SITE DEVELOPMENT PLAN

CHARLES E MILLER BRANCH AND HISTORICAL CENTER

(CAPITAL PROJECT #L0012)

PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

SEE SHEETS 20+21 FOR BUILDING ELEVATIONS | SEE SHEET 17 FOR LEED CHECKLIST

SHEET INDEX

PROFESSIONAL CERTIFICATION

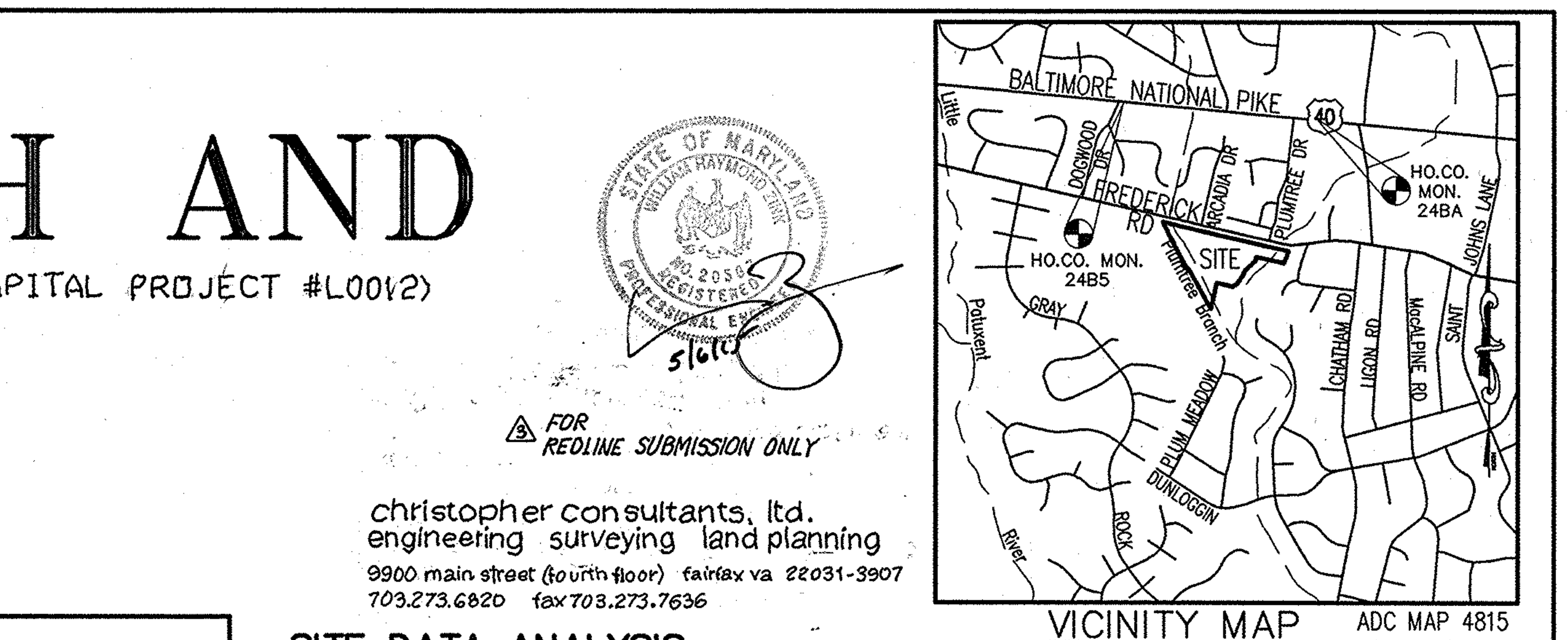
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

SIGNATURE OF ENGINEER — DATE: 02-06-2015

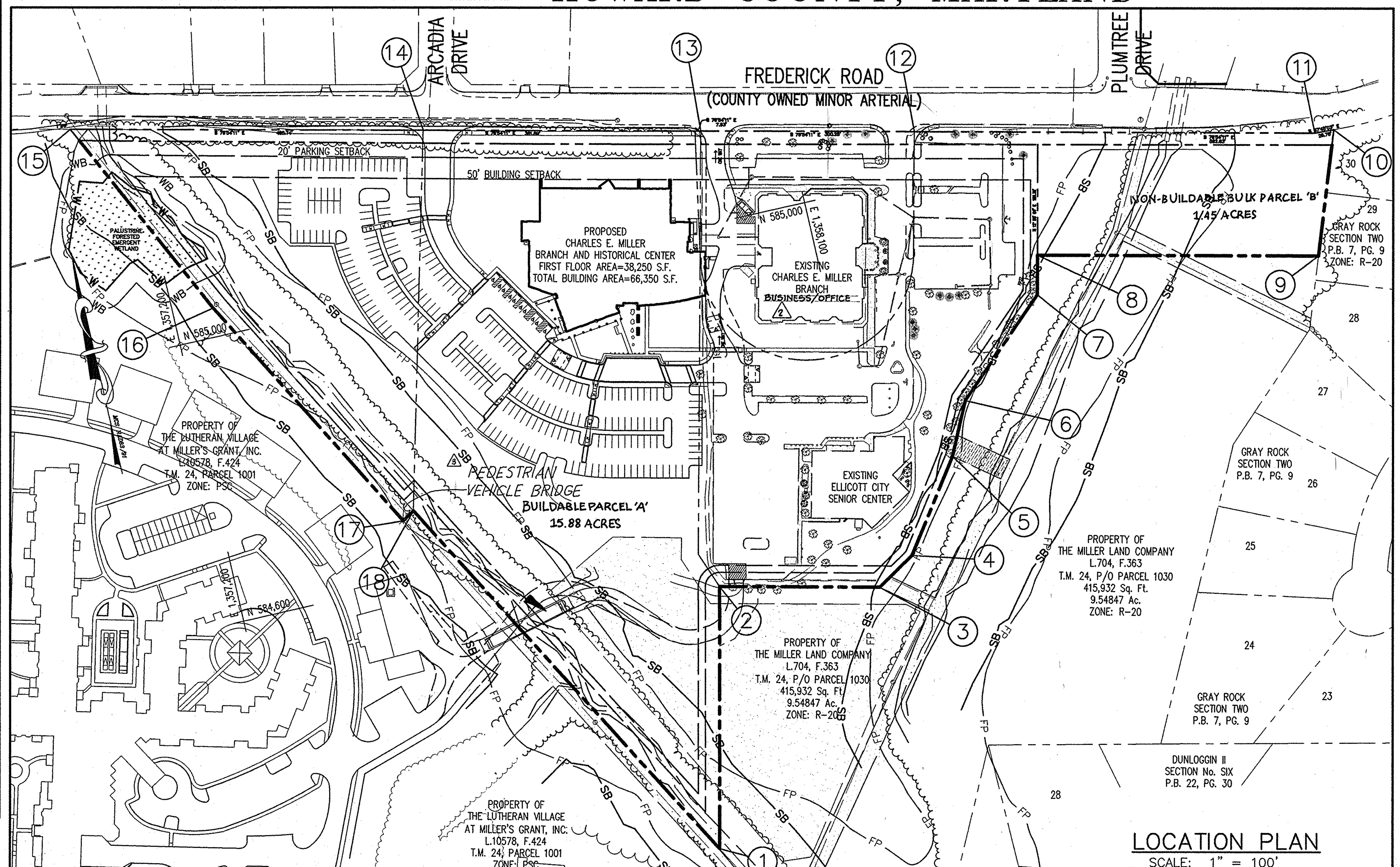
WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

FOR REDLINE SUBMISSION ONLY

christopher consultants, ltd.
engineering surveying land planning
9900 main street (fourth floor) fairfax va 22031-3907
703.273.6820 fax 703.273.7636



VICINITY MAP
SCALE: 1" = 2000'
ADC MAP 4815
GRIDS # F7, G7



LOCATION PLAN
SCALE: 1" = 100'

SITE DATA ANALYSIS

EXISTING ZONING:	R-20 (RESIDENTIAL, SINGLE (20,000 SF))
GROSS AREA OF SITE:	18.06 ACRES (786,783 SF)
AREA IN 100 YEAR FLOODPLAIN:	3.50 ACRES (152,278 SF)
AREA OF STEEP SLOPES: (OUTSIDE OF 100 YEAR FLOOD PLAIN)	*0.00 ACRES (0 SF)
NET TRACT AREA:	14.56 ACRES (634,505 SF)
AREA OF RIGHT-OF-WAY DEDICATION:	0.73 ACRES
LIMIT OF DISTURBED AREA:	8.01 ACRES (348,831 SF)
EXISTING USES:	LIBRARY, SENIOR CENTER
PROPOSED USES:	LIBRARY, LIBRARY STORAGE CENTER, SENIOR CENTER-FITNESS CENTER, BUSINESS/OFFICE
PARKING REQUIRED: (SEE LIBRARY PARKING NEEDS STUDY DATED MARCH 25, 2009)	**57,555 GSF LIBRARY- 346 SPACES (***6.0 SPACES/1,000 GSF) ***PARKING RATIO ADJUSTMENT BASED ON PARKING NEEDS ANALYSIS= 291 SPACES (5.04 SPACES/1,000 GSF) ***PARKING RATIO BASED ON PARKING NEEDS ANALYSIS PREPARED BY TRAFFIC CONCEPTS, INC. DATED MARCH 25, 2009 IN ACCORDANCE WITH SECTION 133.D.8 OF THE ZONING REGULATIONS. ** 22,085 SF LIBRARY 15,780 SF OFFICE - 52 SPACES @ 3.3 SPACES/1,000 SF; 6305 SF FITNESS CENTER - 50 SPACES @ 10 SPACES/1000 SF 13,105 SF SENIOR CENTER- 132 SPACES (10 SPACES/1,000 SF) TOTAL: 470 SPACES
TOTAL PARKING PROPOSED:	493 SPACES
NUMBER OF HANDICAP SPACES	23 EXISTING
PROP NUMBER OF HANDICAP SPACES	5 NEW WITH THIS SDP (3 VAN AND 2 CAR)
NUMBER OF REGULAR SPACES	197 EXISTING 268 NEW WITH THIS SDP
BUILDING HEIGHT ALLOWED:	34 FEET (PER ZONING ORDINANCE)
BUILDING HEIGHT PROPOSED:	40 FEET
OLD LIBRARY HEIGHT-PROPOSED	35 FEET
OPEN SPACE REQUIRED:	1.08 AC. (6%)
OPEN SPACE PROVIDED:	3.36 AC. (18.6%)
DPZ FILE REFERENCES:	CAPITAL PROJ. 99L-0003, SDP-00-140, SDP-98-136, WP-09-147, F-09-107, WP 10-27

*SLOPES >25% SHOWN ARE NOT HOWARD COUNTY REGULATED STEEP SLOPES (<20,000 SF TOTAL AREA)
**LIBRARY SQUARE FOOTAGE IS BASED ON USABLE AREA OF LIBRARY AND DOES NOT INCLUDE MECHANICAL ROOMS.

BENCH MARK

HOWARD COUNTY CONTROL STATION 24B5
N 586,956.233
E 1,356,570.840
ELEV. 390.937

HOWARD COUNTY CONTROL STATION 24BA
N 586,783.250
E 1,359,211.698
ELEV. 386.357

LEGEND

- PROPERTY LINE
- EX. STREAM AND BUFFER
- EXISTING 100-YR FLOODPLAIN
- EXISTING BUILDING
- PROPOSED BUILDING

02/2015 △3 REDLINE REVISION – PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING

COORDINATE LIST

1	N 584,136.89	E 1,357,779.92
2	N 584,497.68	E 1,357,862.53
3	N 584,446.30	E 1,358,081.57
4	N 584,479.77	E 1,358,135.73
5	N 584,603.45	E 1,358,222.53
6	N 584,676.28	E 1,358,257.65
7	N 584,799.65	E 1,358,389.59
8	N 584,854.40	E 1,358,402.45
9	N 584,765.12	E 1,358,786.74
10	N 584,934.80	E 1,358,847.54
11	N 585,219.71	E 1,358,820.78
12	N 585,063.34	E 1,358,272.79
13	N 585,133.17	E 1,357,972.62
14	N 585,332.04	E 1,357,600.67
15	N 585,219.71	E 1,357,117.82
16	N 585,040.76	E 1,357,256.78
17	N 584,687.63	E 1,357,450.03
18	N 584,698.14	E 1,357,467.05

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/ CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
5. ALL PLAN DIMENSIONS ARE TO EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
6. THE EXISTING ON-SITE TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH 2' CONTOUR INTERVALS PREPARED BY PHR+A SEPTEMBER, 2008. OFF-SITE TOPOGRAPHY IS SUPPLEMENTED WITH HOWARD COUNTY GIS INFORMATION. BOUNDARY SURVEY PREPARED BY PHR+A.
7. THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 24B5 AND 24BA WERE USED FOR THIS PROJECT.
8. WATER IS PUBLIC CONTRACT #44-4629-D AND DRAINAGE AREA IS PATAPSCO VALLEY.
9. SEWER IS PRIVATE.
10. THE STORMWATER MANAGEMENT FOR THIS SITE IS PROVIDED BY INSTALLATION OF A STORMWATER MANAGEMENT POND PROVIDING CPV AND WQV. WATER QUALITY FOR THE SITE IS ADDRESSED BY INSTALLATION OF A SURFACE SAND FILTER WITHIN THE UPPER CELL OF THE SWM POND. CPV STORAGE IS PROVIDED IN EXTENDED DETENTION WITHIN THE LOWER CELL OF THE SWM POND. SITE RECHARGE IS PROVIDED BY AN INFILTRATION TRENCH LOCATED ADJACENT TO THE BUILDING.
11. APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
12. THE 100-YEAR FLOODPLAIN HAS BEEN SHOWN HEREON BASED ON FLOODPLAIN STUDY PREPARED BY PHR+A DATED AUGUST 6, 2009 & APPROVED ON AUGUST 24, 2009.
13. THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY PATTON HARRIS RUST AND ASSOCIATES, DATED DECEMBER 2008.
14. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY TRAFFIC CONCEPTS, INC., DATED NOVEMBER 2008, & APPROVED ON AUGUST 24, 2009. THIS IS A GOVERNMENT OWNED AND OPERATED PROPERTY AND IS THEREFORE EXEMPT FROM COMPLYING WITH APFO REQUIRMENTS.
15. THE SITE IS ZONED R-20 (RESIDENTIAL, 20,000 SF LOTS) PER 02-02-04 COMPREHENSIVE ZONING PLAN & THE COMP LITE ZONING AMENDMENTS DATED 7-28-06.
16. ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
17. THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS
18. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
19. PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
20. NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE
21. ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
22. PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.23. ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T180.
23. NON-BUILDABLE BULK PARCEL B HAS BEEN CREATED FOR THE EXPLICIT PURPOSE OF PROVIDING ACCESS T P/O PARCEL 1030 FROM FREDERICK ROAD. IN ACCORDANCE WITH 16.119(A)(8) AND 16.120(C) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WP-09-147, AND WP-10-027, ALL OR PART OF NON-BUILDABLE BULK PARCEL B SHALL BE CONVEYED TO THE OWNERS OF P/O PARCEL 1030 AT THE TIME THAT THE PARCEL IS DEVELOPED, SUBJECT TO COUNTY COUNCIL APPROVAL OF THE TRANSACTION. ENGINEERING AND CONSTRUCTION OF THE ACCESS WOULD BE THE RESPONSIBILITY OF THE DEVELOPER OF P/O PARCEL 1030.
24. ALL EXTERIOR LIGHT FIXTURES SHALL BE ORIENTED TO DIRECT LIGHT INWARDS AND DOWNWARDS ON-SITE AWAY FROM ALL ADJOINING RESIDENTIAL PROPERTIES AND PUBLIC ROADS IN ACCORDANCE WITH SECTION 134 OF THE HOWARD COUNTY ZONING REGULATIONS. LIGHT TRESPASS ONTO ADJOINING PROPERTIES SHALL BE LIMITED TO 0.1 FOOT CANDLES.
25. THERE ARE TWO EXISTING PERMANENT STRUCTURES ON-SITE. ALL EXISTING STRUCTURES WILL REMAIN.
26. WETLANDS, STREAMS, ASSOCIATED BUFFERS, 100-YR FLOODPLAIN & STEEP SLOPES ARE LOCATED ON THIS PROJECT. GRADING, REMOVAL OF VEGETATIVE COVER AND TREES AND PAVING ARE NOT PERMITTED IN WETLANDS, STREAMS, WETLAND BUFFERS, STREAM BUFFERS, FLOODPLAIN, FOREST CONSERVATION AREAS, OR STEEP SLOPES EXCEPT AS APPROVED ON THIS PLAN AND ALLOWED BY WAIVER PETITION No. WP-10-27, APPROVED ON OCTOBER 6, 2009.
27. BASED ON AVAILABLE COUNTY MAPS AND RECORDS, THERE ARE NO HISTORIC STRUCTURES OR KNOWN CEMETERIES LOCATED ON THE SUBJECT PROPERTY.
28. THIS PROJECT IS SUBJECT TO THE FOLLOWING DPZ FILES: CAPITAL PROJ. 99L-0003, SDP-00-140, SDP-98-136, WP-09-147, WP-10-27, F-09-107, AND HOWARD COUNTY RESOLUTION NO. 66-2009. (CAPITAL PROJECT #L0012) △3
29. TRASH REMOVAL FOR THIS PROJECT WILL BE HANDLED WITH A DUMPSTER AS SHOWN ON PLAN.
30. AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEMS WILL BE INSTALLED IN ALL PROPOSED BUILDINGS.
31. THIS PROJECT IS SUBJECT TO COMPLIANCE WITH THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION OR BUILDING/GRADING PERMIT APPLICATIONS.
32. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
33. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-½" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) -3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
34. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
35. ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T180.
36. VERTICAL CONTROLS ON THIS DRAWING ARE PHR+A TRAVERSE POINTS 602 (ELEV. 371.65) AND 603 (ELEV. 361.06) AS SHOWN ON PLAN VIEW SHEETS.
37. A PORTION OF THE EXISTING FOREST CONSERVATION EASEMENT THAT SERVES AS THE OFF-SITE PLANTING AREA FOR THE MILLER CHEVROLET USED CARS SDP (SDP-98-136) HAS BEEN DISSOLVED TO ALLOW FOR A FUTURE FIRE DEPARTMENT ACCESS ROAD CONNECTION TO THE ADJACENT LUTHERN VILLAGE SDP (SDP-08-075).
38. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION. THE TOTAL FOREST CONSERVATION OBLIGATION FOR THIS PROJECT IS 2.01 ACRES AND IS BEING MET BY PLANTING 1.11 ACRES OF AFFORESTATION ON SITE, AND BY THE PAYMENT OF A FEE-IN-LIEU ($29,403) FOR THE REMAINING 0.90 ACRES (39,204 SF X $0.75). THE PORTION OF THE EXISTING FOREST CONSERVATION EASEMENT FOR THE MILLER CHEVROLET THAT IS BEING DISOLVED (0.63 ACRES) DUE TO THE FUTURE ROADWAY CONNECTION FROM THE LUTHERAN VILLAGE SITE TO THE PARKING LOT OF THE ELLICOTT CITY SENIOR CENTER AND THE ADDITION OF A STORMWATER MANAGEMENT POND WILL BE MITIGATED SEPERATELY THROUGH AN ABANDONMENT FEE IN THE AMOUNT OF $34,303.75 (0.63AC= 27,443 SF X $1.25).
39. A VARIANCE TO THE HEIGHT REQUIREMENTS HAS BEEN APPROVED BY THE HOWARD COUNTY COUNCIL BY RESOLUTION No. 66-2009 ON JULY 30, 2009.
40. △3 ON MARCH 9, 2015 MDE ISSUED APPROVAL FOR DISTURBANCE IN A FLOODPLAIN AND STREAM BUFFER TO INSTALL A STEEL TRUSS BRIDGE. AUTH. #201461898/14-NT-3368 EFF. DATE: MARCH 9, 2015 EXP. DATE: MARCH 9, 2018

DPZ DETERMINED THIS TO BE ESSENTIAL DISTURBANCE IN ACCORDANCE W/JUSTIFICATION STATEMENT 3/24/15

WP-09-147 CONDITIONS OF APPROVAL: WAIVING SECTIONS 16.144(b) and 16.144(g), APPROVED ON APRIL 17, 2009.

1. A FINAL PLAT SUBMISSION TO THE DPZ FOR A PROPOSED SUBDIVISION OF MULTIPLE PARCELS INTO ONE PARCEL FOR THE FUTURE DEVELOPMENT OF A NEW, CHARLES E. MILLER BRANCH LIBRARY AND HISTORIC CENTER IS REQUIRED.
2. THE ONSITE FLOODPLAIN SHALL BE INDICATED AND RECORDED ON THE FINAL PLAT IN ACCORDANCE WITH THE REQUIREMENTS OF SUBDIVISION SECTION 16.115(d).
3. VEHICULAR ACCESS RESTRICTIONS ALONG FREDERICK ROAD, A MINOR ARTERIAL CLASSIFICATION ROAD, SHALL BE INDICATED AND RECORDED ON THE FINAL PLAT IN ACCORDANCE WITH THE REQUIREMENTS OF SUBDIVISION SECTION 16.119(f).
4. THE DISPOSITION OF THE EXISTING ONSITE FOREST CONSERVATION EASEMENT (EXISTING 2.62 AC. REFORESTATION FOREST CONSERVATION EASEMENT (FCE), RECORDED AS PLAT NO. 14533 FOR SDP-98-136, MILLER CHEVROLET USED CARS, TM 24 24/GRID 11, TM PARCEL 717, 3520 SOUTH CHEVROLET DRIVE) SHALL BE ADDRESSED WITH ANY PLAT OR PLAN SUBMISSION THAT PROPOSES TO ALTER OR REMOVE ANY PART OF THIS EXISTING FCE.
5. THE FINAL PLAT SUBMISSION TO SUBDIVIDE THE ABOVE CITED PARCELS INTO ONE PARCEL SHALL PROVIDE "USABLE" PUBLIC ROAD FRONTAGE TO THE REMAINING PART OF TM PARCEL 1030 NOT TO BE OWNED BY HOWARD COUNTY IN ACCORDANCE WITH THE "PUBLIC ROAD FRONTAGE" REQUIREMENTS OF SUBDIVISION SECTION 16.120(c).

WP-10-27 CONDITIONS OF APPROVAL: Waiving Sections 16.115(c)(2), 16.116(a)(2)(ii), 16.119(f)(3) and Section 16.1204(d)(1) approved on December 1, 2009.

1. THE ADDITIONAL ACCESS POINT(S) MUST MEET ALL DESIGN MANUAL STANDARDS AND REGULATIONS.
2. THE FUTURE ROAD TO ADJOIN WITH THE LUTHERAN VILLAGE MUST MINIMALLY IMPACT THE STREAM, FLOODPLAIN AND ASSOCIATED BUFFERS.
3. PROVIDE A NOTE ON THE PLAN STATING THE RESPONSIBILE PARTY FOR THE CONSTRUCTION OF THE FUTURE ROAD TO LUTHERAN VILLAGE, THE CONDITIONS THAT WILL TAKE PLACE AT THE TIME OF CONSTRUCTION, AND THE TYPE OF PLAN THAT WILL BE SUBMITTED FOR THE CONSTRUCTION OF THE PLAN.
4. THE PLAT, F-09-107, SHALL BE REVISED TO SHOW THE CONVEYANCE OF THE PORTION OF PARCEL 1030 BACK TO OWNERSHIP OF THE LAND HOLDER FOR P/O PARCEL 1030, UPON COUNCIL APPROVAL OF THE TRANSACTION.
5. THE POTENTIAL FOR CONVEYANCE OF NON-BUILDABLE BULK PARCEL B TO P/O PARCEL 1030 SITUATED SOUTH AND EAST OF BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B SHALL EXIST IN PERPETUITY OR UNTIL AN ALTERNATIVE ACCESS POINT CAN BE CREATED FOR THE P/O PARCEL 1030 THAT IS CURRENTLY LANDLOCKED.
6. REVISE NOTE #23 TO STATE: "NON-BUILDABLE BULK PARCEL B HAS BEEN CREATED FOR THE EXPLICIT PURPOSE OF PROVIDING ACCESS T P/O PARCEL 1030 FROM FREDERICK ROAD. IN ACCORDANCE WITH 16.119(A)(8) AND 16.120(C) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WP-09-147, AND WP-10-027, ALL OR PART OF NON-BUILDABLE BULK PARCEL B SHALL BE CONVEYED TO THE OWNERS OF P/O PARCEL 1030 AT THE TIME THAT THE PARCEL IS DEVELOPED, SUBJECT TO COUNTY COUNCIL APPROVAL OF THE TRANSACTION. ENGINEERING AND CONSTRUCTION OF THE ACCESS WOULD BE THE RESPONSIBILITY OF THE DEVELOPER OF P/O PARCEL 1030.

6-17-13

ADDRESS CHART

LOT / PARCEL NUMBER	STREET ADDRESS
MILLER BRANCH LIBRARY & HISTORICAL CENTER	9421 FREDERICK ROAD
LIBRARY STORAGE	9411 FREDERICK ROAD
SENIOR CENTER	9401 FREDERICK ROAD

PROJECT NAME			SECT./AREA	PARCEL	
CHARLES E. MILLER BRANCH & HISTORICAL CENTER			-	887, 1030, 1090 & 1163	
PLAT NO. OR L/F	GRID #	ZONING	TAX MAP NO.	ELECT. DIST.	CENSUS TRACT
F-09-107 Plat# (21009-21012)	9	R-20	24	2	6029.00
WATER CODE	11-W, 24-3880-D		SEWER CODE	125-S, 129-S, 130-S	

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR	DATE 3/15/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/8/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/15/10

DATE	NO.	REVISION
6-17-13	2	REVISED LOCATION 2ND FLOOR OLD LIBRARY + ADDED NEW USE
10-8-12	1	ADDED 2ND FLOOR TO OLD LIBRARY w/ADDED PARKING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT: CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA: TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: **TITLE SHEET**

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL: STATE OF MARYLAND JOHN W. CLAPSADDLE NO. 16956 REGISTERED PROFESSIONAL ENGINEER

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

(CAPITAL PROJECT #L0012)
DESIGNED BY : PHRA
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP01COV.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 100'
DRAWING NO. 1 OF 60 66

P:\PROJECT\15976\1-0\PLANS\C-SDP01COV.DWG

ccl DWG# 102530

SDP-09-058

LEGEND

- PROPERTY LINE
- EXISTING TREELINE
- WETLANDS AND 25' BUFFER
- EX. STREAM AND BUFFER
- EX. 100-YEAR FLOODPLAIN
- EXISTING CONTOURS
- EXISTING BUILDING
- SLOPES: > 25%
- EXISTING SOILS
- EX. OVERHEAD POWER LINE
- EX. SEWER LINE
- EX. GAS LINE
- EX. TREES
- EX. CURB & GUTTER
- EX. EGDE OF PAVEMENT
- EX. PUBLIC DRAINAGE EASEMENT
- EX. SANITARY SEWER EASEMENT
- EX. UNDERGROUND ELECTRIC

WETLAND LINE TABLE

LINE	DIRECTION	LENGTH
WL1	N 51° 50' 55" E	8.27'
WL2	S 38° 28' 41" E	36.95'
WL3	S 60° 36' 51" E	26.89'
WL4	S 1° 46' 50" E	17.84'
WL5	S 43° 13' 01" E	30.54'
WL6	S 17° 17' 28" E	29.56'
WL7	S 47° 30' 28" E	33.02'
WL8	S 8° 04' 53" E	16.84'
WL9	S 78° 40' 13" W	31.36'
WL10	S 65° 43' 05" W	6.65'

SPECIMEN TREE LIST

KEY	SPECIES	SIZE	CONDITION	REMAIN OR REMOVE
1	SILVER MAPLE (Acer saccharinum)	42"	GOOD	REMAIN
2	EASTERN WHITE PINE (Pinus strobus)	31"	GOOD	REMAIN
3	EASTERN WHITE PINE (Pinus strobus)	30"	DEAD	REMAIN
4	EASTERN WHITE PINE (Pinus strobus)	30"	GOOD	REMAIN
5	EASTERN WHITE PINE (Pinus strobus)	34"	GOOD	REMOVE
6	EASTERN WHITE PINE (Pinus strobus)	34"	GOOD	REMOVE
7	EASTERN WHITE PINE (Pinus strobus)	30"	GOOD	REMAIN
8	EASTERN WHITE PINE (Pinus strobus)	32"	GOOD	REMAIN
9	RED OAK (Quercus rubra)	32"	GOOD	REMAIN

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR 3/15/10 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 3/8/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 3/15/10 DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT **CHARLES E. MILLER BRANCH AND HISTORICAL CENTER**
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

EXISTING CONDITIONS PLAN

Patton Harris Rust & Associates
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8818 Centre Park Drive
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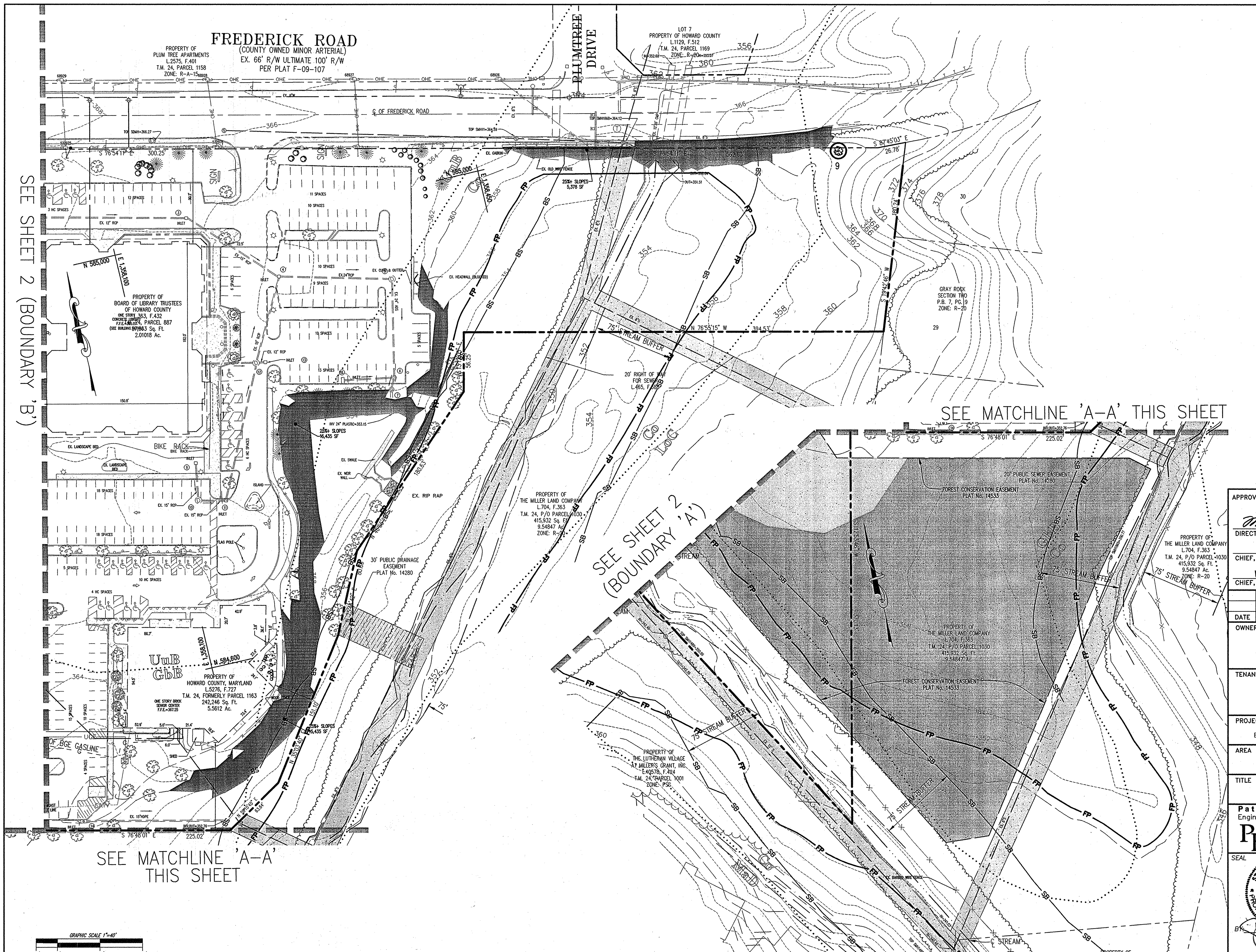
SEAL
STATE OF MARYLAND JOHN W. CLAPSADDLE NO. 16956 REGISTERED PROFESSIONAL ENGINEER
6-17-13

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP02EXI.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 2 OF ~~60~~ 66

SDP-09-058


FREDERICK ROAD
(COUNTY OWNED MINOR ARTERIAL)
EX. 66' R/W ULTIMATE 100' R/W
PER PLAT F-09-107
PLUMTREE DRIVE
PROPERTY OF
PLUM TREE APARTMENTS
L.2575, F.401
T.M. 24, PARCEL 1158
ZONE: R-A-15
LOT 7
PROPERTY OF HOWARD COUNTY
L.1129, F.512
T.M. 24, PARCEL 1169
ZONE: R-20
℄ OF FREDERICK ROAD
SEE SHEET 2 (BOUNDARY 'B')
PROPERTY OF
BOARD OF LIBRARY TRUSTEES
OF HOWARD COUNTY
2.01018 Ac.
BIKE RACK
FLAG POLE
PROPERTY OF
HOWARD COUNTY, MARYLAND
L.5276, F.727
T.M. 24, FORMERLY PARCEL 1163
242,246 Sq. Ft.
5.5612 Ac.
EX. RIP RAP
30' PUBLIC DRAINAGE
EASEMENT
PLAT No. 14280
PROPERTY OF
THE MILLER LAND COMPANY
L.704, F.363
T.M. 24, P/O PARCEL 1030
415,932 Sq. Ft.
9.54847 Ac.
ZONE: R-20
75' STREAM BUFFER
20' RIGHT OF WAY
FOR SEWER
GRAY ROCK
SECTION TWO
P.B. 7, PG. 19
ZONE: R-20
SEE MATCHLINE 'A-A' THIS SHEET
SEE SHEET 2 (BOUNDARY 'A')
20' PUBLIC SEWER EASEMENT
PLAT No. 14280
FOREST CONSERVATION EASEMENT
PLAT No. 14533
PROPERTY OF
THE LUTHERAN VILLAGE
AT MILLER'S GRANT, INC.
L.10578, F.424
T.M. 24, PARCEL 1001
ZONE: PSC
℄ STREAM
SEE MATCHLINE 'A-A'
THIS SHEET
GRAPHIC SCALE 1"=40'

LEGEND

PROPERTY LINE	
EXISTING TREELINE	
WETLANDS AND 25' BUFFER	
EX. STREAM AND BUFFER	
EX. 100-YEAR FLOODPLAIN	
EXISTING CONTOURS	
EXISTING BUILDING	
SLOPES: > 25%	
EXISTING SOILS	
EX. OVERHEAD POWER LINE	
EX. SEWER LINE	
EX. GAS LINE	
EX. TREES	
EX. CURB & GUTTER	
EX. EGDE OF PAVEMENT	
EX. PUBLIC DRAINAGE EASEMENT	
EX. SANITARY SEWER EASEMENT	
EX. UNDERGROUND ELECTRIC	

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — [signature] — DATE 3/15/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — [signature] — DATE 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — [signature] JMF — DATE 3/15/10

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

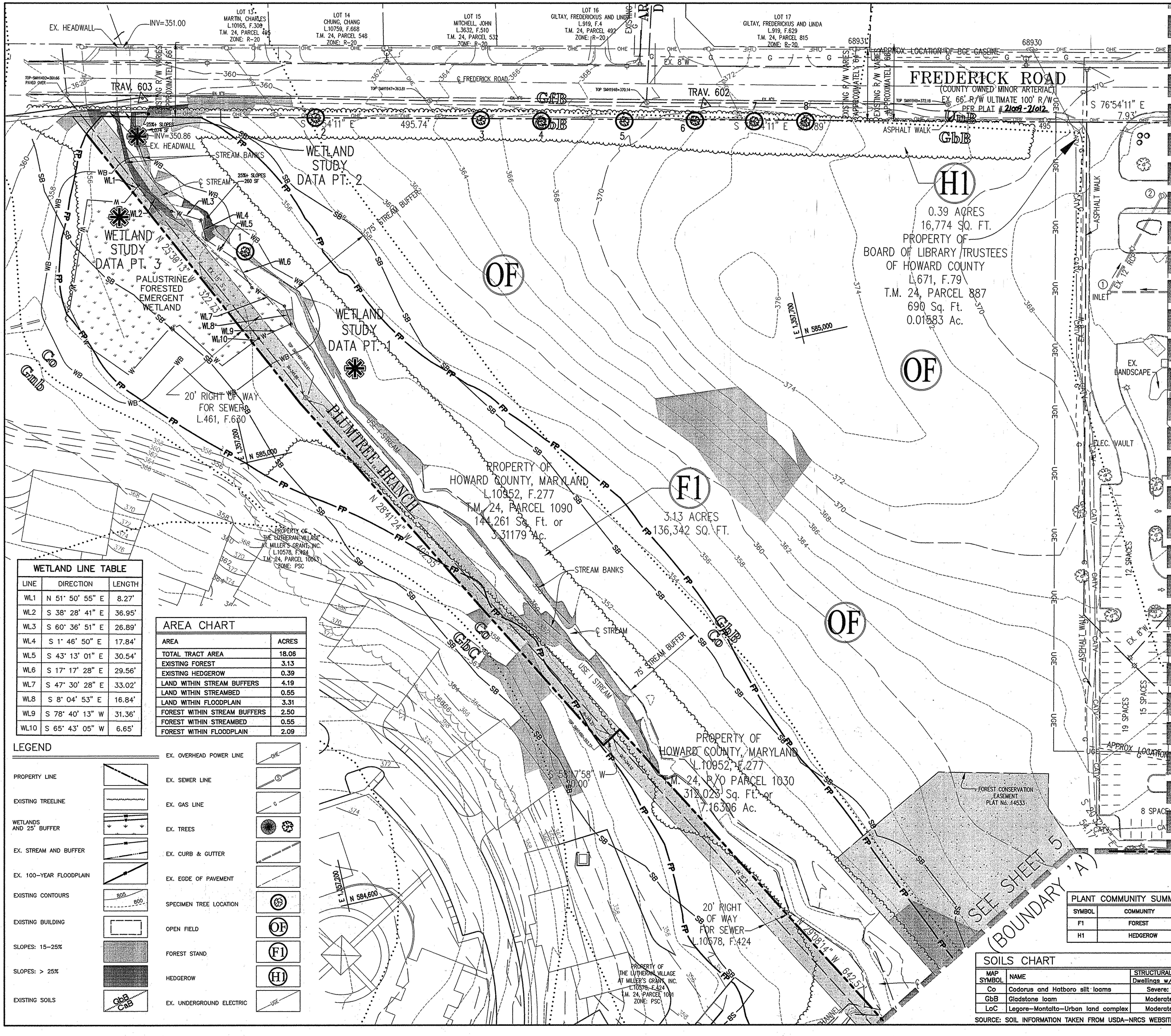
EXISTING CONDITIONS PLAN

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND
JOHN W. CLAPSADDLE
NO. 16956
REGISTERED
PROFESSIONAL ENGINEER
BY:

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP02EXI.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 3 OF 66

SDP-09-058



KEY	SPECIES	SIZE	CONDITION	REMAIN OR REMOVE
1	SILVER MAPLE (Acer saccharinum)	42"	GOOD	REMAIN
2	EASTERN WHITE PINE (Pinus strobus)	31"	GOOD	REMOVE
3	EASTERN WHITE PINE (Pinus strobus)	30"	DEAD	REMOVE
4	EASTERN WHITE PINE (Pinus strobus)	30"	GOOD	REMOVE
5	EASTERN WHITE PINE (Pinus strobus)	34"	GOOD	REMOVE
6	EASTERN WHITE PINE (Pinus strobus)	34"	GOOD	REMOVE
7	EASTERN WHITE PINE (Pinus strobus)	30"	GOOD	REMOVE
8	EASTERN WHITE PINE (Pinus strobus)	32"	GOOD	REMOVE
9	RED OAK (Quercus rubra)	32"	GOOD	REMAIN

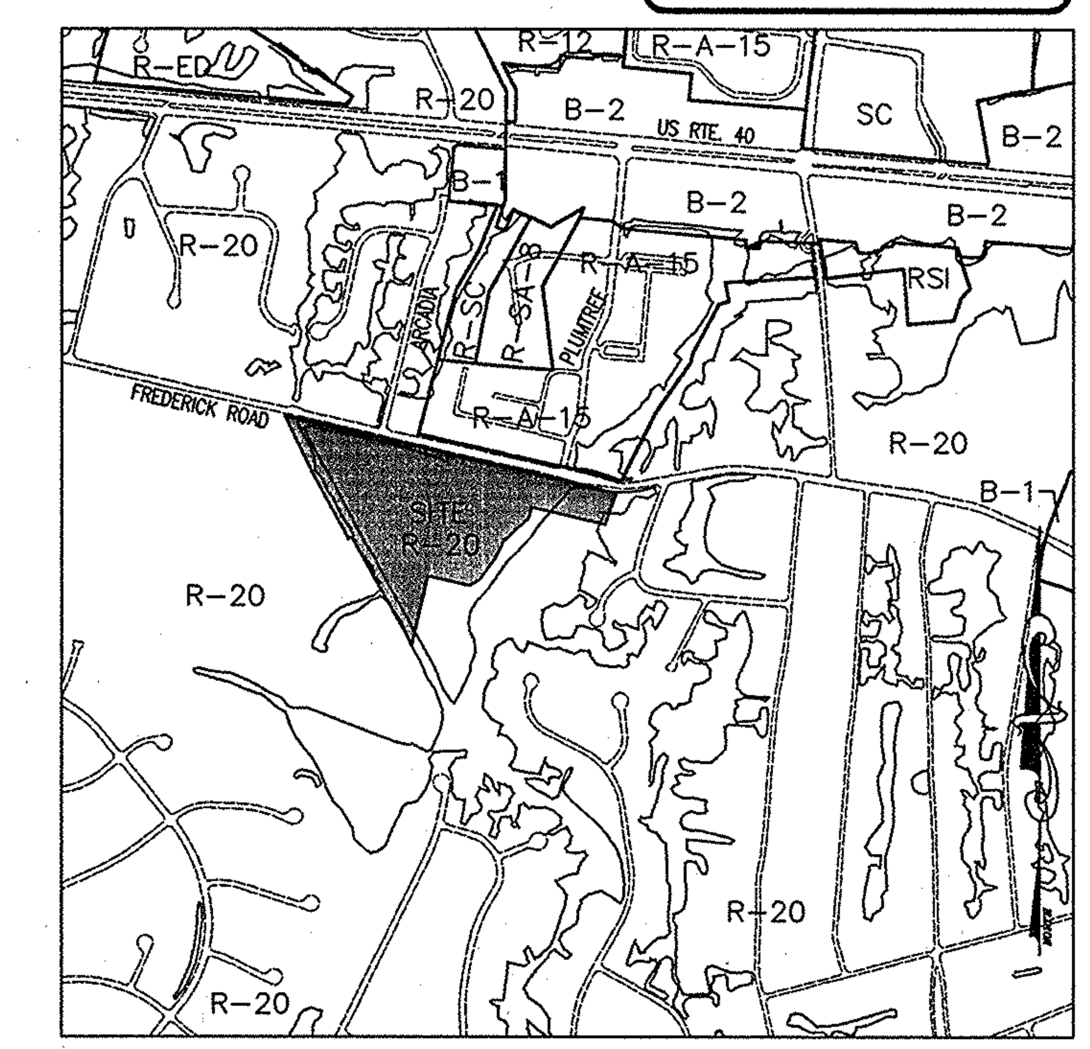
WETLAND LINE TABLE

LINE	DIRECTION	LENGTH
WL1	N 51° 50' 55" E	8.27'
WL2	S 38° 28' 41" E	36.95'
WL3	S 60° 36' 51" E	26.89'
WL4	S 1° 46' 50" E	17.84'
WL5	S 43° 13' 01" E	30.54'
WL6	S 17° 17' 28" E	29.56'
WL7	S 47° 30' 28" E	33.02'
WL8	S 8° 04' 53" E	16.84'
WL9	S 78° 40' 13" W	31.36'
WL10	S 65° 43' 05" W	6.65'

AREA CHART

AREA	ACRES
TOTAL TRACT AREA	18.06
EXISTING FOREST	3.13
EXISTING HEDGEROW	0.39
LAND WITHIN STREAM BUFFERS	4.19
LAND WITHIN STREAMBED	0.55
LAND WITHIN FLOODPLAIN	3.31
FOREST WITHIN STREAM BUFFERS	2.50
FOREST WITHIN STREAMBED	0.55
FOREST WITHIN FLOODPLAIN	2.09

VICINITY MAP
SCALE: 1"=1000'



PLANT COMMUNITY SUMMARY

SYMBOL	COMMUNITY	AREA	PRIORITY RETENTION
F1	FOREST	3.13 Ac.±	HIGH
H1	HEDGEROW	0.39 Ac.±	HIGH

SOILS CHART

MAP SYMBOL	NAME	STRUCTURAL LIMITATIONS Dwellings w/ Basements	EROSION HAZARD	HYDRIC	SLOPE (%)
Co	Codorus and Hatboro silt loams	Severe: flooding	Moderate	Y	0–3
GbB	Gladstone loam	Moderate: slopes	Moderate	N	3–8
LoC	Legore–Montalto–Urban land complex	Moderate: slopes	Moderate	N	8–15

SOURCE: SOIL INFORMATION TAKEN FROM USDA–NRCS WEBSITE.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — 3/15/10 — DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3/8/10 — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 3/15/10 — DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

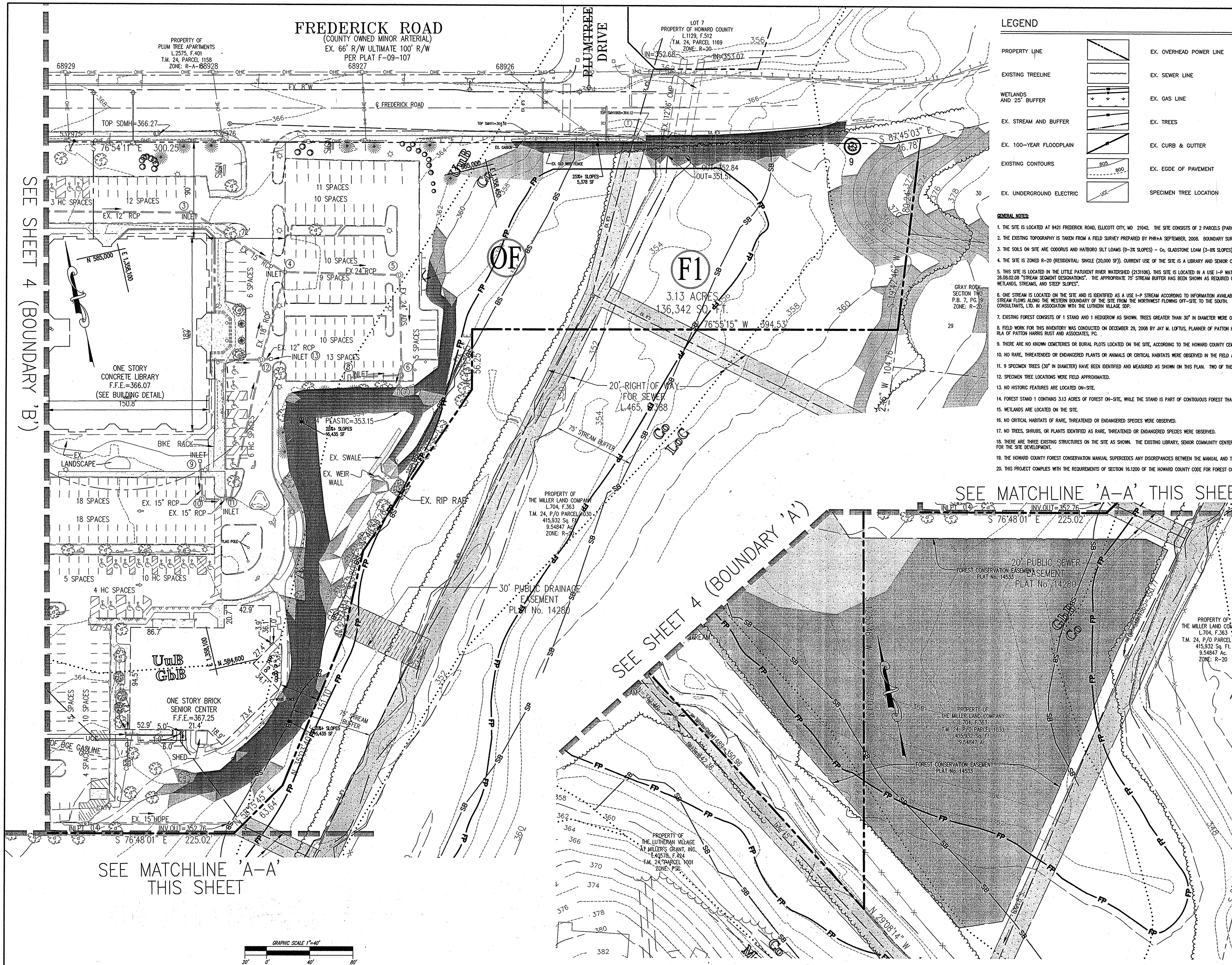
TITLE
FOREST STAND DELINEATION

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND 797 SCOTT R. WOLFORD BOARD OF EXAMINERS OF LANDSCAPE ARCHITECTS
BY:
SCOTT R. WOLFORD #797

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP03FSD.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 4 OF ~~60~~ 66

SDP-09-058



LEGEND

PROPERTY LINE		EX. OVERHEAD POWER LINE		EXISTING BUILDING	
EXISTING TREELINE		EX. SEWER LINE		SLOPES: 15-25%	
WETLANDS AND 25' BUFFER		EX. GAS LINE		SLOPES: > 25%	
EX. STREAM AND BUFFER		EX. TREES		EXISTING SOILS	GbB CaB
EX. 100-YEAR FLOODPLAIN		EX. CURB & GUTTER		OPEN FIELD	OF
EXISTING CONTOURS	805 800	EX. EGDE OF PAVEMENT		FOREST STAND	F1
EX. UNDERGROUND ELECTRIC	UGE	SPECIMEN TREE LOCATION		HEDGEROW	H1

GENERAL NOTES:

1. THE SITE IS LOCATED AT 9421 FREDERICK ROAD, ELLICOTT CITY, MD 21042. THE SITE CONSISTS OF 2 PARCELS (PARCEL 1090, 1189) WHICH EQUALS A TOTAL OF 18.06± ACRES.
2. THE EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD SURVEY PREPARED BY PHR+A SEPTEMBER, 2008. BOUNDARY SURVEY WAS PREPARED BY PHR+A SEPTEMBER, 2008.
3. THE SOILS ON SITE ARE CODORUS AND HATBORO SILT LOAMS (0-3% SLOPES) - Co, GLADSTONE LOAM (3-8% SLOPES) - GbB, LEGORE-MONTALTO-URBAN LAND COMPLEX (8-15% SLOPES) - LoC.
4. THE SITE IS ZONED R-20 (RESIDENTIAL: SINGLE (20,000 SF)). CURRENT USE OF THE SITE IS A LIBRARY AND SENIOR COMMUNITY CENTER.
5. THIS SITE IS LOCATED IN THE LITTLE PATUXENT RIVER WATERSHED (2131106). THIS SITE IS LOCATED IN A USE I-P WATERSHED ACCORDING TO INFORMATION AVAILABLE FROM THE CODE OF MARYLAND REGULATIONS (COMAR) 26.08.02.08 "STREAM SEGMENT DESIGNATIONS". THE APPROPRIATE 75' STREAM BUFFER HAS BEEN SHOWN AS REQUIRED IN THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SECTION 16.116 "PROTECTION OF WETLANDS, STREAMS, AND STEEP SLOPES".
6. ONE STREAM IS LOCATED ON THE SITE AND IS IDENTIFIED AS A USE I-P STREAM ACCORDING TO INFORMATION AVAILABLE FROM THE CODE OF MARYLAND REGULATIONS (COMAR) 26.08.02.08 "STREAM SEGMENT DESIGNATIONS". THE STREAM FLOWS ALONG THE WESTERN BOUNDARY OF THE SITE FROM THE NORTHWEST FLOWING OFF-SITE TO THE SOUTH. A FLOODPLAIN IS LOCATED ON THE SITE AS SHOWN BY FLOODPLAIN STUDY PREPARED BY CHRISTOPHER CONSULTANTS, LTD. IN ASSOCIATION WITH THE LUTHERN VILLAGE SDP.
7. EXISTING FOREST CONSISTS OF 1 STAND AND 1 HEDGEROW AS SHOWN. TREES GREATER THAN 30" IN DIAMETER WERE OBSERVED WITHIN THE PROPERTY BOUNDARY AND ARE SHOWN.
8. FIELD WORK FOR THIS INVENTORY WAS CONDUCTED ON DECEMBER 29, 2008 BY JAY M. LOFTUS, PLANNER OF PATTON HARRIS RUST AND ASSOCIATES, PC UNDER THE SUPERVISION OF PETER J. STONE, RLA AND SCOTT R. WOLFORD, RLA OF PATTON HARRIS RUST AND ASSOCIATES, PC.
9. THERE ARE NO KNOWN CEMETERIES OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY CEMETERIES INVENTORY.
10. NO RARE, THREATENDED OR ENDANGERED PLANTS OR ANIMALS OR CRITICAL HABITATS WERE OBSERVED IN THE FIELD AS STATED IN A LETTER RECEIVED FROM THE MARYLAND DNR.
11. 9 SPECIMEN TREES (30" IN DIAMETER) HAVE BEEN IDENTIFIED AND MEASURED AS SHOWN ON THIS PLAN. TWO OF THE SPECIMEN TREES WILL NEED TO BE REMOVED DUE TO THE PROPOSED DEVELOPMENT ON THE SITE.
12. SPECIMEN TREE LOCATIONS WERE FIELD APPROXIMATED.
13. NO HISTORIC FEATURES ARE LOCATED ON-SITE.
14. FOREST STAND 1 CONTAINS 3.13 ACRES OF FOREST ON-SITE, WHILE THE STAND IS PART OF CONTIGUOUS FOREST THAT EXTENDS FOR A TOTAL OF THIRTY (30) ACRES OFF-SITE.
15. WETLANDS ARE LOCATED ON THE SITE.
16. NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
17. NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
18. THERE ARE THREE EXISTING STRUCTURES ON THE SITE AS SHOWN. THE EXISTING LIBRARY, SENIOR COMMUNITY CENTER AND SHED WILL REMAIN. A NEW HOWARD COUNTY PUBLIC LIBRARY AND ASSOCIATED PARKING ARE PROPOSED FOR THE SITE DEVELOPMENT.
19. THE HOWARD COUNTY FOREST CONSERVATION MANUAL SUPERCEDES ANY DISCREPANCIES BETWEEN THE MANUAL AND THESE PLANS.
20. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Marsha S. McLaughlin 3/15/10
DIRECTOR DATE

3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kent Sheubrooks 3/18/10
CHIEF, DIVISION OF LAND DEVELOPMENT JMF DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

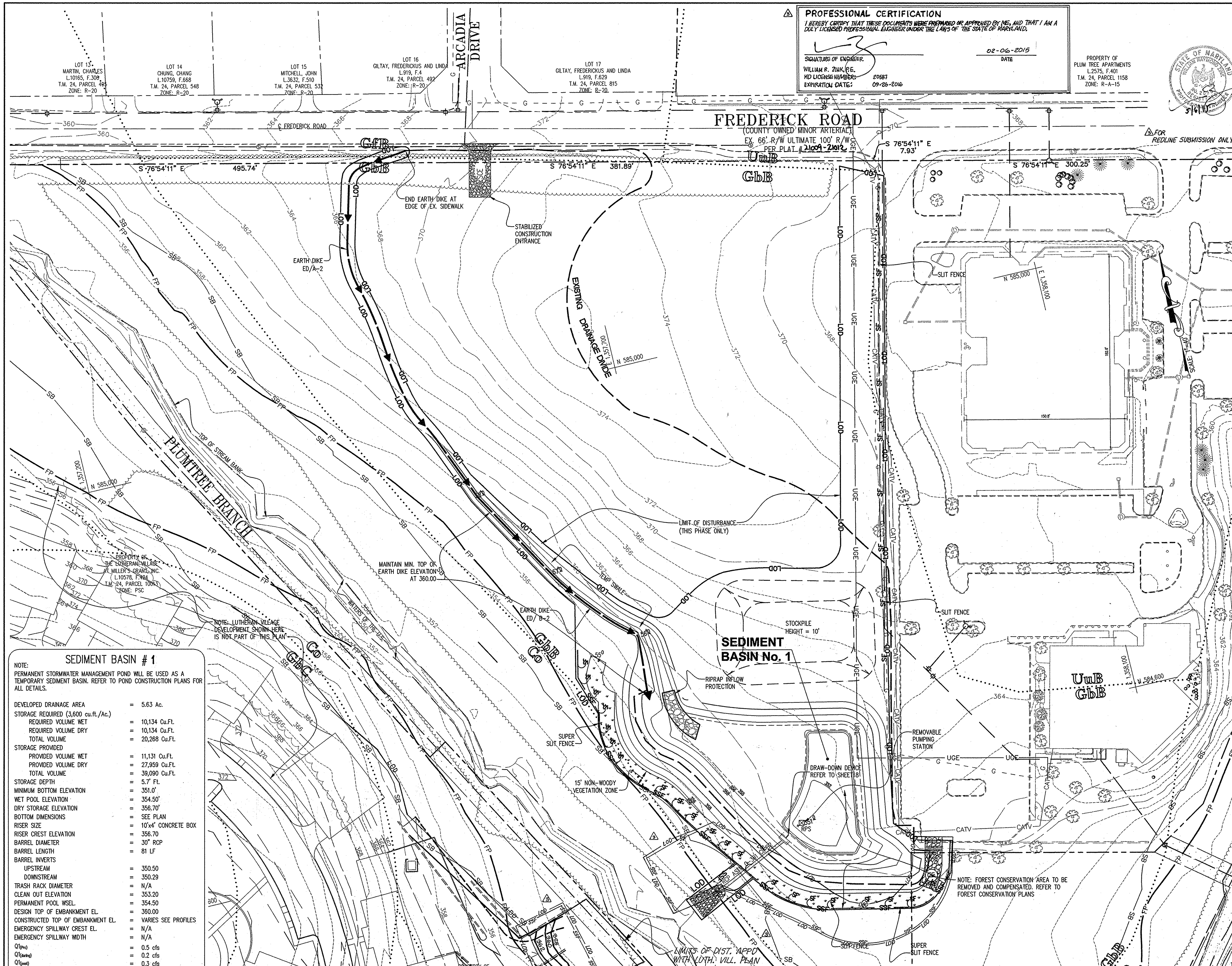
TITLE
FOREST STAND DELINEATION

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
BY:
SCOTT R. WOLFORD #797

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP03FSD.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 5 OF 66

SDP-09-058



SEDIMENT BASIN # 1

NOTE:

PERMANENT STORMWATER MANAGEMENT POND WILL BE USED AS A TEMPORARY SEDIMENT BASIN. REFER TO POND CONSTRUCTION PLANS FOR ALL DETAILS.

DEVELOPED DRAINAGE AREA	=	5.63 Ac.
STORAGE REQUIRED (3,600 cu.ft./Ac.)		
REQUIRED VOLUME WET	=	10,134 Cu.Ft.
REQUIRED VOLUME DRY	=	10,134 Cu.Ft.
TOTAL VOLUME	=	20,268 Cu.Ft.
STORAGE PROVIDED		
PROVIDED VOLUME WET	=	11,131 Cu.Ft.
PROVIDED VOLUME DRY	=	27,959 Cu.Ft.
TOTAL VOLUME	=	39,090 Cu.Ft.
STORAGE DEPTH	=	5.7' Ft.
MINIMUM BOTTOM ELEVATION	=	351.0'
WET POOL ELEVATION	=	354.50'
DRY STORAGE ELEVATION	=	356.70'
BOTTOM DIMENSIONS	=	SEE PLAN
RISER SIZE	=	10'x4' CONCRETE BOX
RISER CREST ELEVATION	=	356.70
BARREL DIAMETER	=	30" RCP
BARREL LENGTH	=	81 LF
BARREL INVERTS		
UPSTREAM	=	350.50
DOWNSTREAM	=	350.29
TRASH RACK DIAMETER	=	N/A
CLEAN OUT ELEVATION	=	353.20
PERMANENT POOL WSEL.	=	354.50
DESIGN TOP OF EMBANKMENT EL.	=	360.00
CONSTRUCTED TOP OF EMBANKMENT EL.	=	VARIES SEE PROFILES
EMERGENCY SPILLWAY CREST EL.	=	N/A
EMERGENCY SPILLWAY WIDTH	=	N/A
$Q1_{(Pre)}$	=	0.5 cfs
$Q1_{(during)}$	=	0.2 cfs
$Q1_{(post)}$	=	0.3 cfs

3

PROFESSIONAL CERTIFICATION

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

SIGNATURE OF ENGINEER — DATE 02-06-2015

WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

LEGEND

LIMIT OF DISTURBANCE	LOD
SILT FENCE	SF
SUPER SILT FENCE	SSF
EARTH DIKE	
SUPER FENCE DIVERSION	SFD
PIPE SLOPE DRAIN	PSD-12
REMOVABLE PUMPING STATION	RPS
BAFFLES	
STABILIZED CONSTRUCTION ENTRANCE	SCE
MOUNTABLE BERM	
PROPERTY LINE	
EXISTING CONTOURS	560 562
PROPOSED CONTOURS	550 552
TEMPORARY SAFETY FENCE	
EXISTING STORM DRAIN SYSTEM	EX. 15" RCP
EXISTING SEWER SYSTEM	EX. 8" SAN
EXISTING WATER SYSTEM	EX. 12" W
NON-WOODY BUFFER	
RIPRAP INFLOW PROTECTION	RRP

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER — DATE 2/4/10

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

ENGINEER — DATE 2/2/2010

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/4/10

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 3/15/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/15/10

DATE	NO.	REVISION
02/2015	3	REDLINE REVISION – PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT **CHARLES E. MILLER BRANCH AND HISTORICAL CENTER**
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **EROSION AND SEDIMENT CONTROL PLAN PHASE ~~1~~ 3A** 3

Patton Harris Rust & Associates
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PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND — JOHN W. CLAPSADDLE — NO. 16956 — REGISTERED PROFESSIONAL ENGINEER

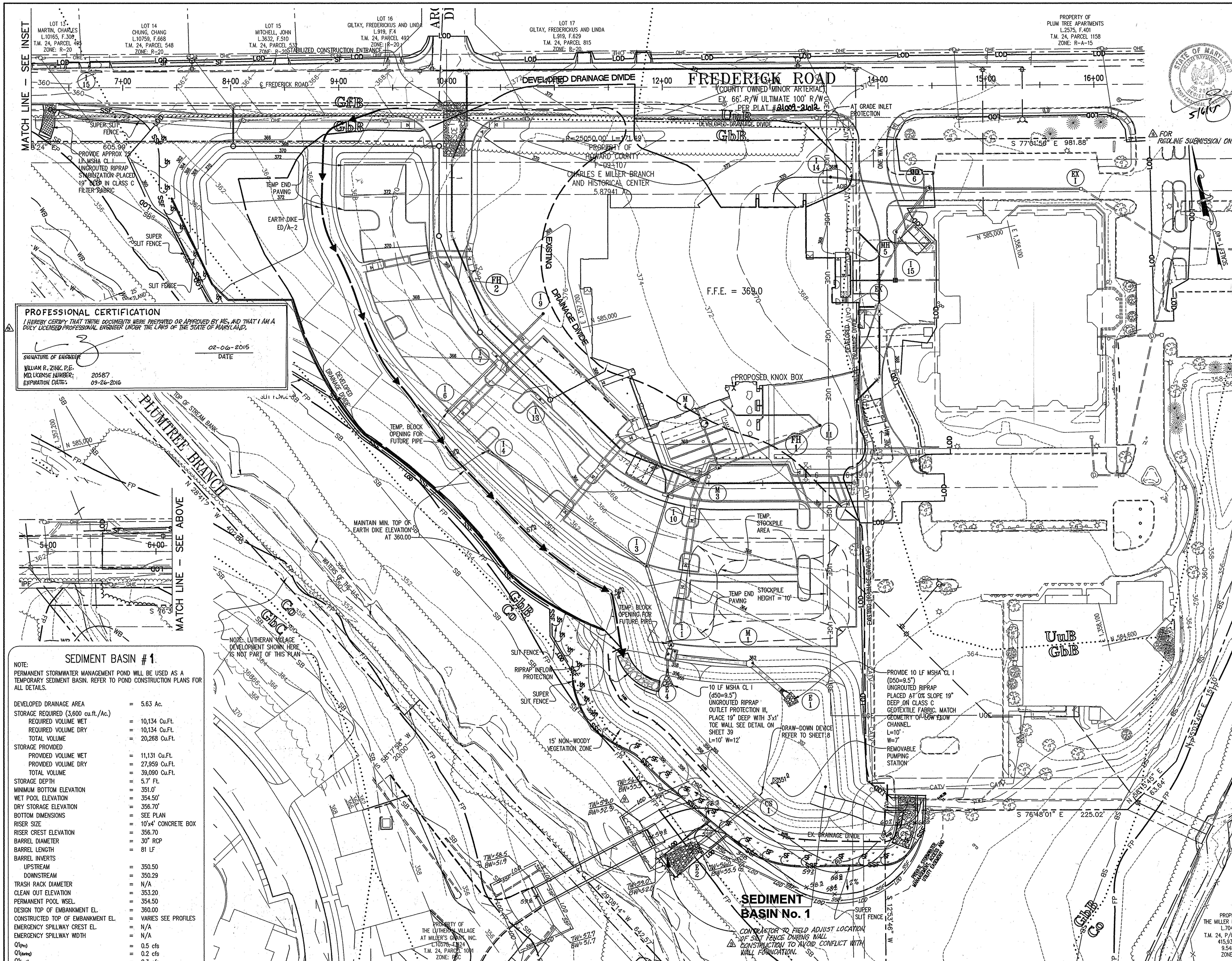
BY:

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JWC
DRAWN BY: JWC/SGM
PROJECT NO : 15976-1-0 C-SDP06ESC.DWG
DATE : FEB 2, 2010
SCALE : 1" = 40' 3
DRAWING NO. 6 OF ~~60~~ 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP06ESC.DWG



PROFESSIONAL CERTIFICATION

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SIGNATURE OF ENGINEER — DATE: 02-06-2015

WILLIAM R. ZINK, P.E.
MD. LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

SEDIMENT BASIN # 1

NOTE:
PERMANENT STORMWATER MANAGEMENT POND WILL BE USED AS A TEMPORARY SEDIMENT BASIN. REFER TO POND CONSTRUCTION PLANS FOR ALL DETAILS.

DEVELOPED DRAINAGE AREA	=	5.63 Ac.
STORAGE REQUIRED (3,600 cu.ft./Ac.)		
REQUIRED VOLUME WET	=	10,134 Cu.Ft.
REQUIRED VOLUME DRY	=	10,134 Cu.Ft.
TOTAL VOLUME	=	20,268 Cu.Ft.
STORAGE PROVIDED		
PROVIDED VOLUME WET	=	11,131 Cu.Ft.
PROVIDED VOLUME DRY	=	27,959 Cu.Ft.
TOTAL VOLUME	=	39,090 Cu.Ft.
STORAGE DEPTH	=	5.7' Ft.
MINIMUM BOTTOM ELEVATION	=	351.0'
WET POOL ELEVATION	=	354.50'
DRY STORAGE ELEVATION	=	356.70'
BOTTOM DIMENSIONS	=	SEE PLAN
RISER SIZE	=	10'x4' CONCRETE BOX
RISER CREST ELEVATION	=	356.70
BARREL DIAMETER	=	30" RCP
BARREL LENGTH	=	81 LF
BARREL INVERTS		
UPSTREAM	=	350.50
DOWNSTREAM	=	350.29
TRASH RACK DIAMETER	=	N/A
CLEAN OUT ELEVATION	=	353.20
PERMANENT POOL WSEL.	=	354.50
DESIGN TOP OF EMBANKMENT EL.	=	360.00
CONSTRUCTED TOP OF EMBANKMENT EL.	=	VARIES SEE PROFILES
EMERGENCY SPILLWAY CREST EL.	=	N/A
EMERGENCY SPILLWAY WIDTH	=	N/A
$Q1_{(Pre)}$	=	0.5 cfs
$Q1_{(during)}$	=	0.2 cfs
$Q1_{(post)}$	=	0.3 cfs

LEGEND

- LIMIT OF DISTURBANCE — LOD
- SILT FENCE — SF
- SUPER SILT FENCE — SSF
- EARTH DIKE
- SUPER FENCE DIVERSION — SFD
- PIPE SLOPE DRAIN — PSD-12
- REMOVABLE PUMPING STATION — RPS
- BAFFLES
- STABILIZED CONSTRUCTION ENTRANCE — SCE
- MOUNTABLE BERM
- PROPERTY LINE
- EXISTING CONTOURS — 560 562
- PROPOSED CONTOURS — 550 552
- TEMPORARY SAFETY FENCE
- EXISTING STORM DRAIN SYSTEM — EX. 15" RCP
- EXISTING SEWER SYSTEM — EX. 8" SAN
- EXISTING WATER SYSTEM — EX. 12" W
- NON-WOODY BUFFER
- RIPRAP INFLOW PROTECTION — RRP

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER — DATE 2/4/10

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

ENGINEER — DATE 2/2/2010

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/9/10

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 3/15/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/15/10

DATE	NO.	REVISION
02/2015	3	REDLINE REVISION - PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE EROSION AND SEDIMENT CONTROL PLAN - PHASE ~~2~~ 3B

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

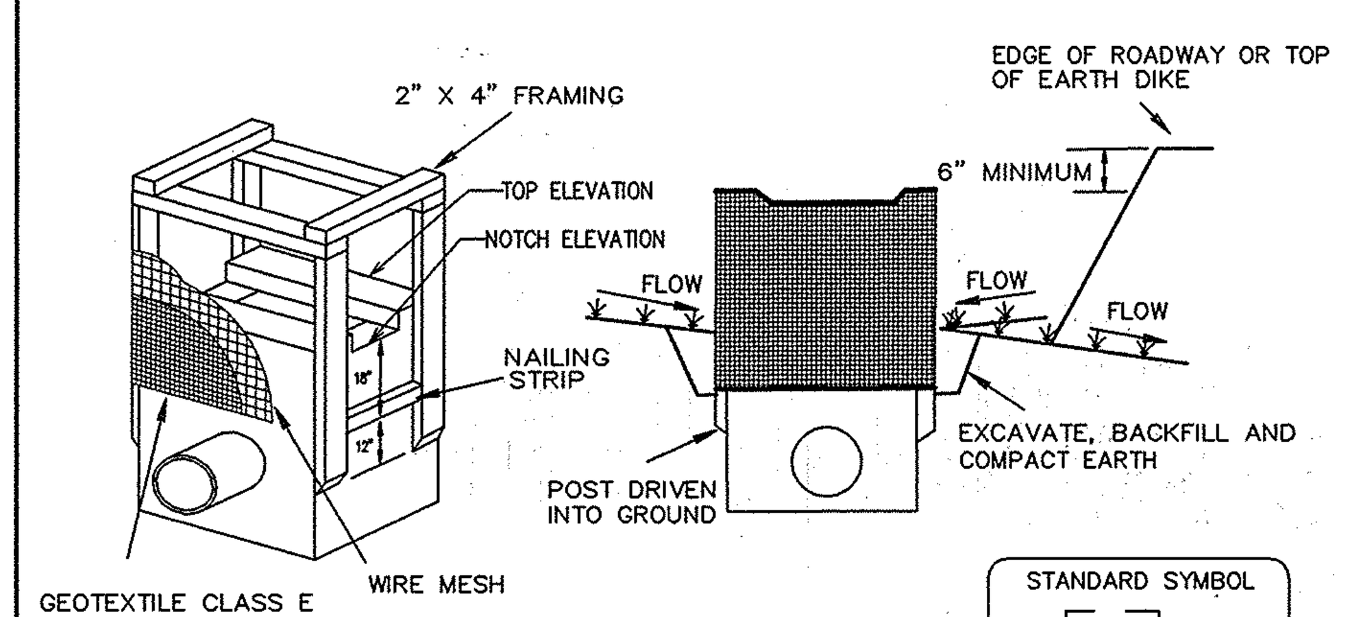
SEAL
BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP07ESC.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 7 OF ~~60~~ 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP07ESC.DWG

STANDARD INLET PROTECTION



STANDARD SYMBOL
SIP

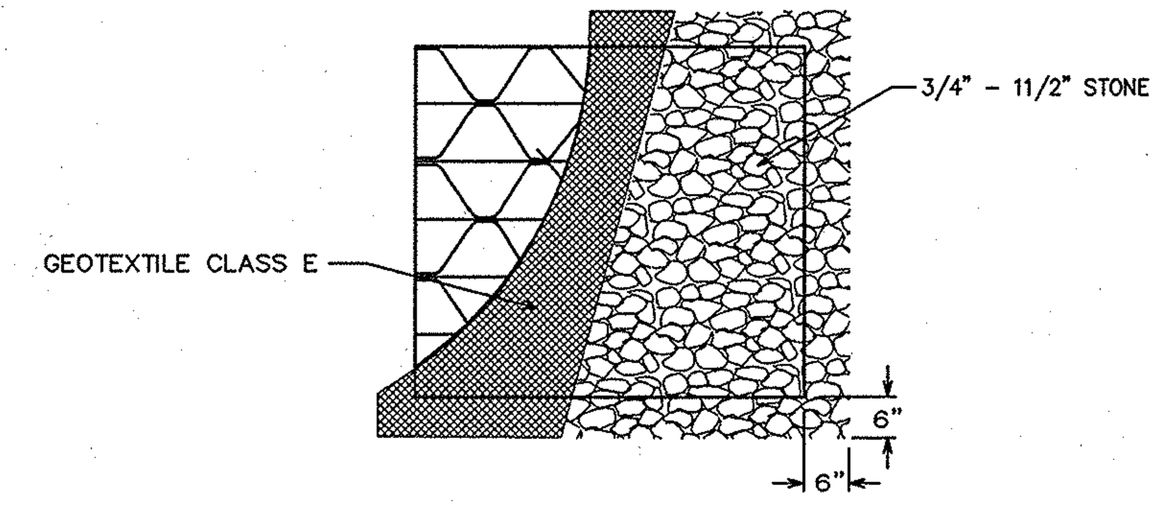
MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

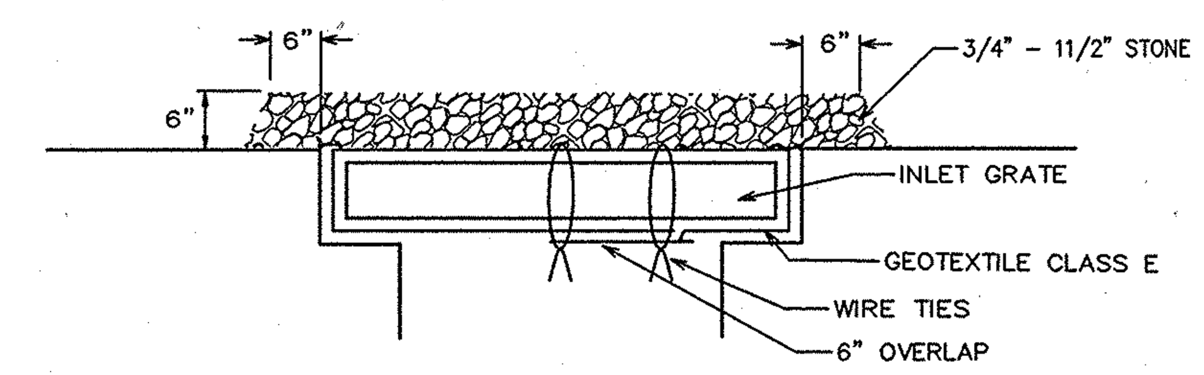
1. Excavate completely around the inlet to a depth of 18" below the notch elevation.
2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.
3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
4. Stretch the Geotextile Class E tightly over the wire mesh with the geotixtile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.
5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 5	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

AT GRADE INLET PROTECTION



PLAN/CUT AWAY VIEW



CROSS SECTION

STANDARD SYMBOL
AGIP

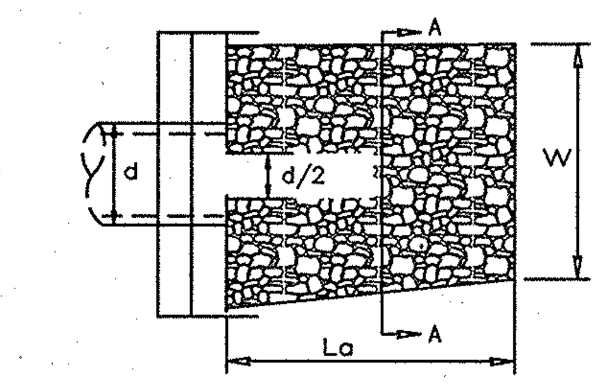
MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

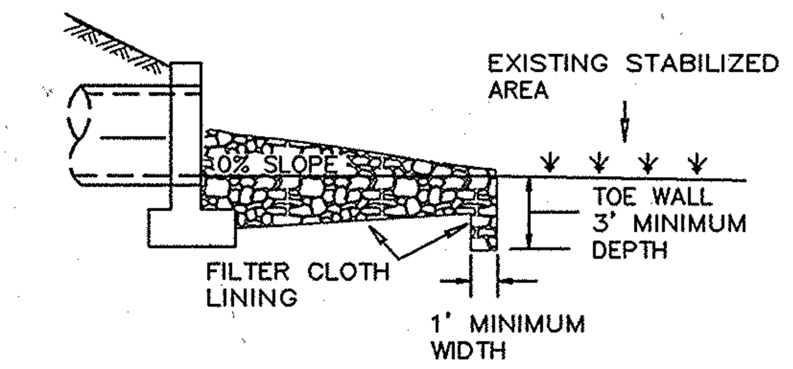
1. Lift grate and wrap with Geotextile Class E to completely cover all openings, then set grate back in place.
2. Place 3/4" to 11/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 5A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

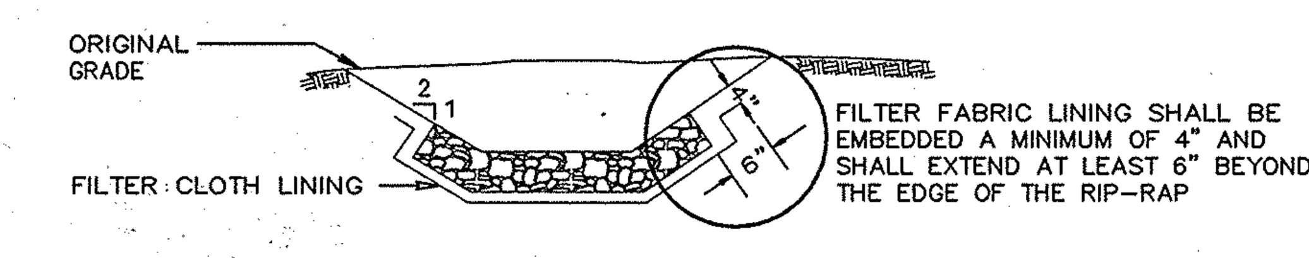
ROCK OUTLET PROTECTION III



PLAN VIEW



ELEVATION



SECTION A-A

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

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ROCK OUTLET PROTECTION III

Construction Specifications

1. The subgrade for the filter, rip-rap, 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.
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall 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 rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

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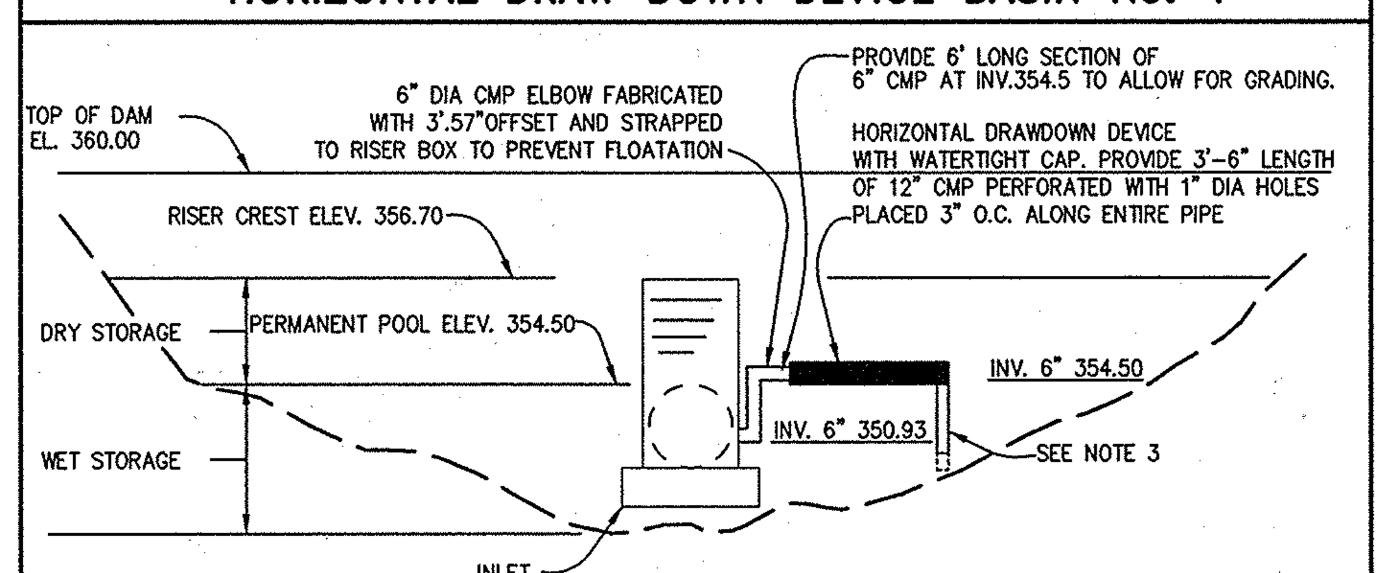
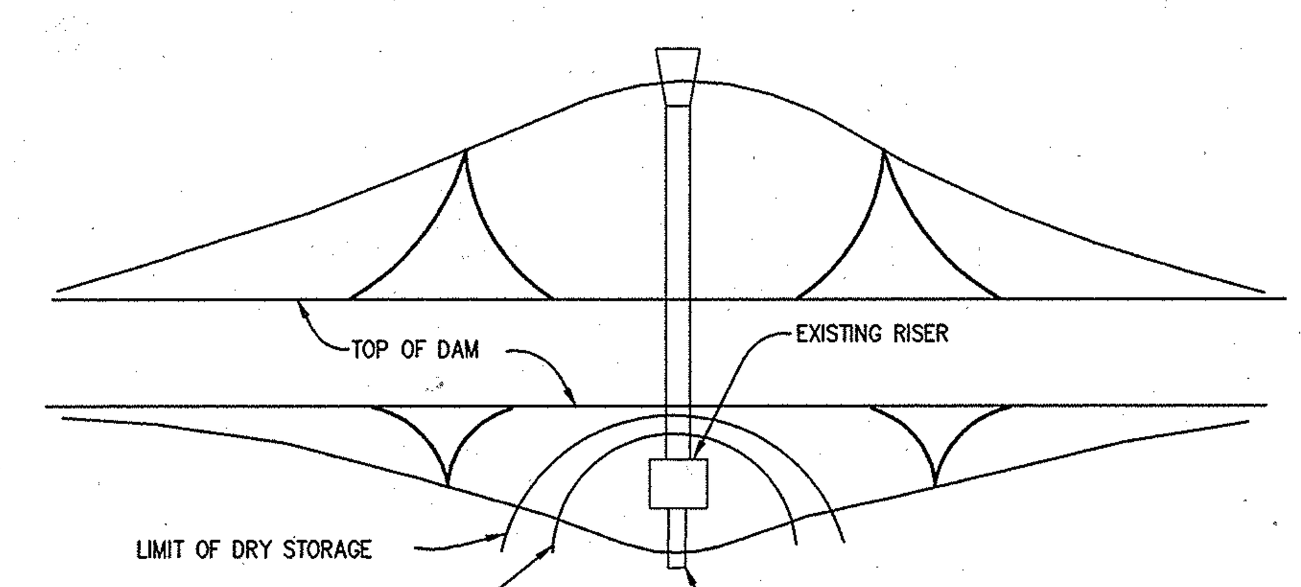
SEDIMENT BASIN DRAWDOWN SCHEMATIC HORIZONTAL DRAW DOWN DEVICE BASIN No. 1



ELEVATION



PLAN VIEW

Construction Specifications

1. The total area of the perforation must be greater than 2 times the area of the internal orifice.
2. The perforated portion of the drawdown device shall be wrapped with 1/2" hardware cloth and geotextile fabric. The geotextile fabric shall meet the specifications for Geotextile Class E.
3. Provide support of drawdown device to prevent sagging and floatation. An acceptable preventative measure is to stake both sides of drawdown device with 1" steel angle, or 1" by 4" square or 2" round wooden posts set 3' minimum into the ground then joining them to the device by wrapping with 12 gauge minimum wire.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 10 - 29	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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2/4/10
DEVELOPER DATE

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2/2/2010
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3/4/10
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

3/15/10
DIRECTOR DATE

3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
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PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **SEDIMENT CONTROL DETAILS**

Patton Harris Rust & Associates
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PHR+A
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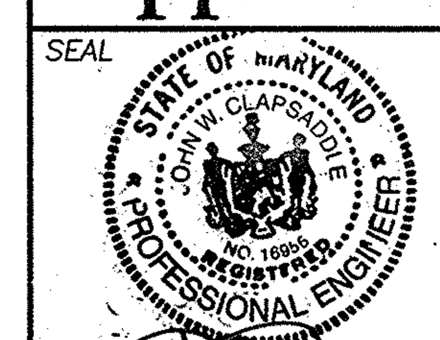
SEAL



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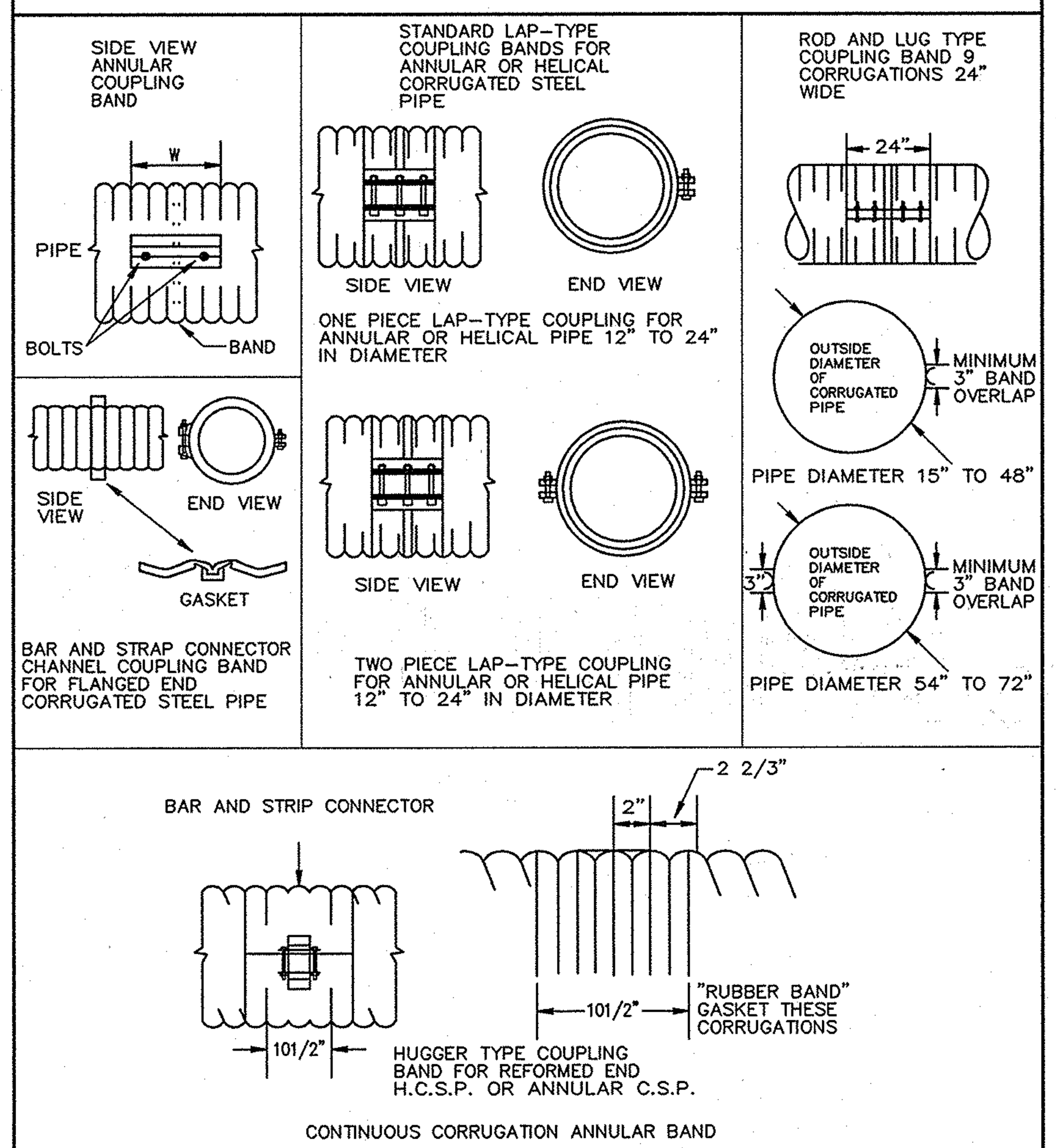
DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP08ESC.DWG
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 8 OF 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP08ESC.DWG

TYPES OF COUPLERS FOR CORRUGATED STEEL PIPE

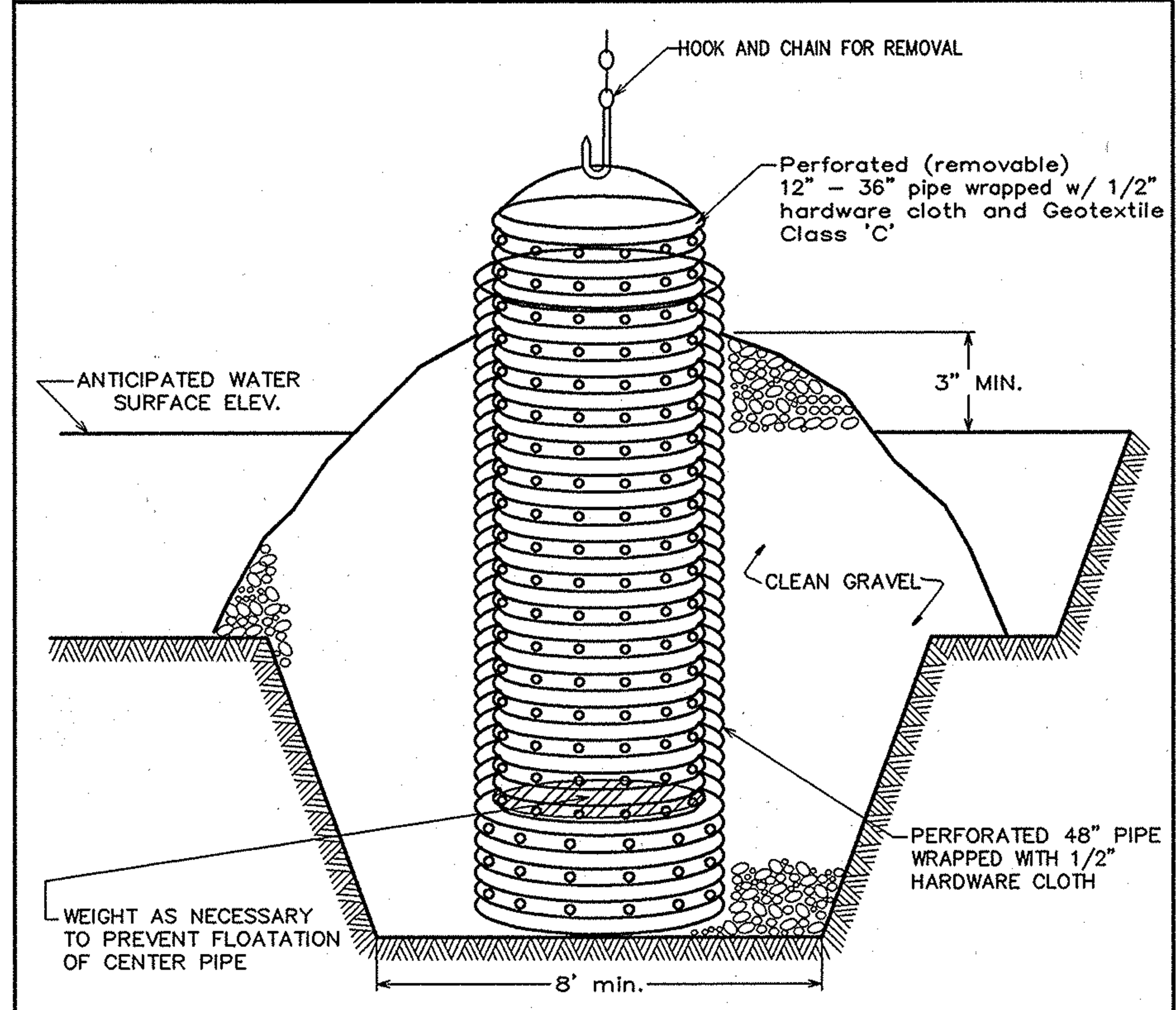
(ALL CONNECTOR BANDS REQUIRE NEOPRENE GASKETS)



NOTE: UNDER NO CIRCUMSTANCES WILL THE DIMPLE (UNIVERSAL) CONNECTOR BAND BE ACCEPTABLE FOR USE IN ANY SEDIMENT CONTROL OR STORMWATER MANAGEMENT STRUCTURE

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE C - 10 - 27	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

REMOVABLE PUMPING STATION



ELEVATION

Construction Specifications

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" X 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.
4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

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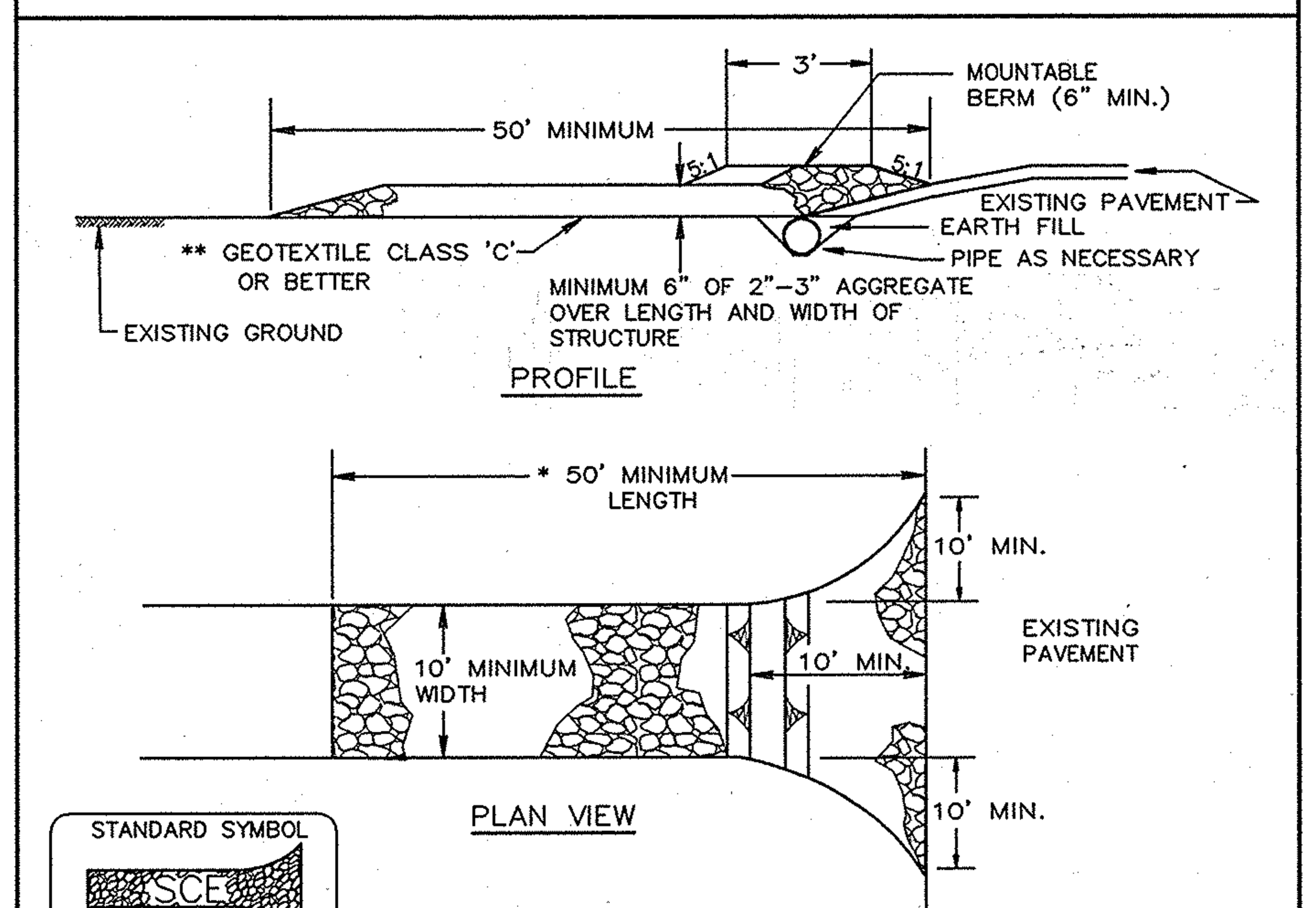
STABILIZED CONSTRUCTION ENTRANCE



Construction Specification

1. Length — minimum of 50' (*30' for single residence lot).
2. Width — 10' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family residences to use geotextile.
4. Stone — crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water — all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location — A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

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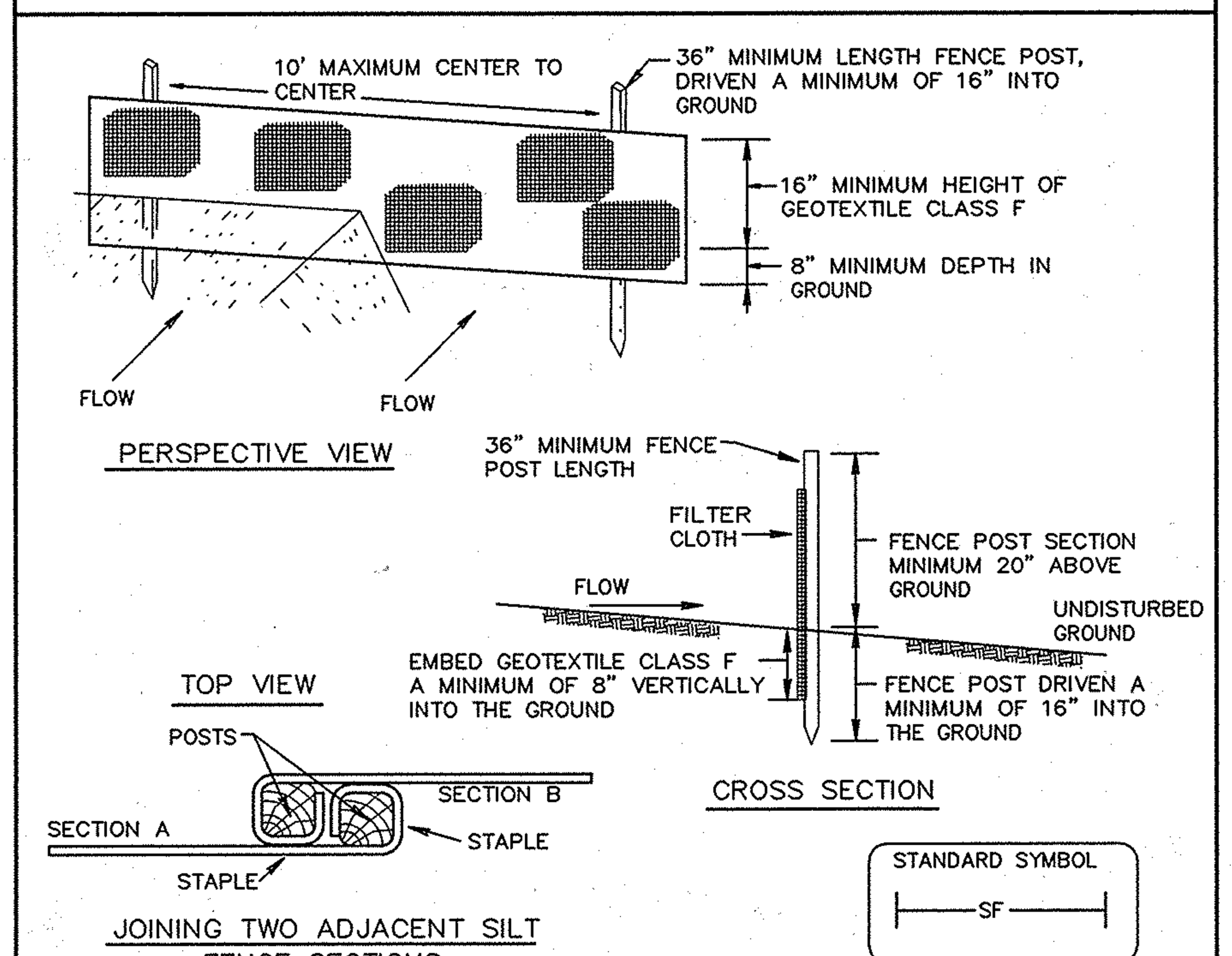
SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pond per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal ft / minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

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DUST CONTROL

DEFINITION

CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS.

PURPOSE

TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES, REDUCE ON AND OFF-SITE DAMAGE, HEALTH HAZARDS, AND IMPROVE TRAFFIC SAFETY.

CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.

SPECIFICATIONS

TEMPORARY METHODS

1. MULCHES — SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING.
2. VEGATATIVE COVER — SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER.
3. TILLAGE — TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12" APART, SPRING-TOOTHED HARROWS, AND SIMILIAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT.
4. IRRIGATION — THIS IS GENERALLY DONE AS AN EMERGENGY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST. REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THAT RUNOFF BEGINS TO FLOW.
5. BARRIERS — SOLID BOARD FENCES, SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALES, AND SIMIILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING SOIL BLOWING.
6. CALCIUM CHLORIDE — APPLY AT RATES THAT WILL KEEP SURFACE MOIST. MAY NEED RETREATMENT.

PERMANENT METHODS

1. PERMANENT VEGETATION — SEE STANDARDS FOR PERMANENT VEGETATIVE COVER, AND PERMANENT STABILIZATION WITH SOD. EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
2. TOPSOILING — COVERING WITH LESS EROSIVE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
3. STONE — COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

REFERENCES

1. AGRICULTURE HANDBOOK 346. WIND EROSION FORCES IN THE UNITED STATES AND THEIR USES IN PREDICTING SOIL LOSS.
2. AGRICULTURE INFORMATION BULLETIN 354. HOW TO CONTROL WIND EROSION, USDA-ARS.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 30 - 1	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

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DEVELOPER 2/4/10 DATE

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ENGINEER 2/2/2010 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT 3/4/10 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR 3/15/10 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 3/8/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 3/15/10 DATE

DATE	NO.	REVISION

OWNER / DEVLOPER: HOWARD COUNTY, MARYLAND, DEPARTMENT OF PUBLIC WORKS, 3430 COURT HOUSE RD, ELLICOTT CITY, MD 21043-4105

TENANTS: HOWARD COUNTY LIBRARY; HOWARD COUNTY HISTORICAL SOCIETY; ELLICOTT CITY SENIOR CENTER 410-313-4600

PROJECT: CHARLES E. MILLER BRANCH AND HISTORICAL CENTER — BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B, PLAT # 21009-21012

AREA: TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163, 2ND ELECTION DISTRICT, HOWARD COUNTY, MARYLAND

TITLE: SEDIMENT CONTROL DETAILS

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
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SEAL

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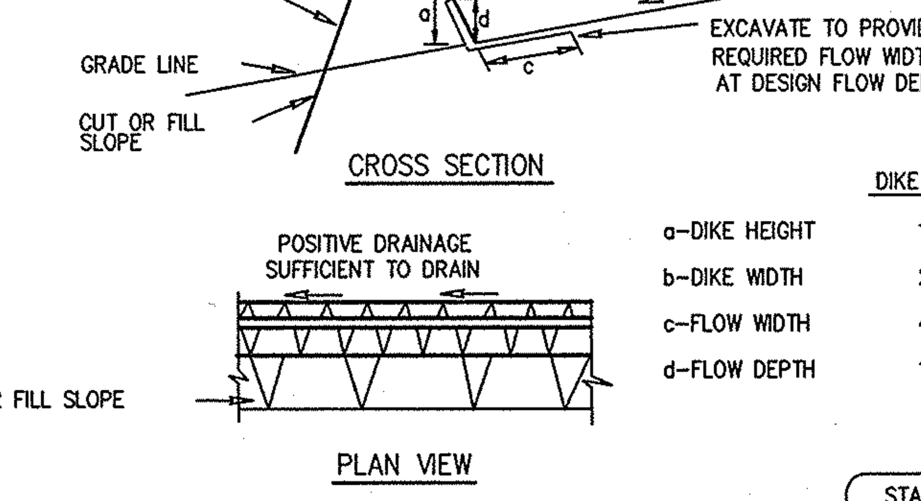
DESIGNED BY	JWC
DRAWN BY	SGM
PROJECT NO	15976-1-0 C-SDP09ESC.DWG
DATE	FEBRUARY 2, 2010
SCALE	AS SHOWN
DRAWING NO.	9 OF 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP09ESC.DWG

EARTH DIKE



	DIKE A	DIKE B
a–DIKE HEIGHT	18"	30"
b–DIKE WIDTH	24"	36"
c–FLOW WIDTH	4'	6'
d–FLOW DEPTH	12"	24"

STANDARD SYMBOL
A-2 B-3

FLOW CHANNEL STABILIZATION
GRADE 0.5% MIN. 10% MAX.

1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" – 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.

2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.

3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.

4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.

5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.

6. Fill shall be compacted by earth moving equipment.

7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.

8. Inspection and maintenance must be provided periodically and after each rain event.

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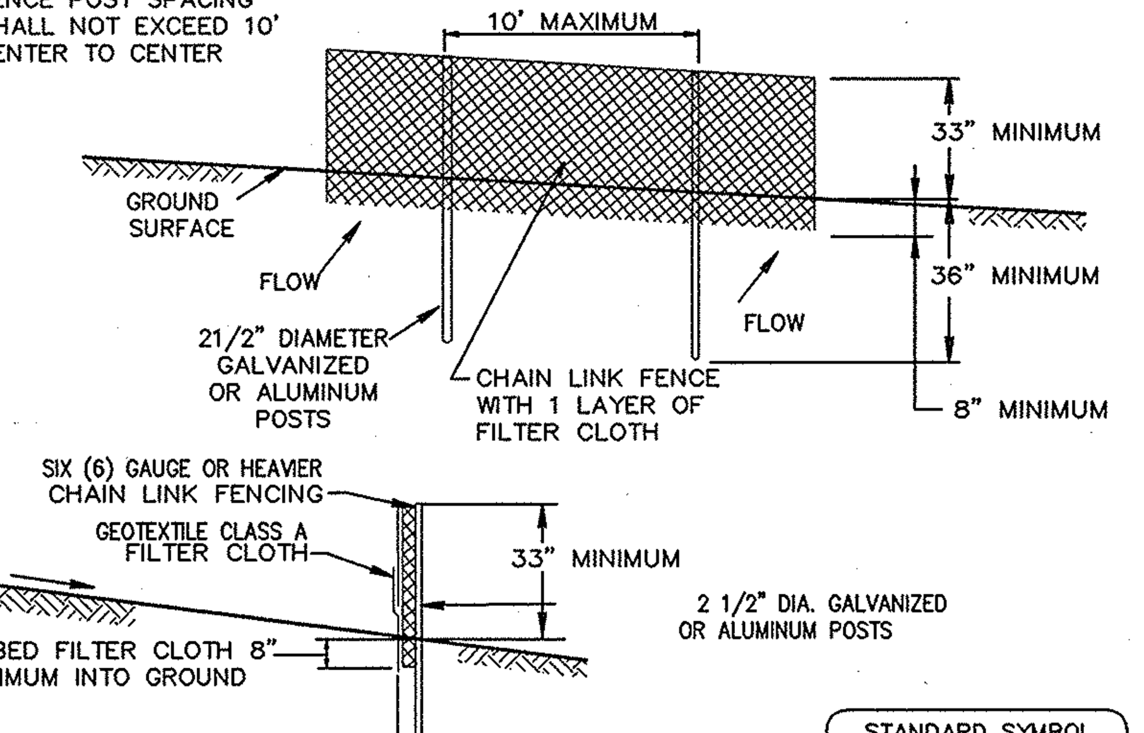
SUPER SILT FENCE

NOTE: FENCE POST SPACING SHALL NOT EXCEED 10' CENTER TO CENTER



STANDARD SYMBOL
SSF

Construction Specifications

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway (SHA) Details for Chain Link Fencing. The SHA specifications for a 6 foot fence shall be used, substituting 42" fabric and 6 foot length posts.

