

- SITE DATA**
1. LOCATION: TAX MAP 40, PARCEL 44, LOT 5
  2. 5TH ELECTION DISTRICT
  3. ZONING: RR-DEQ
  4. GROSS AREA OF PROJECT: 25.6264 AC.
  5. NO. OF RESIDENTIAL DWELLING UNITS: 6
  6. AREA OF PROPOSED RESIDENTIAL LOTS 17-22: 5.8662 AC.
  7. OPEN SPACE REQUIRED: NONE
  8. NON-BUILDABLE PRESERVATION SPACE TO BE OWNED BY HOA: 16.60 AC.
  9. NON-BUILDABLE BULK PARCEL: 1.6804 AC.
  10. RECREATION OPEN SPACE REQUIRED: NONE
  11. AREA OF PROPOSED PUBLIC ROADS: 1.36 AC.
  12. AREA OF 100 YEAR FLOOD PLAIN: 0.27 AC. + 0.21 AC. = 0.48 AC.
  13. AREA OF 20% SLOPES AND STEEPER: 0.23 AC.
  14. NO. OF LOTS/PARCELS: 6
  15. SP 03-03 FOR THIS SUBDIVISION APPROVED ON JULY 28, 2005.

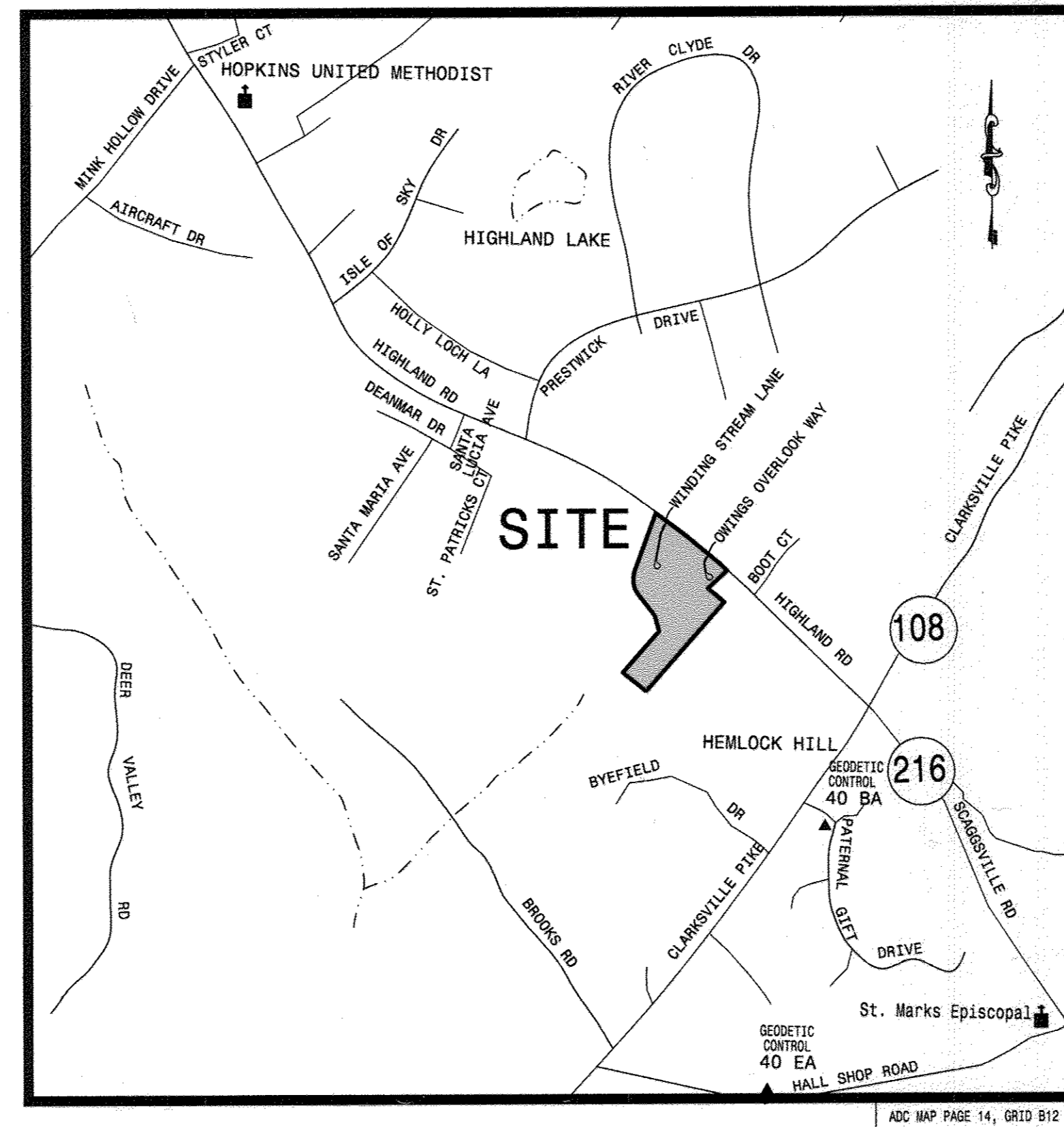
- GENERAL NOTES:**
1. THE PROJECT IS IN CONFORMANCE WITH THE FEBRUARY 2, 2004 COMPREHENSIVE ZONING PLAN AND THE COMP-LITE ZONING AMENDMENTS DATED 7/28/06.
  2. THIS PLAN SHALL BE SUBJECT TO THE AMENDED FIFTH EDITION OF THE HOWARD COUNTY SUBDIVISION REGULATIONS AND AMENDED ZONING REGULATIONS PER COUNCIL BILL 50-2001.
  3. DEED REF.: LIBER 1100 FOLIO 242
  4. PROJECT BACKGROUND INFORMATION: GROSS AREA: 25.6264 AC NET AREA: 25.6294 - (0.48 AC.) = (0.23 AC.) + 24.8194 NO. OF ENTITIES PERMITTED BY RIGHT (25.6294/4.25) = 6 MAXIMUM NO. OF UNITS BASED ON DEO/GE (25.1494/2) = 12 NO. OF DEO'S REQUIRED: 0 PROPOSED LOTS = 6 (6 RESIDENTIAL)
  5. THE EXISTING TOPOGRAPHY IS TAKEN FROM AERIAL SURVEY WITH 2-FOOT CONTOUR INTERVALS PREPARED BY AIR SURVEY PHOTOGRAMMETRIC MAPPING SERVICES, DATED MARCH 18, 2001.
  6. PROJECT BOUNDARY IS BASED ON BOUNDARY SURVEY BY AS CONSULTANTS INC., NOVEMBER 2005 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 NO. 40BA AND 40EA ARE THE CLOSEST TO THIS PROJECT AND WERE USED FOR THIS PROJECT. TRAVERSE RAN BY HARKINS AND ASSOCIATES, BOUNDARY SURVEY BY AS CONSULTANTS.
  7. STORMWATER MANAGEMENT QUALITY & QUANTITY CONTROL PROVIDED BY A MICRO POND WITH EXTENDED DETENTION FACILITY TO BE PRIVATELY OWNED AND MAINTAINED BY THE HOA.
  8. WATER WILL BE PRIVATE WELL FOR ALL LOTS
  9. SEWER FOR LOT 22 IS PRIVATE. LOTS 17-21 WILL HAVE A PUBLIC SHARED SYSTEM CONTRACT NO. 50-4436-D TO BE MAINTAINED BY HOWARD COUNTY UNDER CONT # 50-4436-D.
  10. THE WETLANDS DELINEATION STUDY FOR THIS PROJECT WAS PREPARED BY DENBERRY & DAVIS LLC AND APPROVED BY THE U.S. CORPS OF ENGINEERS ON MAY 13, 2002 AND APPROVED ON FEB. 3 2004.
  11. FOREST STAND DELINEATION BY DENBERRY & DAVIS LLC, FEB 2002, APPROVED JUNE 2003
  12. APFD TRAFFIC STUDY PREPARED BY LEE CUNNINGHAM & ASSOC. AUG. 2002, APPROVED ON FEB. 3 2004.
  13. FOR FLAG OR PIPE STEM LOTS, REFUSE COLLECTION, SNOW REMOVAL AND ROAD MAINTENANCE ARE PROVIDED TO THE JUNCTION OF THE FLAG OR PIPE STEM AND THE ROAD RIGHT-OF-WAY LINE ONLY AND NOT ONTO THE FLAG OR PIPE STEM LOT DRIVEWAY.
  14. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. III (2004) AND AS MODIFIED BY GUIDELINES FOR THE STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 2006). A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.
  15. THIS PROPERTY IS NOT WITHIN THE METROPOLITAN DISTRICT.
  16. SEDIMENT & EROSION CONTROL PER SEPARATE PLAN.
  17. THERE ARE NO BURIAL OR CEMETERY LOCATIONS ON THIS SITE.
  18. THIS SITE MEETS THE OBJECTIVES OF ZONING SECTION 106.F (5) BY:
    - A. PROVIDING PRESERVED AREAS THAT FUNCTION AS FOREST CONSERVATION AREAS AND PRESERVE THE RURAL CHARACTER OF THE SITE.
    - B. CLUSTERING LOTS & CONSOLIDATING SEPTIC AREAS TO MINIMIZE DISTURBANCE TO FOREST AREA RESOURCES.
    - C. ELIMINATING FARMING DISTURBANCE ACTIVITIES.
    - D. PRESERVING EXISTING VEGETATION ALONG HIGHLAND ROAD.
  19. PLANNING & ZONING FILE NUMBERS: SP 03-03, AND WP 03-056.
  20. THE ON-SITE REFORESTATION CONSERVATION SURETY IS \$73,398.60 (3.37 AC x \$0.50/SF). ON-SITE FOREST RETENTION BOND AMOUNT IS \$14,638.16 (1.68 AC x \$0.20/SF). TOTAL FOREST CONSERVATION SURETY AMOUNT IS \$88,034.76.
  21. A FOREST CONSERVATION PLAN IN ACCORDANCE WITH SECTION 16.1200 OF THE HOWARD CO. CODE & THE FOREST CONSERVATION MANUAL, IS PROVIDED AS PART OF THIS ROAD CONSTRUCTION, GRADING, AND STORMWATER MANAGEMENT PLAN. FOREST CONSERVATION WILL BE PROVIDED ON SITE REFORESTATION AND ADORNESTATION OF 3.37 AC. MIN.
  22. THERE ARE NO HISTORIC SITES ON THIS PROPERTY.
  23. WATERSHED: PORTION OF PATUXENT RIVER CLASSIFIED AS USE IV-P STREAM.
  24. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSMA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
  25. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 315-1880 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF WORK.
  26. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
  27. TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
  28. ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE IN ACCORDANCE WITH AASHTO T-180 STANDARDS.
  29. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$32,850 FOR REQUIRED PLANTS ONLY. 89 SHADE TREES @ \$300 = \$26,700 41 EVERGREEN TREES @ \$150 = \$6,150.
  30. FINANCIAL SURETY FOR THE REQUIRED STREET TREE PLANTINGS MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$26,400 FOR REQUIRED PLANTS ONLY. 80 SHADE TREES @ \$300 = \$24,000 WHICH AMOUNT IS PART OF THE FINANCIAL GUARANTEE TO THE PROPOSED PUBLIC IMPROVEMENTS.
  31. NO NOISE STUDY IS REQUIRED FOR THIS PROJECT.
  32. THE GEOTECHNICAL REPORT FOR THIS PROJECT WAS PREPARED BY GTA, DATED JULY 18, 2003 & MARCH 29, 2006.
  33. 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.
  34. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
  35. THE FLOODPLAIN STUDY FOR THIS PROJECT WAS PREPARED BY DENBERRY ON MAY 12, 2003 AND WAS APPROVED ON JULY 28, 2005.
  36. WATER REQUEST NO. WP 03-50 IS FOR TWO ACCESS POINTS ONTO HIGHLAND ROAD HAS BEEN GRANTED
    - A.) ONE ACCESS POINT IS FOR AN INSTITUTIONAL USE AND IS NO LONGER APPLICABLE
    - B.) THE SECOND ACCESS POINT IS FOR PREVIOUS LOCATION OF WINDING STREAM LANE AND IS NO LONGER APPLICABLE
  37. DEVELOPER RESERVES UNTO ITSELF, ITS SUCCESSORS AND ASSIGNS, ALL EASEMENTS SHOWN ON THIS PLAN FOR WATER, SEWER, STORM DRAINAGE, OTHER PUBLIC UTILITIES, AND FOREST CONSERVATION (DESIGNATED AS "FOREST CONSERVATION AREA"), LOCATED IN, OVER AND THROUGH THE NON-BUILDABLE, PRESERVATION PARCEL 'F' OR PORTIONS THEREOF, AND SHOWN ON THIS PLAN AS THE FOREST CONSERVATION AREA. ANY AND ALL CONVEYANCES OF AFORESAID PARCEL SHALL BE SUBJECT TO THE EASEMENTS HEREIN RESERVED, WHETHER OR NOT EXPRESSLY STATED IN THE DEED(S) CONVEYING SAID LOT(S). DEVELOPER SHALL EXECUTE AND DELIVER A DEED(S) FOR THE EASEMENTS HEREIN RESERVED TO HOWARD COUNTY, WITH A METES AND BOUNDS DESCRIPTION OF THE FOREST CONSERVATION AREA. UPON COMPLETION OF THE PUBLIC UTILITIES AND THEIR ACCEPTANCE BY HOWARD COUNTY, AND, IN CASE OF A FOREST EASEMENT(S), UPON COMPLETION OF DEVELOPER'S OBLIGATION UNDER THE FOREST CONSERVATION INSTALLATION AND DEVELOPER'S SURETY POSTED WITH SAID AGREEMENT, THE COUNTY SHALL ACCEPT THE EASEMENTS AND RECORD THE DEED(S) OF EASEMENT IN THE LAND RECORDS OF HOWARD COUNTY.

# FINAL ROAD CONSTRUCTION PLANS

# OWINGS PROPERTY, LOT 5

## 5th ELECTION DISTRICT

## HOWARD COUNTY, MARYLAND



**VICINITY MAP**  
SCALE: 1"=1000'

SHEET INDEX	
SHEET NO.	DESCRIPTION
1	FINAL PLAN - TITLE SHEET
2	ROADWAY PLAN AND PROFILE - WINDING STREAM LANE
3	ROADWAY PLAN AND PROFILE - OWINGS OVERLOOK
4	ROADWAY PLAN AND PROFILE - HIGHLAND ROAD
5	CROSS SECTIONS - HIGHLAND ROAD IMPROVEMENT
6	CROSS SECTIONS - HIGHLAND ROAD IMPROVEMENT
7	DRIVEWAY PROFILE - LOT 22
8	TYPICAL SECTION AND ROAD DETAILS
9	STORM DRAIN PROFILE
10	STORM DRAIN DETAILS
11	STORM DRAIN DRAINAGE AREA MAP
12	GRADING, EROSION & SEDIMENT CONTROL PLAN
13	GRADING, EROSION & SEDIMENT CONTROL PLAN
14	GRADING, EROSION & SEDIMENT CONTROL PLAN
15	GRADING, EROSION & SEDIMENT CONTROL PLAN
16	EROSION & SEDIMENT CONTROL NOTES
17	EROSION & SEDIMENT CONTROL DETAILS
18	STORMWATER MANAGEMENT, BMP A - PLAN & SECTIONS
19	STORMWATER MANAGEMENT DETAILS
20	POND SPECIFICATIONS & NOTES
21	EXISTING SWM DRAINAGE AREA MAP, SITE & OFFSITE AREAS
22	EXISTING SWM DRAINAGE AREA MAP, SITE AREA ONLY
23	DEVELOPED SWM DRAINAGE AREA MAP, SITE & OFFSITE AREAS
24	DEVELOPED SWM DRAINAGE AREA MAP, SITE AREA ONLY
25	SOIL BORING LOG
26	LANDSCAPE/FOREST CONSERVATION PLAN
27	LANDSCAPE/FOREST CONSERVATION PLAN
28	LANDSCAPE/FOREST CONSERVATION NOTES AND DETAILS
29	HIGHLAND ROAD - PAVING MARKING PLAN
30	HIGHLAND ROAD - MAINTENANCE OF TRAFFIC PLAN

**AS-BUILT CERTIFICATION**

Note: There is no "AS-BUILT" information provided on this sheet.

Name: SANITARY PARCEL

P.E. NO.: 21042

Date: 10/31/16

**ENGINEER'S CERTIFICATE**

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

Signature of Engineer: [Signature] DATE: 06/06/08

JOSE-H. ESCALANTE

**DEVELOPER'S CERTIFICATE**

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

Signature of Developer: [Signature] DATE: 06/06/08

PRESIDENT DALE THOMPSON BUILDERS, INC. SOLE MEMBER RUNNING BROOK, LLC

APPROVED: DEPARTMENT OF PUBLIC WORKS

Signature: [Signature] DATE: 7-1-08

CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Signature: [Signature] DATE: 7/1/08

CHIEF, DEVELOPMENT ENGINEERING DIVISION

Signature: [Signature] DATE: 7/1/08

CHIEF, DIVISION OF LAND DEVELOPMENT

**HOWARD COUNTY GEODETIC CONTROL**

MON. NOS.	N	E	ELEV.
40BA	549,925.102	1,324,025.124	534.654
40EA	547,911.373	1,324,510.058	503.948

**NOTE**

INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS BUT THE CONTRACTOR MUST DETERMINE THE EXACT LOCATION AND ELEVATION OF THE MAINS BY DIGGING TEST PITS BY HAND AT ALL UTILITY CROSSINGS WELL IN ADVANCE OF THE START OF EXCAVATION. CONTACT "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO THE START OF EXCAVATION. IF CLEARANCES ARE LESS THAN SHOWN ON THIS PLAN OR TWELVE (12) INCHES, WHICHEVER IS LESS, CONTACT THE ENGINEER AND THE UTILITY BEFORE PROCEEDING WITH CONSTRUCTION.

**OWNER / DEVELOPER**

**SK HOMES AT HIGHLAND OWINGS, LLC**  
7030 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD. 21046  
PHONE: 301-870-5603

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date : 12-26-08.

**DALE THOMPSON**

BUILDERS  
6300 Woodside Court Suite A  
Columbia, MD 21045

410-992-6736  
301-596-7280  
Fax 410-381-8747

**TITLE SHEET**

**OWINGS PROPERTY, LOT 5**

LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY  
TAX MAP 40, GRID 4, PARCEL 44  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND.

PROJECT NO.: \_\_\_\_\_

SCALE: AS SHOWN

DATE: 06/06/08

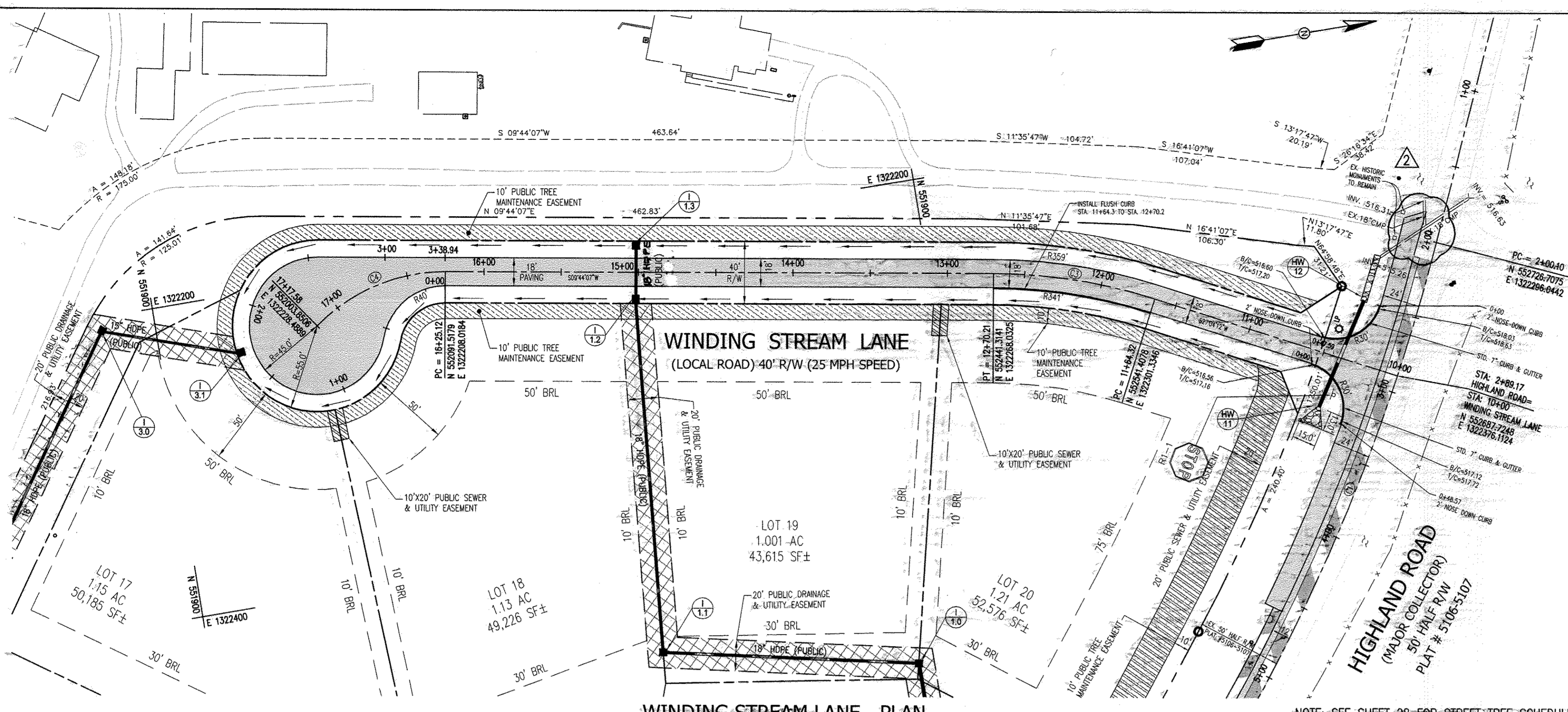
DRAWN BY: AVG

CHECKED BY: JHE

SHEET: 1 - 30

F-06-112





**WINDING STREAM LANE - PLAN**  
SCALE: 1"=50'

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHD. BRG.	CHD. DIST.	TAN	DELTA
C1	1275.00'	333.16'	N58°33'20"W	332.21'	167.53	14°58'17"
C3	350.00'	105.89'	S18°24'10"W	105.49'	53.35	17°20'05"
C4	115.78'	92.46'	S13°08'35"E	90.03'	48.86	45°45'25"

- NOTES:**
- FOR FILL UNDER PUBLIC STREET COMPACTION SHALL BE ACCORDANCE TO ASHOTO T-180 STANDARDS.
  - HIGHLAND ROADWAY IMPROVEMENT SHOWN SHALL BE ACCORDANCE WITH DESIGN MANUAL, VOLUME IV, STD. DETAIL R-1.08. SEE SHT. 6.
  - ALL SIGNAGE AND PAVEMENT MARKING MUST BE ACCORDANCE WITH THE LATEST MUTCD STANDARDS.
  - ALL NEW PAVEMENT MARKING AND SIGN LOCATION SHALL BE APPROVED BY A COUNTY TRAFFIC ENGINEER PRIOR TO INSTALLATION GALL 140313-5752.
  - ALL SIGN POST 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 POST GAP SHALL BE MOUNTED ON TOP OF EACH POST.
  - ROAD ENTRANCE FILLET SHALL BE STANDARD 7" CURB & GUTTER.
  - HALF OF HIGHLAND ROAD EXISTING R/W IS 50 FT. FROM THE CENTER OF HIGHLAND ROAD PER PLAT # 5106-5107.

STREET LIGHT SCHEDULE				
SYMBOL	POLE TYPE	FIXTURE	LOCATION	LAMP SIZE
SLP	14' BLACK FIBERGLASS POLE	POST-TOP: ACORN	STA. 0+45, 17.5' RT. WINDING STREAM LANE	150W HPS 250 V

ROAD NAME	STATION	DESIGN SPEED	ROAD CLASSIFICATION	PAVING TYPE
WINDING STREAM LANE	STA. 10+00.00 TO STA. 17+47.58	25	PUBLIC ACCESS PLACE	P-2

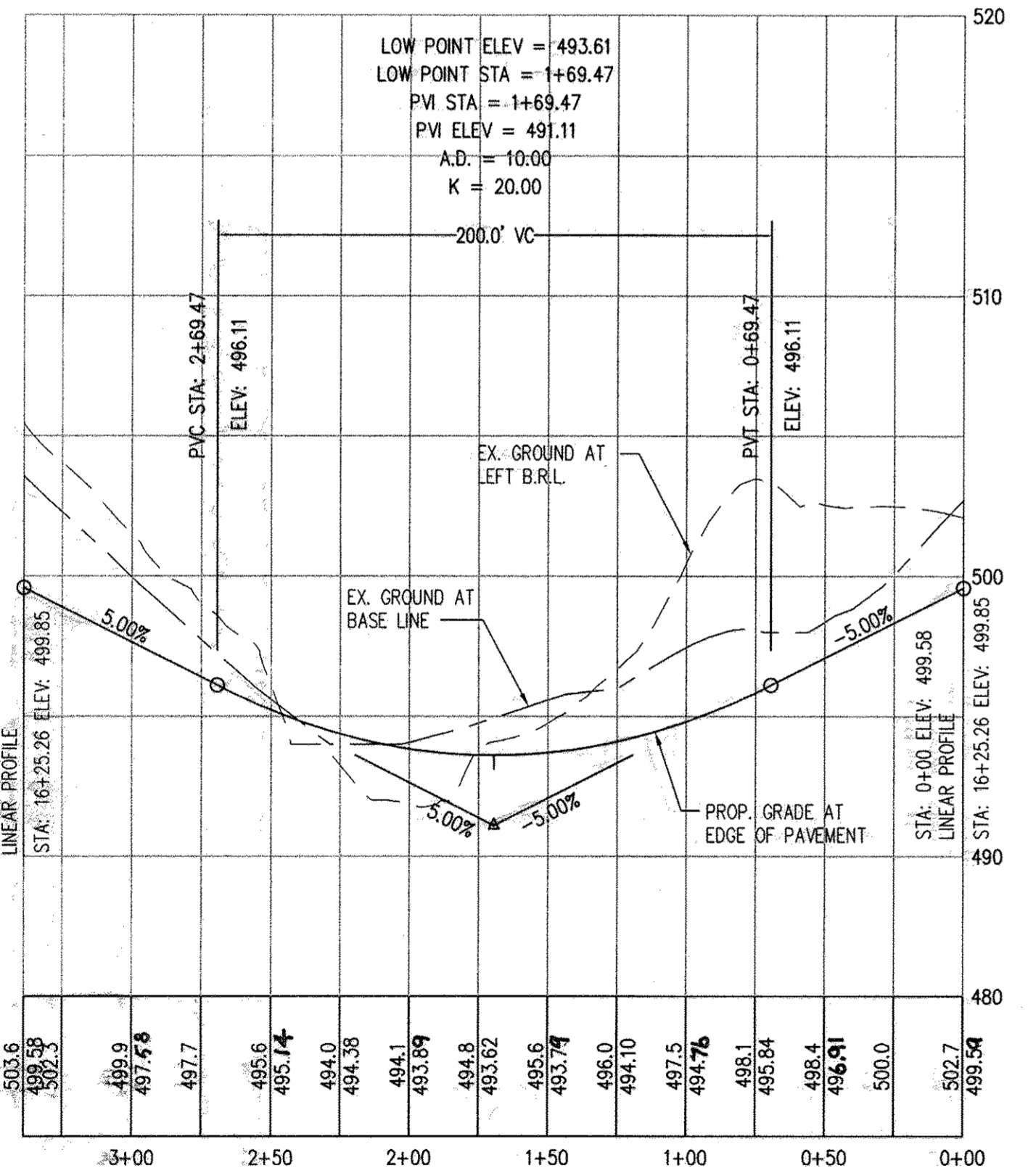
**LEGEND:**

- [Symbol] FULL DEPTH ASPHALT PAVING
- [Symbol] 1 1/2" MILLING & OVERLAY
- [Symbol] STABILIZED SHOULDER DOUBLE BIT SURFACE TREATMENT

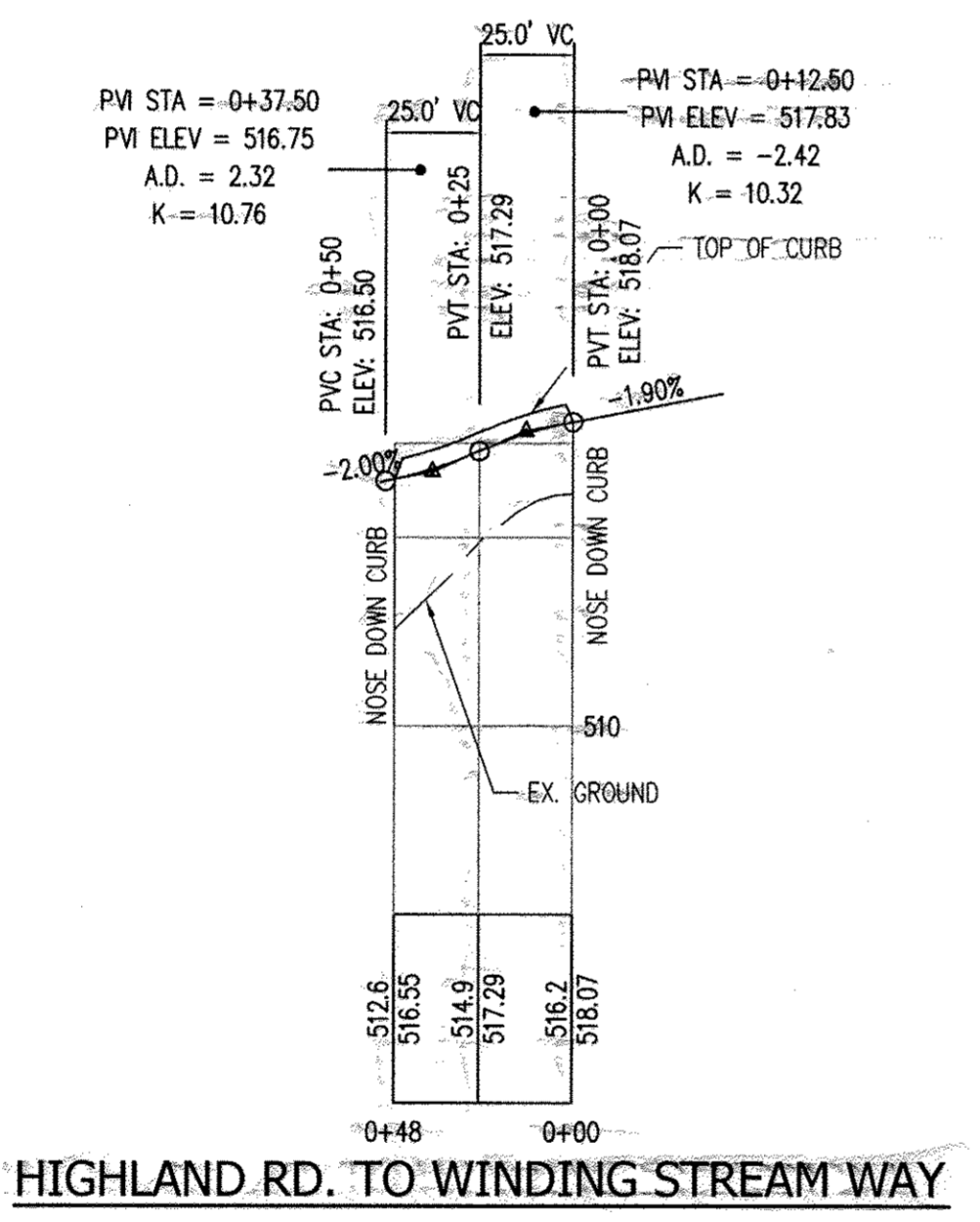
**AS-BUILT CERTIFICATION**

I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS-BUILT" and meet the Approved Plans and Specifications.

