

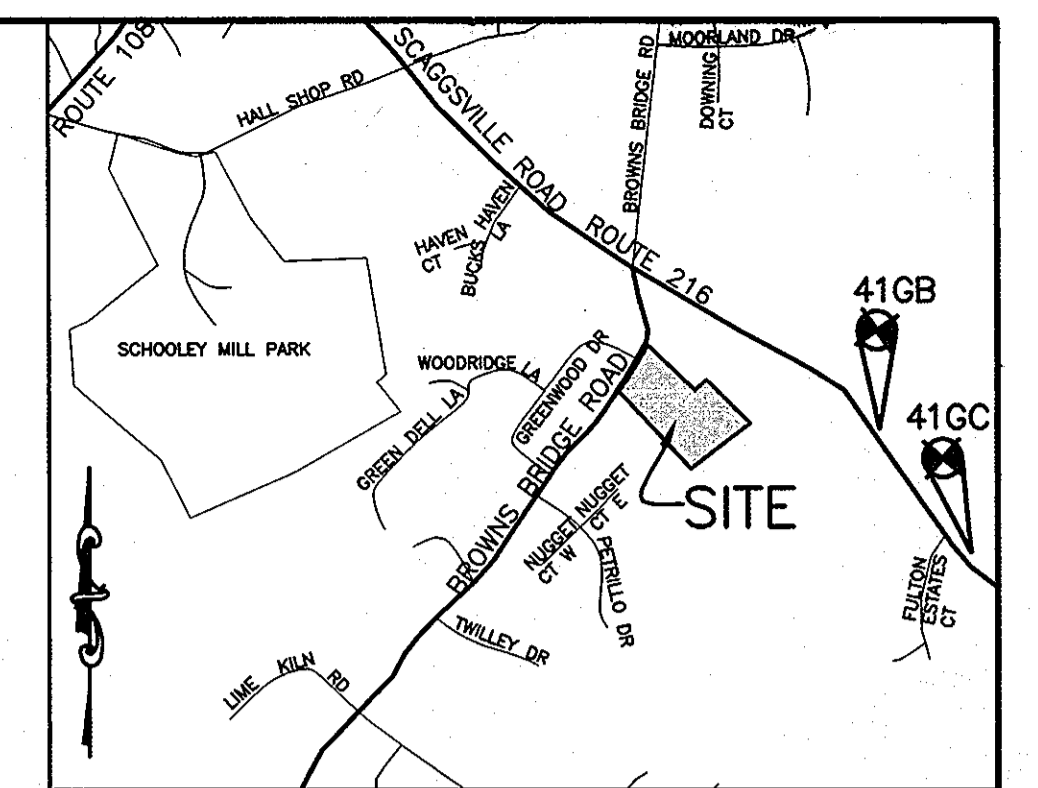
SHEET INDEX	
NO	DESCRIPTION
1	TITLE SHEET
2	PLAN AND PROFILE OF ALL DAUGHTERS LANE
3	ROAD SECTIONS AND DETAILS
4	GRADING, SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP
5	CONSTRUCTION AND EROSION AND SEDIMENT CONTROL DETAILS
6	EROSION AND SEDIMENT CONTROL NOTES
7	SWM DETAILS
8	STORM SEWER AND POND PROFILES
9	SWM FACILITY DETAILS
10	SWM FACILITY AND SEDIMENT BASIN DETAILS
11	FINAL LANDSCAPE PLAN, NOTES AND SCHEDULES
12	FINAL SWM PLANTING, LANDSCAPE NOTES, DETAILS, AND SCHEDULES
13	FINAL FOREST CONSERVATION PLAN
14	FOREST CONSERVATION NOTES AND DETAILS
15	MOT PLAN
16	SOIL BORING LOGS
17	SOIL BORING LOGS
18	OFFSITE FOREST STAND DELINEATION PLAN
19	OFFSITE FOREST STAND DELINEATION PLAN
20	OFFSITE FINAL FOREST CONSERVATION PLAN
21	OFFSITE FINAL FOREST CONSERVATION PLAN

ROADWAY AND STORM DRAIN PLANS

ORCHARD ESTATES

LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

5th ELECTION DISTRICT HOWARD COUNTY, MARYLAND



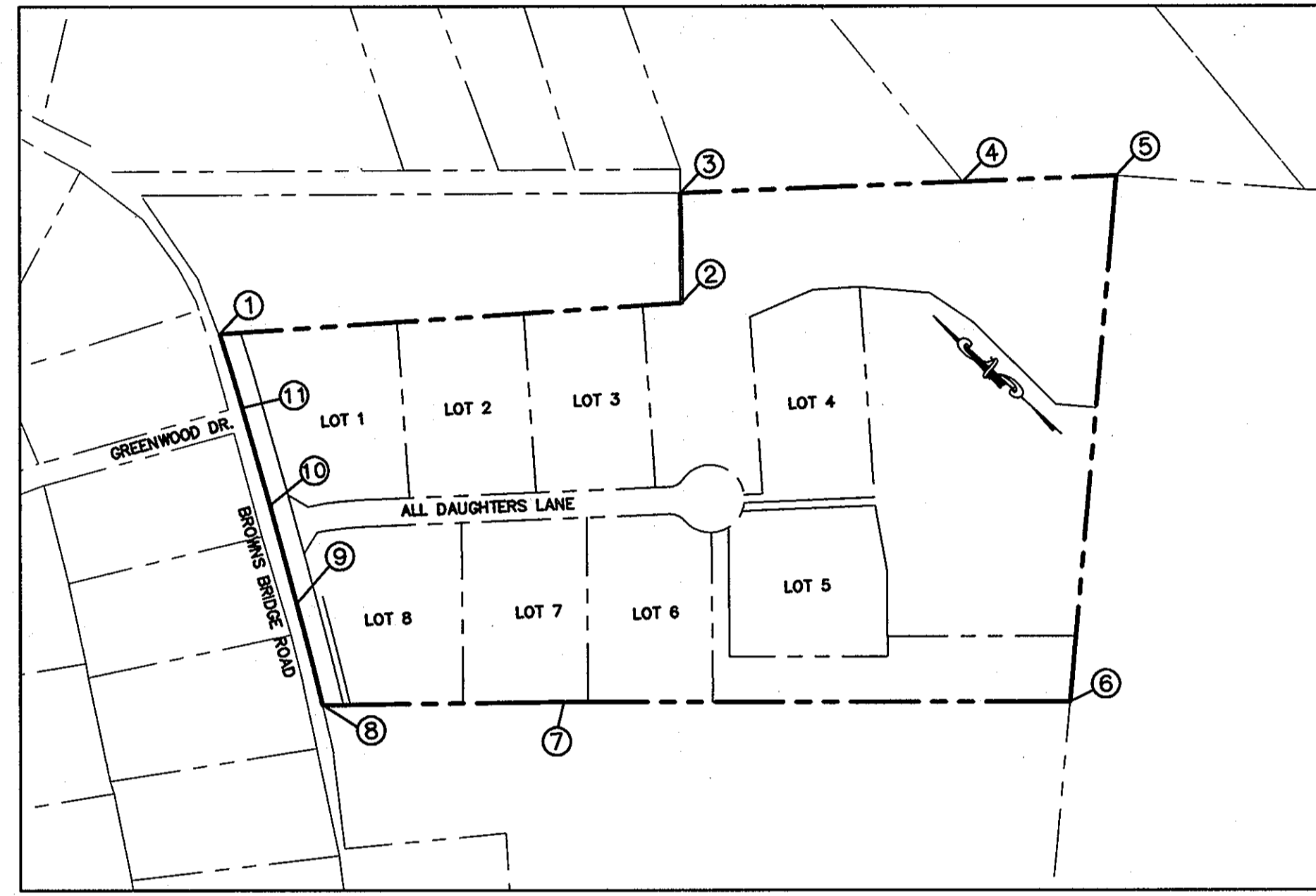
VICINITY MAP
SCALE: 1"=2000'

BENCH MARK
HOWARD COUNTY CONTROL
STATION 41GC
N 543290.6332
E 1331697.8591
ELEV. 468.374

HOWARD COUNTY CONTROL
STATION 41GB
N 544580.3747
E 1330741.3820
ELEV. 475.304

GENERAL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. IV "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION" PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY PREPARED BY PATTON HARRIS RUST AND ASSOCIATES DATED SEPT. 2004.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE MARYLAND COORDINATE SYSTEM NAD 83 (MCS). HOWARD COUNTY MONUMENT NOS. 41GC AND 41GB.
- PRIVATE WELLS WILL BE USED TO SERVE THIS PROPERTY.
- PRIVATE INDIVIDUAL SEPTIC AREAS WILL BE USED TO SERVE THIS PROPERTY.
- STORMWATER MANAGEMENT FOR THIS SITE WILL BE PROVIDED BY ONE DRY EXTENDED DETENTION POND AND TWO BIO-RETENTION FACILITIES. DRY EXTENDED DETENTION POND WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED BY HOWARD COUNTY AND HOA. BIO-RETENTION FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY HOA.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
- THERE ARE NO WETLANDS ON-SITE STUDY FOR THIS PROJECT AS DETERMINED BY PATTON HARRIS RUST AND ASSOCIATES FIELD WALKED, DATED DECEMBER 2004. DRY EXTENDED DETENTION POND WILL BE PRIVATELY OWNED AND JOINTLY MAINTAINED BY HOWARD COUNTY AND HOA. BIO-RETENTION FACILITY WILL BE PRIVATELY OWNED AND MAINTAINED BY HOA.
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY TRAFFIC CONCEPTS INC. DATED DECEMBER 2004.
- A NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- THE BOUNDARY SURVEY FOR THIS PROJECT WAS PREPARED BY PATTON HARRIS RUST AND ASSOCIATES DATED SEPTEMBER 2004.
- SUBJECT PROPERTY ZONED RR-DEO PER 2-02-04 COMPREHENSIVE ZONING PLAN AND THE COMP-LITE ZONING AMENDMENTS DATED 7/28/06.
- ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
- SEE DEPARTMENT OF PLANNING AND ZONING FILE NO'S.: SP 05-15, RE 06-007.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
- DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOL. III. ALL 40' RIGHT OF WAYS 25 M.P.H.
- ALL STREET CURB RETURNS SHALL HAVE 25' RADII UNLESS OTHERWISE NOTED.
- NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE STREAM OR REQUIRED BUFFER, AND FOREST CONSERVATION EASEMENT AREAS.
- BASED ON AVAILABLE COUNTY MAPS AND RECORDS, THERE ARE NO HISTORIC STRUCTURES OR KNOWN CEMETERIES LOCATED ON THE SUBJECT PROPERTY.
- THE FOREST CONSERVATION OBLIGATION FOR THE PROPOSED SITE DEVELOPMENT HAS BEEN MET BY PLACING 1.56± AC (67,953.60 SF±) OF FOREST IN AN ON-SITE FOREST RETENTION EASEMENT. FOREST CONSERVATION SURETY IN THE AMOUNT OF \$13,590.72 (67,953.60 SF x \$0.20/SF) WILL BE POSTED.
- THE REMAINING OBLIGATION OF 2.15 AC (93,654 SF) WILL BE SATISFIED BY OFFSITE FOREST CONSERVATION EASEMENTS ON THE RUSSELL HOLLAND PROPERTY AT TAX MAP 7, PARCEL 101, AND TAX MAP 8, PARCEL 4 (F-07-130). A 4.3 ACRE (187,308 SF) OFFSITE RETENTION EASEMENT SATISFIES THE REMAINING OBLIGATION OF 2.15 ACRES (93,654 SF). OFFSITE FOREST CONSERVATION SURETY IN THE AMOUNT OF \$37,461.60 (187,308 x \$0.20/SF) WILL BE POSTED.
- PRESERVATION PARCELS A, B & C HAVE NO FURTHER SUBDIVISION POTENTIAL.
- FOR FLAG OR PIPESTEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPESTEM AND ROAD RIGHT-OF-WAY LINE AND NOT ONTO THE PIPESTEM LOT DRIVEWAY.
- LAND DEDICATED TO HOWARD COUNTY, MARYLAND, FOR PURPOSES OF A PUBLIC ROAD IS 1.1071 ACRES.
- PARCELS A, B, & C WILL BE PRIVATELY OWNED. THE EASEMENT HOLDERS FOR PARCELS A, B, & C WILL BE THE HOMEOWNER'S ASSOCIATION AND HOWARD COUNTY.
- 95% COMPACTION IS REQUIRED IN FILL AREAS UNDER ROADS AND PROPOSED STORM DRAIN PIPES PER AASHTO T-180 STANDARDS.
- 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 GA.) INSERTED INTO A 2-1/2" GALVANIZED STEEL PERFORATED, SQUARE TUBE SLEEVE (12 GA.) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- THIS PROJECT IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL NO. 45-2003 AND THE AMENDED ZONING REGULATIONS PER COUNCIL BILL NO. 75-2003. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS/PARCELS MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE BUILDING/GRADING PERMIT APPLICATIONS.
- 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 WILL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$26,550.00 FOR 74 SHADE TREES, 0 ORNAMENTAL TREES, 28 EVERGREEN TREES, AND 0 SHRUBS.



PLAN
SCALE: 1" = 200'

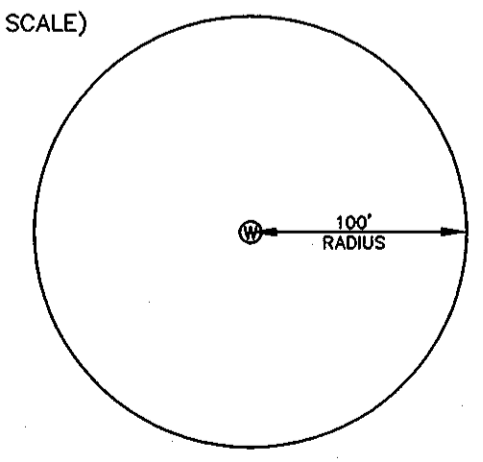
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1	N 545,449.73	E 1,328,318.94
2	N 544,979.55	E 1,328,814.70
3	N 545,090.87	E 1,329,933.29
4	N 544,795.48	E 1,329,228.27
5	N 544,635.17	E 1,329,388.08
6	N 544,158.91	E 1,328,769.82
7	N 544,707.98	E 1,328,262.93
8	N 544,966.70	E 1,328,018.45
9	N 545,096.19	E 1,328,102.52
10	N 545,223.42	E 1,328,182.95
11	N 545,351.35	E 1,328,260.99

SITE TABULATION

EXISTING ZONING	RR-DEO
GROSS AREA OF PROPERTY	18.57 AC (809,079 SF)
AREA IN 100 YR. FLOODPLAIN	0 AC
AREA OF STEEP SLOPE	0.21 AC
NET TRACT AREA	18.36 AC
AREA OF RIGHT OF WAY	1.11 AC
AREA OF PROPOSED BUILDABLE LOTS	12.45 AC
AREA OF PROPOSED NON-BUILDABLE PRESERVATION PARCELS	5.01 AC
MINIMUM LOT SIZE SELECTED	47,000 SF
AREA OF REQUIRED OPEN SPACE	NONE
NUMBER OF BUILDABLE LOTS	8 *
NUMBER OF BUILDABLE PRESERVATION PARCELS	1
NUMBER OF NON-BUILDABLE PRESERVATION PARCELS	2
NUMBER OF OPEN SPACE LOTS	N/A
PROPOSED WATER AND SEWER	PRIVATE WELL AND SEPTIC
* DENSITY EXCHANGE OPTION WILL BE USED TO IMPORT DENSITY UNITS TO THIS PARCEL.	
BASE DENSITY = 18.57 AC/4.25 = 4.36 OR 4 UNITS	
DEO OPTION DENSITY = 18.36 AC/2 = 9 UNITS	
TOTAL DEO UNITS REQUIRED = 9-4=5 UNITS	

WATER AND SEWER GENERAL NOTES:

- THIS AREA [diagonal hatching] DESIGNATES A PRIVATE SEPTIC EASEMENT OF AT LEAST 10,000 SQUARE FEET AS REQUIRED BY THE MARYLAND DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA ARE RESTRICTED. THESE EASEMENTS SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWAGE EASEMENT. RECORDATION OF A REVISED SEWAGE EASEMENT SHALL NOT BE NECESSARY.
- PERC HOLES SHOWN HEREON HAVE BEEN FIELD LOCATED BY PATTON HARRIS RUST AND ASSOCIATES, PC IN AUGUST 2004.
- ⊕ DENOTES PASSING PERC TEST.
- ⊙ DENOTES FAILED PERC TEST.
- WELLS AND SEPTIC SYSTEMS WITHIN 100 FEET OF THE PROPERTY BOUNDARY HAVE BEEN SHOWN TO THE BEST OF OUR KNOWLEDGE AND INFORMATION FROM AVAILABLE COUNTY RECORDS.
- THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARLAND DEPARTMENT OF THE ENVIRONMENT AND HOWARD COUNTY.
- DENOTES WELL (NOT TO SCALE)



EXISTING STRUCTURE LIST			
LOCATION	AGE	USE FOR	REMOVE/RETAIN
N 544936 E 1328089	-	-	REMOVE
N 544612 E 1328374	-	-	REMOVE
N 544571 E 1328388 (EX. FENCE)	-	PROTECT PROPERTY LINE	RETAIN

MINIMUM LOT SIZE CHART			
LOT NO.	GROSS AREA	PIPESTEM AREA	MIN LOT SIZE
1	52,439	-	52,439
2	49,245	-	49,245
3	47,077	-	47,077
4	49,747	327	49,420
5	49,938	-	49,938
6	49,896	-	49,896
7	49,677	-	49,677
8	54,347	-	54,347
A	140,111	2,332	137,779

ALL AREAS SHOWN ABOVE ARE IN SQUARE FEET

PRESERVATION PARCEL A, B & C - JUSTIFICATION
THREE PRESERVATION PARCELS HAVE BEEN CREATED IN THIS CLUSTER SUBDIVISION. THE NON-BUILDABLE PRESERVATION PARCEL B HAS BEEN CREATED TO PRESERVE THE ON-SITE FOREST RESOURCES. PRESERVATION PARCEL A HAS BEEN CREATED TO PROVIDE A BUILDABLE HOUSE SITE. IN ADDITION, ALL OF THE PROJECT'S WATER QUALITY AND QUANTITY MANAGEMENT FACILITIES WILL BE LOCATED ON THE NON-BUILDABLE PRESERVATION PARCELS B & C. THE EXISTING HEDGEROWS AND VEGETATION ALONG THE PROPERTY BOUNDARIES ARE BEING PRESERVED.

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Willa R. Hall</i>	11-20-07
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Cindy Hamt</i>	11/30/07
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>W. J. J. J.</i>	11/27/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
DATE	REVISION
OWNER	CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539
DEVELOPER	RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414
PROJECT	ORCHARD ESTATES LOTS 1-8 PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C
AREA TAX MAP	40, GRID 18, PARCEL 178, ZONED RR-DEO 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE	TITLE SHEET

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

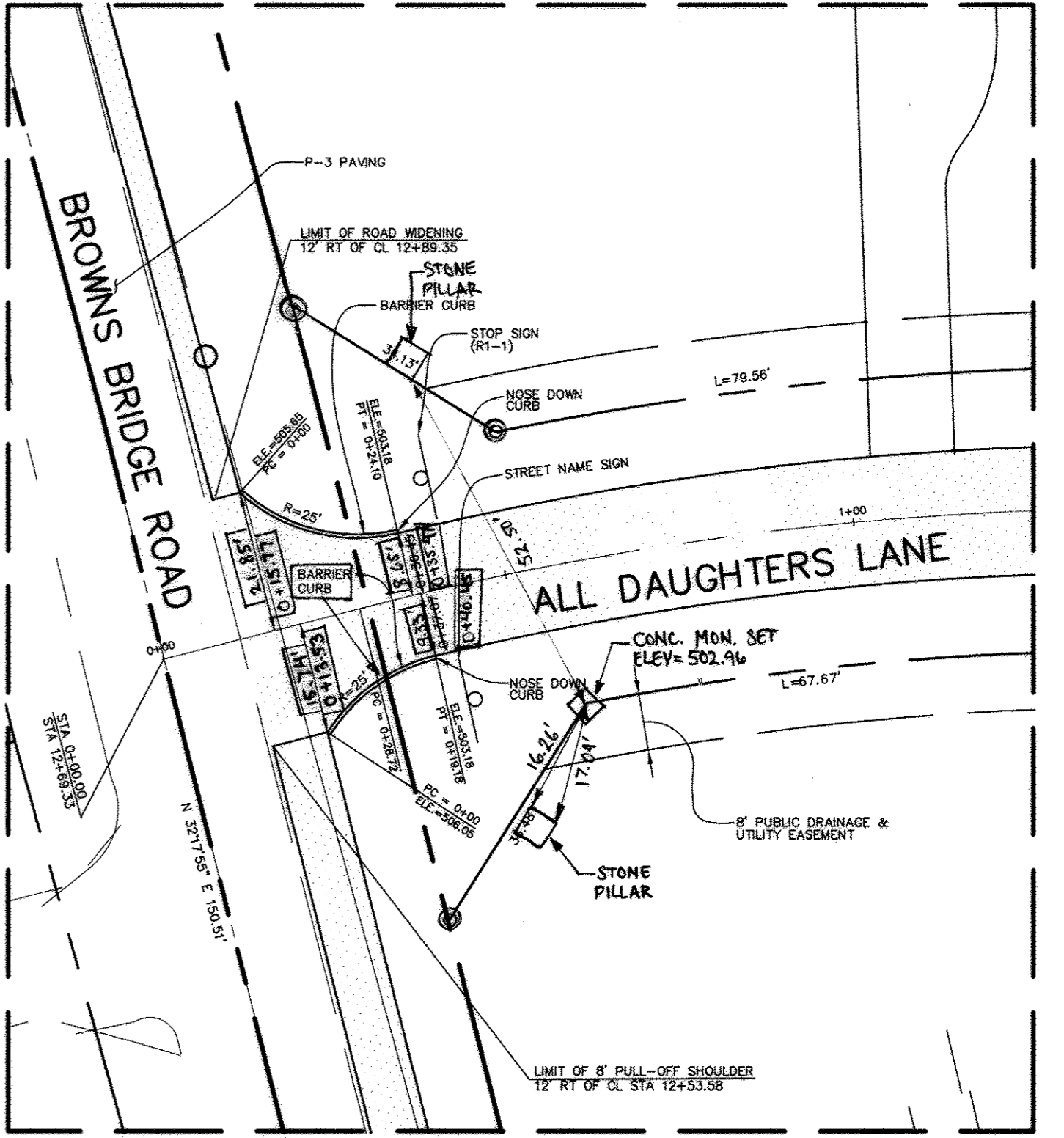
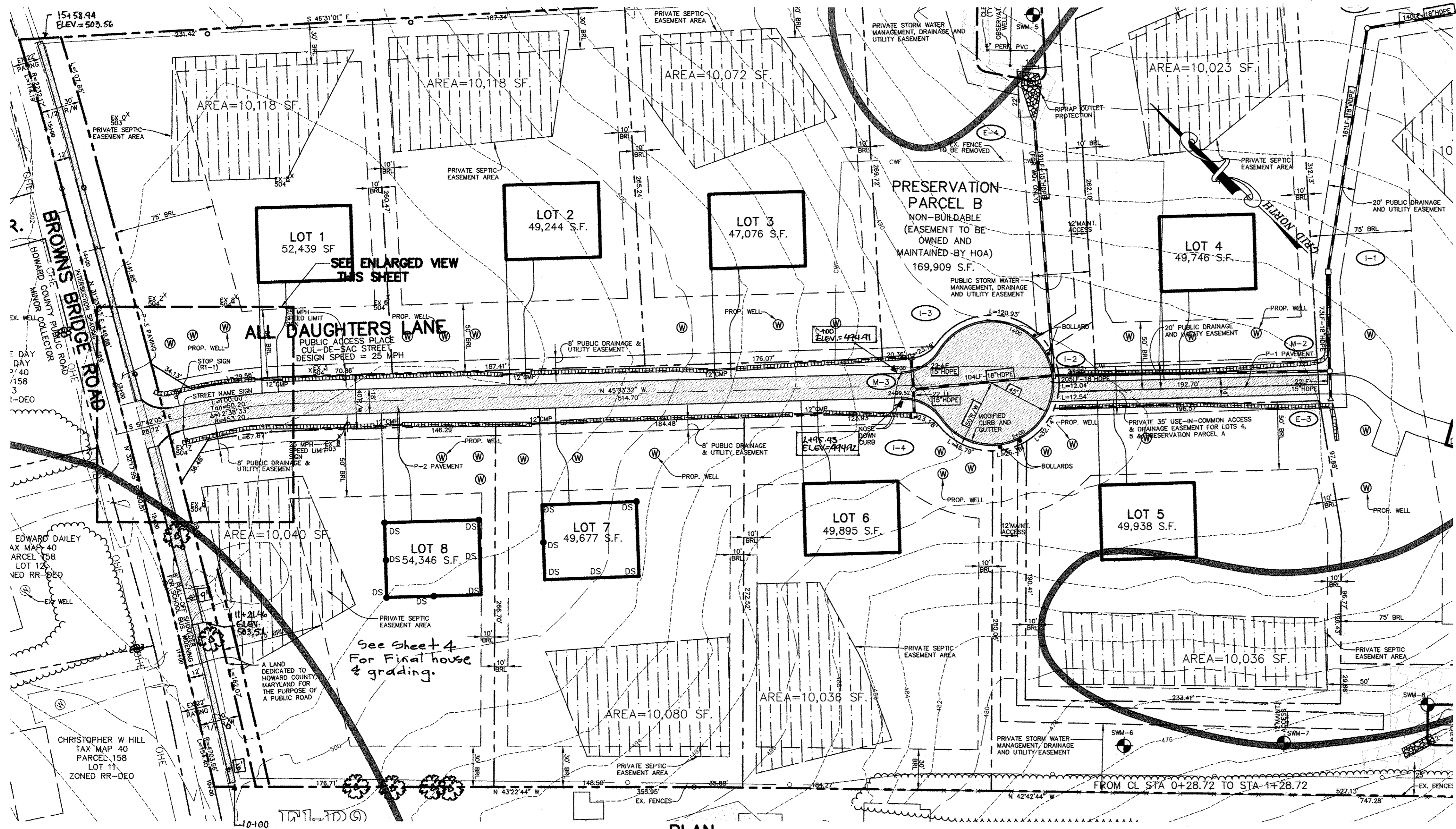
PHRA

10/22/07
DATE

CHECKED BY: DWC
DESIGNED BY: NS
DRAWN BY: EMR/JMK
PROJECT NO: 3043/1-0/ENGR/PLANS
FINAL/COO000V.DWG
DATE : NOVEMBER 6, 2007
SCALE : AS SHOWN
DRAWING NO. 1 OF 21

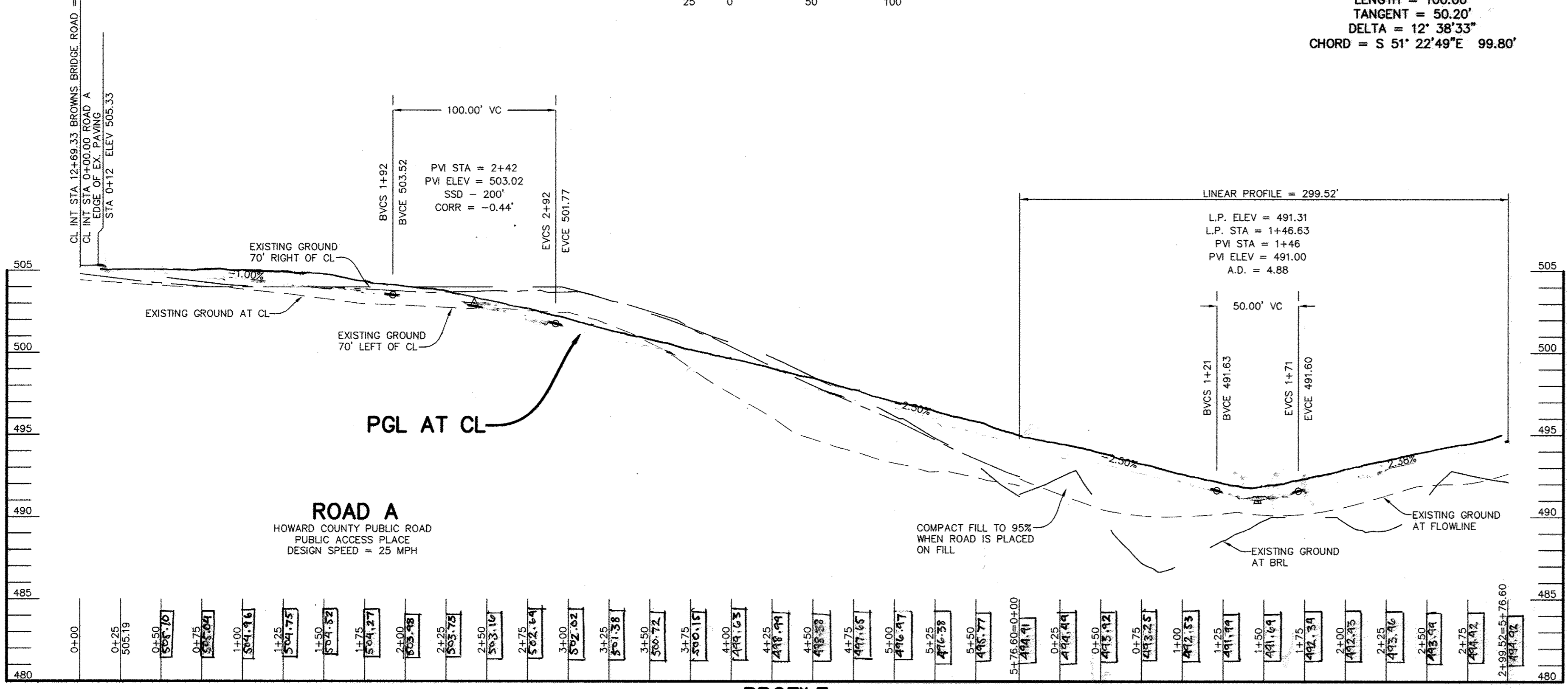
DOMENICK W. COLANGELO #27200
F-07-005

P:\Project\3043\1-0\ENGR\PLANS\Final\COO000V.DWG, 10/19/2007 8:17:51 AM



CL CURVE DATA

RADIUS = 453.20'
LENGTH = 100.00'
TANGENT = 50.20'
DELTA = 12° 38' 33"
CHORD = S 51° 22' 49" E 99.80'



AS-BUILT CERTIFICATION

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

Sharm K. Cruz 36896
PRINTED NAME MD. P.E. NO.

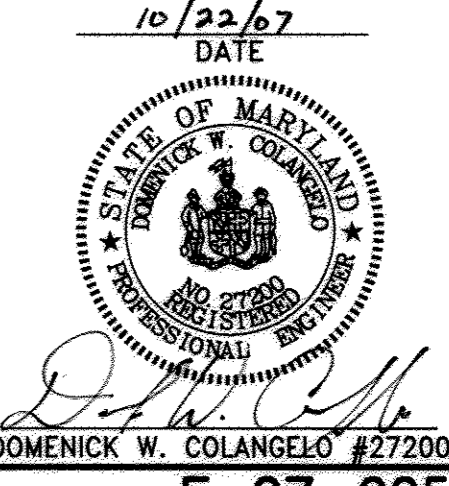
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SIGNATURE DATE



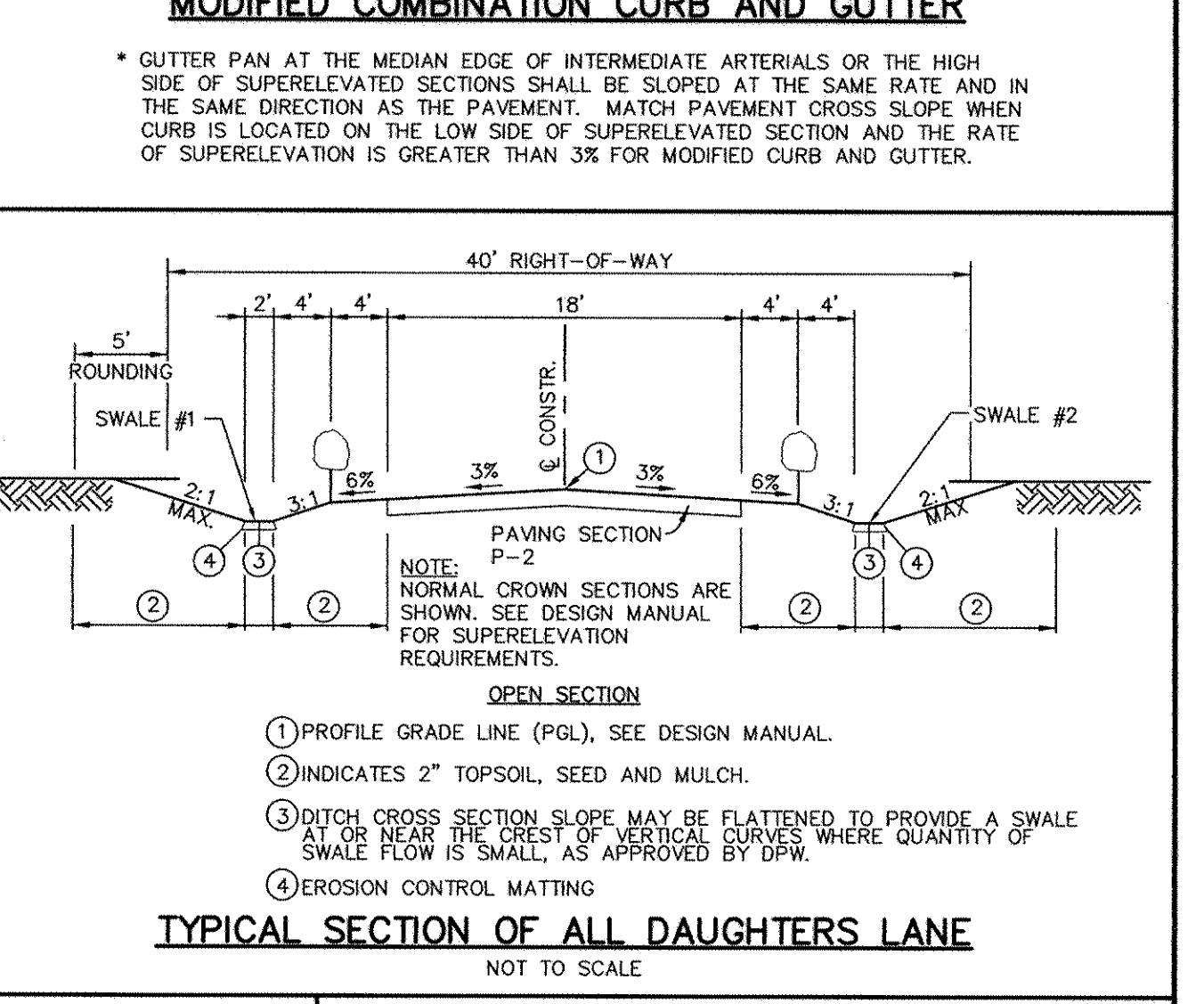
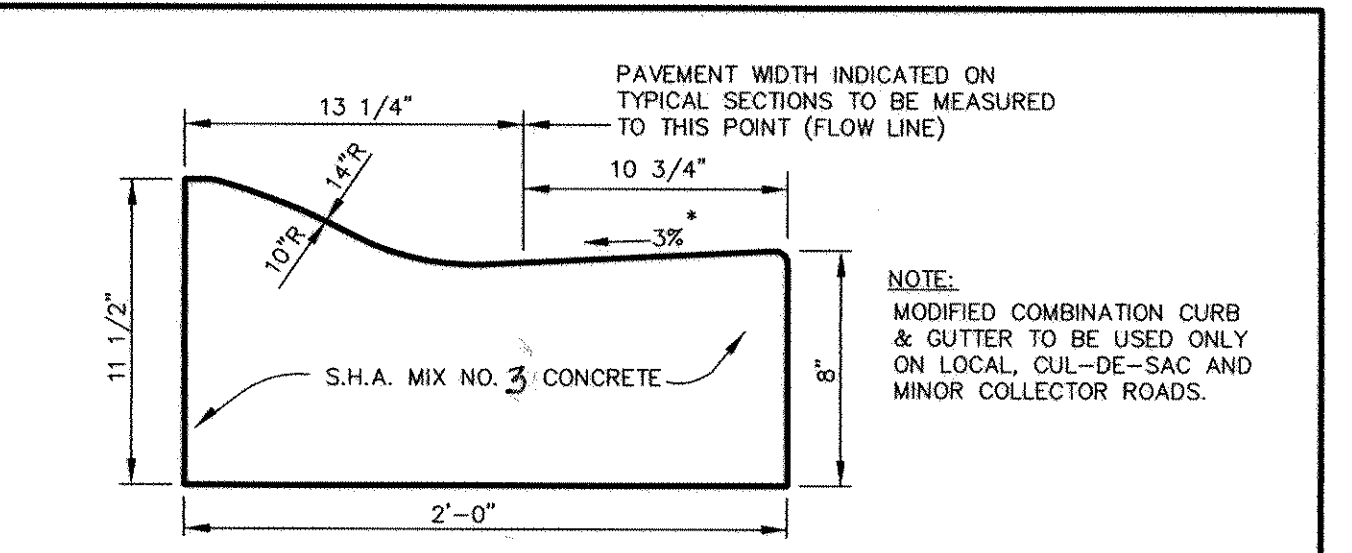
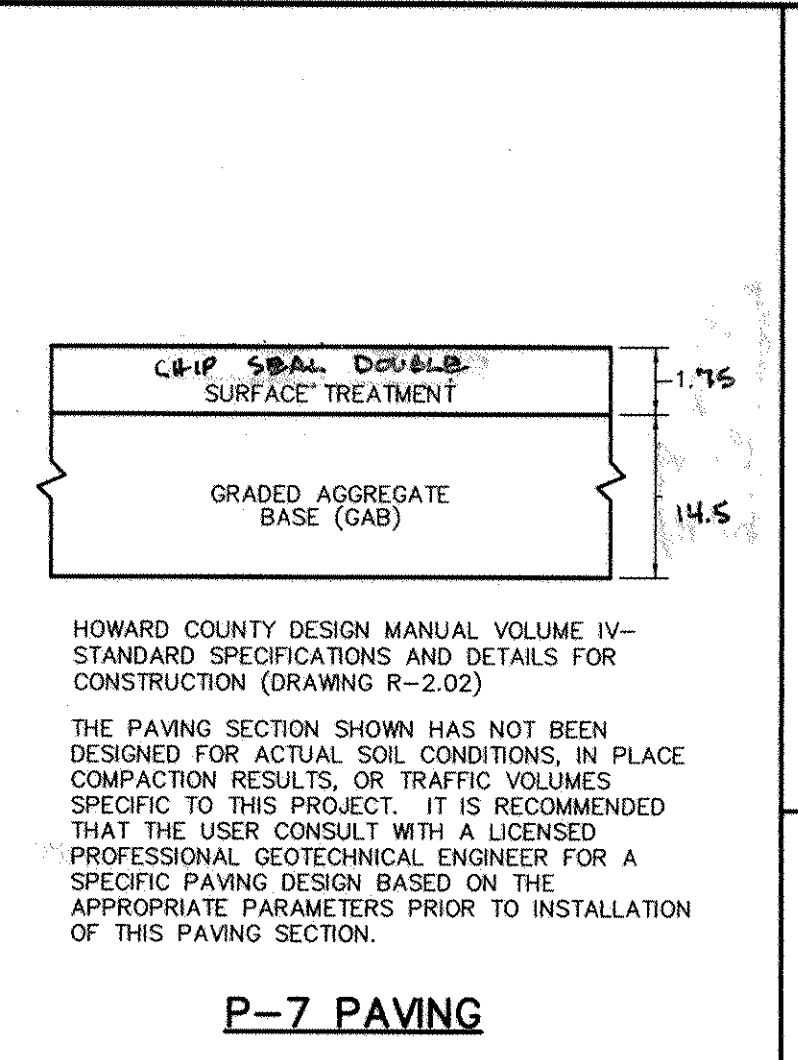
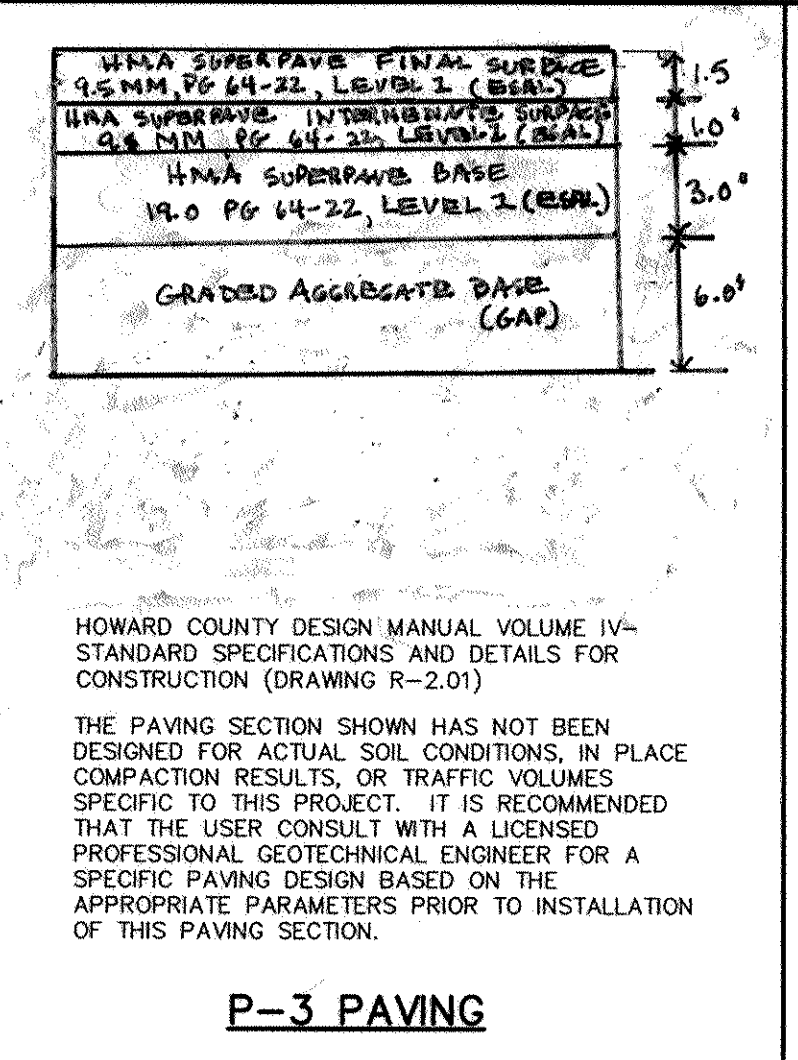
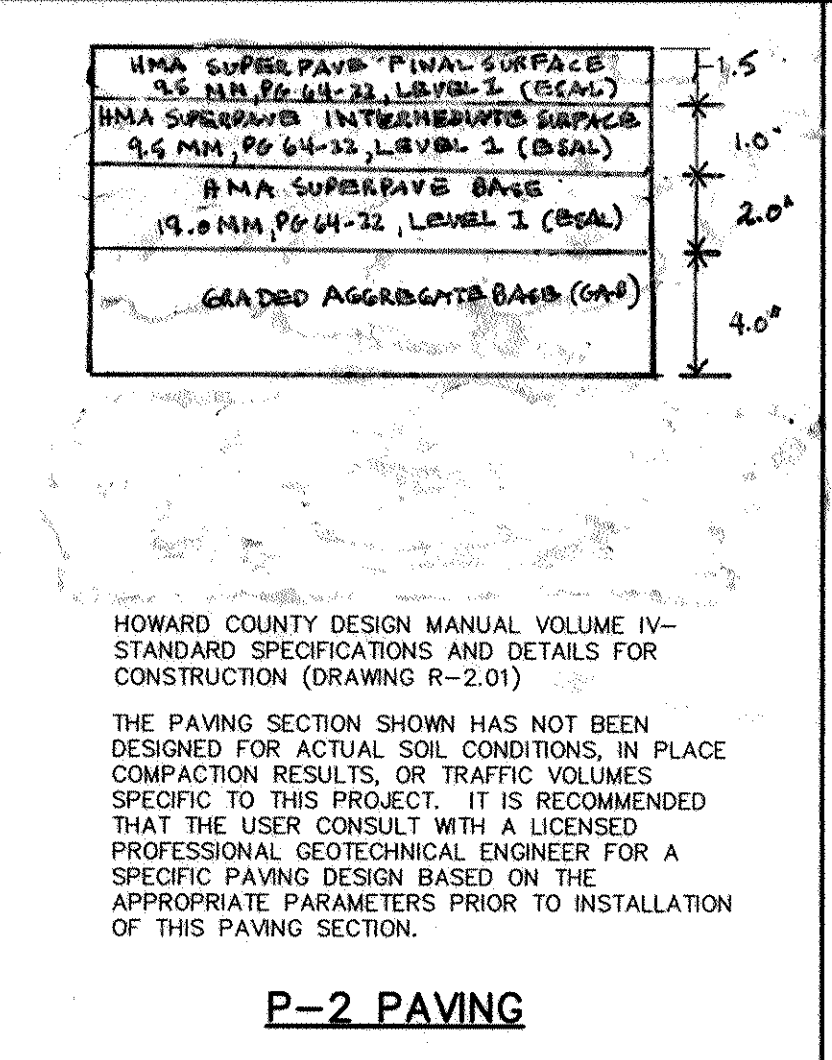
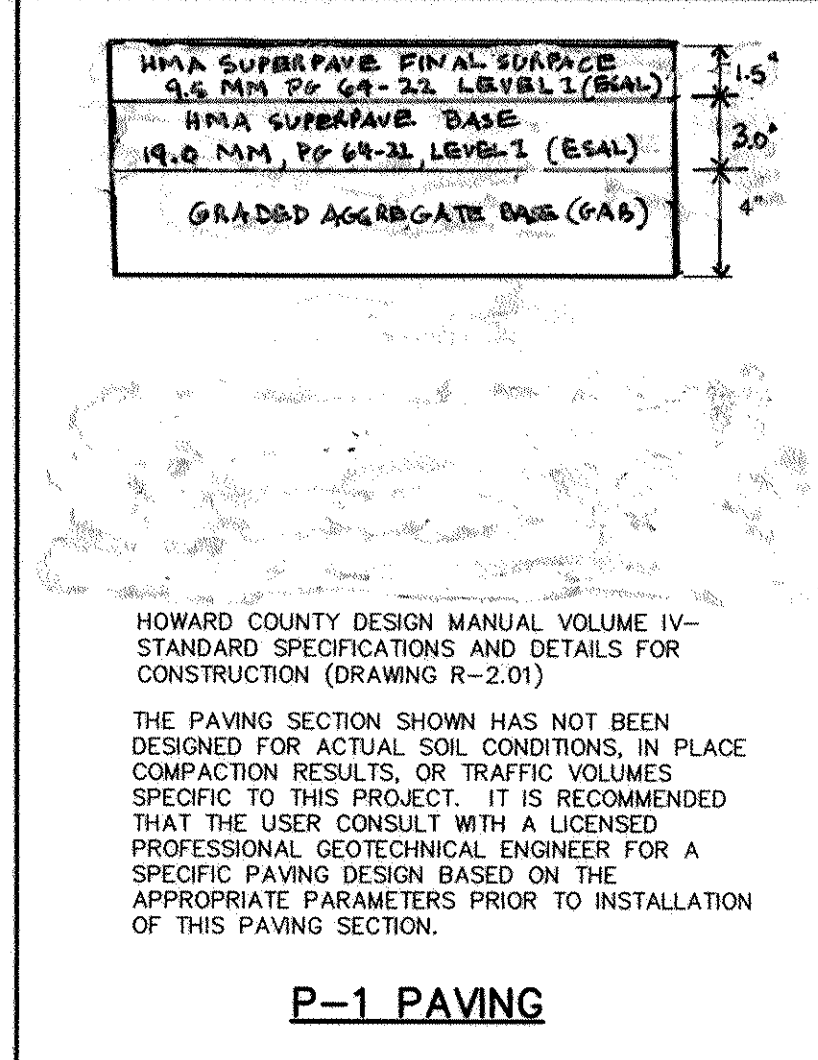
FINAL AS-BUILT PLANS
PREPARED BY PENNONI ASSOCIATES, FORMERLY PHRA

AS-BUILT DATE OF SURVEY: 11.08.17

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<u>Walter J. Marshall</u> CHIEF, BUREAU OF HIGHWAYS	11-20-07 DATE
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<u>Vivian Hamilton</u> CHIEF, DIVISION OF LAND USE DEVELOPMENT	11/20/07 DATE
<u>Walter J. Marshall</u> CHIEF, DEVELOPMENT ENGINEERING DIVISION	11/20/07 DATE
DATE NO.	REVISION
OWNER CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539	
DEVELOPER RUPPERT PROPERTIES ATTN: RICHARD DENMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414	
PROJECT AS-BUILT ORCHARD ESTATES LOTS 1-B, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C	
AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE PLAN AND PROFILE OF ALL DAUGHTERS LANE	
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
<u>10/22/07</u> DATE	CHECKED BY: DWC
DESIGNED BY : NS	
DRAWN BY: EMR/JMK	
PROJECT NO: 13043/1-0/ENGR/PLANS /FINAL/C40ROAD.DWG	
DATE : NOVEMBER 6, 2007	
SCALE : AS SHOWN	
DRAWING NO. 2 OF 21	

