THE CHASE AT STONEY BROOK

LOTS 1 - 20, PRESERVATION PARCEL 'A' AND NON-BUILDABLE PRESERVATION PARCELS 'B' THROUGH 'D'

ROADS, STORMWATER MANAGEMENT AND STORM DRAIN CONSTRUCTION PLANS

GENERAL NOTES

1.) THE PROJECT IS IN CONFORMANCE WITH THE LATEST HOWARD COUNTY STANDARDS UNLESS WAIVERS HAVE BEEN APPROVED.

2.) THE EXISTING TOPOGRAPHY SHOWN IS BASED ON FIELD SURVEY BY BENCHMARK ENGINEERING, INC. IN APRIL, 2003. AND SUPPLEMENTED WITH DIGITAL GIS TOPOGRAPHY PURCHASED FROM HOWARD COUNTY.

3.) THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 07FB AND 07FA WERE USED FOR THIS PROJECT.

4.) WATER IS PRIVATE.

5.) SEWER IS PRIVATE.

6.) STORMWATER MANAGEMENT SHALL BE PROVIDED BY POCKET PONDS AND SHALLOW WETLANDS ON NON-BUILDABLE PRESERVATION PARCELS 'B' THRU 'D'. SWM FACILITIES ARE TO BE PRIVATELY OWNED AND MAINTAINED.

7.) EXISTING UTILITIES ARE BASED UPON FIELD SURVEY LOCATIONS.

8.) WETLAND DELINEATION PROVIDED BY WILDMAN ENVIRONMENTAL SERVICES DATED JANUARY, 2001 AND WAS APPROVED UNDER S-01-21.

9.) TRAFFIC STUDY WAS PREPARED BY LEE CUNNINGHAM & ASSOCIATES, INC. IN AUGUST, 2000 AND REVISED IN JANUARY, 2001 AND WAS APPROVED UNDER S-01-21.

10.) A NOISE STUDY PREPARED BY BENCHMARK ENGINEERING, INC. IN AUGUST 2001 AND WAS APPROVED UNDER S-01-21.

11.) THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY HILLIS CARNES ENGINEERING ASSOCIATES, INC. DATED JULY 7, 2003.

12.) THE SUBJECT PROPERTY IS ZONED RC-DEO PER THE 2-2-04 COMPREHENSIVE ZONING PLAN. ALL ADJACENT PROPERTIES ARE ZONED RC-DEO PER THE 2-2-04 COMPREHENSIVE ZONING PLAN.

13.) TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO BURIAL GROUNDS OR CEMETERIES LOCATED ON THIS SITE.

14.) THERE SHALL BE NO DISTURBANCE WITHIN THE 100-YR FLOODPLAIN, WETLANDS, STREAMS, THEIR BUFFERS OR STEEP SLOPES THAT ARE AT LEAST 20,000 S.F. UNLESS APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING.

15.) BOUNDARY IS BASED ON A FIELD RUN MONUMENTED BOUNDARY SURVEY PERFORMED BY BENCHMARK ENGINEERING, INC., DATED APRIL, 2003.

16.) THIS PROJECT IS NOT LOCATED WITHIN THE METROPOLITAN DISTRICT.

17.) THIS PLAN IS SUBJECT TO COMPLIANCE WITH THE SECOND AMENDMENT OF THE FOURTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AS A CONSEQUENCE FOR ITS SUBMISSION PRIOR TO 11-15-2001. THIS PROJECT IS SUBJECT TO COMPLIANCE WITH THE 1993 ZONING REGULATIONS IN EFFECT PRIOR TO COUNCIL BILL 50-2001 BECAUSE THE PLAN HAS GIVEN TECHNICALLY COMPLETE APPROVAL PRIOR TO 11/1/01, IN ACCORDANCE WITH COUNCIL BILL 50-2003.

18.) [hatched symbol] THIS AREA DESIGNATES A PRIVATE SEWERAGE EASEMENT OF 10,000 SQUARE FEET AS REQUIRED BY THE STATE DEPARTMENT OF THE ENVIRONMENT FOR INDIVIDUAL SEWERAGE DISPOSAL. IMPROVEMENTS OF ANY NATURE IN THIS AREA IS RESTRICTED UNTIL PUBLIC SEWER IS AVAILABLE. THIS EASEMENT SHALL BECOME NULL AND VOID UPON CONNECTION TO A PUBLIC SEWERAGE SYSTEM. THE COUNTY HEALTH OFFICER SHALL HAVE THE AUTHORITY TO GRANT ADJUSTMENTS TO THE PRIVATE SEWERAGE EASEMENT. RECORDATION OF A MODIFIED SEWERAGE EASEMENT PLAT SHALL NOT BE NECESSARY.

19.) THE PURPOSE OF THE PRESERVATION PARCELS AND THE JUSTIFICATION FOR THE DESIGN OF THE CLUSTER SUBDIVISION IS AS FOLLOWS:

PRESERVATION PARCEL 'A' IS PROPOSED AS A BUILDABLE PARCEL TO ALLOW FOR 1 DWELLING UNIT. IT WILL BE A PART OF THE HOWARD COUNTY AGRICULTURAL LAND PRESERVATION PROGRAM BY PLACEMENT IN A HOWARD COUNTY AGRICULTURAL LAND PRESERVATION EASEMENT. IT WILL BE PRIVATELY OWNED WITH HOWARD COUNTY AGRICULTURAL LAND PRESERVATION PROGRAM AS THE EASEMENT HOLDER. There will be a Howard County Agricultural Land Preservation Program Easement.

PRESERVATION PARCELS 'B', 'C', AND 'D' ARE PROPOSED AS NON-BUILDABLE PRESERVATION PARCELS TO PROVIDE STORMWATER MANAGEMENT. THESE PARCELS ARE TO BE DEDICATED TO THE HOMEOWNERS ASSOCIATION WITH HOWARD COUNTY AS THE EASEMENT HOLDER.

20.) THIS PLAN COMPLIES WITH THE REQUIREMENTS OF SECTION 16.1200 OF THE HOWARD COUNTY CODE FOR FOREST CONSERVATION BY RETENTION OF 7.54 ACRES OF FOREST AND REFORESTATION OF 1.68 ACRES. FINANCIAL SURETY FOR THE 7.54 ACRES (328,442.40 S.F.) OF RETENTION IN THE AMOUNT OF $65,688.48 AND THE 1.68 ACRES (73,180.80 S.F.) OF REFORESTATION IN THE AMOUNT OF $36,590.40 HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT FOR THE TOTAL AMOUNT OF $102,278.88.

21.) THE 100-YEAR FLOODPLAIN LIMITS SHOWN ON THIS PLAN ARE FROM A DETAILED STUDY BY BENCHMARK ENGINEERING, INC., DATED MARCH 5, 2004, AND FROM INFORMATION PROVIDED IN THE CATTAIL CREEK WATERSHED STUDY, CAPITAL PROJECT #D-1079 DATED JUNE, 1994. THE LIMITS AND CROSS-SECTION INFORMATION WAS OBTAINED THROUGH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS TRANSPORTATION AND WATERSHED DIVISION'S GIS NETWORK.

22.) ALL DRIVEWAY CULVERTS ARE TO BE 15" HDPEP. DESIGN CALCULATIONS ARE PROVIDED IN THE APPROVED STORM DRAIN REPORT.

23.) HOWARD COUNTY MONUMENT #07FA TO BE RELOCATED BY OTHERS.

24.) THE 65 dBA NOISE CONTOUR LINE DRAWN ON THIS SUBDIVISION PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY, 1992 AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65 dBA NOISE EXPOSURE. THE 65 dBA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT THE AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

25.) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

26.) ALL LANDSCAPING REQUIREMENTS FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL AND SECTION 16.124(b)(3)(ii) OF THE SUBDIVISION REGULATIONS. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING WILL BE POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF $63,450.00.

27.) THE DEVELOPER HAS FILED A JOINT FEDERAL/STATE APPLICATION FOR THE ALTERATION OF ANY FLOODPLAIN, WATERWAY, TIDAL OR NONTIDAL WETLAND IN MARYLAND FOR THE NECESSARY ROAD CROSSINGS. MARYLAND DEPARTMENT OF THE ENVIRONMENT HAS DETERMINED THAT THERE ARE NO IMPACTS TO STATE JURISDICTIONAL WETLANDS, WATERWAYS OR FLOODPLAINS. THE U. S. ARMY CORPS OF ENGINEERS HAS AUTHORIZED THE DEVELOPER TO PERFORM WORK IN ACCORDANCE WITH THE TERMS AND CONDITIONS SPECIFIED IN SECTION VI OF THE MDSPGP-2 EFFECTIVE ON OCTOBER 1, 2001. THE TRACKING NUMBER IS 200662094/06-NT-3055.

28.) [cross-hatched symbol] THIS AREA DESIGNATES A SAND MOUND LOCATION FOR DISPOSAL OF SEWAGE. LOTS 6, 7, 10, 14 AND 15 CONTAIN SANDMOUNDS THAT ARE TO BE DESIGNED AT THE TIME OF PERMIT PLAN.

29.) DISTURBANCE TO FLOOD PLAIN ASSOCIATED WITH THE CONSTRUCTION OF THE ROADWAY CROSSING HAS BEEN APPROVED UNDER SECTION 16.115.(C) OF THE SUBDIVISION REGULATIONS BY THE DIVISION OF LAND DEVELOPMENT. THE DEPARTMENT OF PLANING AND ZONING HAS DETERMINED THAT THE DISTURBANCE AT THE STREAM CROSSING IS CONSIDERED "NECESSARY" IN ACCORDANCE WITH SECTION 16.116(C) OF THE SUBDIVISION REGULATIONS. THE DISTURBANCE WAS APPROVED BECAUSE CONSTRUCTING A SEPARATE ACCESS ONTO ROUTE 94 WOULD REQUIRE EXTENSIVE CLEARING AND GRADING ALONG THE SCENIC ROAD AND DUE TO THE PRESENCE OF STEEP SLOPES IN THE AREA.

30.) There are no Specimen Trees on this site.

SITE ANALYSIS DATA CHART

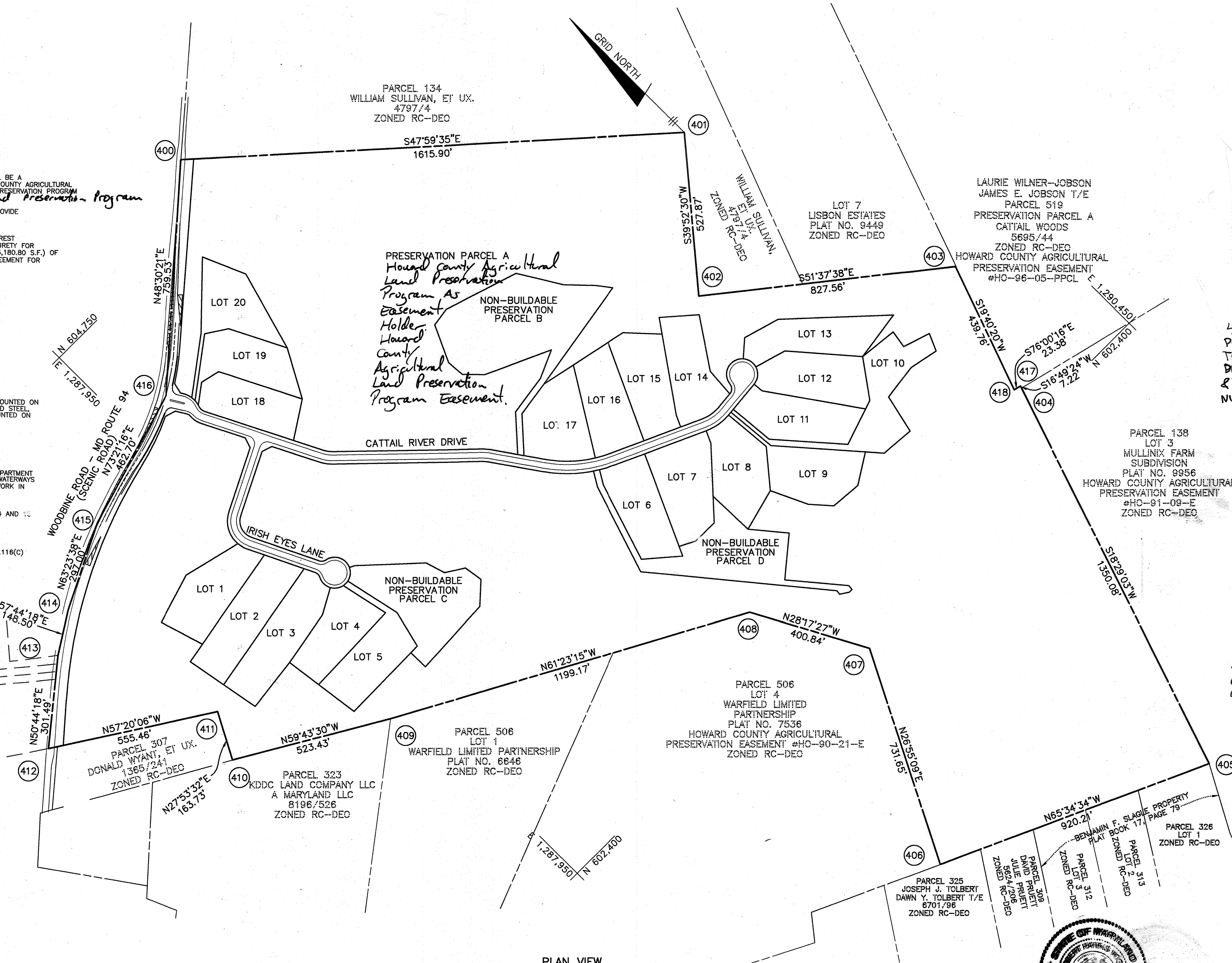
GENERAL SITE DATA

1.) PRESENT ZONING: RC-DEO
2.) APPLICABLE DPZ FILE REFERENCES: S-01-21, P-05-001
3.) PROPOSED USE OF SITE: RESIDENTIAL (SFD)
4.) PROPOSED WATER AND SEWER SYSTEMS: PRIVATE

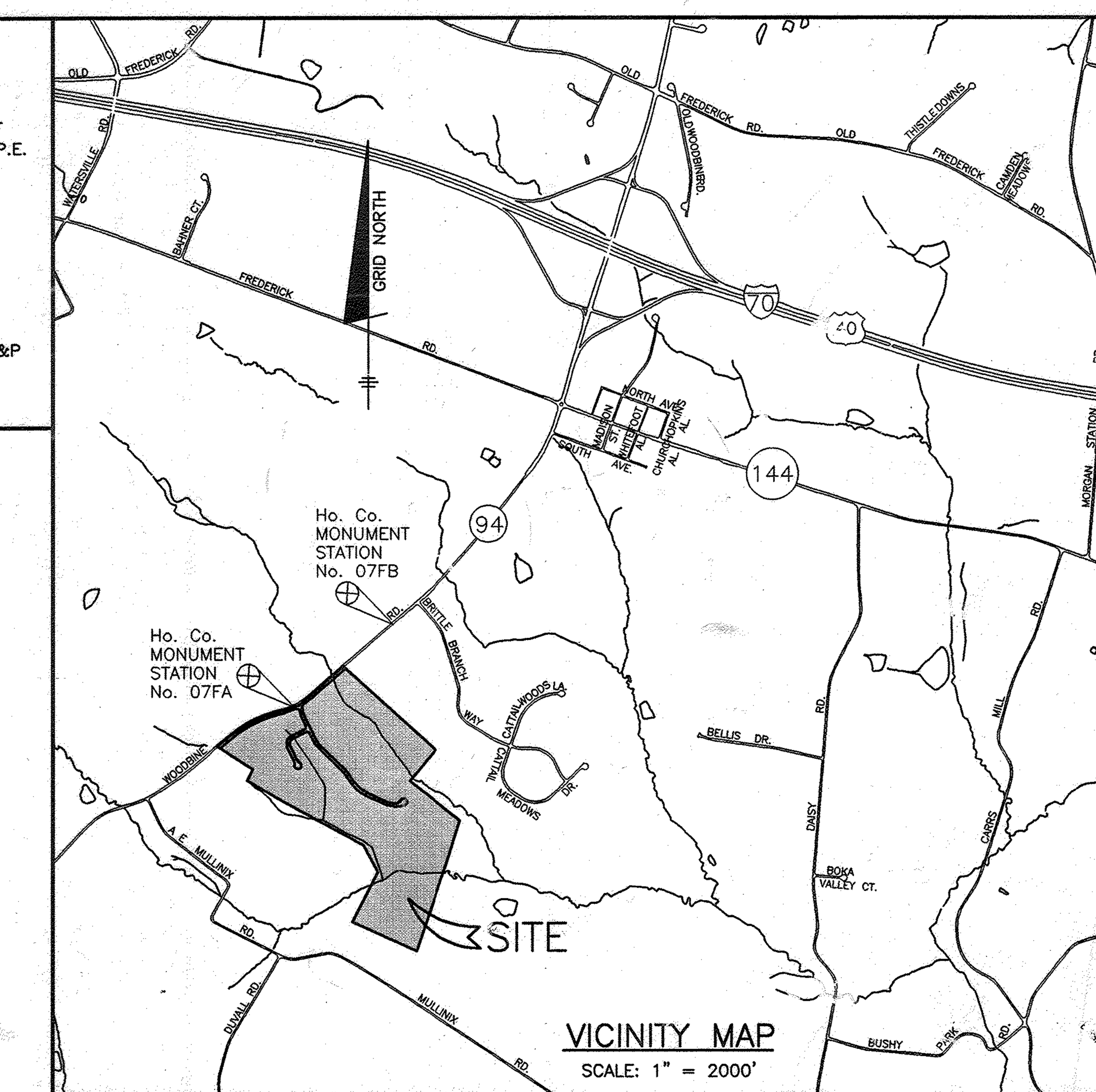
AREA TABULATION

1.) GROSS TRACT AREA: 116.79 AC.±
2.) AREA WITHIN 100-YEAR FLOODPLAIN: 23.62 AC.±
3.) TOTAL AREA OF 25% OR GREATER STEEP SLOPES: 1.10 AC.±
4.) NET TRACT AREA: 92.07 AC.±
5.) TOTAL NUMBER OF LOTS ALLOWED PER ZONING 1 UNIT PER 4.25 GROSS ACRES: 27
6.) TOTAL NUMBER OF RESIDENTIAL UNITS/LOTS PROPOSED ON THIS SUBMISSION (20 CLUSTER LOTS+ PRES. PARCEL A): 21
7.) AREA OF CLUSTER LOTS: 22.72 AC.±
8.) AREA OF BUILDABLE PRESERVATION PARCEL: 83.33 AC.±
9.) AREA OF NON-BUILDABLE PRESERVATION PARCELS: 6.35 AC.±
10.) AREA OF ROAD RIGHT-OF-WAY: 4.39 AC.±
11.) OPEN SPACE ON-TOTAL SITE: N/A
11.) TOTAL NUMBER OF BUILDABLE PRESERVATION PARCELS: 1
12.) TOTAL NUMBER OF NON-BUILDABLE PRESERVATION PARCELS: 3

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS	DATE 4-21-06
APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT JA	DATE 5/12/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK	DATE 5/2/06



BENCH MARKS NAD'83
HO. CO. #07FB STAMPED BRASS DISK SET ON TOP OF CONCRETE BASE; 3.6' SOUTH OF EDGE OF PAVING OF ROUTE 94; 62.9' SOUTHWEST OF C&P POLE #15 AND 44.6' SOUTHEAST OF P.E. POLE #FS2601. N 605463.426' E 1289326.119' ELEV. 589.016'
HO. CO. #07FA STAMPED BRASS DISK SET ON TOP OF CONCRETE BASE; 6.1' SOUTH OF THE EDGE OF PAVING OF ROUTE 94; 45.3' SOUTH OF P.E. SYSTEM POLE #FS6908 AND 26.6' NORTHEAST OF P.E. SYSTEM POLE #6909(C&P POLE #22). N 604392.216' E 1288044.192' ELEV. 593.432'



SHEET INDEX	
NO.	DESCRIPTION
1	TITLE SHEET
2	ROAD PLAN
3	ROAD PLAN
4	WOODBINE ROAD IMPROVEMENT PLAN
5	ROAD PROFILES
6	ROAD PROFILES AND DETAILS
7	STORMDRAIN DRAINAGE AREA MAP
8	STORMDRAIN PROFILES
9	STORMDRAIN PROFILES
10	GRADING, SEDIMENT AND EROSION CONTROL PLAN
11	GRADING, SEDIMENT AND EROSION CONTROL PLAN
12	SEDIMENT AND EROSION CONTROL NOTES AND DETAILS
13	LANDSCAPE PLAN
14	FOREST CONSERVATION PLAN
15	FOREST CONSERVATION PLAN
16	SWM DETAILS FACILITY #1
17	SWM DETAILS FACILITY #2
18	SWM DETAILS FACILITY #3
19	SWM NOTES AND BORING LOGS
20	RED-LINE REVISION FOR LOT-10-BLOWUP & DETAILS

4/28/2023 REVISION PURPOSE STATEMENT: TO REVISE LOT 10, HOUSE DRIVEWAY, SEPTIC, GRADING & TO UPDATE ALL PAGE NUMBERS.

REV. #1 ONLY

STATE OF MARYLAND · DUSTIN M. LAVELLE · 21701 · PROFESSIONAL LAND SURVEYOR

REG. NO. 21701, EXP. 6/11/2023
A LICENSEE EITHER PERSONALLY PREPARED THIS RED-LINE REVISION OR WAS IN RESPONSIBLE CHARGE OVER ITS PREPARATION AND THE SURVEYING WORK REFLECTED IN IT, ALL IN COMPLIANCE WITH REQUIREMENTS SET FORTH IN REGULATION 09.13.06.12 OF THE CODE OF MARYLAND REGULATIONS (COMAR). 4/28/2023.

LEGEND

- LIMIT OF WETLANDS
- EXISTING WOODS LINE
- PROPOSED WOODS LINE
- EXISTING STRUCTURE
- EXISTING WELL (EX. WELL)
- PROPOSED SEPTIC FIELD
- 100 YEAR FLOODPLAIN
- PROP. STREET TREE
- PROPOSED SANDMOUND AREA
- SLOPES 25% AND GREATER
- SLOPE BETWEEN 15% AND 24.9%

NO.	DATE	REVISION
1	4/28/2023	RED-LINE REVISION - LOT 10 HOUSE, DRIVEWAY, SEPTIC, & GRADING

STATE OF MARYLAND · ROBERT HARRIS VOGEL · No. 16193 · PROFESSIONAL ENGINEER

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS & SPECIFICATIONS.

SIGNATURE — 16193 PE. NO. — 01/31/13 DATE

BENCHMARK ENGINEERING, INC.
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418
ELLICOTT CITY, MARYLAND 21043
phone: 410-465-6105 ▲ fax: 410-465-6644
www.bei-civilengineering.com

3/31/06

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

PROJECT: **THE CHASE AT STONEY BROOK**
LOTS 1-20, PRESERVATION PARCEL "A" AND NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION: TAX MAP 7, BLOCK 17 PARCEL 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: TITLE SHEET

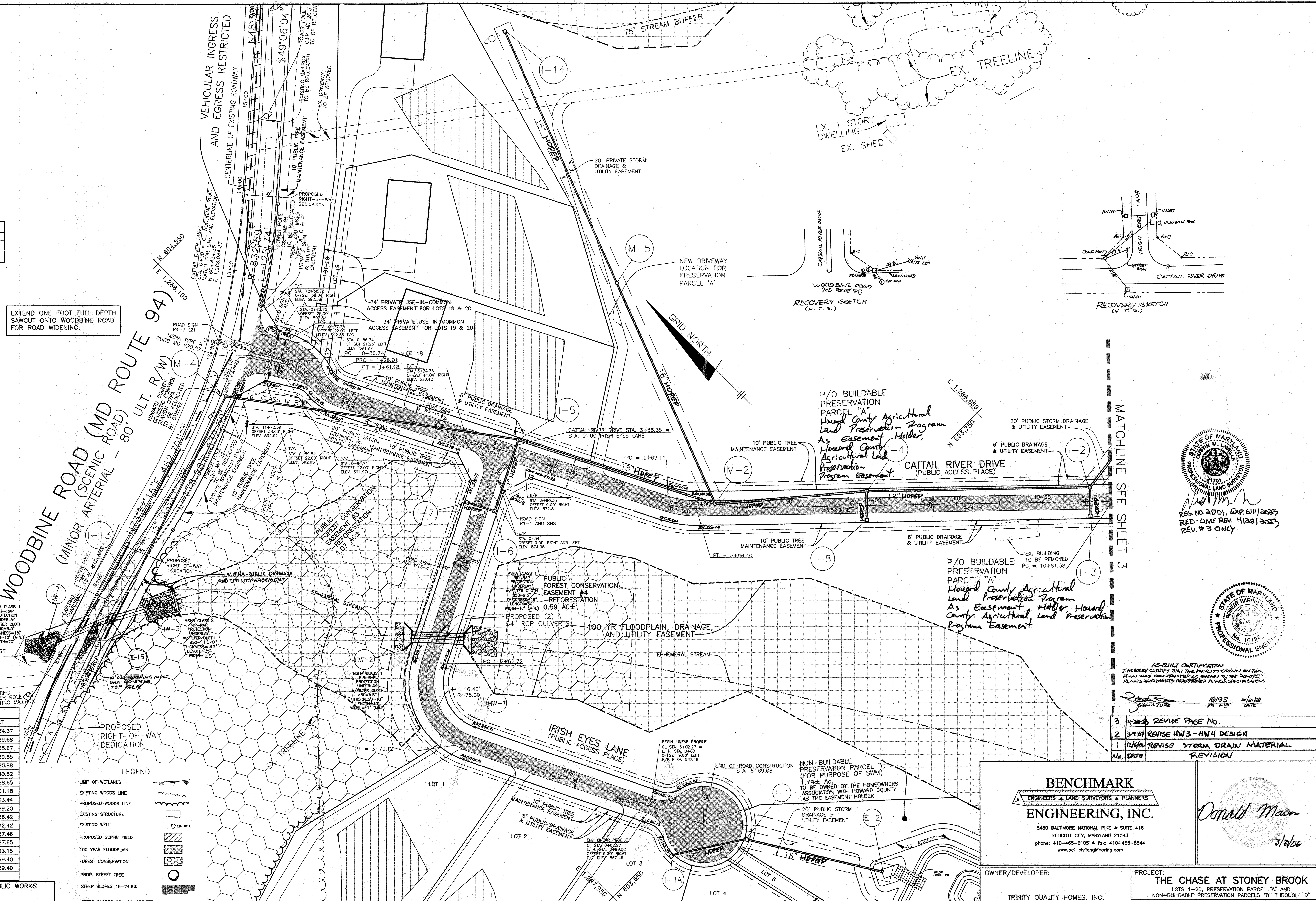
DES: JMC	DRAFT: JMC	CHECK: DAM	DATE: APRIL, 2006 / MARCH, 2006	PROJECT NO. 1187
			SCALE: AS SHOWN	SHEET 1 OF 20 ~~19~~

AS-BUILT 1/31/13

F-05-170

P:\1187\dwg\7009S01.dwg, Sheet 1, 3/31/2006 3:02:03 PM, imc, Oce TDS600 HDI for mylar.pc3

STREET LIGHT SCHEDULE		
SYMBOL	DESCRIPTION	LOCATION
	250-WATT HPS VAPOR PENDANT FIXTURE (SAG) MOUNTED AT 30' ON A BRONZE FIBERGLASS POLE, USING A 12' ARM	OFFSET 54.9' LT C/L STA. 0+42.5± CATTAIL RIVER ROAD



CENTERLINE CONTROL DATA			
STREET NAME	STATION	NORTH	EAST
CATTAIL RIVER DRIVE	BEGIN=0+00.00	604434.35	1288084.37
	PC=0+86.74	604360.39	1288129.68
	PRC=1+26.01	604322.59	1288135.67
	PT=1+61.18	604288.37	1288139.65
	PC=5+63.11	603929.62	1288320.88
	PT=5+96.40	603902.93	1288340.52
	PC=10+81.38	603565.28	1288688.65
	PT=11+00.78	603550.51	1288701.18
	PC=12+80.13	603403.16	1288803.44
	PT=14+98.96	603264.31	1288969.20
	PC=18+15.00	603132.43	1289256.42
	PT=18+92.99	603119.35	1289332.42
	END=20+51.24	603160.70	1289457.46
IRISH EYES LANE	BEGIN=0+00.00	604114.18	1288227.65
	PC=2+62.72	603995.17	1287993.15
	PT=3+79.12	603896.22	1287959.40
	END=6+69.08	603634.99	1287959.40

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

William L. Malak Jr. — CHIEF, BUREAU OF HIGHWAYS — 4-21-06 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Cindy Hamilton — CHIEF, DIVISION OF LAND DEVELOPMENT — 5/12/06 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — MK — 5/2/06 DATE

CENTER LINE CURVE DATA							
STREET NAME	STATION	RADIUS	LENGTH	DELTA	TANGENT	CHORD	
CATTAIL RIVER DRIVE	STA. 0+86.74 TO 1+26.01	50.00'	32.27'	45°00'00"	20.71'	N08°59'59"W	38.27'
	STA. 1+26.01 TO 1+61.18	50.00'	35.17'	40°18'24"	18.35'	S06°38'53"E	34.45'
	STA. 5+63.11 TO 5+96.40	100.00'	33.29'	19°04'26"	16.80'	S36°20'18"E	33.14'
	STA. 10+81.38 TO 11+00.78	100.00'	19.40'	11°06'58"	9.73'	N40°19'02"W	19.37'
	STA. 12+80.13 TO 14+98.96	410.00'	218.82'	30°34'45"	112.08'	S50°02'56"E	216.23'
	STA. 18+15.00 TO 18+92.99	150.00'	78.00'	29°47'31"	39.90'	S80°14'04"E	77.12'
IRISH EYES LANE	STA. 2+62.72 TO 3+79.12	75.00'	116.40'	88°55'13"	73.60'	S18°44'19"W	105.06'

REG. NO. 21701, EXP. 6/11/2023
RED-LINE REV. 4/28/2023
REV. #3 ONLY

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS & SPECIFICATIONS

SIGNATURE — 16193 PE NO — 01/31/13 DATE

No.	DATE	REVISION
3	4-28-23	REVISE PAGE NO.
2	3-9-07	REVISE HW3 - HW4 DESIGN
1	12/6/06	REVISE STORM DRAIN MATERIAL

BENCHMARK ENGINEERING, INC.
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ELLICOTT CITY, MARYLAND 21043
phone: 410-465-6105 ▲ fax: 410-465-6644
www.bei-civilengineering.com

Donald Mason 3/31/06

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

PROJECT: THE CHASE AT STONEY BROOK
LOTS 1-20, PRESERVATION PARCEL "A" AND NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION: TAX MAP No. 7, BLOCK No. 17, PARCEL No. 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: ROAD PLANS

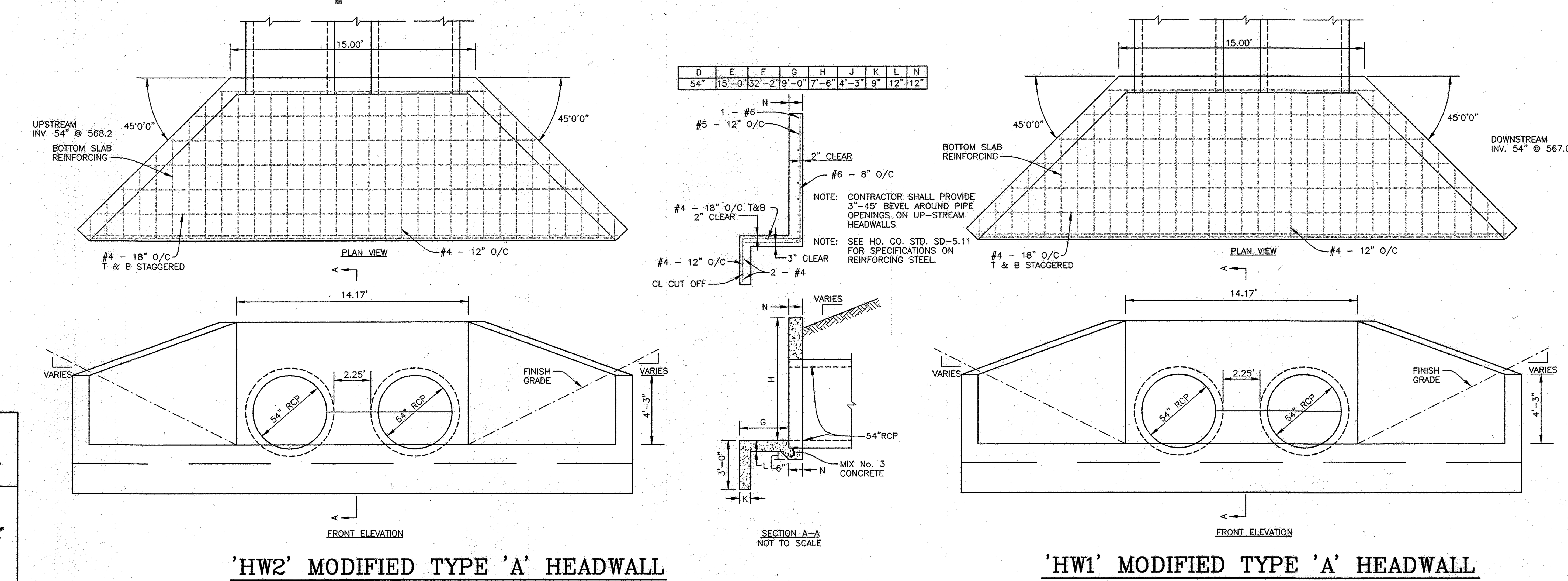
DATE: AUGUST, 2005 / MARCH, 2006 — PROJECT NO. 1187