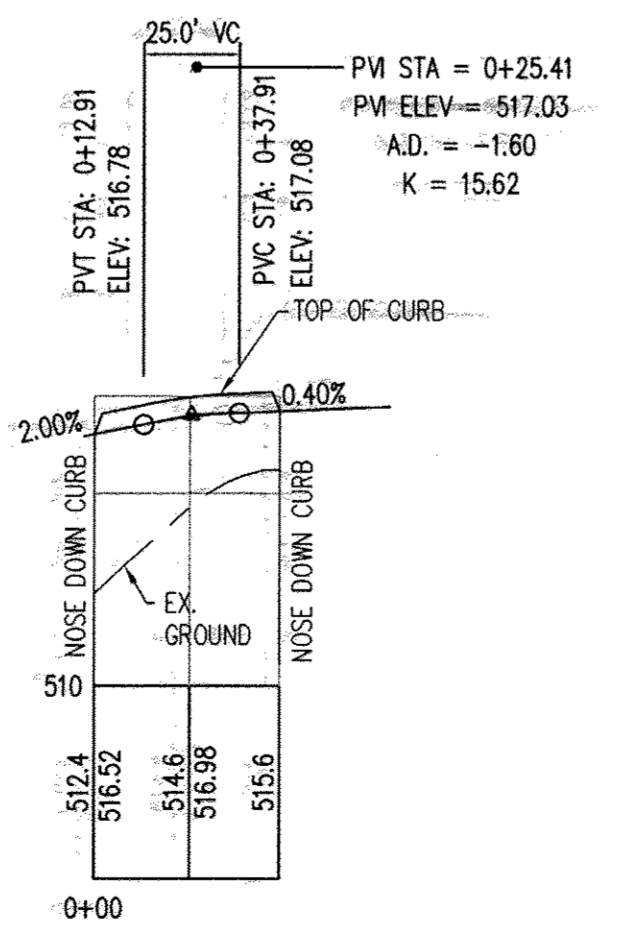
SANJAY PATEL  
P.E. NO. 81042  
Date 10/21/16



**CUL-DE-SAC - LINEAR PROFILE**  
SCALE: 1"=50' (H) AND 1"=5' (V)

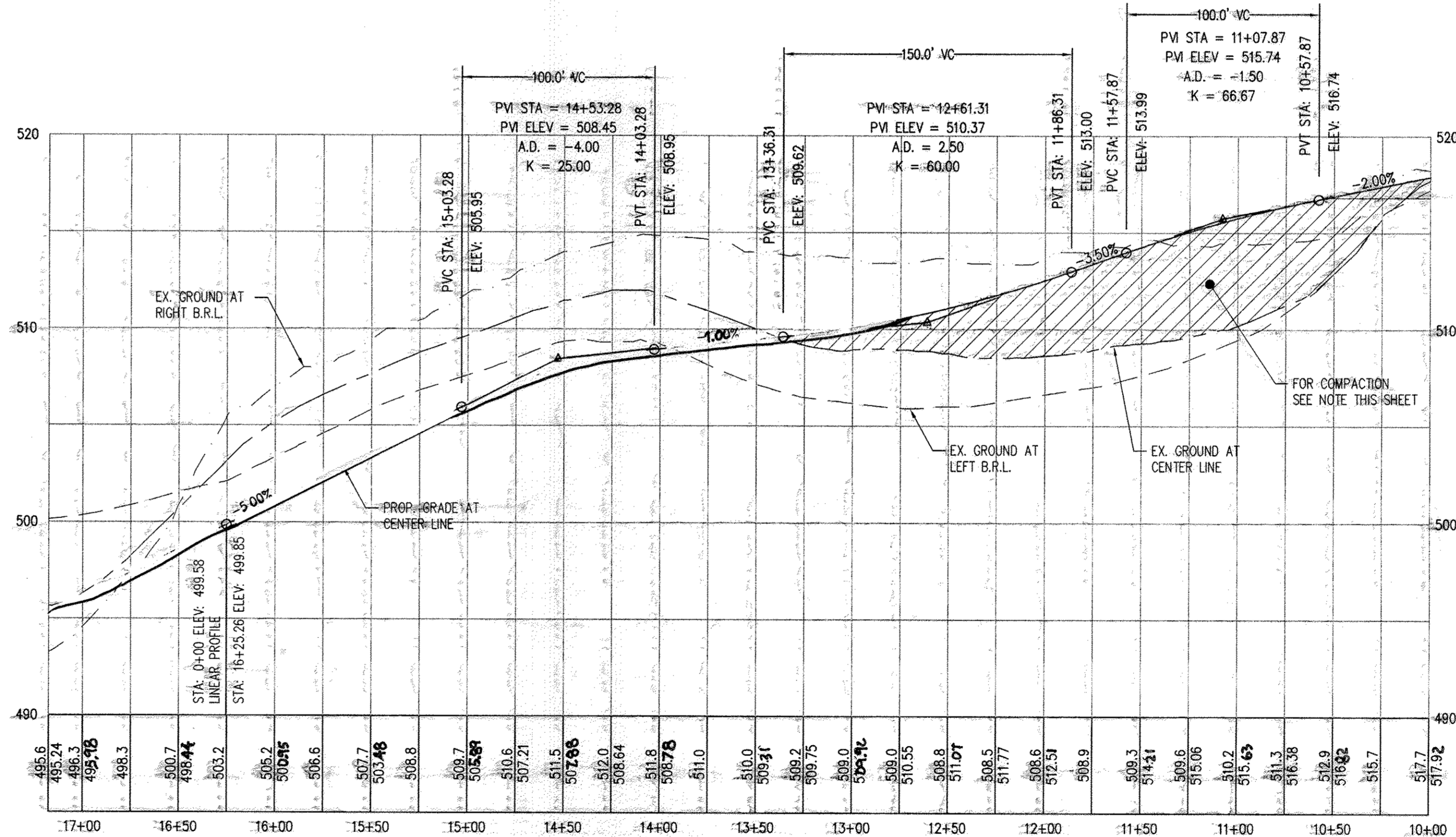


**HIGHLAND RD. TO WINDING STREAM WAY**



**WINDING STREAM WAY TO HIGHLAND RD.**

**CURB RETURN - PROFILE**  
SCALE: 1"=50' (H) AND 1"=5' (V)



**WINDING STREAM LANE - PROFILE**  
SCALE: 1"=50' (H) AND 1"=5' (V)

**"AS-BUILT"**

**REVISED FINAL ROAD CONSTRUCTION PLAN**

**PURPOSE OF REVISION TO THIS SHEET**

- TO SHOW REVISED ENTRANCE.

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THE RED-LINE REVISIONS SHOWN HEREON, INDICATED BY THE SYMBOL AND , WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31042 EXPIRATION DATE: 02/18/15"

**AB CONSULTANTS, INC.**  
9450 ANNAPOLIS ROAD  
LANHAM, MARYLAND 20706  
PHONE: (301) 306-3091  
FAX: (301) 306-3092

CONTACT: SANJAY PATEL PHONE: (301)-306-3091 x21

BENCH MARK - CONTROL POINTS			
POINTS	NORTHING	EASTING	TYPE
TRAV 15	552328.2656	1322789.9701	PK. NAIL
TRAV 16	551993.6856	1323220.6324	PK. NAIL

**ENGINEER'S CERTIFICATE**

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

SANJAY PATEL  
SIGNATURE OF ENGINEER  
DATE: 05/25/2013

**DEVELOPER'S CERTIFICATE**

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

William C. Melrose  
SIGNATURE OF DEVELOPER  
DATE: 7/6/2013

APPROVED: DEPARTMENT OF PUBLIC WORKS

W. R. [Signature]  
CHIEF, BUREAU OF HIGHWAYS  
DATE: 7-22-13

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

[Signature]  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 8/5/13

[Signature]  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 8/16/13

DATE	NO.	REVISION
04/11/12	1	REVISE ROAD PROFILES & GRADES ON WINDING STREAM LN
04/25/13	2	REVISE DRIVEWAY ENTRANCE

OWNER // DEVELOPER:

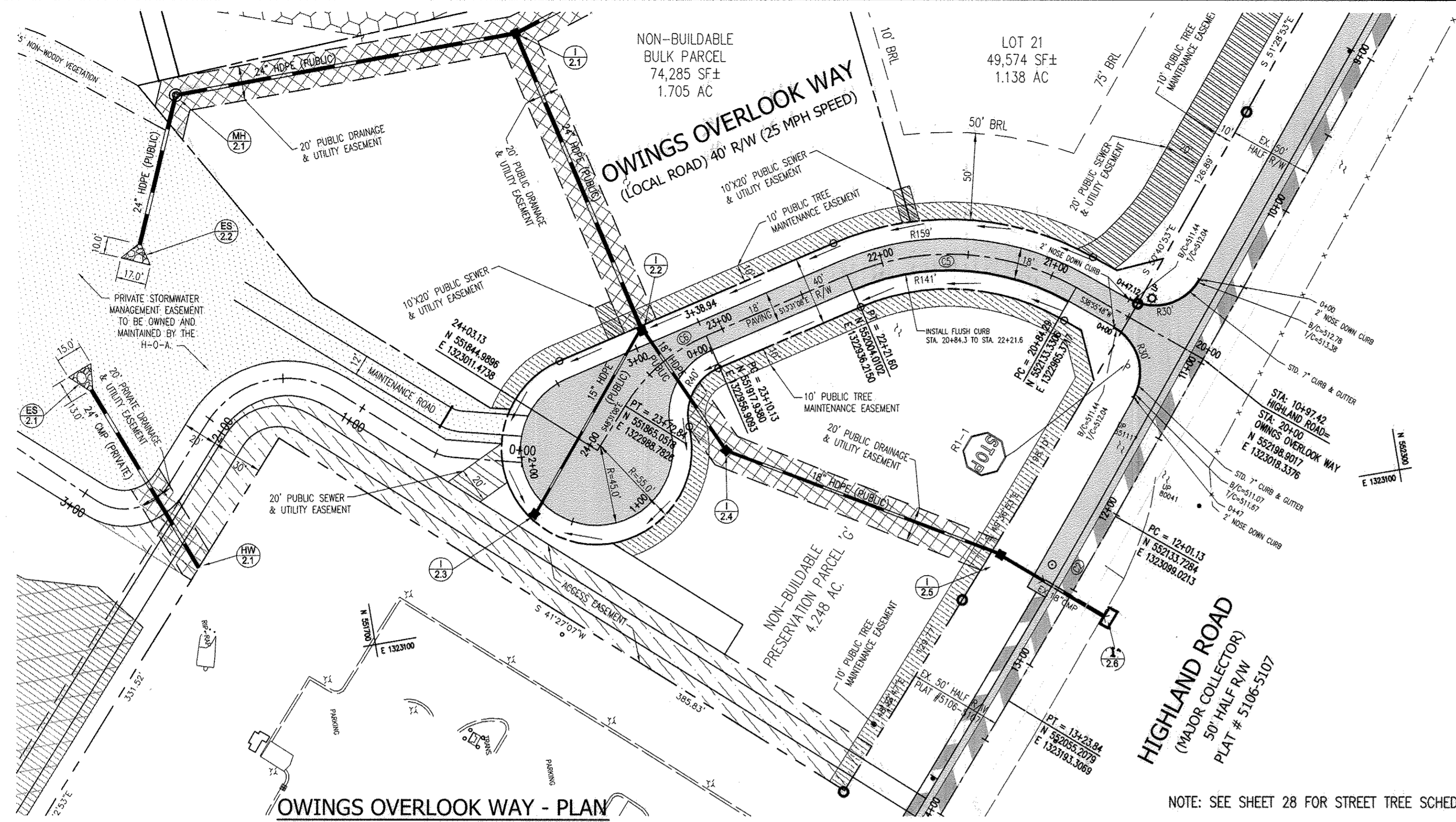
SK HOMES AT HIGHLAND OWINGS, LLC  
7090 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD 21046  
301-670-5603

**ROADWAY PLAN**

**OWINGS PROPERTY, LOT 5**  
LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY TAX MAP 40, GRID 4, PARCEL 44 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.

PROJECT NO. 2011200  
SCALE: AS SHOWN  
DATE: 06/27/12  
DRAWN BY: HRP  
CHECKED BY: SBP  
SHEET: 2-30





OWINGS OVERLOOK WAY - PLAN  
SCALE: 1"=50'

STREET LIGHT SCHEDULE				
SYMBOL	POLE TYPE	FIXTURE	LOCATION	LAMP SIZE
LP ○	14' BLACK FIBERGLASS POLE	POST-TOP: ACORN	STA. 04+43, 16' RT. OWINGS OVERLOOK WAY	150W HPS 250 V

CURVE TABLE					
CURVE	RADIUS	LENGTH	CHD. BRG.	CHD. DIST.	TAN DELTA
C2	4100.00'	122.70'	N50°12'46"W	122.70'	61.36 1°42'53"
C5	150.00'	137.31'	S12°42'20"W	132.57'	73.89 52°26'56"
C6	103.00'	62.71'	S31°04'35"E	61.75'	32.36 34°53'06"

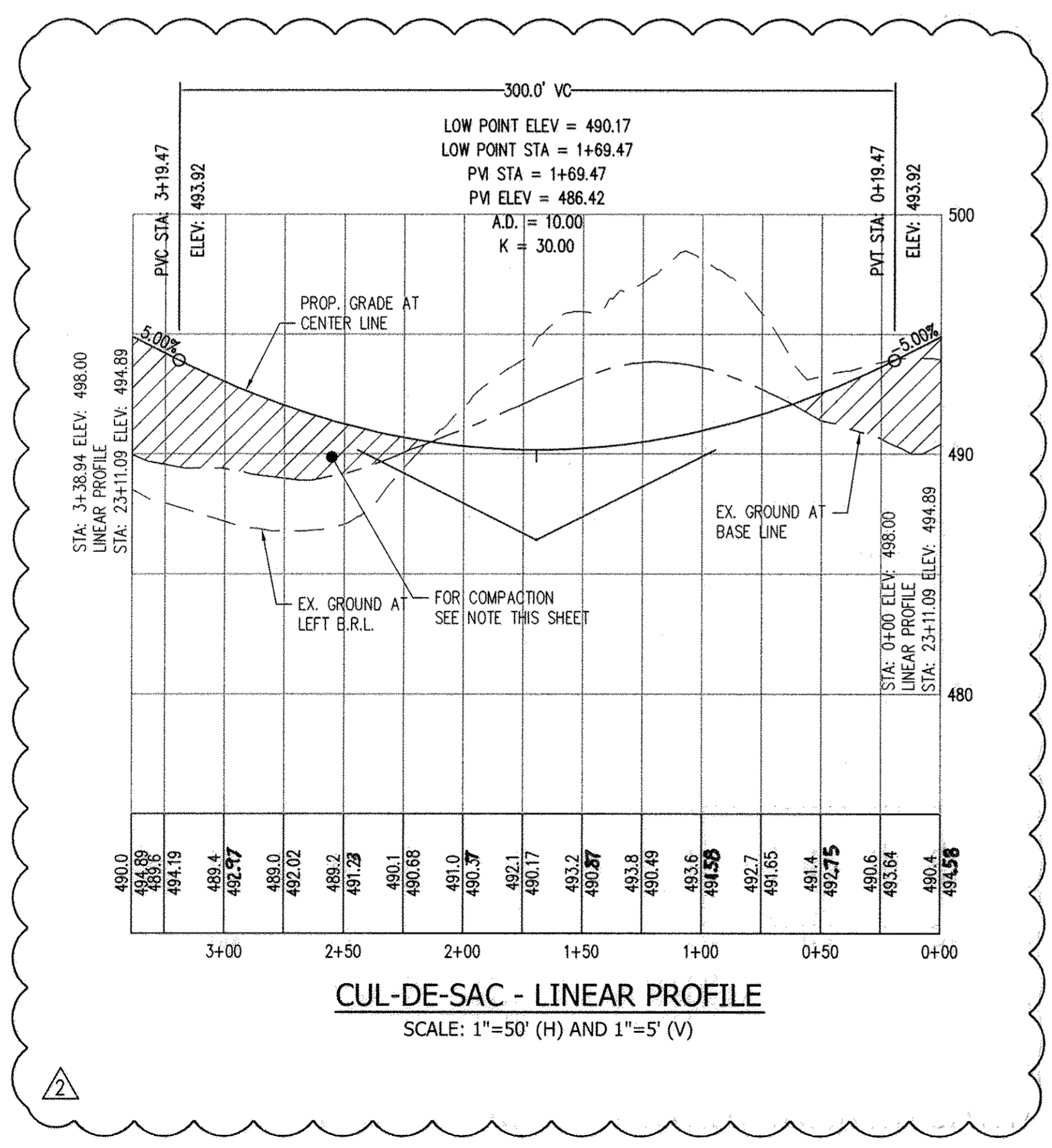
- NOTES:**
- FOR FILL UNDER PUBLIC STREET COMPACTION SHALL BE ACCORDANCE TO ASSHOTO T-180 STANDARDS.
  - HIGHLAND ROADWAY IMPROVEMENT SHOWN SHALL BE ACCORDANCE WITH DESIGN MANUAL, VOLUME IV, STD. DETAIL R-1.08, SEE SHT 6.
  - ALL SIGNAGE AND PAVEMENT MARKING MUST BE ACCORDANCE WITH THE LATEST MUTCD STANDARDS.
  - ALL NEW PAVEMENT MARKING AND SIGN LOCATION SHALL BE APPROVED BY A COUNTY TRAFFIC ENGINEER, PRIOR TO INSTALL CALL 410-313-5752.
  - ALL SIGN POST 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 POST CAP SHALL BE MOUNTED ON TOP OF EACH POST.
  - ROAD ENTRANCE FILLET SHALL BE STANDARD 7" CURB & GUTTER.
  - HALF OF HIGHLAND ROAD EXISTING R/W IS 50 FT. FROM THE CENTER OF HIGHLAND ROAD PER PLAT # 5106-5107.

ROAD NAME	STATION	DESIGN SPEED	ROAD CLASSIFICATION	PAVING TYPE
OWINGS OVERLOOK WAY	STA. 20+00.00 TO STA. 24+03.13	25	PUBLIC ACCESS PLACE	P-2

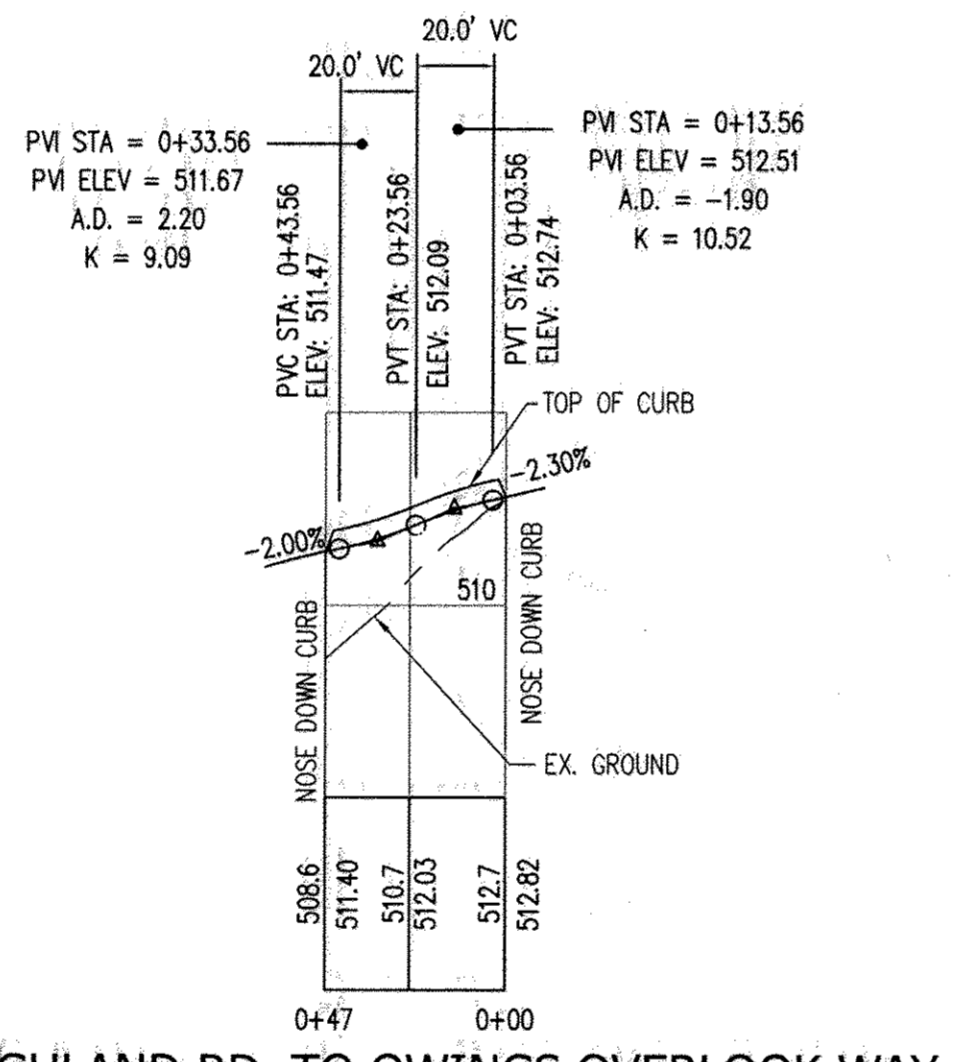
**LEGEND:**

- FULL DEPTH ASPHALT PAVING
- 1 1/2" MILLING & OVERLAY
- STABILIZED SHOULDER
- P-2 PAVEMENT SECTION

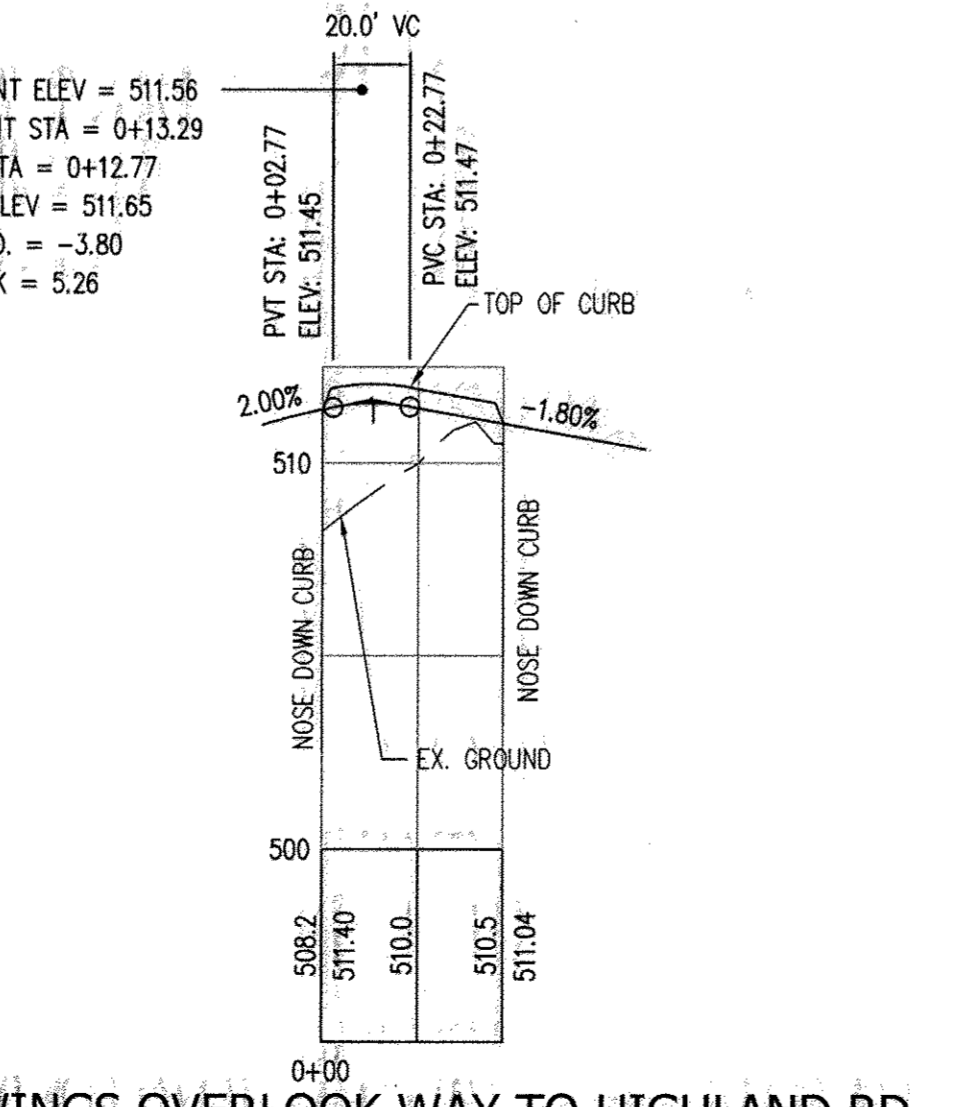
NOTE: SEE SHEET 28 FOR STREET TREE SCHEDULE



CUL-DE-SAC - LINEAR PROFILE  
SCALE: 1"=50' (H) AND 1"=5' (V)

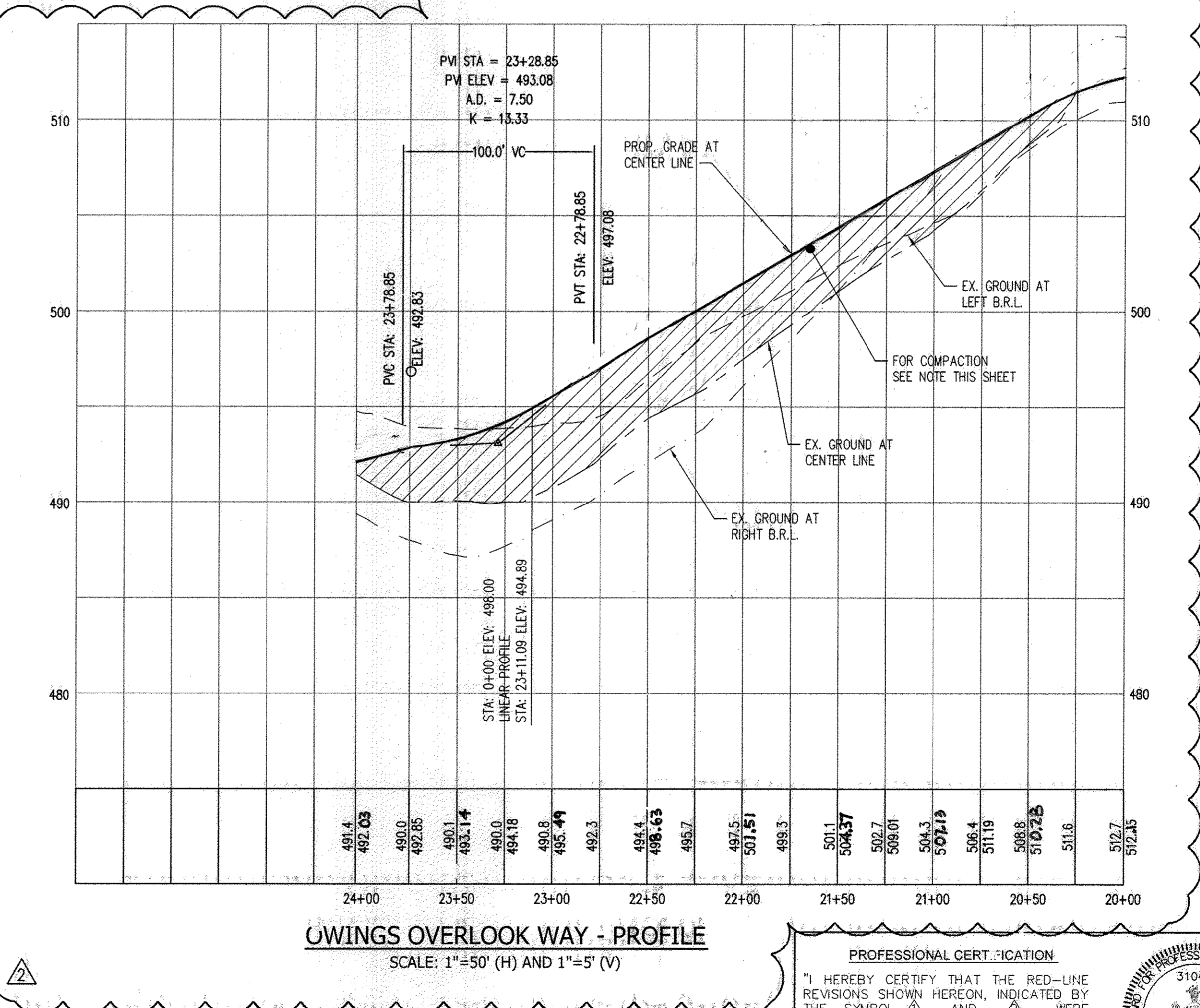


HIGHLAND RD. TO OWINGS OVERLOOK WAY



OWINGS OVERLOOK WAY TO HIGHLAND RD.

CURB RETURN - PROFILE  
SCALE: 1"=50' (H) AND 1"=5' (V)



OWINGS OVERLOOK WAY - PROFILE  
SCALE: 1"=50' (H) AND 1"=5' (V)

**REVISED FINAL ROAD CONSTRUCTION PLAN**

**PURPOSE OF REVISION TO THIS SHEET**

- TO SHOW PROPOSED GRADE FOR OWINGS OVERLOOK WAY
- TO SHOW ROADWAY PROFILE

**"AS-BUILT"**

**AS-BUILT CERTIFICATION**

I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the Approved Plans and Specifications.

NAME: SANJAY PATEL  
 P.E. NO.: 31042  
 Date: 10/23/16

**ENGINEER'S CERTIFICATE**

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

Sanjay Patel 05/25/2013  
 SIGNATURE OF ENGINEER DATE

**DEVELOPER'S CERTIFICATE**

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

William C McEwen 7/8/2013  
 SK HOMES AT HIGHLAND OWINGS, LLC DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

Walter R. Mall 7-22-13  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Kurt Redmond 8/5/13  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

APPROVED: CHIEF, DIVISION OF LAND DEVELOPMENT

Kurt Redmond 8/06/13  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION
04/11/12	1	REVISE ROAD PROFILES & GRADES ON OWINGS OVERLOOK WAY
04/25/13	2	REVISE ROAD PROFILES & GRADES ON OWINGS OVERLOOK WAY

OWNER / DEVELOPER:  
 SK HOMES AT HIGHLAND OWINGS, LLC  
 7090 SAMUEL MORSE DRIVE  
 SUITE 500  
 COLUMBIA, MD 21046  
 301-870-5603

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THE RED-LINE REVISIONS SHOWN HEREON, INDICATED BY THE SYMBOL AND , WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31042 EXPIRATION DATE: 02/18/15

Sanjay Patel  
 PROFESSIONAL ENGINEER

**AB CONSULTANTS, INC.**  
 9450 ANNAPOLIS ROAD  
 LANHAM, MARYLAND 20706  
 PHONE: (301) 306-3091  
 FAX: (301) 306-3092

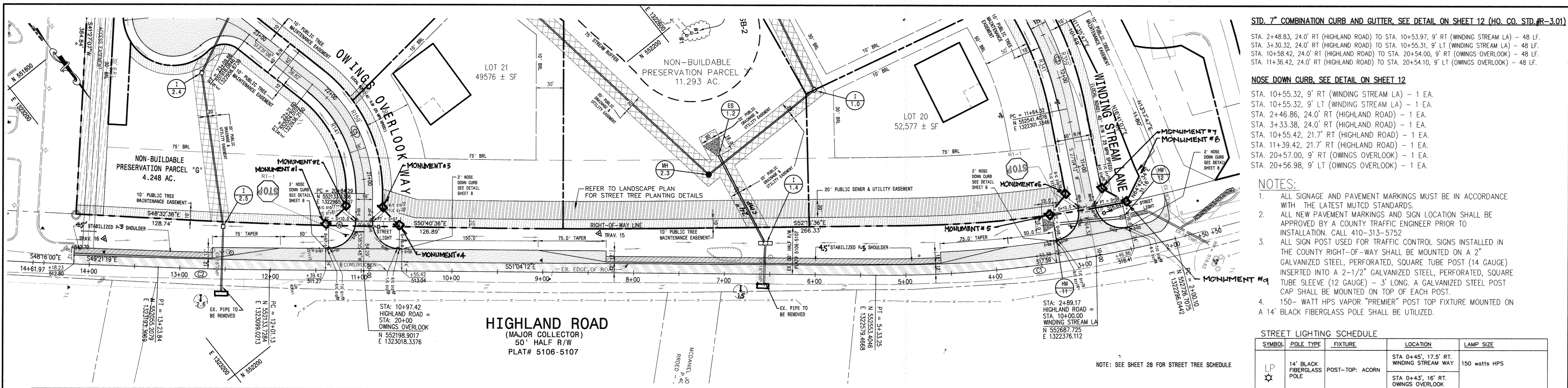
CONTACT: SANJAY PATEL PHONE: (301)-306-3091 x21

**ROADWAY PLAN**

**OWINGS PROPERTY, LOT 5**  
 LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARMWOOD OWINGS PROPERTY TAX MAP 40, GRID 4, PARCEL 44 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.

PROJECT NO. 2011200  
 SCALE: AS SHOWN  
 DATE: 06/27/12  
 DRAWN BY: HRP  
 CHECKED BY: SBP  
 SHEET: 3-30





**HIGHLAND ROAD**  
(MAJOR COLLECTOR)  
50' HALF R/W  
PLAT# 5106-5107

**HIGHLAND ROAD - PLAN**  
SCALE: 1" = 50'

**CURVE TABLE**

CURVE	DELTA	R	T	L	LC	CHD
C1	14°58'17"	1275.00'	167.5319'	333.1552'	332.2082'	N58°33'20"W
C2	1°42'53"	4100.00'	61.3568'	122.7044'	122.6998'	N50°12'46"W

**BENCH MARK - CONTROL POINTS**

POINTS	NORTHING	EASTING	TYPE
TRAV 15	552328.2058	1322789.9701	PK. NAIL
TRAV 16	551993.6856	1323220.6324	PK. NAIL

**STD. 7" COMBINATION CURB AND GUTTER, SEE DETAIL ON SHEET 12 (HO. CO. STD. R-3.01)**

STA. 2+48.83, 24.0' RT (HIGHLAND ROAD) TO STA. 10+53.97, 9' RT (WINDING STREAM LA) - 48 LF.  
 STA. 3+30.32, 24.0' RT (HIGHLAND ROAD) TO STA. 10+53.31, 9' LT (WINDING STREAM LA) - 48 LF.  
 STA. 10+58.42, 24.0' RT (HIGHLAND ROAD) TO STA. 20+54.00, 9' RT (OWINGS OVERLOOK) - 48 LF.  
 STA. 11+36.42, 24.0' RT (HIGHLAND ROAD) TO STA. 20+54.10, 9' LT (OWINGS OVERLOOK) - 48 LF.

**NOSE DOWN CURB, SEE DETAIL ON SHEET 12**

STA. 10+55.32, 9' RT (WINDING STREAM LA) - 1 EA.  
 STA. 10+55.32, 9' LT (WINDING STREAM LA) - 1 EA.  
 STA. 2+46.86, 24.0' RT (HIGHLAND ROAD) - 1 EA.  
 STA. 3+33.38, 24.0' RT (HIGHLAND ROAD) - 1 EA.  
 STA. 10+55.42, 21.7' RT (HIGHLAND ROAD) - 1 EA.  
 STA. 11+39.42, 21.7' RT (HIGHLAND ROAD) - 1 EA.  
 STA. 20+57.00, 9' RT (OWINGS OVERLOOK) - 1 EA.  
 STA. 20+56.98, 9' LT (OWINGS OVERLOOK) - 1 EA.

