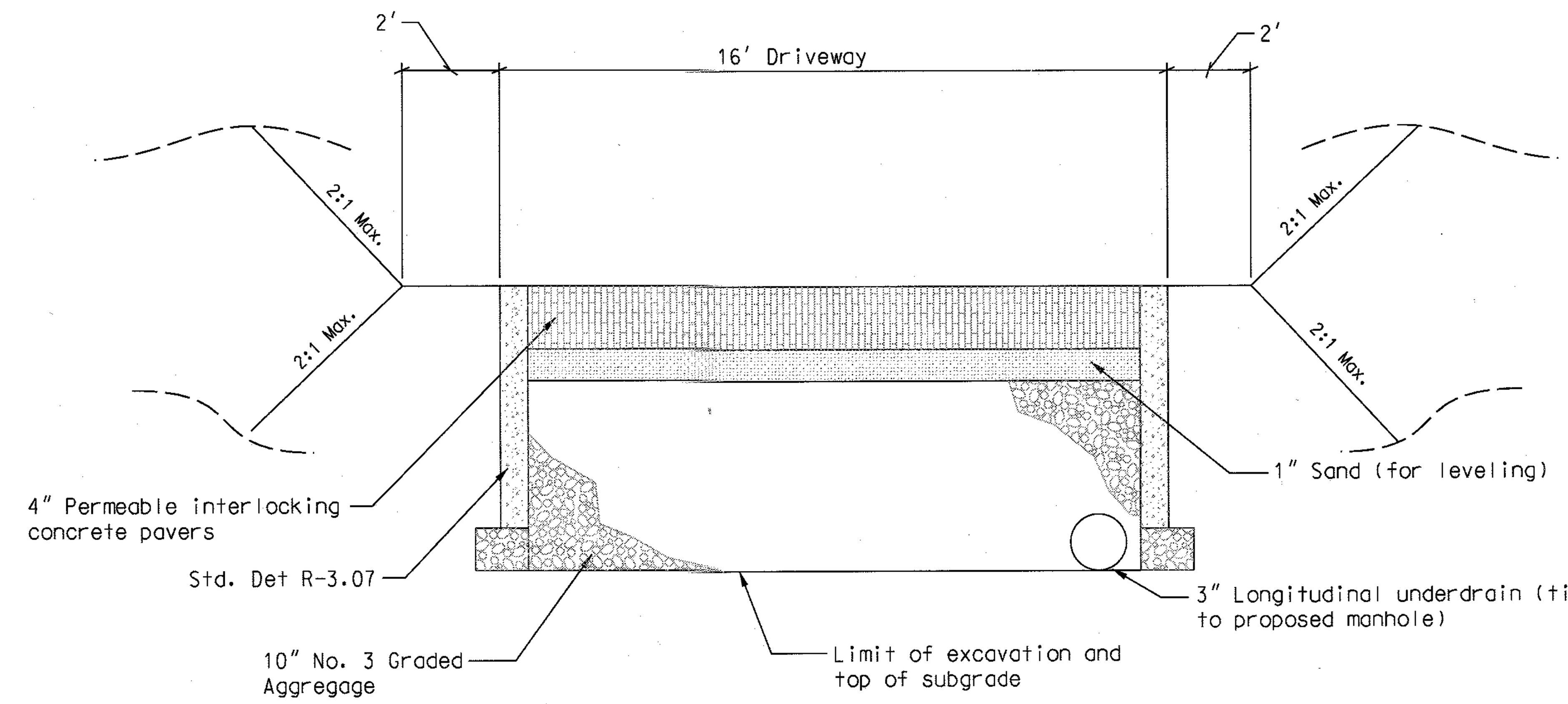
STORM DRAIN PROFILE (MH-1 TO I-1)

SCALE: HORIZ: 1"=30'
VERT.: 1"=5'

STRUCTURE SCHEDULE						
Struct.	Std. Det.	Station	Offset	North	East	Top Elevation
I 1'	D-4.14	33+84.11	-21.86	552,697.97	1,376,448.12	250.68
MH 1'	G-5.12	33+81.37	6.10	552,675.21	1,376,464.59	248.98

Note:
1. Work point location for inlet is the midpoint of exterior inlet wall at intersection to new RCCP.
2. Work point location for manhole is the center of the structure.



