

# FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLAN

# WALNUT CREEK

## PHASE THREE

**Lots 69 - 114,**  
**Non-Buildable Preservation Parcels 'O' Thru 'R' & 'V'**  
**Non-Buildable Parcel 'S', Buildable Preservation Parcel 'T'**  
**And Buildable Bulk Parcel 'U'**

**(A Resubdivision of Buildable Bulk Parcel 'H' - Walnut Creek, Phase Two)**  
**Plat No.'s. Thru &**  
**(A Revision to Non-Buildable Preservation Parcels 'L' and 'M' - Walnut Creek, Phase Two, Plat Nos. Thru**

**ZONING: RC-DEO & RR-DEO**

**TAX MAP NO. 28 GRID Nos. 4, 5, 10-12, 17 AND 18 PARCEL No. 49**

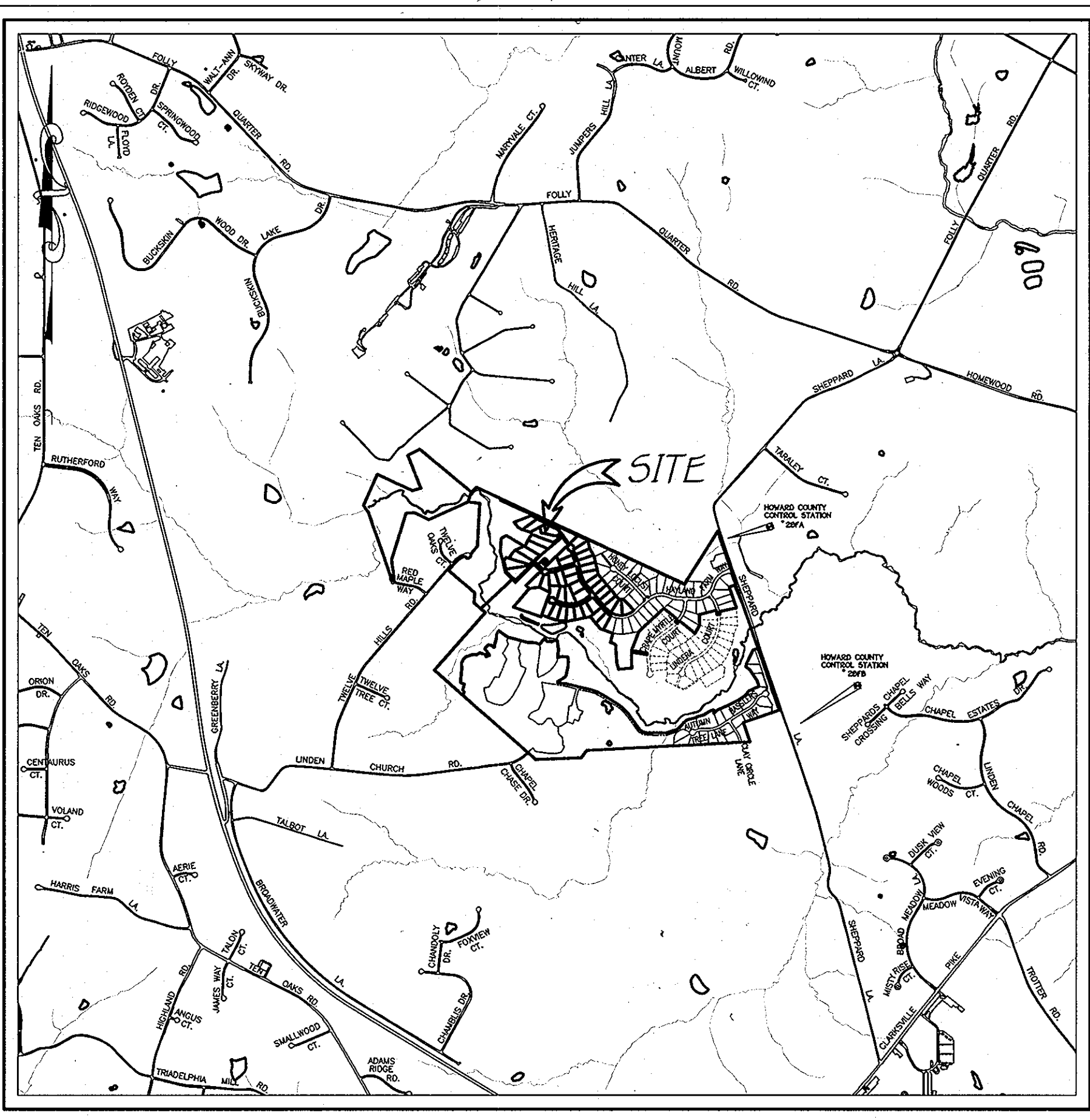
SHEET No.	TITLE SHEET
1	TITLE SHEET
2	DEMO PLAN
3	HAYLAND FARM WAY PLAN AND PROFILE
4	HAYLAND FARM WAY PLAN AND PROFILE
5	WILD OLIVE COURT PLAN AND PROFILE
6	CATALPA COURT PLAN AND PROFILE
7-9	STREET TREE, GRADING, AND SEDIMENT CONTROL PLAN
10	LANDSCAPE PLAN
11	LANDSCAPE NOTES & DETAILS
12-13	STORMWATER MANAGEMENT NOTES AND DETAILS
14-15	STORM DRAIN PROFILES
16	STORM DRAIN DRAINAGE AREA MAP
17-18	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
19-23	FOREST CONSERVATION PLANS
24	SOIL BORINGS & FILLET PROFILES
25	EXISTING STRUCTURE LOCATION PLAN

ROAD NAME	CENTERLINE STA.	OFFSET	POSTED SIGN	SIGN CODE
WILD OLIVE COURT	0+50	15L	STOP	R1-1
CATALPA COURT	0+50	15L	STOP	R1-1

ROAD NAME	CLASSIFICATION	DESIGN SPEED	R/W WIDTH
HAYLAND FARM WAY	PUBLIC ACCESS STREET	30 M.P.H.	50'
WILD OLIVE COURT	PUBLIC ACCESS PLACE	25 M.P.H.	50'
CATALPA COURT	PUBLIC ACCESS PLACE	25 M.P.H.	50'

**GENERAL NOTES CONTINUED:**

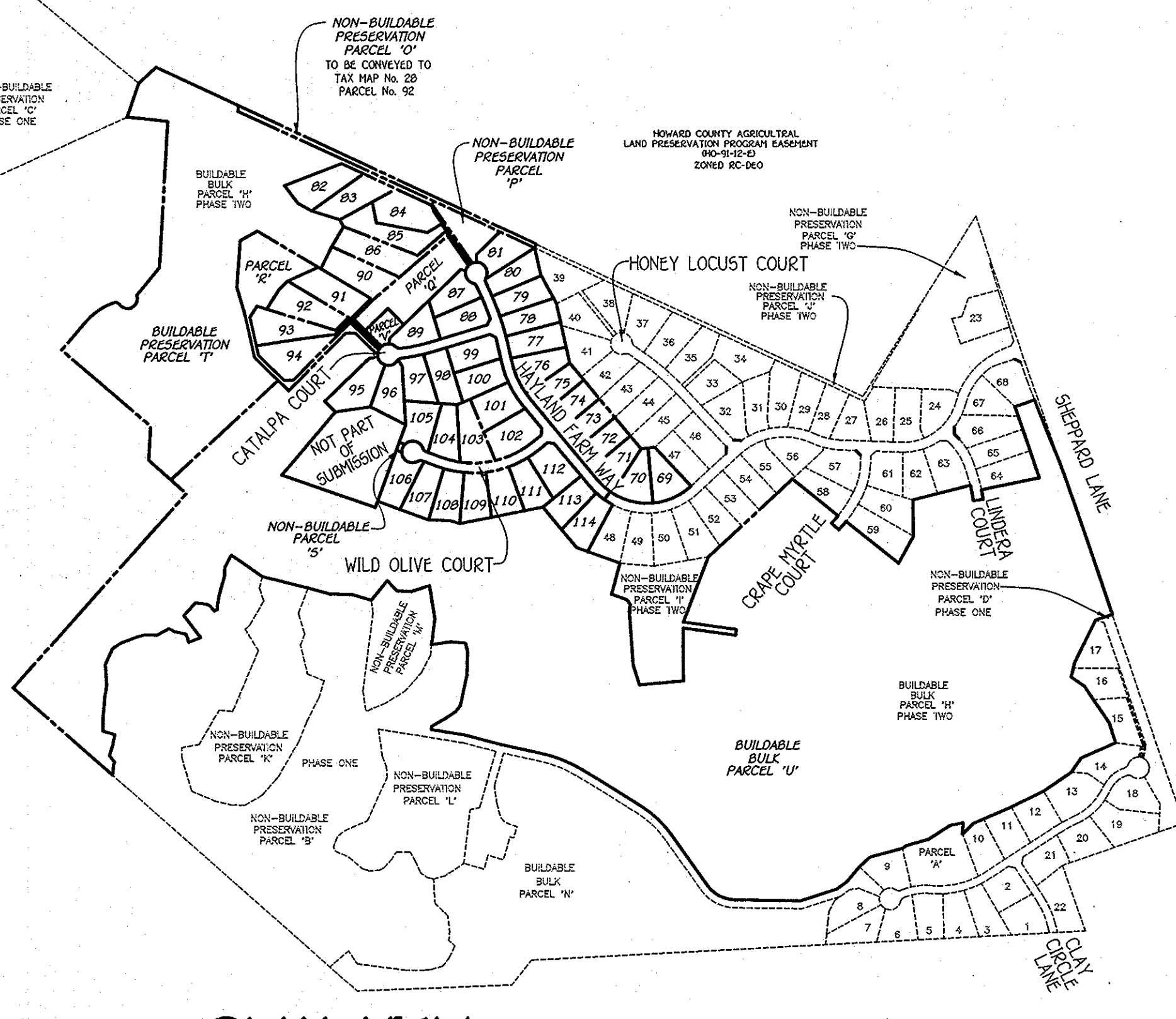
- THIS PLAT IS BASED ON FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED ON OR ABOUT AUGUST, 2004, BY FISHER, COLLINS & CARTER, INC.
- THIS PROJECT IS SUBJECT TO WASTEWATER DISCHARGE PERMIT NUMBER 10-0358 AND IS EFFECTIVE FROM MAY 1, 2002 UNTIL APRIL 30, 2027 WHEN IT EXPIRES.
- THIS PROPERTY WILL BE SERVED BY PRIVATE WATER AND PRIVATE SEWERAGE SYSTEMS. THE PUBLIC SHARED SEWERAGE SYSTEM IS LOCATED ON NON-BUILDABLE PRESERVATION PARCELS 'WALNUT CREEK, PHASE ONE - PLAT NOS. 2003 THROUGH 20047 WILL BE MAINTAINED BY HOWARD COUNTY, MARYLAND. LOTS 69 - 81, 87 - 89 AND 94 - 96 WILL USE THE PUBLIC SHARED SEWERAGE SYSTEMS ON NON-BUILDABLE PRESERVATION PARCEL 'O'.
- THE SHARED SEPTIC SYSTEM DEVELOPER'S AGREEMENT NO. 50-4441-D WAS EXECUTED ON APRIL 8, 2009. PRIVATE DRAINAGE EASEMENTS AND PRIVATE SURFACE DRAINAGE EASEMENT ARE THE RESPONSIBILITY OF THE WALNUT CREEK HOMEOWNERS ASSOCIATION.
- THE NON-CRITICAL FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY FISHER, COLLINS & CARTER, INC. DATED JULY, 2005 AND SUPPLEMENTED WITH INFORMATION OBTAINED FROM HOWARD COUNTY CAPITAL PROJECT D-1028A.
- WITHIN THE 50/60 FOOT WIDE AGRICULTURAL BUFFER EASEMENT LOCATED ALONG THE NORTHERN PROPERTY BOUNDARY, NO PRIMARY OR ACCESSORY STRUCTURES SHALL BE PERMITTED, AND WITHIN THE EASEMENT AREA THE EXISTING MEDIUM VEGETATION SHALL BE PRESERVED AND SUPPLEMENTED ENHANCED LANDSCAPE VEGETATION EXITS.
- NON-BUILDABLE PRESERVATION PARCEL 'O' TO BE CONVEYED TO TAX MAP 28 PARCEL 92 SIMULTANEOUSLY WITH THE RECORDATION OF THIS PLAT.
- A PUBLIC TREE MAINTENANCE EASEMENT RUNNING ALONG THE EDGE OF THE PUBLIC ROAD RIGHT OF WAY AS SHOWN ON THIS PLAT OF SUBDIVISION IS RESERVED UPON ALL LOTS FRONTING ON THE SAID PUBLIC ROAD RIGHT OF WAY. THIS EASEMENT ALLOWS HOWARD COUNTY THE RIGHT TO ACCESS THE PROPERTY, WHEN NECESSARY, FOR THE SPECIFIC PURPOSE OF THE INSTALLATION, REPAIR AND MAINTENANCE OF COUNTY OWNED TREES LOCATED WITHIN THE BOUNDARIES OF THE PRIVATE LOTS. NO BUILDING OR STRUCTURE OF ANY KIND SHALL BE LOCATED ON OR OVER THE SAID EASEMENT AREA.
- ARTICLES OF INCORPORATION FOR THE WALNUT CREEK HOMEOWNERS ASSOCIATION WAS FILED WITH THE MARYLAND STATE DEPARTMENT OF ASSESSMENT AND TAXATION ON 1/3/2006, RECEIPT #02639795.
- EXISTING DWELLING STRUCTURES LOCATED ON LOTS 105 AND 106 TO REMAIN. NO NEW BUILDINGS, EXTENSIONS OR ADDITIONS TO THE EXISTING DWELLING STRUCTURES ARE TO BE CONSTRUCTED AT A DISTANCE LESS THAN THE ZONING REGULATIONS REQUIRED. ALL OTHER STRUCTURES TO BE REMOVED.
- NON-BUILDABLE PRESERVATION PARCELS 'O', 'Q', 'R', 'S', 'T' ARE ENCUMBERED BY AN EASEMENT AGREEMENT WITH HOWARD COUNTY, MARYLAND AND HOMEOWNERS ASSOCIATION. ALL THESE AGREEMENTS PROHIBIT FURTHER SUBDIVISION OF THE PARCEL, OUTLINES THE MAINTENANCE RESPONSIBILITIES OF ITS OWNERS AND ENUMERATES THE USES PERMITTED ON THE PROPERTY.
- THE GROUND WATER APPROPRIATIONS PERMIT NO. H0200020000 RECEIVED NOE APPROVAL ON JUNE 1, 2008.
- THIS PLAT IS SUBJECT TO WASTEWATER DISCHARGE PERMIT NUMBER 10-0358 AND IS EFFECTIVE FROM MAY 1, 2002 UNTIL APRIL 30, 2027 WHEN IT EXPIRES.



## FIFTH ELECTION DISTRICT

## HOWARD COUNTY, MARYLAND

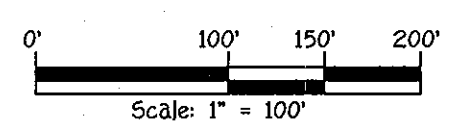
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
---	5' SILT FENCE
---	5' SUPER-SILT FENCE
---	LIMIT OF DISTURBANCE
---	EARTH DIKE
---	WETLANDS BUFFER
---	WETLANDS LIMITS
---	STORM DRAIN
---	PROPOSED BORING LOCATION
---	EROSION CONTROL MATTING
---	LOW PRESSURE SEWER
---	PROPOSED STREET TREE
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	PROPOSED DRIVEWAY CULVERT



**PLAN VIEW**  
NO SCALE

**Owner**  
 BY Business Trust  
 19950 North Avenue  
 P.O. Box 482  
 Lisbon, MD 21765  
 410-489-7900

**Developer**  
 Bäseler Venture, LLC  
 19950 North Avenue  
 P.O. Box 482  
 Lisbon, MD 21765  
 410-489-7900



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2015.



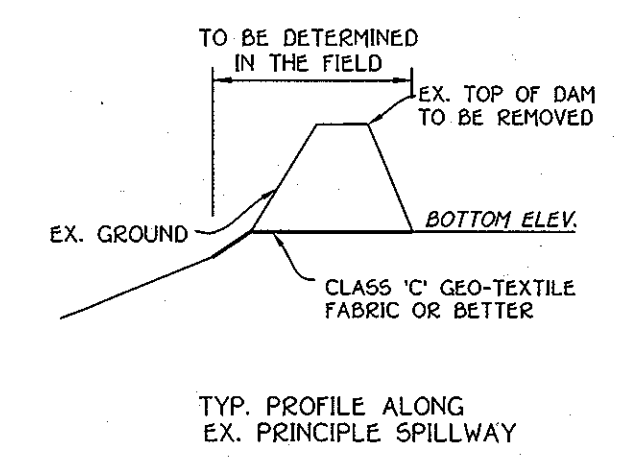
APPROVED: DEPARTMENT OF PUBLIC WORKS	4/14/13
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	4/15/13
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
APPROVED: DEPARTMENT OF PUBLIC WORKS	4/12/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE

**GENERAL NOTES**

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT 410-313-8880 AT LEAST 15 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 R1-1 ("STOP") SIGN AND THE STREET NAME SIGN (S15) 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 1400-313-2400 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 DEVICES INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH") SQUARE TUBE POST (4" GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED SQUARE TUBE SLEEVE (2" GAUGE) - 3' LONG. THE ANKOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE GROUND LEVEL. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- COORDINATES BASED ON NAD83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 20 FA AND NO. 20 FB
 

HOWARD COUNTY MONUMENT NO. 28FA	N 272,956.669	E 348,296.000
HOWARD COUNTY MONUMENT NO. 28FB	N 272,710.239	E 348,504.000
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP, DATED SEPTEMBER, 2005 AND WAS APPROVED UNDER SP-06-07 ON MAY 31, 2006.
- BACKGROUND INFORMATION:
  - SUBDIVISION NAME: WALNUT CREEK
  - TAX MAP NO.: 28
  - PARCEL NO.: 49
  - ZONING: RC-DEO & RR-DEO
  - ELECTION DISTRICT: FIFTH
  - TOTAL TRACT AREA: 222.002 AC. (PHASE THREE)
  - NO. OF BUILDABLE LOTS: 46
  - NO. OF NON-BUILDABLE PRESERVATION PARCELS: 5
  - NO. OF BUILDABLE BULK PARCELS: 1
  - NO. OF NON-BUILDABLE PARCELS: 1
  - AREA OF BUILDABLE LOTS: 40.390 AC.
  - AREA OF NON-BUILDABLE PRESERVATION PARCELS: 239.009 AC.
  - AREA OF BUILDABLE BULK PARCELS: 29.449 AC.
  - AREA OF NON-BUILDABLE PARCELS: 141.531 AC.
  - AREA OF NON-BUILDABLE PARCELS: 0.025 AC.
  - TOTAL AREA OF ROADWAY TO BE DEDICATED: 573.015 AC.
  - PREVIOUS FILE NOS.: SP-06-007 APPROVAL DATE: 08-05-06, BA-05-03E, BA-05-49E & WP-00-007 (SEE NOTE 10 BELOW), F-07-076 (PHASE ONE), F-08-081 (PHASE TWO)
- ONE CEMETERY EXISTS WITHIN THIS SUBDIVISION (PROPOSED NON-BUILDABLE PRESERVATION PARCEL 'V'). "CLASS FAMILY CEMETERY" - NO. CO. 10 238-2. THE PLANNING BOARD APPROVED THE CEMETERY ACCOMMODATION AND BOUNDARY DOCUMENTATION PLAN ON MARCH 30, 2006 (SP-06-007) SUBJECT TO THE FOLLOWING CONDITIONS:
  - THE DEVELOPER AND/OR THE WALNUT CREEK H.O.A. SHALL UPGRADE THE EXISTING SPLIT RAIL FENCE TO FURTHER PROTECT THE EXISTING CEMETERY SITE.
  - THE DEVELOPER AND/OR THE WALNUT CREEK H.O.A. SHALL REGULARLY MAINTAIN THE CEMETERY AREA.
  - THE DEVELOPER AND/OR THE WALNUT CREEK H.O.A. MUST PLACE A CEMETERY MARKER AT THE ENTRANCE OF THE CEMETERY SITE.
- ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.
- THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16122 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THE ENTIRE SUBDIVISION WILL BE FULFILLED BY PROVIDING 59.57 ACRES OF ON-SITE FOREST RETENTION AND 36.66 ACRES OF ON-SITE FOREST AFFORESTATION FOR A TOTAL OF 96.23 ACRES. THERE IS NO SURETY REQUIRED FOR ON-SITE FOREST RETENTION SURETY FOR ON-SITE AFFORESTATION = \$40,500.00 SF. = \$699,555.00 IS REQUIRED. THE FOREST CONSERVATION REQUIREMENTS PER SECTION 16122 OF THE HOWARD COUNTY CODE AND THE FOREST CONSERVATION MANUAL FOR THE ENTIRE SUBDIVISION WILL BE FULFILLED BY PROVIDING 59.57 ACRES OF ON-SITE FOREST RETENTION AND 36.66 ACRES OF ON-SITE FOREST AFFORESTATION FOR A TOTAL OF 96.23 ACRES. THERE IS NO SURETY REQUIRED FOR ON-SITE FOREST RETENTION SURETY FOR ON-SITE AFFORESTATION = \$40,500.00 SF. = \$699,555.00 IS REQUIRED. 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APPROVED: DEPARTMENT OF PUBLIC WORKS		
CHIEF, BUREAU OF HIGHWAYS	<i>[Signature]</i>	4/12/13
DATE		
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
CHIEF, DIVISION OF LAND DEVELOPMENT & CONTROL	<i>[Signature]</i>	4/12/13
DATE		
APPROVED: DEPARTMENT OF ENGINEERING		
CHIEF, DEVELOPMENT ENGINEERING DIVISION	<i>[Signature]</i>	4/12/13
DATE		
REVISIONS		
NO.	DESCRIPTION	DATE



**POND BREACHING SEQUENCE OF CONSTRUCTION**

1. DRAIN THE POND BY AN ACCEPTABLE MEANS. IF UTILIZING A VALVE DRAIN, OPEN TO A SLOW DRAIN AS TO NOT CREATE ANY EROSION DOWNSTREAM.
2. REMOVE THE CONTROL STRUCTURE (RISER) AND OUTFALL PIPE. OPEN CUT THE EXISTING DAM TO PROVIDE A TEMPORARY EROSION CONTROL MATTING LINED SPILLWAY - SEE PLAN AND DETAIL ABOVE.
3. REMOVE THE REMAINDER OF THE EMBANKMENT FOR LIMITS SHOWN AND GRADE BOTTOM AREA FOR POSITIVE DRAINAGE AT 3X.
4. ONCE THE POND IS DRY, PLANT BOTTOM AND REMAINDER OF POND DISTURBANCE WITH PERMANENT SEEDING MIX.
5. TOPSOIL AND MATERIAL UNSUITABLE FOR USE AS STRUCTURAL FILL MAY BE PLACED IN THIS FACILITY.

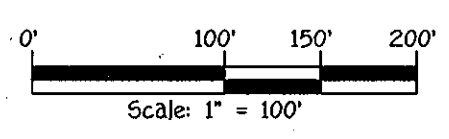
**GUIDELINES FOR SEDIMENT BASIN/TRAP REMOVAL & STABILIZATION**

1. BEFORE ATTEMPTING TO REMOVE ANY POND, ALL WATER IN THE POND SHALL BE DRAINED BY PHYSICALLY ALTERING THE RISER INVERT ELEVATION TO GRADUALLY LOWER THE WATER LEVEL. THIS MAY BE ACCOMPLISHED BY PUNCHING HOLES IN THE RISER BELOW THE WATER LINE. IN CASES WHERE PHYSICAL DAMAGE TO THE RISER IS UNDESIRABLE OR WHERE PHYSICAL ALTERATION OF THE RISER IS NOT FEASIBLE THE POND SHALL BE PUMPED THRU A FILTER BAG.
2. PRIOR TO COMMENCING WORK ON DAM REMOVAL, A METHOD OF MINIMIZING DOWN STREAM SEDIMENTATION SHALL BE APPROVED ON SITE BY THE HOWARD SOIL CONSERVATION DISTRICT.
3. REMOVE DAM AND SPREAD TO CONFORM WITH SURROUNDING CONTOURS.
4. AS A FINAL MEASURE, ACCUMULATED SEDIMENT SHALL BE REMOVED FROM DOWN STREAM SEDIMENT CONTROL STRUCTURES REQUIRED BY ITEM #2 AND SAID STRUCTURES REMOVED AND AREA SEEDING.



**EXISTING FARM POND**  
 THE BARREL/RISER ASSEMBLY FOR THIS FACILITY IS TO BE REMOVED AND THE DAM EMBANKMENT REMOVED ALONG THE LIMITS SHOWN. ANY STANDING WATER WILL BE PUMPED THROUGH A SEDIMENT FILTER BAG AND RELEASE ON EXISTING GRADE AT NON-EROSIVE VELOCITIES.

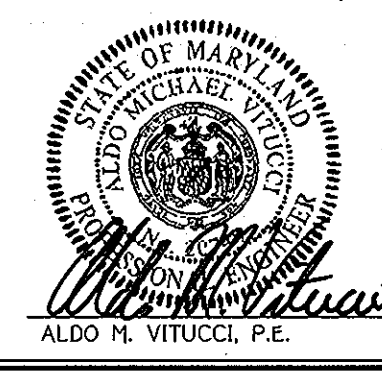
**EXISTING FARM POND EMBANKMENT TO BE REMOVED ENTIRELY DOWN TO ELEV. 381.0 WITH NO FILL MATERIAL TO ENTER POND AREA.**



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLETTT CITY, MARYLAND 21765  
 (410) 681-2855

<b>Owner</b>	<b>Developer</b>
BY Business Trust 15950 North Avenue P.O. Box 492 Lisbon, MD 21765 410-489-7900	Bassler Venture, LLC 15950 North Avenue P.O. Box 492 Lisbon, MD 21765 410-489-7900

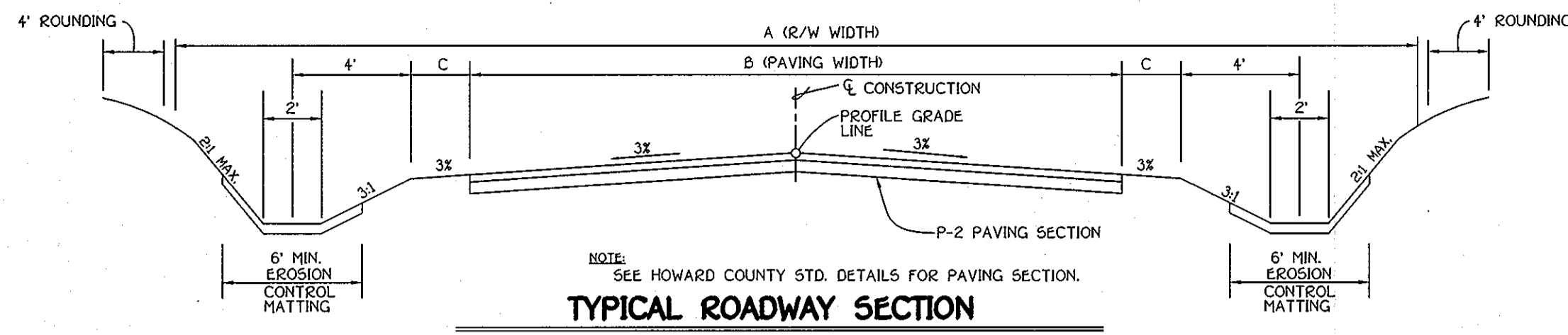
"Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2015."



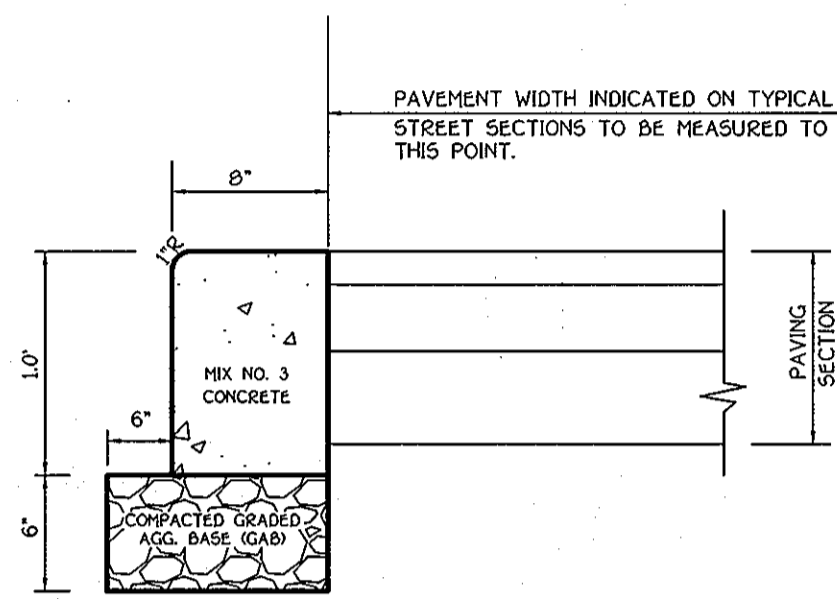
*[Signature]*  
 DATE 4/27/13

**DEMOLITION AND SEDIMENT CONTROL PLAN**  
**WALNUT CREEK**  
**PHASE THREE**  
**Lots 69 - 114**  
 Non-Buildable Preservation Parcels 'O' Thru 'Y' & 'V',  
 Non-Buildable Parcel 'S', Buildable Preservation Parcel 'T'  
 And Buildable Bulk Parcel 'U'  
 A Resubdivision of Buildable Bulk Parcel 'Y' - Walnut Creek, Phase Two  
 Plat Nos. The 4 & 5  
 A Revision to Non-Buildable Preservation Parcels 'L' and 'M' - Walnut Creek, Phase Two  
 Plat Nos. The 1 & 2  
 ZONING: RC-DEO & RR-DEO  
 TAX MAP No. 2B GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: FEBRUARY 26, 2013  
 SHEET 2 OF 25

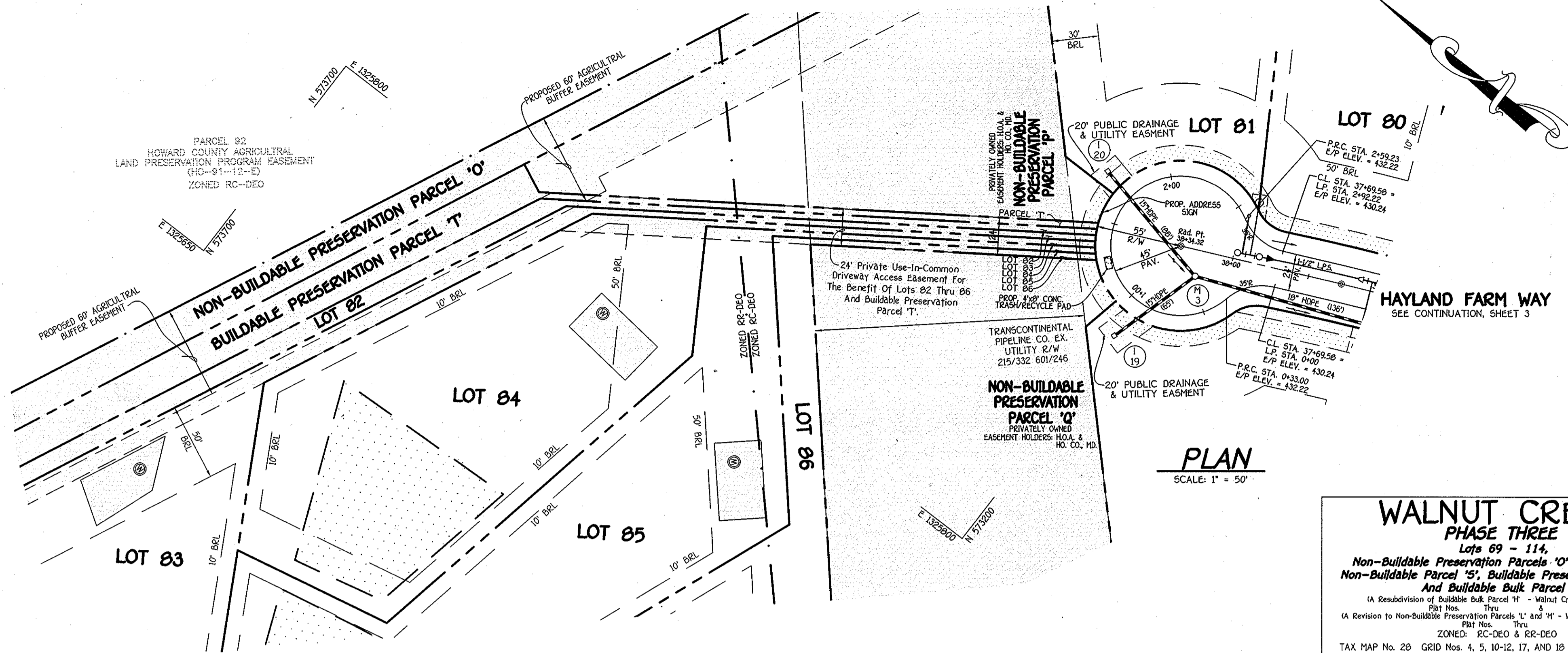
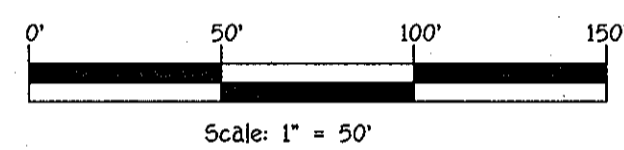




ROADWAY INFORMATION CHART						
ROAD NAME	CLASSIFICATION	DESIGN SPEED	ZONING	A	B	C
HAYLAND FARM WAY	PUBLIC ACCESS STREET	30 MPH	RC-DEO	50'	24'	3'
WILD OLIVE COURT	PUBLIC ACCESS PLACE	25 MPH	RC-DEO	50'	18'	4'
CATALPA COURT	PUBLIC ACCESS PLACE	25 MPH	RC-DEO	50'	18'	4'



NO.	DESCRIPTION	DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
	<i>[Signature]</i>	4/15/13
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS		
	<i>[Signature]</i>	4/14/13

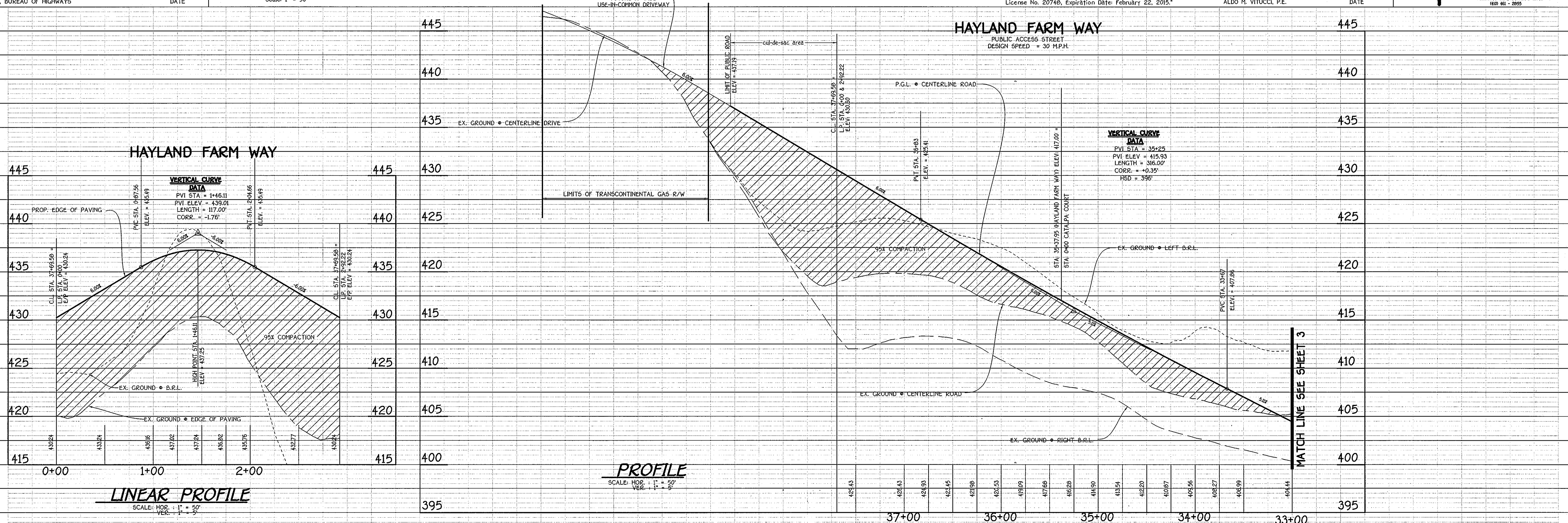


**WALNUT CREEK PHASE THREE**  
Lots 89 - 114  
Non-Buildable Preservation Parcel 'O' Thru 'R' & 'V'  
Buildable Preservation Parcel 'T'  
And Buildable Bulk Parcel 'U'

Owner: BV Business Trust  
Developer: Bassler Venture, LLC

SCALE: AS SHOWN DATE: FEB. 26, 2013 DWG. NO. 4 OF 25  
DES. R.A.L. DRN. J.C.L. CHK. A.M.V.