2. The posts do not need to be set in concrete.

3. Chain link fence shall be fastened securely to the fence posts with wire ties or staples. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence. The chain link fencing shall be six (6) gauge or heavier.

4. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

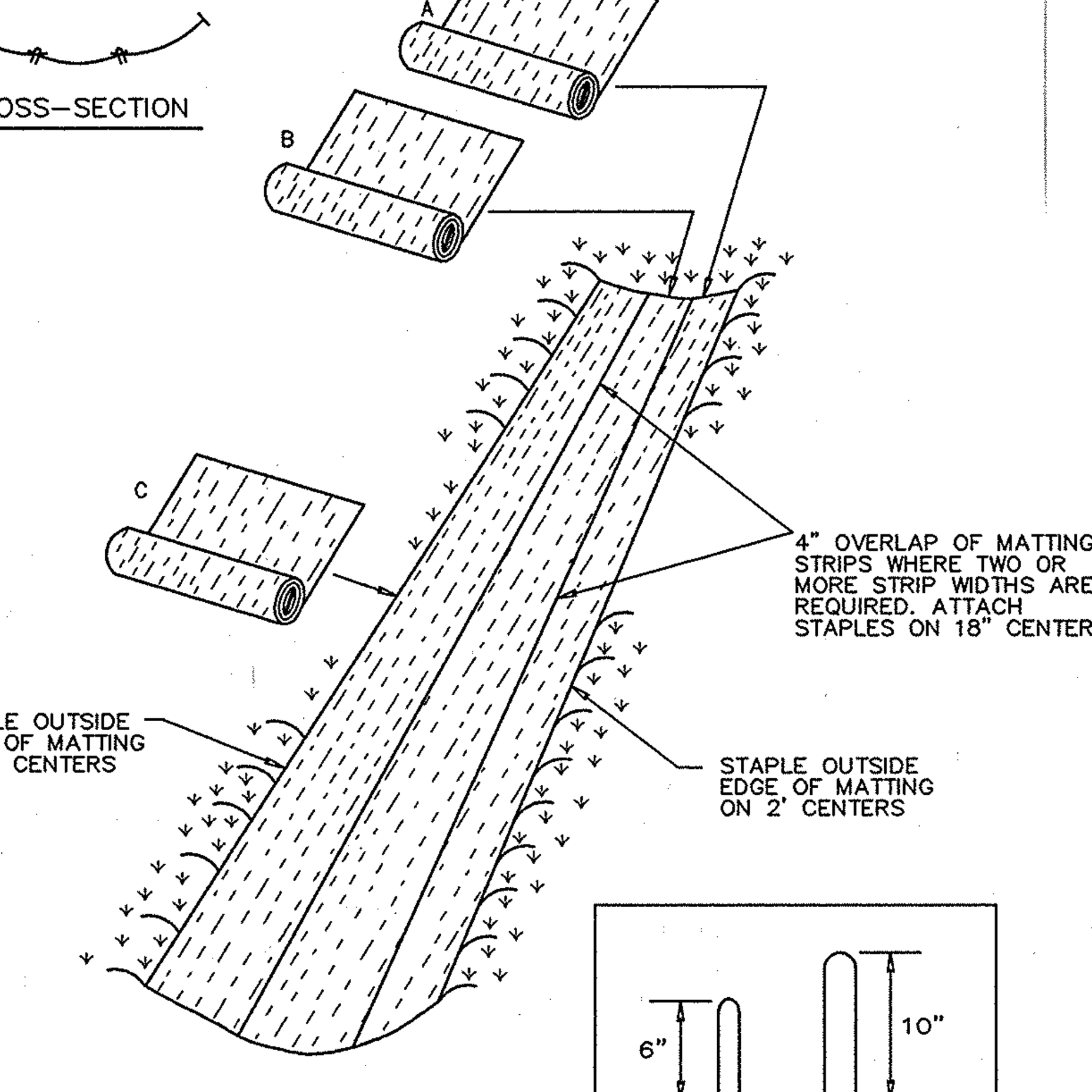
5. Filter cloth shall be embedded a minimum of 8" into the ground.

6. When two sections of geotextile fabric adjoin each other, they shall be overlapped by 6" and folded.

7. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H – 26 – 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

EROSION CONTROL MATTING



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE G – 22 – 2	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

△3 PHASE 3A

1.) INSTALL STABILIZED CONSTRUCTION ENTRANCE AND INSTALL SUPER SILT FENCE AS SHOWN. THE SUPER SILT FENCE WILL ALSO SERVE AS TREE PROTECTION IN ACCORDANCE WITH THE DETAIL AND NOTES ON FOREST CONSERVATION PLAN SHEET 26. CONTRACTOR SHALL REFER TO SHEET 26 PRIOR TO INSTALLATION OF ANY EROSION CONTROL MEASURES.

NOTE: WEST SIDE OF PROJECT SHALL BE ACCESSED VIA LUTHERAN VILLAGE CONSTRUCTION ENTRANCE.

PHASE 3B

1.) BEGIN CLEARING AND EARTHWORK FOR BOTH ABUTMENTS AND ROUGH GRADE ROAD.

2.) INSTALL PREFABRICATED BRIDGE AND FINISH ROAD PAVING.

3.) UPON PERMISSION OF COUNTY SEDIMENT CONTROL INSPECTOR. REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (1 DAY)

△3 **PROFESSIONAL CERTIFICATION**

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

SIGNATURE OF ENGINEER — DATE 02-06-2015

WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

STATE OF MARYLAND — WILLIAM RAYMOND ZINK — NO. 20587 — REGISTERED PROFESSIONAL ENGINEER
5/6/15

△3 FOR REDLINE SUBMISSION ONLY

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER — DATE 2/4/10

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

ENGINEER — DATE 2/2/2010

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/4/10

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 3/15/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/15/10

DATE	NO.	REVISION
02/2015	△3	REDLINE REVISION - PHASE 3A/3B SEQUENCE OF CONSTRUCTION
11/17/10	1	Revise Sequence of Construction, Phase 3, Notes 13 and 19

STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).

2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.

3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A)7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THE PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.

5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. G.). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.

6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

7. SITE ANALYSIS:

TOTAL AREA OF SITE	6.69 ACRES
AREA DISTURBED	5.2 ACRES
AREA TO BE PAVED	3.5 ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.7 ACRES
TOTAL CUT	11000 CU. YARDS
TOTAL FILL	10000 CU. YARDS

OFFSITE WASTE AREA LOCATION TO HAVE ACTIVE GRADING PERMIT

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.

9. ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

12. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.

13. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.

14. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL OR EMBANKMENT MATERIAL, NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED. WHERE AREAS WILL NOT BE DISTURBED AGAIN IN THE SHORT TERM, USE PERMANENT SEEDING AS NOTED BELOW.

SEEDBED PREPARATION : LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS : APPLY 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS. PER 1000 SQ.FT.).

SEEDING : FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 15 THRU NOVEMBER 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS. PER 1000 SQ.FT.). FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 10 LBS. PER ACRE OF FOXTAIL MILLET. FOR THE PERIOD NOVEMBER 16 THRU FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING : APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS. PER 1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL. PER 1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 347 GAL. PER ACRE (8 GAL. PER 1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR RATE AND METHODS NOT COVERED.

PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION : LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISCING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED. REMOVE ROCKS FROM SEED BED AND RE-GRADE IF NECESSARY PRIOR TO PLANTING

SOIL AMENDMENTS : IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES :

1) PREFERRED – APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS. PER 1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS. PER 1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS. PER ACRE 30-0-0 UREAFORM FERTILIZER (9 LBS. PER 1000 SQ.FT.).

2) ACCEPTABLE – APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS. PER 1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS. PER 1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING : FOR THE PERIOD MARCH 1 THRU APRIL 30 AND FROM AUGUST 1 THRU OCTOBER 15, SEED WITH FOLLOWING MIXTURE: 100% TALL TURF TYPE FESCUE (3 WAY BLEND) AT 6 LBS/1,000 SF. ALL SEED VARIETIES MUST BE SELECTED FROM LIST OF RECOMMENDED CULTIVARS OF TURF-TYPE TALL FESCUES AS INDICATED BY THE UNIVERSITY OF MARYLAND AGRONOMY MIMEO 77 (REVISED MAY 1995) OR MOST CURRENT EDITION. SEED MIX SHALL CONSIST OF A THREE-WAY BLEND (34%, 33%, AND 33%) OF TURF-TYPE TALL FESCUES FROM ABOVE UNIVERSITY OF MARYLAND LIST OR RECOMMENDED CULTIVARS. DURING THE PERIOD OCTOBER 16 THRU FEBRUARY 28, PROTECT SITE BY ONE OF THE FOLLOWING OPTIONS :

1) 2 TONS PER ACRE OF WELL-ANCHORED MULCH STRAW AND SEED AS SOON AS POSSIBLE IN THE SPRING.

2) USE SOD.

3) SEED AND MULCH WITH 2 TONS PER ACRE WELL ANCHORED STRAW.

MULCHING : APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS. PER 1000 SQ.FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL. PER 1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 347 GAL. PER ACRE (8 GAL. PER 1000 SQ.FT.) FOR ANCHORING.

MAINTENANCE : INSPECT ALL SEEDED AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

SEQUENCE OF CONSTRUCTION

PHASE 1

1. OBTAIN GRADING PERMIT.

2. INSTALL STABILIZED CONSTRUCTION ENTRANCE AND SUPER SILT FENCES BELOW PROPOSED SEDIMENT BASIN (PERMANENT POND). (2 DAYS)

3. CONSTRUCT SEDIMENT BASIN NO. 1 INCLUDING CUTOFF TRENCH, BARREL, RISER AND EMBANKMENT. REFER TO DETAILS FOR PERMANENT POND CONSTRUCTION FOR ALL CONSTRUCTION. INCLUDE CONSTRUCTION OF TEMP. SWALE TO ALLOW POSTIVE FLOW INTO SEDIMENT BASIN. INSTALL THE DRAW DOWN DEVICE, REMOVABLE PUMPING STATION AND ALL RIPRAP. (1 WEEK)

4. ALL STORMWATER PONDS MUST HAVE A SAFETY AS BUILT PERFORMED AND SUBMITTED WITHIN 30-DAYS OF CONSTRUCTION. THIS DUTY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTACT PATTON HARRIS RUST AND ASSOCIATES TO PERFORM THE AS BUILT ONCE IT HAS BEEN COMPLETED. (3 WEEKS)

5. INSTALL ALL REMAINING SEDIMENT CONTROL DEVICES. RELOCATION OF EXISTING UTILITIES WITHIN THE BUILDING SLAB MAY TAKE PLACE AT ANY TIME AFTER THIS POINT. CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY WELL IN ADVANCE OF CONSTRUCTION START IN ORDER TO ANTICIPATE THE NEED FOR THIS WORK. (2 DAYS)

6.OBTAIN INSPECTOR'S APPROVAL OF THE INSTALLATION OF ALL SEDIMENT CONTROL DEVICES BEFORE CONTINUING WITH WORK.

PHASE 2

7. BEGIN ROUGH GRADING OF THE SITE. DELAY CONSTRUCTION OF THE LOWER PARKING LOT AND MAINTAIN EARTH DIKE AND TEMP. SWALE DIVERTING FLOWS INTO THE BASIN. IMPLEMENT ALL DUST CONTROL MEASURES THROUGHOUT CONSTRUCTION (4 WEEKS)

8. CONTINUE ROUGH GRADING OF THE SITE. AS THE GRADES HAVE BEEN ACHIEVED FOR THE BUILDING AREA, BEGIN CONSTRUCTION OF FOUNDATIONS, UNDER-SLAB UTILITIES AND BUILDING SLAB. AS SLAB IS COMPLETE BEGIN BUILDING CONSTRUCTION. (10 MONTHS)

9. AS ROUGH GRADING HAS BEEN COMPLETED BEGIN INSTALLATION OF UTILITIES INCLUDING WATER, SEWER, AND STORM DRAIN. DELAY CONSTRUCTION OF STORM DRAIN WHERE IN CONFLICT WITH TEMPORARIY SWALE. DELAY CONSTRUCTION OF THE RECHARGE DRYWELL. DO NOT CONNECT ROOF DRAIN FROM BUILDING BELOW GRADE AT THIS TIME. (4 MONTHS)

10. UPON COMPLETION OF STORM DRAIN STRUCTURES AND PIPES SHOWN ON PHASE 2 PLAN, TEMP. BLOCK OFF OPENINGS IN STRUCTURES I-4 AND I-1 WHERE FUTURE PIPES WILL CONNECT. (1 DAY)

11. UPON COMPLETION OF STORM DRAIN WITH THE EXCEPTION OF INLETS I-2, I-5 I-12 AND CONNECTING PIPE INSTALL REMAINING SUPER SILT FENCE BELOW WALL AND BEGIN CONSTRUCTION OF RETAINING WALL. MAINTAIN POSITIVE SLOPE FROM WALL AND INTO TEMP SWALE DURING CONSTRUCTION OF WALL (4 WEEKS)

PHASE 3

12. UPON COMPLETION OF RETAINING WALL INSTALL REMAINING STORM DRAIN INLETS AND PIPES REMOVE TEMP SWALE AND BRING LOWER PARKING LOT TO GRADE (2 WEEKS)

△1 13. UPON COMPLETION OF ALL UTLITIES BEGIN CURB AND GUTTER INSTALLATION. Install recharge dry well. Do not connect roof drains. Protect dry well from contamination. (3 weeks)

14. UPON COMPLETION OF SUBGRADE FOR PAVING INSTALL BASE COURSE PAVING ONLY. (2 WEEKS)

15. UPON COMPLETION OF GRADING IN ANY GIVEN AREA, STABILIZE IMMEDIATELY. CONTINUE WITH BUILDING CONSTRUCTION. (1 DAY)

16. UPON COMPLETION OF THE BUILDING EXTERIOR PERFORM FINE GRADING, LANDSCAPING AND CONSTRUCT SIDEWALKS. (2 WEEKS)

17. APPLY TOPSOIL AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 DAYS)

18. COMPLETE BUILDING CONSTRUCTION. (1 MONTHS)

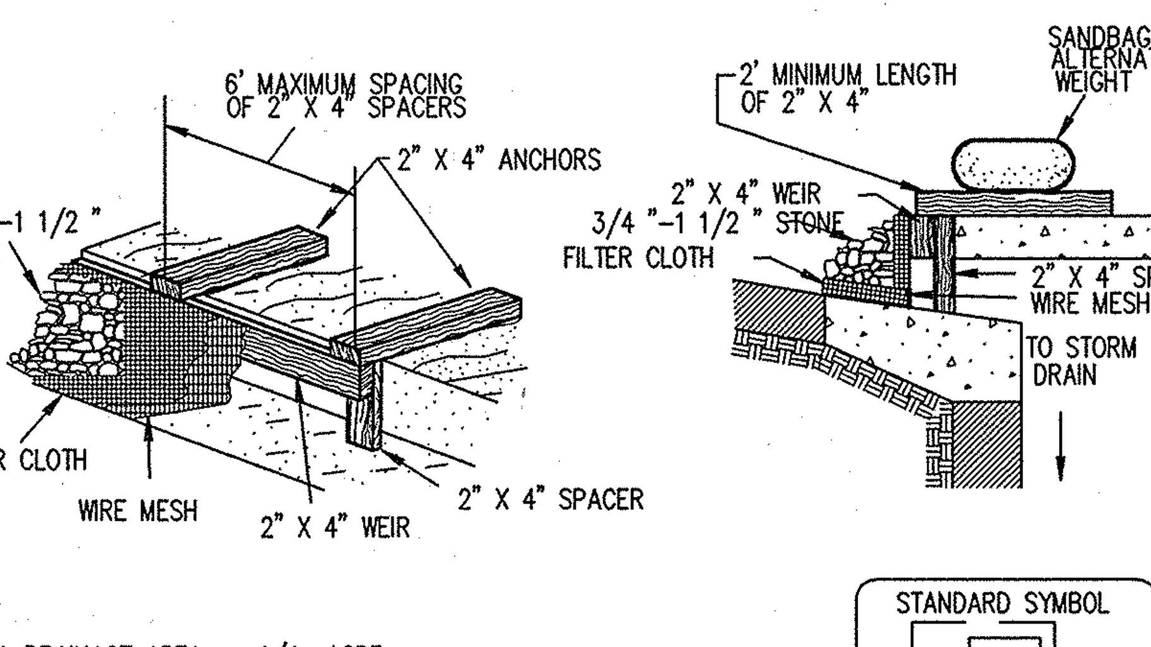
△1 19. UPON COMPLETE STABILIZATION OF SITE AND ESTABLISHMENT OF LAWNS, MUCK OUT SEDIMENT BASIN NO. 1 AND BEGIN CONVERSION TO THE PERMANENT STORMWATER MANAGEMENT POND. INSTALL INTERCELL EMBANKMENT, SAND FILTER, REMOVE TEMP. DRAWDOWN DEVICELOW FLOW PIPE AND FINAL LANDSCAPING. Connect roof drains to drywell (1 week).

20. UPON PERMISSION OF COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (1 DAY)

21. CONTRACTOR SHALL PROVIDE A COPY OF THE FINAL STORMWATER POND AS BUILT APPROVAL BY HSCD TO THE COUNTY INSPECTOR.

△3 PHASE 3A & 3B
SEE ABOVE RIGHT

CURB INLET PROTECTION



MAX. DRAINAGE AREA = 1/4 ACRE

STANDARD SYMBOL
CIP

Construction Specifications

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.

2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.

3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' apart).

4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.

5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.

6. Form the 1/2 " x 1/2 " wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4 " x 1 1/2 " stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.

8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E – 16 – 5B	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **SEDIMENT CONTROL DETAILS AND NOTES**

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND — JOHN W. CLAPSADDLE — NO. 16956 — REGISTERED PROFESSIONAL ENGINEER

BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP10ESC.DWG
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 10 OF ~~60~~ △3 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP10ESC.DWG

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION
PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE
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.

CONDITIONS WHERE PRACTICE APPLIES
I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
—a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
—b. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
—c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
—d. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.

II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS
I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT 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—SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTATION STATION.

II. TOPSOIL SPECIFICATIONS — SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
—i. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1—1/2" IN DIAMETER.
—ii. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSONGRASS, NUTSEDGE, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
—iii. WHERE SUBSOIL IS EITHER HIGHLY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE SPREAD AT THE RATE OF 4—8 TONS/ACRE (200—400 POUNDS PER 1,000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.

III. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
—i. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION — SECTION I — VEGETATIVE STABILIZATION METHODS AND MATERIALS.

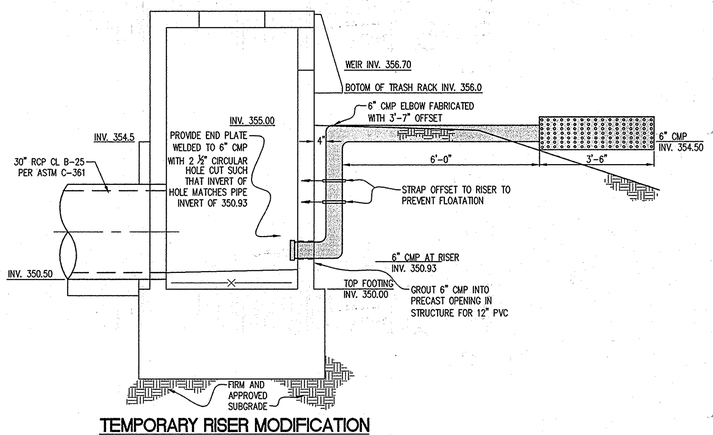
IIII. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
—i. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
—a. PH FOR TOPSOIL SHALL BE BETWEEN 6.0 AND 7.5. IF THE TESTED SOIL DEMONSTRATES A PH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE PH TO 6.5 OR HIGHER.
—b. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
—c. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
—d. NO SOD OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO—TOXIC MATERIALS.

NOTE: TOPSOIL SUBSTITUTES TO 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.

—ii. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 20.0 VEGETATIVE STABILIZATION — SECTION I — VEGETATIVE STABILIZATION METHODS AND MATERIALS.

V. TOPSOIL APPLICATION
—i. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
—ii. GRADES ON THE AREAS TO BE TOPSOILED, WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBEIT 4" — 8" HIGHER IN ELEVATION.
—iii. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" — 8" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SODDING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OR OTHER OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
—iv. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.

VI. ALTERNATIVE FOR PERMANENT SEEDING — INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:
—i. COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE TESTED TO PRESCRIBE AMENDMENTS AND FOR SITE HAVING DISTURBED AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
—a. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS THAT ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER COMAR 26.04.06.
—b. COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHORUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE CONSTITUENTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
—c. COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.
—d. COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB/1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATION RATE. REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SODDING. MD—VA, PUB. #1, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES. REVISED 1973.



TEMPORARY RISER MODIFICATION DURING USE AS A SEDIMENT BASIN
NOT TO SCALE

SEDIMENT CONTROL PLAN - PHASE 3
SCALE : 1"=40'

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER — DATE 2/4/10

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

ENGINEER — DATE 2/2/2010

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/4/10

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 3/15/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/15/10

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD.
ELLICOTT CITY, MD 21043—4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410—313—4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21008-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
SEDIMENT CONTROL PLAN PHASE 3, NOTES AND DETAILS

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

STATE OF MARYLAND — JOHN W. CLAPP — No. 19958 — REGISTERED PROFESSIONAL ENGINEER

BY:

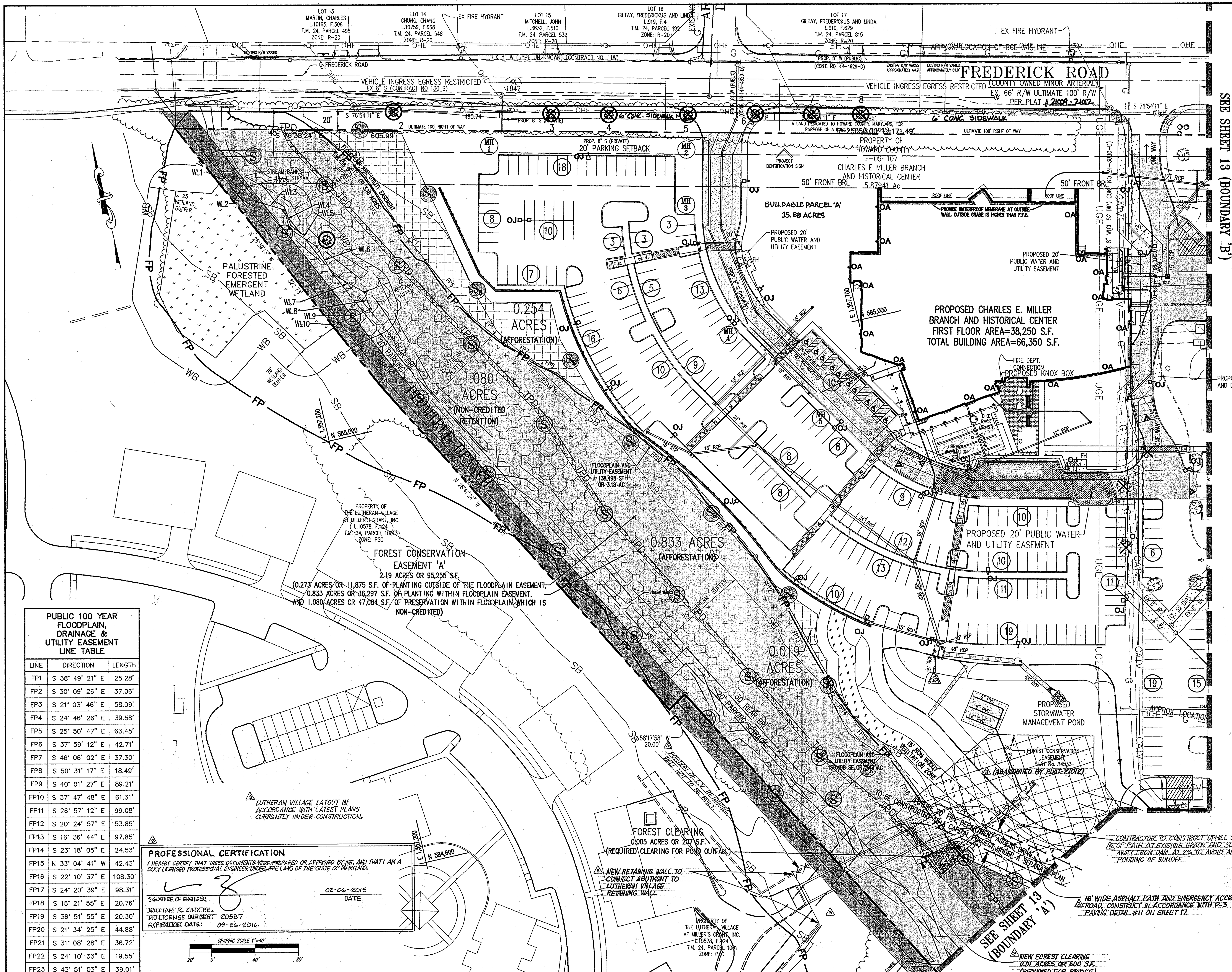
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19958, EXPIRATION DATE: 09/09/2011"

DESIGNED BY :	JWC
DRAWN BY:	SGM
PROJECT NO :	15976-1-0 C-SDP11ESC.DWG
DATE :	FEBRUARY 2, 2010
SCALE :	AS SHOWN
DRAWING NO.	11 OF 60

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP11ESC.DWG

P:\projects\15976\1-0\Land_Dev\Work\C-SDP11ESC.dwg, 2/2/2010 10:33:28 AM, 1:1, Sara.matthews@PHR+A.com



PUBLIC 100 YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT LINE TABLE		
LINE	DIRECTION	LENGTH
FP1	S 38° 49' 21" E	25.28'
FP2	S 30° 09' 26" E	37.06'
FP3	S 21° 03' 46" E	58.09'
FP4	S 24° 46' 26" E	39.58'
FP5	S 25° 50' 47" E	63.45'
FP6	S 37° 59' 12" E	42.71'
FP7	S 46° 06' 02" E	37.30'
FP8	S 50° 31' 17" E	18.49'
FP9	S 40° 01' 27" E	89.21'
FP10	S 37° 47' 48" E	61.31'
FP11	S 26° 57' 12" E	99.08'
FP12	S 20° 24' 57" E	53.85'
FP13	S 16° 36' 44" E	97.85'
FP14	S 23° 18' 05" E	24.53'
FP15	N 33° 04' 41" W	42.43'
FP16	S 22° 10' 37" E	108.30'
FP17	S 24° 20' 39" E	98.31'
FP18	S 15° 21' 55" E	20.76'
FP19	S 36° 51' 55" E	20.30'
FP20	S 21° 34' 25" E	44.88'
FP21	S 31° 08' 28" E	36.72'
FP22	S 24° 10' 33" E	19.55'
FP23	S 43° 51' 03" E	39.01'

PROFESSIONAL CERTIFICATION

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

SIGNATURE OF ENGINEER — DATE 02-06-2015

WILLIAM R. ZINK P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

LEGEND

- PROPERTY LINE
- EXISTING TREELINE
- WETLANDS AND 25' BUFFER
- EX. STREAM AND BUFFER
- EX. 100-YEAR FLOODPLAIN
- EXISTING CONTOURS
- EXISTING BUILDING
- AREA TO BE PAVED ACCORDING TO P-3 STANDARD AS SHOWN ON DETAIL SHEET 11
- EXISTING SOILS
- EX. OVERHEAD POWER LINE
- EX. SEWER LINE
- EX. GAS LINE
- EX. TREES
- EX. CURB & GUTTER
- EX. EGDE OF PAVEMENT
- EX. PUBLIC DRAINAGE EASEMENT
- EX. SANITARY SEWER EASEMENT
- EX. UNDERGROUND ELECTRIC
- SPECIMEN TREE TO REMAIN
- SPECIMEN TREE TO BE REMOVED

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 3/15/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/15/10

DATE	NO.	REVISION
02/2015	01	REDLINE REVISION – PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

OVERALL SITE DEVELOPMENT PLAN

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

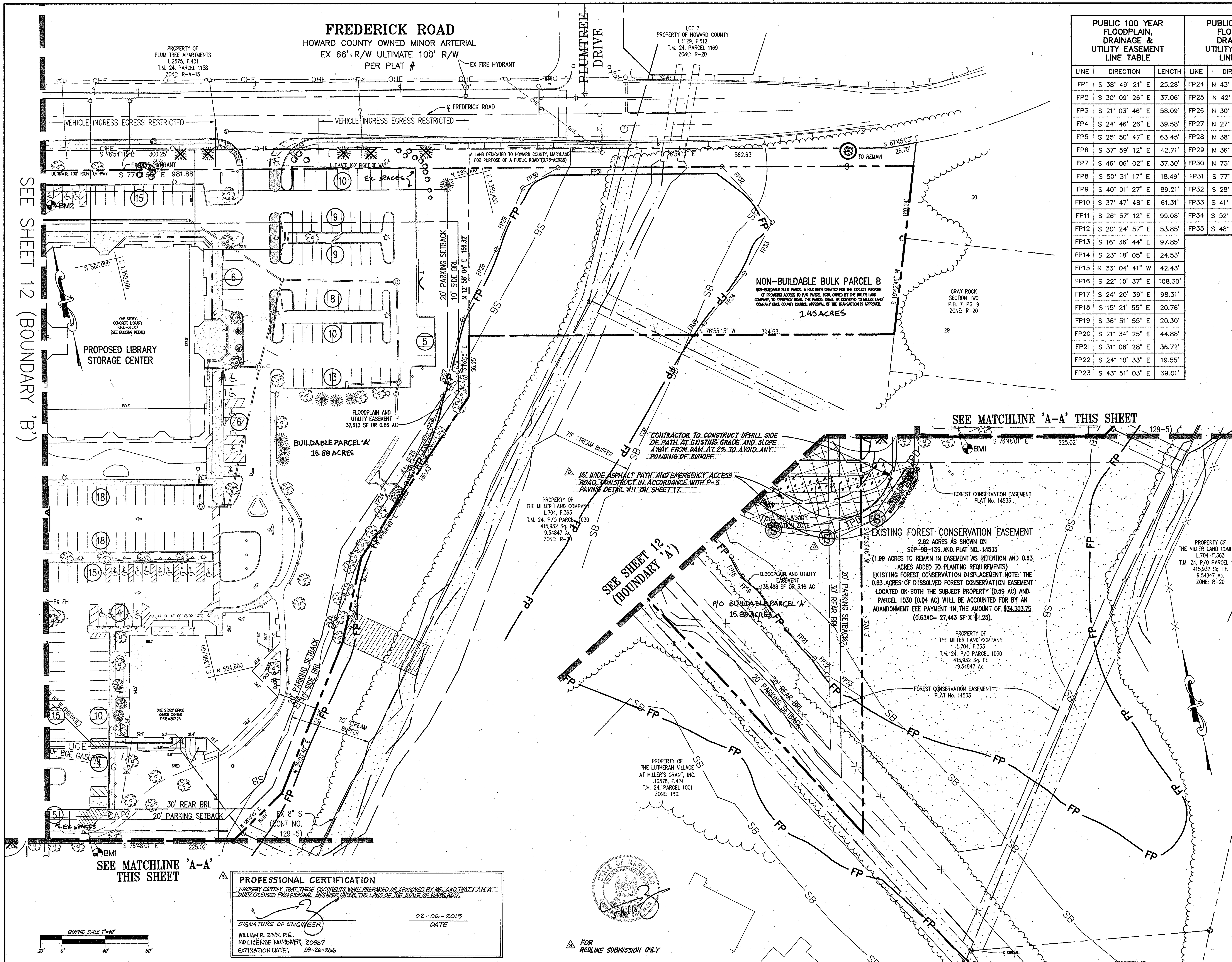
SEAL

BY:

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP10SIT.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 12 OF ~~60~~ 66

SDP-09-058



FREDERICK ROAD
HOWARD COUNTY OWNED MINOR ARTERIAL
EX 66' R/W ULTIMATE 100' R/W
PER PLAT #
PLUMTREE DRIVE
PROPERTY OF PLUM TREE APARTMENTS L.2575, F.401 T.M. 24, PARCEL 1158 ZONE: R-A-15
LOT 7 PROPERTY OF HOWARD COUNTY L.1129, F.512 T.M. 24, PARCEL 1169 ZONE: R-20
EX FIRE HYDRANT
℄ FREDERICK ROAD
VEHICLE INGRESS EGRESS RESTRICTED
VEHICLE INGRESS EGRESS RESTRICTED
ULTIMATE 100' RIGHT OF WAY
S 77°01'56" E 981.88
A LAND DEDICATED TO HOWARD COUNTY, MARYLAND FOR PURPOSE OF A PUBLIC ROAD (0.73 ACRES)
EX. SPACES
TO REMAIN
S 87°45'03" E
SEE SHEET 12 (BOUNDARY 'B')
BM2
PROPOSED LIBRARY STORAGE CENTER
ONE STORY CONCRETE LIBRARY
20' PARKING SETBACK
10' SIDE BRL
N 12°58'04" E 156.32'
NON-BUILDABLE BULK PARCEL B
1.45 ACRES
N 76°55'15" W 394.53'
GRAY ROCK SECTION TWO P.B. 7, PG. 9 ZONE: R-20
FLOODPLAIN AND UTILITY EASEMENT 37,613 SF OR 0.86 AC
BUILDABLE PARCEL 'A' 15.88 ACRES
75' STREAM BUFFER
SEE MATCHLINE 'A-A' THIS SHEET
BM1
S 76°48'01" E 225.02'
CONTRACTOR TO CONSTRUCT UPHILL SIDE OF PATH AT EXISTING GRADE AND SLOPE AWAY FROM DAM AT 2% TO AVOID ANY PONDING OF RUNOFF
16' WIDE ASPHALT PATH AND EMERGENCY ACCESS ROAD. CONSTRUCT IN ACCORDANCE WITH P-3 PAVING DETAIL #11 ON SHEET 17.
PROPERTY OF THE MILLER LAND COMPANY L.704, F.363 T.M. 24, P/O PARCEL 1030 415,932 Sq. Ft. 9.54847 Ac. ZONE: R-20
FOREST CONSERVATION EASEMENT PLAT No. 14533
EXISTING FOREST CONSERVATION EASEMENT
2.62 ACRES AS SHOWN ON SDP-98-136 AND PLAT NO. 14533
(1.99 ACRES TO REMAIN IN EASEMENT AS RETENTION AND 0.63 ACRES ADDED TO PLANTING REQUIREMENTS)
EXISTING FOREST CONSERVATION DISPLACEMENT NOTE: THE 0.63 ACRES OF DISSOLVED FOREST CONSERVATION EASEMENT LOCATED ON BOTH THE SUBJECT PROPERTY (0.59 AC) AND PARCEL 1030 (0.04 AC) WILL BE ACCOUNTED FOR BY AN ABANDONMENT FEE PAYMENT IN THE AMOUNT OF $34,303.75 (0.63AC= 27,443 SF X $1.25).
SEE SHEET 12 (BOUNDARY 'A')
FLOODPLAIN AND UTILITY EASEMENT 138,498 SF OR 3.18 AC
P/O BUILDABLE PARCEL 'A' 15.88 ACRES
30' REAR BRL
20' PARKING SETBACK
ONE STORY BRICK SENIOR CENTER
PROPERTY OF THE LUTHERAN VILLAGE AT MILLER'S GRANT, INC. L.10578, F.424 T.M. 24, PARCEL 1001 ZONE: PSC
EX 8" S (CONT NO. 129-5)
UGE OF BGE GASLINE
FLEX SPACES
SEE MATCHLINE 'A-A' THIS SHEET
GRAPHIC SCALE 1"=40'

PUBLIC 100 YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT LINE TABLE			PUBLIC 100 YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT LINE TABLE		
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FP3	S 21° 03' 46" E	58.09'	FP26	N 30° 39' 07" E	48.65'
FP4	S 24° 46' 26" E	39.58'	FP27	N 27° 40' 54" E	73.94'
FP5	S 25° 50' 47" E	63.45'	FP28	N 38° 35' 37" E	72.60'
FP6	S 37° 59' 12" E	42.71'	FP29	N 36° 45' 30" E	62.34'
FP7	S 46° 06' 02" E	37.30'	FP30	N 73° 05' 23" E	37.80'
FP8	S 50° 31' 17" E	18.49'	FP31	S 77° 01' 56" E	152.25'
FP9	S 40° 01' 27" E	89.21'	FP32	S 28° 44' 40" E	69.54'
FP10	S 37° 47' 48" E	61.31'	FP33	S 41° 32' 38" W	54.77'
FP11	S 26° 57' 12" E	99.08'	FP34	S 52° 00' 57" W	59.04'
FP12	S 20° 24' 57" E	53.85'	FP35	S 48° 36' 20" W	13.38'
FP13	S 16° 36' 44" E	97.85'			
FP14	S 23° 18' 05" E	24.53'			
FP15	N 33° 04' 41" W	42.43'			
FP16	S 22° 10' 37" E	108.30'			
FP17	S 24° 20' 39" E	98.31'			
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FP21	S 31° 08' 28" E	36.72'			
FP22	S 24° 10' 33" E	19.55'			
FP23	S 43° 51' 03" E	39.01'			

LEGEND

- PROPERTY LINE
- EXISTING TREELINE
- WETLANDS AND 25' BUFFER
- EX. STREAM AND BUFFER
- EX. 100-YEAR FLOODPLAIN
- EXISTING CONTOURS
- EXISTING BUILDING
- AREA TO BE PAVED ACCORDING TO P-3 STANDARD AS SHOWN ON DETAIL SHEET 11
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- EX. PUBLIC DRAINAGE EASEMENT
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- EX. UNDERGROUND ELECTRIC
- SPECIMEN TREE TO REMAIN
- SPECIMEN TREE TO BE REMOVED

PROFESSIONAL CERTIFICATION

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

SIGNATURE OF ENGINEER — 02-06-2015 DATE

WILLIAM R. ZINK P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

△3 FOR REDLINE SUBMISSION ONLY

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — 3/15/10 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3/8/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 3/15/10 DATE

DATE	NO.	REVISION
02/2015	△3	REDLINE REVISION – PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT
CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA
TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
OVERALL SITE DEVELOPMENT PLAN

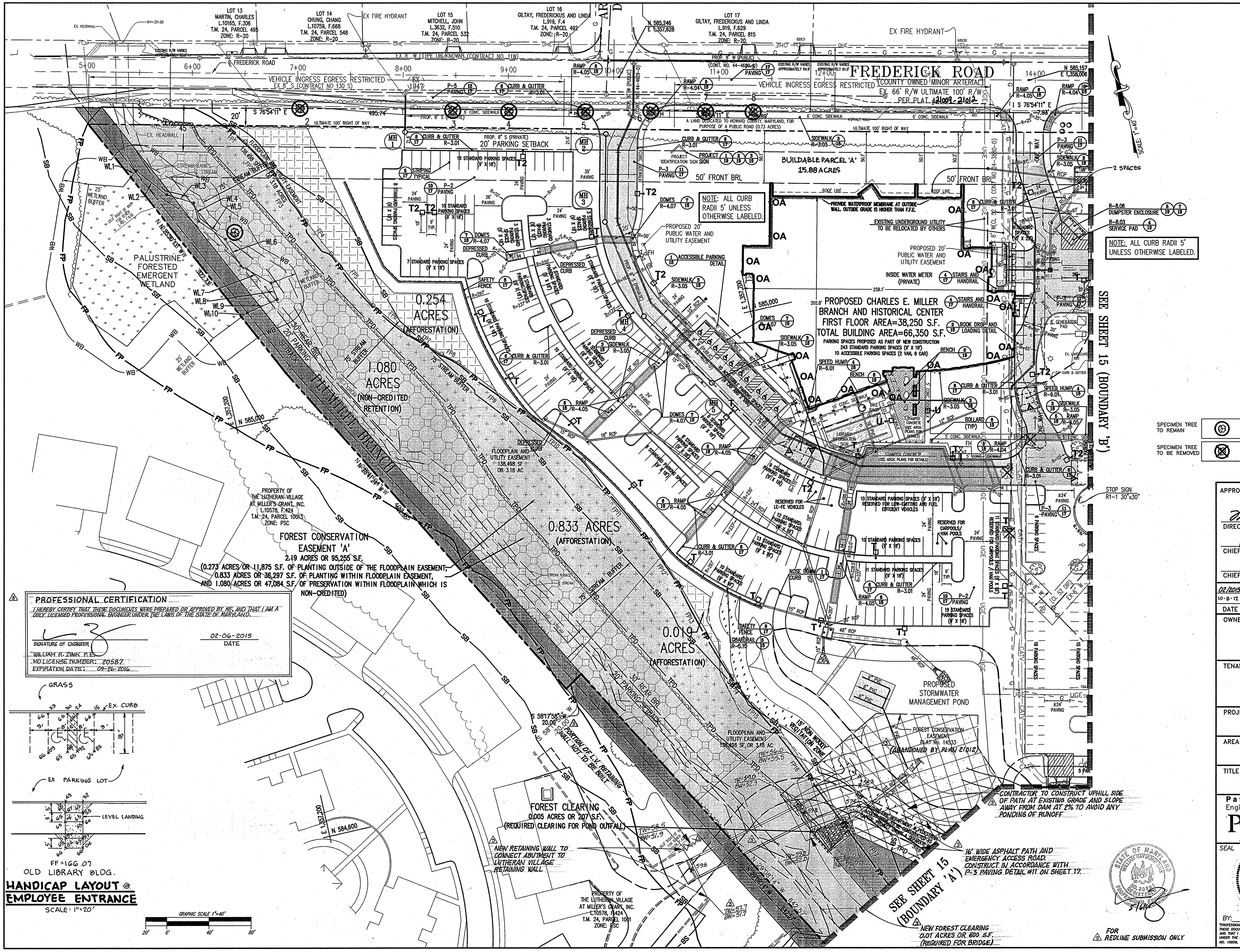
Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND — JOHN W. CLAPSADDLE — NO. 16956 — REGISTERED — PROFESSIONAL ENGINEER

BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP10SIT.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 13 OF ~~60~~ 66 △2

SDP-09-058



LEGEND

PROPERTY LINE	
EXISTING TREELINE	
EXISTING TREELINE TO REMAIN	
PROPOSED LOT LINE	
EX. STREAM AND BUFFER	
EX. 100-YEAR FLOODPLAIN	
FOREST PRESERVATION AREA FLOODPLAIN	
FOREST PLANTING AREA	
FOREST PLANTING AREA	
FOREST RETENTION SIGNAGE	
REFORESTATION SIGNAGE	
PROPOSED RETAINING WALL EASEMENT	
LIMIT OF DISTURBANCE	
OVERHEAD ELECTRIC LINE	
EXISTING BUILDING	
PROPOSED BUILDING	
PROPOSED CONTOURS	
SPECIMEN TREE TO REMAIN	
SPECIMEN TREE TO BE REMOVED	
EX. SANITARY SEWER EASEMENT	
EX. UNDERGROUND ELECTRIC	

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas G. Butler 3/15/10
DIRECTOR DATE

[signature] 3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kent Sheubrooks 3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT AMP DATE

DATE	NO.	REVISION
02/2015	3	REDLINE REVISION - PEDESTRIAN PATH / BRIDGE ALIGNMENT
10-8-12	1	ADDED 2ND FLOOR TO OLD LIBRARY w/ADDED PARKING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
SITE DEVELOPMENT PLAN

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JML
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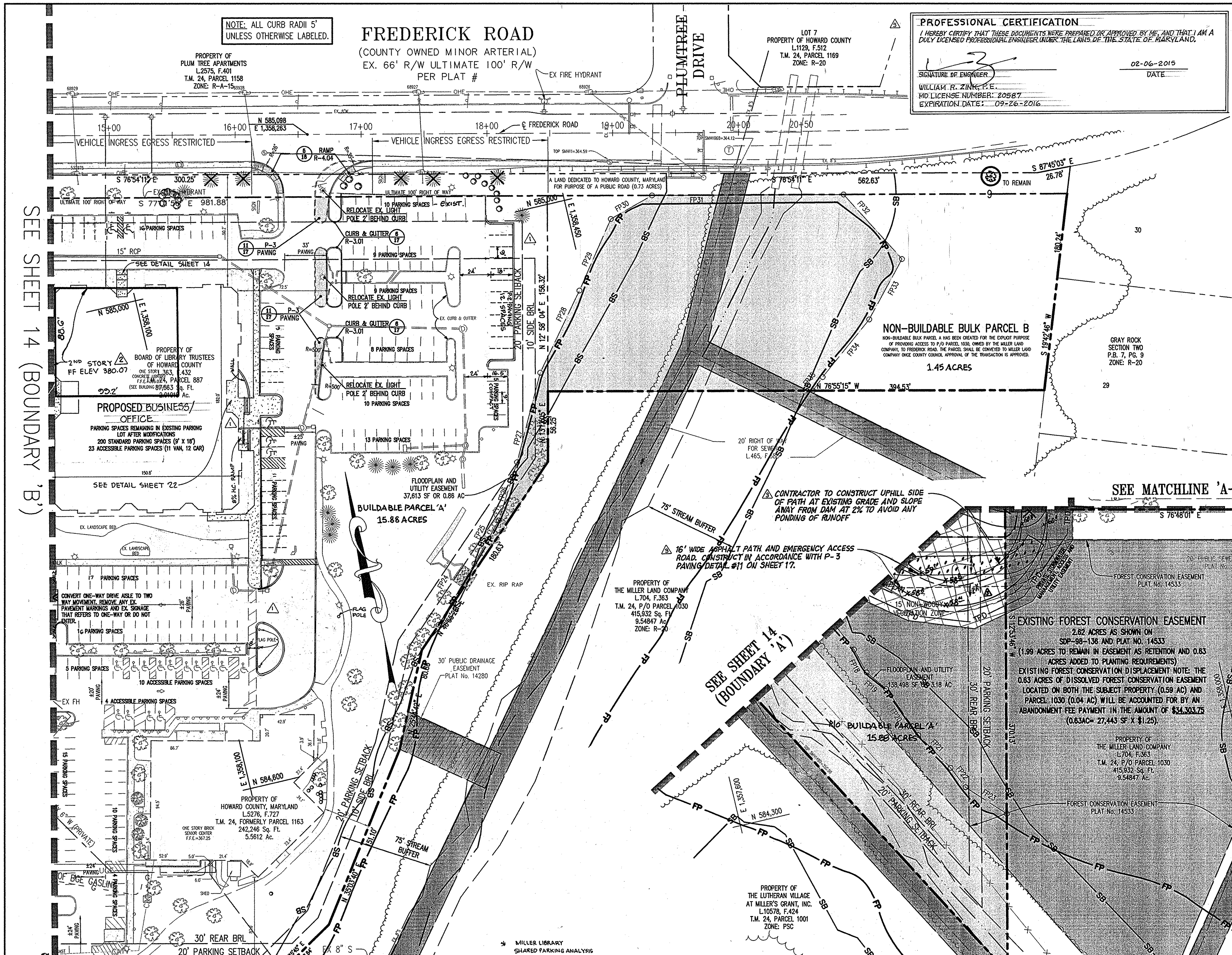
PROJECT NO : 15976-1-0 C-SDP11SIT.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 14 OF ~~60~~ 66

SDP-09-058



* MILLER LIBRARY
SHARED PARKING ANALYSIS

SHARED PARKING ADJUSTMENT									
USE	AREA	*SPACES REQD.	WEEKDAY				WEEKEND		NIGHT
			6AM-8AM	8AM-3PM	3PM-5PM	5PM-MID.	6AM-6PM	6PM-MID	
OLD LIBRARY			42	52	52	6	6	3	3
OFFICE @3.3 SPACES/1000 SF	15,780 SF	52	80%	100%	100%	10%	10%	5%	5%
			0	50	25	10	0	0	0
FITNESS (MAX CAPACITY 55) 8:30AM-9:00 PM	6,305 SF	50	0%	100%	50%	20%	0%	0%	0%
NEW LIBRARY FROM SDP-09-058 5.04 SPACES/1000 SF	57,555 SF	291	15 5%	175 60%	291 100%	262 90%	291 100%	175 60%	59 20%
ELLICOTT CITY S.C. 8:30AM-9:00 PM 10 SPACES/1000 SF	13,105 SF	132	7 5%	132 100%	86 65%	27 20%	33 25%	0 0%	7 5%
TOTAL SPACES REQ'D		513	64	409	454	305	330	178	69
			AFTER SHARED PARKING ADJUSTMENT 454						

PROPOSED PARKING = 493 SPACES
SHARED PARKING ADJUSTMENT = 454 SPACES
39 EXCESS SPACES

* SEE 12/4/12 MEMO IN DP2 FILE WHICH OUTLINES THE PARKING NEEDS FOR THE PROPOSED FITNESS CENTER

PROFESSIONAL CERTIFICATION

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

SIGNATURE OF ENGINEER — DATE 02-06-2015
WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

PUBLIC 100 YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT LINE TABLE			PUBLIC 100 YEAR FLOODPLAIN, DRAINAGE & UTILITY EASEMENT LINE TABLE		
LINE	DIRECTION	LENGTH	LINE	DIRECTION	LENGTH
FP1	S 38° 49' 21" E	25.28'	FP24	N 43° 23' 08" E	56.27'
FP2	S 30° 09' 26" E	37.06'	FP25	N 42° 21' 31" E	39.59'
FP3	S 21° 03' 46" E	58.09'	FP26	N 30° 39' 07" E	48.65'
FP4	S 24° 46' 26" E	39.58'	FP27	N 27° 40' 54" E	73.94'
FP5	S 25° 50' 47" E	63.45'	FP28	N 38° 35' 37" E	72.60'
FP6	S 37° 59' 12" E	42.71'	FP29	N 36° 45' 30" E	62.34'
FP7	S 46° 06' 02" E	37.30'	FP30	N 73° 05' 23" E	37.80'
FP8	S 50° 31' 17" E	18.49'	FP31	S 77° 01' 56" E	152.25'
FP9	S 40° 01' 27" E	89.21'	FP32	S 28° 44' 40" E	69.54'
FP10	S 37° 47' 48" E	61.31'	FP33	S 41° 32' 38" W	54.77'
FP11	S 26° 57' 12" E	99.08'	FP34	S 52° 00' 57" W	59.04'
FP12	S 20° 24' 57" E	53.85'	FP35	S 48° 36' 20" W	13.38'
FP13	S 16° 36' 44" E	97.85'			
FP14	S 23° 18' 05" E	24.53'			
FP15	N 33° 04' 41" W	42.43'			
FP16	S 22° 10' 37" E	108.30'			
FP17	S 24° 20' 39" E	98.31'			
FP18	S 15° 21' 55" E	20.76'			
FP19	S 36° 51' 55" E	20.30'			
FP20	S 21° 34' 25" E	44.88'			
FP21	S 31° 08' 28" E	36.72'			
FP22	S 24° 10' 33" E	19.55'			
FP23	S 43° 51' 03" E	39.01'			

LEGEND

PROPERTY LINE
EXISTING TREELINE
EXISTING TREELINE TO REMAIN
PROPOSED LOT LINE
EX. STREAM AND BUFFER
EX. 100-YEAR FLOODPLAIN
FOREST PRESERVATION AREA FLOODPLAIN
FOREST PRESERVATION AREA NON-FLOODPLAIN
FOREST PLANTING AREA
PROPOSED RETAINING WALL EASEMENT
LIMIT OF DISTURBANCE
OVERHEAD ELECTRIC LINE
EXISTING BUILDING
EX. SANITARY SEWER EASEMENT
FOREST RETENTION SIGNAGE
REFORESTATION SIGNAGE
EX. UNDERGROUND ELECTRIC
SPECIMEN TREE TO BE REMOVED
SPECIMEN TREE TO REMAIN

DATE	NO.	REVISION
02/2015	3	REDLINE REVISION – PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING
6-17-13	2	REVISED LOCATION 2ND FLOOR OLD LIBRARY & ADDED NEW USE
10-8-12	1	ADDED 2ND FLOOR TO OLD LIBRARY w/ADDED PARKING

REVISION (REV. 3 – SEE ABOVE)

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 3/15/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/8/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/15/10

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

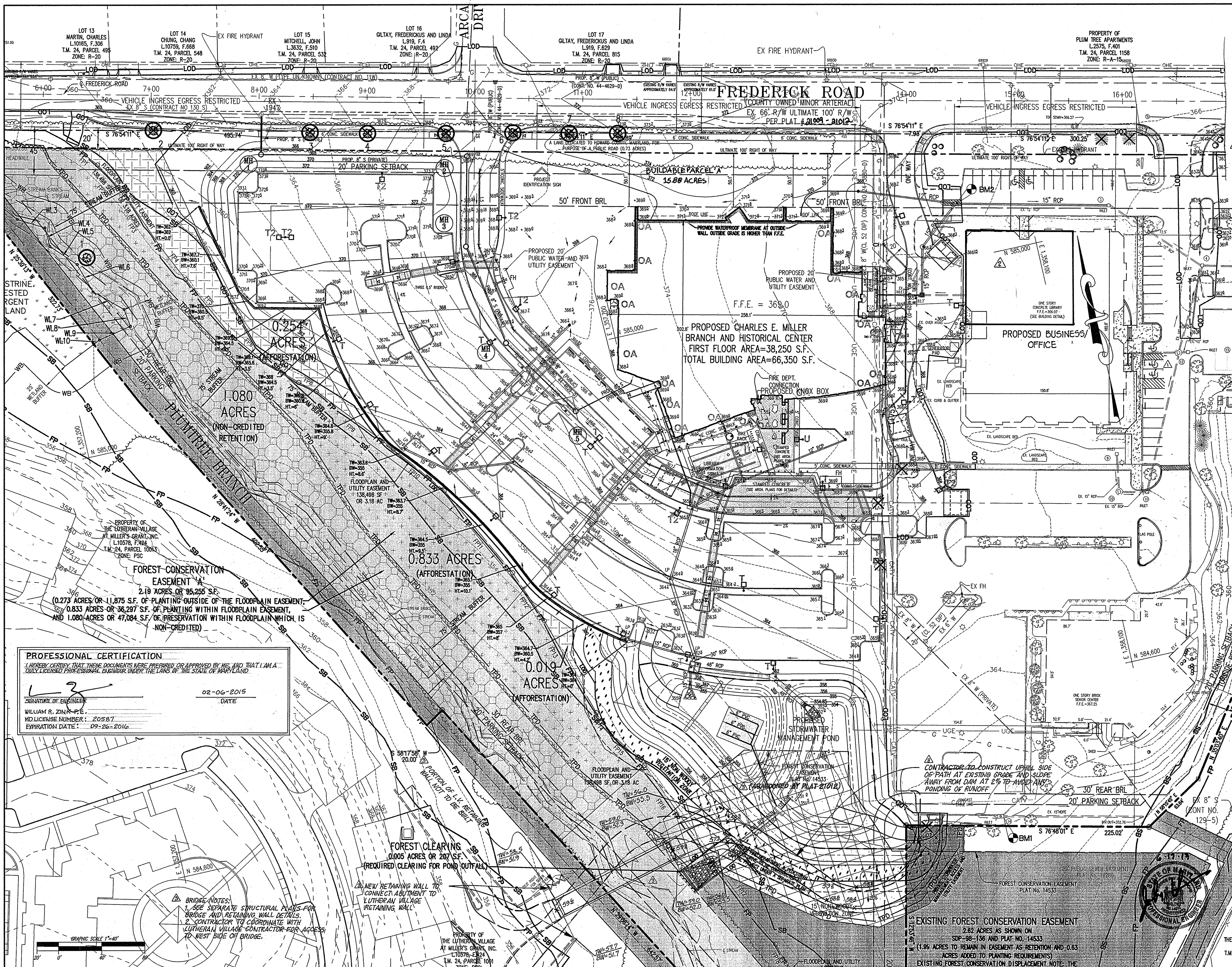
TITLE
SITE DEVELOPMENT PLAN

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP12SIT.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 15 OF ~~60~~ 66

SDP-09-058



LEGEND

- PROPERTY LINE
- EXISTING TREELINE
- EXISTING TREELINE TO REMAIN
- PROPOSED LOT LINE
- EX. STREAM AND BUFFER
- EX. 100-YEAR FLOODPLAIN
- EXISTING CONTOURS
- PROPOSED FOREST CONSERVATION EASEMENT 'A'
- PROPOSED FOREST CONSERVATION EASEMENT 'B'
- SILT FENCE
- LIMIT OF DISTURBANCE
- OVERHEAD ELECTRIC LINE
- EXISTING BUILDING
- PROPOSED BUILDING
- PROPOSED CONTOURS
- EX. PUBLIC DRAINAGE EASEMENT
- EX. SANITARY SEWER EASEMENT
- FOREST CONSERVATION EASEMENT
- EX. UNDERGROUND ELECTRIC
- SPECIMEN TREE TO REMAIN
- SPECIMEN TREE TO BE REMOVED

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR	3/15/10 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	3/8/10 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	3/15/10 DATE

DATE	NO.	REVISION
6-17-13	2	REVISED LOCATION 2ND FLOOR OLD LIBRARY & ADDED NEW USE
10-8-12	1	ADDED 2ND FLOOR TO OLD LIBRARY w/ADDED PARKING
02/2015	3	PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT
CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA
TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

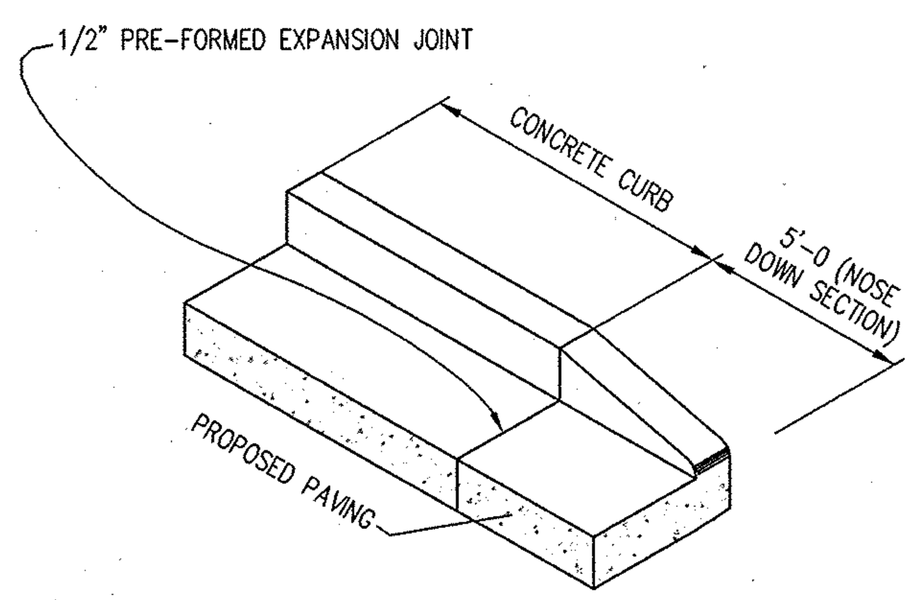
TITLE
GRADING PLAN

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND – JOHN W. CLAPSADDLE – NO. 16956 – REGISTERED PROFESSIONAL ENGINEER
BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP13GRA.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 16 OF ~~60~~ 66

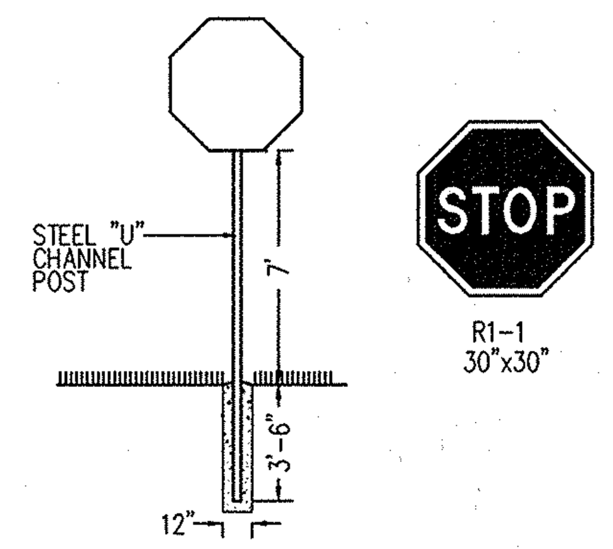
SDP-09-058



HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-3.02).

(1/17) NOSE DOWN CURB DETAIL

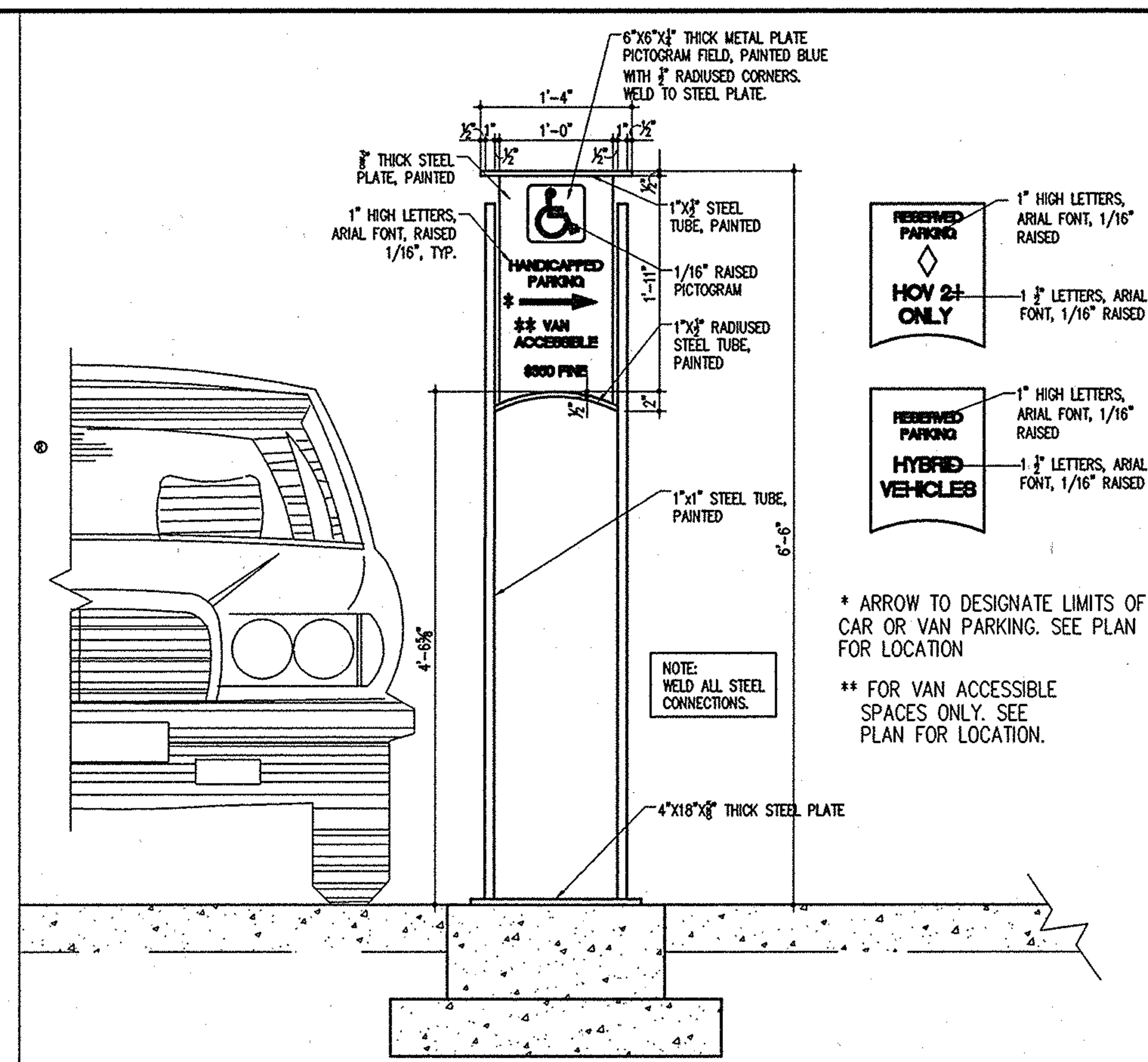
NOT TO SCALE



HEIGHT & CLEARANCE OF SIGNS (FOR ROADWAY SIGN)

(2/17) STOP SIGN DETAIL

NOT TO SCALE

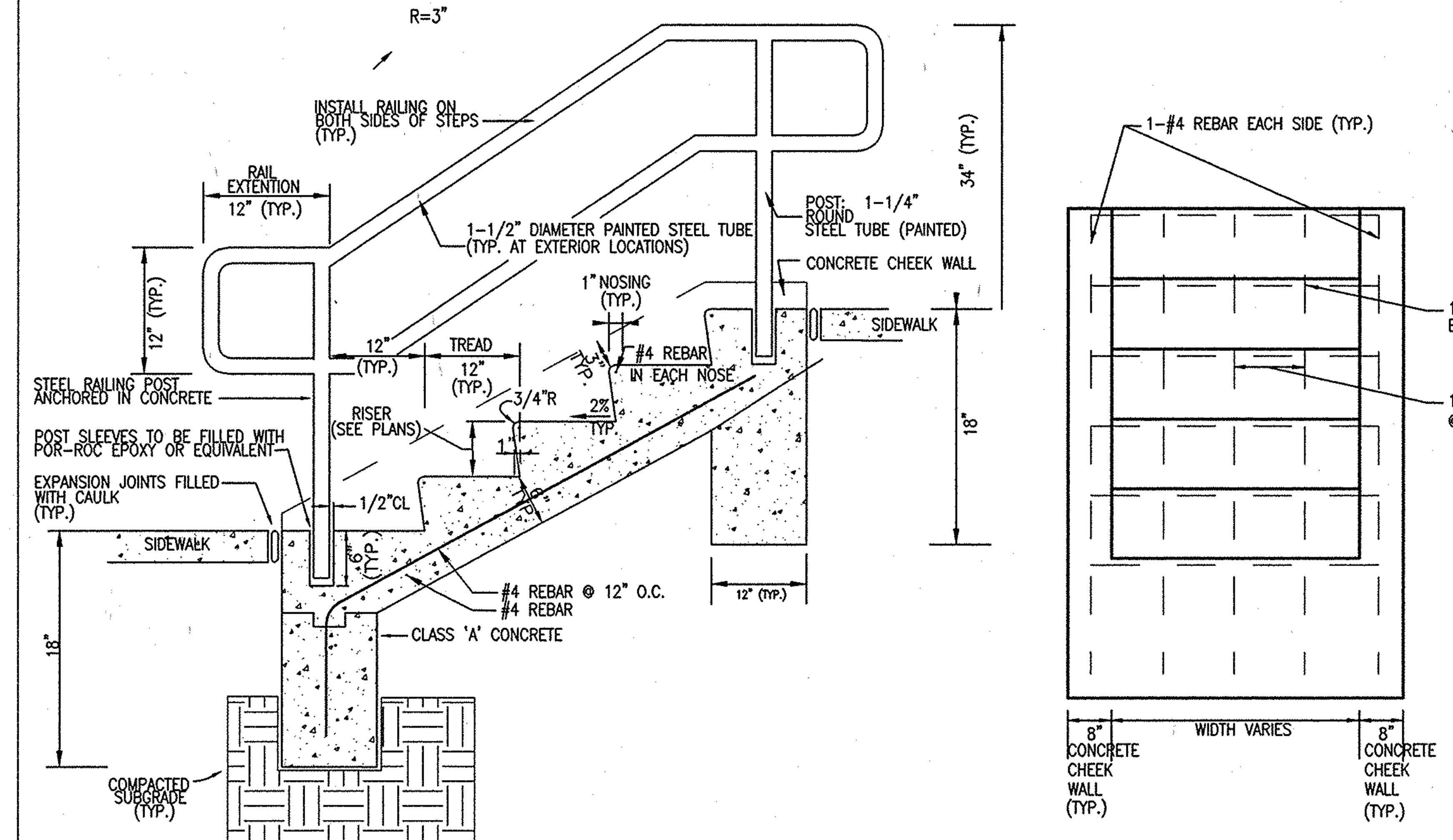


* ARROW TO DESIGNATE LIMITS OF CAR OR VAN PARKING. SEE PLAN FOR LOCATION

** FOR VAN ACCESSIBLE SPACES ONLY. SEE PLAN FOR LOCATION.

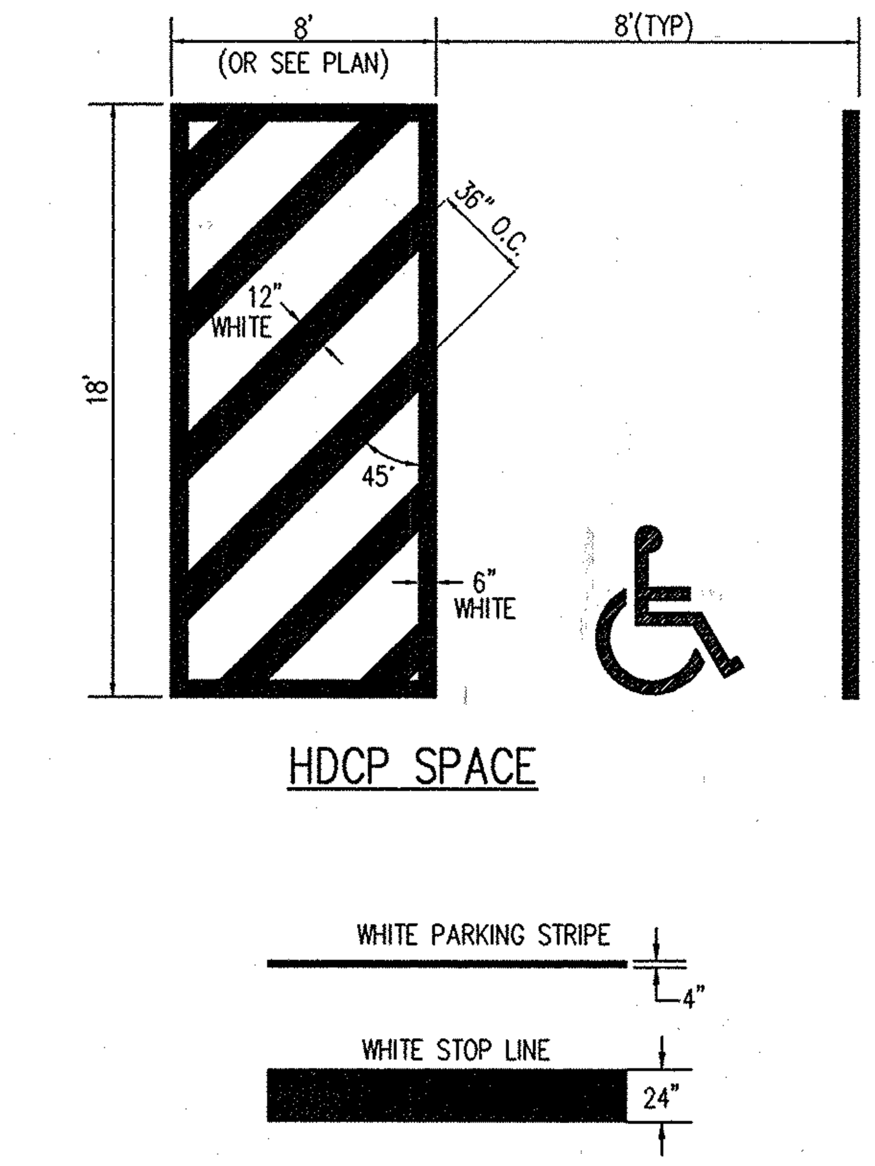
(3/17) CUSTOM HANDICAPPED SIGN DETAIL

NOT TO SCALE



(4/17) STEPS AND HANDRAIL DETAIL

NOT TO SCALE



LINE SPECIFICATIONS

RESERVED

LE-FE VEHICLE ONLY

OR

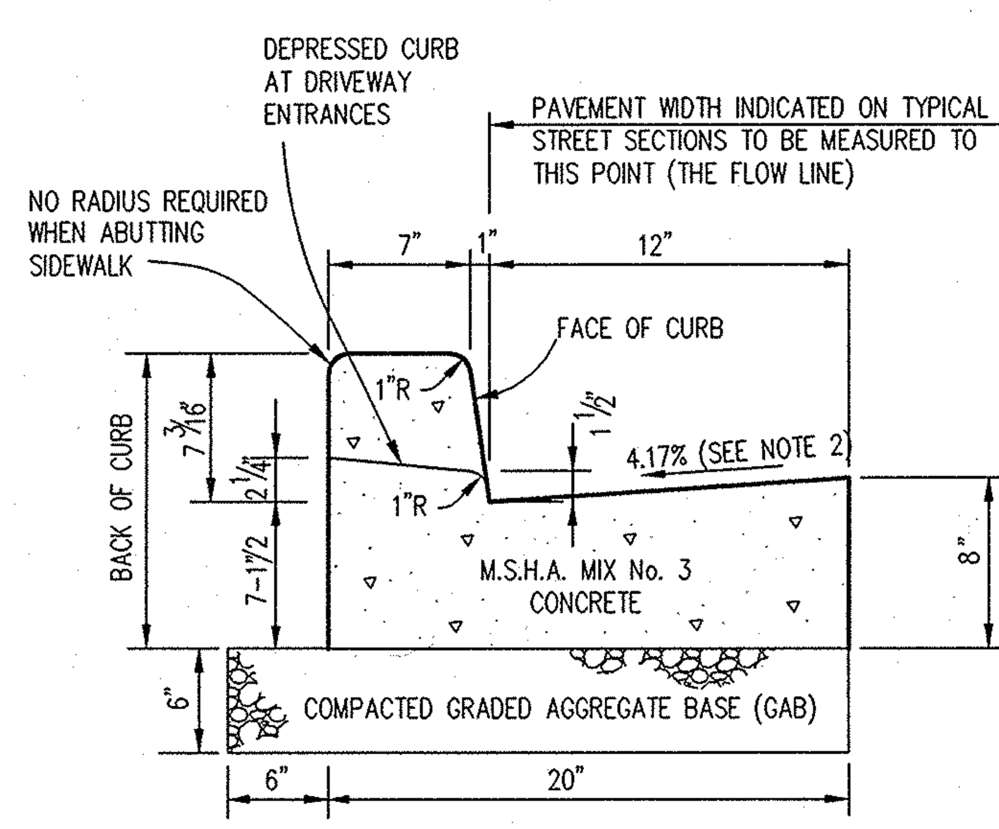
CAR / VAN POOL ONLY

"RESERVED PARKING" SPECIFICATIONS

ALL SPACES SHOWN AS RESERVED ON PLAN SHALL HAVE THE APPROPRIATE WORDING PAINTED AT THE ENTRANCE TO EACH STALL. THE WORDING SHALL BE CENTERED AND FULLY CONTAINED WITHIN EACH STALL.

(5/17) STRIPING STANDARDS

NOT TO SCALE



NOTE: PROVIDE TRANSITION TO CURB INLET IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-3.06.

HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-3.01).

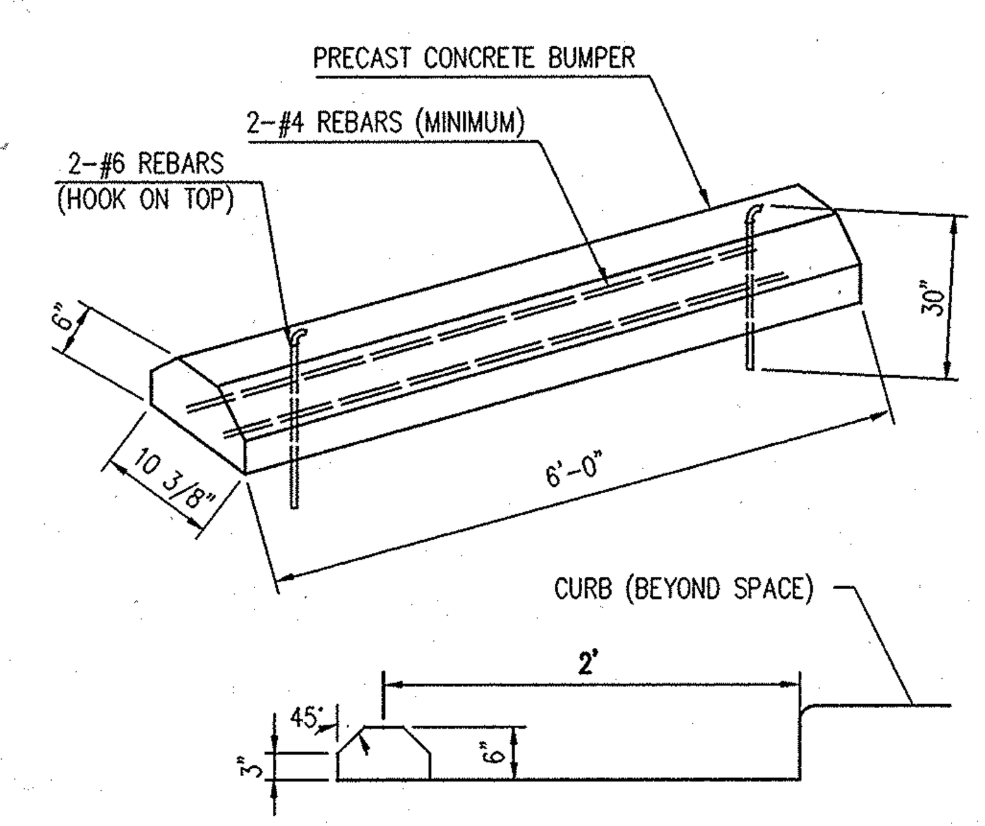
* GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTIONS SHALL BE SLOPED AT THE SAME RATE AS THE PAVEMENT.

NOTES :

1. A REVERSE GUTTER PAN SHALL HAVE A GUTTER SLOPE OF 4.17% AWAY FROM THE FLOW LINE, AND SHALL NOT BE USED WHERE THIS DRAINAGE CREATES A HAZARDOUS CONDITION.
2. GUTTER PAN AT THE MEDIAN EDGE OF INTERMEDIATE ARTERIALS OR THE HIGH SIDE OF SUPERELEVATED SECTION SHALL BE SLOPED AT THE SAME RATE AS THE PAVEMENT. MATCH PAVEMENT CROSS SLOPE WHEN CURB IS LOCATED ON THE LOW SIDE OF THE SUPERELEVATED SECTION AND THE RATE OF SUPERELEVATION IS GREATER THAN 3% FOR MODIFIED CURB & GUTTER.
3. A MINIMUM OF TWO (2) FEET OF COMPACTED STABILIZED EARTH, OR EQUIVALENT, SHALL SUPPORT THE ENTIRE BACK OF CURB.
4. POSITIVE DRAINAGE SHALL BE PROVIDED BOTH BEHIND THE CURB AND ALONG THE GUTTER AND FLOW LINE.

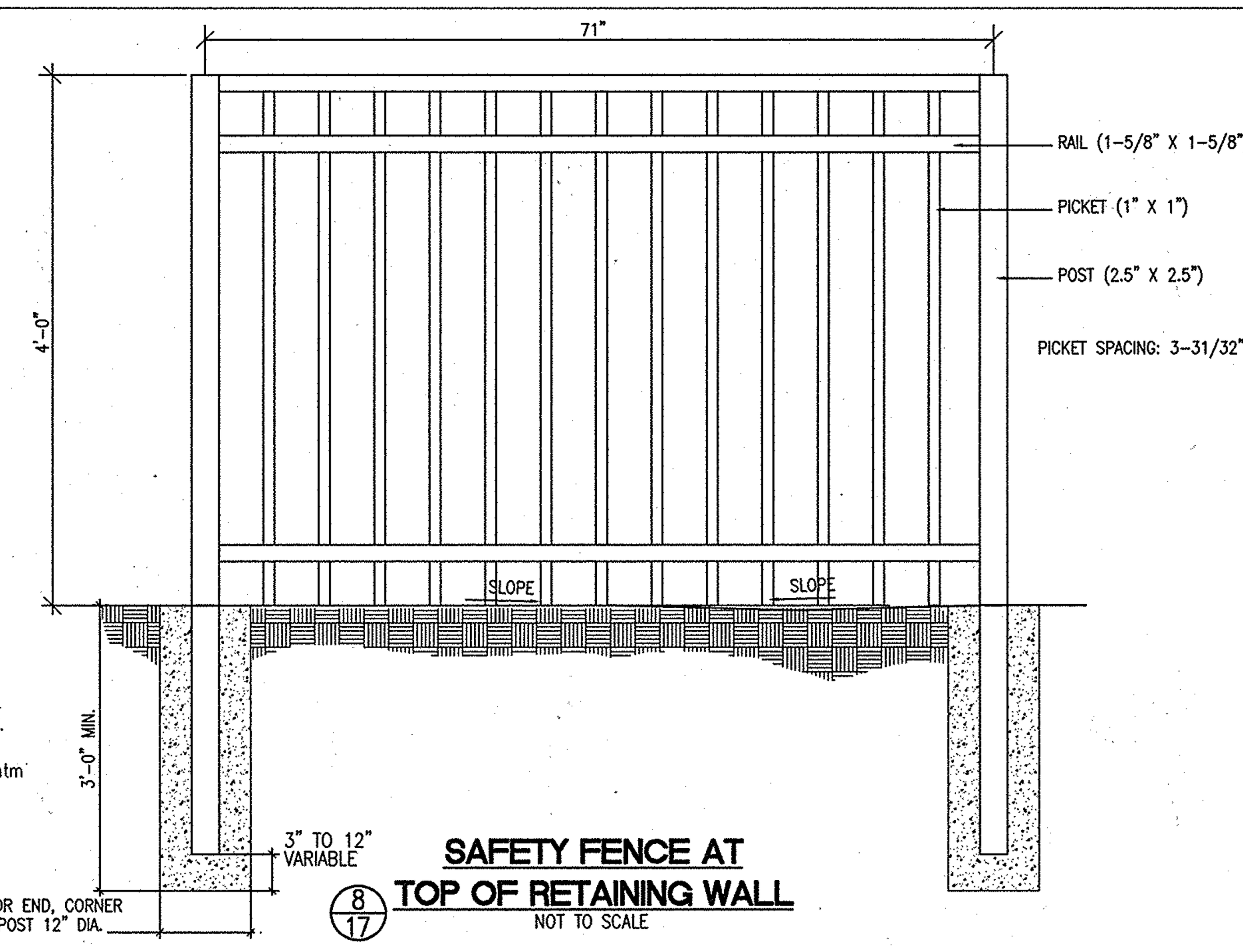
(6/17) STANDARD 7" COMBINATION CURB AND GUTTER

NOT TO SCALE



(7/17) CONCRETE WHEEL STOP

NOT TO SCALE



NOTE: 48" SAFETY FENCE TO BE DELGARD COMMERCIAL FENCE TYPE: STRATFORD, COLOR: BLACK. INSTALL PER MANUFACTURER SPECIFICATIONS.

http://www.delgard.com/dg-comm.htm

18" DIA. FOR END, CORNER AND PULL POST 12" DIA. LINE POST

(8/17) SAFETY FENCE AT TOP OF RETAINING WALL

NOT TO SCALE

LEED® for New Construction Application for Multiple Buildings Credit Scorecard

LEED-NC Green Building Rating System, version 2.2, final version

Howard County Library

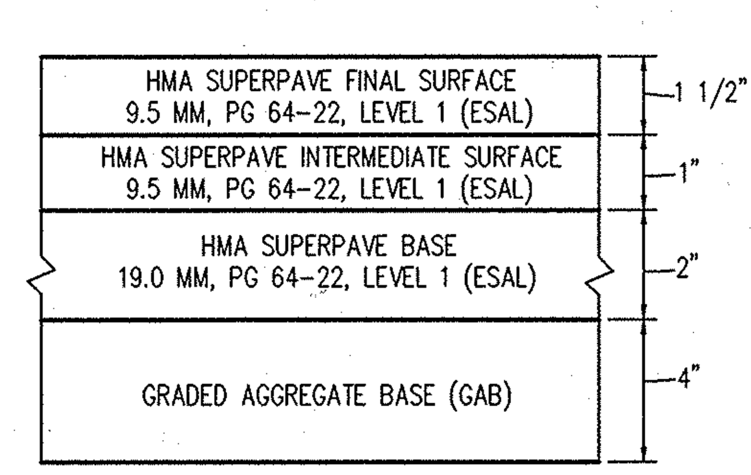
Charles E. Miller Branch and Historical Center

Sustainable Design Consulting

Y	?	N			
37	8	24	**Total Project Score**		Possible Points 69
			Certified 26 to 32 points Silver 33 to 38 points Gold 39 to 51 points Platinum 52 or more points		
5	2	7	**Sustainable Sites**		Possible Points 14
Y			Prereq 1	Construction Activity Pollution Prevention	
		1	Credit 1	Site Selection	1
		1	Credit 2	Development Density & Community Connectivity	1
		1	Credit 3	Brownfield Redevelopment	1
	1		Credit 4.1	Alternative Transportation: Public Transportation Access	1
		1	Credit 4.2	Alternative Transportation: Bicycle Storage & Changing Rooms	1
1			Credit 4.3	Alternative Transportation: Low Emitting & Fuel Efficient Vehicles	1
1			Credit 4.4	Alternative Transportation: Parking Capacity	1
		1	Credit 5.1	Site Development: Protect or Restore Habitat	1
1			Credit 5.2	Site Development: Maximize Open Space	1
		1	Credit 6.1	Stormwater Design: Quantity Control	1
1			Credit 6.2	Stormwater Design: Quality Control	1
	1		Credit 7.1	Heat Island Effect: Non-Roof	1
1			Credit 7.2	Heat Island Effect: Roof	1
		1	Credit 8	Light Pollution Reduction	1
4		1	**Water Efficiency**		Possible Points 5
1			Credit 1.1	Water Efficient Landscaping: Reduce by 50%	1
1			Credit 1.2	Water Efficient Landscaping: No Potable Use or No Irrigation	1
		1	Credit 2	Innovative Wastewater Technologies	1
1			Credit 3.1	Water Use Reduction: 20% Reduction	1
1			Credit 3.2	Water Use Reduction: 30% Reduction	1
8	3	6	**Energy & Atmosphere**		Possible Points 17
Y			Prereq 1	Fundamental Commissioning of the Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	CFC Reduction in HVAC&R Equipment	
2			Credit 1.1	Optimize Energy Performance: 14% New / 7% Existing	2
2			Credit 1.2	Optimize Energy Performance: 21% New / 14% Existing	2
2			Credit 1.3	Optimize Energy Performance: 28% New / 21% Existing	2
	1	1	Credit 1.4	Optimize Energy Performance: 35% New / 28% Existing	2
		2	Credit 1.5	Optimize Energy Performance: 42% New / 35% Existing	2
		1	Credit 2.1	On-Site Renewable Energy: 2.5%	1
		1	Credit 2.2	On-Site Renewable Energy: 7.5%	1
		1	Credit 2.3	On-Site Renewable Energy: 12.5%	1
1			Credit 3	Enhanced Commissioning	1
1			Credit 4	Enhanced Refrigerant Management	1
	1		Credit 5	Measurement & Verification	1
	1		Credit 6	Green Power	1

Y	?	N			
6	1	6	**Materials & Resources**		Possible Points 13
Y			Prereq 1	Storage & Collection of Recyclables	
		1	Credit 1.1	Building Reuse: Maintain 75% of Existing Walls, Floors & Roof	1
		1	Credit 1.2	Building Reuse: Maintain 95% of Existing Walls, Floors & Roof	1
		1	Credit 1.3	Building Reuse: Maintain 50% of Interior Non-Structural Elements	1
1			Credit 2.1	Construction Waste Management: Divert 50% from Disposal	1
1			Credit 2.2	Construction Waste Management: Divert 75% from Disposal	1
		1	Credit 3.1	Materials Reuse: 5%	1
		1	Credit 3.2	Materials Reuse: 10%	1
1			Credit 4.1	Recycled Content: 10% (post-consumer + 1/2 pre-consumer)	1
1			Credit 4.2	Recycled Content: 20% (post-consumer + 1/2 pre-consumer)	1
1			Credit 5.1	Regional Materials: 10% Extracted, Processed & Manufactured Regionall	1
1			Credit 5.2	Regional Materials: 20% Extracted, Processed & Manufactured Regionall	1
		1	Credit 6	Rapidly Renewable Materials	1
	1		Credit 7	Certified Wood	1
9	2	4	**Indoor Environmental Quality**		Possible Points 15
Y			Prereq 1	Minimum IAQ Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
1			Credit 1	Outdoor Air Delivery Monitoring	1
		1	Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan: During Construction	1
1			Credit 3.2	Construction IAQ Management Plan: Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials: Adhesives & Sealants	1
1			Credit 4.2	Low-Emitting Materials: Paints	1
1			Credit 4.3	Low-Emitting Materials: Carpet	1
1			Credit 4.4	Low-Emitting Materials: Composite Wood & Agrifiber Products	1
		1	Credit 5	Indoor Chemical & Pollutant Source Control	1
		1	Credit 6.1	Controllability of Systems: Lighting	1
		1	Credit 6.2	Controllability of Systems: Thermal Comfort	1
1			Credit 7.1	Thermal Comfort: Design	1
1			Credit 7.2	Thermal Comfort: Verification	1
	1		Credit 8.1	Daylight & Views: Daylight 75% of Spaces	1
	1		Credit 8.2	Daylight & Views: Views for 90% of Spaces	1
5			**Innovation & Design Process**		Possible Points 5
1			Credit 1.1	Innovation in Design: Green Educational Program	1
1			Credit 1.2	Innovation in Design: Green Housekeeping Program	1
1			Credit 1.3	Innovation in Design: 40% Water Efficiency	1
1			Credit 1.4	Innovation in Design: Typical Exemplary Performance	1
1			Credit 2	LEED Accredited Professional	1

Sustainable Design Consulting, LLC

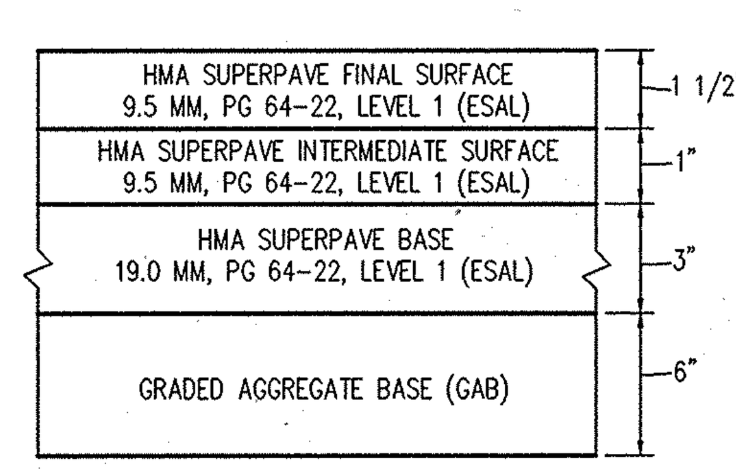


HOWARD COUNTY DESIGN MANUAL VOLUME IV- STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-2.01)

(10/17) P-2 PAVING

NOT TO SCALE

NOTE: THE PAVING SECTION SHOWN HAS NOT BEEN DESIGNED FOR ACTUAL SOIL CONDITIONS, IN PLACE COMPACTION RESULTS, OR TRAFFIC VOLUMES SPECIFIC TO THIS PROJECT. IT IS RECOMMENDED THAT THE USER CONSULT WITH A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER FOR A SPECIFIC PAVING DESIGN BASED ON THE APPROPRIATE PARAMETERS PRIOR TO INSTALLATION OF THIS PAVING SECITON.

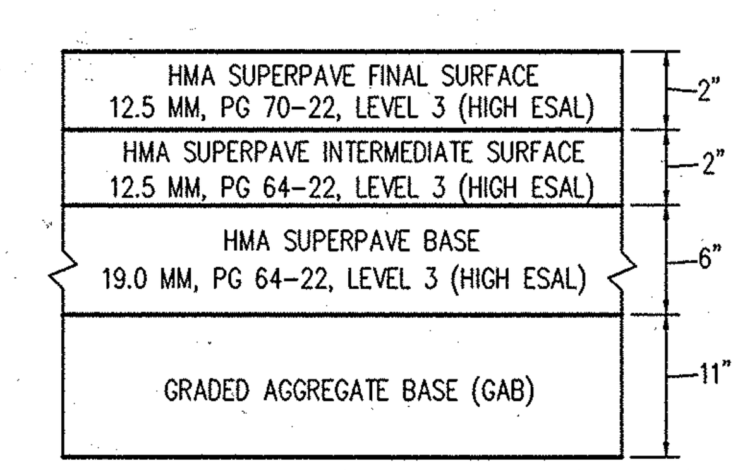


HOWARD COUNTY DESIGN MANUAL VOLUME IV- STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-2.01)

(11/17) P-3 PAVING

NOT TO SCALE

NOTE: THE PAVING SECTION SHOWN HAS NOT BEEN DESIGNED FOR ACTUAL SOIL CONDITIONS, IN PLACE COMPACTION RESULTS, OR TRAFFIC VOLUMES SPECIFIC TO THIS PROJECT. IT IS RECOMMENDED THAT THE USER CONSULT WITH A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER FOR A SPECIFIC PAVING DESIGN BASED ON THE APPROPRIATE PARAMETERS PRIOR TO INSTALLATION OF THIS PAVING SECITON.

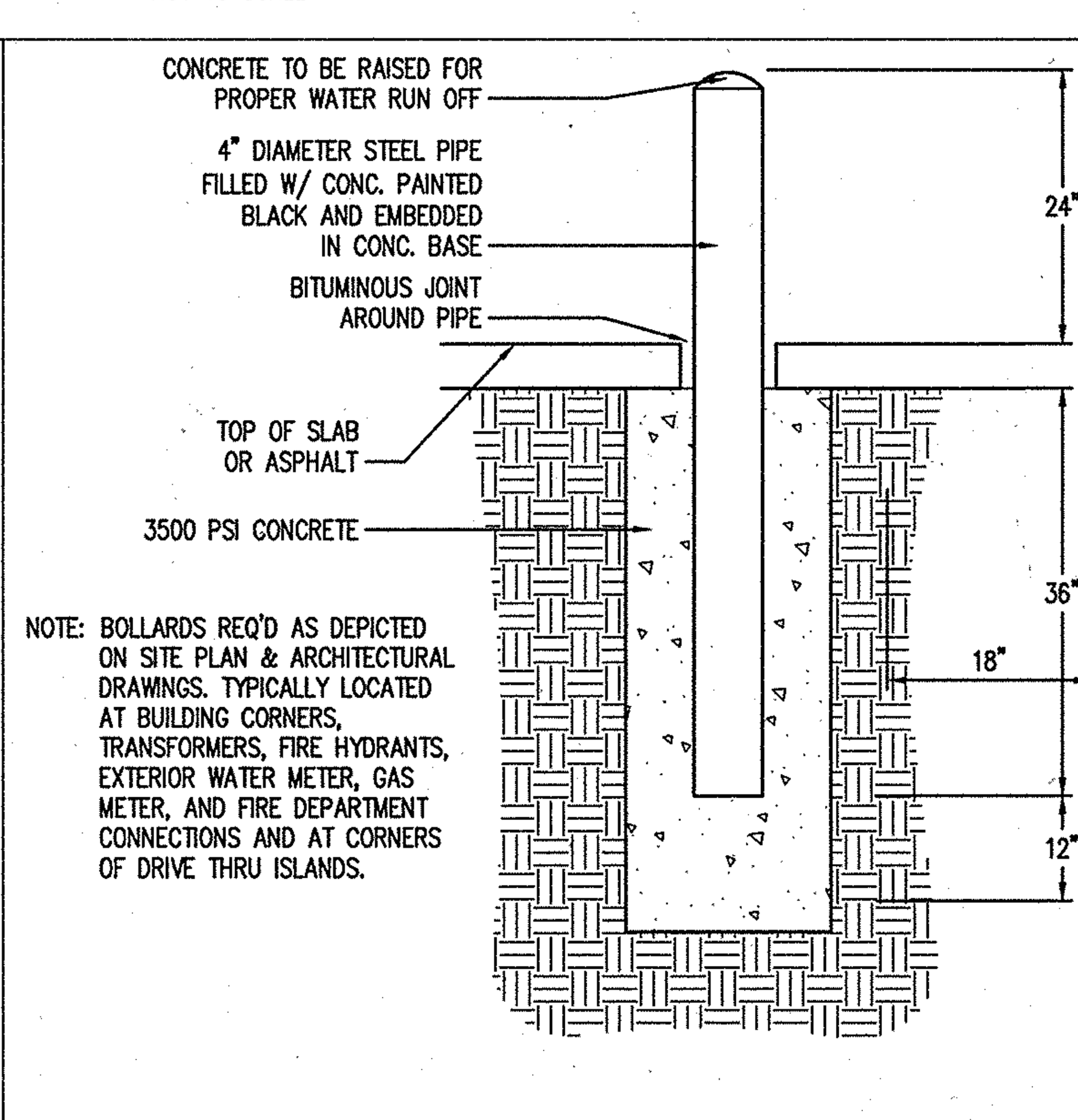


HOWARD COUNTY DESIGN MANUAL VOLUME IV- STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (DRAWING R-2.02)

(12/17) P-5 PAVING

NOT TO SCALE

NOTE: THE PAVING SECTION SHOWN HAS NOT BEEN DESIGNED FOR ACTUAL SOIL CONDITIONS, IN PLACE COMPACTION RESULTS, OR TRAFFIC VOLUMES SPECIFIC TO THIS PROJECT. IT IS RECOMMENDED THAT THE USER CONSULT WITH A LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER FOR A SPECIFIC PAVING DESIGN BASED ON THE APPROPRIATE PARAMETERS PRIOR TO INSTALLATION OF THIS PAVING SECITON.



NOTE: BOLLARDS REQ'D AS DEPICTED ON SITE PLAN & ARCHITECTURAL DRAWINGS. TYPICALLY LOCATED AT BUILDING CORNERS, TRANSFORMERS, FIRE HYDRANTS, EXTERIOR WATER METER, GAS METER, AND FIRE DEPARTMENT CONNECTIONS AND AT CORNERS OF DRIVE THRU ISLANDS.

(13/17) CONCRETE BOLLARD DETAIL

NOT TO SCALE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Butler 3/15/10
DIRECTOR DATE

[signature] 3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kent Sheubrooks 3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

SITE DETAILS

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
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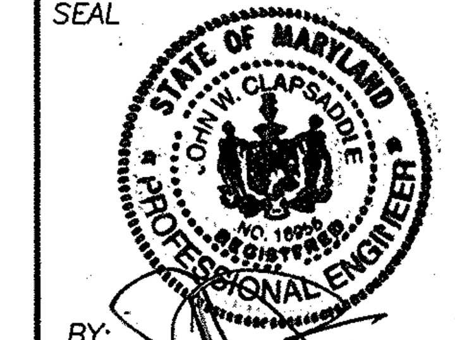
SEAL

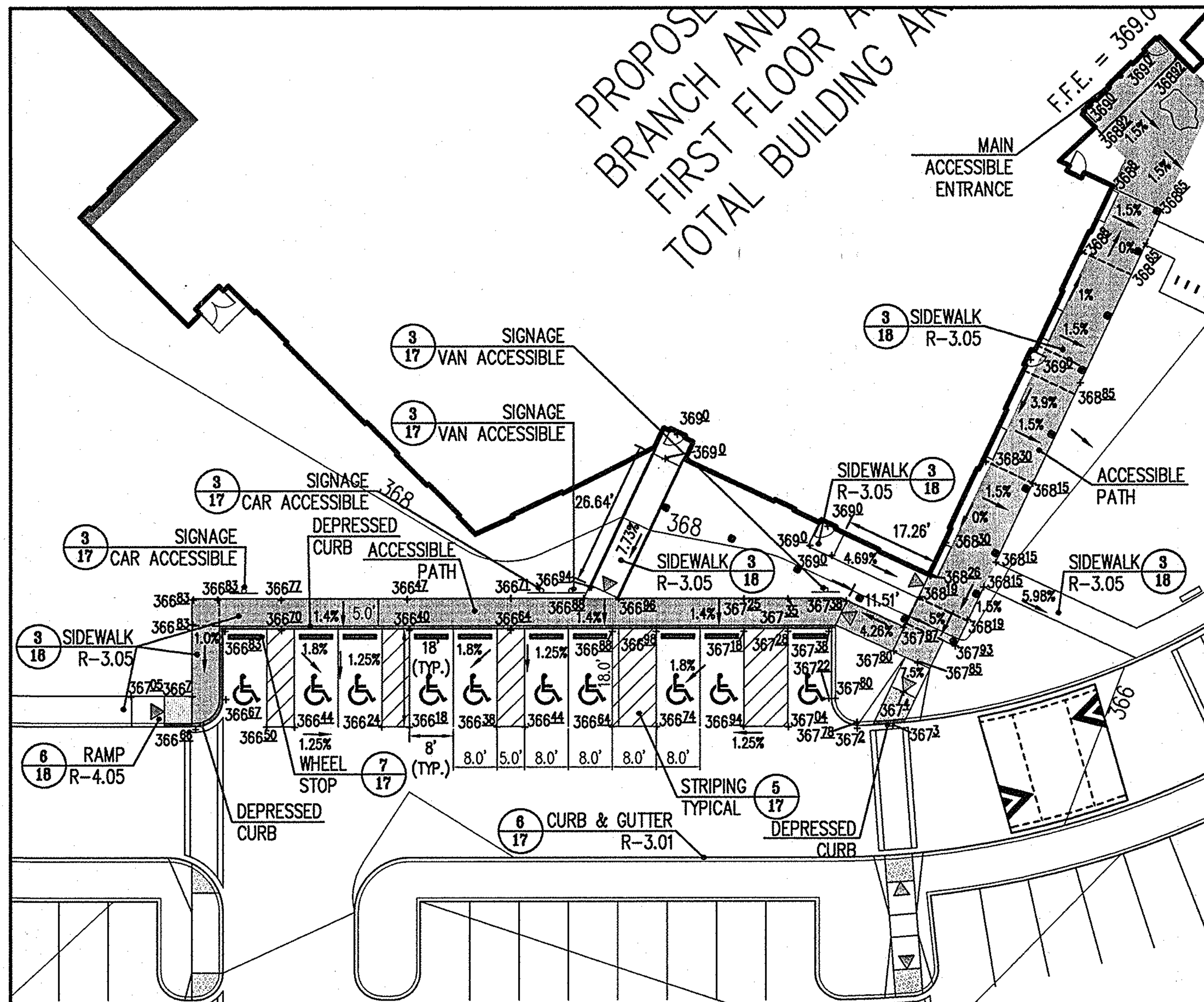


BY:

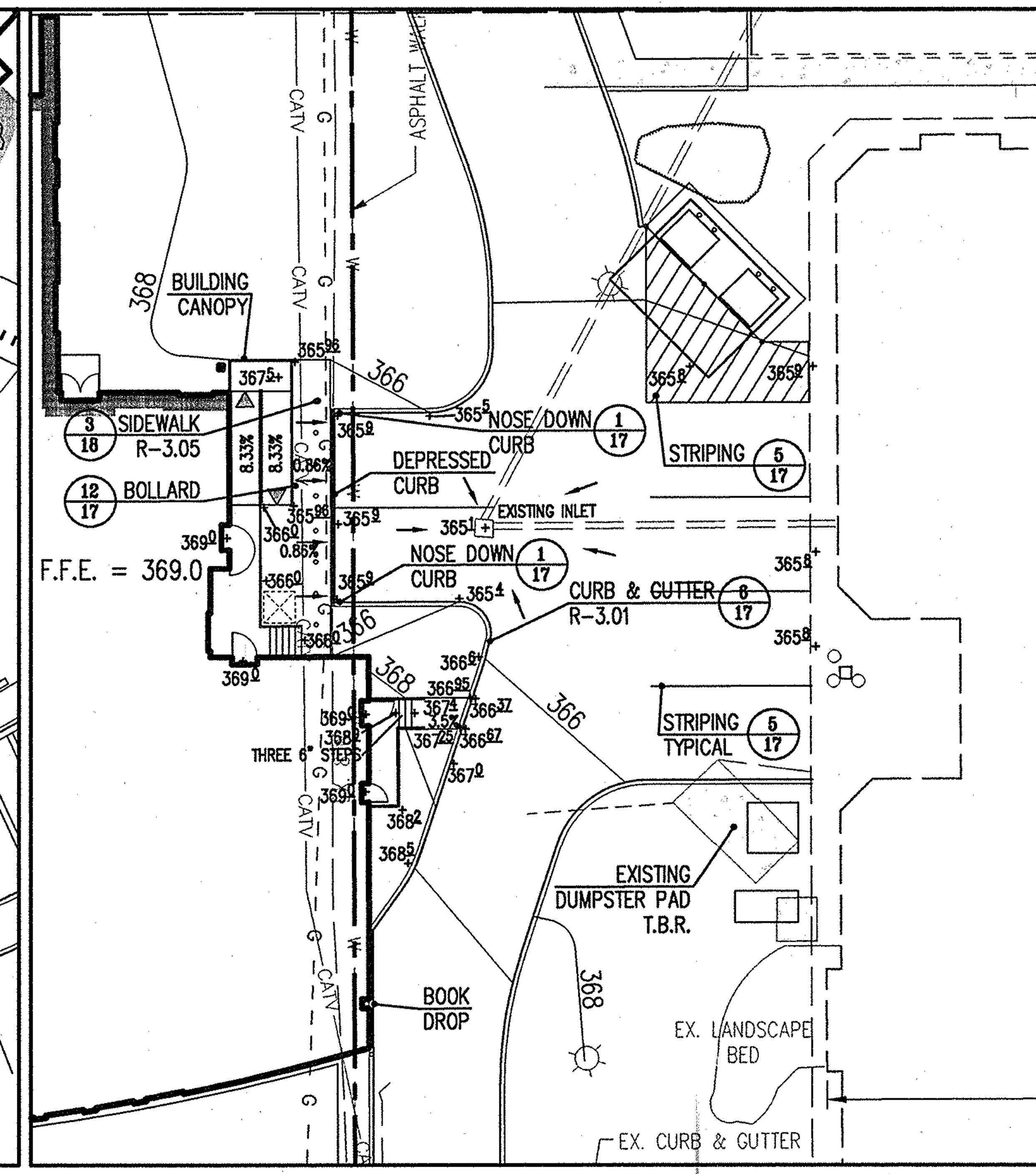
"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE 06/09/2010."