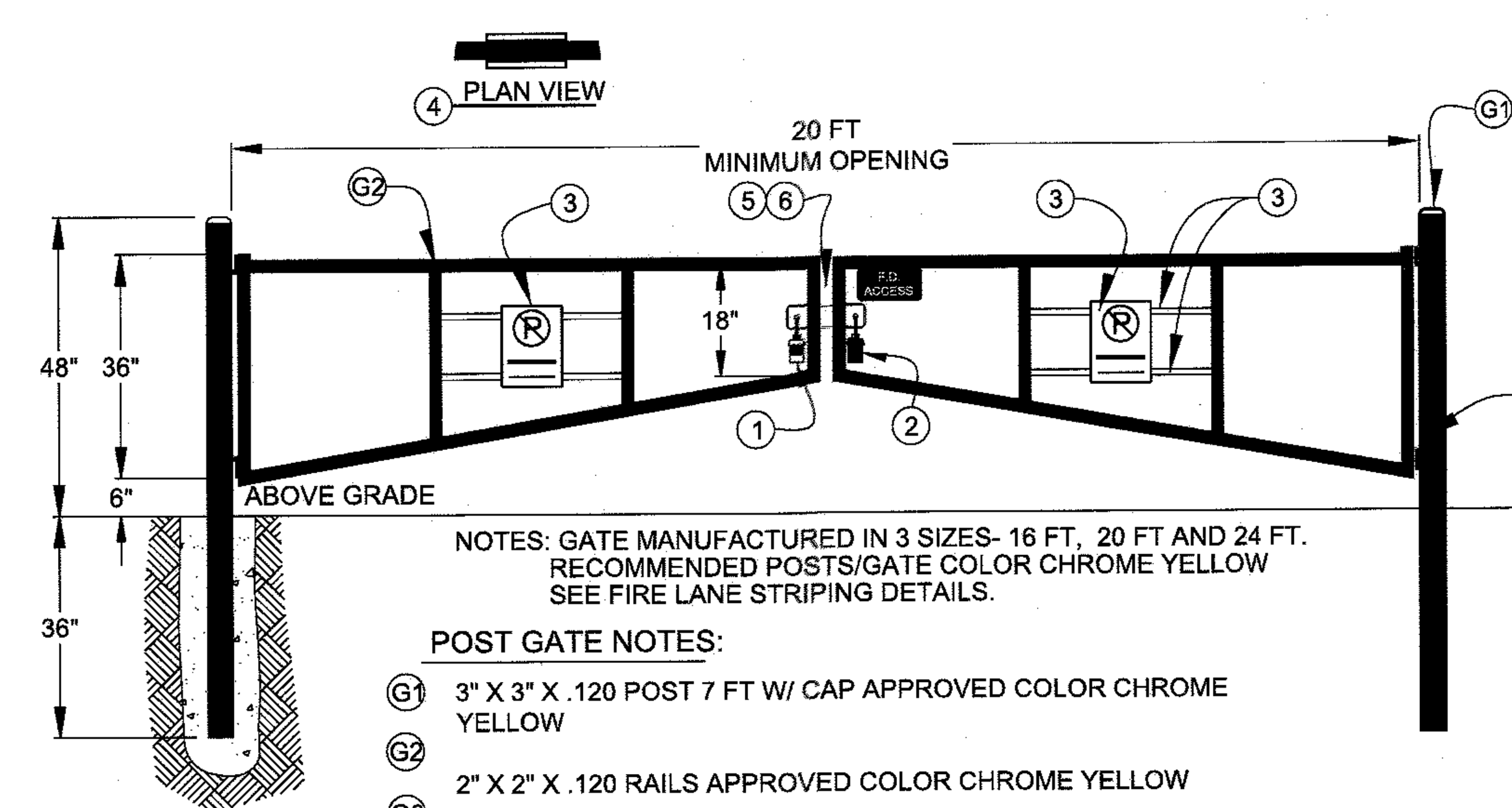


ACCESS ROAD TYPICAL SECTION

SCALE: NTS

GENERAL NOTES:

1. PROPERTY OWNER/MANAGEMENT PADLOCK
2. FIRE DEPT. PADLOCK SHALL BE ACCESSIBLE FROM BOTH SIDES OF GATE. ORDER FORMS FOR KNOX PADLOCKS ARE AVAILABLE THROUGH EITHER THE ACCESS OR GATE INSPECTORS IN FIRE PREVENTION
3. APPROVED FIRE LANE SIGNS (R7-6) WITH REFLECTIVE BACKGROUND, PLACED BACK TO BACK AND FASTENED ON ALL 4 CORNERS. 57/64" X 1 59/64" MOUNTING STRAPS
4. THE MINIMUM OVERALL WIDTH OF THE GATE OPENING SHALL BE 20 FT
5. WELD MODIFIED L-BRACKET TO GATE FRAME. ROUND ALL EDGES. (TYPICAL 2 PLACES)
6. LOCKING BAR LENGTH IS DETERMINED BY THE FRAME WIDTH AND THE GAP WIDTH BETWEEN THE 2 GATES. REMOVE ALL SHARP EDGES / ROUND ALL CORNERS



NOTES: GATE MANUFACTURED IN 3 SIZES- 16 FT, 20 FT AND 24 FT. RECOMMENDED POSTS/GATE COLOR CHROME YELLOW SEE FIRE LANE STRIPING DETAILS.

POST GATE NOTES:

- G1 3" X 3" X .120 POST 7 FT W/ CAP APPROVED COLOR CHROME YELLOW
- G2 2" X 2" X .120 RAILS APPROVED COLOR CHROME YELLOW
- G3 5" HEAVY DUTY BARREL HINGES (TYPICAL 4 PLACES)

ACCESS DRIVEWAY GATE WITH KNOX LOCK

SCALE: NTS

AS-BUILT FEB 2017

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — 10-21-16 (DATE)	CHIEF, BUREAU OF ENGINEERING — 10-19-16 (DATE)
CHIEF, BUREAU OF HIGHWAYS — 10/24/2016 (DATE)	CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — 10-19-16 (DATE)

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STATE OF MARYLAND — BRANDON NOLAN LOVE — 27045 — PROFESSIONAL ENGINEER — 10-19-16

DES: BNL
DRN: BNL
CHK: SDS
DATE: 10/2016

BY	NO.	REVISION	DATE

600' SCALE MAP NO. ______ BLOCK NO. ______

Storm Drain Profile and Details

EMERGENCY ACCESS ROAD BETWEEN BLUE STREAM DRIVE AND BUSINESS PKWY

CAPITAL PROJECT J4244

ELECTION DISTRICT NO. 2
ELKRIDGE, MARYLAND

SCALE: AS SHOWN

SITE ANALYSIS INFORMATION

1. General Site Data
   a. Proposed use: New access road
   b. Area of steep slopes 15% and greater: 0.15 ac.
   c. Total site area: 0.49 ac.
   d. Total limit of disturbance: 0.28 ac.
   e. Total impervious area: 0.10 ac.

2. There are no regulated streams, wetlands, 100 year floodplains or associated buffers, as described in the Howard County Code 16.116(c) within the site.

3. There are no specimen trees present on the site.

4. During construction, this plan shall meet the 2011 Maryland Standards & Specifications for Soil Erosion and Sediment Control or applicable Howard SCD requirements.

STANDARD SEDIMENT CONTROL NOTE

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hour notice to CID must be given at the following stages:

   a. Prior to the start of earth disturbance,
   b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,
   c. Prior to the start of another phase of construction or opening of another grading unit,
   d. Prior to the removal or modification of sediment control practices.

   Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan.