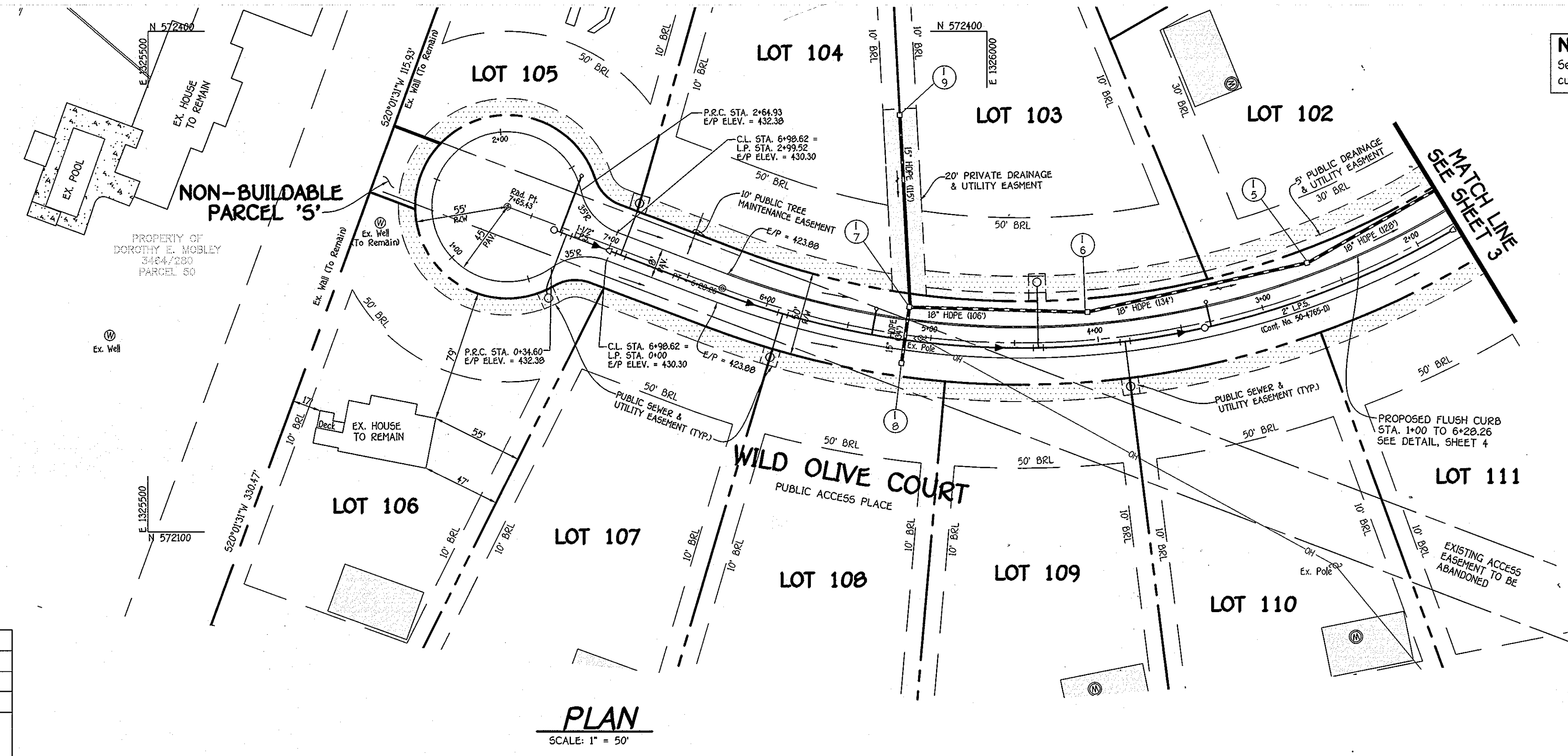
**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS



Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 20748, Expiration Date: February 22, 2015.

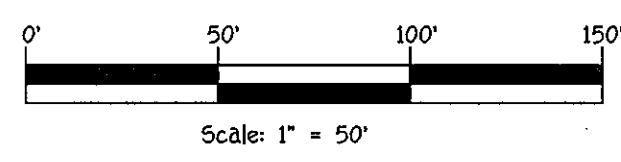


2/27/13 DATE



**Note:**  
See Sheets 7-9 for Driveway  
culvert Locations and Chart

**PLAN**  
SCALE: 1" = 50'



**CURVE DATA**  
**WILD OLIVE COURT**  
STA. 1+00.00 TO STA. 6+28.26  
RADIUS = 500.00' R  
ARC LENGTH = 528.26'  
TAN = 231.73'  
DELTA = 60°32'01"  
CHORD = 580°36'17"W, 504.03'

NO.	DESCRIPTION	DATE
REVISIONS		
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
	<i>Kent Stender</i> CHIEF, DIVISION OF LAND DEVELOPMENT	4/15/13 DATE
	<i>Chris DeMunn</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	4/12/13 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS		
	<i>Samuel S. R...</i> CHIEF, BUREAU OF HIGHWAYS	4/14/13 DATE

**WALNUT CREEK**  
**PHASE THREE**  
Lots 69 - 114,  
Non-Buildable Preservation Parcels 'O' Thru 'R' & 'V'  
Non-Buildable Parcel 'S', Buildable Parcel 'U'  
And Buildable Bulk Parcel 'W'

(A Resubdivision of Buildable Bulk Parcel 'W' - Walnut Creek, Phase Two)  
Pkt Nos. 1 Thru 5  
(A Revision to Non-Buildable Preservation Parcels 'L' and 'M' - Walnut Creek, Phase Two,  
Pkt Nos. 1 Thru 5)  
ZONED: RC-DEO & RR-DEO  
TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**WILD OLIVE COURT**  
PLAN AND PROFILE

<b>Owner</b> BV Business Trust 19550 North Avenue P.O. Box 482 Linthicum, MD 21765 410-489-7900	<b>Developer</b> Bassler Venture, LLC 19550 North Avenue P.O. Box 482 Linthicum, MD 21765 410-489-7900
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SCALE: AS SHOWN DATE: FEB. 26, 2013 DWG. NO. 5 OF 25  
DES. R.A.I. DRN. J.C.L. CHK. A.M.V.

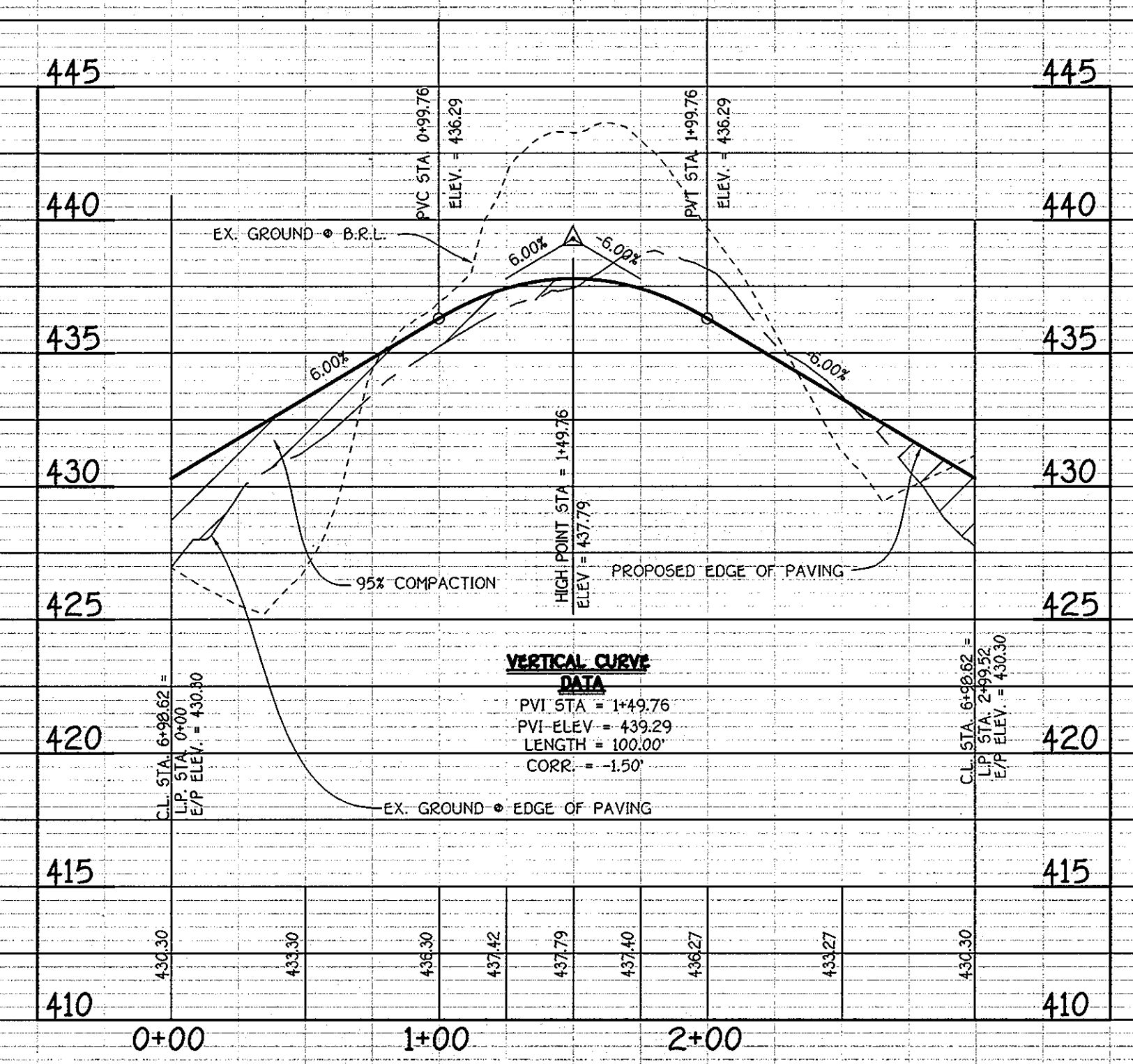
**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FREE  
ELKJOTT CITY, MARYLAND 21842  
410.461.2822



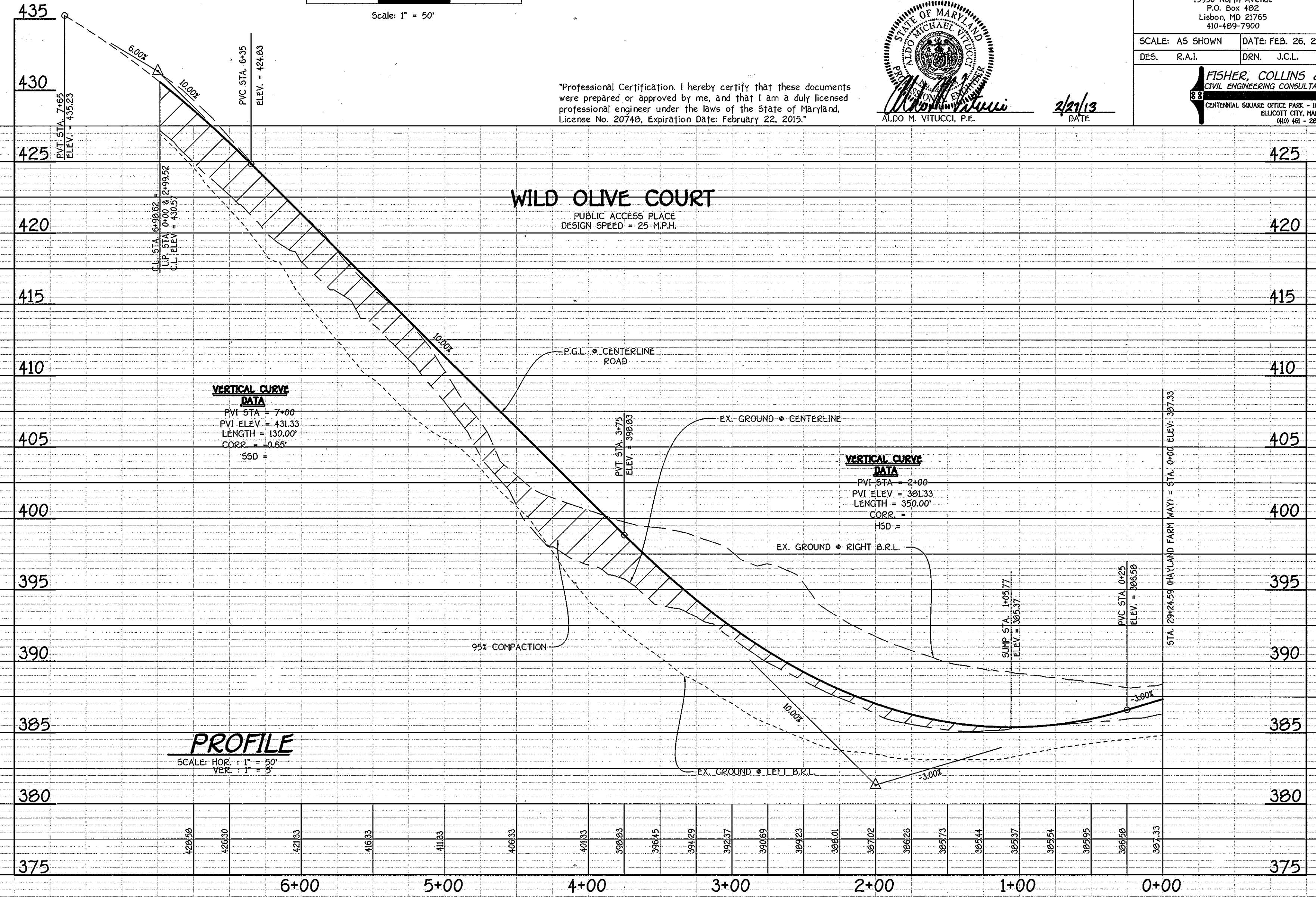
"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2015."

4/21/13  
DATE

**WILD OLIVE COURT**

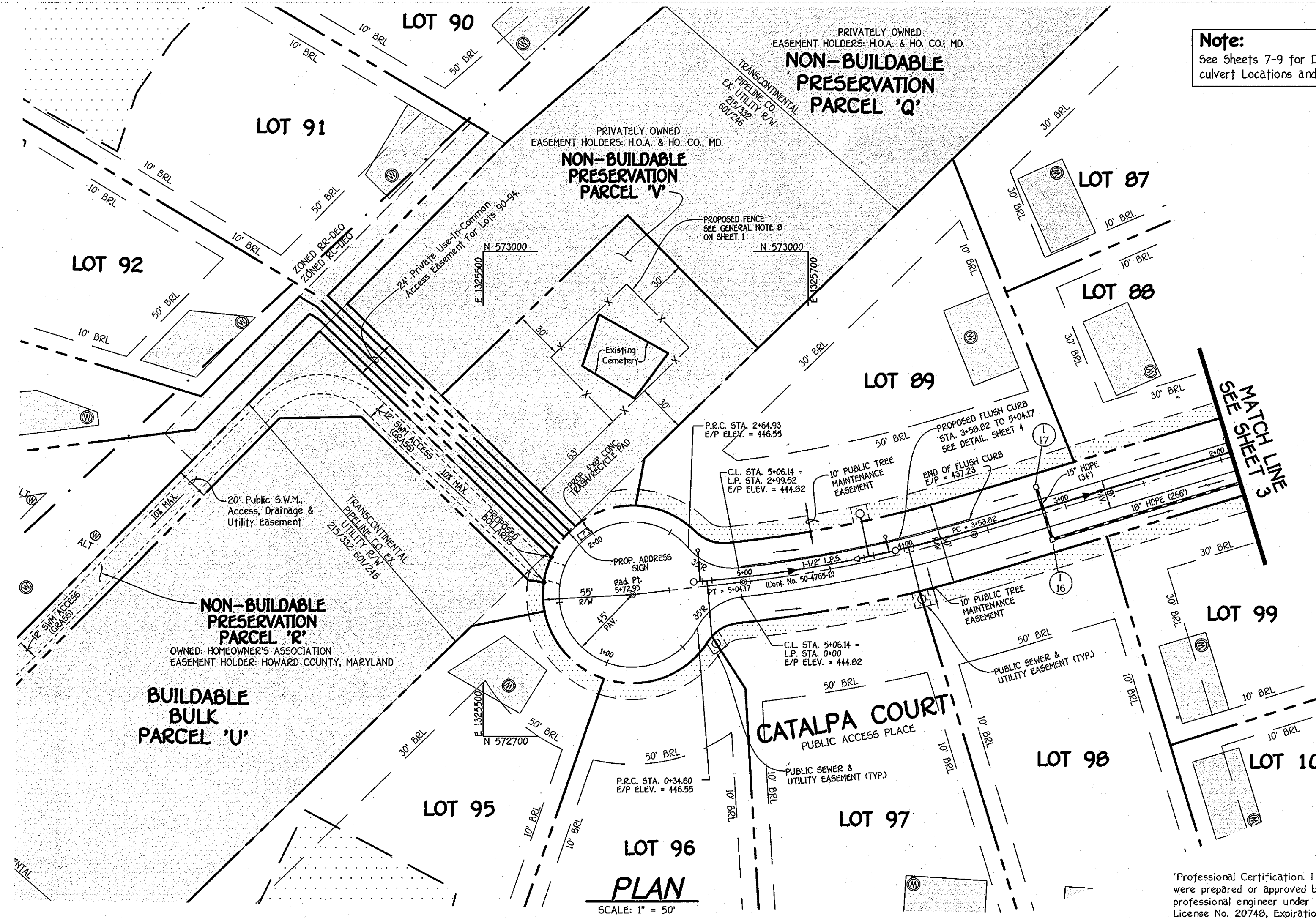


**LINEAR PROFILE**  
SCALE: HOR: 1" = 50'  
VER: 1" = 5'



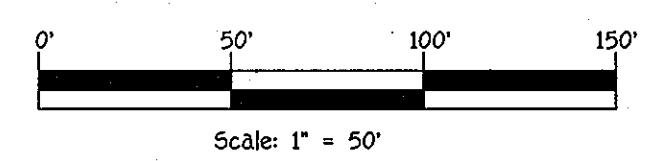
**PROFILE**  
SCALE: HOR: 1" = 50'  
VER: 1" = 5'

**© CURVE DATA**  
**CATALPA COURT**  
 STA. 3+58.82 TO STA. 5+04.17  
 RADIUS = 800.00' ±  
 ARC LENGTH = 145.35'  
 TAN. = 72.87°  
 DELTA = 10°24'35"  
 CHORD = 578'19"31"W, 145.15'



**Note:**  
 See Sheets 7-9 for Driveway  
 Culvert Locations and Chart

NO.	DESCRIPTION	DATE
REVISIONS		
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
	<i>Veronica Level</i> CHIEF, DIVISION OF LAND DEVELOPMENT	4/15/13 DATE
	<i>Chris Pennington</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	4/12/13 DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS		
	<i>Robert S. ...</i> CHIEF, BUREAU OF HIGHWAYS	4/14/13 DATE



**WALNUT CREEK**  
**PHASE THREE**  
 Lots 69 - 114,  
 Non-Buildable Preservation Parcels 'O' Thru 'R' & 'V'  
 Non-Buildable Parcel 'S', Buildable Parcel 'U'  
 And Buildable Bulk Parcel 'U'

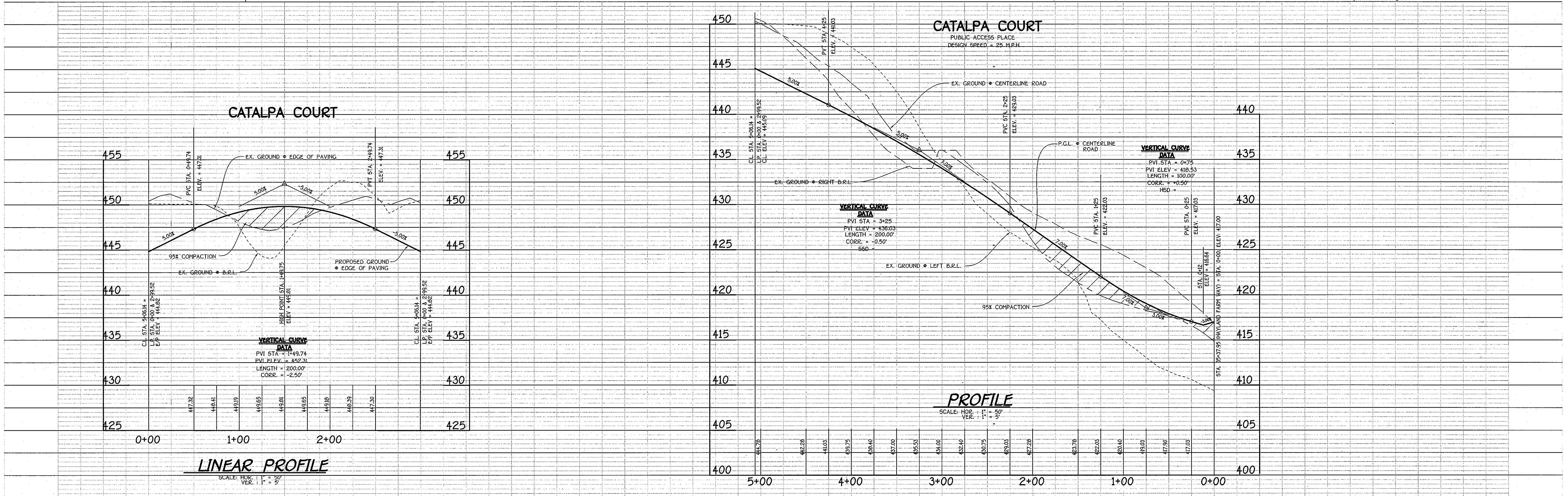
(A Resubdivision of Buildable Bulk Parcel 'U' - Walnut Creek, Phase Two  
 (A Revision to Non-Buildable Preservation Parcels 'O' and 'V' - Walnut Creek, Phase Two,  
 PBT Nos. 1782  
 & 1783  
 The  
 ZONED: RC-DEO & RR-DEO  
 TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

**CATALPA COURT**  
 PLAN AND PROFILE

<b>Owner</b> BY Business Trust 15950 North Avenue P.O. Box 482 Lisbon, MD 21765 410-489-7900	<b>Developer</b> Bosler Venture, LLC 15950 North Avenue P.O. Box 482 Lisbon, MD 21765 410-489-7900
---	---

SCALE: AS SHOWN	DATE: FEB. 26, 2013	DWG. NO. 6 OF 25
DES. R.A.L.	DRN. J.C.L.	CHK. A.M.V.

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLETTT CITY, MARYLAND 21042  
 410-661-2992





**NOTE:**  
 WITHIN THE 50'/60' WIDE AGRICULTURAL BUFFER EASEMENT LOCATED ALONG THE NORTHERN PROPERTY BOUNDARY, NO PRIMARY OR ACCESSORY STRUCTURES SHALL BE PERMITTED, AND WITHIN THE EASEMENT AREA, THE EXISTING HEDGEROW VEGETATION SHALL BE PRESERVED AND SUPPLEMENTED WITH A TYPE 'A' LANDSCAPE BUFFER WHERE INSUFFICIENT VEGETATION EXISTS.

**NOTE:**  
 THE CONTRACTOR SHALL REMOVE ALL OLD AND NEW JUNK, TRASH, DEBRIS AND OTHER UNNATURAL ITEMS FROM THE FORESTS, FLOODPLAINS, STREAMS, WETLANDS AND BUFFER AREAS.

By The Developer:  
 I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District.

Signature of Developer: *Timothy W. Feaga* 2/28/13  
 Printed Name of Developer: Timothy W. Feaga

By The Engineer:  
 I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Feasible Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Noted The Location Of Any Wetlands And Other Sensitive Areas And Have Provided The Howard Soil Conservation District With An "As-Built" Plan Within 30 Days Of Completion.

Signature of Engineer: *Alfredo Vitucci* 2/27/13  
 Printed Name of Engineer: Alfredo Vitucci

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.  
 Signature of District: *John R. Blanton* 4/2/13  
 Chief, Bureau of Highways

Approved Department of Public Works  
 Signature: *Edward J. ...* 4/14/13  
 Chief, Bureau of Highways

Approved Department of Planning And Zoning  
 Signature: *Victor ...* 4/15/13  
 Chief, Division of Land Development  
 Signature: *...* 4/2/13  
 Chief, Development Engineering Division

AS-BUILT CERTIFICATION  
 I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

Signature: \_\_\_\_\_ P.E. No. \_\_\_\_\_  
 Date: \_\_\_\_\_

REVISIONS  
 NO. DESCRIPTION DATE

NO.	DESCRIPTION	DATE

**Walnut Creek - Phase 3  
 Driveway Culverts**

Lot	Slope (%)	Q10 (cfs)	DW Pipe Size
69	1.80	5.3	15" CMP
70	1.18	3.9	15" CMP
71	1.20	3.6	STANDARD
72	1.20	3.1	15" CMP
73	1.20	3.1	STANDARD
74	4.42	1.5	STANDARD
75	5.11	0.4	STANDARD
76	5.11	3.2	15" CMP
77	5.11	2.8	STANDARD
78	5.75	1.8	STANDARD
79	6.09	1.2	STANDARD
80	6.00	0.8	STANDARD
81	TOVC	0.3	STANDARD
82	TOVC	U.L.C. DR.	NO PIPE
83	TOVC	U.L.C. DR.	NO PIPE
84	TOVC	U.L.C. DR.	NO PIPE
85	TOVC	U.L.C. DR.	NO PIPE
86	TOVC	U.L.C. DR.	NO PIPE
87	6.00	0.2	STANDARD
88	6.00	0.7	STANDARD
89	5.00	1.8	STANDARD
90	TOVC	U.L.C. DR.	NO PIPE
91	TOVC	U.L.C. DR.	NO PIPE
92	TOVC	U.L.C. DR.	NO PIPE
93	TOVC	U.L.C. DR.	NO PIPE
94	TOVC	U.L.C. DR.	NO PIPE
95	TOVC	NO PIPE	NO PIPE
96	3.50	0.8	STANDARD
97	5.00	1.6	STANDARD
98	5.00	2.5	15" CMP
99	5.44	0.8	STANDARD
100	10.00	0.7	STANDARD
101	5.11	1.5	STANDARD
102	5.11	1.2	STANDARD
103	10.00	0.7	STANDARD
104	10.00	2.5	15" CMP
105	6.00	1.8	STANDARD
106	NO PIPE	NO PIPE	NO PIPE
107	10.00	0.9	STANDARD
108	10.00	1.6	15" CMP
109	10.00	0.9	STANDARD
110	7.60	0.8	STANDARD
111	2.50	1.0	STANDARD
112	1.44	1.6	15" CMP
113	1.20	0.5	STANDARD
114	1.18	4.1	15" CMP

ALL Q's HAVE BEEN EXTRAPOLATED FROM THE 10 YEAR STORM DRAIN COMPUTATIONS  
 STANDARD = HOWARD COUNTY STANDARD 12" CIRCULAR OR 14"x19" ARCH PIPE  
 TOVC = LOCATED NEAR THE TOP OF A VERTICAL CURVE

**STREET TREE, GRADING & SEDIMENT CONTROL PLAN  
 WALNUT CREEK  
 PHASE THREE  
 Lots 69 - 114.  
 Non-Buildable Preservation Parcels 'Q' Thru 'R' & 'U',  
 Non-Buildable Parcel 'S', Buildable Preservation Parcel 'T'  
 And Buildable Bulk Parcel 'U'**  
 (A Revision to Buildable Bulk Parcel 'U' - Walnut Creek, Phase Two)  
 (A Revision to Non-Buildable Preservation Parcels 'Q' and 'R' - Walnut Creek, Phase Two)  
 TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: FEBRUARY 26, 2013  
 SHEET 8 OF 25

- LEGEND**
- S.S.F.—S.S.F.—S.S.F.— SUPER-SILT FENCE
  - S.F.—S.F.—S.F.— SILT FENCE
  - T.P.—T.P.—T.P.— TREE PROTECTION FENCE
  - S.C.E. STABILIZED CONSTRUCTION ENTRANCE
  - EARTH DIKE
  - L.O.D. DENOTES L.O.D. LIMITS OF DISTURBANCE
  - E.C.M. DENOTES EROSION CONTROL MATTING
  - Denotes 25% OR GREATER SLOPES
  - Denotes 15% - 24.99% SLOPES
  - Denotes LOW PRESSURE SEWER BY OTHERS W/ GRINDER PUMPS
  - R.I.P. RIP-RAP INFLOW PROTECTION



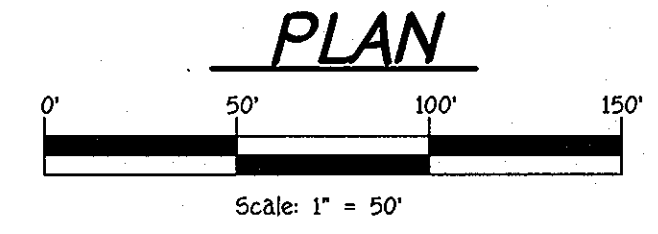
**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 33 CONTINENTAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL PIKE  
 ELKTON CITY, MARYLAND 21842  
 410-481-2855

**Owner**  
 BV Business Trust  
 15950 North Avenue  
 P.O. Box 482  
 Lisbon, MD 21765  
 410-489-7900

**Developer**  
 Basler Venture, LLC  
 15950 North Avenue  
 P.O. Box 482  
 Lisbon, MD 21765  
 410-489-7900

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2015.

Signature: *Alfredo Vitucci* 2/27/13  
 Printed Name: ALDO M. VITUCCI, P.E.  
 Date: 2/27/13



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Approved: Department of Public Works  
 Chief, Bureau of Highways  
 Date: 4/14/13

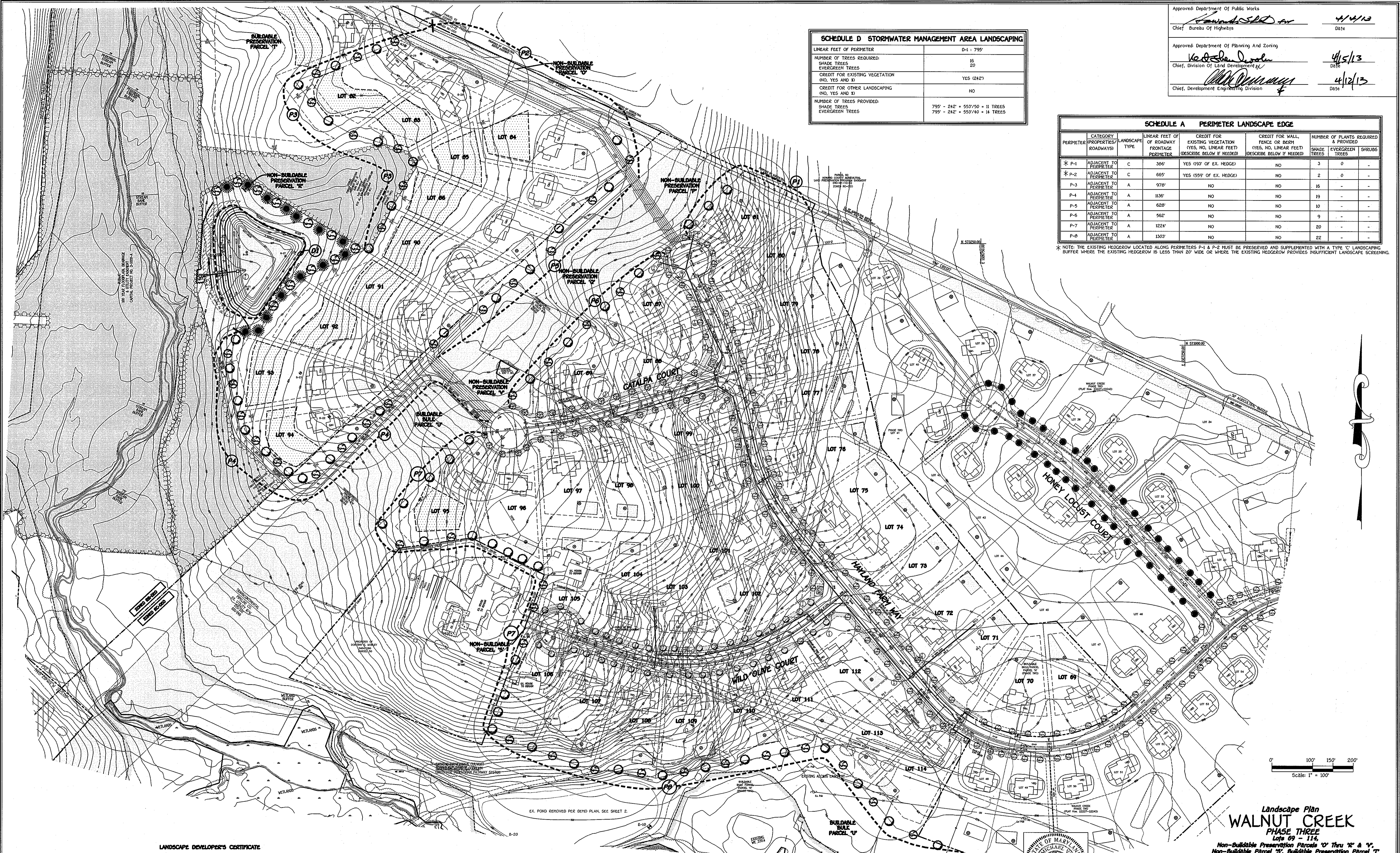
Approved: Department of Planning and Zoning  
 Chief, Division of Land Development  
 Date: 4/15/13

Chief, Development Engineering Division  
 Date: 4/12/13

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING	
LINEAR FEET OF PERIMETER	D-1 = 795'
NUMBER OF TREES REQUIRED:	
SHADE TREES	16
EVERGREEN TREES	20
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	YES (242')
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES PROVIDED:	
SHADE TREES	795' - 242' = 553/50 = 11 TREES
EVERGREEN TREES	795' - 242' = 553/40 = 14 TREES

SCHEDULE A PERIMETER LANDSCAPE EDGE						
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 BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NUMBER OF PLANTS REQUIRED & PROVIDED (SHADE TREES, EVERGREEN TREES, SHRUBS)
* P-1	ADJACENT TO PERIMETER	C	306'	YES (193' OF EX. HEDGE)	NO	3 0 -
* P-2	ADJACENT TO PERIMETER	C	665'	YES (559' OF EX. HEDGE)	NO	2 0 -
P-3	ADJACENT TO PERIMETER	A	978'	NO	NO	15 - -
P-4	ADJACENT TO PERIMETER	A	1136'	NO	NO	19 - -
P-5	ADJACENT TO PERIMETER	A	628'	NO	NO	10 - -
P-6	ADJACENT TO PERIMETER	A	562'	NO	NO	9 - -
P-7	ADJACENT TO PERIMETER	A	1224'	NO	NO	20 - -
P-8	ADJACENT TO PERIMETER	A	1303'	NO	NO	22 - -

\* NOTE: THE EXISTING HEDGEROW LOCATED ALONG PERIMETERS P-1 & P-2 MUST BE PRESERVED AND SUPPLEMENTED WITH A TYPE 'C' LANDSCAPING BUFFER WHERE THE EXISTING HEDGEROW IS LESS THAN 20' WIDE OR WHERE THE EXISTING HEDGEROW PROVIDES INSUFFICIENT LANDSCAPE SCREENING.



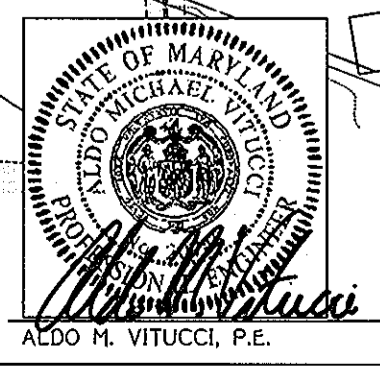
**LANDSCAPE DEVELOPER'S CERTIFICATE**  
 I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

**Owner**  
 BV Business Trust  
 19550 North Avenue  
 P.O. Box 482  
 Lisbon, MD 21765  
 410-469-7900

**Developer**  
 Bassler Venture, LLC  
 19550 North Avenue  
 P.O. Box 482  
 Lisbon, MD 21765  
 410-469-7900

**PLAN**  
 SCALE: 1" = 100'

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2015.



4/27/13  
 DATE

**Landscape Plan**  
**WALNUT CREEK**  
**PHASE THREE**  
 Lots 69 - 114.  
 Non-Buildable Preservation Parcels 'O' Thru 'R' & 'V',  
 Non-Buildable Parcel 'S', Buildable Preservation Parcel 'T'  
 And Buildable Bulk Parcel 'U'

(A) Resubdivision of Buildable Bulk Parcel 'U' - Walnut Creek, Phase Two  
 (B) Revision to Non-Buildable Preservation Parcels 'L' and 'M' - Walnut Creek, Phase Two.