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP14DET.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 30'
DRAWING NO. 17 OF 66

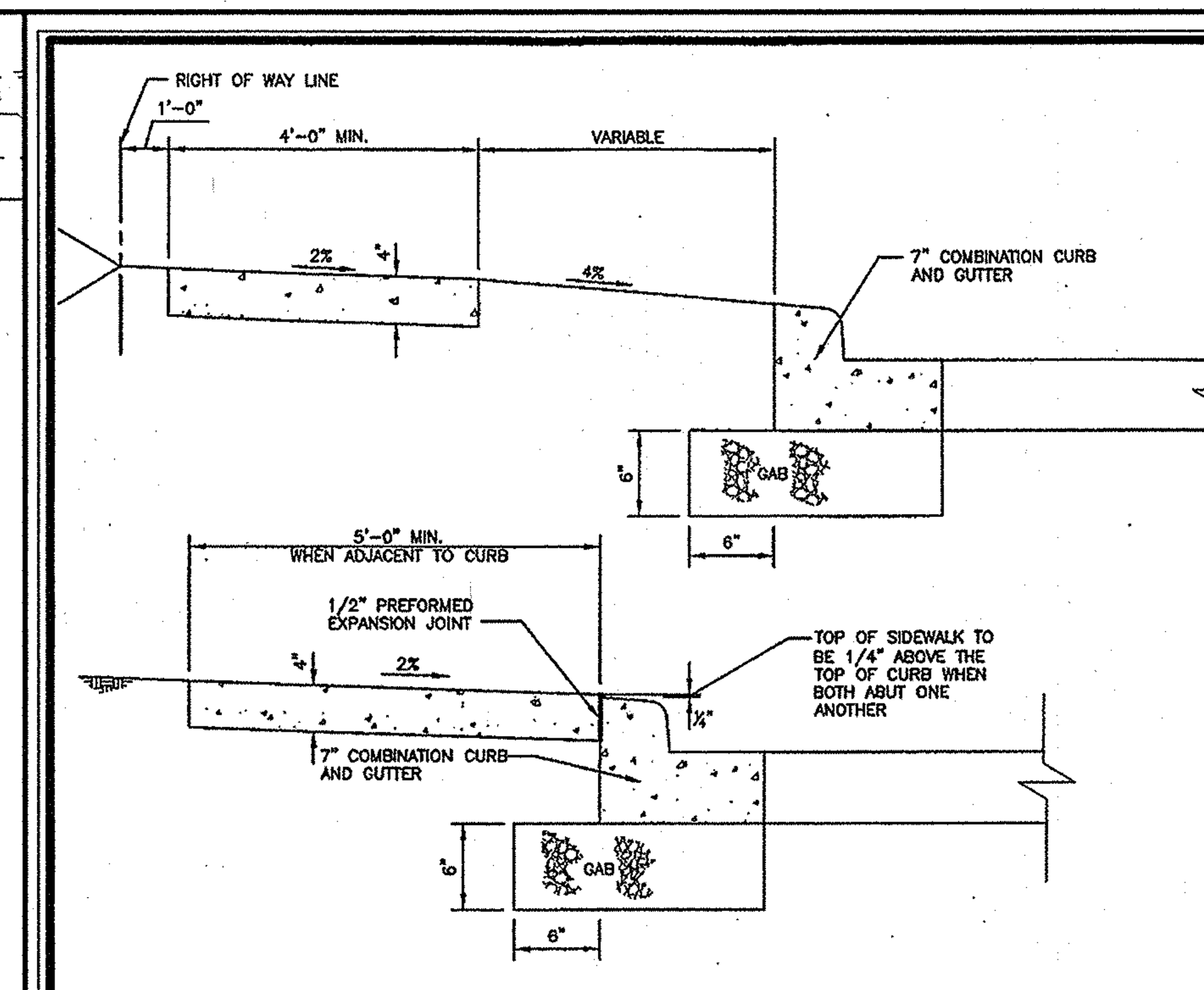
SDP-09-058



1/18 **HANDICAPPED PARKING AREA DETAIL**
SCALE: 1"=20'



2/18 **BOOK DROP AND LOADING AREA DETAIL**
SCALE: 1"=20'

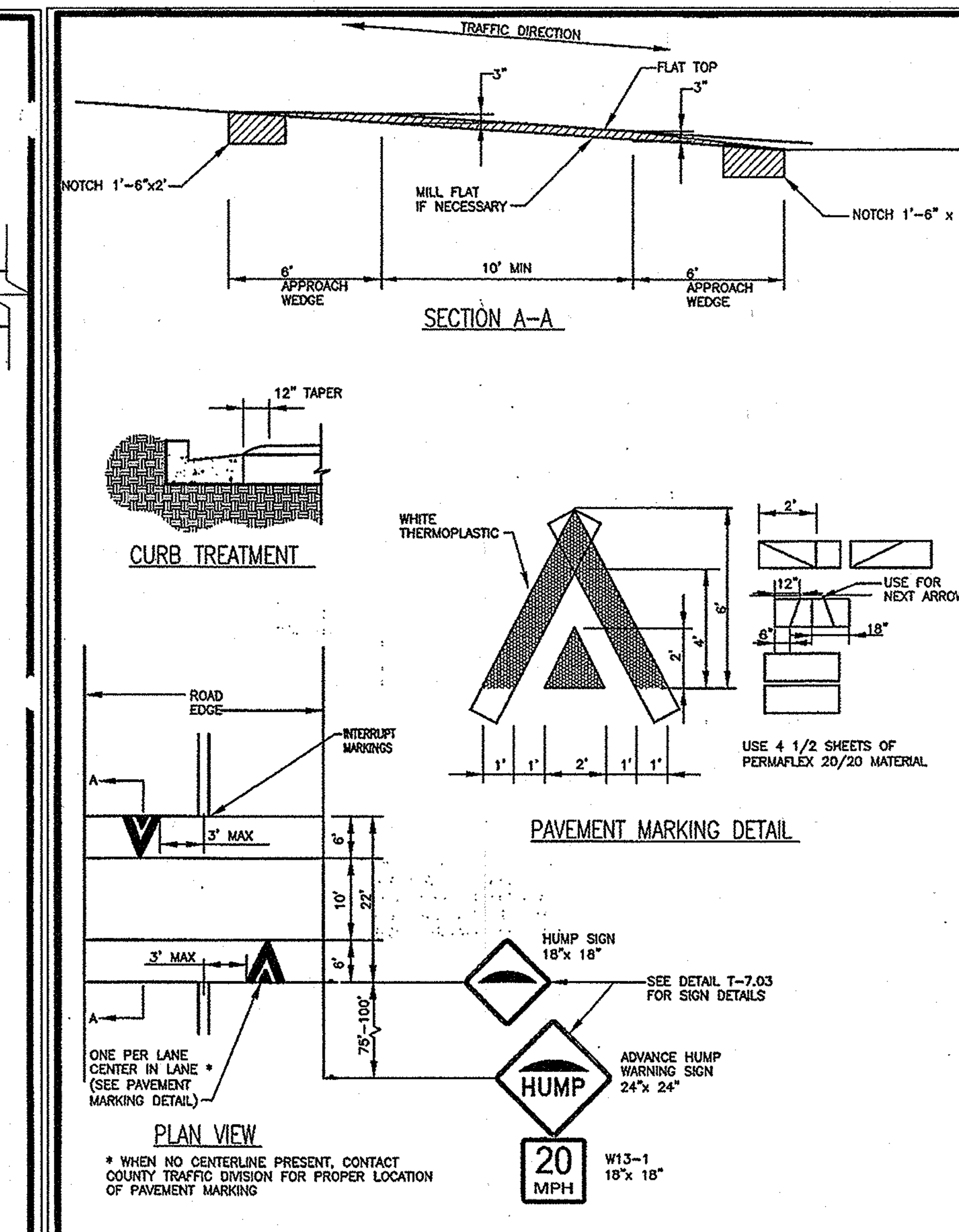


NOTES:

1. SIDEWALK TO BE SCRIBED IN 5'-0" MAXIMUM SQUARES.
2. EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO BE MORE THAN 15' APART.
3. 1/2" PREFORMED EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK.
4. CONCRETE TO BE MIX NO.3.
5. WHEN SIDEWALK ABUTS CURB, SIDEWALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PREFORMED EXPANSION JOINT 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 48 FEET. THE HEADERS SHALL BE PLACED AT THE EXPANSION JOINT LOCATIONS AND SHALL BE MONOLITHIC WITH THE SIDEWALK.
7. SIDEWALK WIDTH ADJACENT TO CURB SHALL BE 5'-0" MINIMUM EXCEPT SIDEWALK ADJACENT TO CURB IN CUL-DE-SAC BULBS MAY BE 4'-0" WIDE.
8. SIDEWALK LOCATED 2' OR MORE FROM CURB MAY BE 4'-0" IN WIDTH WITH A 5'x5' PAVED SECTION PLACED 200' APART.
9. 4'-0" SIDEWALK REQUIRES A PASSING AREA (SEE DETAIL R-4.01).

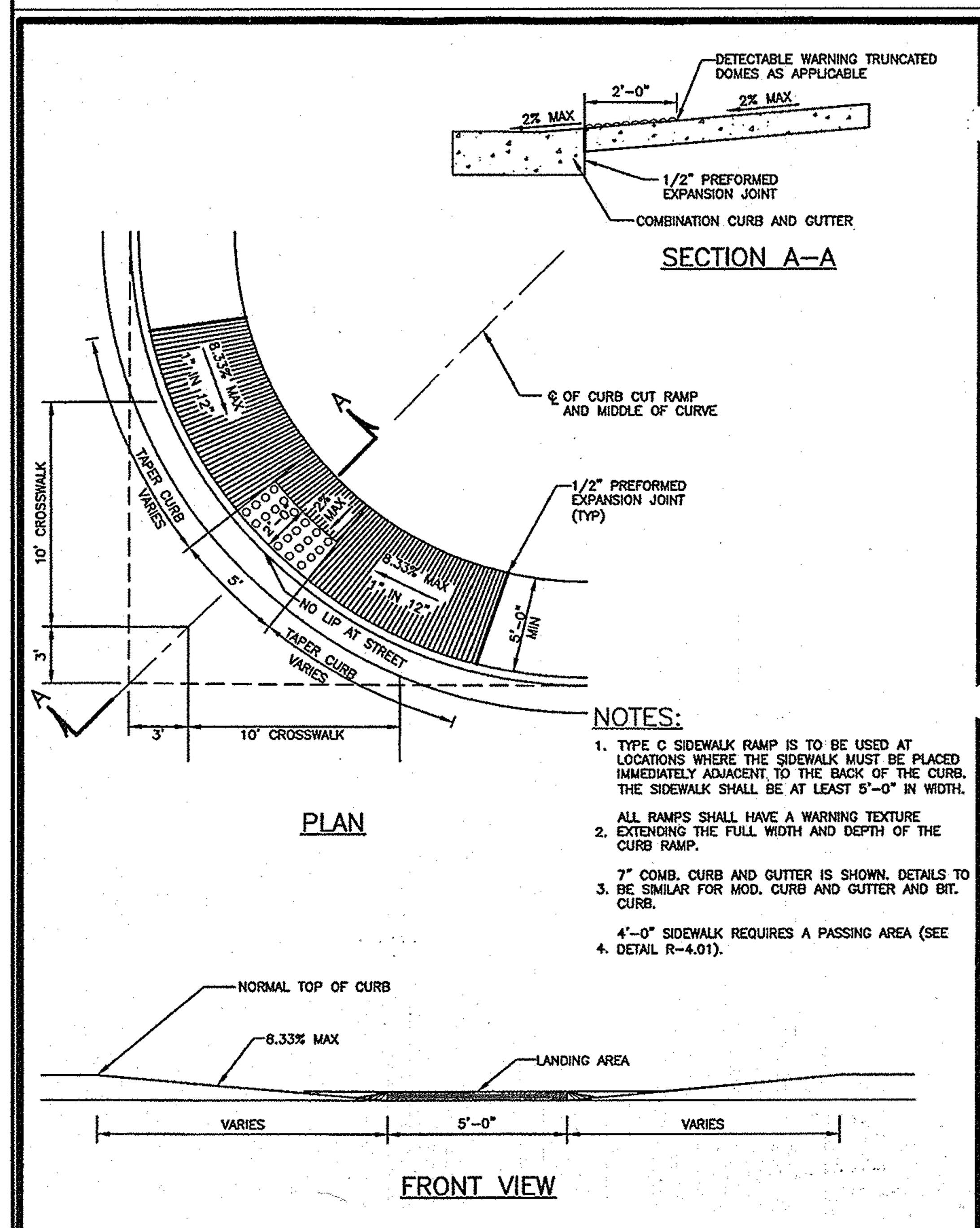
Revised / Revised 5/7/2007 Approved	Howard County, Maryland Department of Public Works — Approved: Chief, Bureau of Engineering	Concrete Sidewalk	Detail R-3.05

3/18 **CONCRETE SIDEWALK DETAIL**
NOT TO SCALE



Revised / 5/7/2007 Approved	Howard County, Maryland Department of Public Works — Approved: Chief, Bureau of Engineering	Flat Top Profile Speed Table (Speed Hump)	Detail T-6.01

4/18 **SPEED HUMP DETAIL**
NOT TO SCALE



NOTES:

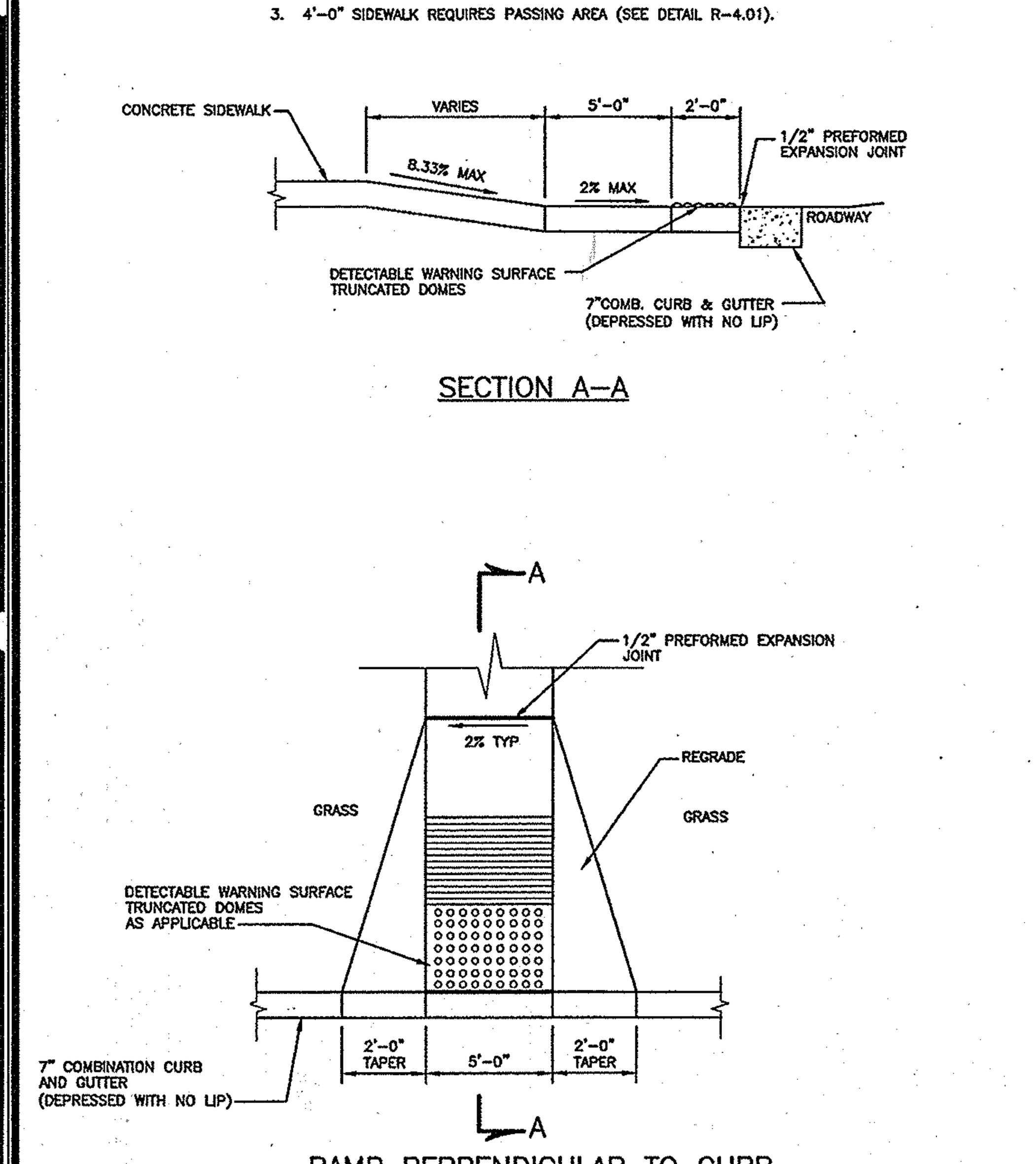
1. TYPE C SIDEWALK RAMP IS TO BE USED AT LOCATIONS WHERE THE SIDEWALK MUST BE PLACED IMMEDIATELY ADJACENT TO THE BACK OF THE CURB. THE SIDEWALK SHALL BE AT LEAST 5'-0" IN WIDTH.
2. ALL RAMPS SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH AND DEPTH OF THE CURB RAMP.
3. 7" COMB. CURB AND GUTTER IS SHOWN. DETAILS TO BE SIMILAR FOR MOD. CURB AND GUTTER AND BIT. CURB.
4. 4'-0" SIDEWALK REQUIRES A PASSING AREA (SEE DETAIL R-4.01).

Revised / Revised 5/7/2007 Approved	Howard County, Maryland Department of Public Works — Approved: Chief, Bureau of Engineering	SIDEWALK RAMP Type C	Detail R-4.04

5/18 **SIDEWALK RAMP - TYPE C**
NOT TO SCALE

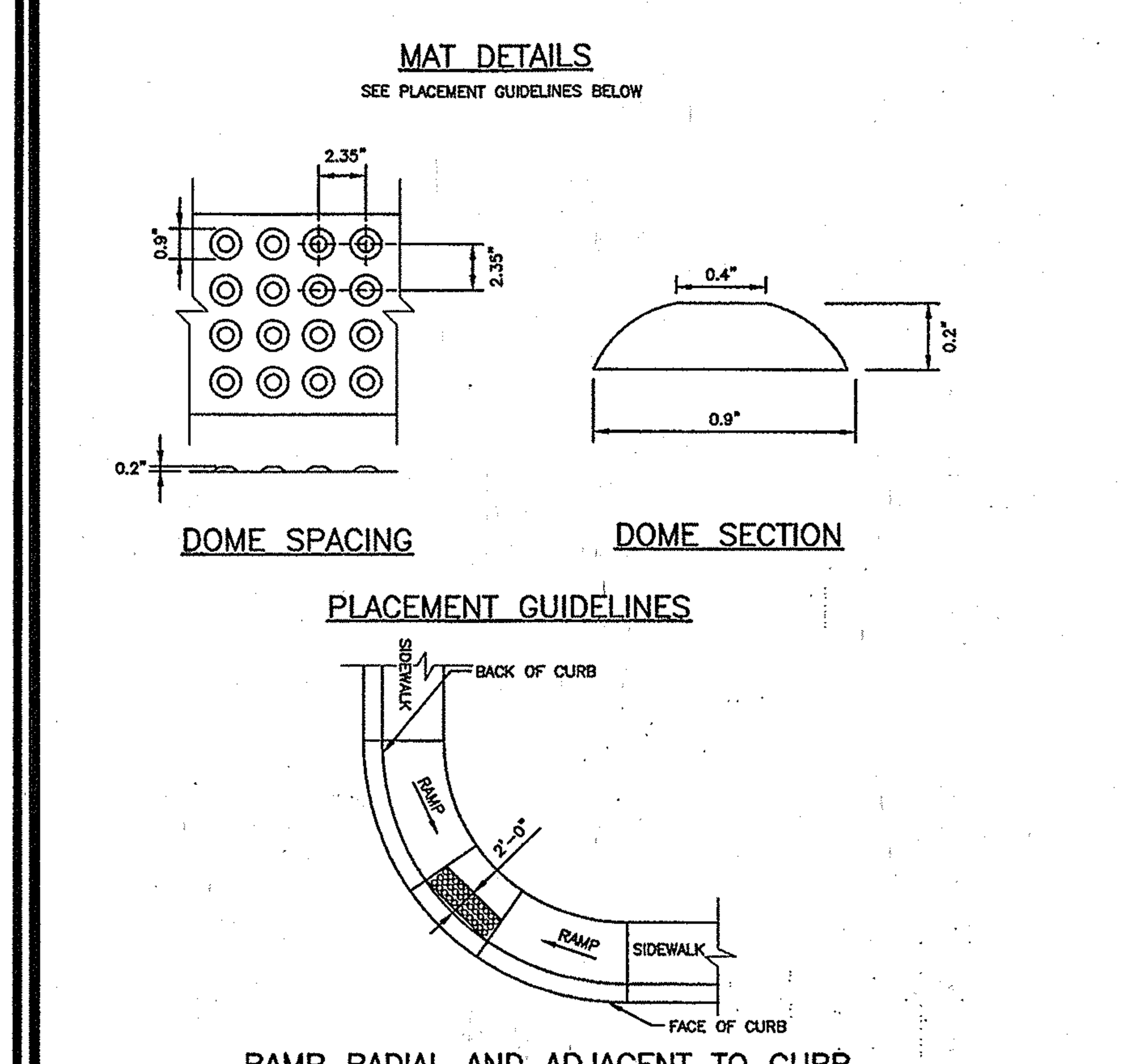
NOTES:

1. ALL RAMPS SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH AND DEPTH OF RAMP. SEE DETAIL R-4.07.
2. GRASS AREA ADJACENT TO SIDEWALK MUST BE SLOPED TO MEET RAMP.
3. 4'-0" SIDEWALK REQUIRES PASSING AREA (SEE DETAIL R-4.01).



Revised / Revised 5/7/2007 Approved	Howard County, Maryland Department of Public Works — Approved: Chief, Bureau of Engineering	SIDEWALK RAMP Layout & Grading Perpendicular to Curb	Detail R-4.05

6/18 **SIDEWALK RAMP - PERP. TO CURB**
NOT TO SCALE

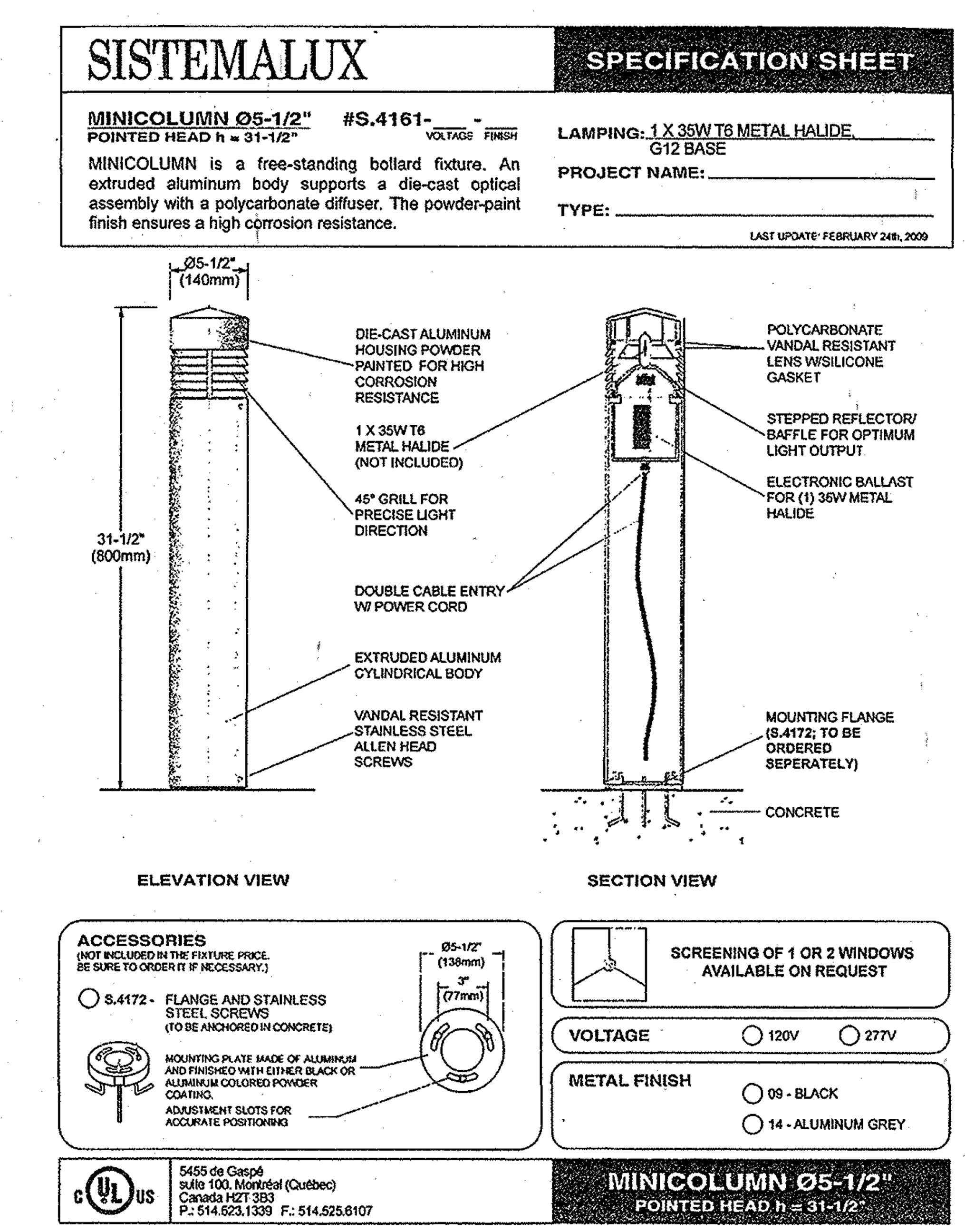


NOTES:

1. THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 TO 8 INCHES FROM THE FACE OF THE CURB.
2. FOR SKEWED APPLICATIONS DETECTABLE WARNING SHALL BE PLACED SUCH THAT THE DOMES CLOSEST TO THE BACK OF THE CURB ARE NO LESS THAN 0.5" AND NO MORE 3.0" FROM THE BACK OF THE CURB. TRUNCATED DOME SURFACES SHALL BE FABRICATED TO PROVIDE FULL DOMES ONLY.

Revised / 5/7/2007 Approved	Howard County, Maryland Department of Public Works — Approved: Chief, Bureau of Engineering	SIDEWALK RAMP Detectable Warning Truncated Domes	Detail R-4.07

7/18 **SIDEWALK RAMP - DETECTABLE WARNING**
NOT TO SCALE



8/18 **BOLLARD LIGHT**
NOT TO SCALE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Butler 3/15/10
DIRECTOR DATE

3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kent Sheubrooks 3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

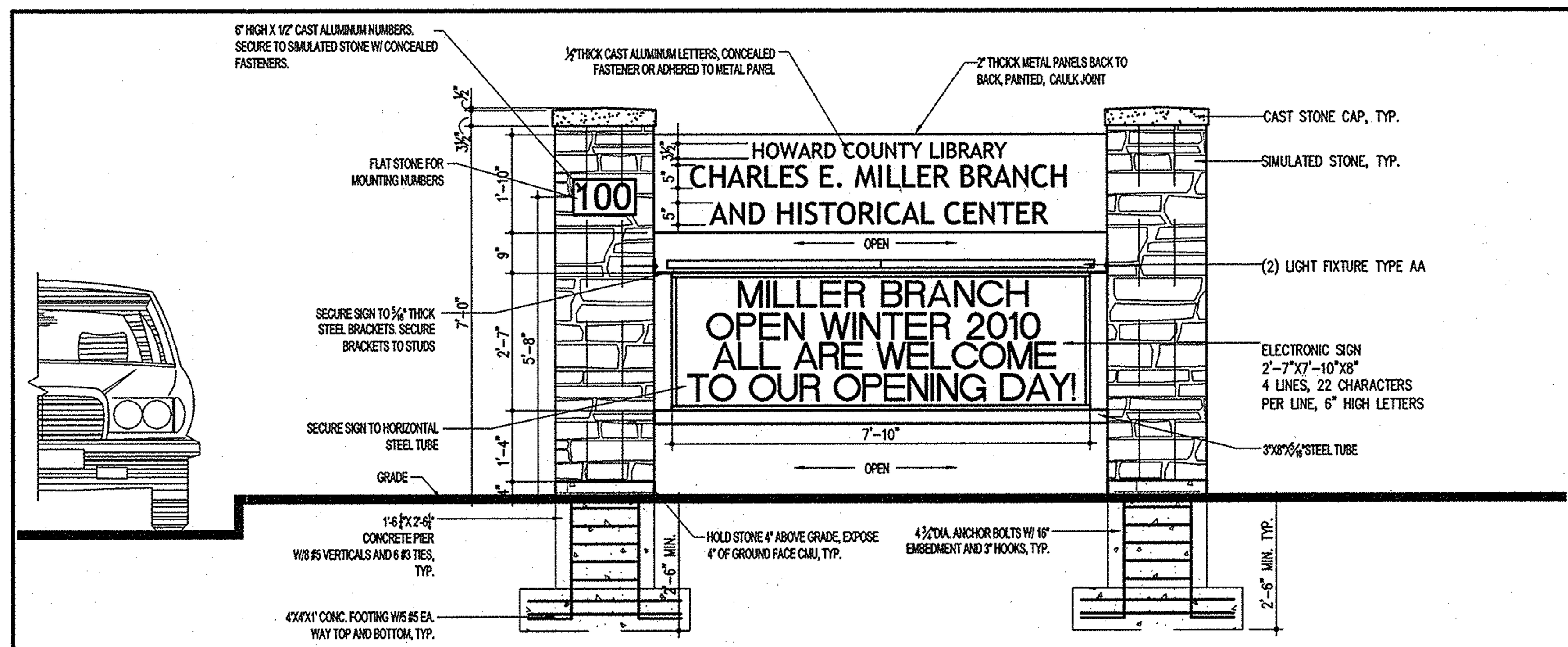
TITLE **SITE DETAIL SHEET**

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

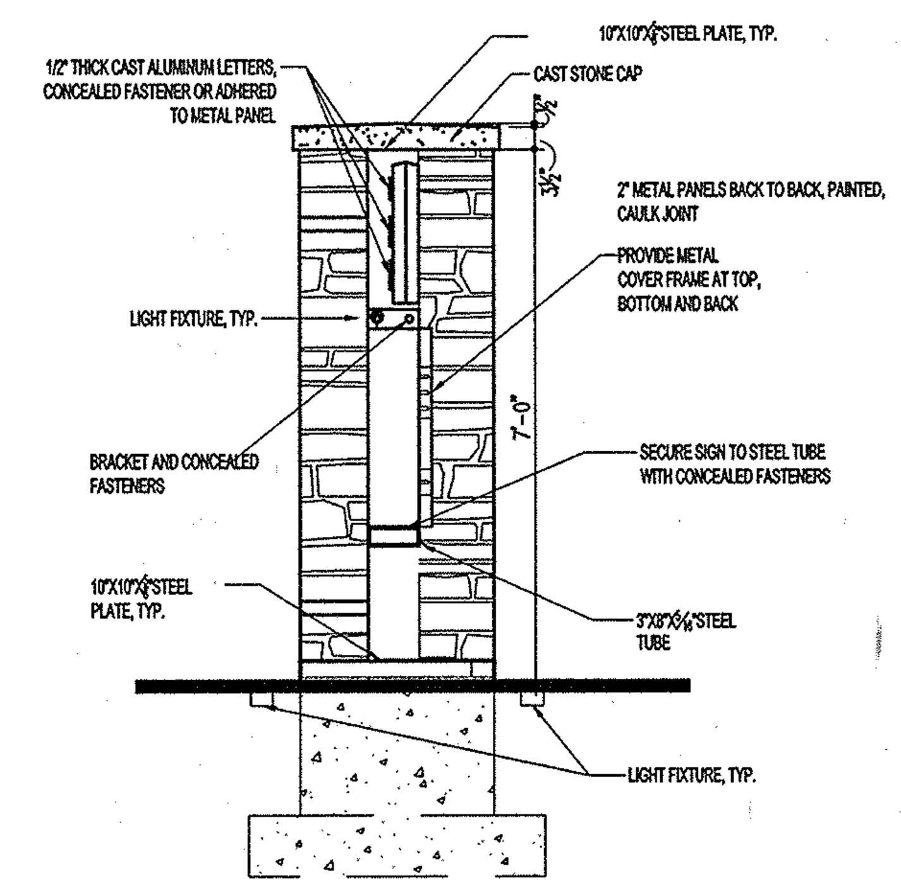
SEAL
STATE OF MARYLAND — JOHN W. CLAPSADDLE — NO. 16956 — REGISTERED PROFESSIONAL ENGINEER
BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP15DET.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40' (3)
DRAWING NO. 18 OF ~~60~~ 66

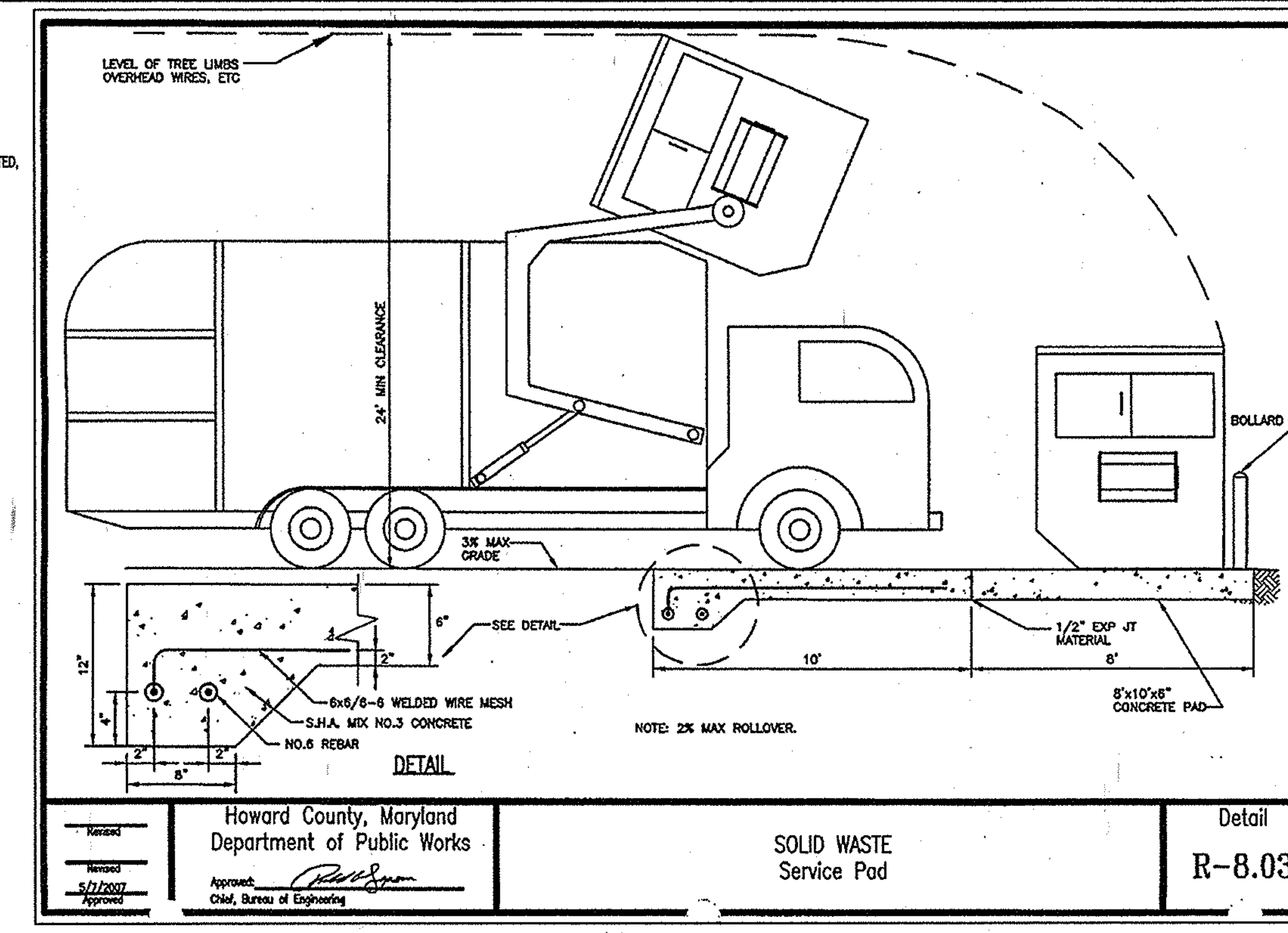
SDP-09-058



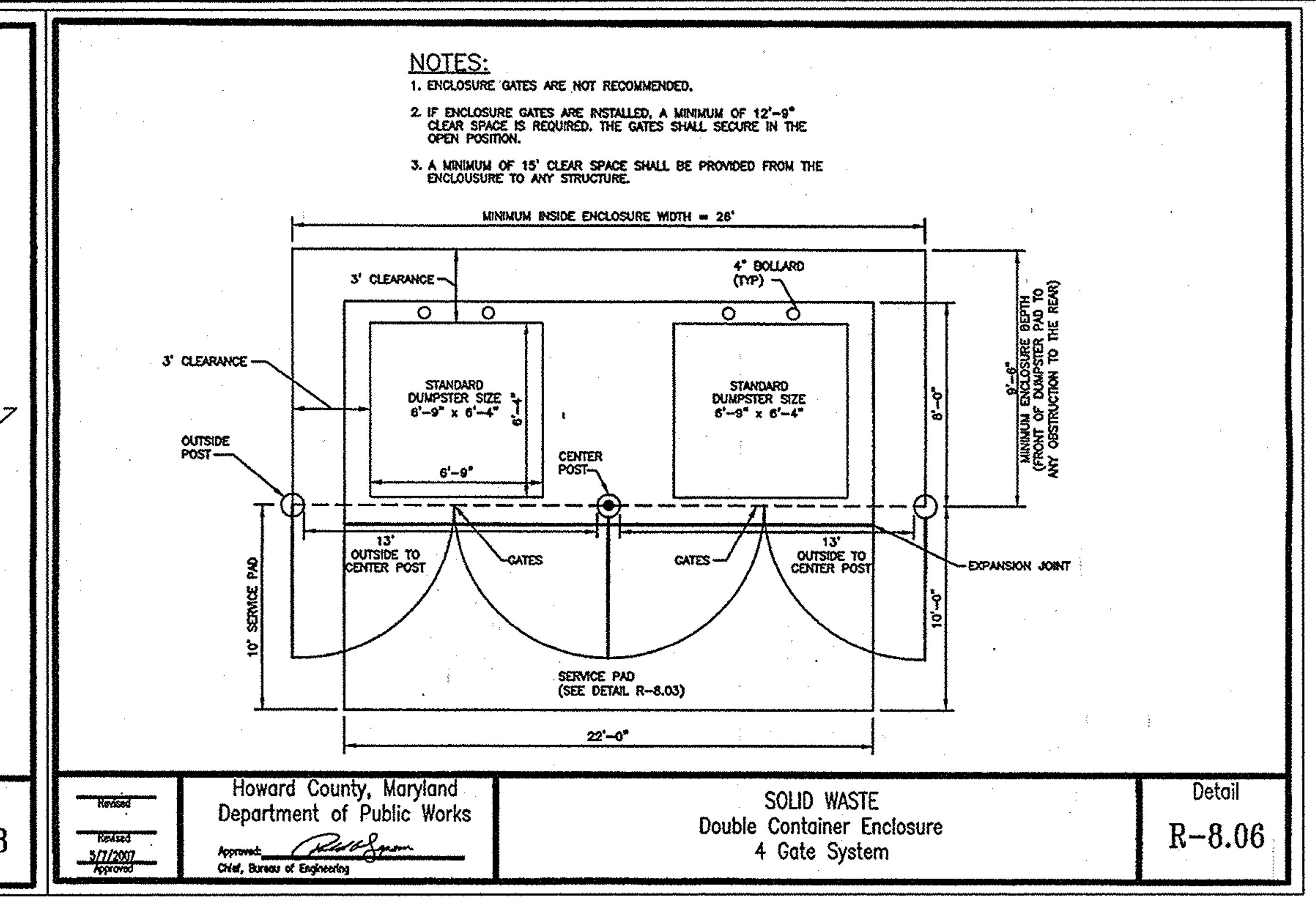
1/19 PROJECT SIGN ELEVATION
SCALE: N.T.S.



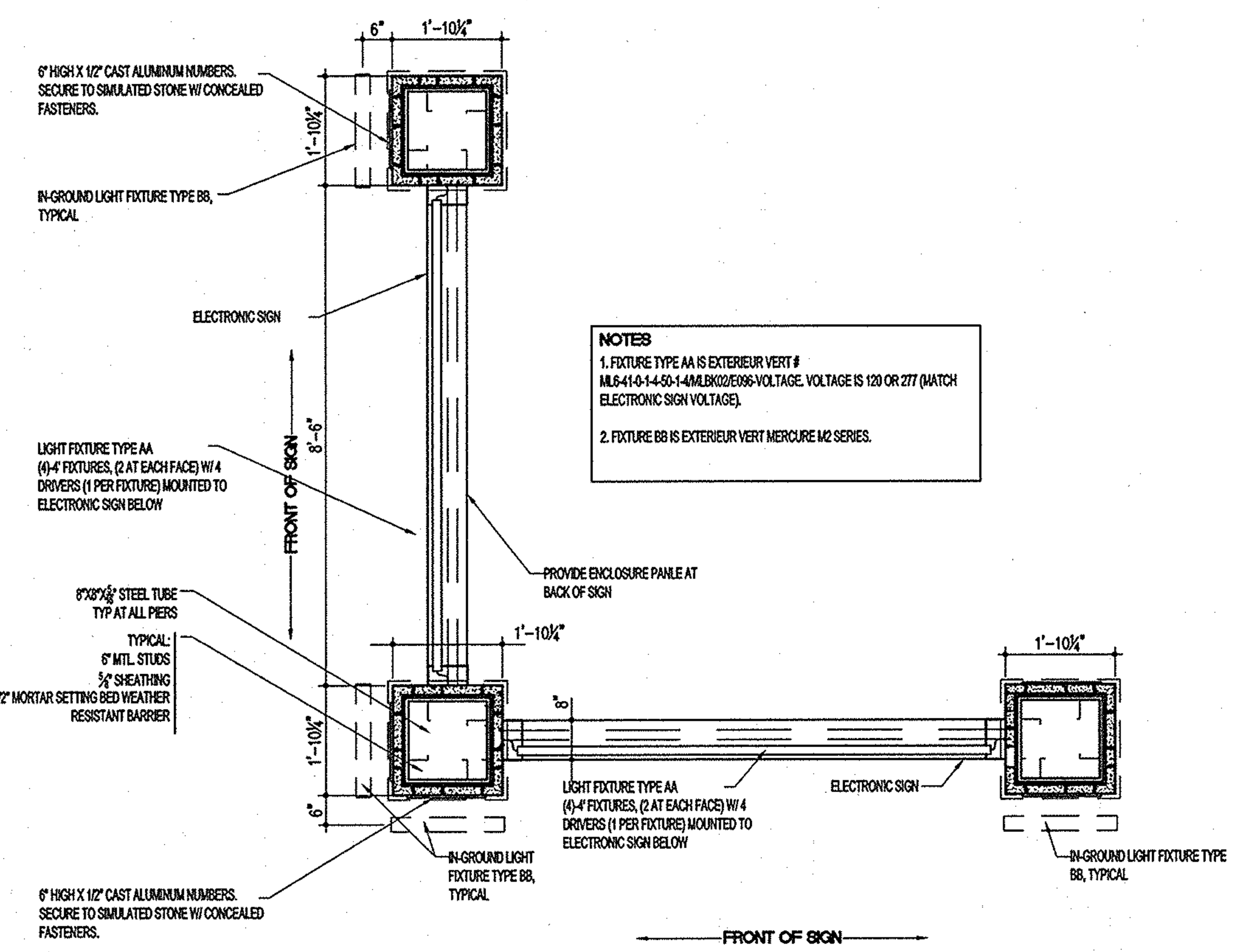
2/19 PROJECT SIGN SECTION
SCALE: N.T.S.



4/19 DUMPSTER SERVICE PAD
NOT TO SCALE

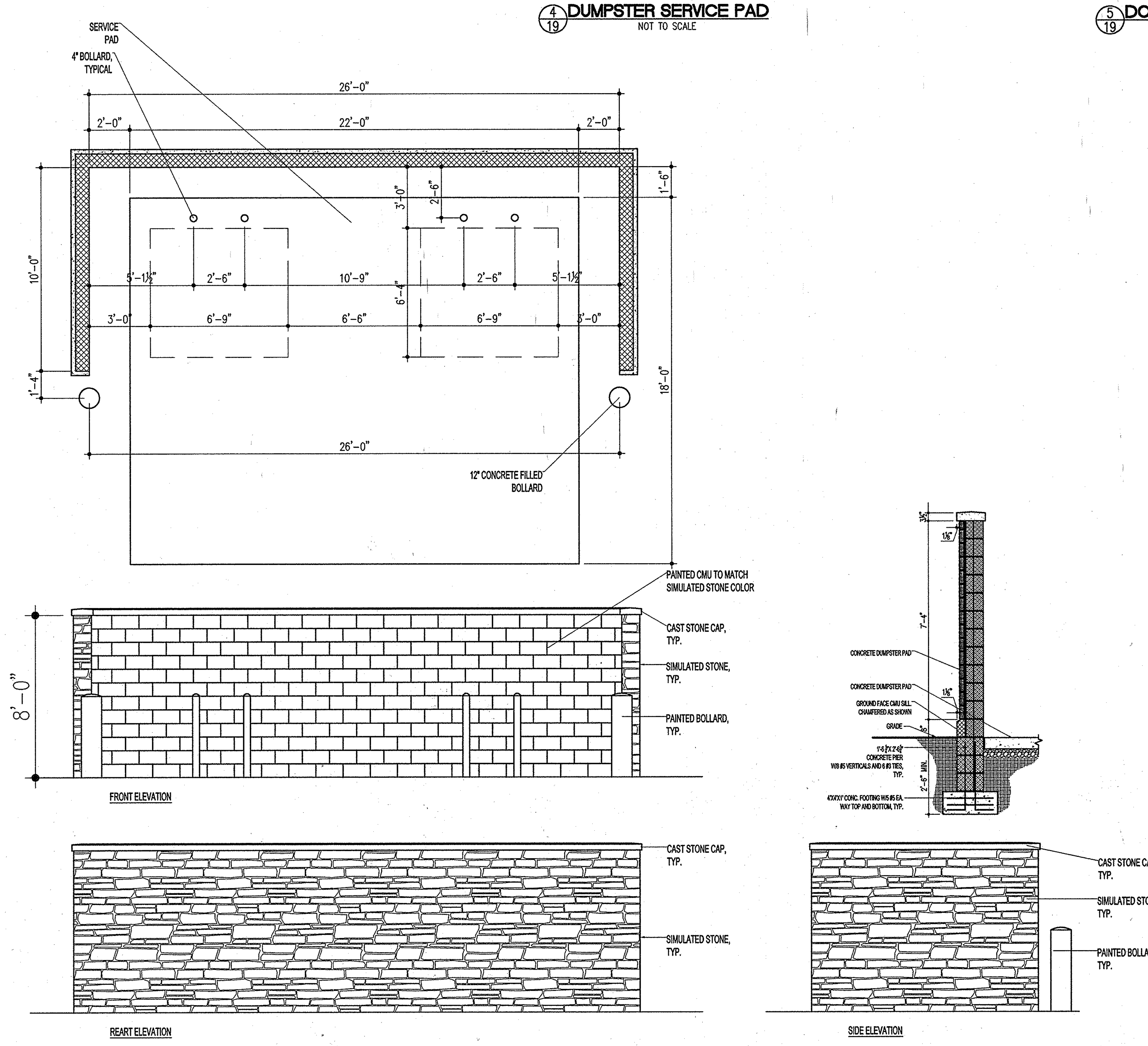


5/19 DOUBLE CONTAINER ENCLOSURE
NOT TO SCALE



NOTES
1. FIXTURE TYPE AA IS EXTERIEUR VERT # ML6-41-0-1-4-50-1-4/MLBK02/E096-VOLTAGE. VOLTAGE IS 120 OR 277 (MATCH ELECTRONIC SIGN VOLTAGE).
2. FIXTURE BB IS EXTERIEUR VERT MERCURE M2 SERIES.

3/19 PROJECT SIGN PLAN
SCALE: N.T.S.



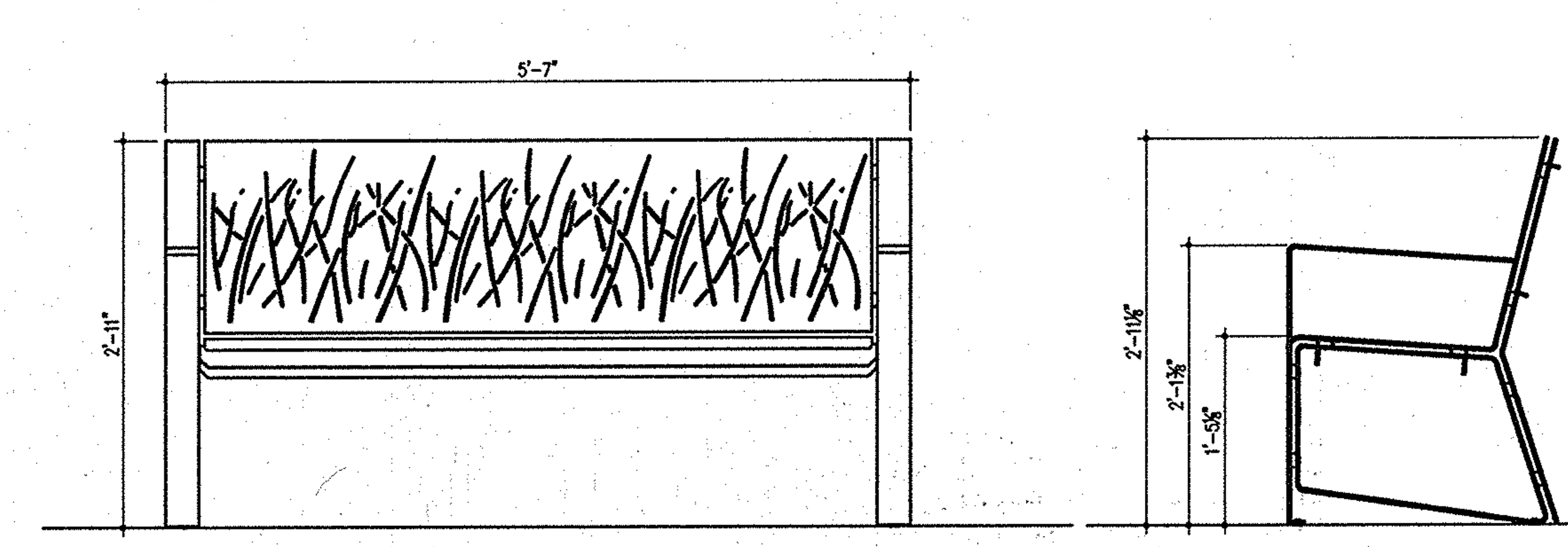
7/19 DOUBLE CONTAINER ENCLOSURE DETAIL
NOT TO SCALE

landscapeforms

431 LAWNDALE AVE.
KALAMAZOO, MI 49048
PHONE: 800-521-2546
FAX: 269-381-3455

CONFIDENTIAL DRAWING INFORMATION CONTAINED HEREIN IS THE PROPERTY OF LANDSCAPE FORMS, INC. INTENDED USE IS LIMITED TO DESIGN PROFESSIONALS SPECIFYING LANDSCAPE FORMS, INC. PRODUCTS AND THEIR DIRECT CLIENTS. DRAWING IS NOT TO BE COPIED OR DISCLOSED TO OTHERS WITHOUT THE CONSENT OF LANDSCAPE FORMS, INC.

DESIGN GROUP: LAKESIDE?
DESCRIPTION: BACKED BENCH 67in, INSERT, GRASS, FREESTANDING / SURFACE MOUNT
PATENT: D529,736; D530,548; D532,210; D536,549
FILE: LS606-01
DATE: 01/26/2009
DRAWN BY: mdk
DIMENSIONS ARE IN INCHES[mm]



6/19 BENCH DETAIL
NOT TO SCALE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR (signed)	DATE 3/15/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION (signed)	DATE 3/8/10
CHIEF, DIVISION OF LAND DEVELOPMENT (signed)	DATE 3/15/10

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **SITE DETAILS**

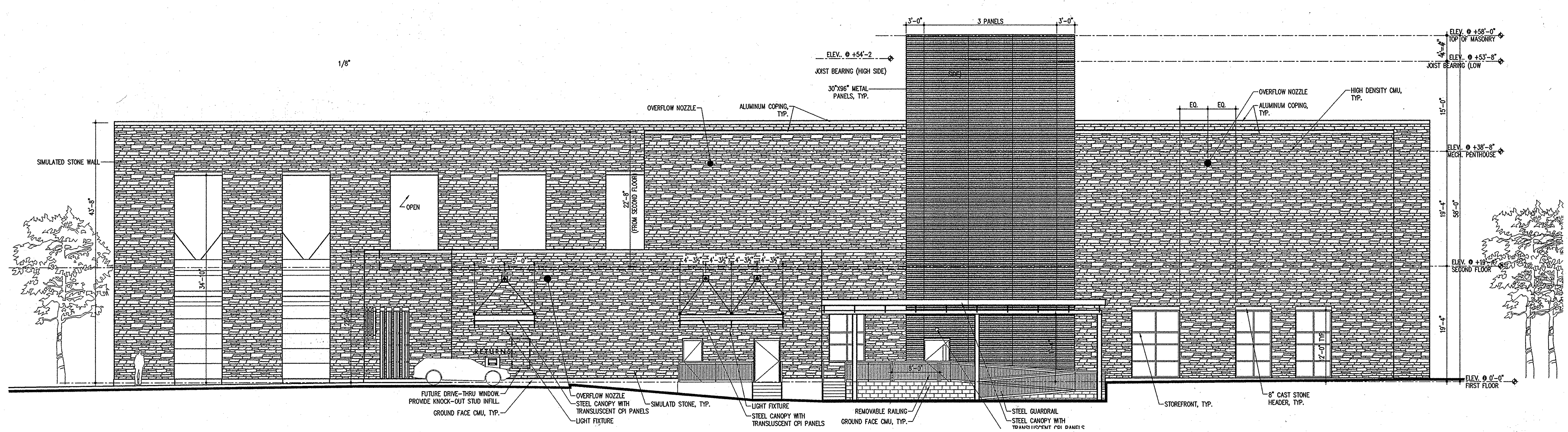
Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND · JOHN W. CLAPSADDLE · NO. 16956 · REGISTERED · PROFESSIONAL ENGINEER
BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP16DET.DWG
DATE : FEBRUARY 2, 2010
SCALE : N.T.S.
DRAWING NO. 19 OF 66

SDP-09-058

SOUTH ELEVATION
NTS



EAST ELEVATION
NTS

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR	3/15/10 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	3/8/10 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	3/15/10 DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD.
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
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BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

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ELEVATIONS

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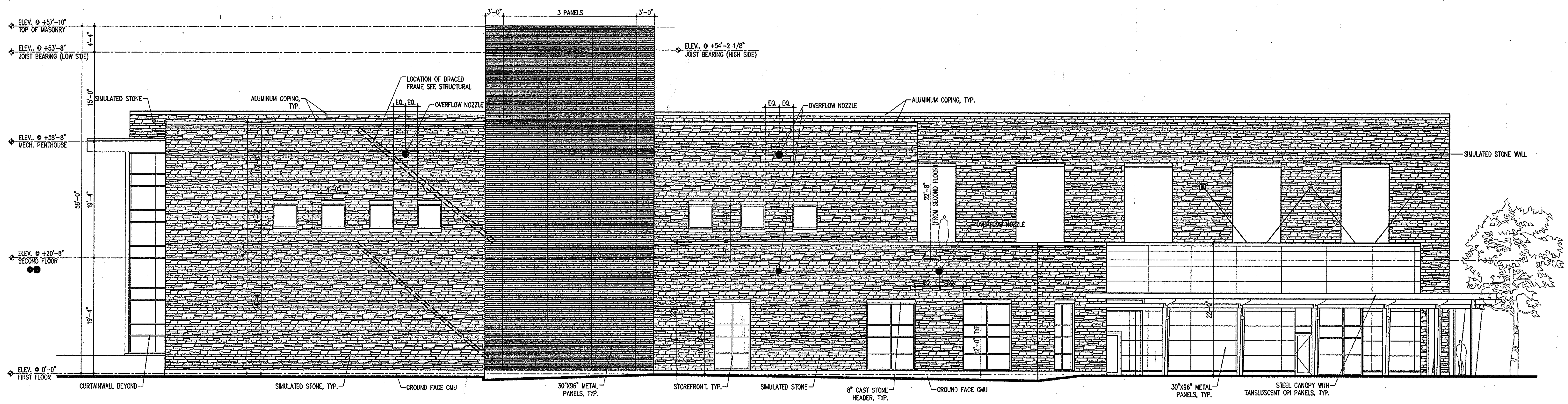
SEAL

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16856, EXPIRATION DATE: 06/09/2010."

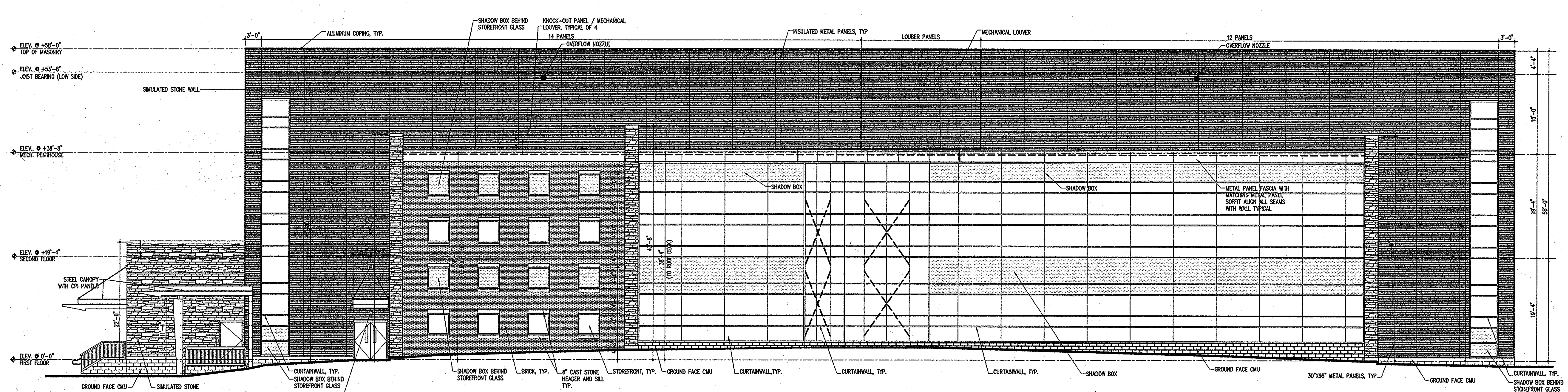
DESIGNED BY : JML	
DRAWN BY: JML	
PROJECT NO : 15976-1-0 C-SDP17ELV.dwg	
DATE : FEBRUARY 2, 2010	
SCALE : NTS	
DRAWING NO. 20 OF 66	

SDP-09-058



EAST ELEVATION

NTS



NORTH ELEVATION

NTS

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
DIRECTOR	DATE 3/15/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/8/10
CHIEF, DIVISION OF LAND DEVELOPMENT JMF	DATE 3/15/10

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

ELEVATIONS

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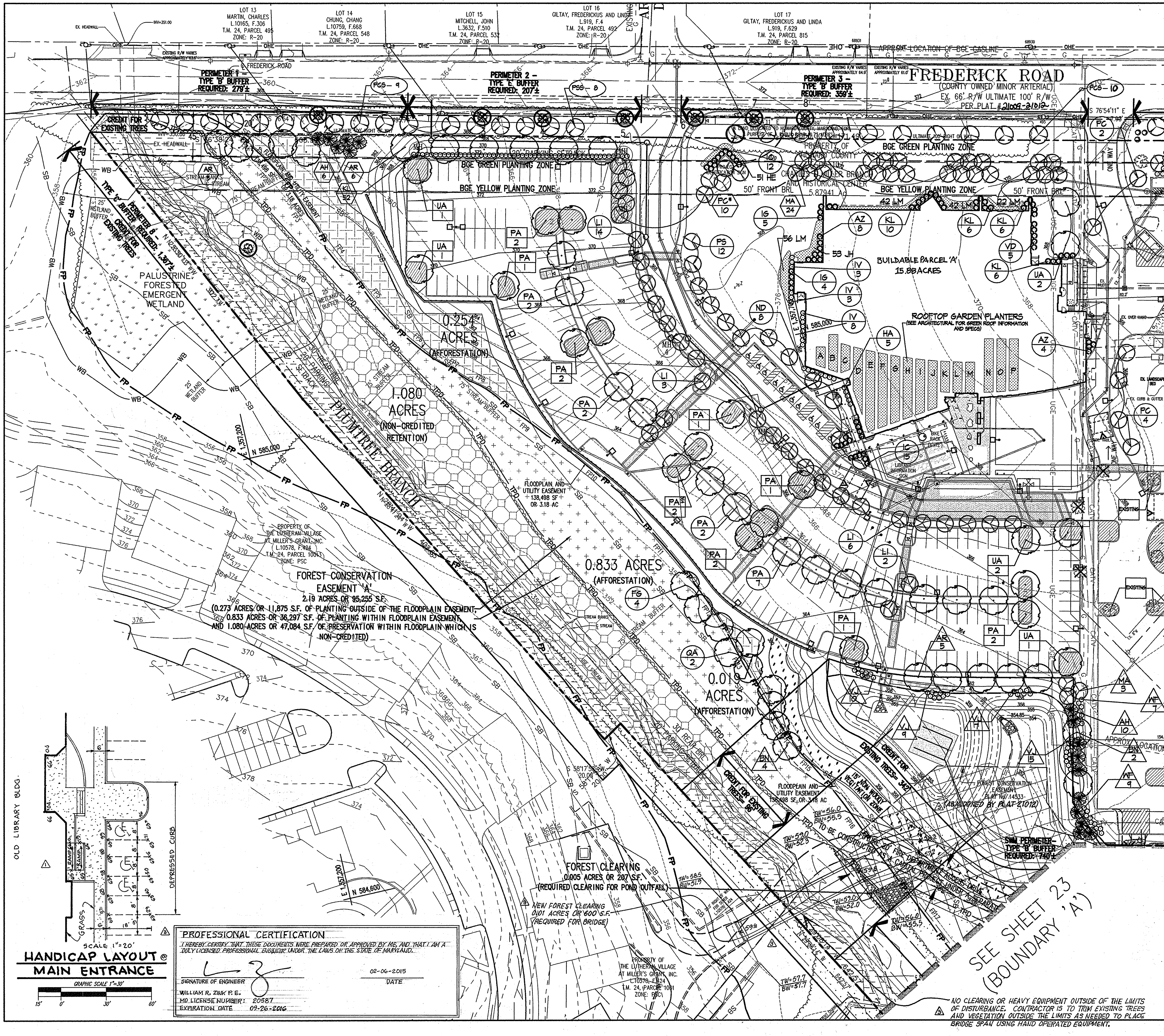
SEAL
STATE OF MARYLAND · JOHN W. CLAPSADDLE · NO. 16956 · REGISTERED · PROFESSIONAL ENGINEER
BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP18ELV.dwg
DATE : FEBRUARY 2, 2010
SCALE : NTS 3
DRAWING NO. 21 OF ~~60~~ 66

SDP-09-058



LEGEND

EXISTING TREE TO REMAIN		STORMWATER MANAGEMENT LANDSCAPE PLANTING	
PROPERTY LINE		PERIMETER LANDSCAPE PLANTING	
EXISTING TREELINE		NON-REQUIRED ADDITIONAL LANDSCAPE PLANTING	
PROPOSED TREELINE		INTERNAL PARKING LOT LANDSCAPE PLANTING	
TREE PROTECTION DEVICE (TPD) (SUPER SILT FENCE)		STREET TREE LANDSCAPE PLANTING	
PROP. SHADE TREE		LIMIT OF DISTURBANCE	
PROP. EVERGREEN TREE		FOREST PRESERVATION AREA FLOODPLAIN	
EXISTING FORESTED AREA COUNTED AS LANDSCAPE CREDIT		FOREST PRESERVATION AREA NON-FLOODPLAIN	
EXISTING BG&E POWER LINE		FOREST PLANTING AREA	
EXISTING BG&E 'GREEN PLANTING ZONE'		PARKING ISLANDS	
EXISTING BG&E 'YELLOW PLANTING ZONE'		EX. PUBLIC DRAINAGE EASEMENT	
		EX. SANITARY SEWER EASEMENT	

DEVELOPER'S/BUILDER'S CERTIFICATE:

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE 2/4/10 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR 3/15/10 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 3/8/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 3/15/10 DATE

DATE	NO.	REVISION
02/2015	3	PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING
10-8-12	1	ADDED 2ND FLOOR TO OLD LIBRARY w/ADDED PARKING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

LANDSCAPE PLAN

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND 797 SCOTT R. WOLFORD BOARD OF EXAMINERS OF LANDSCAPE ARCHITECTS
BY:
SCOTT R. WOLFORD #797

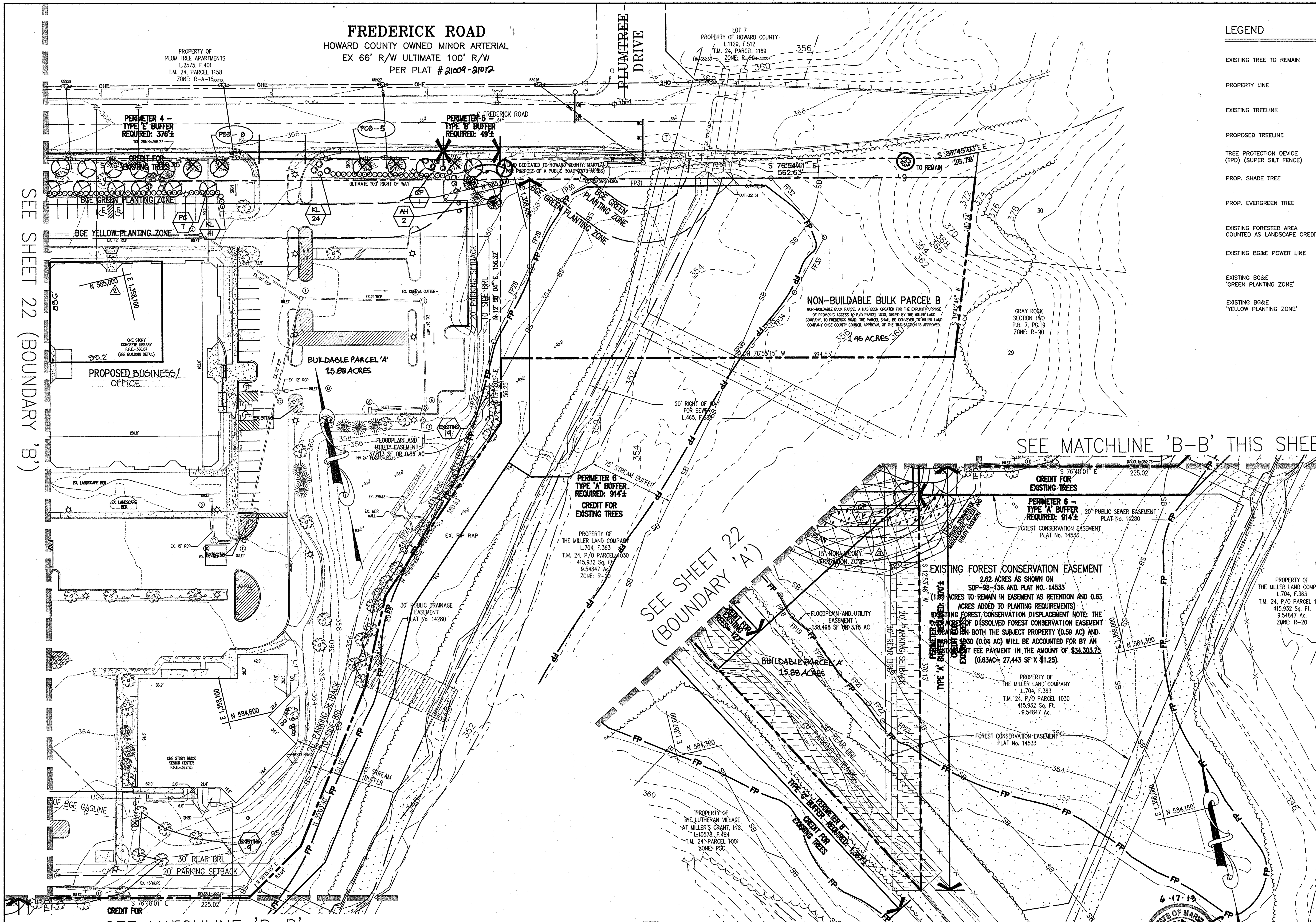
DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP19LND.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 22 OF 66

SDP-09-058

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
SIGNATURE OF ENGINEER 02-06-2015 DATE
WILLIAM R. ZINK P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE 09-26-2016

NO CLEARING OR HEAVY EQUIPMENT OUTSIDE OF THE LIMITS OF DISTURBANCE. CONTRACTOR IS TO TRIM EXISTING TREES AND VEGETATION OUTSIDE THE LIMITS AS NEEDED TO PLACE BRIDGE SPAN USING HAND OPERATED EQUIPMENT.

FOR REDLINE SUBMISSION ONLY


FREDERICK ROAD
HOWARD COUNTY OWNED MINOR ARTERIAL
EX 66' R/W ULTIMATE 100' R/W
PER PLAT #21009-21012
PLUMTREE DRIVE
PROPERTY OF PLUM TREE APARTMENTS L.2575, F.401 T.M. 24, PARCEL 1158 ZONE: R-A-15
LOT 7 PROPERTY OF HOWARD COUNTY L.1129, F.512 T.M. 24, PARCEL 1169
PERIMETER 4 - TYPE 'E' BUFFER REQUIRED: 376'±
CREDIT FOR EXISTING TREES
PERIMETER 5 - TYPE 'B' BUFFER REQUIRED: 49'±
BGE GREEN PLANTING ZONE
BGE YELLOW PLANTING ZONE
SEE SHEET 22 (BOUNDARY 'B')
PROPOSED BUSINESS/ OFFICE
BUILDABLE PARCEL 'A' 15.88 ACRES
NON-BUILDABLE BULK PARCEL B
1.46 ACRES
GRAY ROCK SECTION TWO P.B. 7, PG. 9 ZONE: R-20
20' RIGHT OF WAY FOR SEWER L.465, F.589
FLOODPLAIN AND UTILITY EASEMENT
75' STREAM BUFFER
PERIMETER 6 TYPE 'A' BUFFER REQUIRED: 914'±
CREDIT FOR EXISTING TREES
PROPERTY OF THE MILLER LAND COMPANY L.704, F.363 T.M. 24, P/O PARCEL 1030 415,932 Sq. Ft. 9.54847 Ac. ZONE: R-20
30' PUBLIC DRAINAGE EASEMENT PLAT No. 14280
SEE SHEET 22 (BOUNDARY 'A')
SEE MATCHLINE 'B-B' THIS SHEET
EXISTING FOREST CONSERVATION EASEMENT
2.62 ACRES AS SHOWN ON SDP-98-136 AND PLAT NO. 14533
FLOODPLAIN AND UTILITY EASEMENT 138,498 SF OR 3.18 AC
FOREST CONSERVATION EASEMENT PLAT No. 14533
PROPERTY OF THE LUTHERAN VILLAGE AT MILLER'S GRANT, INC.
PERIMETER 8 - TYPE 'C' BUFFER REQUIRED: 1,307'±
CREDIT FOR EXISTING TREES
ONE STORY BRICK SENIOR CENTER
30' REAR BRL
20' PARKING SETBACK
SEE MATCHLINE 'B-B' THIS SHEET
GRAPHIC SCALE 1"=40'
LEGEND
EXISTING TREE TO REMAIN
PROPERTY LINE
EXISTING TREELINE
PROPOSED TREELINE
TREE PROTECTION DEVICE (TPD) (SUPER SILT FENCE)
PROP. SHADE TREE
PROP. EVERGREEN TREE
EXISTING FORESTED AREA COUNTED AS LANDSCAPE CREDIT
EXISTING BG&E POWER LINE
EXISTING BG&E 'GREEN PLANTING ZONE'
EXISTING BG&E 'YELLOW PLANTING ZONE'
STORMWATER MANAGEMENT LANDSCAPE PLANTING
PERIMETER LANDSCAPE PLANTING
NON-REQUIRED ADDITIONAL LANDSCAPE PLANTING
INTERNAL PARKING LOT LANDSCAPE PLANTING
STREET TREE LANDSCAPE PLANTING
LIMIT OF DISTURBANCE
FOREST PRESERVATION AREA FLOODPLAIN
FOREST PRESERVATION AREA NON-FLOODPLAIN
FOREST PLANTING AREA
PARKING ISLANDS
EX. PUBLIC DRAINAGE EASEMENT
EX. SANITARY SEWER EASEMENT

PROFESSIONAL CERTIFICATION

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

SIGNATURE OF ENGINEER — 02-06-2015 DATE

WILLIAM R. ZINK P.E.
MD LICENSE NUMBER 20587
EXPIRATION DATE: 09-26-2016

FOR REDLINE SUBMISSION ONLY

DEVELOPER'S/BUILDER'S CERTIFICATE:

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE — 2/4/10 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — 3/15/10 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3/8/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 3/15/10 DATE

DATE	NO.	REVISION
6-17-13	2	REVISED LOCATION 2ND FLOOR OLD LIBRARY & ADDED NEW USE
10-8-12	1	ADDED 2ND FLOOR TO OLD LIBRARY w/ADDED PARKING
02/2015	3	PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **LANDSCAPE PLAN**

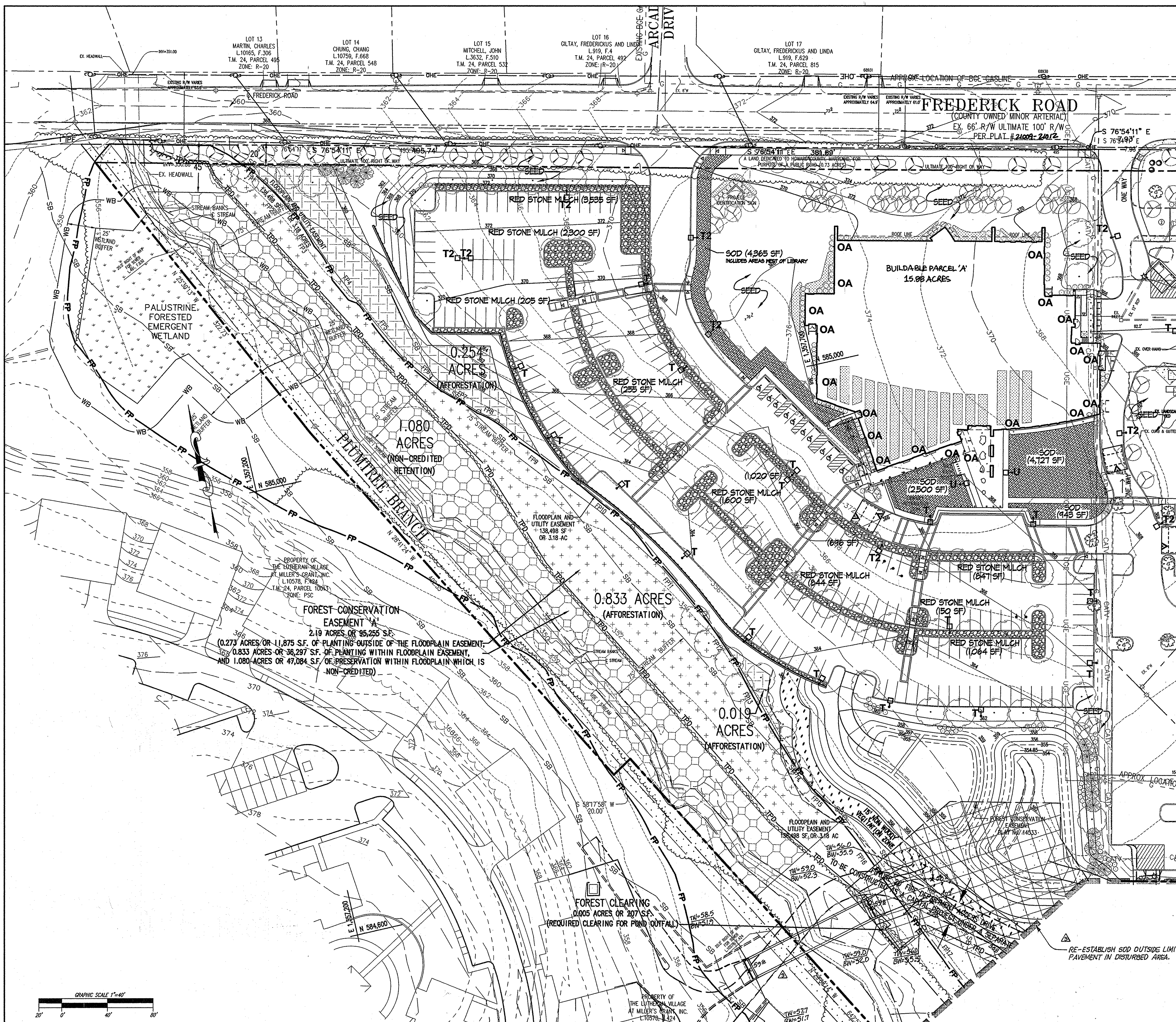
Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

BY: SCOTT R. WOLFORD #797

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP20LND.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 23 OF 66

SDP-09-058



FOR REDLINE SUBMISSION ONLY

RE-ESTABLISH SOD OUTSIDE LIMITS OF PAVEMENT IN DISTURBED AREA.

LEGEND

- EXISTING TREE TO REMAIN
- PROPERTY LINE
- EXISTING TREELINE
- PROPOSED TREELINE
- TREE PROTECTION DEVICE (TPD) (SUPER SILT FENCE)
- PROP. SHADE TREE
- PROP. EVERGREEN TREE
- EXISTING BG&E POWER LINE
- LIMIT OF DISTURBANCE
- FOREST PRESERVATION AREA FLOODPLAIN
- FOREST PRESERVATION AREA NON-FLOODPLAIN
- FOREST PLANTING AREA
- PARKING ISLANDS
- EX. PUBLIC DRAINAGE EASEMENT
- EX. SANITARY SEWER EASEMENT
- SOD AREA TURF TYPE FESCUE
- RED STONE MULCH SIZE: 2"-4"

PROFESSIONAL CERTIFICATION

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

SIGNATURE OF ENGINEER — DATE: 02-06-2015

WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

DEVELOPER'S/BUILDER'S CERTIFICATE:

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

SIGNATURE — DATE 2/4/10

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 3/13/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/15/10

DATE	NO.	REVISION
02/2015	3	REDLINE REVISION - PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
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PROJECT **CHARLES E. MILLER BRANCH AND HISTORICAL CENTER**
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
SOD AND MULCH PLAN

Patton Harris Rust & Associates
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PHR+A
8818 Centre Park Drive
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SEAL

BY:
SCOTT R. WOLFORD #797

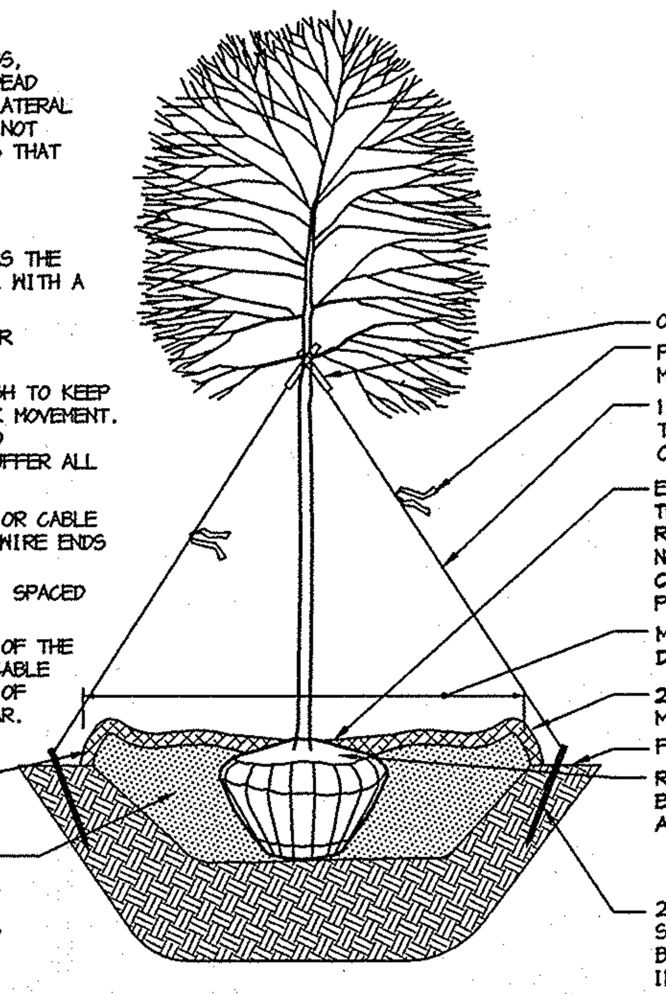
DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP19LND.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 24 OF ~~60~~ 66

SDP-09-058

P:\project\15976\1-0\Land_Dev\Plans\C-SDP24LND.dwg, 2/2/2010 12:17:00 PM, 1:1, Sam.mattammal@PHRA.com

NOTES:

1. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
2. STAKE TREES AS SHOWN.
3. DIG PLANTING PIT TWICE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.
4. PLACE ROOT BALL ON UNEXCAVATED OR COMPACTED SOIL.
5. TIGHTEN WIRE OR CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. PLASTIC HOSE SHALL BE LONG ENOUGH TO ACCOMMODATE 1.5 IN. OF GROWTH AND BUFFER ALL BRANCHES FROM THE WIRE.
6. TUCK ANY LOOSE ENDS OF THE WIRE OR CABLE INTO THE WIRE WRAP SO THAT NO SHARP WIRE ENDS ARE EXPOSED.
7. INSTALL THREE GUY WIRES PER TREE, SPACED EVENLY AROUND THE TRUNK.
8. ASSURE THAT THE BEARING SURFACE OF THE PROTECTIVE COVERING OF THE WIRE OR CABLE AGAINST THE TREE TRUNK IS A MINIMUM OF 0.5 IN. REMOVE STAKES AFTER ONE YEAR.


CONSTRUCT 3" SAUCER ALL AROUND PLANTING HOLE. FLOOD WITH WATER TWICE WITHIN 24 HOURS.
BACKFILL WITH PLANTING MIX (SEE PLANTING SPECIFICATIONS). TAMP SOIL AROUND ROOT BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT.
0.5 IN. DIAM. PLASTIC HOSE
PLASTIC FLAGGING OR OTHER VISUAL MARKER ON EACH WIRE.
12 GAUGE GALVANIZED WIRE OR CABLE TWIST WIRE TO TIGHTEN. TURNBUCKLES FOR TREES OVER 6 IN. CALIPER.
EACH TREE MUST BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOTBALL. TREES WHERE THE TRUNK FLARE IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL. PLANT 1/8 OF ROOTBALL ABOVE FINAL GRADE.
MULCH RING 6 FOOT DIAMETER MINIMUM 8 FOOT DIAMETER PREFERRED
2 TO 3 INCHES OF MULCH. DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK.
FINAL GRADE
REMOVE ALL TWINE, ROPE, WIRE, AND BURLAP FROM TOP OF ROOT BALL. CUT AND REMOVE TOP HALF OF WIRE BASKET.
2"x2" BY 30" LONG WOOD STAKE. ALL STAKES SHALL BE DRIVEN OUTSIDE THE EDGE OF THE ROOT BALL INTO PREFERABLY UNEXCAVATED SOIL. DRIVE INTO GROUND AND EXPOSE ONLY 6"-8" OF STAKE.

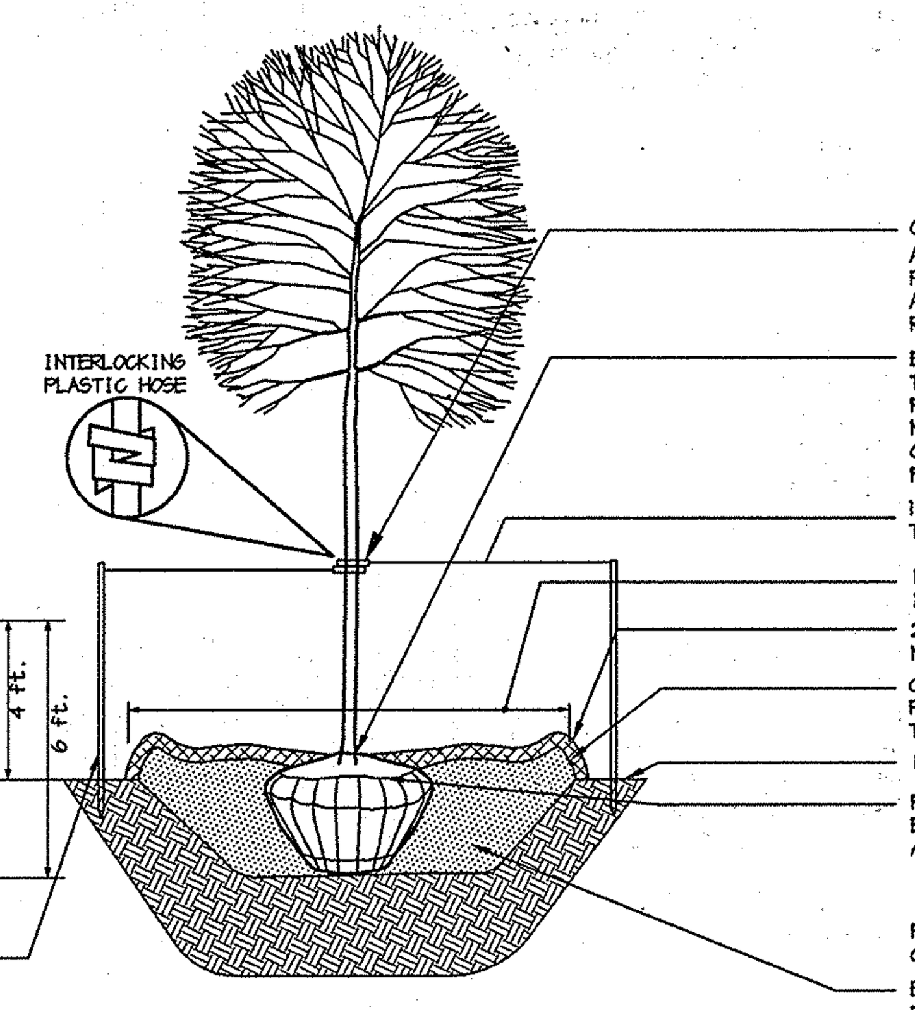
DECIDUOUS B&B TREE PLANTING DETAIL (TREES 3" CAL. OR LARGER)

NOT TO SCALE

NOTES:

1. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
2. STAKE TREES AS SHOWN.
3. DIG PLANTING PIT TWICE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.
4. TIGHTEN WIRE OR CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. PLASTIC HOSE SHALL BE LONG ENOUGH TO ACCOMMODATE 1.5 IN. OF GROWTH AND BUFFER ALL BRANCHES FROM THE WIRE.
5. TUCK ANY LOOSE ENDS OF THE WIRE OR CABLE INTO THE WIRE WRAP SO THAT NO SHARP WIRE ENDS ARE EXPOSED.

INSTALL TWO STAKES ON OPPOSITE SIDES OF TREE, PARALLEL TO THE DIRECTION OF THE PREVAILING WINTER WINDS, UNLESS OTHERWISE DIRECTED BY LANDSCAPE ARCHITECT. ALL STAKES SHALL BE DRIVEN OUTSIDE THE EDGE OF THE ROOT BALL INTO PREFERABLY UNEXCAVATED SOIL.

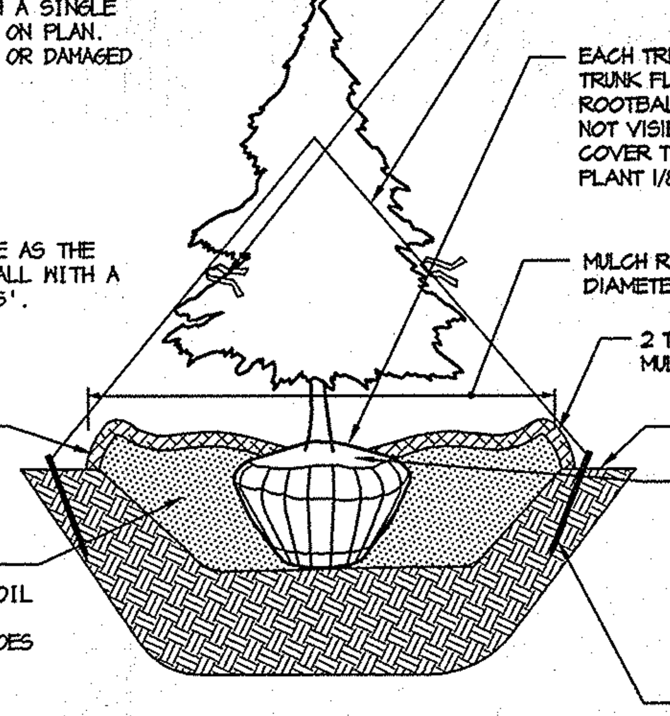

INTERLOCKING PLASTIC HOSE
4 ft.
6 ft.
0.5 IN. DIAM. INTERLOCKING PLASTIC HOSE
ASSURE THAT THE BEARING SURFACE OF THE PROTECTIVE COVERING OF THE WIRE OR CABLE AGAINST THE TREE TRUNK IS A MINIMUM OF 0.5 IN. REMOVE STAKES AFTER ONE YEAR.
EACH TREE MUST BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOTBALL. TREES WHERE THE TRUNK FLARE IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL. PLANT 1/8 OF ROOTBALL ABOVE FINAL GRADE.
14 GAUGE GALVANIZED WIRE OR CABLE TWIST WIRE TO TIGHTEN.
MULCH RING 6 FOOT DIAMETER MINIMUM 8 FOOT DIAMETER PREFERRED
2 TO 3 INCHES OF MULCH. DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK.
CONSTRUCT 3" SAUCER ALL AROUND PLANTING HOLE. FLOOD WITH WATER TWICE WITHIN 24 HOURS.
FINAL GRADE
REMOVE ALL TWINE, ROPE, WIRE, AND BURLAP FROM TOP OF ROOT BALL. CUT AND REMOVE TOP HALF OF WIRE BASKET.
PLACE ROOT BALL ON UNEXCAVATED OR COMPACTED SOIL.
BACKFILL WITH PLANTING MIX (SEE PLANTING SPECIFICATIONS). TAMP SOIL AROUND ROOT BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT.

DECIDUOUS B&B TREE PLANTING DETAIL (TREES 3" CAL. OR SMALLER)

NOT TO SCALE

NOTES:

1. SELECT ONLY NURSERY STOCK WITH A SINGLE LEADER UNLESS OTHERWISE SPECIFIED ON PLAN. PLANTS WITH CO-DOMINANT, MISSING, OR DAMAGED LEADERS SHALL BE REJECTED.
2. STAKE TREES AS SHOWN.
3. DIG PLANTING PIT TWICE AS WIDE AS THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 5'.

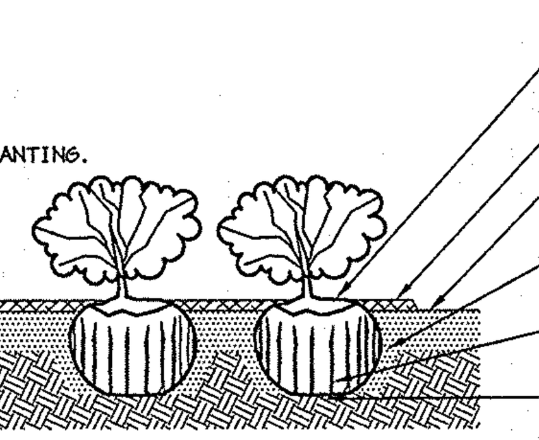

PLASTIC FLAGGING OR OTHER VISUAL MARKER ON EACH TREE CHAIN.
BLACK PLASTIC TREE CHAIN OR APPROVED EQUAL.
EACH TREE MUST BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOTBALL. TREES WHERE THE TRUNK FLARE IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL. PLANT 1/8 OF ROOTBALL ABOVE FINAL GRADE.
MULCH RING 6 FOOT DIAMETER MINIMUM 8 FOOT DIAMETER PREFERRED
2 TO 3 INCHES OF MULCH. DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK.
FINAL GRADE
REMOVE ALL TWINE, ROPE, WIRE, AND BURLAP FROM TOP OF ROOT BALL. CUT AND REMOVE TOP HALF OF WIRE BASKET.
PLACE ROOT BALL ON UNEXCAVATED OR COMPACTED SOIL.
2"x2" BY 30" LONG WOOD STAKE. ALL STAKES SHALL BE DRIVEN OUTSIDE THE EDGE OF THE ROOT BALL INTO PREFERABLY UNEXCAVATED SOIL. DRIVE INTO GROUND AND EXPOSE ONLY 6"-8" OF STAKE.
CONSTRUCT 3" SAUCER ALL AROUND PLANTING HOLE. FLOOD WITH WATER TWICE WITHIN 24 HOURS.
BACKFILL WITH PLANTING MIX (SEE PLANTING SPECIFICATIONS). TAMP SOIL AROUND ROOT BALL BASE FIRMLY WITH FOOT PRESSURE SO THAT ROOT BALL DOES NOT SHIFT.

EVERGREEN B&B TREE PLANTING DETAIL

NOT TO SCALE

NOTES:

1. SEE PLANTING SPECIFICATIONS FOR PREPARATION OF PLANTING BED.
2. DO NOT HEAVILY PRUNE THE SHRUB AT PLANTING. PRUNE ONLY BROKEN, DAMAGED, OR Diseased BRANCHES.
3. DIG PLANTING PIT 12" WIDER THAN THE DIAMETER OF THE TOP OF THE ROOT BALL WITH A MINIMUM PLANTING PIT DIAMETER OF 18".
4. FOR B&B SHRUBS: REMOVE ALL TWINE, ROPE, AND BURLAP FROM TOP OF ROOT BALL.
5. ALL CONTAINERS SHALL BE REMOVED BEFORE INSTALLATION.


DO NOT COVER THE TOP OF THE ROOT BALL WITH SOIL. PLANT 1/8 OF ROOTBALL ABOVE FINAL GRADE.
2 TO 3 INCHES OF MULCH. DO NOT PLACE MULCH IN CONTACT WITH SHRUB TRUNK OR BRANCHES.
FINAL GRADE
TAMP SOIL AROUND BALL BASE FIRMLY WITH FOOT PRESSURE SO THE ROOT BALL DOES NOT SHIFT.
SCARIFY ROOT BALL TO A DEPTH OF 3/4" ON ALL SIDES OR BUTTERFLY CUT CONTAINER PLANTS.
PLACE ROOT BALL ON UNEXCAVATED OR COMPACTED SOIL.

SHRUB BED PLANTING DETAIL - B&B AND CONTAINER SHRUBS

NOT TO SCALE

STREET TREE CALCULATIONS

FREDERICK ROAD	*1,125'± / 30	38 STREET TREES
TOTAL TREES REQUIRED		38 STREET TREES

*STREET TREE NOTES:

SMALL TREES MUST BE SELECTED FOR PLANTING UNDER POWER LINES AS STATED IN PAGE 39 OF HOWARD COUNTY LANDSCAPE MANUAL AMENDED MARCH 2, 1998. 38 STREET TREES HAVE BEEN PROVIDED FOR 1,076' OF THE 1,351' OF TOTAL FRONTAGE OF PARCEL A. 275' OF FRONTAGE HAS BEEN REMOVED TO ACCOUNT FOR THE 3 ACCESS POINTS ONTO FREDERICK ROAD.

STREET TREE PLANTING LIST

SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
PCS	24	PRUNUS CERASIFERA 'THUNDERCLOUD' THUNDERCLOUD PLUM	8'-10' HT.	CONT.	SINGLE LEADER
PSS	16	PRUNUS SERRULATA 'KWANZAN' KWANZAN CHERRY	2.5" CAL.	B&B	SINGLE LEADER

SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING

PERIMETER	1
LANDSCAPE TYPE	B
LINEAR FEET OF PERIMETER	740'±
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	223'± 25' EXISTING FOREST
LINEAR FEET REMAINING	517'
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SMALL FLOWERING TREES SHRUBS	 11 13 0 0
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SMALL FLOWERING TREES SHRUBS	 11 10 3 57

SCHEDULE B - PARKING LOT INTERNAL LANDSCAPING

PARKING LOT	1
NUMBER OF PARKING SPACES	473
NUMBER OF SHADE TREES REQUIRED (1/20 SPACES)	24
CREDIT FOR EXISTING TREES	7
NUMBER OF TREES PROVIDED SHADE TREES OTHER TREES (2:1 SUBSTITUTION)	 19 4
NUMBER OF ISLANDS PROVIDED	50

PLANT SCHEDULE

SYMBOL	QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
AR	16	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2.5-3" CAL.	B&B	SINGLE LEADER, PLANT AS SHOWN
AT	-	ACER TRUNCATUM 'NORWEGIAN SUNSET' TRUNCATUM MAPLE	2.5-3" CAL.	B&B	SINGLE LEADER, PLANT AS SHOWN
BN	6	BETULA NIGRA 'HERITAGE' HERITAGE RIVER BIRCH	10'-12' HT.	B&B	PLANT AS SHOWN
FG	4	FAGUS GRANDIFOLIA AMERICAN BEECH	2.5-3" CAL.	B&B	SINGLE LEADER, PLANT AS SHOWN
PA	27	PLATANUS x ACERIFOLIA 'BLOODGOOD' BLOODGOOD LONDON PLANE	3.5-4" CAL.	B&B	SINGLE LEADER, PLANT AS SHOWN
QA	2	QUERCUS ALBA WHITE OAK	3.5-4" CAL.	B&B	SINGLE LEADER, PLANT AS SHOWN
QP	2	QUERCUS PHELLOS WILLOW OAK	3.5-4" CAL.	B&B	SINGLE LEADER, PLANT AS SHOWN
UA	7	ULMUS AMERICANA 'PRINCETON' PRINCETON AMERICAN ELM	3.5-4" CAL.	B&B	SINGLE LEADER, PLANT AS SHOWN
PC	13	PRUNUS CERASIFERA 'THUNDERCLOUD' THUNDERCLOUD PLUM	8'-10' HT.	CONT.	SINGLE LEADER, PLANT AS SHOWN
PC*	10	PRUNUS CERASIFERA 'THUNDERCLOUD' THUNDERCLOUD PLUM	4.5" CAL.	B&B	SINGLE LEADER, PLANT AS SHOWN
CF	-	CORNUS FLORIDA FLOWERING DOGWOOD	8'-10' HT.	CONT.	SINGLE LEADER, PLANT AS SHOWN
LI	25	LAGERSTROEMIA X 'SIOUX' SIOUX CRAPEMYRTLE	8'-10' HT.	CONT.	MULTI-STEM, PLANT AS SHOWN
MA	27	MAGNOLIA VIRGINIANA SWEETBAY MAGNOLIA	8'-10' HT.	B&B	SINGLE LEADER, PLANT AS SHOWN
PS	12	PRUNUS SERRULATA 'KWANZAN' KWANZAN CHERRY	4.5" CAL.	B&B	SINGLE LEADER, PLANT AS SHOWN
AH	18	*ILEX OPACA AMERICAN HOLLY	6-8' HT.	B&B	SINGLE LEADER, PLANT AS SHOWN
PST	-	PINUS STROBUS EASTERN WHITE PINE	6-8' HT.	B&B	SINGLE LEADER, PLANT AS SHOWN
AZ	12	AZALEA 'DELAWARE VALLEY WHITE' DELAWARE VALLEY AZALEA - WHITE	24"-30" HT.	CONT.	PLANT AS SHOWN
WF	16	WEIGELA FLORIDA 'FINE WINE' FINE WINE WEIGELA	24"-30" HT.	CONT.	PLANT AS SHOWN
HA	5	HYDRANGEA ARBORESCENS 'ANNABELLE' ANNABELLE HYDRANGEA	24"-30" HT.	CONT.	PLANT AS SHOWN
VJ	41	VIBURNUM x JUDDI JUDDI VIBURNUM	24"-30" HT.	CONT.	PLANT AS SHOWN
ND	8	NANDINA DOMESTICA HEAVENLY BAMBOO	30"-42" HT.	CONT.	PLANT AS SHOWN
IC	27	ILEX CORNUTA 'BURFORDII NANA' DWARF BURFORD HOLLY	24"-30" HT.	CONT.	PLANT AS SHOWN
IG	9	ILEX GLABRA 'SHAMROCK' INKBERRY	24"-30" HT.	CONT.	PLANT AS SHOWN
IV	14	ITEA VIRGINICA 'LITTLE HENRY' LITTLE HENRY VIRGINIA SWEETSPIRE	24"-30" HT.	CONT.	PLANT AS SHOWN
KL	145	**KALMIA LATIFOLIA MOUNTAIN LAUREL	30"-36" HT.	CONT.	PLANT AS SHOWN
VD	5	***VIBURNUM DENTATUM 'BLUE MUFFIN' BLUE MUFFIN ARROWWOOD VIBURNUM	30"-36" HT.	CONT.	PLANT AS SHOWN
HE	51	****HEMEROCALLIS DAYLILY	1 QUART CON.	CONT.	PLANT AS SHOWN
JH	53	JUNIPERUS HORIZONTALIS 'WILTONII' BLUE RUG JUNIPER	1 GALLON CON.	CONT.	PLANT AS SHOWN
LM	162	LIRIOPE MUSCARI 'BIG BLUE' CREEPING LILYTURF	1 QUART CON.	CONT.	PLANT AS SHOWN

*PER MR. OVERSTREET PLEASE USE A MIX OF SATYR HILL AND MISS HELEN VARIETIES.
**PER MR. OVERSTREET PLEASE USE A MIX OF THE BULLSEYE, CAROUSEL, CAROL, OLYMPIC FIRE, SARAH, SILVER DOLLAR, AND KEEPSAKE VARIETIES OF MOUNTAIN LAUREL.
***PER MR. OVERSTREET PLEASE MIX IN THE PATHFINDER WITH THE BLUE MUFFIN VARIETY FOR BERRY PRODUCTION.
****PER MR. OVERSTREET PLEASE USE A MIX OF STELLA ORO DAY, HAPPY RETURNS, AND RUBY STELLA VARIETIES.

SCHEDULE A - PERIMETER LANDSCAPE EDGE

	ADJACENT TO ROADWAYS					TOTAL PLANTS
PERIMETER	1	2	3	4	5	
LANDSCAPE TYPE	B	E	B	E	B	
LINEAR FEET OF ROADWAY FRONTAGE	279'±	207'±	359'±	376'±	49'±	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES 47' EXISTING FOREST	NO -	NO -	NO -	NO -	
CREDIT FOR GRADE CHANGE OR DRIVE AISLE (YES/NO/LINEAR FEET)	NO -	NO -	NO -	YES (DRIVE ISLES) 40'	NO -	
LINEAR FEET REMAINING	232'±	207'±	340'±	336'±	49'±	
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SMALL FLOWERING TREES SHRUBS	 5 6 0 0	 6 0 0 52	 8 9 0 0	 8 0 0 84	 1 2 0 0	 28 17 0 136
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SMALL FLOWERING TREES SHRUBS	 5 6 0 0	 6 0 0 52	 0 0 34(1) 0	 4(2) 1(2) 7 84(2)	 1 2 0 0	 16 9 41 136

SCHEDULE A - PERIMETER LANDSCAPE EDGE (CONTINUED)

	ADJACENT TO PERIMETER PROPERTIES					TOTAL PLANTS
PERIMETER	6	7	8			
LANDSCAPE TYPE	A	A	C			
LINEAR FEET OF PERIMETER	914'±	370'±	1,367'±			
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES, 914'± EXISTING LANDSCAPING	YES, 346' 25' EXISTING FOREST/ FOREST-CON. EASEMENT	YES, 1,367' 25' EXISTING FOREST			
CREDIT FOR GRADE CHANGE OR DRIVE AISLE (YES/NO/LINEAR FEET)	NO -	NO -	NO -			
LINEAR FEET REMAINING	0'	83'±	-			
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SMALL FLOWERING TREES SHRUBS	 0 0 0 0	 1 0 0 0	 0 0 0 0			 1 0 0 0
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES SMALL FLOWERING TREES SHRUBS	 0 0 0 0	 1 0 0 0	 0 0 0 0			 1 0 0 0

SCHEDULE 'A' NOTES:

1) SUBSTITUTION NOTES PERIMETER 3:
34 PROPOSED SMALL FLOWERING TREES WILL COUNT AS REQUIREMENT FOR 8 REQUIRED SHADE TREES AND 9 REQUIRED EVERGREEN TREES.
2) SUBSTITUTION NOTES PERIMETER 4:
4 EXISTING SHADE TREES AND 1 EXISTING EVERGREE TREE WILL COUNT TOWARDS CREDIT FOR 8 REQUIRED SHADE TREES.
19 EXISTING SHRUBS WILL COUNT TOWARDS CREDIT FOR 84 REQUIRED SHRUBS.

GENERAL NOTES:

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.

2. THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY.

3. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.

4. ALL MATERIAL SELECTED SHALL BE EQUAL TO OR BETTER THAN THE REQUIREMENTS OF THE "USA STANDARD FOR NURSERY STOCK", LATEST EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.

5. ALL MATERIAL SHALL BE PLANTED IN ACCORDANCE WITH THE MINIMUM STANDARDS CITED IN THE LATEST EDITION OF "LANDSCAPE SPECIFICATION GUIDELINES" PUBLISHED BY THE LANDSCAPE CONTRACTORS ASSOCIATION.

6. AT THE TIME OF INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS SHALL BE OF THE PROPER HEIGHT AND/OR SPREAD REQUIREMENTS IN ACCORDANCE WITH THIS PLAN AND THE HOWARD COUNTY LANDSCAPE MANUAL.

7. NO SUBSTITUTIONS OR RELOCATION OF PLANTS MAY BE MADE WITHOUT PRIOR APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING OF HOWARD COUNTY. ANY DEVIATION FROM THIS LANDSCAPE PLAN MAY RESULT IN A REQUIREMENT FOR SUBMITTAL OF AN OFFICIAL "REDLINE REVISION" TO THE SITE DEVELOPMENT PLAN(S) AND/OR DENIAL IN THE RELEASE OF LANDSCAPE SURETY.

8. THIS PLAN PROPOSES THE PLANTING OF 65 SHADE TREES, 20 EVERGREEN TREES, 87 FLOWERING TREES, AND 288 SHRUBS.

9. PERIMETER LANDSCAPE OBLIGATIONS WILL BE FULFILLED BY A COMBINATION OF NEW PLANTINGS AND PRESERVATION OF EXISTING VEGETATION.

10. SHOULD ANY TREE DESIGNATED FOR PRESERVATION, FOR WHICH LANDSCAPING CREDIT IS GIVEN, DIE PRIOR TO RELEASE OF BONDS, THE OWNER WILL BE REQUIRED TO REPLACE THE TREE WITH THE EQUIVALENT SPECIES OR WITH A TREE WHICH WILL OBTAIN THE SAME HEIGHT, SPREAD AND GROWTH CHARACTERISTICS. THE REPLACEMENT TREE MUST BE A MINIMUM OF 3 INCHES IN CALIPER AND INSTALLED AS REQUIRED IN THE LANDSCAPE MANUAL.

11. THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING PLANT MATERIALS, BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.

12. THE LANDSCAPE CONTRACTOR MUST NOTIFY MR. TIM OVERSTREET OF THE HOWARD COUNTY HORTICULTURE AND LAND MANAGEMENT DIVISION 48 HOURS IN ADVANCE OF THE START OF LANDSCAPE INSTALLATION. MR. OVERSTREET OR A REPRESENTATIVE FROM HOWARD COUNTY MAY SUPERVISE THE INSTALLATION OF LANDSCAPE PLAN AND OR FOREST CONSERVATION PLAN PLANT MATERIAL.

13. THE LANDSCAPE CONTRACTOR SHALL INSPECT ALL PLANTING AND STORWATER MANAGEMENT AREAS EVERY MONTH DURING THE INITIAL GROWING SEASON, AND THEN EVERY THREE MONTHS AFTERWARDS DURING THE TWO YEAR MAINTENANCE PERIOD. REMOVE OR TREAT WITH AN ACCEPTABLE METHOD, ALL NOXIOUS OR INVASIVE PLANT MATERIAL SUCH AS MULTIFLORA ROSE, TEARTHUMB, AND JOHNSON GRASS WITHIN ALL PLANTING AND STORMWATER MANAGEMENT AREAS.

NOTE: SEE ARCHITECTURAL FOR GREEN ROOF INFORMATION AND SPECS

DEVELOPER'S/BUILDER'S CERTIFICATE:

I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A LETTER OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE OF PLANT MATERIALS, WILL BE SUBMITTED TO THE DEPARTMENT OF PLANNING AND ZONING.

