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4-5	OLD ANNAPOLIS ROAD CROSS SECTIONS
6	SQUIRREL HILL DRIVE PLAN & PROFILE AND EDMOND COURT PLAN & PROFILE
7	TENNEY COURT PLAN AND PROFILE
8	ROADWAY DETAILS
9-10	GRADING AND SEDIMENT CONTROL PLAN
11-12	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
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18-19	STREET TREE & LANDSCAPE PLAN
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29	FINAL GRADING PLAN
30	BORING LOGS

FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLANS

CENTENNIAL LAKE OVERLOOK

(Formerly Mason Property)
SECTION ONE

**BUILDABLE LOTS 1 THRU 23,
 OPEN SPACE LOTS 24 THRU 28
 AND BUILDABLE BULK PARCELS 'A' AND 'B'**

ZONING: R-20

**TAX MAP No. 30, GRID No. 2
 PARCEL No. 86**

STREET LIGHT CHART			
STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
SQUIRREL HILL DRIVE	0+36	30"	150-WATT H.P.S. PREMIER POST TOP MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE
EDMOND COURT	0+09	15"	100-WATT H.P.S. PREMIER POST TOP MOUNTED ON A 14-FOOT BLACK FIBERGLASS POLE
EDMOND COURT	L.P. 1+44	3' BEHIND CURB	
TENNEY COURT	L.P. 1+72	3' BEHIND CURB	

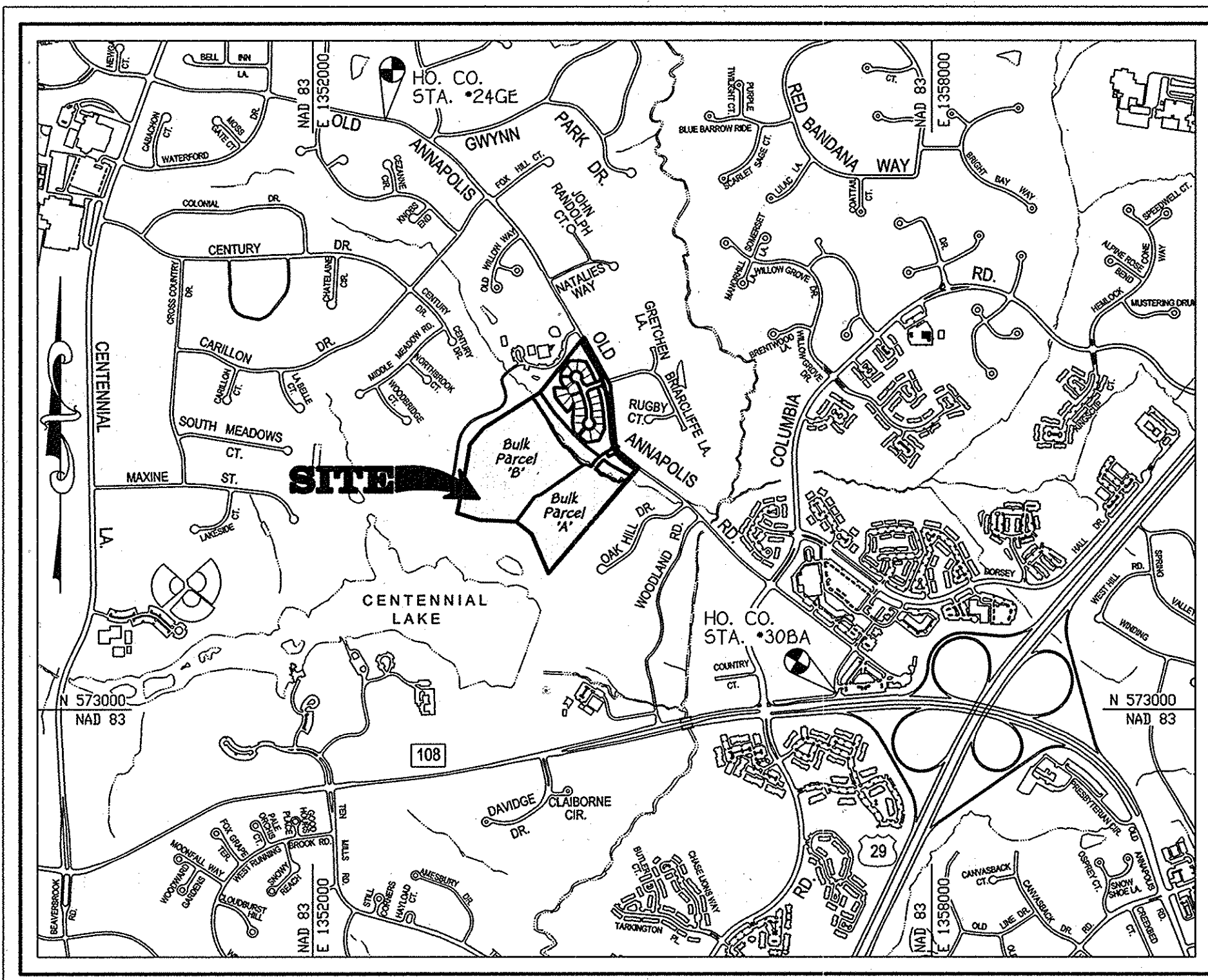
REMOVE EXISTING STREET LIGHT FROM OLD ANNAPOLIS ROAD, STA. 4+34 R

ROADWAY INFORMATION CHART			
ROAD NAME	CLASSIFICATION	DESIGN SPEED	R/W WIDTH
SQUIRREL HILL DRIVE	PUBLIC ACCESS STREET	30 M.P.H.	50'
EDMOND COURT	PUBLIC ACCESS PLACE	25 M.P.H.	50'
TENNEY COURT	PUBLIC ACCESS PLACE	25 M.P.H.	50'

STORMWATER MANAGEMENT PRACTICES		
LOT No./ADDRESS	DRY WELLS	M-# (NUMBER)
8 9834 TENNEY CT.	2	
9 9830 TENNEY CT.	2	
10 9825 TENNEY CT.	1	
14 9810 TENNEY CT.	1	
15 9806 TENNEY CT.	1	
16 9802 TENNEY CT.	2	

NOTE: ALL DRYWELLS ARE TO BE SIZED AND INSTALLED WITH THE FUTURE SITE DEVELOPMENT PLAN.

TRAFFIC CONTROL SIGNS			
ROAD NAME	CENTERLINE STA.	POSTED SIGN	SIGN CODE
SQUIRREL HILL DRIVE	0+48 L	STOP	R1-1
SQUIRREL HILL DRIVE	1+00 R	SPEED LIMIT 25	R2-1
SQUIRREL HILL DRIVE	2+00 R	STOP	R1-1
WELLFORD DRIVE	0+40 L	STOP	R1-1



VICINITY MAP
 SCALE: 1" = 1200'

SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND

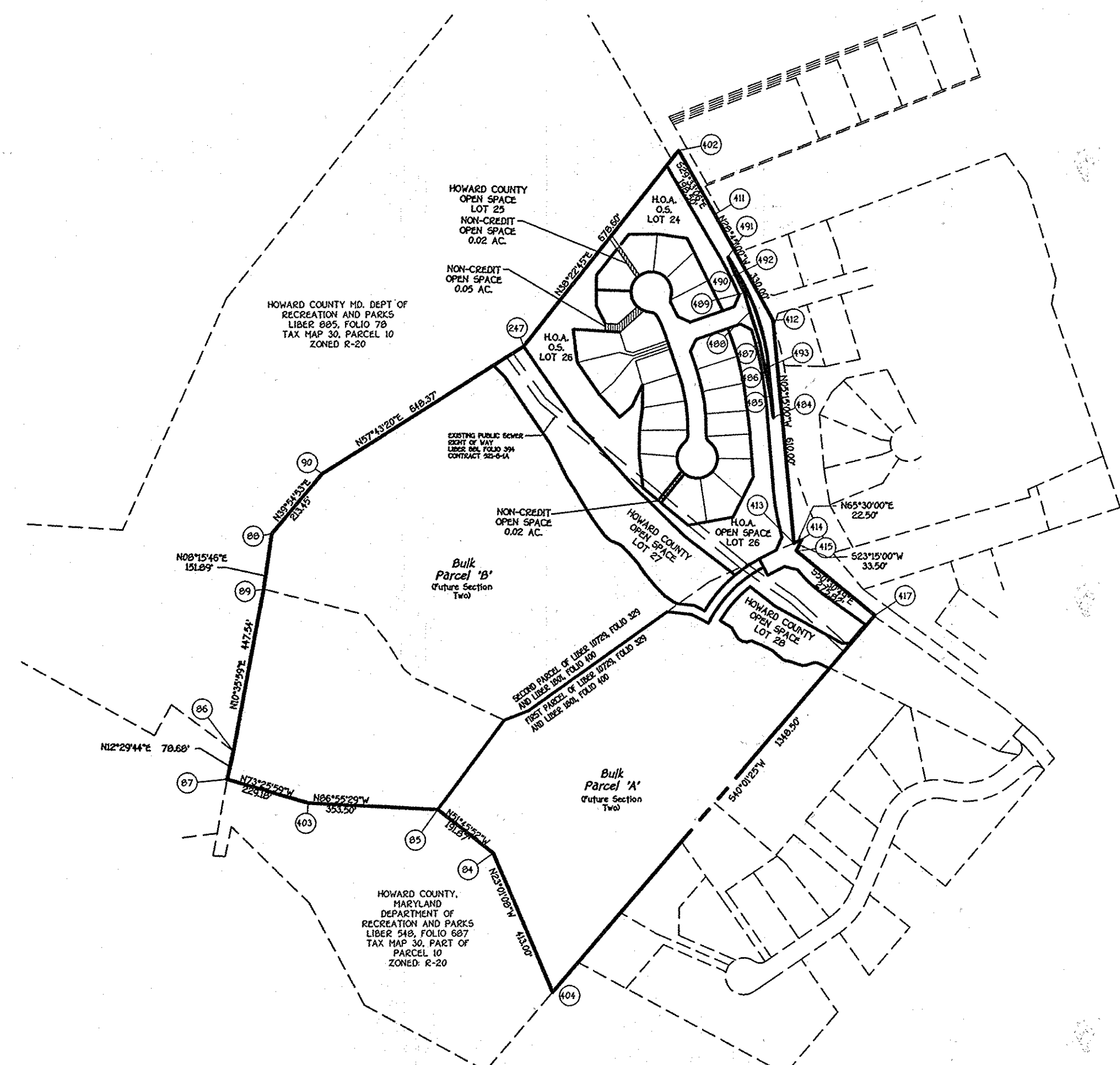
GENERAL NOTES CONTINUED:

- THE LANDSCAPE SURETY IN THE AMOUNT OF \$21,690.00 FOR PERIMETER LANDSCAPE REQUIREMENTS (48 SHADE TREES, 47 EVERGREEN TREES AND 8 SHRUBS) OF SECTION 16124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL IS PROVIDED WITH THE DEVELOPERS AGREEMENT FOR THIS PLAN (7-14-02).
- SEVERAL SPECIMEN TREES HAVE BEEN LOCATED ON-SITE. THIS PLAN IS SUBJECT TO WAIVER PETITION WP-13-095 TO ALLOW FOR THE REMOVAL OF 15 SPECIMEN TREES (No. 1, 9, 10, 12-16, 18-20, 23, 24, 37 & 39) WITHIN THE PROJECT BOUNDARY AND FOR WAIVER TO THE FINAL PLAT TO ALLOW AN ADJOINER DEED TRANSFER BETWEEN PARCELS. THE WAIVER WAS APPROVED ON JANUARY 14, 2013 WITH THE FOLLOWING CONDITIONS:
 - APPROVAL IS GIVEN FOR A READJUSTMENT OF THE PARCEL LOT LINE BETWEEN THE FIRST AND SECOND PARCELS OF LAND AS DESCRIBED IN FOLIO 329 AND LIBER 1801, FOLIO 400 FOR PARCEL 86 LOCATED ON TAX MAP No. 30. A NEW DEED SHALL BE RECORDED IN THE LAND RECORDS OFFICE OF HOWARD COUNTY IDENTIFYING THE PARCEL LINE ADJUSTMENT AND A COPY OF THE RECORDED DEED FORWARDED TO THIS DEPARTMENT FOR FILE RETENTION.
 - APPROVAL IS GIVEN FOR REMOVAL OF 15 SPECIMEN TREES AS SHOWN AND IDENTIFIED ON THE REVISED WAIVER PETITION EXHIBIT DATED JANUARY 9, 2013. PROPOSED PERIMETER LANDSCAPING, ON-SITE FOREST CONSERVATION RETENTION AND PLANTING EASEMENT AREAS, STREET TREE PLANTING AND RETENTION OF OVER HALF THE REMAINING SPECIMEN TREES WILL SERVE TO MITIGATE SPECIMEN TREE REMOVAL.
 - USING THE NEIGHBORHOOD PRESERVATION EXCHANGE OPTION DESCRIBED IN SECTION 12B.1 OF THE ZONING REGULATIONS THE RIGHTS FOR ONE (1) OF THE RESIDENTIAL LOTS SHOWN ON THE SUBDIVISION PLAN FOR CENTENNIAL LAKE OVERLOOK HAS BEEN TRANSFERRED FROM ~~PREVIOUS PROPERTY~~ PARCEL 109 TAX MAP 31.

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE. THIS PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT 410-313-1800 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES:
 - THE R-1 (STOP) SIGN AND THE STREET SIGN (S) ASSEMBLY FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
 - THE TRAFFIC CONTROL DEVICE LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY HOWARD COUNTY TRAFFIC DIVISION (410-313-2430) PRIOR TO THE INSTALLATION OF ANY OF THE TRAFFIC CONTROL DEVICES.
 - ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).
 - ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED "QUICK PUNCH" SQUARE TUBE POST (1/4 GAUGE) INSERTED INTO A 2 1/2" GALVANIZED STEEL, PERFORATED SQUARE TUBE SLEEVE (1/2 GAUGE - 3" LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- THIS SUBDIVISION PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE 10-06-13 ZONING REGULATIONS PER COUNCIL BILL NO. 32-2013. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS OR PARCELS MUST COMPLY WITH SETBACKS AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF A BUILDING OR GRADING PERMIT APPLICATION.
- COORDINATES BASED ON NAVD83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 24GE AND NO. 30BA

Station No. 24GE	N 578,706.5244	E 1,352,699.6808	Elev. = 445.695'
Station No. 30BA	N 573,149.0939	E 1,357,083.1735	Elev. = 397.140'
- THIS R-20 ZONED SUBDIVISION IS BEING DEVELOPED PURSUANT TO SECTION 107.E OF THE R-ED ZONING DISTRICT REGULATIONS AND CRITERIA PER SECTION 108.F.3 OF THE ZONING REGULATIONS.
 - SUBDIVISION NAME: CENTENNIAL LAKE OVERLOOK
 - TAX MAP No. 30
 - PARCEL No. 86
 - ZONING R-20
 - ELECTION DISTRICT: SECOND
 - GROSS AREA OF TRACT = 45.487 ACRES
 - NUMBER OF BUILDABLE LOTS: 23 (Section One)
 - NET DENSITY = 42.987 x 2 UNITS/ACRE = 85, TRANSFER INTO PROPERTY = 10x = 85, MAX. DENSITY ALLOWED = 93
 - NUMBER OF OPEN SPACE LOTS: 5
 - NUMBER OF BULK PARCELS: 2
 - AREA OF BUILDABLE LOTS: 4.524 ACRES
 - AREA OF OPEN SPACE LOTS: 7.282 ACRES
 - AREA OF BULK PARCELS: 32.159 ACRES (FUTURE SECTION TWO)
 - AREA OF PUBLIC ROADWAY TO BE DEDICATED: 2.522 ACRES
 - AREA OF FLOODPLAIN: 3.04 ACRES
 - AREA OF 25% OR GREATER SLOPES = 0.460 ACRES (outside floodplain)
 - NET AREA OF TRACT = 42.987 ACRES
 - PREVIOUS FILE NUMBERS: ECP-12-053, WP-13-096 (see note no. 32), SP-13-004, PB-399
- OPEN SPACE REQUIREMENTS: (SECTION ONE AND FUTURE SECTION TWO)
 - REQUIRED OPEN SPACE = (50x x 45.487 ac. (GROSS AREA)) = 23.244 AC
 - AREA OF SECTION ONE = 14.328 AC.
(REQUIRED OPEN SPACE FOR SECTION ONE = 50% OF 14.328 AC. = 7.164 ac.)
 - OPEN SPACE PROVIDED FOR SECTION ONE = 7.282 AC
 - RECREATIONAL OPEN SPACE REQUIRED FOR PROJECT TOTAL = (300 SQ.FT. PER UNIT = 27,900 SQ.FT.)
 - PROVIDED RECREATIONAL OPEN SPACE = 29,500 SQ.FT.
NOTE: THIS AREA IS PROVIDED WITHIN SECTION TWO AS SHOWN ON SP-13-004
 - THE RECREATIONAL OPEN SPACE REQUIRED FOR SECTION ONE = (300 SQ.FT./LOT x 23 LOTS) = 6,900 SQ.FT.
 - THE RECREATIONAL OPEN SPACE PROVIDED FOR SECTION ONE WILL BE PROVIDED BY ACTIVE/PASSIVE AREAS. THIS INCLUDES A PEDESTRIAN PATHWAY SYSTEM WITH A DIRECT CONNECTION TO THE ADJACENT COUNTY PARK AND A WOODED AND MEADOW ENVIRONMENTAL AREA LOCATED ALONG THE STREAM VALLEY ON OPEN SPACE LOTS 26 AND 27.
- THESE ARE AREAS OF STEEP SLOPES LOCATED ON THIS PROPERTY AS DEFINED BY THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 1611G.1, (0.48 ac. outside of floodplain).
- NO NOISE STUDY IS REQUIRED FOR THIS PROJECT.
- EXISTING WATER IS PUBLIC (CONTRACT No. 801 W&S)
EXISTING SEWER IS PUBLIC (CONTRACT Nos. 801 W&S, 521-5-1A)
- SOILS INFORMATION TAKEN FROM HOWARD COUNTY SOIL SURVEY ISSUED JULY 1968, MAP No. 19.
- EXISTING PAVING AND/OR STRUCTURES LOCATED ON SITE ARE TO BE RAZED AS SHOWN ON PLAN (SHEETS 3 AND 4). THE EXISTING DWELLINGS ON PROPOSED LOTS 72 AND 79 ARE TO REMAIN.
- BOUNDARY OUTLINE BASED ON FIELD RUN SURVEY PERFORMED BY FISHER COLLINS AND CARTER, INC. DATED JANUARY, 2012.
- TOPOGRAPHIC CONTOURS BASED ON AERIAL SURVEY PERFORMED BY HARFORD AERIAL SURVEYS, INC. DATED DECEMBER, 2011 AND SUPPLEMENTED WITH FIELD RUN TOPOGRAPHY PREPARED BY FISHER, COLLINS AND CARTER, INC. DATED MARCH, 2012.
- ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.
- STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH THE 2010 MDE, CHAPTER 5 REGULATIONS AND THE LATEST HOWARD COUNTY DESIGN MANUAL, VOL. 1, CHAPTER 5 ADOPTED ON OR AROUND MAY 4, 2010. GROUNDWATER RECHARGE VOLUME WILL BE PROVIDED THROUGH THE USE OF STONE RESERVOIRS LOCATED BENEATH THE VARIOUS 650 FACILITIES. THE REQUIRED 650 VOLUMES WILL BE PROVIDED BY BIO-RETENTION (B-R), MICRO BIO-RETENTION (M-B), DRYWELLS (M-D) AND INFILTRATION BERMS (M-I). OVERBANK FLOOD PROTECTION VOLUME AND EXTREME FLOOD VOLUMES ARE NOT REQUIRED FOR THIS SITE. THE STORMWATER MANAGEMENT FACILITIES (BIO-RETENTION AND MICRO BIO-RETENTION) WILL BE PRIVATELY OWNED BY THE H.O.A. AND JOINTLY MAINTAINED BY THE H.O.A. AND HOWARD COUNTY. THE DRYWELLS LOCATED ON BUILDABLE LOTS WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOMEOWNER. THE INFILTRATION BERM WILL BE PRIVATELY OWNED & MAINTAINED BY THE H.O.A.
- DURING THE INSTALLATION PROCESS OF PUBLIC WATER AND SEWER, THE WELL AND SEPTIC AT 9725 ANNAPOLIS ROAD AND AT 9725-A ANNAPOLIS ROAD, ELLICOTT CITY, MARYLAND 21042 WILL BE PROPERLY ABANDONED/SEALED IN CENTENNIAL LAKE OVERLOOK, SECTION TWO, CONTRACT NO. 24-4764-D AND THE HOWARD COUNTY HEALTH DEPARTMENT WILL BE NOTIFIED. DOCUMENTATION OF PROPER ABANDONMENT OF THE WELL BY A LICENSED WELL DRILLER AND PROPER ABANDONMENT OF THE SEPTIC SYSTEM WILL BE FORWARDED TO THE HOWARD COUNTY HEALTH DEPARTMENT.
- FLOODPLAIN STUDY SHOWN HEREON WAS PREPARED BY FISHER, COLLINS & CARTER, INC. DATED MARCH, 2012 AND WAS APPROVED ON MARCH 14, 2013.
- TRAFFIC STUDY WAS PREPARED BY THE TRAFFIC GROUP, INC. DATED JANUARY, 2012 AND WAS APPROVED MARCH 14, 2013.
- THE FOREST STAND DELINEATION AND WETLAND DELINEATION FOR THIS PROJECT WAS PREPARED BY MCCARTHY & ASSOCIATES, INC. DATED MARCH, 2012.
- THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
- NO KNOWN CEMETERIES EXIST WITHIN THIS SUBDIVISION. ONE HISTORIC STRUCTURE EXISTS ON-SITE, HO 401, SQUIRREL HILL, WHICH WILL REMAIN ON PROPOSED LOT 79. THIS PLAN CAME TO THE HISTORIC DISTRICT COMMISSION ON JUNE 7, 2012 FOR ADVISORY COMMENTS.
- NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE WETLANDS, STREAMS OR THEIR REQUIRED BUFFERS, UNLESS THE ACTIVITIES ARE CONSIDERED NECESSARY OR WAIVERS ARE APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING. ROAD CONSTRUCTION FOR ROAD 'A' AND INSTALLATION OF SEWER AND/OR STORM DRAINS IN THE FLOODPLAIN, STREAM BUFFER AND/OR WETLAND BUFFER SHALL BE CONSIDERED ESSENTIAL DISTURBANCE BY DPZ IN ACCORDANCE WITH SECTION 1611G.1 OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.
- THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HILLIS-CARNES ENGINEERING ASSOCIATES, INC. DATED AUGUST, 2012 AND WAS APPROVED ON MARCH 14, 2013.
- 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 OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- A PRIVATE RANGE OF ADDRESS STREET NAME SIGN ASSEMBLY FOR TENNEY COURT SHALL BE FABRICATED AND INSTALLED BY HOWARD COUNTY BUREAU OF HIGHWAYS AT THE DEVELOPERS/OWNERS EXPENSE. CONTACT HOWARD COUNTY TRAFFIC DIVISION AT 410-313-5752 FOR DETAILS AND COST ESTIMATES.
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND THE ROAD RIGHT-OF-WAY LINE ONLY AND NOT ONTO THE FLAG OR PIPESTEM LOT DRIVEWAY.
- TRASH AND RECYCLING COLLECTION WILL BE PROVIDED ALONG THE COUNTY ROADWAY WITHIN 5' OF THE ROAD.
- THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16120 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THIS SUBDIVISION WILL BE FULFILLED BY PROVIDING 3.82 ACRES OF ON-SITE FOREST RETENTION, 5.14 ACRES OF REFORESTATION AND 0.14 ACRES OF AFFORESTATION WHICH IS SUFFICIENT TO MEET 3.81 ACRES OF REQUIRED RETENTION AND 5.28 ACRES OF PLANTINGS. SURETY IN THE AMOUNT OF \$14,999,000 FOR REQUIRED PLANTINGS (40-50 x 229,997 SQ. FT.) SHALL BE POSTED WITH THE DEVELOPER'S AGREEMENT FOR THIS PLAN (7-14-02).

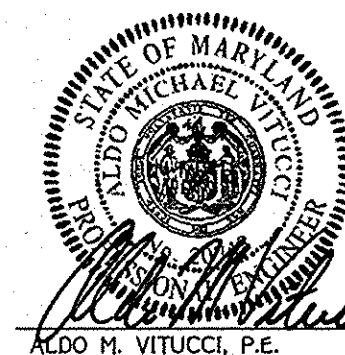


METES AND BOUNDS
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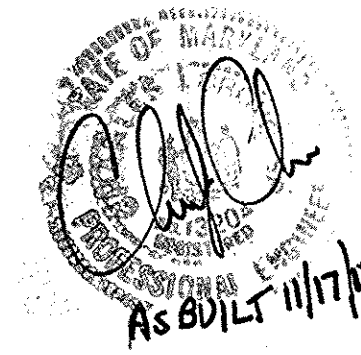
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SOURCE OFFICE PARK - 10272 MULTNOMAH NATIONAL FEE
 ELLICOTT CITY, MARYLAND 21042
 410.461.2995

OWNER
 JOHN TENNEY MASON, JR. FAMILY LLC
 AND FRANCES WELLFORD MASON FAMILY LLC
 c/o MR. JOHN TENNEY MASON, III, GENERAL
 MEMBER 7636 GAITHER ROAD
 SYKESVILLE, MD 21784
 (443-367-0422)

DEVELOPER
 DOUBLE R VENTURES, LLC
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, SUITE 102
 ELLICOTT CITY, MARYLAND 21042
 (443-367-0422)



Professional certification I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20738, Expiration Date 2-22-15.

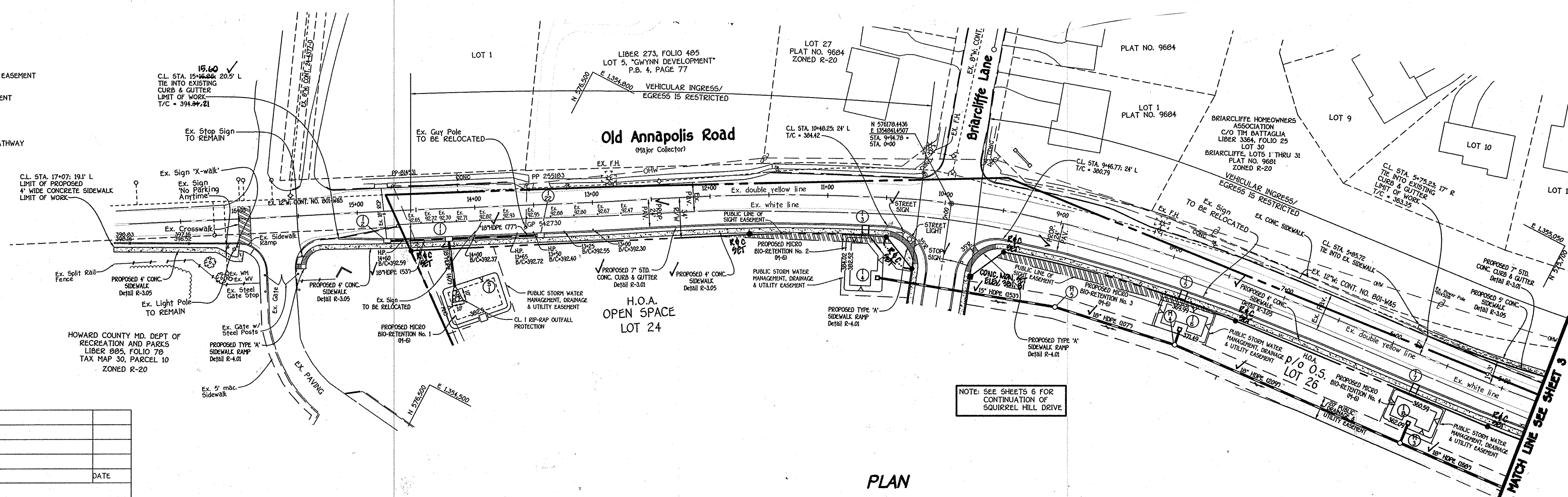


Centennial Lake Overlook
 (Formerly Mason Property)
Section One
 Buildable Lots 1 Thru 23,
 Open Space Lots 24 Thru 28 &
 Buildable Bulk Parcels 'A' And 'B'
 (Being a Subdivision of Tax Parcel No. 86, Tax Map No. 30,
 Liber 10729 At Folio 329 And Liber 10729 At Folio 335)
 Zoning: R-20
 Grid No. 2
 Parcel No. 86
 Howard County, Maryland
 Date: January 10, 2014
 Scale: As Shown
 Sheet 1 of 30

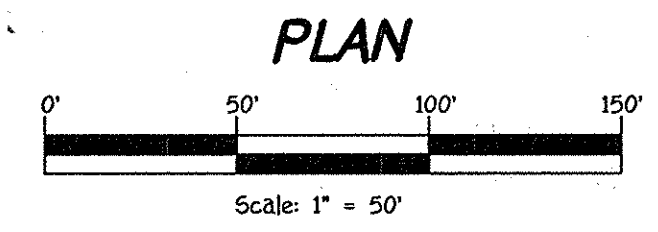
AS-BUILT F-14-002

LEGEND

	FOREST CONSERVATION EASEMENT
	SIGHT DISTANCE EASEMENT
	PROPOSED 4' SIDEWALK
	PROPOSED MACADAM PATHWAY

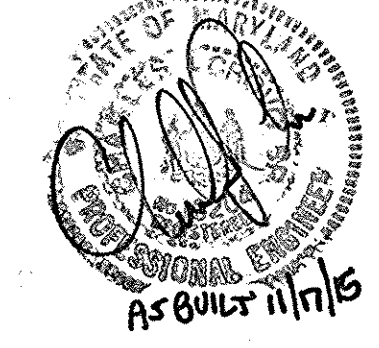


NOTE: SEE SHEETS 6 FOR CONTINUATION OF SQUIRREL HILL DRIVE



- NOTES:**
- SEE SHEET 20 FOR PROPOSED STRIPING AND SIGNAGE PLAN & EXISTING SIGNS TO BE RELOCATED.
 - SEE SHEET 13-17 FOR STORMWATER MANAGEMENT FACILITY PLANS & DETAILS.

NO.	DESCRIPTION	DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
	<i>Karl Stalman</i> CHIEF, DIVISION OF LAND DEVELOPMENT	3/04/14
	<i>Chad Edwards</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	2-26-14
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS		
	<i>William R. ...</i> CHIEF, BUREAU OF HIGHWAYS	2-20-14



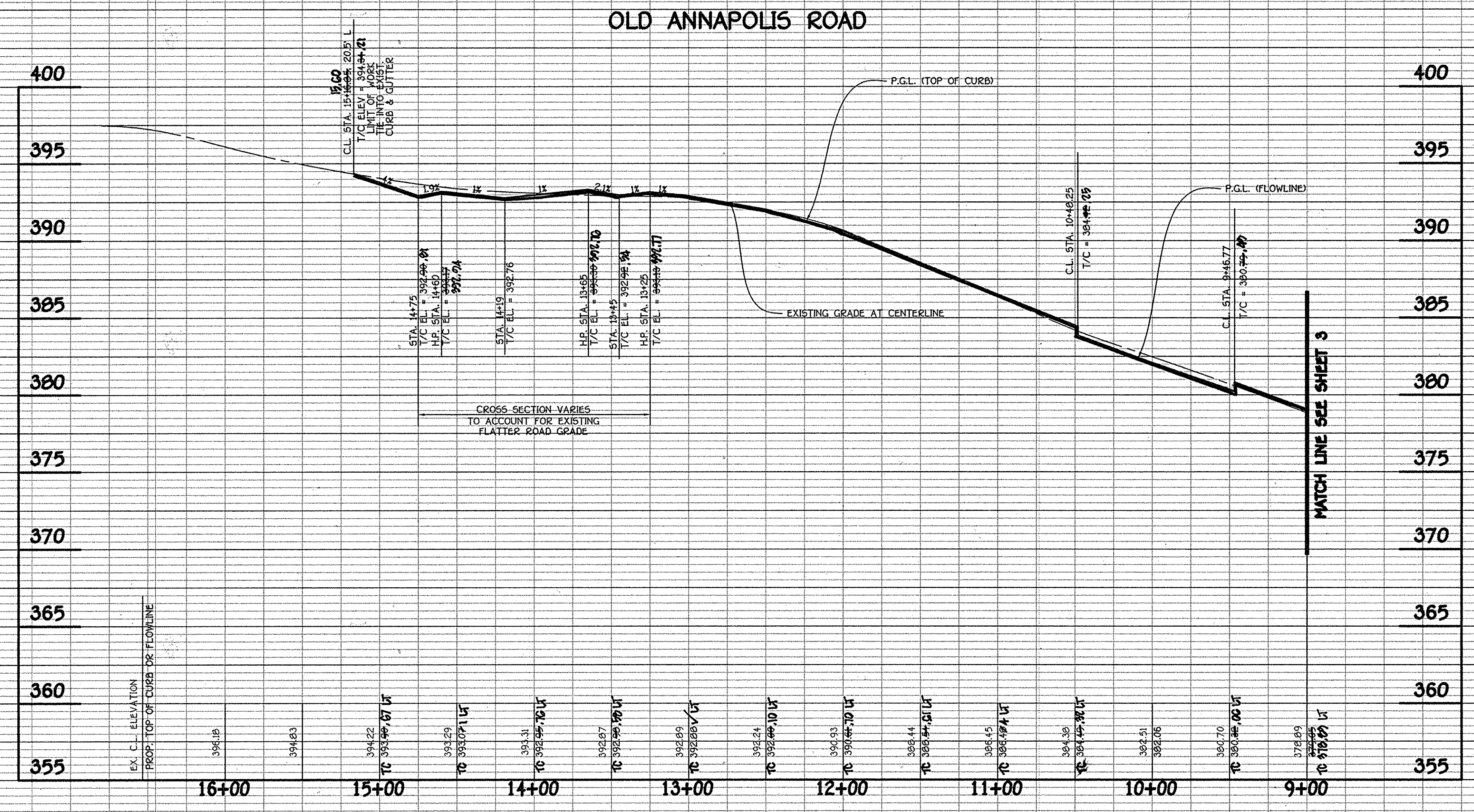
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Zoning: R-20
Grid No. 2
Parcel No. 86
2nd Election District
Howard County, Maryland

OLD ANNAPOLIS ROAD
PLAN AND PROFILE

OWNER	DEVELOPER
JOHN TRANEY MASON, JR. FAMILY LLC AND FRANCIS WELLSFORD MASON FAMILY LLC C/O MR. JOHN TRANEY MASON, III, GENERAL MEMBER 7836 GATHERS ROAD SYKESVILLE, MD 21784 (443-367-0822)	DOUBLE R VENTURES, LLC C/O LAND DESIGN AND DEVELOPMENT, INC. 5500 DORSEY HALL DRIVE, SUITE 102 ELLCOTT CITY, MARYLAND 21042 (443-367-0822)

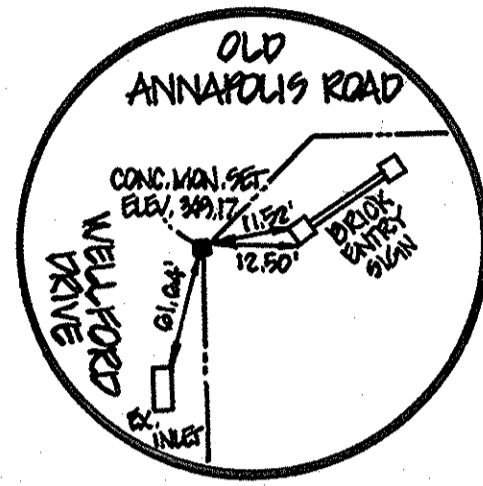
SCALE: As Shown	DATE: JAN. 10, 2014	DWG. NO. 2 OF 30
DES. R.A.I.	DRN. J.C.L.	CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 3072 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
MD 461 - 2855

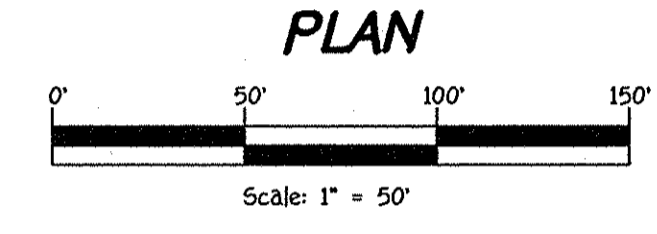
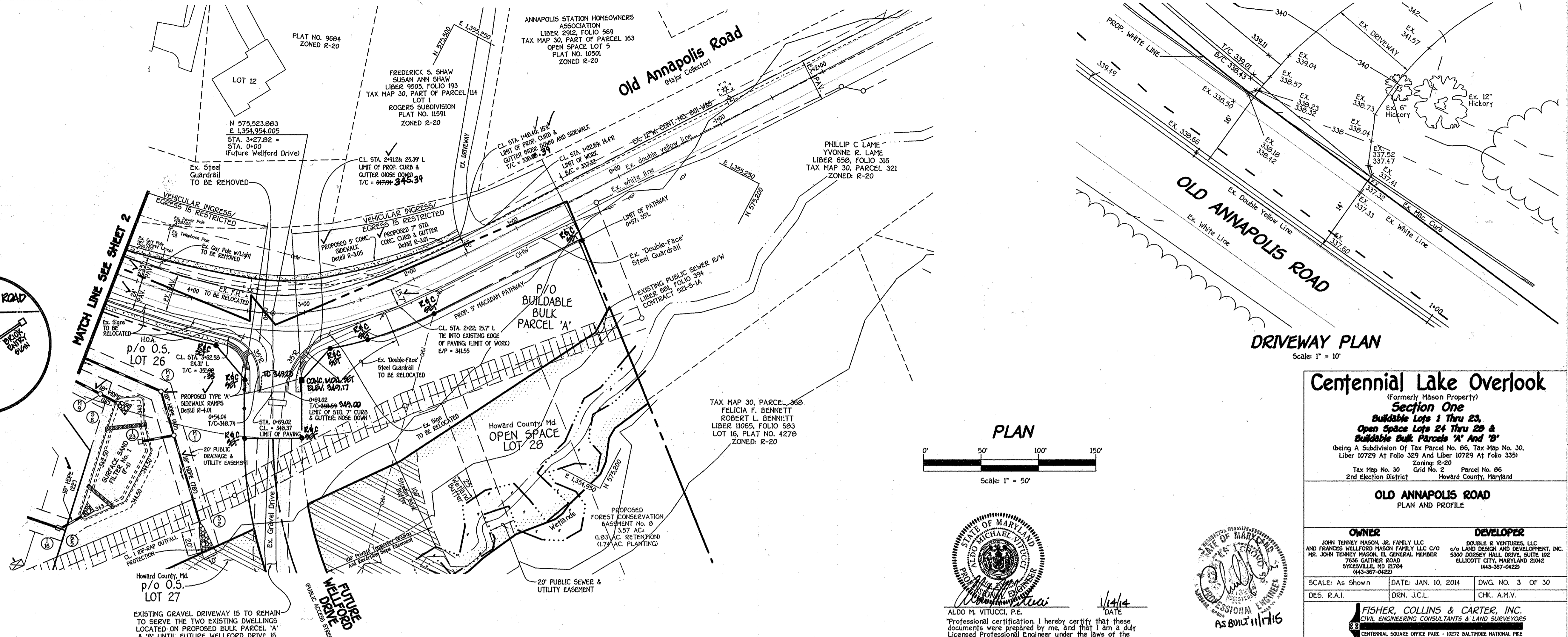


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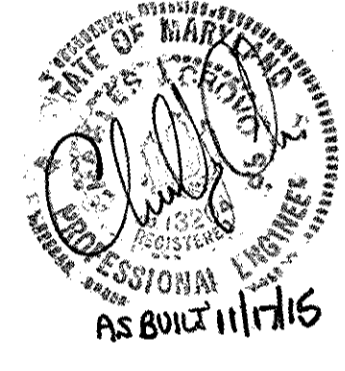
NOTE:
SEE SHEET 20 FOR PROPOSED STRIPING AND SIGNAGE PLAN & EXISTING SIGNS TO BE RELOCATED.



NO.	DESCRIPTION	DATE
REVISIONS		
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
	<i>K. O. Shaughnessy</i> CHIEF, DIVISION OF LAND DEVELOPMENT	3/04/14 DATE
	<i>Chad E. Chandra</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	2-26-14 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS		
	<i>Walter R. Marshall</i> CHIEF, BUREAU OF HIGHWAYS	2-20-14 DATE



ALDO H. VITUCCI, P.E.
"Professional certification I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15."



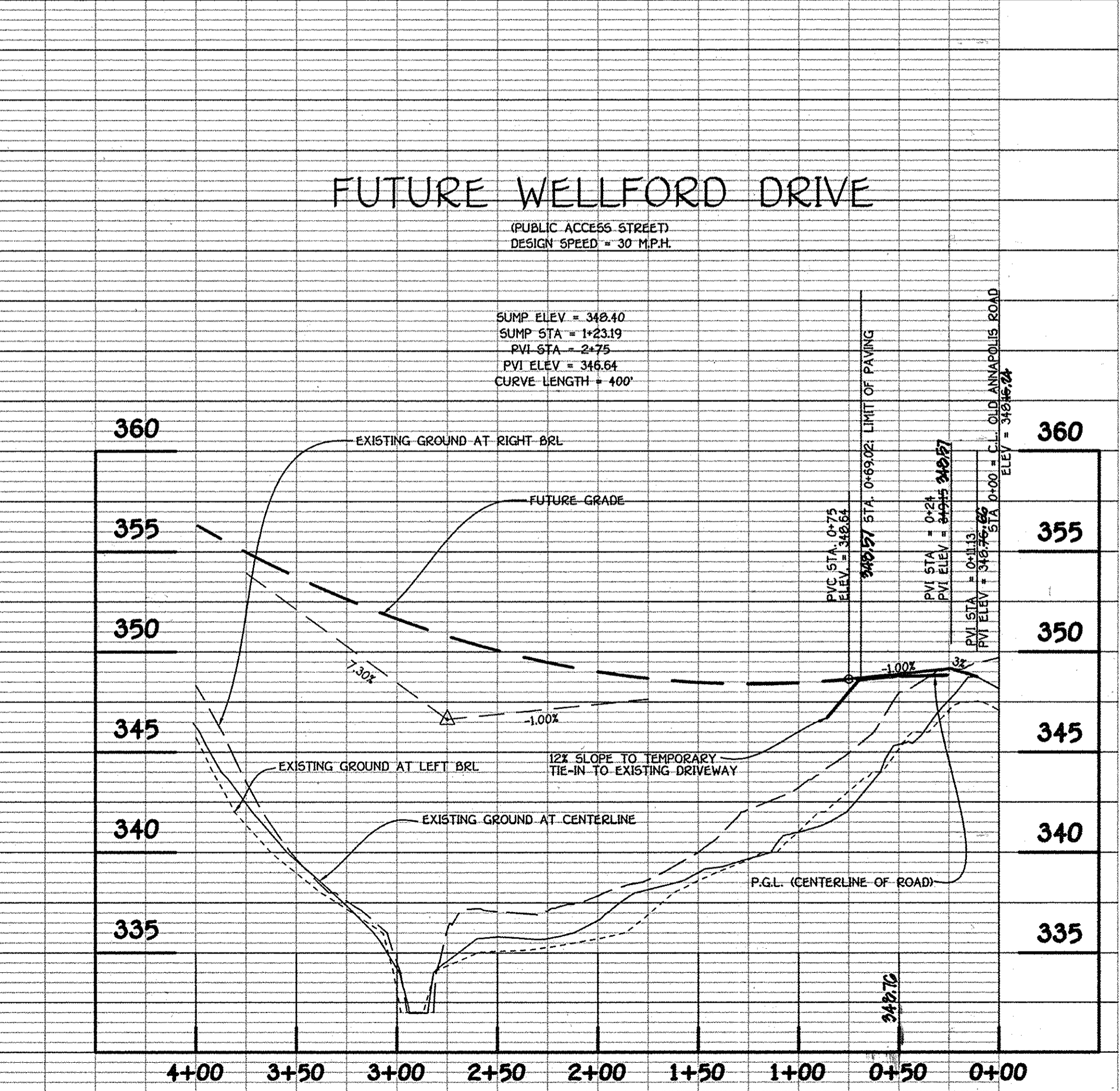
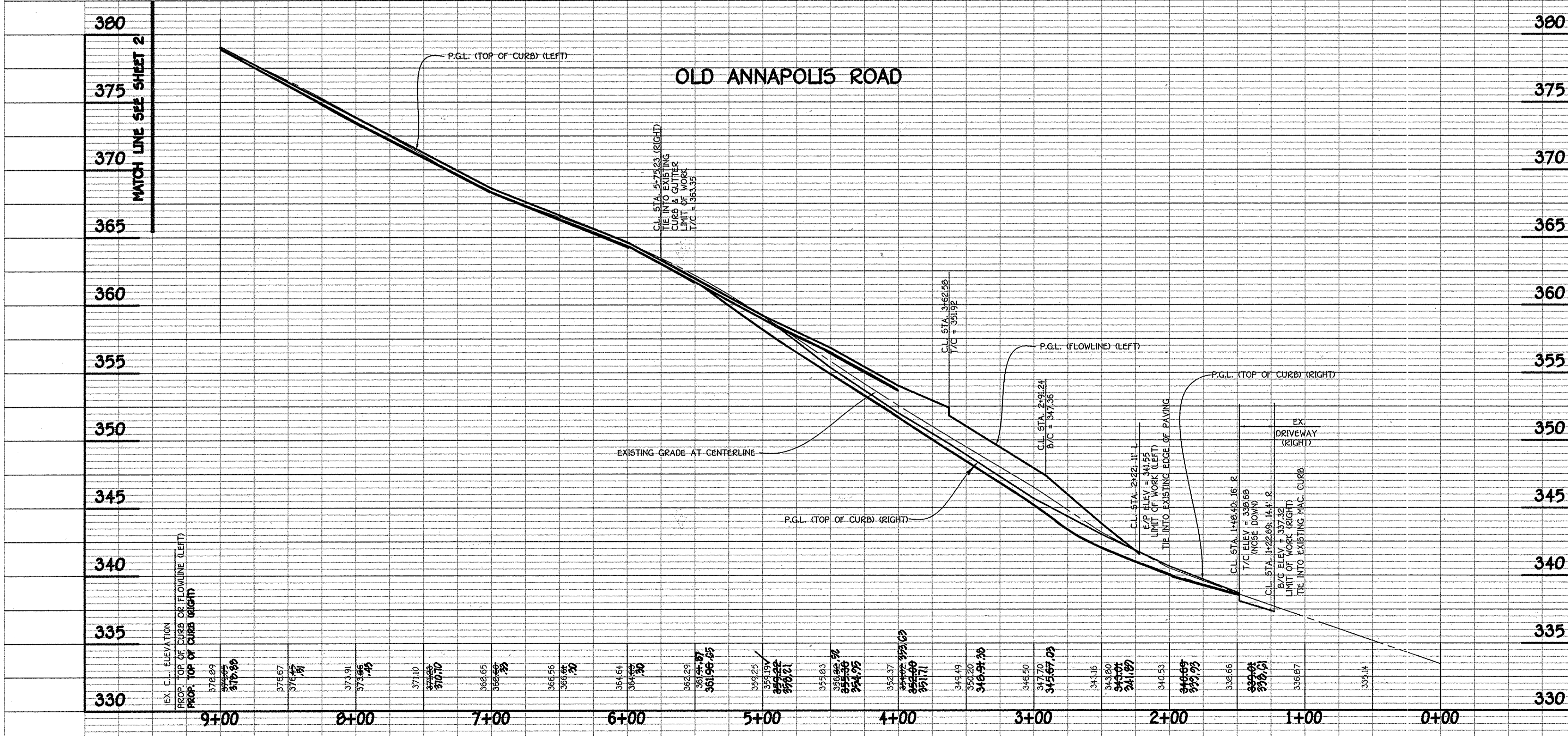
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Tax Map No. 30 Zoning R-20 Parcel No. 86
2nd Election District Grid No. 2 Howard County, Maryland

OLD ANNAPOLIS ROAD
PLAN AND PROFILE

OWNER	DEVELOPER
JOHN TANNY MASON, JR. FAMILY LLC AND FRANCIS WELLSFORD MASON FAMILY LLC C/O MR. JOHN TANNY MASON, JR. GENERAL PARTNER 7036 GATHER ROAD STEVENSVILLE, MD 21784 (410-367-0822)	DOUBLE E. VENTURES, LLC 2/6 LAND DESIGN AND DEVELOPMENT, INC. 5300 CROSSY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 (410-367-0822)

SCALE: As Shown DATE: JAN 10, 2014 DWG. NO. 3 OF 30
DES. R.A.I. DRN. J.C.L. CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10725 BALTIMORE NATIONAL PkE
ELLICOTT CITY, MARYLAND 21042
410 461-2855



AS-BUILT F-14-002

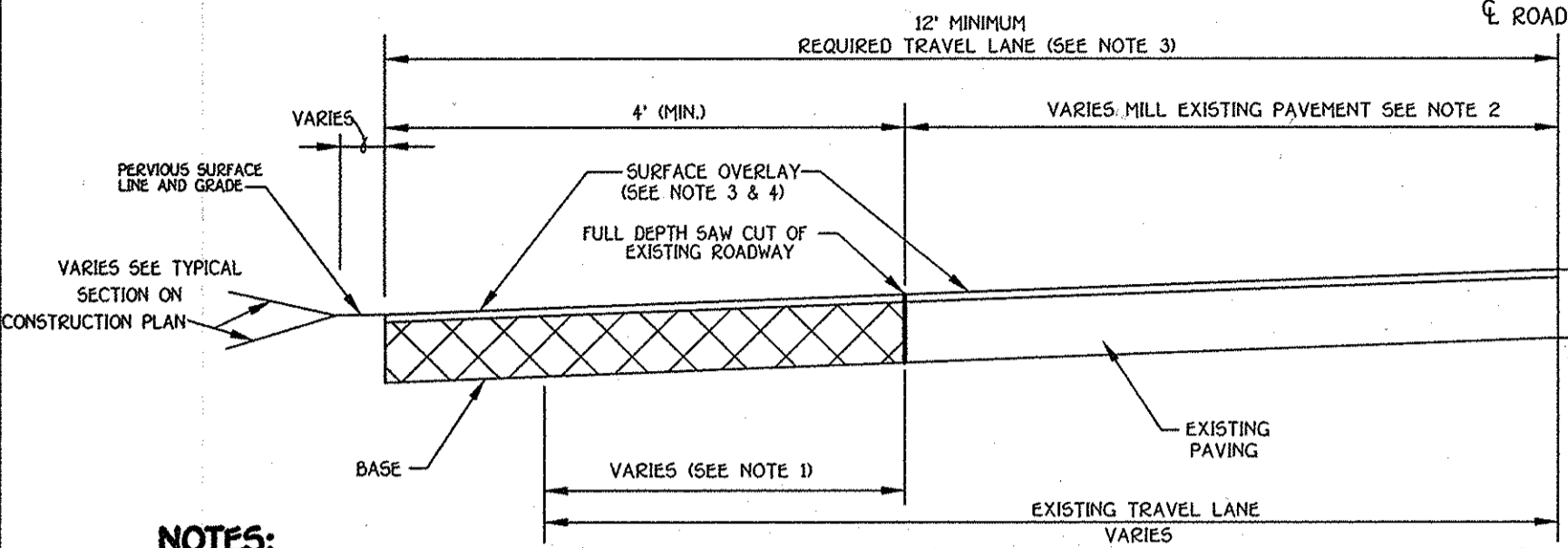
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)				
		3 TO 5	5 TO 7	7 TO 10	10 TO 15	
P-4	MINOR COLLECTORS: NON-RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE 18.5 MM PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0
		HMA SUPERPAVE INTERMEDIATE SURFACE 18.5 MM PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0
		HMA SUPERPAVE BASE 19.0 MM PG 64-22, LEVEL 2 (LOW ESAL)	4.0	4.0	3.0	6.0
	MAJOR COLLECTORS:	GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	6.0

NOTE: SEE SHEET 20 FOR SECTIONS AT 1+50 & 2+00.

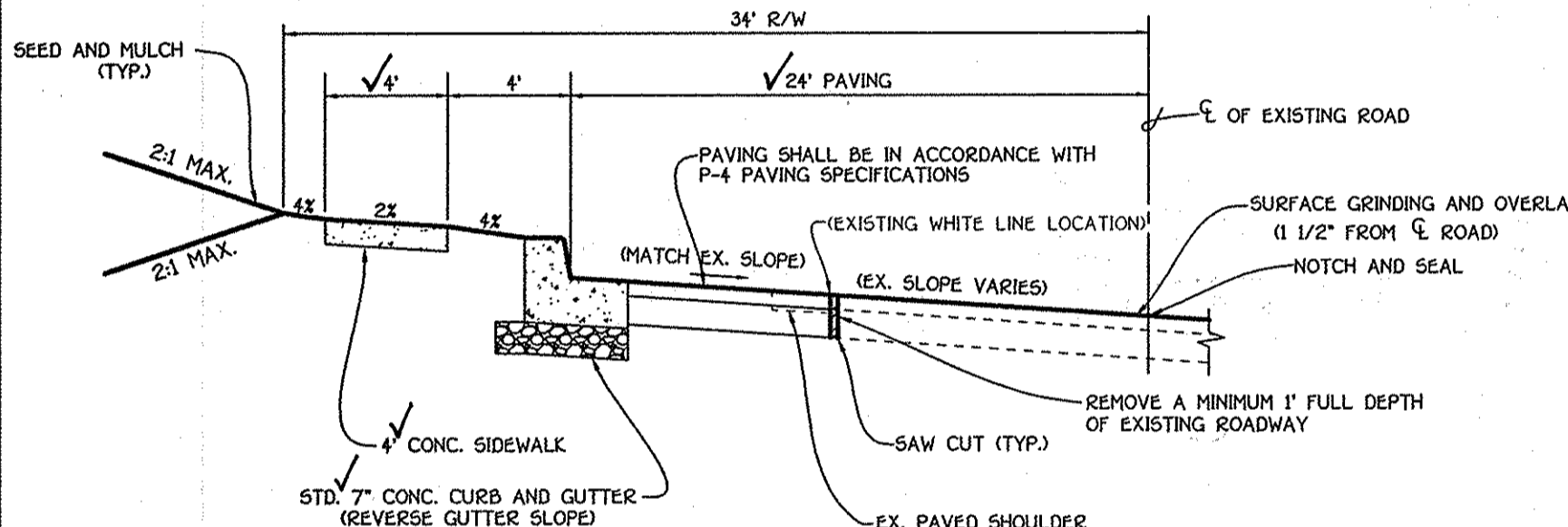
APPROVED: DEPARTMENT OF PUBLIC WORKS
 WILLO T. ...
 CHIEF, BUREAU OF HIGHWAYS
 DATE: 2-20-14

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 ...
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 3/04/14

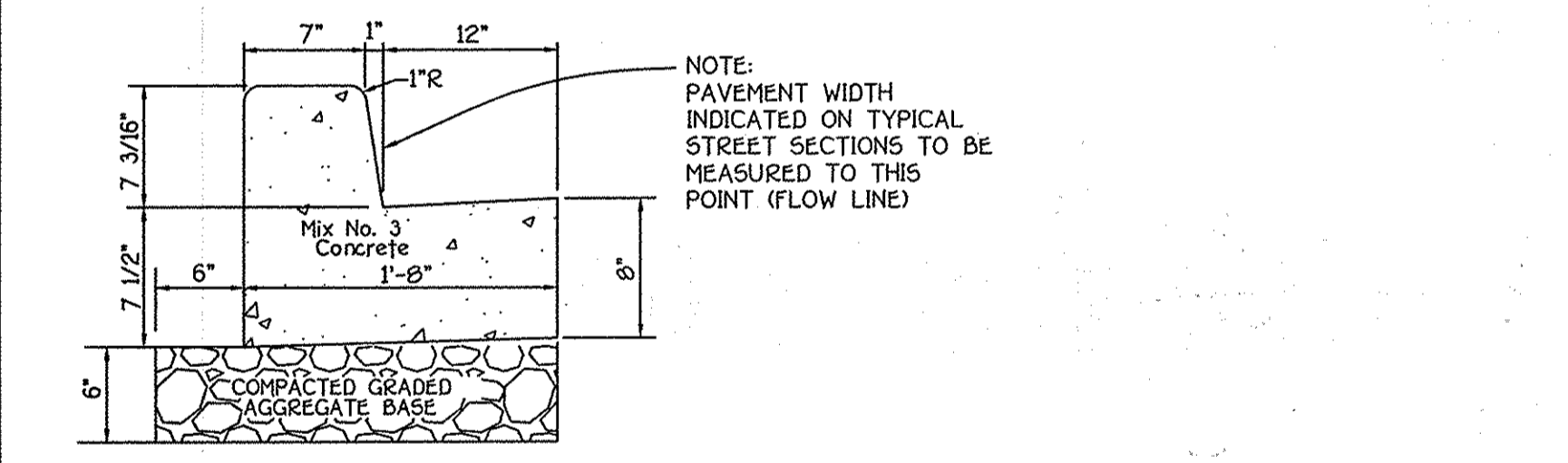
CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 2-26-14



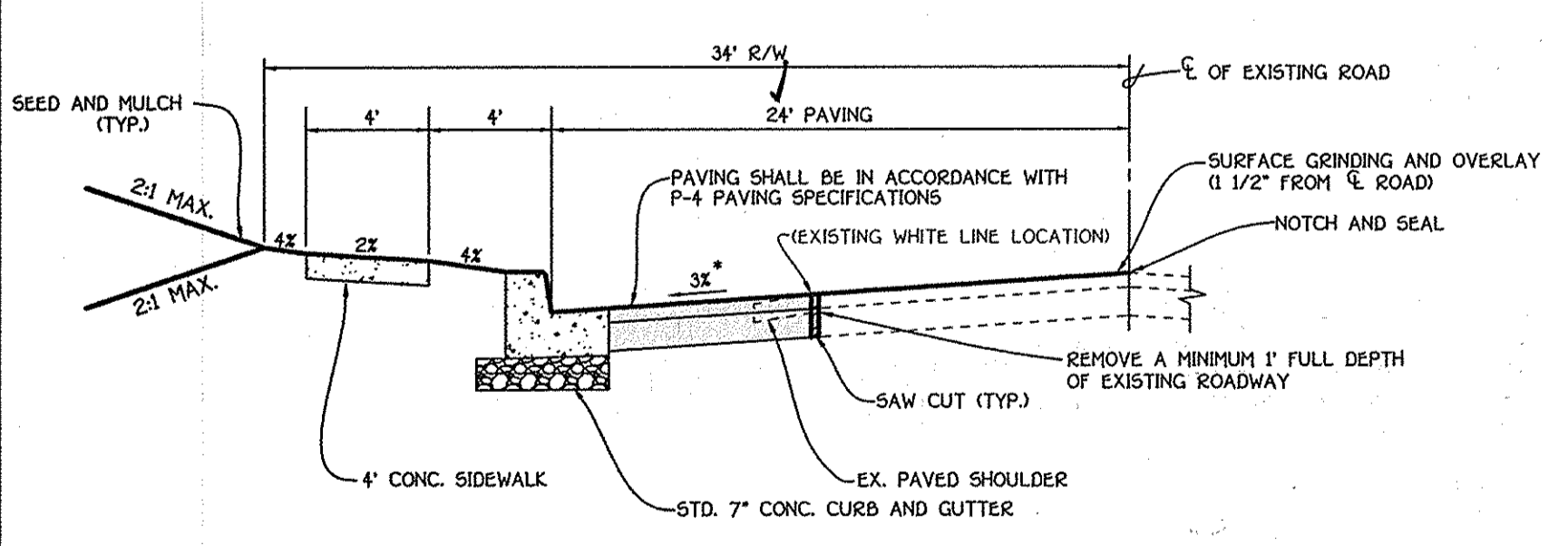
NOTES:
 1. WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE, CONTRACTOR SHALL REMOVE A MINIMUM OF 1' FULL DEPTH OF THE EXISTING ROADWAY. IF CURB AND GUTTER IS INSTALLED, PROVIDE A MINIMUM OF 4' OF WIDENING FROM FACE OF GUTTER PAN.
 2. THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT DEPTH OF 1 1/2" (MINIMUM).
 3. THE RESURFACING SHALL BE PLACED TO THE CENTERLINE OF THE ROADWAY.
 4. RESURFACING COURSE TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION.



STD. 7" CONC. CURB AND GUTTER R-3.01
 NO SCALE

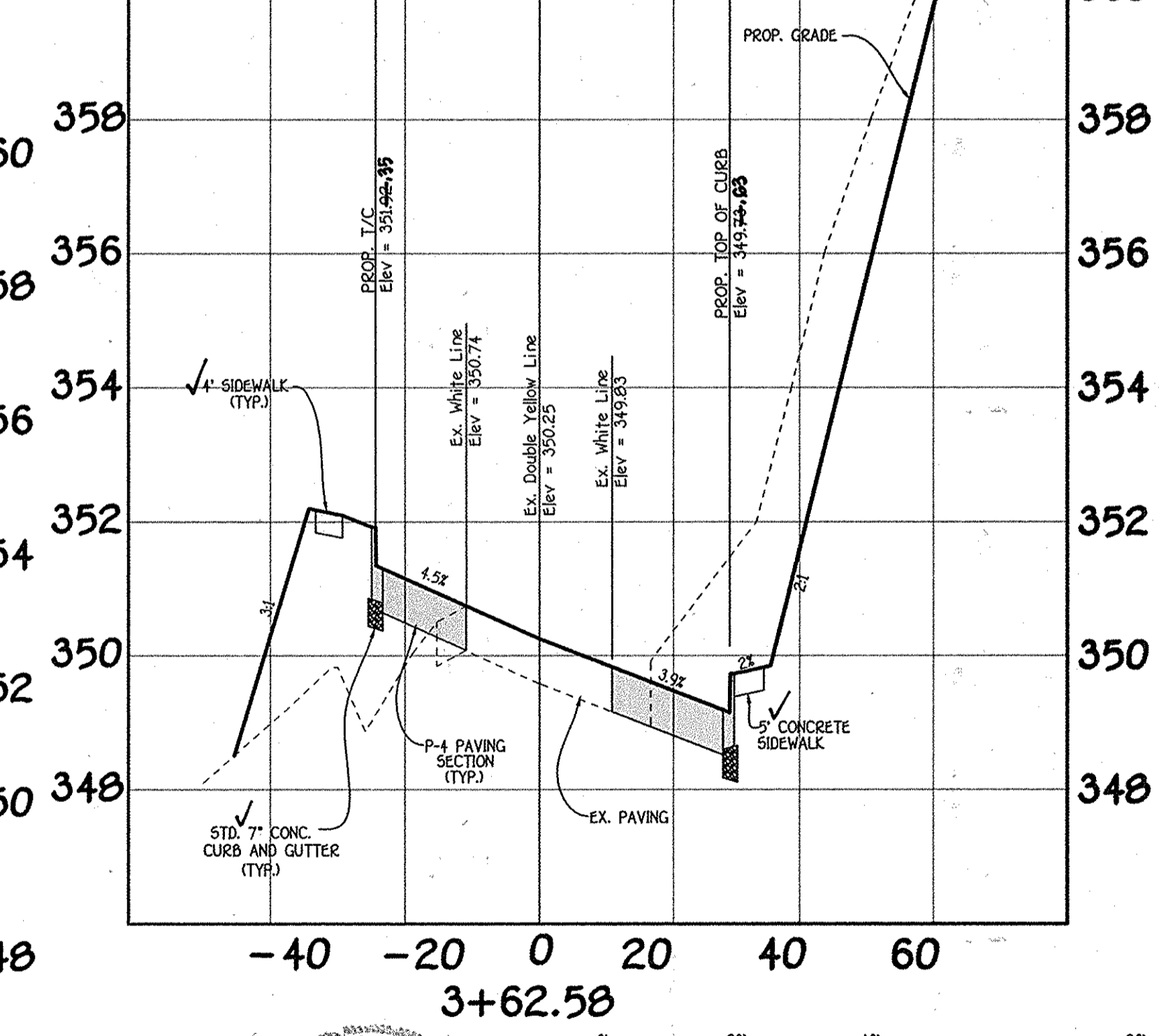
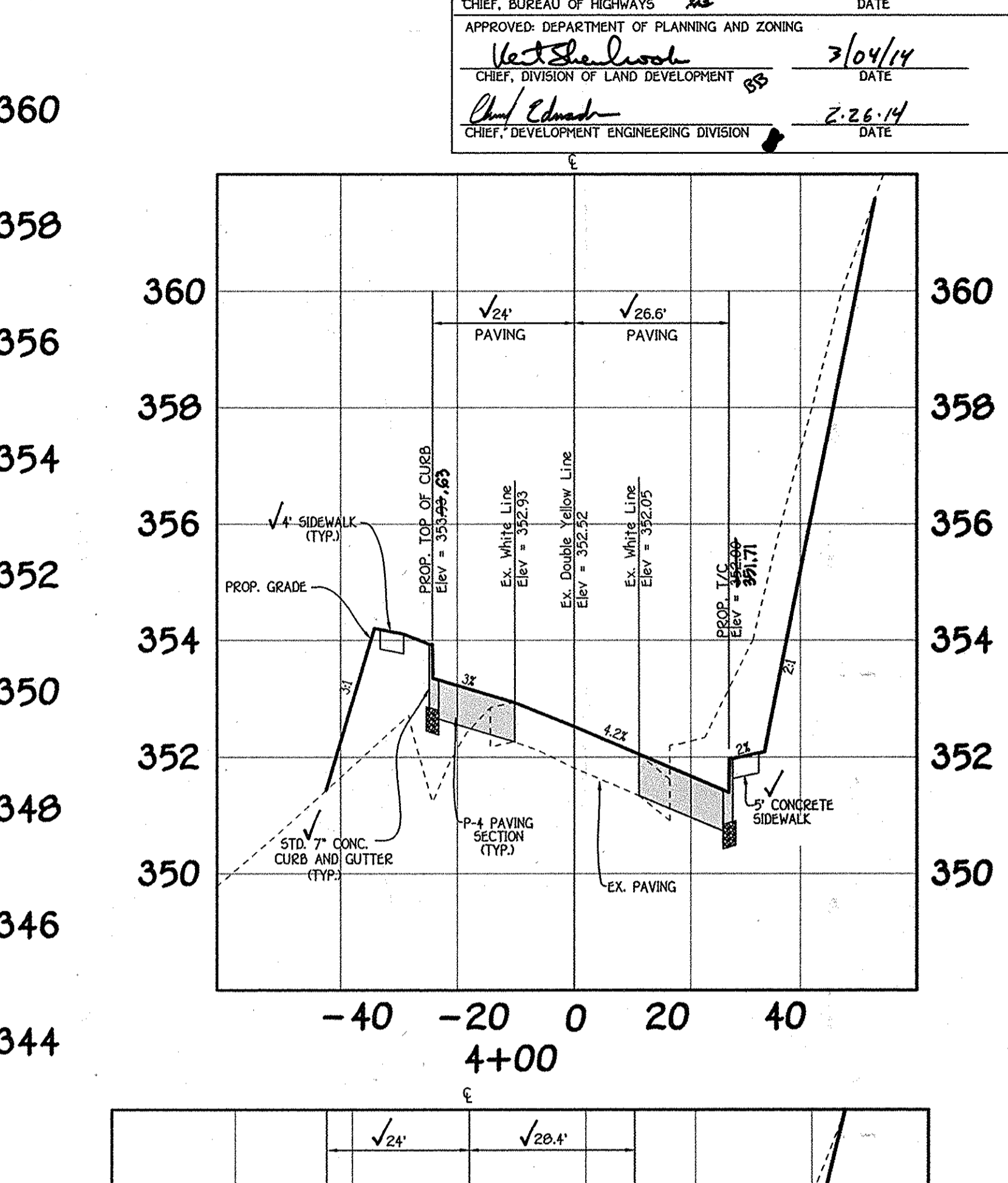
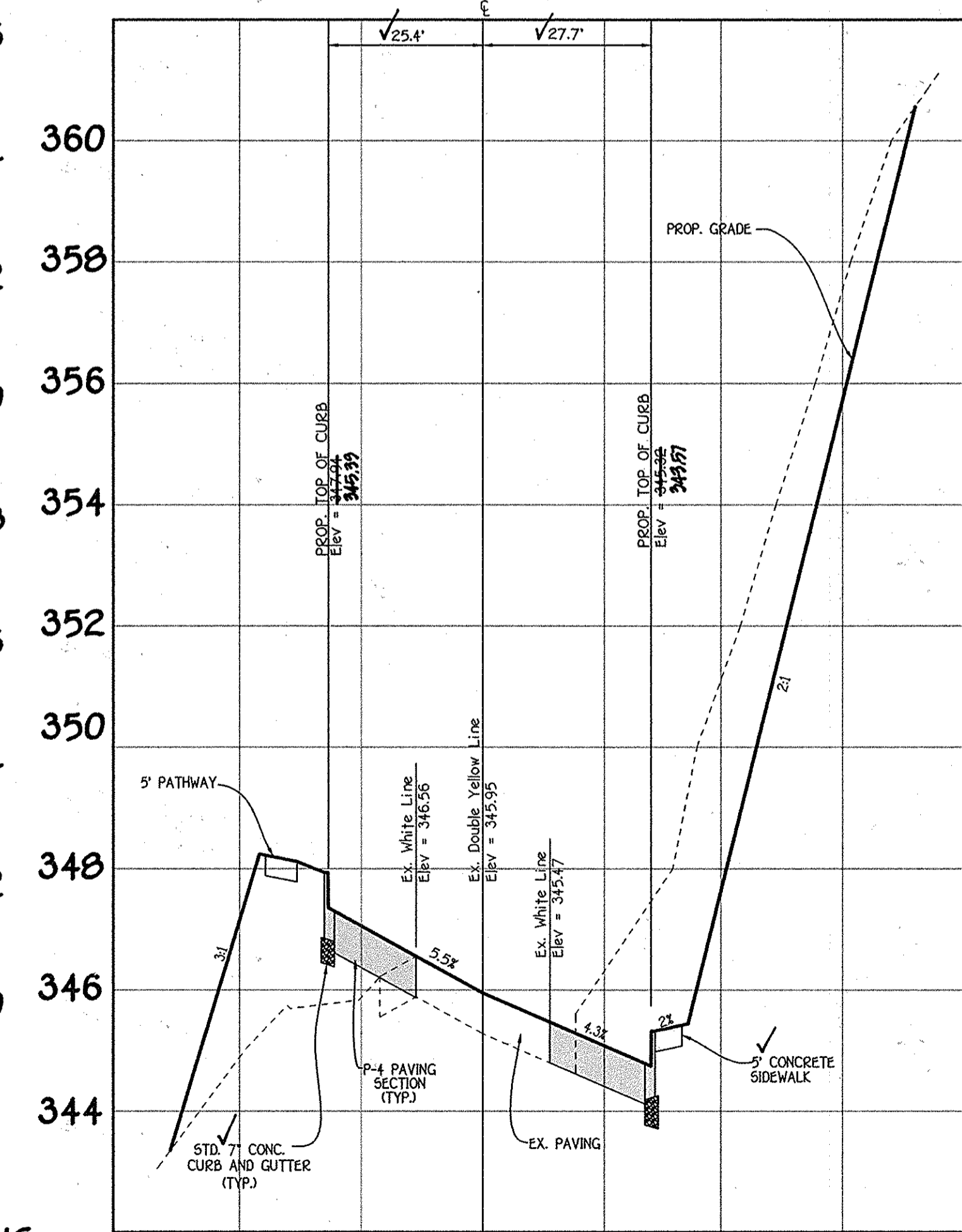
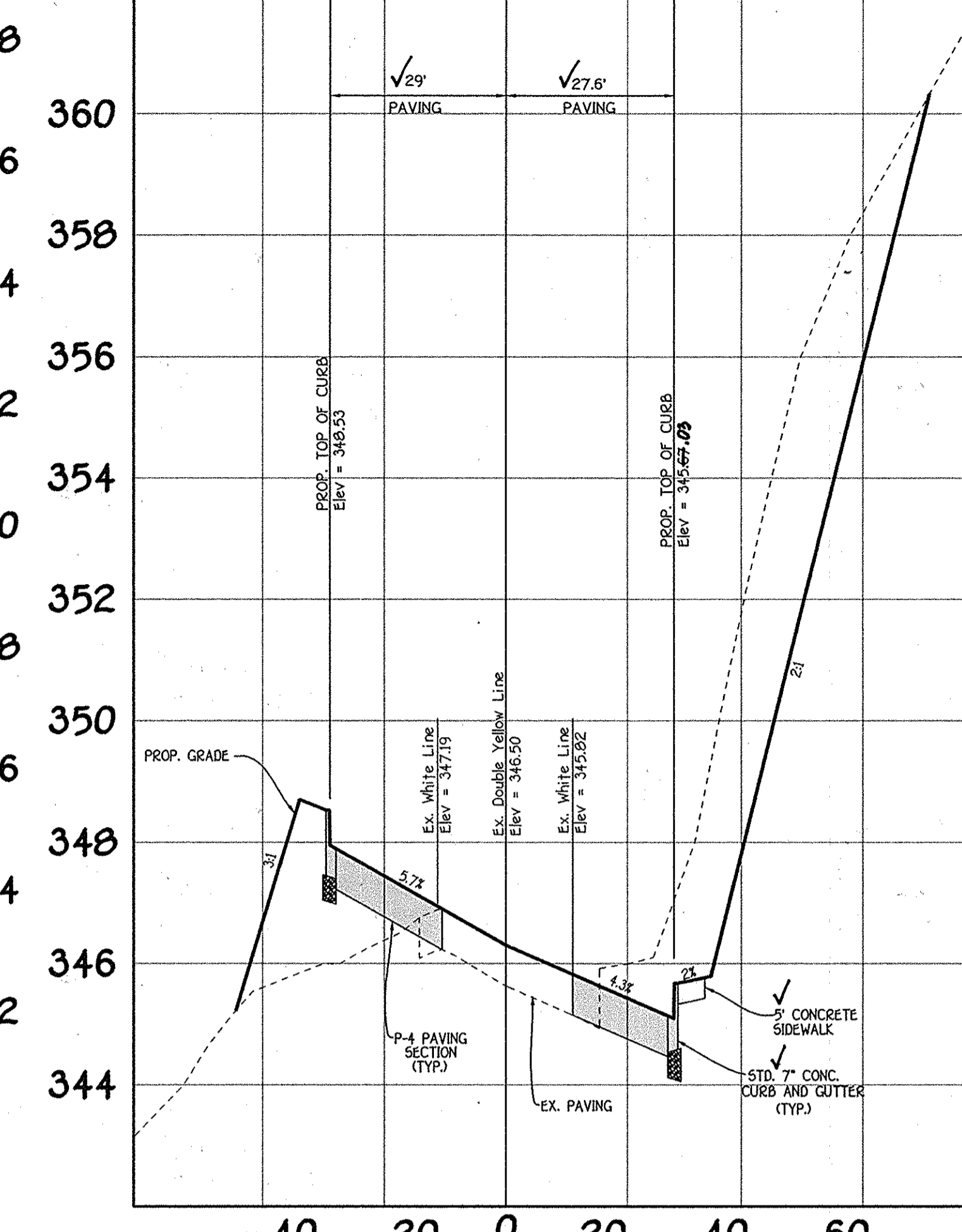
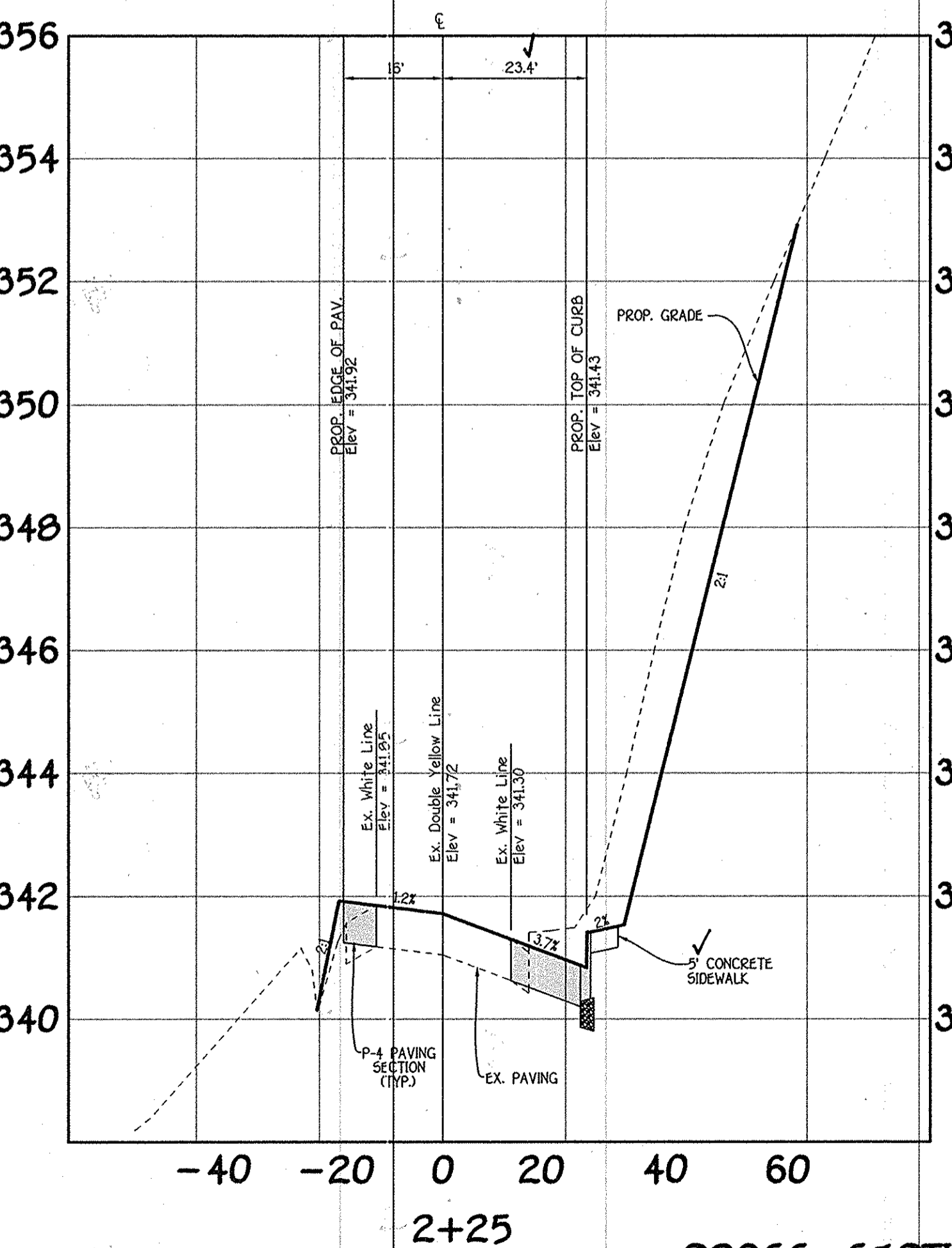
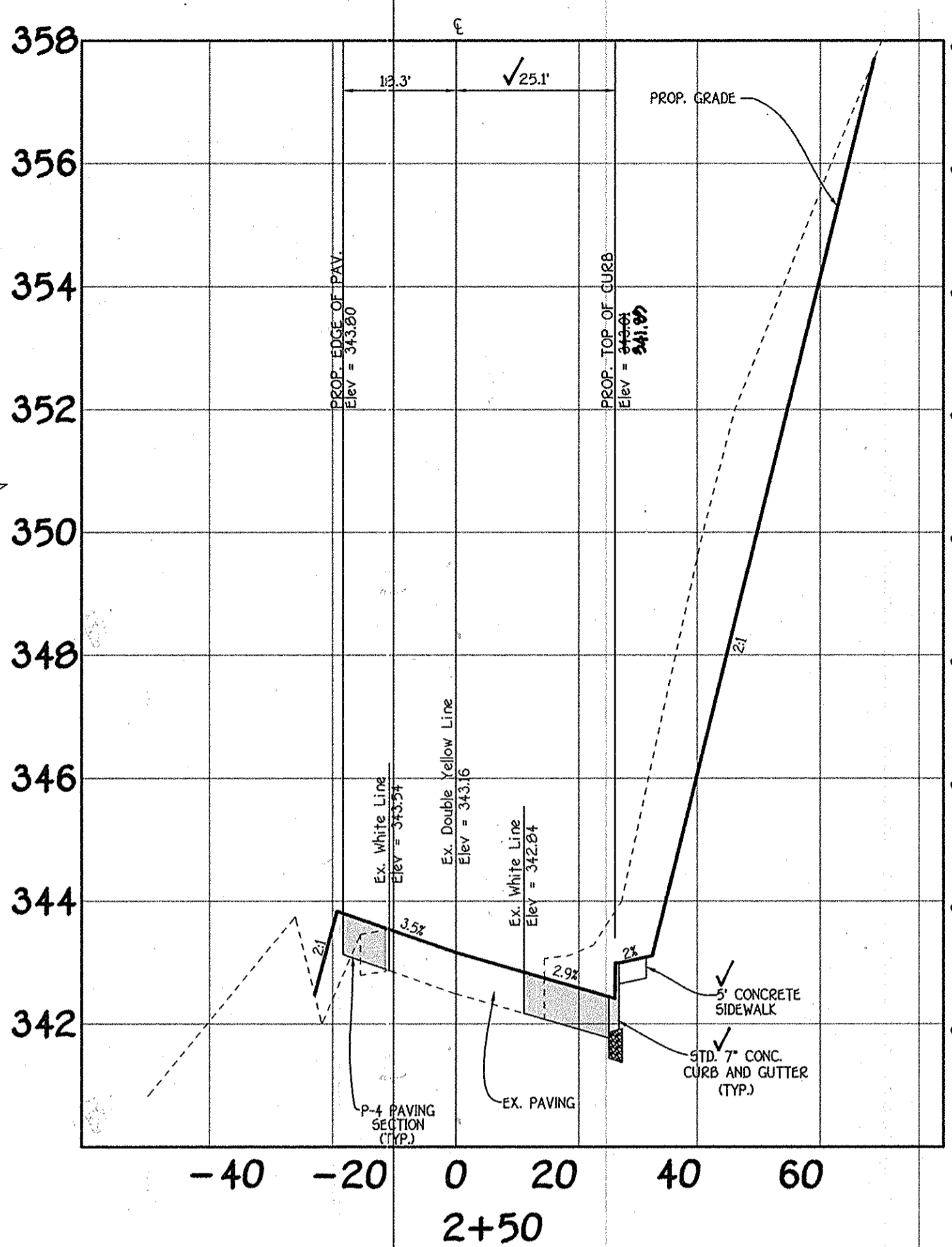


TYPICAL ROAD WIDENING STA. 5+00 TO STA. 13+00
 NO SCALE



TYPICAL ROAD WIDENING STA. 5+00 TO STA. 13+00
 NO SCALE

OWNER: JOHN TENNEY MASON, JR. FAMILY LLC AND FRANCES WELFORD MASON FAMILY LLC
DEVELOPER: DOUBLE R VENTURES, LLC c/o LAND DESIGN AND DEVELOPMENT, INC.