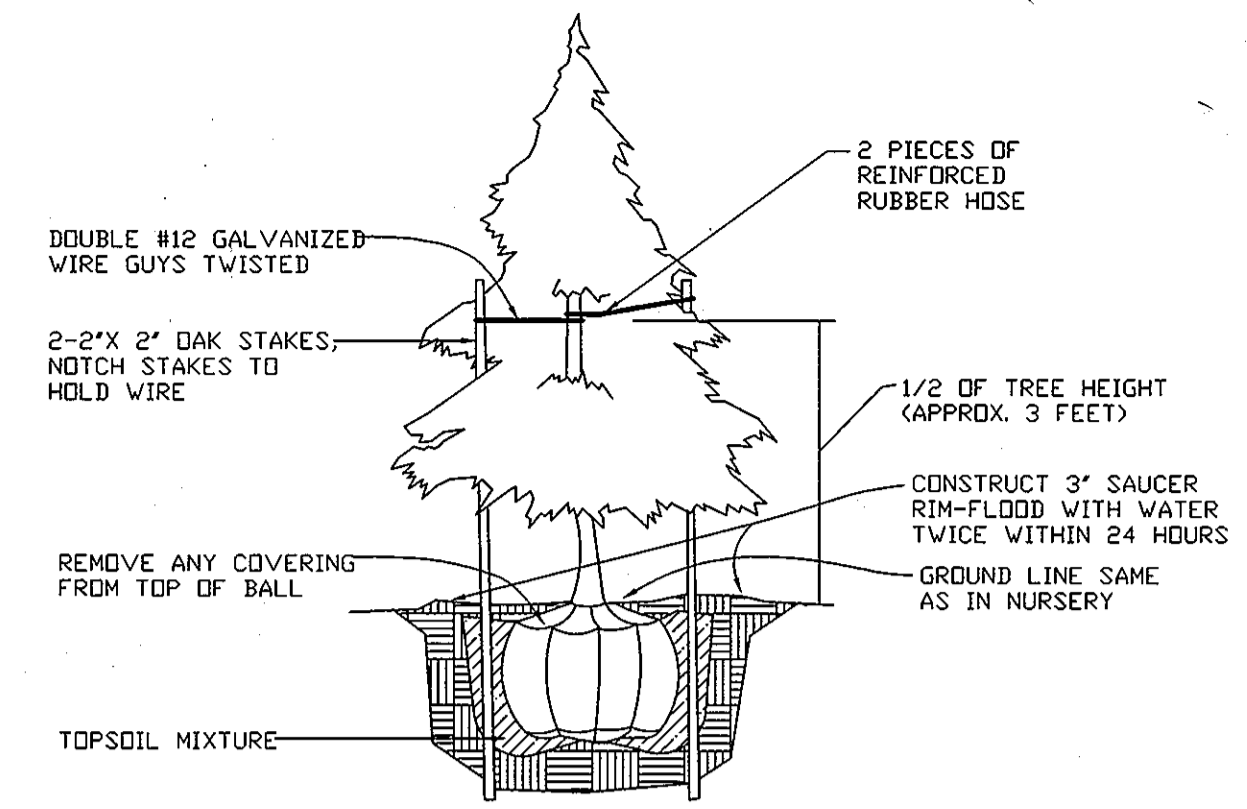
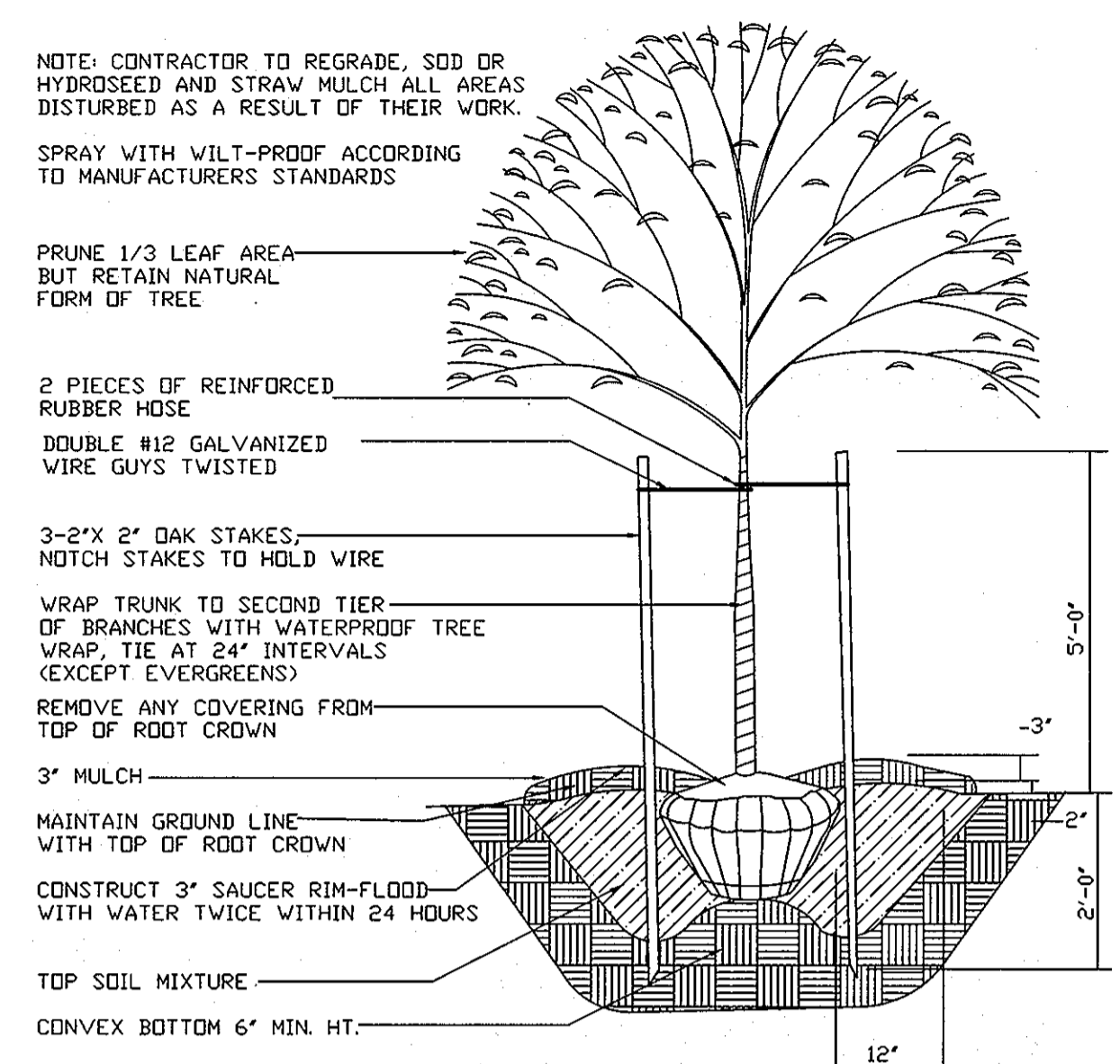
ZONED: RC-DEO & RR-DEO  
 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49  
 TAX MAP No. 28  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: FEBRUARY 26, 2013  
 SHEET 10 OF 25

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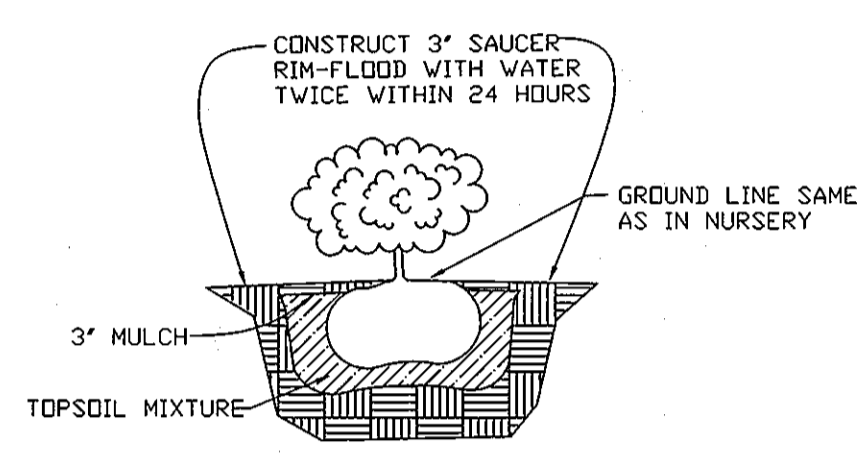
Approved: Department of Public Works  
 Chief: Bureau Of Highways  
 Date: 4/14/13

Approved: Department of Planning And Zoning  
 Chief: Division Of Land Development PL  
 Chief, Development Engineering Division  
 Date: 4/15/13  
 Date: 4/12/13

**NOTES:**  
 \*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 relaxations 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 continual compliance with applicable regulations. All the other required landscaping shall be permanently maintained in good condition and when necessary, repaired or replaced.



**EVERGREEN PLANTING DETAIL**

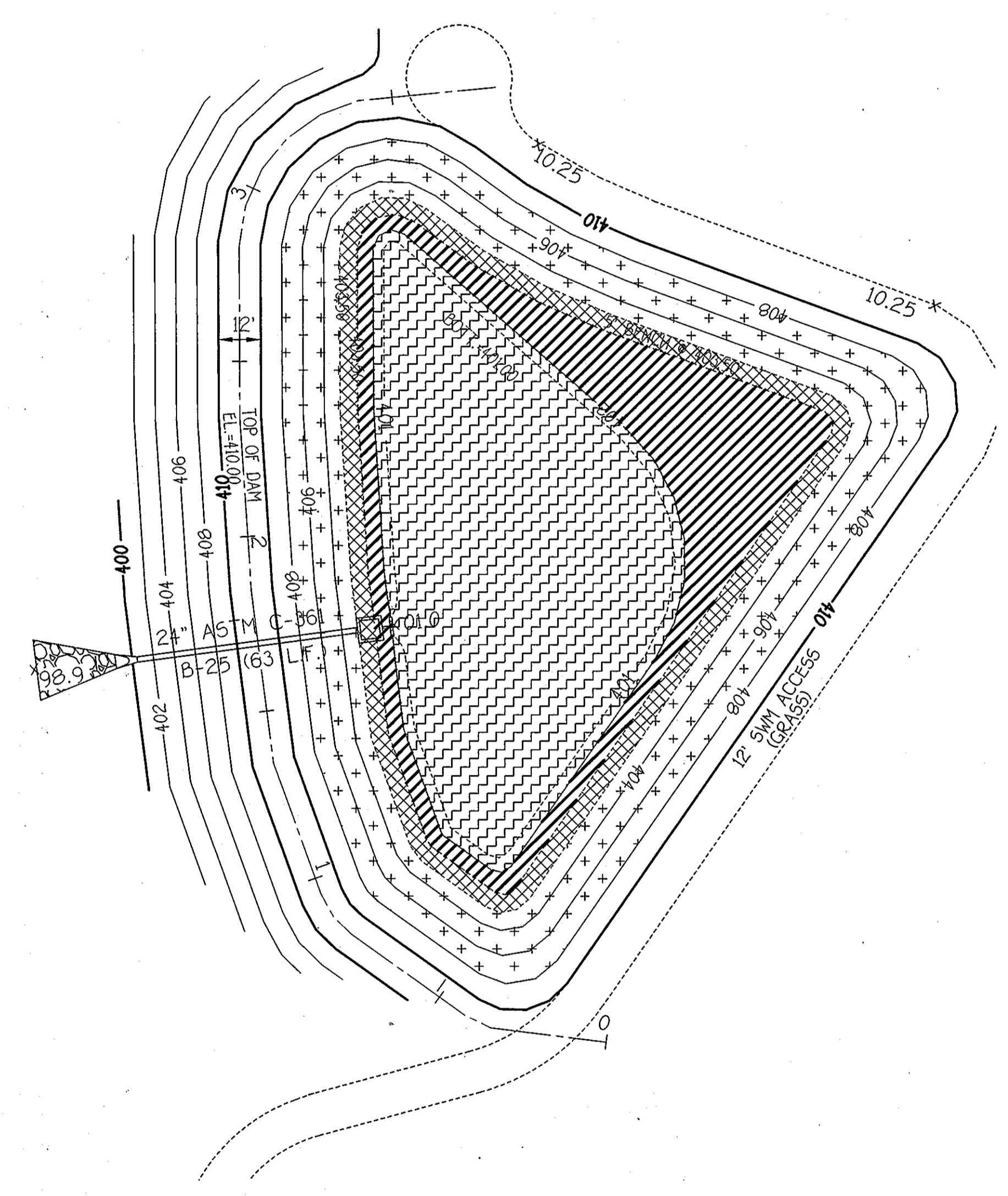
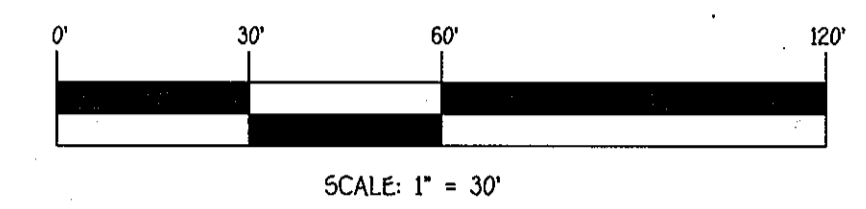


**SHRUB PLANTING DETAIL**

**TREE PLANTING DETAIL**

**PLANTING SPECIFICATIONS**

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.  
 All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plant list and the American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sun scald injuries, abrasions of the bark, plant disease, 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 heated-in plants from cold storage will be accepted.  
 Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agenda.  
 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 drip 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 plan 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 plans.  
 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 (acidic) 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 fine graded and seeded.  
 This plan is intended for landscape use only. see other plan sheets for more information on grading, sediment control, layout, etc.



**INTERNAL POND PLANTING DETAIL**

PLANT LIST			
SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE
	55	ACER RUBRUM "Armstrong" ARMSTRONG COLUMNAR RED MAPLE	2 1/2-3" CAL.
	57	QUERCUS COCCINEA SCARLET OAK	2 1/2-3" CAL.
	14	PINUS STROBUS EASTERN WHITE PINE	6' - 8' HT.

"THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED 112 SHADE & 14 EVERGREEN TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$35,700.00.

**INTERNAL POND PLANT LIST**

- ZONE 5 FLOODPLAIN TERRACE**  
 1' - 4' ELEVATION ABOVE NORMAL POOL ELEVATION - PLANT AREA w/ SWITCH GRASS  
 QUANTITY - N/A SPACING - N/A
- ZONE 3 SHORELINE FRINGE**  
 0' - 12" ELEVATION ABOVE NORMAL POOL ELEVATION - PLANT BENCH AREA w/ THE FOLLOWING: INKBERRY, WITCHHAZEL & WINTERBERRY  
 QUANTITY - 16 EACH SPACING - 12" MAX.
- ZONE 2 SHALLOW WATER BENCH**  
 0' - 12" ELEVATION BELOW NORMAL POOL ELEVATION - PLANT AREA w/ BULRUSH, RIVER  
 QUANTITY - N/A SPACING - N/A
- ZONE 1 DEEPWATER POOL**  
 1' - 3' ELEVATION BELOW NORMAL POOL ELEVATION - PLANT AREA w/ WIDGEON-GRASS  
 QUANTITY - N/A SPACING - N/A

**LANDSCAPE DEVELOPER'S CERTIFICATE**

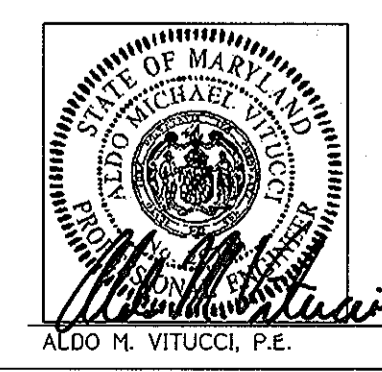
I/We certify that the landscaping shown on this plan will be done according to the plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant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

*T. Z. F.*  
 Name: \_\_\_\_\_ Date: 2/08/13

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 18275 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21117  
 (410) 461-2955

<b>Owner</b>	<b>Developer</b>
BV Business Trust 15950 North Avenue P.O. Box 492 Lisbon, MD 21765 410-489-7900	Bassler Venture, LLC 15950 North Avenue P.O. Box 492 Lisbon, MD 21765 410-489-7900

"Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2015."



*ALDO M. VITUCCI*  
 DATE

**Landscape Plan Notes**  
**WALNUT CREEK**  
**PHASE THREE**  
 Lots 69 - 114,  
 Non-Buildable Preservation Parcels 'O' Thru 'K' & 'J',  
 Non-Buildable Parcel 'S', Buildable Preservation Parcel 'T'  
 And Buildable Parcel 'U'  
 (A Resubdivision of Buildable Parcel 'M' - Walnut Creek, Phase Two)  
 (A Revision to Non-Buildable Preservation Parcels 'L' and 'N' - Walnut Creek, Phase Two)  
 ZONED: RC-DEO & R2-DEO  
 TAX MAP No. 2B GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: FEBRUARY 25, 2013  
 SHEET 11 OF 25

# STORM WATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

## Site Preparation

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

## EARTH FILL

**Material** - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment and cut off trench shall conform to Unified Soil Classification Code, CH, or CL. Other fill material must have at least 30% passing the #20 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

**Placement** - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8-inch thick (before compaction) layers which are to be compacted over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

**Compaction** - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibrator roller. Fill material shall contain sufficient moisture so that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.

When required by the reviewing agency the minimum required density shall not be less than 95% of maximum dry density with a moisture content within +2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).

**Cut Off Trench** - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be covered by the equipment used for excavation with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.

**Embankment Core** - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

## Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi; 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material shall completely fill all voids adjacent to the flowable fill zone. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a structure or pipe unless there is a compacted fill of 24" or greater over the structure or pipe. Backfill material outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to the specified for the core of the embankment or other embankment materials.

## Pipe Conduits

All pipes shall be circular in cross section.

**Corrugated Metal Pipe** - All of the following criteria shall apply for corrugated metal pipe:

1. Materials - Polymer Coated steel pipe - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10 mil) on both sides of the pipe. This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-245 & M-246 with watertight coupling bands or flanges.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with watertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used with flowable fill or when soil and/or water conditions warrant the need for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Any aluminum coating damaged or otherwise removed shall be resealed with cold applied bituminous coating compound. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling bands or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

2. Coupling bands, anti-seep collars, end sections, etc. must be composed of the same material and coatings as the pipe. Metals must be insulated from dissimilar materials with use of rubber or plastic insulating materials at least 24 mils in thickness.

3. Connections - All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dipole bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the gasket. The following type connections are acceptable for pipes less than 24-inches in diameter: flanges on both ends of the pipe with a circular 3/8" inch closed cell neoprene gasket, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lip type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 15-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2-inch greater than the corrugation depth. Pipes 24-inches in diameter and larger shall be connected by a 24-inch long annular corrugated band using a minimum of 4 (four) rods and legs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12-inches on the end of each pipe. Flanged joints with 3/8-inch closed cell gaskets the full width of the flange is also acceptable.

Helically corrugated pipe shall have either continuously welded seams or have lock seams with interlock caulking or a neoprene bead.

4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

5. Backfilling shall conform to "Structure Backfill".

6. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:

1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.

2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.

3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

## Plastic Pipe

The following criteria shall apply for plastic pipe:

1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirement of AASHTO M-252 Type 5, and 12" through 24" inch shall meet the requirement of AASHTO M-28 Type 5.

2. Joints and connections to anti-seep collars shall be completely watertight.

3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.

4. Backfilling shall conform to "Structure Backfill".

5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

## Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

## Rock Riprap

Rock riprap shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 311.

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.05, Class C.

## Care of Water during Construction

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the excavations, foundations and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

## Stabilization

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planting (MD-342) or as shown on the accompanying drawings.

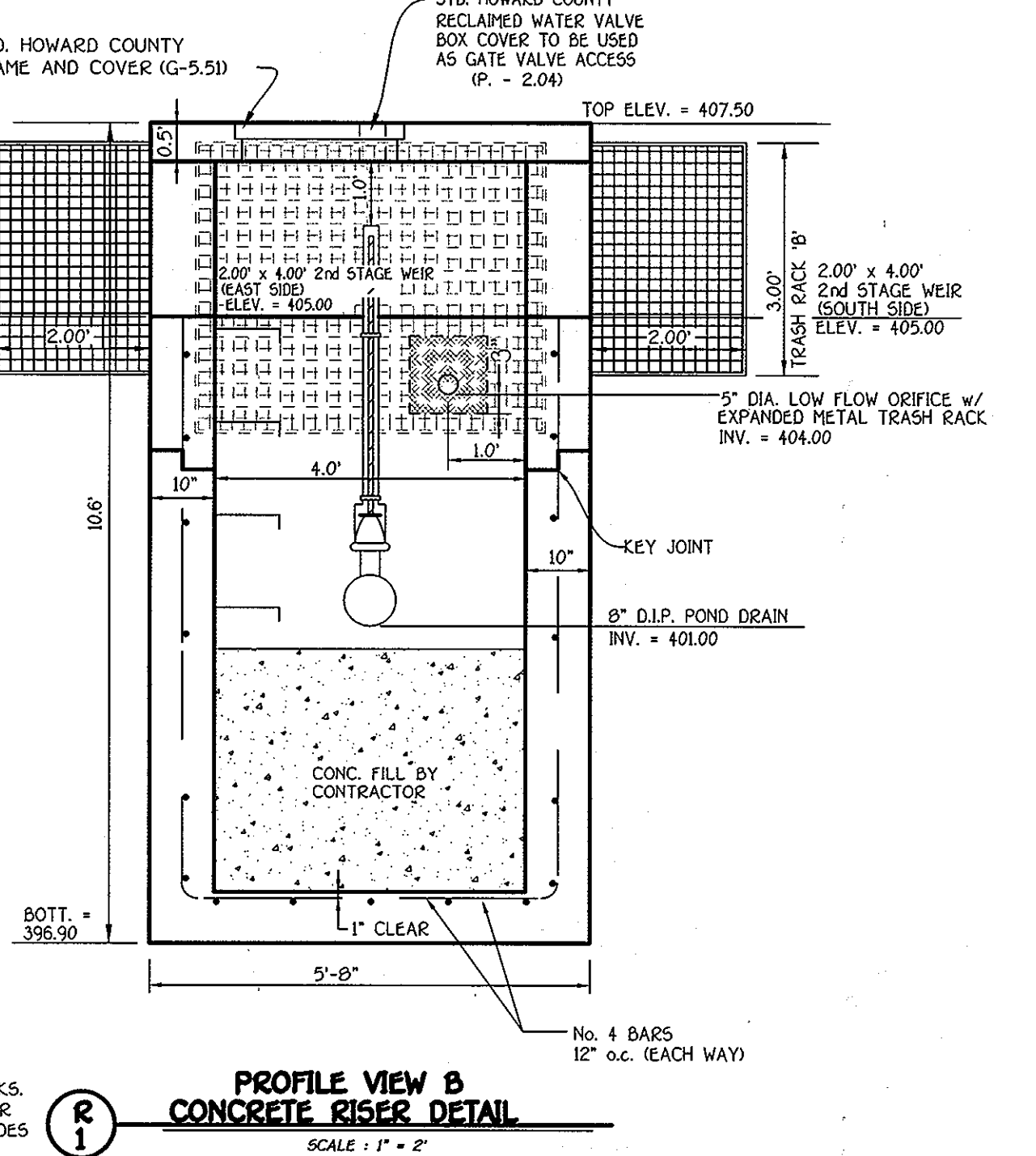
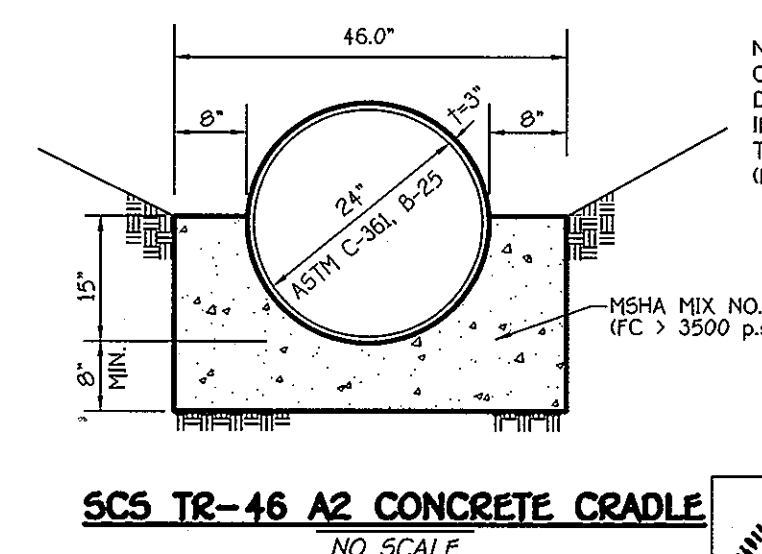
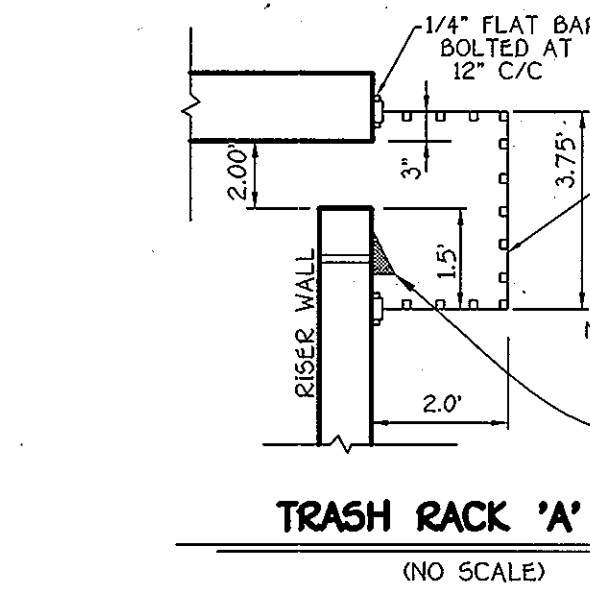
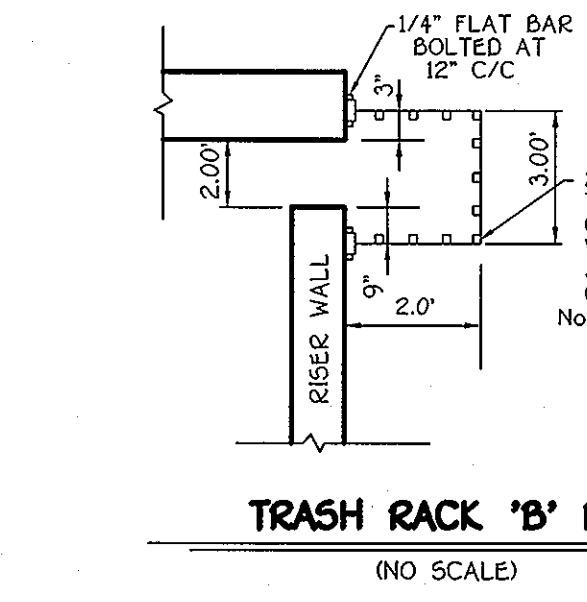
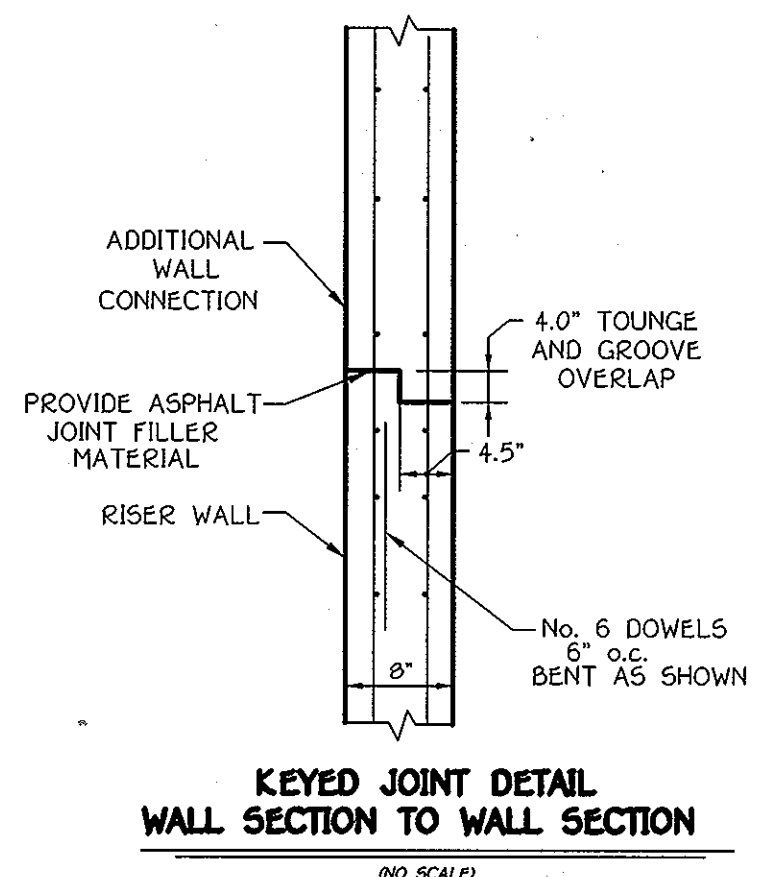
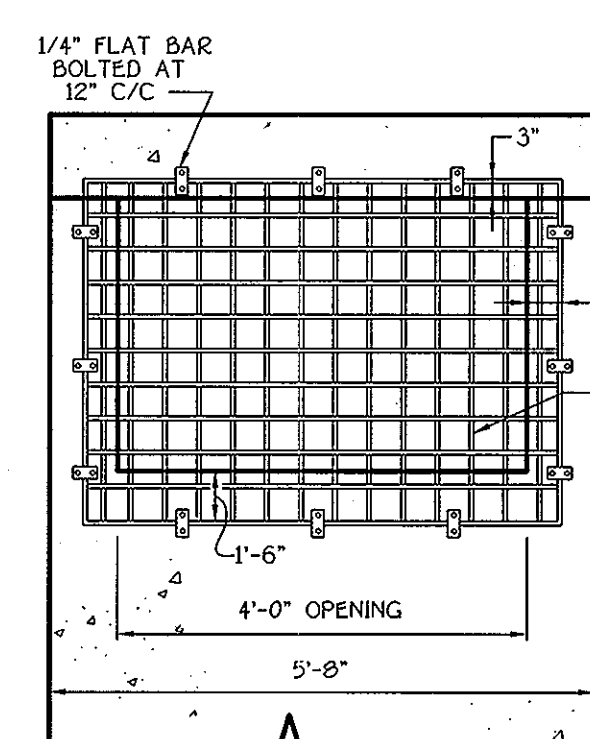
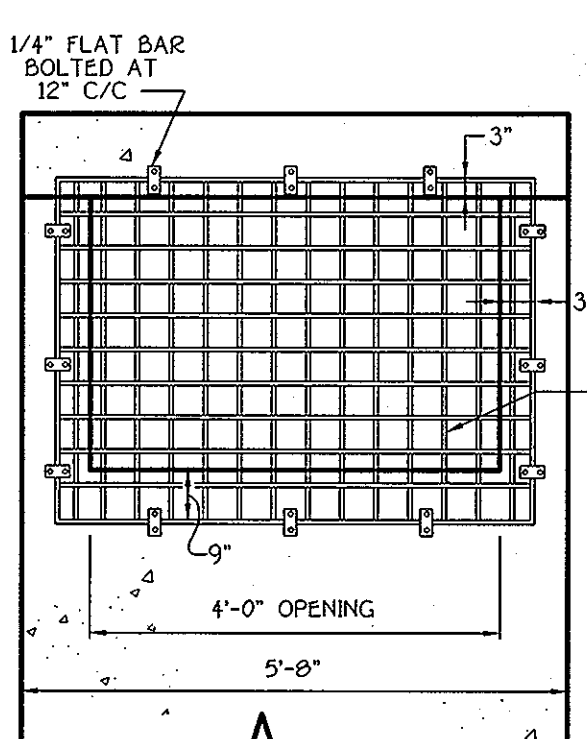
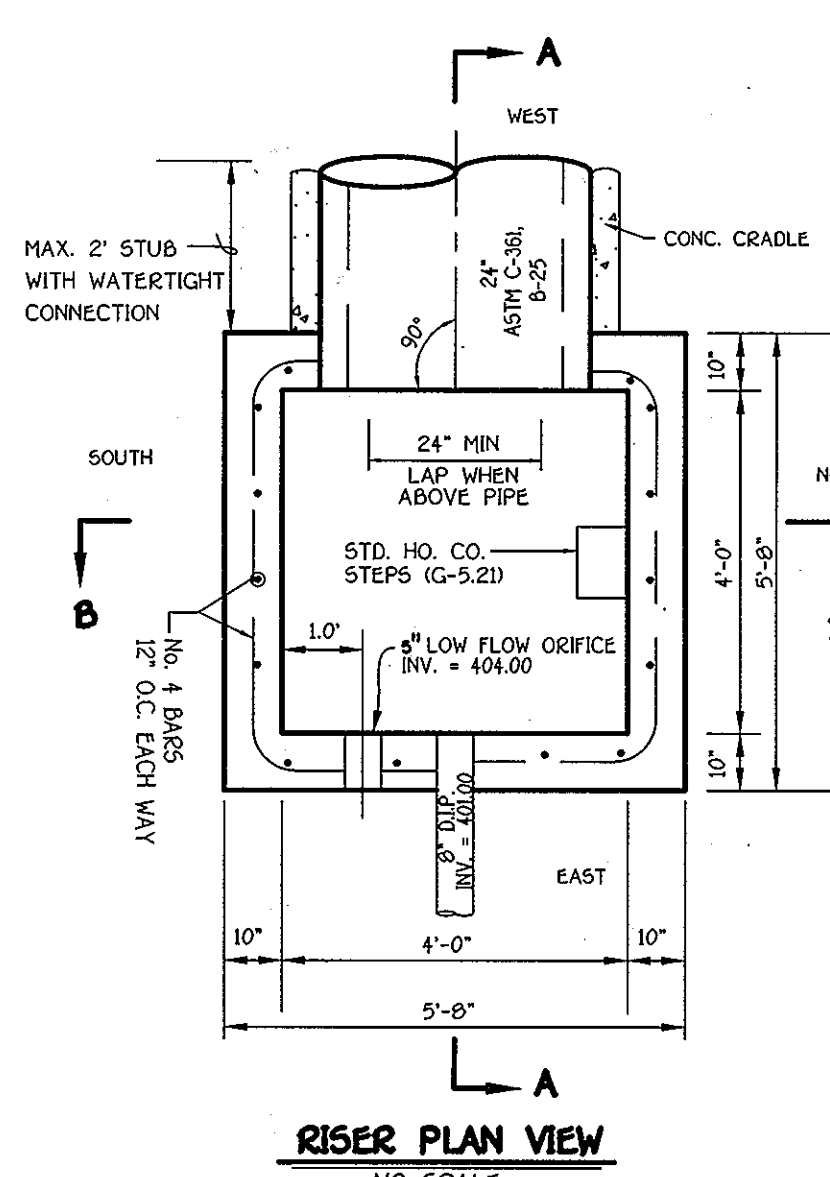
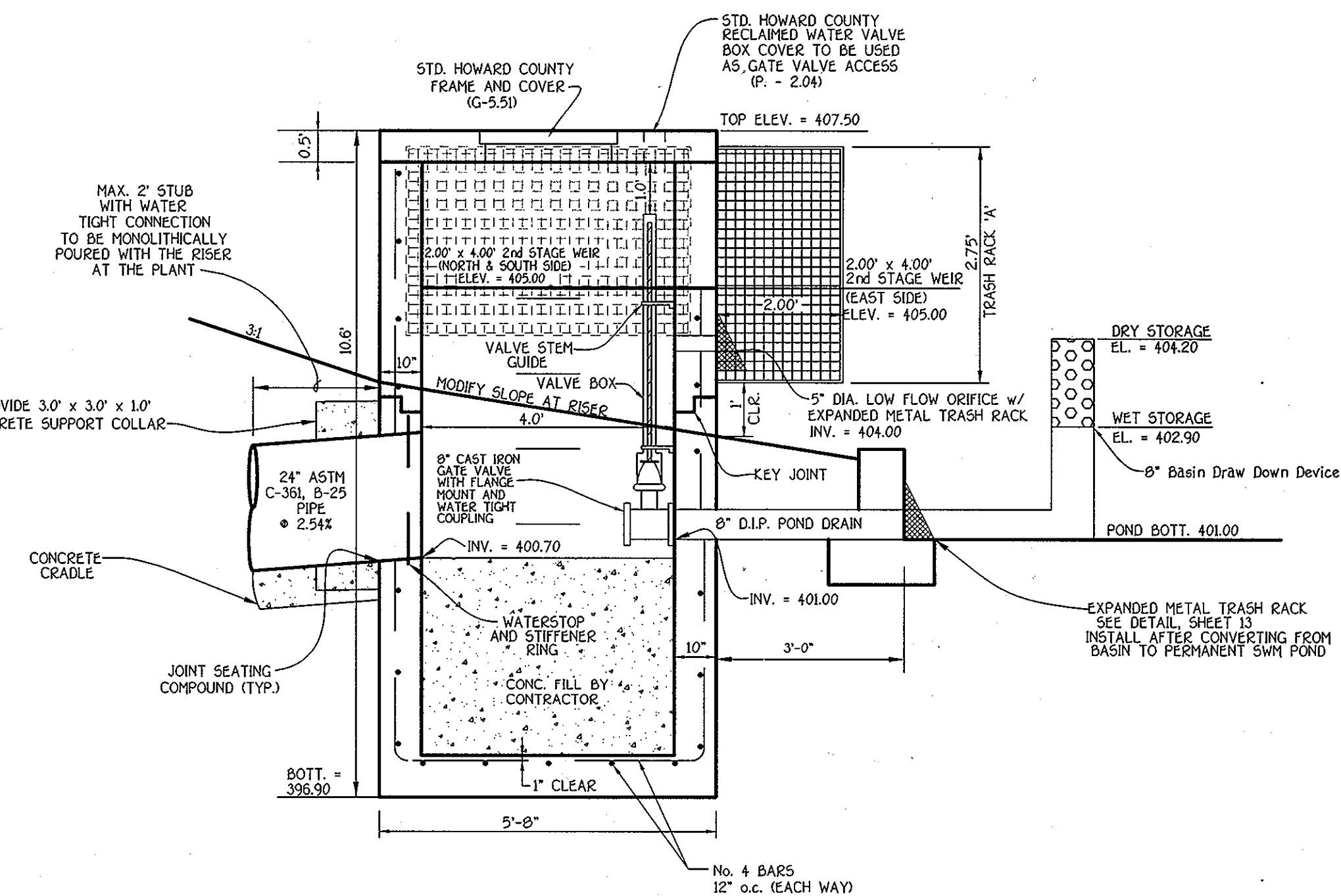
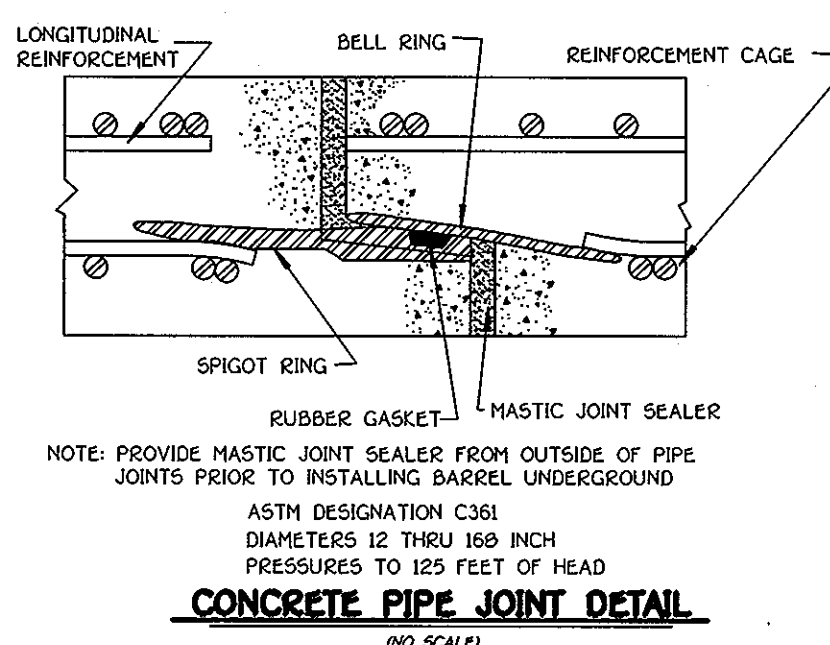
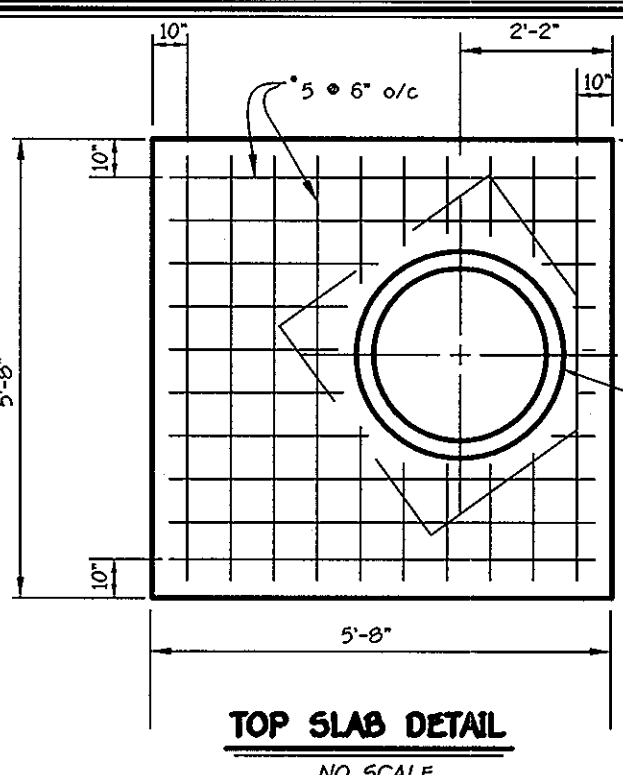
## Erosion and Sediment Control

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

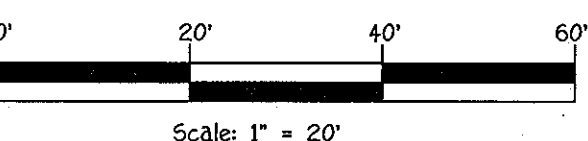
## OPERATION AND MAINTENANCE

An operation and maintenance plan in accordance with Local or State Regulations will be prepared for all ponds. As a minimum, the dam inspection checklist located in Appendix A shall be included as part of the operation and maintenance plan and performed at least annually. Written records of maintenance and major repairs needs to be retained in a file. The issuance of a Maintenance and Repair Permit for any repairs or maintenance that involves the modification of the dam or spillway from its original design and specifications is required. A permit is also required for any repairs or reconstruction that involve a substantial portion of the structure. All indicated repairs are to be made as soon as practical.

