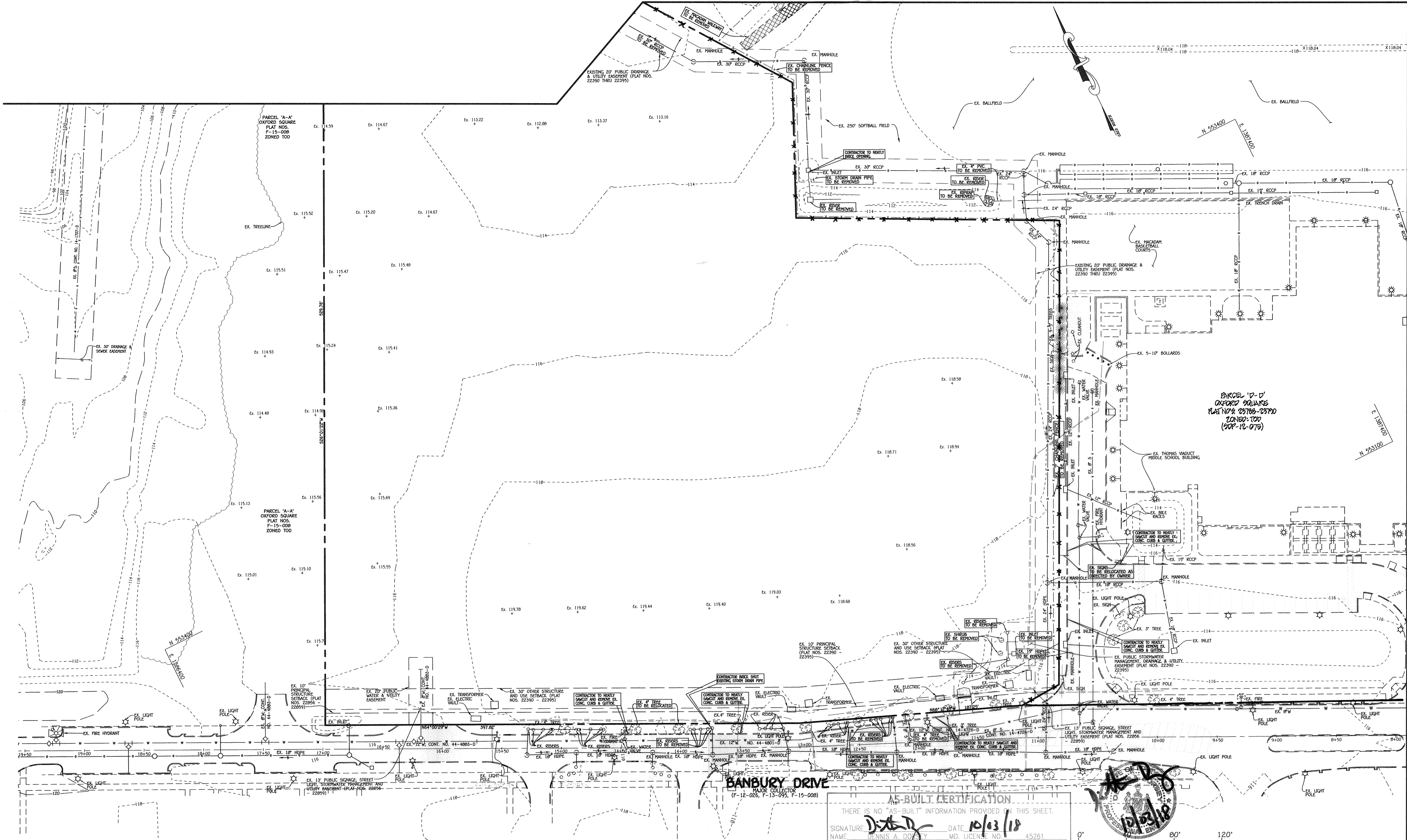




FOR CONTINUATION SEE SHEET 3

LEGEND	
SYMBOL	DESCRIPTION
--- 108 ---	EXISTING CONTOUR 2' INTERVAL
--- 110 ---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING UNDERGROUND ELECTRIC LINE
---	EXISTING UNDERGROUND FIBER OPTICS
---	EXISTING UNDERGROUND CABLE
---	EXISTING GAS LINE
X	EXISTING CHAINLINK FENCE
□	EXISTING WOOD FENCE
---	EXISTING CONCRETE WALK
---	EXISTING MACADAM PAVING
○	EXISTING TREES
---	EXISTING TREELINE
---	APPROXIMATE DEMOLITION AREA



AS-BUILT CERTIFICATION  
 THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.  
 SIGNATURE: *Dennis A. Dwyer* DATE: 10/03/18  
 NAME: DENNIS A. DWYER MD. LICENSE NO. 45261 EXP. DATE: 04/30/20

EXISTING STRUCTURES ARE TO REMAIN UNLESS OTHERWISE INDICATED.

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELKROTT CITY, MARYLAND 21042  
 (410) 461-2899

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
*Charles J. Cervo*  
 CHARLES J. CERVO, SR., P.E.  
 DATE: 3/11/16

DATE	DESCRIPTION	DATE
7/16/19	REVISED EXTENT OF DEMOLITION OF MACADAM WALKWAY	
6/27/16	REVISED PARCEL NAME & COMBINED PARCELS 'B' & 'D' INTO PARCEL 'D-D'	
REVISION BLOCK		
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>William J. Galle</i>	Director - Department of Planning and Zoning	4-18-16
<i>West Schaefer</i>	Chief, Division of Land Development	4-28-16
<i>Paul Pank</i>	Chief, Development Engineering Division	4-13-16

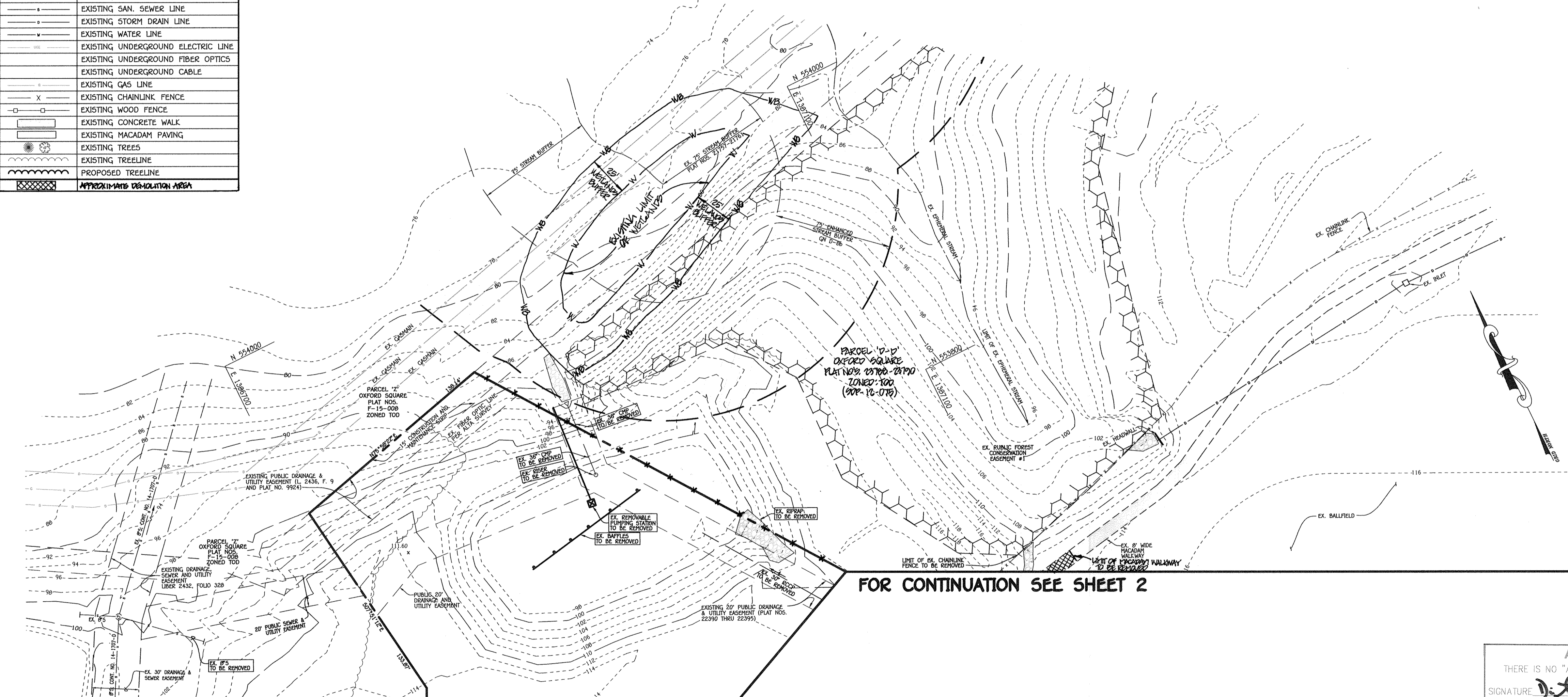
PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6905



Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076
PROJECT	SECTION/AREA
ELEMENTARY SCHOOL #42	N/A
ELEMENTARY SCHOOL #42	PARCEL
PLAT NOS. BLOCK NO. ZONE TAX MAP ELEC. DIST. CENSUS TR.	'D-D'
07180-07190 20 TOD 3B FIRST 6012.01	
WATER CODE	SEWER CODE
---	---

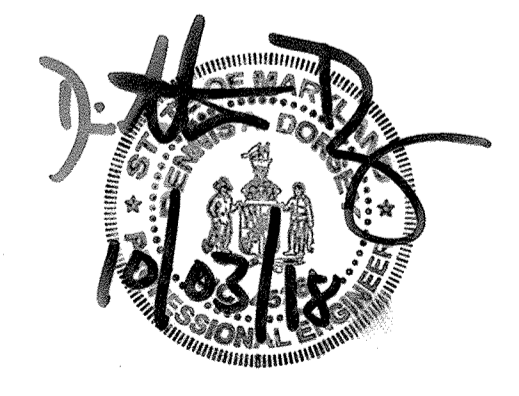
**DEMOLITION PLAN**  
 'GREEN NEIGHBORHOOD'  
 ELEMENTARY SCHOOL #42  
 OXFORD SQUARE  
 PARCEL 'D-D'  
 ZONED: TOD TAX MAP No.: 3B GRID No.: 20 PARCEL No.: 1003  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 40' DATE: MARCH 7, 2016  
 SHEET 2 OF 44

LEGEND	
SYMBOL	DESCRIPTION
--- 10' ---	EXISTING CONTOUR 2' INTERVAL
--- 110 ---	EXISTING CONTOUR 10' INTERVAL
—	EXISTING SAN. SEWER LINE
—	EXISTING STORM DRAIN LINE
—	EXISTING WATER LINE
—	EXISTING UNDERGROUND ELECTRIC LINE
—	EXISTING UNDERGROUND FIBER OPTICS
—	EXISTING UNDERGROUND CABLE
—	EXISTING GAS LINE
— X —	EXISTING CHAINLINK FENCE
— O —	EXISTING WOOD FENCE
—	EXISTING CONCRETE WALK
—	EXISTING MACADAM PAVING
—	EXISTING TREES
—	EXISTING TREELINE
—	PROPOSED TREELINE
—	APPROXIMATE DEMOLITION AREA



FOR CONTINUATION SEE SHEET 2

**AS-BUILT CERTIFICATION**  
 THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.  
 SIGNATURE: *J. A. D.* DATE: 10/03/18  
 NAME: JENNIS A. DORR MD. LICENSE NO. 45261  
 EXP. DATE: 04/10/20



0' 40' 80' 120'  
 SCALE: 1" = 40'

**AS-BUILT**

EXISTING STRUCTURES ARE TO REMAIN UNLESS OTHERWISE INDICATED.

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10270 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2099

\*PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016.  
*Charles J. Grovo*  
 CHARLES J. GROVO, SR., P.E.  
 DATE: 3/11/16

DATE	DESCRIPTION	REVISION BLOCK
7/10/19	REVISED EXTENT OF DEMOLITION OF MACADAM WALKWAY AND ADDED DEMOLITION SYMBOL TO LEGEND	
6/27/16	REVISED PARCEL NAME & COMBINED PARCELS 'D' & 'D-D' INTO PARCEL 'D-D'	

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Director - Department of Planning and Zoning  
 Chief, Division of Land Development  
 Chief, Development Engineering Division

DATE: 4-18-16  
 DATE: 4-18-16  
 DATE: 4-13-16

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805



Address Chart	
Parcel Number	Street Address
D-D	7030 BANBURY DRIVE HANOVER, MD 21076

PROJECT	SECTION/AREA	PARCEL
ELEMENTARY SCHOOL #42	N/A	'D-D'
PLAT NOS. 05196-05190	BLOCK NO. 20	ZONE TOD
TAX MAP 38	ELEC. DIST. FIRST	CENSUS TR. 6012.01
WATER CODE	SEWER CODE	

**DEMOLITION PLAN**

'GREEN NEIGHBORHOOD'  
**ELEMENTARY SCHOOL #42**  
 OXFORD SQUARE  
 PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 40' DATE: MARCH 7, 2016

SHEET 3 OF 44

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING CABLE LINE
---	EXISTING GAS LINE
---	EXISTING FIBER OPTIC
---	EXISTING FENCE
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
+	SPOT ELEVATION
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	PROPOSED PUBLIC WATER
---	PROPOSED PRIVATE WATER
---	PROPOSED STORM DRAIN
---	PROPOSED PRIVATE SEWER
---	PROPOSED PUBLIC SEWER
---	PROPOSED RIPRAP
---	PROPOSED BRICK
---	PROPOSED STAMPED CONC. PAVING
---	PROTECTIVE PLAY SURFACE

ELEMENTARY SCHOOL #42 STORMWATER MANAGEMENT SUMMARY TABLE		
ESD <sup>a</sup>	REQUIRED (cf)	PROVIDED (cf)
WQV	12,483 <sup>b</sup> + 1,146 <sup>c</sup> = 13,629	13,833
CPV	10,391 <sup>b</sup>	10,391
Rev	1,922 + 112 <sup>c</sup> = 2,034	8,603

<sup>a</sup> ESDV IS COMPOSED OF THREE (3) COMPONENTS: WATER QUALITY (WQ), CHANNEL PROTECTION (CPV) & RECHARGE (REV). THESE COMPONENTS ARE LISTED IN THIS TABLE.  
<sup>b</sup> REFLECTS 75% ADJUSTMENT OF THE REQUIRED VOLUME.  
<sup>c</sup> REFLECTS ADJUSTMENT (INCREASE) FOR LOSS OF ADJACENT SITE M5-20 BMP #4.  
<sup>d</sup> VOLUME IN BMP'S AND 72" PIPE STORAGE, RESPECTIVELY.

ELEMENTARY SCHOOL #42 72" PIPE UNDERGROUND STORAGE (SWM #6) PEAK DISCHARGE SUMMARY TABLE			
SWM #6	Peak Qs/WSEs <sup>a</sup>		
	Q1	Q10	Q100
	2.2 cfs @ WSE 106.61	38.8 cfs @ WSE 109.15	56.5 cfs @ WSE 109.49

<sup>a</sup> STRUCTURE SWM #6 STORES CPV ONLY AND PROVIDES THE REQUIRED CPV NOT ABLE TO BE STORED IN THE BMP'S

FOR CONTINUATION SEE SHEET 5

HANOVER HILLS ELEMENTARY SCHOOL PARKING LOT PEAK DISCHARGE SUMMARY TABLE		
BMP #6	Peak Qs/WSEs <sup>a</sup>	
	Q10	Q100
	4.8 cfs @ WSE 109.7	10.5 cfs @ WSE 110.0

<sup>a</sup> SEE TR-20 OUTPUT IN APPENDIX B

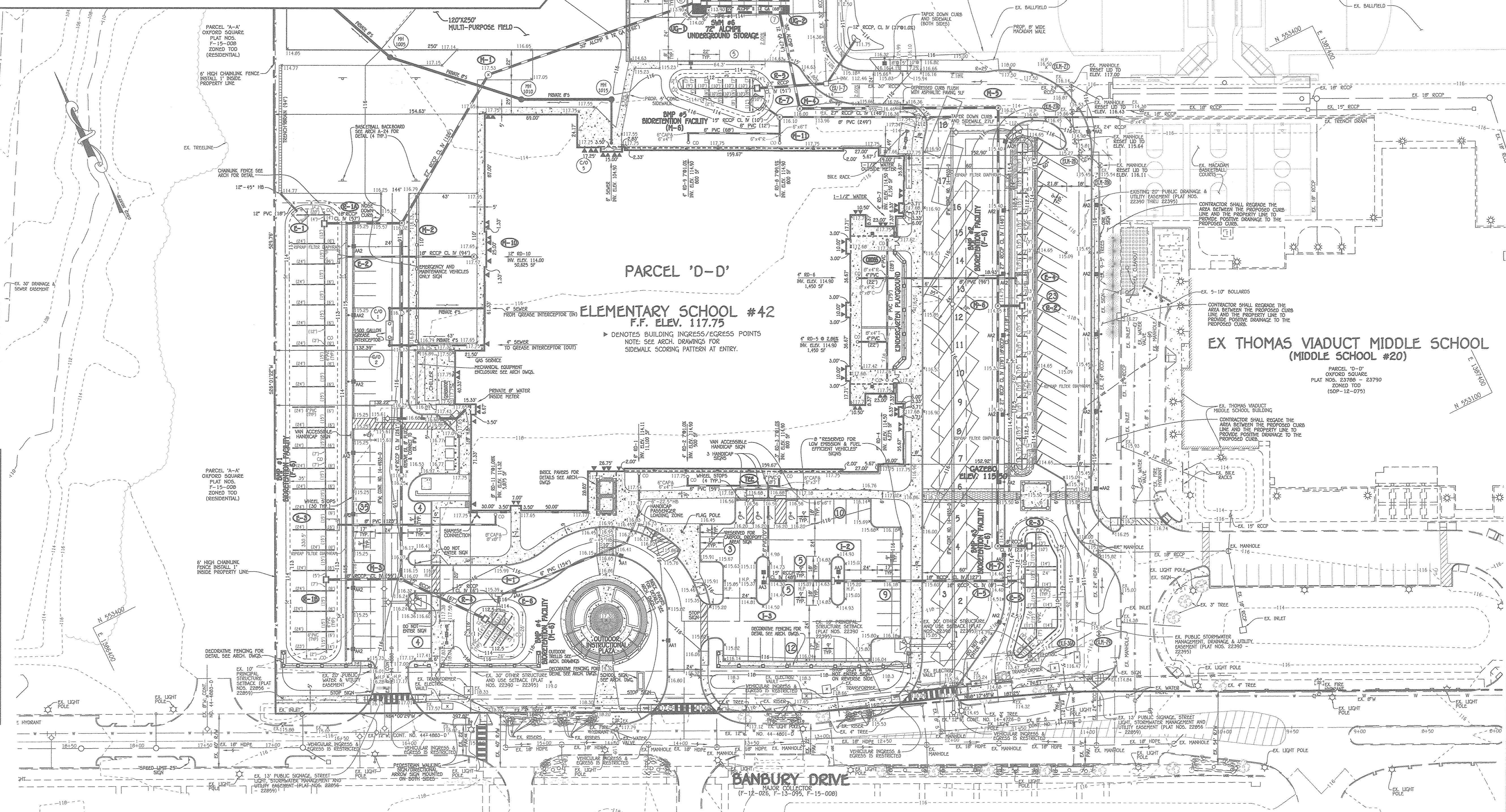
HANOVER HILLS ELEMENTARY SCHOOL OVERFLOW PARKING LOT STORMWATER MANAGEMENT SUMMARY TABLE			
ESD <sup>a</sup>	REQUIRED (cf)	PROVIDED (cf)	PRACTICE
WQV	2,809 <sup>a</sup>	3,025 <sup>b</sup>	BIO-RETENTION BMP (F-6) WITH FOREBAY
Rev	964	994	AGGREGATE BELOW UNDERDRAIN

<sup>a</sup> VALUE IS AFTER THE 75% REDUCTION FACTOR.  
<sup>b</sup> SEE STAGE STORAGE TABLE IN APPENDIX B.

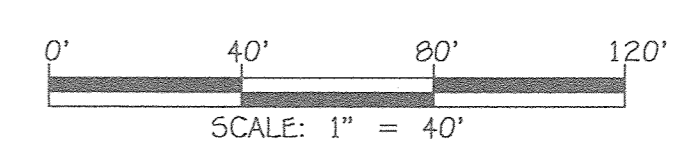
ELEMENTARY SCHOOL #42 BMP and SWM #6 (72" PIPE) STORAGE SUMMARY TABLE						
ESD <sup>a</sup>	WQV		CPV		Rev	
	REQUIRED (cf)	PROVIDED (cf)	REQUIRED (cf)	PROVIDED (cf)	REQUIRED (cf)	PROVIDED (cf)
BMP #1 (BIO-RETENTION) (F-6)		5,728 cf		6,537 cf		6,786 cf
BMP #2 (BIO-RETENTION) (F-6)		3,154 cf		0		362 cf
BMP #3 (BIO-RETENTION) (F-6)		2,929 cf		0		393 cf
BMP #4 (MICRO BIO-RETENTION) (M-6)		770 cf		0		384 cf
BMP #5 (MICRO BIO-RETENTION) (M-6)		1,252 cf		118 cf		678 cf
BMP #6 (72" PIPE STORAGE) (CPV STORAGE ONLY)		0		4,124 cf		0
TOTAL	13,629 cf	13,833 cf	10,391 cf	10,779 cf	2,034 cf	8,603 cf

<sup>a</sup> ESDV IS COMPOSED OF THREE (3) COMPONENTS: WATER QUALITY (WQ), CHANNEL PROTECTION (CPV) & RECHARGE (REV). THESE COMPONENTS ARE LISTED IN THIS TABLE.

PURPOSE NOTE: THE PURPOSE OF THIS REDLINE IS TO ADD AN ADDITIONAL PARKING LOT TO THE REAR OF THE SCHOOL, ADD A NEW SWM FACILITY (BMP #6) AND RELOCATE A PORTION OF THE 8' WIDE MACADAM PATHWAY.



NOTE: NO TOPSOIL EXIST ON SITE. CONTRACTOR SHALL IMPORT TOPSOIL THAT HAS BEEN TESTED AND MET SPECIFICATIONS REQUIRED BY OWNER.



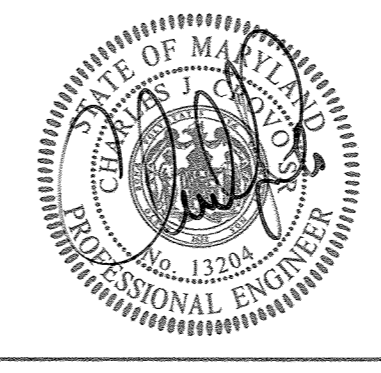
FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 15000 ROUTE 108, SUITE 100, GREENBELT, MD 21044  
 (410) 461-2995

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2020."  
 Charles J. Crovo, Sr., P.E.  
 7/29/19 DATE

DATE	DESCRIPTION	DATE
6/14/19	Added New Parking Area, Parking Lights & 2 LE & FEV Signs	8-26-19
6/27/16	Revised Parcel Name & Combined Parcels 'B' & 'B-B' Into Parcel 'D-D'	8/20/19

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Director, Department of Planning and Zoning  
 Chief, Division of Land Development  
 Chief, Development Engineering Division

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805



Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076

PROJECT	SECTION/AREA	PARCEL
ELEMENTARY SCHOOL #42	N/A	'D-D'

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
23788-23790	20	TOD	3B	FIRST	6012.01

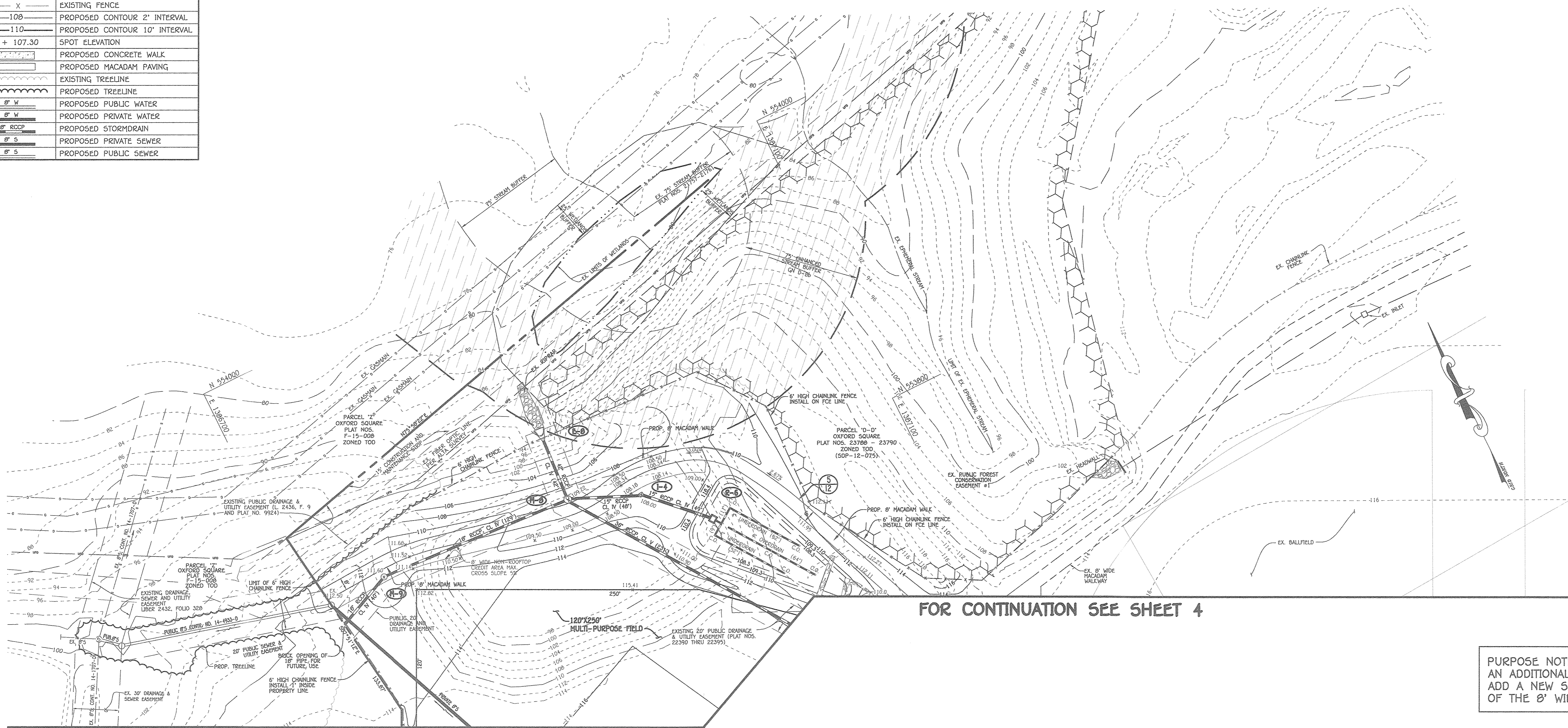
WATER CODE	SEWER CODE
---	---

REVISED SITE IMPROVEMENT PLAN  
 'GREEN NEIGHBORHOOD'  
 ELEMENTARY SCHOOL #42  
 OXFORD SQUARE  
 PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 3B GRID No.: 20 PARCEL No.: 1003  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 40' DATE: JULY 23, 2019

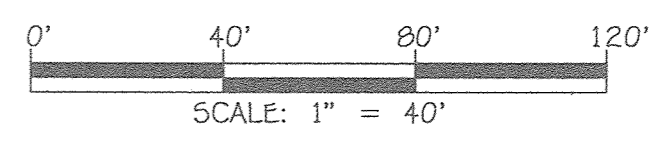
SHEET 4 OF 44

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING CABLE LINE
---	EXISTING GAS LINE
---	EXISTING FIBER OPTIC
X	EXISTING FENCE
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
+ 107.30	SPOT ELEVATION
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
---	EXISTING TREELINE
---	PROPOSED TREELINE
BP W	PROPOSED PUBLIC WATER
BP P	PROPOSED PRIVATE WATER
BP S	PROPOSED STORM DRAIN
BP S	PROPOSED PRIVATE SEWER
BP S	PROPOSED PUBLIC SEWER



FOR CONTINUATION SEE SHEET 4

PURPOSE NOTE: THE PURPOSE OF THIS REDLINE IS TO ADD AN ADDITIONAL PARKING LOT TO THE REAR OF THE SCHOOL, ADD A NEW SWM FACILITY (BMP #6) AND RELOCATE A PORTION OF THE 8' WIDE MACADAM PATHWAY.



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CONTINENTAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELKROTT CITY, MARYLAND 21042  
 (410) 461-2899

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2020."  
*Charles J. Cervo*  
 CHARLES J. CERVO, SR., P.E.  
 7/23/19 DATE

DATE	DESCRIPTION	REVISION BLOCK
6/14/19	Added BMP #6 And Revised Macadam Walk	
6/27/16	Revised Parcel Name & Combined Parcels 'B' & 'B-B' Into Parcel 'D-D'	
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>Nathaniel J. Galt</i> Director - Department of Planning and Zoning 8-26-19 Date		
<i>Robert J. ...</i> Chief, Division of Land Development 8/20/19 Date		
Chief, Development Engineering Division 8/21/19 Date		

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805



Address Chart					
Parcel Number	Street Address				
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076				
PROJECT	SECTION/AREA	PARCEL			
ELEMENTARY SCHOOL #42	N/A	'D-D'			
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
23788-23790	20	TOD	3B	FIRST	6012.01
WATER CODE	SEWER CODE				
---	---				

**REVISED SITE IMPROVEMENT PLAN**

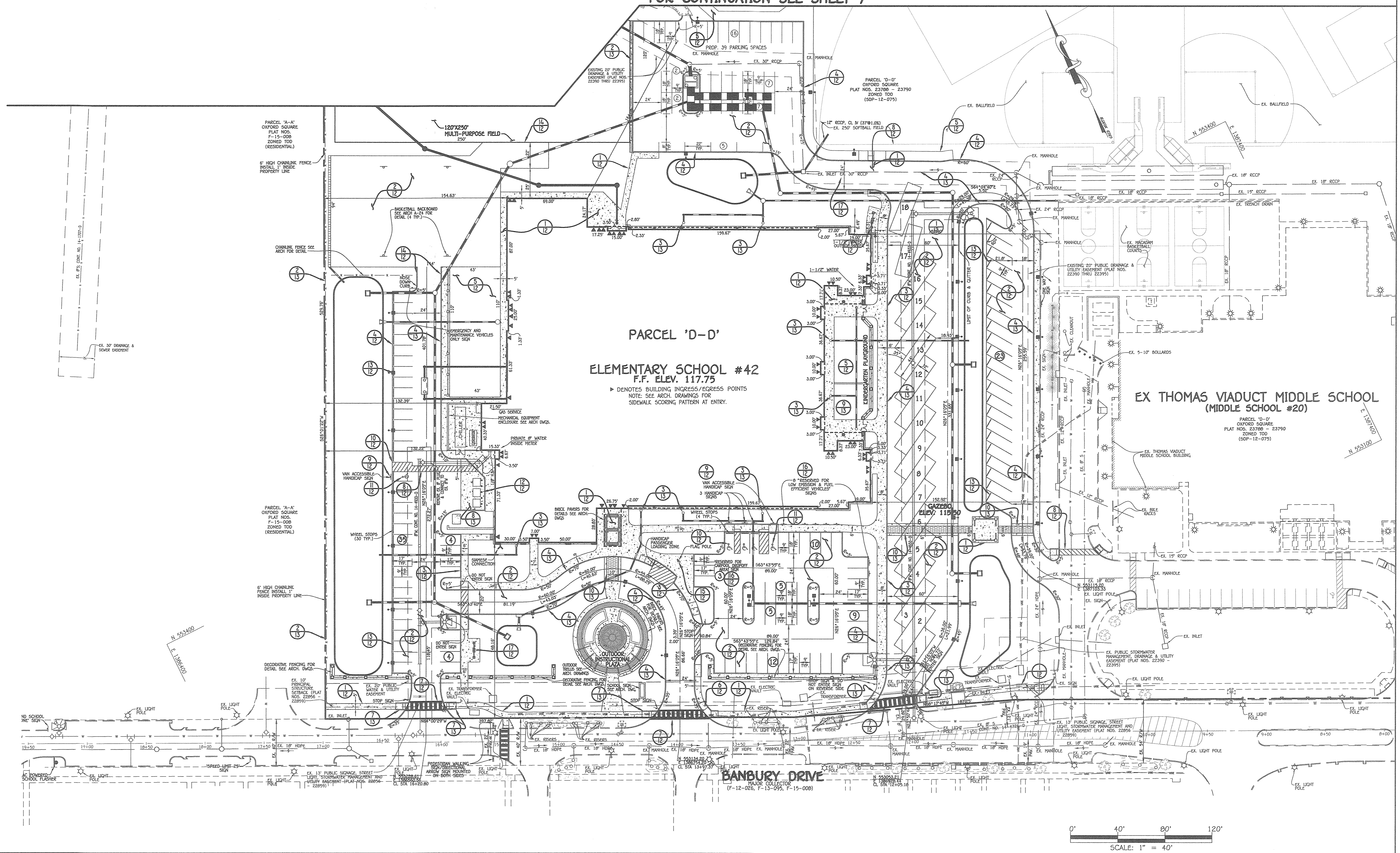
'GREEN NEIGHBORHOOD'  
**ELEMENTARY SCHOOL #42**  
 OXFORD SQUARE  
 PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 3B GRID No.: 20 PARCEL No.: 1003  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 40' DATE: JULY 23, 2019

SHEET 5 OF 44

FOR CONTINUATION SEE SHEET 7

LEGEND	
SYMBOL	DESCRIPTION
—	EXISTING SAN SEWER LINE
—	EXISTING STORM DRAIN LINE
—	EXISTING WATER LINE
—	EXISTING ELECTRIC LINE
—	EXISTING CABLE LINE
—	EXISTING GAS LINE
—	EXISTING FENCE
—	PROPOSED CONCRETE WALK
—	PROPOSED MACADAM PAVING
—	PROPOSED PUBLIC WATER
—	PROPOSED PRIVATE WATER
—	PROPOSED STORMDRAIN
—	PROPOSED PRIVATE SEWER
—	PROPOSED PUBLIC SEWER
—	PROPOSED RIPRAP
—	PROPOSED BRICK
—	PROPOSED STAMPED CONC. PAVING
—	PROTECTIVE PLAY SURFACE



"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204. EXPIRATION DATE: NOVEMBER 3, 2020."

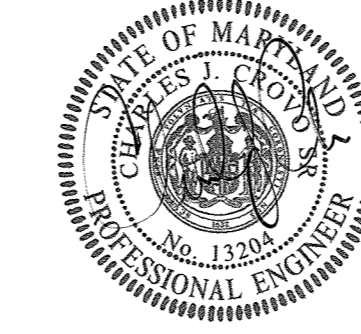
*Charles J. Provo, Sr., P.E.*  
CHARLES J. PROVO, SR., P.E.

7/29/19  
DATE

DATE	DESCRIPTION	REVISION BLOCK
6/14/19	Added New Parking Area & Macadam Walk (39 Spaces)	
6/27/16	Revised Parcel Name & Combined Parcels 'B' & 'B-B' Into Parcel 'D-D'	

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Director: *William J. ...* 8-26-19 Date  
 Chief, Division of Planning and Zoning: *Walter ...* 8/20/19 Date  
 Chief, Development Engineering Division: *...* 8/9/19 Date

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



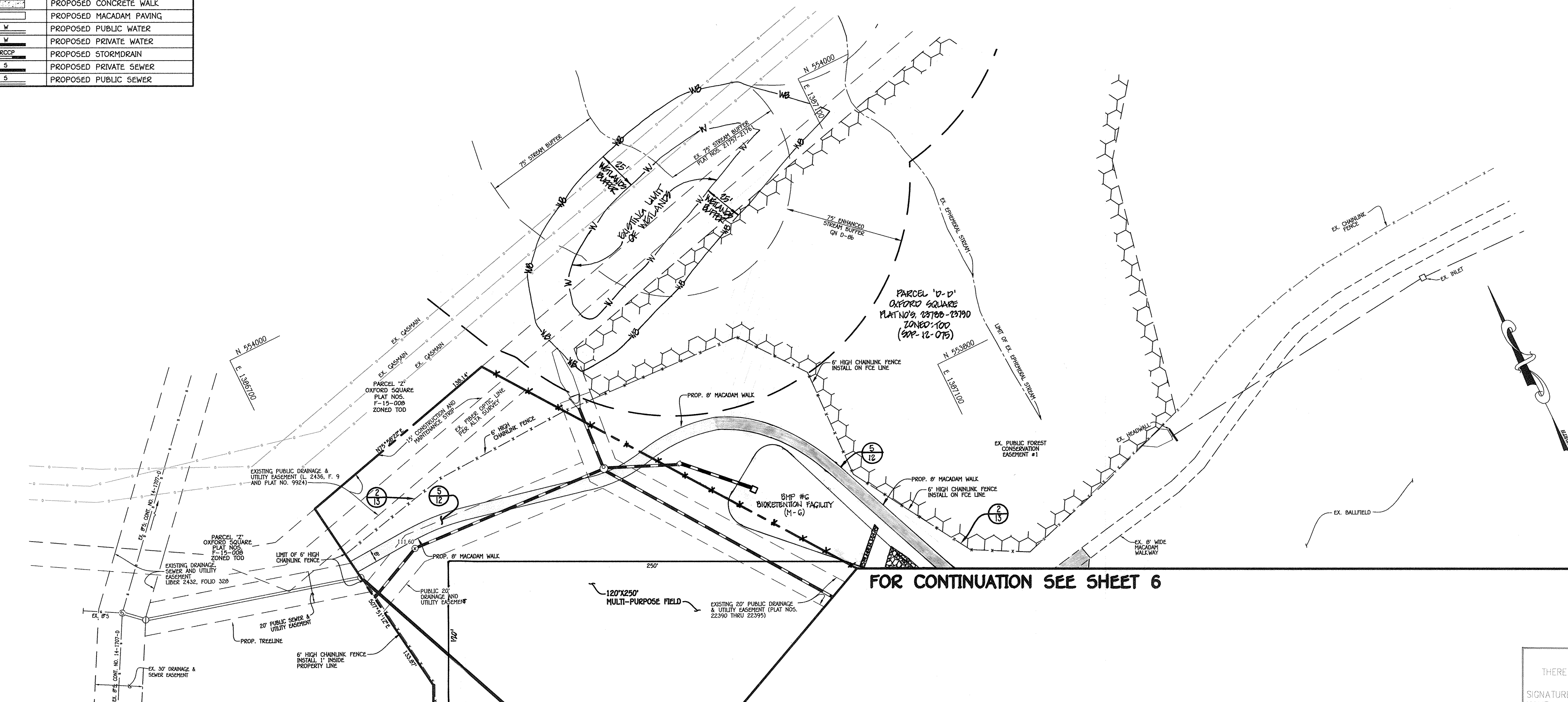
Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076

PROJECT	SECTION/AREA	PARCEL
ELEMENTARY SCHOOL #42	N/A	'D-D'

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
23788-23790	20	TOD	3B	FIRST	6012.01

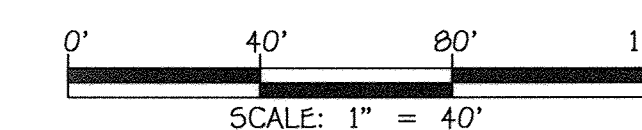
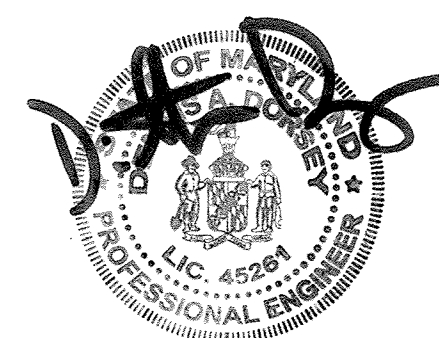
REVISED GEOMETRY PLAN	
'GREEN NEIGHBORHOOD' ELEMENTARY SCHOOL #42 OXFORD SQUARE PARCEL 'D-D'	
ZONED: TOD	TAX MAP No.: 3B
FIRST ELECTION DISTRICT	HOWARD COUNTY, MARYLAND
SCALE: 1" = 40'	DATE: JULY 23, 2019
SHEET 6 OF 44	

LEGEND	
SYMBOL	DESCRIPTION
—s—	EXISTING SAN. SEWER LINE
—d—	EXISTING STORM DRAIN LINE
—w—	EXISTING WATER LINE
—e—	EXISTING ELECTRIC LINE
—c—	EXISTING CABLE LINE
—g—	EXISTING GAS LINE
—x—	EXISTING FENCE
—	PROPOSED CONCRETE WALK
—	PROPOSED MACADAM PAVING
—P.W.—	PROPOSED PUBLIC WATER
—P.P.W.—	PROPOSED PRIVATE WATER
—SP SCP—	PROPOSED STORMDRAIN
—P.S.—	PROPOSED PRIVATE SEWER
—P.P.S.—	PROPOSED PUBLIC SEWER



FOR CONTINUATION SEE SHEET 6

**AS-BUILT CERTIFICATION**  
 THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.  
 SIGNATURE: *D.A.D.* DATE: 10/23/18  
 NAME: DENNIS A. DORSEY, LIC. 45261, EXP. DATE: 04/10/20



**AS-BUILT**

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLEOTT CITY, MARYLAND 21042  
 (410) 461-3295

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."

*Charles J. Crovo, Sr.*  
 CHARLES J. CROVO, SR., P.E.

3/11/16  
 DATE

DATE	DESCRIPTION	REVISION BLOCK
7/16/19	ADDED BENCH MARK & REVISION MACADAM WALK	
6/27/16	REMOVED PARCEL NAME & COMBINED PARCELS 'D' & 'D-D' INTO PARCEL 'D-D'	
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>William J. Halla</i> Director - Department of Planning and Zoning		4-18-16 Date
<i>Kathleen</i> Chief, Division of Land Development		4-18-16 Date
<i>Chad Edraka</i> Chief, Development Engineering Division		4-13-16 Date

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 9045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805



Address Chart					
Parcel Number	Street Address				
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076				
PROJECT	SECTION/AREA				
ELEMENTARY SCHOOL #42	N/A				
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
23700-23700	20	TOD	38	FIRST	6012.01
WATER CODE	SEWER CODE				
----	----				

**GEOMETRY PLAN**

'GREEN NEIGHBORHOOD'  
 ELEMENTARY SCHOOL #42  
 OXFORD SQUARE  
 PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 40' DATE: MARCH 7, 2016

SHEET 7 OF 44

TEMPORARY SEDIMENT TRAP ST #1 (@ BMP #3)  
TRAP TYPE: PIPE OUTLET SEDIMENT TRAP ST-1

INITIAL D.A. = 1.21 Ac.  
DURING CONSTRUCTION D.A. = 1.85 Ac.  
FINAL D.A. = 1.54 Ac.

STORAGE REQUIRED:  
WET = 1,800 cf/ac. x 1.85 ac. = 3,330 cf  
DRY = 1,800 cf/ac. x 1.85 ac. = 3,330 cf  
TOTAL = 6,660 cf

STORAGE PROVIDED:  
WET = 3,403 cf @ ELEV. 111.50  
DRY = 3,450 cf @ ELEV. 112.60  
TOTAL = 6,853 cf

BASIN BOTTOM ELEV. = 110.0 (MIN. AREA = 1,965 sf)

STORAGE DEPTH = 2.6'

CLEAN OUT ELEVATION = 110.75

TOP OF EMBANKMENT = 114.3+

SIDE SLOPES: 2.5:1 except as shown

EMBANKMENT: None (EXCAVATED)

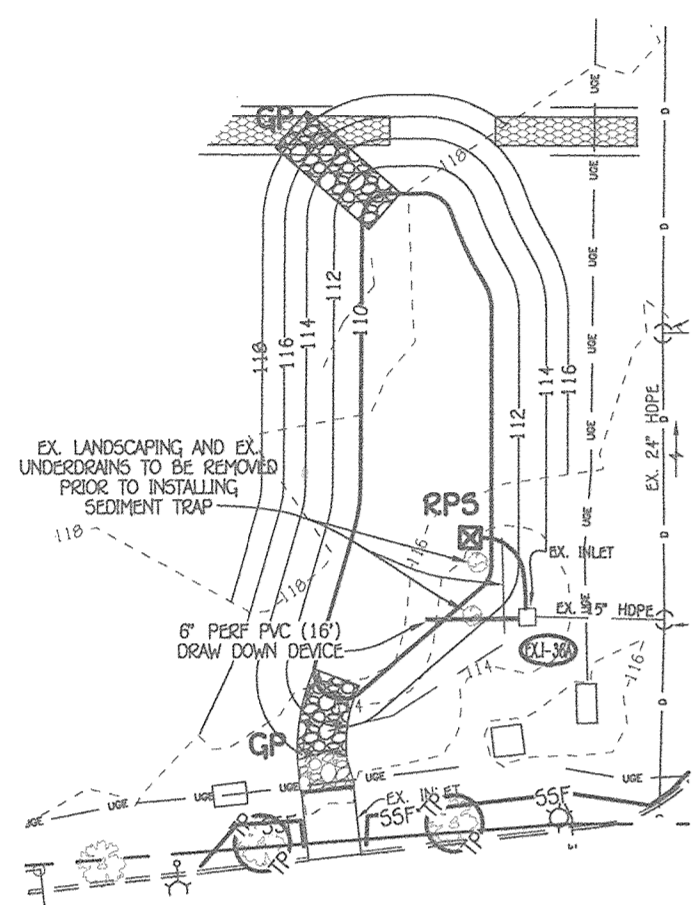
BOTTOM DIMENSIONS: CURVILINEAR PER PLAN TO APPROXIMATE BMP #3 SHAPE.

OUTLET DIAMETER = 2" x ORIFICE @ INV. 109.65; USING 16 LF (min.) of 6" PERFORATED PIPE

NOTE:  
THE CONTRACTOR IS RESPONSIBLE FOR PUMPING ALL STANDING WATER THROUGH A FILTERING DEVICE TO A CLEAR WATER OUTFALL WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT.

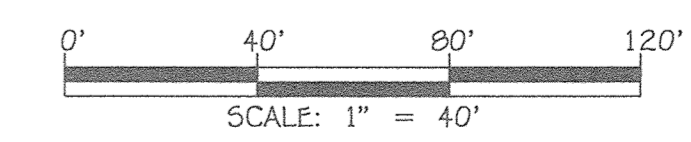
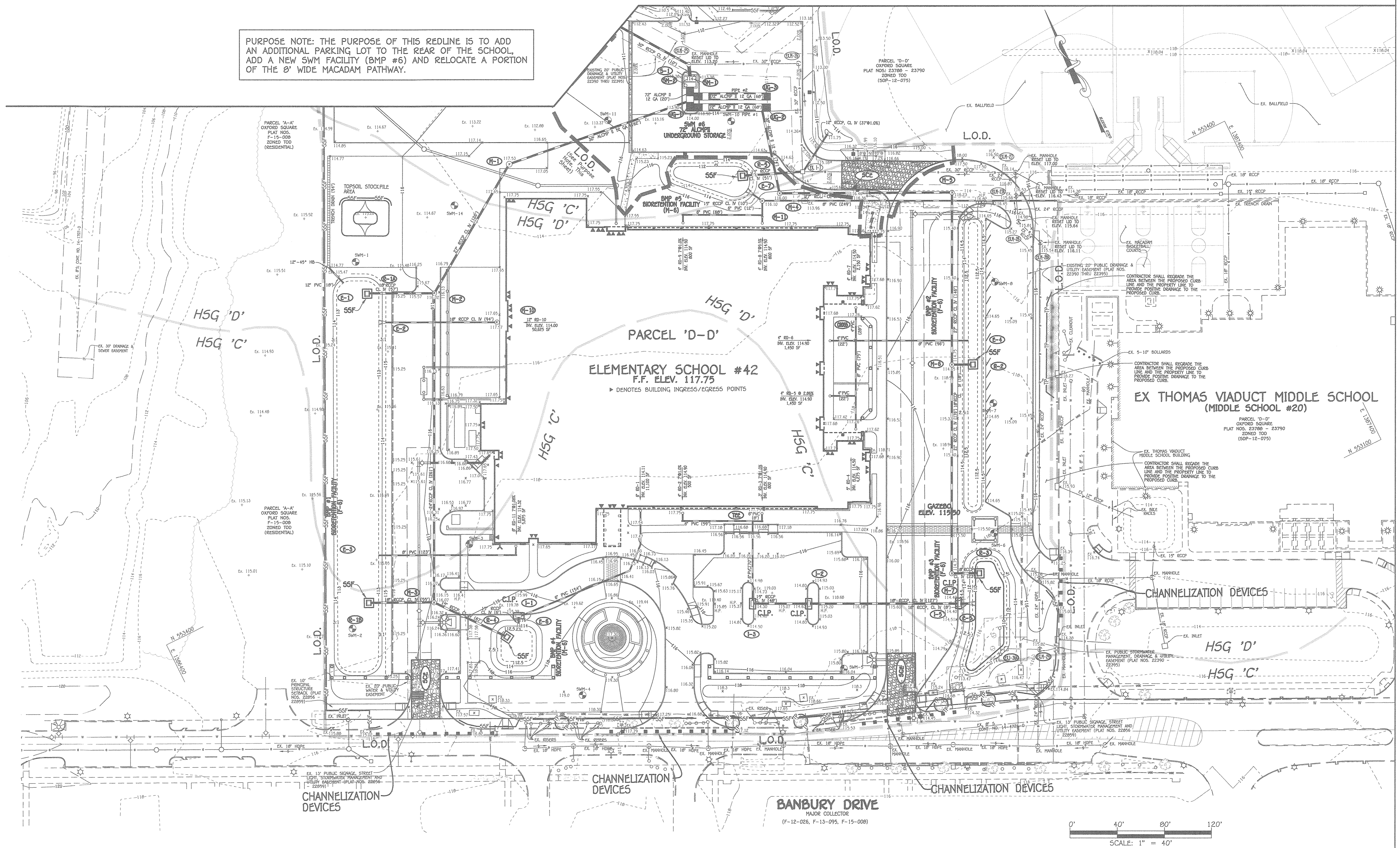
PURPOSE NOTE: THE PURPOSE OF THIS REDLINE IS TO ADD AN ADDITIONAL PARKING LOT TO THE REAR OF THE SCHOOL, ADD A NEW SWM FACILITY (BMP #6) AND RELOCATE A PORTION OF THE 8' WIDE MACADAM PATHWAY.

FOR CONTINUATION SEE SHEET 9



SEDIMENT TRAP #1  
SCALE: 1" = 40'

LEGEND	
--- 100 ---	EXISTING CONTOUR 2' INTERVAL
--- 110 ---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING CABLE LINE
---	EXISTING GAS LINE
---	EXISTING FENCE
--- 100 ---	PROPOSED CONTOUR 2' INTERVAL
--- 110 ---	PROPOSED CONTOUR 10' INTERVAL
+ 107.30	SPOT ELEVATION
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	PROPOSED PUBLIC WATER
---	PROPOSED PRIVATE WATER
---	PROPOSED STORMDRAIN
---	PROPOSED PRIVATE SEWER
---	PROPOSED PUBLIC SEWER
---	PROPOSED RIPRAP
---	PROPOSED BRICK
---	PROPOSED STAMPED CONC. PAVING
---	PROTECTIVE PLAY SURFACE
---	SOILS DELINEATION
---	SUPER SILT FENCE
---	STABILIZED CONSTRUCTION ENTRANCE
---	TREE PROTECTION
---	L.O.D. LIMIT OF DISTURBANCE



FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PLACE  
ELLSWORTH CITY, MARYLAND 21044  
(410) 461-2899

**ENGINEER'S CERTIFICATE**  
"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS 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 of Engineer: Charles A. Crovo, Sr., P.E.  
Date: 7/29/19

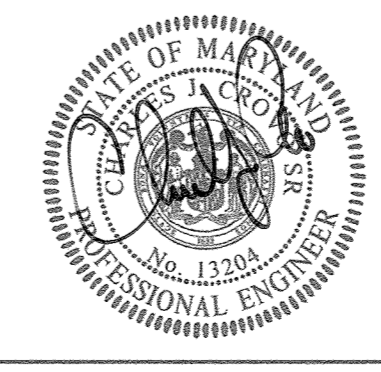
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2020."  
Signature of Engineer: Charles A. Crovo, Sr., P.E.  
Date: 7/29/19

**DEVELOPER'S CERTIFICATE**  
"I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL 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 MDE."  
Signature of Developer: James J. Hickey  
Date: 7-29-19

"THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT."  
Signature of District: John R. Platten  
Date: 7/30/19

6/14/19 Added New Parking Area And Macadam Walk  
6/27/19 Revised Parcel Name & Combined Parcels 'B' & 'B-B' Into Parcel 'D-D'  
DATE DESCRIPTION REVISION BLOCK  
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Director: Department of Planning and Zoning  
Chief, Division of Land Development  
Date: 8-26-19  
Date: 8/20/19  
Date: 8/2/19

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



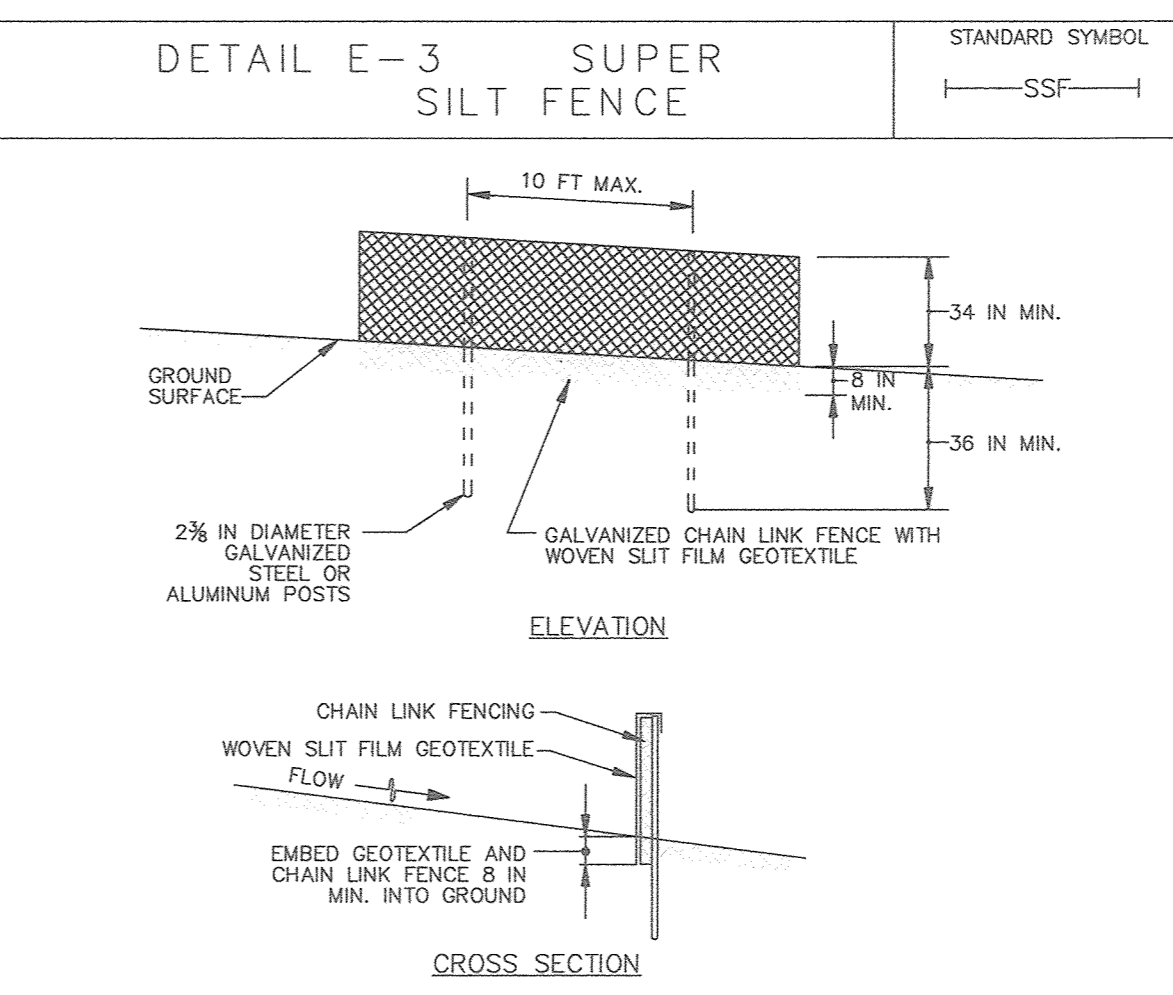
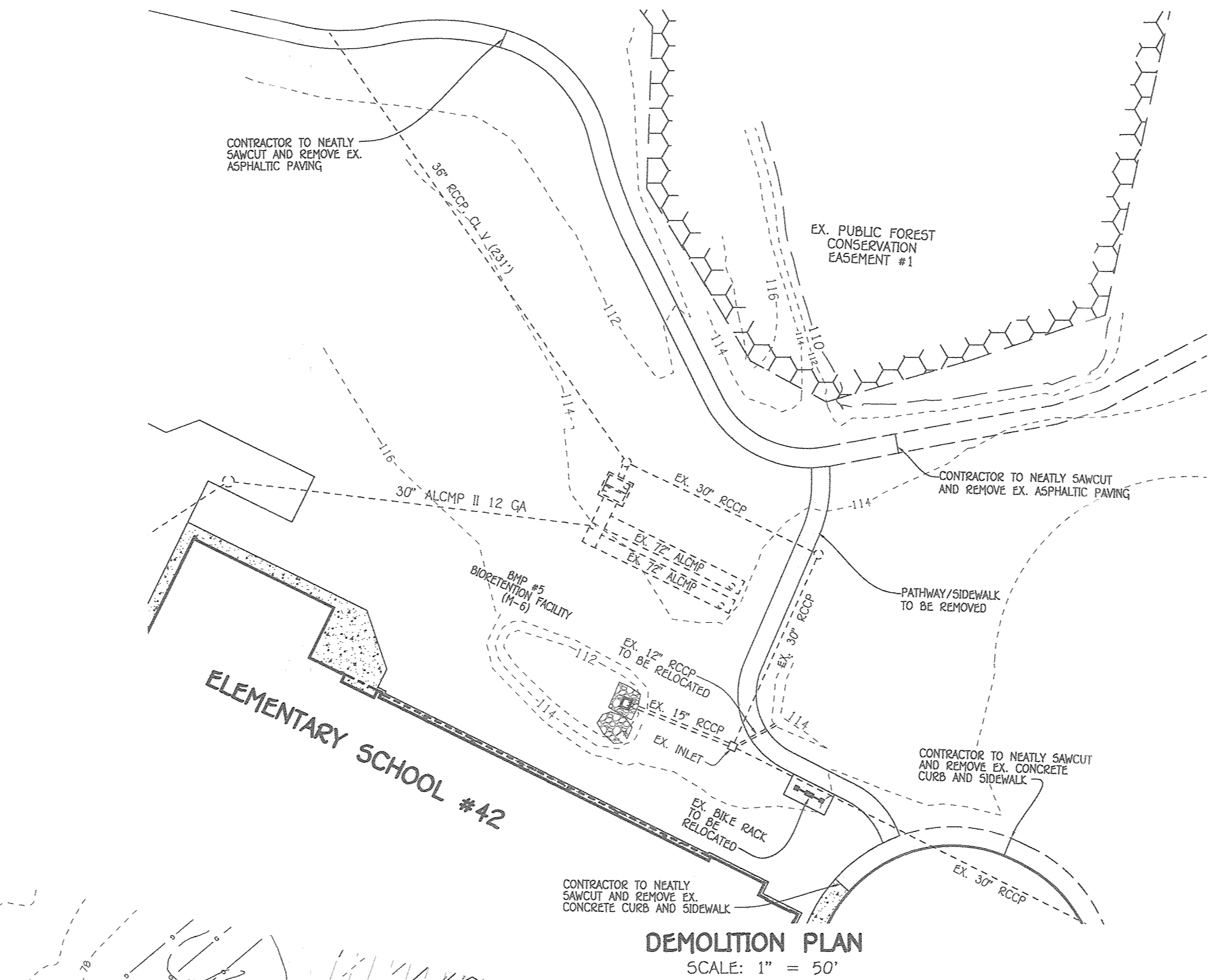
Address Chart		
Parcel Number	Street Address	
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076	
PROJECT	SECTION/AREA	PARCEL
ELEMENTARY SCHOOL #42	N/A	'D-D'
PLAT NOS.	BLOCK NO.	ZONE
23788-23790	20	TOD
TAX MAP	ELEC. DIST.	CENSUS TR.
38	FIRST	6012.01
WATER CODE	SEWER CODE	

**REVISED SEDIMENT AND EROSION CONTROL PLAN**  
**'GREEN NEIGHBORHOOD'**  
**ELEMENTARY SCHOOL #42**  
OXFORD SQUARE  
PARCEL 'D-D'  
ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 40' DATE: JULY 23, 2019  
SHEET 8 OF 44

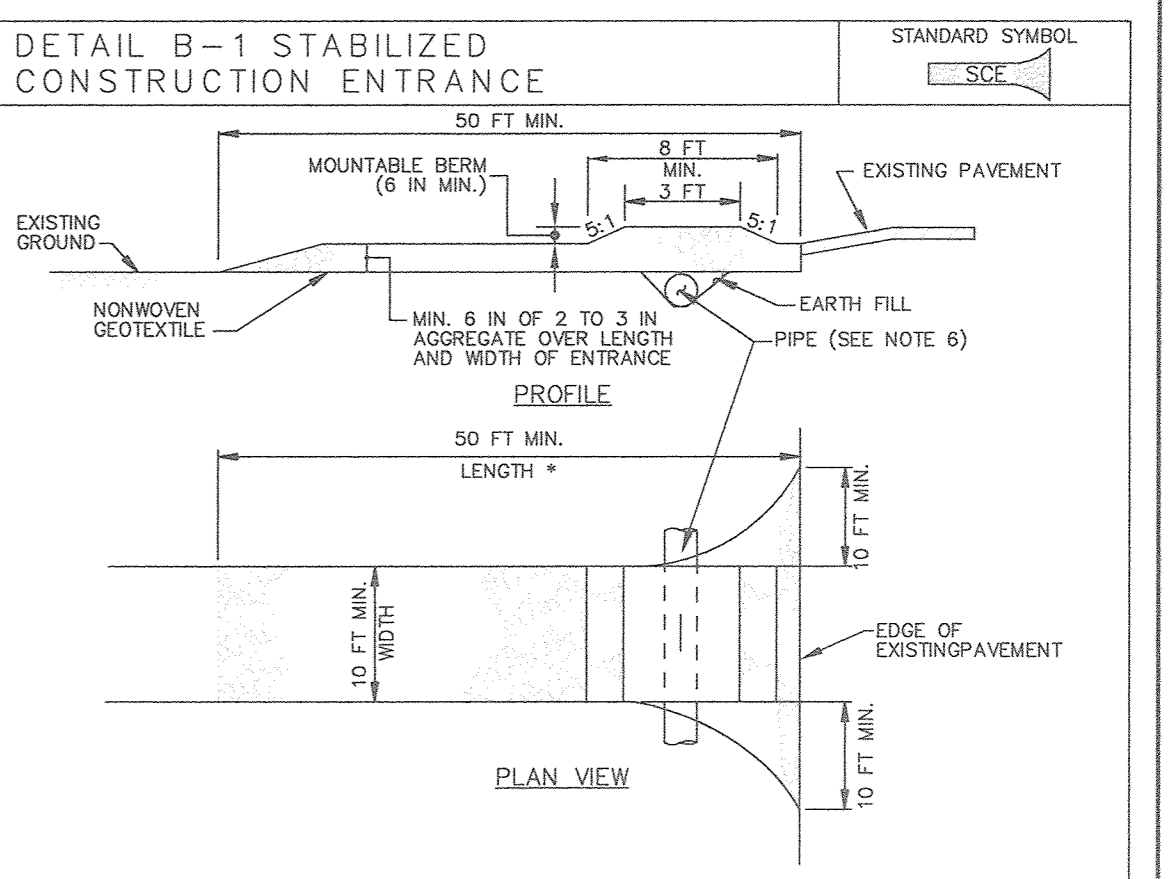


LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
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---	PROPOSED PRIVATE SEWER
---	PROPOSED PUBLIC SEWER
---	PROPOSED RIPRAP
---	SUPER SILT FENCE
---	SOILS DELINEATION
---	LIMIT OF DISTURBANCE

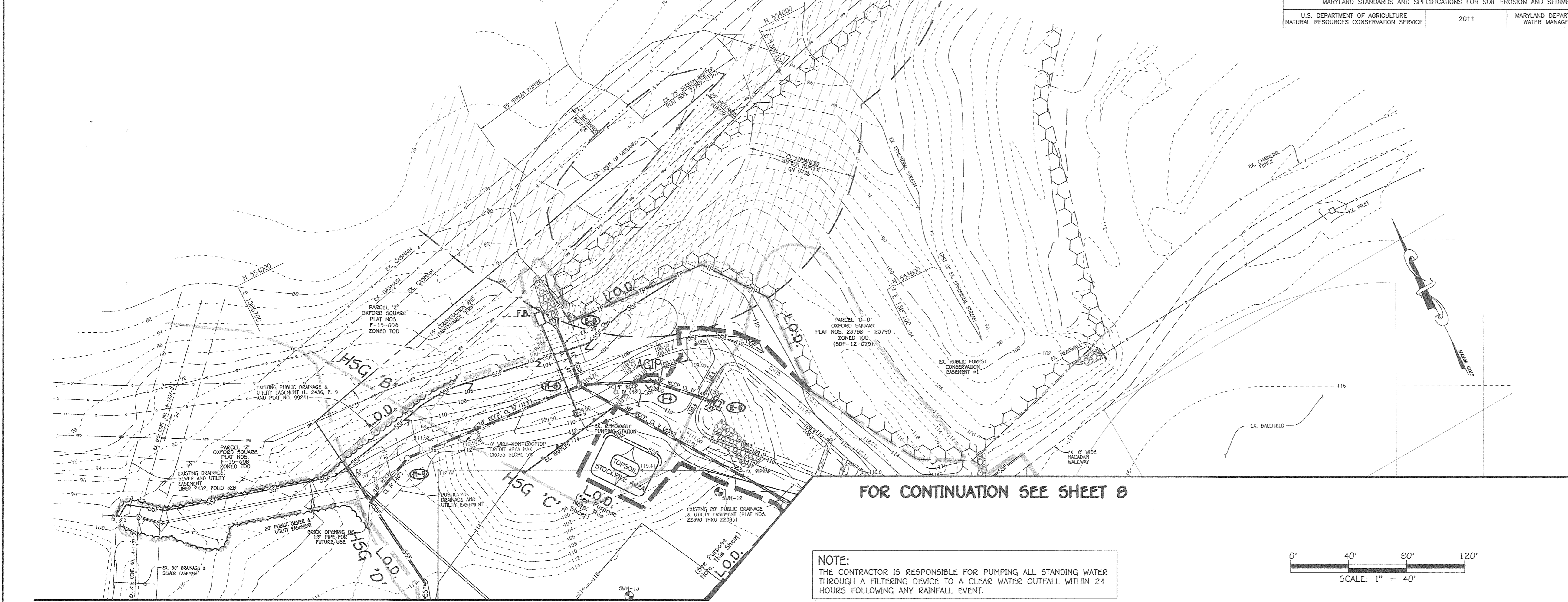
- SEQUENCE OF CONSTRUCTION**
- OBTAIN GRADING PERMIT. (1 DAY)
  - NOTIFY "MISS UTILITY" AT 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 48 HOURS BEFORE STARTING WORK.
  - INSTALL ALL TREE PROTECTION FENCE FOR TREES TO BE UNDISTURBED AS INDICATED ON THE PLANS (1 DAY). INSTALL STABILIZED CONSTRUCTION ENTRANCES. (1 DAY)
  - INSTALL SEDIMENT CONTROL MEASURES SHOWN. (3 DAYS)
  - BEGIN DEMOLITION WORK SHOWN ON THIS SHEET. (1 WEEK)
  - WITH APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR BEGIN SITE GRADING FOR PARKING LOT CONSTRUCTION. (1 MONTH)
  - INSTALL STORM DRAIN SYSTEM AND INSTALL INLET PROTECTION AT EXISTING INLET 1-4 AND EXCAVATE BMP AREA TO ALLOW POSITIVE DRAINAGE FROM THE PARKING LOT. INSTALL R-6 WITH THE EXCEPTION OF RIPRAP, UNDERDRAIN PIPE, PLANTING SOIL AND MULCH IN BMP. THE CONTRACTOR SHALL REMOVE ANY SEDIMENT FROM BMP WHEN SEDIMENT ACCUMULATES TO ELEV. 108.80. THE CONTRACTOR SHALL BLOCK THE UNDERDRAIN OPENING AT R-6 UNTIL SUCH TIME AS THE UNDERDRAIN SYSTEM IS INSTALLED. INSTALL SILT FENCE BLOCKING AT R-6 WHEN CONSTRUCTED. (2 WEEKS)
  - INSTALL CURB AND GUTTER, PAVING AND SIDEWALKS AS SHOWN. (2 WEEKS)
  - THE CONTRACTOR SHALL NOTIFY MR. GREG CONNOR AT GROUND SERVICES (410-313-2577) ONE WEEK PRIOR TO FINE GRADING ANY AREAS ON THE PARKING LOT. FINE GRADE ALL AREAS, INSTALL SOO AND LANDSCAPING. (2 WEEKS)
  - WHEN DISTURBED AREAS HAVE BEEN STABILIZED (I.E. HAVING FULLY ESTABLISHED 3" GRASS OR PAVEMENT) INSTALL BMP. WORK INCLUDES EXCAVATION, INSTALLING UNDERDRAINS, RIPRAP, PLANTING SOIL, MULCH LAYERS AND PLANTINGS. (2 WEEKS)
  - OBTAIN PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR TO REMOVE ALL REMAINING SEDIMENT AND EROSION CONTROL DEVICES. THEN STABILIZE THOSE AREAS DISTURBED BY THIS PROCESS WITH PERMANENT SEEDING. (1 WEEK)
  - NOTIFY HOWARD COUNTY OFFICE OF INSPECTION AND PERMITS FOR FINAL INSPECTION OF THE COMPLETED PROJECT.
- NOTE: ALL CONSTRUCTION AND DEMOLITION WASTE MUST BE MANAGED IN ACCORDANCE WITH THE CONSTRUCTION WASTE MANAGEMENT PLAN TO ACHIEVE A 75% DIVERSION RATE.**



- 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 9 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.
  - 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.

