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DORSEY HALL VILLAGE STORMWATER RETROFITS

HOWARD COUNTY, MD

FINAL DESIGN

CAPITAL PROJECT # D-1160

NOTE:
THE FIELD WORK FOR THIS STREAM AS-BUILT WAS
PERFORMED ON MAY 7 - 15, 2015.

HOWARD COUNTY
GEORGE HOWARD BUILDING
3430 COURHOUSE DRIVE
ELLCOTT CITY, MD 21043
(P) 410 313 2022
(F) 410 313 3390

GEORGE WILLIAM STEPHENS, JR. and ASSOCIATES, INC.
ENGINEERS- PLANNERS- SURVEYORS- TRANSPORTATION
4692 MILLENNIUM DRIVE, SUITE 100
BELCAMP, MARYLAND 21017
Phone: (410) 297-2340 gwestphens.com Fax: (410) 297-2345

DATE	ISSUES / REVISIONS
09/18/2014	60% DESIGN
12/04/2014	FINAL DESIGN
06/09/2015	AS-BUILT DRAWING
06/15/2016	TIE TO EXISTING CONTOURS (SHEETS 7&8)

STATE OF MARYLAND
NICK LONGO
AS-BUILT CERTIFICATION
I HEREBY CERTIFY BY MY SEAL THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.

APPROVED: Nick Longo 12/16/16 DATE
DEPARTMENT OF PUBLIC WORKS
Mark S. Richmond 1/20/15 DATE
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

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DORSEY HALL VILLAGE STORMWATER RETROFITS

EP-15-017

COVER SHEET
AS-BUILT

PROJECT NO.: 13005.14 SCALE:

SEAL: BY: K7/NL CHECK: DWG. NO.:

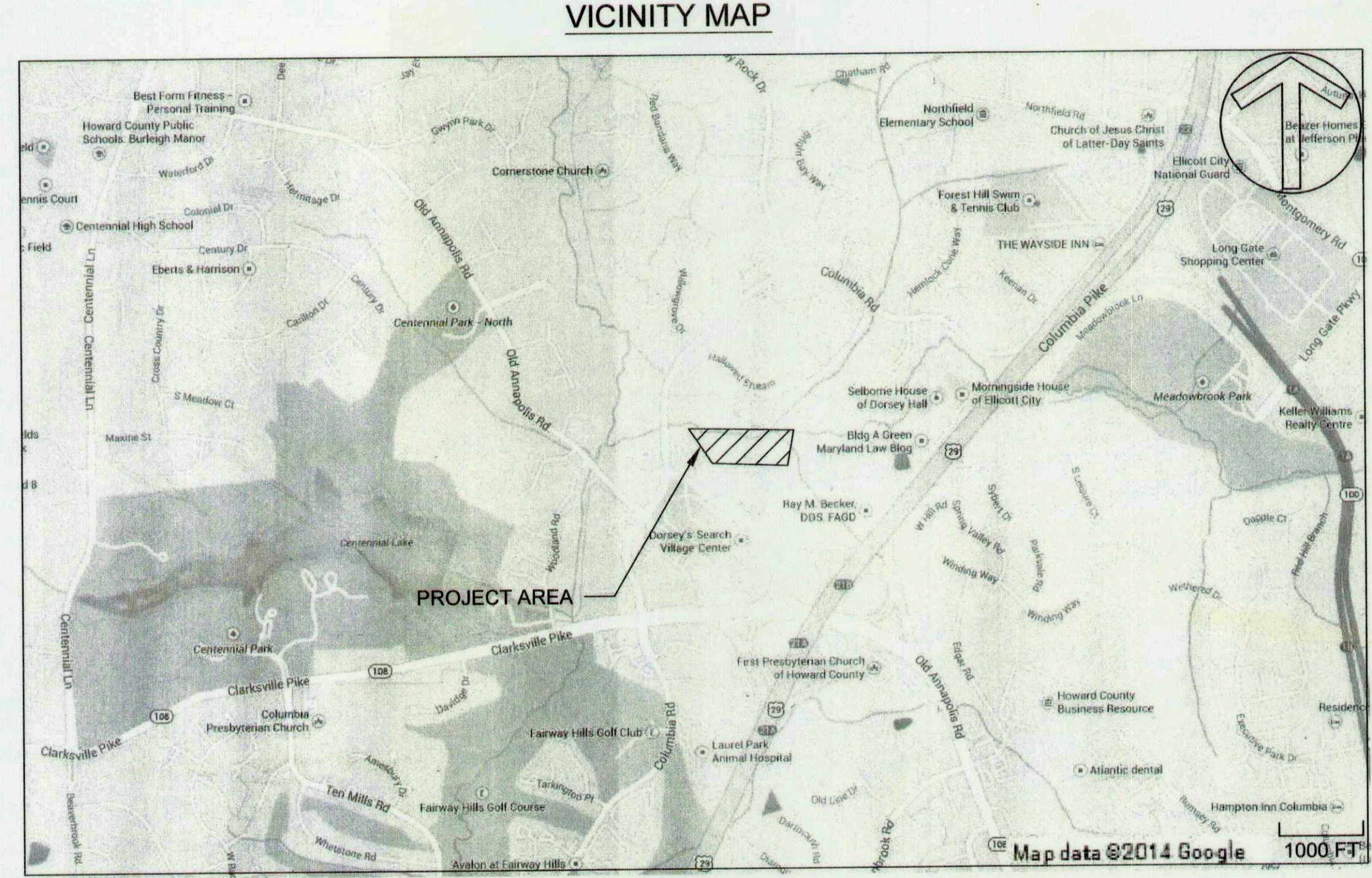
STATE OF MARYLAND
NICKOLAS LINDOW
Professional Engineer
No. 40826
01/20/15

1 of 22

- GENERAL NOTES:**
- A WAIVER PETITION (WP-15-080) FROM SECTION 16.1202 WAS APPROVED ON 01/21/2015 THAT ALLOWS THE USE OF THE AREA INSIDE THE LIMIT OF DISTURBANCE AS THE NET TRACT AREA IN THE FOREST CONSERVATION CALCULATIONS SUBJECT TO THE FOLLOWING CONDITIONS:
 - AUTHORIZATION FROM THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND THE U.S. ARMY CORPS OF ENGINEERING FOR ACTIVITIES IN THE REGULATED AREAS
 - DISTURBANCE IS LIMITED TO THE LIMIT OF DISTURBANCE AS DEPICTED ON THE WAIVER EXHIBIT
 - ALL AREAS MUST BE REPLANTED AND STABILIZED.
 - THE DEPARTMENT OF PLANNING AND ZONING HAVE DETERMINED THAT THE DISTURBANCE WITHIN THE 100-YEAR FLOODPLAIN AND REQUIRED BUFFERS FOR THE PROPOSED OUTFALL RETROFIT PROJECT ARE CONSIDERED ESSENTIAL OR NECESSARY IN ACCORDANCE WITH SECTIONS 16.115(A)(1)(II) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
 - RED HILL BRANCH IS A USE IV WATERWAY; IN-STREAM WORK MAY NOT BE CONDUCTED FROM MARCH 1 THROUGH MAY 31 INCLUSIVE, OF ANY YEAR.
 - ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY.
 - SURVEY OF THE SITE WAS PERFORMED BY AB CONSULTANTS, SPRING 2014.
 - THE COORDINATES SHOWN HEREON ARE BASED ON HOWARD COUNTY GEODETIC CONTROL, WHICH IS BASED UPON THE MARYLAND STATE PLAN COORDINATE SYSTEM. BENCHMARKS SHOWN HEREON WERE PROVIDED BY AB CONSULTANTS.
 - WETLANDS WERE DELINEATED BY BIOHABITATS, JUNE 2014.
 - OBSTRUCTIONS SHOWN ON THESE DRAWINGS ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY AND BIOHABITATS DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION GIVEN. THE CONTRACTOR MUST VERIFY SUCH INFORMATION TO HIS OWN SATISFACTION.
 - THE EXISTING INFORMATION SHOWN ON THESE PLANS WAS TAKEN FROM THE BEST AVAILABLE SOURCES AND SHALL BE VERIFIED BEFORE STARTING CONSTRUCTION. HOWARD COUNTY DOES NOT GUARANTEE THE COMPLETENESS OR THE CORRECTNESS OF THE SHOWN INFORMATION.
 - THE CONTRACTORS SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO THE CONTRACTORS OPERATION SHALL BE REPAIRED IMMEDIATELY. ALL UTILITIES SHALL HAVE A CLEARANCE BY A MINIMUM OF 6 INCHES VERTICALLY AND A MINIMUM OF 5 FEET HORIZONTALLY.
 - SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE CONTRACTOR SHALL NOTIFY BIOHABITATS IMMEDIATELY TO RESOLVE THE SITUATION.
 - THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.

LEGEND

EXISTING	PROPOSED
— MAJOR CONTOUR	— 425 — MAJOR CONTOURS
- - - MINOR CONTOUR	- - - 424 — MINOR CONTOURS
- - - SAN — SANITARY SEWER	- - - BASELINE
- - - SD — STORM DRAIN	— LOD — LIMIT OF DISTURBANCE
~ TREELINE	— BOF — BLAZE ORANGE FENCE
- - - WIL — WETLAND LINE	— FL — FILTER LOG
- - - WB — WETLAND BUFFER LINE	⊗ TREE REMOVAL
- - - PROPERTY LINE	⊙ TREE SAVE
- - - EXISTING 100 YEAR FLOODPLAIN	⊗ LARGE WOODY DEBRIS
△ TREE	▨ CASCADE
⊕ TRAVERSE POINT	▨ COBBLE TOE TRENCH
⊙ SOIL BORING	▨ STAGING AND STOCKPILING AREA
⊙ SEWER MANHOLE	▨ MULCH ACCESS ROAD
⊙ CRITICAL ROOT ZONE	▨ STABILIZED CONSTRUCTION ENTRANCE
AS-BUILT LEGEND	⊕ PUMP AROUND
— 340 — CONTOUR - INDEX	⊕ FILTER BAG
- - - 338 — CONTOUR - INTERMEDIATE	⊕ SAND BAGS
— ● — STREAM CENTERLINE	
⊙ ● STORM DRAIN MH / PIPE	
— ● — BOULDER LINE	
▨ STRUCTURE - CASCADE	
▨ COBBLE TOE / RIP RAP	



- NOTE:**
- 2-FT CONTOURS - SPRING 2011 LIDAR, ALL EXISTING GIS MAPPING IS FROM HOWARD COUNTY BASE DATA, COORDINATE SYSTEM NAD 1983 STATE PLANE MARYLAND FIPS 1900 FEET.
 - ALL SWM BMPS ARE IN 100 YR FLOODPLAIN

PERMIT INFORMATION CHART					
SUBDIVISION NAME DORSEY HALL VILLAGE	SECTION/AREA 2/2	LOT/PARCEL# 1	TAX MAP NO. 30	ELECT. DISTR. 2	CENSUS TRACT 6069.02
PLAT# OR L/F 6390	GRID# 004	ZONING RA-15			
WATER CODE PUBLIC	SEWER CODE PUBLIC				

<p>This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.</p> <p><u>John K. Robertson</u> 2/3/15 Howard SCD Date</p>	<p>DEPARTMENT OF PUBLIC WORKS, HOWARD CO, MD</p> <p><u>Mark S. Richmond</u> 1/20/15 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE</p>
<p>DEPARTMENT OF PUBLIC WORKS, HOWARD CO, MD</p> <p><u>Mark S. Richmond</u> 1/20/15 CHIEF, STORMWATER MANAGEMENT DIVISION DATE</p>	<p>DEPARTMENT OF PUBLIC WORKS, HOWARD CO, MD</p> <p><u>John G. De...</u> 1/20/15 DIRECTOR, DEPARTMENT OF PUBLIC WORKS DATE</p>

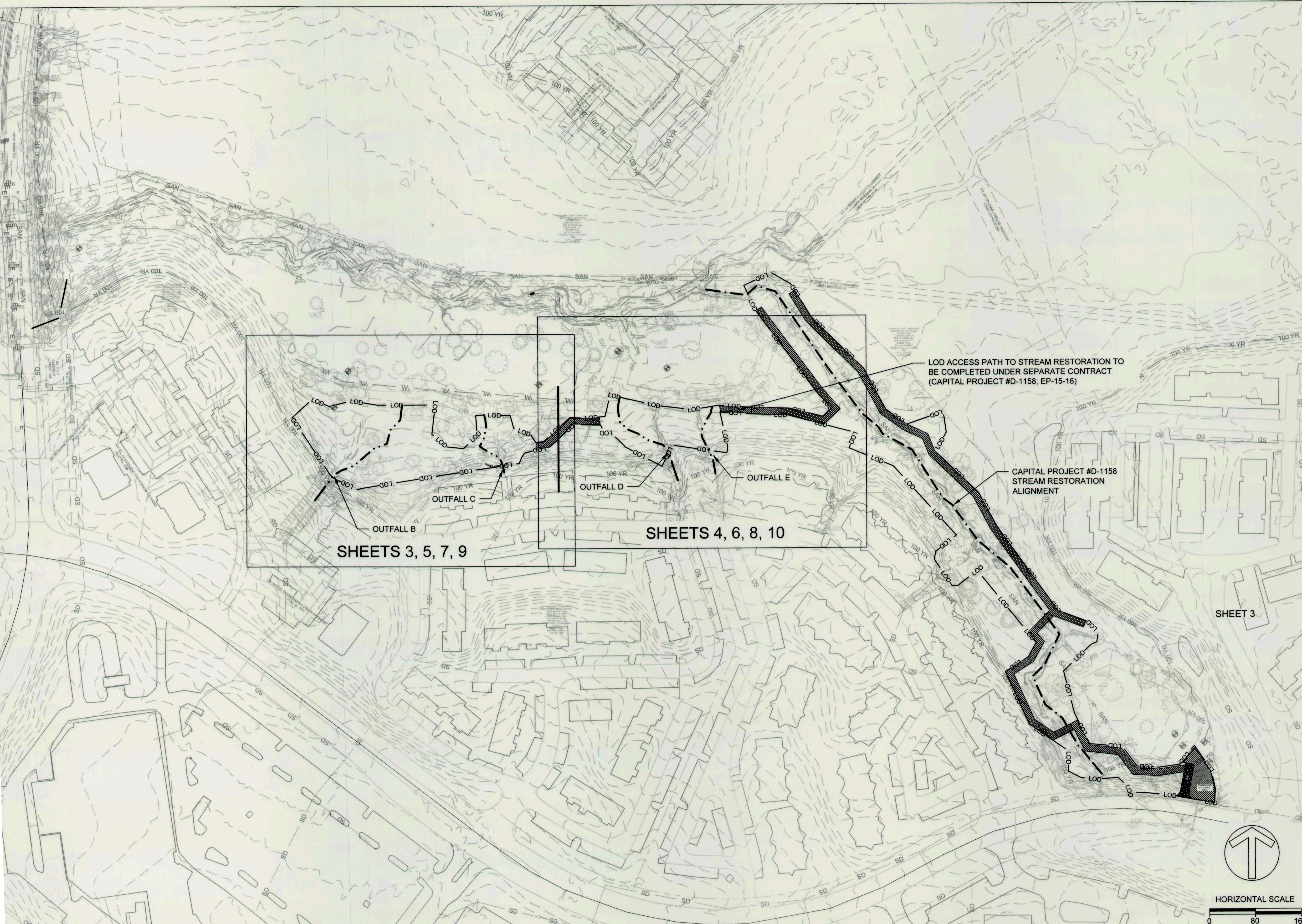
"I CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY SOIL CONSERVATION DISTRICT"

Nick Lindow 01-26-15
SIGNATURE OF ENGINEER (PRINTNAME BELOW SIGNATURE) DATE

DEVELOPERS CERTIFICATE

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

Mark S. Richmond 1/20/15
SIGNATURE OF DEVELOPER (PRINTNAME BELOW SIGNATURE) DATE



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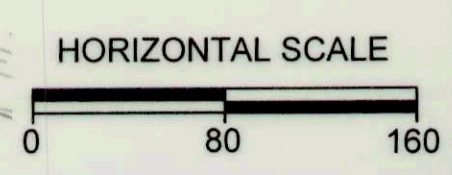
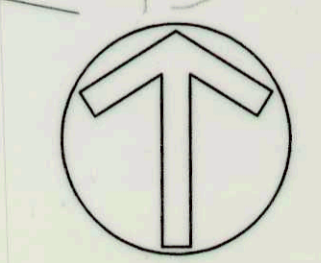
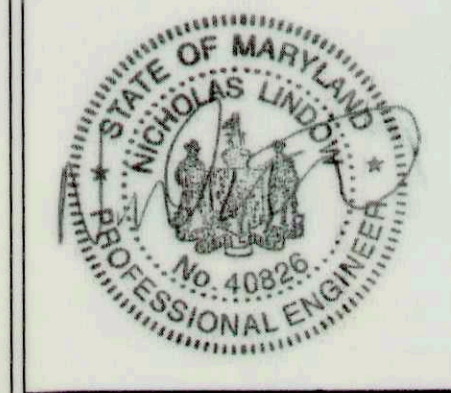
APPROVED: DEPARTMENT OF PUBLIC WORKS
Michael J. Lane DATE
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

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**DORSEY HALL
 VILLAGE
 STORMWATER
 RETROFITS**

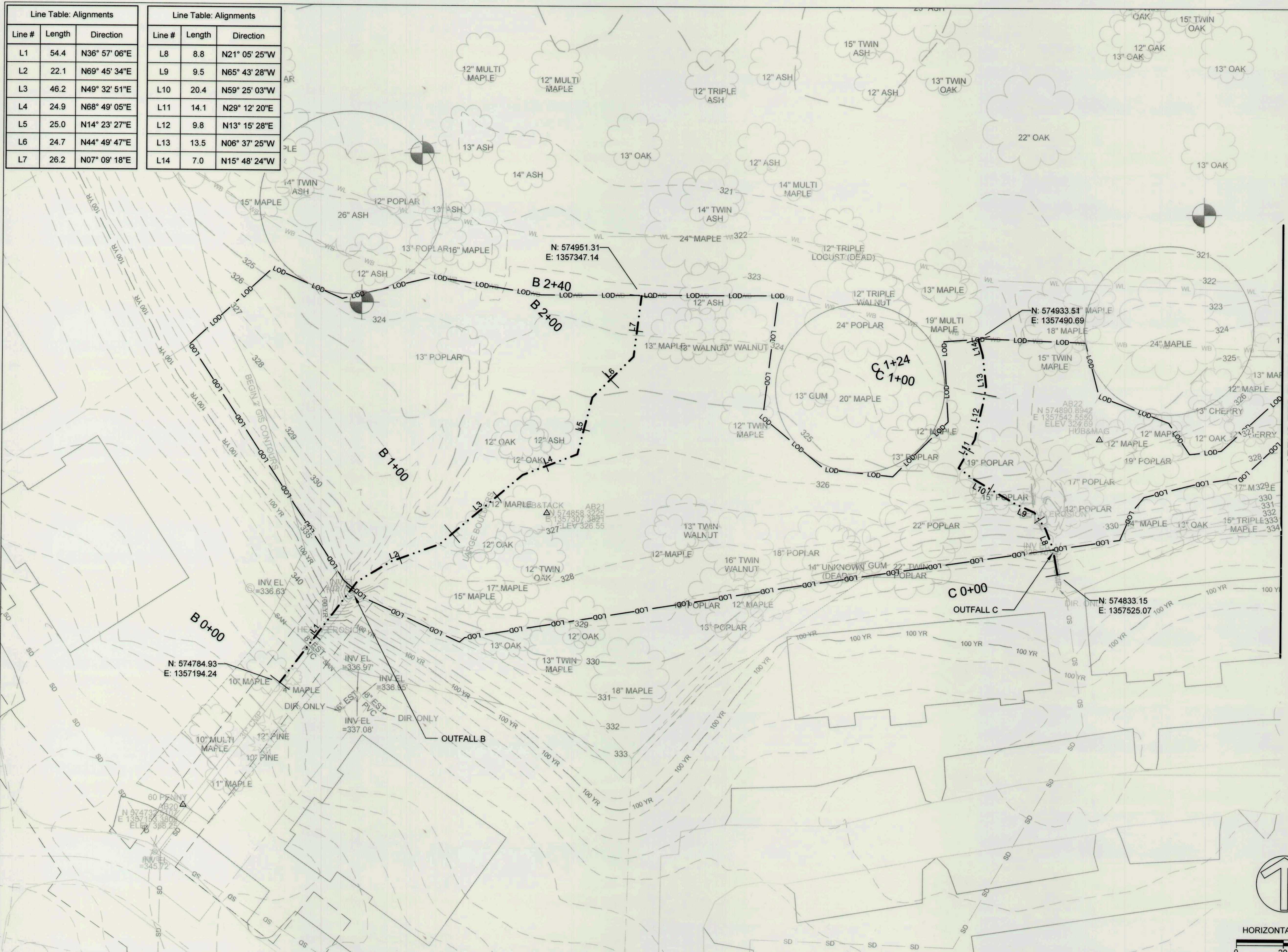
SITE MAP

PROJECT NO:	13005.14	SCALE:	1" = 80'
SEAL:		BY:	KT/NL
		CHECK:	
		DWG NO.:	



Line Table: Alignments		
Line #	Length	Direction
L1	54.4	N36° 57' 06"E
L2	22.1	N69° 45' 34"E
L3	46.2	N49° 32' 51"E
L4	24.9	N68° 49' 05"E
L5	25.0	N14° 23' 27"E
L6	24.7	N44° 49' 47"E
L7	26.2	N07° 09' 18"E

Line Table: Alignments		
Line #	Length	Direction
L8	8.8	N21° 05' 25"W
L9	9.5	N65° 43' 28"W
L10	20.4	N59° 25' 03"W
L11	14.1	N29° 12' 20"E
L12	9.8	N13° 15' 28"E
L13	13.5	N06° 37' 25"W
L14	7.0	N15° 48' 24"W



MATCHLINE SEE SHEET 4

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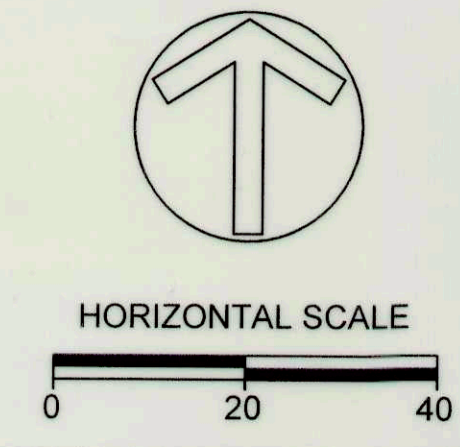
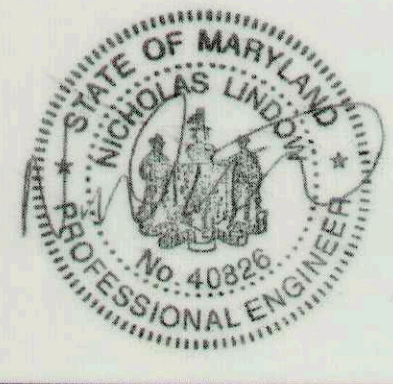
APPROVED: DEPARTMENT OF PUBLIC WORKS
M. D. ...
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

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**DORSEY HALL
 VILLAGE
 STORMWATER
 RETROFITS**

TITLE
**EXISTING CONDITIONS
 & GEOMETRY**

PROJECT NO.: 13005.14 SCALE: 1" = 20'
 SEAL: BY: KT/NL CHECK: DWG. NO.:



Line #	Length	Direction
L15	23.4	N16° 35' 41"W
L16	10.2	N40° 30' 04"W
L17	28.8	N71° 27' 20"W
L18	20.4	N55° 45' 06"W
L19	17.4	N68° 11' 40"W
L20	19.8	N48° 15' 30"W
L21	19.0	N09° 57' 02"W
L22	10.2	N00° 06' 16"W
L23	7.8	N12° 06' 01"E

Line #	Length	Direction
L24	25.0	N09° 50' 48"W
L25	23.7	N26° 07' 21"W
L26	8.2	N04° 35' 27"W
L27	20.4	N25° 37' 56"E
L28	8.9	N34° 01' 27"E
L29	12.7	N13° 22' 54"E



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APPROVED: DEPARTMENT OF PUBLIC WORKS

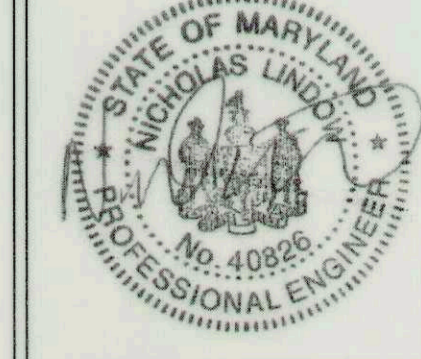
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE 1/20/15