SCALE: 1" = 20'

OLD ANNAPOLIS ROAD CROSS-SECTIONS Centennial Lake Overlook
 (Formerly Mason Property)
 Section One
 Buildable Lots 1 Thru 25
 Open Space Lots 24 Thru 29 & Buildable Bulk Parcels 'A' And 'B'
 Being A Subdivision Of Tax Parcel No. 86, Tax Map No. 30, Liber 10729 At Folio 329 And Liber 10729 At Folio 335)

ALDO M. VITUCCI, P.E.
 PROFESSIONAL ENGINEER
 DATE: 1/14/14

Professional certification I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15.

I:\2011\11042.dwg\Finals section one\11042 sheet 4-5 cross sections.dwg, sheet 4, 1/13/2014 8:11:27 AM, 1.1

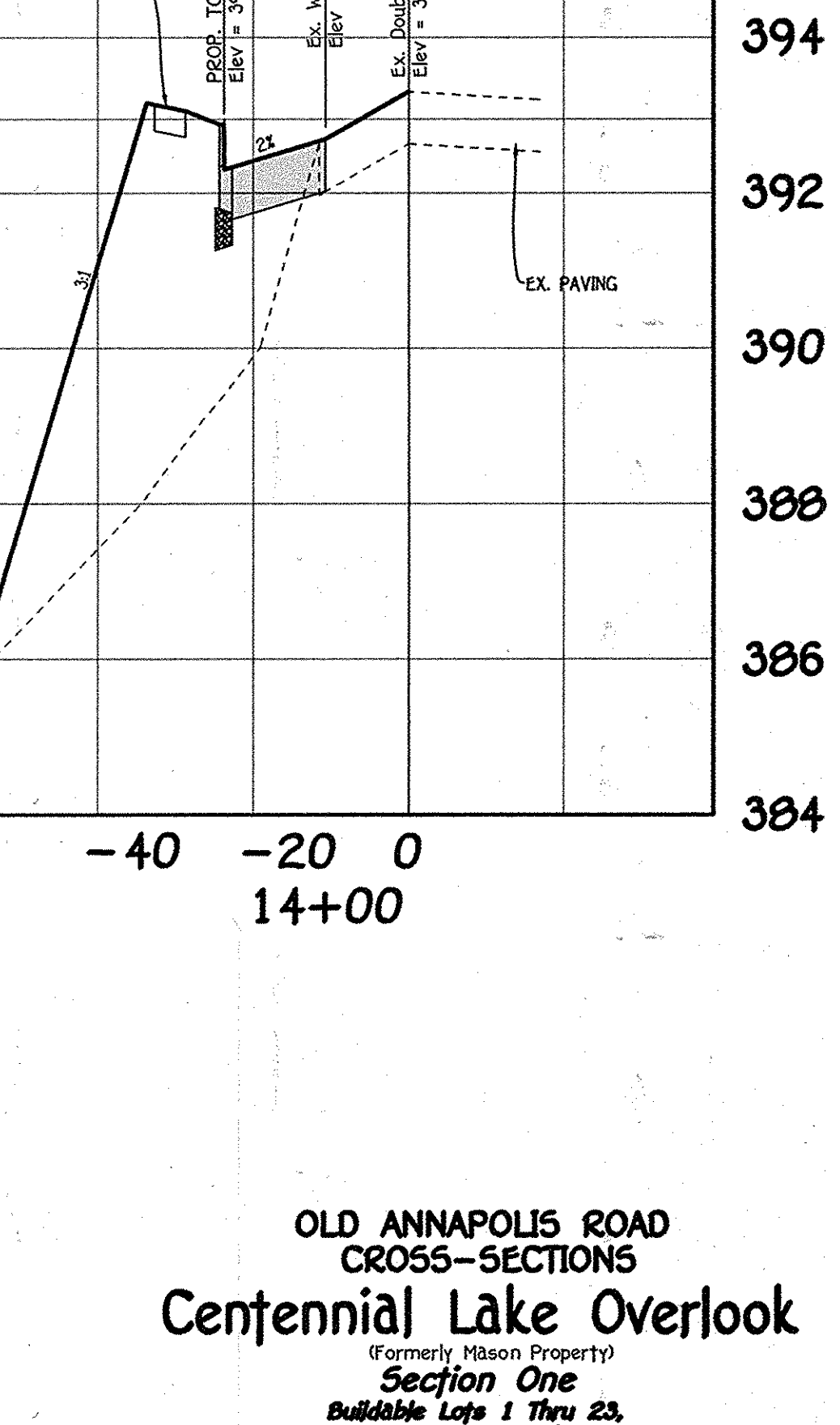
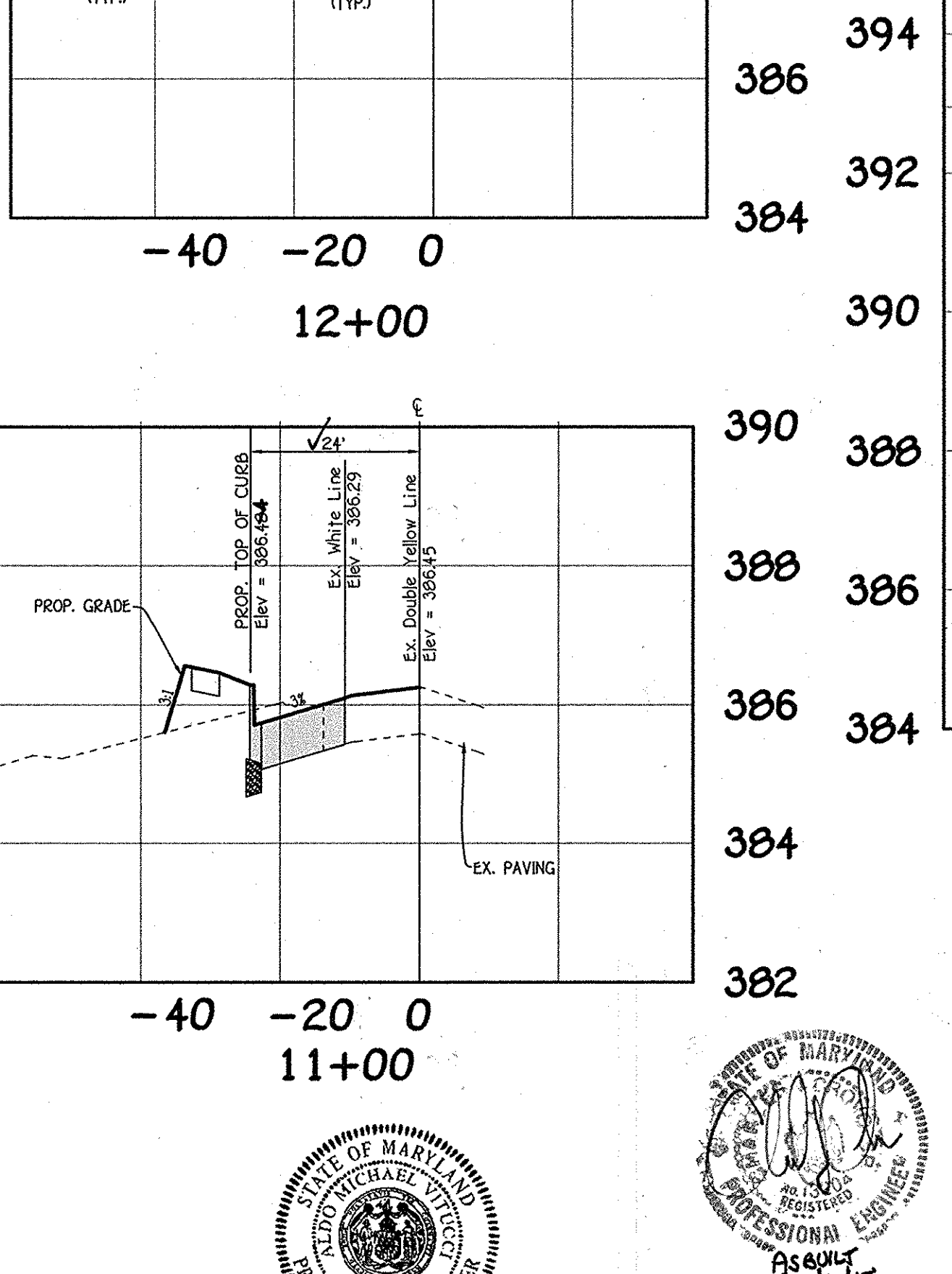
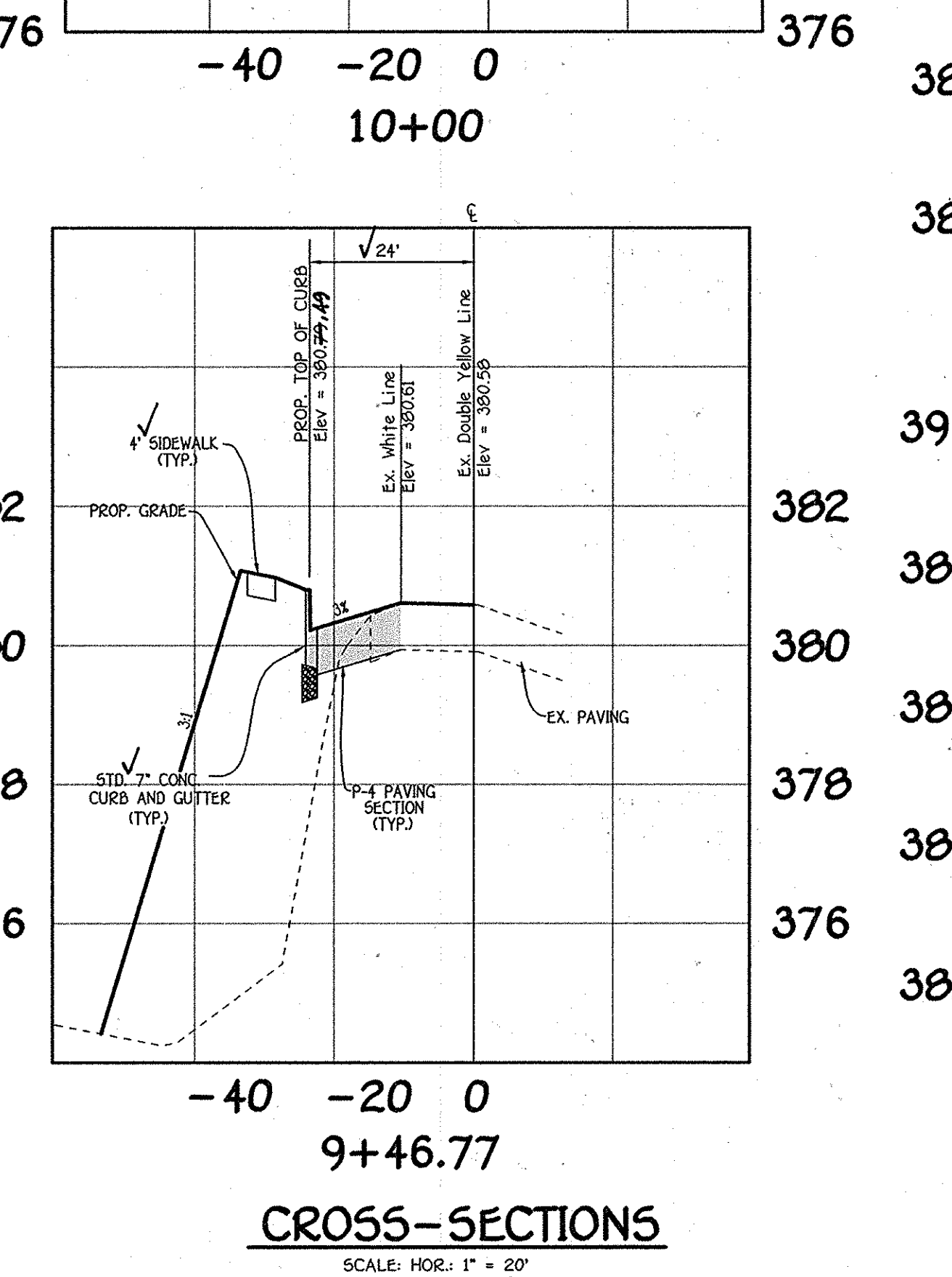
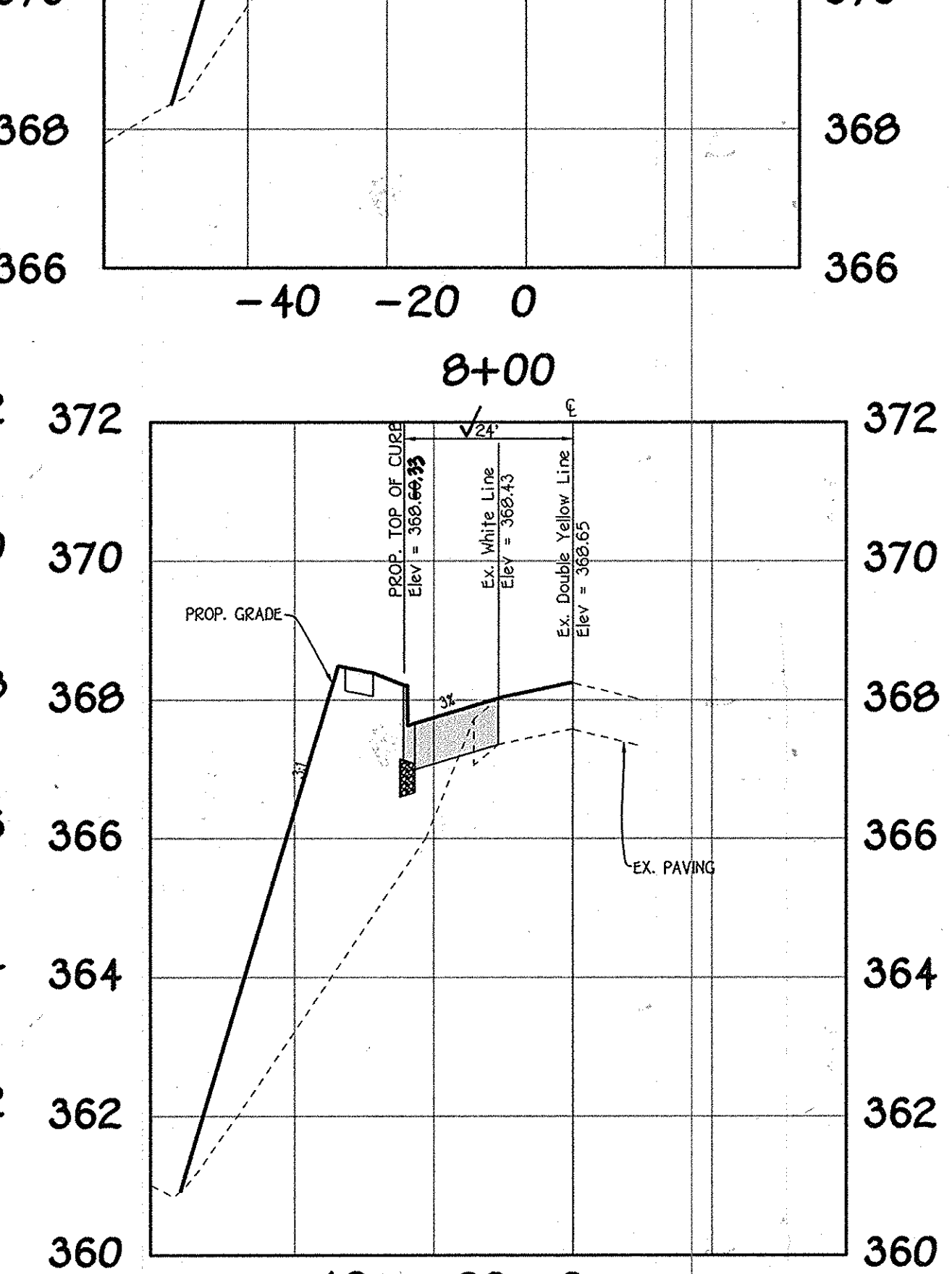
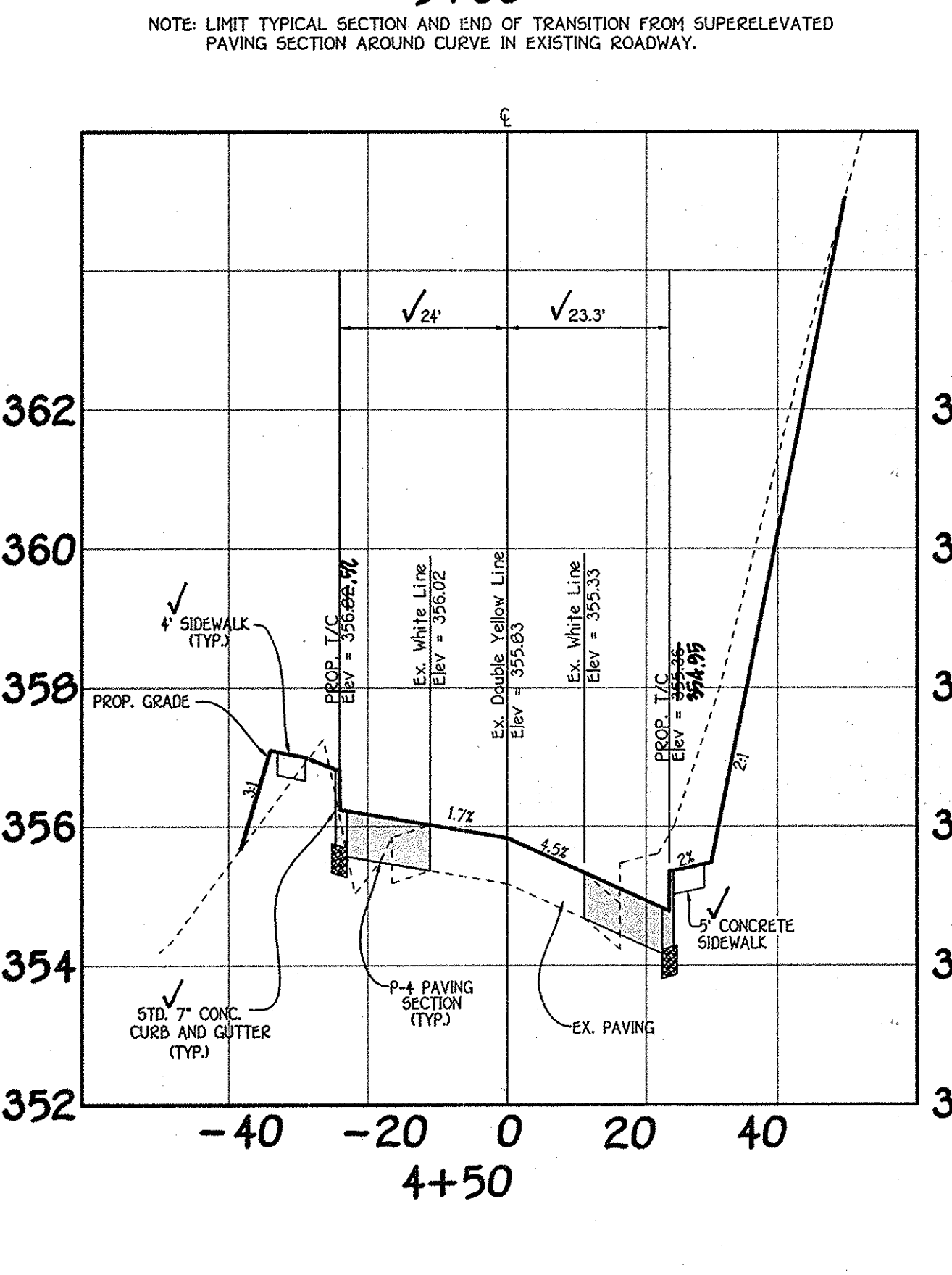
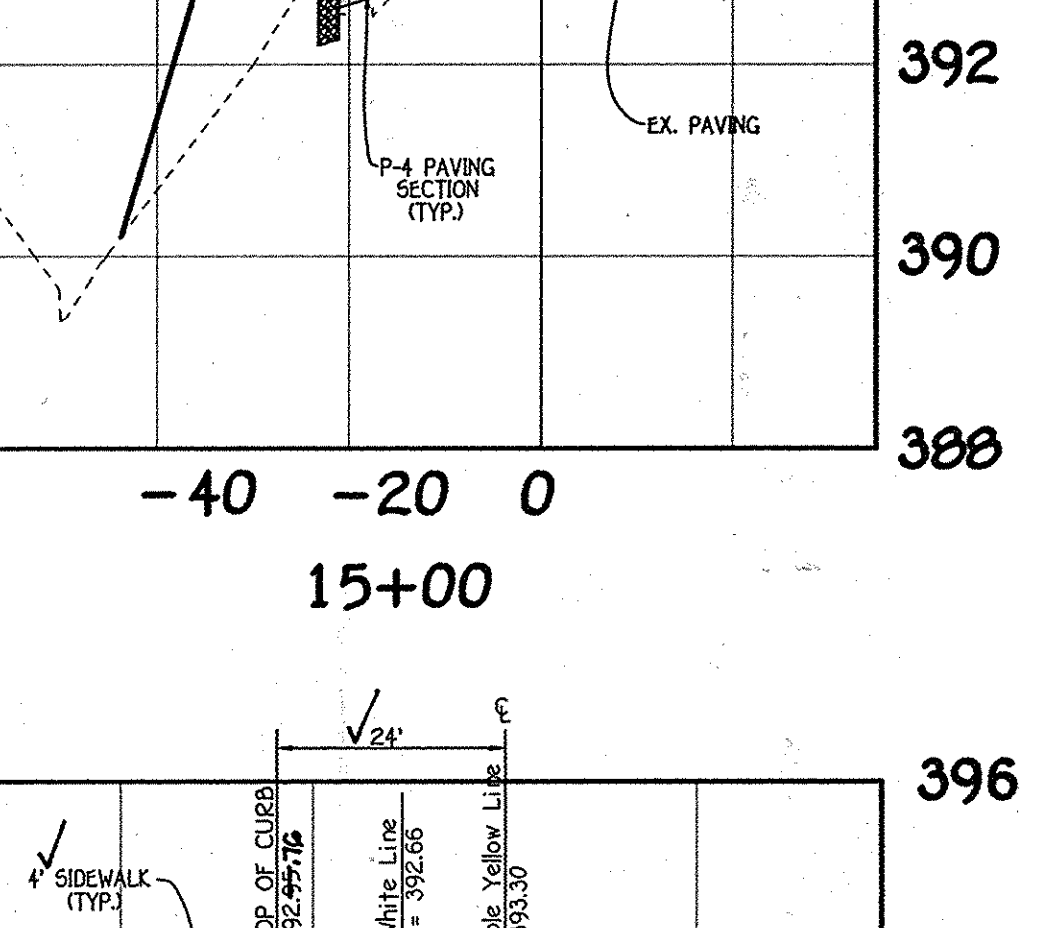
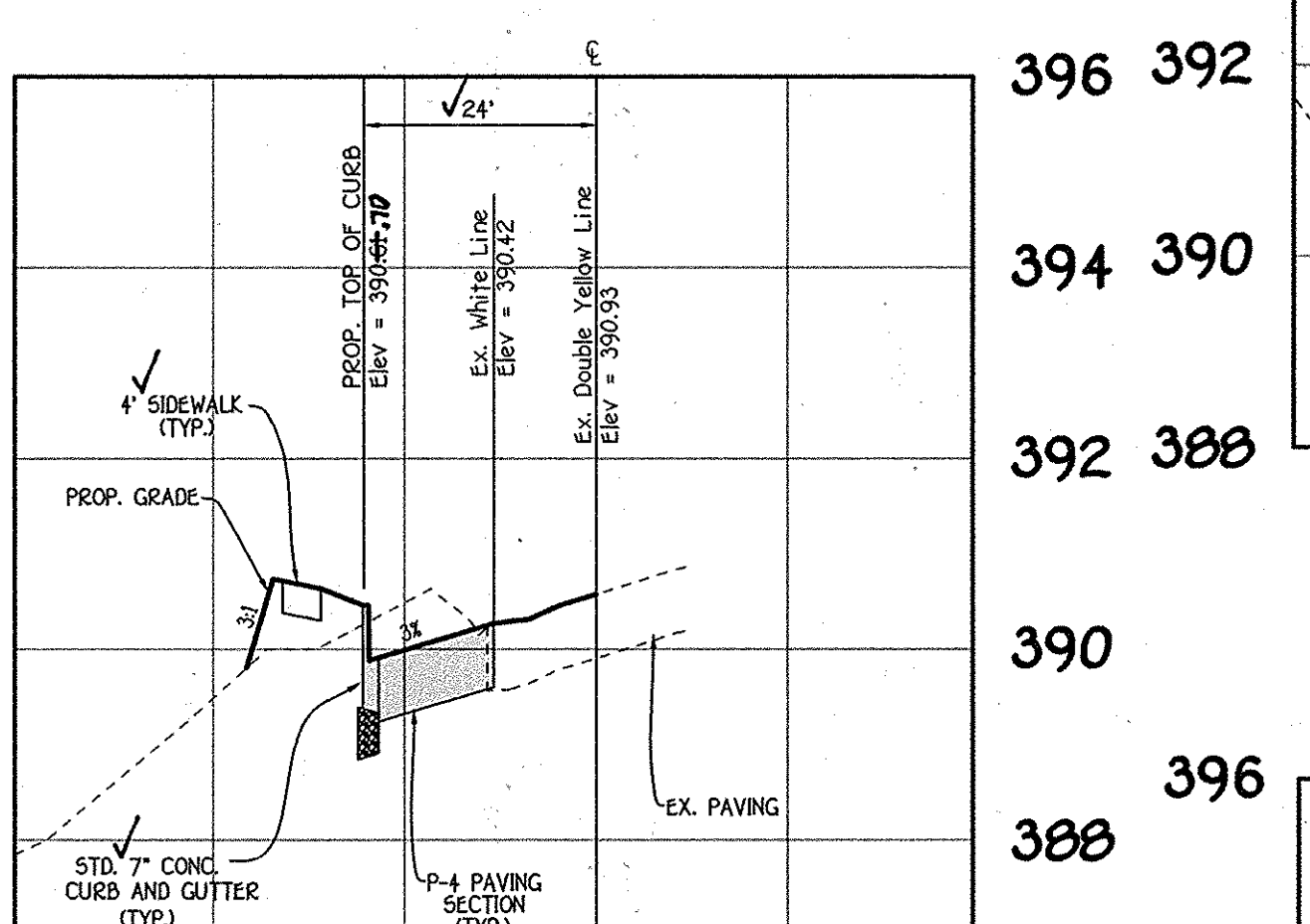
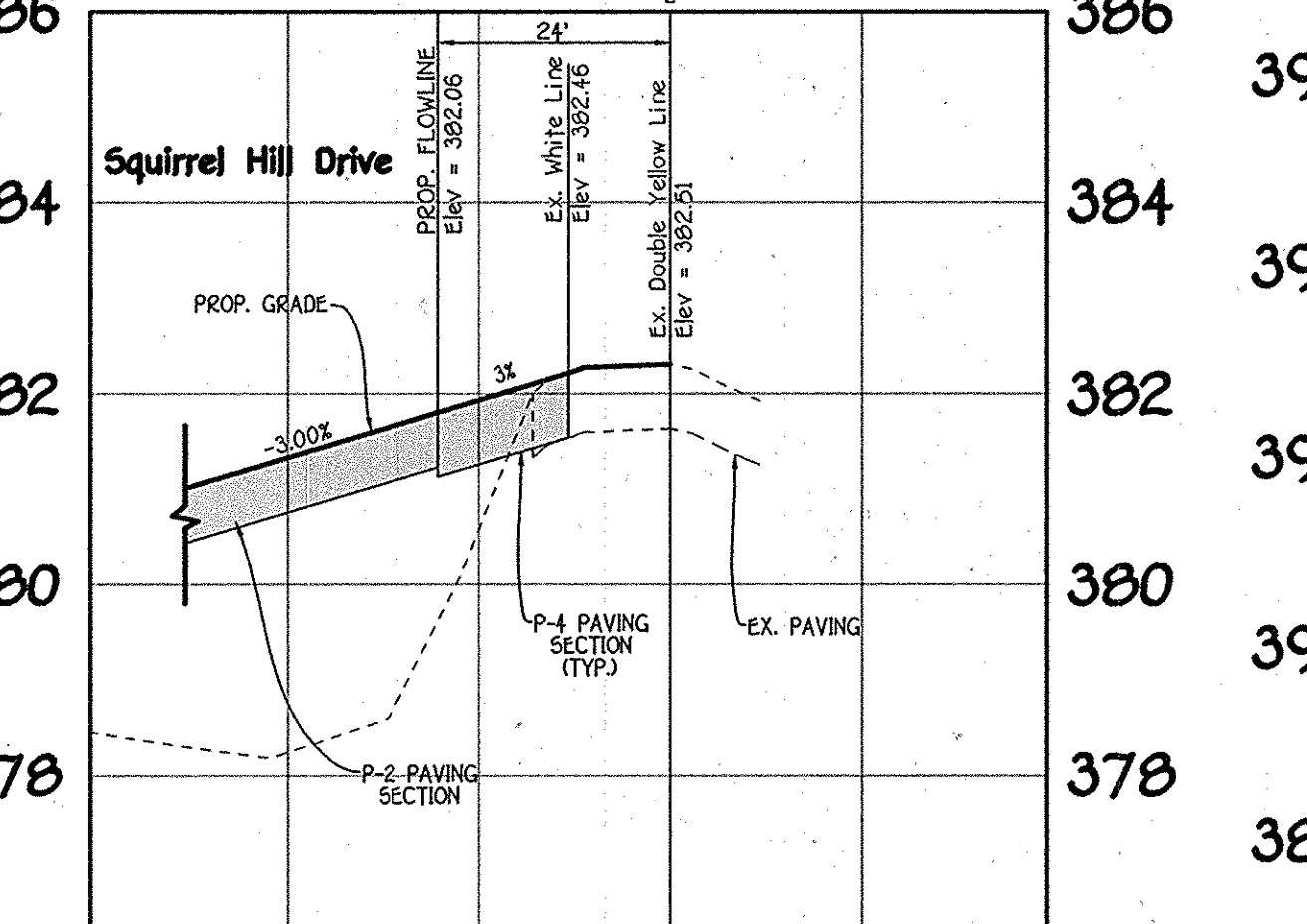
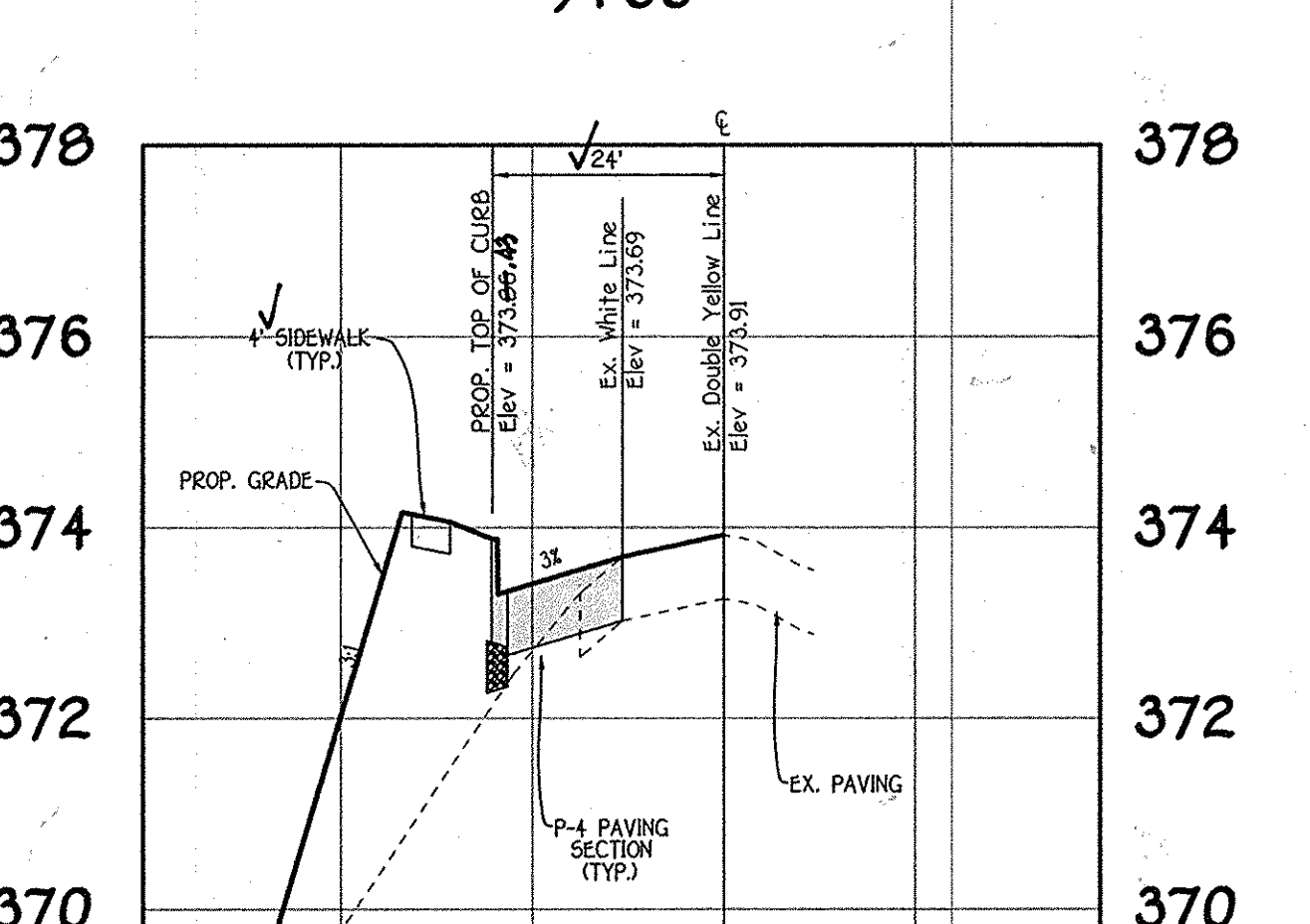
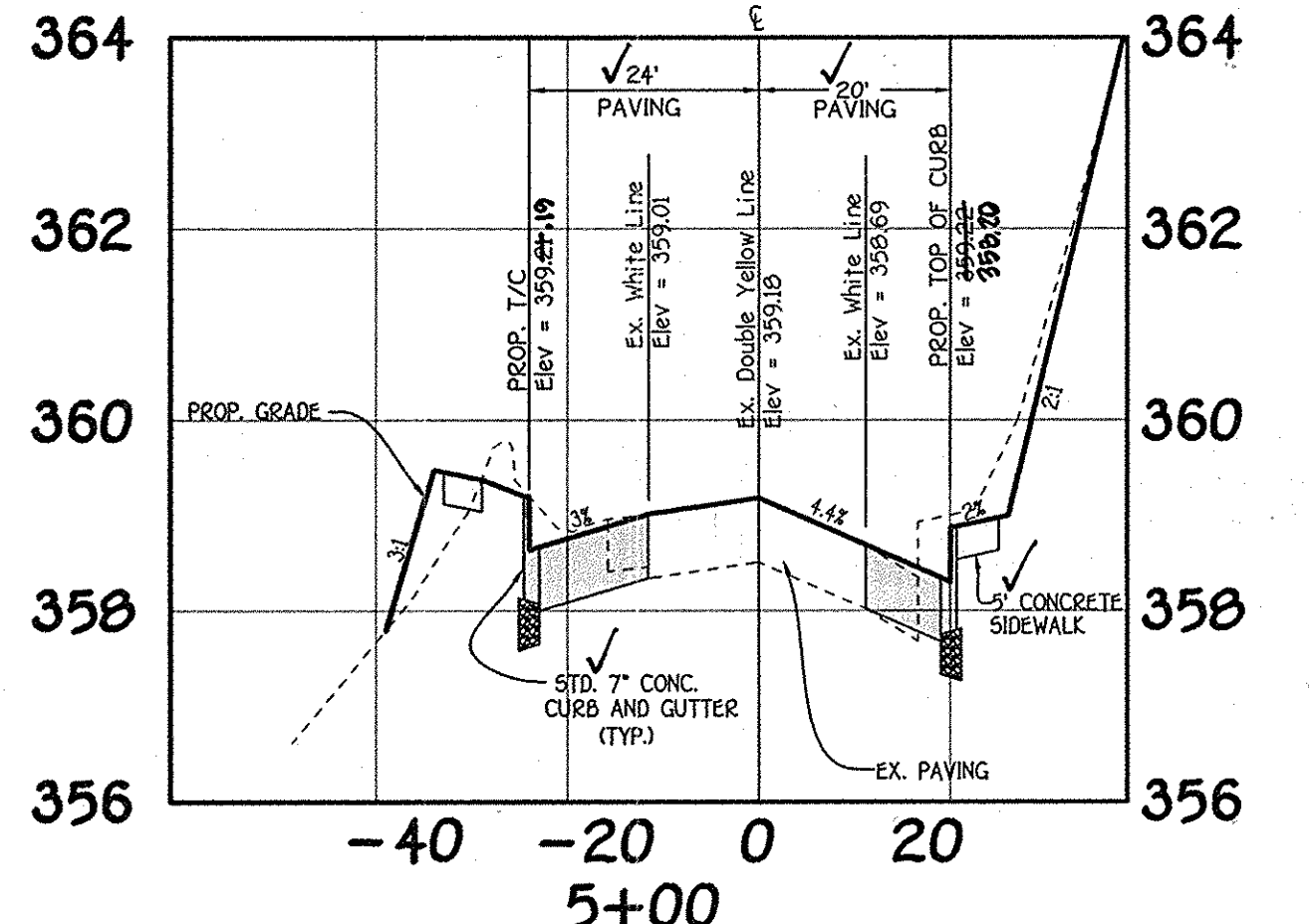
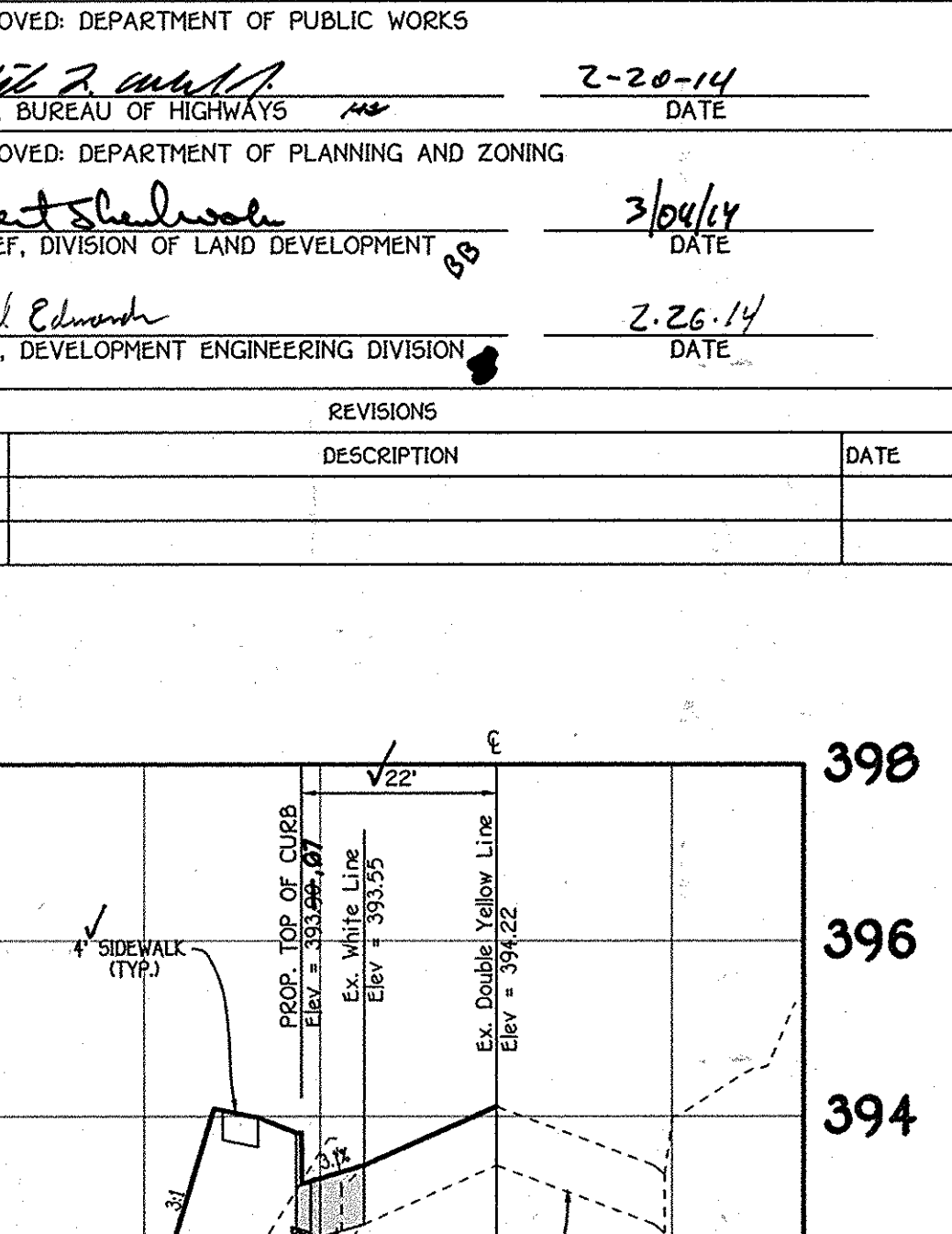
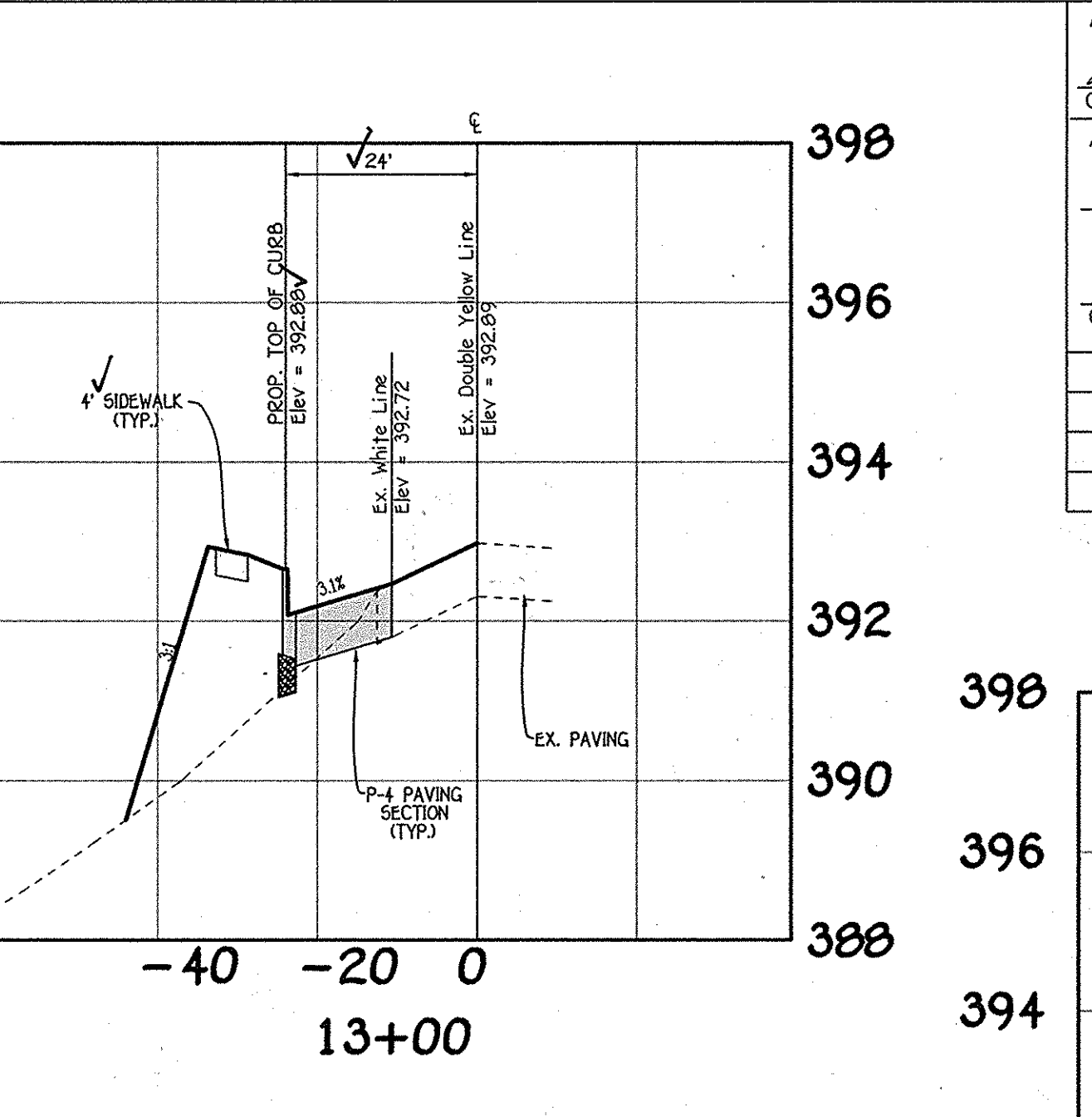
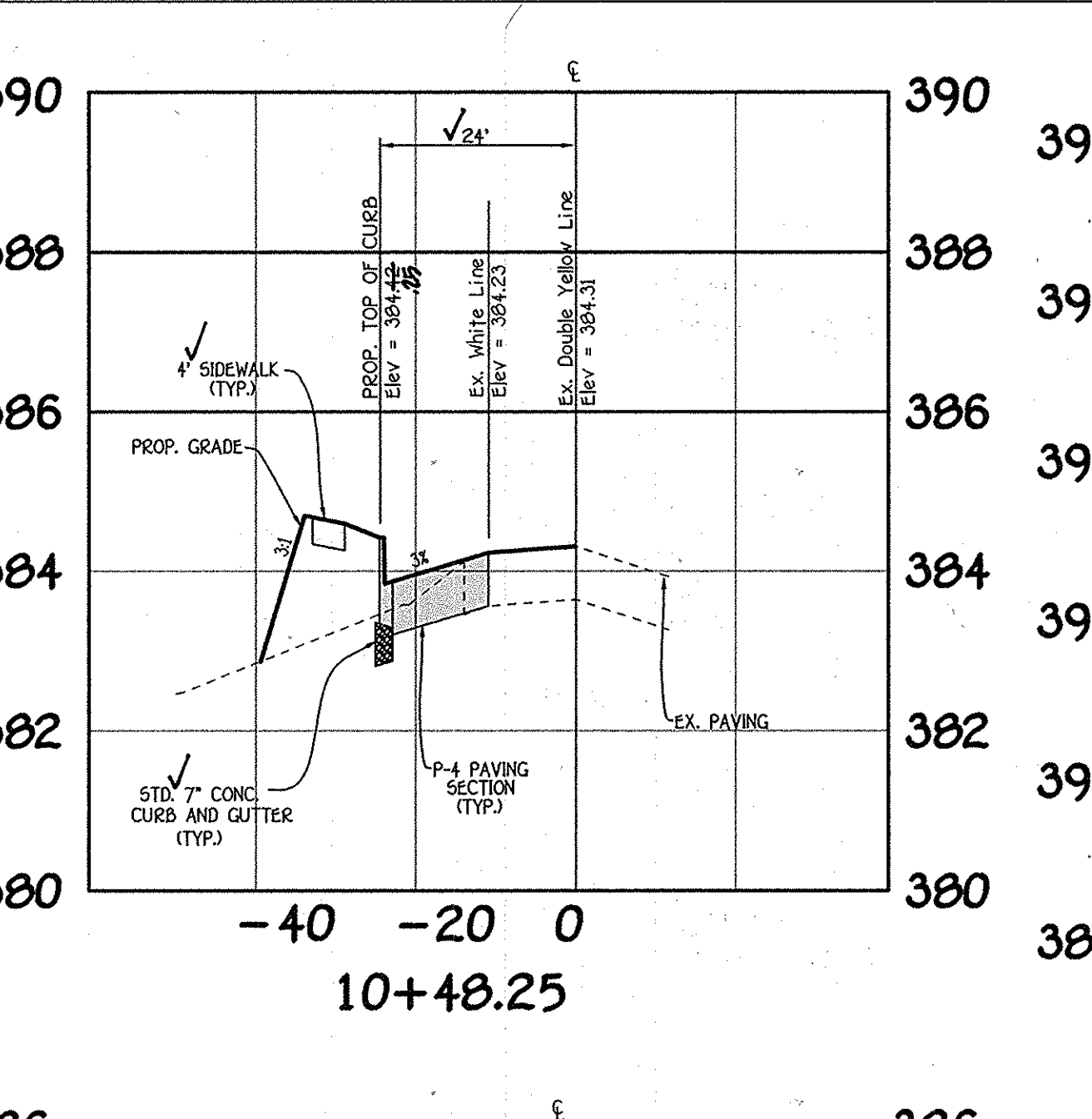
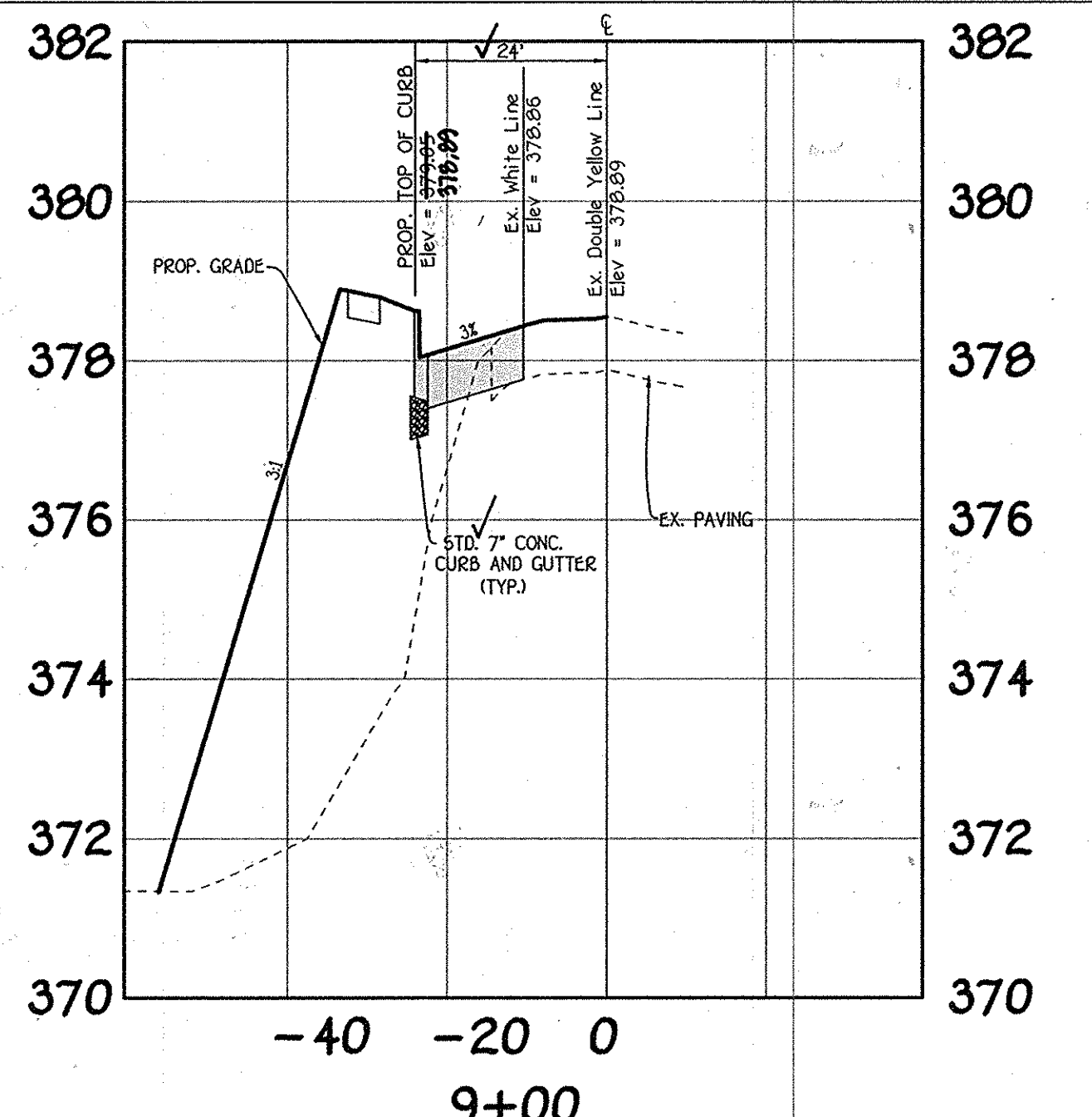
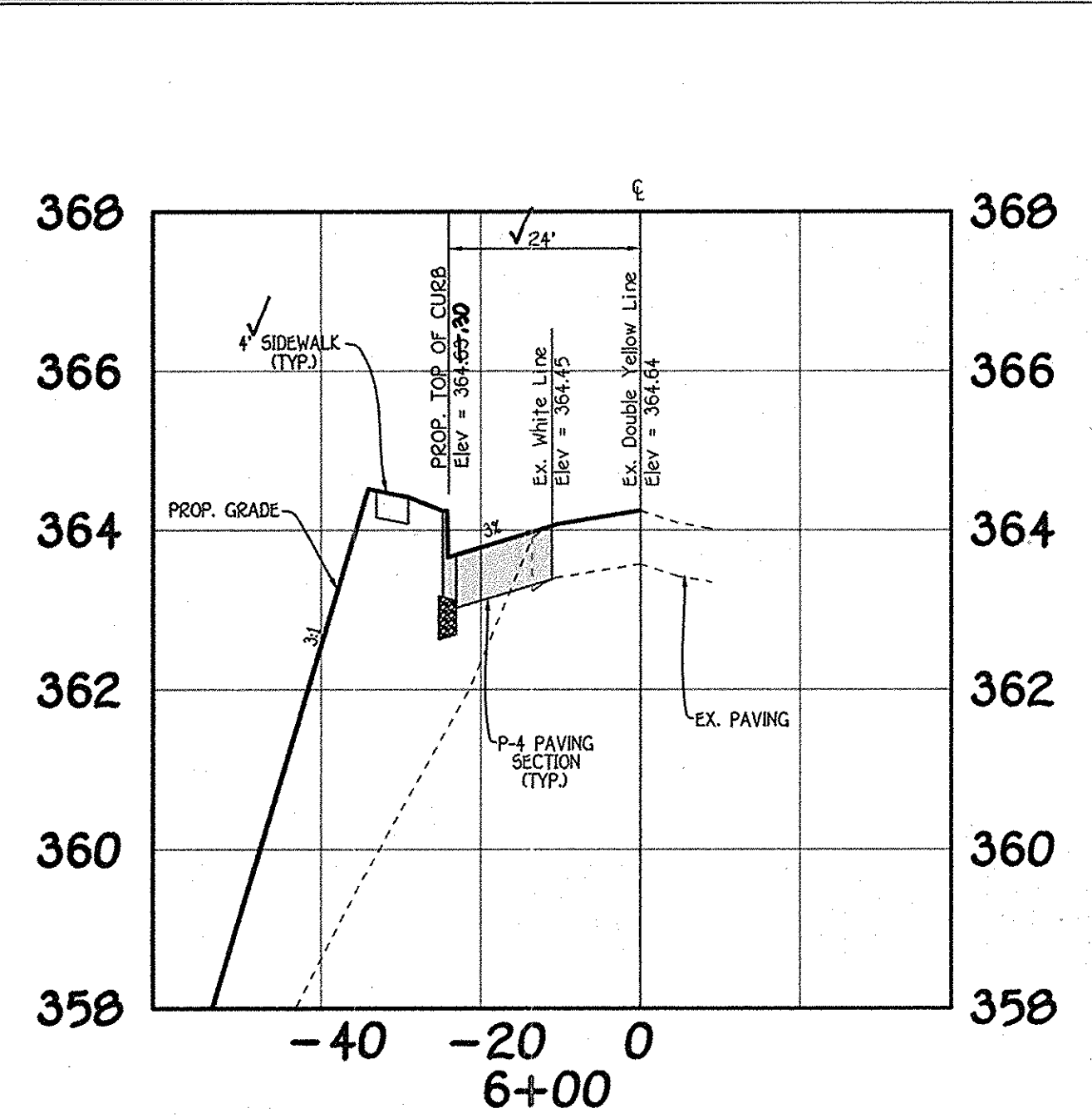
AS-BUILT F-14-002

APPROVED: DEPARTMENT OF PUBLIC WORKS
Neil Z. ... 2-20-14
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Victor ... 3/04/14
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Phil ... 2-26-14
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

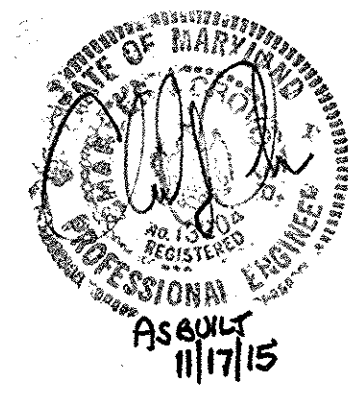
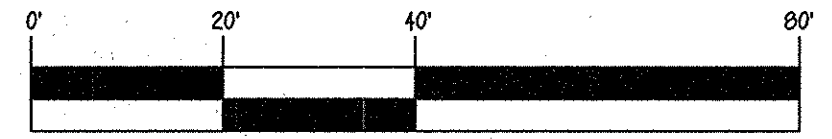
NO.	DESCRIPTION	DATE



NOTE: LIMIT TYPICAL SECTION AND END OF TRANSITION FROM SUPERELEVATED PAVING SECTION AROUND CURVE IN EXISTING ROADWAY.

CROSS-SECTIONS

SCALE: HOR: 1" = 20'
 VER: 1" = 2'



OLD ANNAPOLIS ROAD CROSS-SECTIONS Centennial Lake Overlook

(Formerly Mason Property)
Section One
 Buildable Lots 1 Thru 23,
 Open Space Lots 24 Thru 29 &
 Building Lots 30, 31, 32 &
 33
 (Being A Subdivision Of Tax Parcel No. 36, Tax Map No. 30,
 Liber 10729 At Folio 329 And Liber 10729 At Folio 335)
 Zoning R-20 Parcel No. 06
 2nd Election District Howard County, Maryland
 Scale: As Shown Date: January 10, 2014
 Sheet 5 Of 30

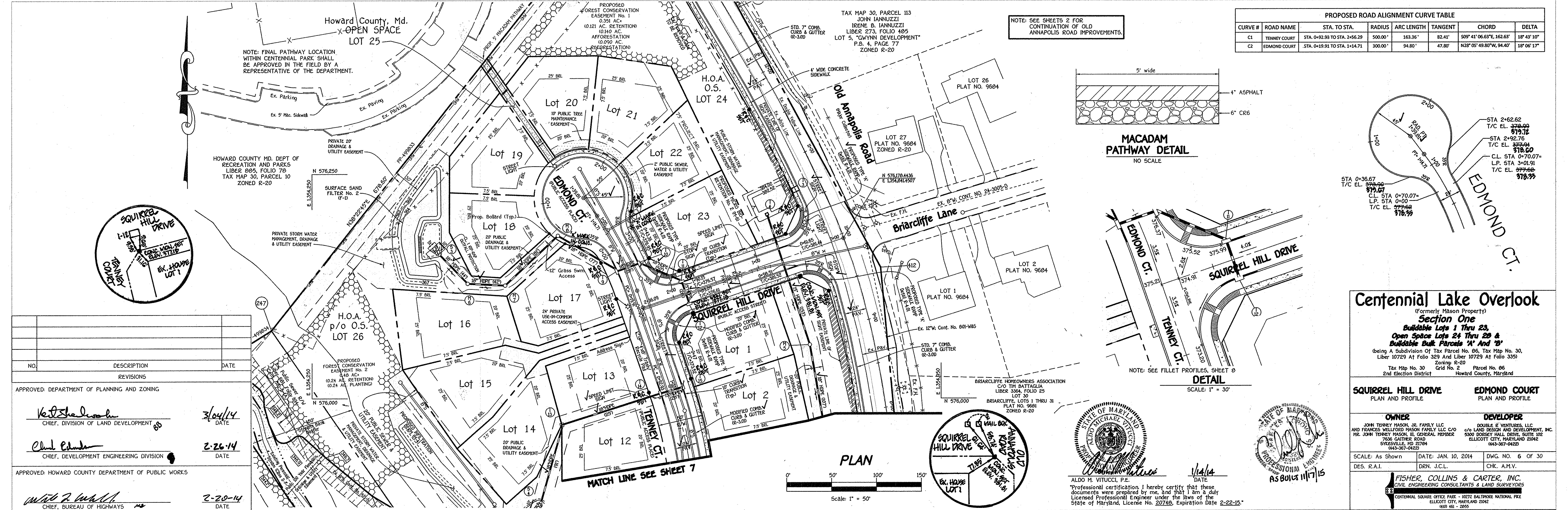
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OWNER
 JOHN TENNEY MASON, JR. FAMILY LLC
 AND FRANCIS WELFORD MASON FAMILY LLC
 c/o MR. JOHN TENNEY MASON, III, GENERAL
 MEMBER 7636 GAITHER ROAD
 SYKESVILLE, MD 21784
 (443-367-0422)

DEVELOPER
 DOUBLE R VENTURES, LLC
 AND FRANCIS WELFORD MASON FAMILY LLC
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, SUITE 102
 ELLICOTT CITY, MARYLAND 21042
 (443-367-0422)

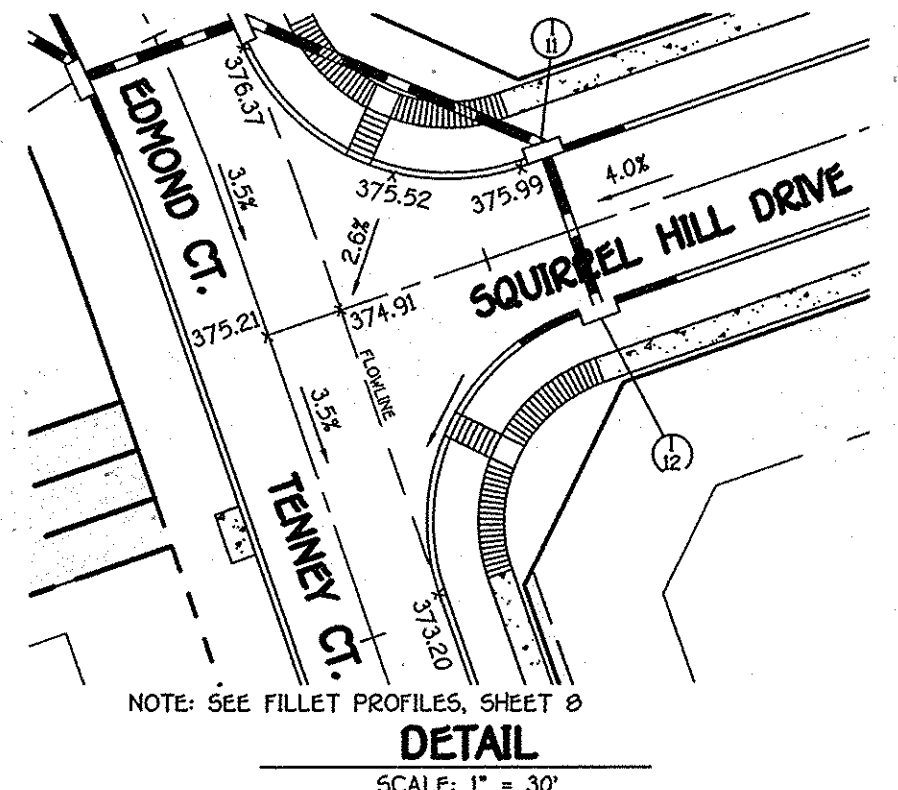
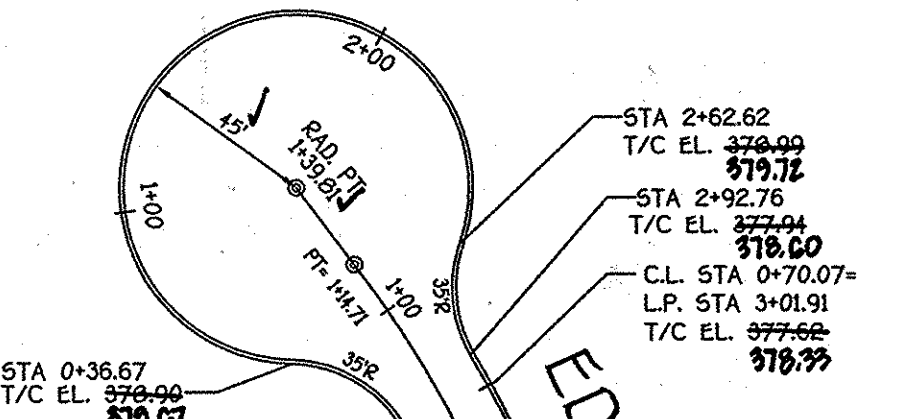
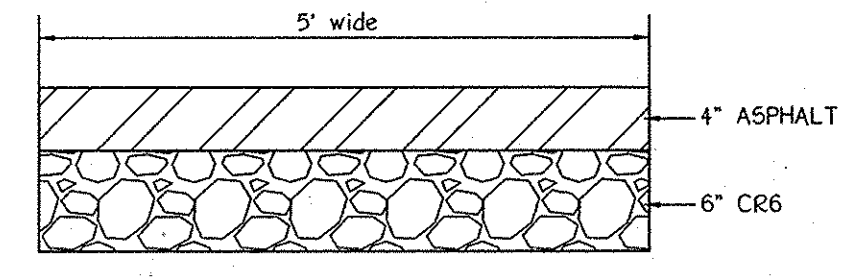
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2892

AS-BUILT F-14-002

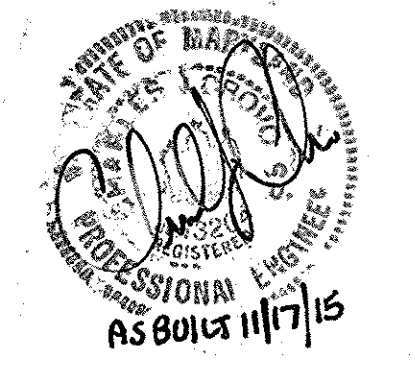
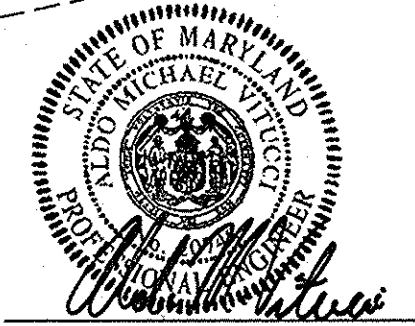


PROPOSED ROAD ALIGNMENT CURVE TABLE

CURVE #	ROAD NAME	STA. TO STA.	RADIUS	ARC LENGTH	TANGENT	CHORD	DELTA
C1	TENNEY COURT	STA. 0+52.93 TO STA. 2+56.29	500.00'	163.36'	82.41'	509' 41" 06.63"E, 162.63'	18° 43' 10"
C2	EDMOND COURT	STA. 0+19.91 TO STA. 1+14.71	300.00'	94.80'	47.80'	N28° 05' 49.80"W, 94.40'	18° 06' 17"



NO.	DESCRIPTION	DATE
	REVISIONS	
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
	<i>K. J. Shalinski</i> CHIEF, DIVISION OF LAND DEVELOPMENT	3/04/14 DATE
	<i>Chad Edwards</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	2-26-14 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS		
	<i>Walter R. Wall</i> CHIEF, BUREAU OF HIGHWAYS	2-20-14 DATE



Centennial Lake Overlook
(Formerly Mason Property)
Section One
Buildable Lots 1 Thru 23,
Open Space Lots 24 Thru 29 &
Buildable Bulk Parcels 1' And 2'

Being a Subdivision of Tax Parcel No. 06, Tax Map No. 30,
Liber 10729 At Folio 329 And Liber 10729 At Folio 335
Zoning R-20 Parcel No. 06
2nd Election District
Howard County, Maryland