App. B.4 Specifications for ESD practices

B.4.B Specifications for Permeable Pavements

1. Permeable Interlocking Concrete Pavements (PICP)

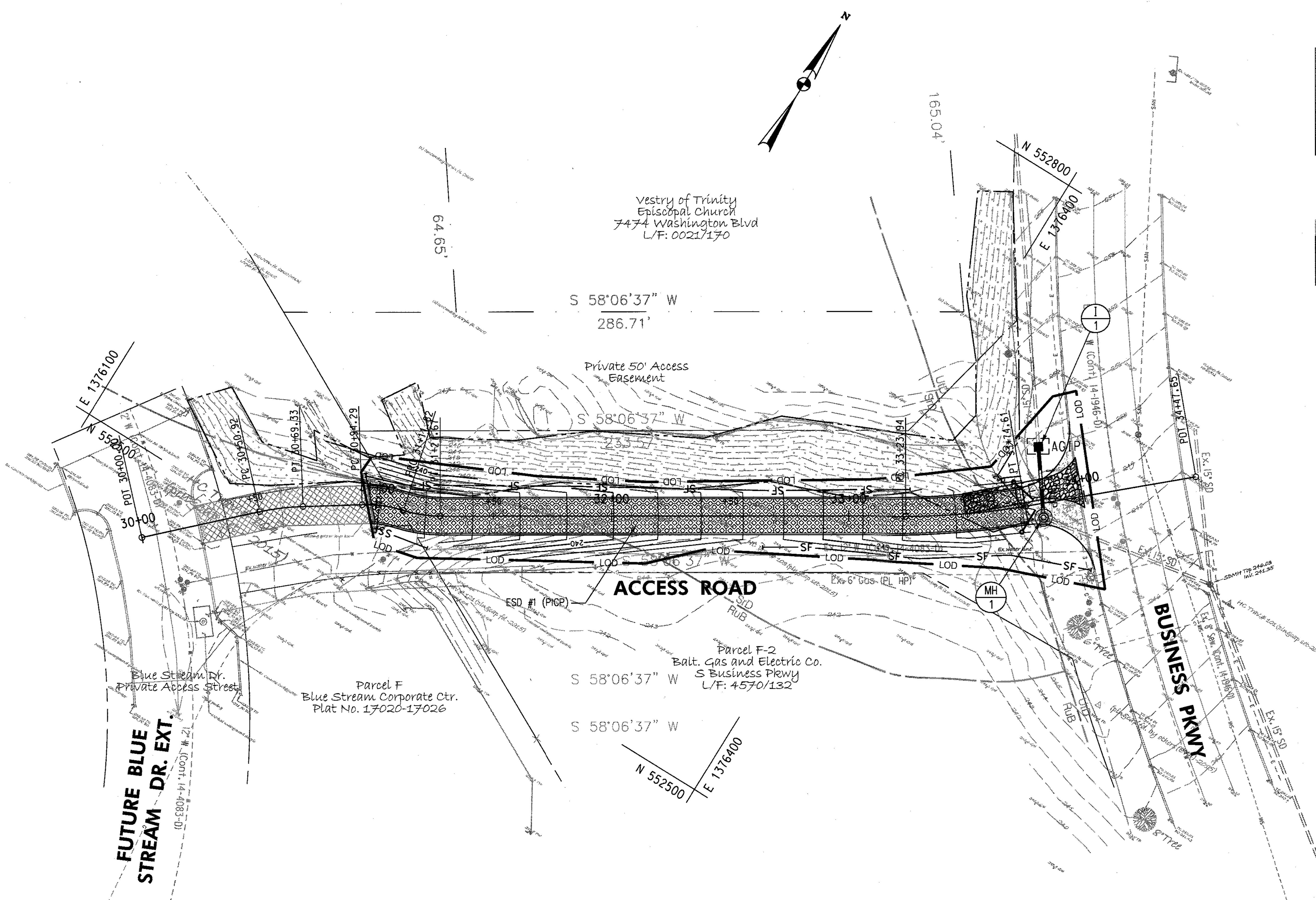
Paver Blocks – Blocks should be either 3" in. or 4 in. thick, and meet ASTM C 936 or CSA A231.2 requirements. Applications should have 20% or more (40% preferred) of the surface area open. Installation should follow manufacturer's instructions, except that infill and base course materials and dimensions specified in this Appendix shall be followed.

Infill Materials and Leveling Course –– Openings shall be filled with ASTM C-33 graded sand or sandy loam. PICP blocks shall be placed on a one-inch thick leveling course of ASTM C-33 sand.

Base Course – The base course shall be AASHTO No. 3 or 4 course aggregate with an assumed open pore space of 30% (n = 0.30).

ESD Practice Summary			
		Area or Volume	Type
ESD #1		3,800 sq. ft.	Permeable Pavement (PICP)
ESDv Req'd		400 cu. ft.	
ESDv Provided		715 cu. ft.	

Map Unit Symbol	Map Unit Name	Hydrologic Soil Group	K Vale (Kw)
UtD	Urban Land-Udorthents, 0 to 15% slopes	D	0.28
SrD	Sassafras and Croom Soils, 10 to 15% slopes	B	0.37
RuB	Russett and Beltsville Soils, 2 to 5% slopes	C	0.24



LEGEND

EX. PROPERTY LINE
EX. 1' CONTOURS
EX. 5' CONTOURS
EX. STORM DRAIN
EX. WOODSLINE
EX. WATER LINE
STEEP SLOPES
PROPOSED CONTOUR
PROPOSED LIMIT OF DISTURBANCE
PROPOSED STORMDRAIN
PROPOSED STORM DRAIN MANHOLE
DIVERSION FENCE
SILT FENCE
SUPER SILT FENCE
AT GRADE INLET PROTECTION
PICP (PERMEABLE INTERLOCKING CONC. PAVEMENT)
STABILIZED CONSTRUCTION ENTRANCE

OWNER / DEVELOPER
HOWARD COUNTY GOVERNMENT
9250 BENDIX ROAD
COLUMBIA, MARYLAND 21045
PH. (410) 313-6159

SCALE: 1" = 30'

AS-BUILT FEB 2017

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS — 10.24.16 — DATE
CHIEF, BUREAU OF ENGINEERING — 10-19-16 — DATE
CHIEF, BUREAU OF HIGHWAYS — 10/24/2016 — DATE
CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — 10-19-16 — DATE

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STATE OF MARYLAND — BRANDON NOLAN LOVE — 27045 — PROFESSIONAL ENGINEER — 10-19-16

DES: BNL
DRN: BNL
CHK: SDS
DATE: 10/2016

BY	NO.	REVISION	DATE

Erosion and Sediment Control Plan

600' SCALE MAP NO. BLOCK NO.

EMERGENCY ACCESS ROAD BETWEEN BLUE STREAM DRIVE AND BUSINESS PKWY
CAPITAL PROJECT J4244
ELECTION DISTRICT NO. 2
ELKRIDGE, MARYLAND

SCALE: AS SHOWN

SHEET 5 OF 9

B-4 STANDARDS AND SPECIFICATIONS
FOR VEGETATIVE STABILIZATION

Definition
Using vegetation as cover to protect exposed soil from erosion.

Purpose
To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies
On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

Effects on Water Quality and Quantity
Stabilization practices 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 runoff to downstream areas. 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. Over time, vegetation 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 within the root zone. Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment
Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

1. Adequate vegetative stabilization requires 95 percent groundcover.
2. If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
3. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
4. Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

B-4-1 STANDARDS AND SPECIFICATIONS
FOR INCREMENTAL STABILIZATION

Definition
Establishment of vegetative cover on cut and fill slopes.

Purpose
To provide timely vegetative cover on cut and fill slopes as work progresses.