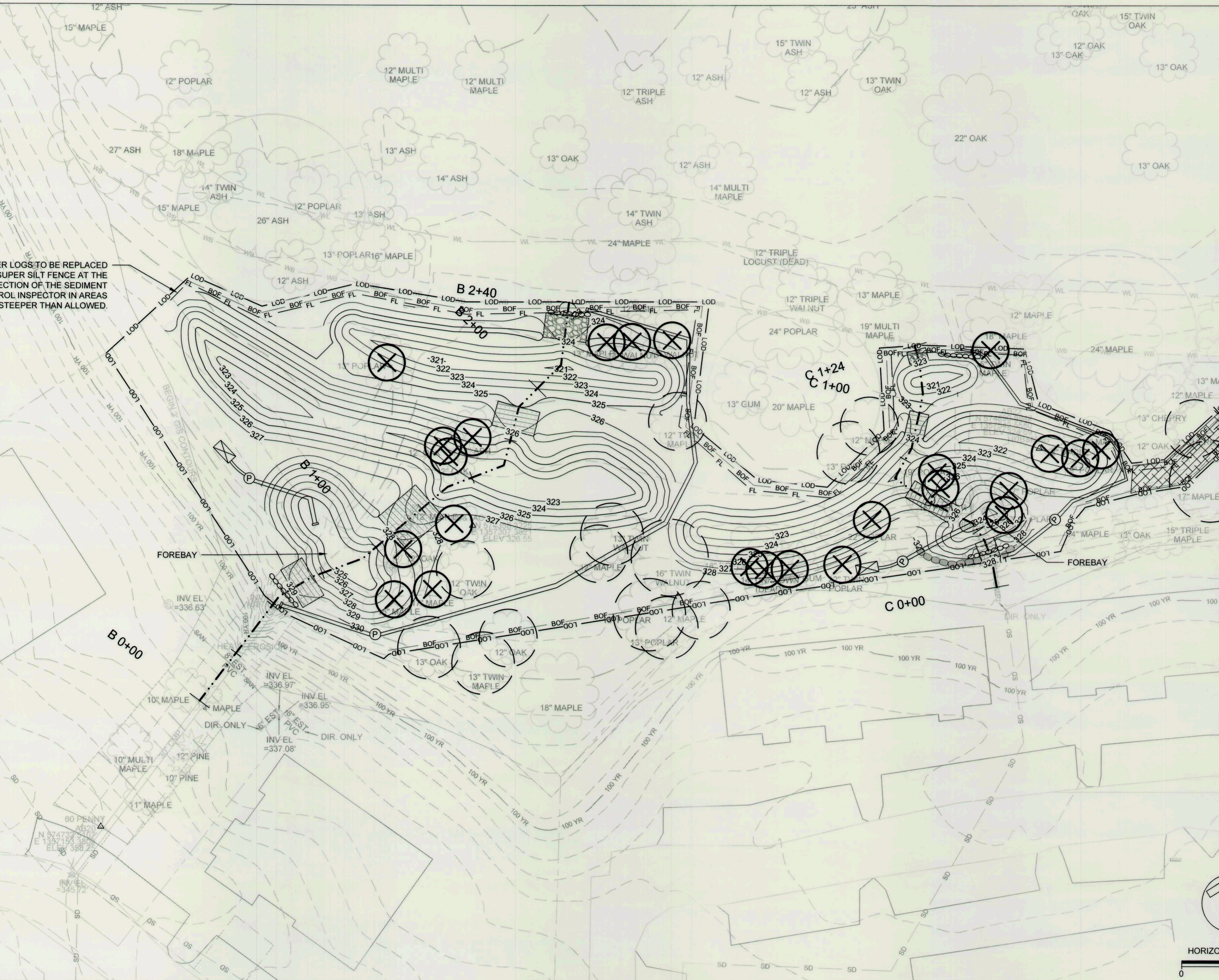

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DORSEY HALL VILLAGE STORMWATER RETROFITS

EXISTING CONDITIONS & GEOMETRY

PROJECT NO.	13005.14	SCALE	1" = 20'
SEAL	BY	CHECK	
	KT/NL		
	DWG. NO.		





FOR LOGS TO BE REPLACED
 SUPER SILT FENCE AT THE
 SECTION OF THE SEDIMENT
 CONTROL INSPECTOR IN AREAS
 STEEPER THAN ALLOWED.

MATCHLINE SEE SHEET 6

HOWARD COUNTY
 GEORGE HOWARD BUILDING
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DATE	ISSUES / REVISIONS
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12/04/2014	FINAL DESIGN

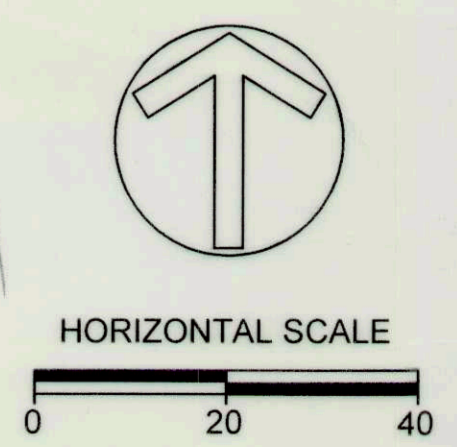
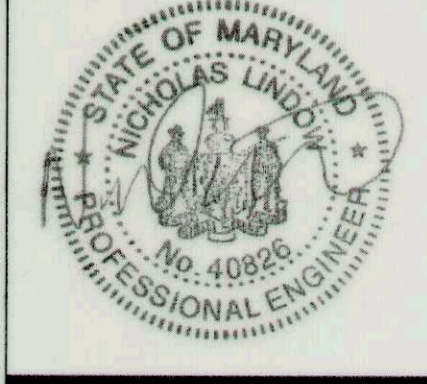
APPROVED: DEPARTMENT OF PUBLIC WORKS
Mark D. L...
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE 1/26/15

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**DORSEY HALL
 VILLAGE
 STORMWATER
 RETROFITS**

TITLE: **EROSION AND
 SEDIMENT CONTROL**

PROJECT NO.: 13005.14 SCALE: 1" = 20'
 SEAL: BY: KT/NL CHECK: DWG. NO.



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APPROVED: DEPARTMENT OF PUBLIC WORKS
M. O. L... *ds/ls*
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

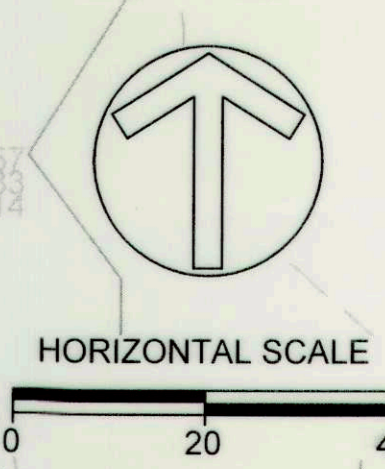
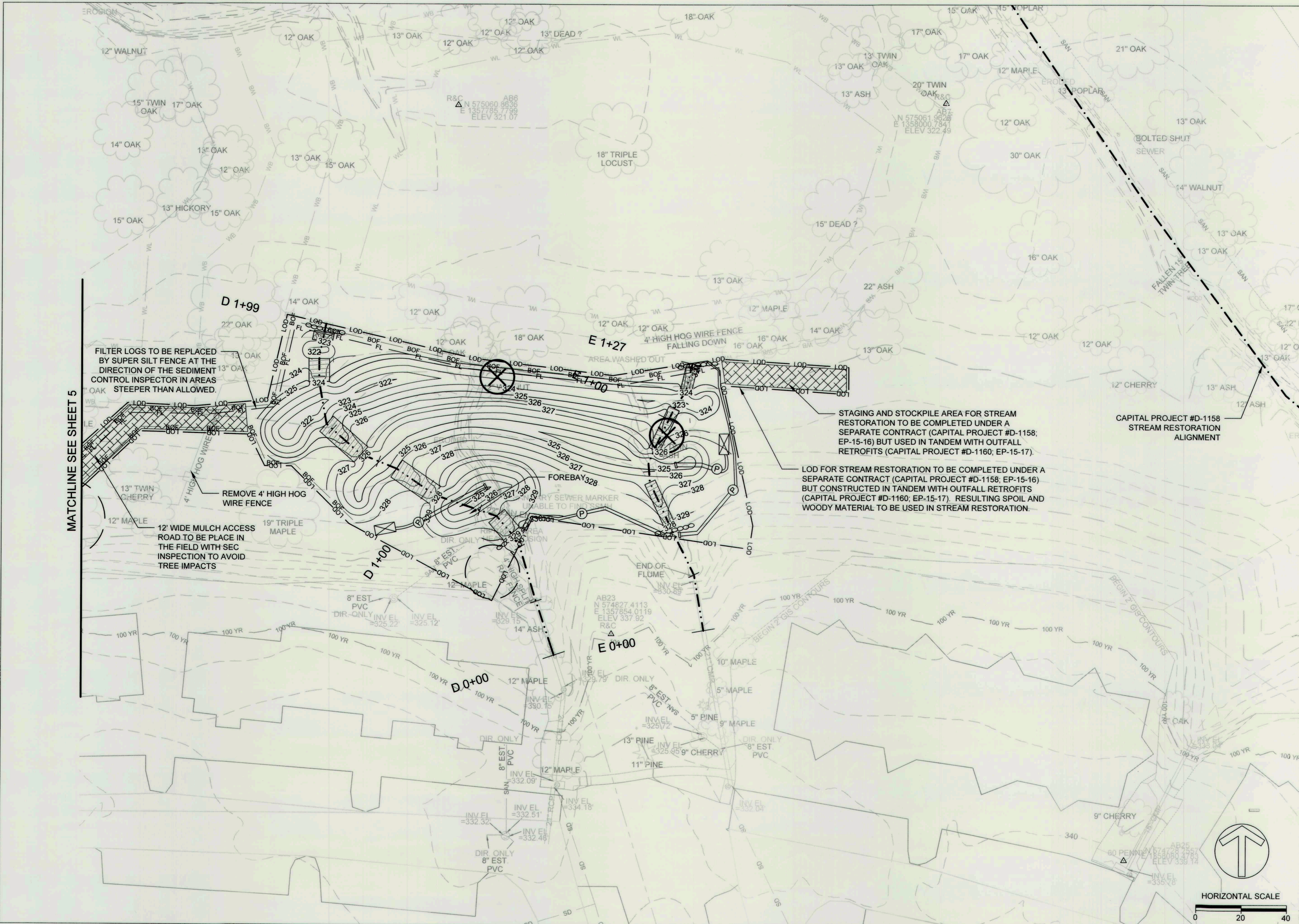
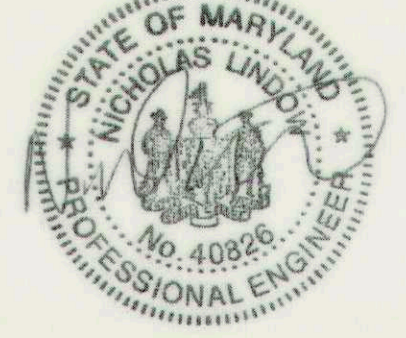
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**DORSEY HALL VILLAGE
 STORMWATER
 RETROFITS**

**TITLE: EROSION AND
 SEDIMENT CONTROL**

PROJECT NO. 13005.14 SCALE 1" = 20'

SEAL BY CHECK
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06/15/2016	TIE TO EXISTING CONTOURS (SHEETS 7&8)



I HEREBY CERTIFY, BY MY SEAL, THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.

APPROVED: *ALG* 12/6/16
 NAME: DATE
 APPROVED: *Mark...* 1/28/15
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE

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DORSEY HALL VILLAGE STORMWATER RETROFITS
AS-BUILT

PROPOSED CONDITIONS

PROJECT NO. 13005.14 SCALE 1" = 20'
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AS-BUILT CERTIFICATION
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NAME: *AGS* DATE: 12/6/16
 APPROVED: DEPARTMENT OF PUBLIC WORKS

NAME: *William J. ...* DATE: 1/28/15
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

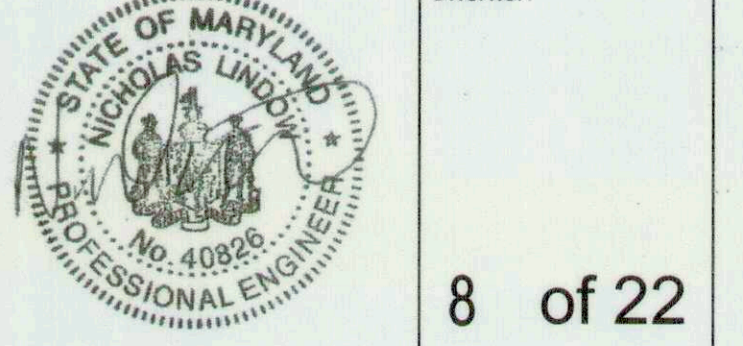
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**DORSEY HALL
 VILLAGE
 STORMWATER
 RETROFITS**

**AS-BUILT
 PROPOSED
 CONDITIONS**

PROJECT NO.: 13005.14 SCALE: 1" = 20'
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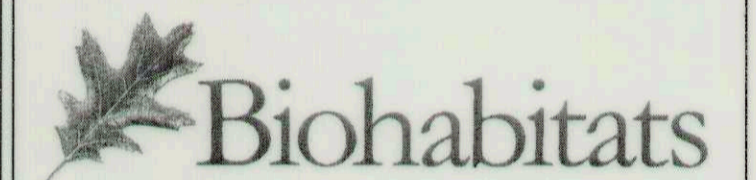


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Mark D. Linn 1/28/15
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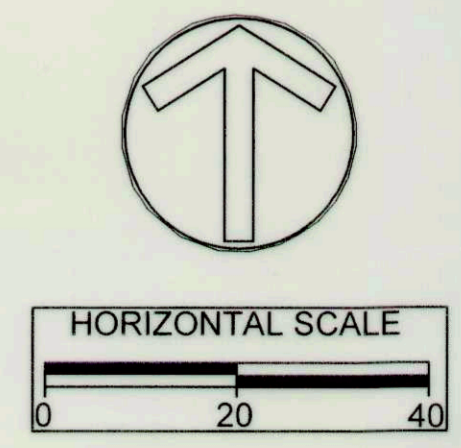
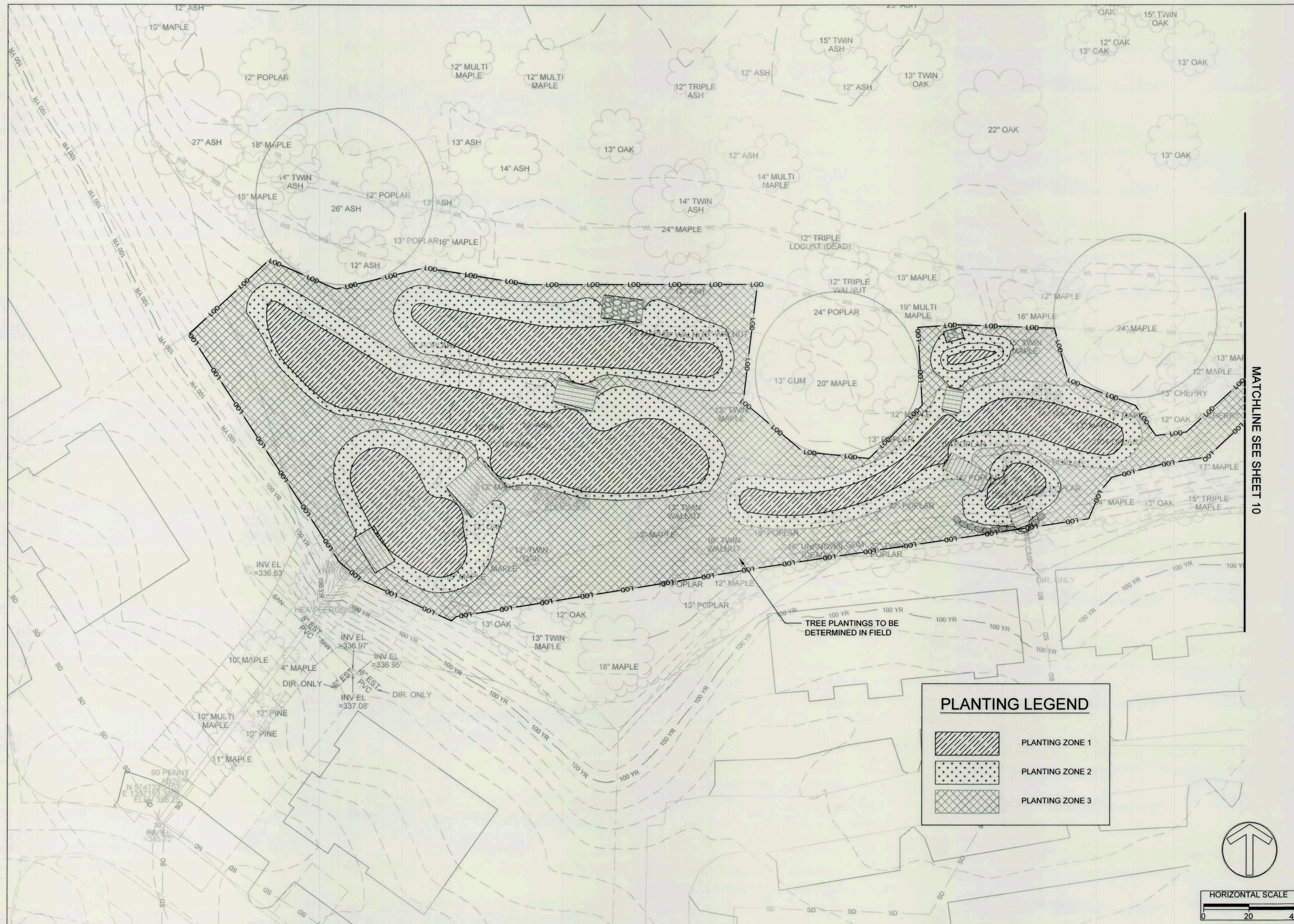
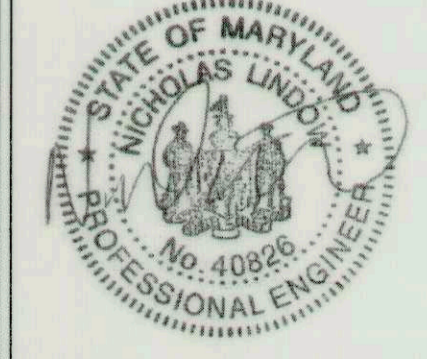
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DORSEY HALL VILLAGE
STORMWATER
RETROFITS

PLANTING PLAN

PROJECT NO: 13005.14 SCALE: 1" = 20'

SEAL BY: CHECK
 KT/NL
 DWG NO:



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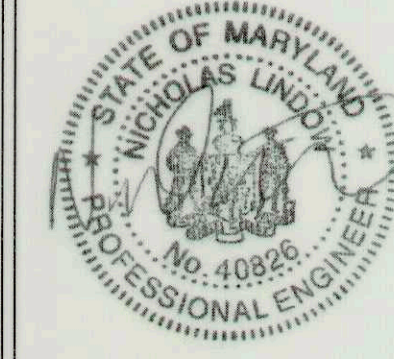
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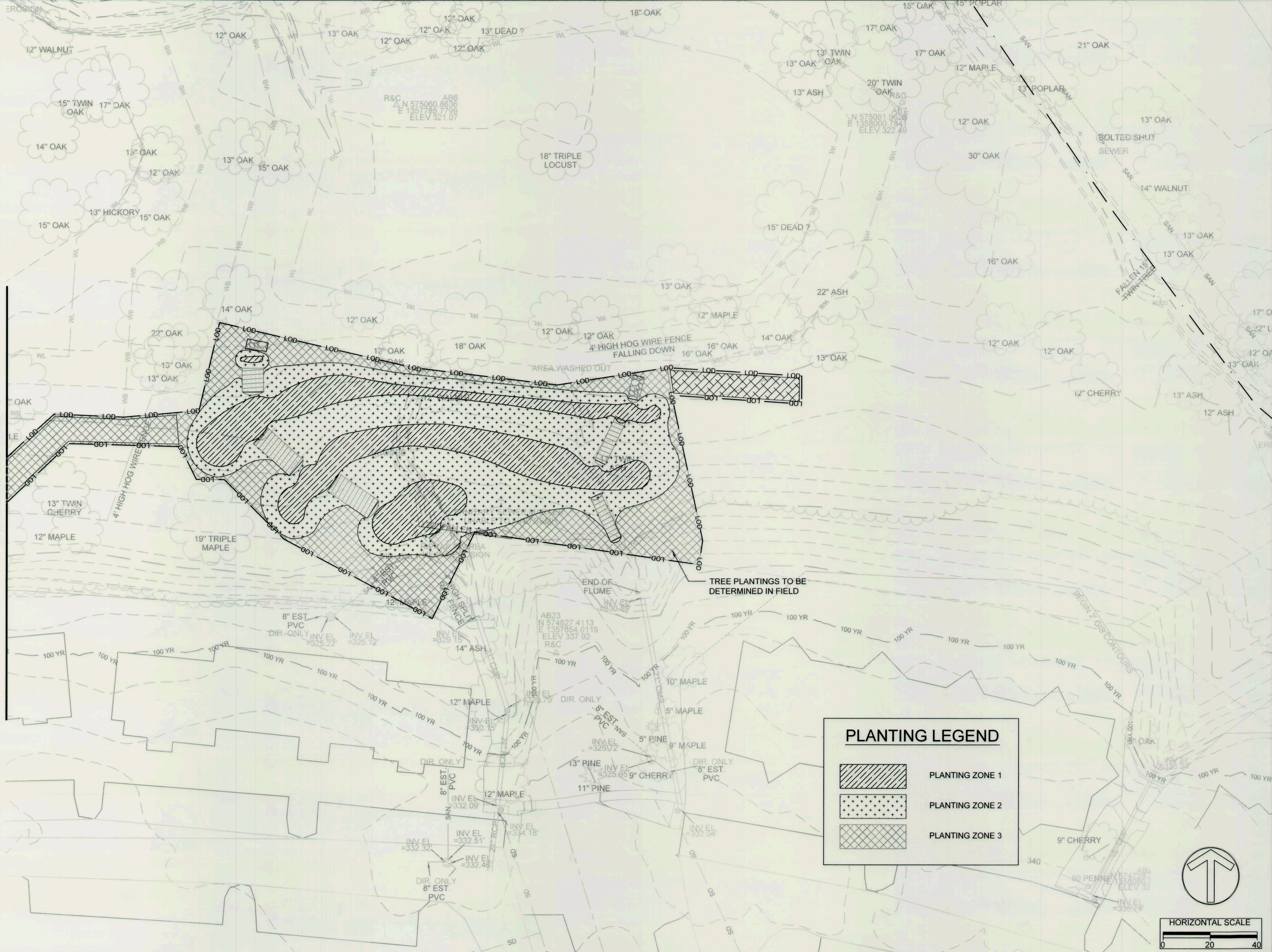
**DORSEY HALL
 VILLAGE
 STORMWATER
 RETROFITS**

PLANTING PLAN

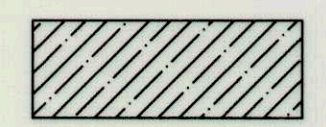
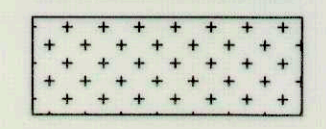
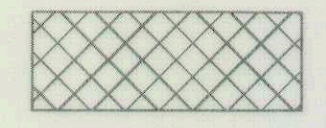
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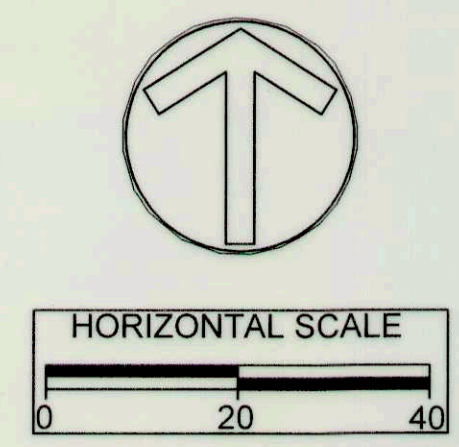