**NOTES:**

- ALL SIGNAGE AND PAVEMENT MARKINGS MUST BE IN ACCORDANCE WITH THE LATEST MUTCD STANDARDS.
- ALL NEW PAVEMENT MARKINGS AND SIGN LOCATION SHALL BE APPROVED BY A COUNTY TRAFFIC ENGINEER PRIOR TO INSTALLATION. CALL 410-313-5752
- ALL SIGN POST 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 POST CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- 150-WATT HPS VAPOR "PREMIER" POST TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS POLE SHALL BE UTILIZED.

**STREET LIGHTING SCHEDULE**

SYMBOL	POLE TYPE	FIXTURE	LOCATION	LAMP SIZE
LP ★	14' BLACK FIBERGLASS POLE	POST-TOP: ACORN	STA 0+45', 17.5' RT, WINDING STREAM WAY STA 0+43', 16' RT, OWINGS OVERLOOK WAY	150 watts HPS

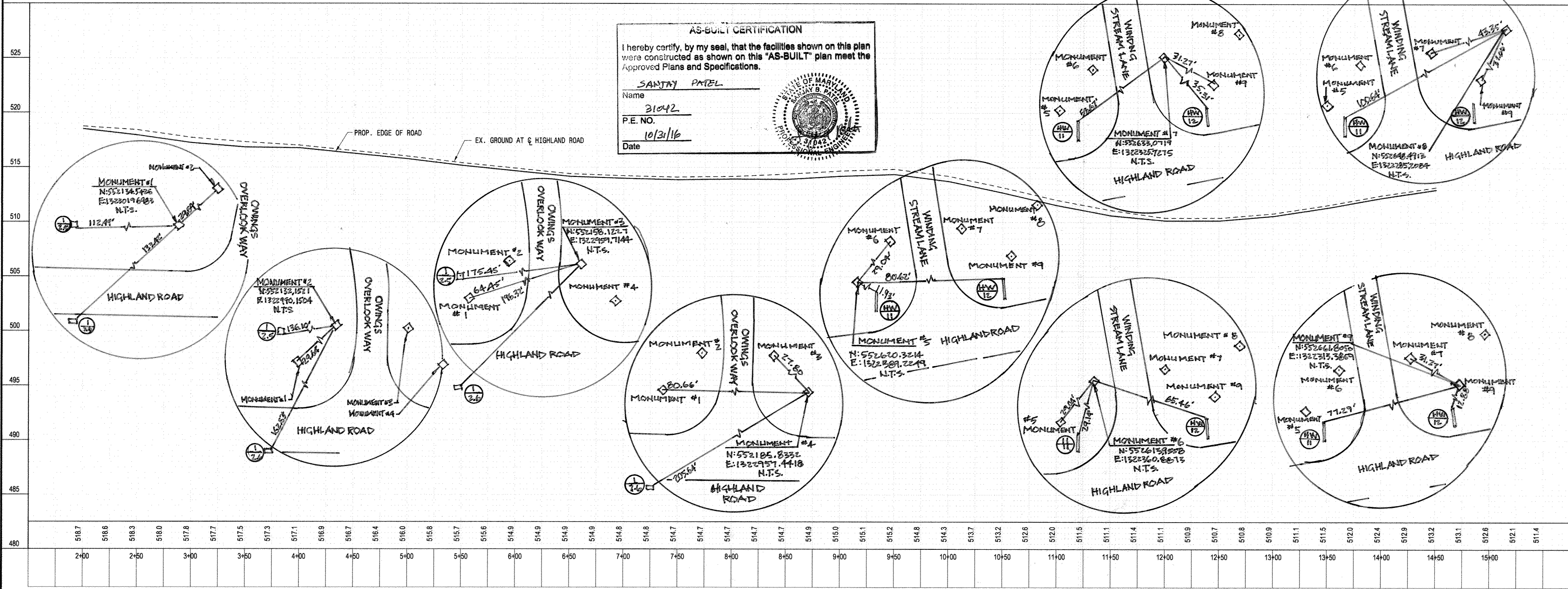
**NOTES:**

- HIGHLAND ROADWAY IMPROVEMENT SHOWN SHALL BE IN ACCORDANCE WITH DESIGN MANUAL, VOLUME IV, STD. DETAIL R-1.08. SEE SHT 6.

**AS-BUILT CERTIFICATION**

I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the Approved Plans and Specifications.

Name: SANJAY PATEL  
 Name: 31042  
 P.E. NO.: 103116  
 Date: 10/31/16



**HIGHLAND ROAD - PROFILE**  
SCALE: 1" = 50' HOR.  
1" = 5' VER.

**"AS-BUILT"**

**LEGEND**

- FULL DEPTH ASPHALT PAVING
- 1 1/2" MILL & OVERLAY
- STABILIZED SHOULDER P3 PAVEMENT SECTION

**ENGINEER'S CERTIFICATE**

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

Signature: Jose H. Escalante DATE: 06/06/08

**DEVELOPER'S CERTIFICATE**

"I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZED PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS IS REQUIRED NECESSARY."

Signature: Dale Thompson DATE: 06/06/08

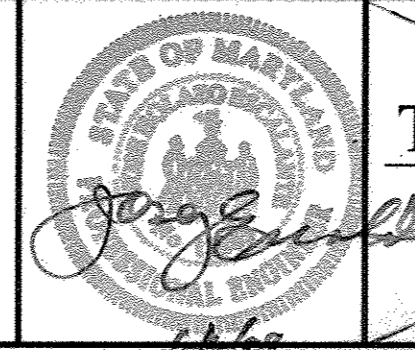
APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS 7-1-08 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 7/2/08 DATE  
 CHIEF, DIVISION OF LAND DEVELOPMENT 7/2/08 DATE

DATE	NO.	REVISION

**OWNER / DEVELOPER**  
**SK HOMES AT HIGHLAND OWINGS, LLC**  
 7080 SAMUEL MORSE DRIVE  
 SUITE 500  
 COLUMBIA, MD 21046  
 PHONE: 301-870-5603

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-26-08.



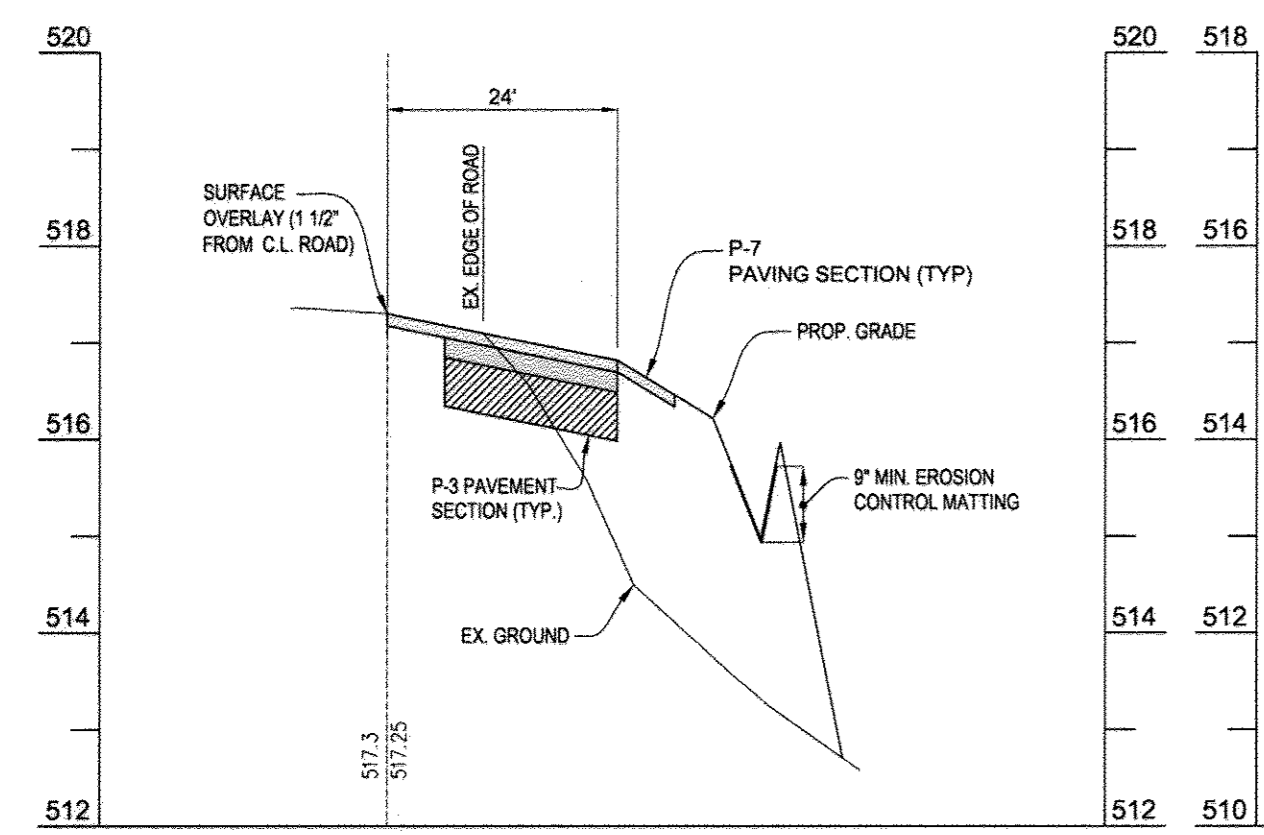
**DALE THOMPSON**  
 BUILDERS  
 6300 Woodside Court Suite A  
 Columbia, MD 21045  
 410-995-6756  
 301-596-7280  
 Fax 410-381-8747

**PROJECT:** PLAN & PROFILE - HIGHLAND ROAD  
**OWINGS PROPERTY, LOT 5**  
 LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY  
 TAX MAP 40, GRID 4, PARCEL 44  
 5TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND.

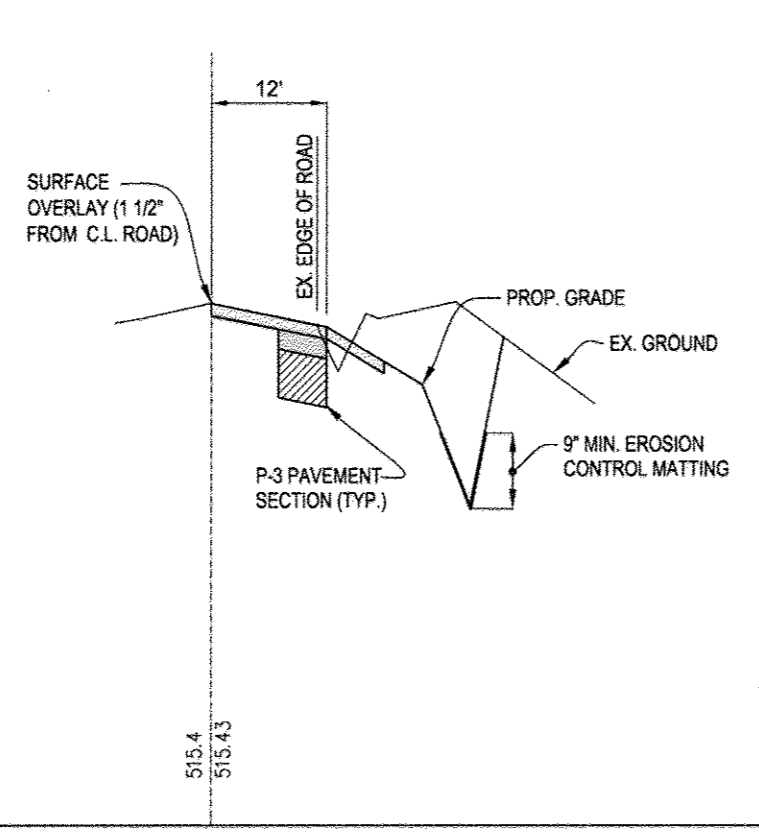
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 CHECKED BY: JHE  
 SHEET: 4 - 30  
 F-06-112



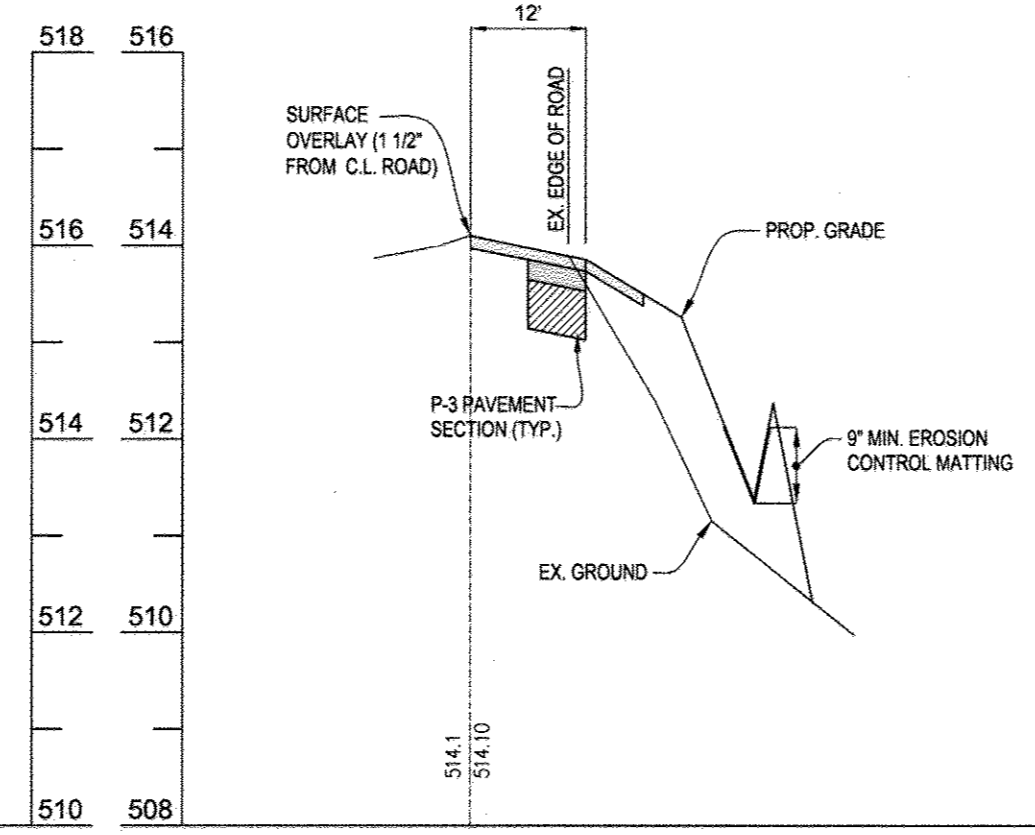
NOTE  
1. ROADWAY WIDENING FOR HIGHLAND ROAD SHALL BE IN ACCORDANCE WITH DESIGN MANUAL, VOLUME IV STANDARDS DETAIL, R-10.01.



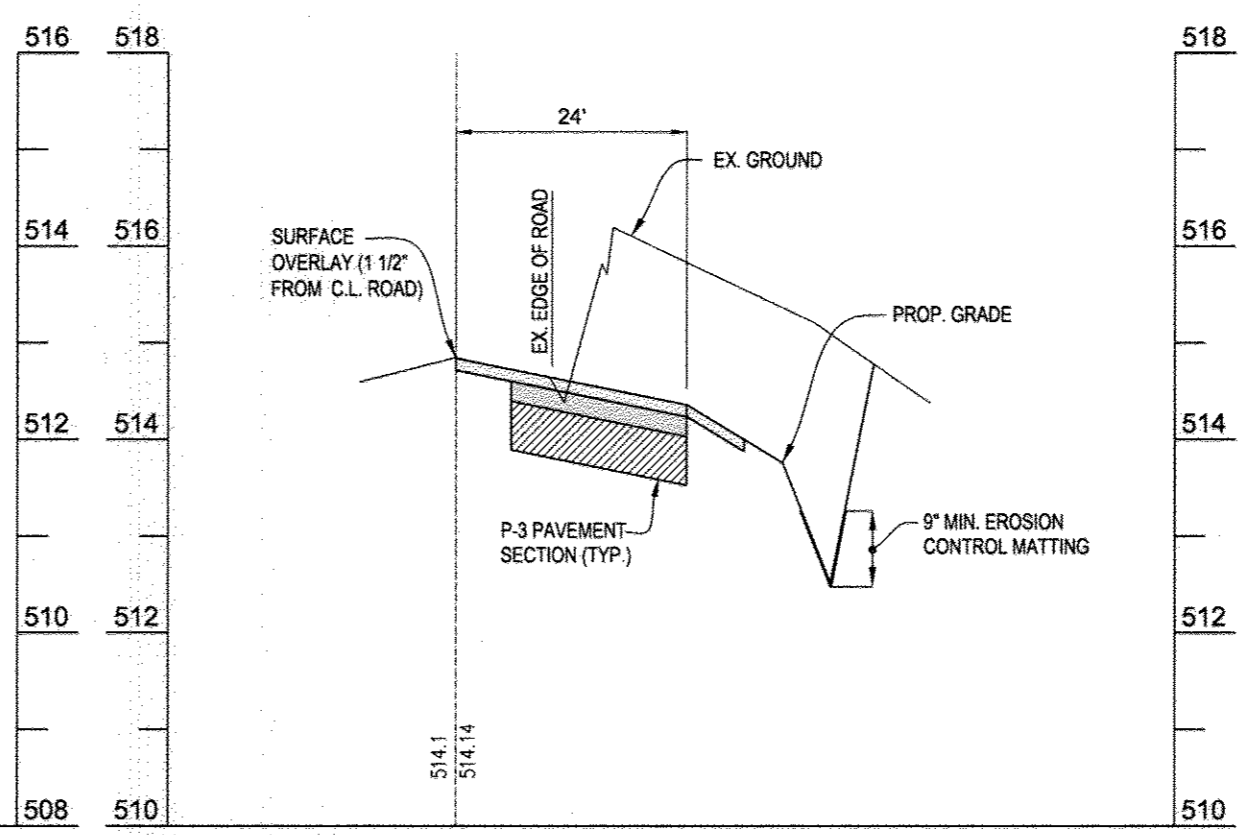
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SCALE: 1" = 20' (HOR.)  
1" = 2' (VERT.)