Conditions Where Practice Applies
Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

Criteria
A. Incremental Stabilization – Cut Slopes
1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
2. Construction sequence example (Refer to Figure B.1):
   a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
   b. Perform Phase 1 excavation, prepare seedbed, and stabilize.
   c. Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
   d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

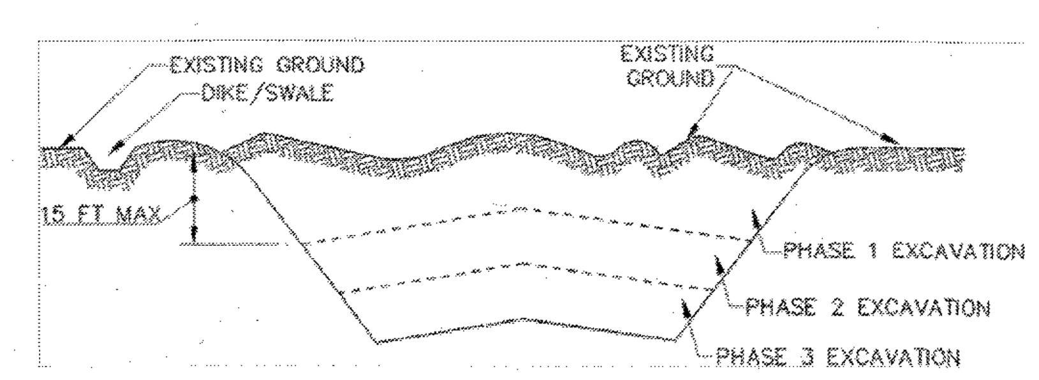


Figure B.1: Incremental Stabilization - Cut

B. Incremental Stabilization – Fill Slopes
1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.
3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
4. Construction sequence example (Refer to Figure B.2):
   a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
   b. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
   c. Place Phase 1 fill, prepare seedbed, and stabilize.
   d. Place Phase 2 fill, prepare seedbed, and stabilize.
   e. Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

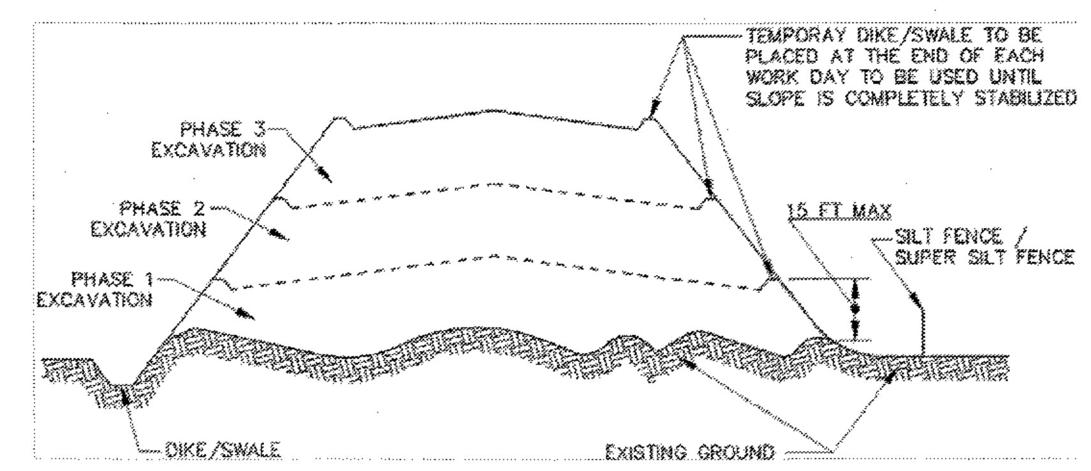


Figure B.2: Incremental Stabilization - Fill

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

Definition
The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose
To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies
Where vegetative stabilization is to be established.

Criteria
A. Soil Preparation
1. Temporary Stabilization
   a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
   b. Apply fertilizer and lime as prescribed on the plans.
   c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.

2. Permanent Stabilization
   a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
      i. Soil pH between 6.0 and 7.0.
      ii. Soluble salts less than 500 parts per million (ppm).
      iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
      iv. Soil contains 1.5 percent minimum organic matter by weight.
      v. Soil contains sufficient pore space to permit adequate root penetration.
   b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
   c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
   d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
   e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling
1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.
4. Areas having slopes steeper than 2:1 require special consideration and design.
5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
   a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.
   b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
   c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
6. Topsoil Application
   a. Erosion and sediment control practices must be maintained when applying topsoil.
   b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
   c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

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

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

Definition
The application of seed and mulch to establish vegetative cover.

Purpose
To protect disturbed soils from erosion during and at the end of construction.

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

Criteria
A. Seeding
1. Specifications
   a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
   b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
   c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
   d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
2. Application
   a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
      i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
      ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.
   b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      i. 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.
      ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
   c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
      i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P2O5 (phosphorous), 200 pounds per acre; K2O (potassium), 200 pounds per acre.
      ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
      iii. Mix seed and fertilizer on site and seed immediately and without interruption.
      iv. When hydroseeding do not incorporate seed into the soil.

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

2. Application
   a. Apply mulch to all seeded areas immediately after seeding.
   b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
   c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
3. Anchoring
   a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
      i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 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 follow the contour.
      ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
      iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. Use of asphalt binders is strictly prohibited.
      iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

AS-BUILT FEB 2017

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND			
DIRECTOR OF PUBLIC WORKS	10-31-16	CHIEF, BUREAU OF ENGINEERING	10-19-16
CHIEF, BUREAU OF HIGHWAYS	10/24/2016	CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION	10-19-16

"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. 27045, EXPIRATION DATE: 01/24/2018"

STATE OF MARYLAND – BRANDON NOLAN LOVE – 27045 – PROFESSIONAL ENGINEER – 10-19-16

DES: BNL				
DRN: BNL				
CHK: SDS				
DATE: 10/2016	BY	NO.	REVISION	DATE

Erosion and Sediment Control Notes

600' SCALE MAP NO. ________ BLOCK NO. ________

EMERGENCY ACCESS ROAD BETWEEN
BLUE STREAM DRIVE AND BUSINESS PKWY

CAPITAL PROJECT J4244

ELECTION DISTRICT NO. 2
ELKRIDGE, MARYLAND

SCALE: AS SHOWN

B-4-4 STANDARDS AND SPECIFICATIONS
FOR TEMPORARY STABILIZATION

Definition
To stabilize disturbed soils with vegetation for up to 6 months.

Purpose
To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies
Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria
1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), 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 plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4 3.A.1.b and maintain until the next seeding season.