MATCHLINE SEE SHEET 9

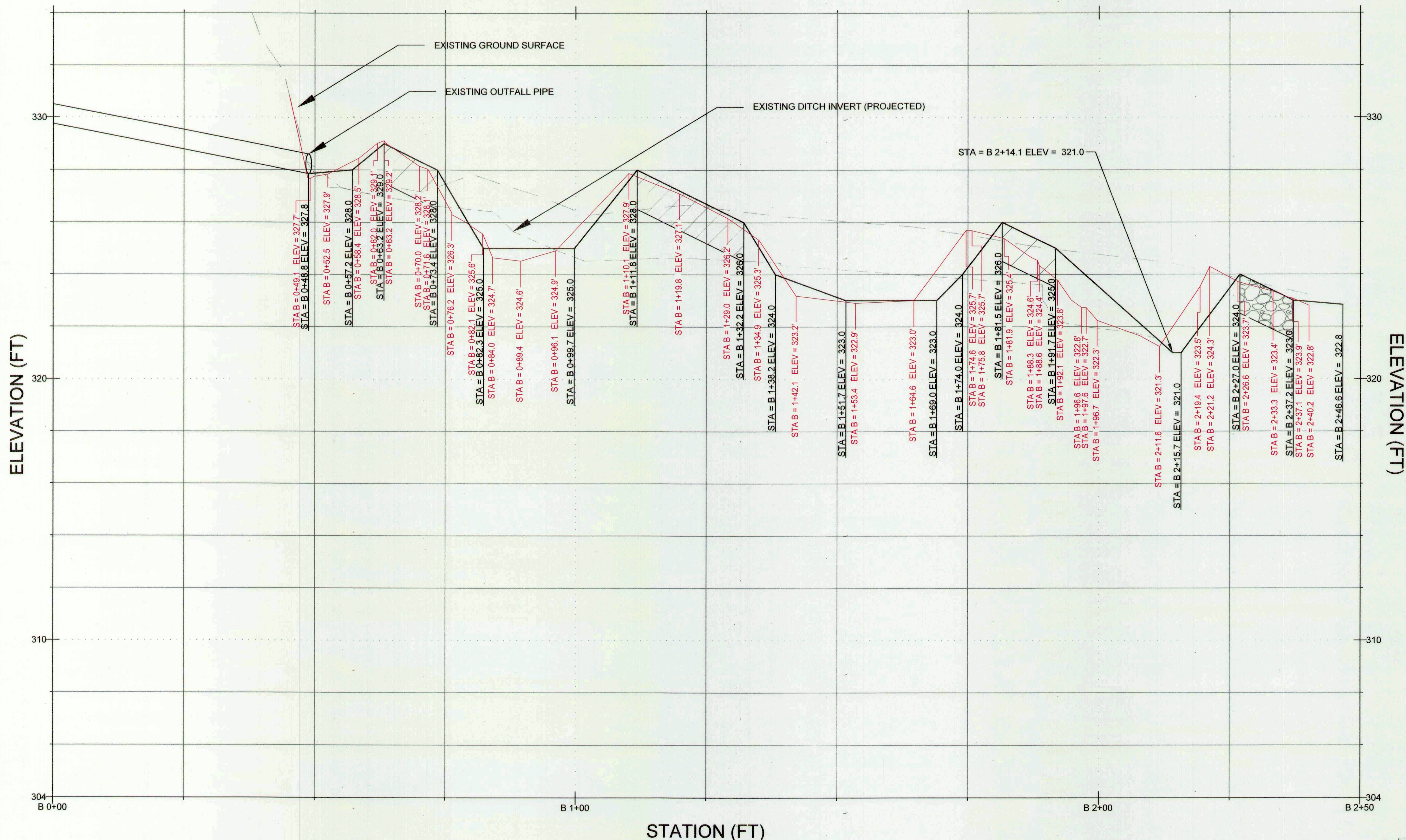


PLANTING LEGEND

-  PLANTING ZONE 1
-  PLANTING ZONE 2
-  PLANTING ZONE 3

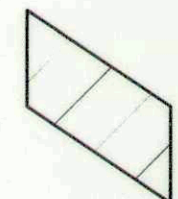


OUTFALL B

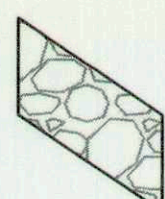


PROFILE LEGEND

--- EXISTING
 --- PROPOSED

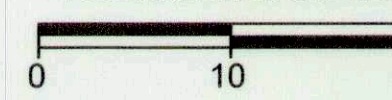


CASCADE STRUCTURE



COBBLE TOE TRENCH

HORIZONTAL SCALE



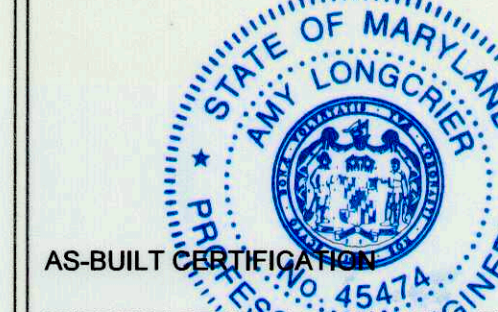
VERTICAL SCALE

HOWARD COUNTY
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 3430 COURHOUSE DRIVE
 ELLICOTT CITY, MD 21043
 (P) 410 313 2022
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GEORGE WILLIAM STEPHENS, JR. and ASSOCIATES, INC.
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 4692 MILLENNIUM DRIVE, SUITE 100
 BELCAMP, MARYLAND 21017
 Phone: (410) 297-2340 gstephens.com Fax: (410) 297-2345

DATE ISSUES / REVISIONS

09/18/2014 60% DESIGN
 12/04/2014 FINAL DESIGN
 06 / 05 / 2015 AS-BUILT DRAWING



AS-BUILT CERTIFICATION
 I HEREBY CERTIFY, BY MY SEAL, THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN MEET THE APPROVED PLANS AND SPECIFICATIONS.

NAME: *[Signature]* DATE: 12/6/16
 APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] DATE: 12/6/16
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

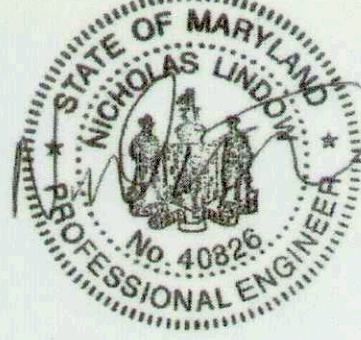
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 Baltimore, MD 21211 / ph: 410.554.0156
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DORSEY HALL VILLAGE STORMWATER RETROFITS

PROFILE AS-BUILT

PROJECT NO.: 13005.14 SCALE: AS SHOWN

BY: KT/NL CHECK: []
 DWG. NO.:



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DATE	ISSUES / REVISIONS
09/18/2014	60% DESIGN
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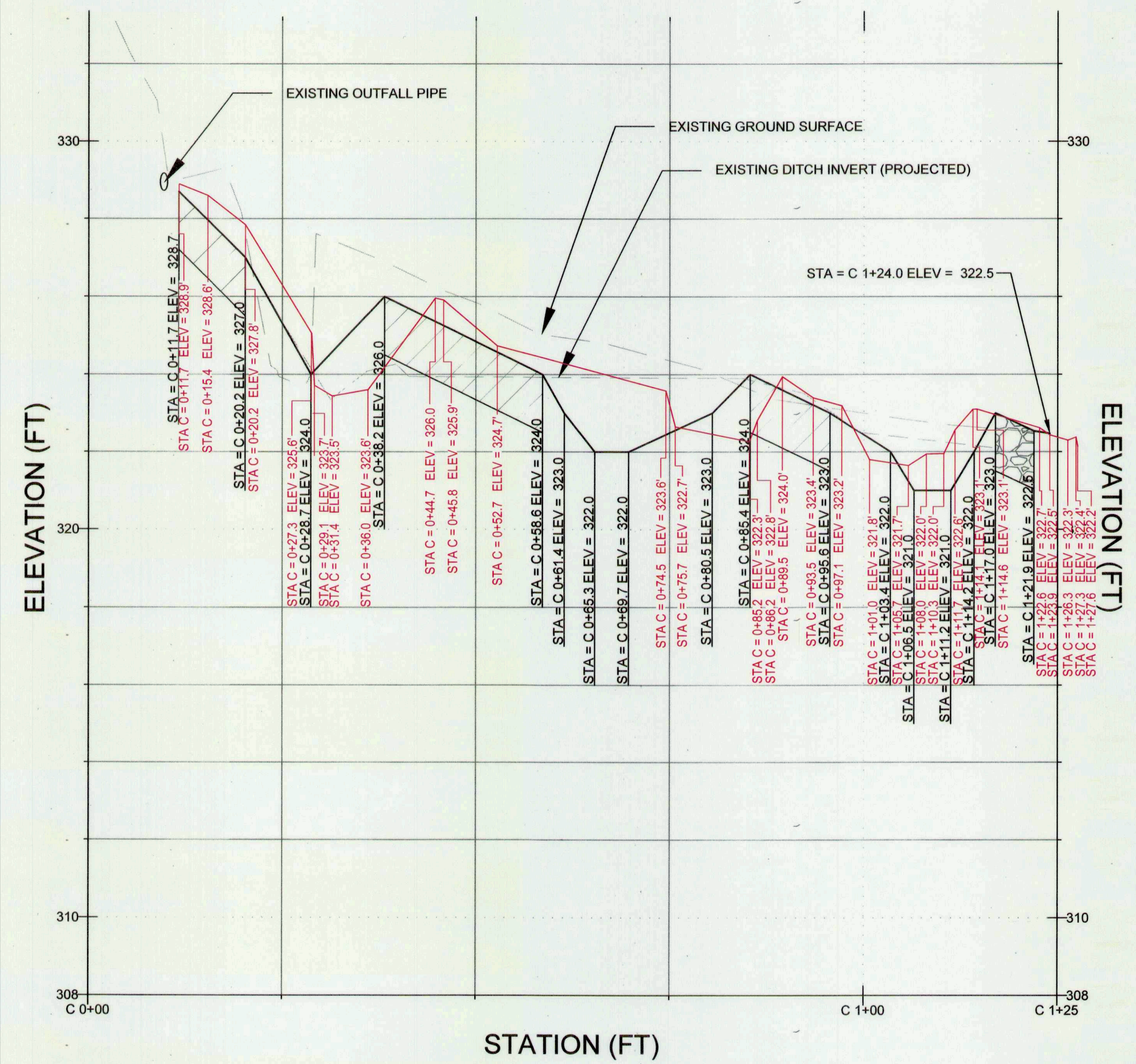
APPROVED: *[Signature]* 12/6/16
 NAME: DATE
 DEPARTMENT OF PUBLIC WORKS
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES 12/6/16
 DATE

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**DORSEY HALL
 VILLAGE
 STORMWATER
 RETROFITS**

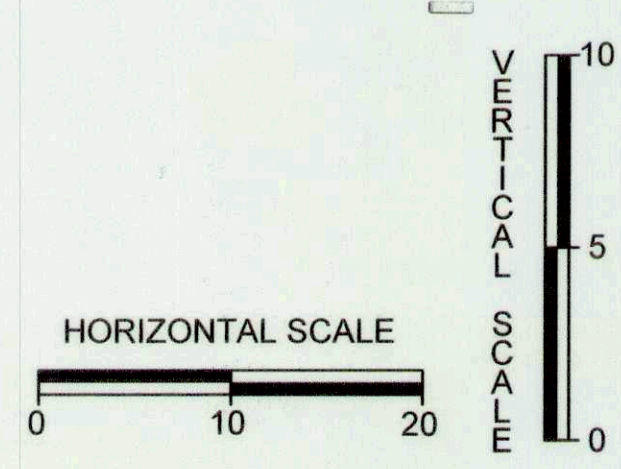
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PROJECT NO.: 13005.14	SCALE: AS SHOWN
SEAL:	BY: KT/NL CHECK: DWG. NO.:
12 of 22	

OUTFALL C

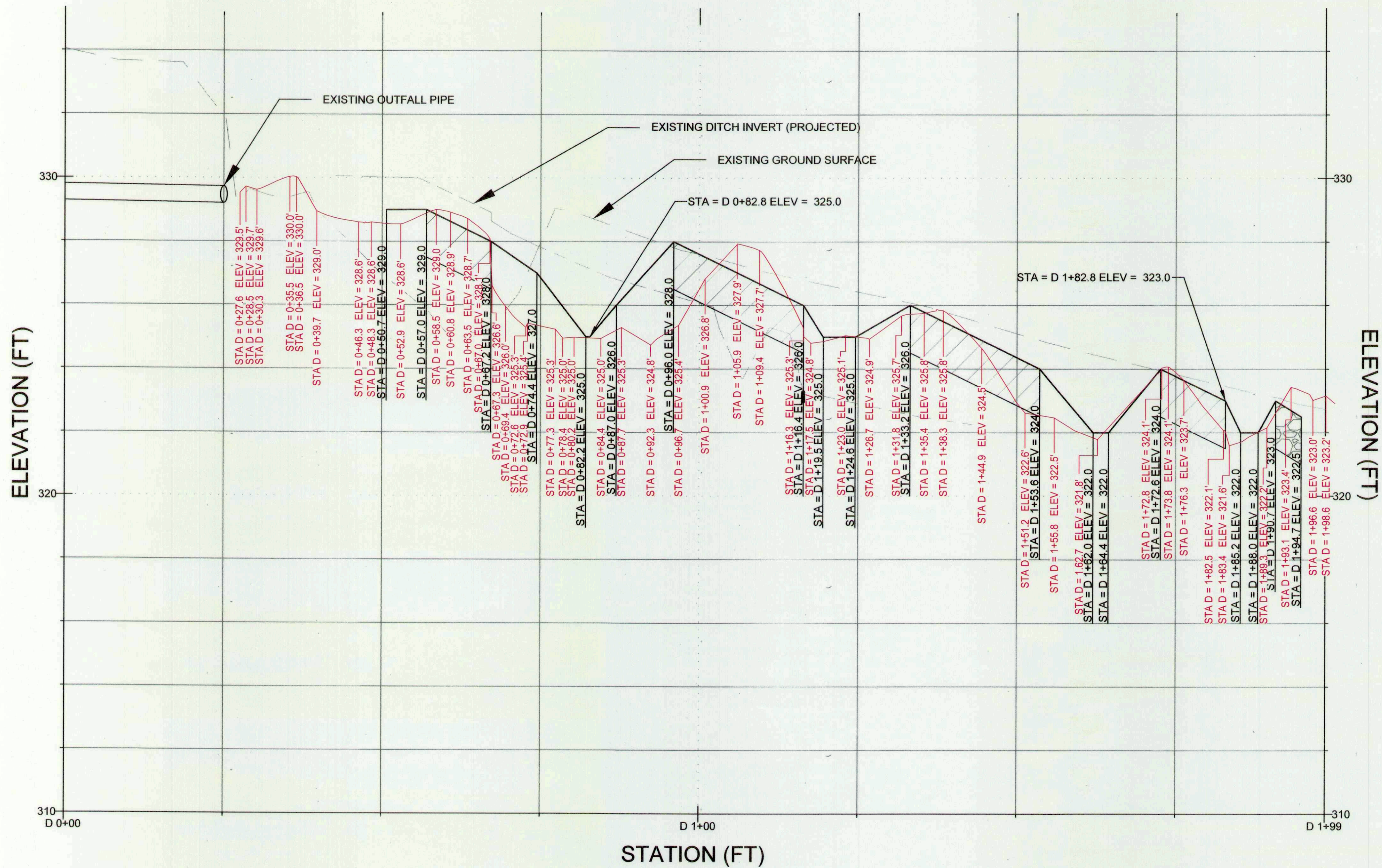


PROFILE LEGEND

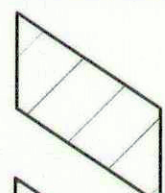
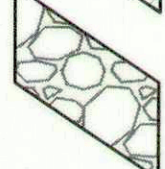
- EXISTING
- PROPOSED
- CASCADE STRUCTURE
- COBBLE TOE TRENCH

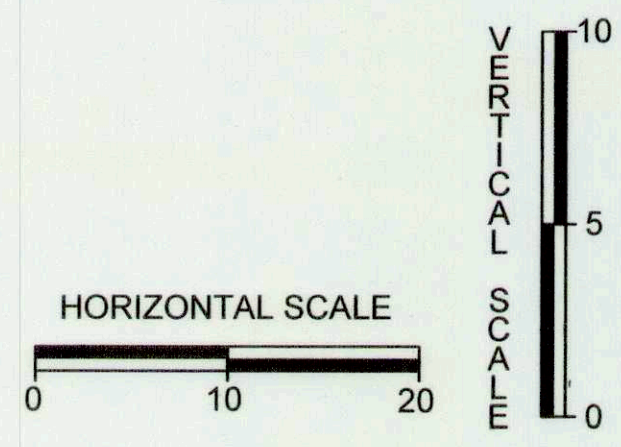


OUTFALL D



PROFILE LEGEND

- EXISTING
- PROPOSED
-  CASCADE STRUCTURE
-  COBBLE TOE TRENCH



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12/04/2014	FINAL DESIGN
06 / 05 / 2015	AS-BUILT DRAWING



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NAME: *AS* DATE: 12/6/16


APPROVED: DEPARTMENT OF PUBLIC WORKS
 NAME: *Michael D. ...* DATE: 1/28/15
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

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DORSEY HALL VILLAGE STORMWATER RETROFITS

PROFILE AS-BUILT

PROJECT NO.: 13005.14 SCALE: AS SHOWN

SEAL:  CHECK:
 DWG. NO.: 13 of 22

HOWARD COUNTY
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06 / 09 / 2015 AS-BUILT DRAWING



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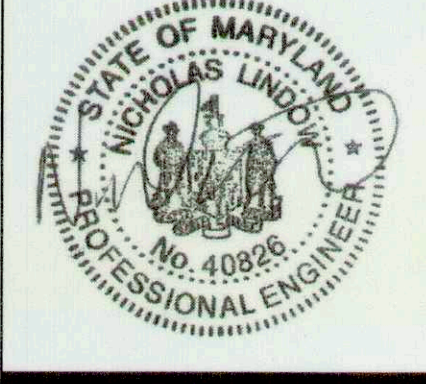
APPROVED: *AS* NAME DATE 12/6/16
 DEPARTMENT OF PUBLIC WORKS
 APPROVED: *Michael...* NAME DATE 1/28/15
 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES

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**DORSEY HALL
 VILLAGE
 STORMWATER
 RETROFITS**

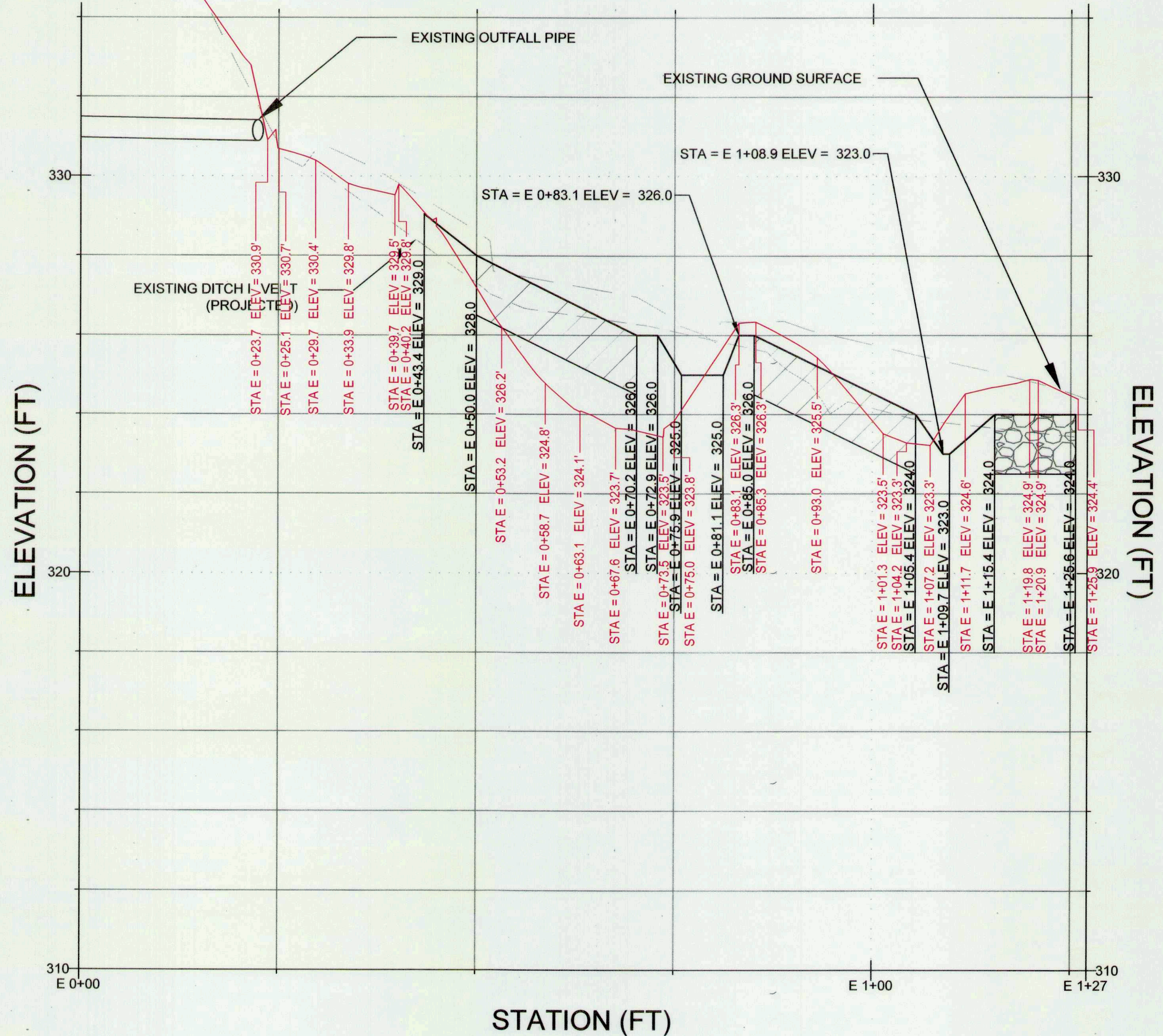
TITLE
**PROFILE
 AS-BUILT**

PROJECT NO. 13005.14 SCALE AS SHOWN
 SEAL BY CHECK
 KT/NL
 DWG. NO.