- NOTES:
1. CONCRETE SHALL BE MSHA MIX NO. 3 (FC > 3500 P.S.I.)
  2. REINFORCING STEEL - GRADE 60
  3. FOR WALLS OR STRUCTURE SHALL UTILIZE L.M. SCORFIELD CO. T-9055 FORM LINERS. RANDOM SPLIT-FACE ROCK OPTIONAL.
  4. PROVIDE ROUGH BOTTOM FINISH. PROVIDE HUGGER TYPE BAND WITH O-RING GASKETS HAVING A MINIMUM DIAMETER OF 1/2-INCH GREATER THAN THE CORRUGATION DEPTH. PIPES 24-INCHES IN DIAMETER AND LARGER SHALL BE CONNECTED BY A 24-INCH LONG ANNULAR CORRUGATED BAND USING A MINIMUM OF 4 (FOUR) RODS AND LEGS, 2 ON EACH CONNECTING PIPE END. A 24-INCH WIDE BY 3/8-INCH THICK CLOSED CELL CIRCULAR NEOPRENE GASKET WILL BE INSTALLED WITH 12-INCHES ON THE END OF EACH PIPE. FLANGED JOINTS WITH 3/8-INCH CLOSED CELL GASKETS THE FULL WIDTH OF THE FLANGE IS ALSO ACCEPTABLE.
  5. ANCHOR BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 6.07.03.59 OF THE MSHA STANDARDS AND SPECS.
  6. ALL REINFORCING SPICES SHALL BE LAP SPICES OF 30 BAR DIA. UNLESS OTHERWISE SHOWN.



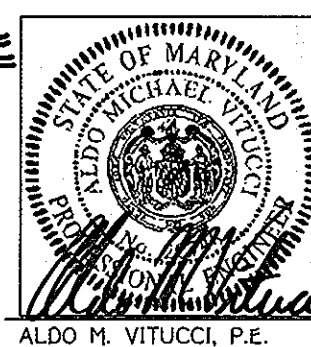
**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PARK  
ELLSWORTH CITY, MARYLAND 21042  
410 461 - 2855



**Owner**  
BV Business Trust  
15950 North Avenue  
P.O. Box 482  
Lisbon, MD 21765  
410-489-7900

**Developer**  
Bassler Venture, LLC  
15950 North Avenue  
P.O. Box 482  
Lisbon, MD 21765  
410-489-7900

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2015.



By The Developer:  
I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District.

Signature Of Developer: Timothy W. Frago  
Date: 2/28/13

Printed Name Of Developer: Timothy W. Frago

By The Engineer:  
I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical Engineering Design Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Reviewed The Design, That It Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion.

Signature Of Engineer: [Signature]  
Date: 2/28/13

Printed Name Of Engineer: [Name]

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Signature Of Engineer: [Signature]  
Date: 4/2/13

Approved: Department Of Public Works  
Signature: [Signature]  
Date: 4/14/13

Approved: Department Of Planning And Zoning  
Signature: [Signature]  
Date: 4/15/13

Signature: [Signature]  
Date: 4/12/13

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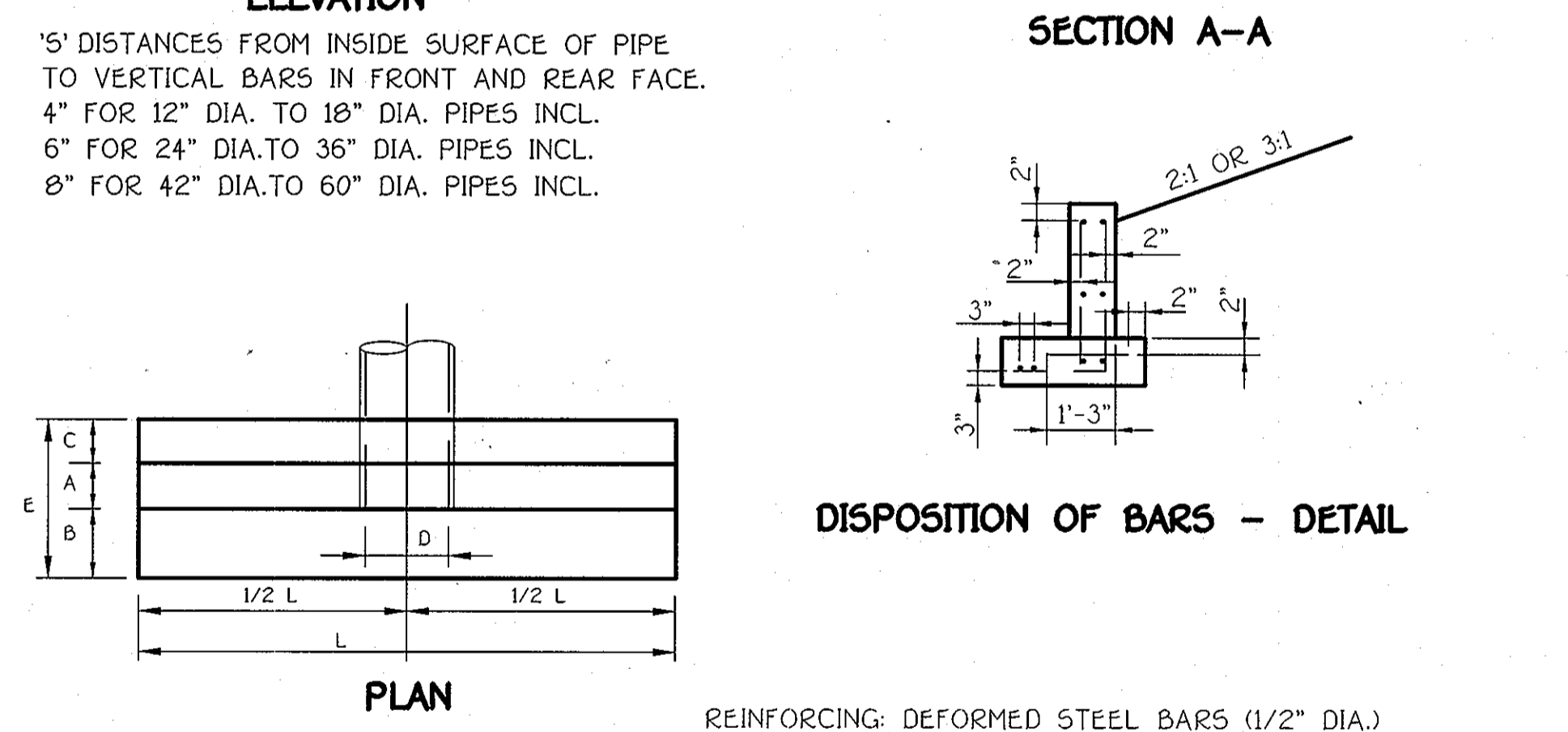
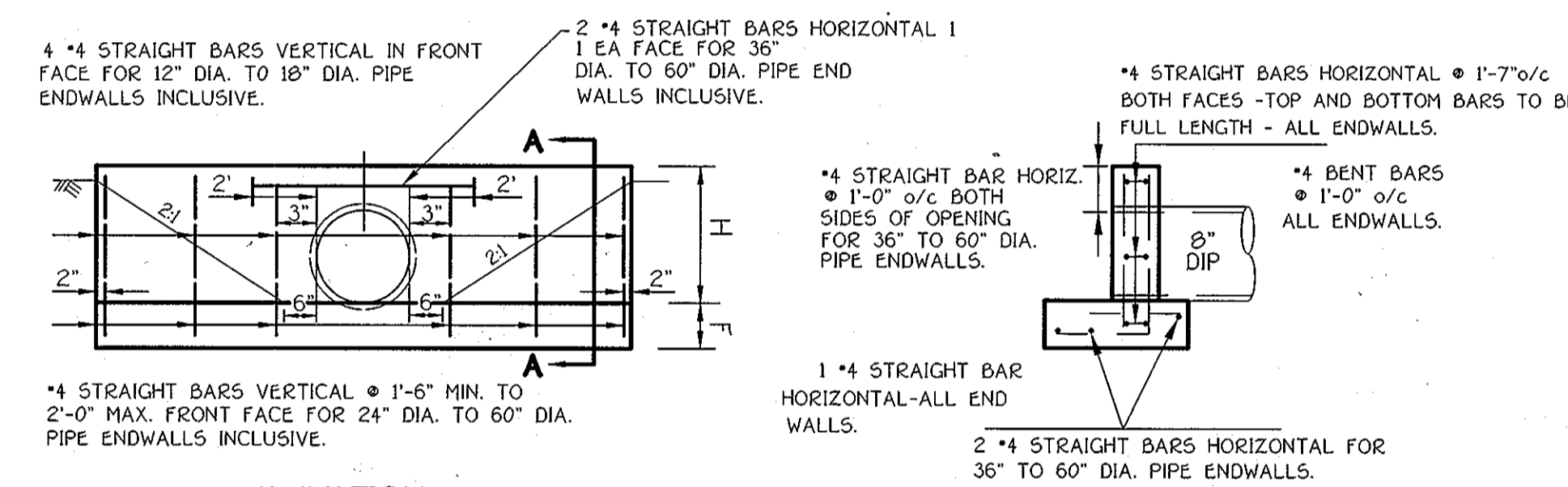
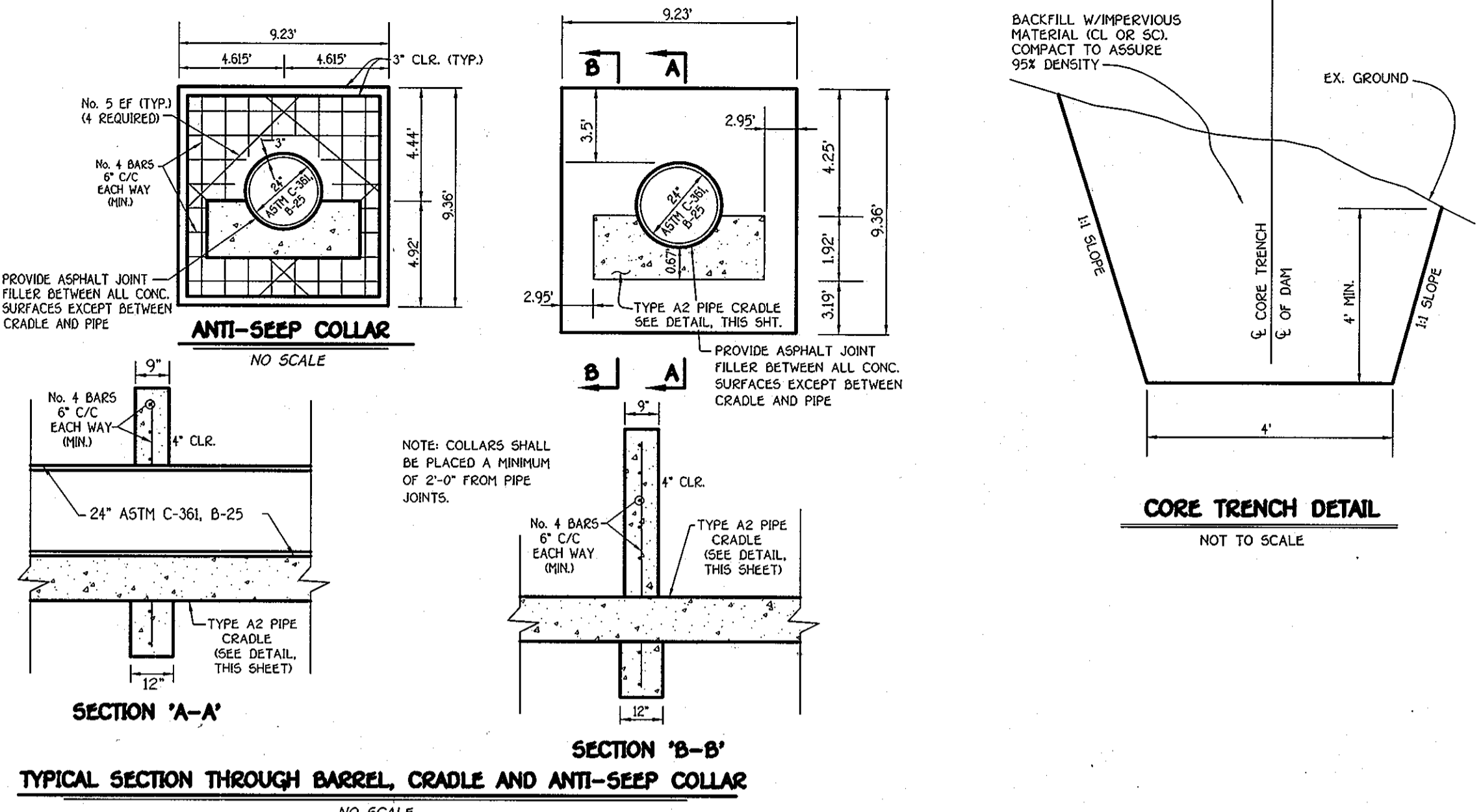
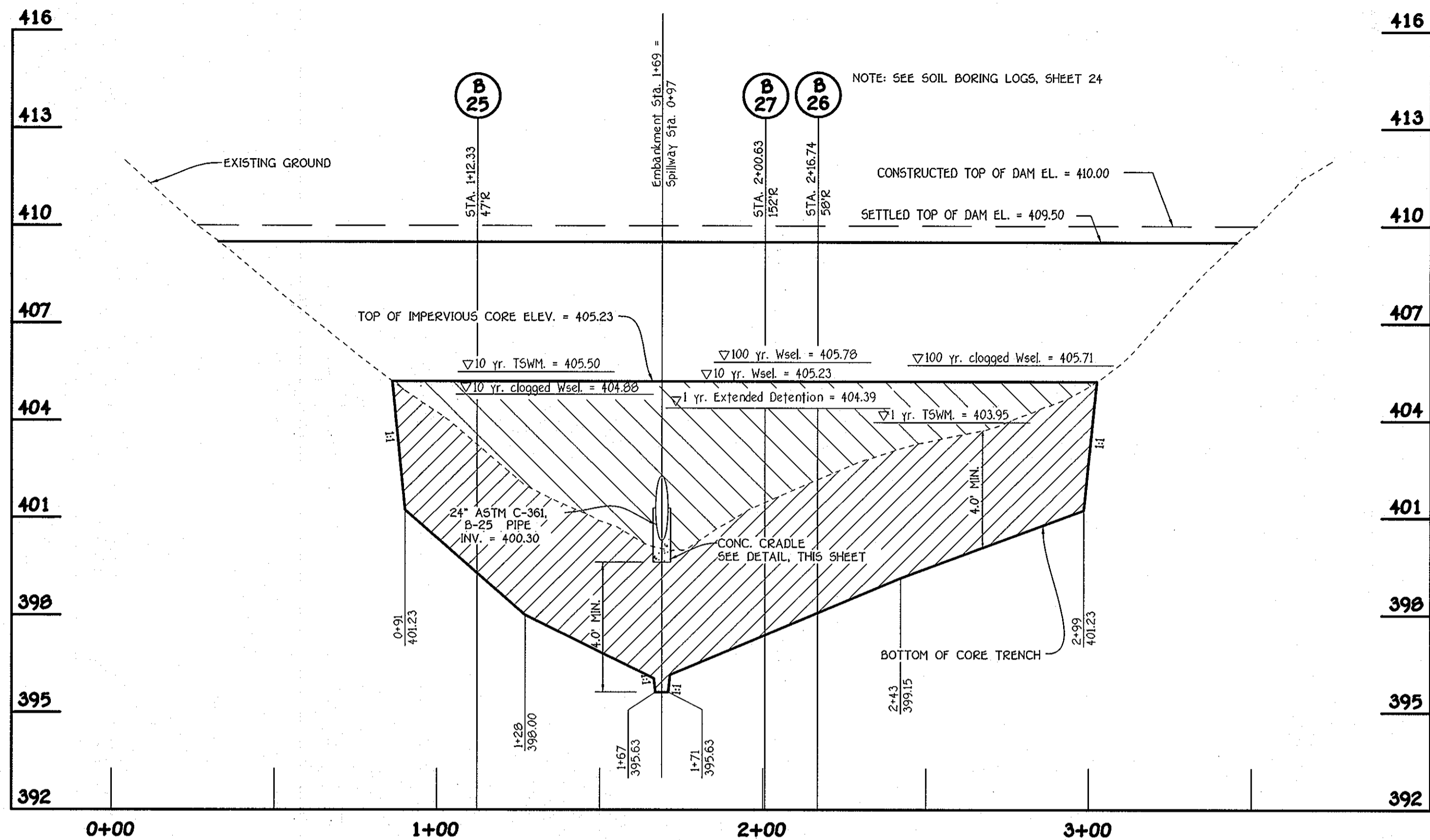
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Signature: [Signature]  
Date: 4/12/13

Stormwater Management Notes And Details  
Pond No. 5  
WALNUT CREEK  
PHASE THREE  
Lots 69 - 114,  
Non-Buildable Preservation Parcels 10" Thru "K" & "L",  
Non-Buildable Parcel 15, Buildable Preservation Parcel "I"  
(A Resubdivision of Buildable Parcel "I" - Walnut Creek, Phase Two)  
(A Revision to Non-Buildable Preservation Parcels "L" and "M" - Walnut Creek, Phase Two)  
ZONES: RC-DEO & RR-DEO  
TAX MAP No. 2B GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
DATE: FEBRUARY 26, 2013  
SHEET 12 OF 25



By The Developer:  
I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District.

Signature of Developer: *Matthew W. Feago* Date: 2-28-13  
Printed Name of Developer: Matthew W. Feago

By The Engineer:  
I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Feasible Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Reviewed The Plans And I Certify That The Plans Meet The Requirements Of The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion.

Signature of Engineer: *Alfredo M. Vitucci* Date: 4/2/13  
Printed Name of Engineer: Alfredo M. Vitucci

Approved Department of Public Works: *John L. Robinson* Date: 4/14/13  
Chief, Bureau Of Highways

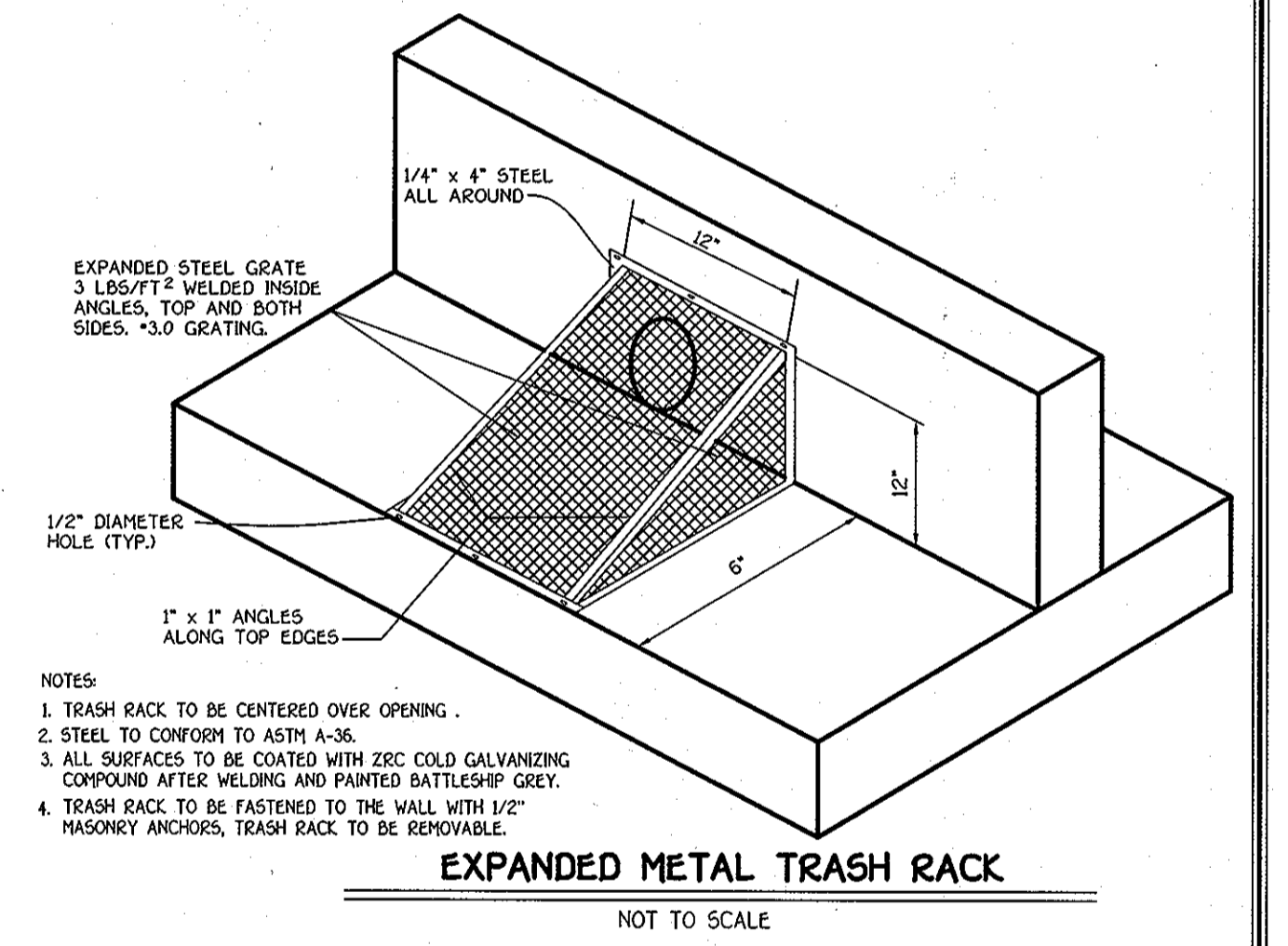
Approved Department of Planning And Zoning: *Neil E. DeLore* Date: 4/15/13  
Chief, Division Of Land Development

Approved Department of Planning And Zoning: *Alfredo M. Vitucci* Date: 4/12/13  
Chief, Development Engineering Division

**AS-BUILT CERTIFICATION**  
I Herby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

Signature: \_\_\_\_\_ P.E. No. \_\_\_\_\_  
Date: \_\_\_\_\_

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not Mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.



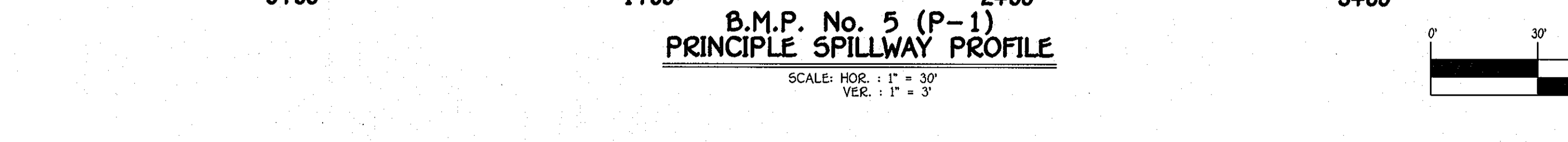
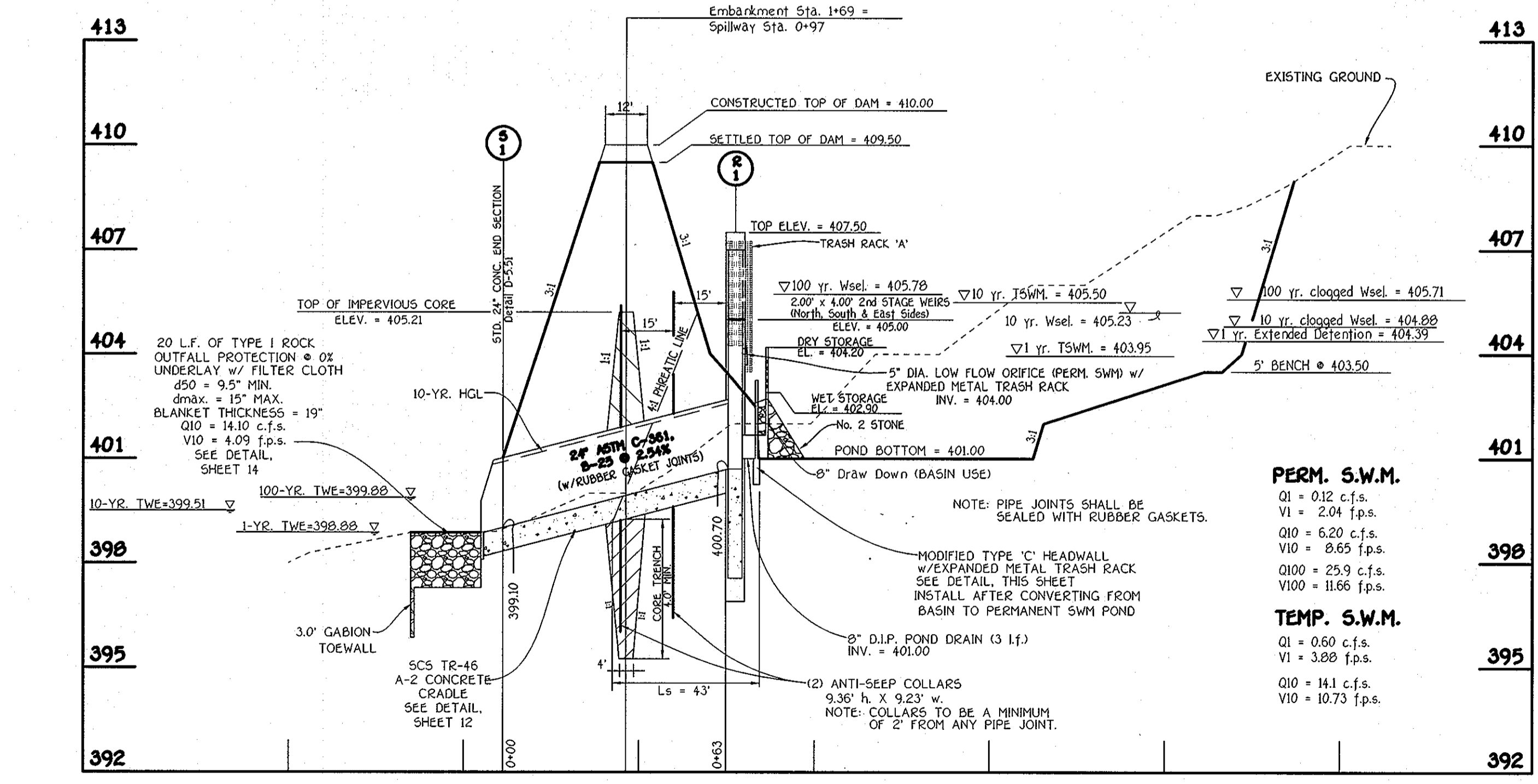
**OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND JOINTLY MAINTAINED STORMWATER MANAGEMENT FACILITIES**

**ROUTINE MAINTENANCE**

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

**NON-ROUTINE MAINTENANCE**

- Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
- Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond or forebay is half full of sediment, or when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.



**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 1872 BALTIMORE NATIONAL PRIZ  
ELICOTT CITY, MARYLAND 21042  
410 681 - 2955

**Owner**  
BV Business Trust  
15950 North Avenue  
P.O. Box 492  
Lisbon, MD 21765  
410-489-7900

**Developer**  
Bässler Venture, LLC  
15950 North Avenue  
P.O. Box 492  
Lisbon, MD 21765  
410-489-7900

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2015.



