

ROAD CONSTRUCTION PLANS

CHELSEA KNOLLS

FOURTH ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

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/CONSTRUCTION INSPECTIONS DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS PRIOR TO ANY EXCAVATION WORK:
 - MISS UTILITY 1-800-257-7777
 - VERIZON TELEPHONE COMPANY (410) 725-9976
 - HOWARD COUNTY BUREAU OF UTILITIES (410) 313-4900
 - AT&T CABLE LOCATION DIVISION (410) 393-3533
 - BALTIMORE GAS & ELECTRIC (410) 685-0123
 - STATE HIGHWAY ADMINISTRATION (410) 531-5533
 - HOWARD COUNTY DEPT. OF PUBLIC WORKS/ CONSTRUCTION INSPECTION DIVISION (410) 313-1880
- SITE DATA:
 - ZONING: RC-DEO (ZONING MAP DATED JULY 28, 2006)
 - TAX MAP 6 & 12 PARCEL 7B (RECONFIGURED) DEED REFERENCE: 1084/139
 - GROSS AREA: 84.42 ACRES ±
 - NET TRACT AREA: 81.78 ACRES ±
 - AREA OF STEEP SLOPES (OUTSIDE FLOODPLAIN): 1.58 ACRES ±
 - AREA OF 100 YEAR FLOOD PLAIN: 1.28 ACRES
 - AREA IN ROW: 0.95 ACRES
 - MINIMUM LOT SIZE (PER PLAT): 43,871 SQ. FT.
 - NUMBER OF BUILDABLE LOTS: 14 LOTS
 - NUMBER OF NON-BUILDABLE PRESERVATION PARCELS: 2 (A) & (B)
 - NUMBER OF BULK PARCELS: 1 (C)
 - NUMBER OF UNITS ALLOWED: 20
 - NUMBER OF UNITS PROVIDED: 14
 - AREA OF PROPOSED BUILDABLE LOTS: 15.66 ACRES
 - AREA OF PROPOSED PRESERVATION PARCEL: 39.25 ACRES
 - AREA OF PROPOSED NON-BUILDABLE BULK PARCEL: 29.97 ACRES
 - AREA OF ROAD DEDICATION: 0.98 ACRES
 - PREVIOUS PROJECT NUMBERS: SP-02-01, RE-04-04, WF-03-34, RE-05-04, WF-09-21G, WF-12-06T
- COORDINATES BASED ON NAD'83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 301A AND 31D.
 - STA. 061A N603004.896, E1267938.951 EL. 786.421
 - STA. 061A N602649.523, E1271163.330 EL. 714.283
- 2' TOPOGRAPHY FOR THE DEVELOPED AREAS IS BASED ON A FIELD RUN SURVEY BY MILDBERG, BOENDER & ASSOC. ON OR ABOUT SEP. 2001. 2' TOPOGRAPHY FOR THE NON-DEVELOPED AREAS IS BASED ON HOWARD COUNTY 200 SCALE MAPS.
- BASED ON AVAILABLE COUNTY DATA, NO HISTORIC STRUCTURES OR BURIAL GROUNDS EXIST ON SITE.
- SOILS DATA BASED ON HOWARD COUNTY SOIL SURVEY DATED 1968, SHEET 5.
- PRIVATE WATER AND SEWER WILL BE UTILIZED.
- PROPERTY IS LOCATED WITHIN THE "NO PLANNED SERVICE AREA."
- NON-CRITICAL FLOODPLAIN STUDY PREPARED BY MILDBERG, BOENDER & ASSOC. INC., APPROVED ON 2/7/03 UNDER SP-02-01. FLOODPLAIN EXISTS ON PRESERVATION PARCEL "A".
- WETLAND STUDY PREPARED BY WILDMAN ENVIRONMENTAL SERVICES, INC. IN JULY 2001. APPROVED ON 2/7/03 UNDER SP-02-01.
- DRIVEWAYS SHALL BE PROVIDED PRIOR TO RESIDENTIAL OCCUPANCY TO ENSURE SAFE ACCESS FOR FIRE AND EMERGENCY VEHICLES PER THE FOLLOWING MINIMUM REQUIREMENTS:
 - A) WIDTH - 12 FEET (16 FEET SERVING MORE THAN ONE RESIDENCE).
 - B) SURFACE - 6 INCHES OF COMPACTED CRUSHER RUN BASE WITH TAR AND CHIP COATING.
 - C) GEOMETRY - MAXIMUM 14% GRADE, MAXIMUM 10% GRADE CHANGE AND A MINIMUM 45-FOOT RADIUS.
 - D) STRUCTURES (CULVERTS/BRIDGES) - CAPABLE OF SUPPORTING 25 GROSS TONS (H25 LOADING).
 - E) DRAINAGE ELEMENTS - CAPABLE OF SAFELY PASSING 100-YEAR FLOOD WITH NO MORE THAN 1 FOOT DEPTH OVER DRIVEWAY SURFACE.
 - F) STRUCTURE CLEARANCES - MINIMUM 12 FEET
 - G) MAINTENANCE - SUFFICIENT TO ENSURE ALL WEATHER USE.
- NO STRUCTURES EXIST ON SITE.
- THIS PLAN WAS SUBMITTED PRIOR TO NOV. 15, 2001 AND THUS GRANDFATHERED TO THE FOURTH EDITION OF THE SUBDIVISION REGULATIONS AND 08-50-2001.
- THIS AREA DESIGNATES A PRIVATE SEWERAGE EASEMENT OF AT LEAST 10,000 SQ. FT. AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF ENVIRONMENT FOR INDIVIDUAL SEWERAGE DISPOSAL IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED UNTIL PUBLIC SEWERAGE IS AVAILABLE. THIS EASEMENT SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT VARIANCES FOR ENCROACHMENTS INTO THE PRIVATE SEWERAGE EASEMENT. RECORDED OF A MODIFIED EASEMENT SHALL NOT BE NECESSARY.
- THE GROUND WATER APPROPRIATIONS PERMIT NO. H02007005(01) RECEIVED MDE APPROVAL ON MAY 30, 2007.
- THE GROUND WATER DISCHARGE PERMIT NO. 05-DP-3508 RECEIVED MDE APPROVAL ON OCTOBER 1, 2005.
- ALL WELLS SHALL BE DRILLED PRIOR TO RECORD PLAT SIGNATURE.
- THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED LANDSCAPING INCLUDING BOTH PLANT MATERIALS AND BERMS, FENCES AND WALLS. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED.
- TRAFFIC STUDY BY MARS TRAFFIC GROUP, DATED DECEMBER 11, 2001.
- SIGN POSTS: ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT FOR THIS SUBDIVISION SHALL BE FULFILLED BY PROVIDING A TOTAL OF 8.93 ACRES (1.6 ACRES OF REFORESTATION AND 6.33 ACRES OF AFFORESTATION) WHICH SHALL BE FULFILLED BY PROVIDING 7.81 ACRES OF RETENTION AT A 2:1 RATIO FOR 2.3 ACRES OF AFFORESTATION AND 6.1 ACRES OF REFORESTATION WITH A REMAINING 6.03 ACRES OF AFFORESTATION PLANTING WITH PRESERVATION PARCELS "A", FOREST CONSERVATION SURETY FOR AFFORESTATION IN THE AMOUNT OF \$131,333.00 SHALL BE POSTED AS A PART OF THE DEVELOPER'S AGREEMENT.
- NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE REQUIRED WETLANDS, STREAMS OR THEIR BUFFERS, AND FOREST CONSERVATION EASEMENT AREAS, EXCEPT AS SHOWN ON APPROVED PLANS.
- PERIMETER LANDSCAPING SHALL BE PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING (75 SHADE TREES, 5 EVERGREENS & 10 SHRUBS) SHALL BE POSTED AS PART OF THE DPW DEVELOPERS AGREEMENT IN THE AMOUNT OF \$23,950.00.
- STORM WATER MANAGEMENT IS PROVIDED BY ROOFTOP CREDITS, NON-ROOFTOP DISCONNECTION CREDITS AND RAINGARDENS TO BE PRIVATELY OWNED AND MAINTAINED.
- ALL FILL AREAS IN THE RIGHT OF WAY AND EASEMENTS TO BE COMPACTED TO 98% PER AASHTO T-180.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III(1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." A MINIMUM OF SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET-AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- AT THE TIME OF PLANT INSTALLATION, ALL SHRUBS AND TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION 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 APPLICABLE PLANS.
- ALL WELLS SHOULD BE DRILLED PRIOR TO FINAL PLAT RECORDATION.

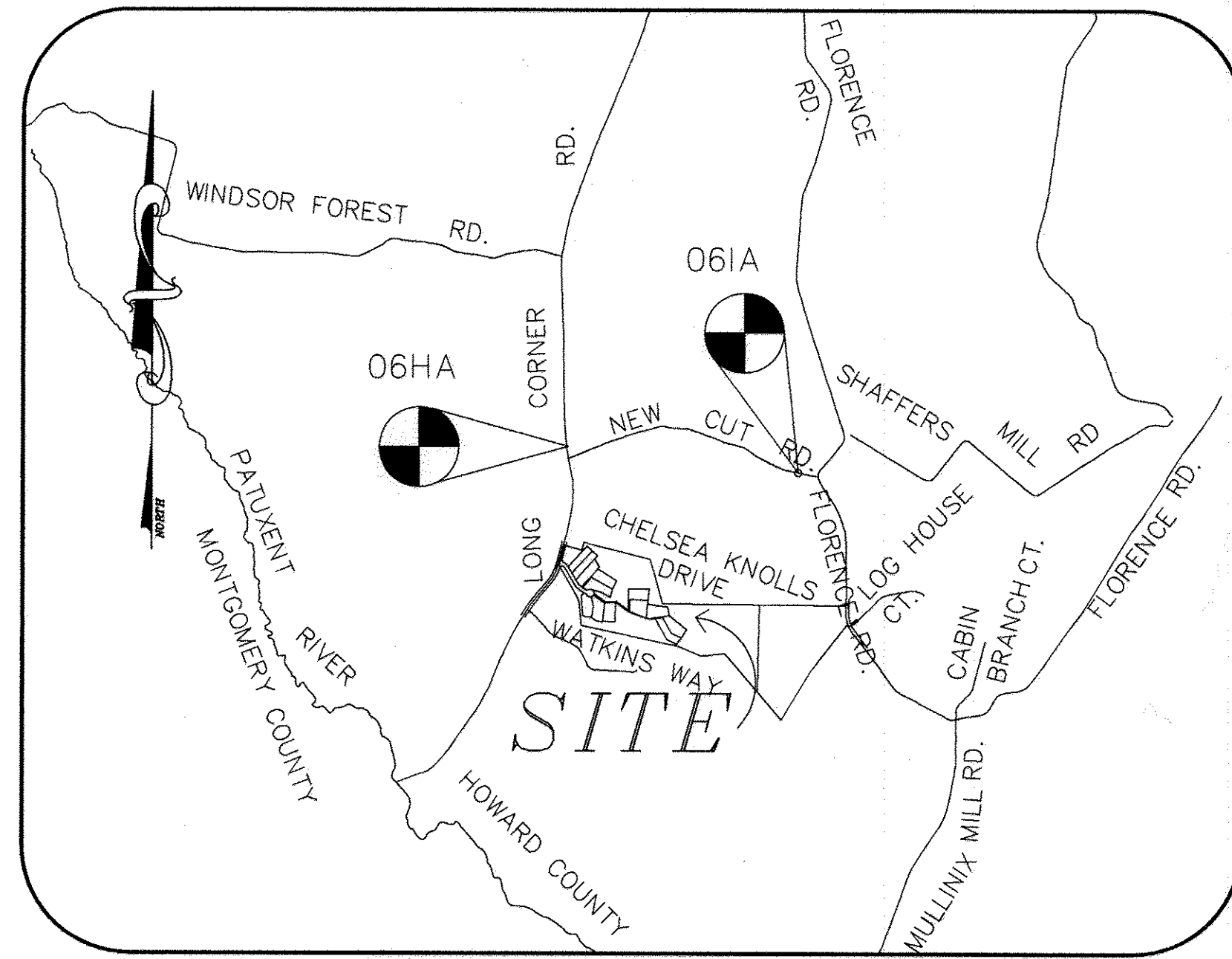
GRADING SHOWN ON THESE PLANS DID NOT INCLUDE THE RESIDENTIAL LOTS; THEREFORE, THE STORMWATER DESIGN FOR THE LOTS IS CONCEPTUAL AND FINAL DESIGN WILL BE SHOWN WITH THE INDIVIDUAL LOT BUILDING PERMIT. DECLARATION OF COVENANTS WILL BE CORRECTED AS NEEDED AND MATCH THE ASSOCIATED PLOT PLAN.

SHEET INDEX

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LEGEND

	DENOTES WETLANDS		DENOTES PROPOSED WELL
	15% TO 25% SLOPES		DENOTES PERIMETER LANDSCAPE EDGE
	25% OR GREATER SLOPES		DENOTES PUBLIC FOREST CONSERVATION EASEMENT (RETENTION)
	PROPOSED PRIVATE USE-IN-COMMON ACCESS OR PRIVATE INGRESS - EGRESS EASEMENT		DENOTES PUBLIC FOREST CONSERVATION EASEMENT (AFFORESTATION)
	EXISTING SPECIMEN TREES		DENOTES FOREST CONSERVATION SIGNAGE
	LIMIT OF DISTURBANCE		DENOTES EXISTING WELL
	PHASE 1 SUPER SILT FENCE		DENOTES FLOODPLAIN
	PHASE 2 SUPER SILT FENCE		EXISTING TREELINE
	TREE PROTECTION FENCE		PROPOSED TREELINE
	STABILIZED CONSTRUCTION ENTRANCE		40' OVERHEAD UTILITY PLANTING ZONE
	DENOTES EXISTING POWER POLE		DENOTES PUBLIC 10' TREE MAINTENANCE EASEMENT
			DENOTES PRIVATE SEPTIC AND UTILITY EASEMENT
			DENOTES SEDIMENT AND EROSION CONTROL MATTING
			DENOTES PROPOSED WELL AREA
			PRIVATE ENTRANCE SIGN EASEMENT



VICINITY MAP

SCALE: 1"=2000'
ADC MAP COORDINATES: 2-C13

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."

DATE: 4/15/09

PRINTED NAME OF DEVELOPER: R. J. DIKENS

BY THE ENGINEER:

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

DATE: 4/15/09

PRINTED NAME OF ENGINEER: R. JACOB HILKERT

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

USDA - NATURAL RESOURCE CONSERVATION SERVICE DATE: 4/23/09

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT

APPROVED: DEPARTMENT OF PUBLIC WORKS

DATE: 4/29/09

CHIEF BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

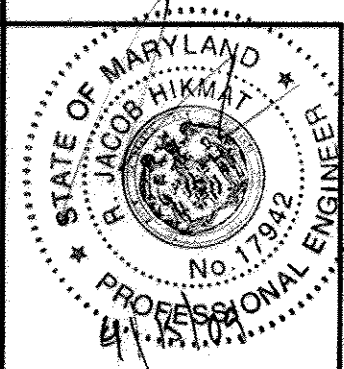
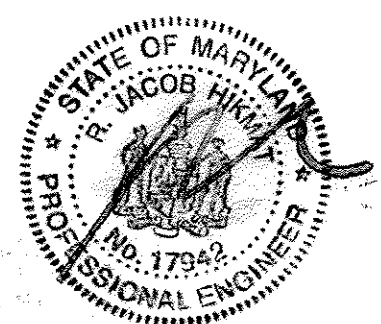
DATE: 5/7/09

CHIEF, DIVISION OF LAND DEVELOPMENT

DATE: 5/15/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION

THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET.



OWNER/DEVELOPER

CHELSEA KNOLLS, LC
1355 BEVERLY RD, SUITE 240
MCLEAN, VIRGINIA 22101
(703) 734-9730
(301) 720-3021

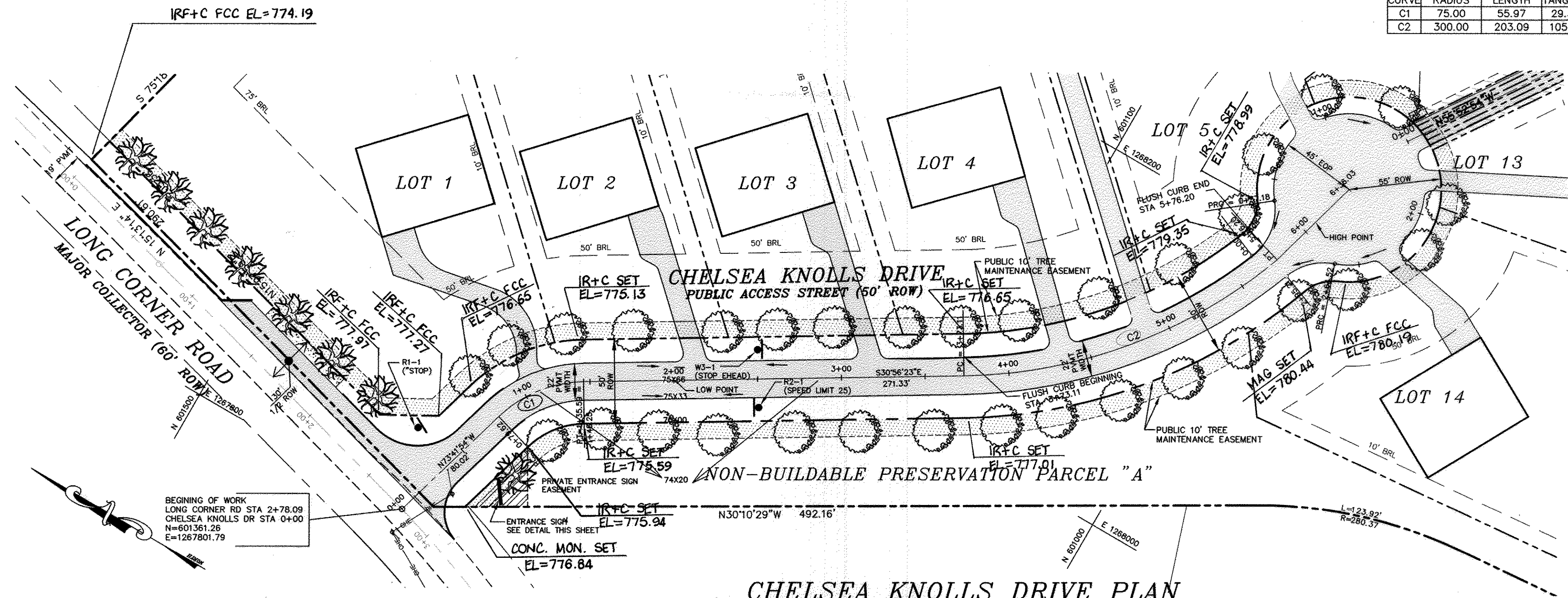
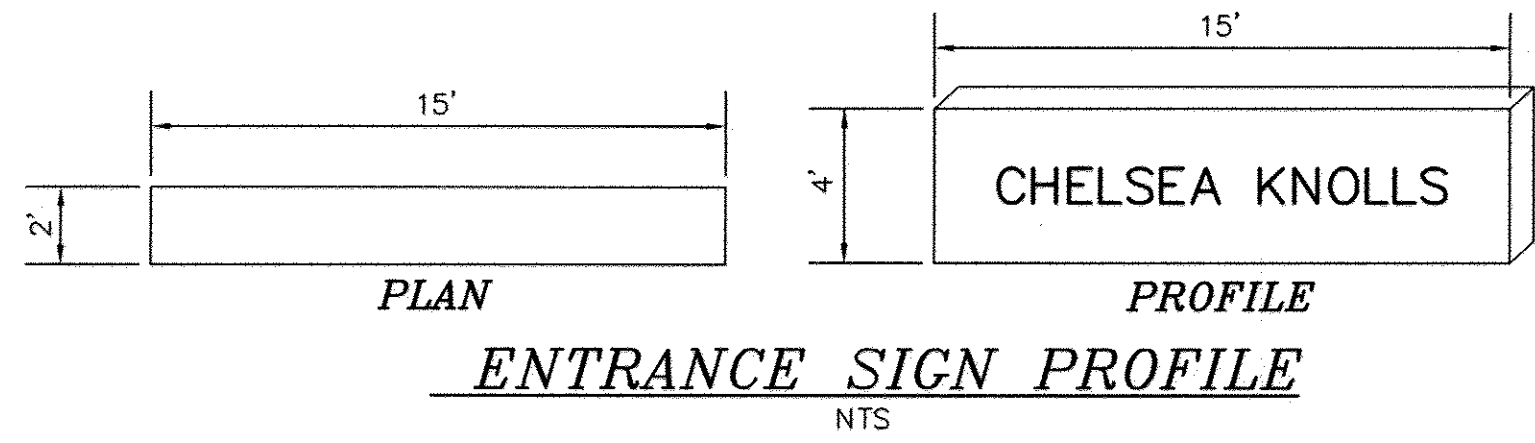
project	2001-008	date	APR. 2009
illustration	MMT	approval	MMT
scale	1/2"=1'	revision	AS SHOWN

ADD SWM NOTE	1/2/11	date	3/20/12
ADD SHEET TOTAL SHEET NO. 12 TO SHEET INDEX	4/11/15	description	INDEX
CHANGE TOTAL SHEET #S	4/11/15	description	INDEX
REV. TITLE BLOCK, NOTES, LEGEND	3/20/12	description	INDEX