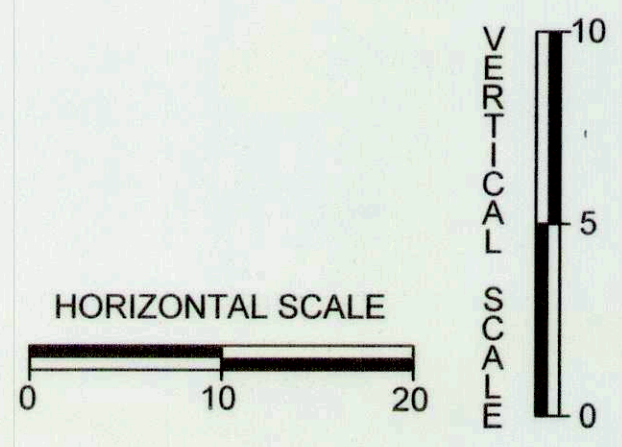
14 of 22

OUTFALL E



PROFILE LEGEND

- EXISTING
- PROPOSED
- CASCADE STRUCTURE
- COBBLE TOE TRENCH



OUTFALL B STRUCTURE TABLE				
CASCADE				
STATION	NODE	NORTHING	EASTING	ELEVATION
B 0+63.2	US-L	574839.4	1357227.7	330.0
	US-T	574831.7	1357232.3	329.0
	US-R	574823.9	1357236.9	330.0
	DS-L	574844.6	1357236.5	329.0
	DS-T	574836.9	1357241.1	328.0
	DS-R	574829.2	1357245.7	329.0
STATION	NODE	NORTHING	EASTING	ELEVATION
B 1+11.8	US-L	574862.0	1357268.2	329.0
	US-T	574854.5	1357273.1	328.0
	US-R	574848.4	1357280.0	329.0
	DS-L	574875.3	1357283.6	327.0
	DS-T	574868.5	1357289.5	326.0
	DS-R	574861.7	1357295.4	327.0
STATION	NODE	NORTHING	EASTING	ELEVATION
B 1+81.5	US-L	574900.2	1357315.1	327.0
	US-T	574897.9	1357323.8	326.0
	US-R	574895.6	1357332.5	327.0
	DS-L	574910.1	1357317.8	326.0
	DS-T	574907.8	1357326.5	325.0
	DS-R	574905.5	1357335.2	326.0

OUTFALL C STRUCTURE TABLE				
CASCADE				
STATION	NODE	NORTHING	EASTING	ELEVATION
C 0+11.7	US-L	574843.6	1357518.8	329.7
	US-T	574844.6	1357522.8	328.7
	US-R	574846.0	1357526.6	329.7
	DS-L	574851.2	1357516.1	328.0
	DS-T	574852.6	1357519.9	327.0
	DS-R	574854.0	1357523.7	328.0
	STATION	NODE	NORTHING	EASTING
C 0+38.2	US-L	574860.1	1357504.5	327.0
	US-T	574863.2	1357507.1	326.0
	US-R	574867.0	1357508.5	327.0
	DS-L	574870.5	1357486.9	325.0
	DS-T	574873.9	1357488.9	324.0
	DS-R	574877.4	1357491.0	325.0
	STATION	NODE	NORTHING	EASTING
C 0+85.4	US-L	574896.5	1357486.6	325.0
	US-T	574895.6	1357490.5	324.0
	US-R	574894.8	1357494.4	325.0
	DS-L	574906.5	1357488.8	324.0
	DS-T	574905.6	1357492.8	323.0
	DS-R	574904.7	1357496.7	324.0

OUTFALL D STRUCTURE TABLE				
CASCADES				
STATION	NODE	NORTHING	EASTING	ELEVATION
D 0+57.0	US-L	574868.6	1357806.5	330.0
	US-T	574871.6	1357809.9	329.0
	US-R	574874.5	1357813.3	330.0
	DS-L	574876.4	1357799.8	329.0
	DS-T	574879.3	1357803.3	328.0
	DS-R	574882.3	1357806.7	329.0
	STATION	NODE	NORTHING	EASTING
D 0+96.0	US-L	574884.7	1357773.4	329.0
	US-T	574888.5	1357776.0	328.0
	US-R	574892.2	1357778.5	329.0
	DS-L	574896.2	1357756.6	327.0
	DS-T	574900.0	1357759.1	326.0
	DS-R	574903.7	1357761.7	327.0
	STATION	NODE	NORTHING	EASTING
D 1+33.2	US-L	574902.7	1357740.4	327.0
	US-T	574906.1	1357743.4	326.0
	US-R	574909.4	1357746.4	327.0
	DS-L	574916.3	1357725.1	325.0
	DS-T	574919.6	1357728.1	324.0
	DS-R	574923.0	1357731.2	325.0
STATION	NODE	NORTHING	EASTING	ELEVATION
D 1+72.6	US-L	574938.4	1357720.3	325.0
	US-T	574938.4	1357724.9	324.0
	US-R	574938.4	1357729.4	325.0
	DS-L	574948.6	1357720.3	324.0
	DS-T	574948.6	1357724.8	323.0
	DS-R	574948.6	1357729.4	324.0

OUTFALL E STRUCTURE TABLE				
CASCADES				
STATION	NODE	NORTHING	EASTING	ELEVATION
E 0+50.0	US-L	574874.9	1357877.1	329.0
	US-T	574876.0	1357879.4	328.0
	US-R	574877.0	1357881.7	329.0
	DS-L	574893.4	1357868.5	327.0
	DS-T	574894.5	1357870.7	326.0
	DS-R	574895.5	1357873.1	327.0
	STATION	NODE	NORTHING	EASTING
E 0+85.0	US-L	574909.8	1357870.3	327.0
	US-T	574908.8	1357872.6	326.0
	US-R	574907.9	1357875.1	327.0
	DS-L	574928.2	1357879.2	325.0
	DS-T	574927.1	1357881.4	324.0
	DS-R	574926.1	1357883.7	325.0
	STATION	NODE	NORTHING	EASTING
E 1+15.4	US-L	574936.1	1357884.2	325.0
	US-T	574935.6	1357886.7	324.0
	US-R	574935.0	1357889.1	325.0
	DS-L	574946.0	1357886.6	324.0
	DS-T	574945.5	1357889.0	324.0
	DS-R	574944.9	1357891.4	324.0


OUTFALL B STRUCTURE TABLE				
COBBLE TOE TRENCH				
STATION	NODE	NORTHING	EASTING	ELEVATION
B 2+27.0	US-L	574936.8	1357336.3	325.0
	US-T	574935.7	1357345.2	324.0
	US-R	574934.6	1357354.2	325.0
	DS-L	574947.0	1357337.6	324.0
	DS-T	574945.9	1357346.5	323.0
	DS-R	574944.7	1357355.4	324.0

OUTFALL C STRUCTURE TABLE				
COBBLE TOE TRENCH				
STATION	NODE	NORTHING	EASTING	ELEVATION
C 1+17.0	US-L	574925.7	1357488.7	323.5
	US-T	574926.8	1357492.6	323.0
	US-R	574927.8	1357496.5	323.5
	DS-L	574930.6	1357487.4	323.0
	DS-T	574931.7	1357491.3	322.5
	DS-R	574932.7	1357495.2	323.0

OUTFALL D STRUCTURE TABLE				
COBBLE TOE TRENCH				
STATION	NODE	NORTHING	EASTING	ELEVATION
D 1+90.7	US-L	574957.0	1357721.7	323.5
	US-T	574956.4	1357726.1	323.0
	US-R	574955.7	1357730.5	323.5
	DS-L	574961.1	1357722.6	323.0
	DS-T	574960.3	1357727.0	322.5
	DS-R	574959.5	1357731.4	323.0

HOWARD COUNTY
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09/18/2014	60% DESIGN
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APPROVED: DEPARTMENT OF PUBLIC WORKS

 CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE 12/15

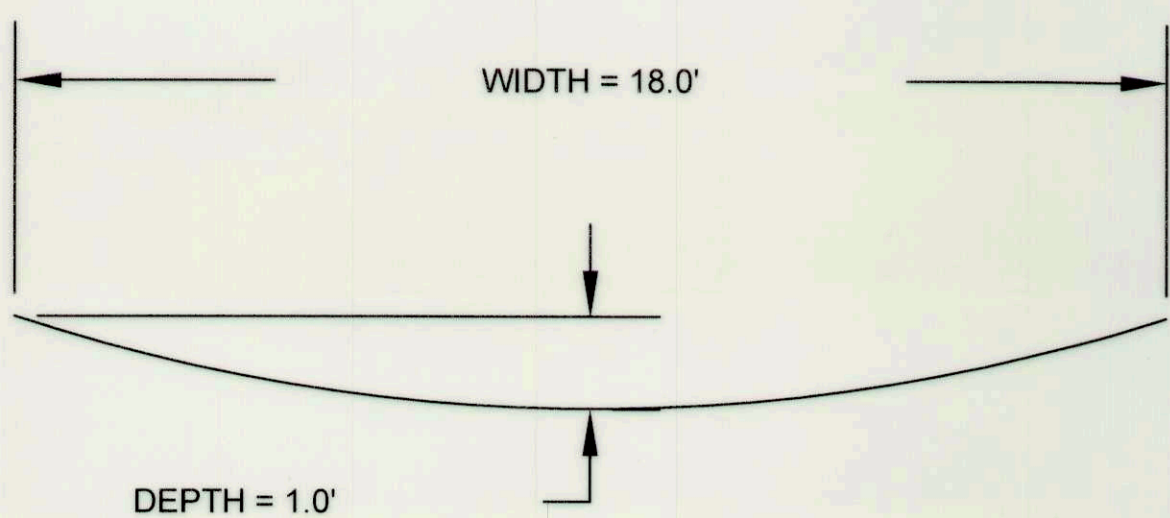

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 VILLAGE
 STORMWATER
 RETROFITS**

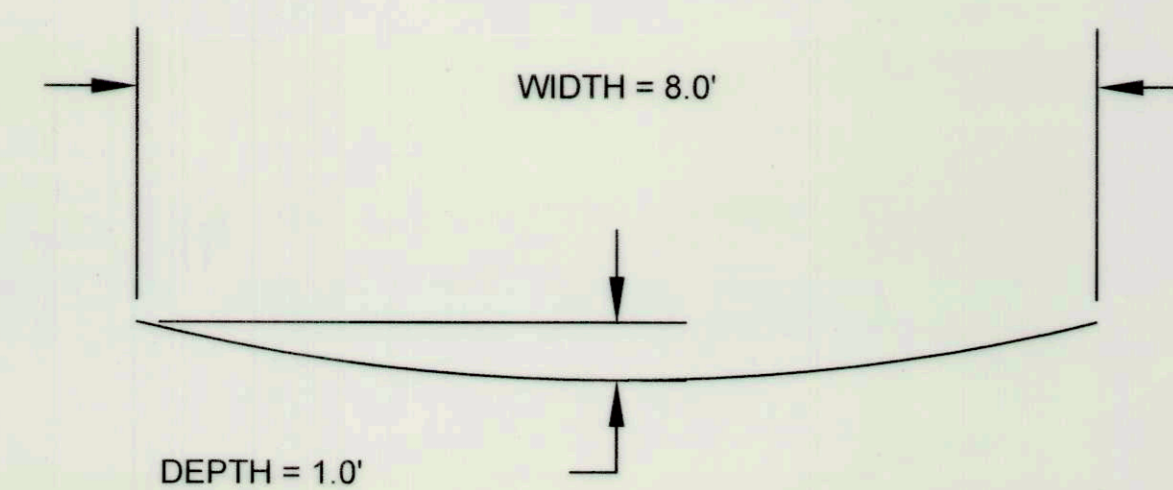
STRUCTURE TABLES

PROJECT NO: 13005.14 SCALE:
 SEAL: BY: KT/NL CHECK:
 DWG NO:

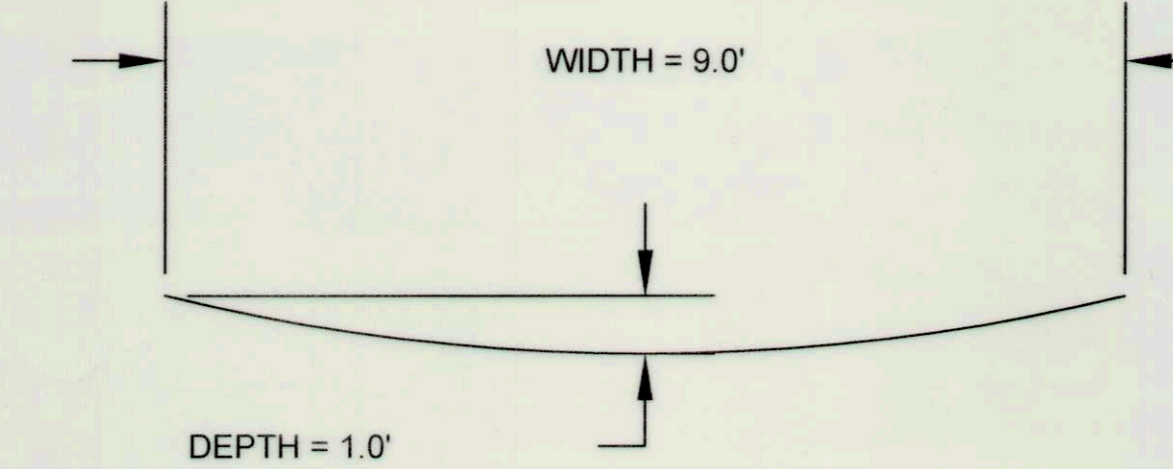
STATE OF MARYLAND
 NICHOLAS LINDO
 No. 40826
 PROFESSIONAL ENGINEER



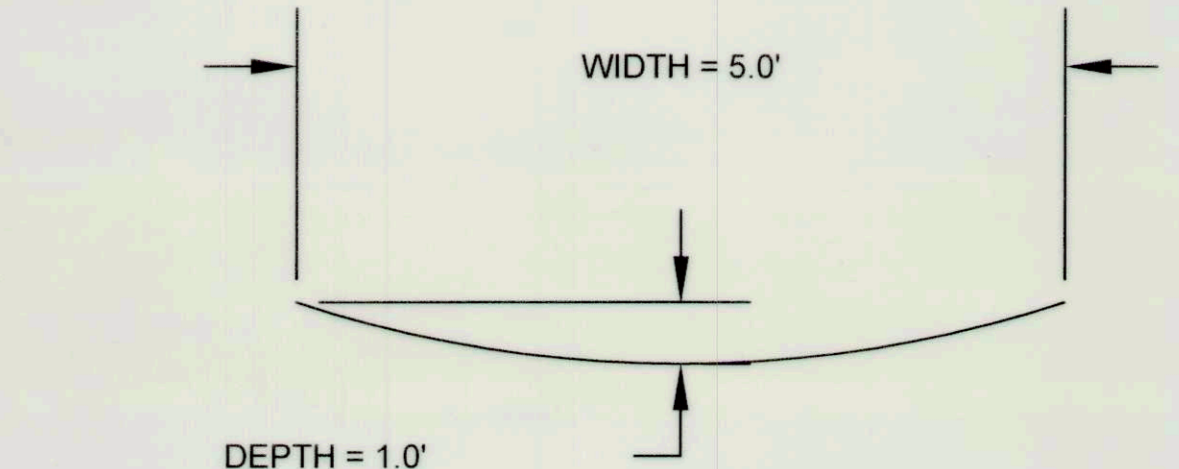
**TYPICAL CROSS SECTION
 CASCADE & COBBLE TOE
 TRENCH - OUTFALL B**
 NOT TO SCALE



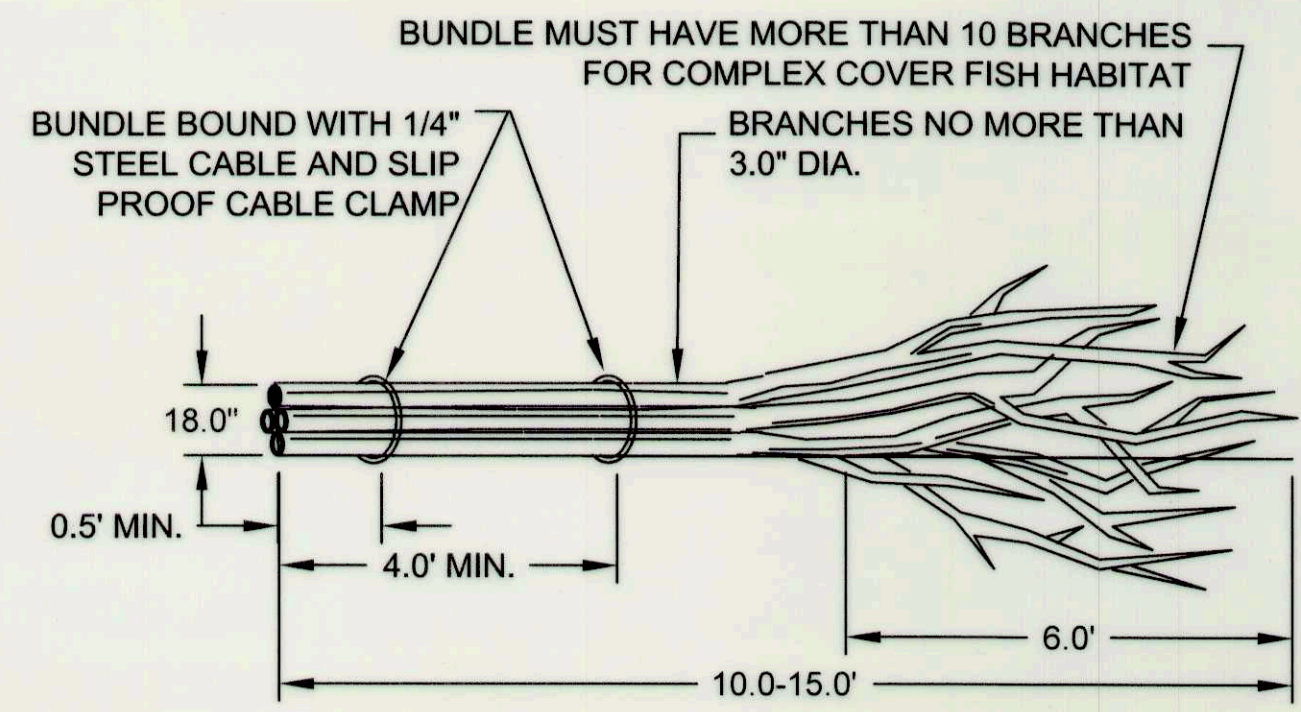
**TYPICAL CROSS SECTION
 CASCADE & COBBLE TOE
 TRENCH - OUTFALL C**
 NOT TO SCALE



**TYPICAL CROSS SECTION
 CASCADE & COBBLE TOE
 TRENCH - OUTFALL D**
 NOT TO SCALE

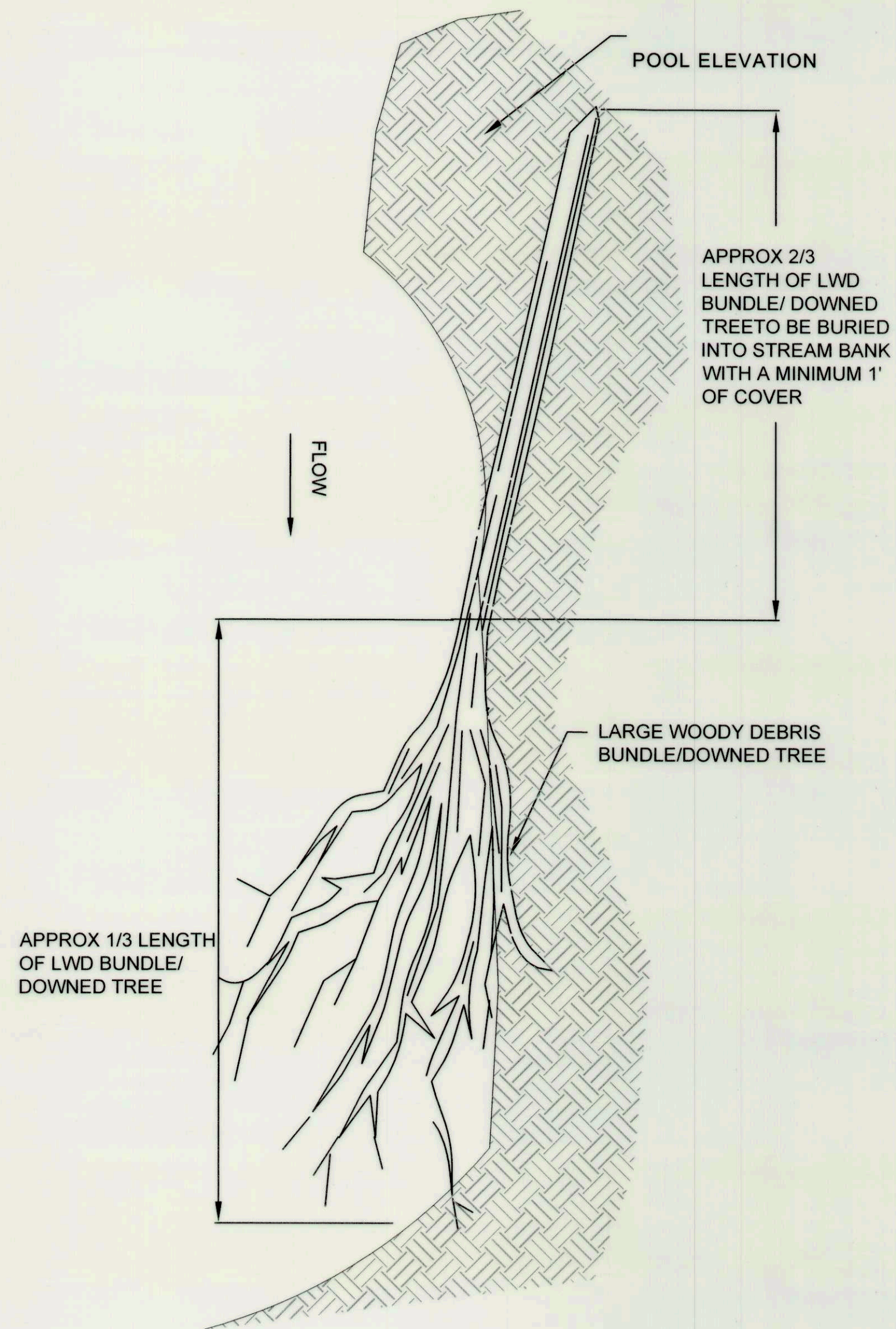


**TYPICAL CROSS SECTION
 CASCADE & COBBLE TOE
 TRENCH - OUTFALL E**
 NOT TO SCALE

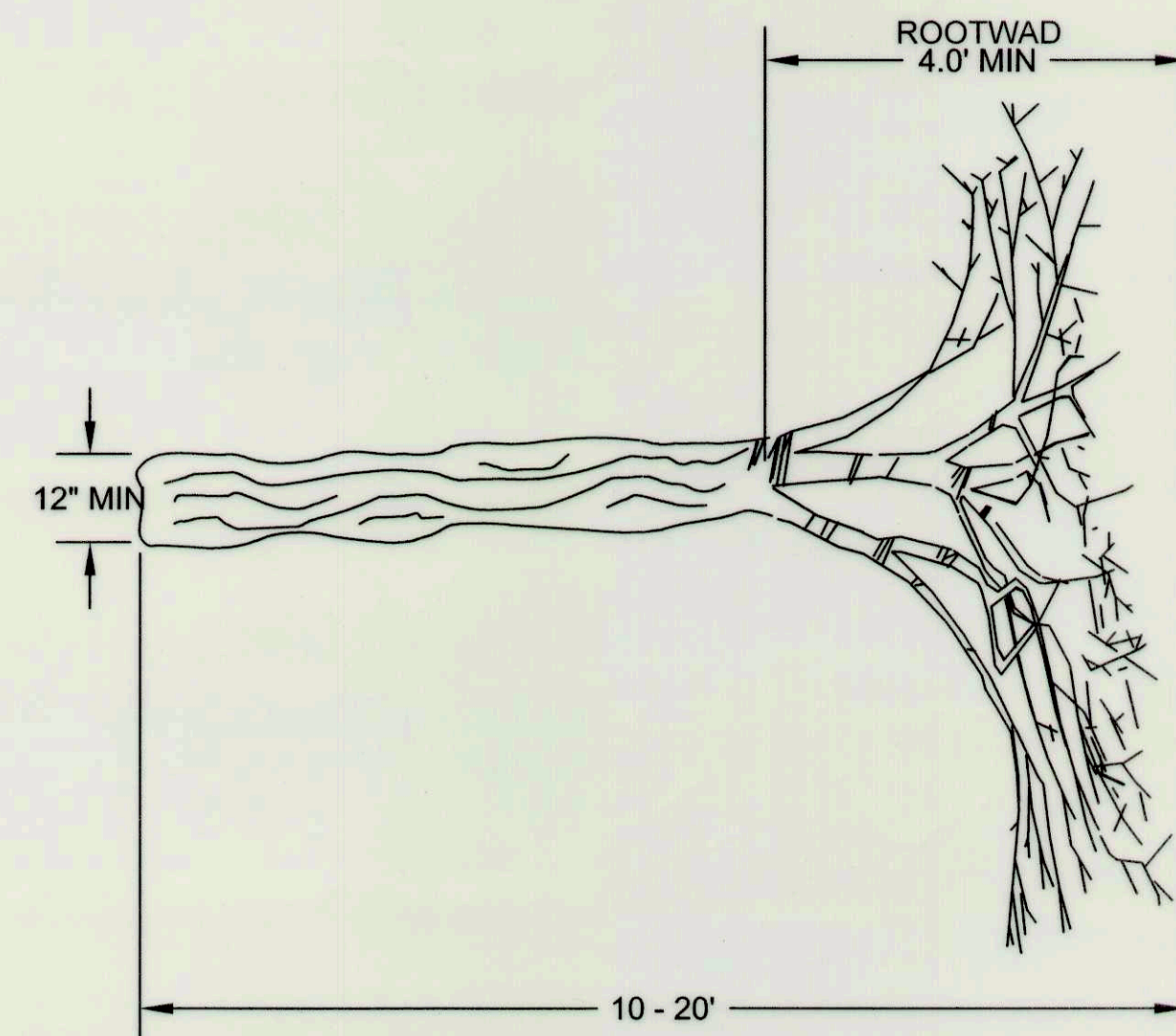


**INSTREAM LARGE WOODY DEBRIS (LWD)
LARGE WOODY DEBRIS BUNDLE** NOT TO SCALE

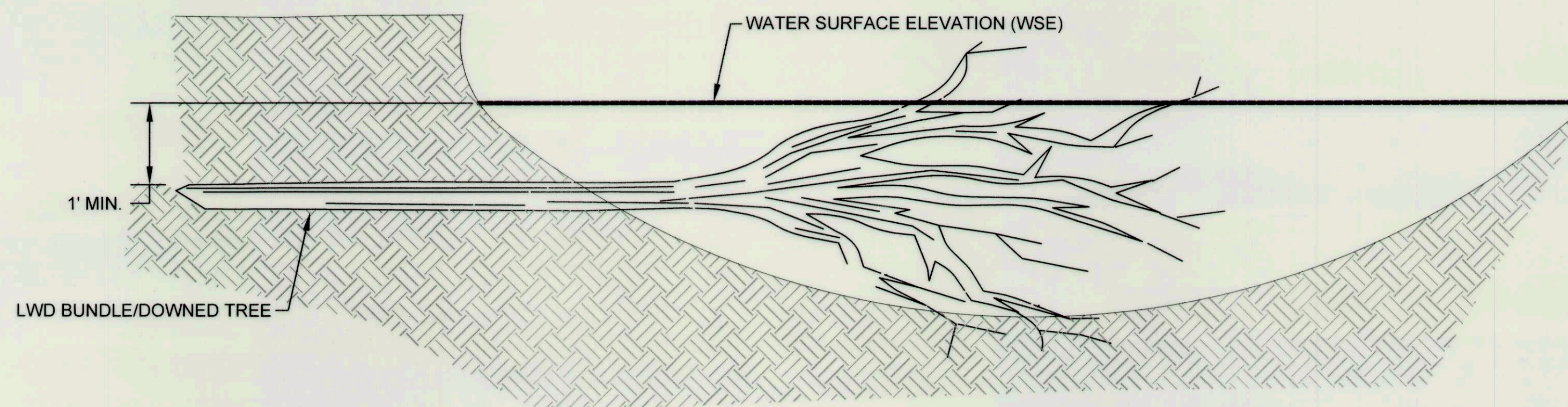
- NOTE:
1. INSTALL IN-STREAM LARGE WOODY DEBRIS, ONE PER POOL AT LOCATIONS DETERMINED BY ENGINEER
 2. PARTIALLY BURY ONSITE LWD INTO THE STREAM BANK APPROXIMATELY 2/3 OF TOTAL LENGTH TO SECURE IN PLACE AS DIRECTED BY THE ENGINEER
 3. IF DOWNED LOG IS BEING USED INSTEAD OF LWD, THE ROOTWAD SHALL BE PLACED WHERE BRANCHES ARE INDICATED ON THIS SHEET.