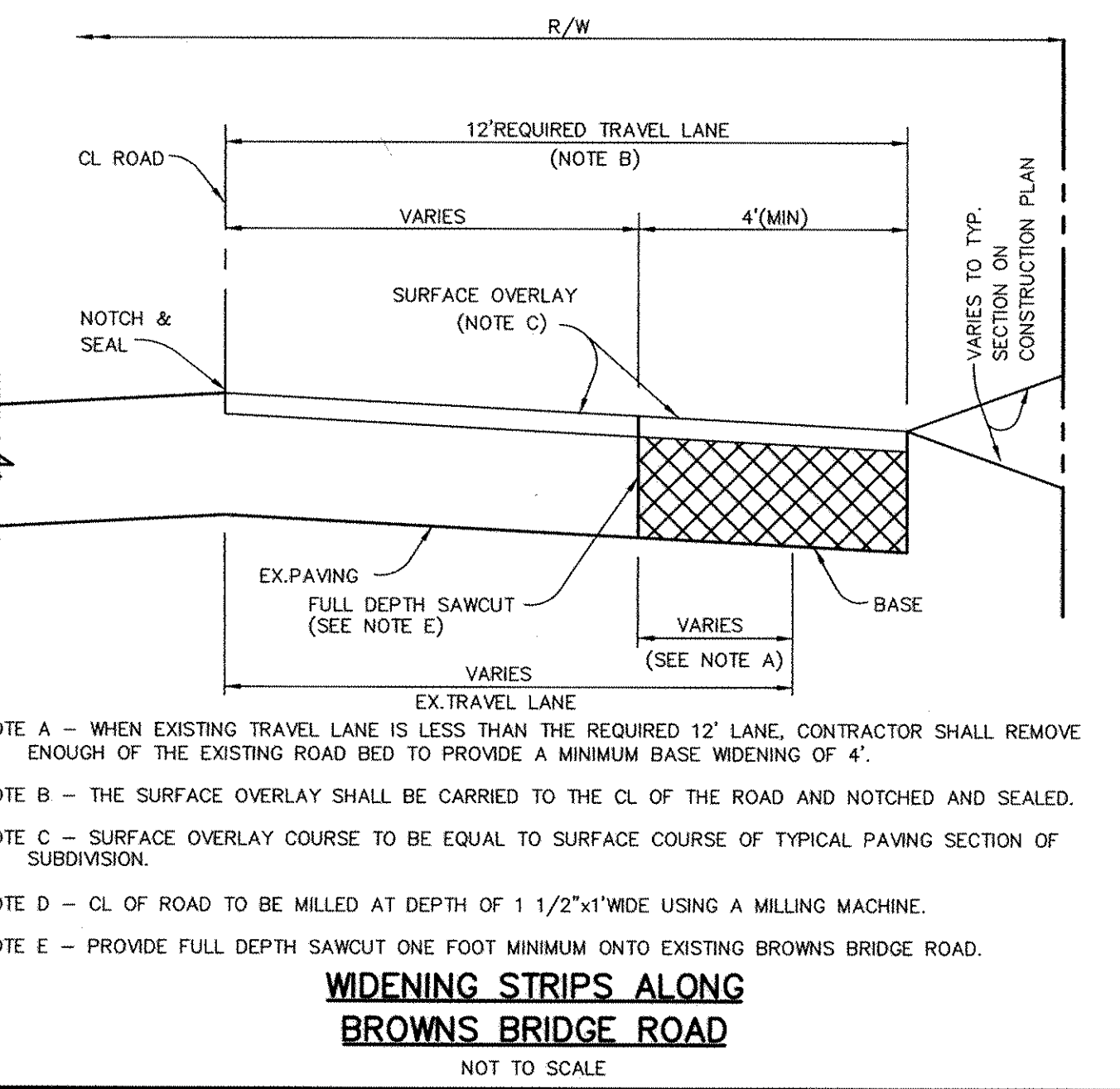
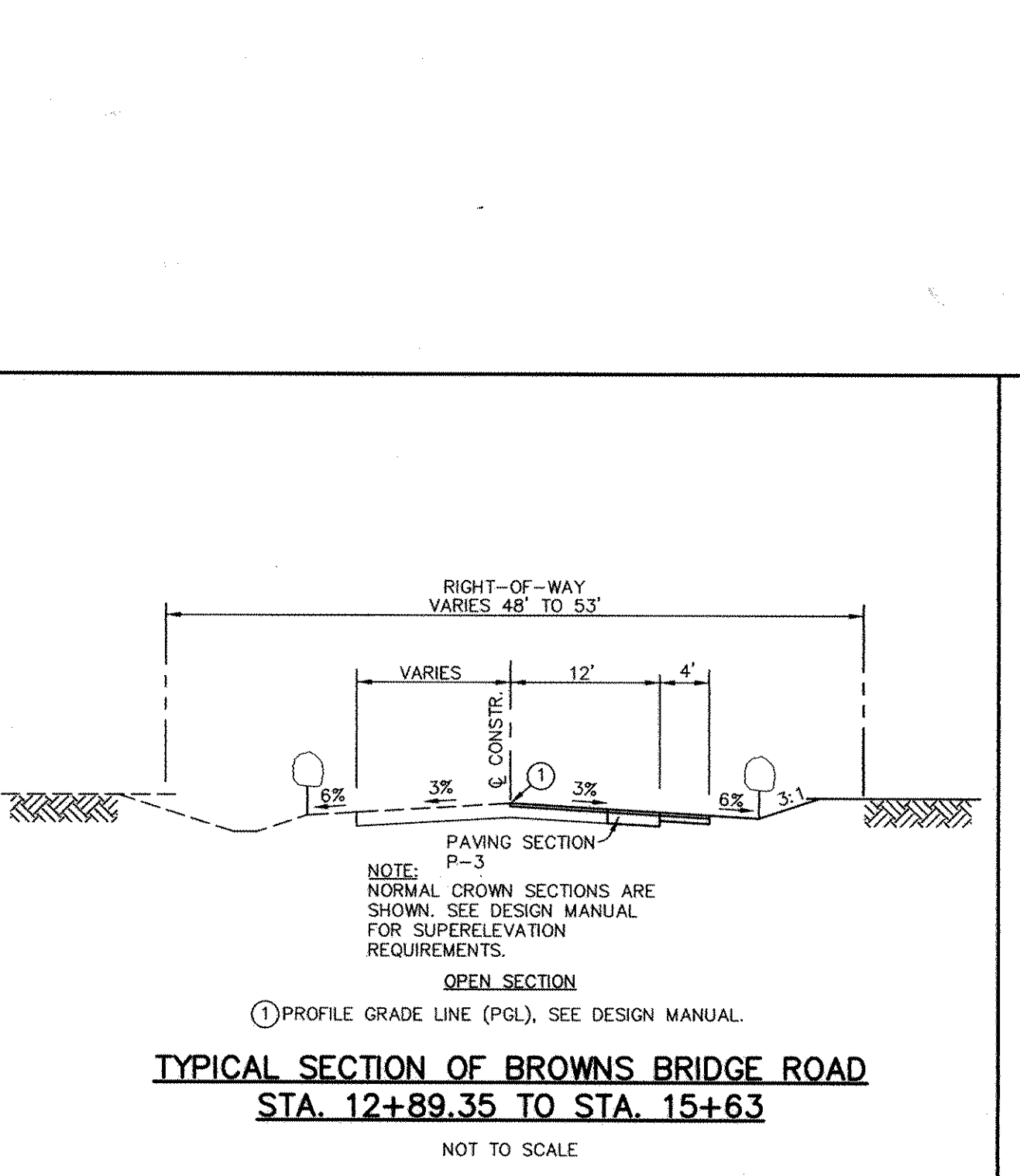
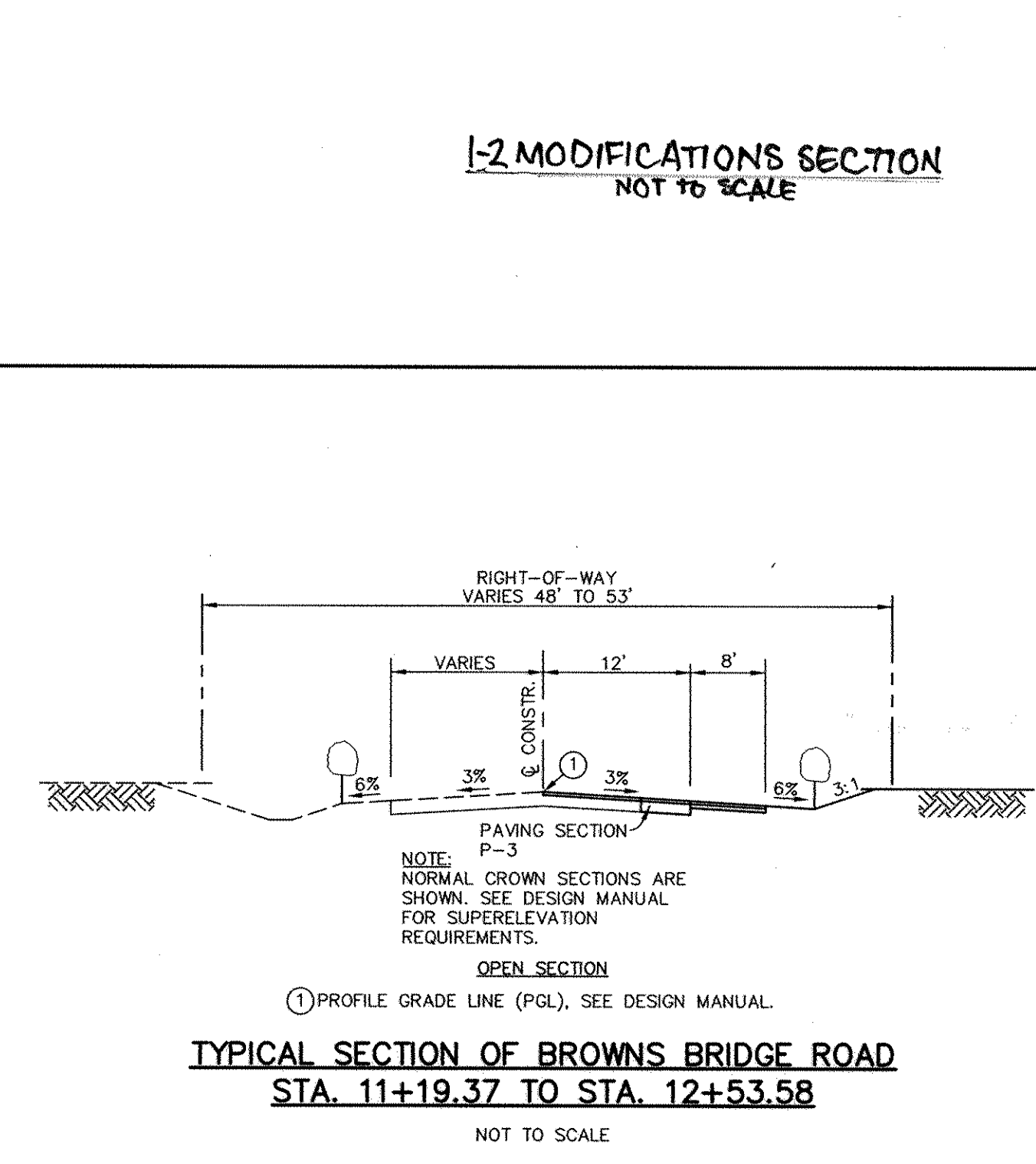
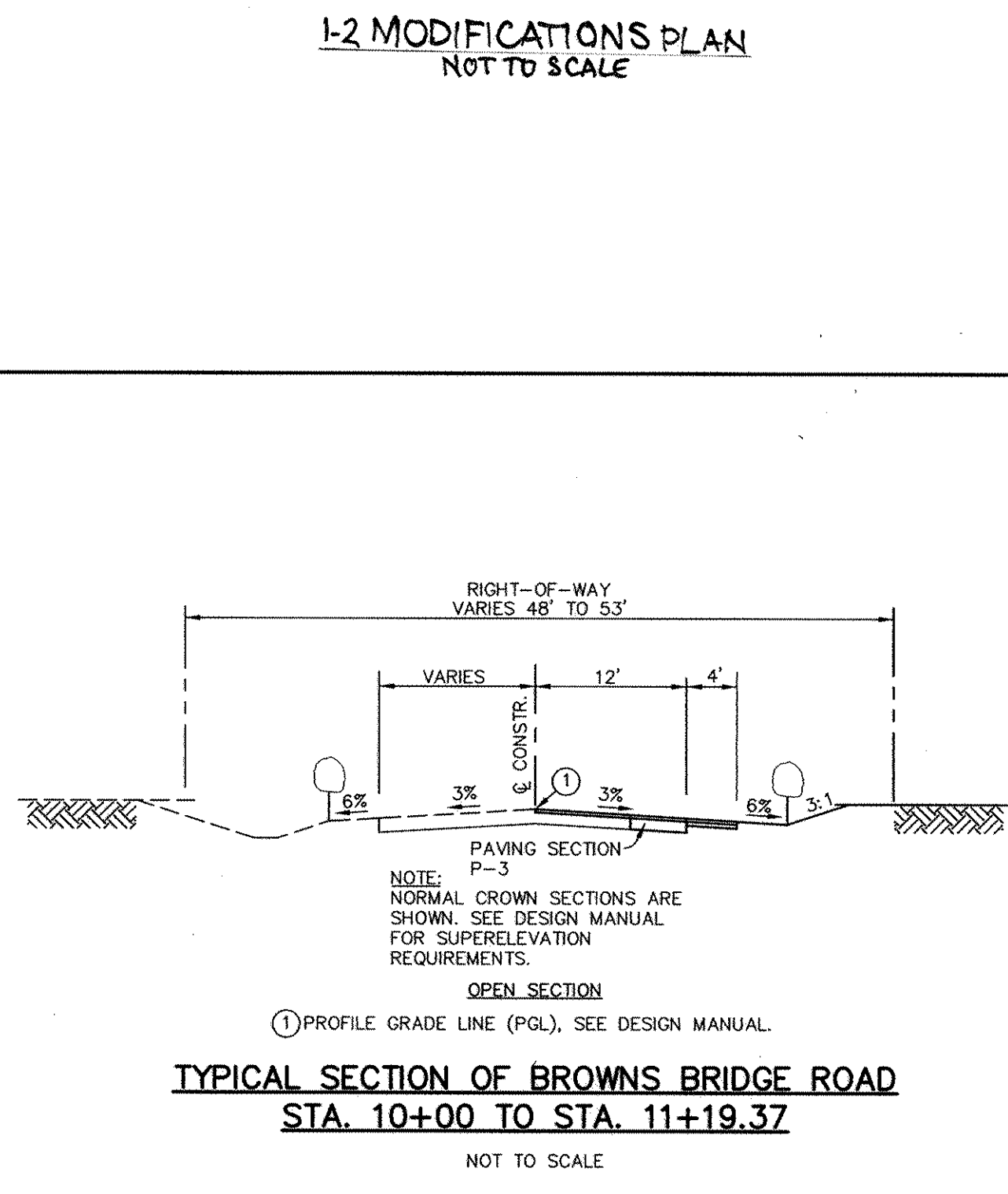
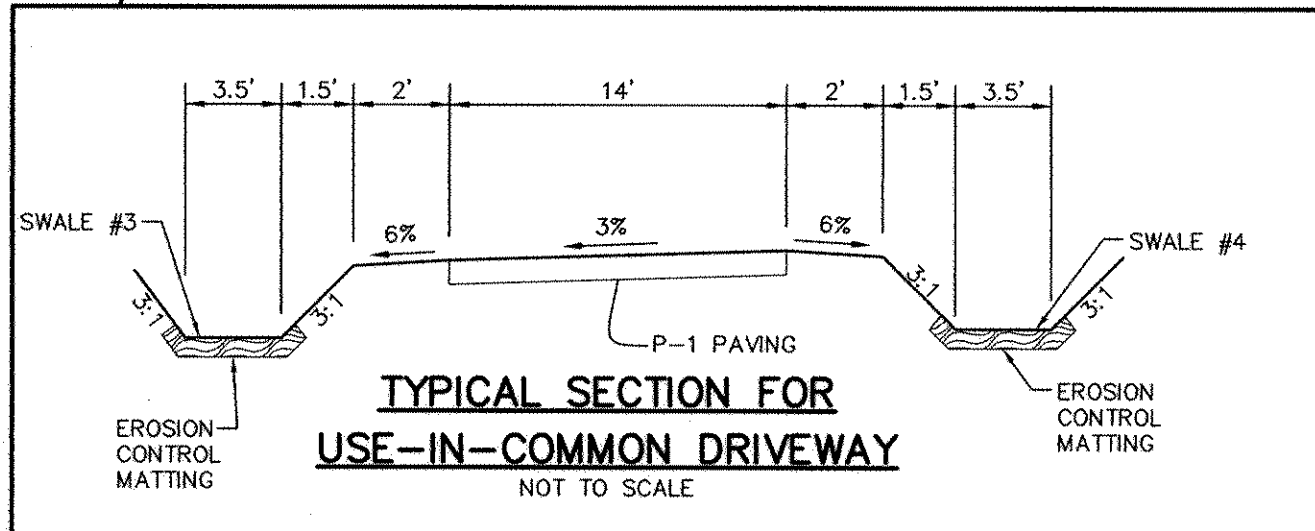
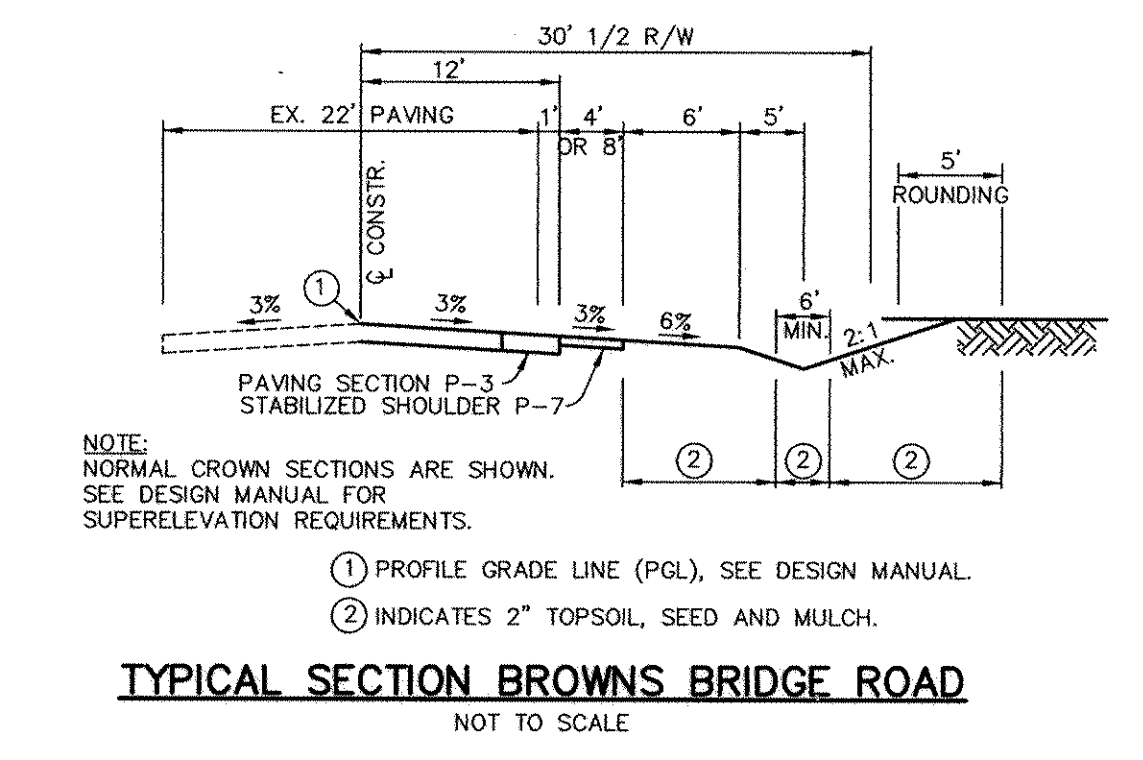
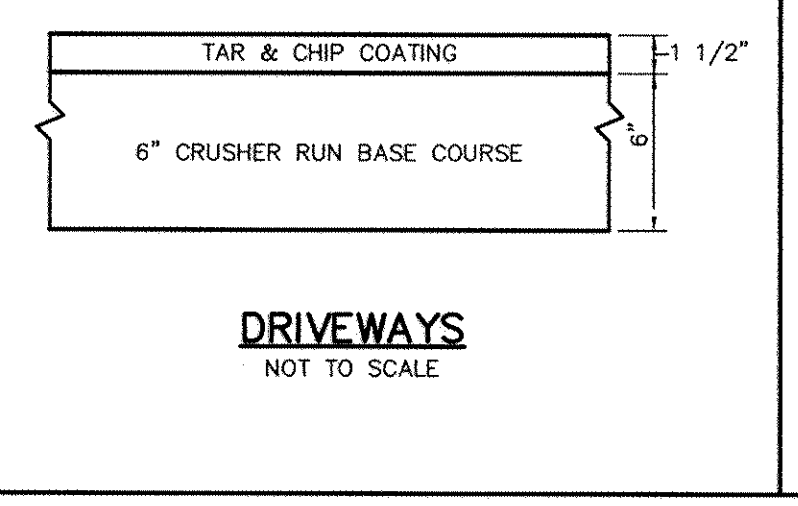
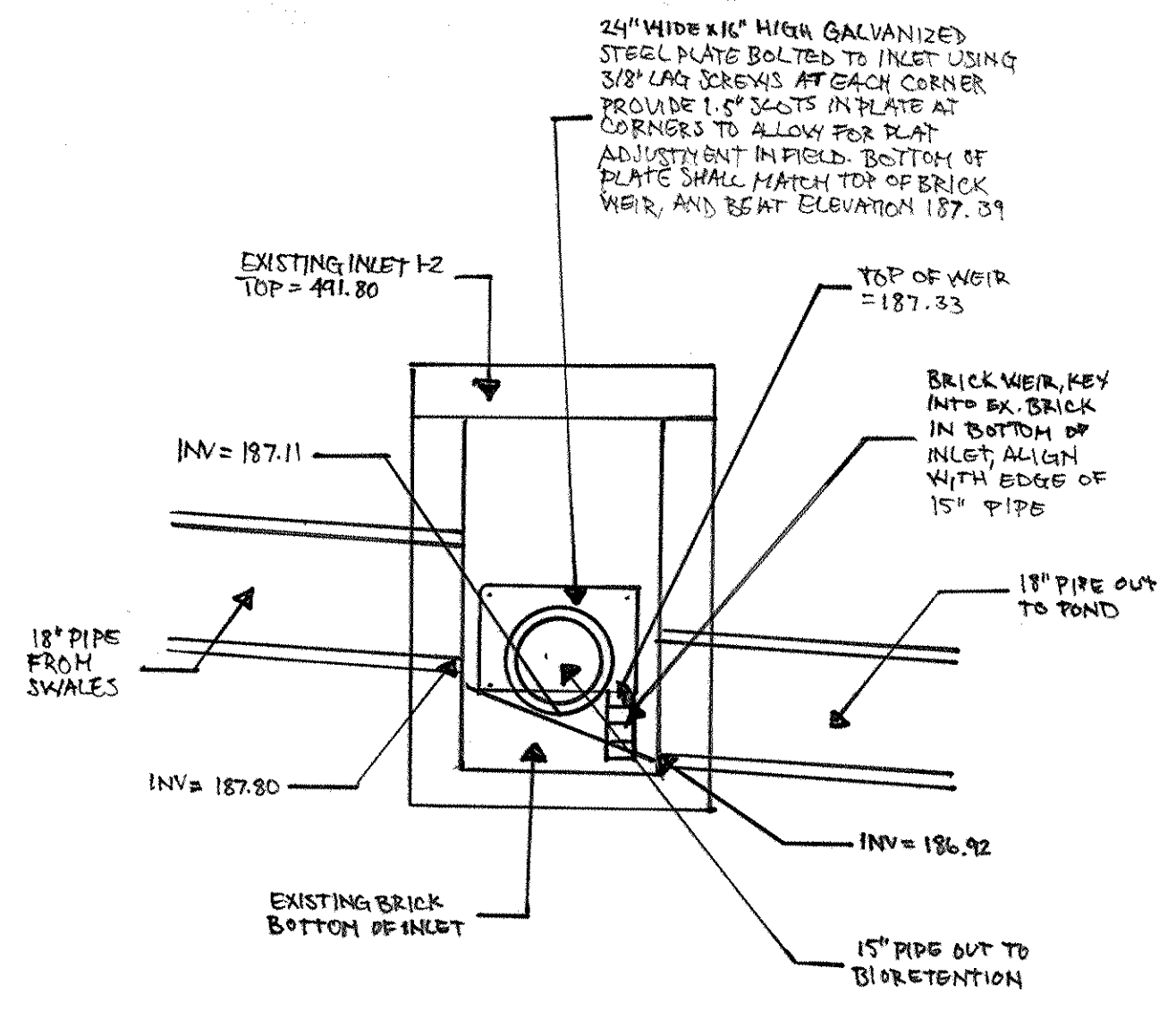
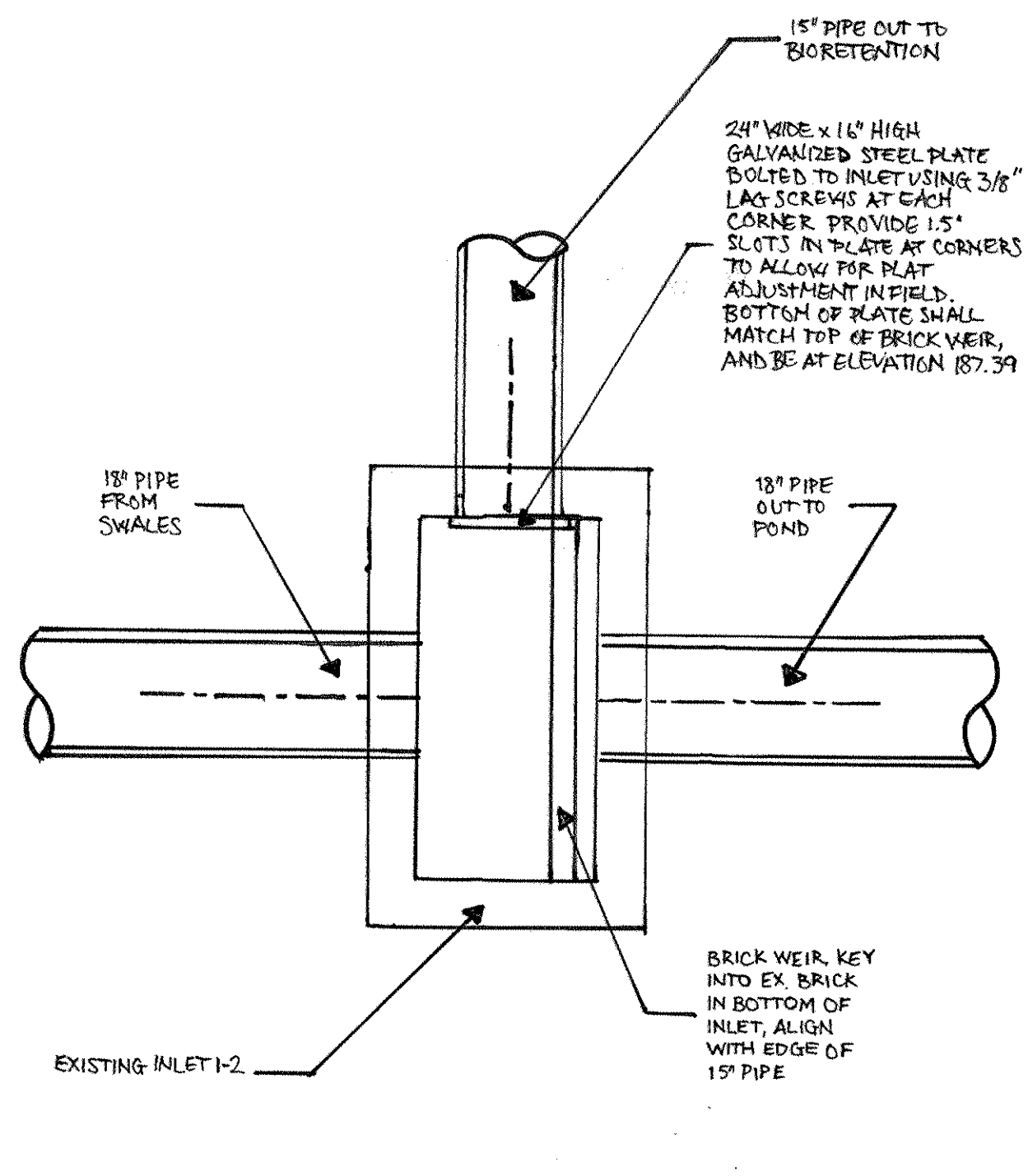


F-07-005



INLET 1-2 OPERATION AND MAINTENANCE SCHEDULE

- INSPECT INLET ON A SEMI-ANNUAL BASIS AND AFTER HEAVY RAIN EVENTS.
- CLEAN INLET AS NEEDED WHEN INSPECTING.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Walter Z. Smith 11-20-07
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Orinda K. Smith 11/20/07
CHIEF, DIVISION OF LAND USE DEVELOPMENT DATE

Chris P. ... 11/27/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

1/27/17 1 MODIFY INLET 1-2
DATE NO. REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
ROAD SECTIONS AND DETAILS

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

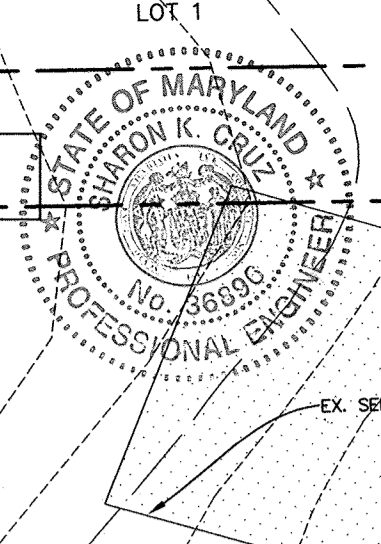
10/22/07 DATE
CHECKED BY: DWC
DESIGNED BY: NS
DRAWN BY: EMR/JMK
PROJECT NO. 13043/1-0/ENGR/PLANS/FINAL/C400ROADSECT
DATE: NOVEMBER 6, 2007
SCALE: AS SHOWN
DRAWING NO. 3 OF 21

DOMENICK W. COLANGELO #27200

AS-BUILT CERTIFICATION

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

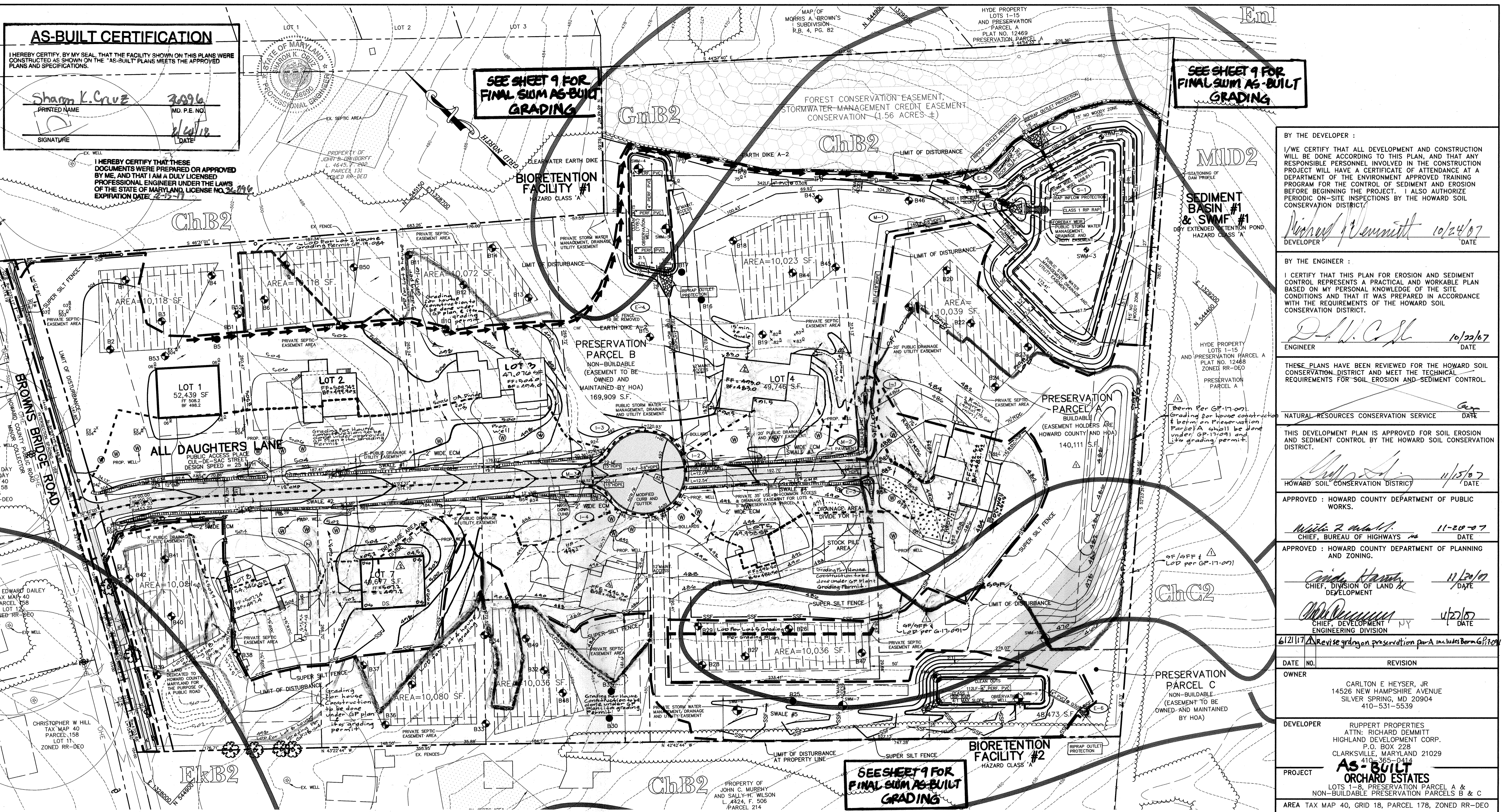
Sharon K. Cruz 3/29/16
 PRINTED NAME MD. P.E. NO.
 SIGNATURE DATE



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. 24,796, EXPIRATION DATE: 3-29-16

SEE SHEET 9 FOR FINAL SUM AS-BUILT GRADING

SEE SHEET 9 FOR FINAL SUM AS-BUILT GRADING



BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Richard J. Demmitt 10/24/07
 DEVELOPER DATE

BY THE ENGINEER :

I 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.

D.W. Cruz 10/22/07
 ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Cam
 NATURAL RESOURCES CONSERVATION SERVICE DATE

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

Sharon K. Cruz 11/15/07
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Walter Z. M... II 11-20-07
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Carla Harris 11/20/07
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Sharon K. Cruz 11/21/07
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

6/21/17 *Revise grading on preservation parcel A includes berm GP-17-091*

DATE	NO.	REVISION

OWNER: CARLTON E HEYSER, JR
 14526 NEW HAMPSHIRE AVENUE
 SILVER SPRING, MD 20904
 410-531-5539

DEVELOPER: RUPPERT PROPERTIES
 ATTN: RICHARD DEMMITT
 HIGHLAND DEVELOPMENT CORP.
 P.O. BOX 228
 CLARKSVILLE, MARYLAND 21029
 410-365-0414

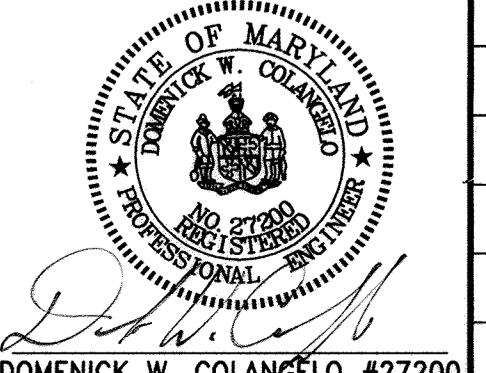
PROJECT: **AS-BUILT ORCHARD ESTATES**
 LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: **GRADING, SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP**

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

10/22/07 DATE
 CHECKED BY: DWC
 DESIGNED BY: NS
 DRAWN BY: EMR/JMK
 PROJECT NO: 13043/1-0/ENGR/PLANS
 PROJECT NO: FINAL/C6009A.DWG
 DATE: NOVEMBER 6, 2007
 SCALE: 1" = 50'
 DRAWING NO. 4 OF 21



SEE SHEET 9 FOR FINAL SUM AS-BUILT GRADING

LEGEND

IMP SYMBOL	NAME	STRUCTURAL LIMITATIONS	EROSION HAZARD	HYDRIC	SLOPE (%)
CHB2	CHESTER SILT LOAM	SLIGHT	MODERATE	NO	3-8%
CHC2	CHESTER SILT LOAM	MODERATE	MODERATE	NO	8-15%
EMB2	ELIOM SILT LOAM	SLIGHT	MODERATE	NO	3-8%
CHB2	GLENVILLE SILT LOAM	MODERATE	MODERATE	NO	3-8%
MID2	MANOR LOAM	MODERATE/SEVERE	MODERATE	NO	15-25%

* SOIL MAY CONTAIN HYDRIC INCLUSIONS

DRAINAGE AREA CHART			
INLET NO.	AREA (AC.)	C	% IMP
1-1	0.70	0.21	21
1-2	0.17	0.86	47
1-3	1.13	0.21	19
1-4	0.88	0.21	31

FOR DRAINAGE AREA 1A, NON-ROOFTOP RUNOFF AND GRASS CHANNEL CREDITS WILL BE APPLIED TOWARDS THE WQV AND REV REQUIREMENTS FOR THAT AREA THAT DOES NOT DRAIN TO BIORETENTION FACILITY #1. THE BIORETENTION FACILITY WILL PROVIDE FOR THE REMAINING WQV AND THE ROAD SIDE SWALES WILL PROVIDE REV. Cpv WILL BE PROVIDED WITH A DRY EXTENDED DETENTION POND.

FOR DRAINAGE AREA 1B, THE NATURAL AREA CONSERVATION CREDIT WILL BE USED TO MEET THE REQUIRED WQV. REV WILL BE PROVIDED FOR IN DRAINAGE AREA 1A. Cpv IS NOT REQUIRED BECAUSE THE 1-YEAR PEAK DISCHARGE IS LESS THAN 2 CFS.