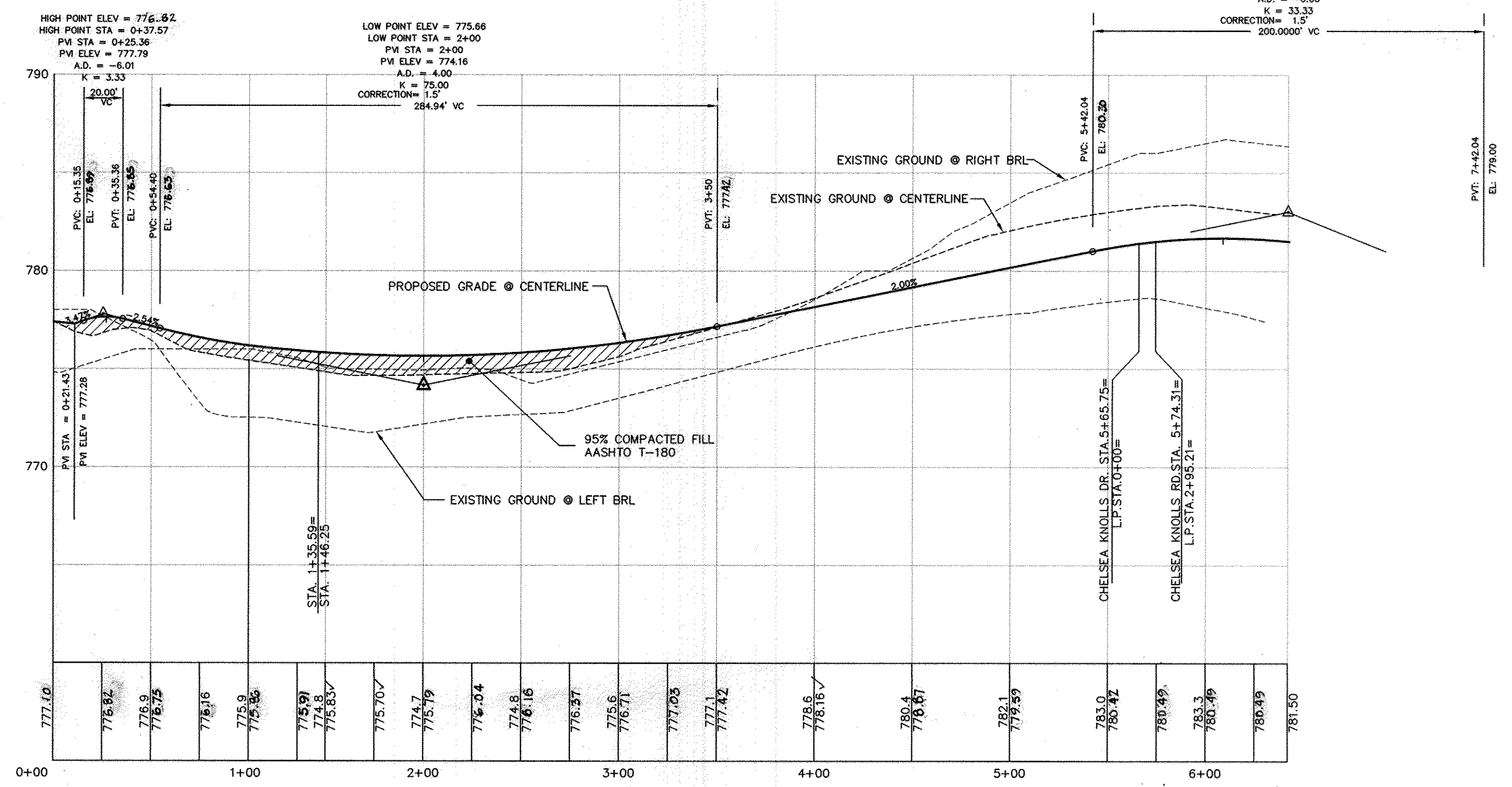
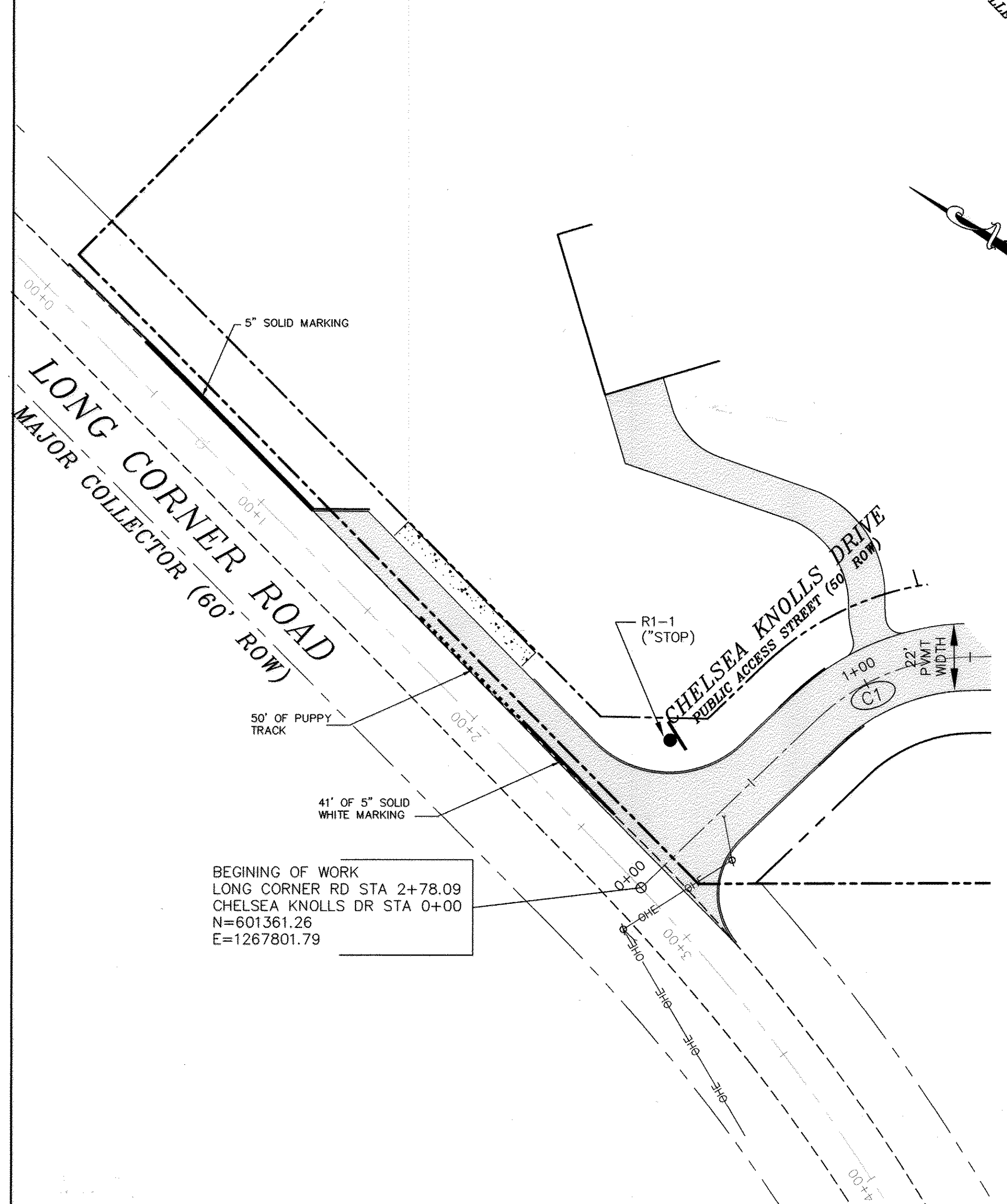
CHELSEA KNOLLS
LOTS 1-14, NON-BUILDABLE PRESERVATION PARCELS 4B AND NON-BUILDABLE BULK PARCEL "C"
TAX MAP 6 GRID 22 AND TAX MAP 12, GRID 5, PARCEL 9
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
COVER SHEET

MILDBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0286 Fax

CURVE TABLE					
CURVE	RADIUS	LENGTH	TANGENT	DELTA	CHORD BEARING & DISTANCE
C1	75.00	55.97	29.36	42°54'31"	N52°19'09"W 54.68
C2	300.00	203.09	105.61	38°47'10"	S50°19'58"E 199.23



CHELSEA KNOLLS DRIVE PLAN
 CLASSIFICATION: PUBLIC ACCESS STREET (50' ROW)
 DESIGN SPEED: 25 MPH
 SCALE: 1"=50'

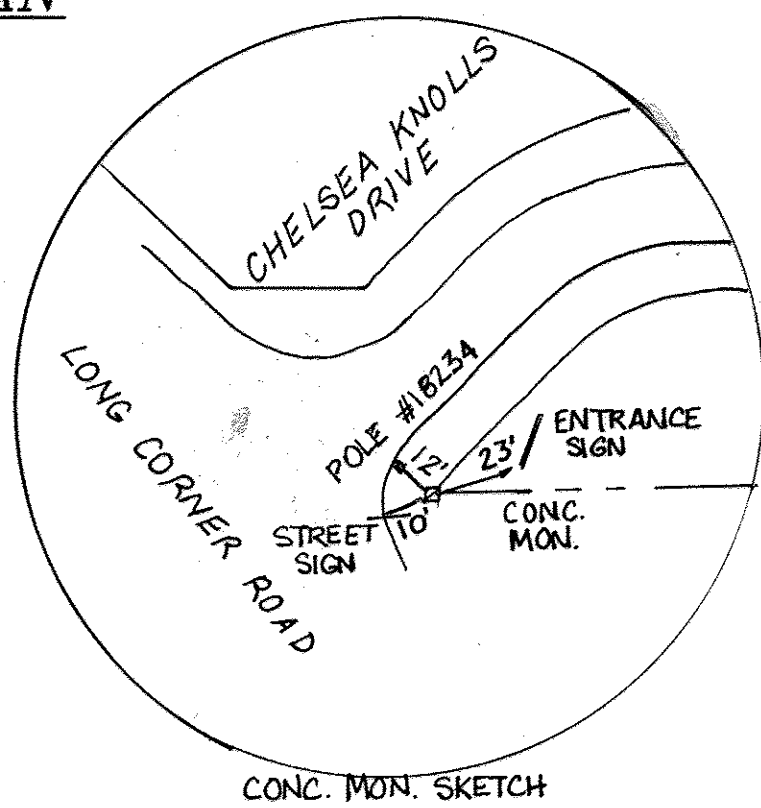


CHELSEA KNOLLS DRIVE PROFILE
 CLASSIFICATION: PUBLIC ACCESS STREET (50' ROW)
 DESIGN SPEED: 25 MPH
 SCALE: HOR: 1"=50'
 VER: 1"=50'

PAVMENT MARKING PLAN

OWNER/DEVELOPER
 CHELSEA KNOLLS, LC
 1355 BEVERLY RD. SUITE 240
 McLEAN, VIRGINIA 22101
 (703) 734-9730
 (301) 720-3021

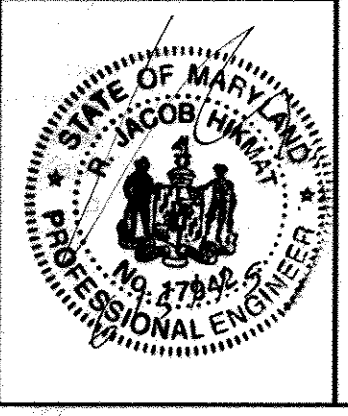
I hereby certify that the facility shown on this plan was constructed as shown on the 'As-Built' plans and meets with the approved plans and specifications.



APPROVED: DEPARTMENT OF PUBLIC WORKS
 [Signature] DATE: 7/11/15
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 [Signature] DATE: 7-13-15
 CHIEF, DIVISION OF LAND DEVELOPMENT

APPROVED: [Signature] DATE: 7-10-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



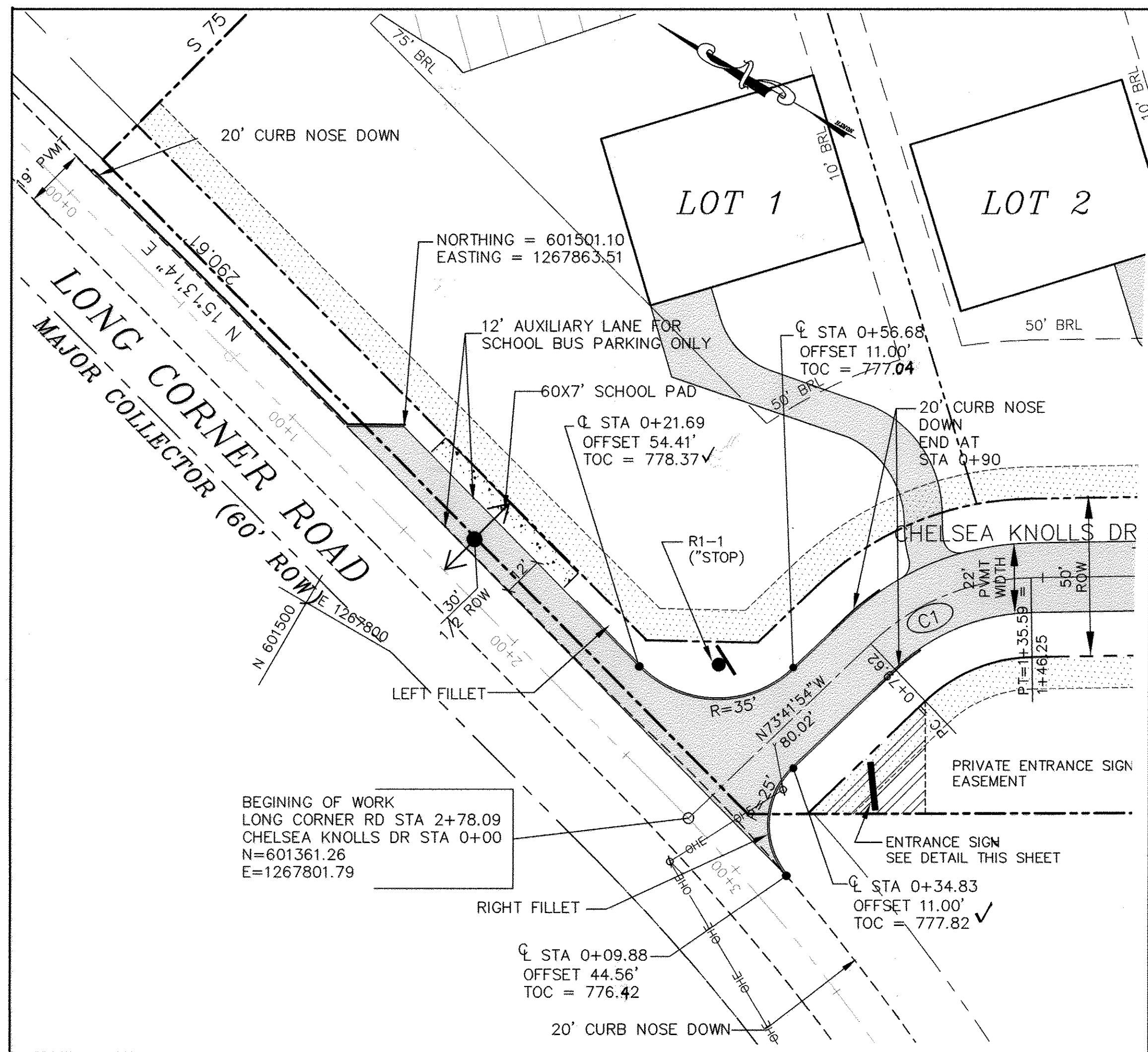
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17942, EXP DATE 9/3/16.

PROJECT	01-009	DATE	MAR. 2009
ILLUSTRATION	MAM	DATE	MAR. 2012
SCALE	1"=50'	DATE	MAR. 2012
APPROVAL	MAM	DATE	MAR. 2012
REVISIONS		DATE	

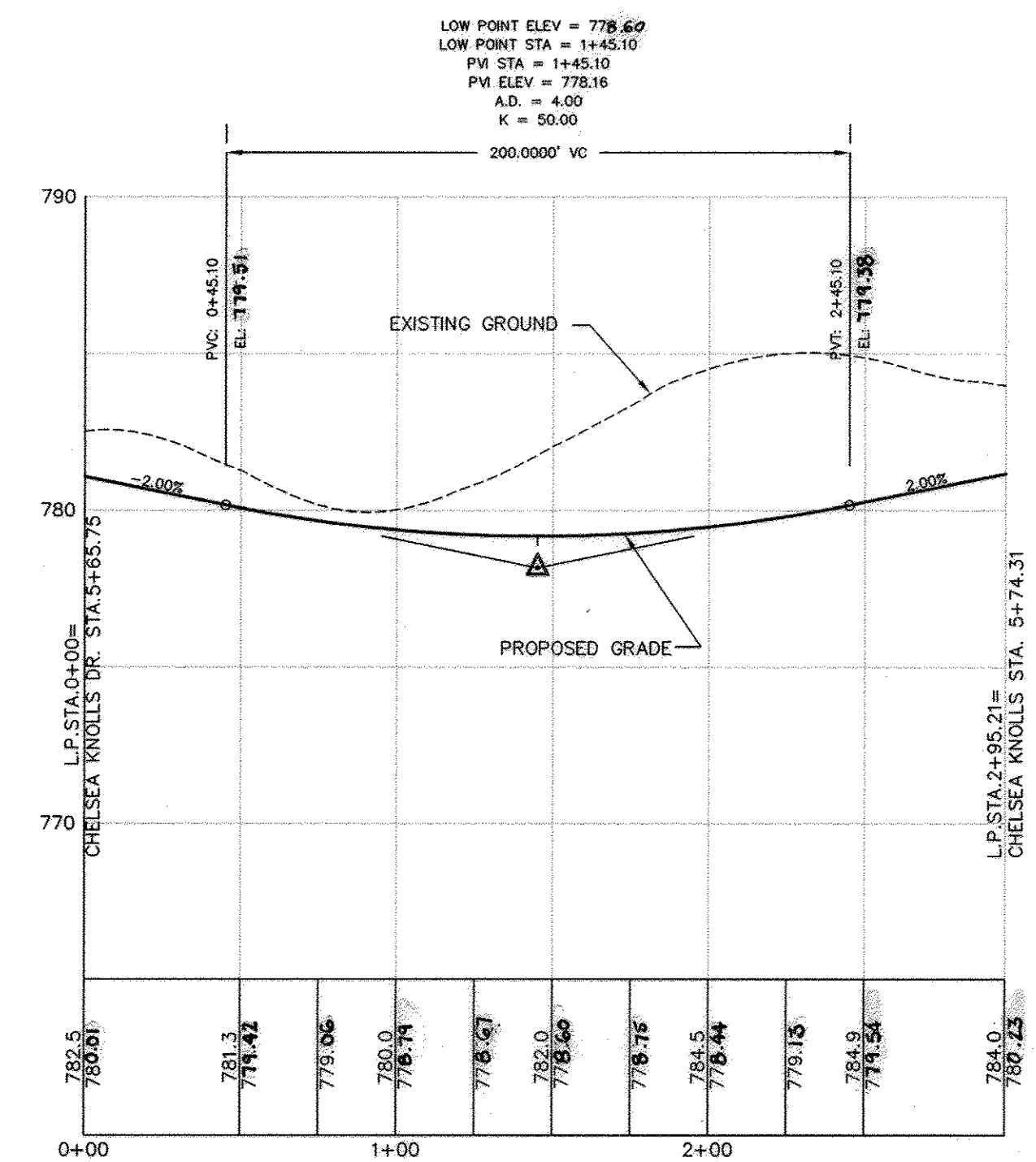
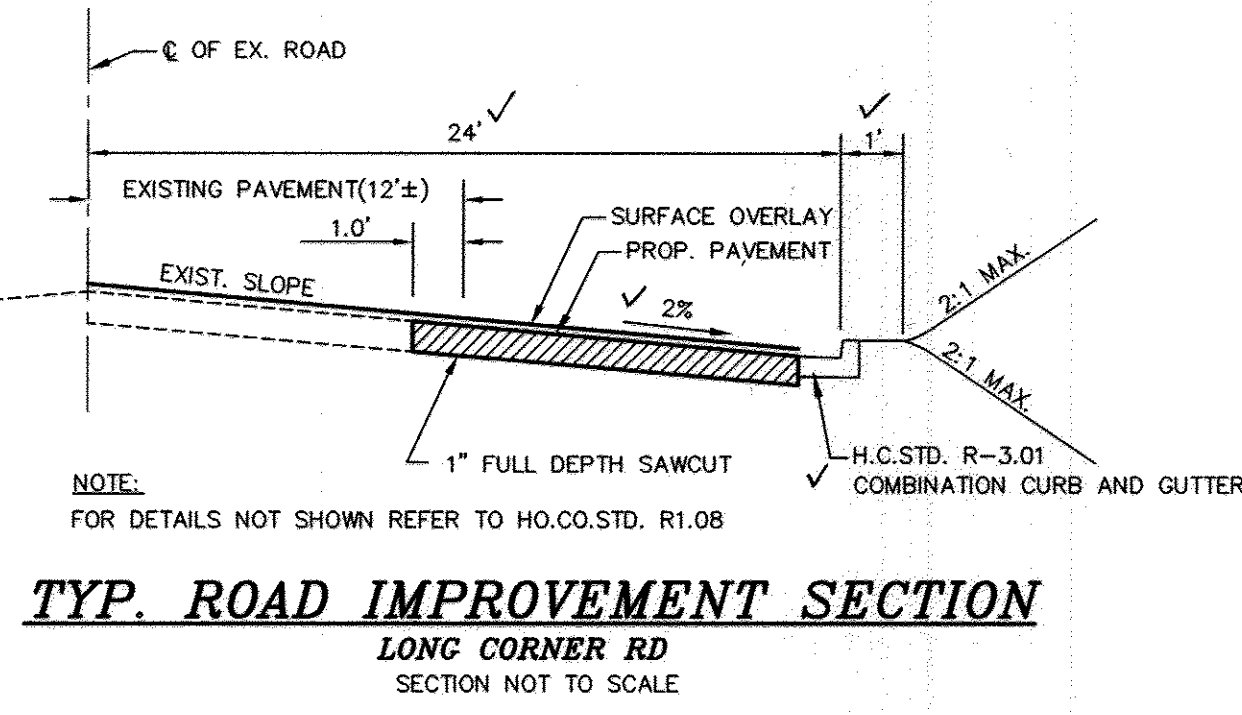
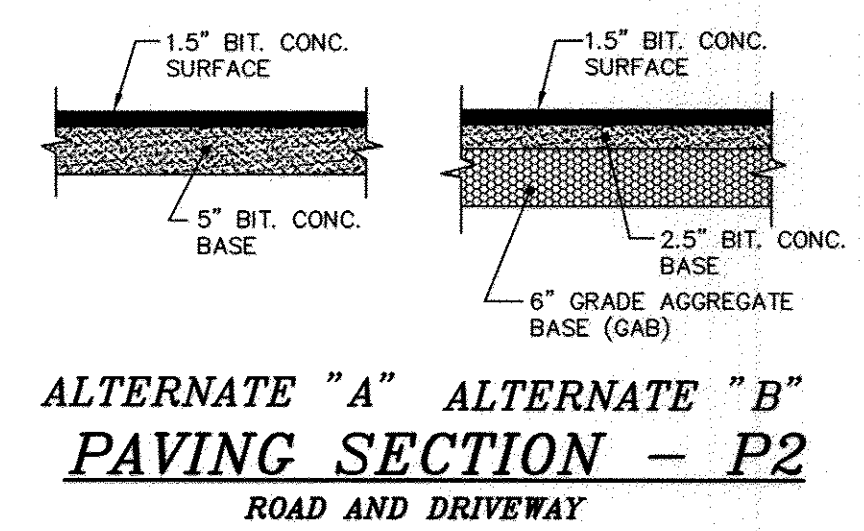
NO.	DESCRIPTION	DATE
1	ADD AS-BUILT DATA	4-27-14
2	REV. DIRECTIONAL SIGNAGE	JUNE 2015
3	REV. DIRECTIONAL SIGNAGE	APRIL 2015
4	REV. DIRECTIONAL SIGNAGE	MARCH 2012

CHELSEA KNOLLS
 TAX MAP 6 & 12, PARCEL 9
 FOURTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 ROAD PLAN, PROFILE AND PAVEMENT MARKING

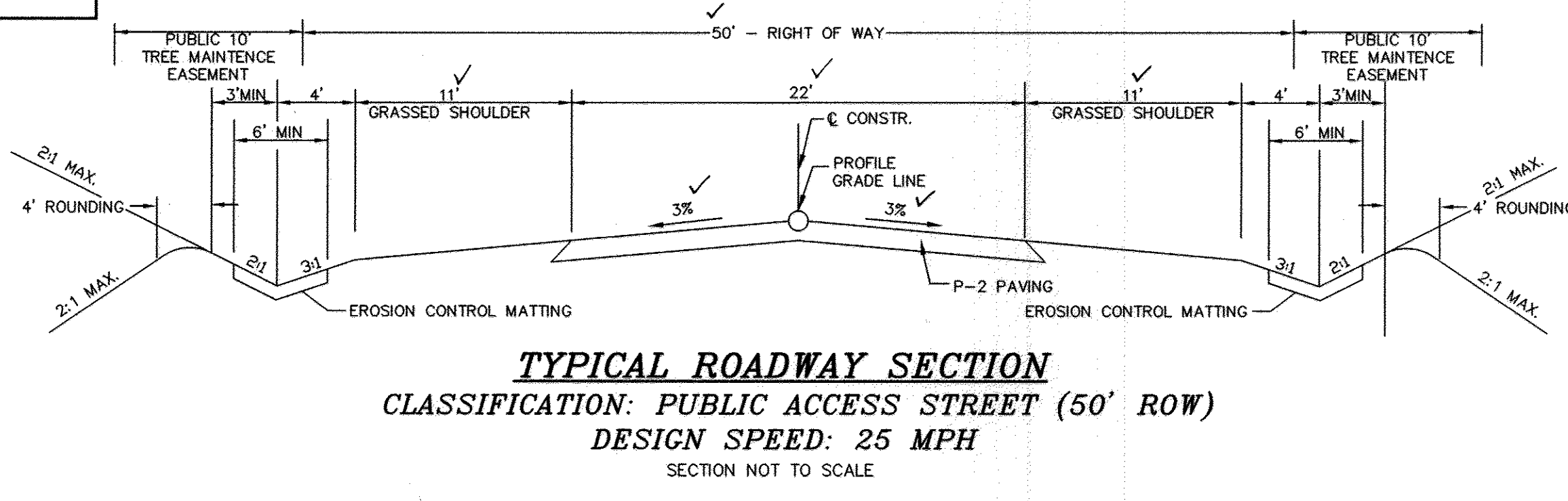
MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsy Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0286 Bldg. (410) 997-0288 Fax.