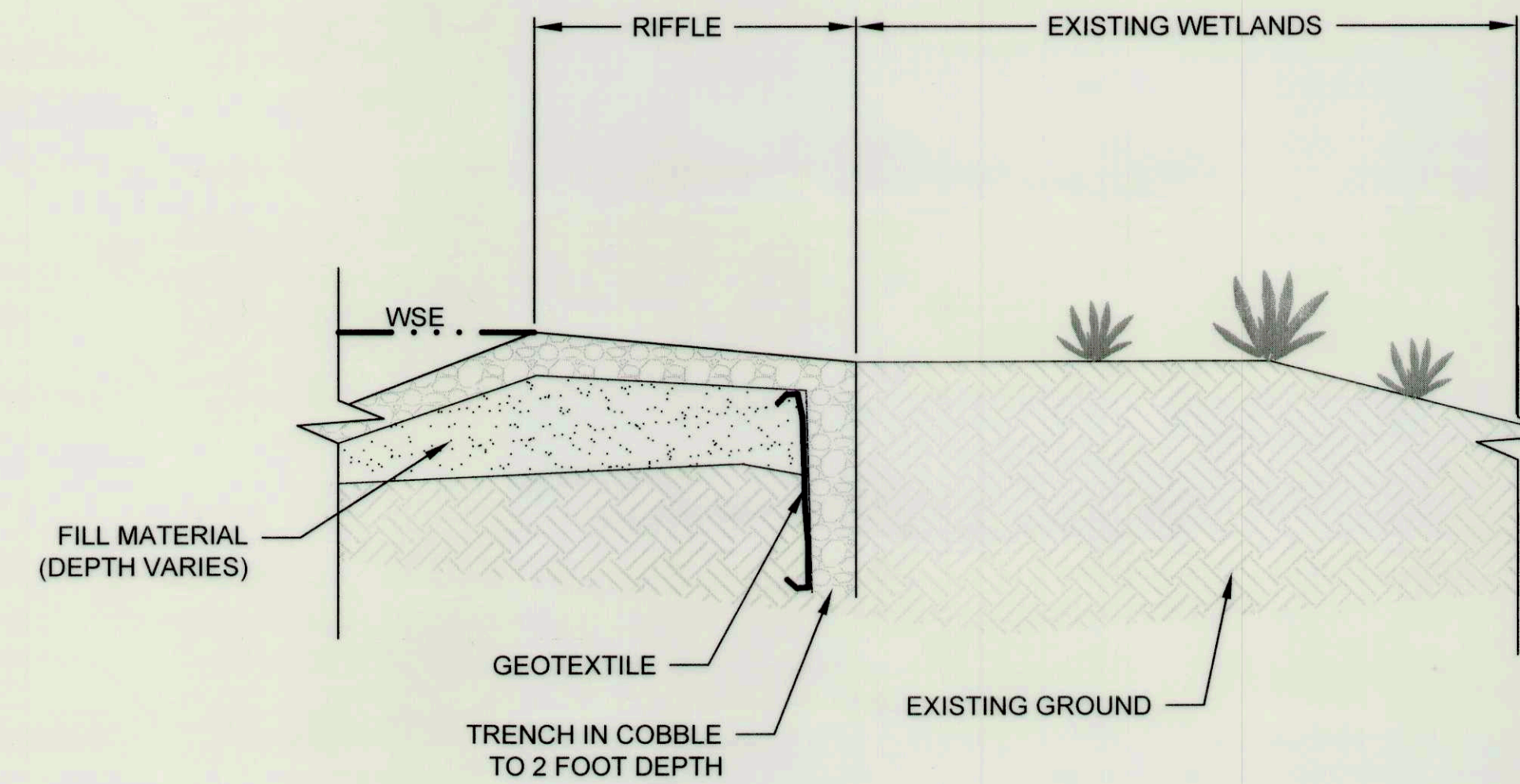
**INSTREAM LARGE WOODY DEBRIS (LWD)
PLAN VIEW- TYPICAL** NOT TO SCALE



**INSTREAM LARGE WOODY DEBRIS (LWD)
DOWNED LOG** NOT TO SCALE



**INSTREAM LARGE WOODY DEBRIS (LWD)
CROSS SECTION** NOT TO SCALE



**COBBLE TOE TRENCH
TYPICAL DETAIL** NOT TO SCALE

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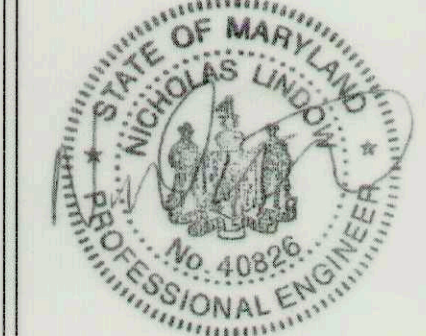
APPROVED: *[Signature]* DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE: 1/29/15

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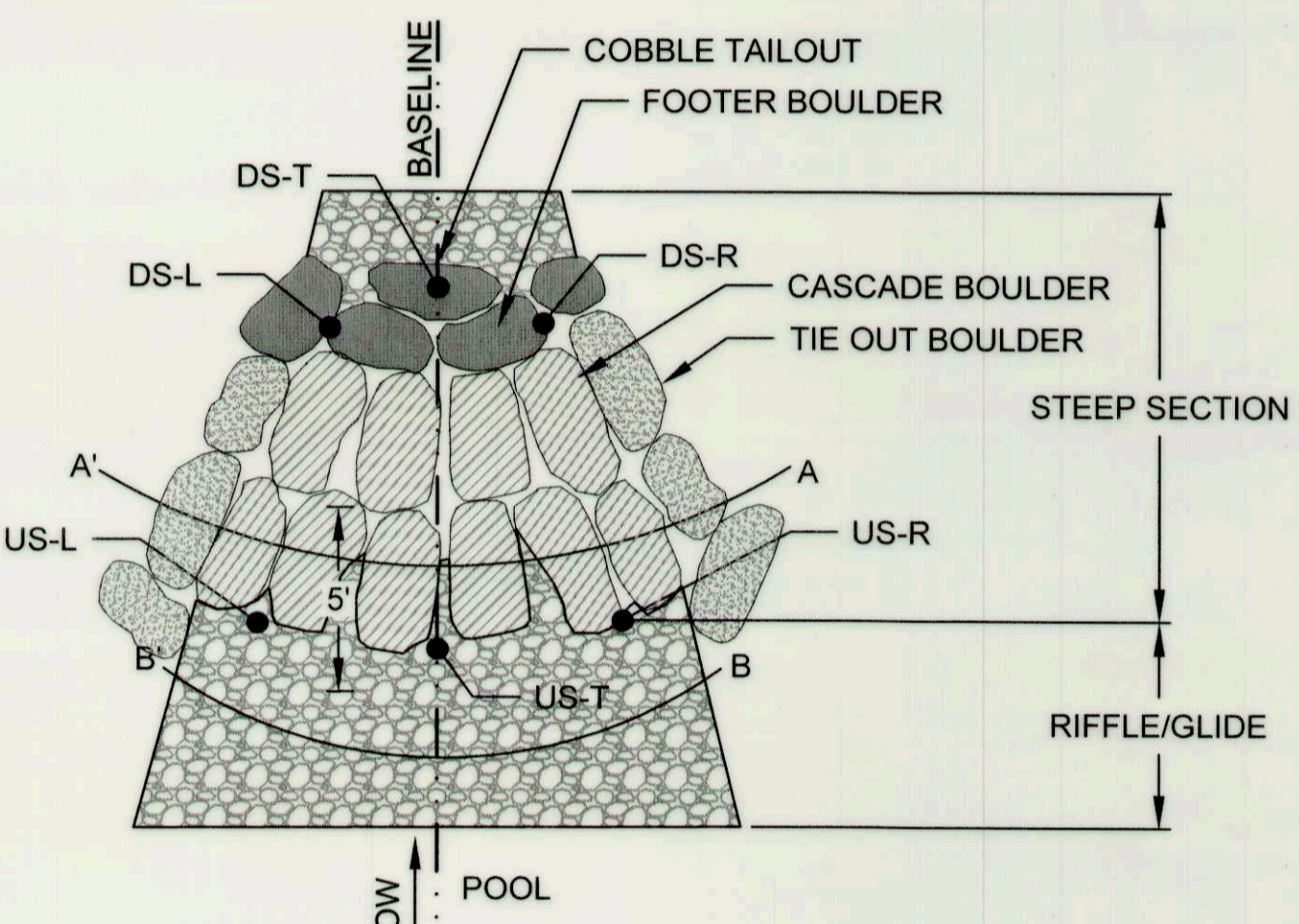
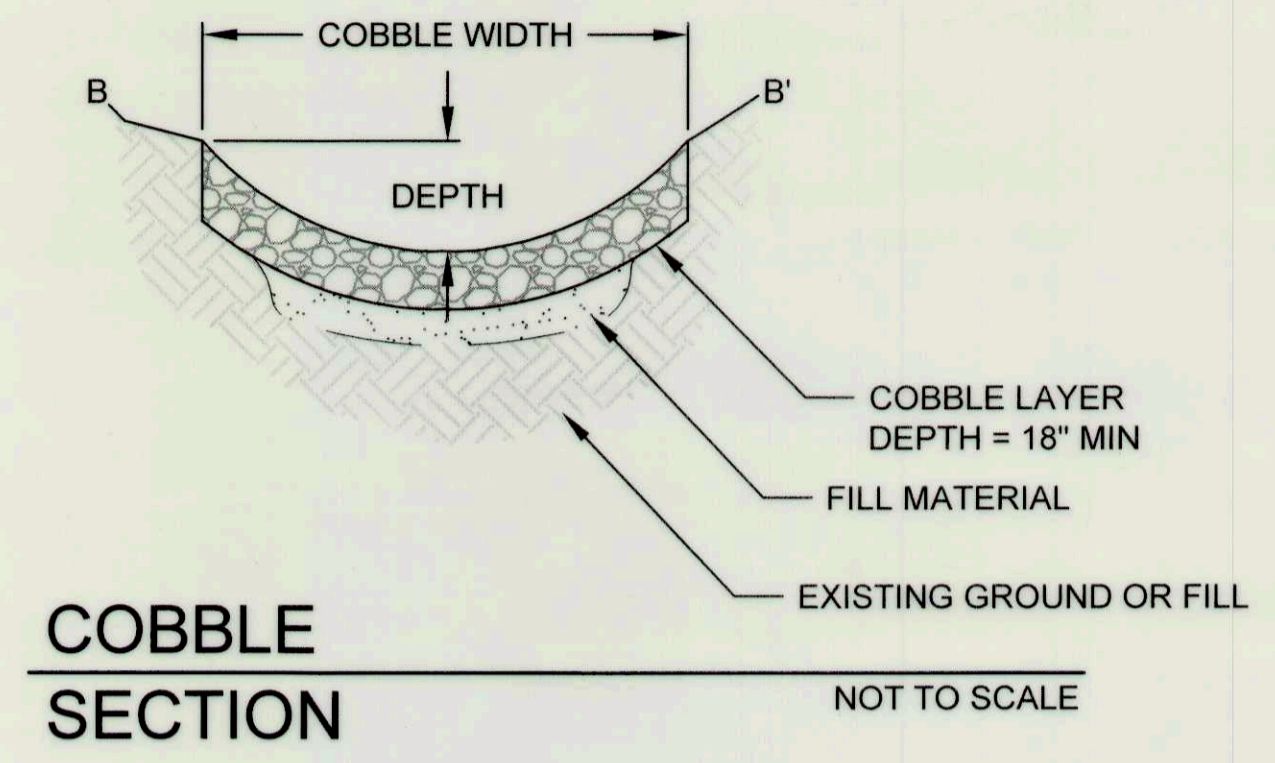
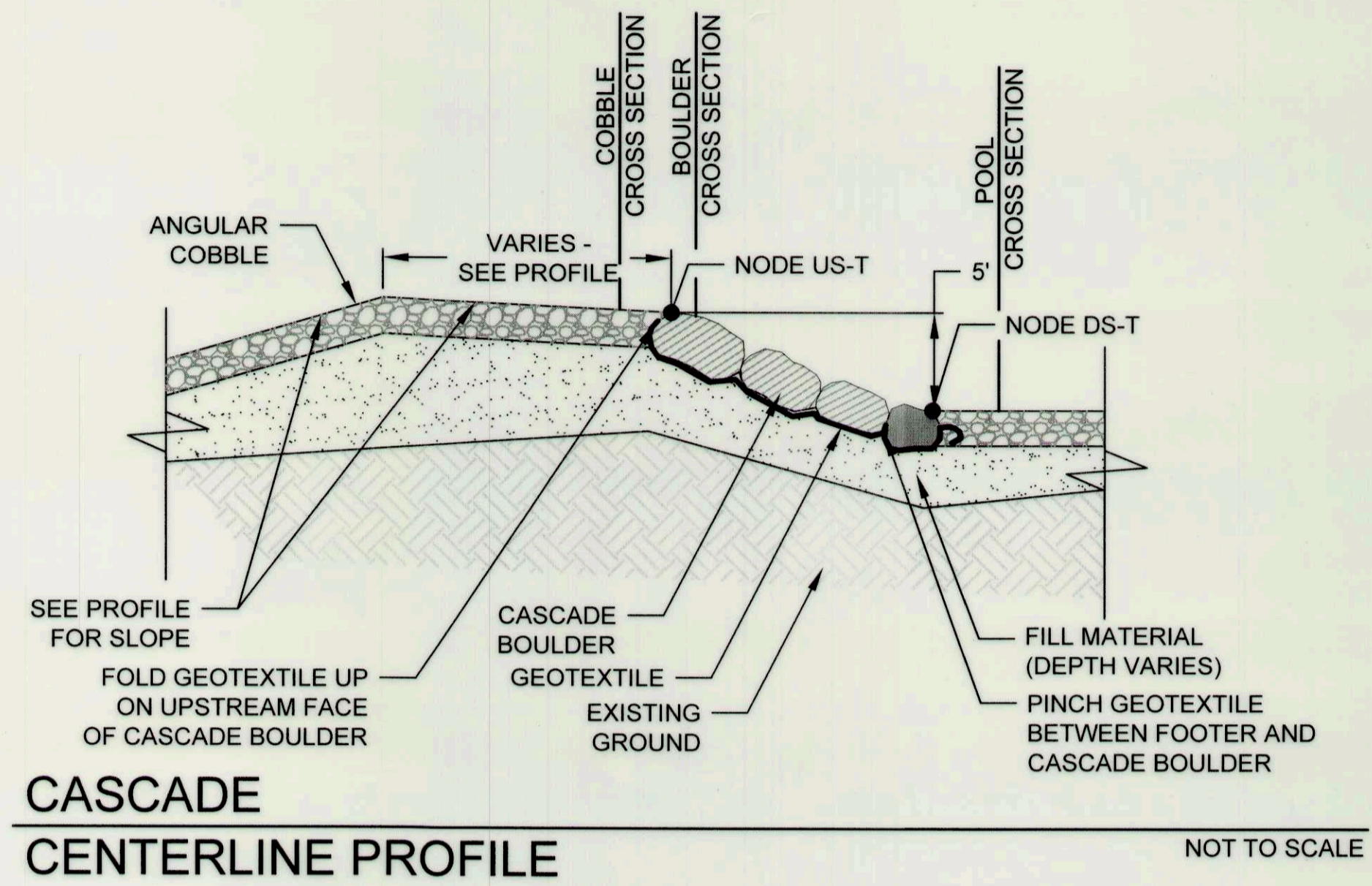
**DORSEY HALL
VILLAGE
STORMWATER
RETROFITS**

TITLE: **DETAILS**

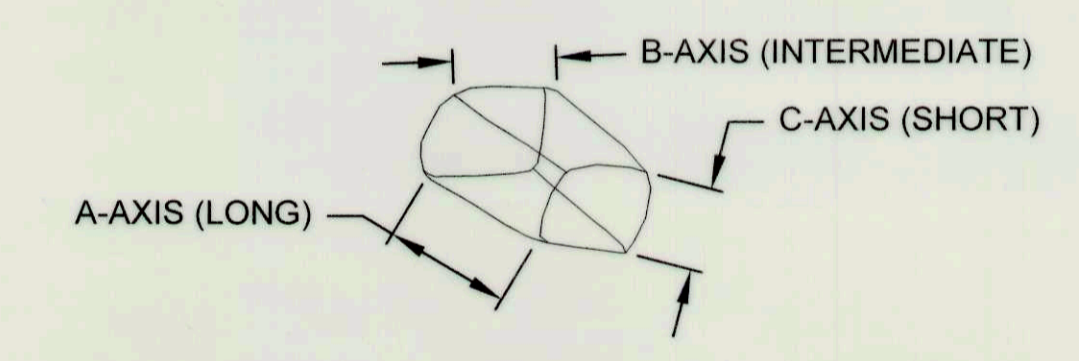
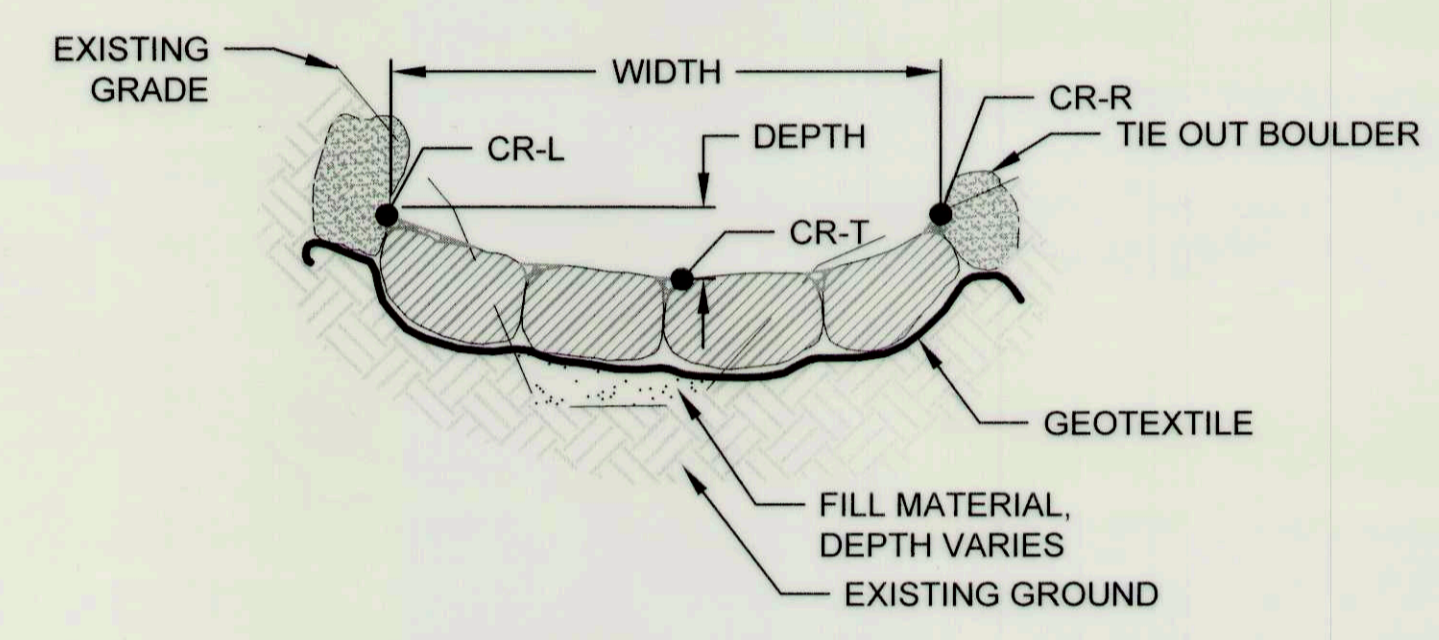
PROJECT NO: 13005.14	SCALE:
SEAL:	BY: KT/NL CHECK:
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- CASCADe NOTES:**
1. PLACE COBBLE IN A LIFT WITH THICKNESS EQUAL TO THE LARGEST STONE IN GRADATION. DO NOT DROP STONES FROM A HEIGHT GREATER THAN 2 FEET ABOVE THE FINISHED SUBGRADE.
 2. PLACE FINES GRADATION ON TOP OF EACH LIFT OF THE FRAMEWORK GRADATION AND USE PRESSURIZED WATER TO WASH THE FINES INTO THE VOIDS IN THE STONE LAYER. APPLY WATER SUFFICIENT TO ASSURE THAT ALL VOID SPACES ARE COMPLETELY FILLED WITH FINES.
 3. REMOVE ANY EXCESS FINES PRIOR TO PLACING THE NEXT LIFT OF COBBLE TO ASSURE COBBLE-TO-COBBLE CONTACT AND THAT THE SUBSEQUENT LIFT DOES NOT REST ON FINES.
 4. PLACE THE NEXT LIFT AS DESCRIBED ABOVE UNTIL THE FINISH GRADE HAS BEEN REACHED.
 5. NUMBER OF CASCADe BOULDERS MAY VARY FROM THAT SHOWN BASED ON SIZE AND SHAPE OF ACTUAL STONE.
 6. JOINTS BETWEEN CASCADe STONE IN SEQUENTIAL LAYERS SHALL BE STAGGERED A MINIMUM OF 1/3 STONE DIAMETER



- FILL MATERIAL NOTES:**
1. FILL MATERIAL SHALL BE SUITABLE MATERIAL FROM ON-SITE EXCAVATIONS OR FROM OTHER SOURCES.
 2. THE MATERIAL SHALL BE CLEAN EARTH.
 3. THE MATERIAL SHALL BE FREE FROM VEGETABLE MATTER, ORGANIC MATERIAL, SLUDGE, GRIT, TRASH, DEBRIS, MUCK, SWAMP MUCK, ROOTS, ROOT MAT, LOGS, STUMPS, TREE STUMPS, BRUSH, FROZEN MATERIAL OR OTHER DELETERIOUS SUBSTANCES.

- COBBLE MATERIAL NOTES:**
1. COBBLE FILL SHALL CONSIST OF CRUSHED STONE AND/OR ROUNDED ALLUVIAL GRAVELS THAT IS OF APPROPRIATE COLOR (E.G. GREEN/GRAY, BROWN/GRAY, DARK GRAY, AND/OR DARK BROWN IN COLOR).
 2. COBBLE SHALL BE COMPOSED OF WELL-GRADED MIXTURE OF STONE SIZE SO THAT 50% OF THE PIECES, BY WEIGHT, SHALL BE LARGER THAN THE D50 SIZE OF 4 INCHES. A WELL-GRADED MIXTURE AS USED HEREIN IS DEFINED AS A MIXTURE COMPOSED PRIMARILY OF LARGER STONE SIZES BUT WITH A SUFFICIENT MIXTURE OF OTHER SIZES TO FILL THE SMALL VOIDS BETWEEN THE COBBLES. SEE GRADATION TABLE ON THIS SHEET. GRADING OF COBBLE PIECES SHALL BE CONTROLLED BY VISUAL INSPECTION OR AS DIRECTED BY THE ENGINEER.
 3. SALVAGED STREAMBED MATERIAL AVAILABLE FROM BOTTOM OF THE EXISTING STREAM CHANNEL WITHIN LIMITS OF WORK MAY BE USED IN PLACE OF IMPORTING GRAVEL. SIZE AND TYPE OF STREAMBED MATERIAL MUST BE VISUALLY INSPECTED AND APPROVED BY THE ENGINEER. SALVAGING OF STREAMBED MATERIAL CAN ONLY OCCUR WHERE EXISTING STREAM BED IS TO BE FILLED.

COBBLE GRADATION TABLE

CUMULATIVE % FINER	COBBLE SIZE (IN)
100	7
84	6
60	5
50	4
30	3
10	1

FINES GRADATION TABLE

CUMULATIVE % FINER	FINES SIZE (IN)
100	NO. 7
50	NO. 10
15	NO. 200

- BOULDER MATERIAL NOTES:**
1. GAPS BETWEEN BOULDERS SHALL BE CHINKED WITH COBBLE
 2. TYPICALLY, CASCADe BOULDER A-AXIS WILL BE ORIENTED IN DIRECTION OF FLOW FOOTER BOULDERS A-AXIS WILL BE ORIENTED PERPENDICULAR TO FLOW.