DES: JMC | DRAFT: LAB | CHECK: DAM | SCALE: 1" = 50' | SHEET 2 OF 20 ~~19~~

AS-BUILT 1/31/13

F-05-170


S51°37'38"E 827.56
25' WETLANDS BUFFER
75' STREAM BUFFER
EX. TREELINE
EX. 1 STORY DWELLING
EX. SHED
30" RCP
12' ACCESS
12' EMERGENCY SPILLWAY
5' BENCH
20' PUBLIC STORM DRAINAGE & UTILITY EASEMENT
24" HDPEP
PRIVATE ACCESS, LANDSCAPE, PRESERVATION, STORM DRAINAGE, STORMWATER MANAGEMENT & UTILITY EASEMENT
NON-BUILDABLE PRESERVATION PARCEL "B" (FOR PURPOSE OF SWM)
TO BE OWNED BY THE HOMEOWNERS ASSOCIATION WITH HOWARD COUNTY AS THE EASEMENT HOLDER
2.86± Ac.
GRID NORTH
P/O BUILDABLE PRESERVATION PARCEL "A"
Howard County Agricultural Land Preservation Program as Easement Holder, Howard County Agricultural Land Preservation Program Easement
18" HDPEP
15" HDPEP
END OF ROAD CONSTRUCTION STA. 20+51.24
BEGIN LINEAR PROFILE
END LINEAR PROFILE
20' PRIVATE STORM DRAINAGE & UTILITY EASEMENT
LOT 6
LOT 7
LOT 8
LOT 9
LOT 10
LOT 11
LOT 12
LOT 13
LOT 14
LOT 15
LOT 16
LOT 17
CATTAIL RIVER DRIVE (PUBLIC ACCESS PLACE)
6' PUBLIC DRAINAGE & UTILITY EASEMENT
10' PUBLIC TREE MAINTENANCE EASEMENT
MATCHLINE SEE SHEET 2
PC = 10+81.38
PT = 11+00.78
PC = 12+80.13
PT = 14+98.96
PC = 18+15.00
PT = 18+92.98
L=218.82 R=410.00
L=19.40' R=100.00
L=76.00 R=150.00
S34°45'33"E 179.35'
S65°20'18"E 316.04'
N 603,300
E 1,288,750
N 603,200
E 1,289,300
NON-BUILDABLE PRESERVATION PARCEL "D" (FOR PURPOSE OF SWM)
1.75± Ac.
TO BE OWNED BY THE HOMEOWNERS ASSOCIATION WITH HOWARD COUNTY AS THE EASEMENT HOLDER
LEGEND
LIMIT OF WETLANDS
EXISTING WOODS LINE
PROPOSED WOODS LINE
EXISTING STRUCTURE
EXISTING WELL
PROPOSED SEPTIC FIELD
100 YEAR FLOODPLAIN
FOREST CONSERVATION
PROP. STREET TREE
STEEP SLOPES 15–24.9%
STEEP SLOPES 25% OR GREATER
REG.No.21701, EXP.6/11/23
RED-LINE REV. 4/28/2023
REV.#2 ONLY


15.00'
UPSTREAM INV. 54" @ 568.2
DOWNSTREAM INV. 54" @ 567.00
BOTTOM SLAB REINFORCING
45°0'0"
#4 – 18" O/C T & B STAGGERED
#4 – 12" O/C
PLAN VIEW
14.17'
2.25'
54" RCP
FINISH GRADE
VARIES
4'-3"
FRONT ELEVATION
NOTE: CONTRACTOR SHALL PROVIDE 3"–45° BEVEL AROUND PIPE OPENINGS ON UP-STREAM HEADWALLS
NOTE: SEE HO. CO. STD. SD–5.11 FOR SPECIFICATIONS ON REINFORCING STEEL.
MIX No. 3 CONCRETE
SECTION A–A NOT TO SCALE

D	E	F	G	H	J	K	L	N
54"	15'-0"	32'-2"	9'-0"	7'-6"	4'-3"	9"	12"	12"

'HW2' MODIFIED TYPE 'A' HEADWALL
SCALE: 1" = 5'

'HW1' MODIFIED TYPE 'A' HEADWALL
SCALE: 1" = 5'

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND MEETS THE APPROVED PLANS & SPECIFICATIONS
SIGNATURE 16193 P.E. NO. 01/31/13 DATE

No.	DATE	REVISION
2	4/28/23	REVISE PAGE No.
1	12/6/06	REVISE STORM DRAIN MATERIAL

BENCHMARK ENGINEERING, INC.
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
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phone: 410-465-6105 ▲ fax: 410-465-6644
www.bei-civilengineering.com

3/31/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — 4-21-06 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — 5/12/06 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 5/12/06 DATE

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
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ELLICOTT CITY, MD 21043
410-480-0023

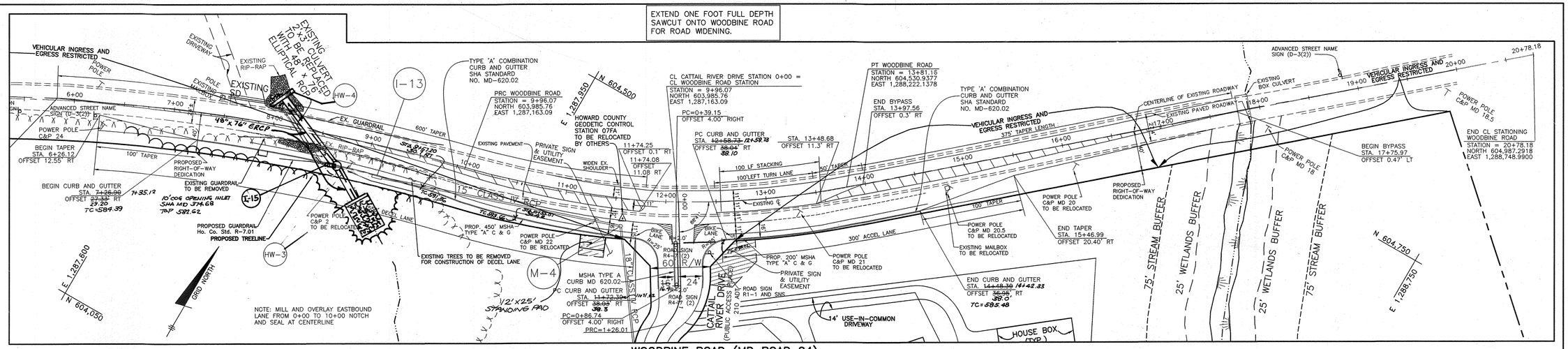
PROJECT: THE CHASE AT STONEY BROOK
LOTS 1–20, PRESERVATION PARCEL "A" AND NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"
LOCATION: TAX MAP No. 7, BLOCK No. 17, PARCEL No. 33
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
TITLE: ROAD PLANS
DATE: MAY, 2005 / MARCH, 2006
PROJECT NO. 1187
DES: JMC | DRAFT: LAB | CHECK: DAM | SCALE: 1" = 50' | SHEET 3 OF 20

AS-BUILT 1/31/13

F-05-170

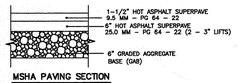
P:\1187\dwg\7017\s2_3.dwg, SHEET 3, 3/31/2006 2:08:16 PM

EXTEND ONE FOOT FULL DEPTH SAWCUT ONTO WOODBINE ROAD FOR ROAD WIDENING.

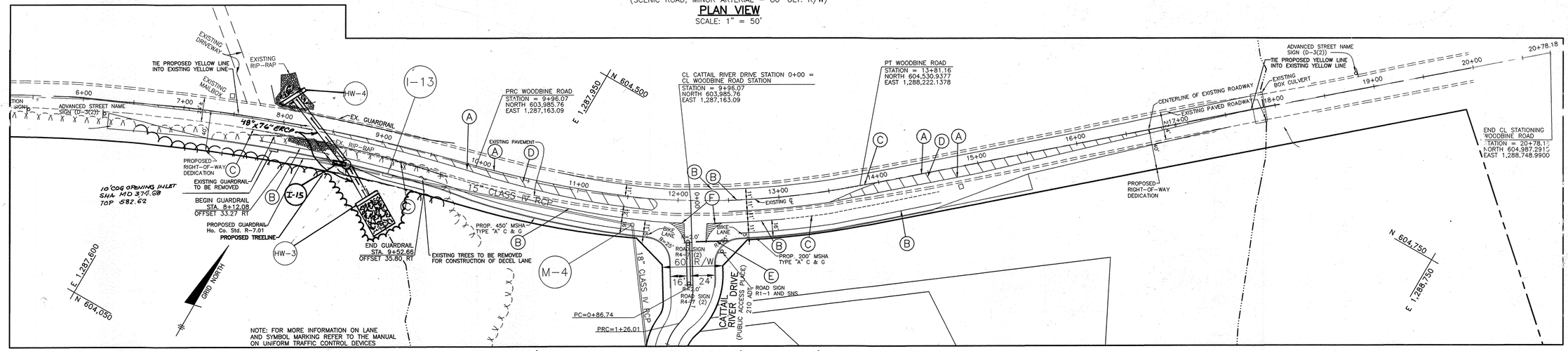


WOODBINE ROAD (MD ROAD 94)
(SCENIC ROAD, MINOR ARTERIAL – 80' ULT. R/W)

PLAN VIEW
SCALE: 1" = 50'

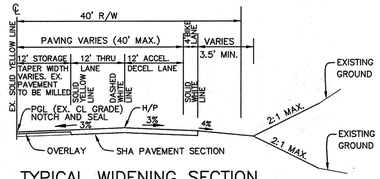


MSHA PAVING SECTION

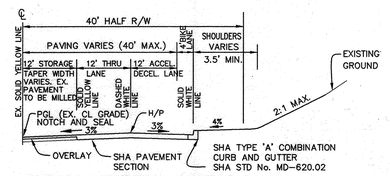


WOODBINE ROAD (MD ROAD 94)
(SCENIC ROAD, MINOR ARTERIAL – 80' ULT. R/W)

PLAN VIEW – STRIPING AND SIGNAGE
SCALE: 1" = 50'



TYPICAL WIDENING SECTION
WOODBINE ROAD – OPEN SECTION
NOT TO SCALE



TYPICAL WIDENING SECTION
WOODBINE ROAD – CURB AND GUTTER
NOT TO SCALE

LINE LEGEND

- (A) DOUBLE YELLOW CENTERLINE 5" WIDE (EACH LINE)
- (B) SOLID WHITE (5" WIDE)
- (C) PUPPY TRACKS (5" WIDE – WHITE) (3' LONG/ 9' GAP)
- (D) HATCH LINES 12" WIDE ON 45° ANGLE EVERY 100' (YELLOW)
- (E) STOP BAR (24" WIDE – WHITE) (THERMPLASTIC)

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 4-21-06

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/2/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/2/06

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER — 3/31/12

ROBERT H. VOGEL, P.E.
No. 16193
FOR REVISION #2ONLY

STATE OF MARYLAND — DUSTIN M. LABELLE — 21701 — PROFESSIONAL LAND SURVEYOR

REG.NO.21701 EXP.6/11/13
RED-LINE REV. 4/28/13
REV.#3 ONLY

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLANS WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PUBLIC SPECIFICATIONS.

SIGNATURE — 16193 PE NO. — 01/31/13 DATE

NO.	DATE	REVISION
3	4/28/13	REVISE PAGE NO.
2	6/11/12	ADD 12'X25' STANDING PAD
1	5-9-07	REVISE HW3 – HW4 DESIGN

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418
ELLICOTT CITY, MARYLAND 21043
phone: 410-465-6105 ▲ fax: 410-465-6644
www.bel-civilengineering.com

STATE OF MARYLAND — DONALD MASON — PROFESSIONAL ENGINEER — 3/21/06

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

PROJECT: THE CHASE AT STONEY BROOK
LOTS 1–20, PRESERVATION PARCEL "A" AND NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION: TAX MAP NO. 7 BLOCK NO. 17 PARCEL NO. 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: WOODBINE ROAD IMPROVEMENT PLAN

DES: RPS | DRAFT: RPS | CHECK: DAM

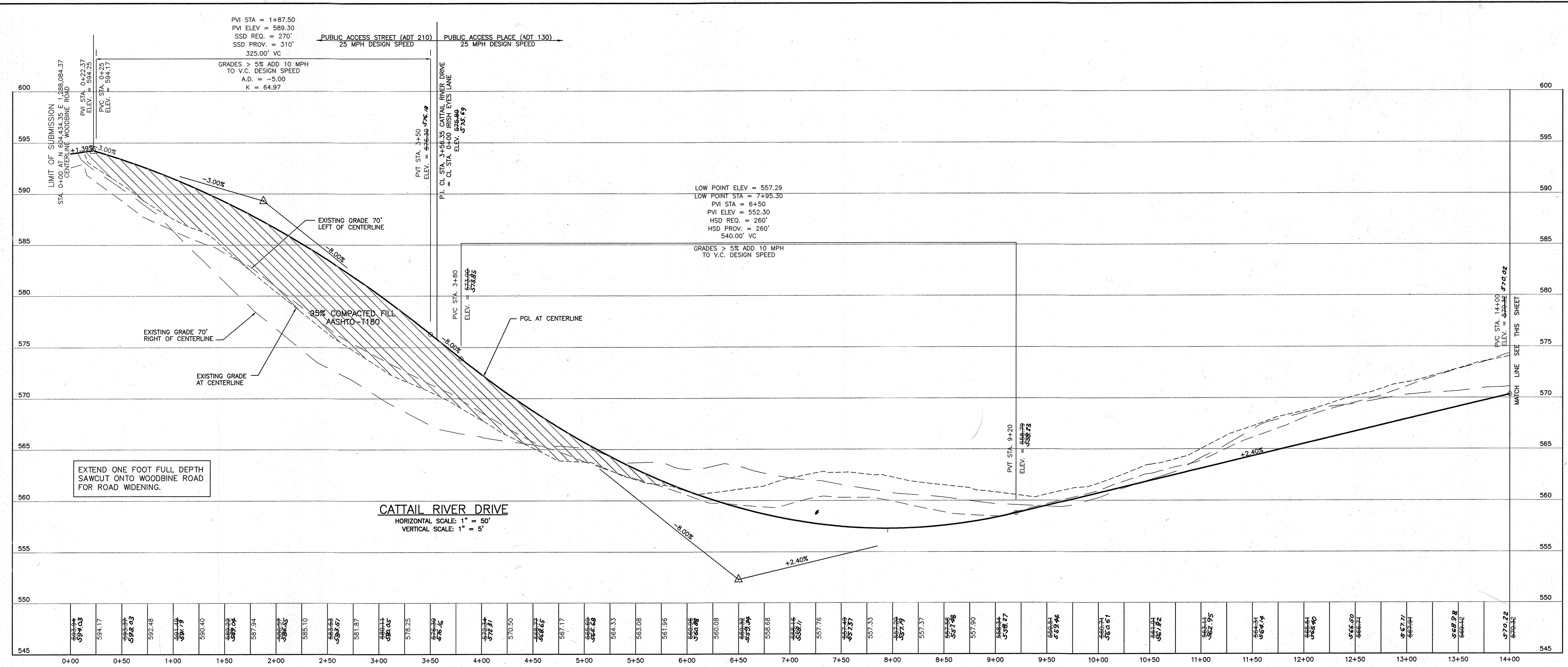
DATE: MARCH, 2006 | PROJECT NO. 1187

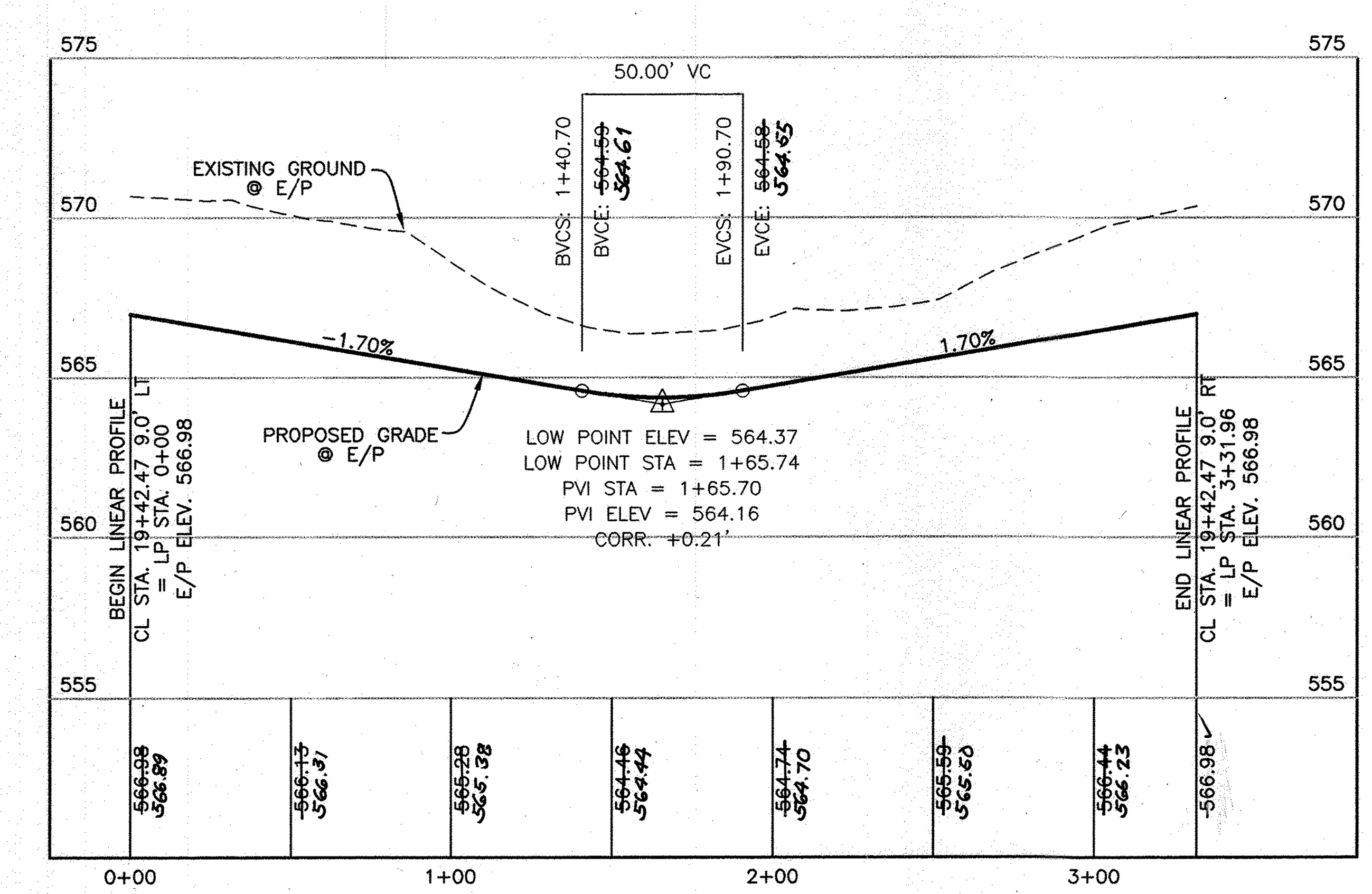
SCALE: AS SHOWN | SHEET 4 OF 20 19

AS-BUILT 1/31/13

F-05-170

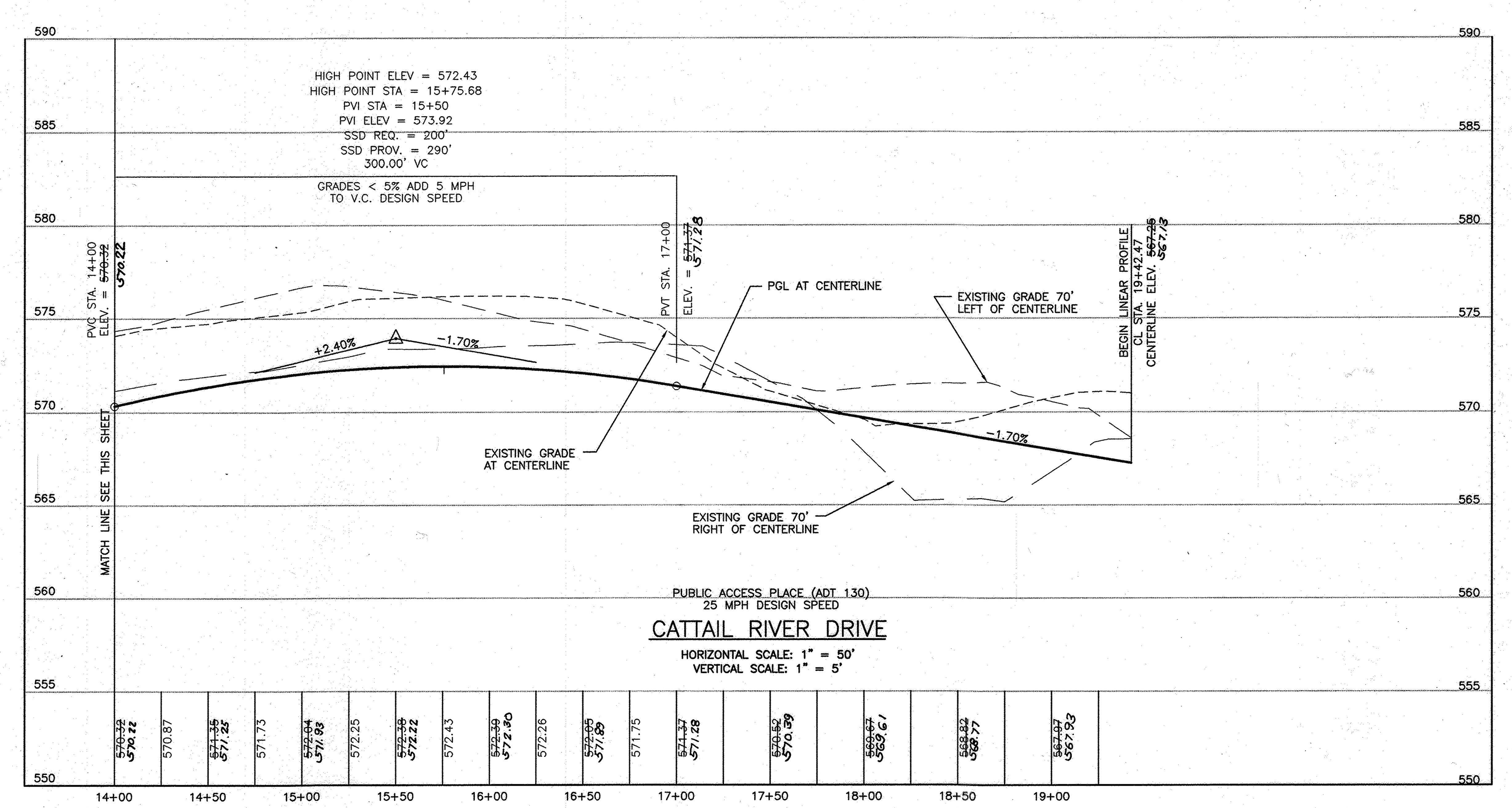
P:\1187\dwg\7017504.dwg, Layout1, 3/31/2006 2:09:15 PM, imc, Oce TDS600 HDI for nvilar.sc3





CATTAIL RIVER DRIVE LINEAR PROFILE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



CATTAIL RIVER DRIVE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

REG. No. 21701, EXP. 6/11/23
RED-LINE REV. 4/28/23
REV. #1 ONLY

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS & SPECIFICATIONS.
SIGNATURE 16193 PE NO. 01/31/13 DATE

No.	DATE	REVISION
1	4/28/23	REVISE PAGE No.

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ELLICOTT CITY, MARYLAND 21043
phone: 410-465-6105 ▲ fax: 410-465-6644
www.bei-civilengineering.com

3/31/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — 4-21-06 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — 5/12/06 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 5/2/06 DATE

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

PROJECT: THE CHASE AT STONEY BROOK
LOTS 1-20, PRESERVATION PARCEL "A" AND NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION: TAX MAP NO. 7 BLOCK NO. 17 PARCEL NO. 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: ROAD PROFILES

DATE: ~~AUGUST, 2005~~ MARCH, 2006 — PROJECT NO. 1187
DESIGN: JMC — DRAFT: RPS — SCALE: AS SHOWN — DRAWING 5 OF 20

AS-BUILT 1/31/13 — F-05-170

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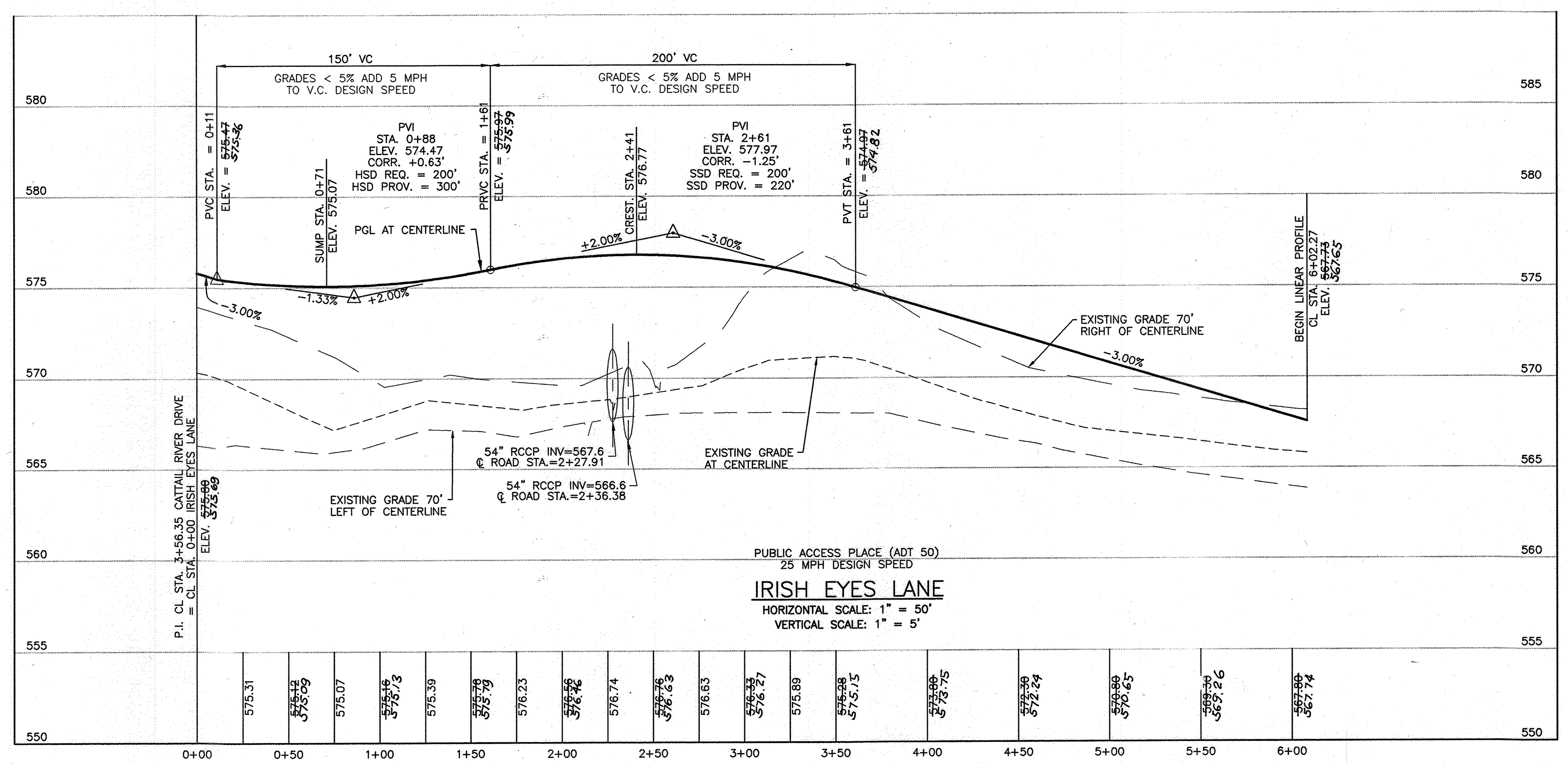
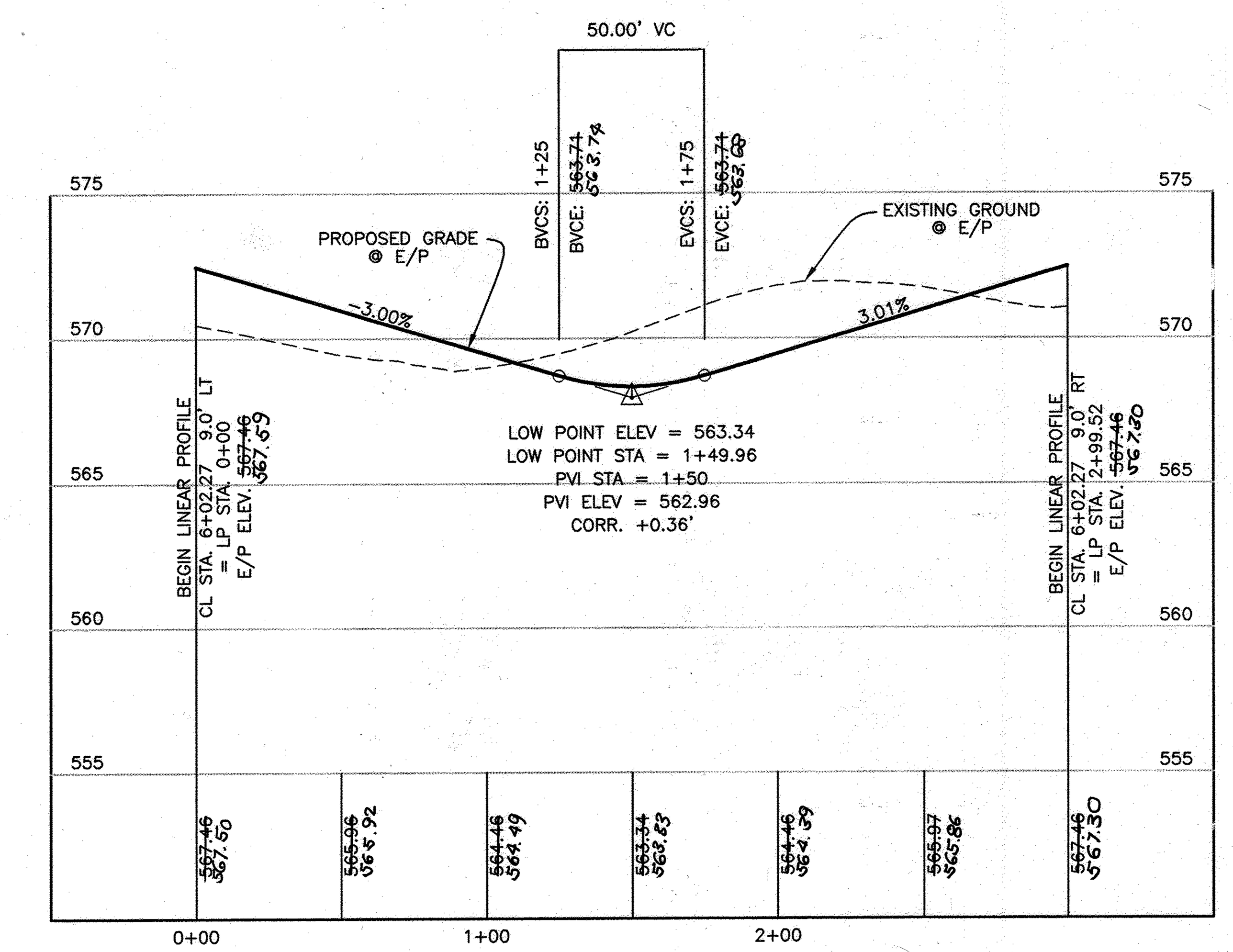
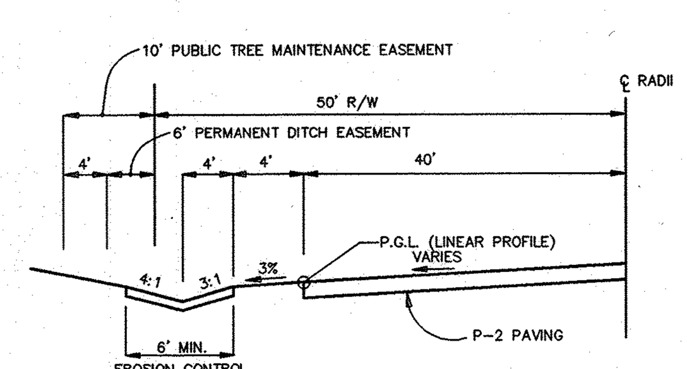