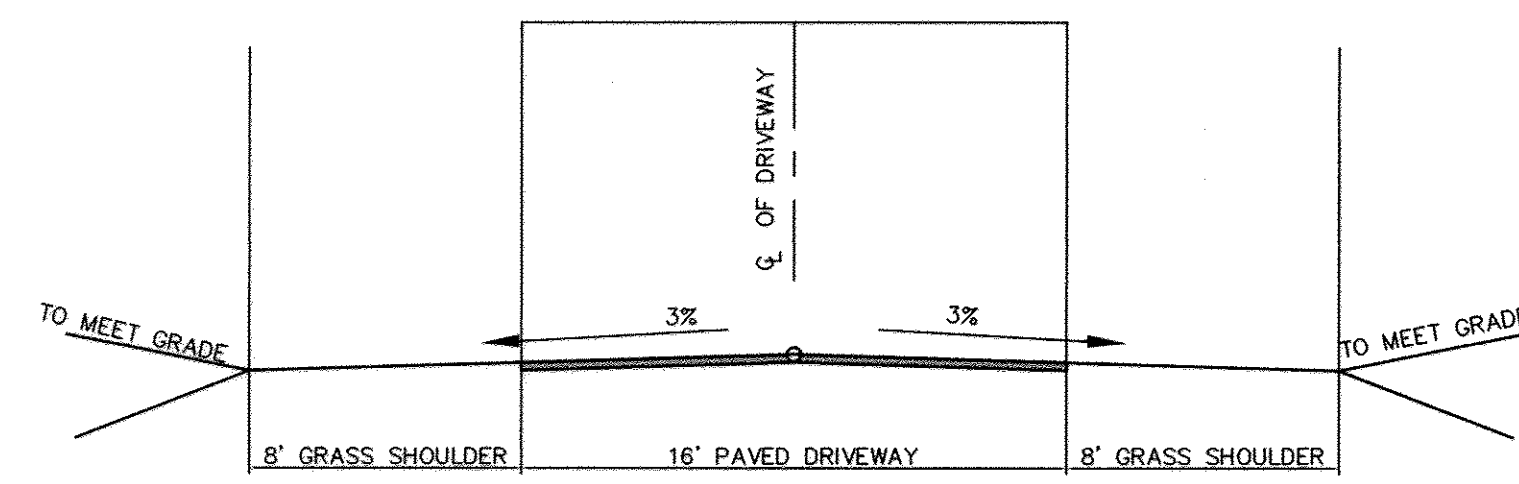
CHelsea Knolls Drive Entrance Plan
SCALE: 1"=30'



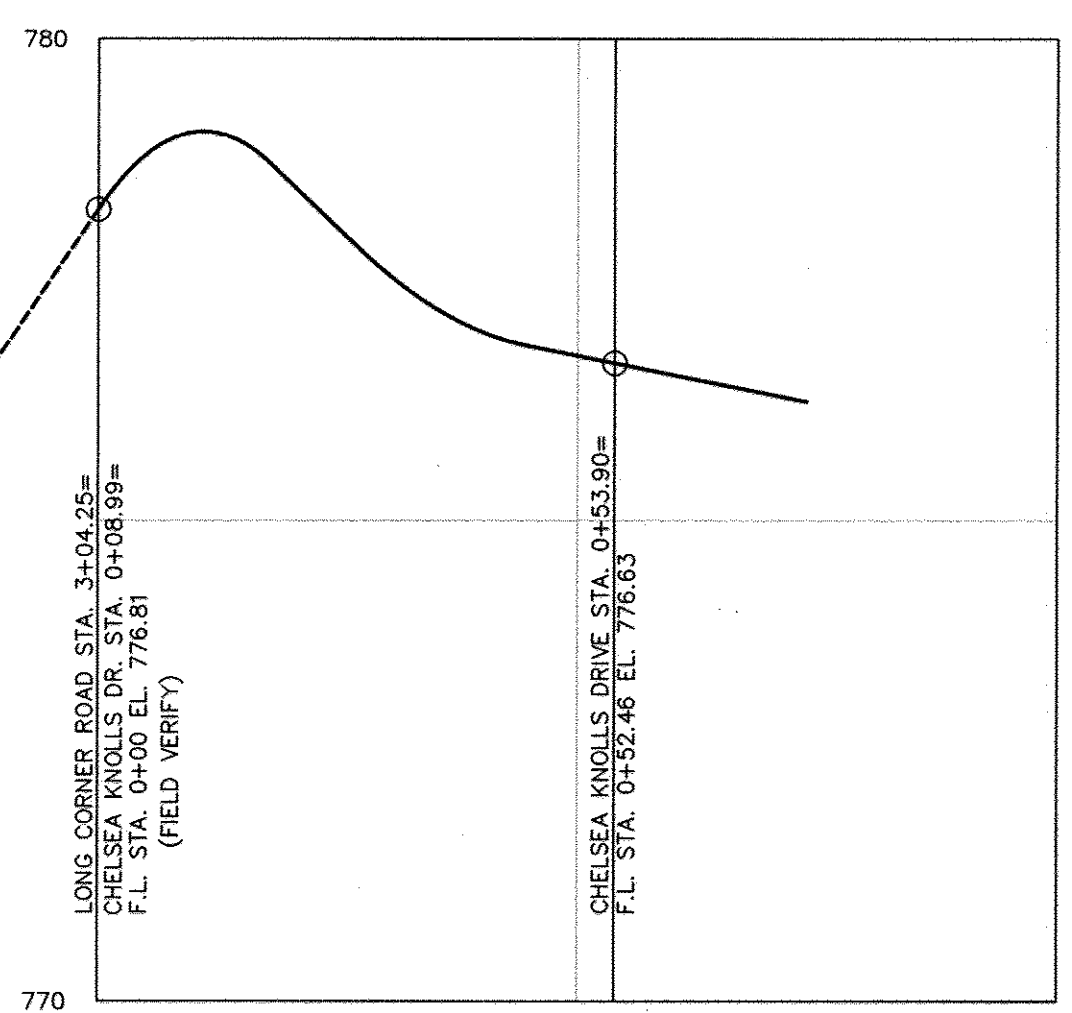
CHelsea Knolls Drive Linear Profile
CLASSIFICATION: PUBLIC ACCESS STREET (50' ROW)
DESIGN SPEED: 25 MPH
SCALE: HOR: 1"=50'
VER: 1"=50'



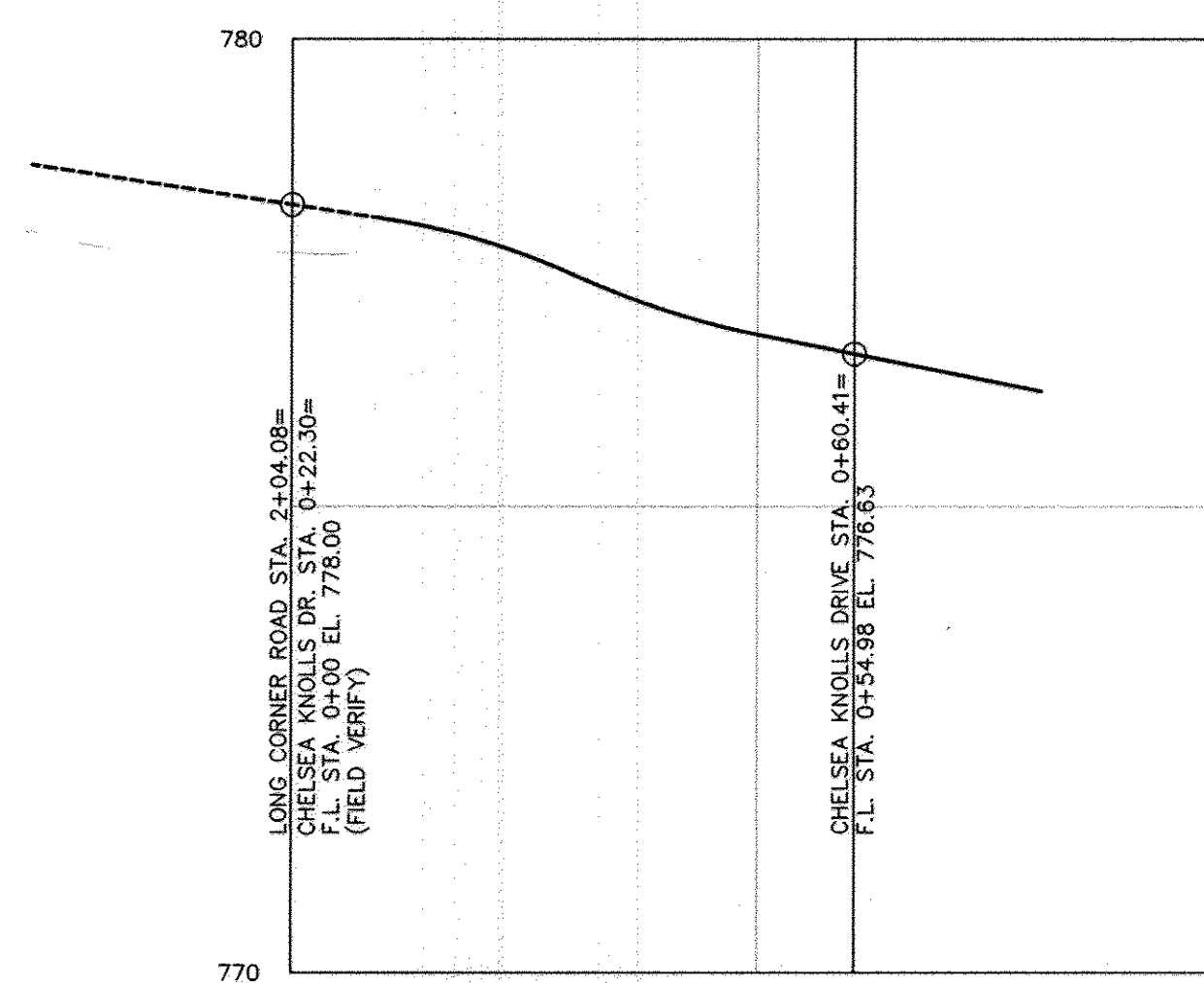
TYPICAL ROADWAY SECTION
CLASSIFICATION: PUBLIC ACCESS STREET (50' ROW)
DESIGN SPEED: 25 MPH
SECTION NOT TO SCALE



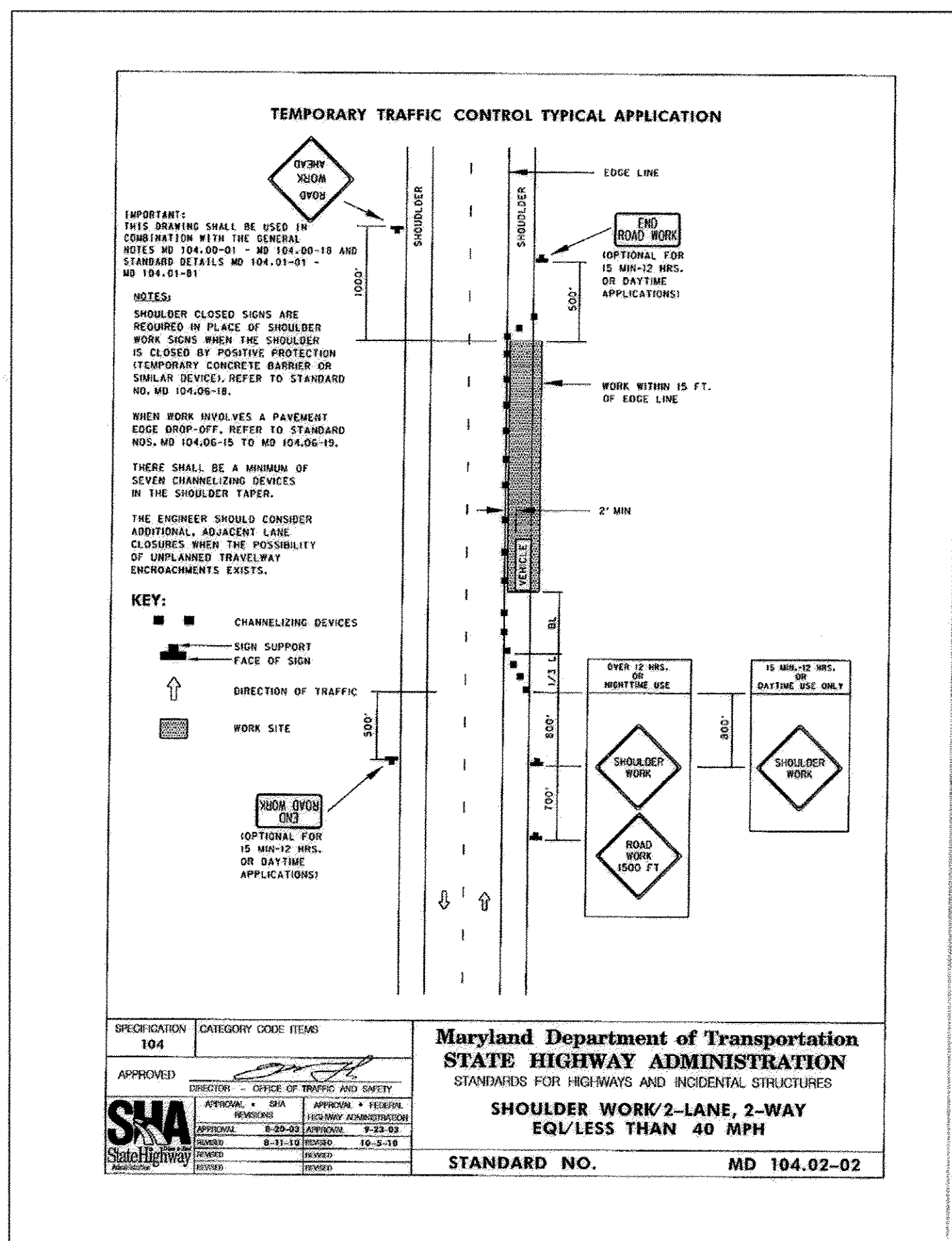
TYPICAL USE-IN-COMMON DRIVEWAY SECTION
DESIGN SPEED: 15 MPH
SECTION NOT TO SCALE



CHelsea Knolls Drive Left Fillet Profile
SCALE: HOR: 1"=20'
VER: 1"=2'

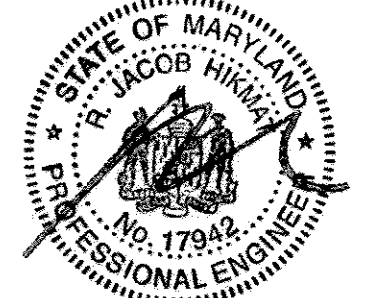


CHelsea Knolls Drive Right Fillet Profile
SCALE: HOR: 1"=20'
VER: 1"=2'



Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES
SHOULDER WORK/2-LANE, 2-WAY
EQ/LESS THAN 40 MPH
STANDARD NO. MD 104.02-02

I hereby certify that the facility shown on this plan was constructed as shown on the 'As-Built' plans and meets with the approved plans and specifications.



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. 17942, EXP DATE 9/3/16.

APPROVED: DEPARTMENT OF PUBLIC WORKS	<i>[Signature]</i>	DATE: 7-11-15
CHIEF BUREAU OF HIGHWAYS		
APPROVED: DEPARTMENT OF PLANNING AND ZONING	<i>[Signature]</i>	DATE: 7-13-15
CHIEF, DIVISION OF LAND DEVELOPMENT		
APPROVED: CHIEF, DEVELOPMENT ENGINEERING DIVISION	<i>[Signature]</i>	DATE: 7-10-15



OWNER/DEVELOPER
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1355 BEVERLY RD, SUITE 240
McLEAN, VIRGINIA 22101
(703) 734-9730
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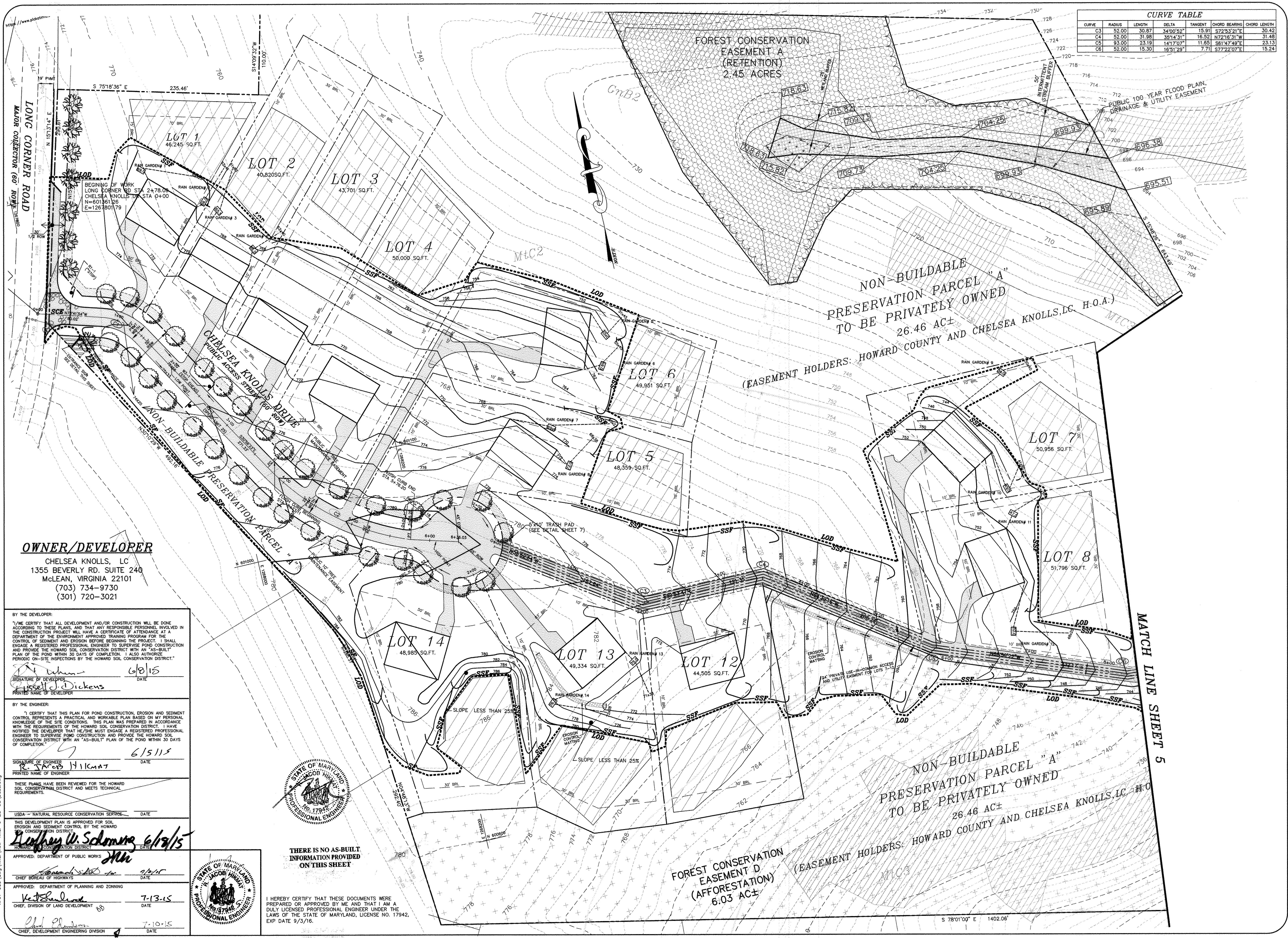
Project	date	approval
01-009	MAR. 2009	AS SHOWN RJH
Illustration	engineering	
MAM	MAM	
scale		

REVISED	date	description	revision
4	9/12/16	ADD AS BUILT DATA	
3	JUNE 2015	REV. HORIZONTAL ALIGNMENT OF THE ENTRANCE	
2	MAR. 2015	REV. TOTAL SHEET NO.	
1		NEW ENTRY SIGN ERECTION	

REVISED
CHelsea Knolls
LOTS 1-14, NON-BUILDABLE PRESERVATION PARCELS A & B & NON-BUILDABLE BULK PARCEL C
TAX MAP 6 & 12, PARCEL 9
FOURTH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
LINEAR PROFILE & TYPICAL SECTIONS

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296 Fax

CURVE TABLE						
CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHORD BEARING	CHORD LENGTH
C3	52.00	30.87	34°00'52"	15.91	S72°53'21"E	30.42
C4	52.00	31.98	35°14'31"	16.52	N72°16'31"W	31.48
C5	93.00	23.19	14°17'07"	11.65	S61°47'49"E	23.13
C6	52.00	15.30	16°51'29"	7.71	S77°22'07"E	15.24



OWNER/DEVELOPER
 CHELSEA KNOLLS, LC
 1355 BEVERLY RD. SUITE 240
 McLEAN, VIRGINIA 22101
 (703) 734-9730
 (301) 720-3021

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: *[Signature]* DATE: 6/8/15
 Printed Name: Russell J. Dickens

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

Signature: *[Signature]* DATE: 6/15/15
 Printed Name: R. Jacob Hickmat



THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

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. 17942, EXP. DATE 9/3/16.

USDA - NATURAL RESOURCE CONSERVATION SERVICE DATE: _____
 THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
 Signature: *[Signature]* DATE: 6/19/15
 APPROVED: DEPARTMENT OF PUBLIC WORKS
 Signature: *[Signature]* DATE: 7/14/15
 CHIEF BUREAU OF HIGHWAYS
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Signature: *[Signature]* DATE: 7-13-15
 CHIEF, DIVISION OF LAND DEVELOPMENT
 Signature: *[Signature]* DATE: 7-10-15
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

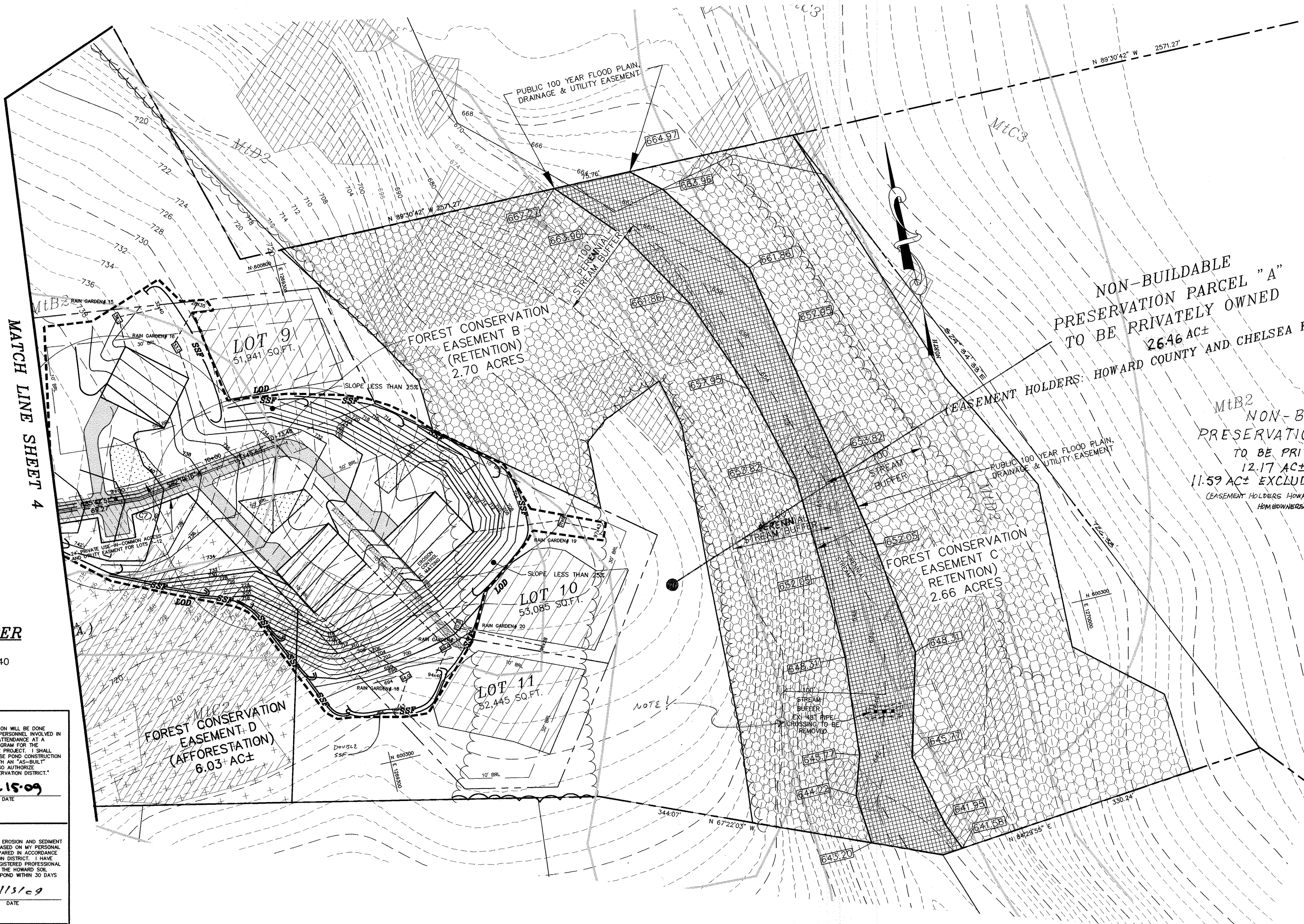


date	APR. 2009	engineering	MM	approval	RJH
project	01-009	illustration	MM	scale	1"=50'

date	JUNE 2015	description	ALIGNMENT OF THE ENTRANCE
rev.	3	description	REV. TOTAL SHEET NO. OF SHEETS (FFC)
rev.	2	description	ADDRESS PLAN, REV. PARCEL A, AC. REV. TITLE BLOCK
rev.	1	description	ADDRESS PLAN, REV. PARCEL A, AC. REV. TITLE BLOCK

REVISED
CHELSEA KNOLLS
 CHELSEA KNOLLS PRESERVATION PARCELS A & B & NON-BUILDABLE BULK PARCEL C
 TAX MAP 6 & 12, PARCEL 9
 FOURTH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND
 GRADING AND SEDIMENT CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsy Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0296 Fax: (410) 997-0298 Fax



OWNER/DEVELOPER
 CHELSEA KNOLLS, LC
 1355 BEVERLY RD. SUITE 240
 McLEAN, VIRGINIA 22101
 (703) 734-9730
 (301) 720-3021

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] 4/15/09
 DATE
R. S. DIJONIS
 PRINTED NAME OF DEVELOPER

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

[Signature] 4/15/09
 DATE
R. JACOB HILKAT
 PRINTED NAME OF ENGINEER

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

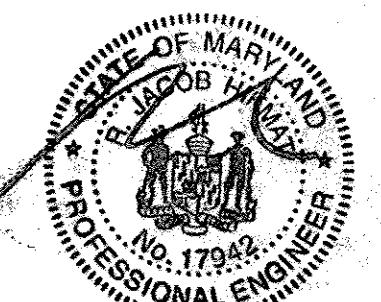
USDA - NATURAL RESOURCE CONSERVATION SERVICE DATE
 THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT DATE 4/23/09

APPROVED: DEPARTMENT OF PUBLIC WORKS
[Signature] 4/29/09
 DATE
Diane Johnson, Acting
 CHIEF BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
[Signature] 5/7/09
 DATE
Candy Harris
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 5/5/09
 DATE
Mark Dammann
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET



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. 17942, EXP. DATE 9/3/10.