**Stormwater Management Notes And Details**  
Pond No. 5  
**WALNUT CREEK**  
PHASE THREE  
Lots 89 - 114  
Non-Buildable Preservation Parcels 10' Thru 12' & 14',  
Non-Buildable Parcel 21, Buildable Preservation Parcel 17  
And Buildable Bulk Parcel 17

IA Resubdivision of Buildable Bulk Parcel 17 - Walnut Creek, Phase Two  
Site Nos. 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 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**STRUCTURE SCHEDULE**

STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	LOCATION	ROAD STA./COORDINATE	OFFSET	TYPE AND WIDTH	REMARKS
I-1	* 380.98	373.89 (36')	373.79 (36')	HAYLAND FARM WAY	25+25	19' LT	'D' INLET - 4.0'	D - 4.10
I-2	* 382.60	378.36 (36')	375.16 (36')	HAYLAND FARM WAY	26+60	19' LT	'D' INLET - 4.0'	D - 4.10
I-3	* 383.98	378.16 (24')	377.91 (24')	WILD OLIVE COURT	1+05.77	17' RT	'D' INLET - 3.0'	D - 4.10
I-4	* 383.98	379.00 (36')	378.50 (24')	WILD OLIVE COURT	1+05.77	17' RT	'D' INLET - 3.0'	D - 4.10
I-5	* 388.75	383.95 (36')	383.70 (36')	WILD OLIVE COURT	2+66	17' RT	'D' INLET - 2.5'	D - 4.10
I-6	* 400.44	396.65 (36')	396.40 (36')	WILD OLIVE COURT	4+05	17' RT	'D' INLET - 2.5'	D - 4.10
I-7	* 411.54	406.60 (36')	406.35 (36')	WILD OLIVE COURT	5+15	17' RT	'D' INLET - 2.5'	D - 4.10
I-8	* 411.54	-----	406.94 (36')	WILD OLIVE COURT	5+15	17' LT	'D' INLET - 2.5'	D - 4.10
(PRIVATE) I-9	* 411.00	-----	407.75 (36')	WILD OLIVE COURT	5+44	129.4' RT	'D' INLET - 2.5'	D - 4.10
I-10	* 382.60	378.89 (36')	378.64 (36')	HAYLAND FARM WAY	26+60	19' RT	'D' INLET - 2.5'	D - 4.10
(PRIVATE) I-11	* 383.00	-----	379.75 (36')	HAYLAND FARM WAY	26+58	19' RT	'D' INLET - 2.5'	D - 4.10
I-12	* 392.62	386.71 (24')	386.46 (24')	HAYLAND FARM WAY	30+97	19' LT	'D' INLET - 3.0'	D - 4.10
I-13	* 401.05	397.66 (36')	397.04 (36')	HAYLAND FARM WAY	32+62	19' LT	'D' INLET - 3.0'	D - 4.10
I-14	* 412.53	407.93 (36')	407.68 (36')	HAYLAND FARM WAY	34+83	19' LT	'D' INLET - 2.5'	D - 4.10
I-15	* 416.44	412.50 (36')	410.34 (36')	CATALPA COURT	0+47	17' LT	'D' INLET - 2.5'	D - 4.10
I-16	* 433.47	428.47 (36')	428.22 (36')	CATALPA COURT	3+14	17' LT	'D' INLET - 2.5'	D - 4.10
I-17	* 433.47	-----	428.81 (36')	CATALPA COURT	3+14	17' RT	'D' INLET - 2.5'	D - 4.10
I-18	* 416.44	414.44 (36')	411.89 (36')	CATALPA COURT	0+47	17' RT	'D' INLET - 2.5'	D - 4.10
I-19	* 429.00	-----	424.03 (36')	HAYLAND FARM WAY	38+51	45' LT	'D' INLET - 2.5'	D - 4.10
I-20	* 433.00	-----	429.77 (36')	HAYLAND FARM WAY	38+98	29' RT	'D' INLET - 2.5'	D - 4.10
I-21	* 401.36	-----	398.05 (36')	HAYLAND FARM WAY	32+68	19' RT	'D' INLET - 2.5'	D - 4.10
I-22	* 425.80	417.65 (36')	417.40 (36')	HAYLAND FARM WAY	36+85	22' LT	'D' INLET - 2.5'	D - 4.10
M-1	386.45	379.81 (24')	377.04 (24')	HAYLAND FARM WAY	29+06	19' LT	5' DIA. MANHOLE	G - 5.13
M-2	419.36	414.24 (36')	413.99 (36')	HAYLAND FARM WAY	35+87	14' LT	4' DIA. MANHOLE	G - 5.12
M-3	433.60	422.73 (36')	422.48 (36')	HAYLAND FARM WAY	38+22	14' LT	4' DIA. MANHOLE	G - 5.12
S-1	401.10	399.10	-----	FACILITY NO. 5	N 57317144 E 13248603	-----	24" CONC. END SECTION	D - 5.12
R-1	407.50	401.00 (36')	400.70 (24')	FACILITY NO. 5	N 57317144 E 13248603	-----	CONC. RISER	pre-cast

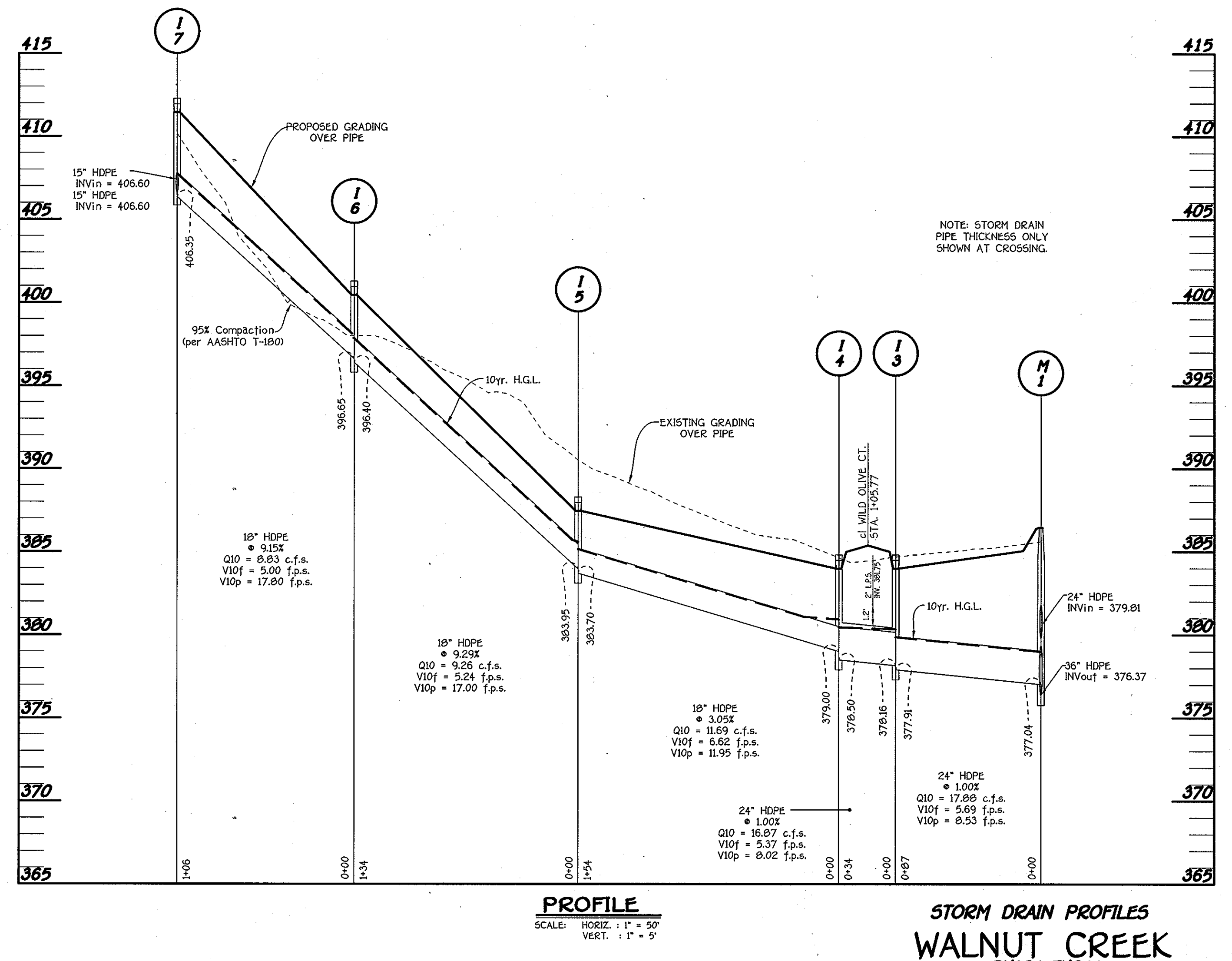
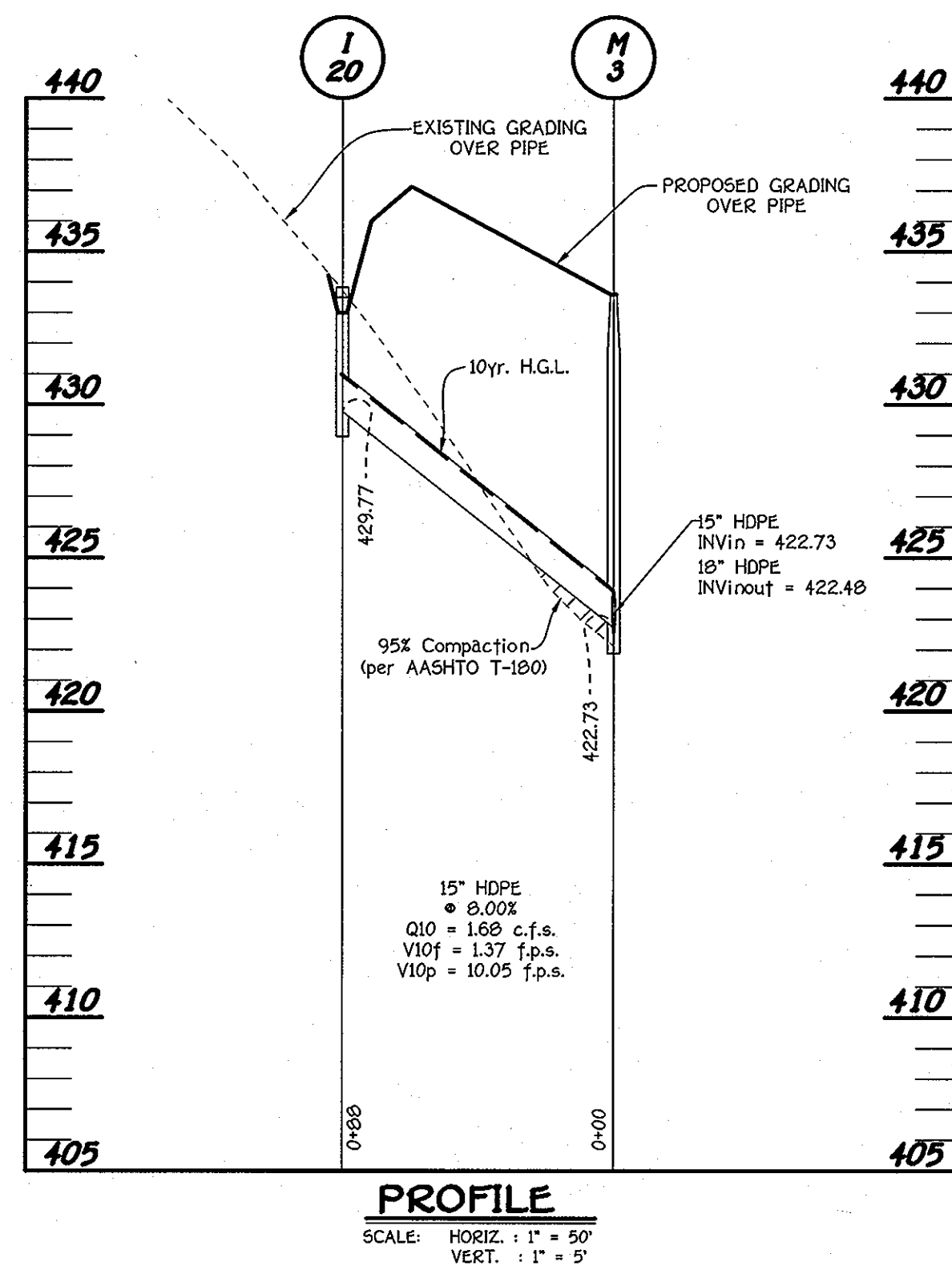
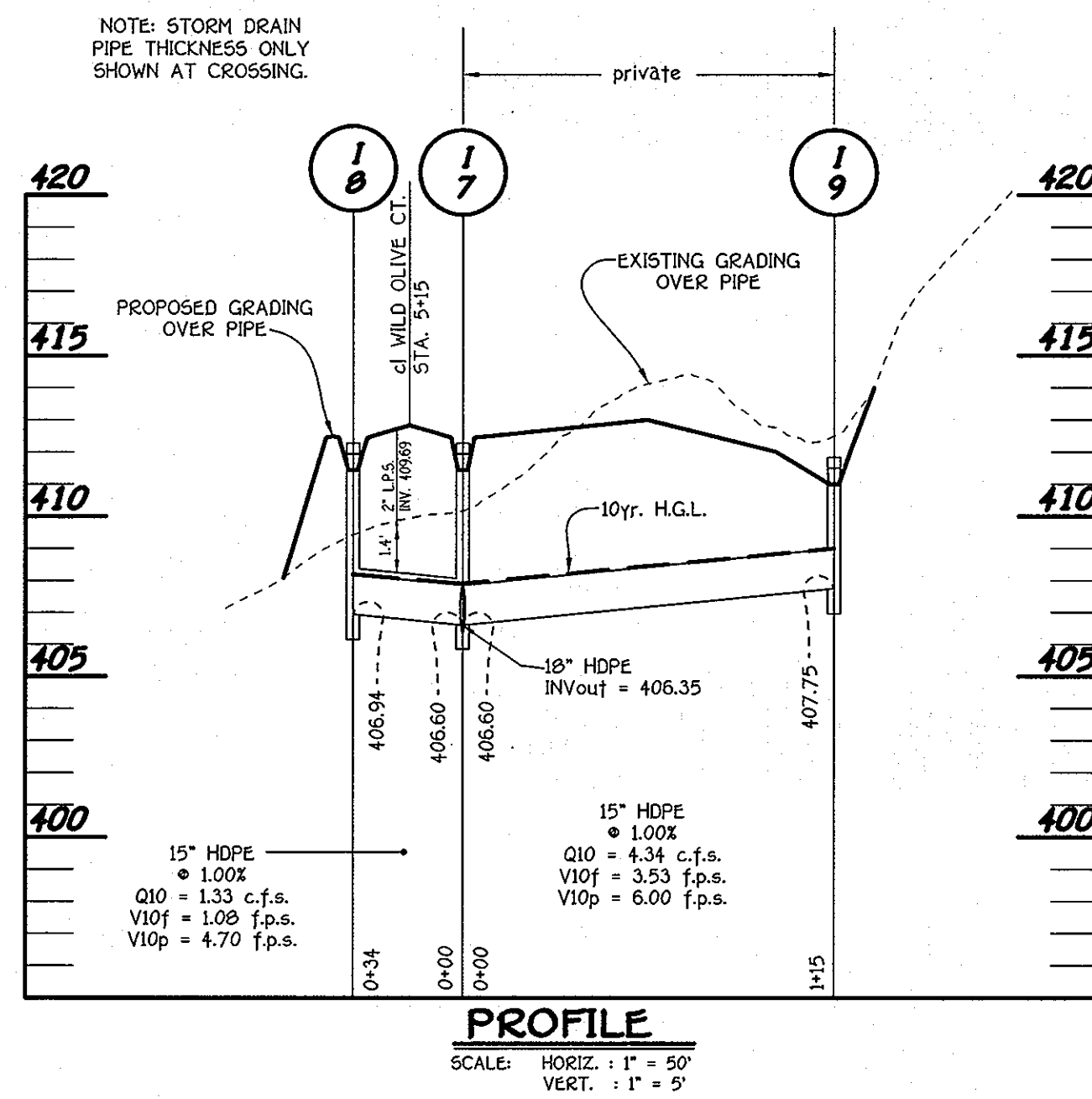
\* - DENOTES THROAT ELEVATION  
(PRIVATE) - DENOTES OWNED AND MAINTAINED BY H.O.A.

SIZE	CLASS	LENGTH
15"	HDPE	260 L.F.
18"	HDPE	1277 L.F.
24"	HDPE	481 L.F.
36"	HDPE	365 L.F.

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

SIZE	CLASS	LENGTH
15"	HDPE	287 L.F.

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



**STORM DRAIN PROFILES  
WALNUT CREEK  
PHASE THREE  
Lots 69 - 114,  
Non-Buildable Preservation Parcels 'O' Thru 'R' & 'V',  
Non-Buildable Parcel 'S', Buildable Preservation Parcel 'T'  
And Buildable Parcel 'U'**

(A Resubdivision of Buildable Parcel 'M' - Walnut Creek, Phase Two)  
Plan No. \_\_\_\_\_  
(A Revision to Non-Buildable Preservation Parcels 'L' and 'M' - Walnut Creek, Phase Two)  
Plan No. \_\_\_\_\_  
ZONES: RC-DEO & RR-DEO  
TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, and 18 PARCEL No. 49  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
DATE: FEBRUARY 26, 2013  
SHEET 14 OF 25

**DETAIL D-4-1-A ROCK OUTLET PROTECTION I**

STANDARD SYMBOL  
ROPI

DISCHARGE TO SEMI CONFINED CHANNEL SECTION

**CONSTRUCTION SPECIFICATIONS**

1. RIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
2. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING, OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
3. PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (3/4 TO 1 1/2 INCH STONE FOR 6 INCH MINIMUM DEPTH) AND RIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
4. EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF THE RIPRAP.
5. CONSTRUCT RIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPILLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RIPRAP IN A MANNER TO PREVENT DAMAGE TO THE STONE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
6. WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
7. CONSTRUCT APRON WITH OR WITHOUT SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
8. MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND CLOGGED RIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

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

APPROVED: DEPARTMENT OF PUBLIC WORKS  
CHIEF, BUREAU OF HIGHWAYS  
APPROVED: DEPARTMENT OF PLANNING AND ZONING  
CHIEF, DIVISION OF LAND DEVELOPMENT  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE: 4/14/13  
DATE: 4/15/13  
DATE: 4/15/13

REVISIONS

NO.	DESCRIPTION	DATE

**ROCK OUTLET PROTECTION DESIGN DATA**

STRUCTURE	AREA (SQ. FT.)	WETTED PERIMETER	R	R <sup>2/3</sup>	S	S <sup>1/2</sup>	V	d	n	V <sub>10</sub>	V <sub>100</sub>	BLANKET THICKNESS	PIPE SIZE	LA
S-1	3.44	9.75	0.348	0.493	0.005	0.0707	6.0	4.68	0.04	4.09	14.10	5.5"	15"	20'

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PKWY  
ELLSWORTH CITY, MARYLAND 21117  
(410) 481-2855

**Owner**  
BV Business Trust  
15950 North Avenue  
P.O. Box 482  
Lisbon, MD 21765  
410-489-7900

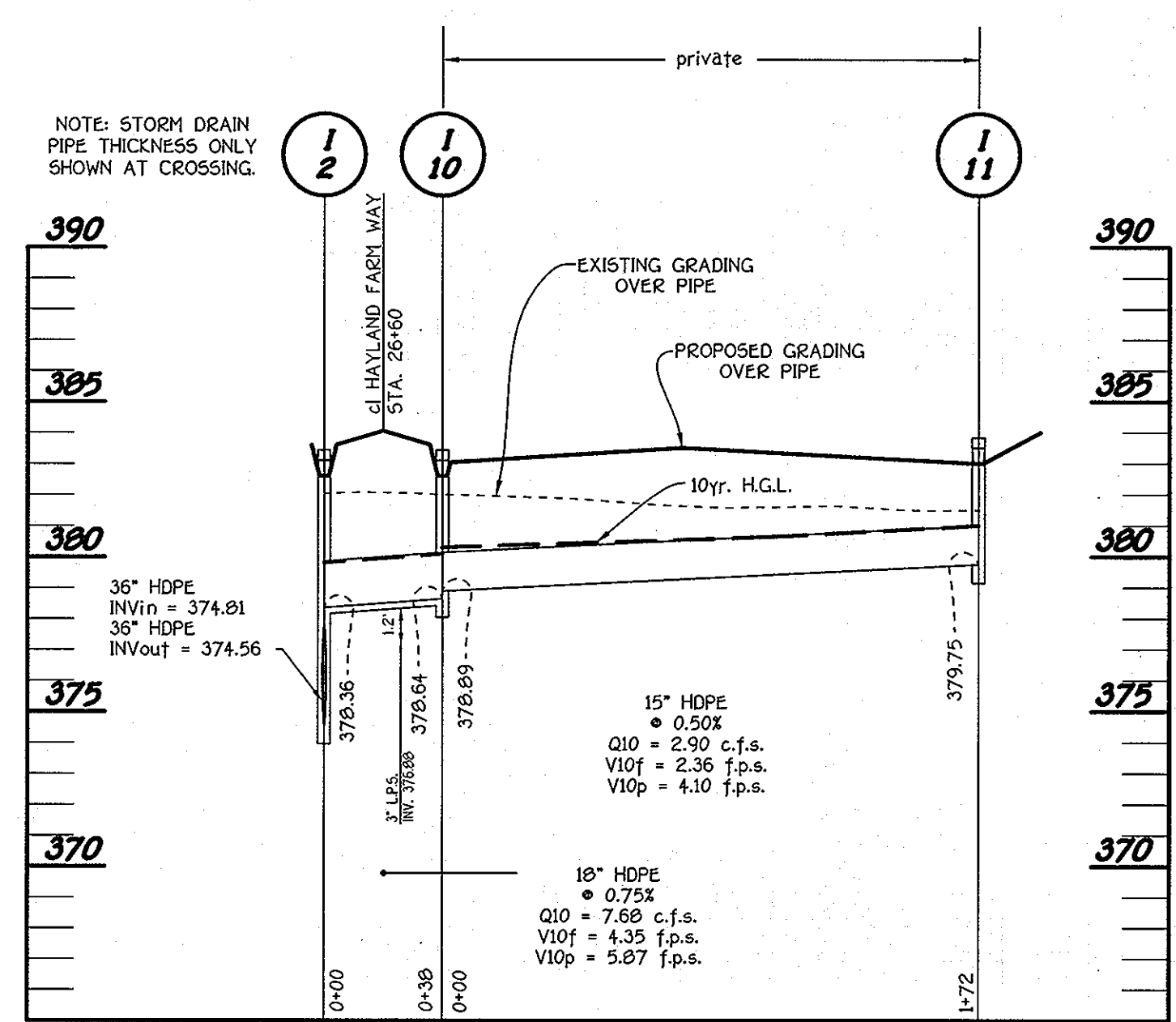
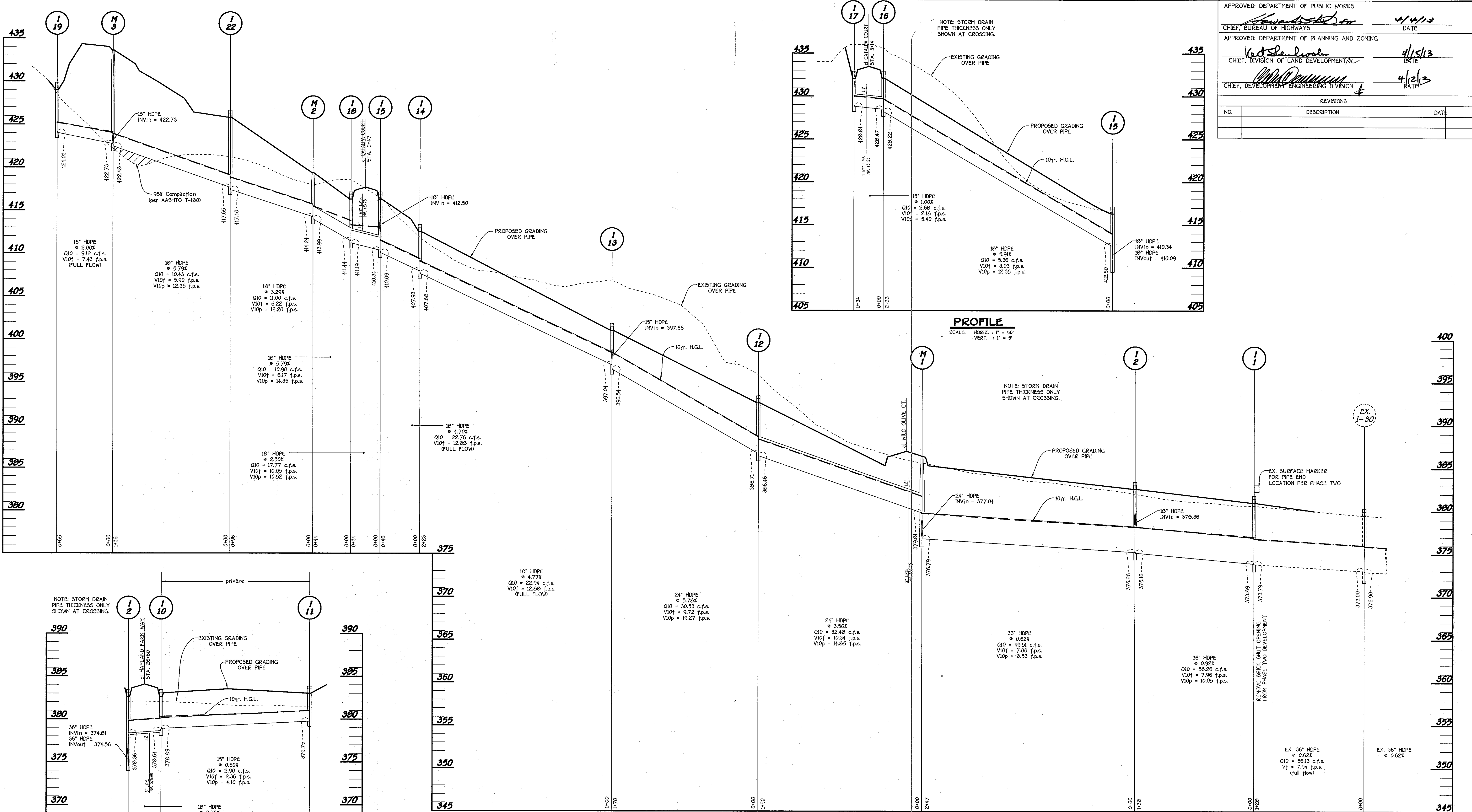
**Developer**  
Bassler Venture, LLC  
15950 North Avenue  
P.O. Box 482  
Lisbon, MD 21765  
410-489-7900

"Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2015."



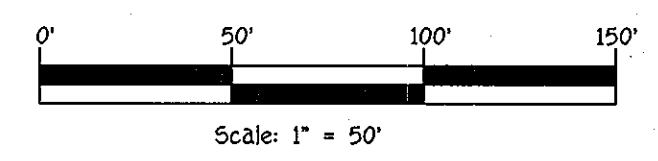
DATE: 4/15/13

APPROVED: DEPARTMENT OF PUBLIC WORKS		
CHIEF, BUREAU OF HIGHWAYS	<i>[Signature]</i>	4/14/13 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
CHIEF, DIVISION OF LAND DEVELOPMENT	<i>[Signature]</i>	4/15/13 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	<i>[Signature]</i>	4/12/13 DATE
REVISIONS		
NO.	DESCRIPTION	DATE



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

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



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CENTRAL SQUARE OFFICE PARK - 16072 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21041  
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BV Business Trust  
15950 North Avenue  
P.O. Box 482  
Lisbon, MD 21765  
410-489-7900

**Developer**  
Bassler Venture, LLC  
15950 North Avenue  
P.O. Box 482  
Lisbon, MD 21765  
410-489-7900

Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2015.



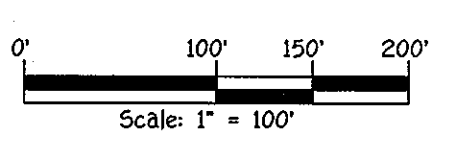
DATE: 4/13

**STORM DRAIN PROFILES**  
**WALNUT CREEK**  
PHASE THREE  
Lots 69 - 114,  
Non-Buildable Preservation Parcels 'O' Thru 'V' & 'V',  
Non-Buildable Parcel 'S', Buildable Preservation Parcel 'U'  
And Buildable Bulk Parcel 'U'  
(A Resubdivision of Buildable Bulk Parcel 'U' - Walnut Creek, Phase Two)  
(A Revision to Non-Buildable Preservation Parcels 'L' and 'T' - Walnut Creek, Phase Two)  
ZONED: RC-DEO & R2-DEO  
TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, and 18 PARCEL No. 49  
FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
DATE: FEBRUARY 26, 2013  
SHEET 15 OF 25

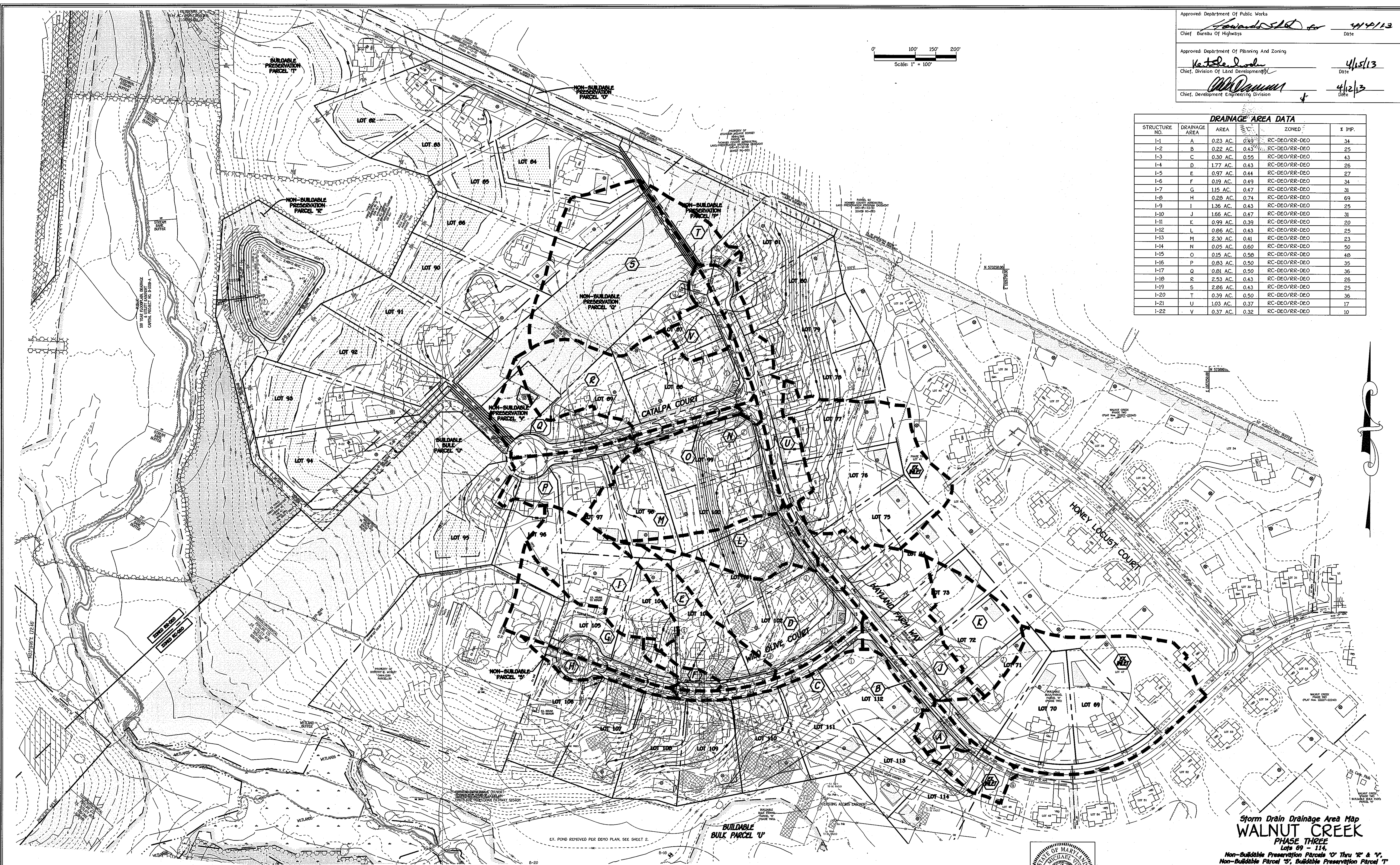
Approved: Department Of Public Works  
*Howard Selt* for 4/14/13  
 Chief Bureau Of Highways Date

Approved: Department Of Planning And Zoning  
*Kate Leonard* 4/15/13  
 Chief, Division Of Land Development Date

*Al M. Vitucci* 4/12/13  
 Chief, Development Engineering Division Date



DRAINAGE AREA DATA				
STRUCTURE NO.	DRAINAGE AREA	AREA	ZONED	% IMP.
I-1	A	0.23 AC.	RC-DEO/RR-DEO	34
I-2	B	0.22 AC.	RC-DEO/RR-DEO	25
I-3	C	0.30 AC.	RC-DEO/RR-DEO	43
I-4	D	1.77 AC.	RC-DEO/RR-DEO	26
I-5	E	0.97 AC.	RC-DEO/RR-DEO	27
I-6	F	0.19 AC.	RC-DEO/RR-DEO	34
I-7	G	1.15 AC.	RC-DEO/RR-DEO	31
I-8	H	0.28 AC.	RC-DEO/RR-DEO	69
I-9	I	1.36 AC.	RC-DEO/RR-DEO	25
I-10	J	1.66 AC.	RC-DEO/RR-DEO	31
I-11	K	0.99 AC.	RC-DEO/RR-DEO	20
I-12	L	0.86 AC.	RC-DEO/RR-DEO	25
I-13	M	2.30 AC.	RC-DEO/RR-DEO	23
I-14	N	0.05 AC.	RC-DEO/RR-DEO	50
I-15	O	0.15 AC.	RC-DEO/RR-DEO	48
I-16	P	0.83 AC.	RC-DEO/RR-DEO	35
I-17	Q	0.81 AC.	RC-DEO/RR-DEO	36
I-18	R	2.53 AC.	RC-DEO/RR-DEO	26
I-19	S	2.86 AC.	RC-DEO/RR-DEO	25
I-20	T	0.39 AC.	RC-DEO/RR-DEO	36
I-21	U	1.03 AC.	RC-DEO/RR-DEO	17
I-22	V	0.37 AC.	RC-DEO/RR-DEO	10



**Storm Drain Drainage Area Map  
 WALNUT CREEK  
 PHASE THREE  
 Lots 69 - 114**

**Non-Buildable Preservation Parcels 'O' Thru 'R' & 'V',  
 Non-Buildable Parcel 'S', Buildable Preservation Parcel 'T'  
 And Buildable Bulk Parcel 'U'**

(A Resubdivision of Buildable Bulk Parcel 'U' - Walnut Creek, Phase Two)  
 PRT Nos. Thru  
 (A Revision to Non-Buildable Preservation Parcels 'L' & 'M' - Walnut Creek, Phase Two)  
 PRT Nos. Thru

ZONED: RC-DEO & RR-DEO  
 TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: FEBRUARY 26, 2013  
 SHEET 16 OF 25

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE, FLOOR 1072 BALTIMORE NATIONAL FIRE  
 ELLICOTT CITY, MARYLAND 21114  
 410.461.2855

**Owner**  
 BV Business Trust  
 15950 North Avenue  
 P.O. Box 482  
 Lubbock, MD 21765  
 410-489-7900

**Developer**  
 Bessler Venture, LLC  
 15950 North Avenue  
 P.O. Box 482  
 Lubbock, MD 21765  
 410-489-7900

**PLAN**  
 SCALE: 1" = 100'

"Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2015."



*Al M. Vitucci*  
 DATE: 4/15/13

## 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 rippers mounted on construction equipment. After the soil is loosened, it must be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
  - Apply fertilizer and lime as prescribed on the 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 loess will be planted, then a sandier soil (less than 40 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.
  - Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seeded preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seeded loosening may be unnecessary on newly disturbed areas.

### B. Topsoiling

- Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
- Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
- Topsoiling is limited to areas having 2:1 or flatter slopes where:
  - The texture of the exposed subsoil/parent material is not adequate to 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 cinders, stones, silt, 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.

- Soil Amendments (Fertilizer and Lime Specifications)
  - Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
  - Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
  - Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent total oxides pass through a #20 mesh sieve and 98 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 1000 square feet) prior to the placement of topsoil.

### C. Soil Amendments (Fertilizer and Lime Specifications)

- Temporary Seeding Summary
 

Hardness Zone (from Figure B.3)	Seed Mixture (from Table B.1)	Fertilizer Rate (10-20-20)	Lime Rate	
8	TALL FESCUE	45 lbs. per acre (10 lb/1000 sf)	90 lb/acre (2 lb/1000 sf)	2 tons/acre (100 lb/1000 sf)
- 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 alone as prescribed in Section B-4-3.1.B and maintain until the next seeding season.

### PERMANENT SEEDING NOTES (B-4-3)

- 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 3 1/2 pounds per 1000 square feet (50 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
- Turfgrass Mixtures
  - Areas where turfgrasses 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.
  - Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 15 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
  - Kentucky Bluegrass/Perennial Ryegrass: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
  - Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes Certified Tall Fescue Cultivars 90 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
  - Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes: Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1 1/2 to 3 pounds per 1000 square feet.
- Notes
 

Select turfgrass varieties from those listed in the most current University of Maryland Publication Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.
- Ideal Times of Seeding for Turf Grass Mixtures
 

Western MD: March 15 to June 1, August 1 to October 1  
 Hardness Zone: 5b, 6a Central MD: March 1 to May 15, August 15 to October 15  
 Hardness Zone: 6a Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15  
 Hardness Zone: 7a, 7b
- Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 1/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
- If soil moisture is deficient, supply new seedlings with adequate water for plant growth (1/2 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

## PERMANENT SEEDING NOTES (B-4-3)

- 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 3 1/2 pounds per 1000 square feet (50 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.

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  - Areas where turfgrasses may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
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  - Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes Certified Tall Fescue Cultivars 90 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.
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- Notes
 

Select turfgrass varieties from those listed in the most current University of Maryland Publication Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

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 Hardness Zone: 5b, 6a Central MD: March 1 to May 15, August 15 to October 15  
 Hardness Zone: 6a Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15  
 Hardness Zone: 7a, 7b

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- Soil Amendments (Fertilizer and Lime Specifications)
  - Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
  - Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
  - Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent total oxides pass through a #20 mesh sieve and 98 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 1000 square feet) prior to the placement of topsoil.

- Temporary Seeding Summary
 

Hardness Zone (from Figure B.3)	Seed Mixture (from Table B.1)	Fertilizer Rate (10-20-20)	Lime Rate	
8	TALL FESCUE	45 lbs. per acre (10 lb/1000 sf)	90 lb/acre (2 lb/1000 sf)	2 tons/acre (100 lb/1000 sf)

- Definition
 

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- Temporary Seeding Summary
 

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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 alone as prescribed in Section B-4-3.1.B and maintain until the next seeding season.

- Soil Amendments (Fertilizer and Lime Specifications)
  - Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
  - Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
  - Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent total oxides pass through a #20 mesh sieve and 98 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 1000 square feet) prior to the placement of topsoil.

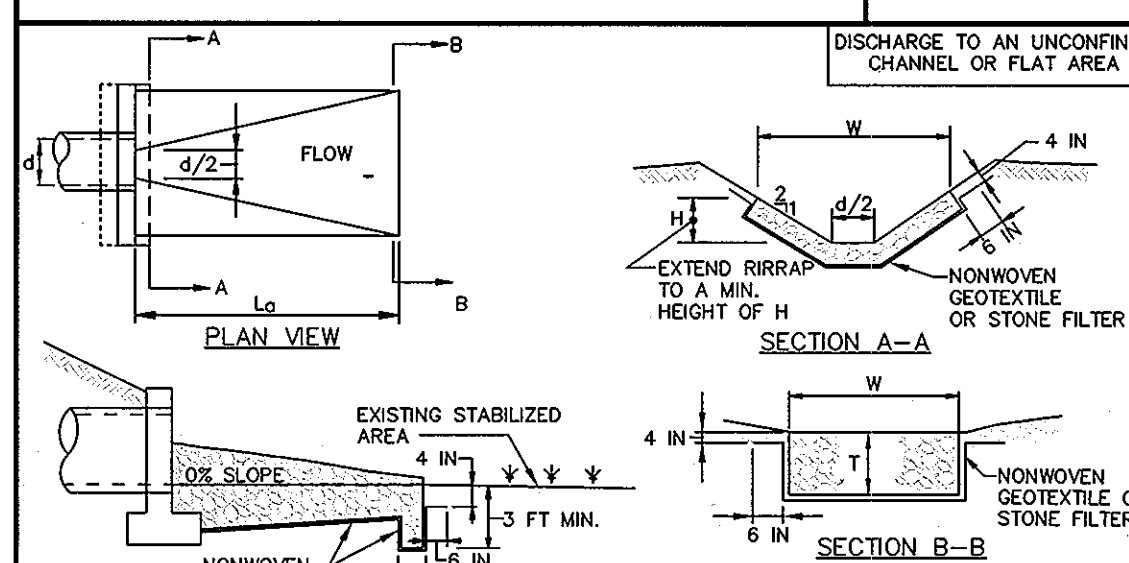
- Temporary Seeding Summary
 

Hardness Zone (from Figure B.3)	Seed Mixture (from Table B.1)	Fertilizer Rate (10-20-20)	Lime Rate	
8	TALL FESCUE	45 lbs. per acre (10 lb/1000 sf)	90 lb/acre (2 lb/1000 sf)	2 tons/acre (100 lb/1000 sf)

- Definition
 

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

## DETAIL D-4-1-C ROCK OUTLET PROTECTION III



CLASS	THICKNESS (T)
I	19 IN
II	32 IN
III	48 IN

- CONSTRUCTION SPECIFICATIONS
  - RRIPRAP AND STONE MUST CONFORM TO THE SPECIFIED CLASS.
  - USE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS, AND PROTECT FROM PUNCTURING, CUTTING OR TEARING. REPAIR ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGED PART OR BY COMPLETELY REPLACING THE GEOTEXTILE. PROVIDE A MINIMUM OF ONE FOOT OVERLAP FOR ALL REPAIRS AND FOR JOINING TWO PIECES OF GEOTEXTILE TOGETHER.
  - PREPARE THE SUBGRADE FOR GEOTEXTILE OR STONE FILTER (3/4 TO 1 1/2 INCH MINIMUM STONE FOR 6 INCH MINIMUM DEPTH) AND RRIPRAP TO THE REQUIRED LINES AND GRADES. COMPACT ANY FILL REQUIRED IN THE SUBGRADE TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
  - EXTEND GEOTEXTILE AT LEAST 6 INCHES BEYOND EDGES OF RRIPRAP AND EMBED AT LEAST 4 INCHES AT SIDES OF RRIPRAP.
  - CONSTRUCT RRIPRAP OUTLET TO FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. PLACE STONE FOR RRIPRAP OUTLET IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENEOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. PLACE RRIPRAP IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEXTILE. HAND PLACE TO THE EXTENT NECESSARY.
  - WHERE NO ENDWALL IS USED, CONSTRUCT THE UPSTREAM END OF THE APRON SO THAT THE WIDTH IS TWO TIMES THE DIAMETER OF THE OUTLET PIPE, AND EXTEND THE STONE UNDER THE OUTLET BY A MINIMUM OF 18 INCHES.
  - CONSTRUCT APRON WITH 0% SLOPE ALONG ITS LENGTH AND WITHOUT OBSTRUCTIONS. PLACE STONE SO THAT IT BLENDS IN WITH EXISTING GROUND.
  - MAINTAIN LINE, GRADE, AND CROSS SECTION. KEEP OUTLET FREE OF EROSION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. AFTER HIGH FLOWS INSPECT FOR SCOUR AND RRIPRAP DISLOADED RRIPRAP. MAKE NECESSARY REPAIRS IMMEDIATELY.