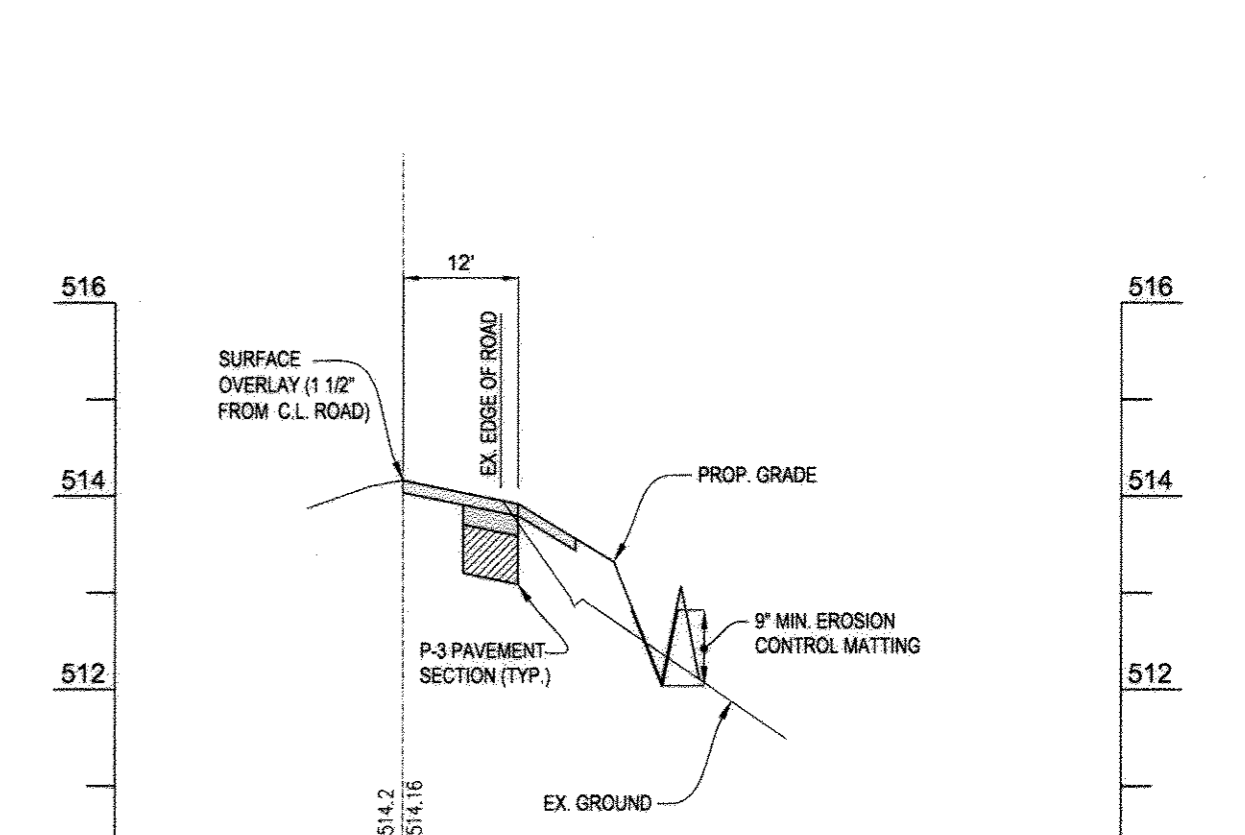
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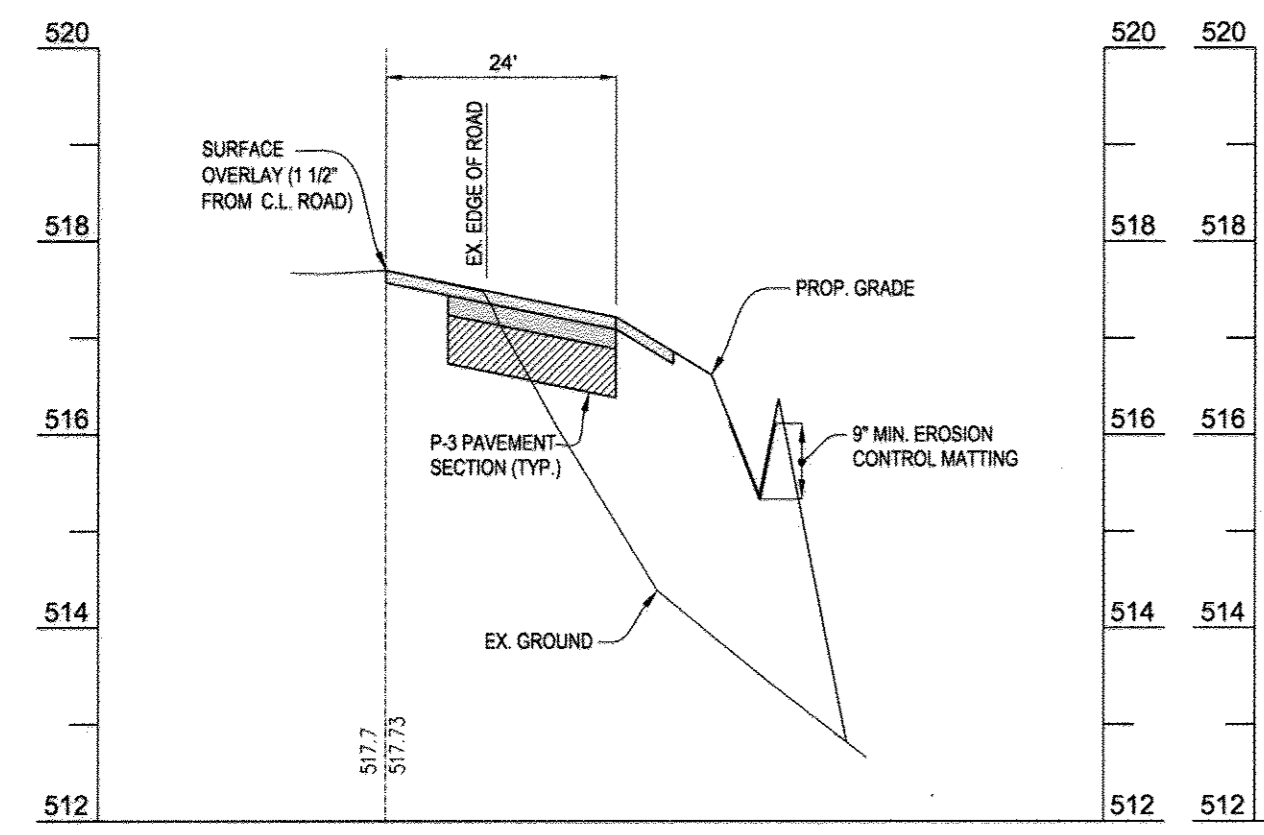
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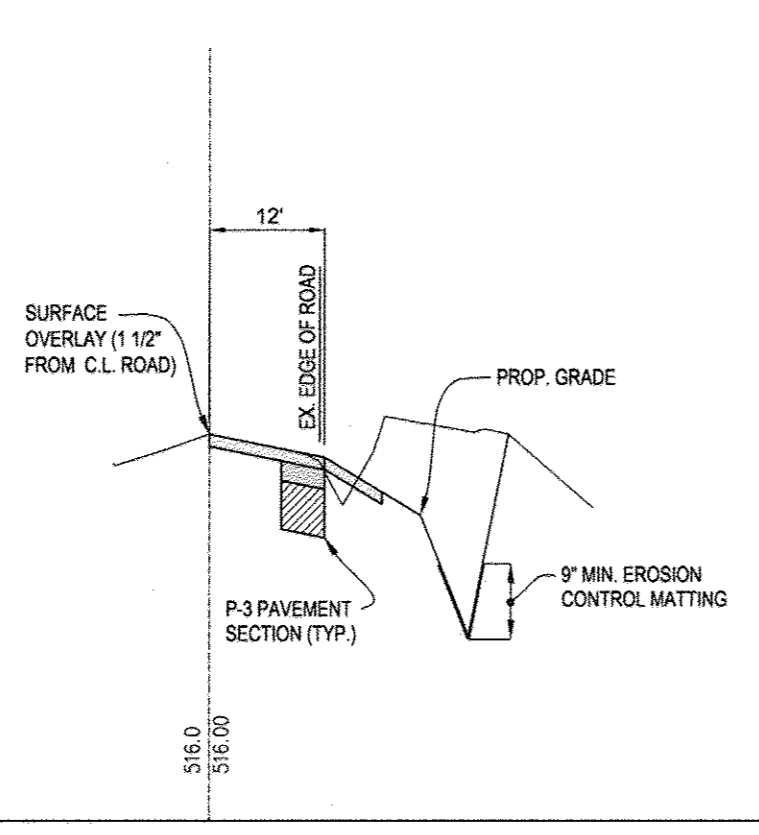
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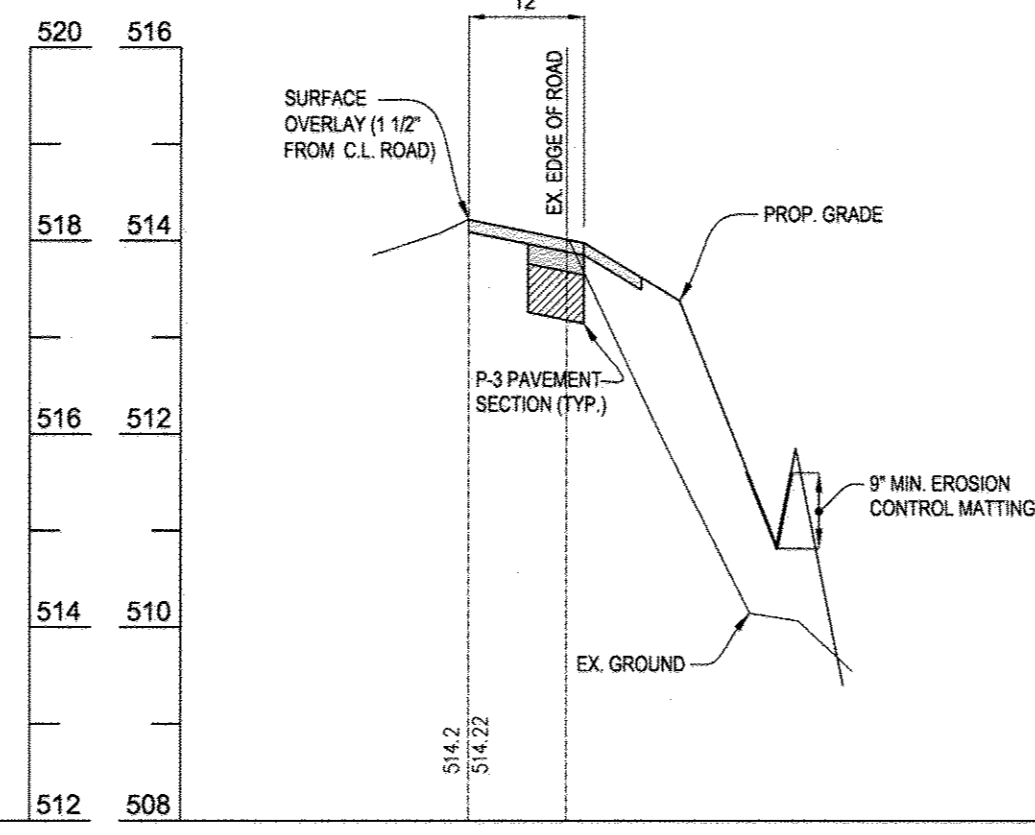
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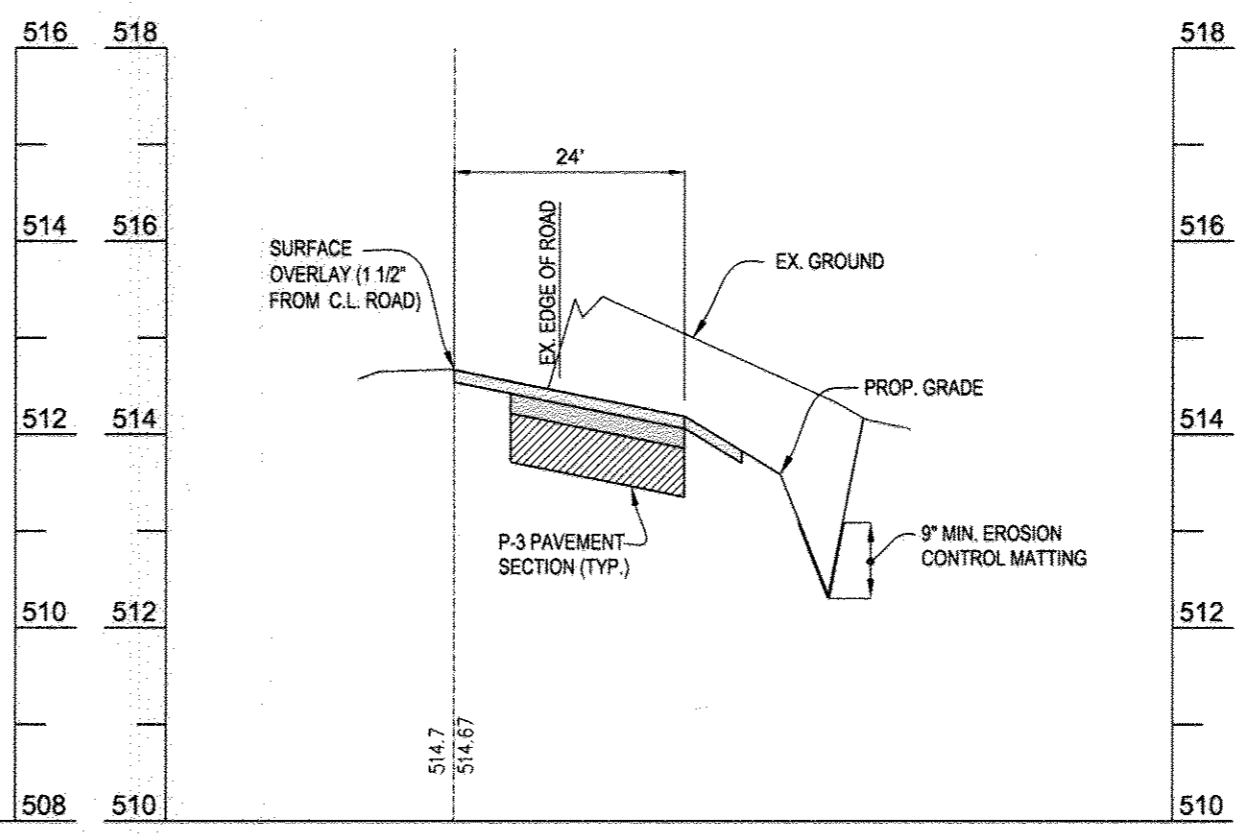
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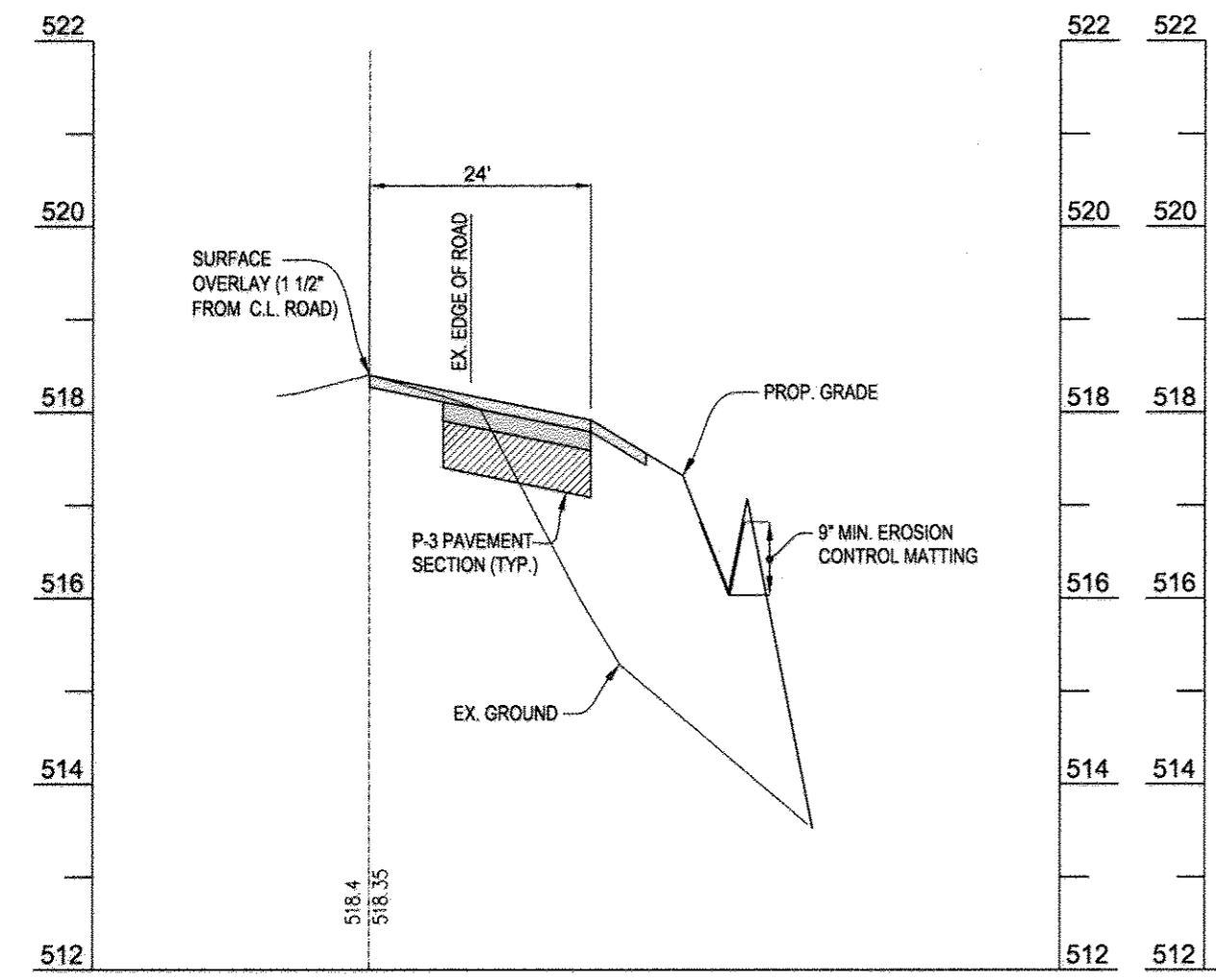
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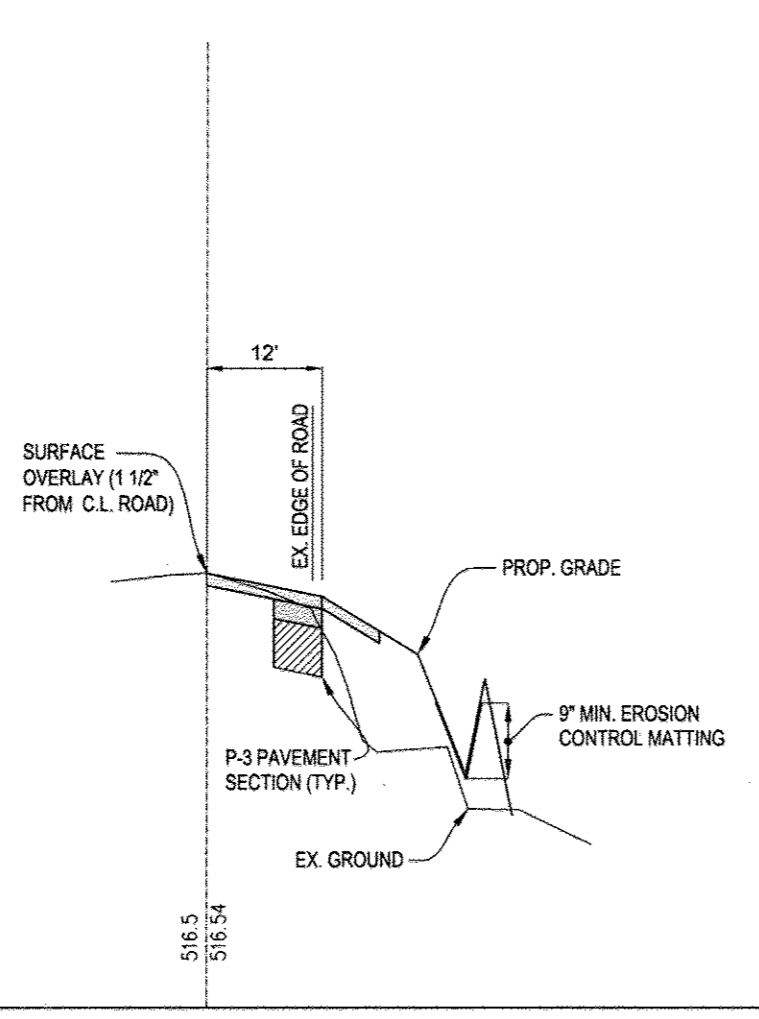
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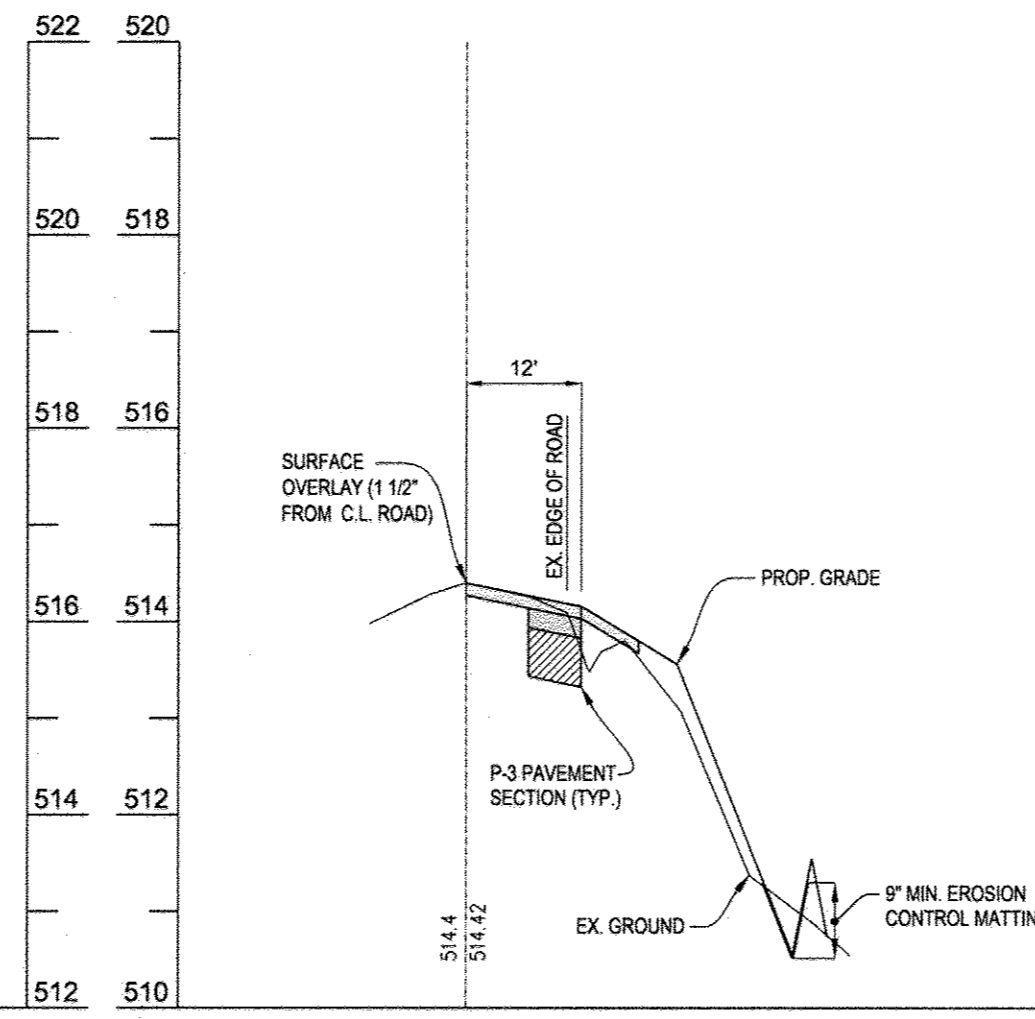
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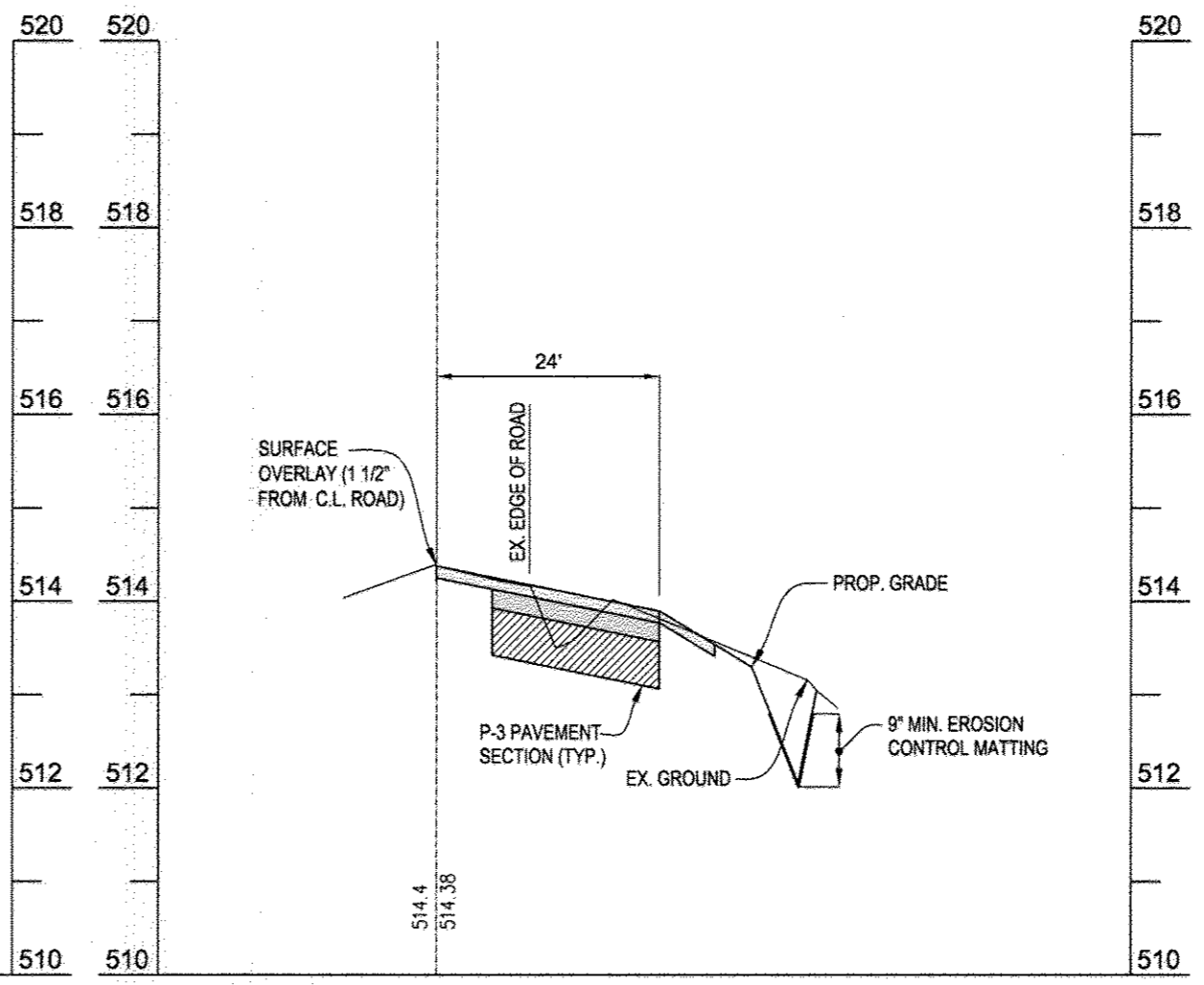
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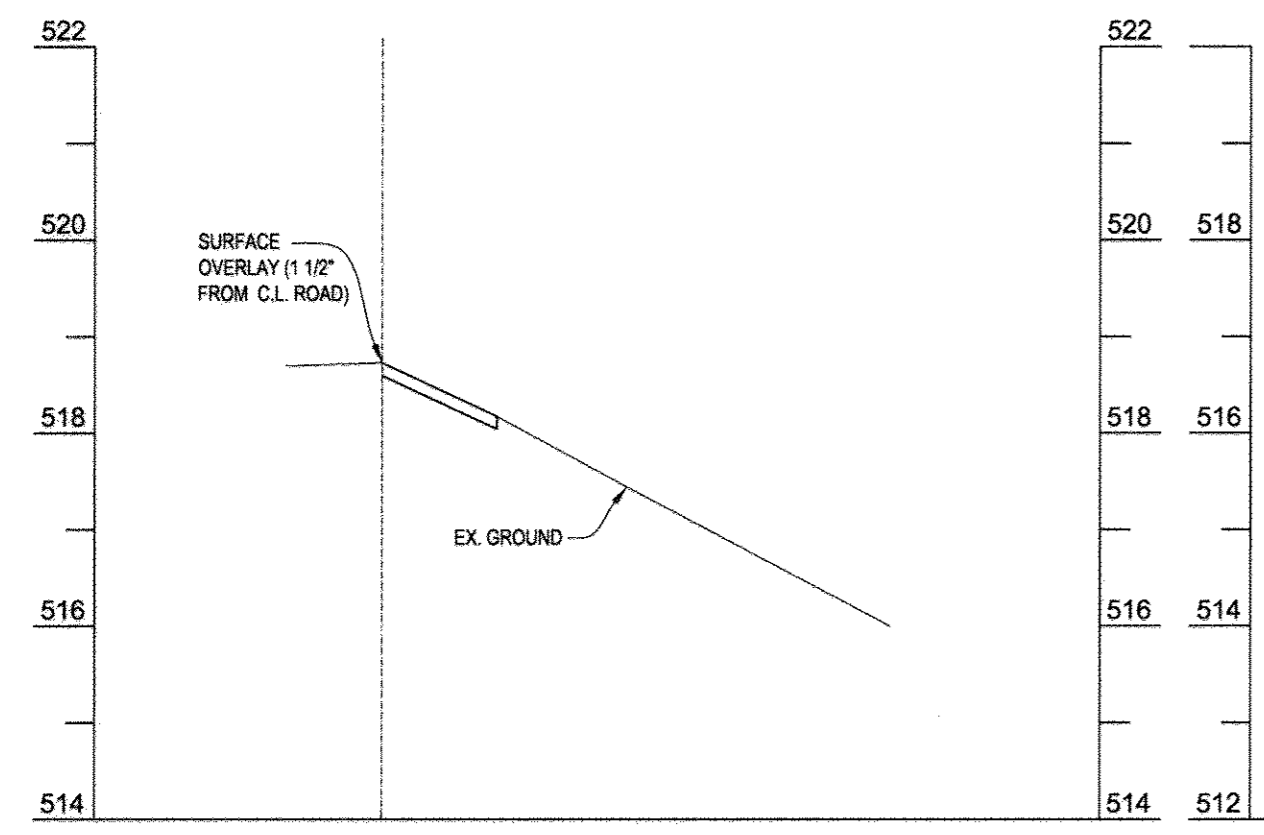
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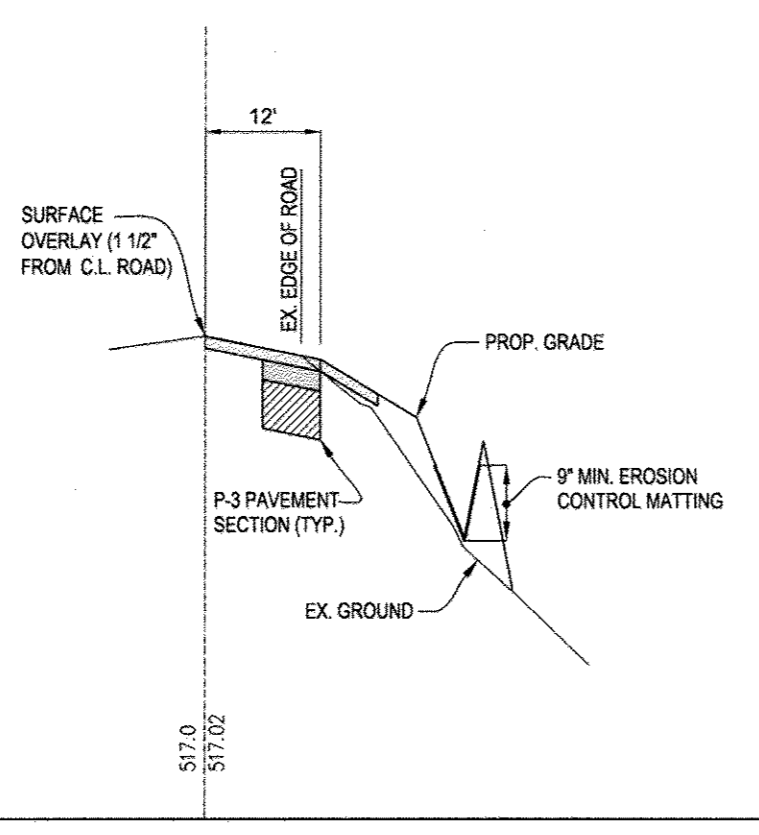
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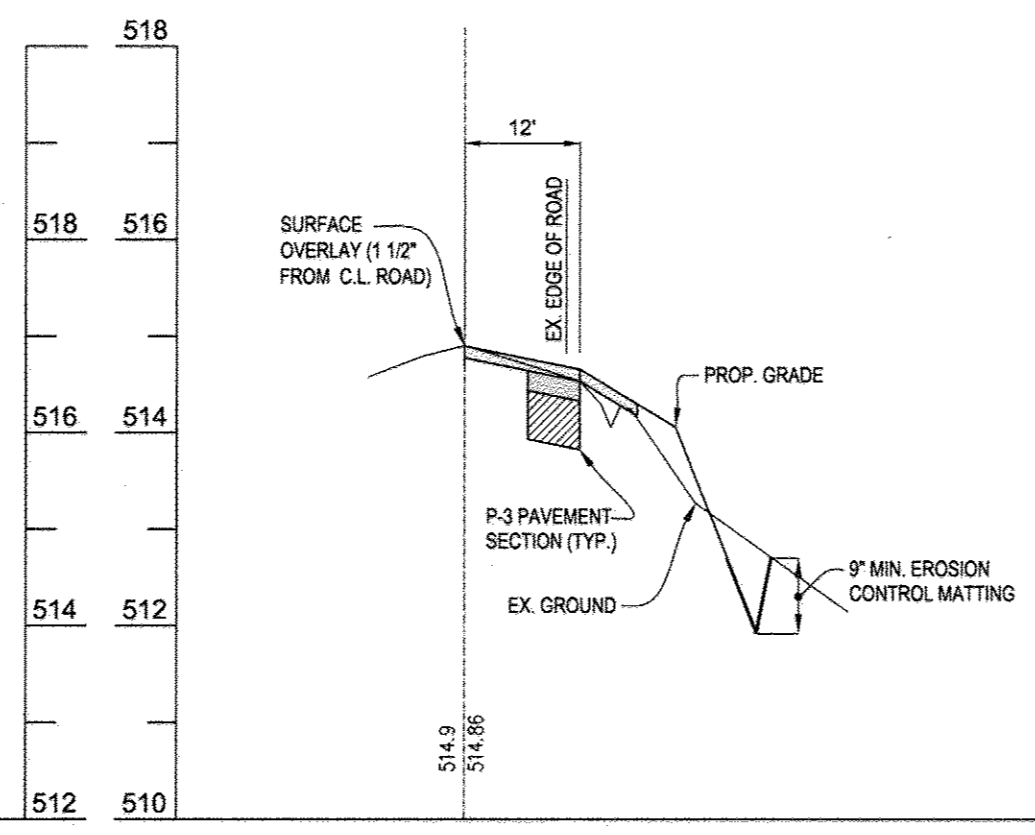
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**CROSS SECTION 2+00**  
SCALE: 1" = 20' (HOR.)  
1" = 2' (VERT.)



**CROSS SECTION 4+00**  
SCALE: 1" = 20' (HOR.)  
1" = 2' (VERT.)



**CROSS SECTION 6+00**  
SCALE: 1" = 20' (HOR.)  
1" = 2' (VERT.)

**"AS-BUILT"**  
NOTE: PER PAVING SECTIONS P-3 & P-7 SEE SHEET 8.

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date : 12-26-08.

**AS-BUILT CERTIFICATION**  
Note: There is no "AS-BUILT" information provided on this sheet.

Name: SAMJAY PATEL  
P.E. NO.: 31042  
Date: 10/2/16

**ENGINEER'S CERTIFICATE**  
"I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."  
Signature of Engineer: Jose H. Escalante  
Date: 06/06/08

**DEVELOPER'S CERTIFICATE**  
"I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE REQUIRED NECESSARY."  
Signature: Dale Thompson  
Date: 06/06/08  
President Dale Thompson Builders, Inc.  
Sole Member Running Brook, LLC

APPROVED: DEPARTMENT OF PUBLIC WORKS  
Chief, Bureau of Highways: Michelle Z. Wall Date: 7-10-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
Chief, Development Engineering Division: Mike Damman Date: 7/2/08  
Chief, Division of Land Development: David Stearns Date: 7/2/05

DATE	NO.	REVISION

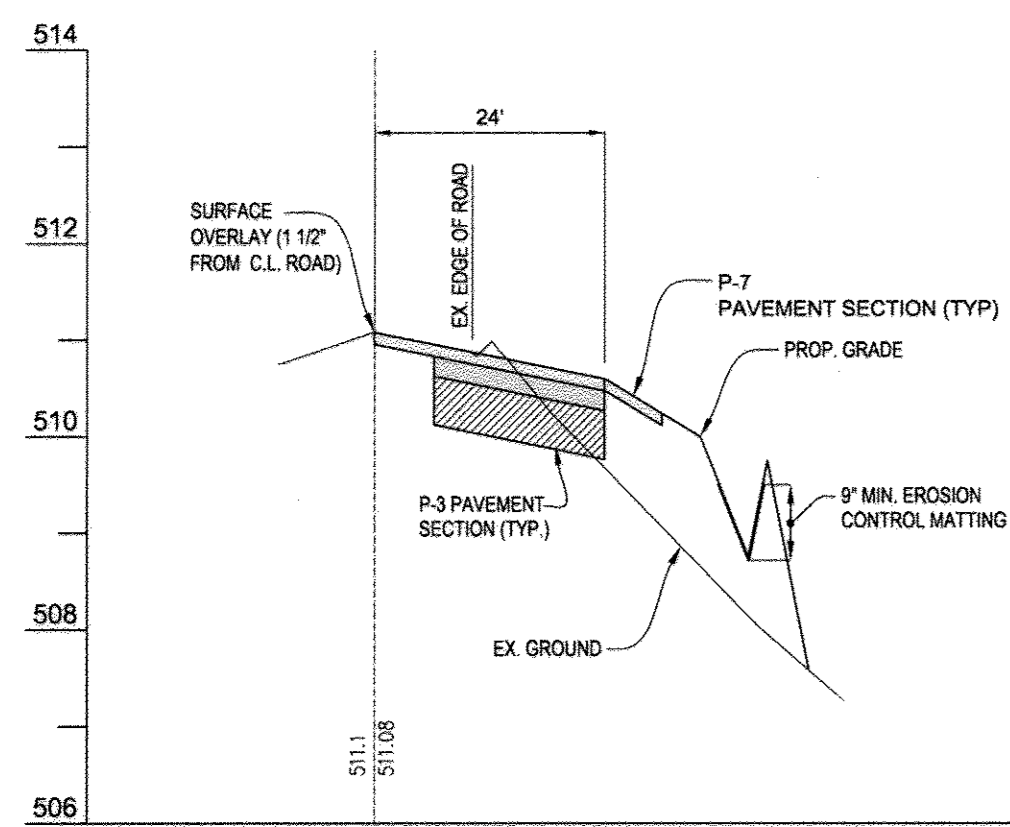
OWNER / DEVELOPER  
**SK HOMES AT HIGHLAND OWINGS, LLC**  
7090 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD. 21046  
PHONE: 301-870-5603

PROJECT: **CROSS SECTION PLAN**  
**OWINGS PROPERTY, LOT 5**  
LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARROD OWINGS PROPERTY TAX MAP 40, GRID 4, PARCEL 44 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.

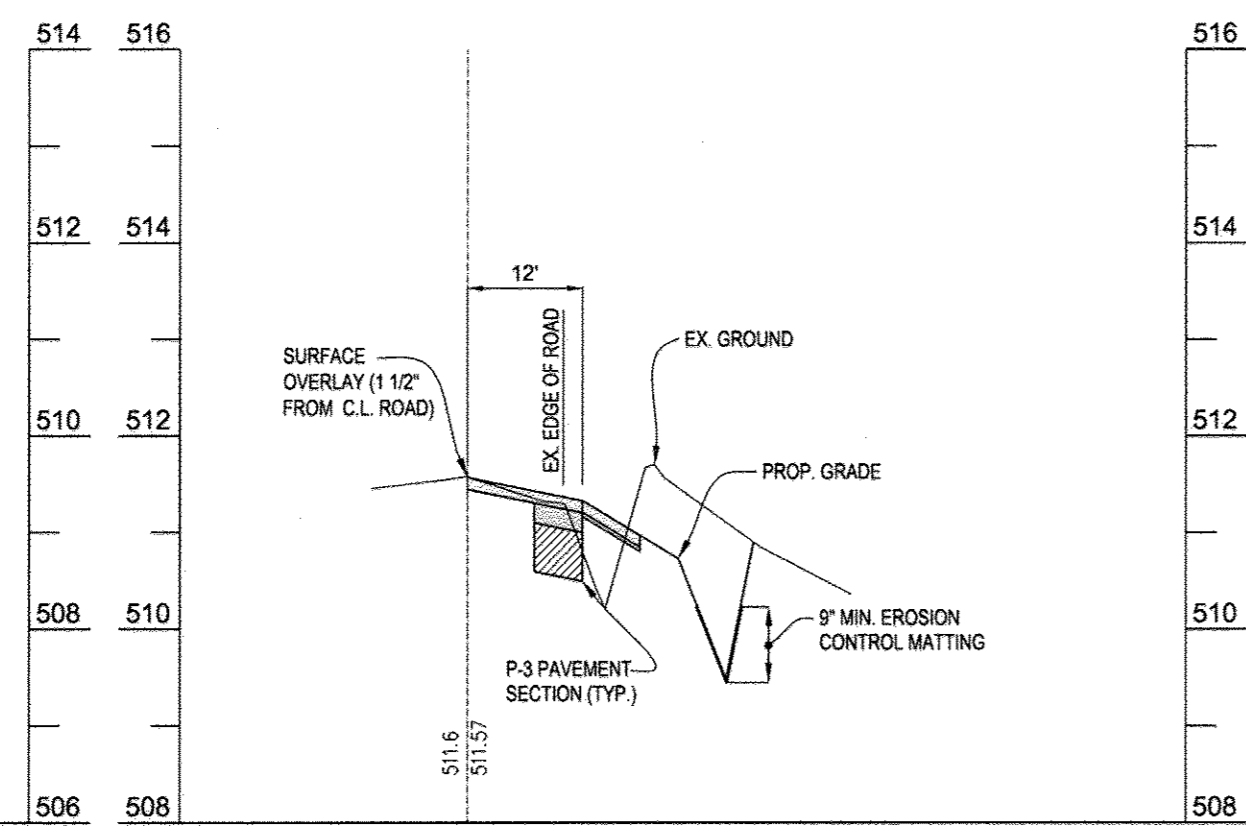
PROJECT NO.:    
SCALE: AS SHOWN  
DATE: 06/06/08  
DRAWN BY: AVG  
CHECKED BY: JHE  
SHEET: 5 - 30

**DALE THOMPSON**  
BUILDERS  
6300 Woodbine Court Suite A  
Columbia, MD 21045  
410-995-6736  
201-596-7280  
FAX: 410-381-9747

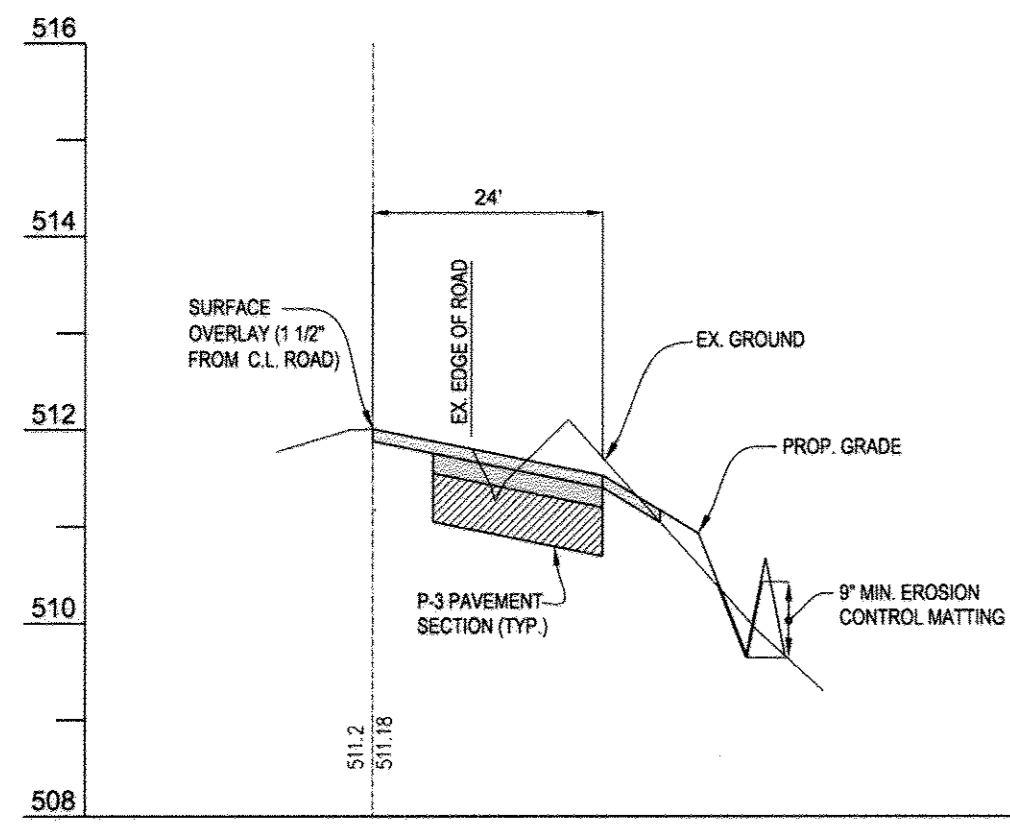




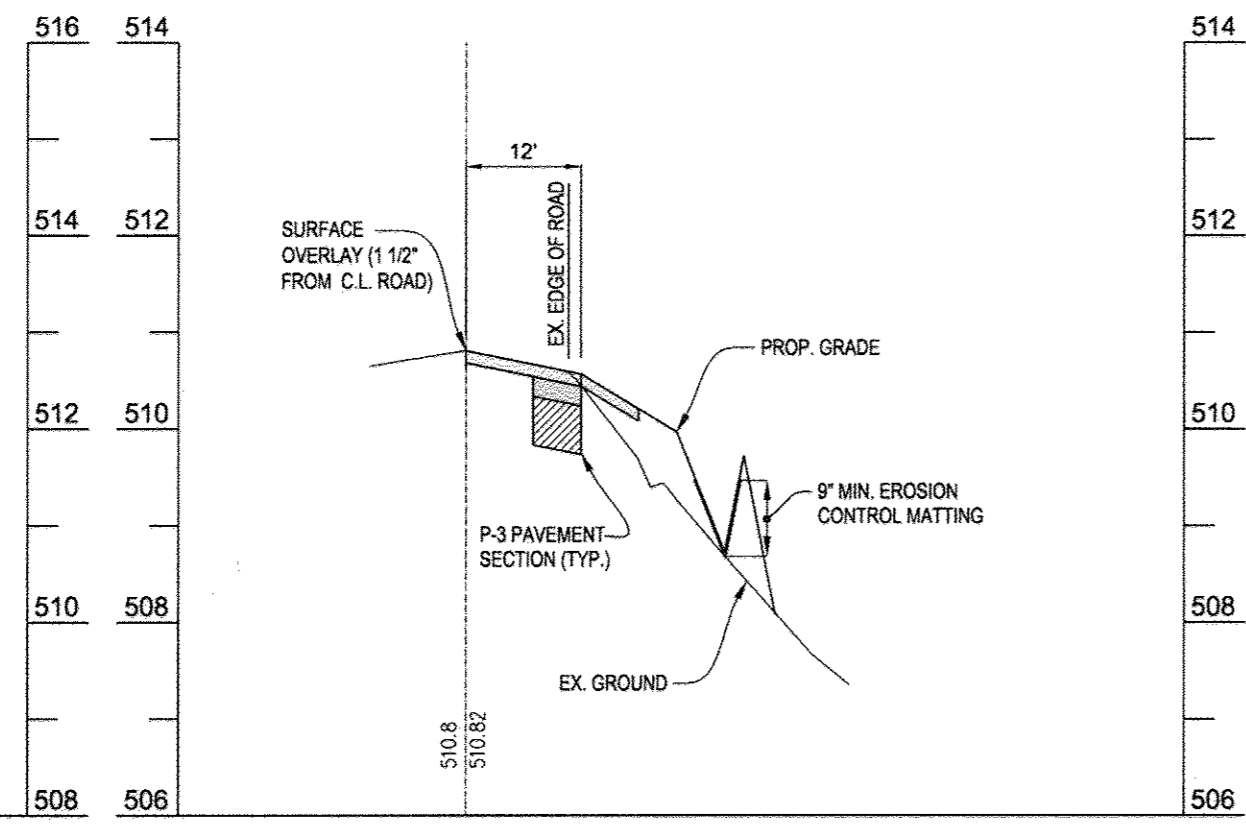
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1" = 2' (VERT.)