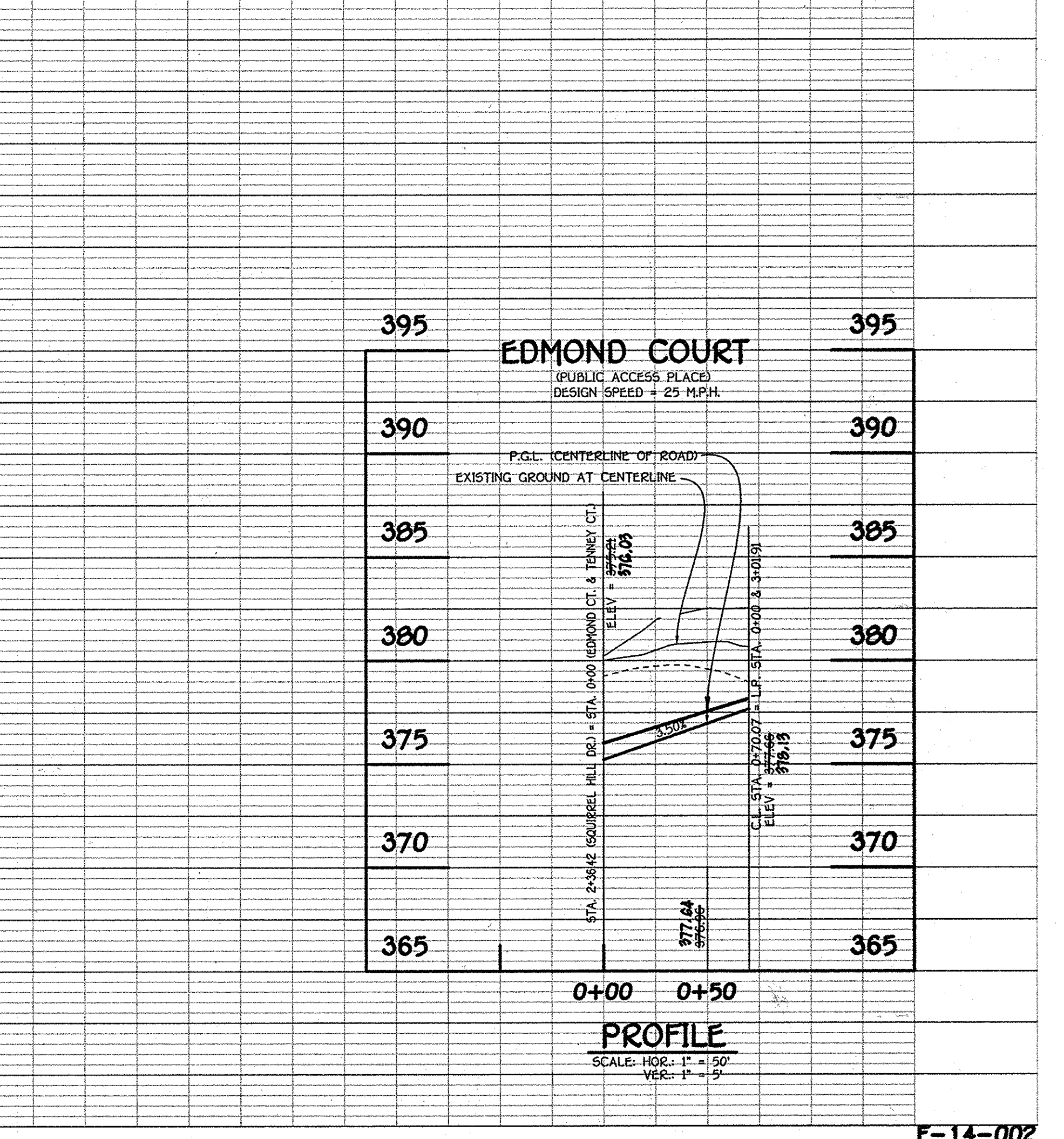
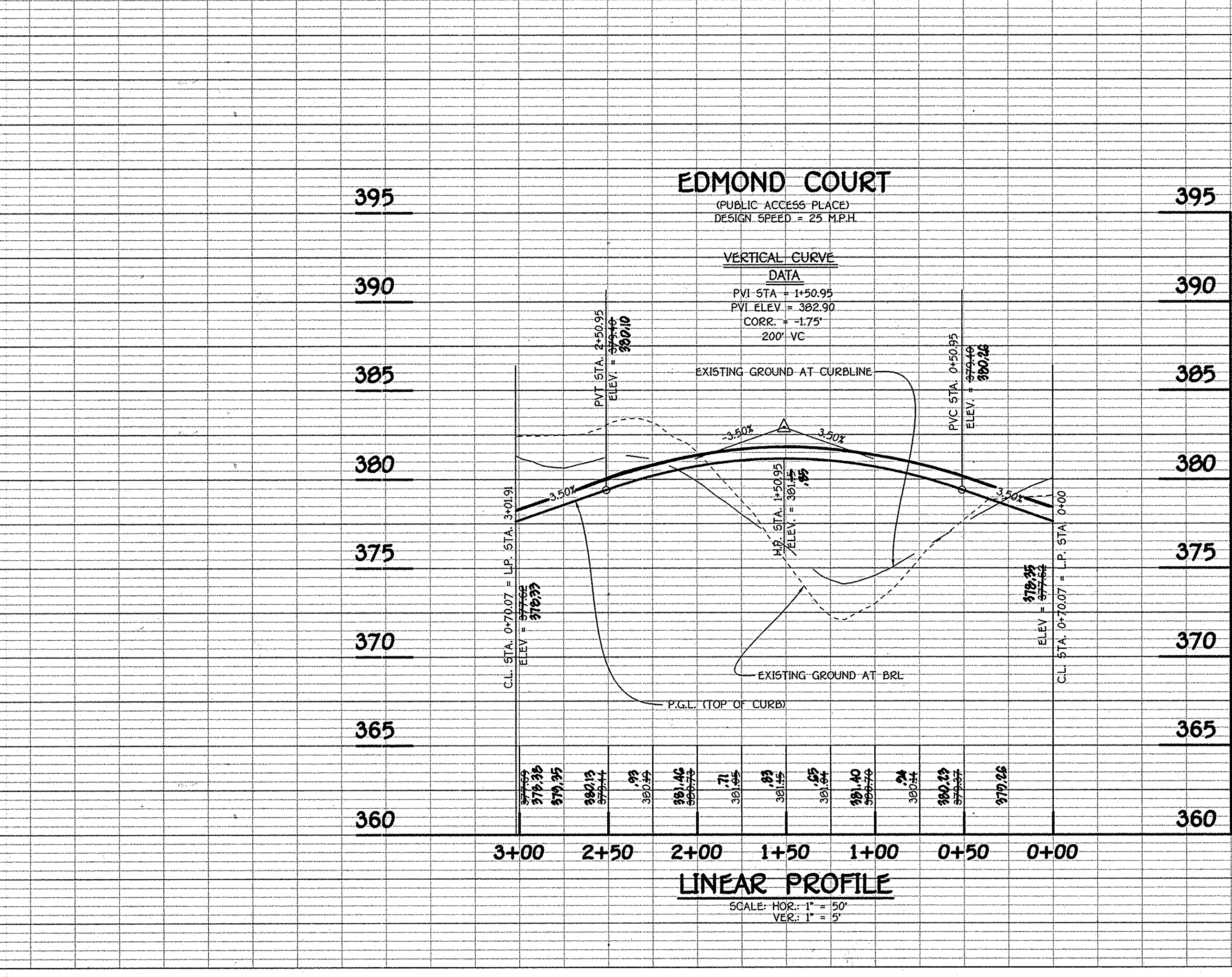
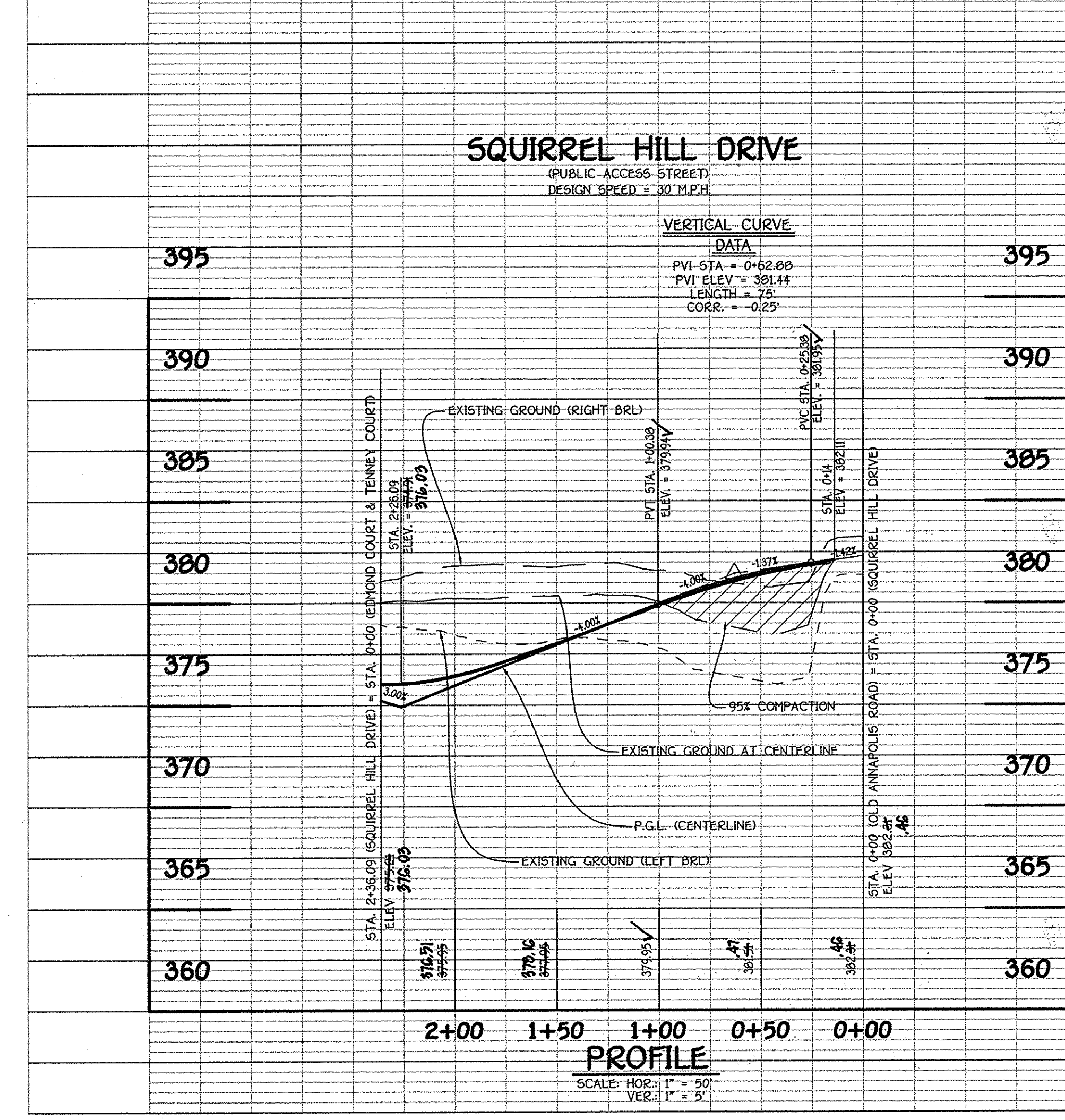
SQUIRREL HILL DRIVE PLAN AND PROFILE	EDMOND COURT PLAN AND PROFILE
--	---

OWNER: JOHN TENNEY MASON, JR. FAMILY LLC AND FRANCES WELFORD MASON FAMILY LLC, C/O 192 JOHN TENNEY MASON, III, GENERAL HEREDITY, 7636 GATHER ROAD, SYLVESVILLE, MD 21784, (443-367-0122)

DEVELOPER: DOUBLE E VENTURES, LLC, 276 LAND DESIGN AND DEVELOPMENT, INC., 5000 DODDLEY HALL DRIVE, SUITE 102, ELLICOTT CITY, MARYLAND 21042, (443-367-0122)

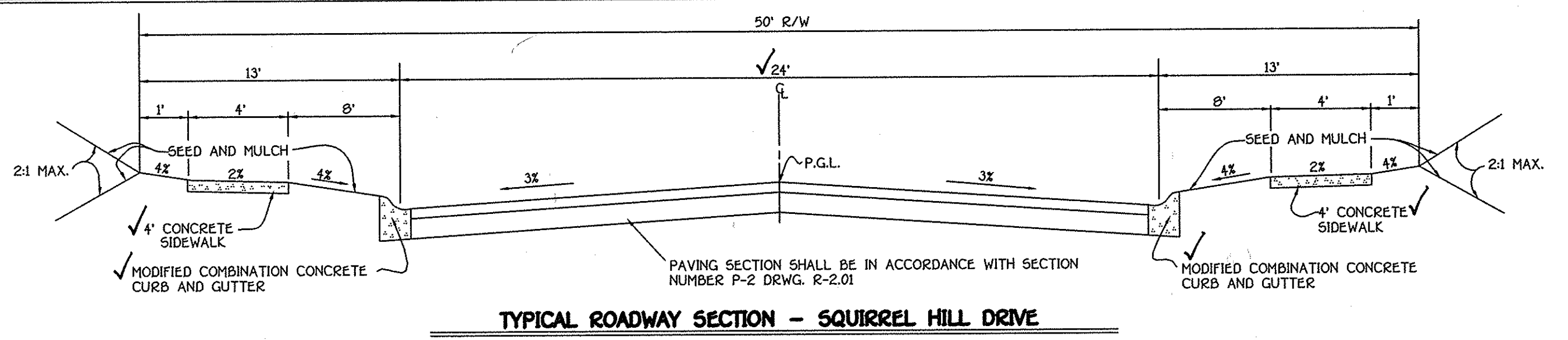
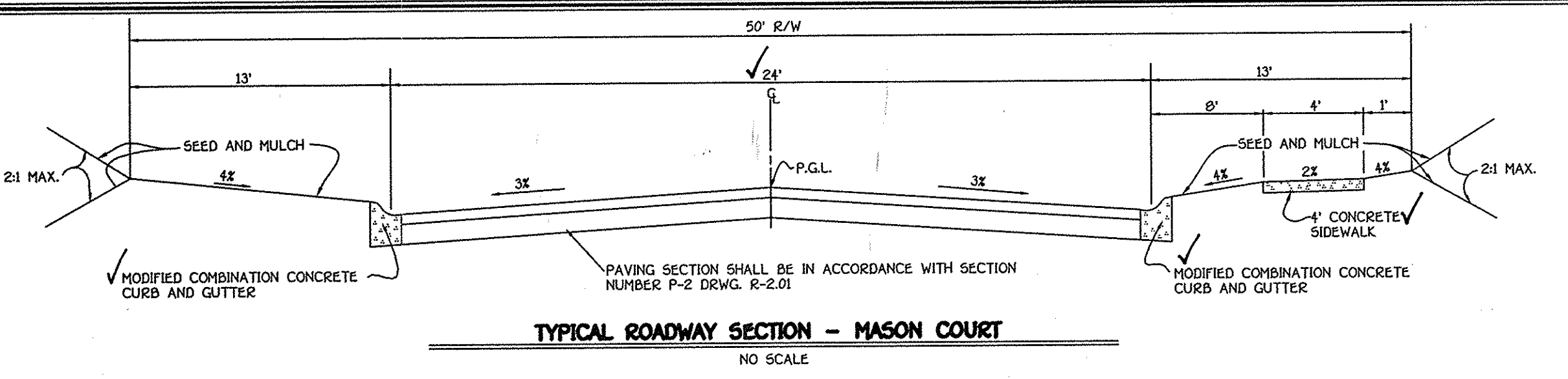
SCALE: As Shown DATE: JAN. 10, 2014 DWG. NO. 6 OF 30
DES. R.A.I. DRN. J.C.L. CHK. A.M.V.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 1022 BALTIMORE NATIONAL FREE
ELLICOTT CITY, MARYLAND 21042
4101 461 - 2055



APPROVED: DEPARTMENT OF PUBLIC WORKS
 2-20-14 DATE
 CHIEF, BUREAU OF HIGHWAYS MS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 3/04/14 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT
 CHIEF, DEVELOPMENT ENGINEERING DIVISION
 2-26-14 DATE

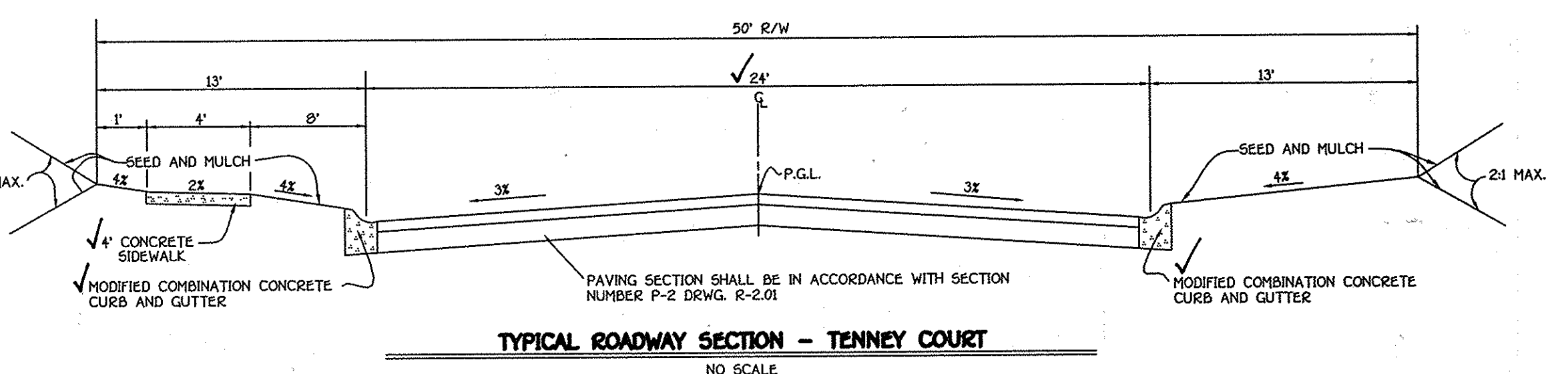
NO.	REVISIONS DESCRIPTION	DATE



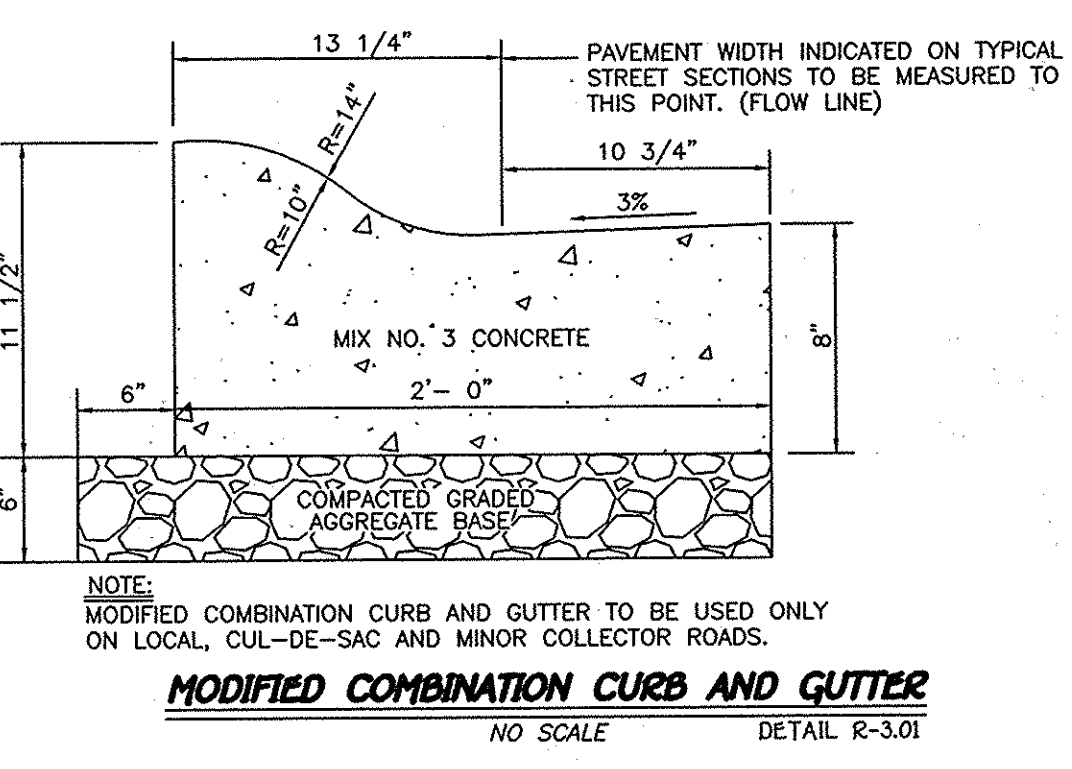
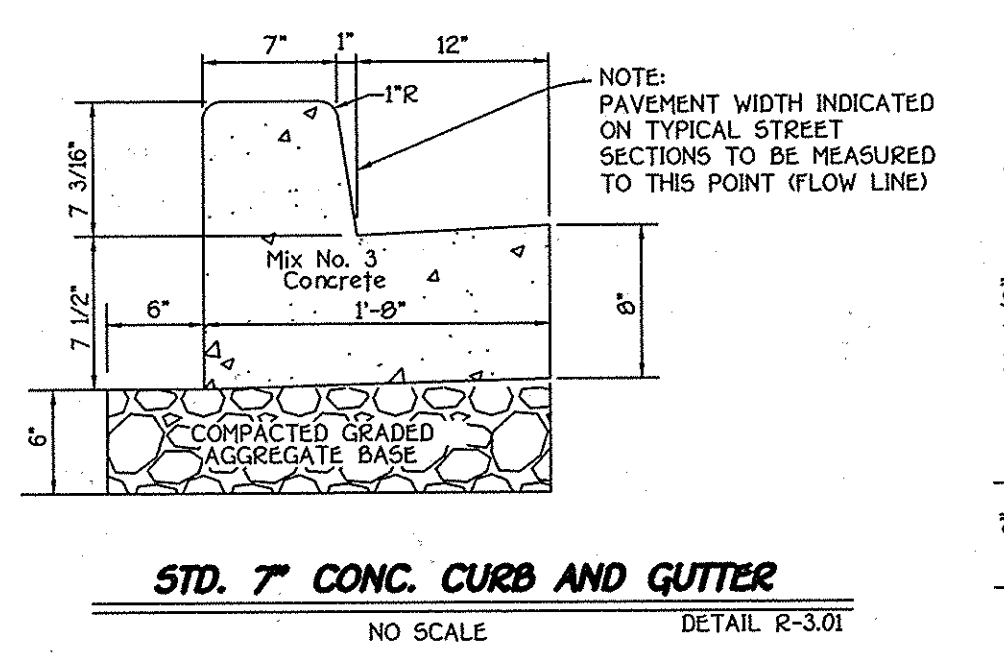
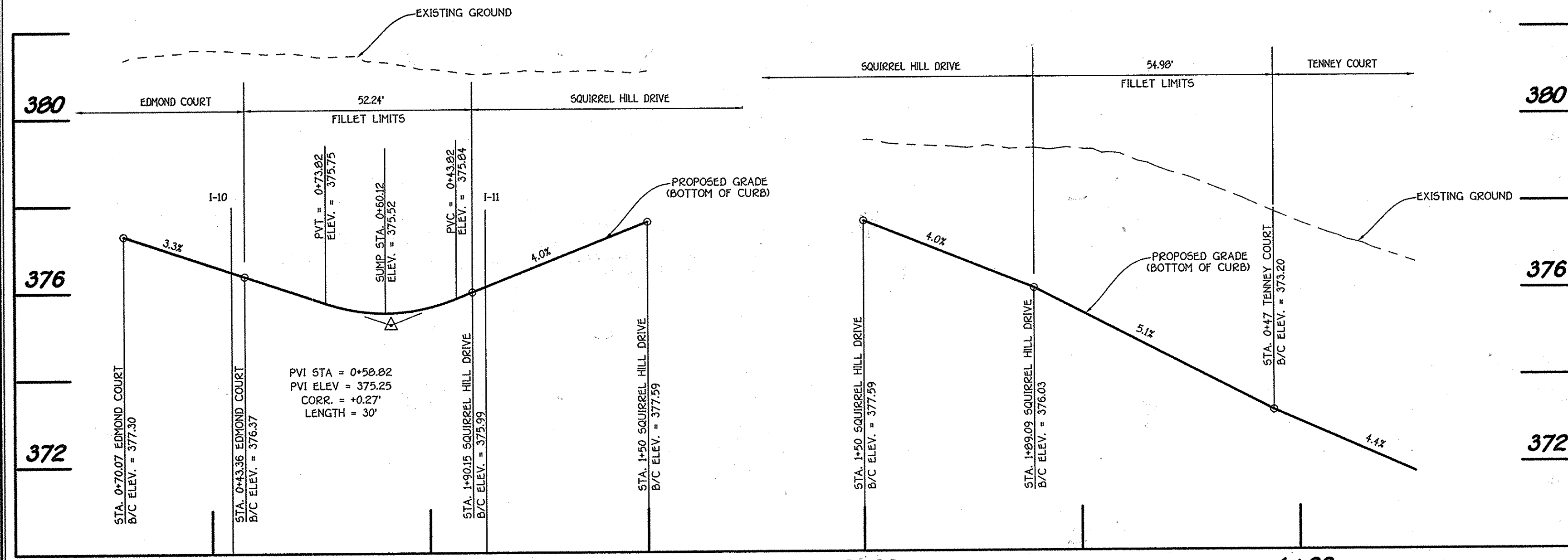
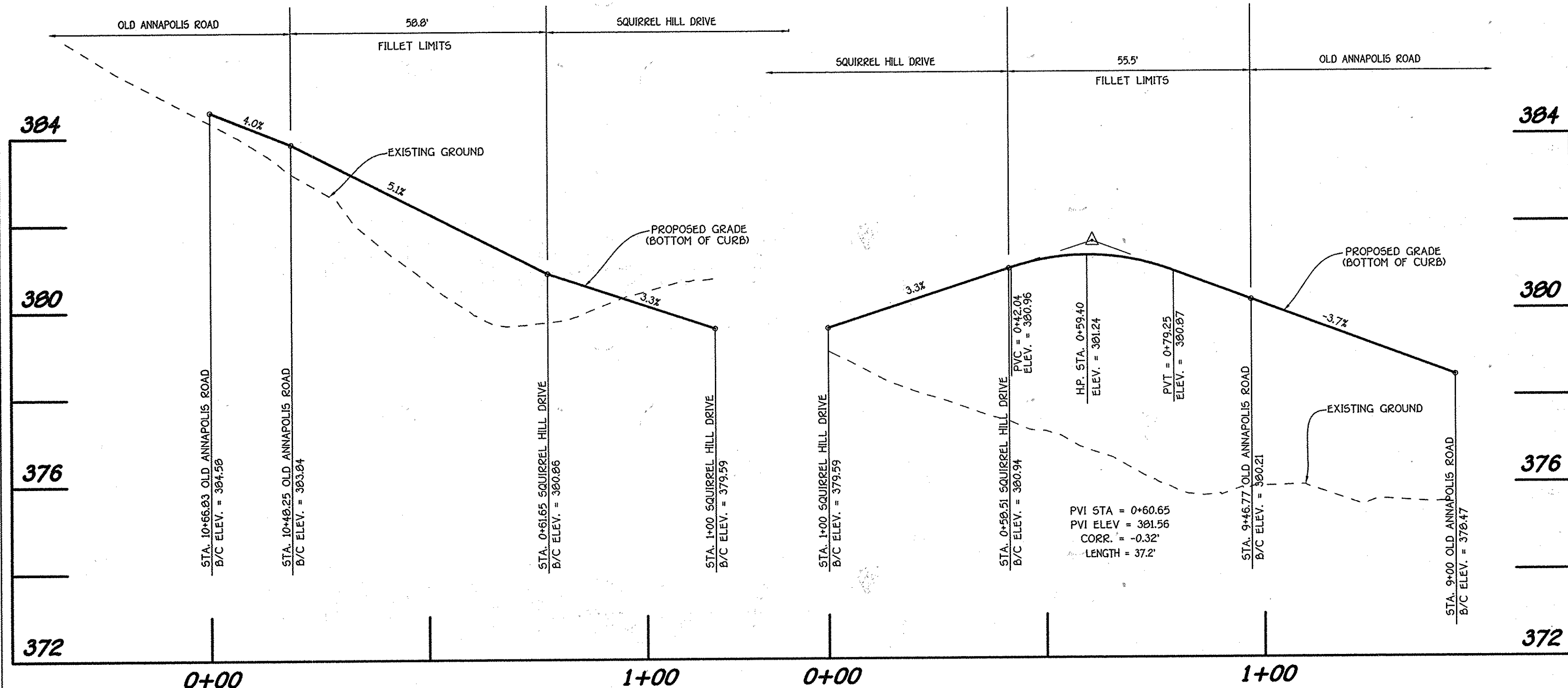
ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS	PAVING SECTION
EDMOND COURT	PUBLIC ACCESS PLACE	25 MPH	R-20	0+00 TO 1+54.81	P-2

ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS	PAVING SECTION
SQUIRREL HILL DRIVE	PUBLIC ACCESS STREET	30 MPH	R-20	0+00 TO 2+36.42	P-2

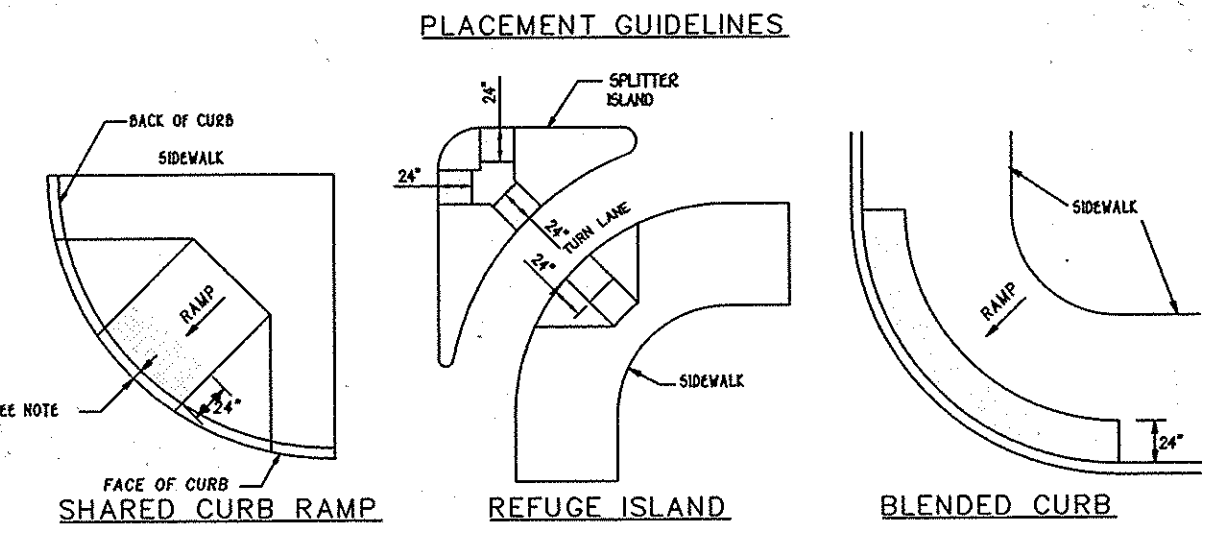
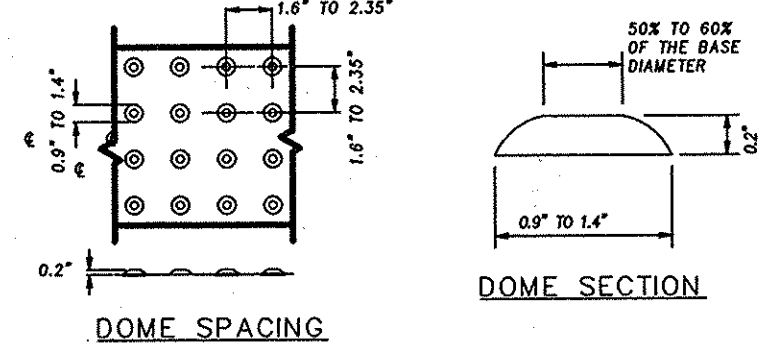
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)					
		3 TO 4	5 TO 7	7	3 TO 4	5 TO 7	7
P-2	PARKING DRIVE AISLES: RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS: ACCESS PLACE, ACCESS STREET CUL-DE-SACS: RESIDENTIAL	PAVEMENT MATERIAL (INCHES)					
		HMA SUPERPAVE FINAL SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)					
		HMA SUPERPAVE INTERMEDIATE SURFACE 9.5 MM PG 64-22, LEVEL 1 (ESAL)					
		HMA SUPERPAVE BASE 19.0 MM PG 64-22, LEVEL 1 (ESAL)					
		GRADED AGGREGATE BASE (GAB)					
		MIN HMA WITH GAB	HMA WITH CONSTANT GAB				



ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	STATION LIMITS	PAVING SECTION
TENNEY COURT	PUBLIC ACCESS PLACE	25 MPH	R-20	0+00 TO 3+39.03	P-2

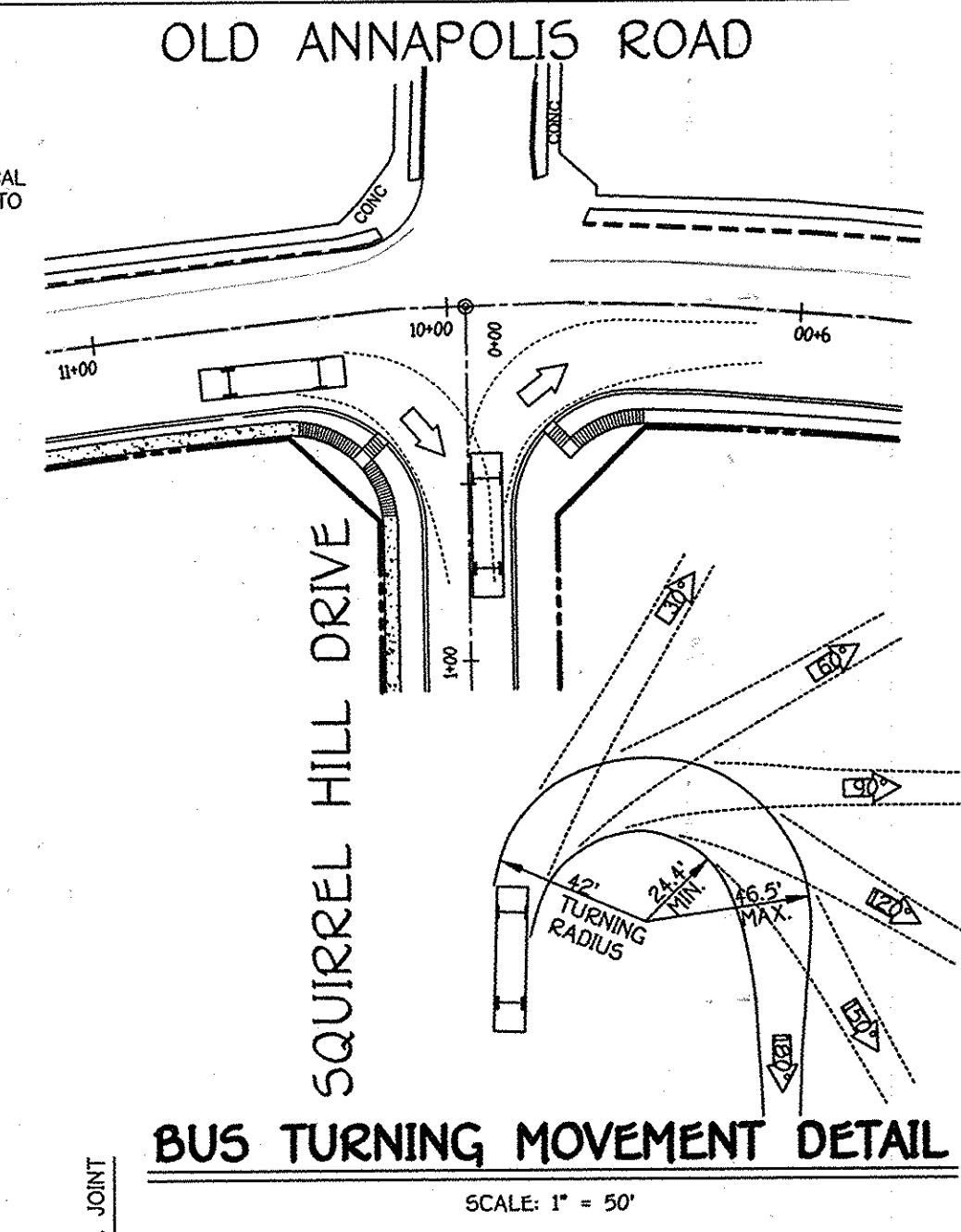


(MATT DETAILS OR OPTIONAL 12"x12" TILE TECH PAVERS(RED))



- 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 CURB.
 2. FOR SLOPED APPLICATIONS DETECTABLE WARNING SHALL BE PLACED SUCH THAT THE DOMES CLOSEST TO THE BACK OF CURB ARE NO LESS THAN 6" AND NO MORE THAN 30" FROM THE BACK OF CURB. TRUNCATED DOME SURFACES SHALL BE FABRICATED TO PROVIDE FULL DOMES ONLY.
 3. DETECTABLE WARNING SURFACE SHALL BE PAID FOR IN ACCORDANCE WITH SECTION 611 OF THE SPECIFICATIONS.
 4. DETECTABLE WARNING SURFACES ARE REQUIRED AT STREET CROSSING & SIGNALIZED INTERSECTIONS.

DETECTABLE WARNING SURFACE GUIDELINES
 STD. DETAIL NO. 655-10

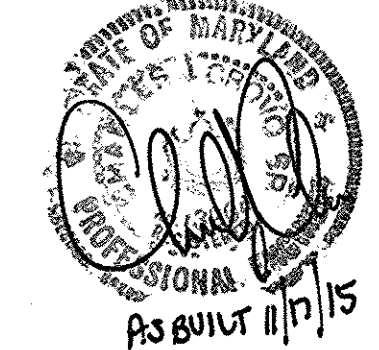
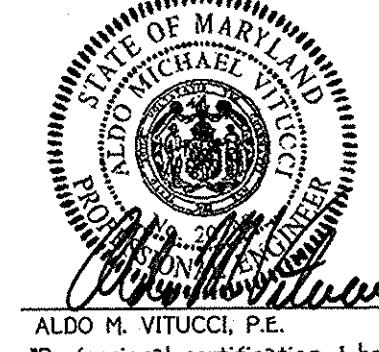


FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 1000 SQUARE OFFICE PARK - 10272 BALDROCK NATIONAL PKWY
 ELLICOTT CITY, MARYLAND 21042
 (410) 441-1000

FILLET PROFILES
 SCALE: HOR: 1" = 20'
 VER: 1" = 2'

OWNER: JOHN TENNEY MASON, JR. FAMILY LLC
 AND FRANCES WELLFORD MASON FAMILY LLC
 c/o MR. JOHN TENNEY MASON, III, GENERAL MEMBER
 7636 GAITHER ROAD, SYKESVILLE, MD 21784
 (443-367-0422)

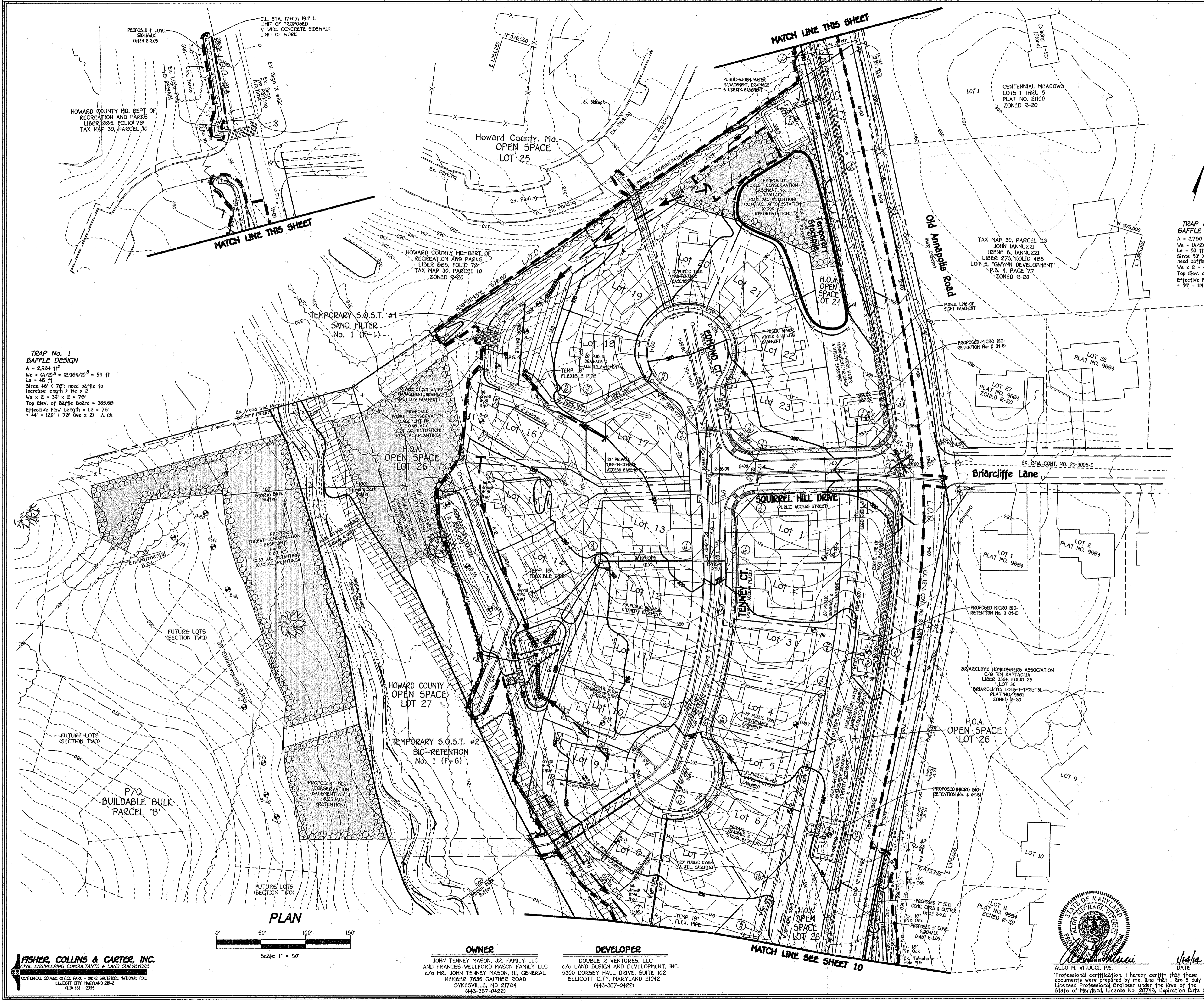
DEVELOPER: DOUBLE R VENTURES, LLC
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, SUITE 102
 ELLICOTT CITY, MARYLAND 21042
 (443-367-0422)



ROADWAY DETAILS
Centennial Lake Overlook
 (Formerly Mason Property)
 Section One
 Buildable Lots 1 Thru 23,
 Open Space Lots 24 Thru 28 &
 Buildable Lots Parcels 'A' and 'B'
 (Being A Subdivision Of Parcel No. 86, Tax Map No. 30,
 Liber 10729 At Folio 359 And Liber 10729 At Folio 359)
 Zoning R-20
 Tax Map No. 30 Grid No. 2 Parcel No. 86
 2nd Election District Howard County, Maryland
 Date: January 10, 2014
 Scale: As Shown
 Sheet 8 Of 30

AS-BUILT F-14-002

I:\2011\11042.dwg (Final section one) 11042 sheet 8 roadway details.dwg, sheet 8, 1/11/2014 11:14:09 AM, 1, 1



ENGINEER'S CERTIFICATE
 I have prepared this Plan For Erosion And Sediment Control...
 Signature: *[Signature]* Date: 1/14/14

DEVELOPER'S CERTIFICATE
 I/We Certify That All Development And Construction Will Be Done...
 Signature: *[Signature]* Date: 1/14/14

Approved: This Development is Approved For Erosion And Sediment Control By...
 Signature: *[Signature]* Date: 1/28/14

Approved: Department Of Planning And Zoning
 Signature: *[Signature]* Date: 3/04/14

Approved: Chief, Division Of Land Development
 Signature: *[Signature]* Date: 2-26-14

Approved: Howard County Department Of Public Works
 Signature: *[Signature]* Date: 2-20-14

NO.	DESCRIPTION	DATE

**TRAP No. 2
 BAFFLE DESIGN**
 A = 3,780 ft²
 We = (A/2)^(1/2) = (3,780/2)^(1/2) = 43 ft
 Le = 53 ft
 Since 53' > 43' but is less than We x 2
 need baffle to increase length > We x 2
 We x 2 = 43' x 2 = 86'
 Top Elev. of Baffle Board = 348.20
 Effective Flow Length = Le = 59'
 * 56' x 11' x 86' (We x 2) . . . ok

**TRAP No. 1
 BAFFLE DESIGN**
 A = 2,984 ft²
 We = (A/2)^(1/2) = (2,984/2)^(1/2) = 39 ft
 Le = 46 ft
 Since 46' < 39' need baffle to
 increase length > We x 2
 We x 2 = 39' x 2 = 78'
 Top Elev. of Baffle Board = 365.60
 Effective Flow Length = Le = 76'
 * 44' x 120' x 78' (We x 2) . . . ok

LEGEND

SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	WETLANDS BUFFER
---	WETLANDS LIMITS
---	FLOODPLAIN LIMITS (F.C.C. STUDY)
---	FLOODPLAIN LIMITS (FEMA 2013)
---	FOREST CONSERVATION EASEMENT
---	BIO-RETENTION FACILITY
---	FUTURE DRYWELL
---	PROPOSED 4' SIDEWALK
---	SIGHT DISTANCE EASEMENT
---	PROPOSED MACADAM PATHWAY

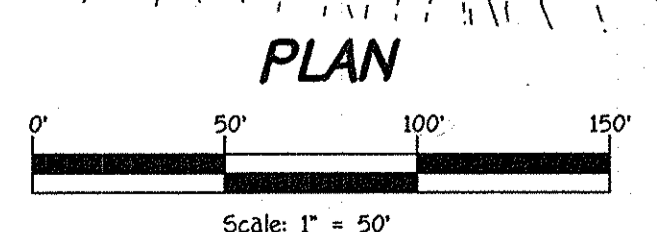
SEDIMENT CONTROL LEGEND

---	DIVERSION FENCE
---	SUPER-SILT FENCE
---	SILT FENCE
---	SILT FENCE AND TREE PROTECTION FENCE
---	STABILIZED CONSTRUCTION ENTRANCE
---	EARTH DIKE
---	LIMIT OF DISTURBANCE
---	RIP-RAP INFLOW PROTECTION
---	STANDARD INLET PROTECTION
---	STANDARD INLET PROTECTION w/SUPER SILT FENCE
---	CURB INLET PROTECTION
---	REMOVABLE PUMPING STATION
---	FILTER BAG

NOTE: SEE SHEETS 11-12 FOR SEDIMENT CONTROL DETAILS.

STONE/RIPRAP OUTLET SEDIMENT TRAP 51-II

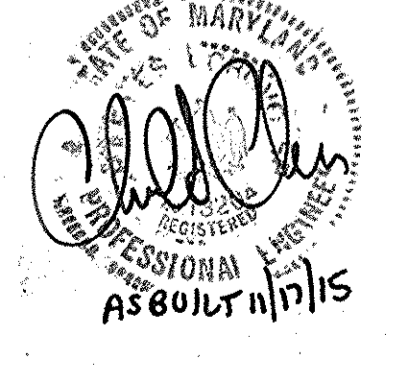
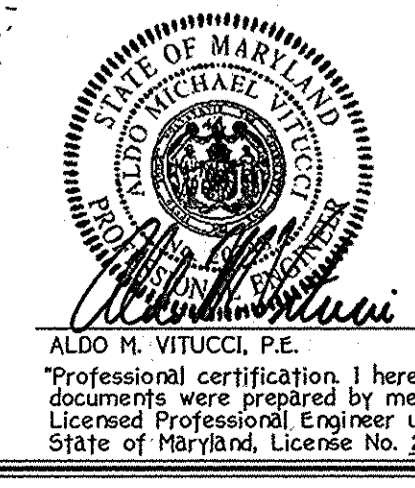
TRAP No.	ACRES	TRAP No. 1	TRAP No. 2
DRAINAGE AREA - INITIAL	1.53	1.53	1.53
DRAINAGE AREA - INTERIM	---	---	---
DRAINAGE AREA - FINAL	2.56	2.10	2.10
TOTAL STORAGE REQUIRED	CF	9,576	7,560
TOTAL STORAGE PROVIDED	CF	12,200	7,817
WET STORAGE REQUIRED	CF	4,780	3,780
WET STORAGE PROVIDED	CF	4,780	3,780
DRY STORAGE REQUIRED	CF	9,576	7,560
DRY STORAGE PROVIDED	CF	365.78	7,817
EXISTING GROUND ELEVATION AT OUTLET	FT	367.00	347.20
WET STORAGE ELEVATION	FT	362.00	342.00
TRAP BOTTOM DIMENSIONS	FT x FT	35' x 105'	25' x 70'
WEIR LENGTH	FT	12	10
WEIR CREST DRY STORAGE ELEVATION	FT	365.79	348.40
CLEANOUT ELEVATION	FT	363.60	345.03
TOP OF EMBANKMENT ELEVATION	FT	367.00	350.00
SIDE SLOPE	HV RATIO	3:1	3:1
EMBANKMENT TOP WIDTH	FT	6	4
OUTLET PROTECTION - LENGTH	FT	15	10
OUTLET PROTECTION - DEPTH	IN	19	19



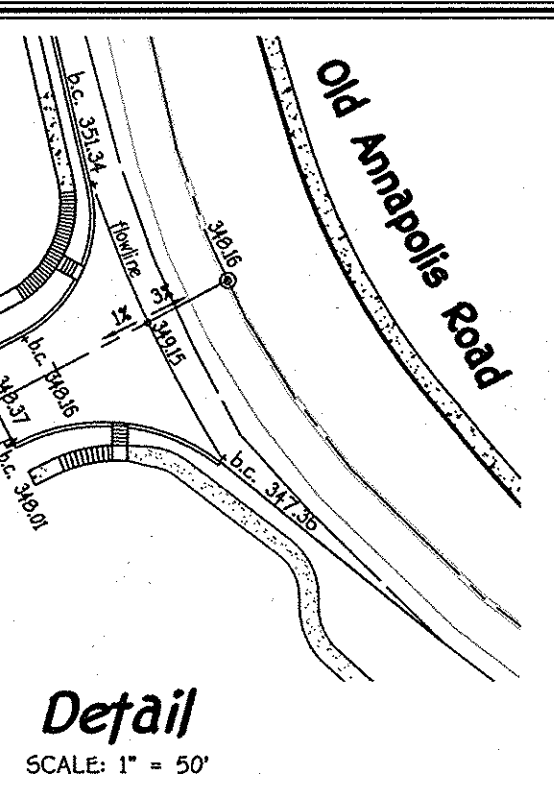
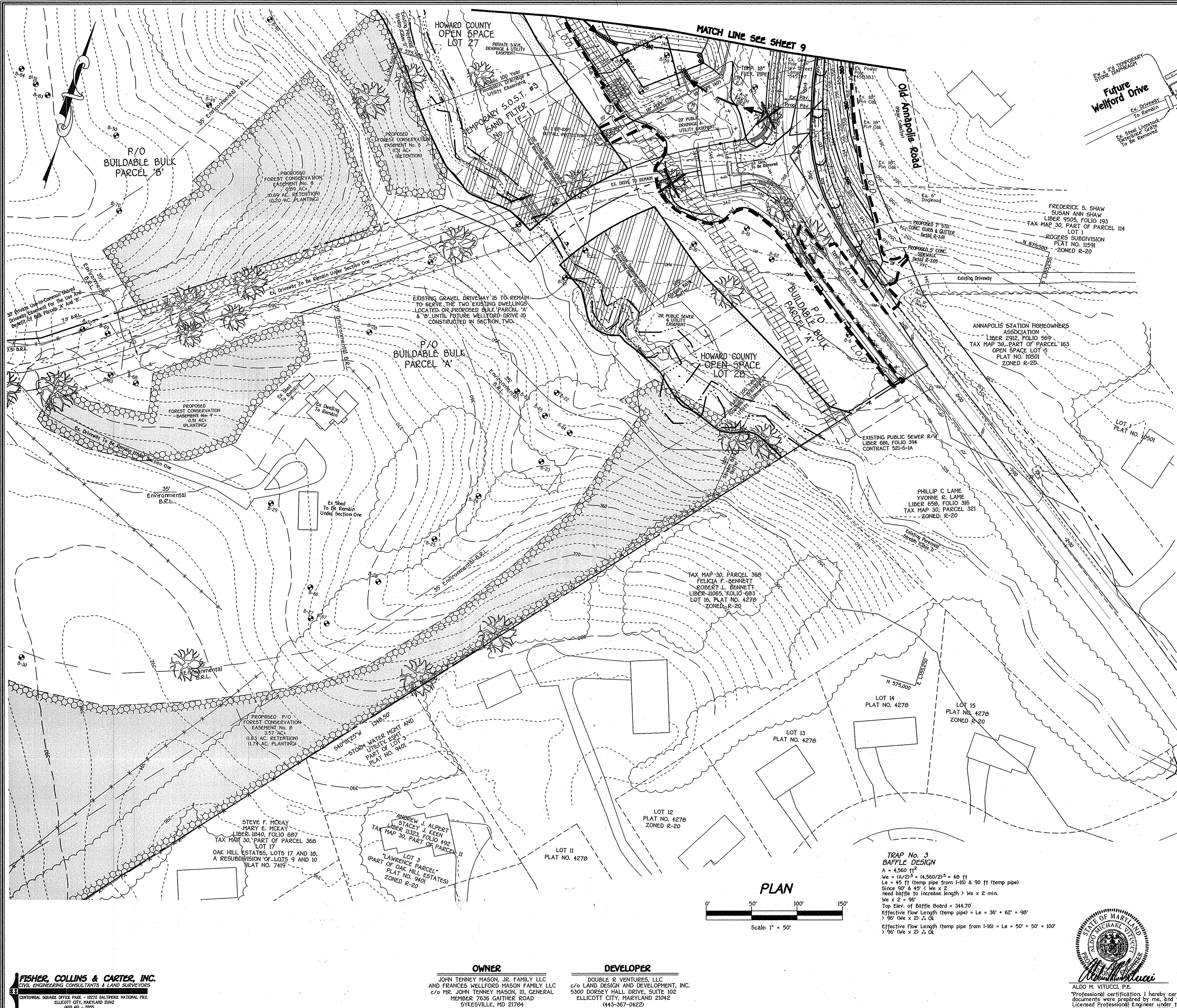
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10723 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 410-461-2055

OWNER
 JOHN TENNEY MASON, JR. FAMILY, LLC
 AND FRANCES WELFORD MASON FAMILY LLC
 c/o MR. JOHN TENNEY MASON, III, GENERAL
 MEMBER 7636 GAITHER ROAD
 SYKEVILLE, MD 21784
 (443-367-0422)

DEVELOPER
 DOUBLE R VENTURES, LLC
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, SUITE 102
 ELLICOTT CITY, MARYLAND 21042
 (443-367-0422)



GRADING & SEDIMENT CONTROL PLAN
Centennial Lake Overlook
 (Formerly Mason Property)
Section One
 Buildable Lots 1 Thru 23,
 Open Space Lots 24 Thru 28 &
 Buildable Bulk Parcel 'A' and 'B'
 Being A Subdivision Of Tax Parcel No. 86, Tax Map No. 30,
 Liber 10729 At Folio 329 And Liber 10729 At Folio 335
 Zoning: R-20
 Tax Map No. 30 Grid No. 2 Parcel No. 86
 2nd Elevation District: Howard County, Maryland
 Date: January 10, 2014
 Scale: As Shown
 Sheet 9 of 30



ENGINEER'S CERTIFICATE
 I certify that this Plan For Erosion And Sediment Control Represents A Practically Achievable Plan Based On My Personal Knowledge Of The Site Conditions And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.
 Signature: *[Signature]* Date: 1/14/14

DEVELOPER'S CERTIFICATE
 I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary.
 Signature Of Developer: *[Signature]* Date: 1/14/14

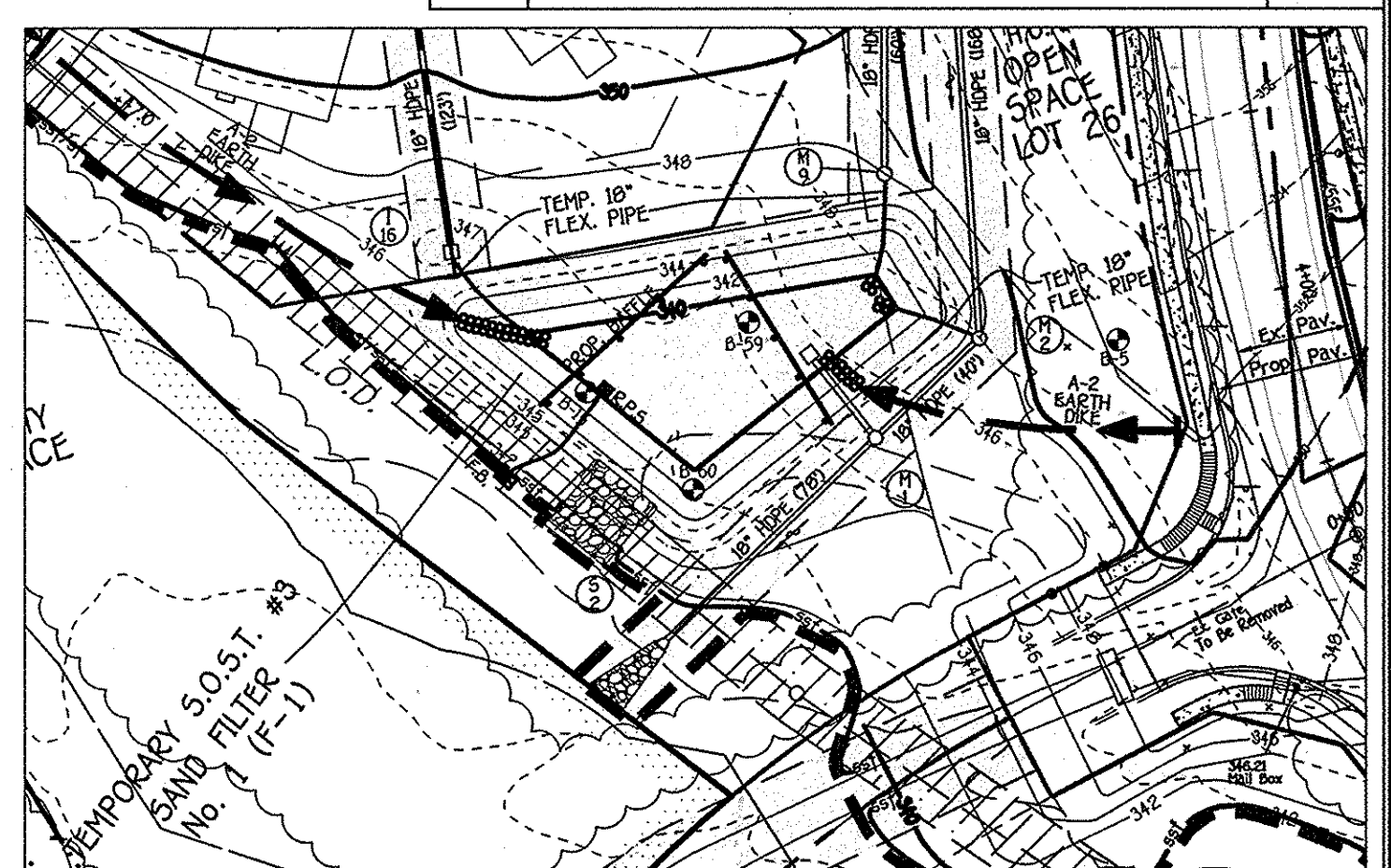
Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.
 Signature: *[Signature]* Date: 1/28/14
 District Howard Soil Conservation Dist.

Approved: Department Of Planning And Zoning
 Signature: *[Signature]* Date: 3/04/14
 Chief, Division Of Land Development

Signature: *[Signature]* Date: 2-26-14
 Chief, Development Engineering Division

Signature: *[Signature]* Date: 2-20-14
 Chief, Bureau Of Highways

REVISIONS		
NO.	DESCRIPTION	DATE



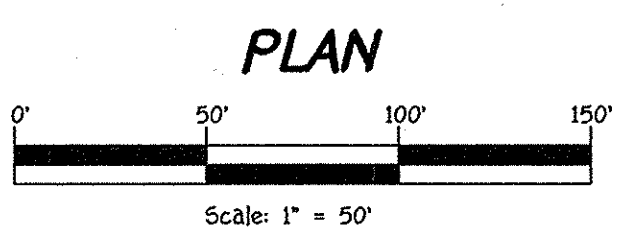
TRAP No. 3 PLAN
 SCALE: 1" = 50'

STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II

TRAP No.	ACRES	TRAP No. 3
DRAINAGE AREA - INITIAL	4.29	4.29
DRAINAGE AREA - INTERIM	---	---
DRAINAGE AREA - FINAL	3.39	3.39
TOTAL STORAGE REQUIRED	CF 15,444	CF 15,444
TOTAL STORAGE PROVIDED	CF 20,554	CF 20,554
WET STORAGE REQUIRED	CF 7,722	CF 7,722
WET STORAGE PROVIDED	CF 7,722	CF 7,722
DRY STORAGE REQUIRED	CF 15,444	CF 15,444
DRY STORAGE PROVIDED	CF 15,444	CF 15,444
EXISTING GROUND ELEVATION AT OUTLET (WET STORAGE ELEVATION)	FT 345.00	FT 345.00
TRAP BOTTOM ELEVATION	FT 340.00	FT 340.00
TRAP BOTTOM DIMENSIONS	FT x FT 83' x 46'	FT x FT 83' x 46'
WEIR LENGTH	FT 20	FT 20
WEIR CREST (DRY STORAGE) ELEVATION	FT 344.70	FT 344.70
CLEANOUT ELEVATION	FT 341.00	FT 341.00
TOP OF EMBANKMENT ELEVATION	FT 345.00	FT 345.00
SIDE SLOPE	HV RATIO 3:1	HV RATIO 3:1
EMBANKMENT TOP WIDTH	FT 6	FT 6
OUTLET PROTECTION - LENGTH	FT 22	FT 22
OUTLET PROTECTION - DEPTH	IN 19	IN 19

GRADING & SEDIMENT CONTROL PLAN
Centennial Lake Overlook
 (Formerly Mason Property)
Section One
 Buildable Lots 1 Thru 23,
 Open Space Lots 24 Thru 28 &
 Buildable Bulk Parcels 1A And 1B
 (Being A Subdivision Of Tax Parcel No. 85, Tax Map No. 30,
 Liber 10729 At Page 329 And Liber 10729 At Folio 335)
 Zoning: R-20
 Tax Map No. 30 Grid No. 2 Parcel No. 85
 2nd Election District Howard County, Maryland
 Scale: As Shown Date: January 10, 2014
 Sheet 10 Of 30

ALDO H. VITVICKI, P.E.
 STATE OF MARYLAND
 PROFESSIONAL ENGINEER
 License No. 22749, Expiration Date 2-22-15.
 Signature: *[Signature]* Date: 1/14/14



TRAP No. 3
BAFFLE DESIGN
 A = 4,560 ft²
 $W = \sqrt{A/25} = \sqrt{4,560/25} = 43 \text{ ft}$
 $L = 45 \text{ ft (temp pipe from 1-18) + 90 ft (temp pipe)}$
 Since $90' < 45' < W \times 2$
 need baffle to increase length $> W \times 2 \text{ min.}$
 $W \times 2 = 90'$
 Top Elev. of Baffle Board = 344.70'
 Effective Flow Length (temp pipe) = $L = 36' + 62' = 98'$
 $> 90' (W \times 2) \therefore O.K.$
 Effective Flow Length (temp pipe from 1-18) = $L = 50' + 50' + 100'$
 $> 90' (W \times 2) \therefore O.K.$

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 (410) 461 - 2895

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 ELLICOTT CITY, MARYLAND 21042
 (443-367-0422)

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

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

- A. Soil Preparation**
- Temporary Stabilization**
 - Seeded preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or ripers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slips or blatters are to be tracked with ridges running parallel to the center of the slope.
 - Apply fertilizer and lime as prescribed on the plans.
 - Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
 - Permanent Stabilization**
 - A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
 - Soil pH between 6.0 and 7.0.
 - Soluble salts less than 500 parts per million (ppm).
 - Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception if lowgrass will be planted then a sandy soil less than 30 percent silt plus clay would be acceptable.
 - Soil contains 15 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
 - Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.
 - Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.

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

- C. Soil Amendments (Fertilizer and Lime Specifications)**
- Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
 - Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Name may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
 - Lime materials must be ground limestone hydrated or burnt lime may be substituted except when hydroxydizing which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent will pass through a #20 mesh sieve and 90 to 100 percent will pass through a #40 mesh sieve.
 - Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
 - Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

- TEMPORARY SEEDING NOTES (B-4-4)**
- 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**
- Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
 - For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
 - When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch above as prescribed in Section B-3.1A.1B and maintain until the next seeding season.

Temporary Seeding Summary					
Hardness Zone (from Figure B.3):	_____ B.3		Fertilizer Rate (10-20-20)		Lime Rate
Seed Mixture (from Table B.1):	_____ B.1		_____ B.1		_____ B.1
No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depths	
BARLEY	96	3/1 - 5/15 8/15 - 10/15	1"	436 lb/acre (10 lb/1000 sq ft)	2 tons/acre (90 lb/1000 sq ft)
OATS	72	3/1 - 5/15 8/15 - 10/15	1"		
RYE	112	3/1 - 5/15 8/15 - 10/15	1"		

PERMANENT SEEDING NOTES (B-4-5)

- A. Seed Mixtures**
- General Use**
 - Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
 - Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
 - For sites having disturbed areas over 5 acres, use and show the rates recommended by the soil testing agency. 4 for Areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 1 1/2 pounds per 1000 square feet (100 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
 - Turfgrass Mixtures**
 - Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
 - Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixtures, application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.

Permanent Seeding Summary					
Hardness Zone (from Figure B.3):	_____ B.3		Fertilizer Rate (10-20-20)		Lime Rate
Seed Mixture (from Table B.3):	_____ B.3		_____ B.3		_____ B.3
No.	Species	Application Rate (lb/acre)	Seeding Dates	Seeding Depths	
B	TALL FESCUE	100	Mar. 1-May 15 Aug. 1-Oct. 15	1/4-1/2 in.	45 lbs. per acre (10 lb/1000 sq ft)

- STANDARD STABILIZATION NOTE**
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:
- THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER DIKES, SWALES, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND
 - SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.

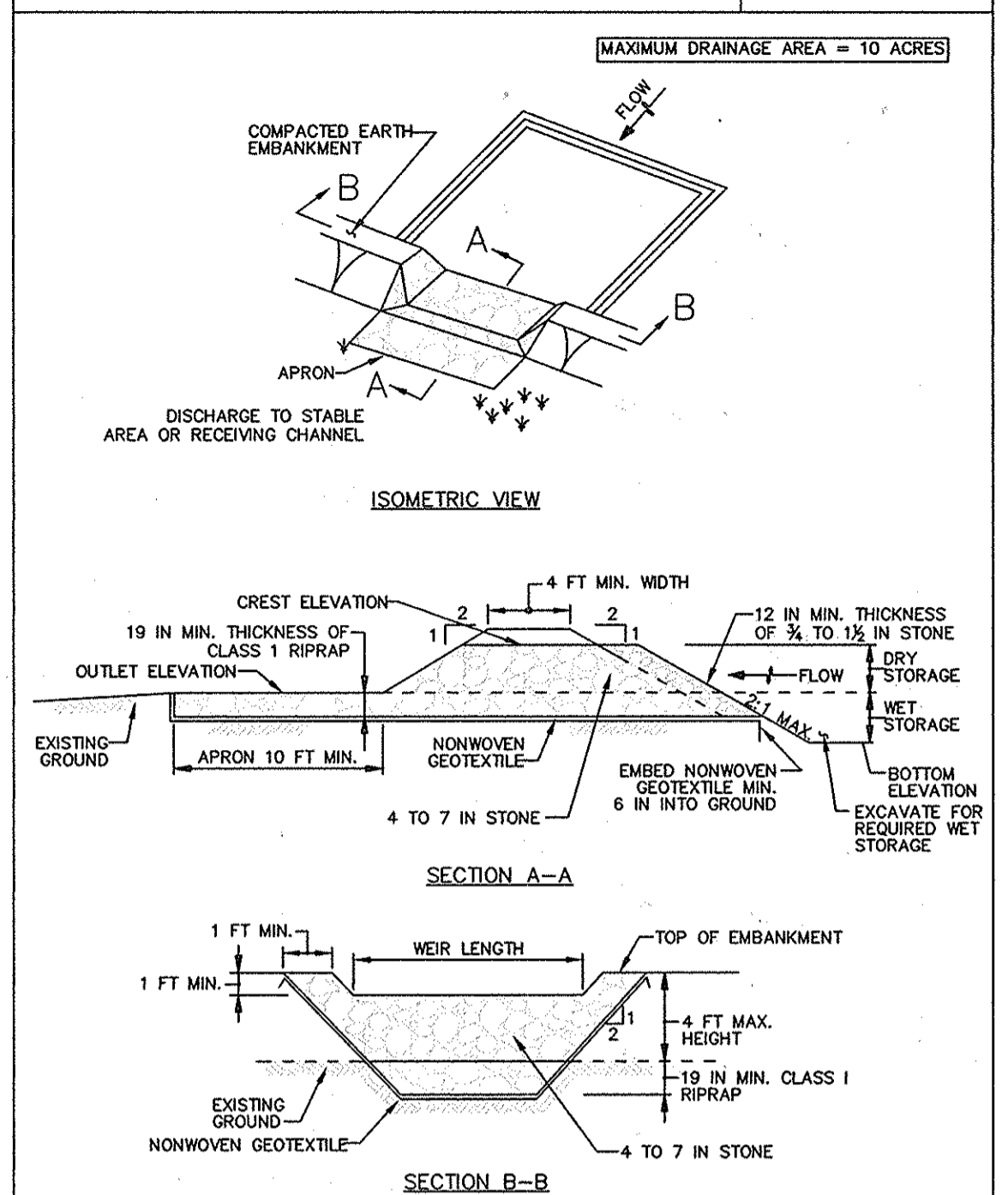
OWNER

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5300 DORSEY HALL DRIVE, SUITE 102
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DETAIL G-1-2 STONE/RIPRAP OUTLET SEDIMENT TRAP ST-II



- CONSTRUCTION SPECIFICATIONS**
- CONSTRUCT TRAP IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE AVOIDED.
 - CLEAR, GRUB, AND STRIP ANY VEGETATION AND ROOT MAT FROM THE AREA UNDER THE EMBANKMENT AND TRAP BOTTOM.
 - USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION, OVERSIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL FOR THE EMBANKMENT.
 - CONSTRUCT TOP OF EMBANKMENT 1 FOOT MINIMUM ABOVE WEIR CREST. COMPACT THE EMBANKMENT BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
 - MAKE ALL CUT AND FILL SLOPES 2:1 OR FLATTER.
 - PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, OVER THE BOTTOM AND SIDES OF OUTLET AND APRON PRIOR TO PLACEMENT OF RIPRAP. OVERLAP SECTIONS OF GEOTEXTILE AT LEAST 1 FOOT WITH THE SECTION NEARER TO THE TRAP PLACED ON TOP. EMBED GEOTEXTILE AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OF OUTLET CHANNEL.
 - USE CLEAN 4 TO 7 INCH RIPRAP TO CONSTRUCT THE WEIR. USE CLASS I RIPRAP FOR THE APRON. USE OF RECYCLED CONCRETE EQUIVALENT IS ACCEPTABLE.
 - PLACE 1 FOOT OF CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE ON THE UPSTREAM FACE OF THE WEIR.
 - CONSTRUCT AND MAINTAIN THE OUTLET ACCORDING TO APPROVED PLAN, AND IN SUCH A MANNER THAT EROSION AT OR BELOW THE OUTLET DOES NOT OCCUR.
 - STABILIZE THE EMBANKMENT AND INTERIOR SLOPES WITH SEED AND MULCH. STABILIZE POINTS OF CONCENTRATED INFLOW AS SHOWN ON APPROVED PLAN.
 - REMOVE SEDIMENT AND RESTORE TRAP TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO CLEANOUT ELEVATION (50% OF WET STORAGE DEPTH). DEPOSIT REMOVED SEDIMENT IN AN APPROVED AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE. KEEP POINTS OF INFLOW AND OUTFLOW AS WELL AS INTERIOR OF THE TRAP FREE FROM EROSION, AND REMOVE ACCUMULATED DEBRIS. MAINTAIN EMBANKMENTS TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. REMOVE ANY TREES, BRUSH, OR OTHER WOODY VEGETATION GROWING ON EMBANKMENT OR NEAR PRINCIPAL SPILLWAY. MAINTAIN LIME, GRADE, AND CROSS SECTION.
 - WHEN DEWATERING TRAP, PASS REMOVED WATER THROUGH AN APPROVED SEDIMENT CONTROL PRACTICE.
 - UPON REMOVAL, GRADE AND STABILIZE THE AREA OCCUPIED BY TRAP.

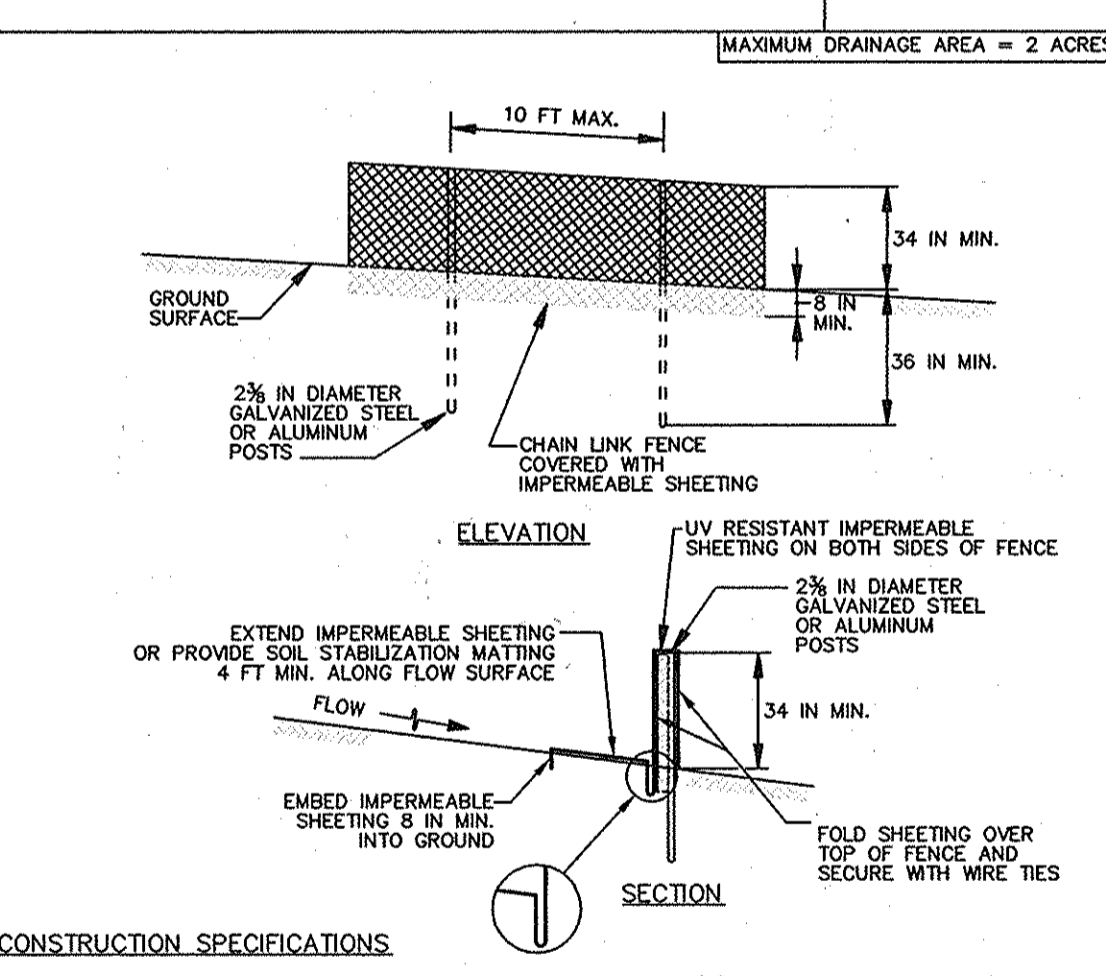
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

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

SEQUENCE OF CONSTRUCTION

- OBTAIN GRADING PERMITS. (2 WEEKS)
 - NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION DIVISION AT 410-313-1970 AT LEAST 24 HOURS BEFORE STARTING ANY WORK. IN ADDITION, NOTIFY AT/PRIOR TO ANY ACTIVITY WITHIN THEIR EASEMENT.
 - INSTALL STABILIZED CONSTRUCTION ENTRANCE. (1 DAY)
 - INSTALL SUPER-SILT FENCE AND TREE PROTECTION WHERE SHOWN ON THE PLANS. CLEAR AND GRUB WHERE NECESSARY FOR ROADWAY CONSTRUCTION AND LOT CONSTRUCTION. (4 WEEKS)
 - INSTALL SEDIMENT CONTROL STONE OUTLET TRAPS #1 THRU #3. (2 WEEKS)
 - INSTALL EARTH DIKES TO SEDIMENT TRAPS FROM STEP 5 ALONG WITH THE PROPOSED BARRIERS AS SHOWN ON THE PLANS. OBTAIN PERMISSION FROM INSPECTOR AFTER CONSTRUCTING THESE TRAPS AND EARTH DIKES. (2 WEEKS)
 - AFTER PERMISSION IS GRANTED BY THE SEDIMENT CONTROL INSPECTOR, GRADE SITE TO SUBGRADE AND STABILIZE USING TEMPORARY SEEDING NOTES. (1 WEEK)
 - INSTALL STORM DRAIN SYSTEM AS SHOWN ON THE PLANS. BLOCK OFF M-2 AT THE OUTFALL AND INSTALL 18" FLEXIBLE PIPE TO OUTFALL INTO THE PROPOSED STONE OUTLET SEDIMENT TRAP #3. BLOCK OFF I-13 & M-6 AND INSTALL 18" FLEXIBLE PIPE INTO THE PROPOSED STONE OUTLET SEDIMENT TRAPS #1 & #2. (3 WEEKS)
 - INSTALL ROADWAY BASE COURSE PAVING. (2 WEEKS)
 - STABILIZE ALL DISTURBED AREAS. (1 DAY)
 - APPLY TACK COAT TO BASE COURSE PAVING AND LAY SURFACE COURSE. (2 WEEKS)
 - WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE DEVICES MAY BE REMOVED AND/OR BACKFILLED AND THE REPAIRING AREAS BROUGHT TO FINAL GRADE. THIS INCLUDES THE INSTALLATION OF THE 4 MICRO BIO-RETENTION (M-6) FACILITIES TO TREAT THE ROADWAY RUNOFF. IN ADDITION, INSTALL THE PROPOSED BIO-RETENTION #1 (F-6) FACILITY ON OPEN SPACE LOT 26, THE INFILTRATION BERM (M-4) AND SURFACE SAND FILTERS (F-1) #1 & #2. (3 WEEKS)
 - UPON COMPLETION OF ROADWAY CONSTRUCTION, STABILIZE AREAS AND REMOVE TEMPORARY DEVICES INCLUDING THE THREE (3) BULKHEADS LOCATED WITHIN M-2, I-13 & M-6. (1 DAY)
 - NOTIFY HOWARD COUNTY OFFICE OF INSPECTIONS AND PERMITS FOR A FINAL INSPECTION OF THE COMPLETED PROJECT.
 - AFTER CONSTRUCTION OF THE FINAL STORMWATER FACILITY HAS BEEN COMPLETED, THE DEVELOPER MUST HAVE AN AS-BUILT PLAN PREPARED AND SUBMITTED TO HOWARD COUNTY BY THE PROJECT ENGINEER.
- NOTE: CONTRACTOR SHALL CLEAN AND RESTORE THE RECEIVING PONDS OF ANY AND ALL SEDIMENT, TO THEIR ORIGINALLY DESIGNED GRADE.
- NOTE: THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER EACH RAINFALL AND ON A DAILY BASIS, REMOVE SEDIMENT FROM S.O.S.T. No. 1 THRU 3 WHEN CLEANOUT ELEVATIONS ARE REACHED. ALL SEDIMENT MUST BE PLACED UPSTREAM OF AN APPROVED BASIN DEVICE.
- NOTE: NO REVISION TO THE SEQUENCE OF CONSTRUCTION WILL BE ALLOWED WITHOUT PRIOR APPROVAL FROM THE HOWARD SCD.

DETAIL C-9 DIVERSION FENCE



- CONSTRUCTION SPECIFICATIONS**
- USE 42 INCH HIGH, 9 GAUGE OR THICKER CHAIN LINK FENCING (2 1/2 INCH MAXIMUM OPENING).
 - USE 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. THE POSTS DO NOT NEED TO BE SET IN CONCRETE.
 - FASTEN CHAIN LINK FENCE SECURELY TO THE FENCE POSTS WITH WIRE TIES.
 - SECURE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT TOP, MID SECTION, AND BELOW GROUND SURFACE.
 - EXTEND SHEETING A MINIMUM OF 4 FEET ALONG FLOW SURFACE AND EMBED END A MINIMUM OF 8 INCHES INTO GROUND. SOIL STABILIZATION MATTING MAY BE USED IN LIEU OF IMPERMEABLE SHEETING ALONG FLOW SURFACE.
 - WHEN TWO SECTIONS OF SHEETING ADJOIN EACH OTHER, OVERLAP BY 6 INCHES AND FOLD WITH SEAM FACING DOWNGRADE.
 - KEEP FLOW SURFACE ALONG DIVERSION FENCE AND POINT OF DISCHARGE FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND MAINTAIN POSITIVE DRAINAGE. REPLACE IMPERMEABLE SHEETING IF TORN. IF UNDERMINING OCCURS, REINSTALL FENCE.
- MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
- U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION

ENGINEER'S CERTIFICATE

I hereby certify that this Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Howard Soil Conservation District.