- Notes
 

Select turfgrass varieties from those listed in the most current University of Maryland Publication Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line.

- Ideal Times of Seeding for Turf Grass Mixtures
 

Western MD: March 15 to June 1, August 1 to October 1  
 Hardness Zone: 5b, 6a Central MD: March 1 to May 15, August 15 to October 15  
 Hardness Zone: 6a Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15  
 Hardness Zone: 7a, 7b

- Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1 1/2 inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.

- If soil moisture is deficient, supply new seedlings with adequate water for plant growth (1/2 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

- Soil Amendments (Fertilizer and Lime Specifications)
  - Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.
  - Fertilizers must be uniform in composition, free flowing and suitable for accurate application by appropriate equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers must all be delivered to the site fully labeled according to the applicable laws and must bear the name, trade name or trademark and warranty of the producer.
  - Lime materials must be ground limestone (hydrated or burnt lime may be substituted except when hydroseeding) which contains at least 50 percent total oxides (calcium oxide plus magnesium oxide). Limestone must be ground to such fineness that at least 50 percent total oxides pass through a #20 mesh sieve and 98 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 1000 square feet) prior to the placement of topsoil.

- Temporary Seeding Summary
 

Hardness Zone (from Figure B.3)	Seed Mixture (from Table B.1)	Fertilizer Rate (10-20-20)	Lime Rate	
8	TALL FESCUE	45 lbs. per acre (10 lb/1000 sf)	90 lb/acre (2 lb/1000 sf)	2 tons/acre (100 lb/1000 sf)

- Definition
 

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

- Purpose
 

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

- <



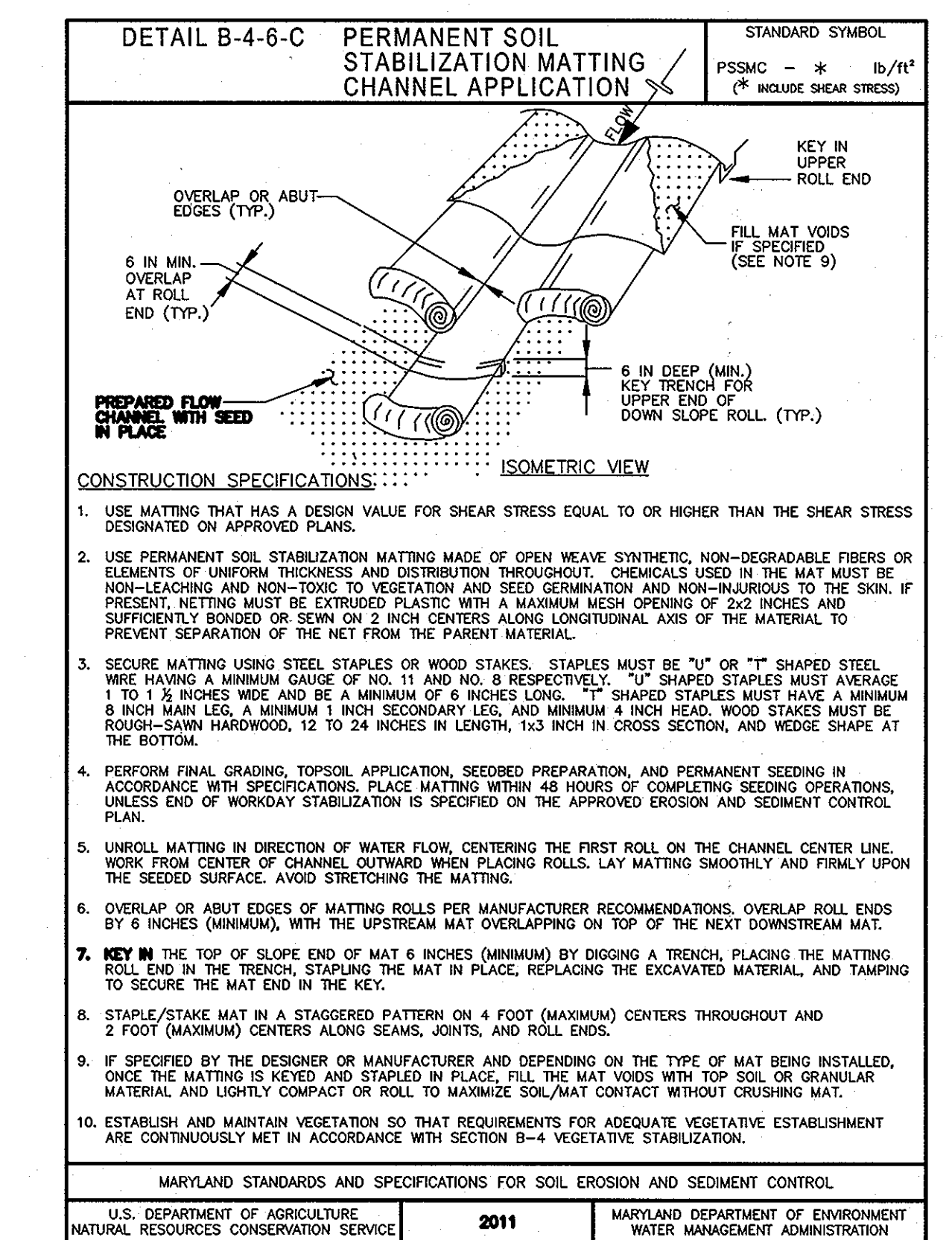
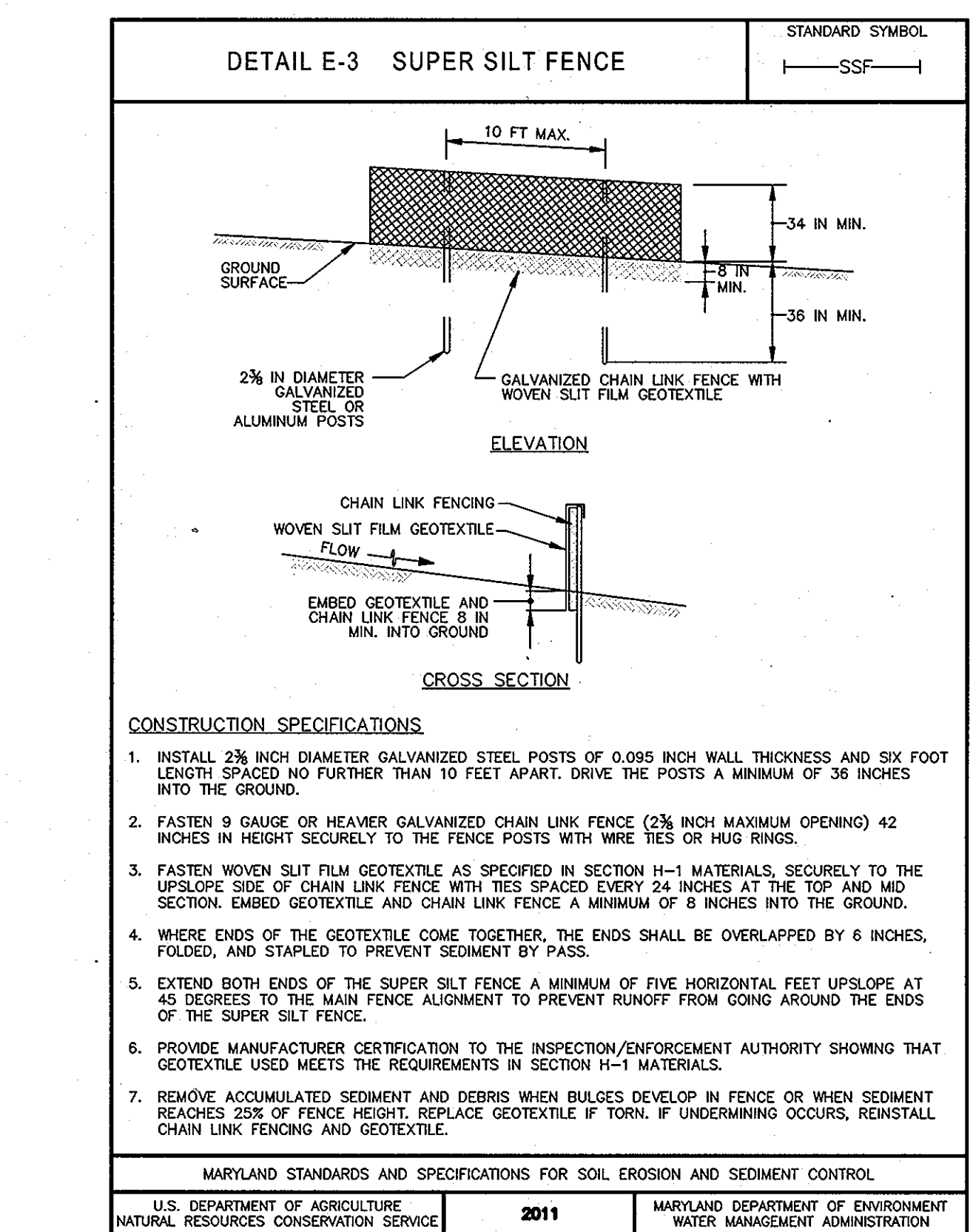
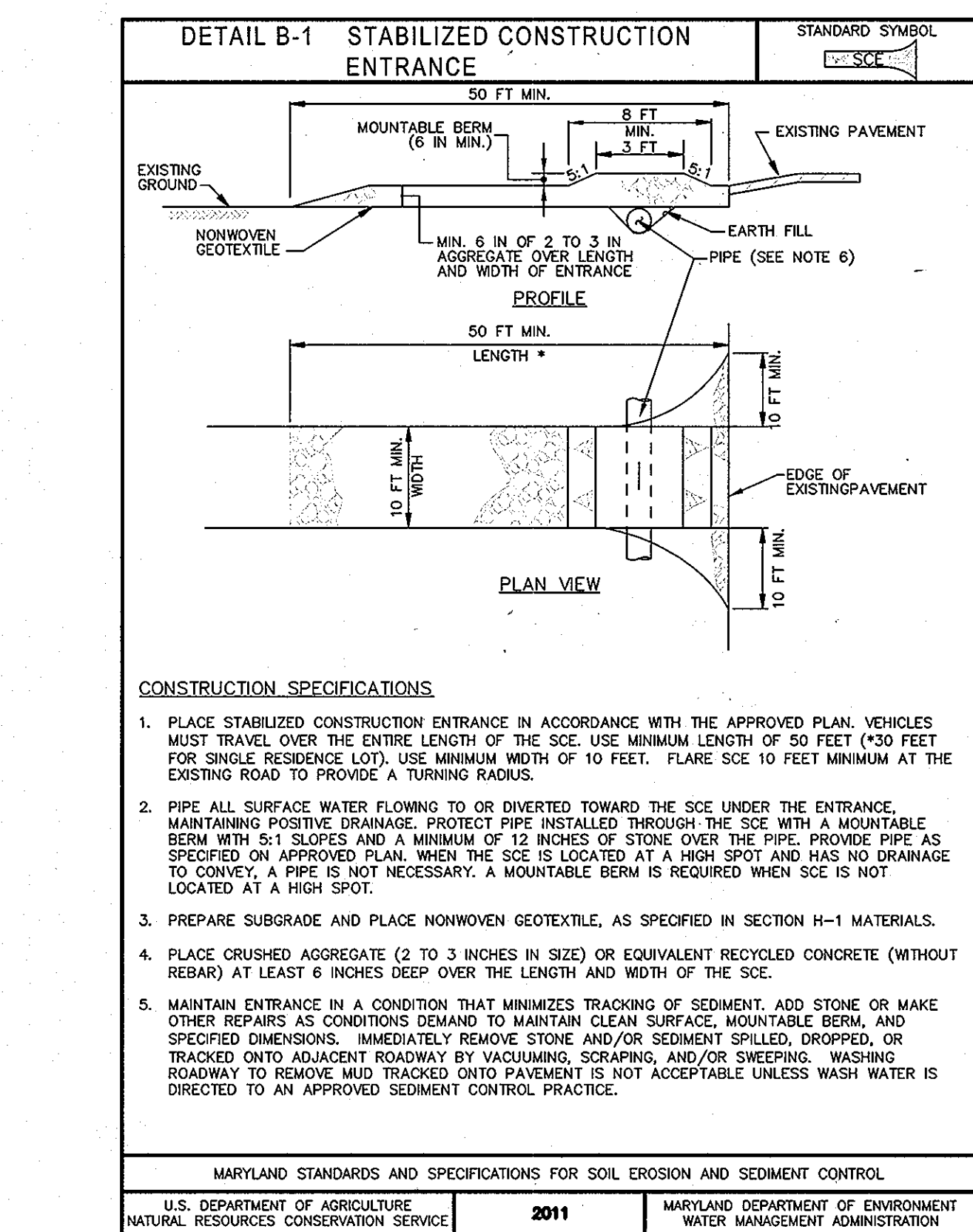
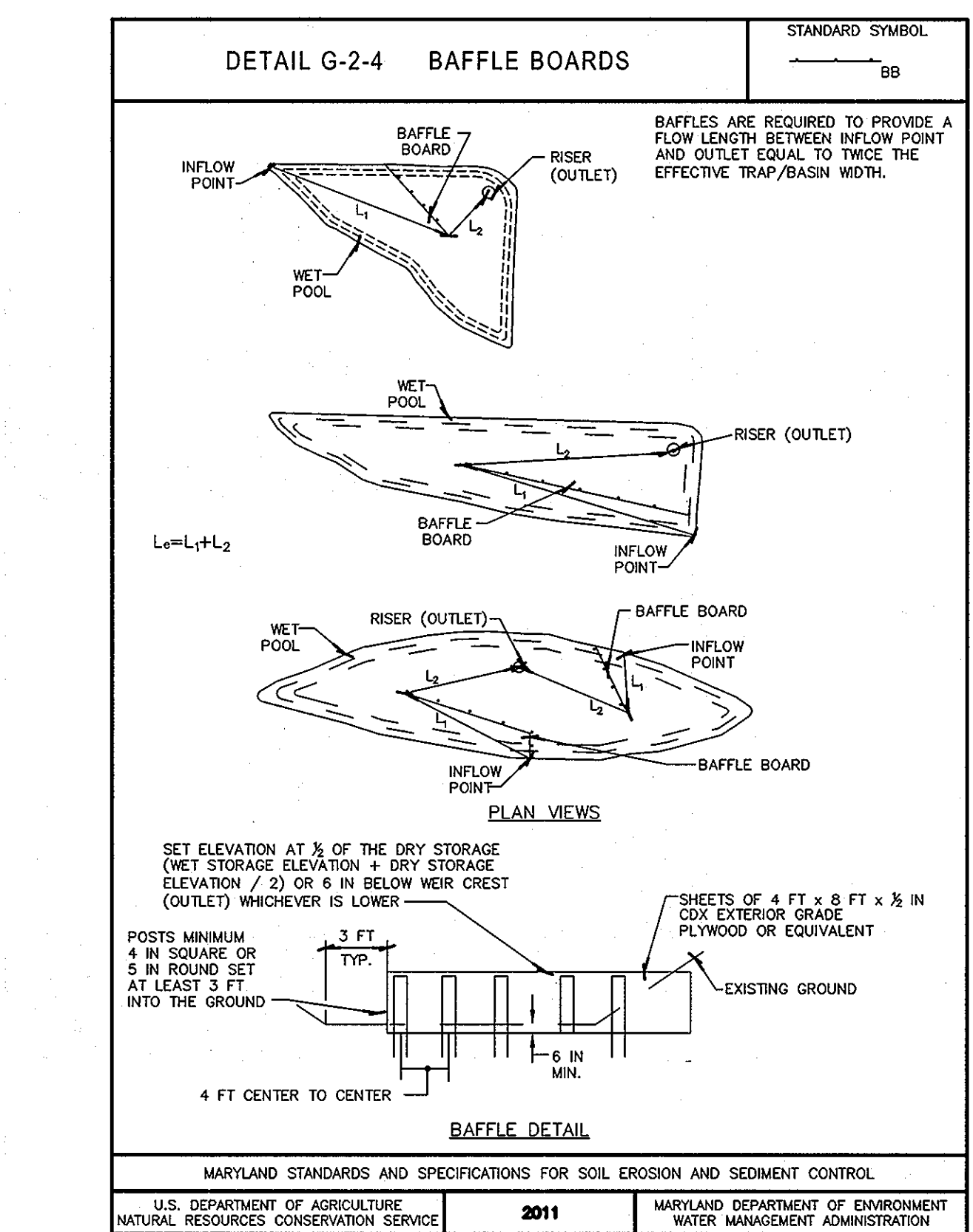
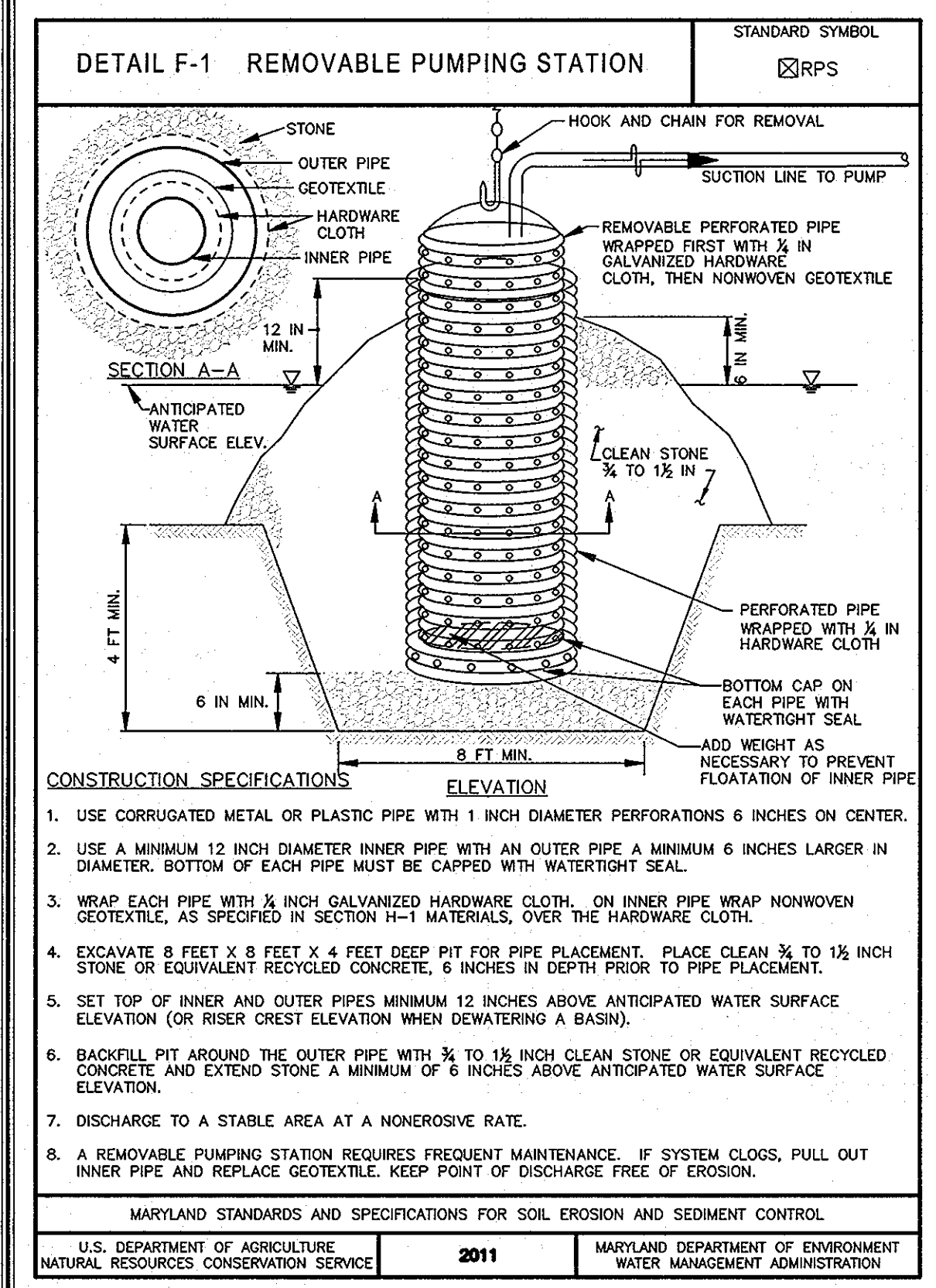
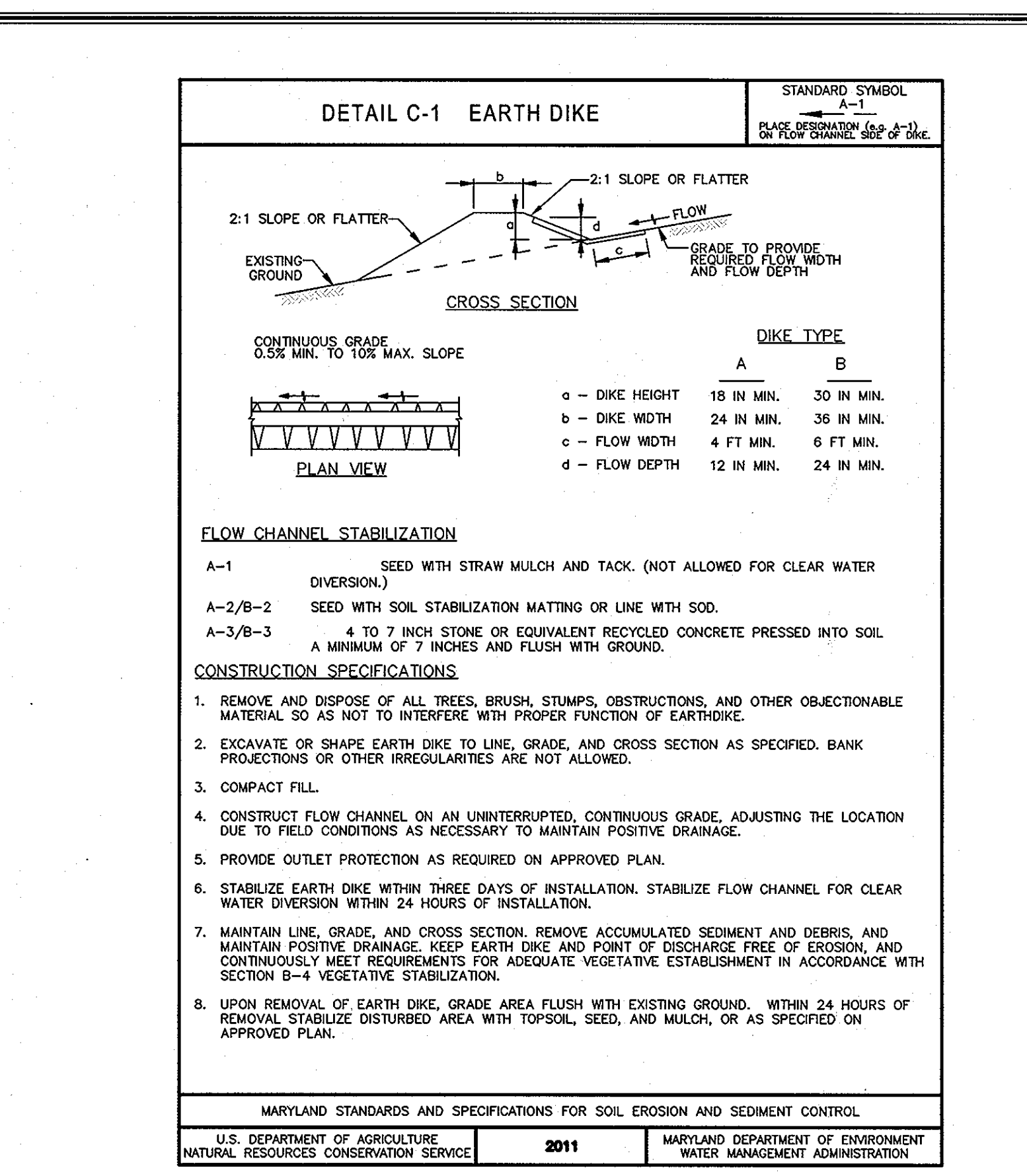
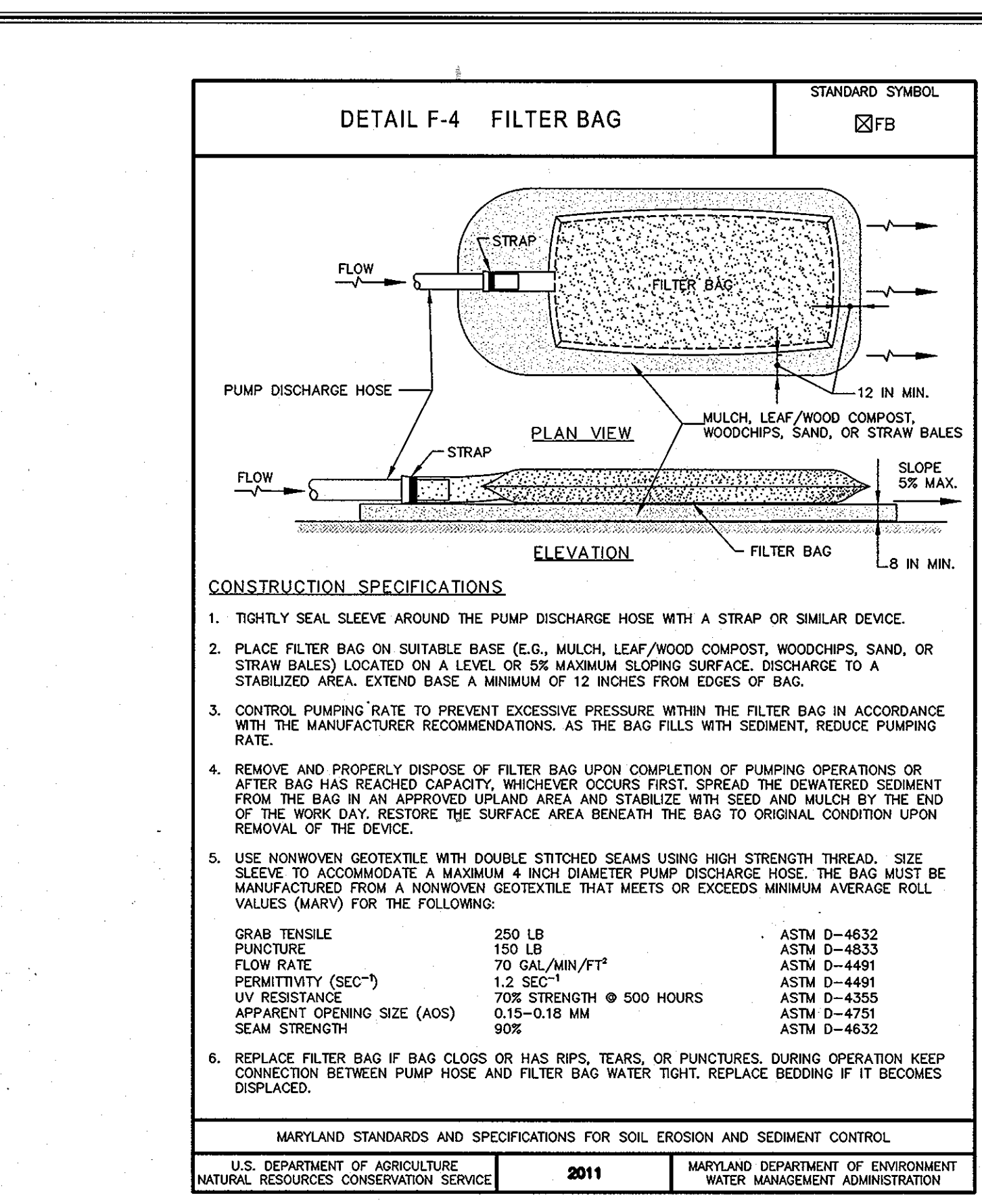
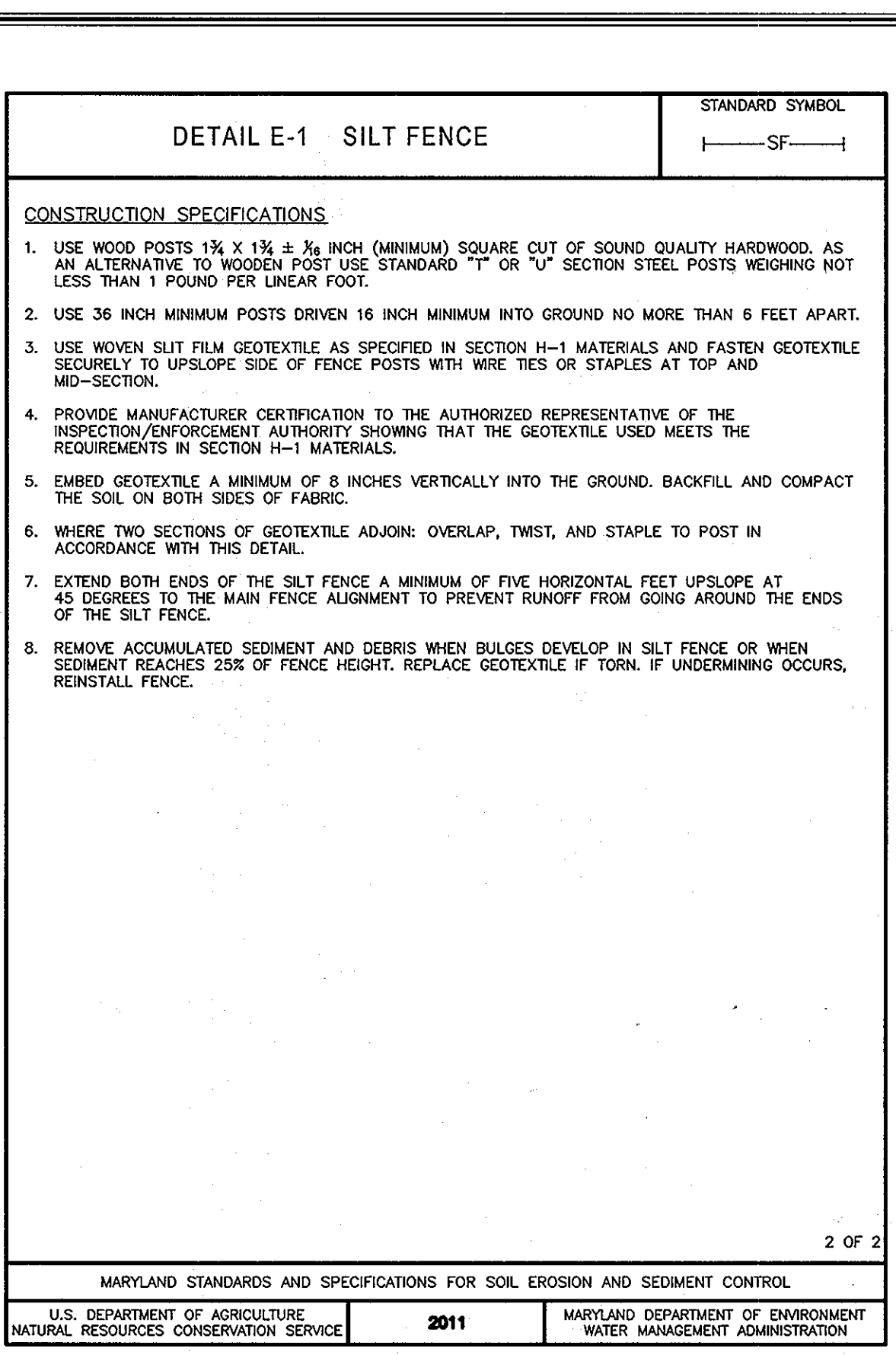
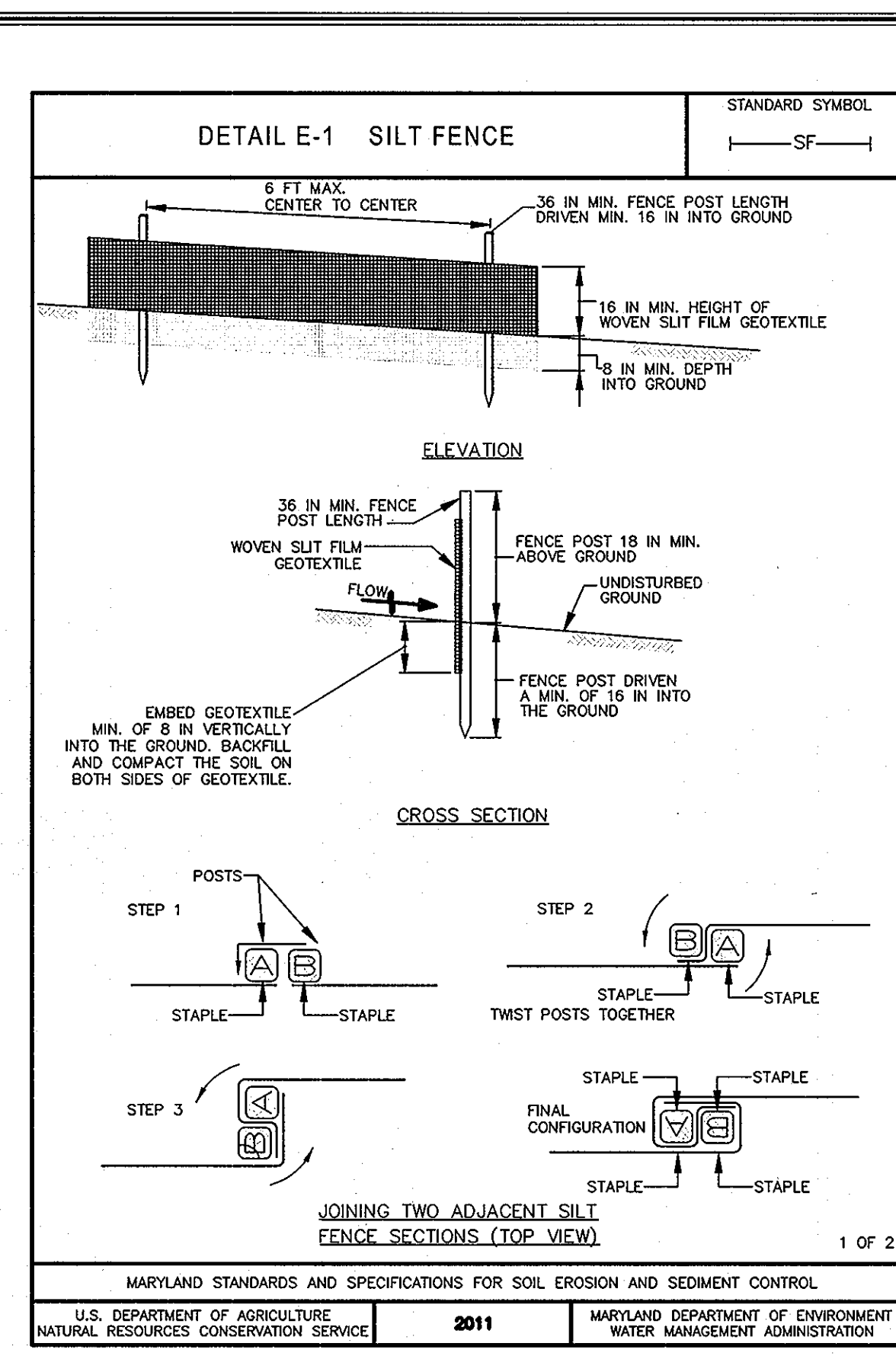
**ENGINEER'S CERTIFICATE**  
 I have prepared this Plan For Erosion And Sediment Control...  
 Date: 2/21/13