SYMBOL	DESCRIPTION
Cc	CODORUS SILT LOAM --- TYPE C
G1A	GLENELG LOAM, 0% TO 3% SLOPES --- TYPE B
G1B2	GLENELG LOAM, 3% TO 8% SLOPES, MODERATELY ERODED --- TYPE B
G1C2	GLENELG LOAM, 8% TO 15% SLOPES, MODERATELY ERODED --- TYPE B
G1B2	GLENVILLE SILT LOAM, 3% TO 8% SLOPES, MODERATELY ERODED --- TYPE C
Hc	HATBORO SILT LOAM --- TYPE D
L1C2	LINGANORE CHANNERY LOAM, 8% TO 15% SLOPES, MODERATELY ERODED --- TYPE B
M1B2	MANOR LOAM, 3% TO 8% SLOPES, MODERATELY ERODED --- TYPE B
M1C2	MANOR LOAM, 8% TO 15% SLOPES, MODERATELY ERODED --- TYPE B
M1C3	MANOR LOAM, 8% TO 15% SLOPES, SEVERELY ERODED --- TYPE B
M1D2	MANOR LOAM, 15% TO 25% SLOPES, MODERATELY ERODED --- TYPE B
M1D3	MANOR LOAM, 15% TO 25% SLOPES, SEVERELY ERODED --- TYPE B
M1E	MANOR LOAM, 25% TO 45% SLOPES --- TYPE B
M1D	MANOR VERY STONY LOAM, 3% TO 25% SLOPES --- TYPE B
M1F	MANOR VERY STONY LOAM, 25% TO 60% SLOPES --- TYPE B
M1B2	MT. AIRY CHANNERY LOAM, 3% TO 8% SLOPES, MODERATELY ERODED --- TYPE A
M1C2	MT. AIRY CHANNERY LOAM, 8% TO 15% SLOPES, MODERATELY ERODED --- TYPE A
M1C3	MT. AIRY CHANNERY LOAM, 8% TO 15% SLOPES, SEVERELY ERODED --- TYPE A
M1D2	MT. AIRY CHANNERY LOAM, 15% TO 25% SLOPES, MODERATELY ERODED --- TYPE A
M1E	MT. AIRY CHANNERY LOAM, 25% TO 45% SLOPES --- TYPE A

CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHORD BEARING	CHORD LENGTH
C6	52.00	15.30	16°51'29"	7.71	S77°22'07"E	15.24
C7	52.00	10.78	11°52'53"	5.41	N88°15'42"E	10.76

project	01-009	date	APR. 2009
illustration	MM	engineering	MM
scale	1"=50'	approval	MM

REV. TOTAL SHEET NO.	01/15	date	4/15/09
REVISE TOTAL NUMBER OF SHEETS (of 3)	4/2/15	description	3.5/04
REV. DRAWING A CHANGE, REV. TITLE BLOCK	3.5/04	revisions	

CHELSEA KNOLLS
 LOTS 1-14, NON-BUILDABLE PRESERVATION PARCELS A & B & NON-BUILDABLE BULK PARCEL C
 TAX MAP 6 & 12, PARCEL 9
 HOWARD COUNTY, MARYLAND
 FOURTH ELECTION DISTRICT
GRADING AND SEDIMENT CONTROL PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorney Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 397-0256 Fax

HOWARD SOIL CONSERVATION DISTRICT

PERMANENT SEEDING NOTES

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

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

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

- 1) UNWEEDING - APPLY 2 TONS PER ACRE OF SOLUCLIMIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 600 LBS. PER ACRE 10-10-10 FERTILIZER (14 LBS./1000 SQ.FT.) BEFORE SEEDING.
- 2) HARROW OR DISK UNDER THREE INCHES OF TOPSOIL FOR THE PERIOD MAY 1 THRU AUGUST 14. SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (0.5 LBS./1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28. PROJECT SITE BY: OPTION (1) - APPLY 400 LBS. PER ACRE 0-0-0 UREA-FORMALIN FERTILIZER (9 LBS./1000 SQ.FT.)
- 3) ACCEPTABLE: APPLY 2 TONS PER ACRE SOLUCLIMIC LIMESTONE (92 LBS./1000 SQ.FT.) AND 1000 LBS. PER ACRE 10-10-10 FERTILIZER (23 LBS./1000 SQ.FT.) BEFORE SEEDING. HARROW OR DISK UNDER THREE INCHES OF SOIL.

SEEDING - FOR THE PERIODS MARCH 1 THRU APRIL 30 AND AUGUST 1 THRU OCTOBER 15, SEED WITH 60 LBS. PER ACRE 1.4 LBS./1000 SQ.FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 60 LBS. KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS. PER ACRE (0.5 LBS./1000 SQ.FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THRU FEBRUARY 28. PROJECT SITE BY: OPTION (1) - APPLY 400 LBS. PER ACRE 0-0-0 UREA-FORMALIN FERTILIZER (9 LBS./1000 SQ.FT.) AND 216 GALLONS PER ACRE (6 GAL./1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS ON SLOPES 8 FEET OR HIGHER. USE 348 GALLONS PER ACRE (8 GAL./1000 SQ.FT.) FOR ANCHORING.

MAINTENANCE - INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE REDISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

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

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

SEEDING - FOR PERIODS MARCH 1 THRU APRIL 30 AND FROM AUGUST 1 THRU OCTOBER 15, SEED WITH 2-1/2 LBS. PER ACRE OF ANNUAL RYE (3.5 LBS./1000 SQ.FT.) FOR THE PERIOD MAY 1 THRU AUGUST 14, SEED WITH 3 LBS. PER ACRE OF WEEPING LOVEGRASS (0.7 LBS./1000 SQ.FT.). FOR THE PERIOD NOVEMBER 16 THRU NOVEMBER 28, PROJECT SITE BY RAKING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOU.

MULCHING - APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS./1000 SQ.FT.) OF UNWEEDED WOOD FREE SMALL GRASS STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 216 GAL. PER ACRE (6 GAL./1000 SQ.FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GAL. PER ACRE (8 GAL./1000 SQ.FT.) FOR ANCHORING.

REFER TO THE 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RULES AND METHODS NOT COVERED.

STANDARD SEDIMENT CONTROL NOTES

- 1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION. (313-1850).
- 2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL," AND REVISIONS THERETO.
- 3) FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - a) 7 CALENDAR DAYS FOR ALL PERMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERMETER SLOPES AND ALL SLOPES GREATER THAN 2:1.
 - b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- 4) ALL SEDIMENT TRAP BASINS MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERMETER IN ACCORDANCE WITH SECTION 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- 5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1981 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE USED WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- 6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 7) SITE ANALYSIS: N/A
- 8) TOTAL AREA TO BE RESTORED OR GRADED: 8500 ACRES
- 9) TOTAL AREA TO BE TEMPORARILY STABILIZED: 350 ACRES
- 10) TOTAL CUT: 20,000 CU. YDS.
- 11) TOTAL FILL: 20,000 CU. YDS.
- 12) TOTAL WASTE/BORROW AREA LOCATION: THESE QUANTITIES ARE FOR PERMIT PURPOSES ONLY. CONTRACTOR IS REQUIRED TO PROVIDE HIS OWN QUANTITIES MEASUREMENTS.
- 13) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- 14) ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- 15) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERMETER EROSION AND SEDIMENT CONTROL. BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING, OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE OBTAINED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- 16) TRAPCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

OWNER/DEVELOPER

CHELSEA KNOLLS, LC
1355 BEVERLY RD. SUITE 240
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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 BEGGINING 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] 4/15/09
DATE

[Signature] 4/15/09
DATE

BY THE ENGINEER:

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[Signature] 4/15/09
DATE

[Signature] 4/23/09
DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.

USDA - NATURAL RESOURCE CONSERVATION SERVICE DATE: 4/23/09

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: DEPARTMENT OF PUBLIC WORKS

[Signature] 4/23/09
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[Signature] 5/7/09
DATE

APPROVED: DEPARTMENT OF ENGINEERING

[Signature] 6/5/09
DATE

STANDARD AND SPECIFICATIONS FOR TOPSOIL

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

PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW pH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES

1. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
 - a. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
 - b. THE SUBSOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
 - c. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
 - d. THE SOIL IS SO AODIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
2. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS

1. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.
2. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
 - i. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND, OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY THE APPROPRIATE APPROVAL AUTHORITY. REGARDLESS, TOPSOIL SHALL NOT BE A Mixture OF CONTRASTING TEXTURED SUBSOILS AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF ONDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
 - ii. TOPSOIL SHALL BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACKGRASS, JOHNSON-SON GRASS, NUTTBUSH, POISON IVY, THISTLE, OR OTHERS AS SPECIFIED.
 - iii. WHERE THE SUBSOIL IS EITHER HEAVILY ACIDIC OR COMPOSED OF HEAVY CLAYS, GROUND LIMESTONE SHALL BE PLACED AT THE RATE OF 4-8 TONS/ACRE (200-400 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL. LIME SHALL BE DISTRIBUTED UNIFORMLY OVER DESIGNATED AREAS AND WORKED INTO THE SOIL IN CONJUNCTION WITH TILLAGE OPERATIONS AS DESCRIBED IN THE FOLLOWING PROCEDURES.
3. FOR SITES HAVING DISTURBED AREAS UNDER 5 ACRES:
 - i. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 2.0.0. VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
 - ii. FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES:
 1. ON SOIL MEETING TOPSOIL SPECIFICATIONS, OBTAIN TEST RESULTS DICTATING FERTILIZER AND LIME AMENDMENTS REQUIRED TO BRING THE SOIL INTO COMPLIANCE WITH THE FOLLOWING:
 - a. pH FOR TOPSOILS SHALL BE BETWEEN 6.0 AND 7.0. IF THE TESTED SOIL DEMONSTRATES A pH OF LESS THAN 6.0, SUFFICIENT LIME SHALL BE PRESCRIBED TO RAISE THE pH TO 6.5 OR HIGHER.
 - b. ORGANIC CONTENT OF TOPSOIL SHALL BE NOT LESS THAN 1.5 PERCENT BY WEIGHT.
 - c. TOPSOIL HAVING SOLUBLE SALT CONTENT GREATER THAN 500 PARTS PER MILLION SHALL NOT BE USED.
 - d. NO SOU OR SEED SHALL BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEED CONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHENOXY TOXIC MATERIALS.
 2. PLACE TOPSOIL (IF REQUIRED) AND APPLY SOIL AMENDMENTS AS SPECIFIED IN 2.0.0. VEGETATIVE STABILIZATION - SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS.
4. TOPSOIL APPLICATION
 1. WHEN TOPSOILING, MAINTAIN NEEDED EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, EARTH DIKES, SLOPE SILT FENCE AND SEDIMENT TRAPS AND BASINS.
 2. GRADES ON THE AREAS TO BE TOPSOILED WHICH HAVE BEEN PREVIOUSLY ESTABLISHED, SHALL BE MAINTAINED, ALBERT 4" - 6" HIGHER IN ELEVATION.
 3. TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED IN A 4" TO 6" LAYER AND LIGHTLY COMPACTED TO A MINIMUM THICKNESS OF 4". SPREADING SHALL BE PERFORMED IN SUCH A MANNER THAT SOODING OR SEEDING CAN PROCEED WITH A MINIMUM OF ADDITIONAL SOIL PREPARATION AND TILLAGE. ANY IRREGULARITIES IN THE SURFACE RESULTING FROM TOPSOILING OPERATIONS SHALL BE CORRECTED IN ORDER TO PREVENT THE FORMATION OF DEPRESSIONS OR WATER POCKETS.
 4. TOPSOIL SHALL NOT BE PLACED WHILE THE TOPSOIL OR SUBSOIL IS IN A FROZEN OR MUDDY CONDITION, WHEN THE SUBSOIL IS EXCESSIVELY WET OR IN A CONDITION THAT MAY OTHERWISE BE DEETRIMENTAL TO PROPER GRADING AND SEEDBED PREPARATION.
5. ALTERNATIVE FOR PERMANENT SEEDING - INSTEAD OF APPLYING THE FULL AMOUNTS OF LIME AND COMMERCIAL FERTILIZER, COMPOSTED SLUDGE AND AMENDMENTS MAY BE APPLIED AS SPECIFIED BELOW:
 1. COMPOSTED SLUDGE MATERIAL FOR USE AS A SOIL CONDITIONER FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES SHALL BE SUBJECT TO PRECISE AMENDMENTS AND FOR SITES HAVING AREAS UNDER 5 ACRES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS:
 - a. COMPOSTED SLUDGE SHALL BE SUPPLIED BY, OR ORIGINATE FROM, A PERSON OR PERSONS WHO ARE PERMITTED (AT THE TIME OF ACQUISITION OF THE COMPOST) BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UNDER ZOMAR 26.04.05.
 - b. COMPOSTED SLUDGE SHALL CONTAIN AT LEAST 1 PERCENT NITROGEN, 1.5 PERCENT PHOSPHORUS, AND 0.2 PERCENT POTASSIUM AND HAVE A PH OF 7.0 TO 8.0. IF COMPOST DOES NOT MEET THESE REQUIREMENTS, THE APPROPRIATE FERTILIZANTS MUST BE ADDED TO MEET THE REQUIREMENTS PRIOR TO USE.
 - c. COMPOSTED SLUDGE SHALL BE APPLIED AT A RATE OF 1 TON/1,000 SQUARE FEET.
 2. COMPOSTED SLUDGE SHALL BE AMENDED WITH A POTASSIUM FERTILIZER APPLIED AT THE RATE OF 4 LB./1,000 SQUARE FEET, AND 1/3 THE NORMAL LIME APPLICATION RATE.

REFERENCES: GUIDELINE SPECIFICATIONS, SOIL PREPARATION AND SOODING, MD-VIA, PUB. #1, COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF MARYLAND AND VIRGINIA POLYTECHNIC INSTITUTES, REVISED 1973.

EROSION AND SEDIMENT CONTROL NOTES

1. ALL SEDIMENT CONTROL OPERATIONS ARE TO BE DONE IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY VOLUME IV DESIGN MANUAL AND THE STANDARDS AND SPECIFICATIONS FOR SEDIMENT CONTROL IN DEVELOPING AREAS.
2. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST ORDER OF BUSINESS.
3. ALL EXCAVATED MATERIALS SHALL BE STOCKPILED ON THE UPGRADE SIDE OF THE MAIN TRENCH.
4. EXCAVATION AND BACKFILL SHALL BE LIMITED TO THAT WHICH CAN BE STABILIZED WITHIN ONE WORKING DAY.
5. IMMEDIATELY FOLLOWING BACKFILL OF THE SEWER TRENCH, ALL DISTURBED AREAS ARE TO BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION AND SEEDING NOTES SHOWN ON THIS SHEET.
6. THROUGHOUT THE PROJECT, THE CONTRACTOR SHALL REGULARLY INSPECT ALL SEDIMENT CONTROL DEVICES AND PROVIDE ALL NECESSARY MAINTENANCE TO INSURE THAT ALL DEVICES ARE IN OPERATIVE CONDITION.
7. ALL SEDIMENT CONTROL FACILITIES SHALL REMAIN IN PLACE UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

SEQUENCE OF CONSTRUCTION

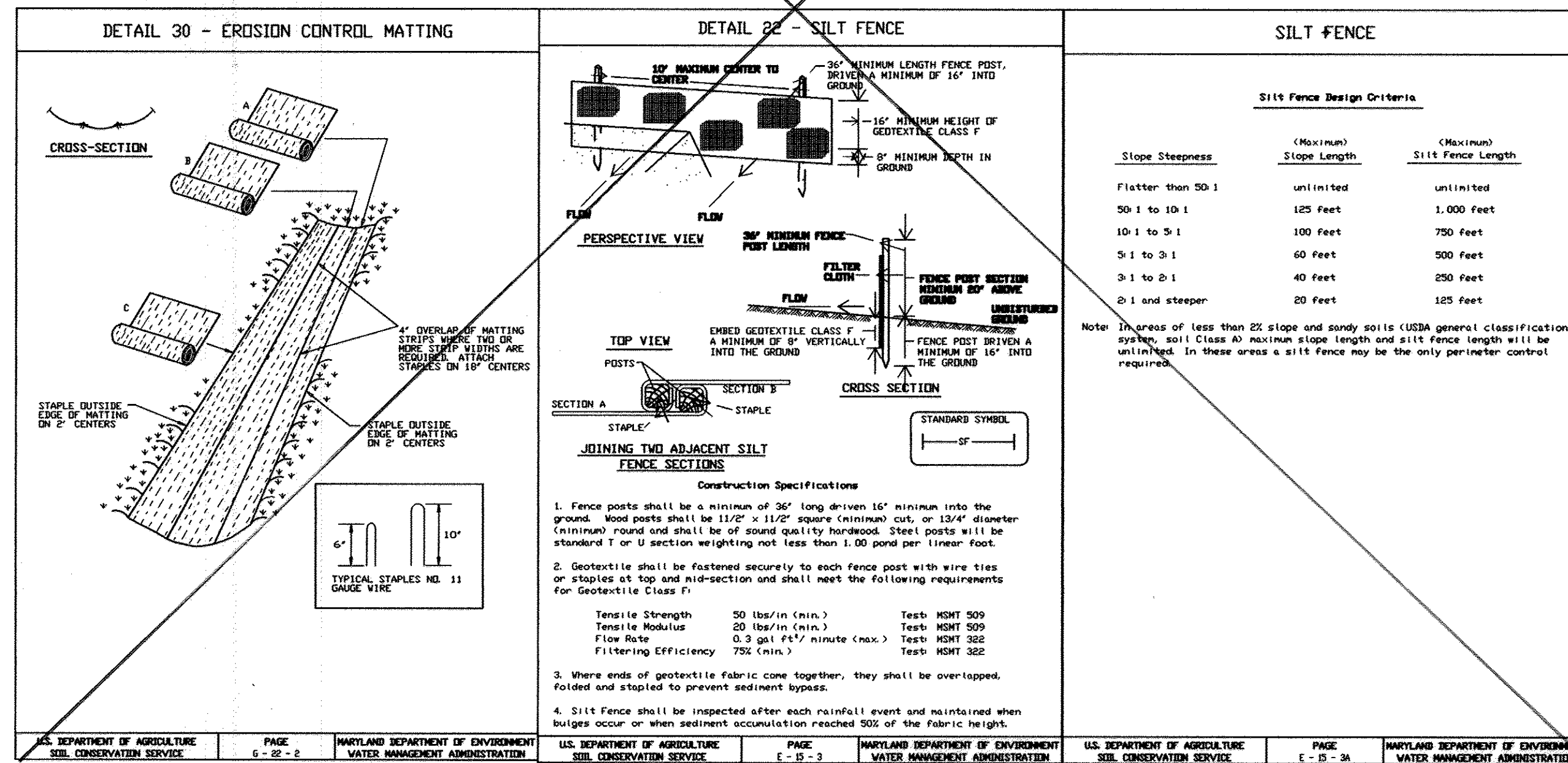
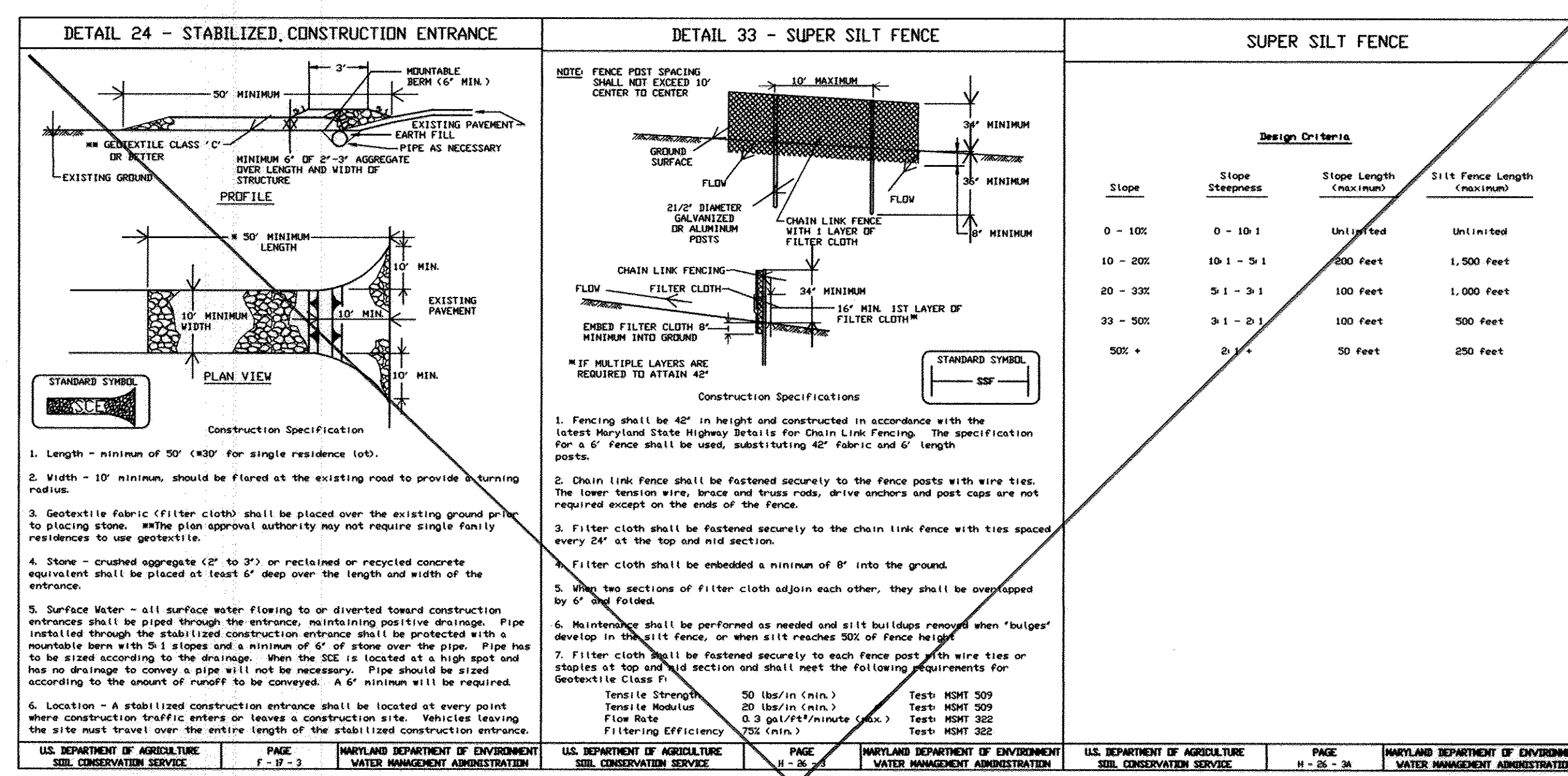
1. OBTAIN GRADING PERMIT. (1 DAY)
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE (1 DAY)
3. CONSTRUCT SILT FENCE AND SUPER SILT FENCE (3 DAYS)
4. AFTER RECEIVING PERMITS FROM INSPECTOR CONSTRUCT ROAD. (7 DAYS)
5. BRING SITE TO DESIGN GRADES, CONSTRUCT SITE PER APPROVED DRAWINGS. (25 DAYS)
6. WHEN ALL CONTRIBUTING AREAS TO SEDIMENT AND EROSION CONTROL DEVICES HAVE BEEN STABILIZED, AND WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR, REMOVE SEDIMENT AND EROSION CONTROL DEVICES AND STABILIZE REMAINING DISTURBED AREAS. (15 DAYS)
7. WITH PERMISSION OF SEDIMENT CONTROL INSPECTOR, REMOVE ALL OLD AND NEW JUNK, TRASH AND DEBRIS FROM THE FLOODPLAINS, STREAMS, WETLANDS AND THEIR BUFFERS, AND FROM FOREST CONSERVATION AREAS. (3 DAYS)
8. STABILIZE REMAINING DISTURBED AREAS. (2 DAYS)

STABILIZE 48" PIPE-REMOVAL AREA IMMEDIATELY WITH ERM/3200. ADD ERM/3200 TO ALL SWALES AND RETAIN TO L.O.O.

THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

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. 17942, EXP. DATE 9/3/10.