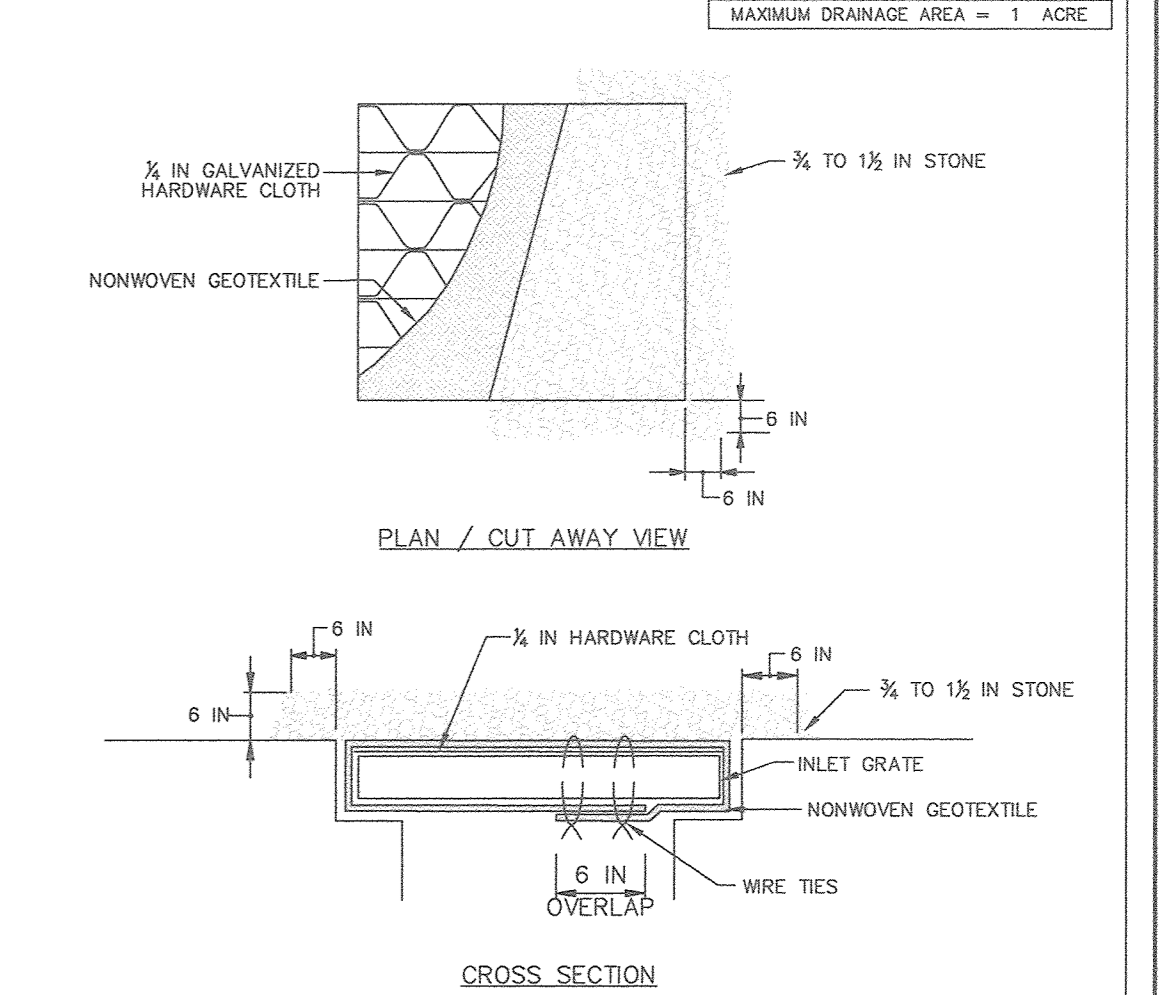


- CONSTRUCTION SPECIFICATIONS**
- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (\*30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
  - PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
  - PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
  - PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
  - MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE. MOUNTABLE BERM AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.



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

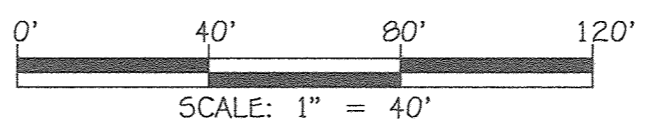
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL		
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



- CONSTRUCTION SPECIFICATIONS**
- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
  - LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
  - PLACE CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
  - STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

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

**NOTE:**  
THE CONTRACTOR IS RESPONSIBLE FOR PUMPING ALL STANDING WATER THROUGH A FILTERING DEVICE TO A CLEAR WATER OUTFALL WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT.



**PURPOSE NOTE:** THE PURPOSE OF THIS REDLINE IS TO ADD AN ADDITIONAL PARKING LOT TO THE REAR OF THE SCHOOL, ADD A NEW SWM FACILITY (BMP #6) AND RELOCATE A PORTION OF THE 8' WIDE MACADAM PATHWAY.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
10727 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-2895

**ENGINEER'S CERTIFICATE**  
"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS 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 COUNTY CONSERVATION DISTRICT."  
Signature: [Signature]  
DATE: 7/29/19

**DEVELOPER'S CERTIFICATE**  
"I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL 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."  
Signature: [Signature]  
DATE: 7-29-19

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2020."  
Signature: [Signature]  
DATE: 7/29/19

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
Signature: [Signature]  
DATE: 7/30/19

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Signature: [Signature]  
DATE: 8-26-19

Signature: [Signature]  
DATE: 8/20/19

Signature: [Signature]  
DATE: 8/19/19

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



Parcel Number		Street Address	
'D-D'		7030 BANBURY DRIVE HANOVER, MD 21076	
PROJECT	SECTION/AREA	PARCEL	
ELEMENTARY SCHOOL #42	N/A	'D-D'	
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP
23708-23790	20	TOD	3B
WATER CODE		SEWER CODE	
---		---	

**REVISED SEDIMENT AND EROSION CONTROL PLAN**

'GREEN NEIGHBORHOOD'  
**ELEMENTARY SCHOOL #42**  
OXFORD SQUARE  
PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 3B GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 40' DATE: JULY 23, 2019

SHEET 9 OF 44

FOR CONTINUATION SEE SHEET 11

**LEGEND**

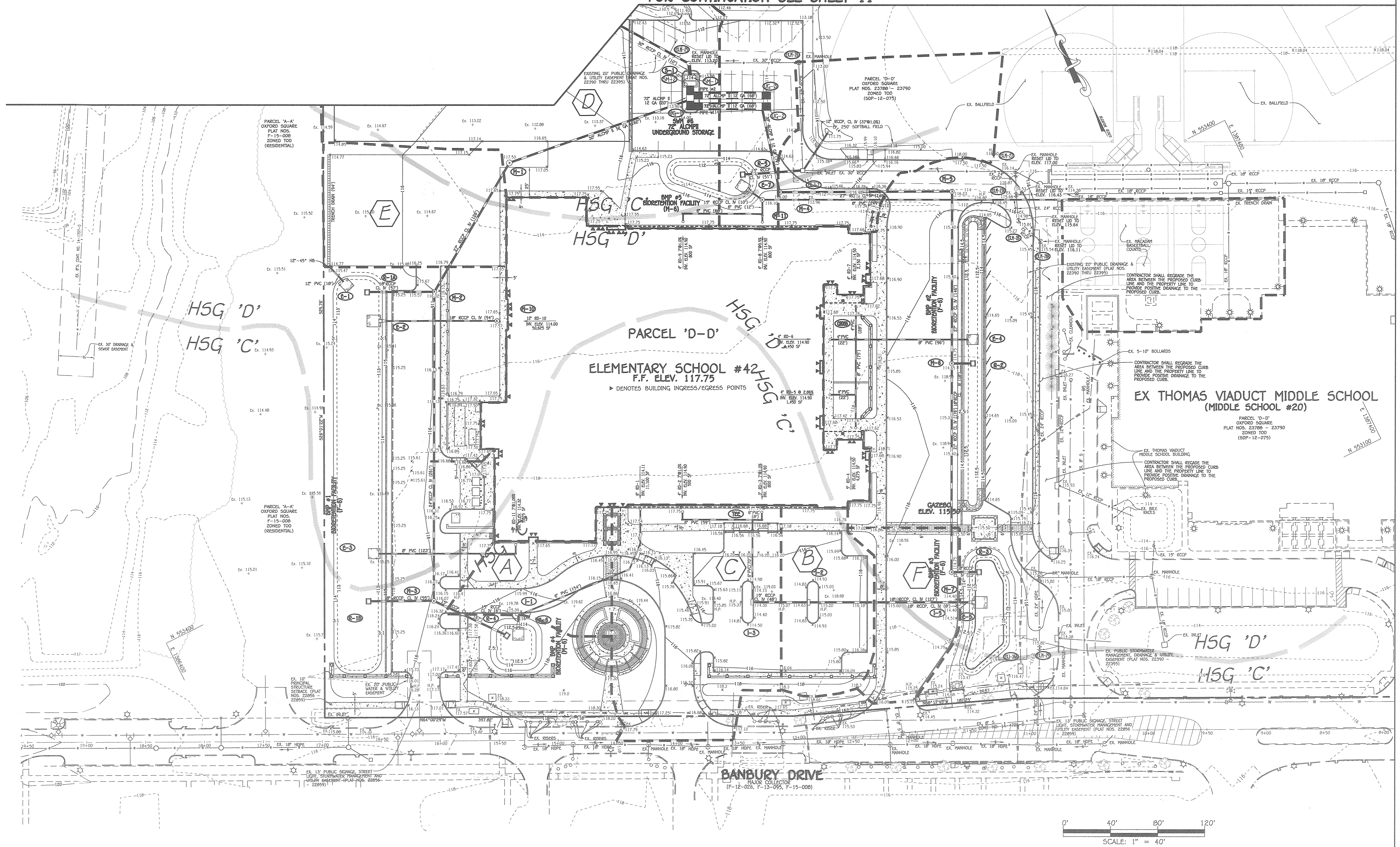
SYMBOL	DESCRIPTION
--- 108 ---	EXISTING CONTOUR 2' INTERVAL
--- 110 ---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING CABLE LINE
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---	PROPOSED MACADAM PAVING
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	PROPOSED STORMDRAIN
---	PROPOSED RIPRAP
---	PROPOSED BRICK
---	PROPOSED STAMPED CONC. PAVING
---	PROTECTIVE PLAY SURFACE
---	SOILS DELINEATION

**SOILS TABLE**

HSG	AREA	% OF LOD	NOTE
B	18,731 SF	4.8%	THE HSGs WERE DETERMINED BY E.C. & S. ADVANTAGE LLC. SEE SOIL LETTER DATED 2/23/2019 IN SWH REPORT.
C	205,870 SF	52.9%	
D	164,569 SF	42.3%	

**DRAINAGE AREA DATA**

DRAINAGE AREA	STRUCTURE NO.	AREA (AC.)	"C"	% IMP.
A	I-1	0.20	0.62	63
B	I-2	0.27	0.69	73
C	I-3	0.61	0.66	70
D	I-4	1.68	0.25	7
E	TRENCH	0.36	0.80	89
F	I-5	0.23	0.79	91



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*Charles J. Cervo, Sr., P.E.*  
 CHARLES J. CERVO, SR., P.E.  
 7/29/19 DATE

DATE	DESCRIPTION	REVISION BLOCK
6/14/19	Added New Parking Area & Macadam Walk	
6/27/16	Revised Parcel Name & Combined Parcels 'B' & 'B-8' into Parcel 'D-D'	

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Naila J. Jurek*  
 Director - Department of Planning and Zoning  
 8-26-19 Date  
*Kurt S. Owen*  
 Chief, Division of Land Development  
 8/20/19 Date  
*John J. ...*  
 Chief, Development Engineering Division  
 8/29/19 Date

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 No. 13204  
 EXPIRES 11/03/2020

Address Chart

Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076

PROJECT	SECTION/AREA	PARCEL
ELEMENTARY SCHOOL #42	N/A	'D-D'

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
23788-23790	20	TOD	3B	FIRST	6012.01

WATER CODE --- SEWER CODE ---

REVISED SOILS AND DRAINAGE AREA MAP

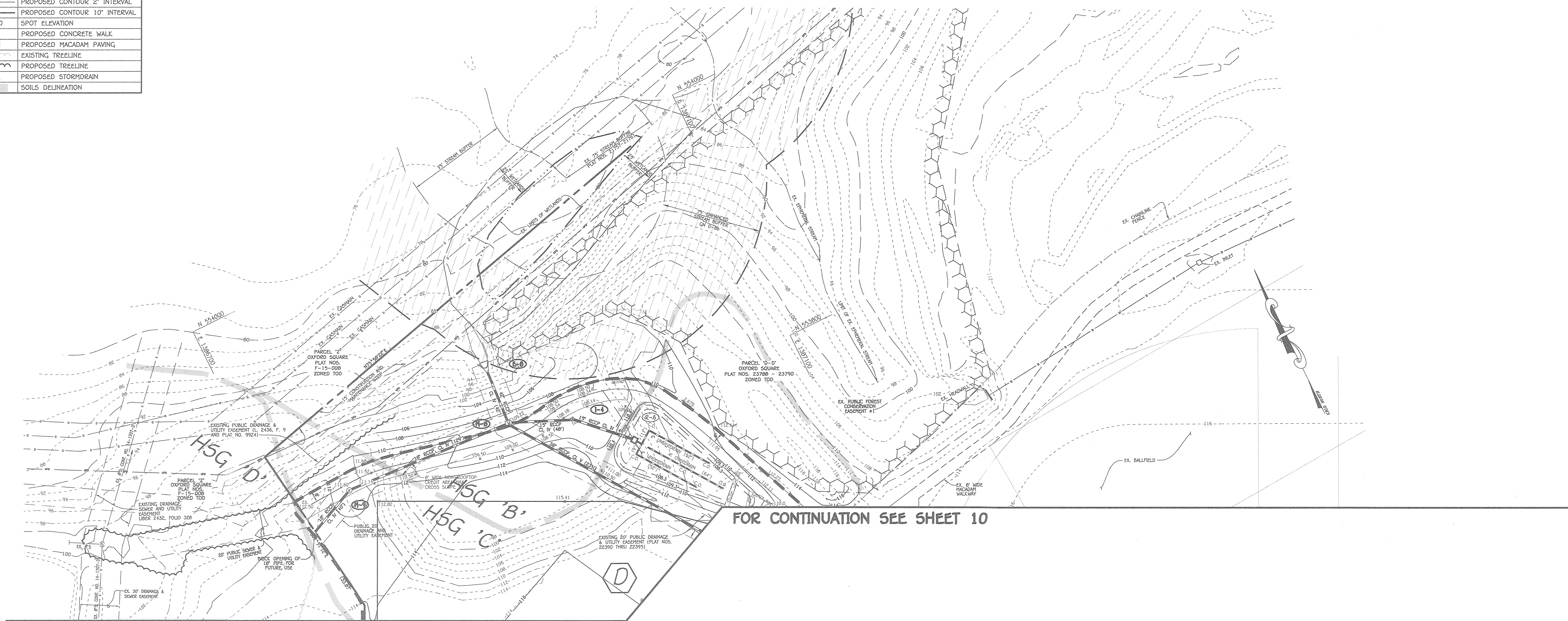
'GREEN NEIGHBORHOOD'  
 ELEMENTARY SCHOOL #42  
 OXFORD SQUARE  
 PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 3B GRID No.: 20 PARCEL No.: 1003  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 40' DATE: JULY 23, 2019

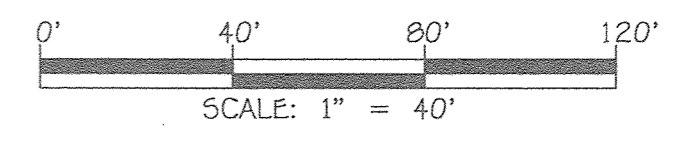
SHEET 10 OF 44

1/2020/09/01/44/04/ELEMENTARY SCHOOL #42 PLANS/SDP REDLINE FOR PARKING/NEW/PLANS FOR REDLINE/09/01/44/04/SDP SHEET 10-1 DRAINAGE MAP.dwg SHEET 11, 7/24/2019 11:26:11 AM, 1:1

LEGEND	
SYMBOL	DESCRIPTION
--- 108 ---	EXISTING CONTOUR 2' INTERVAL
--- 110 ---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING CABLE LINE
---	EXISTING GAS LINE
---	EXISTING FENCE
---	EXISTING FENCE
--- 108 ---	PROPOSED CONTOUR 2' INTERVAL
--- 110 ---	PROPOSED CONTOUR 10' INTERVAL
+ 107.30	SPOT ELEVATION
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	PROPOSED STORMDRAIN
---	SOILS DELINEATION



FOR CONTINUATION SEE SHEET 10



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SOURCE OFFICE PARK - 18272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2895

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2020."  
  
 CHARLES J. CIVICO, SR., P.E.  
 7/29/19 DATE

DATE	DESCRIPTION	REVISION BLOCK
6/14/19	Added BMP #6 And Revised Macadam Walk	
6/27/16	Revised Parcel Name & Combined Parcels 'B' & 'B-B' Into Parcel 'D-D'	
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
Director, Department of Planning and Zoning 8-26-19 Date		
Chief, Division of Land Development 8/20/19 Date		
Chief, Development Engineering Division 8/9/19 Date		

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805



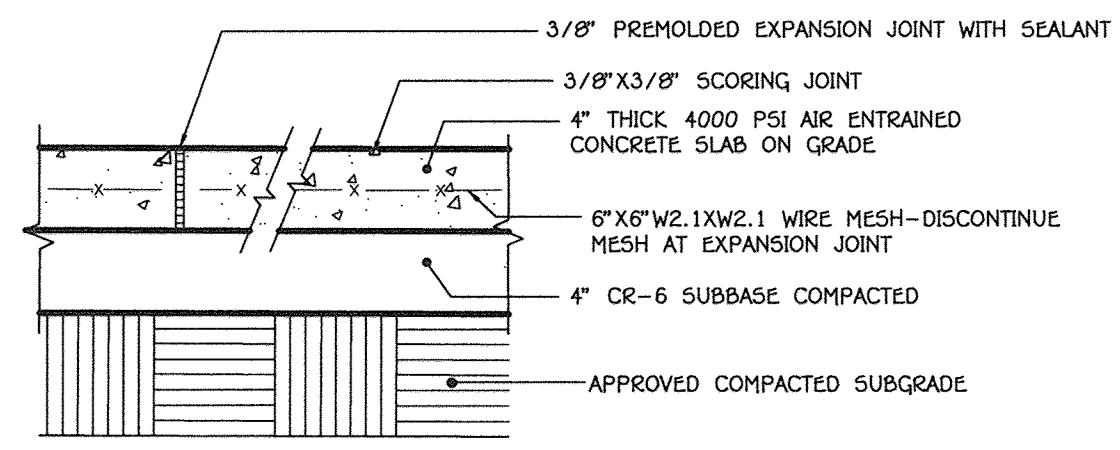
Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076
PROJECT: ELEMENTARY SCHOOL #42	
SECTION/AREA: N/A	
PARCEL: 'D-D'	
PLAT NOS. 23788-23790	BLOCK NO. 20
ZONE TOD	TAX MAP 38
ELEC. DIST. FIRST	CENSUS TR. 6012.01
WATER CODE	SEWER CODE

**REVISED SOILS AND DRAINAGE AREA MAP**

'GREEN NEIGHBORHOOD'  
**ELEMENTARY SCHOOL #42**  
 OXFORD SQUARE  
 PARCEL 'D-D'

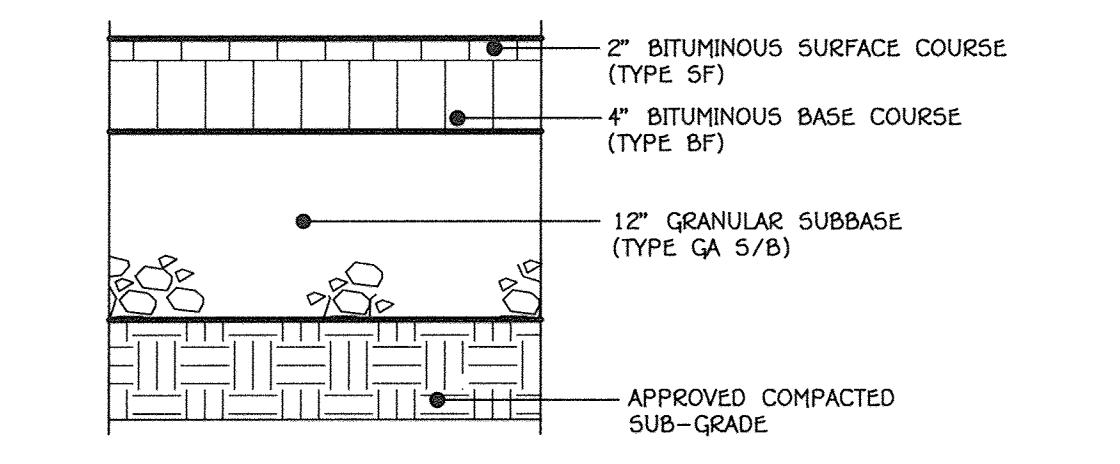
ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 40' DATE: JULY 23, 2019

SHEET 11 OF 44

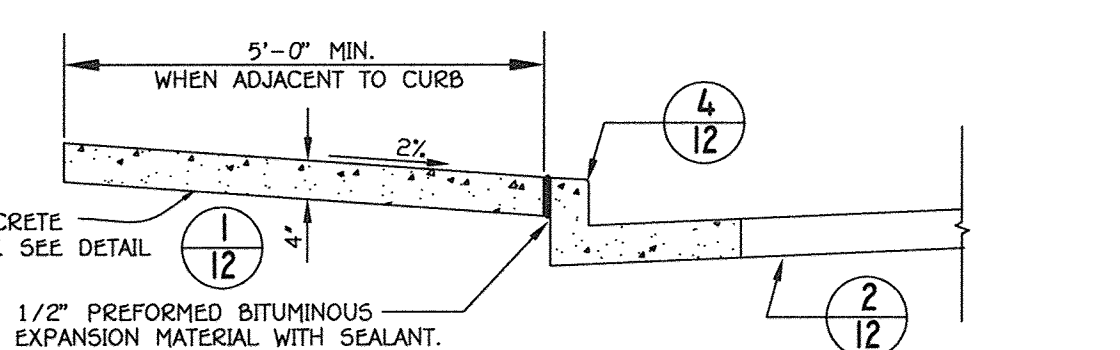


NOTE: INSTALL EXPANSION JOINTS AT MAX. 15'-0" O.C. AND INSTALL SCORING JOINTS AT MAX. 5'-0" O.C.  
SLOPE ACROSS SIDEWALK SHALL BE MIN. 1/8" / FT.

1 CONCRETE WALK DETAIL  
NO SCALE

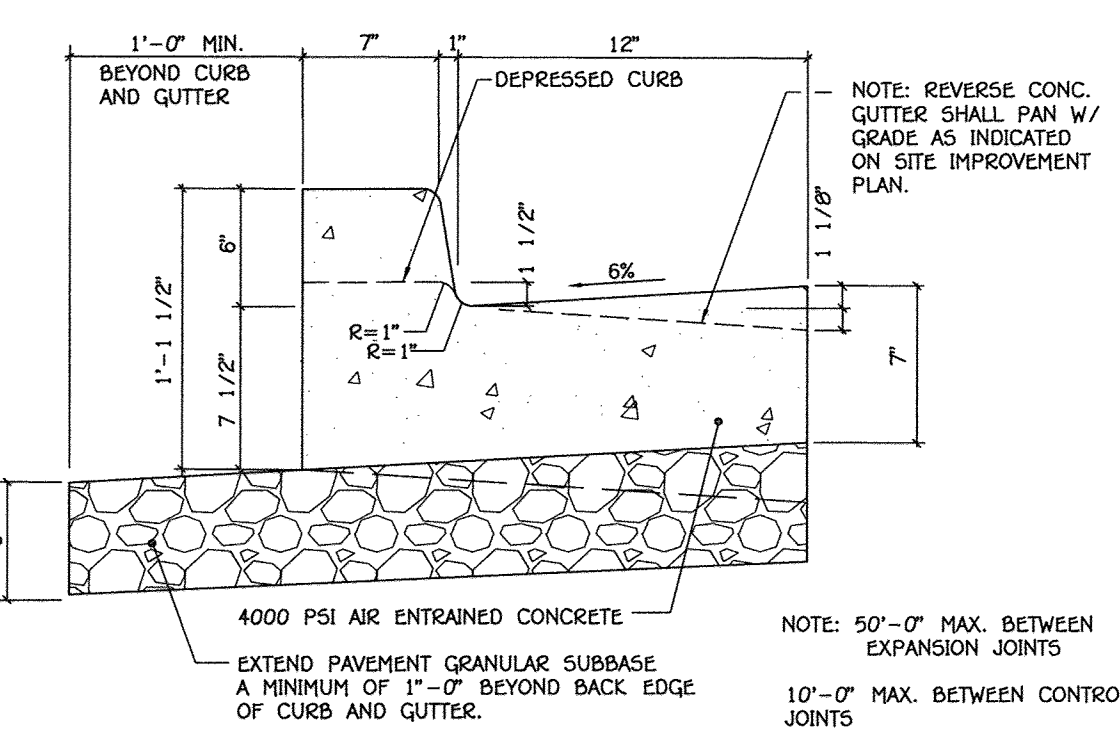


2 HEAVY DUTY ASPHALTIC PAVING DETAIL  
NO SCALE

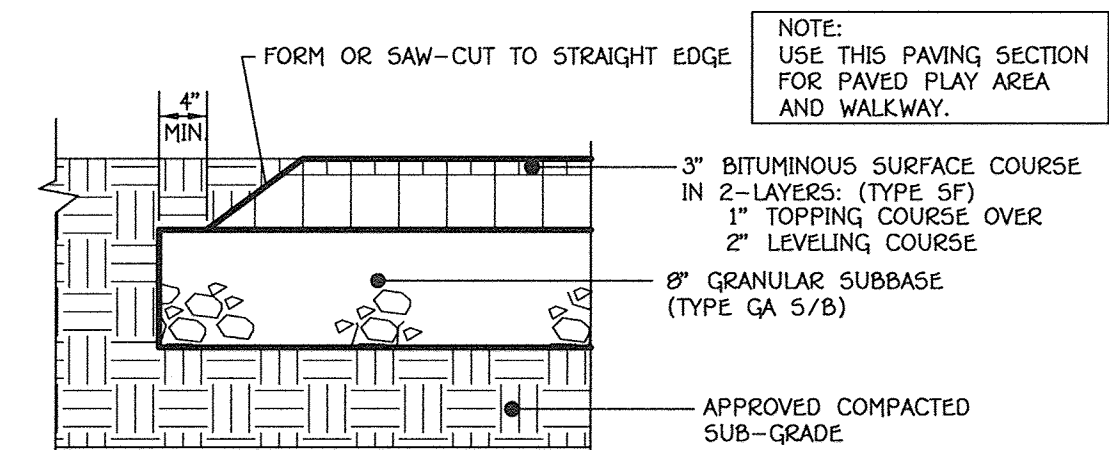


1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL WITH SEALANT.  
NOTES:  
1. SIDEWALK TO BE SCRIBED IN EQUALLY 5'-0" MAXIMUM SQUARES.  
2. EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO MORE THAN 15' APART.  
3. 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK. FILL WITH SEALANT.  
4. 4000 PSI AIR ENTRAINED CONCRETE SHALL BE USED.  
5. WHEN SIDEWALK ABUTS CURB, WALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL BETWEEN SIDEWALK AND CURB.  
6. ON LONGITUDINAL SIDEWALK GRADES OF 5% OR GREATER, A CONCRETE HEADER, 6" THICK AND 6" DEEP BELOW THE NORMAL 4" SIDEWALK THICKNESS SHALL BE CONSTRUCTED FOR THE FULL WIDTH OF THE SIDEWALK AT INTERVALS OF 40 FEET. THE HEADERS SHALL BE PLACED AT EXPANSION JOINT LOCATIONS AND SHALL BE MONOLITHIC WITH THE SIDEWALK.  
7. SIDEWALK WIDTH ADJACENT TO CURB SHALL BE 5'-0" MIN.  
8. SIDEWALK LOCATED 2' OR MORE FROM CURB MAY BE 4'-0" IN WIDTH WITH A 5' X 5' PAVED SECTION PLACED 200' APART.  
9. PROVIDE 1/2" EXPANSION JOINT WHERE WALKS ABUT EXISTING CONCRETE SURFACES TO REMAIN.

3 CONCRETE SIDEWALK ADJACENT TO CURB DETAIL  
HOWARD COUNTY STANDARD DETAIL R-3.05  
NO SCALE

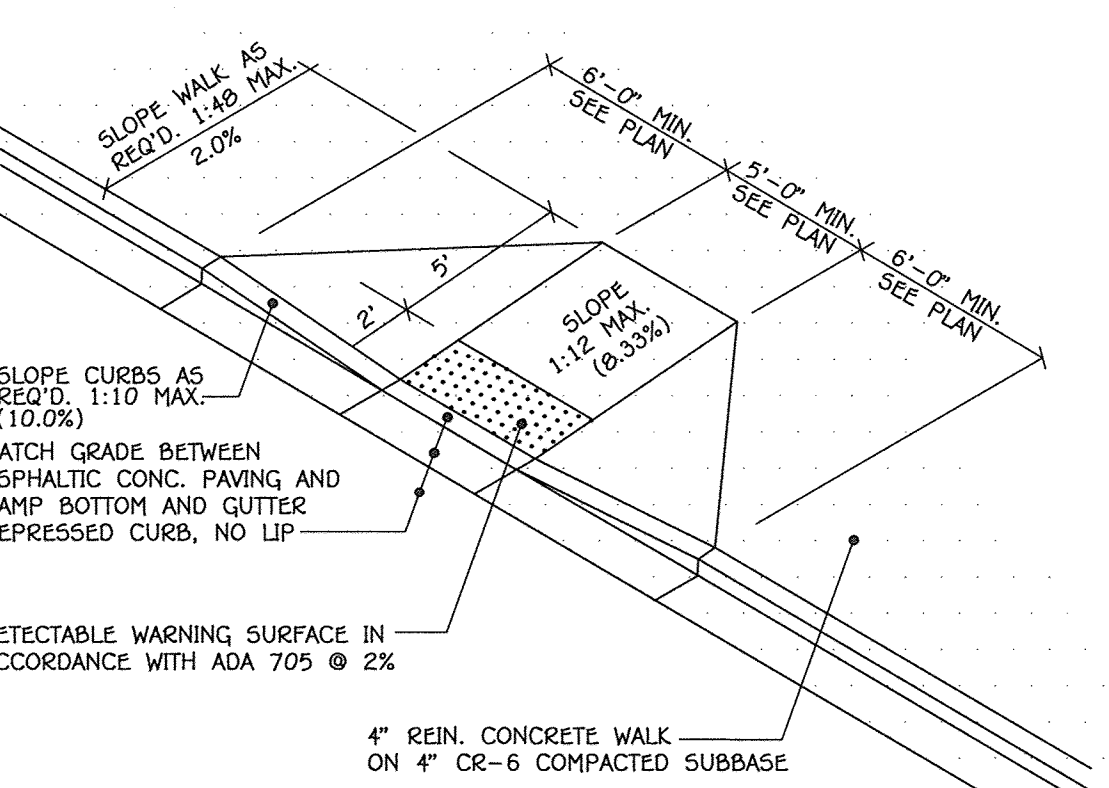


4 STANDARD 6" COMB. CONC. CURB AND GUTTER  
HOWARD COUNTY STANDARD DETAIL R-9.01  
NO SCALE

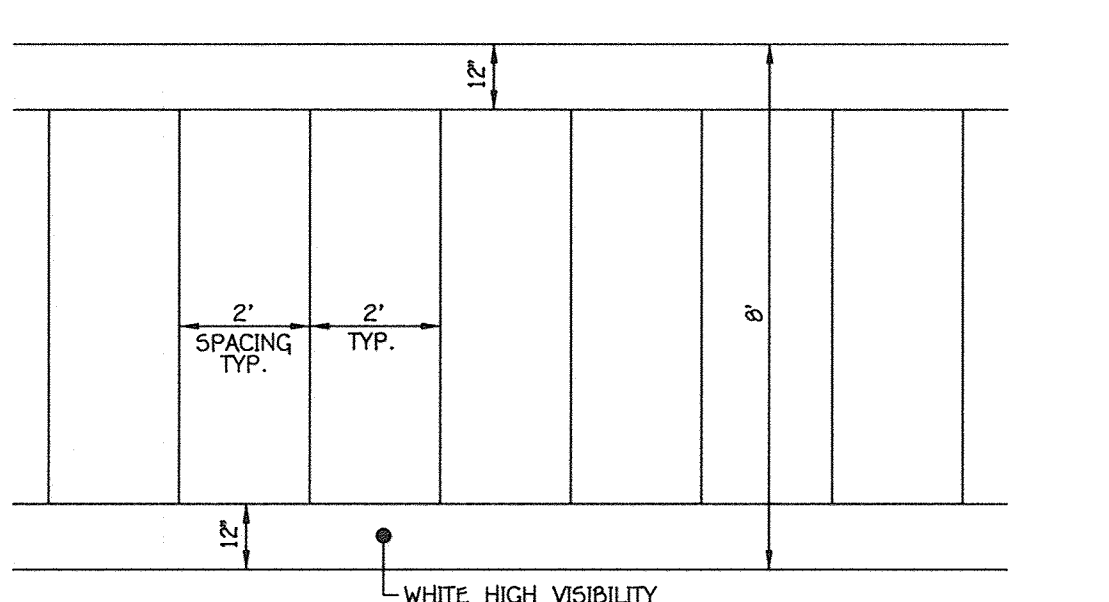


NOTE: USE THIS PAVING SECTION FOR PAVED PLAY AREA AND WALKWAY.  
3" BITUMINOUS SURFACE COURSE IN 2-LAYERS: (TYPE 5F)  
1" TOPPING COURSE OVER 2" LEVELING COURSE  
8" GRANULAR SUBBASE (TYPE GA 5/B)  
APPROVED COMPACTED SUB-GRADE

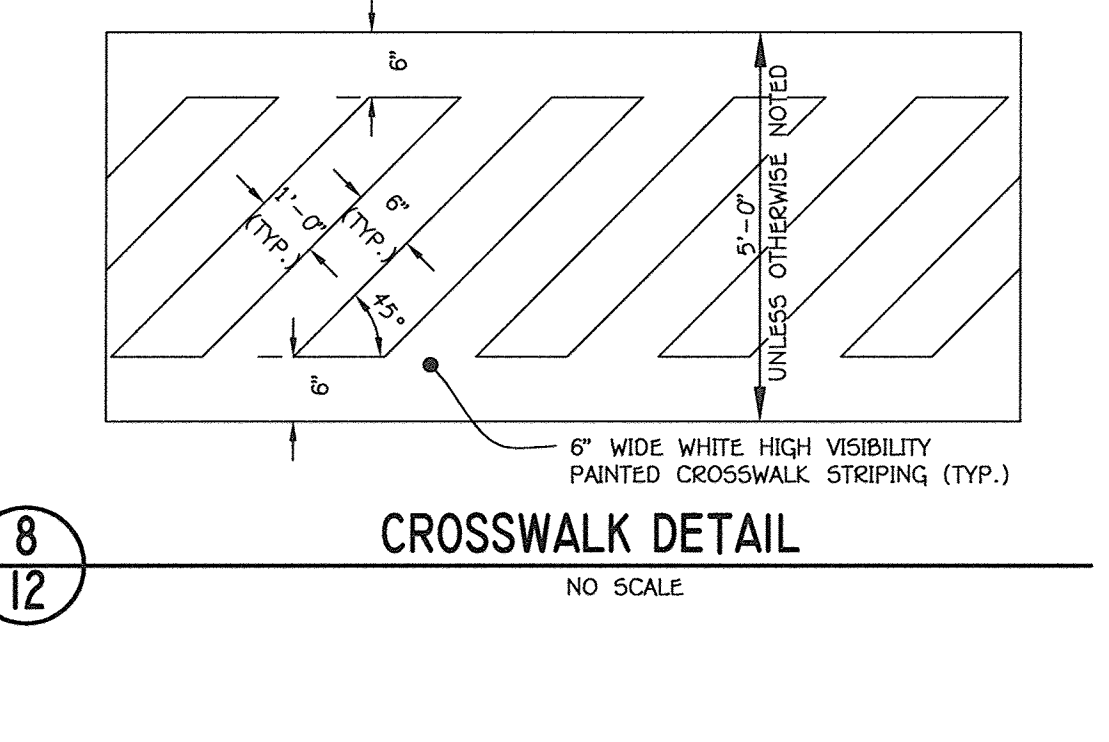
5 PAVED PLAY AREA AND WALKWAY ASPHALTIC PAVING DETAIL  
NO SCALE



6 SIDEWALK RAMP DETAIL  
NO SCALE



7 PEDESTRIAN CROSSWALK DETAIL  
HOWARD COUNTY STANDARD DETAIL T-7.03  
NO SCALE



8 CROSSWALK DETAIL  
NO SCALE



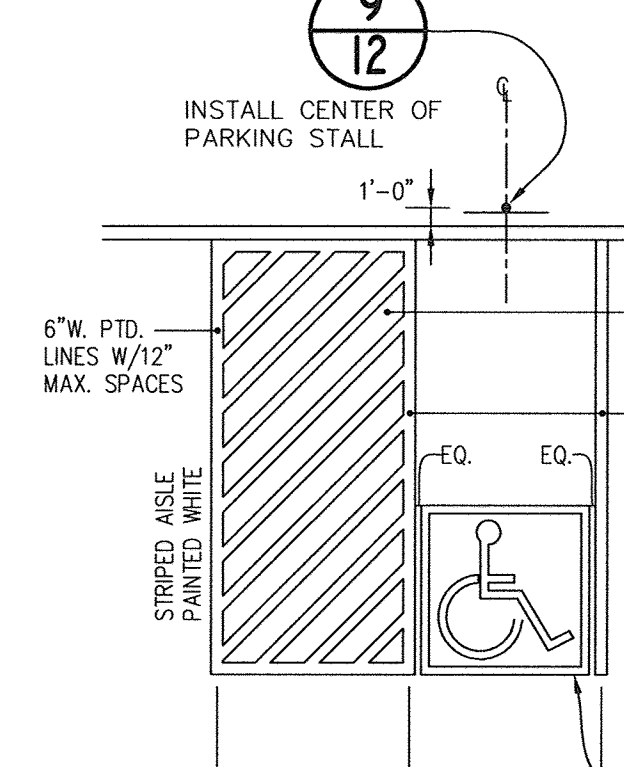
9 HANDICAP PARKING SIGN DETAIL  
NOT TO SCALE



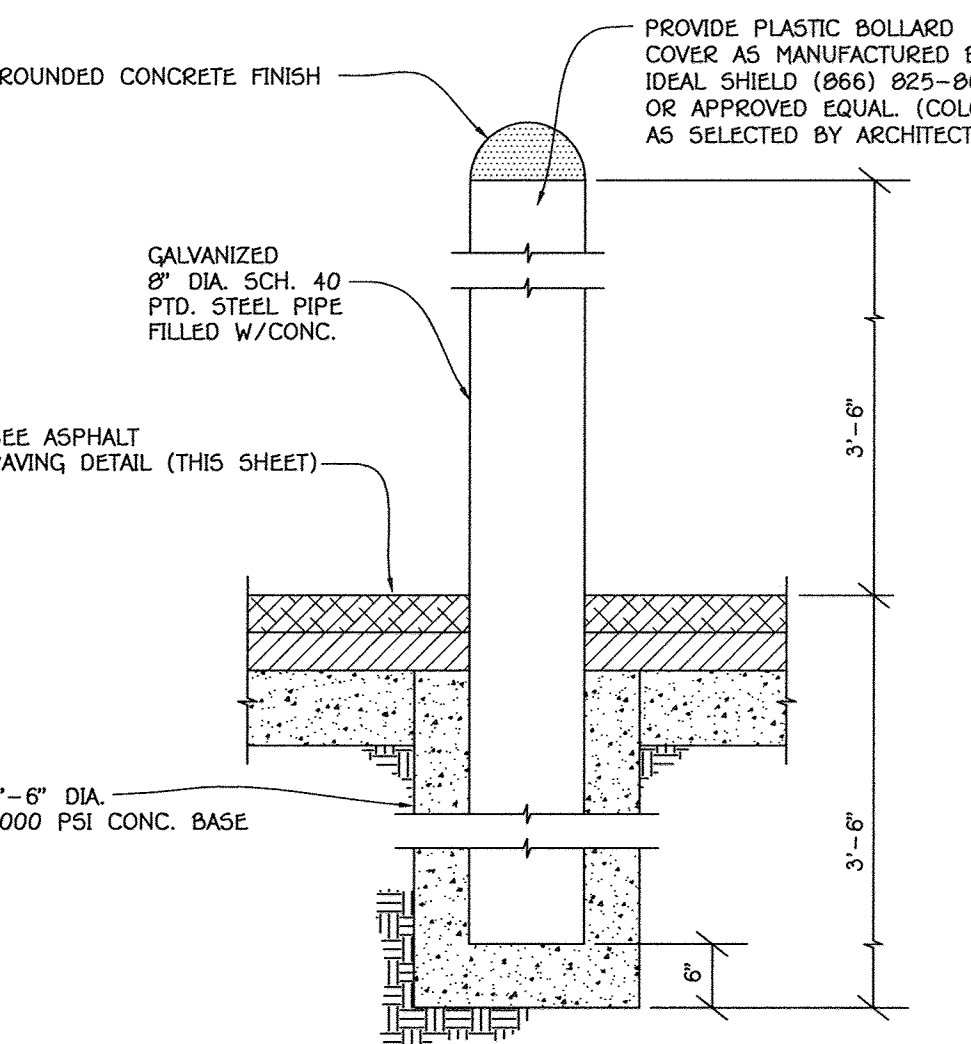
11 HANDICAP SPACE STENCIL LAYOUT  
NO SCALE

GENERAL NOTES:  
1. SIGNS SHALL MEET DESIGN STANDARDS OF THE FEDERAL HIGHWAY ADMINISTRATION AND CONFORM TO THE STATE OF MARYLAND STANDARD HIGHWAY SIGN BOOKLET DETAIL R7-8.  
2. ONE SIGN IS REQUIRED PER SPACE PLACED AS SHOWN ON SITE IMPROVEMENT PLAN.  
3. SIGNS SHALL BE POLE MOUNTED WITH HOT DIPPED GALVANIZED COUNTY APPROVED PERFORATED CHANNEL POSTS W/TOP OF SIGNS 9'-1" ABOVE FINISHED GRADE OR AS INDICATED ON SITE DRAWINGS.  
4. SIGN SHALL BE ATTACHED TO FLANGED SIDE OF POST. POST SHALL EXTEND INTO GROUND 2'-6" MIN.  
5. COLORS: LEGEND AND BORDER-GREEN SYMBOL-WHITE ON BLUE BACKGROUND BACKGROUND-WHITE  
6. CONTRACTOR SHALL COORDINATE ARROW DIRECTION WITH LOCATION OF ADJACENT AISLE.  
7. SPACES INDICATED ON SITE DEVELOPMENT PLANS AS "VAN ACCESSIBLE" SHALL BE SIGNED ACCORDINGLY.

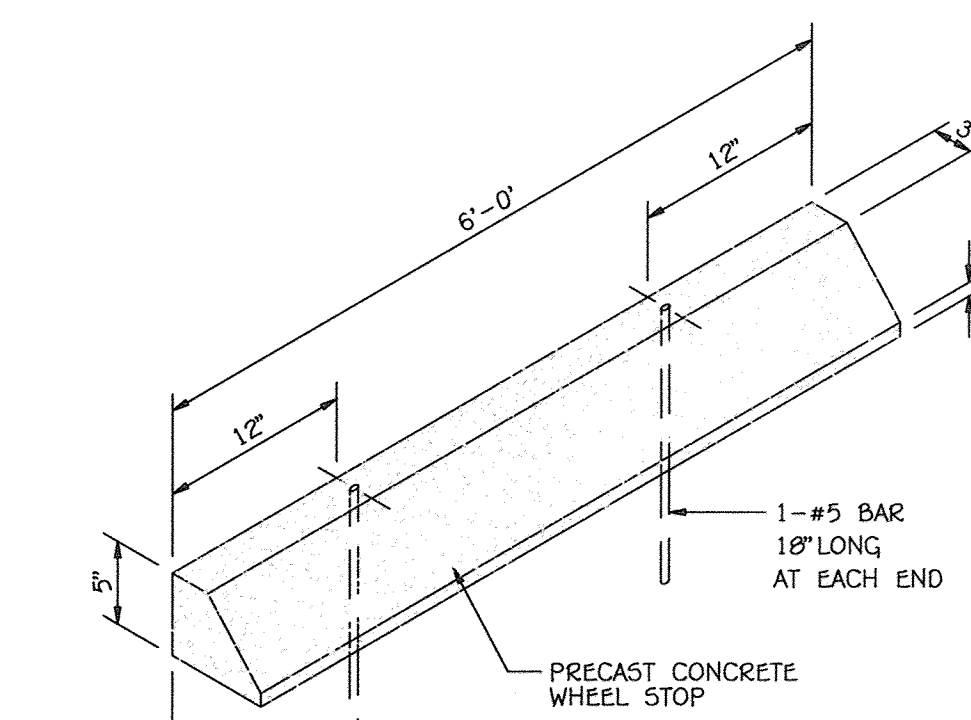
10 ACCESSIBLE SPACE LAYOUT  
NO SCALE



12 ACCESSIBLE SPACE LAYOUT  
NO SCALE



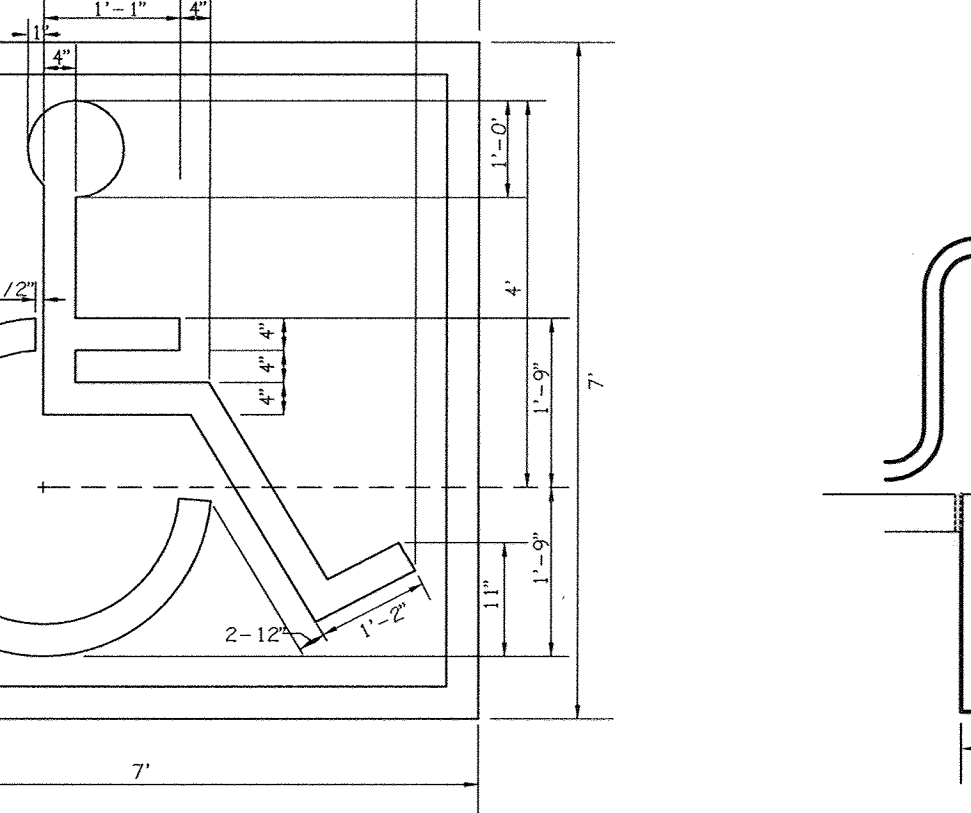
12 BOLLARD DETAIL  
NO SCALE



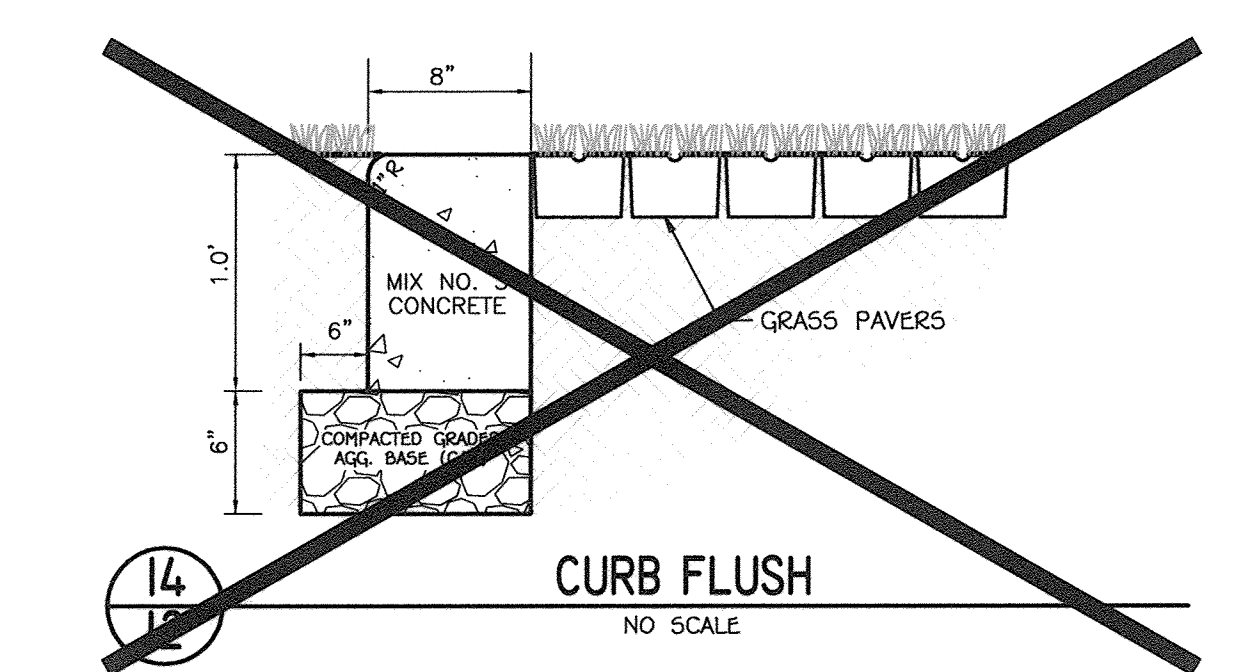
13 WHEEL STOP DETAIL  
NO SCALE

NOTES:  
1. WHEEL STOP FORM SIZES MAY VARY DEPENDING ON MANUFACTURER  
2. CONCRETE STRENGTH SHALL BE 4,000 P.S.I. AIR ENTRAINED

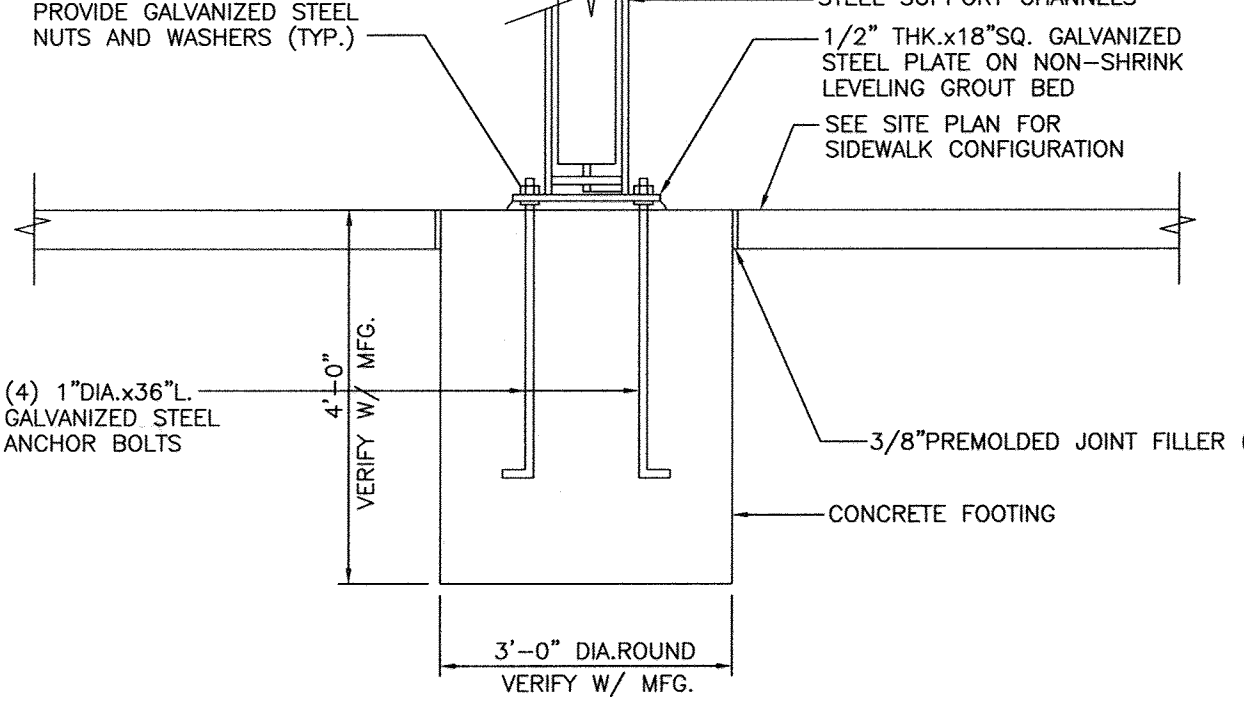
14 CURB FLUSH  
NO SCALE



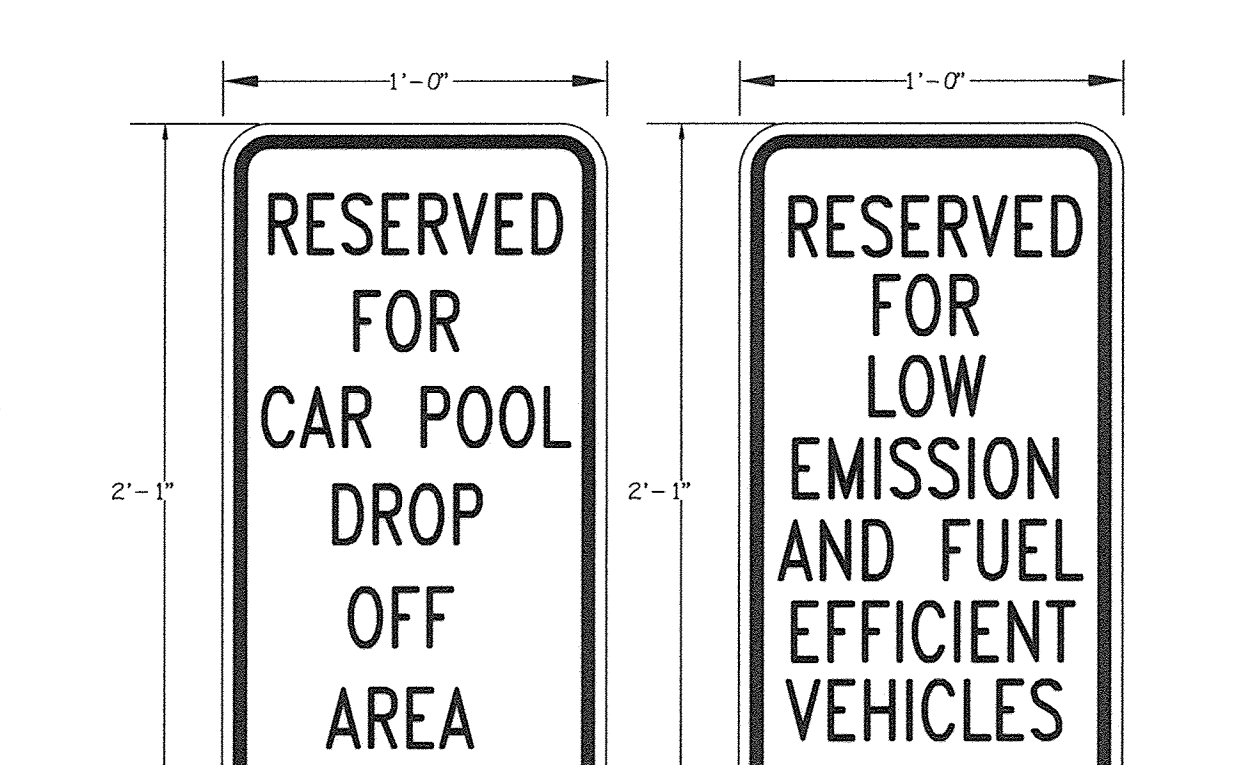
15 TILT FLAGPOLE DETAIL  
NO SCALE



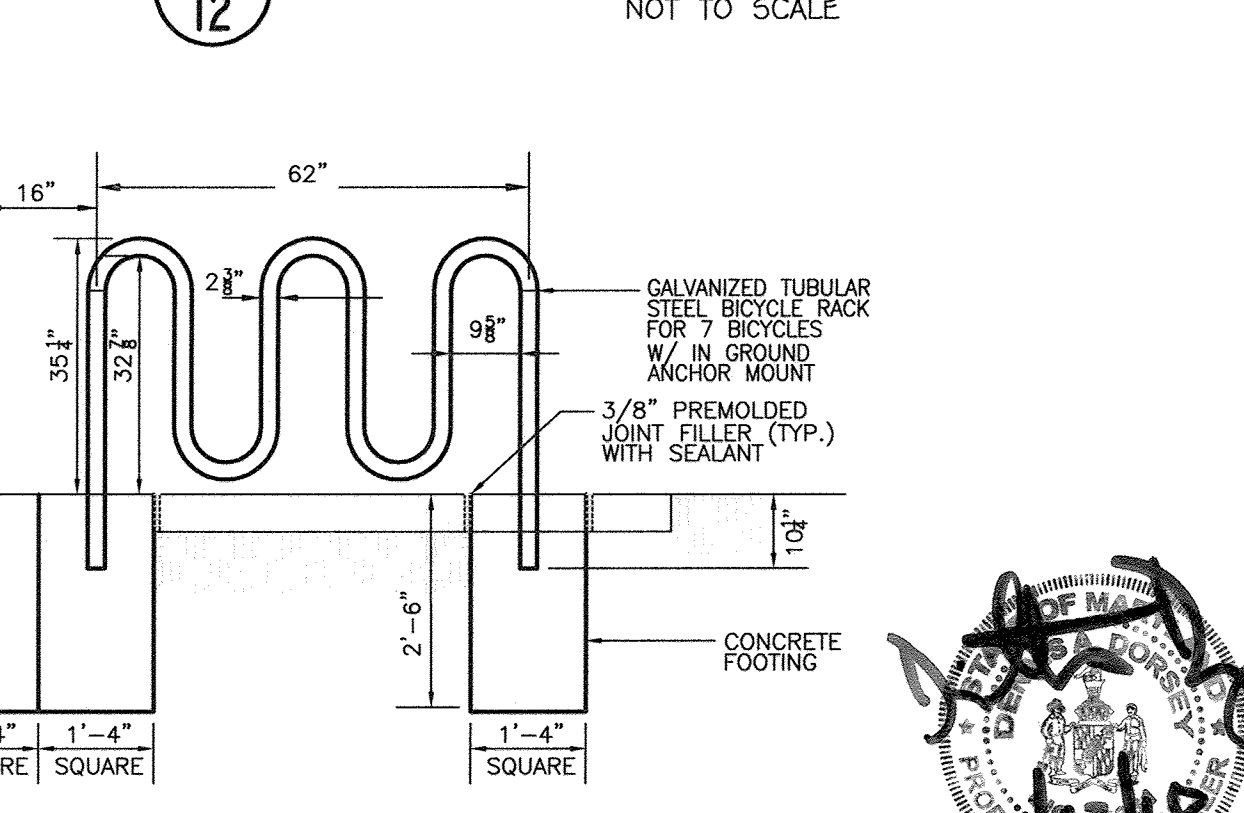
16 LE & FE SIGN DETAIL  
NOT TO SCALE



17 BICYCLE RACK DETAIL  
NO SCALE



18 BICYCLE RACK DETAIL  
NO SCALE



AS-BUILT

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CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE: 10272 BALTIMORE NATIONAL PLAZA  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-2899

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Charles J. Cropp, Sr., P.E.  
DATE: 3/11/16

DATE	DESCRIPTION	REVISION BLOCK
4/27/16	REVISED PARCEL NAME & COMBINED PARCELS 'D' & 'D-1' INTO PARCEL 'D-1'	
	APPROVED: DEPARTMENT OF PLANNING AND ZONING	
	Director - Department of Planning and Zoning	4-18-16
	Chief, Division of Land Development	4-18-16
	Chief, Development Engineering Division	4/13/16

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805

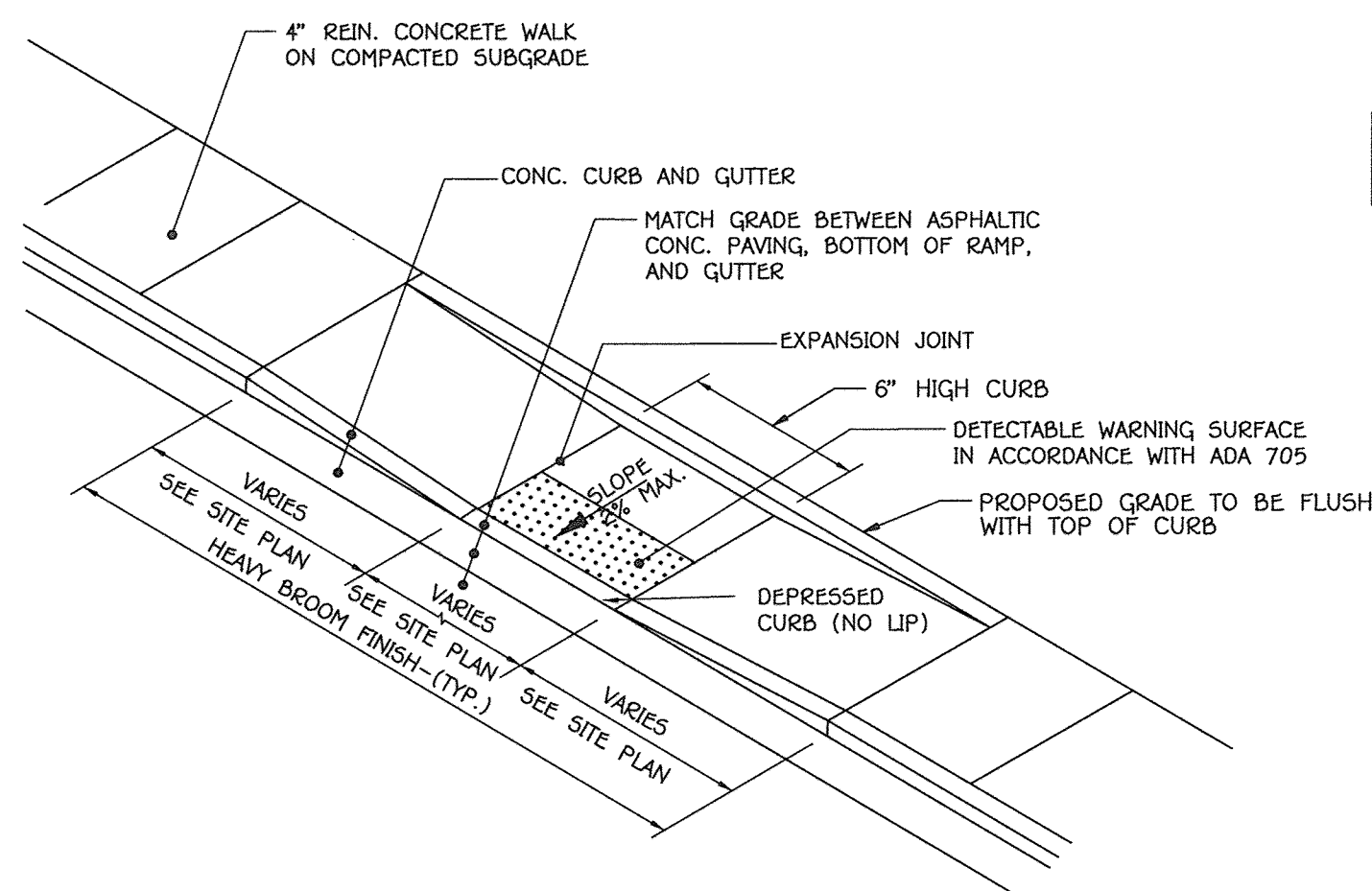


Parcel Number	Street Address
'D-1'	7030 BANBURY DRIVE HANOVER, MD 21076

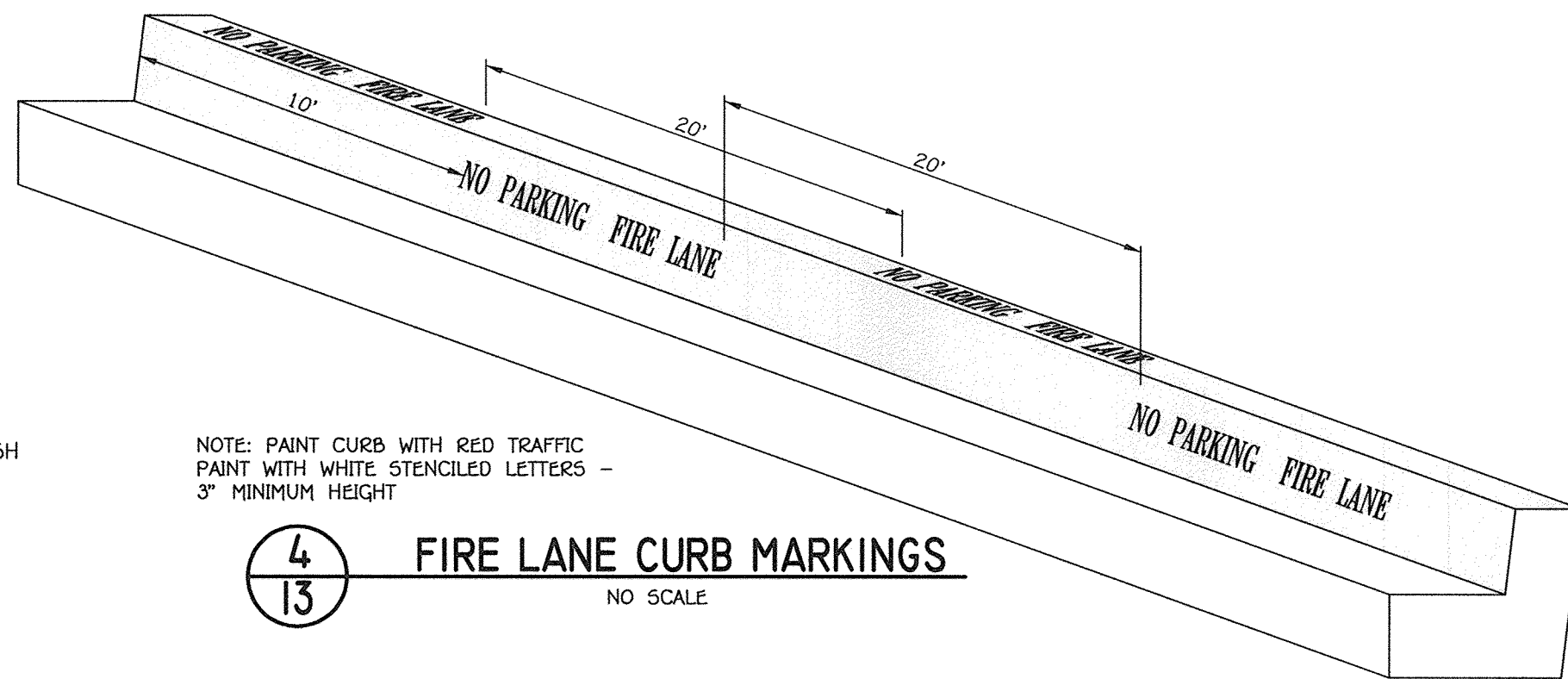
PROJECT	SECTION/AREA	PARCEL
ELEMENTARY SCHOOL #42	N/A	'D-1'
PLAT NOS.	BLOCK NO.	ZONE
27786-07190	20	TOD
TAX MAP	ELEC. DIST.	CENSUS TR.
38	FIRST	6012.01
WATER CODE	SEWER CODE	