Temporary Seeding Summary

Hardiness Zone (from Figure B.3): ________ **Seed Mixture** (from Table B.1): ________					**Fertilizer Rate (10-20-20)**	**Lime Rate**
No.	**Species**	**Application Rate (lb/ac)**	**Seeding Dates**	**Seeding Depths**		
					436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000sf)

B-4-5 STANDARDS AND SPECIFICATIONS
FOR PERMANENT STABILIZATION

Definition
To stabilize disturbed soils with permanent vegetation.

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

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

Criteria
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 condition or purpose found on Table B.2. Enter selected mixture(s), 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 area over 5 acres, use and show the rates recommended by the soil testing agency.
d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time 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 mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars 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 35 percent of the total mixture by weight.
ii. Kentucky Bluegrass/Perennial Rye: 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 Cultivars/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.
iii. 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 Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
iv. 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 Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1½ 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 Zone: 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 disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1½ inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

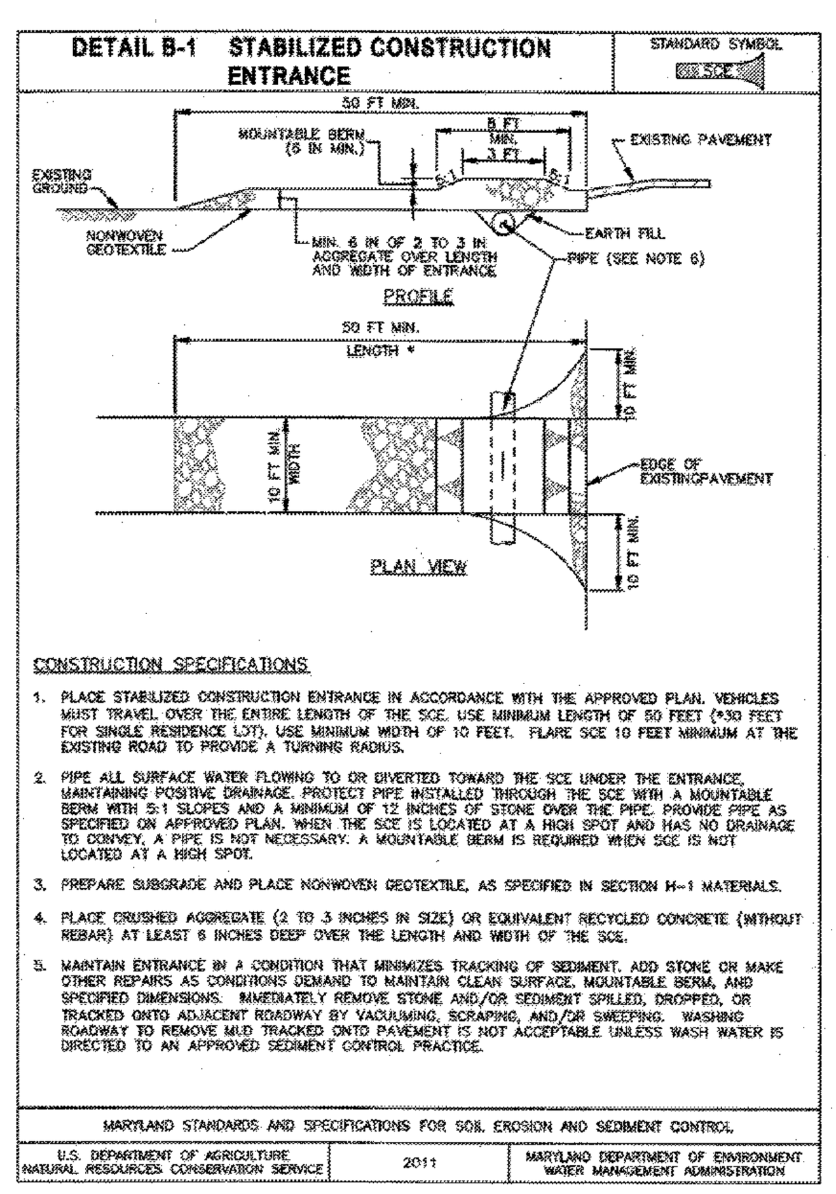
Permanent Seeding Summary

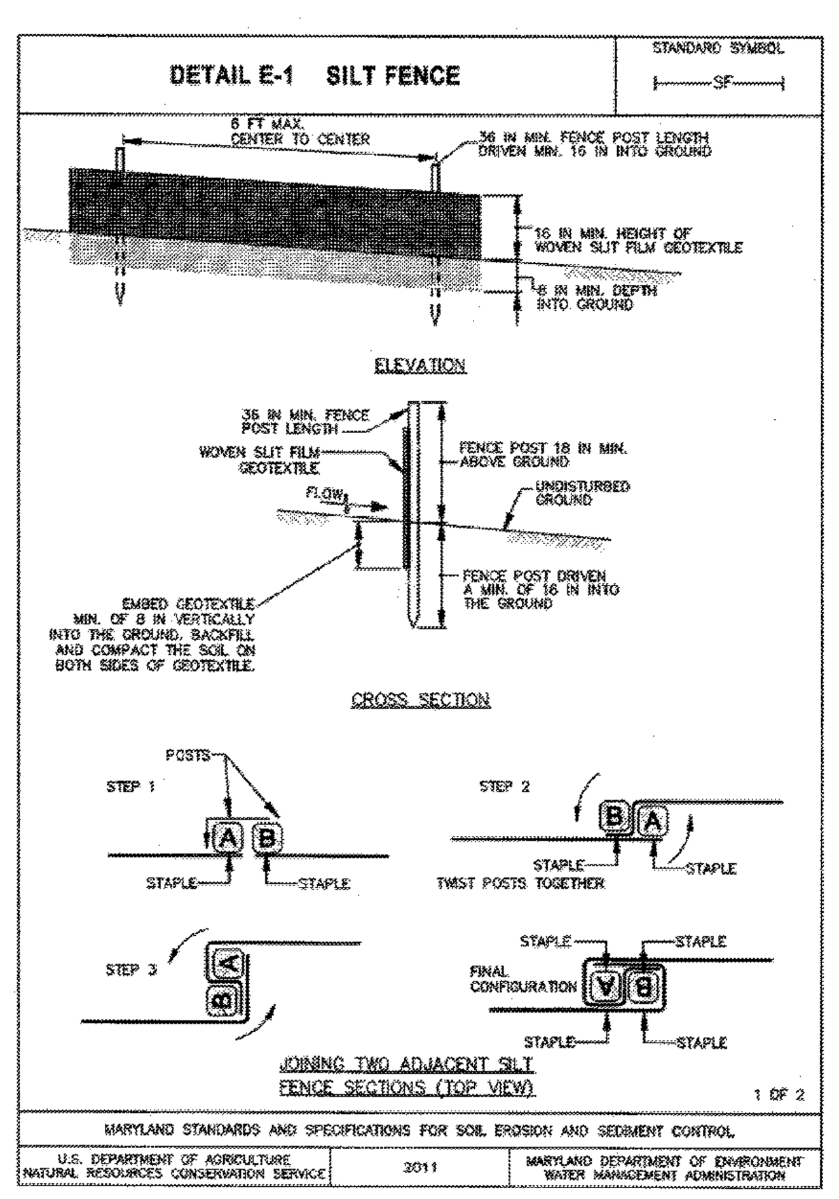
Hardiness Zone (from Figure B.3): ________ **Seed Mixture** (from Table B.3): ________					**Fertilizer Rate (10-20-20)**			**Lime Rate**
No.	**Species**	**Application Rate (lb/ac)**	**Seeding Dates**	**Seeding Depths**	**N**	**P_2O_5**	**K_2O**	
				¼ - ½ in	45 pounds per acre (1.0 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons/ac (90 lb/1000sf)
				¼ - ½ in				
				¼ - ½ in				