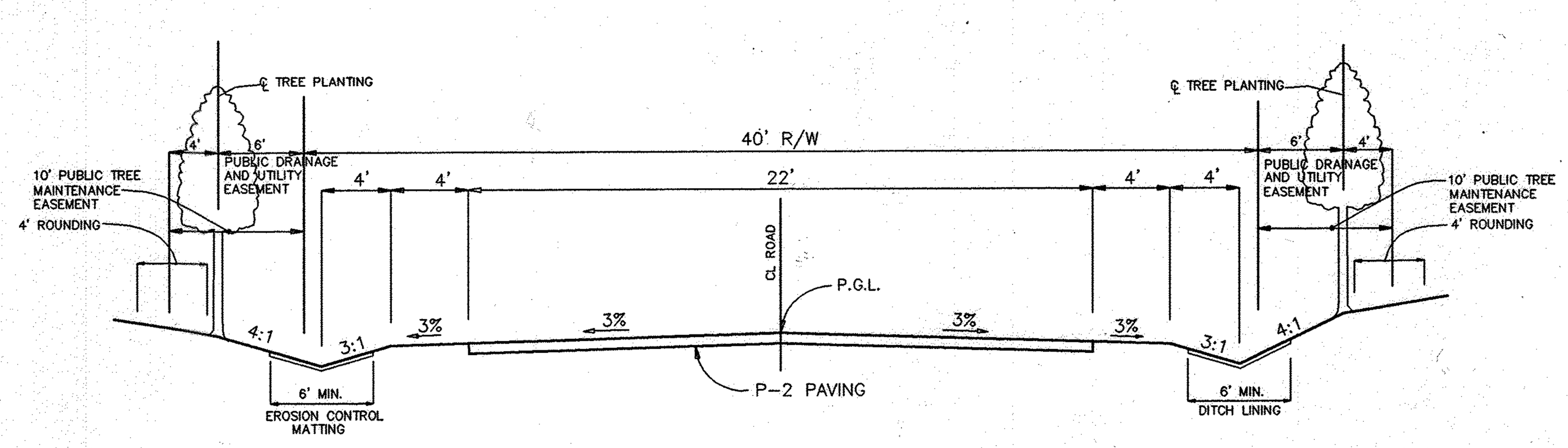
IRISH EYES LANE
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



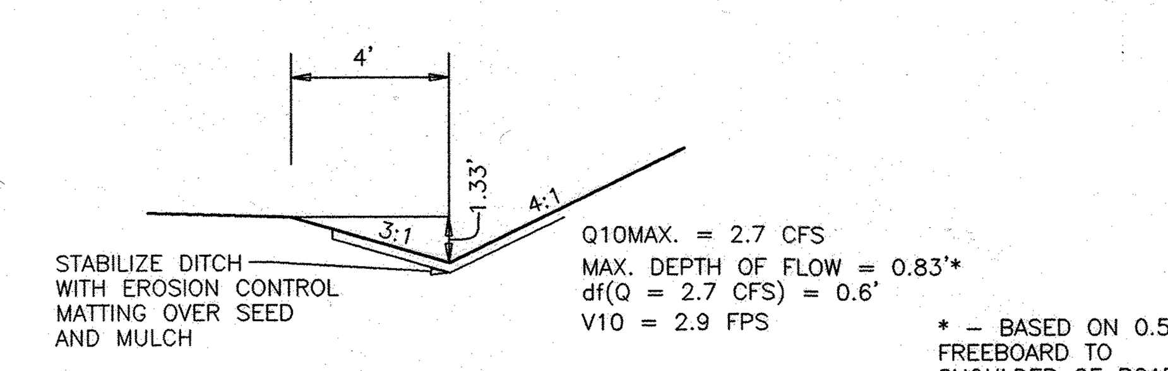
IRISH EYES LANE – LINEAR PROFILE
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



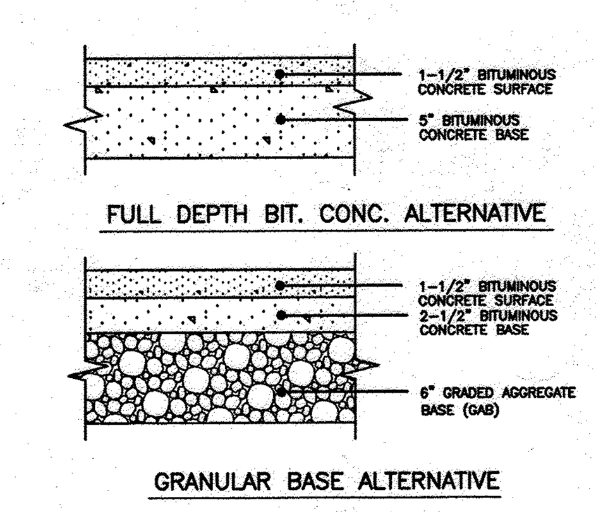
TYPICAL ROADWAY SECTION AT CUL-DE-SAC
LINEAR PROFILE
NOT TO SCALE



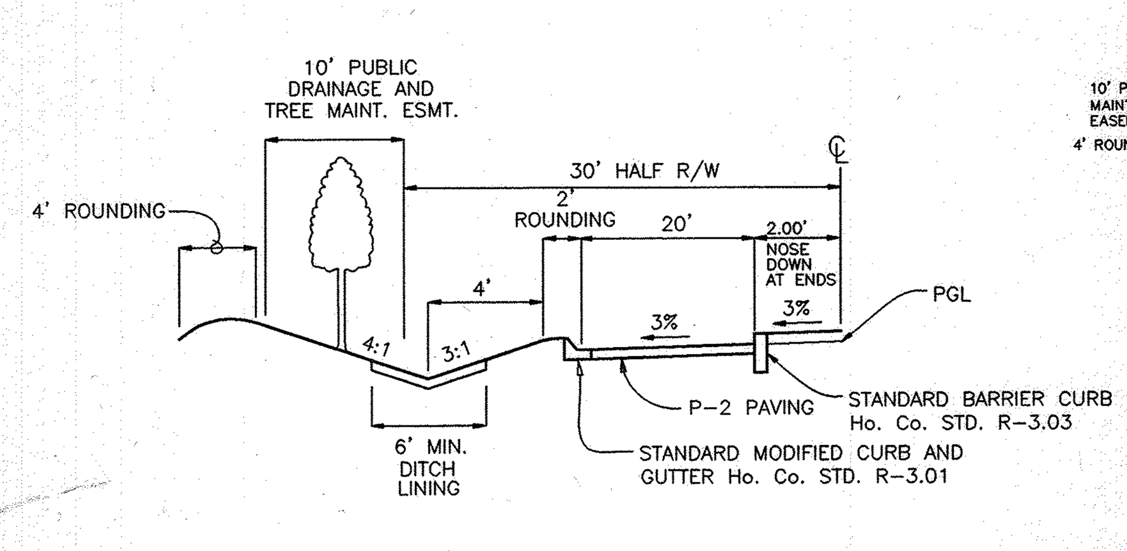
TYPICAL ROADWAY SECTION CATTAIL RIVER DRIVE
(PUBLIC ACCESS STREET – 210 ADT)
DESIGN SPEED: 25 MPH
STA. 1+34.56 TO STA. 3+22.35
NOT TO SCALE



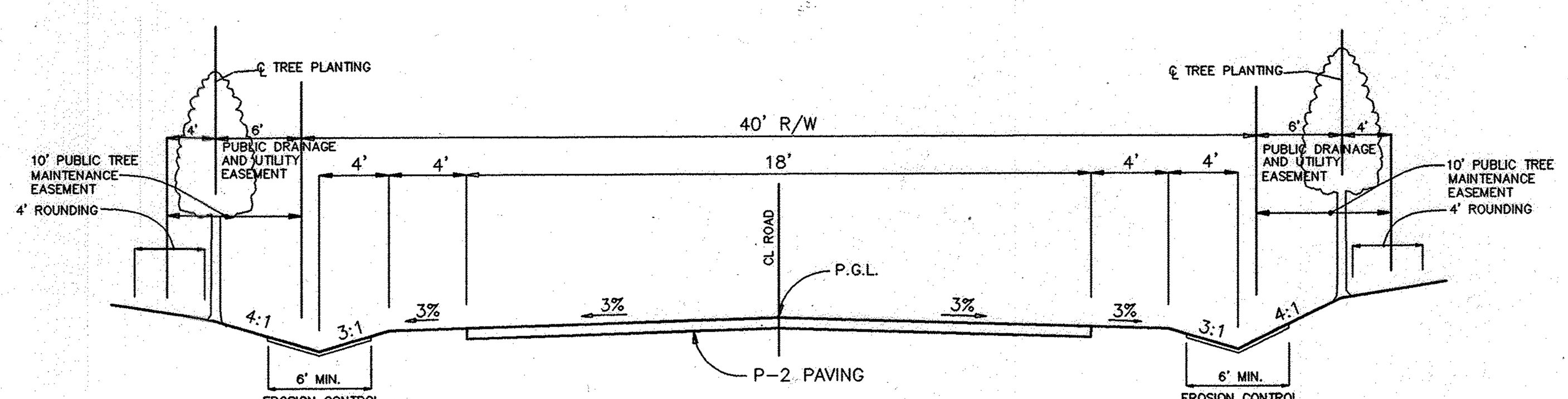
FLOW IN TYPICAL DITCH SECTION
NOT TO SCALE



P-2 PAVING DETAIL
NOT TO SCALE

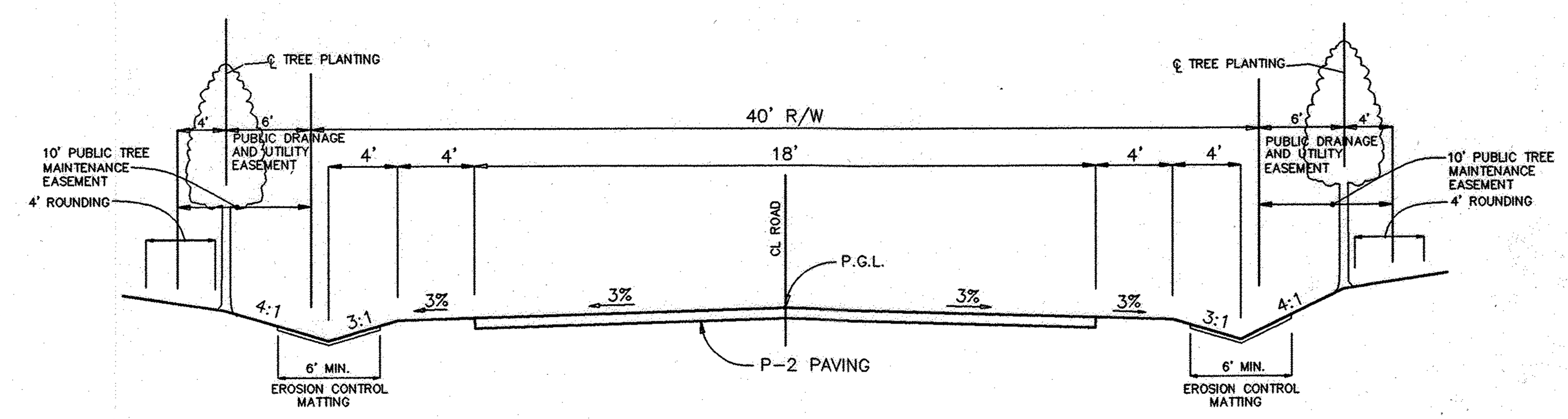


TYPICAL ROADWAY SECTION 20' PAVING W/ 4' ISLAND
(PUBLIC ACCESS STREET – 210 ADT)
DESIGN SPEED: 25 MPH
STA. 0+39.15 TO STA. 0+86.74
NOT TO SCALE



TYPICAL ROADWAY SECTION CATTAIL RIVER DRIVE
(PUBLIC ACCESS PLACE – 130 ADT)
DESIGN SPEED: 25 MPH
STA. 3+90.35 TO STA. 19+42.47
NOT TO SCALE

NOTE: FROM 11+00 TO 12+50 AND 15+64.36 TO 17+14.36 6' PUBLIC DITCH EASEMENT ELIMINATED AND 10' PUBLIC TREE MAINTENANCE EASEMENT TO INCLUDE DITCH MAINTENANCE



TYPICAL ROADWAY SECTION IRISH EYES LANE
(PUBLIC ACCESS PLACE– 50 ADT)
DESIGN SPEED: 25 MPH
STA. 0+36.00 TO STA. 6+02.27
NOT TO SCALE

REG. NO. 21701, EXP. 6/11/23
RED-LINE REV. 4/28/23
REV. #1 ONLY

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS & SPECIFICATIONS

NO.	DATE	REVISION
1	4/28/23	PAGE NO.

SIGNATURE — 16193 P.E. NO. — 01/31/23 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
CHIEF, BUREAU OF HIGHWAYS — 4-21-06 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING
CHIEF, DIVISION OF LAND DEVELOPMENT — 5/12/06 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION — 5/2/06 DATE

BENCHMARK ENGINEERING, INC.
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phone: 410-465-6105 △ fax: 410-465-6644
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3/31/06

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

PROJECT: **THE CHASE AT STONEY BROOK**
LOTS 1-20, PRESERVATION PARCEL "A" AND NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION: TAX MAP NO. 7 BLOCK NO.17 PARCEL NO. 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: ROAD PROFILES AND DETAILS

DATE: AUGUST, 2005 / MARCH, 2006 — PROJECT NO. 1187

DESIGN: JMC — DRAFT: RPS — SCALE: AS SHOWN — DRAWING 6 OF 20

AS-BUILT 1/31/23

F-05-170

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SOILS LEGEND

SOIL	NAME	CLASS
** Ba	Baile silt loam	D
* CuB	Comus silt loam, local alluvium, 3 to 8 percent slopes	B
GlB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	B
GlC2	Glenelg loam, 8 to 15 percent slopes, moderately eroded	B
GlC3	Glenelg loam, 8 to 15 percent slopes, severely eroded	B
GlD3	Glenelg loam, 15 to 25 percent slopes, severely eroded	B
GlD2	Glenelg loam, 15 to 25 percent slopes, moderately eroded	B
* GnA	Glenville silt loam, 0 to 3 percent slopes	C
* GnB2	Glenville silt loam, 3 to 8 percent slopes, moderately eroded	C
** Ha	Hatboro silt loam	D
MtC2	Mt. Airy channery loam, 8 to 15 percent slopes, moderately eroded	A
MtC3	Mt. Airy channery loam, 8 to 15 percent slopes, severely eroded	A
MtD2	Mt. Airy channery loam, 15 to 25 percent slopes, moderately eroded	A
MtE	Mt. Airy channery loam, 25 to 45 percent slopes	A

NOTES:
- * Hydric soils and/or contains hydric inclusions
- ** May contain hydric inclusions
- † Generally only within 100-year floodplain areas

STORM DRAIN DATA

INLET NO.	AREA (AC)	% IMPERVIOUS	SOIL CLASS	ZONING	'C' FACTOR
I-1	2.60	26	B, C	RC-DEO	0.28
I-1A	2.85	19	B, C	RC-DEO	0.26
I-2	0.90	38	B	RC-DEO	0.37
I-3	0.54	49	B	RC-DEO	0.47
I-4	0.43	100	B	RC-DEO	0.86
I-5	0.29	81	B	RC-DEO	0.71
I-6	0.09	100	B, C	RC-DEO	0.86
I-7	0.39	74	B, C	RC-DEO	0.67
I-8	0.48	69	B	RC-DEO	0.64
I-9	1.59	17	B	RC-DEO	0.20
I-10	0.36	13	B	RC-DEO	0.19
I-11	1.54	49	B	RC-DEO	0.45
I-12	2.26	20	A, B	RC-DEO	0.21
I-13	0.22	100	B, C	RC-DEO	0.86
I-14	1.15	15	B	RC-DEO	0.19

SWALE DATA

SWALE NO.	AREA (AC)	SOIL CLASS	ZONING	'C' FACTOR
1	1.84	B	RC-DEO	0.18
2	1.48	A, B	RC-DEO	0.17
3	1.59	B	RC-DEO	0.20
4	1.46	B	RC-DEO	0.19
5	3.56	A, B	RC-DEO	0.17

LEGEND

- LIMIT OF WETLANDS
- EXISTING WOODS LINE
- PROPOSED WOODS LINE
- EXISTING STRUCTURE
- EXISTING WELL — EX. WELL
- PROPOSED SEPTIC FIELD
- 100 YEAR FLOODPLAIN
- FOREST CONSERVATION
- PROP. STREET TREE
- STEEP SLOPES 15–24.9%
- STEEP SLOPES 25% OR GREATER
- PROPOSED SAND MOUND AREA

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS & SPECIFICATIONS.

[signature] SIGNATURE — 16193 PE NO. — 01/31/13 DATE

STATE OF MARYLAND — PROFESSIONAL ENGINEER — No. 16193

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

[signature] MS — CHIEF, BUREAU OF HIGHWAYS — 4-21-06 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

[signature] JA — CHIEF, DIVISION OF LAND DEVELOPMENT — 5/12/06 DATE

[signature] MK — CHIEF, DEVELOPMENT ENGINEERING DIVISION — 5/2/06 DATE

NO.	DATE	REVISION
3	4-28-23	REVISE LOT 10 HOUSE, DRIVEWAY, & GRADING & PAGE NO.
2	3-9-07	REVISE HW-3 TO HW-4 DESIGN & FCE #1
1	2/6/06	REVISE STORM DRAIN MATERIAL

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418
ELLICOTT CITY, MARYLAND 21043
phone: 410-465-6105 ▲ fax: 410-465-6644
www.bei-civilengineering.com

[signature] 3/31/06

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

PROJECT:
THE CHASE AT STONEY BROOK
LOTS 1–20, PRESERVATION PARCEL "A" AND NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION:
TAX MAP No. 7, BLOCK No. 17, PARCEL No. 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
STORM DRAINAGE AREA MAP

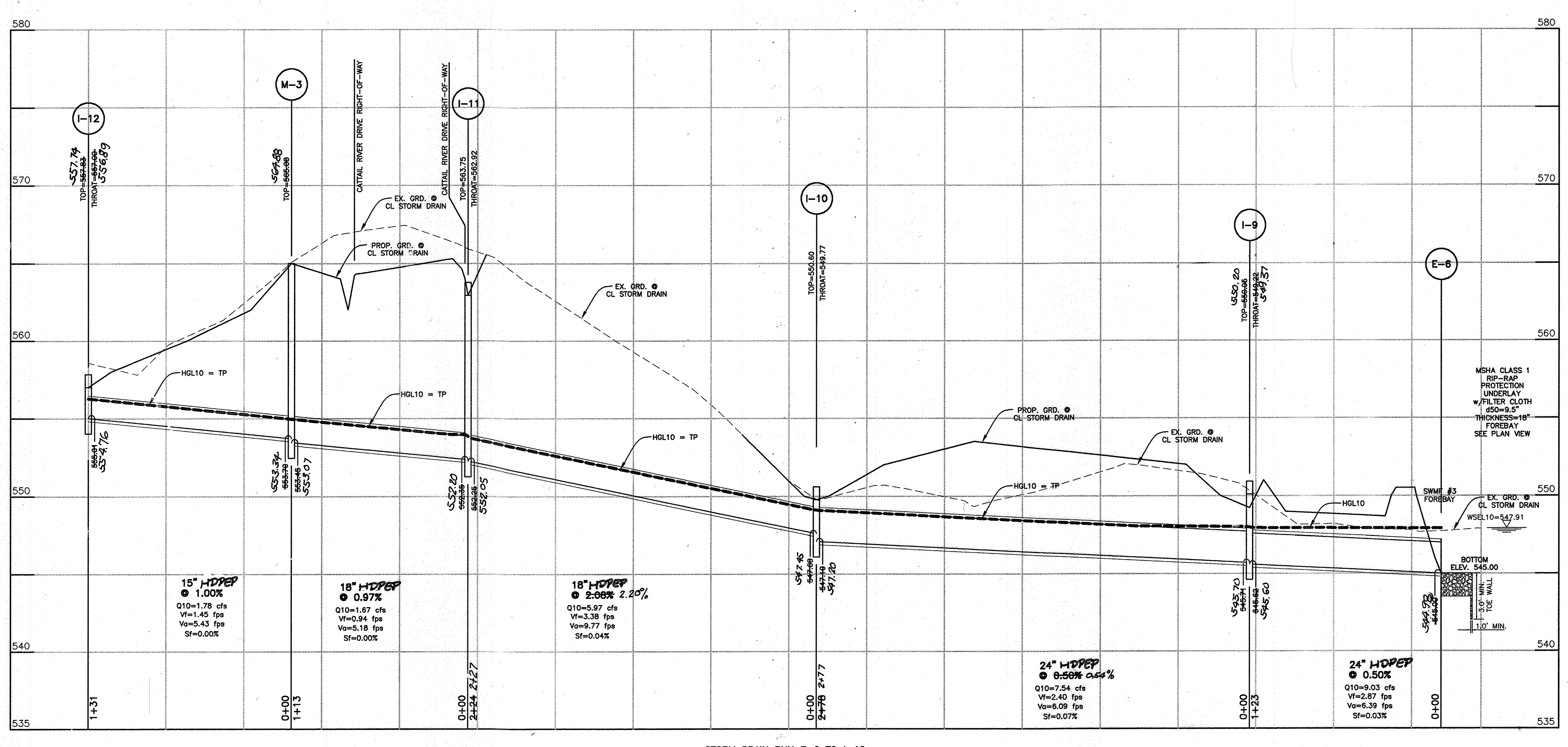
DATE: AUGUST, 2005 / MARCH, 2006 — PROJECT NO. 1187

DES: JMC — DRAFT: RPS — CHECK: DAM — SCALE: 1" = 100' — SHEET 7 OF ~~19~~ 20

AS-BUILT 1/31/13

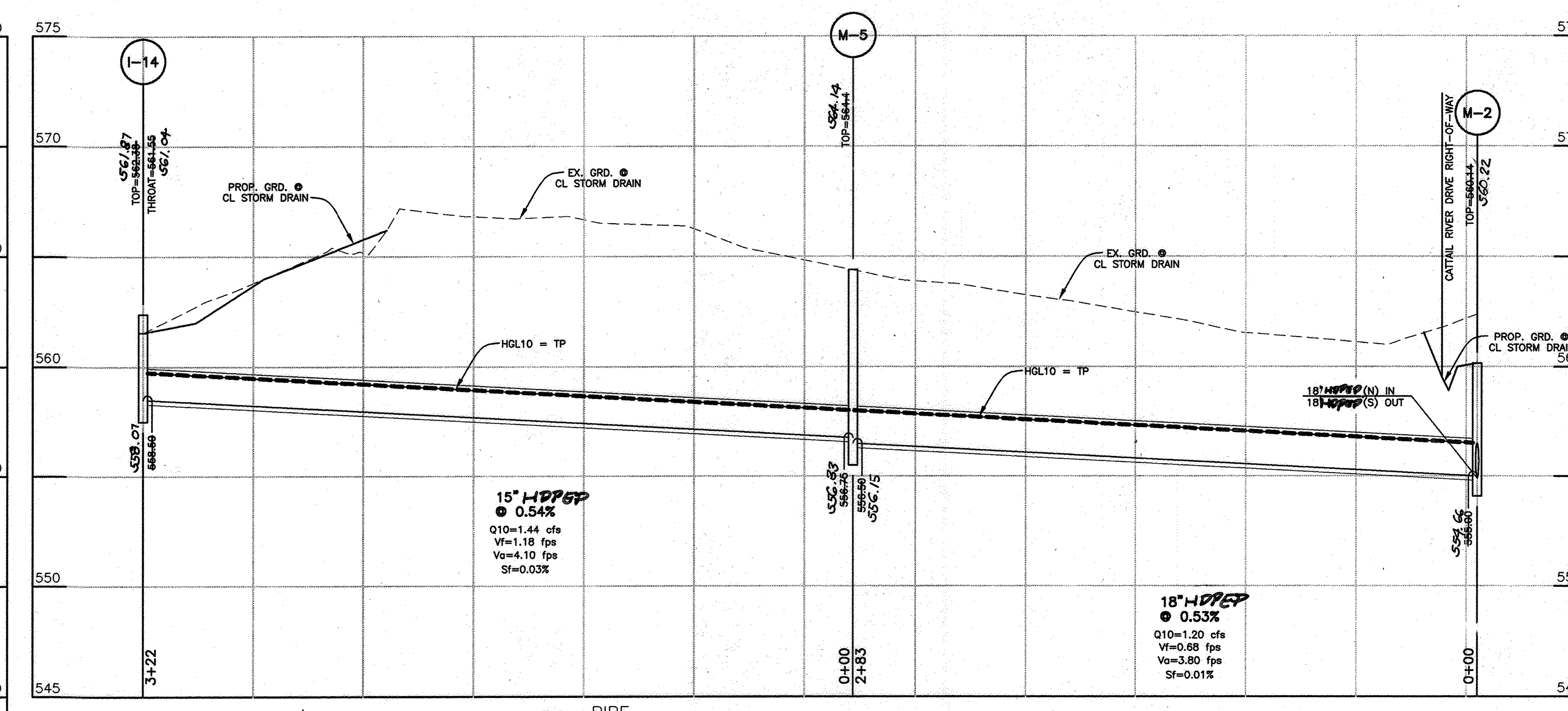
F-05-170

P:\1187\dwg\7025S1.dwg, StormDrainAreaMap, 3/31/2006 2:19:03 PM,
jmc, Oce TDS600 HDI for mylar.pc3



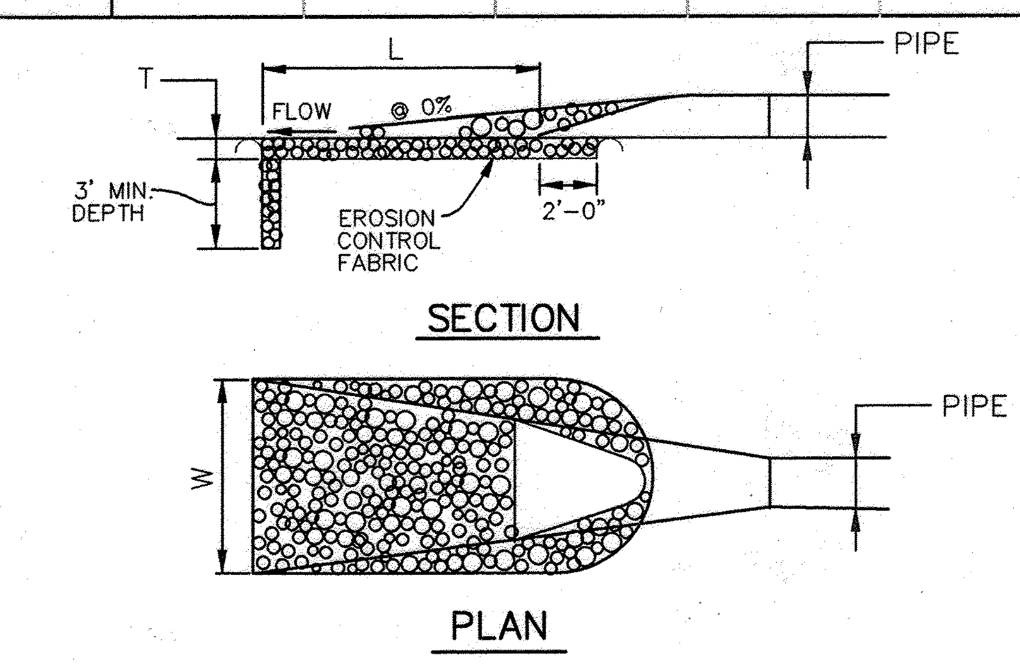
STORM DRAIN RUN E-6 TO I-12

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



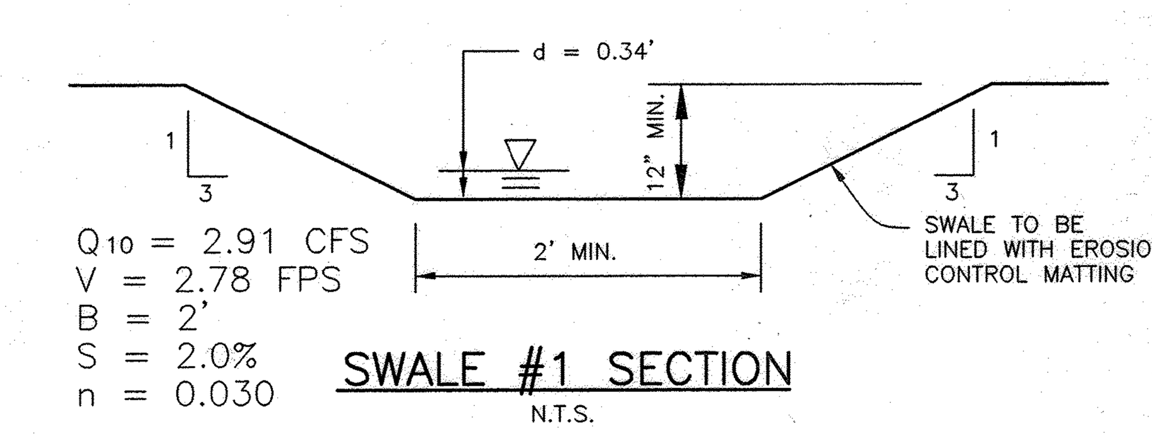
STORM DRAIN RUN M-2 TO I-14

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



OUTLET PROTECTION DETAIL

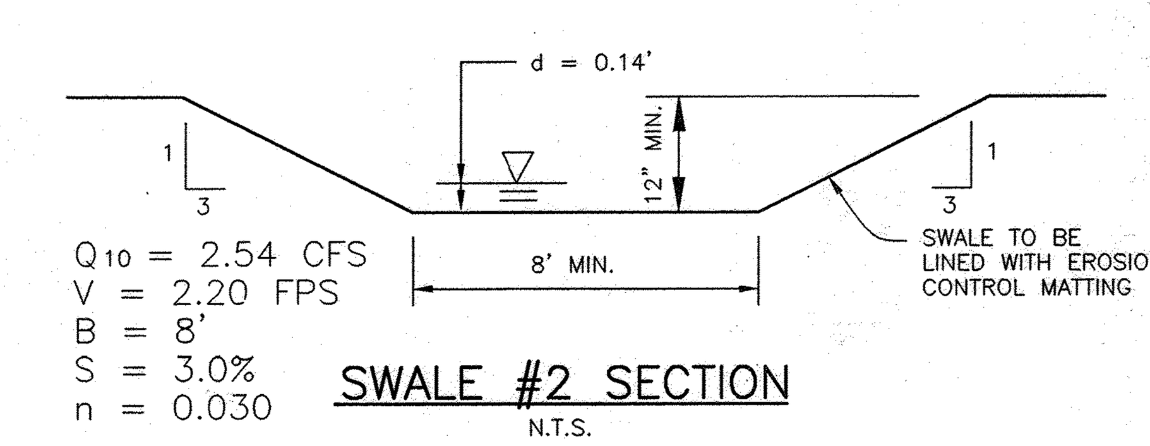
NOT TO SCALE



Q10 = 2.91 CFS
V = 2.78 FPS
B = 2'
S = 2.0%
n = 0.030

SWALE #1 SECTION

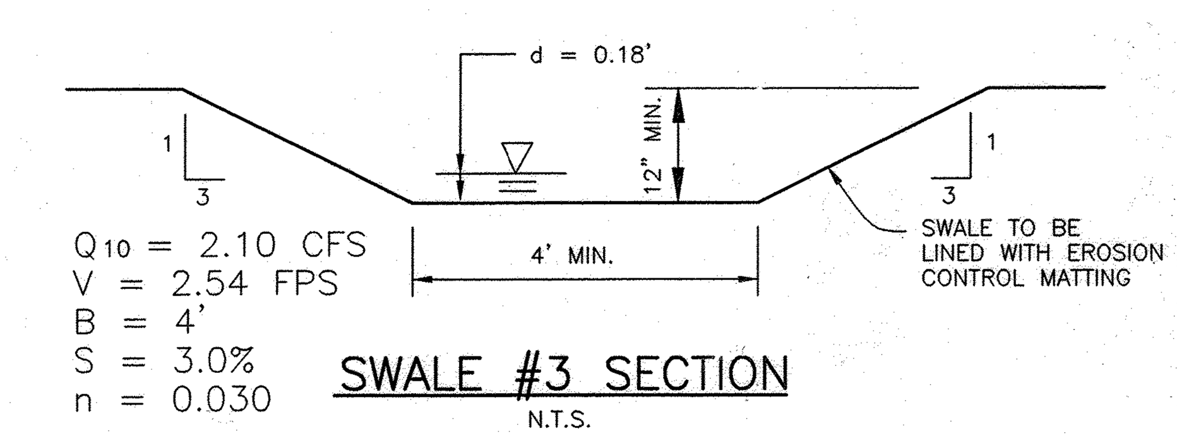
N.T.S.