DETAIL SHEET  
'GREEN NEIGHBORHOOD'  
ELEMENTARY SCHOOL #42  
OXFORD SQUARE  
PARCEL 'D-1'

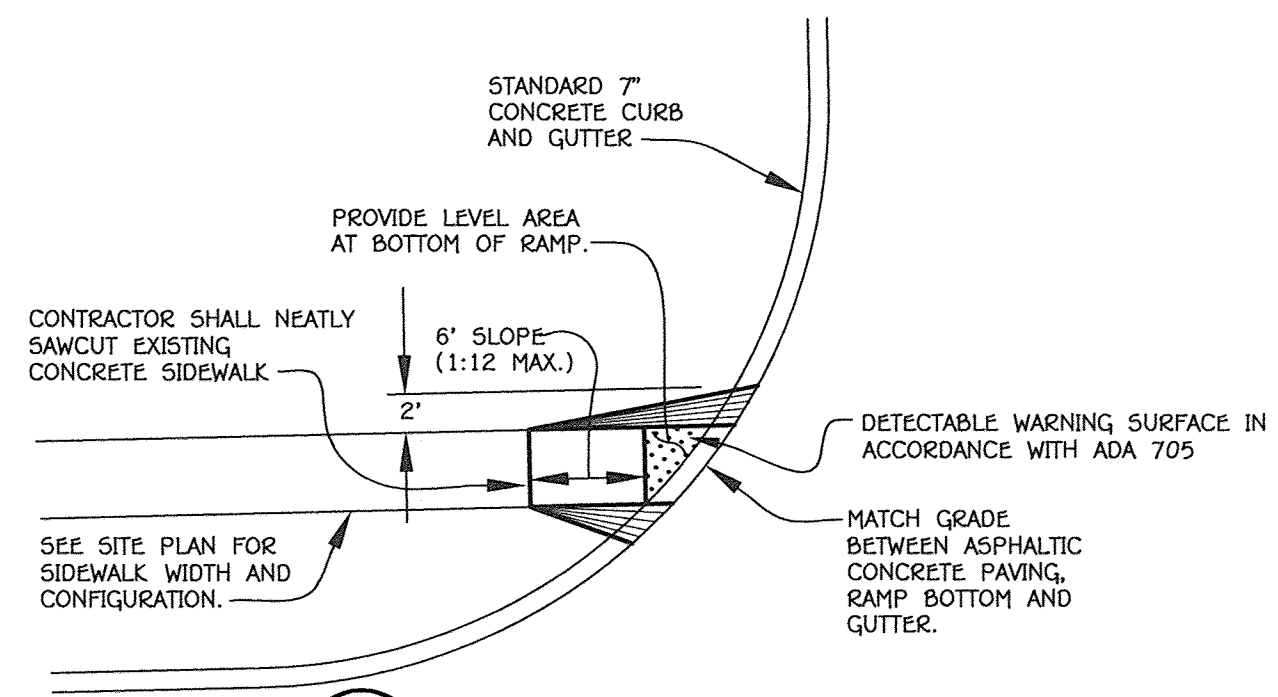
ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: NONE DATE: MARCH 7, 2016  
SHEET 12 OF 44



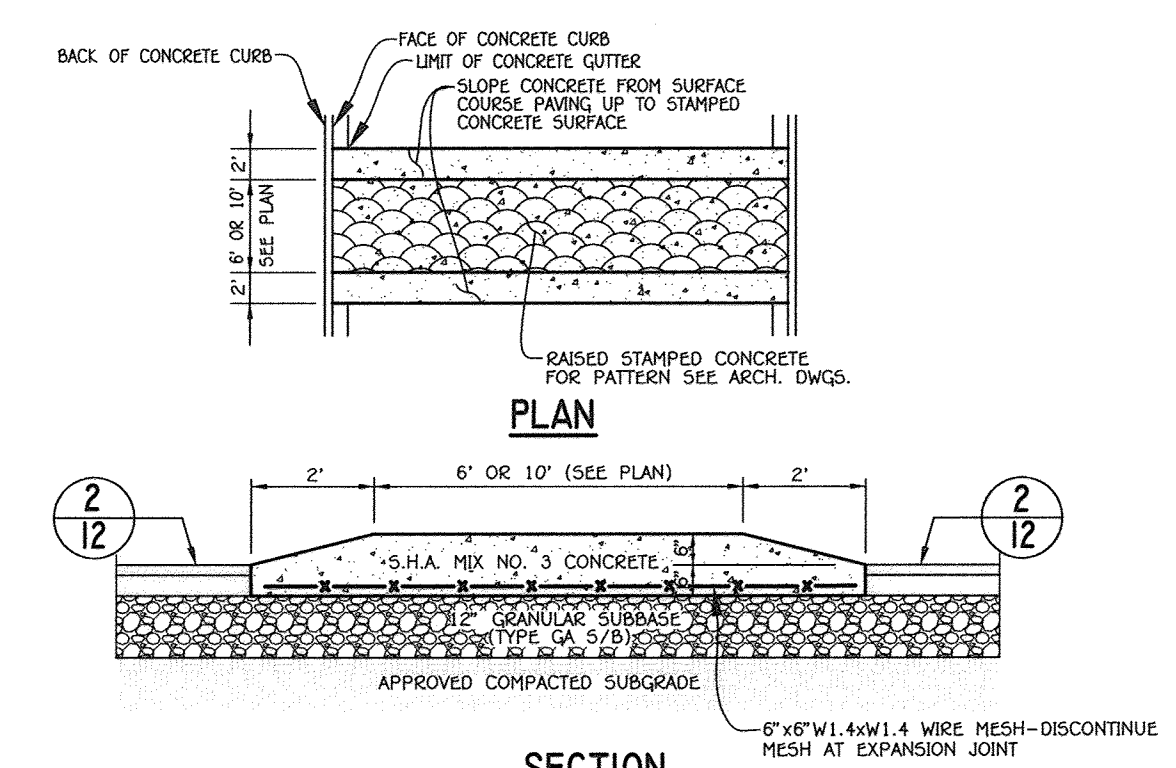
**1**  
**13** HANDICAP CURB RAMP DETAIL  
NO SCALE



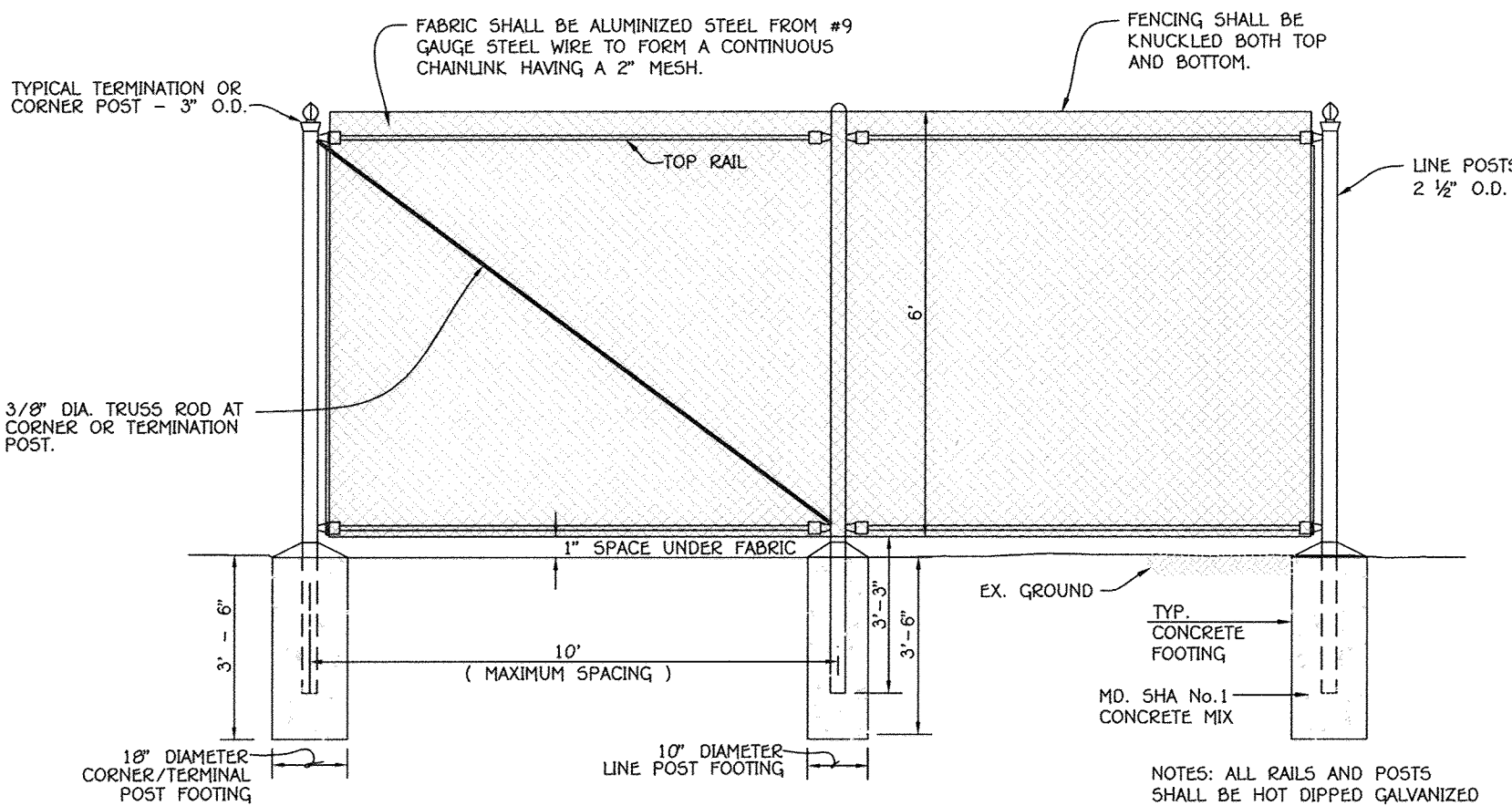
**4**  
**13** FIRE LANE CURB MARKINGS  
NO SCALE



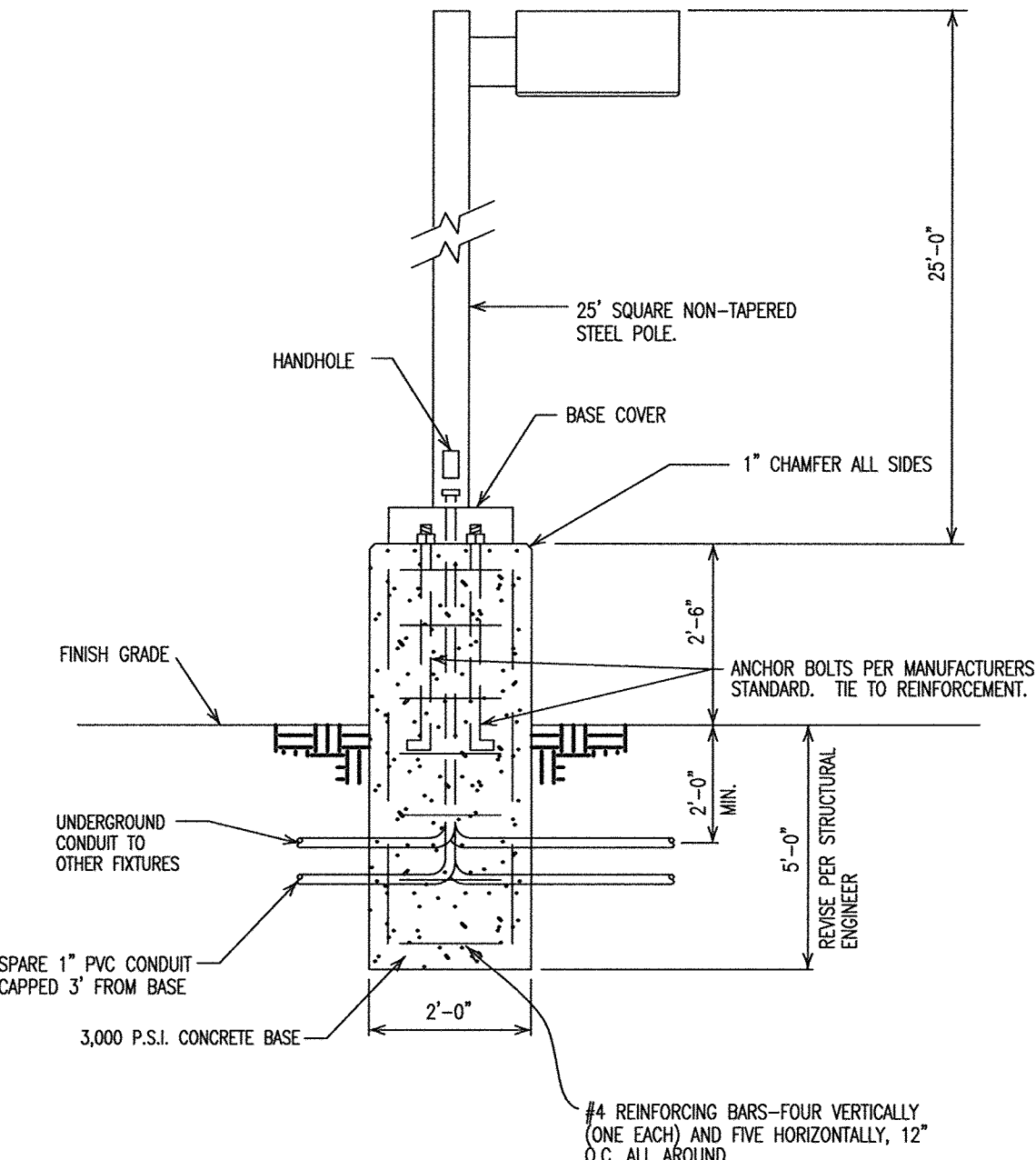
**7**  
**13** HANDICAP RAMP 'C' DETAIL  
NO SCALE



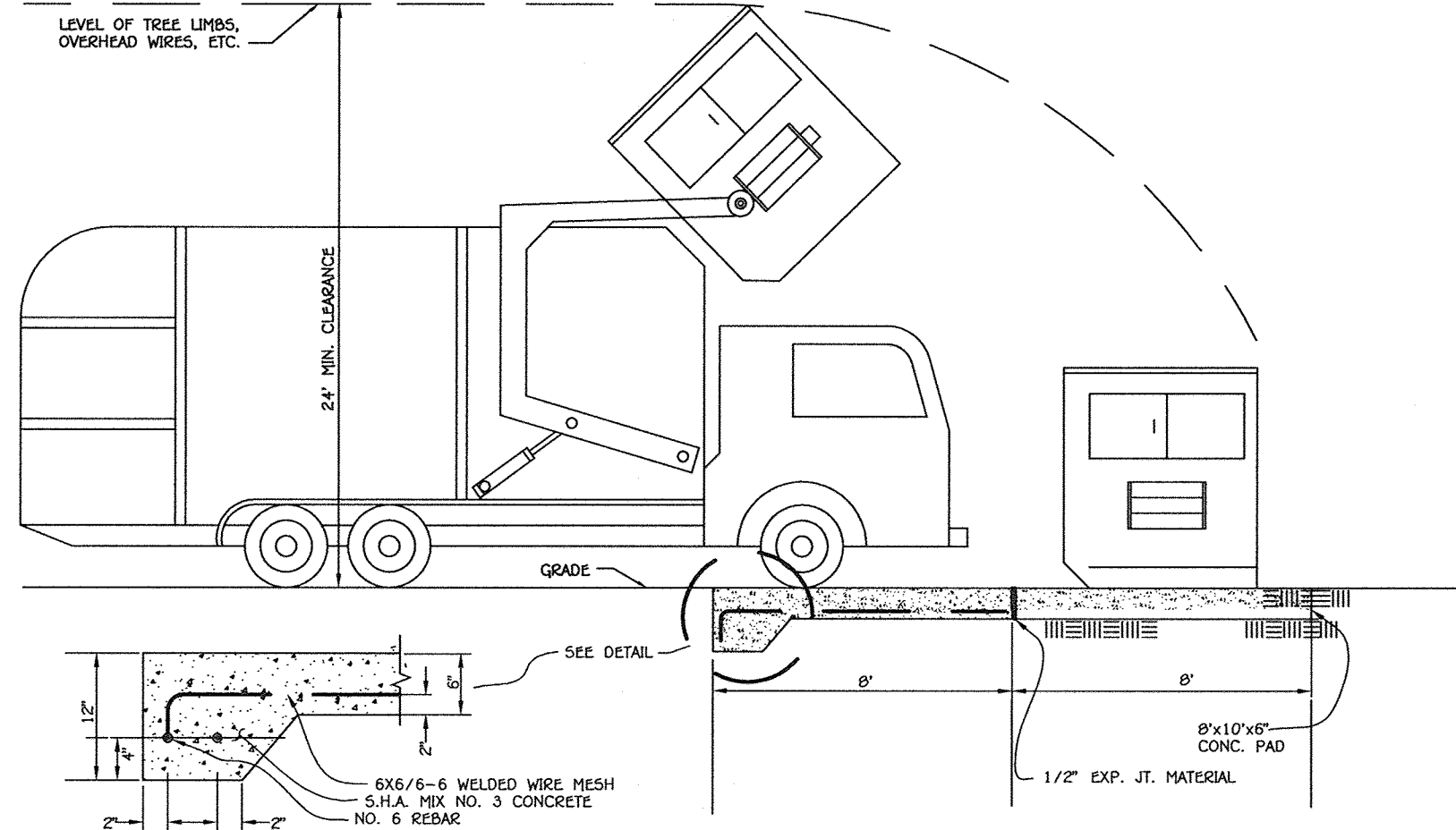
**10**  
**13** FLAT TOP SPEED HUMP  
NO SCALE



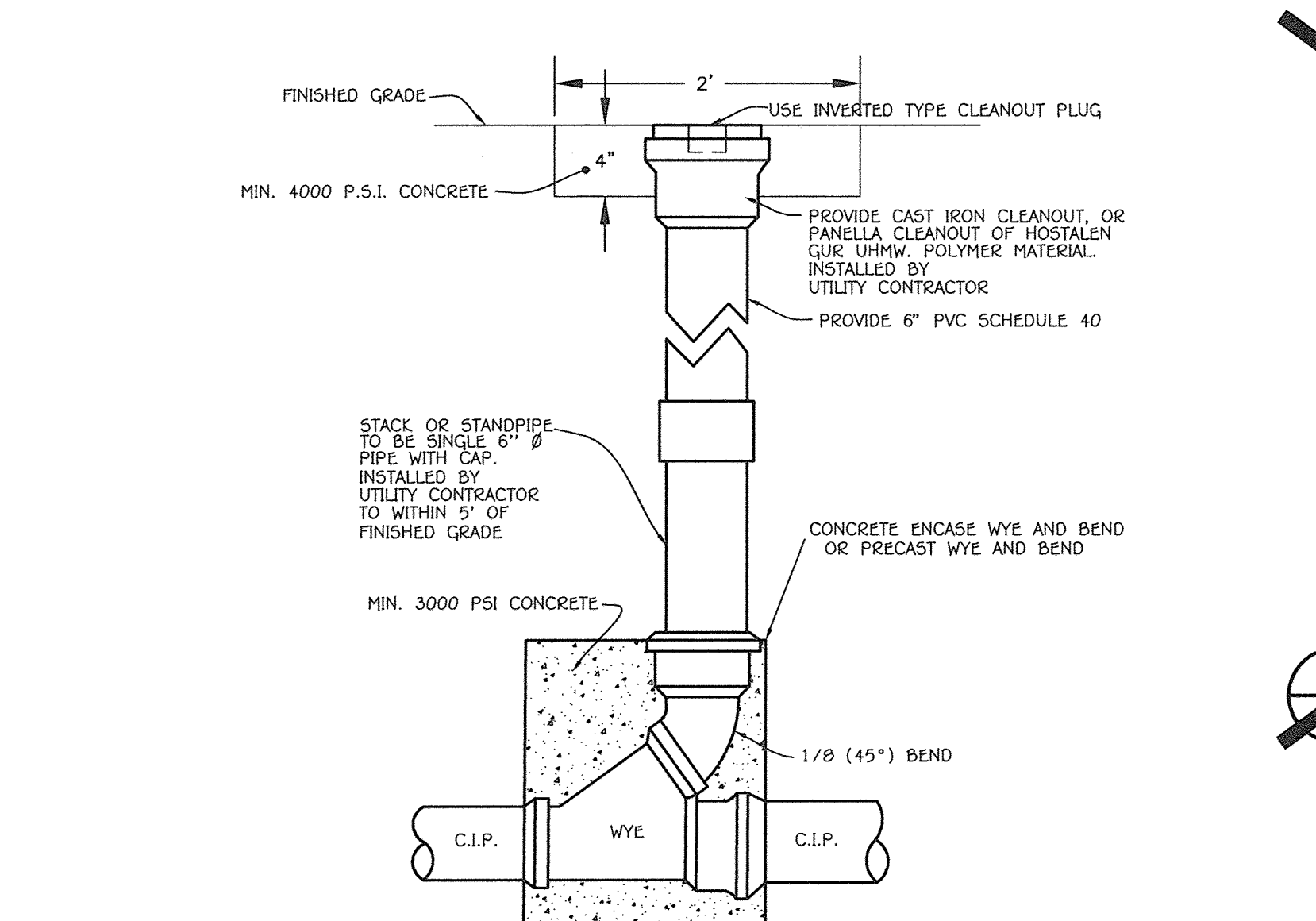
**2**  
**13** CHAIN LINK FENCE DETAIL  
HOWARD COUNTY STANDARD DETAIL G-7.21  
NO SCALE



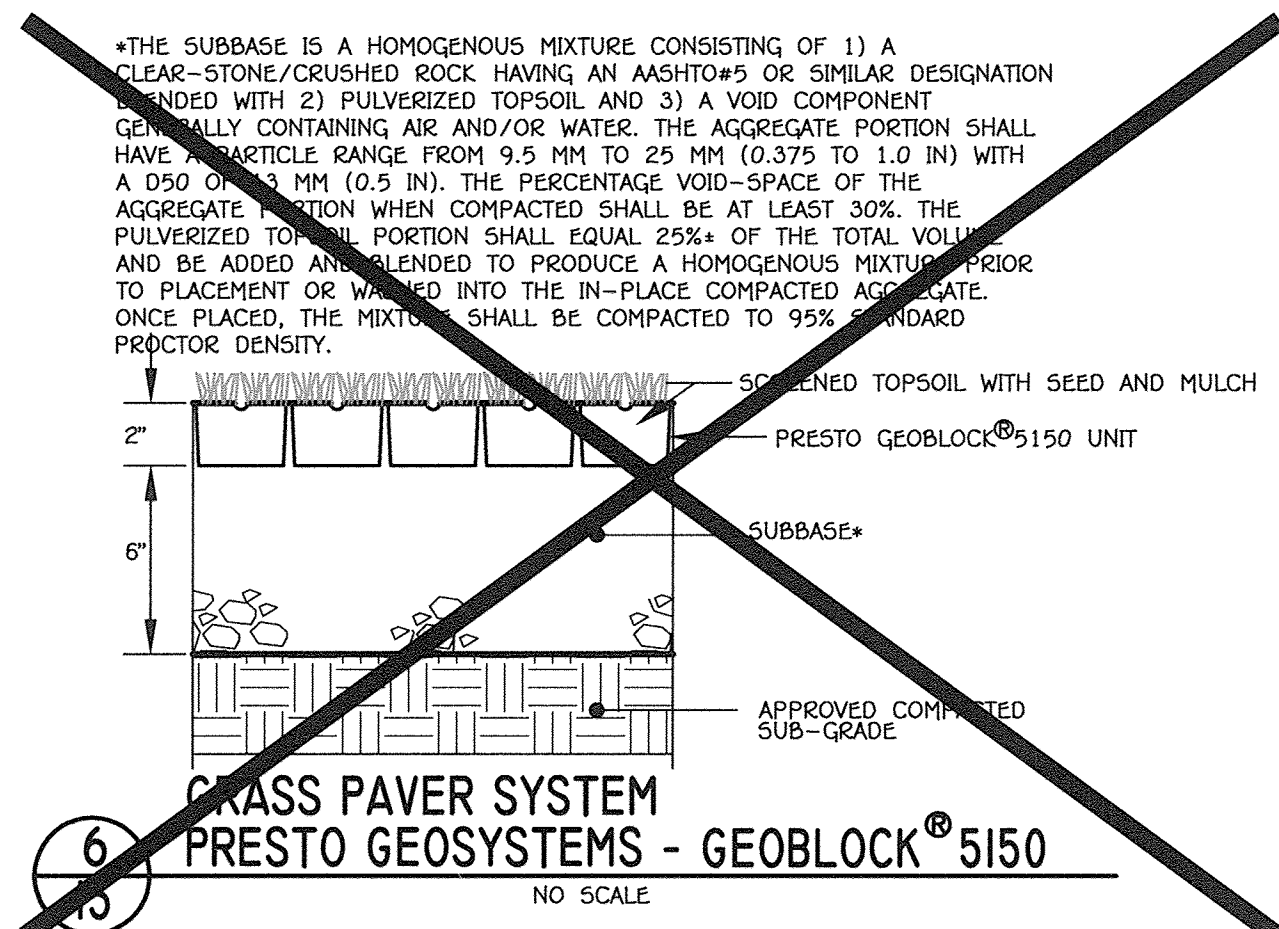
**5**  
**13** LIGHTING FIXTURE  
SEE ELECT. DETAIL B/EO.3 FOR INFORMATION  
NO SCALE



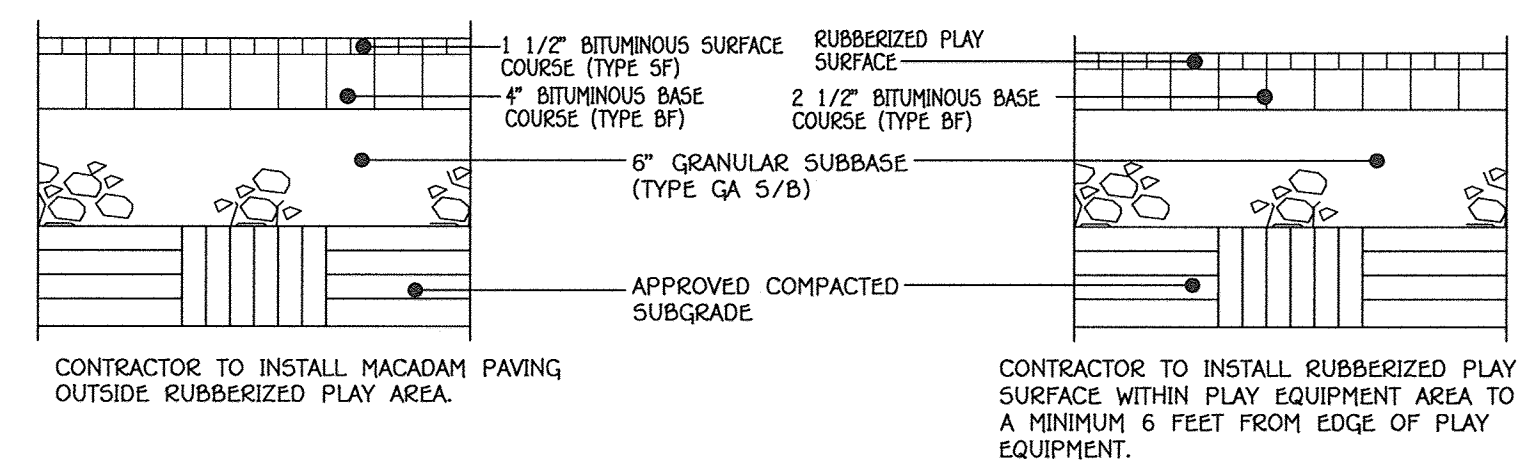
**8**  
**13** SOLID WASTE SERVICE DETAIL  
HOWARD COUNTY STANDARD DETAIL R-8.03  
NOT TO SCALE



**3**  
**13** TYPICAL CLEAN-OUT  
NO SCALE



**6**  
**13** GRASS PAVER SYSTEM  
PRESTO GEOSYSTEMS - GEOBLOCK® 5150  
NO SCALE



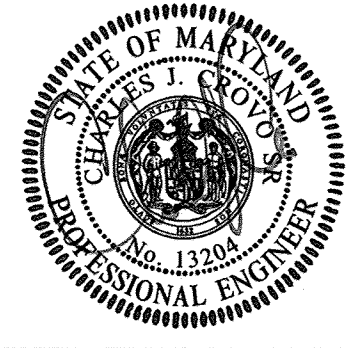
**9**  
**13** PLAYGROUND PROTECTIVE PLAY SURFACE DETAIL  
NO SCALE

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CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALDWIN NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-2000

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*Charles J. Brovo, Sr., P.E.*  
CHARLES J. BROVO, SR., P.E.  
3/21/16  
DATE

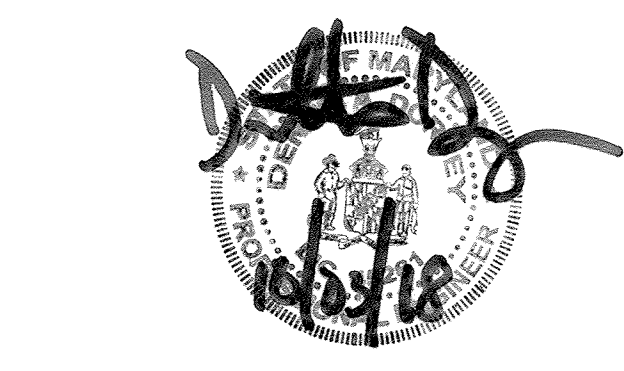
DATE	REVISION	DESCRIPTION
4/27/16	REVIEW PARCEL NAME & COMPARE PARCELS 'D' & 'D' INTO PARCEL 'D-D'	
		REVISION BLOCK
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>Valdis J. J. J.</i>	4-18-16	Date
Director - Department of Planning and Zoning		
<i>Scott Washington</i>	4-18-16	Date
Chief, Division of Land Development		
<i>John E. ...</i>	4-13-16	Date
Chief, Development Engineering Division		

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



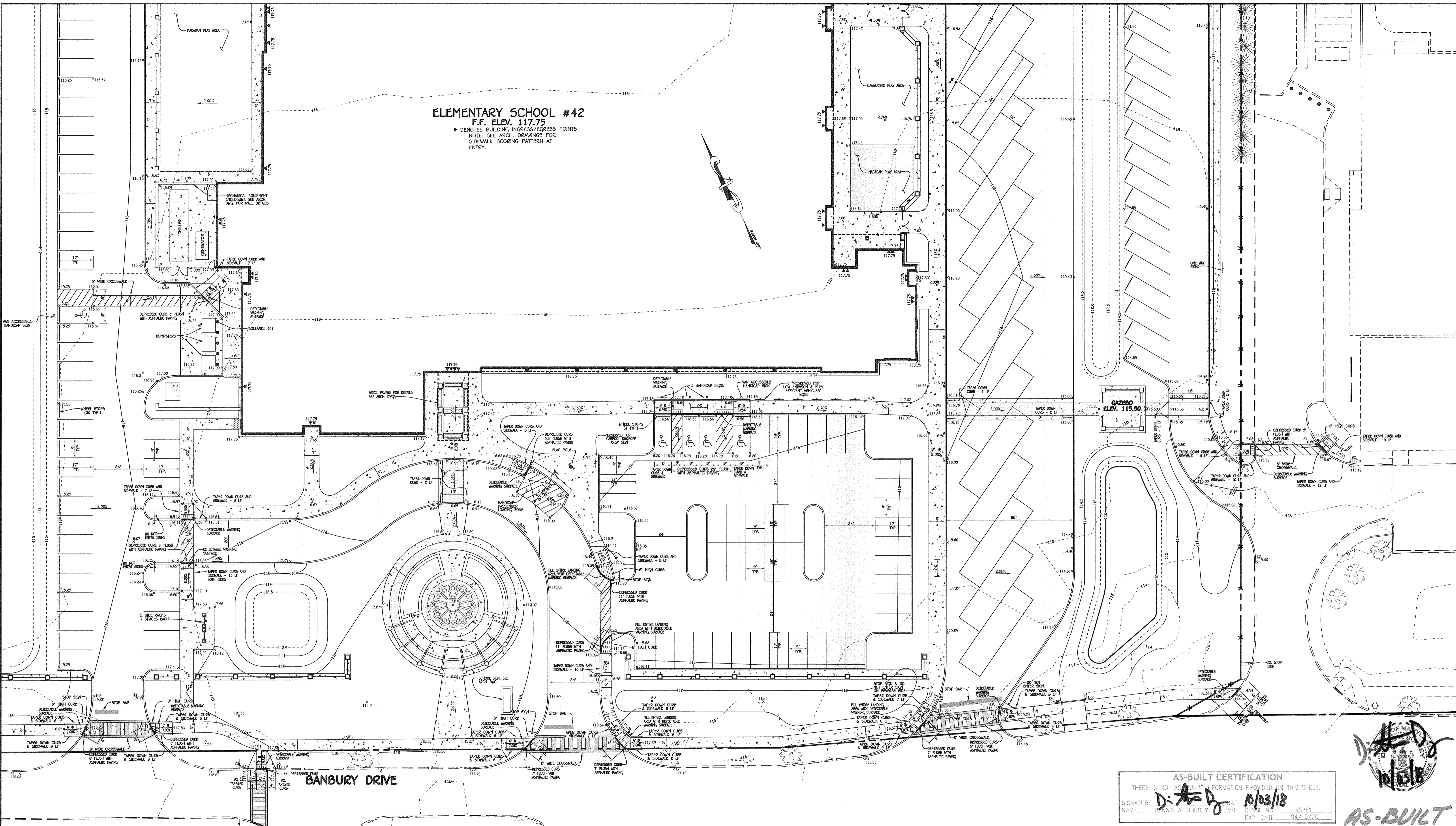
Address Chart			
Parcel Number	Street Address		
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076		
PROJECT		SECTION/AREA	PARCEL
ELEMENTARY SCHOOL #42		N/A	'D-D'
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP
02700-02790	20	TOD	38
WATER CODE		SEWER CODE	
---		---	

AS-BUILT CERTIFICATION  
THERE IS NO "AS-BUILT" INFORMATION PROVIDED IN THIS SHEET.  
SIGNATURE: *D. Stod* DATE: 10/2/16  
NAME: DENNIS A. DORSEY MD. LICENSE NO. 45261  
EXP. DATE: 04/10/20



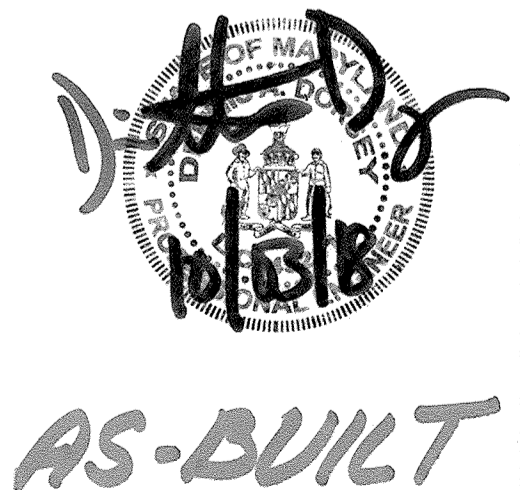
**AS-BUILT**

**DETAIL SHEET**  
**'GREEN NEIGHBORHOOD'**  
**ELEMENTARY SCHOOL #42**  
**OXFORD SQUARE**  
**PARCEL 'D-D'**  
ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: NONE DATE: MARCH 7, 2016  
SHEET 13 OF 44

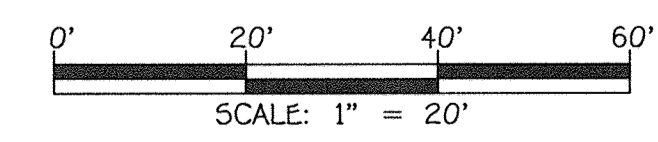


**ELEMENTARY SCHOOL #42**  
 F.F. ELEV. 117.75  
 ▶ DENOTES BUILDING INGRESS/EGRESS POINTS  
 NOTE: SEE ARCH. DRAWINGS FOR  
 SIDEWALK SCORING PATTERN AT  
 ENTRY.

**AS-BUILT CERTIFICATION**  
 THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.  
 SIGNATURE: *D.A.D.* DATE: 10/03/18  
 NAME: DENNIS A. DORSEY MD. LICENSE NO. 45261  
 EXP. DATE: 04/10/20



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 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-0895



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*Charles J. Cravo*  
 CHARLES J. CRAVO, SR., P.E.  
 3/11/16  
 DATE

DATE	DESCRIPTION
02/10/16	REVISED PARCEL NAME & COMBINED PARCELS 'B' & 'B-B' INTO PARCEL 'D-D'
REVISION BLOCK	
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Nashim Williams</i> Director - Department of Planning and Zoning	4-18-16 Date
<i>Victor Johnson</i> Chief, Division of Land Development	4-18-16 Date
<i>Chad Elwood</i> Chief, Development Engineering Division	4-13-16 Date

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805



Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076
PROJECT	SECTION/AREA
ELEMENTARY SCHOOL #42	N/A
PLAT NOS.	BLOCK NO.
2576b-03700	20
ZONE	TOD
TOD	3B
ELEC. DIST.	FIRST
CENSUS TR.	6012.01
WATER CODE	SEWER CODE

<b>HANDICAP ACCESS PLAN</b>	
'GREEN NEIGHBORHOOD' <b>ELEMENTARY SCHOOL #42</b> OXFORD SQUARE PARCEL 'D-D'	
ZONED: TOD	TAX MAP No.: 3B
FIRST ELECTION DISTRICT	GRID No.: 20
SCALE: 1" = 20'	PARCEL No.: 1003
	HOWARD COUNTY, MARYLAND
	DATE: MARCH 7, 2016
SHEET 14 OF 44	

**SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS (B-4-2)**

- A. SOIL PREPARATION**
- TEMPORARY STABILIZATION
    - SEEDING PREPARATION CONSISTS OF LOOSENING SOIL TO A DEPTH OF 3 TO 9 INCHES BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT. SUCH AS DISK HARROW OR CHAIN PLOW OR OTHERS 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.
    - APPLY FERTILIZER AND LIME AS PRESCRIBED ON THE PLAN.
    - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
  - PERMANENT STABILIZATION
    - A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 5 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
      - SOIL PH BETWEEN 6.0 AND 7.0
      - SOLUBLE SALTS LESS THAN 500 PARTS PER MILLION (PPM)
      - 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 LOWWEIGHTS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
      - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
      - SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
    - THE RELATIONSHIP OF AMENDMENTS OR TOPSOIL TO ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
      - 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.
      - APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF SOIL TEST.
      - EX. SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS. RACE 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 SEEDING PREPARATION. DISKING IS NOT TO BE USED TO TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 2 INCHES OF SOIL LOOSE AND FRAGILE. SEEDING LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.

- B. TOPSOILING**
- 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.
  - 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.
  - TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
    - THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PROVIDE DESIRED GROWTH.
    - THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT ROOTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
    - THE SOIL IS HIGHLY ACIDIC TO BE CORRECTED TO BE SUITABLE TO PLANT GROWTH.
    - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
  - 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:
- TOPSOIL MUST BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR LOAMY SAND. OTHER SOILS MAY BE USED IF APPROVED 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 CONIDES, STONES, SLIC, CONCRETE FRAGMENTS, GRAVEL, STICKS, OR OTHER MATERIALS LARGER THAN 1 1/2 INCHES IN DIAMETER.
  - TOPSOIL MUST BE FREE OF NOXIOUS PLANTS OR PLANT PARTS SUCH AS BURNING GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEED, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
  - 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.
  - 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 SOODING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND RELAXE. 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.
  - 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 DETERMINAL TO PROPER GRADING AND SEEDED PREPARATION.

**C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)**

- SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS 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.
- 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 TRADE MARK, AND WARRANTY OF THE MANUFACTURER.
- LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED) OR BURNED LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE SHOULD 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.
- 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.
- 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.

**TEMPORARY SEEDING NOTES (B-4-4)**

- 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.

TEMPORARY SEEDING SUMMARY			
HARDINESS ZONE (FROM FIGURE B.3):	SEED MIXTURE (FROM TABLE B.1):	FERTILIZER RATE (10-20-20)	LIME RATE
6B			
SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS
BARLEY	96	3/1 - 5/15, 8/15 - 10/15	1"
OATS	72	3/1 - 5/15, 8/15 - 10/15	1"
RYE	112	3/1 - 5/15, 8/15 - 10/15	1"

1. SELECT ONE OR MORE OF THE SPECIES OR SEED MIXTURES LISTED IN TABLE B.1 FOR THE APPROPRIATE PLANT HARDNESS 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
6B			
SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS
BARLEY	96	3/1 - 5/15, 8/15 - 10/15	1"
OATS	72	3/1 - 5/15, 8/15 - 10/15	1"
RYE	112	3/1 - 5/15, 8/15 - 10/15	1"

**ENGINEER'S CERTIFICATE**

"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS REPRESENTED BY THE ENGINEER AND APPROVED BY THE AGENCY AND ON MY PERSONAL KNOWLEDGE OF THE SITE AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

DATE: 3/18/16  
CHARLES J. DORSE, SR., P.E.

**DEVELOPER'S CERTIFICATE**

"I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO AN 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 FACILITY FOR EROSION AND SEDIMENT CONTROL 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."

DATE: 3/18/16

**PERMANENT SEEDING NOTES (B-4-5)**

- A. SEED MIXTURES**
- GENERAL USE
    - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDNESS 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.
    - 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.
    - 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 1/2 POUNDS PER 1,000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
    - TURFGRASS MIXTURES
      - AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
      - 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.
      - 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 1,000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
      - 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 D TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1,000 SQUARE FEET. ONE OR MORE CULTIVARS MAY BE BLENDED.
      - 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 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1,000 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 (HARDNESS ZONES: 5B, 6A) CENTRAL MD: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONES: 6B) SOUTHERN MD: WESTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONES: 7A, 7B)
- D. TILL AREAS AND RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES. LEVEL AND SLOPE THE AREAS TO PREPARE A PROPER SEEDBED. REMOVE STONES AND DEBRIS WHICH ARE NOT DESIRED. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE MOWING OF GRASSES WILL BE WITHOUT DIFFICULTY.**

- E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDING ARE MADE LATE IN THE PLANTING SEASON, IN ANOMALY 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
6B			
SPECIES	APPLICATION RATE (LB/AC)	SEEDING DATES	SEEDING DEPTHS
TALL FESCUE	100	MAR. 1-MAY 15 AUG. 1-OCT. 15	1 1/4-1/2 IN
		45 LB/AC PER ACRE (1.0 LB/1000 SF)	90 LB/AC PER ACRE (2.0 LB/1000 SF)
		2 TONS/AC	4 TONS/AC

**STANDARD STABILIZATION NOTE**

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:

- (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.

**STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA (B-4-8)**

**DEFINITION:** THE 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:**

- THE STOCKPILE LOCATION AND ALL RELATED SEEDMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
- 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.
- RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
- ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
- CLEAN WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIRT, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
- WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
- 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.
- 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.

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- RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
- ACCESS THE STOCKPILE AREA FROM THE UPGRADE SIDE.
- CLEAN WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIRT, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
- WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
- 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.
- 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.

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- WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
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**STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING (B-4-3)**

- 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:**
- SEEDING
    - SPECIFICATIONS
      - ALL SEED MUST MEET THE REQUIREMENT 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.1 REGARDING THE QUALITY OF SEED. USE 1000 SEEDS PER SQUARE FOOT UNLESS REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
      - 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 THAW.
      - 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.
      - SOIL 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 DISSEMINATION OF PHYTO-TOXIC MATERIALS.
    - APPLICATION
      - DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OR BROADCAST SPREADERS.
      - INOCULATED SEED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON TEMPORARY SEEDING TABLE B.1.
      - PERMANENT SEEDING: THIS INCLUDES USE OF CONVENTIONAL SEEDING TABLE B.1.
      - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH WEIGHTED ROLLER TO PROVIDE GOOD SOIL CONTACT.
      - DRILL OR CULTRIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
      - CULTRIPACKER 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.
      - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER, APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
      - SEED MIXTURES TO BE APPLIED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER).
        - IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN: 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN; P (PHOSPHORUS): 200 POUNDS PER ACRE; K (POTASSIUM): 200 POUNDS PER ACRE.
        - LIME: LIME SHOULD BE APPLIED TO CORRECT SOIL ACIDITY. LIME SHOULD BE APPLIED BY HYDROSEEDING. NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNED OR HYDRATED LIME WHEN HYDROSEEDING.
        - HYDROSEEDING: HYDROSEEDING IS THE MOST EFFECTIVE SEEDING METHOD. HYDROSEEDING IS ANOMALY DRY OR HOT SEASONS, OR ON ADVERSE SITES.

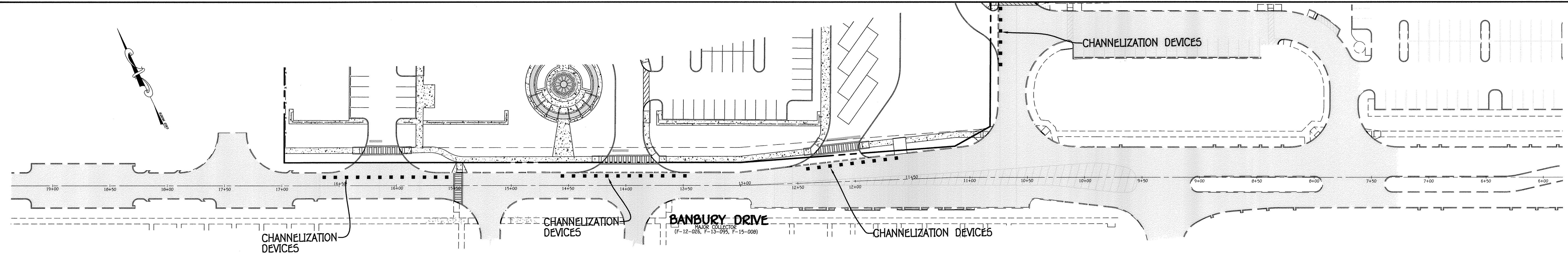
- MULCHING:**
- MULCH MATERIALS (IN ORDER OF PREFERENCE)
    - STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY BRIGHT IN COLOR. STRAW SHOULD BE USED INSTEAD OF NOXIOUS WOOD SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOULDY, OAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STRIPED STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
    - WOOD CELLULOSE FIBER MULCH CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO UNIFORM FIBROUS PHYSICAL STATE.
    - WCM MATERIALS ARE TO BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT PROVIDE AN APPROPRIATE CUTOFF TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
    - WCM, INCLUDING DYED, MUST CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL MUST FORM A BLENDED SLURRY ON APPLICATION, HAVING SUFFICIENT ABSORPTION AND PERCOLATION PROPERTIES AND MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
    - WCM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BY PHYTO-TOXIC.
  - WCM 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, MOISTURE 15 TO 16 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 90 PERCENT MINIMUM.

- APPLICATION:**
- APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
  - WHEN STRAW MULCH IS USED, APPLY IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LAYER DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH. MULCH SHOULD NOT EXPOSE WHEN USING A MULCH ANCHORING TOOL. INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
  - WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED TO 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.
  - ANCHORING
    - 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:
      - 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.
      - WOOD OUTLOOKS OR STRIPS MAY BE USED TO ANCHOR MULCH. APPLY THE FIBRE BANDER AT A NET DRY WEIGHT OF 75 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A RATIO OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
      - SYNTHETIC BINERS SUCH AS ACROLEX (DIX LAGRO-TACK), DICK-70, PERFORATED, TERRA TAC II, TERRA TACK, OR OTHER APPROVED EQUAL MAY BE USED. FOLLOW APPLICATION RATES AS SPECIFIED BY THE MANUFACTURER. APPLICATION OF LIQUID BINERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINERS IS STRICTLY PROHIBITED.
      - LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4-15 FEET WIDE AND 300 TO 3,000 FEET LONG.

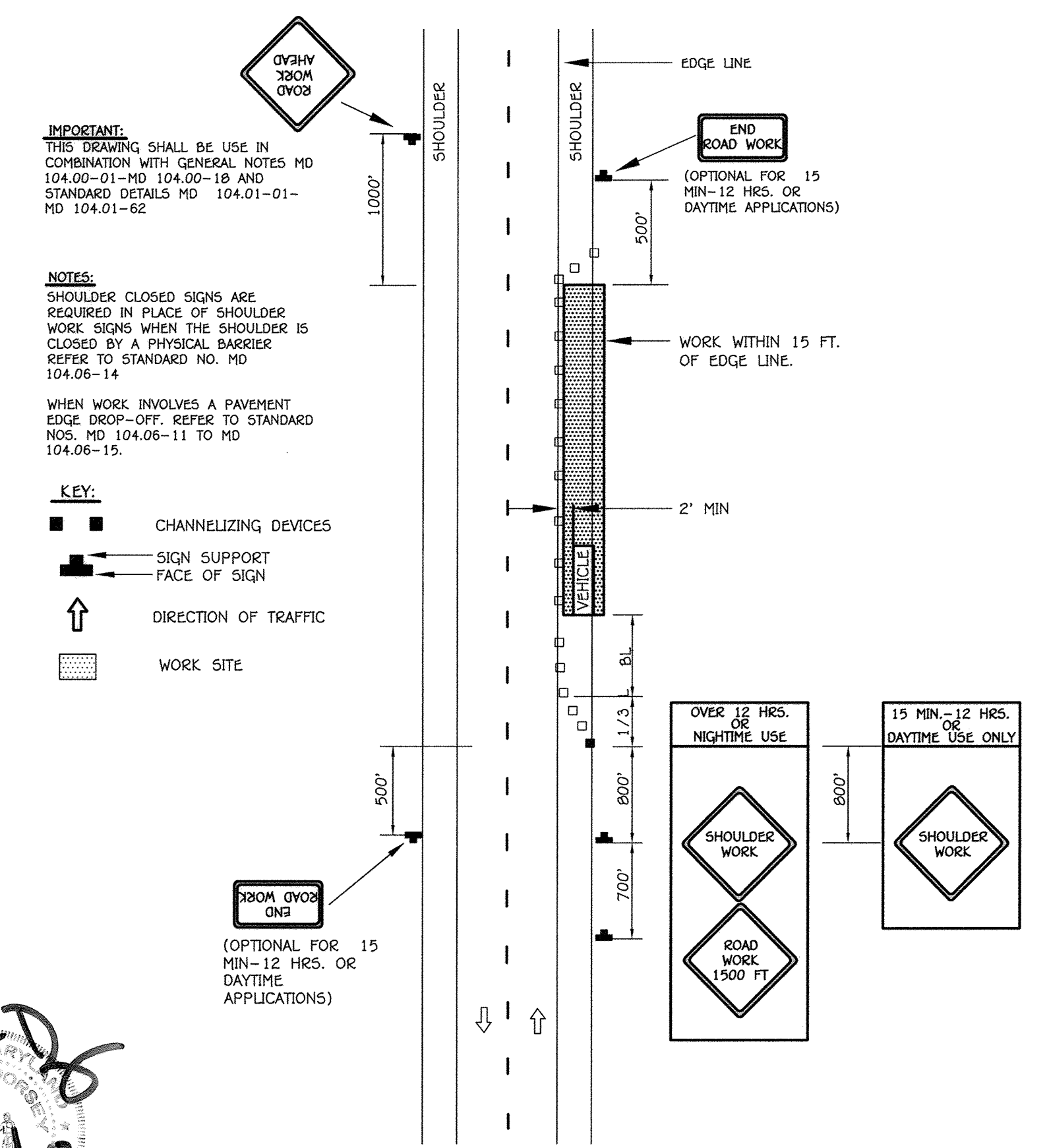
- CRITERIA:**
- PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE) DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
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**PLAN**  
SCALE: 1" = 40'



**IMPORTANT:**  
THIS DRAWING SHALL BE USED IN COMBINATION WITH GENERAL NOTES MD 104.00-01-MD 104.00-10 AND STANDARD DETAILS MD 104.01-01-MD 104.01-62

**NOTES:**  
SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY A PHYSICAL BARRIER REFER TO STANDARD NO. MD 104.06-14  
WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-11 TO MD 104.06-15.

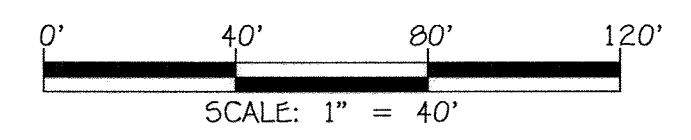
**KEY:**  

 CHANNELIZING DEVICES  
 SIGN SUPPORT  
 FACE OF SIGN  
 DIRECTION OF TRAFFIC  
 WORK SITE

*D.A.D.*  
10/3/18

**AS-BUILT CERTIFICATION**  
 THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.  
 SIGNATURE: *D.A.D.* DATE: 10/3/18  
 NAME: DENNIS A. DORSEY, P.E. LICENSE NO.: 45261 EXP. DATE: 04/10/20

**SHOULDER WORK/2-LANE, 2-WAY**  
EQL/LESS THAN 40 MPH  
NO SCALE



**AS-BUILT**

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21042  
 (410) 461-2200

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
*Charles J. Grovo*  
 CHARLES J. GROVO, SR., P.E. 3/24/16 DATE

DATE	DESCRIPTION	REVISION BLOCK
6/27/16	REMOVED PARCEL NAME & COMBINED PARCELS 'B' & 'B-B' INTO PARCEL 'D-D'	
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>William J. Davis</i>	4-18-16	Date
Director - Department of Planning and Zoning		
<i>Keith S. Schuler</i>	4-18-16	Date
Chief, Division of Land Development		
<i>John E. Clark</i>	4-13-16	Date
Chief, Development Engineering Division		

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805



Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076
PROJECT	SECTION/AREA
ELEMENTARY SCHOOL #42	N/A
PLAT NOS.	BLOCK NO.
23700-05790	20
WATER CODE	SEWER CODE
---	---

TRAFFIC MAINTENANCE PLAN	
'GREEN NEIGHBORHOOD' ELEMENTARY SCHOOL #42 OXFORD SQUARE PARCEL 'D-D'	
ZONED: TOD	TAX MAP No.: 38
FIRST ELECTION DISTRICT	GRID No.: 20
SCALE: AS SHOWN	PARCEL No.: 1003
	HOWARD COUNTY, MARYLAND
	DATE: MARCH 7, 2016
SHEET 17 OF 44	

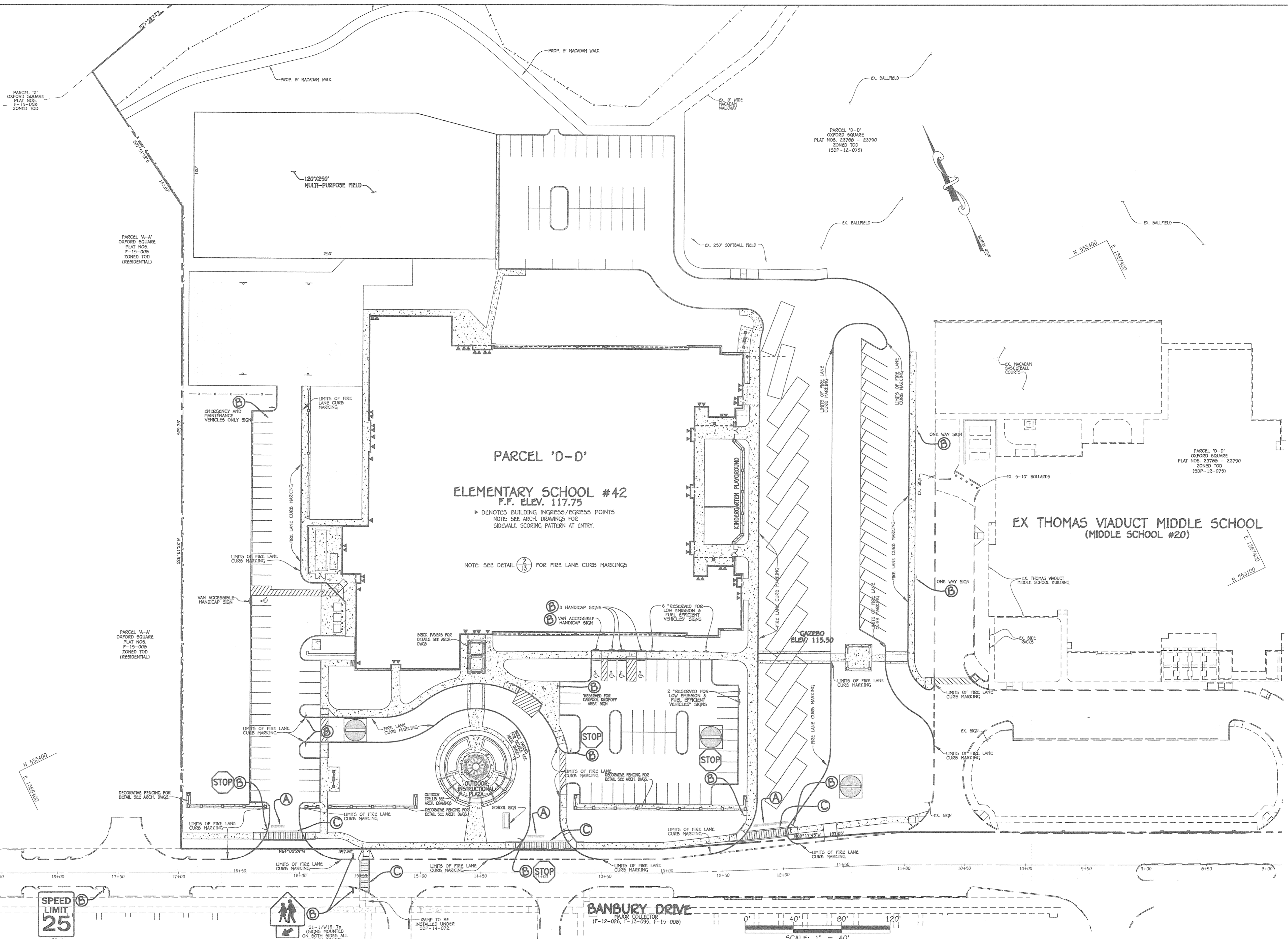
LEGEND	
SYMBOL	DESCRIPTION
	PROPOSED CONCRETE WALK
	PROPOSED MACADAM PAVING
	PROTECTIVE PLAY SURFACE
	PROPOSED FENCE

- NOTES:**
1. ALL SIGN LOCATIONS AND PAVEMENT MARKINGS TO BE INSTALLED IN THE COUNTY RIGHT-OF-WAY OR AT A COUNTY INTERSECTION MUST BE APPROVED BY THE HOWARD COUNTY TRAFFIC DIVISION (410-313-2430).
  2. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (1/4 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
  3. SIGNAGE ALONG BANBURY DRIVE SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE PARKING LOT PAVING.
  4. ALL PAINT FOR PARKING STRIPING, BUS LOOP STRIPING, HANDICAPPED SYMBOLS AND CROSSWALKS TO BE ACRYLIC OR LATEX PAINT ESPECIALLY FORMULATED AND MANUFACTURED FOR USE ON ASPHALTIC CONCRETE UNDER TRAFFIC CONDITIONS. ACCEPTABLE STRIPING PAINTS ARE "NON-REFLECTIONIZED" BY SHERWIN WILLIAMS OR "IRON-CLAD" BY BENJAMIN MOORE. PARKING STRIPES SHALL BE 4" WIDE WHITE UNLESS OTHERWISE NOTED. ACCESSIBLE SPACE STENCIL SHALL BE PAINTED BLUE IN ACCORDANCE WITH FEDERAL STANDARD 5952.
  5. THE FOLLOWING WILL BE REQUIRED TO BE INSTALLED ALONG BANBURY DRIVE:
    - ONE (1) AC POWERED SCHOOL FLASHER - BOARD OF EDUCATION WILL NEED TO REQUEST BGE FOR ELECTRICAL SERVICE
    - TWO (2) 51-1 (ADVANCE SCHOOL) SIGNS (36"x36") WITH 'SCHOOL' PANEL BELOW (FYI IN COLOR) (FLUORESCENT YELLOW GREEN IN COLOR)
    - ONE (1) 55-2 ('END SCHOOL ZONE') SIGN
    - ONE (1) R2-1 ('SPEED LIMIT 25') SIGN
 NOTE THESE EXISTING SIGNS MAY NEED TO BE RELOCATED.

**NOTE: THE CONTRACTOR SHALL NOTIFY MR. PARRIS ZIRKENBACH (410-313-5752) AT THE TRAFFIC ENGINEERING DIVISION BEFORE ANY SIGNS, SCHOOL FLASHERS OR MARKERS ARE ORDERED AND/OR INSTALLED.**

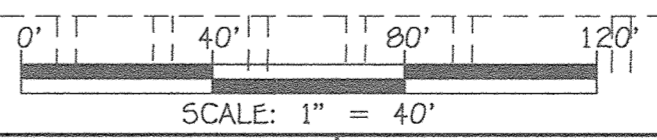
**PAVEMENT MARKING LEGEND**

- (A) INSTALL 2" SOLID WHITE PAVEMENT MARKING FOR STOP LINE.
- (B) INSTALL GROUND MOUNTED SIGN.
- (C) PEDESTRIAN CROSSWALK. CROSSWALK SHALL BE THE HOWARD COUNTY STANDARD CROSSWALK (REFER TO DETAIL T-7.03 IN THE HOWARD COUNTY DESIGN MANUAL - VOLUME IV). THE CROSSWALK SHALL BE INSTALLED WITH THERMOPLASTIC OR PREFORMED, HEAT APPLIED, THERMOPLASTIC.
- (D) PEDESTRIAN CROSSWALK. PAINTED 5" WIDE SOLID WHITE LINES.