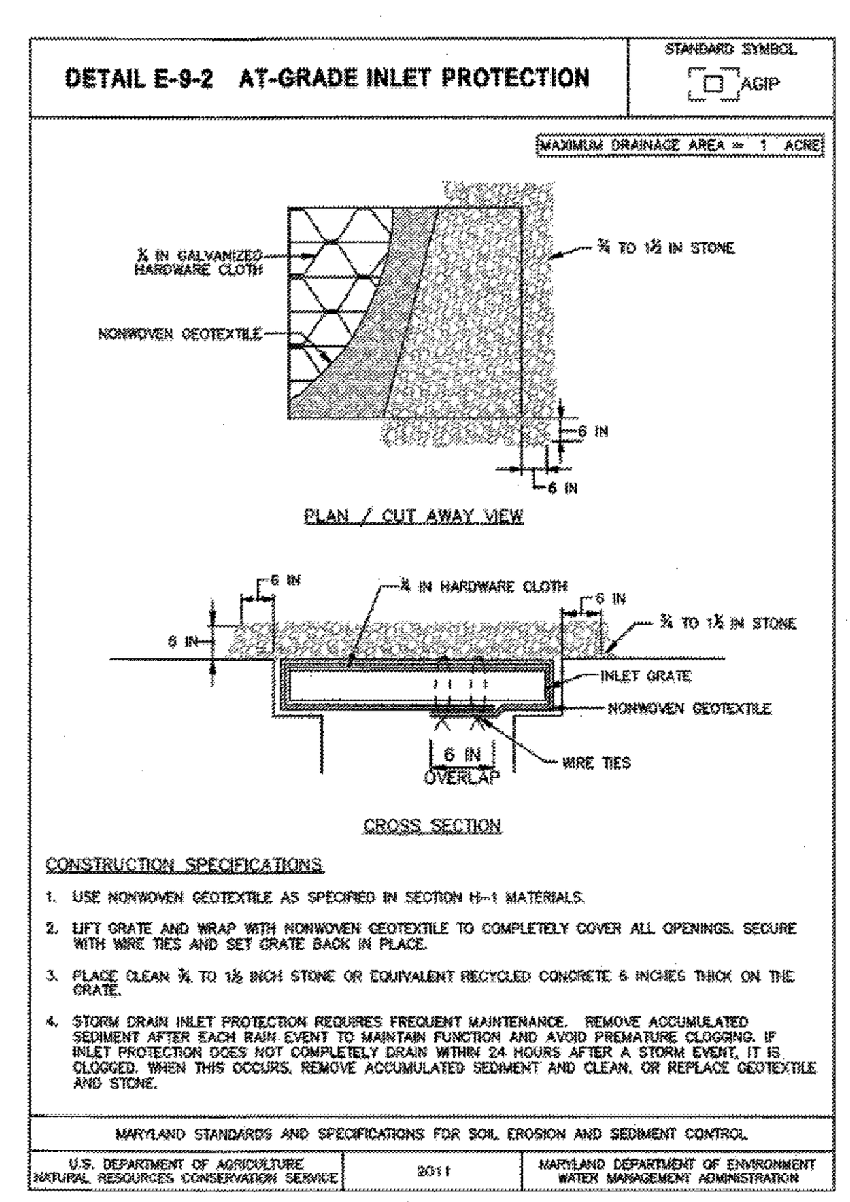
B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).
1. General Specifications
a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
b. Sod must be machine cut at a uniform soil thickness of ? inch, plus or minus ¼ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.
2. Sod Installation
a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours
3. Sod Maintenance
a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.
b. After the first week, sod watering is required as necessary to maintain adequate moisture content.
c. Do not mow until the sod is firmly rooted. No more than ? of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