Q10 = 2.54 CFS
V = 2.20 FPS
B = 8'
S = 3.0%
n = 0.030

SWALE #2 SECTION

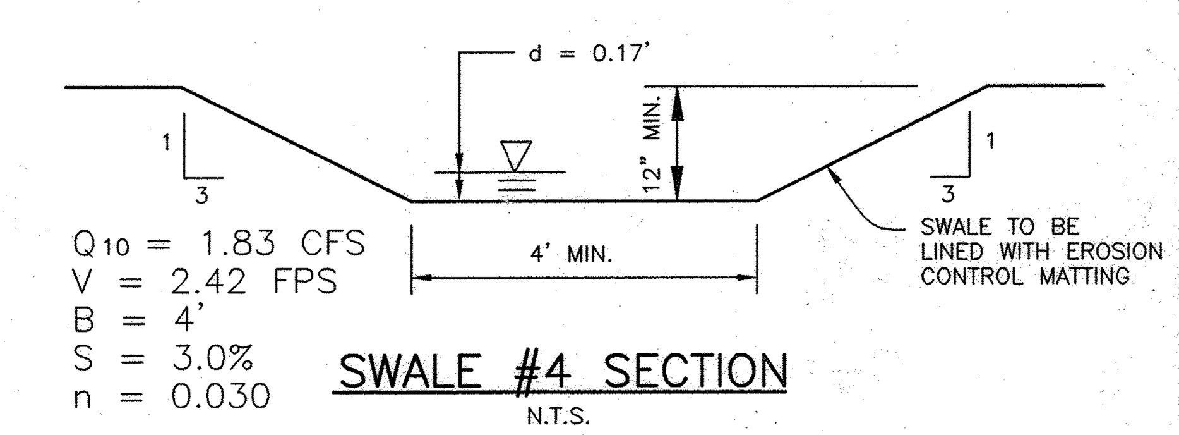
N.T.S.



Q10 = 2.10 CFS
V = 2.54 FPS
B = 4'
S = 3.0%
n = 0.030

SWALE #3 SECTION

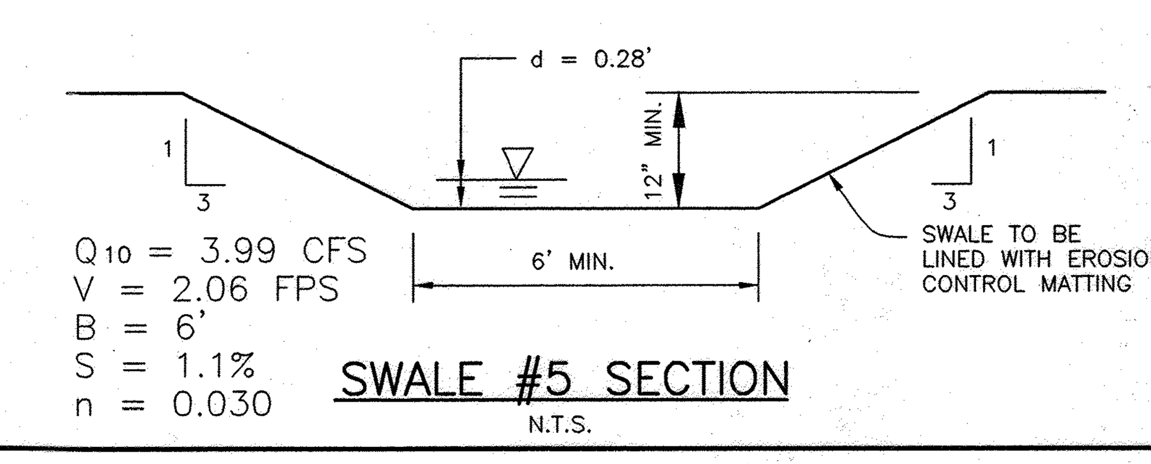
N.T.S.



Q10 = 1.83 CFS
V = 2.42 FPS
B = 4'
S = 3.0%
n = 0.030

SWALE #4 SECTION

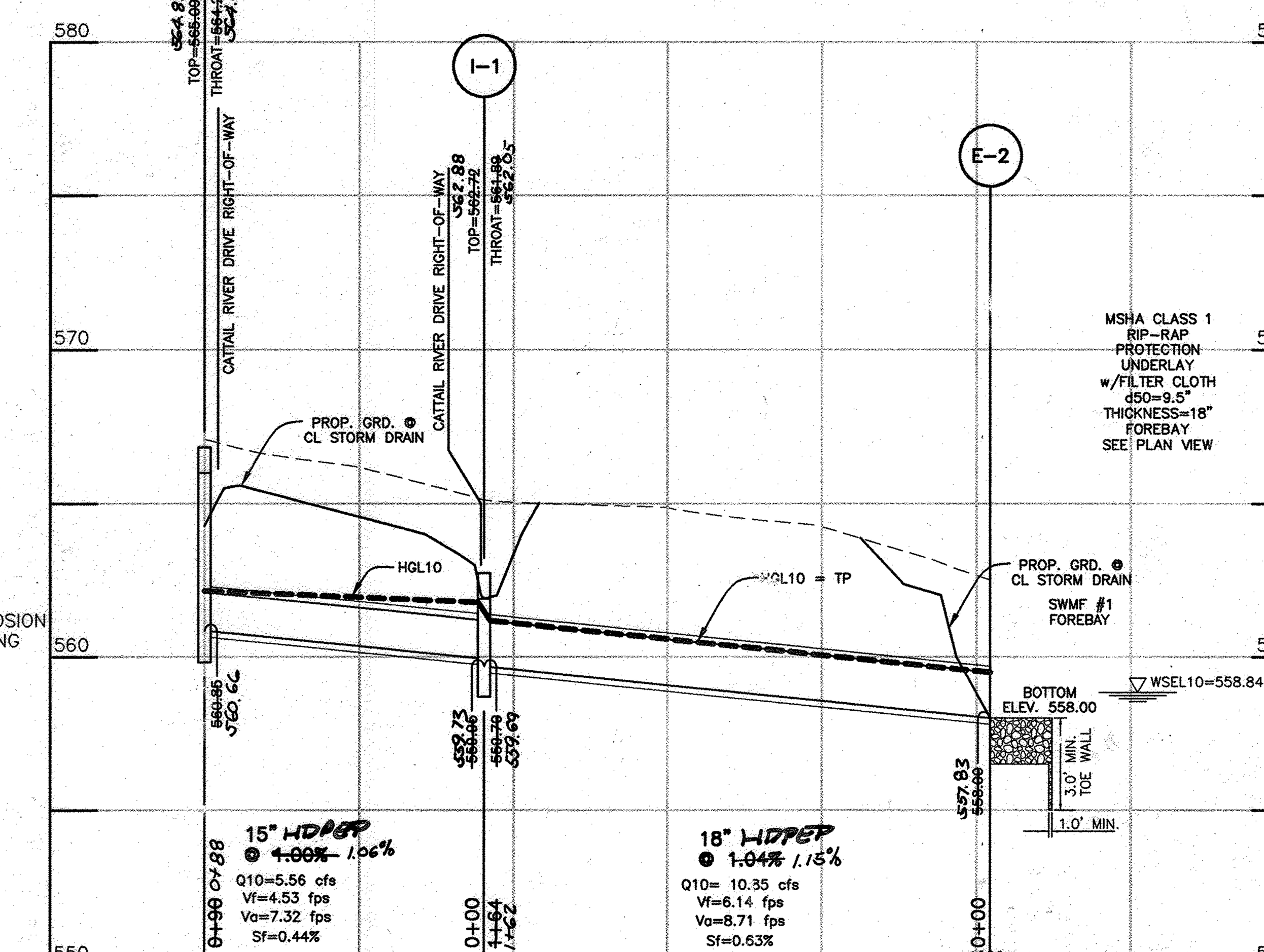
N.T.S.



Q10 = 3.99 CFS
V = 2.06 FPS
B = 6'
S = 1.1%
n = 0.030

SWALE #5 SECTION

N.T.S.



STORM DRAIN RUN E-2 TO I-1A

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

STRUCTURE SCHEDULE

NO.	TYPE	LOCATION	THROAT INV.	INVERT IN	INVERT OUT	TOP ELEV.	STANDARD	REMARKS
I-1	TYPE "D"	STA. 1+49.72 OFF. 8.00' LT.	562.05 ~~561.89~~	559.73 ~~559.95~~	559.69 ~~559.70~~	562.88 ~~562.72~~	Ho.Co.STD. SD-4.11	OPEN 4 SIDES
I-1A	TYPE "D"	STA. 2+41.22 OFF. 8.00' LT.	~~564.26~~	–	~~560.85~~	~~565.09~~	Ho.Co.STD. SD-4.11	OPEN 4 SIDES
I-2	TYPE "D"	STA. 10+55.62 OFF. 17.00' LT.	559.84 ~~560.32~~	549.92/549.99 ~~550.65/550.40~~	547.46 ~~549.91~~	560.67 ~~561.15~~	Ho.Co.STD. SD-4.11	OPEN 2 SIDES
I-3	TYPE "D"	STA. 10+55.62 OFF. 17.00' RT.	560.03 ~~560.32~~	–	553.84 ~~554.05~~	580.82 ~~561.15~~	Ho.Co.STD. SD-4.11	OPEN 2 SIDES
I-4	TYPE "D"	STA. 7+95.30 OFF. 17.00' LT.	555.17 ~~555.57~~	552.62/552.94 ~~553.25/553.10~~	552.71 ~~553.00~~	556.00 ~~556.40~~	Ho.Co.STD. SD-4.11	OPEN 2 SIDES
I-5	TYPE "D"	STA. 3+73.35 OFF. 17.50' LT.	572.51 ~~572.70~~	566.91/566.94 ~~567.10/567.10~~	566.65 ~~567.00~~	573.34 ~~573.53~~	Ho.Co.STD. SD-4.11	OPEN 2 SIDES
I-6	TYPE "D"	STA. 0+70.69 OFF. 17.00' LT.	~~573.35~~	570.31 ~~570.66~~	569.91 ~~570.41~~	573.51 ~~574.18~~	Ho.Co.STD. SD-4.11	OPEN 2 SIDES
I-7	TYPE "D"	STA. 0+70.69 OFF. 17.00' RT.	573.23 ~~573.35~~	–	570.71 ~~571.00~~	574.06 ~~574.18~~	Ho.Co.STD. SD-4.11	OPEN 2 SIDES
I-8	TYPE "D"	STA. 3+95.30 OFF. 17.00' RT.	555.52 ~~555.57~~	–	553.45 ~~553.59~~	556.35 ~~556.40~~	Ho.Co.STD. SD-4.11	OPEN 2 SIDES
I-9	TYPE "D"	N 603,582.83 E 1,289,282.13	549.37 ~~549.22~~	545.70 ~~545.71~~	545.60 ~~545.62~~	550.20 ~~550.05~~	Ho.Co.STD. SD-4.11	OPEN 2 SIDES
I-10	TYPE "D"	N 603,408.33 E 1,289,499.70	549.77	547.45 ~~547.60~~	547.20 ~~547.10~~	550.60	Ho.Co.STD. SD-4.11	OPEN 2 SIDES
I-11	TYPE "D"	STA. 1+65.74 OFF. 8.00' LT.	563.32 ~~562.92~~	552.20 ~~552.35~~	562.05 ~~552.25~~	563.32 ~~563.75~~	Ho.Co.STD. SD-4.11	OPEN 4 SIDES
I-12	TYPE "D"	N 602,971.22 E 1,289,539.93	556.89 ~~557.00~~	–	554.76 ~~555.01~~	557.74 ~~557.83~~	Ho.Co.STD. SD-4.11	OPEN 2 SIDES
I-13	15' COG	STA. 9+15.30 OFF. 29.27' RT.	583.32 ~~583.33~~	–	579.00 ~~579.20~~	584.99 ~~584.20~~	MD 374.51	15' OPENING
I-14	TYPE "D"	N 604,455.39 E 1,288,577.30	561.04 ~~561.55~~	–	558.07 ~~558.50~~	561.87 ~~562.38~~	Ho.Co.STD. SD-4.11	OPEN 2 SIDES
M-1	4'-0" STANDARD	N 602,676.37 E 1,289,007.90		535.64 ~~398.92~~	535.53 ~~398.82~~	541.80 ~~406.60~~	Ho.Co.STD. G-5.12	STANDARD PRECAST MANHOLE
M-2	4'-0" STANDARD	STA. 6+18.70 OFF. 5.00' LT.		554.66 ~~555.00~~/555.00	554.60 ~~554.90~~	560.22 ~~560.14~~	Ho.Co.STD. G-5.12	STANDARD PRECAST MANHOLE
M-3	4'-0" STANDARD	N 603,078.08 E 1,289,464.88		553.34 ~~553.70~~	553.07 ~~553.45~~	564.88 ~~565.00~~	Ho.Co.STD. G-5.12	STANDARD PRECAST MANHOLE
M-4	4'-0" STANDARD	STA. 11+56.92 OFF. 27.10' RT.		576.08 ~~576.70~~	575.85 ~~576.45~~	594.35 ~~593.26~~	MD 383.01	STANDARD PRECAST MANHOLE
M-5	4'-0" STANDARD	N 604,155.14 E 1,288,461.68		556.33 ~~556.75~~	556.15 ~~556.50~~	564.14 ~~564.4~~	Ho.Co.STD. G-5.12	STANDARD PRECAST MANHOLE
E-1	TYPICAL CONCRETE	N 603,298.46 E 1,288,320.36		–	553.92 ~~554.0~~	–	Ho.Co.STD. SD-5.51	SWM OUTFALL
E-2	18" METAL	N 603,447.57 E 1,288,193.44		–	557.63 ~~558.0~~	–	Ho.Co.STD. SD-5.61	OUTFALL INTO FOREBAY
E-3	TYPICAL CONCRETE	N 602,453.87 E 1,289,192.94		–	534.0	–	Ho.Co.STD. SD-5.51	SWM OUTFALL
E-4	TYPICAL CONCRETE	N 603,676.31 E 1,289,300.75		–	539.96 ~~540.0~~	–	Ho.Co.STD. SD-5.51	SWM OUTFALL
E-5	24" METAL	N 603,659.54 E 1,289,168.42		–	545.07 ~~545.0~~	–	Ho.Co.STD. SD-5.61	OUTFALL INTO FOREBAY
E-6	24" METAL	N 603,659.83 E 1,289,186.13		–	544.98 ~~545.0~~	–	Ho.Co.STD. SD-5.61	OUTFALL INTO FOREBAY
HW-1	CAST IN PLACE	N 603,986.76 E 1,288,041.43		–	565.33/565.34 ~~565.87~~	573.08 ~~574.5~~	Ho.Co.STD. G-5.21	SEE DETAILS
HW-2	CAST IN PLACE	N 604,032.42 E 1,288,000.00		567.71 / 567.95 ~~568.2~~	–	575.50 ~~575.7~~	Ho.Co.STD. G-5.21	SEE DETAILS
HW-3	CAST IN PLACE	N 604,274.59 E 1,287,805.02		–	573.69 ~~574.10~~	578.86 ~~579.35~~	--	MSHA - 355.02
HW-4	CAST IN PLACE	N 604,327.56 E 1,287,690.88		577.25 ~~577.32~~	–	582.41 ~~582.57~~	--	MSHA - 355.02
I-15	5' COS (96"DIA)	N604,294.91 E1287766.71	581.70	573.91 ~~574.36~~	573.91 ~~574.36~~	583.10 ~~582.37~~	MD 374.63	5'OPENING, 96" BASE

1) STRUCTURE TOP ELEVATION AND LOCATION FOR MANHOLES IS AT THE TOP AND CENTER OF RIM.
2) STRUCTURE TOP ELEVATION AND LOCATION FOR INLETS IS AT THE TOP, CENTER FACE OF THE INLET FOR CURB INLETS AND AT THE CENTER TOP FOR YARD INLETS.
3) STRUCTURE TOP ELEVATION AND LOCATION FOR END SECTIONS IS AT THE CONNECTION OF PIPE AND END SECTION AT CENTERLINE.
4) STRUCTURE TOP ELEVATION AND LOCATION FOR HEADWALLS IS AT THE MIDPOINT OF THE FACE OF THE MAIN WALL

PIPE LENGTH SCHEDULE

SIZE	TYPE	CLASS	TOTAL LENGTH
15"	RCP	IV	322'
18"	RCP	IV	283'
24"	HDPEP	*	892'
54"	RCP	IV	120'
48" x 76"	RCP	IV	126'
15"	HDPEP	*	569'
18"	HDPEP	*	1613'

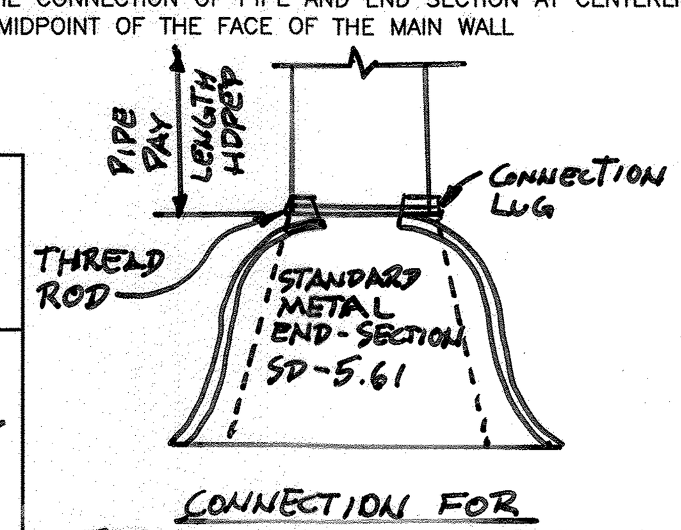
* SMOOTH BORE INTERIOR FINISH

OUTLET PROTECTION SCHEDULE

STRUCTURE	D-50	LENGTH	WIDTH	THICKNESS	SHA CLASS
E-1	9.5"	14'	17'	18"	1
E-2	9.5"	FOREBAY	FOREBAY	18"	1
E-3	9.5"	14'	17'	18"	1
E-4	9.5"	44'	20'	18"	1
E-5	9.5"	FOREBAY	FOREBAY	18"	1
E-6	9.5"	FOREBAY	FOREBAY	18"	1

PIPE SCHEDULE

RUN	SIZE	LENGTH	TYPE & CLASS
E-2 TO I-1	18"	164'	HDPEP
I-1 TO I-1A	15"	90'	HDPEP
E-5 TO I-2	24"	491'	HDPEP
I-2 TO I-4	18"	260'	HDPEP
I-4 TO M-2	18"	177'	HDPEP
M-2 TO I-5	18"	242'	HDPEP
I-5 TO M-4	18"	345'	RCP CLASS IV
M-4 TO I-13	15"	246'	RCP CLASS IV
M-2 TO M-5	18"	283'	HDPEP
M-5 TO I-14	15"	322'	HDPEP
I-5 TO I-6	18"	88'	HDPEP
I-6 TO I-7	15"	34'	HDPEP
I-4 TO I-8	15"	34'	HDPEP
I-2 TO I-3	15"	34'	HDPEP
E-6 TO I-9	24"	123'	HDPEP
I-9 TO I-10	24"	278'	HDPEP
I-10 TO I-11	18"	224'	HDPEP
I-11 TO M-3	18"	113'	HDPEP
M-3 TO I-12	15"	131'	HDPEP
HW-1 TO HW-2	(2) 54"	60'	RCP CLASS IV
HW-3 TO I-15	48" x 76"	40'	RCP CLASS IV
I-15 TO HW4	48" x 76"	86'	RCP CLASS IV



CONNECTION FOR HDPEP TO METAL END-SECTION
NOT TO SCALE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 4-21-06 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 5/12/06 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 5/2/06 DATE

STATE OF MARYLAND — DUSTIN M. LAVELLE — 21701 — PROFESSIONAL LAND SURVEYOR

REG. No. 21701, EXP. 6/11/23
RED-LINE REV. 4/28/23
REV. #3 ONLY

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS & SPECIFICATIONS.

SIGNATURE — 16193 PE NO. — 01/31/13 DATE

No.	DATE	REVISION
3	4/28/23	REVISE PAGE NO.
2	3/9/07	REVISE HW3 TO HW4 DESIGN
1	12/6/06	REVISE STORM DRAIN MATERIAL

BENCHMARK ENGINEERING, INC.
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8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418
ELLICOTT CITY, MARYLAND 21043
phone: 410-465-6105 ▲ fax: 410-465-6644
www.bei-civilengineering.com

3/31/06

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

PROJECT:
THE CHASE AT STONEY BROOK
LOTS 1-20, PRESERVATION PARCEL "A" AND NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION:
TAX MAP NO. 7 BLOCK NO. 17 PARCEL NO. 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
STORM DRAIN PROFILES

DATE: AUGUST, 2005 / MARCH, 2006 — PROJECT NO. 1187

DESIGN: JMC — DRAFT: JMC — SCALE: AS SHOWN — DRAWING 8 OF 20 ~~19~~

AS-BUILT 1/31/13

F-05-170

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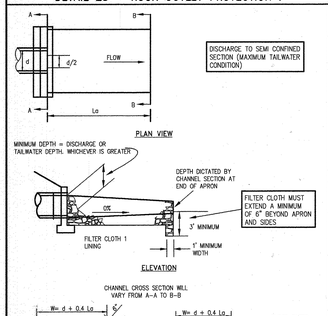
ime, Oce TDS600 HDI for mylar.pc3

DETAIL 25 – ROCK OUTLET PROTECTION I



NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

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

ROCK OUTLET PROTECTION I

CONSTRUCTION SPECIFICATIONS

1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.

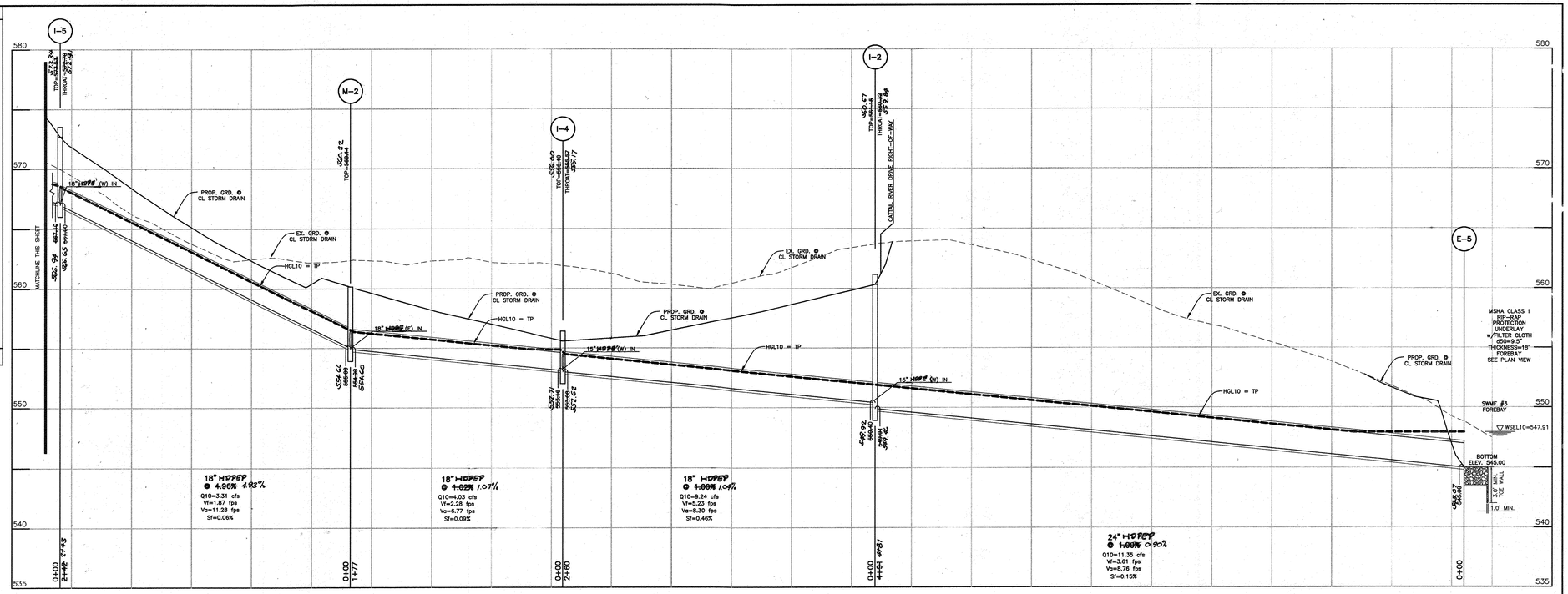
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.

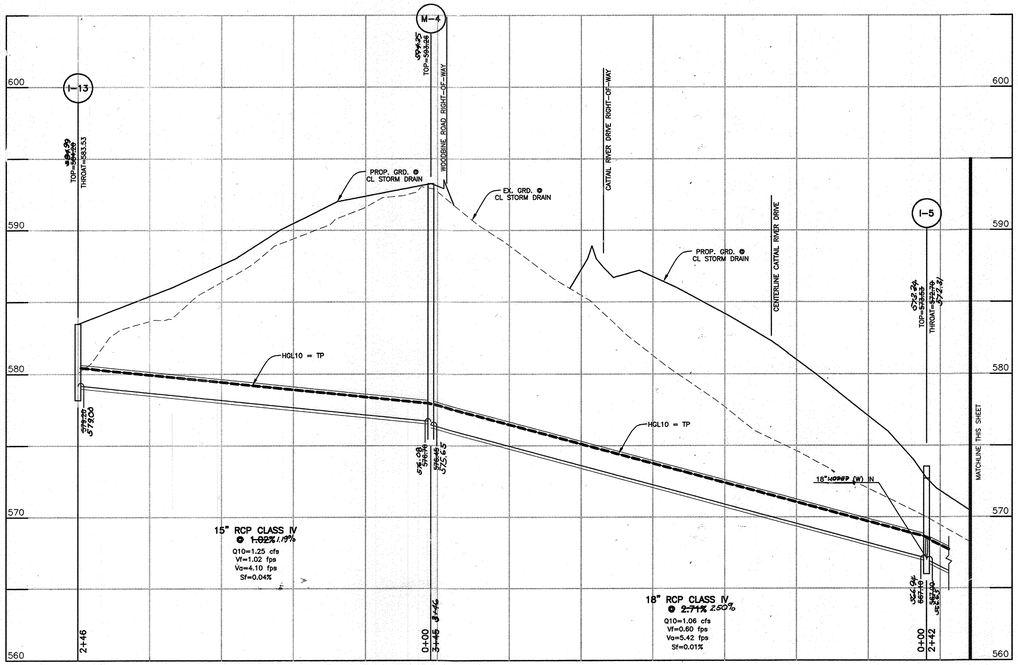
3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece at geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile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

4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

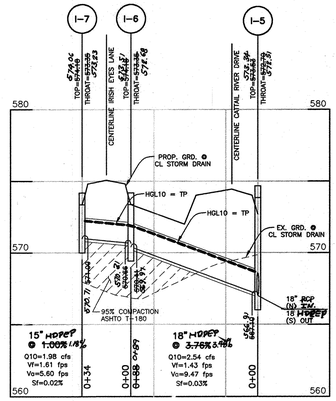
5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

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

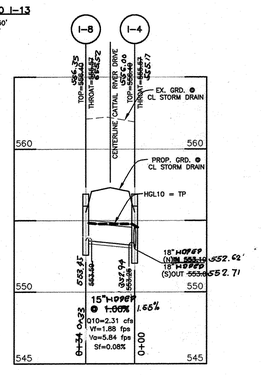




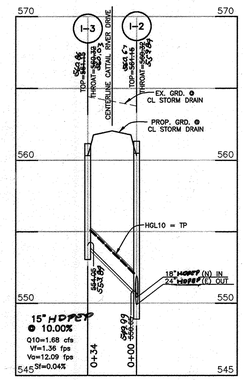
STORM DRAIN RUN E-5 TO I-13
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



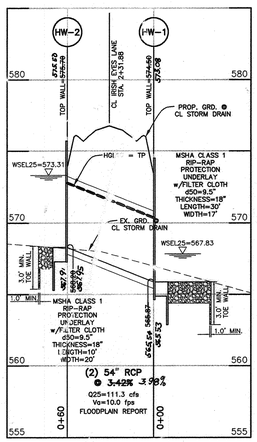
STORM DRAIN RUN I-5 TO I-7
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



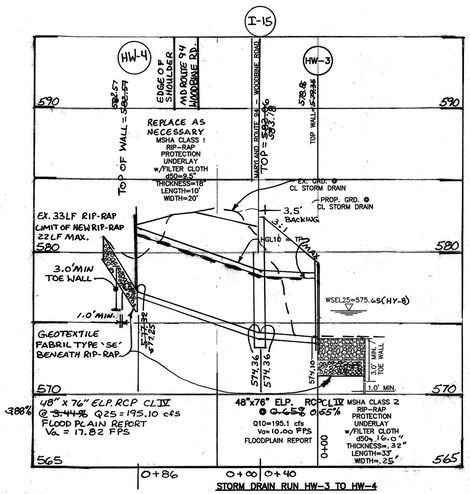
STORM DRAIN RUN I-4 TO I-8
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



STORM DRAIN RUN I-2 TO I-3
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



STORM DRAIN RUN HW-1 TO HW-2
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



STORM DRAIN RUN HW-3 TO HW-4
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 4-21-06

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/12/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/2/06

STATE OF MARYLAND — DARRIN M. LASLIE — 21701 — PROFESSIONAL LAND SURVEYOR

REG.No. 21701, EXP. 6/11/09
REV. # 3 ONLY

STATE OF MARYLAND — ROBERT HOWARD MOORE — No. 16193 — PROFESSIONAL ENGINEER

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE AS-BUILT SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE AS-BUILT PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE — 16193 PE NO. — 6/21/13 DATE

No.	DATE	REVISION
3	4/28/23	RANGE PAGE No.
2	3/9/07	REVISE HW-3 TO HW-4 PROFILE TO MATCH MSHA PERMIT
1	12/6/06	REVISE STORM DRAIN MATERIAL

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418
ELLICOTT CITY, MARYLAND 21043
phone: 410-465-6105 ▲ fax: 410-465-6644
www.bei-civilengineering.com

Donald Moore 3/31/06

OWNER/DEVELOPER:

TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

PROJECT:
THE CHASE AT STONEY BROOK
LOTS 1-20, PRESERVATION PARCEL "A" AND NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION:
TAX MAP NO. 7 BLOCK NO. 17 PARCEL NO. 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
STORM DRAIN PROFILES

DESIGN: JMC | DRAFT: JMC | DATE: AUGUST, 2005 / MARCH, 2006 | SCALE: AS SHOWN | PROJECT NO. 1187 | DRAWING 9 OF 30 19

AS-BUILT 1/31/13

F-05-170

P:\1187dwg\7044SS_9.dwg, Sheet 9, 3/31/2006 2:20:12 PM, jmc. Oce TDS600 HDI for mylar.ps3

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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."