END SCHOOL ZONE  
55-2

SPEED LIMIT  
25  
82-1



**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FIVE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-2895

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2020."  
*Charles J. Grovo, Sr., P.E.*  
CHARLES J. GROVO, SR., P.E.  
7/29/19 DATE

DATE	DESCRIPTION	REVISION BLOCK
6/14/19	Added New Parking Area & Two LE & FEV Signs And Revised Mac. Walk	
6/27/16	Revised Parcel Name & Combined Parcels 'B' & 'B-B' Into Parcel 'D-D'	
		APPROVED: DEPARTMENT OF PLANNING AND ZONING
		<i>Nancy J. [Signature]</i> 8-20-19 Date
		<i>Karl [Signature]</i> 8/20/19 Date
		<i>[Signature]</i> 8/19/19 Date

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



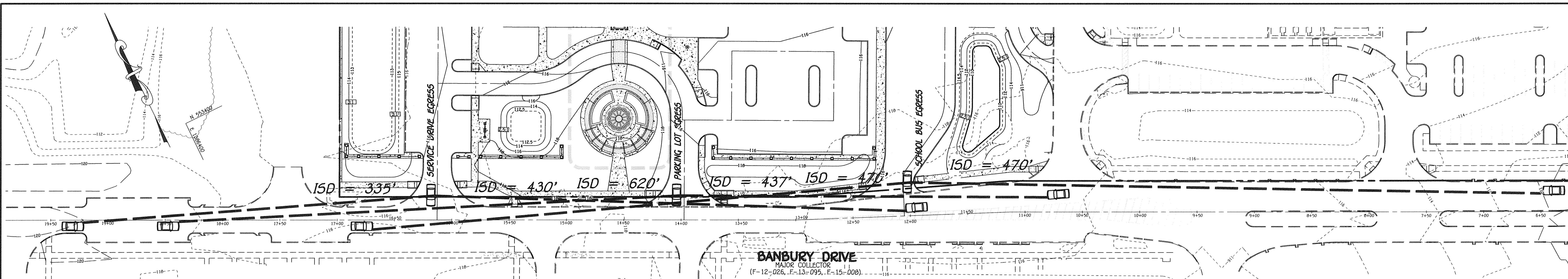
Address Chart					
Parcel Number	Street Address				
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21075				
PROJECT	SECTION/AREA	PARCEL			
ELEMENTARY SCHOOL #42	N/A	'D-D'			
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
23708-23790	20	TOD	3B	FIRST	6012.01
WATER CODE	SEWER CODE				

**REVISED PAVEMENT MARKING AND SIGNAGE PLAN**

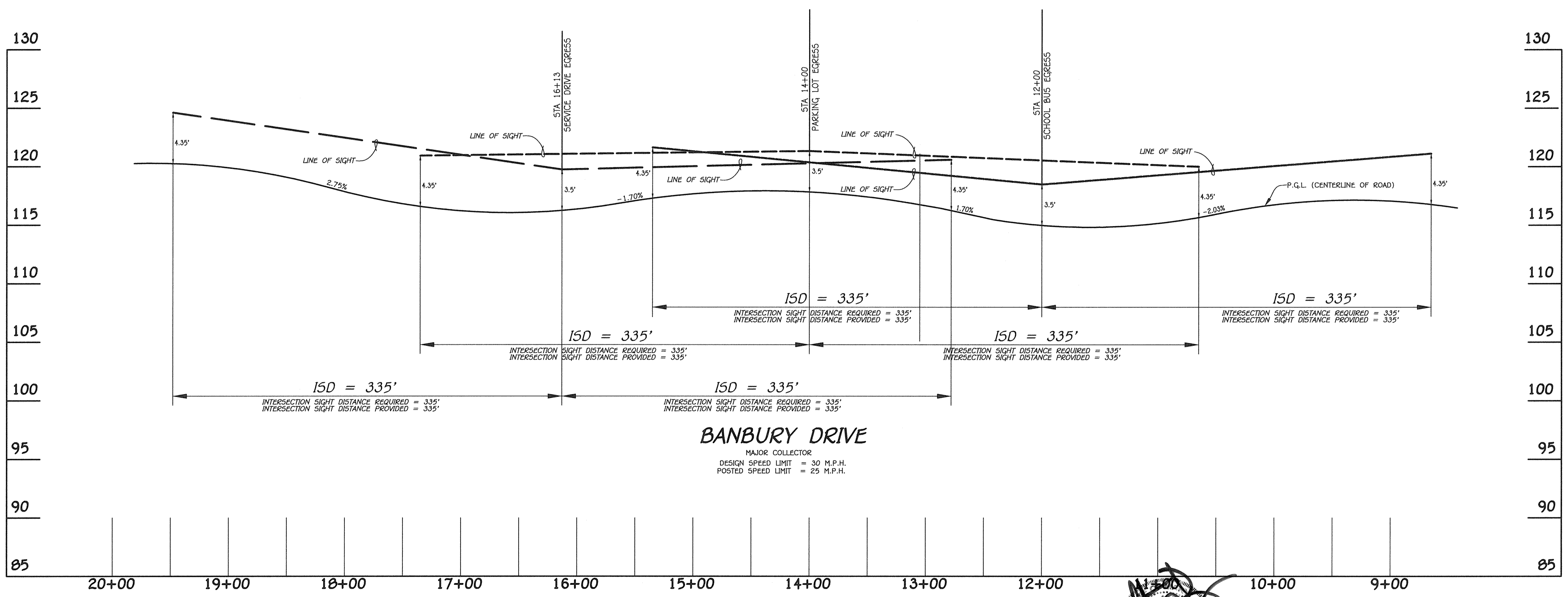
'GREEN NEIGHBORHOOD'  
**ELEMENTARY SCHOOL #42**  
OXFORD SQUARE  
PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 3B GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 40' DATE: JULY 23, 2019

1/2020/09/01/Adv/Elementary School #42 Plans/SDP Redline For Parking Plan/Adv. Markings: 7/24/2019 10:53:46 AM, 1:1



**PLAN**  
SCALE: 1" = 40'



**PROFILE**  
SCALE: HOR. 1" = 50'  
VERT. 1" = 5'

**AS-BUILT CERTIFICATION**  
THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.  
SIGNATURE: *D. A. Dorsey* DATE: 10/23/18  
NAME: DENNIS A. DORSEY, M.D. LICENSE NO. 45261 EXP. DATE: 04/10/20

**AS-BUILT**

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
14101 461 - 2295

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
*Charles J. Crow*  
CHARLES J. CROW, SR., P.E.  
3/21/16 DATE

DATE	DESCRIPTION	REVISION BLOCK
3/21/16	REVISED PARCEL NAME & COMBINED PARCELS 'D' & 'D' INTO PARCEL 'D-D'	
4-18-16		
4-28-16		
4-13-16		

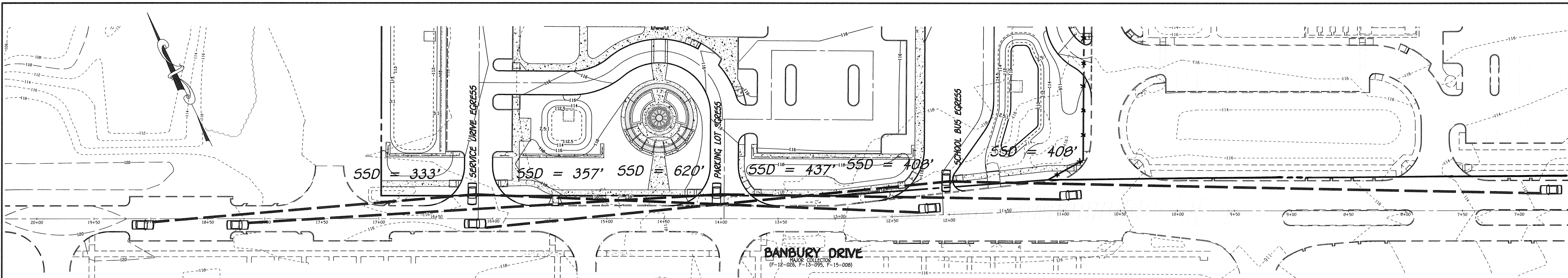
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Director - Department of Planning and Zoning  
Chief, Division of Land Development  
Chief, Development Engineering Division

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
2045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805

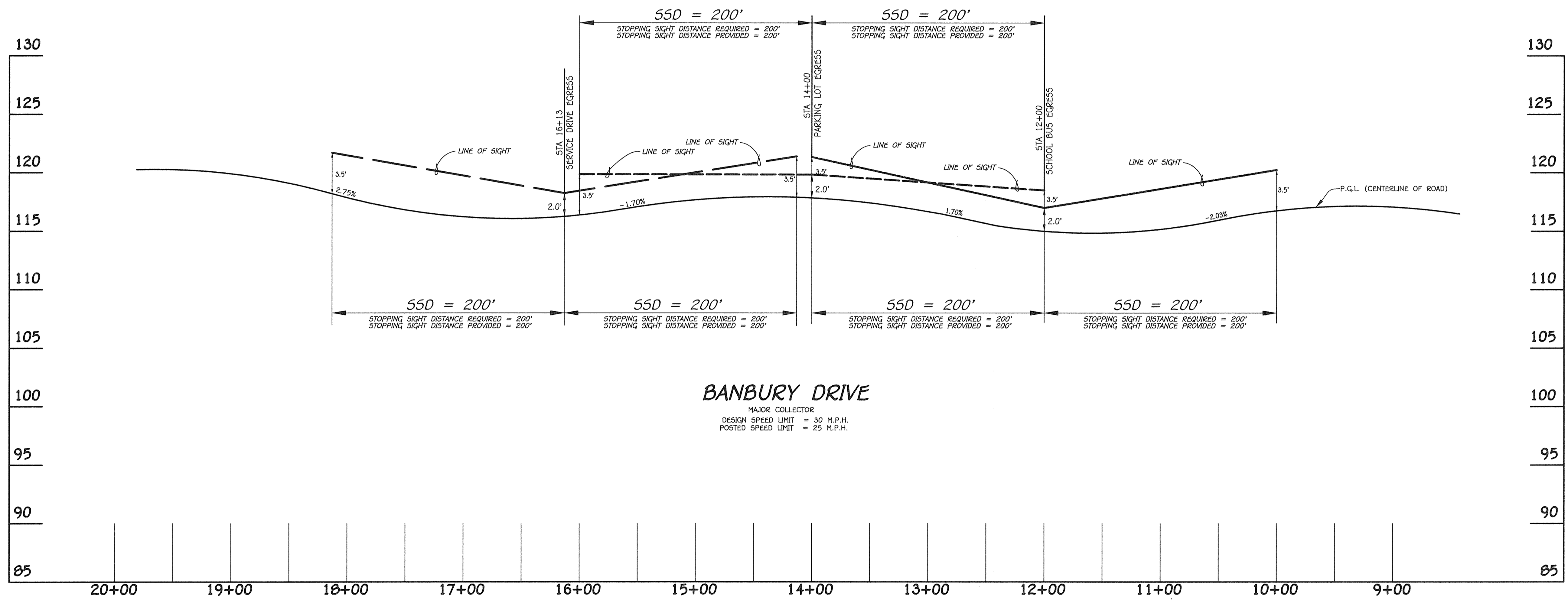


Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076
PROJECT	SECTION/AREA
ELEMENTARY SCHOOL #42	N/A
PLAT NOS.	BLOCK NO.
22700 - 22700	20
ZONE	TAX MAP
TOD	3B
ELEC. DIST.	FIRST
CENSUS TR.	6012.01
WATER CODE	SEWER CODE
----	----

**INTERSECTION SIGHT DISTANCE PLAN AND PROFILE**  
**'GREEN NEIGHBORHOOD' ELEMENTARY SCHOOL #42**  
OXFORD SQUARE  
PARCEL 'D-D'  
ZONED: TOD TAX MAP No.: 3B GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 7, 2016  
SHEET 19 OF 44

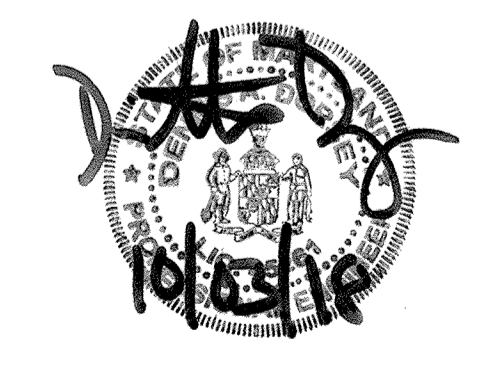


**PLAN**  
SCALE: 1" = 40'



**PROFILE**  
SCALE: HOR. 1" = 90'  
VERT. 1" = 5'

**AS-BUILT CERTIFICATION**  
THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.  
SIGNATURE: *Dennis A. Gorski* DATE: 04/10/20  
NAME: DENNIS A. GORSKI, MD. LICENSE NO. 45261 EXP. DATE: 04/10/20



**AS-BUILT**

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-3295

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*Charles J. Grovo*  
CHARLES J. GROVO, SR., P.E.  
3/21/16 DATE

DATE	DESCRIPTION	REVISION BLOCK
4/18/16	REMOVED PARCEL NAME & COMBINED PARCELS 'B' & 'D' INTO PARCEL 'D-D'	
4-18-16		
4-13-16		

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Director - Department of Planning and Zoning  
Chief, Division of Land Development  
Chief, Development Engineering Division

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



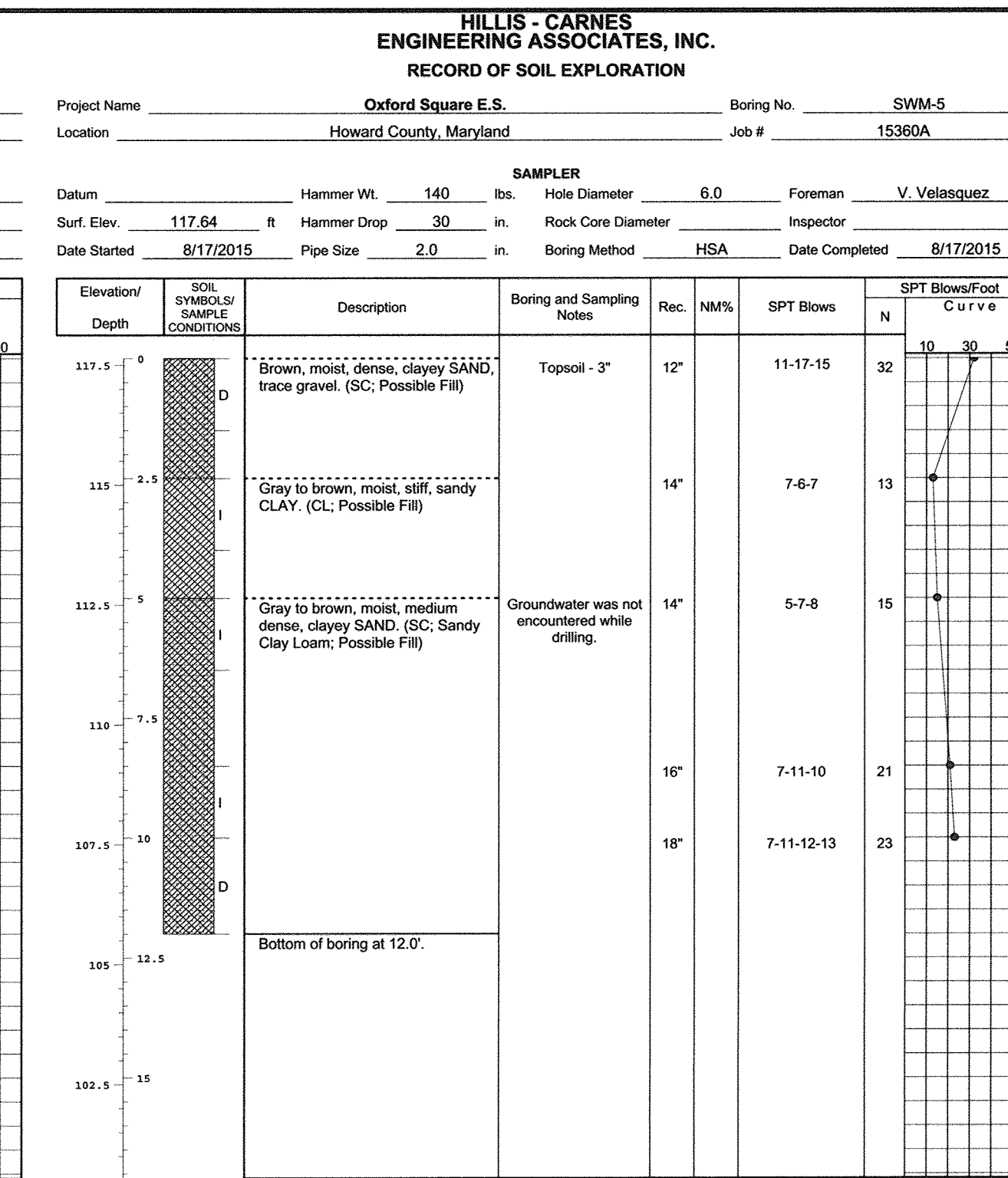
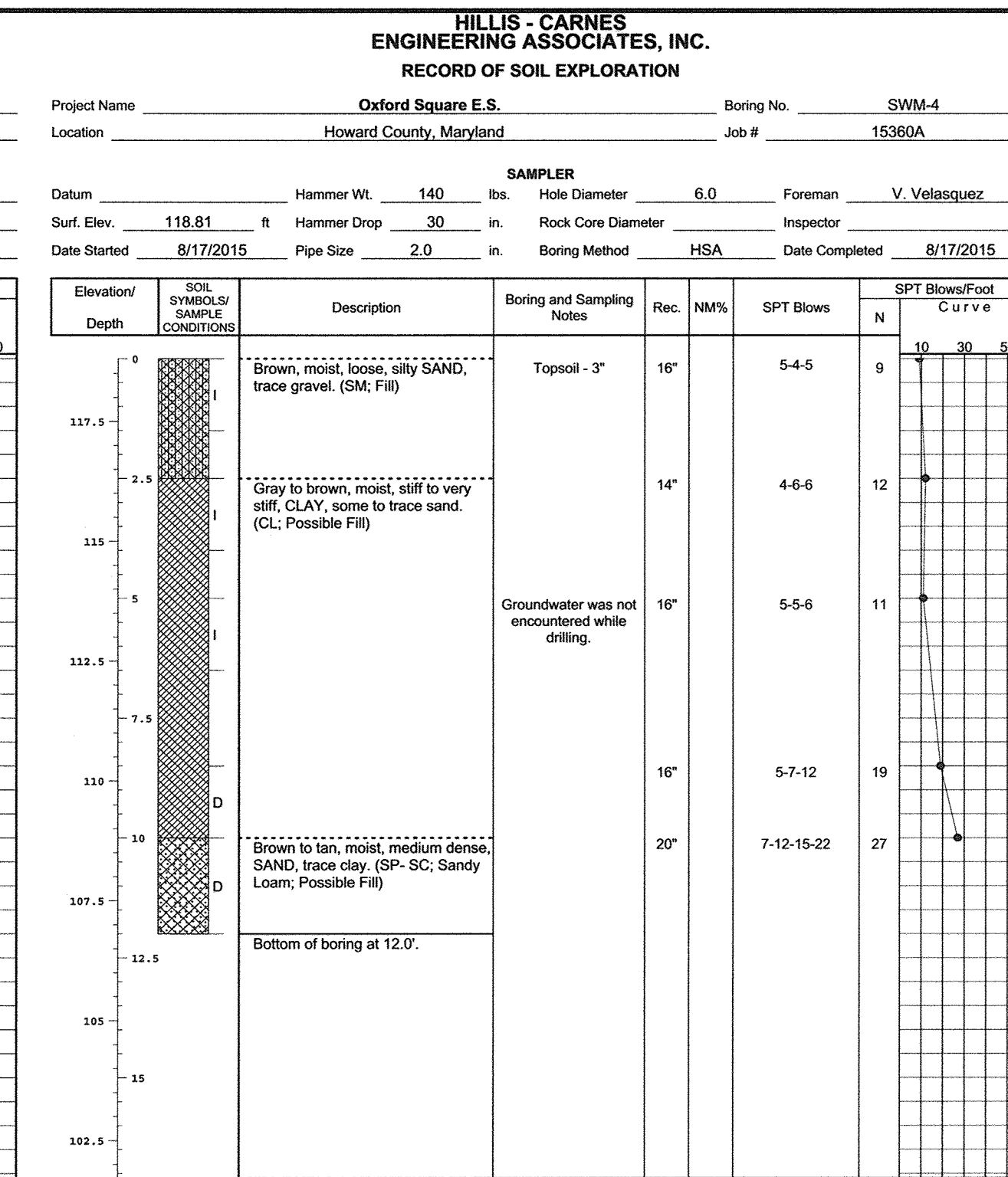
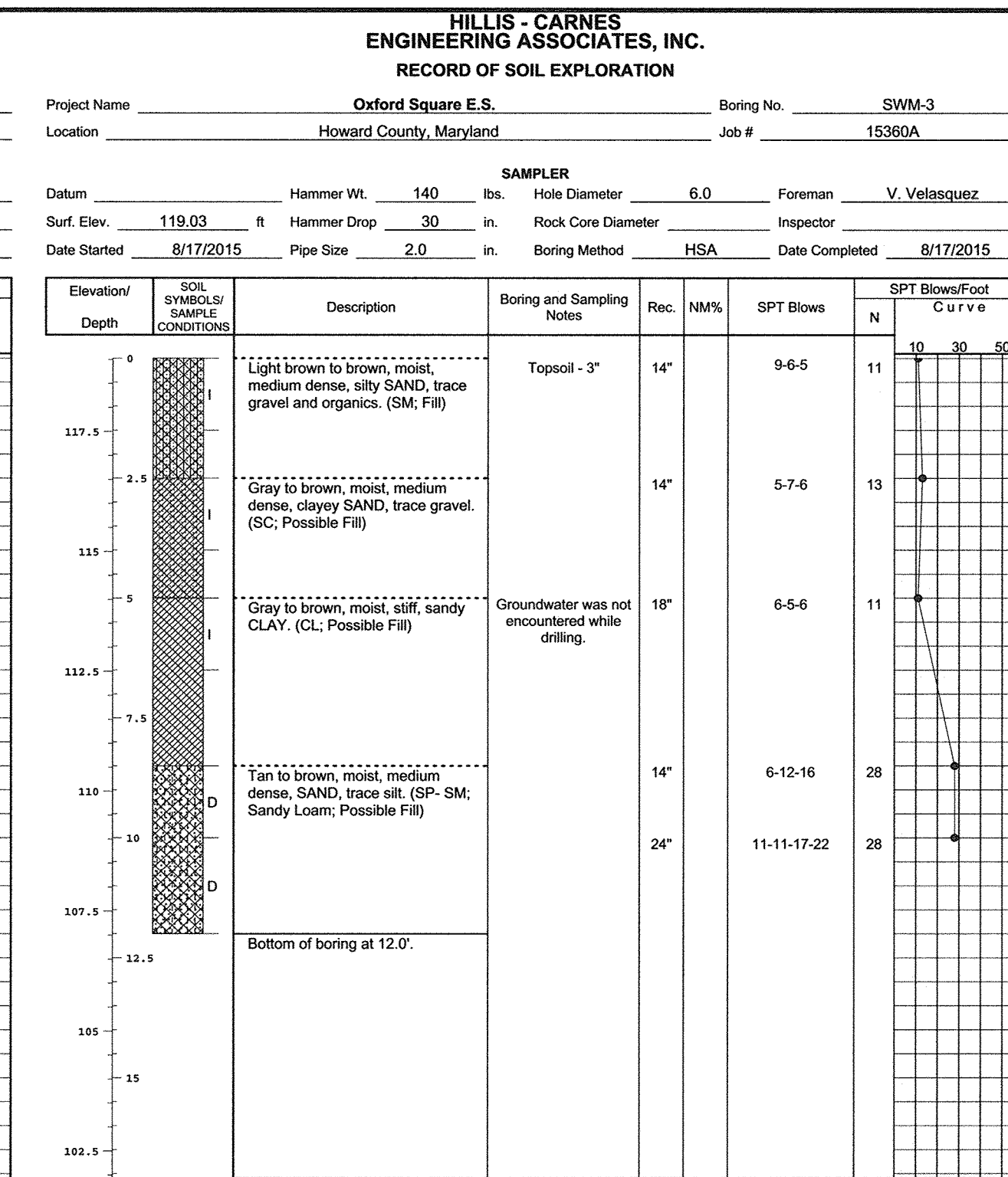
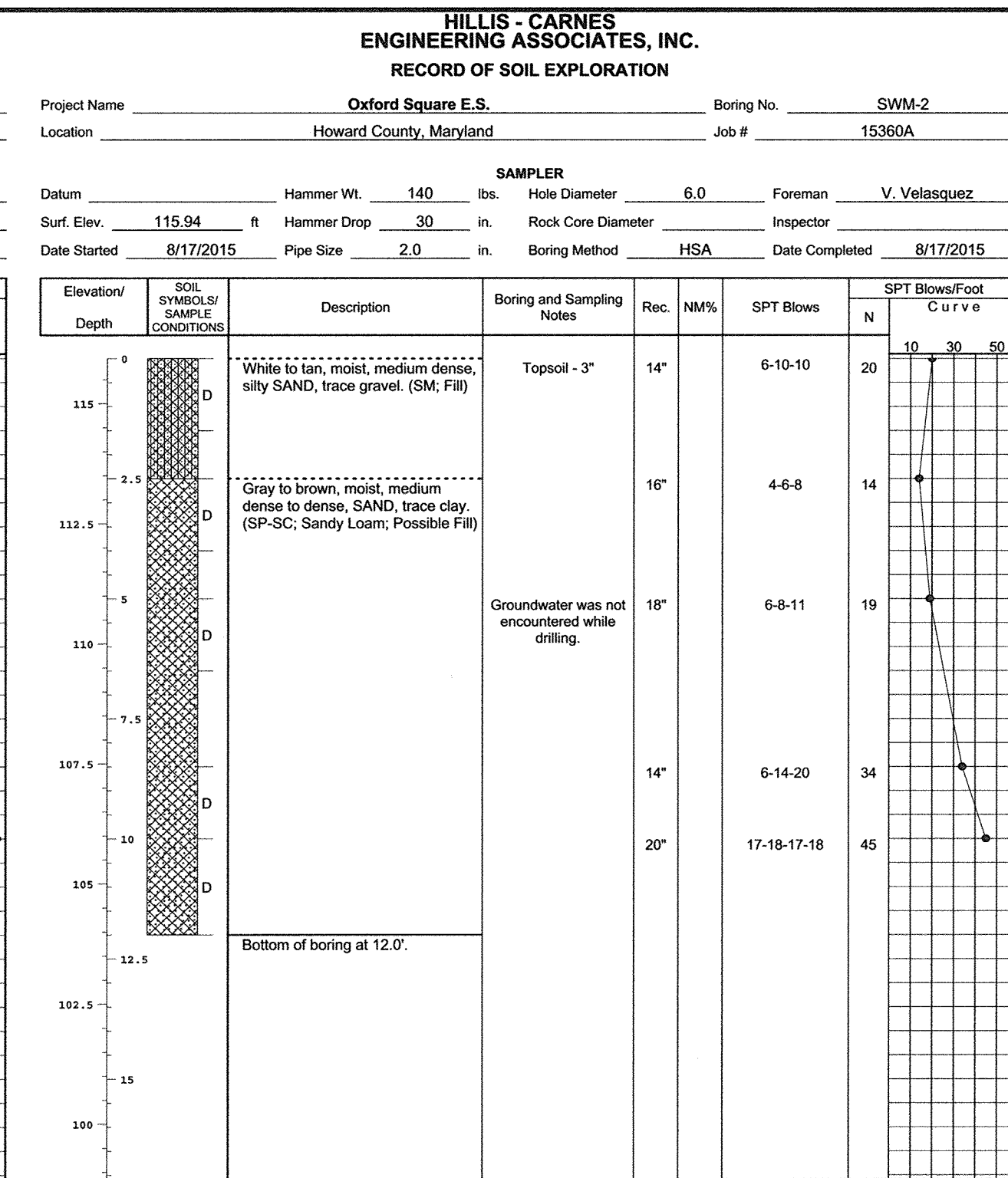
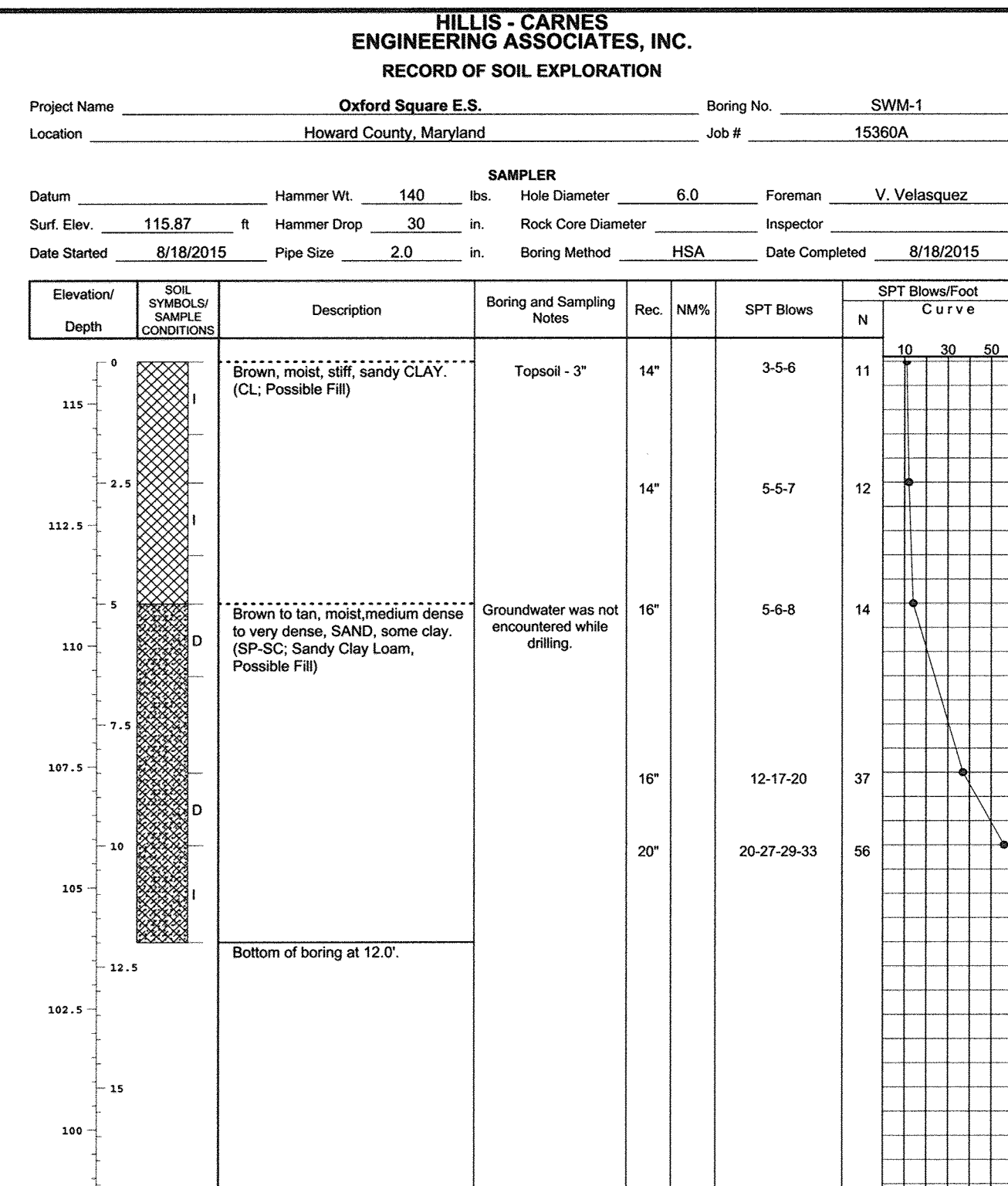
Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076
PROJECT	SECTION/AREA
ELEMENTARY SCHOOL #42	N/A
PLAT NOS.	BLOCK NO.
25700-25750	20
ZONE	TOD
TAX MAP	ELEC. DIST.
3B	FIRST
CENSUS TR.	PARCEL
6012.01	'D-D'
WATER CODE	SEWER CODE
---	---

**STOPPING SIGHT DISTANCE PLAN AND PROFILE**

'GREEN NEIGHBORHOOD'  
**ELEMENTARY SCHOOL #42**  
OXFORD SQUARE  
PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 3B GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 7, 2016

SHEET 20 OF 44



SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED  
 SAMPLE CONDITIONS: D-DISINTEGRATED, I-INTACT, U-UNDISTURBED, L-LOST  
 AT COMPLETION: Dry, 5.3 ft  
 GROUND WATER: Dry, 5.3 ft  
 CAVE IN DEPTH: 5.3 ft  
 BORING METHOD: HSA - HOLLOW STEM AUGERS  
 STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED  
 SAMPLE CONDITIONS: D-DISINTEGRATED, I-INTACT, U-UNDISTURBED, L-LOST  
 AT COMPLETION: Dry, 5.1 ft  
 GROUND WATER: Dry, 5.0 ft  
 CAVE IN DEPTH: 5.0 ft  
 BORING METHOD: HSA - HOLLOW STEM AUGERS  
 STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED  
 SAMPLE CONDITIONS: D-DISINTEGRATED, I-INTACT, U-UNDISTURBED, L-LOST  
 AT COMPLETION: Dry, 5.6 ft  
 GROUND WATER: Dry, 5.6 ft  
 CAVE IN DEPTH: 5.6 ft  
 BORING METHOD: HSA - HOLLOW STEM AUGERS  
 STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS.

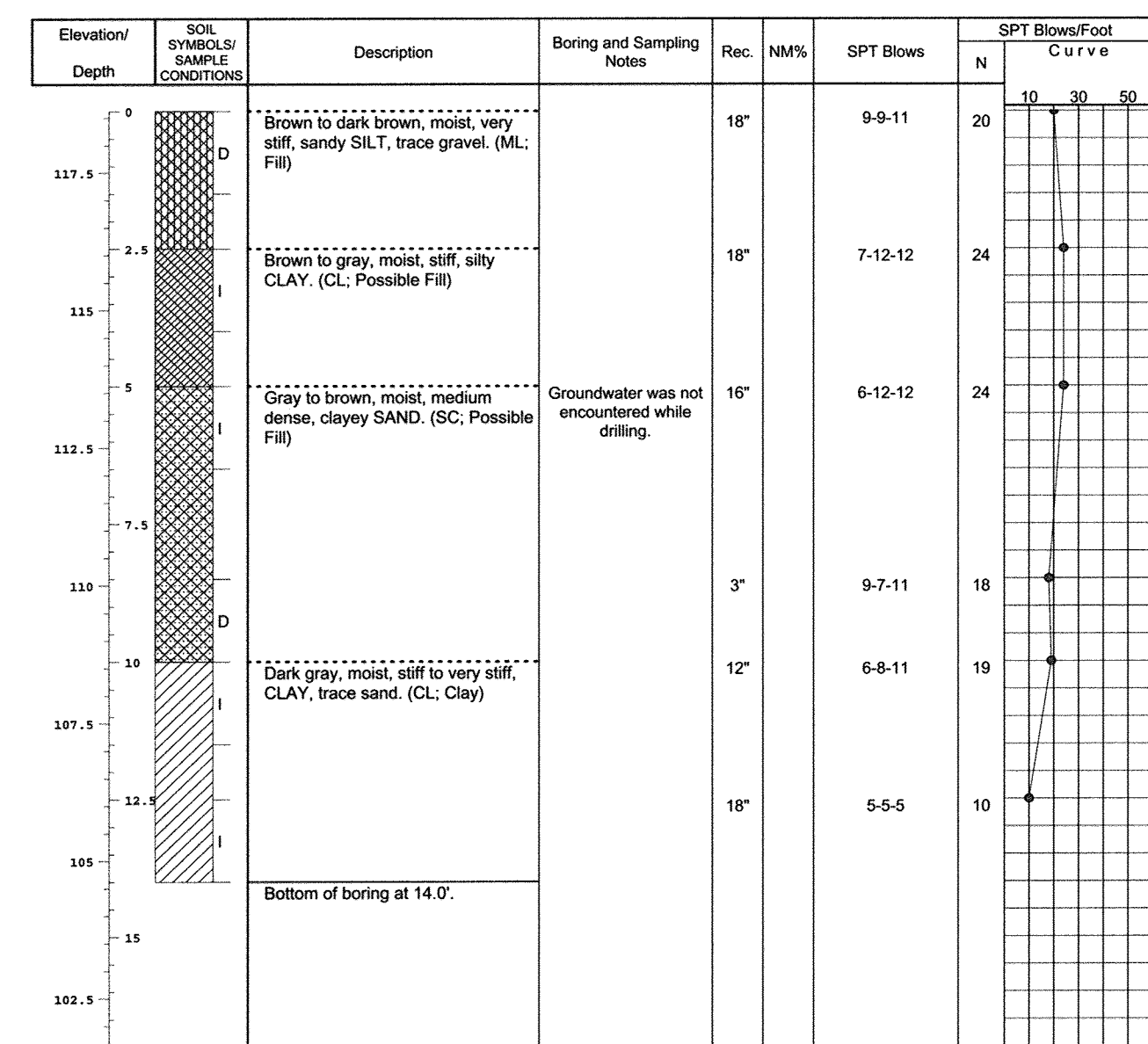
SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED  
 SAMPLE CONDITIONS: D-DISINTEGRATED, I-INTACT, U-UNDISTURBED, L-LOST  
 AT COMPLETION: Dry, 4.9 ft  
 GROUND WATER: Dry, 4.9 ft  
 CAVE IN DEPTH: 4.9 ft  
 BORING METHOD: HSA - HOLLOW STEM AUGERS  
 STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS.

SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED  
 SAMPLE CONDITIONS: D-DISINTEGRATED, I-INTACT, U-UNDISTURBED, L-LOST  
 AT COMPLETION: Dry, 5.2 ft  
 GROUND WATER: Dry, 5.0 ft  
 CAVE IN DEPTH: 5.0 ft  
 BORING METHOD: HSA - HOLLOW STEM AUGERS  
 STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS.

**HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION**

Project Name: Oxford Square E.S. Boring No. SWM-6  
Location: Howard County, Maryland Job # 15360A

Datum: Hammer Wt. 140 lbs. Hole Diameter 6.0 in. Foreman B. Van Doren  
Surf. Elev. 118.62 ft Hammer Drop 30 in. Rock Core Diameter Inspector  
Date Started 8/17/2015 Pipe Size 2.0 in. Boring Method HSA Date Completed 8/17/2015

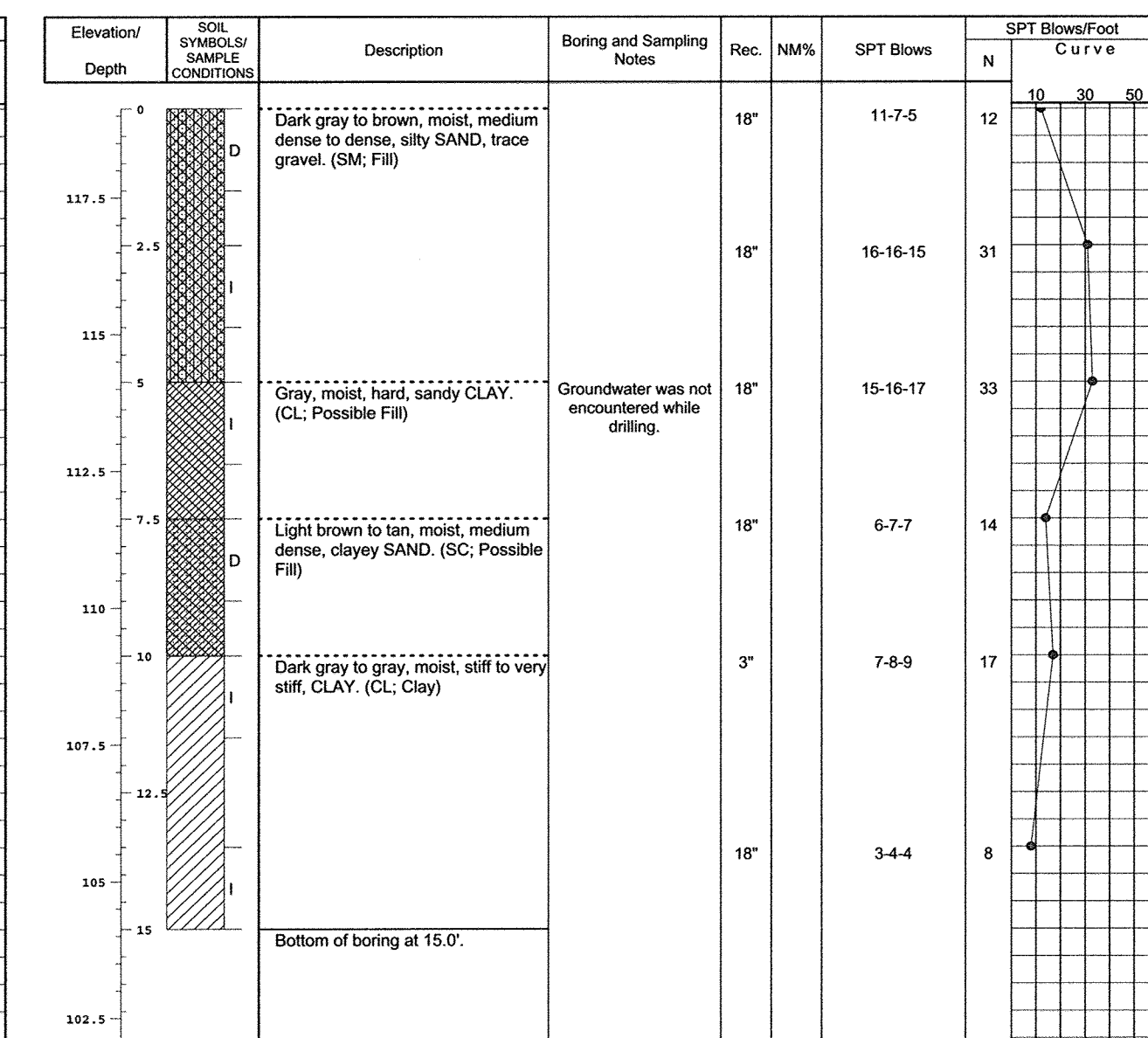


SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED  
 SAMPLE CONDITIONS: D-DISINTEGRATED, I-INTACT, U-UNDISTURBED, L-LOST  
 AT COMPLETION: Dry, 9.0 ft  
 GROUND WATER: Dry, 9.0 ft  
 CAVE IN DEPTH: 9.0 ft  
 BORING METHOD: HSA - HOLLOW STEM AUGERS  
 STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS.

**HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION**

Project Name: Oxford Square E.S. Boring No. SWM-7  
Location: Howard County, Maryland Job # 15360A

Datum: Hammer Wt. 140 lbs. Hole Diameter 6.0 in. Foreman B. Van Doren  
Surf. Elev. 119.13 ft Hammer Drop 30 in. Rock Core Diameter Inspector  
Date Started 8/17/2015 Pipe Size 2.0 in. Boring Method HSA Date Completed 8/17/2015

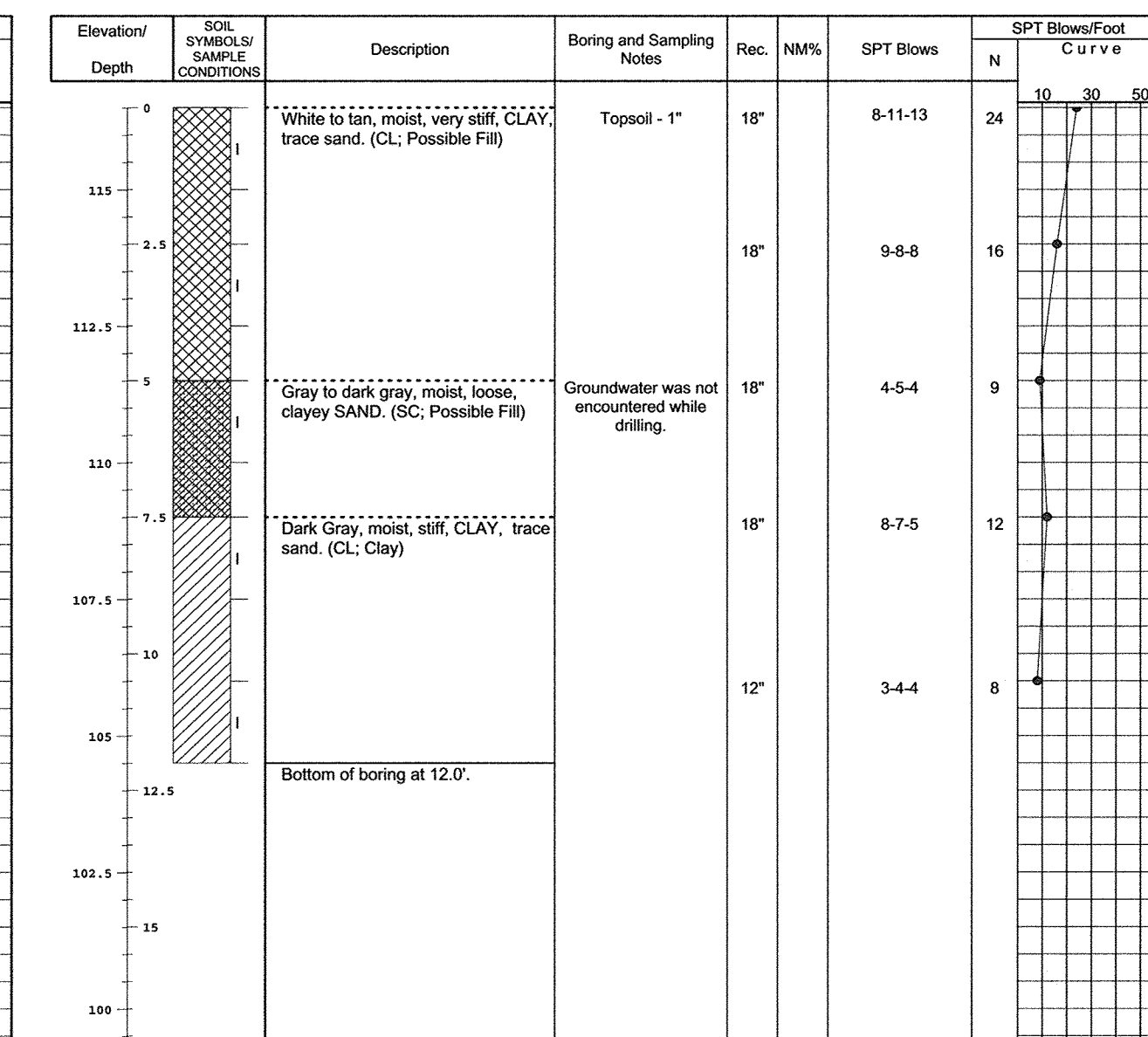


SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED  
 SAMPLE CONDITIONS: D-DISINTEGRATED, I-INTACT, U-UNDISTURBED, L-LOST  
 AT COMPLETION: Dry, 12.0 ft  
 GROUND WATER: Dry, 12.0 ft  
 CAVE IN DEPTH: 12.0 ft  
 BORING METHOD: HSA - HOLLOW STEM AUGERS  
 STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS.

**HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION**

Project Name: Oxford Square E.S. Boring No. SWM-8  
Location: Howard County, Maryland Job # 15360A

Datum: Hammer Wt. 140 lbs. Hole Diameter 6.0 in. Foreman B. Van Doren  
Surf. Elev. 116.51 ft Hammer Drop 30 in. Rock Core Diameter Inspector  
Date Started 8/17/2015 Pipe Size 2.0 in. Boring Method HSA Date Completed 8/17/2015

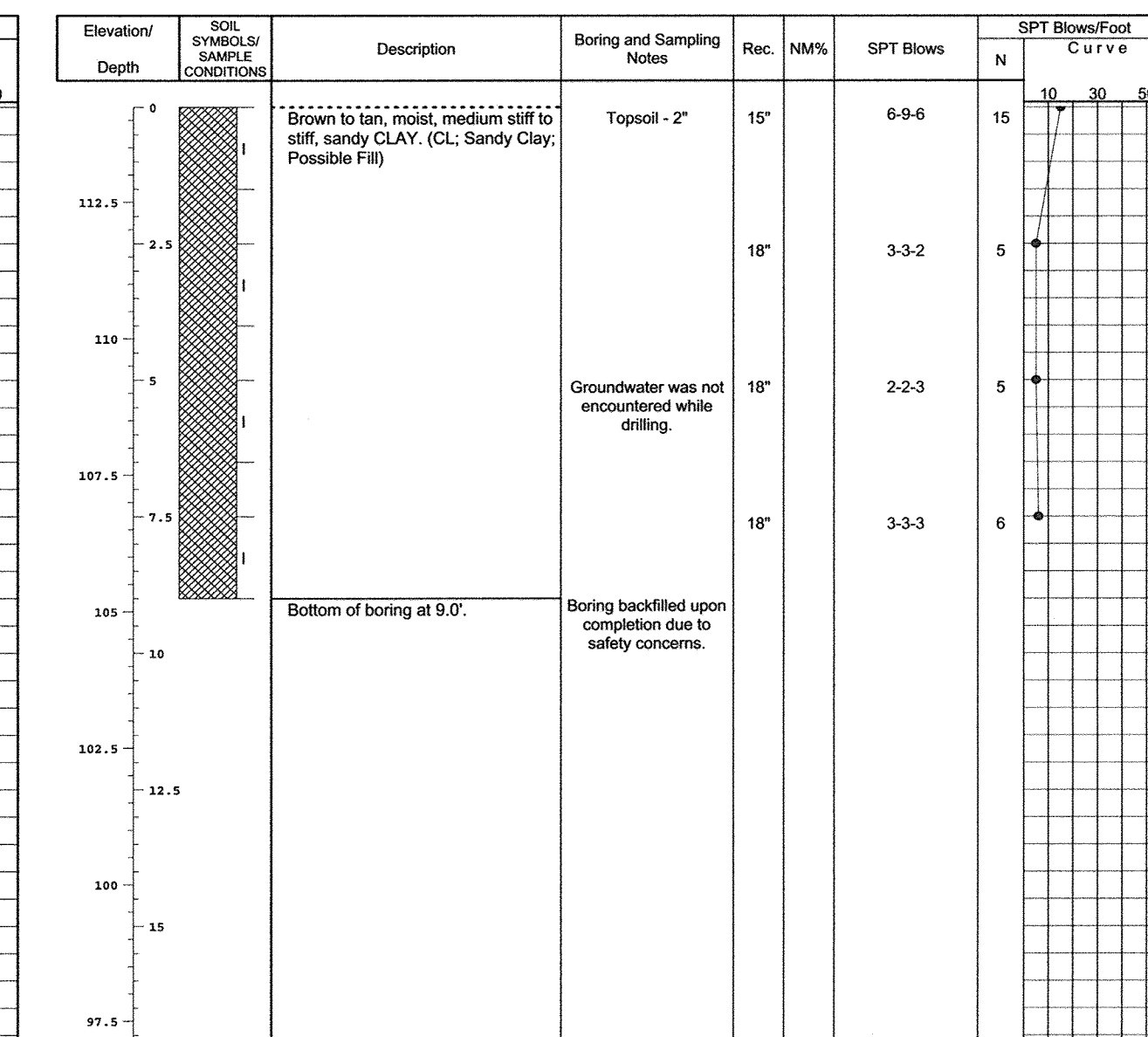


SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED  
 SAMPLE CONDITIONS: D-DISINTEGRATED, I-INTACT, U-UNDISTURBED, L-LOST  
 AT COMPLETION: Dry, 6.0 ft  
 GROUND WATER: Dry, 6.0 ft  
 CAVE IN DEPTH: 6.0 ft  
 BORING METHOD: HSA - HOLLOW STEM AUGERS  
 STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS.

**HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION**

Project Name: Oxford Square E.S. Boring No. SWM-9  
Location: Howard County, Maryland Job # 15360A

Datum: Hammer Wt. 140 lbs. Hole Diameter 6.0 in. Foreman B. Van Doren  
Surf. Elev. 114.24 ft Hammer Drop 30 in. Rock Core Diameter Inspector  
Date Started 8/18/2015 Pipe Size 2.0 in. Boring Method HSA Date Completed 8/18/2015

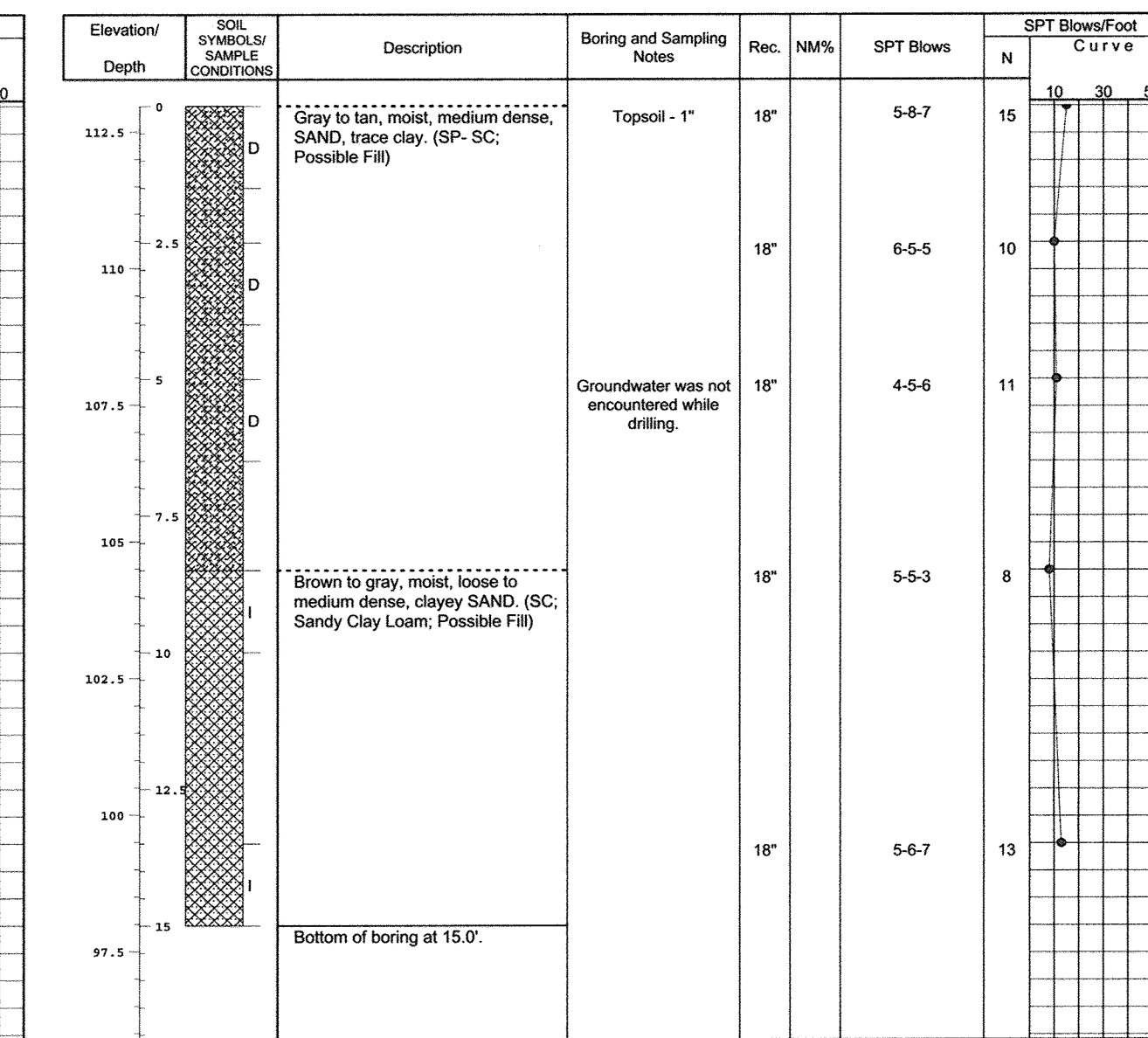


SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED  
 SAMPLE CONDITIONS: D-DISINTEGRATED, I-INTACT, U-UNDISTURBED, L-LOST  
 AT COMPLETION: Dry, 6.0 ft  
 GROUND WATER: Dry, 6.0 ft  
 CAVE IN DEPTH: 6.0 ft  
 BORING METHOD: HSA - HOLLOW STEM AUGERS  
 STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS.

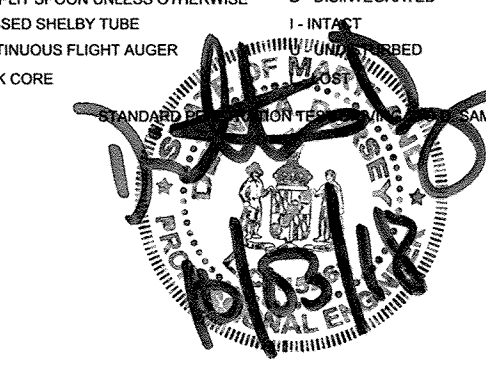
**HILLIS - CARNES ENGINEERING ASSOCIATES, INC. RECORD OF SOIL EXPLORATION**

Project Name: Oxford Square E.S. Boring No. SWM-10  
Location: Howard County, Maryland Job # 15360A

Datum: Hammer Wt. 140 lbs. Hole Diameter 6.0 in. Foreman B. Van Doren  
Surf. Elev. 112.97 ft Hammer Drop 30 in. Rock Core Diameter Inspector  
Date Started 8/18/2015 Pipe Size 2.0 in. Boring Method HSA Date Completed 8/18/2015



SAMPLER TYPE: DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED  
 SAMPLE CONDITIONS: D-DISINTEGRATED, I-INTACT, U-UNDISTURBED, L-LOST  
 AT COMPLETION: Dry, 11.0 ft  
 GROUND WATER: Dry, 11.0 ft  
 CAVE IN DEPTH: 11.0 ft  
 BORING METHOD: HSA - HOLLOW STEM AUGERS  
 STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS.



**AS-BUILT CERTIFICATION**  
 THERE IS NO "AS-BUILT" INFORMATION PROVIDED IN THIS SHEET.  
 SIGNATURE: J.A. [Signature] DATE: 10/22/16  
 NAME: JENNIS A. BORSE, MD. LICENSE NO. 45261 EXP. DATE: 04/10/20

**AS-BUILT**

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE: FREE - 10272 BALTIMORE NATIONAL PKCE  
 ELKLOTT CITY, MARYLAND 21042  
 (410) 461-2299

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."

*Charles J. Cravo, Sr., P.E.*  
 CHARLES J. CRAVO, SR., P.E.  
 3/22/16 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Director - Department of Planning and Zoning  
 Chief, Division of Land Development  
 Chief, Development Engineering Division

PREPARED FOR:  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805

Address Chart  
 Parcel Number: 'D-D'  
 Street Address: 7030 BANBURY DRIVE  
 HANOVER, MD 21076

PROJECT: ELEMENTARY SCHOOL #42  
 PLAT NOS. BLOCK NO. ZONE TAX MAP ELEC. DIST. CENSUS TR.  
 23706-23790 20 TOD 30 FIRST 6012.01

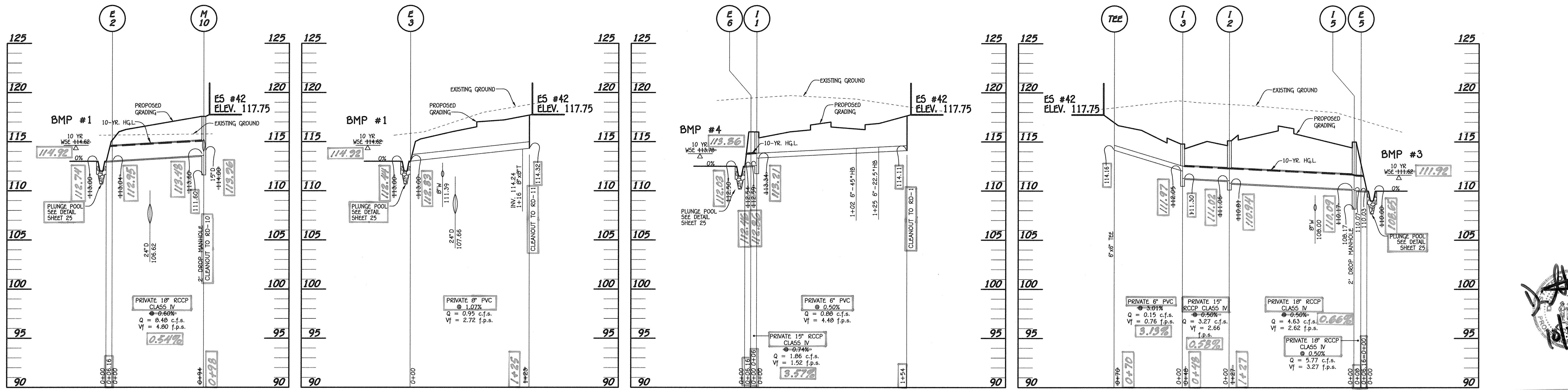
WATER CODE: SEWER CODE

ZONED: TOD TAX MAP No.: 30 GRID No.: 20 PARCEL No.: 1003  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MARCH 7, 2016

SHEET 21 OF 44

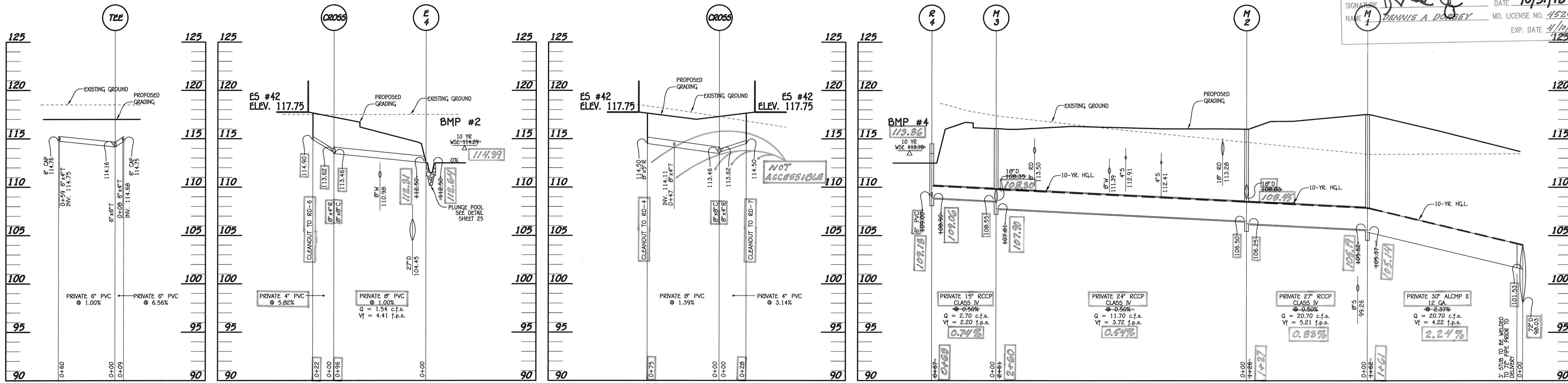
SECTION/AREA: N/A  
 PARCEL: 'D-D'  
 ZONED: TOD TAX MAP No





PROFILE SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'

**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN AND THAT THIS PLAN MEETS THE APPROVED PLAN AND SPECIFICATIONS.  
 SIGNATURE: *[Signature]* DATE: 10/31/18  
 NAME: DENNIS A. DORSEY MD. LICENSE NO. 45261  
 EXP. DATE: 4/10/20



PROFILE SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'

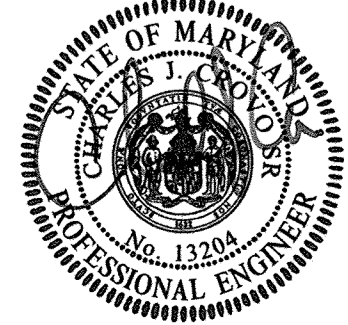
0' 50' 100' 150'  
 SCALE: 1" = 50' **AS-BUILT**

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 OXFORD SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21044  
 (410) 461-2995

\*PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016.  
*[Signature]*  
 CHARLES J. CROVO, SR., P.E.  
 3/21/16  
 DATE

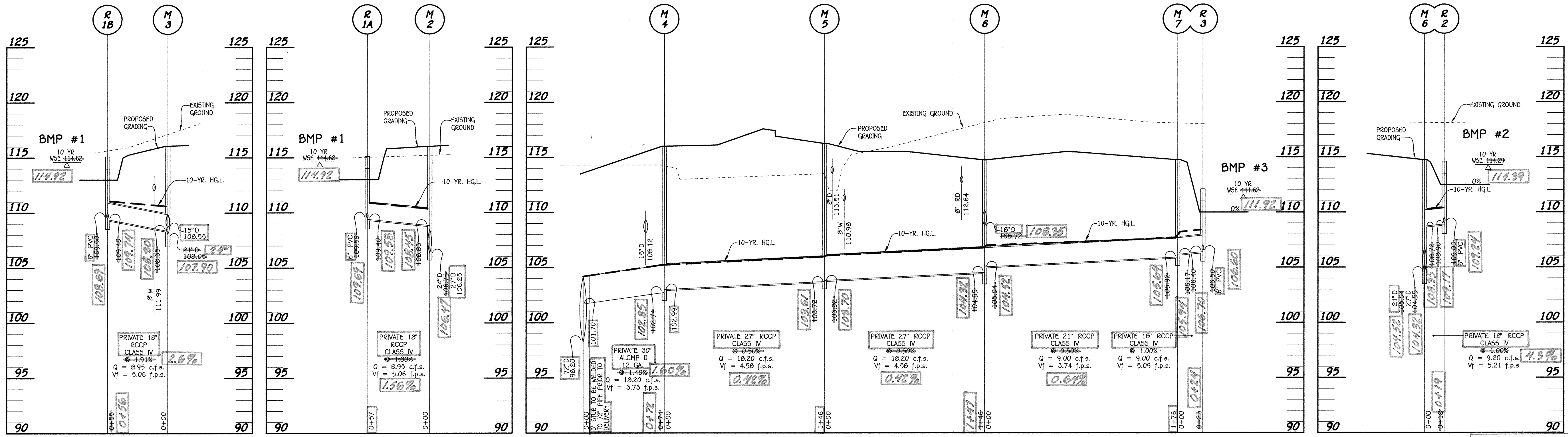
DATE	DESCRIPTION
4-18-16	REVISED PARCEL NAME & COMBINED PARCELS 'D' & 'B-B' INTO PARCEL 'D-D'
REVISION BLOCK	
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>[Signature]</i>	4-18-16
Director - Department of Planning and Zoning	Date
<i>[Signature]</i>	4-08-16
Chief, Division of Land Development	Date
<i>[Signature]</i>	4-13-16
Chief, Development Engineering Division	Date

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805



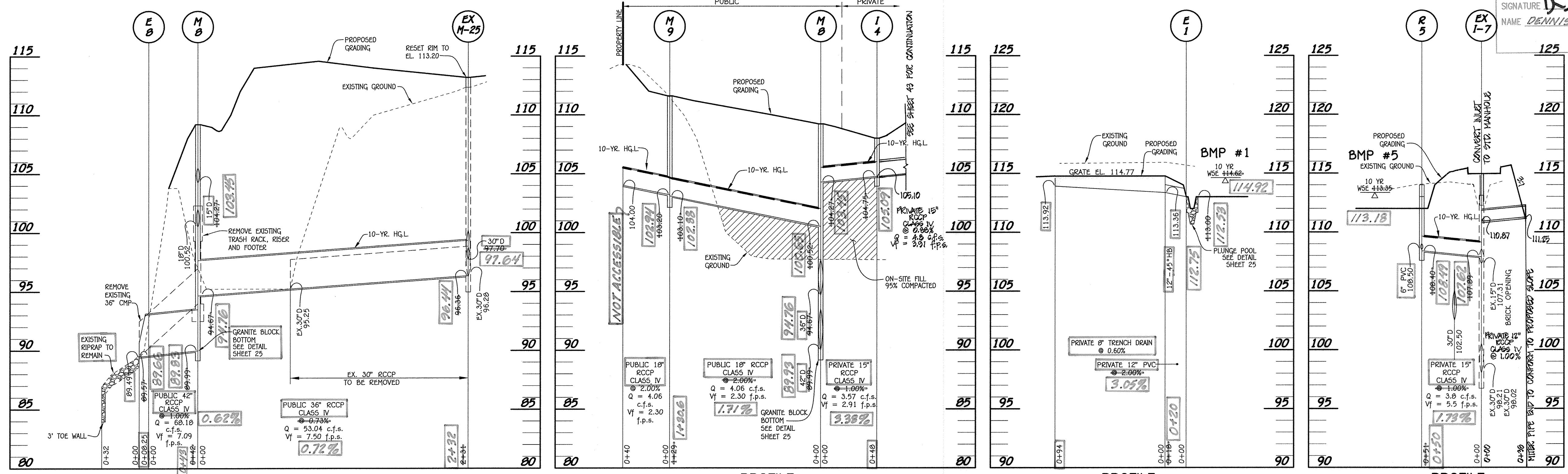
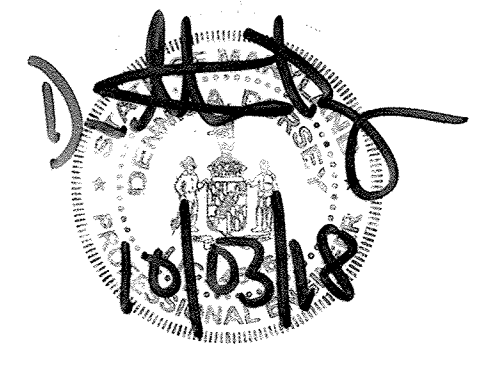
Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076
PROJECT	SECTION/AREA
ELEMENTARY SCHOOL #42	N/A
PLAT NOS.	BLOCK NO.
23766-23790	20
ZONE	TAX MAP
TOD	38
ELEC. DIST.	FIRST
6012.01	
WATER CODE	SEWER CODE
---	---

**STORM DRAIN PROFILES**  
 'GREEN NEIGHBORHOOD'  
 ELEMENTARY SCHOOL #42  
 OXFORD SQUARE  
 PARCEL 'D-D'  
 ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MARCH 7, 2016  
 SHEET 23 OF 44

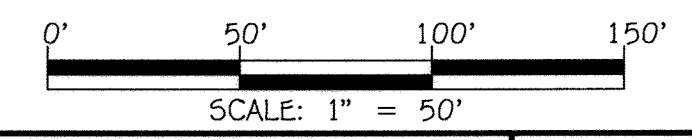


PROFILE SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'

**AS-BUILT CERTIFICATION**  
 I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN AND THAT THIS PLAN MEETS THE APPROVED PLAN AND SPECIFICATIONS.  
 SIGNATURE: *Dennis A. Dorso* DATE: 10/21/18  
 NAME: DENNIS A. DORSO MD. LICENSE NO. 45261  
 EXP. DATE: 4/10/20



PROFILE SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'



**AS-BUILT**

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 10272 BALDWIN NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2899

\*PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016.  
*Charles J. Orsivo*  
 CHARLES J. ORSIVO, SR., P.E.  
 DATE: 3/21/16

DATE	DESCRIPTION
7/16/19	ADDED STORM DRAIN PIPE
8/17/16	REMOVED PARCEL NAME & COMBINE PARCELS 'B' & 'B-1' INTO PARCEL 'D-D'
REVISION BLOCK	
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>William J. Gallen</i>	4-18-16
Director - Department of Planning and Zoning	Date
<i>Walter Deane</i>	4-18-16
Chief, Division of Land Development	Date
<i>David E. ...</i>	4-15-16
Chief, Development Engineering Division	Date

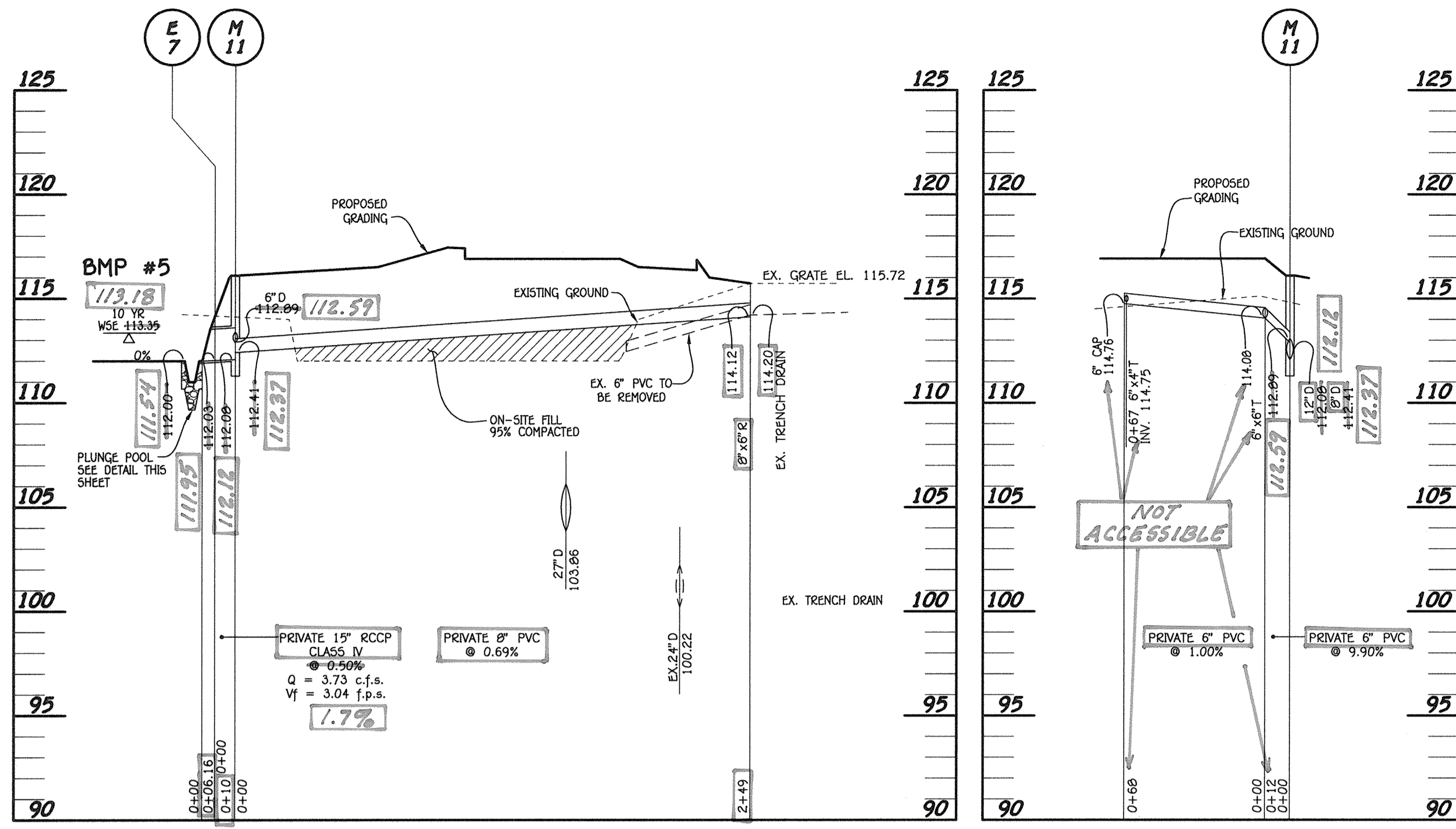
PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805



Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076
PROJECT	SECTION/AREA
ELEMENTARY SCHOOL #42	N/A
PLAT NOS.	BLOCK NO.
23708 - 23790	20
ZONE	TAX MAP
TOD	38
ELEC. DIST.	CENSUS TR.
FIRST	6012.01
WATER CODE	SEWER CODE
---	---