BOULDER DIMENSIONS

	A-AXIS	B-AXIS	C-AXIS
CASCADe	3'-4'	2.5'-3.5'	1.5'-2'
FOOTER	3'-4'	2.5'-3.5'	1.5'-2'
TIE-OUT	2.5'-3.5'	2'-3'	1'-2'

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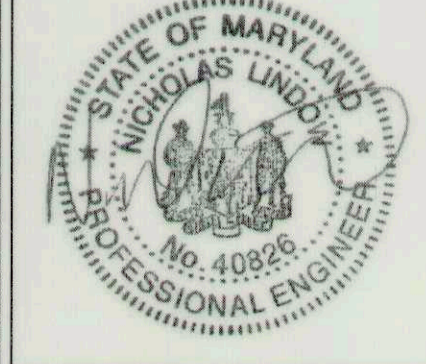
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[Signature] 1/24/15
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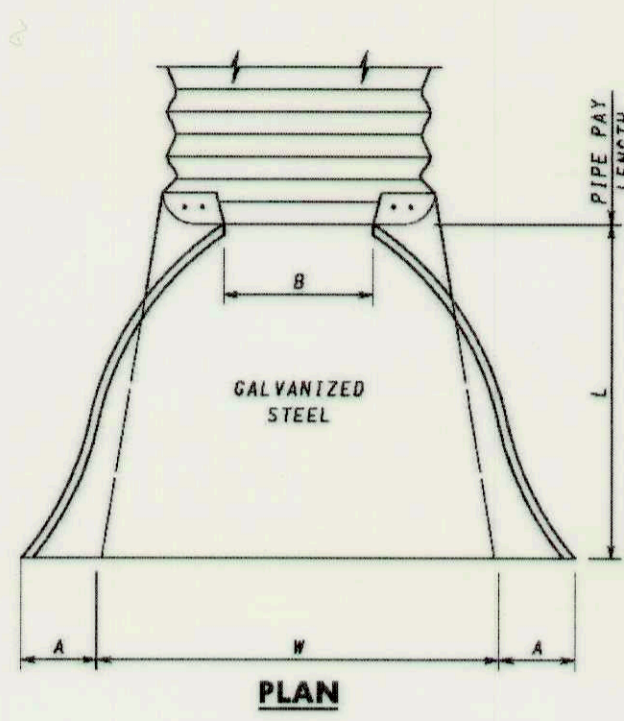
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DORSEY HALL VILLAGE STORMWATER RETROFITS

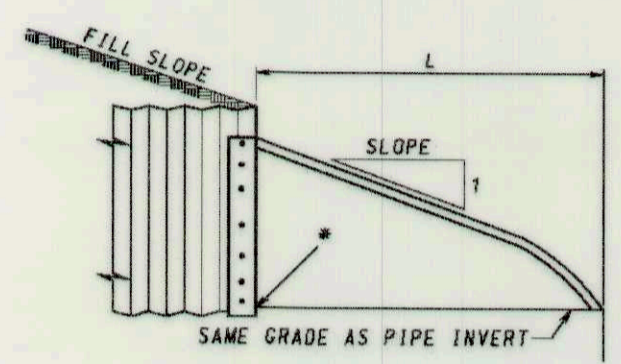
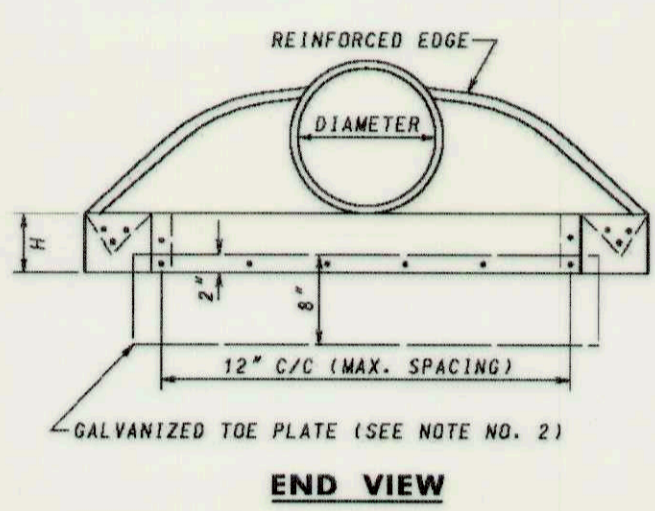
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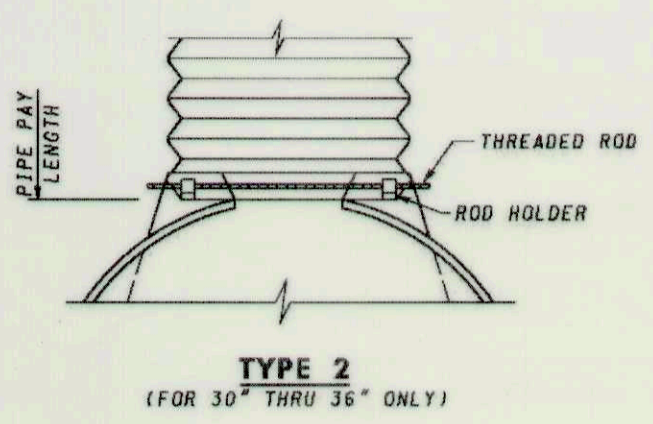
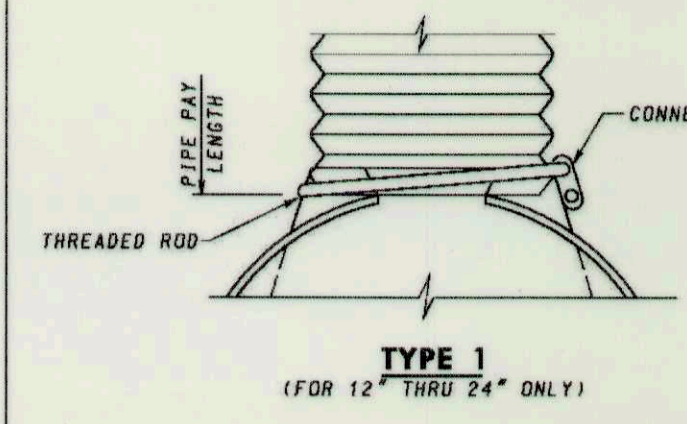


DIMENSIONS								
PIPE DIA.	GA.	A	B	H	L	W	APPROX. SLOPE	UNIT
12"	16	6"	6"	21"	24"	2 1/2"	1 PC.	
15"	16	7"	8"	26"	30"	2 1/2"	1 PC.	
18"	16	8"	10"	31"	36"	2 1/2"	1 PC.	
21"	16	9"	12"	36"	42"	2 1/2"	1 PC.	
24"	16	10"	13"	41"	48"	2 1/2"	1 PC.	
30"	14	12"	16"	51"	60"	2 1/2"	1 PC.	
36"	14	14"	19"	60"	72"	2 1/2"	2 PC.	



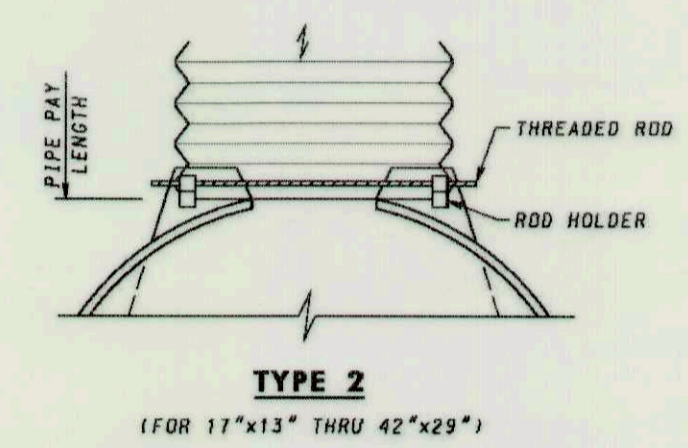
SIDE VIEW
 * INVERT ELEVATION TO BE AT THE PIPE END OF THE STANDARD END SECTION. ELEVATIONS TO BE NOTED ON THE CONSTRUCTION PLANS.

- NOTES**
- METAL END SECTIONS SHALL BE GAGE 16 FOR PIPES RANGING FROM 15" THRU 24", AND GAGE 14 FOR PIPES RANGING FROM 30" THRU 36". MULTIPLE PANEL UNITS TO HAVE LAP SEAMS WHICH ARE TO BE TIGHTLY JOINED BY 1/4" DIAMETER GALVANIZED RIVETS OR BOLTS.
 - TOE PLATES SHALL BE USED WHEN SPECIFIED ON THE PLANS. THICKNESS OF END PLATE TO BE SAME AS END SECTION. COST OF TOE PLATE TO BE INCIDENTAL TO THE BID PRICE PER EACH OF METAL END SECTION.



CONNECTIONS FOR ROUND PIPE

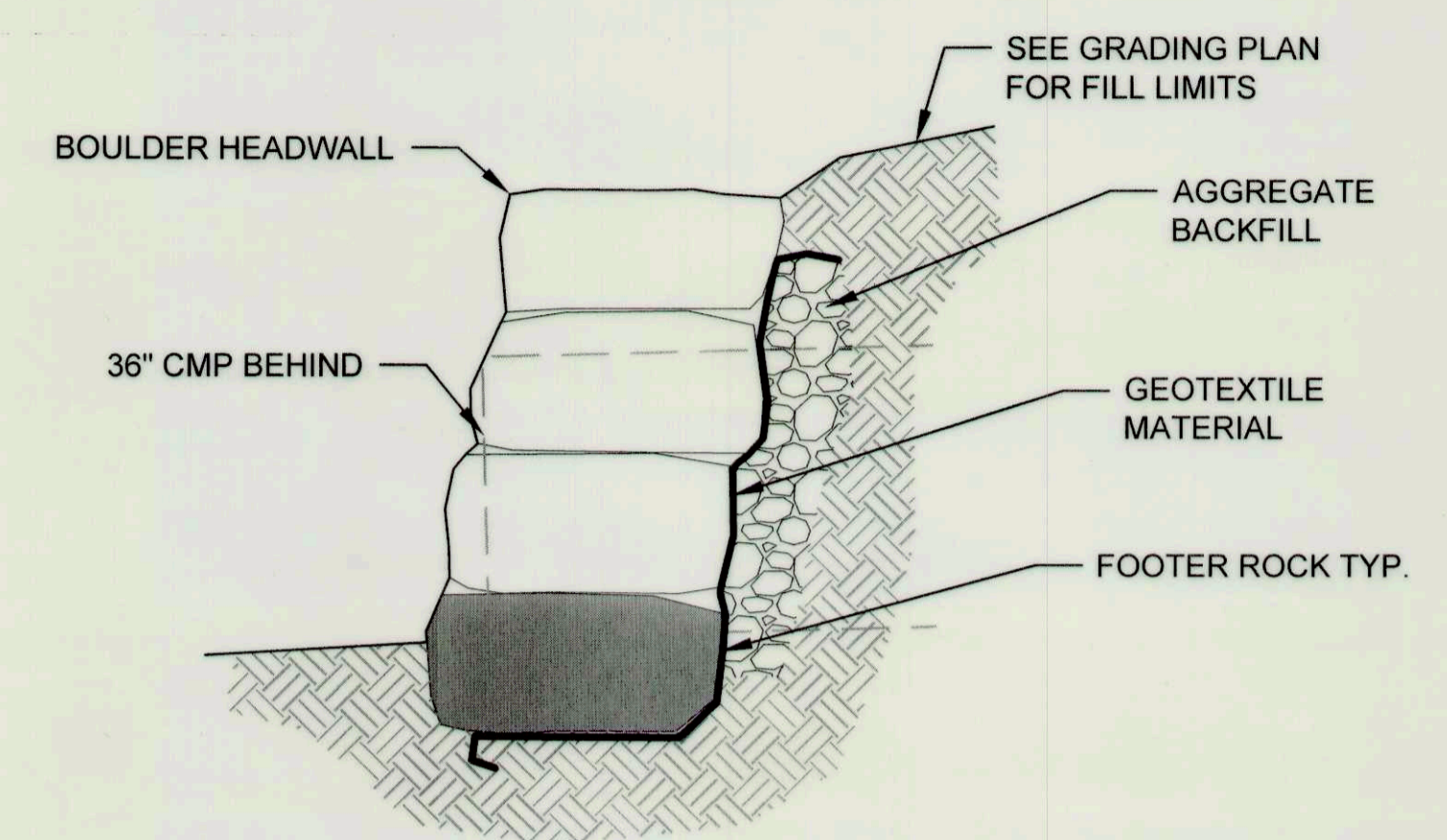
NOTE:
 PIPES AND CONNECTION BANDS SHALL CONFORM TO APPLICABLE SECTION OF THE STANDARD SPECIFICATIONS AND TO AASHTO REQUIREMENTS.



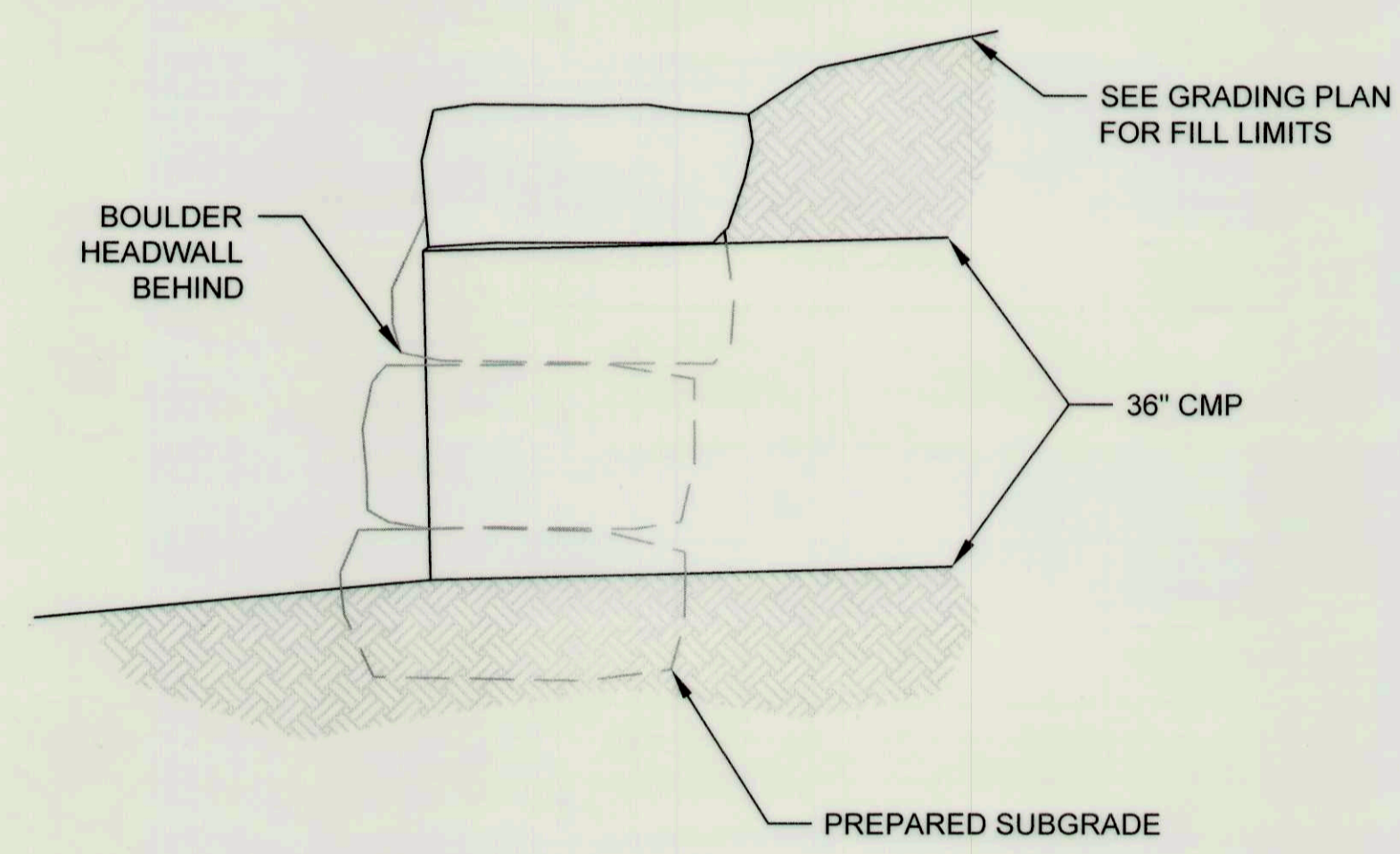
CONNECTIONS FOR PIPE ARCH

SPECIFICATION	CATEGORY CODE ITEMS	Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES STANDARD CONNECTIONS METAL END SECTIONS STANDARD NO. MD 370.11
APPROVED	<i>Kate G. McCall</i> DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT SHA State Highway Administration	
APPROVAL * REVISIONS	APPROVAL * FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL 8-28-86	APPROVAL 12-12-86	
REVISION 10-1-01	REVISION 7-27-09	
REVISION 7-1-09	REVISION	

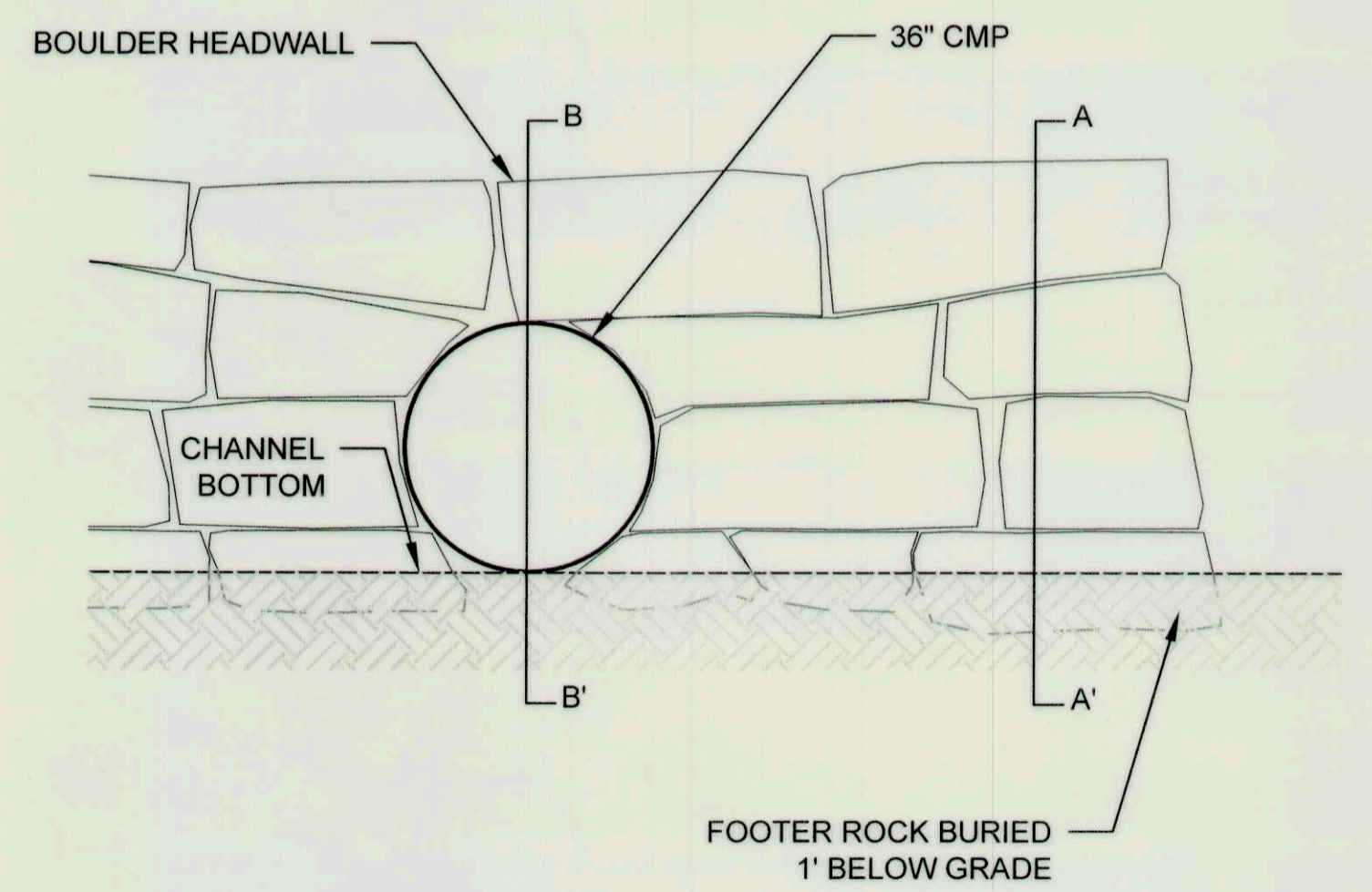
SPECIFICATION	CATEGORY CODE ITEMS	Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES STANDARD METAL END SECTION ROUND METAL PIPE STANDARD NO. MD 370.01
APPROVED	<i>Kate G. McCall</i> DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT SHA State Highway Administration	
APPROVAL * REVISIONS	APPROVAL * FEDERAL HIGHWAY ADMINISTRATION	
APPROVAL 8-28-86	APPROVAL 12-12-86	
REVISION 10-1-01	REVISION 7-27-09	
REVISION 7-1-09	REVISION	



BOULDER HEADWALL SECTION A - A'
 NOT TO SCALE



BOULDER HEADWALL SECTION B - B'
 NOT TO SCALE



BOULDER HEADWALL SECTION C - C'
 NOT TO SCALE

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APPROVED DEPARTMENT OF PUBLIC WORKS

M. L. ...
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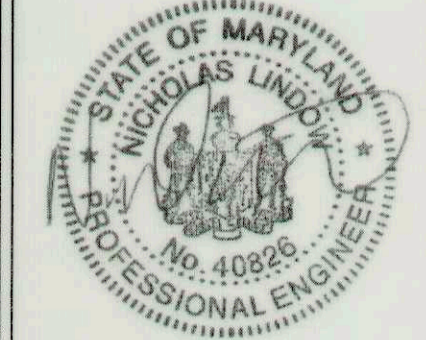
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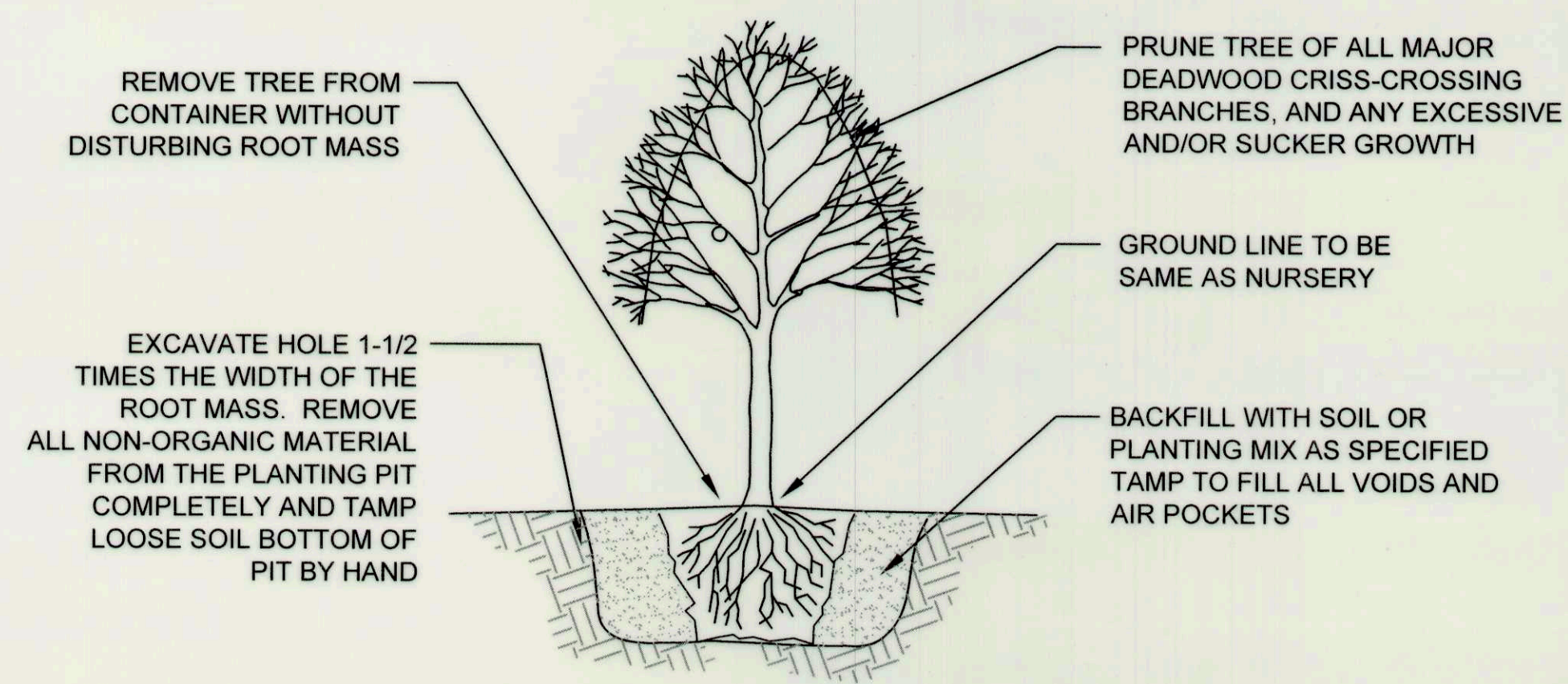
**DORSEY HALL
 VILLAGE
 STORMWATER
 RETROFITS**