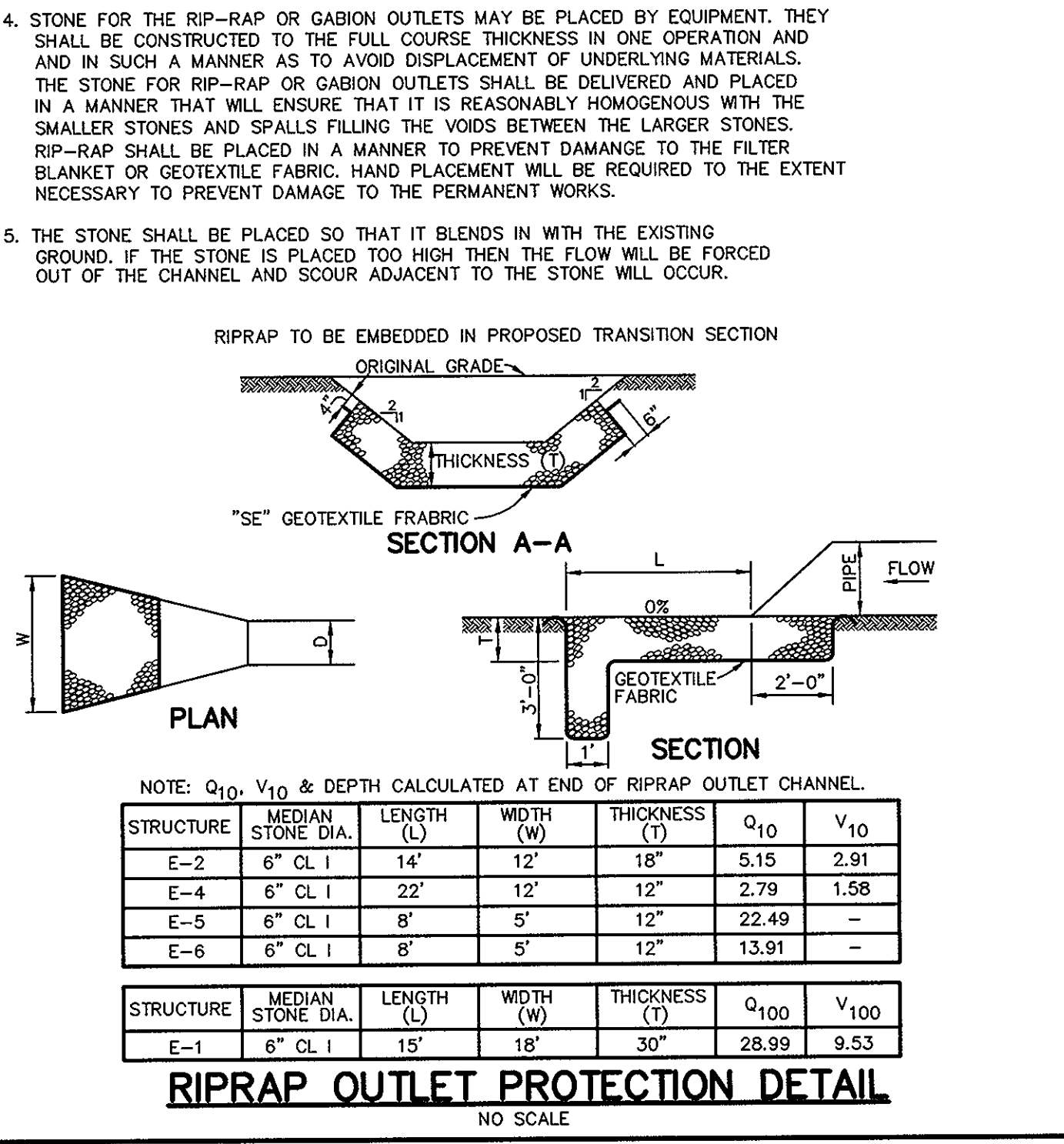
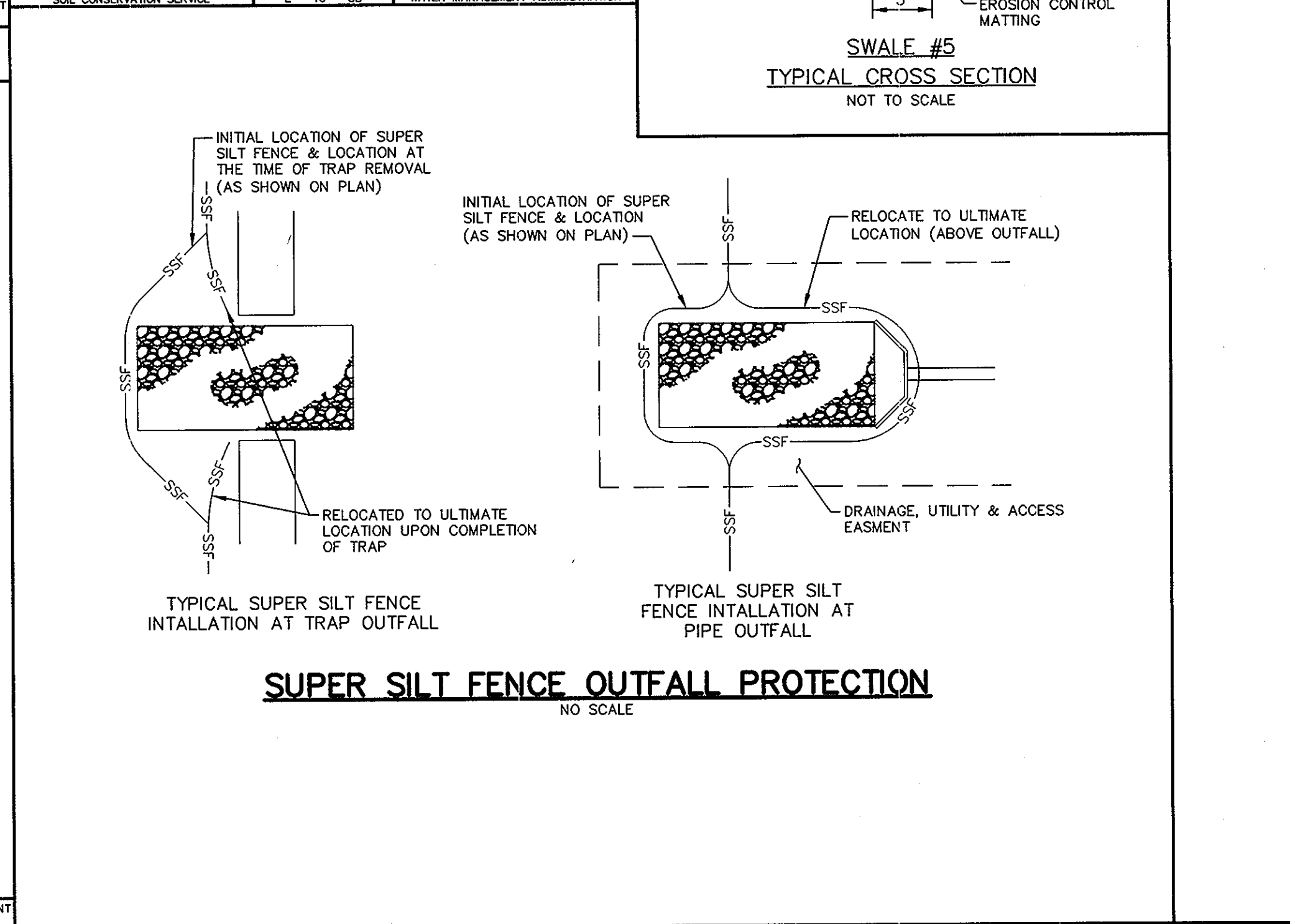
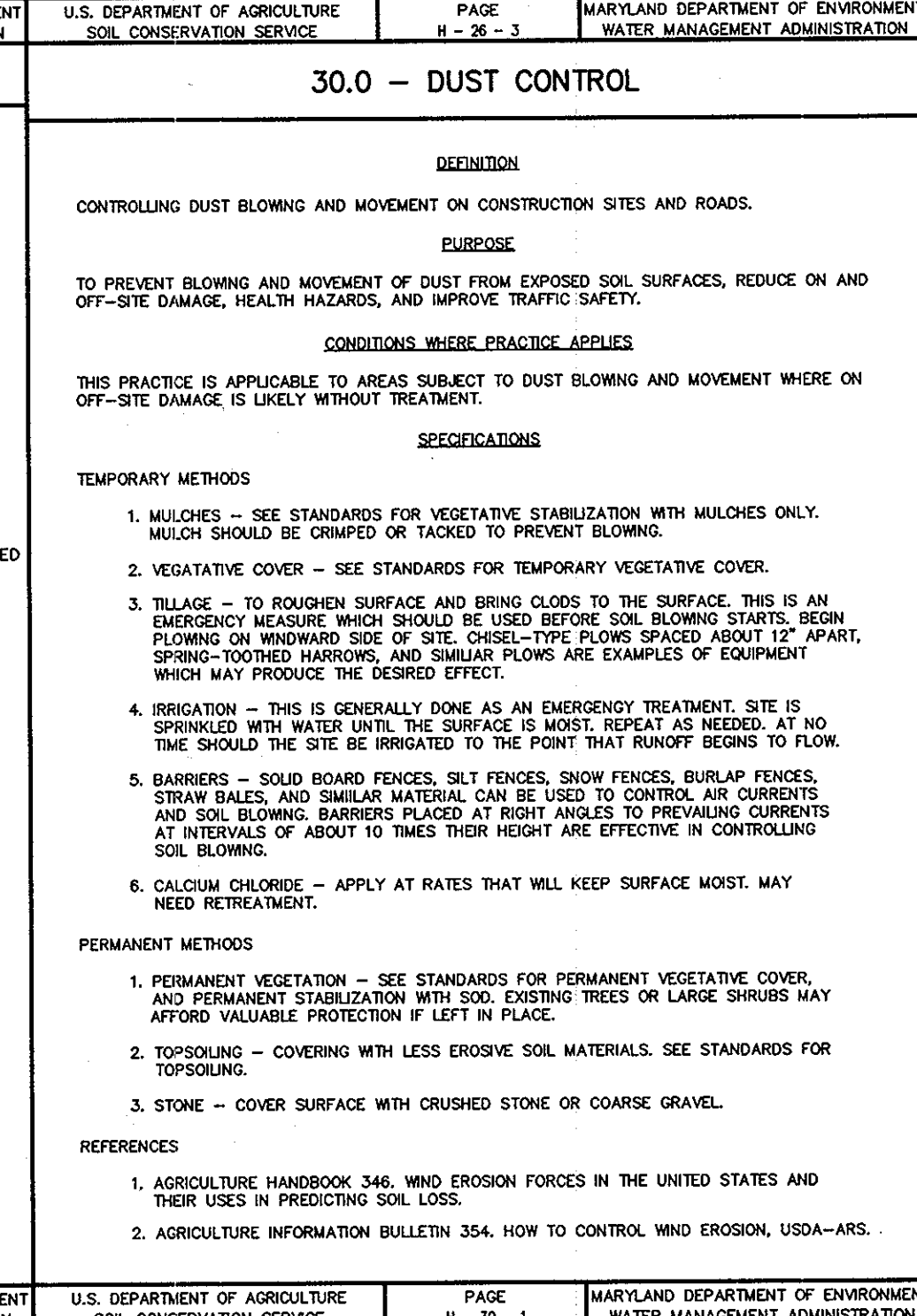
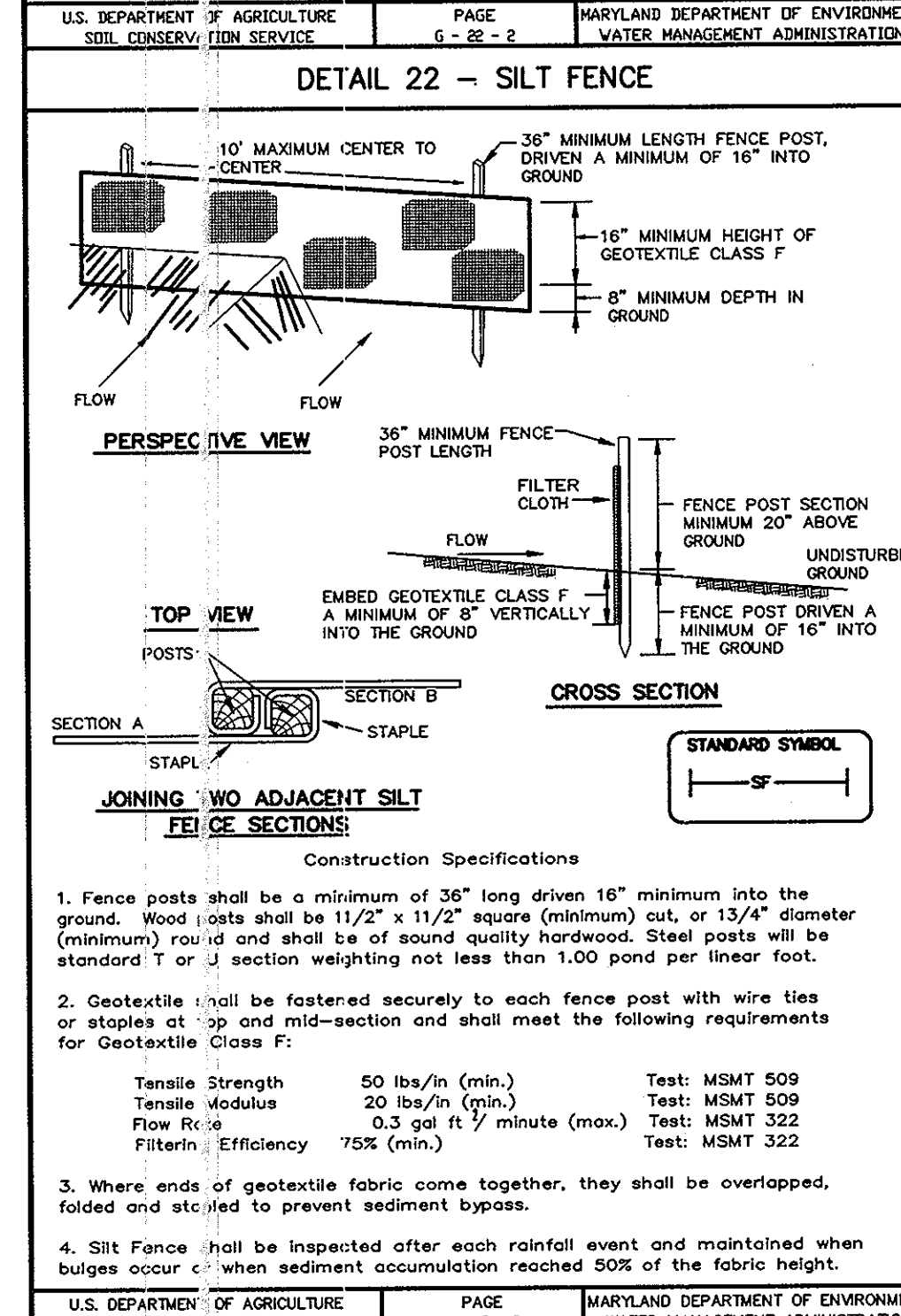
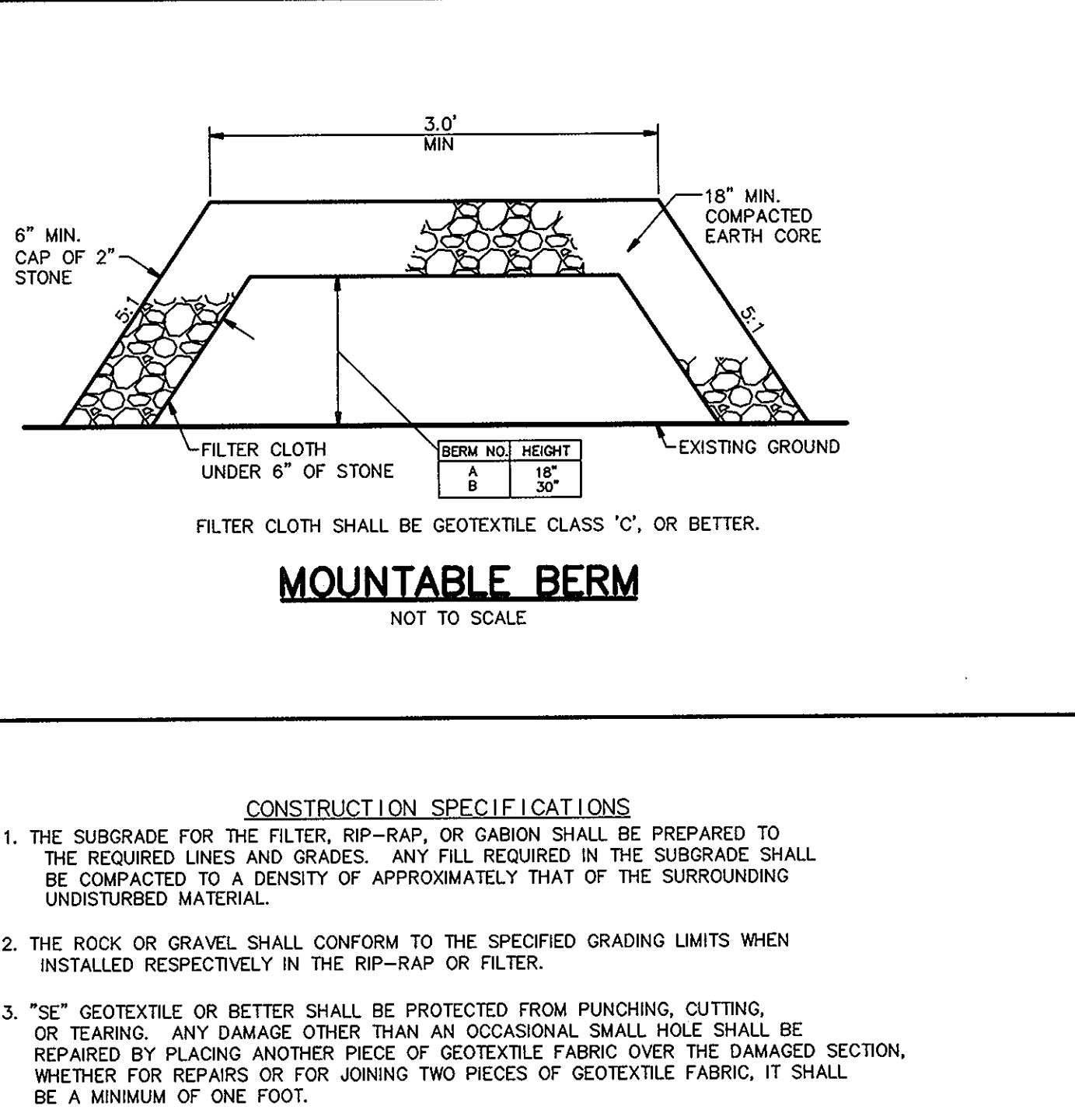
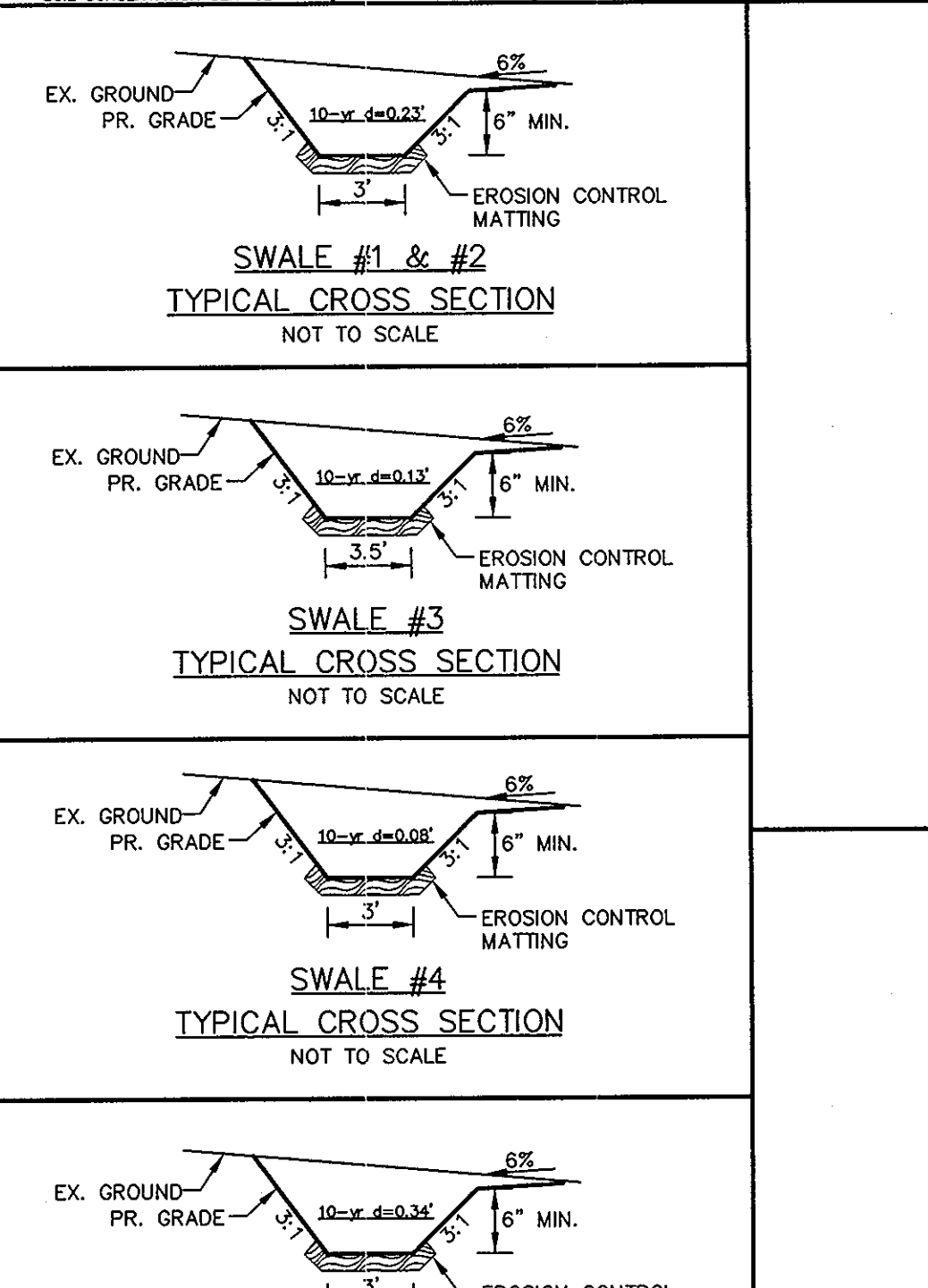
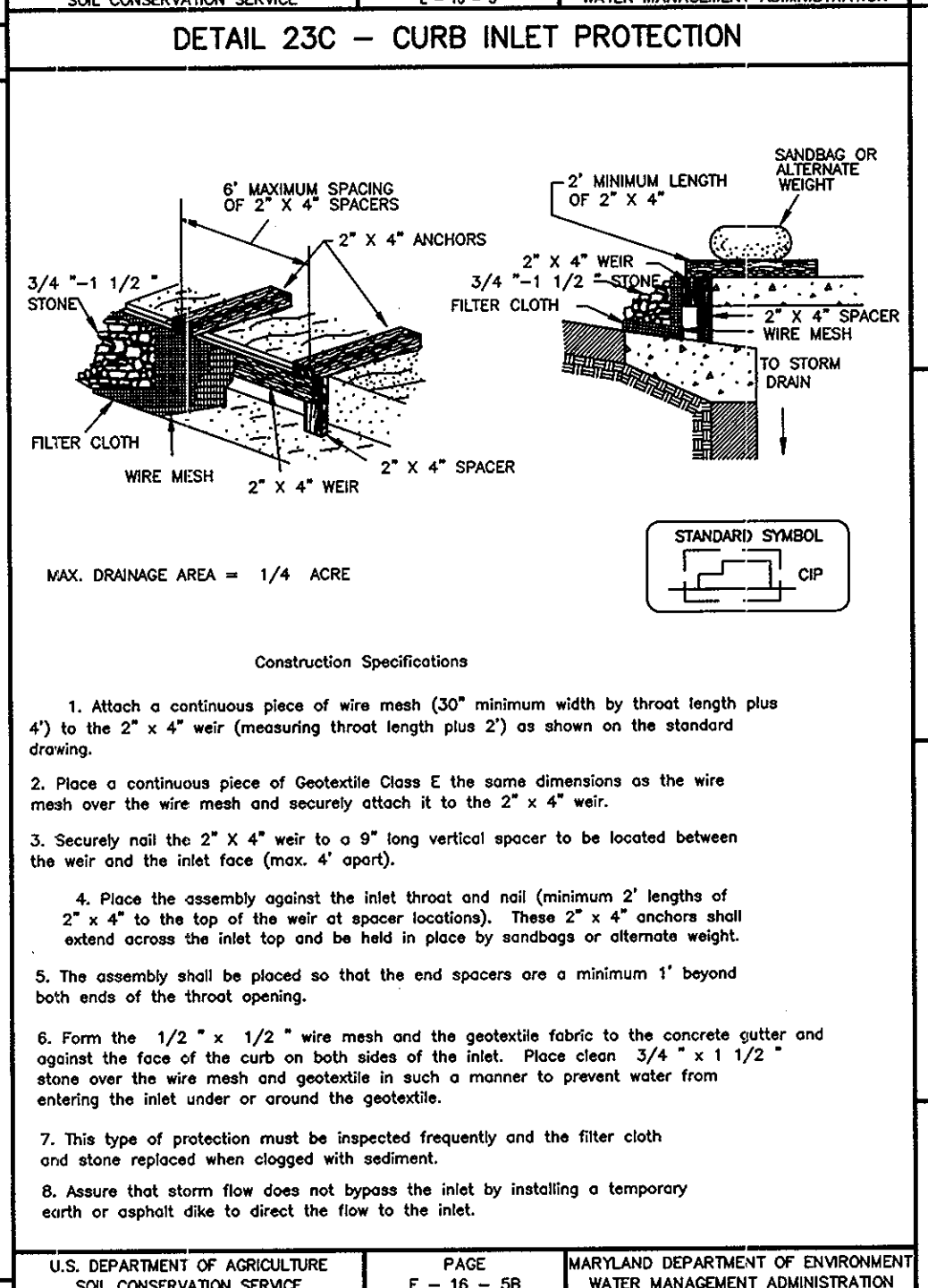
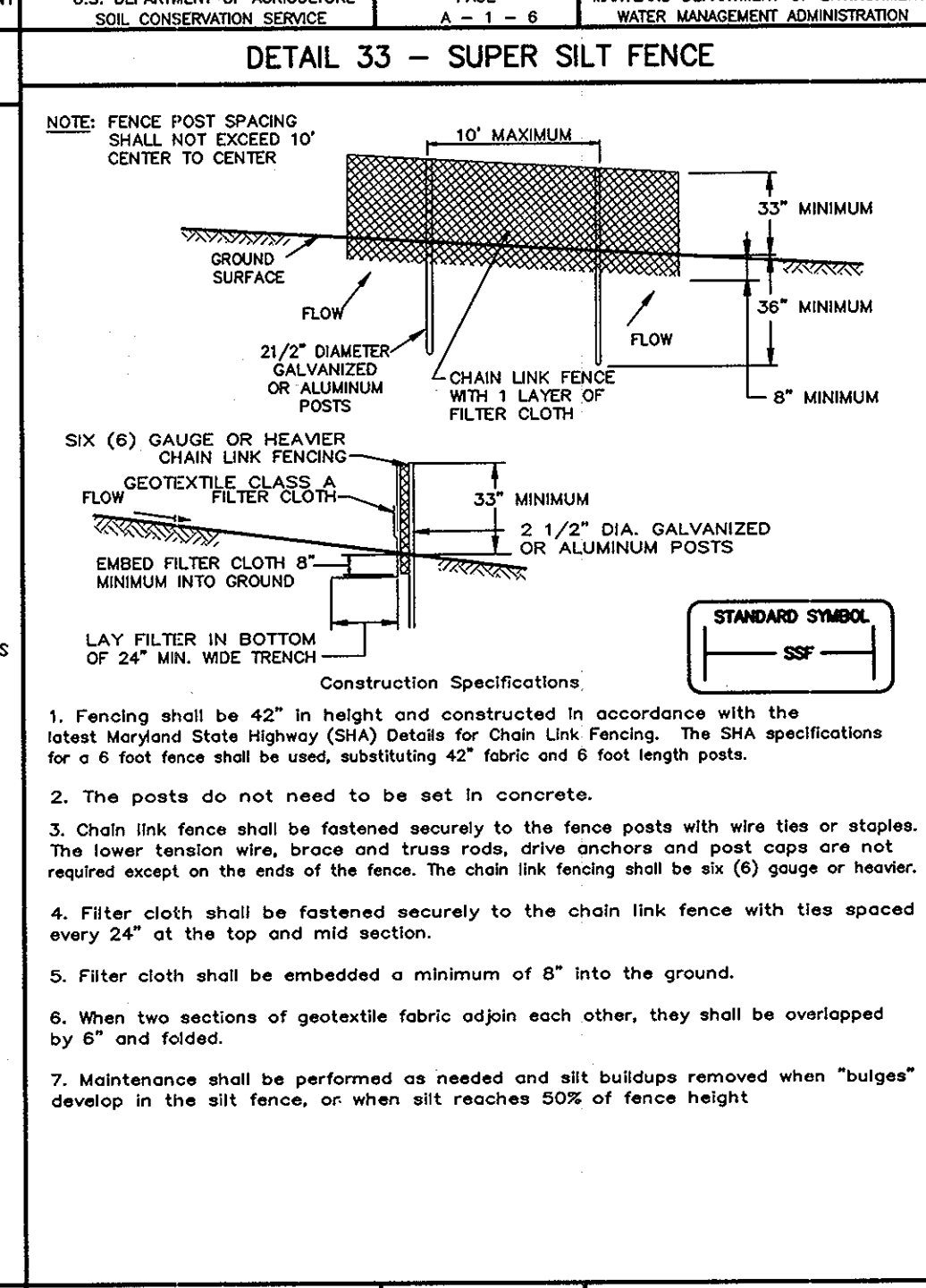
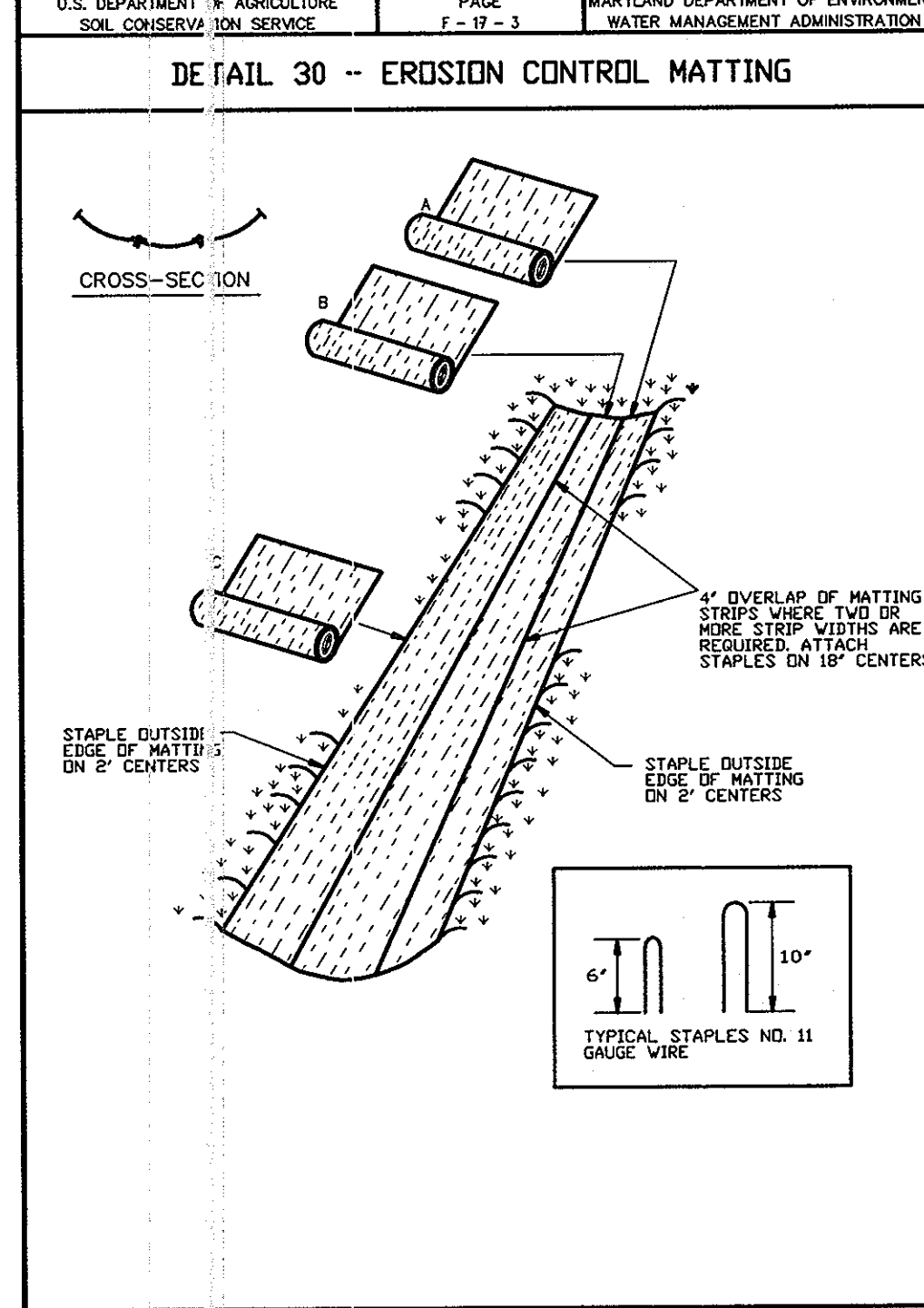
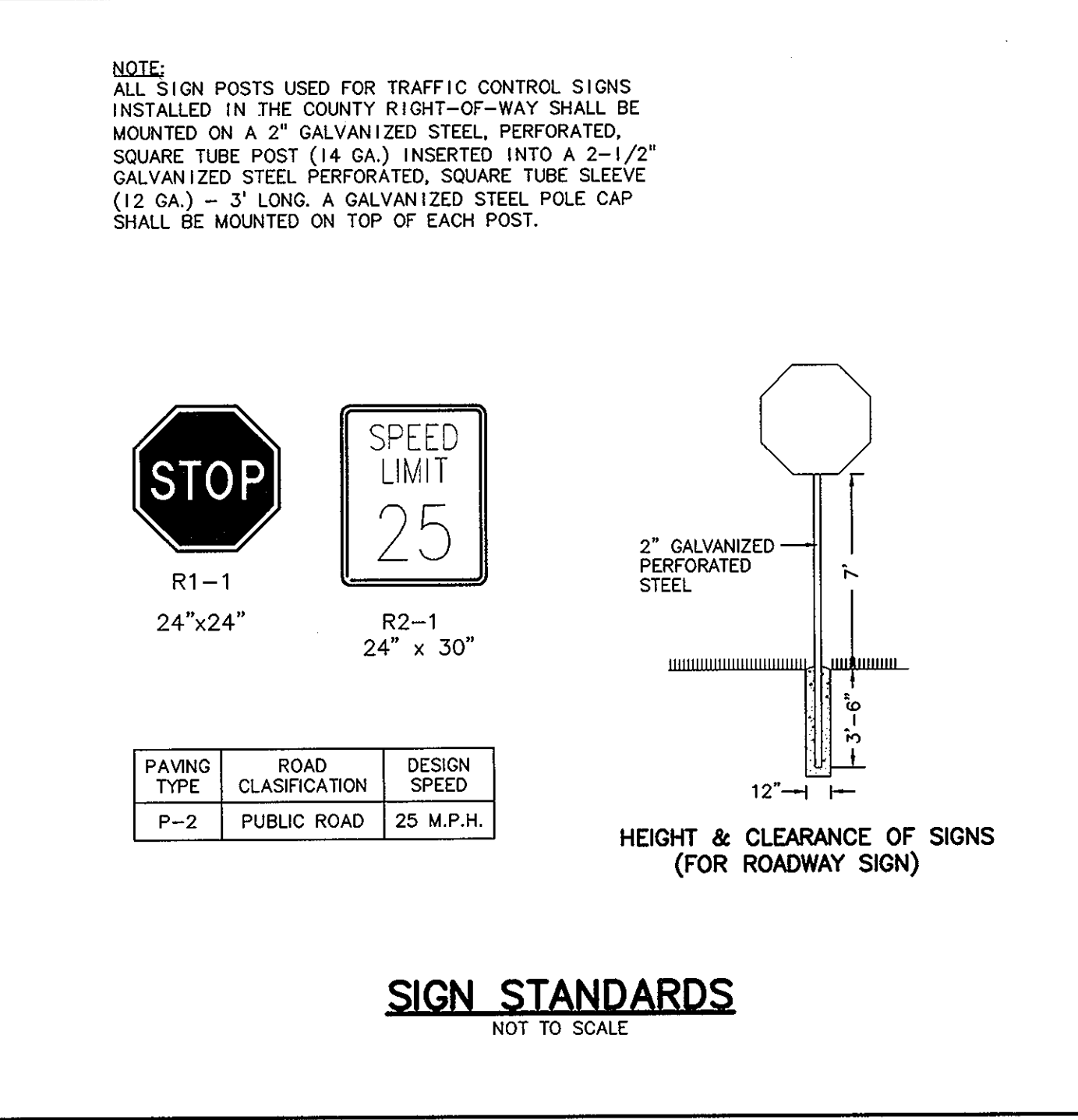
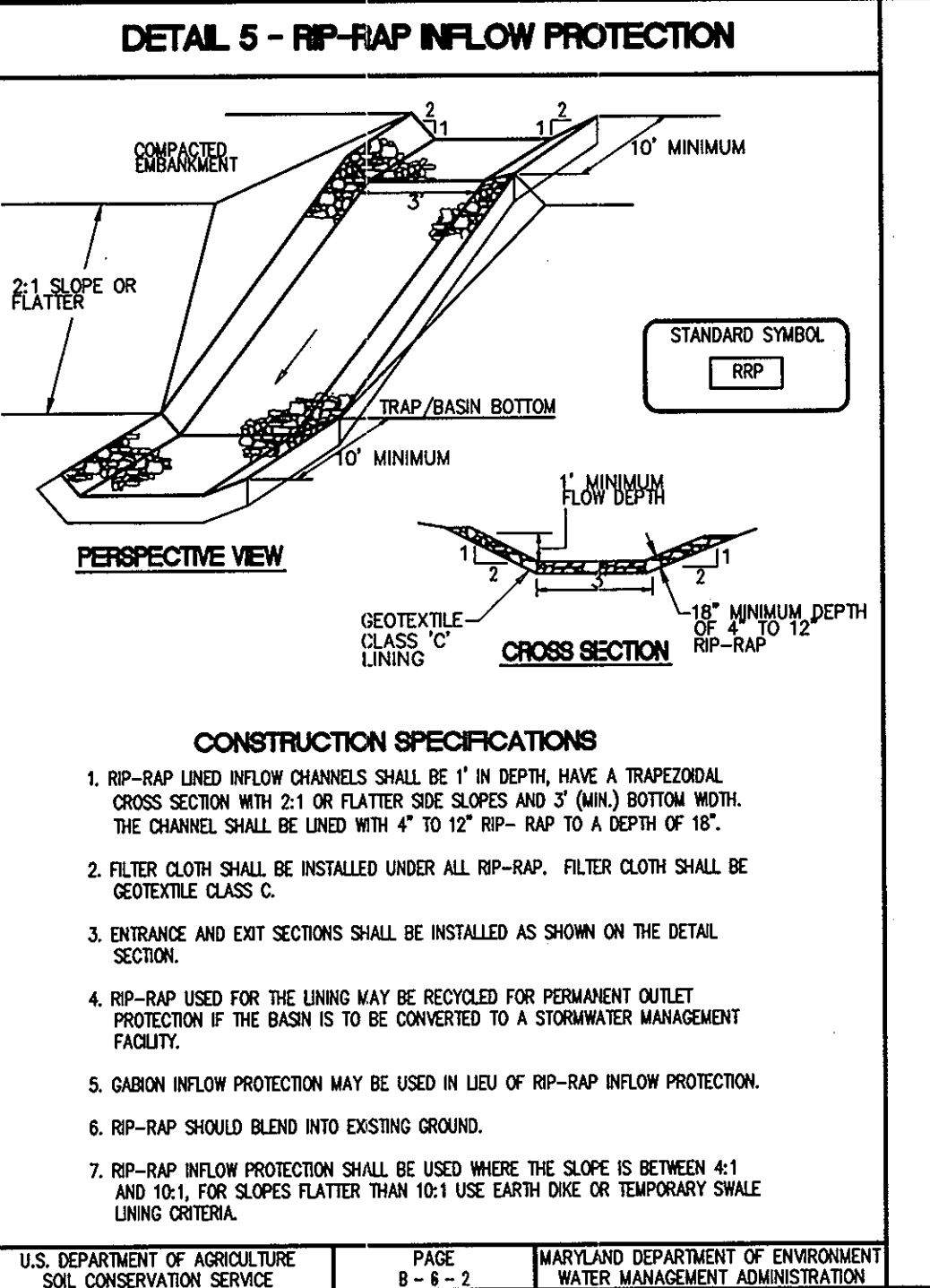
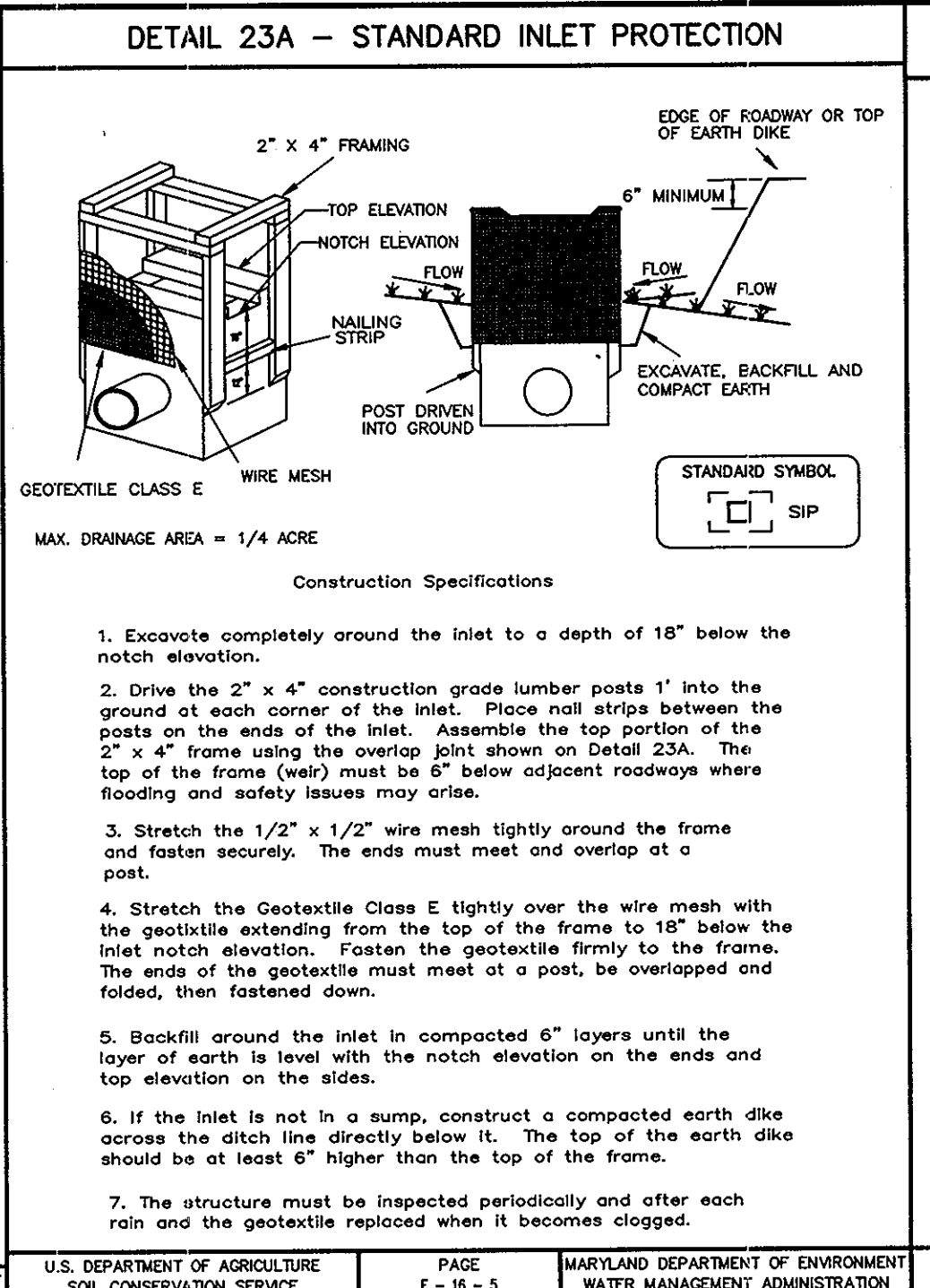
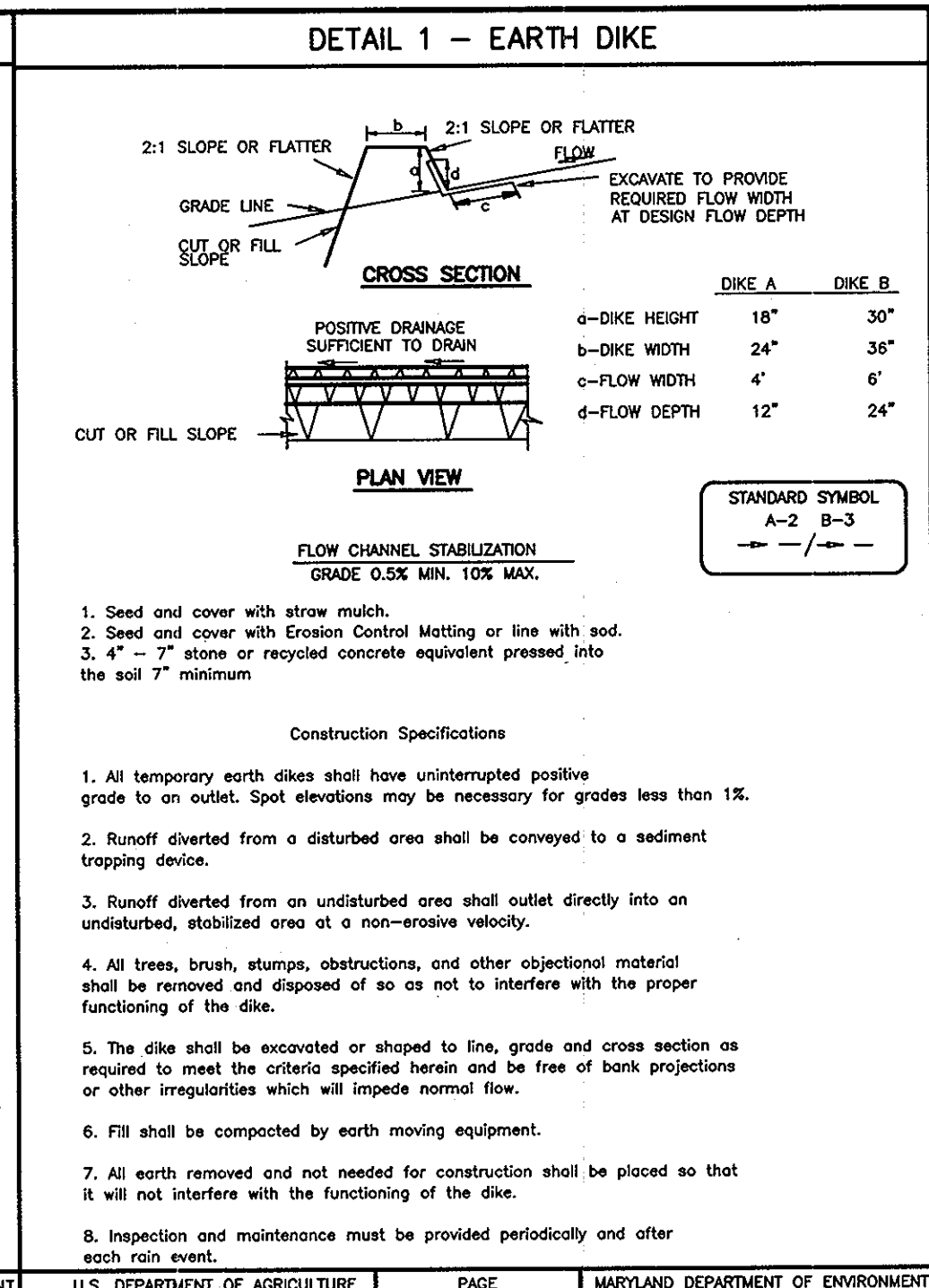
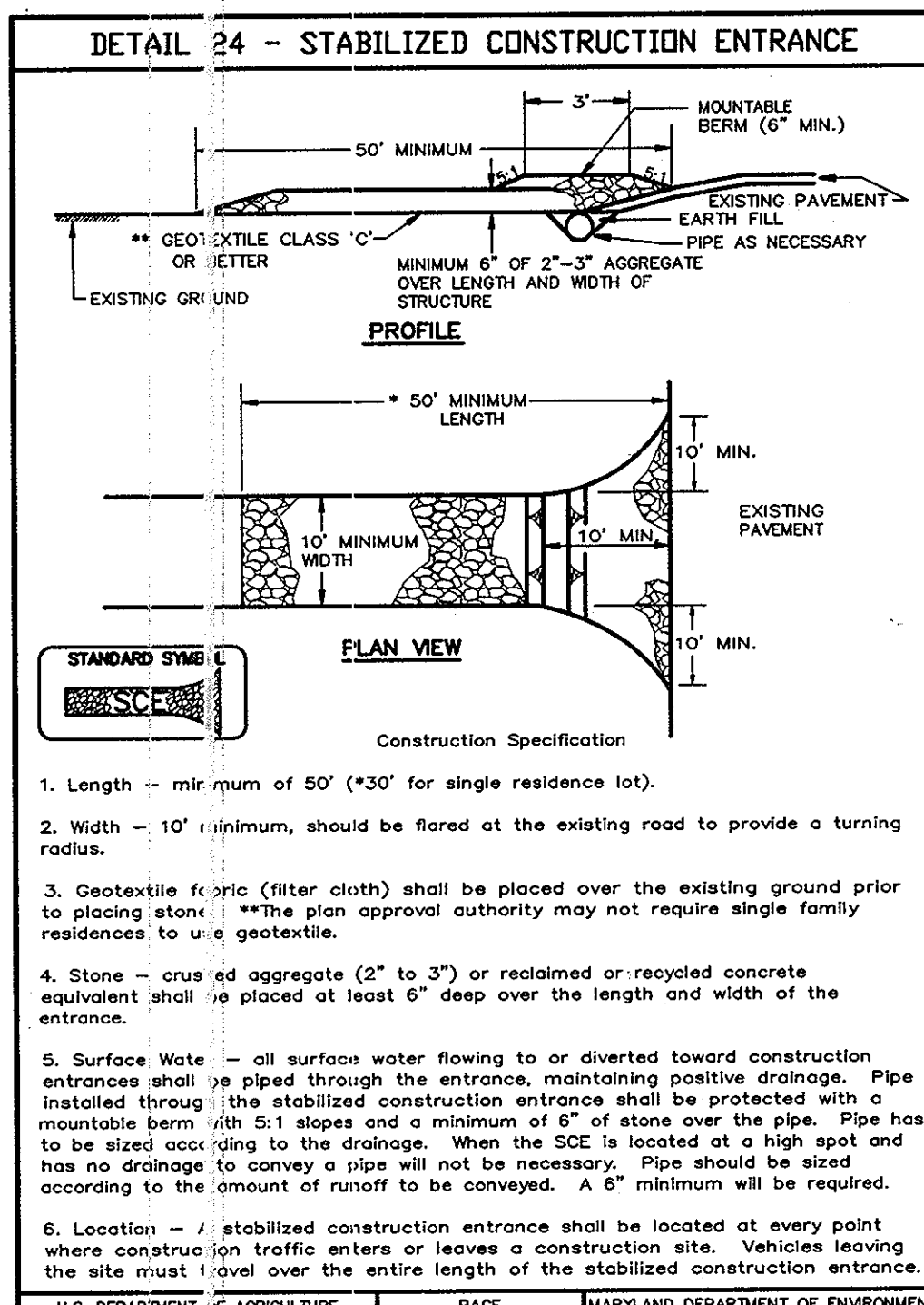
FOR DRAINAGE AREA 2A, THE DISCONNECTION OF ROOFTOP RUNOFF CREDIT WAS APPLIED TOWARDS THE REV REQUIREMENTS AND WAS USED TO REDUCE THE RCN FROM 67 TO 65. THE WQV WILL BE PROVIDED IN BIORETENTION FACILITY #2. THE REMAINING REV WILL BE TREATED BY CREDITS IN DRAINAGE AREA 1A. Cpv IS NOT REQUIRED BECAUSE THE 1-YEAR PEAK DISCHARGE IS LESS THAN 2 CFS.

STORMWATER MANAGEMENT SUMMARY TABLE						
DRAINAGE AREA (AC)	WQV (CF)	Rev (CF)	Cpv (AC-FT)	Op 1 (CFS)	Op 10 (CFS)	Op 100 (CFS)
DA 1A (POND)	10.0	7569	1904	0.267	0.11	9.92
DA 1B	7.0	309	70	N/A	1.13	9.77
DA 2A	6.4	4559	1148	N/A	1.98	13.91
SP #1	17.0	-	-	-	1.18	19.31
SP #2	30.7	-	-	-	18.74	81.86

- △ Add Lot 2 House, LOD + Grading to be done under GP Plan (by GLW on 5-12-14)
- △ Add Parcel A house, LOD + Grading to be done under GP Plan (by GLW on 12-12-13)
- △ Add Lot 5 house, LOD + Grading to be done under GP Plan (by GLW on 12-12-13)
- △ Add Lot 3 house, LOD + Grading to be done under GP-17-012 (by GLW on 09-10-10)
- △ Add Lot 8 house, LOD + Grading to be done under GP-18-04. Update Lot 8 septic field (by GLW on 6-30-10)
- △ Add Lot 10 house, LOD + Grading to be done under GP Plan For Lot 8 (by GLW on 4-10-10)
- △ Update house box for Lot 4 & show Lot 7 LOD for GP plan grading (by GLW on 1-20-10)
- △ add berm & grading per GP-17-091 on Pres. Parcel A



For Revision #1 (by GLW) 6/10/17
 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. 24,796
 Expiration Date: May 20, 2018



BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Walter W. Demmitt 10/24/07
DEVELOPER DATE

BY THE ENGINEER :

I 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.

Dick W. Colangelo 10/22/07
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE DATE

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

Dick W. Colangelo 11/5/07
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Walter Z. ... 11-20-07
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Christy ... 11/20/07
CHIEF, DIVISION OF LAND USE DEVELOPMENT DATE

Dick W. Colangelo 11/21/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

OWNER: CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER: RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT: ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A &
NON-BUILDABLE PRESERVATION PARCELS B & C
AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: CONSTRUCTION AND EROSION AND SEDIMENT CONTROL DETAILS

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

10/22/07 DATE

CHECKED BY: DWC

DESIGNED BY: NS

DRAWN BY: EMR/JMK

PROJECT NO: 13043/1-0/ENGR/PLANS
FINAL/ C90002.DWG

DATE : NOVEMBER 6, 2007

SCALE : AS SHOWN

DRAWING NO. 5 OF 21

Dick W. Colangelo 10/22/07
DOMENICK W. COLANGELO #27200
F-07-005

MD-378 STANDARDS AND SPECIFICATIONS

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

SITE PREPARATION

Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed.

Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans.

All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative.

EARTH FILL

Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials.

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 6-inch thick layers.

Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of the equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tire or vibratory roller.

When required by the reviewing agency the minimum required density shall be less than 95% of maximum dry density with a moisture content within +/- 2% of the optimum.

Cutoff Trench - The cutoff trench shall be excavated into impervious material along or parallel to the embankment as shown on the plans.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet.

STRUCTURE BACKFILL

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material.

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 312 as modified.

PIPE CONDUITS

All pipes shall be circular in cross section. Corrugated Metal Pipe - All of the following criteria shall apply for corrugated metal pipe:

- 1. Materials - (Polymer Coated steel pipe) - Steel pipes with polymeric coatings shall have a minimum coating thickness of 0.01 inch (10mil) on both sides.

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-274 with watertight coupling bands or flanges.

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-196 or M-211 with watertight coupling bands or flanges.

- 2. Coupling bands, anti-seep collars, end sections, etc., must be composed of the same material and coated as the pipe.

- 3. Connections - All connections with pipes must be completely watertight. The drain pipe or baffle connection to the riser shall be welded all around when the pipe and riser are metal.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled on adequate number of corrugations to accommodate the band width.

- 4. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length.

- 5. Backfilling shall conform to "Structure Backfill."

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

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

2. Bedding - All reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the side of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches.

- 3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream.

- 4. Backfilling shall conform to "Structure Backfill."

Plastic Pipe - The following criteria shall apply for pipe:

- 1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241.

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

- 3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length.

- 4. Backfilling shall conform to Structure "Backfill."

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

CONCRETE

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

ROCK RIPRAP

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

Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

CARE OF WATER DURING CONSTRUCTION

All work on permanent structures shall be carried out in areas free from water. The Contractor shall construct and maintain all temporary dikes, levees, cofferdams, drainage channels, and stream diversions necessary to protect the areas to be occupied by the permanent works.

When required by the reviewing agency the minimum required density shall be less than 95% of maximum dry density with a moisture content within +/- 2% of the optimum.

Cutoff Trench - The cutoff trench shall be excavated into impervious material along or parallel to the embankment as shown on the plans.

Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet.

STABILIZATION

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

EROSION AND SEDIMENT CONTROL

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.

Seedbed Preparation - Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

Soil Amendments - Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.).

Seeding - For periods March 1 thru April 30 and from August 15 thru November 15, seed with 2-1/2 bushels per acre of annual ryegrass (14 lbs. per 1000 sq.ft.).

Mulching - Apply 1-1/2 to 2 tons per acre (70 to 80 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding.

Refer to the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation - Loosen upper three inches of soil by raking, discing or other acceptable means before seeding, if not previously loosened.

Soil Amendments - In lieu of soil test recommendations, use one of the following schedules:

- 1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq.ft.) before seeding.

- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs. per 1000 sq.ft.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs. per 1000 sq.ft.) before seeding.

Seeding - For the period March 1 thru April 30 and from August 15 thru October 15, seed with 60 lbs. per acre (14 lbs. per 1000 sq.ft.) of Kentucky 31 Tall Fescue.

- 1) 2 tons per acre of well-anchored mulch straw and seed as soon as possible in the spring.

- 2) Use sod.

Mulching - Apply 1-1/2 to 2 tons per acre (70 to 80 lbs. per 1000 sq.ft.) of unrotted small grain straw immediately after seeding.

Maintenance - Inspect all seeded areas and make needed repairs, replacements and reseedings.

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND SHOWN HEREON SHALL BE PERFORMED AT LEAST ONCE ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATION FOR PONDS" (MD378).

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

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.

Materials, Section 311. Geotextile shall be placed under all riprap and shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 921.09, Class C.

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.

- 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 soil types may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority.

- ii. Where subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-6 tons/acre (200-400 pounds/1,000 square feet) prior to the placement of topsoil.

- iii. For sites having disturbed areas under 5 acres: 1. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - bSection 1 - Vegetative Stabilization Methods and Materials.

- iv. 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 topsoil shall be between 6.0 and 7.5.

- ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - bSection 1 - Vegetative Stabilization Methods and Materials.

- v. Topsoil Application

- i. When topsoiling, maintain needed erosion and sediment control practices such as diversions, Grade Stabilization Structures, Earth Dikes, Slope Silt Fence and Sediment Traps and Basins.

- ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

- iii. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4".

- iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

- v. 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 tested to prescribe amendments and for site having disturbed areas under 5 acres shall conform to the following requirements:

- a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.

- b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.

- c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

- d. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

OPERATION AND MAINTENANCE SCHEDULE FOR HOMEOWNERS ASSOCIATION OWNED AND MAINTAINED BIORETENTION FACILITIES

- 1. ANNUAL MAINTENANCE OF MULCH LAYER, SAND FILTER, PLANTING SOIL AND GRAVEL IS REQUIRED.

- 2. REMOVE DEBRIS AND UNUSED SEDIMENT MATERIAL. MATERIAL SHOULD BE REMOVED WITHIN 3-4 DAYS AFTER EACH STORM.

- 3. REPLACE GEO-TEXTILE FABRIC EVERY 2 YEARS AND REPLACE AFTER HEAVY STORM.

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 (313-1655).

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

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

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

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

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

- 7. SITE ANALYSIS: TOTAL AREA OF SITE 18.57 ACRES

- AREA DISTURBED 10.77 ACRES

- AREA TO BE PROTECTED OR PAVED 1.45 ACRES

- AREA TO BE VEGETATIVELY STABILIZED 9.32 ACRES

- OFFSITE WASTE AREA LOCATION TO HAVE ACTIVE GRADING PERMIT.

- QUANTITIES ARE FOR COUNTY FEE PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ACTUAL QUANTITIES.

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

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

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

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

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

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

- 14. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT 80 QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL OR EMBANKMENT MATERIAL, NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.

OPERATION AND MAINTENANCE SCHEDULE FOR HOMEOWNERS ASSOCIATION OWNED AND JOINTLY MAINTAINED STORMWATER MANAGEMENT POND

ROUTINE MAINTENANCE BY HOA:

- 1. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.

- 2. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.

- 3. WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, AND UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS, SEDIMENT SHALL BE REMOVED FROM THE POND.

- 4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIPRAP OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE BY HOWARD COUNTY:

- 1. STRUCTURAL COMPONENTS OF THE POND SUCH AS THE DAM, THE RISER, AND THE PIPES SHALL BE REPAIRED UPON THE DETECTION OF ANY DAMAGE. THE COMPONENTS SHOULD BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.

- 2. SEDIMENT SHOULD BE REMOVED WHEN ITS ACCUMULATION SIGNIFICANTLY REDUCES THE DESIGN STORAGE, INTERFERE WITH THE FUNCTION OF THE RISER, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, OR WHEN DEEMED NECESSARY BY HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

- 3. REPLACE GEO-TEXTILE FABRIC EVERY 2 YEARS AND REPLACE AFTER HEAVY STORM.