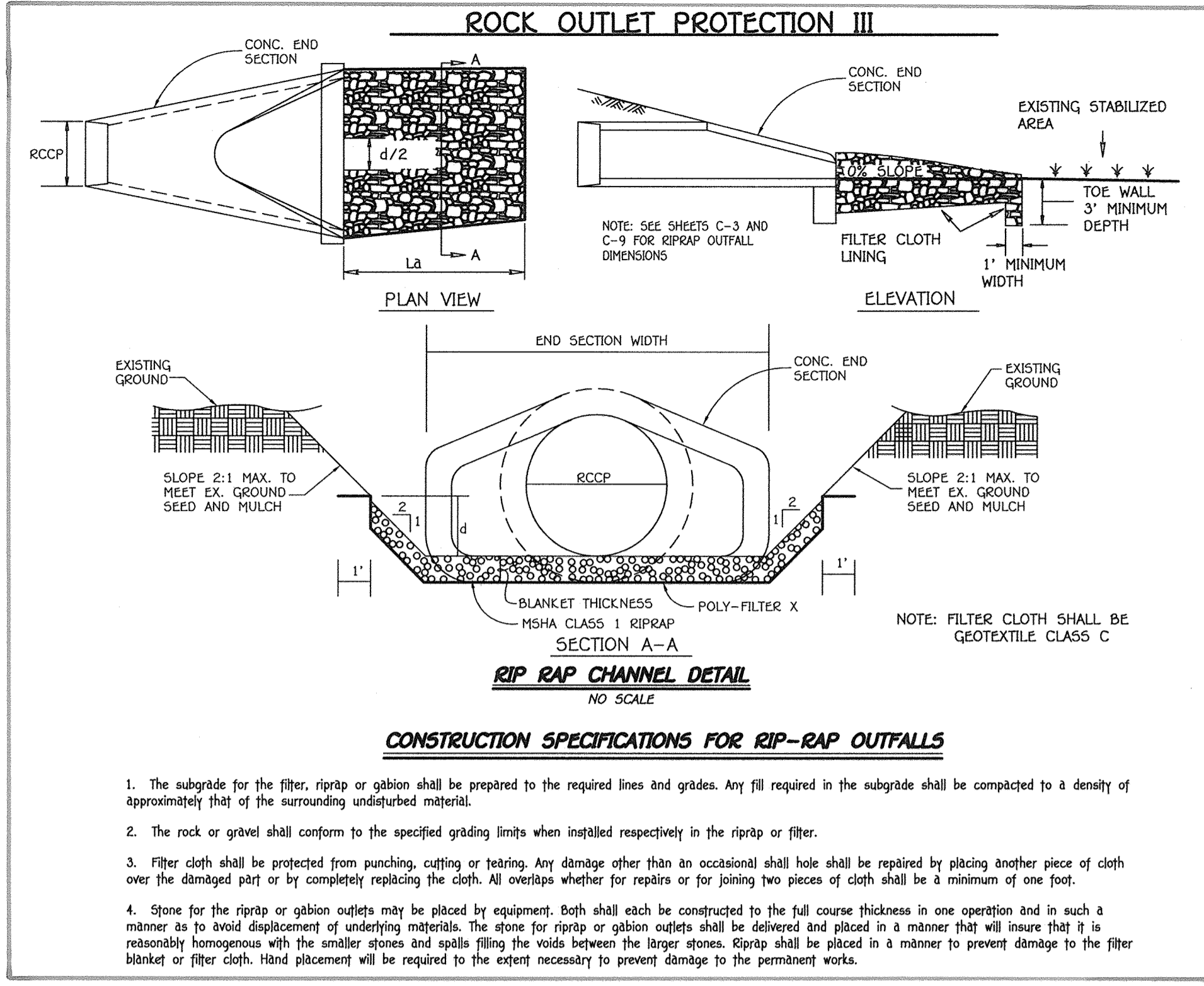
**STORM DRAIN PROFILES**  
 'GREEN NEIGHBORHOOD'  
 ELEMENTARY SCHOOL #42  
 OXFORD SQUARE  
 PARCEL 'D-D'  
 ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MARCH 7, 2016  
 SHEET 24 OF 44





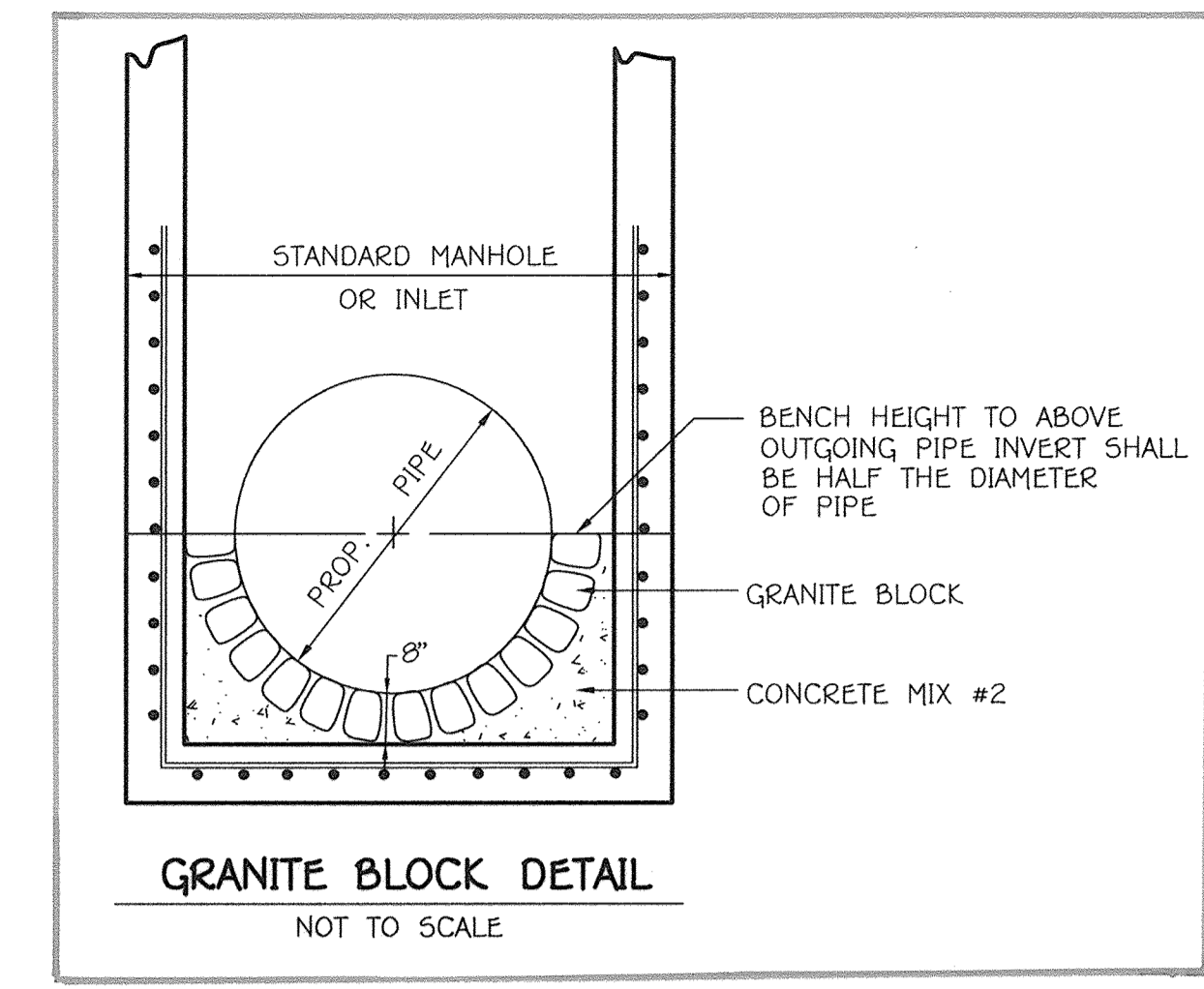
PROFILE  
SCALE: HORIZ. : 1" = 50'  
VERT. : 1" = 5'

PROFILE  
SCALE: HORIZ. : 1" = 50'  
VERT. : 1" = 5'



CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

- The subgrade for the filter, riprap or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
- Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
- Stone for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

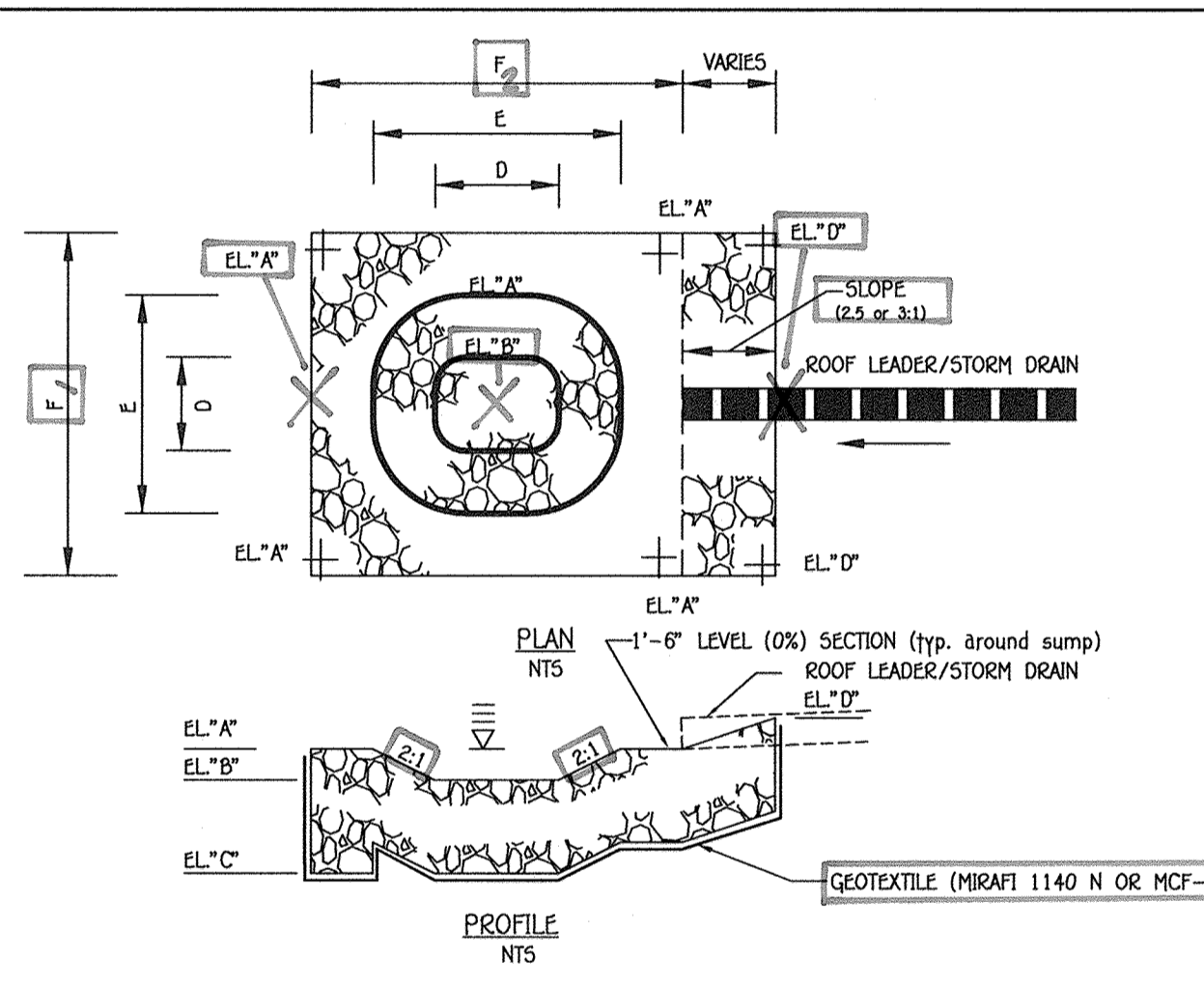


GRANITE BLOCK DETAIL  
NOT TO SCALE

STRUCTURE NO.	OWNERSHIP AND MAINTENANCE	TOP ELEVATION	INV. IN	INV. OUT	COORDINATES	WIDTH	TYPE	REMARKS
116.01	I-1	PRIVATE	115.09	113.21	112.68	42.50'	A-5 INLET	D-4.01
116.02	I-2	PRIVATE	115.13	111.07	110.94	42.50'	A-5 INLET	D-4.01
114.70	I-3	PRIVATE	114.80	111.97	114.05	42.50'	A-5 INLET	D-4.01
114.70	I-4	PRIVATE	108.00	108.09	105.09	42.50'	S INLET	D-4.22 & D-4.93
114.70	I-5	PRIVATE	114.90	110.09	110.04	42.50'	A-5 INLET	D-4.01
116.07	M-1	PRIVATE	117.63	105.62	105.14	42.50'	STD. MANHOLE	G-5.13
116.00	M-2	PRIVATE	116.02	108.00	106.50	42.50'	STD. MANHOLE	G-5.13
116.00	M-3	PRIVATE	116.07	108.55	108.35	42.50'	STD. MANHOLE	G-5.12
116.00	M-4	PRIVATE	116.00	102.97	102.99	42.50'	STD. MANHOLE	G-5.12
116.00	M-5	PRIVATE	116.03	103.02	103.61	42.50'	STD. MANHOLE	G-5.12
114.67	M-6	PRIVATE	114.75	108.78	105.04	42.50'	STD. MANHOLE	G-5.12
114.67	M-7	PRIVATE	114.75	106.17	105.23	42.50'	STD. MANHOLE	G-5.12
109.75	M-8	PRIVATE	109.88	104.87	104.87	42.50'	STD. MANHOLE	G-5.13
111.80	M-9	PRIVATE	111.60	102.94	103.60	42.50'	STD. MANHOLE	G-5.12
115.89	M-10	PRIVATE	117.57	113.96	114.00	42.50'	STD. MANHOLE	G-5.12
115.89	M-11	PRIVATE	116.10	112.09	112.41	42.50'	STD. MANHOLE	G-5.12
115.45	R-1A	PRIVATE	115.40	107.67	109.50	42.50'	MOD. K INLET	SEE SHEET 41
115.41	R-1B	PRIVATE	115.10	102.85	109.50	42.50'	MOD. K INLET	SEE SHEET 41
114.88	R-2	PRIVATE	114.60	109.25	109.74	42.50'	MOD. K INLET	SEE SHEET 41
112.45	R-3	PRIVATE	112.40	106.60	106.67	42.50'	MOD. K INLET	SEE SHEET 41
114.63	R-4	PRIVATE	114.50	109.18	109.00	42.50'	MOD. K INLET	SEE SHEET 41
113.89	R-5	PRIVATE	114.00	108.50	108.49	42.50'	MOD. K INLET	SEE SHEET 41
E-1	PRIVATE		113.42	-	112.75	18"	CONC. END SECTION	D-5.51
E-2	PRIVATE		114.50	-	112.95	18"	CONC. END SECTION	D-5.51
E-3	PRIVATE		113.50	-	112.83	18"	CONC. END SECTION	D-5.51
E-4	PRIVATE		113.98	-	112.31	18"	CONC. END SECTION	D-5.51
E-5	PRIVATE		111.60	-	110.07	18"	CONC. END SECTION	D-5.51
E-6	PRIVATE		113.70	-	112.43	15"	CONC. END SECTION	D-5.51
E-7	PRIVATE		113.00	-	111.35	12"	CONC. END SECTION	D-5.51
E-8	PRIVATE		93.07	-	89.66	42"	CONC. END SECTION	D-5.51

SIZE	CLASS	LENGTH
3"	PVC SCH 40	14 L.F.
4"	PVC SCH 40	86 L.F.
6"	PERF PVC	1802 L.F.
6"	PVC SCH 40	373 L.F.
8"	PVC SCH 40	550 L.F.
12"	PVC SCH 40	34 L.F.
15"	RCCP, CLASS N	225 L.F.
18"	RCCP, CLASS N	551 L.F.
21"	RCCP, CLASS N	487 L.F.
27"	RCCP, CLASS N	418 L.F.
30"	RCCP, CLASS N	79 L.F.
36"	RCCP, CLASS N	231 L.F.
42"	RCCP, CLASS N	42 L.F.
30"	ALCHP, 12 GA	236 L.F.
72"	ALCHP, 12 GA	154 L.F.

EXACT LENGTH CANNOT BE VERIFIED. PIPE IS BURIED AND NOT ACCESSIBLE TO CAPTURE VIA SURVEY.



LOCATION/SIZE	BMP ROOF LEADER/STORM DRAIN OUTFALL SUMP ELEVATION TABLE						
	BMP #1	BMP #1	BMP #1	BMP #2	BMP #3	BMP #4	BMP #5
EL A	113.00	113.00	113.00	112.50	110.00	112.50	112.00
EL B	112.50	112.50	112.50	111.50	109.00	111.50	111.00
EL C	110.75	110.75	110.75	110.25	107.75	110.25	109.75
EL D	113.50	113.50	113.50	113.00	110.50	113.00	112.00
DIMENSION D	1'-6"	4'-0"	1'-6"	1'-8"	3'-0"	2'-6"	2'-7"
DIMENSION E	5'-6"	8'-0"	5'-6"	5'-8"	7'-0"	6'-6"	6'-7"
DIMENSION F	6'-6"	11'-0"	6'-6"	6'-6"	10'-0"	9'-6"	9'-7"

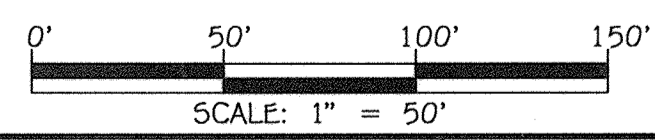
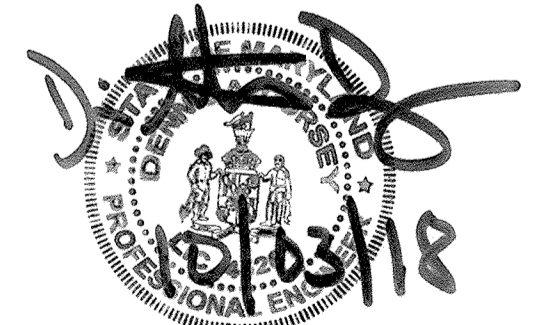
- PLUNGE POOL NOTES:
- USE: MSHA CL 1 RIPRAP (DO NOT USE STONE > 9" #) ON GEOTEXTILE (MIRAFI 1160N), 15" THICK. MIRAFI 1160 N IS A NON-WOVEN FABRIC WITH SMALL PORES TO MINIMIZE FLOW INTO AGGREGATE LAYER.
  - SEE PLAN FOR EXACT SHAPE OF OUTFALL SUMP.
  - DIMENSIONS "D" AND "E" ARE CENTERED ON DIMENSION "F".

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN AND THAT THIS PLAN MEETS THE APPROVED PLAN AND SPECIFICATIONS.

SIGNATURE: *Dennis A. Dole* DATE: 10/2/18

NAME: DENNIS A. DOLEY MD. LICENSE NO. 45261 EXP. DATE: 04/10/20



AS-BUILT

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE  
ELLCOTT CITY, MARYLAND 21042  
(410) 461-2895

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."

*Charles J. Cervo*  
CHARLES J. CERVO, SR., P.E.

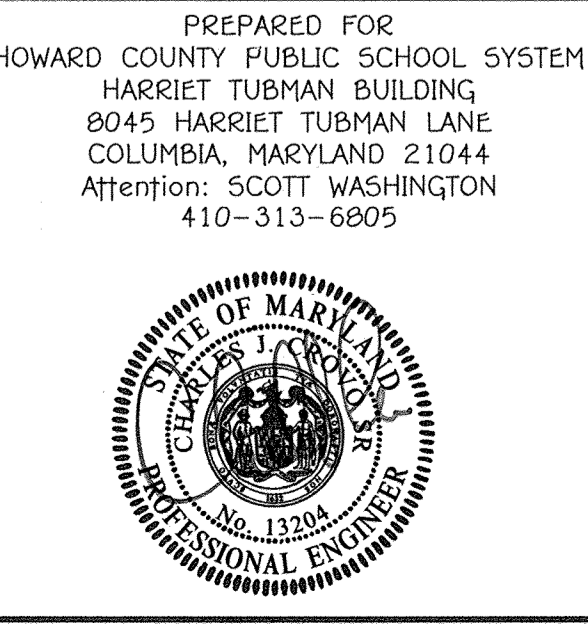
3/21/16  
DATE

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Nancy Spivey* 4-18-16  
Director - Department of Planning and Zoning Date

*Scott Washington* 4-18-16  
Chief, Division of Land Development Date

*Paul Edwards* 4-13-16  
Chief, Development Engineering Division Date



Address Chart	
Parcel Number	Street Address
10-D	7030 BANBURY DRIVE HANOVER, MD 21076

PROJECT	SECTION/AREA	PARCEL
ELEMENTARY SCHOOL #42	N/A	10-D

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
29106-03790	20	TOD	38	FIRST	6012.01

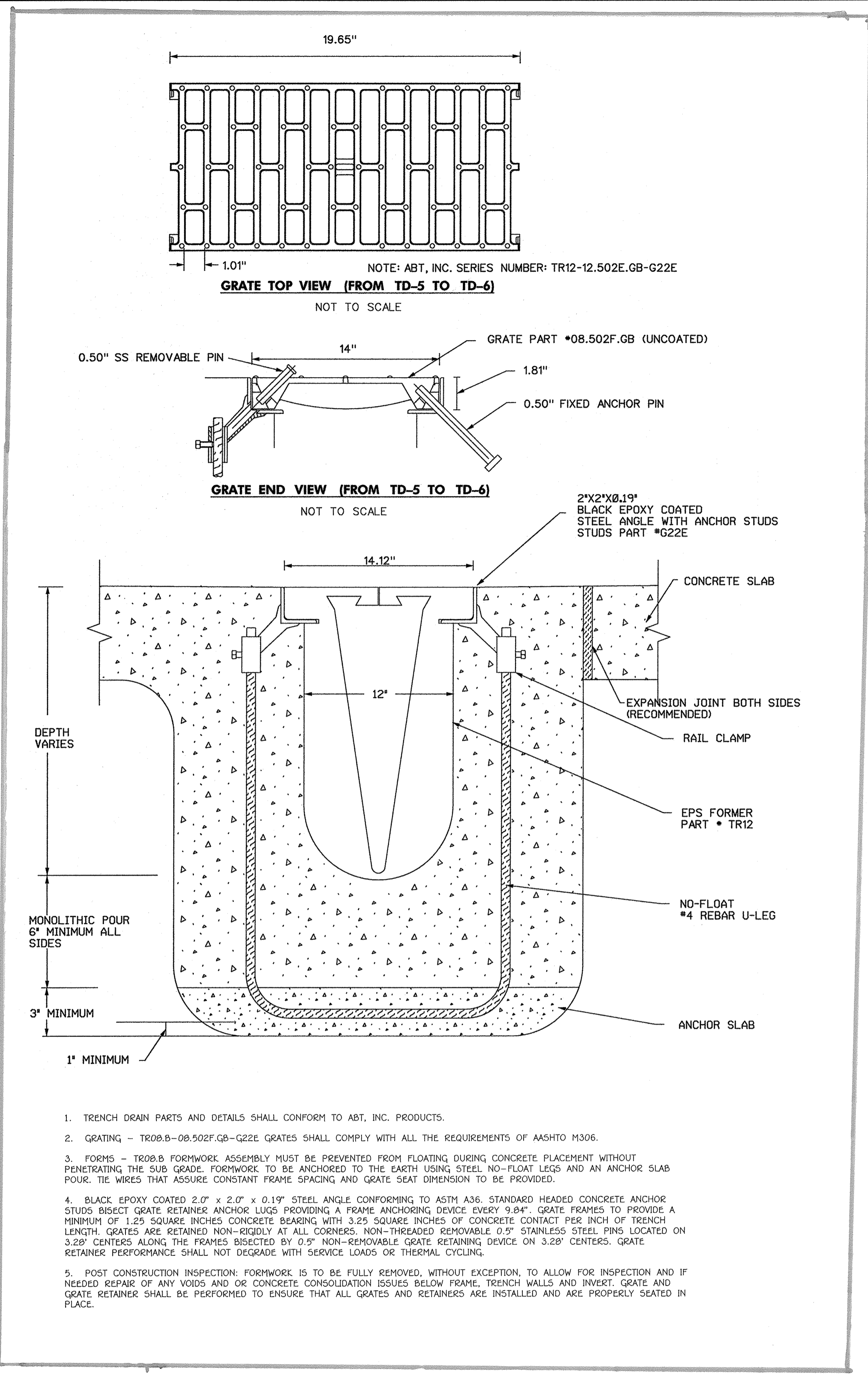
WATER CODE	SEWER CODE
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STORM DRAIN PROFILES, DETAILS AND STRUCTURE SCHEDULE

'GREEN NEIGHBORHOOD' ELEMENTARY SCHOOL #42  
OXFORD SQUARE  
PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT: HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 7, 2016

SHEET 25 OF 44



- TRENCH DRAIN PARTS AND DETAILS SHALL CONFORM TO ABT, INC. PRODUCTS.
- GRATING - TR08.B-08.502F.GB-G22E GRATES SHALL COMPLY WITH ALL THE REQUIREMENTS OF AASHTO M306.
- FORMS - TR08.B FORMWORK ASSEMBLY MUST BE PREVENTED FROM FLOATING DURING CONCRETE PLACEMENT WITHOUT PENETRATING THE SUB GRADE. FORMWORK TO BE ANCHORED TO THE EARTH USING STEEL NO-FLOAT LEGS AND AN ANCHOR SLAB POUR. TIE WIRES THAT ASSURE CONSTANT FRAME SPACING AND GRATE SEAT DIMENSION TO BE PROVIDED.
- BLACK EPOXY COATED 2.0" x 2.0" x 0.19" STEEL ANGLE CONFORMING TO ASTM A36. STANDARD HEADED CONCRETE ANCHOR STUDS BISECT GRATE RETAINER ANCHOR LEGS PROVIDING A FRAME ANCHORING DEVICE EVERY 9.84". GRATE FRAMES TO PROVIDE A MINIMUM OF 1.25 SQUARE INCHES CONCRETE BEARING WITH 3.25 SQUARE INCHES OF CONCRETE CONTACT PER INCH OF TRENCH LENGTH. GRATES ARE RETAINED NON-RIGIDLY AT ALL CORNERS. NON-THREADED REMOVABLE 0.5" STAINLESS STEEL PINS LOCATED ON 3.28" CENTERS ALONG THE FRAMES BISECTED BY 0.5" NON-REMOVABLE GRATE RETAINING DEVICE ON 3.28" CENTERS. GRATE RETAINER PERFORMANCE SHALL NOT DEGRADE WITH SERVICE LOADS OR THERMAL CYCLING.
- POST CONSTRUCTION INSPECTION: FORMWORK IS TO BE FULLY REMOVED, WITHOUT EXCEPTION, TO ALLOW FOR INSPECTION AND IF NEEDED REPAIR OF ANY VOIDS AND OR CONCRETE CONSOLIDATION ISSUES BELOW FRAME, TRENCH WALLS AND INVERT. GRATE AND GRATE RETAINER SHALL BE PERFORMED TO ENSURE THAT ALL GRATES AND RETAINERS ARE INSTALLED AND ARE PROPERLY SEATED IN PLACE.



**AS-BUILT CERTIFICATION**

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN AND THAT THIS PLAN MEETS THE APPROVED PLAN AND SPECIFICATION.

SIGNATURE: *[Signature]* DATE: 10/0/18

NAME: DEWIS A. DORSEY MD. LICENSE NO. 45264

EXP. DATE: 04/10/20

**AS-Built**

**STORM DRAIN DETAIL**

'GREEN NEIGHBORHOOD'  
ELEMENTARY SCHOOL #42  
OXFORD SQUARE  
PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 7, 2016

SHEET 26 OF 44

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FEE  
ELIZABETH CITY, MARYLAND 21042  
(410) 461-2895

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."

*[Signature]*  
CHARLES J. GROVO, SR., P.E.

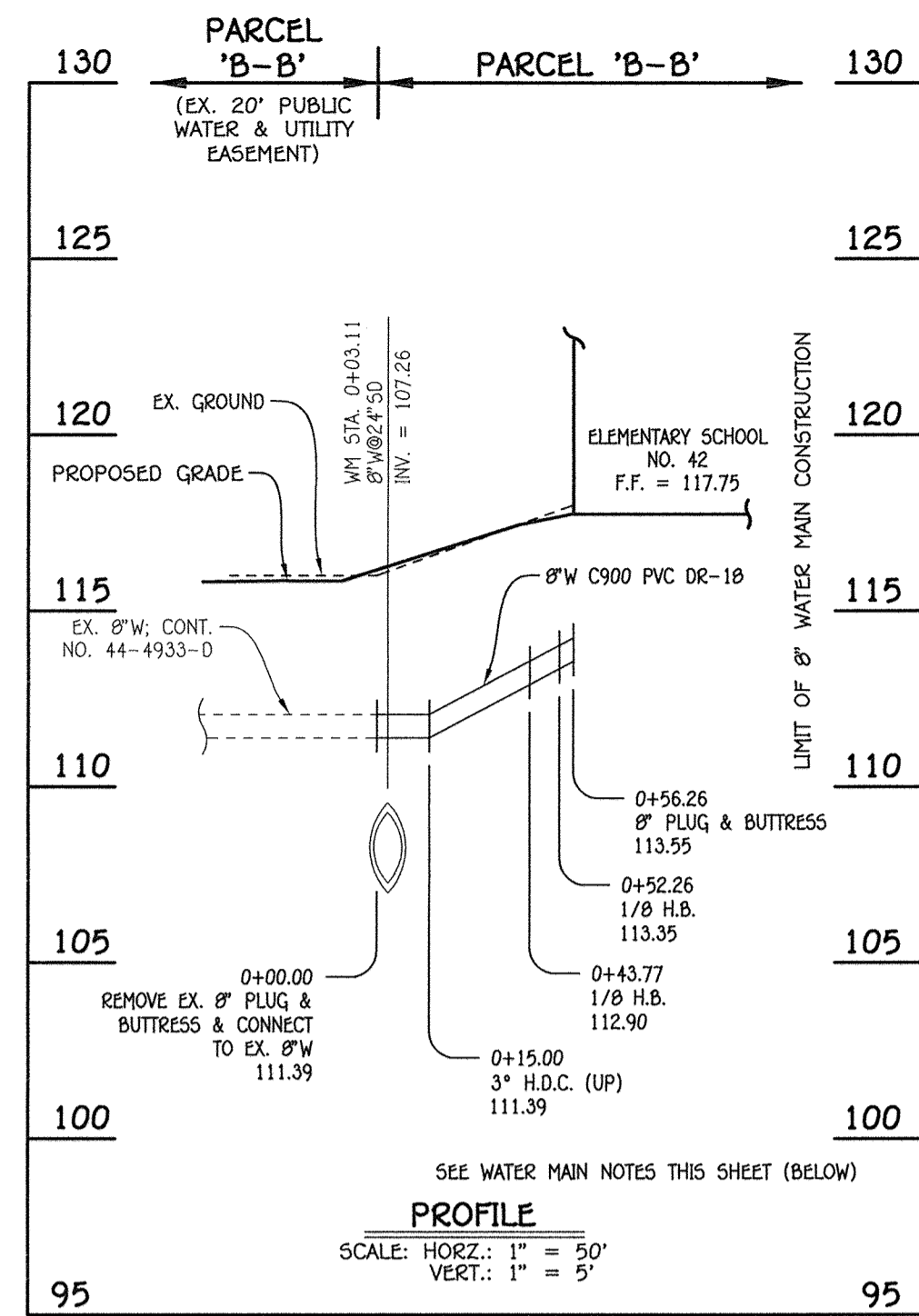
3/11/16  
DATE

DATE	DESCRIPTION	REVISION BLOCK
6/27/16	REVISED PARCEL NAME & CORNERED PARCELS 'B' & 'D-D' INTO PARCEL 'D-D'	
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>[Signature]</i>	4-18-16	Date
Director - Department of Planning and Zoning		
<i>[Signature]</i>	4-18-16	Date
Chief, Division of Land Development		
<i>[Signature]</i>	4-15-16	Date
Chief, Development Engineering Division		

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



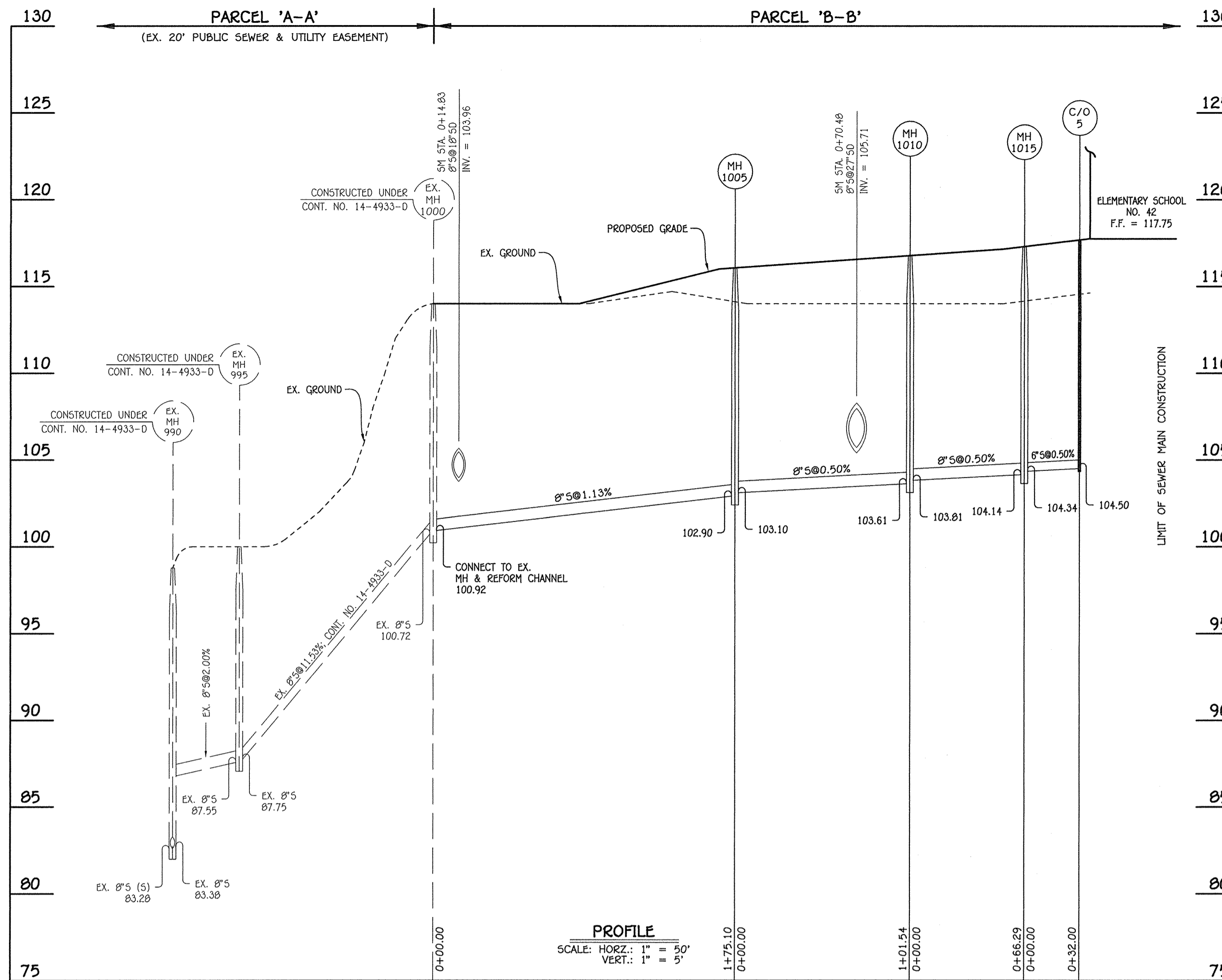
Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076
PROJECT	SECTION/AREA
ELEMENTARY SCHOOL #42	N/A
PLAT NOS.	BLOCK NO.
23780-03790	20
ZONE	TAX MAP
TOD	38
ELEC. DIST.	CENSUS TR.
FIRST	6012.01
WATER CODE	SEWER CODE
----	----



8" WATER MAIN: ELEMENTARY SCHOOL No. 42

WATER MAIN TABULATION CHART			
W.M. STA.	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN: ELEMENTARY SCHOOL NO. 42			
0+00.00	EX. 8" PLUG & BUTTRESS	553430.92	1386660.69
0+43.77	1/8 H.B.	553419.55	1386707.95
0+52.26	1/8 H.B.	553422.27	1386715.98
0+56.26	8" PLUG & BUTTRESS	553425.06	1386717.75

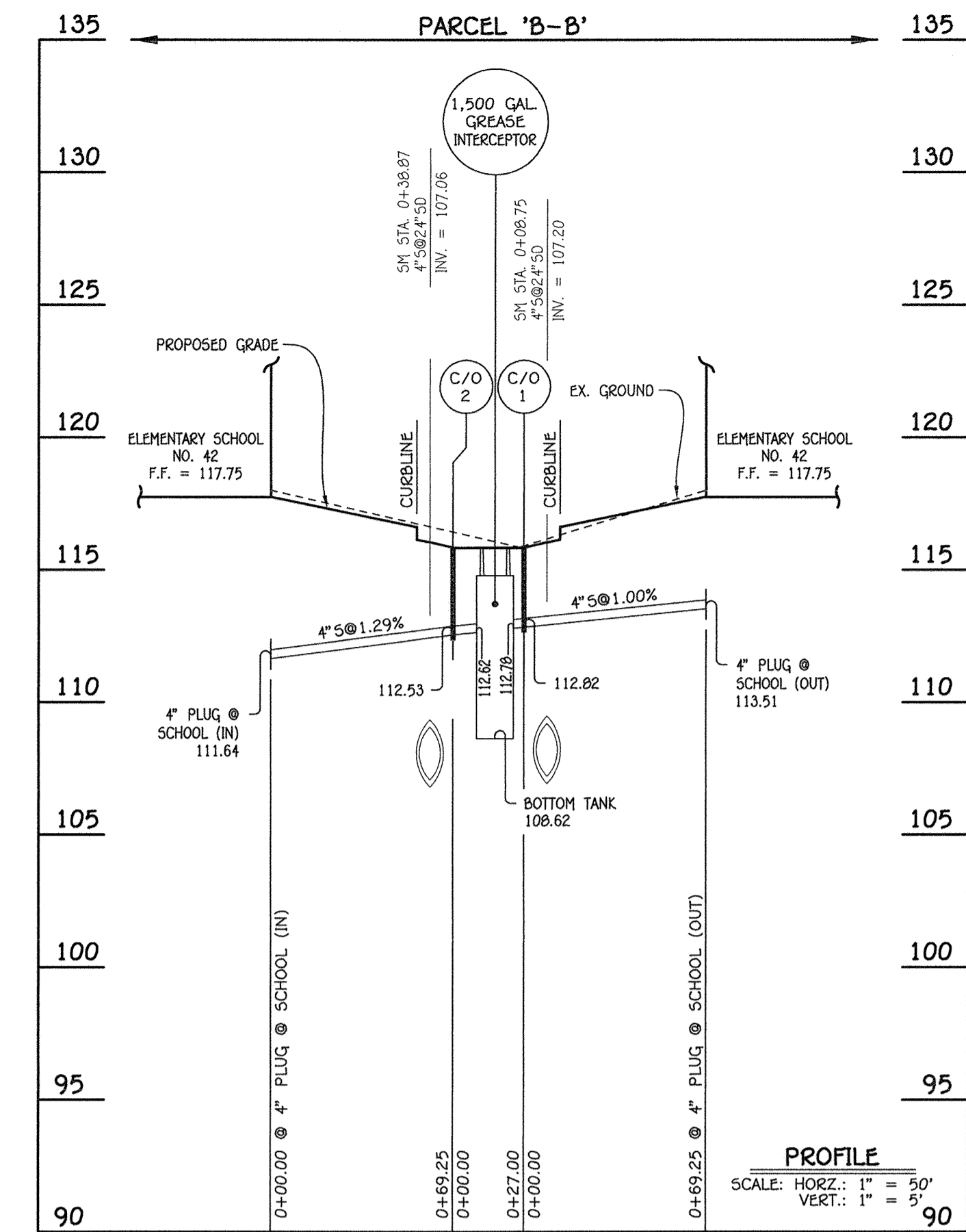
- WATER MAIN NOTES:**
1. ALL WATER MAINS SHALL BE AWWA C900 PVC PIPE, DR-18.
  2. ALL PIPE BEDDING, TRACER WIRE, LOCATING TAPE AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV - WATER AND SEWER STANDARDS FOR AWWA C900 PVC WATER PIPE INSTALLATION.
  3. DEFLECTION COUPLINGS SHALL BE CERTAIN-TIED HIGH DEFLECTION COUPLINGS.
  4. ALL WATER HOUSE CONNECTIONS AND TAPS SHALL BE PERFORMED USING A SADDLE.



8" / 6" SEWER MAIN: ELEMENTARY SCHOOL No. 42

MANHOLE TABULATION CHART			
NO.	NORTHING	EASTING	RIM ELEVATION
1005	553679.25	1386781.00	116.06
1010	553608.75	1386854.07	117.77
1015	553579.41	1386913.51	117.29
C/O 5	553550.72	1386899.35	117.60

NOTE: SET MH RIMS FLUSH W/PROPOSED GRADE.

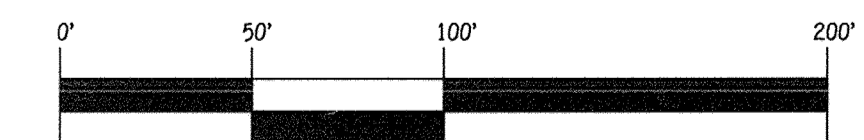


4" SEWER MAIN & GREASE INTERCEPTOR: ELEMENTARY SCHOOL No. 42

MANHOLE TABULATION CHART			
NO.	NORTHING	EASTING	RIM ELEVATION
4" PLUG@SCHOOL WALL	553450.95	1386749.51	---
C/O 1	553409.60	1386687.42	115.03
C/O 2	553509.33	1386697.15	115.03
4" PLUG@SCHOOL WALL	553483.16	1386761.46	---

NOTE: SET CLEAN-OUTS FLUSH W/PROPOSED GRADE.

**AS-BUILT CERTIFICATION**  
 THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.  
 SIGNATURE: *[Signature]* DATE: 4/18/16  
 NAME: DENNIS A. DORSEY MD. LICENSE NO. 45261 EXP. DATE: 04/10/20



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELIJAH CITY, MARYLAND 21042  
 (410) 461-2055

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
*[Signature]*  
 CHARLES J. CROVO, SR., P.E.

3/21/16  
 DATE

DATE: 6/21/16 REVISION: REVISION BLOCK  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*[Signature]* 4-18-16  
 Director - Department of Planning and Zoning  
*[Signature]* 4-18-16  
 Chief, Division of Land Development  
*[Signature]* 4-13-16  
 Chief, Development Engineering Division

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805



Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076

PROJECT	SECTION/AREA	PARCEL
ELEMENTARY SCHOOL #42	N/A	'D-D'

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
23708-23790	20	TOD	38	FIRST	6012.01

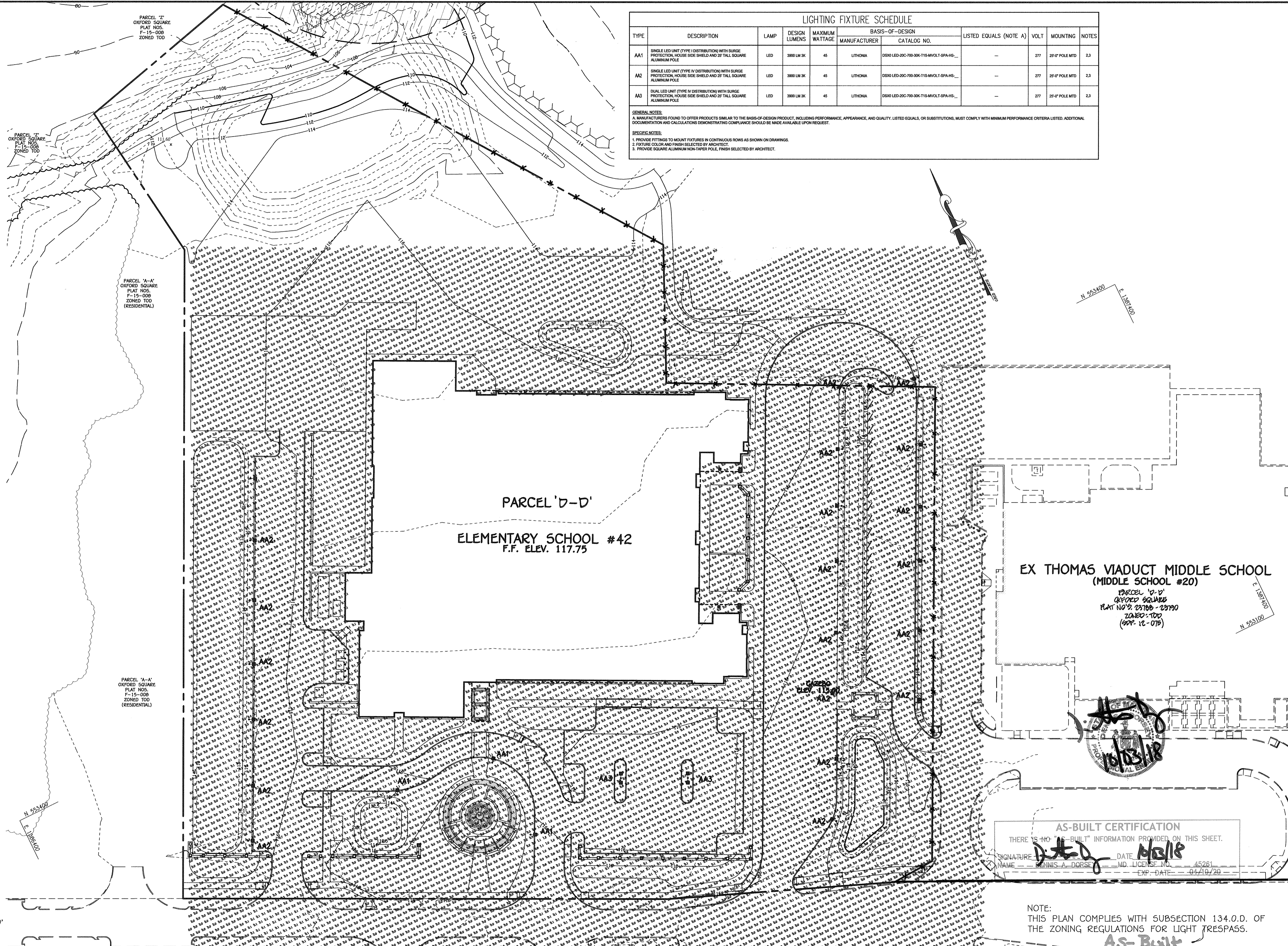
WATER CODE	SEWER CODE
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**SEWER & WATER MAINS PROFILES, CHARTS & NOTES**

'GREEN NEIGHBORHOOD'  
**ELEMENTARY SCHOOL #42**  
 OXFORD SQUARE  
 PARCEL 'D-D'

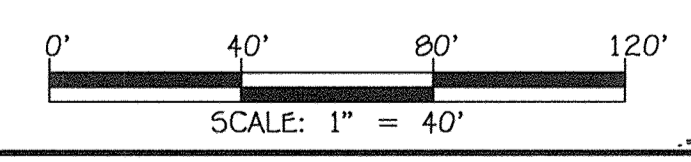
ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MARCH 7, 2016

SHEET 27 OF 44



LIGHTING FIXTURE SCHEDULE										
TYPE	DESCRIPTION	LAMP	DESIGN LUMENS	MAXIMUM WATTAGE	BASIS-OF-DESIGN		LISTED EQUALS (NOTE A)	VOLT	MOUNTING	NOTES
					MANUFACTURER	CATALOG NO.				
AA1	SINGLE LED UNIT (TYPE I DISTRIBUTION) WITH SURGE PROTECTION, HOUSE SIDE SHIELD AND 2' TALL SQUARE ALUMINUM POLE	LED	3000 LM BK	45	LITHONIA	0500 LED-200-700-30K-T15-MVOLT-SPAHS...	-	277	25'-0" POLE MTD	2.3
AA2	SINGLE LED UNIT (TYPE IV DISTRIBUTION) WITH SURGE PROTECTION, HOUSE SIDE SHIELD AND 2' TALL SQUARE ALUMINUM POLE	LED	3000 LM BK	45	LITHONIA	0500 LED-200-700-30K-T15-MVOLT-SPAHS...	-	277	25'-0" POLE MTD	2.3
AA3	DUAL LED UNIT (TYPE IV DISTRIBUTION) WITH SURGE PROTECTION, HOUSE SIDE SHIELD AND 2' TALL SQUARE ALUMINUM POLE	LED	3000 LM BK	45	LITHONIA	0500 LED-200-700-30K-T15-MVOLT-SPAHS...	-	277	25'-0" POLE MTD	2.3

**GENERAL NOTES:**  
A. MANUFACTURERS FOUND TO OFFER PRODUCTS SIMILAR TO THE BASIS-OF-DESIGN PRODUCT, INCLUDING PERFORMANCE, APPEARANCE, AND QUALITY, LISTED EQUALS, OR SUBSTITUTIONS, MUST COMPLY WITH MINIMUM PERFORMANCE CRITERIA LISTED. ADDITIONAL DOCUMENTATION AND CALCULATIONS DEMONSTRATING COMPLIANCE SHOULD BE MADE AVAILABLE UPON REQUEST.  
**SPECIFIC NOTES:**  
1. PROVIDE FITTINGS TO MOUNT FIXTURES IN CONTIGUOUS ROWS AS SHOWN ON DRAWINGS.  
2. FIXTURE COLOR AND FINISH SELECTED BY ARCHITECT.  
3. PROVIDE SQUARE ALUMINUM NON-TAPER POLE, FINISH SELECTED BY ARCHITECT.



**AS-BUILT CERTIFICATION**  
THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.  
SIGNATURE: *[Signature]* DATE: *04/18/16*  
NAME: *BRUNNIS A. DORSE* MD. LICENSE NO.: *45261*  
EXP. DATE: *04/19/20*

NOTE:  
THIS PLAN COMPLIES WITH SUBSECTION 134.0.D. OF THE ZONING REGULATIONS FOR LIGHT TRESPASS.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-2299

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
*[Signature]*  
CHARLES J. CROVO, SR., P.E.  
3/21/16  
DATE

DATE	DESCRIPTION	DATE
4/27/16	REVISED PARCEL NAME & COMBINED PARCELS 'D' & 'D-D' INTO PARCEL 'D-D'	
	REVISION BLOCK	
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>[Signature]</i>	Director - Department of Planning and Zoning	4-18-16
<i>[Signature]</i>	Chief, Division of Land Development	4-20-16
<i>[Signature]</i>	Chief, Development Engineering Division	4-17-16

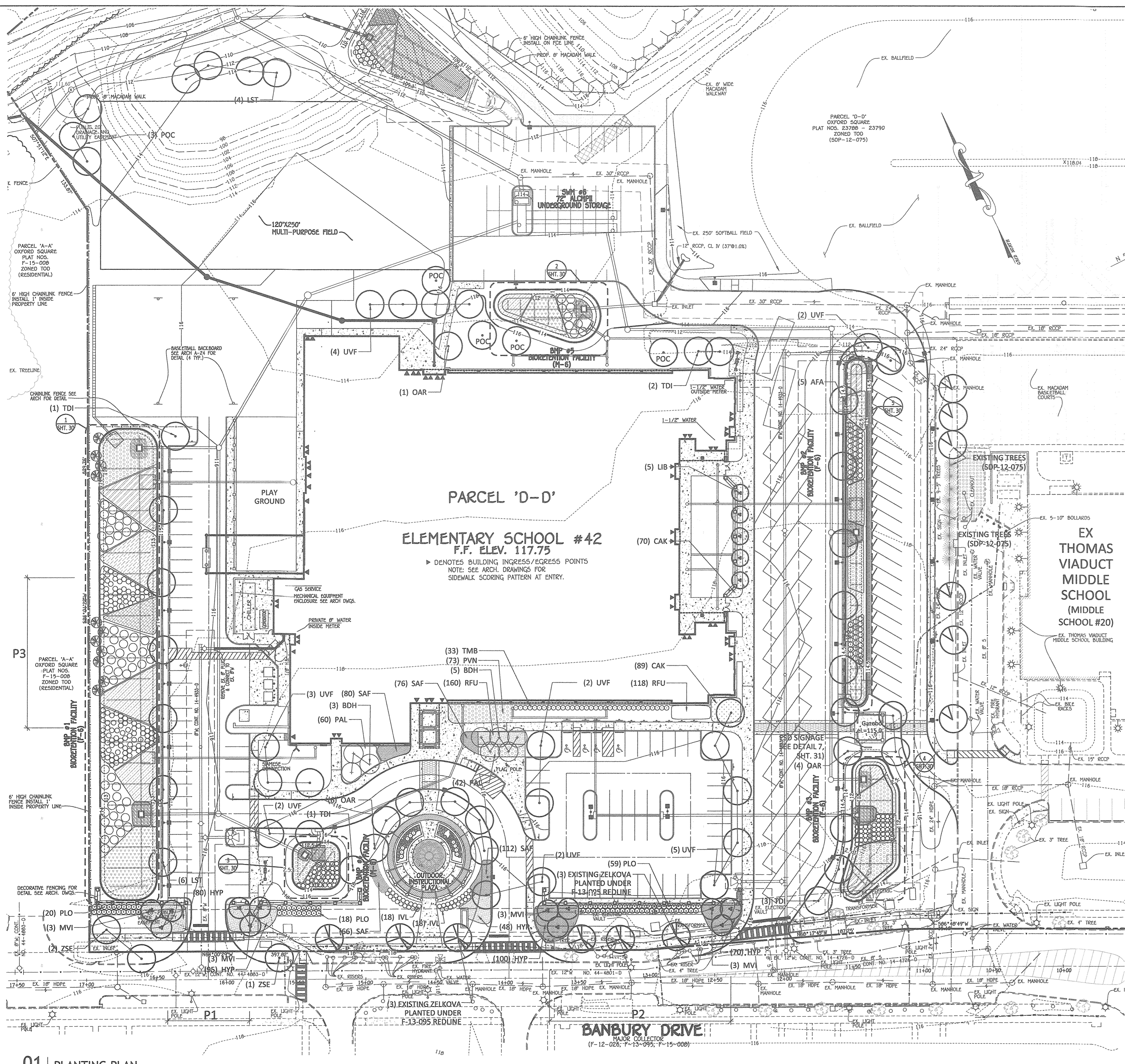
PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076

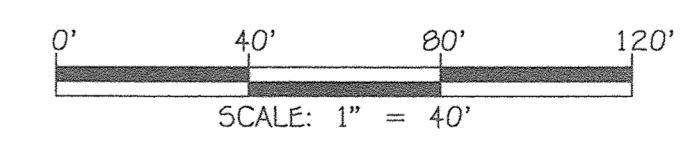
PROJECT	SECTION/AREA	PARCEL
ELEMENTARY SCHOOL #42	N/A	'D-D'
PLAT NOS.	BLOCK NO.	ZONE
23700-03790	20	TOD
TAX MAP	ELEC. DIST.	CENSUS TR.
38	FIRST	6012.01
WATER CODE	SEWER CODE	
---	---	

**PHOTOMETRICS DIAGRAM**  
'GREEN NEIGHBORHOOD'  
**ELEMENTARY SCHOOL #42**  
OXFORD SQUARE  
PARCEL 'D-D'  
ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 40' DATE: MARCH 7, 2016  
SHEET 28 OF 44



PLANTING SCHEDULE (INCLUDED IN SDP LANDSCAPE REQUIREMENTS)					
QTY.	KEY	BOTANICAL NAME COMMON NAME	SIZE	CONT.	REMARKS
<b>TREES - DECIDUOUS SHADE</b>					
5	AFA	Acer x freemanii 'Autumn Blaze'	2-1/2 - 3" cal.	B & B	Seedless
8	BDH	Betula nigra River Birch	8'-10' ht. min.	B & B	Multistem/4 canes min.
10	LST	Liquidambar styraciflua Sweet Gum	2-1/2 - 3" cal.	B & B	
11	OAR	Oxydendron arboreum Sourwood	2-1/2 - 3" cal.	B & B	
7	POC	Platanus occidentalis American Sycamore	2-1/2 - 3" cal.	B & B	
7	TDI	Taxodium distichum Baldcypress	2-1/2 - 3" cal.	B & B	
20	UVF	Ulmus americana 'Valley Forge'; Valley Forge American Elm	2-1/2 - 3" cal.	B & B	
3	ZSE	Zelkova serrata 'Green Vase' Green Vase Zelkova	2-1/2 - 3" cal.	B & B	
<b>TREES - EVERGREEN</b>					
11	IOP	Ilex opaca 'Jersy Night' American Holly	6'-8" ht. min.	B & B	Male Only
<b>TREES - ORNAMENTAL</b>					
11	LIB	Lagerstroemia x 'Biloxi' Biloxi Crapemyrtle	10 - 12' ht. min.	B & B	Multistem/4 canes min.
12	MVI	Magnolia virginiana australis Evergreen Sweetbay Magnolia	10-12' ht. min.	B & B	Multistem/4 canes min.
<b>SHRUBS</b>					
393	HYP	Hypericum 'Hidcote' St. John's Wort	18 - 24" ht.	Cont.	30" O.C.
36	IVL	Itea virginica 'Little Henry' Dwarf Sweetspire	18 - 24" ht.	Cont.	30" O.C.
97	PLO	Prunus laurocerasus 'Otto Luyken' Dwarf Cherry Laurel	24"-30" Ht.	Cont.	36" O.C.
33	TMB	Taxus x media 'Brownii' Anglojap Yew	30"-36" ht.	Cont.	4" O.C.
<b>ORNAMENTAL GRASSES AND PERENNIALS</b>					
159	CAK	Calamagrostis acutiflora 'Karl Foerster' Feather Reed Grass	1 gal.	Cont.	24" O.C.
102	PAL	Pennisetum alopecuroides Fountain grass	2 gal.	Cont.	36" O.C.
73	PVN	Panicum virgatum 'Northwind' Northwind Blue Panicum	2 gal.	Cont.	36" O.C.
278	RFU	Rudbeckia fuldiga Black Eyed Susan	1 gal.	Cont.	18" O.C.
334	SAF	Sedum 'Autumn Fire' Autumn Fire Stonecrop	1 gal.	Cont.	18" O.C.
<b>ESD PLANTS</b>					
491	ASL	Aster laevis Smooth Aster	1 gal.		18" O.C.
205	CAL	Clethra alnifolia Summersweet	18 - 24" ht.	Cont.	42" o.c.
65	HVI	Hamamelis virginiana Common Witchhazel	30"-36" ht.	Cont.	as shown
117	ITH	Itea virginica 'Little Henry' Virginia Sweetspire	24"-30" ht.	Cont.	36" O.C.
491	PVN	Panicum virgatum 'Northwind' Heavy Metal Switchgrass	2 gal.	Cont.	36" O.C.
344	PVS	Panicum virgatum 'Shenandoah' Shenandoah Red Switchgrass	2 gal.	Cont.	36" O.C.
345	EFI	Eupatorium fistulosum Joe Pye Weed	1 gal.		24" O.C.
911	SRU	Solidago rugosa 'Firepower' Firepower Goldenrod	1 gal.		18" O.C.
409	VNO	Vernonia noveboracensis Ironweed	1 gal.		24" O.C.

NOTE:  
SEE SHEET 30 FOR ESD PLANTING PLAN ENLARGEMENTS.



**01** PLANTING PLAN  
1" = 40'-0"

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10275 BATHURST NATIONAL FREE  
ELLSWORTH CITY, MARYLAND 21044  
(410) 461 - 2855

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*Charles J. Rowe, Sr., P.E.*  
CHARLES J. ROWE, SR., P.E.  
7/29/19 DATE

DATE	DESCRIPTION	REVISION BLOCK
6/14/19	Added New Parking Area, Parking Lights, Bmp #6 And 2 LE & FEV Signs, Revised Macadam Walk & Relocated Trees	
6/27/16	Revised Parcel Name & Combined Parcels 'B' & 'B-B' Into Parcel 'D-D'	

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Nathan J. [Signature]* 8-26-19 Date  
Director - Department of Planning and Zoning  
*Karl [Signature]* 8/20/19 Date  
Chief, Division of Land Development  
*[Signature]* 8/19/19 Date  
Chief, Development Engineering Division

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076

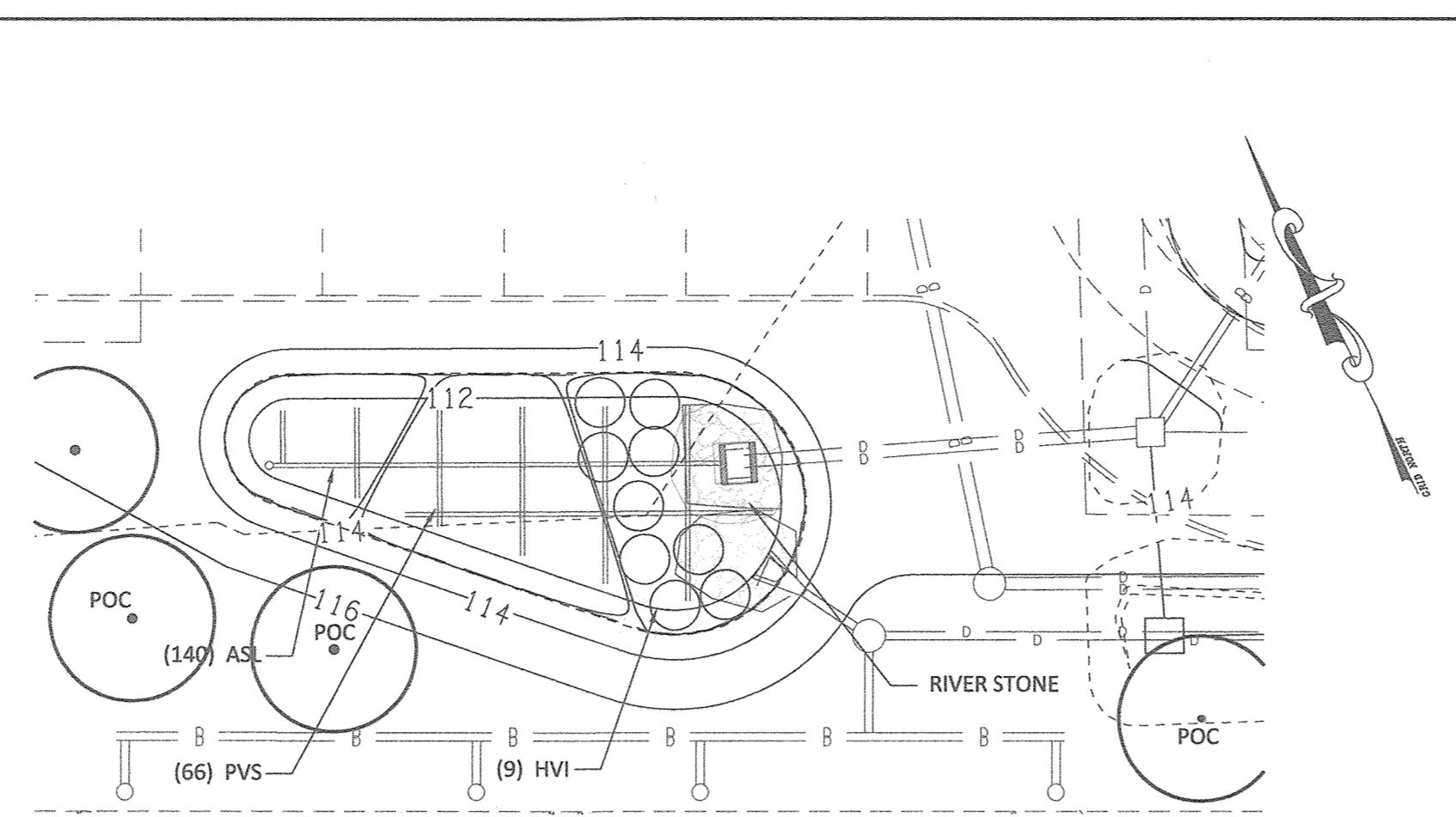
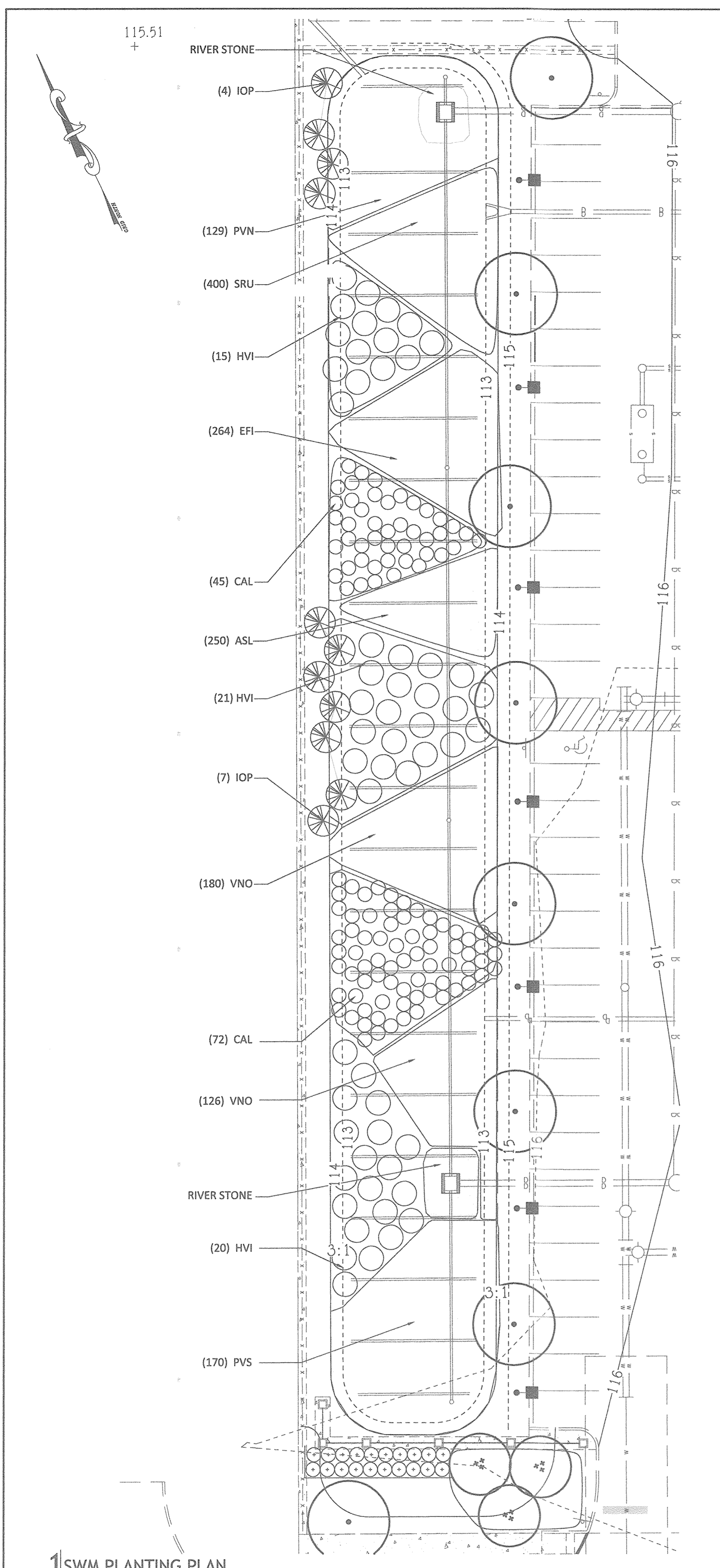
PROJECT	SECTION/AREA	PARCEL			
ELEMENTARY SCHOOL #42	N/A	'D-D'			
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
23708-23790	20	TOD	38	FIRST	6012.01
WATER CODE	SEWER CODE				
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**REVISED LANDSCAPE PLAN**

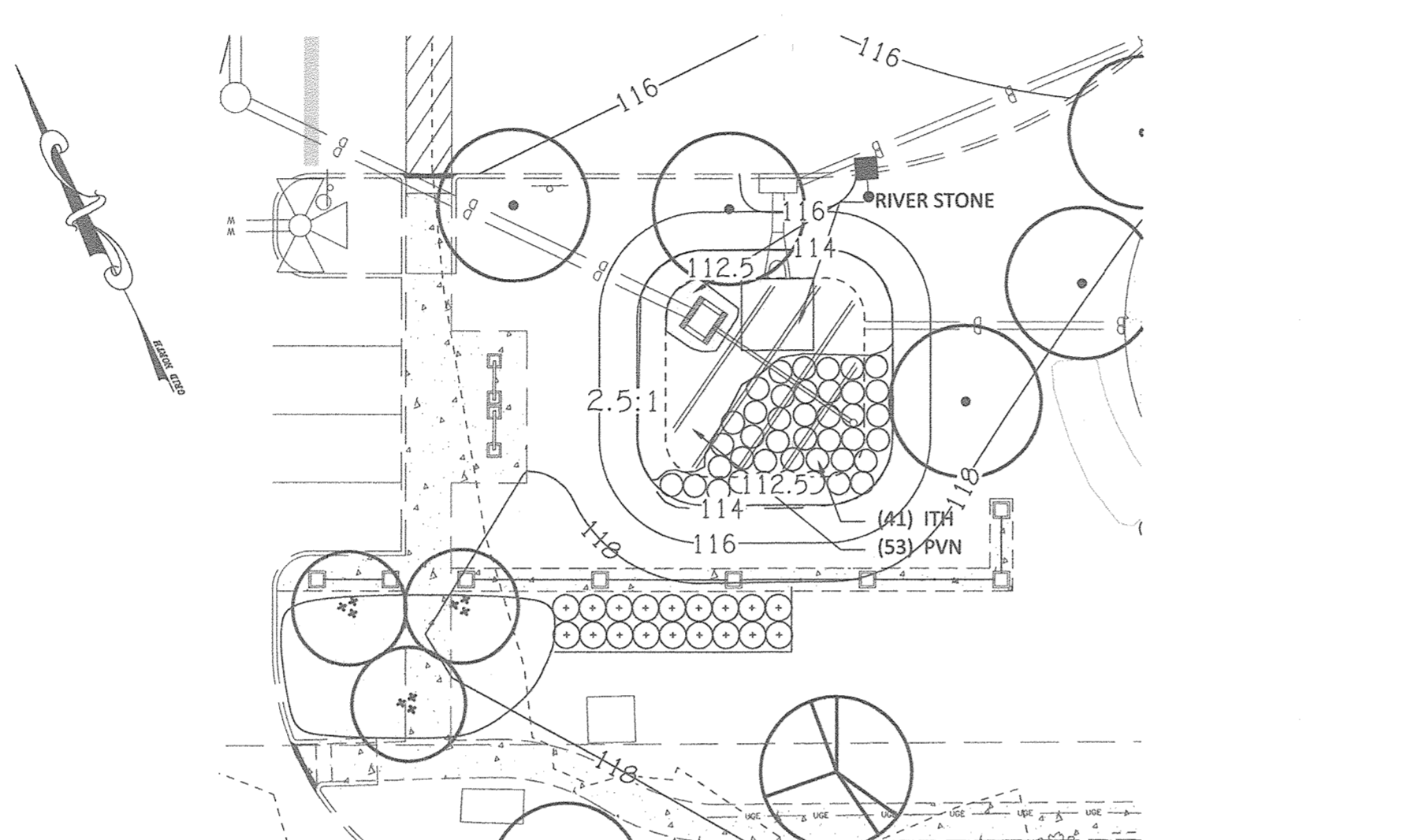
'GREEN NEIGHBORHOOD'  
**ELEMENTARY SCHOOL #42**  
OXFORD SQUARE  
PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 40' DATE: JULY 23, 2019