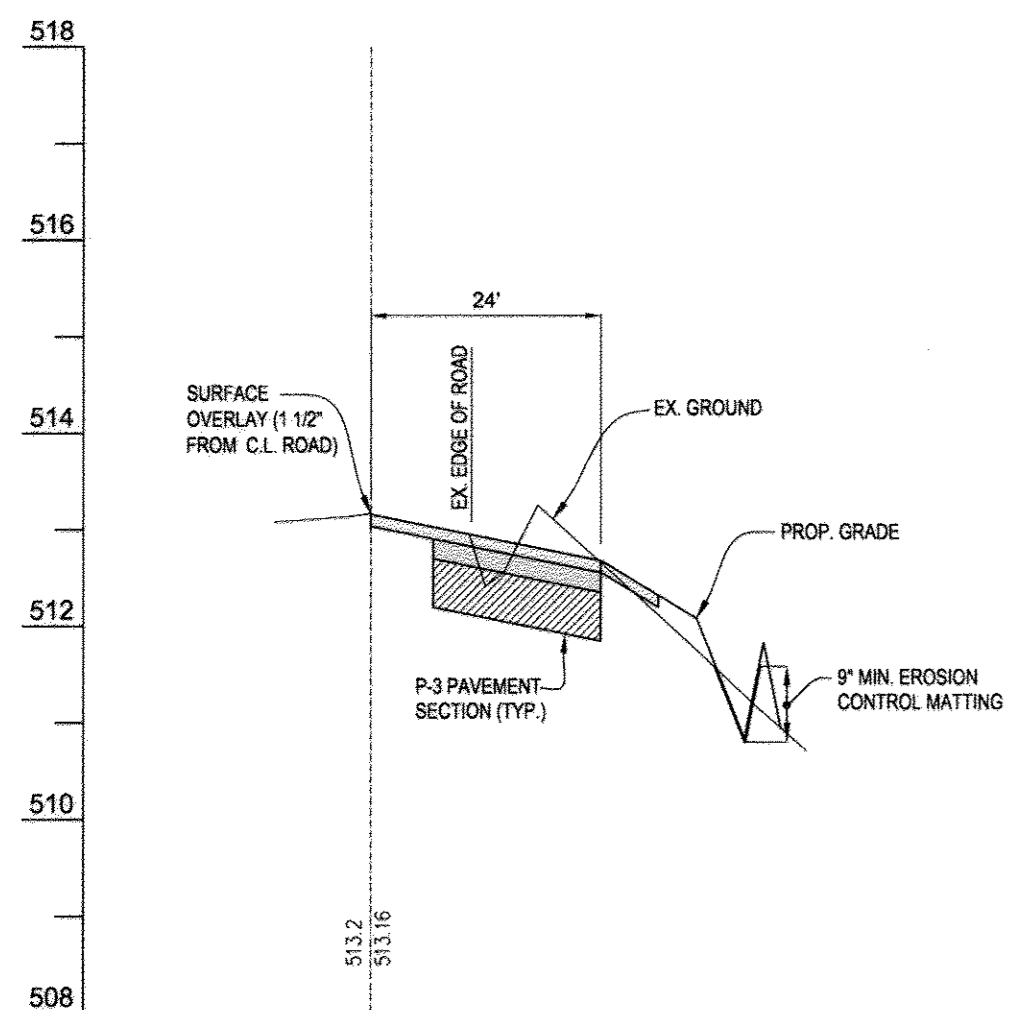
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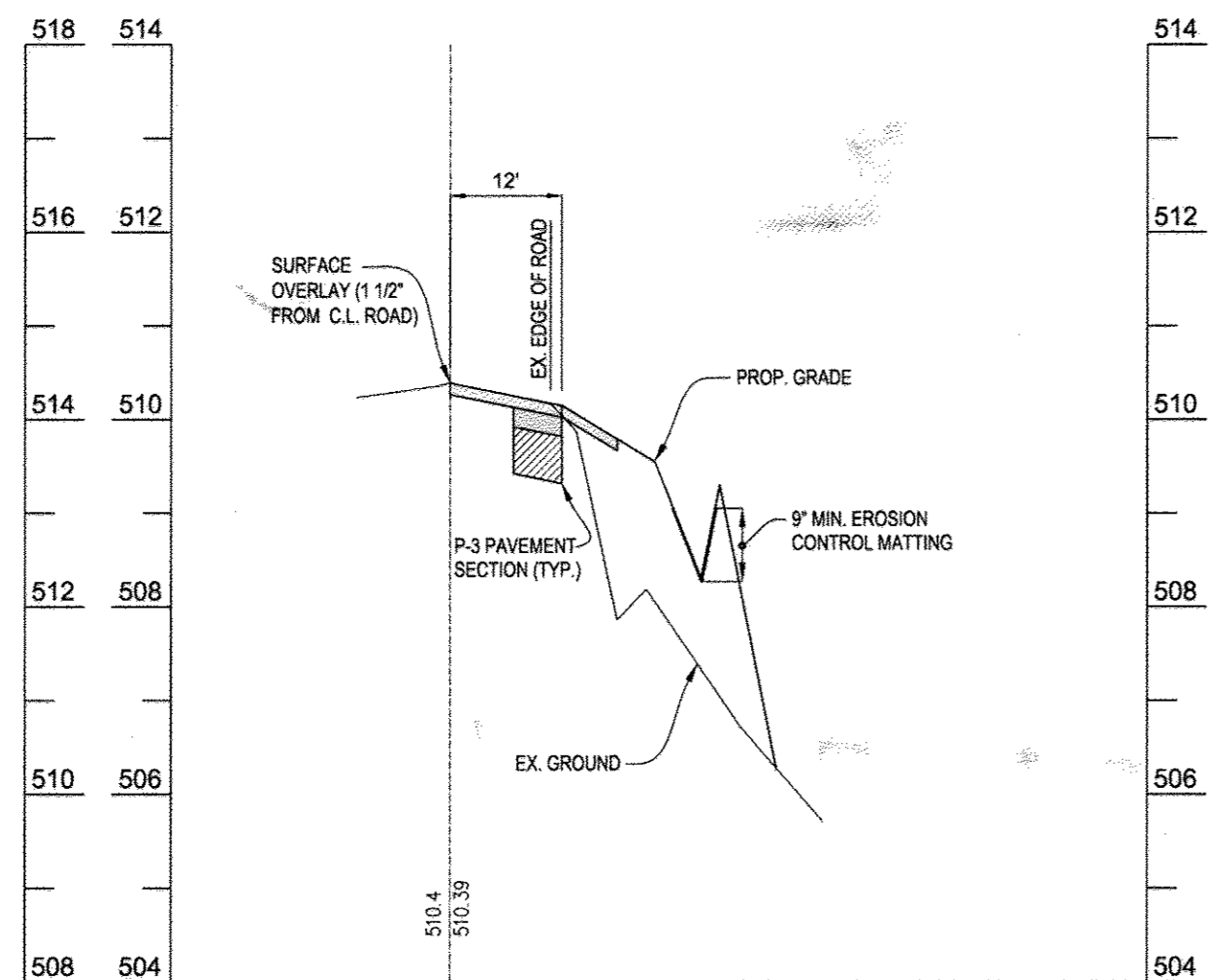
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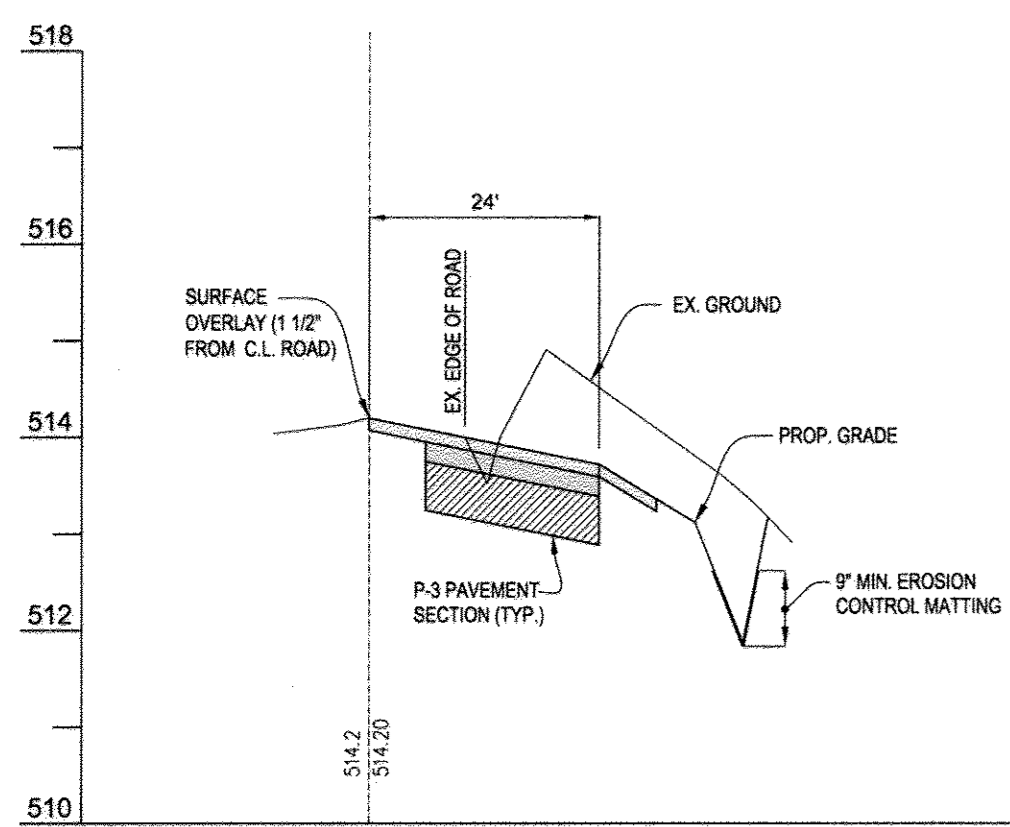
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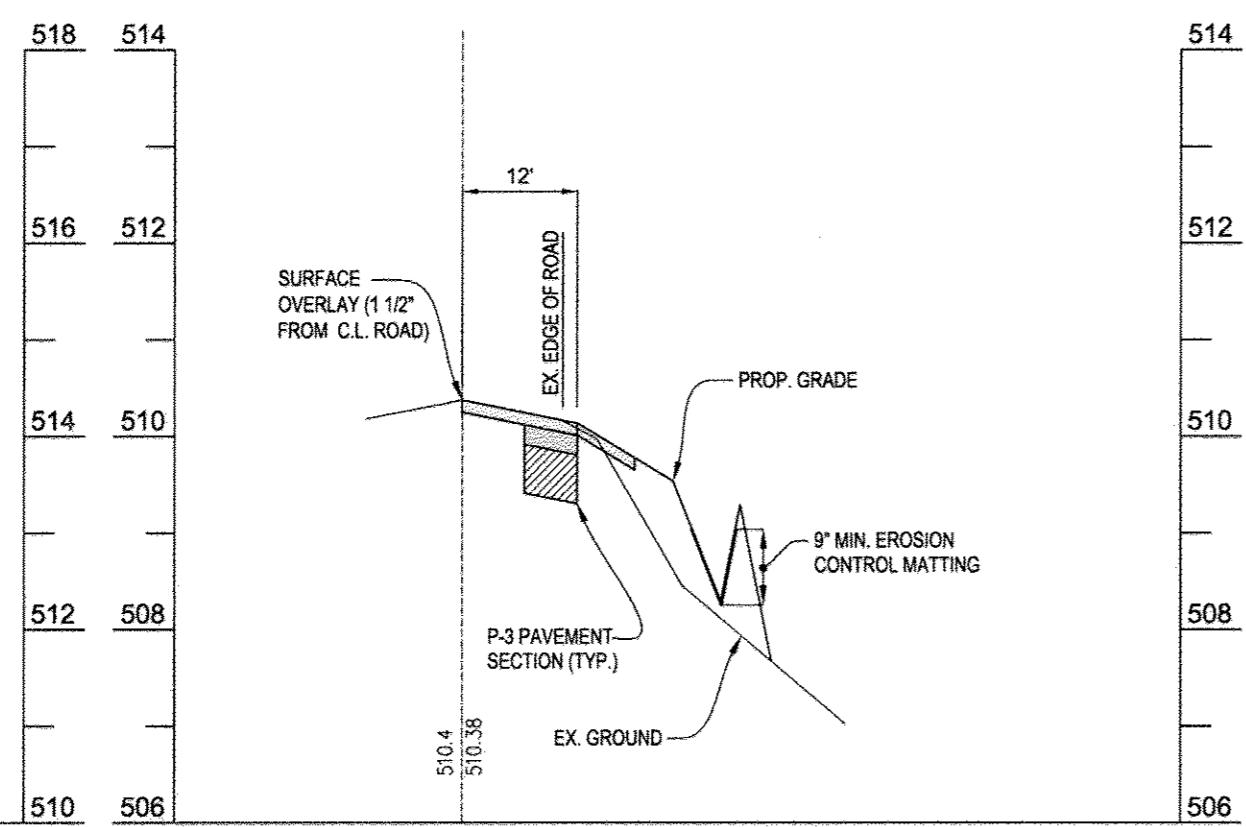
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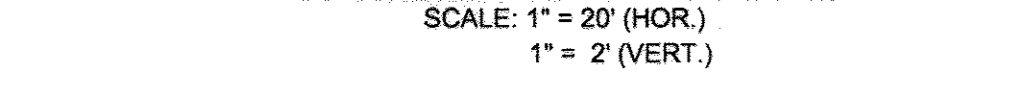
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1" = 2' (VERT.)



**CROSS SECTION 10+00**  
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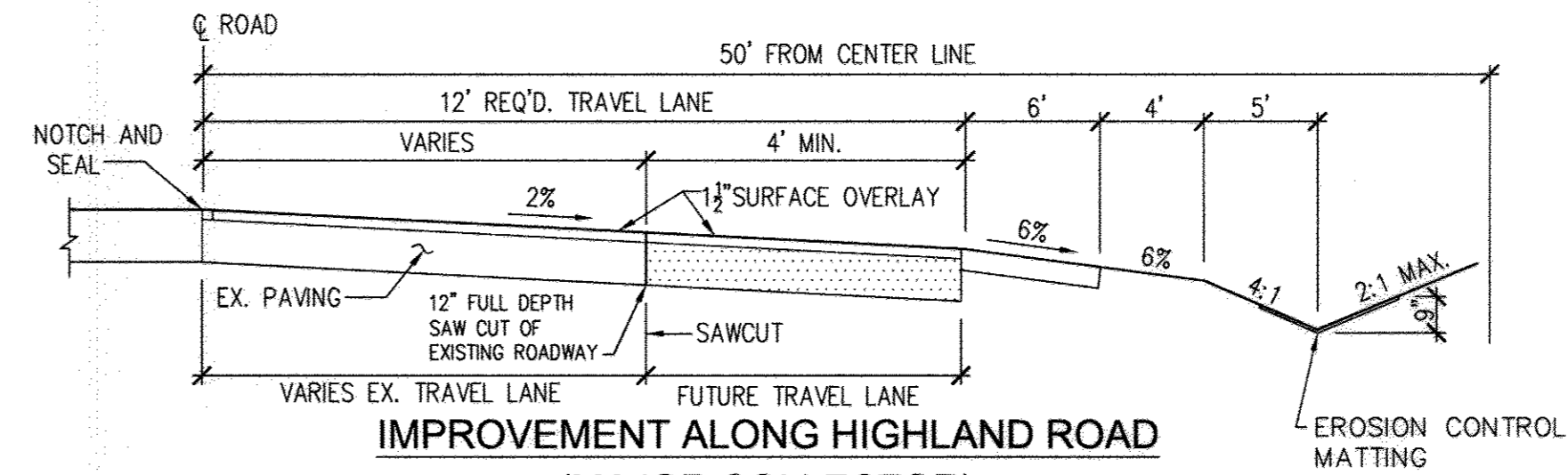
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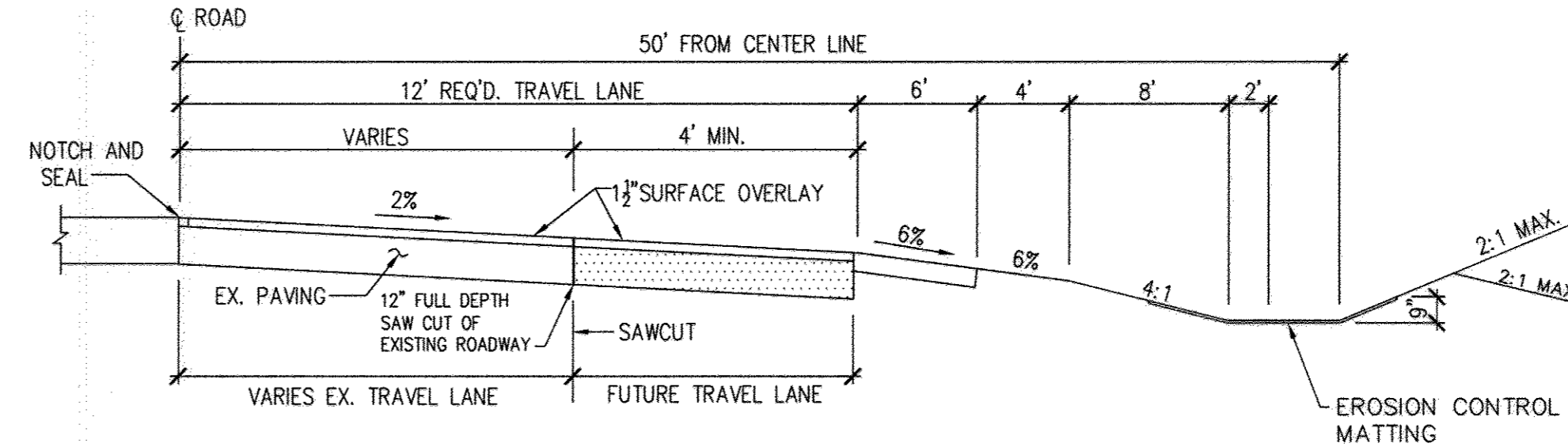
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**CROSS SECTION 14+00**  
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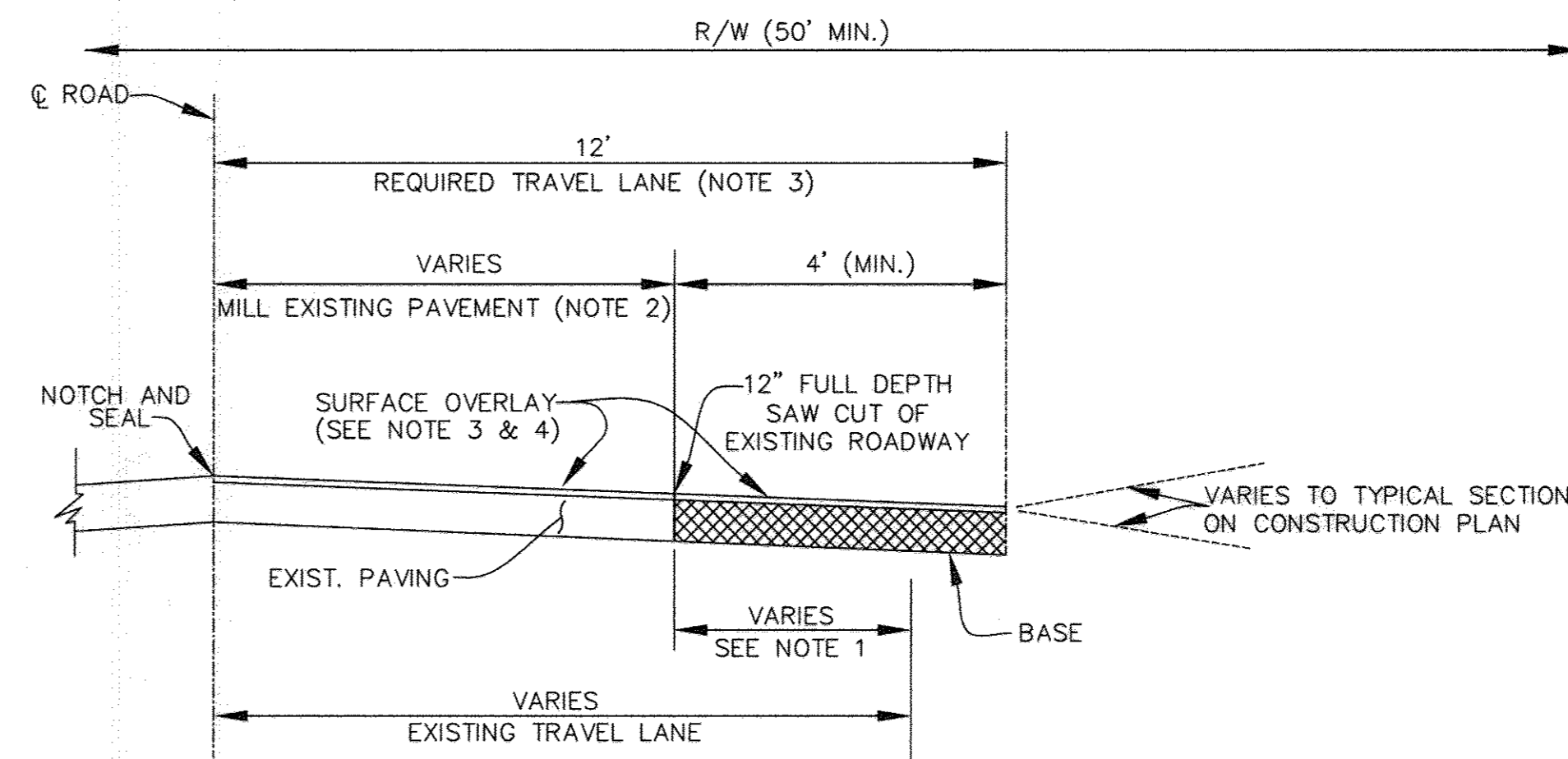


**IMPROVEMENT ALONG HIGHLAND ROAD**  
(MAJOR COLLECTOR)  
STA. 2+00 TO STA. 2+32  
STA. 10+08 TO 14+00  
NOT TO SCALE



**IMPROVEMENT ALONG HIGHLAND ROAD**  
(MAJOR COLLECTOR)  
STA. 2+80 TO STA. 10+70  
NOT TO SCALE

**NOTE**  
1. ROADWAY WIDENING FOR HIGHLAND ROAD SHALL BE IN ACCORDANCE WITH DESIGN MANUAL, VOLUME IV STANDARDS DETAIL, R-1.08.



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

**WIDENING STRIPS ALONG EXISTING ROADWAYS**  
(NOT TO SCALE)

**AS-BUILT CERTIFICATION**  
Note: There is no "AS-BUILT" information provided on this sheet.  
Name: SAMJAY PATEL  
P.E. NO.: 31042  
Date: 10/21/16

**ENGINEER'S CERTIFICATE**  
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
Signature: [Signature] DATE: 06/06/08  
JOSE H. ESCALANTE

**DEVELOPER'S CERTIFICATE**  
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.  
Signature: [Signature] DATE: 06/06/08  
PRESIDENT DALE THOMPSON BUILDERS, INC.  
SOLE MEMBER RUNNING BROOK, LLC

APPROVED: DEPARTMENT OF PUBLIC WORKS  
Chief: [Signature] DATE: 7-1-07  
BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
Chief: [Signature] DATE: 7/2/08  
Development Engineering Division  
Chief: [Signature] DATE: 7/2/08  
Division of Land Development

**"AS-BUILT"**

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13285, Expiration Date: 12-26-08.

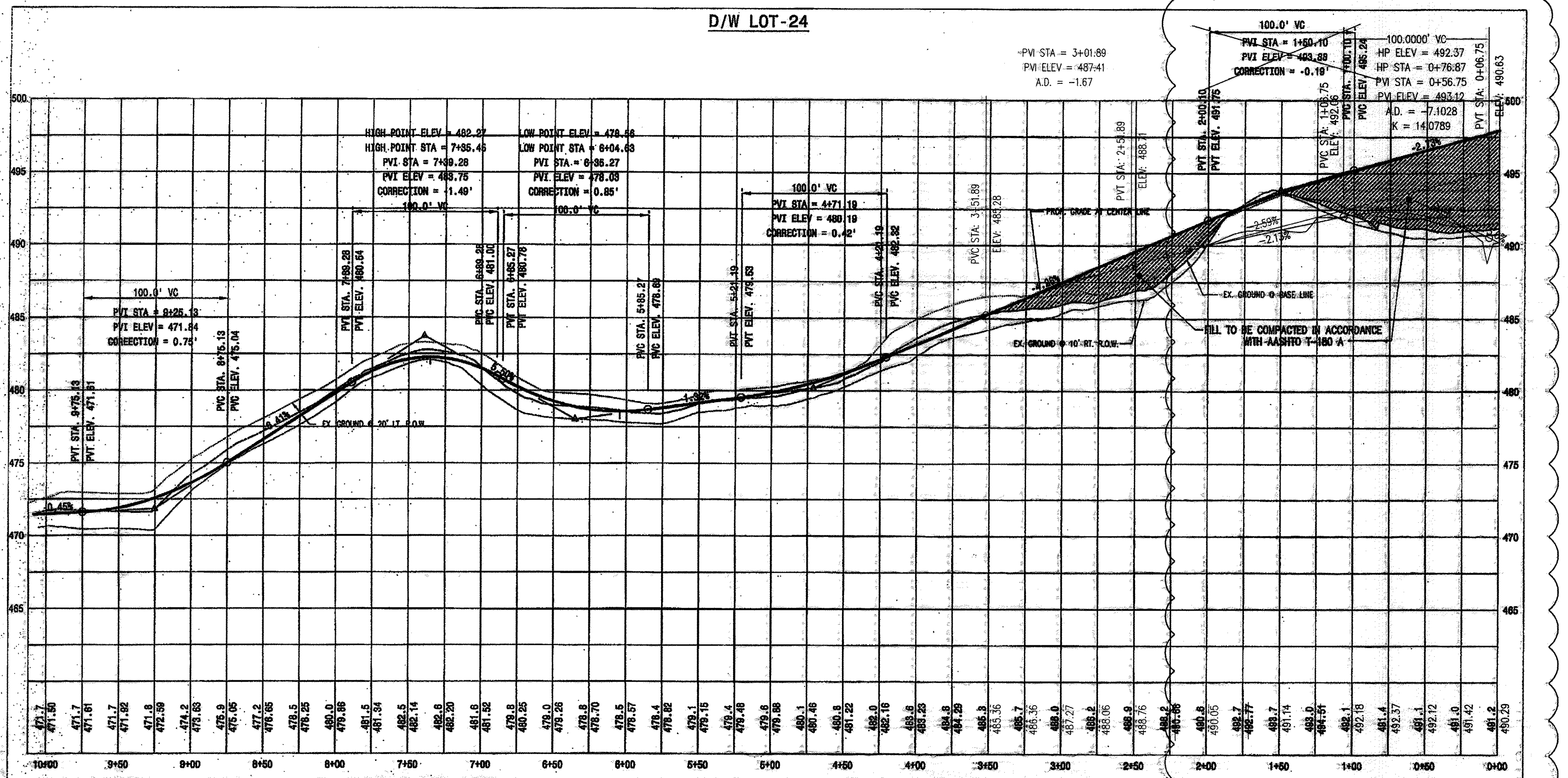
**DALE THOMPSON**  
BUILDERS  
6300 Woodside Court Suite A  
Columbia, MD 21045  
410-995-6736  
301-596-7280  
FAX 410-381-9747

**OWNER / DEVELOPER**  
SK HOMES AT HIGHLAND OWINGS, LLC  
7060 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD. 21046  
PHONE: 301-870-5603

**PROJECT: CROSS SECTION PLAN**  
**OWINGS PROPERTY, LOT 5**  
LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY TAX MAP 40, GRID 4, PARCEL 44 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.

PROJECT NO.:  
SCALE: AS SHOWN  
DATE: 06/06/08  
DRAWN BY: AVG  
CHECKED BY: JHE  
SHEET: 6 - 30  
F-06-112





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

**AS-BUILT CERTIFICATION**  
 Note: There is no "AS-BUILT" information provided on this sheet.  
 Name: SANJAY PATEL  
 P.E. NO.: 21042  
 Date: 10/21/16

**ENGINEER'S CERTIFICATE**  
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
 Signature: Sanjay Patel DATE: 04/25/13  
 SIGNATURE OF ENGINEER DATE

**DEVELOPER'S CERTIFICATE**  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.  
 Signature: William C. White DATE: 7/18/2013  
 SK HOMES AT HIGHLAND OWINGS, LLC DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 Signature: Walter Z. ... DATE: 7-22-13  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
 Signature: Ketola ... DATE: 8/5/13  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
 Signature: ... DATE: 8/26/13  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**"AS-BUILT"**  
**AB CONSULTANTS, INC.**  
 9450 ANNAPOLIS ROAD  
 LANHAM, MARYLAND 20706  
 PHONE: (301) 306-3091  
 FAX: (301) 306-3092  
 CONTACT: SANJAY PATEL PHONE: (301)-306-3091 x21

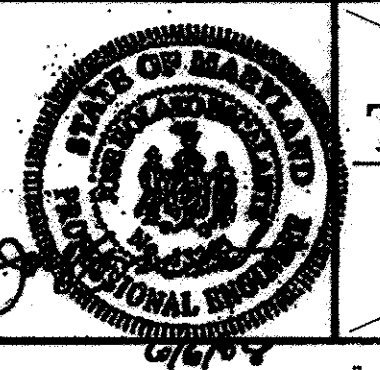
**REVISED FINAL ROAD CONSTRUCTION PLAN**

**PURPOSE OF REVISION TO THIS SHEET**

1. TO SHOW PARTIALLY REVISED LOT 24 DRIVEWAY PROFILE

**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THE RED-LINE REVISIONS SHOWN HEREON, INDICATED BY THE SYMBOL AND , WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31042 EXPIRATION DATE: 02/18/15"  
 Signature: Sanjay Patel DATE: 10/21/16

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13285, Expiration Date: 12-28-08.

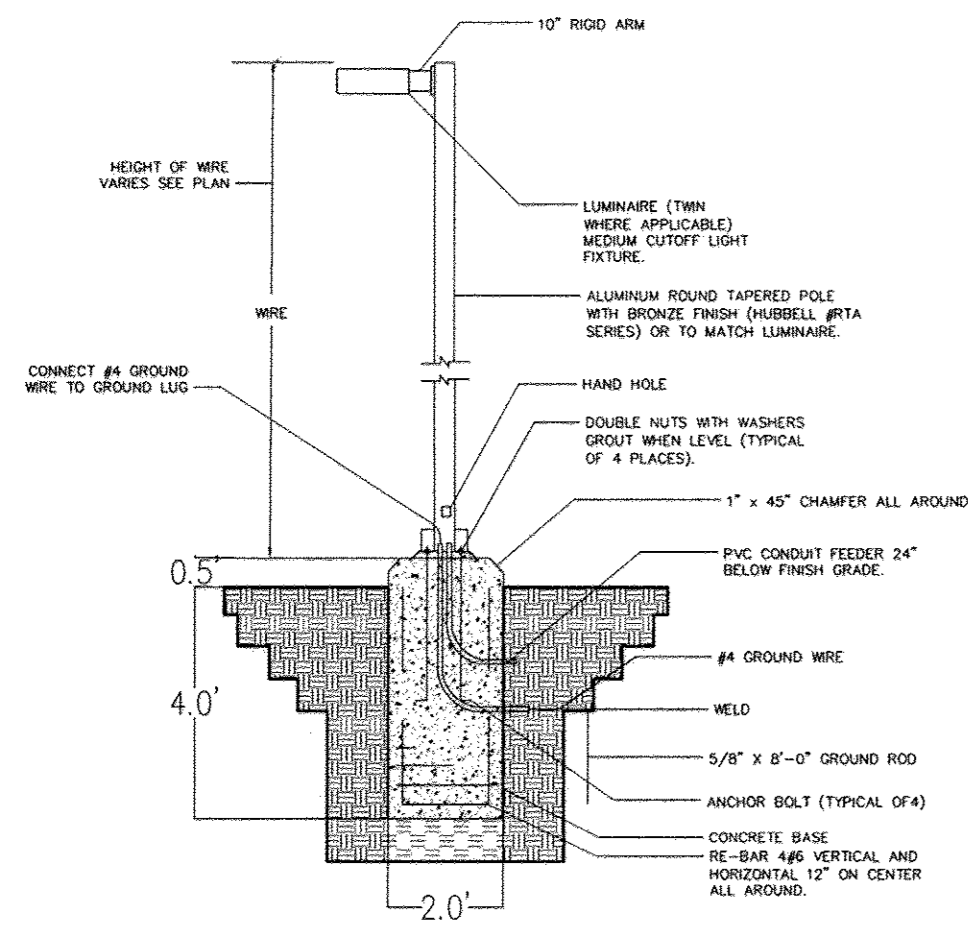


**DALE THOMPSON**  
 BUILDERS  
 6300 Woodside Court Suite A  
 Columbia, MD 21045  
 410-995-6726  
 301-595-7288  
 Fax: 410-595-6747

**PROJECT: DRIVEWAY PROFILE LOT-22 OWINGS PROPERTY, LOT 5**  
 LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARMOND OWINGS PROPERTY TAX MAP 40; GRID F; PARCEL 44; 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.  
 PROJECT NO.:  
 SCALE: AS SHOWN  
 DATE: 08/06/08  
 DRAWN BY: AVS  
 CHECKED BY: JHE  
 SHEET: 7-30  
 F-06-112

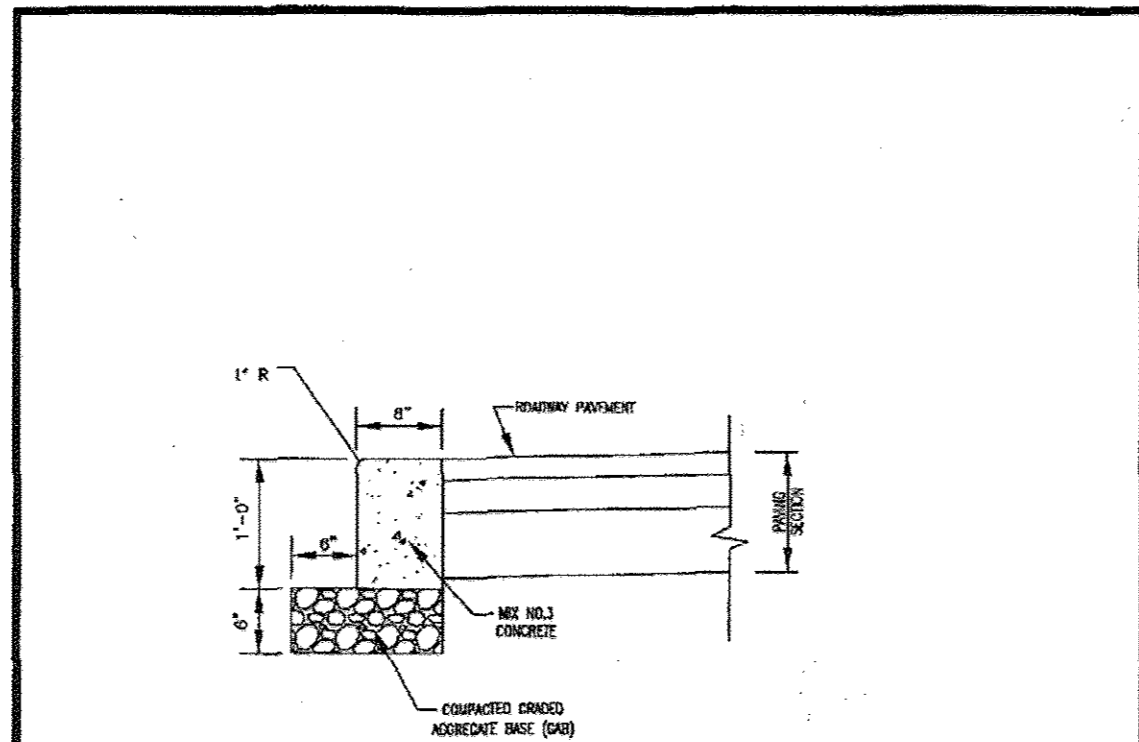


NOTES  
1. ROADWAY WIDENING FOR HIGHLAND ROAD SHALL BE IN ACCORDANCE WITH DESIGN MANUAL, VOLUME IV, STANDARDS DETAIL, R-10.01.