Signature: *[Signature]* Date: 1/14/14

DEVELOPER'S CERTIFICATE

I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Of Their Authorized Agents, As Are Deemed Necessary.

Signature of Developer: *[Signature]* Date: 1/18/14

Approved This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

Signature: *[Signature]* Date: 1/28/14

Approved Department Of Planning And Zoning

Signature: *[Signature]* Date: 3/04/14

Signature: *[Signature]* Date: 2-26-14

Signature: *[Signature]* Date: 2-20-14

Signature: *[Signature]* Date: 2-20-14

REVISIONS

NO.	DESCRIPTION	DATE

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- 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 (410-313-1970).
- 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.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN 3 CALENDAR DAYS FOR ALL PERMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERMETER SLOPES AND ALL SLOPES GREATER THAN 3:1 BY 7 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 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.
- 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.
- SITE ANALYSIS:
TOTAL AREA OF SITE: 46,489 ACRES
AREA TO BE ROOFED OR PAVED: 10,033 ACRES
AREA TO BE VEGETATIVELY STABILIZED: 6,835 ACRES
TOTAL CUT: 20,000 CUBIC YARDS (unadjusted)
TOTAL FILL: 15,000 CUBIC YARDS (unadjusted)
OFFSITE WASTE/BORROW AREA LOCATION: N/A
- ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL PRACTICES MUST BE PROVIDED IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERMETER 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.
- 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, WHEREVER IS SHORTEST.
- ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
- A PROJECT IS TO BE SCHEDULED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT MAXIMUM AVERAGE OF 20 ACRES 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 PROCEEDING 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.

SEDIMENT AND EROSION CONTROL NOTES & DETAILS

Centennial Lake Overlook

(Formerly Mason Property)

Section One

Buildable Lots 1 Thru 23,
Open Space Lots 24 Thru 29 &
Buildable Bulk Parcels 'A' And 'B'

(Being A Subdivision Of Tax Parcel No. 06, Tax Map No. 30, L/br 10729 A1 Folio 325 And L/br 10729 A1 Folio 335)
Zoning: R-20

Tax Map No. 30 Grid No. 2 Parcel No. 06
2nd Election District Howard County, Maryland
Scale: As Shown Date: January 10, 2014
Sheet 11 Of 30



Signature: *[Signature]* Date: 1/14/14

Aldo M. Vitucci, P.E.
Professional certification I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15.

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (M-6) (FACILITY Nos. 1 THRU 4)

- The owner shall maintain the plant material, mulch layer and soil layer annually. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following 2000 Maryland stormwater design manual volume 1, table A.4.1 and 2.
- The owner shall perform a plant in the spring and in the fall each year. During the inspection, the owner shall remove dead and diseased vegetation considered beyond treatment. Replace dead plant material with acceptable replacement plant material. Treat diseased trees and shrubs and replace all deficient shrubs and vines.
- The owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.
- The owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.

Infiltration and Filter System Construction Specifications

Infiltration and filter systems either take advantage of existing permeable soils or create a permeable medium such as sand for infiltration. In some instances where permeability is great, these facilities may be used for flow to well. The most common systems include infiltration trenches, infiltration basins, sand filters, and organic filters.

When properly planted, vegetation will thrive and enhance the functioning of these systems. For example, pre-treatment buffers will trap sediments that often are bound with phosphorus and metals. Vegetation planted in the facility will aid in nutrient uptake and water storage. Additionally, plant roots will provide aeration to permeable soil for groundwater recharge. Finally, successful plantings provide aesthetic value and wildlife habitat making these facilities more desirable to the public.

Design Constraints:

- Planting buffer strips of at least 20 feet will cause sediments to settle out before reaching the facility, thereby reducing the possibility of clogging.
- Determine areas that will be subjected with water and water table depth so that appropriate plants may be selected hydrology will be similar to bio-retention facilities. See Figure A.5 and Table A.4 for planting material guidelines.
- Plants known to send down deep taproots should be avoided in systems where filter fabric is used as part of facility design.
- Test soil conditions to determine if soil amendments are necessary.
- Plants shall be located so that access is possible for structure maintenance.
- Stipulate heavy flow rates with erosion control mats or soil.
- Temporary divert flows from seeded areas until vegetation is established.
- See Table A.5 for additional design considerations.

Bio-retention

Soil Bed Characteristics
The characteristics of the soil for the bio-retention facility are perhaps as important as the facility location, size, and treatment volume. The soil must be permeable enough to allow runoff to filter through the media, while having characteristics suitable to promote and sustain a robust vegetative cover. In addition, much of the nutrient pollutant uptake (nitrogen and phosphorus) is accomplished through absorption and microbial activity within the soil profile. Therefore, soils must balance their chemical and physical properties to support biotic communities above and below ground.

The planting soil should be a sandy loam, loamy sand, loam (USDA), or a loam/sand mix (about 35 to 60% sand, by volume). The clay content for these soils should be less than 25% by volume. Environmental Quality Resources (EQ2), 1996, Engineering Technology Inc. and Biohabitats, Inc. (ETAB), 1993. Soils should fall within the SPL, SL, SC classifications of the Unified Soil Classification System (USCS). A permeability of at least 10 feet per day (0.27 in.) is required to conservative value of 0.5 feet per day is used for design. The soil should be free of stones, clumps, roots, or other woody material over 1" in diameter, brush or weeds from native weeds like, Johnson Grass, Napier, Melaleuca, and Canada Thistle or other noxious weeds as specified under COMAR 15.08.01.05 should not be present in the soil. Placement of the planting soil should be in 12 to 18 lifts that are loosely compacted (formed lightly with a backhoe bucket or trowel) by dense tracks. The specific characteristics are presented in Table A.3.

Table A.3 Planting Soil Characteristics

Parameter	Value
pH range	5.2 to 7.00
Organic matter	1.5 to 4.0% (by weight)
Magnesium	35 lbs. per acre, minimum
Phosphorus (phosphate - P205)	75 lbs. per acre, minimum
Potassium (potash - K2O)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	10 to 25 %
Silt	30 to 55 %
Sand	35 to 60%

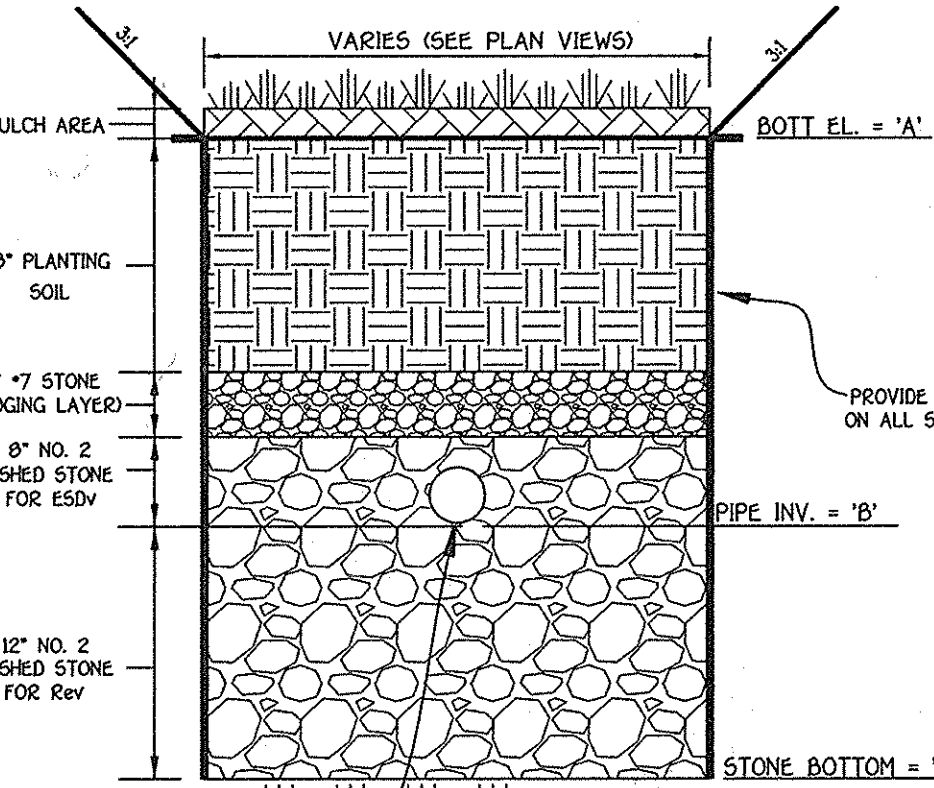
Mulch Layer

The mulch layer plays an important role in the performance of the bio-retention system. The mulch layer helps maintain soil moisture and avoids surface sealing, which reduces permeability. Mulch helps prevent erosion and provides a micro-environment suitable for soil biota at the mulch/soil interface. It also serves as a pretreatment layer, trapping the finer sediments, which remain suspended after the primary pretreatment.

The mulch layer should be standard landscape style, single or double shredded hardwood mulch or chips. The mulch layer should be well aged (leached or stored for at least 12 months), uniform in color, and free of other materials, such as weed seeds, soil, roots, etc. The mulch should be applied to a maximum depth of three inches. Grass clippings should not be used as a mulch material.

Planting Guidance

Plant material selection should be based on the goal of simulating a terrestrial forested community of native species. Bio-retention simulates an urban-species ecosystem. The community should be dominated by trees, but have a distinct community of understory trees, shrubs, and herbaceous materials. By creating a diverse, dense plant cover, a bio-retention facility will be able to filter stormwater runoff and withstand urban stresses from insects, disease, drought, temperature, wind, and erosion. The proper selection and installation of plant materials is key to a successful system. There are essentially three zones within a bio-retention facility (Figure A.2). The lowest elevation supports plants that like arid soil conditions, but can still tolerate occasional inundation by water. The outer edge is the highest elevation and generally supports plants adapted to drier conditions. A sample of appropriate plant materials for bio-retention facilities are included in Table A.4. The level of plant material should be flexible, but should follow the general principles described in Table A.5. The objective is to have a system, which resembles a random, natural plant layout, while maintaining optimal conditions for plant establishment and growth. For a more extensive bio-retention plan, consult ETAB, 1993 or Clayton and Schuler, 1997.



FACILITY NO.	A	B	C
BIO-RETENTION No. 1	382.50	382.00	381.00
BIO-RETENTION No. 2	382.52	380.02	379.02
BIO-RETENTION No. 3	369.99	367.49	366.49
BIO-RETENTION No. 4	360.59	358.09	357.09

NOTE: PERFORATIONS SHOULD BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW.

(FACILITY Nos. 1 THRU 4) MICRO BIO-RETENTION (M-6) SECTION

NO SCALE

Table B.3.1 Material Specifications for Sand filters

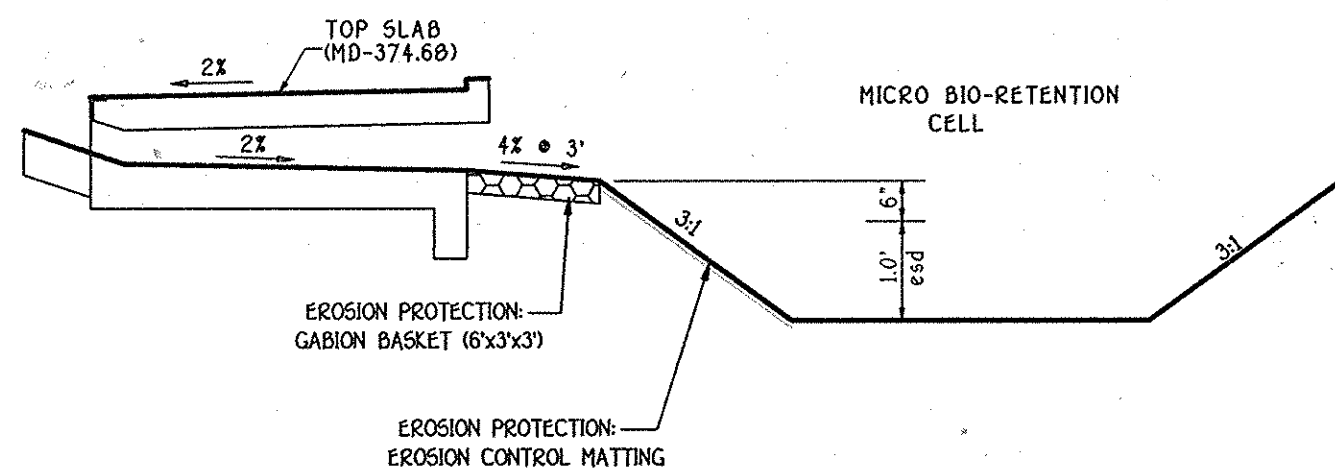
Material	Specifications / Test Method	Size	Notes
sand	clean AASHTO-M-6 of ASTM-C-concrete sand	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone #10 are not acceptable. No calcium carbonate or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.
peat	pH content: < 15% ash range: 5.2 to 4.9 loose bulk density 0.12 to 0.15 g/cc	N/A	The material must be reed-seed lemic peat, shredded, uncompacted, uniform, and clean.
leaf compost		N/A	
underdrain gravel	AASHTO-M-43	0.375" to 0.75"	
geotextile fabric (if required)	ASTM-D-4933 (puncture strength lb.) ASTM-D-4632 (Tensile Strength lb.)	0.08" thick equivalent opening size of #80 sieve	Must maintain 125 gpm per sq. ft. flow rate. Note: a 4" pea gravel layer may be substituted for geotextiles meant to "separate" sand filter layers.
impermeable liner (if required)	ASTM-D-4833 (thickness) ASTM-D-412 (tensile strength 1100 lb., elongation 200%) ASTM-D-624 (tear resistance - 150 lb./in.) ASTM-D-471 (water adsorption +0 to -2% mass)	30 mil thickness	Liner to be ultraviolet resistant. A geotextile fabric should be used to protect the liner from puncture.
underdrain piping	F 750, Type PS 2B or AASHTO-M-27B	4" - 6" rigid schedule 40 PVC or SDR35	3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes
concrete (cast-in-place)	MSHA Standards and Specs. Section 902, Mix No. 3, f'c = 3500 psi, normal weight, air-entrained, reinforcing to meet ASTM-615-60	N/A	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or precast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland
concrete (pre-cast)	per pre-cast manufacturer	N/A	SEE ABOVE NOTE
non-rebar steel	ASTM A-36	N/A	structural steel to be hot-dipped galvanized ASTM-A-123

Sand Filter Specifications

- Material Specifications for Sand Filters**
The allowable materials for sand filter construction are detailed in Table B.3.1.
- Sand Filter Testing Specifications**
Underground sand filters, facilities within sensitive groundwater aquifers, and filters designed to serve urban hot spots are to be tested for water tightness prior to placement of filter media. Entrances and exits should be plugged and the system completely filled with water to demonstrate water tightness. Water tightness means no leakage for a period of 8 hours.
All overflow weirs, multiple orifices and flow distribution slots are to be field-tested to verify adequate distribution of flows.
- Sand Filter Construction Specifications**
Provide sufficient maintenance access (i.e., 12-foot-wide road with legally recorded easement). Vegetated access slopes are to be a maximum of 10% ; gravel slopes to 15% ; paved slopes to 25%.
Absolutely no runoff is to enter the filter until all contributing drainage areas have been stabilized. Surface of filter bed is to be level.
All underground sand filters should be clearly delineated with signs so that they may be located when maintenance is due.
Surface sand filters may be planted with appropriate grasses; see MAA Approved Species List.
"Pocket" sandfilters (and residential bio-retention facilities treating areas larger than an acre) shall be sized with a "stone window" that covers approximately 10% of the filter area. This "window" shall be filled pea gravel (3/4 inch stone).

NOTE: THE PROPOSED 4' SIDEWALK SHALL BE TRAFFIC BEARING (7' REINFORCED CONCRETE) A MINIMUM OF 25' ON EITHER SIDE OF THE PROPOSED COG/COS INLET OPENING.

NOTE: SEE SHEET 28 FOR DETAILS OF THE PRIVATE STORMWATER MANAGEMENT FACILITIES TO BE BUILT UNDER THE SDF.

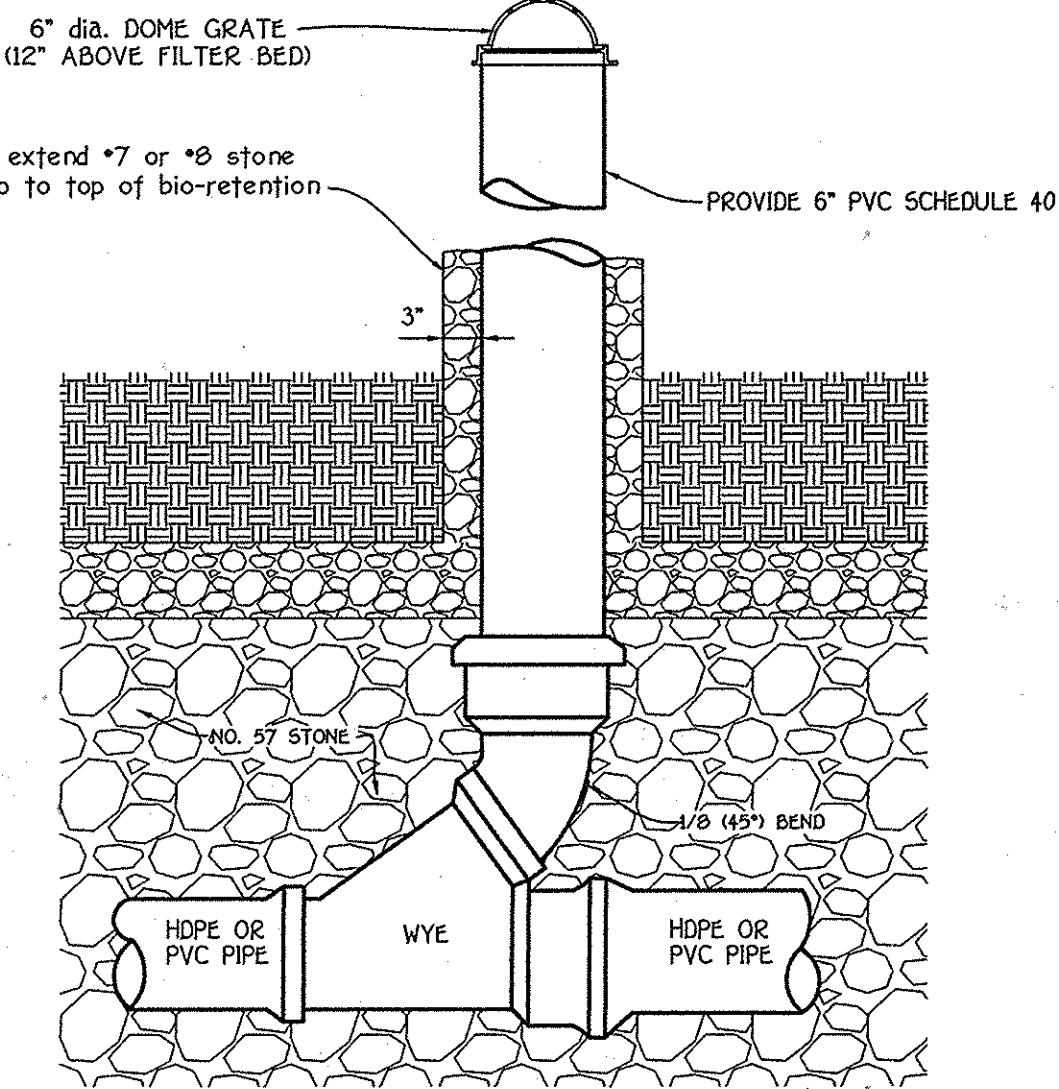


SCHEMATIC SECTION FLOW INLET INTO MICRO BIO-RETENTION

NO SCALE

OWNER
JOHN TENNEY MASON, JR. FAMILY LLC
AND FRANCES WELDFORD MASON FAMILY LLC
c/o MR. JOHN TENNEY MASON, III, GENERAL MEMBER 7636 GAITHER ROAD SYKESVILLE, MD 21784 (443-367-0422)

DEVELOPER
DOUBLE R VENTURES, LLC
c/o LAND DESIGN AND DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, SUITE 102 ELLICOTT CITY, MARYLAND 21042 (443-367-0422)



TYPICAL CLEAN-OUT DETAIL

NO SCALE

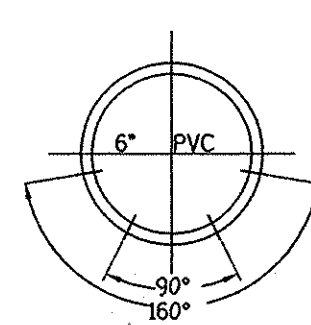
NOTES:
UNDERDRAIN PIPE SHALL BE 4" TO 6" DIAMETER, SLOTTED OR PERFORATED RIGID PLASTIC PIPE (ASTM F 750, TYPE PS 2B OR AASHTO-M-27B) IN A GRAVEL LAYER. THE PREFERRED MATERIAL IS SLOTTED 4" RIGID PIPE (e.g., PVC OR HDPE).

PERFORATIONS SHALL BE 3/8" DIAMETER LOCATED 6" ON CENTER WITH A MINIMUM OF FOUR HOLES PER ROW. PIPE SHALL BE WRAPPED WITH A 1/4" (NO. 4 OR 4 X 4) GALVANIZED HARDWARE CLOTH.

GRAVEL LAYER SHALL BE NO. 57 STONE PREFERRED AT LEAST 3" THICK ABOVE AND BELOW THE UNDERDRAIN. THE MAIN COLLECTOR PIPE SHALL BE AT A MINIMUM 0.5% SLOPE.

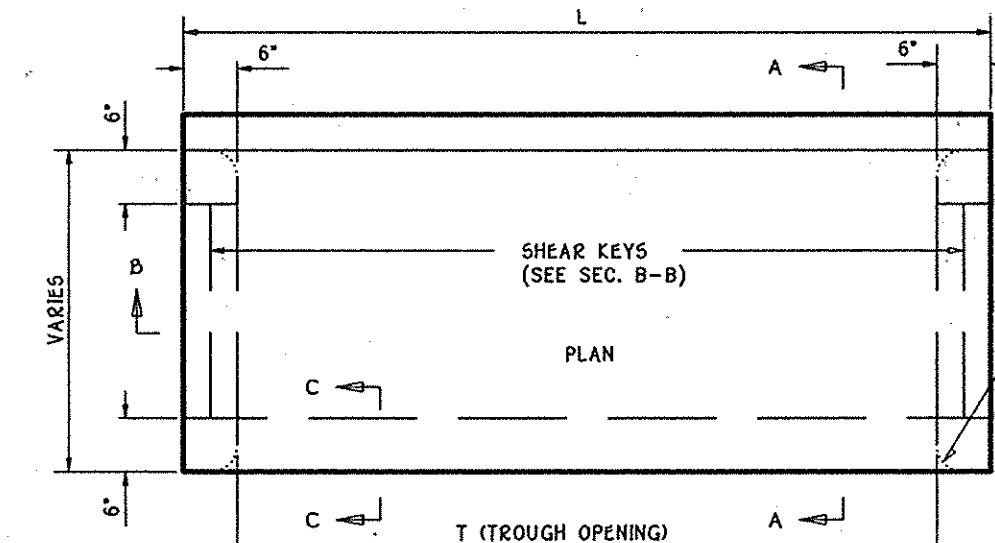
A RIGID NON PERFORATED OBSERVATION WELL MUST BE PROVIDED (ONE PER EVERY 1000 SQFT) TO PROVIDE A CLEANOUT PORT AND MONITOR PERFORMANCE OF THE FILTER.

A 4" LAYER OF PEA GRAVEL (1/8" TO 3/8" STONE) SHALL BE LOCATED BETWEEN THE FILTER MEDIA AND UNDERDRAIN TO PREVENT MIGRATION OF FINES INTO THE UNDERDRAIN. THIS LAYER MAY BE CONSIDERED PART OF THE FILTER BED WHEN BED THICKNESS EXCEEDS 24".



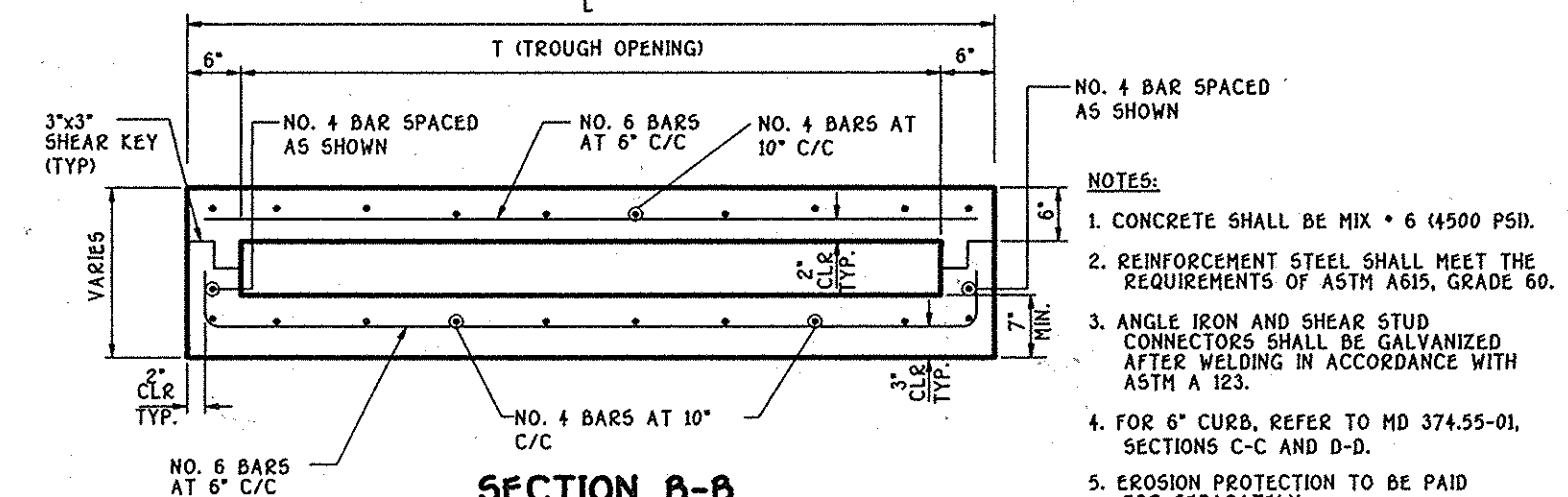
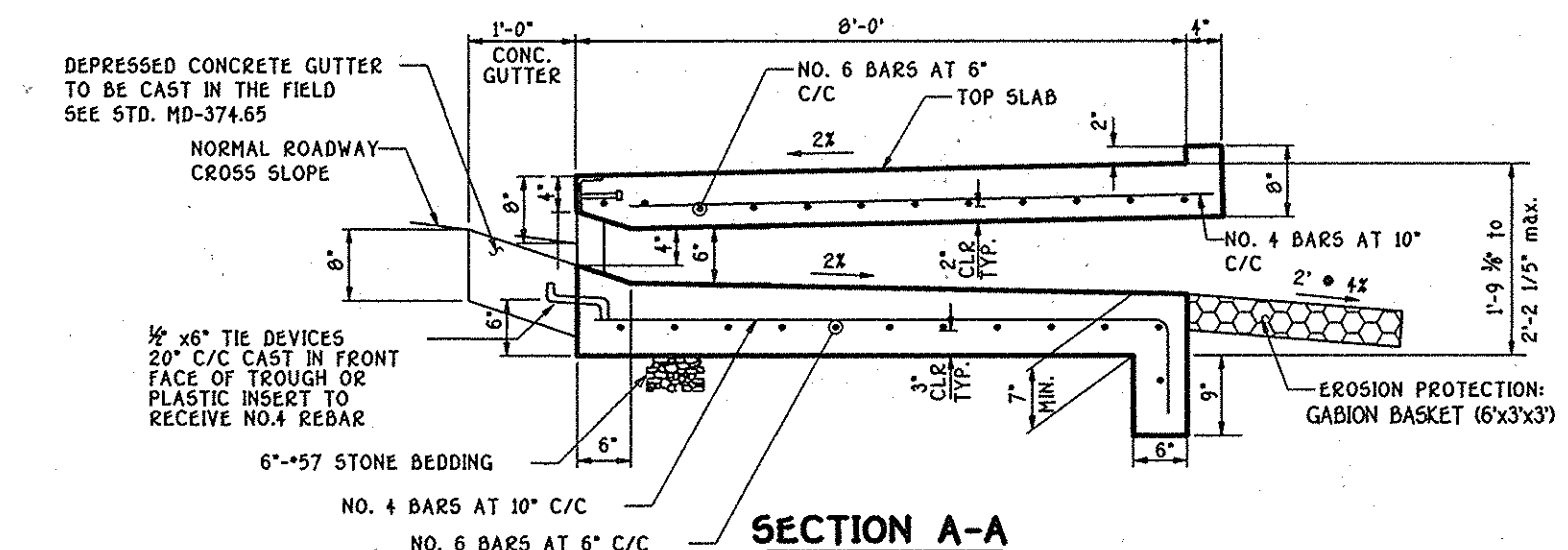
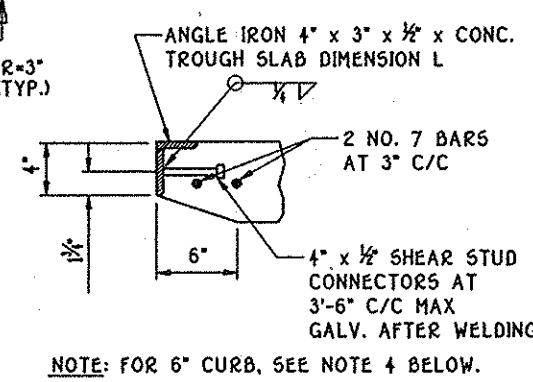
SCH40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN

NO SCALE



PRECAST CONCRETE TOP SLAB

SLAB TYPE	L	T
1	6'-0"	5'-0"

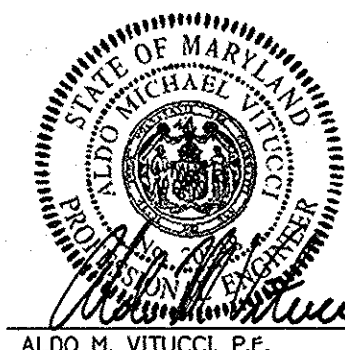


PRECAST OR CAST IN PLACE COG/COS OPENING FOR 8" CURB (5' ONLY)

SWM SUMMARY TABLE SECTION ONE

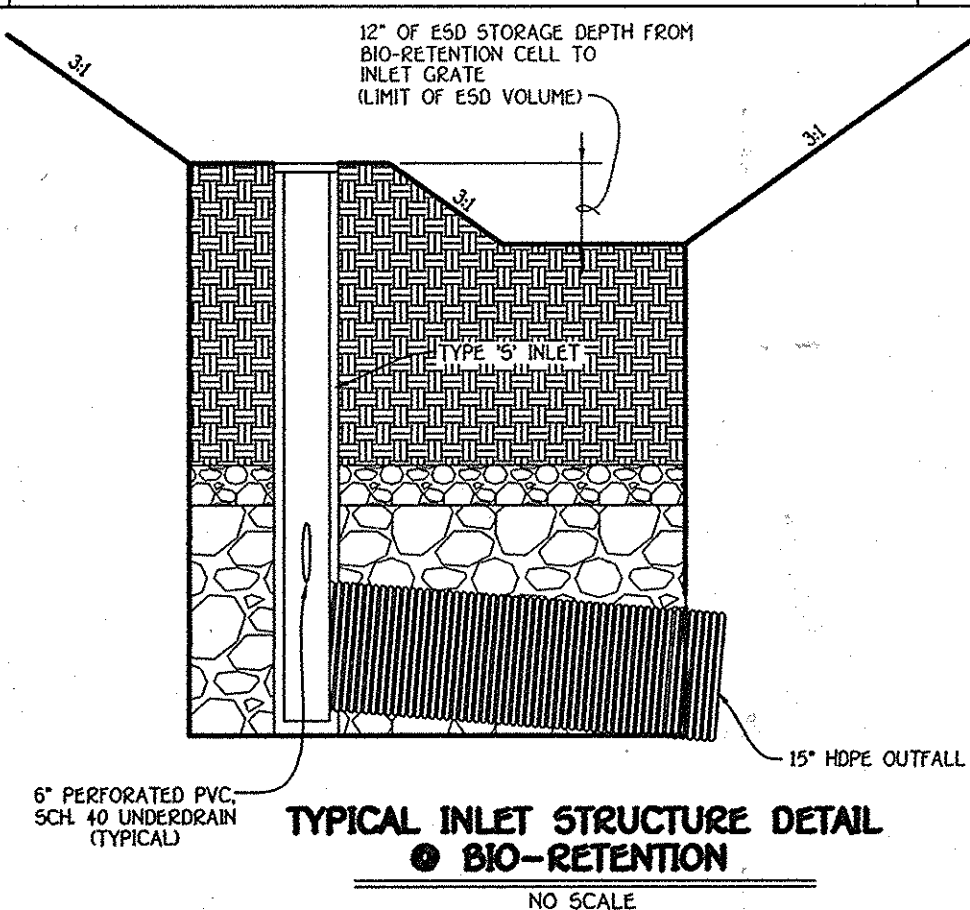
TYPE OF REQUIREMENT	VOLUME REQUIRED	VOLUME PROVIDED AND NOTES
R _{Vol} Recharge Vol. for Entire Site)	2.88 Acres or 0.282 acre-feet	0.0764 Acres w/ X Area Method
W _{Vol}		
Area 'E'	0.0574 acre-feet	0.165 ac. Ft. • SWM Facility #5
Area 'F'	0.0369 acre-feet	0.054 ac. Ft. • SWM Facility #6
Area 'G'	0.0673 acre-feet	0.0248 ac. Ft. • SWM Facility #7
CP _{Vol}		
Area 'E'	N/A	N/A
Area 'F'	N/A	N/A
Area 'G'	N/A	N/A

NOTE: Both Op (Overbank Flood Protection or 10-year storm) and Q_f (Extreme Flood Volume of 100-year storm) are not required for this since this watershed area is not classified as one of the sensitive watershed areas for Howard County.



Professional certification I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15.

APPROVED: DEPARTMENT OF PUBLIC WORKS <i>Michelle M. ...</i> CHIEF, BUREAU OF HIGHWAYS	2-20-14 DATE	
APPROVED: DEPARTMENT OF PLANNING AND ZONING <i>Walt ...</i> CHIEF, DIVISION OF LAND DEVELOPMENT	3/04/14 DATE	
<i>Paul ...</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	2-26-14 DATE	
REVISIONS		
NO.	DESCRIPTION	DATE



TYPICAL INLET STRUCTURE DETAIL

NO SCALE

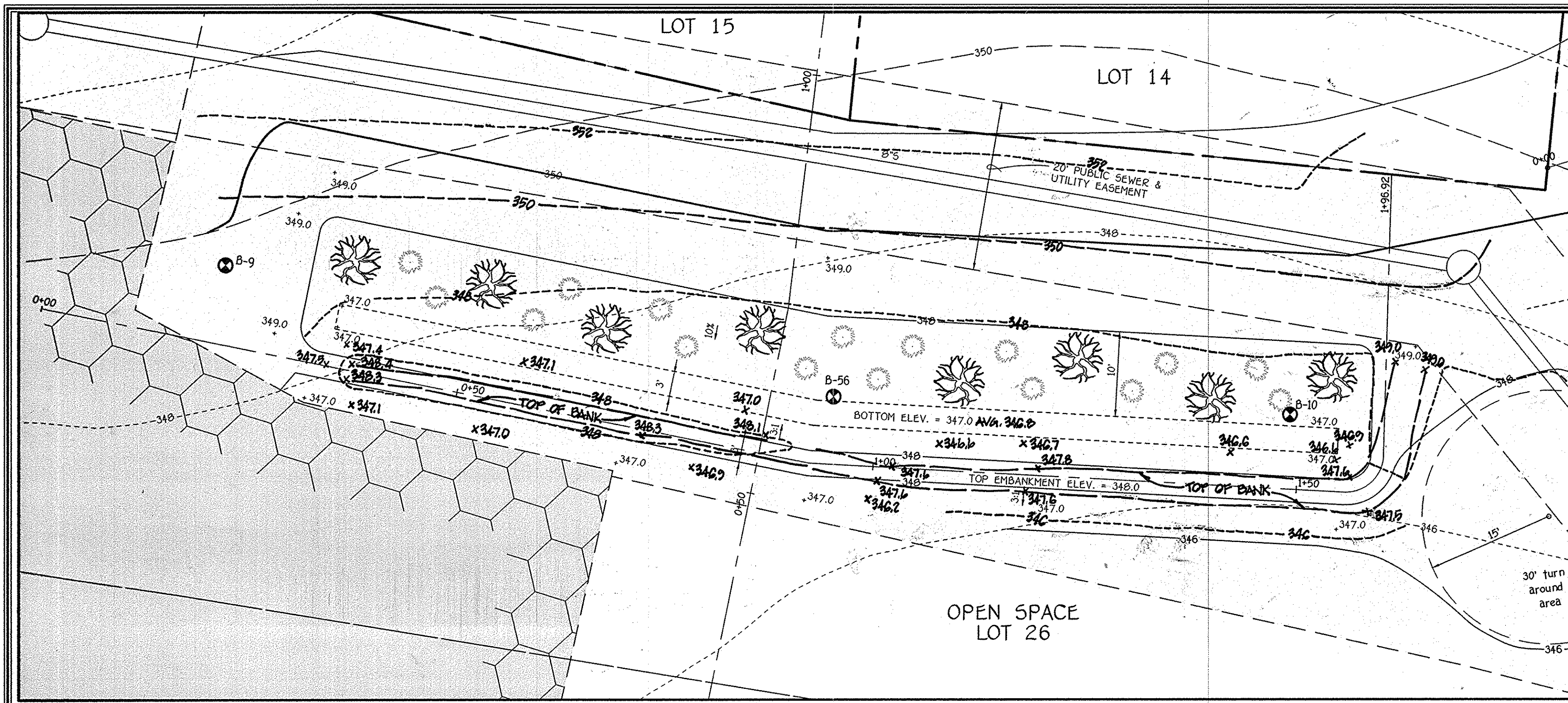
B.4.C Specifications for Micro-Bio-retention, Rain Gardens, Landscape Infiltration & Infiltration Berms

- Material Specifications**
The allowable materials to be used in these practices are detailed in Table B.6.1.
- Filtering Media or Planting Soil**
The soil shall be a uniform mix, free of stones, slumps, roots or other similar objects larger than two inches. The other materials or substances shall be mixed or dumped within the micro-bio-retention practices that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of debris, rocks, clumps, roots, or other noxious weeds as specified under COMAR 15.08.01.05. The planting soil shall be tested and shall meet the following criteria:
Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
Organic Content - Minimum 10% by weight (ASTM D 2974). To general, this can be met with a mixture of loamy sand (100-60) and compost (135 to 46) or sandy loam (100L) coarse sand (100L) and compost (100L).
Clay Content - Media shall have a clay content of less than 5%.
pH Range - Media should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.
There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textual analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.
- Compaction**
It is very important to minimize compaction of both the base of bio-retention practices and the required backfill. When possible, use excavation holes to remove ground soil. If practices are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.
Compaction can be alleviated at the base of the bio-retention facility by using a primary filter media such as pea gravel, or sand. Heavy equipment can be used around the perimeter of the basin to apply soils and sand. Grade bio-retention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.
5. Plant Material
Recommended plant material for micro-bio-retention practices can be found in Appendix A, Section A.3.
6. Plant Installation
Compost is a better organic material source, is less likely to float, and should be placed in the inner and outer low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3" (shredded or chipped hardwood mulch is the only accepted mulch). Fine mulch and wood chips will float and move to the perimeter of the bio-retention area during a storm event and are not acceptable. Shredded mulch must be wet aged to 12 months for acceptance.
7. Rootstock
The rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted no less than 10% of the ball in above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.
8. Trees
Trees shall be banded using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.
9. Grasses and Legume Seed
Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

- Topsoil Specifications**
Topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bio-retention structure is to improve water quality. Adding fertilizers details or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rooted area fertilizer at a rate of 2 pounds per 1000 square feet.
- Underdrains**
Underdrains should meet the following criteria:
Pipe - should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 750, Type PS 2B, or AASHTO-M-27B) in a gravel layer. The preferred material is slotted 4" rigid pipe (e.g., PVC or HDPE).
Perforations - If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/4" No. 4 or 4 x 4 galvanized hardware cloth.
Gravel - The gravel layer No. 57 stone preferred shall be at least 3" thick above and below the underdrain.
The main collector pipe shall be at a minimum 0.5% slope.
A rigid, non-perforated observation well must be provided (one per every 1000 square feet) to provide a cleanout port and monitor performance of the filter.
A 4" layer of pea gravel (1/4" to 3/8" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".
The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and cleanout pipes must be provided (one per 1000 square feet of surface area).
7. Placement
These practices may not be constructed until all contributing drainage areas have been stabilized.

STORMWATER MANAGEMENT DETAILS

Centennial Lake Overlook
(Formerly Mason Property)
Section One
Buildable Lots 1 Thru 23
Open Space Lots 24 Thru 28
Buildable Bulk Parcels 'A' and 'B'
(Being a Subdivision of Tax Parcel No. 85, Tax Map No. 30, Liber 10729 At Folio 329 And Liber 10729 At Folio 355)
Zoning: R-200
Tax Map No. 30 Grid No. 2 Parcel No. 85
2nd Election District Howard County, Maryland
Scale: As Shown Sheet 13 of 30
Date: January 10, 2014



- TREES**
 ARGENT CHERRY
 AUTUMN FLAME RED MAPLE
 EASTERN REDBUD
 PIN OAK
 HEDGE MAPLE
 RED FLOWERING DOGWOOD
- ANY OF THE TREES LISTED MAY BE USED
- SHRUBS**
 BAYBERRY
 SPIDERBUSH
 ARBORSVITAE
 WINTERBERRY
 INKBERY
 WITCH HAZEL
 BUTTONBRUSH BUCKEYE
 BOTTLEBRUSH BUCKEYE
- ANY OF THE SHRUBS LISTED MAY BE USED

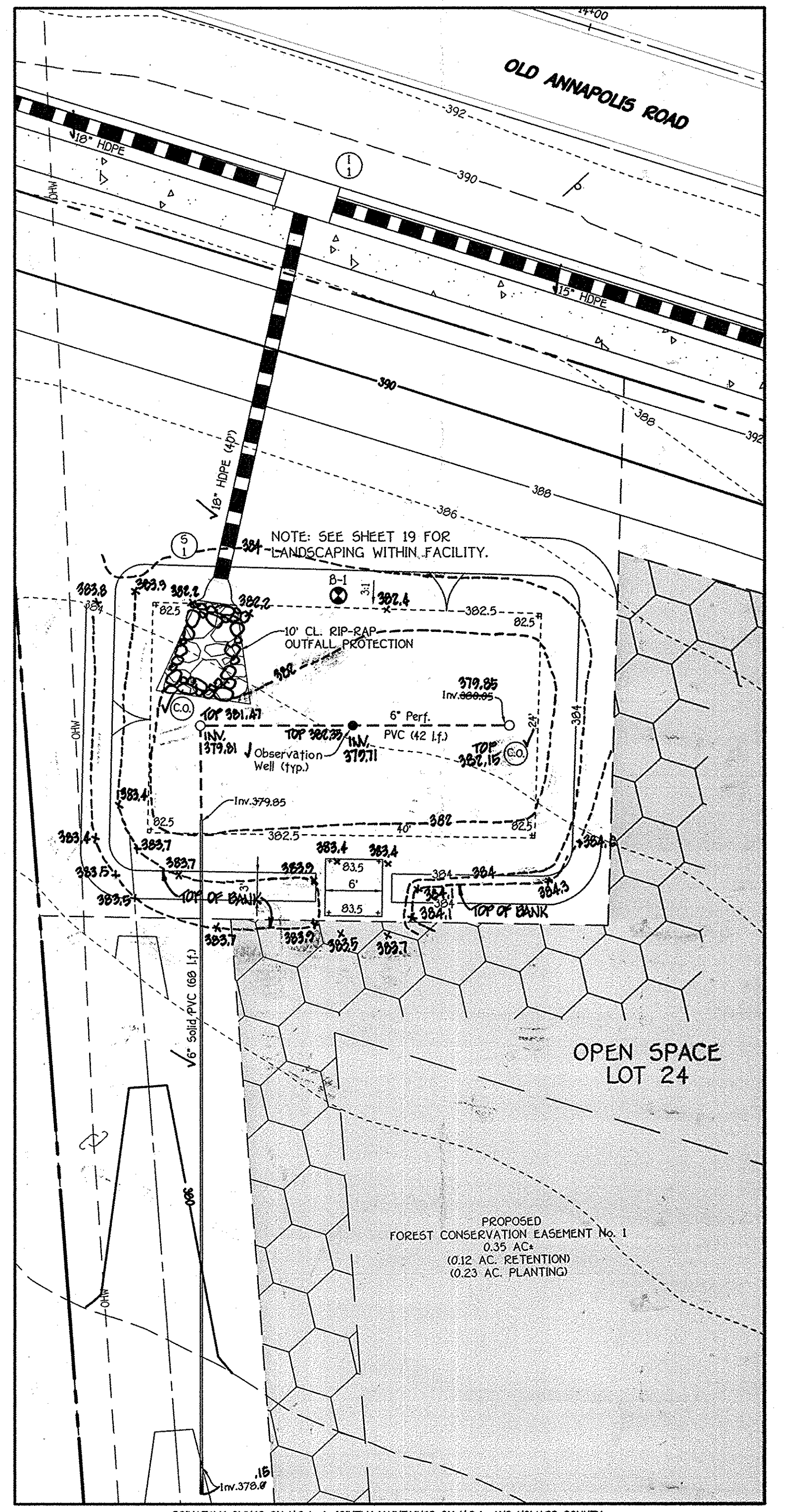
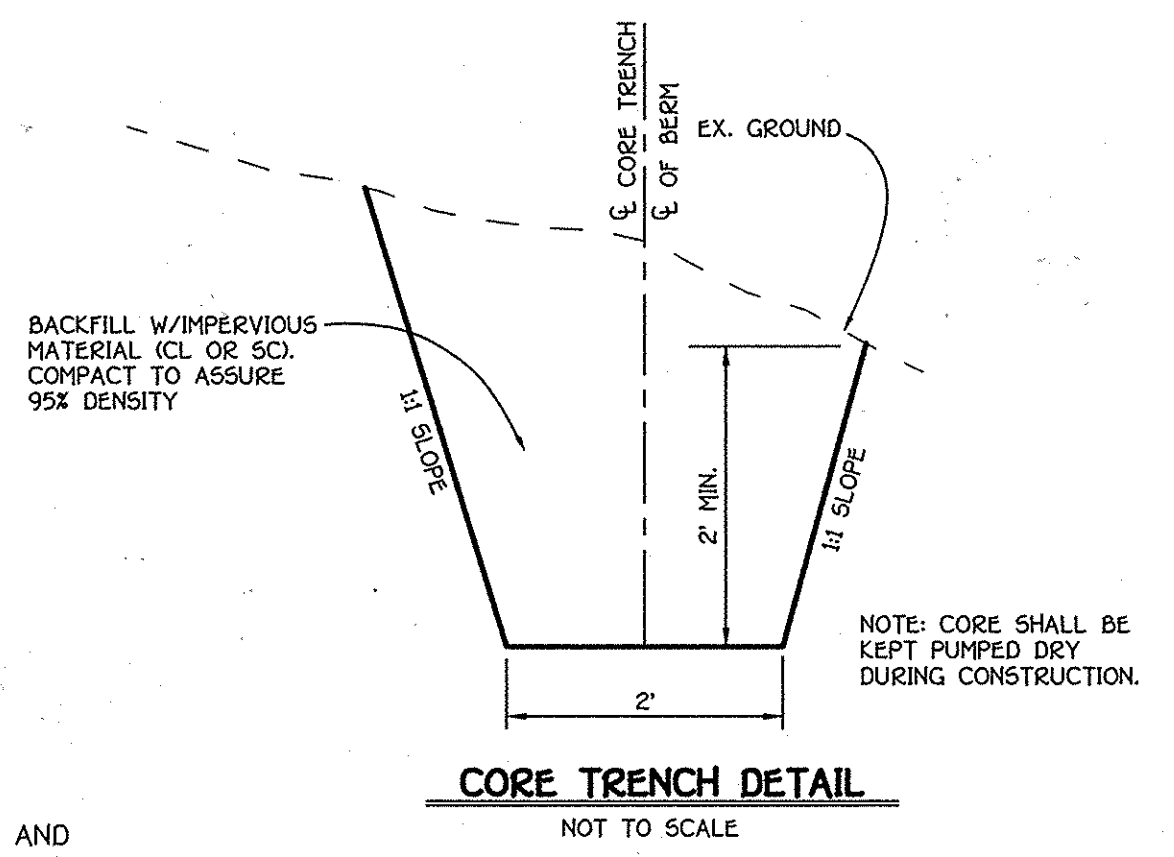
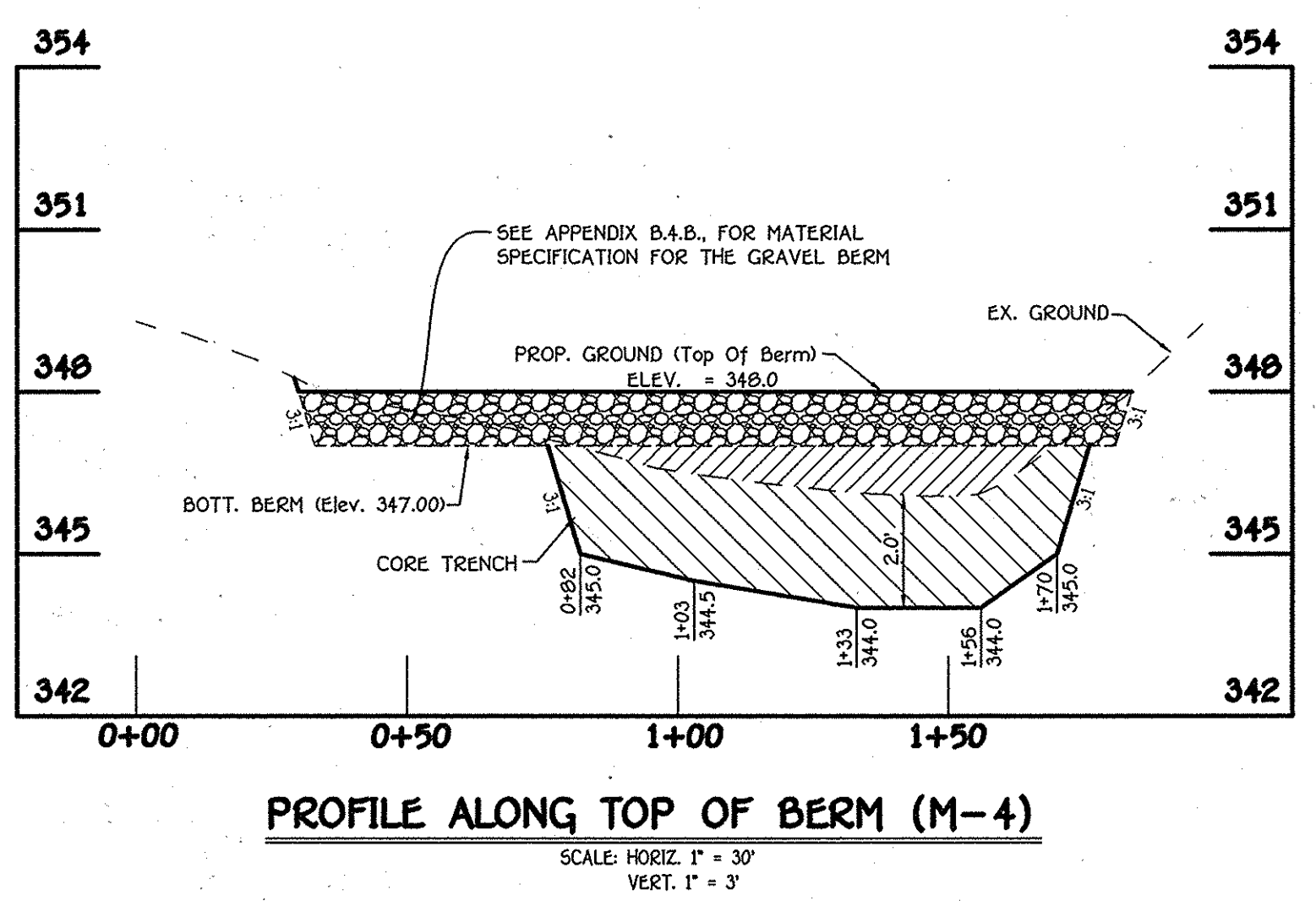
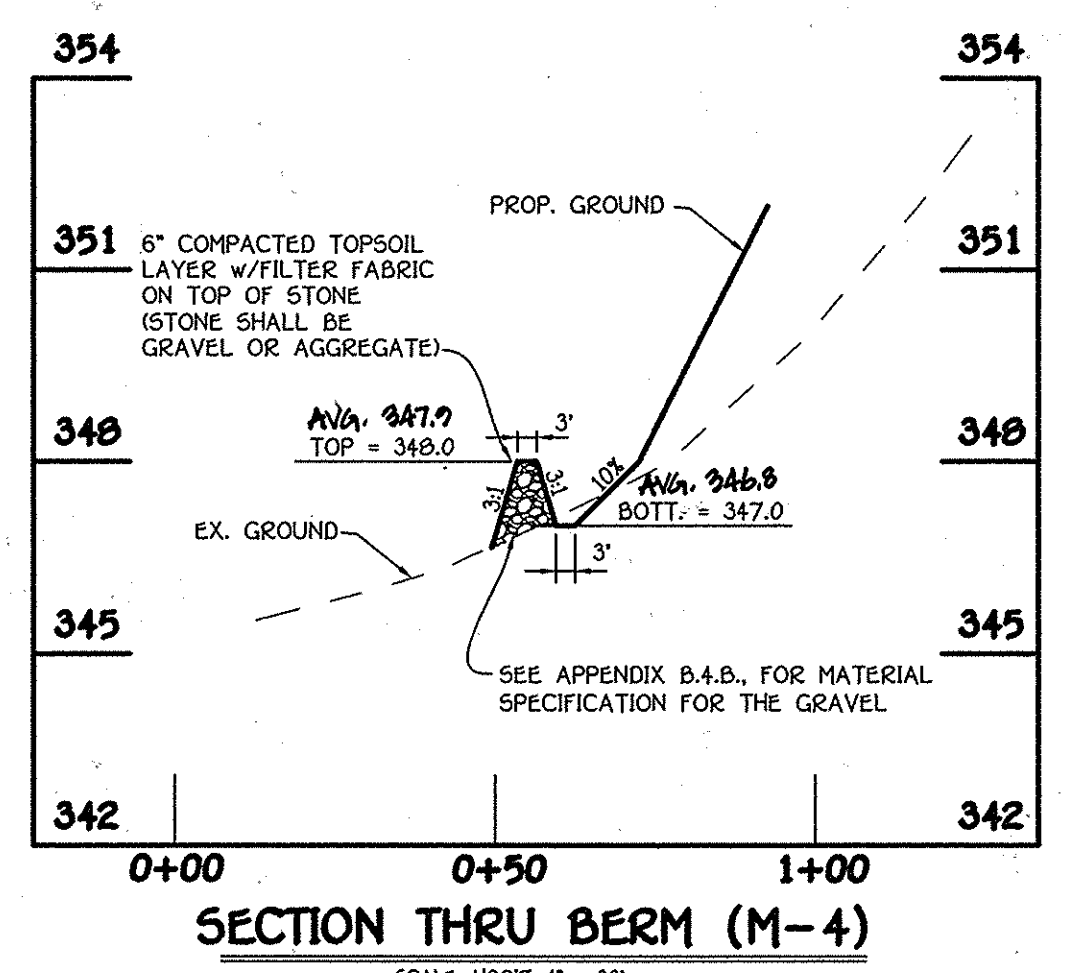
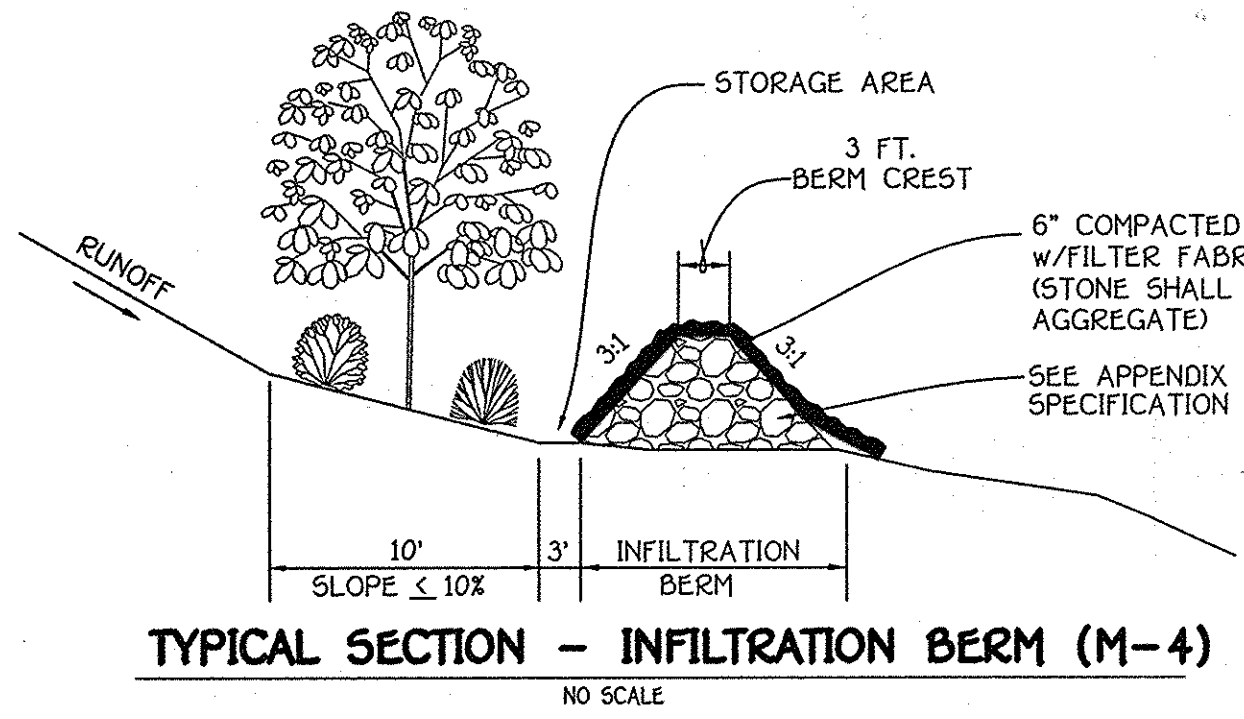
NOTE: THE PROPOSED 4' SIDEWALK SHALL BE TRAFFIC BEARING (77 REINFORCED CONCRETE) A MINIMUM OF 25' ON EITHER SIDE OF THE PROPOSED COG/COS INLET OPENING.

APPROVED: DEPARTMENT OF PUBLIC WORKS		
<i>[Signature]</i>	2-20-14	DATE
CHIEF, BUREAU OF HIGHWAYS		
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>[Signature]</i>	3/04/14	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT		
<i>[Signature]</i>	2-26-14	DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION		
REVISIONS		
NO.	DESCRIPTION	DATE

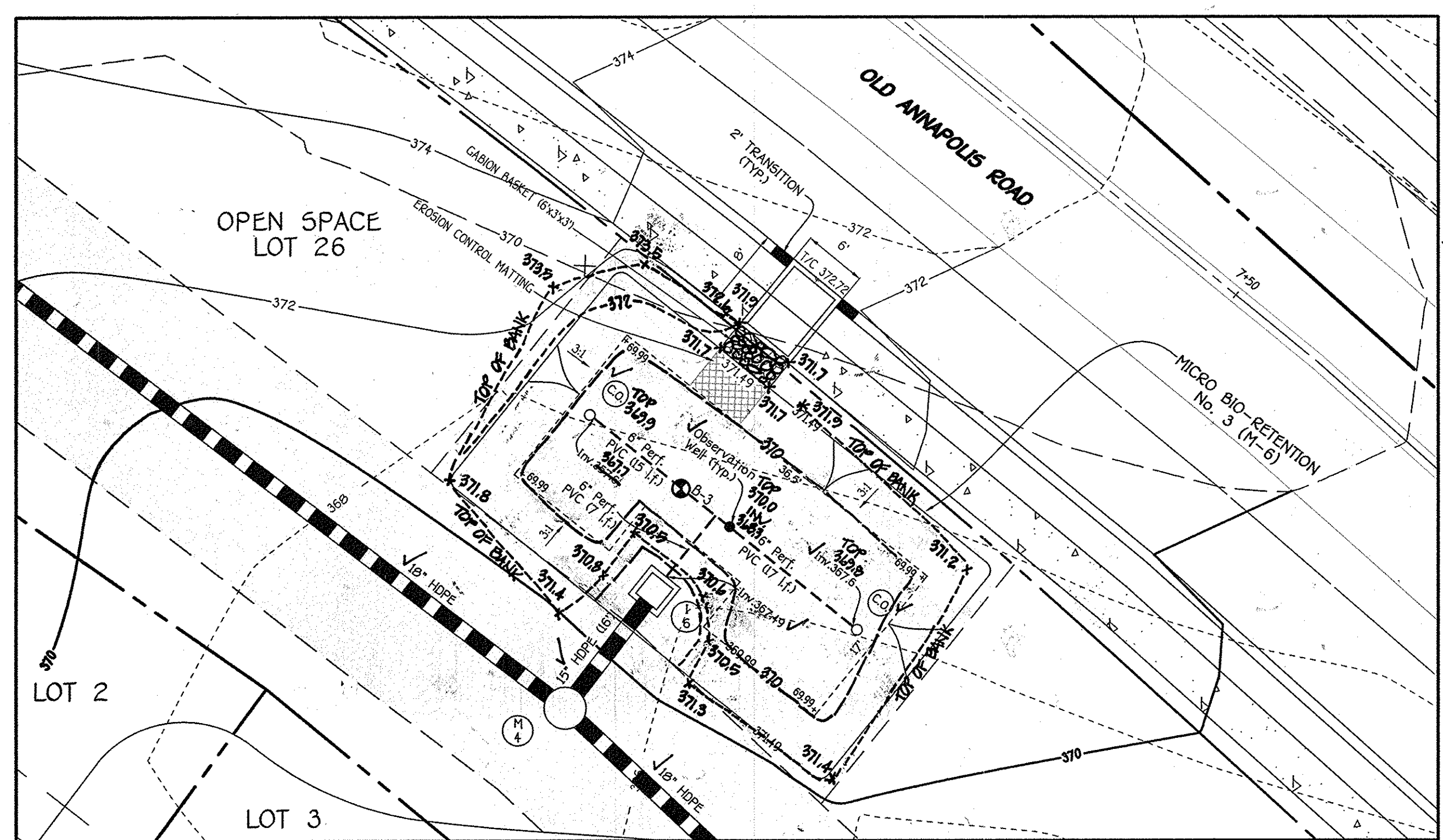
PRIVATELY OWNED & MAINTAINED BY H.O.A.
INFILTRATION BERM (M-4) PLAN
 SCALE: 1" = 10'

OPERATION AND MAINTENANCE SCHEDULE FOR INFILTRATION BERMS (M-4)

- BERM SHOULD BE INSPECTED REGULARLY TO ENSURE THAT FLOWING WATER DOES NOT CREATE NUISANCE CONDITIONS.
- SIGNS OF CONCENTRATED FLOW AND OTHER SURFACE EROSION SHOULD BE REPAIRED TO PROMOTE SHEET FLOW.
- A DENSE MAT OF VEGETATION SHOULD BE PRESENT AT ALL TIMES. VEGETATION SHOULD BE REPLACED AS NEEDED.
- WHEN INFILTRATION BERMS ARE INCORPORATED IN A SYSTEM USING OTHER PRACTICES, THE MAINTENANCE CRITERIA FOR THAT PRACTICE SHALL ALSO BE CONSIDERED.



PRIVATELY OWNED BY H.O.A. & JOINTLY MAINTAINED BY H.O.A. AND HOWARD COUNTY
MICRO BIO-RETENTION (M-6) FACILITY No. 1 PLAN
 SCALE: 1" = 10'



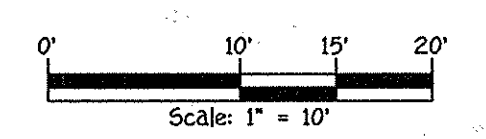
PRIVATELY OWNED BY H.O.A. & JOINTLY MAINTAINED BY H.O.A. AND HOWARD COUNTY
MICRO BIO-RETENTION (M-6) FACILITY No. 3 PLAN
 SCALE: 1" = 10'

NOTE: THE STORMWATER MANAGEMENT FACILITIES (M-6) WILL BE PRIVATELY OWNED BY H.O.A. AND JOINTLY MAINTAINED BY H.O.A. AND HOWARD COUNTY. HOWARD COUNTY'S MAINTENANCE RESPONSIBILITY ONLY PERTAINS TO THE INLET STRUCTURES AND STORM DRAIN PIPE FOR THE MICRO BIO-RETENTION FACILITIES (M-6). ALL LANDSCAPING, UNDERDRAINS, CLEAN-OUTS AND FILTER MEDIA IS THE RESPONSIBILITY OF THE HOMEOWNER'S ASSOCIATION. THE H.O.A. OR PRIVATE HOMEOWNER IS RESPONSIBLE FOR ALL OTHER FACILITIES (F-1), (F-6), (M-5) AND (M-4).

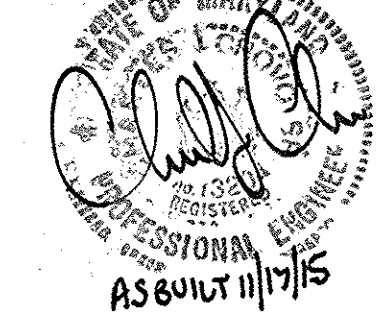
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 200 EASTERN SQUARE OFFICE PARK • 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21114
 (410) 461-2222

OWNER
 JOHN TENNEY MASON, JR. FAMILY LLC
 AND FRANCES WELLFORD MASON FAMILY LLC
 c/o MR. JOHN TENNEY MASON, III, GENERAL MEMBER
 7636 GAITHER ROAD
 SYKESVILLE, MD 21784
 (443-367-0422)

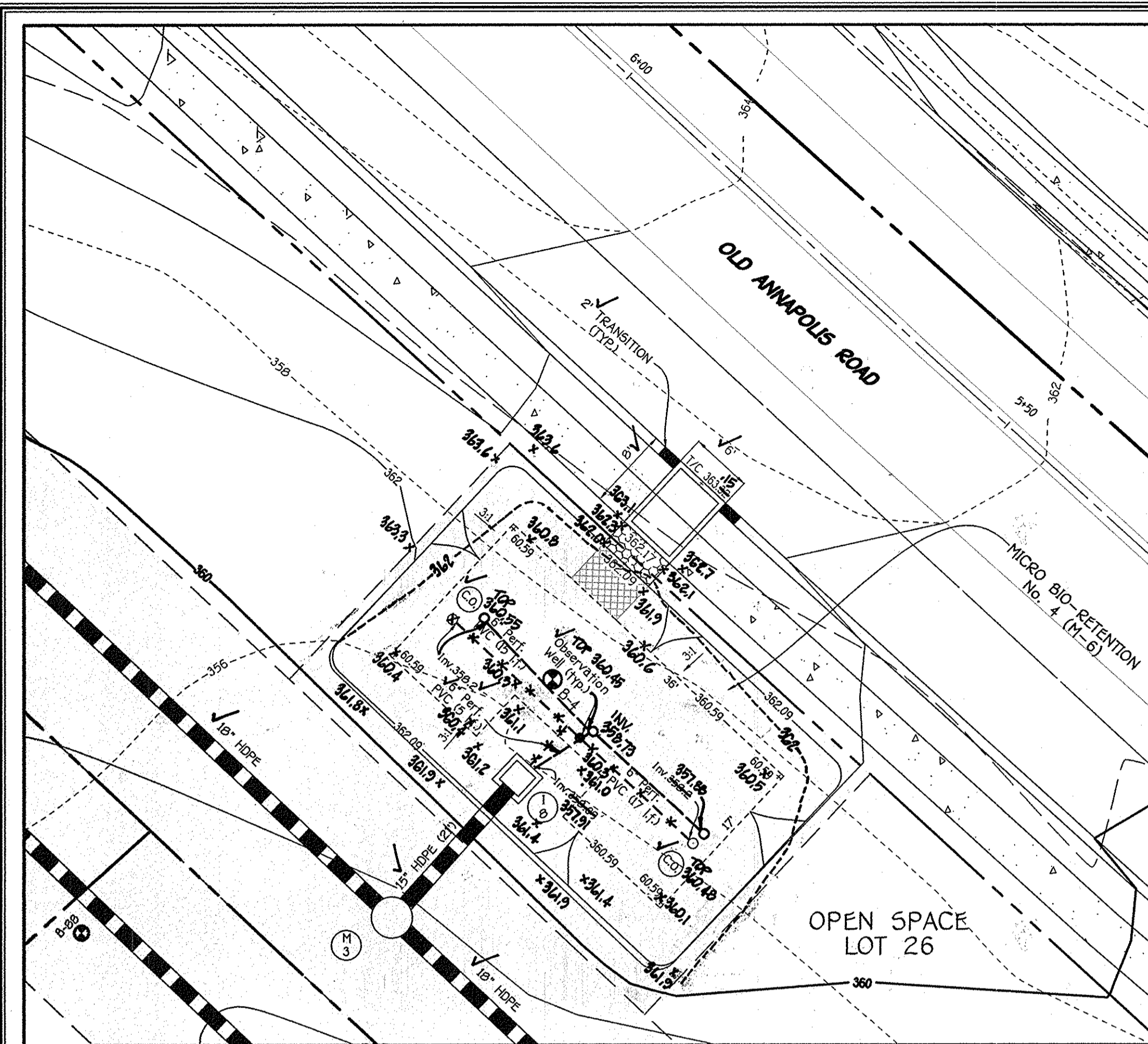
DEVELOPER
 DOUBLE R VENTURES, LLC
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, SUITE 102
 ELLICOTT CITY, MARYLAND 21042
 (443-367-0422)



Professional certification I hereby certify that these documents were prepared by me and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20740, Expiration Date 2-22-15.

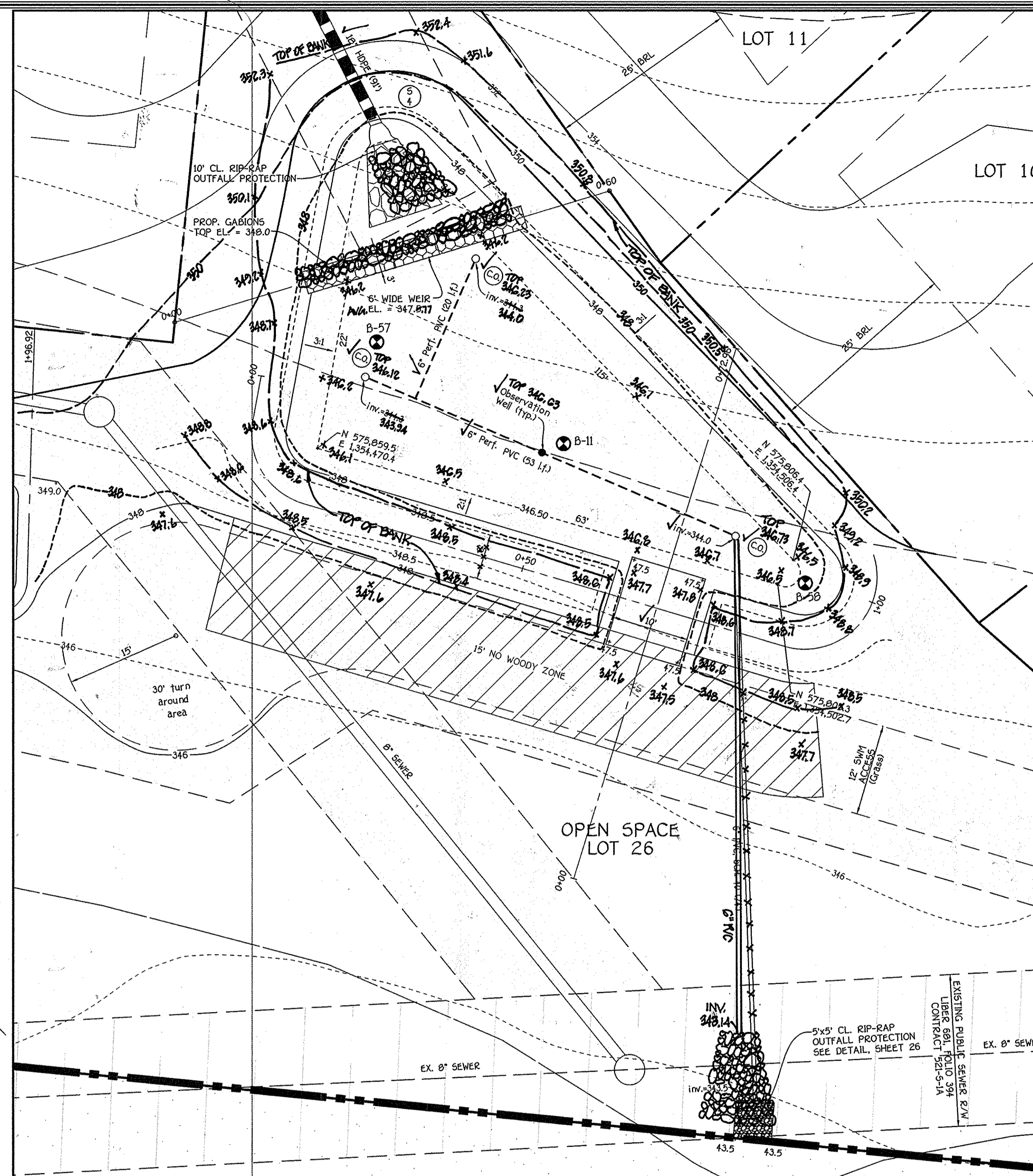


STORMWATER MANAGEMENT PLANS
Centennial Lake Overlook
 (Formerly Mason Property)
Section One
 Buildable Lots 1 Thru 23,
 Open Space Lots 24 Thru 26 &
 Buildable Bulk Parcels A' and B'
 Being A Subdivision Of Tax Parcel No. 306, Tax Map No. 30,
 Liber 10729 At Folio 329 And Liber 10729 At Folio 339)
 Zoning R-20
 Tax Map No. 30 Grid No. 2 Parcel No. 86
 2nd Election District Howard County, Maryland
 Date: January 10, 2014
 Scale: As Shown Sheet 14 Of 30



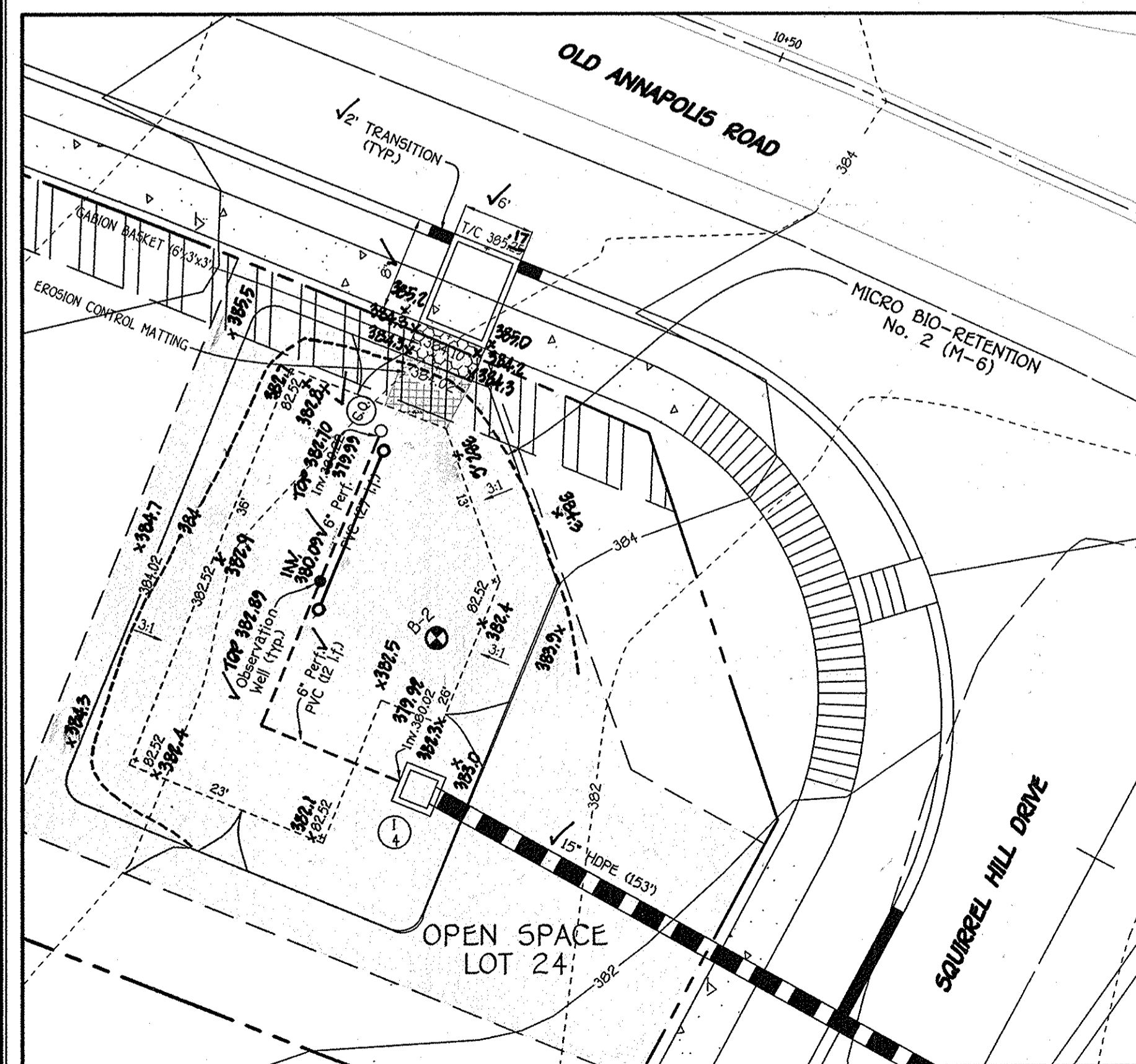
PRIVATELY OWNED BY H.O.A. & JOINTLY MAINTAINED BY H.O.A. AND HOWARD COUNTY
MICRO BIO-RETENTION (M-6) FACILITY No. 4 PLAN
 SCALE: 1" = 10'

NOTE: SEE SHEET 19 FOR LANDSCAPING WITHIN FACILITY.