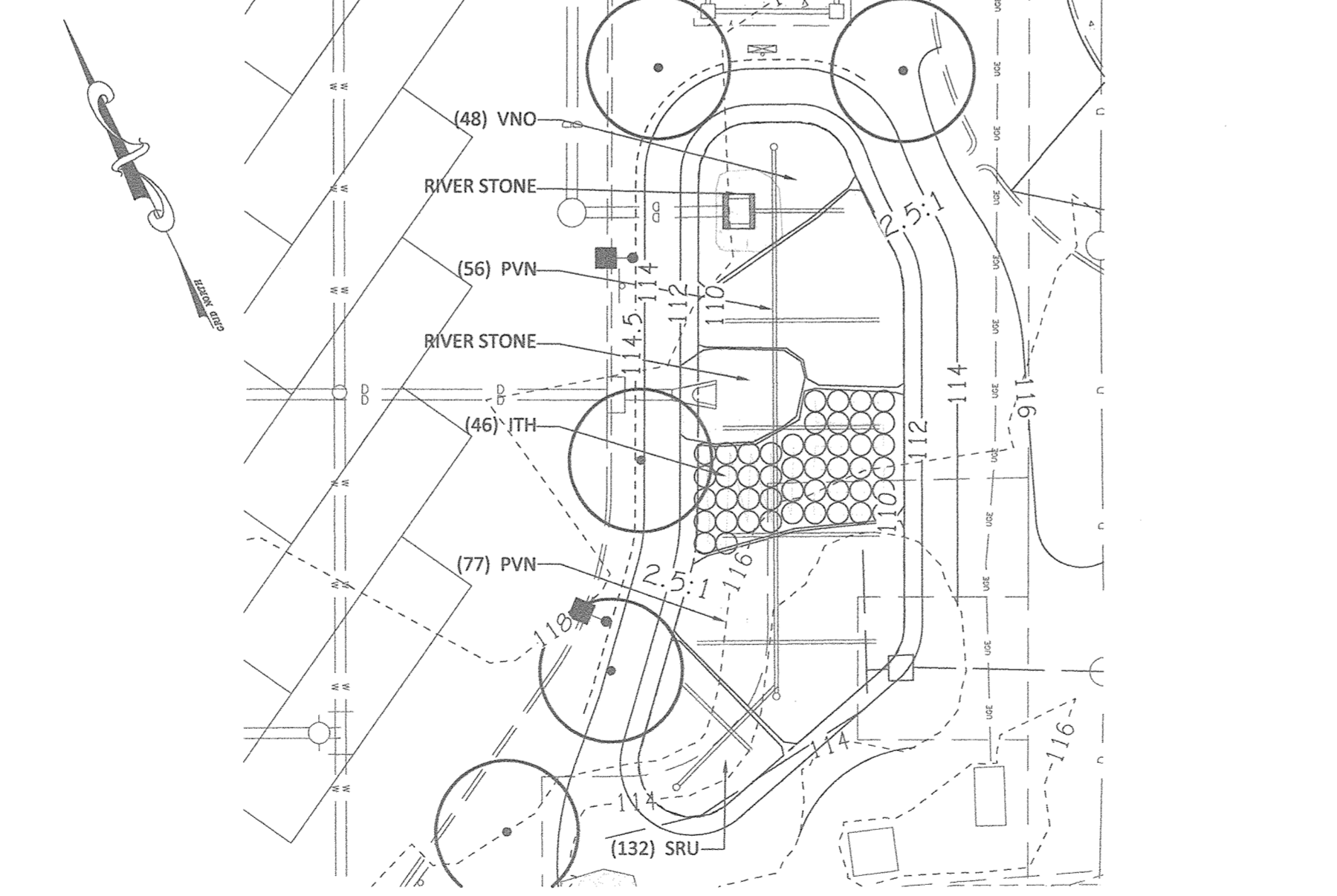
SHEET 29 OF 44



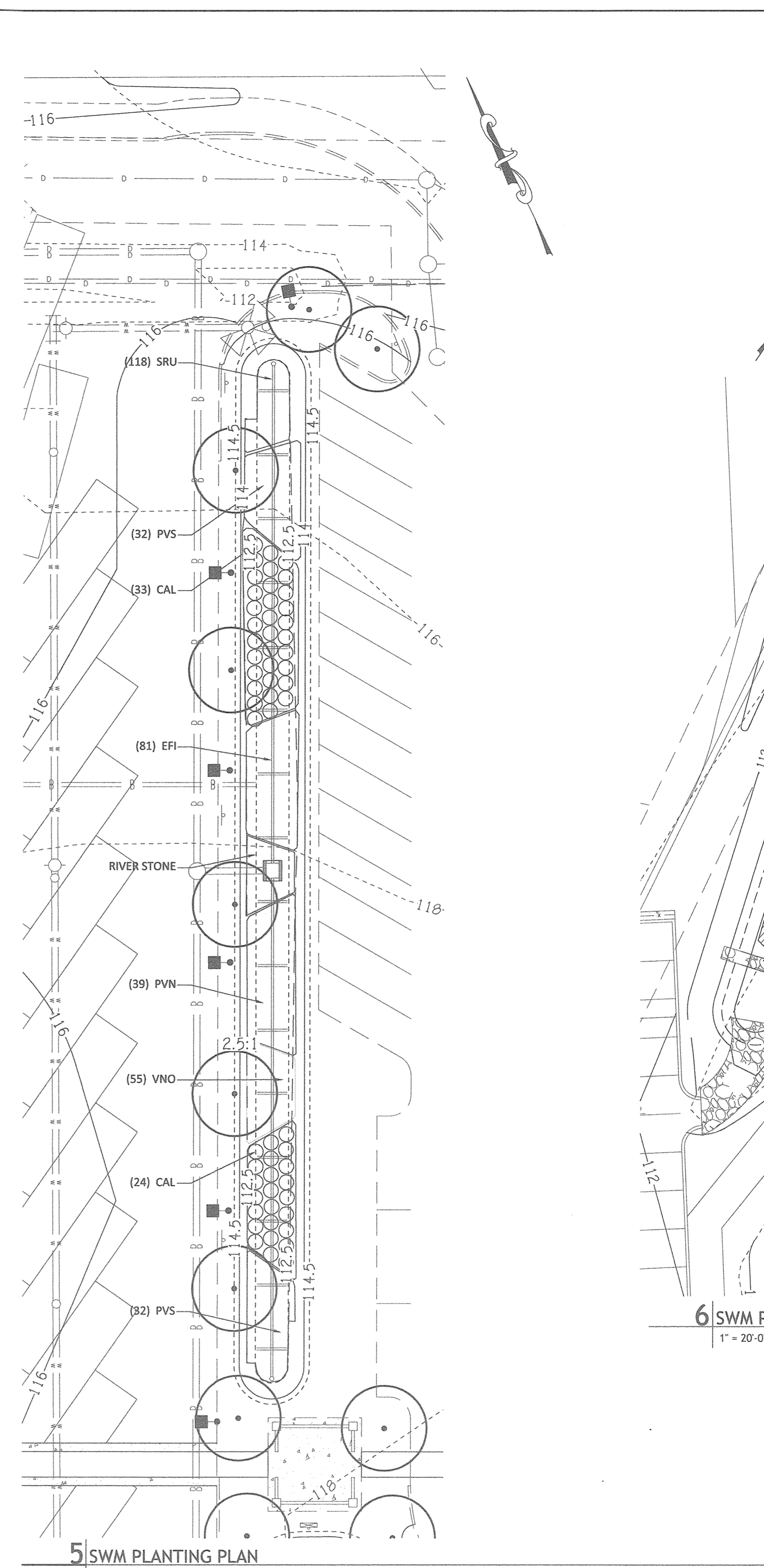
**2 SWM PLANTING PLAN**  
1" = 20'-0"



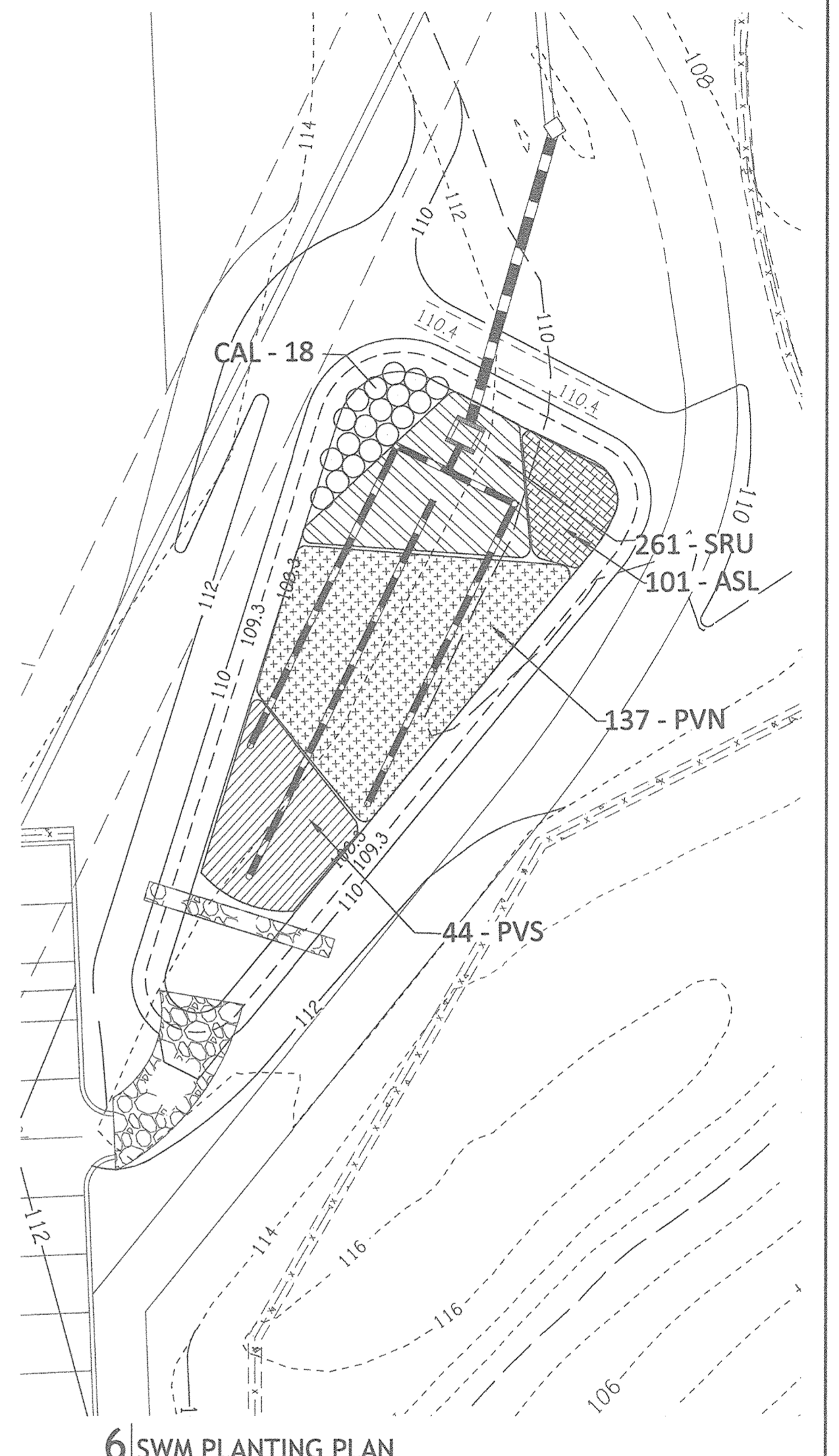
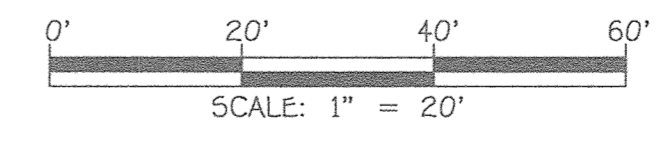
**3 SWM PLANTING PLAN**  
1" = 20'-0"



**4 SWM PLANTING PLAN**  
1" = 20'-0"



**5 SWM PLANTING PLAN**  
1" = 20'-0"



**6 SWM PLANTING PLAN**  
1" = 20'-0"

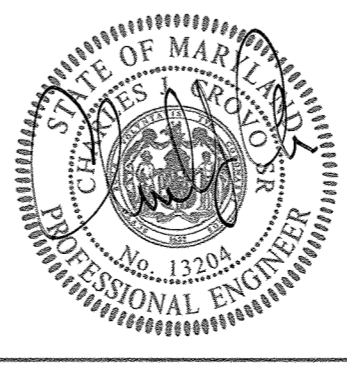
NOTE:  
SEE SHEET 29 FOR OVERALL SITE TREE AND SHRUB PLANTING PLAN.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-2895

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2020."  
*Charles J. Grovo, Sr., P.E.*  
CHARLES J. GROVO, SR., P.E.  
7/23/19 DATE

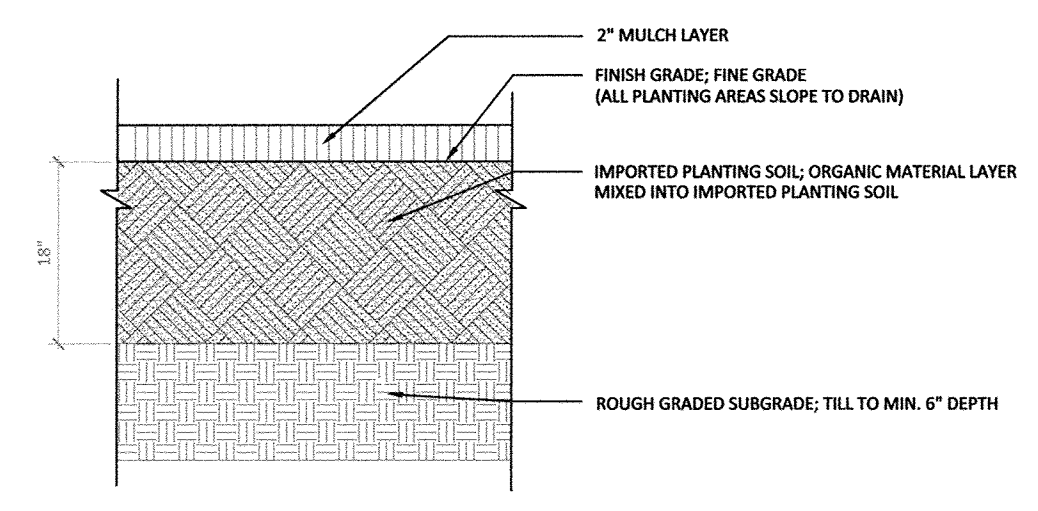
DATE	DESCRIPTION	REVISION BLOCK
6/14/19	Added Planting Plan 6 And Revised Planting Plan 2 & 5	
6/27/16	Revised Parcel Name & Combined Parcels 'B' & 'B-' Into Parcel 'D-D'	
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
Director - Department of Planning and Zoning <i>8-20-19</i> Date		
Chief, Division of Land Development <i>8/20/19</i> Date		
Chief, Development Engineering Division <i>8/19/19</i> Date		

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



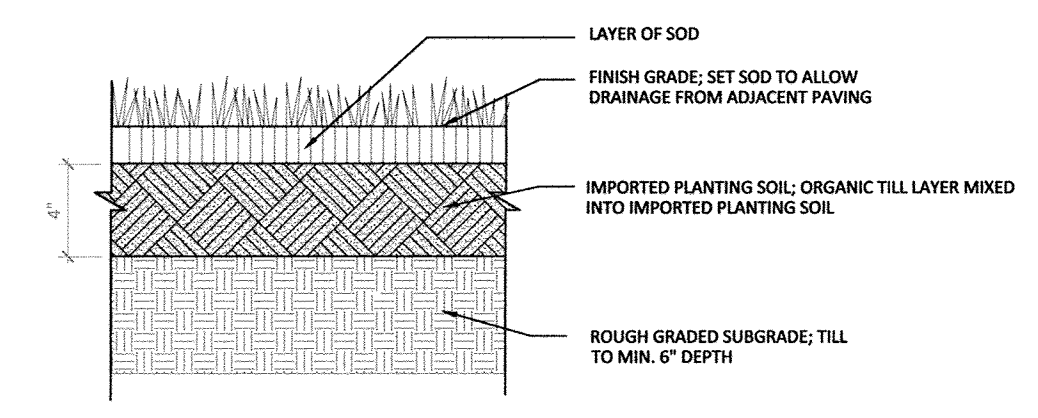
Address Chart					
Parcel Number	Street Address				
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076				
PROJECT	SECTION/AREA	PARCEL			
ELEMENTARY SCHOOL #42	N/A	'D-D'			
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
23708-23790	20	TOD	3B	FIRST	6012.01
WATER CODE	SEWER CODE				
---	---				

**REVISED LANDSCAPE PLAN**  
**'GREEN NEIGHBORHOOD'**  
**ELEMENTARY SCHOOL #42**  
OXFORD SQUARE  
PARCEL 'D-D'  
ZONED: TOD TAX MAP No.: 3B GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 20' DATE: JULY 23, 2019  
SHEET 30 OF 44



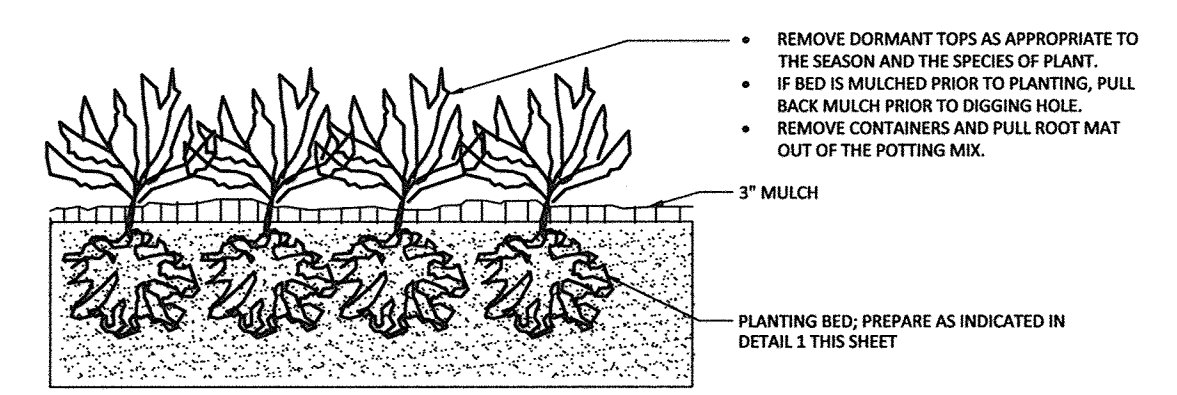
- PLANTING BED PREP. NOTES**
1. ROTOTILL SUBGRADE TO A MIN. DEPTH OF 6 INCHES PRIOR TO PLACEMENT OF TOPSOIL AND AMENDMENTS.
  2. PLACE PRE-MIXED PLANTING SOIL ON TOP OF TILLED SUBGRADE TO DEPTH AS INDICATED ON PLANS IN 6" LISTS.
  3. FINE GRADE FINISHED PLANTING BED PRIOR TO MULCHING.
  4. PLANT PER DETAILS AND SPECIFICATIONS.
  5. FERTILIZE AS REQUIRED.
  6. PROTECT PREPARED PLANTING BEDS FROM SUBSEQUENT CONSTRUCTION ACTIVITY.

**1 PLANTING BED PREPARATION - TYPICAL**  
N.T.S.

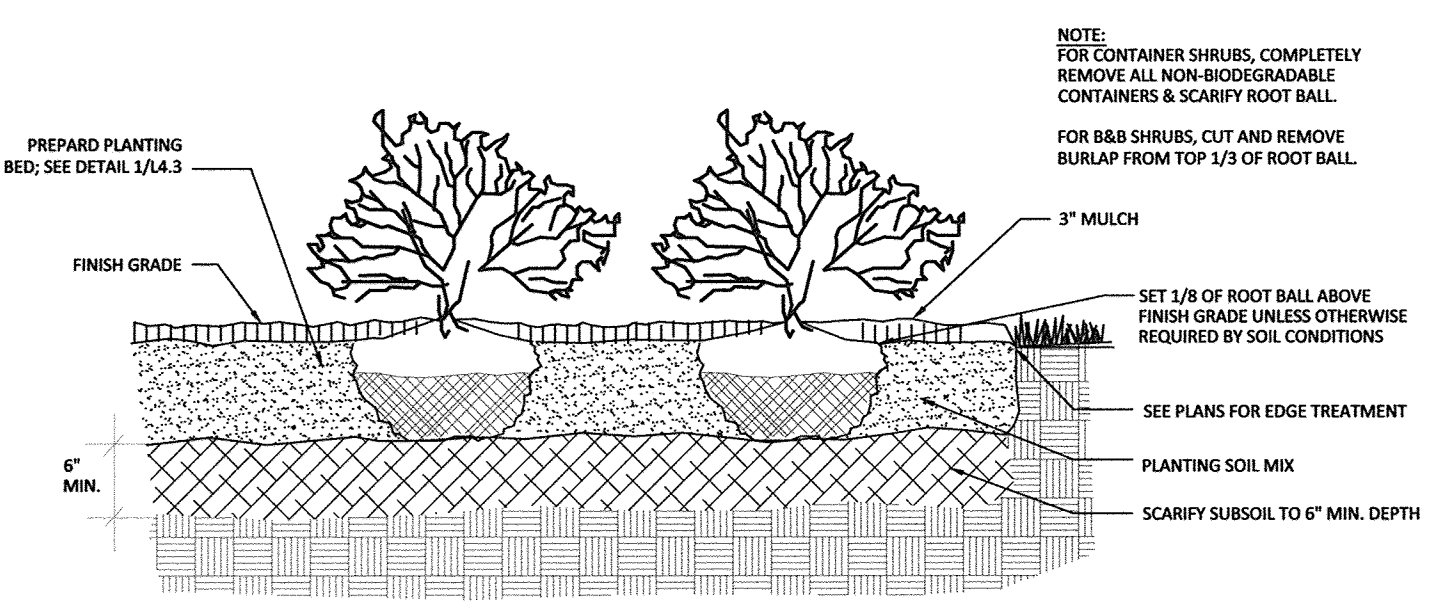


- SOD BED PREP. NOTES**
1. ROTOTILL SUBGRADE TO A MIN. DEPTH OF 6 INCHES PRIOR TO PLACEMENT OF TOPSOIL AND AMENDMENTS.
  2. PLACE PRE-MIXED PLANTING SOIL ON TOP OF TILLED SUBGRADE TO DEPTH OF 4".
  3. FINE GRADE FINISHED SOD AREA PRIOR TO SODDING.
  4. FERTILIZE AS REQUIRED.
  5. PROTECT PREPARED SOD AREAS FROM SUBSEQUENT CONSTRUCTION ACTIVITY.

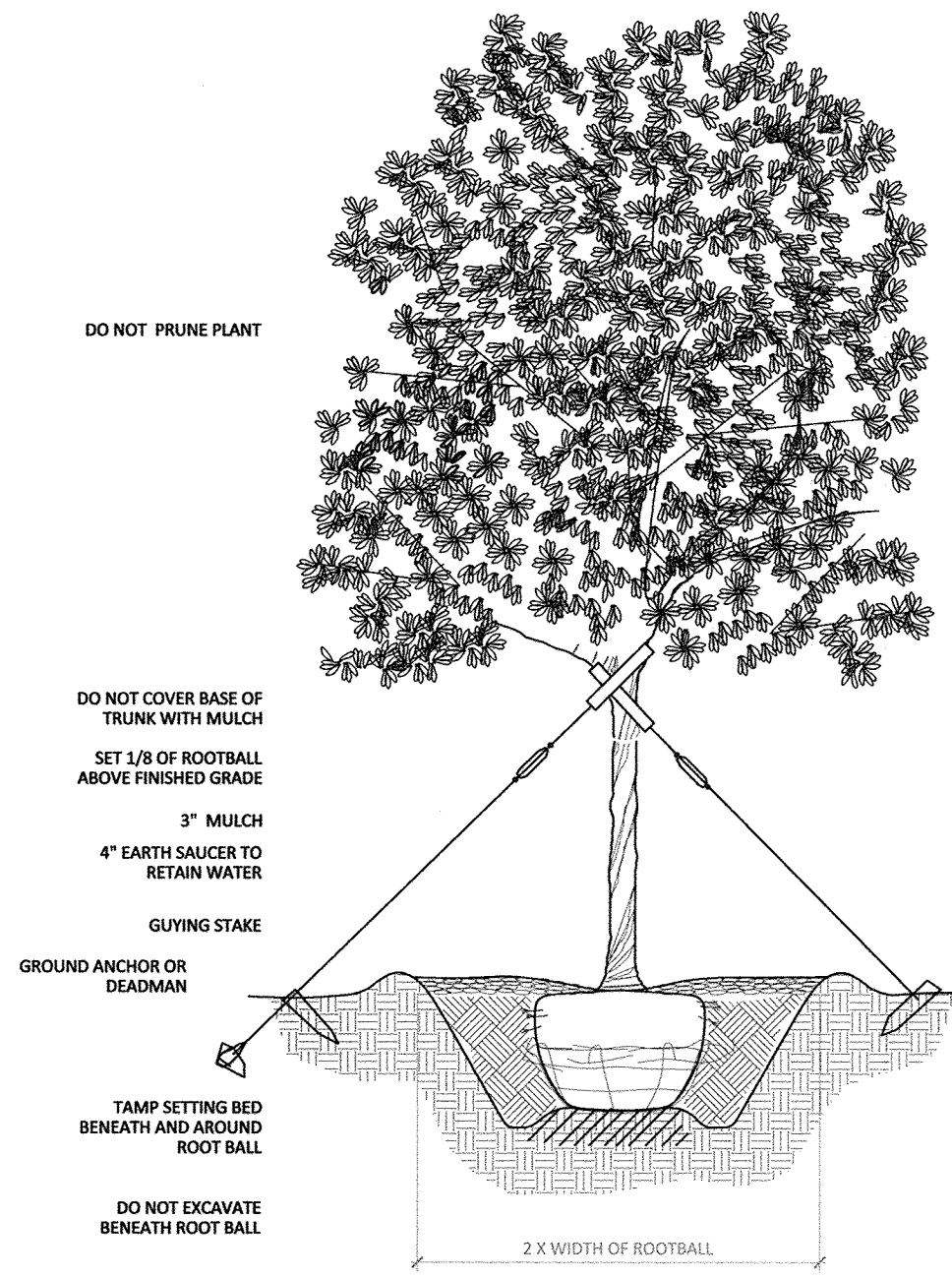
**2 SOD BED PREPARATION - TYPICAL**  
N.T.S.



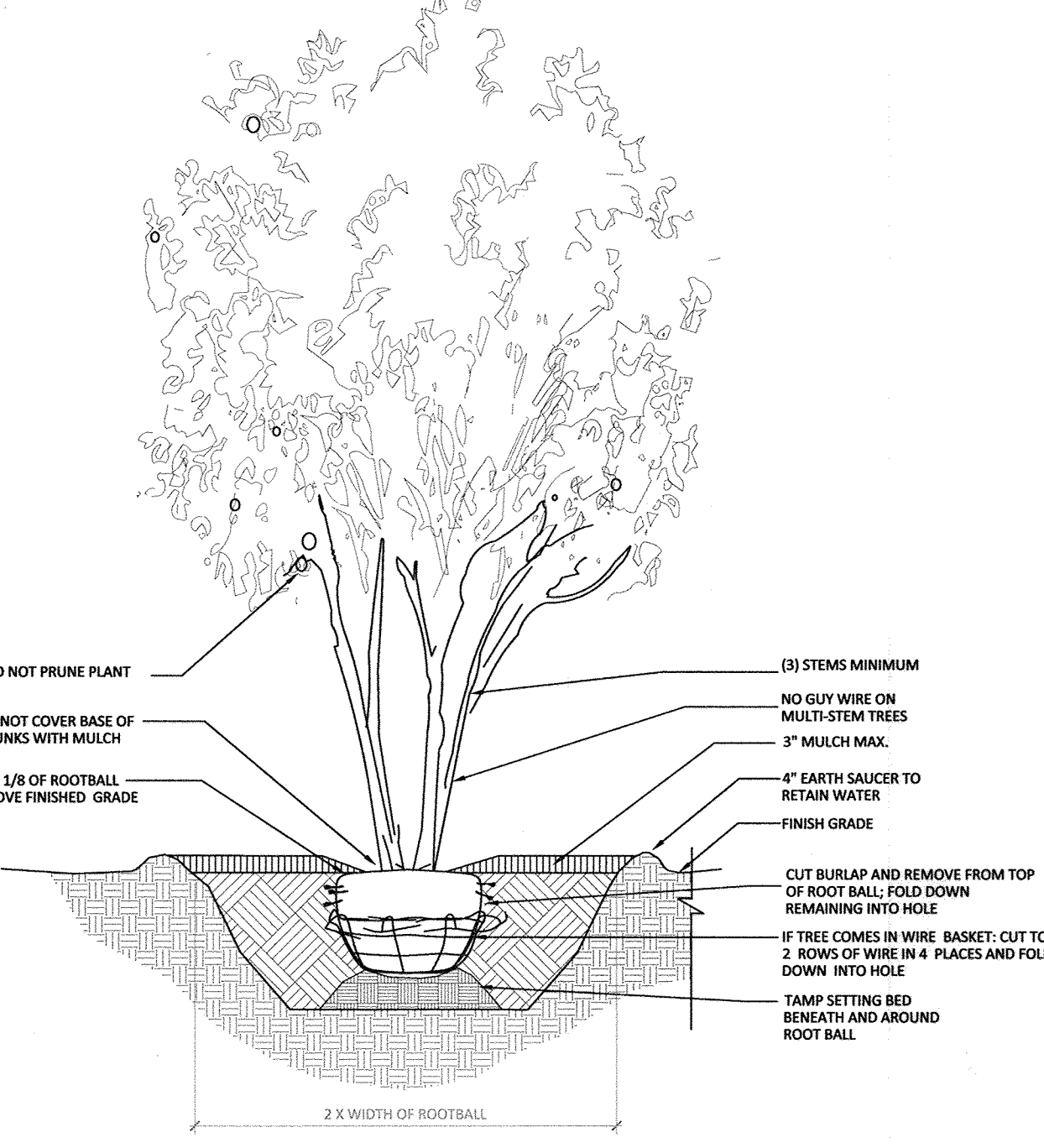
**3 GROUND COVER PLANTING - TYPICAL**  
N.T.S.



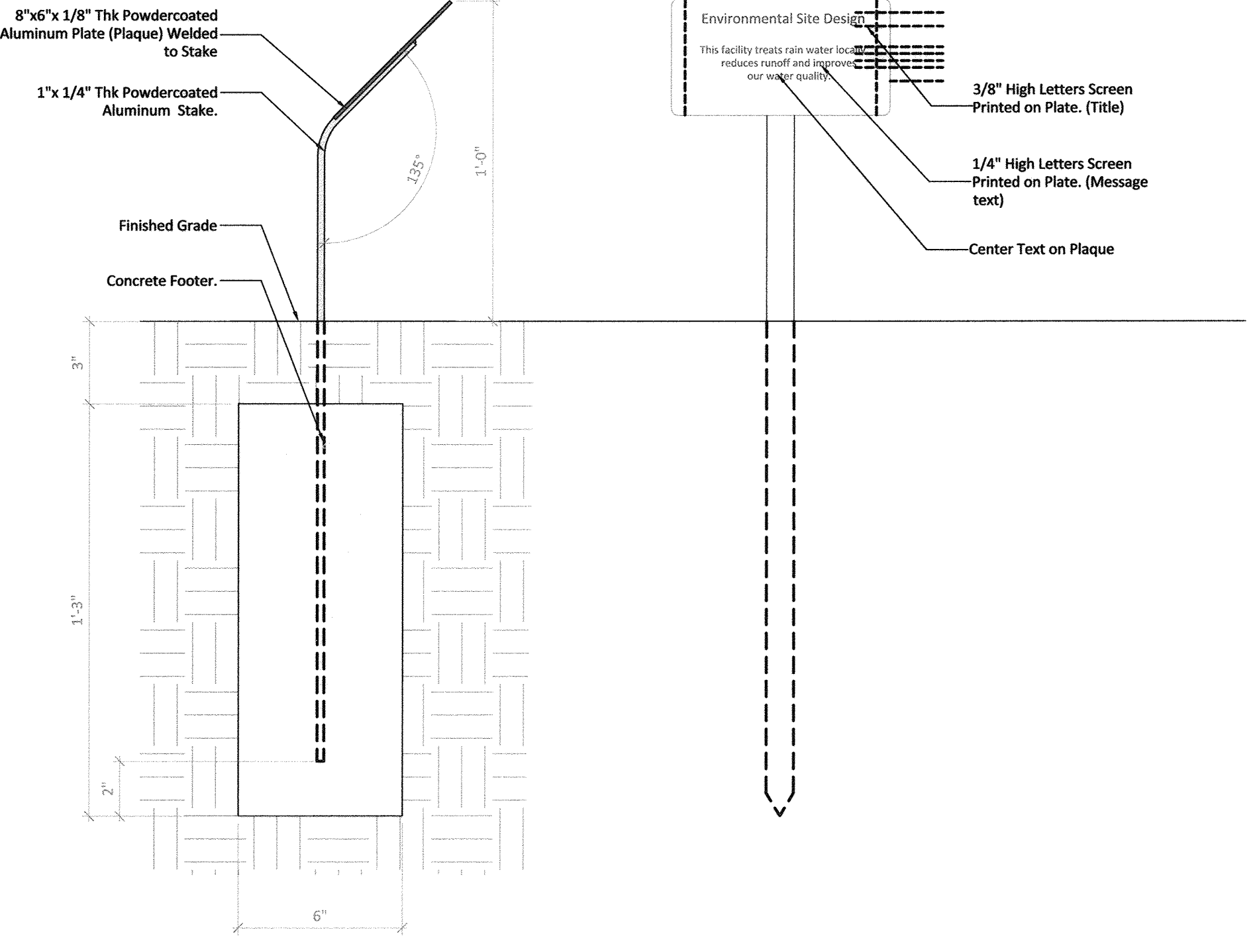
**4 SHRUB PLANTING - TYPICAL**  
N.T.S.



**5 DECIDUOUS TREE PLANTING - TYPICAL**  
N.T.S.



**6 MULTI-STEM TREE PLANTING - TYPICAL**  
N.T.S.



**7 ESD INTERPRETIVE SIGN**  
N.T.S.

SCHEDULE A PERIMETER LANDSCAPE EDGE					
PERIMETER	P1	P2	P3	PERIMETER TOTALS	LANDSCAPING TOTALS
CATEGORY	Buffer - Parking Adj. to Roadway	Buffer - Parking Adj. to Roadway	Dumpster Screening		
LANDSCAPE TYPE	E	E	D		
LINEAR FEET OF PERIMETER	34 LF	130 LF	107'		
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO		
CREDIT FOR WALL FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE IF NEEDED)	YES, 26 LF PIER & FENCE	YES, 142 LF PIER & FENCE	YES, 43 LF ENCLOSURE WALL		
NUMBER OF PLANTS REQUIRED					
SHADE TREES (1:60 W/ FENCE)	1	2	1	4	4
EVERGREEN TREES	-	-	6	6	6
SHRUBS (1:10 LF W/ FENCE)	3	13	-	16	16
NUMBER OF PLANTS PROVIDED					
SHADE TREES	0	0	0	0	71
EVERGREEN TREES	-	-	7	7	11
OTHER TREES (2:1 SUBSTITUTION)	2	4	-	6	17
SHRUBS (10:1 SUBSTITUTION)	10	25	-	35	619
(DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	-	-	-	-	-

SCHEDULE B PARKING LOT INTERNAL LANDSCAPING	
NUMBER OF PARKING SPACES	149
NUMBER OF TREES REQUIRED (1/20 SP)	8
NUMBER OF TREES PROVIDED	
SHADE TREES	8
OTHER TREES (2:1 SUBSTITUTION)	-

**8 TABULATION TABLES**  
N.T.S.

**AS-BUILT CERTIFICATION**  
THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.  
SIGNATURE: *D. Dorsey* DATE: *04/18*  
NAME: DENNIS A. DORSEY MD. LICENSE NO. 45261 EXP. DATE: 04/10/20



*As-Built*

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-2899

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
*Charles J. Provo, Sr.*  
CHARLES J. PROVO, SR., P.E.

DATE	DESCRIPTION	REVISION BLOCK
7/10/19	REVISED SCHEDULE B	
6/27/16	REVISED PARCEL NAME & COMBINED PARCELS 'D' & 'D-D' INTO PARCEL 'D-D'	

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Director - Department of Planning and Zoning  
Date: 4-18-16  
Chief, Division of Land Development  
Date: 4-13-16  
Chief, Development Engineering Division

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076
PROJECT	SECTION/AREA
ELEMENTARY SCHOOL #42	N/A
PLAT NOS.	BLOCK NO.
03766-03790	20
ZONE	TAX MAP
TOD	38
ELEC. DIST.	CENSUS TR.
FIRST	6012.01
WATER CODE	SEWER CODE
---	---

**LANDSCAPE CHARTS AND DETAIL SHEET**

'GREEN NEIGHBORHOOD'  
**ELEMENTARY SCHOOL #42**  
OXFORD SQUARE  
PARCEL 'D-D'

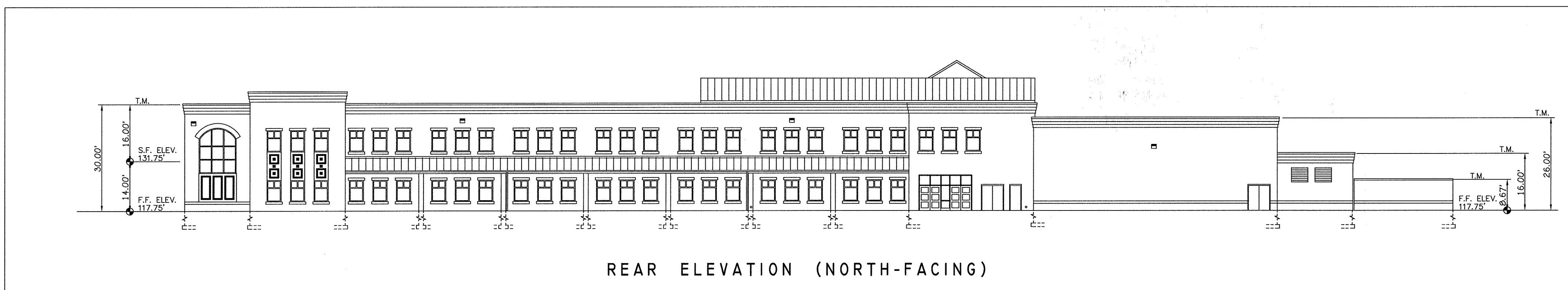
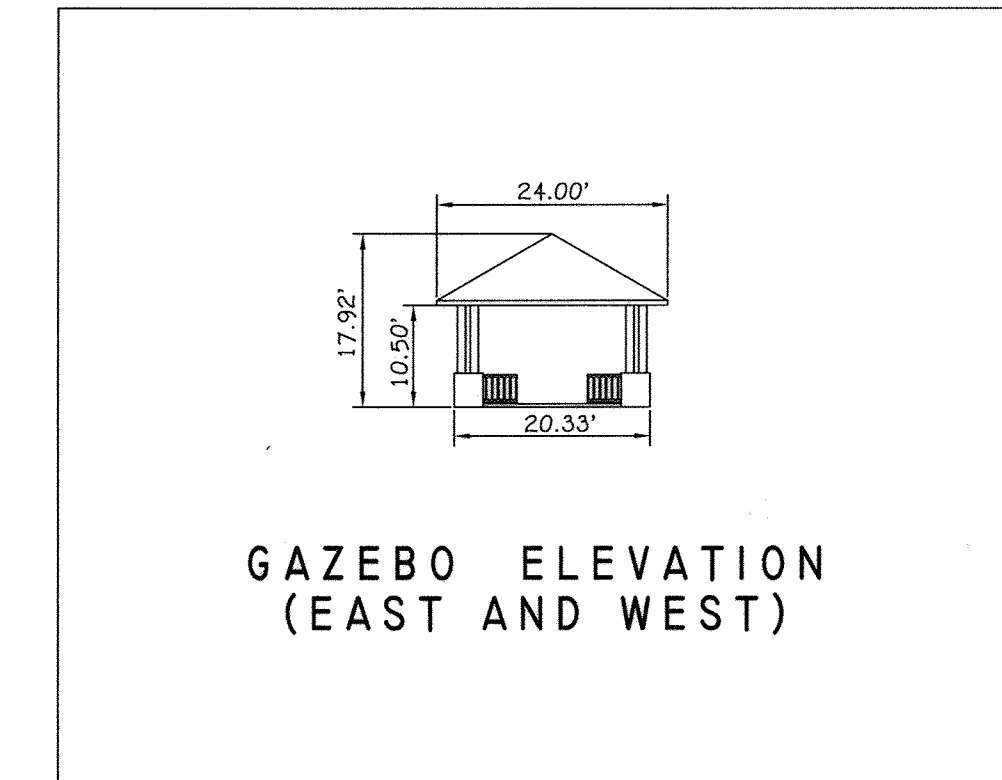
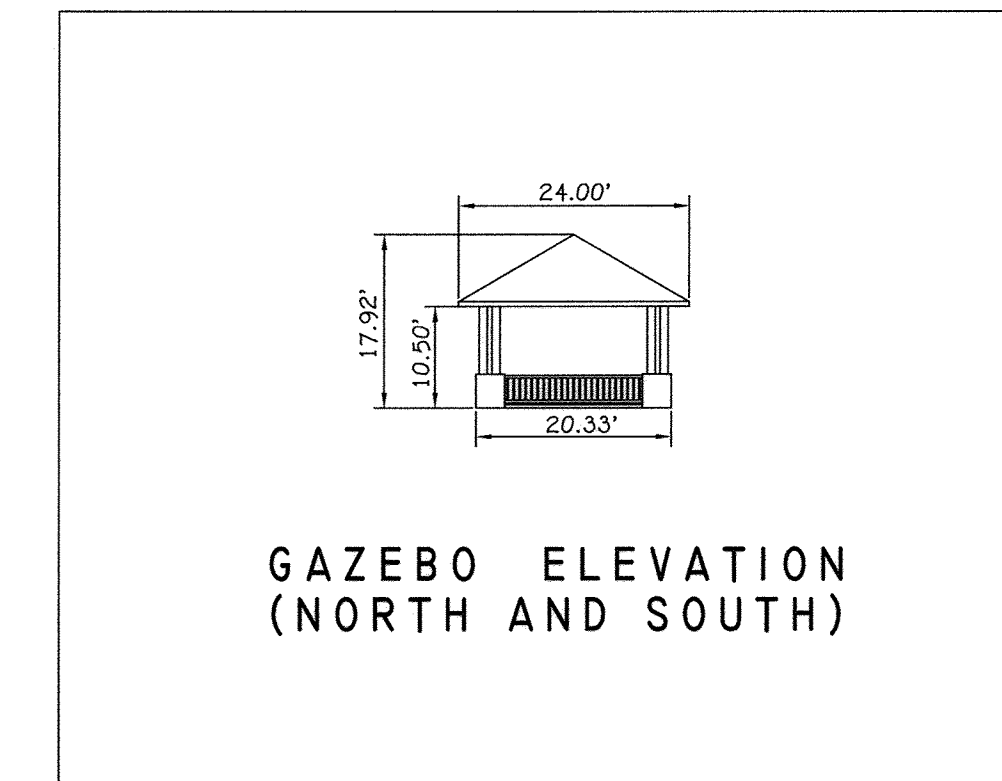
ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 7, 2016

SHEET 31 OF 44

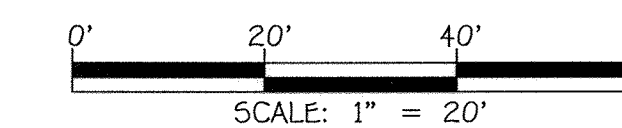








**BUILDING ELEVATIONS**  
SCALE: 1" = 20'



*As-Built*  
10/05/18

**AS-BUILT CERTIFICATION**  
THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.  
SIGNATURE: *Doris A. Dorsey* DATE: 10/05/18  
NAME: DORIS A. DORSEY, MD. LICENSE NO. 45261  
EXP. DATE: 04/10/20

*As-Built*

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 481-3299

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*Charles J. Grovo*  
CHARLES J. GROVO, SR., P.E.  
3/11/16  
DATE

DATE	DESCRIPTION	REVISION BLOCK
02/11/16	REVISED PARCEL NAME & COMBINED PARCELS 'B' & 'B-1' INTO PARCEL 'D-D'	

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Director - Department of Planning and Zoning  
Chief, Division of Land Development  
Chief, Development Engineering Division

4-18-16  
Date  
4-18-16  
Date  
4-13-16  
Date

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076

PROJECT	SECTION/AREA	PARCEL
ELEMENTARY SCHOOL #42	N/A	'D-D'
PLAT NOS.	BLOCK NO.	ZONE
23708 - 23730	20	TOD
TAX MAP	ELEC. DIST.	CENSUS TR.
3B	FIRST	6012.01
WATER CODE	SEWER CODE	
----	----	

**BUILDING ELEVATIONS**

**'GREEN NEIGHBORHOOD'  
ELEMENTARY SCHOOL #42  
OXFORD SQUARE  
PARCEL 'D-D'**

ZONED: TOD TAX MAP No.: 3B GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 20' DATE: MARCH 7, 2016

SHEET 34 OF 44

**GREEN NEIGHBORHOOD COMPLIANCE CHECKLIST**

Credit No.	Credit	Champion (Name, Role)	Requirement	Site Development Plan GN Strategies	Documentation Location	Points	Points
<b>A Innovative / Integrated Design Process</b>							
A-1	Green Development Plan	HCM/Planners	Shows how plans meet or better include checklist, natural resource inventory and energy analysis	Provide documentation	GN Report GN Plan	4	4
A-2	Interdisciplinary Project Team	HCM/Planner	Includes U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) Accredited professional, ecologist / environmental professional / landscape architect, and engineer	The design team includes a LEED AP professional, an ecologist, a civil engineer, an architect and landscape architect.	GN Plan	4	4
A-3	Third Party Certification	HCM/Planner	Certification of credits by independent LEED accredited professional	Alexander Design Studio	GN Plan	4	4
A-4	Innovative Design A	HCM/Planners	Green Streets	Green Streets	GN Report GN Plan SDR-16-013 Sheet 4	1	1
A-4b	Innovative Design B	HCM/Planners	Priority Parking for Fuel Efficient Cars	Reserve 5% for Priority Parking for Fuel Efficient Cars	GN Report GN Plan SDR-16-013 Sheet 4	1	1
A-4c	Innovative Design C	HCM/Planners	Compact Development	Residential Development will exceed 20 DU/AC	GN Plan GN Report	1	1
A-4d	Innovative Design D	HCM/Planners	Walkable Streets	More than 80% building frontage oriented toward public spaces; Less than 20% service and garage openings to public spaces.	GN Report GN Plan SDR-16-013 Sheet 4	1	1
<b>B Location, Linkages &amp; Community Context</b>							
B-1a	Redevelopment Site	HCM/Planners FCCO/Civil	Reuse of previously developed site (minimum 25% existing improvements, with sliding scale for credits based on amount of % impervious)	More than 25% area previously developed (former sand and gravel operation).	GN Plan Reference: Sketch Plan (S-15-001)	4	2
B-1b	Redevelopment Site (Brownfield)	N/A	Brownfield cleanup of redevelopment site	N/A	N/A	8	0
B-2	Historic Buildings	N/A	Preserve, restore or rehabilitate historic properties	N/A	N/A	4	0
B-3a	Transit Access & Amenities for Reduced Auto Dependence (Stop)	HCM/Planners	Site is served by transit stop within 1/2 mile (1 point) or 1/4 mile (2 points) walk from property	Private Shuttle Service with 2 stops (84% DU within 1/4 mile walking distance)	GN Plan Reference: Sketch Plan (S-15-001)	2	2
B-3b	Transit Access & Amenities for Reduced Auto Dependence (Shelter)	HCM/Planners	Provide county-specified transit shelter with benches and lighting at transit stop within 1/2 mile of property and provide pedestrian link to stop if none currently exists	Provide HiCo transit approved shelter for private shuttle service	GN Plan Reference: SDR-13-068	4	4
B-4	Proximity to Community Resources	N/A	Credit for 1/2 mile proximity to existing or proposed community resources such as schools, parks, library, post office, etc.	N/A	N/A	5	0
<b>C Compact, Complete &amp; Connected Development</b>							
C-1	Diversity of Uses	HCM/Planners	1 point per different land use; minimum 100 sf for each non-residential per DU. Minimum of 149,200 SF each of office, institutional and civic use, per 1,492 DU	Provide 3 Uses: Institutional, Civic and Office	GN Plan SDR-16-013 Sheet 4, 5 Reference: Sketch Plan (S-15-001)	3	3
C-2	Planned Service Area	HCM/Planners	Locate the project within the Planned Service Area	This project is within the Planned Service Area	GN Plan	5	5
C-3a	Pedestrian System (Path)	HCM/Planners	Provide an off-site path way/trail system with 2 connections to internal or external sidewalk, with minimal environmental impacts, long-term maintenance	Provide a shared use path system	GN Plan SDR-16-013 Sheet 4, 5 Reference: Sketch Plan (S-15-001)	2	2
C-3b	Pedestrian System (Connections)	N/A	Provide an off-site path way/trail connection	N/A	N/A	2	0
C-3c	Pedestrian System (Amenities)	HCM/Planners	Provide at least two different pedestrian experience features	Provide pedestrian amenities at trailheads, the lawn, school and residential mow	GN Plan SDR-16-013 Sheet 4, 5 Reference: Sketch Plan (S-15-001)	2	2
C-4	Connected On-site Street Network	HCM/Planners	Provide a gridded street network	More than 75% connected streets	GN Plan Reference: Sketch Plan (S-15-001)	2	2
C-5	Parking does not exceed Required Minimum	HCM/Planners	Surface parking lots do not exceed required parking ratios (1 point); plan takes advantage of shared parking provisions parking structure provided (in deck or beneath building, does not include garages within individual units) (4 points)	Provide common parking structures (4 points)	GN Plan Reference: Sketch Plan (S-15-001)	4	4
C-6	Exceed Minimum Open Space Requirements	HCM/Planners	1 point for every 5% above required minimum open space for the TOD zone, 1 point for every 10% of non-buildable HCM parcels above 50% of the site (up to 3 points).	Provide more than 25% increase in amenity space above the required minimum amenity space (TOD zoning regulations)	GN Report GN Plan SDR-16-013 Sheets 4, 5, 36 Reference: Sketch Plan (S-15-001)	5	5
C-7	Green Spaces and Amenity Areas	HCM/Planners	Open space along public/private roads available for public use	Publicly accessible open space will be provided at the Lawn and Barn community building on Parcel T and the community poolhouse and pool on OS Lot #107.	GN Plan Reference: SDR-15-074 Sketch Plan (S-15-001) SDR-13-068	2	2

D Environmental Preservation		E Site Landscape Improvements		F Water Conservation / Efficiency / Management		G Energy Efficiency	
D-1	Stream Restoration or Wetland Creation or Restoration	EcoScience	Restoration of degraded on-site stream channel, on-site restoration of degraded wetlands (sliding scale based on % of length of stream restored and % of acres of wetland created or restored)	E1	Landscaping Exceeds Minimum Requirements and Reduces Heat Island Effect	NA	1 point for each 10% increase in number of plants (must be native plants) provided above total minimum required in Landscape Manual, retain or plant trees on south and west sides of buildings and increase trees within parking areas and along sidewalks and paths
D-2	Habitat Management Plan	EcoScience	Prepare and implement plan that identifies, conserves and enhances natural resources and ecological communities (may include clean up of debris, removal of invasives, etc.)	E2	Native Plants	NA	1 point for 80%, 2 points for 90%, 3 points for 100% of all plants native to within 200 miles of site
D-3	25% Steep Slope Preservation	NA	Protect existing steep slopes as defined by County regulations (required: provide 25' minimum buffer at top of 25% slope (2 points))	E3	No Invasive Plants	HCM/Planners	No plants that are on DNR, SDCA or Cooperative Extension Service lists of invasive plants
D-4	15% Slope Preservation	FCCO/Civil HCM/Planners	Protect existing 15%+ slopes (protect minimum 1/2 acre, with sliding scale based on area or % protected)	E4	Livestock Turf	HCM/Planners	Turf does not exceed 30% of unpaved site (1 point); no turf on new created steep slopes 25% or in densely shaded areas (1 point); non-turf areas must be planted in native vegetation
D-5	Minimize Grading and Site Disturbance	FCCO/Civil HCM/Planners	Minimize limit of disturbance; leave at least 20% of site undisturbed (1 point), 30% (2 points), 40% (3 points); balance cut and fill on site (2 points); retaining walls 3-5.5' (deduct 1 point) retaining walls 6-8.9' (deduct 2 points), walls 9' and higher (deduct 3 points); no new created steep slopes over 25% (1 point); amend soil nutrients in turf and planting areas (1 point)	F-1	Rainwater Harvesting System	Straghan	Collect and make use of water runoff from minimum 50% of roof area; provide storage system and monitoring device and management program
D-6	Exceed Minimum Forest Conservation Requirements	EcoScience FCCO/Civil HCM/Planners	1 point for every 10% of existing forest retained above break even point; 1 point for every 10% of on-site forest planted in excess of afforestation obligation	F-2	Water-Permeable Walkways	NA	Use water-permeable materials in 50% or more of pathways; provide maintenance program
D-7	Save Trees above 12" Minimum Caliper	NA	1 point for protecting each 25% of all specimen trees (does not include specimen trees within forest conservation area or within forests that are being cleared)	F-3a	Low Impact Development (LID) Stormwater Treatment	FCCO/Civil	Meets minimum Design Manual requirements; no dry ponds allowed
D-8a	Exceed Minimum Stream Buffer Requirements	FCCO/Civil	75' buffer required for perennial and intermittent streams inside PSA, 100' buffer required for perennial and intermittent streams outside PSA	F-3b	Low Impact Development (LID) Stormwater Treatment	FCCO/Civil	Exceeds Design Manual requirements; maximize use of bioretention (esp. for parking lots), rain gardens, rain barrels, stormwater wetlands, green roof, etc.
D-8b	Exceed Minimum Stream Buffer Requirements	EcoScience FCCO/Civil HCM/Planners	2 points for each additional 25' of buffer provided in excess of requirements in D-8a outside wetland buffer or floodplain	G-1	Light Pollution Reduction	FCCO/Civil HCM/Planners	Shield all site lighting fixtures to reduce light and pollution below county code requirements; install sensors or timers on all exterior site lighting fixtures
D-9	Exceed Minimum Wetland Buffer Requirements	EcoScience FCCO/Civil HCM/Planners	2 points for each additional 25' of wetland buffer provided outside stream buffer or floodplain	G-2	Solar Orientation	NA	Orient 50% (1 point) or 75% (2 points) or 100% (3 points) of buildings to make available for solar strategies
D-10	Floodplain Buffer	NA	1 point for each 25' of buffer to floodplain outside required or provided wetland or stream buffer	G-3	Infrastructure Energy Efficiency	NA	Select high efficiency fixtures for parking lot and other site light fixtures

H Materials Beneficial to the Environment / Waste Management		I Operations and Maintenance Education	
H-1	Environmentally Preferable Site Products	Straghan FCCO/Civil HCM/Planners	Select products from a list including recycled materials (concrete, asphalt, tires, plastic, etc.), materials with recycled content, salvaged or engineered materials
H-2	Reduce Heat-Island Effect of Paving	NA	Use light-colored or high albedo materials and/or porous paving with a minimum Solar Reflectance Index of 0.8 or over for at least 30% of the site hardscape
H-3	Site Construction Waste Management	Straghan	Develop and implement a construction waste management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points)
H-4	Regionally Provided Materials	Straghan FCCO/Civil HCM/Planners	Use regionally produced materials for 20% of total site materials
I-1	HSA Documents	Straghan;	Include information about green site features and maintenance requirements in HSA documents
I-2	Maintenance Manual for Owner / HSA / Manager	Straghan	Provide a manual that includes information on how to maintain the green features of the site, including paving materials, landscaping and stormwater management
I-3	Public Awareness of Sustainable Community	Straghan; HCM	Develop a program to advertise the environmental benefits of the community

**WATER QUALITY CHART**

BMP FACILITY	WATER QUALITY PROVIDED (CF)
BMP NO.1 (F-C)	5,700 CF
BMP NO.2 (F-C)	3,154 CF
BMP NO.3 (F-C)	2,900 CF
BMP NO.4 (M-C)	770 CF
BMP NO.5 (M-C)	1,080 CF
BMP NO.6 (F-C)	2,085 CF
<b>TOTAL</b>	<b>16,689 CF</b>

20,571 CF  
3,540 CF  
4,335 CF  
1,040 CF  
31,701 CF

TOTAL GREEN NEIGHBORHOOD SITE POINTS		TOTAL GREEN NEIGHBORHOOD SITE POINTS	
167	80	167	80
Number of points required to obtain Green Neighborhood Allocations		90	

**Third Party Certification**

By affixing my signature below, the undersigned does hereby declare and affirm to Howard County that the targeted Green Neighborhood Site credits and point total as specified in this Green Neighborhood Site Compliance Checklist, are reasonable and achievable.

Signature: Charles Alexander Title: President Date: 3-17-16

Organization: ALEXANDER DESIGN STUDIO

Submission (mark "X" where applicable):  Site Development Plan (SDP-16-013)

**AS-BUILT CERTIFICATION**

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN AND THAT THIS PLAN MEETS THE APPROVED PLAN AND SPECIFICATIONS.

SIGNATURE: D. Dorsey DATE: 1/23/18

NAME: DENNIS A. DORSEY MD. LICENSE NO.: 43261

EXP. DATE: 4/19/20



**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21042  
(410) 461 - 2995

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."

Charles J. Orkovo, SE., P.E. DATE: 3/21/16

7/16/10 REVISED WATER QUALITY CHART  
5/17/16 REVISED PARCEL NAME & COMBINED PARCELS 'D' & 'B-D' INTO PARCEL 'D-D'

DATE DESCRIPTION REVISION BLOCK

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Director - Department of Planning and Zoning  
Valerie Jones 4-18-16  
Date  
Chief, Division of Land Development  
Matthew Jones 4-22-16  
Date  
Chief, Development Engineering Division  
Charles Orkovo 4-13-16  
Date

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



Address Chart

Parcel Number	Street Address
D-D	7030 BANBURY DRIVE HANOVER, MD 21076

PROJECT	SECTION/AREA	PARCEL
ELEMENTARY SCHOOL #42	N/A	'D-D'

PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
03780-03790	20	TOD	3B	FIRST	6012.01

WATER CODE: ---- SEWER CODE: ----

**GREEN NEIGHBORHOOD COMPLIANCE CHECKLIST**

'GREEN NEIGHBORHOOD' ELEMENTARY SCHOOL #42  
OXFORD SQUARE  
PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 3B GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT: HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 7, 2016

SHEET 35 OF 44

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As-Built

**GREEN NEIGHBORHOOD NOTES:**

- A-2 THE DESIGN AND DEVELOPMENT TEAM INCLUDES A LEED AP (MATTHEW FITZSIMMONS- HORD COPLAN MACHT), ENVIRONMENTAL PROFESSIONAL (JOHN CANDLES- ECO-SCIENCE PROFESSIONALS, INC.), LANDSCAPE ARCHITECT (JOSH KILRAIN- HORD COPLAN MACHT) AND AN ENGINEER (CHARLES CROVOS, PE- FISHER COLLINS & CARTER)
- A-3 THE THIRD PARTY CERTIFICATION IS PROVIDED BY CHARLES ALEXANDER, LEED-AP OF ALEXANDER DESIGN STUDIOS.
- B-1a THE 118.5 ACRE DEVELOPMENT CONSISTS OF 30.4 ACRES OF PREVIOUSLY DEVELOPED LAND (25.7% OF THE OXFORD SQUARE DEVELOPMENT).
- B-3a OXFORD SQUARE WILL PROVIDE TWO TRANSIT STOPS FOR THE PROPOSED PRIVATE SHUTTLE SERVICE CONNECTING OXFORD SQUARE TO THE DORSEY MARC COMMUTER RAIL STATION. THE STOPS WILL BE WITHIN 1/4 WALKING DISTANCE TO ALL DWELLING UNITS, EXCEPT FOR THE UNITS FURTHERS NORTH ON PARCEL 'Z'.
- B-3b OXFORD SQUARE WILL PROVIDE ONE SHELTER AT ONE OF THE PRIVATE SHUTTLE STOPS. THE SHELTER WILL COMPLY WITH COUNTY -APPROVED CRITERIA INCLUDING BENCHES AND LIGHTING.
- C-1 OXFORD SQUARE WILL PROVIDE THREE DIVERSE USES OTHER THAN RESIDENTIAL: INSTITUTIONAL (MIDDLE SCHOOL BUILDING AND OUTDOOR CLASSROOM SPACE, ELEMENTARY SCHOOL), CIVIC (SCHOOL'S RECREATIONAL PLAYING FIELDS AND SHARED-USE PATH) AND OFFICE.
- C-2 OXFORD SQUARE IS LOCATED WITHIN THE EXISTING PLANNED WATER AND SEWER SERVICE AREA.
- C-3c OXFORD SQUARE WILL PROVIDE A MINIMUM OF TWO PEDESTRIAN SYSTEM AMENITY EXPERIENCES: 1) SHARED USE PATH AND NATURE TRAIL (TRAIL SIGNS AND MARKERS, BENCHES, LITTER RECEPTACLES, INFORMATIONAL SIGNS, BIKE RACKS), 2) THE LAWN (BENCHES, EXTERIOR LIGHTING, SHADE TREES, INFORMATIONAL SIGNS), 3) RESIDENTIAL COURTYARDS AND MEWS (BENCHES), AND 4) SCHOOL SITES (PLAYING FIELDS, BENCHES, BIKE RACKS)
- D-8b OXFORD SQUARE WILL PROVIDE A MINIMUM 75 FT ENHANCED STREAM BUFFER.
- E-3 OXFORD SQUARE WILL NOT PLANT INVASIVE PLANTS.
- E-4 OXFORD SQUARE WILL NOT PLANT TURF IN DENSELY SHADED AREAS.
- F-3b OXFORD SQUARE WILL PROVIDE AT LEAST 51% WATER QUALITY VOLUME STORED AND INFILTRATED/RE-USED ON-SITE.

**GREEN NEIGHBORHOOD CALCULATIONS & TABLES:**

**A-4b Priority Parking for Low-Emitting and Fuel Efficient Vehicles**

	Overall Development	SDP
Total Number of Off-Street Parking Spaces:	1,202 Spaces	149 Spaces
Total Number of Proposed Preferred Parking Spaces:	65 Spaces	8 Spaces
Percent of Preferred Parking Spaces:	5.4%	5.4%

Note: Overall Development calculations summarize all filed Site Development Plans. The Proposed Parking Lot Expansion Adds 39 Additional Parking Spaces of Which Two Will be Designated As Priority Parking For Low-emitting And Fuel Efficient Vehicles.

**A-4c Compact Development**

	Complete Build-Out	SDP
Total Dwelling Units:	1,492 DU	50.8 AC
Residential Land Area:	50.8 AC	29.39 DU/AC

**A-4d Walkable Streets**

	Complete Build-Out	SDP
Length of Buildings Frontage Oriented Towards the Public Space:	12,352 FT	168 FT
Total Length of Building Frontage:	14,620 FT	317 FT
% of Building Frontage Oriented Towards the Public Spaces:	84.5%	53.0%
Length of Building Frontage with Service or Garage Openings:	1,222 FT	0 FT
Length of Building Frontage Oriented Towards Public Spaces (Including Service and Garage Openings):	13,574 FT	168 FT
% of Building Frontage with Service or Garage Openings:	9.0%	0.0%

**B-1a Redevelopment Site**

Gross Site Area:	118.5 Acres
Area of Existing Development (Acres):	30.4 Acres
Percent of Previously Developed:	25.7%

**B-3a Transit Access & Amenities for Reduced Auto Dependence (Stop)**

	Total Number of Qualifying Units	Percent of All Units
Residential Buildings within 1/4 Mile (<1,320 FT)	1,402 DU	94%
All Buildings, except the most distant building on Parcel 'Z'		

**C-1 Diversity of Uses**

Residential Uses	Number of Units	Percent of Total Units
Apartments and Townhouses	1,492 DU	100%
Nonresidential Uses		
Office:	166,000 SF	111 SF/DU
Institutional:		
Middle School	95,747 SF	
Middle School Outdoor Classroom Space	2,500 SF	
Elementary School	117,222 SF	
Institutional Subtotal:	215,469 SF	144 SF/DU
Civic:		
Recreational Playing Fields (School Site)	236,139 SF	
Northern Shared-Use Path (8 FT wide)	22,944 sf	
Southern Shared-Use Path (8 FT wide)	8,016 SF	
Civic Subtotal:	267,099 sf	179 SF/DU

Note: Parcel 'B-3' provides Elementary School and 3,912 SF of the Northern Shared Use Path.

**C-3a Pedestrian System (Paths and Trails)**

Northern Shared Use Path:	Width of Path: 8 FT Length: 2,868 FT (0.54 Miles)
Southern Shared Use Path:	Width of Path: 8 FT Length: 1,002 FT (0.19 Miles)
Nature Path	Width of Path: 8 FT Length: 1,129 FT (0.21 Miles)

Note: Parcel 'B-3' contributes 489 Linear Feet of the Northern Shared Use Path.

**C-4 Street Connections**

Street Name / ID (per S-15-001)	Street Length	Qualifying Street Length
Saint Margarets Boulevard	1,684 FT	1,684 FT
Banbury Drive	2,491 FT	2,491 FT
Southmoor Street	960 FT	960 FT
Dene Court	514 FT	- FT
Crowley Street	1,136 FT	947 FT
Danvers Street	465 FT	465 FT
Beaumont Place	1,450 FT	1,450 FT
Dunstead Street	240 FT	- FT
Headley Street	120 FT	- FT
Pattison Street	120 FT	- FT
Road 1	736 FT	736 FT
Alden Way	554 FT	554 FT
Marston Way	1,613 FT	928 FT

**Summary**

Total Street Length:	12,083 FT
Total Connected Street Length:	10,215 FT
Percent Connected Streets:	84.5%

**C-5 Parking Does Not Exceed Required Minimum**

Number of Spaces within a Common Parking Structure: 1,708 spaces  
Note: No parking structures will be constructed with this SDP.

**C-6 Exceed Minimum Open Space**

Net Acreage:	107.51 AC
Required Amenity Space (TOD: 10% of Net Acreage):	10.75 AC
Provided Amenity Space:	16.33 AC
Percent Increase above the Minimum Required:	51.9%

Note: This SDP Contributes 2.79 Acres. This is 0.46 Acres Less Than Projected On S-15-001. The Extension Of The Bus Loop And Expanded Parking Lot Proposed By This SDP Reduces The Middle School's Amenity Area By 0.31 Acres As Developed Under SDP-12-075.

**C-7 Green Spaces and Amenity Areas**

Parcel	Road Frontage	Amenity Type	Amenity Area
Open Space 1: Lawn and Barn Parcel '1' (SDP-15-074)	1/108 FT (length along Banbury Drive)	Lawn: passive recreation and gathering space Barn: learning, meeting and performance space	66,292 SF (1.52 AC)
Open Space 2: Pool House and Pool O.S. lot #107 (SDP-13-068)	1/138 FT (length along Dene Court)	Pool house, Pool, Fitness Room, and Warming Kitchen	11,282 SF (0.26 AC)

**D-4 15% Slope Preservation**

	GN Boundary
Total Area of Slopes 15-24.9%:	506,841 SF
Area of Undisturbed Slopes 15-24.9%:	200,866 SF
Percent of Undisturbed Slopes:	39.6%

Note: 1. The area of undisturbed slopes is the summation of slopes impacted by the greatest extent of LODs accumulated from the entire development.  
2. Includes area of development per Sketch Plan and future environmental restoration work.