[signature] 2/4/10

SIGNATURE DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Butler 3/15/10
DIRECTOR DATE

[signature] 3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kent Sheubrooks 3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT gmF DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

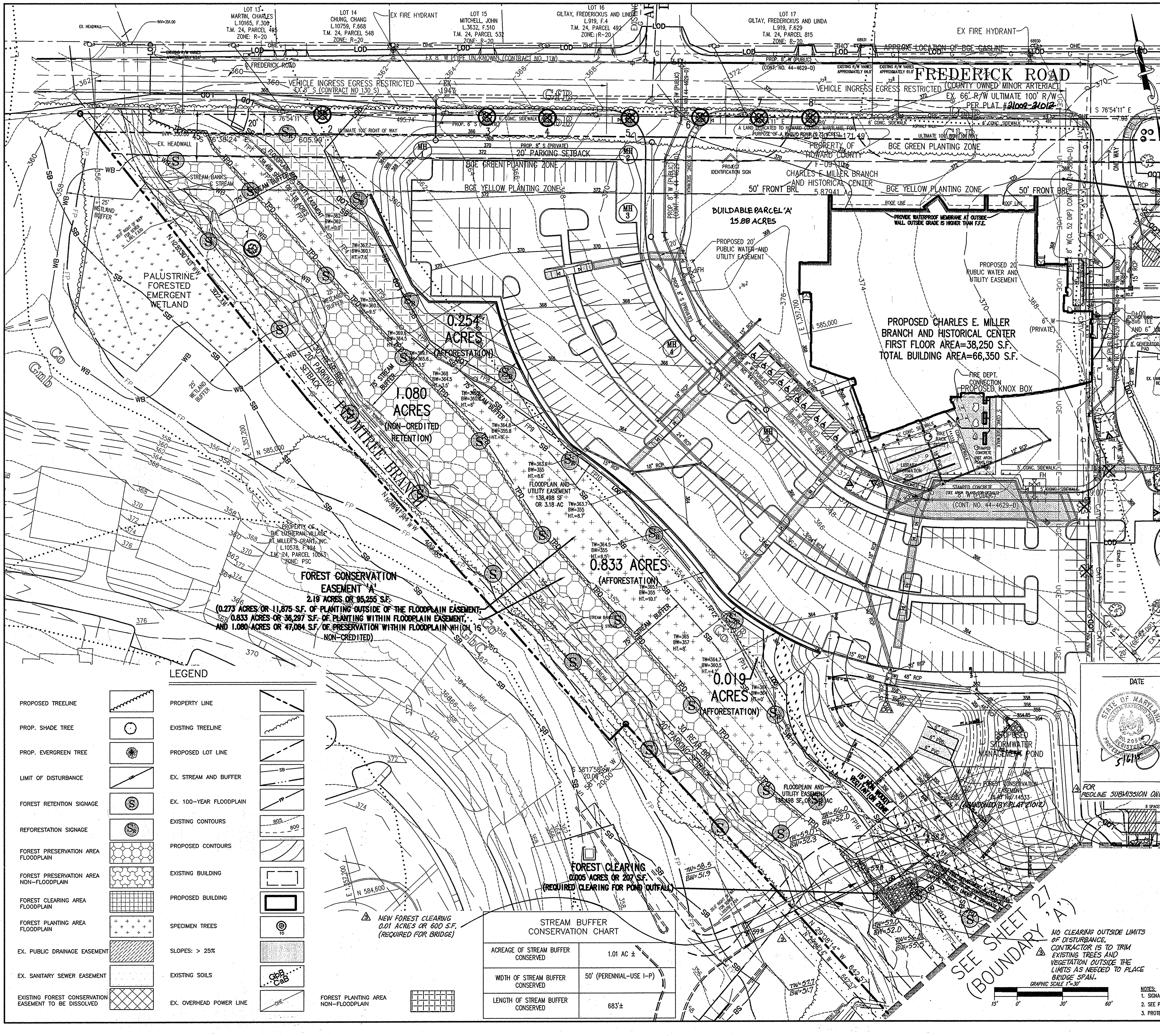
TITLE
LANDSCAPE NOTES AND DETAILS

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

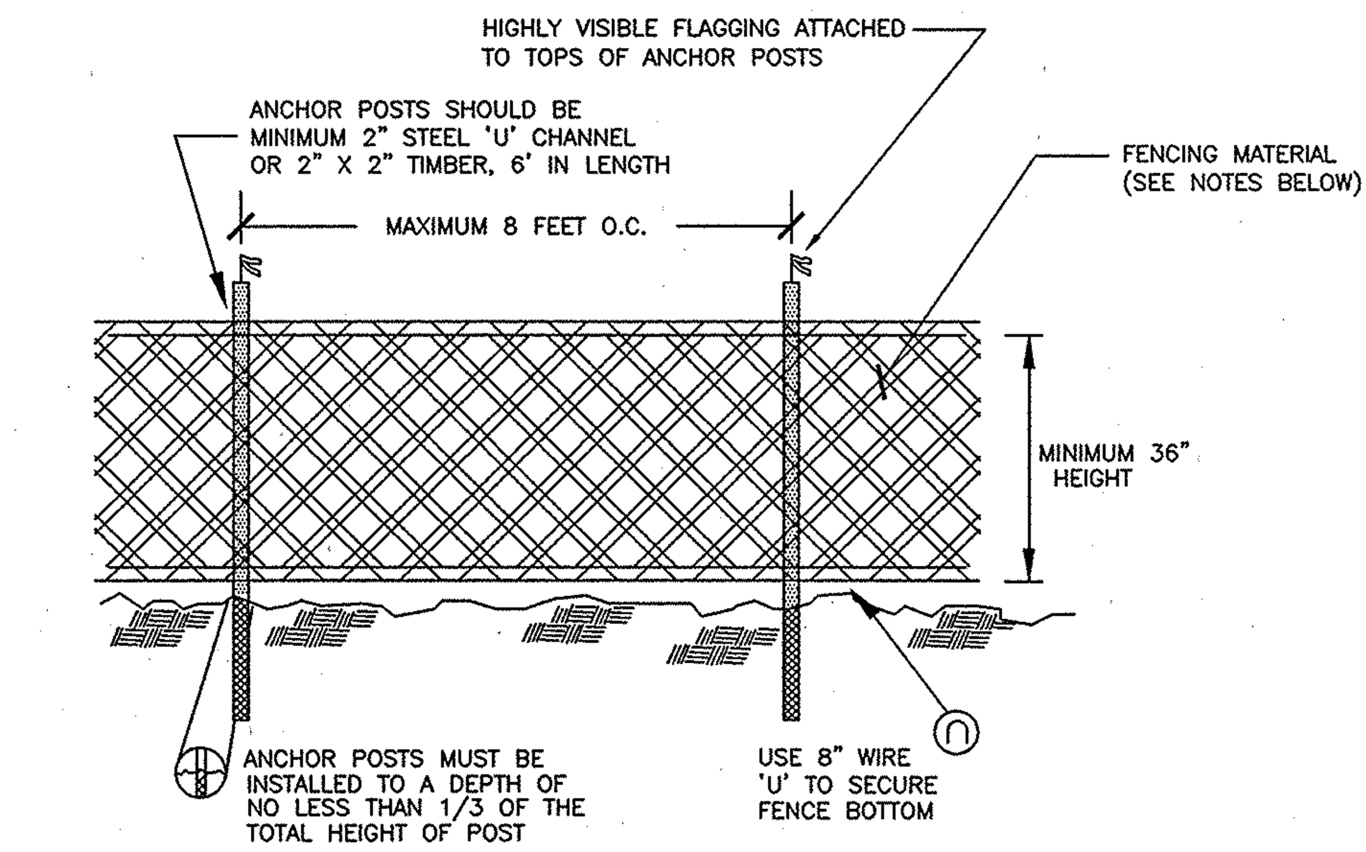
SEAL
STATE OF MARYLAND 797 SCOTT R. WOLFORD
BY:
SCOTT R. WOLFORD #797

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP21LND.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 30'
DRAWING NO. 25 OF ~~80~~ 66

SDP-09-058



STREAM BUFFER CONSERVATION CHART	
ACREAGE OF STREAM BUFFER CONSERVED	1.01 AC ±
WIDTH OF STREAM BUFFER CONSERVED	50' (PERENNIAL-USE I-P)
LENGTH OF STREAM BUFFER CONSERVED	683'±



NOTES:

1. SUPER SILT FENCE FOR TREE PROTECTION DEVICE, ONLY.
2. BOUNDARIES OF PROTECTION AREA WILL BE ESTABLISHED PRIOR TO GRADING AND SEDIMENT CONTROL.
3. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
4. FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCING

NOT TO SCALE

PROFESSIONAL CERTIFICATION

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

SIGNATURE OF ENGINEER — DATE: 02-06-2015

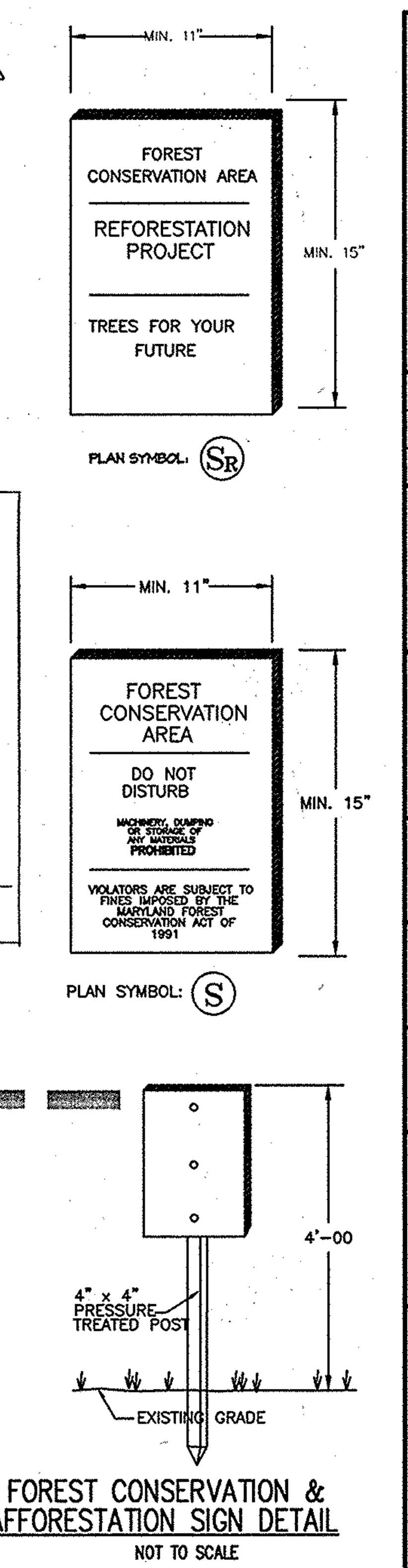
WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

FOREST CLEARING JUSTIFICATION:

0.01 ACRES OF FOREST CLEARING WILL BE REQUIRED BY THIS SDP FOR THE POND OUTFALL.

DNR QUALIFIED PROFESSIONAL SIGNATURE BLOCK:

QUALIFIED PROFESSIONAL: SCOTT R. WOLFORD, RLA (MD RLA REGISTRATION #797) — DATE: 2.2.10



FOREST CONSERVATION & AFFORESTATION SIGN DETAIL

NOT TO SCALE

NOTES:

1. SIGNAGE SHALL BE LOCATED ON FOREST CONSERVATION BORDER.
2. SEE PLAN FOR SPACING.
3. PROTECTIVE SIGNAGE SHALL REMAIN IN PERPETUITY.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE: 3/15/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE: 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE: 3/15/10

DATE	NO.	REVISION
02/2015	3	PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING
10-8-12	1	ADDED 2ND FLOOR TO OLD LIBRARY w/ADDED PARKING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

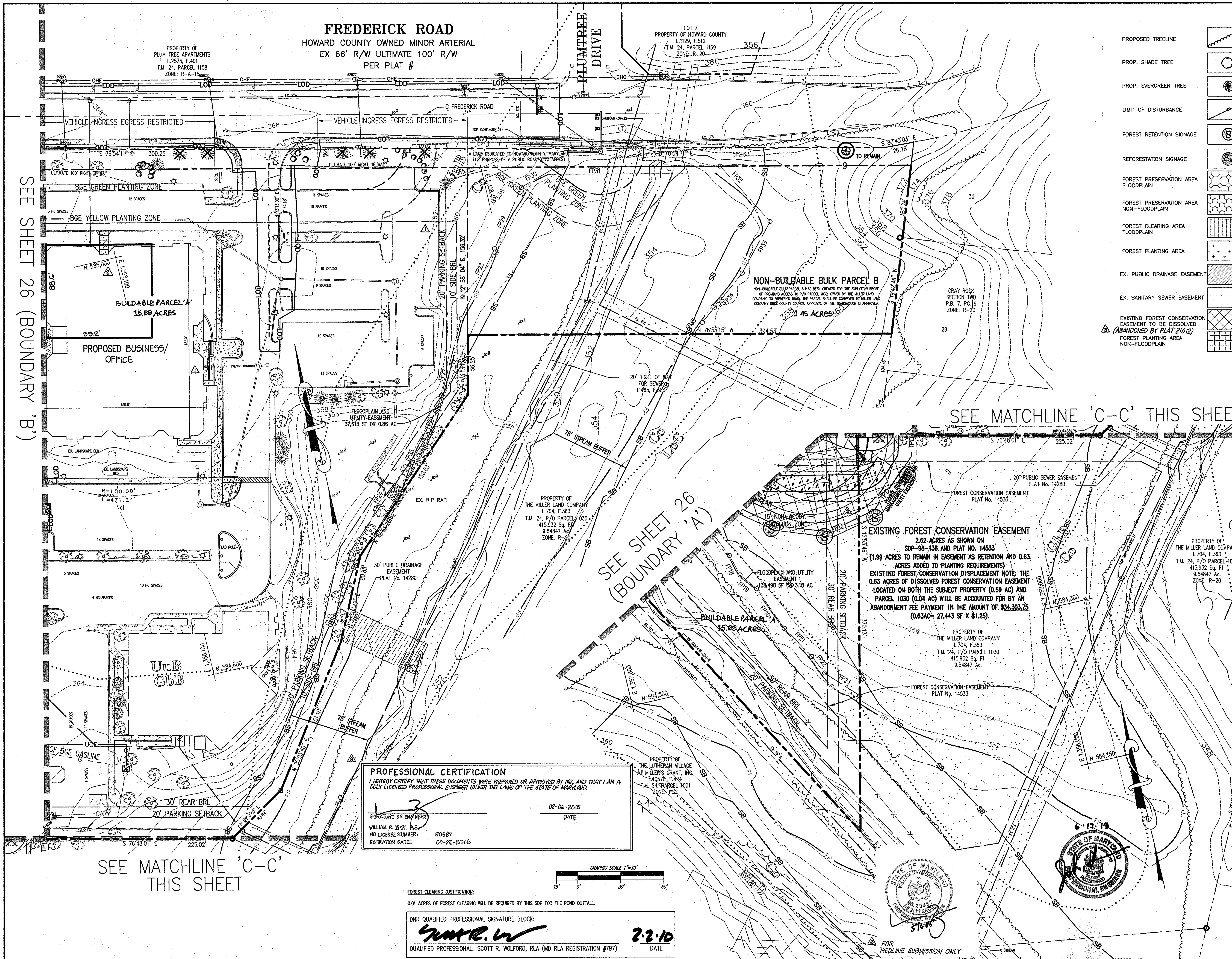
TITLE **FORREST CONSERVATION PLAN**

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
BY:
SCOTT R. WOLFORD, RLA #797
DNR QUALIFIED PROFESSIONAL

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP22FFC.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 26 OF ~~60~~ 66

SDP-09-058


FREDERICK ROAD
HOWARD COUNTY OWNED MINOR ARTERIAL
EX 66' R/W ULTIMATE 100' R/W
PER PLAT #
PLUMTREE DRIVE
PROPERTY OF PLUM TREE APARTMENTS L.2575, F.401 T.M. 24, PARCEL 1158 ZONE: R-A-15
LOT 7 PROPERTY OF HOWARD COUNTY L.1129, F.512 T.M. 24, PARCEL 1169 ZONE: R-20
VEHICLE INGRESS EGRESS RESTRICTED
℄ FREDERICK ROAD
ULTIMATE 100' RIGHT OF WAY
BGE GREEN PLANTING ZONE
BGE YELLOW PLANTING ZONE
BUILDABLE PARCEL 'A' 15.08 ACRES
PROPOSED BUSINESS/ OFFICE
SEE SHEET 26 (BOUNDARY 'B')
NON-BUILDABLE BULK PARCEL B
1.45 ACRES
GRAY ROCK SECTION TWO P.B. 7, PG. 9 ZONE: R-20
20' RIGHT OF WAY FOR SEWER L.465, F.368
FLOODPLAIN AND UTILITY EASEMENT 37,613 SF OR 0.86 AC
75' STREAM BUFFER
EX. RIP RAP
PROPERTY OF THE MILLER LAND COMPANY L.704, F.363 T.M. 24, P/O PARCEL 1030 415,932 Sq. Ft. 9.54847 Ac. ZONE: R-20
30' PUBLIC DRAINAGE EASEMENT PLAT No. 14280
SEE MATCHLINE 'C-C' THIS SHEET
20' PUBLIC SEWER EASEMENT PLAT No. 14280
FOREST CONSERVATION EASEMENT PLAT No. 14533
SEE SHEET 26 (BOUNDARY 'A')
15' NON-WOODY VEGETATION ZONE
EXISTING FOREST CONSERVATION EASEMENT
2.62 ACRES AS SHOWN ON SDP-98-136 AND PLAT NO. 14533 (1.99 ACRES TO REMAIN IN EASEMENT AS RETENTION AND 0.63 ACRES ADDED TO PLANTING REQUIREMENTS)
EXISTING FOREST CONSERVATION DISPLACEMENT NOTE: THE 0.63 ACRES OF DISSOLVED FOREST CONSERVATION EASEMENT LOCATED ON BOTH THE SUBJECT PROPERTY (0.59 AC) AND PARCEL 1030 (0.04 AC) WILL BE ACCOUNTED FOR BY AN ABANDONMENT FEE PAYMENT IN THE AMOUNT OF $34,303.75 (0.63AC= 27,443 SF X $1.25).
FLOODPLAIN AND UTILITY EASEMENT 138,498 SF OR 3.18 AC
BUILDABLE PARCEL 'A' 15.08 ACRES
30' REAR BRL
20' PARKING SETBACK
PROPERTY OF THE LUTHERAN VILLAGE AT MILLER'S GRANT, INC. L.10578, F.424 T.M. 24, PARCEL 1001 ZONE: PSC
30' REAR BRL
20' PARKING SETBACK
SEE MATCHLINE 'C-C' THIS SHEET
GRAPHIC SCALE 1"=30'
15' 0' 30' 60'
FOR REDLINE SUBMISSION ONLY

PROFESSIONAL CERTIFICATION

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

SIGNATURE OF ENGINEER — DATE: 02-06-2015

WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

FOREST CLEARING JUSTIFICATION:

0.01 ACRES OF FOREST CLEARING WILL BE REQUIRED BY THIS SDP FOR THE POND OUTFALL.

DNR QUALIFIED PROFESSIONAL SIGNATURE BLOCK:

QUALIFIED PROFESSIONAL: SCOTT R. WOLFORD, RLA (MD RLA REGISTRATION #797) — DATE: 2-2-10

LEGEND

PROPOSED TREELINE		PROPERTY LINE	
PROP. SHADE TREE		EXISTING TREELINE	
PROP. EVERGREEN TREE		PROPOSED LOT LINE	
LIMIT OF DISTURBANCE		EX. STREAM AND BUFFER	
FOREST RETENTION SIGNAGE		EX. 100-YEAR FLOODPLAIN	
REFORESTATION SIGNAGE		EXISTING CONTOURS	
FOREST PRESERVATION AREA FLOODPLAIN		PROPOSED CONTOURS	
FOREST PRESERVATION AREA NON-FLOODPLAIN		EXISTING BUILDING	
FOREST CLEARING AREA FLOODPLAIN		PROPOSED BUILDING	
FOREST PLANTING AREA		SPECIMEN TREES	
EX. PUBLIC DRAINAGE EASEMENT		SLOPES: > 25%	
EX. SANITARY SEWER EASEMENT		EXISTING SOILS	
EXISTING FOREST CONSERVATION EASEMENT TO BE DISSOLVED (ABANDONED BY PLAT 21012)		EX. OVERHEAD POWER LINE	
FOREST PLANTING AREA NON-FLOODPLAIN			

STREAM BUFFER CONSERVATION CHART

ACREAGE OF STREAM BUFFER CONSERVED	1.01 AC ±
WIDTH OF STREAM BUFFER CONSERVED	50' (PERENNIAL-USE I-P)
LENGTH OF STREAM BUFFER CONSERVED	683'±

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 3/15/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/15/10

DATE	NO.	REVISION
6-17-13	2	REVISED LOCATION 2ND FLOOR OLD LIBRARY & ADDED NEW USE
10-8-12	1	ADDED 2ND FLOOR TO OLD LIBRARY w/ADDED PARKING
02/2015	3	PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE FOREST CONSERVATION PLAN

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND 797 SCOTT R. WOLFORD BOARD OF EXAMINERS OF LANDSCAPE ARCHITECTS

BY:
SCOTT R. WOLFORD, RLA #797
DNR QUALIFIED PROFESSIONAL

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP23FFC.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 27 OF ~~60~~ 66

SDP-09-058

SPECIMEN TREE LIST

KEY	SPECIES	SIZE	CONDITION	REMAIN OR REMOVE
1	SILVER MAPLE (Acer saccharinum)	42"	GOOD	REMAIN
2	EASTERN WHITE PINE (Pinus strobus)	31"	GOOD	REMOVE
3	EASTERN WHITE PINE (Pinus strobus)	30"	DEAD	REMOVE
4	EASTERN WHITE PINE (Pinus strobus)	30"	GOOD	REMOVE
5	EASTERN WHITE PINE (Pinus strobus)	34"	GOOD	REMOVE
6	EASTERN WHITE PINE (Pinus strobus)	34"	GOOD	REMOVE
7	EASTERN WHITE PINE (Pinus strobus)	30"	GOOD	REMOVE
8	EASTERN WHITE PINE (Pinus strobus)	32"	GOOD	REMOVE
9	RED OAK (Quercus rubra)	32"	GOOD	REMAIN

Howard County Forest Conservation Worksheet

Project Name: **CHARLES E MILLER BRANCH AND HISTORICAL CENTER**
County File #: **SDP-09-058**
Date: **October 21, 2009**

Net Tract Area				**Acres**
A.	*Total Tract Area*	A	=	16.61
B.	*Other Deductions* Floodplain (3.23 acres)	B	=	3.23
C.	*Net Tract Area* Net Tract Area = (A-B-C)	C	=	13.38
Land Use Category:				
D.	*Afforestation Threshold* (Net Tract Area X 15%	D	=	2.01
E.	*Conservation Threshold* (Net Tract Area X 20%	E	=	2.68
Existing Forest Cover				
F.	***Existing Forest Cover within the Net Tract Area***	F	=	0.00
G.	*Area of Forest Above Conservation Threshold*	G	=	0.00
	If the Existing Forest Cover (F) is greater than Conservation Threshold (G), then			
	G = Existing Forest Cover (F) - Conservation Threshold (E); Otherwise G = 0			
Break Even Point				
H.	*Break Even* (Amount of forest that must be retained so that no mitigation is required)	H	=	0.00
	(1) If the area of forest above the Conservation Threshold (G) is greater than zero, then			
	H = (0.2 X the area of forest above Conservation Threshold (G)) + the Conservation Threshold (E)			
	(2) If the area of forest above the Conservation Threshold (G) is equal to zero, then			
	H = Existing Forest Cover (F)			
I.	*Forest Clearing Permitted Without Mitigation*	I	=	0.00
	I = Existing Forest Cover (F) - Break Even Point (H)			
Proposed Forest Clearing				
J.	***Total Area of Forest to be Cleared***	J	=	~~0.00~~ 0.01 △
K.	*Total Area of Forest to be Retained*	K	=	0.00
	K = Existing Forest Cover (F) - forest to be cleared (J)			
Planting Requirements				
If the Total Area of Forest to be Cleared (K) is at or above the Breakeven Point (H), no planting is required and no further calculations are necessary (L=0, M=0, N=0, P=0);				
If not, calculate the planting requirement below:				
L.	*Reforestation for Clearing Above the Conservation Threshold*	L	=	0.00
	(1) if the total area of forest to be retained (K) is greater than the Conservation Threshold (E), then			
	L = the area of forest to be cleared (J) X 0.25: or			
	(2) If the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then			
	L = area of forest above Conservation Threshold (G) X 0.25			
M.	*Reforestation for Clearing Below the Conservation Threshold*	M	=	0.00
	(1) if Existing Forest Cover (F) is greater than Conservation Threshold (E) and the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then			
	M = 2.0 X (the Conservation Threshold (E) - the forest to be retained (K))			
	(2) If Existing Forest (F) is less than or equal to the Conservation Threshold (E), then			
	M = 2.0 X Forest to be cleared (J).			
N.	*Credit for Retention Above the Conservation Threshold*	N	=	0.00
	If the area of forest to be retained (K) is greater than the Conservation Threshold (E), then N = K - E			
P.	*Total Reforestation Required* P = L + M - N	P	=	0.00
Q.	*Total Afforestation Required*	Q	=	2.01
	(1) If Existing Forest Cover (F) is less than the Afforestation Threshold (D) then			
	Q = the Afforestation Threshold (D) - the Existing Forest Cover (F)			
R.	*Total Planting Requirement* R = P + Q	R	=	2.01

THE TOTAL FOREST CONSERVATION OBLIGATION FOR THIS PROJECT IS 2.01 ACRES AND IS BEING MET BY PLANTING 1.11 ACRES OF AFFORESTATION ON SITE, AND BY THE PAYMENT OF A FEE-IN-LIEU ($29,403) FOR THE REMAINING 0.90 ACRES OF OBLIGATION (39,204 SF X $0.75).

EXISTING FOREST CONSERVATION DISPLACEMENT NOTE: THE 0.63 ACRES OF DISSOLVED FOREST CONSERVATION EASEMENT LOCATED ON BOTH THE SUBJECT PROPERTY (0.59 AC) AND PARCEL 1030 (0.04 AC) WILL BE ACCOUNTED FOR BY AN ABANDONMENT FEE PAYMENT IN THE AMOUNT OF $34,303.75 (0.63AC= 27,443 SF x $1.25). THIS FEE IN ADDITION TO THE TOTAL PLANTING REQUIREMENT SHOWN IN THE FOREST CONSERVATION WORKSHEET ABOVE.

DNR QUALIFIED PROFESSIONAL SIGNATURE BLOCK:
[signature] 2.2.10
QUALIFIED PROFESSIONAL: SCOTT R. WOLFORD, RLA (MD RLA REGISTRATION #797) DATE

SEQUENCE OF OPERATIONS

PRE-CONSTRUCTION
SITE PREPARATION

1. FIELD STAKE LIMITS OF DISTURBANCE (L.O.D.) AT 25' INTERVALS.
2. REVIEW L.O.D. IN FIELD AND ADJUST IF PRACTICAL.
3. INSTALL TREE PROTECTION FENCE AT THE L.O.D. AND IMPLEMENT TREE PROTECTION METHODS AS SHOWN.
4. CLEAR AND GRUB AS NECESSARY TO FACILITATE ROOT PRUNING TO A DEPTH OF 2-3 FEET WITHIN THE LIMITS OF THE PROPOSED FOREST RETENTION AREA AND AROUND SPECIMEN TREES TO BE SAVED. CLEAR REMAINING TREES IN A WAY THAT "SAVE TREES' ARE NOT DISTURBED. GRIND STUMPS 12" IN DIAMETER AND LARGER THAT ARE WITHIN 25' OF THE L.O.D.
5. PRUNE AND FERTILIZE DESIRABLE 'EDGE TREES' AS PER CONSULTING ARBORIST'S RECOMMENDATIONS AND DETAILS PROVIDED ON THIS SHEET.
6. THERE SHALL BE NO STAGING, STORAGE, OR STOCKPILING OF MATERIALS WITHIN THE NONTIDAL WETLANDS OR 25' NONTIDAL WETLANDS BUFFER, OR OUTSIDE OF THE L.O.D.
7. REMOVE OR TREAT WITH AN ACCEPTABLE METHOD, ALL NOXIOUS OR INVASIVE PLANT MATERIAL SUCH AS MULTIFLORA ROSE, TEARTHUMB, AND JOHNSON GRASS FROM ALL PLANTING AND RETENTION AREAS BEFORE INSTALLING REFORESTATION PLANTS.
8. INSTALL TREE PROTECTION SIGNAGE.
9. STABILIZE ANY DISTURBED AREAS USING THE SPECIFIED STABILIZATION MIXTURE WHICH ALLOWS FOR NATURAL REVEGETATION OF FOREST COMMUNITIES.

FOREST CONSERVATION SEQUENCE OF OPERATIONS

1. Prior to beginning any grading operations on this site or on a respective lot, there may be a preconstruction meeting held at the site which is to include the Contractor and representatives from Patton Harris Rust & Associates, Inc. (PHR+A). The Howard County Department of Planning and Zoning (DPZ) will be notified by the Contractor as to the time and place of the field meeting, should they wish to send a representative. The purpose of this meeting will be to review the approved FCP and to field verify the correct Limits of Disturbance (LOD).

2. The Limits of Disturbance (LOD) pertinent to the preservation of wooded areas shall be staked in the field with final adjustments being made as necessary to insure adequate protection of the Critical Root Zone of trees designated for retention. Stakes to be used shall be those specified for the "TREE PROTECTION DEVICE" to which approved protective material will be attached. Alternate means of defining the LOD may be used if approved by the DPZ.

3. All forest retention areas shall be protected by highly visible, well anchored temporary protection devices (see detail), which shall be securely in place prior to any clearing or grading operations.

4. Grading operations or other construction operations which could dislodge or otherwise damage the protective devices shall be avoided along the edges of the LOD lines if possible. Any protective devices which are damaged during site construction operations shall be properly repaired immediately by the Contractor.

5. After site grading, utility access road, and driveway construction have been completed, all trees adjacent to the LOD line shall be inspected for indications of crown die-back (summer indicator), damage within respective critical root zones or any dead wood or other conditions which might be hazardous to pedestrians, buildings, utility lines vehicular access ways or parked vehicles.

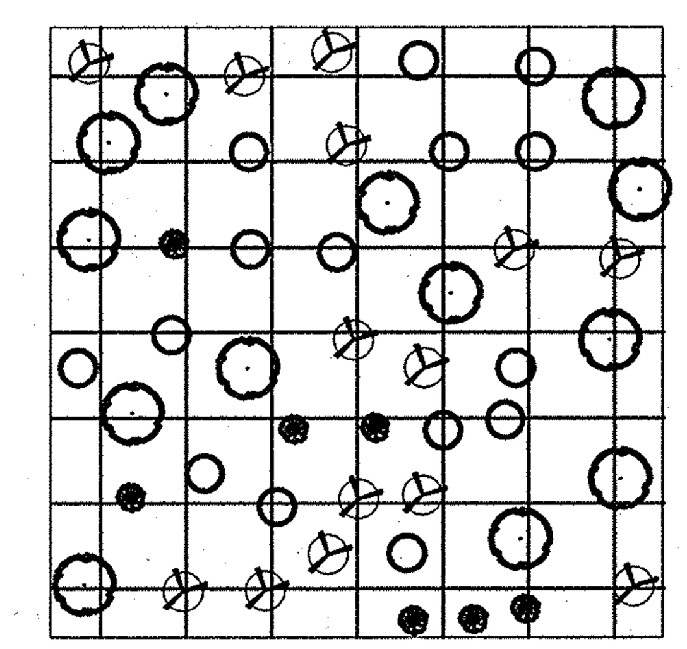
6. Should there be evidence of any damage to tree trunks, branches or the critical root zone of trees within the protected areas, or to isolated specimen trees to be preserved, the damage shall be examined within a period of two (2) days from the date of observance by a licensed tree care professional. Exposed roots should be covered immediately to a depth of 6 - 8 inches with soil, preferably mixed with 50% peat moss or leaf mold.

7. Remove damaged, dead or dying trees or limbs only if the trees or limbs pose an immediate safety hazard to buildings, utility lines, vehicles, or access and egress drives or pedestrian areas. Trees designated for pruning or removal shall be pruned or removed using equipment and methods which will not damage or destroy adjacent large trees or understory trees or shrubs designated for retention.

8. All temporary forest protection devices will be carefully removed after all general construction, necessary tree surgery, removal of debris, etc. regrading and reseeding of sediment and erosion control disturbance have been completed and acceptance and approval of the work and site conditions have been given by the DPZ.

9. The installation of the afforestation plants shall coincide with the planting of the other site landscape material. Please refer to the Sediment Control Plans and the Sequence of Construction which calls for the landscaping to be installed after the completion of the building exterior and fine grading.

10. The Landscape Contractor responsible for the aforestation plant material must notify Mr. Tim Overstreet of the Howard County Horticulture and Land Management Division 48 hours in advance of the start of landscape installation. Mr. Overstreet or a representative from Howard County may supervise the installation of landscape plan and or forest conservation plan plant material.



KEY
TREES
TREE SPECIES 'A'
TREE SPECIES 'B'
TREE SPECIES 'C'
TREE SPECIES 'D'
TREE SPECIES 'E'

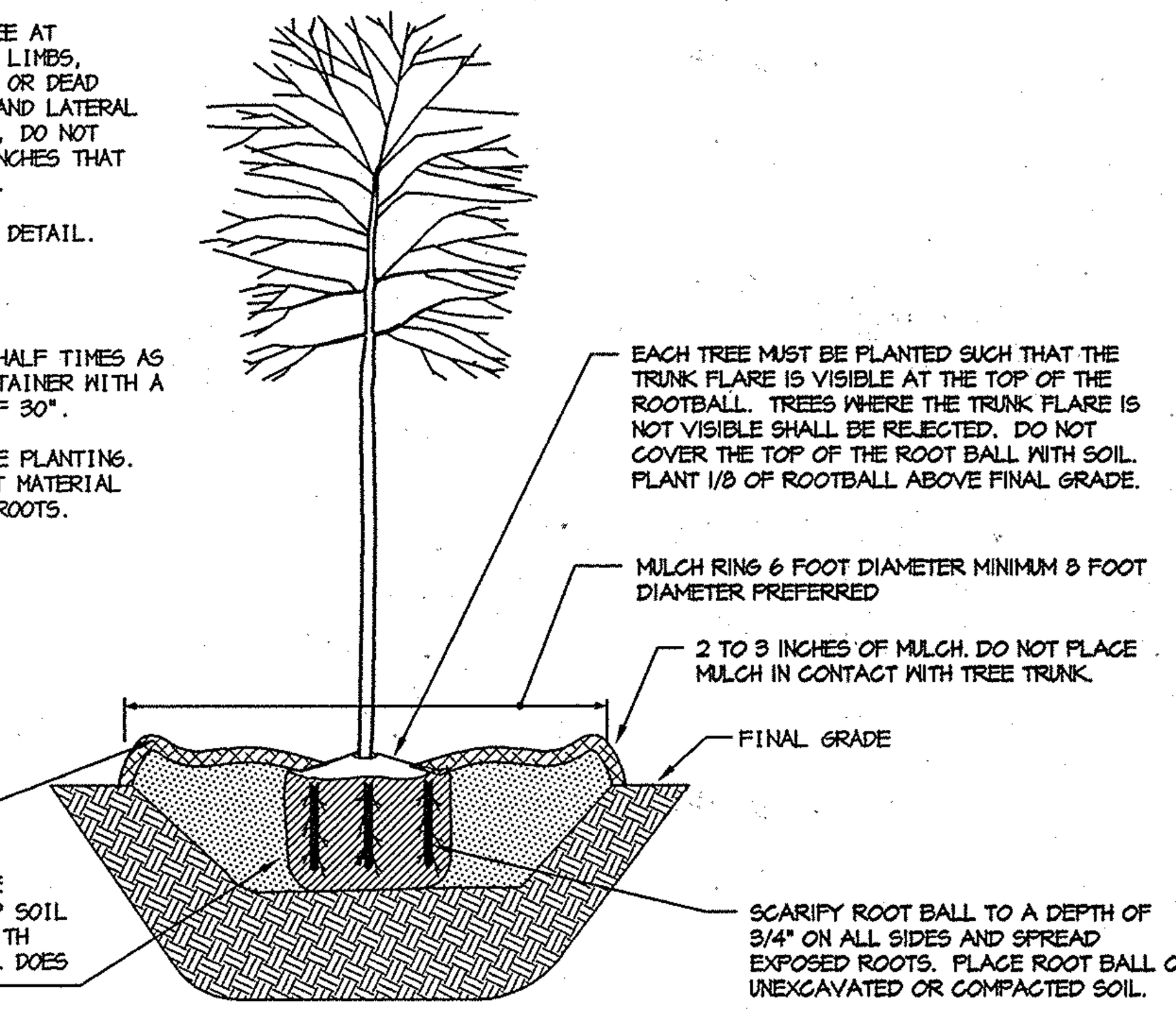
NOTES
1. RANDOMLY LOCATE GROUPS OF PLANT SPECIES, TAKING CARE NOT TO PLANT IN SUCCESSION MORE THAN 4 OF THE SAME SPECIES.
2. THIS DETAIL PROVIDES A HYPOTHETICAL GRAPHIC DEPICTION OF A PROPOSED LAYOUT FOR NINE DIFFERENT TREE SPECIES (A-I). IT IS NOT MEANT TO BE FOLLOWED EXACTLY. THE PURPOSE IS TO ACHIEVE THE APPEARANCE OF RANDOM SPACING.
3. SEE PLANT LIST FOR ACTUAL NUMBER OF PLANT SPECIES. SEE PLANT LIST FOR ON-CENTER SPACING REQUIREMENTS.

RANDOM PLANTING LAYOUT DETAIL
NOT TO SCALE

RANDOMLY SPACE NEW TREE & SHRUB INSTALLATIONS TO ALLOW NO MORE THAN (5) 1" CALIPER TREES OF ANY PARTICULAR SPECIES TO BE PLANTED IN SUCCESSION. USE SUGGESTED SPACING AS A GENERAL GUIDE. TAKE CARE NOT TO PLANT IN PERFECT ROWS OR GRIDS.

NOTES:

1. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
2. STAKE TREES AS SHOWN ON B&B DETAIL.
3. DIG PLANTING PIT TWO AND A HALF TIMES AS WIDE AS THE DIAMETER OF THE CONTAINER WITH A MINIMUM PLANTING PIT DIAMETER OF 30".
4. REMOVE CONTAINER JUST BEFORE PLANTING. INSPECT HEALTH OF ROOTS. REJECT MATERIAL WITH UNHEALTHY OR INSUFFICIENT ROOTS.



CONTAINERIZED TREE PLANTING DETAIL
NOT TO SCALE

PLANTING SPECIFICATIONS:

AFFORESTATION OR REFORESTATION MAINTENANCE AND REPLACEMENT REQUIREMENTS

A two year (24) month maintenance and replacement warranty period is required for all newly planted materials. The maintenance and replacement warranty period shall commence upon the date of the written acceptance by the Owner of the planted areas. A written warranty will be delivered to the Owner upon acceptance of the planted areas. Maintenance and replacement shall be provided by the Contractor responsible for the initial planting operations and related work. All landscape plant material included as forest conservation credits shall be covered under this maintenance and replacement warranty period.

I. MAINTENANCE:
The Contractor shall field check the newly planted area(s) and shall provide the following maintenance items in accordance with the following schedule which shall begin after the completion and acceptance of the initial Afforestation or Reforestation planting:

1. Watering: Watering of all newly planted materials once per week as weather permits during the entire initial growing season. Following the initial growing season, watering shall be done on an "as needed" basis depending on the frequency of natural rainfall. During the months of July and August and periods of severe drought, all newly planted materials shall be watered thoroughly once every week. Watering shall be done deeply and slowly using an open end hose or watering probe, at low pressure, allowing the water to be absorbed into the soil until thoroughly saturated. The watered area shall include the whole root zone as the tree becomes more established.

2. Fertilizing: Fertilizing shall be applied only after the soil has been tested to determine its needs. Organic fertilizer should be applied in accordance with the amounts recommended in the soil analysis report. No fertilizing of newly planted trees shall be done within the first growing season after initial planting. Following the first growing season, apply fertilizer as recommended either in late fall or early spring.

3. Supplemental Mulch: To control undesirable vegetation adjacent to the newly planted materials and to prevent tree roots from drying out, additional mulch shall be placed over the existing mulch field where required. Carefully remove any invasive plants (including the root system) within the mulch fields. Do not damage trees in any way during removal of invasive plants or remulching operations.

4. Pruning: Remove dead, diseased, dying and broken branches from all plant materials. Pruning shall be done cleanly leaving no ragged ends.

5. Invasive Species: Inspect all planting and retention areas every month during the initial growing season, and then every three months afterwards during the two year maintenance period. Remove or treat with an acceptable method, all noxious or invasive plant material such as multiflora rose, tearthumb, and johnson grass within all planting and retention areas.

II. REPLACEMENT OF DEAD OR DYING MATERIALS:

1. Replacement: Any plant materials which are 25% dead or more shall be replaced during the appropriate spring or fall planting seasons in accordance with the methods indicated in the Planting Specifications. A tree shall be considered dead when the main leader has died back.

2. All replacements shall be plants of the same genus, species and size as specified on the plant list.

3. Contractor shall schedule an inspection of the Afforestation or Reforestation area(s) by a qualified representative of the DPZ and by the qualified professional who prepared the plan, at the beginning and at the end of the growing season to observe any problems, monitor survival rate and specify necessary remedial actions needed to correct existing problems. The inspection should focus on the following items when determining survival potential:

(a) Vigor and threat of competing vegetotion
(b) Plant structure
(c) Growth rate
(d) Crown development
(e) Trunk conditions and health

III. SURVIVAL REQUIREMENT:
The survival rate for Afforestation and Reforestation areas shall be a minimum of seventy-five percent (75%) of the total number of trees required to be planted per acre under the approved plan at the end of the 24-month management and maintenance agreement.

AFFORESTATION PLANTING NOTE:

AFFORESTATION AREA= 1.52 AC
TOTAL PLANTING REQUIREMENT= 1.52 AC X 100 2" CALIPER PLANTS/AC= 152 SHADE TREES

THE RED OAK, AND TULIP SPECIES WERE SELECTED BASED UPON THE FINDINGS OF THE FOREST STAND DELINEATION. THE SWEETGUM WAS CHOSEN BECAUSE IT IS INDIGINOUS TO MARYLAND FORESTS. THE SYCAMORE AND PIN OAK WERE SELECTED AT THE SUGGESTION OF THE HOWARD COUNTY NATURAL RESOURCES DIVISION.

ALL TREES BELOW ARE TO BE INSTALLED WTIH BARK PROTECTORS (4" DIA. X 48" TALL).

AFFORESTATION PLANT SCHEDULE

AFFORESTATION PLANTING WITHIN EASEMENT 'A' - 1.11 ACRES

QTY.	SCIENTIFIC/ COMMON NAME	SIZE	ROOT	REMARKS
23	PLATANUS OCCIDENTALIS SYCAMORE	2" CAL.	B&B	MIN. SPACING=20'
22	QUERCUS RUBRA RED OAK	2" CAL.	B&B	MIN. SPACING=20'
22	QUERCUS PALUSTRIS PIN OAK	2" CAL.	B&B	MIN. SPACING=20'
22	LIRIODENDRON TULIPIFERA TULIP TREE	2" CAL.	B&B	MIN. SPACING=20'
22	LIQUIDAMBAR STYRACIFLUA 'ROTUNDIFLORA' SWEETGUM	2" CAL.	B&B	MIN. SPACING=20'

△3 PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
[signature] 02-06-2015
SIGNATURE OF ENGINEER DATE
WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

△3 FOR REDLINE SUBMISSION ONLY

GENERAL NOTES:

1. THE SITE IS LOCATED AT 9421 FREDERICK ROAD, ELLICOTT CITY, MD 21042. THE SITE CONSISTS OF 2 PARCELS (PARCEL 1090, 1189) WHICH EQUALS A TOTAL OF 18.06± ACRES.
2. THE EXISTING TOPOGRAPHY IS TAKEN FROM A FIELD SURVEY PREPARED BY PHR+A SEPTEMBER, 2008. BOUNDARY SURVEY WAS PREPARED BY PHR+A SEPTEMBER, 2008.
3. THE SOILS ON SITE ARE CODORUS AND HATBORO SILT LOAMS (0-3% SLOPES) - Co, GLADSTONE LOAM (3-8% SLOPES) - GbB, LEGORE-MONTALTO-URBAN LAND COMPLEX (8-15% SLOPES) - LoC.
4. THE SITE IS ZONED R-20 (RESIDENTIAL: SINGLE (20,000 SF)). CURRENT USE OF THE SITE IS A LIBRARY AND SENIOR COMMUNITY CENTER.
5. THIS SITE IS LOCATED IN THE LITTLE PATUXENT RIVER WATERSHED (2131106). THIS SITE IS LOCATED IN A USE I-P WATERSHED ACCORDING TO INFORMATION AVAILABLE FROM THE CODE OF MARYLAND REGULATIONS (COMAR) 26.08.02.08 "STREAM SEGMENT DESIGNATIONS". THE APPROPRIATE 75' STREAM BUFFER HAS BEEN SHOWN AS REQUIRED IN THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS SECTION 16.116 "PROTECTION OF WETLANDS, STREAMS, AND STEEP SLOPES".
6. ONE STREAM IS LOCATED ON THE SITE AND IS IDENTIFIED AS A USE I-P STREAM ACCORDING TO INFORMATION AVAILABLE FROM THE CODE OF MARYLAND REGULATIONS (COMAR) 26.08.02.08 "STREAM SEGMENT DESIGNATIONS". THE STREAM FLOWS ALONG THE WESTERN BOUNDARY OF THE SITE FROM THE NORTHWEST FLOWING OFF-SITE TO THE SOUTH. A FLOODPLAIN IS LOCATED ON THE SITE AS SHOWN BY FLOODPLAIN STUDY PREPARED BY CHRISTOPHER CONSULTANTS, LTD. IN ASSOCIATION WITH THE LUTHERN VILLAGE SDP.
7. EXISTING FOREST CONSISTS OF 1 STAND AND 1 HEDGEROWS AS SHOWN. TREES GREATER THAN 30" IN DIAMETER WERE OBSERVED WITHIN THE PROPERTY BOUNDARY AND ARE SHOWN.
8. FIELD WORK FOR THIS INVENTORY WAS CONDUCTED ON DECEMBER 29, 2008 BY JAY M. LOFTUS, PLANNER OF PATTON HARRIS RUST AND ASSOCIATES, PC UNDER THE SUPERVISION OF PETER J. STONE, RLA AND SCOTT R. WOLFORD, RLA OF PATTON HARRIS RUST AND ASSOCIATES, PC.
9. THERE ARE NO KNOWN CEMETERIES OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY CEMETERIES INVENTORY.
10. NO RARE, THREATENDED OR ENDANGERED PLANTS OR ANIMALS OR CRITICAL HABITATS WERE OBSERVED IN THE FIELD AS STATED IN A LETTER RECEIVED FROM THE MARYLAND DNR.
11. 9 SPECIMEN TREES (30" IN DIAMETER) HAVE BEEN IDENTIFIED AND MEASURED AS SHOWN ON THIS PLAN. TWO OF THE SPECIMEN TREES WILL NEED TO BE REMOVED DUE TO THE PROPOSED DEVELOPMENT ON THE SITE.
12. SPECIMEN TREE LOCATIONS WERE FIELD APPROXIMATED.
13. NO HISTORIC FEATURES ARE LOCATED ON-SITE.
14. FOREST STAND 1 CONTAINS 3.24 ACRES OF FOREST ON-SITE, WHILE THE STAND IS PART OF CONTIGUOUS FOREST THAT EXTENDS FOR A TOTAL OF THIRTY (30) ACRES OFF-SITE.
15. WETLANDS ARE LOCATED ON THE SITE.
16. NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
17. NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
18. THERE ARE THREE EXISTING STRUCTURES ON THE SITE AS SHOWN. THE EXISTING LIBRARY, SENIOR COMMUNITY CENTER AND SHED WILL REMAIN. A NEW HOWARD COUNTY PUBLIC LIBRARY AND ASSOCIATED PARKING ARE PROPOSED FOR THE SITE DEVELOPMENT.
19. THE HOWARD COUNTY FOREST CONSERVATION MANUAL SUPERCEDES ANY DISCREPANCIES BETWEEN THE MANUAL AND THESE PLANS.
20. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION.
21. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
22. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION. THE TOTAL FOREST CONSERVATION OBLIGATION FOR THIS PROJECT IS 2.01 ACRES AND IS BEING MET BY PLANTING 1.11 ACRES OF AFFORESTATION ON SITE, AND BY THE PAYMENT OF A FEE-IN-LIEU ($29,403) FOR THE REMAINING 0.90 ACRES (39,204 SF x $0.75). THE PORTION OF THE EXISTING FOREST CONSERVATION EASEMENT FOR THE MILLER CHEVROLET THAT IS BEING DISOLVED (0.63 ACRES) DUE TO THE FUTURE ROADWAY CONNECTION FROM THE LUTHERN VILLAGE SITE TO THE PARKING LOT OF THE ELLICOTT CITY SENIOR CENTER WILL BE MITIGATED SEPERATELY THROUGH AN ABANDONMENT FEE IN THE AMOUNT OF $34,303.75 (0.63AC= 27,443 SF X $1.25).

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[signature] 3/15/10
DIRECTOR DATE
[signature] 3/2/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE
[signature] 3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION
02/2015	△3	FOREST CLEARING

OWNER / DEVLOPER: HOWARD COUNTY, MARYLAND, DEPARTMENT OF PUBLIC WORKS, 3430 COURT HOUSE RD, ELLICOTT CITY, MD 21043-4105

TENANTS: HOWARD COUNTY LIBRARY; HOWARD COUNTY HISTORICAL SOCIETY; ELLICOTT CITY SENIOR CENTER 410-313-4600

PROJECT: CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA: TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

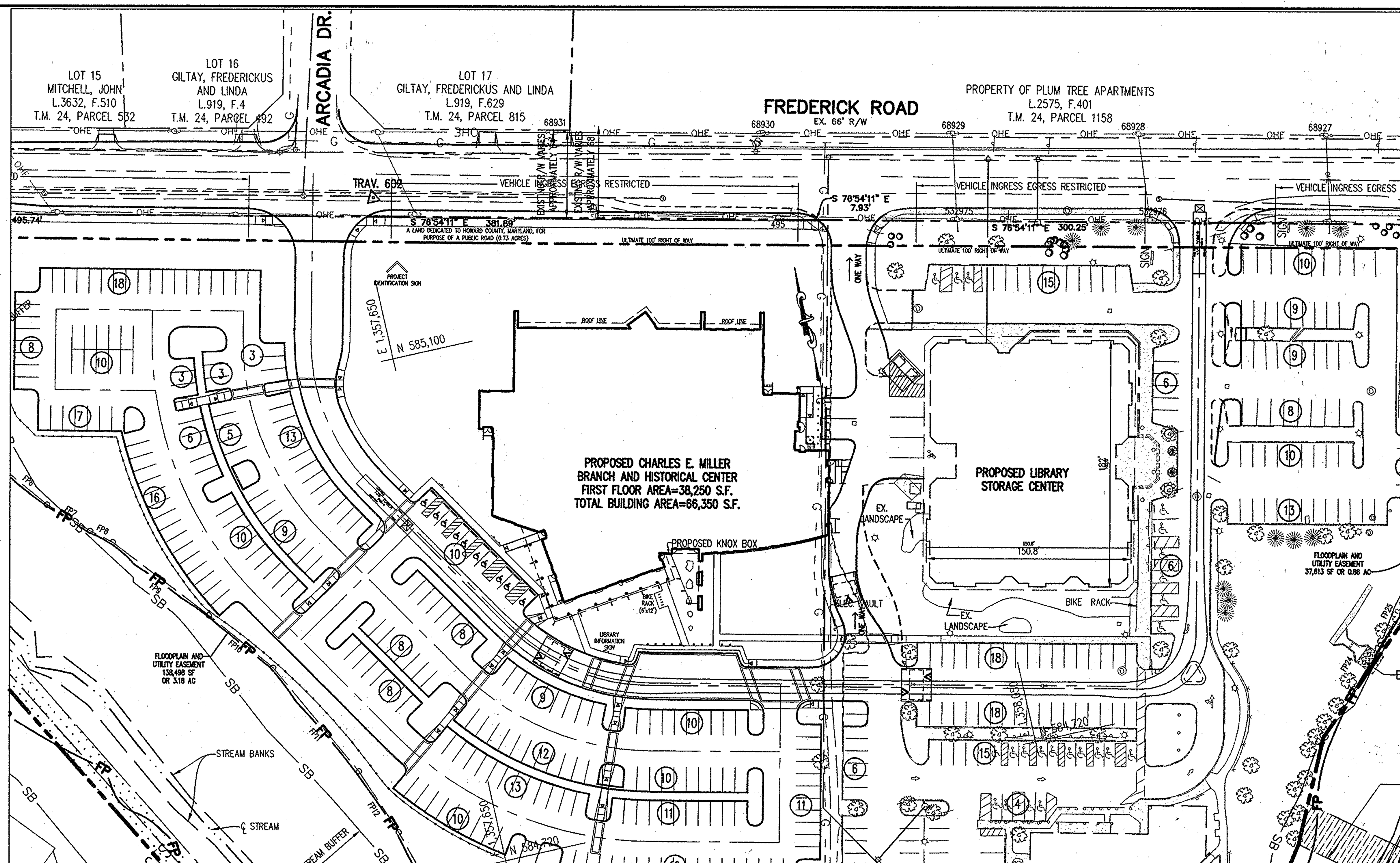
TITLE
FOREST CONSERVATION DETAILS

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
BY: [signature]
SCOTT R. WOLFORD, RLA #797
DNR QUALIFIED PROFESSIONAL

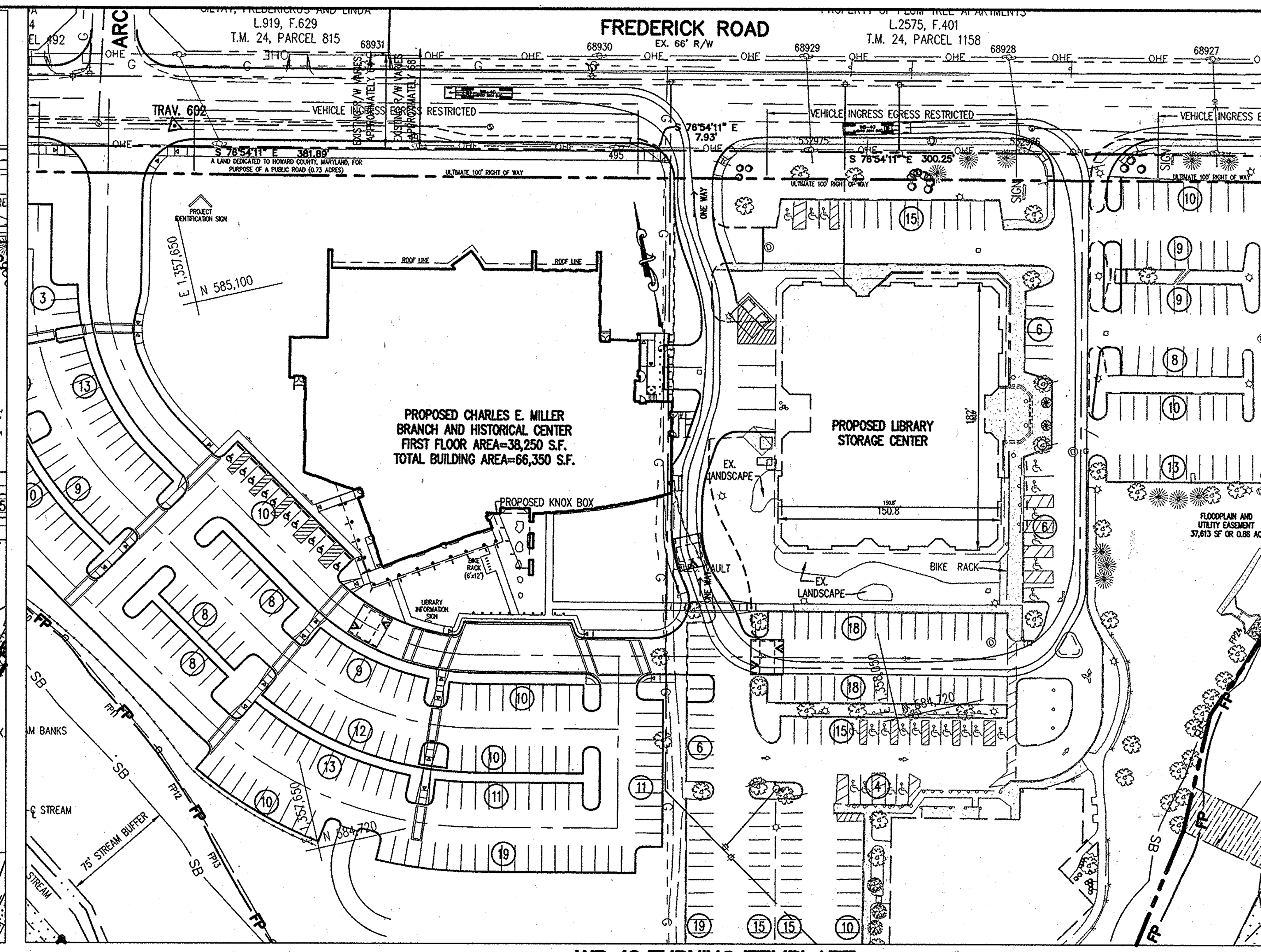
DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP24FFC.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 30' △3
DRAWING NO. 28 OF ~~60~~ 66

SDP-09-058



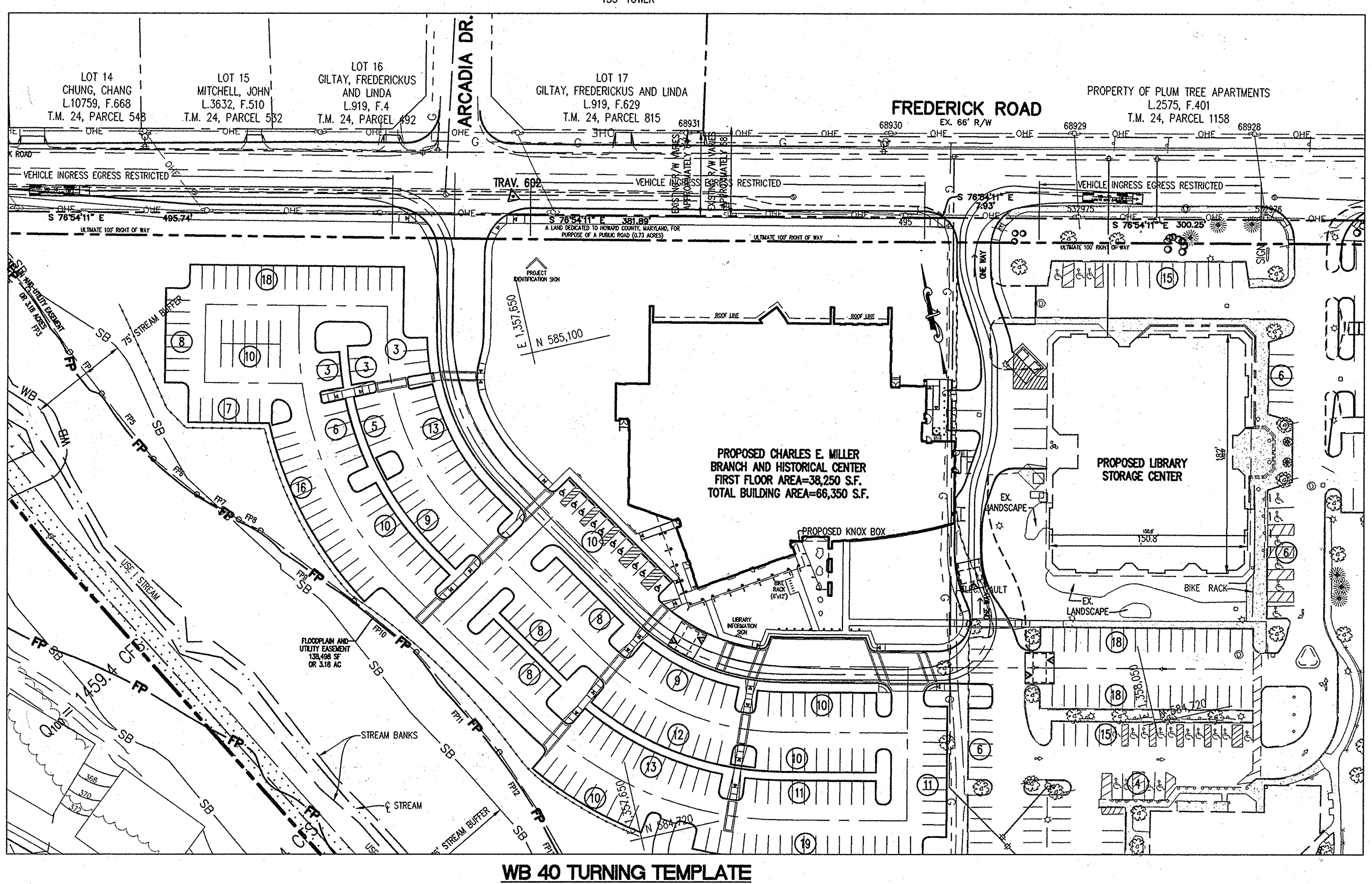
FIRE TRUCK TURNING TEMPLATE

135' TOWER



WB 40 TURNING TEMPLATE

ENTERING AT EXISTING SITE ENTRANCE AND LEAVING THROUGH LOADING AREA



WB 40 TURNING TEMPLATE

ENTERING AT NEW SITE ENTRANCE AND LEAVING THROUGH LOADING AREA

LEGEND

- PROPERTY LINE
- EXISTING TREELINE
- WETLANDS AND 25' BUFFER
- EX. STREAM AND BUFFER
- EX. 100-YEAR FLOODPLAIN
- EXISTING CONTOURS
- EXISTING BUILDING
- AREA TO BE PAVED ACCORDING TO P-3 STANDARD AS SHOWN ON DETAIL SHEET 11
- EXISTING SOILS
- EX. OVERHEAD POWER LINE
- EX. SEWER LINE
- EX. GAS LINE
- EX. TREES
- EX. CURB & GUTTER
- EX. EGDE OF PAVEMENT
- EX. PUBLIC DRAINAGE EASEMENT
- EX. SANITARY SEWER EASEMENT

SCALE 1"=60'

GRAPHIC SCALE 1"=60'

30' 0' 60' 120'

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 3/15/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/15/10

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
TRUCK TURNING TEMPLATE SHEET

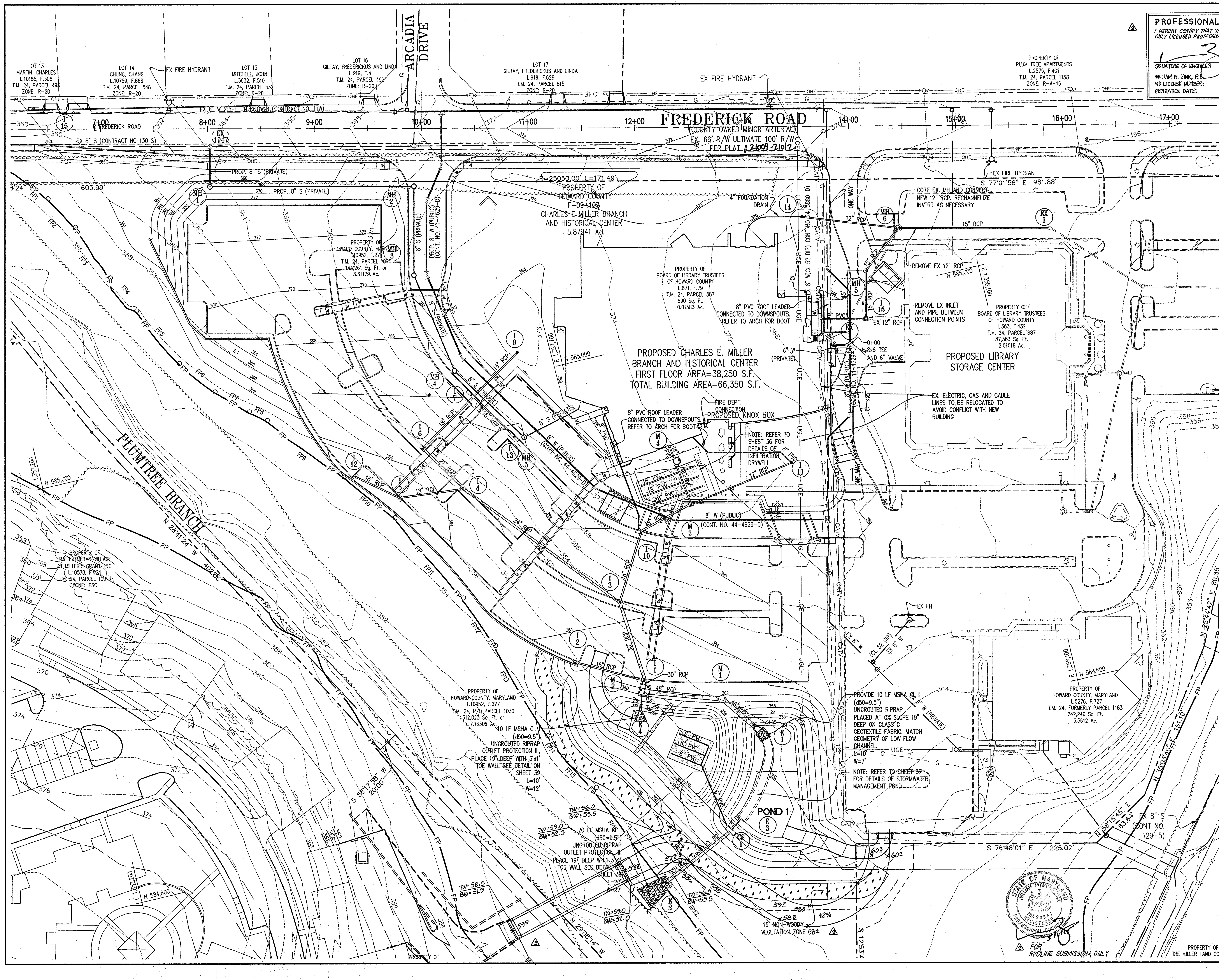
Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND — JOHN CLAPSADDLE — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010.

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP25TTT.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 60'
DRAWING NO. 29 OF 66

SDP-09-058



PROFESSIONAL CERTIFICATION

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

SIGNATURE OF ENGINEER — DATE: 02-06-2015

WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR	DATE 3/15/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/8/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/15/10

DATE	NO.	REVISION
02/2015	△	REDLINE REVISION – PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT **CHARLES E. MILLER BRANCH AND HISTORICAL CENTER**
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

UTILITY PLAN

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND — JOHN W. CLAPSADDLE — No. 16956 — REGISTERED PROFESSIONAL ENGINEER

BY:

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JWC
DRAWN BY: JWC/SGM
PROJECT NO : 15976-1-0 C-SDP30STM.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 30 OF ~~60~~ 66

SDP-09-058

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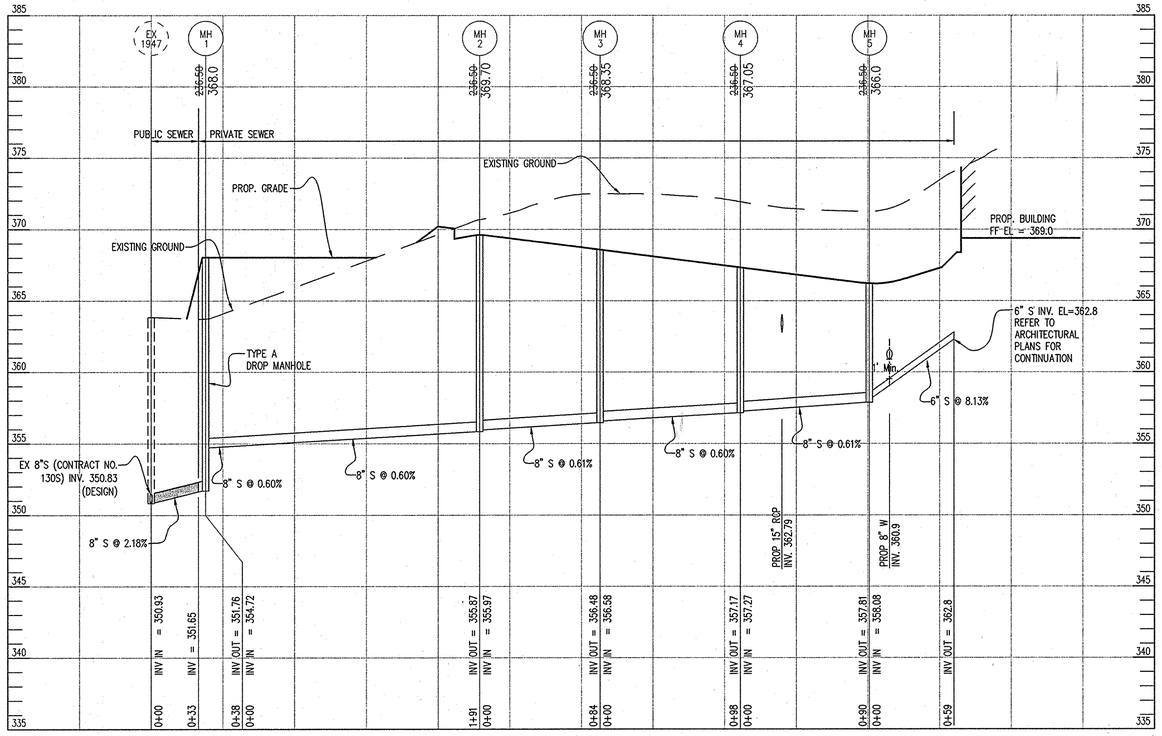
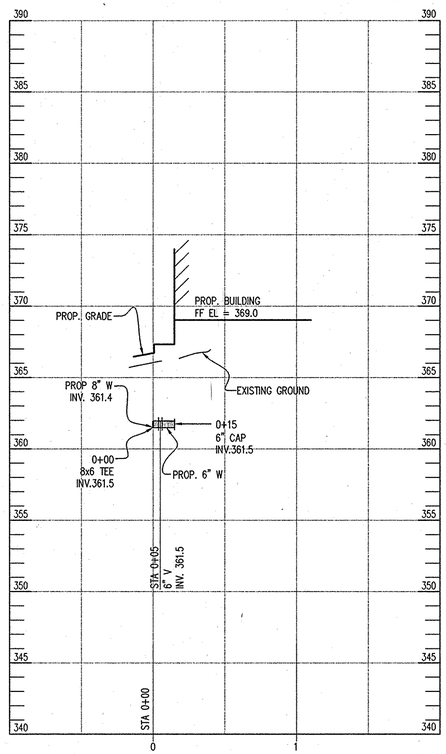


PUBLIC SEWER PROFILE

SCALE : HOR: 1"=50' – VERT: 1"=5'

PRIVATE SEWER PROFILE

SCALE : HOR: 1"=50' – VERT: 1"=5'



WATER HOUSE CONNECTION PROFILE

SCALE : HOR: 1"=50' VERT: 1"=5'

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas J. Butler 3/15/10
DIRECTOR DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 3/8/10

Kent Sheubrooks 3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043–4105

TENANTS HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410–313–4600

PROJECT **CHARLES E. MILLER BRANCH AND HISTORICAL CENTER**
BUILDABLE PARCEL A AND NON–BUILDABLE BULK PARCEL B
PLAT # 20062102

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **PRIVATE WATER AND SEWER PROFILES**

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND — JOHN W. CLARKSON — No. 16956 — REGISTERED PROFESSIONAL ENGINEER
BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976–1–0 C–SDP31PRO.DWG
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 31 OF 80

SDP–09–058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP31PRO.DWG

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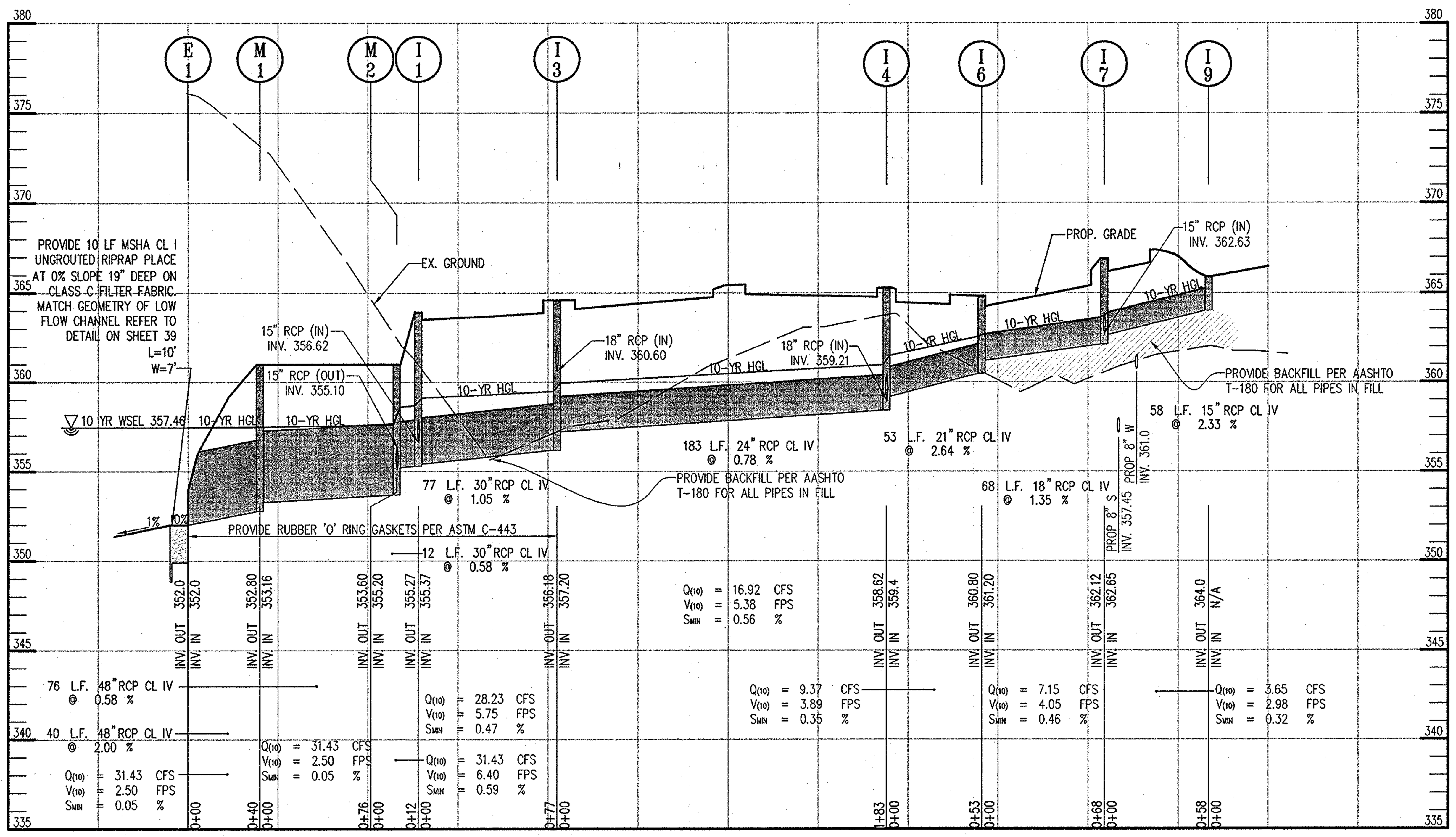
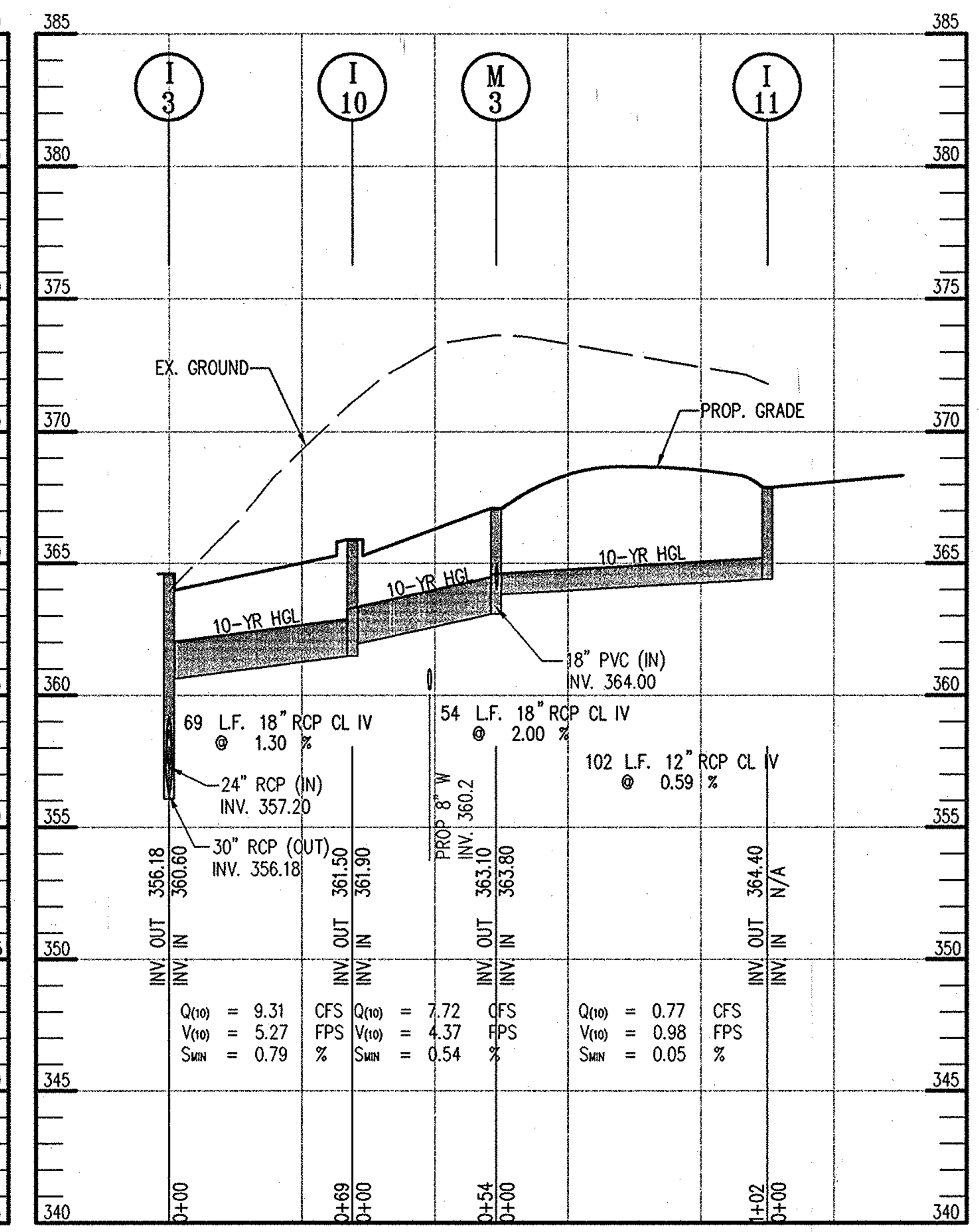


STORM DRAIN PROFILE

SCALE : HOR: 1"=50'
VERT: 1"=5'



STORM DRAIN PROFILE

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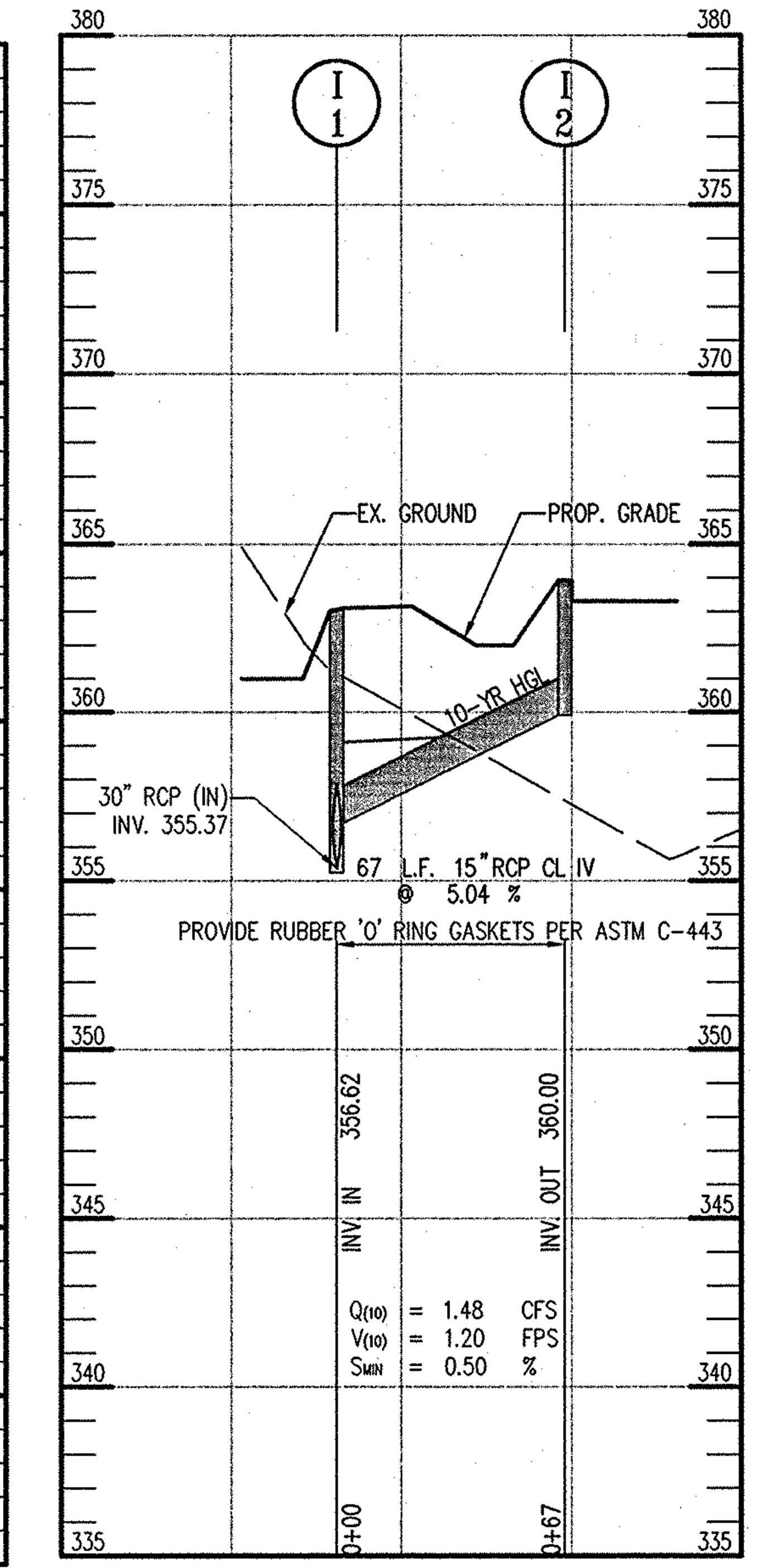

STORM DRAIN PROFILE

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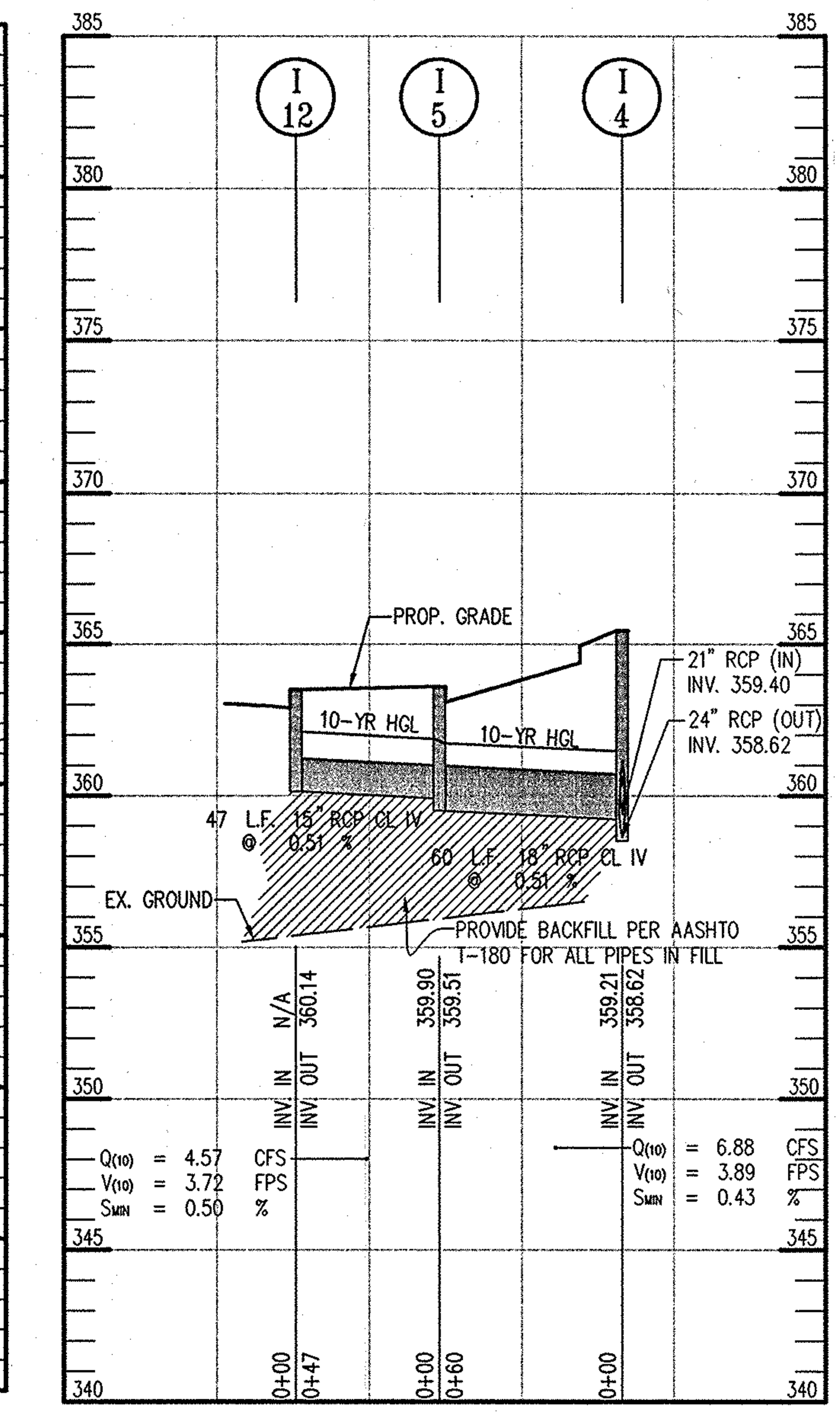
VERT: 1"=5'



STORM DRAIN PROFILE

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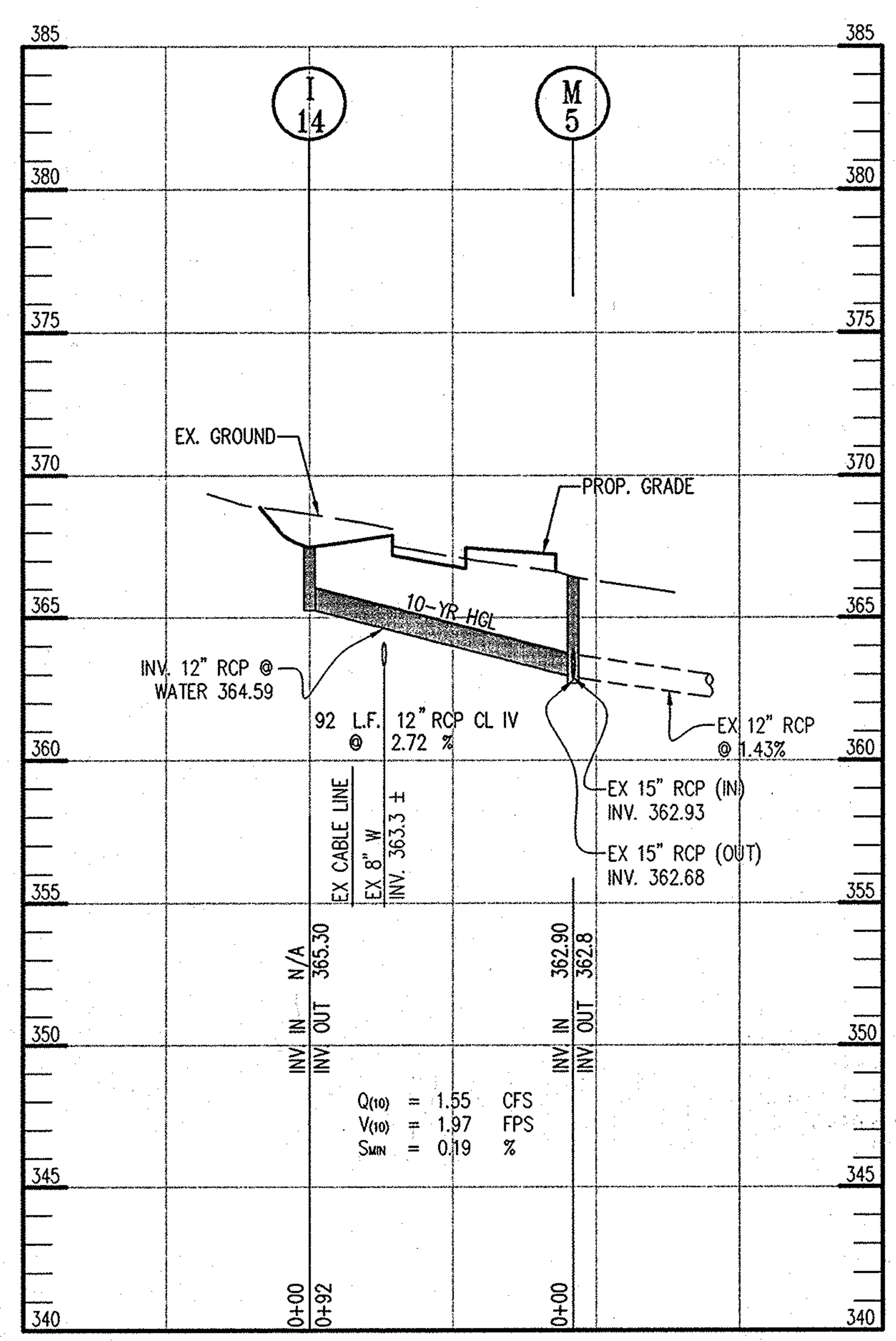
VERT: 1"=5'



STORM DRAIN PROFILE

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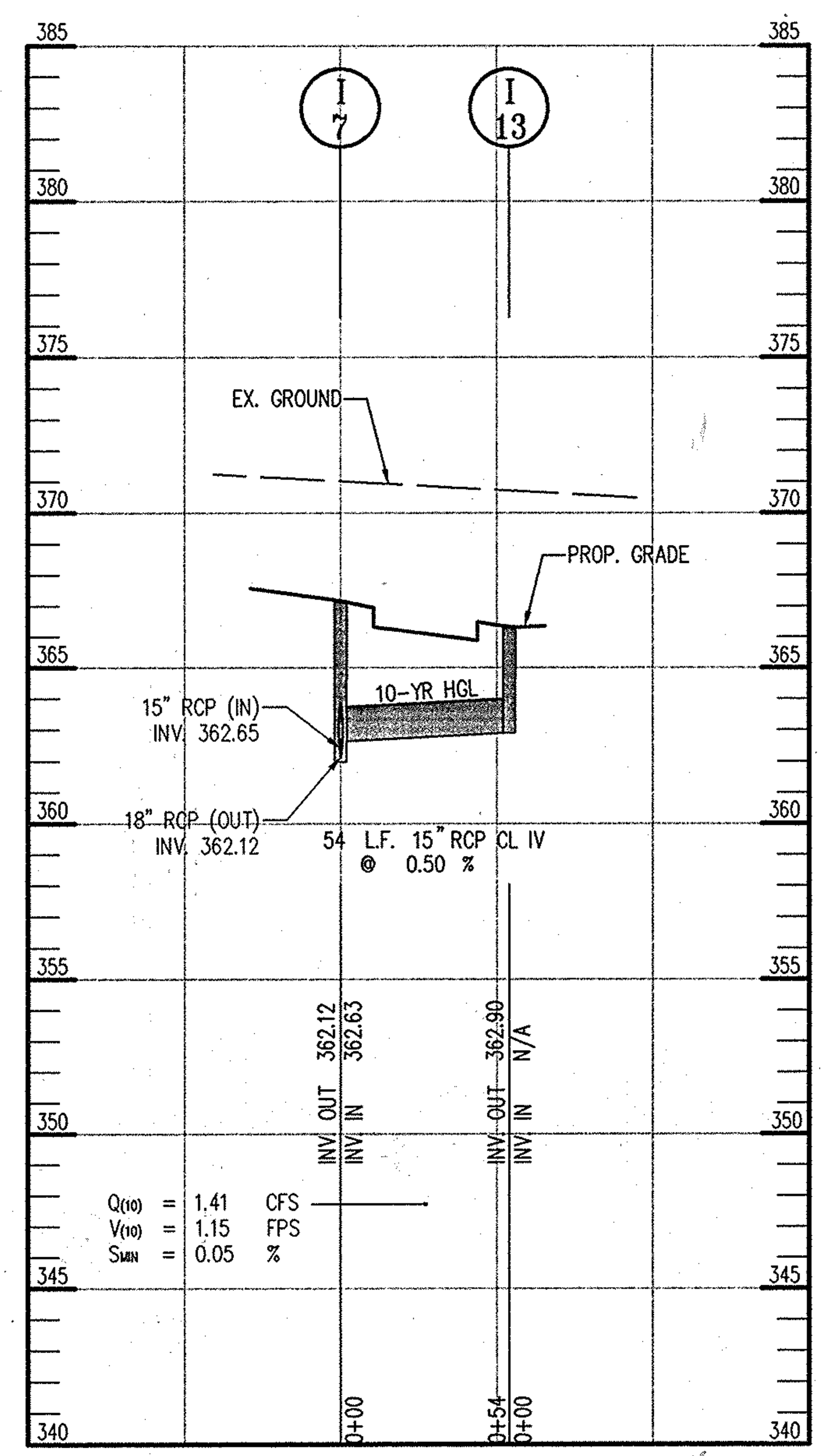

STORM DRAIN PROFILE

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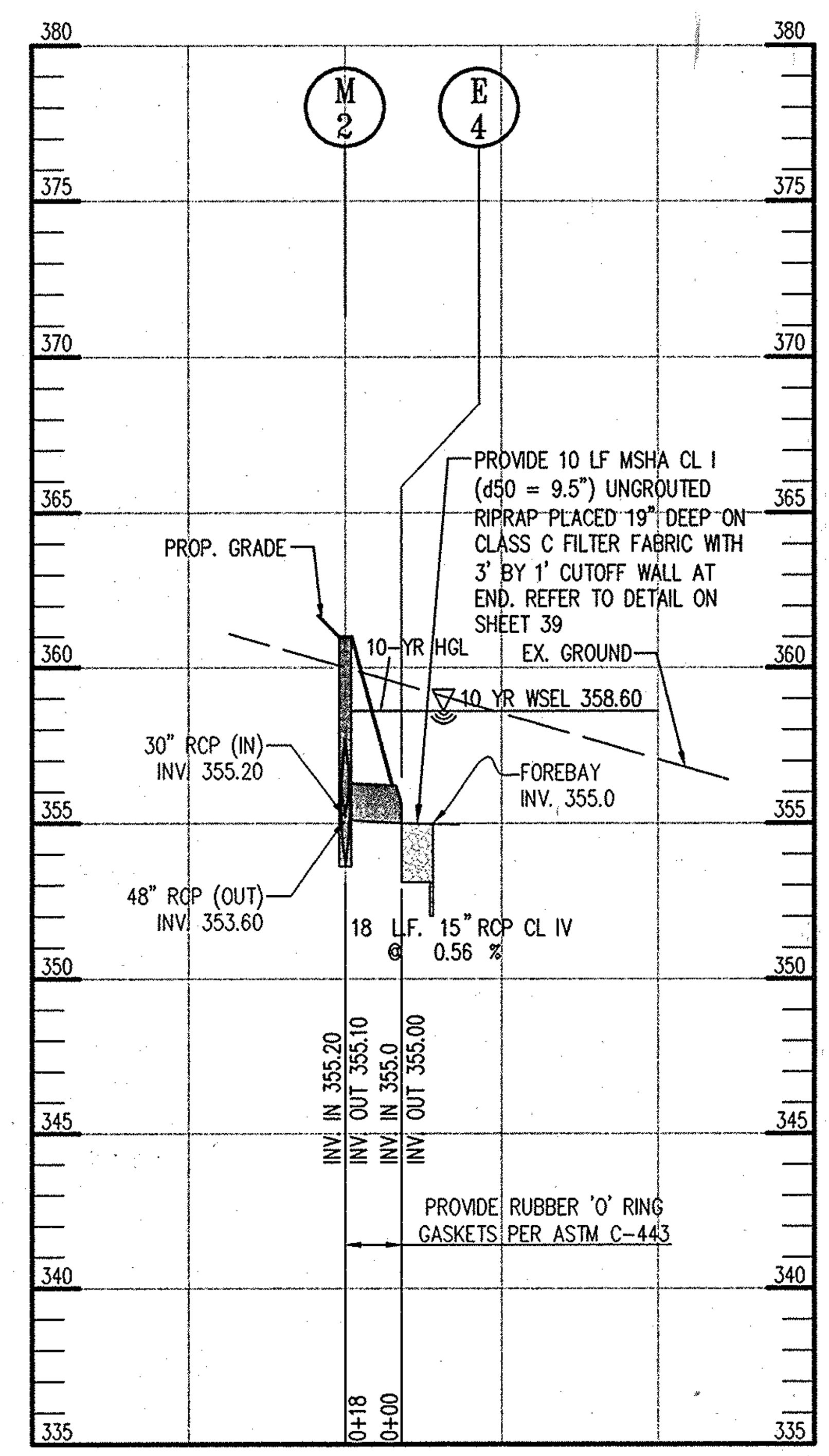
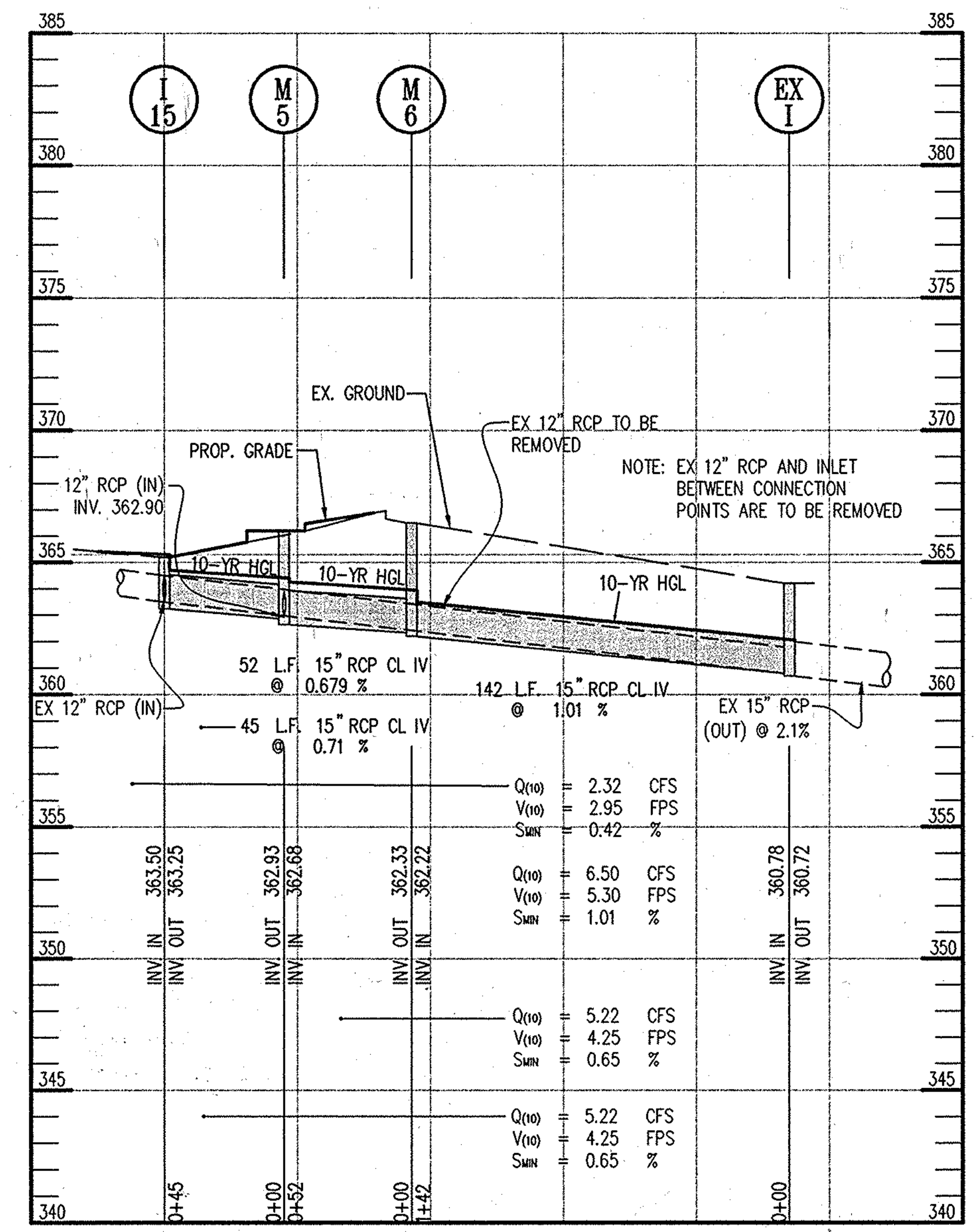
VERT: 1"=5'



STORM DRAIN PROFILE

SCALE : HOR: 1"=50'
VERT: 1"=5'



STORM DRAIN PROFILE

SCALE : HOR: 1"=50'
VERT: 1"=5'

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas J. Butler 3/15/10
DIRECTOR — DATE

3/15/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21006-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

STORM DRAIN PROFILES

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND — PROFESSIONAL ENGINEER
BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE 06/08/2010."

DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP32PRO.DWG
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 32 OF 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP32PRO.DWG

STRUCTURE SCHEDULE

STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP ELEVATION		SIZE	REMARKS
					UPPER	LOWER		
I-1	A-5 INLET	N 584695.1502 E 1357706.0934	355.40	355.30	363.10	363.10	W = 3'-6"	HOWARD COUNTY STD DETAIL SD-4.01
I-2	A-5 INLET	N 584702.2970 E 1357689.8219	355.83	355.50	363.93	363.93	W = 3'-6"	HOWARD COUNTY STD DETAIL SD-4.01
I-3	A-5 INLET	N 584772.0177 E 1357701.3143	357.20	356.18	364.60	364.60	W = 3'-0"	HOWARD COUNTY STD DETAIL SD-4.01
I-4	A-5 INLET	N 584845.2553 E 1357624.4994	18" - 359.21 21" - 359.40	358.62	364.9	364.9	W = 3'-6"	HOWARD COUNTY STD DETAIL SD-4.01
I-5	A-5 INLET	N 584913.6990 E 1357523.6699	359.90	359.51	363.60	363.60	W = 3'-6"	HOWARD COUNTY STD DETAIL SD-4.01
I-6	A-5 INLET	N 584954.5122 E 1357555.9155	361.20	360.80	365.10	365.10	W = 2'-6"	HOWARD COUNTY STD DETAIL SD-4.01
I-7	A-5 INLET	N 584993.5994 E 1357611.6688	362.65	362.12	367.30	367.15	W = 2'-6"	HOWARD COUNTY STD DETAIL SD-4.01
I-9	YARD INLET	N 585021.0221 E 1357661.4002	N/A	364.00	366.20	366.20	DIA = 24"	HOWARD COUNTY STD DETAIL SD-4.14
I-10	A-10 INLET	N 584830.7221 E 1357735.6332	361.90	361.50	365.90	365.90	W = 2'-6"	HOWARD COUNTY STD DETAIL SD-4.03
I-11	YARD INLET	N 584860.3988 1357887.0915	N/A	364.40	367.90	367.90	DIA = 24"	HOWARD COUNTY STD DETAIL SD-4.14
I-12	A-5 INLET	N 584944.6265 E 1357486.1529	N/A	360.14	363.50	363.50	W = 2'-6"	HOWARD COUNTY STD DETAIL SD-4.01
I-13	A-10 INLET	N 584945.3066 E 1357641.9475	N/A	362.90	366.36	366.36	W = 2'-6"	HOWARD COUNTY STD DETAIL SD-4.03
I-14	YARD INLET	N 585083.1391 E 1357949.9505	N/A	365.30	367.50	367.50	DIA = 24"	HOWARD COUNTY STD DETAIL SD-4.14
I-15	TYPE "S" INLET	N 584975.82226 E 1357986.2263	363.50	363.25	365.20	365.20	2'-7"x2'-7"	HOWARD COUNTY STD DETAIL D-4.22
M-1	PRECAST MH	N 584659.5181 E 1357772.6540	353.16	352.80	361.00	361.00	DIA = 6'	PRE-CAST 72" MANHOLE
M-2	PRECAST MH	N 584683.8731 E 1357701.3704	355.20	353.60	361.00	361.00	10' x 10' SQ	SPECIAL DESIGN SEE SHEET 36
M-3	PRECAST MH	N 584874.0450 E 1357779.3859	363.80	363.10	367.10	367.10	DIA = 4'	HOWARD COUNTY STD DETAIL G-5.12
M-4	VORT SENTRY	N 584895.7778 E 1357780.2503	364.21	364.21	368.50	368.50	DIA = 6'	VORT SENTRY (SEE NOTE 6)
M-5	PRECAST MH	N 585004.22 E 1357992.85	362.93	362.68	366.5	366.5	DIA = 4'	HOWARD COUNTY STD DETAIL G-5.12
M-6	PRECAST MH	N 585004.22 E 1357992.85	362.33	362.22	366.50	366.50	DIA = 4'	HOWARD COUNTY STD DETAIL G-5.12
E-1	END SECTION	N 584627.1549 E 1357795.9932	N/A	352.0	N/A	N/A	48"	HOWARD COUNTY STD DETAIL D-5.51
E-2	END SECTION	N 584627.1549 E 1357795.9932	N/A	350.0	N/A	N/A	30"	HOWARD COUNTY STD DETAIL D-5.51
E-3	TYPE "C" END WALL	N 584627.1549 E 1357795.9932	351.0	N/A	N/A	N/A	12"	MODIFIED HOWARD CO. STD DETAIL D-5.21 (SEE NOTE 5)
E-4	END SECTION	N 584627.1549 E 1357795.9932	N/A	355.0	N/A	N/A	15"	HOWARD COUNTY STD DETAIL D-5.51

STRUCTURE SCHEDULE NOTES

1) ALL STRUCTURES ARE HOWARD COUNTY DPW STANDARDS UNLESS NOTED OTHERWISE. CONTRACTOR MAY USE PRECAST STRUCTURE WHERE AVAILABLE TO MEET THE STANDARD STRUCTURE SPECIFIED.

2) COORDINATES ARE GIVEN TO CENTER OF STRUCTURE AT FACE OF CURB FOR CURB INLETS, TO CENTER OF STRUCTURE FOR MANHOLES AND YARD INLETS, AND TO CENTER OF STRUCTURE AT DOWNSTREAM END FOR END SECTION.

3) ELEVATIONS ARE GIVEN TO TOP OF CURB AT UPPER AND LOWER ENDS FOR CURB INLETS, TOP OF GRATE FOR GRATE INLETS AND TOP OF LID FOR MANHOLES.

4) PIPE LENGTHS ARE GIVEN TO THE CENTER OF THE STRUCTURE. CONTRACTOR SHALL A LENGTH TO OBTAIN ACTUAL PIPE LENGTHS.

5) MODIFY END WALL DIMENSION B TO BE 1'-10" TO ACCOMMODATE TRASH RACK.