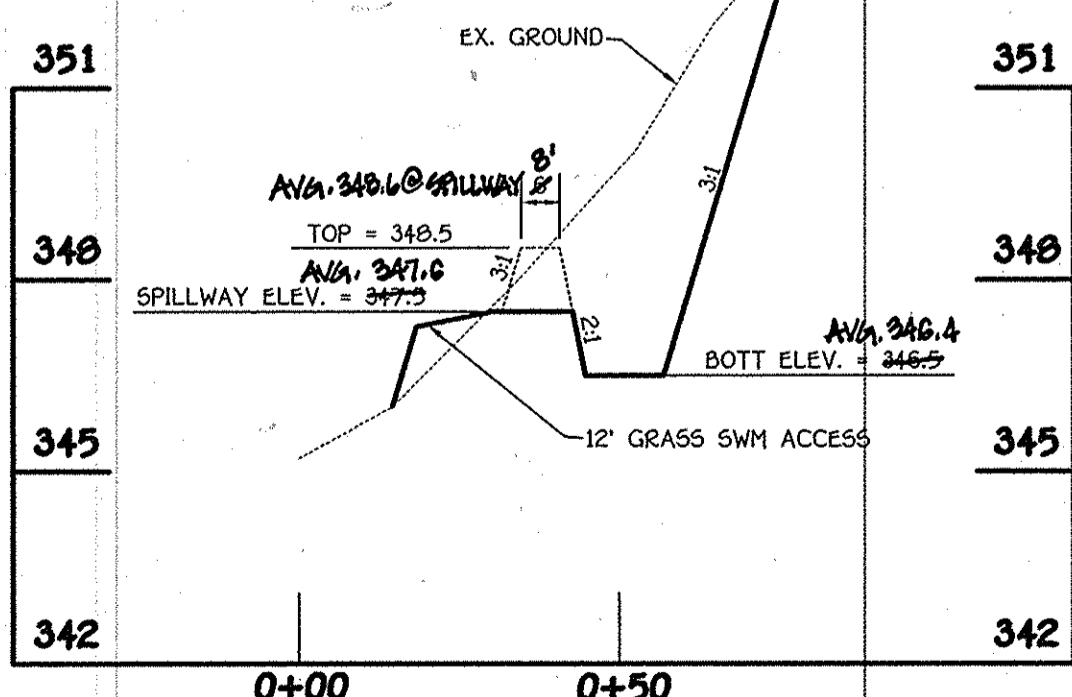
PRIVATELY OWNED & MAINTAINED BY H.O.A.
BIO-RETENTION No. 1 (F-6) PLAN
 SCALE: 1" = 10'

NOTE: SEE SHEET 19 FOR LANDSCAPING WITHIN FACILITY.

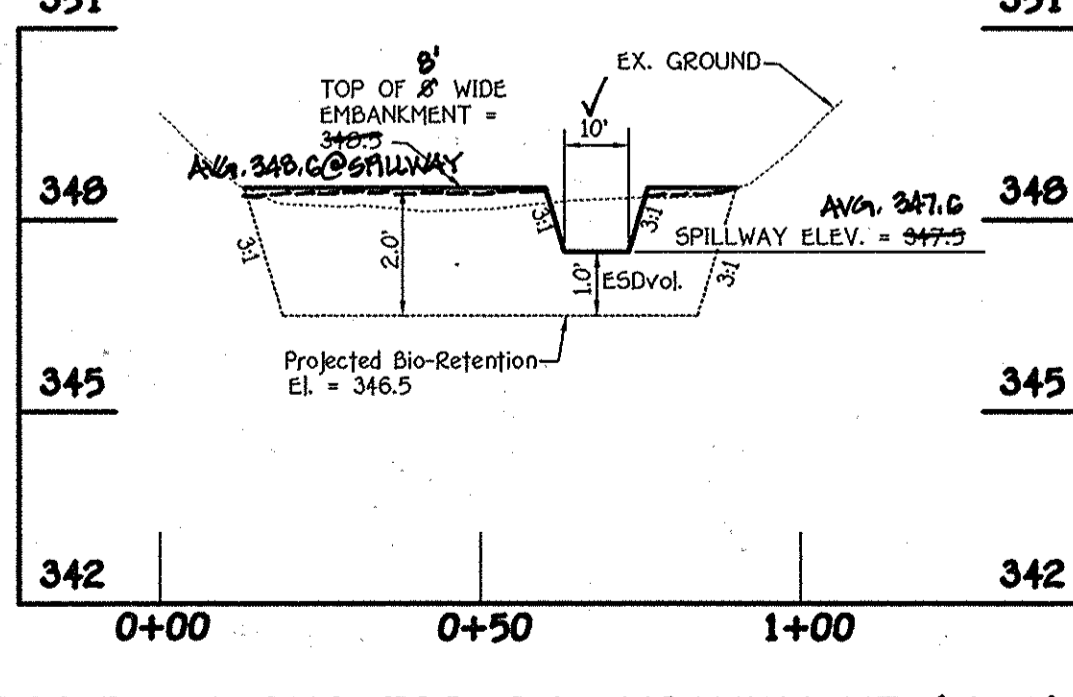


PRIVATELY OWNED BY H.O.A. & JOINTLY MAINTAINED BY H.O.A. AND HOWARD COUNTY
MICRO BIO-RETENTION (M-6) FACILITY No. 2 PLAN
 SCALE: 1" = 10'

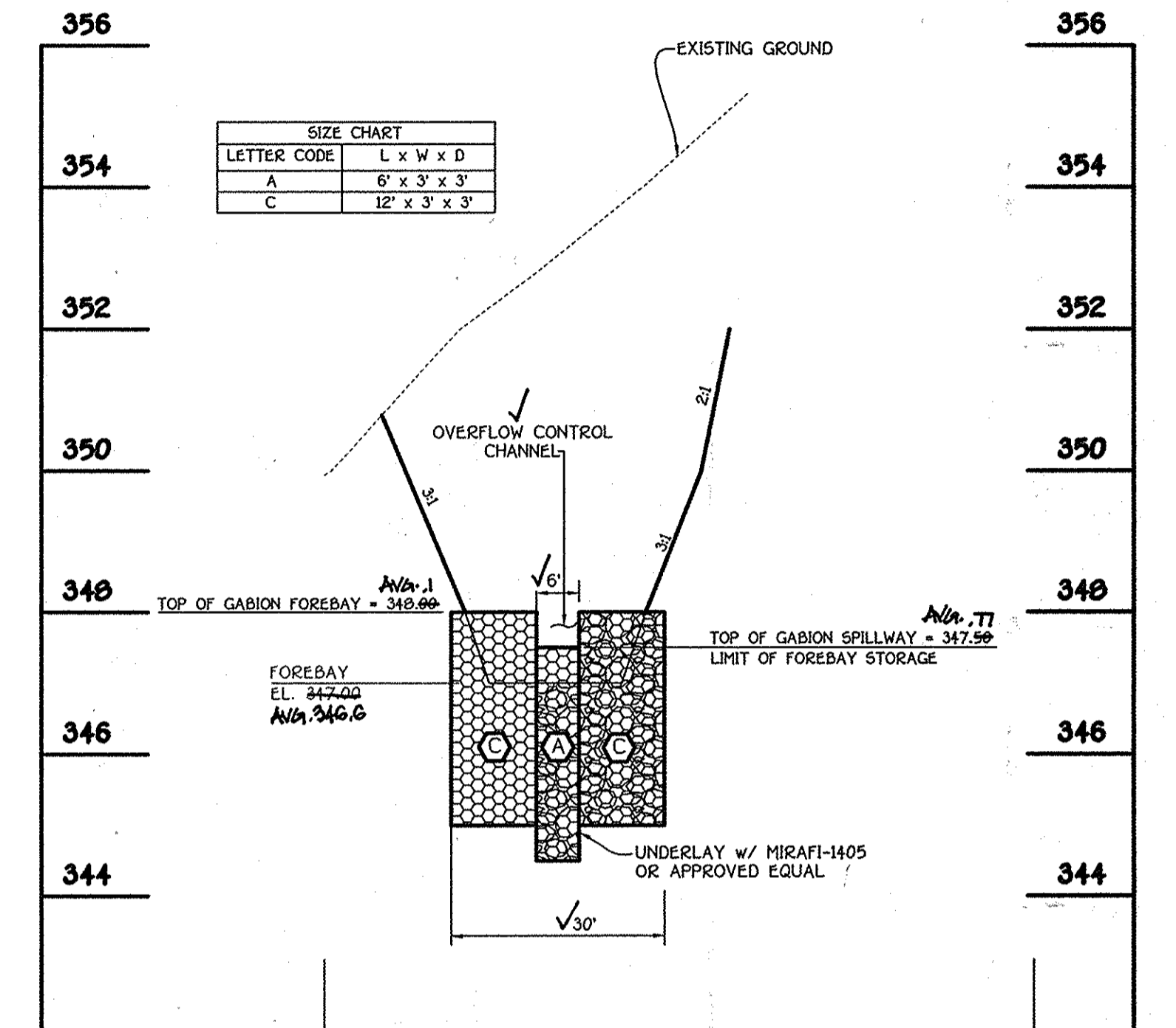
NOTE: SEE SHEET 19 FOR LANDSCAPING WITHIN FACILITY.



PROFILE THRU SPILLWAY (F-6)
 SCALE: HORIZ. 1" = 30'
 VERT. 1" = 3'



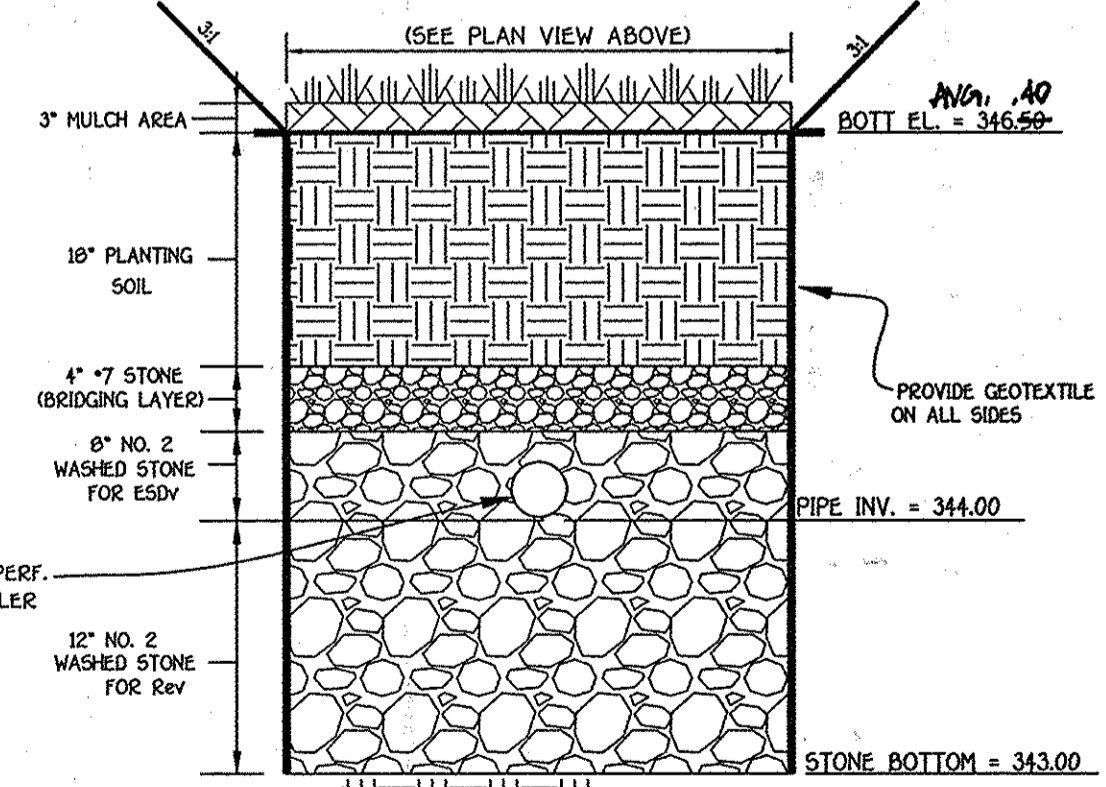
PROFILE ALONG TOP OF EMBANKMENT (F-6)
 SCALE: HORIZ. 1" = 30'
 VERT. 1" = 3'



GABION FOREBAY PROFILE
 SCALE: HORIZ. 1" = 20'
 VERT. 1" = 2'

OPERATION AND MAINTENANCE SCHEDULE FOR BIO-RETENTION AREAS (F-6)

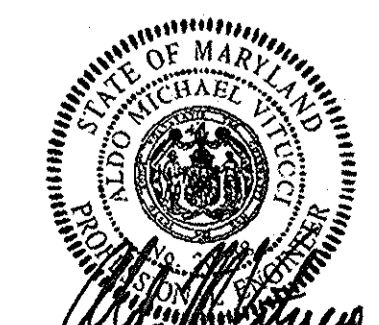
- The owner shall maintain the plant material, mulch layer and soil layer annually. Maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following 5000 Maryland stormwater design manual volume II, table A.4.1 and 2.
- The owner shall perform a plant in the spring and in the fall each year. During the inspection, the owner shall remove dead and diseased vegetation considered beyond treatment, replace dead plant material with acceptable replacement plant material. Treat diseased trees and shrubs and remove all deficient shrubs and vines.
- The owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.
- The owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.



TYPICAL BIO-RETENTION (F-6) SECTION
 NO SCALE

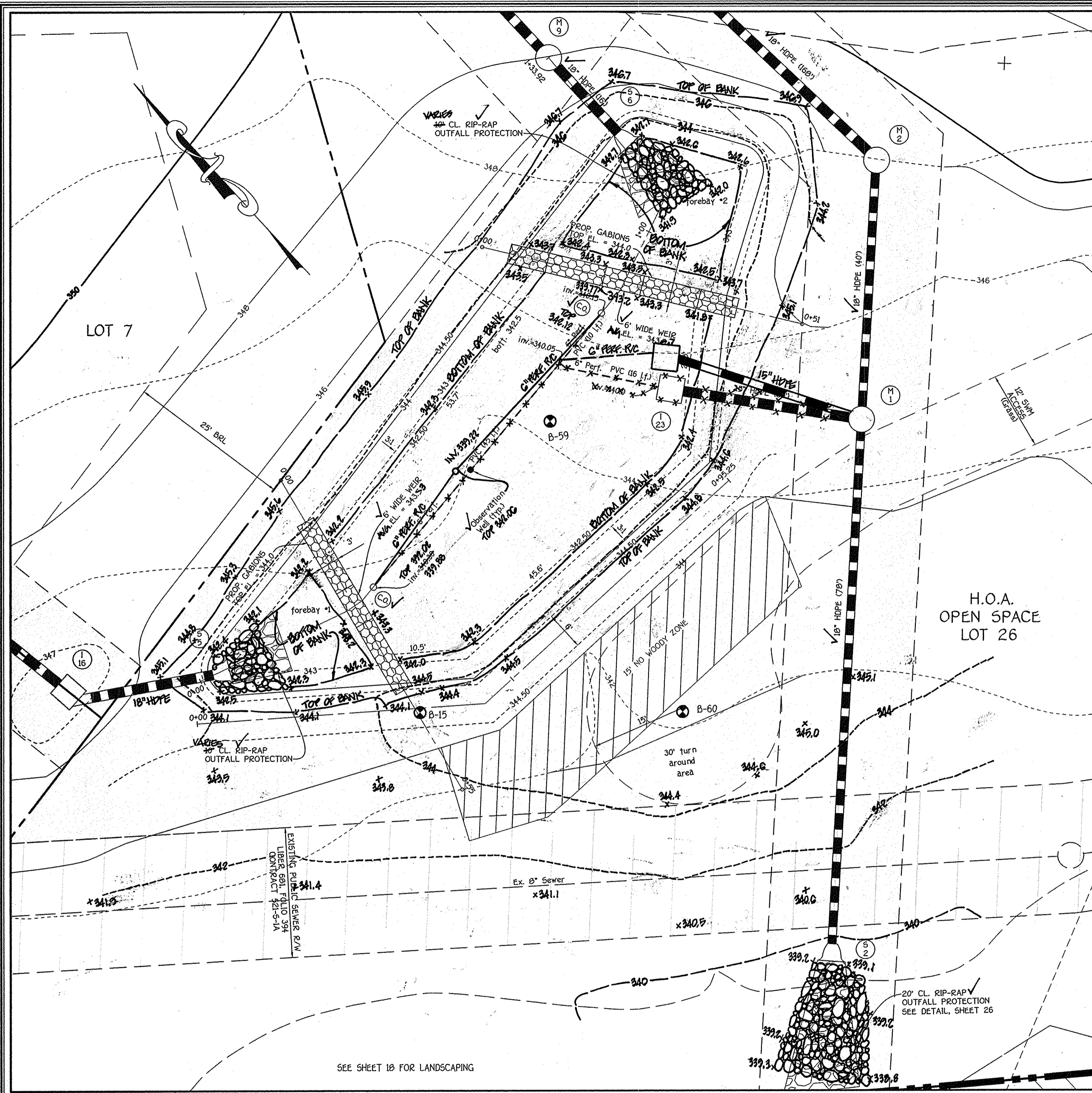
NOTE: THE STORMWATER MANAGEMENT FACILITIES (M-6) WILL BE PRIVATELY OWNED BY H.O.A. AND JOINTLY MAINTAINED BY H.O.A. AND HOWARD COUNTY. HOWARD COUNTY'S MAINTENANCE RESPONSIBILITY ONLY PERTAINS TO THE INLET STRUCTURES AND STORM DRAIN PIPE FOR THE MICRO BIO-RETENTION FACILITIES (M-6). ALL LANDSCAPING, UNDERDRAINS, CLEAN-OUTS AND FILTER MEDIA IS THE RESPONSIBILITY OF THE HOMEOWNER'S ASSOCIATION, THE H.O.A. OR PRIVATE HOMEOWNER IS RESPONSIBLE FOR ALL OTHER FACILITIES (F-1), (F-6), (M-5) AND (M-4).

NOTE: THE PROPOSED 4' SIDEWALK SHALL BE TRAFFIC BEARING (7" REINFORCED CONCRETE) A MINIMUM OF 2' ON EITHER SIDE OF THE PROPOSED COG/COS INLET OPENING.



STORMWATER MANAGEMENT PLANS
Centennial Lake Overlook
 (Formerly Mason Property)
Section One
 Buildable Lots 1 Thru 23,
 Open Space Lots 24 Thru 28 &
 Buildable Bulk Parcels 'A' and 'B'
 (Being a Subdivision of Tax Parcel No. 06, Tax Map No. 30,
 Liber 10729 A1 Folio 329 And Liber 10729 A1 Folio 335)
 Zoning R-20
 Tax Map No. 30 Grid No. 2 Parcel No. 06
 2nd Election District Howard County, Maryland
 Date: January 10, 2014
 Scale: As Shown
 Sheet 15 of 30

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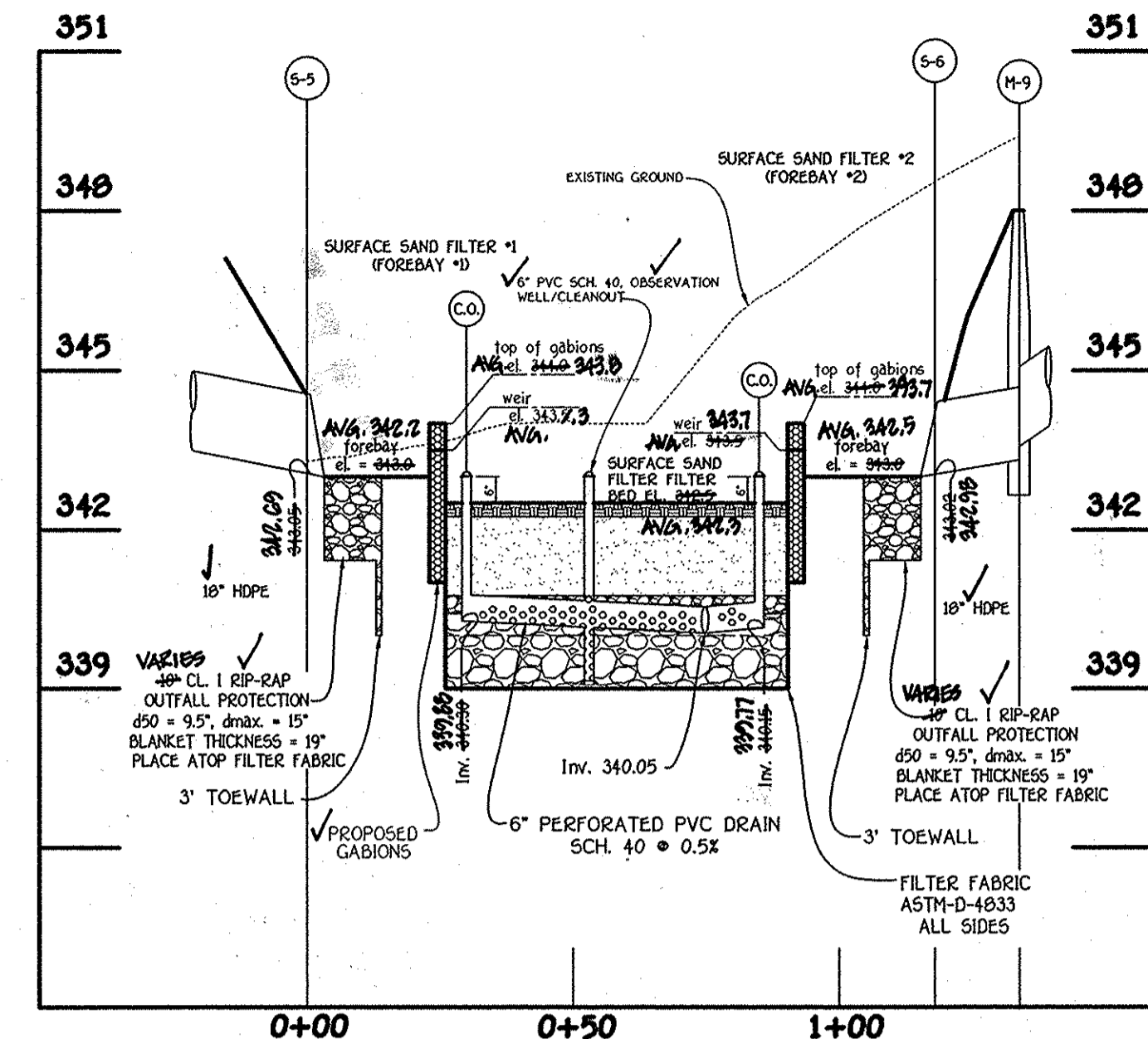
PRIVATELY OWNED & MAINTAINED BY H.O.A.
SAND FILTER NO. 1 (F-1) PLAN
 SCALE: 1" = 10'

NOTE: THE STORMWATER MANAGEMENT FACILITIES (M-5) WILL BE PRIVATELY OWNED BY H.O.A. AND JOINTLY MAINTAINED BY H.O.A. AND HOWARD COUNTY. HOWARD COUNTY'S MAINTENANCE RESPONSIBILITY ONLY PERTAINS TO THE INLET STRUCTURES AND STORM DRAIN PIPE FOR THE MICRO BIO-RETENTION FACILITIES (M-6). ALL LANDSCAPING, UNDERDRAINS, CLEAN-OUTS AND FILTER MEDIA IS THE RESPONSIBILITY OF THE HOMEOWNER'S ASSOCIATION. THE H.O.A. OR PRIVATE HOMEOWNER IS RESPONSIBLE FOR ALL OTHER FACILITIES (F-1), (F-6), (M-5) AND (M-4).

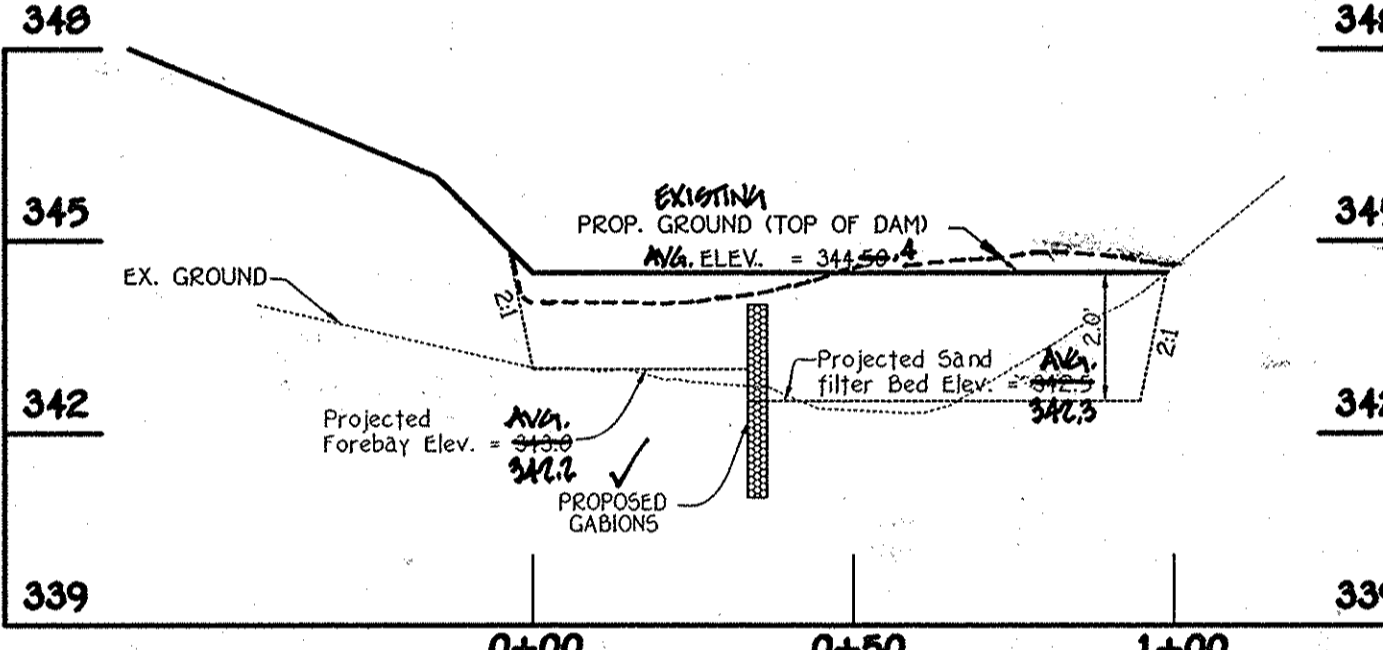
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2995

OWNER
 JOHN TENNEY MASON, JR. FAMILY LLC
 AND FRANCES WELFORD MASON FAMILY LLC
 c/o MR. JOHN TENNEY MASON, III, GENERAL
 MEMBER 7636 GATHER ROAD
 SYKESVILLE, MD 21784
 (443-367-0422)

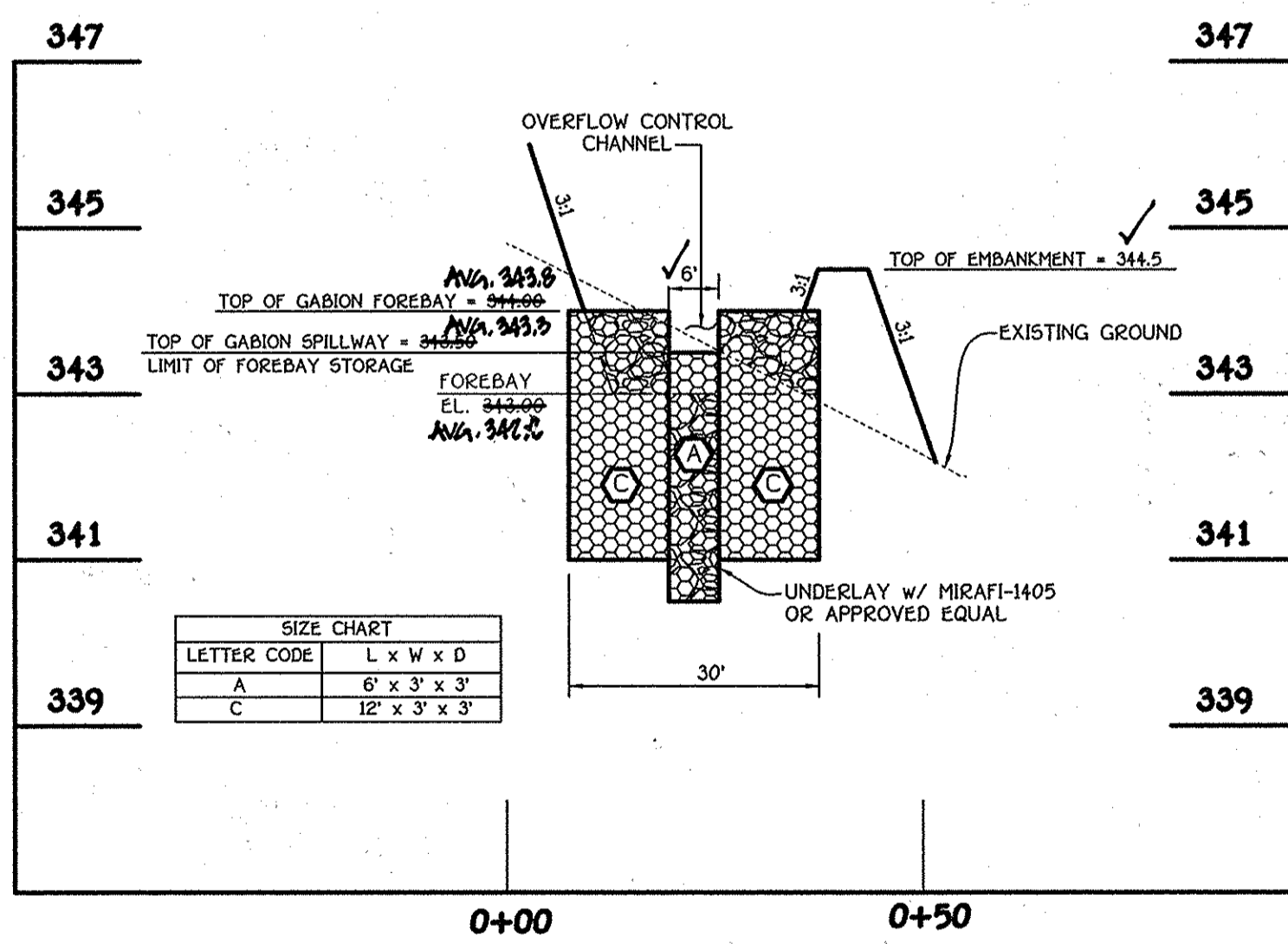
DEVELOPER
 DOUBLE R VENTURES, LLC
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, SUITE 102
 ELLICOTT CITY, MARYLAND 21042
 (443-367-0422)



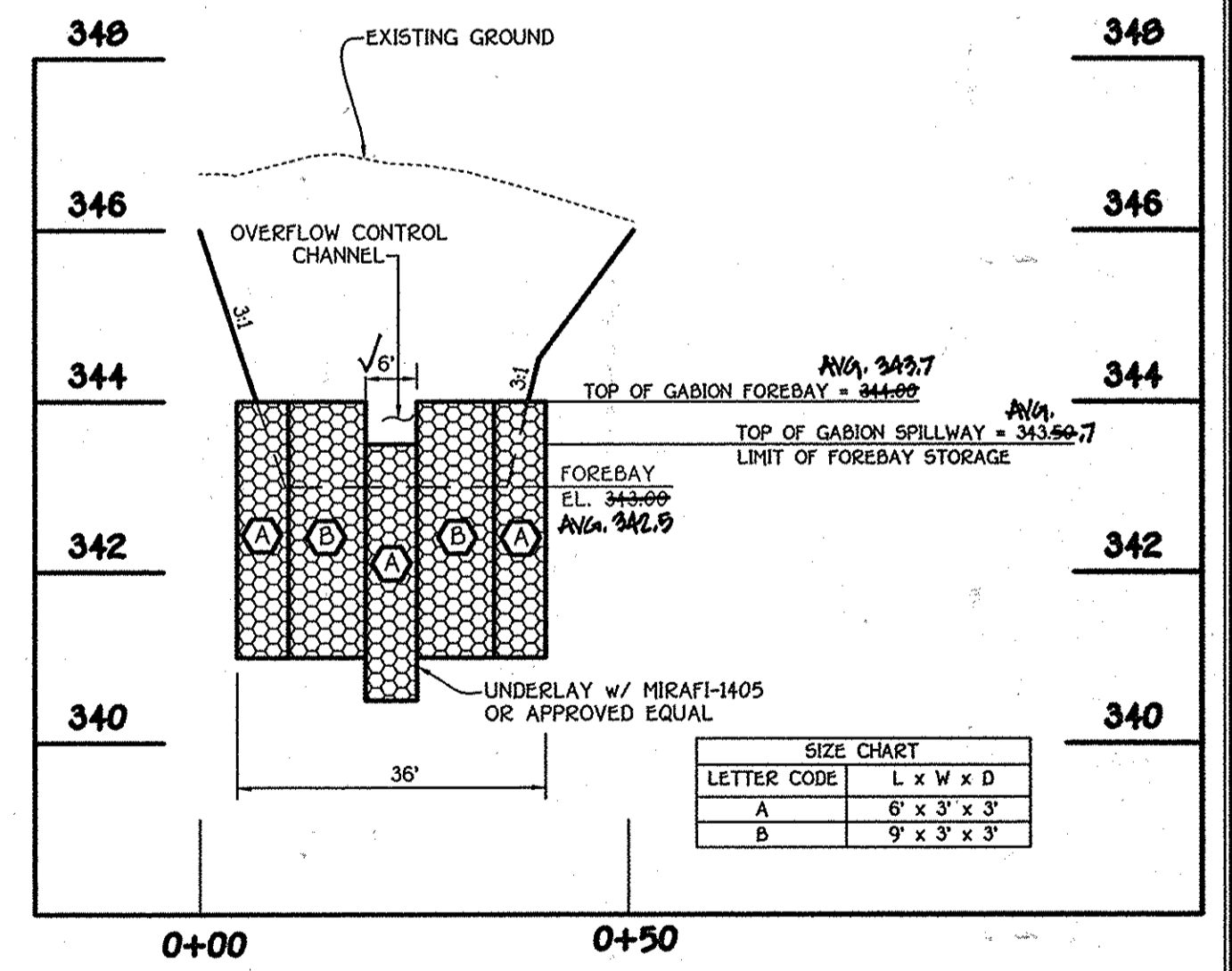
SECTION THRU S.W.M. FACILITY
 SCALE: HORIZ. 1" = 30'
 VERT. 1" = 3'



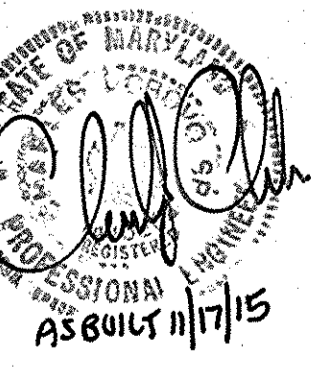
PROFILE ALONG TOP OF EMBANKMENT (F-1)
 SCALE: HORIZ. 1" = 30'
 VERT. 1" = 3'



GABION FOREBAY #1 PROFILE
 SCALE: HORIZ. 1" = 20'
 VERT. 1" = 2'



GABION FOREBAY #2 PROFILE
 SCALE: HORIZ. 1" = 20'
 VERT. 1" = 2'



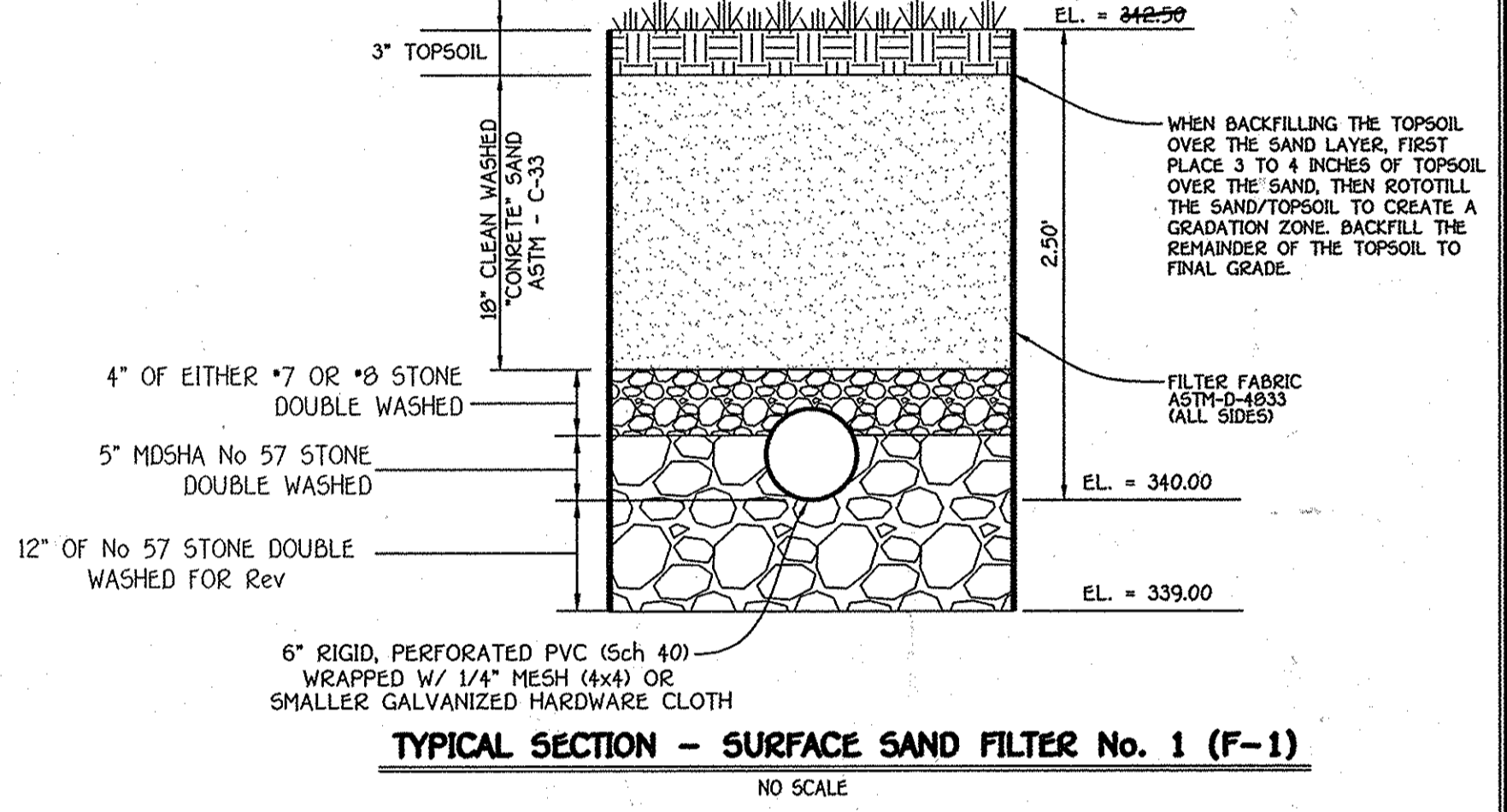
ALDO M. VITUCCI, P.E. DATE 1/14/14
 "Professional certification I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 22748, Expiration Date 2-22-15."

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development
 Chief, Development Engineering Division

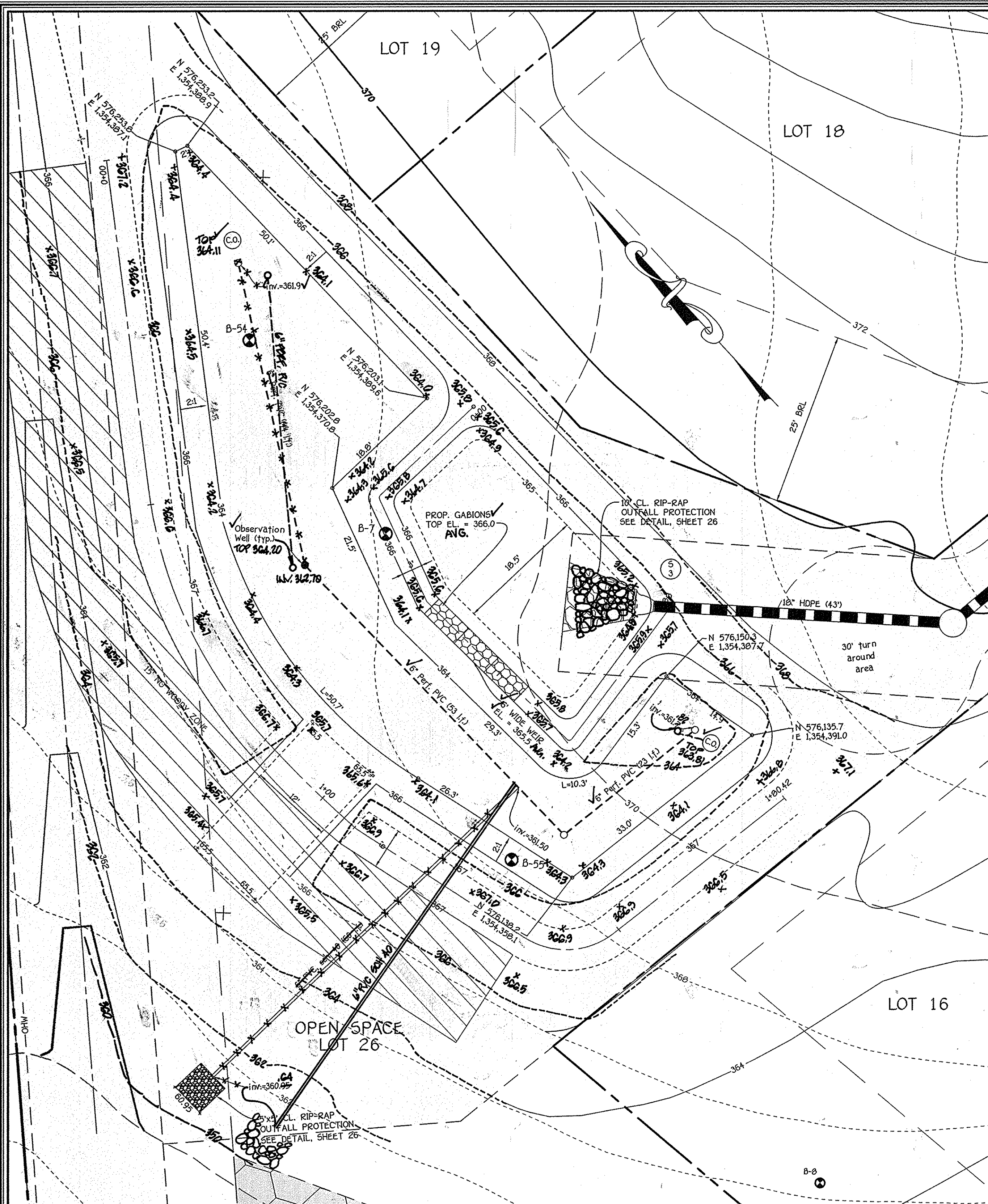
2-20-14 DATE
 3/20/14 DATE
 2-26-14 DATE

REVISIONS		
NO.	DESCRIPTION	DATE

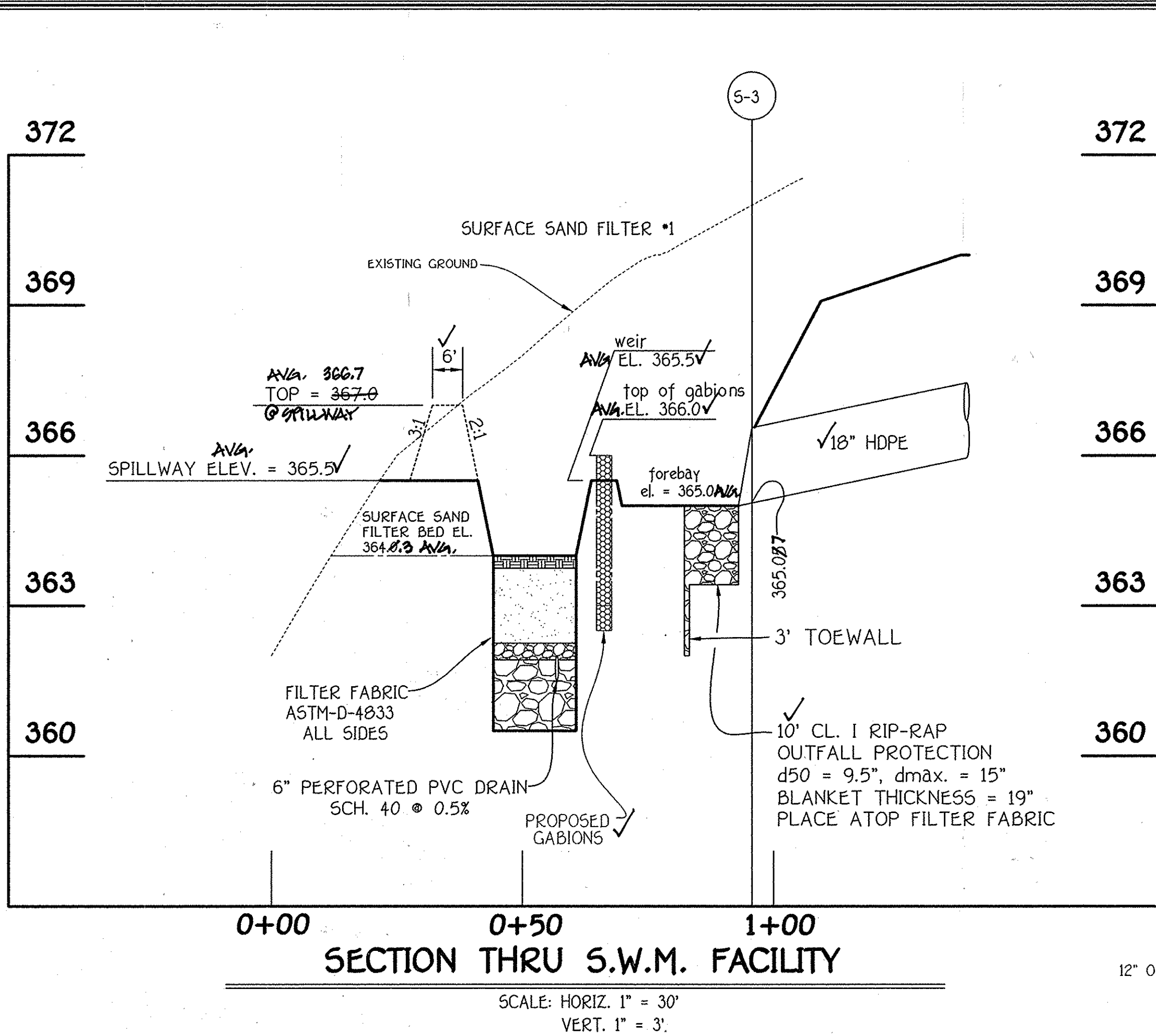
- OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS (F-1)**
- THE STORMWATER WETLAND FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
 - THE TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOVED A MINIMUM OF ONCE PER YEAR, WHEN VEGETATION REACHES 18" IN HEIGHT OR AS NEEDED.
 - 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.
 - DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
 - VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
 - REMOVE SILT WHEN IT EXCEEDS FOUR (4) INCHES DEEP IN THE FOREBAY.
 - FILTER MATERIAL MUST BE REPLACED WHEN WATER REMAINS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 24 HOURS FOLLOWING A 1 OR 2 YEAR STORM EVENT OR MORE THAN 48 HOURS AFTER A 10 YEAR STORM EVENT.
 - A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
 - THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
 - 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.



STORMWATER MANAGEMENT PLANS
Centennial Lake Overlook
 (Formerly Mason Property)
Section One
 Buildable Lots 1 Thru 23,
 Open Space Lots 24 Thru 28 &
 Buildable Bulk Parcels 14 And 15
 Being A Subdivision Of Tax Parcel No. 05, Tax Map No. 30,
 Liber 10729 At Folio 329 And Liber 10729 At Folio 335)
 Zoning R-20
 Grid No. 2 Parcel No. 05
 2nd Election District Howard County, Maryland
 Date January 10, 2014
 Scale: As Shown Sheet 16 OF 30



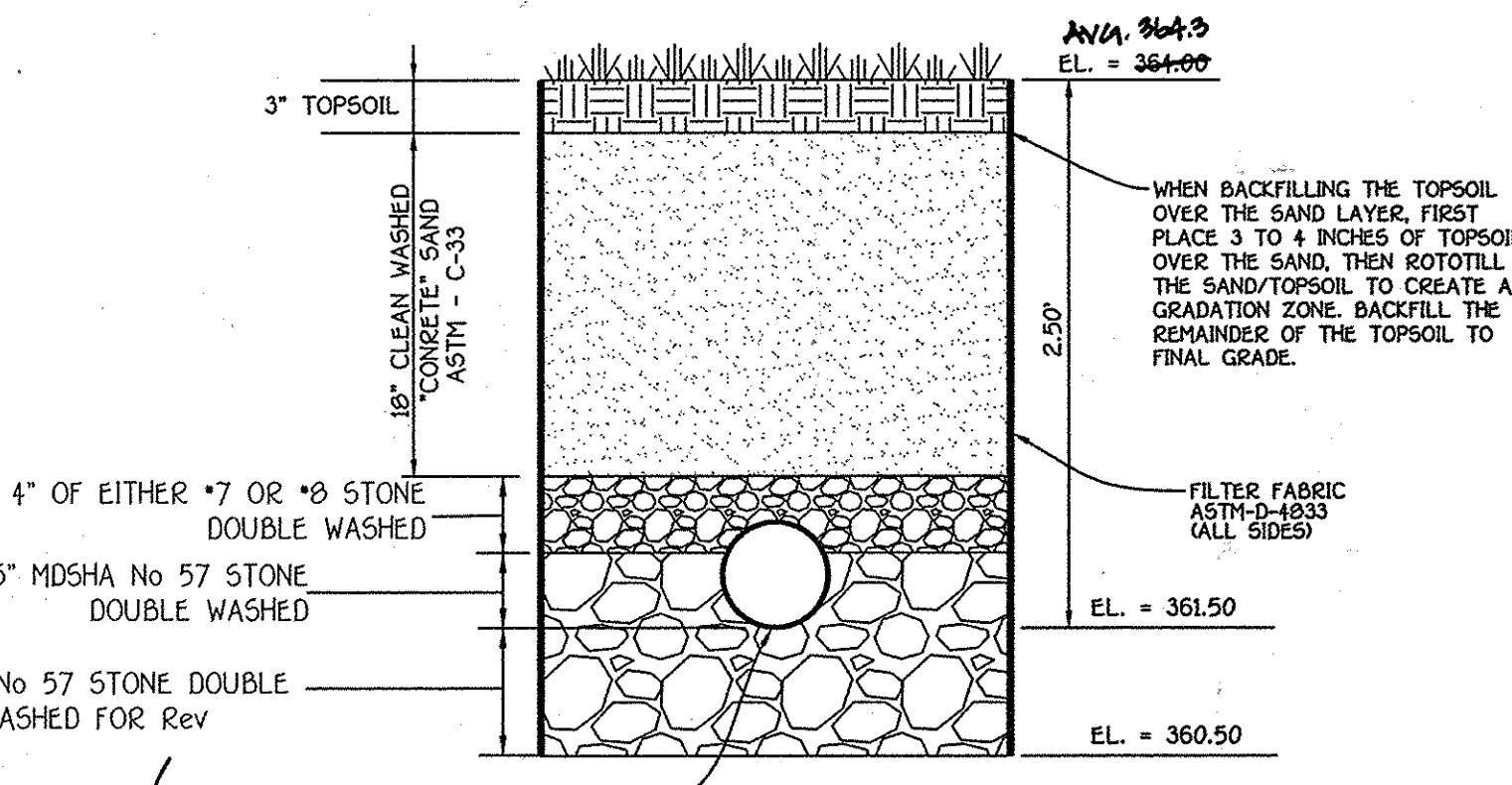
PRIVATELY OWNED & MAINTAINED BY H.O.A.
SAND FILTER NO. 2 (F-1) PLAN
 SCALE: 1" = 10'



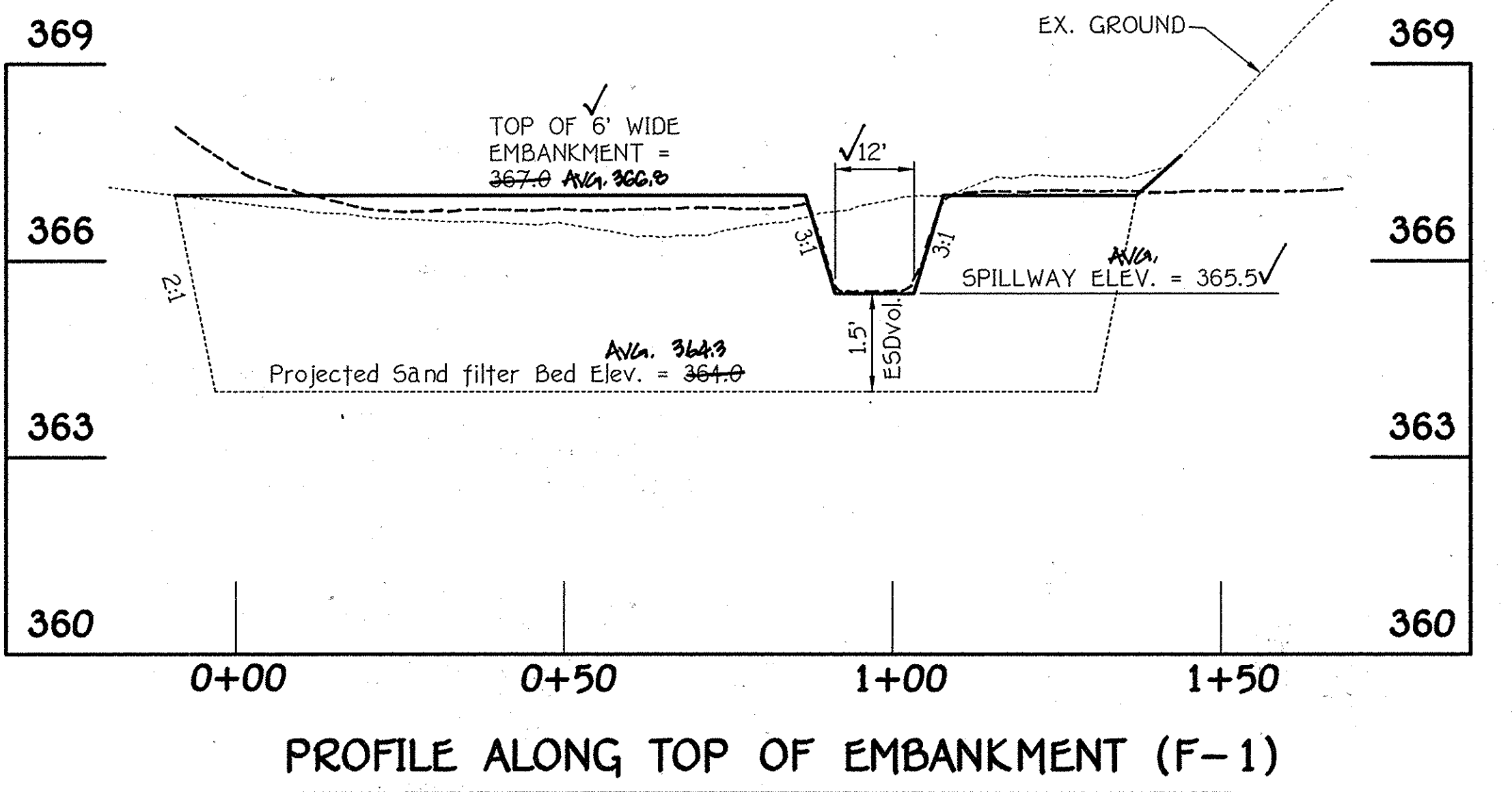
SECTION THRU S.W.M. FACILITY
 SCALE: HORIZ. 1" = 30'
 VERT. 1" = 3'

APPROVED: DEPARTMENT OF PUBLIC WORKS		
<i>W. F. ...</i>	DATE	2-20-14
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>V. ...</i>	DATE	3/04/14
<i>C. ...</i>	DATE	2-26-14
REVISIONS		
NO.	DESCRIPTION	DATE

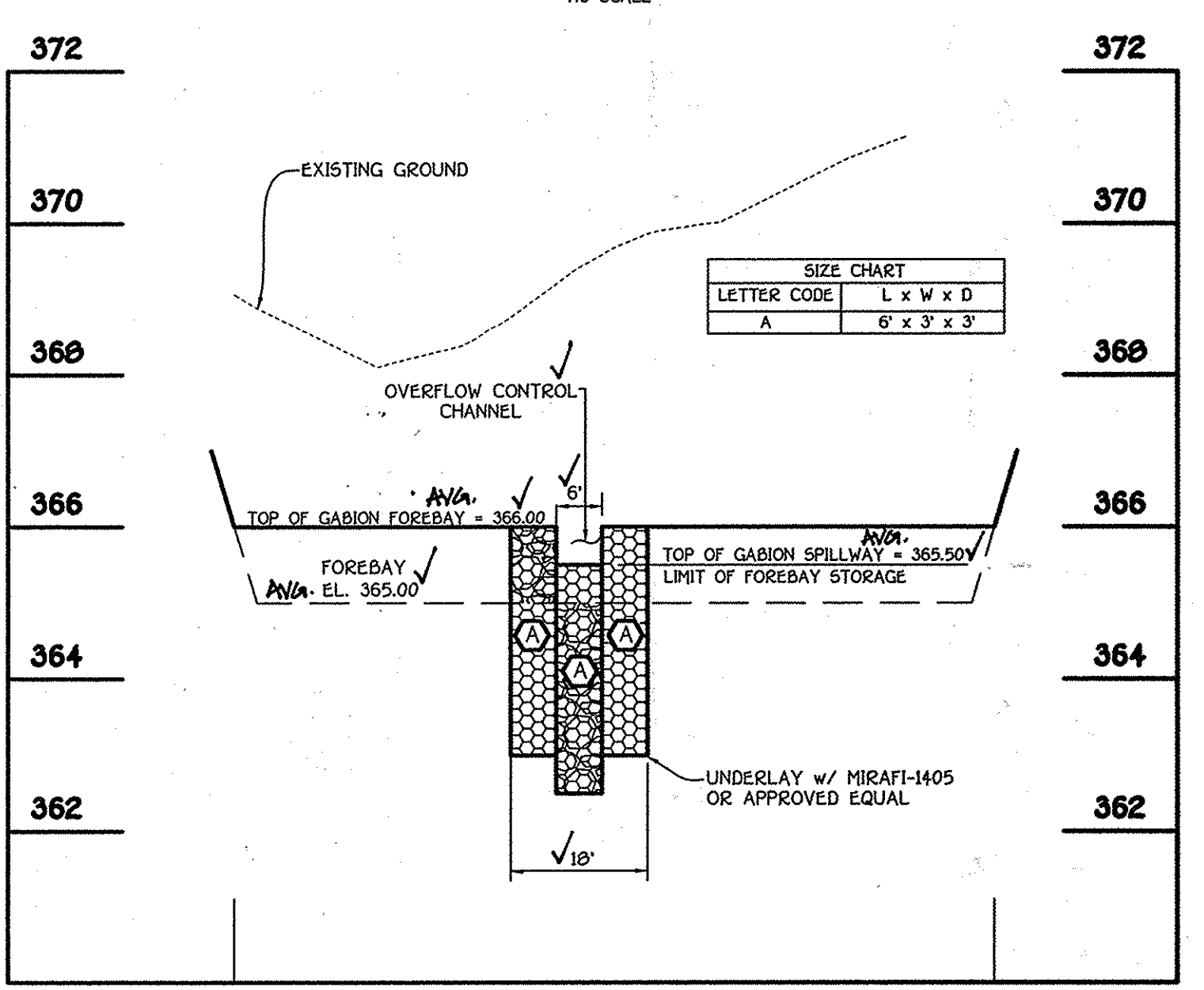
NOTE: THE STORMWATER MANAGEMENT FACILITIES (M-6) WILL BE PRIVATELY OWNED BY H.O.A. AND JOINTLY MAINTAINED BY H.O.A. AND HOWARD COUNTY. HOWARD COUNTY'S MAINTENANCE RESPONSIBILITY ONLY PERTAINS TO THE INLET STRUCTURES AND STORM DRAIN PIPE FOR THE MICRO BIO-RETENTION FACILITIES (M-6). ALL LANDSCAPING, UNDERDRAINS, CLEAN-OUTS AND FILTER MEDIA IS THE RESPONSIBILITY OF THE HOMEOWNER'S ASSOCIATION. THE H.O.A. OR PRIVATE HOMEOWNER IS RESPONSIBLE FOR ALL OTHER FACILITIES (F-1), (F-6), (M-5) AND (M-4).



TYPICAL SECTION - SURFACE SAND FILTER No. 2 (F-1)
 NO SCALE



PROFILE ALONG TOP OF EMBANKMENT (F-1)
 SCALE: HORIZ. 1" = 30'
 VERT. 1" = 3'



GABBION FOREBAY PROFILE
 SCALE: HORIZ. 1" = 20'
 VERT. 1" = 2'

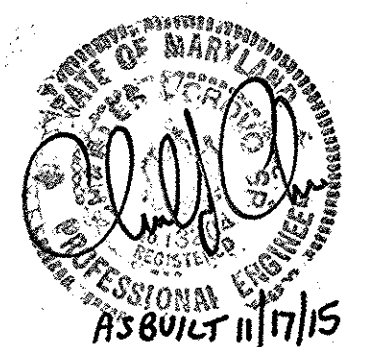
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS (F-1)

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. FILTER MATERIAL MUST BE REPLACED WHEN WATER REMAINS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 24 HOURS FOLLOWING A 1 OR 2 YEAR STORM EVENT OR MORE THAN 48 HOURS AFTER A 10 YEAR STORM EVENT.
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.

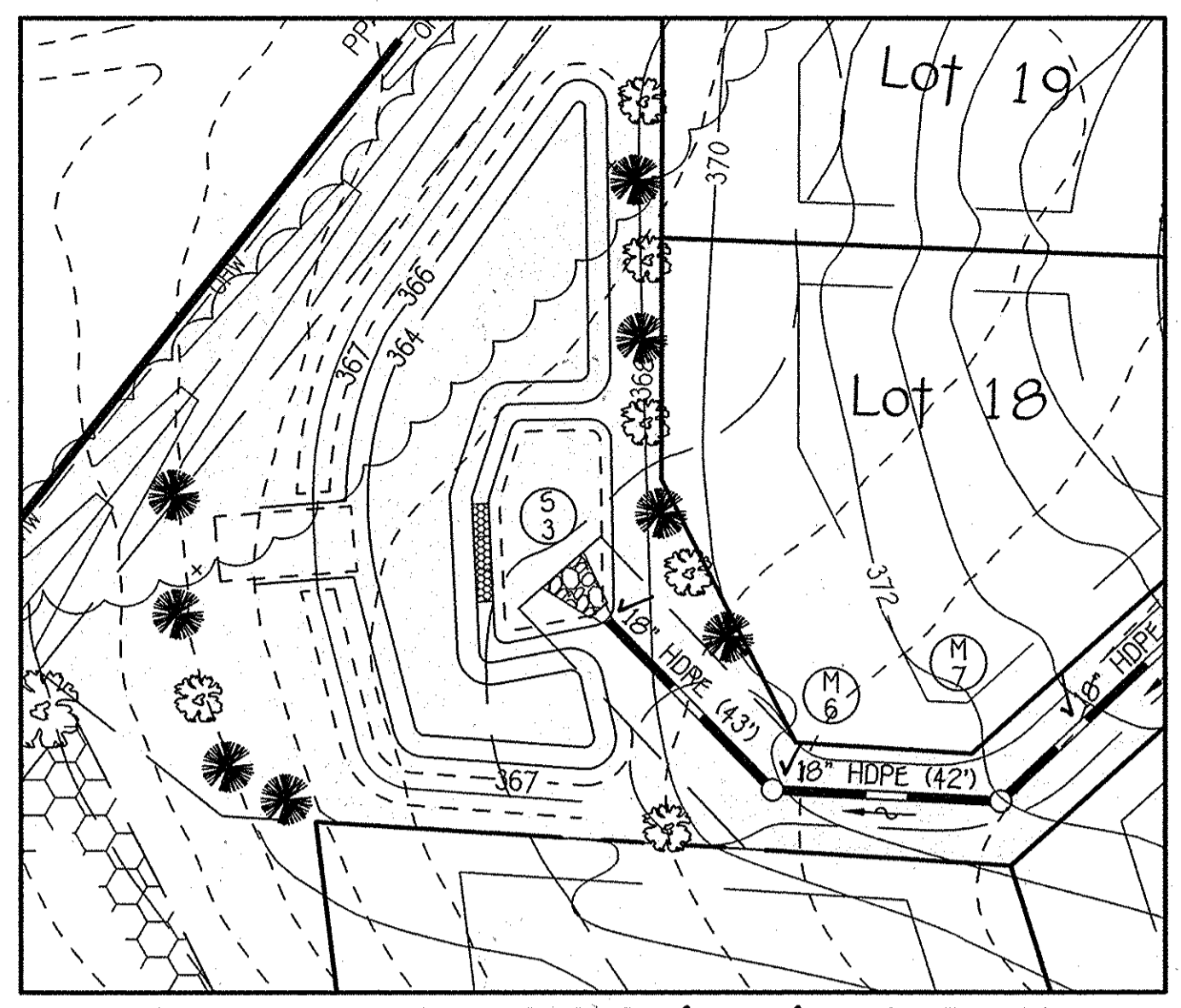
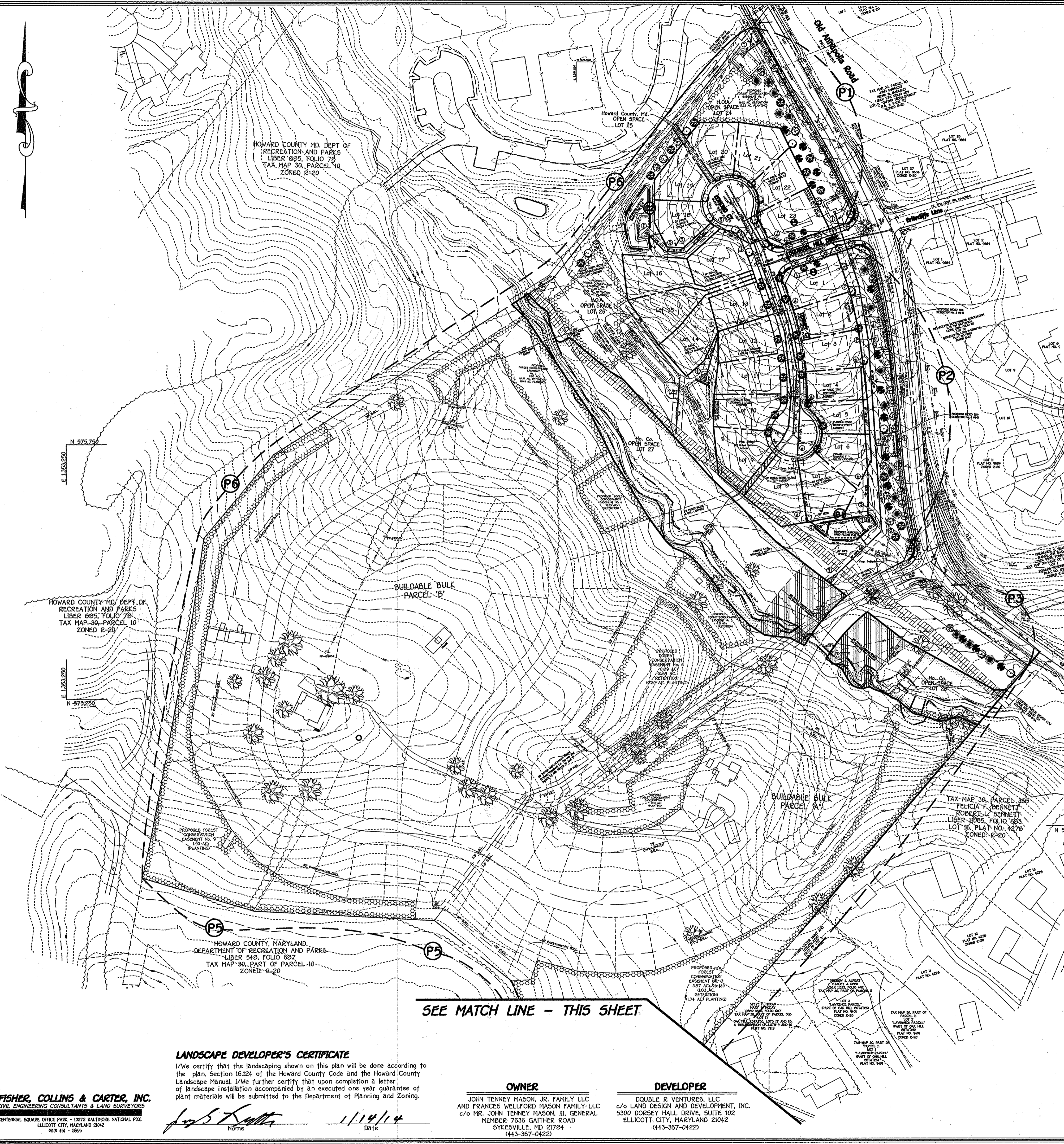
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 4100 461 - 2222

OWNER
 JOHN TENNEY MASON, JR. FAMILY LLC
 AND FRANCES WELLFORD MASON FAMILY LLC
 c/o MR. JOHN TENNEY MASON, III, GENERAL MEMBER
 7636 GATHER ROAD
 SYKESVILLE, MD 21784
 (443-367-0422)

DEVELOPER
 DOUBLE R VENTURES, LLC
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 3300 DORSEY HALL DRIVE, SUITE 102
 ELLICOTT CITY, MARYLAND 21042
 (443-367-0422)



STORMWATER MANAGEMENT PLANS
Centennial Lake Overlook
 (Formerly Mason Property)
Section One
 Buildable Lots 1 Thru 23,
 Open Space Lots 24 Thru 29 &
 Buildable Bulk Parcels 1' And 12'
 Being A Subdivision of Tax Parcel No. 06, Tax Map No. 30,
 Liber 10729 A1 Folio 329 And Liber 10729 A1 Folio 339)
 Zoning R-20
 Tax Map No. 30 Grid No. 2 Parcel No. 06
 2nd Election District Howard County, Maryland
 Date January 10, 2014
 Scale: As Shown Sheet 17 Of 30



Approved: Department Of Planning And Zoning

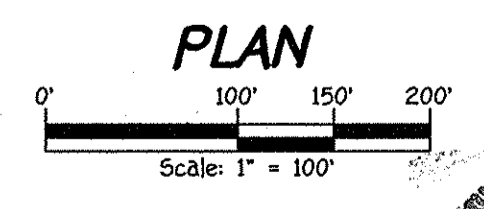
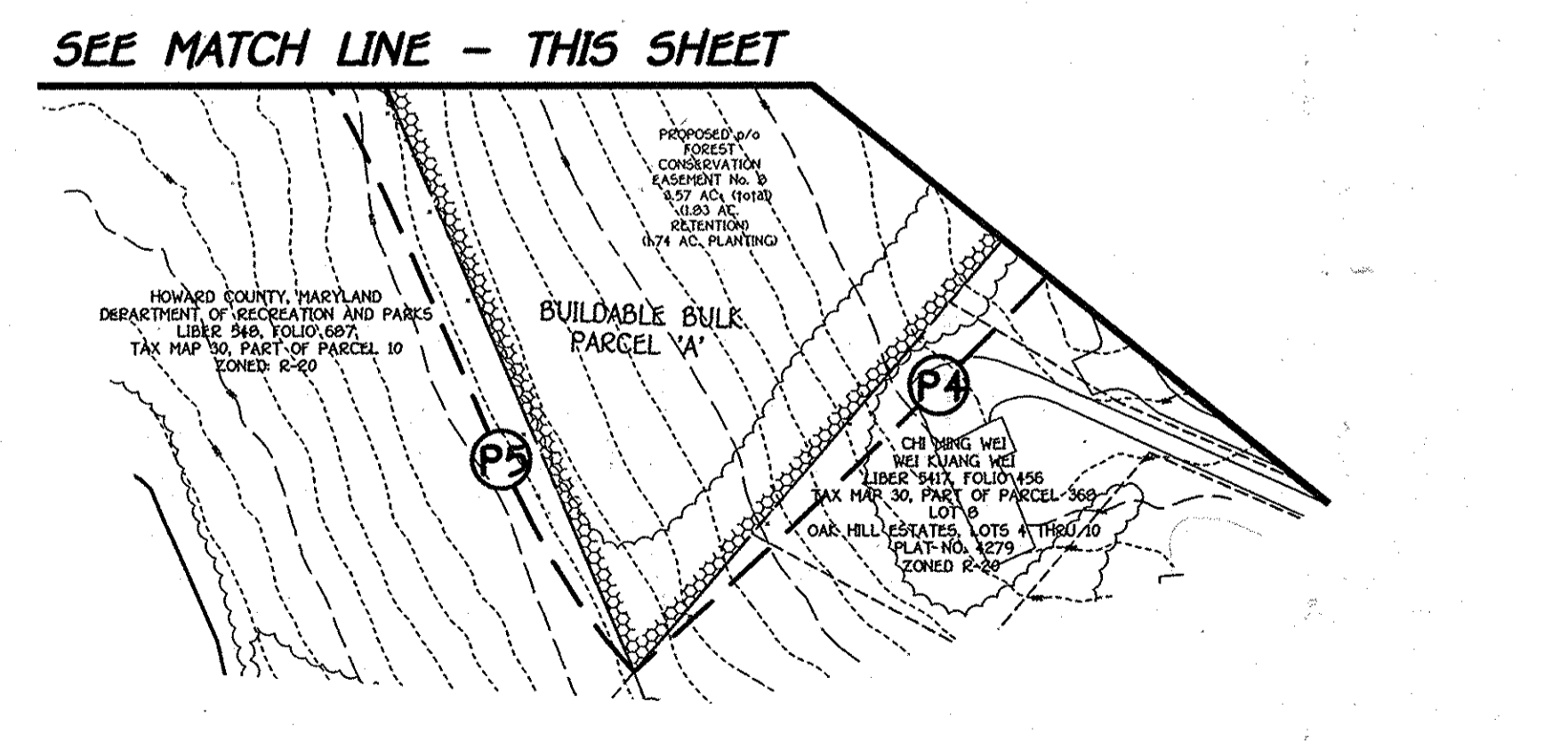
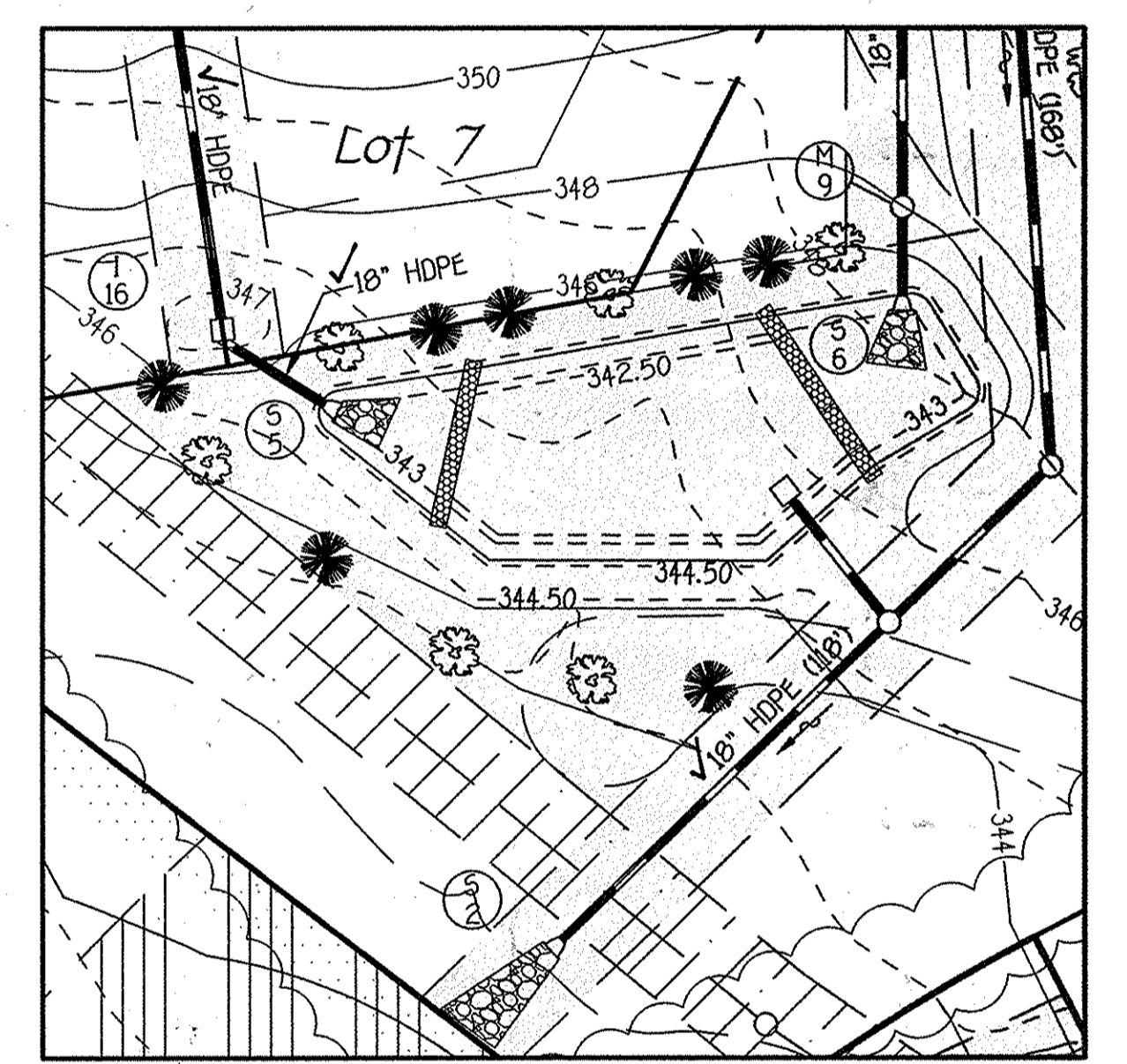
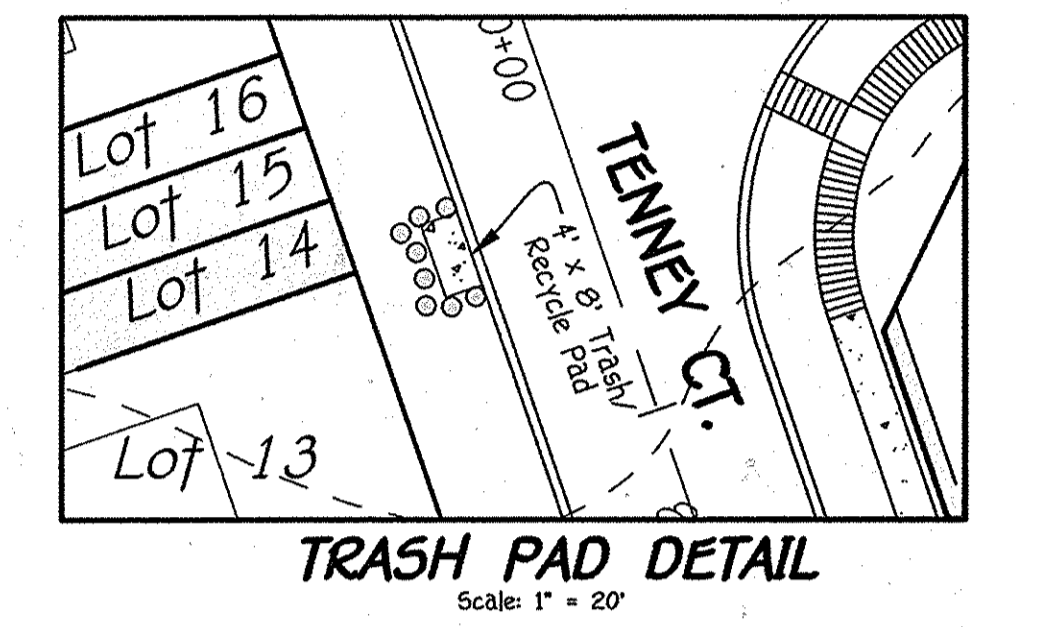
Neil DeLore 3/24/14
 Chief, Division Of Land Development Date

Paul Edinger 2-26-14
 Chief, Development Engineering Division Date

Approved: Howard County Department Of Public Works

William F. Smith 2-20-14
 Chief, Bureau Of Highways Date

NO.	DESCRIPTION	DATE



LANDSCAPE DEVELOPER'S CERTIFICATE

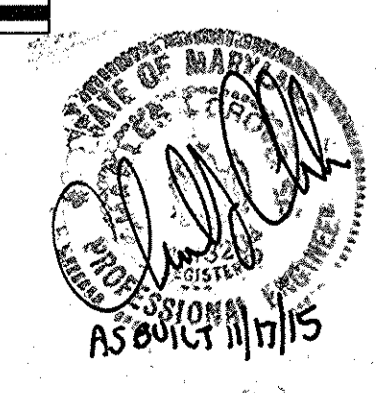
I/We certify that the landscaping shown on this plan will be done according to the plan, Section 18.124 of the Howard County Code and the Howard County Landscape Manual. I/we further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

[Signature] 1/14/14
 Name Date

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 33 CONTINENTAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 410-481-2899

OWNER
 JOHN TENNEY MASON, JR. FAMILY LLC
 AND FRANCES WELLFORD MASON FAMILY LLC
 c/o MR. JOHN TENNEY MASON III, GENERAL
 MEMBER 7636 GATHIER ROAD
 SYKESVILLE, MD 21784
 (443-367-0422)

DEVELOPER
 DOUBLE R VENTURES, LLC
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, SUITE 102
 ELLICOTT CITY, MARYLAND 21042
 (443-367-0422)



STREET TREE & LANDSCAPE PLAN
Centennial Lake Overlook
 (Formerly Mason Property)
Section One
 Buildable Lots 1 Thru 23,
 Open Space Lots 24 Thru 29 &
 Buildable Bulk Parcels A' And VA'
 (Being A Subdivision Of Tax Parcel No. 06, Tax Map No. 30,
 Liber 10729 At Folio 329 And Liber 10729 At Folio 339)
 Zoning: R-20
 Tax Map No. 30 Grid No. 2 Parcel No. 06
 2nd Election District Howard County, Maryland
 Date: January 10, 2014
 Sheet 19 Of 20

I:\2011\11042.dwg\Finals section one\11042.dwg sheet 18-19 landscape plan.dwg sheet 18, 1/11/2014 11:46:12 AM, 1:1

Approved Department of Public Works
 Date: 2-20-14
 Chief Bureau of Highways

Approved Department of Planning and Zoning
 Date: 3/6/14
 Chief, Division of Land Development

Chief, Development Engineering Division
 Date: 2-26-14

NO.	REVISIONS	DATE
	DESCRIPTION	

PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plan and as described herein. All plant material, unless otherwise specified, shall be nursery grown, uniform, branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plan and the American Association of Nurseries (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sun scald injuries, abrasions of the bark, insect damage, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug, no hold-in plants from cold storage will be accepted. Unless otherwise specified, all general conditions, planting operations, details and planting specifications shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Area", hereinafter "Landscape Guidelines" approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architects, latest edition, including all amendments.

Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.

Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.

Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the dip line.

Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing season of completion of site construction.

Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications.

Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plant list take precedence.

All shrubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except where noted on plan.

Positive drainage shall be maintained in planting beds 2 percent slope.

Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure, Add 3 lbs. of standard fertilizer per cubic yard of planting mix. Evergreen Plants - Two parts topsoil, one part humus or other approved organic material, Add 3 lbs. of evergreen grade fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.

Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: be sure to carefully check the chemical used to assure its adaptability to the specific ground cover to be treated.

All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be graded and seeded. This plan is intended for landscape use only - see other plan sheets for more information on grading, sediment control, layout, etc.

PERIMETER	CATEGORY (PROPERTIES/ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)		CREDIT FOR WALL, FENCE OR BEEM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)		NUMBER OF PLANTS REQUIRED			NUMBER OF PLANTS PROVIDED		
				SHADE TREES	EVERGREEN TREES	SHRUBS	SHADE TREES	EVERGREEN TREES	SHRUBS				
P-1	ADJACENT TO ROADWAY	B	404.77'	NO	NO	NO	NO	8	10	-	8	10	-
P-2	ADJACENT TO ROADWAY	B	572.22'	NO	NO	NO	NO	11	14	-	11	14	-
P-3	ADJACENT TO ROADWAY	B	240.35'	YES	18'-2.3' White Oak & 11'-3.4' White Oak	NO	NO	3	6	-	3	6	-
P-4	ADJACENT TO PERIMETER	A	1313.37'	YES (1218')	NO	NO	NO	2	-	-	0	-	-
P-5	ADJACENT TO PERIMETER	A	1187.37'	YES (59')	NO	NO	NO	19	-	-	0	-	-
P-6	ADJACENT TO PERIMETER	A	2166.39' (Total) 723' (This Submission)	NO	NO	NO	NO	12	-	-	12	-	-
P-7	SIDE TO ROADWAY	B	57'	NO	NO	NO	NO	1	1	-	1	1	-
P-8	SIDE TO ROADWAY	B	57'	NO	NO	NO	NO	1	1	-	1	1	-

NOTE: P-4, P-5 AND THE REMAINDER OF P-6 (26 TREES) WILL BE PLANTED WHEN BULK PARCEL 'A' & 'B' IS SUBDIVIDED.

NOTES:

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 Howard County Landscape Manual.

At the time of plant installation, all trees listed and approved on the Landscape Plan shall comply with the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no substitutions or relocations of the required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviations from the approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revisions are made to the road drawing plans.

The Owner, tenants and/or their agents shall be responsible for maintenance of the required perimeter landscaping. 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 the other required landscaping shall be permanently maintained in good condition and when necessary, repaired or replaced.

NOTE: CONTRACTOR TO REGRADE, SOD OR HYDROSEED AND STRAW MULCH ALL AREAS DISTURBED AS A RESULT OF THEIR WORK.

SPRAY WITH MILT-PROOF ACCORDING TO MANUFACTURER'S STANDARDS

POUNE 1/3 LEAF AREA BUT RETAIN NATURAL FORM OF TREE

2 PIECES OF REINFORCED RUBBER HOSE

DOUBLE #12 GALVANIZED WIRE GUYS TWISTED

3-2" X 2" OAK STAKES

NOTCH STAKES TO HOLD WIRE

WRAP TRUNK TO SECOND TIER OF BRANCHES WITH WATERPROOF TREE WRAP AT 3" INTERVALS (EXCEPT EVERGREENS)

REMOVE ANY COVERING FROM TOP OF ROOT CROWN

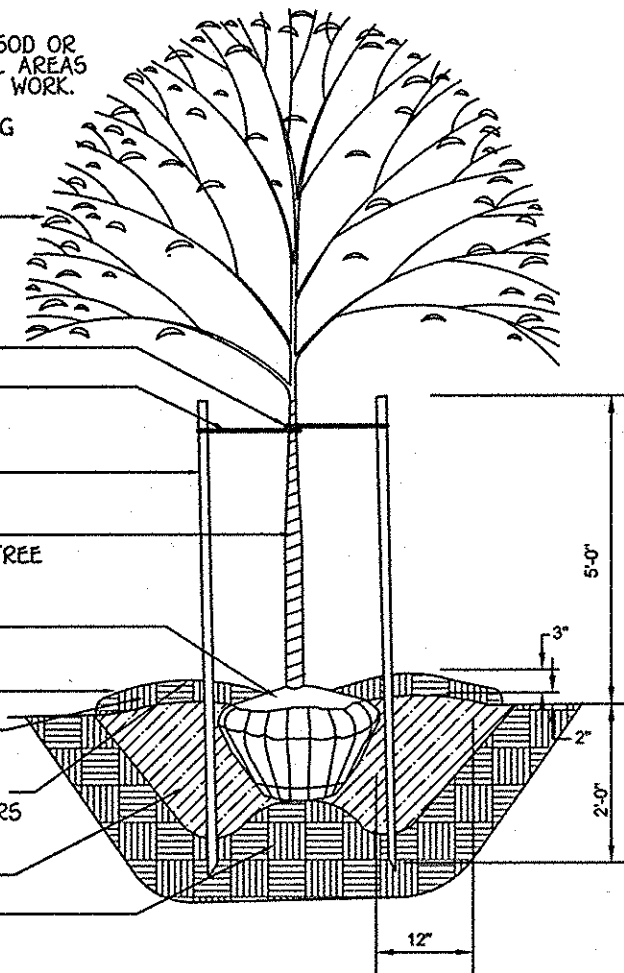
3" MULCH

MAINTAIN GROUND LINE WITH TOP OF ROOT CROWN

CONSTRUCT 3" SAUCER 8" H-FLOOD WITH WATER TWICE WITHIN 24 HOURS

TOP SOIL MIXTURE

CONVEX BOTTOM 6" MIN. HT.



SHADE TREE PLANTING DETAIL

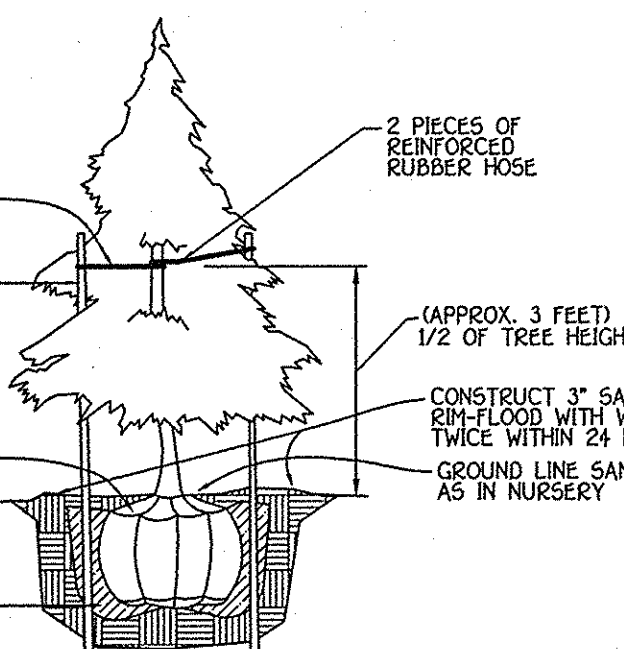
NO SCALE

DOUBLE #12 GALVANIZED WIRE GUYS TWISTED

2-2" X 2" OAK STAKES, NOTCH STAKES TO HOLD WIRE

REMOVE ANY COVERING FROM TOP OF BALL

TOPSOIL MIXTURE



EVERGREEN TREE PLANTING DETAIL

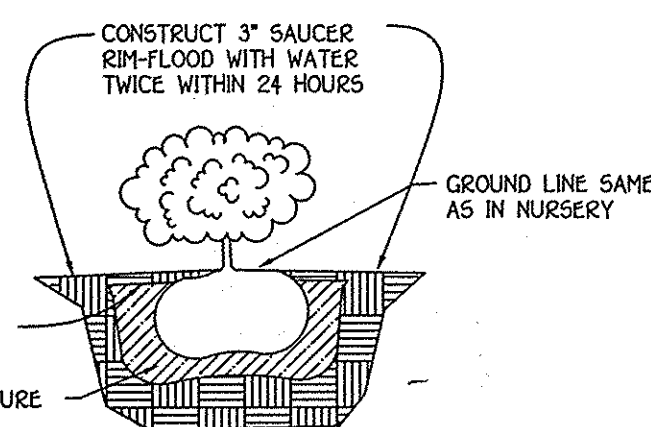
NO SCALE

CONSTRUCT 3" SAUCER 8" H-FLOOD WITH WATER TWICE WITHIN 24 HOURS

GROUND LINE SAME AS IN NURSERY

3" MULCH

TOPSOIL MIXTURE



SHRUB PLANTING DETAIL

NO SCALE

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

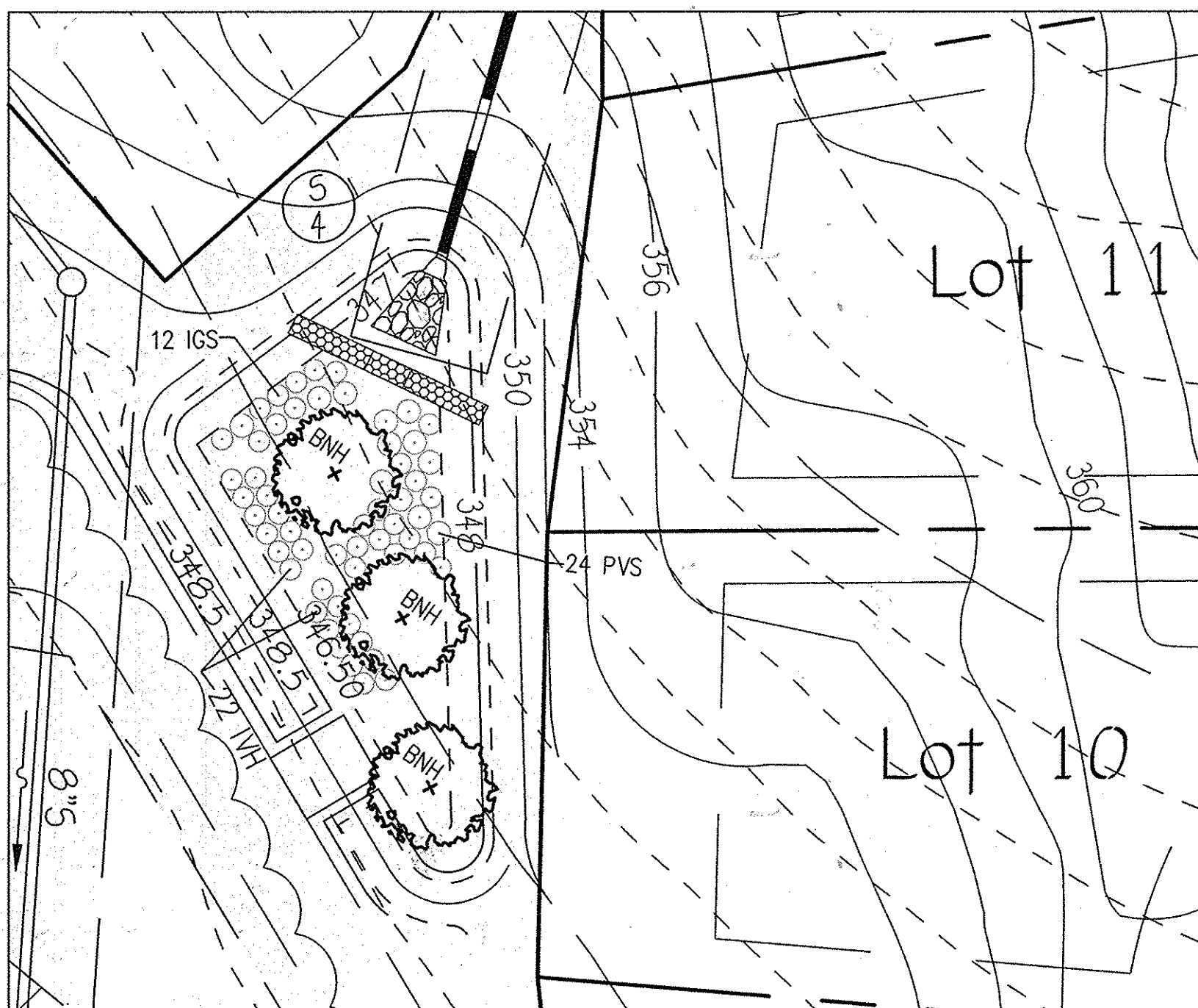
LINEAR FEET OF PERIMETER	D-1 : 275'	D-2 : 304'
NUMBER OF TREES REQUIRED & PROVIDED:		
SHADE TREES	7	8
EVERGREEN TREES		
CREDIT FOR EXISTING VEGETATION (NO, YES AND %) :	NO	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %) :	NO	NO

PLANT LIST

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE
○	32	PLATANUS OCCIDENTALIS 'BLOODGOOD' LONDON PLANETREE	2 1/2-3" CAL.
○	34	PRUNUS SARGENTII SARGENT CHERRY	2 1/2-3" CAL.
○	20	CLADRASTIS LUTEA YELLOWWOOD	2 1/2-3" CAL.
○	30	ACER GRISEUM PAPERBARK MAPLE	2 1/2-3" CAL.
○	15	PINUS STROBUS EASTERN WHITE PINE	6' - 8' HT.
○	32	CHINESE JUNIPER ROBUSTA	5' - 6' HT.
○	8	AZALEA 'BLAAW'S PINK' / BLAAW'S PINK AZALEA	10'-24" SPREAD

1. FINANCIAL SURETY FOR THE REQUIRED 60 STREET TREES HAS SHALL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$20,400.00

2. FINANCIAL SURETY FOR THE REQUIRED 48 SHADE TREES, 47 EVERGREEN TREES AND 8 SHRUBS HAS SHALL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$21,890.00

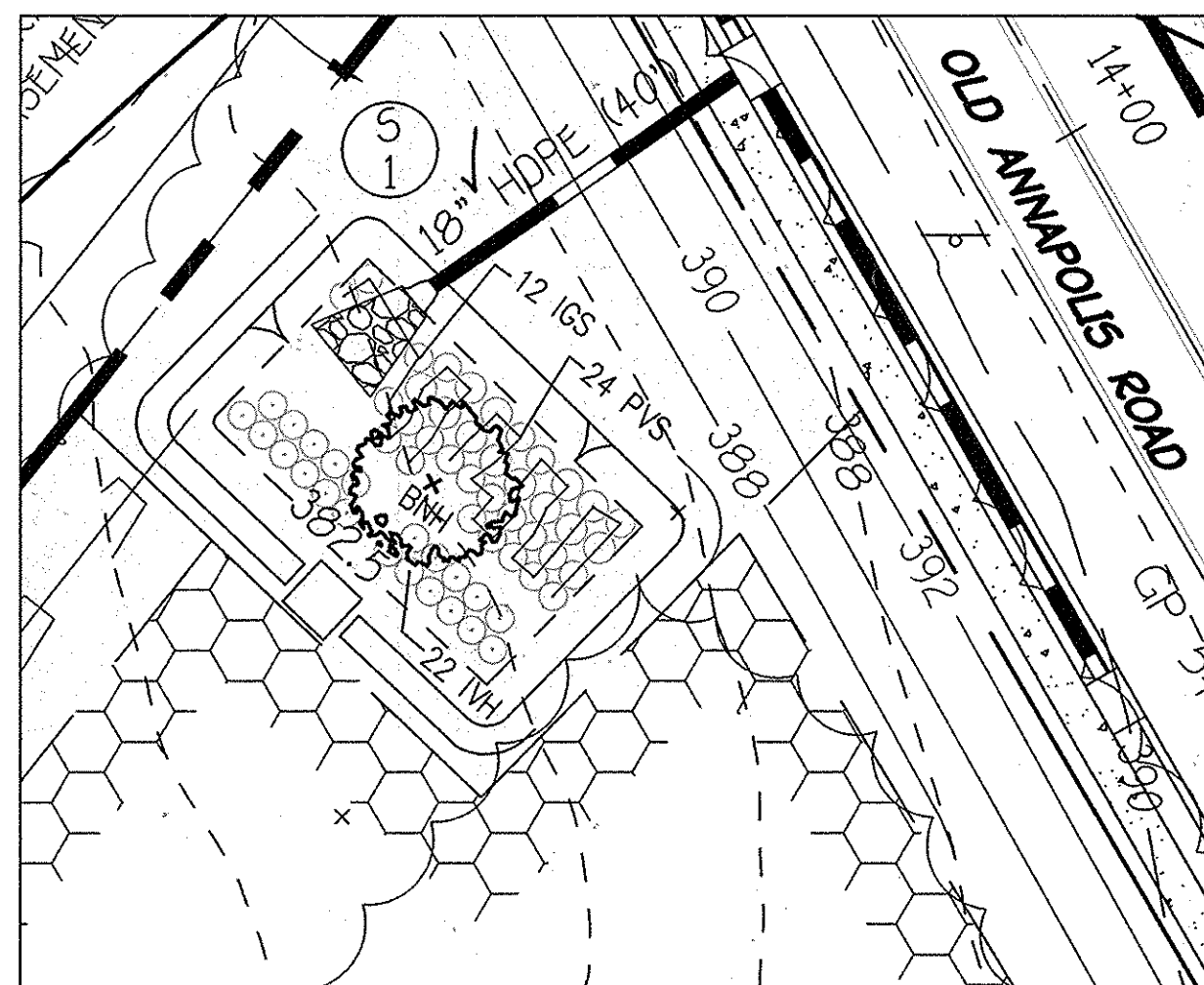


BIO-RETENTION No. 1 PLANTING DETAIL

SCALE: 1" = 20'

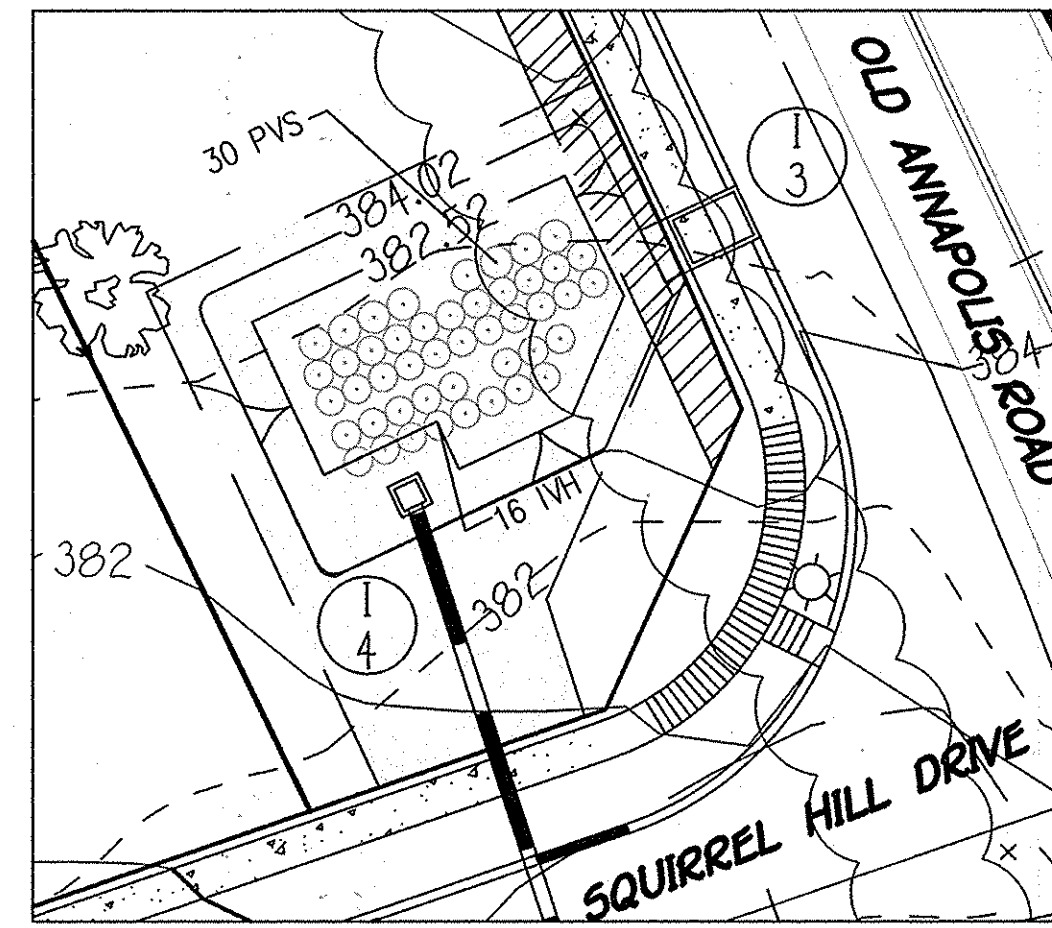
PRIVATE REFUSE PAD LANDSCAPING

4' x 8' PAD NUMBER:	PAD NO. 1
NUMBER OF TREES REQUIRED:	
SHADE TREES	---
EVERGREEN TREES	8
SHRUBS	---
NUMBER OF TREES PROVIDED:	
SHADE TREES	---
EVERGREEN TREES	8
SHRUBS - (AZALEA 'BLAAW'S PINK' / BLAAW'S PINK AZALEA PLANTED 10'-24" APART)	8



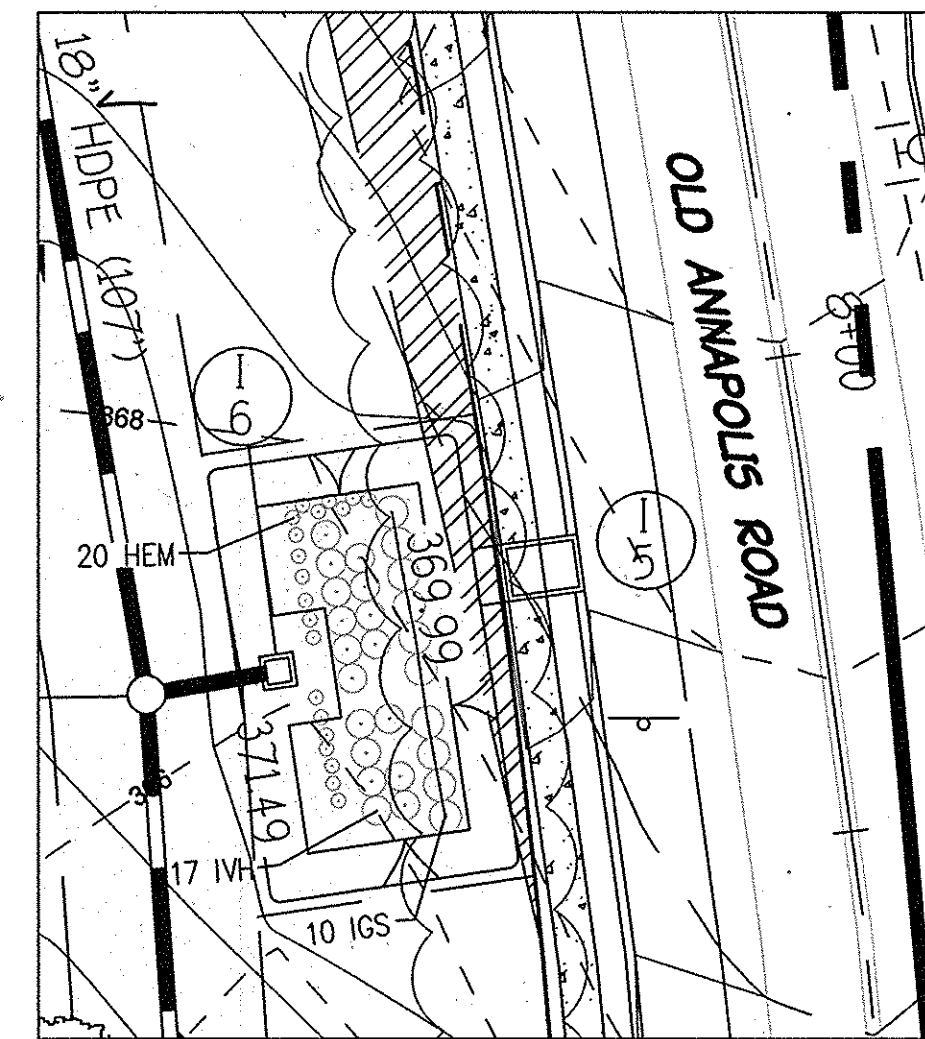
MICRO BIO-RETENTION No. 1 PLANTING DETAIL

SCALE: 1" = 20'



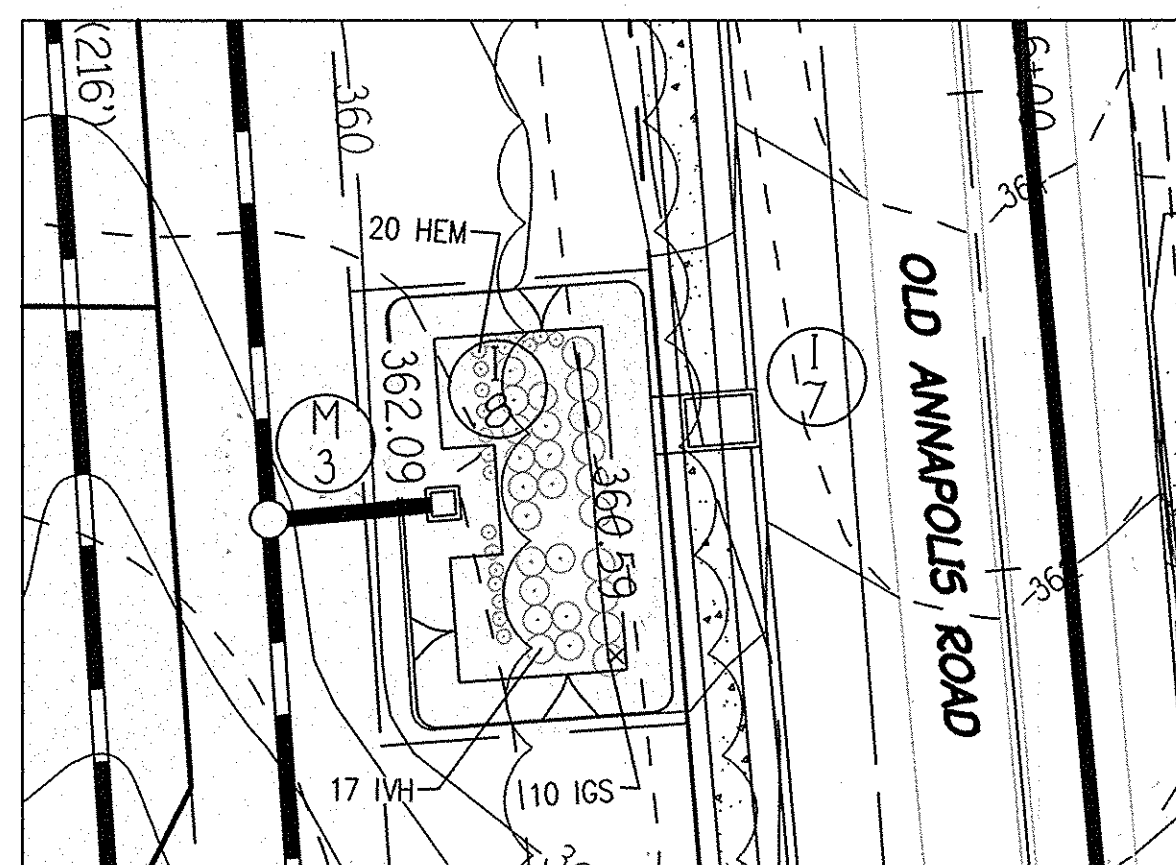
MICRO BIO-RETENTION No. 2 PLANTING DETAIL

SCALE: 1" = 20'



MICRO BIO-RETENTION No. 3 PLANTING DETAIL

SCALE: 1" = 20'



MICRO BIO-RETENTION No. 4 PLANTING DETAIL

SCALE: 1" = 20'

LANDSCAPE DEVELOPER'S CERTIFICATE

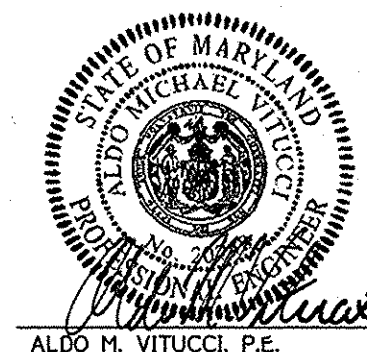
I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

Name: *John Tenney Mason, Jr.* Date: 1/14/14

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 410.461.2999

OWNER
 JOHN TENNEY MASON, JR. FAMILY LLC
 AND FRANCES WELLFORD MASON FAMILY LLC
 c/o MR. JOHN TENNEY MASON, III, GENERAL
 MEMBER 7636 GAITHER ROAD
 SYKESVILLE, MD 21784
 (443-367-0422)

DEVELOPER
 DOUBLE R VENTURES, LLC
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, SUITE 102
 ELLICOTT CITY, MARYLAND 21042
 (443-367-0422)



ALDO M. VITUCCI, P.E.
 "Professional certification I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-16."

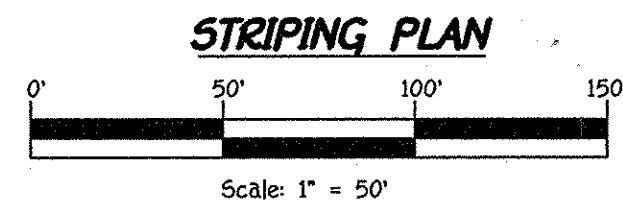
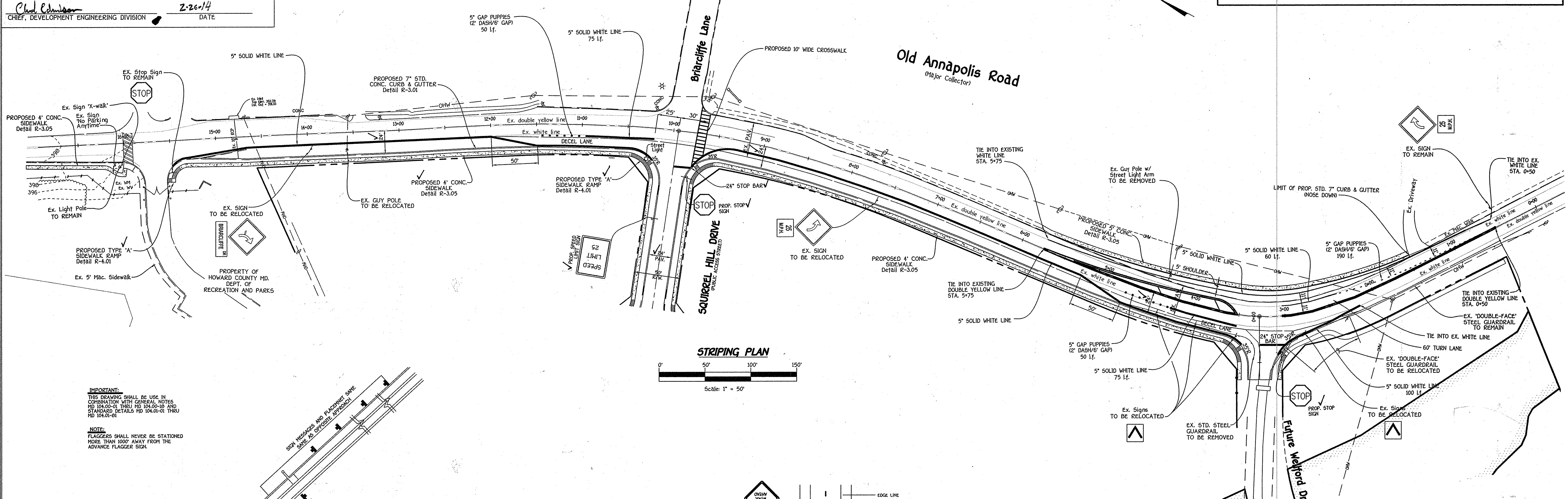
LANDSCAPE NOTES & DETAILS

Centennial Lake Overlook
 (Formerly Mason Property)
 Section One
 Buildable Lots 1 Thru 23,
 Open Space Lots 24 Thru 28 &
 Buildable Bulk Parcels 'A' and 'B'
 (Being A Subdivision Of Tax Parcel No. 26, Tax Map No. 30,
 Liber 10729 At Folio 329 And Liber 10729 At Folio 330)
 Zoning: R-20
 Tax Map No. 30 Grid No. 2 Parcel No. 86
 2nd Election District Howard County, Maryland
 Scale: As Shown Date: January 10, 2014
 Sheet 19 of 30

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief, Bureau of Highways 2-20-14 DATE
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development 3/04/14 DATE
 Chief, Development Engineering Division 2-26-14 DATE

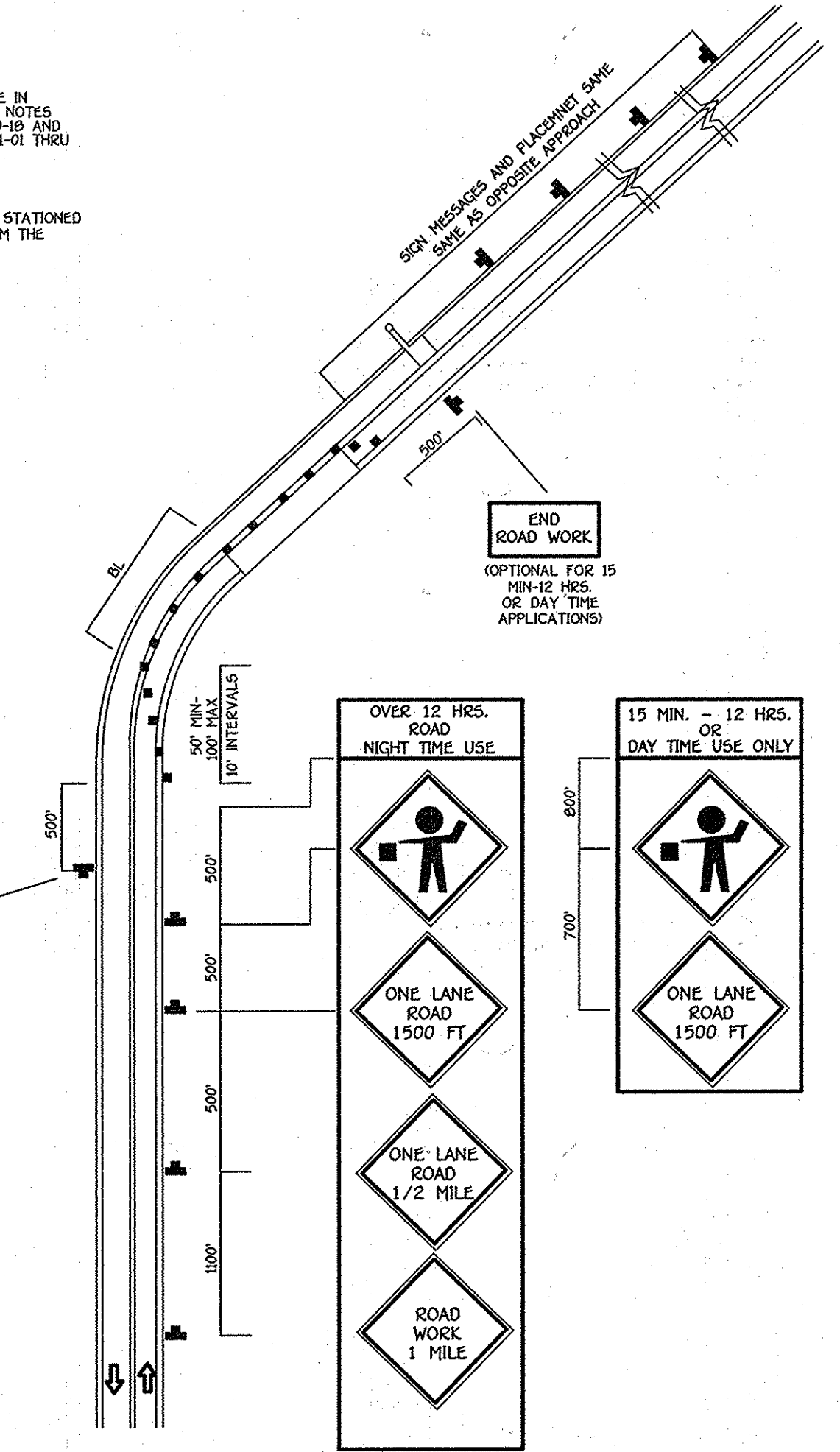
NOTES:
 1) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, (QUICK PUNCH) SQUARE TUBE POST (1/4 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (1/2 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
 2) ALL SIGN LOCATIONS AND ALL PAVEMENT MARKINGS SHALL BE APPROVED BY HOWARD COUNTY TRAFFIC PRIOR TO ANY SIGNING OR PAVEMENT MARKING INSTALLATIONS.



IMPORTANT:
 THIS DRAWING SHALL BE USED IN COMBINATION WITH GENERAL NOTES NO. 104.00-01 THRU 104.00-10 AND STANDARD DETAILS MD 104.01-01 THRU MD 104.01-05.

NOTE:
 FLAGGERS SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLAGGER SIGN.

KEY:
 ■ CHANNELIZING DEVICES
 ■ SIGN SUPPORT FACE OF SIGN
 ↑ DIRECTION OF TRAFFIC
 □ WORK SITE
 □ FLAGGER



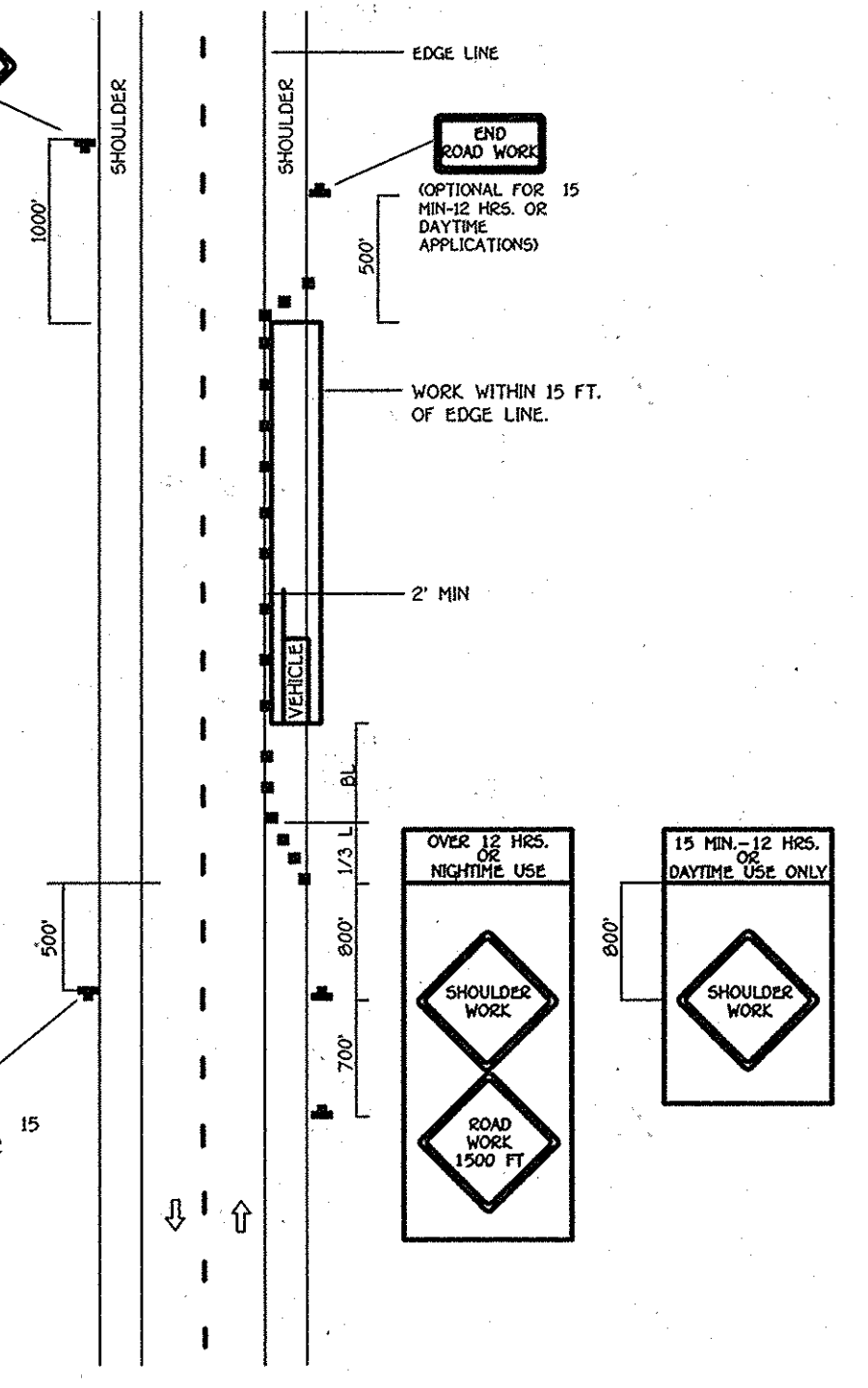
FLAGGING OPERATION 1-LANE, 2-WAY EQUAL/LESS THAN 40 MPH
 NO SCALE FIGURE 6C-3

IMPORTANT:
 THIS DRAWING SHALL BE USED IN COMBINATION WITH GENERAL NOTES NO. 104.00-01 THRU 104.00-10 AND STANDARD DETAILS MD 104.01-01 THRU MD 104.01-05.

NOTE:
 SHOULDERS CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY A PHYSICAL BARRIER. REFER TO STANDARD NO. MD 104.06-14.

WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-11 THRU MD 104.06-15.

KEY:
 ■ CHANNELIZING DEVICES
 ■ SIGN SUPPORT FACE OF SIGN
 ↑ DIRECTION OF TRAFFIC
 □ WORK SITE



SHOULDER WORK/2-LANE, 2-WAY EQUAL/LESS THAN 40 MPH
 NO SCALE FIGURE 6H-6

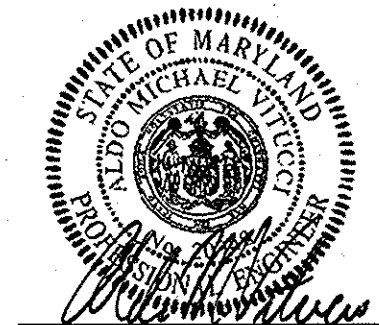
MARKING LEGEND	
Item	Description
1	Install 5 in. solid white line.
2	24 in. wide solid white pavement marking for stop line. (to be installed by traffic signal contractor)
3	Install 5 in. wide solid white dotted pavement marking for lane line. (2 ft. segment - 6 ft. gap ft.)

SIGNING LEGEND		
Description	Size	Color
STOP	R1-1	36" x 36" Red/White
SPEED LIMIT 25	R2-1	24" x 30" Black/White

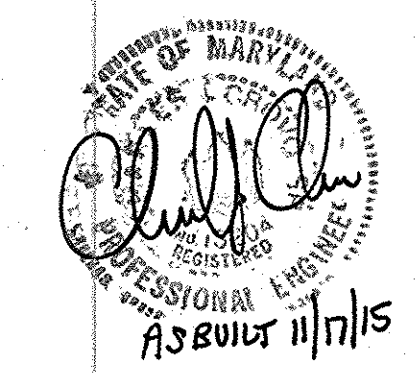
FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21114
 (410) 461-2255

OWNER
 JOHN TENNEY MASON, JR. FAMILY LLC
 AND FRANCES WELLFORD MASON FAMILY LLC
 c/o MR. JOHN TENNEY MASON, III, GENERAL MEMBER 7636 GAITHER ROAD
 SYKESVILLE, MD 21784
 (443-367-0422)

DEVELOPER
 DOUBLE R VENTURES, LLC
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, SUITE 102
 ELLICOTT CITY, MARYLAND 21042
 (443-367-0422)



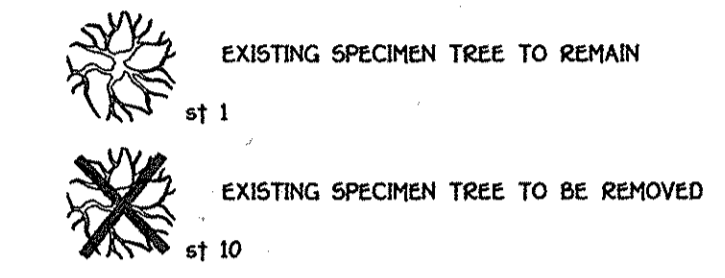
ALDO M. VITUCCI, P.E.
 PROFESSIONAL CERTIFICATION I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20740, Expiration Date 2-22-15.
 DATE: 1/14/14



SIGNING AND PAVEMENT MARKING PLAN (OLD ANNAPOLIS ROAD)
Centennial Lake Overlook
 (Formerly Mason Property)
Section One
 Buildable Lots 1 Thru 23,
 Open Space Lots 24 Thru 28 &
 Buildable Bulk Parcels 'A' and 'B'
 (Being A Subdivision Of Tax Parcel No. 38, Tax Map No. 30,
 Liber 10729 At Folio 329 And Liber 10729 At Folio 335)
 Zoning: R-20
 Tax Map No. 30 Grid No. 2 Parcel No. B6
 2nd Election District Howard County, Maryland
 Scale: As Shown Date: January 10, 2014
 Sheet 20 of 30

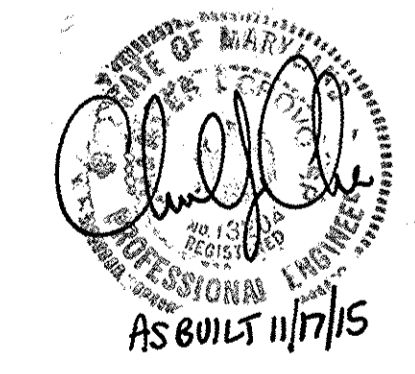
Approved: Department Of Planning And Zoning		
<i>Kent Shelton</i>		3/6/14
Chief, Division Of Land Development	SS	Date
<i>Chad Ammer</i>		2-26-14
Chief, Development Engineering Division		Date
Approved: Howard County Department Of Public Works		
<i>Mike J. Mulla</i>		2-20-14
Chief, Bureau Of Highways		Date
REVISIONS		
NO.	DESCRIPTION	DATE

Reforestation Note:
The reforestation obligation will be met within priority planting areas on the site. This includes floodplain, wetland and buffers. The final planting location and the planting specifications, details, and schedule will be provided on Final Forest Conservation Plan.



SPECIMEN TREE LIST

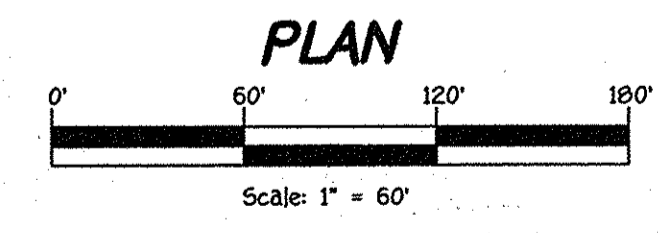
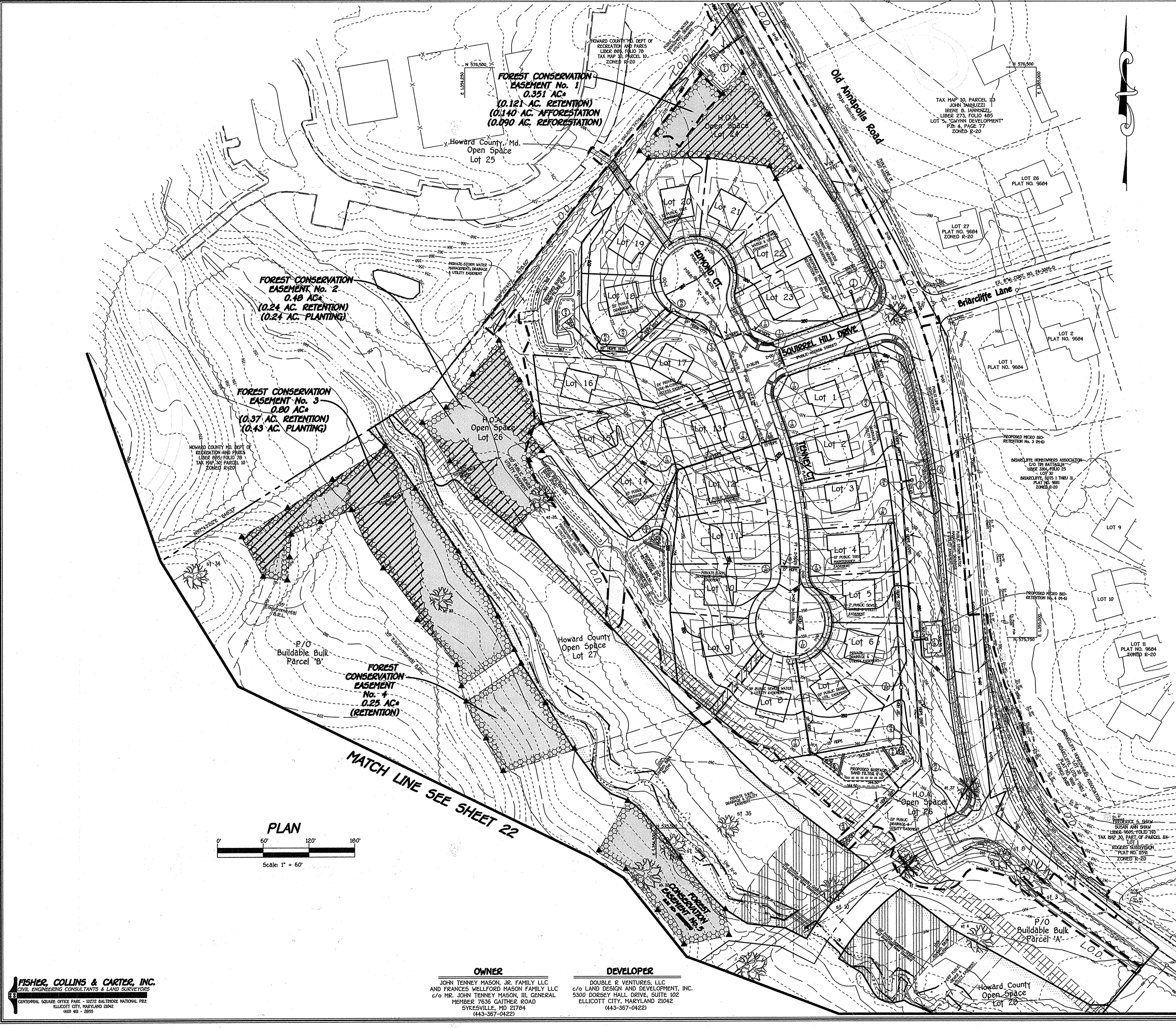
Number	Common Name	Species Name	DBH (inches)	Condition
1	sugar maple	Acer saccharum	31	Good
2	white oak	Quercus alba	31	Good
3	white oak	Quercus alba	49	Good
4	yellow-poplar	Liriodendron tulipifera	36	Good
5	northern red oak	Quercus rubra	39	Fair
6	northern red oak	Quercus rubra	38	Good
7	southern red oak	Quercus coccinea	43	Good
8	southern red oak	Quercus falcata	38	Good
9	pin oak	Quercus palustris	35	Good
10	red maple	Acer rubrum	33	Fair
11	red maple	Acer rubrum	39	Good
12	red maple	Acer rubrum	39	Good
13	black oak	Quercus velutina	46	Fair
14	black oak	Quercus velutina	46	Good
15	eastern white pine	Pinus strobus	39	Good
16	black walnut	Juglans nigra	32	Fair-Good
17	slippery elm	Ulmus rubra	35	Good
18	box-elder	Acer negundo	41	Fair
19	Norway maple	Acer platanoides	41	Good
20	black oak	Quercus velutina	51	Good
21	white oak	Quercus alba	59	Good
22	princess tree	Patalonia tomentosa	36	Fair
23	red maple	Acer rubrum	35	Fair-Good
24	yellow-poplar	Liriodendron tulipifera	33	Fair
25	red maple	Acer rubrum	39	Fair
26	red maple	Acer rubrum	47	Good
27	red maple	Acer rubrum	50	Good
28	red maple	Acer rubrum	31	Fair
29	red maple	Acer rubrum	30	Poor-Fair
30	American sycamore	Platanus occidentalis	38	Fair
31	yellow-poplar	Liriodendron tulipifera	40	Good
32	yellow-poplar	Liriodendron tulipifera	39	Good
33	red maple	Acer rubrum	31	Fair
34	Norway maple	Acer platanoides	32	Fair
35	pin oak	Quercus palustris	36	Fair-Good
36	red maple	Acer rubrum	31	Fair
37	pin oak	Quercus palustris	30	Good
38	red maple	Acer rubrum	33	Fair
39	yellow-poplar	Liriodendron tulipifera	30	Fair-Good



ALDO M. VITUCCI, P.E. DATE 1/14/14
Professional certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20718, Expiration Date 2-22-15.

FOREST CONSERVATION PLAN
Centennial Lake Overlook
(Formerly Mason Property)

Section One
Buildable Lots 1 Thru 23,
Open Space Lots 24 Thru 28 &
Buildable Bulk Parcel 'A' And 'B'
Being A Subdivision Of Tax Parcel No. 06, Tax Map No. 30, Liber 10729 At Folio 329 And Liber 10729 At Folio 335)
Tax Map No. 30 Grid No. 2 Parcel No. 06
2nd Election District Howard County, Maryland
Scale: As Shown Date: January 10, 2014
Sheet 21 Of 32



MATCH LINE SEE SHEET 22

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

OWNER
JOHN TENNEY MASON, JR. FAMILY LLC
AND FRANCES WELFORD MASON FAMILY LLC
c/o MR. JOHN TENNEY MASON, III, GENERAL
MEMBER 7636 GAITHER ROAD
SYKESVILLE, MD 21784
(413-367-0422)

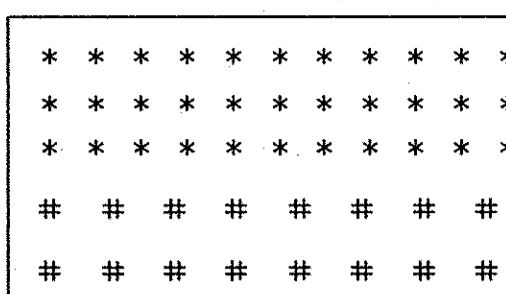
DEVELOPER
DOUBLE R VENTURES, LLC
c/o LAND DESIGN AND DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, SUITE 102
ELLCOTT CITY, MARYLAND 21042
(413-367-0422)

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Planting Notes:

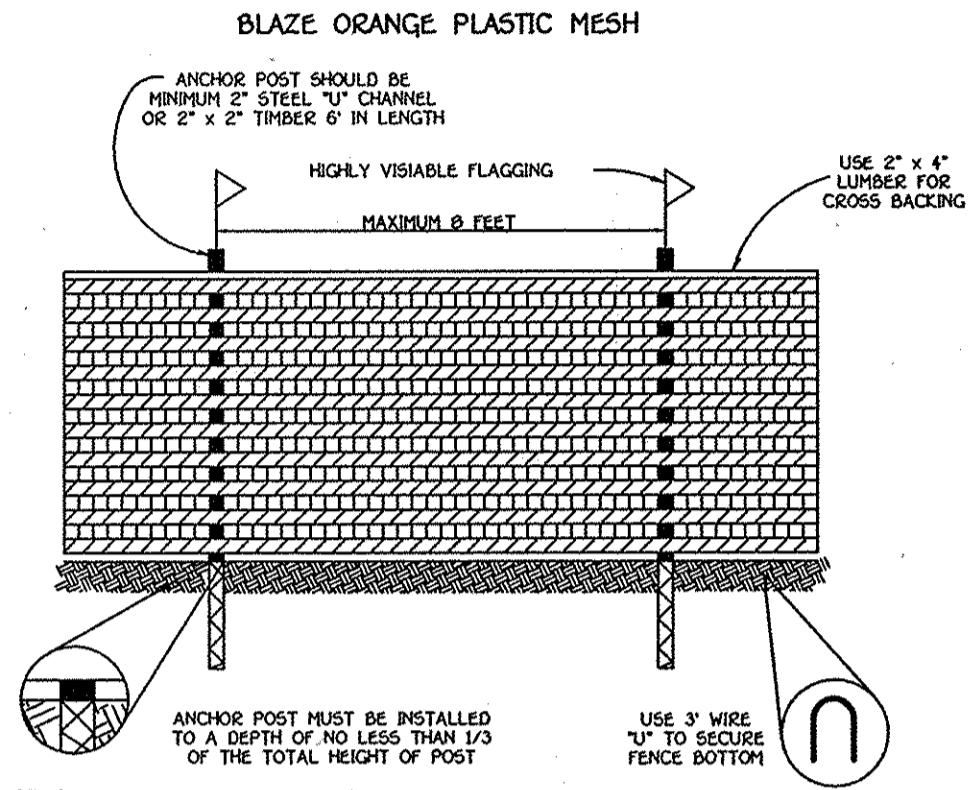
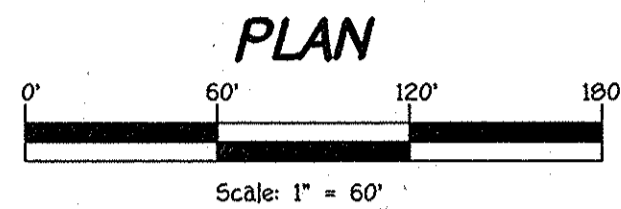
Planting units defined by the spacing requirements established in the FCA Manual. One planting unit is defined as 1 seedling or whip without shelter.
 The Manual states that 700 seedlings/whips without shelters are required per acre, or 350 whips w/shelters, or 200 1" caliper trees, or 100 2" caliper trees.
 By conversion it has been determined that a seedling or whip without shelter = 1 unit, whip with shelter = 2 units, 1" caliper tree = 3.5 units and 2" caliper tree = 7 units. The use of plant units simplifies the plant density calculations when mixing stock size.
 ** - These species should not be planted within the wetland limits.
 1" caliper trees should be staggered along the outer perimeter of the planting area to serve as demarcation of the boundary. The trees should be no closer than 10 foot spacing. Whip spacing to be placed on 11 foot centers. Shelters will be required per Howard County policy.
 Planting shall be made in a curvilinear fashion along contour. The planting should avoid a grid appearance but should be spaced to facilitate maintenance.
 Multiflora rose/heavy brush removal/control may be required prior to installation of planting.
 All whips are required to be installed with tree shelters per Howard County FCA requirements.

PATTERN SPACING DIAGRAM



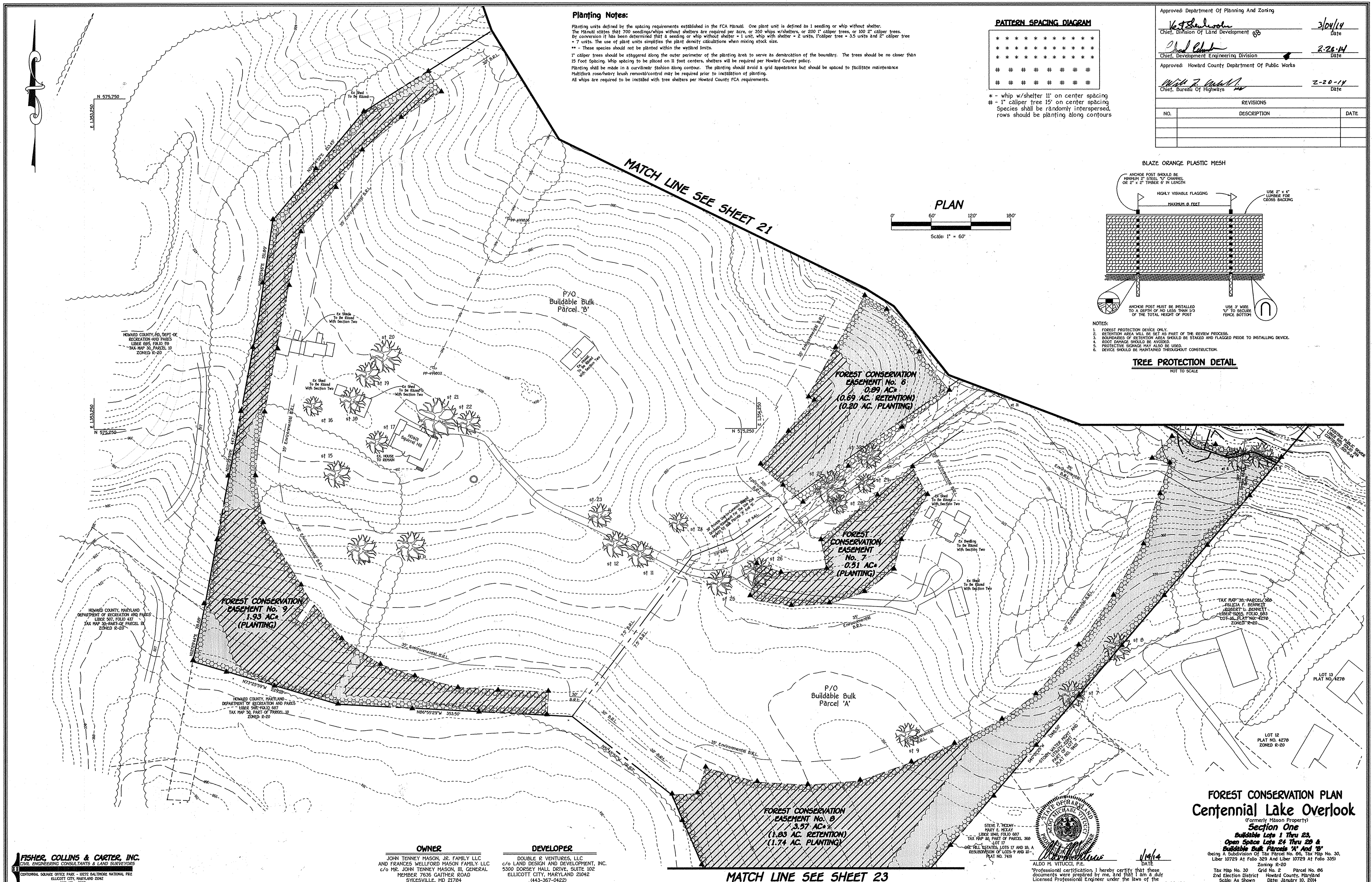
* - whip w/shelter 11' on center spacing
 # - 1" caliper tree 15' on center spacing
 Species shall be randomly interspersed, rows should be planting along contours

Approved: Department Of Planning And Zoning		
<i>16 J. Shelton</i>		3/04/14
Chief, Division Of Land Development		Date
<i>Chad Adams</i>		2-28-14
Chief, Development Engineering Division		Date
Approved: Howard County Department Of Public Works		
<i>Walt R. Smith</i>		2-20-14
Chief, Bureau Of Highways		Date
REVISIONS		
NO.	DESCRIPTION	DATE



- NOTES:
1. FOREST PROTECTION DEVICE ONLY.
 2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
 3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
 4. ROOT DAMAGE SHOULD BE AVOIDED.
 5. PROTECTIVE SIGNAGE MAY ALSO BE USED.
 6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION DETAIL
 NOT TO SCALE



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FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SOURCE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2292

OWNER
 JOHN TENNEY MASON, JR. FAMILY LLC
 AND FRANCES WELFORD MASON FAMILY LLC
 c/o MR. JOHN TENNEY MASON, III, GENERAL
 MEMBER 7636 GAITHER ROAD
 SYKESVILLE, MD 21784
 (443-367-0422)

DEVELOPER
 DOUBLE R VENTURES, LLC
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, SUITE 102
 ELLICOTT CITY, MARYLAND 21042
 (443-367-0422)



STEVE T. MCKAY
 MARY E. HICKEY
 LICENSE 1940, FOLIO 607
 TAX MAP 30, PART OF PARCEL 369
 LOT 17
 ONE-TWO ESTATES, LOTS 17 AND 18, A
 RESUBDIVISION OF LOTS 9 AND 10,
 PLAT NO. 7419

FOREST CONSERVATION PLAN
Centennial Lake Overlook
 (Formerly Mason Property)
Section One
Buildable Lots 1 Thru 23,
Open Space Lots 24 Thru 25 &
Buildable Bulk Parcels 'A' And 'B'
 (Being A Subdivision Of Tax Parcel No. 96, Tax Map No. 30,
 Liber 10729 At Folio 329 And Liber 10729 At Folio 335)
 Zoning R-20 Parcel No. 96
 Grid No. 2 Howard County, Maryland
 2nd Election District
 Date: January 10, 2014
 Scale: As Shown Sheet 22 Of 30

MATCH LINE SEE SHEET 23

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET F-14-002

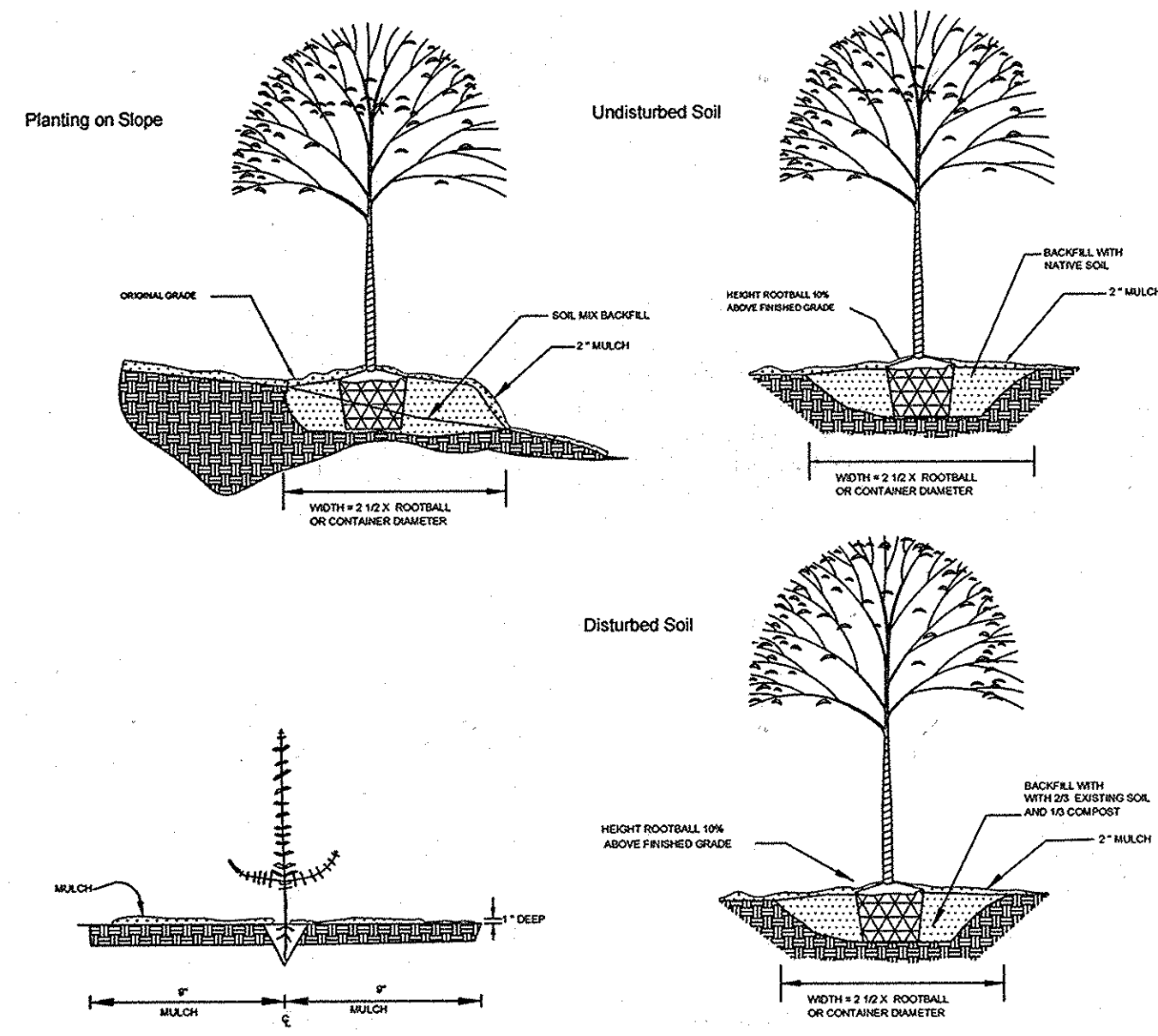
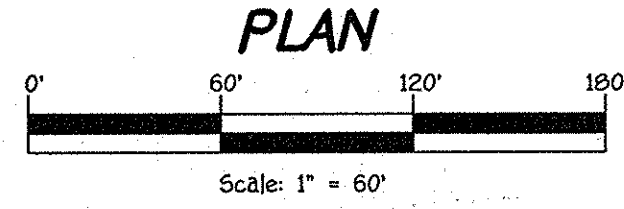
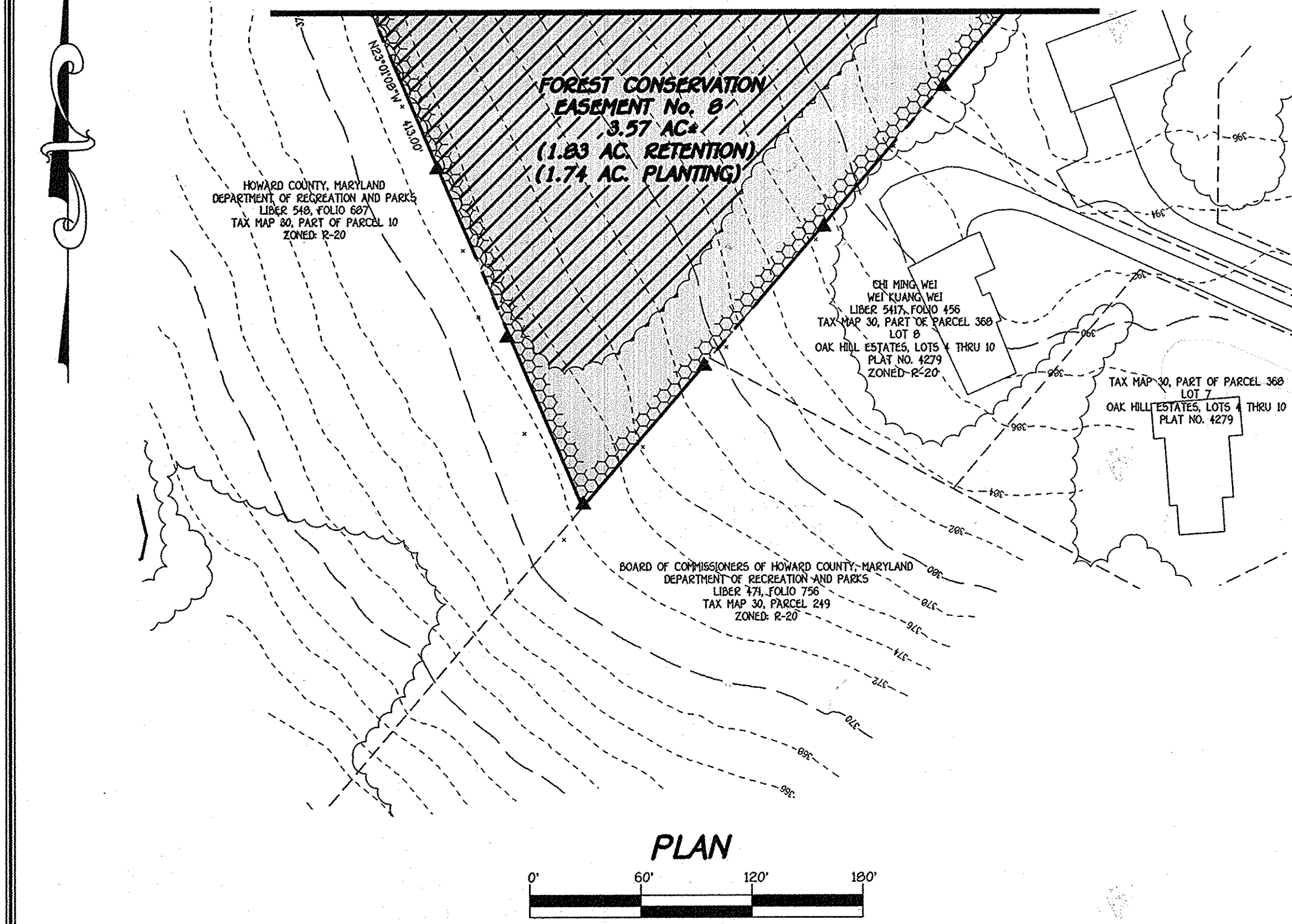
Approved Department of Public Works
 Chief Bureau of Highways
 Date: 2-20-14

Approved Department of Planning and Zoning
 Chief, Division of Land Development
 Date: 3/04/14

Chief, Development Engineering Division
 Date: 2-26-14

REVISIONS
 NO. DESCRIPTION DATE

MATCH LINE SEE SHEET 22



Seeding and Whip Planting Specification

Planting/Soil Specifications

- Installation of bare-root stock shall take place between March 15 - April 20. bbb/container stock March 15 - May 30 or September 15 - November 15. Fall planting of B&B stock is not recommended.
- Disturbed areas shall be seeded and established as per general construction plan for project. Planting areas not impacted by site grading shall have no additional topsoil installed.
- Bare-root plants shall be installed so that the top of root mass is level with the top of existing grade. Roots shall be dipped in an anti-desiccant gel prior to planting. Backfill in the planting pits shall consist of 3 parts existing soil to 1 part fine fines or equivalent.
- Fertilizer shall consist of Agrifert 22-20-2, or equivalent, applied as per manufacturer's specifications, for woody plants. Herbaceous plants shall be fertilized with Omocote 8-6-12.
- Plant material shall be transported to the site in a tarp or covered truck. Plants shall be kept moist prior to planting.
- All non-organic debris associated with the planting operation shall be removed from the site by the contractor.