FOR UPDATED NOTES & DETAILS, SEE SHEET 12

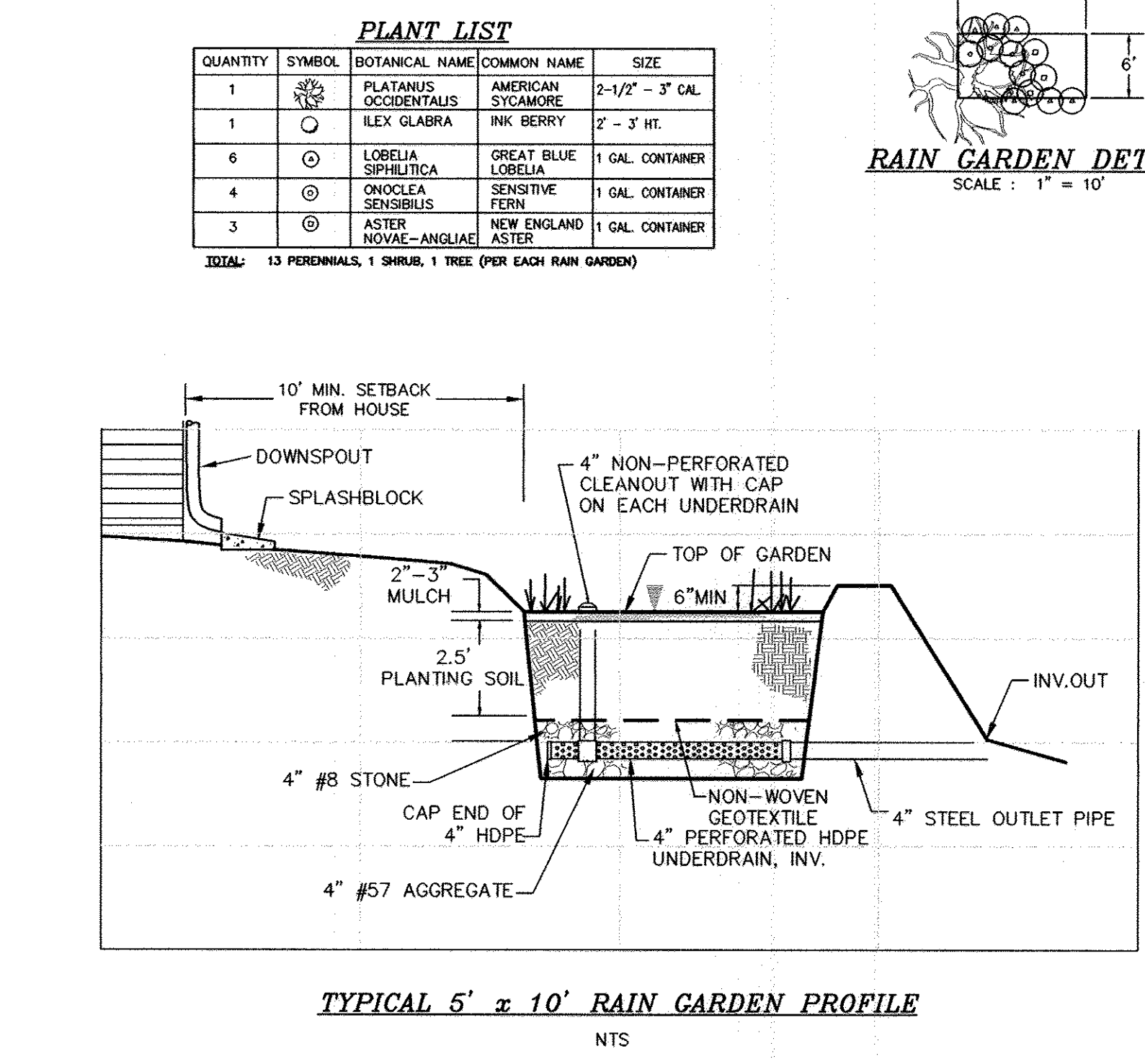


STATE OF MARYLAND PROFESSIONAL ENGINEERING

APPROVED: DEPARTMENT OF PUBLIC WORKS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

APPROVED: DEPARTMENT OF ENGINEERING



RAINGARDEN INFORMATION

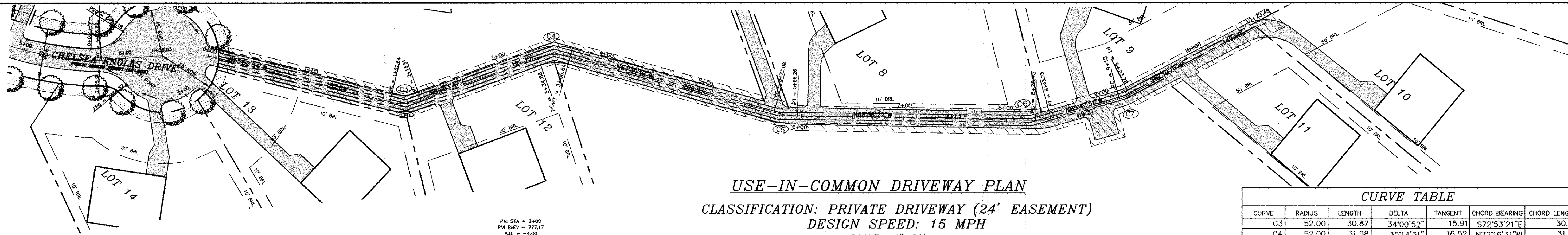
RAINGARDEN DIMENSIONS	TOP OF RAINGARDEN ELEVATION	PONDING DEPTH	DEPTH OF GRAVEL	UNDERDRAIN INVERT	INV. OUT	
1	5'x10'	769.00'	0.5'	2.5'	766.58'	765.23'
2	5'x10'	766.00'	0.5'	2.5'	763.258'	762.41'
3	5'x10'	765.50'	0.5'	2.5'	762.08'	762.00'
4	5'x10'	766.00'	0.5'	2.5'	762.58'	762.40'
5	5'x10'	755.00'	0.5'	2.5'	751.58'	751.45'
6	5'x10'	759.00'	0.5'	2.5'	755.58'	755.45'
7	5'x10'	769.00'	0.5'	2.5'	765.58'	765.23'
8	5'x10'	772.00'	0.5'	2.5'	768.58'	768.38'
9	5'x10'	734.00'	0.5'	2.5'	730.58'	730.40'
10	5'x10'	745.50'	0.5'	2.5'	742.08'	741.90'
11	5'x10'	747.00'	0.5'	2.5'	743.58'	743.38'
12	5'x10'	752.00'	0.5'	2.5'	748.58'	748.25'
13	5'x10'	775.00'	0.5'	2.5'	771.58'	771.38'
14	5'x10'	776.00'	0.5'	2.5'	772.58'	772.28'
15	5'x10'	736.00'	0.5'	2.5'	732.58'	732.40'
16	5'x10'	733.00'	0.5'	2.5'	729.58'	728.35'
17	5'x10'	698.00'	0.5'	2.5'	694.58'	794.40'
18	5'x10'	694.00'	0.5'	2.5'	690.58'	690.43'
19	5'x10'	701.00'	0.5'	2.5'	697.58'	697.43'
20	5'x10'	700.00'	0.5'	2.5'	696.58'	696.28'

OPERATION AND MAINTENANCE SCHEDULE FOR RAINGARDENS

1. ANNUAL MAINTENANCE OF PLANT MATERIAL, MULCH LAYER AND SOIL LAYER IS REQUIRED. MAINTENANCE OF MULCH AND SOIL IS LIMITED TO CORRECTING AREAS OF EROSION OR WASH OUT. ANY MULCH REPLACEMENT SHALL BE DONE IN THE SPRING. PLANT MATERIAL SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION AND MAINTENANCE WILL ADDRESS DEAD MATERIAL AND PRUNING.
2. SCHEDULE OF PLANT INSPECTION WILL BE TWICE A YEAR IN SPRING AND FALL. THIS INSPECTION WILL INCLUDE REMOVAL OF DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT OF ALL DISEASED TREES AND SHRUBS AND REPLACEMENT OF ALL DEFICIENT STAKES AND WIRES.
3. MULCH SHALL BE INSPECTED EACH SPRING. REMOVE PREVIOUS MULCH LAYER BEFORE APPLYING NEW LAYER ONCE EVERY 2 TO 3 YEARS.
4. SOIL EROSION TO BE ADDRESSED ON AN AS NEEDED BASIS, WITH A MINIMUM OF ONCE PER MONTH AND AFTER HEAVY STORM EVENTS.

date APR. 2009
project 01-009
illustration
scale
1"=60'

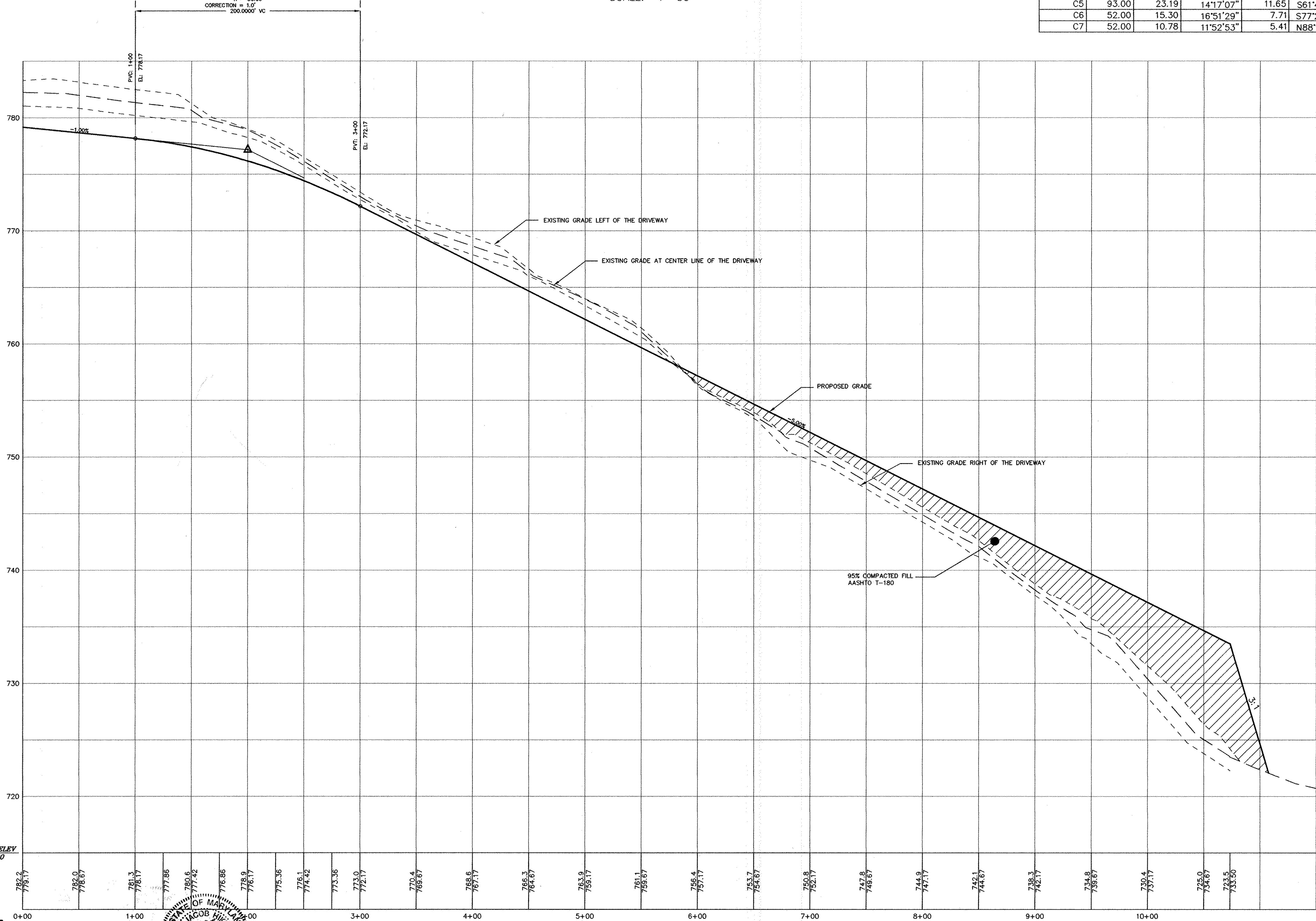
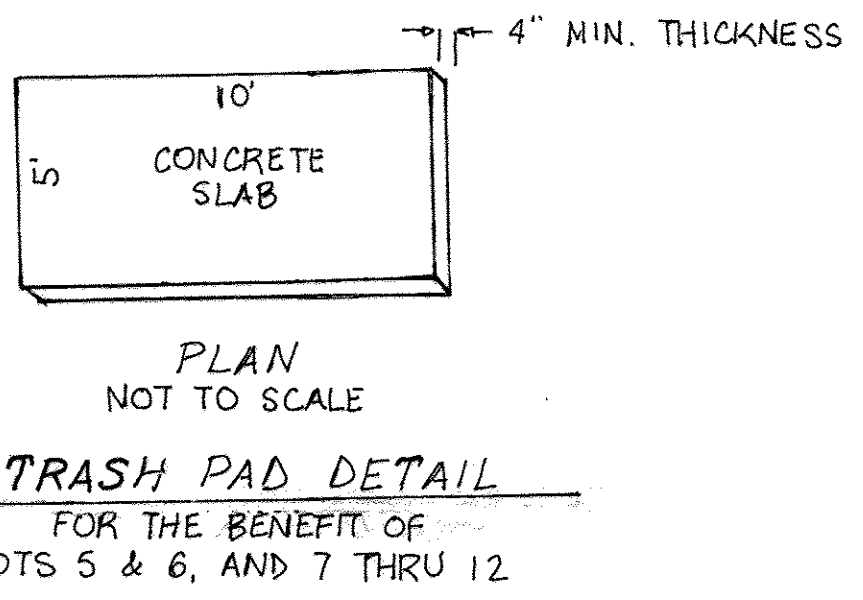
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REV. 5: 6/15/15
REV. 6: 7/15/15
REV. 7: 8/15/15
REV. 8: 9/15/15
REV. 9: 10/15/15
REV. 10: 11/15/15
REV. 11: 12/15/15
REV. 12: 1/16/16
REV. 13: 2/16/16
REV. 14: 3/16/16
REV. 15: 4/16/16
REV. 16: 5/16/16
REV. 17: 6/16/16
REV. 18: 7/16/16
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REV. 20: 9/16/16
REV. 21: 10/16/16
REV. 22: 11/16/16
REV. 23: 12/16/16
REV. 24: 1/17/17
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REV. 119: 12/24/24
REV. 120: 1/25/25
REV. 121: 2/25/25
REV. 122: 3/25/25
REV. 123: 4/25/25
REV. 124: 5



USE-IN-COMMON DRIVEWAY PLAN
 CLASSIFICATION: PRIVATE DRIVEWAY (24' EASEMENT)
 DESIGN SPEED: 15 MPH
 SCALE: 1"=50'

CURVE TABLE						
CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHORD BEARING	CHORD LENGTH
C3	52.00	30.87	34°00'52"	15.91	S72°53'21"E	30.42
C4	52.00	31.98	35°14'31"	16.52	N72°16'31"W	31.48
C5	93.00	23.19	14°17'07"	11.65	S61°47'49"E	23.13
C6	52.00	15.30	16°51'29"	7.71	S77°22'07"E	15.24
C7	52.00	10.78	11°52'53"	5.41	N88°15'42"E	10.76

PM STA = 2+00
 PVI ELEV = 777.17
 A.O. = 4.00
 K = 50.00
 CORRECTION = 1"
 200.0000' VC



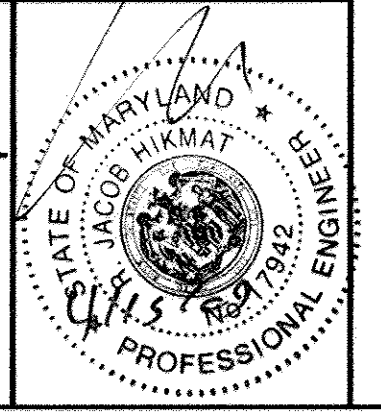
USE-IN-COMMON DRIVEWAY PROFILE
 CLASSIFICATION: PRIVATE DRIVEWAY (24' EASEMENT)
 DESIGN SPEED: 15 MPH
 SCALE: HOR: 1"=50'
 VER: 1"=50'

OWNER/DEVELOPER
 CHELSEA KNOLLS, LC
 1355 BEVERLY RD. SUITE 240
 McLEAN, VIRGINIA 22101
 (703) 734-9730
 (301) 720-3021

APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schwarz, Acting 4/29/09
 CHIEF BUREAU OF HIGHWAYS

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Candy Hamm 5/2/09
 CHIEF DIVISION OF LAND DEVELOPMENT

APPROVED: DEPARTMENT OF DEVELOPMENT
Robert... 5.5.09
 CHIEF, DEVELOPMENT ENGINEERING DIVISION



THERE IS NO AS-BUILT
 INFORMATION PROVIDED
 ON THIS SHEET

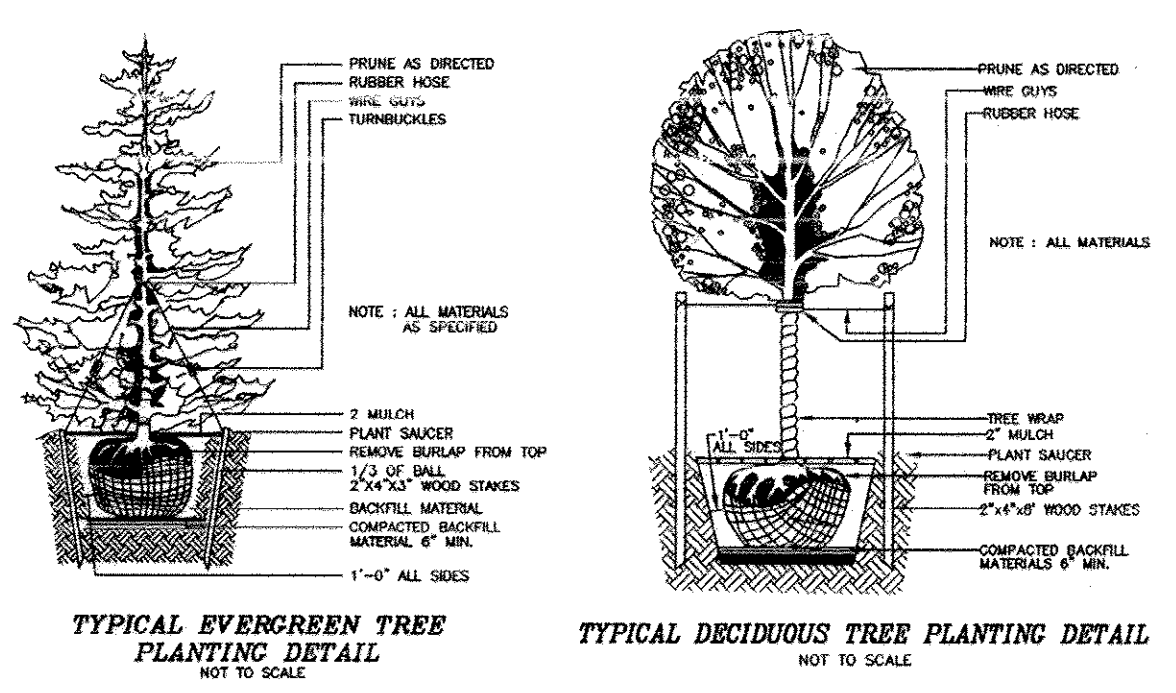
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE
 PREPARED OR APPROVED BY ME AND THAT I AM A
 DULY LICENSED PROFESSIONAL ENGINEER UNDER THE
 LAWS OF THE STATE OF MARYLAND, LICENSE NO. 17942,
 EXP DATE 9/3/10.

Project	01-009	date	MAR. 2009
Illustration	MM	engineering	MM
scale	AS SHOWN	approval	RH

REV. TOTAL SHEET NO.	015/15	date	
REV. TOTAL NUMBER OF SHEETS (FROM)	4/2/15		
ADD TRASH PAD DETAIL, REV. TITLE BLOCK	5/20/12		
inc.			
description			
revisions			

CHELSEA KNOLLS
 NON-BUILDABLE PRESERVATION PARCELS 1 & 6 & NON-BUILDABLE BULK PARCEL C
 TAX MAP 6 & 12, PARCEL 9
 HOWARD COUNTY, MARYLAND
 FOURTH ELECTION DISTRICT
USE-IN-COMMON DRIVEWAY PLAN AND PROFILE

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hill Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 987-0286 Bldg. (410) 987-0288 Fax



RETENTION FOREST CONSERVATION EASEMENTS		
FCE A	2.45 AC	RETENTION
FCE B	2.70 AC	RETENTION
FCE C	2.66 AC	RETENTION
TOTAL	7.81 AC	RETENTION

AFFORESTATION FOREST CONSERVATION EASEMENTS		
FCE D	6.03 AC	1,206 TREES REQUIRED
TOTAL	6.03 AC	1,206 TREES REQUIRED

- LEGEND**
- Denotes Wetlands
 - 15% to 25% Slopes
 - 25% or Greater Slopes
 - Proposed Private Use-In-Common Driveway Easement
 - Existing Specimen Trees
 - Tree Protection Fence
 - Denotes Public 10' Tree Maintenance Easement
 - Denotes Public Forest Conservation Easement (Retention)
 - Denotes Public Forest Conservation Easement (Afforestation)
 - Denotes Forest Conservation Signage
 - Denotes Perimeter Landscape Edge
 - Denotes Existing Power Pole

STREET TREE CALCULATIONS

LONG CORNER ROAD - 239 / 30 = 8
 CHELSEA KNOLLS DRIVE - 1,272 / 40 = 32
 TOTAL TREES REQUIRED = 40 TREES
 TOTAL TREES PROVIDED = 40 TREES

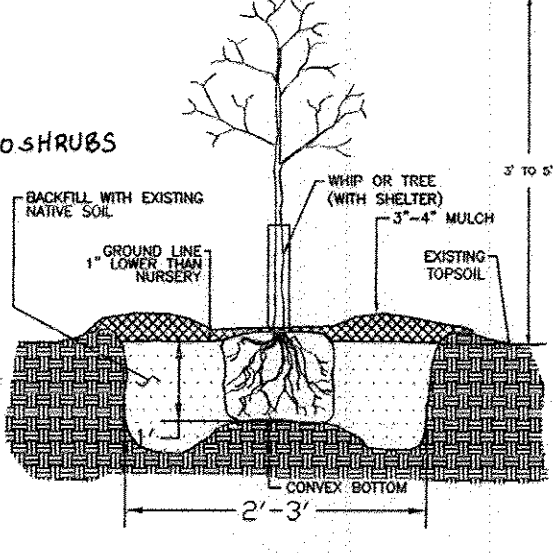
LANDSCAPE PLANTING SCHEDULE FOR TRASH PADS

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
10	(Symbol)	QUERCUS RUBRA OR EQUIVALENT	RED OAK OR EQUIVALENT	2 1/2" - 3" CAL.
5	(Symbol)	PINUS STROBUS OR EQUIVALENT	EASTERN WHITE PINE OR EQUIVALENT	2 1/2" - 3" CAL.
TOTAL				50 TREES

NOTE: THIS DRAWING IS TO BE USED FOR LANDSCAPE & FOREST CONSERVATION PLAN PURPOSES ONLY. NO TREES ARE TO BE PLANTED WITHIN 20' OF ANY OVERHEAD UTILITY.

* DESIGNATES A TREE TO BE PLANTED IN A 40' OVERHEAD UTILITY ZONE AS SHOWN ON PLAN.

- 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 LANDSCAPING IS TO BE POSTED FOR 75 SHADE TREES, 10 SHRUBS AND 5 EVERGREEN TREES IN THE AMOUNT OF \$131,333.00 AS PART OF THE DPW DEVELOPERS AGREEMENT.
- FOREST CONSERVATION OBLIGATIONS IN ACCORDANCE WITH SECTION 16.1200 OF THE HOWARD COUNTY CODE AND FOREST CONSERVATION ACT FOR THIS SUBDIVISION SHALL BE FULFILLED BY PROVIDING A TOTAL OF 9.93 ACRES (1.6 ACRES OF REFORESTATION AND 8.33 ACRES OF AFFORESTATION) WHICH SHALL BE FULFILLED BY PROVIDING 7.81 ACRES OF RETENTION AT A 2:1 RATIO FOR 2.3 ACRES OF AFFORESTATION AND 6.1 ACRES OF REFORESTATION WITH A REMAINING 6.03 ACRES OF AFFORESTATION PLANTING WITHIN PRESERVATION PARCEL "A". FOREST CONSERVATION SURETY FOR AFFORESTATION IN THE AMOUNT OF \$131,333.00 SHALL BE POSTED AS A PART OF THE DEVELOPER'S AGREEMENT.
- NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- SEE SHEET 1 GENERAL NOTES FOR ADDITIONAL LANDSCAPING NOTES.