HOWARD SOIL CONSERVATION DISTRICT (HSCD)STANDARD SEDIMENT CONTROL NOTES

1. A pre-construction meeting must occur with the Howard County Department of Public Works, Construction Inspection Division (CID), 410-313-1855 after the future LOD and protected areas are marked clearly in the field. A minimum of 48 hour notice to CID must be given at the following stages:
a. Prior to the start of earth disturbance,
b. Upon completion of the installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading,
c. Prior to the start of another phase of construction or opening of another grading unit,
d. Prior to the removal or modification of sediment control practices.
Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made. Other related state and federal permits shall be referenced, to ensure coordination and to avoid conflicts with this plan.
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and revisions thereto.
3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization is required within three (3) calendar days as to the surface of all perimeter controls, dikes, swales, ditches, perimeter slopes, and all slopes steeper than 3 horizontal to 1 vertical (3:1); and seven (7) calendar days as to all other disturbed areas on the project site except for those areas under active grading.
4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for topsoil (Sec. B-4-2), permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec. B-4-3). Temporary stabilization with mulch alone can only be applied between the fall and spring seeding dates if the ground is frozen. Incremental stabilization (Sec. B-4-1) specifications shall be enforced in areas with >15??of cut and/or fill. Stockpiles (Sec. B-4-8) in excess of 20 ft. must be benched with stable outlet. All concentrated flow, steep slope, and highly erodible areas shall receive soil stabilization matting (Sec. B-4-6).
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 CID.
6. Site Analysis:
Total Area of Site: 0.28 Acres
Area Disturbed: 0.28_ Acres
Area to be roofed or paved: 0.02 Acres
Area to be vegetatively stabilized: 0.10 Acres
Total Cut: 280 Cu. Yds.
Total Fill: 116 Cu. Yds.
Offsite waste/borrow area location: TBD
7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
8. Additional sediment control must be provided, if deemed necessary by the CID. The site and all controls shall be inspected by the contractor weekly; and the next day after each rain event. A written report by the contractor, made available upon request, is part of every inspection and should include:
?Inspection date
?Inspection type (routine, pre-storm event, during rain event)
?Name and title of inspector
?Weather information (current conditions as well as time and amount of last recorded precipitation)
?Brief description of project??s status (e.g., percent complete) and/or current activities
?Evidence of sediment discharges
?Identification of plan deficiencies
?Identification of sediment controls that require maintenance
?Identification of missing or improperly installed sediment controls
?Compliance status regarding the sequence of construction and stabilization requirements
?Photographs
?Monitoring/sampling
?Maintenance and/or corrective action performed
?Other inspection items as required by the General Permit for Stormwater Associated with Construction Activities (NPDES, MDE).
9. Trenches for the construction of utilities is limited to three pipe lengths or that which can and shall be back-filled and stabilized by the end of each workday, whichever is shorter.
10. Any major changes or revisions to the plan or sequence of construction must be reviewed and approved by the HSCD prior to proceeding with construction. Minor revisions may allowed by the CID per the list of HSCD-approved field changes.
11. Disturbance shall not occur outside the L.O.D. A project is to be sequenced so that grading activities begin on one grading unit (maximum acreage of 20 ac. per grading unit) at a time. Work may proceed to a subsequent grading unit when at least 50 percent of the disturbed area in the preceding grading unit has been stabilized and approved by the CID. Unless otherwise specified and approved by the CID, no more than 30 acres cumulatively may be disturbed at a given time.
12. Wash water from any equipment, vehicles, wheels, pavement, and other sources must be treated in a sediment basin or other approved washout structure.
13. Topsoil shall be stockpiled and preserved on-site for redistribution onto final grade.
14. All Silt Fence and Super Silt Fence shall be placed on-the-contour, and be imbricated at 25? minimum intervals, with lower ends curled uphill by 2? in elevation.
15. Stream channels must not be disturbed during the following restricted time periods (inclusive):
?Use I and IP March 1 – June 15
?Use III and IIIP October 1 – April 30
?Use IV March 1 – May 31
16. A copy of this plan, the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, and associated permits shall be on-site and available when the site is active.







AS-BUILT FEB 2017

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	"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. 27045. EXPIRATION DATE: 01/24/2018"	DES: BNL DRN: BNL CHK: SDS DATE: 10/2016	BY / NO. / REVISION / DATE
DIRECTOR OF PUBLIC WORKS — 10-21-16 DATE CHIEF, BUREAU OF ENGINEERING — 10-19-16 DATE CHIEF, BUREAU OF HIGHWAYS — 10/24/2016 DATE CHIEF, TRANSPORTATION AND SPECIAL PROJECTS DIVISION — 10-19-16 DATE			

Erosion and Sediment Control Notes and Details

600' SCALE MAP NO. ______ BLOCK NO. ______

EMERGENCY ACCESS ROAD BETWEEN BLUE STREAM DRIVE AND BUSINESS PKWY
CAPITAL PROJECT J4244
ELECTION DISTRICT NO. 2
ELKRIDGE, MARYLAND