SEQUENCE OF CONSTRUCTION

- 1. OBTAIN GRADING PERMIT.

- 2. INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, SUPER SILT FENCE, AND BYPASS SWALE. CONTRACTOR TO CONSTRUCT ONLY THE PORTION OF THE SWALE THAT DOES NOT DRAIN INTO THE BASIN AND IS TO STABILIZE BYPASS SWALE IMMEDIATELY.

- 3. INSTALL SEDIMENT BASIN. (3 WEEKS).

- 4. UPON ACCEPTANCE BY THE COUNTY INSPECTOR, CONTRACTOR TO PROCEED WITH ROUGH GRADING OF ENTIRE SITE. (1 WEEK) CONTRACTOR TO PROVIDE DUST CONTROL AS NECESSARY AND AS DIRECTED BY THE INSPECTOR.

- 5. INSTALL WATER, SEWER AND STORM DRAINS AS SUBGRADE ELEVATIONS ARE REACHED. (3 WEEKS)

- 6. INSTALL CURB AND GUTTER AND PAVE. (1 WEEK)

- 7. PERFORM FINE GRADING, SIDEWALK, LIGHTING AND LANDSCAPING. (1 WEEK)

- 8. APPLY TOPSOIL AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 WEEKS)

- 9. UPON PERMISSION OF COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL REMAINING SEDIMENT CONTROL DEVICES AND CONVERT SEDIMENT BASINS TO PERMANENT STORM WATER MANAGEMENT FACILITIES. CONVERT FACILITY IN THE FOLLOWING STEPS:

- A. PUMP OUT STANDING WATER IN BASIN THROUGH PUMPING STATION. (2 DAYS)

- B. REMOVE ACCUMULATED SEDIMENT AND FILL IN BOTTOM OF SEDIMENT BASIN TO MEET PROPOSED BOTTOM ELEVATION OF SWM #1. (2 DAYS)

- C. REMOVE TEMPORARY DRUM DOWN DEVICE AND PLYWOOD COVERING OUTLET WEIR. (1 DAY)

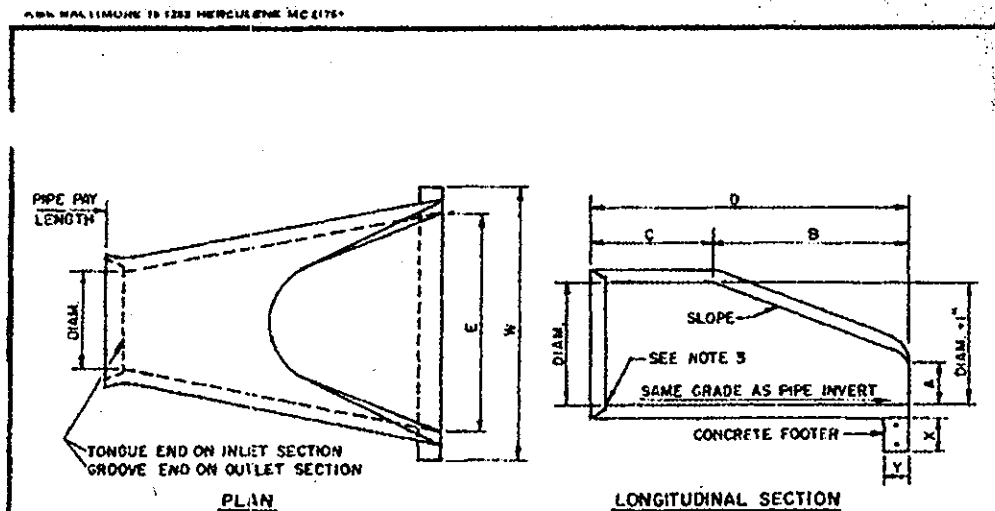
- D. LOWER TOP OF SEDIMENT BASIN EMBANKMENT TO MEET PROPOSED ELEVATIONS OF SWM #1 EMBANKMENT. (2 DAYS)

- E. INSTALL POND DRAIN AND ORIFICE METAL PLATE. (3 DAYS)

- F. INSTALL FOREBAY AND CLAY LINER. (5 DAYS)

- G. STABILIZE REMAINING DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (3 DAYS)

BY THE DEVELOPER: [Signature] 10/24/07 DATE DEVELOPER
BY THE ENGINEER: [Signature] 10/22/07 DATE ENGINEER
I 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] 10/22/07 DATE ENGINEER
THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.
[Signature] 11/5/07 DATE HOWARD SOIL CONSERVATION DISTRICT
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. [Signature] 11-20-07 DATE CHIEF, BUREAU OF HIGHWAYS
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. [Signature] 11/30/07 DATE CHIEF, DIVISION OF LAND DEVELOPMENT
[Signature] 11/27/07 DATE CHIEF, DEVELOPMENT ENGINEERING DIVISION
DATE NO. REVISION
OWNER: CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539
DEVELOPER: RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414
PROJECT: ORCHARD ESTATES LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE: EROSION AND SEDIMENT CONTROL NOTES
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282
10/22/07 DATE
[Seal of Howard County]
13043/1-6/ENGR/PLANS PROJECT NO: FINAL/C900027.DWG
DATE: NOVEMBER 6, 2007
SCALE: AS SHOWN
DRAWING NO. 6 OF 21
F-07-005



- NOTES:
1. END SECTIONS MUST BE REINFORCED TO CONFORM WITH CLASS IV PIPE.
 2. CONCRETE FOOTER SHALL BE USED EXCEPT FOR CONCRETE FOOTER TO BE PAID PER CUBIC YARD OF CLASS A-1 CONCRETE FOR MISCELLANEOUS STRUCTURES. REINFORCEMENTS TO BE AS SHOWN.
 3. INVERT ELEVATION TO BE AT THE PIPE END OF THE STD. END SECTION. ELEVATIONS TO BE NOTED ON CONSTRUCTION PLANS.
 4. CONTRACTOR HAS OPTION OF FURNISHING END SECTIONS CONFORMING TO DETAILS ON THIS SHEET OR END SECTIONS CONFORMING TO DETAILS ON STD. NO. S-52.

CONCRETE END SECTION				CONCRETE FOOTER			
DIAM.	SLOPE	A	B	C	D	E	F
12"	3:1	3.00	2.25	2.25	2.25	2.25	2.25
18"	3:1	4.50	3.38	3.38	3.38	3.38	3.38
24"	3:1	6.00	4.50	4.50	4.50	4.50	4.50
30"	3:1	7.50	5.63	5.63	5.63	5.63	5.63
36"	3:1	9.00	6.75	6.75	6.75	6.75	6.75
42"	3:1	10.50	7.88	7.88	7.88	7.88	7.88
48"	3:1	12.00	9.00	9.00	9.00	9.00	9.00
54"	3:1	13.50	10.13	10.13	10.13	10.13	10.13
60"	3:1	15.00	11.25	11.25	11.25	11.25	11.25
66"	3:1	16.50	12.38	12.38	12.38	12.38	12.38
72"	3:1	18.00	13.50	13.50	13.50	13.50	13.50

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved: *[Signature]*
Chief, Bureau of Engineering

CONCRETE END SECTION
CIRCULAR CONCRETE PIPE

DRAWN BY: *[Signature]*
CHECKED BY: *[Signature]*
SCALE: NONE
DATE: 10-22-07

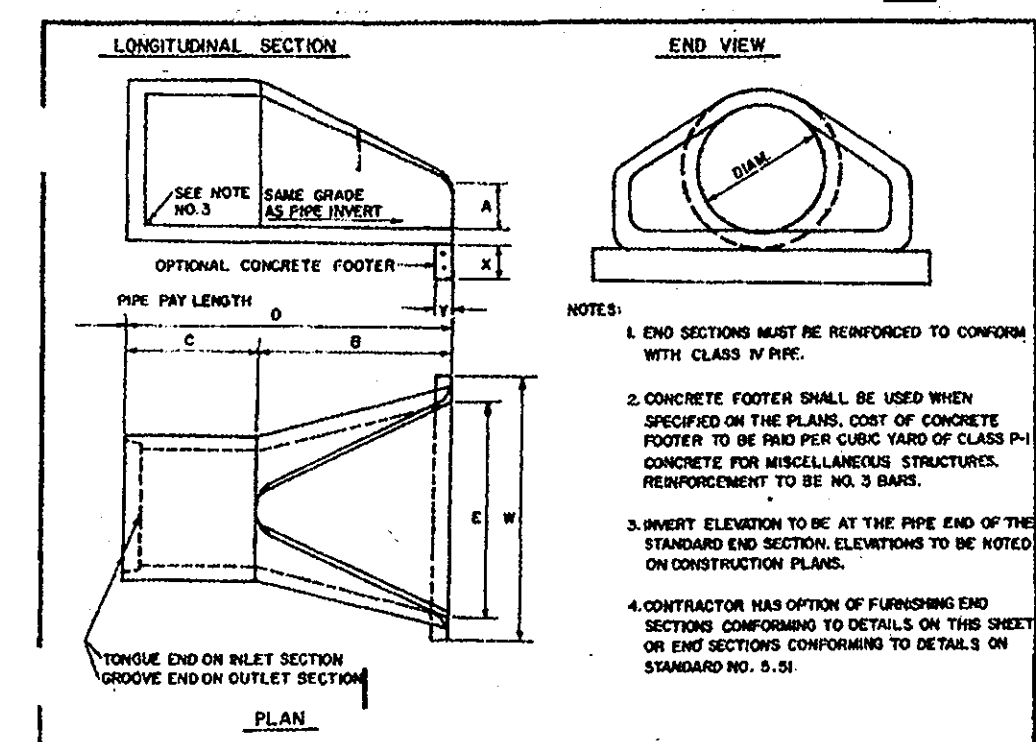


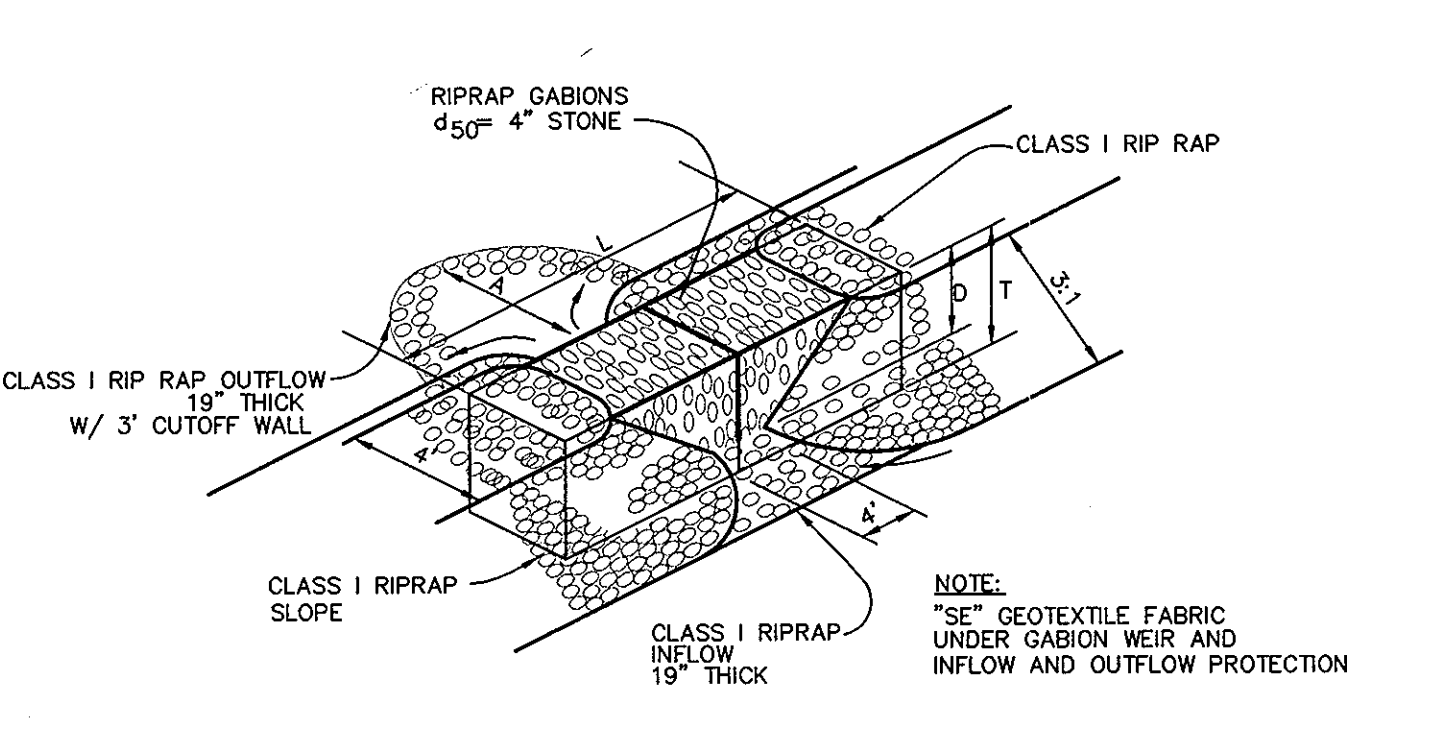
TABLE OF DIMENSIONS

CONCRETE END SECTION				CONCRETE FOOTER			
DIAM.	SLOPE	A	B	C	D	E	F
12"	3:1	3.00	2.25	2.25	2.25	2.25	2.25
18"	3:1	4.50	3.38	3.38	3.38	3.38	3.38
24"	3:1	6.00	4.50	4.50	4.50	4.50	4.50
30"	3:1	7.50	5.63	5.63	5.63	5.63	5.63
36"	3:1	9.00	6.75	6.75	6.75	6.75	6.75
42"	3:1	10.50	7.88	7.88	7.88	7.88	7.88
48"	3:1	12.00	9.00	9.00	9.00	9.00	9.00
54"	3:1	13.50	10.13	10.13	10.13	10.13	10.13
60"	3:1	15.00	11.25	11.25	11.25	11.25	11.25
66"	3:1	16.50	12.38	12.38	12.38	12.38	12.38
72"	3:1	18.00	13.50	13.50	13.50	13.50	13.50

HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS
Approved: *[Signature]*
Chief, Bureau of Engineering

CONCRETE END SECTION
CIRCULAR CONCRETE PIPE

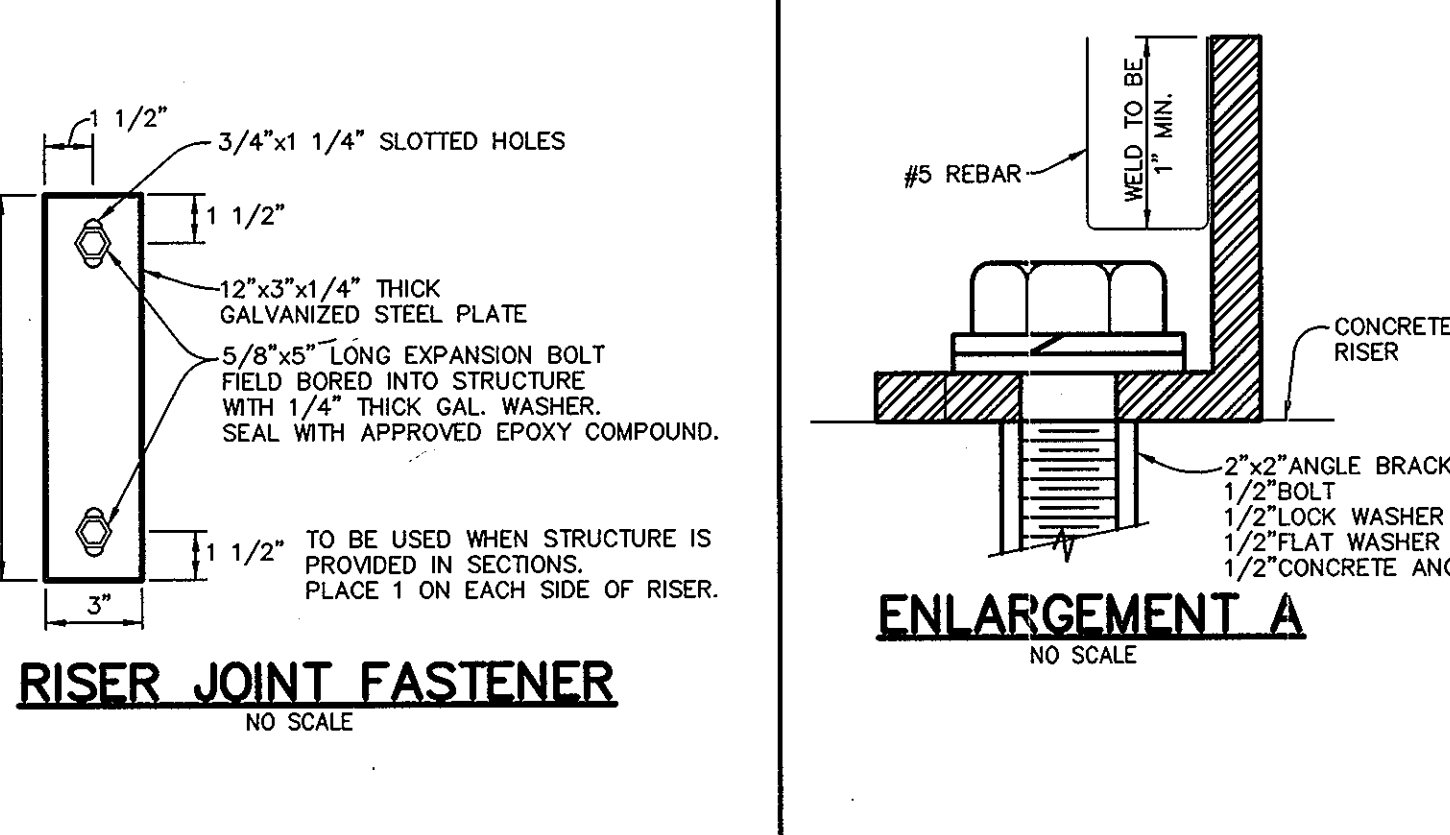
DRAWN BY: *[Signature]*
CHECKED BY: *[Signature]*
SCALE: NONE
DATE: 10-22-07



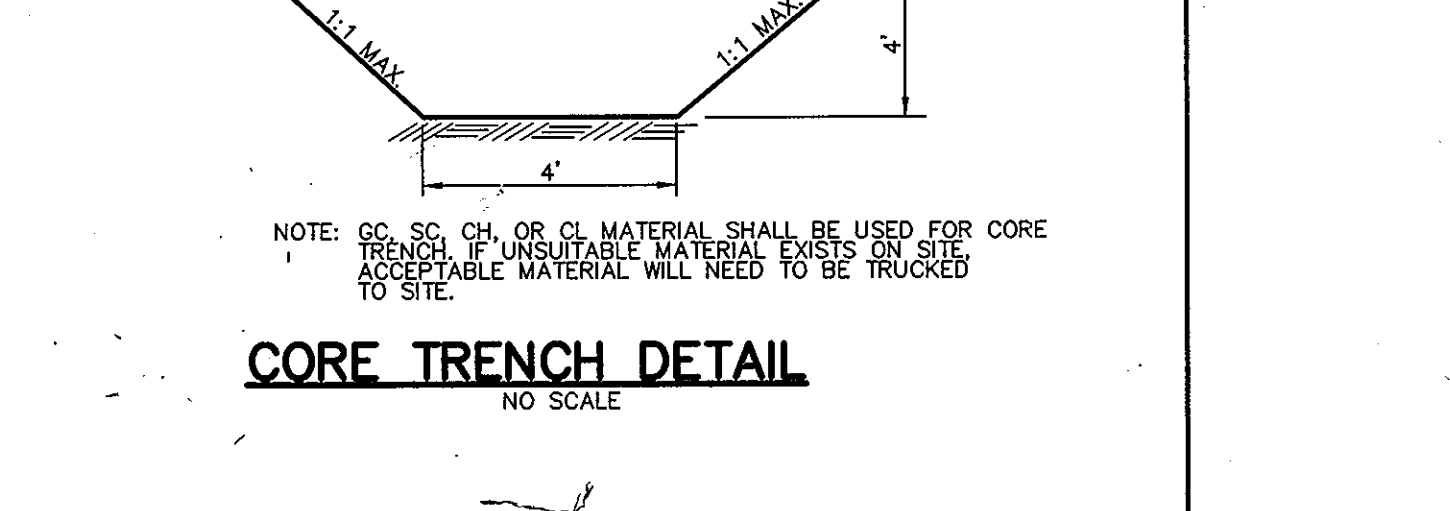
FOREBAY WEIR CHART

POND	GABIONS	TOP EL.	D	L	T	A
1	4.0' x 3.0'	470.0	1.0'	18'	2.5'	16'

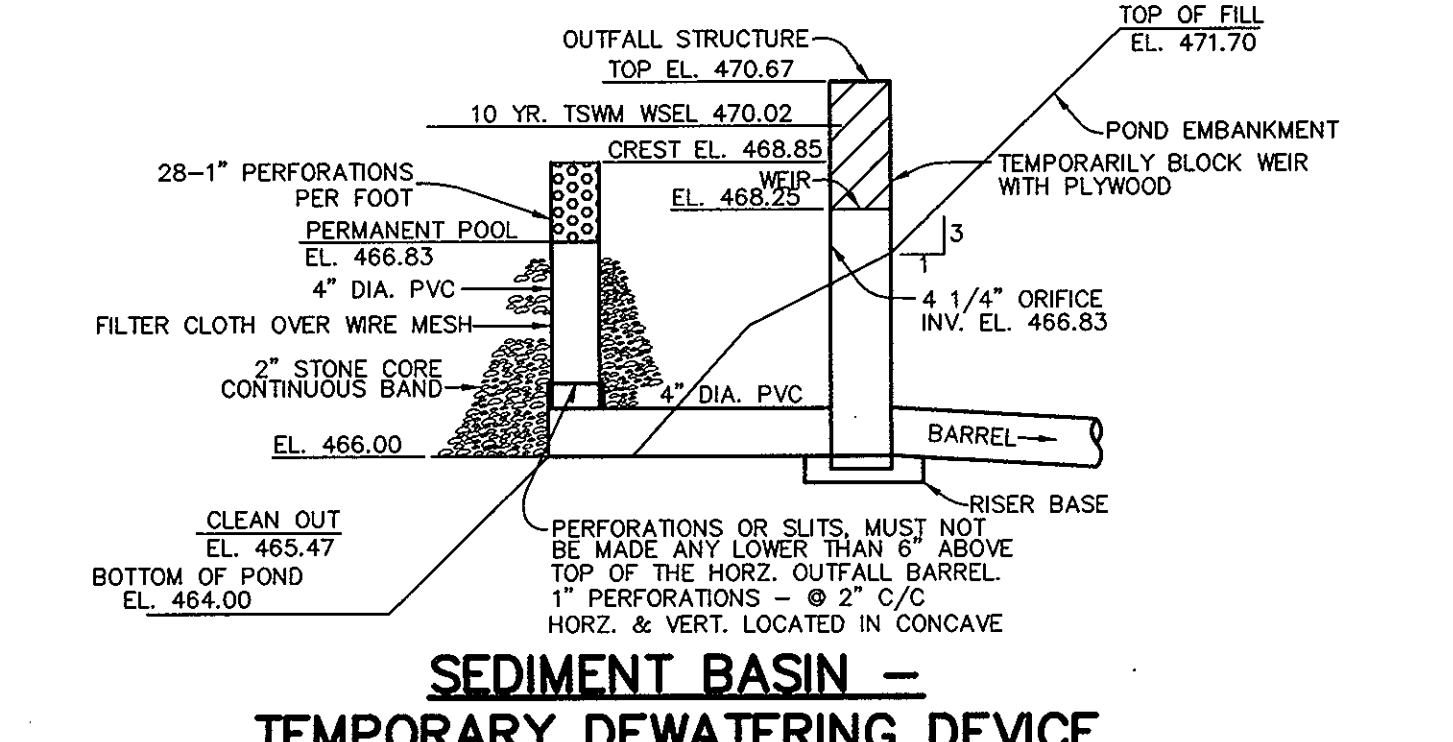
FOREBAY WEIR DETAIL
NO SCALE



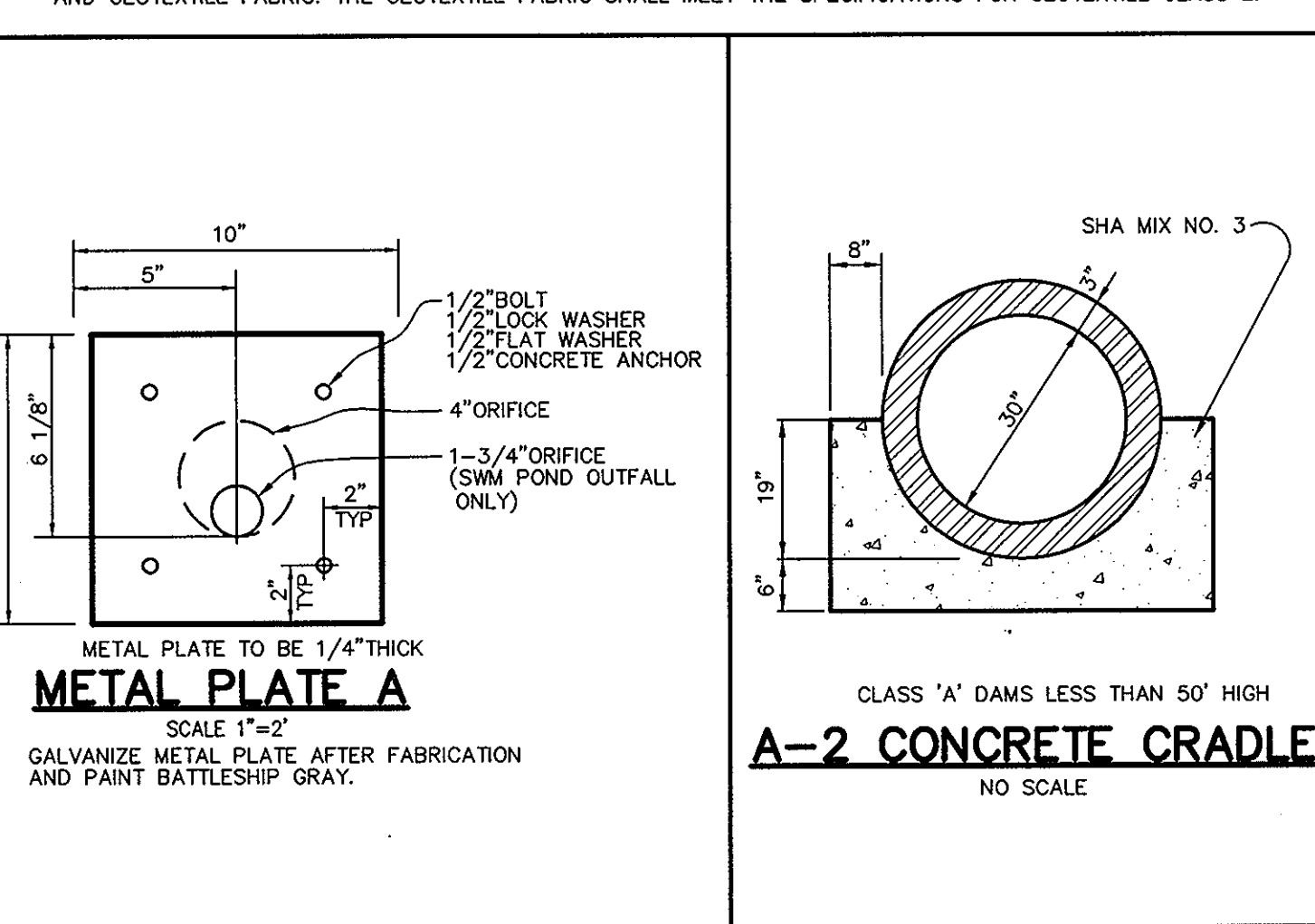
RISER JOINT FASTENER
NO SCALE



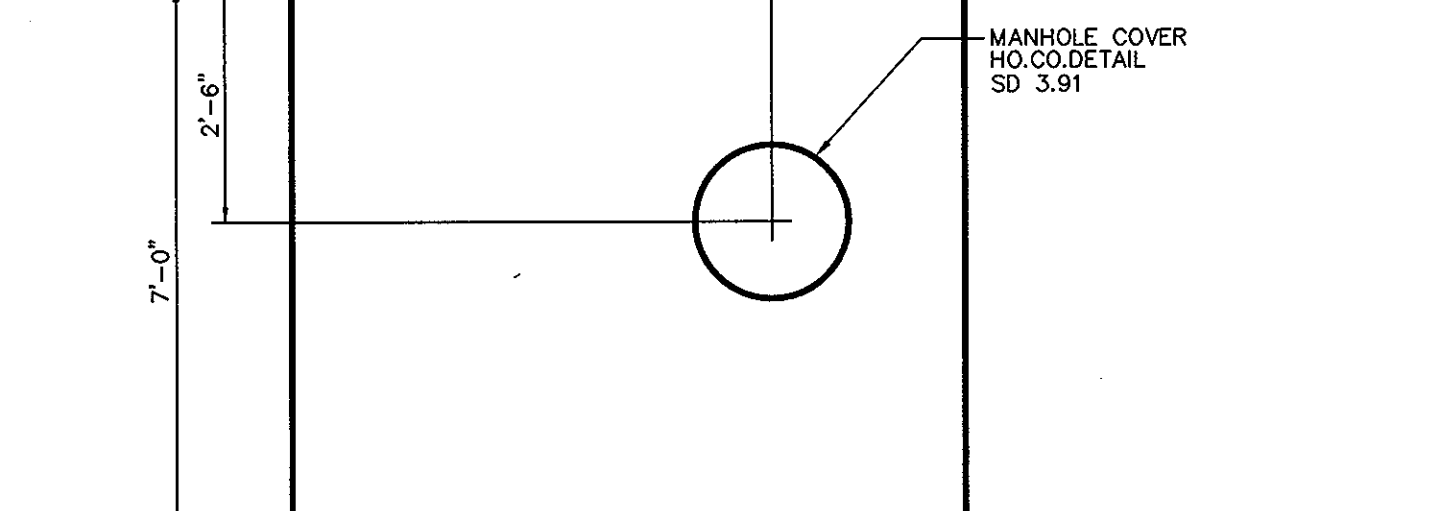
CORE TRENCH DETAIL
NO SCALE



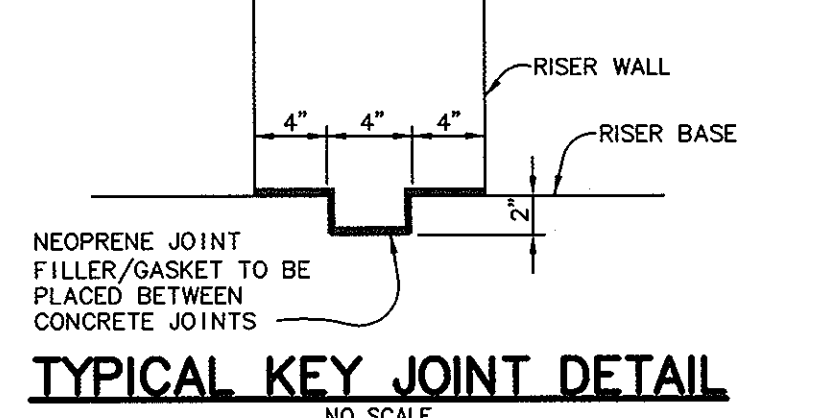
- SEDIMENT BASIN -
TEMPORARY DEWATERING DEVICE
NO SCALE
1. PERFORATIONS ON THE DRAW-DOWN DEVICE SHALL NOT EXTEND INTO THE WET STORAGE.
 2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 4 TIMES THE AREA OF THE INTERNAL ORIFICE.
 3. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.



METAL PLATE A
SCALE 1"=2"
GALVANIZE METAL PLATE AFTER FABRICATION AND PAINT BATTLESHIP GRAY.



A-2 CONCRETE CRADLE
NO SCALE



TYPICAL KEY JOINT DETAIL
NO SCALE

BY THE DEVELOPER:

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 10/24/07
DEVELOPER DATE

BY THE ENGINEER:

I 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] 11/22/07
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE DATE

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

[Signature] 11/15/07
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

[Signature] 11-20-07
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[Signature] 11/20/07
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 11/21/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

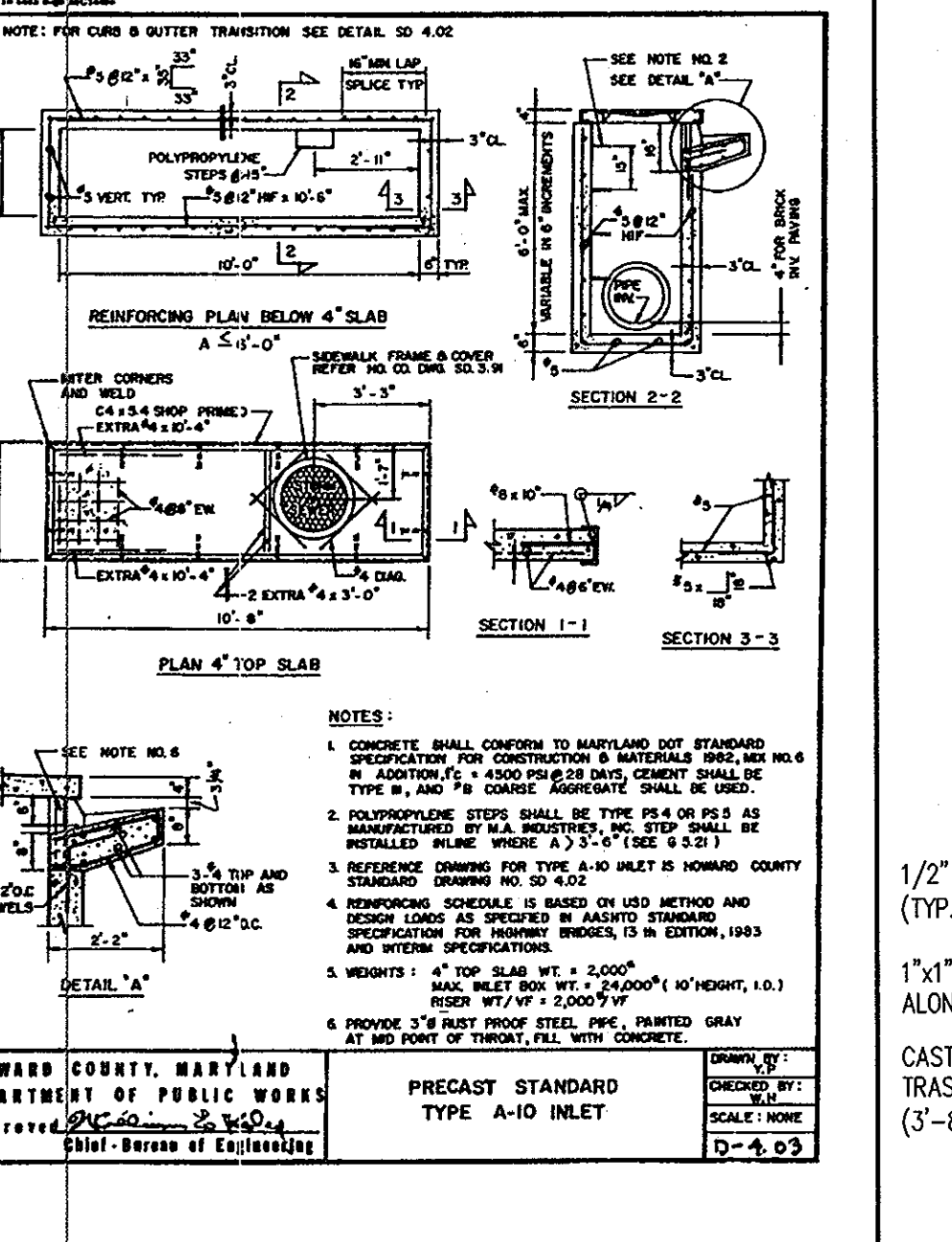
PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A &
NON-BUILDABLE PRESERVATION PARCELS B & C
AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
SWM DETAILS

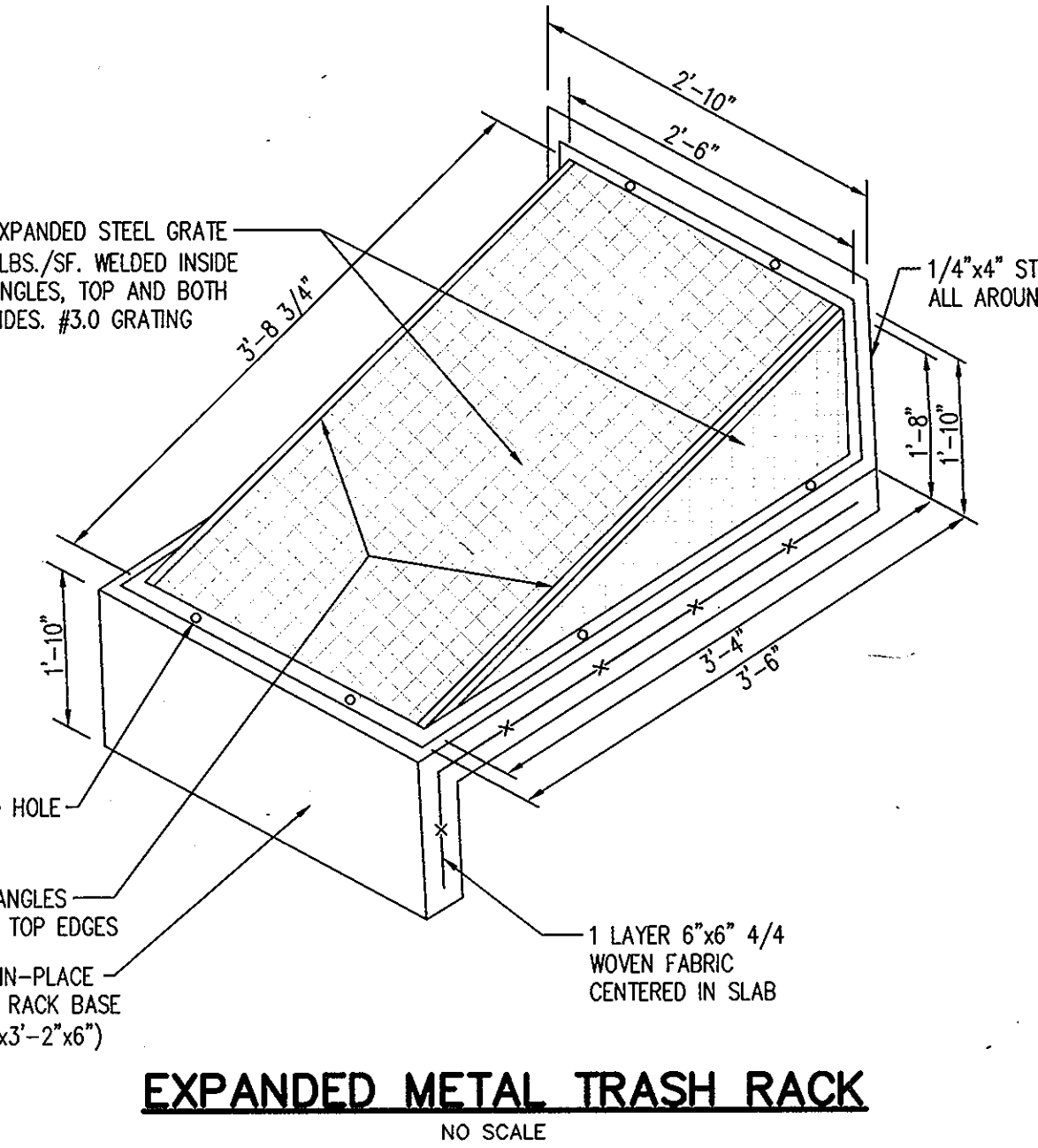
Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10/22/07
DATE
CHECKED BY: DWC
DESIGNED BY: NS
DRAWN BY: EMR/JMK
PROJECT NO: 13043/1-0/ENGR/PLANS
FINAL/CS01DET.DWG
DATE: NOVEMBER 6, 2007
SCALE: AS SHOWN
DRAWING NO. 7 OF 21

[Signature]
DOMENICK W. COLANEOLO #27200



EXPANDED STEEL GRATE
3LBS./SF. WELDED INSIDE ANGLES, TOP AND BOTH SIDES. #3.0 GRATING



PRECAST STANDARD TYPE A-10 INLET
NO SCALE

DAM CONSTRUCTION NOTES:

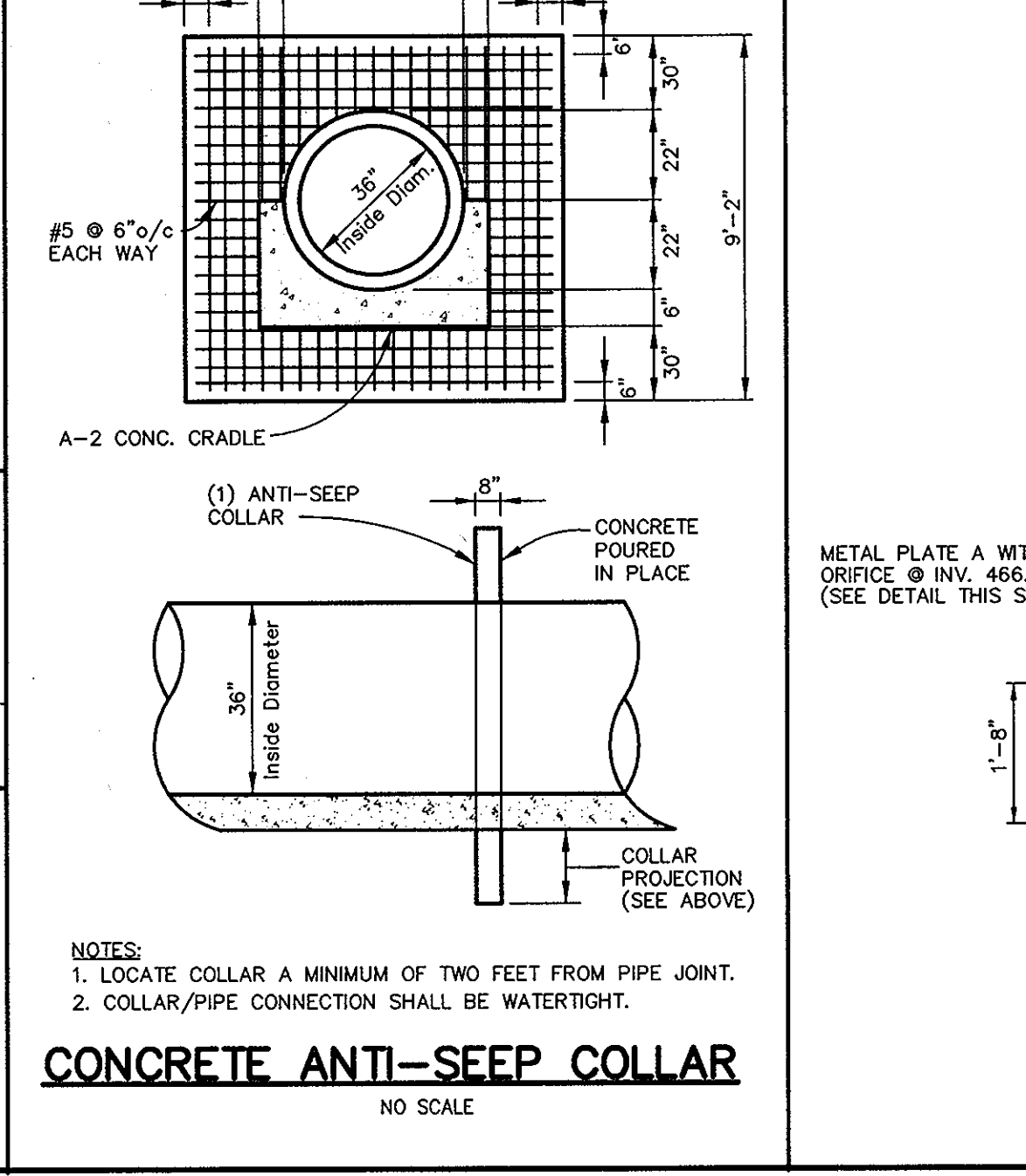
1. THE AREAS OF THE SWM FACILITIES SHOULD BE TRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREA IN ACCORDANCE WITH THE SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIAL SHOULD BE PROFFERED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE. FOR AREAS THAT ARE NOT ACCESSIBLE TO A DUMP TRUCK, THE EXPOSED MATERIALS SHOULD BE OBSERVED AND TESTED BY A GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE UTILIZING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROFFERROLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLY FIRM SOIL, AND THEN RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL.
2. A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT OFF TRENCH. IN ACCORDANCE AND WITH NRCS-MD CODE NO. 378 POND STANDARDS/SPECIFICATIONS, SOILS CONSIDERED SUITABLE FOR THE CENTER OF THE EMBANKMENT AND CUT OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CL, OR CH AND HAVE AT LEAST 30% PASSING THE #200 SIEVE.
3. IN ADDITION TO THE SOIL MATERIALS DESCRIBED ABOVE, A FINE-GRAINED SOIL, INCLUDING SILT (ML-MH) WITH A PLASTICITY INDEX OF 10 OR MORE, CAN BE UTILIZED FOR THE CENTER OF THE AND CORE TRENCH, IF APPROVED BY THE GEOTECHNICAL ENGINEER. ALL FILL MATERIALS MUST BE PLACED AND COMPACTED IN ACCORDANCE WITH NRCS-MD CODE NO. 378 SPECIFICATIONS.

REMOVABLE TRASH RACK NOTES:

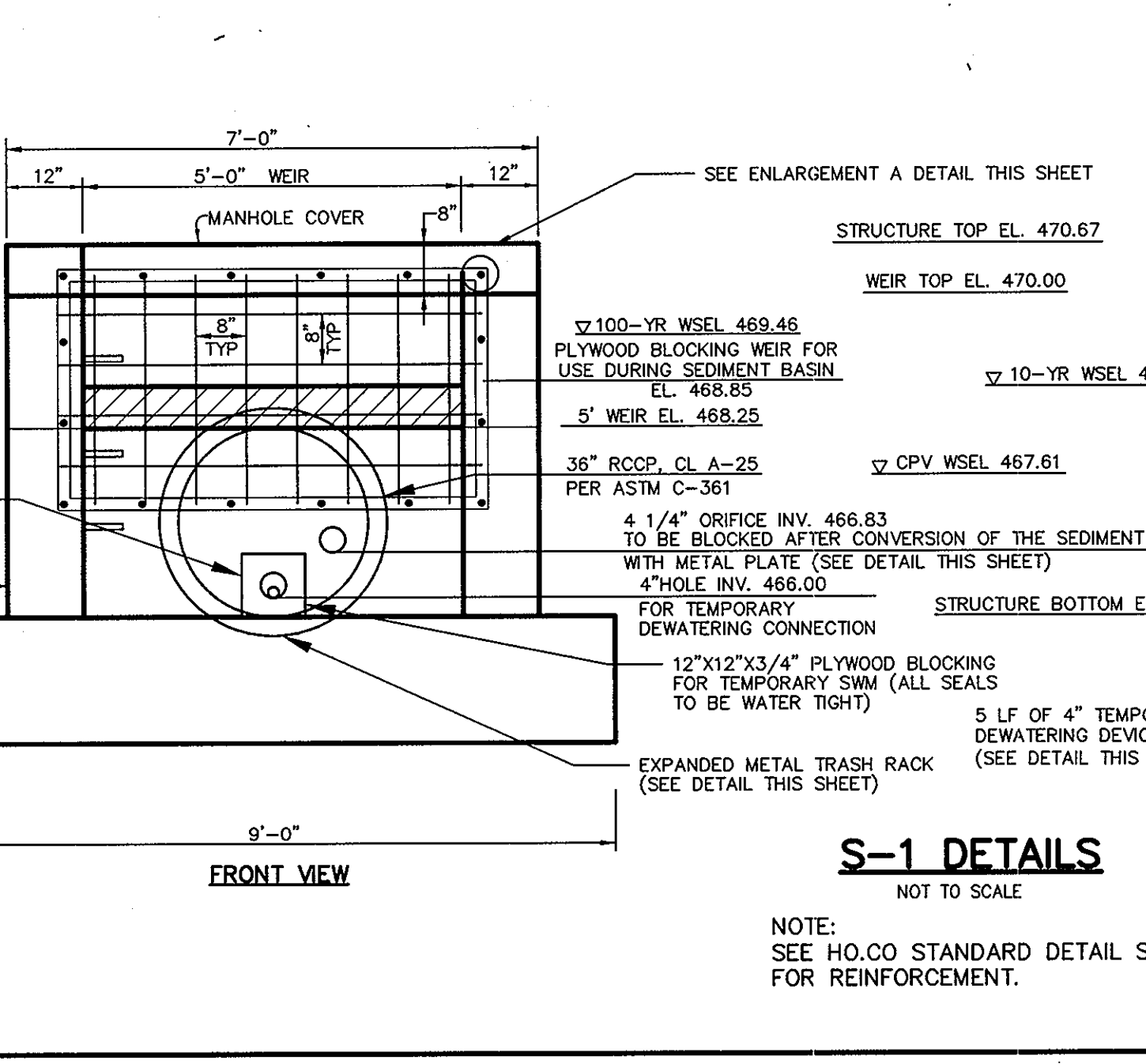
1. STEEL SHALL CONFORM TO ASTM A-36. #5 BARS SHALL BE SMOOTH. SEE DETAIL FOR SPACING.
2. ALL REBAR SHALL BE WELDED AT ALL INTERSECTIONS.
3. ALL BENDS TO BE 2" RADIUS. 2"x2" ANGLE IRON AND 1/2" DIAMETER ANCHOR BOLTS SHALL BE USED FOR TRASH RACK FRAME.
4. GALVANIZE TRASH RACK AFTER FABRICATION AND PAINT 2-COATS BATTLESHIP GRAY.