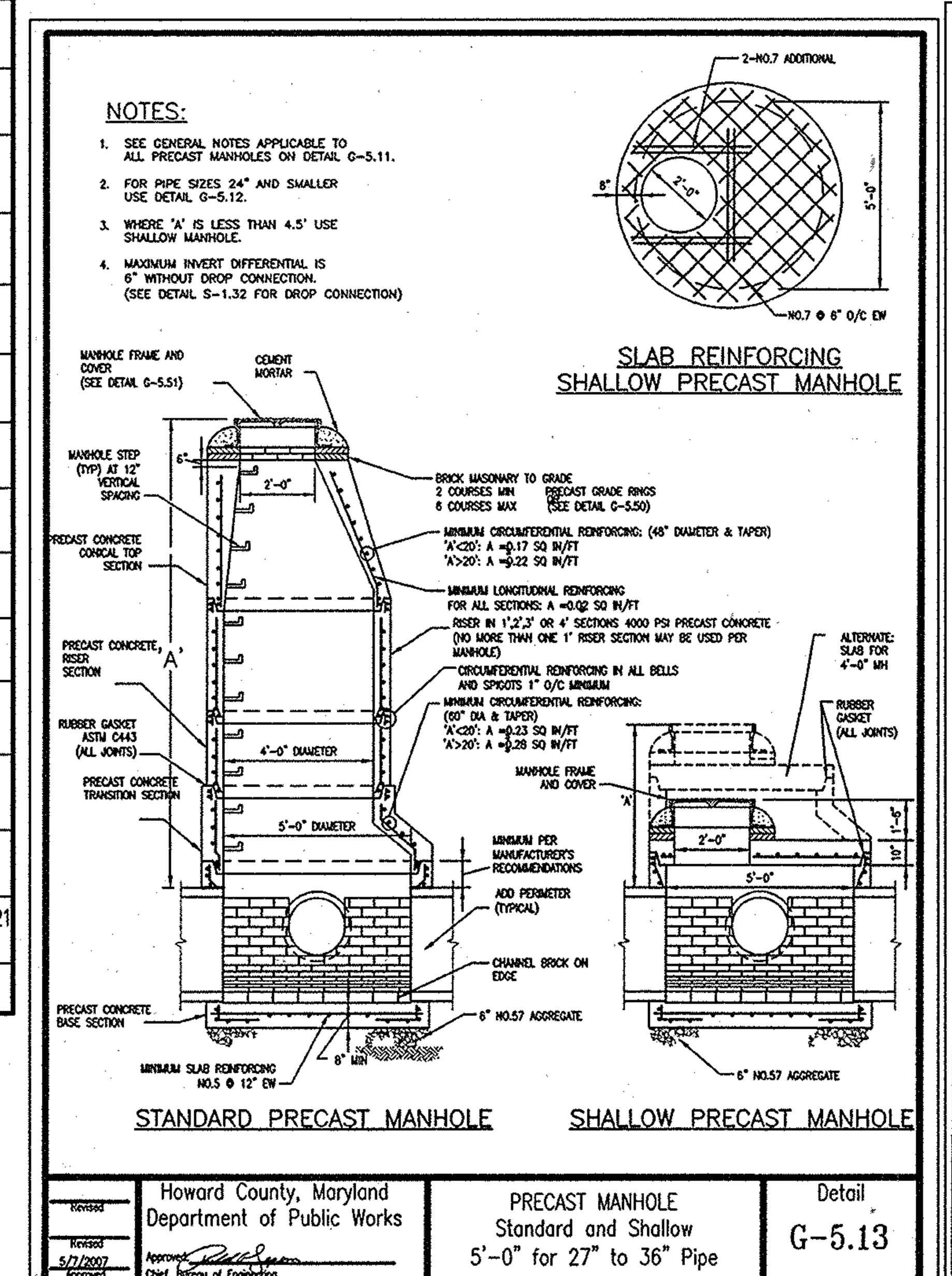
6) REFER TO SHEET 39 FOR DETAILS

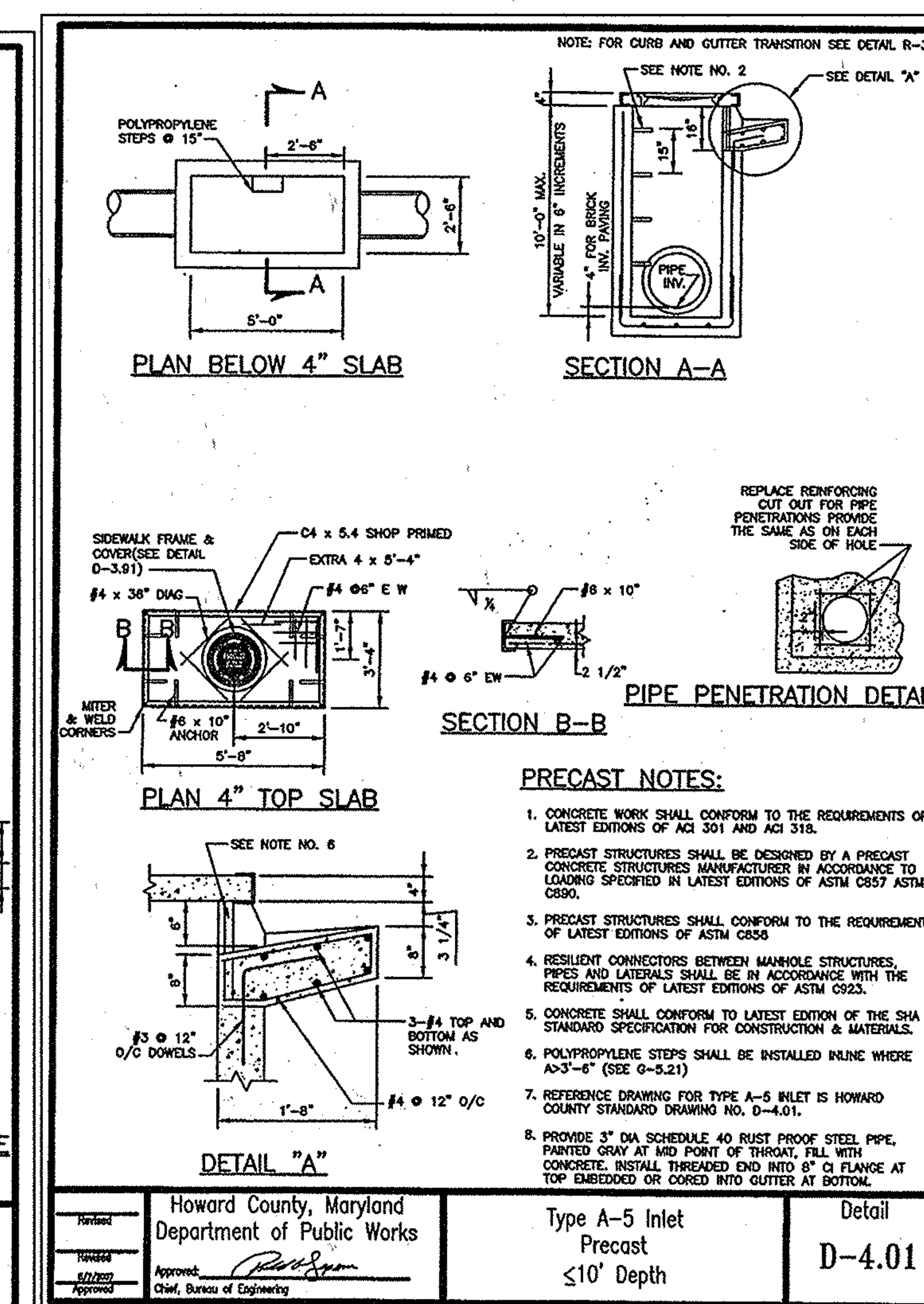
PIPE SCHEDULE

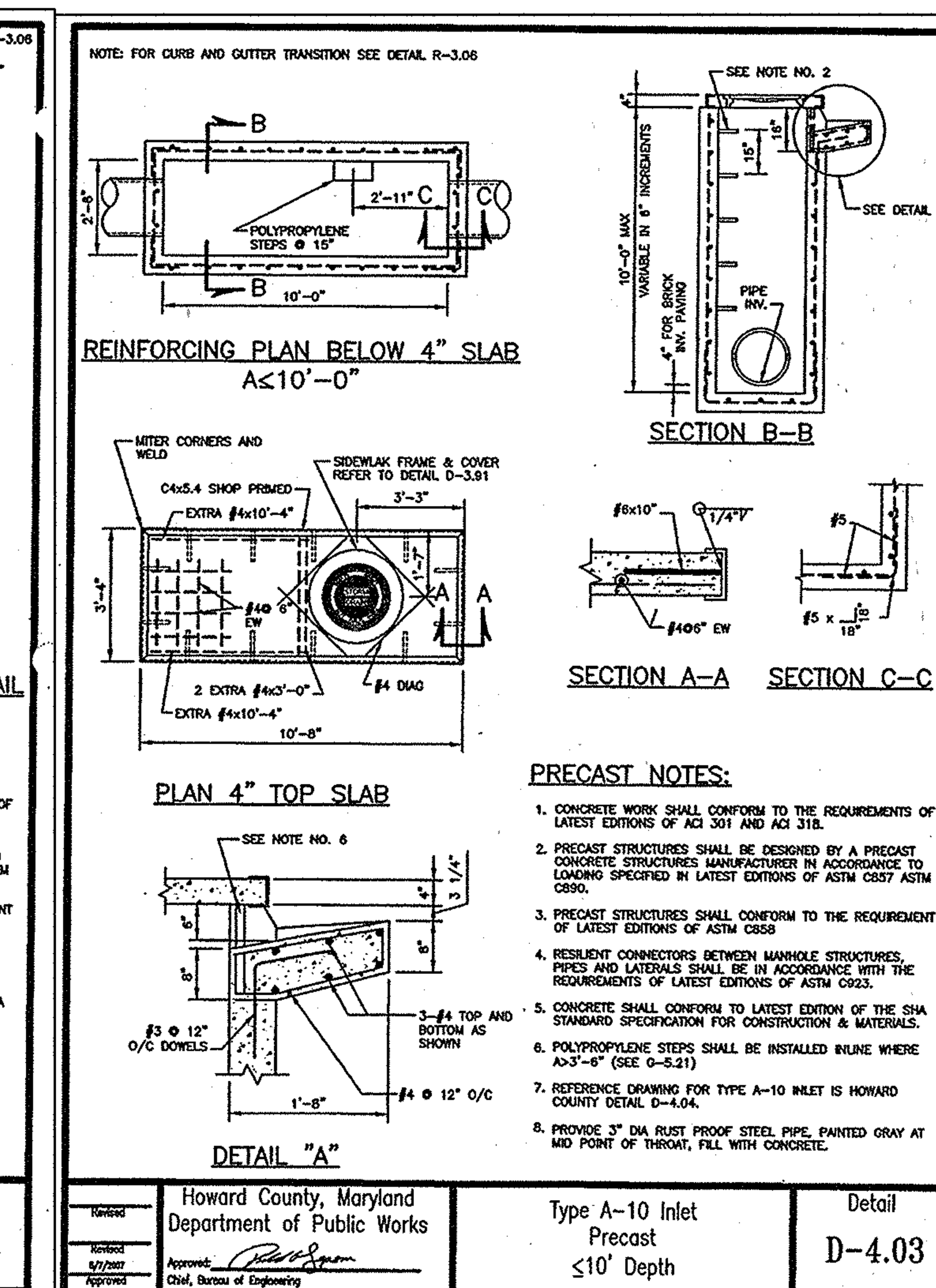
SIZE	TYPE	LINEAR FOOTAGE
6"	PVC SCH 40 (SOLID)	65
6"	PVC SCH 40 (PERFORATED)	107
18"	PVC SCH 40 (SOLID)	58
12"	RCP CL IV	86
18"	PVC SCH 40 (PERFORATED)	157
15"	RCP CL IV	285
18"	RCP CL IV	251
21"	RCP CL IV	53
24"	RCP CL IV	183
30"	RCP CL IV	264
30"	RCP ASTM C-361 CL B2	81
48"	RCP CL IV	116

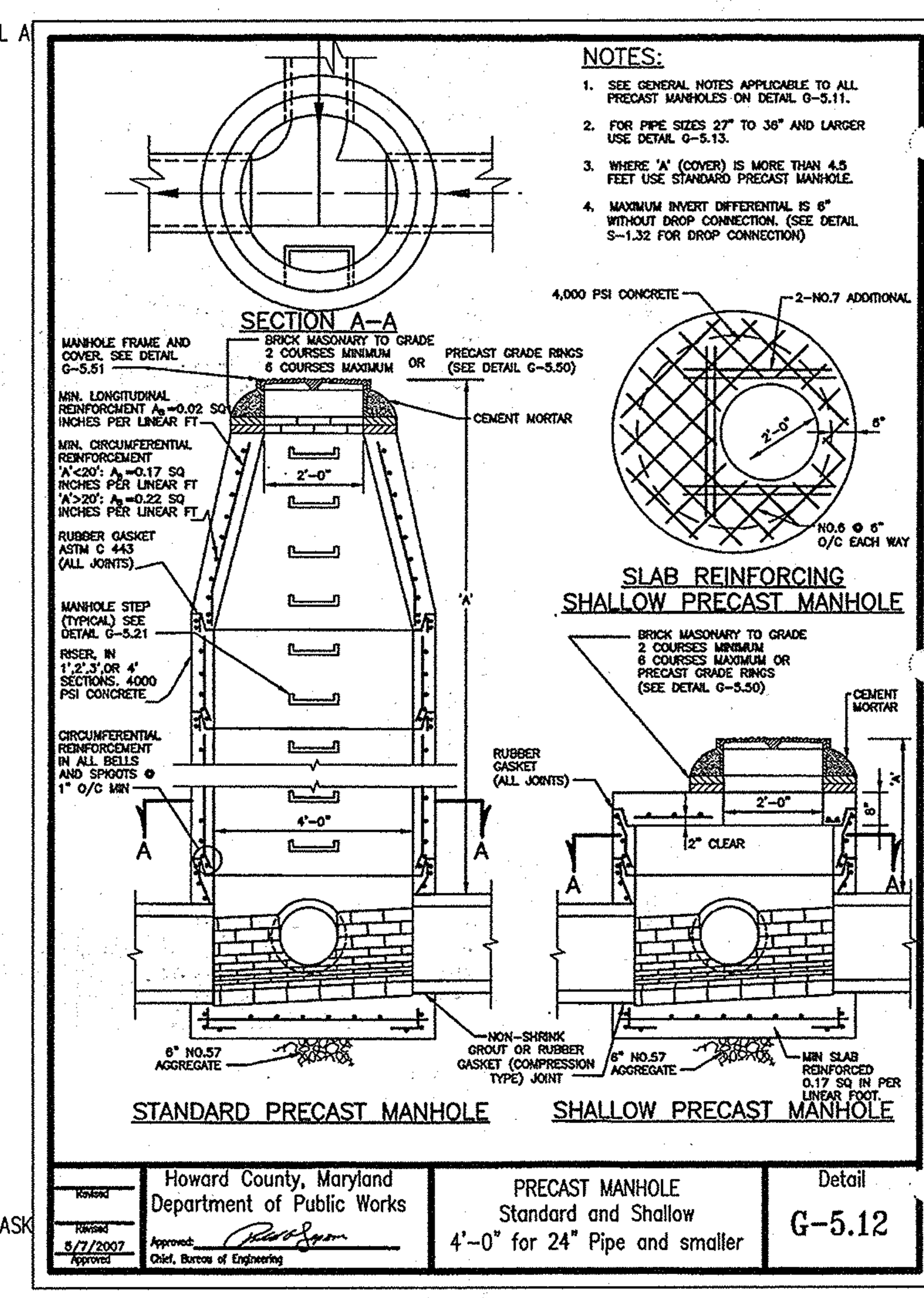
PIPE SCHEDULE NOTES

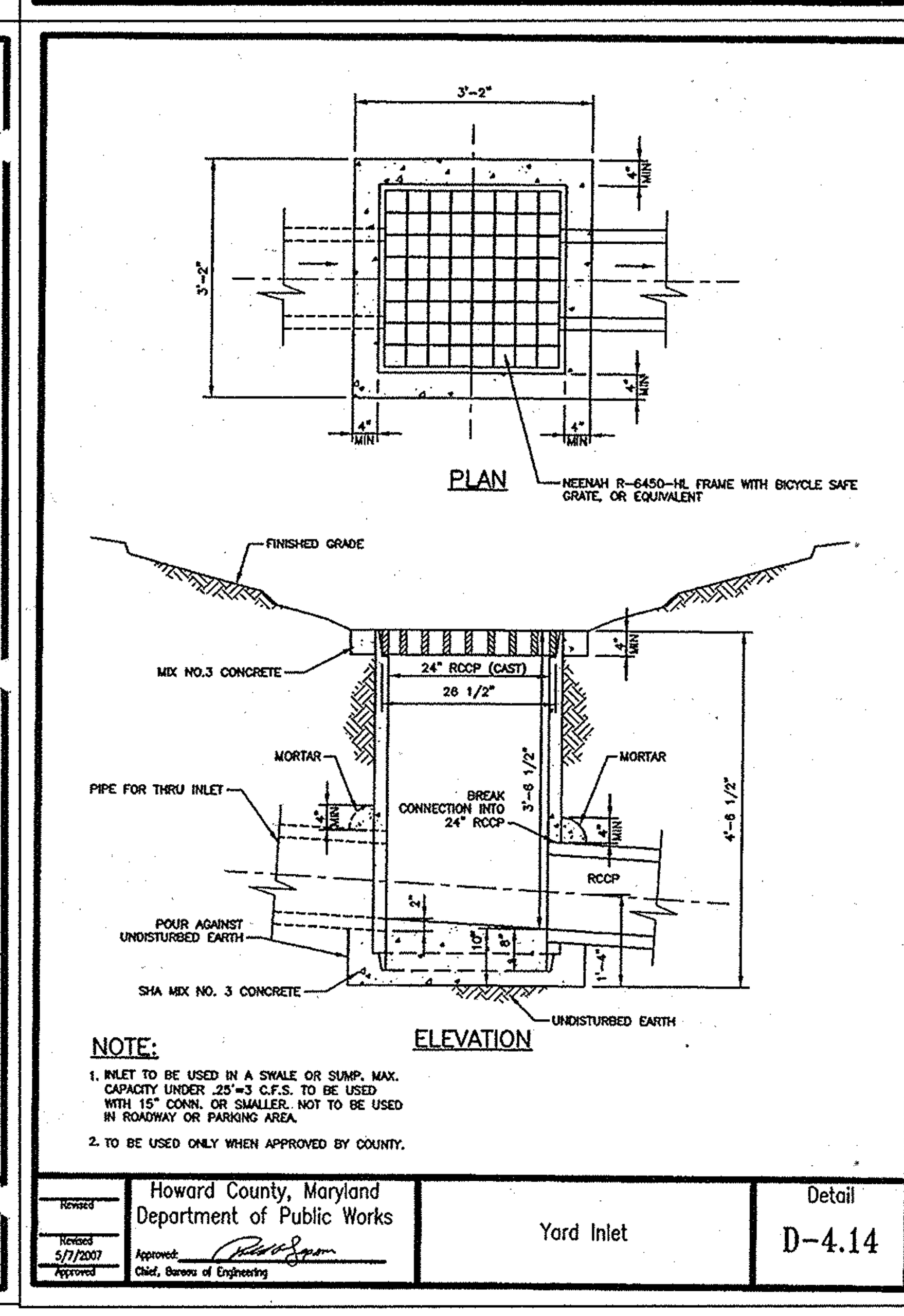
1) REFER TO PROFILES FOR LOCATIONS WHERE PIPE MUST INCLUDE RUBBER 'O' RING GASK ASTM C-443.

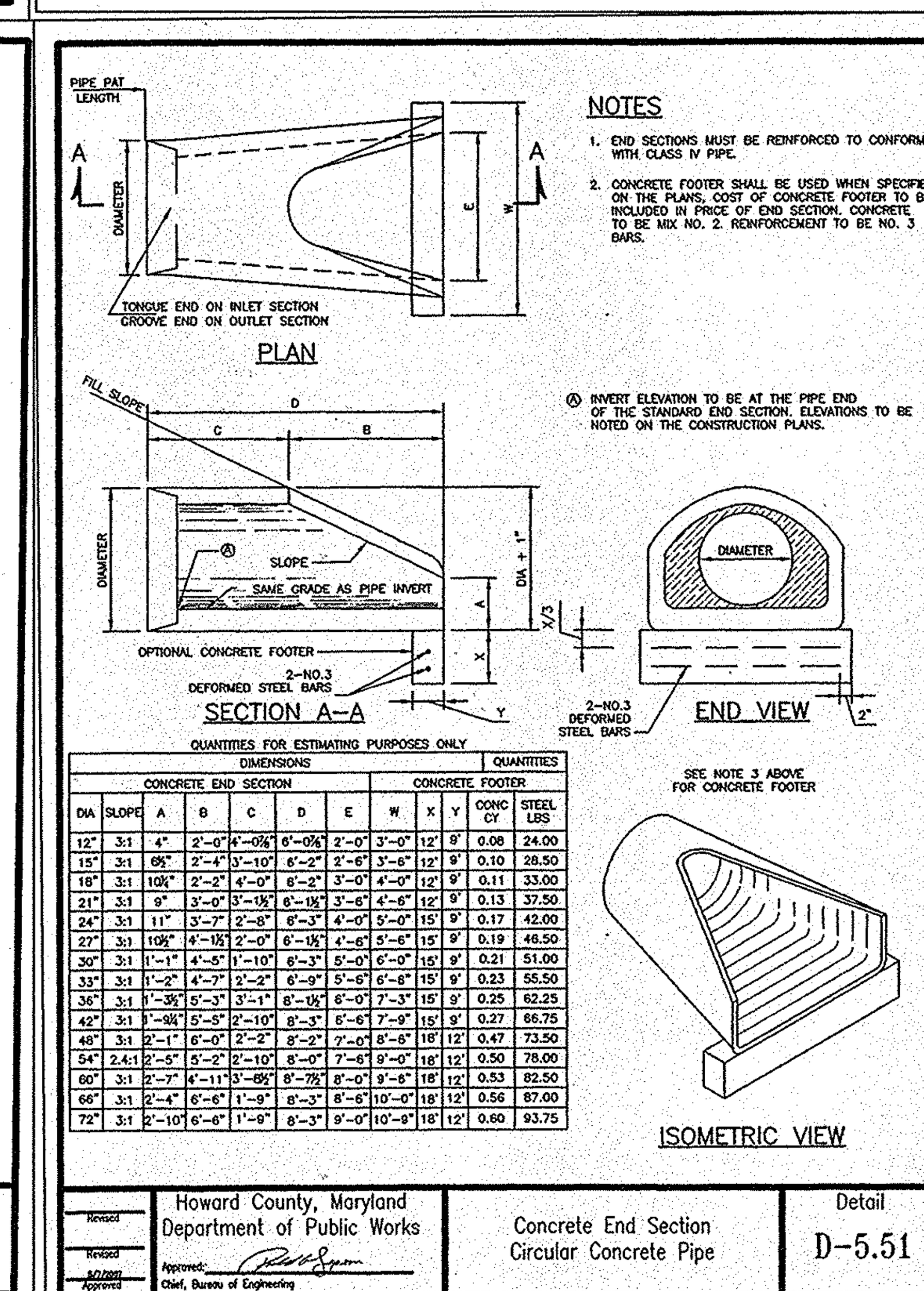


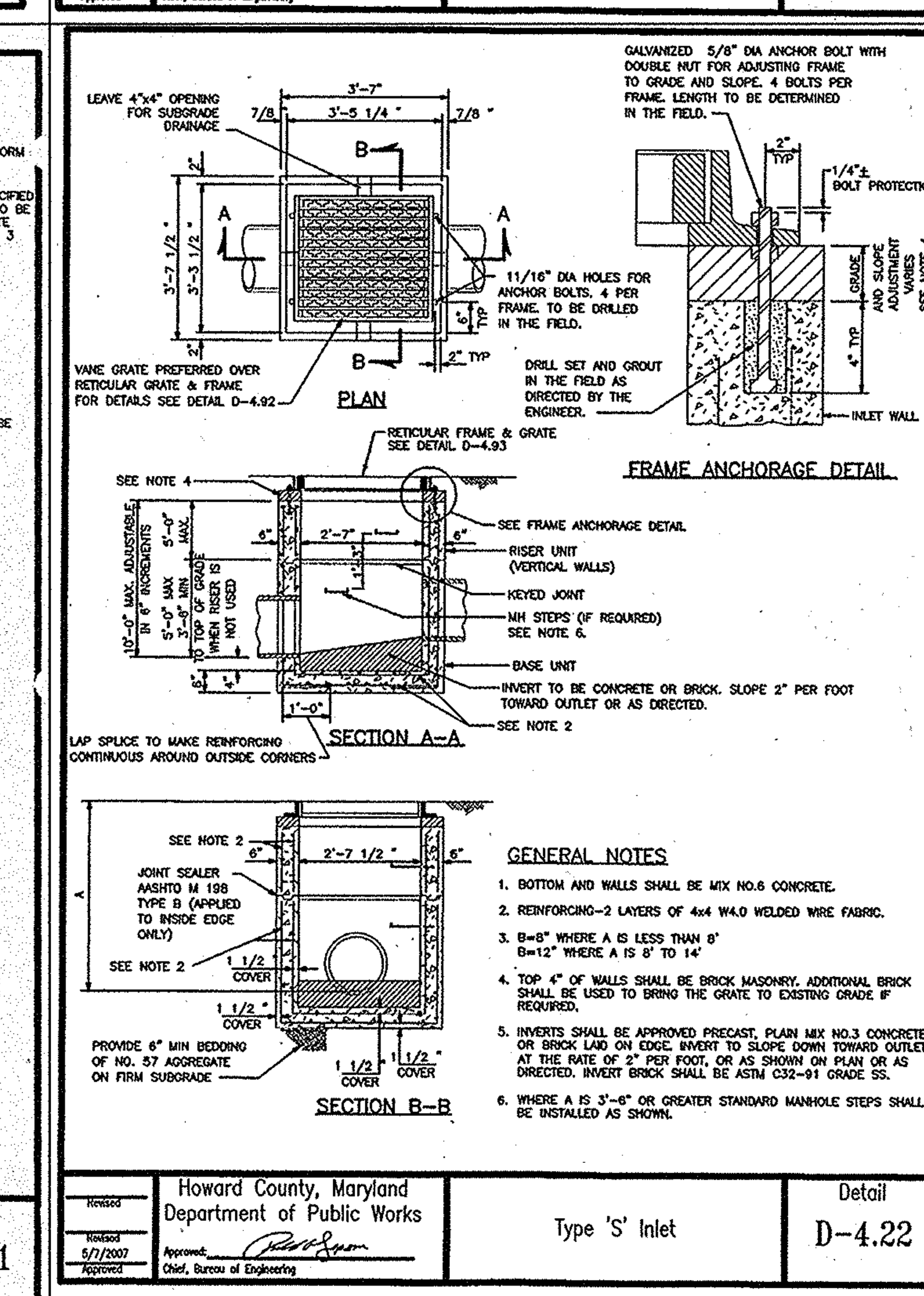












APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR 3/15/10 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 3/8/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 3/15/10 DATE

DATE	NO.	REVISION

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ELLICOTT CITY, MD 21043-4105

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HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE STRUCTURE AND PIPE SCHEDULE AND STORM DRAIN DETAILS

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND JOHN W. CLAPSADDLE NO. 16956 REGISTERED PROFESSIONAL ENGINEER

BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

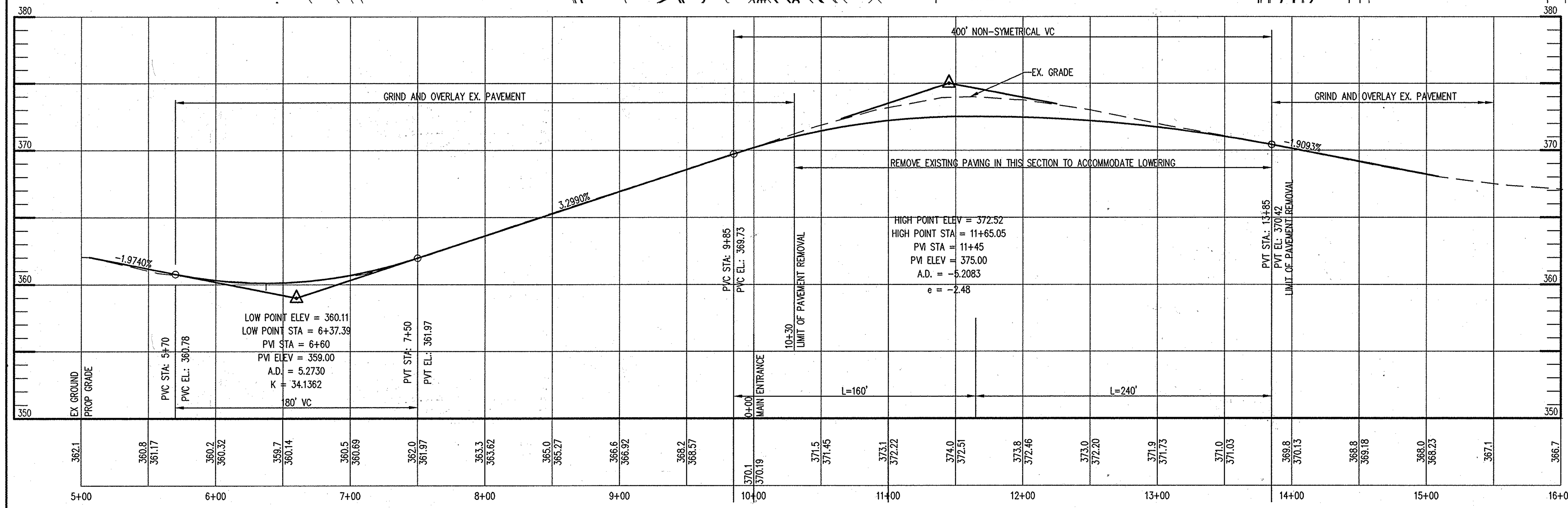
DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP33DET.DWG
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 33 OF 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP33DET.DWG

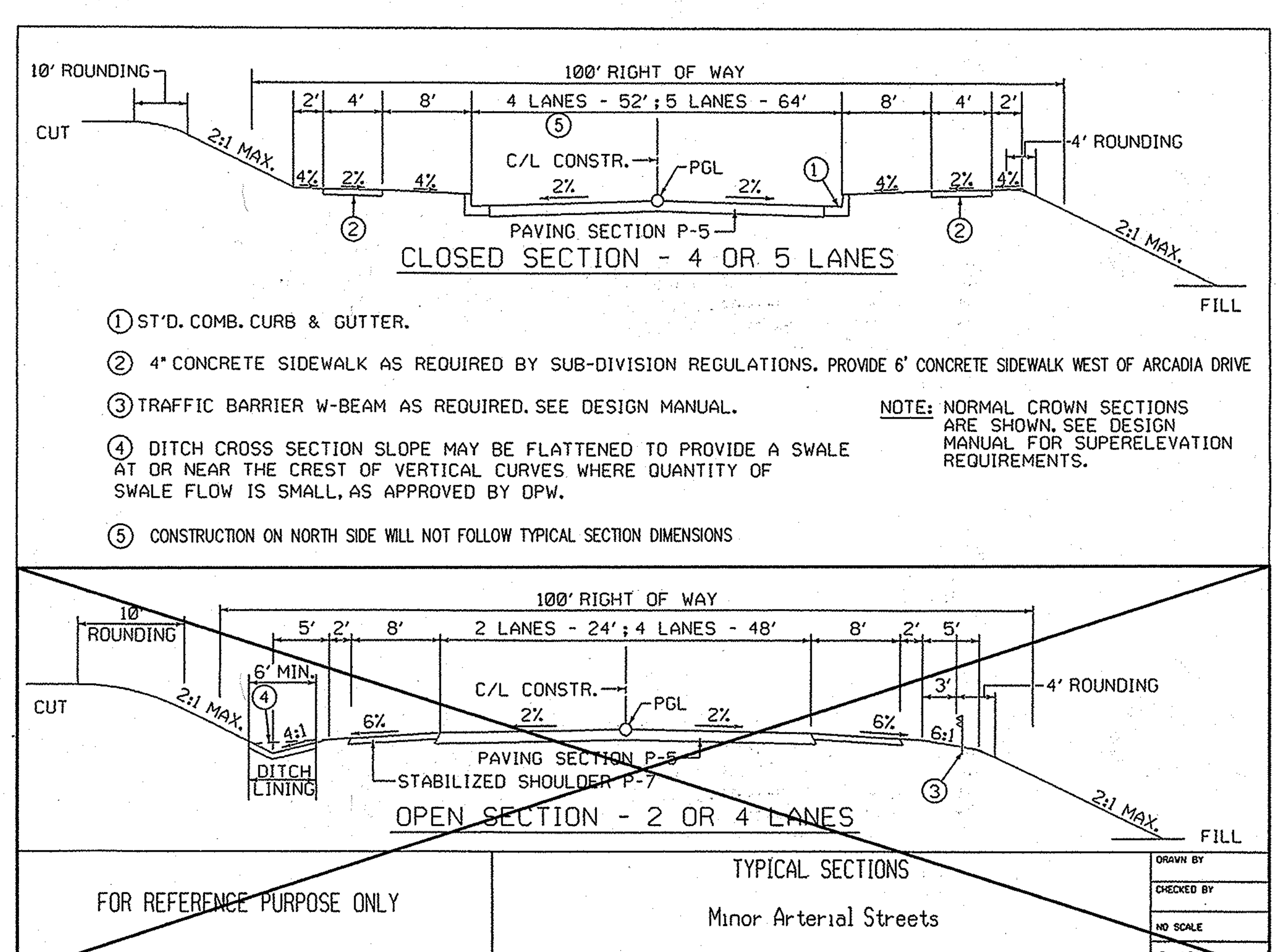
PAVING PLAN

SCALE : 1"=50'



FREDERICK ROAD

SCALE : HOR: 1"=50'
VERT: 1"=5'



① ST'D. COMB. CURB & GUTTER.

② 4" CONCRETE SIDEWALK AS REQUIRED BY SUB-DIVISION REGULATIONS. PROVIDE 6' CONCRETE SIDEWALK WEST OF ARCADIA DRIVE

③ TRAFFIC BARRIER W-BEAM AS REQUIRED. SEE DESIGN MANUAL.

④ DITCH CROSS SECTION SLOPE MAY BE FLATTENED TO PROVIDE A SWALE AT OR NEAR THE CREST OF VERTICAL CURVES WHERE QUANTITY OF SWALE FLOW IS SMALL, AS APPROVED BY DPW.

⑤ CONSTRUCTION ON NORTH SIDE WILL NOT FOLLOW TYPICAL SECTION DIMENSIONS

NOTE: NORMAL CROWN SECTIONS ARE SHOWN. SEE DESIGN MANUAL FOR SUPERELEVATION REQUIREMENTS.

LEGEND

- (500) COORDINATE NUMBER
- [1] CENTER LINE CURVE NUMBER
- P-5 PAVING (REFER TO DETAIL ON SHEET 17)
- GRIND AND OVERLAY EXISTING PAVING
- CONCRETE SIDEWALK
- ASPHALT DEMOLITION
- ASPHALT SIDEWALK
- FILLET PROFILE NO.
- CORE-1 PAVEMENT CORE
- TH3 TEST HOLE

COORDINATE DATA TABLE

POINT NO.	NORTHING	EASTING	REMARKS
500	585362.5640	1357136.3046	CENTERLINE OF FREDERICK ROAD STA 5+00
501	585222.0768	1357727.8335	CENTERLINE OF FREDERICK ROAD PC STA 11+07.98
502	585183.0990	1357894.4871	CENTERLINE OF FREDERICK ROAD PT STA 12+79.13
503	585010.1130	1358645.6927	CENTERLINE OF FREDERICK ROAD STA 20+50

CURVE DATA TABLE

CURVE NO.	DELTA	RADIUS	ARC	TAN	CHD. BRG.	CHD. LEN.
1	00-23-32	25,000	171.1515	85.5761	S76°50'10" E	171.1511

PAVEMENT CORE DATA

CORE NO.	ASPHALT (INCHES)	STONE BASE (INCHES)
1	10.5	11
2	8	12
3	7.75	14

TOP OF CURB ELEVATION DATA TABLE

STATION	℄ ELEVATION	RIGHT SIDE		LEFT SIDE	
		TC ELEV	OFFSET	TC ELEV	OFFSET
5+50	361.0 ±	–	–	360.71	16.0 LT
6+00	360.62	–	–	360.86	16.89' LT
6+40	360.11	MEET EX. TC.	14.17 RT	360.36	17.61' LT
7+00	360.69	360.90	18.60' RT	360.89	18.68' LT
7+50 (PVT)	361.97	362.10	22.30' RT	362.16	19.57' LT
8+00	363.62	363.68	26'.0 RT	363.79	20.46' LT
8+50	365.27	365.33	26'.0 RT	365.42	21.36' LT
9+00	366.92	366.98	26'.0 RT	367.05	22.21' LT
9+50	368.57	368.63	26'.0 RT	368.70	22.25' LT
9+53.00 (FILLET RT)	368.67	368.73	26.0' RT	–	–
9+63.00 (FILLET LT)	369.00	–	–	369.13	22.25' LT
9+88.00 (FILLET RT+LT)	369.82	370.08	61.00' RT	MEET EX. TC	47.25' LT
10+18.00 (FILLET LT)	370.70	–	–	MEET EX. TC	47.25' LT
10+23.00 (FILLET RT)	370.83	369.86	61.00' RT	–	–
10+43.00 (FILLET LT)	371.31	–	–	371.44	22.25' LT
10+58.00 (FILLET RT)	371.61	371.67	26.0' RT	–	–
11+00	372.22	372.28	26'.0 RT	372.35	22.25' LT
11+07.68 (PC)	372.30	372.36	26'.0 RT	372.43	22.25' LT
11+50	372.51	372.57	26'.0 RT	372.64	22.25' LT
11+65.05 (HP)	372.52	372.58	26'.0 RT	372.62	22.25' LT
12+00	372.46	372.52	26'.0 RT	372.59	22.25' LT
12+50	372.20	372.26	26'.0 RT	372.33	22.25' LT
12+79.13 (PT)	371.95	372.01	26'.0 RT	372.08	22.25' LT
13+00	371.73	371.79	26'.0 RT	371.86±	22.25' LT
13+57.30 (FILLET RT)	370.91	370.97	26'.0 RT	371.04	22.25' LT
13+82.30 (FILLET RT)	370.47	MEET EX. TC.	50.89' RT	370.60	22.25' LT.
16+73.98 (FILLET RT)	366.50	364.22	55.91' RT	–	–
17+09.05 (FILLET RT)	366.00	MEET EX. TC	21.00' RT	–	–

TEST HOLE DATA

TEST HOLE NO.	DEPTH (FT)	ELEV (FT)	REMARKS
TH 1	2.79	368.10	TOP 2" GAS
TH 2	4.00	367.29	TOP 8" CI WATER
TH 3	2.36	371.18	TOP 2" GAS
TH 4	3.64	369.80	TOP 8" CI WATER
TH 5	3.10	369.46	TOP 2" GAS
TH 6	4.11	367.81	TOP 8" CI WATER

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — 3/15/10 — DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3/8/10 — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 3/15/10 — DATE

DATE	NO.	REVISION

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HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

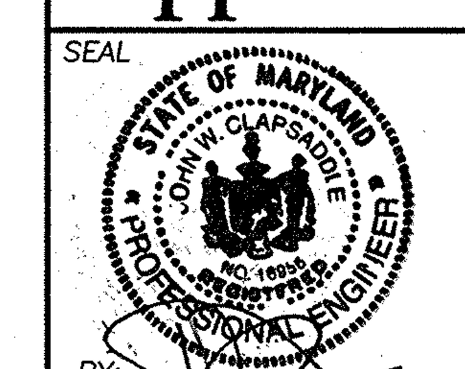
PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **FREDERICK ROAD IMPROVEMENT PLAN**

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

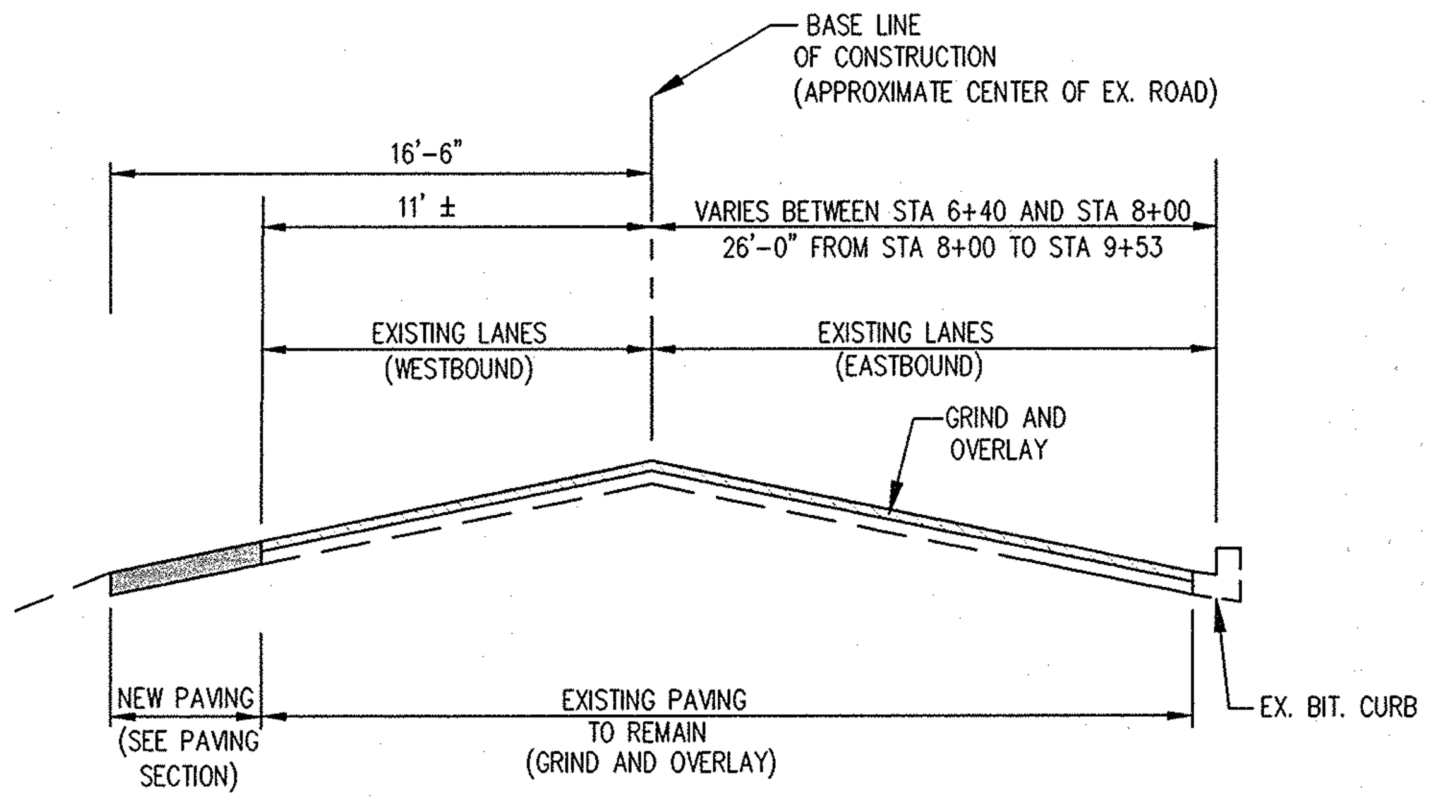


"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16906, EXPIRATION DATE 06/09/2010."

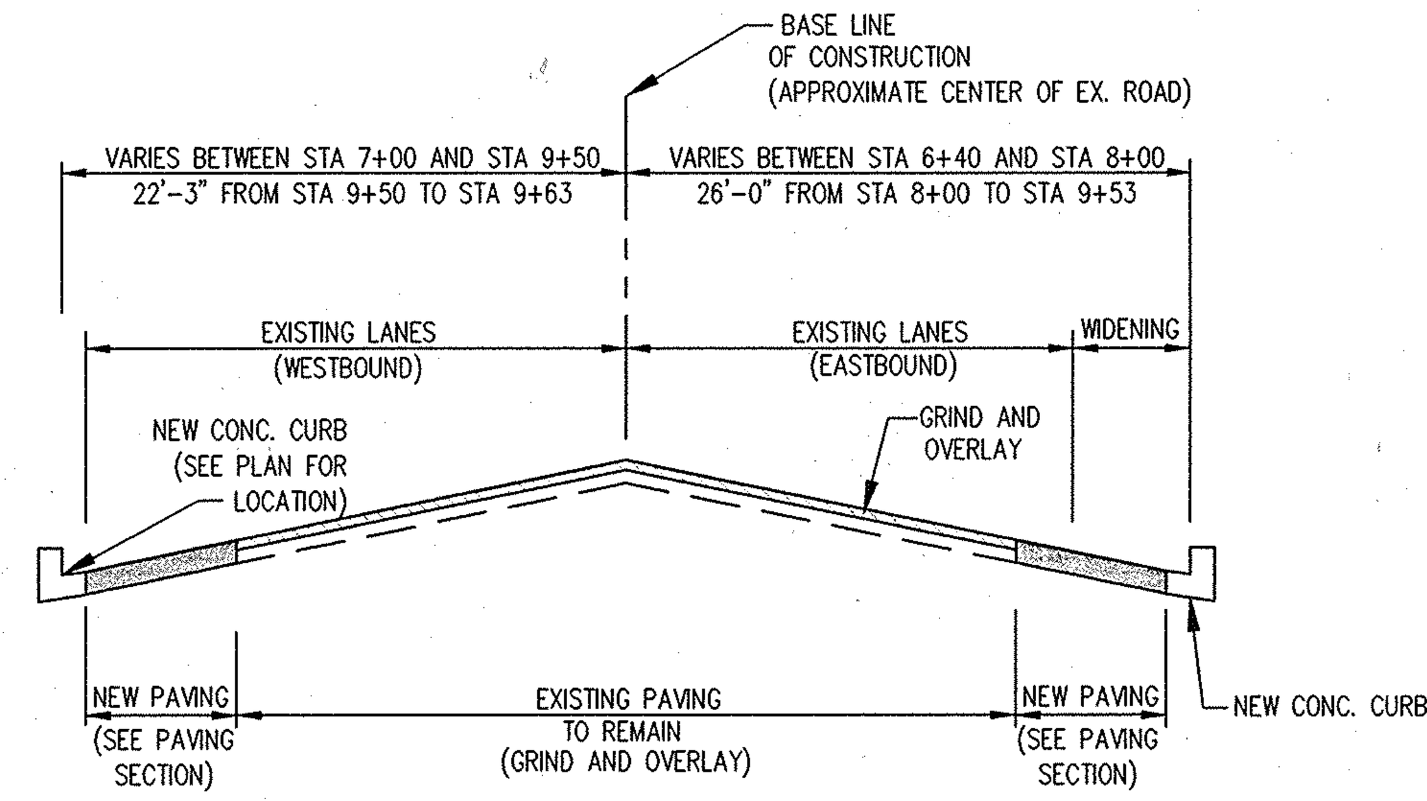
DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP34RIP
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 34 OF 66

SDP-09-058

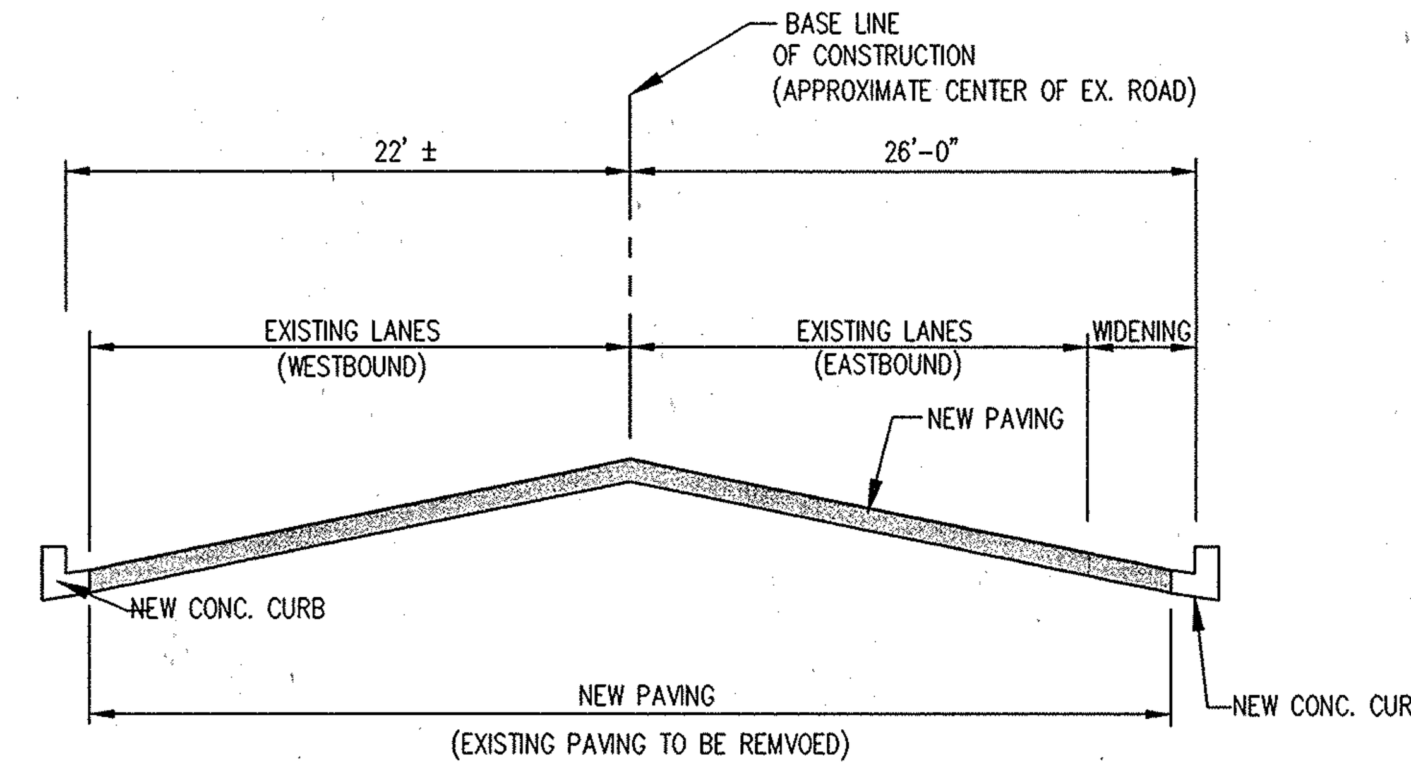
P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP34RIP.DWG



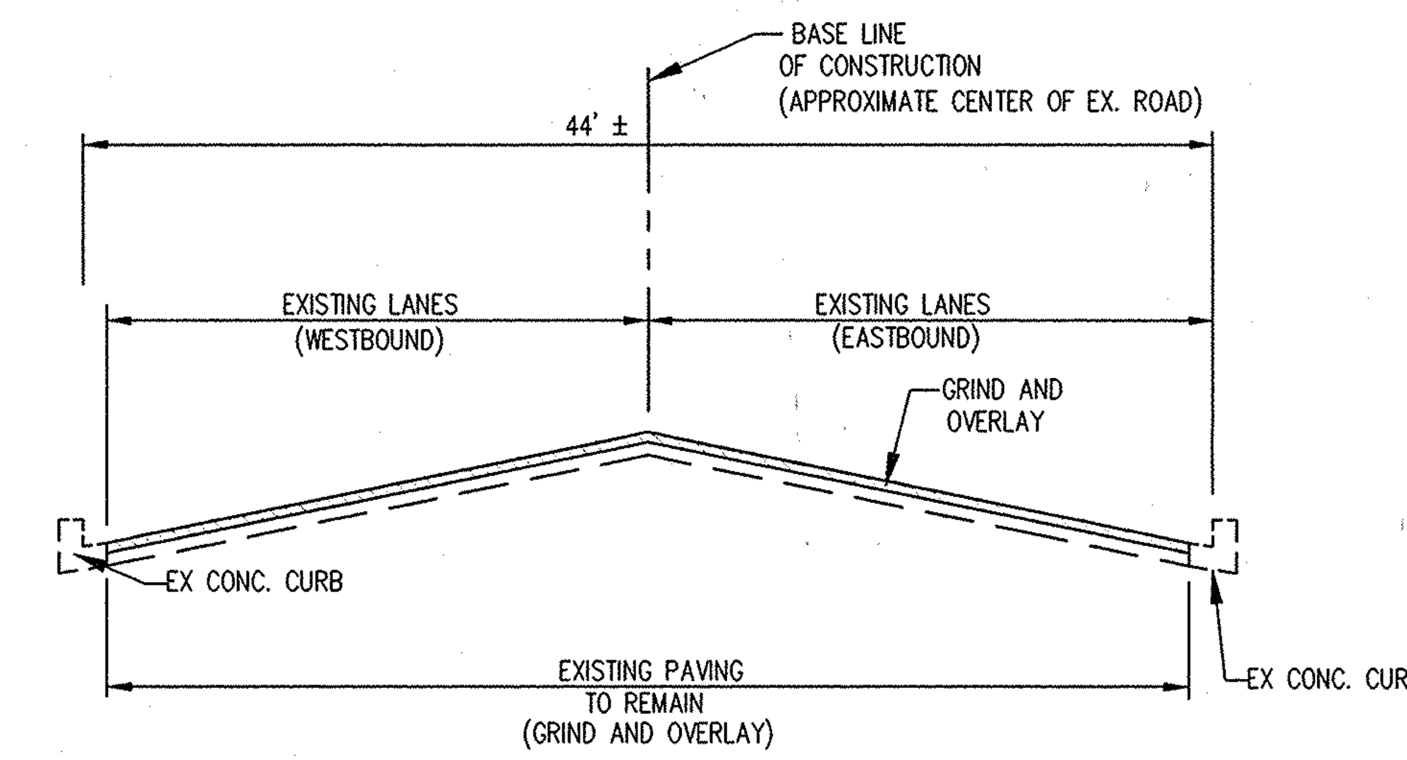
TYPICAL SECTION
STA. 5+50 TO STA 6+40
NOT TO SCALE



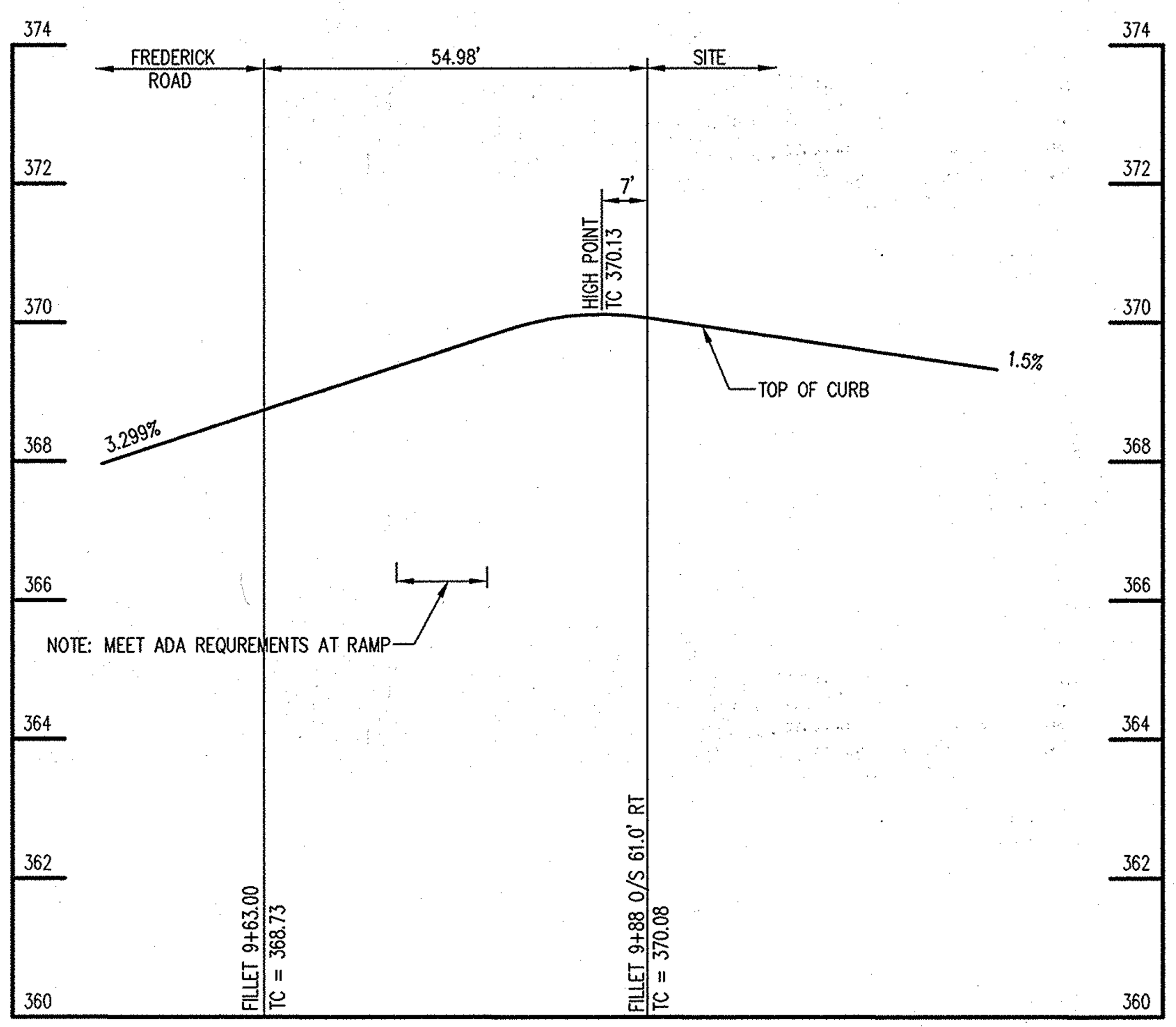
TYPICAL SECTION
STA. 6+40 TO STA 10+30
NOT TO SCALE



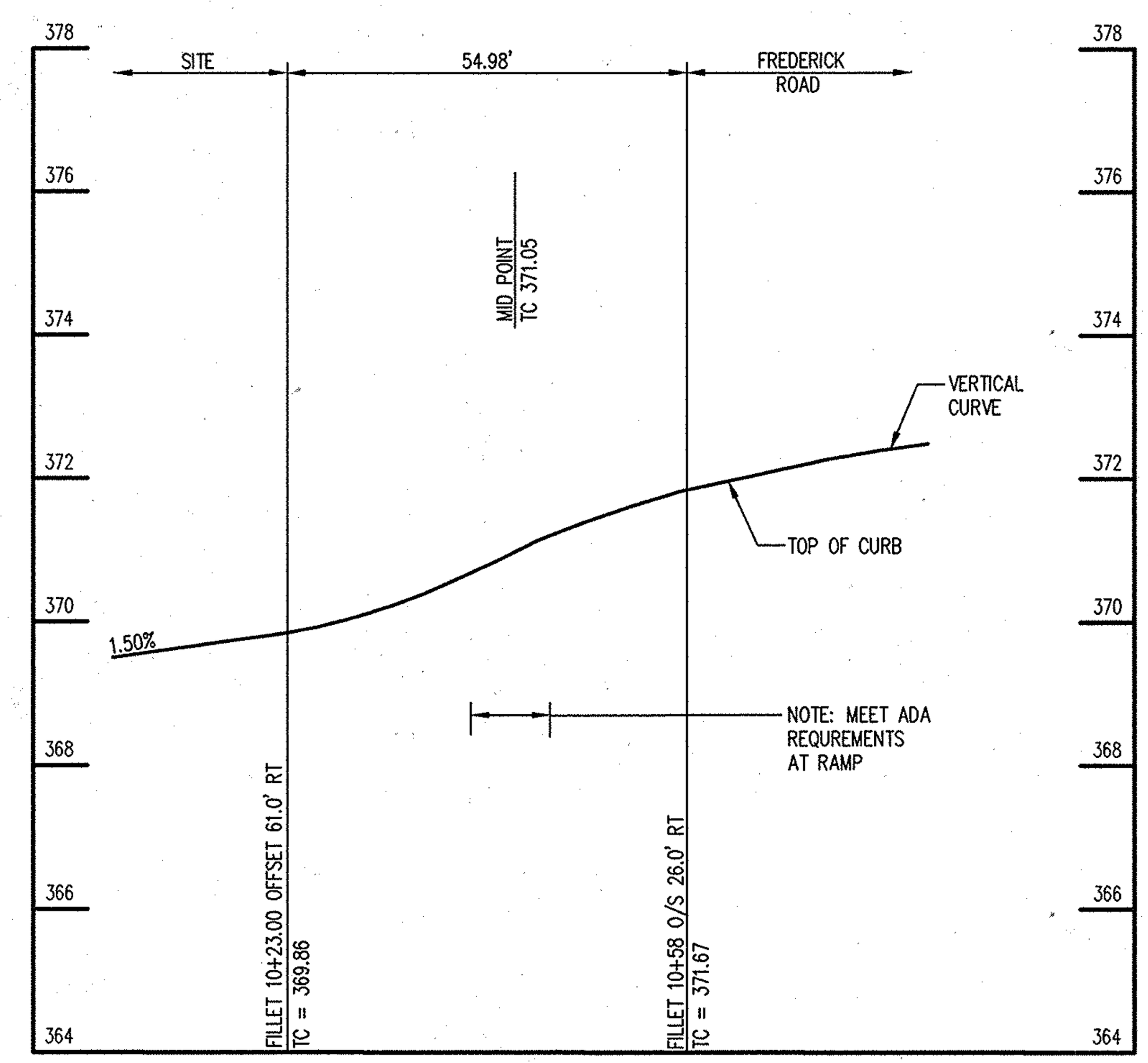
TYPICAL SECTION
STA. 10+30 TO STA 13+82
NOT TO SCALE



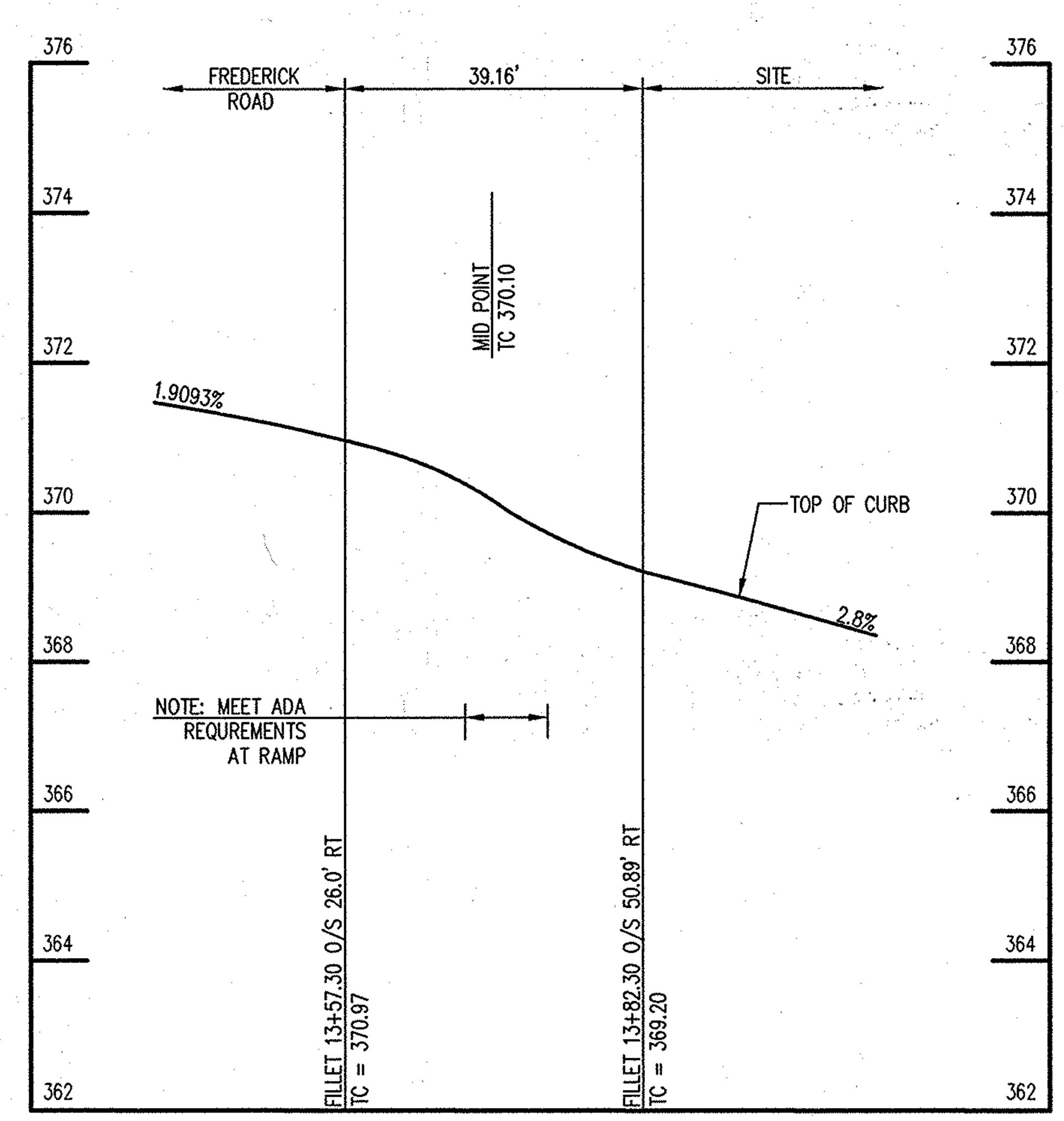
TYPICAL SECTION
STA. 13+82 TO STA 19+30
NOT TO SCALE



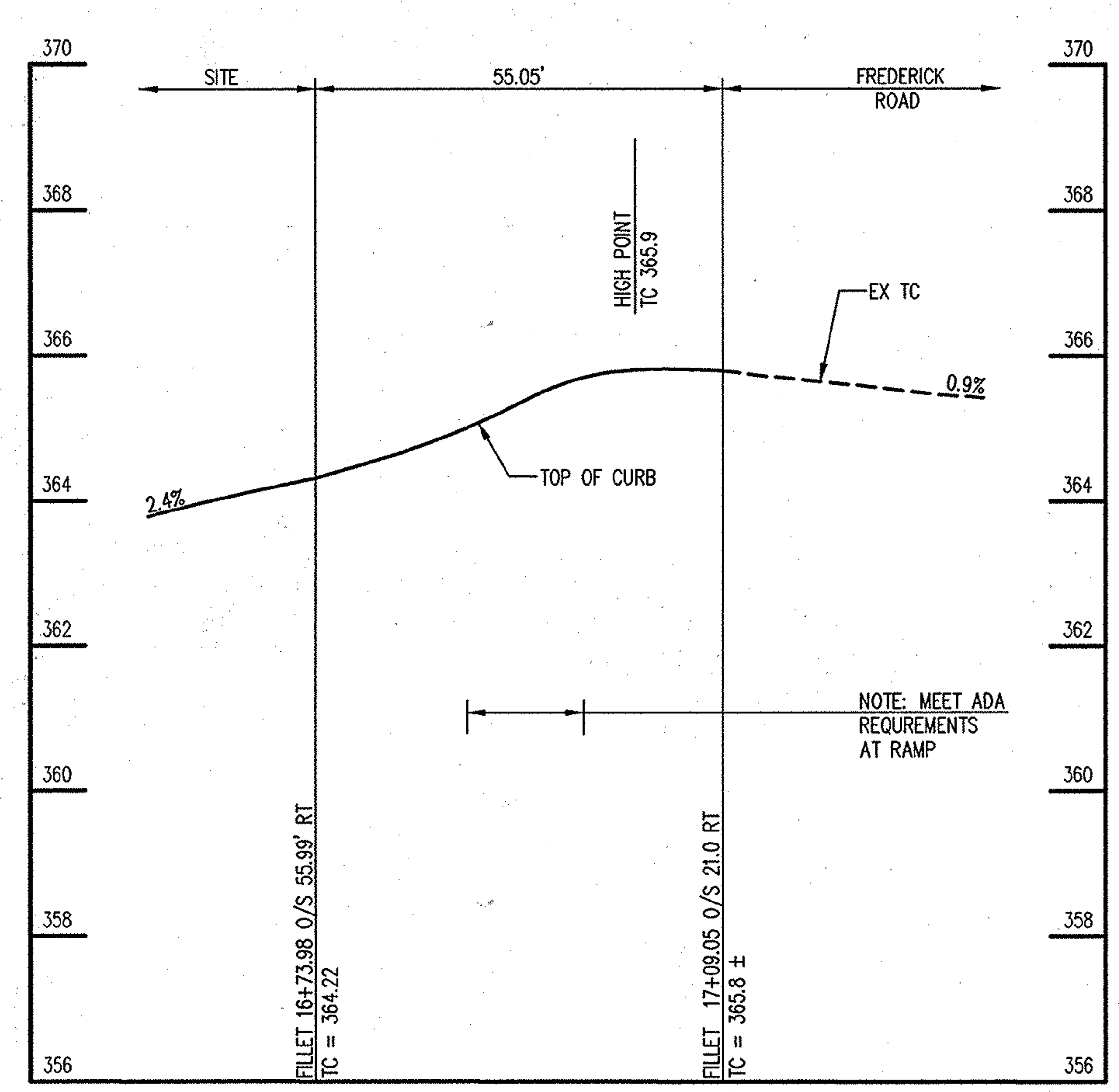
MAIN ENTRANCE - WEST SIDE
⚠ FILLET PROFILE
SCALE : HOR: 1"=20'
VERT: 1"=2'



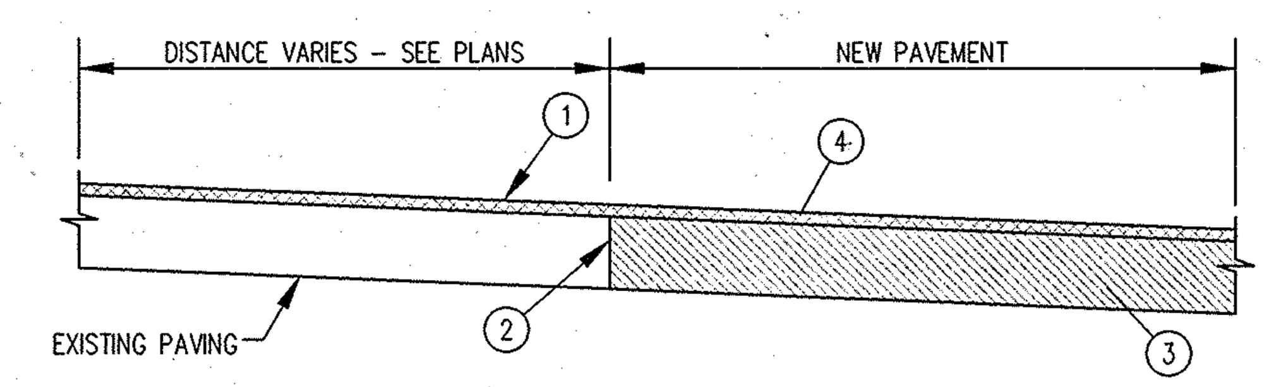
MAIN ENTRANCE - EAST SIDE
⚠ FILLET PROFILE
SCALE : HOR: 1"=20'
VERT: 1"=2'



SERVICE EXIT - WEST SIDE
⚠ FILLET PROFILE
SCALE : HOR: 1"=20'
VERT: 1"=2'



EXISTING ENTRANCE - EAST SIDE
⚠ FILLET PROFILE
SCALE : HOR: 1"=20'
VERT: 1"=2'



1. GRIND 2" DEEP TO LIMIT OF GRINDING PER PLANS
2. SAW-CUT THROUGH FULL DEPTH PAVING
3. INSTALL SUB BASE GRAVEL AND BASIC PAVEMENT PER THE TYPICAL PAVEMENT DETAIL
4. PROVIDE 2" HMA SUPERPAVE 12.5 mm SURFACE, PG70-22, LEVEL 3

NOTE: LONGITUDINAL JOINTS FOR THE WEARING AND TOP SURFACE COARSE MUST NOT COINCIDE WITH THE FULL-DEPTH SAW-CUT JOINT

PAVEMENT CONNECTION DETAIL
NOT TO SCALE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas J. Butler 3/15/10
DIRECTOR DATE

3/15/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kent Sheubrooks 3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

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ELLICOTT CITY SENIOR CENTER
410-313-4600

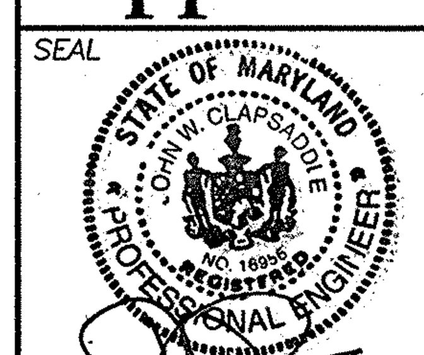
PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE TYPICAL SECTIONS AND FILLET PROFILES

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL



BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP35RIP.DWG
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 35 OF 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP35RIP.DWG

RECHARGE DRYWELL SPECIFICATIONS

Construction Specifications

1. Timing
A recharge drywell shall not be constructed or placed in service until all of the contributing drainage area has been stabilized and approved by the responsible inspector.

2. Drywell Preparation
Excavate the drywell to the design dimensions. Excavated materials shall be placed away from the drywell sides to enhance drywell wall stability. Large tree roots must be trimmed flush with the drywell sides in order to prevent fabric puncturing or tearing during subsequent installation procedures. The side walls of the drywell shall be roughened where sheared and sealed by heavy equipment. The drywell wall shall be battered to maintain stability during construction. The bottom dimensions and stone depth shall be as specified.

3. Fabric Laydown
The filter fabric roll must be cut to the proper width prior to installation. The cut width must include sufficient material to conform to drywell perimeter irregularities and for a 6-inch minimum top overlap. Stones or other anchoring objects should be placed on the fabric at the edge of the drywell to keep the line drywell open during windy periods. When overlaps are required between rolls, the upstream roll should lap a minimum of 2 feet over the downstream roll in order to provide a shingled effect. The overlap ensures fabric continuity or to ensure that the fabric conforms to the excavation surface during aggregate placement and compaction. Filter cloth to be Mirafi 140-N or DPS approved equivalent along the sides and top of the recharge drywell. Do not place any filter material on the bottom of the drywell.

4. Stone Aggregate, Sand Placement and Compaction
drywells shall be filled with 1.5-3.0 inch diameter washed stone meeting ASTM D448, size No. 1 and capped with backfill. The stone aggregate should be placed in lifts and compacted using plate compactors. As a rule of thumb, a maximum loose lift thickness of 12 inches is recommended. The compaction process ensures fabric conformity to the excavation sides, thereby reducing the potential for soil piping, fabric clogging, and settlement problems. The bottom of the drywell shall be graded flat (0 Ft/Ft). Provide a 6" layer of clean washed sand (meeting ASTM C-33 fine aggregate concrete sand specifications) on the bottom of the drywell. Manufactured sand is not allowed.

5. Overlapping and Covering
Flowing the stone aggregate placement, the filter fabric shall be folded over the stone aggregate to form a 6" minimum longitudinal lap. The pea gravel shall be placed over the lap a sufficient intervals to maintain the lap during the subsequent backfilling.

6. Contamination
Care shall be exercised to prevent natural of rill soils for intermixing with the stone aggregate. All contaminated stone aggregate shall be removed and replaced with uncontaminated stone aggregate. When a stone capping is specified, the stone capping shall be cleaned and free of all soil and fines.

7. Voids Behind Fabric
Voids can be created between the fabric and excavation sides and shall be avoided. Removing boulders or other obstacles form the drywell walls is one source of such voids. Natural soils should be placed in these voids at the most convenient time during construction to ensure fabric conformity to the excavation sides. Soil piping, fabric clogging, and possible surface subsidence will be avoided by the remedial process.

8. Unstable Excavation Sides
Vertically excavated walls may be difficult to maintain in areas where the soil moisture is high or where soft cohesive or cohesionless soils predominate. These conditions may require laying back of the side slopes to maintain stability; trapezoidal rather than rectangular cross sections may result.

9. Vegetative Buffer
A grass buffer of at least 20 feet (wider, if possible) shall be used to intercept surface runoff from all impervious areas.

10. Traffic ControlHeavy equipment and traffic shall be restricted from traveling over the recharge areas to minimize compaction of the soil.

11. Observation Well
An Observation Well using 6 inch diameter perforated pvc pipe, schedule 40 shall be placed in each recharge drywell. The well shall be located in the longitudinal center of the drywell and is to be capped using a threaded pvc fitting and a vandal proof sewer cap. The pipe shall have a plastic collar with ribs to prevent rotation when removing the cap. When soil capping is specified, the observation will shall be constricted of perforated pipe within the No. 2 stone sand non-perforated pipe through the soil capping. The depth of the well at the time of installation will be clearly marked on the well cap.

12. Perforated Pipe
12" PVC SCH 40 shall be perforated inside the drywell using 3/8" dia. holes placed 4" O.C.

Maintenance

Refer to the Operation and Maintenance Schedule below.

Design Criteria

The described storm water management facility was designed in compliance with the following criteria:
1. Maryland Department of Natural Resources, Water Resources Administration "Standards and Specifications for Storm water Management recharge Practices" (February, 1984).

Methodology

All soils information was taken from the USDA-SCS Montgomery County Soils Survey revised in 1990. Hydrologic parameters such as RCN's and Tc's were generated with the aid of SCS Technical Release No. 55, "Urban Hydrology for Small Watersheds" as revised in 1986.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER RECHARGE TRENCHES (I-1)

1. The monitoring wells and structures shall be inspected on a quarterly basis and after every large storm event.
2. Water levels and sediment build up in the monitoring wells shall be recorded over a period of several days to insure trench drainage.
3. A logbook shall be maintained to determine the rate at which the facility drains.
4. When the facility becomes clogged so that it does not drain down within the 72 hour time period, corrective action shall be taken.
5. The maintenance logbook shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
6. Once the performance characteristics of the infiltration facility have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.
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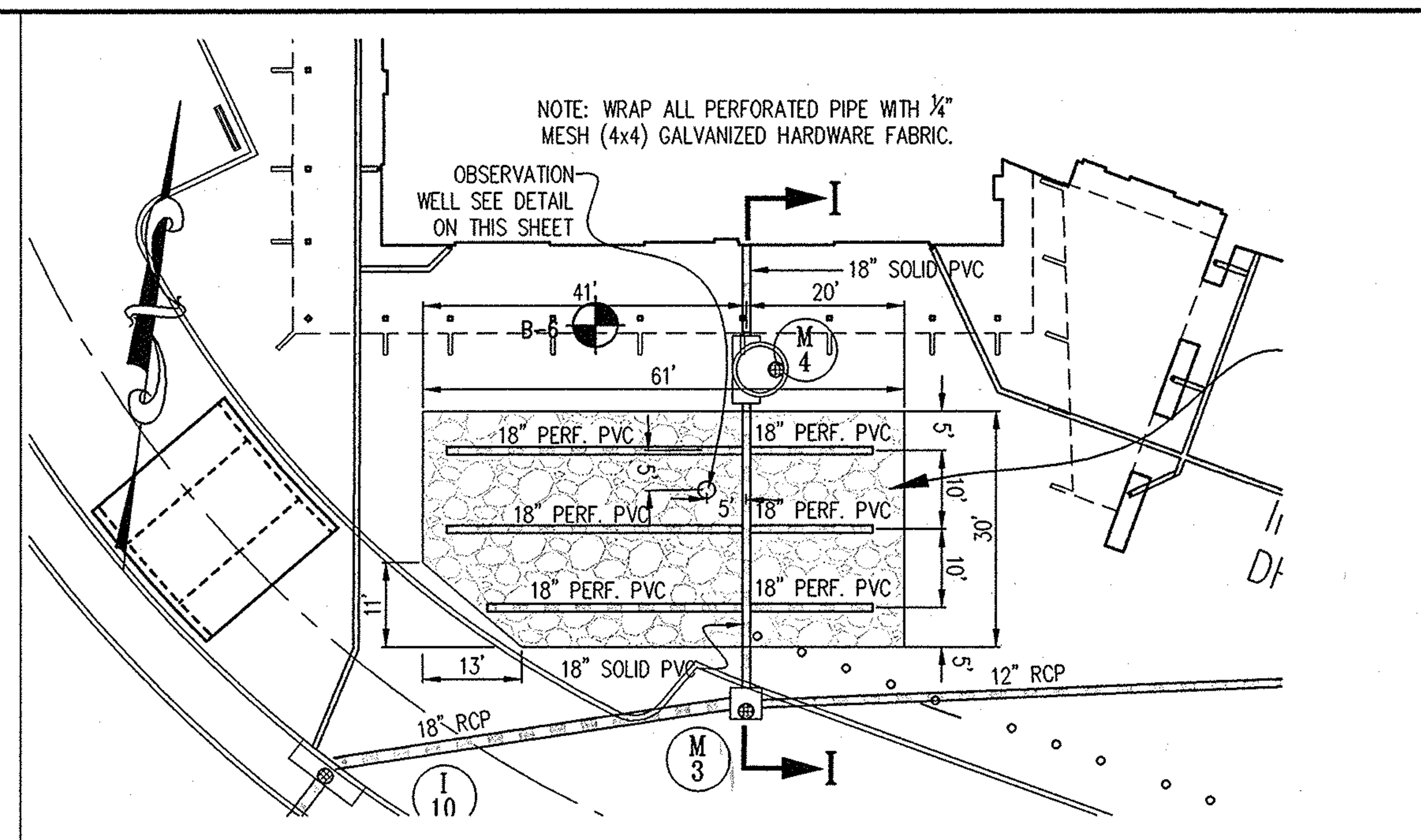
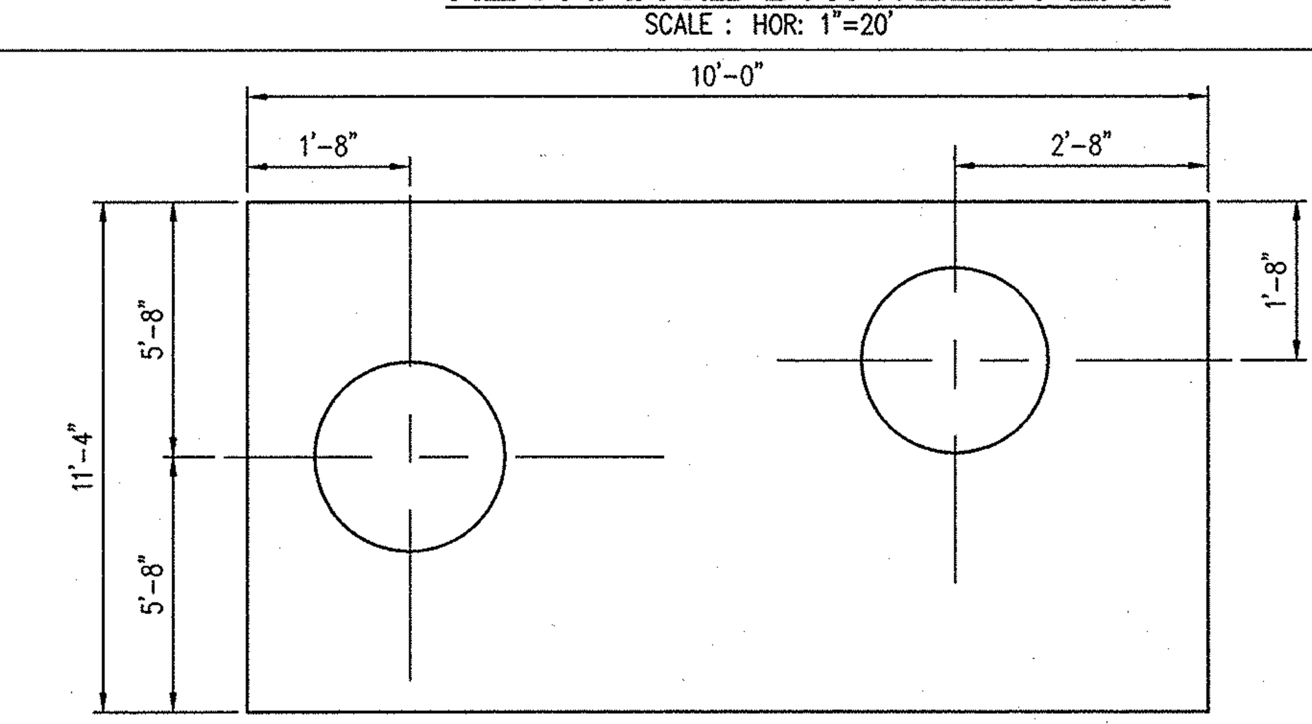
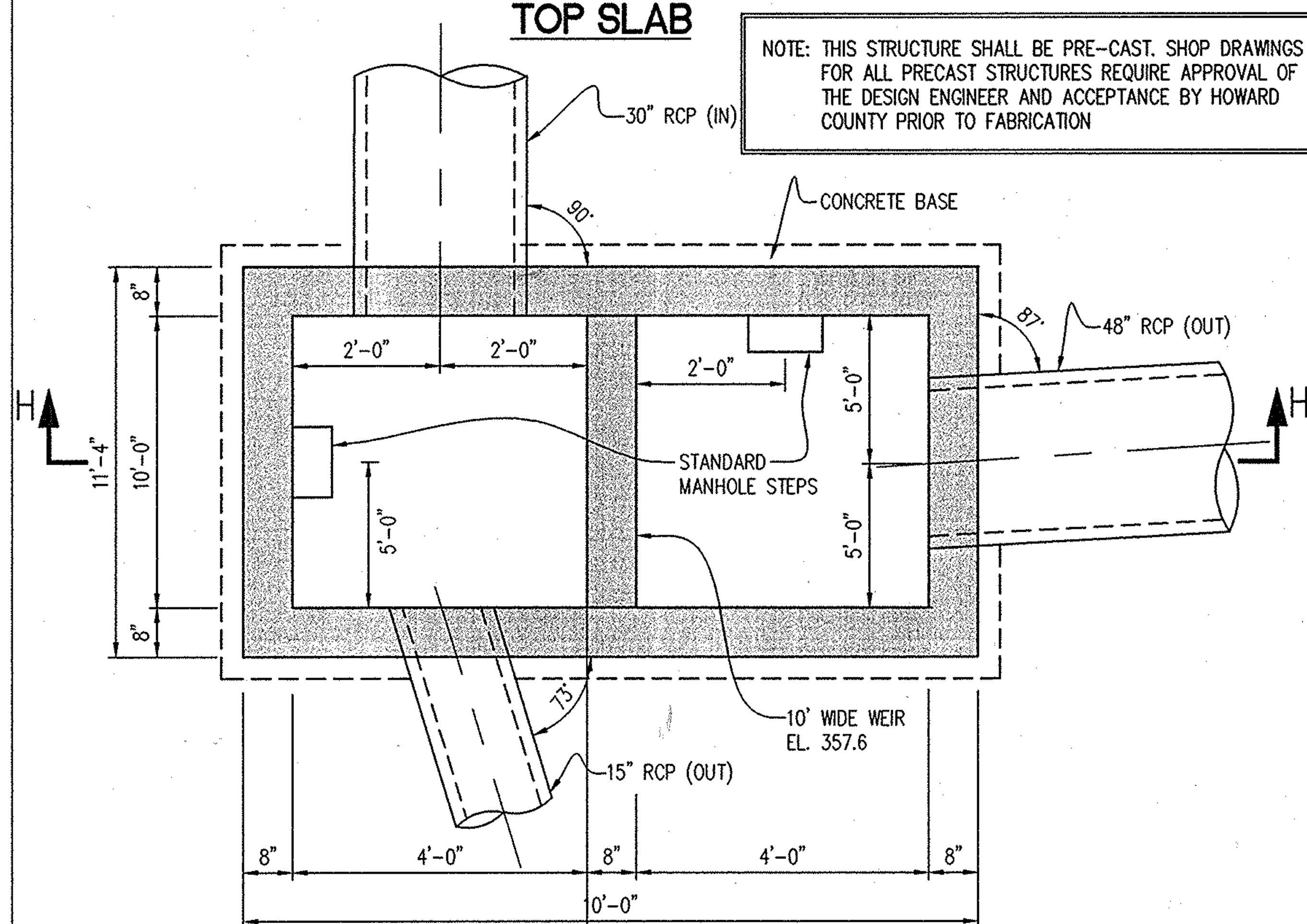


RECHARGE DRYWELL PLAN
SCALE : HOR: 1"=20'

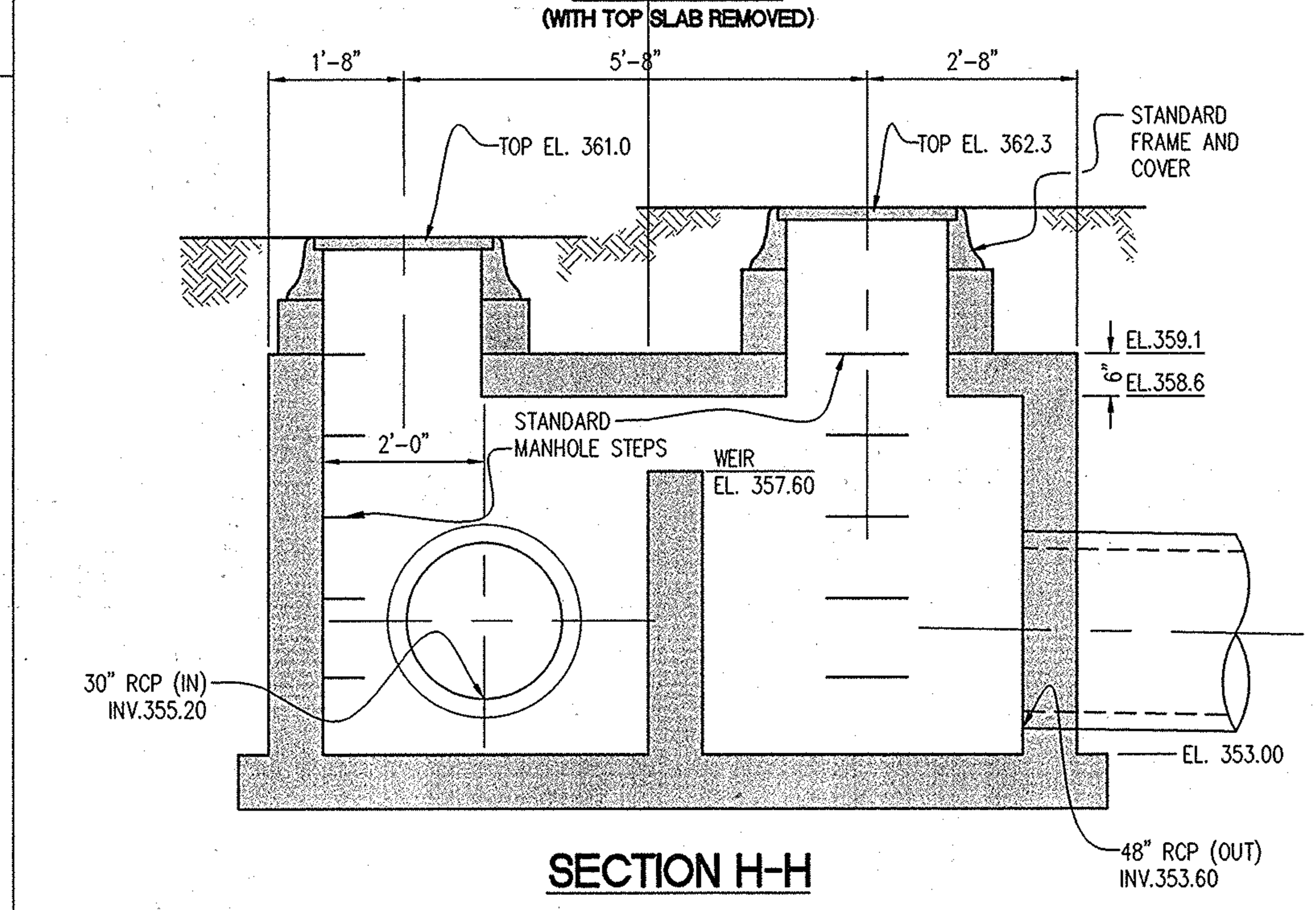


TOP SLAB

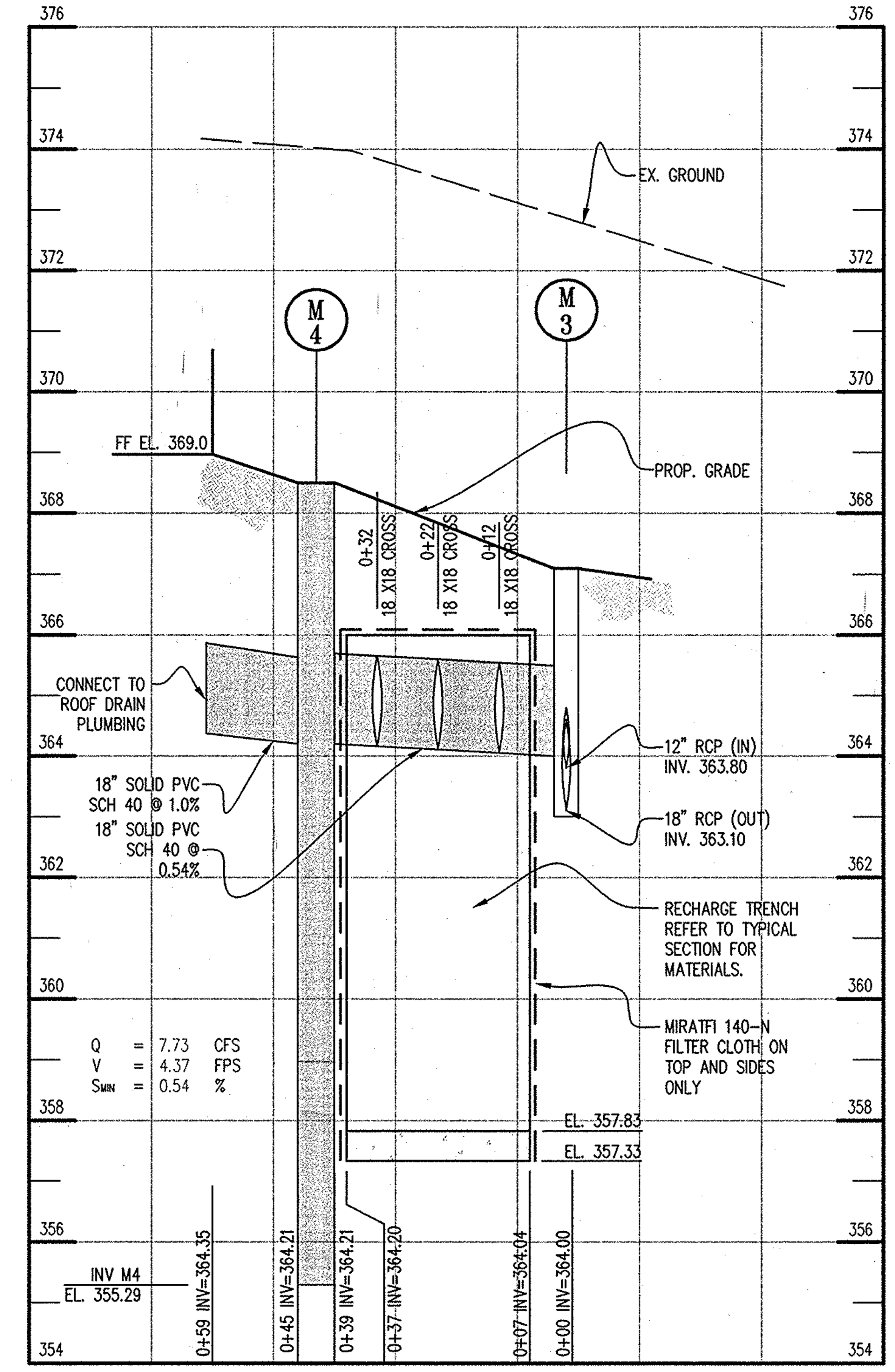
NOTE: THIS STRUCTURE SHALL BE PRE-CAST. SHOP DRAWINGS FOR ALL PRECAST STRUCTURES REQUIRE APPROVAL OF THE DESIGN ENGINEER AND ACCEPTANCE BY HOWARD COUNTY PRIOR TO FABRICATION



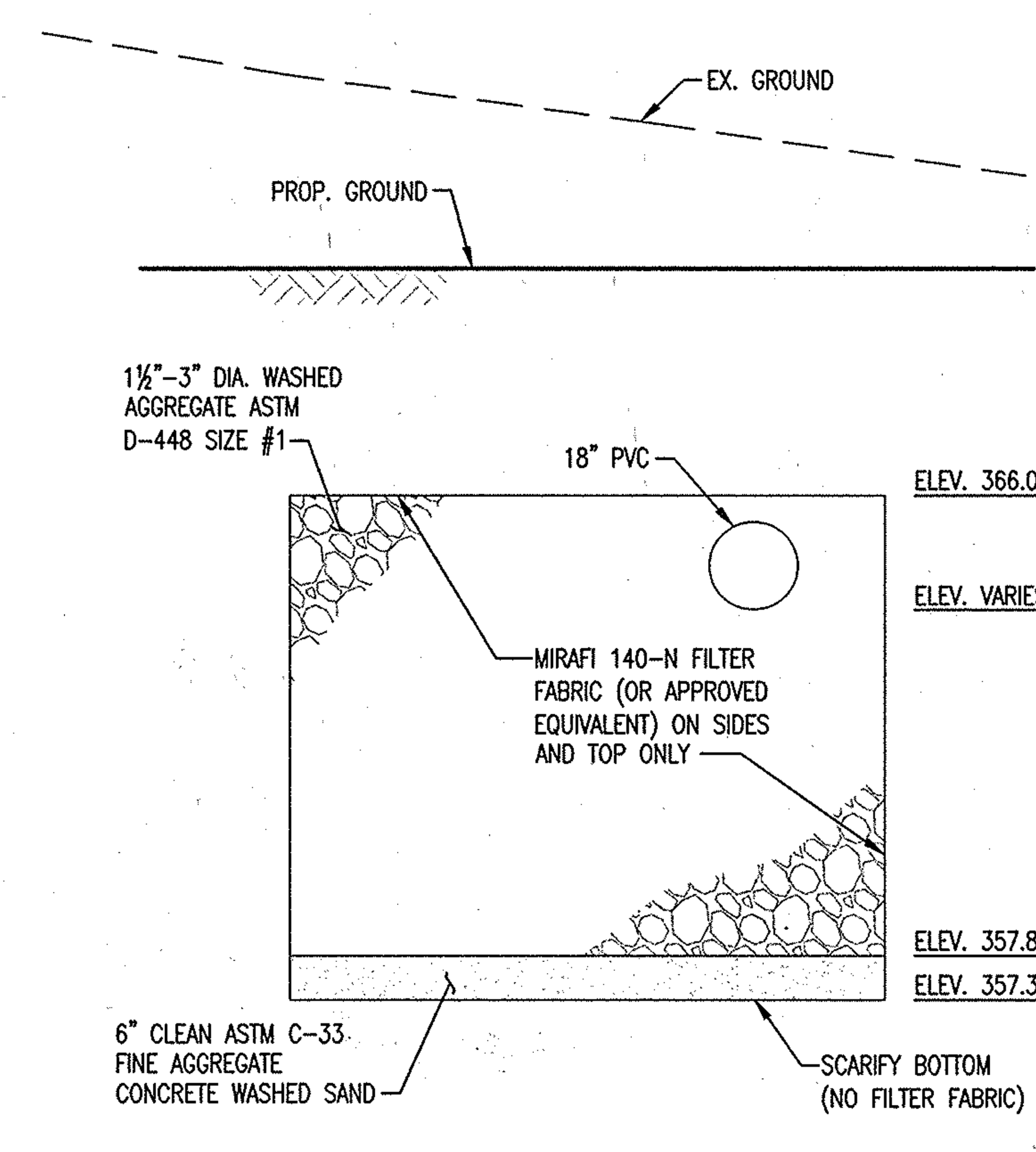
PLAN VIEW
(WITH TOP SLAB REMOVED)



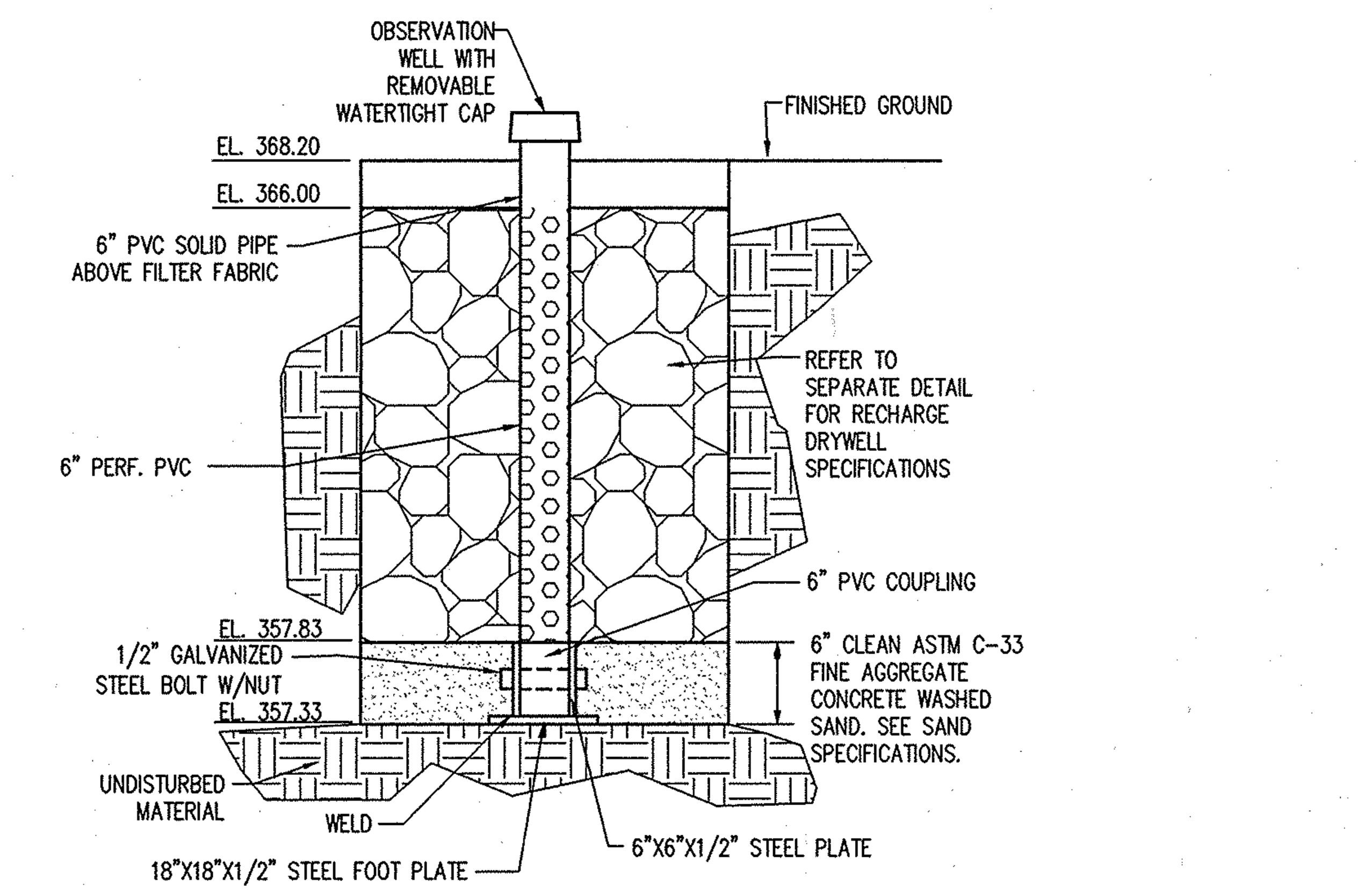
SECTION H-H
FLOW SPLITTER STRUCTURE M-2
NOT TO SCALE



RECHARGE DRY WELL
SECTION I-I
SCALE : HOR: 1"=20'
VERT: 1"=2'



RECHARGE DRYWELL TYPICAL SECTION
SCALE : NONE



OBSERVATION WELL
NOT TO SCALE

NOTES:

1. ALL PVC TO BE SCHEDULE 40, PERFORATIONS SHALL BE 3/8" ø @ 4" O.C. 90° ALL AROUND PIPE.
2. INSTALL REMOVABLE WATERTIGHT PVC CAP ON TOP OF 6" PVC.
3. PIPE PERFORATIONS PROVIDED WITHIN STONE VOLUME ONLY.
4. DO NOT PLACE FILTER FABRIC ON BOTTOM OF TRENCH.
5. BOTTOM EXCAVATION IS TO BE IN NATURAL UNCOMPACTED EARTH.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR	3/15/10 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	3/8/10 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	3/15/10 DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE STORMWATER RECHARGE DRYWELL PLAN, DETAILS AND SPECIFICATIONS

Patton Harris Rust & Associates
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F 410.997.9282

SEAL
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DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP36DET.DWG
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 36 OF 66

SDP-09-058

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OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS (F-1, F-4, AND F-5)

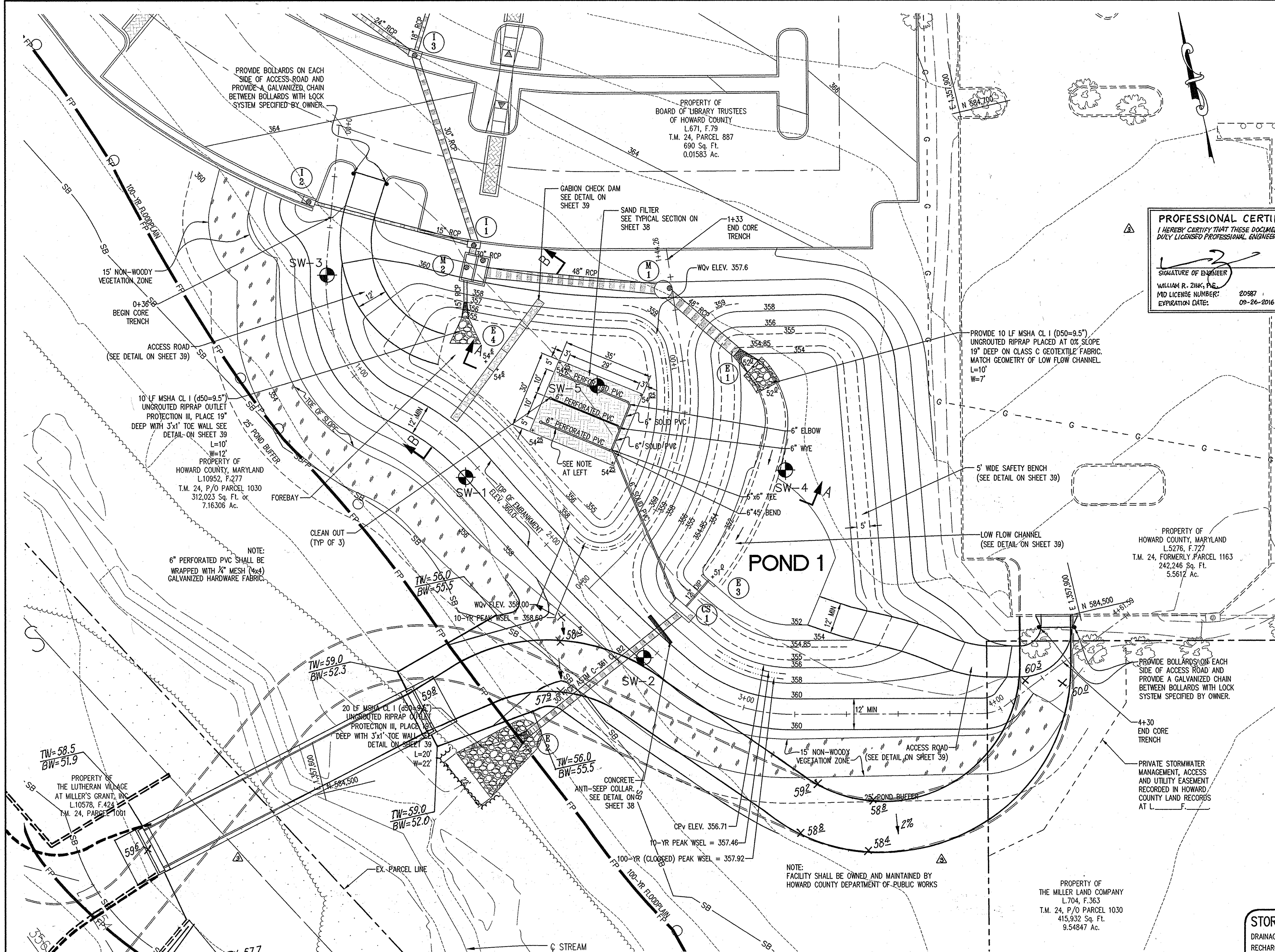
1. The stormwater wetland facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the facility is functioning properly.
2. The top and side slopes of the embankment shall be mowed a minimum of once per year, when vegetation reaches 18" in height or as needed.
3. Filters that have a grass cover shall be mowed a minimum of three (3) times per growing season to maintain a maximum grass height of less than 12 inches,
4. Debris and litter shall be removed during regular mowing operations and as needed.
5. Visible signs of erosion in the facility shall be repaired as soon as it is noticed.
6. Remove silt when it exceeds four (4 inches deep in the forebay.
7. When water ponds on the surface of the filter bed for more than 72 hours, the top few inches of discolored material shall be replaced with fresh material. Proper cleaning and disposal of the removed materials and liquid must be followed by the ()When
8. A logbook shall be maintained to determine the rate at which the facility drains.
9. The maintenance logbook shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria,
10. Once the performance characteristics of the infiltration system have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

PROFESSIONAL CERTIFICATION

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

SIGNATURE OF ENGINEER — DATE: 02-06-2015

WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016



STORMWATER MANAGEMENT POND PLAN (TYPE P-5 POCKET POND AND F-1 SURFACE SAND FILETER) (HAZARD CLASS A FACILITY)

SCALE : 1"=20'

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER PONDS (P-1 THROUGH P-5)

Routine Maintenance:

1. Facility shall be inspected annually and after major storms. Inspections shall be performed during wet weather to determine if the pond is functioning properly.
2. Top and side slopes of the embankment shall be mowed a minimum of two (2) times per year once in June and once in September. Other side slopes and maintenance access shall be mowed as needed.
3. Debris and litter shall be removed during regular mowing operations and as needed.
4. Visible signs of erosion in the pond as well as the riprap or gabion outlet area shall be repaired as soon as it is noticed.