Donald Mason 3-31-06

ENGINEER – DONALD A. MASON, P.E. # 21443 DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

4/4/06

DEVELOPER DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

4/11/06

USDA – NATURAL RESOURCES CONSERVATION SERVICE DATE

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

4/11/06

HOWARD SCD DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

4-21-06

CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

5/12/06

CHIEF, DIVISION OF LAND DEVELOPMENT DATE

5/2/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

SOILS LEGEND

SOIL	NAME	CLASS
** Ba	Baile silt loam	D
* CuB	Comus silt loam, local alluvium, 3 to 8 percent slopes	B
GlB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	B
GlC2	Glenelg loam, 8 to 15 percent slopes, moderately eroded	B
GlC3	Glenelg loam, 8 to 15 percent slopes, severely eroded	B
GlD3	Glenelg loam, 15 to 25 percent slopes, severely eroded	B
GlD2	Glenelg loam, 15 to 25 percent slopes, moderately eroded	B
* GnA	Glenville silt loam, 0 to 3 percent slopes	C
* GnB2	Glenville silt loam, 3 to 8 percent slopes, moderately eroded	C
** Ha	Hatboro silt loam	D
MtC2	Mt. Airy channery loam, 8 to 15 percent slopes, moderately eroded	A
MtC3	Mt. Airy channery loam, 8 to 15 percent slopes, severely eroded	A
MtD2	Mt. Airy channery loam, 15 to 25 percent slopes, moderately eroded	A
MtE	Mt. Airy channery loam, 25 to 45 percent slopes	A

NOTES:

* Hydric soils and/or contains hydric inclusions

** May contain hydric inclusions

† Generally only within 100–year floodplain areas

BENCHMARK ENGINEERING, INC.
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Donald Mason 3/31/06

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410–480–0023

No.	DATE	REVISION
1	12/06	REVISE STORM DRAIN MATERIAL
2	3/9/07	REVISE HW3 TO HW4
3	4/29/13	REVISE PAGE NO.

DES: JMC | DRAFT: LAB | CHECK: DAM

PROJECT:
THE CHASE AT STONEY BROOK
LOTS 1–20, PRESERVATION PARCEL "A" AND NON–BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION:
TAX MAP No. 7, BLOCK No. 17, PARCEL No. 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
GRADING, SEDIMENT AND EROSION CONTROL PLAN

DATE: MARCH, 2006 | PROJECT NO. 1187

SCALE: 1" = 50' | SHEET 10 OF 20 ~~19~~

AS-BUILT 1/31/13

F–05–170

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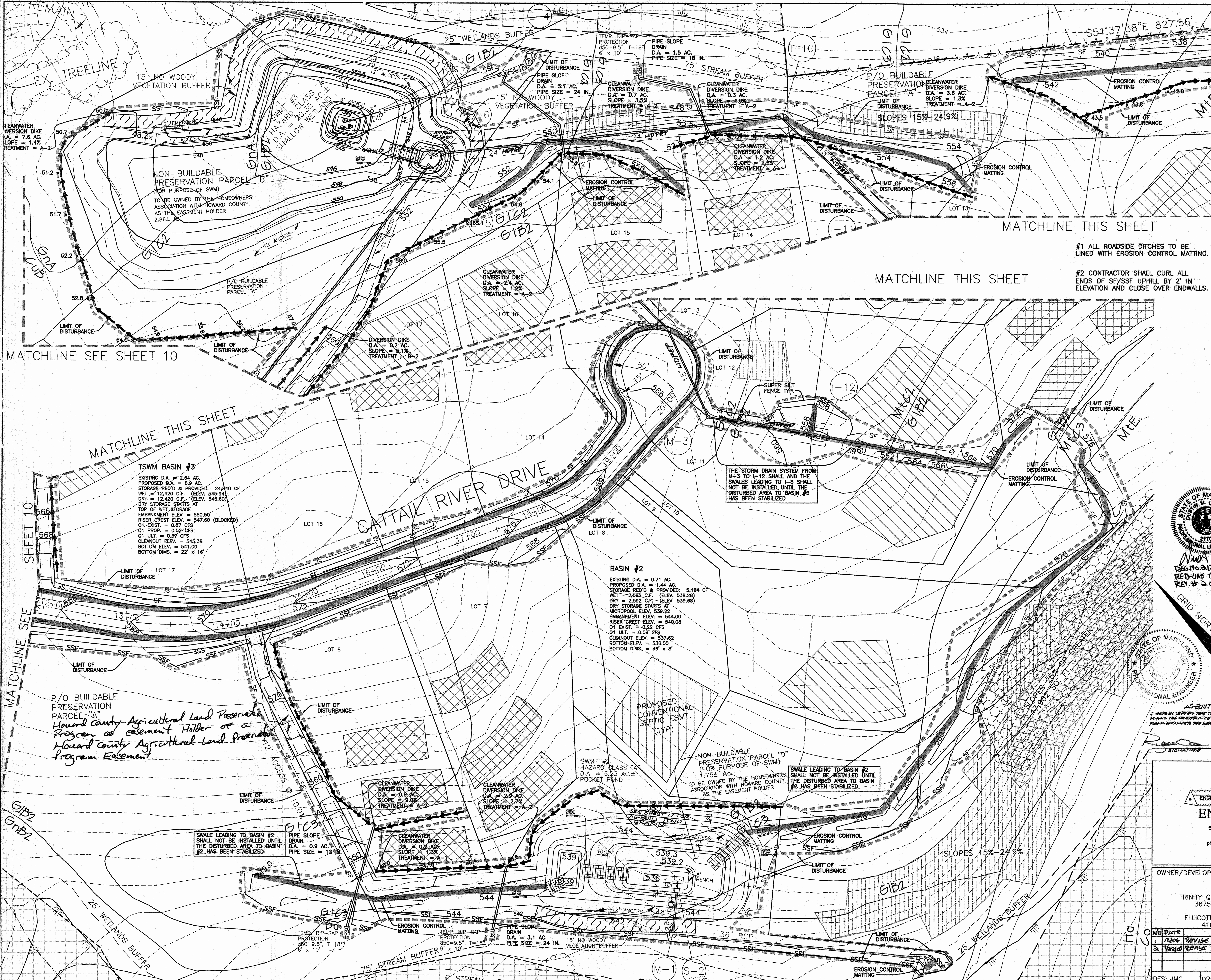

#1 ALL ROADSIDE DITCHES TO BE LINED WITH EROSION CONTROL MATTING.

#2 CONTRACTOR SHALL CURL ALL ENDS OF SF/SSF UPHILL BY 2' IN ELEVATION AND CLOSE OVER ENDWALLS.

SOILS LEGEND

SOIL	NAME	CLASS
** Ba	Baile silt loam	D
* CuB	Comus silt loam, local alluvium, 3 to 8 percent slopes	B
GlB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	B
GlC2	Glenelg loam, 8 to 15 percent slopes, moderately eroded	B
GlC3	Glenelg loam, 8 to 15 percent slopes, severely eroded	B
GlD3	Glenelg loam, 15 to 25 percent slopes, severely eroded	B
GlD2	Glenelg loam, 15 to 25 percent slopes, moderately eroded	B
* GnA	Glenville silt loam, 0 to 3 percent slopes	C
* GnB2	Glenville silt loam, 3 to 8 percent slopes, moderately eroded	C
** Ha	Hatboro silt loam	D
MtC2	Mt. Airy channery loam, 8 to 15 percent slopes, moderately eroded	A
MtC3	Mt. Airy channery loam, 8 to 15 percent slopes, severely eroded	A
MtD2	Mt. Airy channery loam, 15 to 25 percent slopes, moderately eroded	A
MtE	Mt. Airy channery loam, 25 to 45 percent slopes	A

NOTES:

* Hydric soils and/or contains hydric inclusions

** May contain hydric inclusions

† Generally only within 100-year floodplain areas

STATE OF MARYLAND DUSTIN M. LAVELLE 21701 PROFESSIONAL LAND SURVEYOR

REG. No. 21701, Exp. 6/11/23
RED-LINE REV. 4/28/23
REV. # 2 ONLY

STATE OF MARYLAND ROBERT HA... No. 16193 PROFESSIONAL ENGINEER

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLANS WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS & SPECIFICATIONS

SIGNATURE 16193 PE NO 01/31/13 DATE

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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."

ENGINEER – DONALD A. MASON, P.E. # 21443 — DATE 3/31/06

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

DEVELOPER — DATE 4/4/06

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA – NATURAL RESOURCES CONSERVATION SERVICE — DATE 4/11/06

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

HOWARD SCD — DATE 4/11/06

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 4-21-06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/12/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK — DATE 5/2/06

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418
ELLICOTT CITY, MARYLAND 21043
phone: 410-465-6105 ▲ fax: 410-465-6644
www.bei-civilengineering.com

3/31/06

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

No.	DATE	REVISION
1	12/06	REVISE STORM DRAIN MATERIAL
2	4/28/23	REVISE PAGE No.

PROJECT:
THE CHASE AT STONEY BROOK
LOTS 1-20, PRESERVATION PARCEL "A" AND NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION:
TAX MAP No. 7, BLOCK No. 17, PARCEL No. 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
GRADING, SEDIMENT AND EROSION CONTROL PLAN

DATE: MARCH, 2006 — PROJECT NO. 1187

DES: JMC — DRAFT: LAB — CHECK: DAM — SCALE: 1" = 50' — SHEET 11 OF ~~19~~ 20

AS-BUILT 1/31/13

F-05-170

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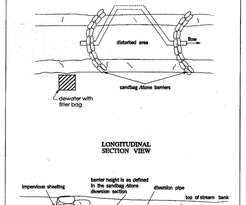

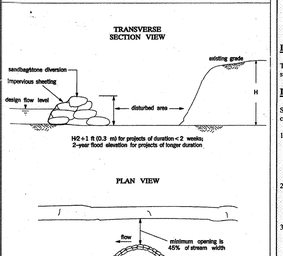

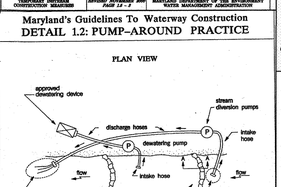

TOPSOIL SPECIFICATIONS

I. Topsoil salvaged from the existing site may be used provided that it meets that standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SCS in cooperation with Maryland Agricultural Experimental Station.

II. Topsoil Specifications – Soil to be used as topsoil must meet the following:

- I. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting texture subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1-1/2" in diameter.
- ii. Topsoil must be free of plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nutsedge, poison ivy, thistle, or others as specified.
- iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4–8 tons/acre (200–400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

III. For sites having disturbed areas under 5 acres:

- I. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization – Section I – Vegetative Stabilization Methods and Materials.

IV. For sites having disturbed areas over 5 acres:

- I. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
  - a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
  - b. Organic content or topsoil shall be not less than 1.5 percent by weight.
  - c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.
  - d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

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

V. Topsoil Application

- I. When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, earth dikes, slope silt fence and sediment traps and basins.
- ii. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" – 8" higher in elevation.
- iii. Topsoil shall be uniformly distributed in a 4" – 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.
- iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

VI. Alternative for Permanent Seeding – Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

- I. Composted Sludge Material for use as a soil conditioner for sites having distributed areas over 5 acres shall be tested to prescribe amendments and for sites 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.
- iv. 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: Guidelines Specifications, Soil Preparation and Sodding. MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes, Revised 1973.

SEQUENCE OF CONSTRUCTION

NOTIFY SEDIMENT CONTROL DIVISION 48 HOURS PRIOR TO START OF CONSTRUCTION

1. OBTAIN GRADING PERMIT AND MSHA ACCESS PERMIT. OBTAIN MDE PERMIT PRIOR TO ANY DISTURBANCES IN REGULATED AREAS. (DAY 1)
2. INSTALL STABILIZED CONSTRUCTION ENTRANCE, TREE PROTECTION FENCES, SUPER SILT FENCES, SILT FENCES AND TEMPORARY CLEANWATER DIVERSION DIKES. RELOCATE UTILITY POLES ALONG ROUTE 94. (DAY 2–12)
3. UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, INSTALL THE ELLIPTICAL (ROUTE 94) AND 54" CULVERTS DURING A 5-DAY CLEAR WEATHER FORECAST FROM NWS. CLOSE SSF OVER ENDWALLS. (DAY 13–17)
4. INSTALL SEDIMENT BASINS. (DAY 17–45)
5. INSTALL ANY REMAINING SEDIMENT CONTROL DEVICES. (DAY 46–50)
6. UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, BRING ROAD BEDS TO SUBGRADE AND STABILIZE SLOPES IN ACCORDANCE WITH TEMPORARY SEEDBED NOTES. UTILIZE DUST CONTROL METHODS. (DAY 51–81)
7. UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, INSTALL STORM DRAINS. THE STORM DRAIN SYSTEMS FROM M-3 TO I-12 AND THE SWALES THAT DRAINS TO POND #2 SHALL NOT BE INSTALLED AT THIS TIME. (DAY 82–112)
8. PAVE ROADWAYS. (DAY 113–128)
9. COMPLETE GRADING OF SITE AND STABLIZE DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDBED NOTES. (DAY 129–144)
10. UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, INSTALL THE STORM DRAINS FROM M-3 TO I-12 AND THE SWALES THAT DRAIN TO POND #2. (DAY 145–147)
11. UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, CONVERT SEDIMENT BASINS TO STORMWATER MANAGEMENT FACILITIES. SHAPE FACILITIES PER FINAL GRADES SHOWN ON THE PLANS AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDBED NOTES. CONTRACTOR SHALL REMOVE ALL OLD AND NEW TRASH, JUNK AND DEBRIS FROM ENTIRE SITE. (DAY 148–153)
12. UPON APPROVAL OF THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE REMAINING SEDIMENT CONTROL DEVICES, WITH THE EXCEPTION OF THE CLEANWATER DIVERSION DIKES, AND STABILIZED DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDBED NOTES. (DAY 154–161)
13. ONCE ALL PONDS ARE COMPLETE AND DISTURBED AREAS ARE STABILIZED REMOVE CLEANWATER DIVERSION DIKES. (DAY 162–170)

30.0 DUST CONTROL

Definition

Controlling dust blowing and movement on construction sites and roads.

Purpose

To prevent blowing and movement of dust from exposed soil surfaces, reduce on and off-site damage, health hazards, and improve traffic safety.

Conditions Where Practice Applies

This practice is applicable to areas subject to dust blowing and movement where on and off-site damage is likely without treatment.

Specifications

Temporary Methods

1. Mulches – See standards for vegetative stabilization with mulches only. Mulch should be crimped or tracked to prevent blowing.
2. Vegetative Cover – See standards for temporary vegetative cover.
3. Tillage – To roughen surface and bring clods to the surface. This is an emergency measure which should be used before soil blowing starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12" apart, spring-toothed harrows, and similiar plows are examples of equipment which may produce the desired effect.
4. Irrigation – This is generally done as an emergency treatment. Site is sprinkled with water until the surface is moist. Repeat as needed. At no time should the site be irrigated to the point that runoff begins to flow.
5. Barriers – Solid board fences, silt fences, snow fences, burlap fences, straw bales, and similiar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 10 times their height are effective in controlling soil blowing.
6. Calcium Chloride – Apply at rates that will keep surface moist. May need retreatment.

Permanent Methods

1. Permanent Vegetation – See standards for permanent vegetative cover, and permanent stabilization with sod. Existing trees or large shrubs may afford valuable protection if left in place.
2. Topsoiling – Covering with less erosive soil materials. See standards for topsoiling.
3. Stone – Cover surface with crushed stone or coarse gravel.

References

1. Agriculture Handbook 346. Wind Erosion Forces in the United States and Their Use in Predicting Soil Loss.
2. Agriculture Information Bulletin 354. How to Control Wind Erosion, USDA-ARS.

BEST MANAGEMENT PRACTICES FOR WORKING IN NONTIDAL WETLANDS AND WATERS OF THE STATE

1) NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILES OR STORED IN NONTIDAL WETLANDS, THE NONTIDAL WETLAND BUFFER, OR WATERS OF THE STATE.
2) PLACE MATERIALS IN A LOCATION AND MANNER THAT DOES NOT ADVERSLY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUR OF NONTIDAL WETLANDS OR WATERS OF THE STATE.
3) DO NOT USE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITAIONSL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
4) PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE TEH EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, THE NONTIDAL WETLAND BUFFER, AND WATERS OF THE STATE.
5) REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMENANT LOSS OF NONTIDAL WETLANDS OR PERMANENT MODIFICATION OF WATERS OF THE STATE IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
6) RECTIFY ANY NONTIDAL WETLANDS, NONTIDAL WETLANDS BUFFER, OR WATERS OF THE STATE TEMPORARILY IMPACTED BY ANY CONSTRUCTIO9IN RELATED ACTIVITIES.
7) SEED MIX USED FOR STABILIZATION IN NONTIDAL WETLANDS AND THE NONTIDAL WETLAND BUFFER SHALL CONSIST OF ONE OR MORE OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (*Lolium multiflorum*), MILLET (*Setaria italica*), BARLEY (*Hordeum sp.*), OATS (*Uniola sp.*), AND/OR RYE (*Secale cereale*). THESE SPECIES WILL ALLOW FOR STABILIZATION OF THE SITE WHILE ALSO ALLOWING OF THE VOLUNARY REVEGETATION OF NATIVE WETLAND SPECIES. OTHER NONPERSISENT VEGETAION MAY BE ACCEPTABLE BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE USED IN NONTIDAL WETLAND OR NONTIDAL WETLAND BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
8) AFTER INSTALLATION OF UNDERGROUND UTILITY LINES IN NONTIDAL WETLANDS AND WATERS OF THE STATE HAS BEEN COMPLETED, GRADES AND ELEVATIONS SHALL BE RETURNED TO PRE-CONSTRUCTION CONDITIONS.
9) TO PROTECT AQUADIC SPECIES, IN STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF STREAM:

USE III WATERS: IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30, INCLUSIVE, DURING ANY YEAR.

10) STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE DISCHARGE OF POLLUTANTS INTO NONTIDAL WETLANDS AND WATERWAYS.
11) CULVERTS AND ASSOCIATED RIPRAP EROSION PROTECTION SHALL BE CONSTRUCTED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.

SEDIMENT CONTROL NOTES

1. A MINIMUM OF 24 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION, (313-1850).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT "MARYLAND STANDARDS AND SPECIFICATION FOR SOIL EROSION AND SEDIMENT CONTROL", REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER 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 THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS (SEC. 51) SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

TOTAL AREA OF SITE	116.79	ACRES
AREA DISTURBED	18.73	ACRES
AREA TO BE ROOFED OR PAVED	8.60	ACRES
AREA TO BE VEGETATIVELY STABILIZED	10.13	ACRES
TOTAL CUT	19,031	CY
TOTAL FILL	16,081	CY
OFFSITE WASTE AREA LOCATION	IF AN OFFSITE LOCATION IS NEEDED THAT SITE MUST HAVE AN APPROVED SED. CONTROL PLAN AND GRADING PERMIT	

8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROL 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 CAN BE BACK FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

TEMPORARY SEEDBED PREPARATIONS

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

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

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

SEEDING: FOR PERIOD MARCH 1 THROUGH APRIL 30 AND FROM AUGUST 15 THROUGH NOV. 15, SEED WITH 2-1/2 BUSHELS PER ACRE OF ANNUAL RYE (3.2 LBS/1000 SQ FT). FOR THE PERIOD MAY 1 THROUGH AUGUST 14, SEED WITH 3 LBS PER ACRE OF WEEPING LOVEGRASS (.07 LBS/1000 SQ FT). FOR THE PERIOD NOVEMBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES, 8 FT. OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

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

PERMANENT SEEDBED PREPARATIONS

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 ON OF THE FOLLOWING SCHEDULES:

1. PREFERRED – APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 600 LBS PER ACRE 10-10-10 FERTILIZER (14 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 LBS PER ACRE 30-0-0- UREAFORM FERTILIZER (9 LBS/1000 SQ FT).
2. ACCEPTABLE – APPLY 2 TONS PER ACRE DOLOMITIC LIMESTONE (92 LBS/1000 SQ FT) AND 1000 LBS PER ACRE 10-10-10 FERTILIZER (23 LBS/1000 SQ FT) BEFORE SEEDING. HARROW OR DISC INTO UPPER THREE INCHES OF SOIL.

SEEDING: FOR THE PERIODS MARCH 1 THROUGH APRIL 30 AND AUGUST 1 THROUGH OCTOBER 15, SEED WITH 60 LBS PER ACRE (1.4 LBS/1000 SQ FT) OF KENTUCKY 31 TALL FESCUE PER ACRE AND 2 LBS PER ACRE (.05 LBS/1000 SQ FT) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 THROUGH FEBRUARY 28, PROTECT SITE BY: OPTION (1) 2 TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING. OPTION (2) USE SOD. OPTION (3) SEED WITH 60 LBS PER ACRE OF KENTUCKY 31 TALL FESCUE AND MULCH WITH 2 TONS PER ACRE OF WELL ANCHORED STRAW.

MULCHING: APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 LBS/1000 SQ FT) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ FT) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPES 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ FT) FOR ANCHORING.

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

Maryland's Guidelines To Waterway Construction
DETAIL 1.4: DIVERSION PIPE

Maryland's Guidelines To Waterway Construction
DETAIL 1.5: SANDBAG/STONE DIVERSION

MGWC 1.4: DIVERSION PIPE

Maryland's Guidelines To Waterway Construction
DETAIL 1.2: PUMP-AROUND PRACTICE

MGWC 1.2: PUMP-AROUND PRACTICE

Temporary measure for dewatering in-channel construction sites

DESCRIPTION

The work should consist of installing a temporary pump around and supporting measures to divert flow around in-stream construction sites.

IMPLEMENTATION SEQUENCE

Sediment control measures, pump-around practices, and associated channel and bank construction should be completed in the following sequence (refer to Detail 1.2):

1. Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage to existing utilities that may result from construction and should repair the damage at his/her own expense to the county's or utility company's satisfaction.
2. The contractor should notify the Maryland Department of the Environment or WMA sediment control inspector at least 5 days before beginning construction. Additionally, the contractor should inform the local environmental protection and resource management inspection and enforcement division and the provider of local utilities a minimum of 48 hours before starting construction.
3. The contractor should conduct a pre-construction meeting on site with the WMA sediment control inspector, the county project manager, and the engineer to review limits of disturbance, erosion and sediment control requirements, and the sequence of construction. The contractor should stake out all limits of disturbance prior to the pre-construction meeting so they may be reviewed. The participants will also designate the contractor's staging areas and flag all trees within the limit of disturbance which will be removed for construction access. Trees should not be removed within the limit of disturbance without approval from the WMA or local authority.
4. Construction should not begin until all sediment and erosion control measures have been installed and approved by the engineer and the sediment control inspector. The contractor should stay within the limits of the disturbance as shown on the plans and minimize disturbance within the work area whenever possible.
5. Upon installation of all sediment control measures and approval by the sediment control inspector and the local environmental protection and resource management inspection and enforcement division, the contractor should begin work at the upstream section and proceed downstream beginning with the establishment of stabilized construction entrances. In some cases, work may begin downstream if appropriate. The sequence of construction must be followed unless the contractor gets written approval for deviations from the WMA or local authority. The contractor should only begin work in an area which can be completed by the end of the day including grading adjacent to the channel. At the end of each work day, the work area must be stabilized and the pump around removed from the channel. Work should not be conducted in the channel during rain events.
6. Sandbag dikes should be situated at the upstream and downstream ends of the work area as shown on the plans, and stream flow should be pumped around the work area. The pump should discharge onto a stable velocity dissipater made of riprap or sandbags.
7. Water from the work area should be pumped to a sediment filtering measure such as a dewatering basin, sediment bag, or other approved source. The measure should be located such that the water drains back into the channel below the downstream sandbag dike.
8. Traversing a channel reach with equipment within the work area where no work is proposed should be avoided. If equipment has to traverse such a reach for access to another area, then timber mats or similar measures should be used to minimize disturbance to the channel. Temporary stream crossings should be used only when necessary and only where noted on the plans or specified. (*See Section 4, Stream Crossings, Maryland Guidelines to Waterway Construction*).
9. All stream restoration measures should be installed as indicated by the plans and all banks graded in accordance with the grading plans and typical cross- sections. All grading must be stabilized at the end of each day with seed and mulch or seed and matting as specified on the plans.
10. After an area is completed and stabilized, the clean water dike should be removed. After the first sediment flush, a new clean water dike should be established upstream from the old sediment dike. Finally, upon establishment of a new sediment dike below the old one, the old sediment dike should be removed.
11. A pump around must be installed on any tributary or storm drain outfall which contributes baseflow to the work area. This should be accomplished by locating a sandbag dike at the downstream end of the tributary or storm drain outfall and pumping the stream flow around the work area. This water should discharge onto the same velocity dissipater used for the main stem pump around.
12. If a tributary is to be restored, construction should take place on the tributary before work on the main stem reaches the tributary confluence. Construction in the tributary, including pump around practices, should follow the same sequence as for the main stem of the river or stream. When construction on the tributary is completed, work on the main stem should resume. Water from the tributary should continue to be pumped around the work area in the main stem.
13. The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.
14. After construction, all disturbed areas should be regraded and revegetated as per the planting plan.

MGWC 1.5: SANDBAG/STONE CHANNEL DIVERSION

Temporary measure for dewatering in-channel construction sites

DESCRIPTION

The work should consist of installing sandbag or stone flow diversions for the purpose of erosion control when construction activities occur within the stream channel.

EFFECTIVE USES & LIMITATIONS

Diversions are used to isolate work areas from flow during the construction of in-stream projects. Diversions which have an insufficient flow capacity can fail and severely erode the disturbed channel section under construction. Therefore, in-channel construction activities should occur only during periods of low rainfall. This temporary measure may not be practical in large channels.

MATERIAL SPECIFICATIONS

Materials for sandbag and stone stream diversions should meet the following requirements:

- *Riprap*: Riprap should be washed and have a minimum diameter of 6 inches (0.15 meters).
- *Sandbags*: Sandbags should consist of materials which are resistant to ultra-violet radiation, tearing, and puncture and should be woven tightly enough to prevent leakage of the fill material (i.e., sand, fine gravel, etc.).
- *Sheeting*: Sheeting should consist of polyethylene or other materials which are impervious and resistant to puncture and tearing.

INSTALLATION GUIDELINES

All erosion and sediment control devices, including dewatering basins, should be implemented as the first order of business according to a plan approved by the WMA or local authority. Installation should proceed from upstream to downstream during periods of low flow. If necessary, silt fence or straw bales should be installed around the perimeter of the work area.

Sandbag/stone diversions can be used independently or as components of other stream diversion techniques. Installation of this measure should proceed as follows (refer to Detail 1.5):

1. The diversion structure should be installed from upstream to downstream.
2. The height of the sandbag/stone diversion should be a function of the duration of the project in the stream reach. For projects with a duration less than 2 weeks, the height of the diversion should be one half the streambank height, measured from the channel bed, plus 1 foot (0.3 meters) or bankfull height, whichever is greater. For projects of longer duration, the top of the sandbag or stone diversion should correspond to bankfull height. For diversion structures utilizing sandbags, the stream bed should be hand prepared prior to placement of the base layer of sandbags in order to ensure a water tight fit. Additionally, it may be necessary to prepare the bank in a similar fashion.
3. All excavated material should be deposited and stabilized in an approved area outside the 100-year floodplain unless otherwise authorized by the WMA.
4. Sediment-laden water from the construction area should be pumped to a dewatering basin.
5. Sheeting on the diversion should be positioned such that the upstream portion covers the downstream portion with at least a 18-inch (0.45 meters) overlap.
6. Sandbag or stone diversions should not obstruct more than 45% of the stream width. Additionally, bank stabilization measures should be placed in the constricted section if accelerated erosion and bank scour are observed during the construction time or if project time is expected to last more than 2 weeks.
7. Prior to removal of these temporary structures, any accumulated sediment should be removed, deposited and stabilized in an approved area outside the 100-year floodplain unless authorized by the WMA.
8. Sediment control devices are to remain in place until all disturbed areas are stabilized in accordance with an approved sediment and erosion control plan and the inspecting authority approves their removal.

ENGINEER'S CERTIFICATE

"I HEREBY CERTIFY THAT THIS PLAN FOR SEDIMENT AND EROSION 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."

Donald Mason 3/31/06
ENGINEER – DONALD A. MASON, P.E. # 21443 DATE

DEVELOPER'S CERTIFICATE

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT."

Michael Pfau 4/4/06
DEVELOPER DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

John Myers / CS 4/11/06
USDA – NATURAL RESOURCES CONSERVATION SERVICE DATE

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

4/11/06
HOWARD SCD DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

4-21-06
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Cindy Hamilton 5/12/06
CHIEF, DIVISION OF LAND DEVELOPMENT JA DATE

5/2/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION MK DATE

DUSTIN M. LAVELLE 21701

Reg. No. 21701, Exp. 6/11/23
RED-LINE REV. 4/28/23
REV. #1 ONLY

ROBERT HARRIS VOGEL No. 16193

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS & SPECIFICATIONS

SIGNATURE 16193 PE NO. 01/31/13 DATE

DETAIL 20A – REMOVABLE PUMPING STATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE D – 12 – 5 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 18 – SEDIMENT BASIN BAFFLES

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE C – 10 – 28 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

TREE PROTECTION FENCE

NOTES:

1. FOREST PROTECTION DEVICE ONLY.
2. RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICES.
4. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
5. DEVICE SHOULD BE PROPERLY MAINTAINED DURING CONSTRUCTION
6. PROTECTIVE SIGNAGE IS ALSO REQUIRED.

DETAIL 1 – EARTH DIKE

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

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

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

CONSTRUCTION SPECIFICATIONS

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectional material shall be removed and disposed of so as not to interfere with the proper functioning of the dike.
5. The dike shall be excavated or shaped to line, grade and cross section as required to meet the criteria specified herein and be free of bank projections or other irregularities which will impede normal flow.
6. Fill shall be compacted by earth moving equipment.
7. All earth removed and not needed for construction shall be placed so that it will not interfere with the functioning of the dike.
8. Inspection and maintenance must be provided periodically and after each rain event.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE A – 1 – 6 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 – STABILIZED CONSTRUCTION ENTRANCE

Construction Specifications

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE F – 17 – 3 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 22 – SILT FENCE

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

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

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

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE | PAGE E – 15 – 3 | MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 33 – SUPER SILT FENCE

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

SUPER SILT FENCE

CONSTRUCTION SPECIFICATIONS

1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length posts.
2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
4. Filter cloth shall be embedded a minimum of 8" into the ground.
5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height
7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

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

SUPER SILT FENCE DESIGN CRITERIA

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 – 10%	0 – 10:1	Unlimited	Unlimited
10 – 20%	10:1 – 5:1	200 feet	1,500 feet
20 – 33%	5:1 – 3:1	100 feet	1,000 feet
33 – 50%	3:1 – 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

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

NO.	DATE	REVISION
1	4/28/23	REVISE PAGE NO.

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418
ELLICOTT CITY, MARYLAND 21043
phone: 410-465-6105 ▲ fax: 410-465-6644
email: Benchmrk@cais.com

Donald Mason
3/31/06

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

PROJECT:
THE CHASE AT STONEY BROOK
LOTS 1-20, PRESERVATION PARCEL "A" AND
NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION:
TAX MAP No. 7 BLOCK No. 17 PARCEL No. 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
SEDIMENT & EROSION CONTROL
NOTES AND DETAILS

DATE: MARCH, 2006
PROJECT NO. 1187
DESIGN: JMC
DRAFT: LAB
CHECK: DAM
SCALE: NOT TO SCALE
SHEET 12 OF 20 ~~19~~

AS-BUILT 1/31/13

F-05-170

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NOTE:

AT THE TIME OF INSTALLMENT, ALL SHRUBS AND OTHER PLANTINGS HEREWITH LISTED AND APPROVED FOR THIS SITE, SHALL BE OF THE PROPER HEIGHT REQUIREMENTS IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATION OF REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATION FROM THIS APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO APPLICABLE PLANS AND CERTIFICATIONS.