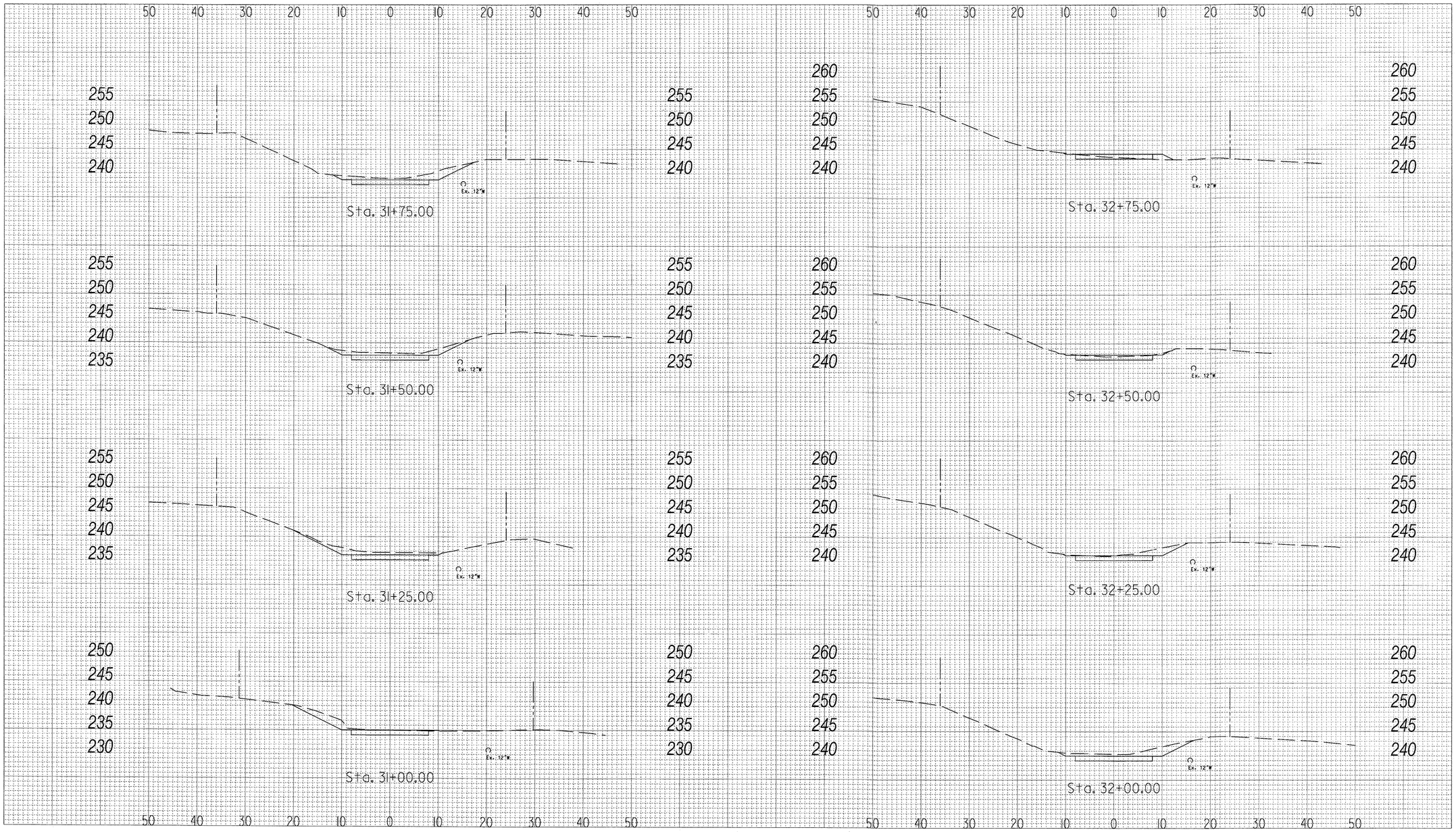
SCALE: AS SHOWN
SHEET 7 OF 9

DRILL HOLES

DRILL HOLES

DRILL HOLES

BORDER REV. DATE: December 13, 2004

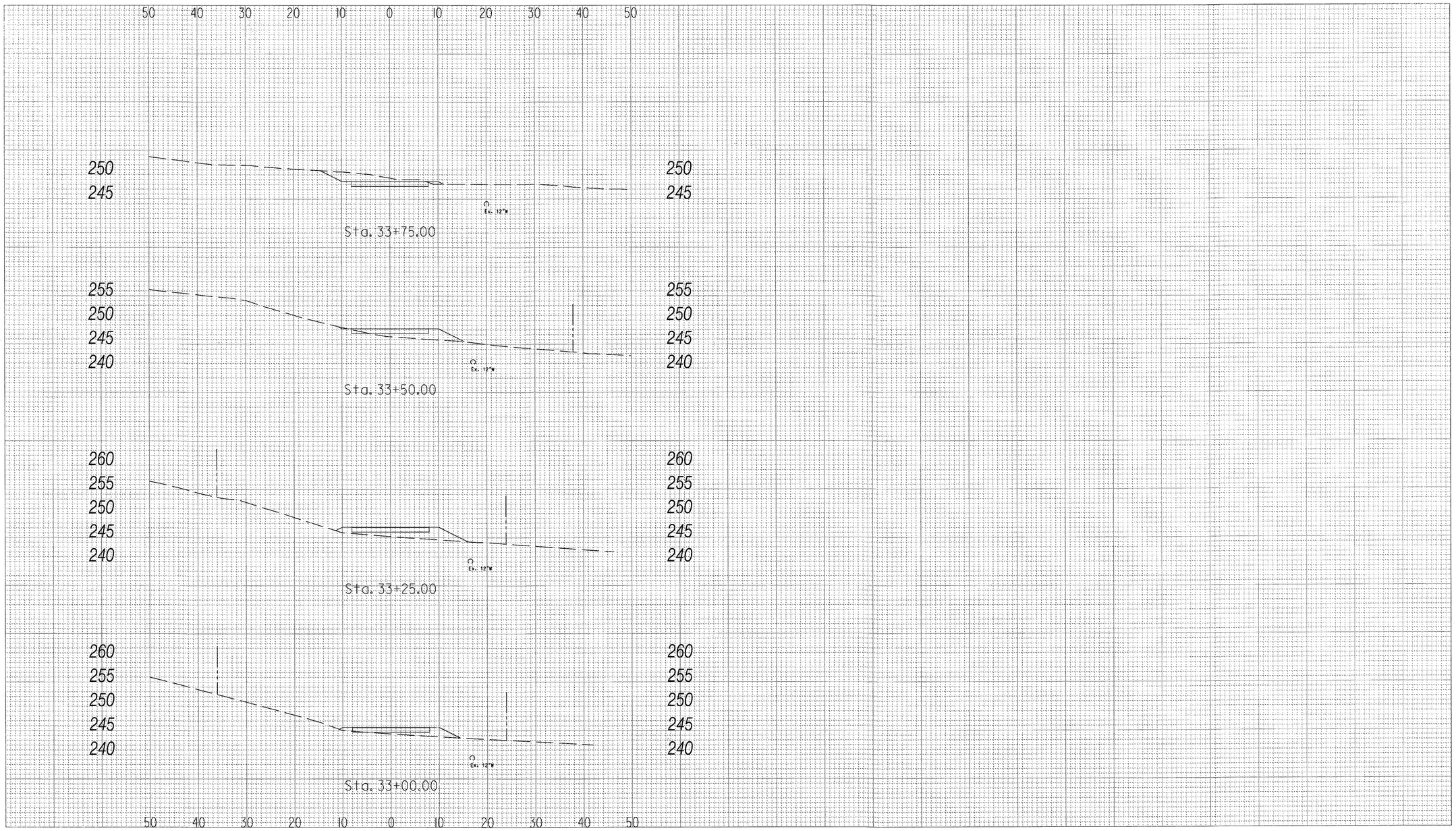


AS-BUILT FEB 2017

ROADWAY CROSS SECTION SHEET	ROAD <ROAD> STATION ____ TO STATION ____
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS TRANSPORTATION AND SPECIAL PROJECTS <PROJECT DESCRIPTION LINE 1> <PROJECT DESCRIPTION LINE 2>	DESIGNED BY <DESIGNED BY> CAP. PROJ. <CONTRACT NO> DRAWN BY <DRAWN BY> HORIZONTAL SCALE <HOR. SCALE> CHECKED BY <CHECKED BY> VERTICAL SCALE <VERT. SCALE>
	DRAWING NO. CS- OF <#> SHEET NO. OF<##>

PLOTTED: $DATETIME$
FILE: $FILE$

Printed by: $USERNAME$



AS-BUILT FEB 2017

ROADWAY CROSS SECTION SHEET

HOWARD COUNTY
DEPARTMENT OF
PUBLIC WORKS
TRANSPORTATION AND
SPECIAL PROJECTS
<PROJECT DESCRIPTION LINE 1>
<PROJECT DESCRIPTION LINE 2>

ROAD <ROAD> STATION _____ TO STATION _____

DESIGNED BY <DESIGNED BY> CAP. PROJ. <CONTRACT NO>
DRAWN BY <DRAWN BY> HORIZONTAL SCALE <HOR. SCALE>
CHECKED BY <CHECKED BY> VERTICAL SCALE <VERT. SCALE>

DRAWING NO. CS- OF <#> SHEET NO. OF<##>

PLOTTED: Tuesday, October 18, 2016 AT 03:33 PM
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