Non-Routine Maintenance:

1. Structural components of the upon the detection of any maintenance operations.
2. Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond, or forebay, is half full of sediment, or, when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.

OPERATION, MAINTENANCE AND INSPECTION

1. Inspection Of The Pond(s) Shown Hereon Shall Be Performed At Least Annually, In Accordance With The Checklist And
Requirements Contained Within USDA, SCS. "standards And Specifications For Ponds" (MD-378).
The Pond Owner(s) And Any Heirs, Successors, Or Assigns Shall Be Responsible For The Safety Of The Pond And The Continued Operation, Surveillance, Inspection, And Maintenance Thereof. The Pond Owner(s) Shall Promptly Notify The Soil Conservation District Of Any Unusual Observations That May Be Indications Of Distress Such As Excessive Seepage, Turbid Seepage, Sliding Or Slumping.

DATE

5/6/15

FOR REDLINE SUBMISSION ONLY

STORMWATER POND SUMMARY TABLE

DRAINAGE AREA	= 5.63 Ac
RECHARGE VOLUME (Rev)	
REQUIRED:	= 4,331 CU. FT.
PROVIDED:	= 4,341 CU. FT.
METHOD:	= RECHARGE DRYWELL PROVIDED. REFER TO SHEET 36
WATER QUALITY VOLUME (WQv)	
REQUIRED:	= 16,656 TOTAL OR 12,325 Cv.FT W/O Rev.
PROVIDED:	= 12,330 Cu. FT.
METHOD:	= SURFACE SAND FILTER PROVIDED IN UPPER CELL WITHIN STORMWATER MANAGEMENT POND CONTROLLED BY FLOW SPLITTER M-2
CHANNEL POSITION VOLUME (CPv)	
REQUIRED:	= 23,859 CU. FT.
PROVIDED:	= 28,325 CU. FT.
METHOD:	= EXTENDED DETENTION VOLUME PROVIDED IN LOWER CELL WITHIN STORMWATER MANAGEMENT POND CONTROLLED BY CONCRETE CONTROL STRUCTURE

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER — DATE 2/4/10

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

ENGINEER — DATE 2/2/2010

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT — DATE 3/4/10

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 3/15/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/15/10

DATE	NO.	REVISION
02/2015	3	REDLINE REVISION - PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT **CHARLES E. MILLER BRANCH AND HISTORICAL CENTER**
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **STORMWATER MANAGEMENT POND PLAN**

Patton Harris Rust & Associates
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SEAL

BY:

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DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP37SWM.DWG
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN

SDP-09-058

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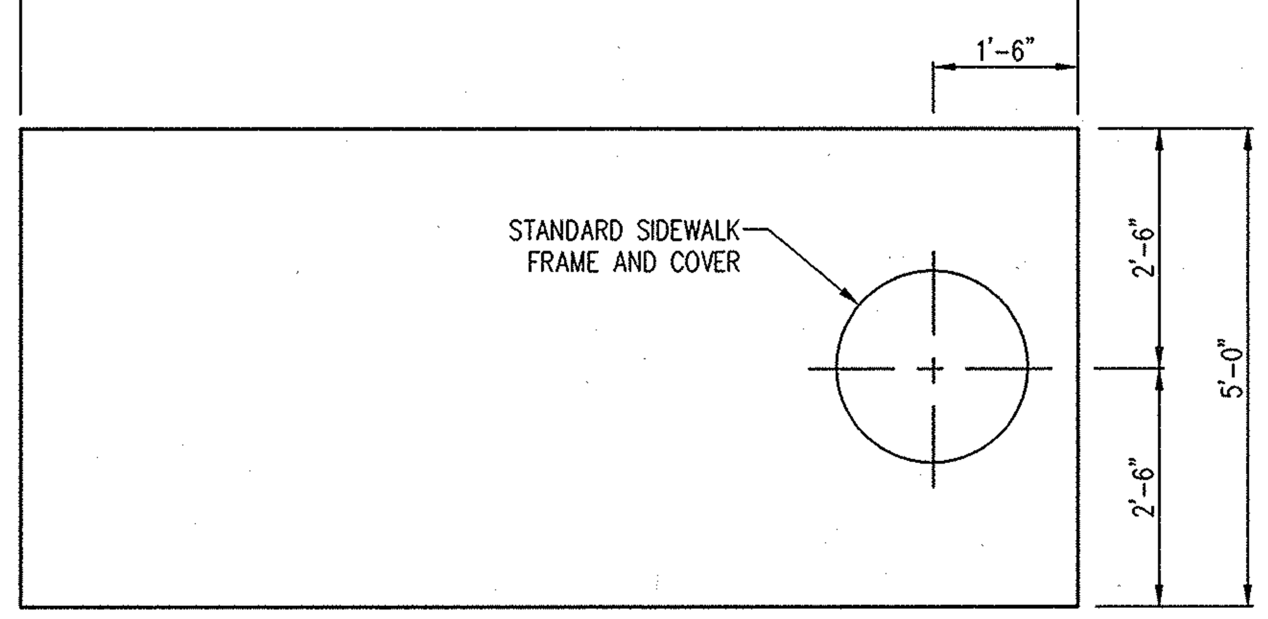
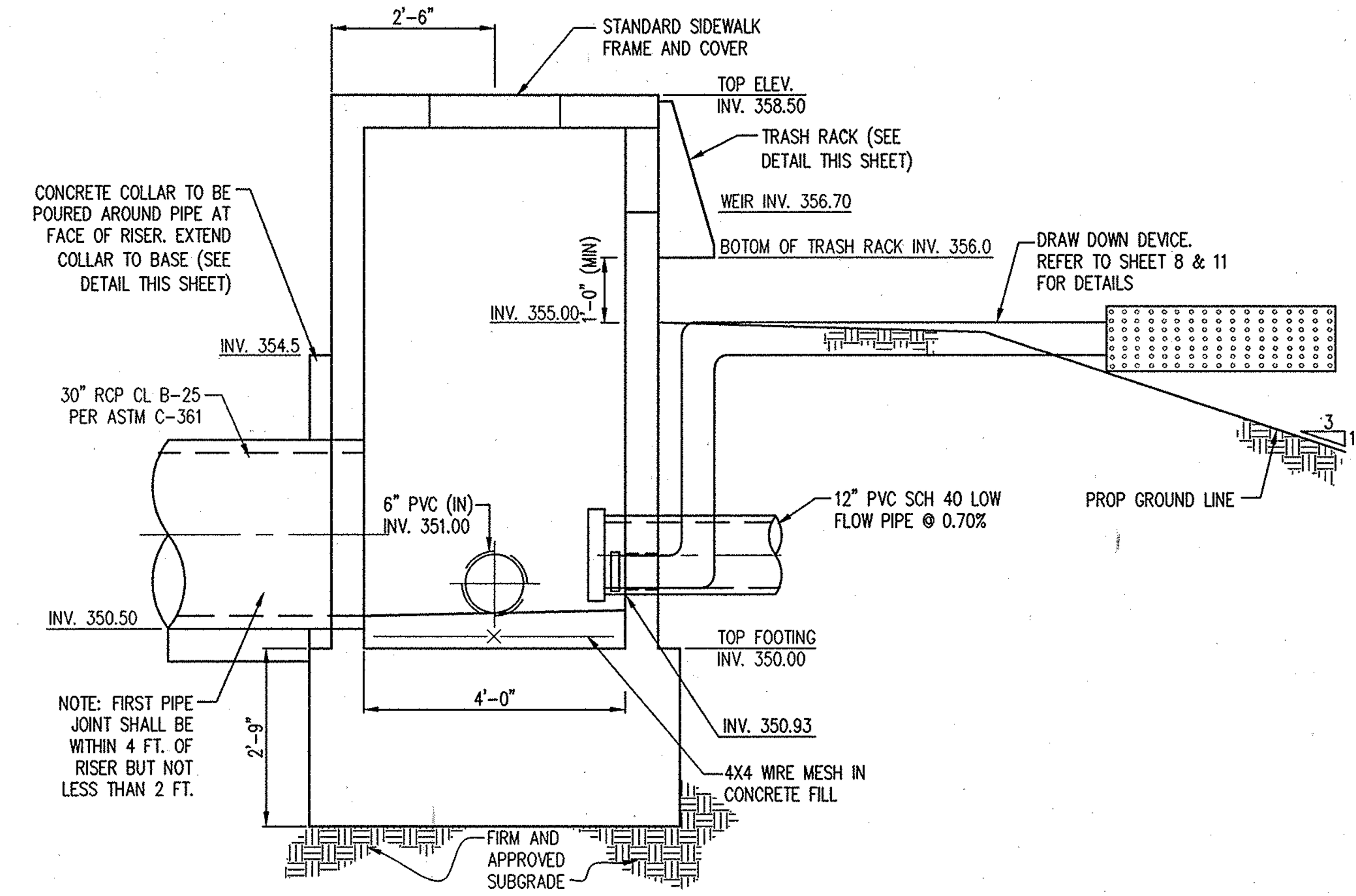
NOTE: THIS STRUCTURE SHALL BE PRE-CAST. SHOP DRAWINGS FOR ALL PRECAST STRUCTURES REQUIRE APPROVAL OF THE DESIGN ENGINEER AND ACCEPTANCE BY HOWARD COUNTY PRIOR TO FABRICATION



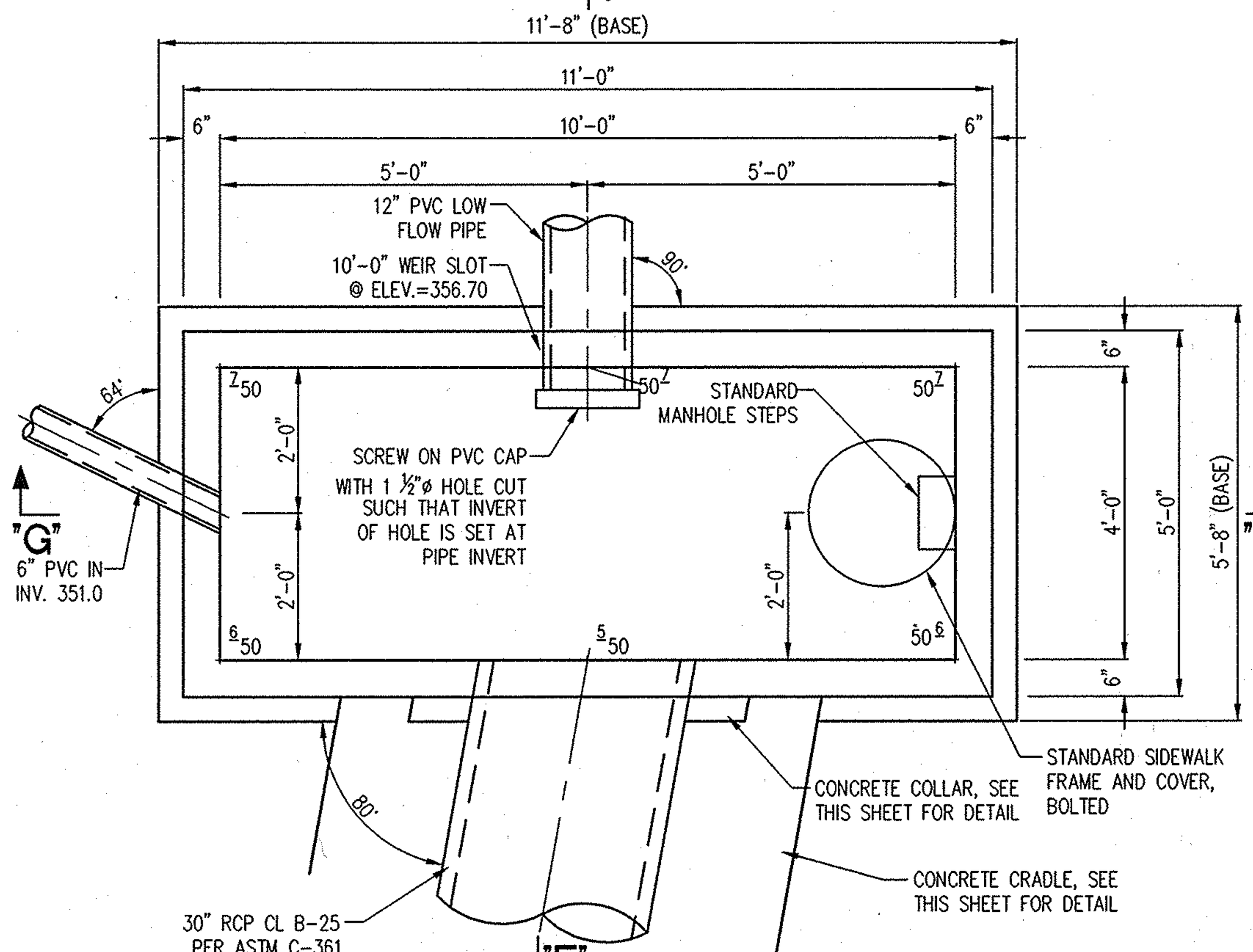
TOP SLAB

SCALE: 1"=2'



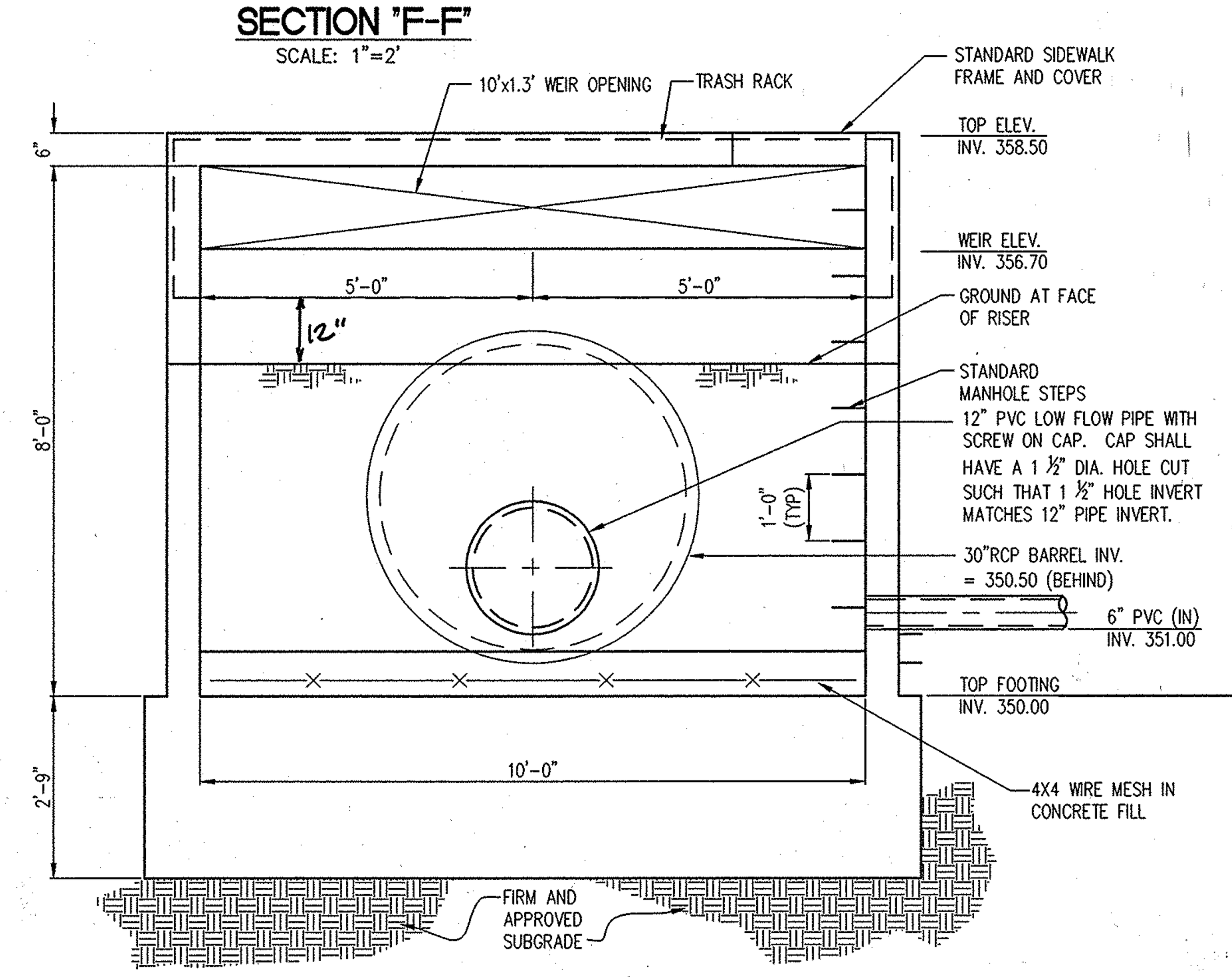
SECTION "F-F"

SCALE: 1"=2'



PLAN SECTION
TOP SLAB REMOVED

SCALE: 1"=2'



SECTION "G-G"

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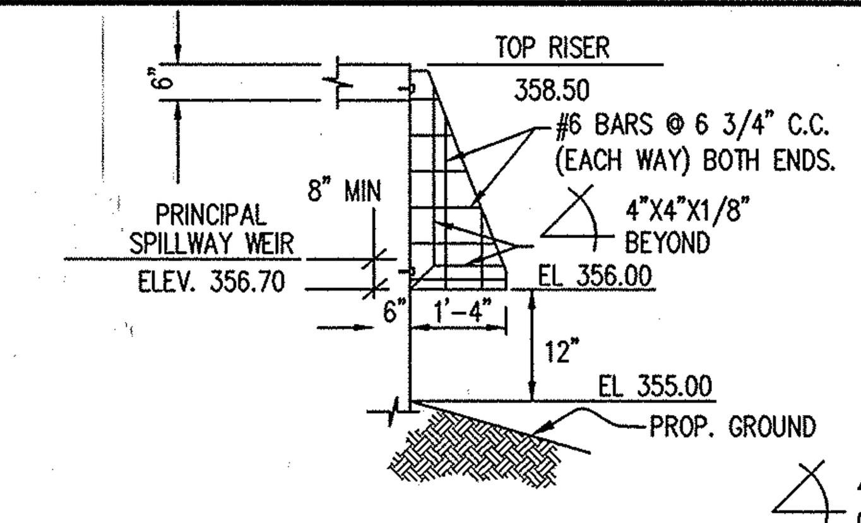
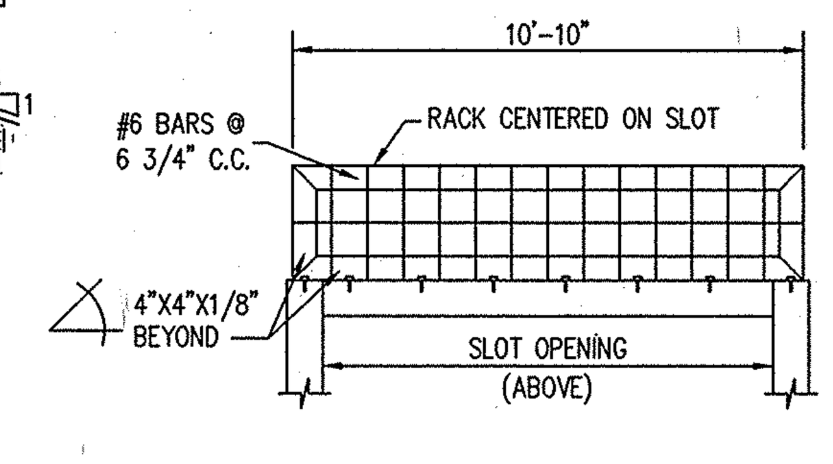
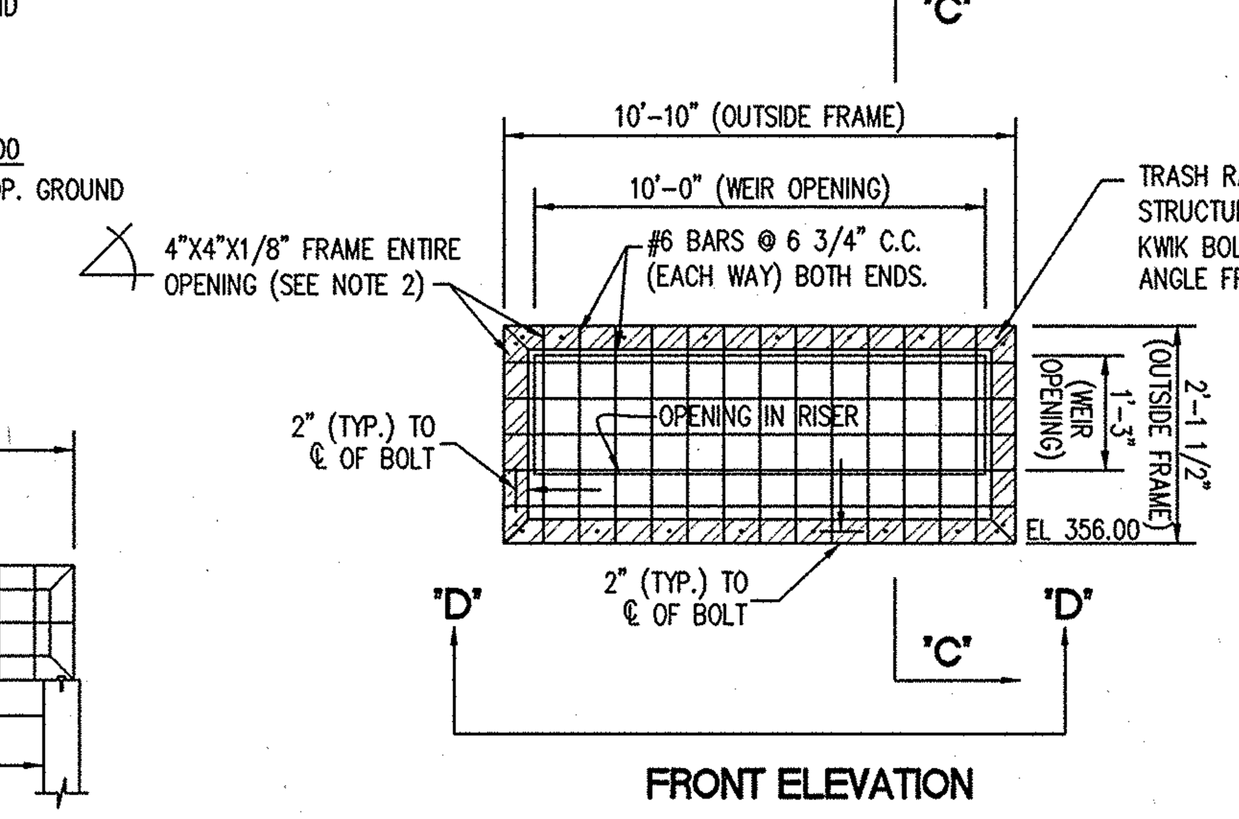


SECTION "C-C"
SIDE VIEW



SECTION "D-D"
BOTTOM VIEW



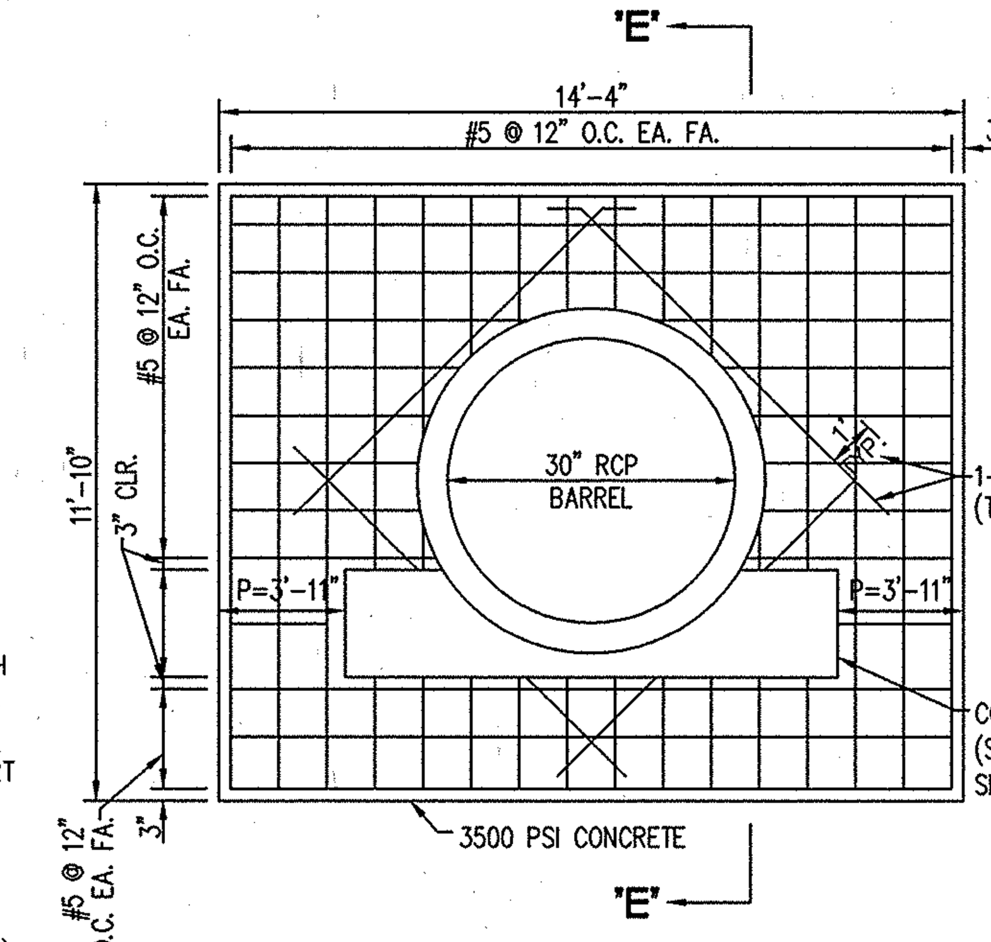
FRONT ELEVATION

REMOVABLE TRASH RACK NOTES:

1. ENTIRE TRASH RACK MUST BE HOT DIPPED GALVANIZED AFTER CONSTRUCTION.
2. BUTT WELD FRAME ANGLE, FILLET WELD BARS TO ANGLE FRAME.
3. PROVIDE 1/4" FILLET WELD AT BAR CROSSINGS.
4. ANGLE FRAMES AND BARS SHALL BE FABRICATED USING ASTM A-36 STEEL.
5. TRASH RACK SHALL BE MOUNTED TO RISER WITH 1/2" DIA. STAINLESS STEEL HEX HEAD BOLTS.
6. HORIZONTAL BARS TO BE BEHIND VERTICAL BARS.

RISER TRASH RACK DETAILS

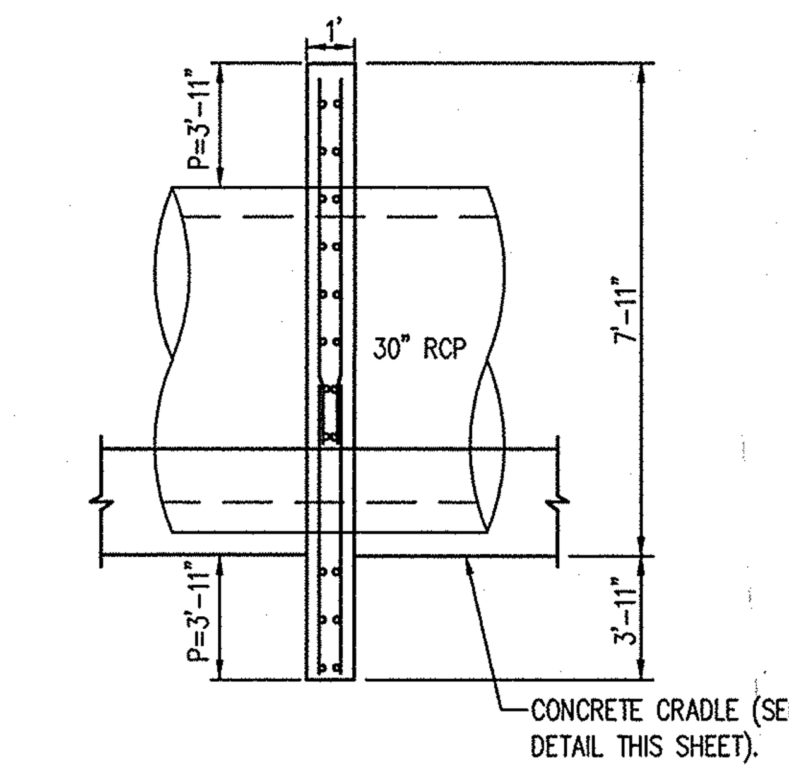
NOT TO SCALE



CAST IN PLACE
ANTI-SEEP COLLAR DETAIL

(1 REQUIRED)

NOT TO SCALE



SECTION "E-E"

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER — 2/4/10 — DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

ENGINEER — 2/2/2010 — DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

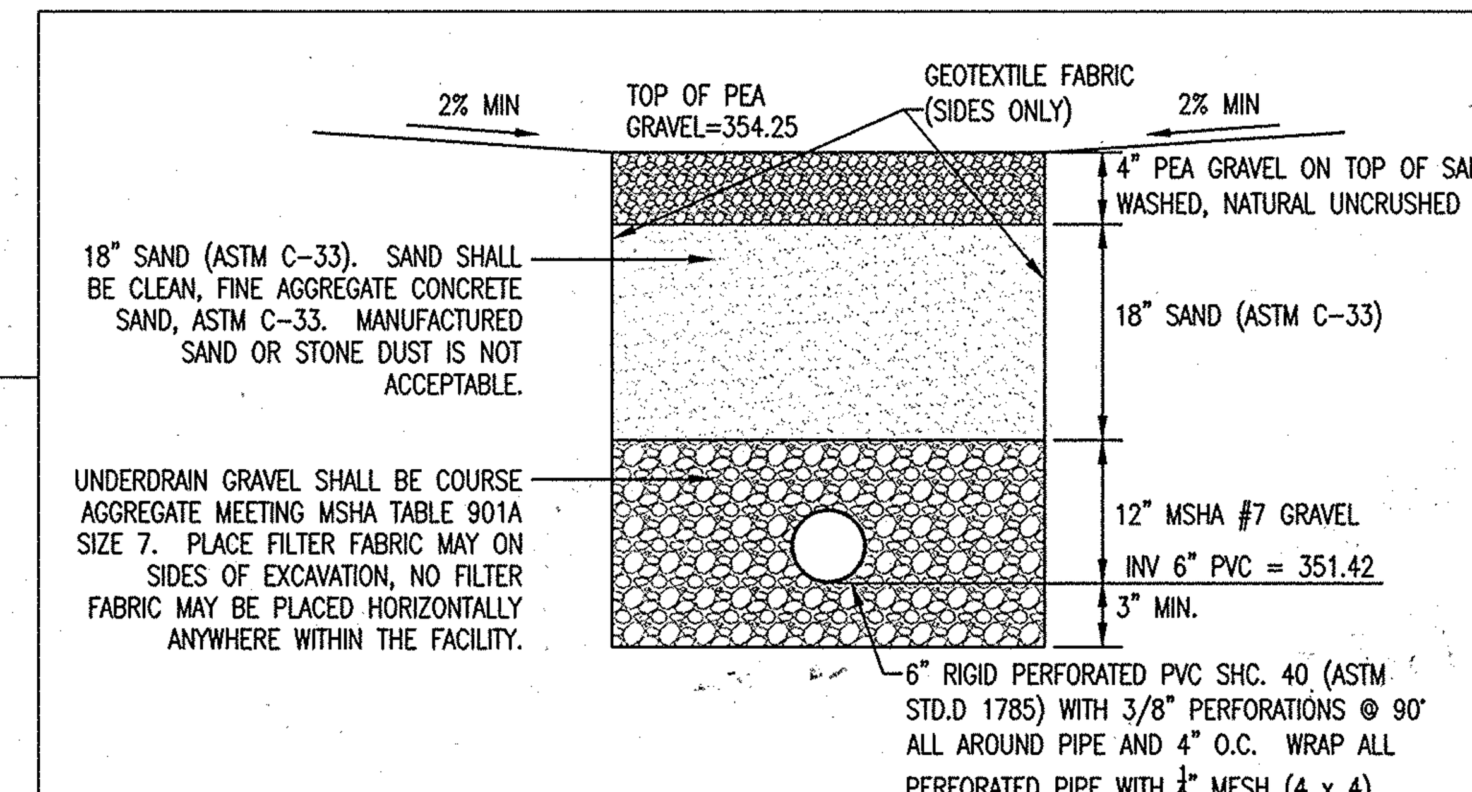
HOWARD SOIL CONSERVATION DISTRICT — 3/4/10 — DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — 3/15/10 — DATE

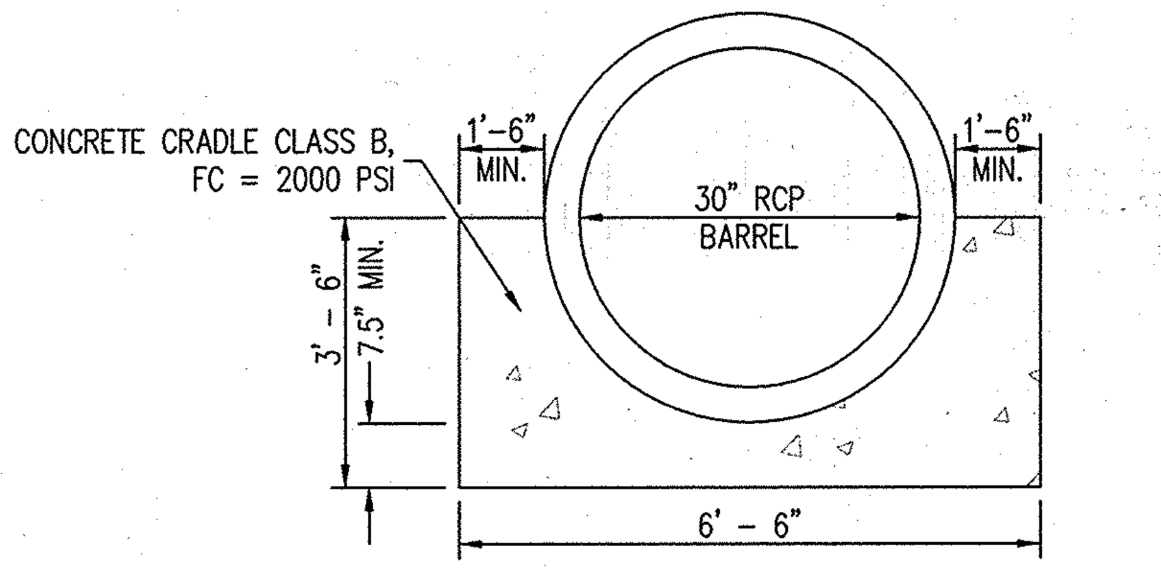
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3/8/10 — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 3/15/10 — DATE



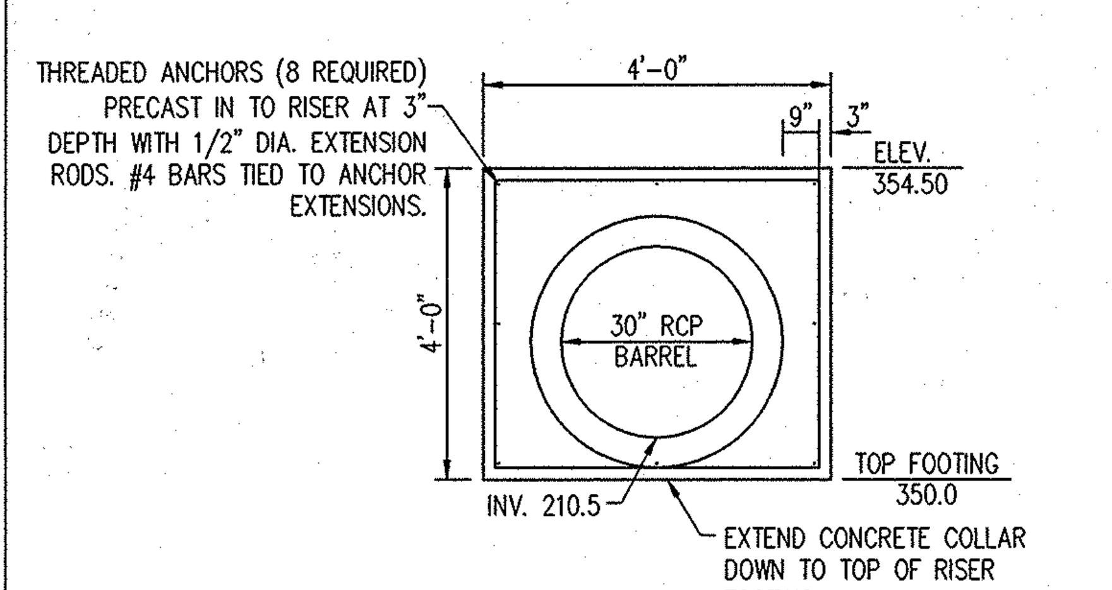
SURFACE SAND FILTER TYPICAL SECTION

NOT TO SCALE



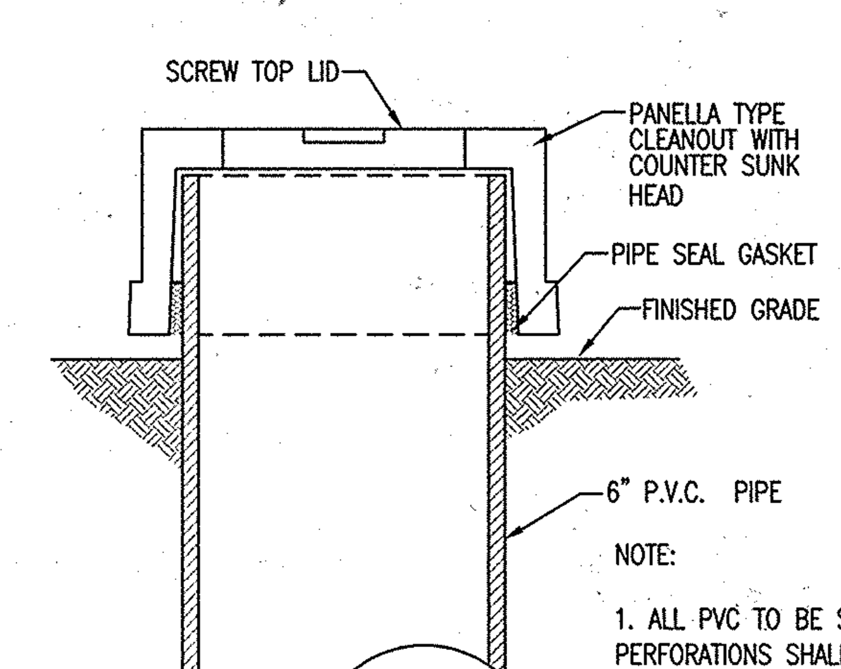
CONCRETE CRADLE DETAIL

(SCS TR-46 A-2)
NOT TO SCALE



CONCRETE COLLAR DETAIL AT 30" RCP BARREL CONNECTION TO RISER

NOT TO SCALE



NOTE:

1. ALL PVC TO BE SCHEDULE 40, PERFORATIONS SHALL BE 3/8" ø @ 4" O.C. 90' ALL AROUND PIPE.

2. INSTALL REMOVABLE WATER TIGHT PVC CAP ON TOP OF 6" PVC.

3. PIPE PERFORATIONS PROVIDED WITHIN STONE VOLUME ONLY.

CLEANOUT CAP

(NOT TO SCALE)

SAND SPECIFICATIONS

WASHED ASTM C33 FINE AGGREGATE CONCRETE SAND IS UTILIZED FOR STORMWATER MANAGEMENT APPLICATIONS IN MONTGOMERY COUNTY. IN ADDITION TO THE ASTM C-33 SPECIFICATIONS, SAND MUST MEET ALL OF THE FOLLOWING CONDITIONS.

1. SAND MUST MEET GRADATION REQUIREMENTS FOR ASTM C-33 FINE AGGREGATE CONCRETE SAND. AASHTO M-6 GRADATION IS ALSO ACCEPTABLE.

2. SAND MUST BE SILICA BASED. NO LIMESTONE BASED PRODUCTS MAY BE USED. IF THE MATERIAL IS WHITE OR GRAY IN COLOR, IT IS PROBABLY NOT ACCEPTABLE.

3. SAND MUST BE CLEAN. NATURAL, UNWASHED SAND DEPOSITS MAY NOT BE USED. LIKEWISE, SAND THAT HAS BECOME CONTAMINATED BY IMPROPER STORAGE OR INSTALLATION PRACTICES WILL BE REJECTED.

4. MANUFACTURED SAND OR STONE DUST IS NOT ACCEPTABLE UNDER ANY CIRCUMSTANCE.

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE STORMWATER MANAGEMENT POND DETAILS

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND — JOHN W. CLAPSADDLE — No. 18956 — PROFESSIONAL ENGINEER

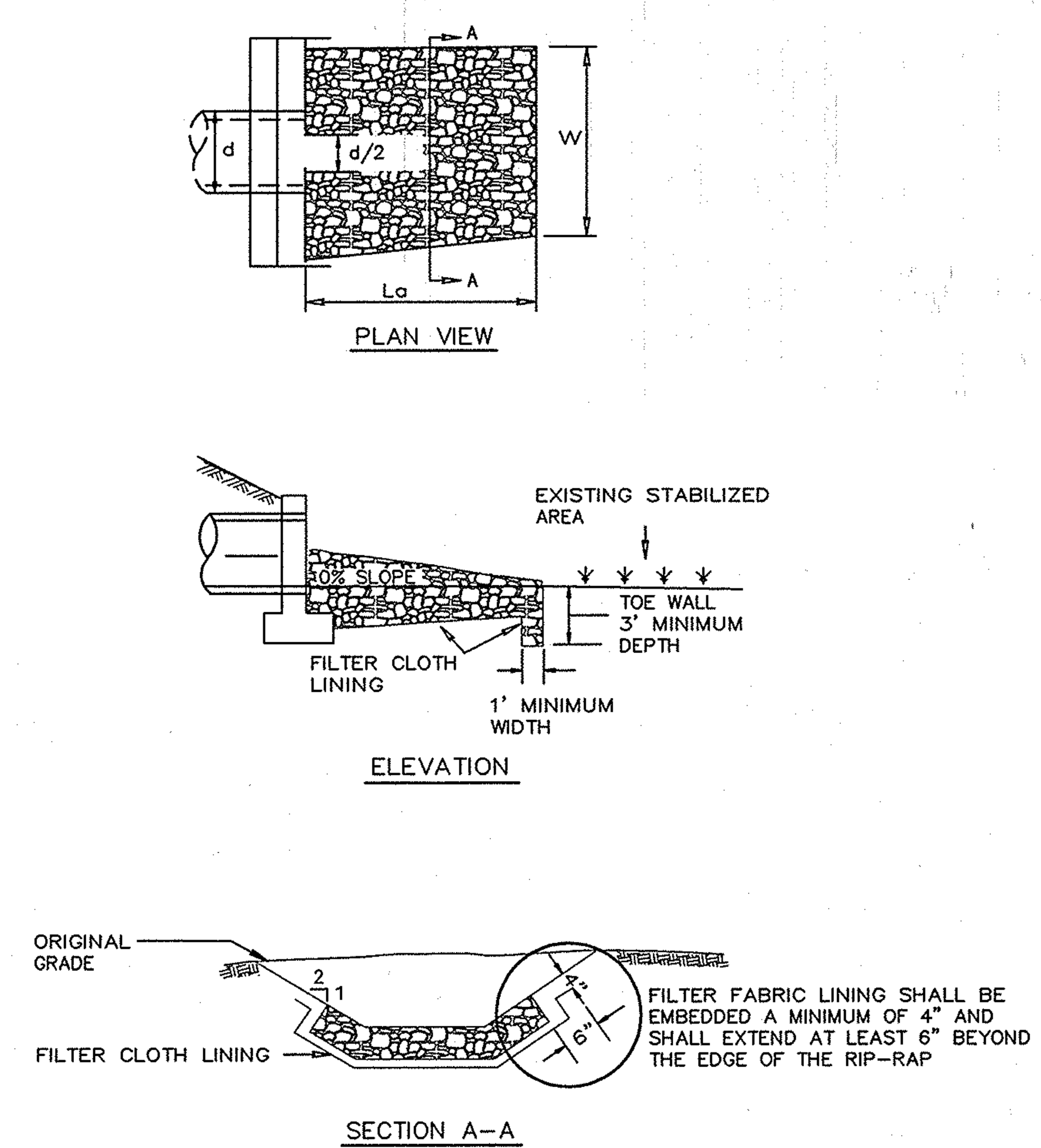
BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18956, EXPIRATION DATE 05/09/2010."

DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP38DET.DWG
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 38 OF 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP38DET.DWG

DETAIL 27 – ROCK OUTLET PROTECTION III



NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F – 18 – 10	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

ROCK OUTLET PROTECTION

Construction Specifications

1. The subgrade for the filter, rip–rap, 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.

2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip–rap or filter.

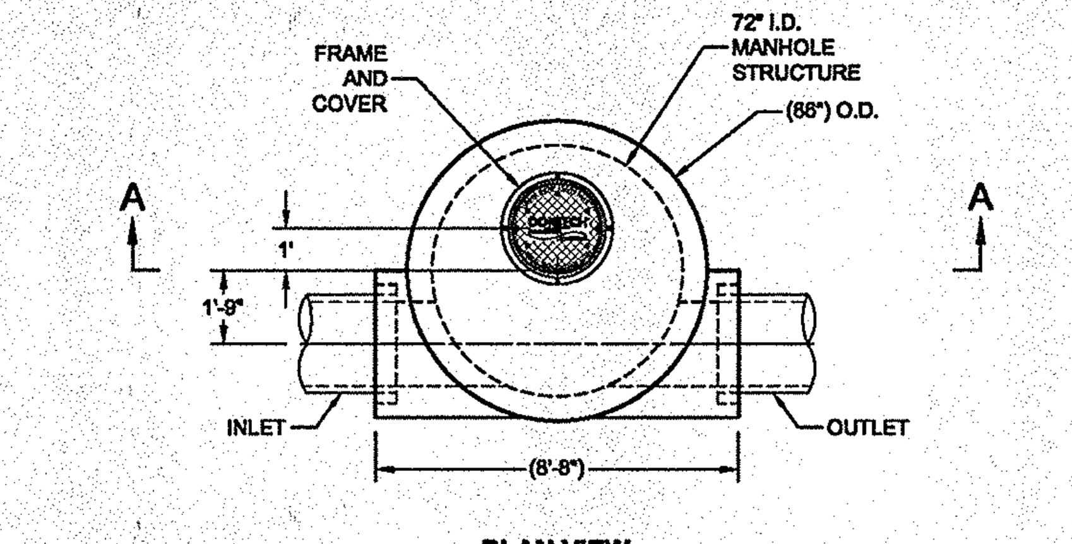
3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.

4. Stone for the rip–rap or gabion outlets may be placed by equipment. They shall 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 rip–rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip–rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

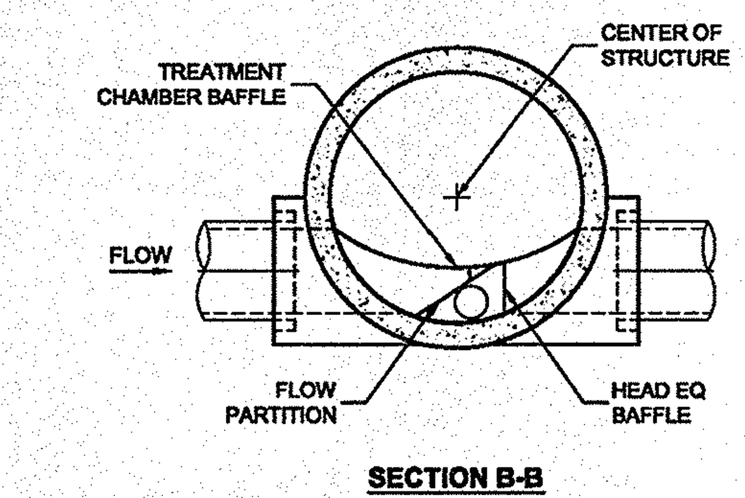
5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F – 18 – 8A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

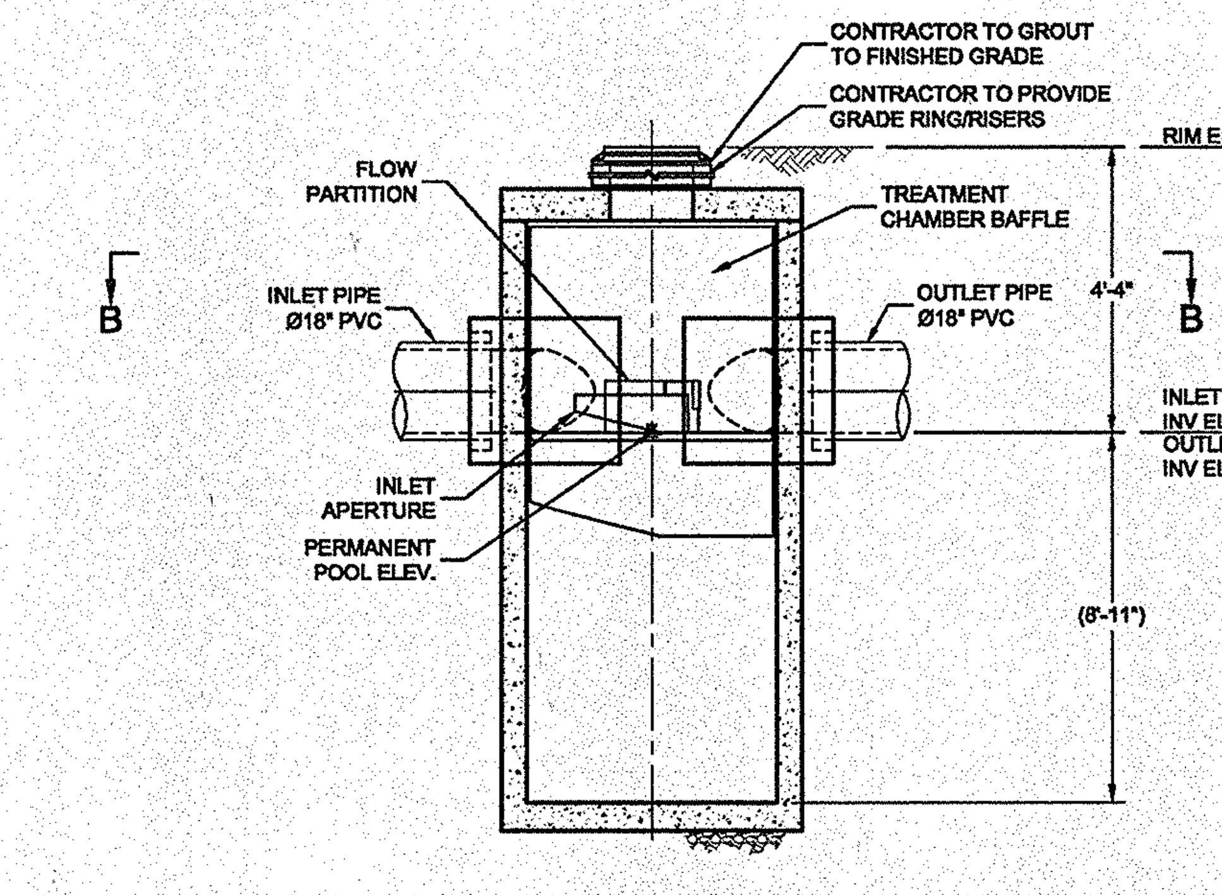
VORTSENTRY



PLAN VIEW



SECTION B-B



SECTION A-A

MATERIALS LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
1	INTERNAL ALUM. COMPONENTS	CONTECH
1	SEALANT FOR JOINTS	CONTRACTOR
1	Ø24" x 4" FRAME AND COVER	CONTRACTOR

SITE DESIGN DATA

WATER QUALITY FLOW RATE	1.32 cfs
PEAK FLOW RATE	7.73 cfs
RETURN PERIOD OF PEAK FLOW	10 yrs

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH STORMWATER SOLUTIONS REPRESENTATIVE. www.contechstormwater.com
4. VORTSENTRY WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE AND CASTINGS SHALL MEET AASHTO H20 LOAD RATING.

INSTALLATION NOTES
1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE VORTSENTRY MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
3. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = T.B.D. LBS.

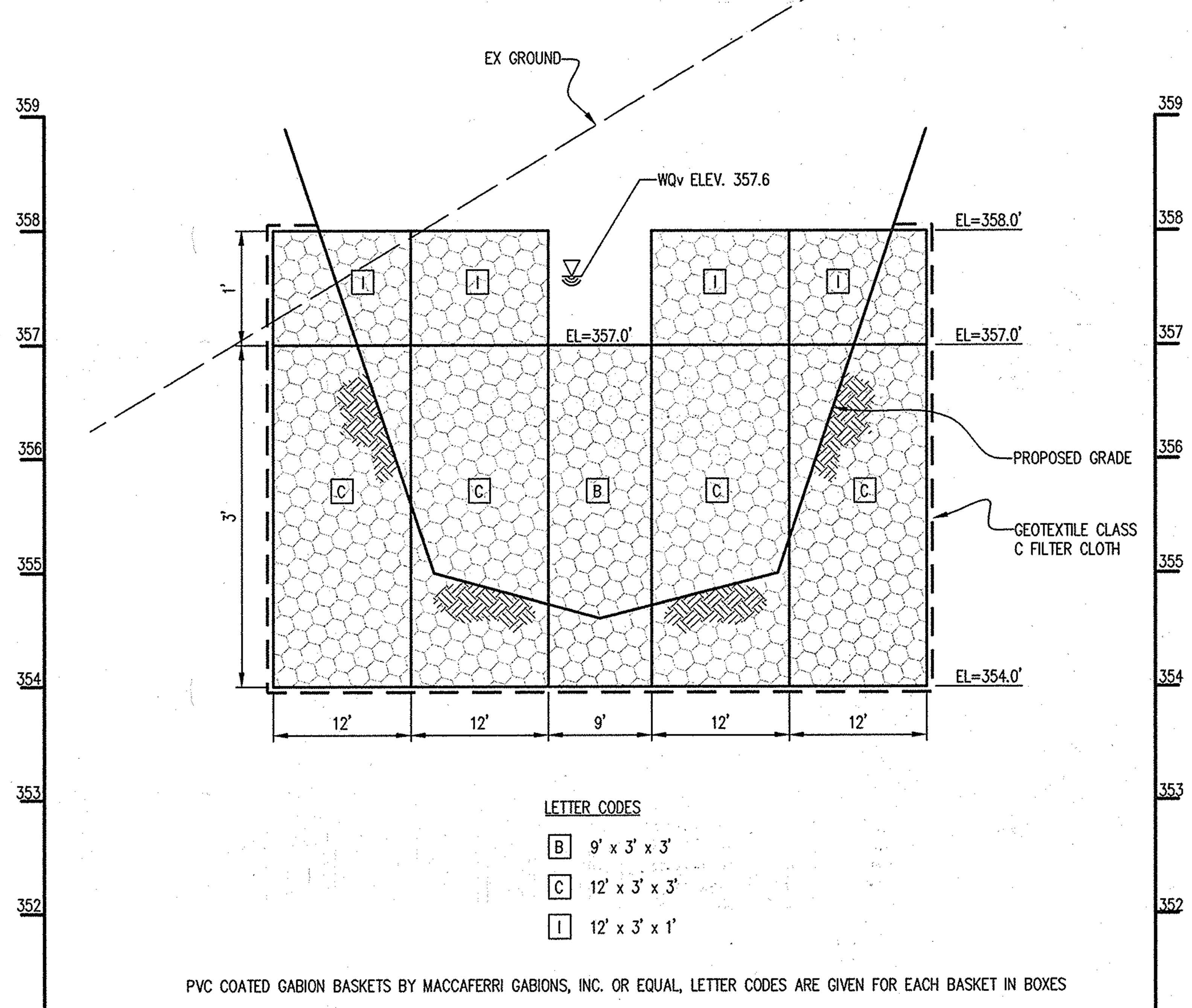
VortSentry®

RE/RE

VORTSENTRY MODEL VS60 - 403,176-01
Charles E Miller Branch and Historical Center
Ellicott City, mD
SITE DESIGNATION: M4

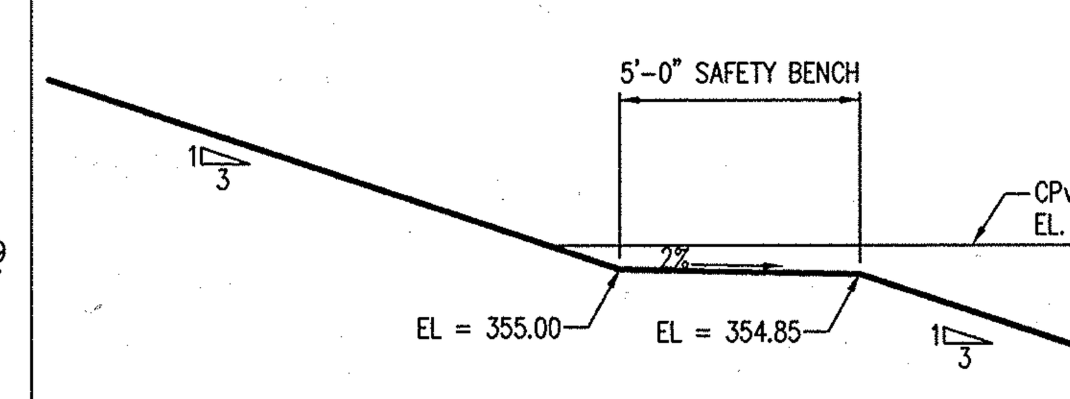
CONTECH® STORMWATER SOLUTIONS™ contechstormwater.com

BASE FILE NAME: VS60-SUB.DWG
SCALE: NONE
DESIGNED: CLG | DRAWN: N/A
DATE: 09/22/09
REV:



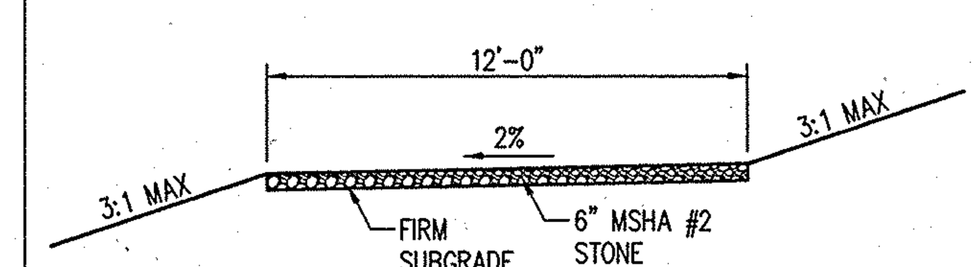
GABION BASKET CHECK DAM CROSS SECTION B-B

SCALE : HOR: 1"=10'
VERT: 1"=1'



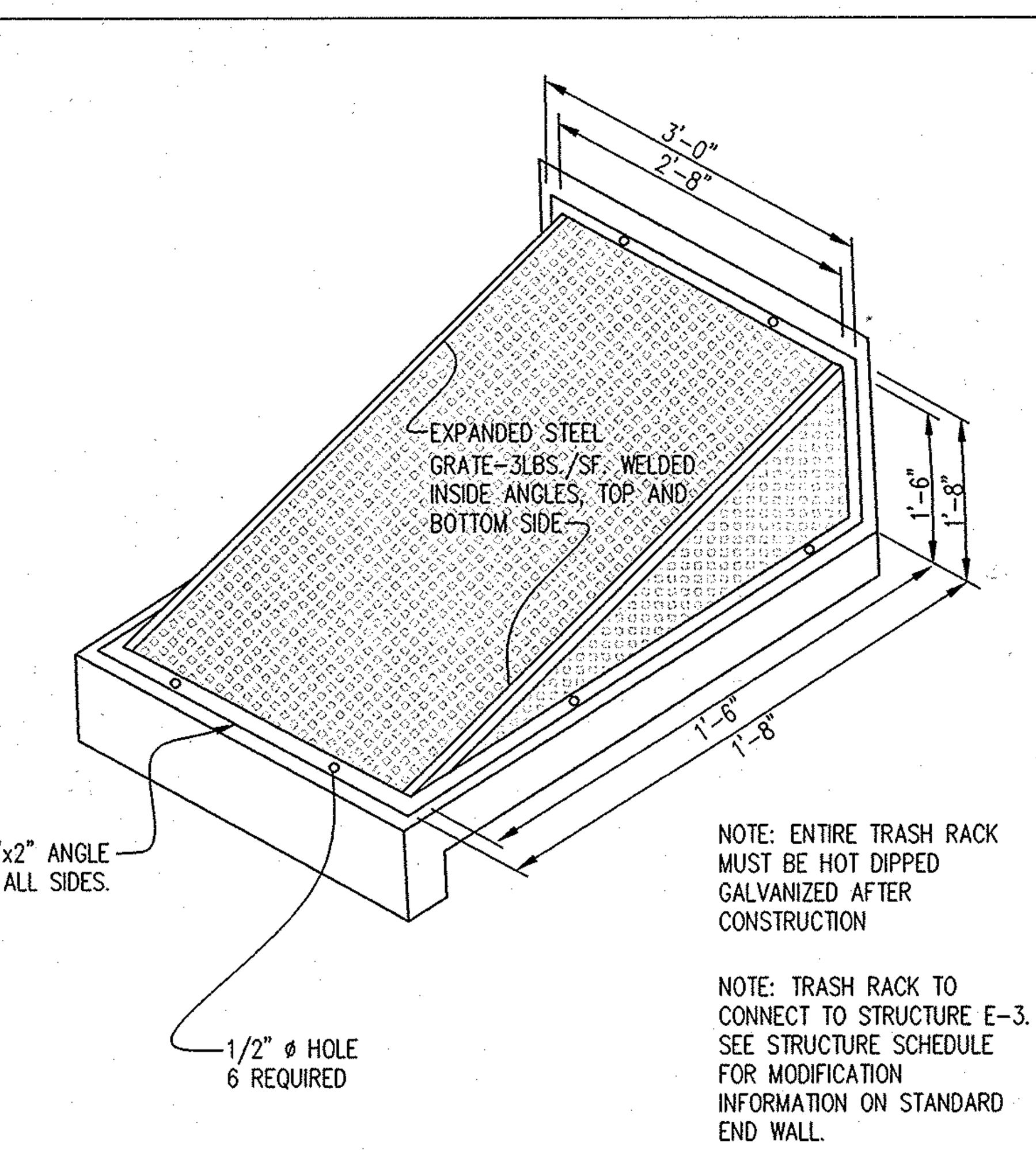
POND BENCHING TYPICAL SECTION

NOT TO SCALE



ACCESS ROAD TYPICAL SECTION

NOT TO SCALE

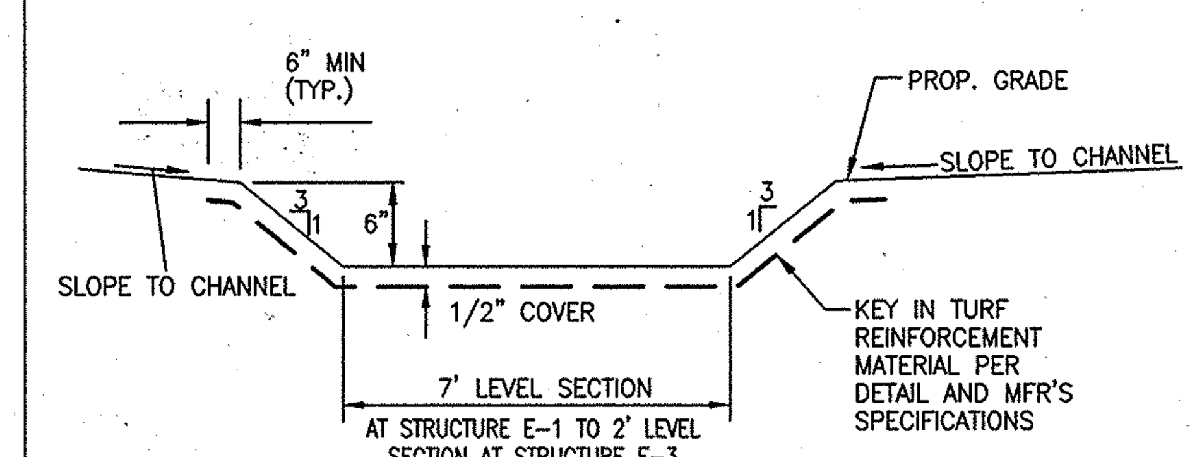


NOTE: ENTIRE TRASH RACK MUST BE HOT DIPPED GALVANIZED AFTER CONSTRUCTION

NOTE: TRASH RACK TO CONNECT TO STRUCTURE E-3. SEE STRUCTURE SCHEDULE FOR MODIFICATION INFORMATION ON STANDARD END WALL.

TRASH RACK

(NOT TO SCALE)



NOTES

1. INSTALL THE MATERIAL PER THE MANUFACTURER'S INSTRUCTIONS INCLUDING SUFACE PREPARATION AND STAPLING. IT IS VERY IMPORTANT THAT THE MATERIAL BE INSTALLED IN GOOD CONTACT WITH THE GROUND WITH NO WRINKLES OR VOID SPACES BELOW THE FABRIC. STAPLES MUST BE PLACED IN A DIAMOND PATTERN APPOXIMATELY 18" APART.

2. FILL VOIDS IN THE MATERIAL WITH TOPSOIL BEFORE SODDING OR SEEDING DO NOT PLACE MORE THAN ONE HALF INCH (1/2") OF TOPSOIL OVER THE MATERIAL. THE MATERIAL MUST BE WITHIN THE ROOT ZONE FOR IT TO FUNCTION PROPERLY.

3. MATERIAL MUST BE ENKAMAT 7010, ENKAMAT 7020, TENSAR TM–3000, PYRAMAT, OR OTHER MCDPS APPROVED EQUIVALENT. TO BE CONSIDERED AS AN EQUIVALENT, THE MATERIAL MUST BE A SINGLE BONDED TURF REINFORCEMENT MATERIAL. PROPOSED ALTERNATIVES MUST BE APPROVED BY MCDPS IN WRITING PRIOR TO PLACEMENT.

4. TURF REINFOREMENT IS NOT MEANT TO SERVE AS AN EROSION CONTROL MAT. IF NECESSARY, A BIOGRADABLE MATERIAL SUCH AS EXVELSIOR MAY BE PLACE OVER THE PREPATED SEED BED TO HOLD THE SEED IN PLACE. THE PURPOSE OF THE TURF REINFOREMENT MATERAIL IS TO ADD STRENGTH TO THE ROOT SYSTEM AFTER GERMINATION.

TURF REINFORCED LOW FLOW CHANNEL

NOT TO SCALE

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

2/4/10
DEVELOPER — DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

2/2/2010
ENGINEER — DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

3/4/10
HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

3/15/10
DIRECTOR — DATE

3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043–4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410–313–4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON–BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE STORMWATER MANAGEMENT POND DETAILS

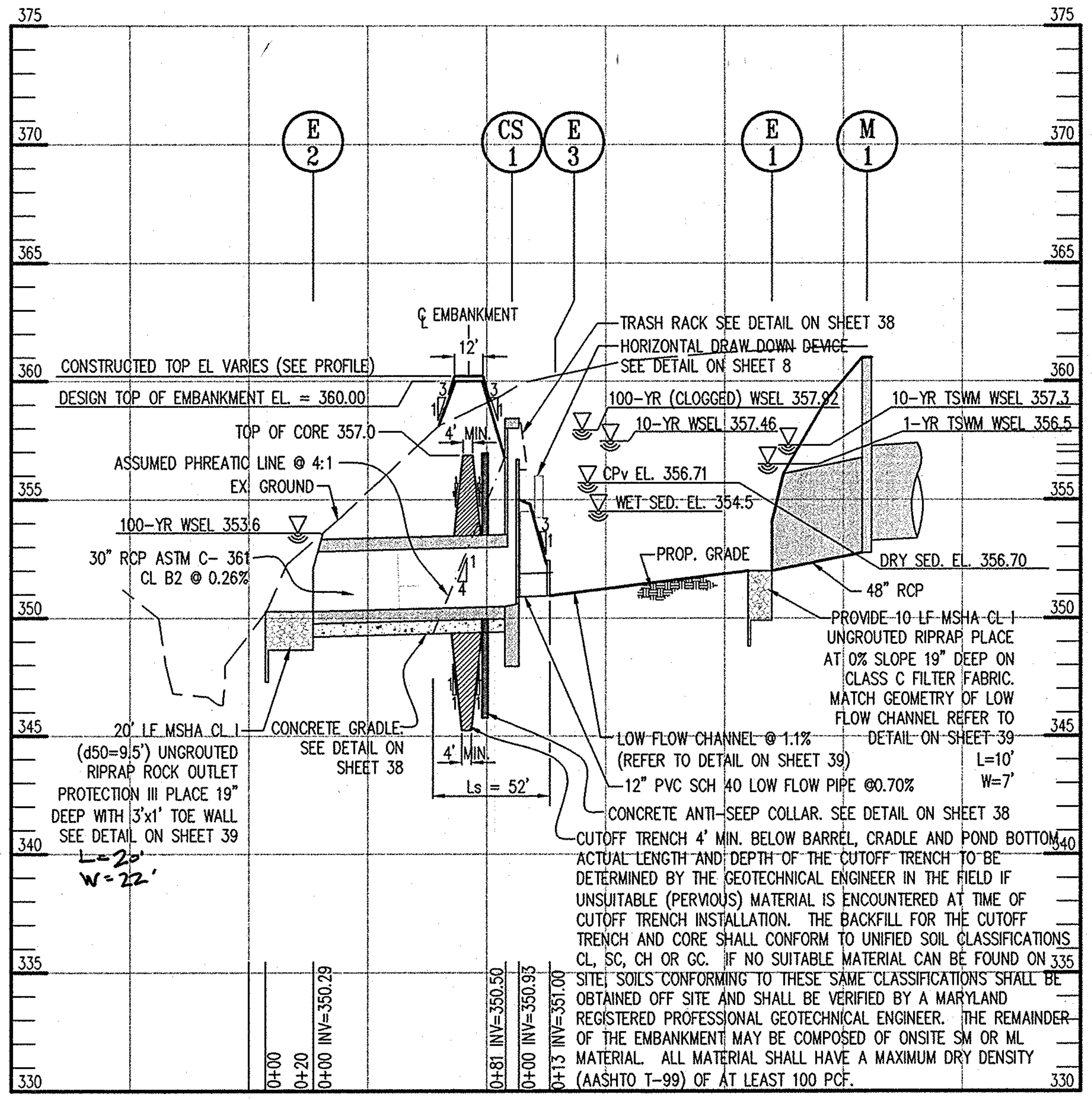
Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

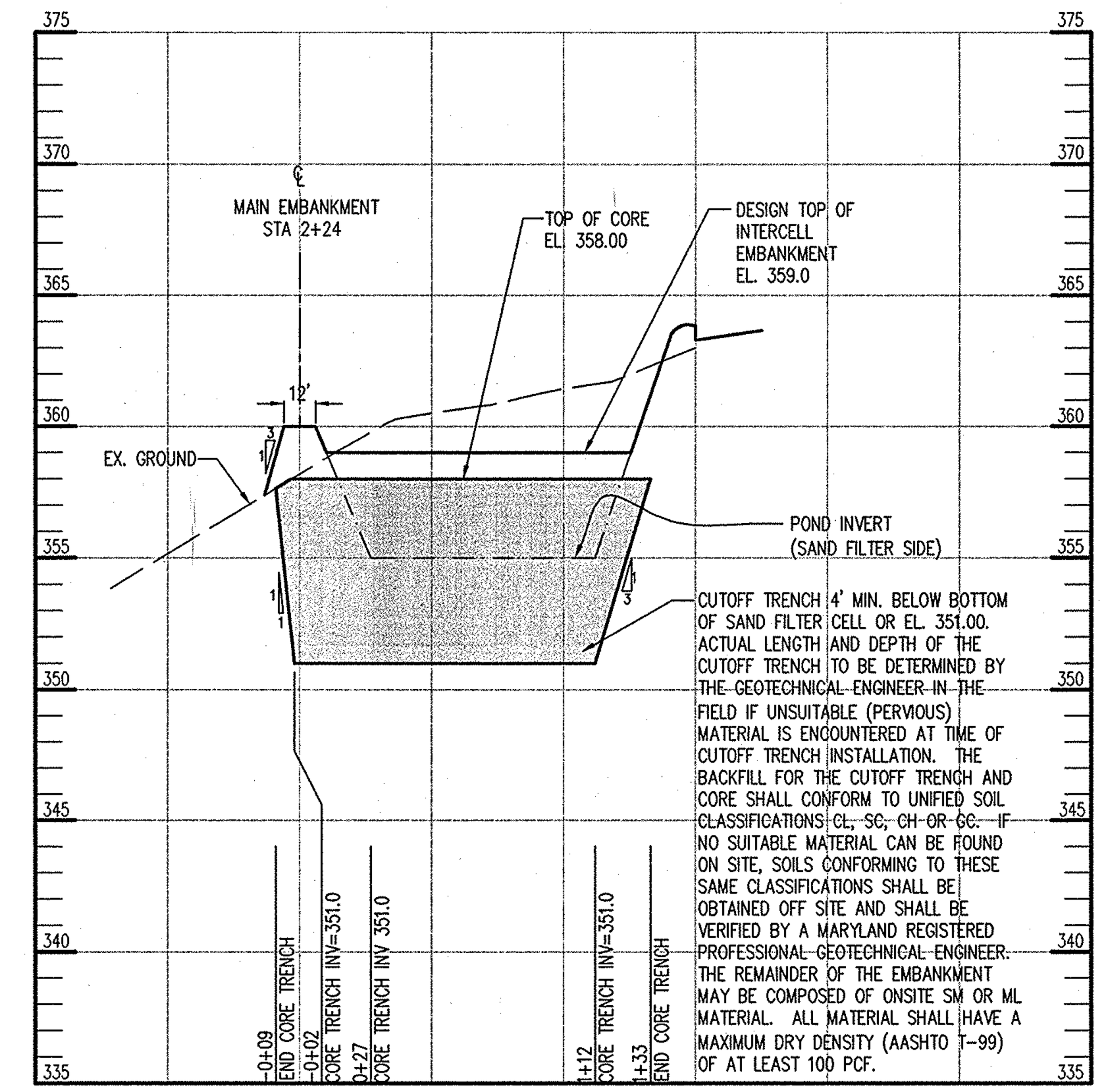
DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP39DET.DWG
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 39 OF 66

SDP–09–058



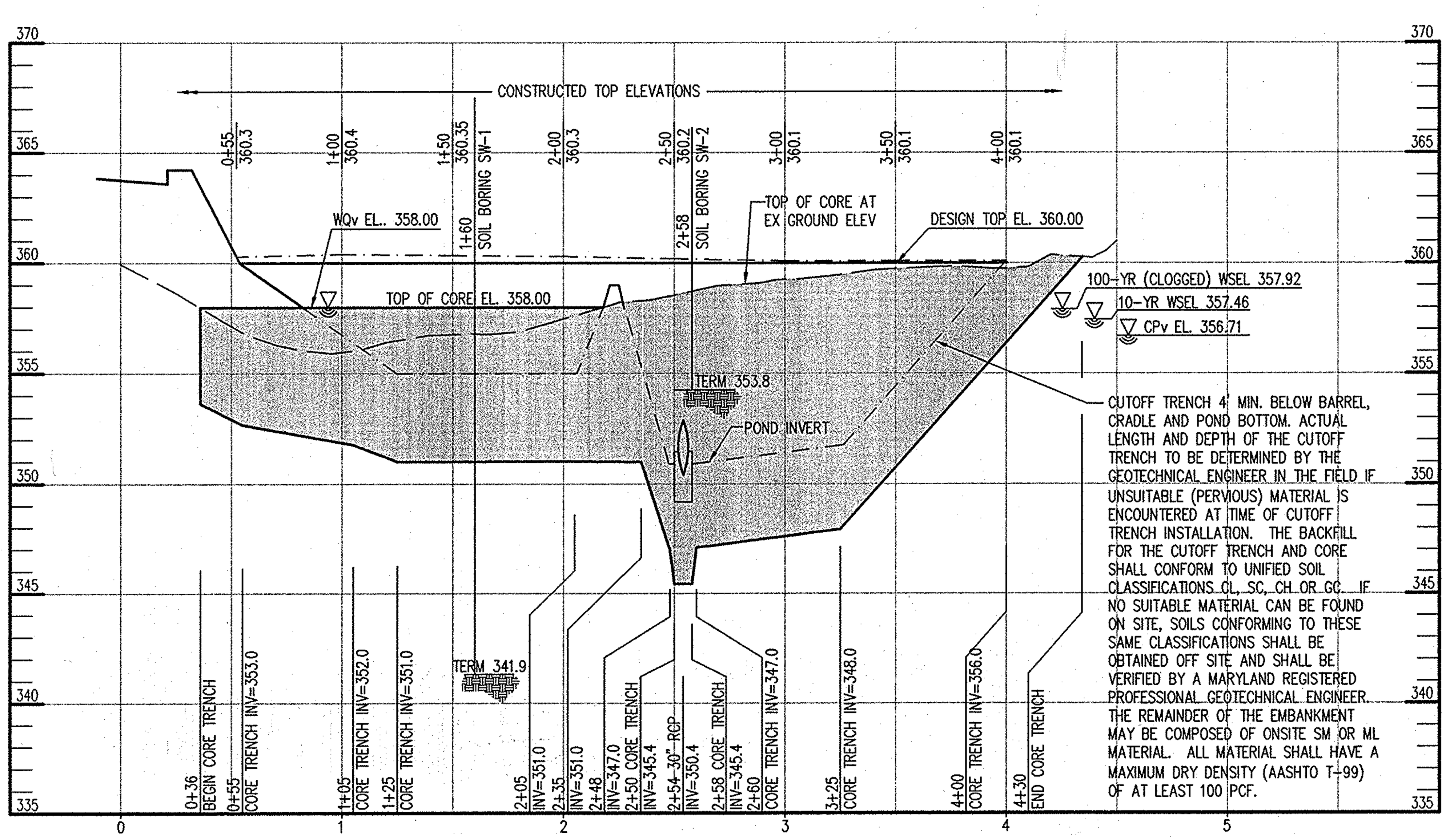
PROFILE THROUGH PRINCIPAL SPILLWAY

SCALE : HOR: 1"=50'
VERT: 1"=5'



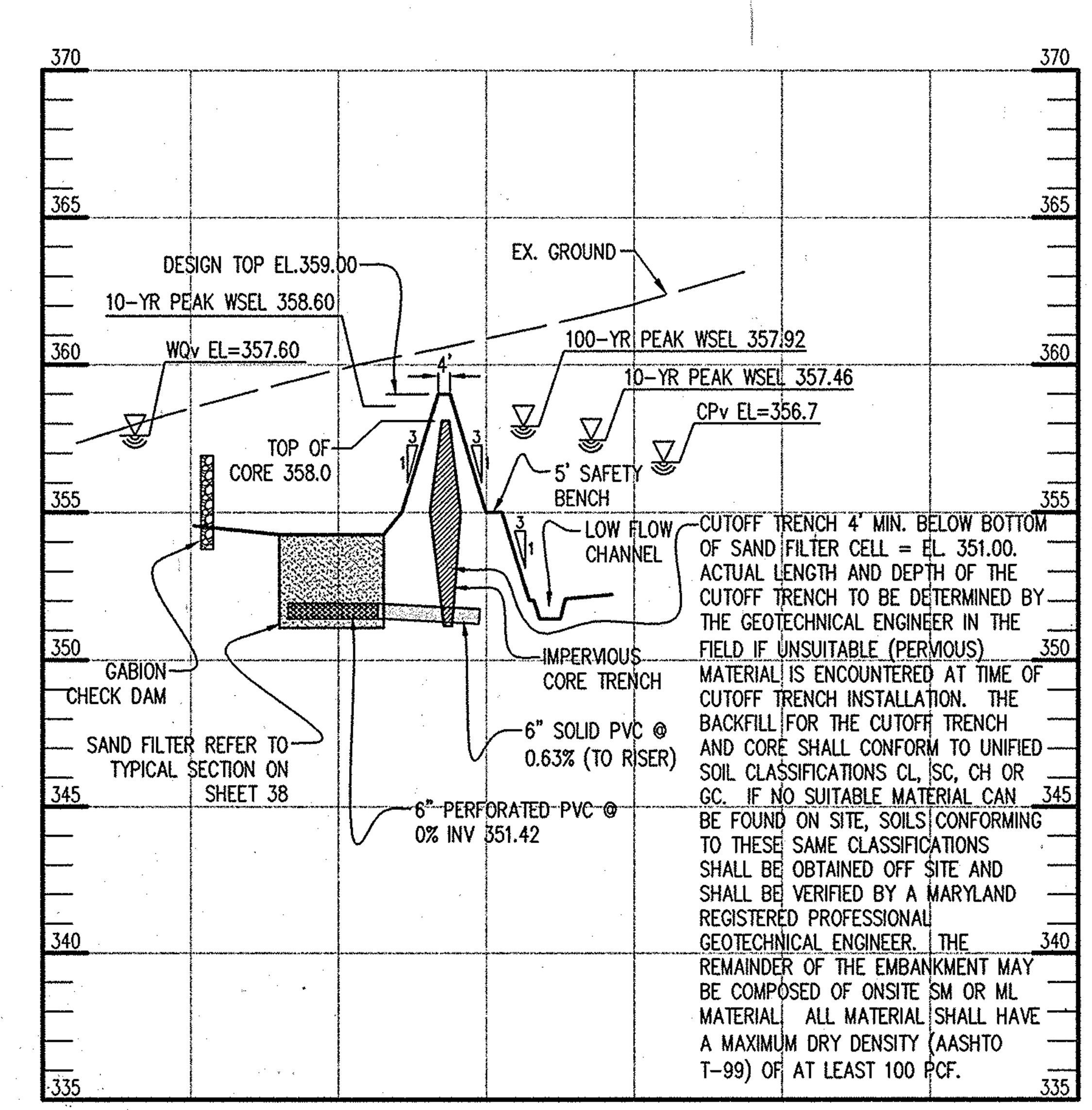
PROFILE ALONG C INTERCELL EMBANKMENT

SCALE : HOR: 1"=50'
VERT: 1"=5'



PROFILE ALONG CENTERLINE OF MAIN EMBANKMENT

SCALE : HOR: 1"=50'
VERT: 1"=5'



CROSS SECTION THROUGH INTERCELL EMBANKMENT SECTION A-A

SCALE : HOR: 1"=50'
VERT: 1"=5'

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER 3/4/10 DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

ENGINEER 2/2/2010 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT 3/4/10 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR 3/15/10 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 3/3/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 3/15/10 DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
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PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
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AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE STORMWATER MANAGEMENT POND SECTIONS AND PROFILES

Patton Harris Rust & Associates
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8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
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SEAL
STATE OF MARYLAND — JOHN W. CLAPSADDLE — NO. 18956 — PROFESSIONAL ENGINEER

BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP40PRO.DWG
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 40 OF 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP40PRO.DWG

CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

Earth Fill

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within ±2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, roll-

ers, or hand tampers to assure maximum density and minimum permeability.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

Pipe Conduits

All pipes shall be circular in cross section.

Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

1. Materials - (Polymer Coated steel pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

   Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be replaced with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted

   with one coat of zinc chromate primer or two coats of asphalt.

   Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

   All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24 inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugation depth. Pipes 24 inches in diameter and larger shall be connected by a 24 inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8 inch closed cell gaskets the full width of the flange is also acceptable.

   Helically corrugated pipe shall have either continuously welded seams or have lock seams with internal caulking or a neoprene bead.

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "**Structure Backfill**".

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding / cradle for their entire length. This bedding / cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. Backfilling shall conform to "**Structure Backfill**".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Plastic Pipe - The following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" – 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding -The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to "**Structure Backfill**".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 902.10, Mix No. 3.

Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class SE (Non-Woven).

Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory per-

formance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a sightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

OPERATION AND MAINTENANCE

An operation and maintenance plan in accordance with Local or State Regulations will be prepared for all ponds. As a minimum, the dam inspection checklist located in Appendix A shall be included as part of the operation and maintenance plan and performed at least annually. Written records of maintenance and major repairs needs to be retained in a file. The issuance of a Maintenance and Repair Permit for any repairs or maintenance that involves the modification of the dam or spillway from its original design and specifications is required. A permit is also required for any repairs or reconstruction that involve a substantial portion of the structure. All indicated repairs are to be made as soon as practical.

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER 2/4/10 DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

ENGINEER 2/2/2010 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT 3/4/10 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR 3/15/10 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 3/8/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 3/15/10 DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **STORMWATER MANAGEMENT NOTES AND SPECIFICATIONS**

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

STATE OF MARYLAND
JOHN W. CLAPSADDLE
NO. 16956
REGISTERED
PROFESSIONAL ENGINEER

BY:

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JWC

DRAWN BY: SGM

PROJECT NO : 15976-1-0 C-SDP41DET.DWG

DATE : FEBRUARY 2, 2010

SCALE : AS SHOWN

DRAWING NO. 41 OF ~~60~~ 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP41DET.DWG

PH R+A PATTON HARRIS RUST & ASSOCIATES, pc — BORING LOG (SW-1)

PROJECT NAME:	PROJECT NUMBER:	BORING NUMBER:
Miller Branch Library	15976-1-0	SW-1
LOCATION: Ellicott City. MD		SHEET 1 OF 1
LOGGED BY: J. Aviles, I. Howard	DRILLER: Hurdis Drilling Company	ELEVATION: 356.9'

GROUNDWATER DATA	DATE	TIME	ELAPSED	CAVED (FT)	DEPTH (FT)		DATE	TIME
ENCOUNTERED:	12/17/08		—			START:	12/17/08	
UPON COMPLETION:	12/17/08		—	13.5	7.0	FINISHED:	12/17/08	
SHORT TERM:	12/29/08		—		7.8	DRILLING METHOD	HSA	
LONG TERM:	2/2/09		—		8.6	EQUIPMENT:	CME-45 ATV	

Recovery (inches)	SPT blows per 6-in.	SPT blows per foot	VISUAL DESCRIPTION	Stratum depth (ft)
			Organic Surface - 10 inches.	0.8
14	2 2 3	5	Loose to medium dense, olive orange, white, moist, silty medium to coarse SAND (SM), little clay, trace mica.	
15	4 3 5	8		
14	4 4 6	10		
14	8 12 12	24		13.5
16	25 45 43	88	Decomposed Rock, sampled as very dense, olive orange, white, moist, silty medium to coarse SAND (SM), trace mica.	15.0
			Boring terminated at 15.0 feet.	

Columns: Elevation (ft.), Depth (ft.), Recovery (inches), SPT blows per 6-in./foot, VISUAL DESCRIPTION, Stratum, Groundwater, MC (%), LL (%), PI (%), Fines (%), COMMENTS

The split spoon sampler is driven into the soil a distance of 18 inches, by a 140-pound safety hammer falling 30 inches. The number of blows required to drive the sampler the final 12 inches is designated the SPT or N-value.

PH R+A PATTON HARRIS RUST & ASSOCIATES, pc — BORING LOG (SW-2)

PROJECT NAME:	PROJECT NUMBER:	BORING NUMBER:
Miller Branch Library	15976-1-0	SW-2
LOCATION: Ellicott City. MD		SHEET 1 OF 1
LOGGED BY: J. Aviles, I. Howard	DRILLER: Hurdis Drilling Company	ELEVATION: 358.8'

GROUNDWATER DATA	DATE	TIME	ELAPSED	CAVED (FT)	DEPTH (FT)		DATE	TIME
ENCOUNTERED:	12/17/08		—			START:	12/17/08	
UPON COMPLETION:	12/17/08		—	14.0	12.0	FINISHED:	12/17/08	
SHORT TERM:	12/29/08		—		10.5	DRILLING METHOD	HSA	
LONG TERM:	2/2/09		—		10.8	EQUIPMENT:	CME-45 ATV	

Recovery (inches)	SPT blows per 6-in.	SPT blows per foot	VISUAL DESCRIPTION	Stratum depth (ft)
			Organic Surface - 10 inches.	0.8
16	2 3 4	7	Firm, orange olive, moist, fine to coarse sandy SILT (ML), some clay, trace mica.	3.5
17	3 4 6	10	Medium dense, olive brown, silty fine to medium SAND (SM), some clay, trace to little mica.	6.0
14	3 4 5	9	Loose to medium dense, yellow olive, white, moist, silty medium to coarse SAND (SM), trace mica.	
16	3 3 3	6		
16	5 6 9	15		15.0
			Boring terminated at 15.0 feet.	

The split spoon sampler is driven into the soil a distance of 18 inches, by a 140-pound safety hammer falling 30 inches. The number of blows required to drive the sampler the final 12 inches is designated the SPT or N-value.

PH R+A PATTON HARRIS RUST & ASSOCIATES, pc — BORING LOG (SW-3)

PROJECT NAME:	PROJECT NUMBER:	BORING NUMBER:
Miller Branch Library	15976-1-0	SW-3
LOCATION: Ellicott City. MD		SHEET 1 OF 1
LOGGED BY: J. Aviles, I. Howard	DRILLER: Hurdis Drilling Company	ELEVATION: 356.2'

GROUNDWATER DATA	DATE	TIME	ELAPSED	CAVED (FT)	DEPTH (FT)		DATE	TIME
ENCOUNTERED:	12/16/08		—			START:	12/16/08	
UPON COMPLETION:	12/16/08		—	15.0	8.0	FINISHED:	12/16/08	
SHORT TERM:	12/29/08		—		7.0	DRILLING METHOD	HSA	
LONG TERM:	2/2/09		—		7.3	EQUIPMENT:	CME-45 ATV	

Recovery (inches)	SPT blows per 6-in.	SPT blows per foot	VISUAL DESCRIPTION	Stratum depth (ft)
			Organic Surface - 10 inches.	0.8
14	3 2 3	5	Firm, olive brown, moist, medium to coarse sandy SILT (ML), trace mica.	3.5
15	5 4 4	8	Loose to medium dense, orange, gray olive, white, moist, silty medium to coarse SAND (SM), trace mica.	
15	3 3 3	6		
14	4 5 6	11		13.5
15	8 26 40	66	Decomposed Rock, sampled as very dense, olive brown, white, moist, silty fine to coarse SAND (SM), trace mica.	15.0
			Boring terminated at 15.0 feet.	

The split spoon sampler is driven into the soil a distance of 18 inches, by a 140-pound safety hammer falling 30 inches. The number of blows required to drive the sampler the final 12 inches is designated the SPT or N-value.

PH R+A PATTON HARRIS RUST & ASSOCIATES, pc — BORING LOG (SW-4)

PROJECT NAME:	PROJECT NUMBER:	BORING NUMBER:
Miller Branch Library	15976-1-0	SW-4
LOCATION: Ellicott City. MD		SHEET 1 OF 1
LOGGED BY: J. Aviles, I. Howard	DRILLER: Hurdis Drilling Company	ELEVATION: 361.0'

GROUNDWATER DATA	DATE	TIME	ELAPSED	CAVED (FT)	DEPTH (FT)		DATE	TIME
ENCOUNTERED:	12/17/08		—			START:	12/17/08	
UPON COMPLETION:	12/17/08		—	14.5	13.0	FINISHED:	12/17/08	
SHORT TERM:	12/29/08		—		11.8	DRILLING METHOD	HSA	
LONG TERM:	2/2/09		—		12.7	EQUIPMENT:	CME-45 ATV	

Recovery (inches)	SPT blows per 6-in.	SPT blows per foot	VISUAL DESCRIPTION	Stratum depth (ft)	MC (%)
			Organic Surface - 10 inches.	0.8	
15	2 2 3	5	Firm, yellow olive, moist, fine sandy CLAY (CL), little silt, trace mica.	3.5	
15	3 2 4	6	Loose, tannish olive, moist, fine to medium clayey SAND (SC) with trace mica.	6.0	
14	3 3 4	7	Loose to medium dense, tan olive, moist, silty fine to coarse SAND (SM), trace clay and mica.		
16	5 7 6	13			19.1
16	4 6 9	15		15.0	
			Boring terminated at 15.0 feet.		

The split spoon sampler is driven into the soil a distance of 18 inches, by a 140-pound safety hammer falling 30 inches. The number of blows required to drive the sampler the final 12 inches is designated the SPT or N-value.

PH R+A PATTON HARRIS RUST & ASSOCIATES, pc — BORING LOG (SW-5)

PROJECT NAME:	PROJECT NUMBER:	BORING NUMBER:
Miller Branch Library	15976-1-0	SW-5
LOCATION: Ellicott City. MD		SHEET 1 OF 1
LOGGED BY: J. Aviles, I. Howard	DRILLER: Hurdis Drilling Company	ELEVATION: 360.5'

GROUNDWATER DATA	DATE	TIME	ELAPSED	CAVED (FT)	DEPTH (FT)		DATE	TIME
ENCOUNTERED:	12/17/08		—			START:	12/17/08	
UPON COMPLETION:	12/17/08		—	14.8	13.6	FINISHED:	12/17/08	
SHORT TERM:	12/29/08		—		11.5	DRILLING METHOD	HSA	
LONG TERM:	2/2/09		—		11.9	EQUIPMENT:	CME-45 ATV	

Recovery (inches)	SPT blows per 6-in.	SPT blows per foot	VISUAL DESCRIPTION	Stratum depth (ft)	MC (%)
			Organic Surface - 10 inches.	0.8	
13	3 4 5	9	Loose, olive orange, moist, clayey fine to medium SAND (SC), some silt, trace mica.	3.5	
16	3 4 6	10	Medium dense, tan olive, moist, clayey fine to medium SAND (SC), trace mica.	6.0	
14	3 4 6	10	Medium dense, tan, moist, medium to coarse POORLY GRADED SAND (SP), some silt, trace mica.	8.5	
17	4 5 5	10	Medium dense, olive, white, moist, silty medium to coarse SAND (SM), trace mica.		
16	5 5 6	11		15.0	23.3
			Boring terminated at 15.0 feet.		

The split spoon sampler is driven into the soil a distance of 18 inches, by a 140-pound safety hammer falling 30 inches. The number of blows required to drive the sampler the final 12 inches is designated the SPT or N-value.

PH R+A PATTON HARRIS RUST & ASSOCIATES, pc — BORING LOG (B-6)

PROJECT NAME:	PROJECT NUMBER:	BORING NUMBER:
Miller Branch Library	15976-1-0	B-6
LOCATION: Ellicott City. MD		SHEET 1 OF 1
LOGGED BY: J. Aviles, I. Howard	DRILLER: Hurdis Drilling Company	ELEVATION: 374.3'

GROUNDWATER DATA	DATE	TIME	ELAPSED	CAVED (FT)	DEPTH (FT)		DATE	TIME
ENCOUNTERED:	12/18/08		—			START:	12/18/08	
UPON COMPLETION:	12/18/08		—	17.0	DRY	FINISHED:	12/18/08	
SHORT TERM:			—			DRILLING METHOD	HSA	
LONG TERM:			—			EQUIPMENT:	CME-45 ATV	

Recovery (inches)	SPT blows per 6-in.	SPT blows per foot	VISUAL DESCRIPTION	Stratum depth (ft)
			Organic Surface - 10 inches.	0.8
14	4 5 5	10	Stiff, orange brown, moist, medium to coarse sandy LEAN CLAY (CL), trace mica.	3.5
12	3 4 5	9	Loose to medium dense, orange olive, white, moist, silty medium to coarse SAND (SM), little clay , trace to little mica.	
14	3 4 6	10		
15	4 4 5	9		
13	5 5 7	12		
14	3 6 7	13		20.0
			Boring terminated at 20.0 feet.	

The split spoon sampler is driven into the soil a distance of 18 inches, by a 140-pound safety hammer falling 30 inches. The number of blows required to drive the sampler the final 12 inches is designated the SPT or N-value.

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND/OR CONSTRUCTION WILL BE DONE ACCORDING TO THESE PLANS, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I SHALL ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER 2/4/10 DATE

BY THE ENGINEER :

I CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS. THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.

ENGINEER 2/2/2010 DATE

THESE PLANS FOR SMALL POND CONSTRUCTION, SOIL EROSION AND SEDIMENT CONTROL MEET THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

HOWARD SOIL CONSERVATION DISTRICT 3/4/10 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR 3/15/10 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 3/8/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 3/15/10 DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **STORMWATER MANAGEMENT SOIL BORING LOGS**

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

STATE OF MARYLAND — JOHN W. CLAPSADDLE — NO. 16956 — REGISTERED PROFESSIONAL ENGINEER

BY:

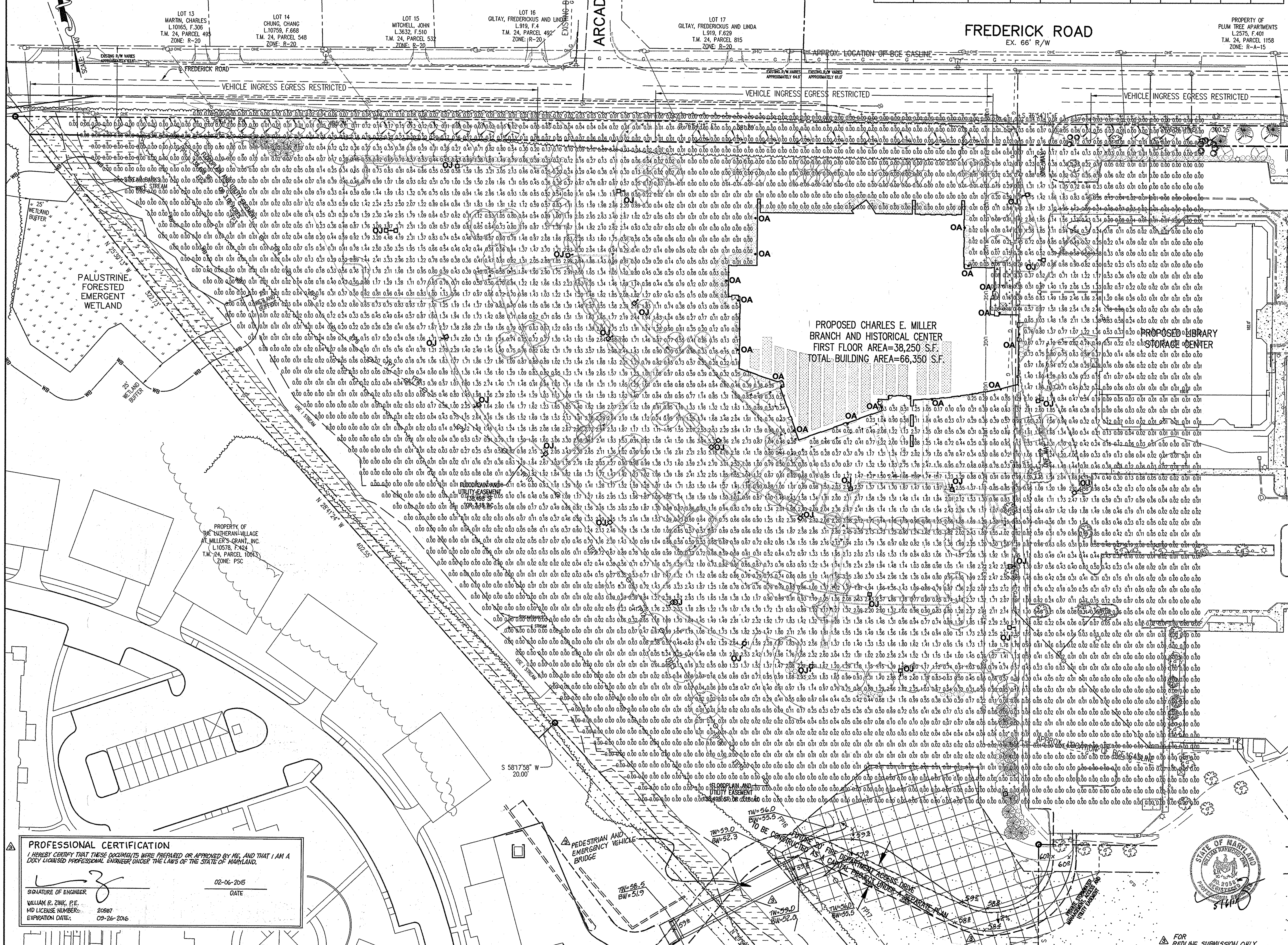
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 08/09/2010."

DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP42BOR.DWG
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 42 OF ~~60~~ 66

P\Project\15976\1-0\Land_Dev\PLANS\C-SDP42BOR.DWG

SDP-09-058

CALCULATION SUMMARY										
AREA NAME	DIMENSIONS	GRID / TYPE	# PTS	SPAC	GROUP	AVE	MAX	MIN	MAX/MIN	AVE/MIN
SITE	1227.75x728.69Ft	@0 / H-H	4296	10.00	<+> Parking Lot	0.59	5.37	0.00	N/A	N/A



ARCADIA DR.
FREDERICK ROAD
EX. 66' R/W
LOT 13 MARTIN, CHARLES L.10165, F.306 T.M. 24, PARCEL 495 ZONE: R-20
LOT 14 CHUNG, CHANG L.10759, F.668 T.M. 24, PARCEL 548 ZONE: R-20
LOT 15 MITCHELL, JOHN L.3632, F.510 T.M. 24, PARCEL 533 ZONE: R-20
LOT 16 GILTAY, FREDERICKUS AND LINDA L.919, F.4 T.M. 24, PARCEL 492 ZONE: R-20
LOT 17 GILTAY, FREDERICKUS AND LINDA L.919, F.629 T.M. 24, PARCEL 815 ZONE: R-20
PROPERTY OF PLUM TREE APARTMENTS L.2575, F.401 T.M. 24, PARCEL 1158 ZONE: R-A-15
APPROX. LOCATION OF BGE GASLINE
VEHICLE INGRESS EGRESS RESTRICTED
PALUSTRINE FORESTED EMERGENT WETLAND
25' WETLAND BUFFER
PROPOSED CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
FIRST FLOOR AREA=38,250 S.F.
TOTAL BUILDING AREA=66,350 S.F.
PROPOSED LIBRARY STORAGE CENTER
PROPERTY OF THE LUTHERAN VILLAGE AT MILLER'S GRANT, INC. L.10578, F.424 T.M. 24, PARCEL 1001 ZONE: PSC
PEDESTRIAN AND EMERGENCY VEHICLE BRIDGE
FUTURE FIRE DEPARTMENT ACCESS DRIVE TO BE CONSTRUCTED AS A CAPITAL PROJECT UNDER A SEPARATE PLAN
S 58°17'58" W 20.00'
FOR REDLINE SUBMISSION ONLY

LEGEND

- PROPERTY LINE
- EXISTING TREELINE
- PROPOSED TREELINE
- PROPOSED LOT LINE
- EX. STREAM AND BUFFER
- EX. 100-YEAR FLOODPLAIN
- LIMIT OF DISTURBANCE
- OVERHEAD ELECTRIC LINE
- EXISTING BUILDING
- PROPOSED BUILDING
- PROPOSED CONTOURS
- EXISTING CONTOURS

GRAPHIC SCALE 1"=40'

20' 0' 40' 80'

PROFESSIONAL CERTIFICATION

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

SIGNATURE OF ENGINEER — DATE: 02-06-2015

WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 3/15/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/15/10

DATE	NO.	REVISION
02/2015	3	REDLINE REVISION - PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE

LIGHTING PLAN

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND — JOHN W. CLAPSADDLE — NO. 16956 — REGISTERED PROFESSIONAL ENGINEER

BY:

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JML
DRAWN BY: JML
PROJECT NO : 15976-1-0 C-SDP43LIT.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 43 OF ~~60~~ 66

SDP-09-058

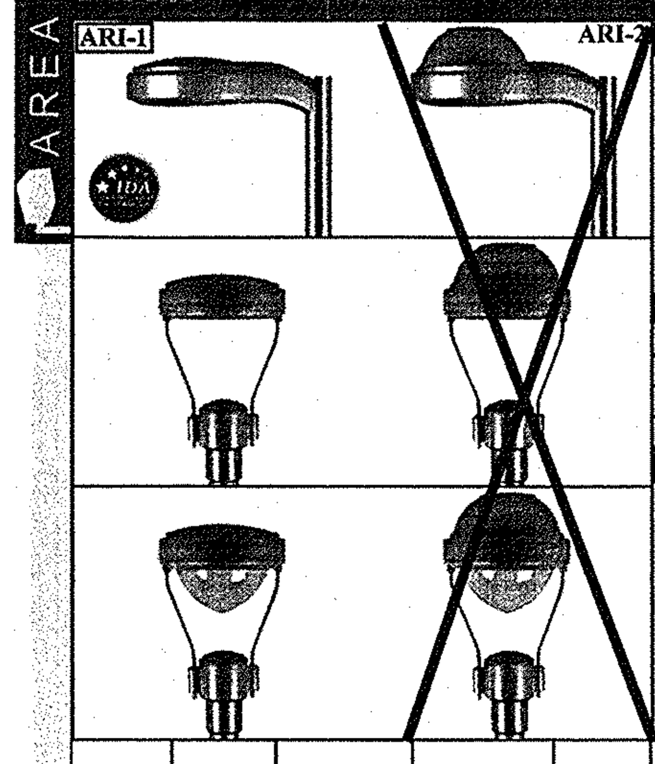
FIXTURE TYPE: OJ

FULL CUTOFF FIXTURE MOUNTED ON A 20' POLE

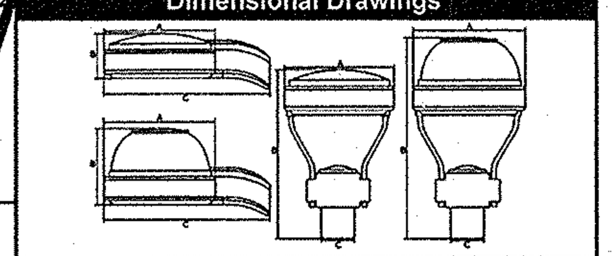
FIXTURE INTENSITY: 14,000 LUMENS

Aria NEW! — AREA

ARI-1 ARI-2

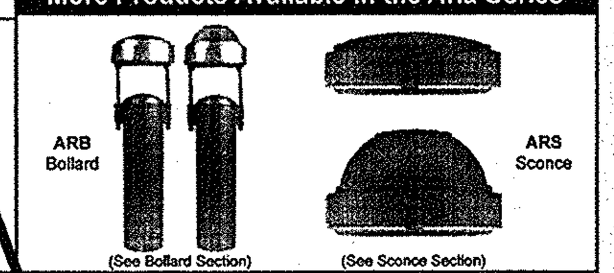


Dimensional Drawings



Fixture	A	B	C	Max. Watts	Lbs
ARI-1	20"	7¼"	28¼"	400w	41
ARI-1-PT	20"	29¾"	6"	400w	41.5
ARI-2	20"	12¼"	28¼"	400w	42.5
ARI-2-PT	20"	35"	6"	400w	46

More Products Available in the Aria Series



Model	Optics	Wattage	Source	Voltage	Mounting	Finish	Options
ARI-1 Low Profile; ARI-2 Dome Top	Type II (T2); Type II Roadway (T2R); Type III (T3); Type III Roadway (T3R); Type IV (T4); Type V (T5)	HID 70 (70), 100 (100), 150 (150), 175 (175), 250 (250), 400 (400); Icetron Induction 70 (70), 100 (100), 150 (150); QL Induction 55 (55), 85 (85), 165 (165); LED 75 (75), 100 (100), 125 (125)	PS, HPS; Induction (IND); LED (LED)	120 (1), 208 (2), 240 (3), 277 (4), 480 (5), 347 (6)	Arm Mount (AM); Post Top (PT)	Bronze (BZ), Black (BK), White (WH), Forest Green (GN), Grey (GY), Silver Metallic (SL), Verdigris (VG), Weathered Brown (WB), Soft Gold (SG), Custom Color (CC)	Photocell & Receptacle; Photo Receptacle (PER); Button Type Photocell; Fusing; Lens: Acrylic Tear Drop Lens (AT), Glass Tear Drop Lens (GT); Painted Bars (PB); Light Trespass Eliminator (LTE); Round Pole Plate Adaptor: For 4"Ø Pole (RPP4), For 5"Ø Pole (RPP5)

VISIONAIRE LIGHTING — Performance In A Whole New Light

8

Housing
- Die cast aluminum fixture housing is 20" diameter with integral tool-less push latch sealing mechanism. Fixture housing encloses the lamp and Vision™ reflector components exclusively. Ballast assembly is conveniently located in the Aria mounting arm.