**DEVELOPER'S CERTIFICATE**  
 I/We Certify That All Development And Construction Will Be Done...  
 Date: 2-28-13

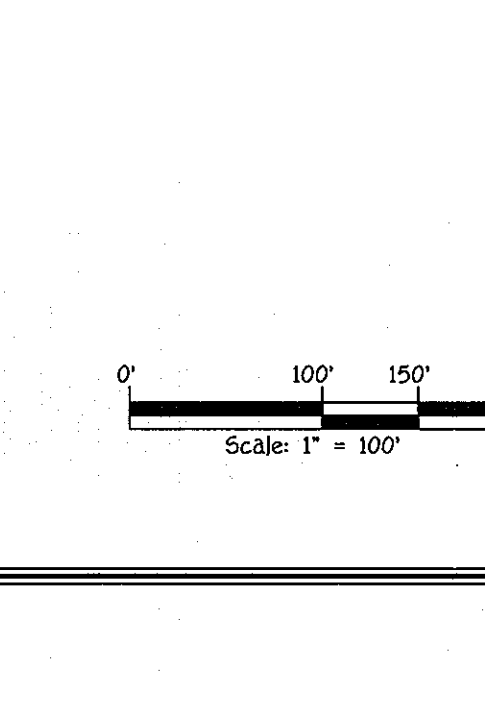
Approved: This Development Is Approved For Erosion And Sediment Control...  
 Date: 4/2/13

Approved: Department Of Planning And Zoning...  
 Date: 4/5/13

Approved: Howard County Department Of Public Works...  
 Date: 4/4/13



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL RICE BLVD. CITY, MARYLAND 21092  
 (410) 461-2255



**Owner**  
 BV Business Trust  
 15950 North Avenue  
 P.O. Box 492  
 Lisbon, MD 21765  
 410-489-7900

**Developer**  
 Bässler Venture, LLC  
 15950 North Avenue  
 P.O. Box 492  
 Lisbon, MD 21765  
 410-489-7900

**Professional Certification** I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2015.

**ALDO M. VITUCCI, P.E.**  
 DATE: 2/21/13

**SEDIMENT CONTROL NOTES AND DETAILS**  
**WALNUT CREEK**  
**PHASE THREE**  
 Lots 69, 114, 115  
 Non-Buildable Preservation Parcel 'O' Thru 'Z' & 'Y',  
 Non-Buildable Parcel '3', Buildable Preservation Parcel 'T'  
 And Buildable Parcels 'U'  
 (A Revision to Non-Buildable Preservation Parcels 'L' and 'M' - Walnut Creek, Phase Two)  
 File No. 114  
 ZONED: RC-DE & R2-DEO  
 TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49  
 FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND  
 DATE: FEBRUARY 25, 2013  
 SHEET 18 OF 25

**SEDIMENT CONTROL NOTES AND DETAILS**  
**WALNUT CREEK**  
**PHASE THREE**  
 Lots 69, 114, 115  
 Non-Buildable Preservation Parcel 'O' Thru 'Z' & 'Y',  
 Non-Buildable Parcel '3', Buildable Preservation Parcel 'T'  
 And Buildable Parcels 'U'  
 (A Revision to Non-Buildable Preservation Parcels 'L' and 'M' - Walnut Creek, Phase Two)  
 File No. 114  
 ZONED: RC-DE & R2-DEO  
 TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49  
 FIFTH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND  
 DATE: FEBRUARY 25, 2013  
 SHEET 18 OF 25

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 4/10/13

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 4/15/13

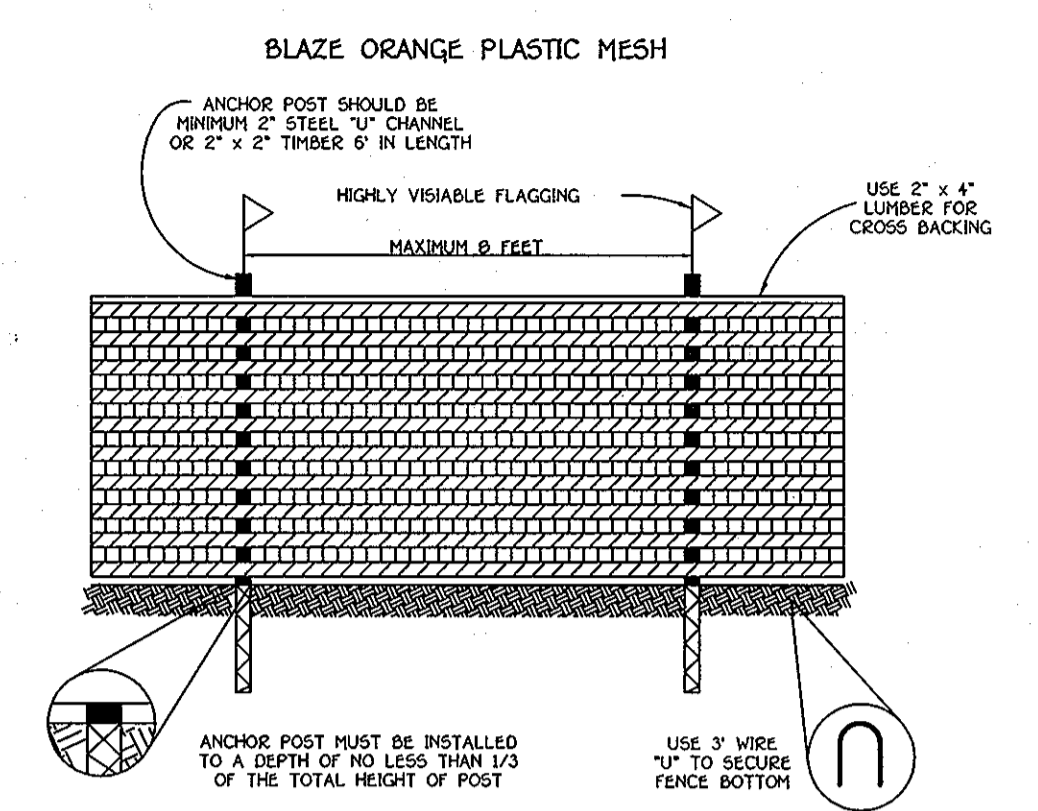
APPROVED: CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 4/12/13

Note: THE FOREST CONSERVATION EASEMENT(S) 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.

**Reforestation Note:**  
 The reforestation obligation will be met within priority planting areas on the site. This includes floodplain, wetland and buffers.

MATCHLINE SEE SHEET 20

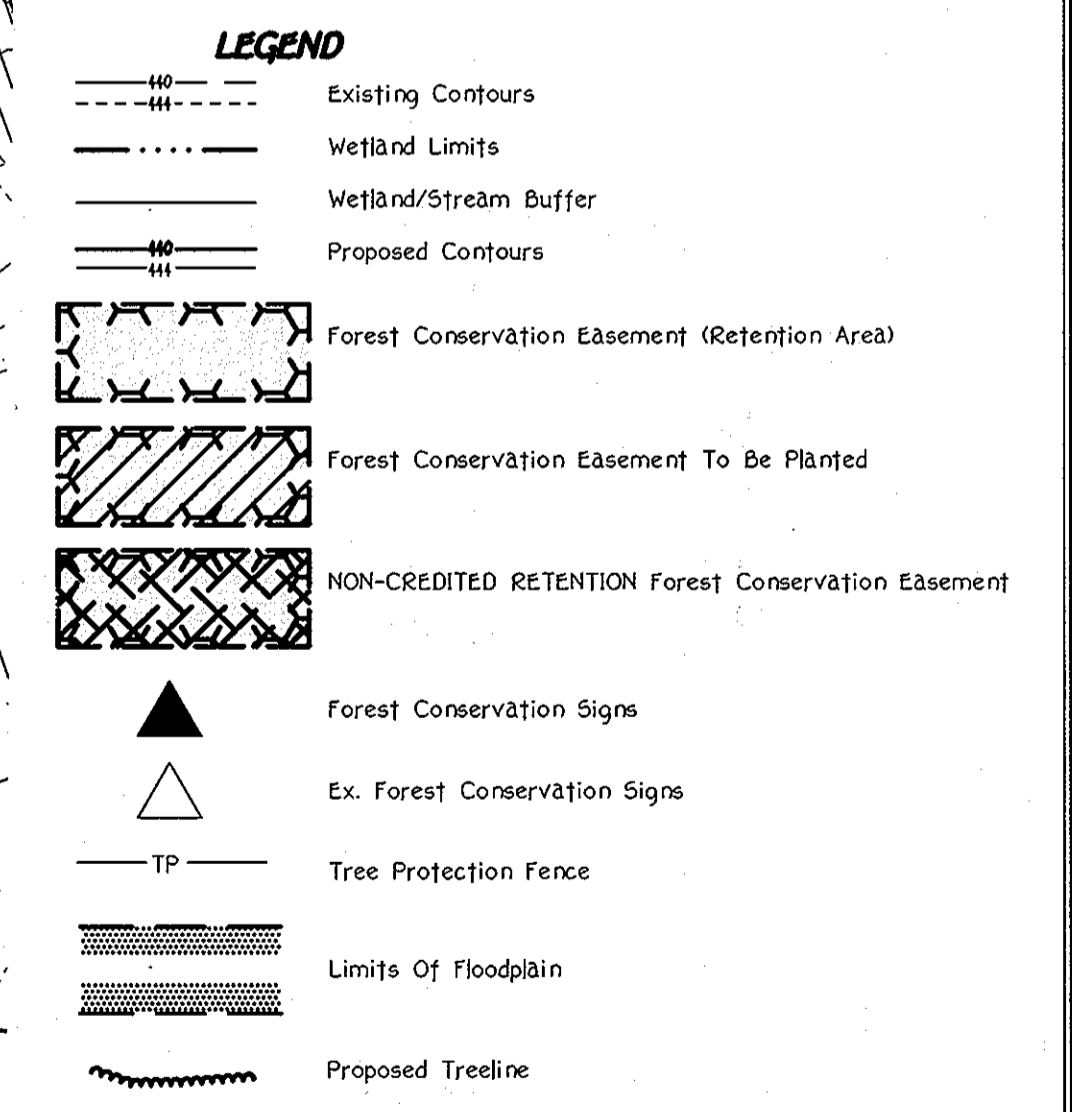
Specimen Tree Chart		
Key	Species/size	Comments
A	White oak, 44 inch dbh	fair condition, some dieback, poor crown spread
B	Tulip poplar, 30 inch dbh	good condition
C	Tulip poplar, 40 inch dbh	poor condition
D	Tulip poplar, 74 inch dbh	poor condition, substantial dieback and poor canopy spread



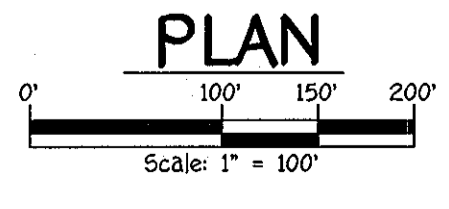
- NOTES:**
- FOREST PROTECTION DEVICE ONLY.
  - RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
  - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
  - ROOT DAMAGE SHOULD BE AVOIDED.
  - PROTECTIVE SIGNAGE SHOULD ALSO BE USED.
  - DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.
- TREE PROTECTION DETAIL**  
 NOT TO SCALE

- 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 limits 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 the entire subdivision will be fulfilled by providing 59,57 acres of on-site forest retention and 31,565 acres of on-site reforestation for a total of 91,133 acres.
  - A total surety for On-site Reforestation = \$0.50/sf for 1,379,110 sf. = \$689,555.00 is required.

CREATED ON-SITE RETENTION OF 17.50 ACRES OF FOREST AND 9.30 ACRES OF ON-SITE AFFORESTATION. CALCULATION USED FOR PHASE THREE FOREST REQUIREMENT:  
 59,57 TOTAL RETENTION ACRES/60 TOTAL UNITS = 0.9761 47 UNITS X 0.9761 = 47.50 AC.  
 31,565 TOTAL PLANTING ACRES/60 TOTAL UNITS = 0.5261 47 UNITS X 0.5261 = 24.73 AC.  
 A SURETY FOR ON-SITE AFFORESTATION = \$0.50/SF FOR 405,000 SF. = \$202,500.00 IS REQUIRED. THE FOREST CONSERVATION SURETY IN THE AMOUNT OF \$202,500.00 IS TO BE PAID AS PART OF THE DPV DEVELOPER'S AGREEMENT.



**FOREST CONSERVATION PLAN**  
**WALNUT CREEK**  
**PHASE THREE**  
 Lots 69 - 114  
 Non-Buildable Preservation Parcels 'O' Thru 'R' & 'V',  
 Non-Buildable Parcel 'S', Buildable Preservation Parcel 'T'  
 And Buildable Bulk Parcel 'U'  
 (A Resubdivision of Buildable Bulk Parcel 'Y' - Walnut Creek, Phase Two)  
 FRI Nos. 114  
 (A Revision to Non-Buildable Preservation Parcels 'L' and 'M' - Walnut Creek, Phase Two, FRI Nos. 114)  
 ZONED: RC-DEO & RR-DEO  
 TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 19 PARCEL No. 49  
 FIFTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: FEBRUARY 26, 2013  
 SHEET 19 OF 25



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL, ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PARK  
 ELKROTT CITY, MARYLAND 21042  
 (410) 461-2255

**Eco-Science Professionals, Inc.**  
 CONSULTING ECOLOGISTS

MD DNR Qualified Professional  
 USACOE Wetland Delimitator  
 Certification # WD093100610044B  
 Date: 3/1/13  
 JOHN CANALES

**Owner**  
 BV Business Trust  
 19550 North Avenue  
 P.O. Box 482  
 Lisbon, MD 21765  
 410-489-7900

**Developer**  
 Baseler Venture, LLC  
 19550 North Avenue  
 P.O. Box 482  
 Lisbon, MD 21765  
 410-489-7900

"Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20740, Expiration Date: February 22, 2015."

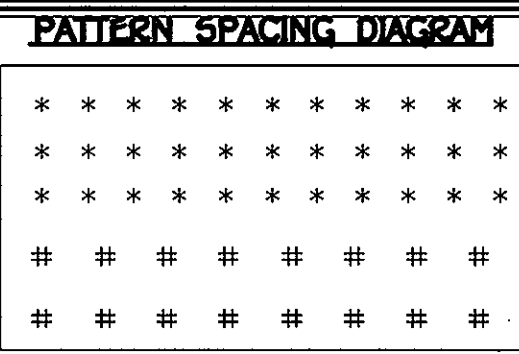


4/15/13  
 DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 4/11/13

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 4/15/13

APPROVED: CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 4/12/13



**Planting/Soil Specifications**

1. Installation of bareroot plant stock shall take place between March 15 - April 20. b&b/container stock March 15 - May 30 or September 15 - November 15. Fall planting of b&b stock is not recommended.
2. Disturbed areas shall be seeded and stabilized as per general construction plan for project. Planting areas not impacted by site grading shall have no additional topsoil installed.
3. Bareroot 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 a parts existing soil to 1 part pine fines or equivalent.
4. Fertilizer shall consist of Agriform 22-0-2, or equivalent, applied as per manufacturer's specifications, for woody plants. Herbaceous plants shall be fertilized with Gosmore 0-5-2.
5. Plant material shall be transported to the site in a tarped or covered truck. Plants shall be kept moist prior to planting.
6. All non-organic debris associated with the planting operation shall be removed from the site by the contractor.

**Sequence of Construction**

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

**Maintenance of Plantings**

1. Maintenance of plantings shall last for a period of 2 years.
2. Plantings must receive 2 gallons of water, either through precipitation or watering, weekly during the 1st growing season, as needed. During second growing season, once a month during May-September, if needed.
3. 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.
4. 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.
5. Dead branches will be pruned from plantings.

**Guarantee Requirements**

1. A 75 percent survival rate of tree and shrub 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 Forestry**

1. The developer shall post a surety bond, letter of credit or ensure that forestry plantings are completed. SEE GENERAL NOTE 10, 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/soil specifications.

**FCE Planting Area # 12 - 1.63 acres**

Planting units required: 1134 (557 whips)  
 Planting units provided: 1134 (480 whips and 50 trees)

Qty	Species	Size	Spacing	Total FCA Units
25	Acer rubrum - Red maple	1" cal	15' o.c.	
25	Quercus alba - White oak	1" cal	15' o.c.	
50	Total 1" caliper trees (1.5 planting units per tree)			75 Total FCA unit credit
100	Acer rubrum - Red maple	2-3" whip	11' o.c.	
100	Cercis canadensis - Red bud	2-3" whip	11' o.c.	
80	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	
40	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	
40	Prunus serotina - Black cherry	2-3" whip	11' o.c.	
40	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	
20	Quercus alba - White oak	2-3" whip	11' o.c.	
20	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	
490	Total whip plantings (2 planting units per tree)			990 Total FCA unit credit
	Total Unit Credit			1134 (75 + 959)

1" CAL TREES = 200/ACRE (50 TREES/200 = 0.25 AC) 3.5 Planting units = 1 - 1" Cal Tree  
 WHPS w/shelters = 350/ACRE = 350 x 1.38 AC = 480 WHPS 2 Planting units = 1 Whip

**FCE Planting Area # 13 - 0.10 acres**

Planting units required: 70 (35 whips)  
 Planting units provided: 70 (35 whips)

Qty	Species	Size	Spacing	Total FCA Units
20	Acer rubrum - Red maple	2-3" whip	11' o.c.	
15	Cercis canadensis - Red bud	2-3" whip	11' o.c.	
35	Total whip plantings (2 planting units per tree)			70 Total FCA unit credit

**FCE Planting Area # 15 - 0.32 acres**

Planting units required: 224 (112 whips)  
 Planting units provided: 224 (112 whips)

Qty	Species	Size	Spacing	Total FCA Units
28	Acer rubrum - Red maple	2-3" whip	11' o.c.	
28	Cercis canadensis - Red bud	2-3" whip	11' o.c.	
28	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	
28	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	
112	Total whip plantings (2 planting units per tree)			224 Total FCA unit credit

**FCE Planting Area # 16 - 4.60 acres**

Planting units required: 3220 (1610 whips)  
 Planting units provided: 3220 (1260 whips and 200 trees)

Qty	Species	Size	Spacing	Total FCA Units
100	Acer rubrum - Red maple	1" cal	15' o.c.	
100	Quercus alba - White oak	1" cal	15' o.c.	
200	Total 1" caliper trees (1.5 planting units per tree)			300 Total FCA unit credit
200	Acer rubrum - Red maple	2-3" whip	11' o.c.	
200	Cercis canadensis - Red bud	2-3" whip	11' o.c.	
200	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	
200	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	
200	Prunus serotina - Black cherry	2-3" whip	11' o.c.	
150	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	
100	Quercus alba - White oak	2-3" whip	11' o.c.	
80	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	
1860	Total whip plantings (2 planting units per tree)			2520 Total FCA unit credit
	Total Unit Credit			3220 (300 + 2520)

1" CAL TREES = 200/ACRE (200 TREES/200 = 1.00 AC) 3.5 Planting units = 1 - 1" Cal Tree  
 WHPS w/shelters = 350/ACRE = 350 x 3.60 AC = 1260 WHPS 2 Planting units = 1 Whip

**FCE Planting Area # 17 - 2.65 acres**

Planting units required: 1862 (931 whips)  
 Planting units provided: 1862 (756 whips and 100 trees)

Qty	Species	Size	Spacing	Total FCA Units
50	Acer rubrum - Red maple	1" cal	15' o.c.	
50	Quercus alba - White oak	1" cal	15' o.c.	
100	Total 1" caliper trees (1.5 planting units per tree)			150 Total FCA unit credit
100	Acer rubrum - Red maple	2-3" whip	11' o.c.	
100	Cercis canadensis - Red bud	2-3" whip	11' o.c.	
100	Cornus florida - Flowering dogwood	2-3" whip	11' o.c.	
100	Liriodendron tulipifera - Tulip poplar	2-3" whip	11' o.c.	
100	Prunus serotina - Black cherry	2-3" whip	11' o.c.	
100	Robinia pseudo-acacia - Black locust	2-3" whip	11' o.c.	
70	Quercus alba - White oak	2-3" whip	11' o.c.	
70	Viburnum prunifolium - Blackhaw	2-3" whip	11' o.c.	
756	Total whip plantings (2 planting units per tree)			1512 Total FCA unit credit
	Total Unit Credit			1862 (150 + 1512)

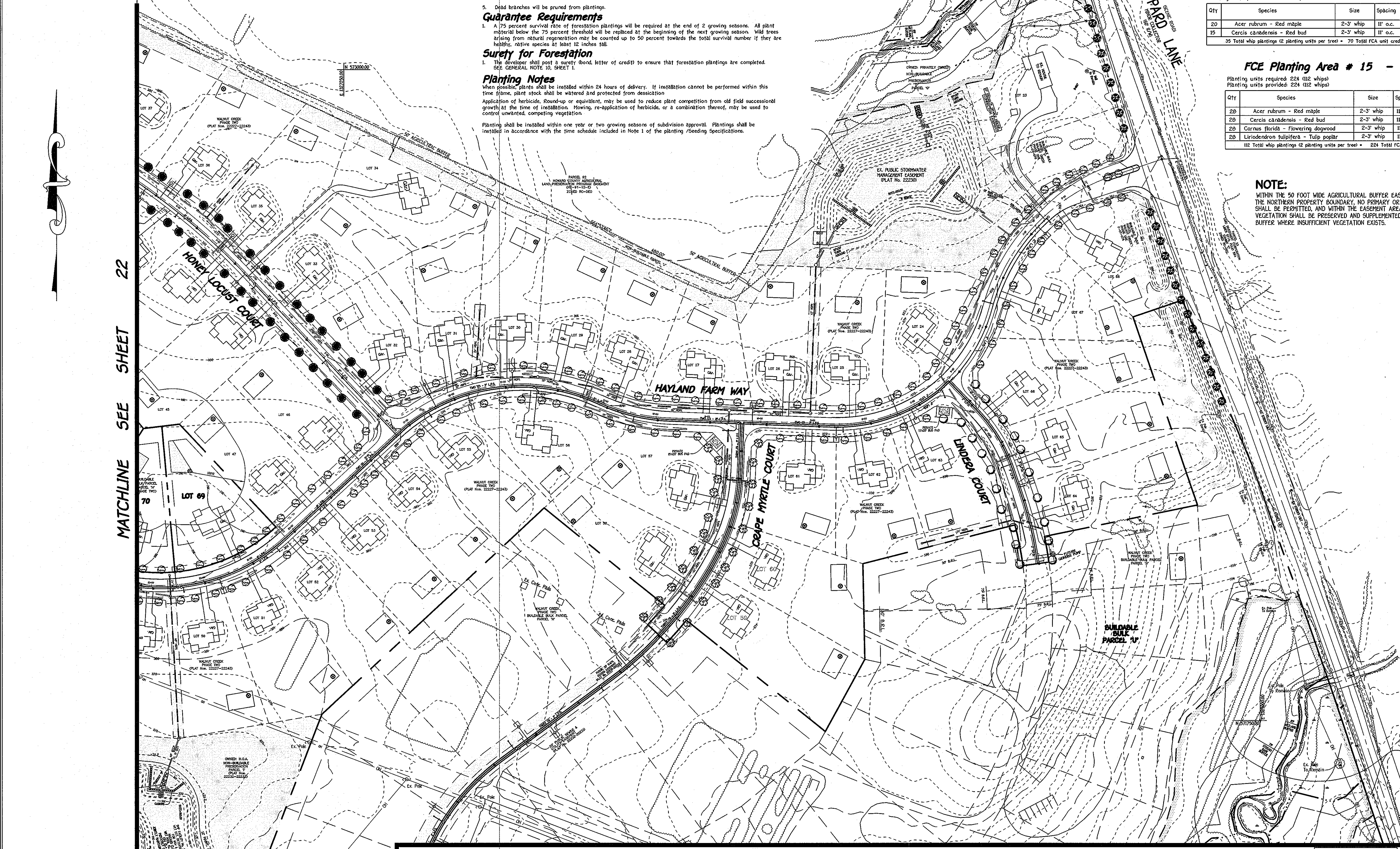
1" CAL TREES = 200/ACRE (200 TREES/200 = 1.00 AC) 3.5 Planting units = 1 - 1" Cal Tree  
 WHPS w/shelters = 350/ACRE = 350 x 2.15 AC = 756 WHPS 2 Planting units = 1 Whip

**FOREST CONSERVATION WORKSHEET**  
 (For the entire Walnut Creek subdivision)

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	435.0
B. DEDUCTIONS (CIRCUITARY AREA RESTRICTED BY LOCAL OR PROGRAM UTILITY TRANSMISSION LINE EASEMENTS)	93.7
C. NET TRACT AREA = NET TRACT AREA + TOTAL TRACT (A) - DEDUCTIONS (B)	341.3
LAND USE CATEGORY: MEDIUM DENSITY RESIDENTIAL	
D. AFFORESTATION THRESHOLD (NET TRACT AREA (C) x 20%)	68.3
E. CONSERVATION THRESHOLD (NET TRACT AREA (C) x 25%)	85.3
EXISTING FOREST COVER	
F. EXISTING FOREST COVER WITHIN THE NET TRACT AREA	75.4
G. AREA OF FOREST ABOVE CONSERVATION THRESHOLD	0
IF THE EXISTING FOREST COVER (F) IS GREATER THAN THE CONSERVATION THRESHOLD (E), THEN G = F - E; OTHERWISE G = 0.	
BREAK-EVEN POINT	
H. BREAK-EVEN POINT (AMOUNT OF FOREST THAT MUST BE RETAINED SO THAT NO MITIGATION IS REQUIRED)	0/0
(I) IF THE AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) IS GREATER THAN 0, THEN H = 0.2 x G. AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) - THE CONSERVATION THRESHOLD (E); OTHERWISE H = 0.	
(J) IF THE AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) IS EQUAL TO 0, THEN H = EXISTING FOREST COVER (F)	
I. FOREST CLEARING PERMITTED WITHOUT MITIGATION	0
K = EXISTING FOREST COVER (F) - BREAK-EVEN POINT (H)	0
PROPOSED FOREST CLEARING	
J. TOTAL AREA OF FOREST TO BE CLEARED	15.83
K. TOTAL AREA OF FOREST TO BE RETAINED	59.57
L = EXISTING FOREST COVER (F) - FOREST TO BE CLEARED (J)	
PLANTING REQUIREMENTS	
IF THE TOTAL AREA OF FOREST TO BE RETAINED (K) IS AT OR ABOVE THE BREAK-EVEN POINT (H), NO PLANTING IS REQUIRED, AND NO FURTHER CALCULATIONS ARE NECESSARY (L=0, M=0, N=0, P=0, Q=0, R=0).	
OTHERWISE, CALCULATE THE PLANTING REQUIREMENTS AS FOLLOWS:	
L. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION THRESHOLD	0
(1) IF THE TOTAL AREA OF FOREST TO BE RETAINED (K) IS GREATER THAN THE CONSERVATION THRESHOLD (E), THEN L = THE AREA OF FOREST TO BE CLEARED (J) x 0.25;	
(2) IF THE FOREST TO BE RETAINED (K) IS LESS THAN OR EQUAL TO THE CONSERVATION THRESHOLD (E), THEN L = AREA OF FOREST ABOVE CONSERVATION THRESHOLD (G) x 0.25	
M. REFORESTATION FOR CLEARING BELOW THE CONSERVATION THRESHOLD	31.66
(1) IF EXISTING FOREST COVER (F) IS GREATER THAN THE CONSERVATION THRESHOLD (E) AND THE FOREST TO BE RETAINED (K) IS LESS THAN OR EQUAL TO THE CONSERVATION THRESHOLD (E), THEN M = 2.0 x (CONSERVATION THRESHOLD (E) - FOREST TO BE RETAINED (K))	
(2) IF EXISTING FOREST COVER (F) IS LESS THAN OR EQUAL TO THE CONSERVATION THRESHOLD (E), THEN M = 2.0 x FOREST TO BE CLEARED (J)	
N. CREDIT FOR RETENTION ABOVE THE CONSERVATION THRESHOLD	0
IF THE AREA OF FOREST TO BE RETAINED (K) IS GREATER THAN THE CONSERVATION THRESHOLD (E), THEN N = K - E; OTHERWISE N = 0	
P. TOTAL REFORESTATION REQUIRED P = L + M - N	31.66
Q. TOTAL AFFORESTATION REQUIRED	0
IF EXISTING FOREST COVER (F) IS LESS THAN THE AFFORESTATION THRESHOLD (D), THEN Q = AFFORESTATION THRESHOLD (D) - EXISTING FOREST COVER (F)	
R. TOTAL PLANTING REQUIREMENT R = P + Q	31.66

NOTE: THIS PLAN IS USING "RURAL CLUSTER OPTION B" PER APPENDIX L OF THE FOREST CONSERVATION MANUAL FOR ITS FOREST REQUIREMENT CALCULATIONS WHICH INCLUDES THE AREA FOR ALL THE PRESERVATION PARCELS.

**NOTE:**  
 WITHIN THE 50 FOOT WIDE AGRICULTURAL BUFFER EASEMENT LOCATED ALONG THE WESTERN PROPERTY BOUNDARY, NO PRIMARY OR ACCESSORY STRUCTURES SHALL BE PERMITTED, AND WITHIN THE EASEMENT AREA, THE EXISTING HEDGEROW VEGETATION SHALL BE PRESERVED AND SUPPLEMENTED WITH A TYPE 'A' LANDSCAPE BUFFER WHERE INSUFFICIENT VEGETATION EXISTS.

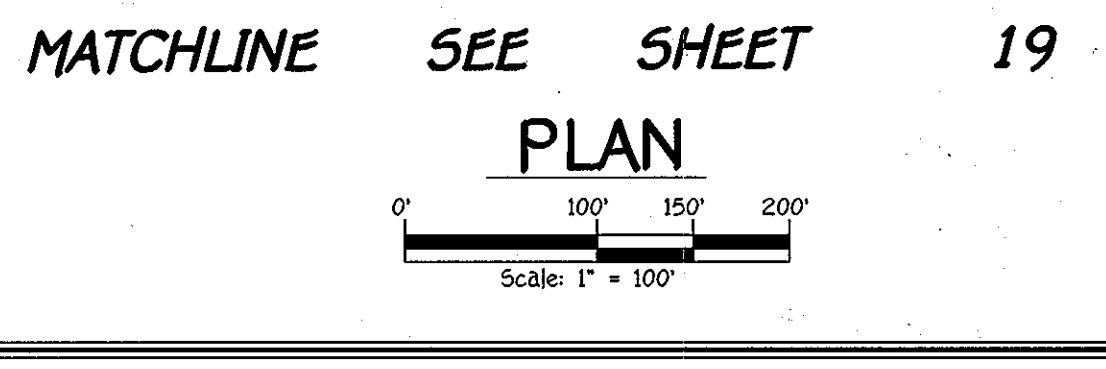


**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 83 CENTENNIAL SQUARE, OFFICE PARK - 1072 BALTIMORE NATIONAL PARK  
 ELKLOTT CITY, MARYLAND 21042  
 4101 661 - 2295

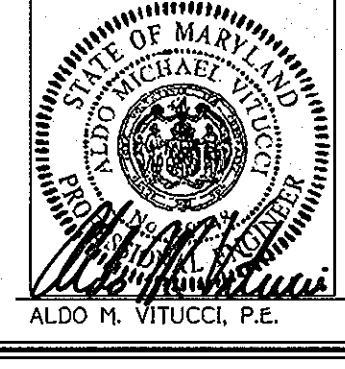
**Eco-Science Professionals, Inc.**  
 CONSULTING ECOLOGISTS  
 MD DNR Qualified Professional  
 USACOE Wetland Delineator  
 Certification # WDCP93M06100418  
 15950 North Avenue  
 P.O. Box 482  
 Lisbon, MD 21765  
 410-489-7900

**Owner**  
 BV Business Trust  
 19920 North Avenue  
 P.O. Box 482  
 Lisbon, MD 21765  
 410-489-7900

**Developer**  
 Bessler Venture, LLC  
 19950 North Avenue  
 P.O. Box 482  
 Lisbon, MD 21765  
 410-489-7900



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2015."



**FOREST CONSERVATION PLAN**  
**WALNUT CREEK**  
 PHASE THREE  
 Lots 69 - 114  
 Non-Buildable Preservation Parcels 'O' Thru 'Z' & 'Y',  
 Non-Buildable Parcel 'S', Buildable Preservation Parcel 'U'  
 And Buildable Bulk Parcel 'V'  
 (A Resubdivision of Buildable Bulk Parcel 'H' - Walnut Creek, Phase Two)  
 P&H Nos. 110  
 (A Revision to Non-Buildable Preservation Parcels 'L' and 'M' - Walnut Creek, Phase Two, P&H Nos. 109)  
 ZONED: RC-DEO & RB-DEO  
 TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49  
 FIFTH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND  
 DATE: FEBRUARY 26, 2013  
 SHEET 20 OF 25

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE 4/14/13

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE 4/15/13

CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE 4/12/13

**FOREST CONSERVATION EASEMENT NO. 13**  
 4.81 AC.\*  
 (0.10 AC. planting)  
 (2.79 AC. credited retention)  
 (1.92 AC. non-credited retention)

**FOREST CONSERVATION EASEMENT NO. 15**  
 2.48 AC.\*  
 2.16 ac. (retention)  
 0.32 ac. (afforestation)

**FOREST CONSERVATION EASEMENT NO. 17**  
 8.34 AC.\*  
 5.69 ac. (retention)  
 2.65 ac. (afforestation)

MATCHLINE SEE SHEET 22



**FOREST CONSERVATION EASEMENT NO. 14**  
 1.66 AC.\*  
 (1.37 AC. credited retention)  
 (0.29 AC. non-credited retention)

**FOREST CONSERVATION EASEMENT NO. 16**  
 4.60 AC.\*  
 (afforestation)

**Construction Period Protection Program**

- A. Forest Protection Techniques**
- Soil Protection Area (Critical Root Zone)**  
 The soil protection area, or critical root zone, of a tree is that portion of the soil column where most of its roots may be found. The majority of roots responsible for water and nutrient uptake are located just below the soil surface. The limit of disturbance (LOD) line depicted on the plan shows the proposed extent of construction activities. Eco-Science Professionals, or another qualified professional designated by the developer, will assist in the field stages of the LOD to ensure that the Critical Root Zone for the Forest Retention Area is determined in accordance with the Field Edge Determination Guidelines in Appendix C. Eco-Science Professionals, or another qualified professional, will also assess the condition of the tree forest edge to determine if selective thinning or pruning is needed to improve the condition of the edge.
  - Fencing and Signage**  
 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 Eco-Science Professionals or another qualified professional. Fencing will extend along all LOD lines that occur within 20 feet of existing structures. Signage will be placed along the edge of the FCP every 100 feet. Fencing will consist of three strands mesh fence or super soil fence. See Forest Conservation Plan for standard specifications.
  - Pre-Construction Meeting**  
 Upon staking of limits of disturbance and installation of all signage, a pre-construction meeting will be held between the developer, contractor and appropriate County Inspector. The purpose of the meeting will be to verify that all tree protection measures outlined in the FCP are in place, that all sediment control is in order, and to notify the contractor of possible penalties for non-compliance with the FCP.
  - Storage Facilities/Equipment Cleaning**  
 All equipment storage, parking, sanitary facilities, material stockpiles, etc. associated with construction of the project will be restricted to those areas shown within the limit of disturbance. Washing of equipment will be prohibited from all forest retention areas. Wastewater resulting from equipment cleaning will be contained to prevent runoff into wetlands, streams and other environmentally sensitive areas.
  - Sequence of Construction**  
 The following timetable represents the proposed timetable for construction of the proposed project. The construction start date for this project has not been finalized. The actual project start date is predicated on the issuance of all necessary permits and approvals for the project. The items outlined in the Forest Conservation Plan will be initiated upon commencement of the project.  
 Below find a sequence of construction:  
 1. Install all tree protection signage, fencing, and sediment control devices.  
 2. Hold pre-construction meeting between developer, contractor and County Inspector.  
 3. Grade site and construct improvements. Stabilize all disturbed areas in accordance with grading plan.  
 4. Remove sediment control devices any forest retention signage in poor condition.  
 5. Hold post-construction meeting with County Inspectors to issue compliance with FCP.
  - Construction Monitoring**  
 Eco-Science Professionals, or another qualified professional designated by the developer, will monitor construction of the project to ensure that all activities are in compliance with the Forest Conservation Plan. This will include inspections to ensure that signage is properly maintained and that all unauthorized intrusions have been made into forest retention areas.
  - Activities Permitted During Construction**  
 The forest conservation plan will allow the following activities within forest resources during the construction phase of the project:  
 1. Passive recreation (overlooking, hiking, etc.)  
 These activities will not damage or negatively impact the forest resources on the property.
  - Post-Construction Meeting**  
 Upon completion of construction, Eco-Science Professionals, or another qualified professional designated by the developer, will verify that the forest retention areas have been properly established and that all post construction protection measures (signage, fencing) have been installed.