LANDSCAPE TREE PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
75	(Symbol)	QUERCUS RUBRA OR EQUIVALENT	RED OAK OR EQUIVALENT	2 1/2" - 3" CAL.
5	(Symbol)	PINUS STROBUS OR EQUIVALENT	EASTERN WHITE PINE OR EQUIVALENT	2 1/2" - 3" CAL.
TOTAL				80 TREES

STREET TREE PLANTING SCHEDULE

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE
8	(Symbol)	FRANKLINIA ALATAMAHA OR EQUIVALENT	FRANKLINIA OR EQUIVALENT	2 1/2" - 3" CAL.
32	(Symbol)	PRUNUS SARGENTII OR EQUIVALENT	SARGENT CHERRY OR EQUIVALENT	2 1/2" - 3" CAL.
TOTAL				40 STREET TREES

FOREST CONSERVATION WORKSHEET

FOREST CONSERVATION WORKSHEET VERSION 1.0
 NET TRACT AREA: 85.00
 A. Total tract area: 85.00
 B. Area within 100' riparian floodplain: 0.00
 C. Area of forest above conservation threshold: 39.35
 D. Net tract area: 45.65
 E. Land use category: 3.21, page 40, Manual
 F. Afforestation threshold: 20% x D = 9.13
 G. Conservation threshold: 25% x D = 11.41
 H. Existing forest cover: 0.80
 I. Area of forest above conservation threshold: 0.00
 J. Area of forest to be retained: 0.00
 K. Forest retention above threshold with no mitigation: 0.00
 L. Clearing permitted without mitigation: 0.00
 M. Proposed forest clearing: 0.00
 N. Total area of forest to be cleared: 0.00
 O. Total area of forest to be retained: 0.00
 P. Reforestation for clearing above conservation threshold: 0.00
 Q. Reforestation for clearing below conservation threshold: 1.80
 R. Total reforestation required: 1.80
 S. Total afforestation required: 7.93
 T. Total reforestation and afforestation required: 9.93
 U. Total off-site retention provided at 2:1 ratio: 7.81
 V. Total off-site afforestation provided: 0.03

SCHEDULE A: PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO PERIMETER PROPERTIES					
	A (PERIMETER 1)	A (PERIMETER 2)	A (PERIMETER 3)	A (PERIMETER 4)	A (PERIMETER 5)	A (PERIMETER 6)
LANDSCAPE TYPE	205.36 LF	334.03 LF	746.09 LF	245.55 LF	267.32 LF	307.50 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	NO	NO	NO	NO	NO	NO
LF REMAINING (NON-CREDITED)	N/A	N/A	N/A	N/A	N/A	N/A
NUMBER OF PLANTS REQUIRED	4 SHADE TREES 5 EVERGREEN TREES 0 SHRUBS	6 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	12 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	4 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	4 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	5 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS
NUMBER OF PLANTS PROVIDED	4 SHADE TREES 5 EVERGREEN TREES 0 SHRUBS	6 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	12 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	4 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	4 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	5 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS

CATEGORY	ADJACENT TO PERIMETER PROPERTIES					
	A (PERIMETER 7)	A (PERIMETER 8)	A (PERIMETER 9)	A (PERIMETER 10)	A (PERIMETER 11)	A (PERIMETER 12)
LANDSCAPE TYPE	292.12 LF	508.02 LF	433.62 LF	248.82 LF	501.76 LF	271.88 LF
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	NO	NO	YES 433.62 LF	YES 248.82 LF	NO	NO
LF REMAINING (NON-CREDITED)	N/A	N/A	0	N/A	N/A	N/A
NUMBER OF PLANTS REQUIRED	5 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	8 SHADE TREE 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	8 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	5 SHADE TREE 0 EVERGREEN TREE 0 SHRUBS
NUMBER OF PLANTS PROVIDED	5 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	8 SHADE TREE 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	0 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	8 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	5 SHADE TREE 0 EVERGREEN TREE 0 SHRUBS

CATEGORY	ADJACENT TO PERIMETER PROPERTIES		
	A (PERIMETER 13)	A (PERIMETER 14)	TOTAL
LANDSCAPE TYPE	470.67 LF	342.65 LF	
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	NO	NO	
LF REMAINING (NON-CREDITED)	N/A	N/A	
NUMBER OF PLANTS REQUIRED	8 SHADE TREE 0 EVERGREEN TREE 0 SHRUBS	6 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	75 SHADE TREES 5 EVERGREEN TREES 0 SHRUBS
NUMBER OF PLANTS PROVIDED	8 SHADE TREE 0 EVERGREEN TREES 0 SHRUBS	6 SHADE TREES 0 EVERGREEN TREES 0 SHRUBS	75 SHADE TREES 5 EVERGREEN TREES 0 SHRUBS

PLANTING SPECIFICATIONS AND NOTES

- DO NOT FERTILIZE NEWLY PLANTED TREES WITHIN THE FIRST GROWING SEASON AFTER PLANTING. DOING SO MAY CAUSE A SPURT OF CANOPY GROWTH WHICH THE ROOTS CANNOT SUPPORT AND ADD ADDITIONAL SHOCK TO THE ALREADY DISTURBED PLANT.
- IF AND WHEN IT IS TIME TO FERTILIZE, ORGANIC FERTILIZERS ARE PREFERRED TO SYNTHETIC FERTILIZERS. BONE MEAL OR SEAWEED BASED PRODUCTS ARE AVAILABLE COMMERCIALY AND ARE RECOMMENDED. THEY HAVE THE ABILITY TO SUPPLY NUTRIENTS TO THE PLANT AS NEEDED WHILE MINIMIZING THE RISK OF EXCESS NUTRIENTS ENTERING THE FOREST SYSTEM AND WATER SUPPLY.
- ANNUAL MAINTENANCE DURING THE GROWING SEASON FOR A THREE YEAR PERIOD.
- ASSESS TREE MORTALITY OF PLANTING STOCK. REMOVE AND REPLACE ANY DEAD OR DISEASED PLANTINGS.
- VOLUNTEER SEEDING OF NATIVE, LOCAL AND ENDEMIC VEGETATION IS TO BE EXPECTED. DO NOT DISCOURAGE THIS EFFORT UNLESS IT IS NEGATIVELY EFFECTING THE PLANTED STOCK.
- REMOVE THROUGH MANUAL MEANS (GRUBBING, PULLING, CUTTING) AGGRESSIVE, NOXIOUS, INVASIVE SPECIES AND ALL HERBACEOUS VEGETATION WITHIN A 3-FOOT RADIUS SURROUNDING THE PLANTED3. WOODY NURSERY STOCK.
- REMOVE AND DISPOSE OF MAN-MADE TRASH, INCLUDING ITEMS CONTAINED WITHIN ENTIRE PLANTING AREA. DO NOT REMOVE DOWN AND DEAD MATERIAL NATURALLY OCCURRING OR ACCUMULATING, UNLESS IT IS SMOTHERING PLANTING STOCK.
- A 75 PERCENT SURVIVAL OF PLANTED STOCK MUST BE ACHIEVED AT THE END OF THE 24 MONTH MANAGEMENT PERIOD. IF NOT, ADDITIONAL PLANTINGS MAY BE REQUIRED TO ACHIEVE THIS GOAL.

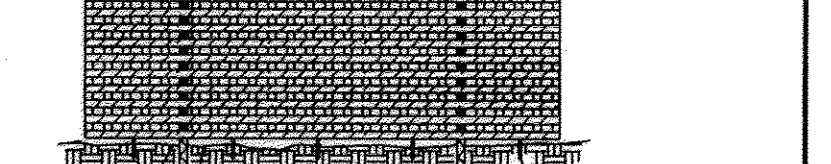
CONSTRUCTION MONITORING

- THE SITE SHALL BE INSPECTED PERIODICALLY DURING THE CONSTRUCTION PHASE OF THE PROJECT. A QUALIFIED PROFESSIONAL SHALL BE RESPONSIBLE FOR IDENTIFYING DAMAGE TO PROTECTED FOREST RESOURCES AND REPORTING SUCH DAMAGE TO THE HOWARD COUNTY INSPECTORS. DAMAGE TO PROTECTED FOREST RESOURCES CAUSED BY FLOODING OR DROUGHT CONDITIONS SHALL BE REMEDIATED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.

LIMITS OF WORK

THE CONSTRUCTION PROCEDURE SHALL NOT DAMAGE AREAS OUTSIDE THE LIMITS OF DISTURBANCE AS DESIGNATED ON THE FOREST CONSERVATION WORKSHEET. DAMAGE TO PROTECTED FOREST RESOURCES CAUSED BY FLOODING OR DROUGHT CONDITIONS SHALL BE REMEDIATED IMMEDIATELY USING APPROPRIATE MEASURES. SEVERE PROBLEMS MAY REQUIRE CONSULTATION WITH A PROFESSIONAL ARBORIST.

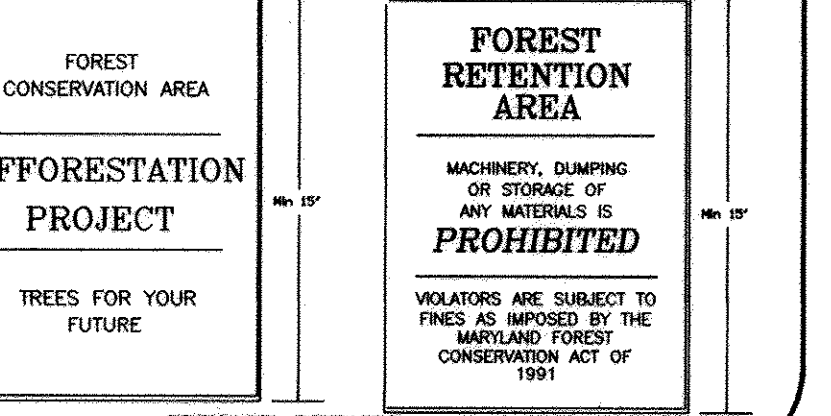
PROTECTIVE FENCE DETAIL



QTY.	SPECIES	SHADE	MOIST.	WET.	REGIME	STATUS	MIN. O.C.	SIZE & SPACING	REMARKS
200	Acer rubrum Red Maple	VT	D-W	FAC	15'	CONT/B & B	15'	CONT/B & B	
200	Cornus florida Flowering Dogwood	VT	D-M	FACU	15'	CONT/B & B	3'-5' HEIGHT	CONT/B & B	
200	Liquidambar styraciflua American Sweet Gum	I	M-W	FAC	15'	CONT/B & B	15'	CONT/B & B	
100	Liriodendron tulipifera Tulip Tree	MT	D-M	FAC	15'	CONT/B & B	15'	CONT/B & B	
100	Prunus serotina Black Gum	T	M-W	FAC	15'	CONT/B & B	15'	CONT/B & B	
100	Prunus serotina Wild Black Cherry	I	M	FACU	15'	CONT/B & B	3'-5' HEIGHT	CONT/B & B	
156	Quercus alba White Oak	MT	D-M	FACU	15'	CONT/B & B	15'	CONT/B & B	
50	Viburnum dentatum Southern Arrowwood	T	M	FACW	15'	CONT/B & B	3'-5' HEIGHT	CONT/B & B	
TOTAL									1,206 TREES

WHIPS OR SEEDLINGS MAY BE SUBSTITUTED FOR THE 1" CALIPER OR 3" - 5" IF WHIPS OR SEEDLINGS ARE TO BE USED, MULTIPLY THE QUANTITIES BY 3.5 TO DETERMINE THE NUMBER OF TREES REQUIRED.

NOTE THIS SUBDIVISION PLAN IS USING "RURAL CLUSTER OPTION A" OR APPENDIX "C" OF THE FOREST CONSERVATION MANUAL BY INCLUDING ALL THE AREAS OF LAND USE CHANGE EXCEPT EXCLUDING PRESERVATION PARCEL "A" (NO CHANGE IN USE)



DEVELOPER'S/OWNER'S LANDSCAPE 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 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.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Diane Schum Acting Chief Bureau of Highways 4/29/09
 APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Andy Khan Chief, Division of Land Development 5/7/09
 APPROVED: DEVELOPMENT ENGINEERING DIVISION
 Chris DeWitt Chief, Development Engineering Division 5/5/09

SCREEN CALCULATIONS

TRASH PAD - 15 LF - TYPE C BUFFER
 EVERGREEN REQUIRED: 10 SHRUBS PROVIDED
 NOTE: EVERGREEN SHRUBS HAVE BEEN PROPOSED TO BUFFER THE TRASH PAD AREA. MAINTENANCE OF THE TRASH PAD AND SCREENING IS THE RESPONSIBILITY OF THE HOA.

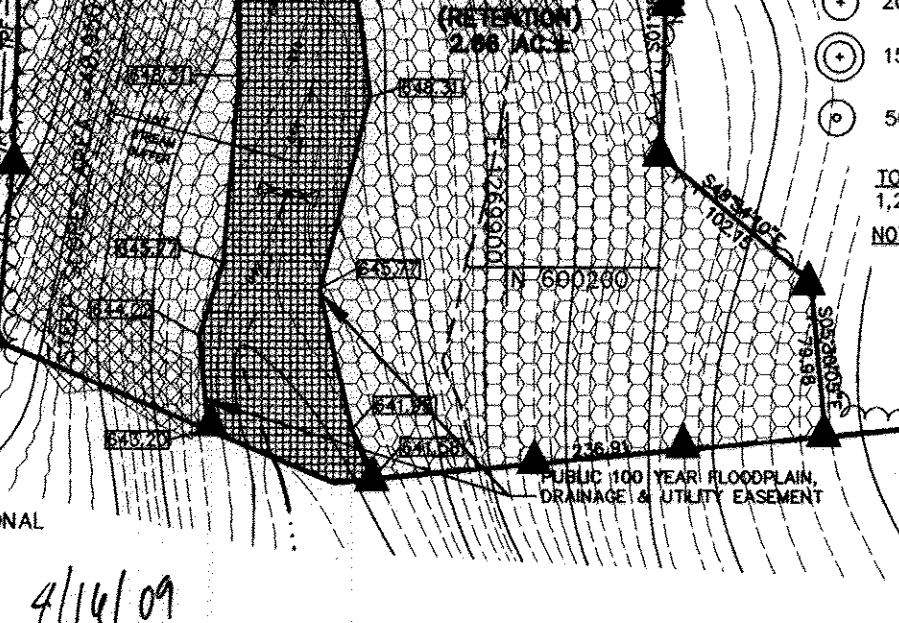
THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

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. 17942, EXP. DATE 9/3/10.

OWNER/DEVELOPER

CHELSEA KNOLLS, LLC
 1355 BEVERLY RD, SUITE 240
 McLEAN, VIRGINIA 22101
 (703) 734-9730
 (301) 720-3021

TYPICAL TREE PLANTING PLAN



project: MAR. 2009
 01-009
 illustration: MMT
 scale: 1"=100'
 date: 3/29/12

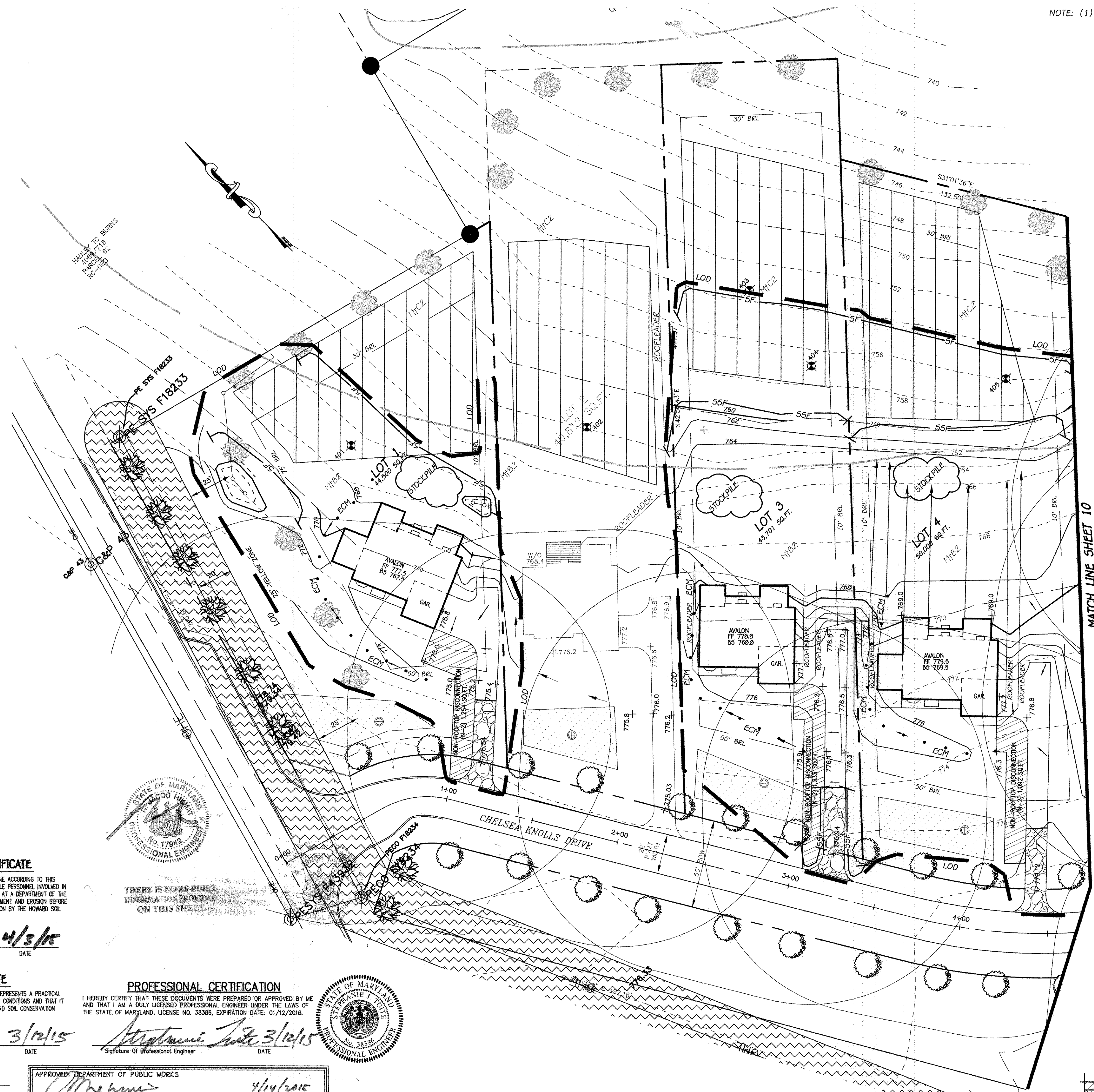
REV. TOTAL SHEET NO. 615/15
 REV. NO. OF SHEETS (15) 42/15
 ADD TRASH PADS, REV. TITLE BLOCK
 description: LANDSCAPE, FOREST CONSERVATION PLAN & STREET TREE PLAN
 title: CHELSEA KNOLLS
 location: TAX MAP 6 GRID 22 AND TAX MAP 12, GRID 5, PARCEL 9
 county: HOWARD COUNTY, MARYLAND
 district: FOURTH ELECTION DISTRICT

CHELSEA KNOLLS
 NON-BUILDABLE PRESERVATION PARCELS "A", "B" & "C" & NON-BUILDABLE BULK PARCEL "C"
 TAX MAP 6 GRID 22 AND TAX MAP 12, GRID 5, PARCEL 9
 FOURTH ELECTION DISTRICT
 LANDSCAPE, FOREST CONSERVATION PLAN & STREET TREE PLAN

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Borsley Hill Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0296 Fax: (301) 621-5523 Wash. (410) 997-0298 Fax.
 8 OF 13
 F-07-072

NOTE: (1) STOCKPILING EXCEEDING 15 FEET IN HEIGHT MUST BE BENCHED.

LEGEND	
SYMBOL	DESCRIPTION
- - - -	EXISTING CONTOUR 2' INTERVAL
- - - -	PROPOSED CONTOUR 2' INTERVAL
x062.5	SPOT ELEVATION
ECM	EROSION CONTROL MATTING
-SF--SF-	SUPER SILT FENCE
-SF--SF-	SILT FENCE
LOD	LIMITS OF DISTURBANCE
(circle with cross)	EXISTING STREET TREES FROM F-12-072
(circle with dot)	EXISTING PERIMETER TREES FROM F-12-072



BUILDER/DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, FOR SEDIMENT AND EROSION CONTROL 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 4/15/15
 SIGNATURE OF DEVELOPER/Daren Snyder, Ryan Homes DATE

ENGINEER'S CERTIFICATE

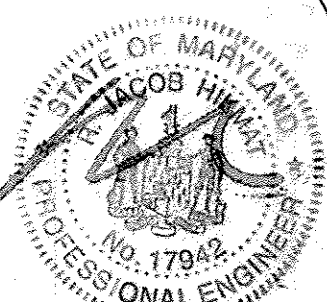
I/WE CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 3/12/15
 SIGNATURE OF ENGINEER DATE

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. 38386, EXPIRATION DATE: 01/12/2016.

[Signature] 3/12/15
 SIGNATURE OF PROFESSIONAL ENGINEER DATE



APPROVED: DEPARTMENT OF PUBLIC WORKS <i>[Signature]</i> 4/14/2015 Chief Bureau of Highways Date
APPROVED: DEPARTMENT OF PLANNING AND ZONING <i>[Signature]</i> 4-22-15 Chief, Division of Land Development Date
<i>[Signature]</i> 4-17-15 Chief, Development Engineering Division Date

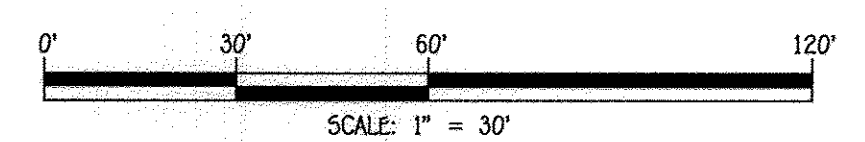
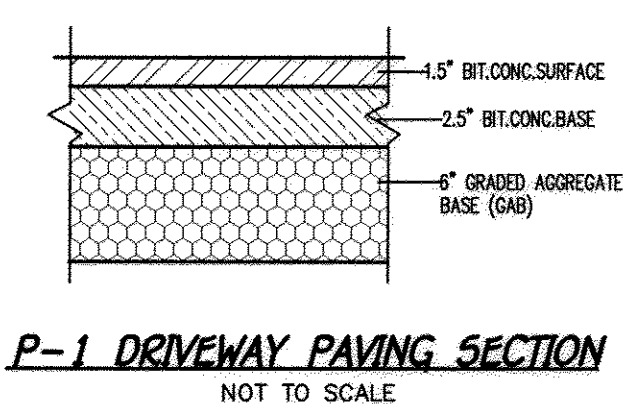
OWNER
 CHELSEA KNOLLS, LLC
 1395 BROADWAY, SUITE 240
 MCLEAN, VIRGINIA 22101 (703)
 734-9230
 (301) 782-3021

DEVELOPER
 RYAN HOMES, INC.
 ATTN: ECHO BOISSE
 9780 PARLUNT WOODS DRIVE
 COLUMBIA, MARYLAND 21046
 410-796-0980

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CONFIDENTIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 481-0991

GP-15-048

SOILS LEGEND		
SOIL	NAME	CLASS
M1B2	Mt. Airy channery loam, 3 to 8 percent slopes, moderately eroded	A
M1C2	Mt. Airy channery loam, 8 to 15 percent slopes, moderately eroded	A

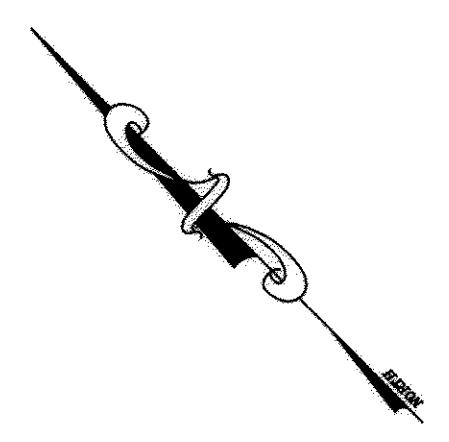
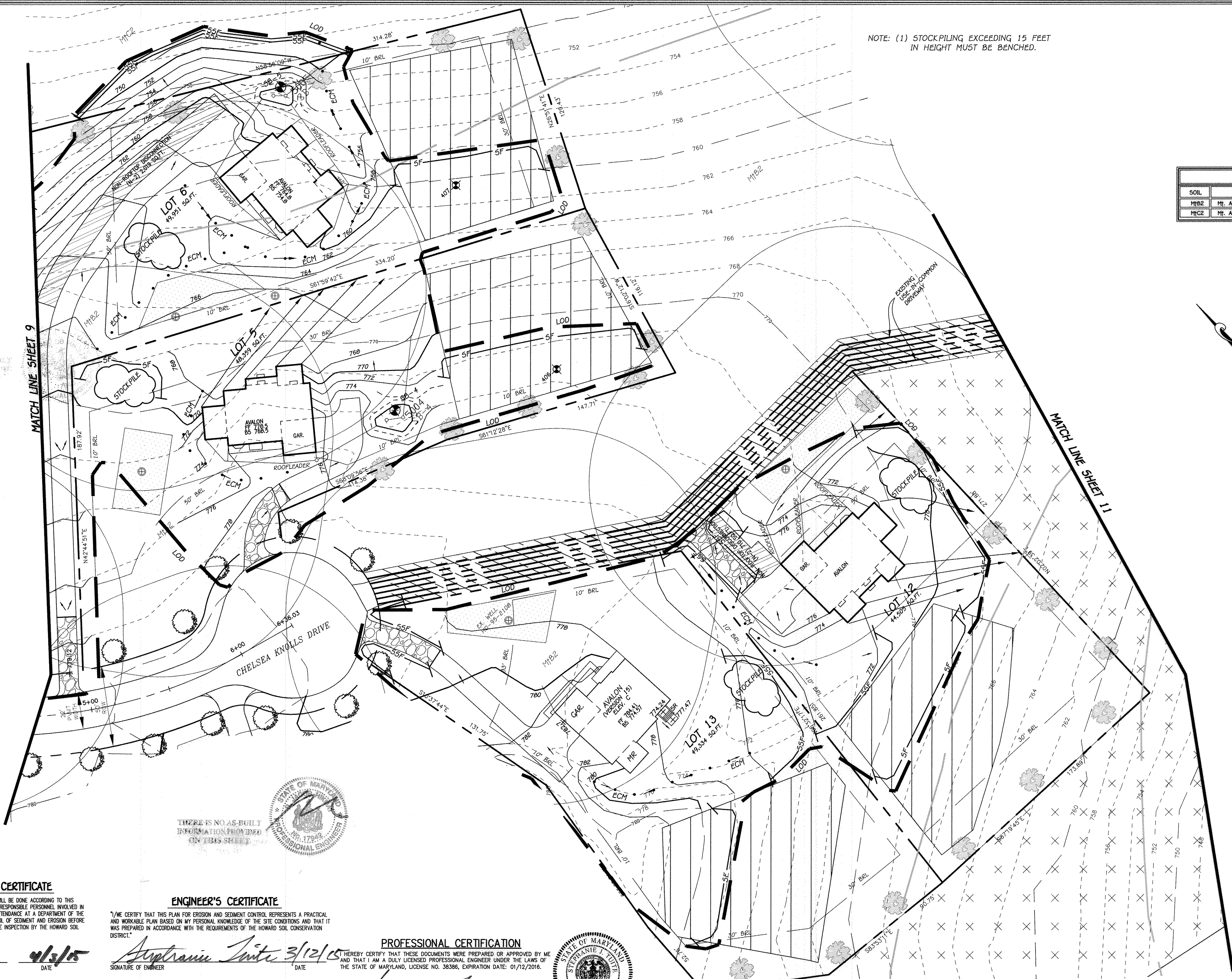


GRADING, SEDIMENT, & EROSION CONTROL PLAN
CHELSEA KNOLLS
 LOTS 1-14, NON-BUILDABLE PRESERVATION PARCELS A & B AND NON-BUILDABLE BULK PARCEL 'C'
 ZONING: RC-DEO
 TAX MAP No. 6 GRID No. 22 AND TAX MAP 12, GRID 5, PARCEL 9
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 DATE: FEBRUARY, 2015
 SHEET 9 OF 13

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
- - - -	PROPOSED CONTOUR 2' INTERVAL
x362.5	SPOT ELEVATION
ECM	EROSION CONTROL MATTING
-SSP-SSP-	SUPER SILT FENCE
-SF-SF-	SILT FENCE
LOD	LIMITS OF DISTURBANCE
(circle with cross)	EXISTING STREET TREES FROM F-12-072
(circle with dot)	EXISTING PERIMETER TREES FROM F-12-072

SOILS LEGEND		
SOIL	NAME	CLASS
MIB2	Mt. Airy channery loam, 3 to 8 percent slopes, moderately eroded	A
MIC2	Mt. Airy channery loam, 8 to 15 percent slopes, moderately eroded	A

NOTE: (1) STOCKPILING EXCEEDING 15 FEET IN HEIGHT MUST BE BENCHED.



THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

BUILDER/DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, FOR SEDIMENT AND EROSION CONTROL, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Developer: *[Signature]* Date: 4/13/15

ENGINEER'S CERTIFICATE

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

Signature of Engineer: *[Signature]* Date: 3/12/15

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. 38386, EXPIRATION DATE: 01/12/2016.

Signature of Professional Engineer: *[Signature]* Date: 3/12/15



OWNER
CHELSEA KNOLLS, LLC
1395 BOYDLEY RD, SUITE 240
MCLEAN, VIRGINIA 22101 (703)
754-9250
(301) 720-3021

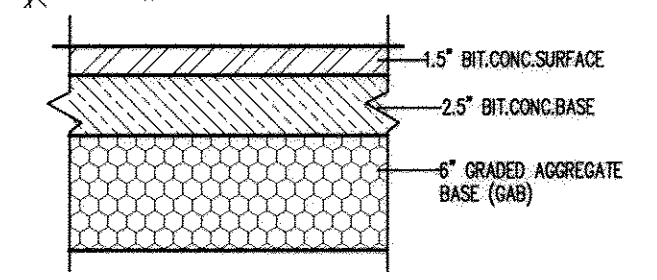
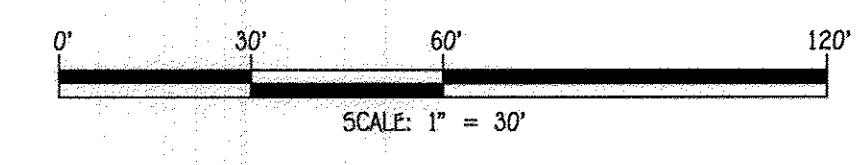
DEVELOPER
RYAN HOMES, INC.
ATTN: EROSION CONTROL
9720 PATUXENT WOODS DRIVE
COLUMBIA, MARYLAND 21046
410-796-0980

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CONFEDERAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELECTRO CITY, MARYLAND 21042
410-461-5995

APPROVED: DEPARTMENT OF PUBLIC WORKS	4/13/2015
Chief, Bureau of Highways	Date
APPROVED: DEPARTMENT OF PLANNING AND ZONING	4-22-15
Chief, Division of Land Development	Date
Chief, Development Engineering Division	4-17-15
Date	Date

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: *[Signature]* 3/17/15
HOWARD SOIL CONSERVATION DISTRICT



P-1 DRIVEWAY PAVING SECTION
NOT TO SCALE

GRADING, SEDIMENT, & EROSION CONTROL PLAN
CHELSEA KNOLLS
LOTS 1-14, NON-BUILDABLE PRESERVATION PARCELS A & B AND NON-BUILDABLE BULK PARCEL 'C'
TAX MAP No. 6 GRID No. 22 AND TAX MAP 12, GRID 5, PARCEL 9
ZONING: RC-3EO
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: FEBRUARY, 2015
SHEET 10 OF 13

BUILDER/DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, FOR SEDIMENT AND EROSION CONTROL 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Developer: *[Signature]* Date: 4/2/15

ENGINEER'S CERTIFICATE

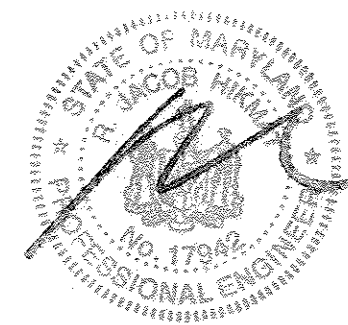
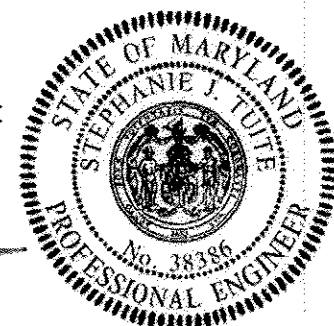
I/WE CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Signature of Engineer: *[Signature]* Date: 3/12/15

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. 38386, EXPIRATION DATE: 01/12/2016.

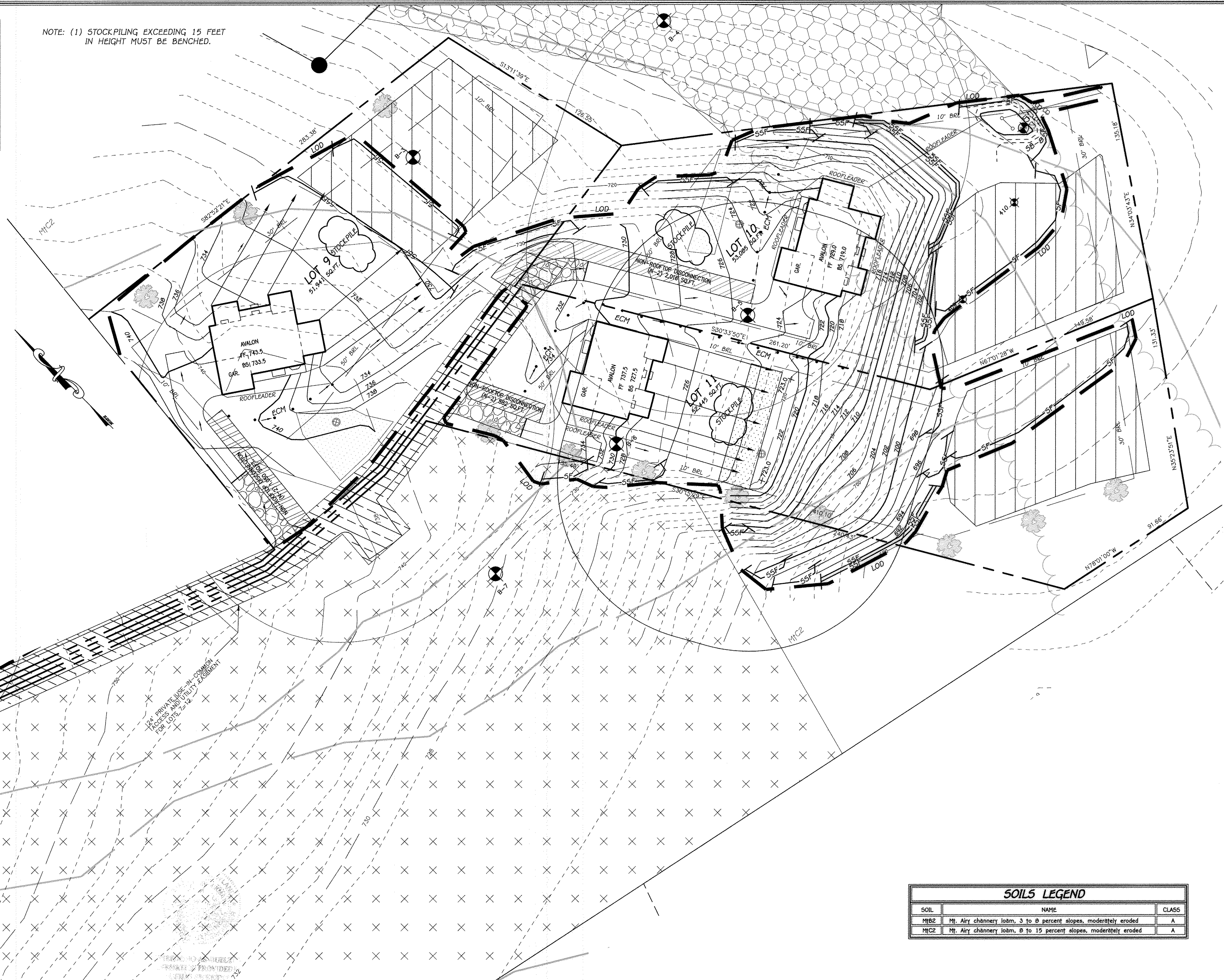
Signature of Professional Engineer: *[Signature]* Date: 3/12/15



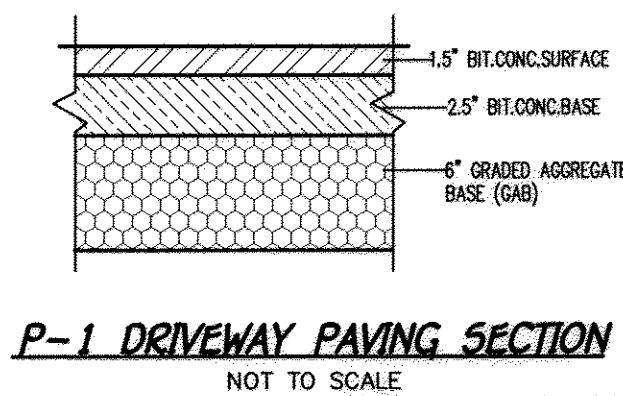
THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
- - - -	PROPOSED CONTOUR 2' INTERVAL
x362.5	SPOT ELEVATION
ECM	EROSION CONTROL MATTING
-SOF-SOF	SUPER SILT FENCE
-SF-SF	SILT FENCE
LOD	LIMITS OF DISTURBANCE
(Circle with cross)	EXISTING STREET TREES FROM F-12-072
(Circle with dot)	EXISTING PERIMETER TREES FROM F-12-072

NOTE: (1) STOCKPILING EXCEEDING 15 FEET IN HEIGHT MUST BE BENCHED.



SOILS LEGEND		
SOIL	NAME	CLASS
MIB2	Mt. Airy channery loam, 3 to 8 percent slopes, moderately eroded	A
MIC2	Mt. Airy channery loam, 8 to 15 percent slopes, moderately eroded	A



GRADING, SEDIMENT, & EROSION CONTROL PLAN
CHELSEA KNOLLS
 LOTS 1-14, NON-BUILDABLE PRESERVATION PARCELS A & B AND NON-BUILDABLE BULK PARCEL 'C'
 TAX MAP No. 6 GRID No. 22 AND TAX MAP 12, GRID 5, PARCEL 9
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 ZONING: RC-OEO
 DATE: FEBRUARY, 2015
 SHEET 11 OF 13

APPROVED: DEPARTMENT OF PUBLIC WORKS
 Chief Bureau Of Highways: *[Signature]* Date: 4/2/2015

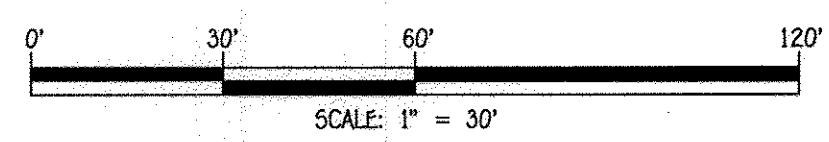
APPROVED: DEPARTMENT OF PLANNING AND ZONING
 Chief, Division of Land Development: *[Signature]* Date: 4-17-15
 Chief, Development Engineering Division: *[Signature]* Date: 4-17-15

OWNER
 CHELSEA KNOLLS, LLC
 1395 BOWERY RD, SUITE 240
 MCLEAN, VIRGINIA 22101 (703)
 704-9750
 (501) 720-3021

DEVELOPER
 RYAN HOMES, INC.
 ATTN: LEVY BOHRES
 9720 PATENT WOODS DRIVE
 COLUMBIA, MARYLAND 21046
 410-796-0980

FISHER, COLLINS & CARTER, INC.
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
 CENTRAL SOURCE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
 ELICOTT CITY, MARYLAND 21042
 (410) 661-3295

THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 APPROVED: *[Signature]* 3/17/15
 HOWARD SOIL CONSERVATION DISTRICT



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 lowgrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
 - Soil contains 1.5 percent minimum organic matter by weight.
 - Soil contains sufficient pore space to permit adequate root penetration.
 - 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. Roll down area 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 on 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

- Topsoiling 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 substrates and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2 inches in diameter.
 - Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutmeg, 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.

6. 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 seeding or sodding can proceed with a minimum of additional soil preparation and tilling. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
- Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seeded preparation.

C. Soil Amendments (Fertilizer and Lime Specifications)

- Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas of 5 acres or more. Soil analysis may be performed by a recognized private or commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analysis.
- 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 will pass through a #100 mesh sieve and 98 to 100 percent will pass through a #200 mesh sieve.
- Lime and fertilizer are to be evenly distributed and incorporated into the top 3 to 5 inches of soil by disking or other suitable means.
- Where the subsoil is either highly acidic or composed of heavy clays, spread ground limestone at the rate of 4 to 8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil.

TEMPORARY SEEDING NOTES (B-4-4)

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

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

Conditions Where Practice Applies
Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

- 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.

Temporary Seeding Summary				Fertilizer Rate (10-20-20)	Lime Rate
Hardness Zone (from Figure B.3):	Seed Mixture (from Table B.1):	Application Rate (lb/ac)	Seeding Dates		
6b	BARLEY	96	3/1 - 5/15	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
	OATS	72	8/15 - 10/15		
	RYE	112			

PERMANENT SEEDING NOTES (B-4-5)

A. Seed Mixtures

- General Use
 - Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
 - Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Document, Section 342 - Critical Area Planting.
 - For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 1/2 pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary.
- Turfgrass Mixtures
 - Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which require a medium to high level of maintenance.
 - Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
 - Kentucky Bluegrass: 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: 1.5 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 Rye: Full Sun Mixture: For use in full sun areas where rapid establishment is necessary and when turf will require medium to intensive management. Certified Perennial Ryegrass Cultivars/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 Certified Kentucky Bluegrass Cultivars 95 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 Zones: 5b, 6a) Central MD: March 1 to May 15, August 15 to October 15 (Hardness Zone: 6b) Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardness Zones: 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 a 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 seedlings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

Permanent Seeding Summary

Hardness Zone (from Figure B.3):	Seed Mixture (from Table B.3):	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P ₂ O ₅	K ₂ O	Lime Rate
6	TALL FESCUE	100	Mar. 1-May 15 Aug. 15-Oct. 15	1/4-1/2 in.	45 lbs. per acre (1.0 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	90 lb/ac (2 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

- General Specifications
 - Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
 - Sod must be machine cut at a uniform soil thickness to 3/4 inch, plus or minus 1/8 inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
 - Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
 - Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
 - Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.
- Sod Installation
 - During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
 - Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are sutured tight in order to prevent voids which would cause or dry out of the roots.
 - Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
 - Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping, and irrigating for any piece of sod within eight hours.
- Sod Maintenance
 - In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.
 - After the first week, sod watering is required as necessary to maintain adequate moisture content.
 - Do not mow until the sod is firmly rooted. No more than 2/3 of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410-313-1025).
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THEREOF.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: (a) 3 CALENDAR DAYS FOR ALL PERMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, (b) 7 DAYS AS TO ALL OTHER DISTURBED OR RE-DISTURBED AREAS ON THE PROJECT SITE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER SEEDING AND ESTABLISHMENT.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSON FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ANY ANALYSIS:
 - TOTAL AREA OF SITE: 69.00 ACRES
 - AREA TO BE COOPIED OR PAVED: 13.49 ACRES
 - AREA TO BE VEGETATIVELY STABILIZED: 3.50 ACRES
 - TOTAL CUT: 20,000 CU.YDS.
 - TOTAL FILL: 20,000 CU.YDS.
 - OFFSITE WASH/BORROW AREA LOCATION: N/A
 - ANY SEDIMENT CONTROL PRACTICE THAT IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS AND THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
- ANY CHANGES OR REVISIONS TO THE SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE PLAN APPROVAL AUTHORITY PRIOR TO PROCEEDING WITH CONSTRUCTION.
- A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM AVERAGE OF 20 ACRES PER GRADING UNIT) AT A TIME. WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE ENFORCEMENT AUTHORITY, UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE APPROVAL AUTHORITY. NO MORE THAN 30 ACRES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.

B-4-B STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREAS

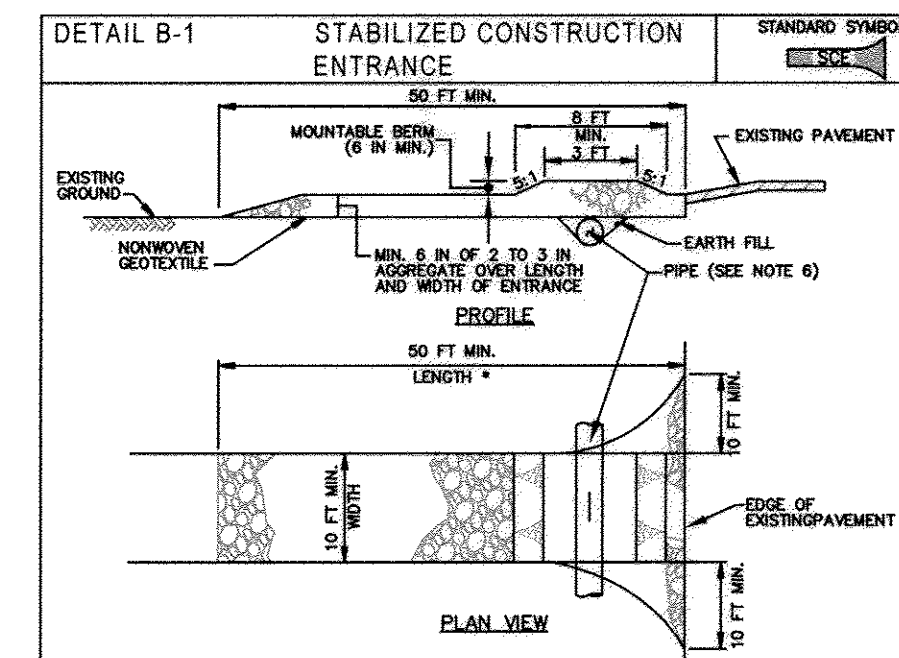
- Definition**
A mound or pile of soil protected by appropriately designed erosion and sediment control measures.
- Purpose**
To provide a designated location for the temporary storage of soil that controls the potential for erosion, sedimentation, and changes to drainage patterns.
- Conditions Where Practice Applies**
Stockpile areas are utilized when it is necessary to salvage and store soil for later use.
- Criteria**
- The stockpile location and all related sediment control practices must be clearly indicated on the erosion and sediment control plan.
 - The footprint of the stockpile must be sized to accommodate the anticipated volume of material and based on a side slope ratio no steeper than 2:1. Benching must be provided in accordance with Section B-3 Land Grading.
 - Runoff from the stockpile area must drain to a suitable sediment control practice.
 - Access the stockpile area from the upgrade side.
 - Clear water runoff into the stockpile area must be minimized by use of a diversion device such as an earth dike, temporary silt or diversion fence. Provisions must be made for discharging concentrated flow in a non-erosive manner.
 - Where runoff concentrates along the top of the stockpile fill, an appropriate erosion/sediment control practice must be used to intercept the discharge.
 - Stockpiles must be stabilized in accordance with the 3/7 day stabilization requirement as well as Standard B-4-1 Incremental Stabilization and Standard B-4-4 Temporary Stabilization.
 - If the stockpile is located on an impervious surface, a liner should be provided below the stockpile to facilitate cleanup. Stockpiles containing contaminated material must be covered with impermeable sheeting.

Maintenance

The stockpile area must continuously meet the requirements for Adequate Vegetative Establishment in accordance with Section B-4 Vegetative Stabilization. Side slopes must be maintained at no steeper than a 2:1 ratio. The stockpile area must be kept free of erosion. If the vertical height of a stockpile exceeds 20 feet for 2:1 slopes, 30 feet for 3:1 slopes, or 40 feet for 4:1 slopes, benching must be provided in accordance with Section B-3 Land Grading.

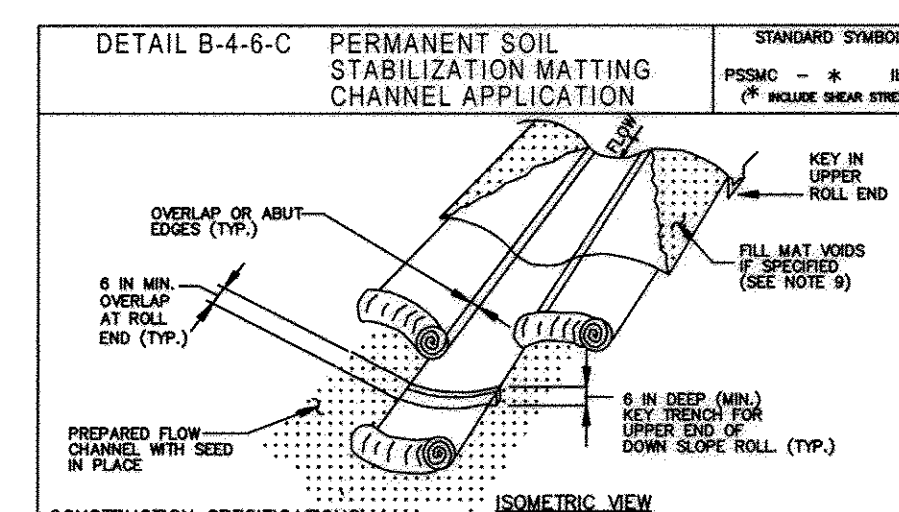
SEQUENCE OF CONSTRUCTION

- OBTAIN A GRADING PERMIT AND HOLD PRE-CONSTRUCTION MEETING WITH COUNTY ENGINEER. (2 WEEKS)
 - NOTIFY "MISS UTILITY" AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION/INSPECTION AT 410-313-1330 AT LEAST 24 HOURS BEFORE STARTING WORK.
 - INSTALL STABILIZED CONSTRUCTION ENTRANCES, SILT FENCE, AND SUPER SILT FENCE. (5 DAYS)
 - ROUGH GRADE SITE. (1 WEEK)
 - INSTALL TEMPORARY SEEDING. (3 DAYS)
 - CONSTRUCT EACH BUILDING AND DRIVEWAY ASSOCIATED WITH INDIVIDUAL LOTS. (18 MONTHS)
 - FINE GRADE SITE AND INSTALL PERMANENT SEEDING ON A PER LOT BASIS. (2 WEEKS PER LOT)
 - UPON STABILIZATION AND ONCE ALL SITE WORK IS COMPLETED, INSTALL NICOR-BIODRETION FACILITIES PROPOSED ON LOTS 1, 5, 6, AND 10. (2 WEEKS PER LOT)
 - ALL FINAL GRADING AND STABILIZATION SHOULD BE COMPLETED BEFORE ANY REMOVAL OF CONTROLS ASSOCIATED WITH EACH INDIVIDUAL LOT. WHEN ALL CONTRIBUTING AREAS TO THE SEDIMENT CONTROL DEVICES HAVE BEEN STABILIZED AND WITH THE PERMISSION OF THE SEDIMENT CONTROL INSPECTOR, THE INDIVIDUAL SEDIMENT CONTROL DEVICES MAY BE REMOVED PER LOT. (3 DAYS PER LOT)
- NOTE: THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE EACH RAINFALL AND ON A DAILY BASIS.