Door Frame & Lens
- Die cast aluminum door frame incorporates two (2) one (1) piece silicone channel gaskets to seal the housing and arm completely. Opening the hinged door frame allows for direct access to the lamp, ballast and reflector. The door frame includes an aircraft cable support to hold it securely while servicing the fixture.
- Lens is clear tempered flat glass; fully gasketed with one piece extruded silicone gasket for complete weather and insect protection.

Vision™ Optical System
- Patented Vision™ series high performance, multi-faceted, segmented, 95% reflectance, anodized aluminum reflectors.
- Vertical lamp reflectors available in four distribution patterns (2, 3, 4, & 5).
- Horizontal lamp reflectors available in six (6) distribution types (2, 3, 4, 5, plus 2 & 3 Roadway).
- All reflectors are field rotatable in 90° increments if applicable.

Quali-Guard® Finish
- Fixture components are chemically pretreated through a multiple stage washer and finished with an electrostatically applied, thermoset polyester powder coat textured paint with a 3 to 5 mils thickness. Finish is oven baked at 400 degrees Fahrenheit for maximum adherence and finish hardness.
- Available in standard and custom colors.
- Finish is guaranteed for two (2) years.

Mounting
- Post Top Mount: The cast aluminum post top mount fitter houses the ballast assembly. The contractor friendly mounting hardware is concealed inside the post-top fitter; which slips over 3" O.D. x 4" tall tenon with a special threaded mounting plate and is secured by a high-strength bolt.
- Arm Mount: The fixture mounts directly to the pole by means of 3 stainless mounting bolts attaching to an in-pole nut plate to ensure level installation.
- A Round Pole Plate Adaptor (RPP-4/5) is required for mounting to 4" - 5" Round Poles.

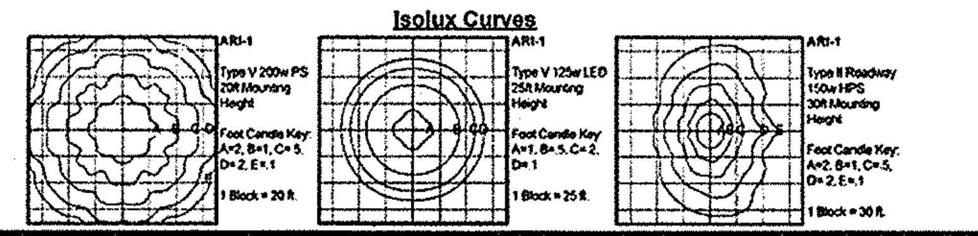
Ballast Assembly
- Modular ballast is mounted to a heavy duty hinge assembly allowing for easy access and tool-less removal. Quick Disconnect(s) supplied for incoming power and to the lamp for ease of installation and maintenance. HID ballasts are CWA or HPF regulating auto transformers rated at -20 degrees Fahrenheit.
- Available in Pulse Start High Pressure Sodium, LED, and Induction.

Options
- Twistlock photocell & receptacle
- Button type photocell
- Round pole adaptor
- Painted bars for post top mount
- Fusing
- Acrylic or glass tear drop lens
- Internal light trespass eliminator

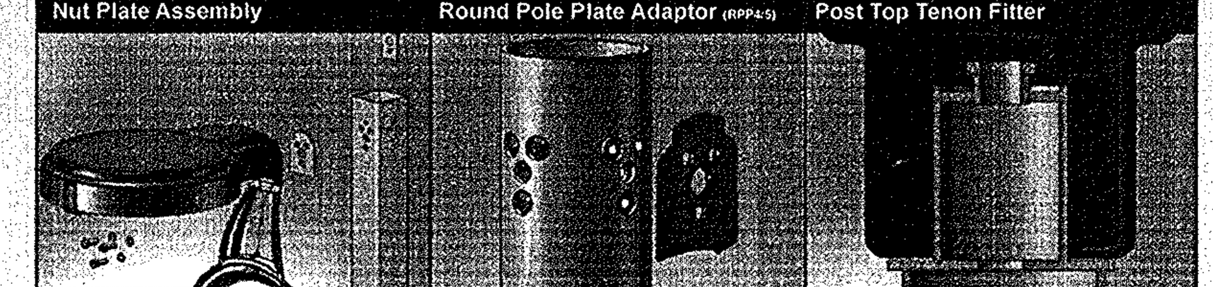
Please consult factory for custom options.

Listings
- Aria is Listed, suitable for wet locations.
- Dark Sky Friendly® certified by the International Dark Sky Association.
- IP65 Pending

Isolux Curves



Nut Plate Assembly — Round Pole Plate Adaptor (RPP4/5) — Post Top Tenon Fitter



EPA Data

Fixture with Arm	Single	2 @ 90°	2 @ 180°	3 @ 90°	3 @ 120°	4 @ 90°
ARI-1	1.2	2.2	2.5	2.7	2.6	2.7
ARI-1-PT	1.8	3.6	3.6	5.3	5.3	5.3
ARI-2	1.7	3.2	3.5	4.2	4.1	4.2
ARI-2-PT	2.3	4.6	4.6	6.8	6.8	6.8

VISIONAIRE LIGHTING — Performance In A Whole New Light

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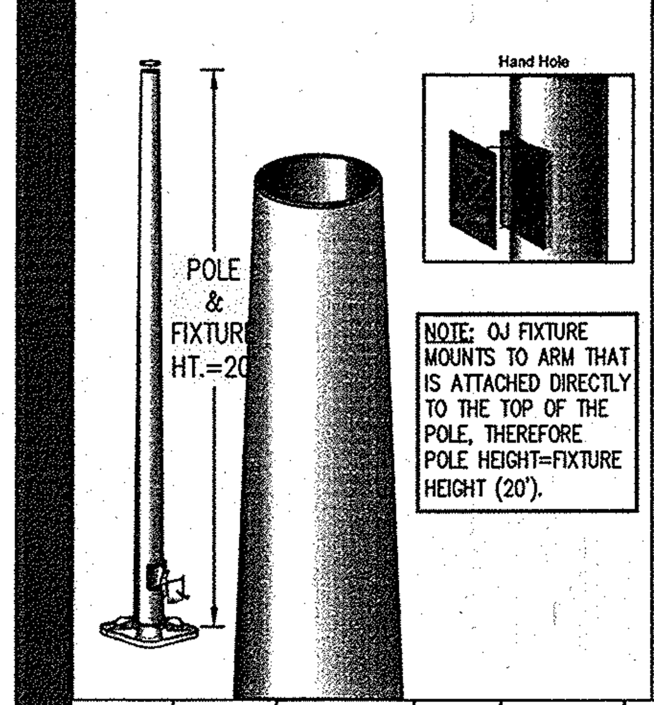
LIGHT POLES

20' POLE

RTAP — POLES



NOTE: OJ FIXTURE MOUNTS TO ARM THAT IS ATTACHED DIRECTLY TO THE TOP OF THE POLE, THEREFORE POLE HEIGHT=FIXTURE HEIGHT (20').

Specifications

Round Tapered Aluminum Pole

Pole Shaft
- Spun tapered from 6063 alloy aluminum tubing. Shaft is furnished with aluminum ground lug inside pole, opposite hand hole opening. Pole shaft includes a reinforced hand hole opening with cover.

Base
- One piece, high quality aluminum alloy casting for strength and durability. Base is circumferentially welded to pole shaft. Furnished with (4) flush mount vandal resistant anchor bolt covers. Consult factory for pole base templates.

Finish
- All poles are shot-blasted and cleaned to a near-white finish prior to painting. A Quali-Guard® textured thermoset polyester powder coat is then applied to a minimum of 3 millimeters and then oven baked at a temperature of 400 degrees Fahrenheit to promote exceptional adherence and finish hardness. Pole finish is warranted for a full two years. An optional five year extended warranty is also available.

Anchorage
- Hot rolled steel bar - minimum yield strength of 50,000 PSI. Bolts have "L" bend on one end and are threaded on the other end. Bolts are galvanized and are furnished with double nuts and washers. All Anchor Bolts are in accordance with ASTM A-153.

Model	Shaft Size	Gauge	Height	Base	Anchorage	Mounting	Finish	Options
RTAP	Pole shaft tapers at 1" per foot; consult factory for exact sizes.	.125 (125); .188 (188); .250 (250)	Pole height in feet; 20'	Consult Factory	"¾" × 17" (341); "¾" × 30" (343); "1" × 36" (136)	Bolt-On Arm: Single (S1), D180 (D2), D90 (D9), T90 (T9), Quad (QD); Tenon Options: 2⅜" (T238R), 2⅞" (T278R), 3" (T3R)	Bronze (BZ), Black (BK), White (WH), Green (GN), Grey (GY), Silver Metallic (SL), Anodized (ANO), Custom Color (CC)	GFI Receptacle (GFI); Coupling (CUP); Custom Bolt Circle (CBC)

2 × 4 BOA Drill Pattern — 2 × 6 BOA Drill Pattern

*Consult factory

VISIONAIRE LIGHTING — Performance In A Whole New Light

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Pole Height	Maximum Allowable EPA (ft²) with 1.3 gust factor: 80 mph	90 mph	100 mph	110 mph	Base Diameter	Wall Thickness	Pole Weight
20'	6.6	4.9	3.7	2.9	6" × 4½"	.125	140
20'	12.0	9.2	7.2	5.8	6" × 4½"	.188	150
20'	18.5	14.3	11.4	9.2	7" × 4½"	.188	150
20'	26.1	20.3	16.3	13.3	8" × 4½"	.188	150
25'	7.1	5.2	3.9	3.0	6" × 4½"	.188	120
25'	11.8	9.0	7.0	5.6	7" × 4½"	.188	150
25'	17.7	13.7	10.8	8.7	8" × 4½"	.188	150
25'	25.1	19.5	15.5	12.6	8" × 4½"	.250	150
30'	7.4	5.4	4.0	3.1	7" × 4½"	.188	120
30'	11.9	9.0	6.9	5.5	8" × 4½"	.188	150
35'	17.8	13.6	10.7	8.6	8" × 4½"	.250	150
35'	17.3	13.2	10.4	8.2	9" × 4½"	.188	150
39'	24.9	19.3	15.3	12.3	9" × 4½"	.250	150
39'	23.5	18.2	14.3	11.3	10" × 6"	.188	200

Table title: Pole EPA for Round Tapered Aluminum Poles

VISIONAIRE LIGHTING — Performance In A Whole New Light

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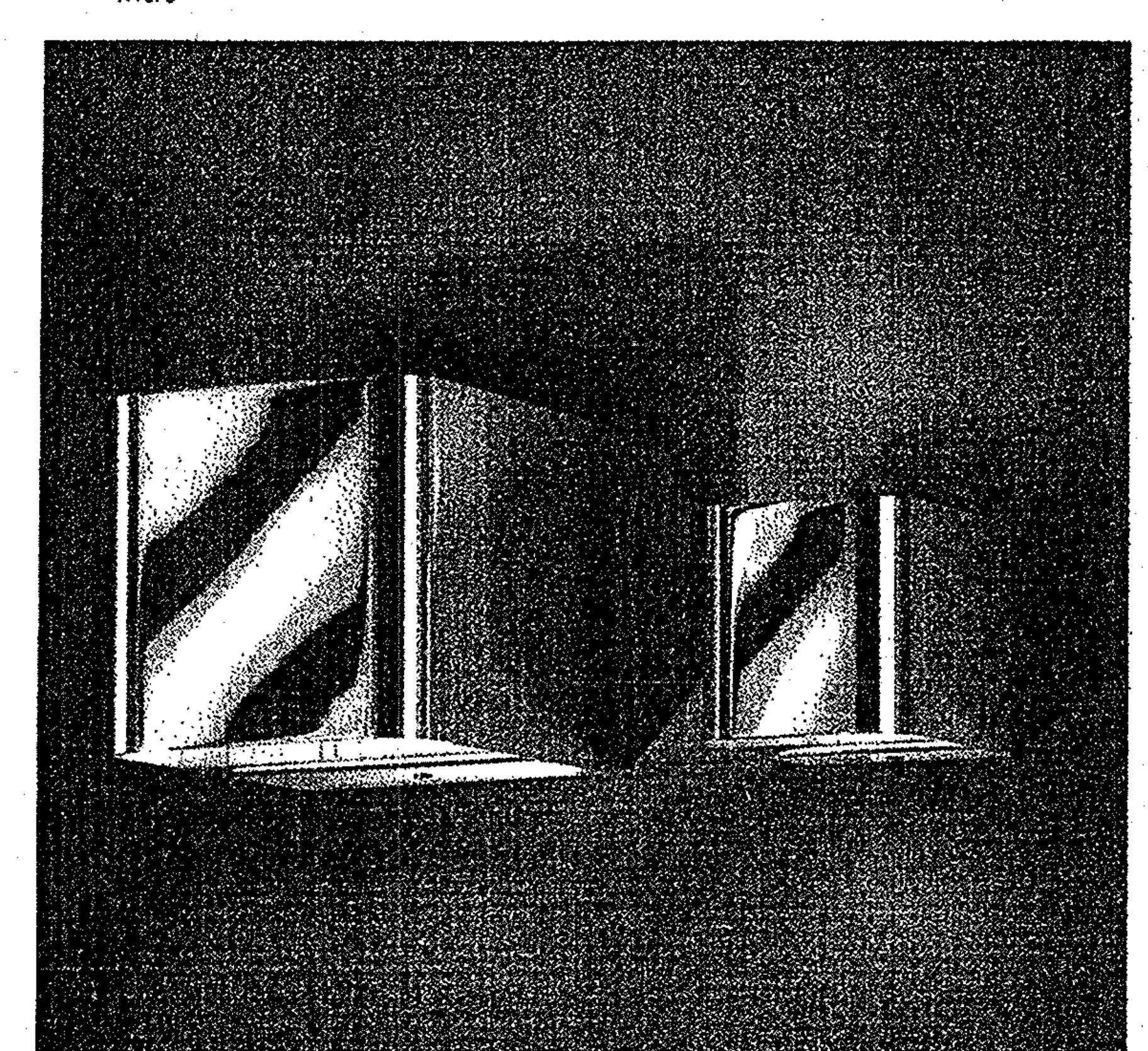
FIXTURE TYPE: OA

BUILDING MOUNTED LIGHTS

FIXTURE INTENSITY: 1,800 LUMENS

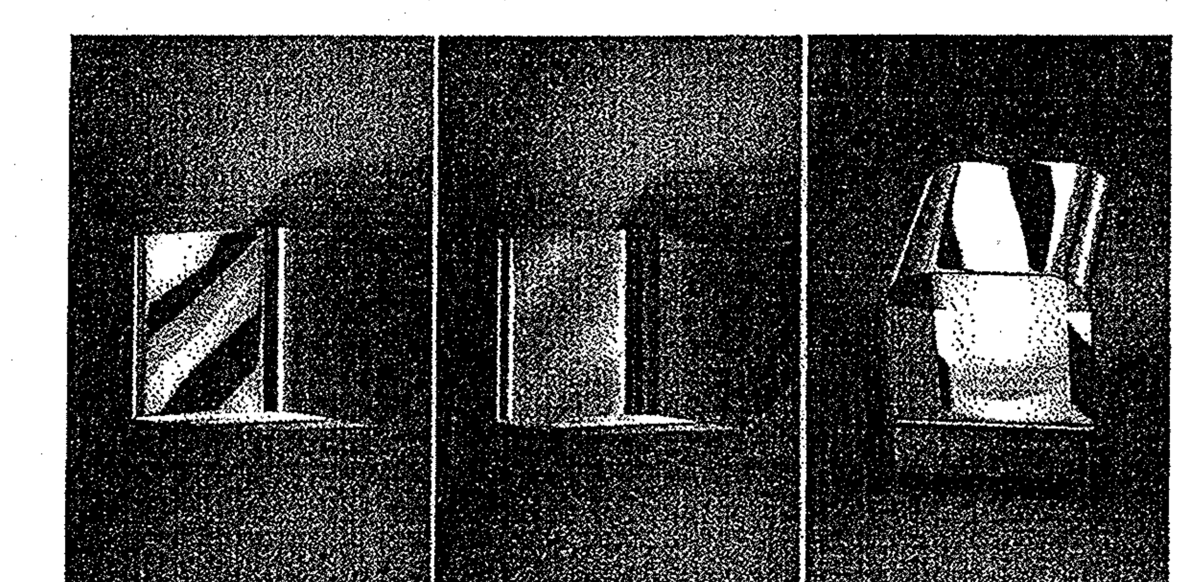
intro

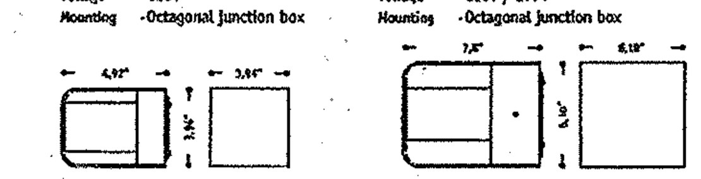


intro is subtle and elegant for every house-façade. The special feature in intro range is the arched front panel with its well-defined contours. Polished or brushed stainless steel in the front panel embraces frosted glass with an interior reflector. This makes the light-beam upwards and downwards even more effective. Intro is available in three different variations:

intro#1, with its neat shape, for line voltage -halogen 69.

intro#2 and intro#3 for either a compact fluorescent or a metal halide lamp. Both of these lights are most popular in commercial surroundings.





APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — 3/15/10 — DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3/8/10 — DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 3/15/10 — DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
LIGHTING NOTES AND DETAILS

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND — JOHN W. CLAPSADDLE — NO. 16956 — REGISTERED PROFESSIONAL ENGINEER

BY:

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JML

DRAWN BY: JML

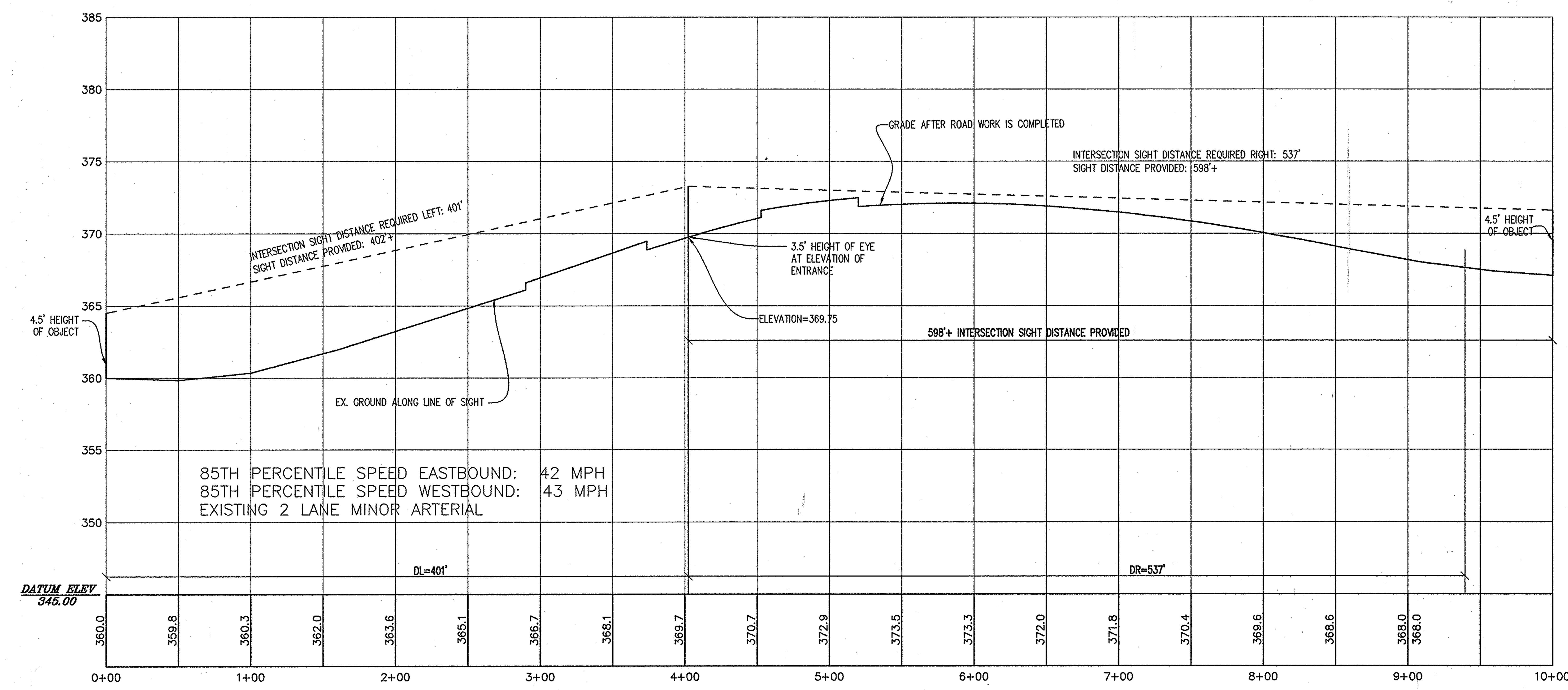
PROJECT NO : 15976-1-0 C-SDP44LIT.DWG

DATE : FEBRUARY 2, 2010

SCALE : 1" = 30'

DRAWING NO. 44 OF ~~60~~ 66

SDP-09-058



INTERSECTION SIGHT DISTANCE
WEST ENTRANCE AND FREDERICK ROAD

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

Charles E. Miller Branch and Historical Center
Intersection Sight Distance Analysis -
Left Turn from Stop

85th Percentile Speed: 43
Time Gap for Passenger Car: 8.5

	Entrance 1	
Required Intersection Sight Distance	537	

Intersection Sight Distance (ISD) Caclulation

ISD = $1.47V_{major}t_g$

where V_{major} = 85th Percentile Speed (mph)
t_g = time gap for minor road vehichle to enter major road

Time gap for minor road approach grades shall be adjusted for 0.2 seconds for every percent in excess of 3%.

Time gap for multilane roads with more than two lanes shall be adjusted 0.5 seconds for passenger cars for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.

Time Gap for vehichles is as follows:

Passenger Car: 7.5 seconds
Single Unit Truck: 9.5 seconds
Combination Truck: 11.5 seconds

Charles E. Miller Branch and Historical Center
Intersection Sight Distance Analysis -
Right Turn From Stop/Crossing Movements

85th Percentile Speed: 42
Time Gap for Passenger Car: 6.5

	Entrance 1	
Required Intersection Sight Distance	401	

Intersection Sight Distance (ISD) Caclulation

ISD = $1.47V_{major}t_g$

where V_{major} = 85th Percentile Speed (mph)
t_g = time gap for minor road vehichle to enter major road

Time gap for minor road approach grades shall be adjusted for 0.1 seconds for every percent in excess of 3%.

Time Gap for vehichles is as follows:

Passenger Car: 6.5 seconds
Single Unit Truck: 8.5 seconds
Combination Truck: 10.5 seconds

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Butler 3/15/10
DIRECTOR DATE

3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

Kent Sheubrooks 3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

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DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **INTERSECTION SIGHT DISTANCE STUDY - WEST ENTRANCE**

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
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8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

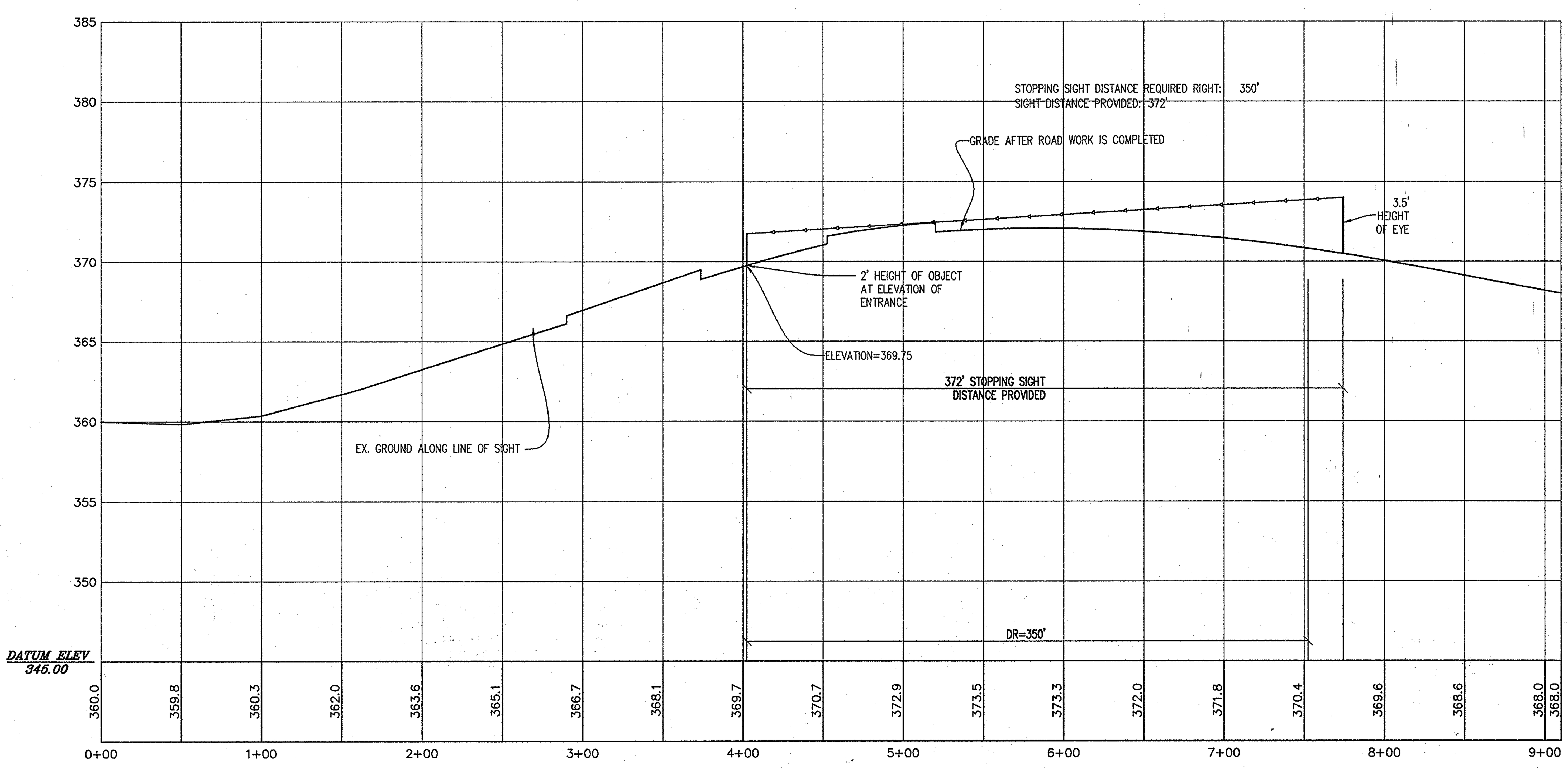
SEAL
STATE OF MARYLAND
JOHN W. CLAPSADDIE
NO. 16956
REGISTERED
PROFESSIONAL ENGINEER

BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY :PHRA
DRAWN BY: ALC
PROJECT NO : 15976-1-0 C-SDP45SD
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 45 OF 66

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP45SD-WEST ENTRANCE.DWG

SDP-09-058



STOPPING SIGHT DISTANCE
WEST ENATRANCE AND FREDERICK ROAD

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

Charles E. Miller Branch and Historical Center
Stopping Sight Distance Analysis

85th Percentile Speed from Right: 43

	Entrance 1	
	Direction Right	
Coefficient of Friction	0.31	
Percent of Grade	-2.7	
Required Stopping Sight Distance	350	

Stopping Sight Distance (SSD) Caclulation

$SSD = 1.47Vt + V^2 / 30((a/32.2)+G)$

where V = Initial Speed (mph)
t = brake reaction time, 2.5 s
a = deceleration rate, ft/s2, 11.2 ft/s2
G = percent of grade divided by 100

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — 3/15/10 — DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3/5/10 — DATE
CHIEF, DIVISION OF LAND DEVELOPMENT — 3/15/10 — DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

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HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE STOPPING SIGHT DISTANCE STUDY – WEST ENTRACE

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND — PROFESSIONAL ENGINEER

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16936, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : PHRA
DRAWN BY: ALC
PROJECT NO : 15976-1-0 C-SDP46SD
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 46 OF 66

SDP-09-058

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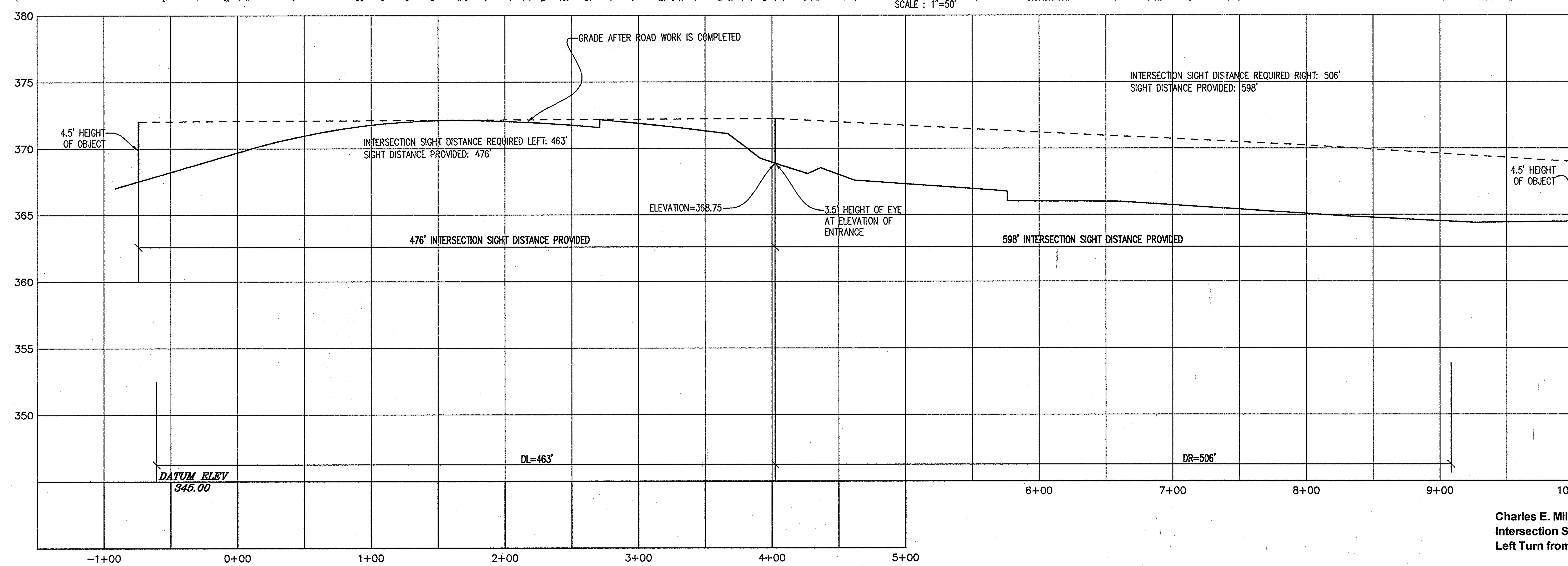

INTERSECTION SIGHT DISTANCE
MIDDLE EXIT AND FREDERICK ROAD

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

Charles E. Miller Branch and Historical Center
Intersection Sight Distance Analysis -
Right Turn From Stop/Crossing Movements

85th Percentile Speed: 42
Time Gap for Passenger Car: 7.5

	Entrance 1	
Required Intersection Sight Distance	463	

Intersection Sight Distance (ISD) Caclulation

$ISD = 1.47V_{major}t_g$

where V_{major} = 85th Percentile Speed (mph)
t_g = time gap for minor road vehichle to enter major road

Time gap for minor road approach grades shall be adjusted for 0.1 seconds for every percent in excess of 3%.

Time Gap for vehichles is as follows:

Passenger Car: 6.5 seconds
Single Unit Truck: 8.5 seconds
Combination Truck: 10.5 seconds

Charles E. Miller Branch and Historical Center
Intersection Sight Distance Analysis -
Left Turn from Stop

85th Percentile Speed: 43
Time Gap for Passenger Car: 8

	Entrance 1	
Required Intersection Sight Distance	506	

Intersection Sight Distance (ISD) Caclulation

$ISD = 1.47V_{major}t_g$

where V_{major} = 85th Percentile Speed (mph)
t_g = time gap for minor road vehichle to enter major road

Time gap for minor road approach grades shall be adjusted for 0.2 seconds for every percent in excess of 3%.

Time gap for multilane roads with more than two lanes shall be adjusted 0.5 seconds for passenger cars for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.

Time Gap for vehichles is as follows:

Passenger Car: 7.5 seconds
Single Unit Truck: 9.5 seconds
Combination Truck: 11.5 seconds

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR 3/15/10 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 3/8/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 3/15/10 DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

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410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **INTERSECTION SIGHT DISTANCE STUDY -MIDDLE EXIT**

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND
JOHN W. CLAPSADDLE
NO. 16956 REGISTERED
PROFESSIONAL ENGINEER

BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : PHRA
DRAWN BY: ALC
PROJECT NO : 15976-1-0 C-SDP47SD-Middle Exit
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 47 OF ~~60~~ 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP47SD-Middle Exit.DWG

Charles E. Miller Branch and Historical Center
Stopping Sight Distance Analysis

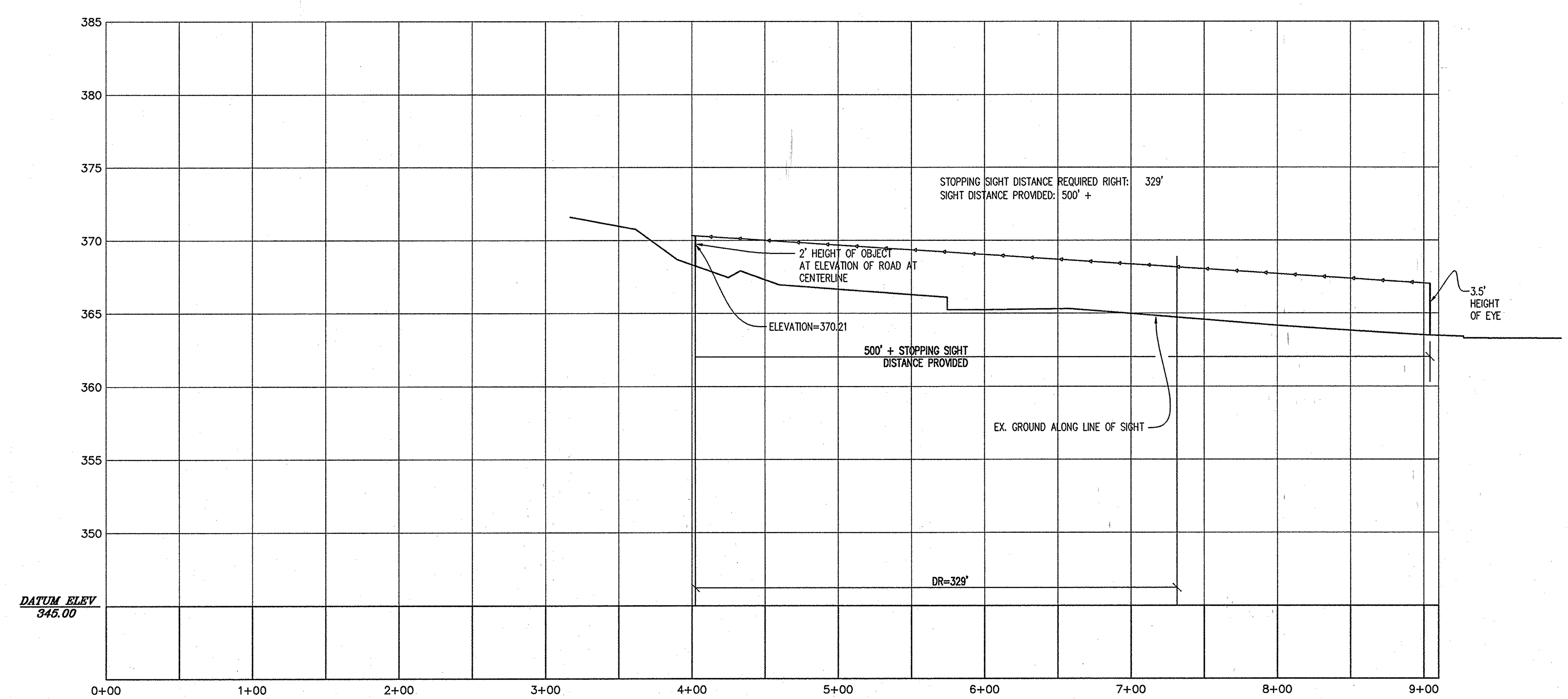
85th Percentile Speed from Right: 43

	Entrance 1	
	Direction Right	
Coefficient of Friction	0.31	
Percent of Grade	1.3	
Required Stopping Sight Distance	329	

Stopping Sight Distance (SSD) Caclulation

$SSD = 1.47Vt + V^2 / 30((a/32.2)+G)$

where V = Initial Speed (mph)
t = brake reaction time, 2.5 s
a = deceleration rate, ft/s2, 11.2 ft/s2
G = percent of grade divided by 100



STOPPING SIGHT DISTANCE
MIDDLE EXIT AND FREDERICK ROAD

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

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 3/15/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/15/10

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE STOPPING SIGHT DISTANCE STUDY – MIDDLE EXIT

Patton Harris Rust & Associates
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T 410.997.8900
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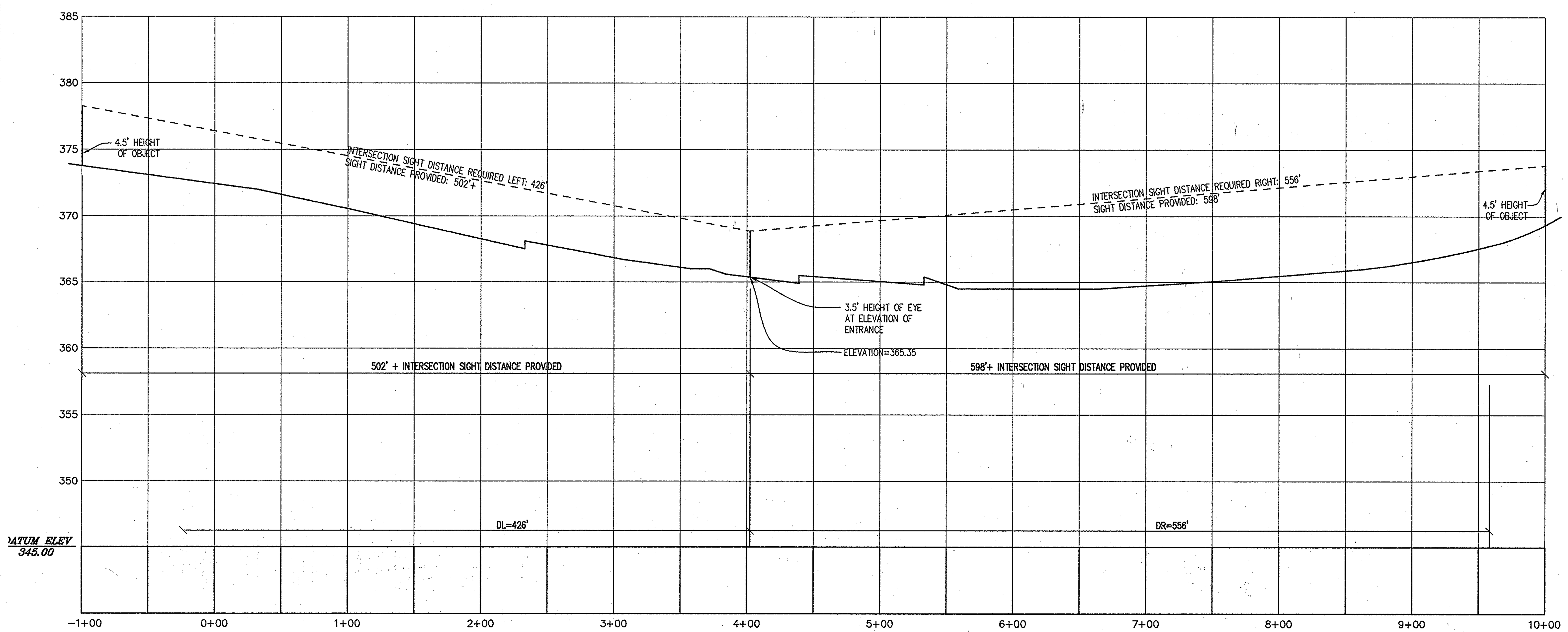
SEAL
STATE OF MARYLAND
JOHN W. CLAPSADDLE
NO. 16956
REGISTERED
PROFESSIONAL ENGINEER

BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY :PHRA
DRAWN BY: ALC
PROJECT NO : 15976-1-0
C-SDP48SD-Middle Exit
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 48 OF ~~60~~ 66

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP48SD-Middle Exit.DWG

SDP-09-058



INTERSECTION SIGHT DISTANCE
EAST ENTRANCE AND FREDERICK ROAD

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

Charles E. Miller Branch and Historical Center
Intersection Sight Distance Analysis -
Left Turn from Stop

85th Percentile Speed:	43
Time Gap for Passenger Car:	8.6

	Entrance 1	
Required Intersection Sight Distance	556	

Intersection Sight Distance (ISD) Caclulation

$ISD = 1.47V_{major}t_g$

where V_{major} = 85th Percentile Speed (mph)
t_g = time gap for minor road vehichle to enter major road

Time gap for minor road approach grades shall be adjusted for 0.2 seconds for every percent in excess of 3%.

Time gap for multilane roads with more than two lanes shall be adjusted 0.5 seconds for passenger cars for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.

Time Gap for vehicles is as follows:

Passenger Car: 7.5 seconds
Single Unit Truck: 9.5 seconds
Combination Truck: 11.5 seconds

Charles E. Miller Branch and Historical Center
Intersection Sight Distance Analysis -
Right Turn From Stop/Crossing Movements

85th Percentile Speed:	42
Time Gap for Passenger Car:	6.9

	Entrance 1	
Required Intersection Sight Distance	426	

Intersection Sight Distance (ISD) Caclulation

$ISD = 1.47V_{major}t_g$

where V_{major} = 85th Percentile Speed (mph)
t_g = time gap for minor road vehichle to enter major road

Time gap for minor road approach grades shall be adjusted for 0.1 seconds for every percent in excess of 3%.

Time Gap for vehicles is as follows:

Passenger Car: 6.5 seconds
Single Unit Truck: 8.5 seconds
Combination Truck: 10.5 seconds

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — Thomas J. Butler — DATE 3/15/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/8/10

CHIEF, DIVISION OF LAND DEVELOPMENT — Kent Sheubrooks — DATE 3/15/10

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **INTERSECTION SIGHT DISTANCE STUDY – EAST ENTRANCE**

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND — JOHN W. CLAPSADDLE — PROFESSIONAL ENGINEER

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : PHRA
DRAWN BY: ALC
PROJECT NO : 15976-1-0
C-SDP49SD-East Entrance
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 49 OF 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP49SD – EAST ENTRANCE.DWG

SIGNAGE AND PAVEMENT MARKING PLAN

SCALE : 1"=50'

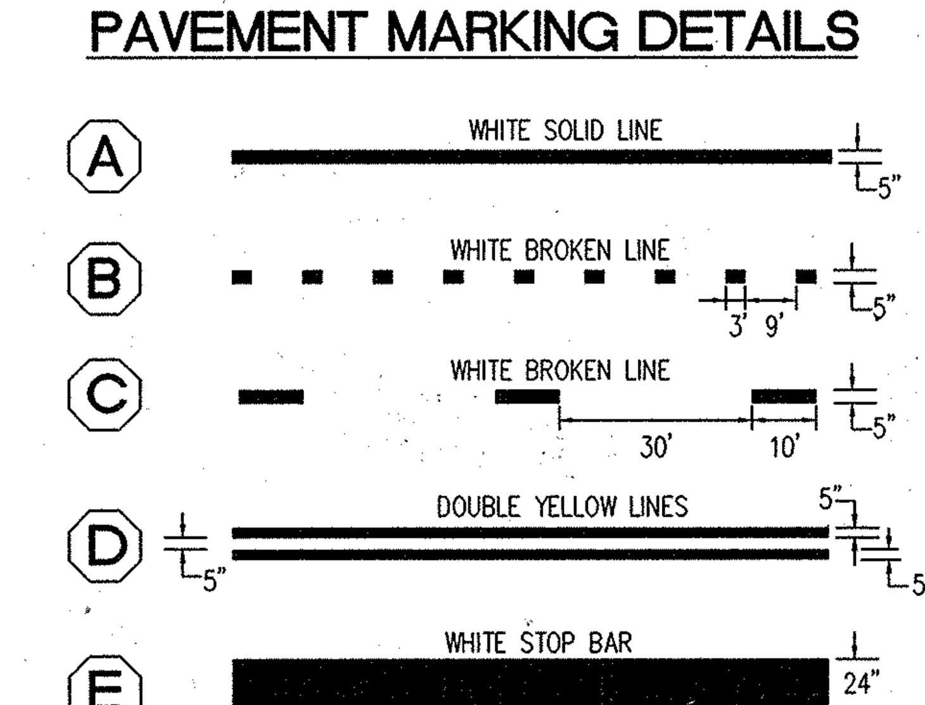
LEGEND

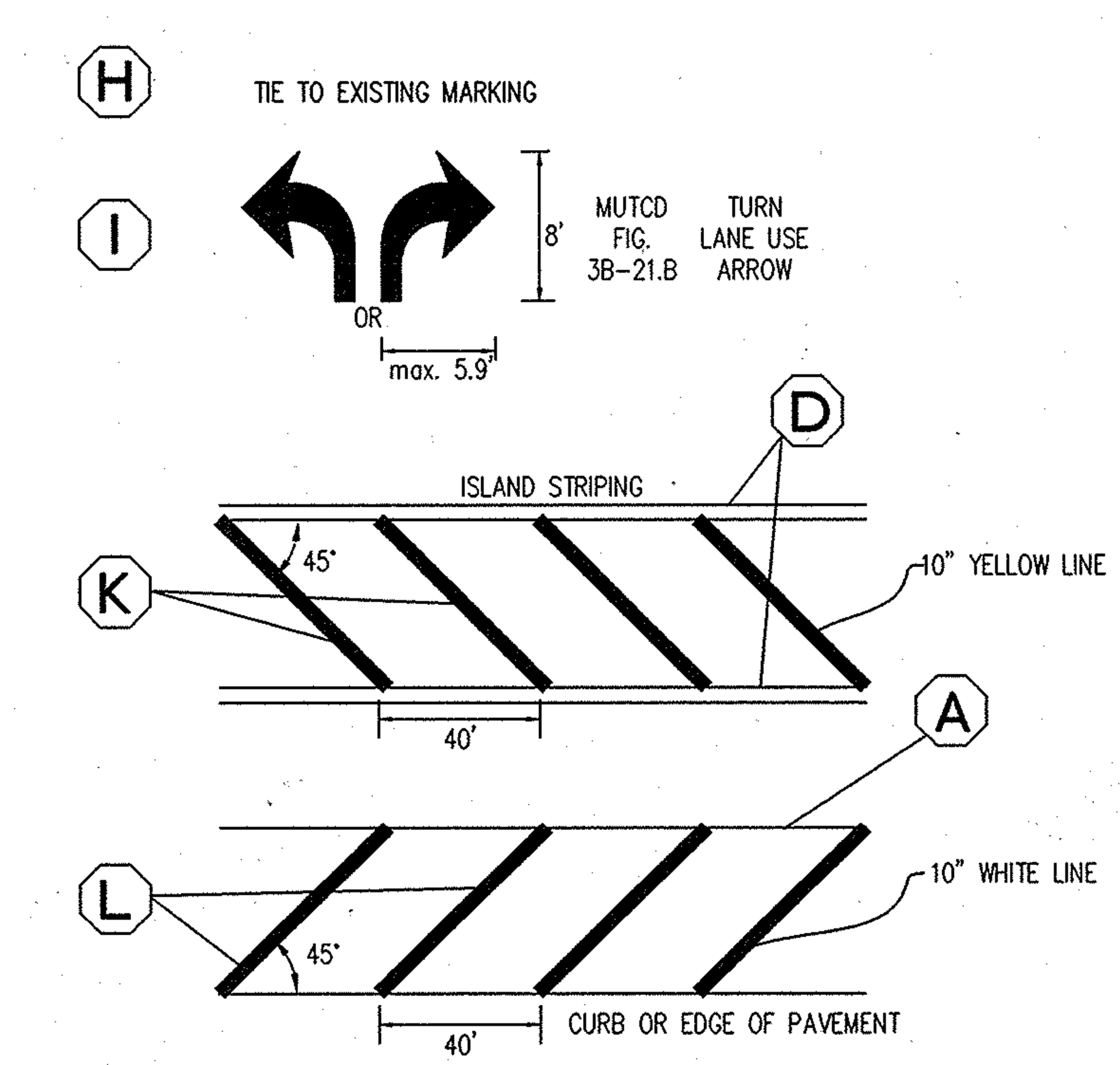
- EXISTING SIGN POST
- PROPOSED SIGN POST
- SPEED LIMIT 40 — EXISTING SIGN TO REMAIN
- SPEED LIMIT 40 — PROPOSED SIGN
- STOP — EXISTING SIGN TO BE REMOVED

GENERAL NOTES:

1. ALL WORK SHOWN ON THIS PLAN SHALL MEET MSHA STANDARD SPECIFICATIONS.
2. ALL WORK SHALL BE COMPLETED UNDER THE DIRECTION OF THE COUNTY INSPECTOR AND SHALL FOLLOW ALL PERMIT REQUIREMENTS. PERMITEE SHALL CONTACT THE APPROPRIATE INSPECTOR 48 HOURS IN ADVANCE OF INSTALLATION OF ALL PERMANENT TRAFFIC CONTROL SIGNS ON EXISTING ROADWAYS.
3. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT OF WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-½" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) -3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST..
4. ALL LANE LINES SHALL BE OF EXTRUDED THERMOPLASTIC MATERIAL AND MAY BE APPLIED BY TRUCK-MOUNTED EQUIPMENT. OTHER SYMBOLIC MARKINGS SUCH AS ARROWS, ONLY AND OTHER WORDINGS MAY BE OF PRE-CUT HEAT-APPLIED THERMOPLASTIC MATERIAL. CROSSWALKS AND STOP BARS COULD BE EITHER EXTRUDED OR PRE-CUT.
5. ALL EXISTING PAVEMENT MARKINGS THAT ARE IN CONFLICT WITH PROPOSED MARKINGS SHALL BE MILLED/OVERLAID AS NECESSARY TO ADEQUATELY REMOVE MARKINGS AS DIRECTED BY THE INSPECTOR HAVING AUTHORITY.
6. ALL SIGNS NEW AND EXISTING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MARYLAND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MD MUTC) STANDARDS AND MUST BE IN GOOD CONDITION (i.e. SIZE, COLOR AND APPLICATION).
7. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED AS PER THE LATEST EDITION OF MUTCD.
8. PROPOSED PAVEMENT MARKINGS SHALL BE ADEQUATELY TIED TO EXISTING PAVEMENT MARKINGS WHERE APPLICABLE.
9. ALL SIGNS WILL BE FURNISHED AND INSTALLED BY THE PERMITEE UNLESS OTHERWISE STATED ON THE PLAN.
10. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THE PAVEMENT MARKINGS WITH THE INSTALLATION OF THE SIGNING. BOTH SIGNING AND MARKINGS SHALL BE APPROVED BY TRAFFIC DIVISION PRIOR TO ANY INSTALLATION. (CONTACT # 410-313-5752)

PAVEMENT MARKING DETAILS





APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Butler — 3/15/10
DIRECTOR — DATE

[signature] — 3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Kent Sheubrooks — 3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
FREDERICK ROAD SIGNAGE AND PAVEMENT MARKING

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND — JOHN W. CLAPSADDLE — NO. 16956 — REGISTERED PROFESSIONAL ENGINEER

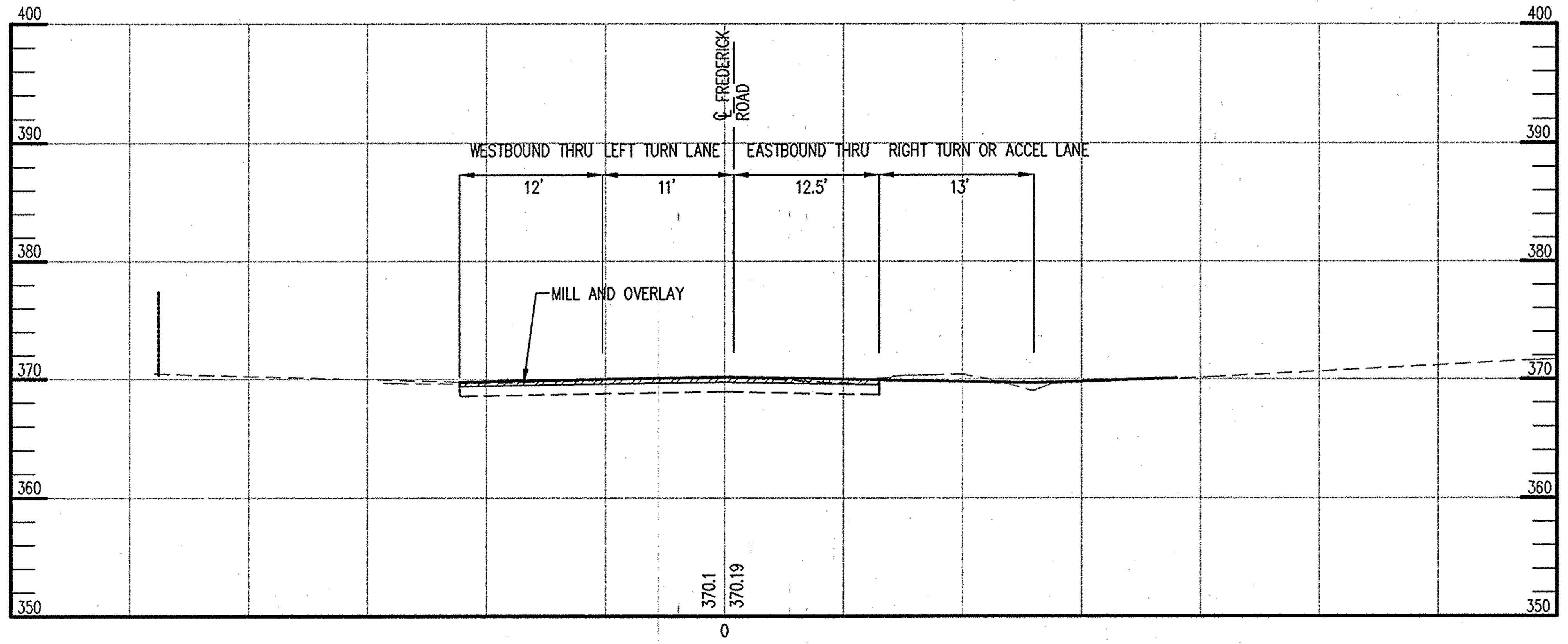
BY:

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY :JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP50RIP
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN

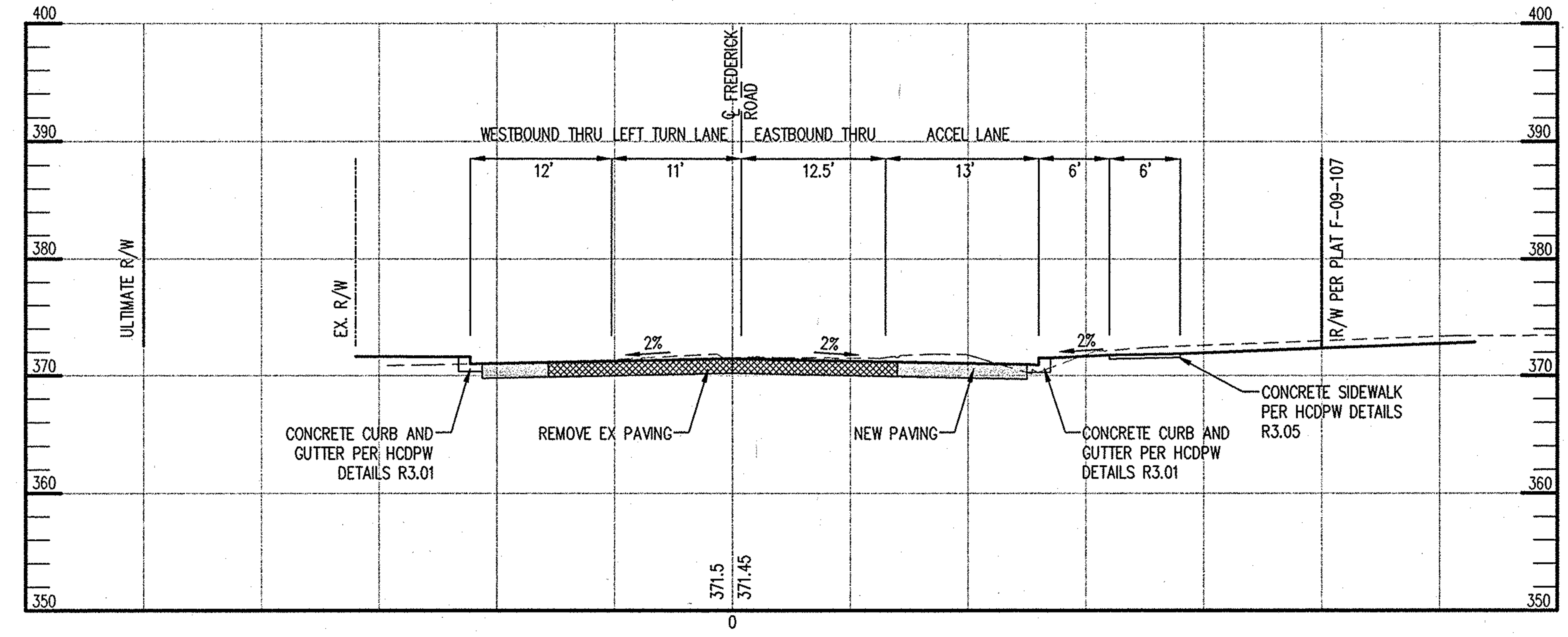
SDP-09-058

P\Project\15976\1-0\Land_Dev\PLANS\C-SDP50RIP.DWG



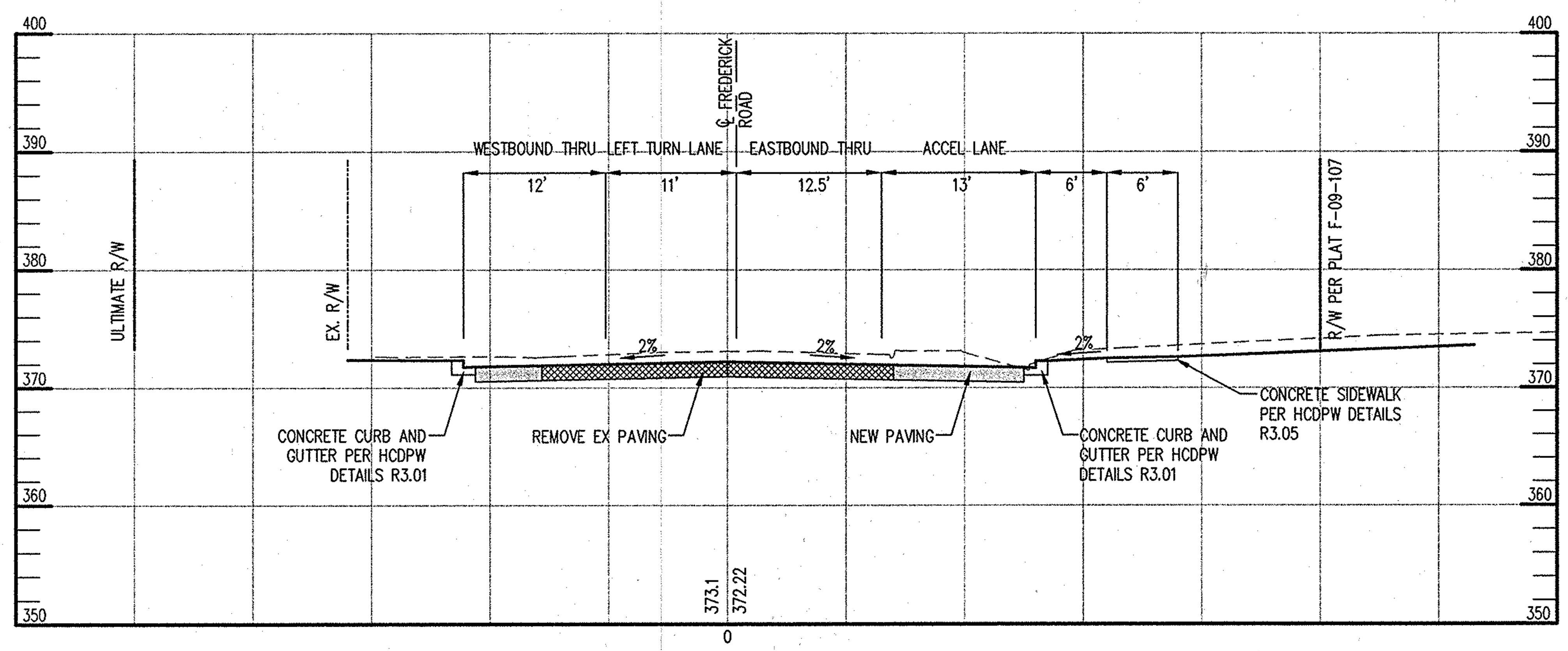
CROSS SECTION STA 10+00

HOR: 1"=10'
VERT: 1"=10'



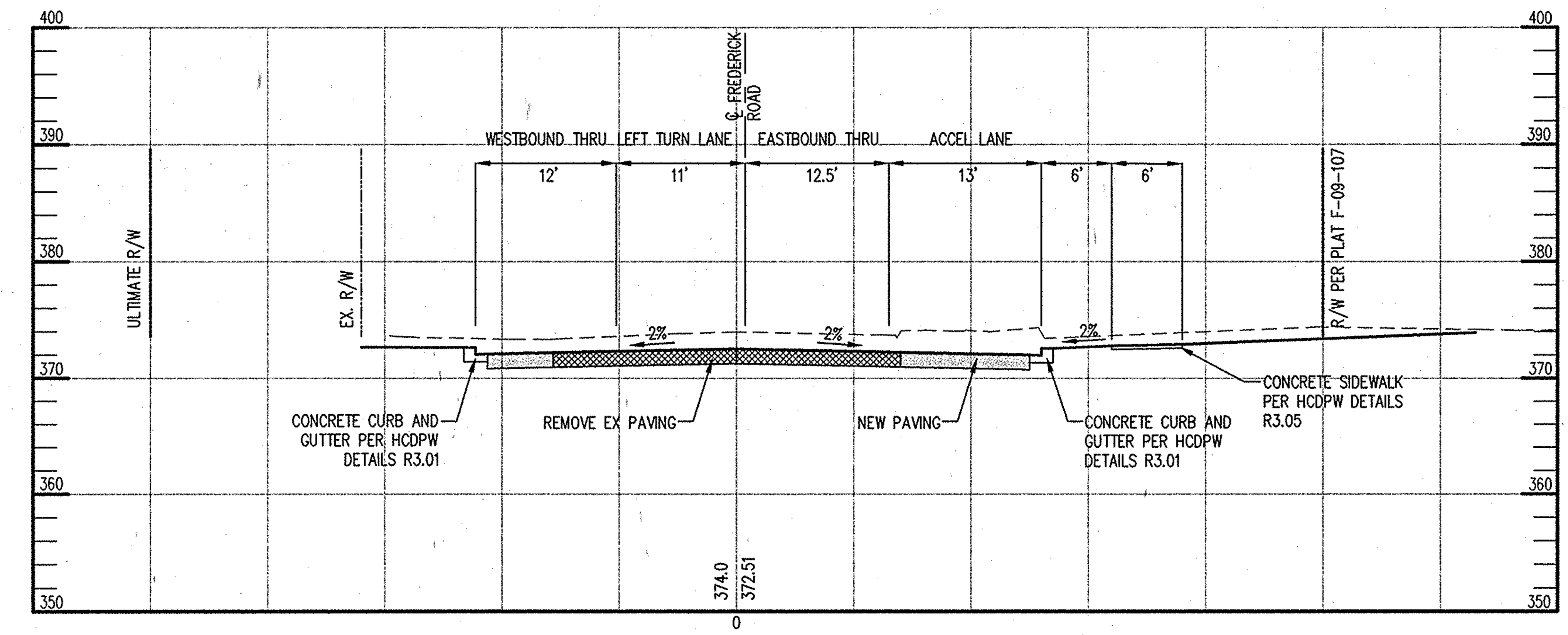
CROSS SECTION STA 10+50

HOR: 1"=10'
VERT: 1"=10'



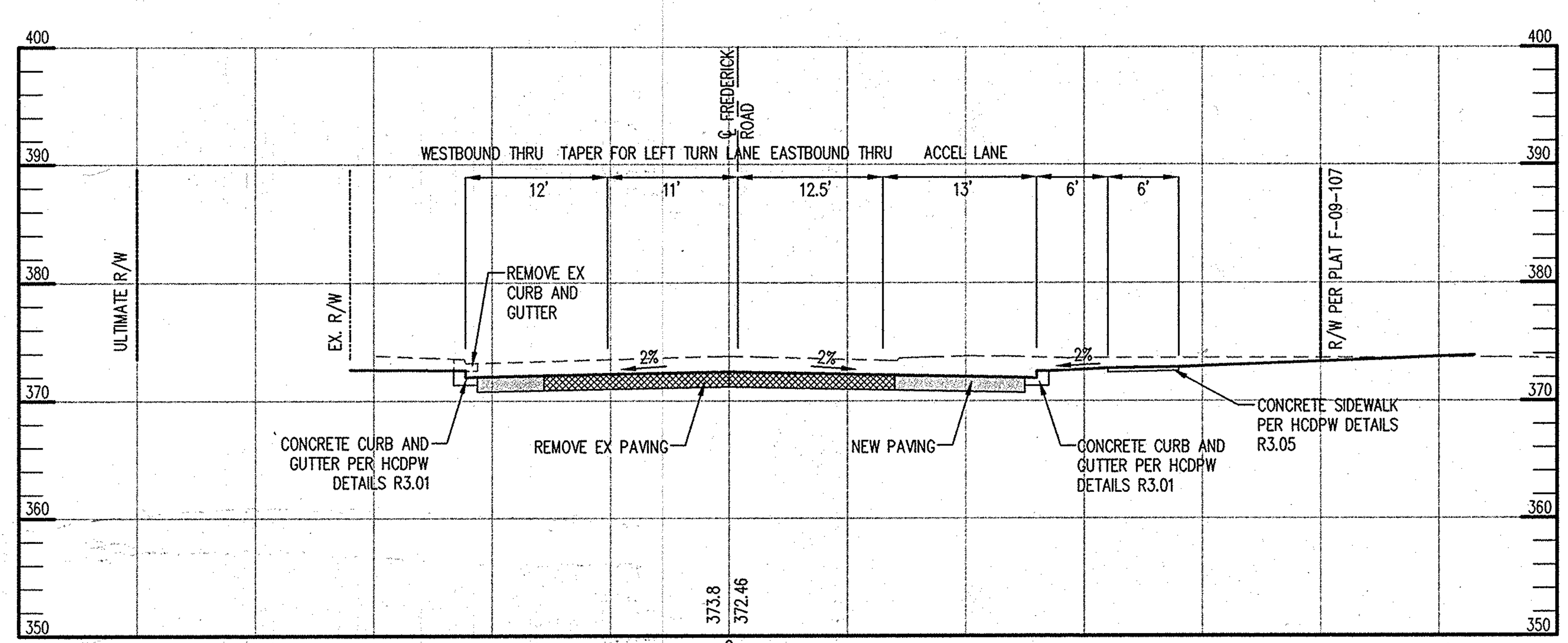
CROSS SECTION STA 11+00

HOR: 1"=10'
VERT: 1"=10'



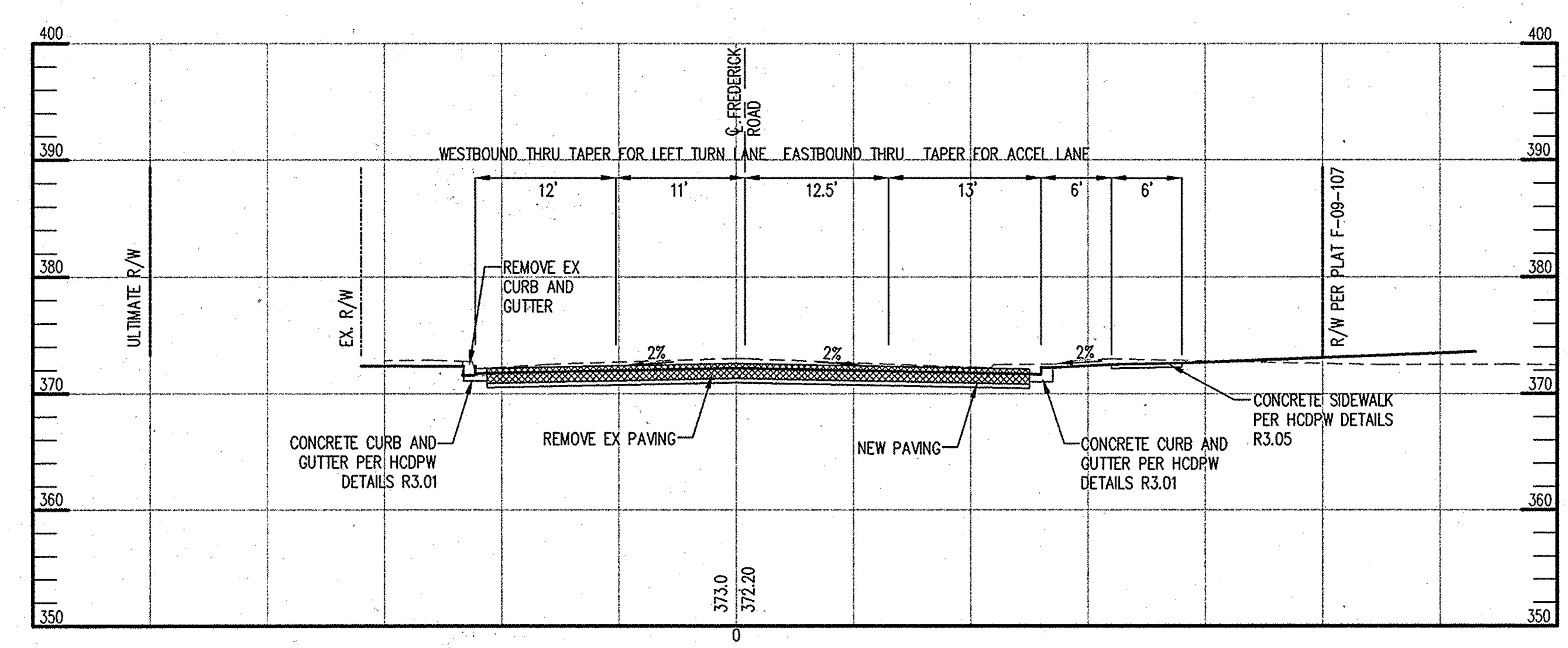
CROSS SECTION STA 11+50

HOR: 1"=10'
VERT: 1"=10'



CROSS SECTION STA 12+00

HOR: 1"=10'
VERT: 1"=10'



CROSS SECTION STA 12+50

HOR: 1"=10'
VERT: 1"=10'

LEGEND

- MILL AND OVERLAY
- PAVEMENT REMOVAL
- NEW PAVEMENT

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Butler 3/15/10
DIRECTOR — DATE

3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

Kent Sheubrooks 3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

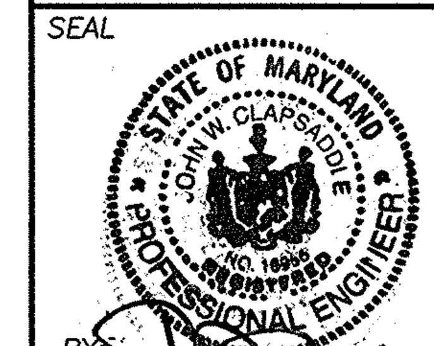
PROJECT **CHARLES E. MILLER BRANCH AND HISTORICAL CENTER**
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **FREDERICK ROAD CROSS SECTIONS**

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

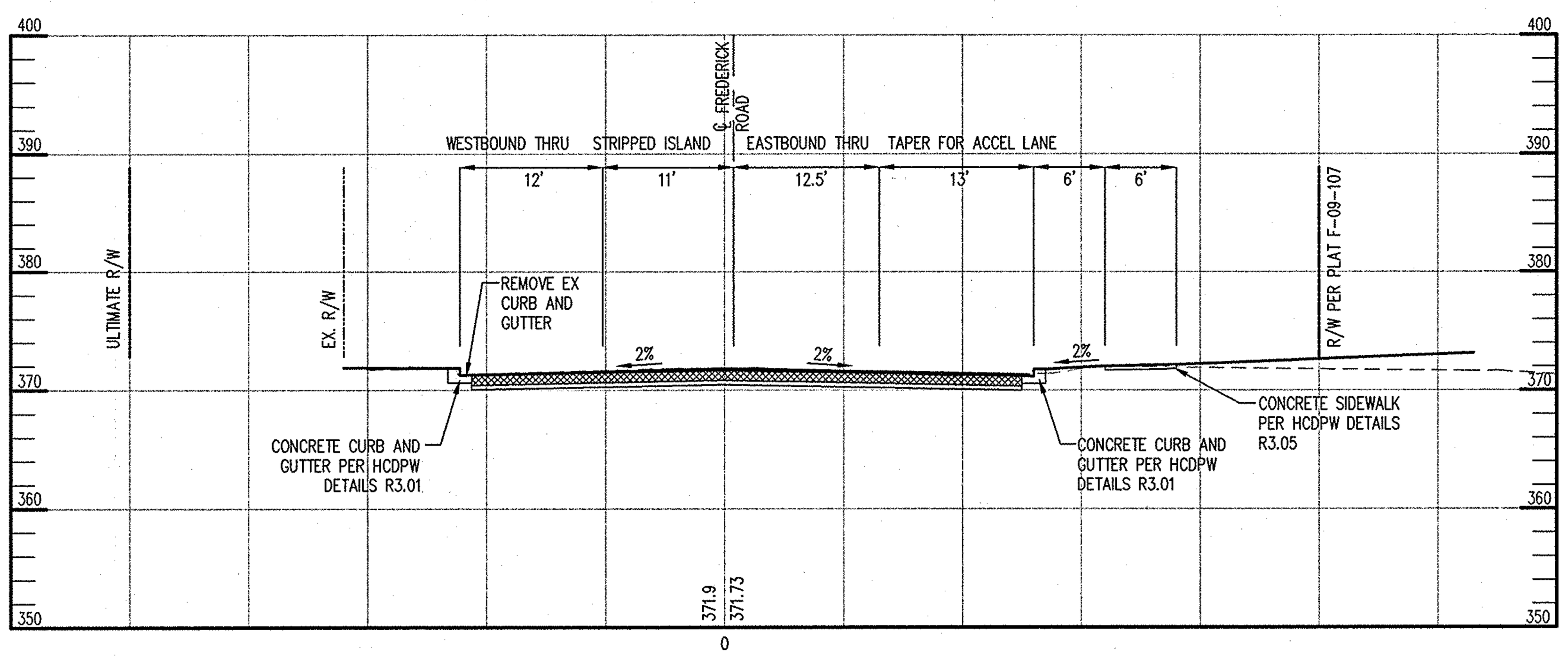


"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16936, EXPIRATION DATE 06/09/2010."

DESIGNED BY : JWC
DRAWN BY: JWC
PROJECT NO : 15976-1-0 C-SDP51RIP
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 51 OF 66

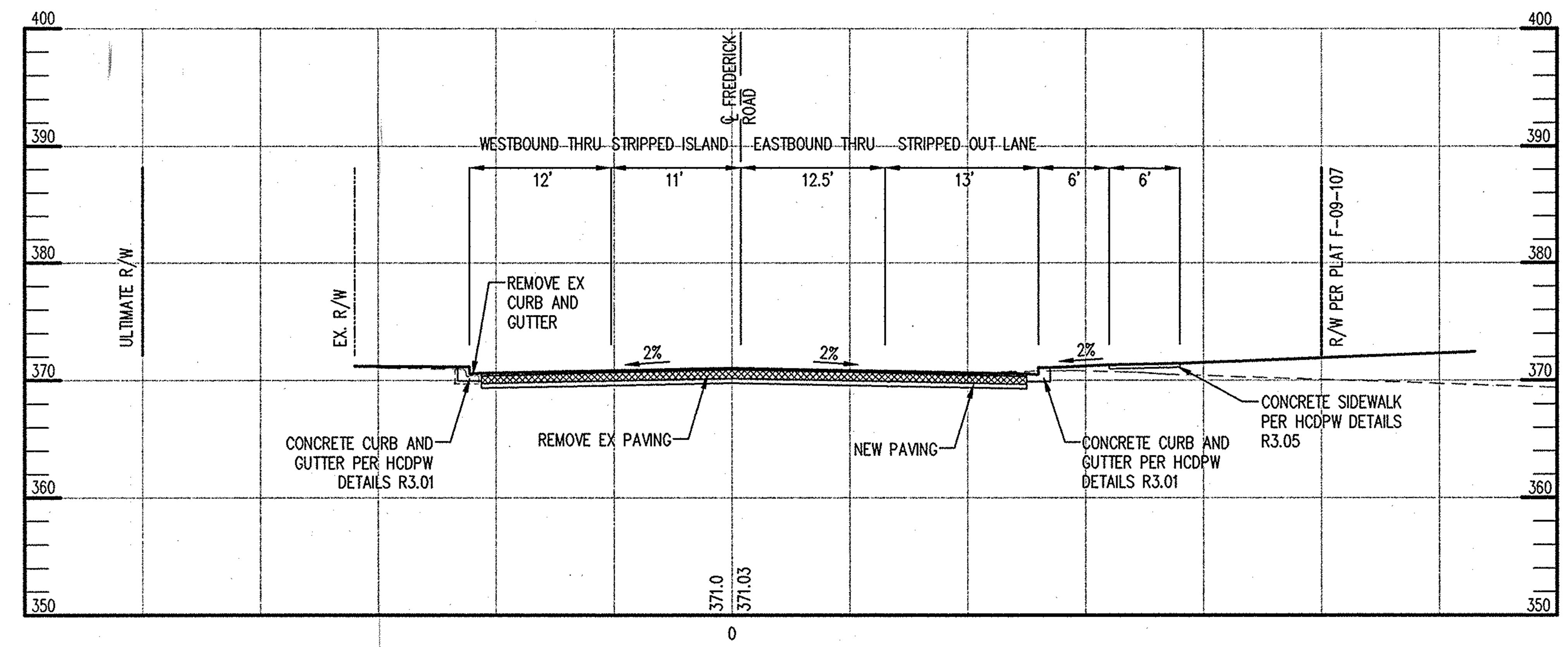
SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP51RIP.DWG



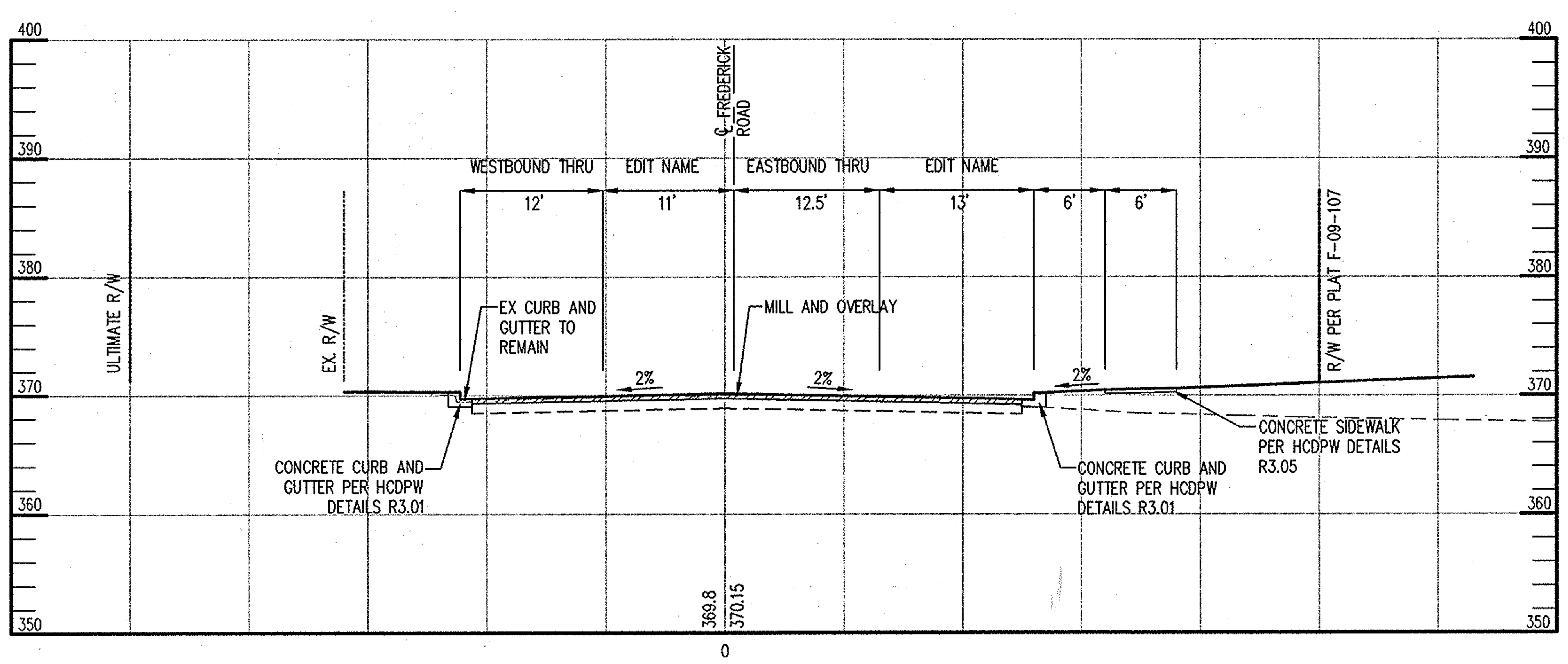
CROSS SECTION STA 13+00

HOR: 1"=10'
VERT: 1"=10'



CROSS SECTION STA 13+50

HOR: 1"=10'
VERT: 1"=10'



CROSS SECTION STA 14+00

HOR: 1"=10'
VERT: 1"=10'

LEGEND

- MILL AND OVERLAY
- PAVEMENT REMOVAL
- NEW PAVEMENT

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR	DATE 3/15/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/8/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/15/10

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

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HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT #

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE FREDERICK ROAD CROSS SECTIONS

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 18956, EXPIRATION DATE 06/09/2010."

DESIGNED BY : JWC
DRAWN BY: JWC
PROJECT NO : 15976-1-0 C-SDP52RIP
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 52 OF 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP52RIP.DWG

PLAN
SCALE : 1"=50'

LEGEND

TRAFFIC CONTROL DEVICES (BARRELS)	● ● ●
DIRECTION OF TRAFFIC	→
CONSTRUCTION SIGN	
TYPE III BARRICADE	
PROPOSED CURB AND GUTTER	
EXISTING CURB AND GUTTER	
WORK AREA	

NOTES:

1. SHA STANDARD NO. MD 104.02-09 (FLAGGER OPERATION) WILL BE USED AS NECESSARY DURING PERIODS OF CONSTRUCTION.

2. CONTRACTOR TO MAINTAIN LESS THAN 2 INCHES OF DROP-OFF DURING PERIODS OF NON-CONSTRUCTION UNLESS CONCRETE BARRIERS ARE USED.

3. TEMPORARY TRAFFIC CONTROL DEVICES AND PERMANENT TRAFFIC CONTROL SIGNS SHALL CONFORM TO THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MDMUTCD). ALL REQUIRED TRAFFIC CONTROL DEVICES ARE TO BE PROVIDED BY THE CONTRACTOR AND SHALL BE INCLUDED IN THE BASE BID.

4. SPACING OF CHANNELIZATION DEVICES WHEN USED FOR TAPER CHANNELIZATION IS TO BE 20' SPACING OF CHANNELIZATION DEVICES WHEN USED FOR TANGENT CHANNELIZATION IS TO BE 40'.

NOTE:
REFER TO SHEET 54 FOR ADDITIONAL SIGNAGE REQUIREMENTS FOR FREDERICK ROAD CLOSURE.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR	3/15/10 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	3/3/10 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	3/15/10 DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
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HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **FREDERICK ROAD**
MAINTENANCE OF TRAFFIC PLAN PHASE 1

Patton Harris Rust & Associates
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PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND — PROFESSIONAL ENGINEER
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 15956, EXPIRATION DATE 06/09/2010."

DESIGNED BY	JWC
DRAWN BY	SGM
PROJECT NO	15976-1-0 C-SDP53TCP
DATE	FEBRUARY 2, 2010
SCALE	AS SHOWN
DRAWING NO.	53 OF 66

SDP-09-058

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP53TCP.DWG

TEMPORARY TRAFFIC CONTROL SIGN TABLE

SYMBOL	M.U.T.C.D. DESIGNATION	MESSAGE	SIZE	QUANTITY	COLOR BACKGROUND	COLOR CHARACTERS
①*	R11-2	ROAD CLOSED	48"x30"	4	ORANGE	BLACK
②	R4-9 W/ROAD NAME PANEL	** DETOUR ↑	5" LETTERS 30"x12" / 30"x24"	19	WHITE / ORANGE	BLACK
③	R4-9R W/ROAD NAME PANEL	** DETOUR →	5" LETTERS 30"x12" / 30"x24"	5	WHITE / ORANGE	BLACK
④	R4-9R (MODIFIED ARROW) W/ROAD NAME PANEL	** DETOUR ↱	5" LETTERS 30"x12" / 30"x30"	5	WHITE / ORANGE	BLACK
⑤	R4-9L W/ROAD NAME PANEL	** DETOUR ←	5" LETTERS 30"x12" / 30"x24"	6	WHITE / ORANGE	BLACK
⑥	R4-9L (MODIFIED ARROW) W/ROAD NAME PANEL	** DETOUR ↰	5" LETTERS 30"x12" / 30"x30"	6	WHITE / ORANGE	BLACK
⑦	M4-8A	END DETOUR	24"x30"	2	ORANGE	BLACK
⑧	W20-2	DETOUR 500 FT	48"x48"	2	ORANGE	BLACK
⑨*	M4-10L W/R11-3	← DETOUR / ROAD CLOSED 1 1/4 MILES AHEAD LOCAL TRAFFIC ONLY	48"x18" / 60"x30"	1	WHITE	BLACK
⑩*	M4-10R W/R11-3	DETOUR → / ROAD CLOSED 1/2 MILE AHEAD LOCAL TRAFFIC ONLY	48"x18" / 60"x30"	1	WHITE	BLACK
⑪	W20-3	ROAD CLOSED 1 MILE	48"x48"	1	ORANGE	BLACK
⑫	W20-3	ROAD CLOSED 1/2 MILE	48"x48"	2	ORANGE	BLACK
⑬	W20-3	ROAD CLOSED 1500 FT	48"x48"	2	ORANGE	BLACK

TEMPORARY TRAFFIC CONTROL SIGN TABLE

SYMBOL	M.U.T.C.D. DESIGNATION	MESSAGE	SIZE	QUANTITY	COLOR BACKGROUND	COLOR CHARACTERS
⑭	W20-3	ROAD CLOSED 800 FT	48"x48"	2	ORANGE	BLACK
⑮*	R11-4	ROAD CLOSED TO THRU TRAFFIC	60"x30"	1	WHITE	BLACK
Ⓐ	NOTICE SIGN (SEE DETAILS)	(SEE DETAILS)	–	5	YELLOW / WHITE / ORANGE	BLACK / BLACK
Ⓑ	NOTICE SIGN (SEE DETAILS)	(SEE DETAILS)	–	5	YELLOW / WHITE / ORANGE	BLACK / BLACK

* MOUNT ON TYPE III BARRICADE

* * FREDERICK RD (6" LETTERS) MOUNT ON TOP OF EACH R4-9 SIGN

30"
(BLACK / WHITE)

6"	NOTICE	BLACK/YELLOW
5"	FREDERICK RD	
6"	CLOSED	BLACK/WHITE
5"	AT ARCADIA DR.	
6"	DETOUR AHEAD	BLACK/ORANGE

MAX. 60"

SIGN Ⓐ

6"	NOTICE	BLACK/YELLOW
5"	FREDERICK RD	
6"	CLOSED	BLACK/WHITE
5"	WEST OF	
5"	PLUMTREE DRIVE	
5"	DETOUR AHEAD	BLACK/ORANGE

MAX. 60"

SIGN Ⓑ

NOTES:

1. VMS BOARDS WILL BE PLACED (BY THE COUNTY) 2 WEEKS PRIOR TO CLOSING.
2. ALL SIGN LOCATIONS ARE APPROXIMATE AND WILL BE FIELD LOCATED BY HOWARD COUNTY TRAFFIC CONTACT 410-313-5752.
3. ALL SIGNS SHALL BE MOUNDED ON 4"x4" WOOD POST UNLESS MOUNDED ON TYPE III BARRICADE.
4. ALL SIGNS SHALL BE COVERED WITH OPAQUE MATERIAL UNTIL ROAD IS CLOSED.
5. ROAD CLOSURE CAN BE STARTED AFTER 9 AM ON DATE AGREED UPON.
6. ACCESS MUST BE MAINTAINED AT ALL TIMES TO ALL RESIDENTS ALONG ARCADIA DRIVE AND TO RESIDENCE AT 9460 FREDERICK ROAD.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Thomas E. Butler 3/15/10
DIRECTOR DATE

3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21010

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
FREDERICK ROAD
MAINTENANCE OF TRAFFIC PLAN PHASE 1

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

SEAL
STATE OF MARYLAND
JOHN W. CLAPSADDLE
NO. 16956
REGISTERED
PROFESSIONAL ENGINEER

BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JWC
DRAWN BY: JWC / SGM
PROJECT NO : 15976-1-0 C-SDP54TCP
DATE : FEBRUARY 2, 2010
SCALE : 1" = 400' ③
DRAWING NO. 54 OF ~~60~~ 66

P:\Project\15976\1-0\Land_Dev\PLANS\C-SDP54TCP.DWG

SDP-09-058

LEGEND

TRAFFIC CONTROL DEVICES (BARRELS)	● ● ●
DIRECTION OF TRAFFIC	→
CONSTRUCTION SIGN	
TYPE III BARRICADE	
PROPOSED CURB AND GUTTER	
EXISTING CURB AND GUTTER	
WORK AREA	

NOTES:

1. SHA STANDARD NO. MD 104.02-09 (FLAGGER OPERATION) WILL BE USED AS NECESSARY DURING PERIODS OF CONSTRUCTION.

2. CONTRACTOR TO MAINTAIN LESS THAN 2 INCHES OF DROP-OFF DURING PERIODS OF NON-CONSTRUCTION UNLESS CONCRETE BARRIERS ARE USED.

3. TEMPORARY TRAFFIC CONTROL DEVICES AND PERMANENT TRAFFIC CONTROL SIGNS SHALL CONFORM TO THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MDMUTCD). ALL REQUIRED TRAFFIC CONTROL DEVICES ARE TO BE PROVIDED BY THE CONTRACTOR AND SHALL BE INCLUDED IN THE BASE BID.

4. SPACING OF CHANNELIZATION DEVICES WHEN USED FOR TAPER CHANNELIZATION IS TO BE 20' SPACING OF CHANNELIZATION DEVICES WHEN USED FOR TANGENT CHANNELIZATION IS TO BE 40'.

NOTE:
CURCULATION PATTERNS WITHIN THE EXISTING LIBRARY SOUTH PARKING LOT SHALL NOT BE CHANGED UNTIL CONSTRUCTION IS COMPLETE ON THE NEW LIBRARY.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — 3/15/10 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 3/3/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT — 3/15/10 DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE FREDERICK ROAD
MAINTENANCE OF TRAFFIC PLAN PHASE 2

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
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SEAL
STATE OF MARYLAND — JOHN W. CLAPSADDLE — PROFESSIONAL ENGINEER
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/08/2010."

DESIGNED BY :	JWC
DRAWN BY:	SGM
PROJECT NO :	15976-1-0 C-SDP55TCP
DATE :	FEBRUARY 2, 2010
SCALE :	AS SHOWN
DRAWING NO.	55 OF 66

SDP-09-058

PLAN
SCALE : 1"=50'

LEGEND

- TRAFFIC CONTROL DEVICES (BARRELS)
- DIRECTION OF TRAFFIC
- CONSTRUCTION SIGN
- TYPE III BARRICADE
- PROPOSED CURB AND GUTTER
- EXISTING CURB AND GUTTER
- WORK AREA

NOTES:

1. SHA STANDARD NO. MD 104.02-09 (FLAGGER OPERATION), SHA STANDARD NO. MD 104.02-01 (SHOULDER WORK) AND SHA STANDARD NO. MD 104.02-14 (FLAGGER OPERATION AT AN INTERSECTION) WILL BE USED AS NECESSARY DURING PERIODS OF CONSTRUCTION.

2. CONTRACTOR TO MAINTAIN LESS THAN 2 INCHES OF DROP-OFF DURING PERIODS OF NON-CONSTRUCTION UNLESS CONCRETE BARRIERS ARE USED.

3. TEMPORARY TRAFFIC CONTROL DEVICES AND PERMANENT TRAFFIC CONTROL SIGNS SHALL CONFORM TO THE MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MDMUTCD). ALL REQUIRED TRAFFIC CONTROL DEVICES ARE TO BE PROVIDED BY THE CONTRACTOR AND SHALL BE INCLUDED IN THE BASE BID.

4. SPACING OF CHANNELIZATION DEVICES WHEN USED FOR TAPER CHANNELIZATION IS TO BE 20' SPACING OF CHANNELIZATION DEVICES WHEN USED FOR TANGENT CHANNELIZATION IS TO BE 40'.

NOTE:
CURCULATION PATTERNS WITHIN THE EXISTING LIBRARY SOUTH PARKING LOT SHALL NOT BE CHANGED UNTIL CONSTRUCTION IS COMPLETE ON THE NEW LIBRARY.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR — DATE 3/15/10

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 3/2/10

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/15/10

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
FREDERICK ROAD
MAINTENANCE OF TRAFFIC PLAN PHASE 3

Patton Harris Rust & Associates
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F 410.997.9282

SEAL

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP56TCP
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 56 OF 66

SDP-09-058

GENERAL NOTES FOR TEMPORARY TRAFFIC CONTROL TYPICALAPPLICATIONS (TTC TA)

1.0 INTRODUCTION

1.1 The General Notes (GN) supplement the Standard Details and the TTCTA5, and have been assembled to provide additional direction on the installation and application of traffic control devices shown in these standards. The GNs also provide additional guidelines and other useful information that will facilitate the installation of appropriate temporary traffic controls. Users of these standards shall also comply with provisions of FHWA's Manual on Uniform Traffic Control Devices (MUTCD) and SHA's Supplement to the MUTCD, standard Specifications for Construction and Materials, and General Provisions for Construction Contracts.

1.2. The TTCTA show the minimum requirements necessary to plan for the safety of workers, motorists, pedestrians, and other system users throughout the temporary traffic control zone for various types of work activities. Typically, more traffic control devices are required for long-term stationary work activities than for short-term stationary work activities. Additional temporary traffic control devices may be necessary because of other traffic factors such as the roadway's accident history, expected traffic backups, high truck traffic, roadway geometrics or characteristics, and other conditions that may adversely affect the flow of traffic, Users of these TTCTA should review the temporary traffic control setup once in place to ensure that traffic is traveling smoothly throughout the traffic control zone, driver expectancy is being met, and no other adjustments to the temporary traffic control devices are necessary. This review is to be repeated on a regular basis as noted elsewhere.

1.3 The TTCTA address a wide variety of different conditions; however, every situation could not be shown. Therefore, charts have been provided showing standard devices to be used for the proposed work zone activity and the placement of these devices for certain roadway conditions and work durations. The user is expected to combine the information from these charts into a workable traffic control plan.

1.4 In applying these standards and guidelines, questions about applications and interpretations should be referred to the State Highway Administration's Assistant District Engineer – Traffic, County Traffic Engineer, City Traffic Engineer, Public Works Engineer, or other responsible party, who has expertise in traffic engineering and has jurisdiction on the appropriate roadways. Such consultation may be required, for example, to determine the appropriate TTCTA for the work zone condition.

1.5 The General Notes address the following topics:

Definitions
Abbreviations
Signs
Arrow Panels
Channelizing Devices
Pavement Markings
Flagging
Vehicles
Work Restrictions
Traffic Control Plans
Sign and Buffer Spacing Charts/Standard Temporary
Traffic Control (TTC) Operations
Project Limits Signs
Identification of Hat and Shovel Signs
Placement of Regulatory Speed signs
TTC Device Selection Charts (for various roadway types)
Warning, Regulatory and Special Signs/Sign Designations
Sign/Sign Support Placement
Vehicle Conspicuity
Protection Vehicle/Paint Train Vehicle Signing

2.0 DEFINITIONS

Administration – Maryland Department of Transportation, State Highway Administration.

Average Daily Traffic – The number of vehicles flowing in both directions along a particular segment of roadway during an average 24-hour period.

Divided Highway – A highway consisting of two roadways, with traffic in one direction of travel separated from traffic in the opposite direction by a median or barrier.

Divided Uncontrolled Highway – A divided highway having at-grade access to/from adjoining roads or driveways.

Driver Expectancy – Temporary traffic control should be designed and applied in a manner equal to or better than permanent/existing conditions, so as to compensate for the
unexpectancy of the work zone situation, thus providing positive guidance for the road users traversing the area.

Engineer – A person designated by the Administration acting directly or through his duly authorized representative, such representative acting within the scope of the particular authority and duties assigned to that person.

Emergency Repair Operation – An unplanned work operation resulting from a failure or imminent failure of a structure or system that, if not controlled or corrected immediately, may present a hazard to the public.

Expressway – A high-speed divided highway with full or partial control of access and grade separations at major intersections.

Freeway – An expressway with full control of access.

High Bus/Truck Volumes– Bus/truck volumes representing more than 10 percent of the total volume of traffic.

*High Speed – Greater than 40 mph.

Line of Sight – Decision sight distance for the following rate of speed:

Decision Sight Distance

MPH	Feet
30	450–625
40	600–825
50	750–1025
60	1000–1275
70	1100–1450

Long-Term Stationary Work Activity – Work that occupies a location more than 12 hours or is conducted during darkness.

*Low Speed – Equal to or less than 40 mph.

Mobile Operation – Work activity that moves along the road either intermittently or continuously; may involve stops as long as 15 minutes.

Moving Normal – Mobile work operation traveling at, or within 15 mph ot the posted speed limit.

Multi-Lane Undivided Highway – A two-way highway having three or more lanes that typically provides at least two lanes in each direction, with traffic separated by a center line as defined by the Manual on Uniform Traffic Control Devices.

Physical Barrier – A device which provides a physical limitation through which a vehicle would not normally pass. It is intended to contain or redirect an errant vehicle.

*Posted or prevailing speed, whichever is higher; also, see definition for 'Speed'.

Prevailing (Travel) Speed – The speed at which the majority of the traffic is traveling at or below (normally the 85th percentile). If the prevailing speed is not known, it shall be determined by the Engineer using the 'floating car' method (in which the driver approximates the median speed by passing as many vehicles as pass the driver) or another suitable method, at the discretion of the Engineer.

Protection Vehicle – A vehicle equipped with one or more of the following devices – an arrow panel/truck mounted changeable message sign, advance warning sign, approved safety lights, or rear truck mounted attenuator – that is used to provide protection for workers, motorists, equipment, and work operations.

Queue – A line of vehicles, or traffic backup, that forms on a section of roadway where traffic volume exceeds capacity.

Service Vehicle – The work vehicle typically used to maintain traffic control devices, such as PCMS and traffic signals.

Short-Term Stationary Work Activity – Daylight work that occupies a location from 15 minutes to 12 hours.

Specifications – The Administration's Standard Specifications for Construction and Materials, latest edition.

Speed – The term "speed" may mean the 85th percentile speed, prevailing speed, posted speed, design speed, or advisory speed. Vehicle speed should be carefully considered in determining the design, use, placement, and location of various traffic control devices.

Two-Lane, Two-Way Roadway – A roadway that provides a single travel lane in each direction. Traffic is separated by a center line as defined in the Manual on Uniform Traffic Control Devices.

3.0 ABBREVIATIONS

ADE-T – Assistant District Engineer-Traffic
ADT – Average Daily Traffic
ASST – Assistant
BL – Buffer Length
CD or CHAN – Channelizing Devices
DARK – Darkness (nighttime)
DAY – Daytime
EQL – Equal
EXP – Expressway
FT – Feet
FOHPWA – Fluorescent Orange High-Performance Wide Angle
ON – General Notes
HRS – Hours
INTERSECT – Intersection
L – Taper Length
LOTS – Lights
LOC – Location
MUTCD – Manual on Uniform Traffic Control Devices
MDOT – Maryland Department of Transportation
MAX – Maximum
MPH – Miles Per Hour
MIN – Minimum
15 MIN – 15 minutes (title block)
OOTS/OOT&S – Office of Traffic & Safety
PED – Pedestrian
PCMS – Portable Changeable Message Sign
RT – Right
SHA – State Highway Administration
STA – Standard
TEMP – Temporary
TTC – Temporary Traffic Control
TTCTA – Temporary Traffic Control Typical Application(s)
TMA – Truck Mounted Attenuator
TYP – Typical
UNCON – Uncontrolled
UNDIV – Undivided
VEH – Vehicle
VP-i – Vertical Panel-i (object marker designation)

4.0 SIGNS

4.1 Signs should be spaced at the distances shown on the TTCTA diagrams.

4.2 See the "Sign and Buffer Spacing Charts/Standard Temporary Traffic Control Operations" for the appropriate spacing of the advance warning signs for lower speed highway facilities.

4.3 At locations where queues extend beyond the first advance warning sign, additional advance warning signs (static and/or PCMS) shall be placed in advance of the longest observed queue.

4.4 When bus and/or truck volumes are high, an initial advance warning sign may be placed on the left side of a multilane undivided roadway.

4.5 As of December 31, 2003, Fluorescent Orange High Performance Wide Angle (FOHPWA) Retroflective Sign Sheeting material shall be used on all temporary post-mounted warning signs erected in work zones.

4.6 FOHPWA Retroreflective Sign sheeting material may be used for maintenance work along freeways and major expressways at the discretion of the Engineer.

4.7 Approved temporary roll-up signs may be used for maintenance work along all roadways.

4.8 Sign designations and messages for the signs most commonly used in work zones are shown within these General Notes. See Specification 104.08-03 for information on other temporary traffic signs.

4.9 095-4 (Hat and Shovel) signs shall be used for projects lasting greater than two months in duration, unless otherwise specified by the Engineer.

4.10 Along streets in urban areas where the prevailing speed is 35mph or less, and along secondary roads where the Average Daily Traffic (ADT) is less than 1000 vehicles, the minimum sign size of 36' x 36' may be used.

4.11 For utility operations, the word "AHEAD" may be used on warning signs in lieu of distance messages for warnings placed up to and including 1500 feet in advance of the work area. At greater distances, the correct distance messages shall be used on such warning signs. Also, the message UTILITY WORK may be used in lieu of ROAD WORK or SHOULDER WORK, ROAD WORK AHEAD signs may also be used in lieu of distance messages on side streets and entrance ramps that intersect roads where work is being performed (as shown in the Typical Applications) and on the main road during mobile and mowing operations.

4.12 ROAD WORK AHEAD signs shall be installed on all side streets and entrance ramps that intersect roads within work zones. The signing shall be placed along the intersection approach to the right of the travel lane. Refer to Standard Detail 104.-i -02 for guidance on sign placement. For side streets intersecting roads outside work zone boundaries, no advanced signing should be installed.

4.13 Warning signs mounted on wood posts, and those mounted on approved portable supports, shall be mounted in conformance with Standard No. MD 104.01-17. Signs mounted on concrete barrier shall be installed using clamps that are on the Office of Traffic & Safety's Approved Product List.

4.14 A BUMP sign should be placed when there is a temporary pavement wedge along a transverse joint, a transverse construction trench with temporary backfill, or a similar transverse disturbance. Sings should be placed according to Shoulder Work Typical Applications for the appropriate prevailing speed and work duration, with BUMP signs replacing the SHOULDER WORK signs.

4.15 TRUCK CROSSING (Wi 1 -(10)1) signs shall only be used during the following two situations:

1) A work area entrance is allowed along a controlled access highway.

2) A work area entrance is provided along highways other than controlled access, the entrance does not have adequate decision sight distance for approaching traffic, and the entrance adequate decision sight distance for approaching traffic, and the entrance cannot be relocated to provide adequate decision sight distance. Refer to Standard No. MD 104.00-03 of the General Notes for decision sight distance criteria.

TRUCK CROSSING signs shall be placed according to the Shoulder Work Typical Applications, with TRUCK CROSSING signs replacing all SHOULDER WORK signs.

Any distances to be displayed on the TRUCK CROSSING sign shall be installed using supplemental distance plaques.

5.0 ARROW PANELS

5.1 Arrow panels that are installed along roadways with prevailing speeds greater than 40 mph shall be provided with a minimum shoulder closure taper of 1/3 the taper length, (see 6.0 Channelizing Devices). For all other roadways, a 100-foot minimum shoulder closure taper shall be used.

6.0 CHANNELIZING DEVICES

6.1 Taper Formulas:

L = WS for speeds greater than (>) 40 mph

$L = WS^2/60$ for speeds equal to or less than ('C) 40 mph

Where: L = minimum length of taper (ft)
S = numerical value of prevailing travel speed or speed limit (MPH), whichever is higher, prior to work starting,
W = width of offset (ft)

6.2 Maximum spacing between channelizing devices:

Taper Channelization: equal in feet to the posted speed limit.

Tangent Channelization: equal in feet to twice the posted speed limit.

6.3 At horizontal or vertical curves, channelizing devices should be extended to a point where they are visible to approaching traffic. On two-lane, two-way roadways, a full taper length shall always be provided in advance of curves.

6.4 Drums, not cones, should always be used to form the taper on roadways having a prevailing travel speed greater than 40 MPH.

6.5 Storing channelizing devices within 30 feet of the edge of open section roadway or 15 feet of a closed section roadway along any roadway is prohibited without approval of the Engineer.