TREE PLANTING DETAIL

NOT TO SCALE

PUBLIC STREET TREE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS	
◎	100	PLATANUX X ACERFOLIO 'BLOODGOOD' (Bloodgood London Plane)	2 1/2" MIN. CAL. B&B FULL HEAD	STREET TREES TO BE PROVIDED BY THE DEVELOPER
⊙	37	ACER RUBRUM 'OCTOBER GLORY' (October Glory Red Maple)	2 1/2" MIN. CAL. B&B FULL HEAD	
⊕	32	Malus floribunda 'HARVEST GOLD' (FLOWERING CRABAPPLE)	2 1/2" MIN. CAL. B&B FULL HEAD	SMALL TREE DUE TO OVERHEAD ULITITY LINES

LANDSCAPE PLANTING LIST

SYMBOL	QUANTITY	NAME	REMARKS	DESCRIPTION
○	102	QUERCUS RUBRA (Red Oak)	2-1/2" – 3"cal.	SHADE TREES ALONG PERIMETER TO BE PROVIDED BY THE DEVELOPER
✳	89	PINUS STROBUS (Eastern White Pine)	6' – 8' ht.	EVERGREEN TREES ALONG SWM FACILITIES TO BE PROVIDED BY THE DEVELOPER
✿	65	TILIA CORDATA 'GREENSPIRE' (Greenspire Littleleaf Linden)	2-1/2" – 3"cal.	SHADE TREES ALONG SWM FACILITIES TO BE PROVIDED BY THE DEVELOPER

TOTAL NUMBER OF EVERGREEN TREES: 89
TOTAL NUMBER OF SHADE TREES: 328

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 OF 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.

Michael Pfau 4/4/06
MICHAEL PFAU
TRINITY QUALITY HOMES, INC.
DATE

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS & SPECIFICATIONS.

SIGNATURE
16193
PE NO.
01/31/13
DATE

STATE OF MARYLAND PROFESSIONAL ENGINEER No. 16193

STREET TREE SCHEDULE

ROAD NAME	PERIMETER	TREES REQ.
WOODBINE ROAD	956'*	32
CATTAIL RIVER DRIVE	4010'	100
IRISH EYES LANE	1495'	37

*1916' TOTAL – 960' CREDIT = 956'
SMALL TREE SELECTION DUE TO OVERHEAD UTILITY LINES

SCHEDULE D
SWM AREA LANDSCAPING

	FACILITY 1	FACILITY 2	FACILITY 3	TOTAL
LINEAR FEET OF PERIMETER	966	804	1479	3249
LINEAR FEET OF EXISTING WOODS LINE	0	0	0	0
LINEAR FEET OF REQUIRED PLANTING	966	804	1479	3249
BUFFER TYPE	"B"	"B"	"B"	–
NUMBER OF TREES REQUIRED				
SHADE TREES	19	16	30	65
EVERGREEN TREES	24	20	37	81
NUMBER OF TREES PROVIDED				
SHADE TREES	19	16	30	65
EVERGREEN TREES	24	20	37	81
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO	NO	NO	–
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO	NO	NO	–

SCHEDULE A
PERIMETER LANDSCAPE EDGE

*EXISTING WOODS 20' OR GREATER IN WIDTH.

CATEGORY	ADJ. TO PERIMETER PROP. 1	ADJ. TO PERIMETER PROP. 2	ADJ. TO PERIMETER PROP. 3	ADJ. TO PERIMETER PROP. 4	ADJ. TO ROAD 5	TOTAL
LANDSCAPE TYPE	A	A	A	A	B	
LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	1567'	2564'	1145'	1186'	329'	6,790'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	YES* 530'	YES* 203'	NO	NO	NO	733
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NO	NO	NO	NO	NO	
NUMBER OF PLANTS REQUIRED	1037'	2361'	1145'	1186'	328'	6,057'
SHADE TREES	17	39	19	20	7	102
EVERGREEN TREES	–	–	–	–	8	8
OTHER TREES (2:1 SUBSTITUTE)	–	–	–	–	–	–
SHRUBS	–	–	–	–	–	–
NUMBER OF PLANTS PROVIDED	1037'	2361'	1145'	1186'	328'	6,057'
SHADE TREES	17	39	19	20	7	102
EVERGREEN TREES	–	–	–	–	8	8
OTHER TREES (2:1 SUBSTITUTE)	–	–	–	–	–	–
SHRUBS	–	–	–	–	–	–

LANDSCAPE NOTES:

1. TREES SHOULD BE PLANTED A MINIMUM OF 6 FEET FROM THE EDGE OF PAVING AND MUST BE A MINIMUM OF 5 FEET FROM ANY STORM DRAIN.
2. TREES MUST BE PLANTED A MINIMUM OF 5 FEET FROM AN OPEN SPACE ACCESS STRIP, 10 FEET FROM A DRIVEWAY AND 15' FROM ANY STREET LIGHT.
3. SEE TREE PLANTING DETAIL – THIS SHEET.
4. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL.
5. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING HAS BEEN POSTED AS PART OF THE DPW DEVELOPER'S AGREEMENT IN THE AMOUNT OF $63,450.00. ($50,100.00 FOR 167 SHADE TREES, $13,350.00 FOR 89 EVERGREENS.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS 4-21-06
DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Cindy Hamner
CHIEF, DIVISION OF LAND DEVELOPMENT JA 5/12/06
DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK 5/2/06
DATE

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BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
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phone: 410-465-6105 ▲ fax: 410-465-6644
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Donald Mason
3/31/06

OWNER/DEVELOPER:

TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

No.	DATE	REVISION
1	12/06	REVISE STORM DRAIN MATERIAL
2	2/9/07	REVISE HW-3 TO HW-4
3	4/28/23	REVISE PAGE NO.

DES: JMC | DRAFT: RPS | CHECK: DAM

PROJECT:
THE CHASE AT STONEY BROOK
LOTS 1-20, PRESERVATION PARCEL "A" AND
NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION:
TAX MAP No. 7 BLOCK No. 17 PARCEL No. 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
LANDSCAPE PLAN

DATE: AUGUST, 2005
MARCH, 2006
PROJECT NO. 1187
SCALE: 1" = 100
SHEET 13 OF ~~19~~ 20

AS-BUILT 1/31/13

F-05-170

Howard County Agricultural Land Preservation Program as Easement Holder of a Howard County Agricultural Land Preservation Program Easement

Howard County Agricultural Land Preservation Program as Easement Holder of a Howard County Agricultural Land Preservation Program Easement.

NOTE:
THE REMOVAL OF 436 S.F. OF NTA FOREST CONSERVATION RETENTION IS MIDIGATED BY THE ADDITION OF 371 S.F. NTA RETENTION. A NEW DEED OF FOREST CONSERVATION EASEMENT SHALL BE RECORDED WITH THE FINAL PLAT OF REVISION UNDER F-07-107

436 S.F. OF NTA RETENTION TO BE REPLACED

371 S.F. NTA TO BE ADDED TO FOREST CONSERVATION RETENTION

Note: There are no specimen trees on this site.

REG.NO. 21701, Exp. 6/11/23
RED-LINE REV. 4/28/23
REV. # 3 ONLY

DUSTIN M. LAVELLE 21701

LEGEND

EXISTING CONTOURS
PROPOSED CONTORS
EXISTING TREELINE
PROPOSED TREELINE
SOIL DELINEATION LINE
G1B2 SOIL TYPE
FOREST CONSERVATION EASEMENT
STEEP SLOPES 25% OR GREATER
STEEP SLOPES 15 - 24.9 %
FCE FOREST CONSERVATION SIGN
X TREE PROTECTION FENCE

Donald Mason
3/31/06

SOILS LEGEND

SOIL	NAME	CLASS
** Ba	Baile silt loam	D
* CuB	Comus silt loam, local alluvium, 3 to 8 percent slopes	B
GlB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	B
GlC2	Glenelg loam, 8 to 15 percent slopes, moderately eroded	B
GlC3	Glenelg loam, 8 to 15 percent slopes, severely eroded	B
GlD3	Glenelg loam, 15 to 25 percent slopes, severely eroded	B
GlD2	Glenelg loam, 15 to 25 percent slopes, moderately eroded	B
* GnA	Glenville silt loam, 0 to 3 percent slopes	C
* GnB2	Glenville silt loam, 3 to 8 percent slopes, moderately eroded	C
** Ha	Hatboro silt loam	D
MtC2	Mt. Airy channery loam, 8 to 15 percent slopes, moderately eroded	A
MtC3	Mt. Airy channery loam, 8 to 15 percent slopes, severely eroded	A
MtD2	Mt. Airy channery loam, 15 to 25 percent slopes, moderately eroded	A
MtE	Mt. Airy channery loam, 25 to 45 percent slopes	A

NOTES:
- * Hydric soils and/or contains hydric inclusions
- ** May contain hydric inclusions
- † Generally only within 100-year floodplain areas

ROBERT HARRIS VOGEL No. 16193

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE 16193 PE NO. 01/31/13 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

William L. Malarkey Jr. 4-21-06
CHIEF, BUREAU OF HIGHWAYS HS DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

Cindy Hamilton 5/12/06
CHIEF, DIVISION OF LAND DEVELOPMENT JA DATE

5/2/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418
ELLICOTT CITY, MARYLAND 21043
phone: 410-465-6105 ▲ fax: 410-465-6644
www.bei-civilengineering.com

DATE	NO.	REVISION
4/28/23	3	PAGE NO. 1
3-9-07	2	REVISE FCE1 / HW-3 TO HW-4
12/06	1	REVISE STORM DRAIN MATERIAL

OWNER/DEVELOPER:

TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

PROJECT:
THE CHASE AT STONEY BROOK

AREA:
TAX MAP 7 BLOCK 17 PARCEL 133
4 th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
FOREST CONSERVATION PLAN

WILDMAN
ENVIRONMENTAL SERVICES
4747 BONNIE BRANCH RD.
ELLICOTT CITY, MD. 21043
PHONE: 410-869-9999
FAX: 410-869-9901

DESIGNED BY: R.B.W.
DRAWN BY: D.B.T./J.E.P.
PROJECT NO. 1025
DATE: MARCH, 2006
SCALE: 1"= 100'
SHEET NO. 14 OF ~~19~~ 20

AS-BUILT 1/31/13

F-05-170

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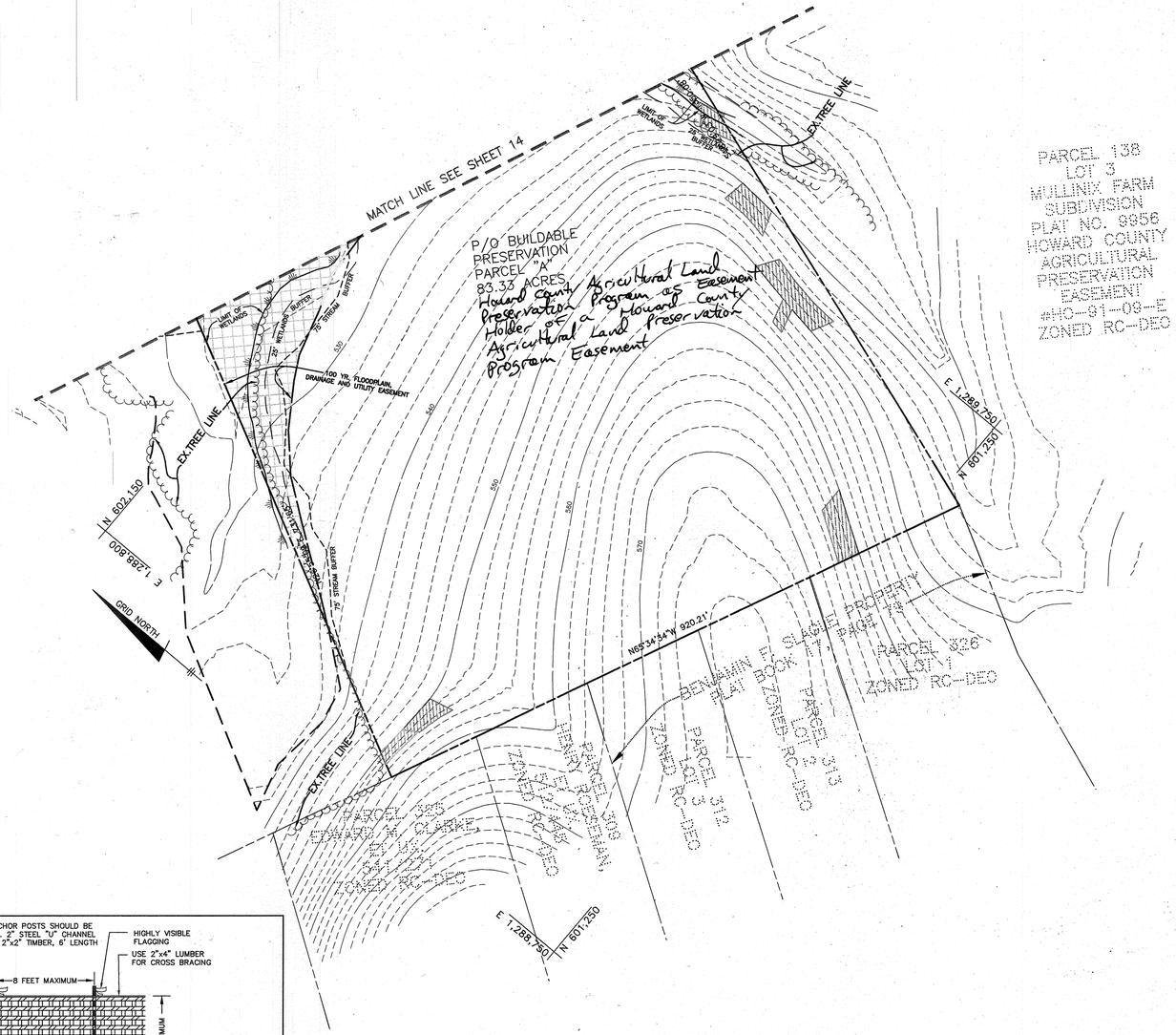


FOREST CONSERVATION NOTES:

1. ANY FOREST CONSERVATION EASEMENT (FCE) AREA SHOWN HEREON IS SUBJECT TO PROTECTIVE COVENANTS WHICH WILL BE RECORDED IN THE LAND RECORDS OF HOWARD COUNTY WHICH RESTRICT THE DISTURBANCE AND USE OF THESE AREAS.
2. FORESTED AREAS OCCURRING OUTSIDE OF THE FCE SHALL NOT BE CONSIDERED PART OF THE FCE AND SHALL NOT BE SUBJECT TO PROTECTIVE LAND COVENANTS.
3. LIMITS OF DISTURBANCE SHALL BE RESTRICTED TO AREAS OUTSIDE THE LIMIT OF TEMPORARY FENCING OR THE FCE BOUNDARY, WHICHEVER IS GREATER.
4. THERE SHALL BE NO CLEARING, GRADING, CONSTRUCTION OR DISTURBANCE OF VEGETATION IN THE FOREST CONSERVATION EASEMENT, EXCEPT AS PERMITTED BY HOWARD COUNTY DPZ.
5. NO STOCKPILES, PARKING AREAS, EQUIPMENT CLEANING AREAS, ETC. SHALL OCCUR WITHIN AREAS DESIGNATED AS FOREST CONSERVATION EASEMENTS.
6. TEMPORARY FENCING SHALL BE USED TO PROTECT FOREST RESOURCES DURING CONSTRUCTION. THE FENCING SHALL BE PLACED ALONG ALL FCE BOUNDARIES WHICH OCCUR WITHIN 15 FEET OF THE PROPOSED LIMITS.
7. PERMANENT SIGNAGE SHALL BE PLACED 50-100' APART ALONG THE BOUNDARIES OF ALL AREAS INCLUDED IN FOREST CONSERVATION EASEMENTS.
8. FOREST CONSERVATION OBLIGATIONS ARE MET BY 7.54 ACRES OF RETENTION AND 1.68 ACRES OF REFORESTATION ON SITE. FINANCIAL SURETY FOR THE REQUIRED OBLIGATION MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $102,278.88. THE TOTAL FOREST CONSERVATION OBLIGATION IS 9.22 ACRES.

NOTE:

WHIP PLANTINGS SHOULD BE INSTALLED IN A CURVILINEAR PATTERN TO FACILITATE MAINTENANCE BUT AVOID A GRID APPEARANCE. TREE SHELTERS SHOULD BE INSTALLED ON ALL WHIP PLANTINGS.

FOREST CONSERVATION EASEMENT #3 (1.07 ACRES±)

QTY.***	SPECIES	SIZE	SPACING
40	Acer rubrum – RED MAPLE	2-3' WHIP	**
35	Robinia pseudoacacia – BLACK LOCUST	2-3' WHIP	**
50	Juglans nigra – BLACK WALNUT	2-3' WHIP	**
40	Juniperus virginiana – RED CEDAR	2-3' WHIP	**
50	Liriodendron tulipifera – POPLAR	2-3' WHIP	**
20	Nyssa sylvatica – BLACK GUM	2-3' WHIP	**
50	Prunus serotina – BLACK CHERRY	2-3' WHIP	**
45	Platanus occidentalis – SYCAMORE	2-3' WHIP	**
30	Quercus rubra – RED OAK	2-3' WHIP	**
15	Sassafras albidum – SASSAFRAS	2-3' WHIP	**
375	TOTAL 375 PLANTINGS REQUIRED		

1" = 214 TREES
2" = 107 TREES

FOREST CONSERVATION EASEMENT #4 (0.61 ACRES±)

QTY.***	SPECIES	SIZE	SPACING
30	Acer rubrum – RED MAPLE	2-3' WHIP	**
15	Robinia pseudoacacia – BLACK LOCUST	2-3' WHIP	**
24	Juglans nigra – BLACK WALNUT	2-3' WHIP	**
25	Juniperus virginiana – RED CEDAR	2-3' WHIP	**
30	Liriodendron tulipifera – POPLAR	2-3' WHIP	**
10	Nyssa sylvatica – BLACK GUM	2-3' WHIP	**
30	Prunus serotina – BLACK CHERRY	2-3' WHIP	**
25	Platanus occidentalis – SYCAMORE	2-3' WHIP	**
15	Quercus rubra – RED OAK	2-3' WHIP	**
10	Sassafras albidum – SASSAFRAS	2-3' WHIP	**
214	TOTAL 207 PLANTINGS REQUIRED		

1½ 122 TREES
2" 61 TREES

KEY:

** PLANTINGS TO BE SPACED AN AVERAGE OF 11 FOOT CENTERS – PLANTINGS SHOULD BE INSTALLED AS RANDOM OF AN ARRAINGEMENT AS POSSIBLE WITH GROUPING 3 TO 5 PLANTINGS AS EACH LOCATION.

PER COUNTY REQUIREMENTS, TREE SHELTERS SHOULD BE USED.

*** THE DEVELOPER RESERVE THE OPTION TO USE THE ALTERNATIVE PLANT MATERIAL SIZE AND DENSITY. IF 1" CALIPER TREES ARE USED THE QUANTITY REQUIRED SHALL BE 57.1% OF THE QUANTITY SPECIFIED IN THE ABOVE TABLE. IF 2" CALIPER TREES ARE PLANTED THE QUANTITY SHALL BE 28.6% OF THE QUANTITY SPECIFIED.

Site Data	
	Areas
Gross Area:	116.79
100 Year Floodplain:	23.62
Agricultural Pres.	83.33
Net Tract Area (NTA):	33.46
Existing Forest on NTA:	8.46
Afforestation Threshold:	6.69
Reforestation Threshold:	8.37
Forest not retained in FCE:	0.92
NTA Forest to be Retained in FCE:	7.54

APPENDIX E
FOREST CONSERVATION WORKSHEET

I. BASIC SITE DATA	ACRES (1/10 acre)
GROSS SITE AREA	116.79
AREA WITHIN 100 YEAR FLOOD PLAIN	23.62
AREA OF PRESERVATION PARCEL	83.33
AREA WITHIN AGRICULTURAL USE OR PRESERVATION PARCEL OUTSIDE OF FLOODPLAIN (IF APPLICABLE)	59.71
NET TRACT AREA	33.46
LAND USE CATEGORY (R-RLD, R-RMD, R-S, C/I/O, I)	R-RMD

II. INFORMATION FOR CALCULATIONS	
A. NET TRACT AREA	33.46
B. REFORESTATION THRESHOLD (25% x A)	8.37
C. AFFORESTATION MINIMUM (20% x A)	6.69
D. EXISTING FOREST ON NET TRACT AREA	8.46
E. FOREST AREAS TO BE CLEARED	0.92
F. FOREST AREAS TO BE RETAINED (RETENTION)	7.54

III. DETERMINING REQUIREMENTS: AFFORESTATION OR REFORESTATION

1. Reforestation

If existing forest areas equal or exceed the afforestation minimum (if D equals or is more than C), and clearing of forest areas is proposed, reforestation requirements may apply.

GO TO SECTION IV

If existing forest areas equal or exceed the afforestation minimum (if D equals or is more than C), and no clearing of existing forest resources is proposed, no reforestation is required. No further calculations are needed.

2. Afforestation

If existing forest areas are less than the afforestation minimum (if D is less than C), afforestation requirements apply.

GO TO SECTION V

NOTE:

1. THIS PROJECT IS USING RURAL CLUSTER OPTION 'C' PER APPENDIX 'L' OF THE FOREST CONSERVATION MANUAL TO CALCULATE ITS FOREST CONSERVATION OBLIGATION.
2. THE 83.33 ACRES EXCLUDED FROM THE THE NET TRACT AREA IS PRESERVATION PARCEL 'A'.
3. There are no specimen trees on this site.

IV. REFORESTATION CALCULATIONS	ACRES (1/10 acre)
A. NET TRACT AREA	33.46
B. REFORESTATION THRESHOLD (25% x A)	8.37
D. EXISTING FOREST ON NET TRACT AREA	8.46
E. FOREST AREAS TO BE CLEARED	0.92
F. FOREST AREAS TO BE RETAINED	7.54
G. FOREST AREAS CLEARED ABOVE REFORESTATION THRESHOLD (D-F, If F equals or is greater than B, Alternate 1) (D-B, if F is less than B, Alternate 2)	0.09
H. FOREST AREAS CLEARED BELOW REFORESTATION THRESHOLD (B-F, If applicable)	0.83
I. FOREST AREAS RETAINED ABOVE REFORESTATION THRESHOLD (F-B, Retention Credit, if applicable)	J

SELECT THE ALTERNATE THAT APPLIES:

1. Clearing above the threshold only

If forest areas to be retained equal or are greater than the reforestation threshold (if F equals or is greater than B), the following calculations apply:

REFORESTATION FOR CLEARING ABOVE THRESHOLD G x 1/4	0.02
CREDIT FOR FOREST AREAS RETAINED ABOVE THRESHOLD I = Retention Credit	0
TOTAL REFORESTATION REQUIRED (G x 1/4) – I	0

If the total reforestation requirement is equal to or less than 0, no reforestation is required.

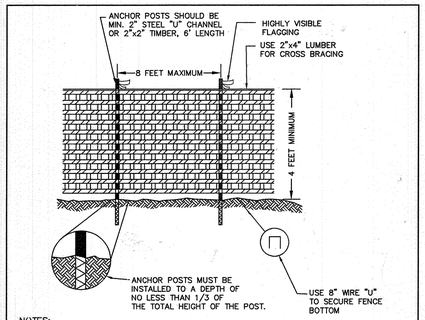
2. Clearing below the threshold

If forest areas to be retained are less than the reforestation threshold (if F is less than B), the following calculations apply:

REFORESTATION FOR CLEARING ABOVE THRESHOLD G x 1/4	0.02
REFORESTATION FOR CLEARING BELOW THRESHOLD H x 2	1.66
TOTAL REFORESTATION REQUIRED (G x 1/4) + (H x 2)	1.68

Since clearing occurs below the threshold, no forest retention credit is possible

FOREST CONSERVATION TABULATION		
DESIGNATION	TYPE	ACREAGE
#1A	RETENTION	6.04 NTA
#2	RETENTION	1.50
#3	REFORESTATION	1.07
#4	REFORESTATION	0.61
TOTAL:	MIX	9.24



NOTES:
1. BLAZE ORANGE OR BLUE PLASTIC MESH FENCE FOR FOREST PROTECTION DEVICE ONLY.
2. BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
3. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLATION.
4. AVOID DAMAGE TO CRITICAL ROOT ZONE. DO NOT DAMAGE OR SEVER LARGE ROOTS WHEN INSTALLING POSTS.
5. PROTECTIVE SIGNS ARE REQUIRED.
6. DEVICE SHOULD BE MAINTAINED THROUGHOUT CONSTRUCTION.

ADAPTED FROM PRINCE GEORGE'S COUNTY, MD. WOODLAND CONSERVATION MANUAL AND FOREST CONSERVATION MANUAL, 1991.

PLASTIC MESH TREE PROTECTION FENCE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 4-21-06

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/2/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/2/06

FOREST RETENTION AREA

MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS *PROHIBITED*

VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE HOWARD COUNTY FOREST CONSERVATION ACT OF 1992

MIN. 15" × MIN. 11"

SPECIMEN TREE

DO NOT REMOVE

MACHINERY, DUMPING OR STORAGE OF ANY MATERIALS IS *PROHIBITED*

VIOLATORS ARE SUBJECT TO FINES AS IMPOSED BY THE HOWARD COUNTY FOREST CONSERVATION ACT OF 1992

MIN. 15" × MIN. 11"

Forest Conservation Area

REFORESTATION PROJECT

Trees For Your Future

MIN. 15" × MIN. 11"

PROTECTIVE SIGNAGE

SOILS LEGEND

SOIL	NAME	CLASS
** Ba	Basile silt loam	D
* CuB	Comus silt loam, local alluvium, 3 to 8 percent slopes	B
GlB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	B
GlC2	Glenelg loam, 8 to 15 percent slopes, moderately eroded	B
GlC3	Glenelg loam, 8 to 15 percent slopes, severely eroded	B
GlD3	Glenelg loam, 15 to 25 percent slopes, severely eroded	B
GlD2	Glenelg loam, 15 to 25 percent slopes, moderately eroded	B
* GnA	Glenville silt loam, 0 to 3 percent slopes	C
* GnB2	Glenville silt loam, 3 to 8 percent slopes, moderately eroded	C
** Ha	Hatboro silt loam	D
MtC2	Mt. Airy channery loam, 8 to 15 percent slopes, moderately eroded	A
MtC3	Mt. Airy channery loam, 8 to 15 percent slopes, severely eroded	A
MtD2	Mt. Airy channery loam, 15 to 25 percent slopes, moderately eroded	A
MtE	Mt. Airy channery loam, 25 to 45 percent slopes	A

NOTES:
* Hydric soils and/or contains hydric inclusions
** May contain hydric inclusions
† Generally only within 100-year floodplain areas

LEGEND

- EXISTING CONTOURS
- PROPOSED CONTORS
- EXISTING TREELINE
- PROPOSED TREELINE
- SOIL DELINEATION LINE
- GlB2 SOIL TYPE
- FOREST CONSERVATION EASEMENT
- STEEP SLOPES 25% OR GREATER
- STEEP SLOPES 15 – 24.9 %
- FCE FOREST CONSERVATION SIGN
- TREE PROTECTION FENCE

STATE OF MARYLAND — AUSTIN M. LAVELLE — 21701 — PROFESSIONAL LAND SURVEYOR
REG. NO. 21701 EXP. 6/11/13
RED-LINE REV. 4/28/13
REV# 2 ONLY

STATE OF MARYLAND — ROBERT HARRIS WILSON — No. 19193 — PROFESSIONAL ENGINEER

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS

SIGNATURE — 6/13/13 FIELD INSP. — 01/31/13 DATE

Donald Moon — 3/31/06

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
GLW ENGINEERING, INC.
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www.bei-civilengineering.com

DATE	NO.	REVISION
4/28/13	2	PAGE NO.
3/9/07	1	REVISE FCE #1

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

PROJECT:
THE CHASE AT STONEY BROOK

AREA:
TAX MAP 7 BLOCK 17 PARCEL 133
4 th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
FOREST CONSERVATION PLAN

WILDMAN
ENVIRONMENTAL SERVICES
4747 BONNIE BRANCH RD.
ELLICOTT CITY, MD. 21043
PHONE: 410-869-9999
FAX: 410-869-9901

DESIGNED BY:	R.B.W.
DRAWN BY:	D.B.T./J.E.P.
PROJECT NO.	1025
DATE:	MARCH, 2006
SCALE:	1"= 100'
SHEET NO.	15 OF 19 30

AS-BUILT 1/31/13

F-05-170

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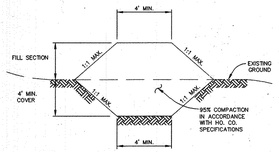
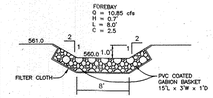


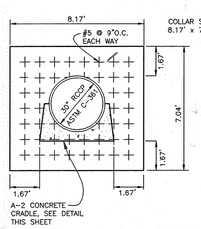
NOTES:

1. IF WATER IS ENCOUNTERED DURING THE CONSTRUCTION OF THE CORE TRENCH, IT IS TO BE REMOVED BY PUMPING.
2. CORE TRENCH SHALL CONSIST OF IMPERVIOUS MATERIAL (GC, SC, CL, OR CH) AS DIRECTED BY A GEOTECHNICAL ENGINEER ONSITE AND MAY REQUIRE TO BE HAULED FROM AN OFFSITE LOCATION.

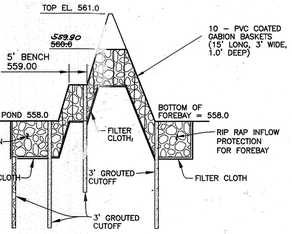
CORE TRENCH SECTION
NOT TO SCALE



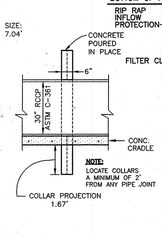
PROFILE THROUGH FOREBAY WEIR
NOT TO SCALE

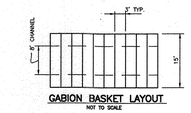


ANTI-SEEP COLLAR
NOT TO SCALE

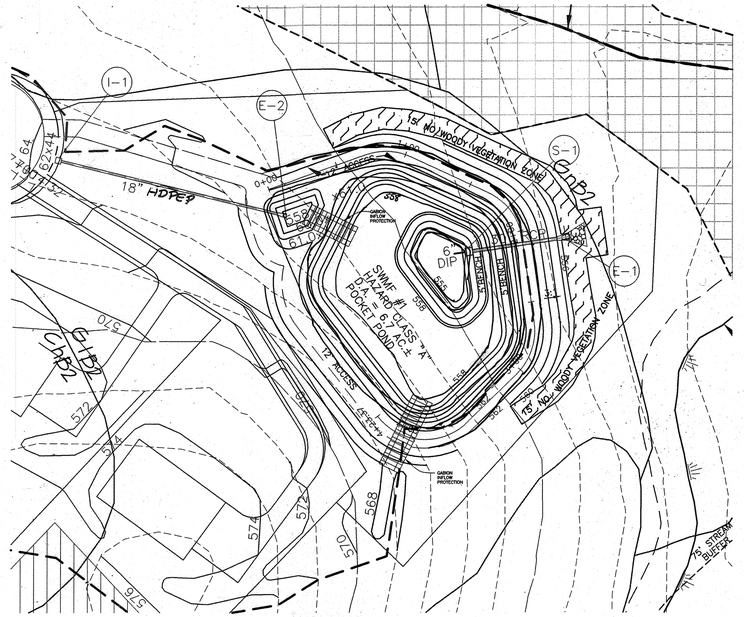


TYPICAL SECTION OF GABION WEIR AT FOREBAY
NOT TO SCALE

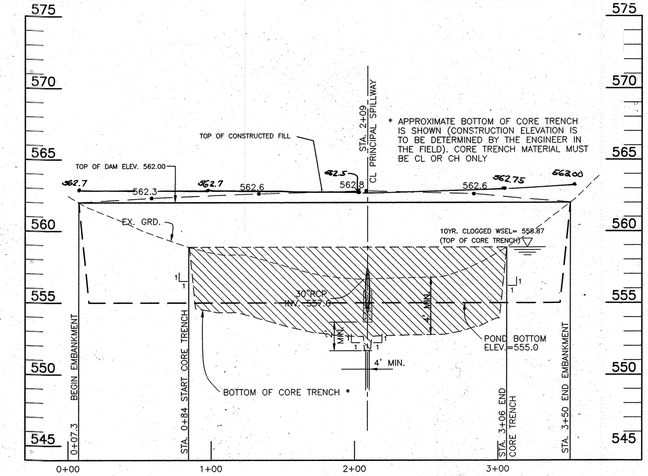




GABION BASKET LAYOUT
NOT TO SCALE



POND #1 DETAIL
SCALE: 1" = 50'



* APPROXIMATE BOTTOM OF CORE TRENCH IS SHOWN (CONSTRUCTION ELEVATION IS TO BE DETERMINED BY THE ENGINEER IN THE FIELD). CORE TRENCH MATERIAL MUST BE CL OR CH ONLY

PROFILE ALONG CL OF EMBANKMENT
SCALE: 1"=50' HORIZ., 1"=5' VERT.