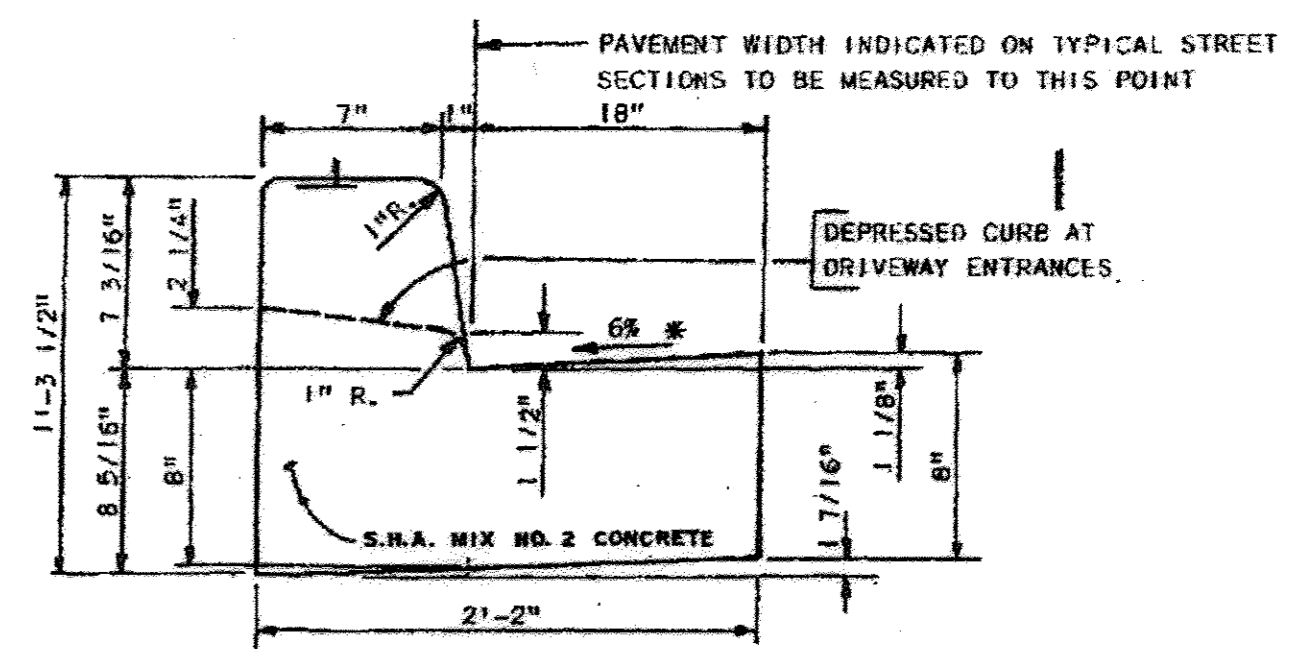


STREET LIGHT POLE BASE DETAIL  
NO SCALE

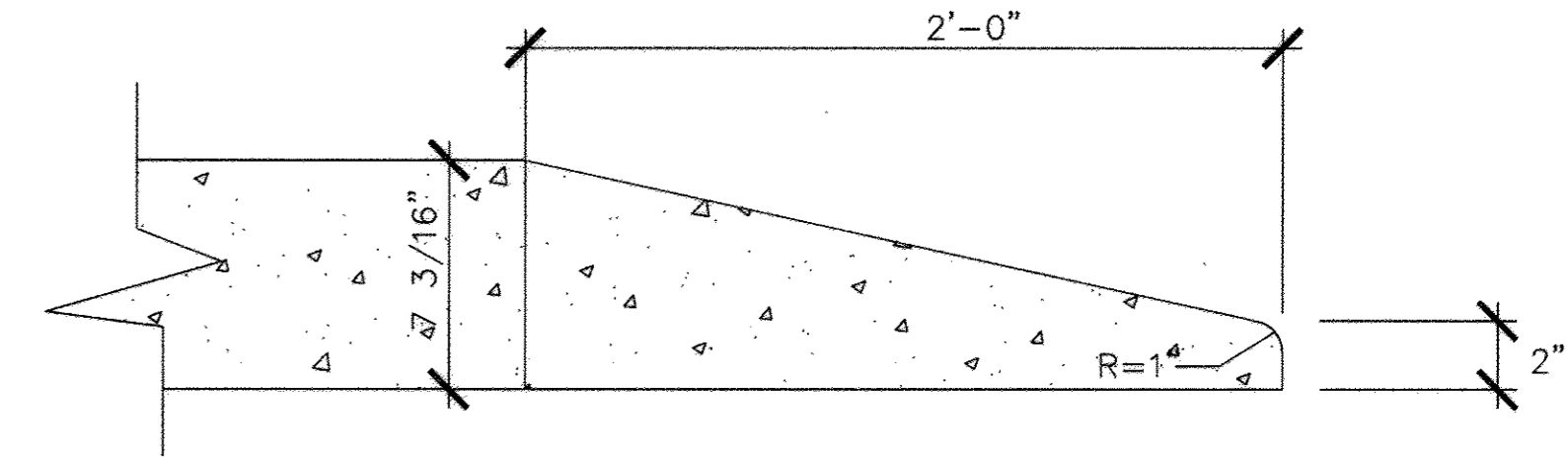
NOTE  
1. LIGHT TO BE 150-WATT HPS VAPOR "PREMIER" POST TOP FIXTURE.  
2. LIGHTING DETAIL FOR INFORMATIONAL PURPOSES ONLY. SEE ELECTRICAL AND ARCHITECTURAL PLANS FOR ACTUAL LIGHTING DETAILS AND SPECIFICATIONS.



PROJECT	Howard County, Maryland Department of Public Works	Detail
NO. / DATE	R-3.07	
APPROVED	<i>[Signature]</i> Dist. Bureau of Engineering	

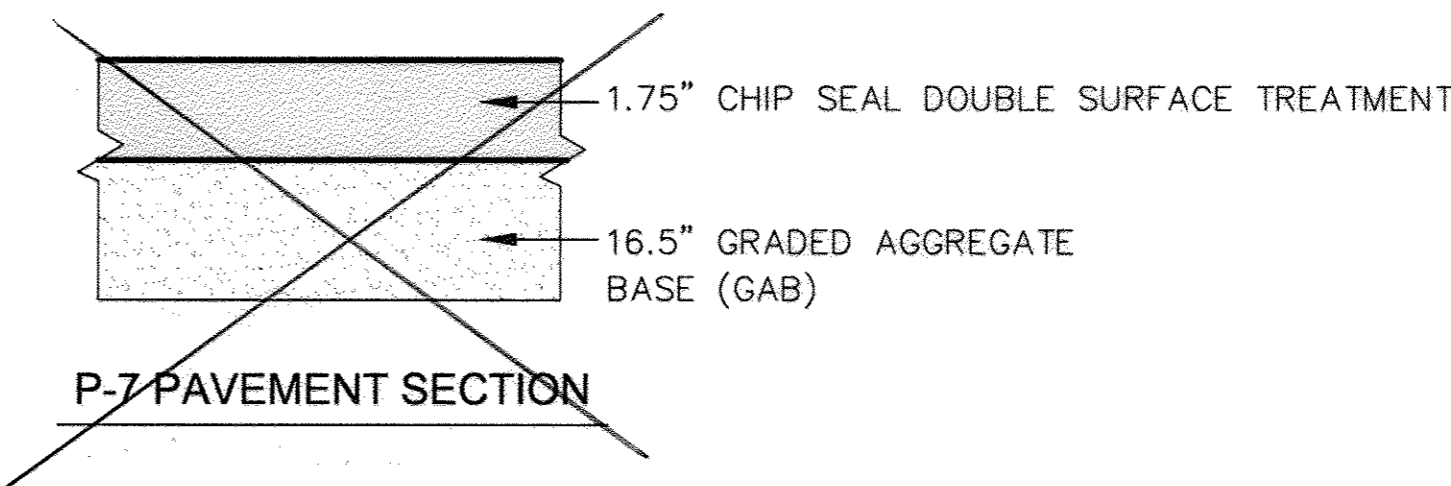


STANDARD 7" COMBINATION CURB AND GUTTER (HOWARD CO. STD. #R-3.01)  
NOT TO SCALE

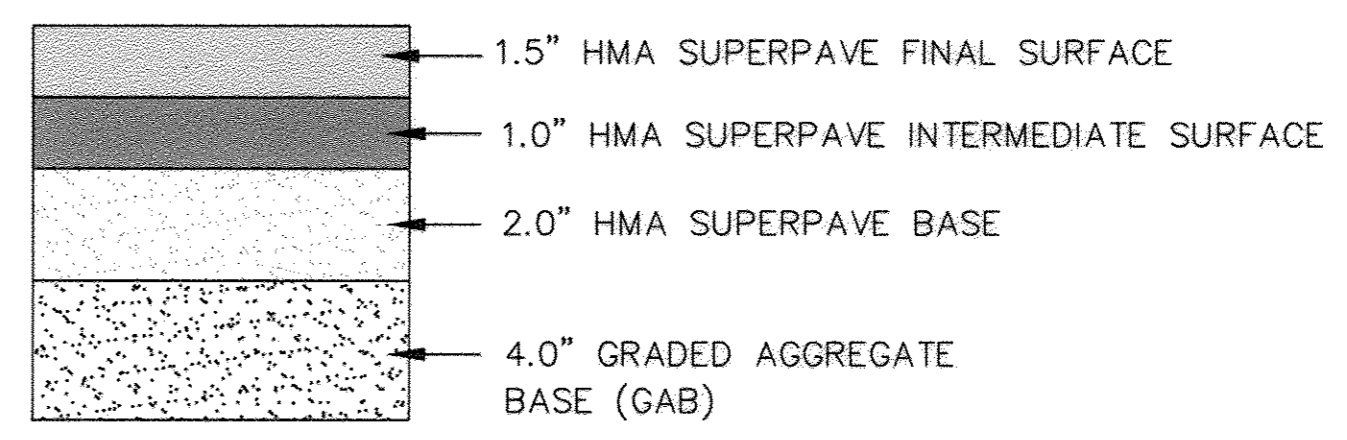


NOSE DOWN CURB  
NOT TO SCALE

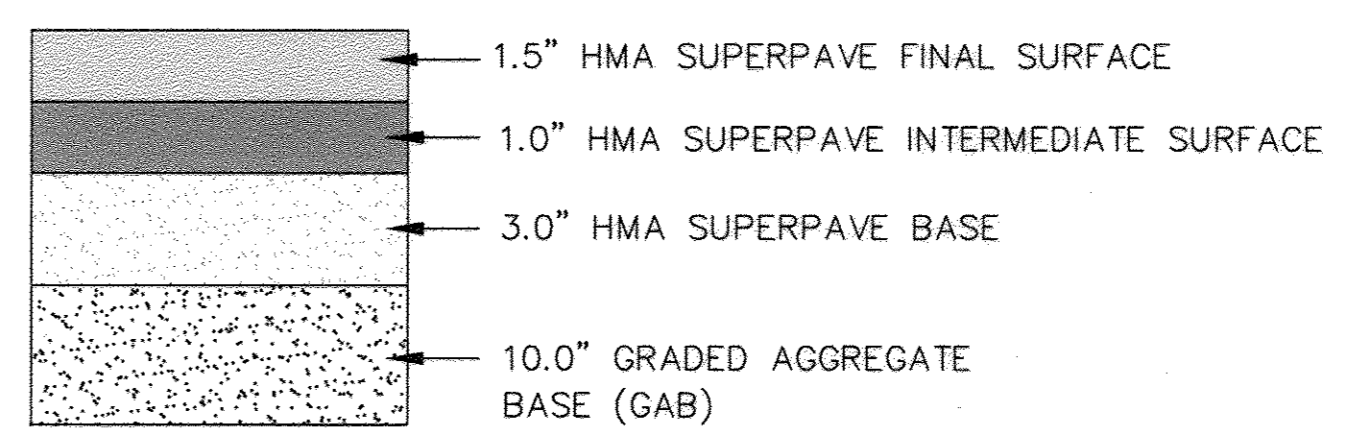
NOTE:  
PAVING SECTIONS SHOWN ARE BASED ON CBR VALUES OF LESS THAN 5. IF FIELD EVALUATION FOUND THE CBR VALUES TO BE GREATER THAN 5, THE PAVING SECTIONS WILL BE REVISED ACCORDINGLY.



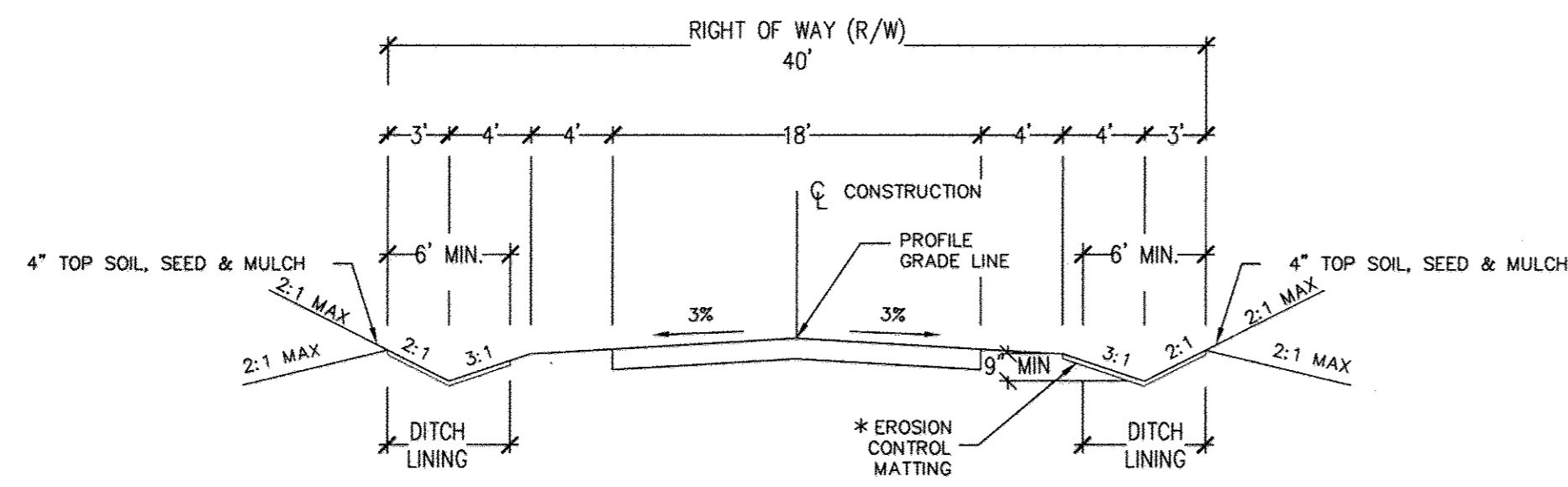
P-7 PAVEMENT SECTION  
NOT TO SCALE



P-2 PAVEMENT SECTION (WINDING STREAM LA. & OWINGS OVERLOOK)  
NOT TO SCALE



P-3 PAVEMENT SECTION (HIGHLAND ROAD)  
NOT TO SCALE

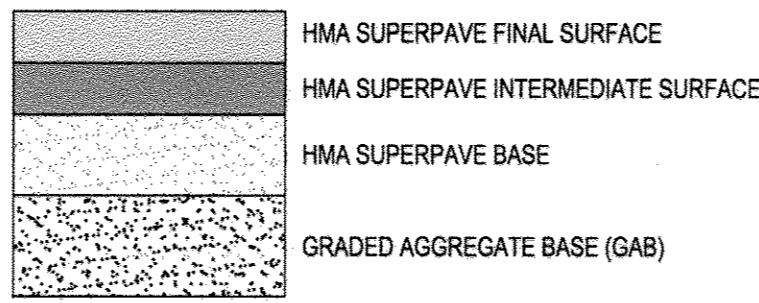


TYPICAL PAVEMENT SECTION WINDING STREAM LANE & OWINGS OVERLOOK WAY  
STA. 10+00 TO STA. 17+21.93 WINDING STREAM WAY  
STA. 20+00 TO STA. 24+42.22 OWINGS OVERLOOK WAY  
NOT TO SCALE

NOTE: INSTALL FLUSH CURB AT STA. 11+64.3 LT. TO 12+70.2, WINDING STREAM LANE, STA. 20+64.3 LT. TO STA. 22+21.6 LT., OWING OVERLOOK WAY.

\* NOTE:  
ROAD WIDENING AT HIGHLAND ROAD SHALL BE IN ACCORDANCE WITH DESIGN MANUAL, VOLUME IV, STANDARD DETAIL R-10.01

SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO <5			5 TO <7		
			MIN	MAX	CONSTANT	MIN	MAX	CONSTANT
P-2	PARALLEL DRIVE ALLEYS RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS ACCESS PLACE, ACCESS STREET CUL-DE-SACS RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE	1.0	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE	2.0	2.0	2.0	3.5	2.0	2.0
		GRADED AGGREGATE BASE (GAB)	8.0	4.0	3.0	4.0	4.0	4.0
P-3	PARALLEL DRIVE ALLEYS RESIDENTIAL AND NON-RESIDENTIAL WITH NO MORE THAN 10 HEAVY TRUCKS PER DAY LOCAL ROADS ACCESS PLACE, ACCESS STREET CUL-DE-SACS NON-RESIDENTIAL MINOR COLLECTORS RESIDENTIAL	HMA SUPERPAVE FINAL SURFACE	1.5	1.5	1.5	1.5	1.5	1.5
		HMA SUPERPAVE INTERMEDIATE SURFACE	1.0	1.0	1.0	1.0	1.0	1.0
		HMA SUPERPAVE BASE	3.0	3.0	3.0	4.5	3.0	3.0
		GRADED AGGREGATE BASE (GAB)	10.0	6.0	3.0	6.0	6.0	6.0
P-7	STABILIZED GRANULAR SUBGRADE	CHIP SEAL DOUBLE SURFACE TREATMENT	1.75	1.75	1.75	NA	NA	NA
		GRADED AGGREGATE BASE (GAB)	15.5	14.5	13.0	NA	NA	NA



AS-BUILT CERTIFICATION  
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the Approved Plans and Specifications.  
Name: SAADY PATEL  
P.E. NO.: 21042  
Date: 10/21/16

ENGINEER'S CERTIFICATE  
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
Signature: *[Signature]* DATE: 06/06/08  
Name: JOSE M. ESCALANTE

DEVELOPER'S CERTIFICATE  
I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE REEMER NECESSARY.  
Signature: *[Signature]* DATE: 06/06/08  
Name: PRESIDENT DALE THOMPSON BUILDERS, INC. SOLE MEMBER RUNNING BROOK, LLC

APPROVED: DEPARTMENT OF PUBLIC WORKS  
Signature: *[Signature]* DATE: 7-1-07  
Name: CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
Signature: *[Signature]* DATE: 7/6/08  
Name: CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE	NO.	REVISION

OWNER / DEVELOPER  
SK HOMES AT HIGHLAND OWINGS, LLC  
1060 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD. 21046  
PHONE: 301-870-5603

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-26-08.

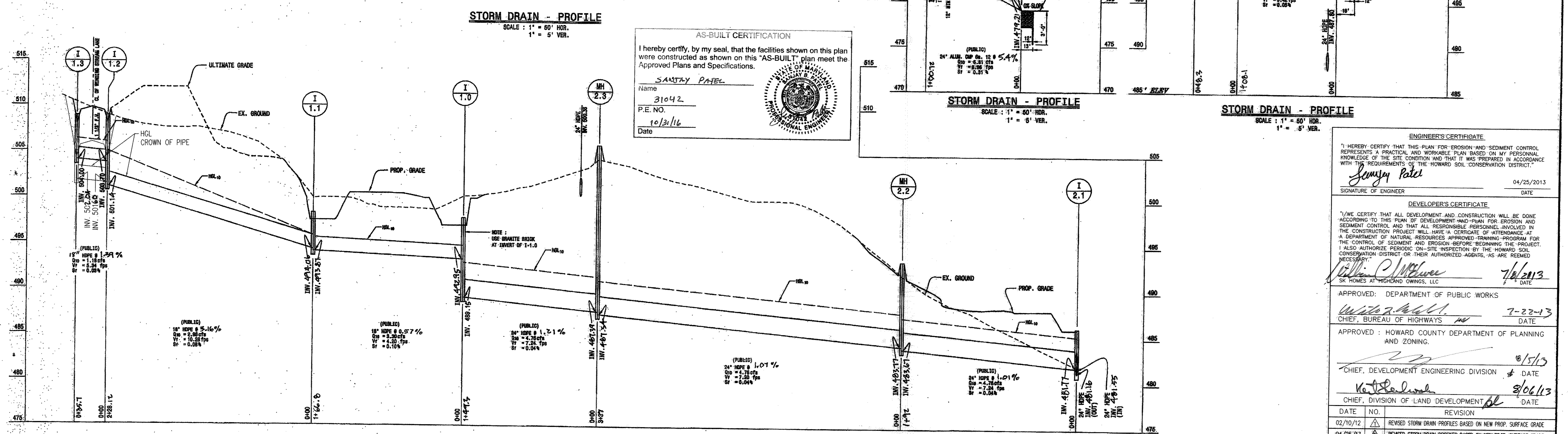
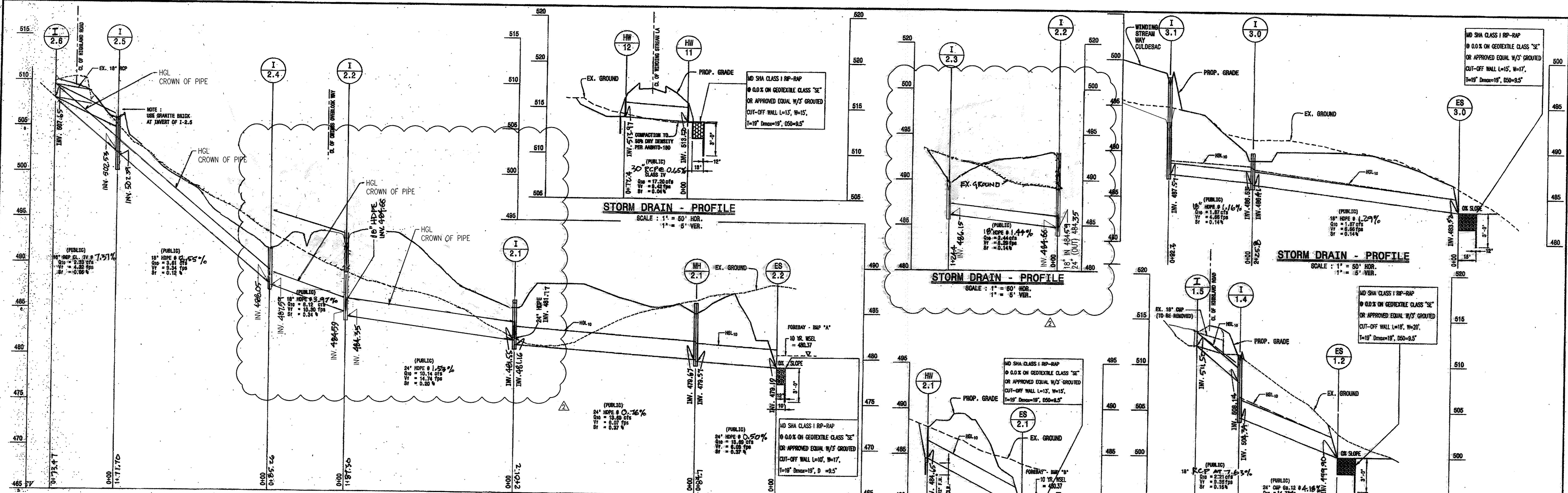


DALE THOMPSON  
BUILDERS  
6300 Woodlands Court Suite A  
Columbia, MD 21045  
410-993-6736  
301-596-7280  
FAX: 410-381-8747

PROJECT: TYPICAL SECTION AND ROAD DETAILS  
OWINGS PROPERTY, LOT 5  
LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY  
TAX MAP 40, GRID 4, PARCEL 44  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND.

PROJECT NO.	
SCALE:	AS SHOWN
DATE:	06/06/08
DRAWN BY:	AVG
CHECKED BY:	JHE
SHEET:	8 - 30





**REVISOR'S CERTIFICATION**

I HEREBY CERTIFY THAT THE RED-LINE REVISIONS SHOWN HEREON, INDICATED BY THE SYMBOL  $\Delta$  AND  $\nabla$ , WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31042 EXPIRATION DATE: 02/18/15"

*Sanjay Patel*

**AS-BUILT CERTIFICATION**

I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the Approved Plans and Specifications.

Name: SANJAY PATEL

No.: 31042

P.E. NO.:

Date: 10/31/16

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE REMEDED NECESSARY.

*William C. McEwen*

SK HOMES AT HIGHLAND OWINGS, LLC

**ENGINEER'S CERTIFICATE**

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

*Sanjay Patel*

SIGNATURE OF ENGINEER: \_\_\_\_\_ DATE: 04/25/2013

**DEVELOPER'S CERTIFICATE**

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

*William C. McEwen*

SK HOMES AT HIGHLAND OWINGS, LLC

**APPROVED: DEPARTMENT OF PUBLIC WORKS**

*William C. McEwen*

CHIEF, BUREAU OF HIGHWAYS DATE: 7-22-13

**APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING**

*William C. McEwen*

CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 8/16/13

DATE	NO.	REVISION
02/10/12	1	REVISED STORM DRAIN PROFILES BASED ON NEW PROP. SURFACE GRADE
04/25/13	2	REVISED STORM DRAIN PROFILES BASED ON NEW PROP. SURFACE GRADE

OWNER / DEVELOPER:

SK HOMES AT HIGHLAND OWINGS, LLC (301-870-5603)  
7090 SAMUEL MORSE DRIVE, SUITE 500, COLUMBIA, MD 21046

**REVISOR'S CERTIFICATION**

I HEREBY CERTIFY THAT THE RED-LINE REVISIONS SHOWN HEREON, INDICATED BY THE SYMBOL  $\Delta$  AND  $\nabla$ , WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31042 EXPIRATION DATE: 02/18/15"

*Sanjay Patel*

**AB CONSULTANTS, INC.**

9450 ANNAPOLIS ROAD  
LANHAM, MARYLAND 20706  
PHONE: (301) 306-3091  
FAX: (301) 306-3092

CONTACT: SANJAY PATEL PHONE: (301)-306-3091 x21

**DALE THOMPSON**

BUILDERS

6300 Woodside Court Suite A  
Columbia, MD 21045

410-995-6726  
410-995-7280  
FAX: 410-581-8747

**PROJECT: STORM DRAIN PROFILE OWINGS PROPERTY, LOT 5**

LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY TAX MAP 40, GRID 4, PARCEL 44 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.