DETAILS

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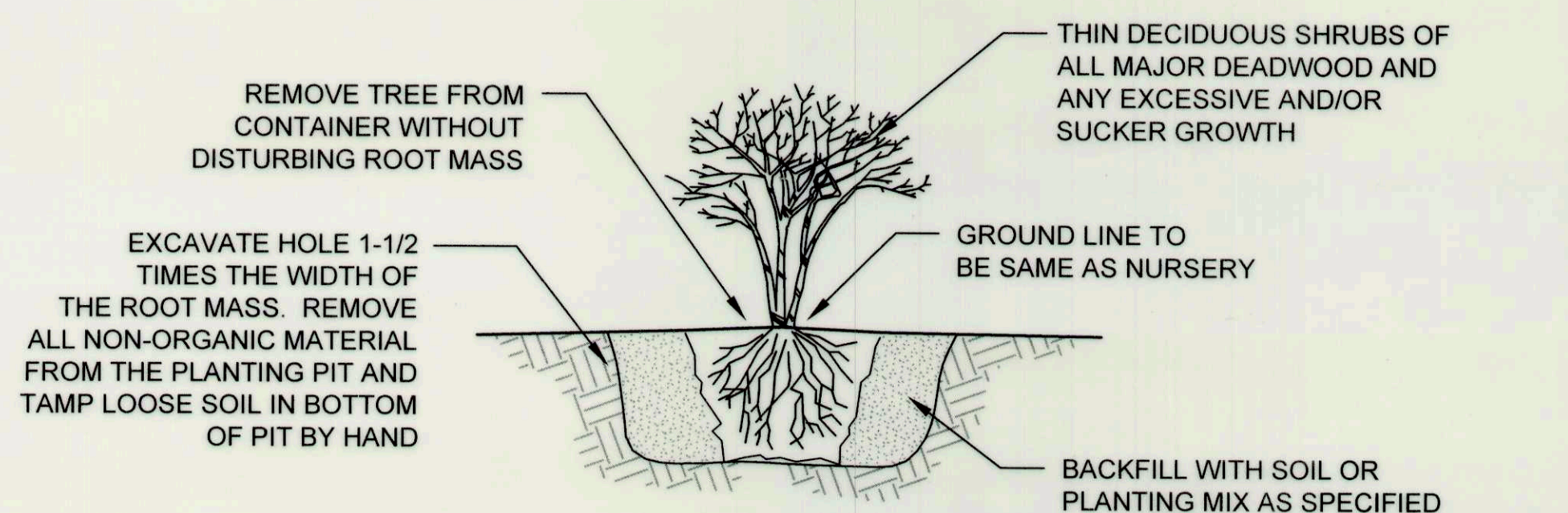
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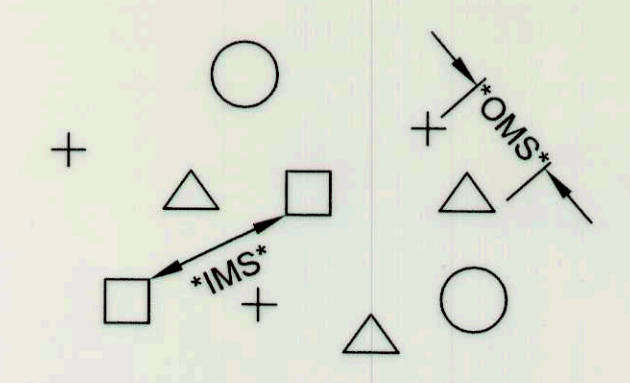
TREE PLANTING - CONTAINER GROWN

NOT TO SCALE



SHRUB PLANTING - CONTAINER GROWN

NOT TO SCALE



OMS- AN OVERALL MINIMUM SPACING DISTANCE *OMS* IS ASSIGNED TO THE PLANTING CONFIGURATION *SEE PLANT SCHEDULE*
 IMS- AN INDIVIDUAL MINIMUM SPACING DISTANCES *IMS* IS ASSIGNED TO EACH INDIVIDUAL SPECIES *SEE PLANT SCHEDULE*

PLANT SPACING - RANDOM PLAN VIEW

NOTE: EACH SYMBOL INDICATES A DIFFERENT SPECIES
 NOT TO SCALE

PLANT AND COMPOSITION SCHEDULE
Planting Zone 1: Shaded Emergent Freshwater Wetland

Size (acres): 0.4

Overall Minimum Spacing (feet off center)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Unit	Spacing Type	Size	Individual Minimum Spacing (ft.)
HERBACEOUS PLANTS									
2.5	6970	15	418	<i>Iris versicolor</i>	Blue flag iris	CON	Clump	2" Plug	6
		20	568	<i>Pontederia cordata</i>	Pickersweed	CON	Clump	2" Plug	6
		10	279	<i>Peltandra virginica</i>	Arrow arum	CON	Clump	2" Plug	8
		20	558	<i>Saururus cernuus</i>	Lizards tail	CON	Clump	2" Plug	6
		15	418	<i>Juncus effusus</i>	Soft rush	CON	Clump	2" Plug	6
		20	558	<i>Carex stricta</i>	Tussock sedge	CON	Clump	2" Plug	6
			2789	= Total					

CON= container
 P.L.S. = Pure Live Seed

PLANT COMPOSITION SCHEDULE
Planting Zone 2: Scrub Shrub

Size (acres): 0.4

Overall Minimum Spacing (ft.)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Unit	Spacing Type	Size	Individual Minimum Spacing (ft.)
SHRUB									
6	1210	20	97	<i>Cornus amomum</i>	Silky dogwood	CONT	Random	18-24"	13
		15	73	<i>Alnus serrulata</i>	Smooth alder	CONT	Random	18-24"	15
		30	145	<i>Cornus sericea</i>	Red osier dogwood	CONT	Random	18-24"	11
		15	73	<i>Salix sericea</i>	Silky willow	CONT	Random	18-24"	15
		20	97	<i>Cephalanthus occidentalis</i>	Buttonbush	CONT	Random	18-24"	13
			485	= total					
HERBACEOUS SEED									
N/A	35	10	1.4	<i>Scirpus cyperinus</i>	Wool grass	SEED	LB of P.L.S. 76 %	N/A	N/A
		25	3.5	<i>Elymus riparius</i>	Riverbank wild rye	SEED	LB of P.L.S. 76 %	N/A	N/A
		25	3.5	<i>Elymus virginicus</i>	Virginia wild rye	SEED	LB of P.L.S. 76 %	N/A	N/A
		25	3.5	<i>Tridens flavus</i>	Purpletop	SEED	LB of P.L.S. 76 %	N/A	N/A
		15	2.1	<i>Dichanthelium clandestinum</i>	Deertongue	SEED	LB of P.L.S. 76 %	N/A	N/A
			14	= total					

CON = Containerized
 P.L.S. = Pure Live Seed

PLANT AND COMPOSITION SCHEDULE
Planting Zone 3: Floodplain Forest

Size (acres): 0.6

Overall Minimum Spacing (feet off center)	Quantity per acre	Frequency (%)	Species Quantity	Vegetation Strata/ Species Name	Common Name	Unit	Spacing Type	Size	Individual Minimum Spacing (ft.)
OVERSTORY TREES									
25	70	10	4	<i>Acer saccharinum</i>	Silver maple	B&B	See Plan	2.5" CAL	81
		20	8	<i>Quercus bicolor</i>	Swamp white oak	B&B	See Plan	2.5" CAL	57
		20	8	<i>Quercus phellos</i>	Willow oak	B&B	See Plan	2.5" CAL	57
		25	11	<i>Platanus occidentalis</i>	Sycamore	B&B	See Plan	2.5" CAL	49
			31	= Total					
MIDSTORY TREES									
18	134	15	2	<i>Betula nigra</i>	River birch	CONT	See Plan	2" CAL	114
		10	1	<i>Amelanchier canadensis</i>	Serviceberry	CONT	See Plan	2" CAL	162
			3	= total					
SHRUBS									
12	303	15	27	<i>Alnus serrulata</i>	Smooth alder	CON	Random	1 Gal	31
		20	36	<i>Sambucus canadensis</i>	Common elderberry	CON	Random	1 Gal	27
		10	18	<i>Ilex verticillata</i>	Winterberry	CON	Random	1 Gal	38
		30	55	<i>Lindera benzoin</i>	Common spicebush	CON	Random	1 Gal	22
		25	45	<i>Viburnum dentatum</i>	Arrowwood	CON	Random	1 Gal	24
			181	= Total					
HERBACEOUS PLANTS									
4	2723	15	245	<i>Symplocarpus foetidus</i>	Skunk cabbage	CON	Clump	Quart	10
		20	327	<i>Onclea sensibilis</i>	Sensitive fern	CON	Clump	Quart	9
		15	245	<i>Osmunda cinnamomea</i>	Cinnamon fern	CON	Clump	Quart	10
		25	408	<i>Lobelia cardinalis</i>	Cardinal flower	CON	Clump	Quart	8
			1225	= Total					
NATIVE SEED									
N/A	30	50	9	<i>Carex pennsylvanica</i>	Pennsylvania sedge	LB of P.L.S. 76 %	SEED	N/A	N/A
		50	9	<i>Elymus virginicus</i>	Virginia wild rye	LB of P.L.S. 76 %	SEED	N/A	N/A
			18.0	= Total					

CON= container
 P.L.S. = Pure Live Seed
 B&B= Balled & Burlapped

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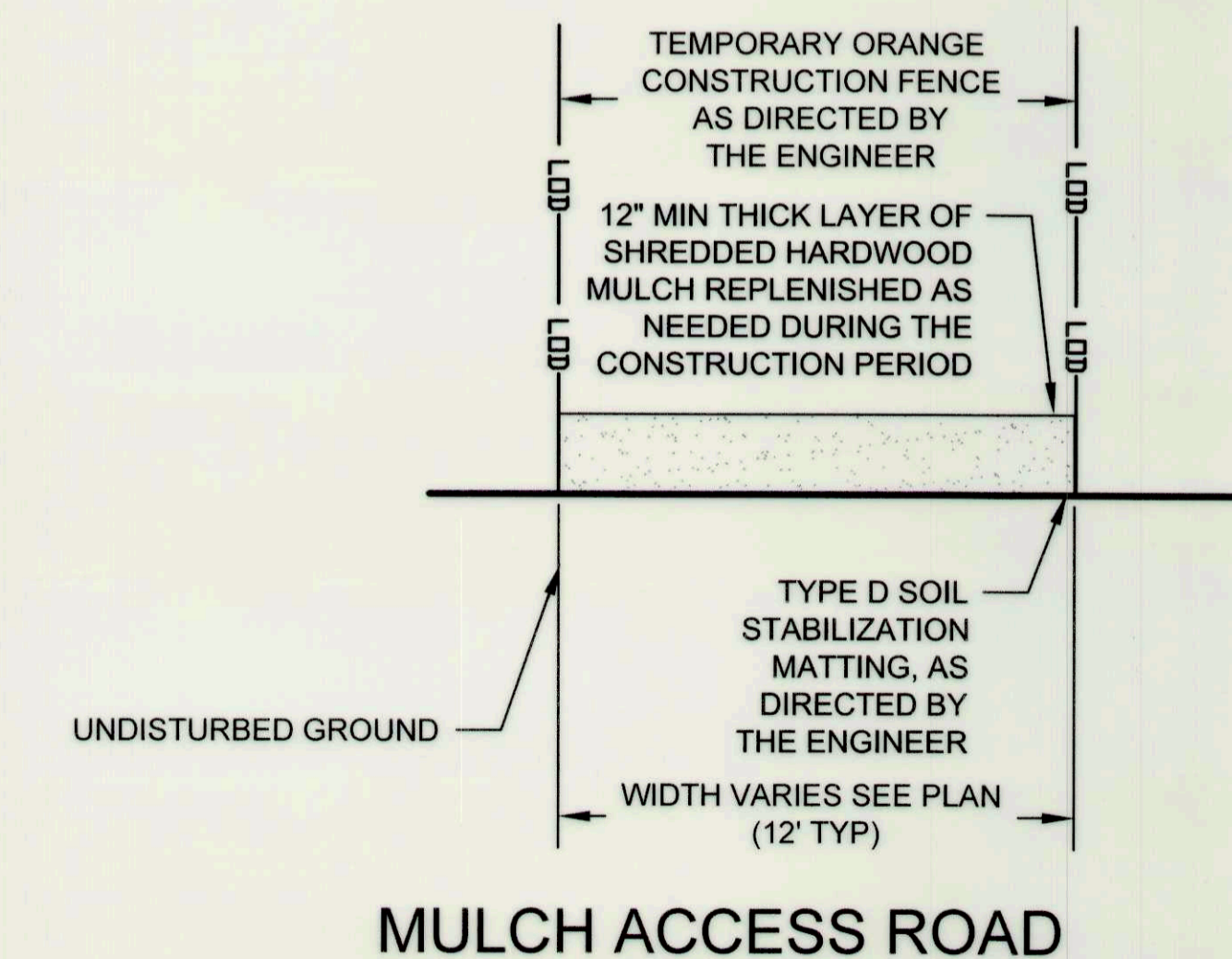
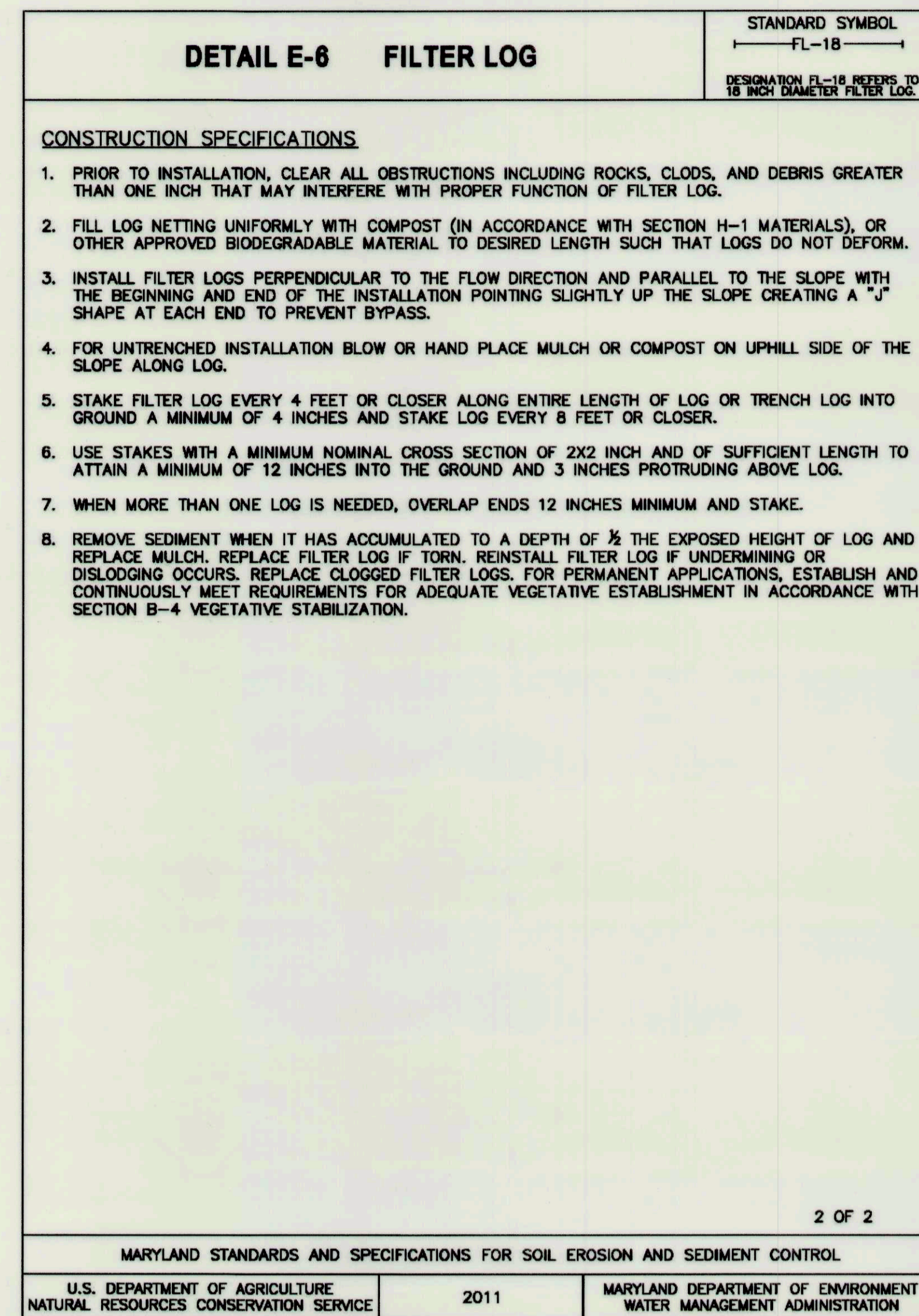
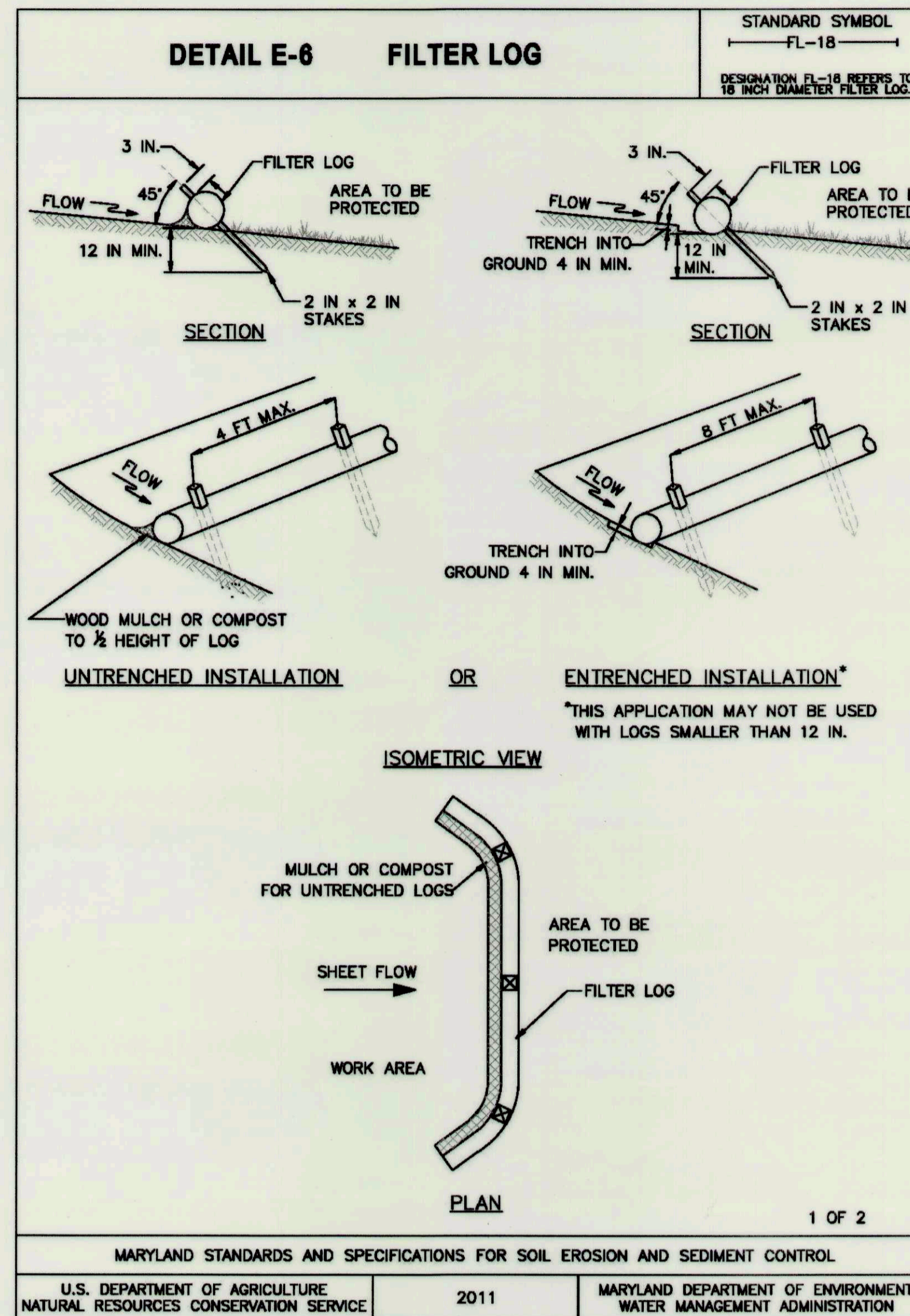
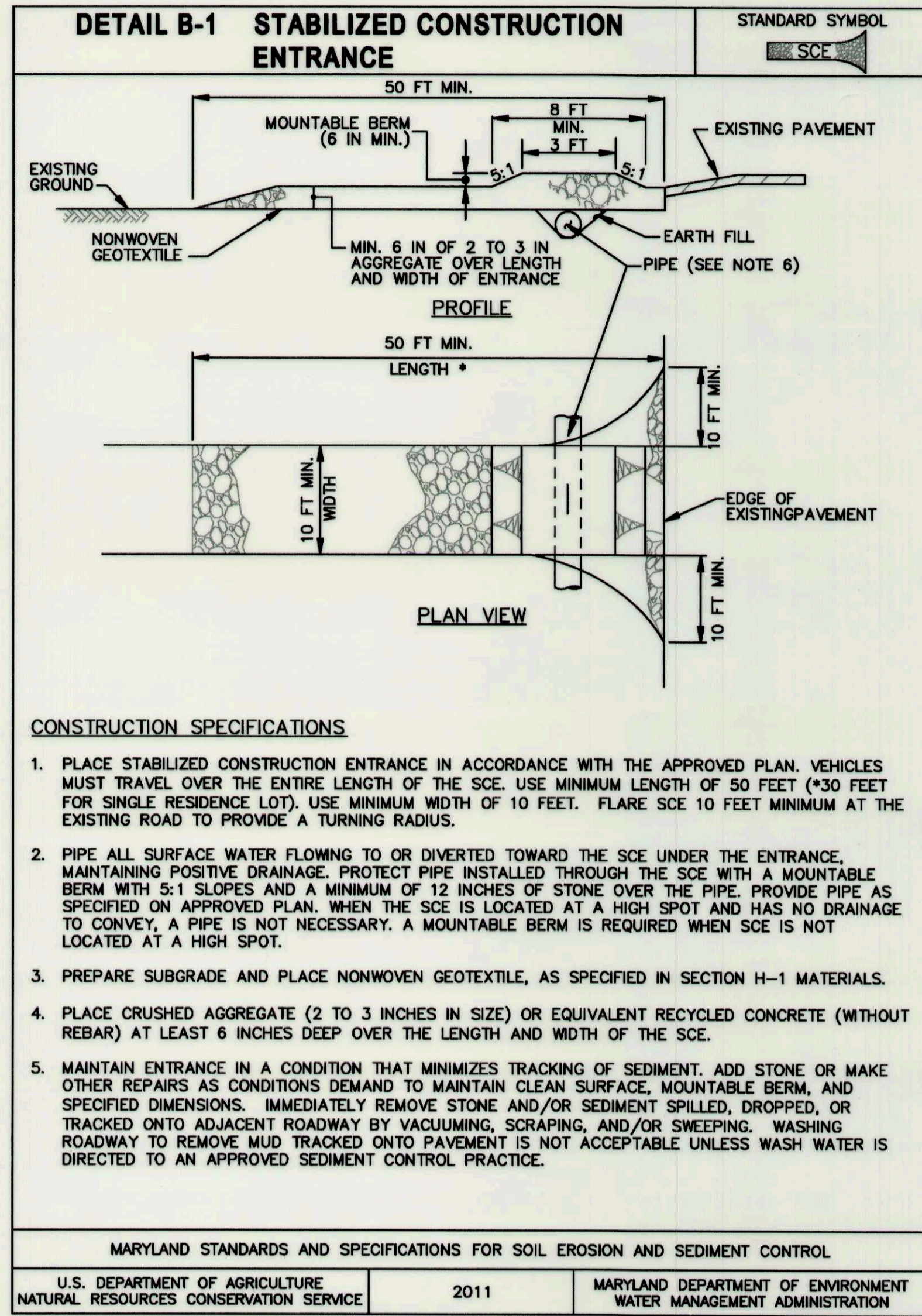
DORSEY HALL VILLAGE STORMWATER RETROFITS

TITLE: **DETAILS**

PROJECT NO. 13005.14 SCALE:

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- NOTES:**
1. ACCESS ROUTES TO BE VERIFIED BY ENGINEER AT EROSION AND SEDIMENT CONTROL MEETING. REVISIONS TO THE ALIGNMENT THAT MINIMIZE TREE DISTURBANCE ARE ENCOURAGED AND REQUIRE REVIEW AND APPROVAL BY THE ENGINEER.
 2. SOIL STABILIZATION MATTING SHALL BE PLACED AT THE DISCRETION OF THE ENGINEER, WITH SEAMS PARALLEL TO THE FLOW OF TRAFFIC AND SHALL OVERLAP BY 18" MINIMUM AT SEAMS.
 3. CONTRACTOR SHALL MAINTAIN MULCH ACCESS THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF PROJECT, MULCH AND COIR MATTING SHALL BE FULLY REMOVED IN ZONE 1. IN ZONE 2 MULCH AND SOIL STABILIZATION MATTING CAN REMAIN IN PLACE AT A MAXIMUM DEPTH OF 2".
 4. SCARIFICATION OF COMPACTED MULCH TO OCCUR UPON REMOVAL OF ACCESS ROAD, AT THE DIRECTION OF THE ENGINEER.
 5. THE ACCESS ROAD IS DESIGNED TO PREVENT COMPACTION OF EXISTING SOILS USING LOW PRESSURE EQUIPMENT WHICH EXERTS NO MORE THAN 8 PSI. IF THE CONTRACTOR INTENDS TO USE ANY EQUIPMENT WITH HIGHER LOADS, ADDITIONAL PROTECTION MEASURES MUST BE PROVIDED, AT NO ADDITIONAL COST TO THE COUNTY, AND THOSE MEASURES MUST BE APPROVED BY THE ENGINEER PRIOR TO IMPLEMENTATION.