RISER STRUCTURE NOTES

1. RISER SHALL BE PRE-CAST. SHOP DRAWINGS FOR ALL CONCRETE STRUCTURES SHALL MEET THE MINIMUM ASTM REQUIREMENTS FOR CAST-IN-PLACE STRUCTURES. A SHOP DRAWING SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION AND SHALL BE SIGNED AND SEALED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER.
2. CONCRETE SHALL BE MSHA MIX NO. 3 (fc=3,500 PSI MINIMUM)
3. REFER TO HOWARD COUNTY STD. G-5.21 FOR MANHOLE STEP DETAILS.
4. ALL PIPE CONNECTIONS SHALL PROVIDE RUBBER GASKET FOR WATERTIGHTNESS.
5. RISER SHALL BE PLACED ON A FIRMLY COMPACTED SUBGRADE AND SHALL BE APPROVED BY A GEOTECHNICAL ENGINEER.

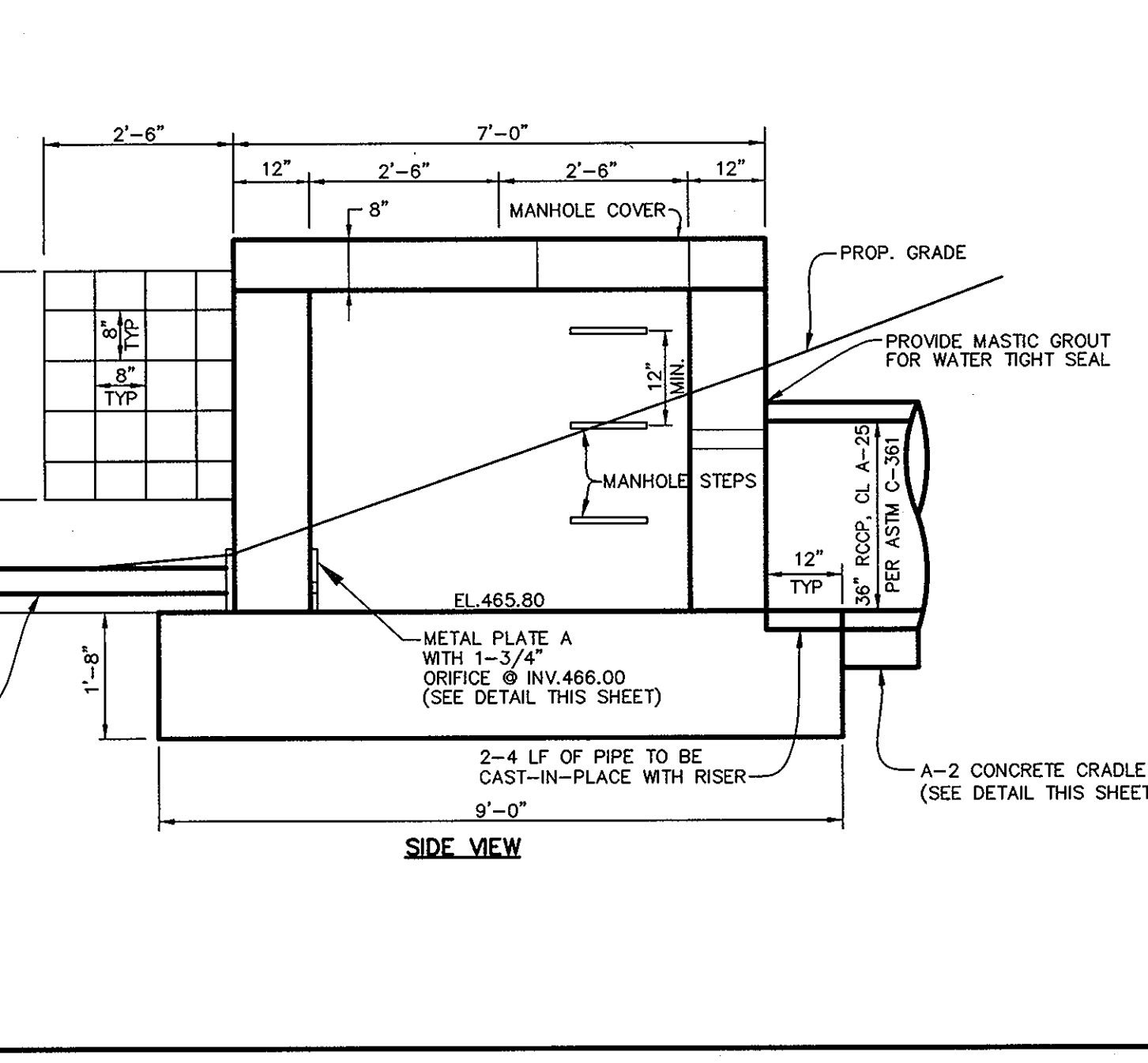


CONCRETE ANTI-SEEP COLLAR
NO SCALE



S-1 DETAILS
NOT TO SCALE

NOTE:
SEE HO.CO STANDARD DETAIL SD 4.02 FOR REINFORCEMENT.

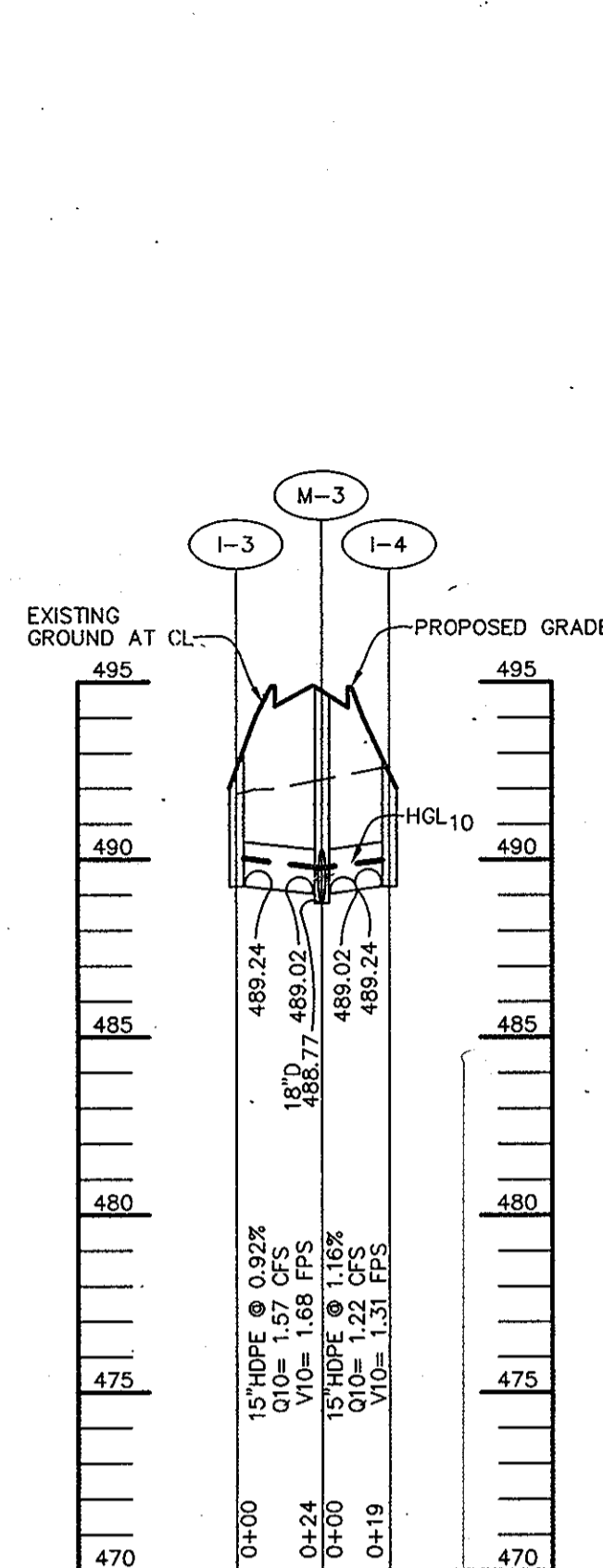


TOP VIEW
SIDE VIEW

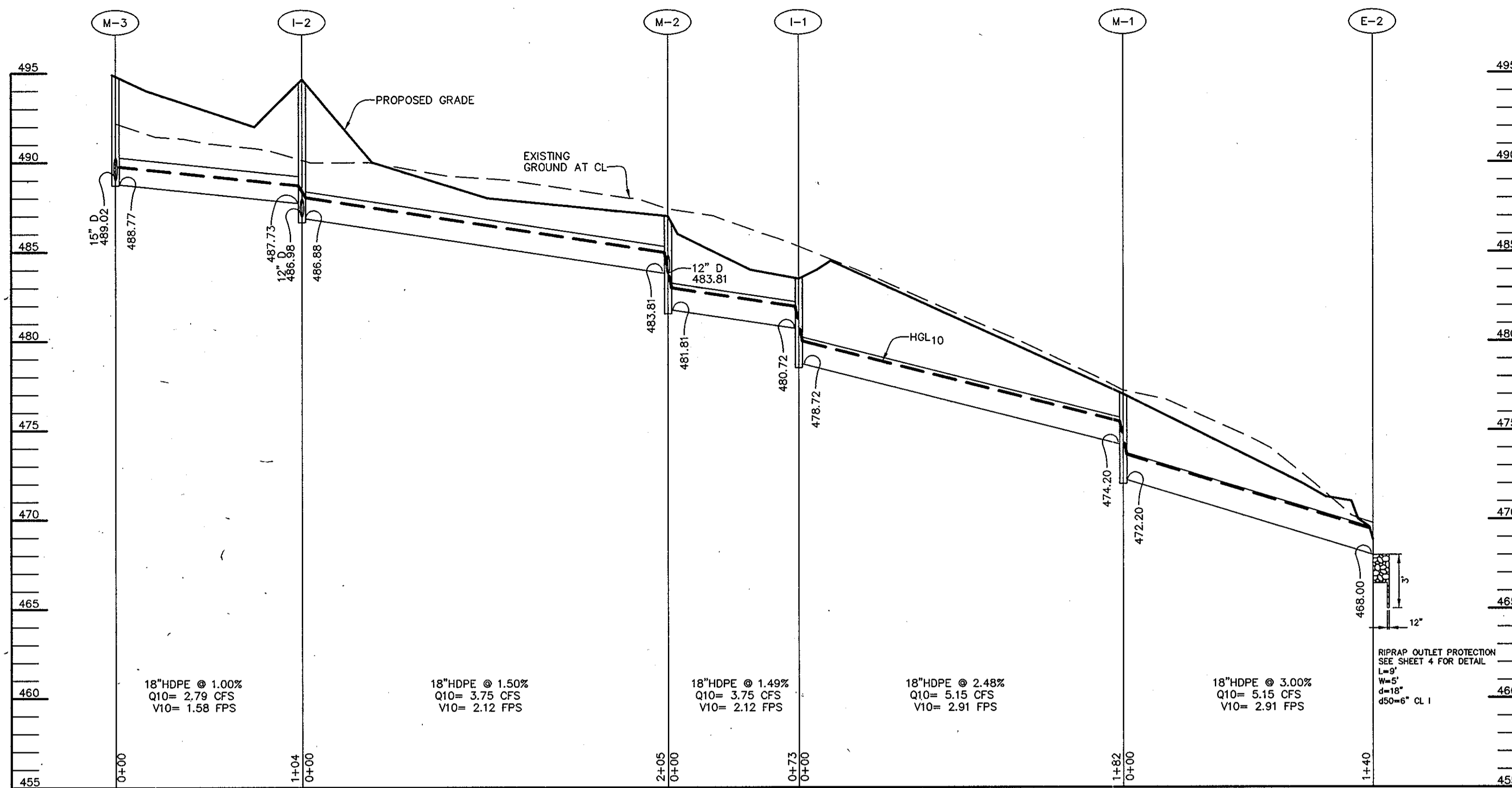
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PIPE SCHEDULE

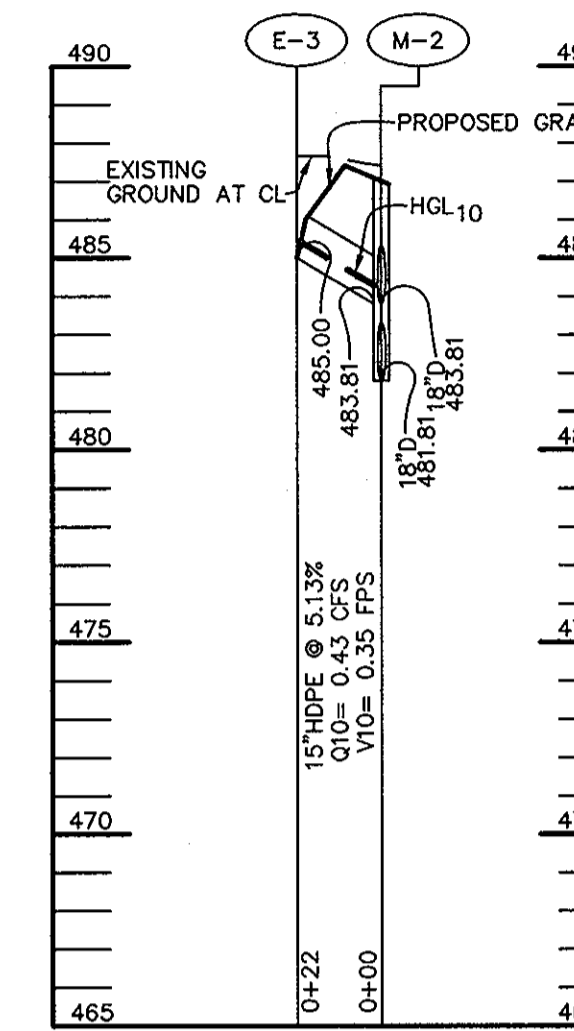
PIPE LENGTH	SIZE	TYPE
125'	12"	CMP
256'	15"	HDPE
703'	18"	HDPE
36'	36"	ASTM C-361 RCCP



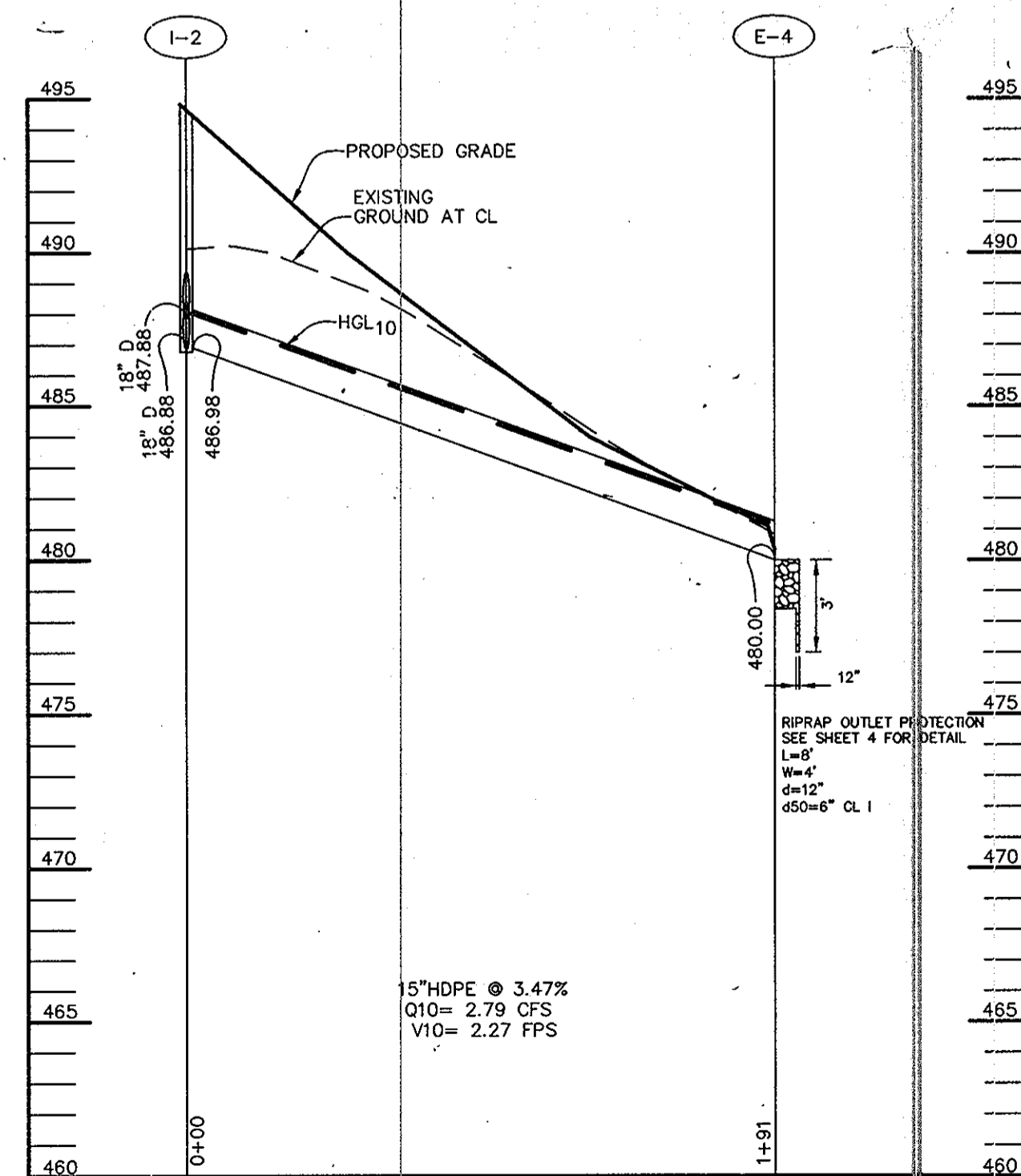
PROFILE
SCALE: HOR. 1" = 50'
VERT. 1" = 5'



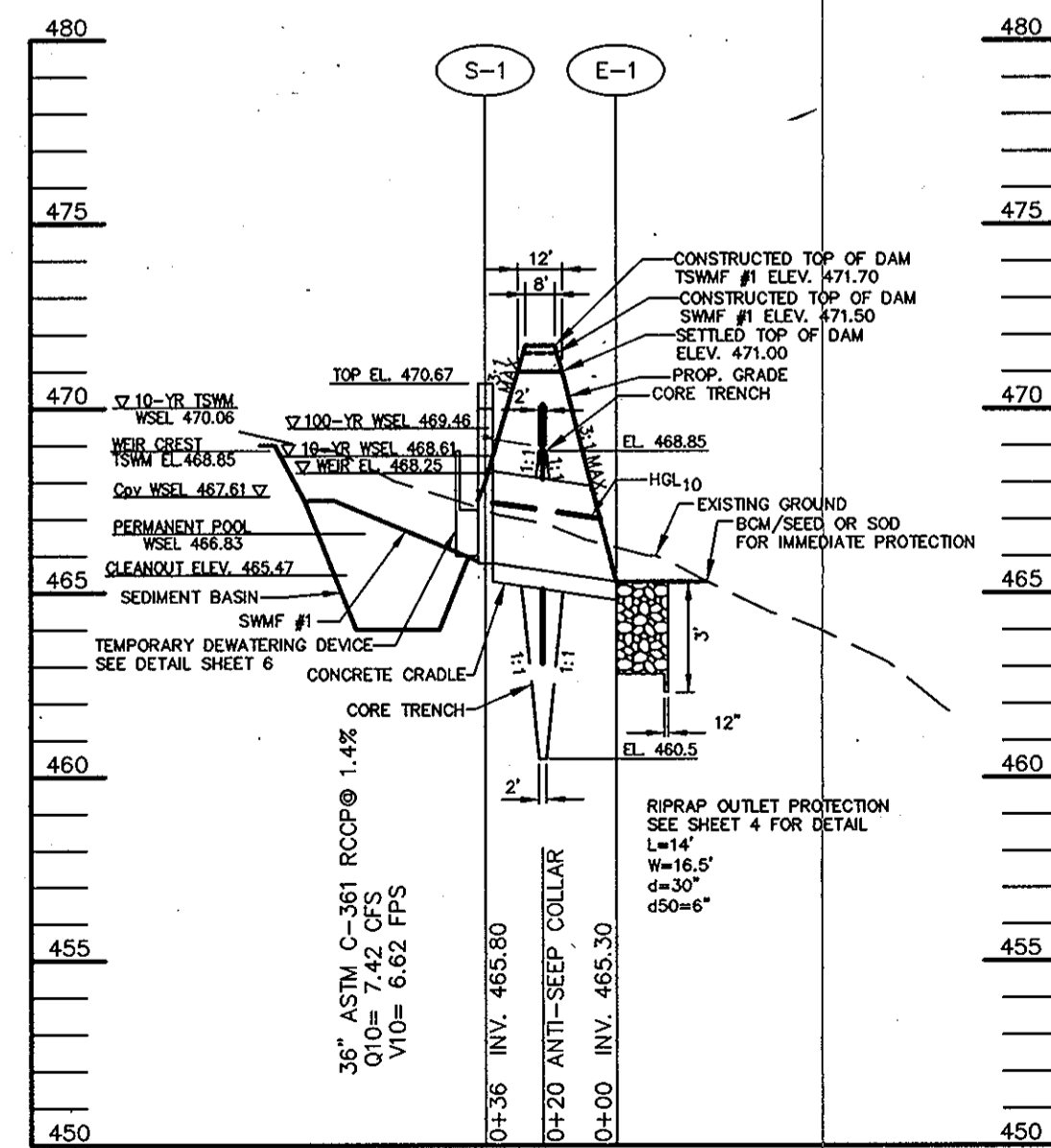
PROFILE
SCALE: HOR. 1" = 50'
VERT. 1" = 5'



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



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



PROFILE THRU SPILLWAY - SWMF #1/SED. BASIN

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

STRUCTURE SCHEDULE

STRUCTURE	TYPE	LOCATION	INV. IN	INV. OUT	TOP	REMARKS
I-1	YARD INLET	N 544627 E 1328861	480.72	478.72	483.50	HOCO STD. DETAIL D-4.14
I-2	A-S INLET	N 544723 E 1328665	487.88	486.98 (E-4) 486.88 (M-2)	494.65	HOCO STD. DETAIL D-4.01
I-3	TYPE S INLET	N 544808 E 1328603	-	489.24	492.00	HOCO STD. DETAIL D-4.22
I-4	TYPE S INLET	N 544777 E 1328573	-	489.24	492.00	HOCO STD. DETAIL D-4.22
M-1	4' DIA. MANHOLE	N 544729 E 1329011	474.20	472.20	477.00	HOCO STD. DETAIL G-5.12
M-2	4' DIA. MANHOLE	N 544576 E 1328809	483.81 (E-3) 483.81 (I-2)	481.81	487.00	HOCO S/D. DETAIL G-5.12
M-3	4' DIA. MANHOLE	N 544791 E 1328588	489.02	488.77 (I-3 AND I-4)	494.90	HOCO STD. DETAIL G-5.12
E-1	END SECTION	N 544636 E 1329263	-	-	-	HOCO STD. DETAIL D-5.51
E-2	END SECTION	N 544645 E 1329121	-	468.00	-	HOCO STD. DETAIL D-5.51
E-3	END SECTION	N 544561 E 1328794	485.00	483.81	-	HOCO STD. DETAIL D-5.51
E-4	END SECTION	N 544862 E 1328793	-	480.00	-	HOCO STD. DETAIL D-5.51
S-1	MODIFIED STRUCTURE	N 544610 E 1329241	466.00	465.00	470.67	SEE SHEET 6

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Willis R. Mohr 11-28-07
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Craig K. Smith 11/20/07
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John J. Williams 11/22/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO. REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A &
NON-BUILDABLE PRESERVATION PARCELS B & C
AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
STORM SEWER AND POND PROFILES

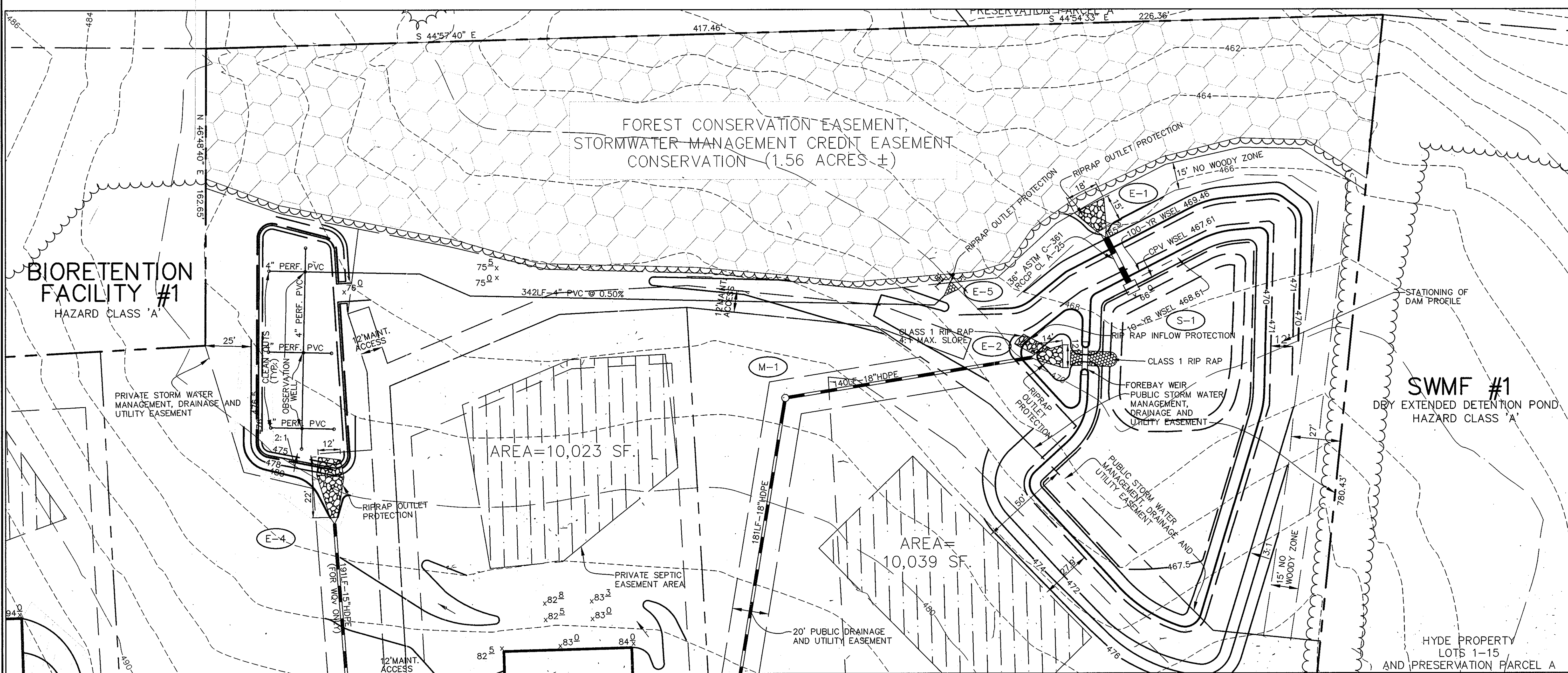
Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

10/22/07
DATE
CHECKED BY: DWC
DESIGNED BY: NS
DRAWN BY: BCL
PROJECT NO: 13043/1-0/ENGR/PLANS
FINAL/CS00PRO.DWG
DATE : NOVEMBER 6, 2007
SCALE : AS SHOWN
DRAWING NO. 8 OF 21



ELEVATION TABLE

FACILITY	TOP OF EMBANKMENT	BOTTOM OF EMBANKMENT	WQV WEIR ELEVATION
1	480.0	475.0	476.0
2	466.0	463.0	464.0



BY THE DEVELOPER :
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
Richard Demmitt 10/24/07
 DEVELOPER DATE

BY THE ENGINEER :
 I 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.
D. W. Colangelo 10/22/07
 ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE DATE

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

[Signature] 11/15/07
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Walter Z. ... 11-20-07
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[Signature] 11/20/07
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 11/27/07
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

OWNER
 CARLTON E HEYSER, JR
 14526 NEW HAMPSHIRE AVENUE
 SILVER SPRING, MD 20904
 410-531-5539

DEVELOPER
 RUPPERT PROPERTIES
 ATTN: RICHARD DEMMITT
 HIGHLAND DEVELOPMENT CORP.
 P.O. BOX 228
 CLARKSVILLE, MARYLAND 21029
 410-365-0414

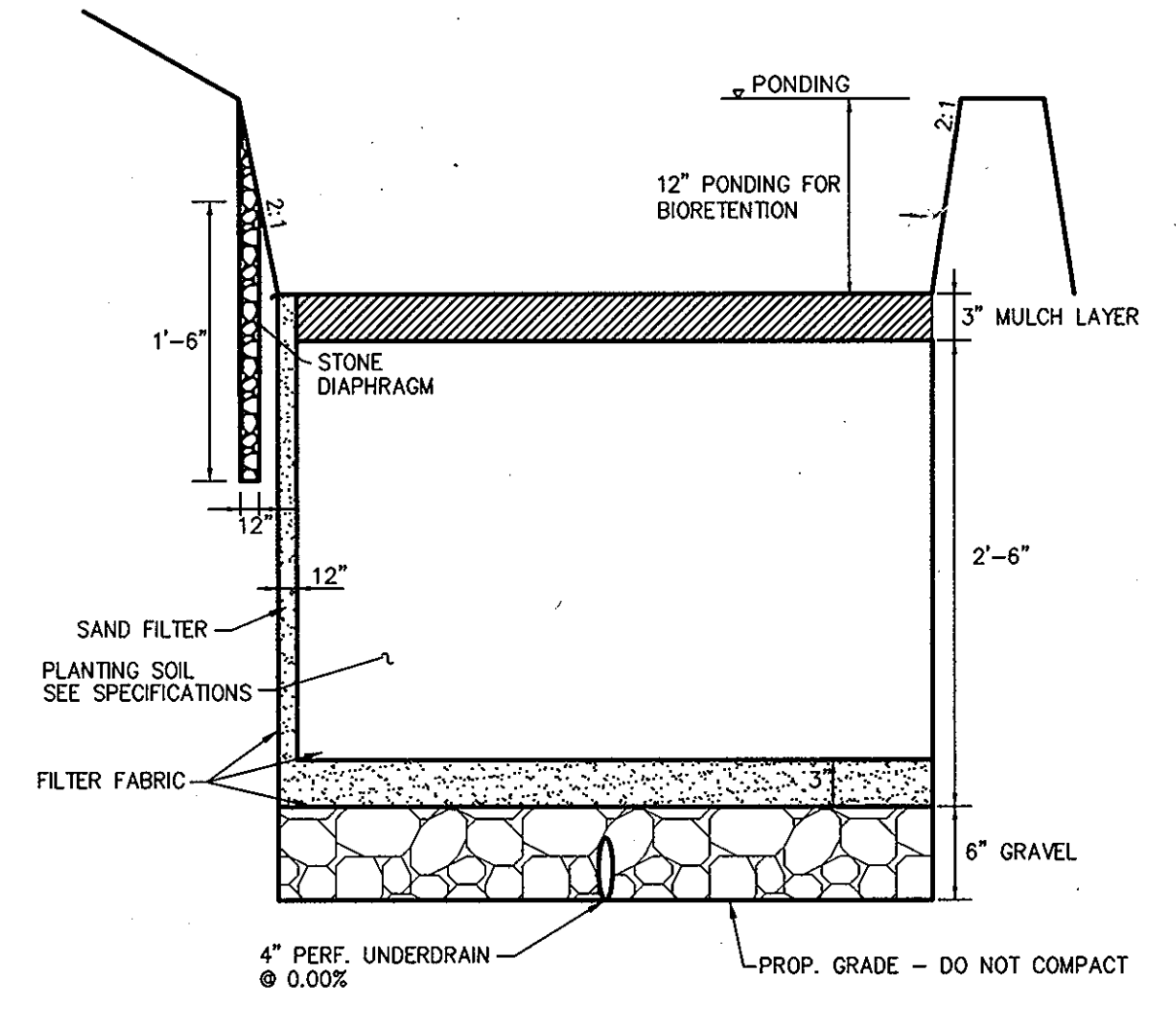
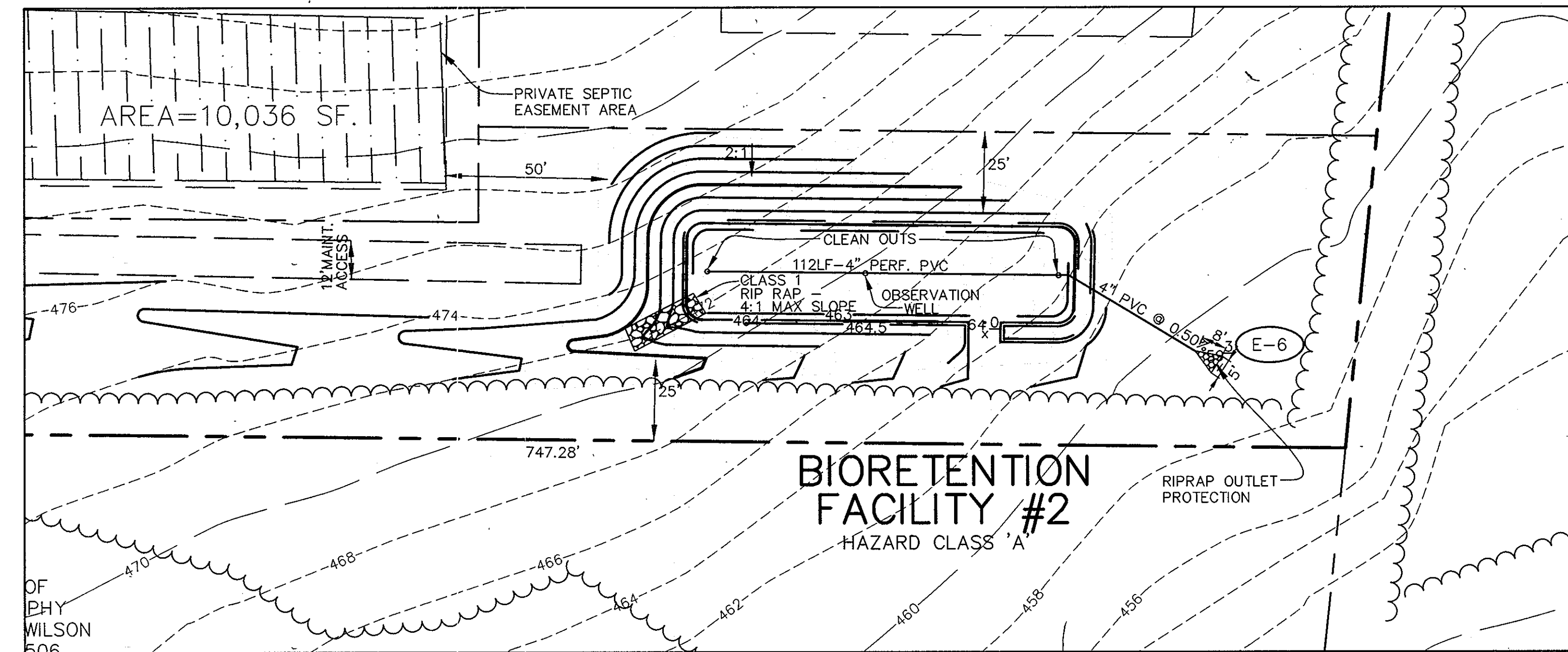
PROJECT
ORCHARD ESTATES
 LOTS 1-8, PRESERVATION PARCEL A &
 NON-BUILDABLE PRESERVATION PARCELS B & C
 AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

SWM FACILITY DETAILS

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

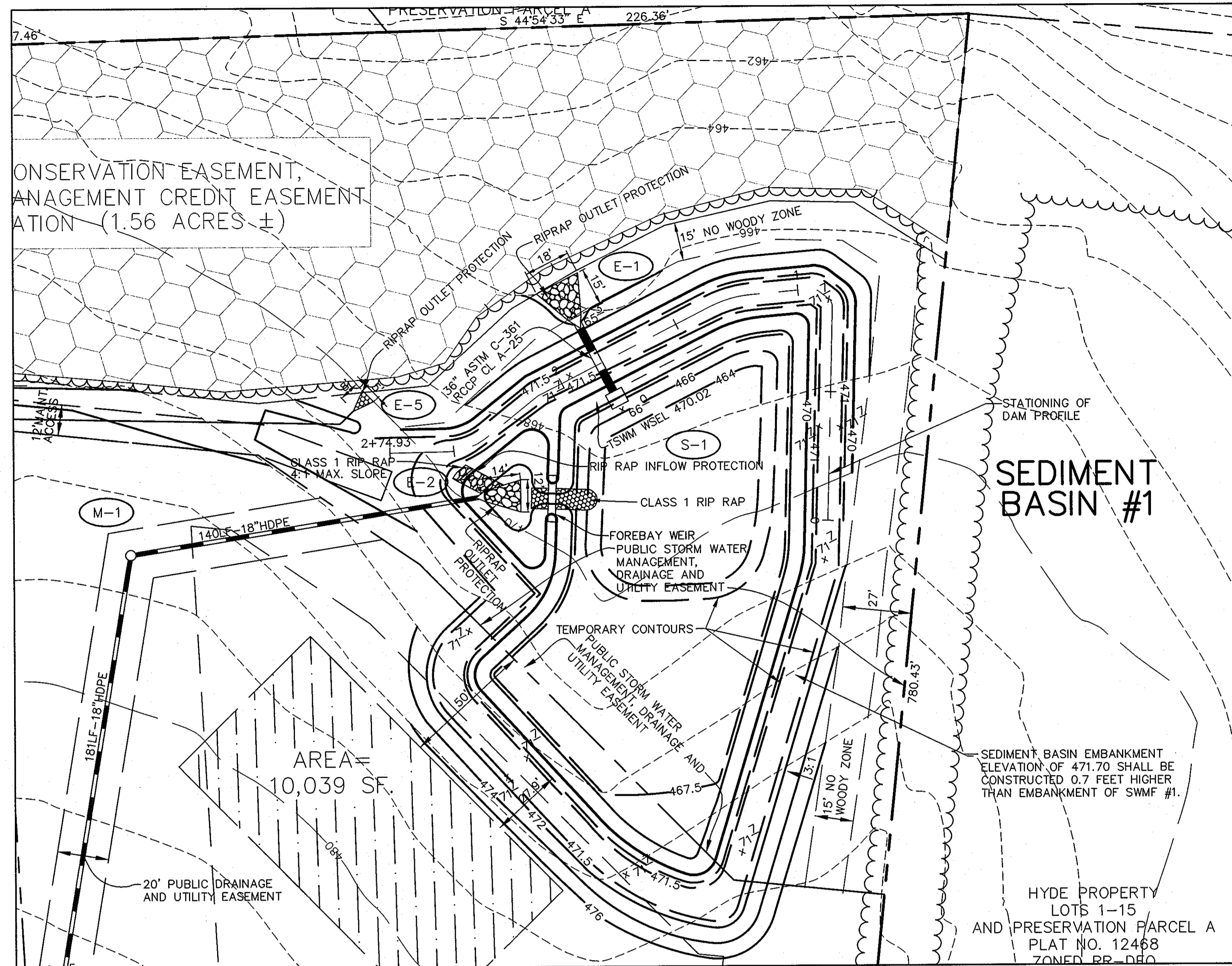
10/22/07
 DATE
 CHECKED BY: DWK
 DESIGNED BY: NS
 DRAWN BY: EMR/JMK
 PROJECT NO: 13043/1-0/ENGR/PLANS/FINAL/090DETS.DWG
 DATE : NOVEMBER 6, 2007
 SCALE : AS SHOWN
 DRAWING NO. 9 OF 21

DETAIL BIORETENTION FACILITY #1 AND SWMF #1
 SCALE: 1" = 30'



TYPICAL BIORETENTION FACILITY #1 & #2 SECTION
 NOT TO SCALE

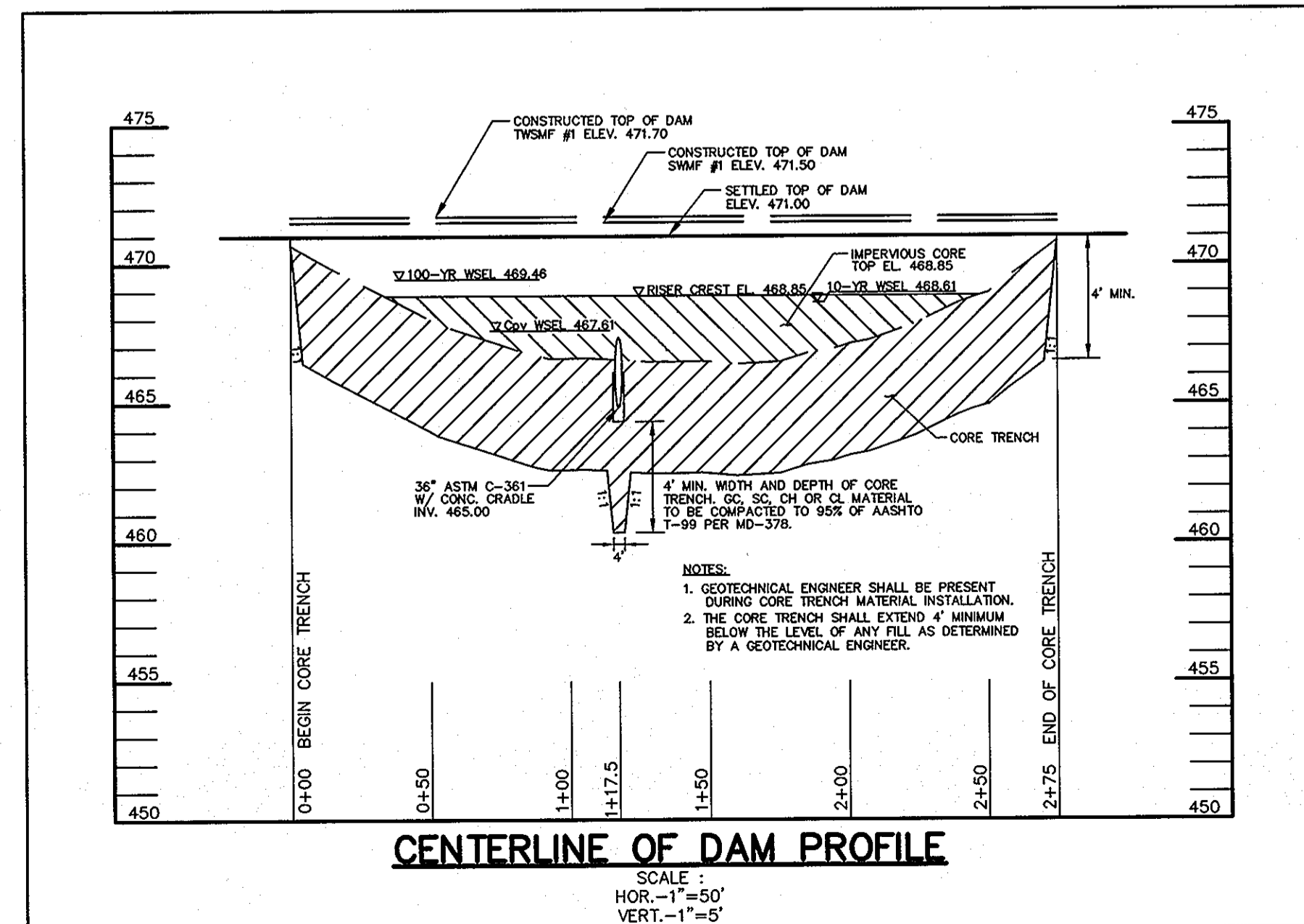
BIORETENTION FACILITY #2
 SCALE: 1" = 30'



DETAIL SEDIMENT BASIN #1

SCALE: 1" = 30'

TR-20 ELEVATION SUMMARY		
TABLE		
	TSWM Elev. (ft)	SWM WSEL Elev. (ft)
1-YR	468.83	467.61
10-YR	470.06	468.61
100-YR	N/A	469.46
Cleanout	465.47	N/A
Permanent Pool	466.83	N/A
Bottom of Basin	464.00	466.00
Weir Elev.	468.85	468.25



CENTERLINE OF DAM PROFILE

SCALE
HOR. - 1" = 50'
VERT. - 1" = 5'

SEDIMENT BASIN SCHEDULE			
BASIN #1			
Drainage Area Exist (Ac.)	15.50	Weir Crest Elev. (ft)	468.85
Drainage Area Prop (Ac.)	8.20	TSWM Perm Pool Elev.(ft)	466.83
Storage Required (cf)	65,673	TSWM Perm Pool Vol.(cf)	14,442
Elev. @ Req. Storage (ft)	470.06	Cleanout Elev. (ft)	465.47
Storage Provided (cf)	85,939	Bottom Elev. (ft)	464.00
Elev. @ Prov. Storage (ft)	471.00	Q ₁ Exist (cfs)	0.60
Weir Length #1 (ft.)	5.00	Q ₁ Bare Soil (cfs)	0.60
Riser Size (in.)	N/A	Q ₁ Post (cfs)	0.10
Depth Below Outlet Elev.(ft.)	1.80	Embankment Elev. (ft)	471.70

BY THE DEVELOPER :

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Richard Demmitt 10/24/07
DEVELOPER DATE

BY THE ENGINEER :

I 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.