6.6 Type 3 object markers (VP-I) are required for barrier flare/tangent points.

6.7 The appropriate channelizing devices (including approved barrier) to separate opposing traffic shall be as shown on the plans or as directed by the Engineer.

6.8 On straight sections of roadway with full dimension center and/or lane lines, but without edge lines, channelizing drums shall be used to delineate the edge of the roadway, except at locations designated by the Engineer. Examples would include roadways with curbs, parking, bicycle lanes, or other markings. The channelizing drums may be spaced up to 500 apart where no undue hazards existing unless otherwise directed by the Engineer. On curves, these spacings shall be reduced to a value equal to the posted speed limit, unless otherwise directed by the Engineer.

7.0 PAVEMENT MARKINGS

7.1 Temporary pavement markings should be installed according to Section 104.02-03(0, Specific Requirements for Temporary Pavement Markings, from the Standard specifications for Construction and Materials and from SHA's "Pavement marking Policy and Guidelines" issued by OOTS.

7.2 Pavement markings that are no longer applicable shall be completely removed or obliterated. Temporary markings shall be used as necessary. Operations less than 12 hours or undertaken during the daytime may require that the permanent markings be temporarily covered with black tape as specified in Section 7.3,

7.3 Pavement marking lines adjacent to any long duration lane transition or lane closure taper shall be removed (or covered with SHA approved black pavement marking tape), unless otherwise directed by the Engineer. Pavement marking lines shall be reinstalled (or uncovered) prior to reopening the closed lane(s).

7.4 Guidance on UNMARKED PAVEMENT signing:

1. Daytime: If the pavement is not marked to SHA's standards/specifications during the daytime, no sign is needed, provided Item #3 below is adhered to.
2. Nighttime: If, due to unforeseen circumstances as determined by the Engineer, the pavement is left in a condition overnight that does not meet SHA pavement marking standards/specifications, then UNMARKED PAVEMENT signing shall be used.
3. In all instances where less than standard markings are in place (permanent or short-term), appropriate channelizing devices and other traffic control devices shall be used to guide traffic through the work zone in an effective, safe, and positive manner.

8.0 FLAGGING

8.1 Where two or more flaggers are used and are unable to see each other, two-way radio communications shall be used.

8.2 If the entire work area is visible from one station, a single flagger may be used subject to other safety considerations.

8.3 Guidance on flagging at signalized intersections:

1. Issues regarding flagging at signalized intersections should be discussed in the planning/design stages of the project, and the recommended intersection control strategy should be specified in the contract documents.

2. At the pre-construction conference, SHA staff and the Contractor should discuss the need for flagging operations, MSP (or local police) presence, and the Standard Operating Procedures to request signal operating mode modifications (if needed).

3. In general, all persons (contractors, maintenance, and utility) should contact the Assistant District Engineer – Traffic (ADE-T) to determine the best method for temporary traffic control at a signalized intersection from the following two (2) cases:

Case 1: The signal is turned to flashing mode during flagging operation.

Case 2: The signal is turned off (dark mode) during flagging operation.

Note: Except for police, flagging shall not occur at a signalized intersection operating in a full-color stop-and-go mode (Normal Operation).

9.0 VEHICLES

9.1 If work vehicles need to be stopped in a lane beyond a horizontal curve or a vertical curve (hill), non-essential vehicles are to be pulled as far off the road as possible or be otherwise parked in a manner as to inhibit the movement of traffic as little as possible. If no protection is available, channelizing devices shall be placed as specified in 6.0 Channelizing Devices.

9.2 Work vehicles should not occupy any part of the buffer area.

9.3 Vehicle safety lights (amber in color) shall be from the Office of Traffic & Safety's Approved Products list.

9.4 A protection vehicle with a rear truck-mounted-attenuator (TMA) is required for all freeway work operations that have no formal lane closure. A formal lane closure is one that includes a full complement of advance warning devices and a lane closure taper and a work area delineated by channelizing devices placed in accordance with these fICTA's.

A protection vehicle is also required for highway marking operations and may be required under other traffic and work conditions in conformance with SHA policy or as directed by the Engineer. The protection vehicle may be considered as a substitute for the initial advance warning sign for some mobile work operations. A protection vehicle should also be used in advance of a work operation that is located beyond a horizontal and/or vertical curve, Consideration should also be given to placing an additional temporary advance warning sign(s) or truck mounted variable message sign no less than 500' and no more than 1500' (1/2 mile for expressway conditions) in advance of the protection vehicle, when one or more of the traffic factors listed under General Notes 1.2 exist.

9.5 When a police vehicle is required, the vehicle shall not be located in the buffer and/or taper, but should be located as directed by the Engineer, depending on the type of work, it is sometimes preferable to deploy the police vehicle in advance of the work zone or queue (if queue exists) to encourage speed reduction prior to the work zone.

10.0 WORK HOUR RESTRICTIONS

10.1 Unless otherwise specified in the Contract Document or permitted by the Engineer, work within a lane, within 15 feet of the nearest edge line (open section roadway), or within 2 feet of the face of curb (closed section roadway), is prohibited during peak hours 6 a.m. – 9 am. and 3 p.m. – 7 p.m. Monday – Friday. Also, such work is not permitted on Saturdays, Sundays, National or State holidays, or days preceding and following said holidays.

11.0 TEMPORARY LIGHTING

11.1. Roadway lighting shall be considered during the planning of temporary traffic control plans. Lighting may be required due to nighttime work zone traffic operations or for new traffic patterns (e.g., new exit or lane shift). Once the need for temporary lighting is identified, it should be provided in one of two ways:

1. If practical, permanent lighting that is being installed as part of the project should be installed in the early stages so that it can be used for illuminating travel lanes through the work one throughout the project.

2. If installation of permanent lighting is not a part of project, then temporary lighting (temporary light poles or flood lights) should be provided to illuminate travel path.

Contractor shall maintain existing lighting.

11.2 The Contractor shall submit a Situation Plan to the Engineer showing the locations and aiming of floodlights. The floodlighting system shall be capable of maintaining a 20-ft-c without producing a disabling glare condition for approaching road users. The adequacy of the floodlight placement and absence of glare should be field-verified by the Engineer and Contractor. This involves driving through and observing the floodlighted area from each direction on all approaching roadways immediately after the initial floodlight setup, at night, and periodically.

12.0 PAVEMENT DROP-OFF

12.1 When pavement drop-offs are present, the placement of temporary traffic control devices, including signs, channelizing devices, and barriers, as well as slope fillet wedges, shall follow SHA Standard Nos. MD 104.06-11, MD 104.06-12, MD 104.-DC-13, MD 104-06-14, MD 104-06-15, and MD 104-01-28. The Engineer may recommend alternative methods to protect the pavement edge drop-off, considering factors such as: pedestrians, bicycle and traffic volumes, vehicle speeds, size of work zone duration of work, etc.

13.0 CLEAR ZONE

13.1 MSHTO's Roadside Design Guide defines the clear zone as "an unencumbered roadside recovery area." The "clear roadside" concept applies to both natural and manmade objects (trees, bridge piers, sign supports, culvers, ditches, and other design features of the roadway). For temporary traffic control zones, SHA intends that clear zone concepts be applied so that the areas outside the travel lanes are not needlessly populated by objects that constitute hazards to motorists. In addition to those objects listed above, potential hazards would include unprotected barrier ends, steep slopes, and temporary barricades. Clear Zone Distances Table lists the distances that must remain unencumbered by such objects for various conditions (design speed, ADT, and side slopes). Where barrier curb is present parallel to the edge of travel lanes and prevailing speeds are less than 40 mph, offsets to such objects may be reduced to 2 feet, with approval of the Engineer.

14.0 SIGHT DISTANCE

14.1 Temporary traffic control devices, including drums, barriers, and vertical panels, and construction equipment, shall be placed to ensure that adequate sight distance is not restricted at ramp junctions and intersections. If sight distance restrictions are unavoidable, additional applicable warning signs must be installed. The placement of vertical panels on concrete barrier and the close spacing of approved drums may, in some instances, contribute to restricted sight distance at roadway junctions. For additional guidance on channelizing device placement at intersections, driveways, and/or ramp junctions, see Standard Detail MD 104.01-29.

The following additional criteria should be considered when placing traffic control devices at intersections or ramp junctions:

TCD's installed at or near intersections, including median openings or driveways, should be designed/installed with adequate corner sight distance (as suggested for intersections in Chapter 9 of AASHTO's "A Policy on Geometric Design of Highways and Streets", 2001 ed.). The area around the intersection should be kept free of obstacles.

Sight distance along a ramp should be, at a minimum, equal to the safe stopping sight distance based on prevailing speed.

there should be a clear view of the entire exist terminal, including the exit nose and a section of the ramp roadway behind gore.

15.0 TRAFFIC CONTROL PLANS

15.1 Alternate traffic control plans may be presented to the SHA district office for approval in conformance with section 104.1 of the standard specifications for construction and materials.

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[signature] 3/15/10
DIRECTOR DATE

[signature] 3/8/10
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

[signature] 3/15/10
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE RD
ELLICOTT CITY, MD 21043-4105

TENANTS
HOWARD COUNTY LIBRARY
HOWARD COUNTY HISTORICAL SOCIETY
ELLICOTT CITY SENIOR CENTER
410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **FREDERICK ROAD MAINTENANCE OF TRAFFIC NOTES**

Patton Harris Rust & Associates
Engineers. Surveyors. Planners. Landscape Architects.
PHR+A
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SEAL
STATE OF MARYLAND · JOHN W. CLAPSADDLE · NO. 16956 · REGISTERED · PROFESSIONAL ENGINEER
BY:
"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JWC
DRAWN BY: SGM
PROJECT NO : 15976-1-0 C-SDP57TCP
DATE : FEBRUARY 2, 2010
SCALE : AS SHOWN
DRAWING NO. 57 OF ~~60~~ 66

SDP-09-058

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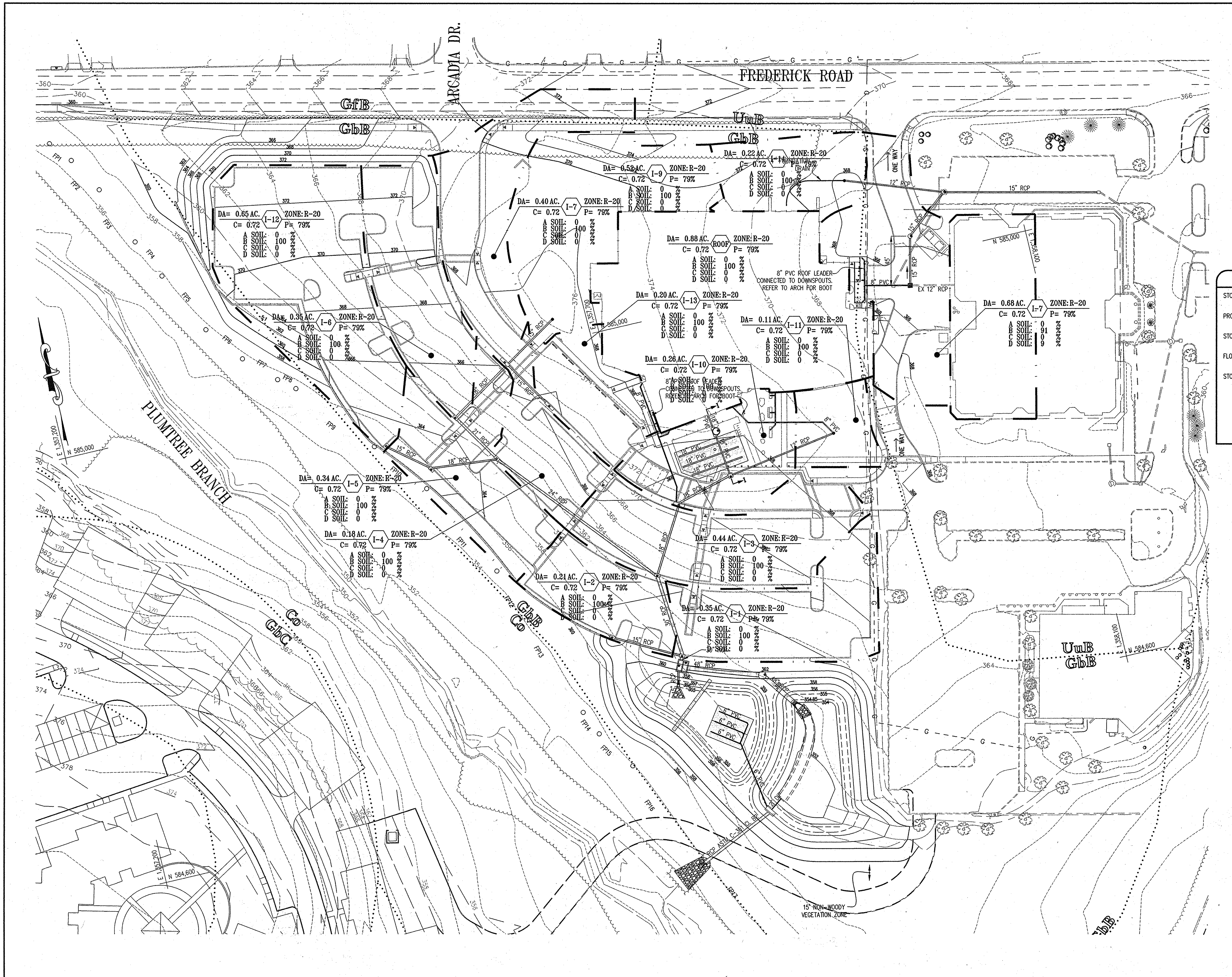

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

DIRECTOR 3/15/10 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 3/8/10 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT 3/15/10 DATE

DATE	NO.	REVISION

OWNER / DEVLOPER
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3430 COURT HOUSE RD
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410-313-4600

PROJECT CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
BUILDABLE PARCEL A AND NON-BUILDABLE BULK PARCEL B
PLAT # 21009-21012

AREA TAX MAP 24, GRID 9, PARCELS 887, 1030, 1090 AND 1163
2ND ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
STORM DRAIN
DRAINAGE AREA MAP

Patton Harris Rust & Associates
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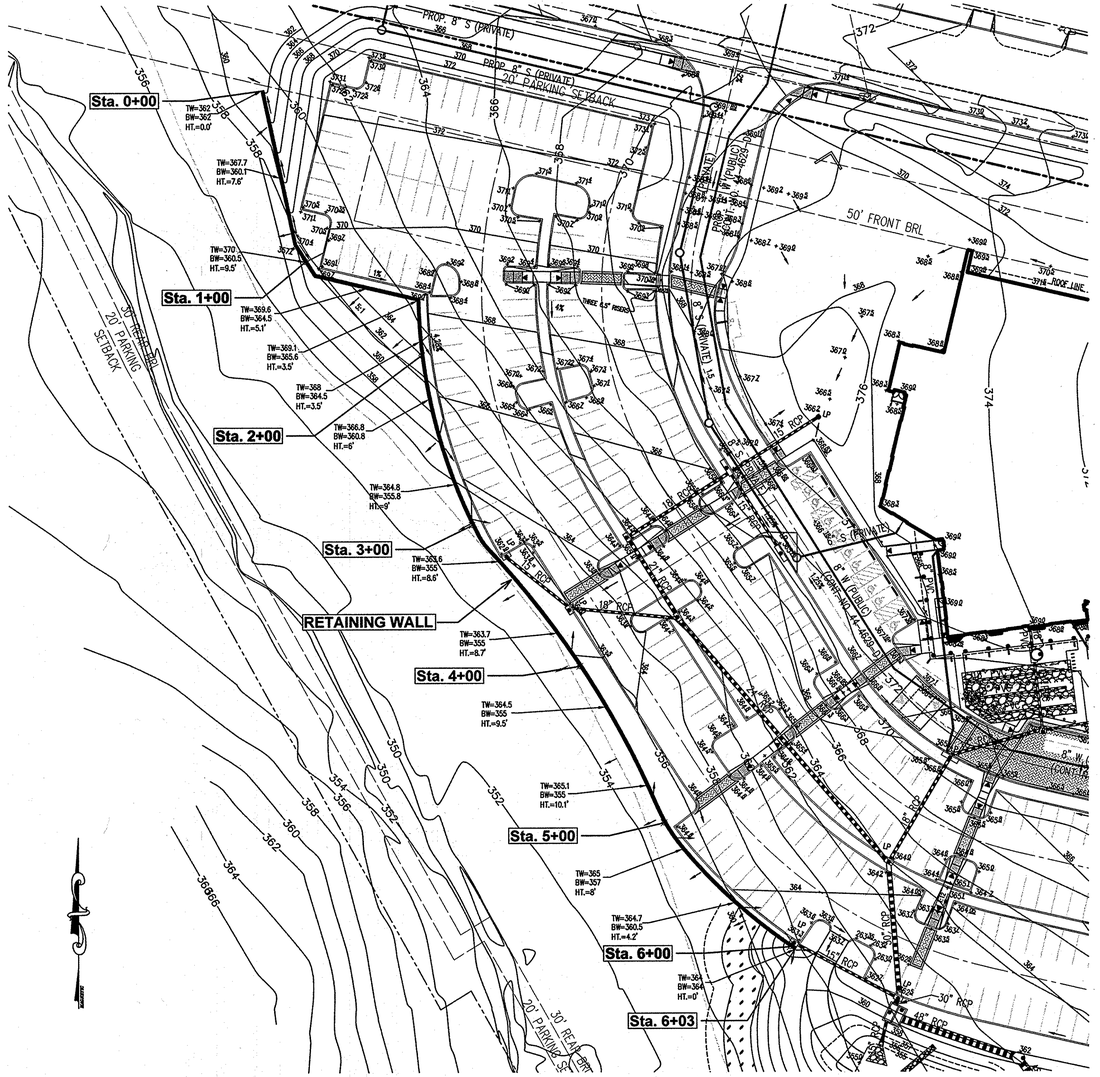
SEAL
STATE OF MARYLAND
JOHN W. CLAPSADDLE
NO. 16956
REGISTERED
PROFESSIONAL ENGINEER

BY:

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 16956, EXPIRATION DATE: 06/09/2010."

DESIGNED BY : JWC
DRAWN BY: JWC/SGM
PROJECT NO : 15976-1-0 C-SDP58DSD.DWG
DATE : FEBRUARY 2, 2010
SCALE : 1" = 40'
DRAWING NO. 58 OF ~~60~~ 66

SDP-09-058



WALL LOCATION PLAN
1"=40'

NOTES:

1. No trees shall be planted within 10 feet of the top of the retaining wall.
2. Retaining walls shall only be constructed under the observation of a registered professional engineer and a (NICET, WACEL, or equiv.) certified soils technician.
3. One soil boring shall be required every one hundred feet along the entire length of the wall. Copies of all boring reports shall be provided to the Howard County Inspector Prior to the start of construction.
4. The required bearing pressure beneath the wall system shall be verified in the field by a certified soils technician. Testing documentation must be provided to the Howard County Inspector prior to start of construction. The required bearing test shall be the Dynamic Cone Penetrometer test ASTM STP-399.
5. The suitability of fill material shall be confirmed by the on-site soils technician. Each 8" lift must be compacted to a minimum 95% standard proctor density and the testing report shall be made available to the Howard County Inspector upon completion of construction.
6. Walls shall not be constructed on uncertified fill materials.
7. Walls shall not be constructed within a Howard Co. right-of-way or easement.

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/9/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/15/10
DIRECTOR	DATE 3/15/10

SPECIFICATIONS
MODULAR CONCRETE BLOCK RETAINING WALL

PART 1: GENERAL

1.01 Description
A. Work shall consist of furnishing and construction of a Modular Retaining Wall System in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the plans.
B. Work includes preparing foundation soil, furnishing and installing leveling pad, unit drainage fill and backfill to the lines and grades shown on the construction drawings.
C. Work includes furnishing and installing geogrid soil reinforcement of the type, size, location, and lengths designated on the construction drawings.

1.02 Delivery, Storage and Handling
A. Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification has been received.
B. Contractor shall protect all materials from damage due to job site conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

PART 2: PRODUCTS

2.01 Modular Concrete Retaining Wall Units
A. Modular concrete units shall conform to the following architectural requirements:
face color - concrete gray - standard manufacturers' color may be specified by the Owner.
face finish - sculptured rock face in angular tri-planer configuration. Other face finishes will not be allowed without written approval of Owner.
bond configuration - running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.
exposed surfaces of units shall be free of chips, cracks or other imperfections when viewed from a distance of 10 feet under diffused lighting.
B. Modular concrete materials shall conform to the requirements of ASTM C1372 - Standard Specifications for Segmental Retaining Wall Units.
C. Modular concrete units shall conform to the following structural and geometric requirements measured in accordance with appropriate references:
compressive strength = 3000 psi minimum;
absorption = 8 % maximum (6% in northern states) for standard weight aggregates;
dimensional tolerances = ± 1/8" from nominal unit dimensions not including rough split face, ±1/16" unit height - top and bottom planes;
unit size - 8" (H) x 18" (W) x 12" (D) minimum;
unit weight - 75 lbs/unit minimum for standard weight aggregates;
inter-unit shear strength - 1000 plf minimum at 2 psi normal pressure;
geogrid/unit peak connection strength - 1000 plf minimum at 2 psi normal force.
D. Modular concrete units shall conform to the following constructability requirements: (If applicable)
vertical setback = 1/8"± per course (near vertical) or 1"+ per course per the design;
alignment and grid positioning mechanism - fiberglass pins, two per unit minimum;
maximum horizontal gap between erected units shall be - 1/2 inch.

2.02 Shear Connectors (If applicable)
A. Shear connectors shall be 1/2 inch diameter thermoset isopthalic polyester resin-protruded fiberglass reinforcement rods or equivalent to provide connection between vertically and horizontally adjacent units. Strength of shear connectors between vertical adjacent units shall be applicable over a design temperature of 10 degrees F to + 100 degrees F.
B. Shear connectors shall be capable of holding the geogrid in the proper design position during grid pre-tensioning and backfilling.

2.03 Base Leveling Pad Material
A. Material shall consist of a compacted #57 crushed stone base as shown on the construction drawings.

2.04 Unit Drainage Fill
A. Unit drainage fill shall consist of #57crushed stone

2.05 Reinforced Backfill
A. Reinforced backfill shall type SM, be free of debris and meet the following gradation tested in accordance with ASTM D-422 and meet other properties shown on the plan:

Sieve Size	Percent Passing
2 inch	100-75
3/4 inch	100-75
No. 40	0-60
No. 200	0-35

Plasticity Index (PI) <10 and Liquid Limit <40 per ASTM D-4318.
B. Material can be site excavated soils where the above requirements can be met. Unsuitable soils for backfill (high plastic clays or organic soils) shall not be used in the reinforced soil mass.

2.06 Geogrid Soil Reinforcement
A. Geosynthetic reinforcement shall consist of geogrids manufactured specifically for soil reinforcement applications and shall be manufactured from high tenacity polyester yarn.

2.07 Drainage Pipe
A. The drainage pipe shall be perforated corrugated HDPE pipe manufactured in accordance with ASTM D-1248.

PART 3 EXECUTION

3.01 Excavation
A. Contractor shall excavate to the lines and grades shown on the construction drawings. Owner's representative shall be responsible for inspecting and approving the excavation prior to placement of leveling material or fill soils.

3.02 Base Leveling Pad
A. Leveling pad material shall be placed to the lines and grades shown on the construction drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6" in front and behind the modular wall unit.
B. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

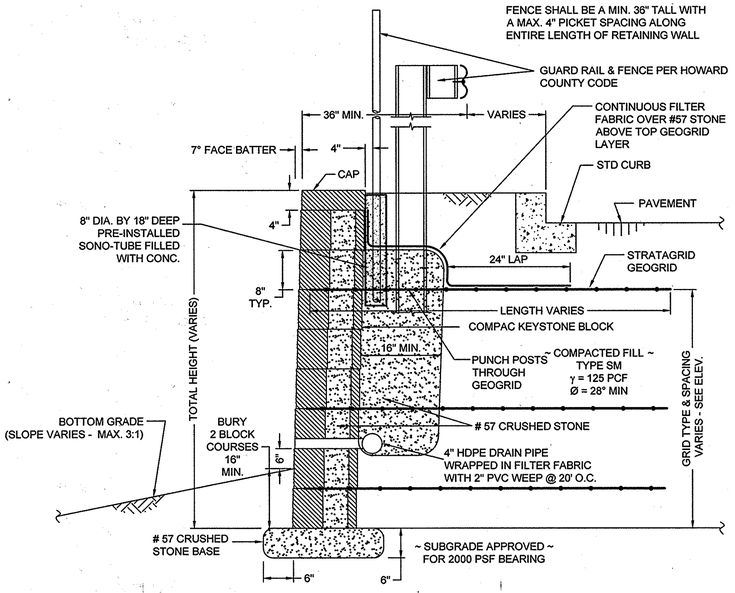
3.03 Modular Unit Installation
A. First course of units shall be placed on the leveling pad at the appropriate line and grade. Alignment and level shall be checked in all directions and insure that all units are in full contact with the base and properly seated.
B. Place the front of units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations.
C. Install shear/connecting devices per manufacturer's recommendations.
D. Place and compact drainage fill within and behind wall units. Place and compact backfill soil behind drainage fill. Follow wall erection and drainage fill closely with structure backfill.
E. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed three courses.

3.04 Structural Geogrid Installation
A. Geogrid shall be oriented with the highest strength axis perpendicular to the wall alignment.
B. Geogrid reinforcement shall be placed at the strengths, lengths, and elevations shown on the construction design drawings or as directed by the Engineer.
C. The geogrid shall be laid horizontally on compacted backfill and attached to the modular wall units. Place the next course of modular concrete units over the geogrid. The geogrid shall be pulled taut, and anchored prior to backfill placement on the geogrid.
D. Geogrid reinforcements shall be continuous throughout their embedment lengths and placed side-by-side to provide 100% coverage at each level. Spliced connections between shorter pieces of geogrid or gaps between adjacent pieces of geogrid are not permitted.

3.05 Reinforced Backfill Placement
A. Reinforced backfill shall be placed, spread, and compacted in such a manner that minimizes the development of slack in the geogrid and installation damage.
B. Reinforced backfill shall be placed and compacted in lifts not to exceed 6 inches where hand compaction is used, or 8 - 10 inches where heavy compaction equipment is used. Lift thickness shall be decreased to achieve the required density as required.
C. Reinforced backfill shall be compacted to 95% of the maximum density as determined by ASTM D698. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be + 3% to - 3% of optimum.
D. Only lightweight hand-operated equipment shall be allowed within 3 feet from the tail of the modular concrete unit.
E. Tracked construction equipment shall not be operated directly upon the geogrid reinforcement. A minimum fill thickness of 6 inches is required prior to operation of tracked vehicles over the geogrid. Tracked vehicle turning should be kept to a minimum to prevent tracks from displacing the fill and damaging the geogrid.
F. Rubber tired equipment may pass over geogrid reinforcement at slow speeds, less than 10 MPH. Sudden braking and sharp turning shall be avoided.
G. At the end of each day's operation, the Contractor shall slope the last lift of reinforced backfill away from the wall units to direct runoff away from wall face. The Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

3.06 Cap Installation
A. Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer.

3.07 Field Quality Control
A. The Owner shall engage inspection and testing services, including independent laboratories, to provide quality assurance and testing services during construction.
B. As a minimum, quality assurance testing should include foundation soil inspection, soil and backfill testing, verification of design parameters, and observation of construction for general compliance with design drawings and specifications.



WALL LOCATION PLAN
1"=40'

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS 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. 14434, EXPIRATION DATE: 05/13/11

OWNER/DEVELOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE ROAD
ELLICOTT CITY, MD 21043-4105

NO.	REVISION	DATE

RETAINING WALL LOCATION PLAN AND DETAILS
CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
PARCELS 1090, 1189

TAX MAP 24, GRID 9
2ND ELECTION DISTRICT
PARCELS 1090, 1189
HOWARD COUNTY, MARYLAND

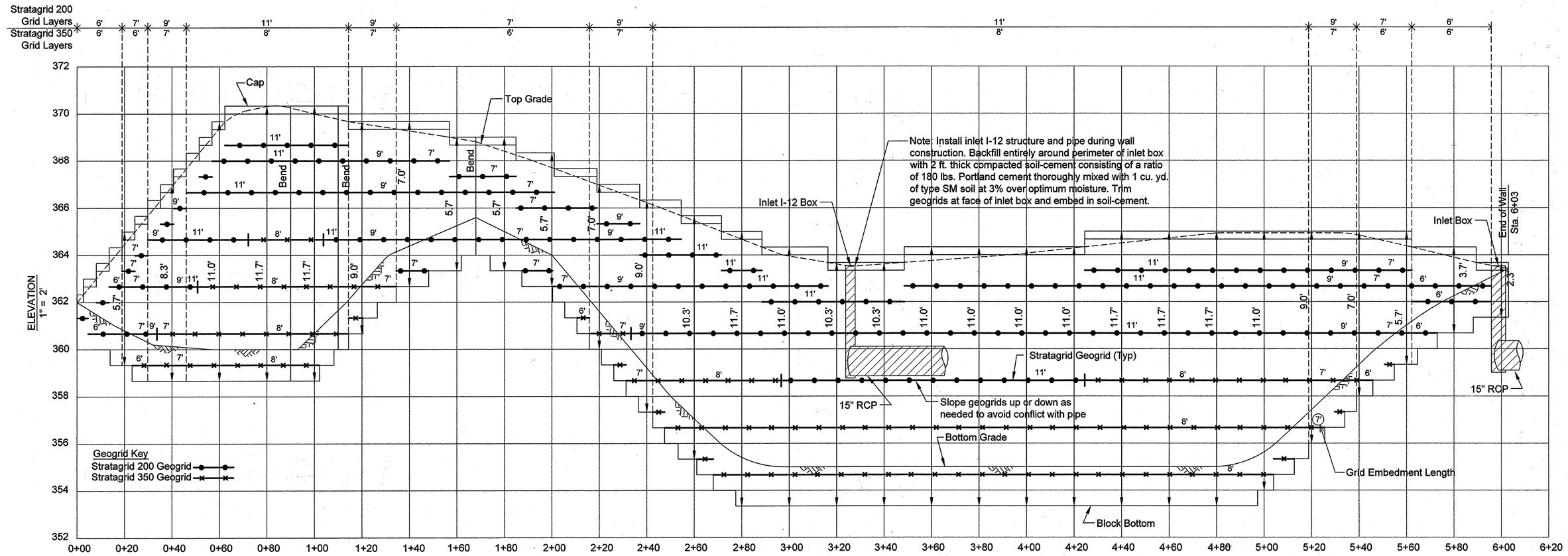
HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A Annapolis Junction, Maryland
(410) 880-4788 Fax: (410) 880-4098

STATE OF MARYLAND RICHARD W. STURGILL No. 14434 PROFESSIONAL ENGINEER

DESIGN BY: AM
DRAWN BY: AM
CHECKED BY: RWS
DATE: FEBRUARY 4, 2010
SCALE: AS SHOWN
JOB NO.: 09059A

SHEET 59 OF 60

SDP-09-058



WALL ELEVATION

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 3/8/10
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 3/15/10
DIRECTOR	DATE 3/15/10

OWNER/DEVELOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE ROAD
ELLICOTT CITY, MD 21043-4105

NO.	REVISION	DATE

RETAINING WALL ELEVATION

CHARLES E. MILLER BRANCH AND HISTORICAL CENTER
PARCELS 1090, 1189

TAX MAP 24, GRID 9 — PARCELS 1090, 1189
2ND ELECTION DISTRICT — HOWARD COUNTY, MARYLAND

HILLIS-CARNES
ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A — Annapolis Junction, Maryland
(410) 880-4788 — Fax: (410) 880-4098

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE PLANS 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. 14434, EXPIRATION DATE: 05/13/11

STATE OF MARYLAND — RICHARD W. STURGILL — No. 14434 — PROFESSIONAL ENGINEER

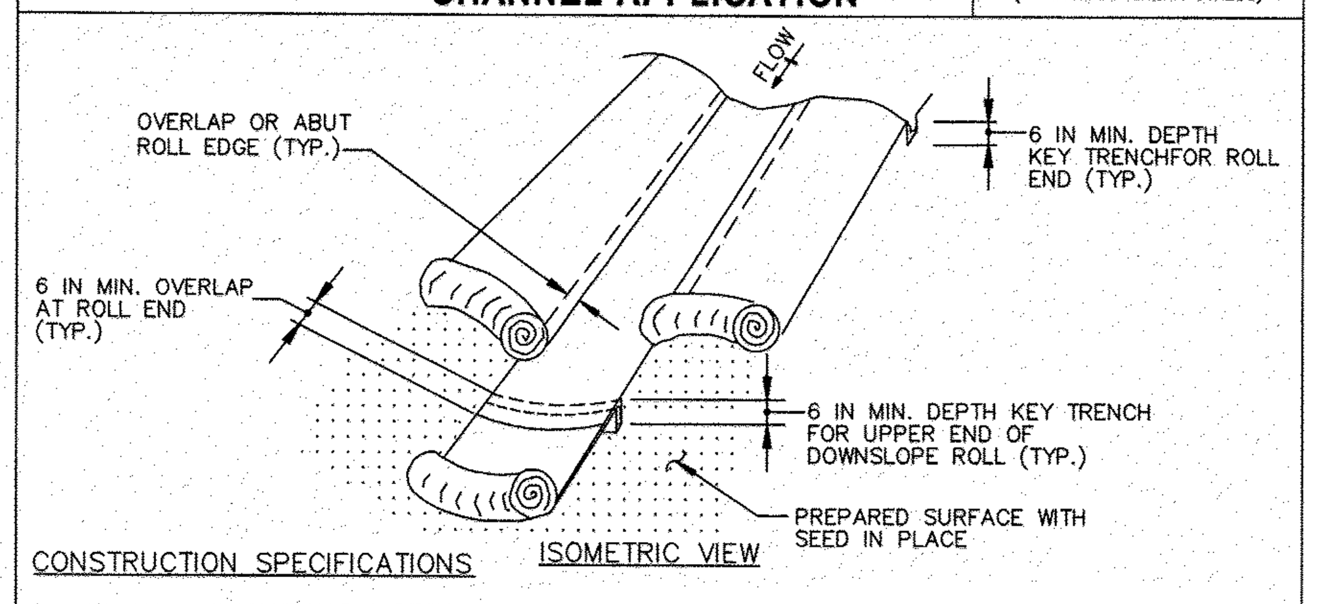
DESIGN BY: AM
DRAWN BY: AM
CHECKED BY: RWS
DATE: FEBRUARY 4, 2010
SCALE: AS SHOWN
JOB NO.: 09059A

SHEET 60 OF 66

SDP-09-058

DETAIL B-4-6-A TEMPORARY SOIL STABILIZATION MATTING CHANNEL APPLICATION

STANDARD SYMBOL
TSSMC – * lb/ft²
(* INCLUDE SHEAR STRESS)



CONSTRUCTION SPECIFICATIONS

1. USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DESIGNATED ON APPROVED PLANS.
2. USE TEMPORARY SOIL STABILIZATION MATTING MADE OF DEGRADABLE (LASTS 6 MONTHS MINIMUM) NATURAL OR MAN-MADE FIBERS (MOSTLY ORGANIC). MAT MUST HAVE UNIFORM THICKNESS AND DISTRIBUTION OF FIBERS THROUGHOUT AND BE SMOLDER RESISTANT. CHEMICALS USED IN THE MAT MUST BE NON-LEACHING AND NON-TOXIC TO VEGETATION AND SEED GERMINATION AND NON-INJURIOUS TO THE SKIN. IF PRESENT, NETTING MUST BE EXTRUDED PLASTIC WITH A MAXIMUM MESH OPENING OF 2x2 INCHES AND SUFFICIENTLY BONDED OR SEWN ON 2 INCH CENTERS ALONG LONGITUDINAL AXIS OF THE MATERIAL TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
3. SECURE MATTING USING STEEL STAPLES, WOOD STAKES, OR BIODEGRADABLE EQUIVALENT. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "U" SHAPED STAPLES MUST AVERAGE 1 TO 1½ INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "T" SHAPED STAPLES MUST HAVE A MINIMUM 8 INCH MAIN LEG, A MINIMUM 1 INCH SECONDARY LEG, AND A MINIMUM 4 INCH HEAD. WOOD STAKES MUST BE ROUGH-SAWN HARDWOOD, 12 TO 24 INCHES IN LENGTH, 1x3 INCH IN CROSS SECTION, AND WEDGE SHAPED AT THE BOTTOM.
4. PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDBED PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
5. UNROLL MATTING IN DIRECTION OF WATER FLOW, CENTERING THE FIRST ROLL ON THE CHANNEL CENTERLINE. WORK FROM CENTER OF CHANNEL OUTWARD WHEN PLACING ROLLS. LAY MAT SMOOTHLY AND FIRMLY ON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
6. KEY-IN UPSTREAM END OF EACH MAT ROLL BY DIGGING A 6 INCH (MINIMUM) TRENCH AT THE UPSTREAM END OF THE MATTING, PLACING THE ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, REPLACING THE EXCAVATED MATERIAL, AND TAMPING TO SECURE THE MAT END.
7. OVERLAP OR ABUT THE ROLL EDGES PER MANUFACTURER RECOMMENDATIONS. OVERLAP ROLL ENDS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
8. STAPLE/STAKE MAT IN A STAGGERED PATTERN ON 4 FOOT (MAXIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG SEAMS, JOINTS, AND ROLL ENDS.
9. ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

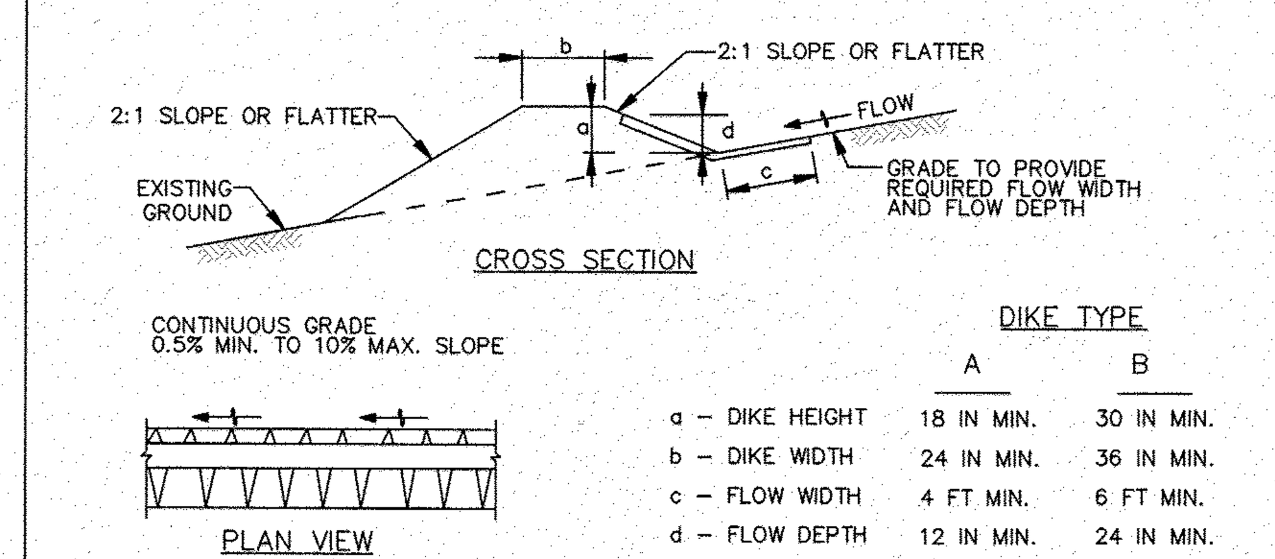
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

B.38

DETAIL C-1 EARTH DIKE

STANDARD SYMBOL
A-1
PLACE DESIGNATION (e.g. A-1) ON FLOW CHANNEL SIDE OF DIKE.



	DIKE TYPE A	DIKE TYPE B
a – DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b – DIKE WIDTH	24 IN MIN.	36 IN MIN.
c – FLOW WIDTH	4 FT MIN.	6 FT MIN.
d – FLOW DEPTH	12 IN MIN.	24 IN MIN.

FLOW CHANNEL STABILIZATION

A-1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)
A-2/B-2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.
A-3/B-3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

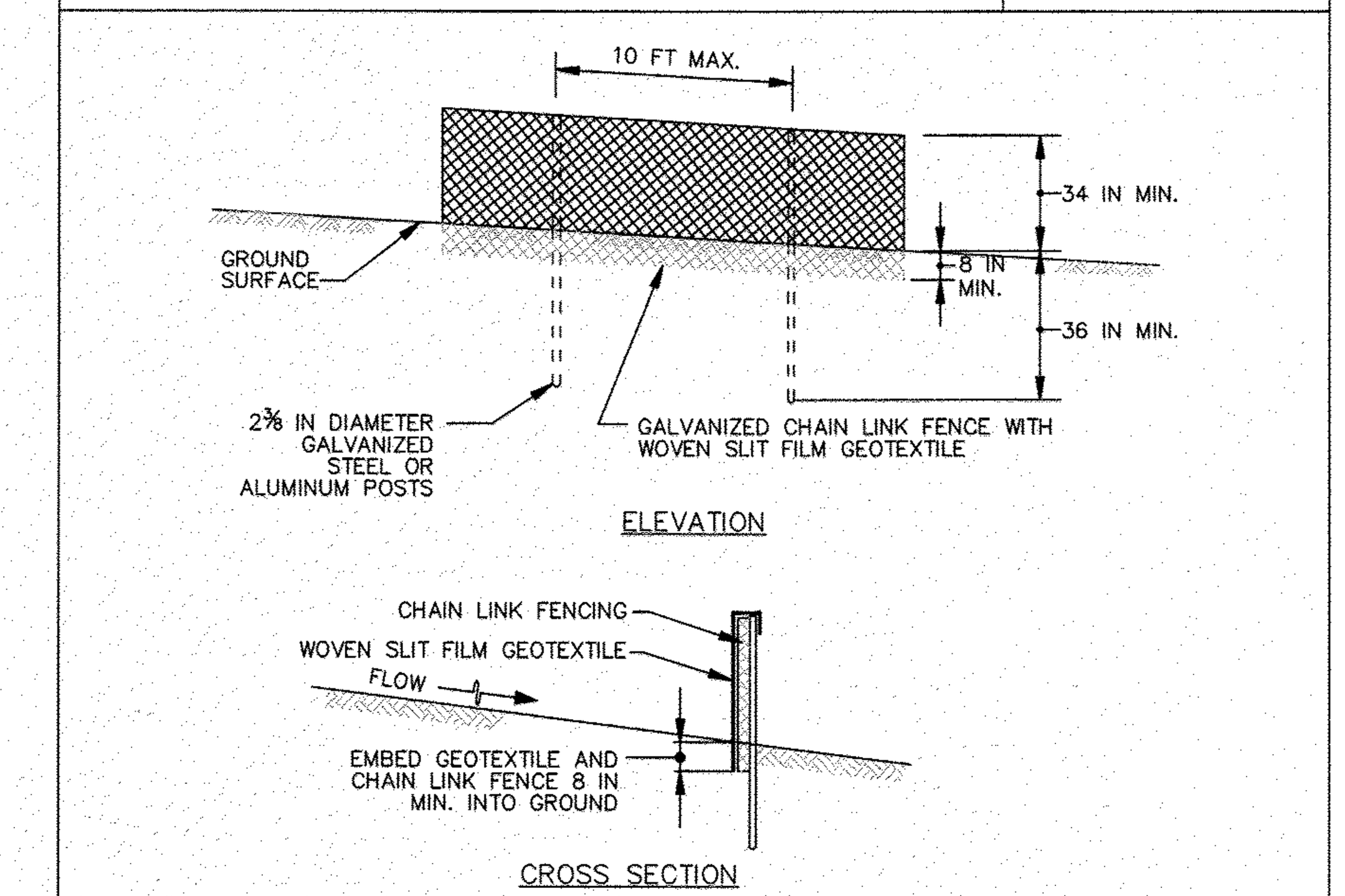
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

C.5

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL
SSF



CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ 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.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. 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.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

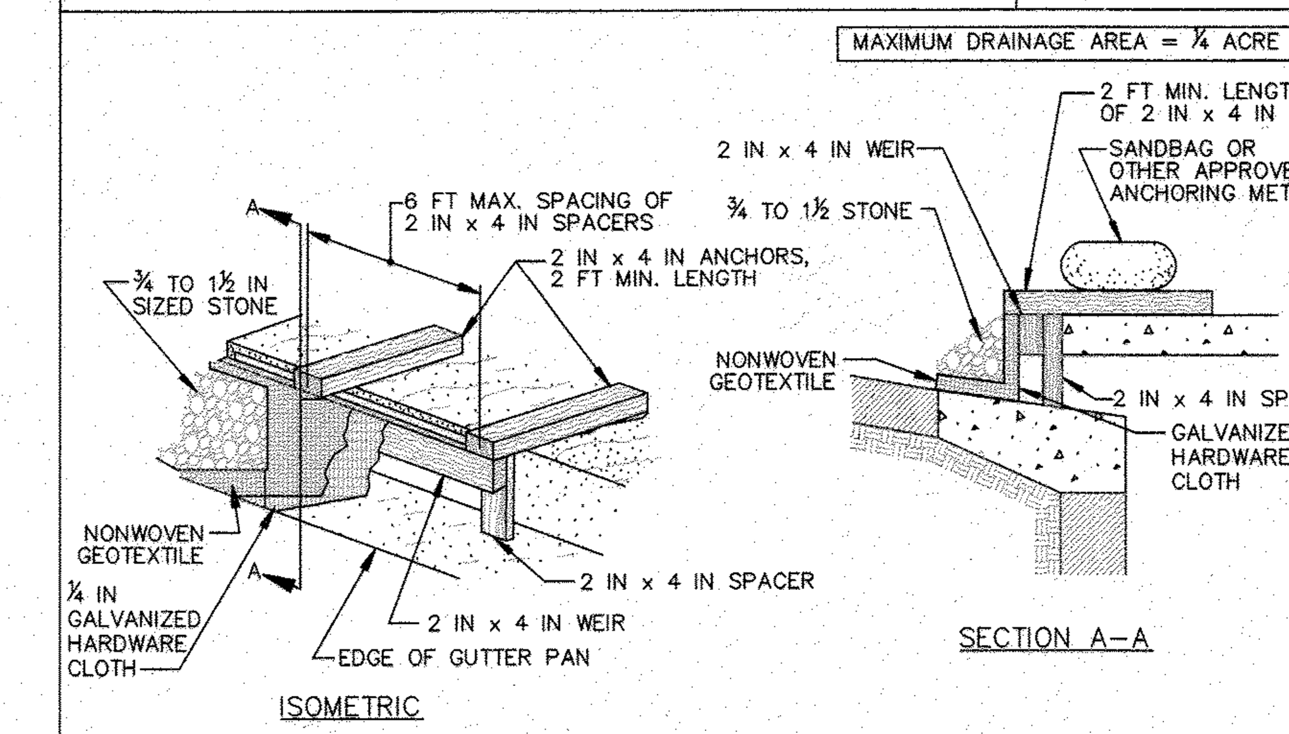
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

E.7

DETAIL E-9-3 CURB INLET PROTECTION

STANDARD SYMBOL
CIP

MAXIMUM DRAINAGE AREA = ¼ ACRE



CONSTRUCTION SPECIFICATIONS

1. USE NOMINAL 2 INCH x 4 INCH LUMBER
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
3. NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
4. ATTACH A CONTINUOUS PIECE OF ¼ INCH GALVANIZED HARDWARE CLOTH, WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
5. PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.
6. PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
7. INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
8. FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
9. AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
10. 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

E.27

B-4-4 STANDARDS AND SPECIFICATIONS FOR TEMPORARY STABILIZATION

Definition

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

Purpose

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

Conditions Where Practice Applies

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

Criteria

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

Temporary Seeding Summary

Hardiness Zone (from Figure B.3): 6b
Seed Mixture (from Table B.1): ____

No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	Fertilizer Rate (10-20-20)	Lime Rate
					436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)

Table B.1: Temporary Seeding for Site Stabilization

Plant Species	Seeding Rate[1/] lb/ac	Seeding Rate[1/] lb/1000 ft²	Seeding Depth[2/] (inches)	Recommended Seeding Dates by Plant Hardiness Zone[3/] 5b and 6a	6b	7a and 7b
Cool-Season Grasses						
Annual Ryegrass (*Lolium perenne ssp. multiflorum*)	40	1.0	0.5	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Barley (*Hordeum vulgare*)	96	2.2	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Oats (*Avena sativa*)	72	1.7	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Wheat (*Triticum aestivum*)	120	2.8	1.0	Mar 15 to May 31; Aug 1 to Sep 30	Mar 1 to May 15; Aug 1 to Oct 15	Feb 15 to Apr 30; Aug 15 to Nov 30
Cereal Rye (*Secale cereale*)	112	2.8	1.0	Mar 15 to May 31; Aug 1 to Oct 31	Mar 1 to May 15; Aug 1 to Nov 15	Feb 15 to Apr 30; Aug 15 to Dec 15
Warm-Season Grasses						
Foxtail Millet (*Setaria italica*)	30	0.7	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14
Pearl Millet (*Pennisetum glaucum*)	20	0.5	0.5	Jun 1 to Jul 31	May 16 to Jul 31	May 1 to Aug 14

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

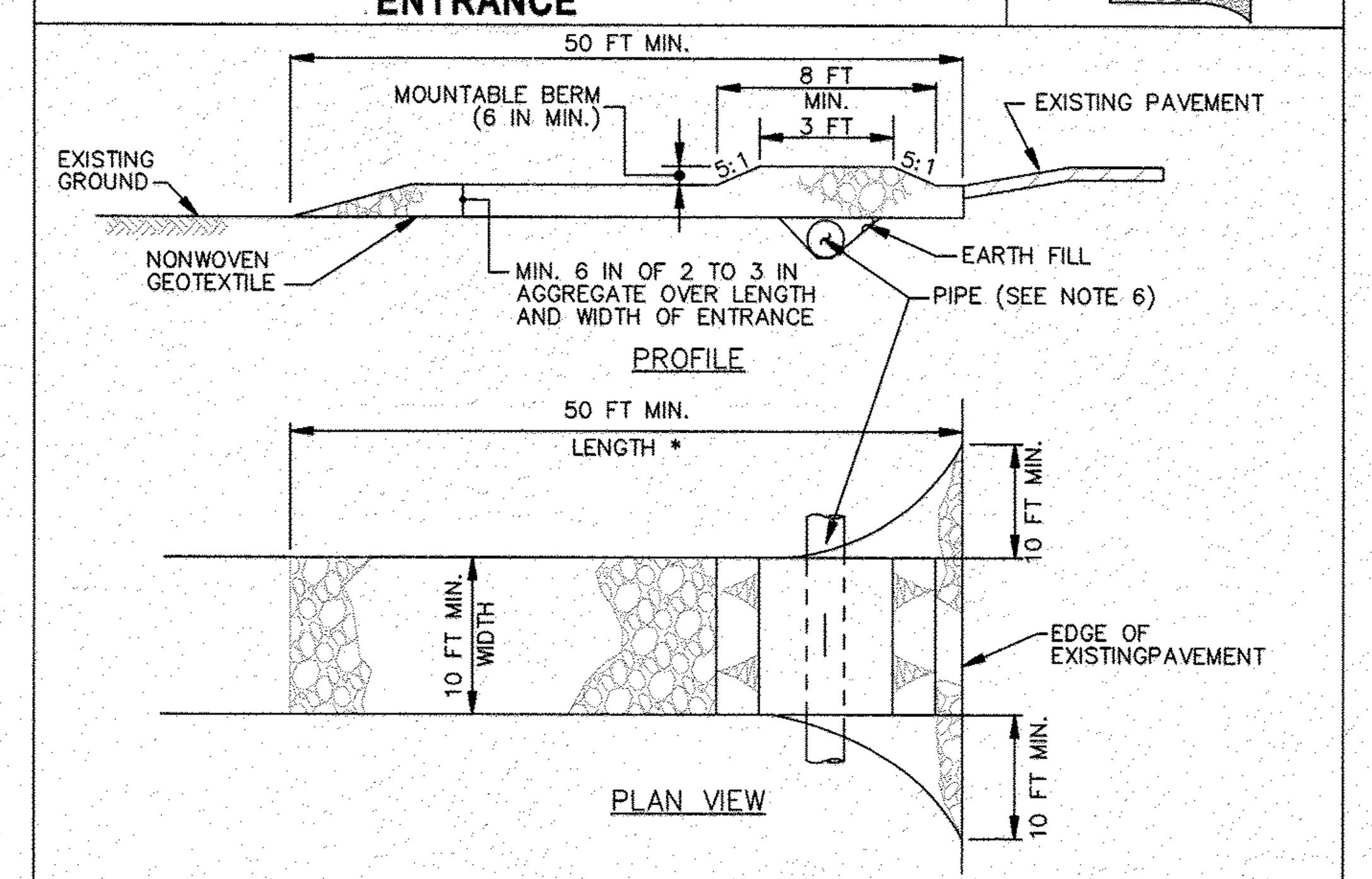
Seeding rates listed above are for temporary seedings, when planted alone. When planted as a nurse crop with permanent seed mixes, use 1/3 of the seeding rate listed above for barley, oats, and wheat. For smaller-seeded grasses (annual ryegrass, pearl millet, foxtail millet), do not exceed more than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

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

2/ For sandy soils, plant seeds at twice the depth listed above.
3/ The planting dates listed are averages for each Zone and may require adjustment to reflect local conditions, especially near the boundaries of the zone.

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL
SCE



CONSTRUCTION SPECIFICATIONS

1. 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.
2. 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.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
4. 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.
5. 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, SCRAPING, 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

B.2

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
Approved: Howard SCD 5/6/15

HOWARD SOIL CONSRVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction (313-1855).

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

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

4. All disturbed areas must be stabilized within the time period specified above in accordance with the 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seeding (Sec. B-4-5), temporary seeding (Sec. B-4-4) and mulching (Sec.B-4-3). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.

5. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.

6. Site Analysis:

Total Area of Site	6.69	Acres	
Area Disturbed	0.4	Acres	(5.2 Ac. W/ PREVIOUS APPROVED PLAN)
Area to be roofed or paved	3.7	Acres	(3.5 Ac. W/ PREVIOUS APPROVED PLAN)
Area to be vegetatively stabilized	1.7	Acres	
Total Cut	11,000	Cu. Yds.	
Total Fill	10,000	Cu. Yds.	
Offsite waste/borrow are location	N/A		

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

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

9. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.

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

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

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

Rev. 4/2013

PROFESSIONAL CERTIFICATION

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

SIGNATURE OF ENGINEER — 02-06-2015 DATE
WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Development Engineering Division — Date 5.7.15
Chief, Division of Land Development — Date 5-13-15
Director — Date 5/13/15

Date	No.	Revision Description
02/2015	2	REDLINE REVISION – PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING
		NEW SHEET FOR SEDIMENT CONTROL

CHARLES E. MILLER BRANCH AND HISTORICAL CENTER

OWNER / DEVELOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE ROAD
ELLICOTT CITY, MD 21043-4105

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) · columbia, md · 21046-2990
410.872.8690 · metro 301.881.0148 · fax 410.872.8693

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.		CENSUS TRACT
CHARLES E. MILLER BRANCH AND HISTORICAL CENTER	887, 1030, 1090 AND 1163		602800
PLAT: 21009-21012	GRID NO. 9	ZONE PSC	T/X MAP 24 / ELECTION DISTRICT 02
WATER CODE		SEWER CODE	

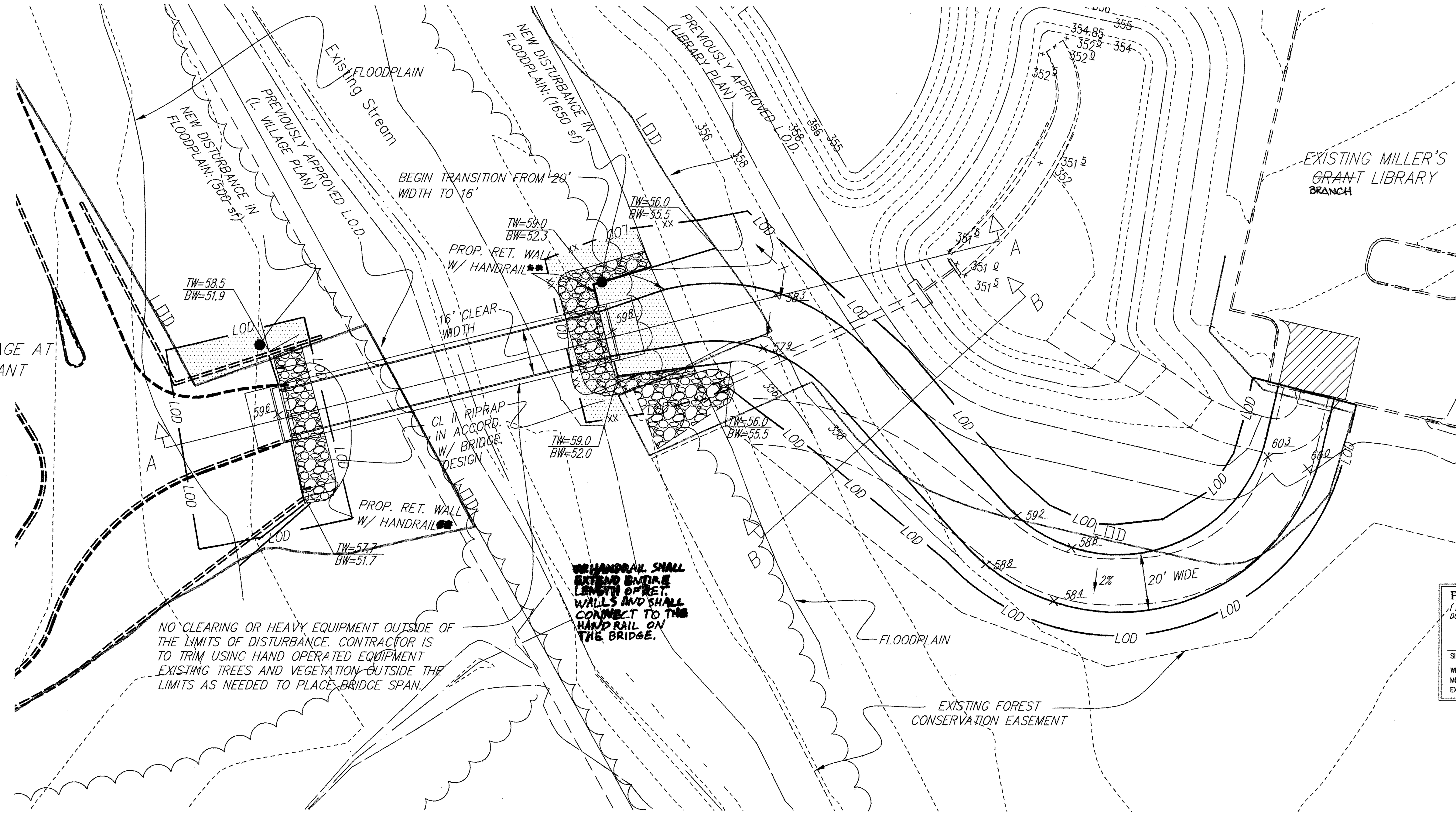
TITLE: REVISED SITE DEVELOPMENT PLAN SEDIMENT CONTROL NOTES AND DETAILS

DESIGN: JL	SCALE: 1" = 30'	PROJECT: 05115.002.00
DRAWN: EG	DATE: FEBRUARY, 2015	2
CHECKED: JL	APPROVED:	61 OF 66

SDP-09-058

P:\Projects\05115\002\00\105\Sdp\Plan\C10A SED CONTROL NOTES & DETAILS.dwg, 4/14/2015 11:55:59 AM, jobsireview, 1:1, christopher consultants, ltd.

GRADING BLOWUP
(1"=30')



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

PROFESSIONAL CERTIFICATION

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

SIGNATURE OF ENGINEER — DATE 02-06-2015

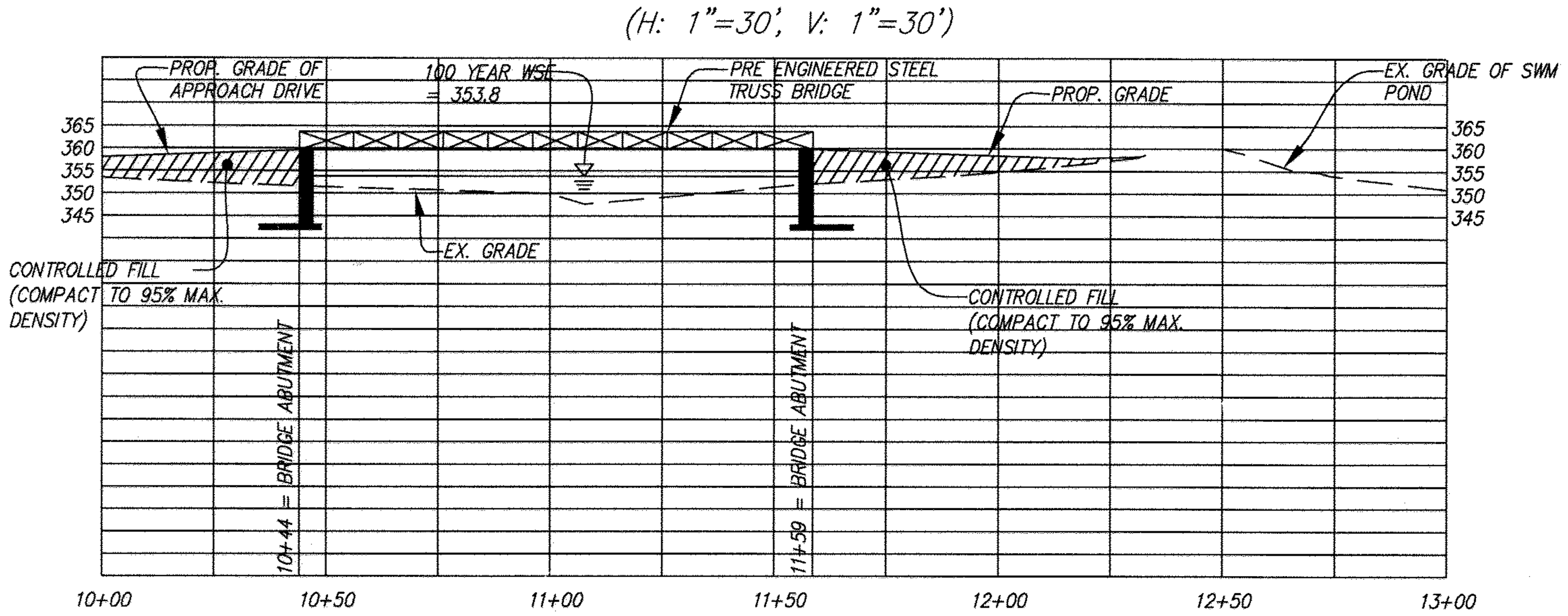
WILLIAM R. ZINK, P.E.
MD LICENSE NUMBER: 20587
EXPIRATION DATE: 09-26-2016

APPROVED: DEPARTMENT OF PLANNING AND ZONING

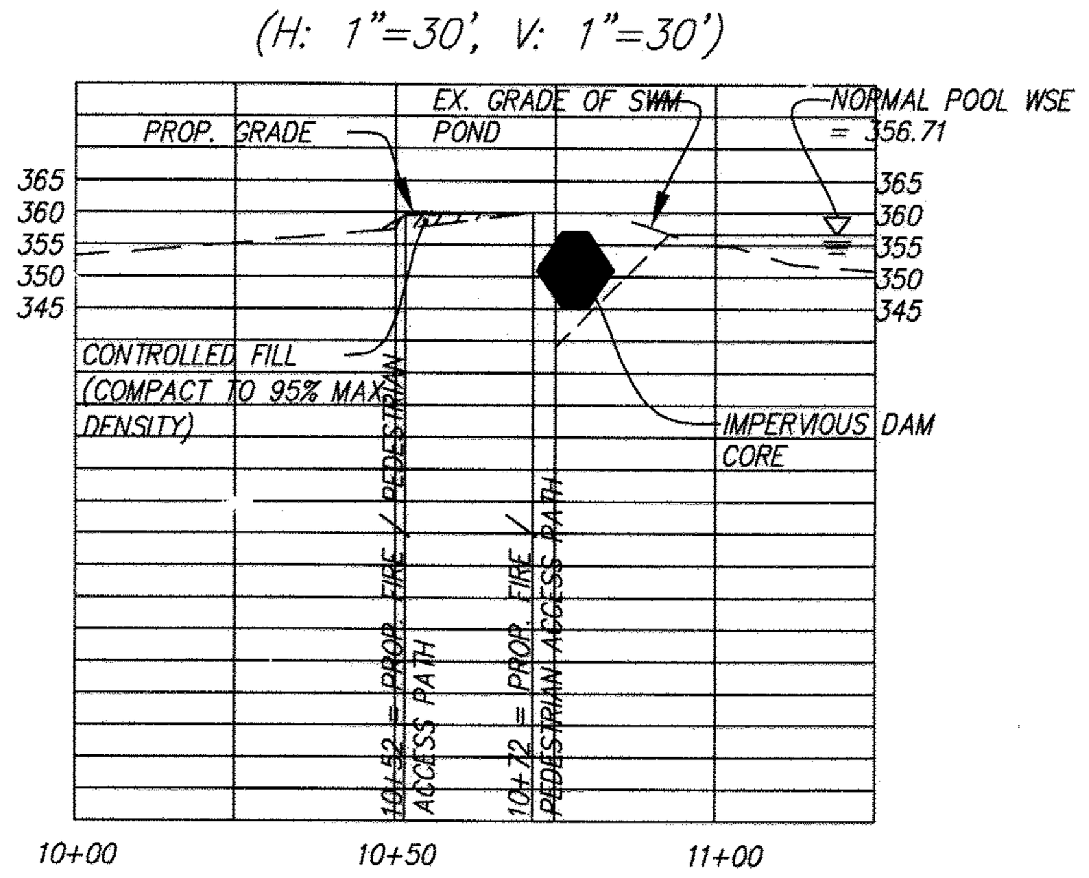
Chief, Development Engineering Division	Date 5-7-15
Chief, Division of Land Development	Date 5-13-15
Director	Date 5/13/15

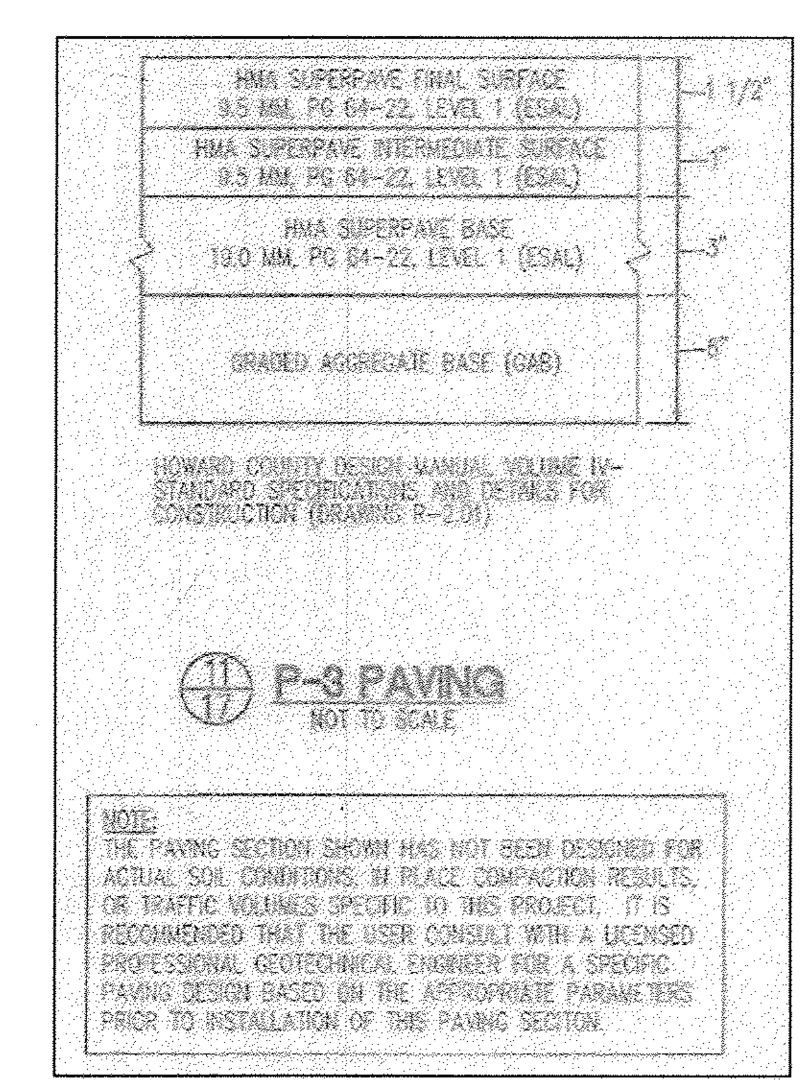
Date	No.	Revision Description
02/2015	1	REDLINE REVISION – PEDESTRIAN PATH / BRIDGE ALIGNMENT, LOD AND GRADING
		NEW SHEET FOR BRIDGE AND ACCESS GRADING

CROSS SECTION A–A
(H: 1"=30', V: 1"=30')



CROSS SECTION B–B
(H: 1"=30', V: 1"=30')





STATE OF MARYLAND — WILLIAM R. ZINK — No. 20587 — PROFESSIONAL ENGINEER — 4/17/15

CHARLES E. MILLER BRANCH AND HISTORICAL CENTER

OWNER / DEVELOPER
HOWARD COUNTY, MARYLAND
DEPARTMENT OF OF PUBLIC WORKS
3430 COURT HOUSE ROAD
ELLICOTT CITY, MD 21043-4105

christopher consultants
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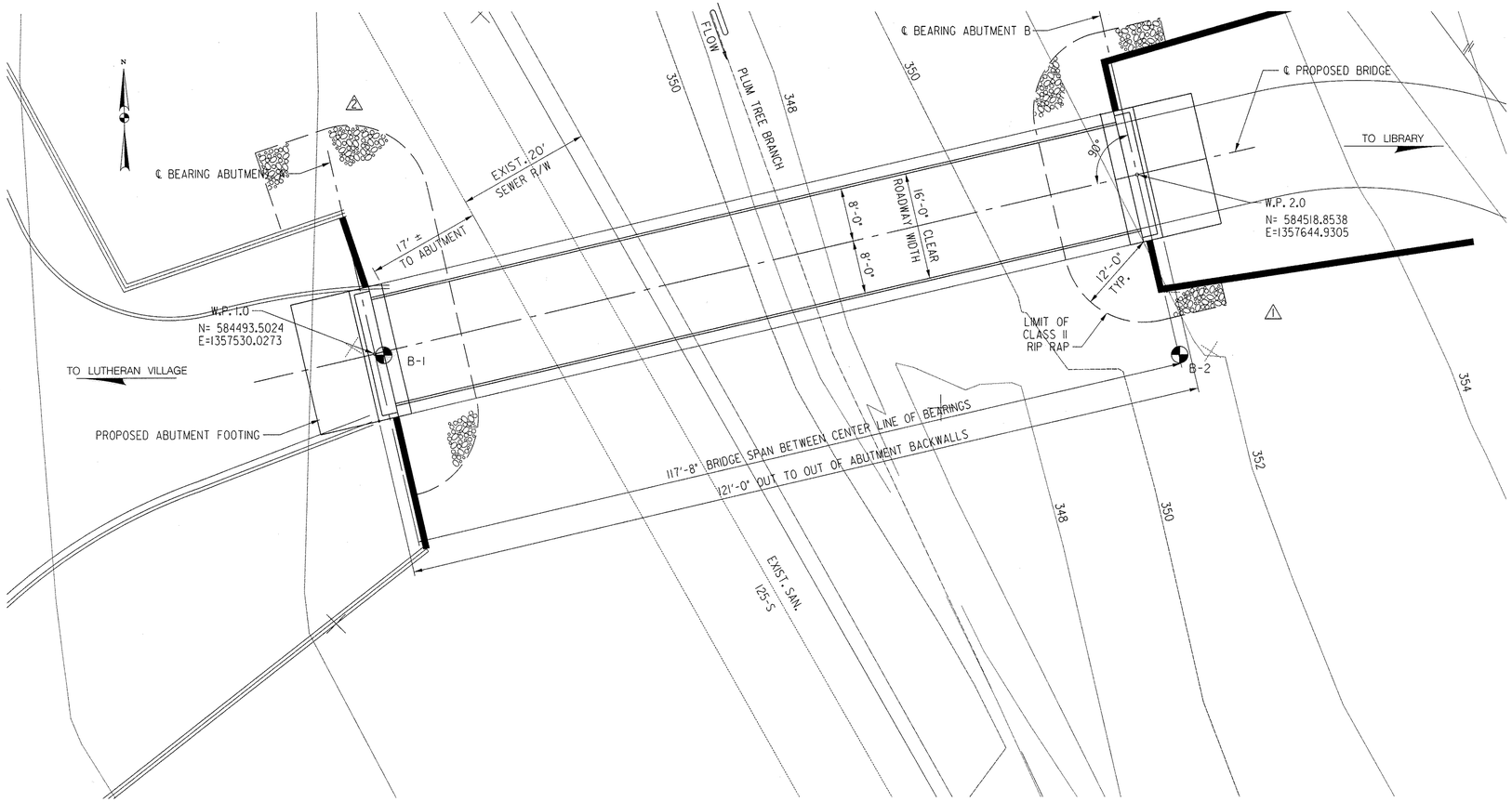
PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.		CENSUS TRACT
CHARLES E. MILLER BRANCH AND HISTORICAL CENTER	887, 1030, 1090 AND 1163		602800
PLAT: 21009–21012	GRID NO. 9	ZONE PSC	TAX MAP 24 / ELECTION DISTRICT 02
WATER CODE			SEWER CODE

TITLE: **REVISED SITE DEVELOPMENT PLAN BRIDGE GRADING PLAN**

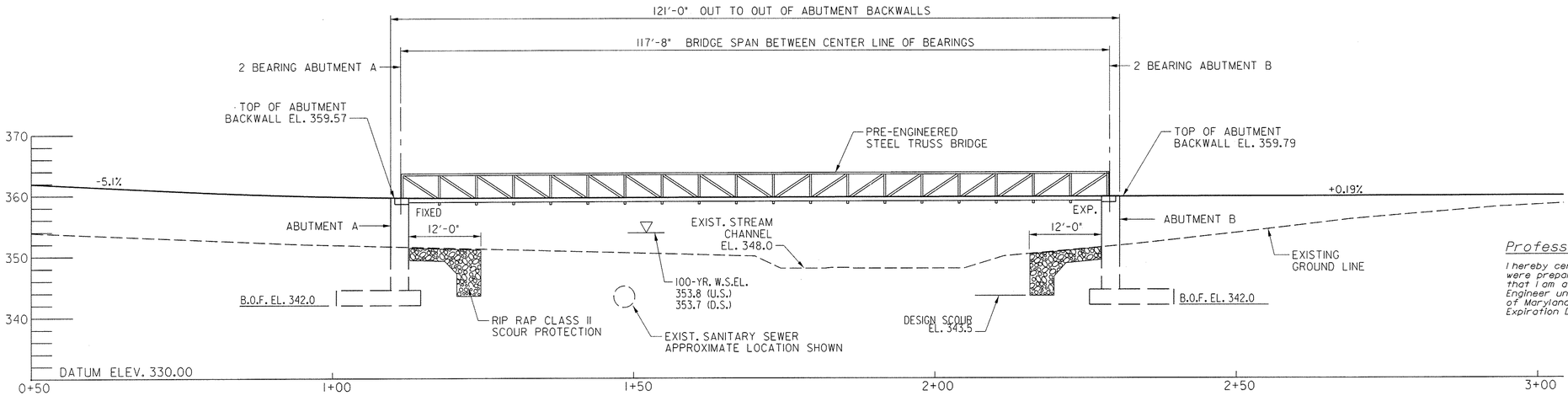
DESIGN: JL	SCALE: SEE DRAWING	PROJECT: 05115.002.00
DRAWN: EG	DATE: FEBRUARY, 2015	1
CHECKED: JL	APPROVED:	62 OF 66

SDP-09-058



PLAN
SCALE: 1" = 10'-0"

FOR ROADWAY, TRAFFIC BARRIER AND RETAINING WALLS, SEE CIVIL DWGS.



NOTES:

1. FOR HORIZONTAL AND VERTICAL ALIGNMENT DATA, SEE CIVIL DWGS.
2. THE 100-YR. FLOODPLAIN ELEVATIONS SHOWN HEREON ARE BASED ON FLOODPLAIN STUDY DRAWINGS PREPARED BY CHRISTOPHER CONSULTANTS IN FEBRUARY 2012.

ELEVATION
SCALE: 1" = 10'-0"

⚠2 REVISION NO. 2
REVISED TITLE BLOCK, RIP RAP
T.E.M. 3/5/15

⚠1 REVISION NO. 1
REVISED BRIDGE LOCATION
T.E.M. 12/8/14

10' 0 10' 20'
SCALE: 1"=10'

GENERAL NOTES

SPECIFICATIONS: MARYLAND SHA STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS, DATED JULY 2008, INCLUDING ALL REVISIONS AND ADDITIONS, AND SPECIAL PROVISIONS FOR MATERIALS AND CONSTRUCTION.

HOWARD COUNTY DESIGN MANUAL VOLUME IV - STANDARD SPECIFICATIONS & DETAILS

PRE-ENGINEERED BRIDGE DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 6TH EDITION, DATED 2012 FOR DESIGN, INCLUDING ALL INTERIM SPECIFICATIONS.

LIVE LOAD: 90 PSF PEDESTRIAN LOAD, OR TYPICAL HOWARD COUNTY EMERGENCY VEHICLES, WHICHEVER PRODUCES THE MAXIMUM LOAD EFFECT IN ANY MEMBER. THE STRUCTURAL DESIGN AND LOAD RATING CALCULATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE MANUFACTURING OF THE BRIDGE SUPERSTRUCTURE.

DESIGN LIVE LOAD SHALL CONSIDER TWO EMERGENCY VEHICLES ON STRUCTURE CONCURRENT.

CONCRETE DESIGN (SUBSTRUCTURE): LOAD AND RESISTANCE FACTOR DESIGN (LRFD) METHOD

CONCRETE: ALL CAST-IN-PLACE STRUCTURE CONCRETE FOR FOOTINGS AND ABUTMENT WALLS SHALL BE MSHA MIX NO. 3 (F'c=3500 P.S.I.)

ALL FINISHED CONCRETE SURFACES SHALL HAVE ¾"x¾" CHAMFER ON ALL CORNERS.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.

ALL SPLICES NOT SHOWN SHALL BE LAPPED AS PER BAR LAP CHARTS. MINIMUM COVER FOR ANY BAR SHALL BE 2 INCHES, UNLESS OTHERWISE NOTED, WITH THE EXCEPTION OF BARS AT THE BOTTOM AND SIDES OF ALL FOOTINGS, WHICH SHALL HAVE 3 INCH MINIMUM COVER.

ONLY GRADE 60 CAN BE USED ON THIS PROJECT.

ALL REINFORCING STEEL IN THE TOP OF BACKWALLS SHALL BE EPOXY COATED.

PRE-ENGINEERED BRIDGE: THE PRE-ENGINEERED BRIDGE SUPERSTRUCTURE SHALL BE DESIGNED AND SEALED BY A MARYLAND LICENSED PROFESSIONAL ENGINEER. THE BRIDGE STRUCTURE SHALL BE DESIGNED, MANUFACTURED AND INSTALLED COMPLETE IN-PLACE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL SUPPLY SHOP DRAWINGS OF THE BRIDGE TO THE ENGINEER FOR REVIEW AND APPROVAL. NO MATERIAL SHALL BE ORDERED OR FABRICATED UNTIL WRITTEN APPROVAL IS RECEIVED FOR THE PROPOSED STRUCTURE.

KEYS: ALL KEYS ARE NOMINAL SIZE.

FOOTINGS: ABUTMENT FOOTINGS HAVE BEEN DESIGNED FOR A MAXIMUM ALLOWABLE BEARING PRESSURE OF 6,000 P.S.F. WHICH SHALL BE VERIFIED DURING CONSTRUCTION BY A MARYLAND LICENSED PROFESSIONAL GEOTECHNICAL ENGINEER RETAINED AND PAID FOR BY THE CONTRACTOR. SHOULD THE ACTUAL ALLOWABLE BEARING PRESSURE AT PLANNED BOTTOM OF FOOTING ELEVATION BE FOUND TO BE LESS THAN ASSUMED, THE WIDTH OR DEPTH OF FOOTINGS SHALL BE ADJUSTED AT THE DIRECTION OF THE ENGINEER.

S-1

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 5.7.15

Chief, Division of Land Development — Date 5-13-15

Director — Date 5/12/15

Date	No.	Revision Description
4/16/15	3	REVISED TITLE BLOCK
3/5/15	2	REVISED TITLE BLOCK AND RIP RAP LIMITS
12/8/14	1	REVISED BRIDGE LOCATION

CHARLES E. MILLER BRANCH AND HISTORICAL CENTER

OWNER / DEVELOPER
HOWARD COUNTY MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLICOTT CITY, MD 21043

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) columbia, md. 21046-2990
410.872.8690 metro 301.861.0148 fax 410.872.8693

Professional Certification

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 17262, Expiration Date: 2/24/2017.

STATE OF MARYLAND — TIMOTHY EDWARD MCSHANE — No. 17262 — REGISTERED PROFESSIONAL ENGINEER

Timothy E. McShane 4/28/15

BRUDIS & ASSOCIATES, INC.
Consulting Engineers
9240 Rumsey Road; Suite C
Columbia, Maryland 21045
Phone: 410-884-3607
www.brudis.com

PERMIT INFORMATION CHART

PROJECT NAME		LOT/PARCEL NO.		CENSUS TRACT
CHARLES E. MILLER BRANCH AND HISTORICAL CENTER		887, 1030, 1090 AND 1163		602800
PLAT: 21009-21012	GRID NO. 9	ZONE PSC	TAX MAP 24	ELECTION DISTRICT 02
WATER CODE			SEWER CODE	

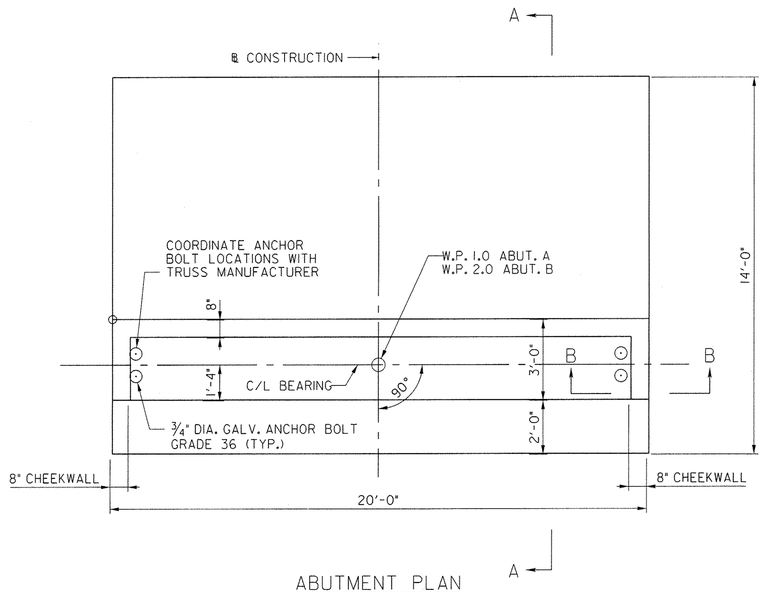
TITLE: **REVISED SITE DEVELOPMENT PLAN**
BRIDGE GENERAL PLAN AND ELEVATION

DESIGN: TEM	SCALE: 1" = 10'	PROJECT: 05115.002.00
DRAWN: NH	DATE: 4 / 28 / 2015	
CHECKED: TEM	APPROVED:	63 OF 66

MDC-1049

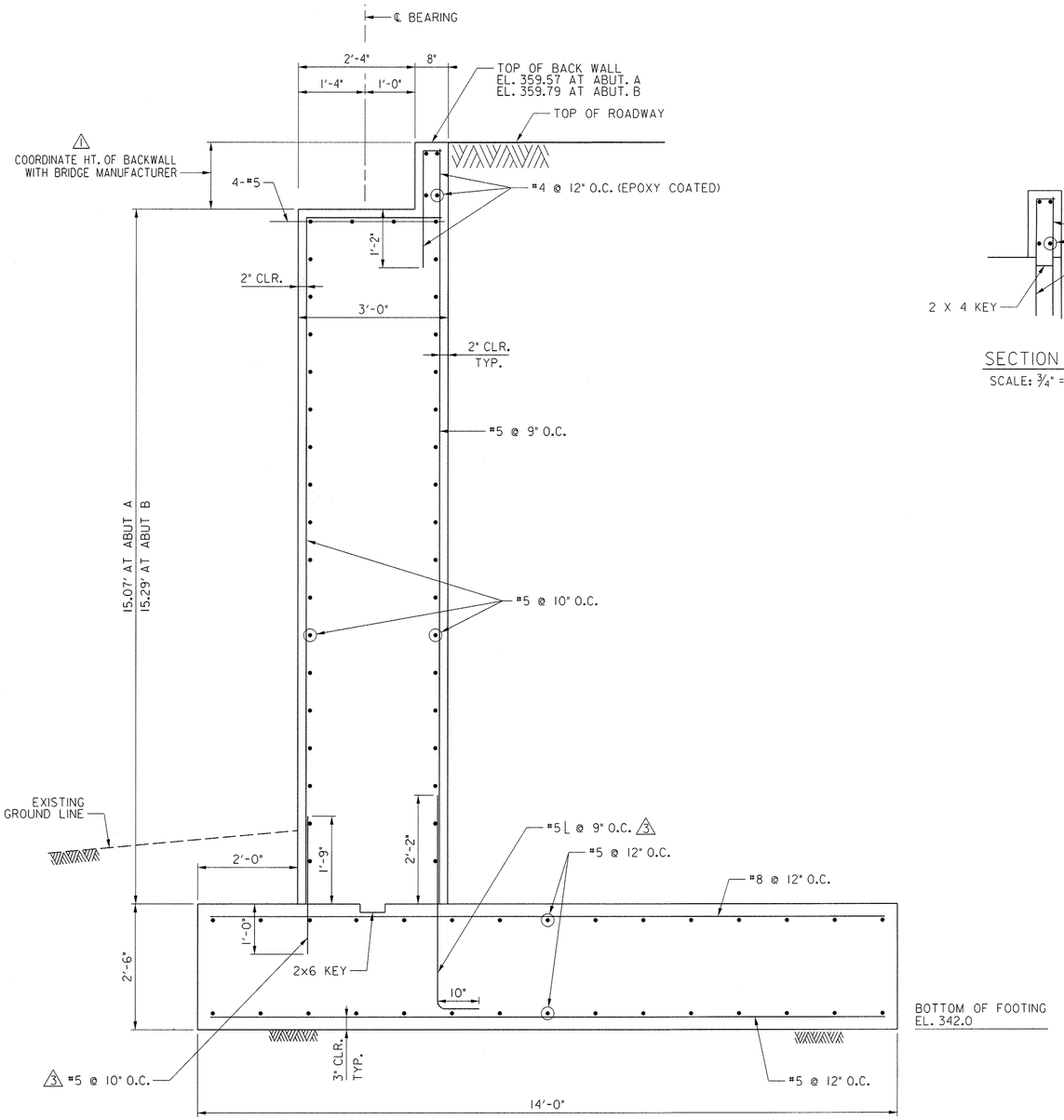
SDP-09-058

11m
PLOTTED: Tuesday, April 28, 2015 AT 12:05 PM
FILE: P:\12-010 Lutheran Village Peds Bridge\Drawings\CADD\Working\pBR-GP00_Lutheron.dgn



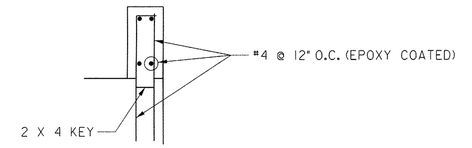
ABUTMENT PLAN

SCALE: 3/8 = 1'-0"



TYPICAL ABUTMENT SECTION A-A

SCALE: 3/4" = 1'-0"



SECTION B-B

SCALE: 3/4" = 1'-0"

3 REVISION NO. 3
ADDED REINFORCING NOTE
T.E.M. 4/16/15

⚠ REVISION NO. 1
REVISED HT. OF ABUTMENT BACKWALL
T.E.M. 12/8/14

BRUDIS & ASSOCIATES, INC.
Consulting Engineers
9240 Rumsey Road, Suite C
Columbia, Maryland 21045
Phone 410-884-3607
www.brudis.com

Professional Certification

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 17262, Expiration Date: 2/24/2017.

STATE OF MARYLAND TIMOTHY EUGENE MCSHANE No. 17262 REGISTERED PROFESSIONAL ENGINEER

Timothy E. McShane 4/28/15

S-2

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 5.7.15

Chief, Division of Land Development — Date 5-13-15

Director — Date 5/12/15

Date	No.	Revision Description
4/16/15	3	ADDED REINFORCING NOTES
3/5/15	2	REVISED TITLE BLOCK
12/8/14	1	REVISED HT. OF ABUTMENT BACKWALL

CHARLES E. MILLER BRANCH AND HISTORICAL CENTER

OWNER / DEVELOPER

HOWARD COUNTY MARYLAND
DEPARTMENT OF PUBLIC WORKS
3430 COURT HOUSE DRIVE
ELLICOTT CITY, MD 21043

christopher consultants
engineering · surveying · land planning
christopher consultants, ltd.
7172 columbia gateway drive (suite 100) columbia, md. 21046-2990
410.872.8690 metro 301.861.3148 fax 410.872.8693

PERMIT INFORMATION CHART

PROJECT NAME	LOT/PARCEL NO.	CENSUS TRACT
CHARLES E. MILLER BRANCH AND HISTORICAL CENTER	887, 1030, 1090 AND 1163	602800

PLAT:	GRID NO.	ZONE	TAX MAP	ELECTION DISTRICT
21009-21012	9	PSC	24	02

WATER CODE	SEWER CODE

TITLE: **REVISED SITE DEVELOPMENT PLAN**

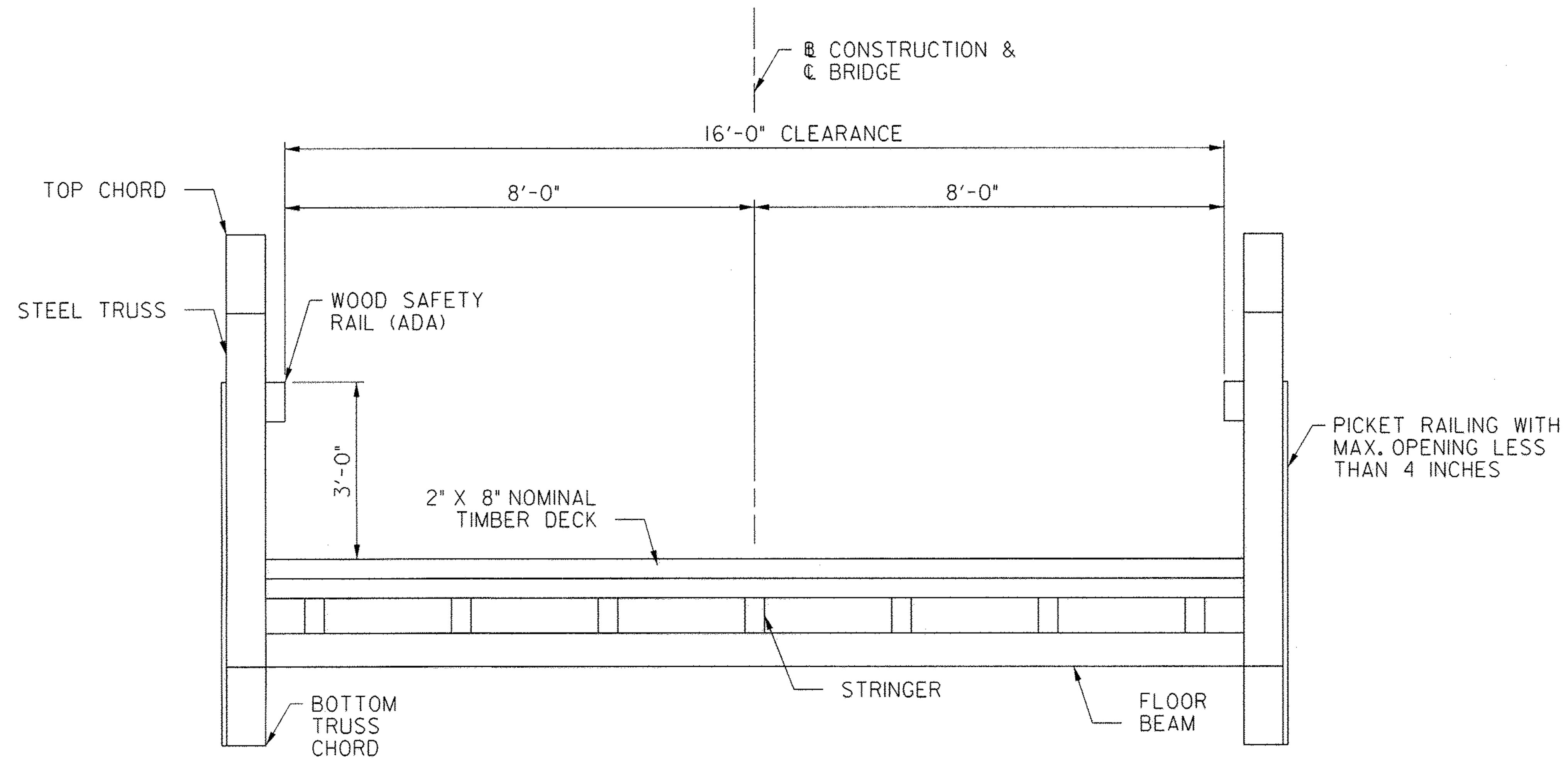
ABUTMENT PLAN, ELEVATION AND TYPICAL SECTION

DESIGN: TEM	SCALE:	PROJECT: 05115.002.00
DRAWN: NH	DATE: 4 / 28 / 2015	
CHECKED: TEM	APPROVED:	64 OF 66

MDC-1049

SDP-09-058

tim
PLOTTED: Tuesday, April 28, 2015 AT 12:09 PM
FILE: P:\12-010 Lutheran Village Pedx Bridge\Drawings\CADD\Working\pBR-ABO1_LUTHERAN.dgn



TYPICAL SECTION

SCALE: 1/2" = 1'-0"

BAR SIZE	* LOCATION CATEGORY		
	A	B	C
#4	2'-5"	1'-9"	1'-5"
#5	3'-0"	2'-2"	1'-9"
#6	3'-7"	2'-7"	2'-1"
#7	4'-10"	3'-6"	2'-10"
#8	6'-5"	4'-7"	3'-8"
#9	8'-1"	5'-9"	4'-8"
#10	10'-3"	7'-4"	5'-11"
#11	12'-7"	9'-0"	7'-3"

* LOCATION CATEGORY

A - Bars in horizontal layers in top of pour with 12" or more of concrete below them such as in: footings, pier caps, etc.
B - All bars not in Category A spaced less than 6" apart.
C - All bars not in Category A spaced 6" or more apart.

Note:
1. When bar lap is not specified on the Plans, the above dimensions shall be used.
2. These bar laps do not apply when bar is in lightweight concrete. Greater lengths are required for this material.
3. These bar laps only apply where the General Notes indicate "Reinforcing Steel Design, fy = 60 ksi."

APPROVAL	
DIRECTOR OFFICE OF STRUCTURES	
DATE: 4/30/81	
REVISIONS	
SHA	FHWA
11-23-93	-
1-22-01	-
9-20-05	-
11-26-07	-

FHWA APPROVAL DATE: 7-19-11

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF STRUCTURES
BAR LAP DIMENSIONS FOR GRADE 60 REINFORCING STEEL IN MIX NO.3 (3500 P.S.I.) CONCRETE NON-EPOXY COATED REINFORCING

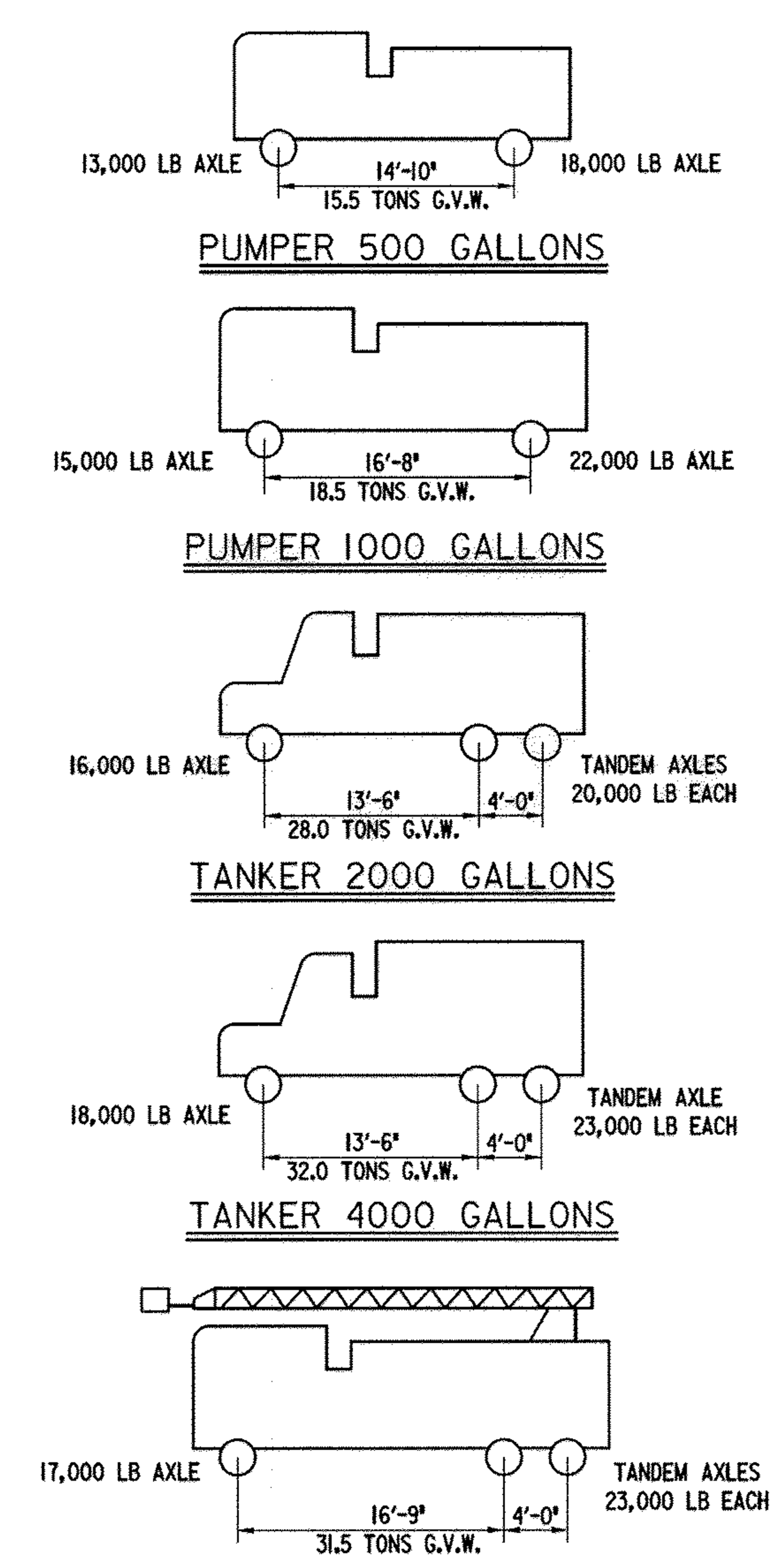
VERIFIED 11-26-2007 LAFO

STANDARD NO. M(6.07)-81-127(L) SHEET 1 OF 3

MISCELLANEOUS

⚠ REINFORCING BAR LAP CHART TO BE USED FOR ABUTMENT CONSTRUCTION AS SHOWN ON SHEET 64.

TYPICAL HOWARD COUNTY EMERGENCY VEHICLES



HO-128 94 3/25/2009

⚠ HOWARD COUNTY EMERGENCY VEHICLE LOADS TO BE USED FOR BRIDGE DESIGN LIVE LOAD CALCULATIONS. REFER TO GENERAL NOTES ON SHEET 63.

⚠ REVISION NO. 1
ADDED REVIEWER NOTE
T.E.M. 4/16/15

Professional Certification

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STATE OF MARYLAND ... No. 17262 ... PROFESSIONAL ENGINEER

Timothy E. McShane 4/28/15

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S-3

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date 5.7.15
Chief, Division of Land Development — Date 5-13-15
Director — Date 5/13/15

Date	No.	Revision Description
4/16/15	1	ADDED REVIEWER NOTES

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PERMIT INFORMATION CHART

PROJECT NAME		LOT/PARCEL NO.		CENSUS TRACT
CHARLES E. MILLER BRANCH AND HISTORICAL CENTER		887, 1030, 1090 AND 1163		602800
PLAT: 21009-21012	GRID NO. 9	ZONE PSC	TAX MAP 24	ELECTION DISTRICT 02
WATER CODE			SEWER CODE	

TITLE: **REVISED SITE DEVELOPMENT PLAN**

BRIDGE TYPICAL SECTION

DESIGN: TEM	SCALE:	PROJECT: 05115.002.00
DRAWN: NH	DATE: 4 / 28 / 2015	
CHECKED: TEM	APPROVED:	65 OF 66

MDC-1049

SDP-09-058

tim
PLOTTED: Tuesday, April 28, 2015 AT 12:13 PM
FILE: P:\12-010 Lutheran Village Pedx Bridge\Drawings\CADD\Working\pBR-TP01_lv.dgn

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: **Lutheran Village Pedestrian Bridge** Boring No.: B-1

Location: Howard County, MD Job #: 14147A

SAMPLER

Datum: ____ Hammer Wt.: 140 lbs. Hole Diameter: 6" Foreman: T. Carroll

Surf. Elev.: 351.26 ft Hammer Drop: 30 in. Rock Core Diameter: ____ Inspector: ____

Date Started: 3/26/14 Pipe Size: 2 in. Boring Method: HSA Date Completed: 3/26/14

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve (10 30 50)
350 / 0	D	Brown, moist, soft clayey SILT with mica (ML/CL) Possible FILL or Alluvium	2" Topsoil	16"		2-2-2	4	
	D	Gray, moist, loose to medium dense micaceous sandy SILT (ML)		13"		2-3-5	8	
345 / 5	D			14"		3-4-7	11	
ABUT.A B.O.F. EL. 342.0	D	Brown/White, moist, very dense, silty, fine to coarse SAND with rock fragments (SM) Decomposed Rock	Groundwater encountered at 9.0' while drilling	9"		35-50/4"	85+	85+
340 / 10	D			7"		35-50/3"	85+	85+
335 / 15	D							
330 / 20	D	Bottom of hole at 19.0', Auger refusal.	Backfilled after 24 hours	3"		50/3"	50+	
325 / 25								
320 / 30								

SAMPLER TYPE	SAMPLE CONDITIONS		GROUND WATER	CAVE IN DEPTH	BORING METHOD
DRIVEN SPLIT SPOON UNLESS OTHERWISE	D - DISINTEGRATED	AT COMPLETION	2.4 ft.	2.5 ft.	HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE	I - INTACT	AFTER 24 HRS.	____ ft.	____ ft.	CFA - CONTINUOUS FLIGHT AUGERS
CA - CONTINUOUS FLIGHT AUGER	U - UNDISTURBED	AFTER ___ HRS.	____ ft.	____ ft.	DC - DRIVING CASING
RC - ROCK CORE	L - LOST				MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

B.O.F. = BOTTOM OF FOOTING

HILLIS - CARNES ENGINEERING ASSOCIATES, INC.

RECORD OF SOIL EXPLORATION

Project Name: **Lutheran Village Pedestrian Bridge** Boring No.: B-2

Location: Howard County Job #: 14147A

SAMPLER

Datum: ____ Hammer Wt.: 140 lbs. Hole Diameter: 6" Foreman: T. Carroll

Surf. Elev.: 350.6 ft Hammer Drop: 30 in. Rock Core Diameter: ____ Inspector: ____

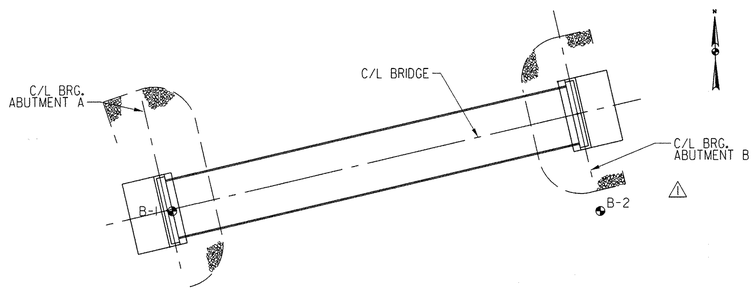
Date Started: 3/26/2014 Pipe Size: 2 in. Boring Method: HSA Date Completed: 3/26/2014

Elevation/ Depth	SOIL SYMBOLS/ SAMPLE CONDITIONS	Description	Boring and Sampling Notes	Rec.	NM%	SPT Blows	SPT Blows/Foot N	SPT Blows/Foot Curve (10 30 50)
350 / 0	D	Brown, moist, soft, clayey SILT with sand and mica (ML/CL) Possible FILL or Alluvium	2" Topsoil	13"		1-2-2	4	
	D	Brown and white, moist, very loose to loose micaceous silty SAND (SM)		11"		2-2-2	4	
345 / 5	D			18"		2-3-4	7	
ABUT.B B.O.F. EL. 342.0	D	Brown/White, moist, very dense, micaceous silty SAND with rock fragments (SM) weathered material.	Groundwater encountered at 7.5' while drilling	18"		22-32-25	57	
340 / 10	D	Brown/White, moist, very dense micaceous silty SAND with rock fragments (SM) Decomposed Rock		13"		11-31-40	71	71
335 / 15	D			12"		19-27-50/3"	77+	77+
330 / 20	D			8"		29-50/4"	79+	79+
325 / 25		Bottom of boring at 25.0'						
320 / 30								

SAMPLER TYPE	SAMPLE CONDITIONS		GROUND WATER	CAVE IN DEPTH	BORING METHOD
DRIVEN SPLIT SPOON UNLESS OTHERWISE	D - DISINTEGRATED	AT COMPLETION	5.3 ft.	11.5 ft.	HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE	I - INTACT	AFTER 24 HRS.	____ ft.	____ ft.	CFA - CONTINUOUS FLIGHT AUGERS
CA - CONTINUOUS FLIGHT AUGER	U - UNDISTURBED	AFTER ___ HRS.	____ ft.	____ ft.	DC - DRIVING CASING
RC - ROCK CORE	L - LOST				MD - MUD DRILLING

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS.

BORING LOGS



BORING AND DRIVE TESTS LOCATION PLAN

SCALE: 1"= 20'

⚠ REVISION NO. 1
REVISED BRIDGE LOCATION
T.E.M. 12/8/14

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S-4

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division — Date: 5.7.15

Chief, Division of Land Development — Date: 5-13-15

Director — Date: 5/13/15

Date	No.	Revision Description
12/8/14	1	REVISED BRIDGE LOCATION

CHARLES E. MILLER BRANCH AND HISTORICAL CENTER

OWNER / DEVELOPER
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PERMIT INFORMATION CHART

PROJECT NAME		LOT/PARCEL NO.		CENSUS TRACT
CHARLES E. MILLER BRANCH AND HISTORICAL CENTER		887, 1030, 1090 AND 1163		602800
PLAT: 21009-21012	GRID NO. 9	ZONE PSC	TAX MAP 24	ELECTION DISTRICT 02
WATER CODE			SEWER CODE	

TITLE: **REVISED SITE DEVELOPMENT PLAN**
BORING TESTS

DESIGN: TEM	SCALE:	PROJECT: 05115.002.00
DRAWN: NH	DATE: 4 / 28 / 2015	
CHECKED: TEM	APPROVED:	66 OF 66

SDP-09-058

MDC-1049

tim
PLOTTED: Tuesday, April 28, 2015 AT 12:15 PM
FILE: Fx12-000 Lutheran Village Pedx Bridge\Drawings\CADD\Working\pBR-BLOI_LUTHERAN.dgn