**D-5 Minimize Grading and Site Disturbance**

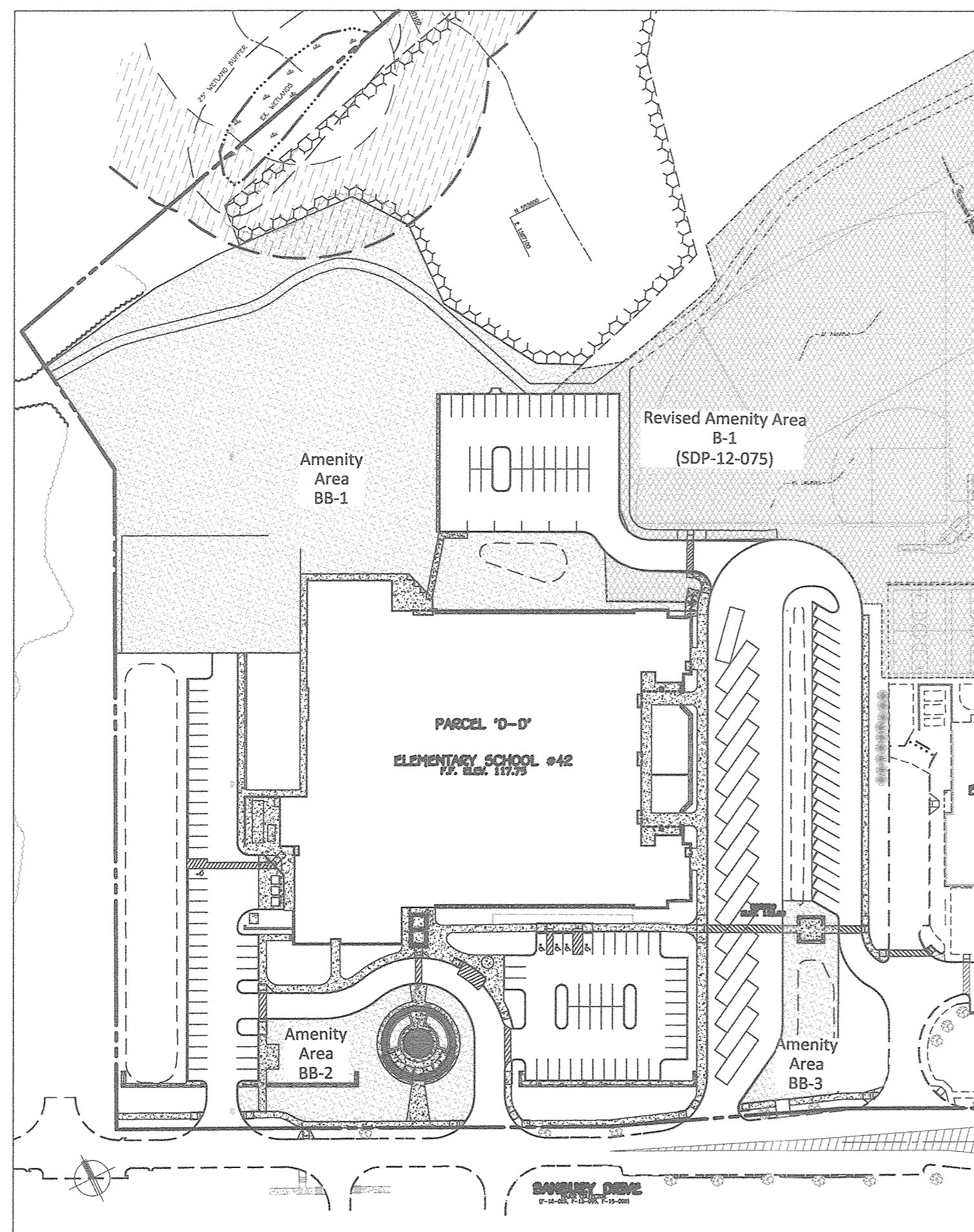
	Complete Build Out
Gross Area of Site	118.5 AC
Existing Impervious Cover	30.4 AC
Area of Site	89.1 AC
Area of Site to Remain Undisturbed	24.2 AC
Percent of Site to Remain Undisturbed:	27.5%
Ratio of Cut to Fill:	1.16 Ratio
Retaining Wall:	<3 FT

Note: 1. Complete Build Out Calculations are based on the aggregate greatest extent of LOD's from entire development.  
2. No dirt will be imported or exported from Oxford Square.

**D-8b Exceed Minimum Stream Buffer Requirements**

Total Stream Buffer Width:	150 FT
Width of Buffer Exceeding Requirements:	75 FT
Total Length of Stream Buffer:	1,984.2 FT
Length of Stream Buffer Outside Other Buffers:	1,352.3 FT
Percent of Stream Buffer Outside Other Buffers:	68.2%

**AMENITY SPACE (1"=100')**



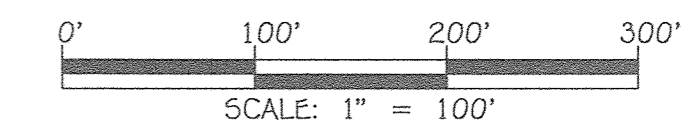
**E-1 Landscaping**

Plants Required	Shade Trees	Evergreen	Shrubs	Total	Percent
Number of Plants Required by Landscape Manual	12	6	16	34	26.5
Number Excess Plants Required for GN Credit	3	2	4	9	
Landscape Manual and GN Requirements	15	8	20	43	

**Plants Provided**

Plants Provided	Shade Trees	Shade Tree (Substitute)	Evergreen	Evergreen (Substitute)	Other Trees (Substitute)	Shrubs	Shrub (Substitute)	Total
Number of Plants Provided to Meet Landscape Manual	12	0	6	0	0	16	0	34
Number of Plants Provided to Meet GN Credits	5	0	0	2	0	4	0	6
Total Number of Plants Provided	17	0	6	2	0	20	0	40

Notes: 1. Required Shade Trees (5 AFA, 3 ZSE, 4 BDH)=12 shade trees  
2. Excess Shade Tree (4 BDH=10 LST + 11 OAR + 7 POC + 7 TD + 20 UV)=59 native shade trees  
3. Required Evergreen Trees (6 IOP)= 6 evergreens  
4. Excess Evergreen Substitute (2 M)= 2 evergreens  
5. Required Shrubs (18 HYP)= 16 shrubs  
6. Excess Native Shrubs (4 IV)= 4 shrubs  
7. This plan provides 56 additional native shade trees over the project's 20% goal.



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CENTENNIAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21046  
(410) 461 - 2295

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2020."

CHARLES J. CROVOS, SR., P.E.

7/21/19 DATE

6/14/19	Expanded Parking Lot Layout
6/27/19	Revised Parcel Name & Combined Parcels 'B' & 'B-3' Into Parcel 'D-D'
DATE	DESCRIPTION
REVISION BLOCK	
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Matthew J. Fitzsimmons</i>	8-26-19 Date
Director - Department of Planning and Zoning	
<i>Charles J. Crovos, Sr.</i>	8/20/19 Date
Chief, Division of Land Development	
<i>Matthew J. Fitzsimmons</i>	8/9/19 Date
Chief, Development Engineering Division	

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



Address Chart					
Parcel Number	Street Address				
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076				
PROJECT	SECTION/AREA				
ELEMENTARY SCHOOL #42	N/A				
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
23700-23790	20	TOD	3B	FIRST	6012.01
WATER CODE	SEWER CODE				
---	---				

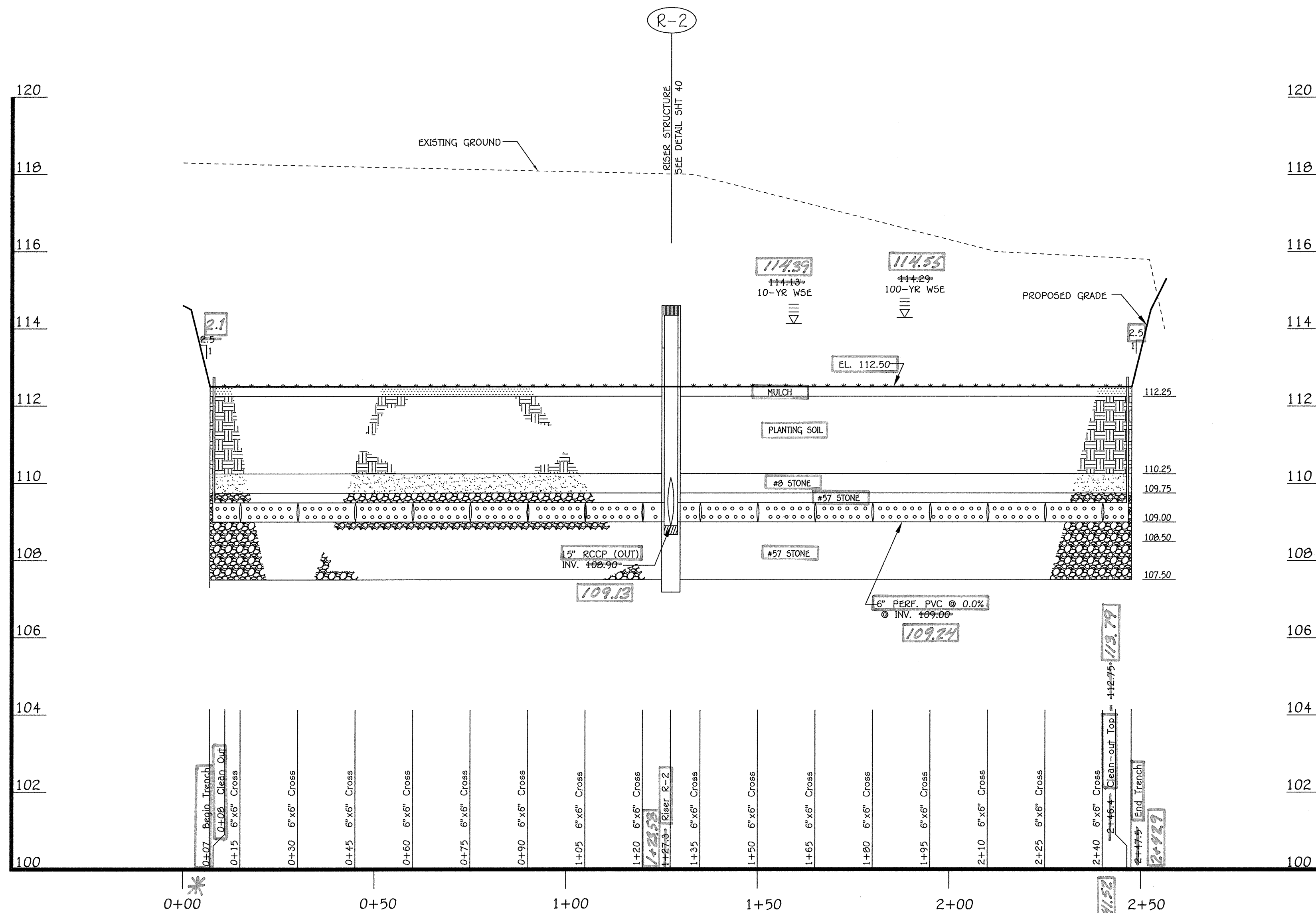
**REVISED GREEN NEIGHBORHOOD NOTES AND TABLES**

'GREEN NEIGHBORHOOD'  
ELEMENTARY SCHOOL #42  
OXFORD SQUARE  
PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 3B GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 100' DATE: JULY 23, 2019

SHEET 36 OF 44



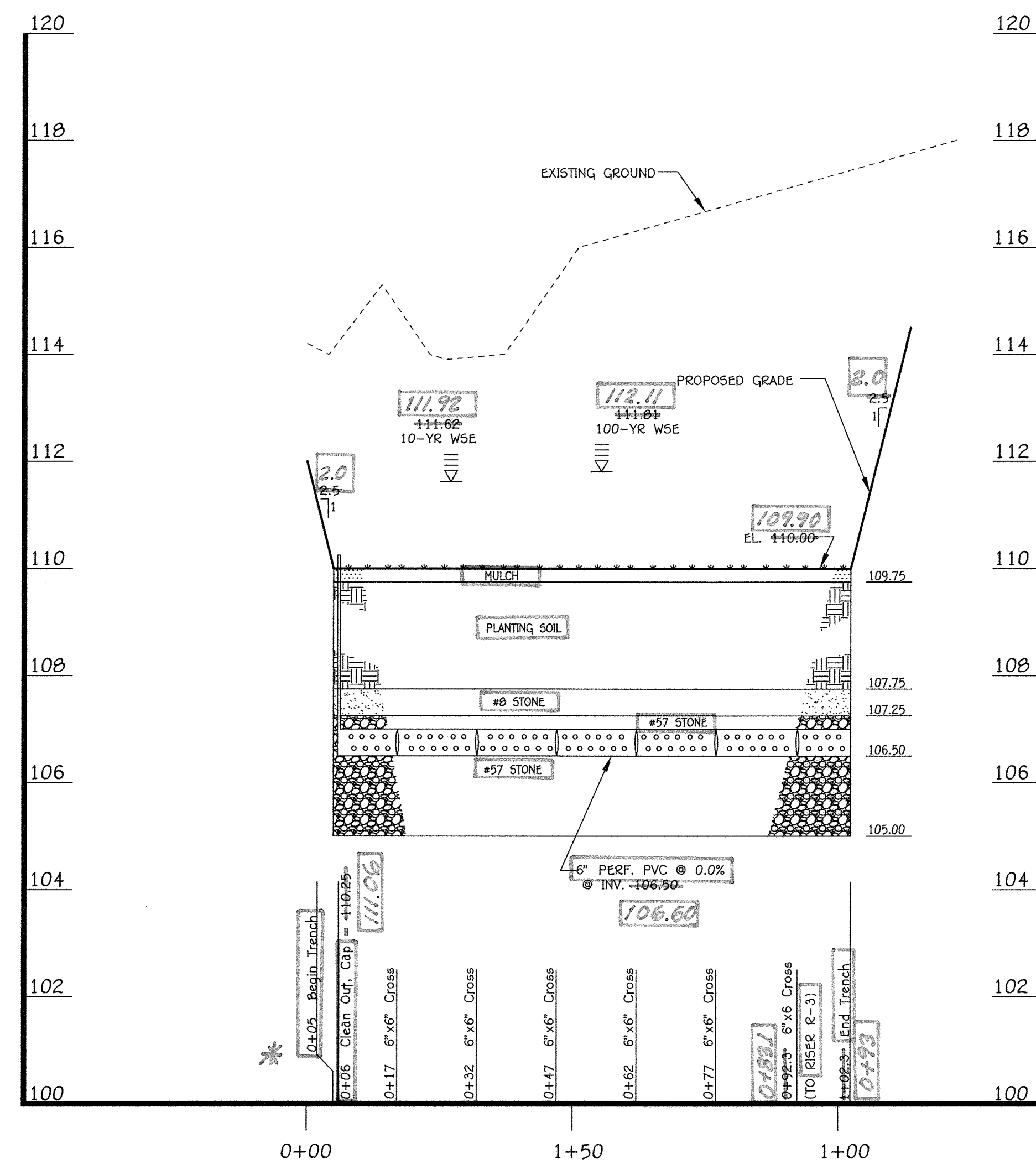


**BMP #2 UNDERDRAIN PROFILE**

SCALE:  
HORIZ: 1" = 20'  
VERT: 1" = 2'

NOTES:  
1. SEE BIORETENTION FACILITY TYPICAL SECTION SHIT 40  
2. FILTER FABRIC NOT SHOWN IN PROFILES FOR CLARITY.

\* BEGINNING OF TRENCH STATION HELD AS REFERENCE



**BMP #3 UNDERDRAIN PROFILE**

SCALE:  
HORIZ: 1" = 20'  
VERT: 1" = 2'

**AS-BUILT CERTIFICATION**  
I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN AND THAT THIS PLAN MEETS THE APPROVED PLAN AND SPECIFICATIONS.  
SIGNATURE: *D. Dorsey* DATE: 10/03/16  
NAME: DENNIS A. DORSEY MD. LICENSE NO. 44261  
EXP. DATE: 4/10/20

0' 20' 40' 60'  
SCALE: 1" = 20'

**AS-BUILT**

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CENTENNIAL SQUARE OFFICE PARK - 10272 BALDWIN NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-2895

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."

*Charles J. Grovo, Sr.*  
CHARLES J. GROVO, SR., P.E.

3/2/16  
DATE

DATE	DESCRIPTION
9/27/16	REVISED PARCEL NAME & COMBINED PARCELS 'D' & 'D-1' INTO PARCEL 'D-D'
REVISION BLOCK	
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Nancy P. Lee</i>	4-18-16
Director - Department of Planning and Zoning	Date
<i>Walter Salas</i>	4-28-16
Chief, Division of Land Development	Date
<i>Chris Edler</i>	4-13-16
Chief, Development Engineering Division	Date

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
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8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



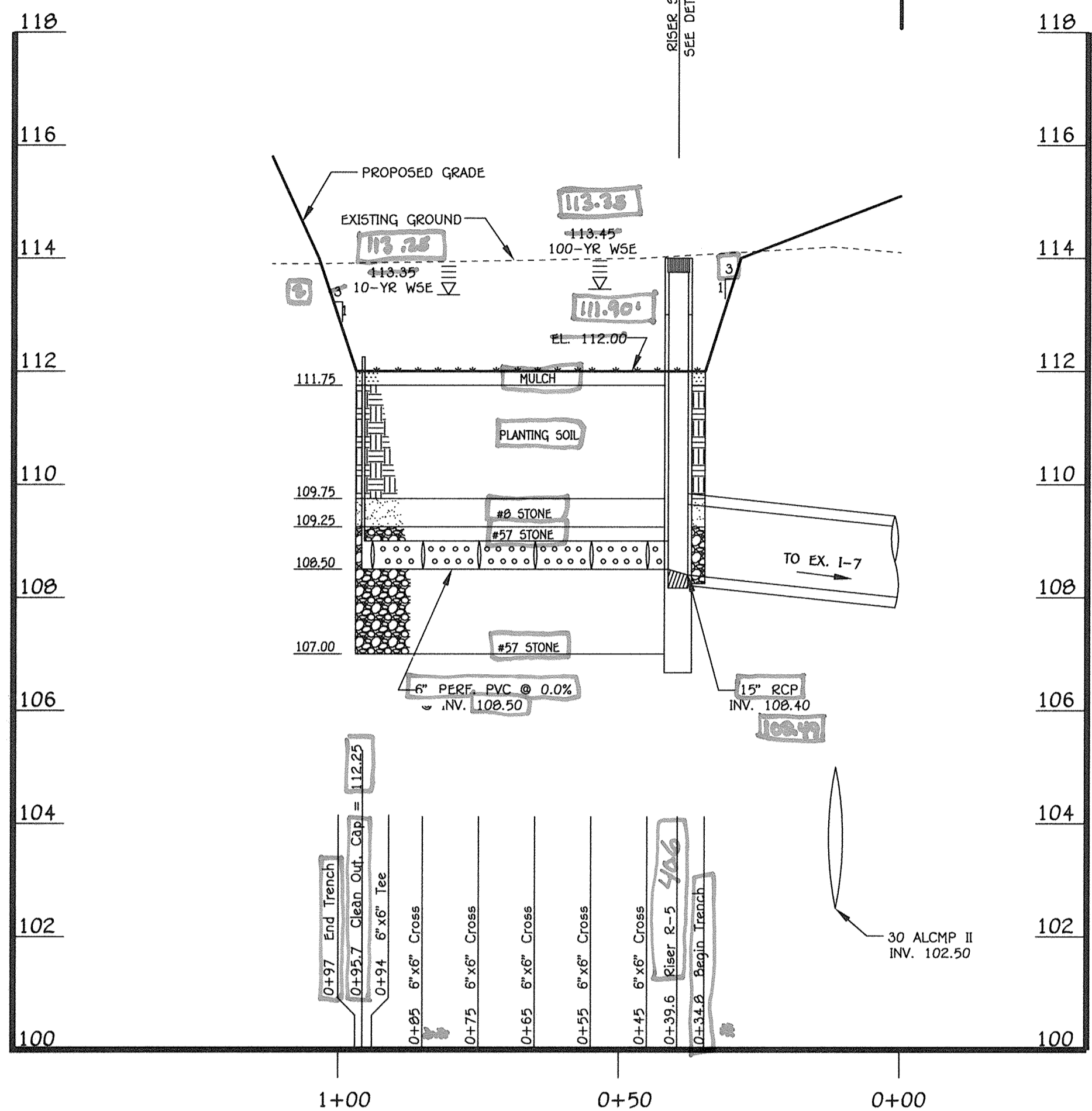
Address Chart					
Parcel Number	Street Address				
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076				
PROJECT	SECTION/AREA				
ELEMENTARY SCHOOL #42	N/A				
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	PARCEL
23106-23170	20	TOD	3B	FIRST	'D-D'
WATER CODE	SEWER CODE				
---	---				

**BIORETENTION FACILITY #2 AND #3 PROFILES**

'GREEN NEIGHBORHOOD'  
ELEMENTARY SCHOOL #42  
OXFORD SQUARE  
PARCEL 'D-D'

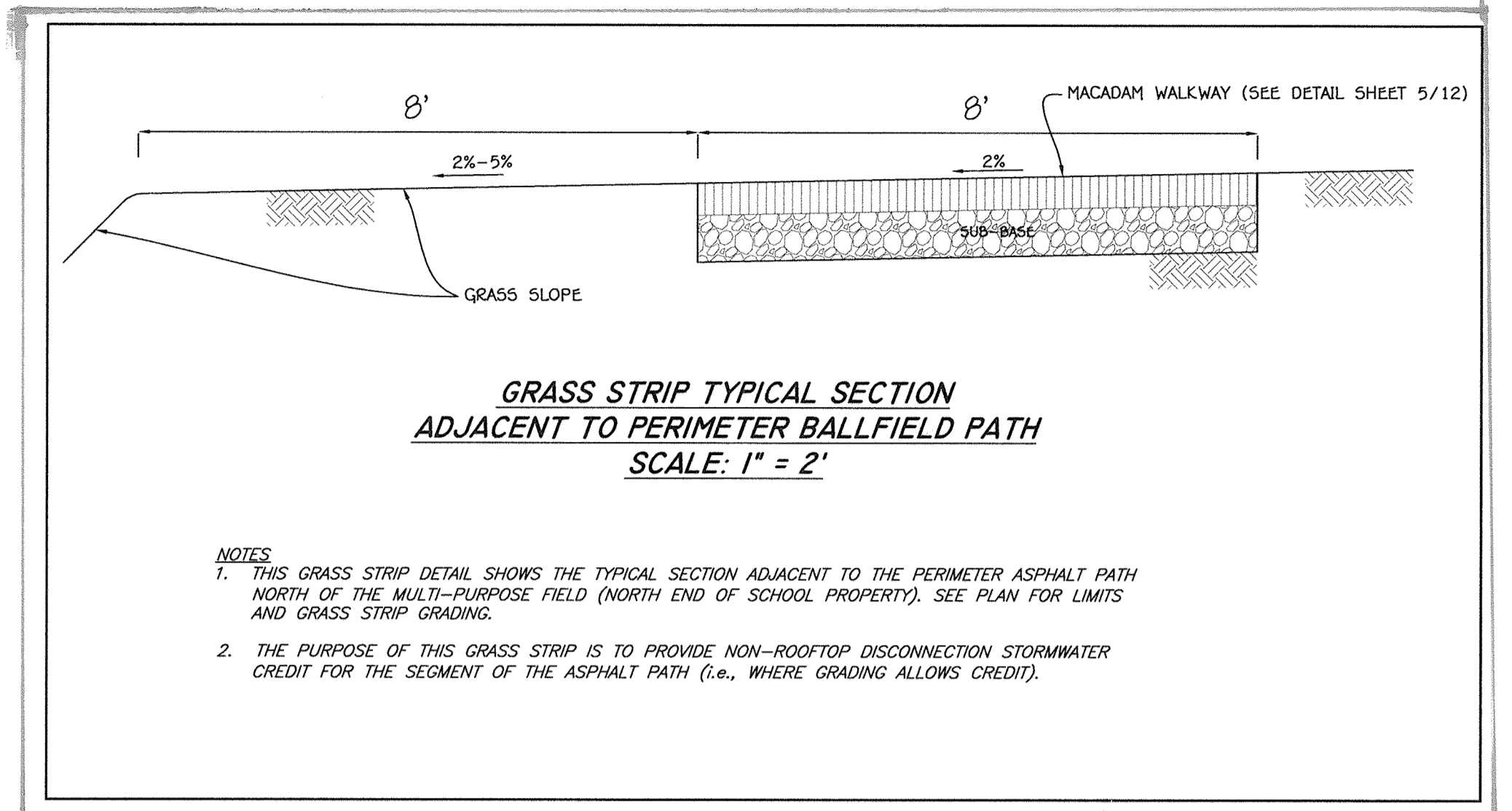
ZONED: TOD TAX MAP No.: 3B GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 7, 2016

SHEET 38 OF 44



**BMP #5 UNDERDRAIN PROFILE**  
SCALE:  
HORZ: 1" = 20'  
VERT: 1" = 2'

± **Begin of Trench Marks**  
**REFERENCE STATION**  
± **± UNDERGROUND, NOT ACCESSIBLE (TOP)**



**GRASS STRIP TYPICAL SECTION**  
ADJACENT TO PERIMETER BALLFIELD PATH  
SCALE: 1" = 2'

**NOTES**  
1. THIS GRASS STRIP DETAIL SHOWS THE TYPICAL SECTION ADJACENT TO THE PERIMETER ASPHALT PATH NORTH OF THE MULTI-PURPOSE FIELD (NORTH END OF SCHOOL PROPERTY). SEE PLAN FOR LIMITS AND GRASS STRIP GRADING.  
2. THE PURPOSE OF THIS GRASS STRIP IS TO PROVIDE NON-ROOFTOP DISCONNECTION STORMWATER CREDIT FOR THE SEGMENT OF THE ASPHALT PATH (i.e., WHERE GRADING ALLOWS CREDIT).

**SEE GEOTECH CERTIFICATION**

Appendix B.4. Construction Specifications for Environmental Site Design Practices

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil (2" to 4" deep)	loamy sand (50-65%) & compost (35-40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed pebbles	stone: 2" to 5"	
Geotextile	AASHTO M-43	n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)		NO. 57 OR NO. 6 AASHTO M-28 (3/8" TO 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row, minimum of 3" of gravel over pipes, not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3, f' = 3500 psi @ 28 days, normal weight, air-entrained, reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test, all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350 R-89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures), and analysis of potential cracking Sand substitutions such as Diabase and Graystone (AASHTO #10 are not acceptable. No calcium carbide or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	

Appendix B.4. Construction Specifications for Environmental Site Design Practices

**SEE GEOTECH CERTIFICATION**

**B.4.C Specifications for Micro-Bioretention, Rain Gardens, Landscape Infiltration & Infiltration Berms**

1. **Material Specifications**  
The allowable materials to be used in these practices are detailed in Table B.4.1.

2. **Filtering Media or Planting Soil**  
The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretention practice that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.  
The planting soil shall be tested and shall meet the following criteria:  
• Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)  
• Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).  
• Clay Content - Media shall have a clay content of less than 5%.  
• pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.  
There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

3. **Compaction**  
It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoist to remove original soil. If practices are

Appendix B.4. Construction Specifications for Environmental Site Design Practices

excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to restructure the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not fill deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grading materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

4. **Plant Material**  
Recommended plant material for micro-bioretention practices can be found in Appendix A, Section A.2.3.

5. **Plant Installation**  
Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Fine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.  
Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8" of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Stakes should maintain the plant straight during the entire planting process. Thoroughly water and mulch the area after installation.

Appendix B.4. Construction Specifications for Environmental Site Design Practices

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers, defolants, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

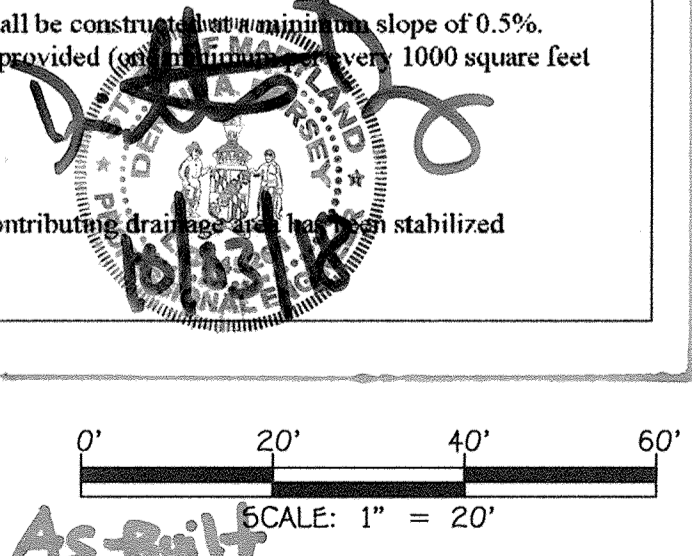
6. **Underdrains**  
Underdrains should meet the following criteria:  
• Pipe - Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 758, Type PS 28 or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).  
• Perforations - If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/4" (No. 4 or 4x4) galvanized hardware cloth.  
• Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.  
• The main collector pipe shall be at a minimum 0.5% slope.  
• A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.  
• A 4" layer of pea gravel (3/8" to 3/4" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".  
The main collector pipe for underdrain systems shall be constructed with a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one per every 1,000 square feet of surface area).

7. **Miscellaneous**  
These practices shall not be constructed until all contributing drainage areas are stabilized.

**AS-BUILT CERTIFICATION**

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN AND THAT THIS PLAN MEETS THE APPROVED PLAN AND SPECIFICATIONS.

SIGNATURE: *D. Dorsey* DATE: 10/23/18  
NAME: DENNIS A. DORSEY MD. LICENSE NO. 45261  
EXP. DATE: 04/10/20



**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-2895

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."

*Charles J. Crovo*  
CHARLES J. CROVO, SR., P.E.

3/21/16 DATE

DATE	DESCRIPTION
07/16	REVISED PARCEL NAMES & COMBINED PARCELS 'B' & 'B-1' INTO PARCEL 'D-D'
REVISION BLOCK	
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Valerie Heine</i>	4-18-16
Director - Department of Planning and Zoning	Date
<i>Michael Stalder</i>	4-28-16
Chief, Division of Land Development	Date
<i>Chris Thomas</i>	4-13-16
Chief, Development Engineering Division	Date

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805

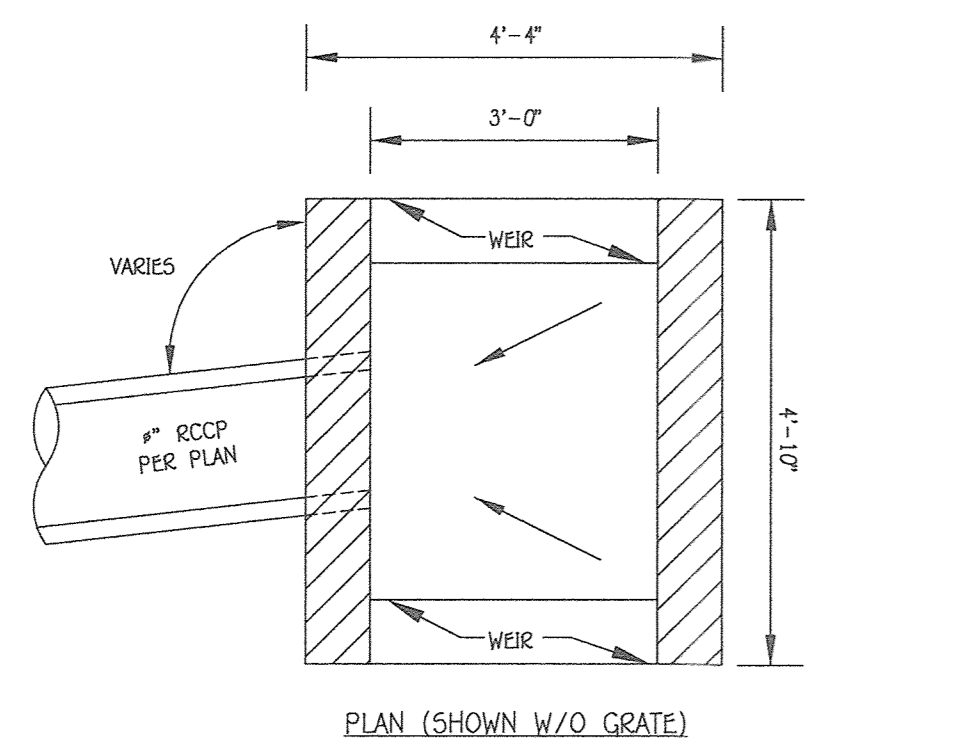
Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076
PROJECT	SECTION/AREA
ELEMENTARY SCHOOL #42	N/A
FLAT NOS.	BLOCK NO.
29700-29790	20
	ZONE
	TOD
	TAX MAP
	ELEC. DIST.
	CENSUS TR.
	6012.01
WATER CODE	SEWER CODE
----	----

**BIORETENTION FACILITY DETAILS**  
**BMP #5 PROFILE**

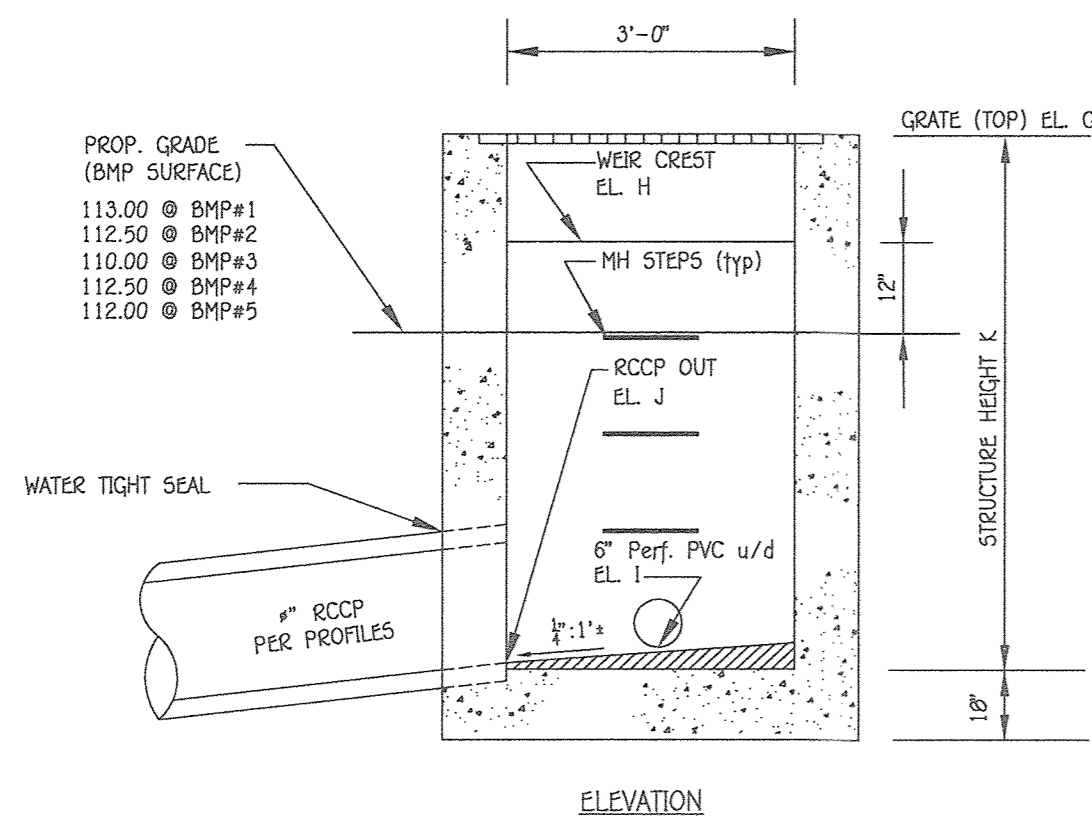
**'GREEN NEIGHBORHOOD'**  
**ELEMENTARY SCHOOL #42**  
OXFORD SQUARE  
PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 30 GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 7, 2016

SHEET 39 OF 44



PLAN (SHOWN W/O GRATE)



ELEVATION

- NOTES:
- SEE MSHA STD DETAIL MD-378.11 FOR DETAILS NOT SHOWN ABOVE.
  - ALL STRUCTURAL REQUIREMENTS SHALL CONFORM TO THE D-INLET (DETAIL D-4.10) REQUIREMENTS DUE TO THE INCREASED INLET DEPTH.
  - USE DOUBLE OPENING WITH NO CONCRETE GUTTER APPROACHES.
  - SLOPE RISER INVERT  $\frac{1}{4}$ "-1" TOWARD RCCP OUTFALL.
  - PROVIDE STEPS PER MODO STD. DETAIL G-5.21.
  - CHAMFER EXPOSED EDGES  $\frac{1}{4}$ ".
  - ORIENT INLET AS SHOWN ON SDP (GRATE SUPPORT WALL IS HATCHED).
  - THE 6" UNDERDRAIN ENTERS SIDE OF INLET OR OPPOSITE THE RCCP OUTFALL. SEE PLAN FOR LOCATION OF 6" UNDERDRAIN CONNECTION TO INLET.

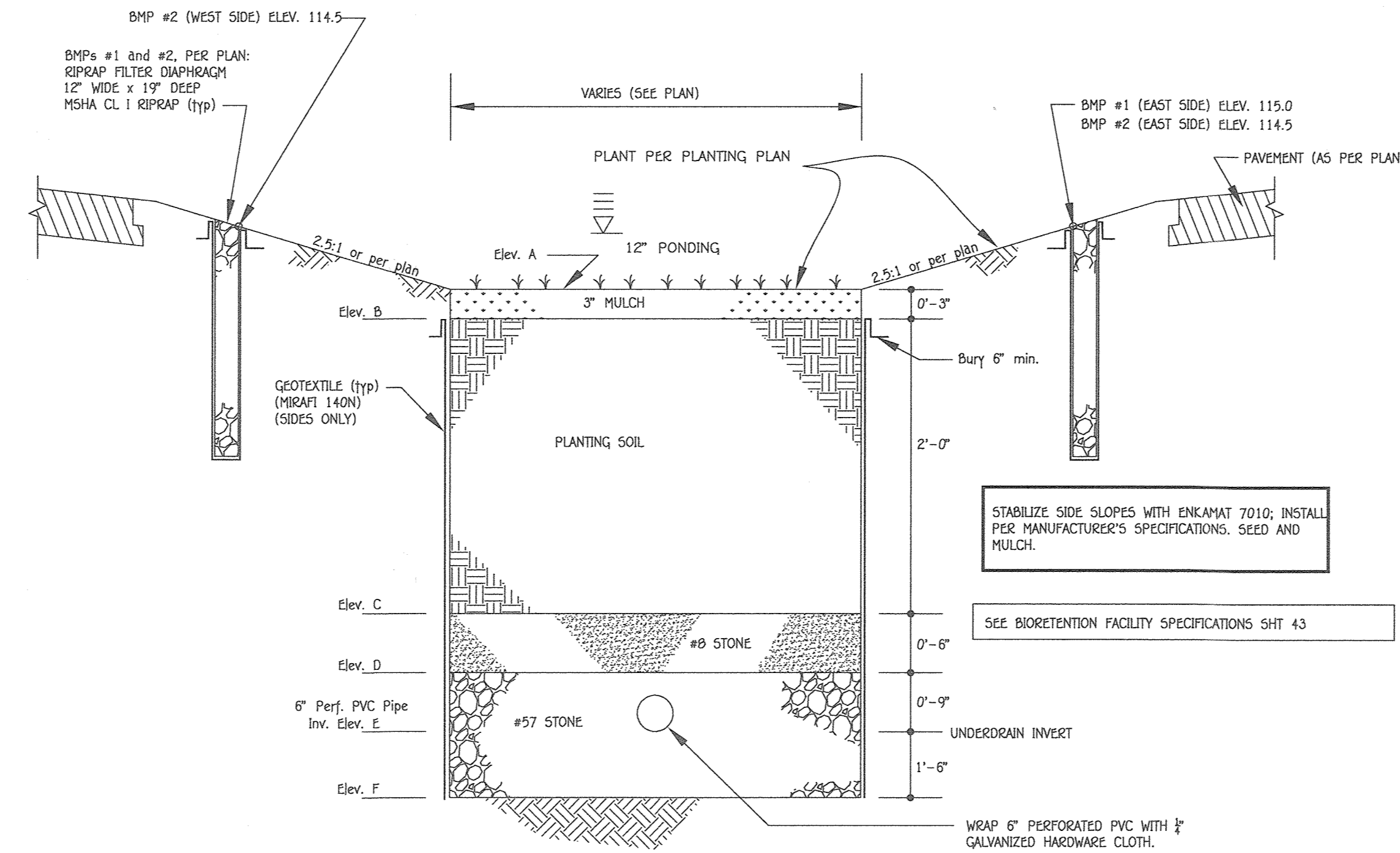
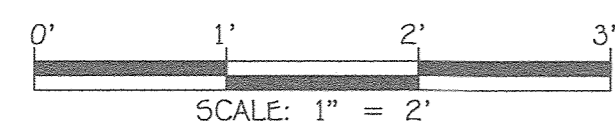
	R-1a (BMP #1)	R-1b (BMP #1)	R-2 (BMP #2)	R-3 (BMP #3)	R-4 (BMP #4)	R-5 (BMP #5)	R-6 (BMP #6)	
ELEV. G	115.10	115.10	114.60	112.10	114.50	114.00	110.20	Top of Grate
ELEV. H	114.00	114.00	113.50	111.00	113.50	113.00	109.30	Weir Crest
ELEV. I	109.50	109.50	109.00	106.50	109.00	108.50	105.63 (4")	Inv. 6" Perfor. u/d
ELEV. J	109.40	109.40	108.90	106.40	108.90	108.40	105.53	RCCP Invert Out
HEIGHT K	5'-11"	5'-11"	5'-11"	5'-11"	5'-10"	5'-10"	4'-11"	Structure Height

RISER STRUCTURES R-1A, R-1B, R-2, R-3 R-4 & R-5 MODIFIED K-INLET TYPICAL SECTION

NTS

SWM #6 OUTFALL STRUCTURE (S-1) DETAIL

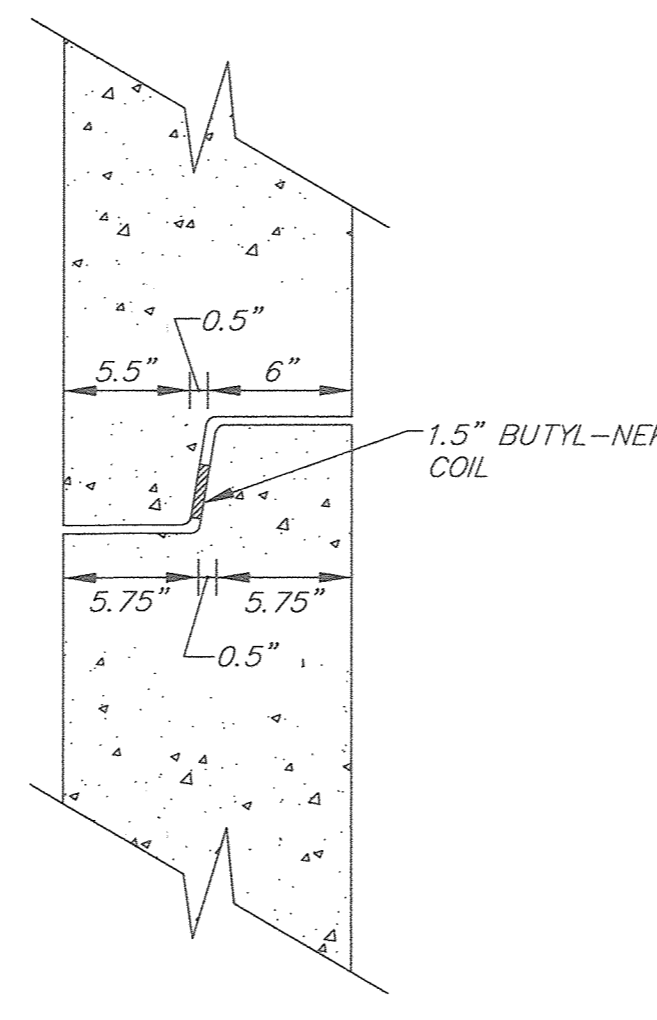
Scale: 1" = 2'



BIORETENTION FACILITY TYPICAL SECTION

NTS

	BMP #1	BMP #2	BMP #3	BMP #4	BMP #5
Elev. A	113.00	112.50	110.00	112.50	112.00
Elev. B	112.75	112.25	109.75	112.25	111.75
Elev. C	110.75	110.25	107.75	110.25	109.75
Elev. D	110.25	109.75	107.25	109.75	109.25
Elev. E	109.50	109.00	106.50	109.00	108.50
Elev. F	108.00	107.50	105.00	107.50	107.00



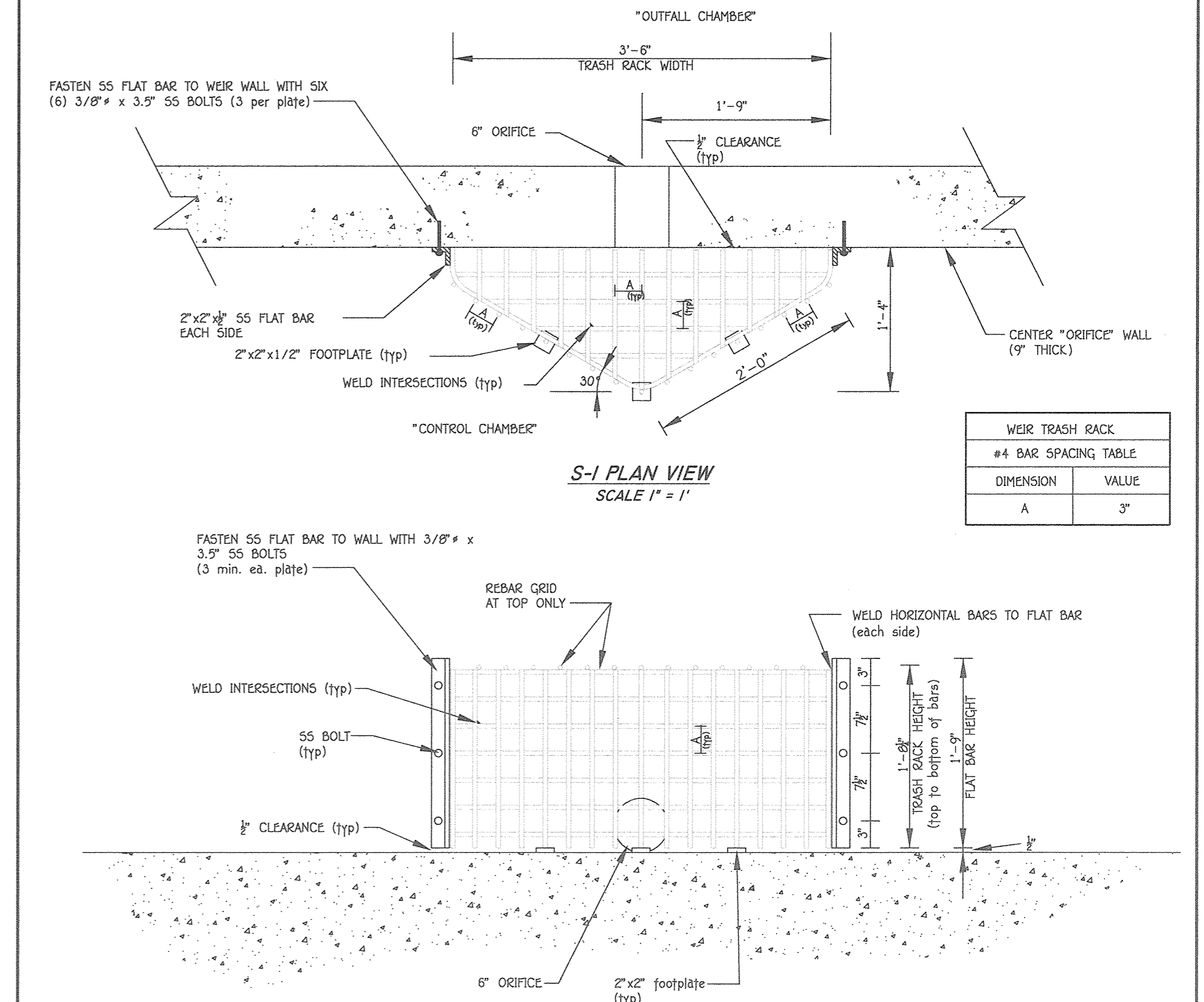
RISER JOINT DETAIL

NTS

- NOTES:
- Riser joints shall join evenly and be watertight. Parge joints after installation.
  - The referenced joint and joint sealant material is used by Frederick Precast, Inc. Similar joints may be used with shop drawing approval by the engineer.

FOREBAY GABION WEIR SCHEDULE (Gabion Basket Quantities)

MANUFACTURER'S LETTER CODE/DIMENSIONS	QUANTITY
(D) 6' x 3' x 1.5'	1
(F) 12' x 3' x 1.5'	2



S-1 PLAN VIEW

SCALE 1" = 1'

FRONT VIEW

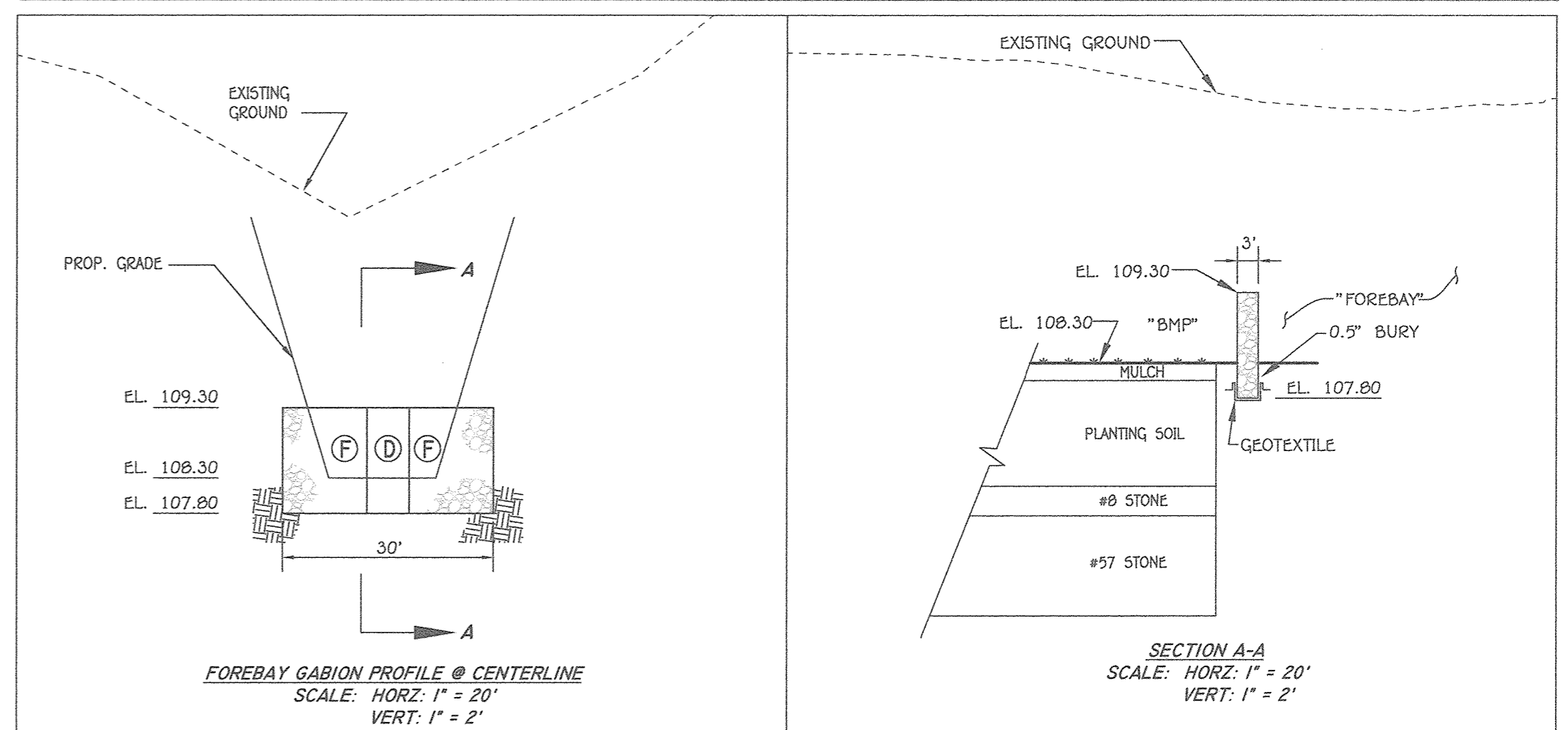
SCALE 1" = 1'

DIMENSION	VALUE
A	3"

- TRASH RACK NOTES
- REBAR FORMS A "CAGE" TRASH RACK WITH A TRIANGULAR PLAN SHAPE WITH REBAR GRID AT TOP ONLY.
  - THE TRASH RACK SHALL BE GALVANIZED AFTER FABRICATION AND PAINTED "BATTLESHIP GRAY" (2 COATS).
  - USE #4 SMOOTH STEEL BARS. BENDING RADIUS = 3"; BEVEL REBAR ENDS AS NECESSARY.
  - ALL REBAR CONNECTIONS/INTERSECTIONS SHALL BE WELDED.
  - STAINLESS STEEL (SS) BOLTS SHALL BE "REMOVABLE" (I.E., INSTALL WITH SLEEVE IN WEIR WALL).
  - TRASH RACK IS SYMMETRICAL AND CENTERED ON THE 6" ORIFICE.
  - FISHER, COLLINS & CARTER, INC. TO REVIEW SHOP DRAWING.

STRUCTURE S-1 TRASH RACK DETAIL

SCALE 1" = 1'



FOREBAY GABION PROFILE @ CENTERLINE

SCALE: HORIZ: 1" = 20'

VERT: 1" = 2'

SECTION A-A

SCALE: HORIZ: 1" = 20'

VERT: 1" = 2'

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21044  
(410) 461-2295

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*Charles J. Grovo*  
CHARLES J. GROVO, SR., P.E.  
7/29/19 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Valerie J. Pappas* 8-26-19 Date  
Director - Department of Planning and Zoning  
*Valerie J. Pappas* 8/20/19 Date  
Chief, Division of Land Development  
*Valerie J. Pappas* 8/19/19 Date  
Chief, Development Engineering Division

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076
PROJECT	SECTION/AREA
ELEMENTARY SCHOOL #42	N/A
PLAT NOS.	BLOCK NO.
23788-23790	20
ZONE	TAX MAP
TOD	38
ELEC. DIST.	CENSUS TR.
FIRST	6012.01
WATER CODE	SEWER CODE
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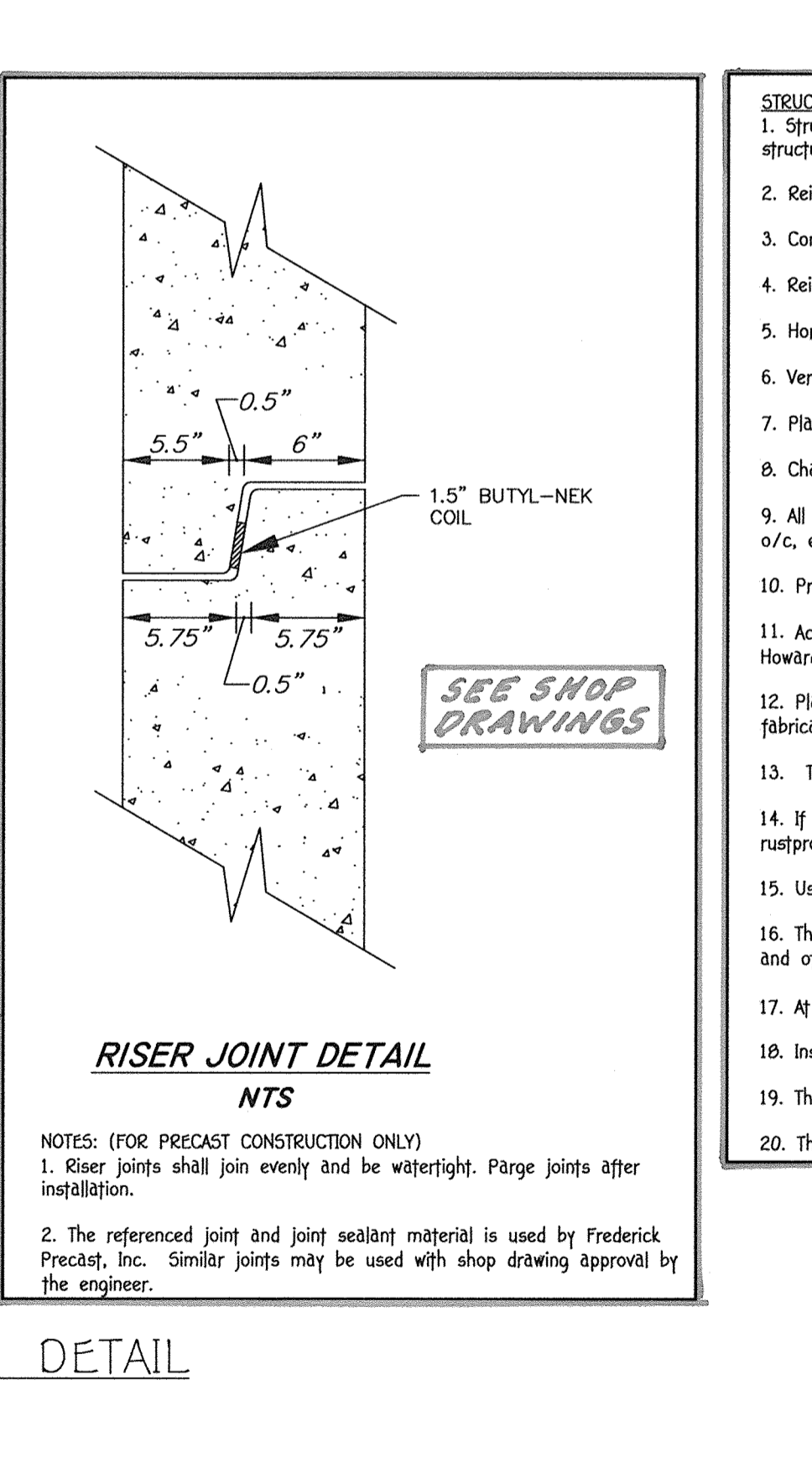
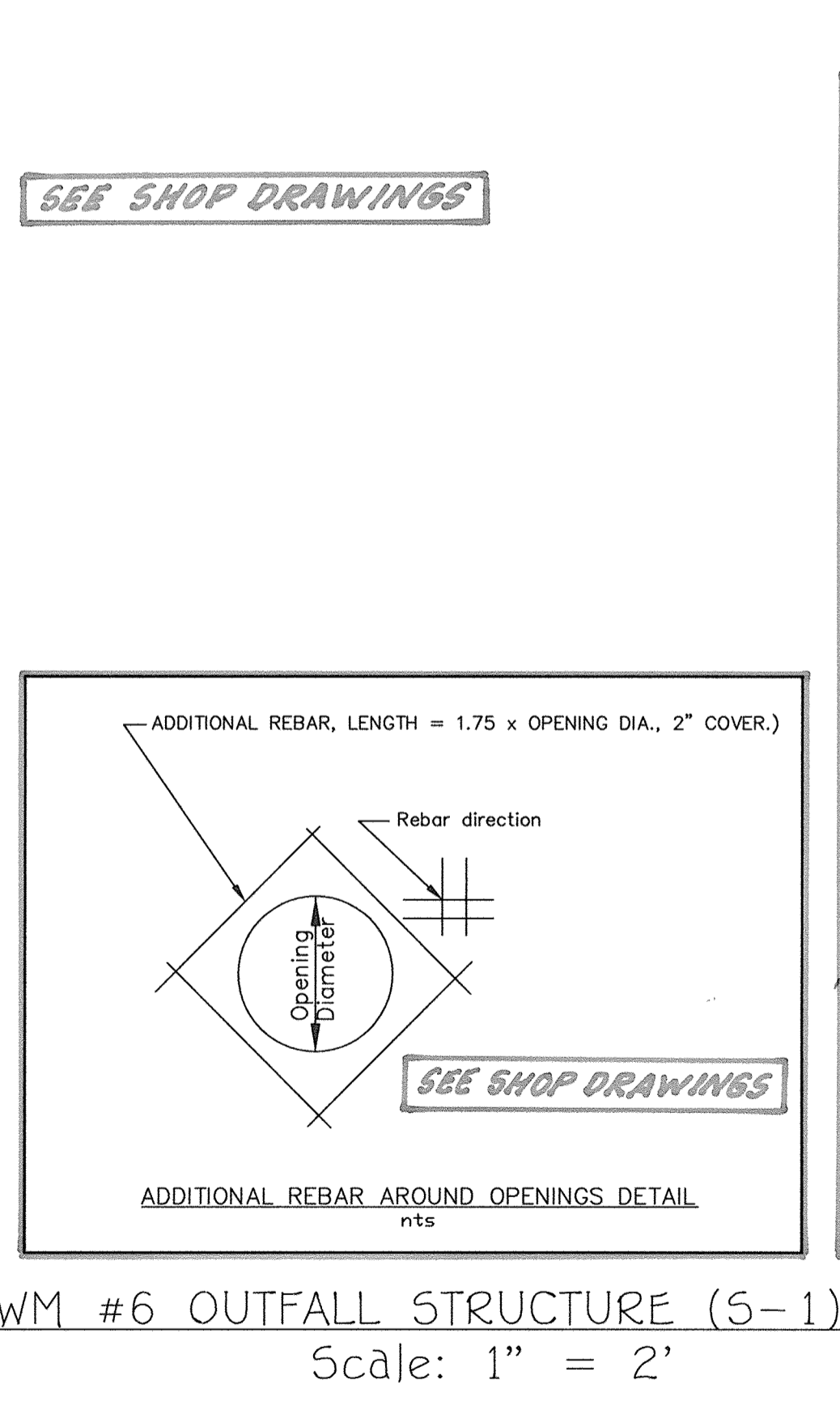
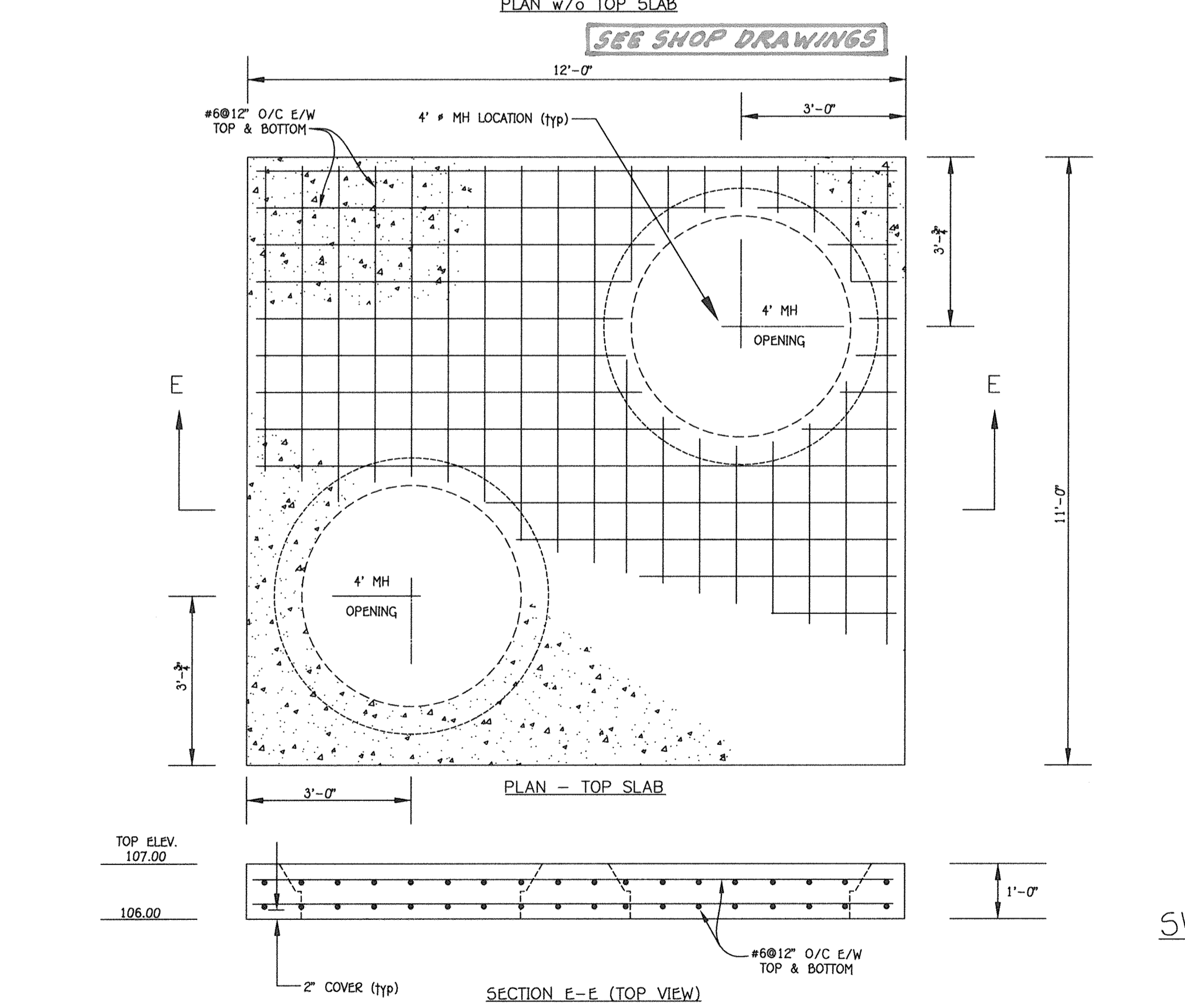
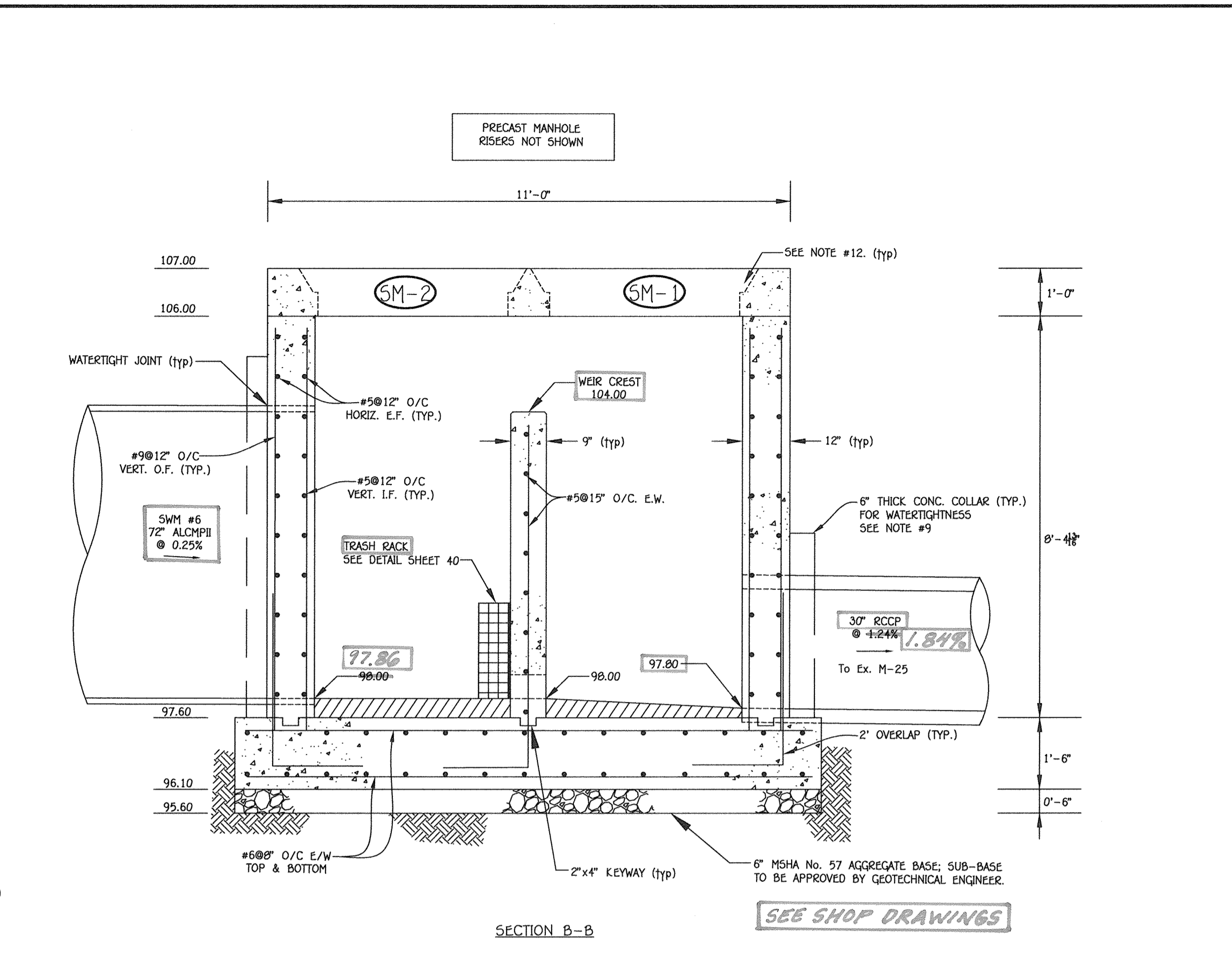
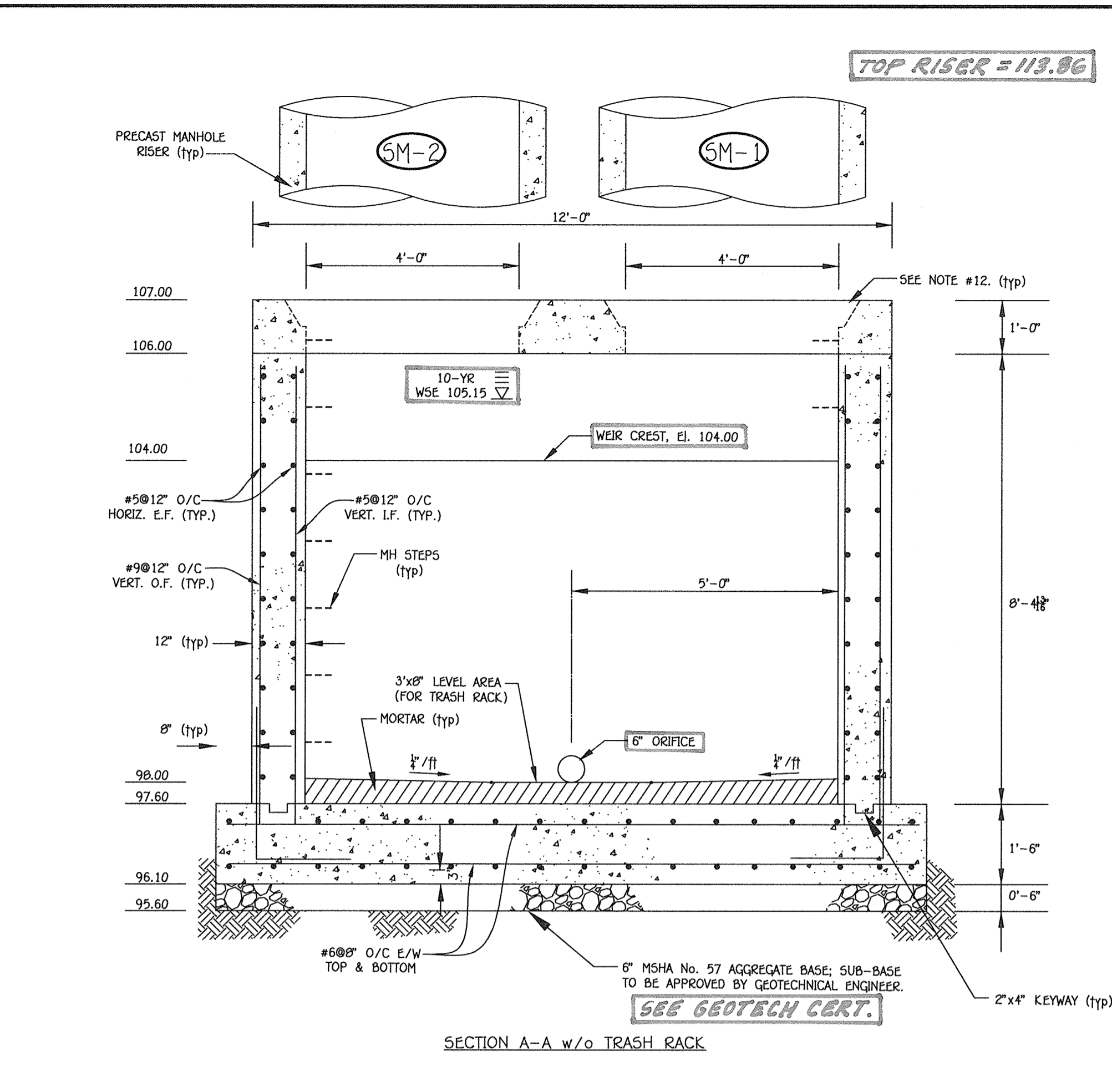
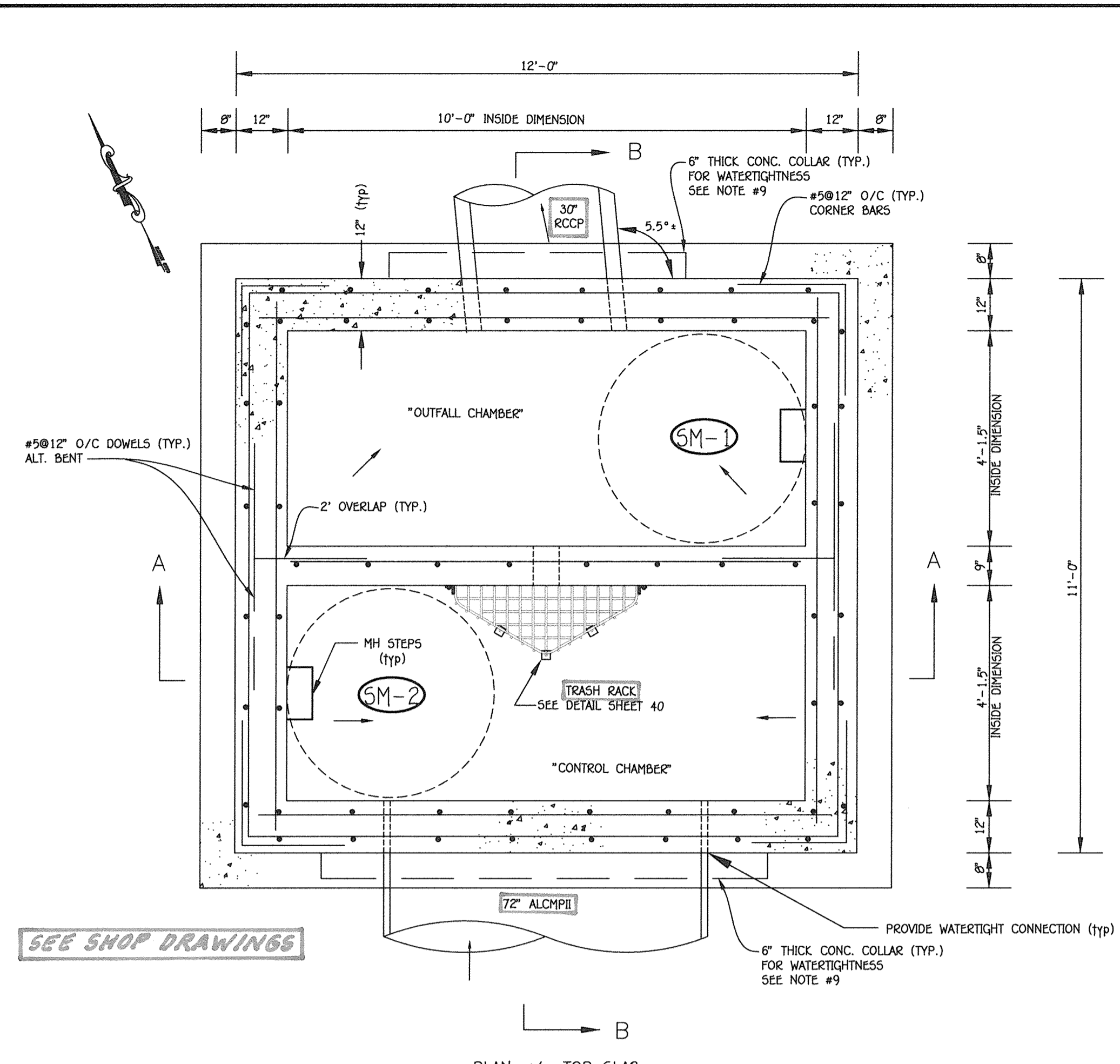
REVISED BIORETENTION FACILITY RISER DETAILS AND TRENCH TYPICAL SECTION

'GREEN NEIGHBORHOOD'  
ELEMENTARY SCHOOL #42  
OXFORD SQUARE  
PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: JULY 23, 2019

SHEET 40 OF 44





- STRUCTURE 5-1 NOTES AND SPECIFICATIONS**
- Structure material for all walls and base shall be air-entrained, 4,000 psi concrete. The concrete shall be compliant with the ACI building code for concrete structures.
  - Reinforcement shall be deformed steel, free of rust, and meet ASTM A615, grade 60, with 2" cover except as shown.
  - Compact backfill to 95% per ASTM T-99.
  - Reinforcement is partially shown and is typical for each respective wall, base and top slab. The structure shall be steel-bar reinforced throughout.
  - Horizontal rebar shall extend into the adjacent riser with a 2'-0" L-shaped overlap.
  - Vertical dowels shall extend horizontally into adjacent base slab with a 2'-0" L-shape overlap.
  - Place four (4) additional rebars at a 45 degree angle around all openings as shown on detail this sheet.
  - Chamfer internal wall (weir crest) ledges 3/4" x 3/4".
  - All connections must be watertight. Use water stops or 6" thick concrete collars around pipes, extending 12" beyond O.D. and reinforce with #4@12" rebar, o/c, e/w. Apply non-shrink grout to seal collar to wall.
  - Provide steps per MSHA Std. Detail MD-383.92 or approved equal.
  - Access manholes to be per Howard County Detail Q5.11. Align manhole steps with steps in structure 5-1. Manhole F&C to be located over steps.
  - Place a complementary circular groove (with gasket) in the 4" diameter openings in the top slab as shown, to place and accept manhole risers. The 5-1 fabricator shall coordinate with manhole fabricator so that the manhole rings and top slab fit snugly and appropriately together.
  - The top slab shall NOT be structurally attached to the walls.
  - If riser is supplied in sections, the joints shall be watertight per riser joint detail shown on this sheet. Bolt sections together at each joint with three (3) rustproof, 2" x 6" (1/4" thick) flat bar connections with 1/2" bolts embedded in to riser.
  - Use provided dimensions; do not scale drawings.
  - The sub-base shall be approved by the on-site Geotechnical engineer. The geotechnical engineer shall confirm the minimum bearing pressure of 2,500 psf and other backfill criteria.
  - At the low flow 6" orifice, "smooth" upstream and downstream circumference edges with 1/2" radius.
  - Install trash rack per detail, Sht 40.
  - The mortar in the inverts shall be "Webercolor 877" manufactured by Weber Saint-Gobain.
  - The contractor shall coat the ends of the 72" ALCPPII with a zinc chromate primer coming in contact with concrete/grout at structure 5-1.