D. W. Colangelo 10/22/07
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John S. ... 4/5/07
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Walter Z. ... 11-28-07
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Quincy ... 11/30/07
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John ... 11/27/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A &
NON-BUILDABLE PRESERVATION PARCELS B & C
AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

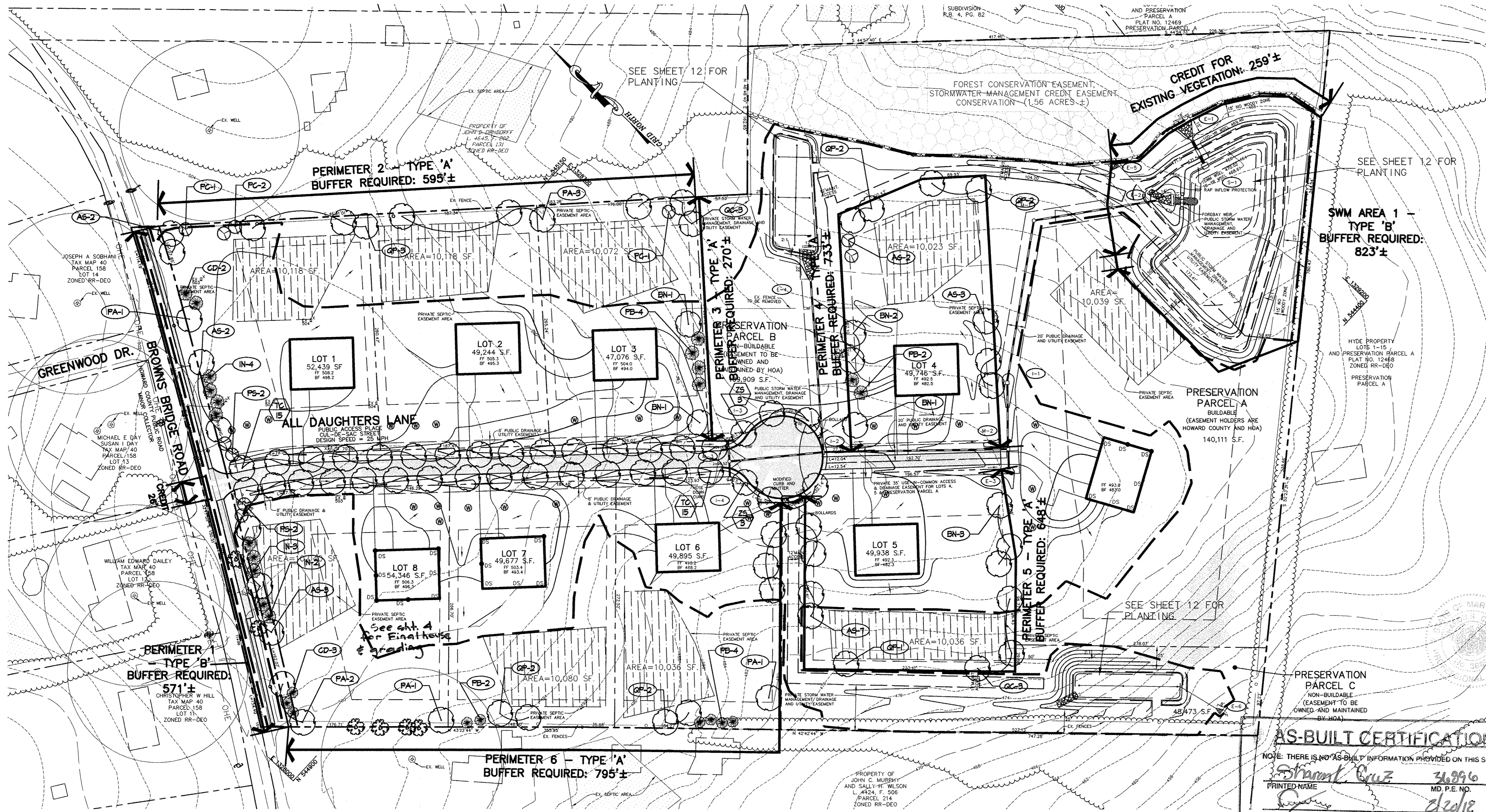
TITLE
SWM AND SEDIMENT BASIN FACILITY DETAILS

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

10/22/07
DATE

CHECKED BY : DWC
DESIGNED BY : NS
DRAWN BY : EMR/JMK
PROJECT NO: 13043/1-0/ENGR/PLANS
/FINAL/0900DETS.DWG
DATE : NOVEMBER 6, 2007
SCALE : AS SHOWN
DRAWING NO. 10 OF 21

Patton Harris Rust & Associates
DOMENICK W. COLANGELO #27200



LEGEND

EXISTING TREELINE		PROPOSED PERENNIALS	
PROPERTY LINE			
EXISTING CONTOURS			
PROPOSED CONTOURS			
SOIL CLASSIFICATION AND BOUNDARY			
EXISTING BUILDING			
LIMIT OF DISTURBANCE LINE			
PROPOSED SHADE TREE			
PROPOSED EVERGREEN TREE			
PROPOSED ORNAMENTAL TREE			
PROPOSED SHRUBS			
STREET TREE LANDSCAPE REQUIREMENT			
PERIMETER LANDSCAPE REQUIREMENT			
SWM PERIMETER LANDSCAPE REQUIREMENT AND BIORETENTION PLANTINGS			
PERIMETER LANDSCAPE EDGE LIMITS			

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

Richard J. Bennett
 SIGNATURE DATE 10/24/07

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
W. J. Smith
 CHIEF, BUREAU OF HIGHWAYS DATE 11-20-07

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Christina Hunter
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE 11/20/07

John J. ...
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 11/27/07

DATE NO. REVISION
 OWNER CARLTON E HEYSER, JR.
 14526 NEW HAMPSHIRE AVENUE
 SILVER SPRING, MD 20904
 410-531-5539

DEVELOPER RUPPERT PROPERTIES
 ATTN: RICHARD DEMMITT
 HIGHLAND DEVELOPMENT CORP.
 P.O. BOX 228
 CLARKSVILLE, MARYLAND 21029
 410-365-0414

PROJECT **AS-BUILT ORCHARD ESTATES**
 LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C
 AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
 5TH ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE **FINAL LANDSCAPE PLAN, NOTES AND SCHEDULES**
Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

DATE 10-25-07
 CHECKED BY: DWC
 DESIGNED BY: NS
 DRAWN BY: BCL

PROJECT NO: 13043/1-0/ENGR/PLANS
 DATE: NOVEMBER 6, 2007
 SCALE: 1" = 60'
 DRAWING NO. 11 OF 21

DATE 10-25-07
 CHECKED BY: DWC
 DESIGNED BY: NS
 DRAWN BY: BCL
 PROJECT NO: 13043/1-0/ENGR/PLANS
 DATE: NOVEMBER 6, 2007
 SCALE: 1" = 60'
 DRAWING NO. 11 OF 21

SCHEDULE A - PERIMETER LANDSCAPE EDGE

PERIMETER	ADJACENT TO PERIMETER PROPERTIES					ADJACENT TO ROADWAYS
	2	3	4	5	6	
LANDSCAPE TYPE	A	A	A	A	A	B
LINEAR FEET OF ROADWAY FRONTAGE/ PERIMETER	595±	270±	733±	648±	795±	571±
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	-
CREDIT FOR WALL, FENCE, BERM OR DRIVE AISLE (YES/NO/LINEAR FEET)	NO	NO	NO	NO	NO	YES 26'
LINEAR FEET REMAINING	595±	270±	733±	648±	795±	545±
NUMBER OF PLANTS REQUIRED						
SHADE TREES	10	5	12	11	13	11
EVERGREEN TREES	0	0	0	0	0	14
SHRUBS	0	0	0	0	0	0
NUMBER OF PLANTS PROVIDED						
SHADE TREES	8	3	10	11	10	9
EVERGREEN TREES	0	0	2	0	6	14
ORNAMENTAL TREES	4	0	2	0	0	4

PERIMETER PLANT SCHEDULE

SYMBOL	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS
SHADE TREES					
AS	17	ACER SACCHARUM 'GREEN MOUNTAIN'	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN
QP	12	QUERCUS PHellos	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN
BN	8	BETULA NIGRA 'HERITAGE'	10'-12' HT.	B & B	MULTI-STEM
QC	6	QUERCUS COCCINEA	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN
PA	8	PLATANUS x ACERIFOLIA 'BLOODGOOD'	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN
ORNAMENTAL TREES					
PC	4	PRUNUS CERASIFERA A TROPICPUREA 'HUNDERLOU'	1 1/2"-2" CAL.	B & B	PLANT AS SHOWN
PS	4	PRUNUS SERRULATA 'KIMANZAN'	1 1/2"-2" CAL.	B & B	PLANT AS SHOWN
AG	2	ACER GRISIMUM	1 1/2"-2" CAL.	B & B	PLANT AS SHOWN
EVERGREEN TREES					
IN	9	ILEX 'NELLIE R. STEVENS'	5'-6" HT.	B & B	PLANT AS SHOWN
CD	5	CEDRUS DEODARA	6'-8" HT.	B & B	PLANT AS SHOWN
PB	12	PICEA ABIES	6'-8" HT.	B & B	PLANT AS SHOWN

STREET TREE PLANT SCHEDULE

SYMBOL	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS
SHADE TREES					
TC	30	TILIA CORDATA 'GREENSPICE'	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN
ZS	6	ZELKOVA SERRATA 'WILLOW GREEN'	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN

GENERAL NOTES:

- 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 MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$26,550.
 74 SHADE TREES @ \$300 = \$22,200
 0 ORNAMENTAL TREES @ \$150 = \$0
 29 EVERGREEN TREES @ \$150 = \$4,350
 0 SHRUBS @ \$30 = \$0
- THIS PLAN IS FOR LANDSCAPING PURPOSES ONLY.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- ALL MATERIAL SELECTED SHALL BE EQUAL TO OR BETTER THAN THE REQUIREMENTS OF THE "USA STANDARD FOR NURSERY STOCK", LATEST EDITION, AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
- ALL MATERIAL SHALL BE PLANTED IN ACCORDANCE WITH THE MINIMUM STANDARDS CITED IN THE LATEST EDITION OF "LANDSCAPE SPECIFICATION GUIDELINES" PUBLISHED BY THE LANDSCAPE CONTRACTORS ASSOCIATION.
- AT THE TIME OF INSTALLATION, ALL SHRUBS AND OTHER PLANTINGS SHALL BE OF THE PROPER HEIGHT AND/OR SPREAD REQUIREMENTS IN ACCORDANCE WITH THIS PLAN AND THE HOWARD COUNTY LANDSCAPE MANUAL.
- NO SUBSTITUTIONS OR RELOCATION OF PLANTS MAY BE MADE WITHOUT PRIOR APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING OF HOWARD COUNTY. ANY DEVIATION FROM THIS LANDSCAPE PLAN MAY RESULT IN A REQUIREMENT FOR SUBMITTAL OF AN OFFICIAL "REDLINE REVISION" TO THE SITE DEVELOPMENT PLAN(S) AND/OR DENIAL IN THE RELEASE OF LANDSCAPE SURETY.
- SEE SHEET 11, FINAL LANDSCAPE NOTES, DETAILS AND TABULATIONS FOR ENLARGED PLANS WITH STORMWATER MANAGEMENT PERIMETER PLANTINGS, BIORETENTION FACILITIES PLANTINGS, AND THEIR ASSOCIATED SCHEDULES.

STREET TREE CALCULATIONS

ROAD A	1423'40	36 LARGE TREES
TOTAL TREES REQUIRED		36 LARGE TREES

FINAL AS-BUILT PLANS PREPARED BY PENNONI ASSOCIATES, FORMERLY PHRA

AS-BUILT DATE OF SURVEY: 11.08.17

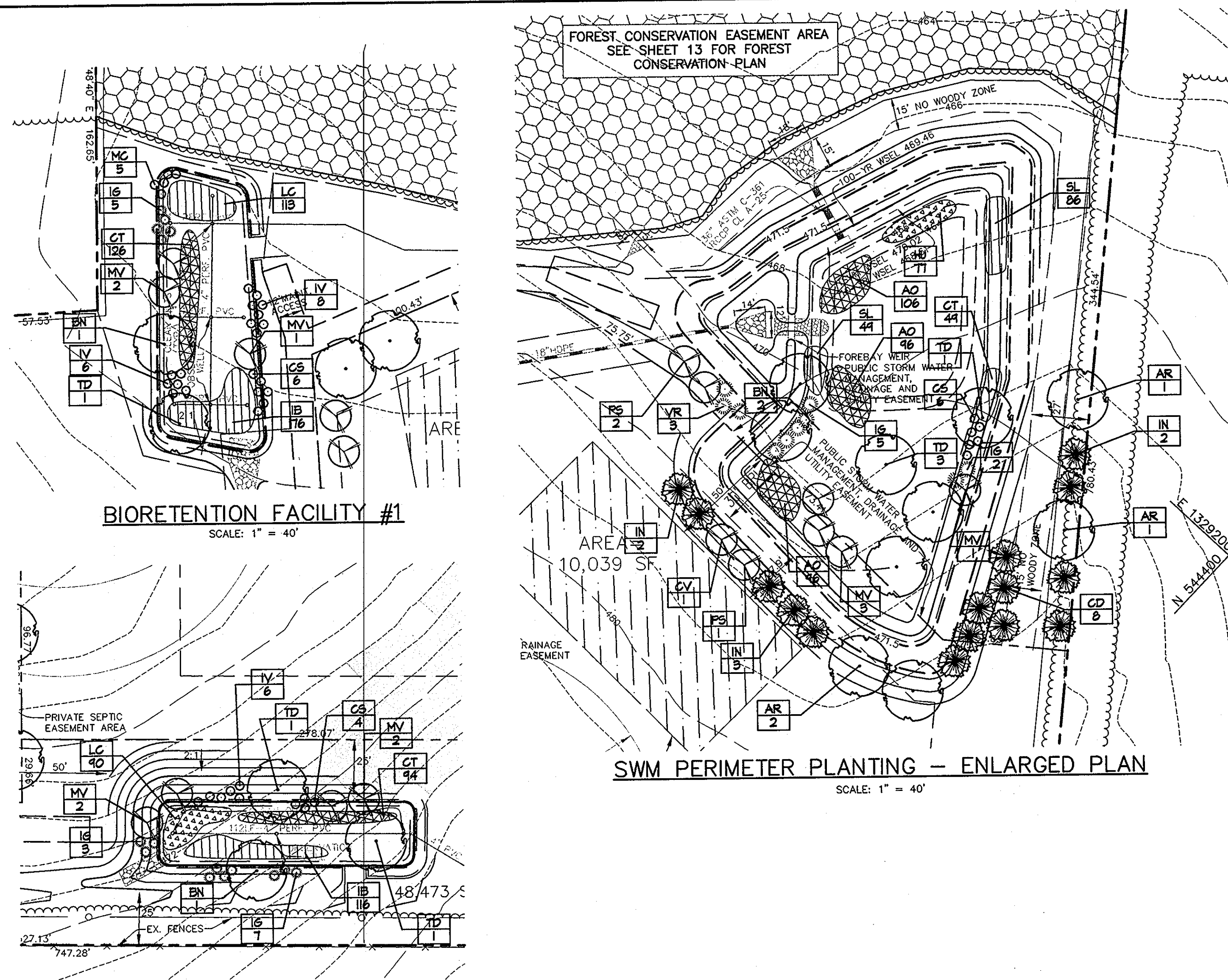
PETER J. STONE # 3068
 F-07-005

SCHEDULE 'A' NOTES:
 * REGULATIONS DO NOT REQUIRE LANDSCAPE EDGES, BUFFERING, OR SCREENING BETWEEN INTERNAL LOTS OR PARCELS WITHIN THE SAME DEVELOPMENT. (PAGE 17 OF THE HOWARD COUNTY LANDSCAPE MANUAL)

SUBSTITUTION NOTES:
 1. FOR PERIMETER 1, FOUR (4) ORNAMENTAL TREES WERE SUBSTITUTED FOR TWO (2) SHADE TREES.
 2. FOR PERIMETER 2, FOUR (4) ORNAMENTAL TREES WERE SUBSTITUTED FOR TWO (2) SHADE TREES.
 3. FOR PERIMETER 3, FOUR (4) EVERGREEN TREES WERE SUBSTITUTED FOR TWO (2) SHADE TREES.
 4. FOR PERIMETER 4, TWO (2) ORNAMENTAL TREES AND TWO (2) EVERGREEN TREES WERE SUBSTITUTED FOR TWO (2) SHADE TREES.
 5. FOR PERIMETER 6, SIX (6) EVERGREEN TREES WERE SUBSTITUTED FOR THREE (3) SHADE TREES.

PLANTING SPECIFICATIONS

- PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION, AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN. WHERE DISCREPANCIES EXIST BETWEEN STANDARDS & GUIDELINES REFERENCED WITHIN THESE SPECIFICATIONS AND THE HOWARD COUNTY LANDSCAPE MANUAL, THE LATTER TAKES PRECEDENCE.
- ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, THAT IS NOT NURSERY GROWN, UNIFORMLY BRANCHED, DOES NOT HAVE A VIGOROUS ROOT SYSTEM, AND DOES NOT CONFORM TO THE MOST RECENT EDITION OF THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN) STANDARDS WILL BE REJECTED. PLANT MATERIAL THAT IS NOT HEALTHY, VIGOROUS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUNSCALD INJURIES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PEST EGGS, BORERS AND ALL FORMS OF INSECT INFESTATIONS OR OBJECTIONABLE DISFIGUREMENTS WILL BE REJECTED. PLANT MATERIAL THAT IS WEAK OR WHICH HAS BEEN CUT BACK FROM LARGER GRADES TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED. TREES WITH FORKED LEADERS WILL BE REJECTED. ALL B & B PLANTS SHALL BE FRESHLY DUG, NO HEALED-IN PLANTS OR PLANTS FROM COLD STORAGE WILL BE ACCEPTED.
- UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATIONS SHALL CONFORM TO THE MOST RECENT EDITION OF THE "LANDSCAPE SPECIFICATION GUIDELINES BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF MD, DC, & VA", (HEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECTS.
- CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION ON THE LANDSCAPE GUIDELINES. CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING WATERING AND REPLACEMENT OF SPECIFIED PLANT MATERIAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL RELEVANT AND APPROPRIATE UTILITY COMPANIES, UTILITY CONTRACTORS, AND "MISS UTILITY" A MINIMUM OF 48 HOURS PRIOR TO THE BEGINNING OF ANY WORK. CONTRACTOR MAY MAKE MINOR ADJUSTMENTS IN SPACING AND LOCATION OF PLANT MATERIAL TO AVOID CONFLICTS WITH UTILITIES. MAJOR CHANGES WILL REQUIRE THE APPROVAL OF THE LANDSCAPE ARCHITECT. DAMAGE TO EXISTING STRUCTURE AND UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
- PROTECTION OF EXISTING VEGETATION TO REMAIN SHALL BE ACCOMPLISHED VIA THE TEMPORARY INSTALLATION OF 4 FOOT HIGH SNOW FENCE AT THE DRIP LINE, SEE DETAIL.
- CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL MATERIAL IN THE PROPER PLANTING SEASON FOR EACH PLANT TYPE. ALL PLANTING IS TO BE COMPLETED WITHIN GROWING SEASON OF COMPLETION OF SITE CONSTRUCTION. DO NOT PLANT PINUS STROBUS OR XOPRESSACYPARIS LEYLANDII BETWEEN NOVEMBER 15 AND MARCH 15. LANDSCAPE PLANTS ARE NOT TO BE INSTALLED BEFORE SITE IS GRADED TO FINAL GRADE.
- CONTRACTOR TO REGRADE, FINE GRADE, SOD, HYDROSEED AND STRAW MULCH ALL AREAS DISTURBED BY THEIR WORK.
- BID SHALL BE BASED ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM ACTUAL SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS.
- PLANT QUANTITIES ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN TAKE PRECEDENCE. WHERE DISCREPANCIES ON THE PLAN EXIST BETWEEN THE SYMBOLS AND THE CALLOUT LEADER, THE NUMBER OF SYMBOLS TAKE PRECEDENCE.
- ALL SHRUBS AND GROUND COVER AREAS SHALL BE PLANTED IN CONTINUOUS PLANTING BEDS, PREPARED AS SPECIFIED, UNLESS OTHERWISE INDICATED ON PLANS. (SEE SPECIFICATION 13). BEDS TO BE MULCHED WITH MINIMUM 2" AND MAXIMUM 3" OF COMPOSTED, DOUBLE-SHREDDED HARDWOOD MULCH THROUGHOUT.
- POSITIVE DRAINAGE SHALL BE MAINTAINED ON PLANTING BEDS (MINIMUM 2 PERCENT SLOPE).
- BED PREPARATION SHALL BE AS FOLLOWS: TILL INTO A MINIMUM DEPTH OF 6" 1 YARD OF COMPRO OR LEAFGRO PER 200 SF OF PLANTING BED, AND 1 YARD OF TOPSOIL PER 100 SF OF BED. ADD 3 LBS OF STANDARD 5-10-5 FERTILIZER PER CUBIC YARD OF PLANTING MIX AND TILL. ERICACEOUS PLANTS (AZALEAS, RHODODENDRONS, ETC.): TOP DRESS AFTER PLANTING WITH IRON SULFATE OR COMPARABLE PRODUCT ACCORDING TO PACKAGE DIRECTIONS. TAXUS BACCATA 'REPANDENS' (ENGLISH WEEPING YEW): TOP DRESS AFTER PLANTING WITH 1/4 TO 1/2 CUP LIME EACH.
- PLANTING MIX: FOR TREES NOT IN A PREPARED BED, MIX 50% COMPRO OR LEAFGRO WITH 50% SOIL FROM TREE HOLE TO USE AS BACKFILL. SEE TREE PLANTING DETAIL.
- WEED & INSECT CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. FOR TREE PLANTING, APPLY A PRE-EMERGENT ON TOP OF SOIL AND ROOT BALL BEFORE MULCHING. CAUTION: FOR AREAS TO BE PLANTED WITH A GROUND COVER, BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUND COVER TO BE TREATED. MAINTAIN THE MULCH WEED-FREE FOR THE EXTENT OF THE WARRANTY PERIOD. UNDER NO CIRCUMSTANCES IS A PESTICIDE CONTAINING CHLOROPYRIFOS TO BE USED AS A MEANS OF PEST CONTROL.
- WATER: ALL PLANT MATERIAL PLANTED SHALL BE WATERED THOROUGHLY THE DAY OF PLANTING. ALL PLANT MATERIAL NOT YET PLANTED SHALL BE PROPERLY PROTECTED FROM DRYING OUT UNTIL PLANTED. AT A MINIMUM, WATER UNPLANTED PLANT MATERIAL DAILY AND AS NECESSARY TO AVOID DESSICATION.
- PRUNING: DO NOT HEAVILY PRUNE TREES AND SHRUBS AT PLANTING. PRUNE ONLY BROKEN, DEAD, OR DISEASED BRANCHES.
- ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL BE FINE GRADED, GRASS SEED PLANTED, AND COVERED WITH STRAW MULCH.



BIORETENTION FACILITY #1 PLANT SCHEDULE

SYMBOL	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS	ZONE*
SHADE TREES						
BN	1	BETULA NIGRA 'HERITAGE'	10'-12' HT.	B & B	MULTI-STEM	(2,3),4
TD	1	TAXODIUM DISTICHUM BALD CYPRESS	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN	(1,2) 3
ORNAMENTAL TREES						
MV	3	MAGNOLIA VIRGINIANA SWEETBAY MAGNOLIA	1 1/2"-2" CAL.	B & B	PLANT AS SHOWN	**
SHRUBS						
CS	6	CORNUS SERICEA RED TWIG DOGWOOD	18"-24" HT.	CONT.	PLANT AS SHOWN	**
IG	5	ILEX GLABRA INKBERRY	18"-24" HT.	CONT.	PLANT AS SHOWN	(2,3), 4
IV	14	ILEX VERTICILLATA 'RED SPRITE' AND 'JIM DANDY' RED SPRITE AND 'JIM DANDY' WINTERBERRY	18"-24" HT.	CONT.	SEE NOTE 1	(1,2,3)
MC	5	MYRICA CERIFERA SOUTHERN BAYBERRY	18"-24" HT.	CONT.	PLANT AS SHOWN	(2,3,4),5
PERENNIALS						
CT	126	CAREX TYPHINA CAT-TAIL SEDGE	1 GAL.	CONT.	24" O.C.	(2,3),4
IB	176	IRIS VERSICOLOR 'BLUE FLAG' BLUE FLAG IRIS	1 GAL.	CONT.	24" O.C.	(1,2),3
LC	113	LOBELIA CARDINALIS CARDINAL FLOWER	1 GAL.	CONT.	24" O.C.	(1,2),3,4

BIORETENTION FACILITY #2 PLANT SCHEDULE

SYMBOL	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS	ZONE*
SHADE TREES						
BN	1	BETULA NIGRA 'HERITAGE'	10'-12' HT.	B & B	MULTI-STEM	(2,3),4
TD	2	TAXODIUM DISTICHUM BALD CYPRESS	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN	(1,2) 3
ORNAMENTAL TREES						
MV	4	MAGNOLIA VIRGINIANA SWEETBAY MAGNOLIA	1 1/2"-2" CAL.	B & B	PLANT AS SHOWN	**
SHRUBS						
CS	4	CORNUS SERICEA RED TWIG DOGWOOD	18"-24" HT.	CONT.	PLANT AS SHOWN	**
IG	10	ILEX GLABRA INKBERRY	18"-24" HT.	CONT.	PLANT AS SHOWN	(2,3), 4
IV	6	ILEX VERTICILLATA 'RED SPRITE' AND 'JIM DANDY' RED SPRITE AND 'JIM DANDY' WINTERBERRY	18"-24" HT.	CONT.	SEE NOTE 1	(1,2,3)
PERENNIALS						
CT	94	CAREX TYPHINA CAT-TAIL SEDGE	1 GAL.	CONT.	24" O.C.	(2,3),4
IB	116	IRIS VERSICOLOR 'BLUE FLAG' BLUE FLAG IRIS	1 GAL.	CONT.	24" O.C.	(1,2),3
LC	190	LOBELIA CARDINALIS CARDINAL FLOWER	1 GAL.	CONT.	24" O.C.	(1,2),3,4

PLANT LIST NOTES:
 * HYDROLOGIC ZONES ACCORDING TO APPENDIX A OF THE MARYLAND MODEL STORMWATER MANAGEMENT ORDINANCE JULY 2000.
 ** KNOWN TO TOLERATE INUNDATION AS WELL AS DRY AREAS ACCORDING TO DIRR, MICHAEL A., MANUAL OF WOODY LANDSCAPE PLANTS.
 NOTES:
 1. PLANT ONE 'JIM DANDY' WINTERBERRY PER EVERY 5 'RED SPRITE' WINTERBERRIES.

SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING

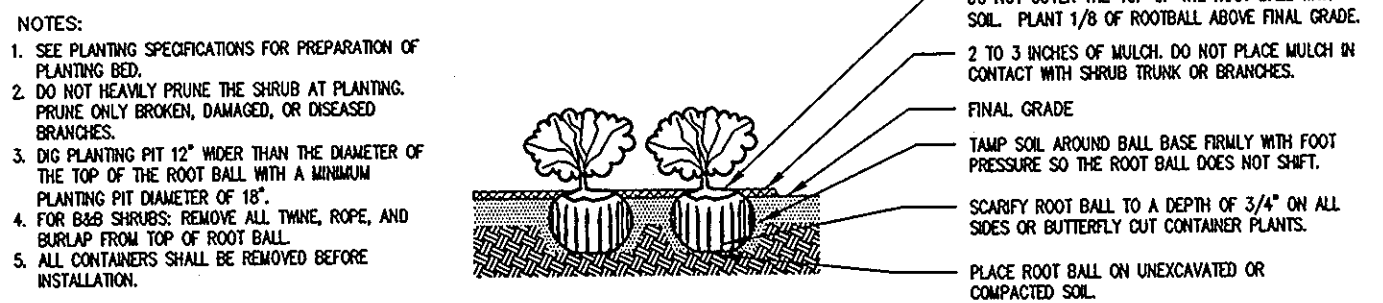
S.W.M. POND PERIMETER	1
LANDSCAPE TYPE	B
LINEAR FEET OF TOTAL PERIMETER	878±
CREDIT FOR EX. VEGETATION (NO OR YES & %)	YES, 259'
CREDIT FOR OTHER PROP. LANDSCAPING (NO OR YES & %)	NO
LINEAR FEET OF REMAINING PERIMETER	619±
NUMBER OF TREES REQUIRED:	
SHADE TREES	12
EVERGREEN TREES	15
NUMBER OF TREES PROVIDED:	
SHADE TREES	9
EVERGREEN TREES	15
ORNAMENTAL TREES	4
SHRUBS	10

SUBSTITUTION NOTES:
 1. FOUR (4) ORNAMENTAL TREES WERE SUBSTITUTED FOR TWO (2) SHADE TREES.
 2. TEN (10) SHRUBS WERE SUBSTITUTED FOR ONE (1) SHADE TREE.

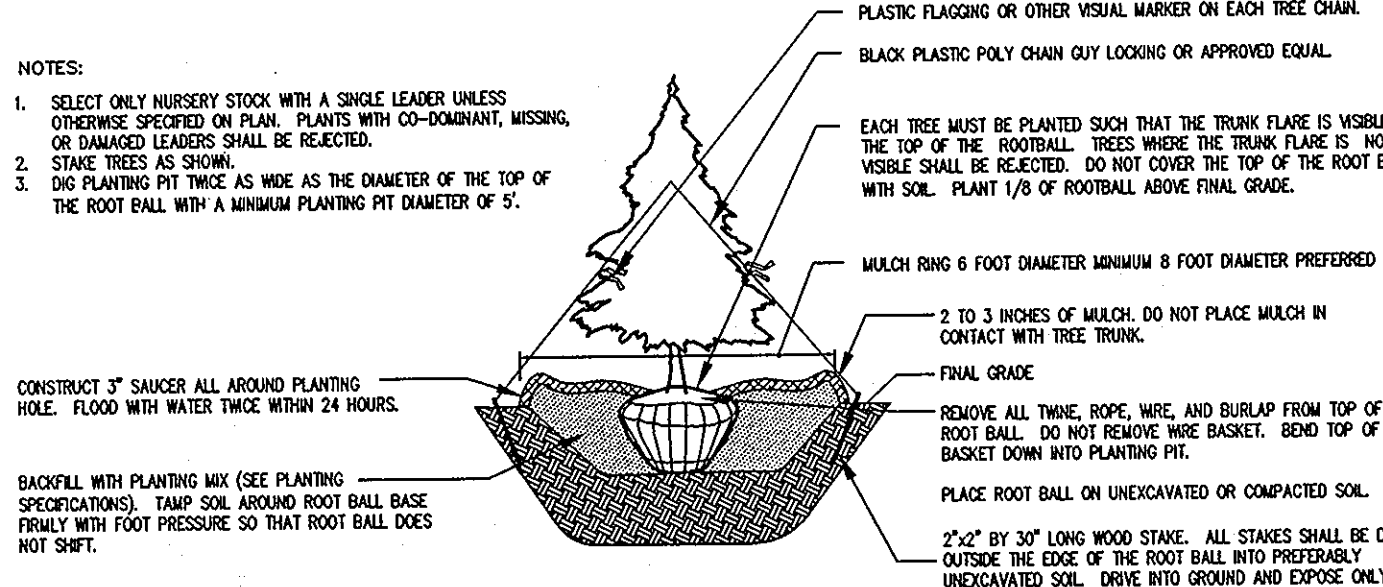
STORMWATER MANAGEMENT PERIMETER PLANT SCHEDULE

SYMBOL	QTY.	SCIENTIFIC/COMMON NAME	SIZE	ROOT	REMARKS	ZONE*
SHADE TREES						
AR	4	ACER RUBRUM 'OCTOBER GLORY' OCTOBER GLORY RED MAPLE	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN	
BN	2	BETULA NIGRA 'HERITAGE' HERITAGE RIVER BIRCH	10'-12' HT.	B & B	MULTI-STEM	(2,3),4
TD	4	TAXODIUM DISTICHUM BALD CYPRESS	2 1/2"-3" CAL.	B & B	PLANT AS SHOWN	(1,2) 3
ORNAMENTAL TREES						
PS	3	PRUNUS SERULLATA 'KWANZAN' KWANZAN CHERRY	1 1/2"-2" CAL.	B & B	PLANT AS SHOWN	
CV	1	CRATAEGUS VIRGOS 'WINTER KING' WINTER KING HAWTHORNE	1 1/2"-2" CAL.	B & B	PLANT AS SHOWN	
MV	3	MAGNOLIA VIRGINIANA SWEETBAY MAGNOLIA	1 1/2"-2" CAL.	B & B	PLANT AS SHOWN	**
EVERGREEN TREES						
CD	8	CEDRUS DEODARA DEODAR CEDAR	6'-8" HT.	B & B	PLANT AS SHOWN	
IN	7	ILEX 'NELLIE R. STEVENS' NELLIE STEVENS HOLLY	6'-8" HT.	B & B	PLANT AS SHOWN	
SHRUBS						
CS	6	CORNUS SERICEA RED TWIG DOGWOOD	18"-24" HT.	CONT.	PLANT AS SHOWN	**
IG	7	ILEX GLABRA INKBERRY	18"-24" HT.	CONT.	PLANT AS SHOWN	(2,3), 4
VR	3	VIORUM RHYTHOPHYLLUM LEATHERLEAF VIBURNUM	2 1/2"-3" HT.	B & B	PLANT AS SHOWN	
PERENNIALS						
AO	298	ALTHAEA OFFICINALIS COMMON MARIOSH-MALLOW	1 GAL.	CONT.	24" O.C.	(1,2),3
CT	49	CAREX TYPHINA CAT-TAIL SEDGE	1 GAL.	CONT.	24" O.C.	(2,3),4
HU	77	HYDROCHOTYLE UMBELLATA PEONYWEET	1 GAL.	CONT.	24" O.C.	(1,2),3
SL	135	SAGITTARIA LATIFOLIA ARROWHEAD	1 GAL.	CONT.	24" O.C.	(4,5),6

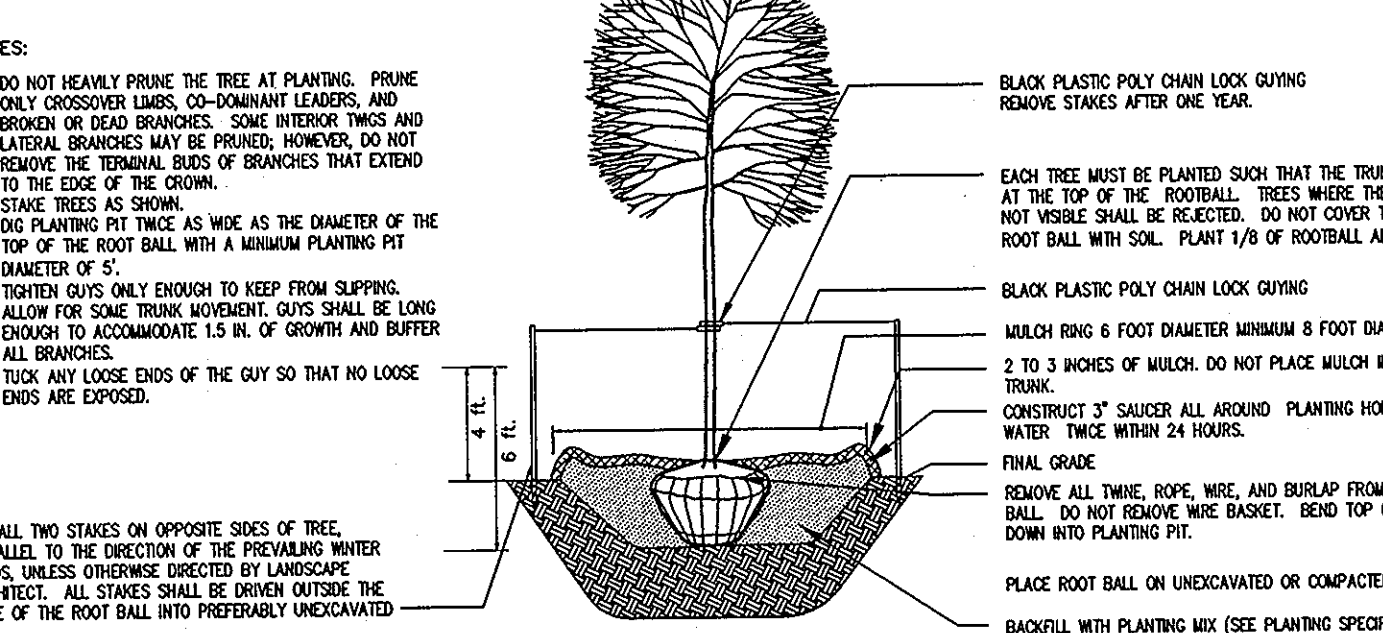
PLANT LIST NOTES:
 * HYDROLOGIC ZONES ACCORDING TO APPENDIX A OF THE MARYLAND MODEL STORMWATER MANAGEMENT ORDINANCE JULY 2000.
 ** KNOWN TO TOLERATE INUNDATION AS WELL AS DRY AREAS ACCORDING TO DIRR, MICHAEL A., MANUAL OF WOODY LANDSCAPE PLANTS.



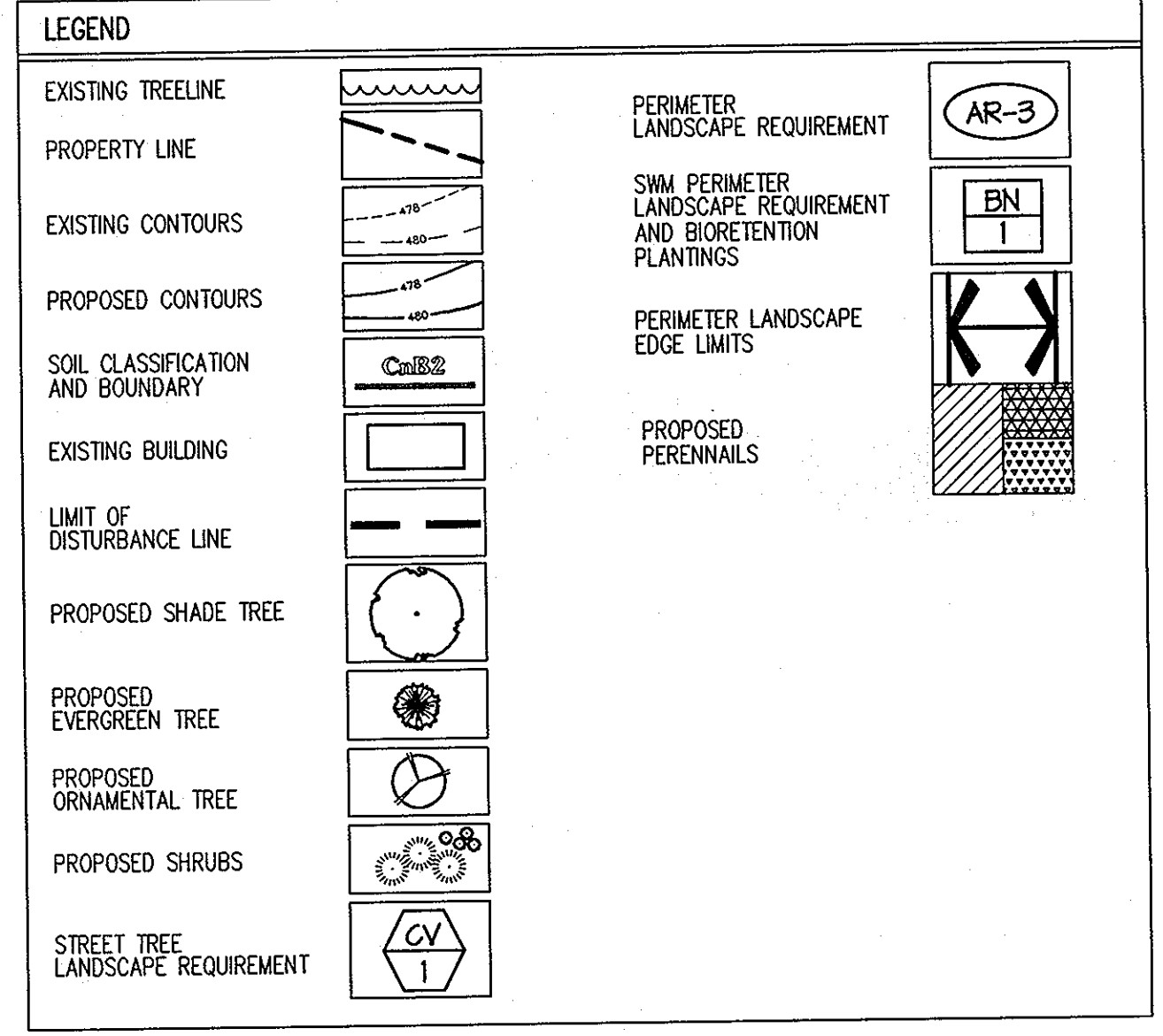
SHRUB BED PLANTING DETAIL - B&B AND CONTAINER SHRUBS
 NOT TO SCALE



EVERGREEN B&B TREE PLANTING DETAIL
 NOT TO SCALE



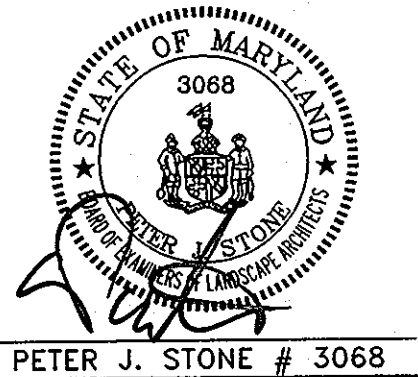
DECIDUOUS B&B TREE PLANTING DETAIL (TREES 3" CAL. OR SMALLER)
 NOT TO SCALE

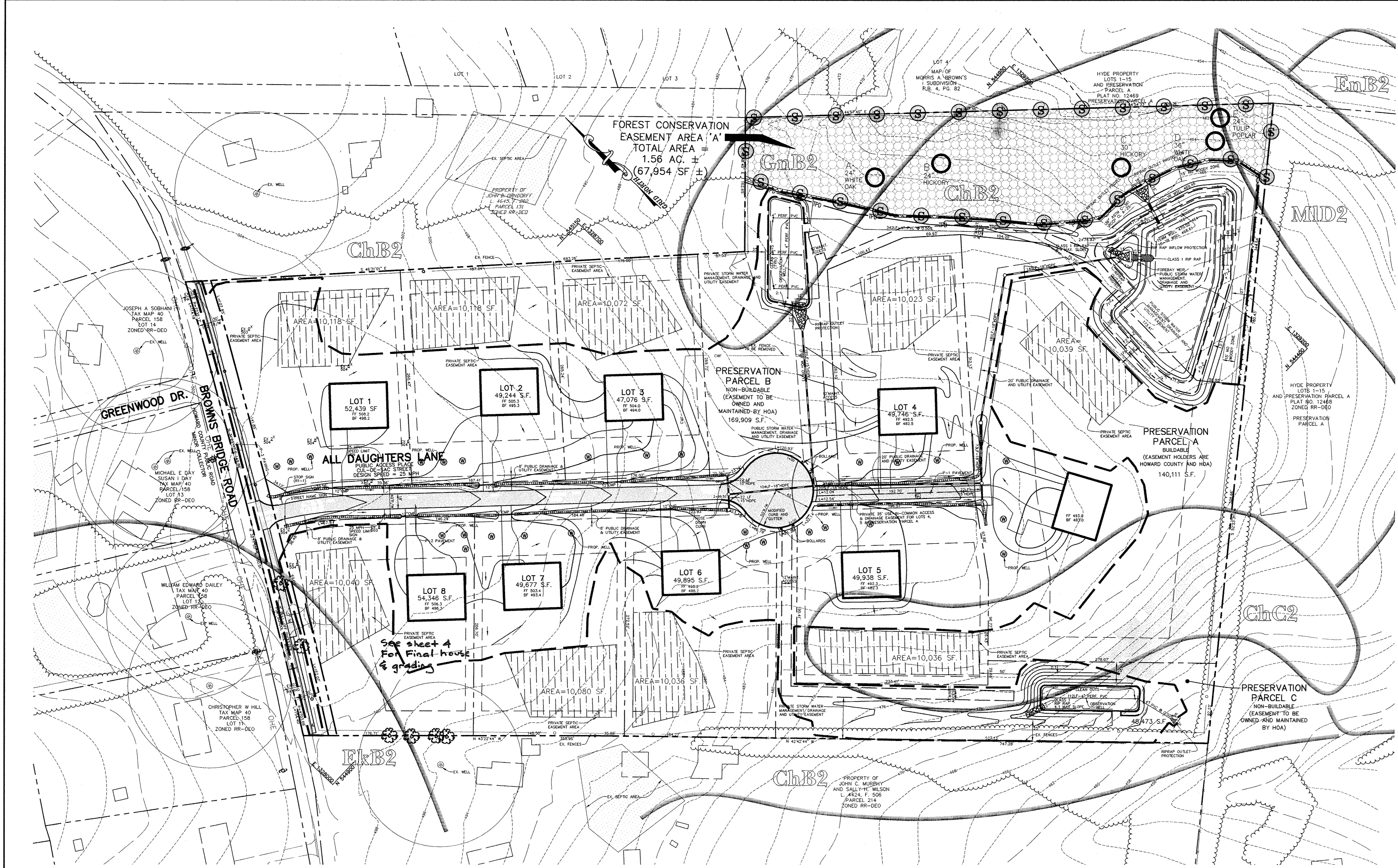


APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 [Signature] 11-20-07
 CHIEF, BUREAU OF HIGHWAYS
 APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
 [Signature] 11/20/07
 CHIEF, DIVISION OF LAND DEVELOPMENT
 [Signature] 11/27/07
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE NO.	REVISION
OWNER	CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539
DEVELOPER	RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414
PROJECT	ORCHARD ESTATES LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: **FINAL SWM PLANTING, LANDSCAPE NOTES, DETAILS AND SCHEDULES**
 Patton Harris Rust & Associates, pc
 Engineers. Surveyors. Planners. Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282
 10-25-07
 DATE
 CHECKED BY: DWC
 DESIGNED BY: NS
 DRAWN BY: BCL
 PROJECT NO: 13045/1-0/ENGR/PLANS
 /FINAL/ L201LND.DWG
 DATE: NOVEMBER 6, 2007
 SCALE: AS SHOWN
 DRAWING NO. 12 OF 21
 PETER J. STONE # 3068





LEGEND	
EXISTING TREELINE	
PROPERTY LINE	
EXISTING CONTOURS	
PROPOSED CONTOURS	
SOIL CLASSIFICATION AND BOUNDARY	
EXISTING BUILDING	
PROPOSED BUILDING	
LIMIT OF DISTURBANCE LINE	
FOREST CONSERVATION AREA	
FOREST CONSERVATION SIGNAGE	
TREE PROTECTION DEVICE (BLAZE ORANGE PLASTIC MESH FENCING)	
SPECIMEN TREE	
SLOPES 15-25%	

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Walter F. Smith 11-20-07
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Cynthia Hester 11/20/07
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Chris P. ... 11/27/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO.	REVISION
OWNER CARLTON E HEYSER, JR. 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539	
DEVELOPER RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414	
PROJECT AS-BUILT ORCHARD ESTATES LOTS 1-8, PRESERVATION PARCELS A & NON-BUILDABLE PRESERVATION PARCELS B & C	
AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE FINAL FOREST CONSERVATION PLAN	

AS-BUILT CERTIFICATION
NOTE: THERE IS NO "AS-BUILT" INFORMATION PROVIDED ON THIS SHEET.
Sharon K. Cruz 30996
PRINTED NAME MD. P.E. NO.
DATE 2/20/08



FINAL AS-BUILT PLANS
PREPARED BY PENNONI
ASSOCIATES, FORMERLY
PHRA

10-25-07 DATE	CHECKED BY: DWC
	DESIGNED BY: NS
	DRAWN BY: BCL
PROJECT NO. 13043/1-0/ENGR/PLANS /FINAL/ C200FCP.DWG	
DATE: NOVEMBER 6, 2007	
SCALE: 1" = 60'	
DRAWING NO. 13 OF 21	

AS-BUILT DATE OF SURVEY: 11.08.17

SEQUENCE OF OPERATIONS

PRE-CONSTRUCTION SITE PREPARATION

- FIELD STAKE LIMITS OF DISTURBANCE (L.O.D.) AT 25' INTERVALS.
- REVIEW L.O.D. IN FIELD AND ADJUST IF PRACTICAL.
- INSTALL TREE PROTECTION FENCE AT THE L.O.D. AND IMPLEMENT TREE PROTECTION METHODS AS SHOWN.
- CLEAR AND GRUB AS NECESSARY TO FACILITATE ROOT PRUNING TO A DEPTH OF 2-3 FEET WITHIN THE LIMITS OF THE PROPOSED REFORESTATION AREA. CLEAR REMAINING TREES IN A WAY THAT "SAVE TREES" ARE NOT DISTURBED. GRIND STUMPS 12" IN DIAMETER AND LARGER THAT ARE WITHIN 25' OF THE L.O.D.
- DO NOT ATTEMPT TO SAVE TREES WITHIN 25' FROM THE L.O.D. UNLESS, IN THE OPINION OF THE CONSULTING ARBORIST, THEY HAVE A 75% CHANCE OR BETTER OF SURVIVAL.
- PRUNE AND FERTILIZE DESIRABLE 'EDGE TREES' AS PER CONSULTING ARBORIST'S RECOMMENDATIONS.
- THERE SHALL BE NO STAGING, STORAGE, OR STOCKPILING OF MATERIALS WITHIN THE NONTIDAL WETLANDS OR 25' NONTIDAL WETLANDS BUFFER.
- REMOVE OR TREAT WITH AN ACCEPTABLE METHOD, NOXIOUS PLANT MATERIAL SUCH AS MULTIFLORA ROSE, TEARHUMB, AND JOHNSON GRASS BEFORE INSTALLING REFORESTATION PLANTS.
- INSTALL TREE PROTECTION SIGNAGE.
- STABILIZE ANY DISTURBED AREAS USING THE SPECIFIED STABILIZATION MIXTURE WHICH ALLOWS FOR NATURAL REVEGETATION OF FOREST COMMUNITIES.

FOREST CONSERVATION SEQUENCE OF OPERATIONS

- PRIOR TO BEGINNING ANY GRADING OPERATIONS ON THIS SITE OR ON A RESPECTIVE LOT, THERE SHALL BE A PRECONSTRUCTION MEETING HELD AT THE SITE WHICH IS TO INCLUDE THE CONTRACTOR AND REPRESENTATIVES FROM PATTON HARRIS RUST & ASSOCIATES, INC. (PHR+A). THE HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING (DPZ) AND THE OWNER WILL BE NOTIFIED BY THE CONTRACTOR AS TO THE TIME AND PLACE OF THE FIELD MEETING, SHOULD THEY WISH TO SEND A REPRESENTATIVE. THE PURPOSE OF THIS MEETING WILL BE TO REVIEW THE APPROVED FCP AND TO FIELD VERIFY THE CORRECT LIMITS OF DISTURBANCE (LOD).
- THE LIMITS OF DISTURBANCE (LOD) PERTINENT TO THE PRESERVATION OF WOODED AREAS SHALL BE STAKED IN THE FIELD WITH FINAL ADJUSTMENTS BEING MADE AS NECESSARY TO INSURE ADEQUATE PROTECTION OF THE CRITICAL ROOT ZONE OF TREES DESIGNATED FOR RETENTION. STAKES TO BE USED SHALL BE THOSE SPECIFIED FOR THE "TREE PROTECTION DEVICE" TO WHICH APPROVED PROTECTIVE MATERIAL WILL BE ATTACHED. ALTERNATE MEANS OF DEFINING THE LOD MAY BE USED IF APPROVED BY THE DPZ.
- ALL FOREST RETENTION AREAS SHALL BE PROTECTED BY HIGHLY VISIBLE, WELL ANCHORED TEMPORARY PROTECTION DEVICES (SEE DETAIL), WHICH SHALL BE SECURELY IN PLACE PRIOR TO ANY CLEARING OR GRADING OPERATIONS.
- GRADING OPERATIONS OR OTHER CONSTRUCTION OPERATIONS WHICH COULD DISLODGE OR OTHERWISE DAMAGE THE PROTECTIVE DEVICES SHALL BE AVOIDED ALONG THE EDGES OF THE LOD LINES IF POSSIBLE. ANY PROTECTIVE DEVICES WHICH ARE DAMAGED DURING SITE CONSTRUCTION OPERATIONS SHALL BE PROPERLY REPAIRED IMMEDIATELY BY THE CONTRACTOR.
- AFTER SITE GRADING, UTILITY ACCESS ROAD, AND DRIVEWAY CONSTRUCTION HAVE BEEN COMPLETED, ALL TREES ADJACENT TO THE LOD LINE SHALL BE INSPECTED FOR INDICATIONS OF CROWN DIE-BACK (SUMMER INDICATOR), DAMAGE WITHIN RESPECTIVE CRITICAL ROOT ZONES OR ANY DEAD WOOD OR OTHER CONDITIONS WHICH MIGHT BE HAZARDOUS TO PEDESTRIANS, BUILDINGS, UTILITY LINES VEHICULAR ACCESS WAYS OR PARKED VEHICLES.
- SHOULD THERE BE EVIDENCE OF ANY DAMAGE TO TREE TRUNKS, BRANCHES OR THE CRITICAL ROOT ZONE OF TREES WITHIN THE PROTECTED AREAS, OR TO ISOLATED SPECIMEN TREES TO BE PRESERVED, THE DAMAGE SHALL BE EXAMINED WITHIN A PERIOD OF TWO (2) DAYS FROM THE DATE OF OBSERVANCE BY A LICENSED TREE CARE PROFESSIONAL. EXPOSED ROOTS SHOULD BE COVERED IMMEDIATELY TO A DEPTH OF 6 - 8 INCHES WITH SOIL, PREFERABLY MIXED WITH 50% PEAT MOSS OR LEAF MOLD.
- REMOVE DAMAGED, DEAD OR DYING TREES OR LIMBS ONLY IF THE TREES OR LIMBS POSE AN IMMEDIATE SAFETY HAZARD TO BUILDINGS, UTILITY LINES, VEHICLES, OR ACCESS AND EGRESS DRIVES OR PEDESTRIAN AREAS. TREES DESIGNATED FOR PRUNING OR REMOVAL SHALL BE PRUNED OR REMOVED USING EQUIPMENT AND METHODS WHICH WILL NOT DAMAGE OR DESTROY ADJACENT LARGE TREES OR UNDERSTORY TREES OR SHRUBS DESIGNATED FOR RETENTION.
- ALL TEMPORARY FOREST PROTECTION DEVICES WILL BE CAREFULLY REMOVED AFTER ALL GENERAL CONSTRUCTION, NECESSARY TREE SURGERY, REMOVAL OF DEBRIS, ETC. REGRADING AND RESEEDING OF SEDIMENT AND EROSION CONTROL DISTURBANCE HAVE BEEN COMPLETED AND ACCEPTANCE AND APPROVAL OF THE WORK AND SITE CONDITIONS HAVE BEEN GIVEN BY THE DPZ.