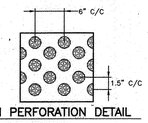
SOILS LEGEND

SOIL	NAME	CLASS
** Ba	Baile silt loam	D
* CuB	Comus silt loam, local alluvium, 3 to 8 percent slopes	B
GlB2	Glenelg loam, 3 to 8 percent slopes, moderately eroded	B
GlC2	Glenelg loam, 8 to 15 percent slopes, moderately eroded	B
GlC3	Glenelg loam, 8 to 15 percent slopes, severely eroded	B
GlD3	Glenelg loam, 15 to 25 percent slopes, severely eroded	B
GlD2	Glenelg loam, 15 to 25 percent slopes, moderately eroded	B
* GnA	Glenville silt loam, 0 to 3 percent slopes	C
* GnB2	Glenville silt loam, 3 to 8 percent slopes, moderately eroded	C
** Ha	Hatboro silt loam	D
MtC2	Mt. Airy channery loam, 8 to 15 percent slopes, moderately eroded	A
MtC3	Mt. Airy channery loam, 8 to 15 percent slopes, severely eroded	A
MtD2	Mt. Airy channery loam, 15 to 25 percent slopes, moderately eroded	A
MtE	Mt. Airy channery loam, 25 to 45 percent slopes	A

NOTES:
* *Hydric soils and/or contains hydric inclusions*
** *May contain hydric inclusions*
† *Generally only within 100-year floodplain areas*

NOTES:

1. TRASH RACK SHALL BE GALVANIZED AFTER FABRICATION
2. TRASH RACK SHALL BE PAINTED BATTLESHIP GRAY.
2. TRASH RACK TO BE INSTALLED UPON CONVERSION TO SWM POND.



TSWM PERFORATION DETAIL
NOT TO SCALE

FOREST CONSE

RCING	QTY.***	SPECI
**	30	Acer rub
**	15	Robinia
**	24	Juglans
**	25	Juniperu
**	35	Liriod
**	15	Nyss
**	30	Pinu
**	25	Pinus
**	15	Quer

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED EXTENDED DETENTION POND

ROUTINE MAINTENANCE:

1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.
3. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS THE RIP-RAP OR GABION OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE:

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 SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENTS SHALL BE REMOVED FROM THE POND, A'D FOREBAY, NO LATER THAN WHEN THE CAPACITY OF THE POND, OR FOREBA', IS HALF FULL OF SEDIMENT, OR, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

16193
PE NO. 21443

~~DONALD A. MASON~~
ROBERT H VOGEL
DATE

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

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

DEVELOPER — DATE 4/4/06

BY THE ENGINEER:

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

Donald Mason — 3/31/06
ENGINEER – DONALD A. MASON, P.E. # 21443 — DATE

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

USDA – NATURAL RESOURCES CONSERVATION SERVICE — DATE 7/6/06

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 7/6/06

APPROVED: DEPARTMENT OF PUBLIC WORKS

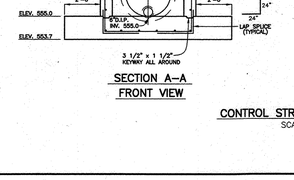
CHIEF, BUREAU OF HIGHWAYS — DATE 4-21-06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/12/06

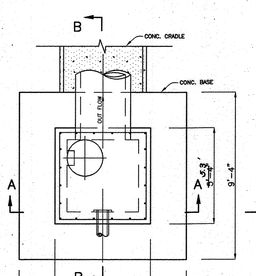
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5/12/06

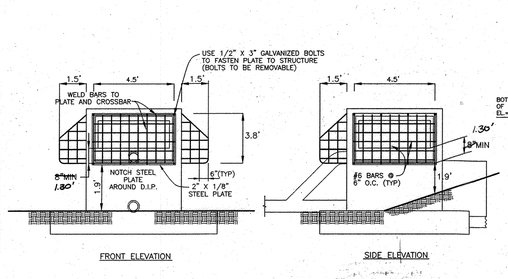
SECTION THRU PRINCIPAL SPILLWAY
SCALE: 1"=20' HORIZ., 1"=2' VERT.



TYPE A-2 CONCRETE CRADLE
NOT TO SCALE

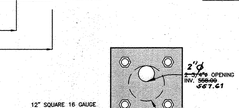
TOP





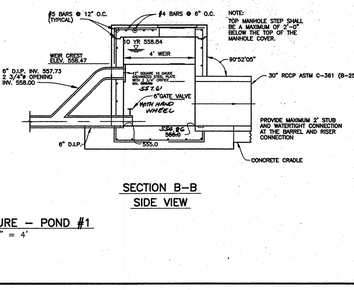
FRONT ELEVATION — SIDE ELEVATION

TRASH RACK DETAIL
SCALE: 1" = 4'



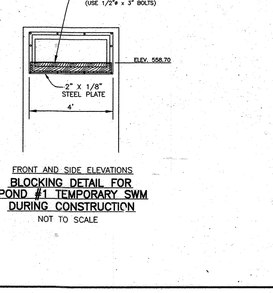
NO WEIR ON REAR OF STRUCTURE

SECTION A-A FRONT VIEW



SECTION B-B SIDE VIEW

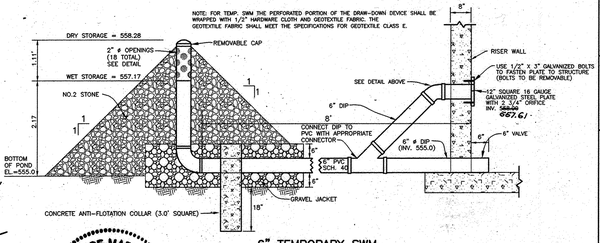
CONTROL STRUCTURE – POND #1
SCALE: 1" = 4'



FRONT AND SIDE ELEVATIONS

BLOCKING DETAIL FOR POND #1 TEMPORARY SWM DURING CONSTRUCTION
NOT TO SCALE

NOTE: FOR TEMP. SWM 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.



6" TEMPORARY SWM VERTICAL DRAW-DOWN DEVICE
NOT TO SCALE

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

16193 PE NO. — 6/28/13 DATE

STATE OF MARYLAND — DUSTIN M. LAWLER — 21701 — PROFESSIONAL LAND SURVEYOR

REG. No. 21701 EXP. 6/11/13
RED-LINE REV. 4/28/13
REV. #3 ONLY

STATE OF MARYLAND — ROBERT HARRIS VOGEL — No. 16193 — PROFESSIONAL ENGINEER — 3/31/13

ROBERT H. VOGEL, P.E.
NO. 16193
FOR REVISION #2 ONLY

NO.	DATE	REVISION
3	4/28/13	REVISE PAGE NO.
2	6/11/12	REVISE PLAN TO DELETE WATERTIGHT MANHOLE FRAME AND COVER; ADD HAND WHEEL TO POND DRAIN AND RELOCATE STANDING PAD
1	12/06/06	REVISE STORM DRAIN MATERIAL

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418
ELLICOTT CITY, MARYLAND 21043
phone: 410-465-6105 ▲ fax: 410-465-6644
www.bel-civilengineering.com

Donald Mason — 3/31/06

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

PROJECT: THE CHASE AT STONEY BROOK
LOTS 1-20, PRESERVATION PARCEL "A" AND NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION: TAX MAP 7, BLOCK 17 PARCEL 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: STORMWATER MANAGEMENT FACILITY #1 (POCKET POND)

DATE: MARCH, 2006 — PROJECT NO. 1187

DES: JMC — DRAFT: JMC — CHECK: DAM — SCALE: AS SHOWN — SHEET 16 OF ~~19~~

AS-BUILT 1/31/13

F-05-170

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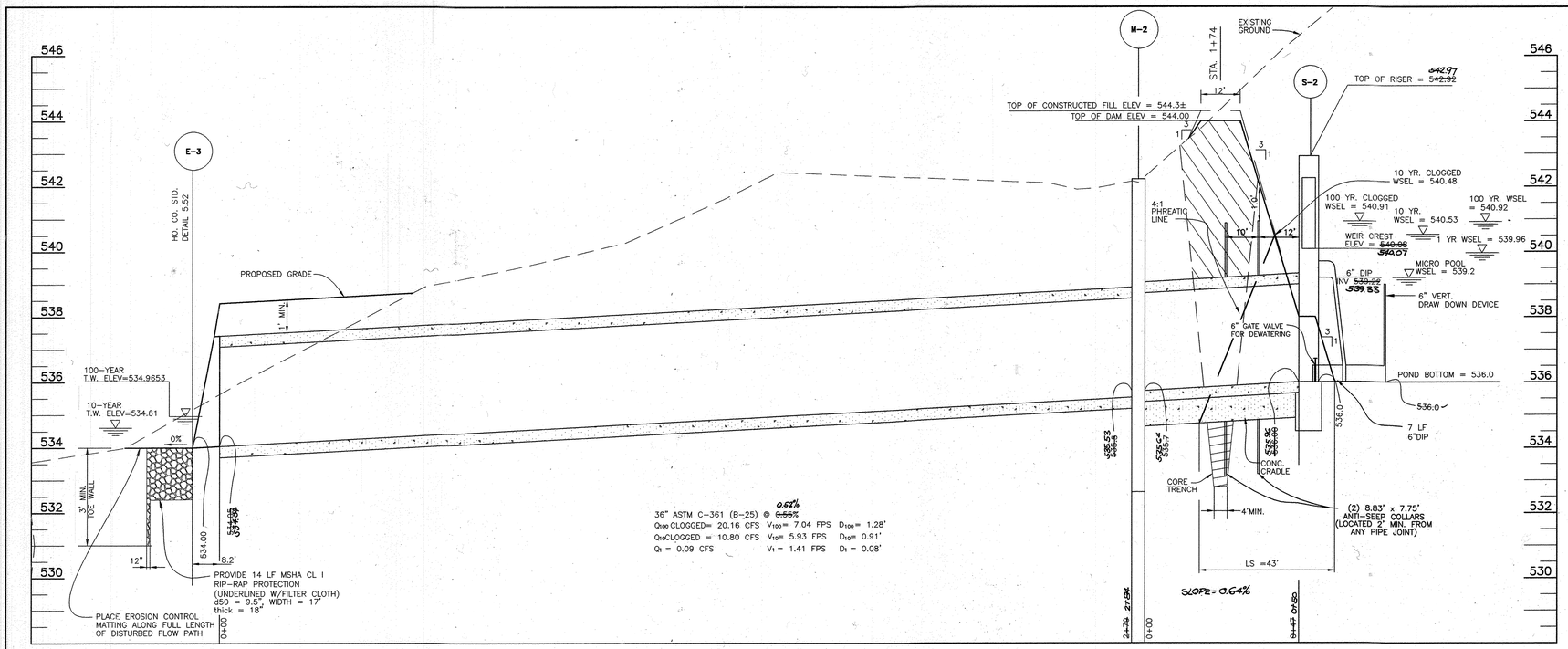
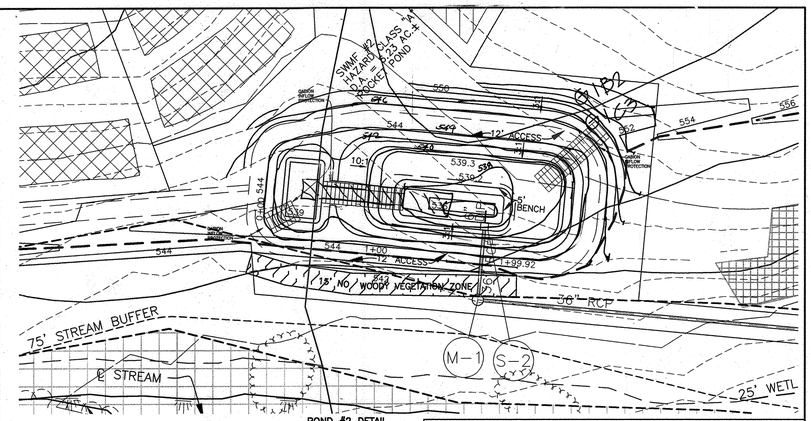


SECTION THRU PRINCIPAL SPILLWAY
SCALE: 1"=20' HORIZ., 1"=2' VERT.



POND #2 DETAIL
SCALE: 1" = 50'

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED EXTENDED DETENTION POND

ROUTINE MAINTENANCE:

1. FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.
2. TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF TWO (2) TIMES PER YEAR, ONCE IN JUNE AND ONCE IN SEPTEMBER. OTHER SIDE SLOPES AND MAINTENANCE ACCESS SHALL BE MOWED AS NEEDED.
3. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
4. VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS THE RIP-RAP OR GABION OUTLET AREA SHALL BE REPAIRED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE:

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 SHALL BE INSPECTED DURING ROUTINE MAINTENANCE OPERATIONS.
2. SEDIMENTS SHALL BE REMOVED FROM THE POND, AND FOREBAY, NO LATER THAN WHEN THE CAPACITY OF THE POND, OR FOREBAY, IS HALF FULL OF SEDIMENT, OR, WHEN DEEMED NECESSARY FOR AESTHETIC REASONS, UPON APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS.

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

PE NO. 16193 21443

ROBERT H. VOGEL DATE

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

BY THE DEVELOPER:

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

DEVELOPER 4/4/06 DATE

BY THE ENGINEER:

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

ENGINEER - DONALD A. MASON, P.E. # 21443 3/31/06 DATE

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

USDA - NATURAL RESOURCES CONSERVATION SERVICE 4/4/06 DATE

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

HOWARD SOIL CONSERVATION DISTRICT 4/4/06 DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS 4-21-06 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT JA 5/22/06 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 5/26/06 DATE

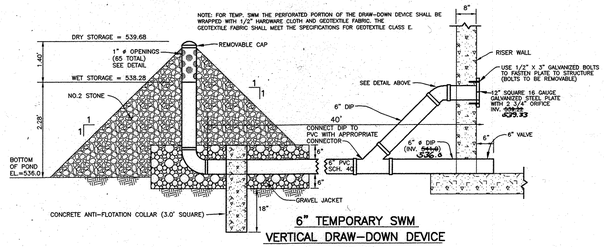
GABION BASKET LAYOUT
NOT TO SCALE

PROFILE THROUGH FOREBAY WEIR
NOT TO SCALE

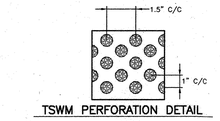
CORE TRENCH SECTION
NOT TO SCALE

NOTES:
1. IF WATER IS ENCOUNTERED DURING THE CONSTRUCTION OF THE CORE TRENCH, IT IS TO BE REMOVED BY PUMPING.
2. CORE TRENCH SHALL CONSIST OF IMPERVIOUS MATERIAL (GC, SC, CL, CH) AS DIRECTED BY A GEOTECHNICAL ENGINEER ONSITE AND MAY REQUIRE TO BE HAULED FROM AN OFFSITE LOCATION.

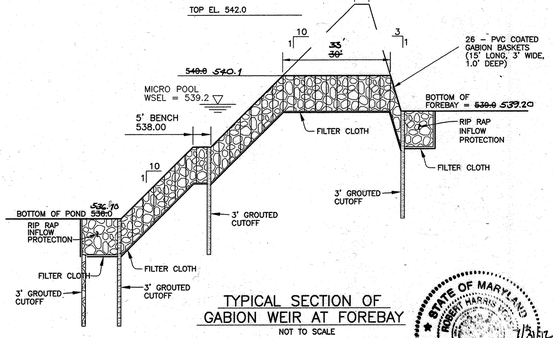
NOTE: FOR TEMP. SWM THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.



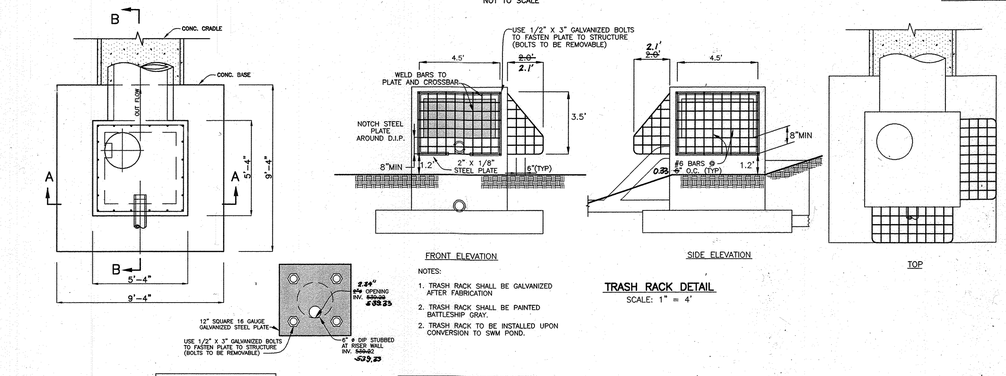
6" TEMPORARY SWM VERTICAL DRAW-DOWN DEVICE
NOT TO SCALE



TSWM PERFORATION DETAIL
NOT TO SCALE



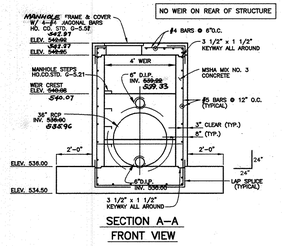
TYPICAL SECTION OF GABION WEIR AT FOREBAY
NOT TO SCALE



FRONT ELEVATION — SIDE ELEVATION — TOP

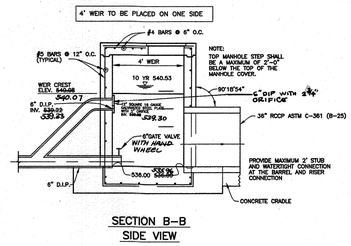
NOTES:
1. TRASH RACK SHALL BE GALVANIZED AFTER FABRICATION
2. TRASH RACK SHALL BE PAINTED BATTLESHIP GRAY.
3. TRASH RACK TO BE INSTALLED UPON CONVERSION TO SWM POND.

TRASH RACK DETAIL
SCALE: 1" = 4'



NO WEIR ON REAR OF STRUCTURE

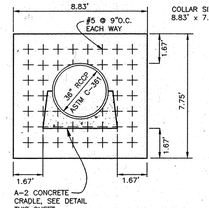
SECTION A-A
FRONT VIEW



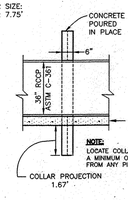
NOTE: TOP MANHOLE STEP SHALL BE A MAXIMUM OF 2'-0" BELOW THE TOP OF THE MANHOLE COVER.

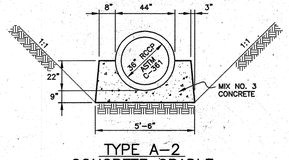
SECTION B-B
SIDE VIEW

CONTROL STRUCTURE - POND #2
SCALE: 1" = 4'

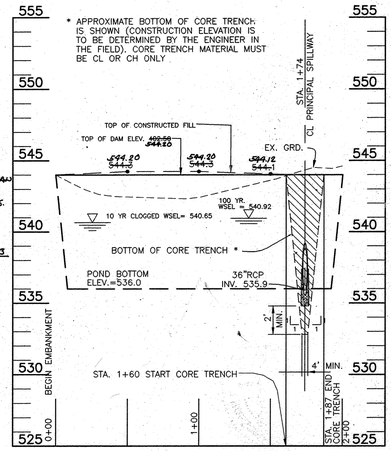


ANTI-SEEP COLLAR
NOT TO SCALE





TYPE A-2 CONCRETE CRADLE
NOT TO SCALE



PROFILE ALONG ℄ OF EMBANKMENT
SCALE: 1"=50' HORIZ., 1"=5' VERT.

AS-BUILT CERTIFICATION
I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

SIGNATURE 16193 PE. NO. 6/21/13 DATE

NO.	DATE	REVISION
3	4/29/13	REVISE PAGE NO.
2	6/11/12	REVISE PLAN TO DELETE WATERTIGHT MANHOLE FRAME AND COVER
2	6/11/12	ADD HAND WHEEL TO POND DRAIN, RELOCATE STANDING PAD

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
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phone: 410-465-6105 ▲ fax: 410-465-6644
www.bel-civilengineering.com

3/31/06

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-3023

PROJECT: THE CHASE AT STONEY BROOK
LOTS 1-20, PRESERVATION PARCEL "A" AND NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION: TAX MAP 7, BLOCK 17 PARCEL 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE: STORMWATER MANAGEMENT FACILITY #2 (POCKET POND)

DATE: MARCH, 2006 PROJECT NO. 1187

DES: JMC DRAFT: JMC CHECK: DAM SCALE: AS SHOWN SHEET 17 OF ~~20~~ 19

AS-BUILT 1/31/13

F-05-170

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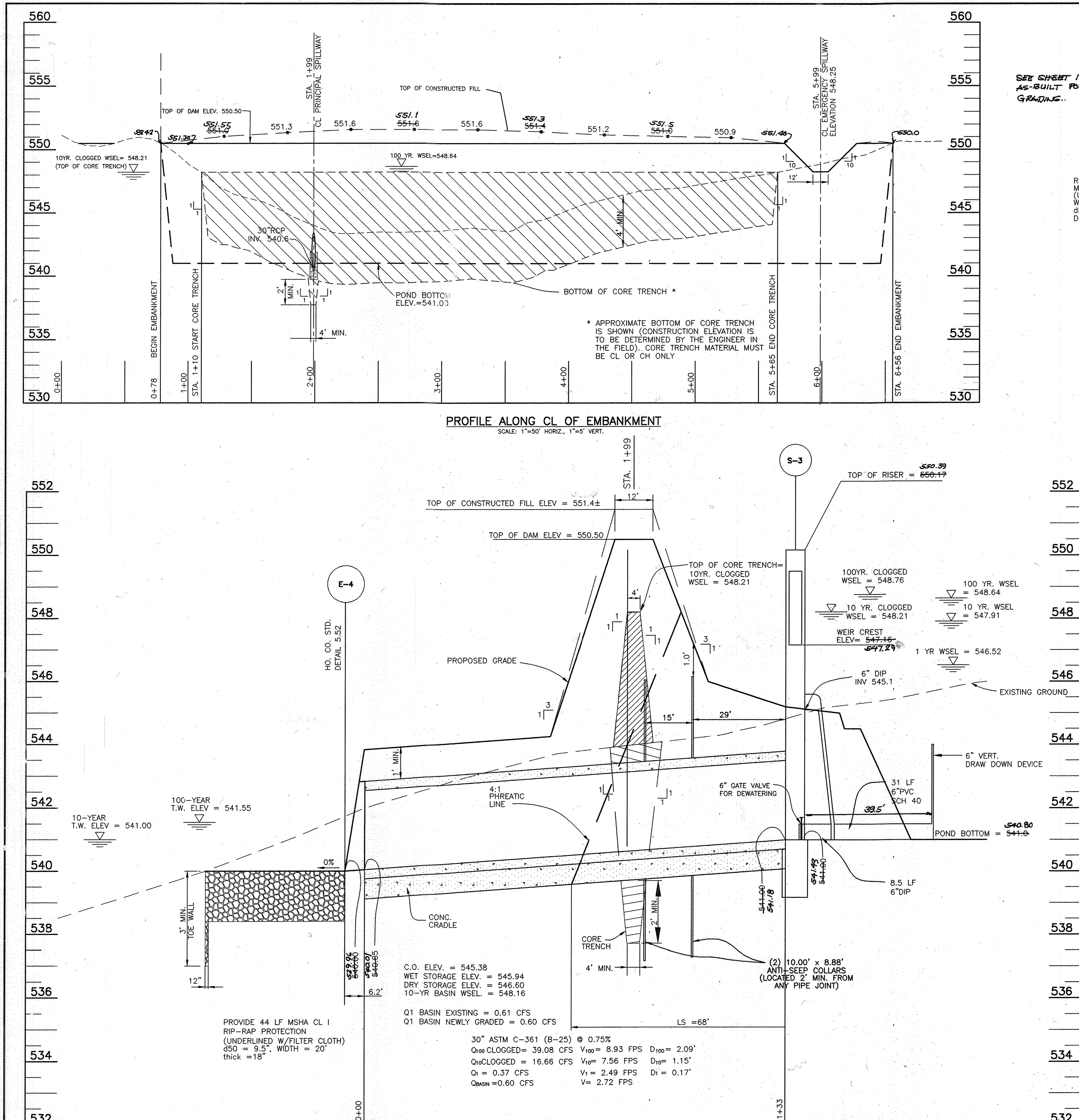

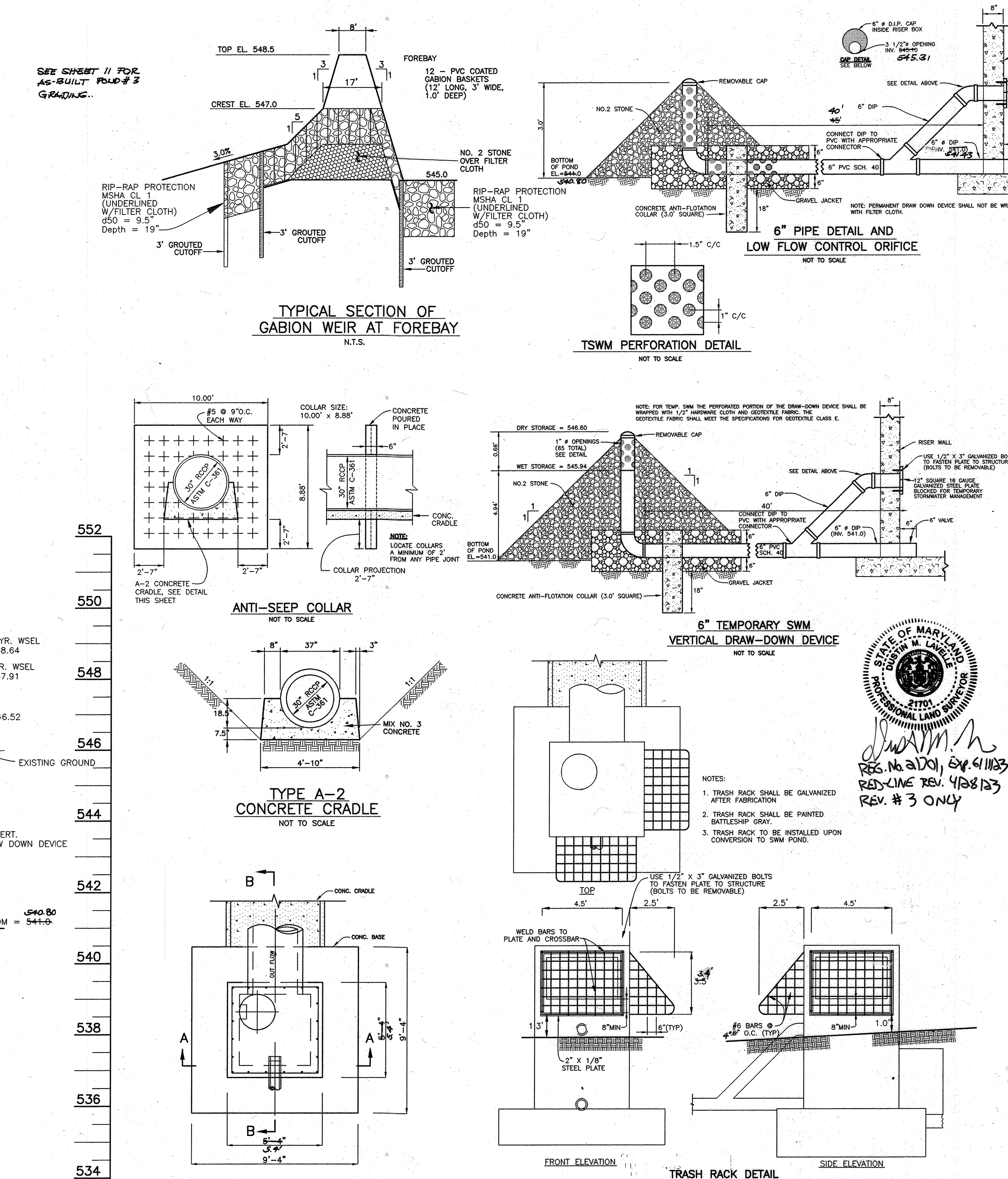

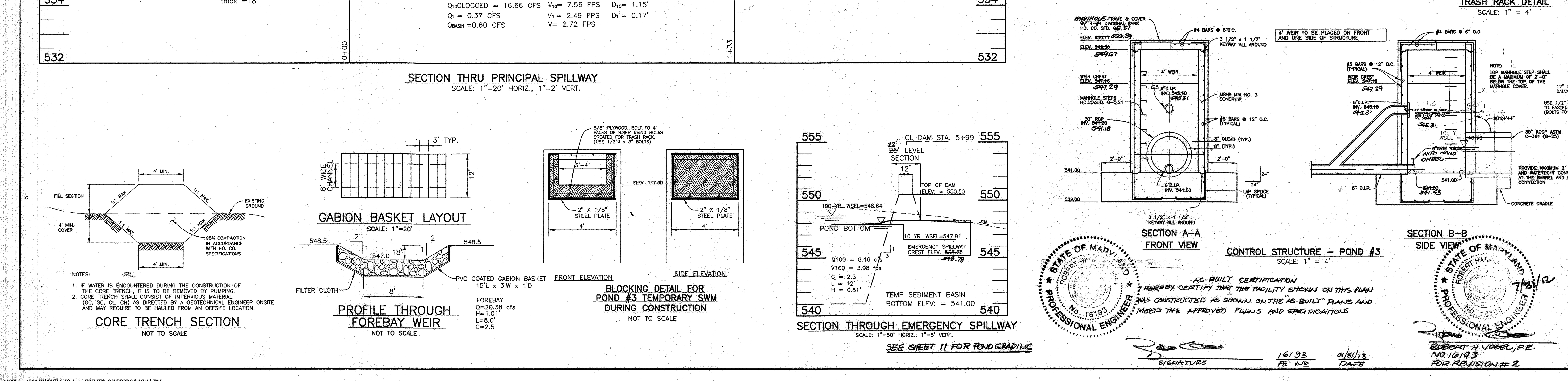

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED EXTENDED DETENTION POND

ROUTINE MAINTENANCE:

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REG. No. 21701, Exp. 6/11/23
REDLINE REV. 4/28/23
REV. #3 ONLY

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS AND SPECIFICATIONS.

PE NO. ~~21443~~ 16193

~~DONALD A. MASON~~ ROBERT H. VOGEL — DATE

CERTIFY MEANS TO STATE OR DECLARE A PROFESSIONAL OPINION BASED UPON ONSITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ONSITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE BY COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER NOR DOES AN ENGINEER'S CERTIFICATION RELIEVE ANY OTHER PARTY FROM MEETING REQUIREMENTS IMPOSED BY CONTRACT, EMPLOYMENT, OR OTHER MEANS, INCLUDING MEETING COMMONLY ACCEPTED INDUSTRY PRACTICES.

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DEVELOPER — 4/4/06 DATE

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ENGINEER — DONALD A. MASON, P.E. # 21443 — 3/31/06 DATE

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

USDA – NATURAL RESOURCES CONSERVATION SERVICE — DATE

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 4-21-06 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 5/12/06 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

NO.	DATE	REVISION
3	4/28/23	PAGE No.
2	6/11/12	REVISE PLAN TO DELETE WATERTHIGHT MANHOLE FRAME AND COVER
		ADD HAND WHEEL TO POND DRAIN, RELOCATE STANDING PAD

BENCHMARK ENGINEERING, INC.
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418
ELLICOTT CITY, MARYLAND 21043
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Donald Mason 3/31/06

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

PROJECT:
THE CHASE AT STONEY BROOK
LOTS 1-20, PRESERVATION PARCEL "A" AND NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION:
TAX MAP 7, BLOCK 17 PARCEL 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE:
STORMWATER MANAGEMENT FACILITY #3 (SHALLOW WETLAND)

DES: JMC	DRAFT: JMC	CHECK: DAM	
DATE: JANUARY, 2006	PROJECT NO. 1187	SCALE: AS SHOWN	SHEET 18 OF ~~19~~ 20

AS-BUILT 1/31/13

F-05-170

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CONSTRUCTION SPECIFICATIONS

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

Site Preparation

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

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

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

Earth Fill

Material – The fill material shall be taken from approved designated borrow areas. If shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable material. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer.

Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.

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

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

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

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

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

Structure Backfill

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

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

Pipe Conduits

All pipes shall be circular in cross section

Corrugated Metal Pipe – all of the following criteria shall apply for corrugated metal pipe:

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

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

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

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

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

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

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

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

5. Backfilling shall conform to "Structure Backfill".

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

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

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

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

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

4. Backfilling shall conform to "Structure Backfill".

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

Plastic Pipe – The following criteria shall apply for plastic pipe:

1. Materials – PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4' – 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.