SCALE: AS SHOWN  
DATE: 08/06/08  
DRAWN BY: AVB  
CHECKED BY: JHE  
SHEET: 9 - 30



STRUCTURE SCHEDULE									
STRUCTURE No.	STRUCTURE TYPE	TOP ELEVATION	INV. IN	INV. OUT	ROAD STATION	NORTHING	EASTING	OFFSET	Ho. Co. STD.
I-1.0	"D" INLET	417.84	432.95	489.15		552352.232	1322508.843		SD - 4.39
I-1.1	"D" INLET	408.08	444.06	493.87		552190.831	1322472.7545		SD - 4.39
I-1.2	"K" INLET	505.22	501.60	501.14		552210.4071	1322345.6845		SEE DETAIL THIS SHEET
I-1.3	"K" INLET	505.29		502.04		552216.1654	1322212.1541		SD - 4.36
I-1.4	"K" INLET	511.54	508.14	504.34		552450.9839	1322552.8989		SEE DETAIL THIS SHEET
I-1.5	"D" INLET	500.43	490.80	495.05		552355.8201	1322489.2234		SD - 4.39
I-2.1	"D" INLET	485.87	481.71	481.55		551838.0578	1322787.8878		SD - 4.39
I-2.2	"K" INLET	492.39	484.59	484.66		551882.0742	1322948.0473		SEE DETAIL THIS SHEET
I-2.3	"K" INLET	489.75	486.15	486.15		551800.9195	1323040.7941		SD - 4.36
I-2.4	"D" INLET	491.83	488.05	481.59		551918.3027	1323023.8683		SD - 4.39
I-2.5	"D" INLET	506.11	502.53	502.39		552084.7478	1323109.8338		SD - 4.39
I-3.0	"D" INLET	489.86	486.55	486.51		551886.1023	1322207.8584		SD - 4.39
I-3.1	"K" INLET	493.22	487.27	487.51		551882.3315	1322240.2389		SEE BELOW
MH-2.3	STD. MANHOLE	505.04	487.39	487.34		552352.8910	1322555.2852		G - 5.12
MH-2.2	STD. MANHOLE	492.87	483.77	483.67		552022.1470	1322707.7838		G - 5.12
MH-2.1	STD. MANHOLE	486.57	479.67	479.57		551838.4007	1322788.7478		G - 5.12
HW-11		516.26	513.50						
HW-12		516.72		513.97					
I-1.5	"K" INLET	513.94		511.82		552488.2873	1322653.2909		SD - 5.11
HW-21		488.13	484.65			551891.4722	1323023.3121		SD - 5.11
I-2.5	"K" INLET	509.93		507.65		552120.5874	1323155.3738		
ES-1.2	END SECTION			499.90		552343.8869	1322833.7063		SD - 5.51
ES-2.0	END SECTION			471.27		551489.8233	1322727.8787		SD - 5.51
ES-2.1	END SECTION			479.21		552343.8869	1322833.7063		SD - 5.51
ES-2.2	END SECTION			479.19		551487.1915	1322717.1887		SD - 5.51
ES-3.0	END SECTION	488.80		483.52		551730.4475	1322380.8825		SD - 5.51
S-2.0		481.25		471.00		551484.8899	1322794.8541		SEE DETAIL THIS SHEET 21

\* UNLESS OTHERWISE NOTED, STRUCTURES ARE PUBLIC

\*\* THROAT OPENING

PIPE SCHEDULE (PUBLIC)			
PIPE SIZE (IN.)	CLASS/TYPE	TOTAL LENGTH (FT.)	REMARKS
15	HDPE	246	
18	HDPE	944	
24	HDPE	1153	
18" x 30"	HERCP	70	
18"	ALUM.	48	
24	ALUM.	104	
24	CMP	74	

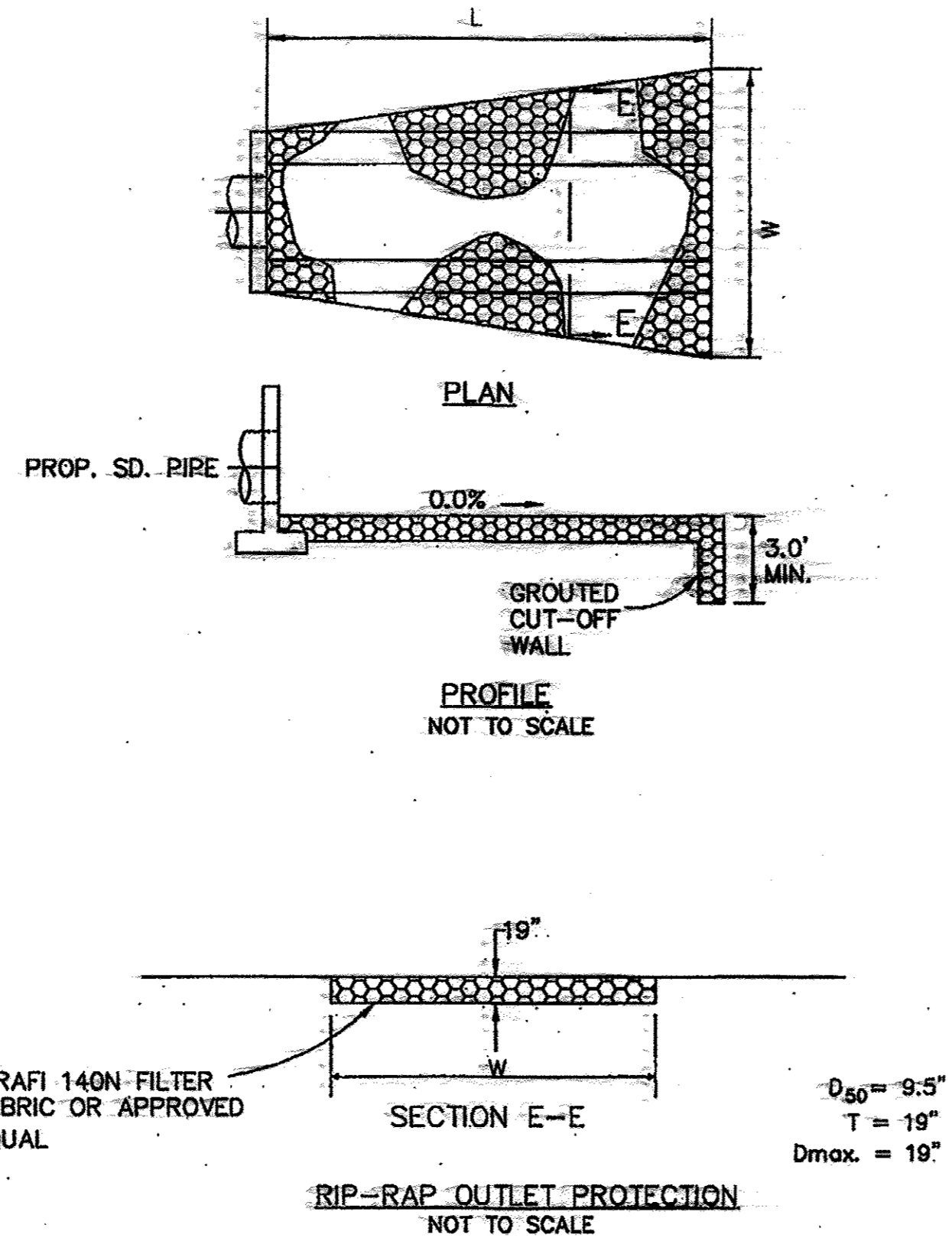
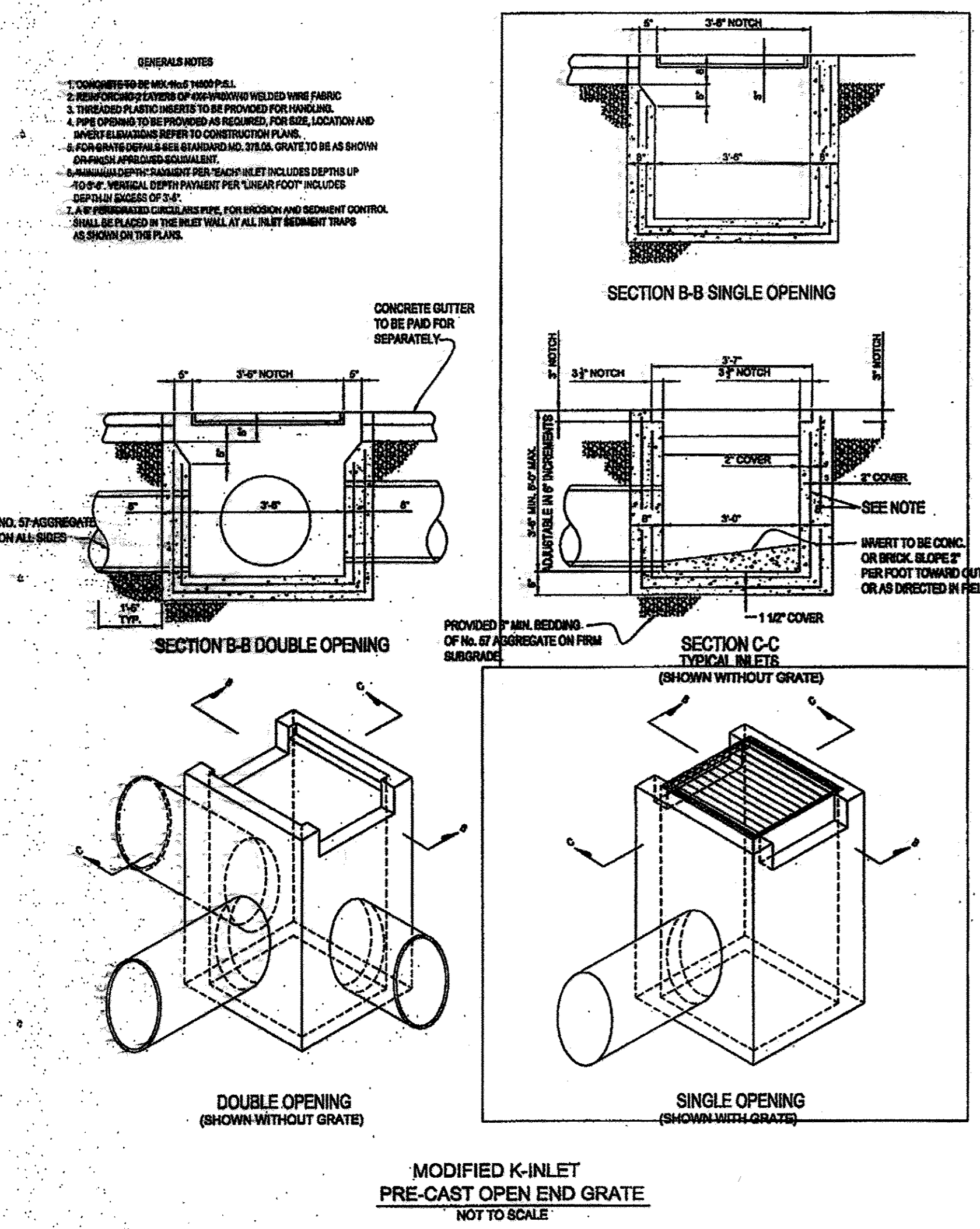
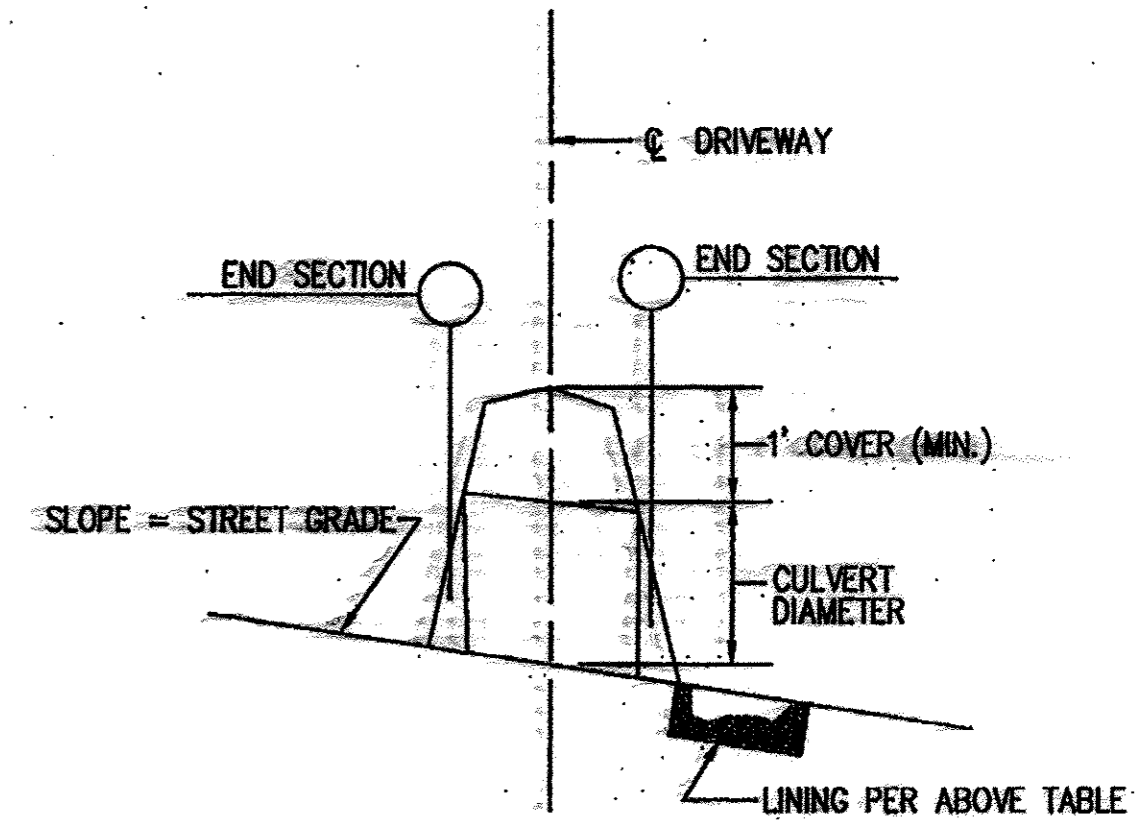
OUTFALL PROTECTION DATA						
OUTFALL	DISCHARGE (CFS)	PIPE DIAMETER (IN)	STONE SIZE - d50 REQUIRED	STONE SIZE - d50 PROVIDED	LENGTH, L (FT)	WIDTH, W (FT)
ES-1.2	14.7	24	3"	6.5"	16	20
ES-2.0	18.42	30	3"	6.5"	14.5	17
ES-2.1	6.81	24	2"	6.5"	13	15
ES-2.2	13.69	30	3"	6.5"	10	16
ES-3.0	1.67	18	2"	6.5"	15	17
HW-11	17.20	18" x 30"		6.5"	13	15

**OUTLET PROTECTION CONSTRUCTION SPECIFICATIONS**

- 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.
- THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.
- GEOTEXTILE SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING. ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY PLACING ANOTHER PIECE OF GEOTEXTILE OVER THE DAMAGE OR BY COMPLETELY REPLACING THE GEOTEXTILE. ALL JOINTS WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEXTILE SHALL BE A MINIMUM OF ONE FOOT.
- 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.
- 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.

DRIVEWAY CULVERT DATA									
LOT NUMBERS	STREET GRADE %	DISCHARGE Q <sub>10</sub> (CFS)	PIPE TYPE/ DIAMETER	PIPE CAPACITY (CFS)	VELOCITY (1) CULVERT TO CH(2) (FPS)	OUTFALL PROTECTION FOR CULVERT AND ROAD SIDE DITCH	REMARKS		
17	8.00	1.80	12" CMP	9.88	6.02 / 3.55	COURSE GRAVEL	Q TO I-2		
18	4.00	1.80	12" CMP	7.13	4.81 / 2.73	COURSE GRAVEL	Q TO I-2		
19	1.00	1.80	12" CMP	3.68	2.48 / 1.88	SOIL STABILIZATION MATTING OVER SEED & MULCH	Q TO I-2		
20	2.00	1.80	12" CMP	6.04	3.47 / 2.21	SOIL STABILIZATION MATTING OVER SEED & MULCH	Q TO I-2		
21	3.53	1.45	12" CMP	8.89	4.82 / 2.57	COURSE GRAVEL	Q TO I-2.2		
22	3.53	2.44	18" CMP	12.14	4.82 / 2.57	COURSE GRAVEL	Q TO I-2.3		

NOTE:  
 1. VELOCITIES DRIVEWAY CULVERTS ARE ASSUMED AS FULL FLOW VELOCITIES BASED ON:  
 a. STREET GRADE = 0  
 b. ASLINED n = 0.015, and  
 c. MANNING EQUATION  
 $V = 1.49 R^{2/3} S^{1/2}$   
 2. DITCH VELOCITIES BASED ON:  
 a. DEPTH OF FLOW = 0.50 D  
 b. AREA OF FLOW = 0.50 D<sup>2</sup>  
 c. FLOW VELOCITY = 0.50 D<sup>1/2</sup>  
 d. HYDRAULIC RADIUS = 0.222 D  
 e. STREET GRADE  
 f. MANNING EQUATION  
 $V = 1.49 R^{2/3} S^{1/2}$   
 FOR n = 0.025 (SOIL, SAND, SOIL LINES)  
 FOR n = 0.015 (COURSE GRAVEL)  
 3. FOR COURSE GRAVEL, d50 = 3/8" STONE



**REVISED FINAL ROAD CONSTRUCTION PLAN**

**PURPOSE OF REVISION TO THIS SHEET**

- TO SHOW STRUCTURE SCHEDULE DUE TO CHANGE IN GRADE

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-28-08.



**DALE THOMPSON**  
 BUILDERS  
 4300 Woodlands Court Suite A  
 Columbia, MD 21045  
 410-292-8726  
 301-566-7281  
 Fax: 410-381-5747

**STORM DRAIN DETAILS**  
**OWINGS PROPERTY, LOT 5**  
 LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & S, AND NON-BUILDABLE BULK PARCEL-H  
 A RESUBDIVISION OF LOT-5 - HARWOOD OWINGS PROPERTY  
 TAX MAP 40, GRID 4, PARCEL 44  
 5TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND.

PROJECT NO. ...  
 SCALE: AS SHOWN  
 DATE: 06/08/08  
 DRAWN BY: AVG  
 CHECKED BY: JHE  
 SHEET: 10 - 30  
 F-06-112

**AS-BUILT CERTIFICATION**  
 I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the Approved Plans and Specifications.  
 Name: SANJAY PATEL  
 P.E. NO. 21042  
 Date: 10/31/16

**ENGINEER'S CERTIFICATE**  
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
 Signature of Engineer: Sanjay Patel  
 DATE: 04/25/2013

**DEVELOPER'S CERTIFICATE**  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERSONNEL ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE REEMED NECESSARY.  
 Signature: William C. McEwee  
 DATE: 7/6/2013  
 SK-HOMES AT HIGHLAND OWINGS, LLC

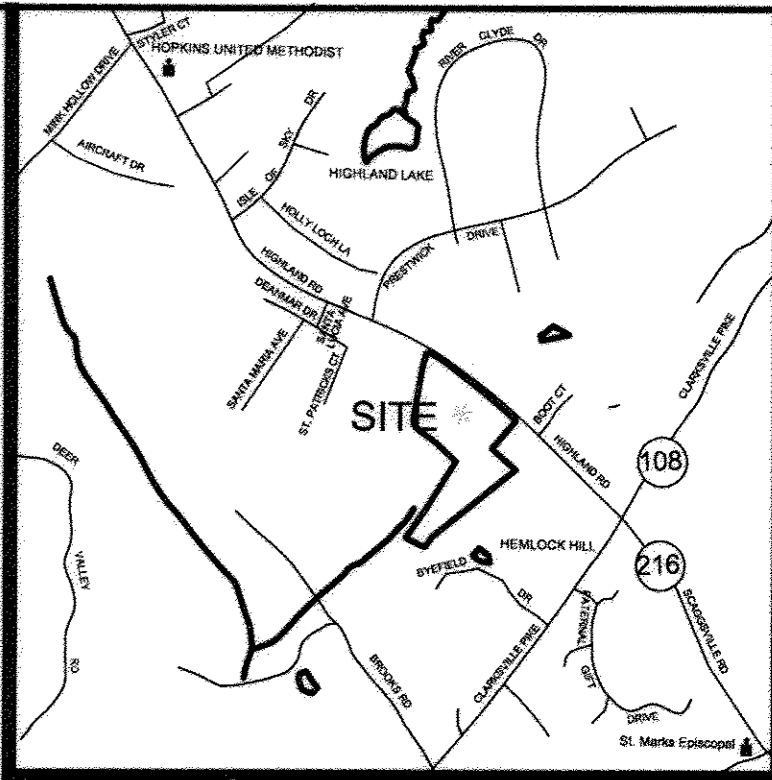
APPROVED: DEPARTMENT OF PUBLIC WORKS  
 Signature: William C. McEwee  
 DATE: 7-22-13  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 Signature: William C. McEwee  
 DATE: 8/15/13  
 CHIEF, DEVELOPMENT-ENGINEERING DIVISION

APPROVED: DIVISION OF LAND DEVELOPMENT  
 Signature: William C. McEwee  
 DATE: 8/26/13  
 CHIEF, DIVISION OF LAND DEVELOPMENT

**OWNER / DEVELOPER**  
 SK-HOMES AT HIGHLAND OWINGS, LLC  
 7090 SAMUEL MORSE DRIVE  
 SUITE 500  
 COLUMBIA, MD 21046  
 301-870-5603





VICINITY MAP  
SCALE: 1"=2000'



PUBLIC 100 YEAR FLOODPLAIN DRAINAGE & UTILITY EASEMENT AREA = 0.21 AC.

- LEGEND:**
- - - - - EXISTING 2 FOOT CONTOURS
  - - - - - EXISTING 10 FOOT CONTOURS
  - — — — — SOIL LINE
  - GIB2 SOIL TYPE
  - — — — — DRAINAGE DIVIDE

**Owings Lot 5 Stream #1**

Cross Section	100-yr Q (cfs)	Ex. Channel Elev.	100-year WSE	E.G. WSE
0+00	197	426.5	428.5	429.49
2+00	197	433.3	435.46	437.00
2+50	197	435.2	437.02	440.57
3+00	197	439.0	441.65	443.02
3+50	197	441.9	443.46	445.69
4+00	197	443.3	446.62	447.42
4+50	197	444.9	447.03	448.87
5+00	197	447.1	449.43	451.18
5+50	197	449.7	451.82	453.83
6+00	197	453.5	454.90	457.70
6+50	197	455.7	458.82	459.61
7+00	197	457.4	459.53	461.03
7+50	197	460.0	462.09	463.91
8+00	197	462.0	464.62	465.66

**Owings Lot 5 Stream #2**

Cross Section	100-yr Q (cfs)	Ex. Channel Elev.	100-year WSE
A	322	419.0	422.73
B	322	425.1	428.22
C	322	428.6	431.27

**HYDROLOGIC TABLE**

INLET NUMBER	AREA (Ac)	% IMP	C FACTOR	C x AREA	TC (Min)	I <sub>10</sub>	DISCHARGE Q <sub>10</sub> (cfs)
I-1.0	1.17	7.6	0.23	0.271	10.7	6.4	1.73
I-1.1	0.36	1.8	0.34	0.124	8.8	7.0	0.86
I-1.2	0.79	15.4	0.27	0.212	5.0	8.5	1.80
I-1.3	0.42	24.5	0.33	0.138	5.0	8.5	1.18
I-1.4	9.56	22.8	0.32	3.053	23.3	4.4	13.56
I-1.5	0.79	10.8	0.33	0.259	5.0	8.5	2.21
I-2.1	1.34	8.4	0.25	0.329	5.0	8.5	2.79
I-2.2	0.67	9.3	0.25	0.168	5.0	8.5	1.43
I-2.3	0.63	40.2	0.46	0.288	5.0	8.5	2.44
I-2.4	1.25	9.9	0.26	0.321	5.0	8.5	2.73
I-2.5	0.44	28.2	0.36	0.157	5.0	8.5	1.33
I-3.0	1.40	8.7	0.22	0.309	15.1	5.43	1.68
I-3.1	0.42	52.5	0.53	0.220	5.0	8.5	1.87
HW-2.1	5.08	9.1	0.22	1.118	11.9	6.02	6.73
I-2.6	1.17	10.6	0.23	0.274	5.0	8.5	2.33

**SOILS LEGEND HOWARD COUNTY**

NON-HYDRIC SOILS LIST	HYDROLOGIC SOIL GROUP
CHB2 CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
GLB2 GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
GLC2 GLENELG LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
EKC2 ELIOAK SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	C
EKB2 ELIOAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
GNB2 GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
ELD3 ELIOAK SILTY CLAY LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	C
HYDRIC SOILS LIST	D
BA BAILE SILT LOAM	D

DESCRIPTION PER HOWARD COUNTY SOIL SURVEY

**ASSOCIATE CERTIFICATION**

I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the Approved Plans and Specifications.

Name: SANJAY PATEL

P.E. NO.: 21042

Date: 10/21/16

**ENGINEER'S CERTIFICATE**

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

Signature: Jose H. Escalante DATE: 06/06/08

SOLE MEMBER RUNNING BROOK, LLC

**DEVELOPER'S CERTIFICATE**

"I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE REEDED NECESSARY."

Signature: Dale Thompson DATE: 06/06/08

PRESIDENT DALE THOMPSON BUILDERS, INC.

APPROVED: DEPARTMENT OF PUBLIC WORKS  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
CHIEF, DIVISION OF LAND DEVELOPMENT

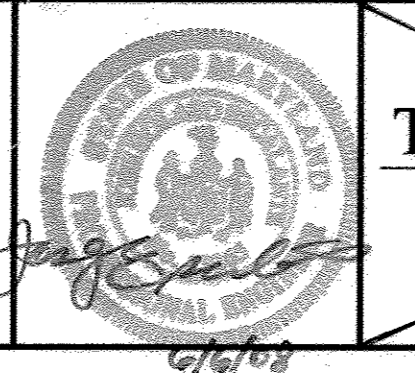
DATE NO. REVISION

**OWNER/DEVELOPER**

SK HOMES AT HIGHLAND OWINGS, LLC  
7060 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD. 21046  
PHONE: 301-870-5603

**"AS-BUILT"**

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-26-08.



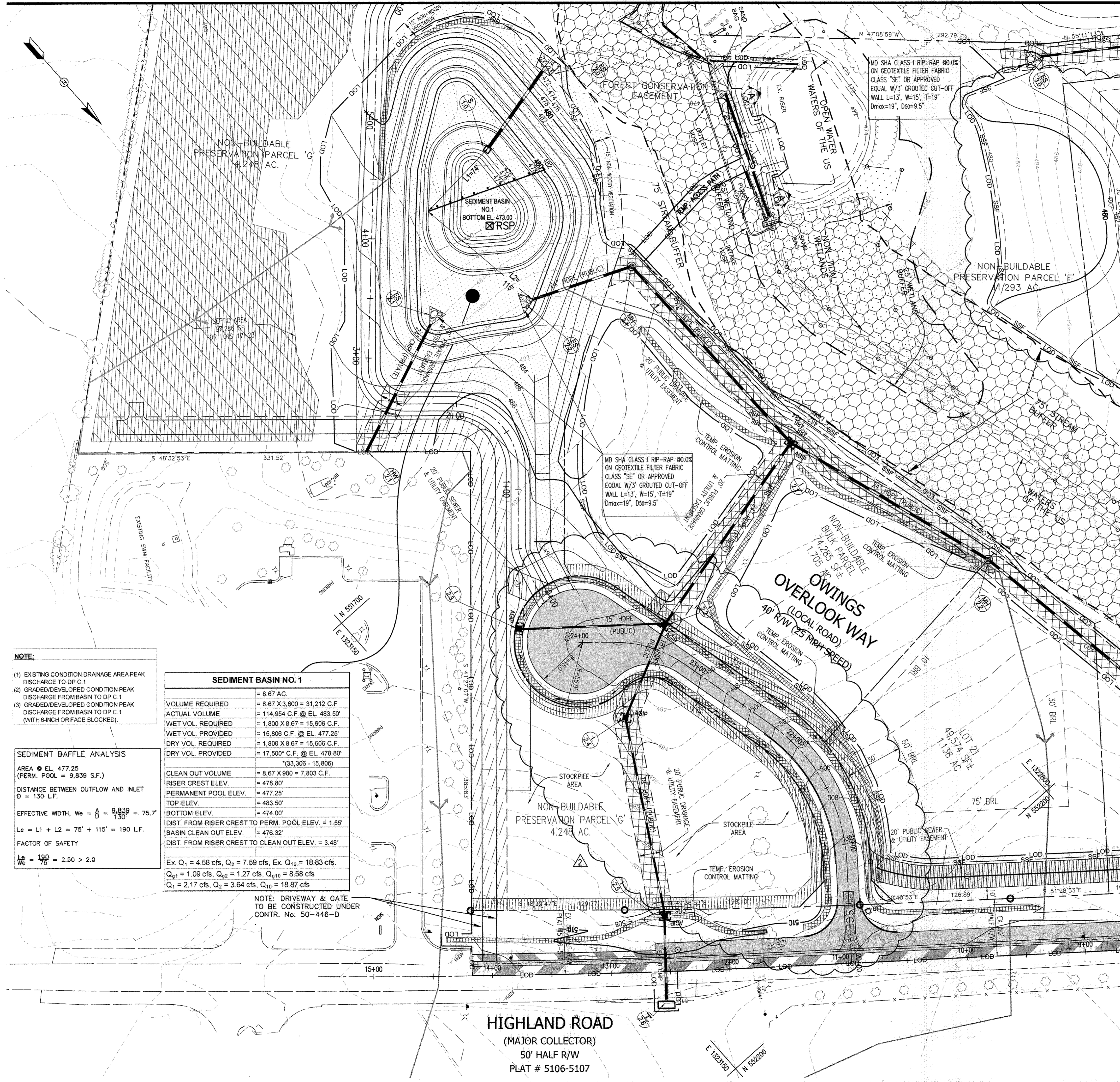
**DALE THOMPSON**  
BUILDERS  
410-995-6736  
301-596-7280  
Fax: 410-381-8747

PROJECT: **STORM DRAIN - DRAINAGE AREA MAP OWINGS PROPERTY, LOT 5**

LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY  
TAX MAP 40, GRID 4, PARCEL 44  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND.

SCALE: 1"=100'  
DATE: 06/06/08  
DRAWN BY: AVG  
CHECKED BY: JHE  
SHEET: 11 - 30





**NOTE:**  
 (1) EXISTING CONDITION DRAINAGE AREA PEAK DISCHARGE TO DP C.1  
 (2) GRADED/DEVELOPED CONDITION PEAK DISCHARGE FROM BASIN TO DP C.1  
 (3) GRADED/DEVELOPED CONDITION PEAK DISCHARGE FROM BASIN TO DP C.1 (WITH 6-INCH ORFACE BLOCKED).

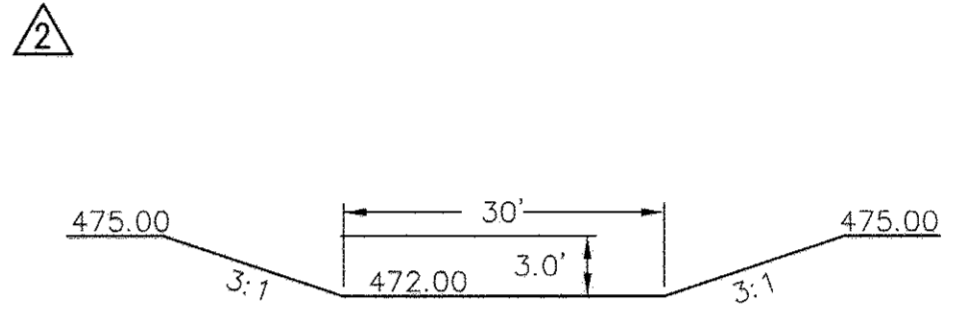
**SEDIMENT BASIN ANALYSIS**  
 AREA @ EL. 477.25 (PERM. POOL = 9,839 S.F.)  
 DISTANCE BETWEEN OUTFLOW AND INLET D = 130 L.F.  
 EFFECTIVE WIDTH,  $W_e = \frac{9,839}{130} = 75.7'$   
 $L_e = L_1 + L_2 = 75' + 115' = 190$  L.F.  
 FACTOR OF SAFETY  
 $\frac{L_e}{W_e} = \frac{190}{75} = 2.50 > 2.0$

SEDIMENT BASIN NO. 1	
VOLUME REQUIRED	= 8.67 AC.
ACTUAL VOLUME	= 8.67 X 3,600 = 31,212 C.F.
WET VOL. REQUIRED	= 1,800 X 8.67 = 15,606 C.F.
WET VOL. PROVIDED	= 15,806 C.F. @ EL. 477.25'
DRY VOL. REQUIRED	= 1,800 X 8.67 = 15,606 C.F.
DRY VOL. PROVIDED	= 17,500* C.F. @ EL. 478.80'
	*(33,306 - 15,806)
CLEAN OUT VOLUME	= 8.67 X 900 = 7,803 C.F.
RISER CREST ELEV.	= 478.80'
PERMANENT POOL ELEV.	= 477.25'
TOP ELEV.	= 483.50'
BOTTOM ELEV.	= 474.00'
DIST. FROM RISER CREST TO PERM. POOL ELEV. = 1.55'	
BASIN CLEAN OUT ELEV.	= 476.32'
DIST. FROM RISER CREST TO CLEAN OUT ELEV. = 3.48'	
Ex. Q <sub>1</sub> = 4.58 cfs, Q <sub>2</sub> = 7.59 cfs, Ex. Q <sub>10</sub> = 18.83 cfs.	
Q <sub>11</sub> = 1.09 cfs, Q <sub>12</sub> = 1.27 cfs, Q <sub>10</sub> = 8.58 cfs	
Q <sub>1</sub> = 2.17 cfs, Q <sub>2</sub> = 3.64 cfs, Q <sub>10</sub> = 18.87 cfs	

NOTE: DRIVEWAY & GATE TO BE CONSTRUCTED UNDER CONTR. No. 50-446-D

**HIGHLAND ROAD**  
 (MAJOR COLLECTOR)  
 50' HALF R/W  
 PLAT # 5106-5107

- NOTE:**  
 1. CONTRACTOR TO REMOVE ANY JUNK, TRASH, DEBRIS AND OTHER NON-NATURAL ITEMS FROM THE FLOODPLAIN, STREAMS, WETLANDS, AND BUFFERS.
- NOTES:**  
 2. TOPOGRAPHY FEATURES, CONTOURS AND ELEVATIONS SHOWN HEREON ARE BASED ON AERIAL PHOTOGRAPHY BY AIR SURVEY PHOTOGRAMMETRIC SERVICES.  
 3. THE BOUNDARY LINES SHOWN HEREON ARE BASED ON A BOUNDARY SURVEY BY DEWBERRY & DAVIS LLC, JANUARY 2002.  
 4. ALL EXISTING WELLS AND SEPTIC AREAS WITHIN 100' OF THE SITE HAVE BEEN SHOWN TO THE BEST OF OUR KNOWLEDGE.  
 5. ALL WELLS TO BE DRILLED PRIOR TO SUBMITTAL OF RECORD PLAT FOR SIGNATURE.  
 6. EXISTING WELLS ON PRESERVATION PARCEL 1 AND 27 TO BE ABANDONED BY A LICENSED WELL DRILLER.  
 7. PERCOLATION PLAT FOR OWING PROPERTY LOT 1 APPROVED ON SEPTEMBER 19, 2002.  
 8. THE LOTS SHOWN HEREON COMPLY WITH THE MINIMUM OWNERSHIP WIDTH AND LOT AREA AS REQUIRED BY THE MARYLAND STATE DEPARTMENT OF THE ENVIRONMENT.  
 9. LOT 3 SHOWN FOR REFERENCE ONLY.



SECTION A-A

**NOTE:**  
 CONTRACTOR TO STABILIZE ALL DISTURBED AREA WITH TYPE-B SOIL STABILIZED MATTING.

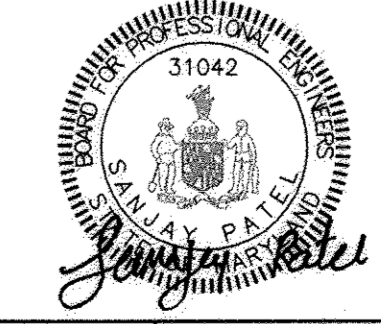
- LEGEND:**
- SCS STABILIZED CONSTRUCTION ENTRANCE
  - SF SILT FENCE
  - SSF SUPER SILT FENCE
  - LOD LIMIT OF DISTURBANCE
  - AGIP AT GRADE INLET PROTECTION
  - DRAINAGE DIVIDE
  - EROSION CONTROL MATTING

**REVISED FINAL ROAD CONSTRUCTION PLAN**  
**PURPOSE OF REVISION TO THIS SHEET**

1. TO SHOW REVISED PROPOSED GRADE

**"AS-BUILT"**

**PROFESSIONAL CERTIFICATION**  
 I, HEREBY CERTIFY THAT THE RED-LINE REVISIONS SHOWN HEREON, INDICATED BY THE SYMBOL AND , WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31042 EXPIRATION DATE: 02/18/15"



**AS-BUILT CERTIFICATION**  
 I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the Approved Plans and Specifications.

Name: SANJAY PATEL  
 P.E. NO.: 31042  
 Date: 10/21/16

THE DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 Signature: John R. ... DATE: 7/6/13  
 DISTRICT HOWARD SOIL CONSERVATION

**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: \_\_\_\_\_ P.E. NO.: \_\_\_\_\_  
 DATE: \_\_\_\_\_

CERTIFY MEANS TO START OR DECLARE A PROFESSIONAL OPINION BASED UPON ON-SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON-SITE INSPECTIONS AND MATERIAL TESTS ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEER'S 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.