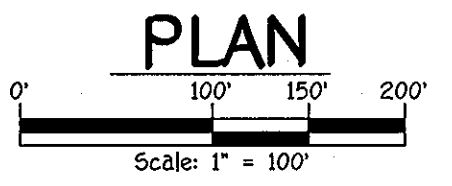
**Post-Construction Management Plan**

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

The following items will be incorporated into the plan for the subject property:

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

EASEMENT NO.	CREDITED RETENTION AREA	PLANTING AREA	NON-CREDITED RETENTION AREA	TOTAL EASEMENT AREA
12	5.49 AC.	1.63 AC.	8.72 AC.	15.84 AC.
13	2.79 AC.	0.10 AC.	1.92 AC.	4.81 AC.
14	1.37 AC.	0.00 AC.	0.29 AC.	1.66 AC.
15	2.16 AC.	0.32 AC.	0.00 AC.	2.48 AC.
16	0.00 AC.	4.60 AC.	0.00 AC.	4.60 AC.
17	5.69 AC.	2.65 AC.	0.00 AC.	8.34 AC.
TOTAL	17.50 AC.	9.30 AC.	11.04 AC.	37.84 AC.



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERS, CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE  
 ELLICOTT CITY, MARYLAND 21114  
 (410) 461-2255

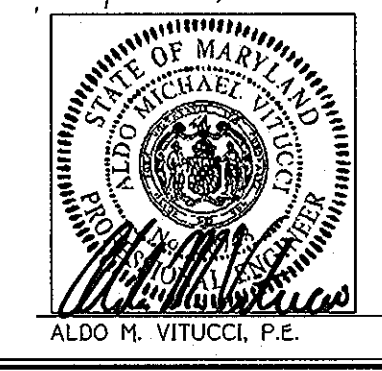
**Eco-Science Professionals, Inc.**  
 CONSULTING ECOLOGISTS

MD DNR Qualified Professional  
 USACE Wetland Designer for Certification # WDCP93MD0610044B  
 J. H. Canales 3/1/13  
 JOHN P. CANALES

**Owner**  
 BV Business Trust  
 15950 North Avenue  
 P.O. Box 492  
 Lisbon, MD 21765  
 410-489-7900

**Developer**  
 Bösler Venture, LLC  
 15950 North Avenue  
 P.O. Box 492  
 Lisbon, MD 21765  
 410-489-7900

Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20748, Expiration Date: February 22, 2015.



ALDO M. VITUCCI, P.E.  
 DATE

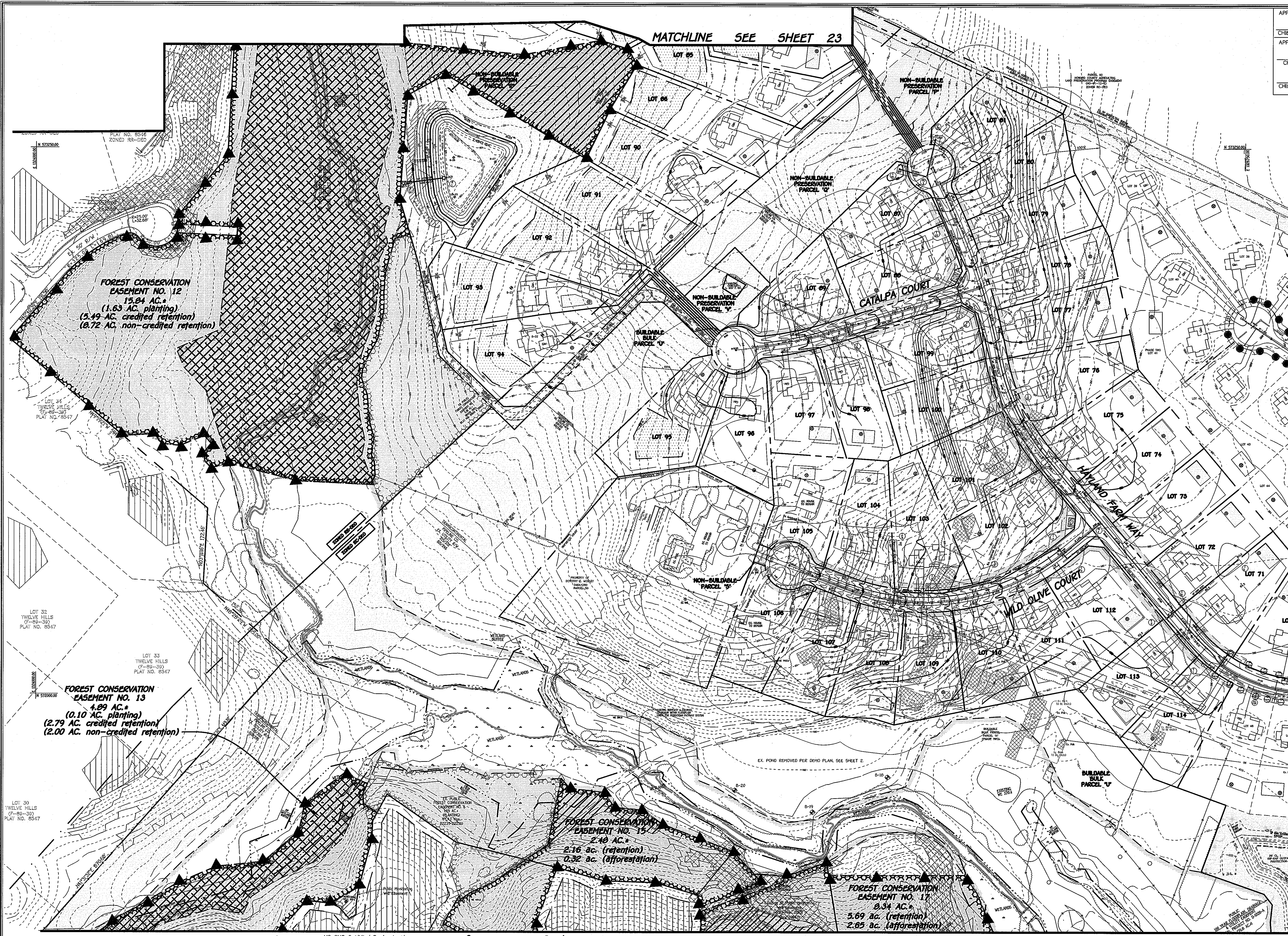
**FOREST CONSERVATION PLAN WALNUT CREEK PHASE THREE**  
 Lots 29, 114, Non-Buildable Preservation Parcels 'O' Thru 'R' & 'V', Non-Buildable Parcel 'S', Buildable Preservation Parcel 'T' And Buildable Bulk Parcel 'U'  
 (A Resubdivision of Buildable Bulk Parcel 'W' - Walnut Creek, Phase Two)  
 (A Revision to Non-Buildable Preservation Parcels 'L' and 'M' - Walnut Creek, Phase Two)  
 ZONED: RC-DEO & RR-DEO  
 TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49  
 FIFTH ELECTORAL DISTRICT HOWARD COUNTY, MARYLAND  
 DATE: FEBRUARY 26, 2013  
 SHEET 21 OF 25

MATCHLINE SEE SHEET 19

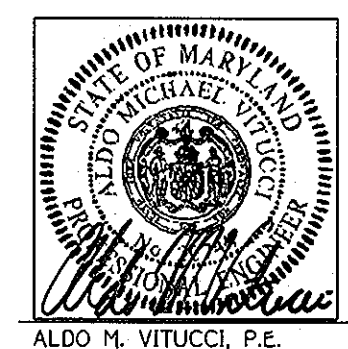
APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 DATE: 4/14/13

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 DATE: 4/15/13

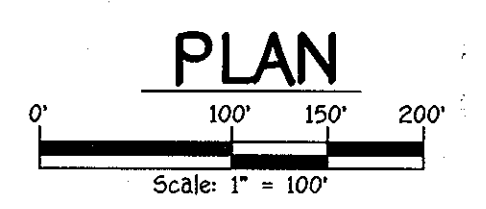
APPROVED: DEVELOPMENT ENGINEERING DIVISION  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION  
 DATE: 4/21/13



MATCHLINE SEE SHEET 20



Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 20749, Expiration Date: February 22, 2015.



**FOREST CONSERVATION PLAN  
 WALNUT CREEK  
 PHASE THREE**  
 Lots 89 - 114,  
 Non-Buildable Preservation Parcel 'O' Thru 'Z' & 'V',  
 Non-Buildable Parcel 'S', Buildable Preservation Parcel 'T'  
 And Buildable Bulk Parcel 'U'

MD DNR Qualified Professional  
 USACOE Wetland Delineator  
 Certification: WDCP93MD06100448

Owner: BY Business Trust  
 19950 North Avenue  
 P.O. Box 482  
 Lisbon, MD 21765  
 410-489-7900

Developer: Bessler Venture, LLC  
 19950 North Avenue  
 P.O. Box 482  
 Lisbon, MD 21765  
 410-489-7900

DATE: FEBRUARY 26, 2013  
 SHEET 22 OF 25

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 83 CENTRAL SQUARE OFFICE PARK • 10772 MALTBORE NATIONAL PARK  
 ELICOTT CITY, MARYLAND 21042  
 410-481-2855

**Eco-Science Professionals, Inc.**  
 CONSULTING ECOLOGISTS

MD DNR Qualified Professional  
 USACOE Wetland Delineator  
 Certification: WDCP93MD06100448  
 J. Conley 3/1/13  
 JORNY R. CANOLE

MATCHLINE SEE SHEET 21

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS  
 APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DIVISION OF LAND DEVELOPMENT  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

4/14/13  
 DATE  
 4/15/13  
 DATE  
 4/21/13  
 DATE



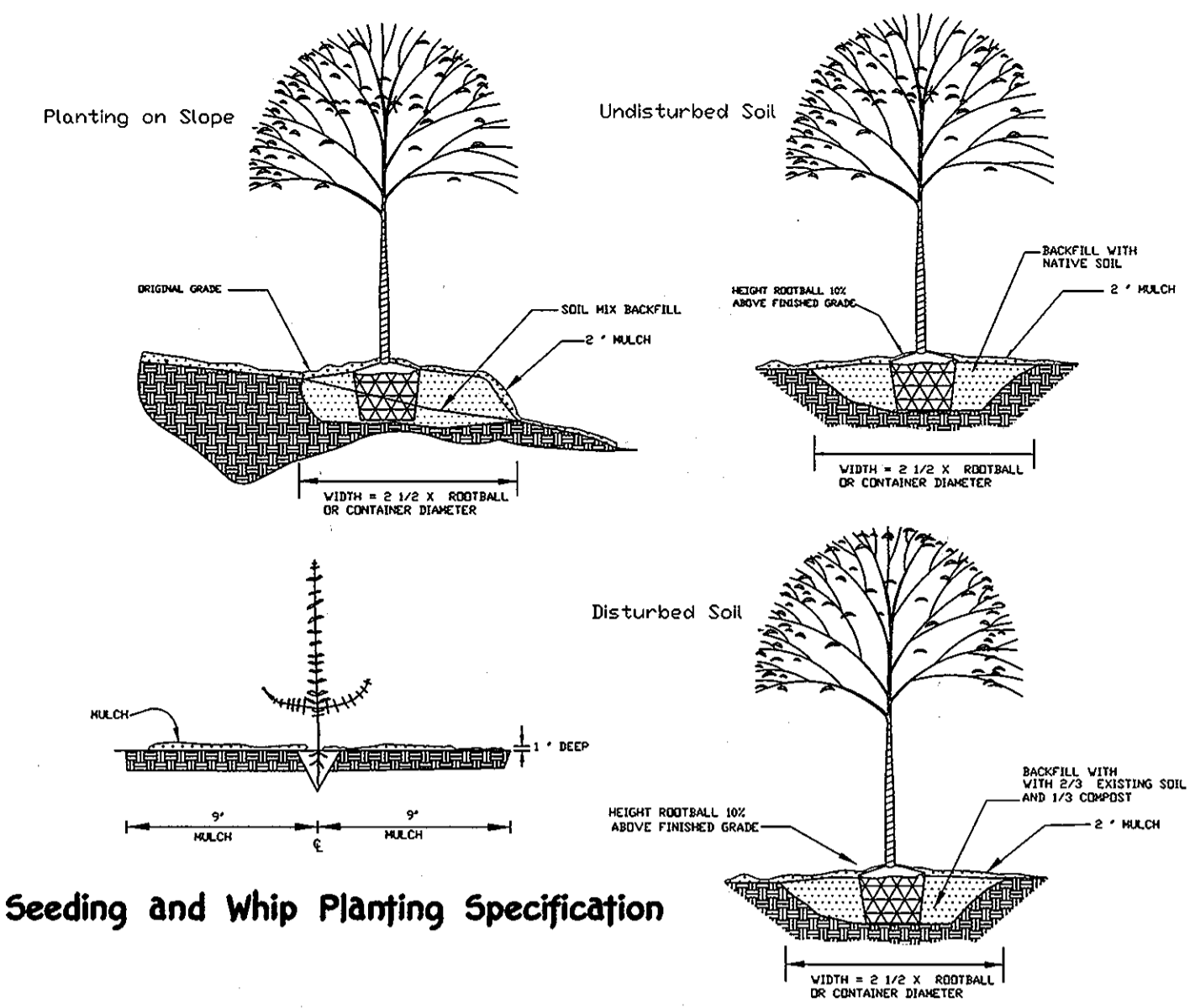
**ON-SITE SIGNAGE**

**FOREST CONSERVATION EASEMENT**

UNAUTHORIZED DISTURBANCE OF VEGETATION IS PROHIBITED. VIOLATORS SUBJECT TO PENALTIES UNDER THE HOWARD COUNTY FOREST CONSERVATION ACT OF 1991.

**TREES FOR YOUR FUTURE**

15" MINIMUM  
 11" MINIMUM

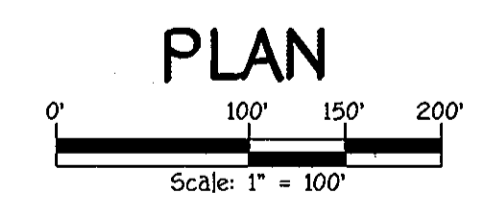


Seeding and Whip Planting Specification

MATCHLINE SEE SHEET 22

**FOREST CONSERVATION EASEMENT NO. 12**  
**15.77 AC.±**  
**(1.62 AC. planting)**  
**(5.43 AC. credited retention)**  
**(8.72 AC. non-credited retention)**

- LEGEND**
- Existing Contours
  - Wetland Limits
  - Wetland/Stream Buffer
  - Proposed Contours
  - Forest Conservation Easement (Retention Area)
  - Forest Conservation Easement To Be Planted
  - NON-CREDITED RETENTION Forest Conservation Easement
  - Forest Conservation Signs
  - Ex. Forest Conservation Signs
  - Tree Protection Fence
  - Limits Of Floodplain
  - Proposed Treeline



**FOREST CONSERVATION DATA (Phase Three)**

EASEMENT NO.	CREDITED RETENTION AREA	PLANTING AREA	NON-CREDITED RETENTION AREA	TOTAL EASEMENT AREA
12	5.49 AC.	1.63 AC.	8.72 AC.	15.84 AC.
13	2.79 AC.	0.10 AC.	1.92 AC.	4.81 AC.
14	1.37 AC.	0.00 AC.	0.29 AC.	1.66 AC.
15	2.16 AC.	0.32 AC.	0.00 AC.	2.48 AC.
16	0.00 AC.	4.60 AC.	0.00 AC.	4.60 AC.
17	5.69 AC.	2.65 AC.	0.00 AC.	8.34 AC.
<b>TOTAL</b>	<b>17.50 AC.</b>	<b>9.30 AC.</b>	<b>11.04 AC.</b>	<b>37.84 AC.</b>

MATCHLINE SEE THIS SHEET

MATCHLINE SEE THIS SHEET

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 18272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21034  
 410 461 - 2895

**Eco-Science Professionals, Inc.**  
 CONSULTING ECOLOGISTS

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 USACE Wetland Delineator  
 Certification # WDCP93MD0610044B  
 J. P. COLLIER 3/1/13  
 JOHN P. COLLIER

**Owner**  
 BV Business Trust  
 15950 North Avenue  
 P.O. Box 482  
 Lubbock, TX 79405  
 409-499-7900

**Developer**  
 Basler Venture, LLC  
 15950 North Avenue  
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 Lubbock, TX 79405  
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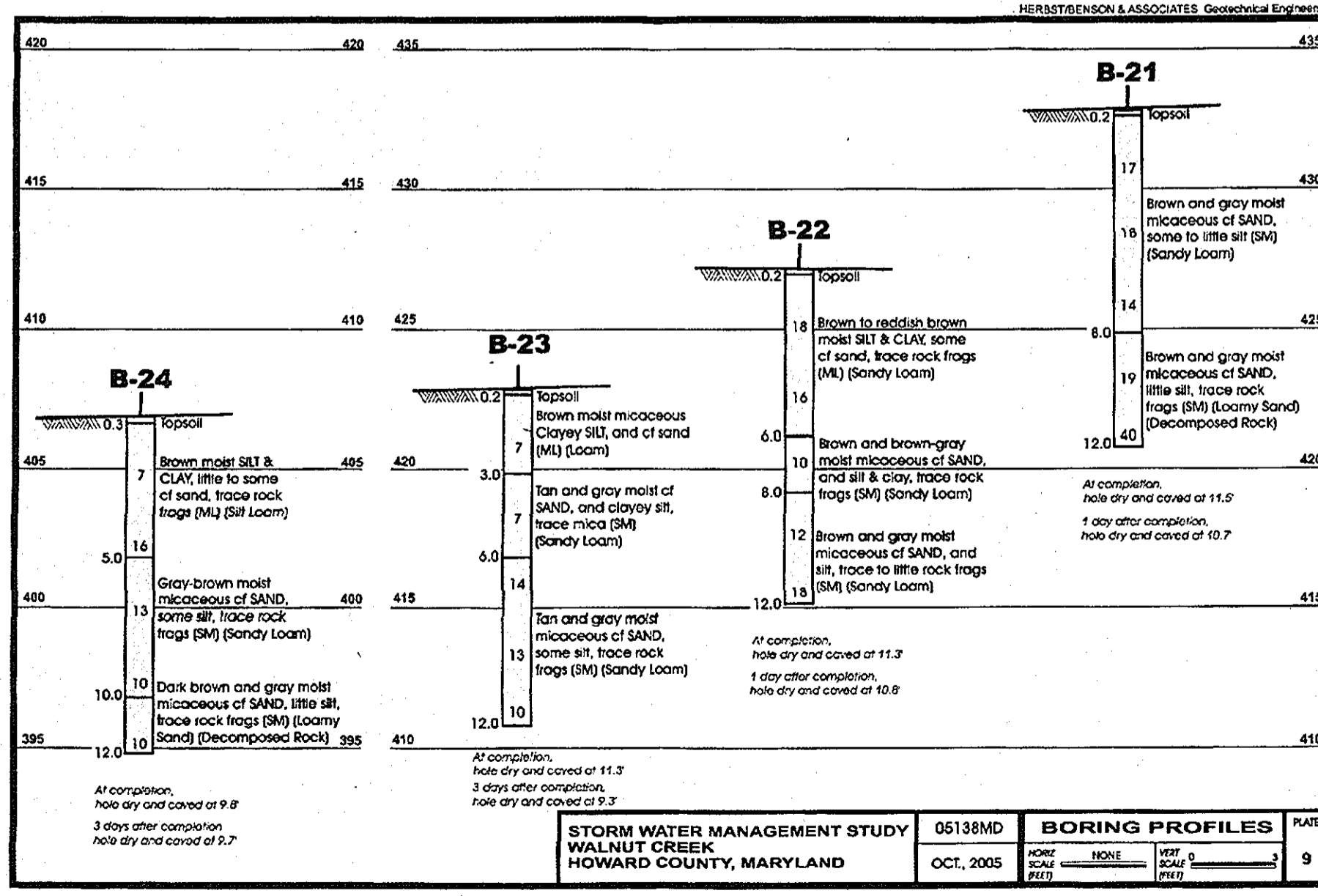
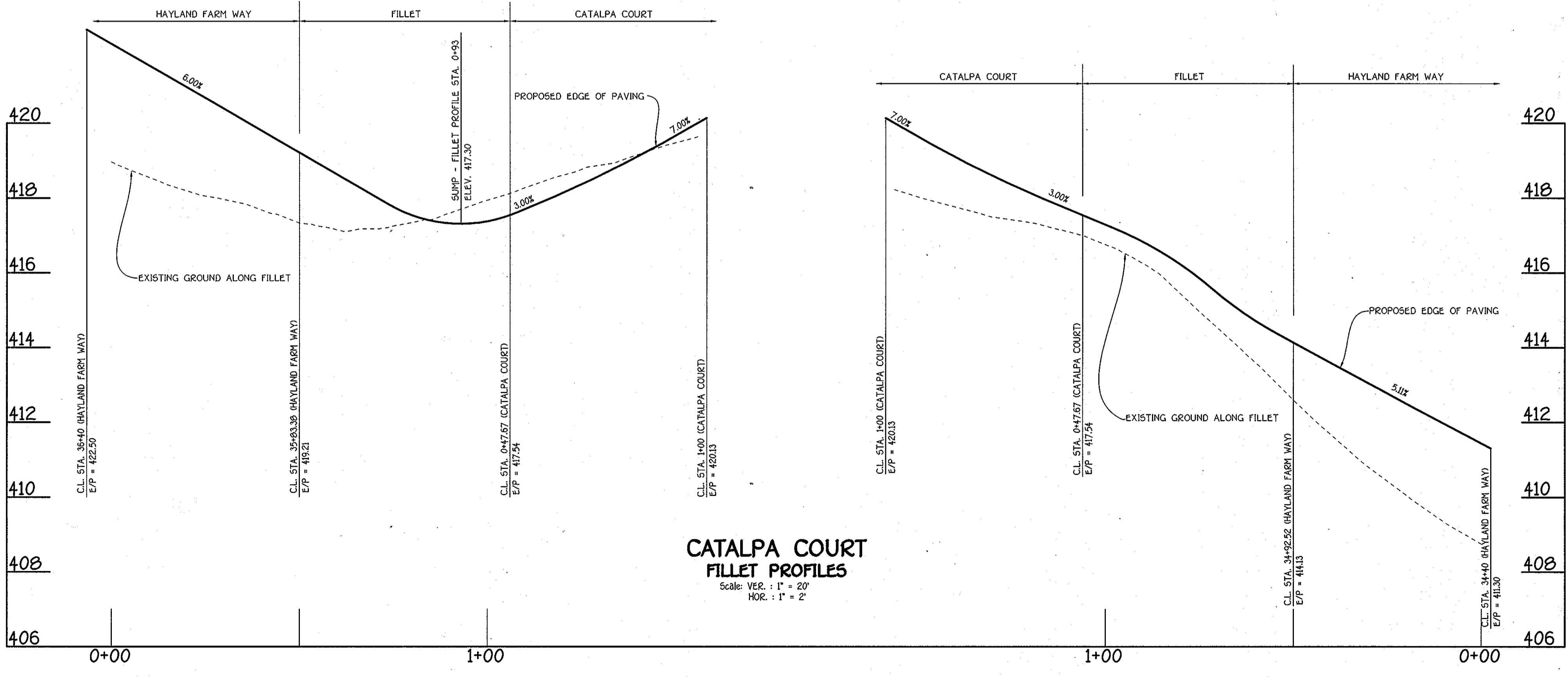
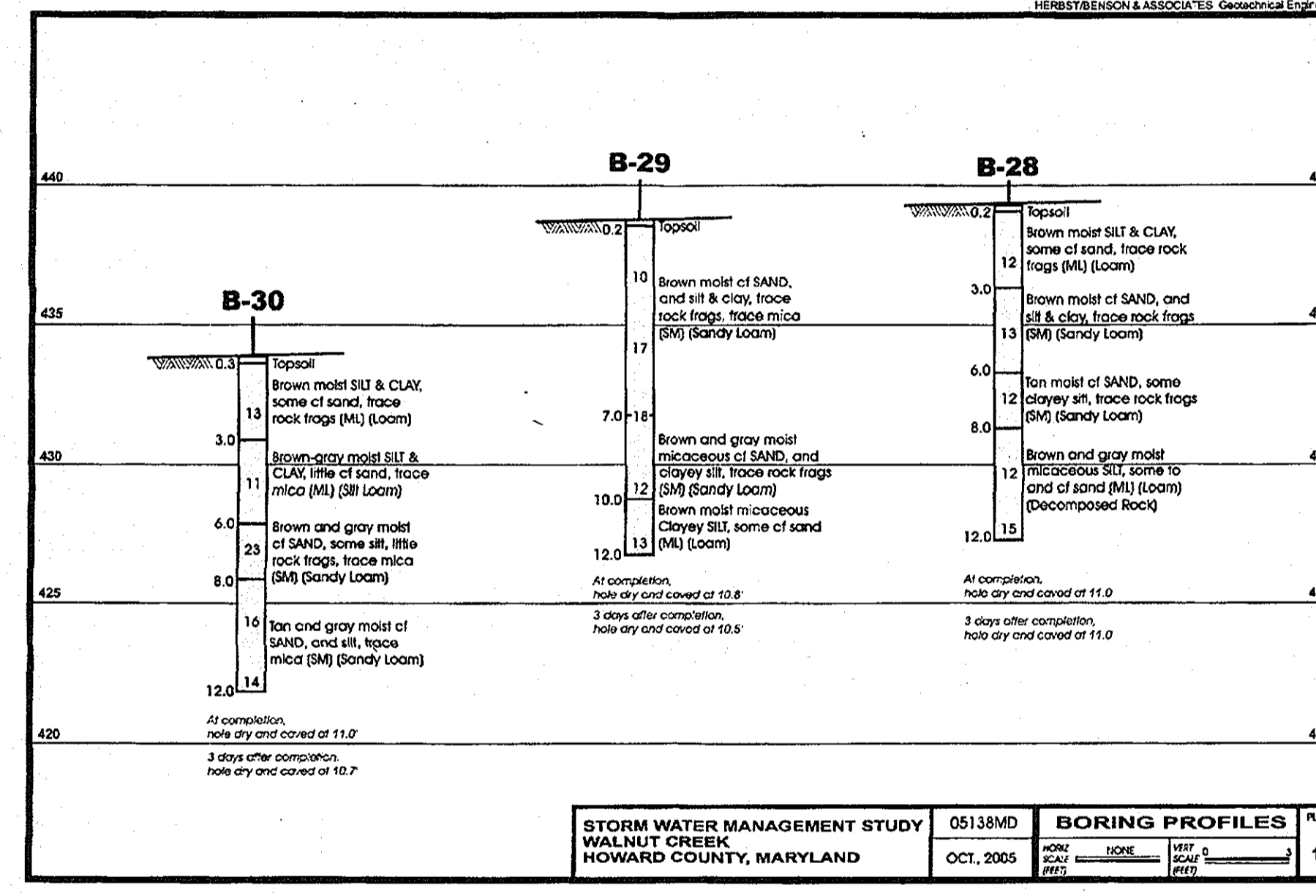
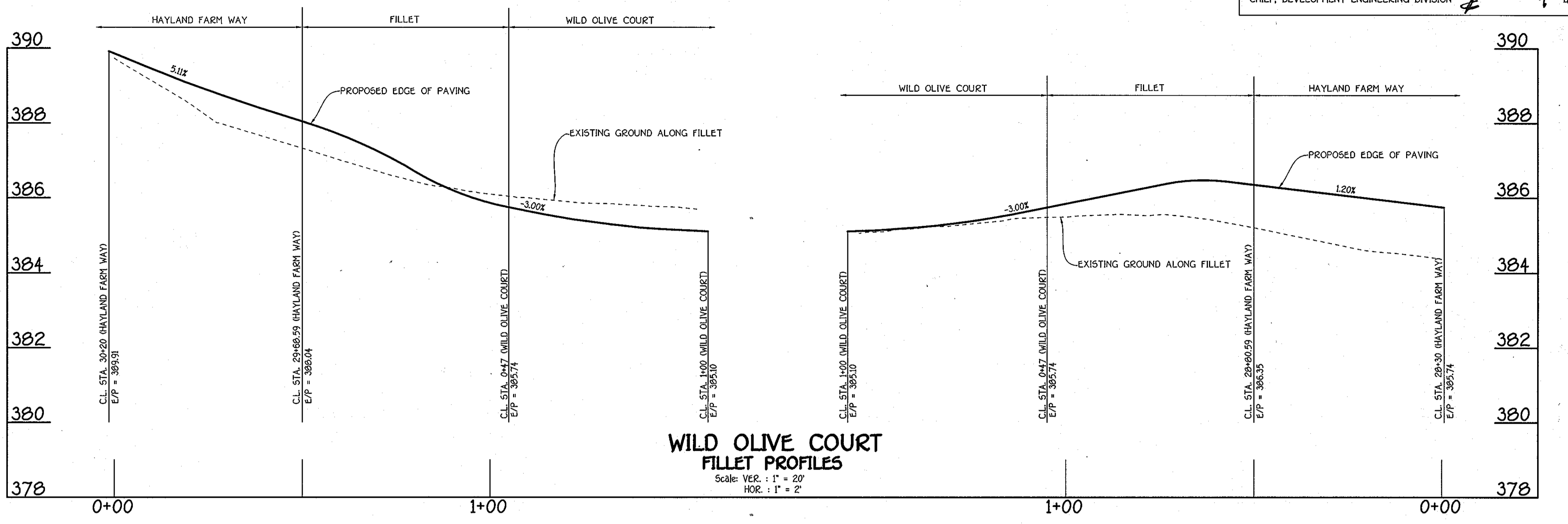
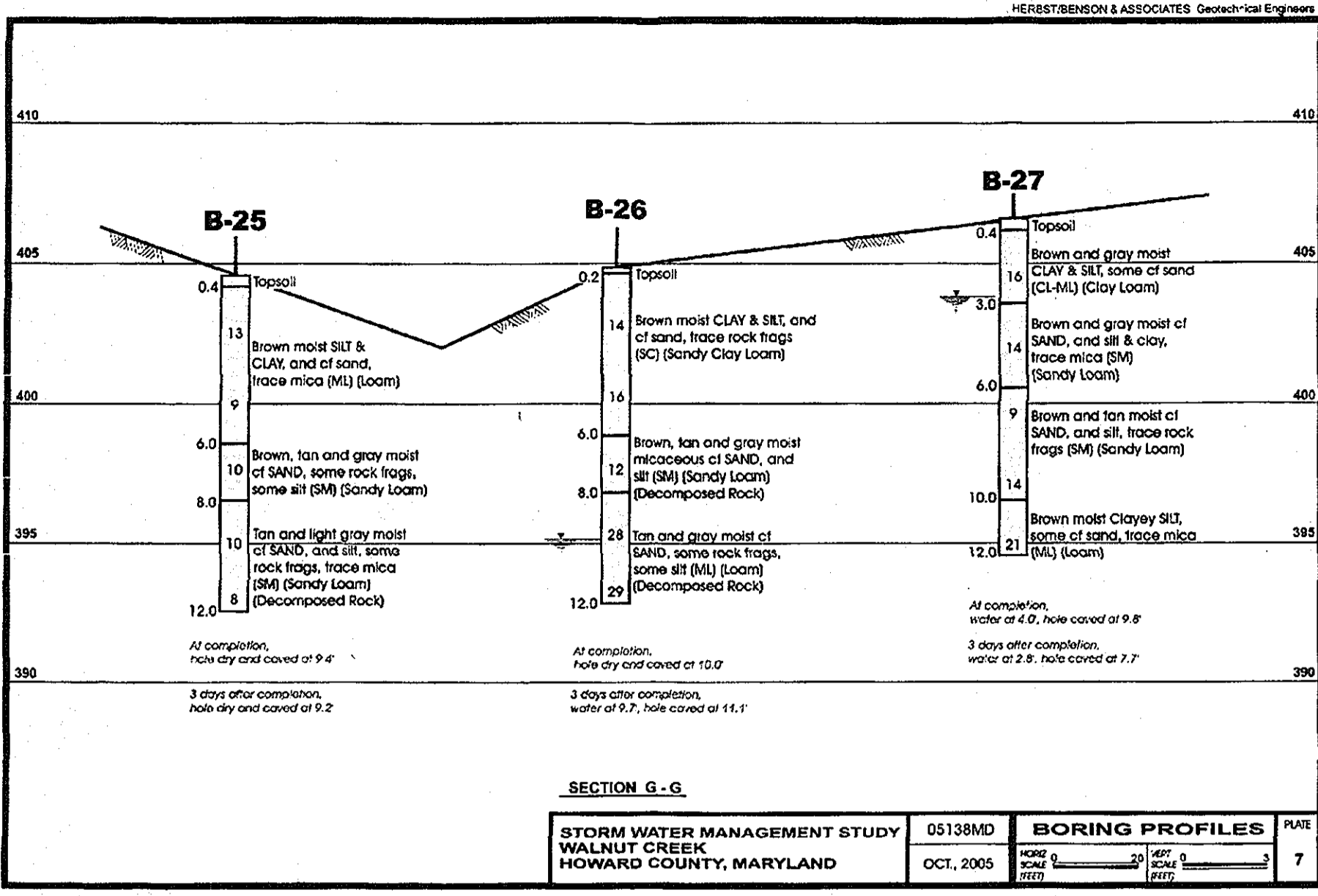
4/21/13  
 DATE

**FOREST CONSERVATION PLAN**  
**WALNUT CREEK**  
**PHASE THREE**  
**Lots 09 - 114,**  
**Non-Buildable Preservation Parcels 'O' Thru 'R' & 'V',**  
**Non-Buildable Parcel 'S', Buildable Preservation Parcel 'U',**  
**And Buildable Bulk Parcel 'W'**  
 A Resubdivision of Buildable Bulk Parcel 'W' - Walnut Creek, Phase Two  
 Plat Nos. 8545, 8546, 8547, 8548, 8549, 8550, 8551, 8552, 8553, 8554, 8555, 8556, 8557, 8558, 8559, 8560, 8561, 8562, 8563, 8564, 8565, 8566, 8567, 8568, 8569, 8570, 8571, 8572, 8573, 8574, 8575, 8576, 8577, 8578, 8579, 8580, 8581, 8582, 8583, 8584, 8585, 8586, 8587, 8588, 8589, 8590, 8591, 8592, 8593, 8594, 8595, 8596, 8597, 8598, 8599, 8600, 8601, 8602, 8603, 8604, 8605, 8606, 8607, 8608, 8609, 8610, 8611, 8612, 8613, 8614, 8615, 8616, 8617, 8618, 8619, 8620, 8621, 8622, 8623, 8624, 8625, 8626, 8627, 8628, 8629, 8630, 8631, 8632, 8633, 8634, 8635, 8636, 8637, 8638, 8639, 8640, 8641, 8642, 8643, 8644, 8645, 8646, 8647, 8648, 8649, 8650, 8651, 8652, 8653, 8654, 8655, 8656, 8657, 8658, 8659, 8660, 8661, 8662, 8663, 8664, 8665, 8666, 8667, 8668, 8669, 8670, 8671, 8672, 8673, 8674, 8675, 8676, 8677, 8678, 8679, 8680, 8681, 8682, 8683, 8684, 8685, 8686, 8687, 8688, 8689, 8690, 8691, 8692, 8693, 8694, 8695, 8696, 8697, 8698, 8699, 8700, 8701, 8702, 8703, 8704, 8705, 8706, 8707, 8708, 8709, 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APPROVED: DEPARTMENT OF PUBLIC WORKS  
 [Signature] 4/14/13  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 [Signature] 4/15/13  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 4/12/13  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE



**SOIL BORINGS & FILLET PROFILES  
 WALNUT CREEK  
 PHASE THREE**  
 Lots 89 - 114,  
 Non-Buildable Preservation Parcel 10' Thru 12' & 14',  
 Non-Buildable Parcel 15', Buildable Preservation Parcel 17'  
 And Buildable Bulk Parcel 14'

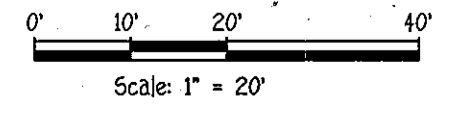
(A Resubdivision of Buildable Bulk Parcel 14' - Walnut Creek, Phase Two)  
 (A Revision to Non-Buildable Preservation Parcel 11' and 14' - Walnut Creek, Phase Two)

ZONED: EC-DEO & RR-DEO  
 TAX MAP No. 28 GRID Nos. 4, 5, 10-12, 17, AND 18 PARCEL No. 49  
 FIFTH ELECTION DISTRICT - HOWARD COUNTY, MARYLAND  
 DATE: FEBRUARY 26, 2013  
 SHEET 24 OF 25

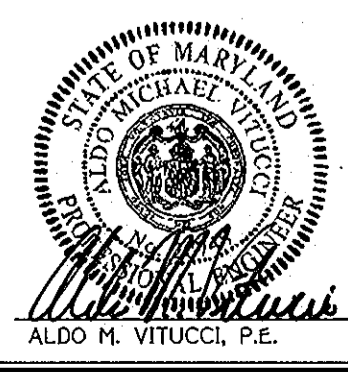
**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CONFEDERATE SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 GAITHERSBURG, MARYLAND 20878  
 (410) 461 - 2555

**Owner**  
 BV Business Trust  
 15950 North Avenue  
 P.O. Box 492  
 Lisbon, MD 21765  
 410-489-7900

**Developer**  
 Bässler Venture, LLC  
 15950 North Avenue  
 P.O. Box 492  
 Lisbon, MD 21765  
 410-489-7900



"Professional Certification I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 20748, Expiration Date: February 22, 2015."



2/2/13  
 DATE