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

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

4. Backfilling shall conform to "Structure Backfill".

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

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

Concrete

Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 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. The contractor shall also furnish, install, operate, and maintain all necessary pumping and other equipment required for removal of water from various parts of the work and for maintaining the evacuations, foundation, and other parts of the work free from water as required or directed by the engineer for constructing each part of the work. After having served their purpose, all temporary protective works shall be removed or leveled and graded to the extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the location being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

Stabilization

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

Erosion and Sediment Control

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

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RECORD OF SOIL EXPLORATION
Page 1 of 1

Project Name Cattail Creek Overlook
Location Lisbon, Maryland
Boring Number B-1
Job # 03329A

SAMPLER
Datum
Surf. Elev. 561.05
Date Started 06-30-03
Hammer Wt. 140 Lbs.
Hammer Drop 30 Inches
Pipe Size 2.0 Inches OD
Hole Diameter 8"
Rock Core Dia. -
Boring Method HSA
Foreman Jerry Hersl
Inspector
Completed 06-30-03

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					1.0' Topsoil
	Brown, moist, stiff, clayey silt trace gravel (ML)	2.0		I	2-3-21	1	9"	
	Brown, moist, medium stiff to stiff sandy silt, trace to little clay (ML)		5.0	I	4-6-5	2	18"	
				I	3-3-3	3	18"	Caved in at 6.5' at Completion * Installed a 7.0' insitu pipe
			10.0	D	5-5-6	4	14"	
								Groundwater encountered at 12.5' while drilling
		15.0	15.0	D	5-9-10	5	18"	Backfilled after 24 hours
	Bottom of Test Hole at 15.0'		20.0					

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED.
PT-PRESSED SHELBY TUBE
CA-CONTINUOUS FLIGHT AUGER
RC-ROCK CORE

SAMPLE CONDITIONS
D-DISINTEGRATED
I-INTACT
U-UNDISTURBED
L-LOST

GROUND WATER DEPTH
AT COMPLETION Dry
AFTER 24 hrs 4.6 FT.
AFTER FT.

BORING METHOD
HSA-HOLLOW STEM AUGERS
CFA-CONT. FLIGHT AUGERS
DC-DRIVING CASING
MD-MUD DRILLING

STANDARD PENETRATION TEST–DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION
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Project Name Cattail Creek Overlook
Location Lisbon, Maryland
Boring Number B-2
Job # 03329A

SAMPLER
Datum
Surf. Elev. 562.65
Date Started 06-30-03
Hammer Wt. 140 Lbs.
Hammer Drop 30 Inches
Pipe Size 2.0 Inches OD
Hole Diameter 8"
Rock Core Dia. -
Boring Method HSA
Foreman Jerry Hersl
Inspector
Completed 06-30-03

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					1.0' Topsoil
	Brown dry, medium stiff, sandy silt, trace gravel, trace roots (ML)	2.0		I	2-3-4	1	9"	No groundwater encountered while drilling
	Brown, moist, stiff sandy silt (ML)	5.5	5.0	I	3-6-7	2	18"	
	Brown, moist medium stiff to stiff silty clay (CL)			I	2-3-4	3	18"	Caved in at 6.5' at Completion Caved in at 8.5' after 24 hours
		11.0	10.0	I	3-4-7	4	18"	
	Brown, moist, stiff silt little decomposed rock fragments (ML)	15.0	15.0	I	3-7-11	5	18"	Backfilled after 24 hours
	Bottom of Test Hole at 15.0'		20.0					

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED.
PT-PRESSED SHELBY TUBE
CA-CONTINUOUS FLIGHT AUGER
RC-ROCK CORE

SAMPLE CONDITIONS
D-DISINTEGRATED
I-INTACT
U-UNDISTURBED
L-LOST

GROUND WATER DEPTH
AT COMPLETION Dry
AFTER 24 hrs 6.9' FT.
AFTER FT.

BORING METHOD
HSA-HOLLOW STEM AUGERS
CFA-CONT. FLIGHT AUGERS
DC-DRIVING CASING
MD-MUD DRILLING

STANDARD PENETRATION TEST–DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

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Project Name Cattail Creek Overlook
Location Lisbon, Maryland
Boring Number B-3
Job # 03329A

SAMPLER
Datum
Surf. Elev. 558.27
Date Started 06-30-03
Hammer Wt. 140 Lbs.
Hammer Drop 30 Inches
Pipe Size 2.0 Inches OD
Hole Diameter 8"
Rock Core Dia. -
Boring Method HSA
Foreman Jerry Hersl
Inspector
Completed 06-30-03

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					1.0' Topsoil
	Brown, moist, soft silt trace clay (ML)	2.0		I	2-2-2	1	12"	No groundwater encountered while drilling
	Brown, moist, medium stiff silty clay (CL)		5.0	I	2-2-2	2	9"	
		8.0		I	3-3-6	3	18"	Caved in at 7.5' at Completion
	Brown moist stiff to hard sandy silt, trace decomposed rock fragments (ML)		10.0	I	5-8-10	4	18"	Caved in at 6.8' after 24 hours
		15.0	15.0	I	10-17-32	5	18"	Backfilled after 24 hours
	Bottom of Test Hole at 15.0'		20.0					

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED.
PT-PRESSED SHELBY TUBE
CA-CONTINUOUS FLIGHT AUGER
RC-ROCK CORE

SAMPLE CONDITIONS
D-DISINTEGRATED
I-INTACT
U-UNDISTURBED
L-LOST

GROUND WATER DEPTH
AT COMPLETION Dry
AFTER 24 hrs 4.6 FT.
AFTER FT.

BORING METHOD
HSA-HOLLOW STEM AUGERS
CFA-CONT. FLIGHT AUGERS
DC-DRIVING CASING
MD-MUD DRILLING

STANDARD PENETRATION TEST–DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

HILLIS - CARNES
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Project Name Cattail Creek Overlook
Location Lisbon, Maryland
Boring Number B-4
Job # 03329A

SAMPLER
Datum
Surf. Elev. 544.76
Date Started 06-30-03
Hammer Wt. 140 Lbs.
Hammer Drop 30 Inches
Pipe Size 2.0 Inches OD
Hole Diameter 8"
Rock Core Dia. -
Boring Method HSA
Foreman Jerry Hersl
Inspector
Completed 06-30-03

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					1.0' Topsoil
	Brown, moist, soft, clayey silt, trace gravel trace roots (ML)	2.0		I	2-2-3	1	14"	
	Brown, mioist medium stiff sandy silt, trace gravel (ML)	5.5	5.0	I	5-6-5	2	14"	
	Brown, moist, stiff, sandy silt, trace clay (ML)			I	4-8-10	3	16"	Caved in at 7.5' at Completion
		12.0	10.0	I	4-9-14	4	18"	Caved in at 7.5' after 24 hours
	Brown, moist, medium stiff clayey silt (ML)							Groundwater encountered at 13.0' while drilling
		15.0	15.0	I	4-5-4	5	18"	Badkfilled after 24 hours
	Bottom of Test Hole at 15.0'		20.0					

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED.
PT-PRESSED SHELBY TUBE
CA-CONTINUOUS FLIGHT AUGER
RC-ROCK CORE

SAMPLE CONDITIONS
D-DISINTEGRATED
I-INTACT
U-UNDISTURBED
L-LOST

GROUND WATER DEPTH
AT COMPLETION Dry
AFTER 24 hrs 4.1 FT
AFTER FT.

BORING METHOD
HSA-HOLLOW STEM AUGERS
CFA-CONT. FLIGHT AUGERS
DC-DRIVING CASING
MD-MUD DRILLING

STANDARD PENETRATION TEST–DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

HILLIS - CARNES
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Project Name Cattail Creek Overlook
Location Lisbon, Maryland
Boring Number B-5
Job # 03329A

SAMPLER
Datum
Surf. Elev. 542.69
Date Started 06-30-03
Hammer Wt. 140 Lbs.
Hammer Drop 30 Inches
Pipe Size 2.0 Inches OD
Hole Diameter 8"
Rock Core Dia. -
Boring Method HSA
Foreman Jerry Hersl
Inspector
Completed 06-30-03

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					1.0' Topsoil
	Brown, moist, soft, silty clay trace roots (CL)	2.0		I	2-2-2	1	11"	
	Brown, moist, medium stiff to hard sandy silt, trace clay (ML)		5.0	I	4-4-5	2	16"	Caved in at 4.7' at Completion
				I	9-12-14	3	16"	Caved in at 2.8' after 24 hours
		12.0	10.0	I	6-14-20	4	18"	
	Light gray, dry, hard sandy silt trace decomposed rock fragments (ML) (Decomposed Rock)							Groundwater encountered at 13.0' while drilling
		15.0	15.0	I	20-40-50/4"	5	18"	Backfilled after 24 hours
	Bottom of Test Hole at 15.0'		20.0					

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED.
PT-PRESSED SHELBY TUBE
CA-CONTINUOUS FLIGHT AUGER
RC-ROCK CORE

SAMPLE CONDITIONS
D-DISINTEGRATED
I-INTACT
U-UNDISTURBED
L-LOST

GROUND WATER DEPTH
AT COMPLETION Dry FT.
AFTER 24 hrs 1.6 FT.
AFTER FT.

BORING METHOD
HSA-HOLLOW STEM AUGERS
CFA-CONT. FLIGHT AUGERS
DC-DRIVING CASING
MD-MUD DRILLING

STANDARD PENETRATION TEST–DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

HILLIS - CARNES
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Project Name Cattail Creek Overlook
Location Lisbon, Maryland
Boring Number B-6
Job # 03329A

SAMPLER
Datum
Surf. Elev. 541.84
Date Started 06-30-03
Hammer Wt. 140 Lbs.
Hammer Drop 30 Inches
Pipe Size 2.0 Inches OD
Hole Diameter 8"
Rock Core Dia. -
Boring Method HSA
Foreman Jerry Hersl
Inspector
Completed 06-30-03

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					1.0' Topsoil
	Brown, moist, medium stiff sandy silt, trace gravel trace roots (ML)	2.0		I	3-3-4	1	9"	
	Light gray, dry, stiff to hard sandy silt, trace decomposed rock fragments (ML)		5.0	D	6-11-18	2	18"	
		8.0		D	10-19-13	3	12"	Caved in at 7.7' at Completion
	Light gray, moist, hard sandy silt, some decomposed rock fragments (ML) (Decomposed Rock)		10.0	D	25-50/4"	4	10"	Caved in at 8.8' after 24 hours Groundwater encountered at 11.0' while drilling
		15.0	15.0	D	28-50/4"	5	9"	Backfilled after 24 hours
	Bottom of Test Hole at 15.0'		20.0					

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED.
PT-PRESSED SHELBY TUBE
CA-CONTINUOUS FLIGHT AUGER
RC-ROCK CORE

SAMPLE CONDITIONS
D-DISINTEGRATED
I-INTACT
U-UNDISTURBED
L-LOST

GROUND WATER DEPTH
AT COMPLETION 7.0' FT.
AFTER 24 hrs 5.3' FT.
AFTER FT.

BORING METHOD
HSA-HOLLOW STEM AUGERS
CFA-CONT. FLIGHT AUGERS
DC-DRIVING CASING
MD-MUD DRILLING

STANDARD PENETRATION TEST–DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

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RECORD OF SOIL EXPLORATION
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Project Name Cattail Creek Overlook
Location Lisbon, Maryland
Boring Number B-7
Job # 03329A

SAMPLER
Datum
Surf. Elev. 544.87
Date Started 06-27-03
Hammer Wt. 140 Lbs.
Hammer Drop 30 Inches
Pipe Size 2.0 Inches OD
Hole Diameter 8"
Rock Core Dia. -
Boring Method HSA
Foreman Jerry Hersl
Inspector
Completed 06-27-03

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					1.0' Topsoil
	Brown, wet, soft, sandy clay trace roots (CL)	2.0		I	2-3-2	1	9"	
	Brown, dry, stif sandy silt trace decomposed rock fragments (ML)		5.0	I	10-10-13	2	18"	
				I	4-6-9	3	18"	Caved in at 7.5' at Completion Caved in at 6.9' after 72 hours
		12.0	10.0	I	6-8-13	4	14"	Groundwater encountered at 9.0' while drilling
	Light gray, dry, hard, sandy silt, trace decomposed rock fragments (ML) (Decomposed Rock)	15.0	15.0	D	12-24-41	5	16"	Backfilled after 72 hours
	Bottom of Test Hole at 15.0'		20.0					

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED.
PT-PRESSED SHELBY TUBE
CA-CONTINUOUS FLIGHT AUGER
RC-ROCK CORE

SAMPLE CONDITIONS
D-DISINTEGRATED
I-INTACT
U-UNDISTURBED
L-LOST

GROUND WATER DEPTH
AT COMPLETION 2.5 FT.
AFTER 72 hrs 3.3' FT.
AFTER FT.

BORING METHOD
HSA-HOLLOW STEM AUGERS
CFA-CONT. FLIGHT AUGERS
DC-DRIVING CASING
MD-MUD DRILLING

STANDARD PENETRATION TEST–DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION
Page 1 of 1

Project Name Cattail Creek Overlook
Location Lisbon, Maryland
Boring Number B-8
Job # 03329A

SAMPLER
Datum
Surf. Elev. 543.89
Date Started 06-27-03
Hammer Wt. 140 Lbs.
Hammer Drop 30 Inches
Pipe Size 2.0 Inches OD
Hole Diameter 8"
Rock Core Dia. -
Boring Method HSA
Foreman Jerry Hersl
Inspector
Completed 06-27-03

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					6" Topsoil
	Brown, moist, soft, clay (CL)	2.0		I	2-2-3	1	14	
	Brown, moist, medium stiff to stiff sandy silt (ML)		5.0	D	4-8-6	2	18"	
		8.0		I	3-3-5	3	18"	
	Dark gray to brown, moist, stiff sandy silt, trace decomposed rock fragments (ML)		10.0	I	5-5-7	4	18"	Caved in at 9.0' at Completion Caved in at 5.5' after 72 hours Groundwater encountered at 13.5' while drilling
		15.0	15.0	I	5-9-10	5	18"	
	Bottom of Test Hole at 15.0'		20.0					Backfilled after 72 hours

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED.
PT-PRESSED SHELBY TUBE
CA-CONTINUOUS FLIGHT AUGER
RC-ROCK CORE

SAMPLE CONDITIONS
D-DISINTEGRATED
I-INTACT
U-UNDISTURBED
L-LOST

GROUND WATER DEPTH
AT COMPLETION 8.9 FT.
AFTER 72 hrs 1.5 FT.
AFTER FT.

BORING METHOD
HSA-HOLLOW STEM AUGERS
CFA-CONT. FLIGHT AUGERS
DC-DRIVING CASING
MD-MUD DRILLING

STANDARD PENETRATION TEST–DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

HILLIS - CARNES
ENGINEERING ASSOCIATES, INC.
RECORD OF SOIL EXPLORATION
Page 1 of 1

Project Name Cattail Creek Overlook
Location Lisbon, Maryland
Boring Number B-9
Job # 03329A

SAMPLER
Datum
Surf. Elev. 542.67
Date Started 06-27-03
Hammer Wt. 140 Lbs.
Hammer Drop 30 Inches
Pipe Size 2.0 Inches OD
Hole Diameter 8"
Rock Core Dia. -
Boring Method HSA
Foreman Jerry Hersl
Inspector
Completed 06-27-03

ELEV.	SOIL DESCRIPTION Color,Moisture,Density,Size,Proportion	STRA. DEPTH	DEPTH SCALE	CON	SAMPLE BLOWS 6"	NO.	REC.	BORING & SAMPLING NOTES
	SURFACE		0.0					1.0' Topsoil
	Dark brown, moist, soft, silty clay trace roots (CL)	2.0		I	2-2-2	1	9"	
	Brown, moist, stiff to hard sandy silt, trace decomposed rock fragments trace clay (ML)		5.0	D	4-5-7	2	14"	
				I	4-6-10	3	16"	Caved in at 7.0' at Completion Caved in at 5.9' after 72 hours
			10.0	I	10-14-17	4	18"	Groundwater encountered at 12.0' while drilling
		15.0	15.0	I	8-11-15	5	12"	Backfilled after 72 hours
	Bottom of Test Hole at 15.0'		20.0					

SAMPLER TYPE
DRIVEN SPLIT SPOON UNLESS OTHERWISE NOTED.
PT-PRESSED SHELBY TUBE
CA-CONTINUOUS FLIGHT AUGER
RC-ROCK CORE

SAMPLE CONDITIONS
D-DISINTEGRATED
I-INTACT
U-UNDISTURBED
L-LOST

GROUND WATER DEPTH
AT COMPLETION 4.5 FT.
AFTER 72 hrs 2.5 FT.
AFTER FT.

BORING METHOD
HSA-HOLLOW STEM AUGERS
CFA-CONT. FLIGHT AUGERS
DC-DRIVING CASING
MD-MUD DRILLING

STANDARD PENETRATION TEST–DRIVING 2" OD SAMPLER 1' WITH 140# HAMMER FALLING 30": COUNT MADE AT 6" INTERVALS

DUSTIN M. LAVELLE
21701

REG. NO. 21701, 6/1/23 EXP.
RED-LINE REV. 4/28/23
REV. #1 ONLY

ROBERT HARRIS VOGEL
No. 16193

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE FACILITY SHOWN ON THIS PLAN WAS CONSTRUCTED AS SHOWN ON THE "AS-BUILT" PLANS AND MEETS THE APPROVED PLANS & SPECIFICATIONS.

SIGNATURE 16193 P.E. NO. 01/31/13 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS 4-21-06 DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT 5/12/06 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION MK 5/2/06 DATE

NO.	DATE	REVISION
1	4/28/23	REVISE PAGE NO.

BENCHMARK
ENGINEERS ▲ LAND SURVEYORS ▲ PLANNERS
ENGINEERING, INC.
8480 BALTIMORE NATIONAL PIKE ▲ SUITE 418
ELLICOTT CITY, MARYLAND 21043
phone: 410-465-6105 ▲ fax: 410-465-6644
www.bei-civilengineering.com

Donald Mason
3/31/06

OWNER/DEVELOPER:
TRINITY QUALITY HOMES, INC.
3675 PARK AVENUE
SUITE 301
ELLICOTT CITY, MD 21043
410-480-0023

PROJECT:
THE CHASE AT STONEY BROOK
LOTS 1-20, PRESERVATION PARCEL "A" AND
NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D"

LOCATION:
TAX MAP 7, BLOCK 17 PARCEL 133
4th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

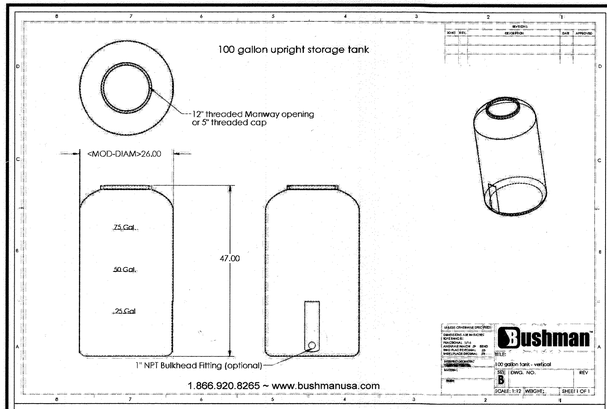
TITLE:
SWM NOTES AND
SOIL BORING LOGS

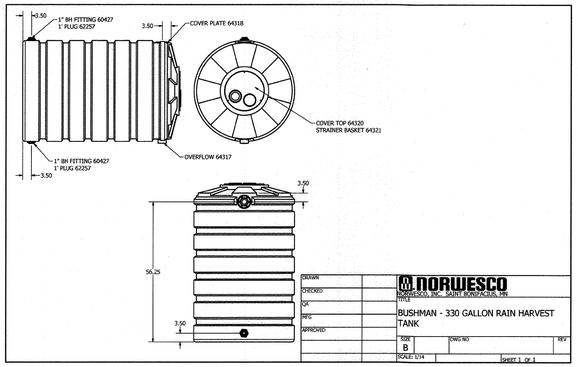
DATE: MARCH, 2006
PROJECT NO. 1187
DES: JMC
DRAFT: LAB
CHECK: DAM
SCALE: AS SHOWN
SHEET 19 OF 20 ~~19~~

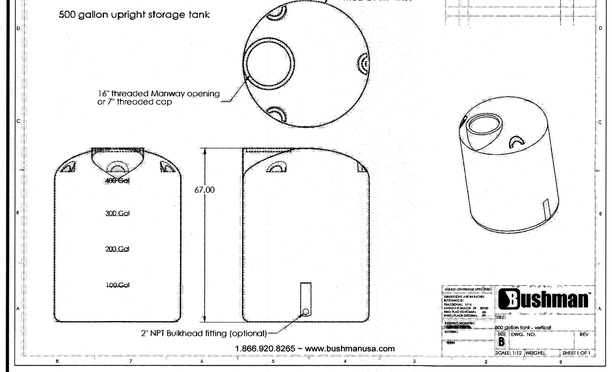
AS-BUILT 1/31/13

F-05-170

P:\1187\dwg\7033s19.dwg, Sheet 1, 3/31/2006 2:21:36 PM, Jne, Oce TDS600 HDI for mylar.pc3

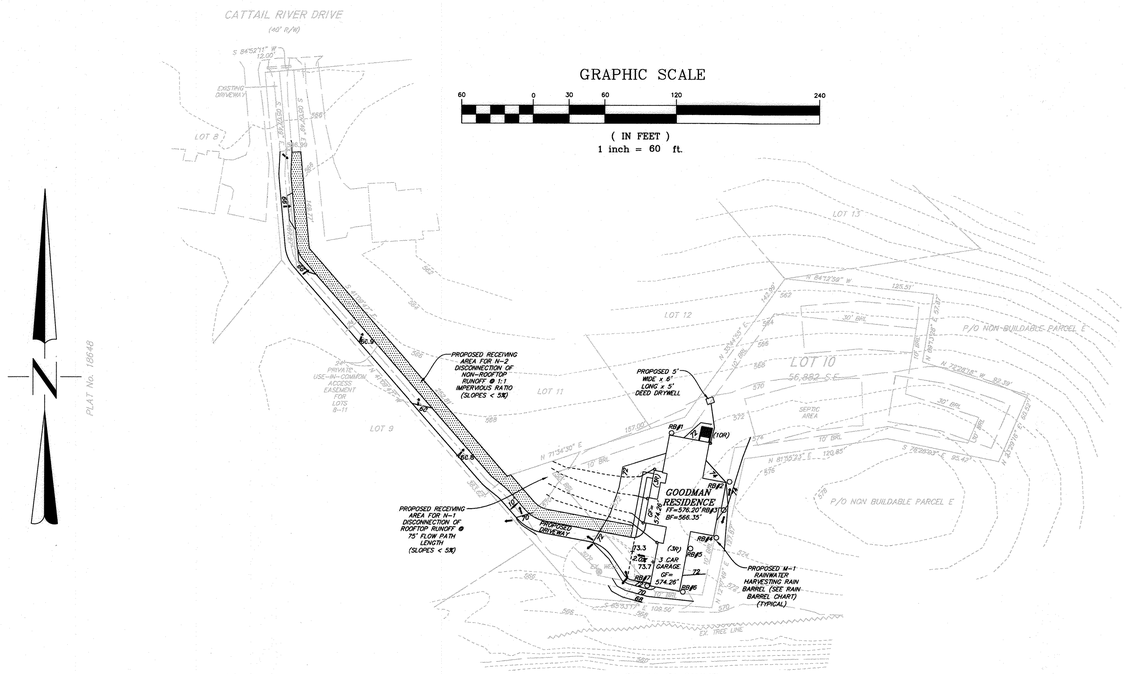






STORMWATER MANAGEMENT PRACTICES

LOT NUMBER	ADDRESS	GREEN ROOFS A-1 (Y/N)	PERMEABLE PAVEMENTS A-2 (Y/N)	REINFORCED TURF A-3 (Y/N)	DISCONNECTION OF ROOFTOP RUNOFF N-1 (NUMBER)	DISCONNECTION OF NON-ROOFTOP RUNOFF N-2 (Y/N)	SHEETFLOW TO CONSERVATION AREAS N-3 (Y/N)	RAINWATER HARVESTING M-1 (NUMBER)	SUBMERGED GRAVEL WETLANDS M-2 (NUMBER)	LANSCAPE INFILTRATION M-3 (NUMBER)	INFILTRATION BERMS M-4 (NUMBER)	DRY WELLS M-5 (NUMBER)	MICRO-BIORETENTION M-6 (NUMBER)	RAIN GARDENS M-7 (NUMBER)	SWALES M-8 (NUMBER)	ENHANCED FILTERS M-9 (NUMBER)
10	16315 CATTAIL RIVER DRIVE	N	N	N	4	Y	N-3	7	0	0	0	1	0	0	0	0



SWM SUMMARY TABLE:

ESDv REQUIRED = 1,308 C.F.
ESDv PROVIDED = 1,055 C.F. OF STORAGE
PE REQUIRED = 1.2"
PE PROVIDED = 0.96"
ReV REQUIRED = 283.5 C.F.
ReV PROVIDED = 686 C.F.

RAIN BARREL CHART:

- RB#1 = 500 GALLON RAIN BARREL
- RB#2 = 500 GALLON RAIN BARREL
- RB#3 = 100 GALLON RAIN BARREL
- RB#4 = 500 GALLON RAIN BARREL
- RB#5 = 500 GALLON RAIN BARREL
- RB#6 = 330 GALLON RAIN BARREL
- RB#7 = 330 GALLON RAIN BARREL

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED DISCONNECTION OF ROOFTOP RUNOFF (N-1), DISCONNECTION OF NON-ROOFTOP RUNOFF (N-2)

a. Maintenance of areas receiving disconnected runoff is generally no different than that required for other lawn or landscaped areas. The Owner shall ensure the areas receiving runoff are protected from future compaction or development of impervious area. In commercial areas, foot traffic should be discouraged as well.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER DRY WELLS (M-5)

1. The monitoring wells and structures shall be inspected on a quarterly basis and after every large storm event.

2. Water levels and sediment build up in the monitoring wells shall be recorded over a period of several days to insure trench drainage.

3. A log book shall be maintained to determine the rate at which the facility drains.

4. When the facility becomes clogged so that it does not drain down within the 72 hour time period, corrective action shall be taken.

5. The maintenance log book shall be available to Howard County for inspection to insure compliance with operation and maintenance criteria.

6. Once the performance characteristics of the infiltration facility have been verified, the monitoring schedule can be reduced to an annual basis unless the performance data indicates that a more frequent schedule is required.

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED RAINWATER HARVESTING (M-1)

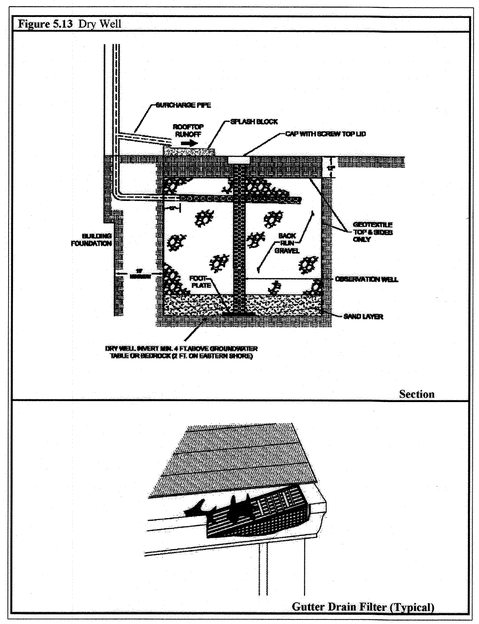
a. The Owner shall empty barrels on a monthly basis and clean barrel with a hose.

b. The Owner shall verify integrity of leaf screens, gutters, downspouts, spigots, and mosquito screens, and clean and remove any debris.

c. The Owner shall replace damaged components as needed.

d. The Owner shall disconnect the barrel prior to winter, or allow the barrel to drain by bottom spigot during the winter season.

STORMWATER DRY WELLS (M-5) DETAIL



CONSTRUCTION CRITERIA FOR PRIVATELY OWNED AND MAINTAINED STORMWATER DRY WELLS (M-5)

THE FOLLOWING ITEMS SHOULD BE ADDRESSED DURING CONSTRUCTION OF PROJECTS WITH DRY WELLS:

- EROSION AND SEDIMENT CONTROL: FINAL GRADING FOR PROPOSED DRY WELLS SHOULD NOT TAKE PLACE UNTIL THE SURROUNDING SITE IS COMPLETELY STABILIZED. IF THIS CANNOT BE ACCOMPLISHED, RUNOFF FROM DISTURBED AREAS SHALL BE DIVERTED.

- SOIL COMPACTION: EXCAVATION SHOULD BE CONDUCTED IN DRY CONDITIONS WITH EQUIPMENT LOCATED OUTSIDE OF THE PRACTICE TO MINIMIZE BOTTOM AND SIDEWALL COMPACTION. CONSTRUCTION OF A DRY WELL SHALL BE PERFORMED WITH LIGHTWEIGHT, WIDE-TRACKED EQUIPMENT TO MINIMIZE DISTURBANCE AND COMPACTION. EXCAVATED MATERIALS SHALL BE PLACED IN A CONTAINED AREA.

- UNDERGROUND CHAMBER: A SUBSURFACE PREFABRICATED CHAMBER MAY BE USED.

- DRY WELL BOTTOM: THE BOTTOM SHALL BE AS LEVEL AS POSSIBLE TO MINIMIZE POOLED WATER IN SMALL AREAS THAT MAY REDUCE OVERALL INFILTRATION AND LONGEVITY.

- FILTER CLOTH: FILTER CLOTH SHALL NOT BE INSTALLED ON THE BOTTOM OF THE WELL. NON-WOVEN FILTER CLOTH SHOULD BE USED TO LINE THE TOP AND SIDES OF THE DRY WELL TO PREVENT THE PORE SPACE BETWEEN THE STONES FROM BEING BLOCKED BY THE SURROUNDING NATIVE MATERIAL.

- GRAVEL MEDIA: THE AGGREGATE SHALL BE COMPOSED OF AN 1B TO 4B-INCH LAYER OF CLEAN WASHED, OPEN GRADED MATERIAL WITH 40% POROSITY (E.G., ASTM D448 4,5, OR 6 STONE OR EQUAL).

CONSTRUCTION CRITERIA FOR PRIVATELY OWNED AND MAINTAINED RAINWATER HARVESTING (M-1)

The following should be addressed during construction of projects with rainwater harvesting systems:

- Site Disturbance: Underground storage tanks shall be placed on or in native soils. If placement on fill material is necessary, a geotechnical analysis may be required by the approving authority.

- Storage Tanks:
  - Storage tanks shall be designed to be watertight and all materials should be sealed with a water safe, non-toxic substance.
  - Storage tanks shall be protected from direct sunlight and shall be opaque to prevent the growth of algae.
  - The top of underground tanks shall be beneath the frost line.
  - Cisterns may be ordered from a manufacturer or constructed on-site. Typical materials used to construct cisterns are fiberglass, wood, metal, or reinforced concrete.
  - Rain barrels can be purchased or custom made from large, plastic (e.g., 55-gallon) drums.

A LICENSEE EITHER PERSONALLY PREPARED THIS RED-LINE REVISION OR WAS IN RESPONSIBLE CHARGE OVER ITS PREPARATION AND THE SURVEYING WORK REFLECTED IN IT, ALL IN COMPLIANCE WITH REQUIREMENTS SET FORTH IN REGULATION 09.13.06.12 OF THE CODE OF MARYLAND REGULATIONS (COMAR).

APPROVED: ~~HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS~~

CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: HOWARD COUNTY DEPT. OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 5/9/23

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 5.8.23

REVISIONS

LAVELLE & ASSOCIATES INCORPORATED
PLANNERS · SURVEYORS
P.O. Box 372, Frederick, Maryland 21705
TEL: (301) 695-9722, FAX: (301) 695-9766

RED-LINE REVISION FOR LOT 10 - BLOWUP & DETAILS
THE CHASE AT STONEY BROOK
LOTS 1-20, PRESERVATION PARCEL "A" AND NON-BUILDABLE PRESERVATION PARCELS "B" THROUGH "D".

TAX MAP 7, BLOCK 17, PARCEL 133
4TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

STATE OF MARYLAND
DUSTIN M. LAVELLE
21701
PROFESSIONAL LAND SURVEYOR

RED-LINE REVISION — REV. 4/28/23

Reg. No. 21701, Exp. 6/11/2023

FIELD DATE: 9/19/2022
DRAWING DATE: 4/17/2023
SCALE: 1" = 60'
PROJ. No. 22-138
FILE: LP3\The Chase at Stoney Brook, Lot 10\wbk.dwg
DRAWN: DML
PAGE 20 OF 20

F-05-170