FOREST CONSERVATION PROGRAM

- OBJECTIVE:**
IT IS THE OBJECTIVE OF THE FOREST CONSERVATION PLAN OF ORCHARD ESTATES TO RETAIN ENVIRONMENTAL INTEGRITY BY PRESERVING EXISTING WOODED AREAS.
- PRESERVATION:**
FOREST PRESERVATION AREAS SHALL BE PERMANENTLY PROTECTED BY FOREST CONSERVATION EASEMENTS.
- GENERAL CONSTRUCTION NOTE:**
THERE WILL BE NO STAGING OR STORING OF EQUIPMENT WITHIN THE LIMIT OF DISTURBANCE.
- POST CONSTRUCTION MANAGEMENT PRACTICE:**
A TWO-YEAR POSTED CONSTRUCTION AND MANAGEMENT PROGRAM TO ENSURE FOREST HEALTH IS REQUIRED AND INCLUDES THE FOLLOWING:
1-MAINTENANCE OF SIGNS, FENCES, AND TREE PROTECTION DEVICES TO
2-PREVENT UNWARRANTED INTRUSION AND DAMAGE.
3-CAREFUL REMOVAL OF ALL TEMPORARY STRUCTURES AFTER CONSTRUCTION.
4-ROUTINE INSPECTIONS OF FOREST CONSERVATION EASEMENTS.

Howard County Forest Conservation Worksheet

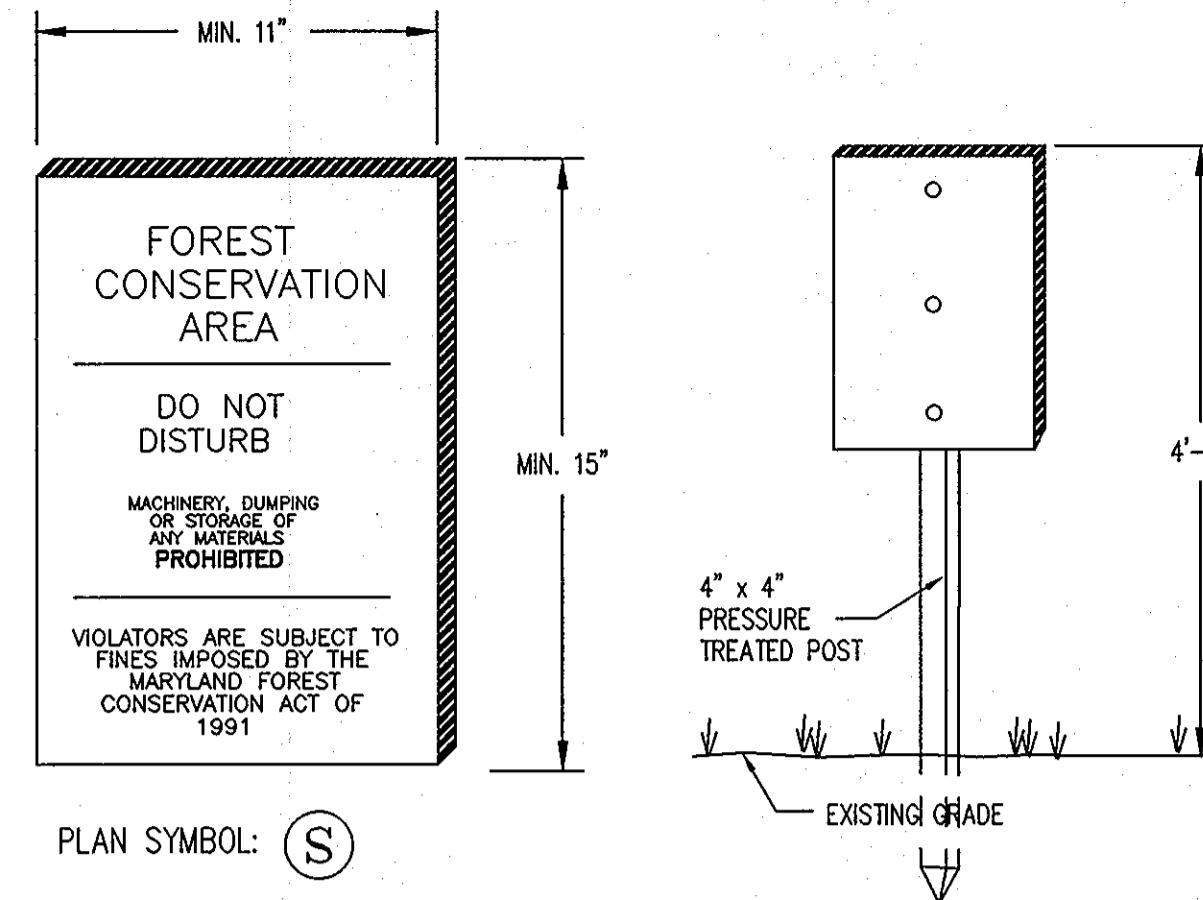
Project Name: Orchard Estates
County File #:
Date: October 29, 2004

Net Tract Area	Acres
A. Total Tract Area	A = 18.57
B. Other Deductions	B =
C. Net Tract Area (A-B-C)	C = 18.57
Land Use Category: Residential Rural Medium Density	
D. Afforestation Threshold (Net Tract Area X 20%)	D = 3.71
E. Conservation Threshold (Net Tract Area X 25%)	E = 4.64
Existing Forest Cover	
F. Existing Forest Cover within the Net Tract Area	F = 1.56
G. Area of Forest Above Conservation Threshold If the Existing Forest Cover (F) is greater than Conservation Threshold (E), then G = Existing Forest Cover (F) - Conservation Threshold (E); Otherwise G = 0	G = 0.00
Break Even Point	
H. Break Even (Amount of forest that must be retained so that no mitigation is required) (1) If the area of forest above the Conservation Threshold (G) is greater than zero, then H = (0.2 X the area of forest above Conservation Threshold (G)) + the Conservation Threshold (E) (2) If the area of forest above the Conservation Threshold (G) is equal to zero, then H = Existing Forest Cover (F)	H = 1.56
I. Forest Clearing Permitted Without Mitigation I = Existing Forest Cover (F) - Break Even Point (H)	I = 0.00
Proposed Forest Clearing	
J. Total Area of Forest to be Cleared	J = 0.00
K. Total Area of Forest to be Retained K = Existing Forest Cover (F) - forest to be cleared (J)	K = 1.56
Planting Requirements	
L. Reforestation for Clearing Above the Conservation Threshold (1) If the total area of forest to be retained (K) is greater than the Conservation Threshold (E), then L = the area of forest to be cleared (J) X 0.25; or (2) If the area of forest to be retained (K) is less than or equal to the Conservation Threshold (E), then L = area of forest above Conservation Threshold (G) X 0.25	L = 0.00
M. Reforestation for Clearing Below the Conservation Threshold (1) If Existing Forest Cover (F) is greater than Conservation Threshold (E) and the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then M = 2.0 X (the Conservation Threshold (E) - the forest to be retained (K)) (2) If Existing Forest Cover (F) is less than or equal to the Conservation Threshold (E), then M = 2.0 X Forest to be cleared (J).	M = 0.00
N. Credit for Retention Above the Conservation Threshold If the area of forest to be retained (K) is greater than the Conservation Threshold (E), then N = K - E	N = 0.00
P. Total Reforestation Required P = L + M - N	P = 0.00
Q. Total Afforestation Required (1) If Existing Forest Cover (F) is less than the Afforestation Threshold (D) then Q = the Afforestation Threshold (D) - the Existing Forest Cover (F)	Q = 2.15
R. Total Planting Requirement R = P + Q	R = 2.15

GENERAL NOTES:

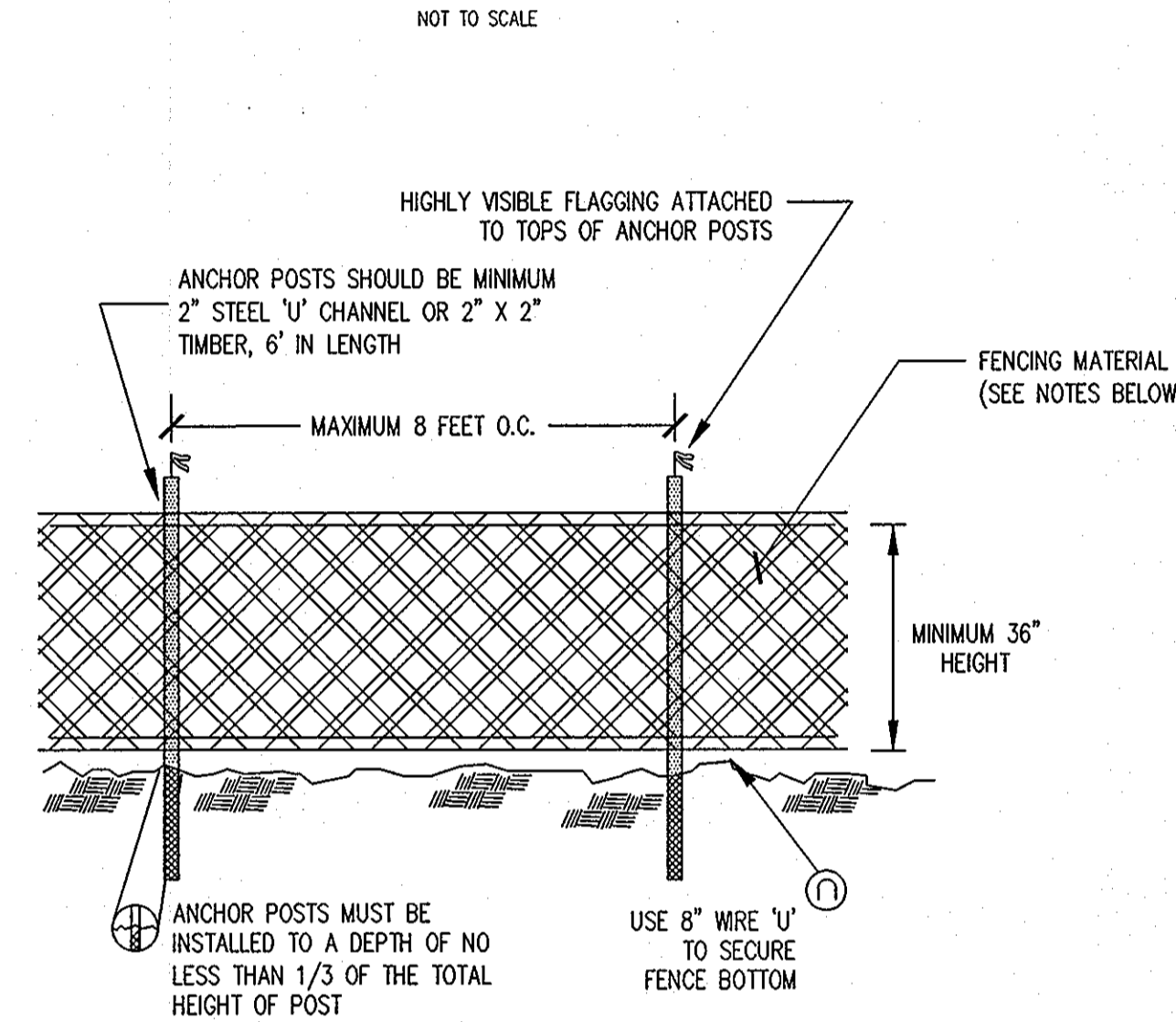
- THE MAJORITY OF THE PLAN HAS BEEN PREPARED USING PHR+A FIELD RUN TOPOGRAPHY. SPECIMEN TREE LOCATIONS WERE FIELD APPROXIMATED.
- NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
- NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
- THERE ARE NO KNOWN CEMETERIES OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY CEMETERIES INVENTORY.
- THERE ARE TWO EXISTING STRUCTURES ON THE SITE AS SHOWN. STRUCTURES ARE PROPOSED AS SHOWN.
- THIS SITE CONTAINS ONE SOIL WITH POSSIBLE HYDRIC INCLUSIONS, GLENVILLE SILT LOAM (GnB2).
- THE FSD, DATED JULY 7, 2004, HAS BEEN PREPARED BY PATTON HARRIS RUST & ASSOCIATES IN CONJUNCTION WITH THESE PLANS.
- THE HOWARD COUNTY FOREST CONSERVATION MANUAL SUPERCEDES ANY DISCREPANCIES BETWEEN THE MANUAL AND THESE PLANS.
- THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION.
- THE FOREST CONSERVATION OBLIGATION FOR THIS PLAN HAS BEEN SATISFIED BY THE CREATION OF A 1.56 ACRE (67,953.60 SF) ONSITE RETENTION EASEMENT. FOREST CONSERVATION SURETY IN THE AMOUNT OF \$13,590.72 (67,953.60 x \$0.20/SF) WILL BE POSTED.
- THE REMAINING OBLIGATION OF 2.15 ACRES (93,654 SF) WILL BE SATISFIED BY OFFSITE FOREST CONSERVATION EASEMENTS LOCATED ON THE RUSSELL HOLLAND PROPERTY AT TAX MAP 7, PARCEL 101 AND TAX MAP 8, PARCEL 4 (COUNTY FILE F-07-130). A 4.3 ACRE (187,308 SF) OFFSITE RETENTION EASEMENT SATISFIES THE REMAINING OBLIGATION OF 2.15 ACRES (93,654 SF). OFFSITE FOREST CONSERVATION SURETY IN THE AMOUNT OF \$37,461.60 (187,308 x \$0.20/SF) WILL BE POSTED.
- THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
- BEARINGS AND DISTANCES FOR FOREST CONSERVATION EASEMENTS ARE PROVIDED ON A SUBDIVISION PLAT.

FOREST CONSERVATION AREA	AREA (IN ACRES)
A	1.56 AC ±
TOTAL	1.56 AC ±



- NOTES:**
- SIGNAGE SHALL BE LOCATED ON FOREST CONSERVATION EASEMENT BORDER.
 - SEE PLAN FOR SPACING.

FOREST CONSERVATION SIGN DETAIL



- NOTES:**
- BLAZE ORANGE MESH OR SUPER SILT FENCE FOR TREE PROTECTION DEVICE, ONLY.
 - BOUNDARIES OF PROTECTION AREA WILL BE ESTABLISHED PRIOR TO GRADING AND SEDIMENT CONTROL.
 - AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
 - FENCING SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCING

NOT TO SCALE

SPECIMEN TREE CHART

KEY	SPECIES	SIZE	CONDITION	REMAIN OR REMOVE
A	WHITE OAK (Quercus alba)	24"	FAIR / GOOD	REMAIN
B	HICKORY	24"	FAIR / GOOD	REMAIN
C	HICKORY	30"	FAIR / GOOD	REMAIN
D	WHITE OAK (Quercus alba)	36"	FAIR / GOOD	REMAIN
E	TULIP POPLAR (Liriodendron tulipifera)	24"	FAIR / GOOD	REMAIN

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
W. R. Wall 11-20-07
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
C. H. H. H. 11/30/07
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

M. D. M. M. 11/27/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO. REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C

AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
FOREST CONSERVATION NOTES AND DETAILS

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

DATE 10-25-07

CHECKED BY: DWC

DESIGNED BY : RBR+A

DRAWN BY: BCL

PROJECT NO./FINAL/ C201FCP.DWG

DATE : NOVEMBER 6, 2007

SCALE : AS SHOWN

DRAWING NO. 14 OF 21

PETER J. STONE # 3068


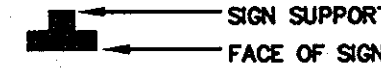


TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATION

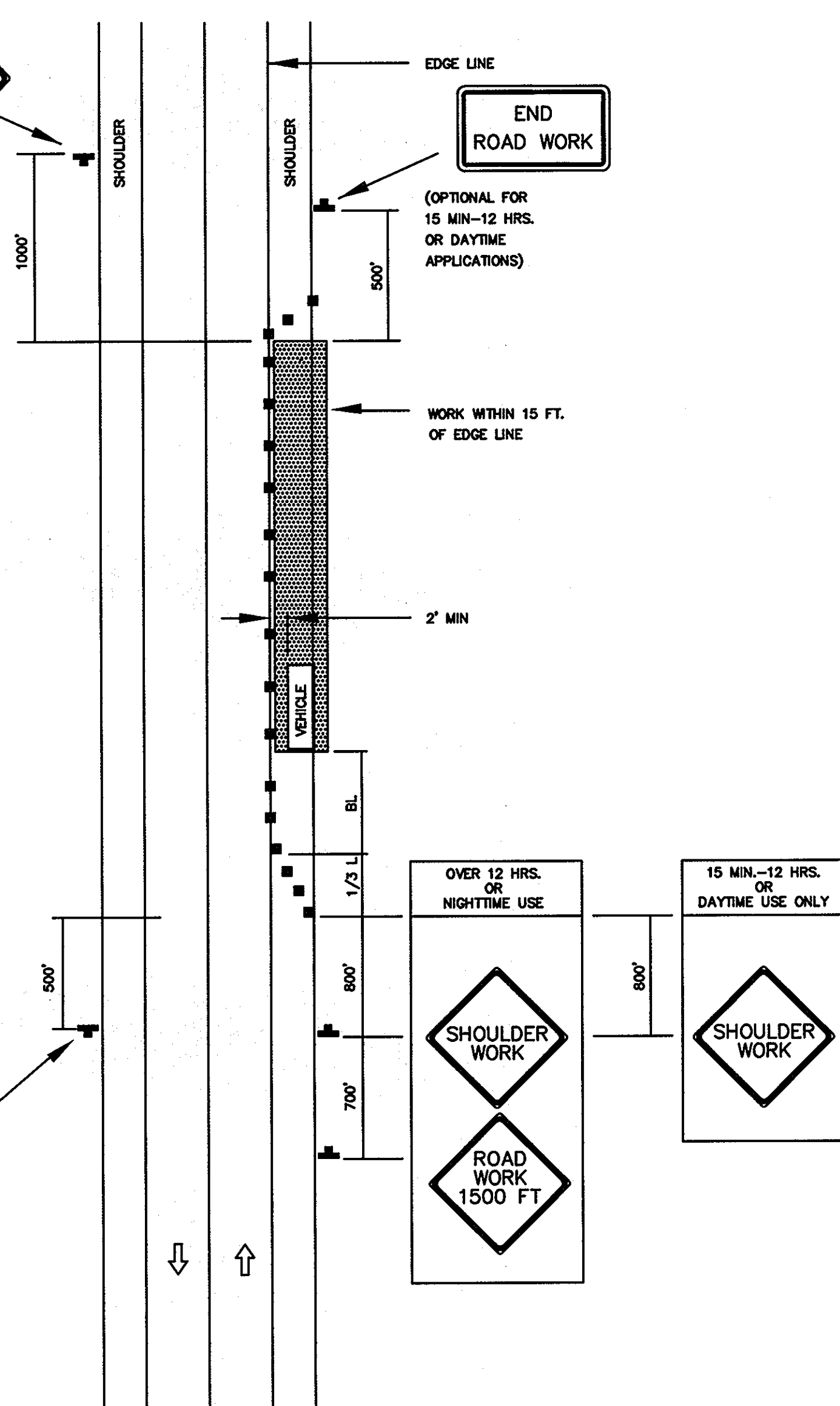
IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-82

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

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

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

END ROAD WORK
 (OPTIONAL FOR 15 MIN-12 HRS. OR DAYTIME APPLICATIONS)


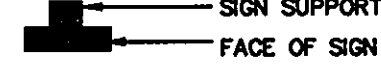





8-20-03 9-23-03

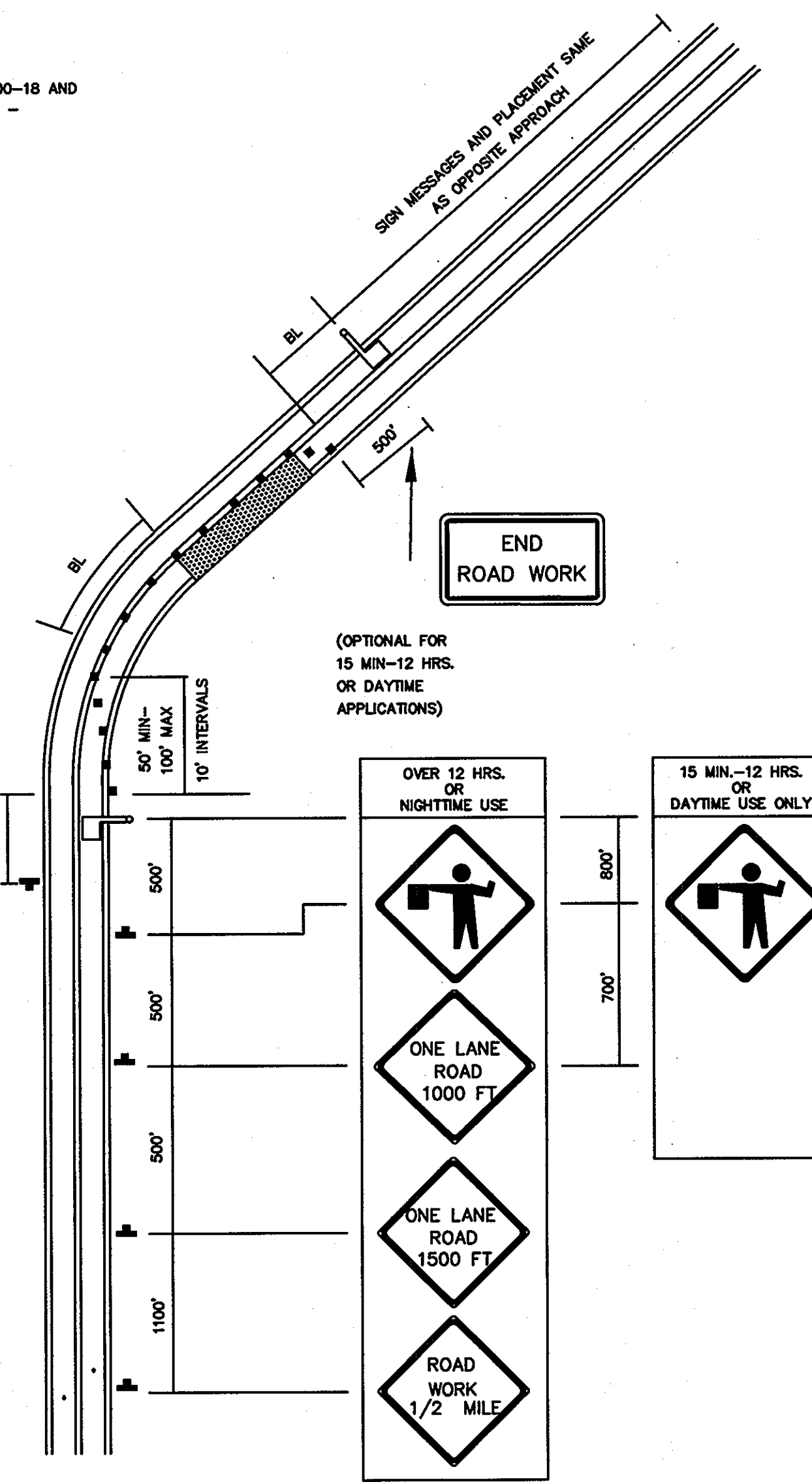
MD. 104.02-02
 SHOULDER WORK, 2 LANE, 2-WAY TRAFFIC, ≤ 40MPH
 NO SCALE

IMPORTANT:
THIS DRAWING SHALL BE USED IN COMBINATION WITH THE GENERAL NOTES MD 104.00-01 - MD 104.00-18 AND STANDARD DETAILS MD 104.01-01 - MD 104.01-82

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

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

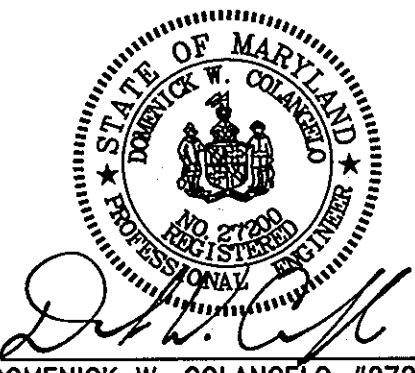
END ROAD WORK
 (OPTIONAL FOR 15 MIN-12 HRS. OR DAYTIME APPLICATIONS)



8-20-03 9-23-03

MD. 104.02-10
 FLAGGING OPERATION, 2 LANE, 2-WAY TRAFFIC, ≤ 40MPH
 NO SCALE

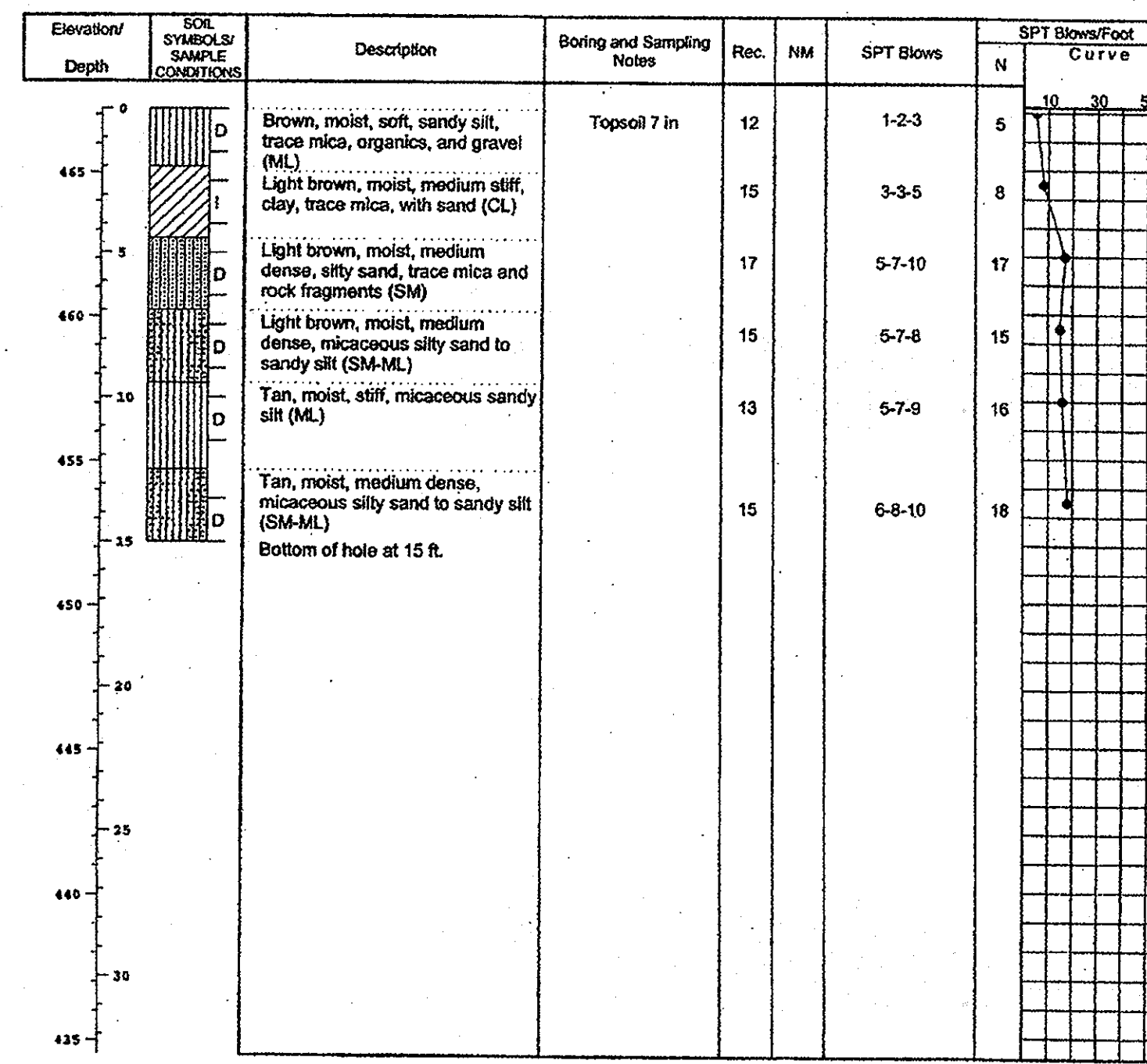
- NOTES
- BROWN'S BRIDGE ROAD IS AN EXISTING 2 LANE, 2-WAY ROAD.
 - REFER TO MDSA STANDARDS MD 104.01-80 AND MD 104.01-81 FOR BUFFER LENGTHS AND TAPER LENGTHS. FOR GENERAL NOTES FOR CHANNELIZATION DEVICES, REFER TO MDSA STANDARD MD 104.00-10.
 - REFER TO MDSA STANDARD MD 104.00-12 FOR GENERAL NOTES FOR FLAGGING OPERATION.

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. <i>William F. McCall</i> 11-20-07 CHIEF, BUREAU OF HIGHWAYS DATE	
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. <i>Carole Hamilton</i> 11/20/07 CHIEF, DIVISION OF LAND DEVELOPMENT DATE	
<i>John P. Williams</i> 11/27/07 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE	
DATE NO.	REVISION
OWNER CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539	
DEVELOPER RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414	
PROJECT ORCHARD ESTATES LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C	
AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE MOT PLAN	
Patton Harris Rust & Associates, pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
10/22/07 DATE	CHECKED BY: DWC
	DESIGNED BY : NS
	DRAWN BY: EMR/JMK
	PROJECT NO: 13043/1-0/ENGR/PLANS /FINAL/ C902DET
	DATE : NOVEMBER 6, 2007
	SCALE : NO SCALE
	DRAWING NO. 15 OF 21

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

Project Name Heyser SWM Boring No. SWM-1
Location Howard County, MD Job # 04712A

SAMPLER
Datum Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 467.21 Ft. Hammer Drop 30 in. Rock Core Diameter _____ Inspector _____
Date Started 1/24/05 Pipe Size 2.0 in. Boring Method HSA Date Completed 1/24/05



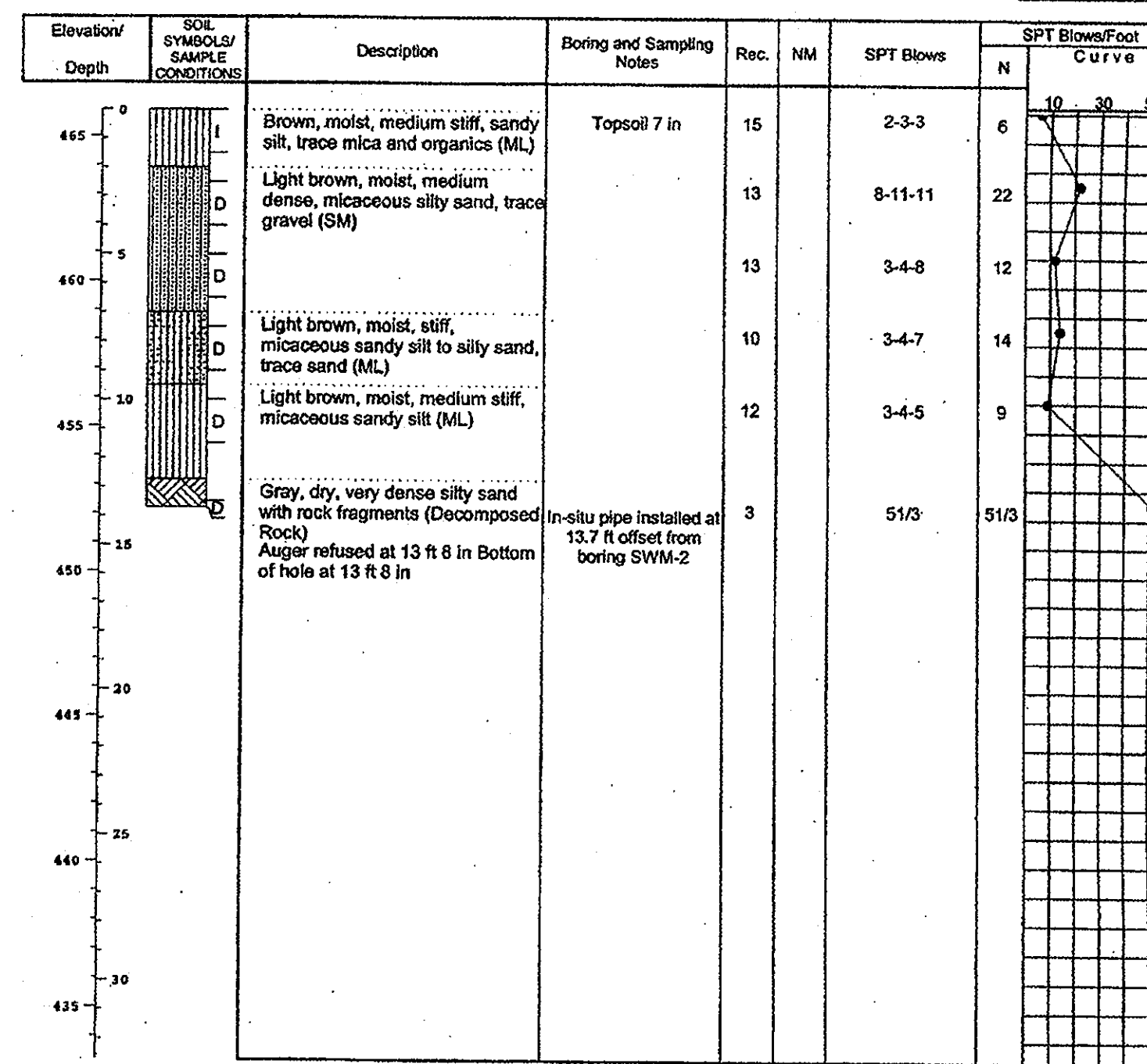
SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION GROUND WATER Dry ft. CAVE IN DEPTH 10.0 ft. BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. Dry ft. 9.5 ft. CA - CONTINUOUS FLIGHT AUGERS
CA - CONTINUOUS FLIGHT AUGER U - UNDISTURBED AFTER _____ HRS. _____ ft. DC - DRIVING CASING
RC - ROCK CORE L - LOST MD - MUD DRILLING

STANDARD PENETRATION TEST-DRAWING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 6" INTERVALS.

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

Project Name Heyser SWM Boring No. SWM-2
Location Howard County, MD Job # 04712A

SAMPLER
Datum Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 465.91 Ft. Hammer Drop 30 in. Rock Core Diameter _____ Inspector _____
Date Started 1/25/05 Pipe Size 2.0 in. Boring Method HSA Date Completed 1/25/05



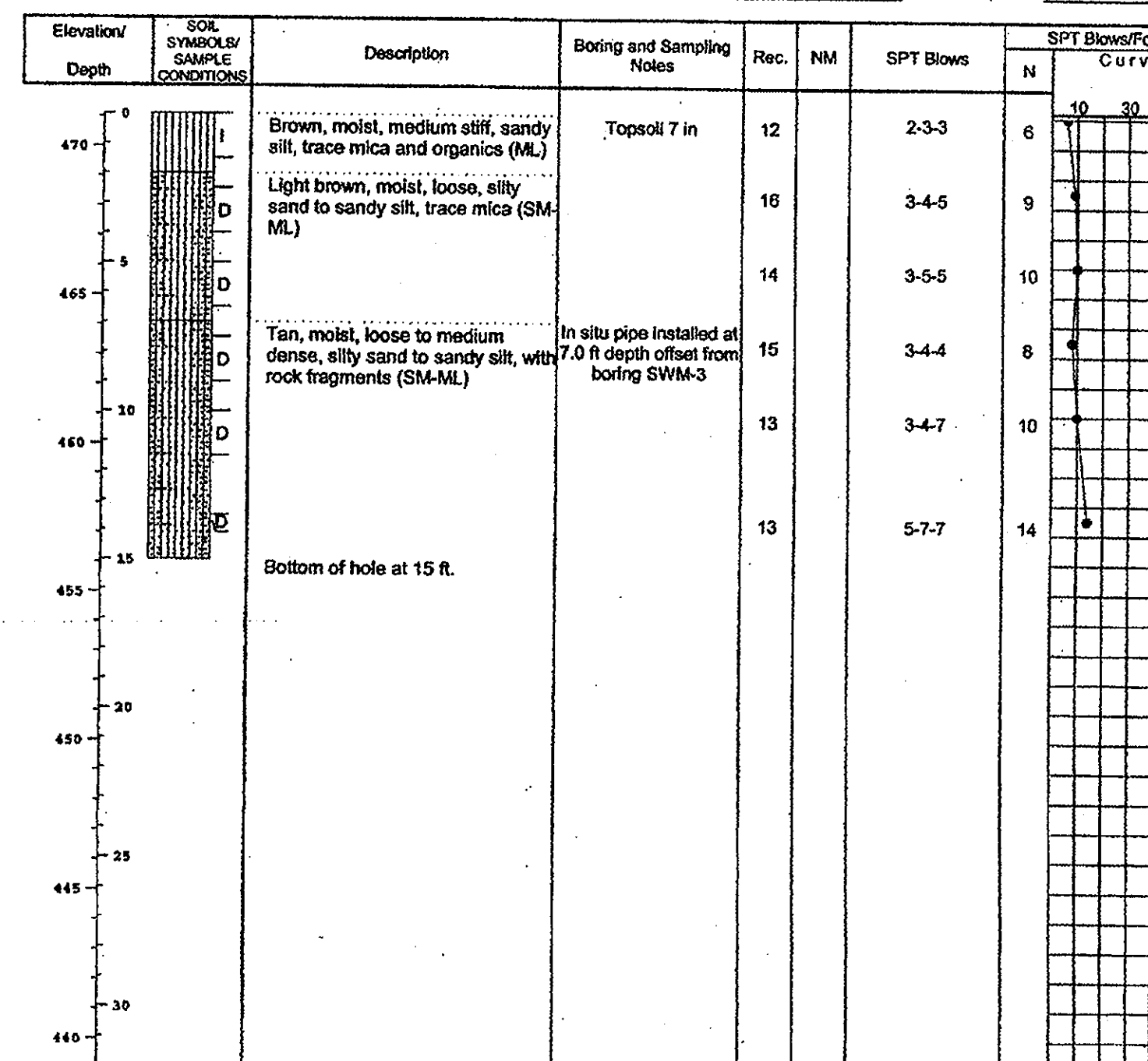
SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION GROUND WATER Dry ft. CAVE IN DEPTH 6.5 ft. BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. Dry ft. 9.0 ft. CA - CONTINUOUS FLIGHT AUGERS
CA - CONTINUOUS FLIGHT AUGER U - UNDISTURBED AFTER _____ HRS. _____ ft. DC - DRIVING CASING
RC - ROCK CORE L - LOST MD - MUD DRILLING

STANDARD PENETRATION TEST-DRAWING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 6" INTERVALS.

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

Project Name Heyser SWM Boring No. SWM-3
Location Howard County, MD Job # 04712A

SAMPLER
Datum Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 471.10 Ft. Hammer Drop 30 in. Rock Core Diameter _____ Inspector _____
Date Started 1/25/05 Pipe Size 2.0 in. Boring Method HSA Date Completed 1/25/05



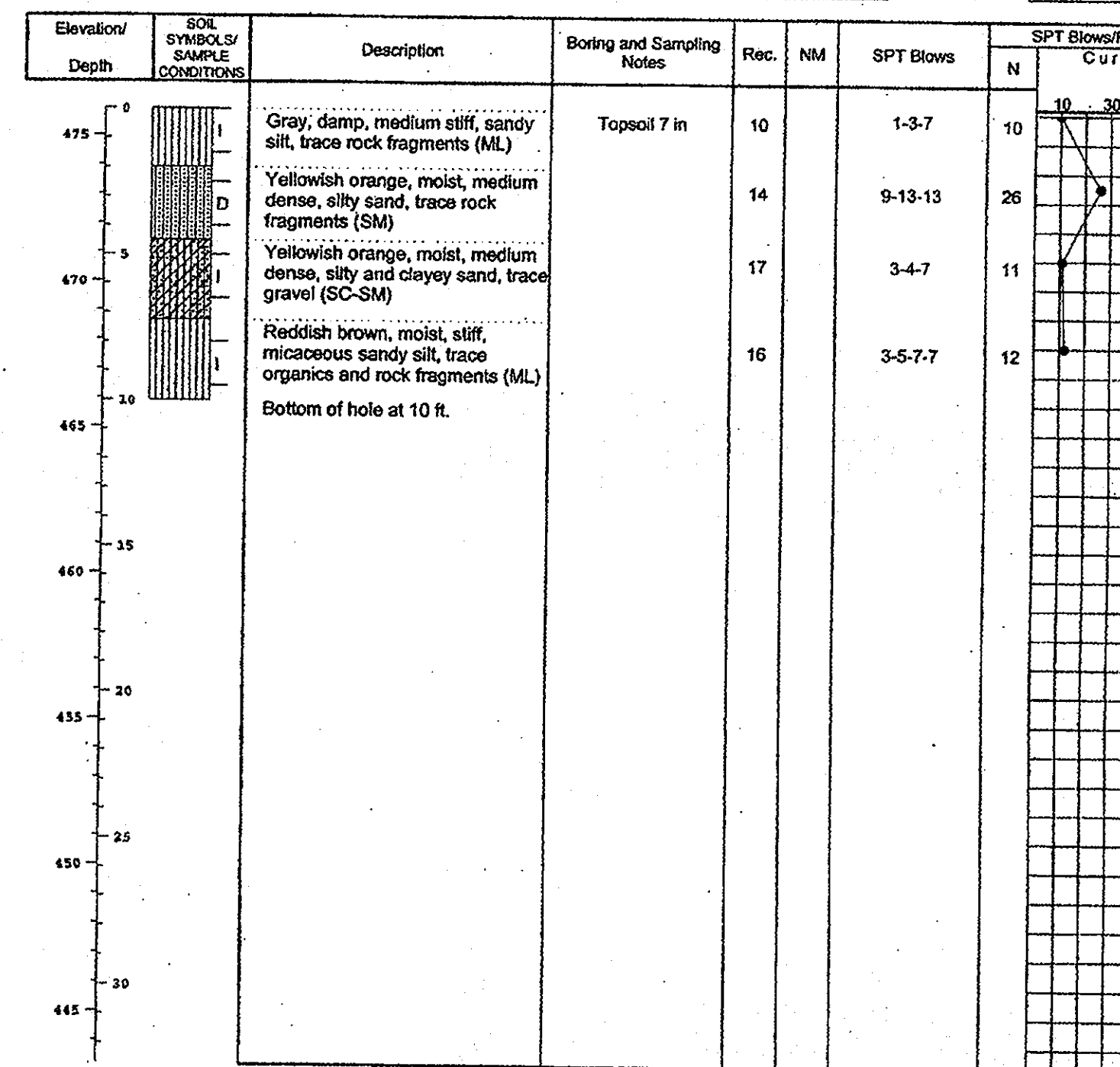
SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION GROUND WATER Dry ft. CAVE IN DEPTH 9.0 ft. BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. Dry ft. 9.0 ft. CA - CONTINUOUS FLIGHT AUGERS
CA - CONTINUOUS FLIGHT AUGER U - UNDISTURBED AFTER _____ HRS. _____ ft. DC - DRIVING CASING
RC - ROCK CORE L - LOST MD - MUD DRILLING

STANDARD PENETRATION TEST-DRAWING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 6" INTERVALS.

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

Project Name Heyser SWM Boring No. SWM-4
Location Howard County, MD Job # 04712A

SAMPLER
Datum Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 475.91 Ft. Hammer Drop 30 in. Rock Core Diameter _____ Inspector _____
Date Started 1/26/05 Pipe Size 2.0 in. Boring Method HSA Date Completed 1/26/05



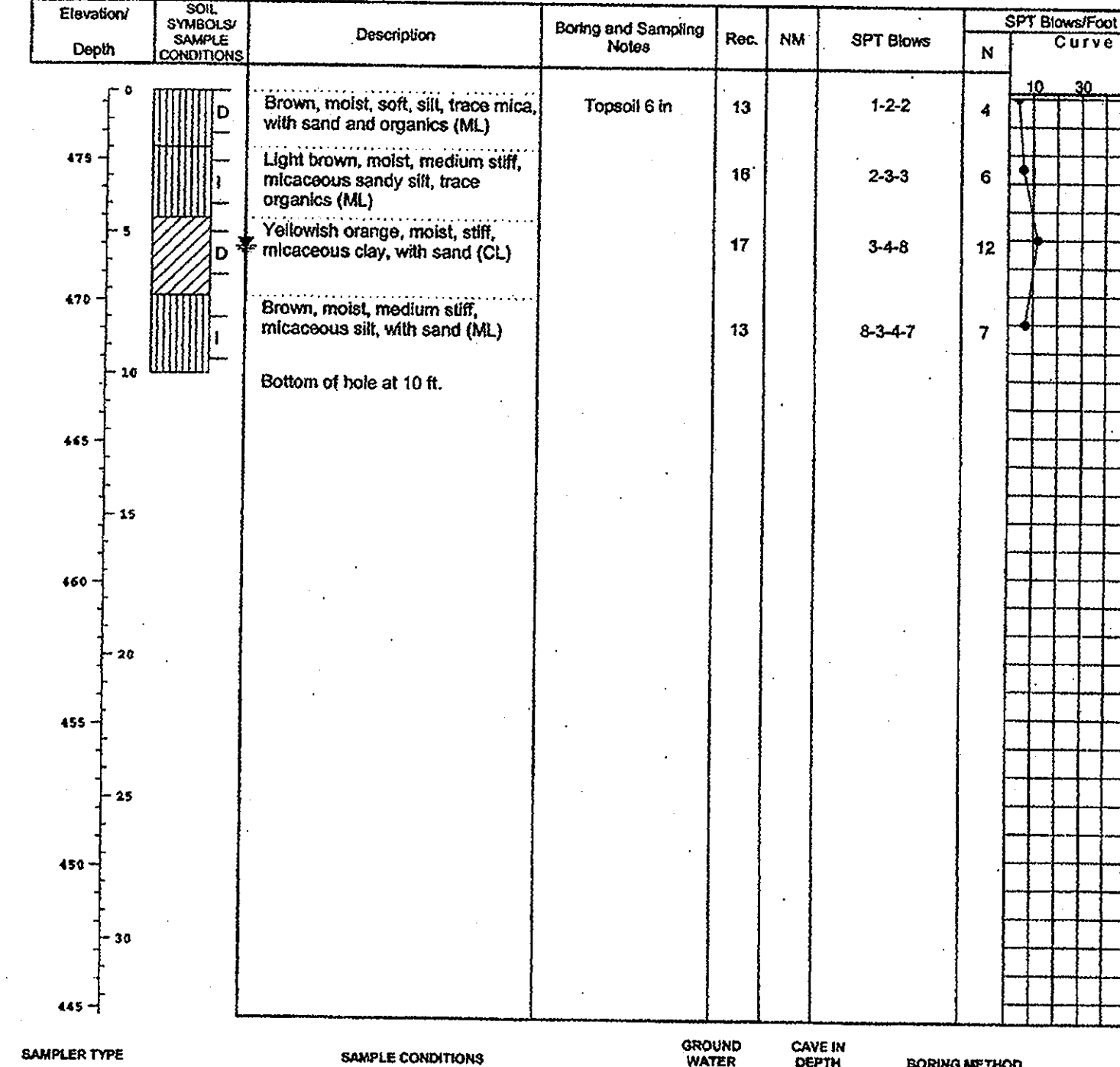
SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION GROUND WATER Dry ft. CAVE IN DEPTH 6.0 ft. BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. Dry ft. 9.0 ft. CA - CONTINUOUS FLIGHT AUGERS
CA - CONTINUOUS FLIGHT AUGER U - UNDISTURBED AFTER _____ HRS. _____ ft. DC - DRIVING CASING
RC - ROCK CORE L - LOST MD - MUD DRILLING

STANDARD PENETRATION TEST-DRAWING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 6" INTERVALS.

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

Project Name Heyser SWM Boring No. SWM-5
Location Howard County, MD Job # 04712A

SAMPLER
Datum Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 477.42 Ft. Hammer Drop 30 in. Rock Core Diameter _____ Inspector _____
Date Started 1/26/05 Pipe Size 2.0 in. Boring Method HSA Date Completed 1/26/05



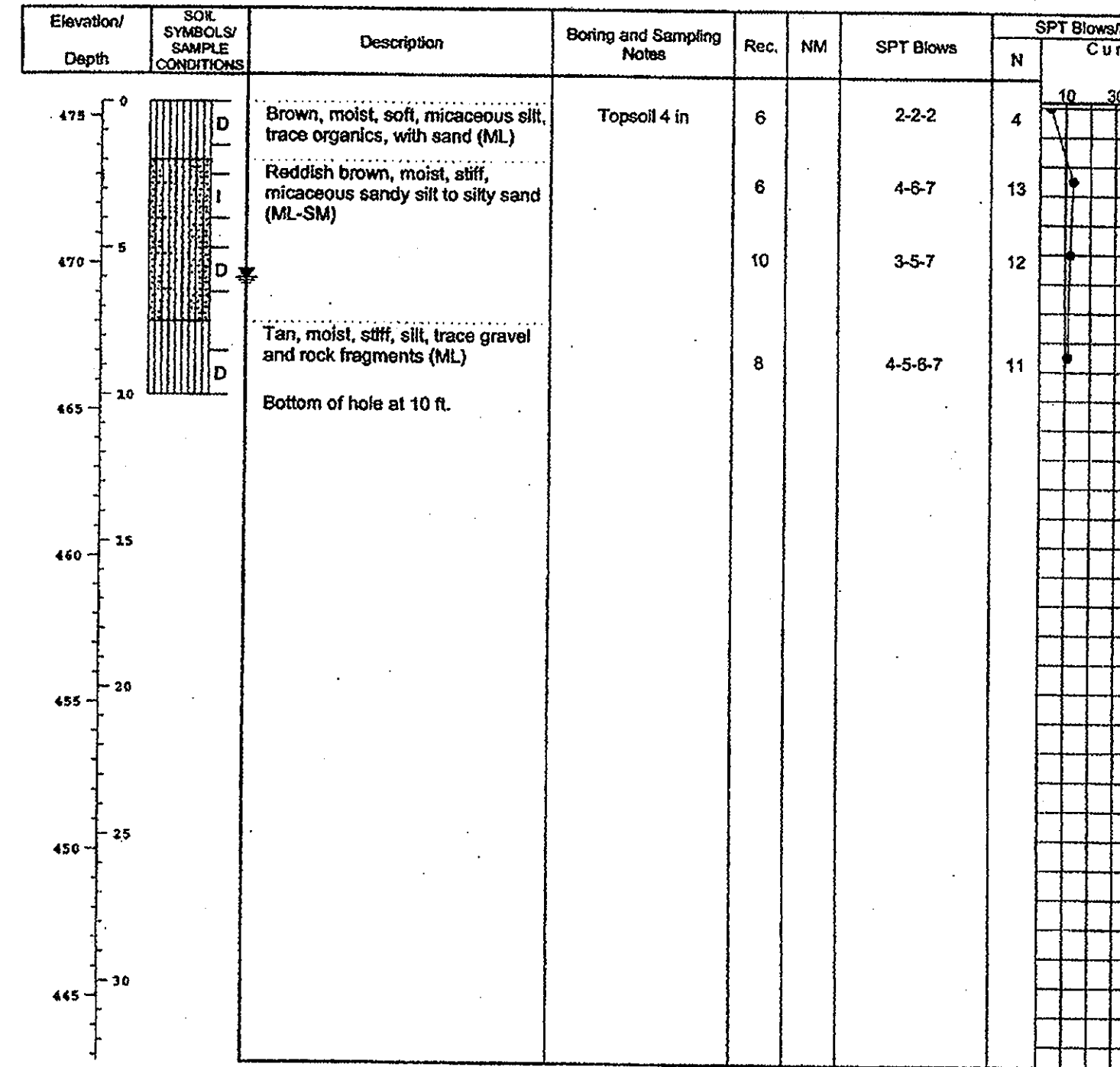
SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION GROUND WATER Dry ft. CAVE IN DEPTH 6.5 ft. BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. 5.5 ft. 6.0 ft. CA - CONTINUOUS FLIGHT AUGERS
CA - CONTINUOUS FLIGHT AUGER U - UNDISTURBED AFTER _____ HRS. _____ ft. DC - DRIVING CASING
RC - ROCK CORE L - LOST MD - MUD DRILLING

STANDARD PENETRATION TEST-DRAWING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 6" INTERVALS.