NOT TO SCALE

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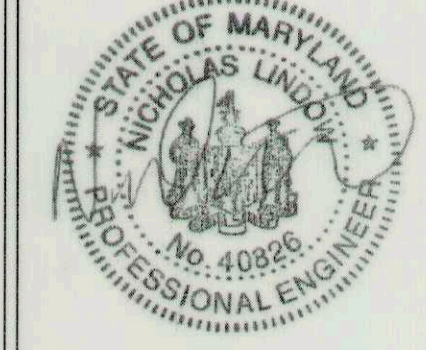
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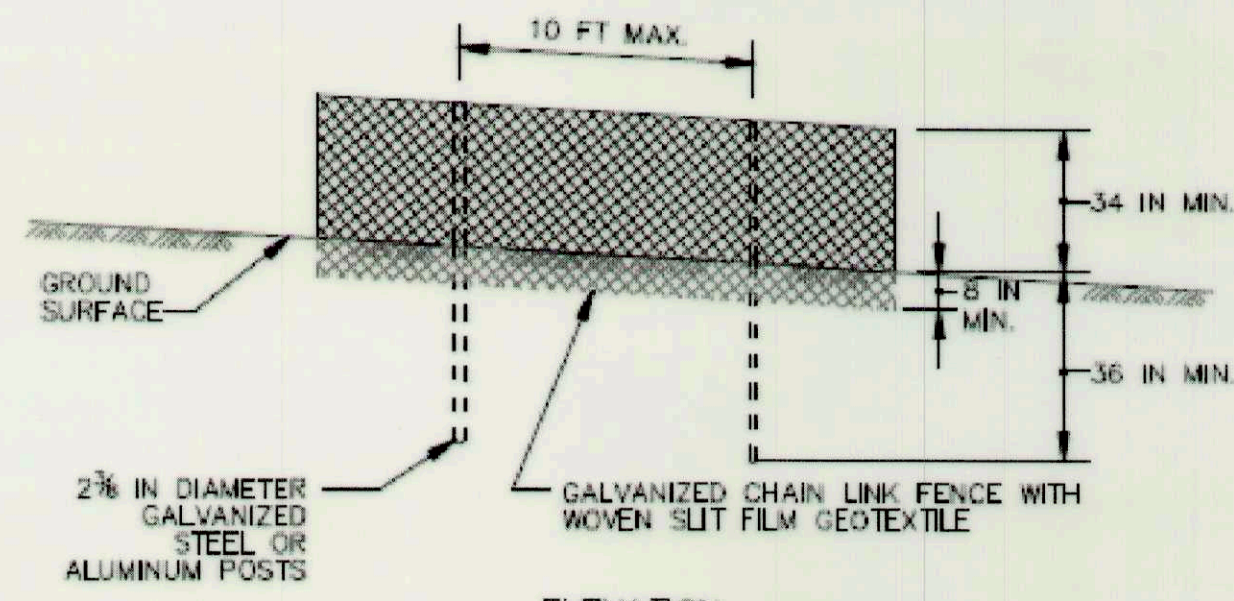
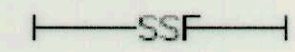
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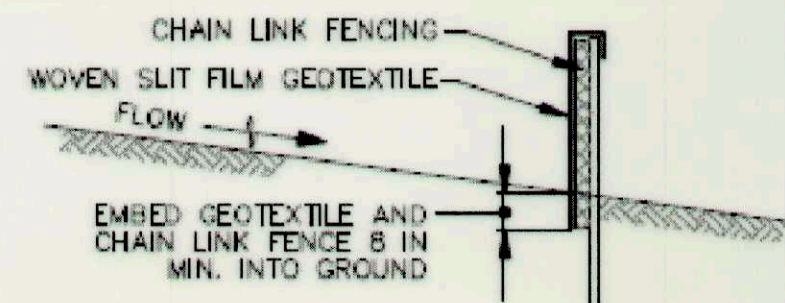
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DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL



ELEVATION



CROSS SECTION

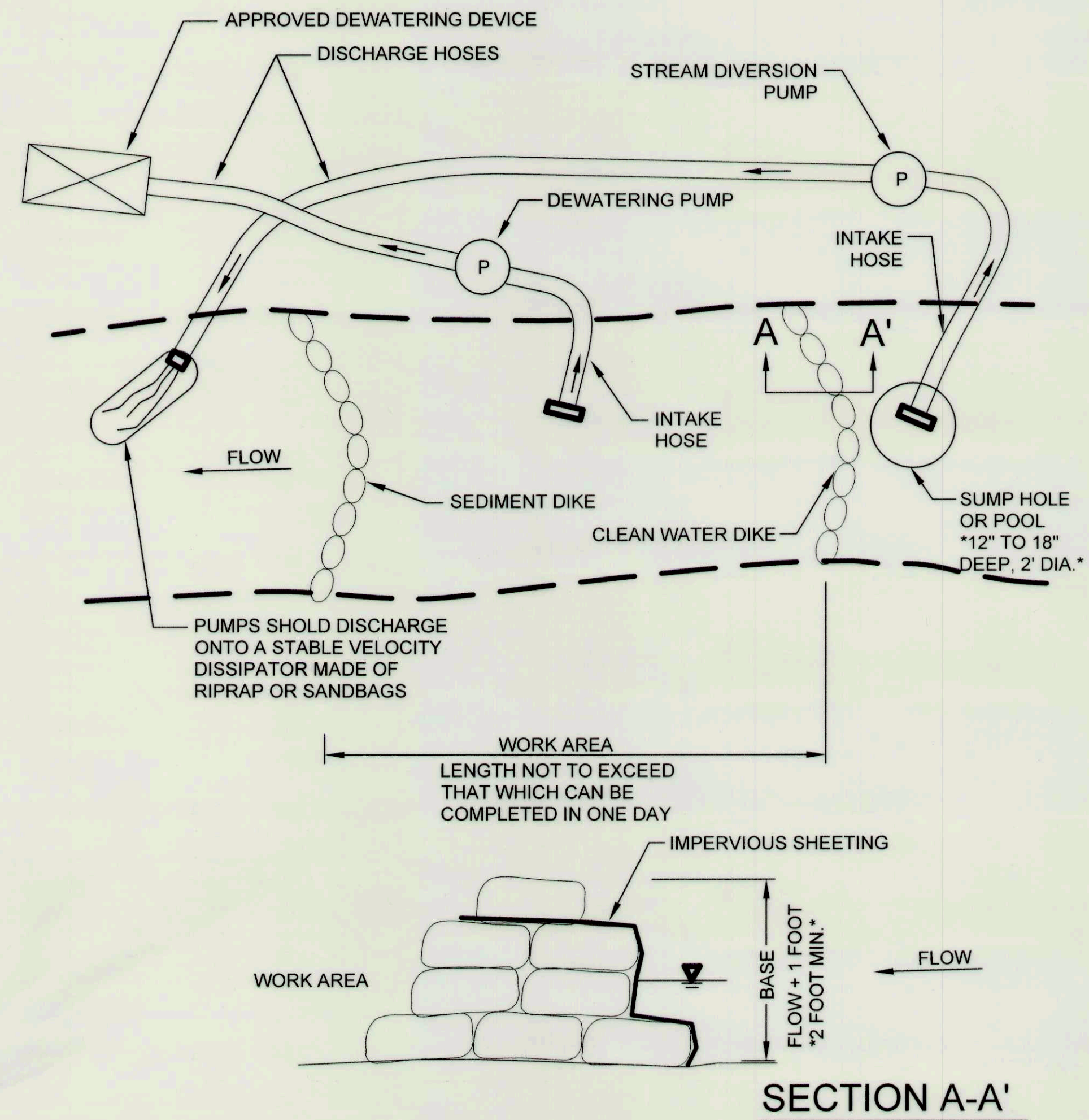
CONSTRUCTION SPECIFICATIONS

- INSTALL 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
- FASTEN 8 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 1/2 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION
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PUMP AROUND

NOT TO SCALE

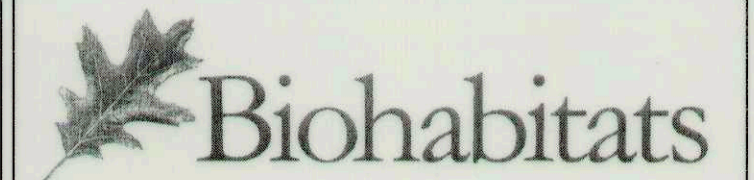
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DATE ISSUES / REVISIONS

09/18/2014	60% DESIGN
12/04/2014	FINAL DESIGN

APPROVED: DEPARTMENT OF PUBLIC WORKS

Michael P. ... 1/28/15
CHIEF, BUREAU OF ENVIRONMENTAL SERVICES DATE



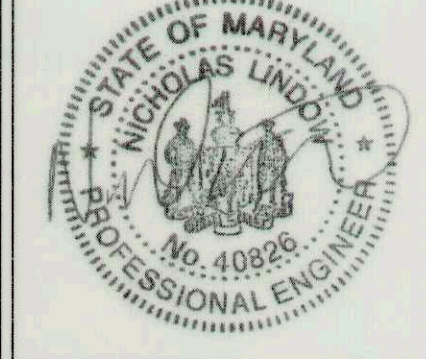
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Restore the Earth & Inspire Ecological Stewardship

**DORSEY HALL
VILLAGE
STORMWATER
RETROFITS**

DETAILS

PROJECT NO: 13005.14	SCALE:
SEAL:	BY: KT/NL CHECK:
	DWG NO:



2011 MD STANDARDS & SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL – B-4-8 STOCKPILE AREA

DEFINITION - A MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.
 PURPOSE - TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.
 CONDITIONS WHERE PRACTICE APPLIES - STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

CRITERIA:

1. THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
2. THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
3. RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
4. ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
5. CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
6. WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
7. STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
8. IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, A LINER SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

MAINTENANCE:

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

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	1.4 acres
AREA DISTURBED	1.4 acres
AREA TO BE ROOFED OR PAVED	0 acres
AREA TO BE VEGETATIVELY STABILIZED	1.4 acres
TOTAL CUT	1,337 cubic yards
TOTAL FILL	568 cubic yards
OFFSITE WASTE/BORROW AREA LOCATION	SEE CAPITAL PROJECT PLAN #D-1158; EP-15-16
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 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 BE 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.

NOTE: TEMPORARY AND/OR PERMANENT STABILIZATION IS TO BE PERFORMED AT THE DIRECTION OF THE SEDIMENT CONTROL INSPECTOR OR AT THE INTERVALS REQUIRED BY THE 2011 STANDARDS & SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, WHICHEVER IS MORE RESTRICTIVE.

SEQUENCE OF CONSTRUCTION

EROSION AND SEDIMENT CONTROL SETUP (1 WEEK)

1. CONTRACTOR SHALL STAKE OUT THE LIMITS OF DISTURBANCE, PROPOSED CHANNEL BASELINE STATIONING AS SHOWN ON THE GEOMETRY PLAN, AND STRUCTURE LOCATIONS PER COORDINATE LOCATIONS SHOWN ON THE GRADING PLANS.
2. CONTRACTOR SHALL FLAG ALL TREES WITHIN THE LIMIT OF DISTURBANCE WHICH WILL BE REMOVED FOR CONSTRUCTION ACCESS AND GRADING. NO TREES SHALL BE REMOVED WITHIN THE LIMITS OF DISTURBANCE WITHOUT APPROVAL FROM THE PROJECT ENGINEER OR CONSTRUCTION SUPERVISOR.
3. CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION MEETING ONSITE WITH THE PROJECT ENGINEER, CONSTRUCTION SUPERVISOR, AND APPROPRIATE AGENCY PERSONNEL TO REVIEW THE EROSION AND SEDIMENT CONTROL REQUIREMENTS, SEQUENCE OF CONSTRUCTION, LIMITS OF DISTURBANCE, PROJECT LAYOUT, AND TREE IMPACT BEFORE WORK BEGINS.
4. CONTRACTOR SHALL CLEAR AND GRUB AS NECESSARY TO INSTALL SEDIMENT EROSION CONTROLS AND STAGING AREAS WITH APPROVAL OF THE SEDIMENT AND EROSION CONTROL INSPECTOR, THE CONTRACTOR MAY BEGIN GRADING OPERATIONS.
5. CONTRACTOR SHALL INSTALL THE STABILIZED CONSTRUCTION ENTRANCES, MULCH ACCESS PATHWAYS, BLAZE ORANGE FENCE, AND TREE PROTECTION AREAS AS SHOWN ON THE GRADING PLANS OR AS DIRECTED BY THE ENGINEER.
6. CONTRACTOR SHALL ESTABLISH THE TEMPORARY STOCKPILE AREA IN THE LOCATION INDICATED ON GRADING PLAN (NOTE: INSTALL SILT FENCE AROUND STOCKPILE AREA AS INDICATED ON PLANS).
7. MATERIALS FOR PUMPING STATION AND FILTER BAG SHALL BE LOCATED ON SITE.
8. CONTRACTOR SHALL INSTALL A CLEAR WATER DIVERSION, OR PUMPING STATION AND FILTER BAG DEWATERING DEVICE AS NECESSARY TO DIVERT STORM AND STREAM FLOW AROUND THE WORK AREA. SEDIMENT SHALL NOT BE RELEASED INTO THE STREAM AND FLOODPLAIN. SEDIMENT LADEN WATER IS TO BE PUMPED INTO A SEDIMENT FILTERING BAG. CLEAN WATER ONLY IS TO BE DISCHARGED INTO THE STREAM AND FLOODPLAIN. NO WORK SHALL BE CONDUCTED IN THE STREAM, CHANNEL, OR FLOODPLAIN DURING RAIN EVENTS.
9. INSTALL REMAINING EROSION AND SEDIMENT CONTROL DEVICES SHOWN ON THE PLANS.
10. PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER 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 OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.
11. ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
12. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

OUTFALL CONSTRUCTION

1. NOTE: CONSTRUCTION OF OUTFALLS AND STREAM RESTORATION SHOULD BE DONE CONCURRENTLY. WORK SHALL BE PERFORMED FROM THE WEST TO EAST DIRECTION AND DOWNSTREAM TO UPSTREAM AS MUCH AS POSSIBLE. THIS IS TO UTILIZE MATERIALS, BOTH FILL AND WOODY MATERIAL, AVAILABE FROM BOTH RETROFIT AND RESTORATION PROJECTS. STOCKPILE AND STAGING AREAS FOR BOTH PROJECTS WILL BE SHARED.

PHASE I - OUTFALL B TO BE CONSTRUCTED UPSTREAM TO DOWNSTREAM (3 WEEKS)

2. DEWATER WORK AREA BEFORE BEGINNING WORK. PUMP AROUND SHOULD OCCUR UPSTREAM TO DOWNSTREAM. SANDBAG DIKES SHOULD BE SITUATED AT UPSTREAM AND DOWNSTREAM ENDS OF WORK AND PUMP SHOULD DISCHARGE ONTO A STABLE VELOCITY DISSIPATOR. WATER FROM WORK AREA SHOULD BE PUMPED TO A SEDIMENT FILTERING MEASURE SUCH AS A FILTER BAG AND SHOULD DRAIN BACK TOWARDS THE STREAM CHANNEL BELOW THE DOWNSTREAM SANDBAG DIKE.
3. PLACE FILL MATERIAL, STRUCTURES AND PERFORM GRADING AS DETAILED ON PLANS, WORKING UPSTREAM TO DOWNSTREAM. ONLY INSTALL AS MANY STRUCTURES AS CAN BE COMPLETED AND STABILIZED IN ONE DAY. ALL FINISHED GRADING MUST BE PERMANENTLY STABILIZED AT THE END OF EACH DAY WITH A 3" LAYER OF SINGLE SCREENED HARDWOOD MULCH. OTHERWISE TEMPORARILY STABILIZE ALL DISTURBED AREAS AT THE END OF EACH WORKING DAY.
4. UPON COMPLETION OF INSTALLATION, STABILIZE REMAINING DISTURBED AREAS AND SECURE PUMP AROUND DEVICES AT THE END OF EACH DAY.
5. A STABLE OUTFALL MUST BE OPERABLE AT THE END OF EACH DAY SUCH THAT ANY STORM FLOW CAN BE SAFELY CONVEYED. THE OUTFALL SHALL BE THE EXISTING OUTFALL, THE PROPOSED OUTFALL, OR A COMBINATION OF THE TWO.

PHASE II - OUTFALL C TO BE CONSTRUCTED UPSTREAM TO DOWNSTREAM (3 WEEKS)

6. DEWATER WORK AREA BEFORE BEGINNING WORK. PUMP AROUND SHOULD OCCUR UPSTREAM TO DOWNSTREAM. SANDBAG DIKES SHOULD BE SITUATED AT UPSTREAM AND DOWNSTREAM ENDS OF WORK AND PUMP SHOULD DISCHARGE ONTO A STABLE VELOCITY DISSIPATOR. WATER FROM WORK AREA SHOULD BE PUMPED TO A SEDIMENT FILTERING MEASURE SUCH AS A FILTER BAG AND SHOULD DRAIN BACK TOWARDS THE STREAM CHANNEL BELOW THE DOWNSTREAM SANDBAG DIKE.
7. PLACE FILL MATERIAL, STRUCTURES AND PERFORM GRADING AS DETAILED ON PLANS, WORKING UPSTREAM TO DOWNSTREAM. ONLY INSTALL AS MANY STRUCTURES AS CAN BE COMPLETED AND STABILIZED IN ONE DAY. ALL FINISHED GRADING MUST BE PERMANENTLY STABILIZED AT THE END OF EACH DAY WITH A 3" LAYER OF SINGLE SCREENED HARDWOOD MULCH. OTHERWISE TEMPORARILY STABILIZE ALL DISTURBED AREAS AT THE END OF EACH WORKING DAY.
8. UPON COMPLETION OF INSTALLATION, STABILIZE REMAINING DISTURBED AREAS AND SECURE PUMP AROUND DEVICES AT THE END OF EACH DAY.
9. A STABLE OUTFALL MUST BE OPERABLE AT THE END OF EACH DAY SUCH THAT ANY STORM FLOW CAN BE SAFELY CONVEYED. THE OUTFALL SHALL BE THE EXISTING OUTFALL, THE PROPOSED OUTFALL, OR A COMBINATION OF THE TWO.

PHASE III - OUTFALL D & E TO BE CONSTRUCTED DOWNSTREAM TO UPSTREAM (3 WEEKS)

10. DEWATER WORK AREA BEFORE BEGINNING WORK. PUMP AROUND SHOULD OCCUR UPSTREAM TO DOWNSTREAM. SANDBAG DIKES SHOULD BE SITUATED AT UPSTREAM AND DOWNSTREAM ENDS OF WORK AND PUMP SHOULD DISCHARGE ONTO A STABLE VELOCITY DISSIPATOR. WATER FROM WORK AREA SHOULD BE PUMPED TO A SEDIMENT FILTERING MEASURE SUCH AS A FILTER BAG AND SHOULD DRAIN BACK TOWARD THE STREAM CHANNEL BELOW THE DOWNSTREAM SANDBAG DIKE.
11. PLACE FILL MATERIAL, STRUCTURES AND PERFORM GRADING AS DETAILED ON PLANS, WORKING UPSTREAM TO DOWNSTREAM. ONLY INSTALL AS MANY STRUCTURES AS CAN BE COMPLETED AND STABILIZED IN ONE DAY. ALL FINISHED GRADING MUST BE PERMANENTLY STABILIZED AT THE END OF EACH DAY WITH A 3" LAYER OF SINGLE SCREENED HARDWOOD MULCH. OTHERWISE TEMPORARILY STABILIZE ALL DISTURBED AREAS AT THE END OF EACH WORKING DAY.
12. UPON COMPLETION OF INSTALLATION, STABILIZE REMAINING DISTURBED AREAS AND SECURE PUMP AROUND DEVICES AT THE END OF EACH DAY.
13. A STABLE OUTFALL MUST BE OPERABLE AT THE END OF EACH DAY SUCH THAT ANY BASE FLOW OR STORM FLOW CAN BE SAFELY CONVEYED. THE OUTFALL SHALL BE THE EXISTING OUTFALL, THE PROPOSED OUTFALL, OR A COMBINATION OF THE TWO.

PHASE IV - PLANTING AND DEMOBILIZATION (2 WEEKS)

1. PLANT SITE ACCORDING TO THE PLANTING PLAN.
2. WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR, REMOVE THE SEDIMENT CONTROL DEVICES. STABILIZE ANY AREAS DISTURBED BY SEDIMENT CONTROL REMOVAL.

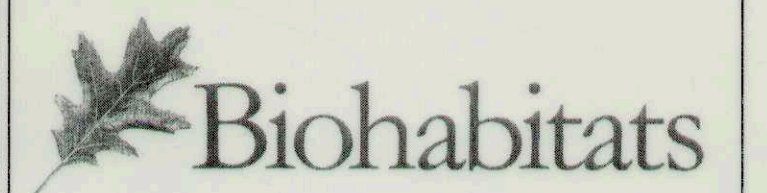
CONTRACTOR SPECIAL NOTES

1. NOTIFY THE DEPARTMENT OF PUBLIC WORKS, BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT LEAST 48 HOURS BEFORE COMMENCING WORK AT (410)-313-1880. WORK MAY NOT COMMENCE UNTIL THE PERMITTEE OR THE RESPONSIBLE PE HAVE MET ON SITE WITH THE SEDIMENT AND EROSION CONTROL INSPECTOR TO REVIEW THE APPROVED PLANS.
2. NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
3. CONSTRUCTION SHALL NOT BEGIN UNTIL ALL SEDIMENT AND EROSION CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVED BY THE ENGINEER AND SEDIMENT CONTROL INSPECTOR. THE CONTRACTOR SHALL STAY WITHIN THE LIMIT OF DISTURBANCE AS SHOWN ON THE PLANS AND MINIMIZE DISTURBANCE WITHIN THE WORKING AREA WHENEVER POSSIBLE.
4. CONTRACTOR SHALL TAKE EXTRA PRECAUTION FOR TRANSPORTING MATERIALS FROM THE STORAGE AREA TO THE CONSTRUCTION SITE. CONTRACTOR SHALL MINIMIZE THE IMPACT ON EXISTING TREES, WETLANDS, U.S. WATERS, EXISTING UTILITY AND OTHER EXISTING FEATURES.
5. CONTRACTOR SHALL CAUTION THE TRUCK DRIVERS TO TAKE EXTRA PRECAUTION WHILE DRIVING ON THE TEMPORARY ACCESS PATHWAY SO THAT IT CAN MINIMIZE THE IMPACTS ON STREAMBED, SIDE SLOPES, EXISTING TREES, U.S. WATERS, AND ANY EXISTING FEATURES.
6. ALL OUTFALL AND IN STREAM WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE PUMP AROUND CRITERIA.

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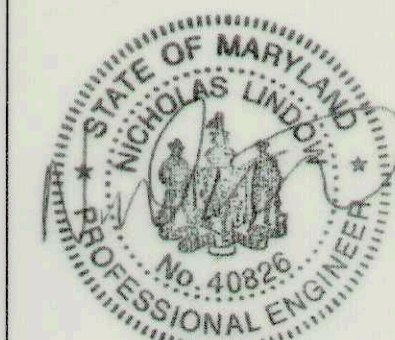
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