Sequence of Construction

- Sediment control shall be installed in accordance with general construction plan for site.
- Plants shall be installed as per Plant Schedule and the Planting/Soil Specifications for the project.
- Upon completion of the planting, signage shall be installed as shown.
- Plantings shall be maintained and guaranteed in accordance with the Maintenance and Guarantee requirements for project.

Maintenance of Plantings

- Maintenance of plantings shall last for a period of 2 years.
- Plantings must receive 2 gallons of water, either through precipitation or watering, weekly during the first growing season, as needed. During second growing season, once a month during May-September, if needed.
- Invasive exotics and noxious weeds will be removed, as required, from planting areas mechanically and/or with limited herbicide application (see groundcover note where appropriate). Old field successional species will be retained.
- Plants will be examined a minimum two times during the growing season for serious plant pests and diseases. Serious problems will be treated with the appropriate agent.
- Dead branches will be pruned from plantings.

Guarantee Requirements

- A 75 percent survival rate of forestation plantings will be required at the end of 2 growing seasons. All plant material below the 75 percent threshold will be replaced at the beginning of the next growing season. Wild trees arising from natural regeneration may be counted up to 50 percent towards the total survival number if they are healthy, native species at least 12 inches tall.

Surety for Forestation

- The contractor shall post a surety (bond, letter of credit) to ensure that forestation plantings are completed. SEE GENERAL NOTE 3L SHEET 1.

Planting Notes

When possible, plants shall be installed within 24 hours of delivery. If installation cannot be performed within this time frame, plant stock shall be watered and protected from desiccation. Application of herbicide, Round-up or equivalent, may be used to reduce plant competition from old field successional growth at the time of installation. Mowing, re-application of herbicide, or a combination thereof, may be used to control unwanted, competing vegetation.

Planting shall be installed within one year or two growing seasons of subdivision approval. Plantings shall be installed in accordance with the time schedule included in Note 1 of the planting/Seeding Specifications.

FCE Planting Area # 1 - 0.23 acres

Planting units required: 182 (84 whips)
 Planting units provided: 182 (84 whips)

Qty	Species	Size	Spacing	Total FCA Units
21	Acer rubrum - Red maple	2-3" whip	11' o.c.	21
20	Cercis canadensis - Red bud	2-3" whip	11' o.c.	20
20	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	20
20	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	20
81	Total whip plantings (2 planting units per tree)			182 Total FCA unit credit

FCE Planting Area # 2 - 0.24 acres

Planting units required: 168 (84 whips)
 Planting units provided: 168 (84 whips)

Qty	Species	Size	Spacing	Total FCA Units
24	Acer rubrum - Red maple	2-3" whip	11' o.c.	24
20	Cercis canadensis - Red bud	2-3" whip	11' o.c.	20
20	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	20
20	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	20
84	Total whip plantings (2 planting units per tree)			168 Total FCA unit credit

FCE Planting Area # 3 - 0.43 acres

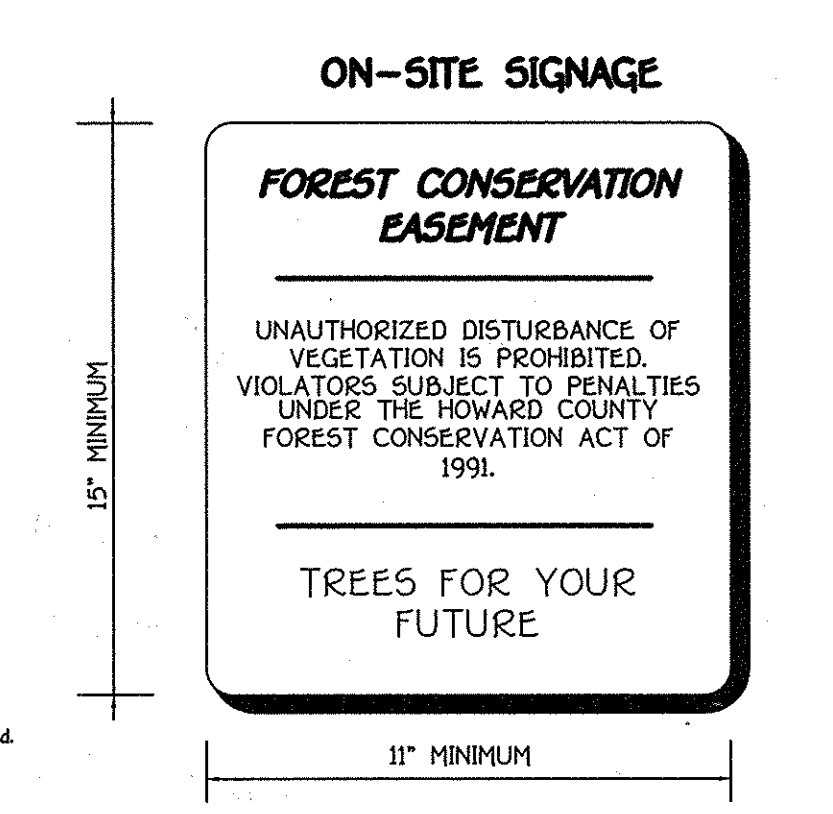
Planting units required: 302 (151 whips)
 Planting units provided: 302 (151 whips and 20 trees)

Qty	Species	Size	Spacing	Total FCA Units
10	Acer rubrum - Red maple	1" cal.	15' o.c.	10
10	Quercus alba - White oak	1" cal.	15' o.c.	10
20	Total 1" caliper trees (0.5 planting units per tree)			20 Total FCA unit credit
15	Acer rubrum - Red maple	2-3" whip	11' o.c.	15
15	Cercis canadensis - Red bud	2-3" whip	11' o.c.	15
15	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	15
15	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	15
15	Prunus serotina - Black cherry	2-3" whip	11' o.c.	15
15	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	15
13	Quercus alba - White oak	2-3" whip	11' o.c.	13
13	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	13
168	Total whip plantings (2 planting units per tree)			332 Total FCA unit credit
	Total Unit Credit			352 + 20 = 372

FCE Planting Area # 6 - 0.20 acres

Planting units required: 140 (70 whips)
 Planting units provided: 140 (70 whips)

Qty	Species	Size	Spacing	Total FCA Units
30	Acer rubrum - Red maple	2-3" whip	11' o.c.	30
15	Cercis canadensis - Red bud	2-3" whip	11' o.c.	15
15	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	15
10	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	10
70	Total whip plantings (2 planting units per tree)			140 Total FCA unit credit



FCP NOTES

- Any Forest Conservation Easement (FCE) area shown hereon is subject to protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and use of these areas.
- Forested areas occurring outside of the FCE shall not be considered part of the FCE and shall not be subject to protective land covenants.
- Limits of disturbance shall be restricted to areas outside the limit of temporary fencing or the FCE boundary, whichever is greater.
- There shall be no clearing, grading, construction or disturbance of vegetation in the Forest Conservation Easement, except as permitted by Howard County DPZ.
- No stockpiles, parking areas, equipment clearing areas, etc. shall occur within areas designated as Forest Conservation Easements.
- Temporary fencing shall be used to protect forest resources during construction. The fencing shall be placed along all FCE boundaries which occur within 15 feet of the proposed limits of disturbance.
- Permanent signage shall be placed 50-100' apart along the boundaries of all areas included in Forest Conservation Easements.
- The Forest Conservation Requirements Per Section 161200 Of The Howard County Code And The Forest Conservation Manual For This Subdivision Will Be Fulfilled By Providing 3.82 Acres Of On-site Forest Retention, 5.14 Acres Of Reforestation And 0.14 Acres Of Afforestation Which is Sufficient to Meet 3.81 Acres of Required Retention And 5.28 Acres of Plantings. Surety In The Amount Of \$149,900.00 For Required Plantings (40.50 X 229,977 Sq. Ft.) Shall Be Posted With The Developer's Agreement For This Plan (F-14-002).

Note: THE FOREST CONSERVATION EASEMENTS WILL BE ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 161200 OF THE HOWARD COUNTY FOREST CONSERVATION ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, EXCEPT AS SHOWN ON AN APPROVED ROAD CONSTRUCTION DRAWING. HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

Construction Period Protection Program

- Site Protection Techniques**
 - Adequate protection techniques shall be used to protect the soil and vegetation within the FCE area.
 - The soil protection area, or critical root zone, of a tree in the FCE area shall be protected by a minimum of 12 inches of mulch or other protective material.
 - The key of disturbance shall be marked on the site with the proposed extent of construction activities. Erosion Prevention, or another approved protection designated by the contractor, will be used to the soil during the life of the FCE area. The key of disturbance shall be marked on the site with the proposed extent of construction activities.
 - All forest retention areas will be protected from unauthorized intrusion by appropriate signage and fencing. Signage and fencing will be installed prior to any construction activity. Installation of these devices will be supervised by a qualified professional or another qualified professional. Fencing will be placed along all FCE lines that occur within 50 feet of existing trees. Signage will be placed along the edge of the FCE every 100 feet. Fencing will consist of 40 inch mesh mesh fence or 40 inch mesh fence. See Forest Conservation Plan for detailed specifications.
- Pre-Construction Meeting**
 - Upon filing of plans and installation of all signage, a pre-construction meeting will be held between the developer, contractor and appropriate agencies. The meeting will be held to discuss the FCE area and the proposed construction activities. The meeting will be held at the site of the FCE area. The meeting will be held at the site of the FCE area.
- Storage Facilities/Equipment Cleaning**
 - All equipment storage, parking, and other activities shall be restricted to areas outside the FCE area. All equipment storage, parking, and other activities shall be restricted to areas outside the FCE area.
- Sequence of Construction**
 - The following sequence represents the proposed sequence for construction of the proposed project. The construction start date for this project has not been finalized. The actual start date shall be subject to the issuance of all necessary permits for the project. The time schedule in the Forest Conservation Plan will be subject to change.
 - 1. Install all site protection signage, fencing and sediment control devices.
 - 2. Hold pre-construction meeting between developer, contractor and County Inspector.
 - 3. Grade site and construct improvements. Establish all disturbed areas in accordance with grading plan.
 - 4. Remove sediment control. Install any forest retention signage in year condition.
 - 5. Hold post-construction meeting with County Inspector to insure compliance with FCP.

FCE Planting Area # 7 - 0.51 acres

Planting units required: 350 (175 whips)
 Planting units provided: 350 (175 whips and 30 trees)

Qty	Species	Size	Spacing	Total FCA Units
15	Acer rubrum - Red maple	2-3" whip	11' o.c.	15
15	Quercus alba - White oak	1" cal.	15' o.c.	15
30	Total 1" caliper trees (0.5 planting units per tree)			30 Total FCA unit credit
20	Acer rubrum - Red maple	2-3" whip	11' o.c.	20
15	Cercis canadensis - Red bud	2-3" whip	11' o.c.	15
15	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	15
15	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	15
15	Prunus serotina - Black cherry	2-3" whip	11' o.c.	15
15	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	15
15	Quercus alba - White oak	2-3" whip	11' o.c.	15
15	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	15
127	Total whip plantings (2 planting units per tree)			254 Total FCA unit credit
	Total Unit Credit			(254 + 105) = 359

FCE Planting Area # 8 - 1.74 acres

Planting units required: 1210 (605 whips)
 Planting units provided: 1210 (434 whips and 100 trees)

Qty	Species	Size	Spacing	Total FCA Units
50	Acer rubrum - Red maple	1" cal.	15' o.c.	50
50	Quercus alba - White oak	1" cal.	15' o.c.	50
100	Total 1" caliper trees (0.5 planting units per tree)			100 Total FCA unit credit
72	Acer rubrum - Red maple	2-3" whip	11' o.c.	72
72	Cercis canadensis - Red bud	2-3" whip	11' o.c.	72
65	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	65
65	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	65
40	Prunus serotina - Black cherry	2-3" whip	11' o.c.	40
40	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	40
40	Quercus alba - White oak	2-3" whip	11' o.c.	40
40	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	40
434	Total whip plantings (2 planting units per tree)			868 Total FCA unit credit
	Total Unit Credit			(868 + 350) = 1218

FCE Planting Area # 9 - 1.93 acres

Planting units required: 1352 (676 whips)
 Planting units provided: 1352 (501 whips and 100 trees)

Qty	Species	Size	Spacing	Total FCA Units
50	Acer rubrum - Red maple	1" cal.	15' o.c.	50
50	Quercus alba - White oak	1" cal.	15' o.c.	50
100	Total 1" caliper trees (0.5 planting units per tree)			100 Total FCA unit credit
76	Acer rubrum - Red maple	2-3" whip	11' o.c.	76
75	Cercis canadensis - Red bud	2-3" whip	11' o.c.	75
75	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	75
75	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	75
50	Prunus serotina - Black cherry	2-3" whip	11' o.c.	50
50	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	50
50	Quercus alba - White oak	2-3" whip	11' o.c.	50
50	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	50
501	Total whip plantings (2 planting units per tree)			1002 Total FCA unit credit
	Total Unit Credit			(1002 + 350) = 1352

FOREST CONSERVATION WORKSHEET

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	66.49
B. DEDUCTIONS: CRITICAL AREA, AREA RESTRICTED BY LOCAL OR PROGRAM FLOODPLAIN	3.04
C. NET TRACT AREA - NET TRACT AREA + TOTAL TRACT (A) - DEDUCTIONS (B)	63.45
LAND USE CATEGORY: WETLAND DENSITY: RESIDENTIAL	
D. AFFORESTATION THRESHOLD NET TRACT AREA (C) x 150	6.52
E. CONSERVATION THRESHOLD NET TRACT AREA (C) x 200	8.69
EXISTING FOREST COVER	
F. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	6.30
G. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	0
H. IF THE EXISTING FOREST COVER (F) IS GREATER THAN THE CONSERVATION THRESHOLD (E), THEN G = F - E. OTHERWISE G = 0	
BREAK-EVEN POINT	
K. BREAK-EVEN POINT AMOUNT OF FOREST THAT MUST BE RETAINED SO THAT NO MITIGATION IS REQUIRED	6.30
IF THE AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) IS GREATER THAN 0, THEN	
H = 0.2 x G. THE AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) - THE CONSERVATION THRESHOLD (E)	
I. IF THE AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) IS EQUAL TO 0, THEN	
J. EXISTING FOREST COVER (F)	
L. FOREST CLEARING PERMITTED WITHOUT MITIGATION	0
M. EXISTING FOREST COVER (F) - BREAK-EVEN POINT (K)	
PROPOSED FOREST COVER	
N. TOTAL AREA OF FOREST TO BE CLEARED	2.57
O. TOTAL AREA OF FOREST TO BE RETAINED	3.81
P. EXISTING FOREST COVER (F) - FOREST TO BE CLEARED (N)	
PLANTING REQUIREMENTS	
IF THE TOTAL AREA OF FOREST TO BE RETAINED (O) IS AT OR ABOVE THE BREAK-EVEN POINT (K), NO PLANTING IS REQUIRED, AND NO FURTHER CALCULATIONS ARE NECESSARY (L >= 0, M >= 0, P >= 0, R >= 0).	
OTHERWISE, CALCULATE THE PLANTING REQUIREMENTS AS FOLLOWS:	
L. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION THRESHOLD	0
IF THE TOTAL AREA OF FOREST TO BE RETAINED (O) IS GREATER THAN THE CONSERVATION THRESHOLD (E), THEN L = THE AREA OF FOREST TO BE CLEARED (N) x 0.25	
IF THE FOREST TO BE RETAINED (O) 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	5.14
IF EXISTING FOREST COVER (F) IS GREATER THAN THE CONSERVATION THRESHOLD (E) AND THE FOREST TO BE RETAINED (O) IS LESS THAN OR EQUAL TO THE CONSERVATION THRESHOLD (E), THEN M = 2.0 x (CONSERVATION THRESHOLD (E) - FOREST TO BE RETAINED (O))	
IF EXISTING FOREST COVER (F) IS LESS THAN OR EQUAL TO THE CONSERVATION THRESHOLD (E), THEN M = 2.0 x FOREST TO BE CLEARED (N)	
N. CREDIT FOR RETENTION ABOVE THE CONSERVATION THRESHOLD	0
IF THE AREA OF FOREST TO BE RETAINED (O) IS GREATER THAN THE CONSERVATION THRESHOLD (E), THEN N = E - O. OTHERWISE N = 0	
P. TOTAL REFORESTATION REQUIRED P = L + M - N	5.14
Q. TOTAL AFFORESTATION REQUIRED	
IF EXISTING FOREST COVER (F) IS LESS THAN THE AFFORESTATION THRESHOLD (D), THEN Q = AFFORESTATION THRESHOLD (D) - EXISTING FOREST COVER (F)	0.14
R. TOTAL PLANTING REQUIREMENT R = P + Q	5.28

FOREST CONSERVATION DATA

EASEMENT NO.	RETENTION AREA	PLANTING AREA	TOTAL EASEMENT AREA
1	0.12 AC.	0.23 AC.	0.35 AC.
2	0.24 AC.	0.24 AC.	0.48 AC.
3	0.37 AC.	0.43 AC.	0.80 AC.
4	0.25 AC.	---	0.25 AC.
5	0.31 AC.	---	0.31 AC.
6	0.69 AC.	0.20 AC.	0.89 AC.
7	---	0.51 AC.	0.51 AC.
8	1.83 AC.	1.74 AC.	3.57 AC.
9	---	1.93 AC.	1.93 AC.
TOTAL	3.81 AC.	5.28 AC.	9.09 AC.

Post-Construction Management Plan

The post-construction management plan will further ensure that all Forest Conservation Easement Areas are maintained. The developer will be responsible for the maintenance of the post-construction management plan.

A. Signage

Signage indicating the limits of the forest retention areas shall be maintained.



ALDO M. VITUCCI, P.E.
 DATE: 1/10/14
 Zoning: R-20
 Parcel No. 86
 2nd Election District: Howard County, Maryland
 Scale: As shown
 sheet 23 of 30

FOREST CONSERVATION PLAN
Centennial Lake Overlook

(Formerly Mason Property)
Section One
Buildable Lots 1 Thru 23,
Open Space Lots 24 Thru 29 &
Buildable Bulk Parcels 'A' And 'B'
 (Being A Subdivision Of Tax Parcel No. 06, Tax Map No. 30,
 Liber 10729 At Folio 329 And Liber 10729 At Folio 335)

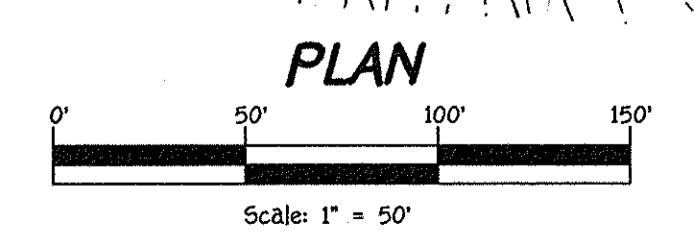
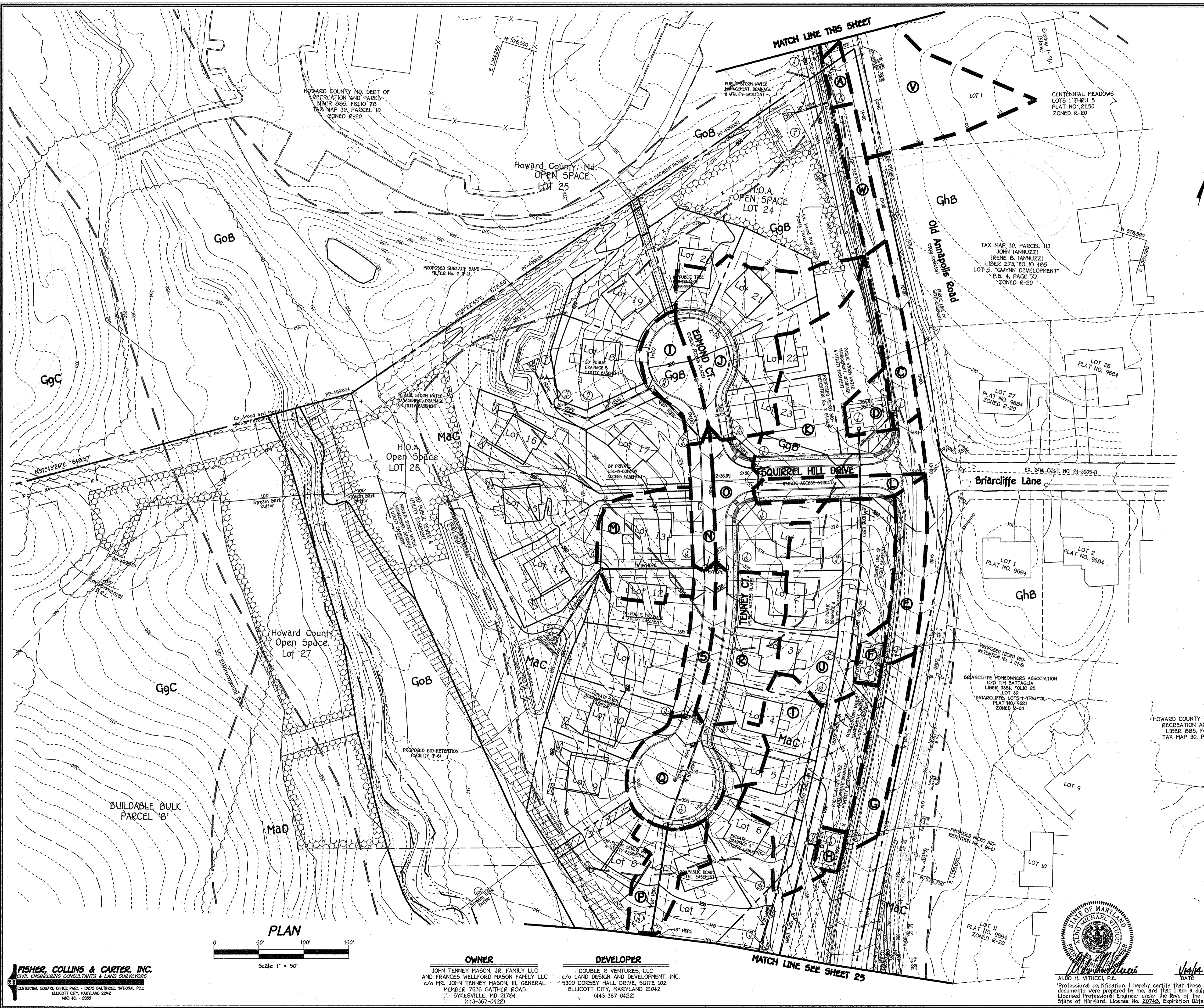
Approved: Department Of Planning And Zoning
Vestil
 Chief, Division Of Land Development 3/04/14 Date
Chad
 Chief, Development Engineering Division 2-26-14 Date
 Approved: Howard County Department Of Public Works
Walt
 Chief, Bureau Of Highways 2-20-14 Date

REVISIONS		
NO.	DESCRIPTION	DATE

SOILS LEGEND			
SOIL	NAME	CLASS	EROSION FACTOR (K _w)
Co	Codorus and Harboro silt loams, 0 to 3 percent slopes	C	.37
GgB	Glenelig loam, 3 to 8 percent slopes	B	.20
GgC	Glenelig loam, 8 to 15 percent slopes	B	.20
GhB	Glenelig-Urban land complex, 0 to 8 percent slopes	B	.20
GmC	Glenville silt loam, 8 to 15 percent slopes	C	.37
GoB	Glenville-Codorus silt loams, 0 to 8 percent slopes	C	.37
MaC	Mānor loam, 8 to 15 percent slopes	B	.20
MaD	Mānor loam, 15 to 25 percent slopes	B	.24

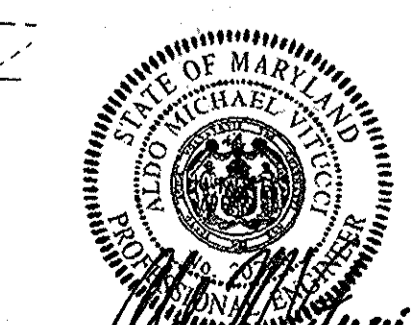
DRAINAGE AREA DATA					
STRUCTURE NO.	DRAINAGE AREA	AREA	"C"	ZONED	X IMP.
I-1	A	0.07	0.50	R-20	35
I-2	B	0.04	0.95	R-20	100
I-3	C	0.13	0.95	R-20	100
I-4	D	0.08	0.25	R-20	0
I-5	E	0.15	0.75	R-20	71
I-6	F	0.03	0.25	R-20	0
I-7	G	0.16	0.74	R-20	71
I-8	H	0.13	0.25	R-20	0
I-9	I	0.13	0.71	R-20	68
I-10	J	0.55	0.36	R-20	16
I-11	K	0.59	0.35	R-20	14
I-12	L	0.10	0.61	R-20	52
I-13	M	0.27	0.50	R-20	50
I-14	N	0.08	0.59	R-20	49
I-15	O	0.23	0.47	R-20	32
I-16	P	0.16	0.37	R-20	18
I-17	Q	0.32	0.61	R-20	51
I-18	R	0.30	0.37	R-20	17
I-19	S	0.10	0.57	R-20	46
I-20	T	0.54	0.50	R-20	35
I-21	U	0.52	0.50	R-20	35
I-22	V	0.09	0.95	R-20	100
EX. INLET	V	0.46	0.50	R-20	35

□ DENOTES 15% TO 24.9% SLOPES
 ■ DENOTES 25% OR GREATER SLOPES

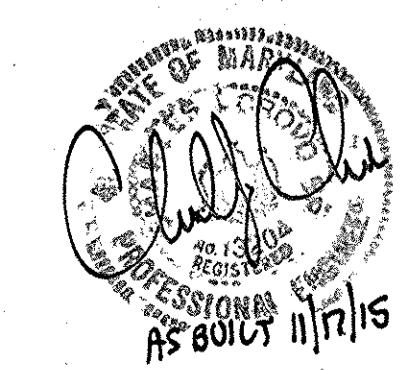


OWNER
 JOHN TENNEY MASON, JR. FAMILY LLC
 AND FRANCES WELLFORD MASON FAMILY LLC
 c/o MR. JOHN TENNEY MASON, III, GENERAL
 MEMBER 7636 GAITHER ROAD
 SYKESVILLE, MD 211784
 (443-367-0422)

DEVELOPER
 DOUBLE R VENTURES, LLC
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, SUITE 102
 ELLICOTT CITY, MARYLAND 21042
 (443-367-0422)



Professional certification I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20749, Expiration Date 2-22-15.



DRAINAGE AREA MAP & SOILS MAP
Centennial Lake Overlook
 (Formerly Mason Property)
Section One
 Buildable Lots 1 Thru 23,
 Open Space Lots 24 Thru 28 &
 Buildable Bulk Parcels 'A' And 'B'
 (Being A Subdivision Of Tax Parcel No. 86, Tax Map No. 30,
 Liber 10729 At Folio 329 And Liber 10729 At Folio 335)
 Zoning: R-20
 Tax Map No. 30 Grid No. 2 Parcel No. 86
 2nd Election District Howard County, Maryland
 Date: January 10, 2014
 Scale: As Shown Sheet 24 Of 30

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FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 461-2225

Approved: Department Of Planning And Zoning

Ken Shee 3/04/14
Chief, Division Of Land Development Date

Chad Edwards 2-26-14
Chief, Development Engineering Division Date

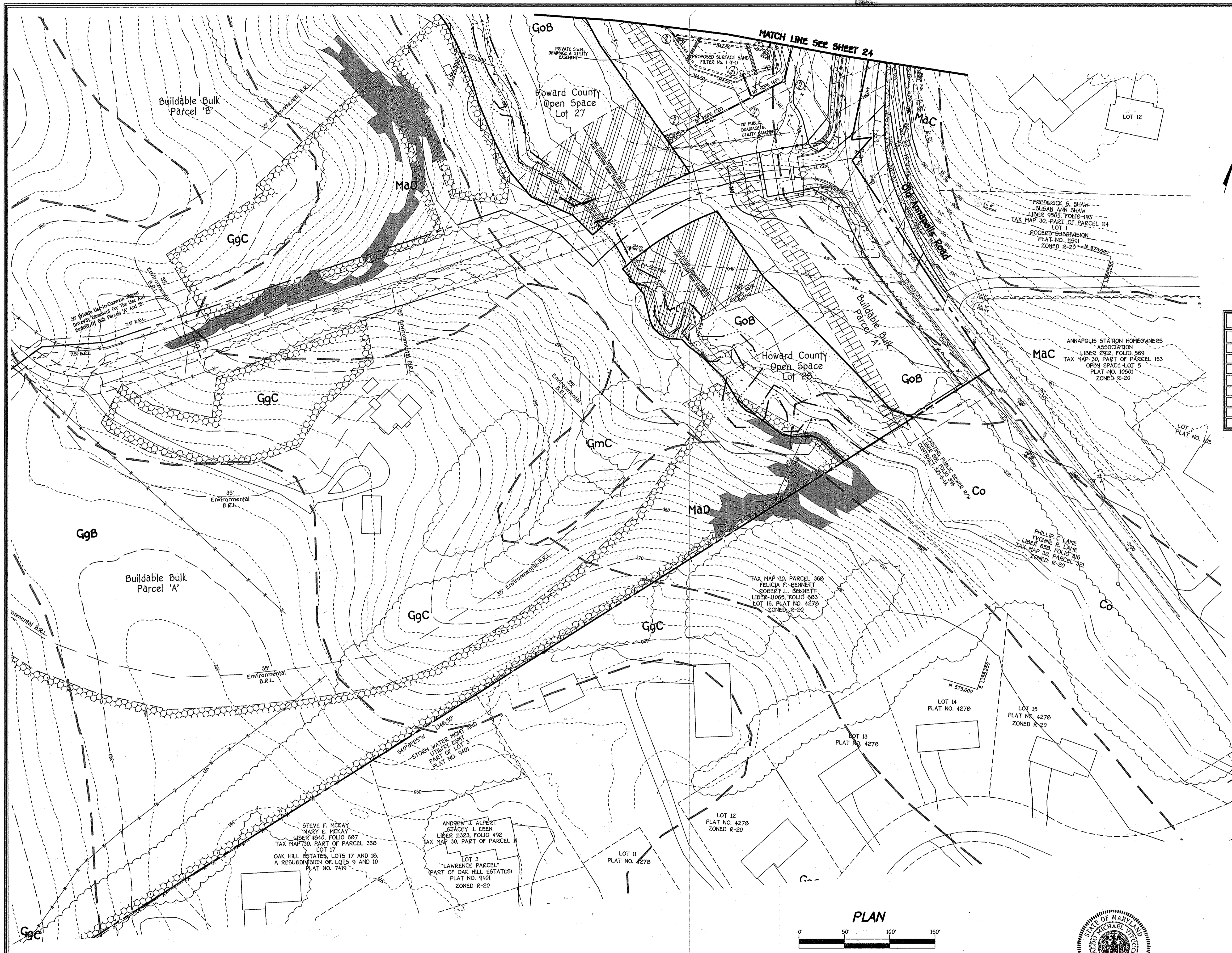
Approved: Howard County Department Of Public Works

Mike P. ... 2-20-14
Chief, Bureau Of Highways Date

REVISIONS		
NO.	DESCRIPTION	DATE

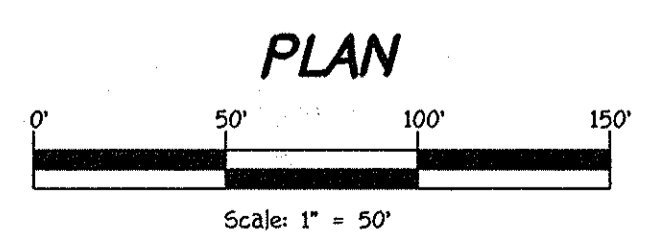
SOILS LEGEND

SOIL	NAME	CLASS	EROSION FACTOR (Kv)
Co	Codorus and Haboro silt loams, 0 to 3 percent slopes	C	.37
GgB	Glenelg loam, 3 to 8 percent slopes	B	.20
GgC	Glenelg loam, 8 to 15 percent slopes	B	.20
GhB	Glenelg-Urban land complex, 0 to 8 percent slopes	B	.20
GmC	Glenville silt loam, 8 to 15 percent slopes	C	.37
GoB	Glenville-Codorus silt loams, 0 to 8 percent slopes	C	.37
MaC	Manor loam, 8 to 15 percent slopes	B	.28
MaD	Manor loam, 15 to 25 percent slopes	B	.24



□ DENOTES 15% TO 24.99% SLOPES

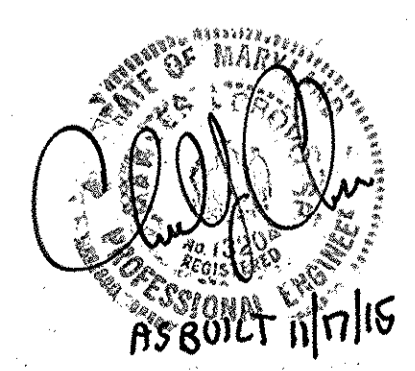
■ DENOTES 25% OR GREATER SLOPES



FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FEE
ELLCOTT CITY, MARYLAND 21042
(410) 481-3200

OWNER
JOHN TENNEY MASON, JR. FAMILY LLC
AND FRANCES WELLFORD MASON FAMILY LLC
c/o MR. JOHN TENNEY MASON, III, GENERAL MEMBER
7636 GAITHER ROAD
SYKESVILLE, MD 21784
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5300 DORSEY HALL DRIVE, SUITE 102
ELLCOTT CITY, MARYLAND 21042
(443-367-0422)



DRAINAGE AREA MAP & SOILS MAP
Centennial Lake Overlook
(Formerly Mason Property)
Section One
Buildable Lots 1 Thru 25
Open Space Lots 24 Thru 29 & Buildable Bulk Parcels 'A' And 'B'
Being A Subdivision Of Tax Parcel No. 36, Tax Map No. 30, Liber 10729 At Folio 329 And Liber 10729 At Folio 335)
Zoning R-20
Tax Map No. 30 Grid No. 2 Parcel No. 85
2nd Election District Howard County, Maryland
Scale: As Shown Sheet 25 Of 30
Date: January 10, 2014
Expiration Date: 2-22-15

AS-BUILT F-14-002

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STRUCTURE SCHEDULE

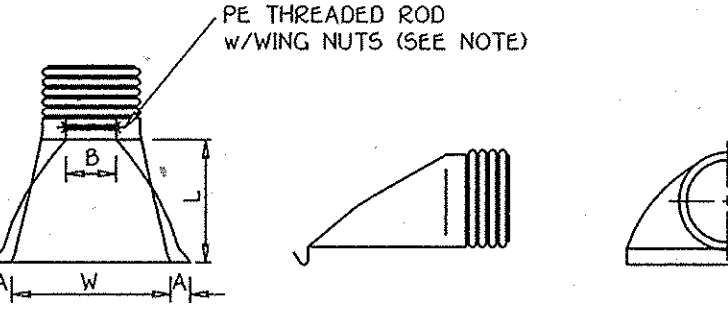
STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	LOCATION (ROAD NAME/COORDINATE)	ROAD STA.	OFFSET	TYPE AND WIDTH	REMARKS
I-1	392.76.01	385.97.05	385.97.08	OLD ANNAPOLIS ROAD	14+25.50	24' LV	A-5 (2.5' V)	D - 4.01
I-2	392.76.01	388.00.07	388.00.10	OLD ANNAPOLIS ROAD	14+74.50	23.4' LV	A-5 (2.5' V)	D - 4.01
I-3	385.29.17	388.00.07	388.00.10	OLD ANNAPOLIS ROAD	10+64.50	24' LV	COG/COS OPENING	MD - 374.68
I-4	383.84.38	388.00.07	378.41.05	SQUIRREL HILL DRIVE	0+72.38	53' R V	5" INLET	D - 4.22
I-5	372.71	388.00.07	378.41.05	OLD ANNAPOLIS ROAD	7+85.50	24' LV	COG/COS OPENING	MD - 374.68
I-6	370.99.74	387.74.05	385.96.05	OLD ANNAPOLIS ROAD	7+75.21	57' LV	5" INLET	D - 4.22
I-7	363.86.18	388.00.07	388.00.10	OLD ANNAPOLIS ROAD	5+82.50	24' LV	COG/COS OPENING	MD - 374.68
I-8	361.99.00	388.00.07	385.96.05	OLD ANNAPOLIS ROAD	5+61.49	57' LV	5" INLET	D - 4.22
I-9	370.46.06	370.46.06	370.46.06	EDMOND COURT	0+47.61	12' LV	A-5 (2.5' V)	D - 4.01
I-10	372.71	372.71	370.46.06	EDMOND COURT	0+47.61	12' R V	A-5 (2.5' V)	D - 4.01
I-11	372.71	372.71	372.26.08	SQUIRREL HILL DRIVE	1+86.50	12' R V	A-5 (2.5' V)	D - 4.01
I-12	372.71	372.71	372.75.05	SQUIRREL HILL DRIVE	1+86.50	12' LV	A-5 (2.5' V)	D - 4.01
I-13	throat = 356.29.34	367.74.05	367.74.05	N 575.9780 E 1.354.5270	0+52.50	12' LV	10" INLET	D - 4.10
I-14	throat = 372.71	367.74.05	367.74.05	TENNEY COURT	0+52.50	12' LV	A-5 (2.5' V)	D - 4.01
I-15	throat = 372.71	367.74.05	367.74.05	TENNEY COURT	0+52.50	12' LV	A-5 (2.5' V)	D - 4.01
I-16	throat = 345.66.74	343.33.08	343.33.08	N 575.6080 E 1.354.7060	0+52.50	12' LV	10" INLET	D - 4.10
I-17	354.00.97	343.33.08	343.33.08	TENNEY COURT	L.P. 1+45.11	12' LV	A-10 (2.5' V)	D - 4.03
I-18	366.40.34	343.33.08	343.33.08	TENNEY COURT	2+85.50	12' LV	A-5 (2.5' V)	D - 4.01
I-19	366.40.34	343.33.08	343.33.08	TENNEY COURT	2+85.50	12' R V	A-5 (2.5' V)	D - 4.01
I-20	throat = 351.96.04	347.96.05	347.96.05	N 575.6840 E 1.354.8020	0+52.50	12' LV	10" INLET	D - 4.10
I-21	throat = 363.86.18	359.57.05	359.57.05	N 575.9000 E 1.354.8090	0+52.50	12' LV	10" INLET	D - 4.10
I-22	392.96.04	387.74.05	387.74.05	OLD ANNAPOLIS ROAD	13+49.50	24' LV	A-5 (2.5' V)	D - 4.01
I-23	throat = 343.50.11	343.50.11	343.50.11	N 575.5780 E 1.354.8080	0+52.50	12' LV	10" INLET	D - 4.10
M-1	344.84.04	333.70.05	333.70.05	N 575.5280 E 1.354.8930	0+52.50	4" DIA. MANHOLE	G - 5.12	
M-2	348.00.00	333.70.05	333.70.05	OLD ANNAPOLIS ROAD	4+05.57	85.4' LV	4" DIA. MANHOLE	G - 5.12
M-3	350.25.00	333.70.05	333.70.05	OLD ANNAPOLIS ROAD	5+61.16	75.5' LV	4" DIA. MANHOLE	G - 5.12
M-4	369.80.00	333.70.05	333.70.05	OLD ANNAPOLIS ROAD	7+74.06	70.7' L	4" DIA. MANHOLE	G - 5.12
M-5	372.00.00	333.70.05	333.70.05	OLD ANNAPOLIS ROAD	8+85.29	70.5' L	4" DIA. MANHOLE	G - 5.12
M-6	369.80.00	333.70.05	333.70.05	N 575.5780 E 1.354.8080	0+52.50	4" DIA. MANHOLE	G - 5.12	
M-7	372.00.00	333.70.05	333.70.05	N 575.5780 E 1.354.8080	0+52.50	4" DIA. MANHOLE	G - 5.12	
M-8	369.80.00	333.70.05	333.70.05	N 575.5780 E 1.354.8080	0+52.50	4" DIA. MANHOLE	G - 5.12	
M-9	348.00.11	343.33.08	343.33.08	N 575.6080 E 1.354.8080	0+52.50	4" DIA. MANHOLE	G - 5.12	
S-1	384.40.23	382.60.73	382.60.73	OLD ANNAPOLIS ROAD	14+25.50	64.7' LV	18" FLARED END SECTION	**
S-2	340.40.55	339.05.05	339.05.05	N 575.5780 E 1.354.7060	0+52.50	18" FLARED END SECTION	**	
S-3	366.50.00	365.00.00	365.00.00	N 576.1000 E 1.354.9300	0+52.50	18" FLARED END SECTION	**	
S-4	348.00.00	347.00.10	347.00.10	N 575.6080 E 1.354.5080	0+52.50	18" FLARED END SECTION	**	
S-5	344.80.20	343.00.00	343.00.00	N 575.5280 E 1.354.7060	0+52.50	18" FLARED END SECTION	**	
S-6	344.80.20	343.00.00	343.00.00	N 575.6080 E 1.354.8080	0+52.50	18" FLARED END SECTION	**	

NOTE: TOP ELEVATION OF COG/COS OPENING IS AT 12" OFFSET FROM CENTERLINE ON OLD ANNAPOLIS ROAD
NOTE: SEE SHEET 13 FOR COG/COS OPENING DETAIL

PIPE SCHEDULE

SIZE	CLASS	LENGTH
15"	HDPE	560 LF.
10"	HDPE	1,609 LF.
6"	SOLID PVC, SCH. 40	202 LF.
6"	PERFORATED PVC, SCH. 40	422 LF.

NOTE: HDPE MAY BE SUBSTITUTED WITH RCCP, CL. IV PIPE MATERIAL.



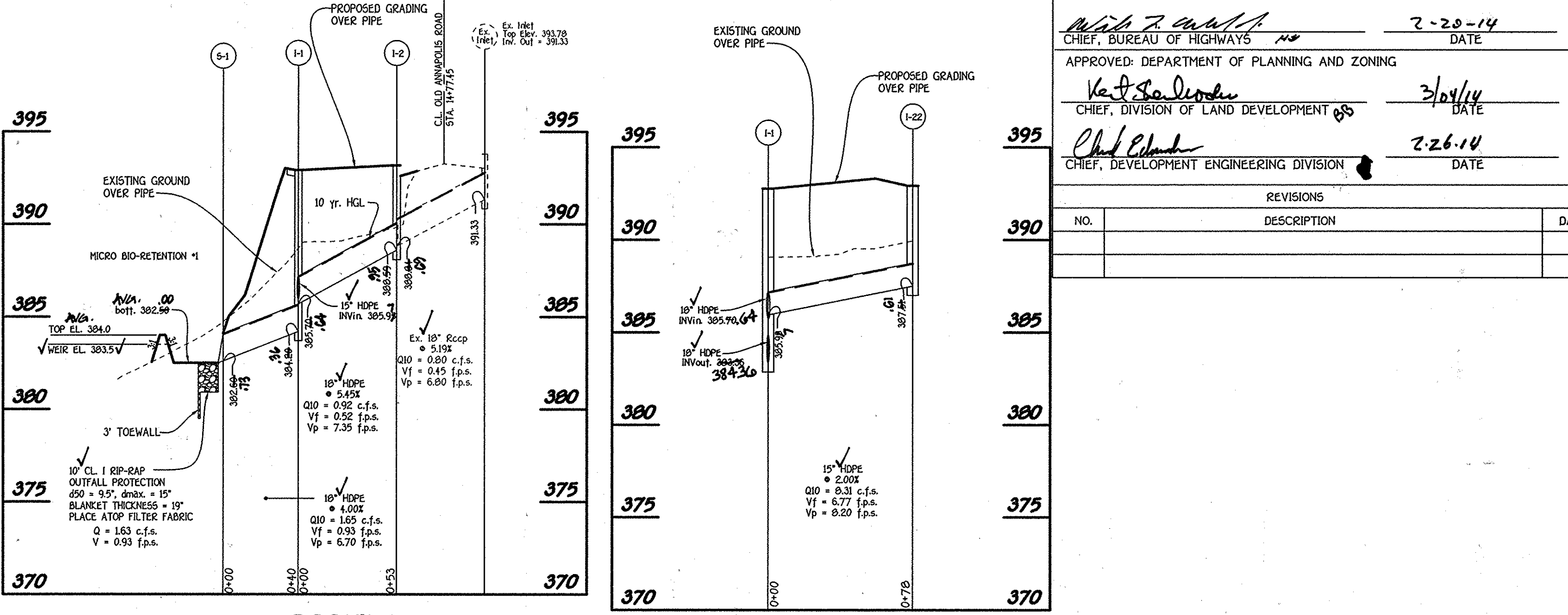
TOP VIEW RIGHT SIDE VIEW FRONT VIEW

PART	PIPE SIZE	A	B (max)	H	L	W
120NP	12 in (300 mm)	6.50 in (165 mm)	10.00 in (254 mm)	6.50 in (165 mm)	25.00 in (635 mm)	25.00 in (635 mm)
150NP	15 in (375 mm)	6.50 in (165 mm)	10.00 in (254 mm)	6.50 in (165 mm)	25.00 in (635 mm)	25.00 in (635 mm)
180NP	18 in (450 mm)	6.50 in (165 mm)	10.00 in (254 mm)	6.50 in (165 mm)	25.00 in (635 mm)	25.00 in (635 mm)
240NP	24 in (600 mm)	7.50 in (191 mm)	15.00 in (381 mm)	6.50 in (165 mm)	32.00 in (813 mm)	32.00 in (813 mm)
300NP	30 in (750 mm)	10.50 in (267 mm)	N/A	7.00 in (178 mm)	53.00 in (1346 mm)	68.00 in (1727 mm)
360NP	36 in (900 mm)	10.50 in (267 mm)	N/A	7.00 in (178 mm)	53.00 in (1346 mm)	68.00 in (1727 mm)

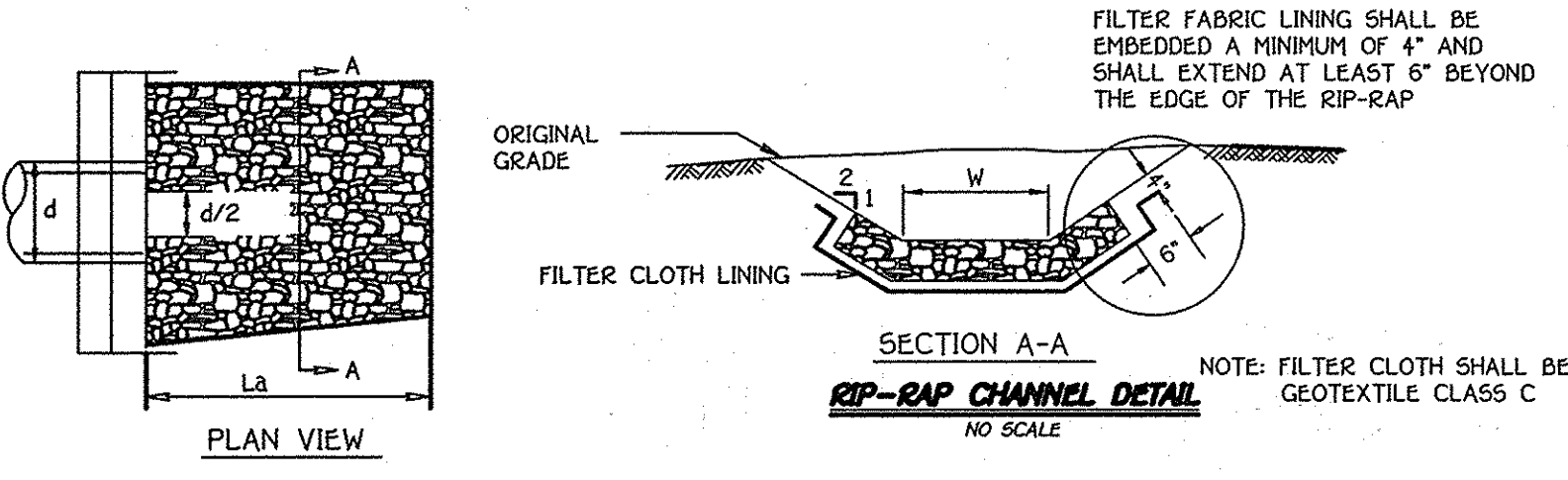
NOTE: PE THREADED ROD W/WING NUTS PROVIDED FOR END SECTIONS 12" - 24"
30" - 36" END SECTIONS TO BE WELDED TO WELD PER MANUFACTURER'S RECOMMENDATIONS.

FLARED END SECTION DETAIL

** - ADS (ADVANCED DRAINAGE SYSTEMS) OR EQUAL



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

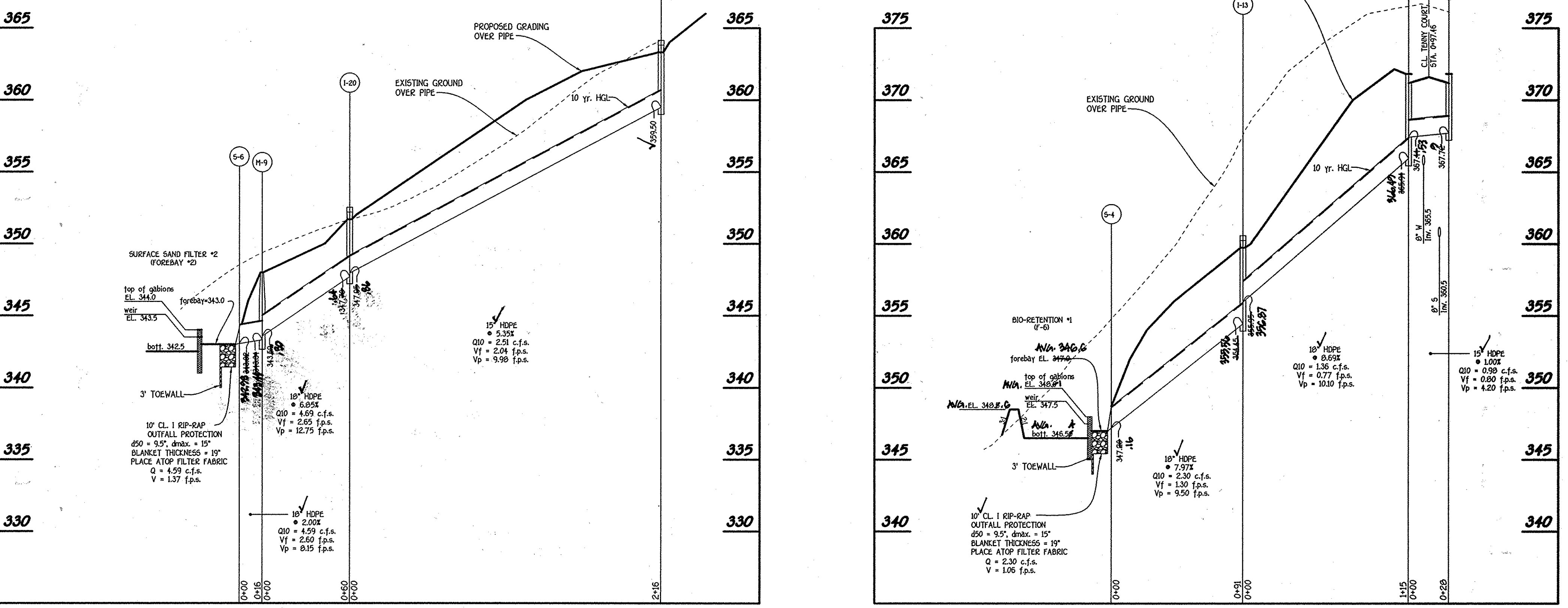


CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

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

RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA (SQ. FT.)	WETTED PERIMETER	R	R ^{2/3}	S	S ^{1/2}	W	d	n	V (f.p.s.)	Q (c.f.s.)	D ₅₀	D ₈₅	BLANKET THICKNESS	PIPE SIZE	La
S-1	1.70	8.49	0.2096	0.3510	0.005	0.0707	8.0'	0.17'	0.04	0.93	1.65	9.5"	19"	19"	18"	10'
S-2	2.74	8.75	0.3131	0.4593	0.005	0.0707	8.0'	0.31'	0.04	1.21	3.31	9.5"	19"	19"	18"	20'
S-3	3.11	8.85	0.3514	0.6867	0.005	0.0707	8.0'	0.38'	0.04	1.31	4.01	9.5"	19"	19"	18"	10'
S-4	2.20	8.61	0.2555	0.4993	0.005	0.0707	8.0'	0.27'	0.04	1.06	2.30	9.5"	19"	19"	18"	10'
S-5	2.51	8.69	0.2880	0.5644	0.005	0.0707	8.0'	0.31'	0.04	1.15	2.88	9.5"	19"	19"	18"	10'
S-6	3.36	8.91	0.3771	0.7369	0.005	0.0707	8.0'	0.41'	0.04	1.37	4.59	9.5"	19"	19"	18"	10'

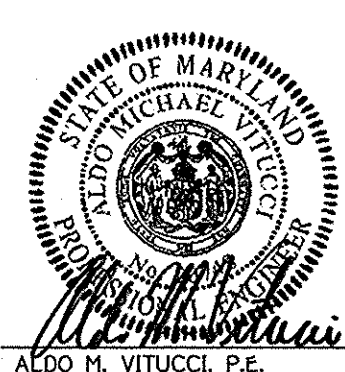
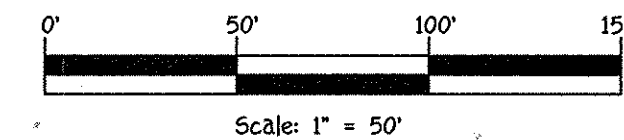


PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'

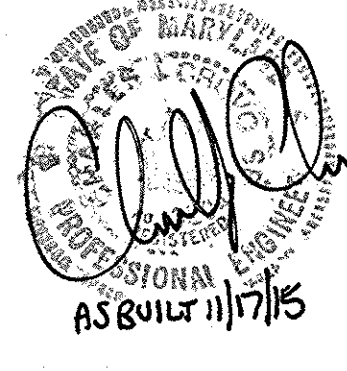
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CONTINENTAL SQUARE OFFICE PARK - 10274 BALTIMORE NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
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SYKESVILLE, MD 21784
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DEVELOPER
DOUBLE R VENTURES, LLC
c/o LAND DESIGN AND DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, SUITE 102
ELLCOTT CITY, MARYLAND 21042
(443-367-0422)

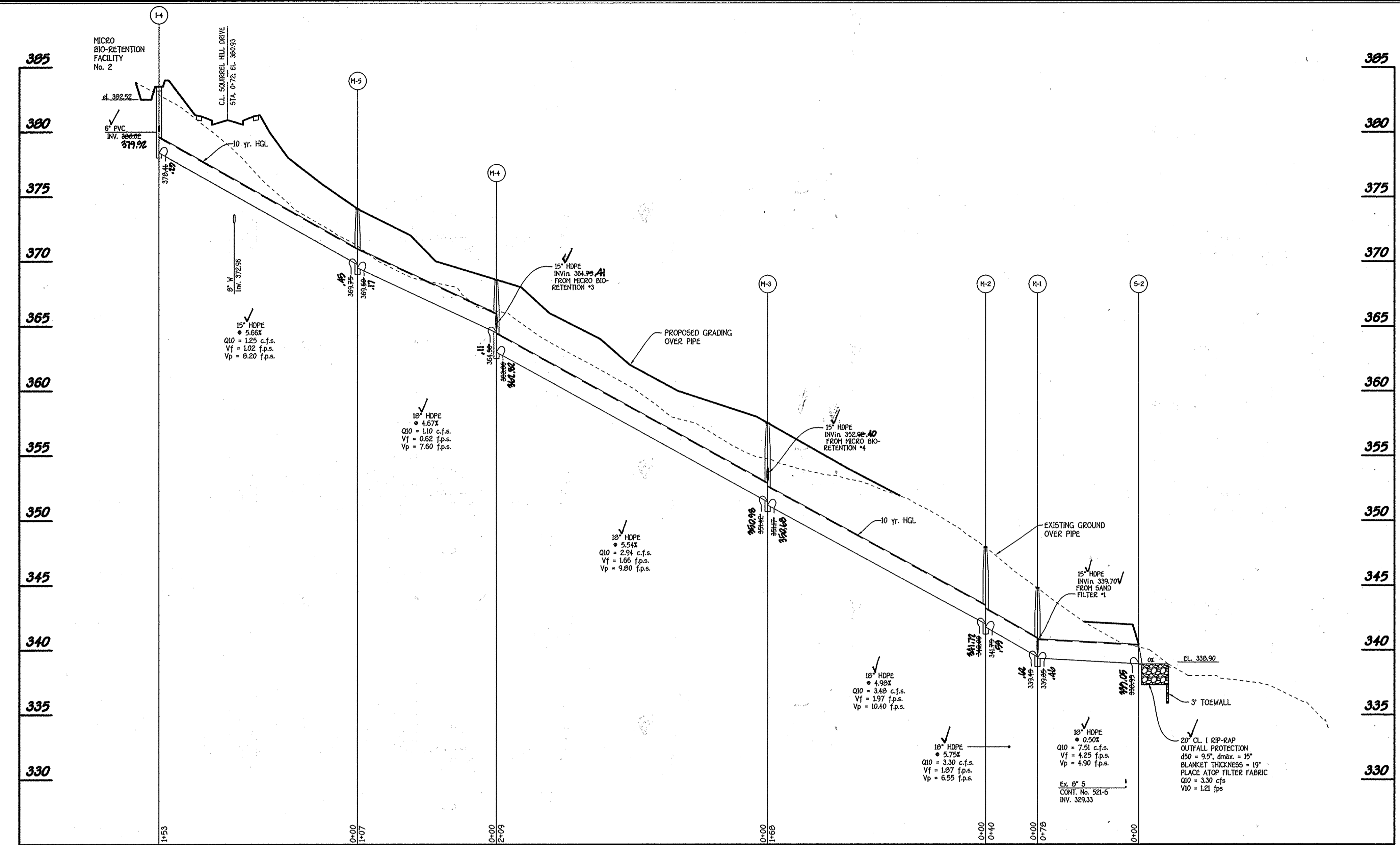


ALDO M. VITUCCI, P.E.
DATE: 1/14/14
Professional certification I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15.

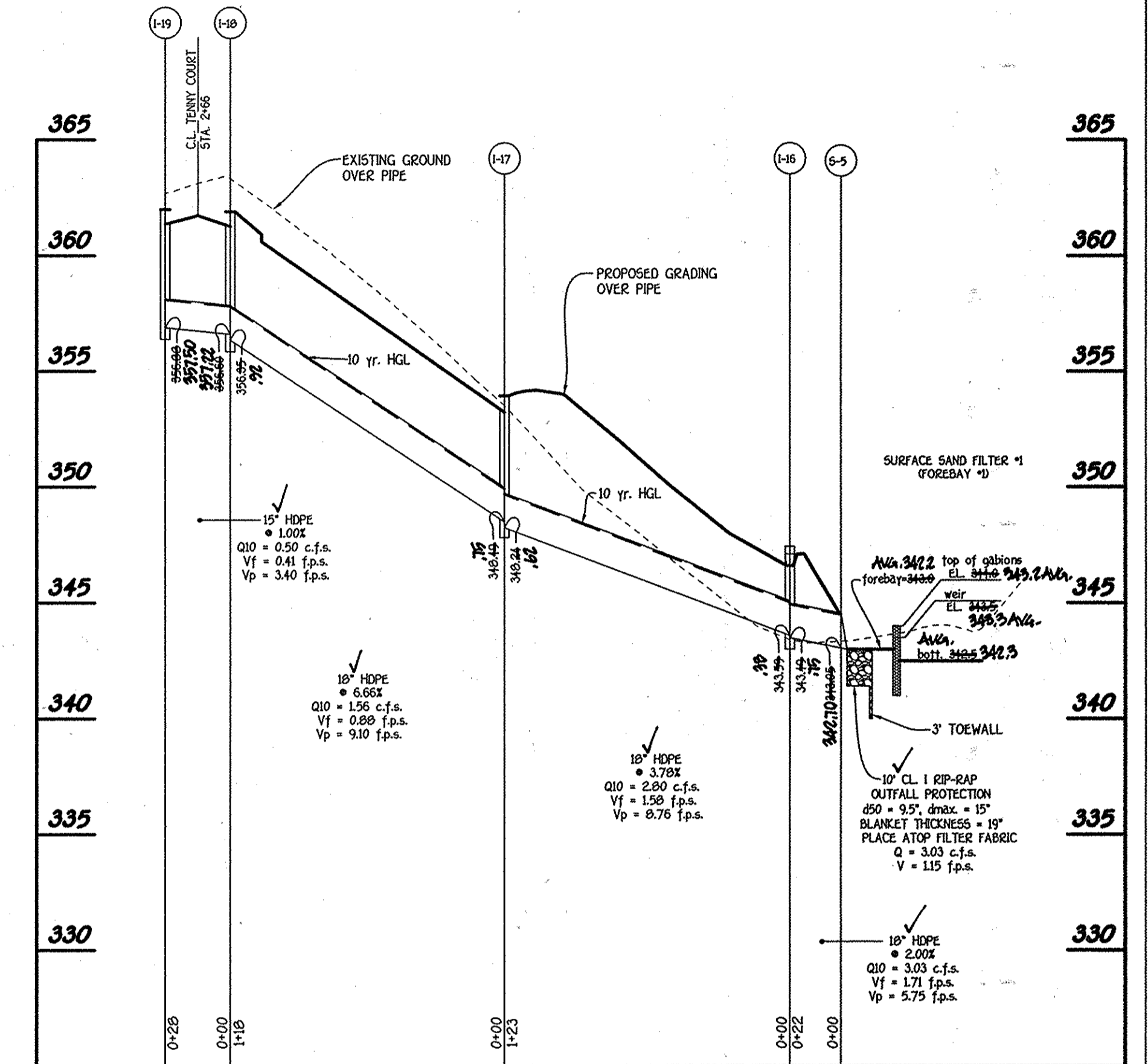


STORM DRAIN PROFILES
Centennial Lake Overlook
(Formerly Mason Property)
Section One
Buildable Lots 1 Thru 23,
Open Space Lots 24 Thru 28 &
Buildable Bulk Parcels 'A' and 'B'
Using A Subdivision Of Tax Parcel No. 80, Tax Map No. 30,
Liber. 10729 At Folio 329 And Liber. 10729 At Folio 335
Zoning: R-20
Tax Map No. 30 Grid No. 2 Parcel No. 86
2nd Election District Howard County, Maryland
Scale: As Shown Date: January 10, 2014
Sheet 26 of 30

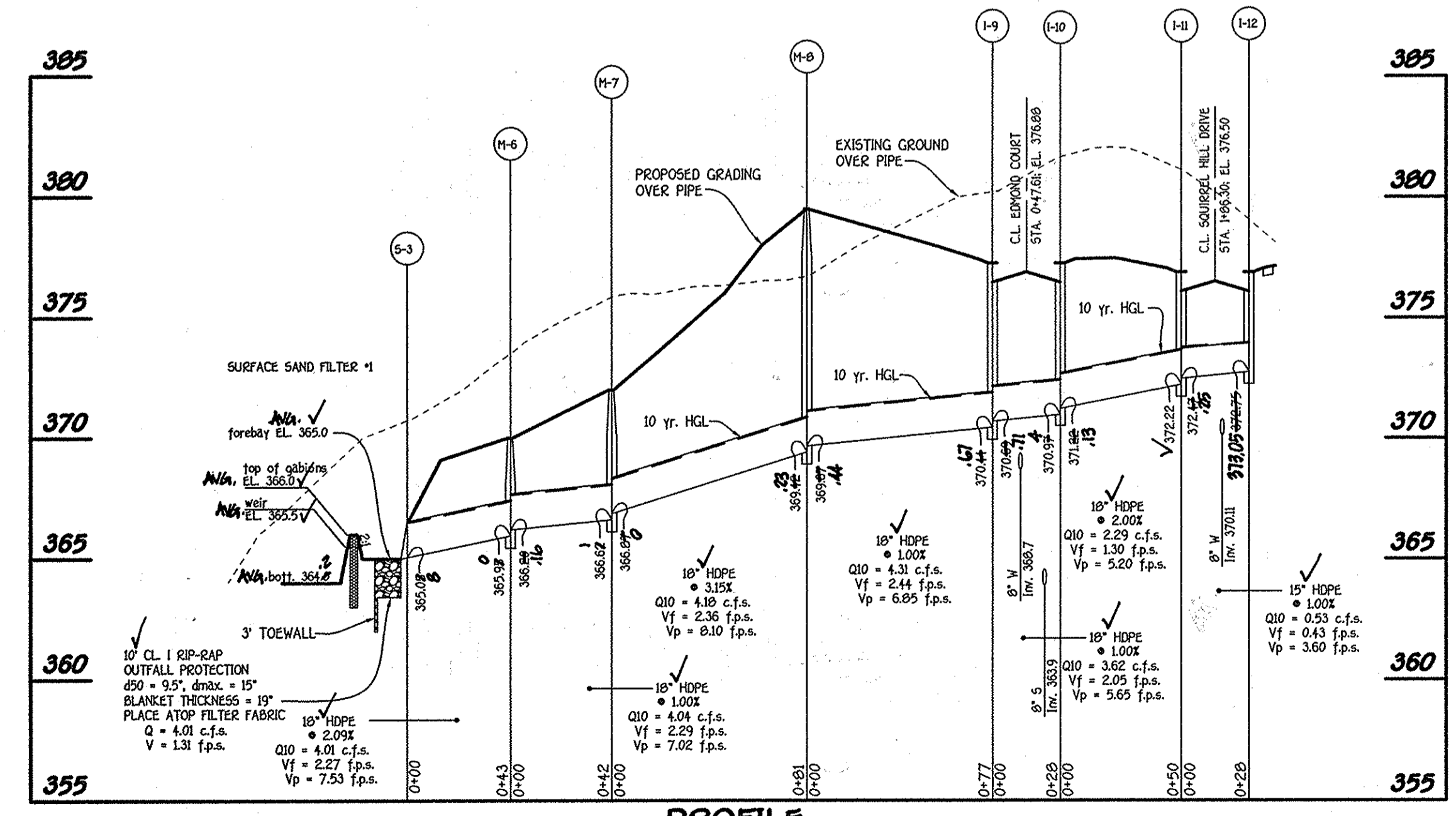
APPROVED: DEPARTMENT OF PUBLIC WORKS		
<i>W. F. Smith</i>	2-20-14	DATE
CHIEF, BUREAU OF HIGHWAYS		
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>Veronica D...</i>	3/04/14	DATE
CHIEF, DIVISION OF LAND DEVELOPMENT		
<i>Chad Edward</i>	2-26-14	DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION		
REVISIONS		
NO.	DESCRIPTION	DATE



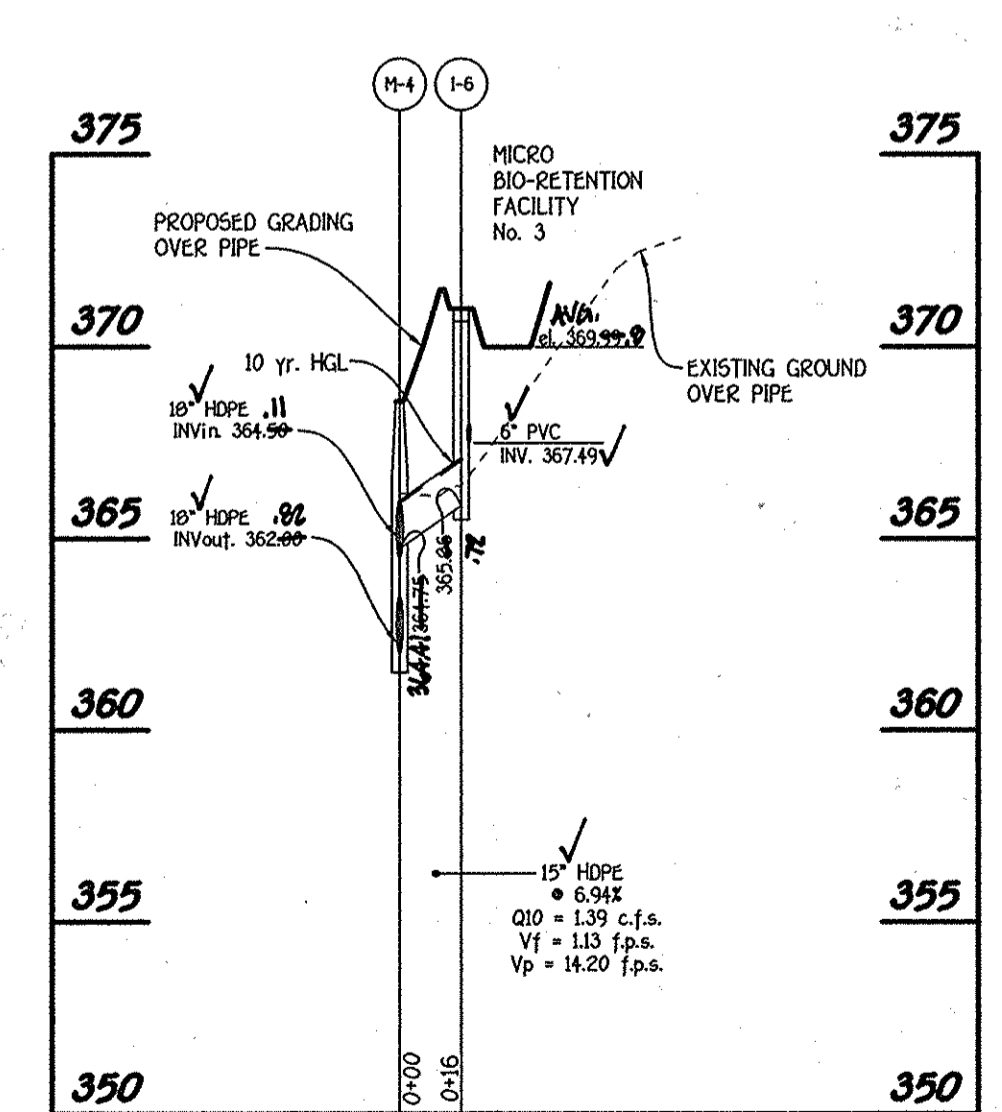
PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'



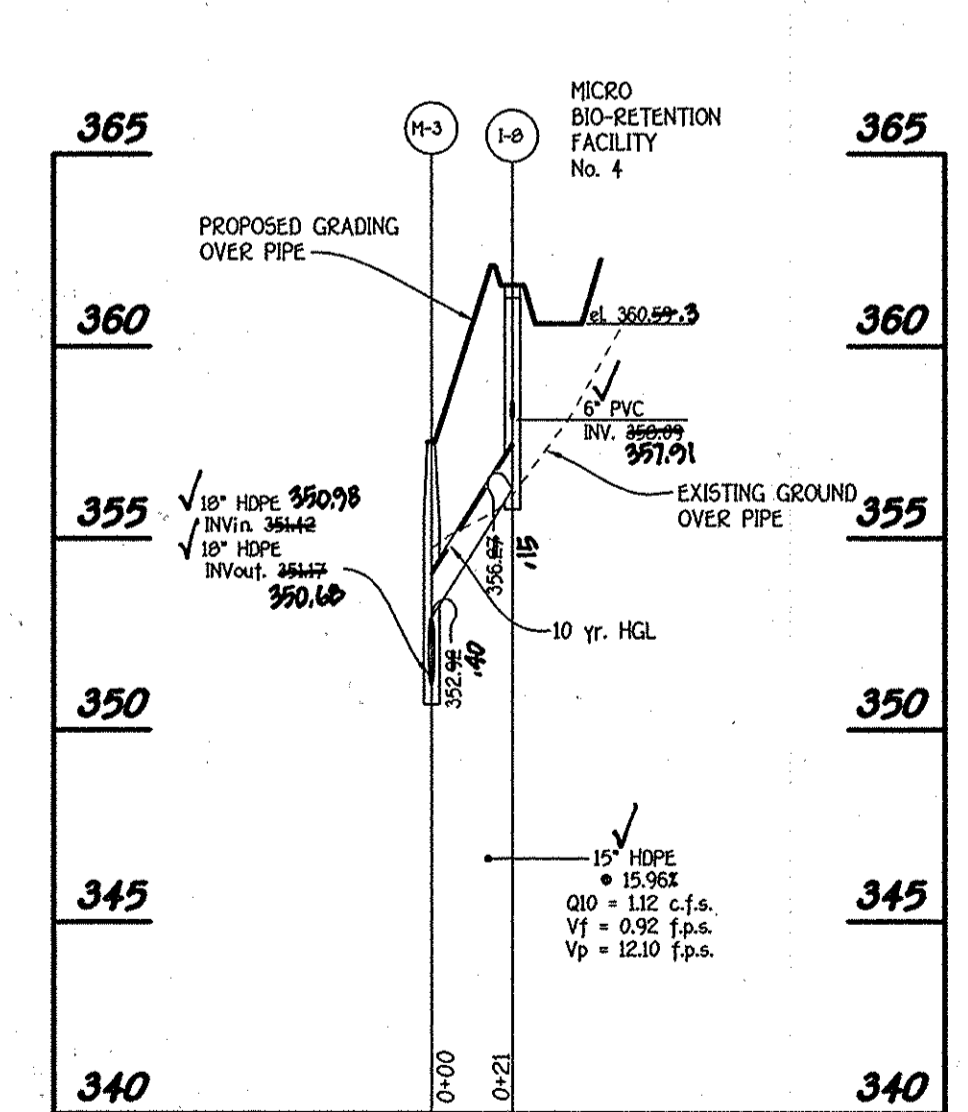
PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'



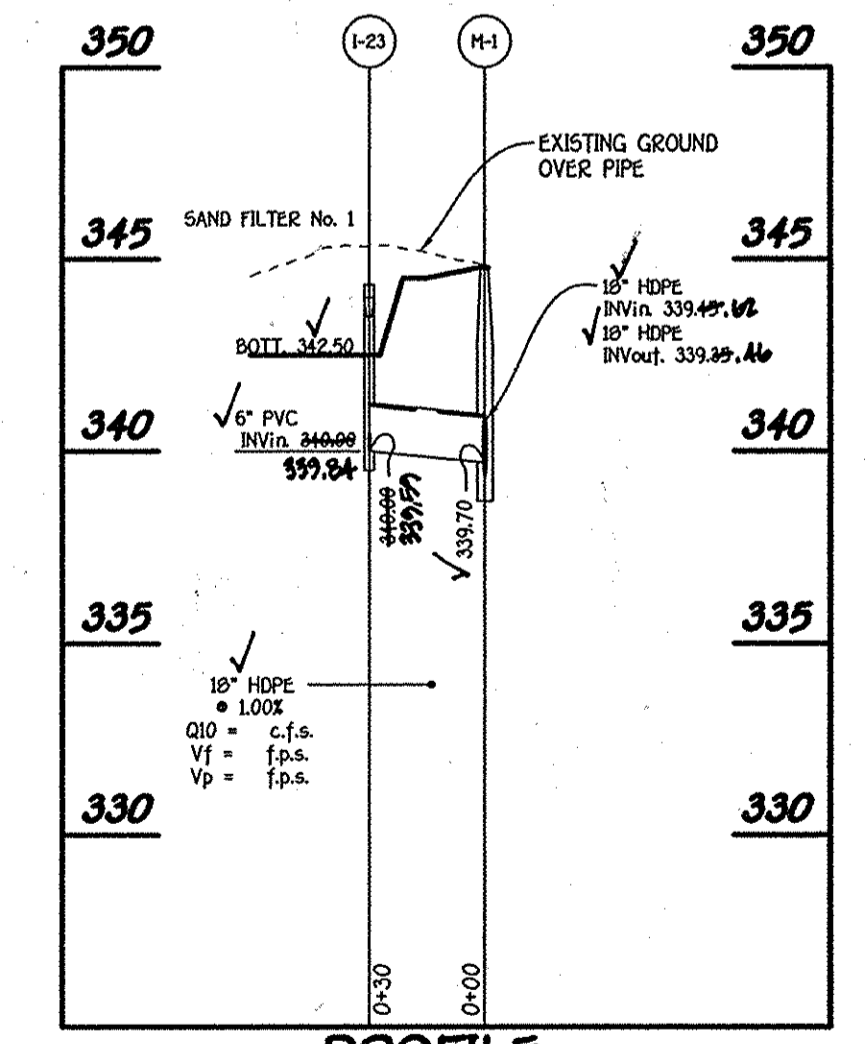
PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'



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



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

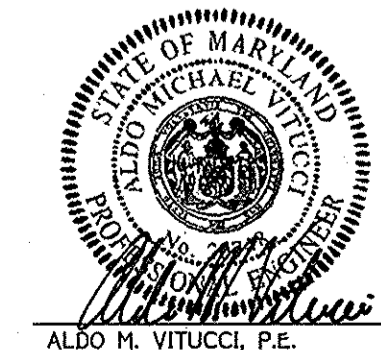
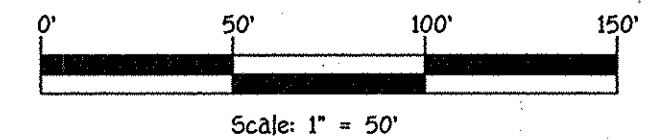


PROFILE
SCALE: HORIZ. : 1" = 50'
VERT. : 1" = 5'

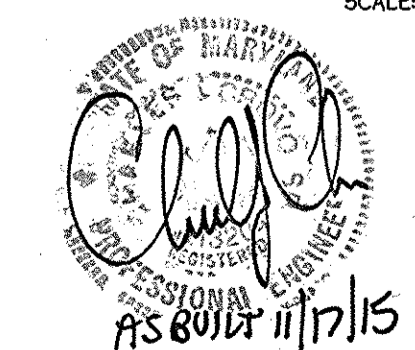
FISHER, COLLINS & CARTER, INC.
A DIVISION OF TAX PARCEL NO. 20
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21114
4102 461 - 2000

OWNER
JOHN TENNEY MASON, JR. FAMILY LLC
AND FRANCES WELLFORD MASON FAMILY LLC
c/o MR. JOHN TENNEY MASON, III, GENERAL
MEMBER 7636 GAITHER ROAD
SYKESVILLE, MD 21784
(443-367-0422)

DEVELOPER
DOUBLE R VENTURES, LLC
c/o LAND DESIGN AND DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, SUITE 102
ELLICOTT CITY, MARYLAND 21142
(443-367-0422)



ALDO M. VITUCCI, P.E.
DATE: 1/16/14
Professional certification I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15.