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

Project Name Heyser SWM Boring No. SWM-6
Location Howard County, MD Job # 04712A

SAMPLER
Datum Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 475.51 Ft. Hammer Drop 30 in. Rock Core Diameter _____ Inspector _____
Date Started 1/24/05 Pipe Size 2.0 in. Boring Method HSA Date Completed 1/24/05



SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION GROUND WATER Dry ft. CAVE IN DEPTH 6.0 ft. BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. 6.0 ft. 6.5 ft. CA - CONTINUOUS FLIGHT AUGERS
CA - CONTINUOUS FLIGHT AUGER U - UNDISTURBED AFTER _____ HRS. _____ ft. DC - DRIVING CASING
RC - ROCK CORE L - LOST MD - MUD DRILLING

STANDARD PENETRATION TEST-DRAWING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 6" INTERVALS.

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Walter Z. ... 11-20-07
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Carole ... 11/20/07
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 11/20/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO. REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A &
NON-BUILDABLE PRESERVATION PARCELS B & C
AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
SOIL BORING LOGS

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

10/22/07
DATE
CHECKED BY: DWK
DESIGNED BY: NS
DRAWN BY: EMR/JMK
PROJECT NO: 13045/1-0/ENGR/PLANS
/FINAL/090305.DWG
DATE : NOVEMBER 6, 2007
SCALE : AS SHOWN
DRAWING NO. 16 OF 21

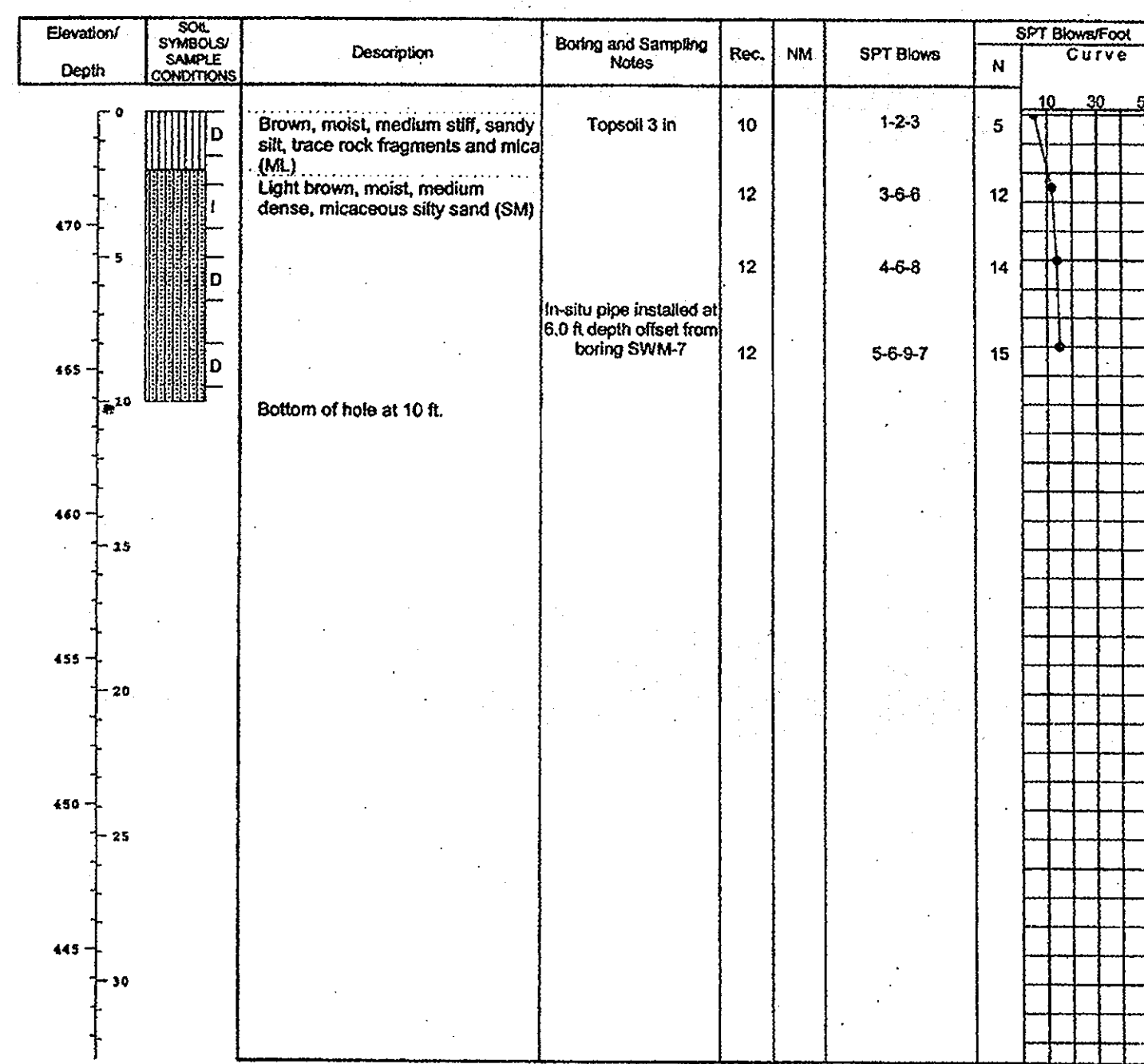
DOWENICK W. COLANGELO #27200
F-07-005

P:\Project\13045\1-0\Engr\Plan\Final\090305.DWG, 10/22/07 8:51:37 AM

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

Project Name Heysler SWM Boring No. SWM-7
Location Howard County, MD Job # 04712A

SAMPLER
Datum Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 473.89 Ft. Hammer Drop 30 in. Rock Core Diameter Inspector
Date Started 1/24/05 Pipe Size 2.0 in. Boring Method HSA Date Completed 1/24/05



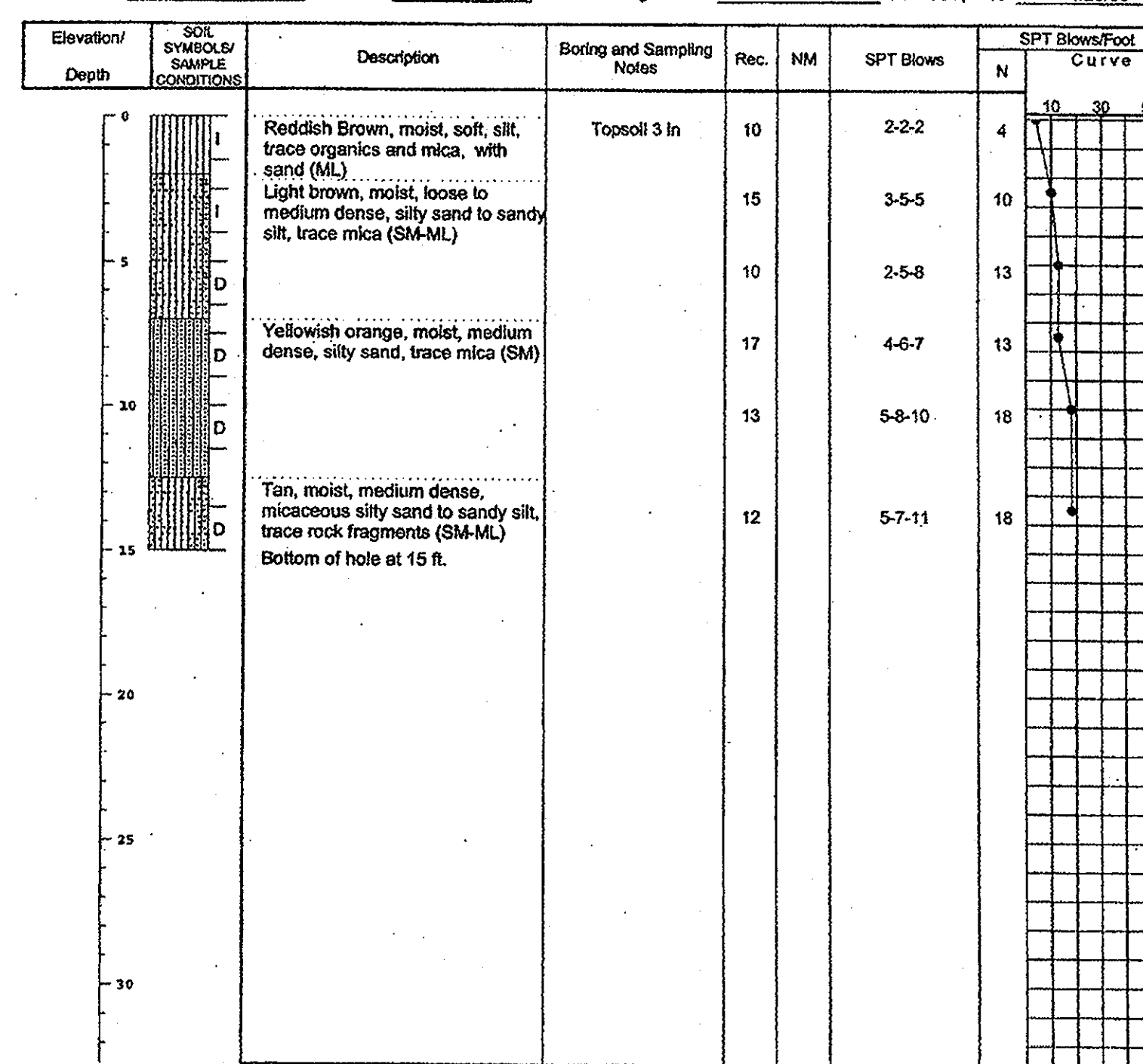
SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION DRY GROUND WATER DRY CAVE IN DEPTH 5.5 BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. U - UNDISTURBED AFTER HRS. DC - DRIVING CASING MD - MUD DRILLING
CA - CONTINUOUS FLIGHT AUGER L - LOST

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 6" INTERVALS.

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

Project Name Heysler SWM Boring No. SWM-8
Location Howard County, MD Job # 04712A

SAMPLER
Datum Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. FL Hammer Drop 30 in. Rock Core Diameter Inspector
Date Started 1/25/05 Pipe Size 2.0 in. Boring Method HSA Date Completed 1/25/05



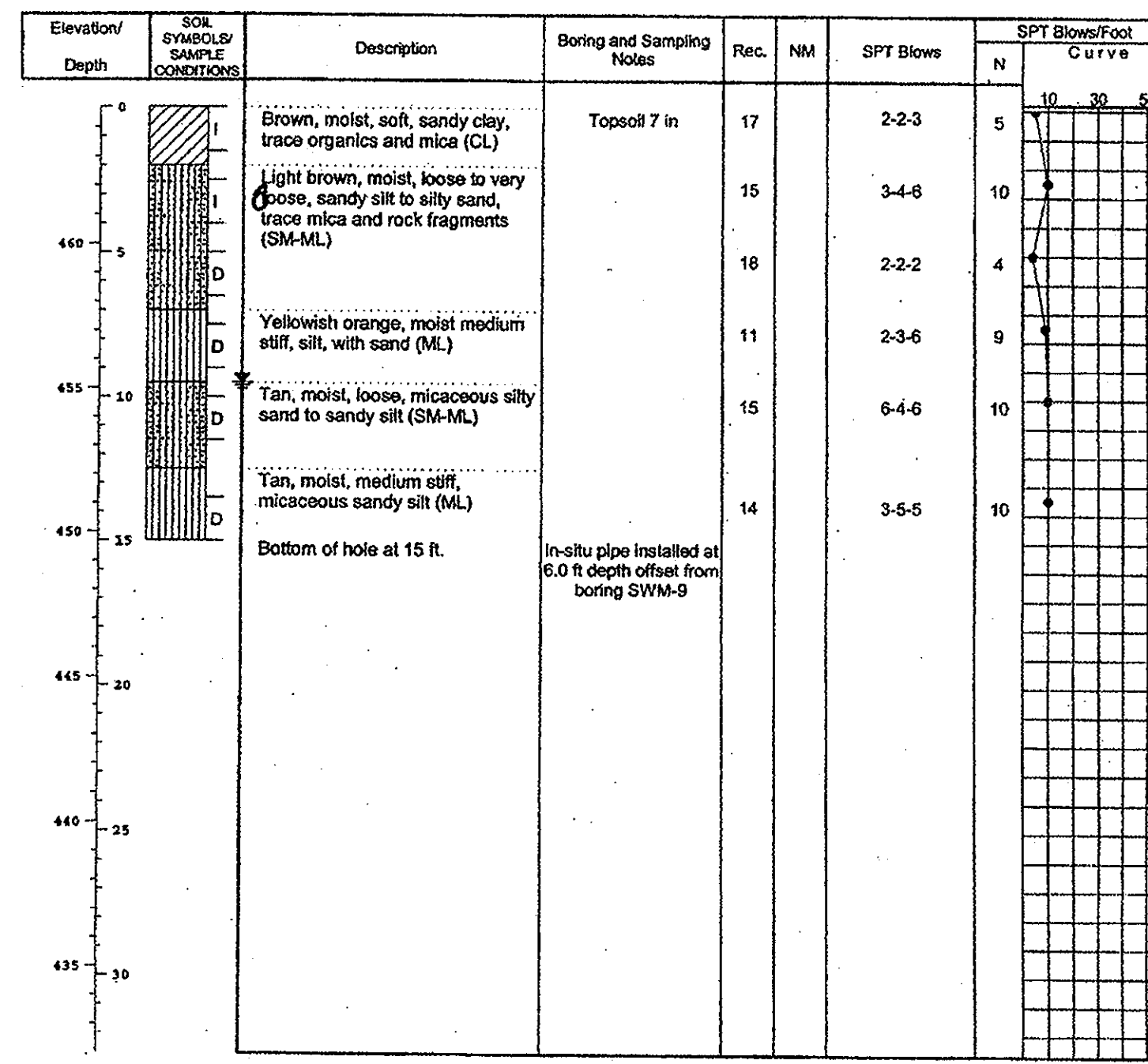
SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION DRY GROUND WATER DRY CAVE IN DEPTH 10.0 BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. U - UNDISTURBED AFTER HRS. DC - DRIVING CASING MD - MUD DRILLING
CA - CONTINUOUS FLIGHT AUGER L - LOST

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 6" INTERVALS.

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

Project Name Heysler SWM Boring No. SWM-9
Location Howard County, MD Job # 04712A

SAMPLER
Datum Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 464.89 Ft. Hammer Drop 30 in. Rock Core Diameter Inspector
Date Started 1/25/05 Pipe Size 2.0 in. Boring Method HSA Date Completed 1/25/05



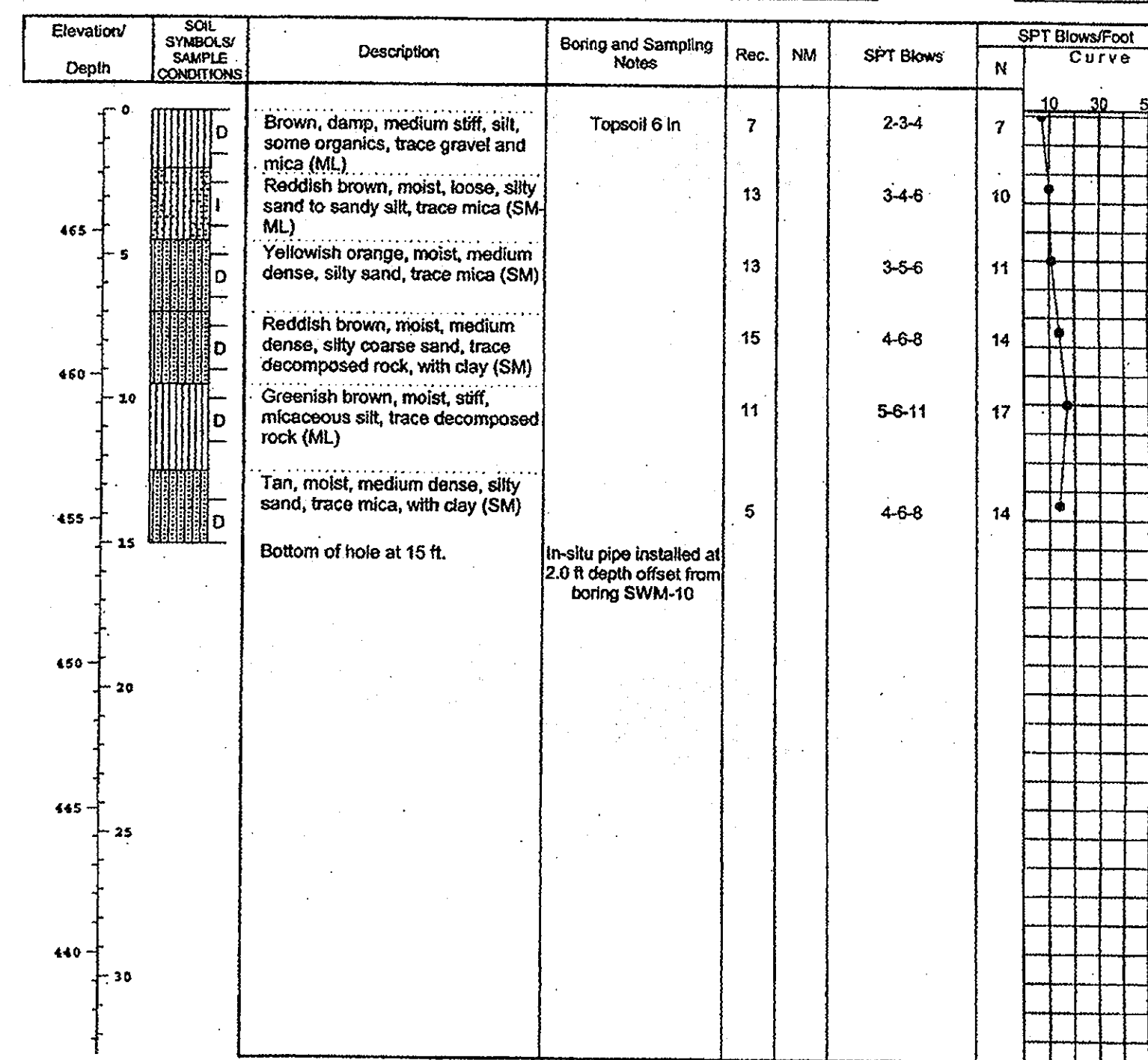
SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION DRY GROUND WATER DRY CAVE IN DEPTH 10.5 BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. U - UNDISTURBED AFTER HRS. DC - DRIVING CASING MD - MUD DRILLING
CA - CONTINUOUS FLIGHT AUGER L - LOST

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 6" INTERVALS.

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

Project Name Heysler SWM Boring No. SWM-10
Location Howard County, MD Job # 04712A

SAMPLER
Datum Hammer Wt. 140 lbs. Hole Diameter 6 Foreman Lamont Smith
Surf. Elev. 489.17 Ft. Hammer Drop 30 in. Rock Core Diameter Inspector
Date Started 1/25/05 Pipe Size 2.0 in. Boring Method HSA Date Completed 1/25/05



SAMPLER TYPE DRIVEN SPLIT SPOON UNLESS OTHERWISE SAMPLE CONDITIONS D - DISINTEGRATED AT COMPLETION DRY GROUND WATER DRY CAVE IN DEPTH 11.0 BORING METHOD HSA - HOLLOW STEM AUGERS
PT - PRESSED SHELBY TUBE I - INTACT AFTER 24 HRS. U - UNDISTURBED AFTER HRS. DC - DRIVING CASING MD - MUD DRILLING
CA - CONTINUOUS FLIGHT AUGER L - LOST

STANDARD PENETRATION TEST-DRIVING 2" O.D. SAMPLER 1" WITH 140# HAMMER FALLING 30". COUNT MADE AT 6" INTERVALS.

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Walter Zambelli 11-20-07
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Cynthia Kramlich 11/20/07
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Richard DeMmitt 11/21/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO. REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A &
NON-BUILDABLE PRESERVATION PARCELS B & C
AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
SOIL BORING LOGS

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

10/22/07
DATE

CHECKED BY: DWK

DESIGNED BY : NS

DRAWN BY: EMR/JMK

PROJECT NO: 13043/1-0/ENGR/PLANS

DATE : NOVEMBER 6, 2007

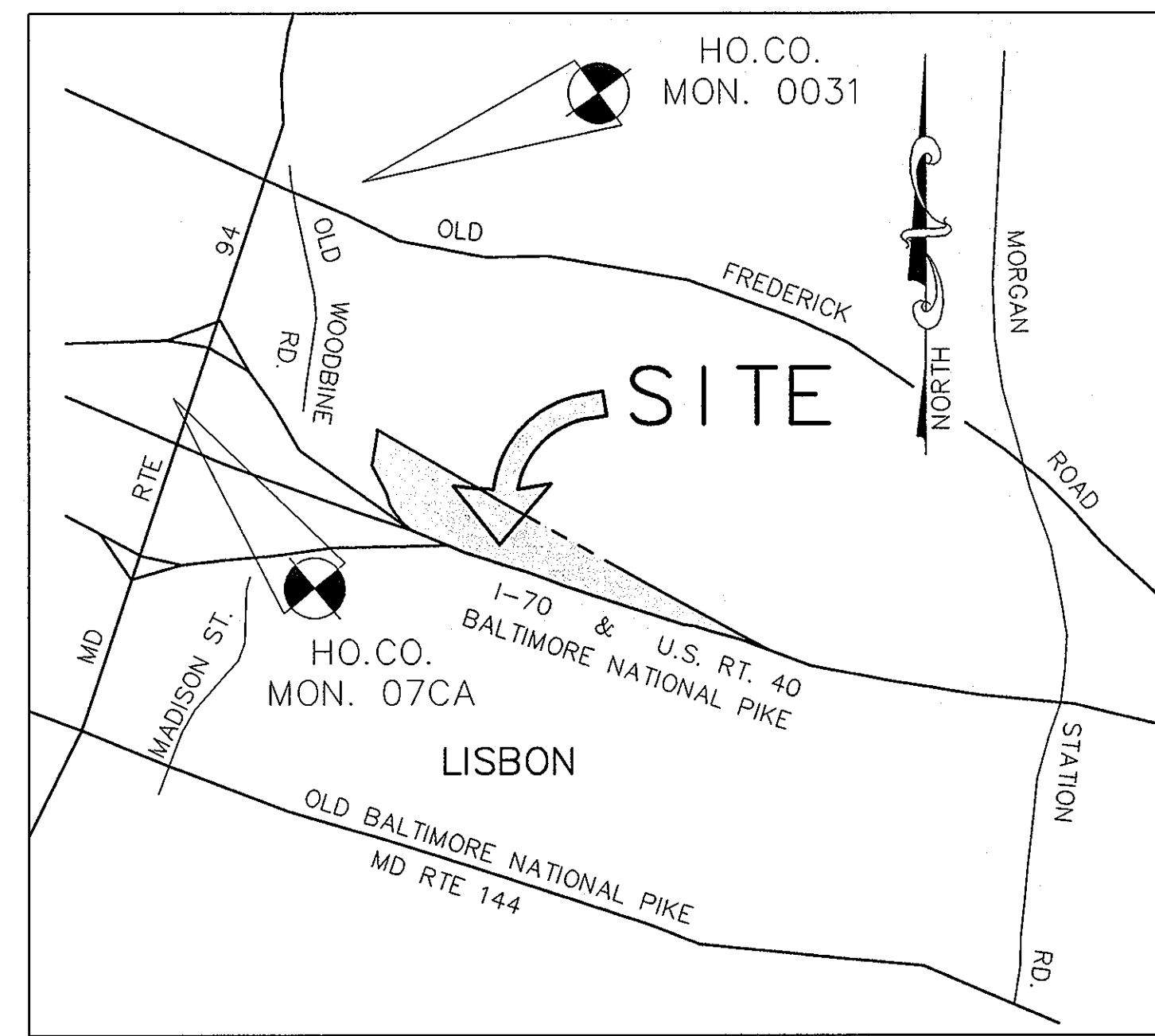
SCALE : AS SHOWN

DRAWING NO. 17 OF 21

DOMENICK W. COLANGELO #27200

F-07-005

P:\Project\13043\1-0\Engr\Plans\C903DET.dwg, 10/19/2007 9:18:24 AM



VICINITY MAP
SCALE: 1" = 1000'

LEGEND	
EXISTING TREELINE	
PROPERTY LINE	
EXISTING CONTOURS	
PROPOSED CONTOURS	
SOIL CLASSIFICATION AND BOUNDARY	
EXISTING BUILDING	
SPECIMEN TREE	
STAND #	
STAND DIVISION LINE	
SLOPES 15 - 25%	
SLOPES >25%	

SOILS CHART					
MAP SYMBOL	NAME	STRUCTURAL LIMITATIONS DWELLINGS	EROSION HAZARD	HYDRIC	SLOPE (%)
G1A	GLENELG LOAM	SLIGHT	SLIGHT	NO	0-3%
G1B2	GLENELG LOAM	SLIGHT	MODERATE	NO	3-8%
G1C2	GLENELG LOAM	MODERATE	MODERATE	NO	8-15%
G1C3	GLENELG LOAM	MODERATE	SEVERE	NO	8-15%
GnA	GLENVILLE SILT LOAM	MODERATE	SLIGHT	NO*	0-3%
GnB2	GLENVILLE SILT LOAM	MODERATE	MODERATE	NO*	3-8%
GnC2	GLENVILLE SILT LOAM	MODERATE	MODERATE	NO	8-15%
M1A	MANOR LOAM	SLIGHT	SLIGHT	NO	0-3%
M1B2	MANOR LOAM	SLIGHT	MODERATE	NO	8-15%
M1C2	MANOR LOAM	MODERATE	MODERATE	NO	8-15%
M1C3	MANOR LOAM	MODERATE	SEVERE	NO	8-15%
M1D3	MANOR LOAM	MODERATE	SEVERE	NO	15-25%

* SOIL MAY CONTAIN HYDRIC INCLUSIONS
THIS INFORMATION TAKEN FROM THE HOWARD COUNTY SOIL SURVEY DATE JULY 1968, MAP 2

PURPOSE STATEMENT:

THE PURPOSE OF THIS PLAN IS TO PREPARE A FOREST STAND DELINEATION FOR APPROXIMATELY 4.30 ACRES OF OFFSITE FOREST TO BE UTILIZED BY ORCHARD ESTATES (F-07-005). THERE ARE FOUR EXISTING FOREST STANDS LOCATED ON THE EASTERN END OF THE SITE, AS SHOWN THE PLAN. THEY ARE ALL HIGH PRIORITY FOREST STANDS. A FOREST STAND DELINEATION WAS NOT PREPARED FOR THE REMAINDER OF THE SITE AS THIS FOREST IS NOT BEING USED FOR OFFSITE FOREST RETENTION CREDITS.

AREA CHART	
AREA	ACRES
TOTAL TRACT AREA	34.94
EXISTING FOREST	24.23
LAND WITHIN STREAM BUFFERS	5.53
LAND WITHIN FLOODPLAIN	0
FOREST WITHIN STREAM BUFFERS	2.66
FOREST WITHIN FLOODPLAIN	0
ROAD DEDICATION	0

GENERAL NOTES:

1. THE SITE IS LOCATED ALONG THE NORTH SIDE OF ROUTE 70 IN WESTERN HOWARD COUNTY. THE SITE CONSISTS OF PARCEL 101 (TAX MAP 7) AND PARCEL 4 (TAX MAP 8), WHICH ARE 2.3494 ACRES.
2. TOPOGRAPHIC INFORMATION IS FROM HOWARD COUNTY GIS INFORMATION. BOUNDARY INFORMATION IS FROM A FIELD SURVEY PREPARED BY PATTON HARRIS RUST & ASSOCIATES.
3. THE SOILS ON SITE ARE DESCRIBED IN THE CHART ON THIS PLAN, AND ARE IN ACCORDANCE WITH THE SOIL SURVEY FOR HOWARD COUNTY, MARYLAND. STEEP SLOPES ARE PRESENT ON THE SITE AS SHOWN.
4. THE SITE IS ZONED RC-DEO (RURAL CONSERVATION WITH A DENSITY EXCHANGE OPTION OVERLAY).
5. THE SITE IS LOCATED IN THE PATUXENT WATERSHED, BRIGHTON DAM SUBWATERSHED (#2131108).
6. THERE IS NO 100-YEAR FLOODPLAIN LOCATED ON SITE AS SHOWN. STREAMS AND WETLANDS ARE LOCATED ON SITE AS SHOWN.
7. THERE ARE FOUR EXISTING FOREST STANDS LOCATED ON THE EASTERN END OF THE SITE, AS SHOWN THE PLAN. THEY ARE ALL HIGH PRIORITY FOREST STANDS. A FOREST STAND DELINEATION WAS NOT PREPARED FOR THE REMAINDER OF THE SITE AS THIS FOREST IS NOT BEING USED FOR OFFSITE FOREST RETENTION CREDITS.
8. THERE ARE 4 SPECIMEN TREES (30"+) LOCATED ON SITE, AS SHOWN ON THE PLAN.
9. FIELD WORK FOR THIS INVENTORY WAS CONDUCTED ON DECEMBER 11, 2006 BY BILL BOND OF PARKTON WOODLAND SERVICES. SEE FOREST STAND DELINEATION REPORT FOR FIELD INVESTIGATION NARRATIVE.
10. THE SITE HAS A FOREST CONSERVATION THRESHOLD OF 25% AND AN AFFORESTATION THRESHOLD OF 20%.
11. NO CEMETERIES OR HISTORIC STRUCTURES ARE LOCATED ON-SITE. NO EXISTING STRUCTURES ARE PRESENT ON THE SITE.
12. THIS FOREST STAND DELINEATION (FSD) HAS BEEN PREPARED IN ACCORDANCE WITH HOWARD COUNTY REGULATIONS.
13. THIS SITE CONTAINS SOILS WITH POSSIBLE HYDRIC INCLUSIONS, GLENVILLE SILT LOAM (GnB2 and GnA).

PLANT COMMUNITY SUMMARY			
SYMBOL	COMMUNITY	AREA	RETENTION PRIORITY
F1	FOREST	0.24 Ac. ±	HIGH
F2	FOREST	1.1 Ac. ±	HIGH
F3	FOREST	2.23 Ac. ±	HIGH
F4	FOREST	0.73 Ac. ±	HIGH

SPECIMEN TREE CHART			
KEY	SPECIES	SIZE	CONDITION
1	SCARLET OAK (QUERCUS COCCINEA)	37"	FAIR / GOOD
2	SCARLET OAK (QUERCUS COCCINEA)	33"	FAIR / GOOD
3	WHITE OAK (QUERCUS ALBA)	35"	GOOD
4	RED MAPLE (ACER RUBRUM)	30"	FAIR

MATCHLINE - SEE SHEET 19

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
William Z. Mulla 11-20-07
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Chris Krasny 11/20/07
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

William Z. Mulla 11/20/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO.	REVISION

OWNER
CARLTON E HEYSER, JR
14526 NEW HAMPSHIRE AVENUE
SILVER SPRING, MD 20904
410-531-5539

DEVELOPER
RUPPERT PROPERTIES
ATTN: RICHARD DEMMITT
HIGHLAND DEVELOPMENT CORP.
P.O. BOX 228
CLARKSVILLE, MARYLAND 21029
410-365-0414

PROJECT
ORCHARD ESTATES
LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C
AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO
5TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
OFFSITE FOREST STAND DELINEATION PLAN

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

10-25-07
DATE

CHECKED BY: PJS
DESIGNED BY: NS
DRAWN BY: ALG
PROJECT NO: 15043/1-0/ENGR/PLANS
FINAL/2006/30-OFFSITE.DWG
DATE : NOVEMBER 6, 2007
SCALE : 1" = 100'
DRAWING NO. 18 OF 21

PETER J. STONE # 3068

MATCHLINE - SEE SHEET 18



LEGEND	
EXISTING TREELINE	
PROPERTY LINE	
EXISTING CONTOURS	
PROPOSED CONTOURS	
SOIL CLASSIFICATION AND BOUNDARY	
EXISTING BUILDING	
SPECIMEN TREE	
STAND #	
STAND DIVISION LINE	
SLOPES 15 - 25%	
SLOPES >25%	

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Walter F. Walsh</i> CHIEF, BUREAU OF HIGHWAYS	11-20-07 DATE
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Craig Harvath</i> CHIEF, DIVISION OF LAND DEVELOPMENT	11/20/07 DATE
<i>John DeLuca</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	11/27/07 DATE
DATE NO.	REVISION
OWNER CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539	
DEVELOPER RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414	
PROJECT ORCHARD ESTATES LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C	
AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE OFFSITE FOREST STAND DELINEATION PLAN	
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
DATE 10-25-07	CHECKED BY: PJS
	DESIGNED BY : NS
	DRAWN BY: ALC
	PROJECT NO: 13043/1-0/ENGR/PLANS FINAL_R2006CP-OFFSITE.DWG
	DATE : NOVEMBER 6, 2007
	SCALE : 1" = 100'
	DRAWING NO. 19 OF 21



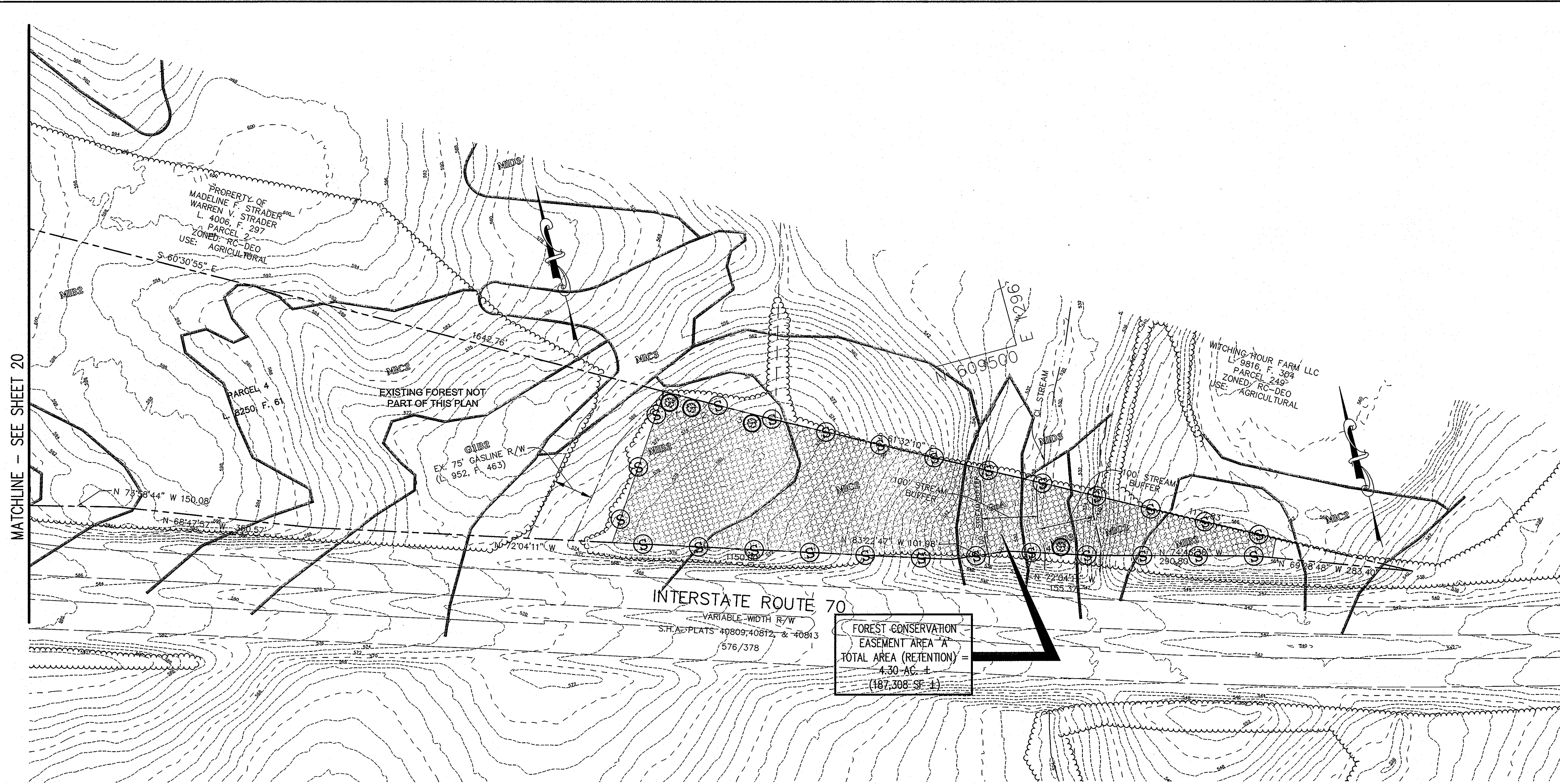
MATCHLINE - SEE SHEET 21

PURPOSE STATEMENT:

THE PURPOSE OF THIS PLAN IS TO PREPARE A FOREST CONSERVATION EASEMENT FOR 4.30 ACRES OF OFFSITE FOREST TO BE UTILIZED BY ORCHARD ESTATES (F-07-005). THERE ARE FOUR EXISTING FOREST STANDS LOCATED ON THE EASTERN END OF THE SITE, AS SHOWN IN THE PLAN. THEY ARE ALL HIGH PRIORITY FOREST STANDS. A FOREST STAND DELINEATION WAS NOT PREPARED FOR THE REMAINDER OF THE SITE AS THIS FOREST IS NOT BEING USED FOR OFFSITE FOREST RETENTION CREDITS.

LEGEND	
EXISTING TREELINE	
PROPERTY LINE	
EXISTING CONTOURS	
PROPOSED CONTOURS	
SOIL CLASSIFICATION AND BOUNDARY	
EXISTING BUILDING	
PROPOSED BUILDING	
LIMIT OF DISTURBANCE LINE	
FOREST CONSERVATION AREA	
FOREST CONSERVATION SIGNAGE	
TREE PROTECTION DEVICE (BLAZE ORANGE PLASTIC MESH FENCING)	
SPECIMEN TREE	
SLOPES 15 - 25%	
SLOPES >25%	

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Walter J. ...</i>	11-20-07
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Cindy ...</i>	11/20/07
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>...</i>	11/27/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
DATE NO.	REVISION
OWNER	CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539
DEVELOPER	RUPPERT PROPERTIES ATTN: RICHARD DENMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414
PROJECT	ORCHARD ESTATES LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C
AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO	5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
TITLE	OFFSITE FINAL FOREST CONSERVATION PLAN
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
10-25-07	CHECKED BY: PJS
DATE	DESIGNED BY: NS
	DRAWN BY: ALC
PETER J. STONE # 3068	PROJECT NO. 13045/1-0/ENGR/PLANS /FINAL/2200FCP-OFFSITE.DWG
	DATE : NOVEMBER 6, 2007
	SCALE : 1" = 100'
	DRAWING NO. 20 OF 21



LEGEND	
EXISTING TREELINE	
PROPERTY LINE	
EXISTING CONTOURS	
PROPOSED CONTOURS	
SOIL CLASSIFICATION AND BOUNDARY	
EXISTING BUILDING	
PROPOSED BUILDING	
LIMIT OF DISTURBANCE LINE	
FOREST CONSERVATION AREA	
FOREST CONSERVATION SIGNAGE	
TREE PROTECTION DEVICE (BLAZE ORANGE PLASTIC MESH FENCING)	
SPECIMEN TREE	
SLOPES 15 - 25%	
SLOPES >25%	

MATCHLINE - SEE SHEET 20

FOREST CONSERVATION PROGRAM

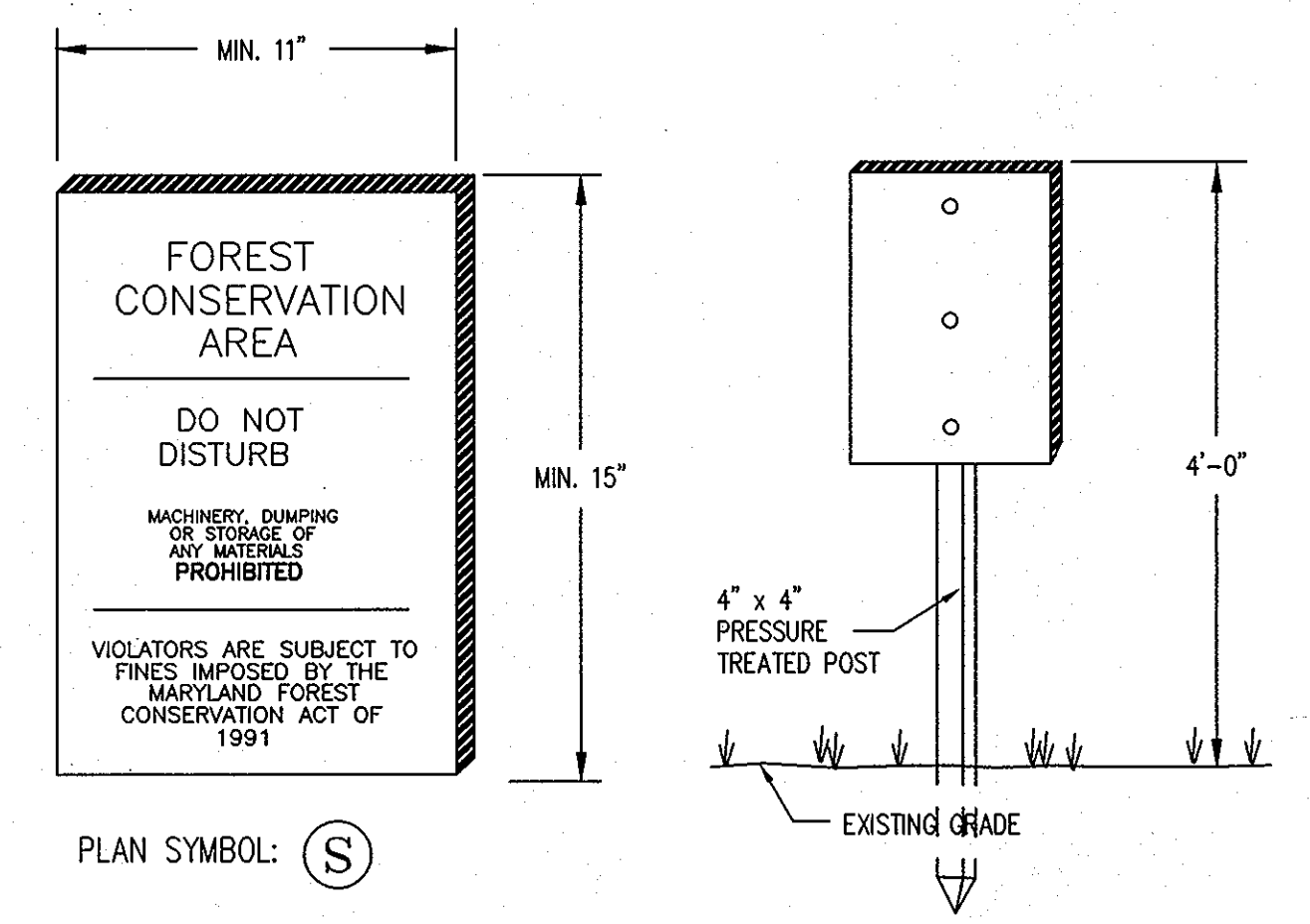
- I. OBJECTIVE:**
IT IS THE OBJECTIVE OF THE FOREST CONSERVATION PLAN OF ORCHARD ESTATES TO RETAIN ENVIRONMENTAL INTEGRITY BY PRESERVING EXISTING WOODED AREAS IN AN OFFSITE FOREST CONSERVATION EASEMENT.
- II. PRESERVATION:**
FOREST PRESERVATION AREAS SHALL BE PERMANENTLY PROTECTED BY FOREST CONSERVATION EASEMENTS.
- III. GENERAL CONSTRUCTION NOTE:**
THERE WILL BE NO STAGING OR STORING OF EQUIPMENT WITHIN THE LIMIT OF DISTURBANCE.
- IV. POST CONSTRUCTION MANAGEMENT PRACTICE:**
A TWO-YEAR POSTED CONSTRUCTION AND MANAGEMENT PROGRAM TO ENSURE FOREST HEALTH IS REQUIRED AND INCLUDES THE FOLLOWING:
- 1-MAINTENANCE OF SIGNS, FENCES, AND TREE PROTECTION DEVICES TO
 - 2-PREVENT UNWARRANTED INTRUSION AND DAMAGE.
 - 3-CAREFUL REMOVAL OF ALL TEMPORARY STRUCTURES AFTER CONSTRUCTION.
 - 4-ROUTINE INSPECTIONS OF FOREST CONSERVATION EASEMENTS.

GENERAL NOTES:

1. THE MAJORITY OF THE PLAN HAS BEEN PREPARED USING HOWARD COUNTY GIS DATA. SPECIMEN TREE LOCATIONS WERE FIELD APPROXIMATED.
2. NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
3. NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
4. THERE ARE NO KNOWN CEMETERIES OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY CEMETERIES INVENTORY.
5. THERE ARE NO EXISTING STRUCTURES ON THE SITE.
6. THIS SITE CONTAINS SOILS WITH POSSIBLE HYDRIC INCLUSIONS, GLENVILLE SILT LOAM (GhB2 AND GhA).
7. THE FSD, DATED DECEMBER 11, 2006, HAS BEEN PREPARED BY PARKTON WOODLAND SERVICES IN CONJUNCTION WITH THESE PLANS.
8. THE HOWARD COUNTY FOREST CONSERVATION MANUAL SUPERCEDES ANY DISCREPANCIES BETWEEN THE MANUAL AND THESE PLANS.
9. THIS PROJECT COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION.
10. THE FOREST CONSERVATION EASEMENT SHOWN ON THIS PLAN IN THE AMOUNT OF A 4.3 AC (187,308 SF) RETENTION EASEMENT SATISFIES THE REMAINING OBLIGATION OF 2.15 ACRES (93,654 SF) OF THE ORCHARD ESTATES (F-07-005) FOREST CONSERVATION REQUIREMENTS.
11. THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE. NO CLEARING, GRADING, OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT, HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.
12. BEARINGS AND DISTANCES FOR FOREST CONSERVATION EASEMENTS ARE PROVIDED ON A "PLAT OF CONSOLIDATION AND PLAT OF PRESERVATION EASEMENT, DENSITY SENDING RUSSELL-HOLLAND PARCEL A"(F-07-130).

SPECIMEN TREE CHART				
KEY	SPECIES	SIZE	CONDITION	REMAIN OR REMOVE
1	SCARLET OAK (QUERCUS COCCINEA)	37"	FAIR / GOOD	REMAIN
2	SCARLET OAK (QUERCUS COCCINEA)	33"	FAIR / GOOD	REMAIN
3	WHITE OAK (QUERCUS ALBA)	35"	GOOD	REMAIN
4	RED MAPLE (ACER RUBRUM)	30"	FAIR	REMAIN

FOREST CONSERVATION AREA	AREA (IN ACRES)
A	4.3 AC ±
TOTAL	4.3 AC ±



- NOTES:**
1. SIGNAGE SHALL BE LOCATED ON FOREST CONSERVATION EASEMENT BORDER.
 2. SEE PLAN FOR SPACING.

FOREST CONSERVATION SIGN DETAIL
NOT TO SCALE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Walter Z. ... 11-20-07
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
David ... 11/30/07
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 11/27/07
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION
OWNER		
CARLTON E HEYSER, JR 14526 NEW HAMPSHIRE AVENUE SILVER SPRING, MD 20904 410-531-5539		
DEVELOPER		
RUPPERT PROPERTIES ATTN: RICHARD DEMMITT HIGHLAND DEVELOPMENT CORP. P.O. BOX 228 CLARKSVILLE, MARYLAND 21029 410-365-0414		
PROJECT		
ORCHARD ESTATES LOTS 1-8, PRESERVATION PARCEL A & NON-BUILDABLE PRESERVATION PARCELS B & C		
AREA TAX MAP 40, GRID 18, PARCEL 178, ZONED RR-DEO 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND		
TITLE		
OFFSITE FINAL FOREST CONSERVATION PLAN		
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282		

10-25-07 DATE
CHECKED BY: PJS
DESIGNED BY: NS
DRAWN BY: ALC
PROJECT NO: 13043/1-0/ENGR/PLANS
FINAL_2010FCP-OFFSITE.DWG
DATE : NOVEMBER 6, 2007
SCALE : 1" = 100'
DRAWING NO. 21 OF 21