**AS-BUILT CERTIFICATION**

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN AND THAT THIS PLAN MEETS THE APPROVED PLAN AND SPECIFICATIONS.

SIGNATURE: *Dennis A. Dorsey* DATE: 4/18/16  
 NAME: DENNIS A. DORSEY MD. LICENSE NO. 45261 EXP. DATE: 4/14/20

SCALE: 1" = 2'

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10772 BALDWIN NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2995

\*PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016.\*

*Charles J. Orsivo, Sr.*  
 CHARLES J. ORSIVO, SR., P.E.  
 DATE: 3/21/16

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Nathan J. ...* 4-18-16  
 Director - Department of Planning and Zoning Date

*...* 4-18-16  
 Chief, Division of Land Development Date

*...* 4-13-16  
 Chief, Development Engineering Division Date

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 DENNIS A. DORSEY  
 No. 45261

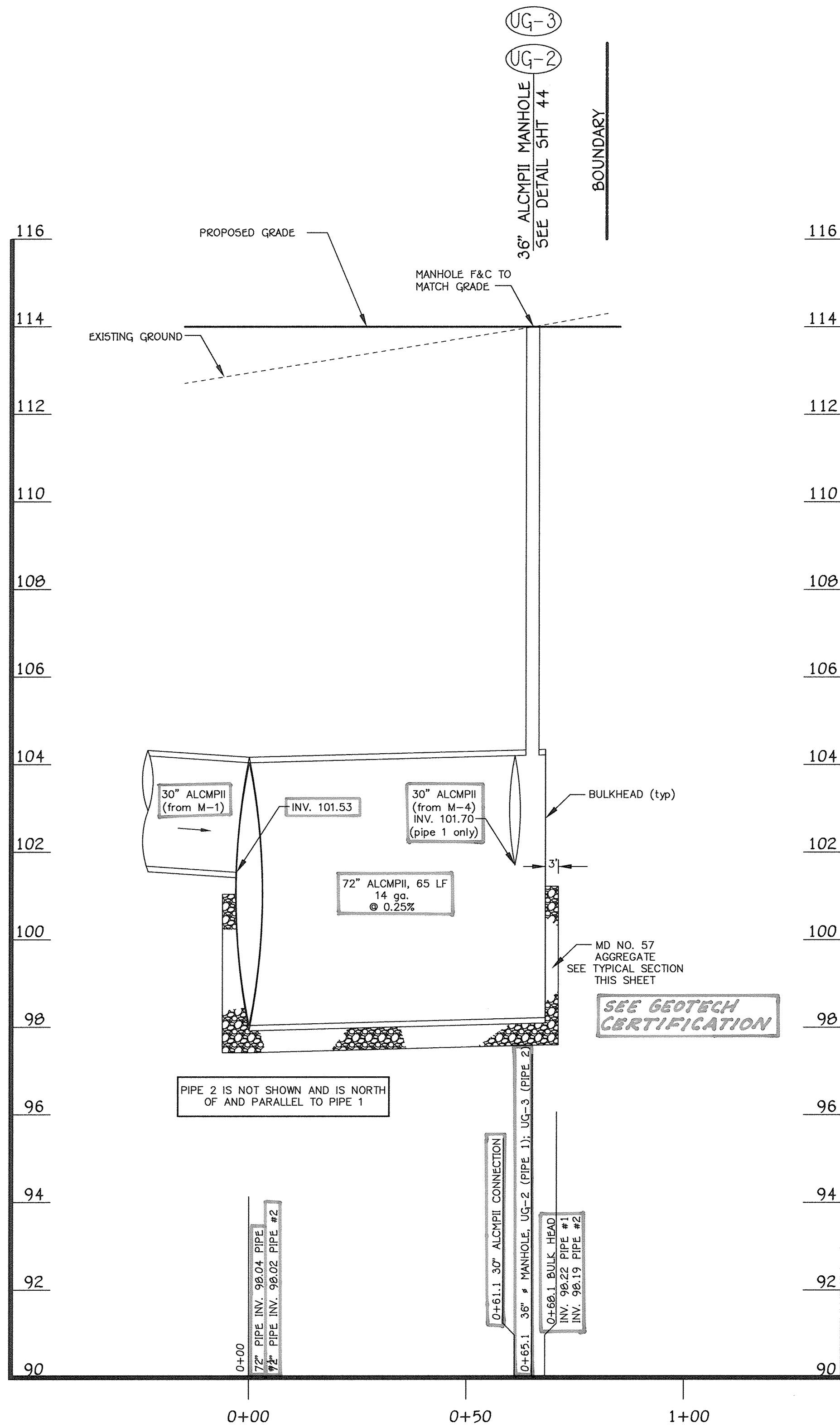
Address Chart	
Parcel Number	Street Address
D-D	7030 BANBURY DRIVE HANOVER, MD 21076
PROJECT	SECTION/AREA
ELEMENTARY SCHOOL #42	N/A
PLAT NOS.	BLOCK NO.
03768-03770	20
WATER CODE	SEWER CODE
---	---

**RISER STRUCTURE (5-1) DETAIL**

'GREEN NEIGHBORHOOD'  
 ELEMENTARY SCHOOL #42  
 OXFORD SQUARE  
 PARCEL D-D'

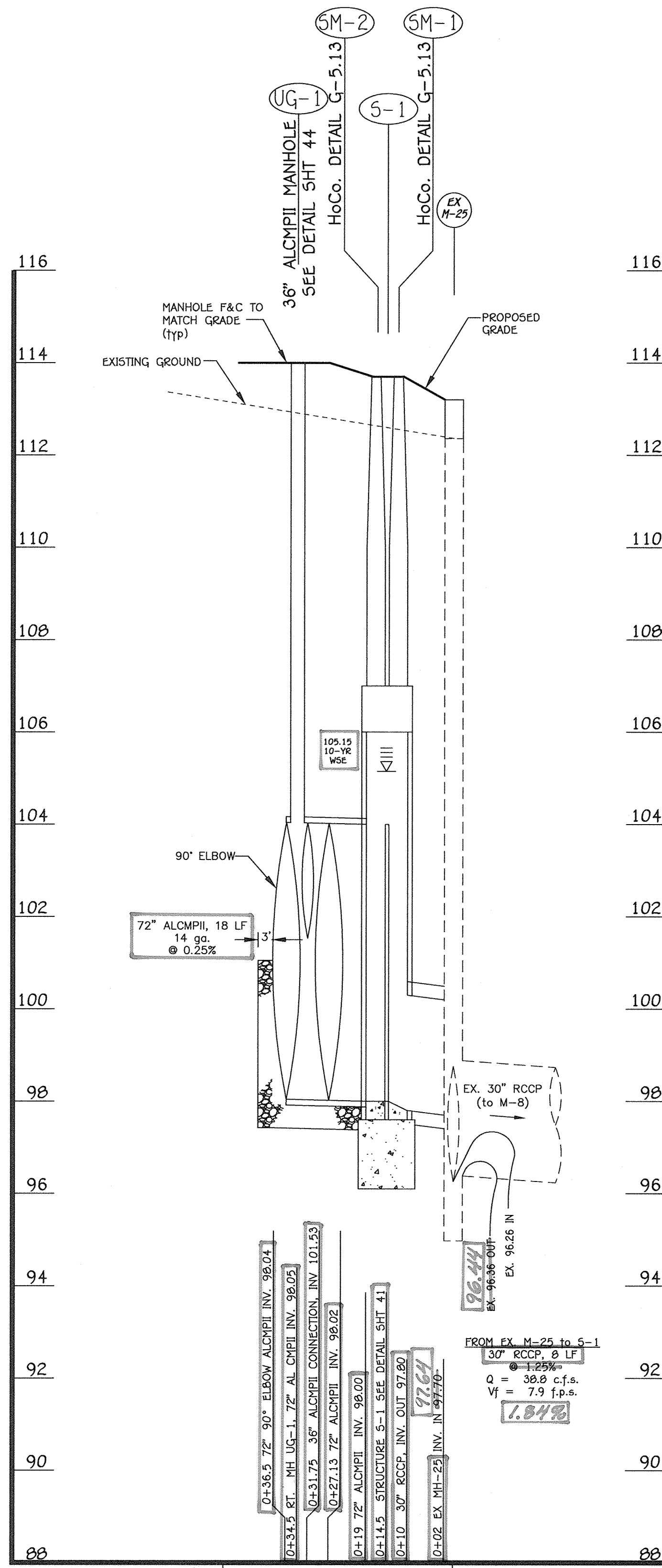
ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
 FIRST ELECTION DISTRICT: HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MARCH 7, 2016

SHEET 41 OF 44



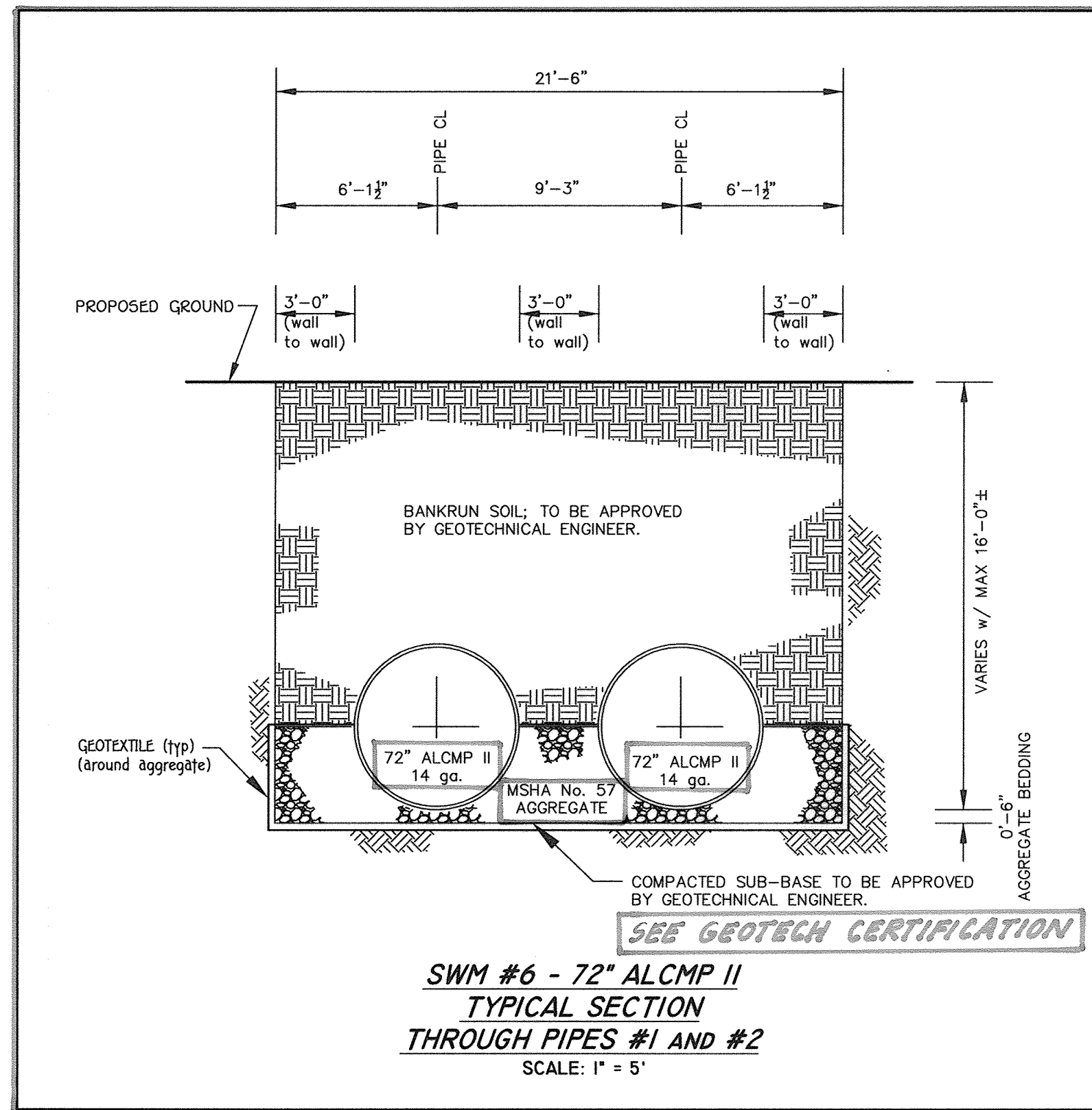
**SWM #6 - 72\"/>**

SCALE:  
 HORZ: 1" = 20'  
 VERT: 1" = 2'



**EX. MH-25 TO UG-1 PROFILE**

SCALE:  
 HORZ: 1" = 20'  
 VERT: 1" = 2'



**SWM #6 - 72\"/>**

**SWM #6 (72\"/>**

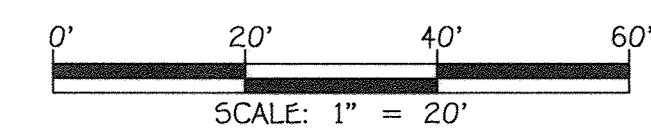
- The 72" ALCMP II pipes (14 ga. with 3"x1" corrugations) to be manufactured by Contech Engineered Solutions, LLC. Construction shall follow manufacturer's specifications and recommendations.
- The aluminized steel coils shall conform to the applicable requirements of AASHTO M274 OR ASTM 929. The CSP shall be manufactured per the applicable requirements of AASHTO M36 or ASTM A760.
- Provide aggregate pipe bedding as shown. **SEE SHOP DRAWINGS**
- Pipe to be sloped to drain to Structure S-1 @ 0.25% (0.05%±). **SEE GEOTECH CERT.**
- Manholes to be 36" ALCMP II, with welded steps/rungs per CONTECH specifications.
- Contractor shall submit SWM #6 shop drawings for review.
- Foundation/Bedding Preparation**  
 Prior to placing the bedding, the foundation must be constructed to a uniform and stable grade. In the event that unsuitable foundation materials are encountered during excavation, they shall be removed and brought back to the grade with a fill material as approved by the on-site geotechnical engineer. Once the foundation preparation is complete, 6" minimum of the well-graded granular material shall be placed as the bedding as shown.
- Backfill**  
 The backfill shall be an A1, A2 or A3 granular fill per AASHTO M145, or a well-graded granular fill as approved by the site geotechnical engineer. The material shall be placed in 8" loose lifts and compacted to 90% AASHTO T-99 standard proctor density. When placing the first lifts of backfill it is important to make sure that the backfill is properly compacted under and around the pipe haunches. Backfill shall be placed such that there is no more than a two lift (16") differential between any of the pipes at any time during the backfill process. The backfill shall be advanced along the length of the detention system at the same rate to avoid differential loading on the pipe. Other alternate backfill material may be allowed depending on site specific conditions, as approved by site geotechnical engineer.
- Handling and Assembly.** Shall be in accordance with recommendations of the national corrugated steel pipe association (NCSIPA).
- Installation:** Shall be in accordance with AASHTO standard specifications for highway bridges, section 26, division ii or ASTM A798 and in conformance with the project plans and specifications. If there are any inconsistencies or conflicts, the contractor should discuss and resolve with the site engineer. It is the responsibility of the contractor to follow OSHA guidelines for safe practices.



**AS-BUILT CERTIFICATION**

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN AND THAT THIS PLAN MEETS THE APPROVED PLAN AND SPECIFICATIONS.

SIGNATURE: *Dennis A. Dorsey* DATE: 10/23/18  
 NAME: DENNIS A. DORSEY MD. LICENSE NO. 48261 EXP. DATE: 4/10/20



**AS-BUILT**

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLEOTT CITY, MARYLAND 21042  
 (410) 461-2895

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."

*Charles J. Brovo*  
 CHARLES J. BROVO, SR., P.E.

3/21/16  
 DATE

DATE	DESCRIPTION
4-18-16	REVISION BLOCK
4-18-16	APPROVED: DEPARTMENT OF PLANNING AND ZONING
4-13-16	Director, Department of Planning and Zoning
4-13-16	Chief, Division of Land Development
4-13-16	Chief, Development Engineering Division

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805



Address Chart	
Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076
PROJECT	SECTION/AREA
ELEMENTARY SCHOOL #42	N/A
PLAT NOS.	BLOCK NO.
29706-29790	20
ZONE	TAX MAP
TOD	38
ELEC. DIST.	PARCEL
38	'D-D'
FIRST	CENSUS TR.
6012.01	
WATER CODE	SEWER CODE
---	---

**SWM #6 (72\"/>**

'GREEN NEIGHBORHOOD'  
 ELEMENTARY SCHOOL #42  
 OXFORD SQUARE  
 PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MARCH 7, 2016

**OPERATION AND MAINTENANCE SCHEDULE FOR BIORETENTION BMPs #1 - #5**

THE BIORETENTION FACILITIES SHALL BE INSPECTED AT LEAST TWICE PER YEAR (ONCE EACH IN THE SPRING AND FALL) AND AFTER HEAVY STORMS. THE OWNER IS RESPONSIBLE FOR MAINTAINING A DETAILED LOG OF THE MAINTENANCE INSPECTION FINDINGS AND A HISTORY OF THE COMPLETED WORK. THE LOG SHALL BE MADE AVAILABLE TO HOWARD COUNTY DPZ AND/OR THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UPON REQUEST.

BIORETENTION FACILITY COMPONENTS TO BE INSPECTED AND MAINTAINED INCLUDE THE ITEMS AS FOLLOWS:

1. PLANT MATERIAL: PLANTS SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION. REMOVE AND REPLACE DEAD OR DYING VEGETATION CONSIDERED BEYOND TREATMENT (SEE NOTE BELOW). MAINTENANCE ALSO INCLUDES PRUNING, AND REPLACEMENT OF DEFICIENT STAKES AND WIRE.
2. MULCH LAYER: SHALL BE REPLACED ONCE EVERY SPRING DUE TO THE HEAVY METALS GENERATED FROM THE PARKING LOT. THE OWNER SHALL PROPERLY DISPOSE OF THE OLD MULCH SO AS NOT TO CAUSE STORMWATER CONTAMINATION ELSEWHERE. WASHED OUT AREAS SHALL BE REPAIRED AS NECESSARY.
3. SOIL LAYER: SHOULD STORMWATER POND FOR MORE THAN 24 HOURS, THE TOP 6 INCHES (MINIMUM) OF THE SOIL LAYER SHALL BE REMOVED AND REPLACED. THE OLD SOILS SHALL BE PROPERLY DISPOSED OF.
4. SPILLWAY OUTFALL, INTERIOR SLOPES: ERODED AREAS SHALL BE REPAIRED (FILLED IN AND SEEDED) AS NEEDED. BARE AREAS SHALL BE TREATED AND RE-SEEDED.
5. INLET: REPAIR CRACKS, DAMAGED CONCRETE, ETC. AS NECESSARY.
6. REMOVE AND PROPERLY DISPOSE ACCUMULATED SEDIMENT GREATER THAN ONE (1) INCH.

- NOTES:
1. IF SPECIFIC PLANTS ARE NOT SURVIVING, THE PLANT TYPE SHOULD BE CHANGED TO BETTER SUITED SPECIES.
  2. PLANT WATERING MAY BE NEEDED DURING PROLONGED DRY PERIODS.

**OPERATION AND MAINTENANCE SCHEDULE FOR A PRIVATELY OWNED AND MAINTAINED UNDERGROUND SWM FACILITY (SWM #6/5-1)**

1. THE UNDERGROUND STORMWATER MANAGEMENT (SWM) FACILITY IS PRIVATELY OWNED AND MAINTAINED. THE OWNER IS RESPONSIBLE FOR PERIODICALLY INSPECTING AND MAINTAINING THIS FACILITY SO THAT IT REMAINS IN GOOD WORKING ORDER AND FUNCTIONS AS INTENDED.
2. THE 72" ALCMPI SWM FACILITY (SWM #6) SHALL BE INSPECTED AT LEAST ONCE A YEAR AND AFTER MAJOR STORMS (3"/24 hours). THE INSPECTION SHALL TAKE PLACE DURING WET WEATHER (WHEN SAFE) TO DETERMINE IF FACILITY IS OPERATING AS INTENDED.
3. AT LEAST ANNUALLY, OR WHEN SEDIMENT REACHES 2" DEPTH AT ANY LOCATION, THE SEDIMENT SHALL BE FLUSHED DOWN TO STRUCTURE 5-1 AND MANUALLY REMOVED OR VACUUMED. DEBRIS THAT COULD POTENTIALLY BLOCK THE OUTFALL MUST BE REMOVED UPON DISCOVERY.
4. THE FACILITY SHALL BE IMMEDIATELY CLEANED AFTER PETROLEUM SPILLS. THE OWNER SHALL NOTIFY THE APPROPRIATE REGULATORY AGENCIES OF THE SPILL AND CLEAN-UP OPERATIONS.
5. ALL SEDIMENT/DEBRIS/OIL SHALL BE PROPERLY AND LEGALLY DISPOSED IN EITHER A LICENSED WASTE FACILITY OR A SANITARY LANDFILL. THE OUTFALL ORIFICE SHALL BE BLOCKED DURING THE CLEANING/MAINTENANCE OPERATION.
6. INSPECT STRUCTURAL COMPONENTS: ALL STRUCTURAL COMPONENTS (MANHOLES, 6" PVC TRASH RACK, AIR VENTS, STORM DRAIN CONNECTIONS, PIPE JOINTS, AND STRUCTURE 5-1) SHALL BE REPAIRED UPON DETECTION OF ANY STRUCTURAL PROBLEMS (e.g., CRACKING, LEAKING, ETC.).

**PRIVATELY-OWNED OPERATION AND MAINTENANCE SCHEDULE BIORETENTION BMP**

1. The Property Owner is responsible for periodic maintenance of the bioretention facility. The facility shall be inspected every spring and fall as well as after heavy storms. The appropriate necessary maintenance shall be provided as determined by the inspections.
2. Plant Material: Trees, shrubs, and grass shall be checked for disease and insect infestation. Remove and replace dead or dying vegetation considered beyond treatment. If specific plants are not surviving, the plant type should be changed to a better-suited species. Replacement vegetation is limited to those listed in the 2000 Maryland Stormwater Design Manual Volume II, Table A.4.1 and 2. Maintenance also includes pruning, and replacement of deficient stakes and wire.
3. Mulch Layer: Shall be replaced every 2 years in the spring due to the concentration of heavy metals. The Property Owner shall remove and properly dispose of the old mulch so as not to cause water contamination elsewhere. Washed out and eroded areas shall be repaired.
4. Soil Layer: Should stormwater pond for more than 48 hours, the top 6 inches (minimum) of the soil layer shall be replaced. The old soil shall be properly disposed.
5. Spillway Outfall & Interior Slopes: Eroded areas shall be repaired (filled-in and seeded) when discovered. Bare areas shall be repaired (scarified, top soil added as needed and re-seeded).
6. Remove and properly dispose accumulated sediment greater than one (1) inch.
7. Plant watering may be needed during prolonged dry periods.

**GABION WALL NOTES**

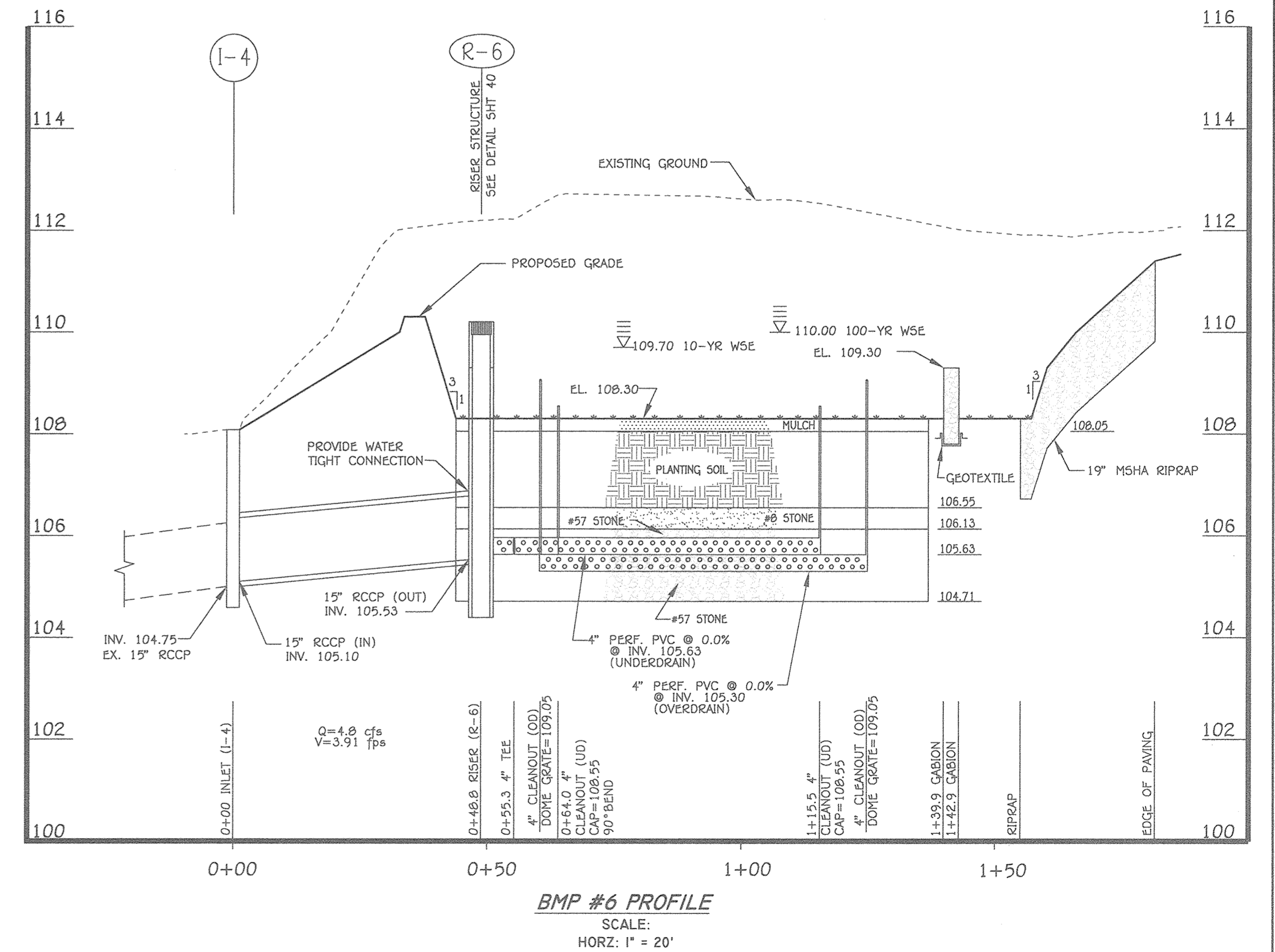
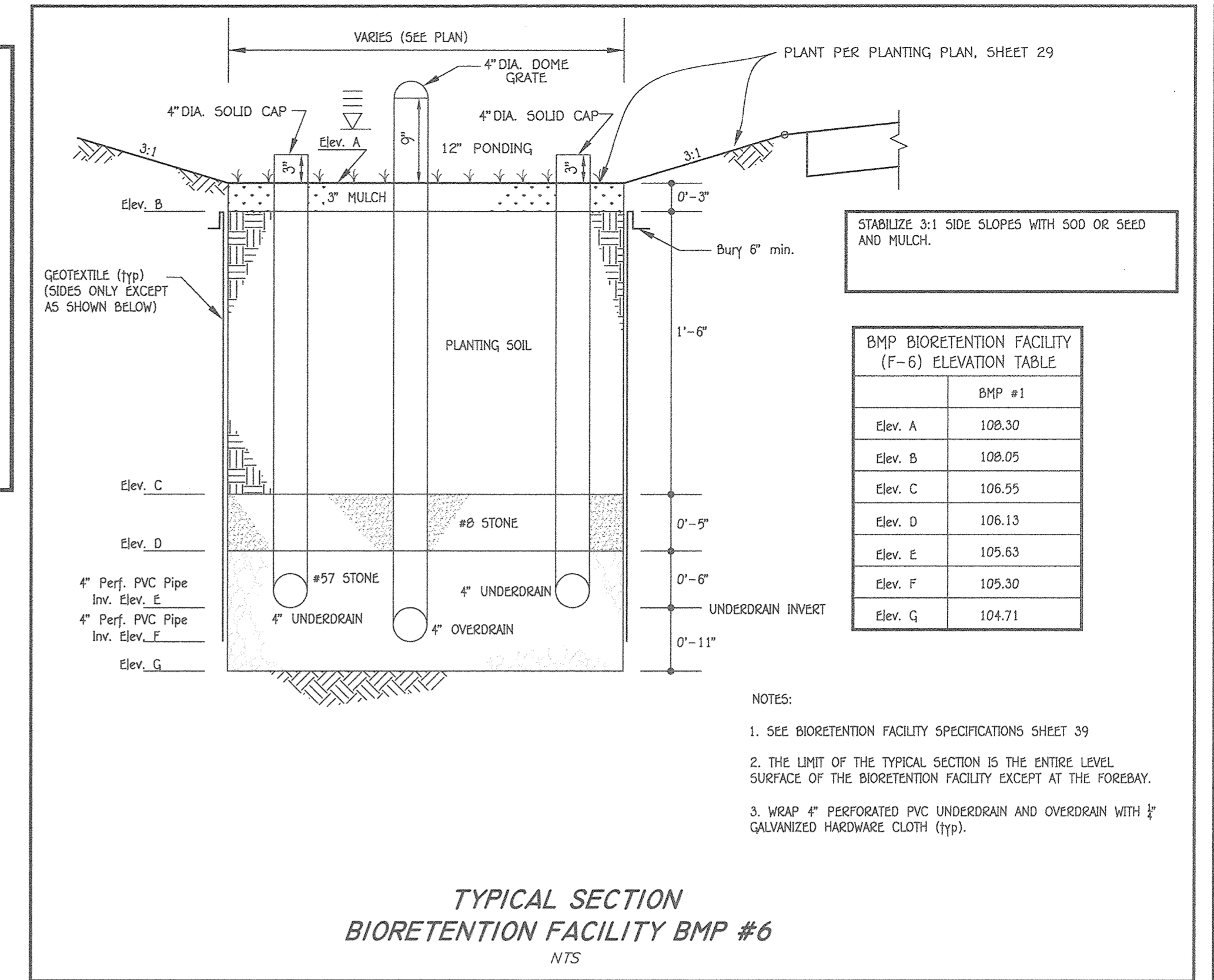
1. GABIONS SHALL BE MANUFACTURED BY MACCAFERRI GABIONS INC. THE INSTALLATION SHALL FOLLOW THE MANUFACTURER'S SPECIFICATIONS.
2. THE GABION BASKETS SHALL BE PVC COATED AND FILLED WITH CLEAN 4" - 7" STONE. THE GABION STONE SHALL BE MANUALLY AND CAREFULLY PLACED TO CREATE TIGHT, INTERLOCKING AGGREGATE WITH MINIMAL VOIDS.
3. GABIONS SHALL BE PLACED ON GEOTEXTILE FABRIC (MACCAFERRI MACTEX N47 OR APPROVED EQUAL) AT ALL SOIL/GABION INTERFACES. GEOTEXTILE MEETING NONWOVEN SPECIFICATIONS IN NRCS SEDIMENT CONTROL MANUAL STANDARDS & SPECIFICATIONS (pg H.1) FOR NON-WOVEN GEOTEXTILE IS ALSO ACCEPTABLE.
4. GABIONS SHALL BE CAREFULLY PLACED WITH NO DAMAGED WIRE. EARTH FOUNDATION SHALL BE FIRM. SOIL AROUND GABIONS SHALL BE WELL-COMPACTED (95%).
5. GABIONS SHALL BE FASTENED TOGETHER WITH MANUFACTURER-SPECIFIED WIRING (LACING) OR RINGS. RINGS SHALL MEET ASTM A975-97 SECTION MAXIMUM SPACING. SEE MACCAFERRI'S INSTALLATION GUIDE.
6. EMBANKMENT SLOPE ADJACENT TO GABIONS IS 2:1 AND SHALL SMOOTHLY TRANSITION INTO 3:1 SLOPES WITHIN 6'± FROM GABIONS.
7. WHERE THE STANDARD GABION DIMENSION NEEDS TO BE MODIFIED, FOLD THE MESH MATERIAL AS PER MACCAFERRI GUIDELINES (i.e., DO NOT CUT THE MESH). CONTACT MACCAFERRI, INC. FOR SPECIFIC DIMENSION ADJUSTMENT/FOLD METHOD.
8. THE GABIONS SHALL REST ON A COMPACTED SUBGRADE APPROVED BY THE GEOTECHNICAL ENGINEER FOR 2,000 psf (MINIMUM).

**GENERAL STORMWATER MANAGEMENT NOTES**

1. STORMWATER MANAGEMENT HAS BEEN PROVIDED WITH FIVE (5) BIORETENTION FACILITIES AND ONE (1) PIPE STORAGE FACILITY. PLEASE REFER TO THE SWM REPORT PREPARED BY FISHER, COLLINS, & CARTER, INC. DATED OCTOBER 16, 2015.
2. ALL CONSTRUCTION SHALL MEET THE LATEST EDITION OF THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS, AND THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S CURRENT STORMWATER DESIGN MANUAL, OR AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL CONSULT THE ENGINEER SHOULD THERE BE ANY DISCREPANCIES. SEE BIORETENTION FACILITY SPECIFICATIONS ON THIS SHEET.
3. THE UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL TEST PIT ALL KNOWN EXISTING UTILITIES TO VERIFY, SIZE, SHAPE, LOCATION, AND TYPE PRIOR TO PERFORMING CONSTRUCTION. ANY UTILITY DAMAGED DUE TO CONSTRUCTION MUST BE REPAIRED IMMEDIATELY.
4. SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. IF THE CONTRACTOR MAKES FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
5. CONTRACTOR SHALL NOTIFY MISS UTILITY 1-800-257-7777 AND THE HOWARD COUNTY DEPARTMENT OF INSPECTION LICENSES & PERMITS THREE (3) WORKING DAYS BEFORE BEGINNING CONSTRUCTION.
6. FISHER, COLLINS & CARTER, INC. IS NOT RESPONSIBLE FOR THE CONTRACTOR'S UTILIZATION OF MEN, MATERIALS, EQUIPMENT, OR SAFETY MEASURES IN THE PERFORMANCE OF ANY WORK FOR THIS PROJECT. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR PERFORMING THE WORK CORRECTLY AND IN CONFORMANCE WITH CODE/SPECIFICATION REQUIREMENTS.
7. THE BIORETENTION FACILITIES MAY BE GRADED, HOWEVER, THE TRENCH MATERIAL (PLANTING SOIL, AGGREGATE, PIPE, GEOTEXTILE) SHALL NOT BE INSTALLED UNTIL ALL UPSTREAM AREAS HAVE BEEN STABILIZED (i.e., THICK GRASS COVER, OR PAVED).
8. ALL STORMWATER MANAGEMENT FACILITIES FOR THIS PROJECT WILL BE PRIVATELY OWNED AND MAINTAINED.

**BIORETENTION FACILITY NOTES AND SPECIFICATIONS**

1. REFER TO THE LATEST MARYLAND SWM DESIGN MANUAL FOR BIORETENTION SPECIFICATIONS FOR INFORMATION NOT LISTED HEREIN AND FOR ADDITIONAL INFORMATION. THE MDE SWM DESIGN MANUAL'S APPENDIX B.4 HAS BEEN REPRODUCED ON SHT 39. THE 3/4" PERFORATION SPECIFICATION BELOW SHALL BE USED IN LIEU OF THE MDE PERFORATION SPECIFICATION IN APPENDIX B.4.
2. THE BIORETENTION BMP MATERIALS ARE AS FOLLOWS:
  - PLANTING SOIL: PER SPECIFICATIONS OUTLINED IN MDE'S 2000 SWM MANUAL, APPENDIX B.4. THE PLANTING SOIL SHALL MEET THE FOLLOWING: LOAMY SAND @ 60-65% AND COMPOST 35-40%, OR, 30% SANDY LOAM, 30% COARSE SAND, & 40% COMPOST. SEE MDE APPENDICES A.2.3, B.4.7 and TABLE A.3 FOR ADDITIONAL INFORMATION. IN ADDITION, THE PLANTING SOIL SHALL BE MIXED/DESIGNED SO THAT ITS COEFFICIENT OF PERMEABILITY (K) IS EQUAL TO OR GREATER THAN 1.1 ft/day. DO NOT MECHANICALLY COMPACT PLANTING SOIL, HOWEVER, SOIL CAN BE "WATERED" TO FACILITATE SETTLING.
  - PVC UNDERDRAIN PIPE OUTSIDE BMP: SCHEDULE 40. SOLID PIPE WITH MINIMUM SLOPE OF 0.5% OR AS PER PLAN.
  - PVC UNDERDRAIN IN BMP: SCHEDULE 40 AND PERFORATED WITH 3/4" HOLES. WRAP UNDERDRAIN WITH GALVANIZED 1/4" HARDWARE CLOTH (WELDED WIRE MESH). PROVIDE 4 - 3/4" HOLES EVENLY SPACED AROUND THE 6" UNDERDRAIN PIPE CIRCUMFERENCE. SPACE PERFORATIONS ALONG PIPE AT 6" ON CENTER. ADJACENT SETS OF PERFORATIONS SHALL BE STAGGERED AT 45°. PERFORATIONS MUST TOTAL 3.5 sq. inch PER LF OF PIPE.
  - STONE AGGREGATE: MSHA SPECIFICATIONS AS SHOWN ON TYPICAL SECTION; AGGREGATE MUST BE WASHED, AND BE FREE OF FINES, SAND, DIRT & DEBRIS.
  - GEOTEXTILE: Miraf 140 N, NON-WOVEN FABRIC.
  - MULCH: SHREDDED, WELL-AGED (6-12 MONTHS) HARDWOOD MULCH; NO WOOD CHIPS OR PINE MULCH.
3. THE CONTRACTOR SHALL UNDER NO CIRCUMSTANCES ALLOW SURFACE DRAINAGE INTO THE MICRO-BIORETENTION BMPs UNTIL ALL UPSTREAM AREAS HAVE BEEN STABILIZED (i.e., PAVED, OR HAVE WELL-ESTABLISHED VEGETATION).
4. BOARDS SHALL NOT BE LEFT IN PLACE DURING THE CONSTRUCTION OF THE BIORETENTION BMP.
5. GEOTEXTILE (FILTER FABRIC) SHALL BE PLACED AGAINST EXCAVATED VERTICAL SURFACES. SCARIFY EARTH PRIOR TO GEOTEXTILE PLACEMENT. INSTALL GEOTEXTILE PER MANUFACTURER'S SPECIFICATIONS/RECOMMENDATIONS AND USE A 2 FT MINIMUM OVERLAP AND NOTCH ENDS WITH A 6" MINIMUM BURY OR EQUIVALENT ANCHORING METHOD.
6. THE CONTRACTOR SHALL PROVIDE TO THE OWNER INDEPENDENT CERTIFICATION THAT THE PLANTING SOILS AND OTHER BIORETENTION MATERIALS MEET THE SPECIFICATIONS.
7. THE BIORETENTION FACILITIES SHALL BE VEGETATED (TOP LEVEL SURFACE ONLY) IN ACCORDANCE WITH THE PLANTING PLAN AND THE BMP SPECIFICATIONS IN MDE'S CURRENT STORMWATER MANAGEMENT DESIGN MANUAL.
8. INSTALL CLEANOUTS (SOLID PVC PIPE) AS SHOWN. THE CLEANOUT TOP SHALL EXTEND 3" ABOVE TOP OF MULCH.



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE: PARK - 10772 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2895

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY 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. 13204, EXPIRATION DATE: NOVEMBER 3, 2022."  
  
 CHARLES J. CROVO, SR., P.E.  
 7/29/19 DATE

DATE	DESCRIPTION	REVISION BLOCK
6/14/19	Added BMP #6 Details, Gabion Notes And O&M Schedule	
6/27/16	Revised Parcel Name & Combined Parcels 'B' & 'B-B' Into Parcel 'D-D'	

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
  
 Director - Department of Planning and Zoning  
 8-26-19 Date

Chief, Division of Land Development  
 8/20/19 Date

Chief, Development Engineering Division  
 8/9/19 Date

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805

Address Chart

Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076

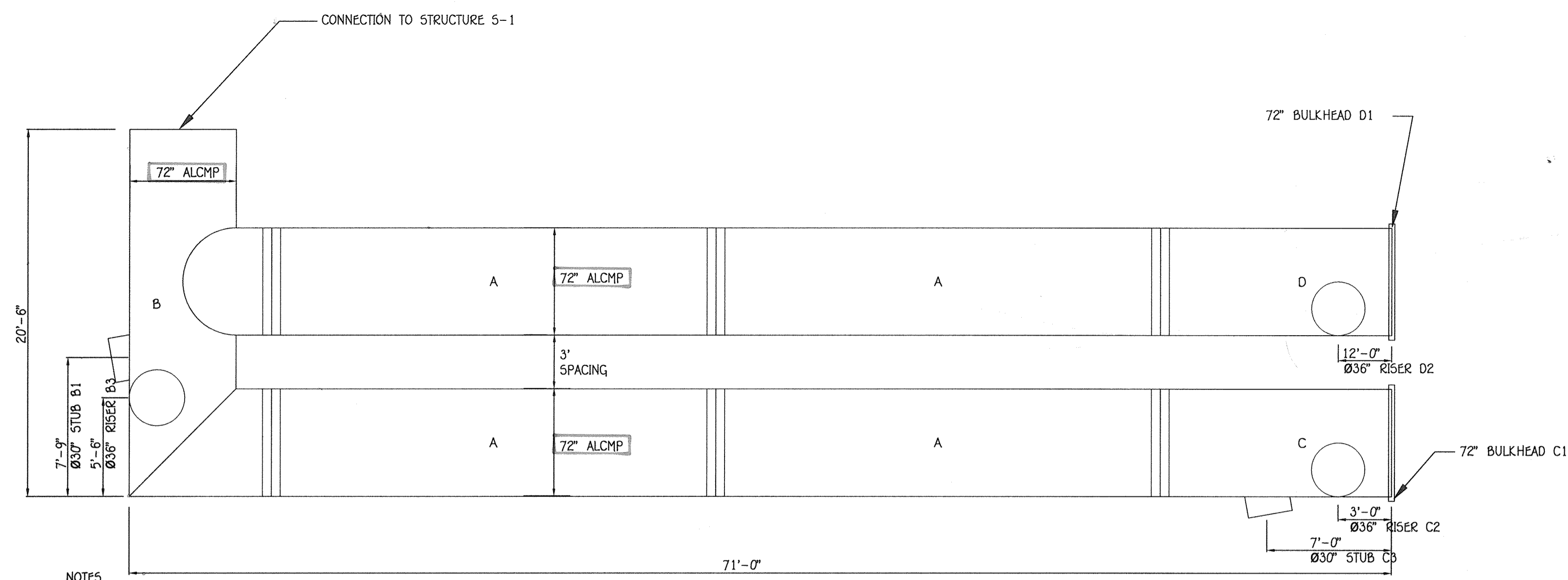
**REVISED BIORETENTION FACILITY SPECIFICATIONS, NOTES & DETAILS**

'GREEN NEIGHBORHOOD'  
**ELEMENTARY SCHOOL #42**  
 OXFORD SQUARE  
 PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: JULY 23, 2019

SHEET 43 OF 44

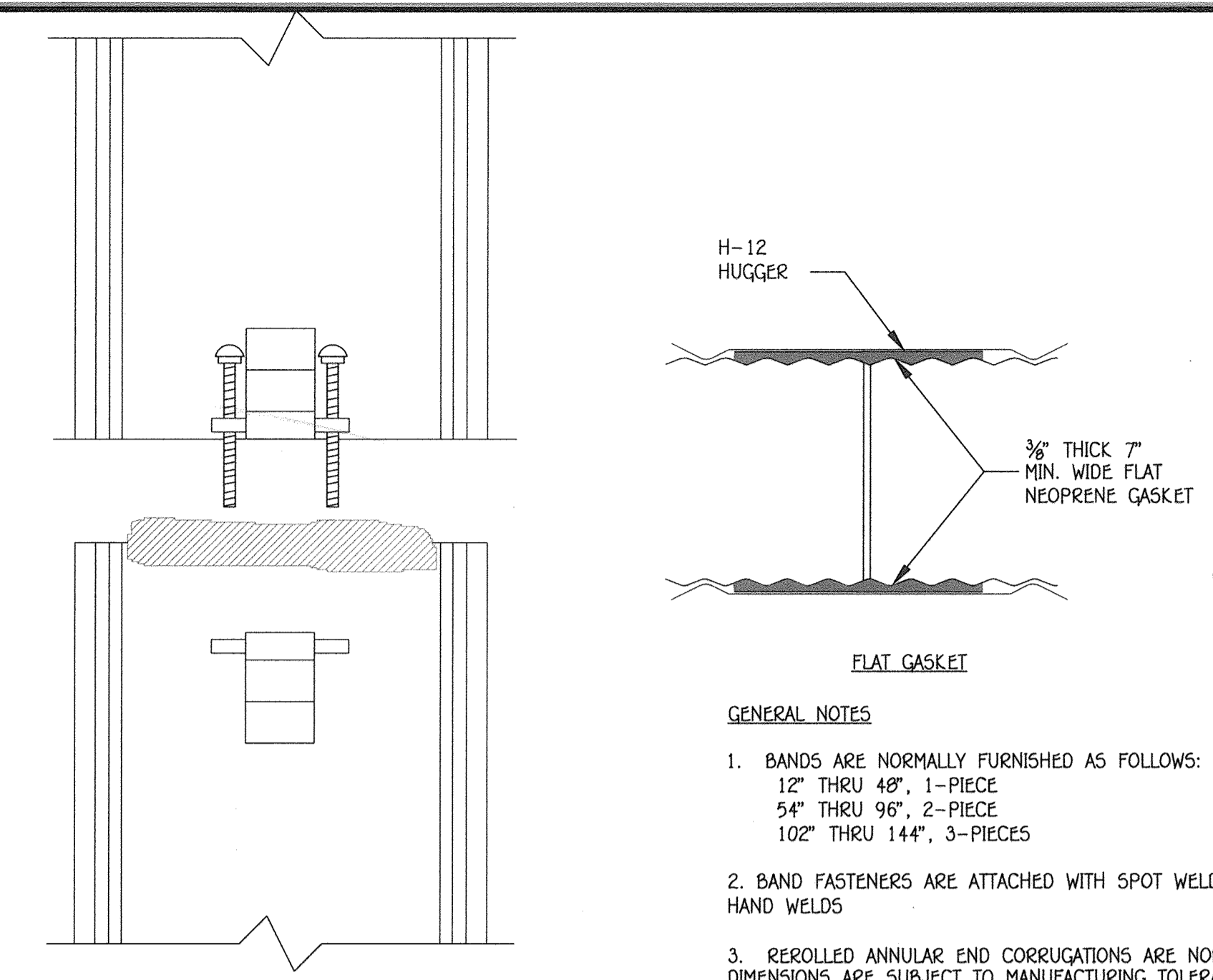




- NOTES**
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE.
  - ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
  - ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A990.
  - ALL RISERS AND STUBS ARE 2<sup>5</sup>/<sub>8</sub>\" x 1/2\" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
  - THE PIPES ARE LABELED WITH ALPHA DESIGNATION. THESE DESIGNATIONS CORRELATE WITH THE ALPHA-NUMERIC PIPE FITTINGS (I.E. RISERS, PIPE STUBS, BULKHEADS) LABELS.

**SWM#6 PLAN VIEW**  
SCALE: 1\" = 5'

SEE SHOP DRAWINGS

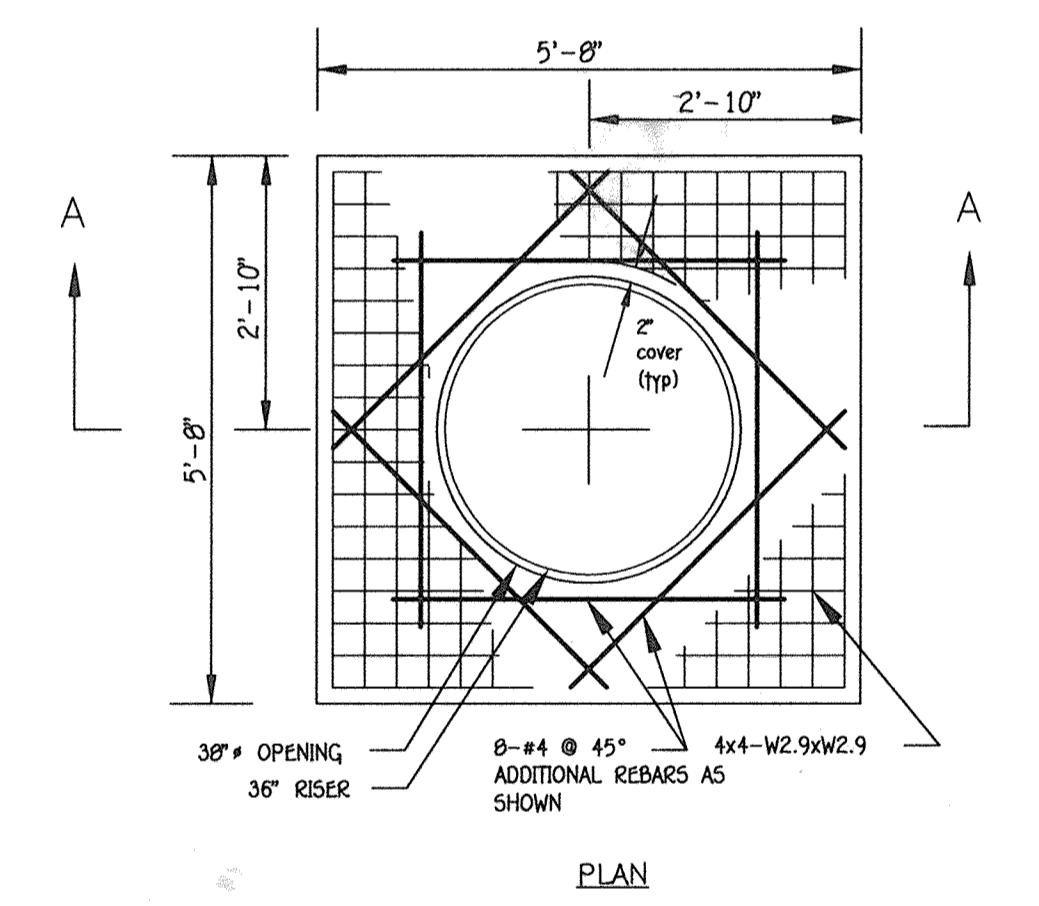


**CONNECTION DETAIL**  
**SINGLE BOLT, BAR AND STRAP**

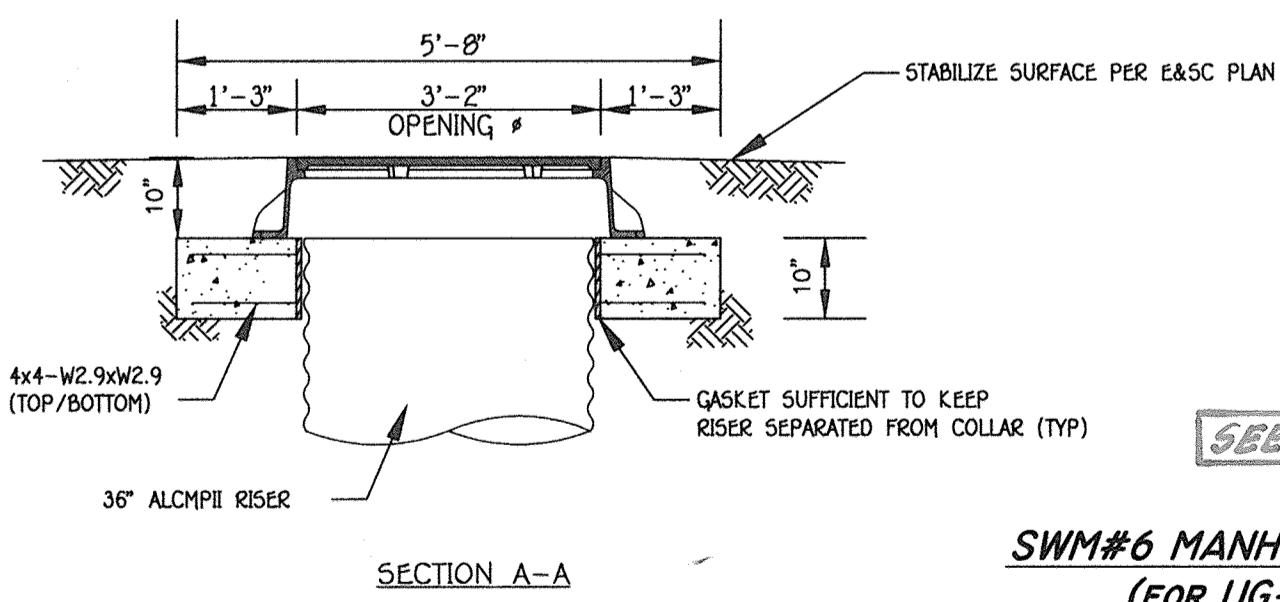
**2 H-12 HUGGER BAND DETAIL**  
**P2 SCALE: N.T.S.**

- GENERAL NOTES**
1. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:  
12\" THRU 48\", 1-PIECE  
54\" THRU 96\", 2-PIECE  
102\" THRU 144\", 3-PIECES
  2. BAND FASTENERS ARE ATTACHED WITH SPOT WELDS, RIVETS OR HAND WELDS
  3. REROLLED ANNULAR END CORRUGATIONS ARE NORMALLY 2<sup>5</sup>/<sub>8</sub>\" x 1/2\". DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES

SEE GEOTECH CERTIFICATION

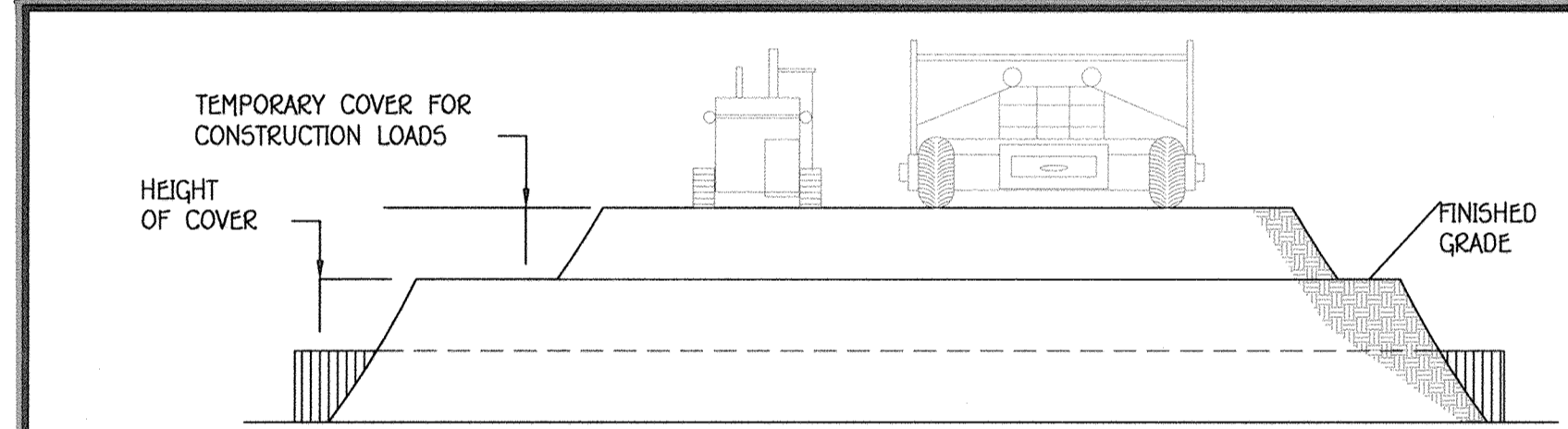


- MANHOLE COLLAR NOTES**
1. CONCRETE FOR COLLAR BE AIR-ENTRAINED, 4,000 PSI CONCRETE. THE CONCRETE SHALL BE COMPLIANT WITH THE ACI BUILDING CODE FOR CONCRETE STRUCTURES.
  2. REINFORCEMENT SHALL BE DEFORMED STEEL, FREE OF RUST, AND MEET ASTM A615, GRADE 60, WITH 2\" COVER.
  3. COMPACT COLLAR BACKFILL TO 90% PER ASTM T-99.
  4. REINFORCEMENT IS PARTIALLY SHOWN BUT IS TYPICAL FOR WHOLE COLLAR.
  5. PLACE ADDITIONAL #4 REBARS (AT 45° AND 0°) AROUND 36\" OPENING AS SHOWN.
  6. USE NEENAH FOUNDRY F&C R-1740-D WITH INSIDE 36\" OPENING FOR THE THREE (3) MANHOLES (RISERS) ON THE 72\" ALCMPIL. THE COVER SHALL BE VENTED WITH 9 (NINE) 1\" HOLES SPACED PER MANUFACTURER'S RECOMMENDATIONS.
  7. MANHOLE COVER ELEVATION PER STORM DRAIN STRUCTURE TABLE.



**SWM#6 MANHOLE F&C DETAIL**  
**(FOR UG-1, 2 AND 3)**  
NTS

SEE SHOP DRAWINGS



**CONSTRUCTION LOADS**  
FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

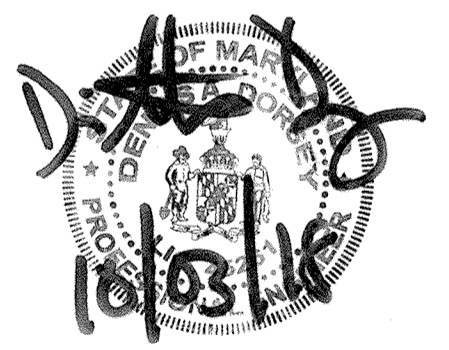
\*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

**SWM #6 CONSTRUCTION LOADING DIAGRAM**  
SCALE: N.T.S.

**AS-BUILT CERTIFICATION**

I HEREBY CERTIFY, BY MY SEAL, THAT THE FACILITIES SHOWN ON THIS PLAN WERE CONSTRUCTED AS SHOWN ON THIS "AS-BUILT" PLAN AND THAT THIS PLAN MEETS THE APPROVED PLAN AND SPECIFICATIONS.

SIGNATURE: *Dennis A. Dorsey* DATE: 4/10/16  
NAME: DENNIS A. DORSEY MD. LICENSE NO. 45261  
EXP. DATE: 4/10/20



AS-BUILT

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
12000 GROUNDWORK ELEMENTARY SCHOOL #42 PLANS/9014 SDP SHEET 44 SWM #6 DETAILS.dwg SHEET 44 3/21/2016 11:00:05 AM, 1:1

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*Charles J. Grovo*  
CHARLES J. GROVO, SR., P.E.  
DATE: 3/21/16

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Director - Department of Planning and Zoning  
Chief, Division of Land Development  
Chief, Development Engineering Division

DATE: 4-18-16  
DATE: 4-19-16  
DATE: 4-13-16

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



Address Chart

Parcel Number	Street Address
'D-D'	7030 BANBURY DRIVE HANOVER, MD 21076

PROJECT	SECTION/AREA	PARCEL
ELEMENTARY SCHOOL #42	N/A	'D-D'
PLAT NOS.	BLOCK NO.	ZONE
25786-25790	20	TOD
TAX MAP	ELEC. DIST.	CENSUS TR.
	38	FIRST
6012.01		
WATER CODE	SEWER CODE	
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**SWM #6 DETAILS**

'GREEN NEIGHBORHOOD'  
**ELEMENTARY SCHOOL #42**  
OXFORD SQUARE  
PARCEL 'D-D'

ZONED: TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 1003  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 7, 2016

SHEET 44 OF 44