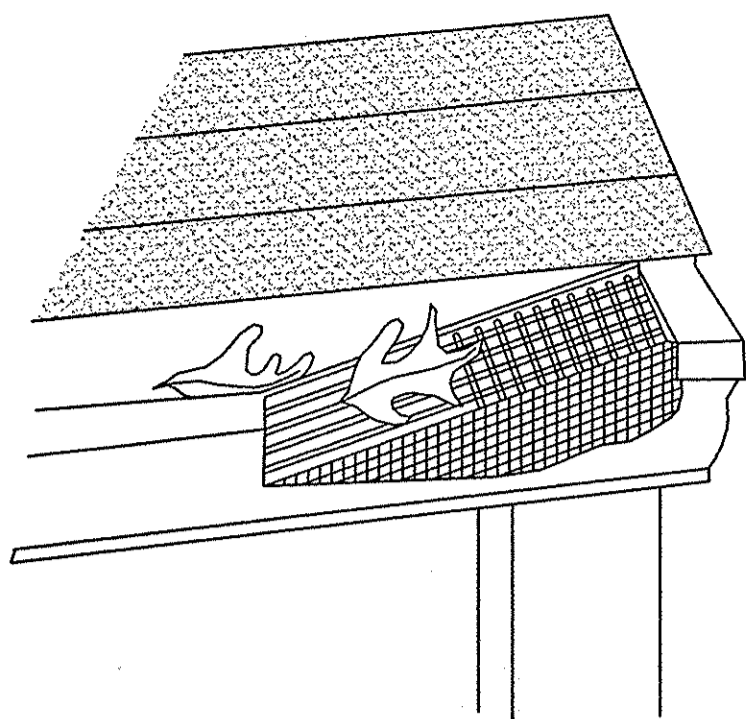


STORM DRAIN PROFILES
Centennial Lake Overlook
(Formerly Mason Property)
Section One
Buildable Lots 1 Thru 23,
Open Space Lots 24 Thru 28 &
Buildable Bulk Parcels 1A and 1B
Being A Subdivision Of Tax Parcel No. 20, Tax Map No. 30,
Liber 10729 At Folio 329 And Liber 10729 At Folio 335
Zoning: R-20
Tax Map No. 30 Grid No. 2 Parcel No. 96
2nd Election District Howard County, Maryland
Date: January 10, 2014
Scale: As Shown Sheet 27 of 30

AS-BUILT

F-14-002

I:\2011\11042.dwg\Finals section one\11042 sheet 26-27 storm drain profiles.dwg, sheet 27, 1/13/2014 7:30:14 AM, 1:1

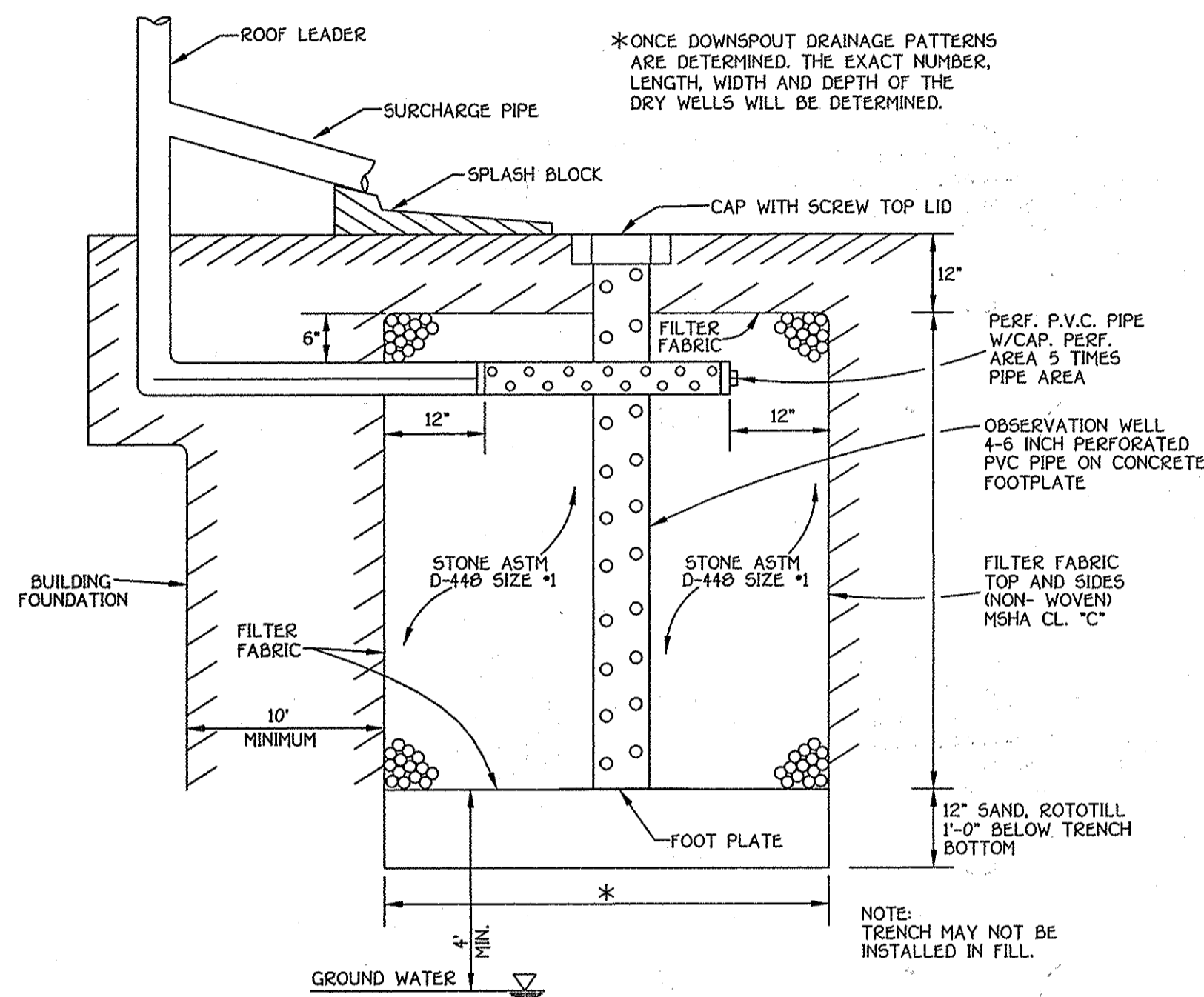


GUTTER DRAIN FILTER DETAIL
NOT TO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR DRYWELLS (M-5)

- The owner shall inspect the monitoring wells and structures on a quarterly basis and after every heavy storm event.
- The owner shall record the water levels and sediment build up in the monitoring wells over a period of several days to insure trench drainage.
- The owner shall maintain a log book to determine the rate at which the facility drains.
- When the facility becomes clogged so that it does not drain down within a seventy two (72) hour time period, corrective action shall be taken.
- The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.
- 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.

DRYWELL CHART (FOR FUTURE SITE PLAN USE)				
LOT No.	E50 REQ'D. (cu.ft.)	DRYWELL SIZE	No. OF DRYWELLS PER LOT	E50 PROV'D. (cu.ft.)
8	205	7.5'x14'x4' deep	2	336
9	205	7.5'x14'x4' deep	2	336
10	143	7.5'x14'x4' deep	1	160
14	143	8'x16'x4' deep	1	205
15	143	8'x16'x4' deep	1	205
16	205	7.5'x14'x4' deep	2	336



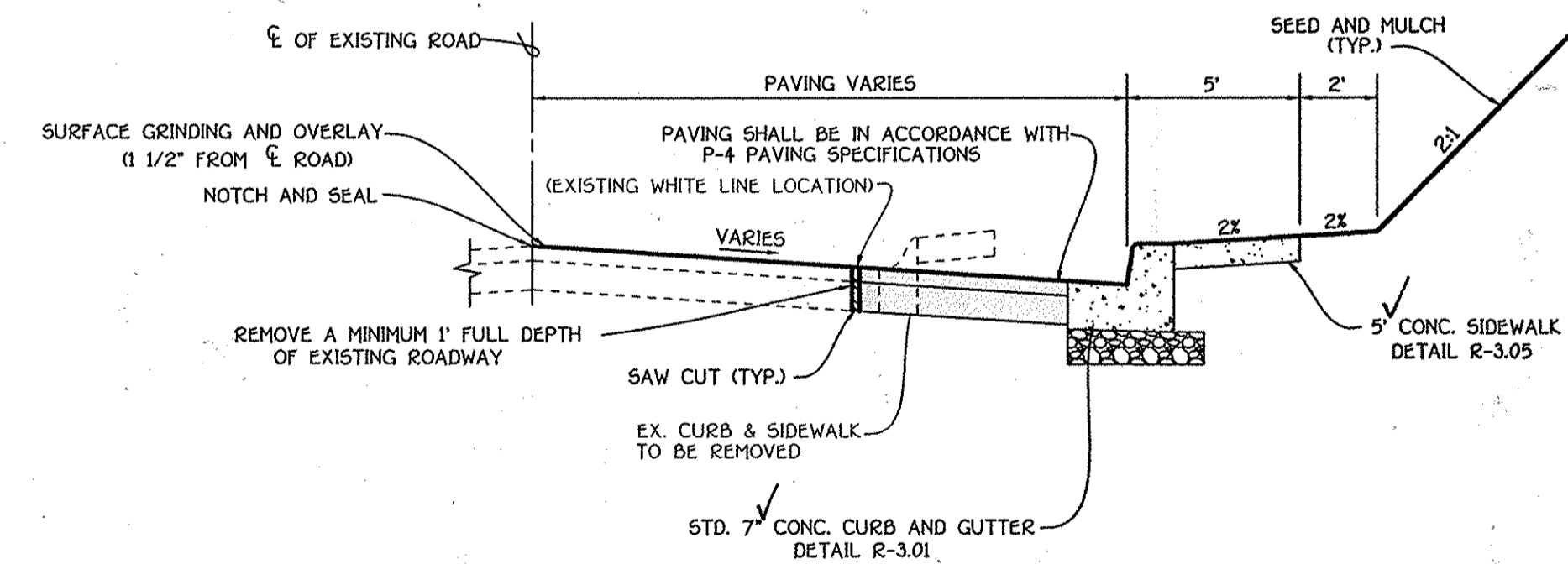
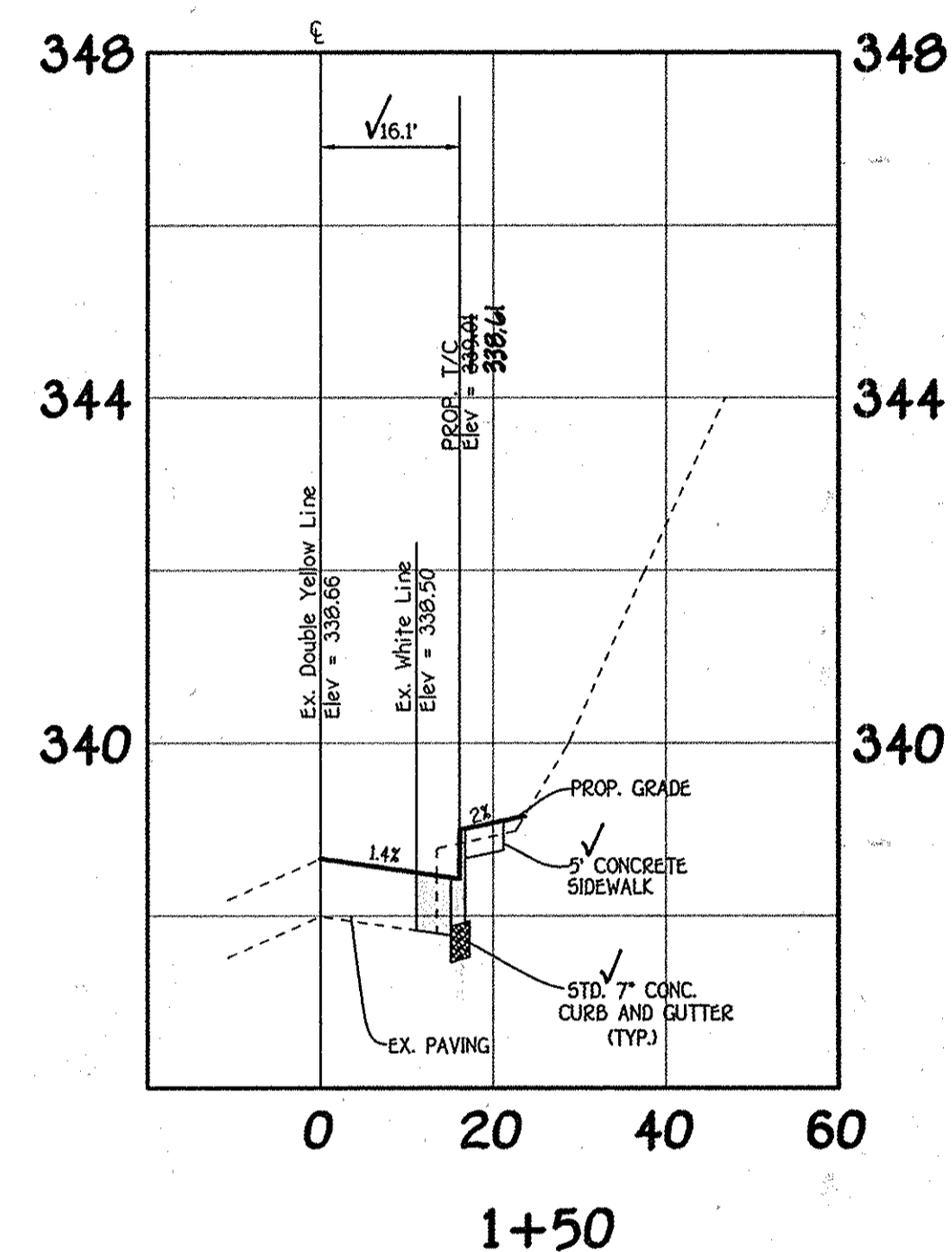
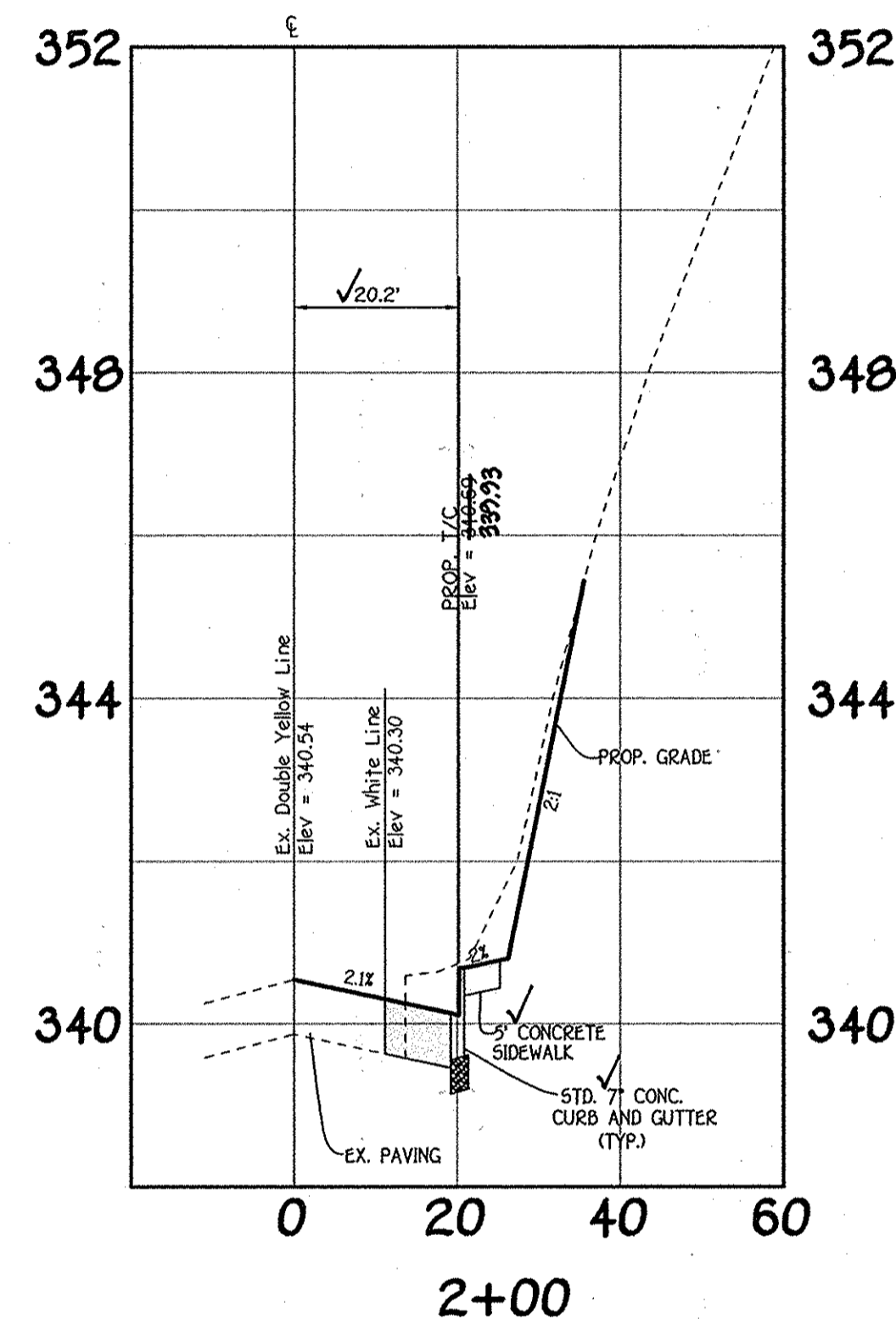
FUTURE DRY WELL DETAIL (LOTS 8, 9, 10, 14, 15 & 16)
NOT TO SCALE

FUTURE PRIVATE FACILITIES

NOTE: ALL PRIVATE FACILITIES ARE TO BE CONSTRUCTED & DETAILED AT THE SITE DEVELOPMENT PLAN PHASE, ONCE ACTUAL HOUSE TYPES ARE SELECTED.

STORMWATER MANAGEMENT NOTES

- STORMWATER MANAGEMENT IS PROVIDED IN ACCORDANCE WITH THE 2000 MARYLAND STORMWATER DESIGN MANUAL.
- CREDITS ARE GIVEN FOR DISCONNECTION OF IMPERVIOUS COVERS.
- MAXIMUM CONTRIBUTING ROOF TOP AREA TO EACH DOWNSPOUT SHALL BE LESS THAN 500 SQ. FT.
- DRYWELLS SHALL BE PROVIDED AT LOCATIONS WHERE THE LENGTH OF DISCONNECTION IS LESS THAN 75' AT 5%. THE SIZE AND CONSTRUCTION OF THE DRYWELL SHALL BE IN ACCORDANCE WITH THE FIGURE 5.2 OF THE MANUAL AND THE DETAIL SHOWN ON THIS SHEET.
- FINAL GRADING SHALL BE SHOWN ON SITE DEVELOPMENT PLAN.

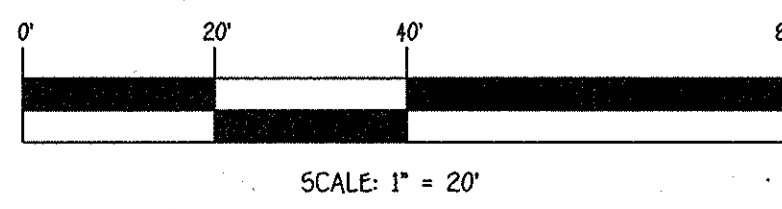


TYPICAL ROAD WIDENING
NO SCALE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTHAZAR NATIONAL PIKE
ELLCOTT CITY, MARYLAND 21042
(410) 461-2999

OWNER
JOHN TENNEY MASON, JR. FAMILY LLC
AND FRANCES WELLFORD MASON FAMILY LLC
c/o MR. JOHN TENNEY MASON, III, GENERAL
MEMBER 7536 GAITHER ROAD
SYKESVILLE, MD 21784
(443-367-0422)

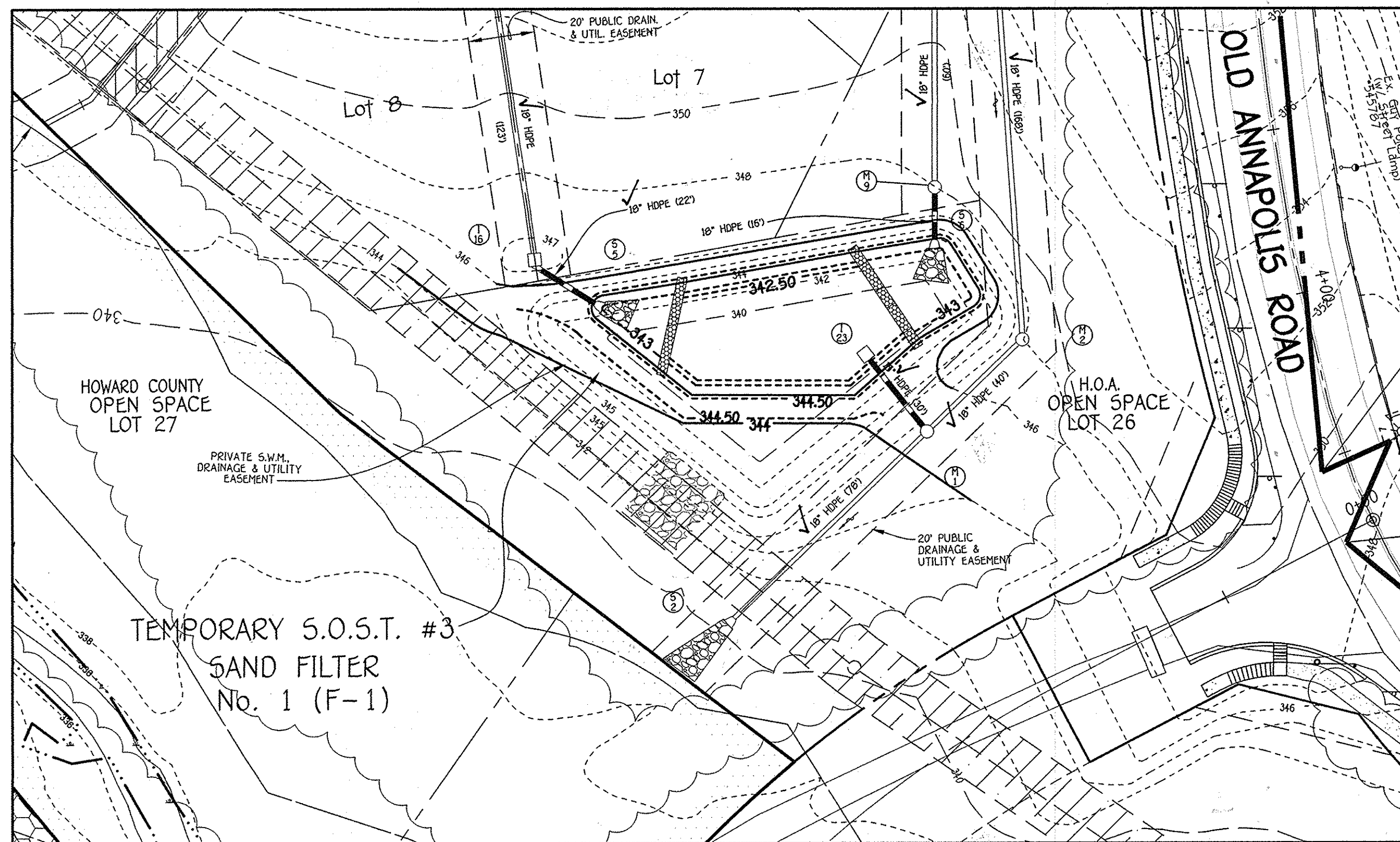
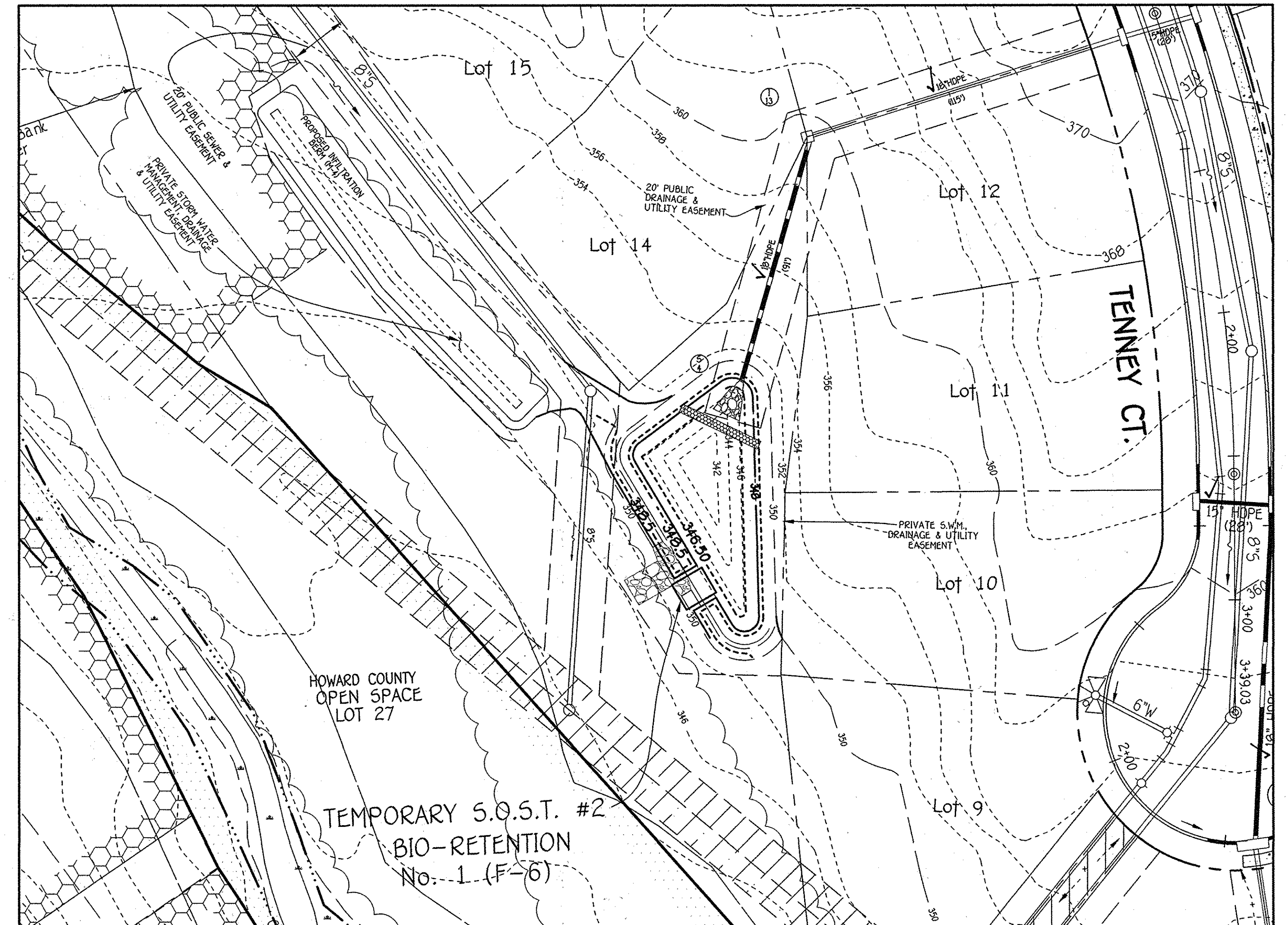
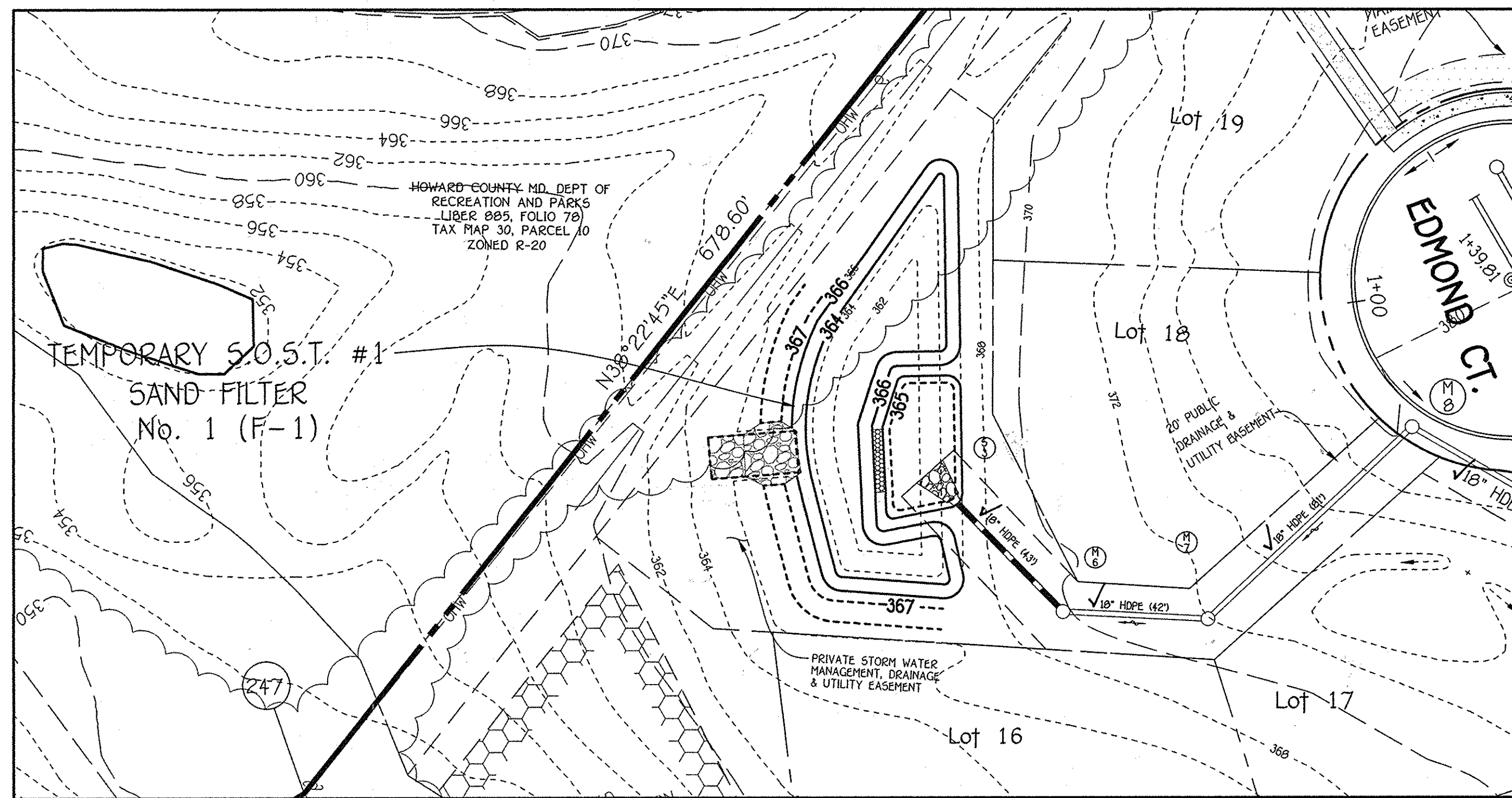
DEVELOPER
DOUBLE R VENTURES, LLC
c/o LAND DESIGN AND DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, SUITE 102
ELLCOTT CITY, MARYLAND 21042
(443-367-0422)



ALDO M. VITUCCI, P.E.
DATE 1/14/14
Professional certification I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20718, Expiration Date 2-22-15.



FUTURE PRIVATE S.W.M. NOTES & DETAILS AND OLD ANNAPOLIS ROAD CROSS-SECTIONS
Centennial Lake Overlook
(Formerly Mason Property)
Section One
Buildable Lots 1 Thru 23,
Open Space Lots 24 Thru 28 &
Buildable Bulk Parcels 11' And 12'
(Being A Subdivision Of Tax Parcel No. 06, Tax Map No. 30,
Liber 10729 At Folio 329 And Liber 10729 At Folio 339)
Zoning R-20
Tax Map No. 30 Grid No. 2 Parcel No. 06
2nd Election District Howard County, Maryland
Scale: As Shown Date: January 10, 2014
Sheet 28 Of 30

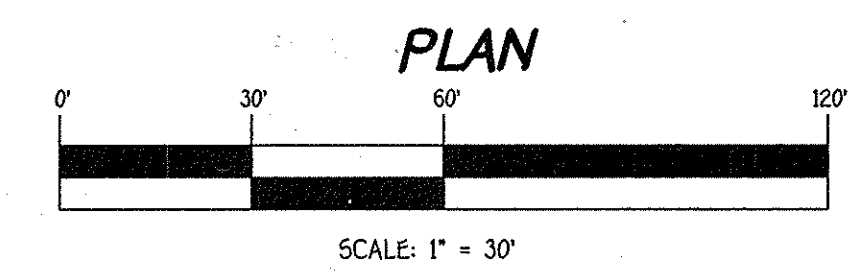


Approved: Department Of Planning And Zoning
Victor S. Decker 3/04/14
 Chief, Division Of Land Development 65 Date

Approved: Howard County Department Of Public Works
Chad Edwards 2-26-14
 Chief, Development Engineering Division Date

Approved: Howard County Department Of Public Works
Walter Zimball 2-20-14
 Chief, Bureau Of Highways Date

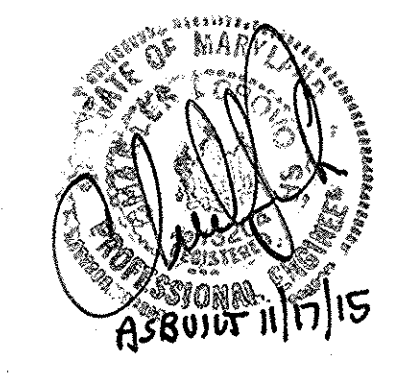
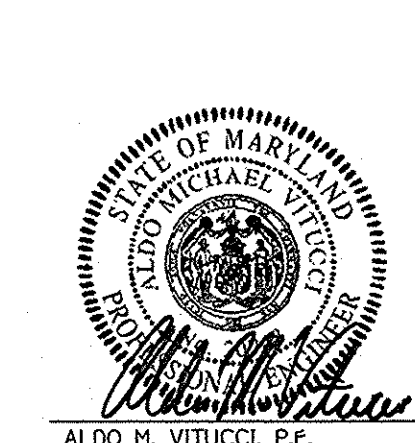
REVISIONS		
NO.	DESCRIPTION	DATE



FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTENNIAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE
 ELLICOTT CITY, MARYLAND 21042
 (410) 481-2829

OWNER
 JOHN TENNEY MASON, JR. FAMILY LLC
 AND FRANCES WELLFORD MASON FAMILY LLC
 c/o MR. JOHN TENNEY MASON, III, GENERAL
 MEMBER 7636 GAITHER ROAD
 SYKESVILLE, MD 21784
 (443-367-0422)

DEVELOPER
 DOUBLE R VENTURES, LLC
 c/o LAND DESIGN AND DEVELOPMENT, INC.
 5300 DORSEY HALL DRIVE, SUITE 102
 ELLICOTT CITY, MARYLAND 21042
 (443-367-0422)



ALDO M. VITUCCI, P.E. DATE 1/14/14
 Professional certification I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15.

FINAL GRADING PLAN
Centennial Lake Overlook
 (Formerly Mason Property)
Section One
 Buildable Lots 1 Thru 23,
 Open Space Lots 24 Thru 26 &
 Buildable Bulk Parcels 'A' And 'B'
 (Being A Subdivision Of Tax Parcel No. 86, Tax Map No. 30,
 Liber 10729 At Folio 329 And Liber 10729 At Folio 339)
 Zoning R-20
 Tax Map No. 30 Grid No. 2 Parcel No. 86
 2nd Election District Howard County, Maryland
 Date: January 10, 2014
 Scale: As Shown
 Sheet 29 Of 30

AS-BUILT

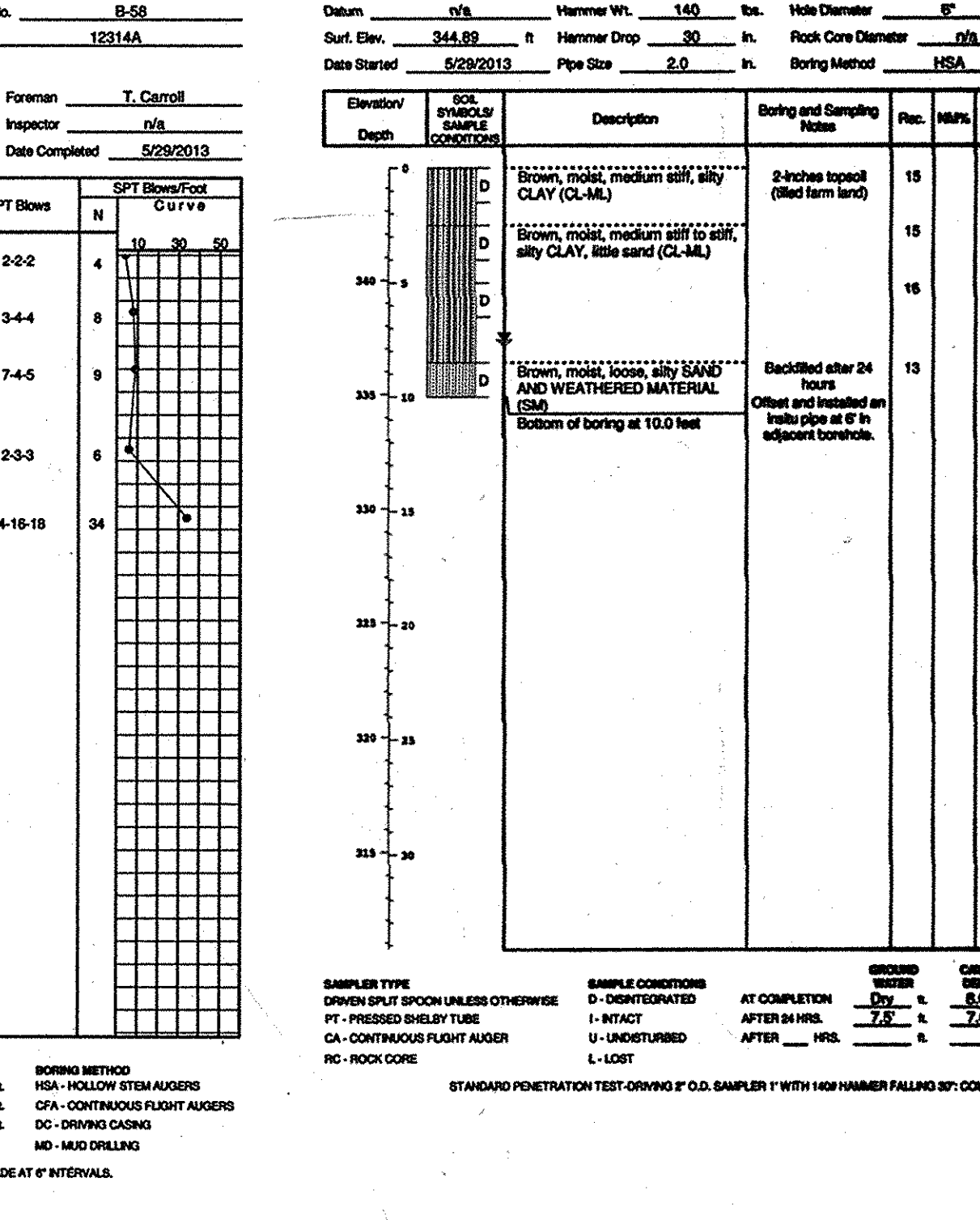
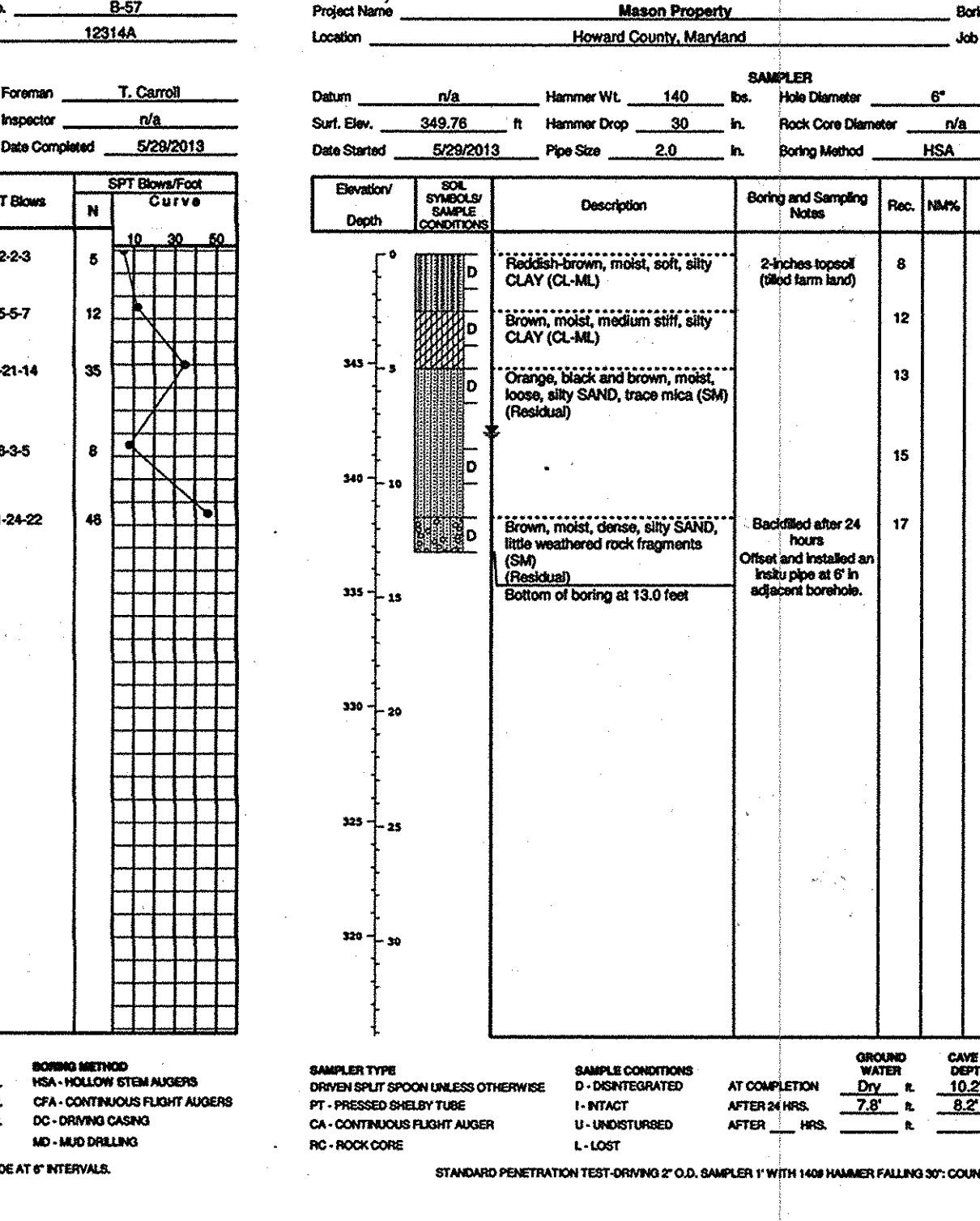
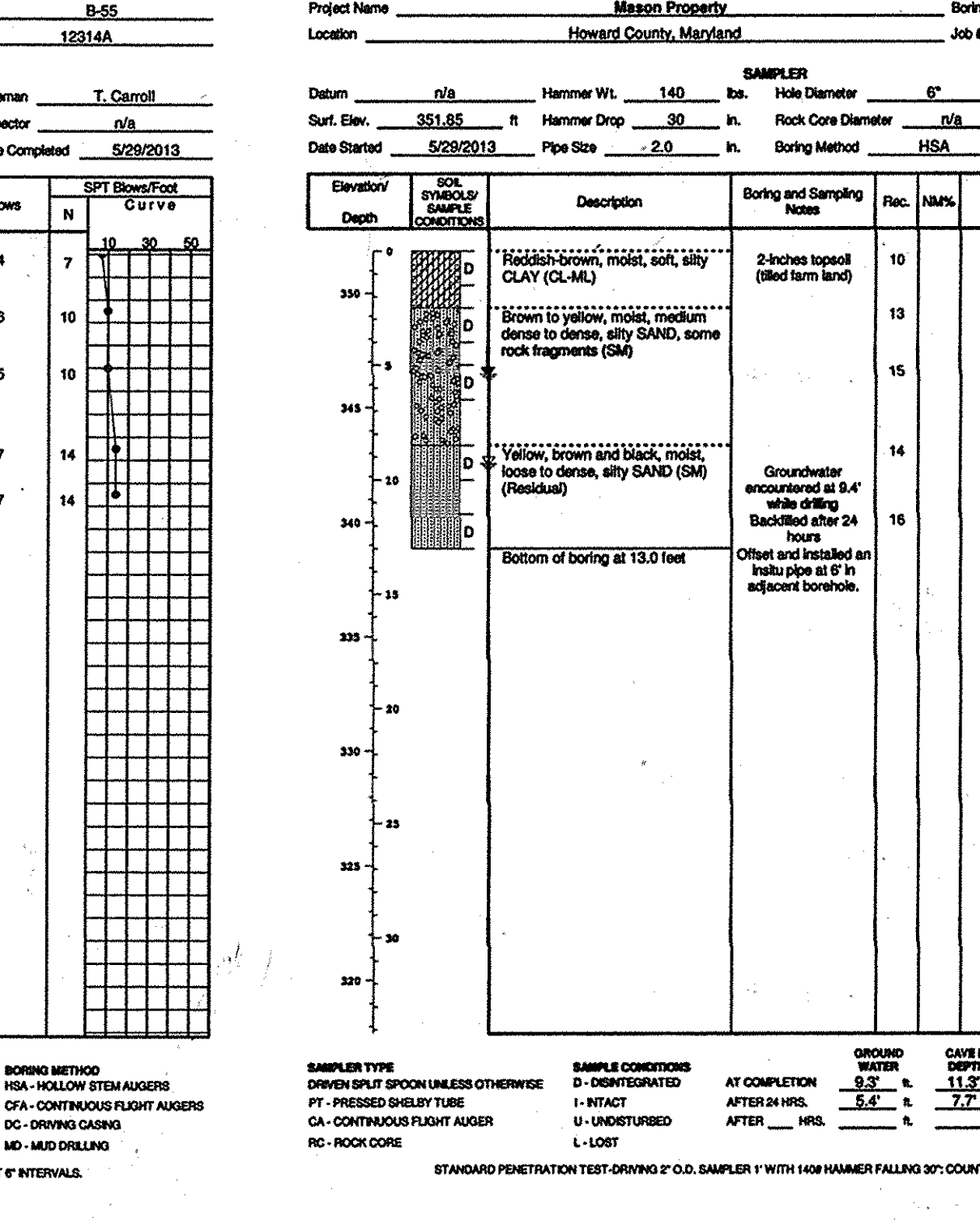
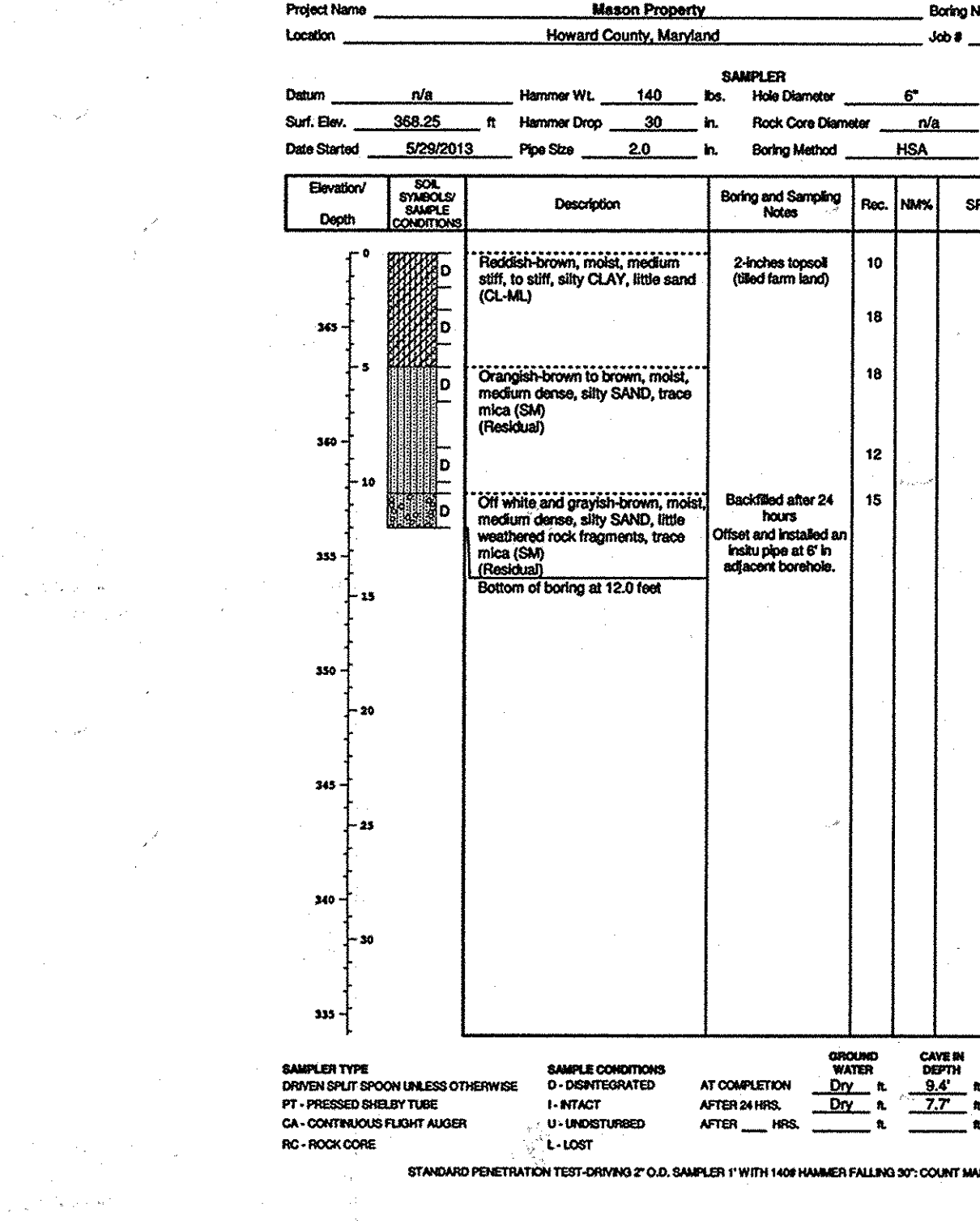
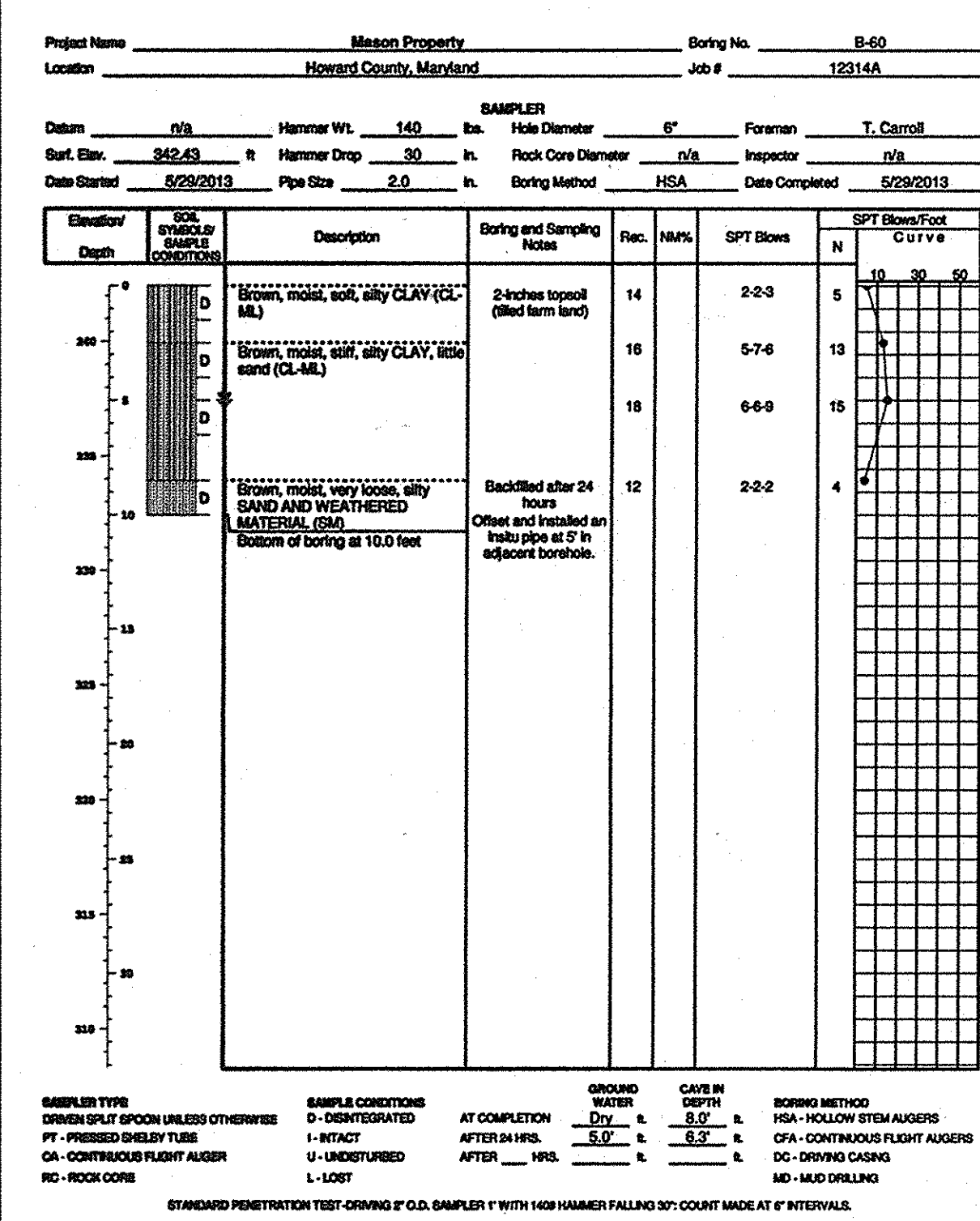
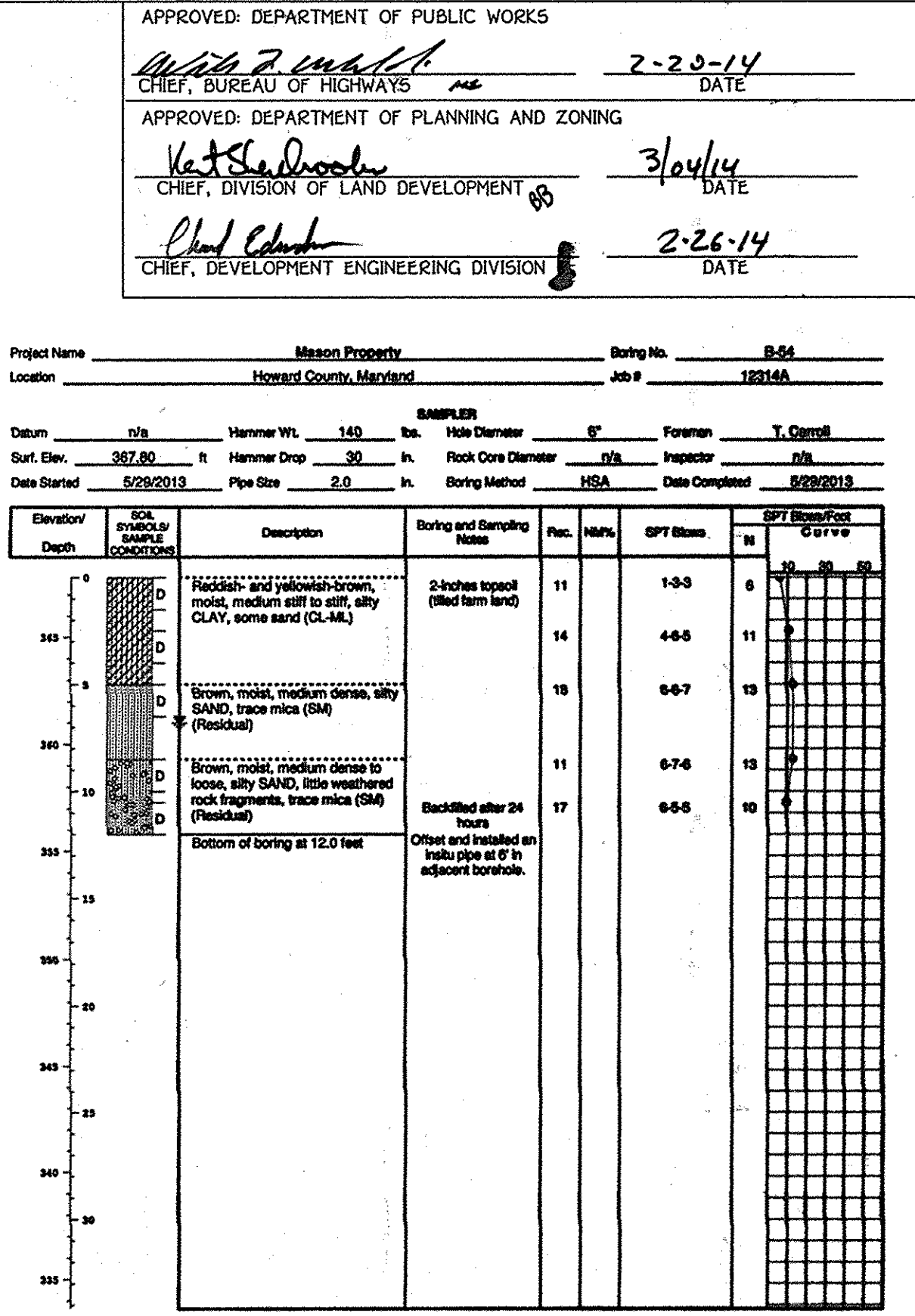
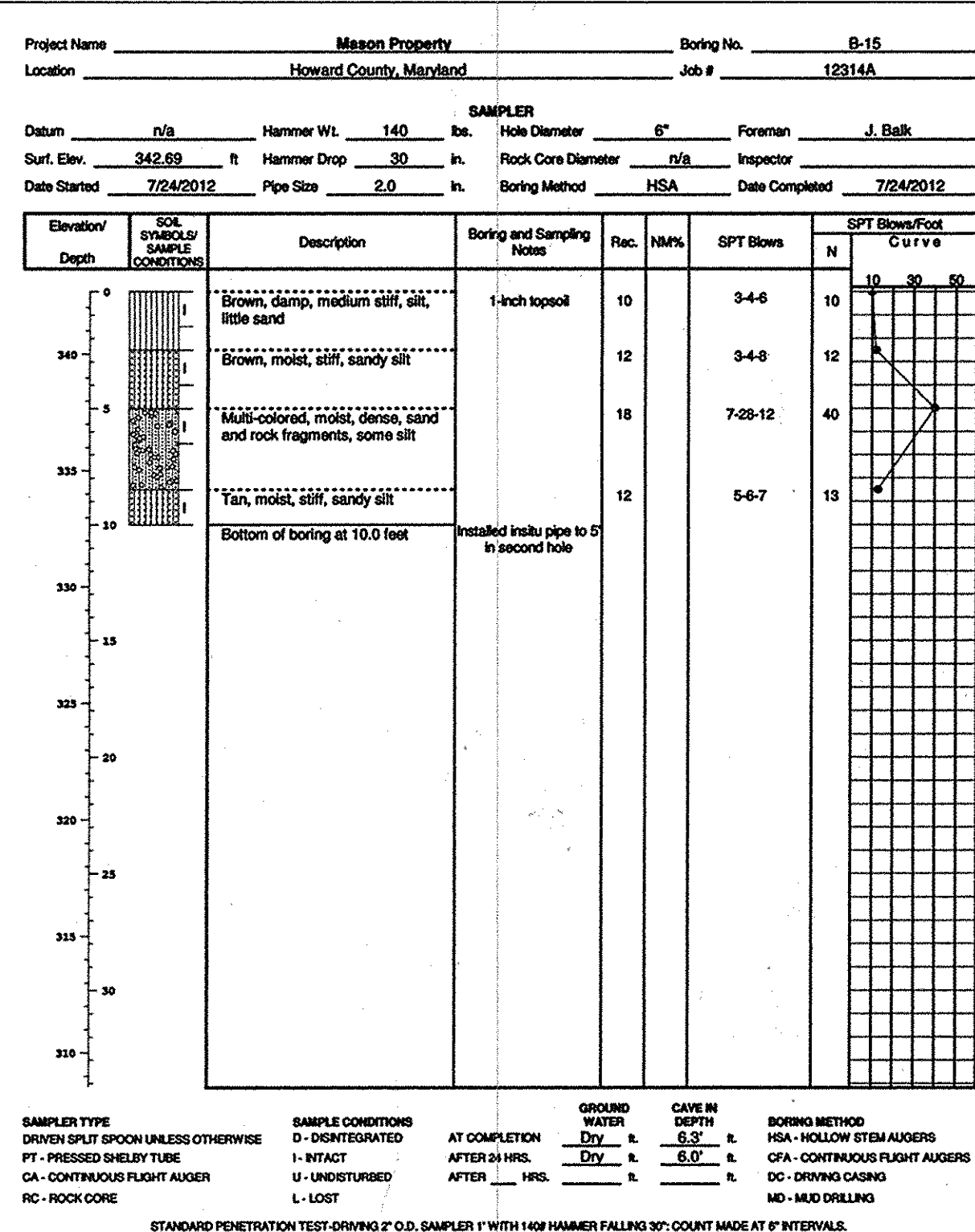
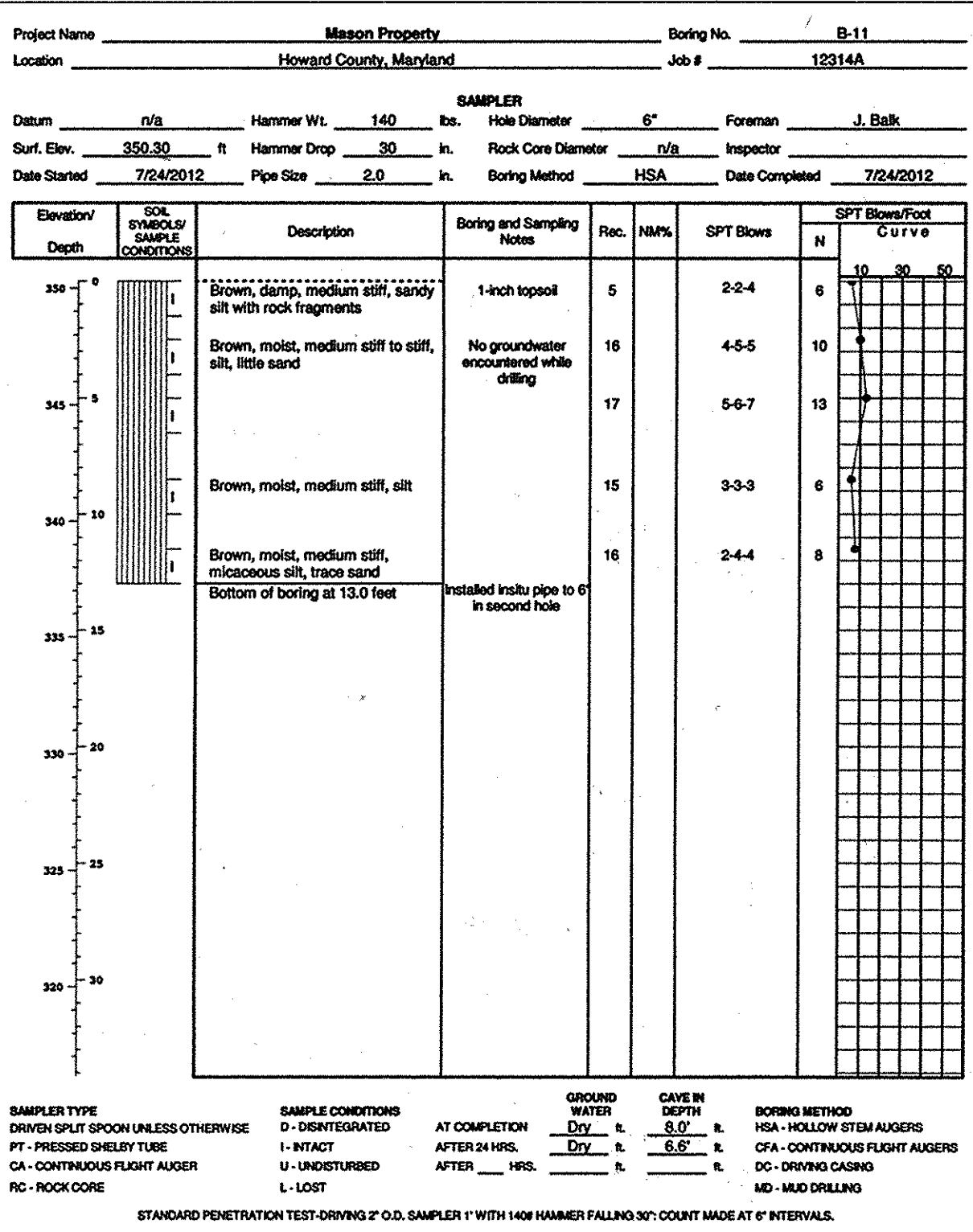
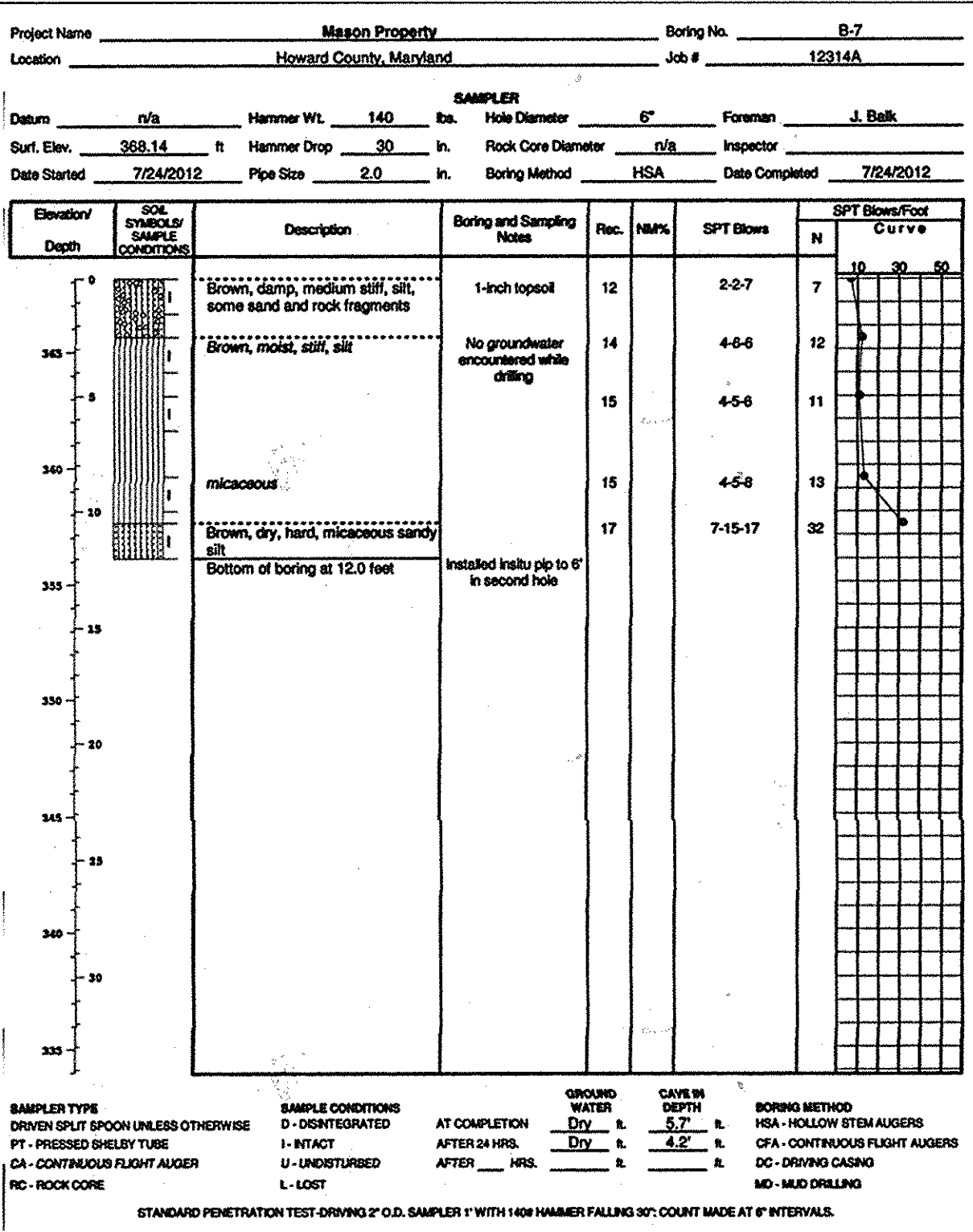
F-14-002

I:\2011\11042\dwg\Finals section one\11042 sheet 29 final grading plan.dwg, sheet 29, 1/13/2014 7:54:06 AM, 1:1

Table 1. Auger Probe Summary				Table 1. Auger Probe Summary							
Boring	Surface Elevation	Boring Depth	At Completion	Boring	Surface Elevation	Boring Depth	At Completion				
		Proposed	Drilled			Proposed	Drilled				
B-1	354.99	12	Dry	6.5	B-54	367.80	12	6.8	8.0		
B-2	352.91	13	Dry	10.0	B-55	368.25	12	12	Dry	7.7	
B-3	357.50	8	Dry	6.0	B-56	347.52	12	12	6.2	6.3	
B-4	356.26	8	Dry	5.0	B-57	351.85	13	13	5.4	7.7	
B-5	350.74	8	Dry	5.5	B-58	349.76	13	13	7.8	8.2	
B-6	353.13	8	Dry	6.8	B-59	344.89	10	10	7.5	7.6	
B-7	358.14	12	Dry	5.7	B-60	342.43	10	10	5.0	6.3	
B-8	354.42	10	Dry	8.0	B-61	339.89	10	10	Dry	7.1	
B-9	349.58	12	Dry	—	B-62	338.19	10	10	Dry	7.0	
B-10	346.77	8	Dry	—	B-63	349.68	12	12	Dry	7.0	
B-11	350.30	13	Dry	8.0	B-64	365.03	12	12	Dry	6.3	
B-12	355.40	8	Dry	6.5	B-65	344.07	12	12	6.6	9.3	
B-13	350.15	8	Dry	6.0	B-66	375.86	10	10	Dry	7.3	
B-14	347.89	8	Dry	6.0	B-67	372.86	10	10	Dry	7.2	
B-15	342.69	10	Dry	6.3	B-68	373.54	12	12	Dry	8.3	
B-16	338.33	10	Dry	7.5	B-69	374.57	12	12	Dry	8.3	
B-17	334.89	20	20	6.0	10.0	B-70	387.96	12	12	Dry	9.3
B-18	334.70	20	20	8.0	8.0	B-71	382.46	12	12	Dry	8.3
B-19	337.39	20	20	6.5	8.0	B-72	337.39	10	10	Dry	6.0
B-20	337.66	20	20	8.5	9.0	B-73	383.62	12	12	Dry	8.3
B-21	345.70	11	11	Dry	—	B-74	389.82	10	10	Dry	7.9
B-22	342.65	10	10	Dry	7.3	B-75	399.86	12	12	Dry	8.5
B-23	349.30	10	10	Dry	6.8	B-76	404.69	18	18	Dry	14.0
B-24	357.82	10	10	Dry	2.0	B-77	378.15	12	12	Dry	8.7
B-25	352.99	10	10	Dry	7.8	B-78	385.62	16	16	Dry	11.7
B-26	358.02	10	10	Dry	7.2	B-79	358.42	20	19.3	8.0	14.5
B-27	375.68	10	10	Dry	7.3	B-80	351.76	15	15	9.0	10.0
B-28	362.00	8	Dry	—	B-81	351.43	15	13.8	4.0	10.8	
B-29	369.55	12	12	Dry	8.0	B-82	383.35	10	10	Dry	6.3
B-30	389.38	10	10	Dry	6.0	B-83	390.35	16	16	Dry	14.3
B-31	382.45	8	Dry	6.3	B-84	392.69	13	20	Dry	16.0	
B-32	350.71	10	10	Dry	7.8	B-85	371.54	14	14	4.3	6.8
B-33	350.93	10	10	Dry	8.7	B-86	369.05	14	14	7.5	10.0
B-34	374.98	8	Dry	6.8	B-87	353.35	12	12	Dry	7.0	
B-35	378.91	8	Dry	6.0	B-88	355.62	12	12	2.1	6.5	
B-36	378.77	8	Dry	6.9							
B-37	378.07	10	10	Dry	6.1						
B-38	383.24	10	10	Dry	6.9						
B-39	387.67	10	10	Dry	7.5						
B-40	391.47	10	10	Dry	6.0						
B-41	401.83	14	14	Dry	11.0						
B-42	394.45	10	10	Dry	8.8						
B-43	351.99	12	12	Dry	10.5						
B-44	351.82	15	15	Dry	6.0						
B-45	351.34	10	10	Dry	8.5						
B-46	353.38	10	10	Dry	6.5						
B-47	363.80	10	10	Dry	6.5						
B-48	353.07	12	12	Dry	7.5						
B-49	378.29	10	10	Dry	7.0						
B-50	355.68	12	12	Dry	8.0						
B-51	391.90	18	18	Dry	14.0						
B-52	378.14	12	12	Dry	7.5						
B-53	374.48	12	12	Dry	8.0						

* Groundwater encountered at 6.5 ft while drilling in Boring B-44

Auger Refusal encountered at depth shallower than proposed



BORING LOGS SHOWN HEREON REQUIRED INSITU TESTING.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK, #1072 BALTIMORE NATIONAL PLACE
ELKLOTT CITY, MARYLAND 21042
410.411.1042

OWNER
JOHN TENNEY MASON, JR. FAMILY LLC
AND FRANCES WELLFORD MASON FAMILY LLC
c/o MR. JOHN TENNEY MASON, III, GENERAL
MEMBER 7636 GAITHER ROAD
STIKESVILLE, MD 21174
(443-367-0422)

DEVELOPER
DOUBLE R VENTURES, LLC
c/o LAND DESIGN AND DEVELOPMENT, INC.
5300 DORSEY HALL DRIVE, SUITE 102
ELLICOTT CITY, MARYLAND 21042
(443-367-0422)



ALDO M. VITUCCI, P.E.
DATE 1/14/14
Professional certification I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 202748, Expiration Date 2-22-15.

BORING LOGS
Centennial Lake Overlook
(Formerly Mason Property)
Section One
Buildable Lots 1 Thru 23,
Open Space Lots 24 Thru 29 &
Buildable Bulk Parcels 'A' And 'B'
(Being A Subdivision Of Tax Parcel No. 26, Tax Map No. 30,
Liber 10729 At Folio 329 And Liber 10729 At Folio 335)
Zoning R-20
Grid No. 2
Howard County, Maryland
Scale As Shown
Sheet 30 Of 30

THERE IS NO AS-BUILT INFORMATION ON THIS SHEET