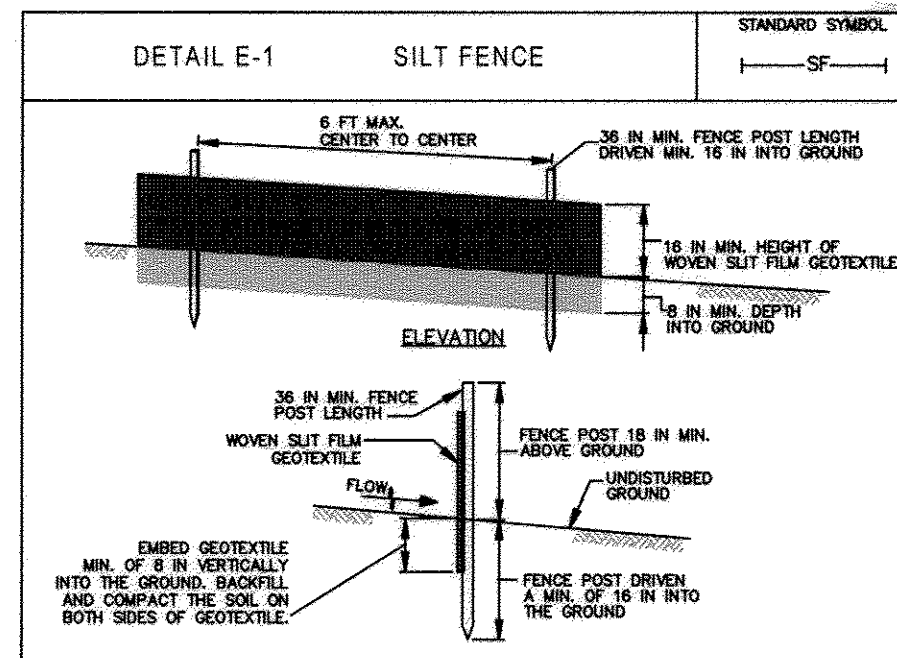
- CONSTRUCTION SPECIFICATIONS**
- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SOE. USE MINIMUM LENGTH OF 50 FEET (40 FEET FOR SINGLE RESIDENCE LOTS). USE MINIMUM WIDTH OF 10 FEET. FLARE SOE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
 - PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SOE UNDER THE ENTRANCE. MAINTAINING POSTS TO MAINTAIN CLEAN SURFACE. MOUNTABLE BERM AND SLOPES MUST BE MAINTAINED TO A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS TRACKED ON APPROVED PLAN. WHEN LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SOE IS NOT LOCATED AT A HIGH SPOT.
 - PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION 4-1 MATERIALS.
 - PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SOE.
 - MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT AND STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE. MOUNTABLE BERM AND SLOPES MUST BE MAINTAINED TO A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS TRACKED ON APPROVED PLAN. WHEN LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SOE IS NOT LOCATED AT A HIGH SPOT.

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



- CONSTRUCTION SPECIFICATIONS**
- USE MATTING THAT HAS A DESIGN VALUE FOR SHEAR STRESS EQUAL TO OR HIGHER THAN THE SHEAR STRESS DERIVED ON APPROVED PLAN.
 - USE PERMANENT SOIL STABILIZATION MATTING MADE OF OPEN WEAVE SYNTHETIC NON-DEGRADABLE FIBERS OR ELEMENTS OF UNIFORM THICKNESS AND DISTRIBUTION THROUGHOUT. GENERALLY USED IN THE MAT MUST BE NON-LEAKING AND NON-TORN TO VEGETATION AND SEED GERMINATION AND NON-HARMFUL TO THE SOIL. IF PRESENT MATTING MUST BE COVERED WITH A MINIMUM 2 INCH DEPTH OF SOIL. MATTING MUST BE BLENDED TO MATCH EXISTING MATTING. MATTING MUST BE BLENDED TO MATCH EXISTING MATTING. MATTING MUST BE BLENDED TO MATCH EXISTING MATTING.
 - SECURE MATTING USING STEEL STAPLES OR WOOD STAPLES. STAPLES MUST BE "U" OR "T" SHAPED STEEL WIRE HAVING A MINIMUM GAUGE OF NO. 11 AND NO. 8 RESPECTIVELY. "T" SHAPED STAPLES MUST AVERAGE 1 TO 1.5 INCHES WIDE AND BE A MINIMUM OF 6 INCHES LONG. "U" SHAPED STAPLES MUST HAVE A MINIMUM OF 1/2 INCH WIDE AND BE A MINIMUM OF 6 INCHES LONG. MATTING MUST BE BLENDED TO MATCH EXISTING MATTING. MATTING MUST BE BLENDED TO MATCH EXISTING MATTING. MATTING MUST BE BLENDED TO MATCH EXISTING MATTING.
 - PERFORM FINAL GRADING, TOPSOIL APPLICATION, SEEDING PREPARATION, AND PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS. PLACE MATTING WITHIN 48 HOURS OF COMPLETING SEEDING OPERATIONS. UNLESS END OF WORKDAY STABILIZATION IS SPECIFIED ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
 - UNROLL MATTING IN DIRECTION OF WATER FLOW CENTERING THE FIRST ROLL ON THE CHANNEL CENTER LINE. WORK FROM CENTER OF CHANNELS OUTWARD WITH PLACING ROLLS LAY MATTING SMOOTHLY AND FINAL UPON THE SEEDED SURFACE. AVOID STRETCHING THE MATTING.
 - OVERLAP OR MEET EDGES OF MATTING ROLLS FOR MANUFACTURER'S RECOMMENDATIONS. OVERLAP ROLLS BY 6 INCHES (MINIMUM), WITH THE UPSTREAM MAT OVERLAPPING ON TOP OF THE NEXT DOWNSTREAM MAT.
 - KEY IN THE TOP OF SLOPE OF MAT BY 4 INCHES (MINIMUM) BY DIGGING A TRENCH, PLACING THE MATTING ROLL END IN THE TRENCH, STAPLING THE MAT IN PLACE, RELOCATING THE COAGULATED MATERIAL, AND TAMPING TO SECURE THE MAT END IN THE KEY.
 - STAPLE/MAT MAT IN A STAGGERED PATTERN ON 4 FOOT (MINIMUM) CENTERS THROUGHOUT AND 2 FOOT (MAXIMUM) CENTERS ALONG BEAMS, JOINTS, AND ROLL ENDS.
 - IF SPECIFIED BY THE DESIGNER OR MANUFACTURER AND DEPENDING ON THE TYPE OF MAT BEING INSTALLED, OVER THE MATTING IS REVEALED AND STAPLED IN PLACE. FILL THE MAT WITH TOP SOIL OR GRANULAR MATERIAL AND LIGHTLY COMPACT OR ROLL TO MAXIMIZE SOIL/MAT CONTACT WITHOUT CRUSHING MAT.
 - ESTABLISH AND MAINTAIN VEGETATION SO THAT REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE CONTINUOUSLY MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

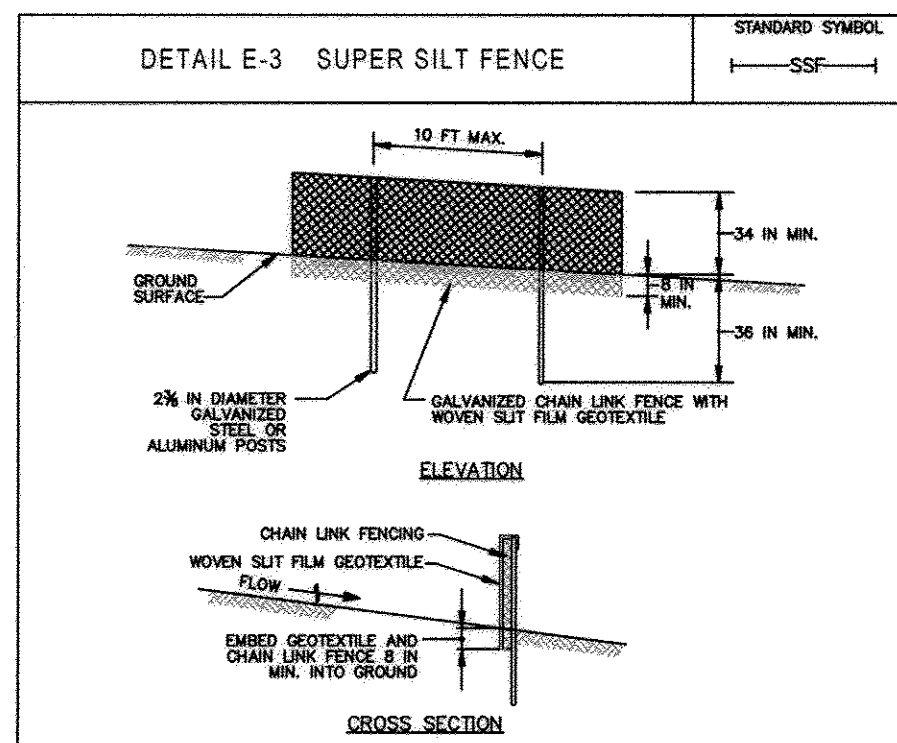
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL
U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT AND WATER MANAGEMENT ADMINISTRATION



- CONSTRUCTION SPECIFICATIONS**
- USE WOOD POSTS 3/8 x 1 1/2 x 8 IN (MINIMUM) SQUARE CUT OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO THE ABOVE STANDARD "T" OR "U" SECTION STEEL POSTS WEARING NOT LESS THAN 1 POUND PER LINEAR FOOT.
 - USE 36 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 6 FEET APART.
 - USE WOVEN SILT FENCE GEOTEXTILE AS SPECIFIED IN SECTION 4-1 MATERIALS AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION IN SECTION 4-1 MATERIALS.
 - PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION 4-1 MATERIALS.
 - EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND. BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
 - WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
 - EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 40 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
 - REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 20% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL SILT FENCE.

- JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)**
- CONSTRUCTION SPECIFICATIONS**
- USE WOVEN SILT FENCE GEOTEXTILE AS SPECIFIED IN SECTION 4-1 MATERIALS. SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 36 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
 - EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 40 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
 - REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 20% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCE AND GEOTEXTILE.

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



- CONSTRUCTION SPECIFICATIONS**
- INSTALL 3/8 INCH DIAMETER GALVANIZED STEEL POSTS OF 6000 INCH WALL THICKNESS AND 36 INCH LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
 - FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 1/2 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUB RINGS.
 - FASTEN WOVEN SILT FENCE GEOTEXTILE AS SPECIFIED IN SECTION 4-1 MATERIALS. SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 36 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
 - WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY WIND.
 - EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 40 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
 - PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION 4-1 MATERIALS.
 - REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 20% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCE AND GEOTEXTILE.

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

BUILDER/DEVELOPER'S CERTIFICATE

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, FOR SEDIMENT AND EROSION CONTROL, 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 ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

SIGNATURE OF DEVELOPER: *[Signature]* DATE: 4/2/15

ENGINEER'S CERTIFICATE

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

SIGNATURE OF ENGINEER: *[Signature]* DATE: 3/12/15

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 38386, EXPIRATION DATE: 01/12/2016.

SIGNATURE OF PROFESSIONAL ENGINEER: *[Signature]* DATE: 3/12/15

OWNER
CHELSEA KNOLLS, LLC
1355 BEVERLY RD, SUITE 240
MELAN, VIRGINIA 22101 (703)
754-9730
410-720-3021

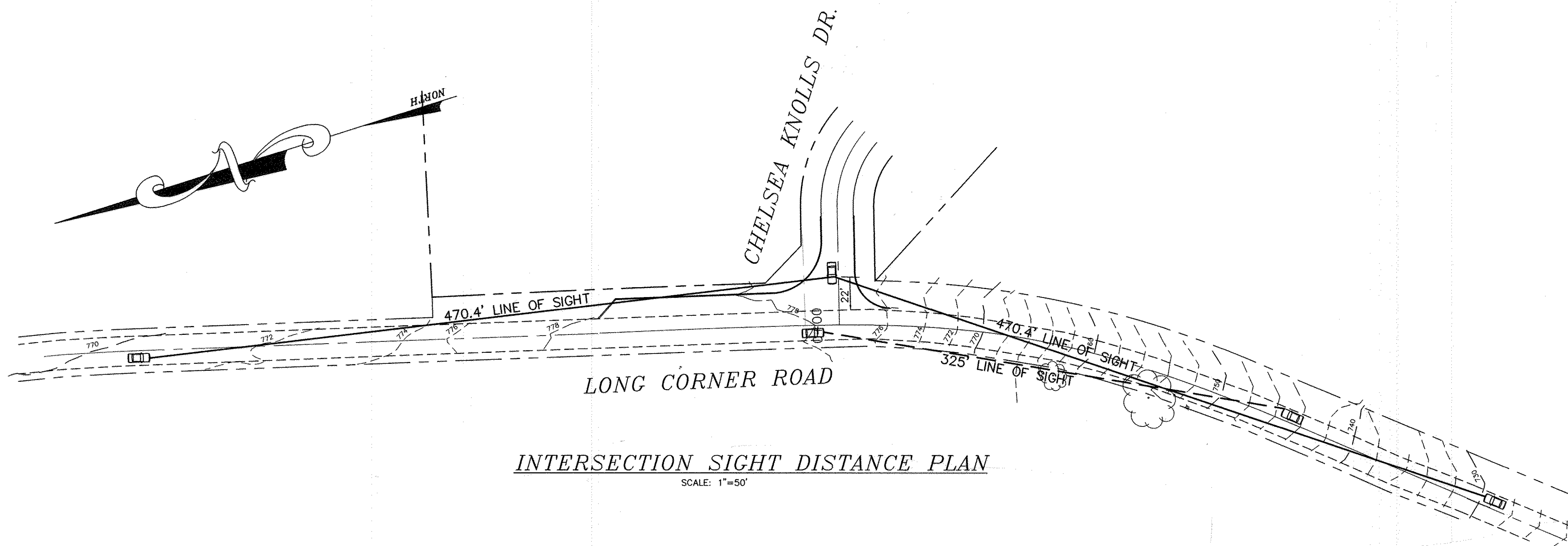
DEVELOPER
EVAN KNOLLS, INC.
ATTN: LEON BOGARD
9720 PATENT WOODS DRIVE
COLLINGS, MARYLAND 21046
410-796-0980

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLSWORTH CITY, MARYLAND 21042
(410) 461-3999

APPROVED: DEPARTMENT OF PUBLIC WORKS
Chief, Bureau of Highway: *[Signature]* DATE: 4/14/2015

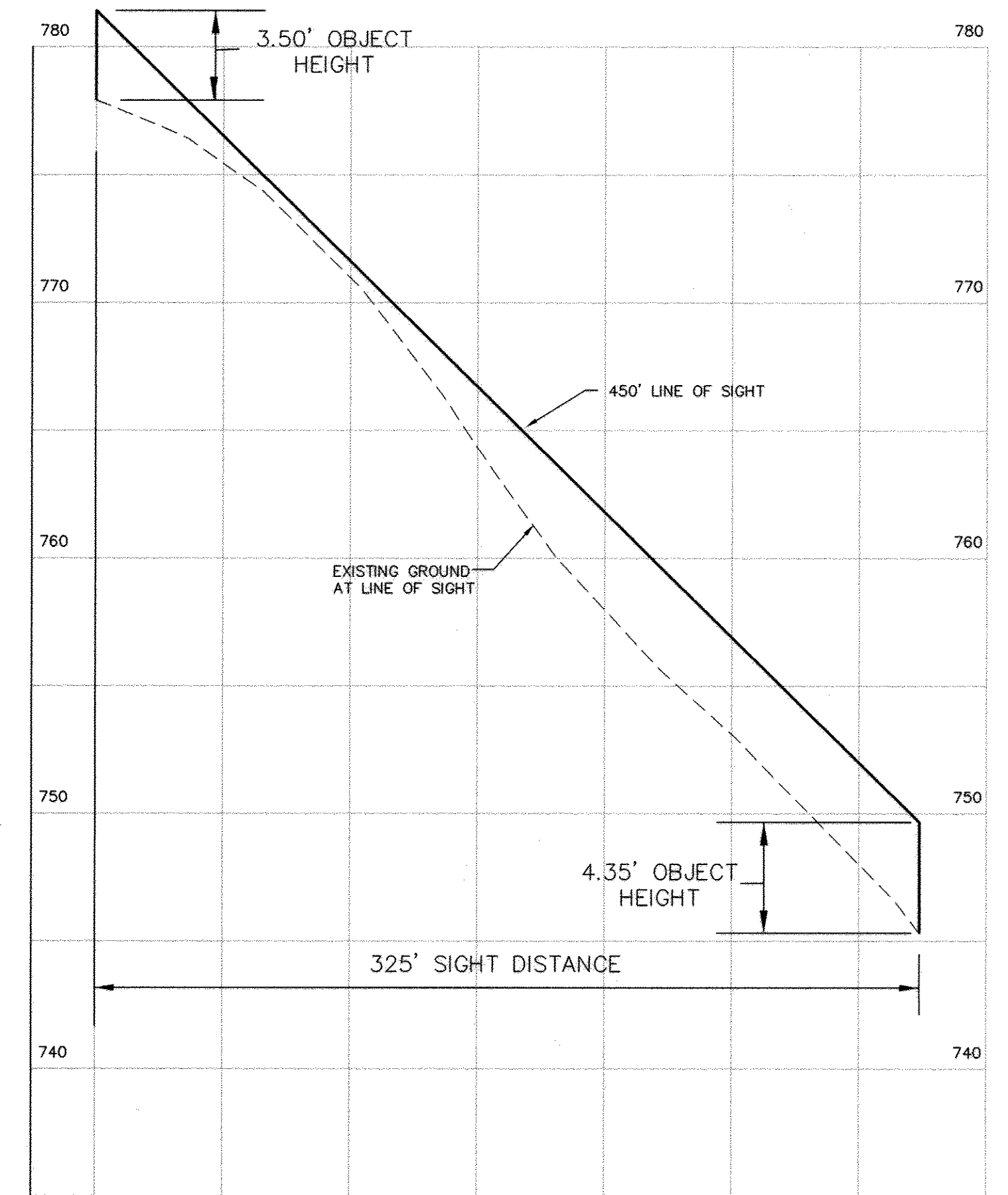
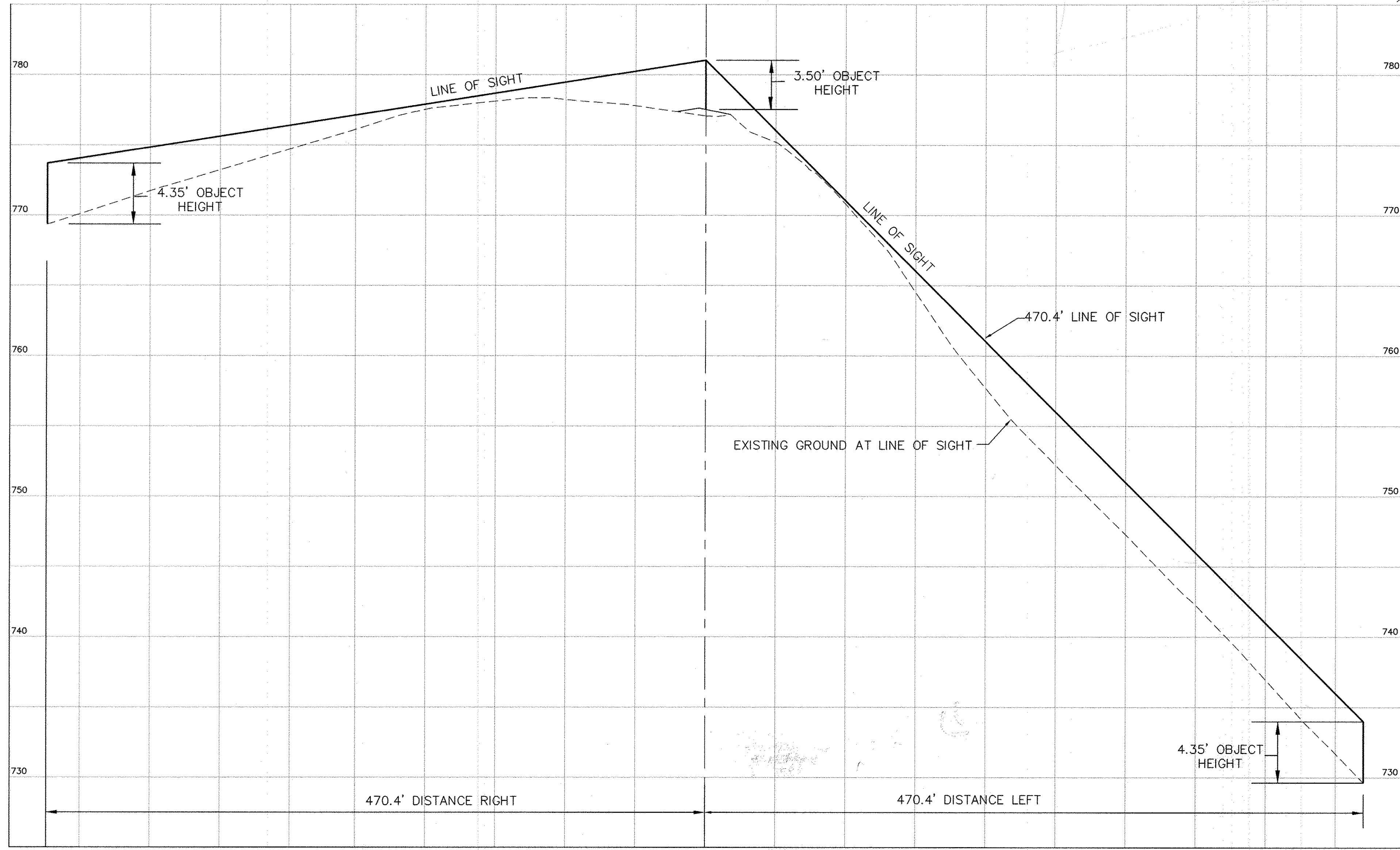
APPROVED: DEPARTMENT OF PLANNING AND ZONING
Chief, Division of Land Development: *[Signature]* DATE: 4-22-15
Chief, Development Engineering Division: *[Signature]* DATE: 4-17-15





NOTES

OPERATING SPEED= 39.6 MPH NORTH BOUND
 OPERATING SPEED= 40.6 MPH SOUTH BOUND
 HEIGHT OF EYE = 3.5'
 HEIGHT OF OBJECT = 4.35'



LEFT TURN FROM MAJOR ROAD SIGHT DISTANCE PROFILE

PER AASHTO, CHAPTER 8.5.3, CASE F, TABLE 9-14 (LEFT TURN FROM THE MAJOR ROAD),
 INTERSECTION SIGHT DISTANCE =
 $(1.47)(40)(5.5) = 323.4$ FEET.

PER AASHTO, CHAPTER 8.5.3, CASE B, TABLE 9-5, (INTERSECTION WITH STOP CONTROL ON A MINOR ROAD FOR MULTILANE HIGHWAY),
 INTERSECTION SIGHT DISTANCE =
 $(1.47)(40)(7.5+0.5) = 470.4$ FEET.

BASED ON THIS ANALYSIS, THE INTERSECTION HAS ADEQUATE SIGHT DISTANCE.

APPROVED: DEPARTMENT OF PUBLIC WORKS
 CHIEF BUREAU OF HIGHWAYS
 DATE: 7/13/15

APPROVED: DEPARTMENT OF PLANNING AND ZONING
 CHIEF, DIVISION OF LAND DEVELOPMENT
 DATE: 7-13-15

APPROVED: CHIEF, DEVELOPMENT ENGINEERING DIVISION
 DATE: 7-10-15



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. 17942, EXP. DATE 9/3/16.

R. JACOB HIKMAT, P.E.

THERE IS NO AS-BUILT INFORMATION PROVIDED ON THIS SHEET



date	JUNE 2015	approval	RJH
project	01-009	engineering	MAT
illustration	MAM	scale	1"=50'

no.	description	revisions	date

REVISIONS
CHELSEA KNOLLS
 LOTS 1-14, NON-BUILDABLE PRESERVATION PARCELS A & B AND NON-BUILDABLE BULK PARCEL C
 TAX MAP 6 GRID 22 AND TAX MAP 12, GRID 5, PARCEL 78
 FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
 SIGHT DISTANCE ANALYSIS

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 7350-B Grace Drive, Columbia, Maryland 21044
 (410) 997-0296 Fax: (410) 997-0298 Fax.