**ENGINEER'S CERTIFICATE**  
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

Signature: Sanjay Patel DATE: 04/25/2013  
 SIGNATURE OF ENGINEER

**DEVELOPER'S CERTIFICATE**  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE REEMER NECESSARY.

Signature: William C. ... DATE: 7/6/2013  
 SK HOMES AT HIGHLAND OWINGS, LLC

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 Signature: ... DATE: 7-22-13  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
 Signature: ... DATE: 8/15/13  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

Signature: ... DATE: 8/06/13  
 CHIEF, DIVISION OF LAND DEVELOPMENT

DATE	NO.	REVISION
04/11/12		REVISE GRADES ON OWINGS OVERLOOK WAY.
04/25/13		WEIR GRADING AND PIPE REMOVAL/GROUT AT EXISTING POIND. REVISE GRADES ON OWINGS OVERLOOK WAY, PARCEL F AND LOT 17

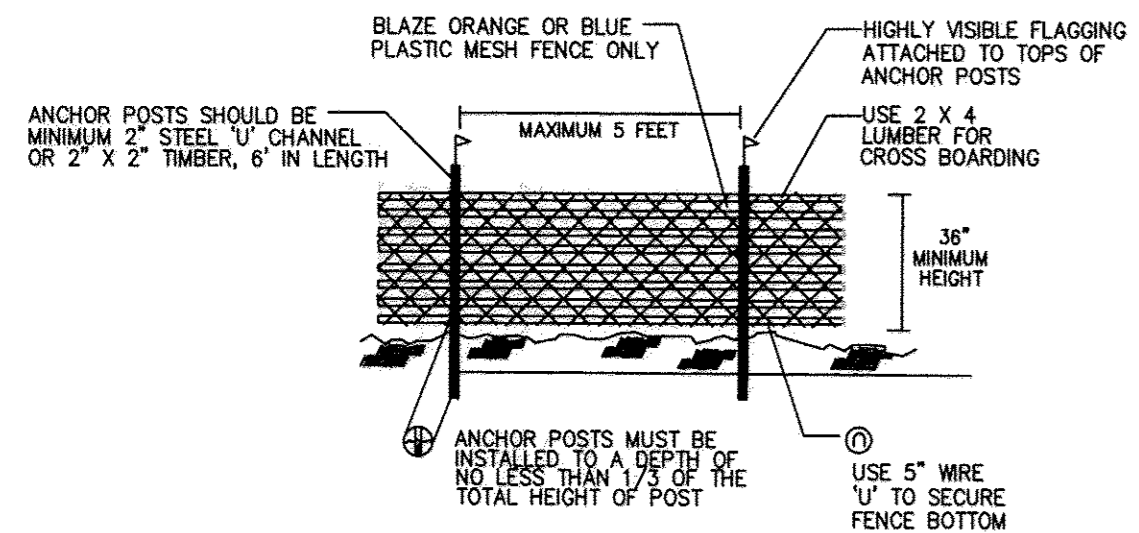
**OWNER / DEVELOPER:**  
 SK HOMES AT HIGHLAND OWINGS, LLC  
 7090 SAMUEL MORSE DRIVE  
 SUITE 500  
 COLUMBIA, MD 21046  
 301-870-5603

**AB CONSULTANTS, INC.**  
 9450 ANNAPOLIS ROAD  
 LANHAM, MARYLAND 20706  
 PHONE: (301) 306-3091  
 FAX: (301) 306-3092

**PROJECT**  
**GRADING, EROSION & SEDIMENT CONTROL PLAN**  
**OWINGS PROPERTY, LOT 5**  
 LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY  
 TAX MAP 40, JRD 4, PARCEL 44  
 5TH DISTRICT HOWARD COUNTY, MARYLAND.

PROJECT NO.: 2011200  
 SCALE: 1"=40'  
 DATE: 06/27/12  
 DRAWN BY: HRP  
 CHECKED BY: SBP  
 SHEET: 12-30

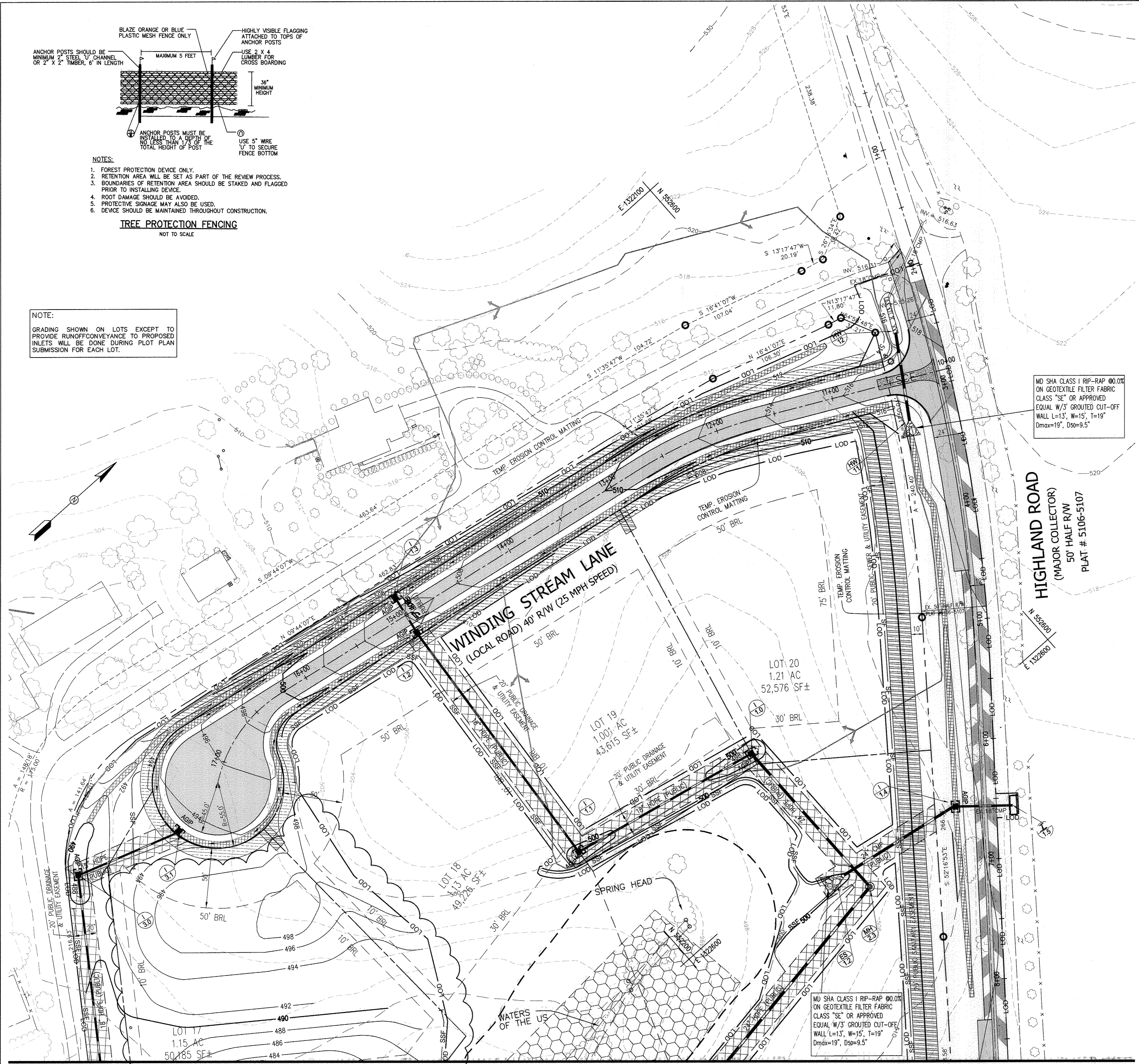




- NOTES:
- FOREST PROTECTION DEVICE ONLY.
  - RETENTION AREA WILL BE SET AS PART OF THE REVIEW PROCESS.
  - BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
  - ROOT DAMAGE SHOULD BE AVOIDED.
  - PROTECTIVE SIGNAGE MAY ALSO BE USED.
  - DEVICE SHOULD BE MAINTAINED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

**TREE PROTECTION FENCING**  
NOT TO SCALE

NOTE:  
GRADING SHOWN ON LOTS EXCEPT TO PROVIDE RUNOFF/CONVEYANCE TO PROPOSED INLETS WILL BE DONE DURING PLOT PLAN SUBMISSION FOR EACH LOT.



**LEGEND:**

- SCE STABILIZED CONSTRUCTION ENTRANCE
- SF SILT FENCE
- SSF SUPER SILT FENCE
- LOD LIMIT OF DISTURBANCE
- AGIP AT GRADE INLET PROTECTION
- DRAINAGE DIVIDE
- EROSION CONTROL MATTING

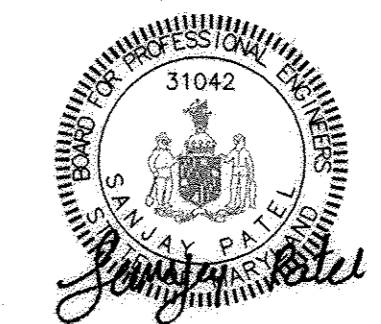
**REVISED FINAL ROAD CONSTRUCTION PLAN**

**PURPOSE OF REVISION TO THIS SHEET**

- TO SHOW REVISED PROPOSED GRADE
- REVISED LOCATION OF LOD AND SUPER SILT FENCE / SILT FENCE TO INCLUDE FORCE MAIN CONSTRUCTION AREA

**PROFESSIONAL CERTIFICATION**

"I HEREBY CERTIFY THAT THE RED-LINE REVISIONS SHOWN HEREON, INDICATED BY THE SYMBOL AND , WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31042 EXPIRATION DATE: 02/18/15"



**AB CONSULTANTS, INC.**  
9450 ANNAPOLIS ROAD  
LANHAM, MARYLAND 20706  
PHONE: (301) 306-3091  
FAX: (301) 306-3092

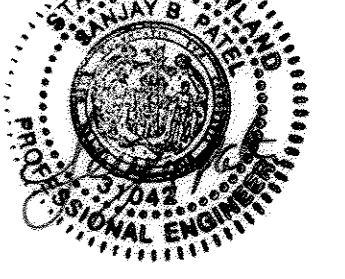
**PROJECT**  
GRADING, EROSION & SEDIMENT CONTROL PLAN  
**OWINGS PROPERTY, LOT 5**  
LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY TAX MAP 40, GRID 4, PARCEL 44 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.

PROJECT NO. 2011200  
SCALE: 1"=40'  
DATE: 06/27/12  
DRAWN BY: HRP  
CHECKED BY: SBP  
SHEET: 13-30

**AS-BUILT CERTIFICATION**

I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the approved Plans and Specifications.

Name: SANJAY PATEL  
P.E. NO. 31042  
Date: 10/31/16



**"AS-BUILT"**

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

John P. Roberts 7/4/13  
DISTRICT HOWARD SOIL CONSERVATION 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 AND SPECIFICATIONS."

SIGNATURE \_\_\_\_\_ P.E. NO. \_\_\_\_\_  
DATE \_\_\_\_\_

CERTIFY MEANS TO START OR DECLARE A PROFESSIONAL OPINION BASED UPON ON SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON SITE INSPECTIONS AND MATERIAL TEST ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEERS 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.

**ENGINEER'S CERTIFICATE**

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

Sanjay Patel 04/25/2013  
SIGNATURE OF ENGINEER DATE

**DEVELOPER'S CERTIFICATE**

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

William C. McInerney 7/6/2013  
SK HOMES AT HIGHLAND OWINGS, LLC DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS

W. R. Smith 7-22-13  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[Signature] 6/15/13  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

K. L. [Signature] 8/26/13  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION
04/11/12		REVISE GRADES ON WINDING STREAM LANE
04/25/13		REVISE GRADES ON LOTS 17 AND 18

OWNER / DEVELOPER:  
SK HOMES AT HIGHLAND OWINGS, LLC  
7090 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD 21046  
301-870-5603

MATCH LINE A-A, SEE SHEET 12 OF 30

CONTACT: SANJAY PATEL PHONE: (301)-306-3091 x21



**OWINGS LOT 5 STREAM #1**

CROSS SECTION	100-YR Q (cfs)	EX. CHANNEL ELEV.	100-YR WSE	E.O. WSE
0+00	197	426.5	428.5	429.49
2+00	197	433.3	435.46	437.00
2+50	197	435.2	437.02	440.57
3+00	197	439.0	441.65	443.02
3+50	197	441.9	443.46	445.69
4+00	197	443.3	446.62	447.42
4+50	197	449.9	447.03	448.87
5+00	197	447.1	449.43	451.18
5+50	197	449.7	451.82	453.83
6+00	197	453.5	454.90	457.70
6+50	197	455.7	458.82	459.61
7+00	197	457.4	459.53	461.03
7+50	197	460.0	462.09	463.91
8+00	197	462.0	464.62	465.66

**OWINGS LOT 5 STREAM #2**

CROSS SECTION	100-YR Q (cfs)	EX. CHANNEL ELEV.	100-YR WSE
A	322	419.0	422.73
B	322	425.1	428.22
C	322	428.6	431.27

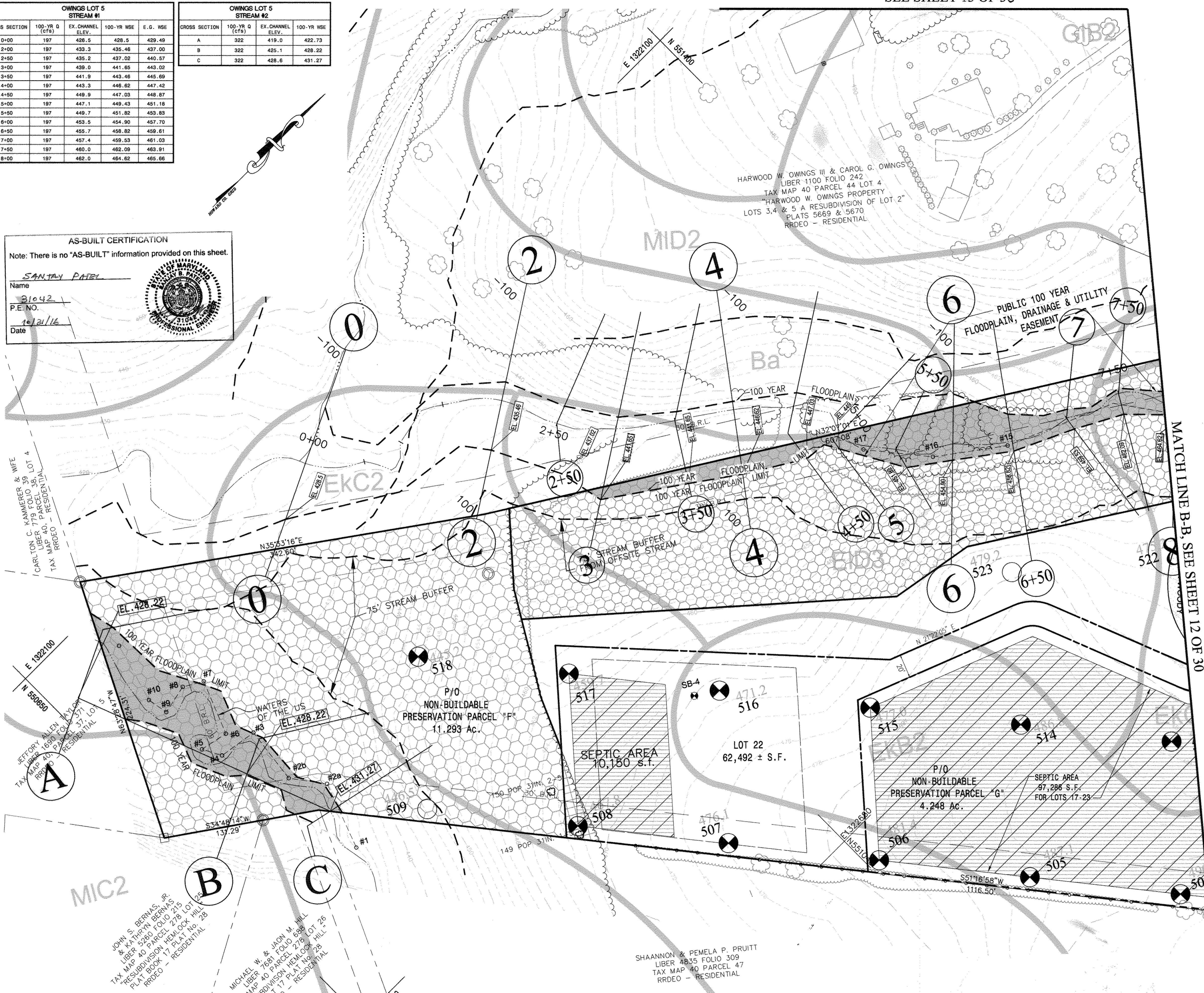
**LEGEND**

- PROPOSED CONTOUR
- LIMIT OF DISTURBANCE
- SUPER SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- MEDIAN INLET PROTECTION
- DRAINAGE DIVIDE
- FOREST CONSERVATION EASEMENT
- PROPOSED SHARED SEPTIC AREA
- EXISTING 15-24.9% SLOPES
- EXISTING 25% AND GREATER SLOPES
- SOILS LINE
- 1.5" MILL AND OVERLAY

NOTE: GRADING SHOWN ON LOTS EXCEPT TO PROVIDE RUNOFF CONVEYANCE TO PROPOSED INLETS WILL BE DONE DURING PLOT PLAN SUBMISSION FOR EACH LOT.

**AS-BUILT CERTIFICATION**  
 Note: There is no "AS-BUILT" information provided on this sheet.

Name: SANTAY PATRI  
 P.E. NO.: 31042  
 Date: 10/21/16



THE DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 DATE: 6/23/08

**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.

P.E. NO. \_\_\_\_\_  
 SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

CERTIFY MEANS TO START OR DECLARE A PROFESSIONAL OPINION BASED UPON ON SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON SITE INSPECTIONS AND MATERIAL TEST ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEERS 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.

**ENGINEER'S CERTIFICATE**  
 I HEREBY CERTIFY THAT THIS PLAN FOR POND CONSTRUCTION, 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. I HAVE NOTIFIED THE DEVELOPER THAT HE/SHE MUST ENGAGE A REGISTERED PROFESSIONAL ENGINEER TO SUPERVISE THE POND CONSTRUCTION AND PROVIDE THE HOWARD SOIL CONSERVATION DISTRICT WITH AN "AS-BUILT" PLAN OF THE POND WITHIN 30 DAYS OF COMPLETION.  
 SIGNATURE OF ENGINEER: Jose H. Escalante DATE: 06/06/08

**DEVELOPER'S CERTIFICATE**  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDING TO THIS PLAN OF DEVELOPMENT FOR SEDIMENT AND EROSION CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL BE 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 INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 PRESIDENT DALE THOMPSON BUILDERS, INC. DATE: 06/06/08  
 SOLE MEMBER RUNNING BROOK, LLC

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 CHIEF, BUREAU OF HIGHWAYS DATE: 7-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 4 DATE: 7/2/08  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE: 7/6/08

DATE	NO.	REVISION

OWNER / DEVELOPER  
**SK HOMES AT HIGHLAND OWINGS, LLC**  
 7060 SAMUEL MORSE DRIVE  
 SUITE 500  
 COLUMBIA, MD. 21046  
 PHONE: 301-870-5603

**"AS-BUILT"**

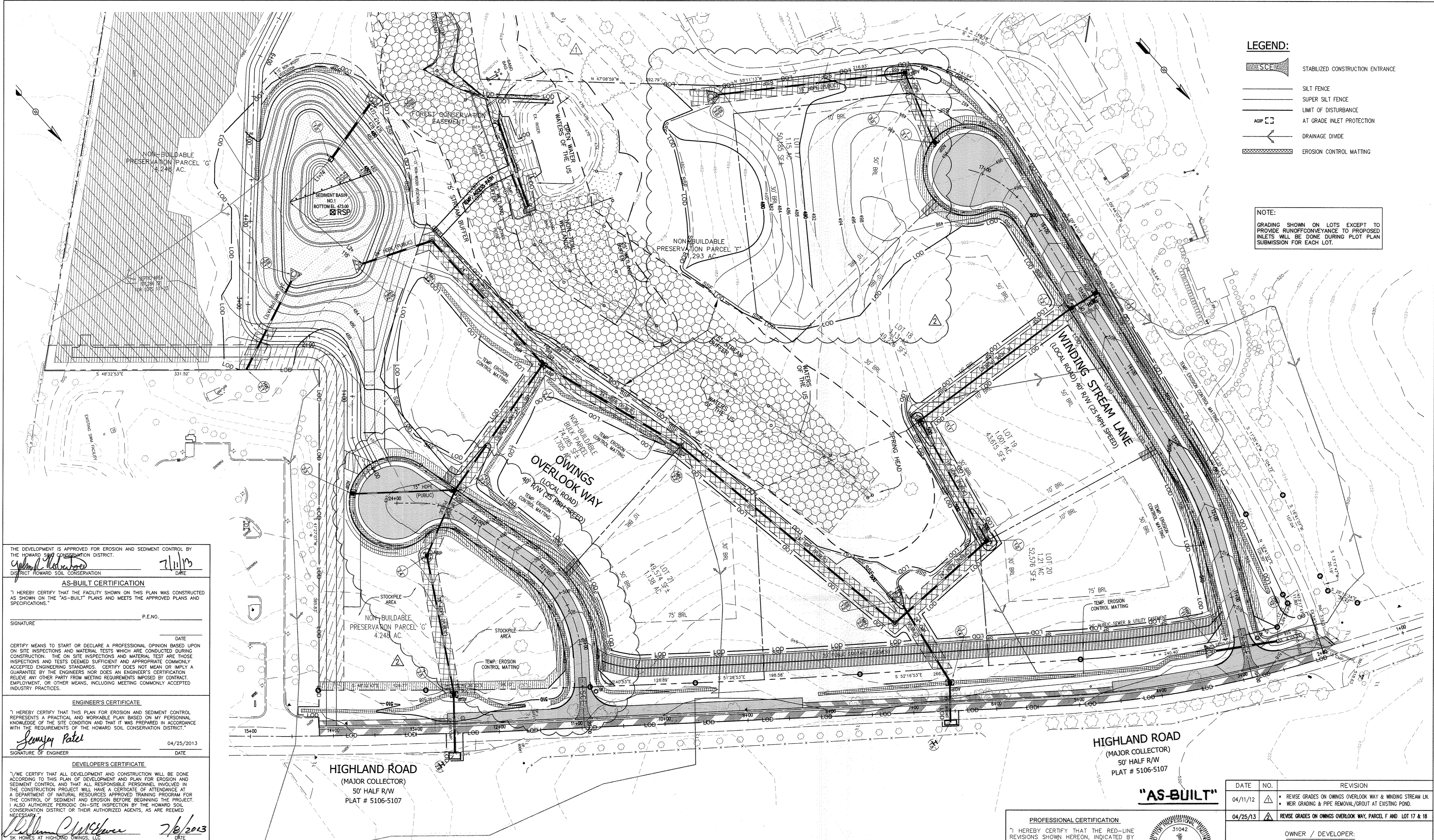
I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-26-08.

**DALE THOMPSON**  
 BUILDERS  
 6300 Woodbridge Court Suite A  
 Columbia, MD 21045  
 410-955-6736  
 301-596-7280  
 Fax: 410-381-8747

PROJECT: GRADING, SEDIMENT & EROSION CONTROL PLAN  
**OWINGS PROPERTY, LOT 5**  
 LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H  
 A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY  
 TAX MAP 40, GRID #, PARCEL 44  
 5TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND.

PROJECT NO. \_\_\_\_\_  
 SCALE: 1"=40'  
 DATE: 06/06/08  
 DRAWN BY: AVG  
 CHECKED BY: JHE  
 SHEET: 14-30





THE DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*Upward* 7/1/13  
 DISTRICT HOWARD SOIL CONSERVATION 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 AND SPECIFICATIONS.  
 P.E. NO. \_\_\_\_\_  
 SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

CERTIFY MEANS TO START OR DECLARE A PROFESSIONAL OPINION BASED UPON ON SITE INSPECTIONS AND MATERIAL TESTS WHICH ARE CONDUCTED DURING CONSTRUCTION. THE ON SITE INSPECTIONS AND MATERIAL TEST ARE THOSE INSPECTIONS AND TESTS DEEMED SUFFICIENT AND APPROPRIATE COMMONLY ACCEPTED ENGINEERING STANDARDS. CERTIFY DOES NOT MEAN OR IMPLY A GUARANTEE BY THE ENGINEERS 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.

**ENGINEER'S CERTIFICATE**  
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
*Sanjay Patel* 04/25/2013  
 SIGNATURE OF ENGINEER DATE

**DEVELOPER'S CERTIFICATE**  
 I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE REEMED NECESSARY.  
*William C. McPherson* 7/8/2013  
 SK HOMES AT HIGHLAND OWINGS, LLC DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*W. J. Wall* 7-22-13  
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*W. J. Wall* 8/17/13  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE  
*W. J. Wall* 8/16/13  
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

**AS-BUILT CERTIFICATION**  
 I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the Approved Plans and Specifications.  
 Name: SANJAY PATEL  
 P.E. NO.: 31042  
 Date: 10/31/16

**REVISED FINAL ROAD CONSTRUCTION PLAN**

**PURPOSE OF REVISION TO THIS SHEET**  
 1. TO SHOW REVISED PROPOSED GRADING

**PROFESSIONAL CERTIFICATION**  
 I HEREBY CERTIFY THAT THE RED-LINE REVISIONS SHOWN HEREON, INDICATED BY THE SYMBOL AND , WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31042 EXPIRATION DATE: 02/18/15"  
  
 PROJECT: GRADING, EROSION & SEDIMENT CONTROL SCHEMATIC

**AB CONSULTANTS, INC.**  
 9450 ANNAPOLIS ROAD  
 LANHAM, MARYLAND 20706  
 PHONE: (301) 306-3091  
 FAX: (301) 306-3092  
 CONTACT: SANJAY PATEL PHONE: (301)-306-3091 #21

DATE	NO.	REVISION
04/11/12		REVISE GRADES ON OWINGS OVERLOOK WAY & WINDING STREAM LANE. WEIR GRADING & PIPE REMOVAL/GROUT AT EXISTING POND.
04/25/13		REVISE GRADES ON OWINGS OVERLOOK WAY, PARCEL F AND LOT 17 & 18

OWNER / DEVELOPER:  
 SK HOMES AT HIGHLAND OWINGS, LLC  
 7090 SAMUEL MORSE DRIVE  
 SUITE 500  
 COLUMBIA, MD 21046  
 301-870-5603

**OWINGS PROPERTY, LOT 5**  
 LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY TAX MAP 40, GRID 4, PARCEL 44 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.  
 PROJECT NO. 2011200  
 SCALE: 1"=50'  
 DATE: 06/27/12  
 DRAWN BY: HRP  
 CHECKED BY: SBP  
 SHEET: 15-30



B-4 STANDARDS AND SPECIFICATIONS

FOR VEGETATIVE STABILIZATION

Definition: Using vegetation as cover to protect exposed soil from erosion. Purpose: To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies: On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization, soil preparation, soil amendments, topsoiling, seeding and mulching, temporary stabilization, and permanent stabilization.

Effects on Water Quality and Quantity

Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, and groundwater recharge.

Adequate Vegetative Establishment

Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

- 1. Adequate vegetative stabilization requires 95 percent groundcover. 2. If an area has less than 40 percent groundcover, reestablish following the original recommendations for time, fertilizer, seedbed preparation, and seeding. 3. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified. 4. Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

B.9

B-4.2 STANDARDS AND SPECIFICATIONS

FOR SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition: The process of preparing the soils to sustain adequate vegetative stabilization. Purpose: To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies: Where vegetative stabilization is to be established. Criteria: A. Soil Preparation 1. Temporary Stabilization a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment.

2. Permanent Stabilization a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are: i. Soil pH between 6.0 and 7.0. ii. Soluble salts less than 500 parts per million (ppm).

b. Drill or Outpacker Seeding: Mechanized seeders that apply and cover seed with soil. c. Topsoiling: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer). d. Application of amendments or topsoil is required on site soils that do not meet the above criteria.

B.12

B-4.1 STANDARDS AND SPECIFICATIONS

FOR INCREMENTAL STABILIZATION

Definition: Establishment of vegetative cover on cut and fill slopes. Purpose: To provide timely vegetative cover on cut and fill slopes as work progresses. Conditions Where Practice Applies: Any cut or fill slope greater than 15 feet in height.

Criteria

- A. Incremental Stabilization - Cut Slopes 1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. 2. Construction sequence example (Refer to Figure B.1): a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation. b. Perform Phase 1 excavation, prepare seedbed, and stabilize. c. Perform Phase 2 excavation, prepare seedbed, and stabilize. d. Perform final phase excavation, prepare seedbed, and stabilize.

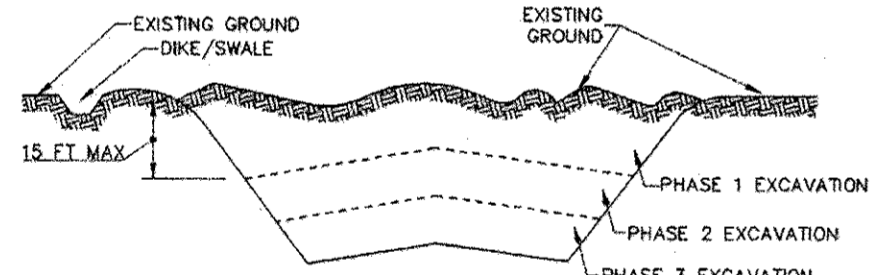


Figure B.1: Incremental Stabilization - Cut

B.10

- B. Incremental Stabilization - Fill Slopes 1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. 2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans. 3. At the end of each day, install temporary water conveyance practices, as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner. 4. Construction sequence example (Refer to Figure B.2): a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. b. At the end of each day, install temporary water conveyance practices, as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner. c. Place Phase 1 fill, prepare seedbed, and stabilize. d. Place Phase 2 fill, prepare seedbed, and stabilize. e. Place final phase fill, prepare seedbed, and stabilize.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

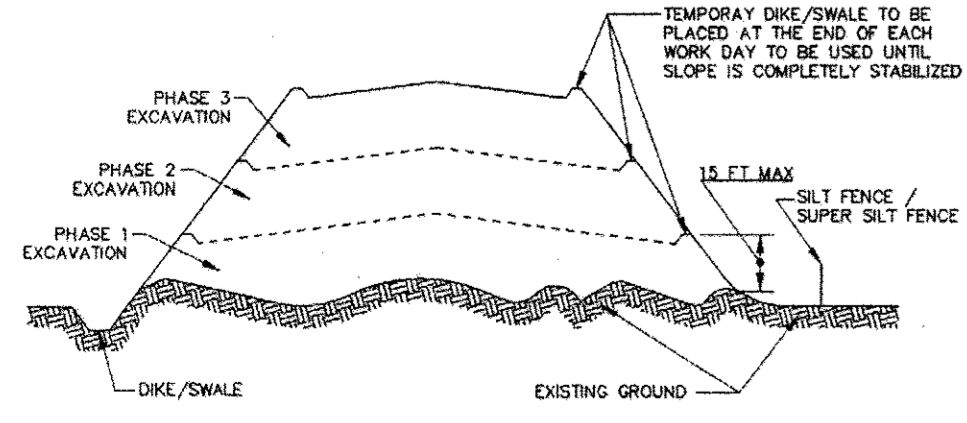


Figure B.2: Incremental Stabilization - Fill

B.11

B-4.3 STANDARDS AND SPECIFICATIONS

FOR SEEDING AND MULCHING

Definition: The application of seed and mulch to establish vegetative cover. Purpose: To protect disturbed soils from erosion during and at the end of construction. Conditions Where Practice Applies: To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria: A. Seeding 1. Specifications a. All seed must meet the requirements of the Maryland State Seed Law.

2. Application i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1. ii. Apply seed in two directions, perpendicular to each other. iii. Mix seed and fertilizer on site and seed immediately and without interruption.

B.15

B-4.4 STANDARDS AND SPECIFICATIONS

FOR TEMPORARY STABILIZATION

Definition: To stabilize disturbed soils with vegetation for up to 6 months. Purpose: To use fast growing vegetation that provides cover on disturbed soils. Conditions Where Practice Applies: Exposed soils where ground cover is needed for a period of 6 months or less.

Criteria: 1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3).

2. For sites having soil tests performed, use and show the recommended rates by the testing agency. 3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4.3.A.1.b and maintain until the next seeding season.

Table with 5 columns: No., Species, Application Rate (lb/ac), Seeding Dates, Seeding Depth, Fertilizer Rate (lb/1000 sq ft), and Lime Rate. Rows include BARLEY, OATS, and CORN RYE.

B.18

B-4.5 STANDARDS AND SPECIFICATIONS

FOR PERMANENT STABILIZATION

Definition: To stabilize disturbed soils with permanent vegetation. Purpose: To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils. Conditions Where Practice Applies: Exposed soils where ground cover is needed for 6 months or more.

Criteria: A. Seed Mixtures 1. General Use a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3).

2. Turfgrass Mixtures a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance. b. Select one or more of the species or mixtures listed below based on the site conditions or purpose.

3. Anchoring a. Apply mulch to all seeded areas immediately after seeding. b. Uniform mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a minimum loose depth of 1 to 2 inches.

4. Ideal Times of Seeding for Turf Grass Mixtures Western MD: March 15 to June 1, August 1 to October 1. Central MD: March 1 to May 15, August 15 to October 15. Southern MD: Eastern Shore: March 1 to May 15, August 15 to October 15.

5. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed.

6. If soil moisture is deficient, apply seedings with adequate water for plant growth (1 to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established.

Permanent Seeding Summary table with columns for Hardiness Zone, Species, Application Rate, Seeding Dates, Seeding Depth, Fertilizer Rate (N, P2O5, K2O), and Lime Rate.

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

- 1. General Specifications a. Class of turfgrass seed must be Maryland State Certified. b. Seed must be machine cut at a uniform soil thickness of 1/4 inch, plus or minus 1/8 inch.

- 2. Sod Installation a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the sods immediately prior to laying the sod. b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other.

- 3. Sod Maintenance a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. b. After the first week, sod watering is required as necessary to maintain adequate moisture content.

HOWARD SOIL CONSERVATION DISTRICT STANDARD SEDIMENT CONTROL NOTES

- 1. A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits. 2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

- 3. Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within: a) 3 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 7 days 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.

- 7. Site Analysis: Total Area of Site: 25.63 Acres. Area Disturbed: 8.58 to 10.06 Acres. Area to be roofed or paved: 2.32 Acres. Area to be vegetatively stabilized: 3.35 Acres. Total Cut: 4,000 Cu. Yards. Total Fill: 4,000 Cu. Yards. Off site waste/borrow area location: 0.

- 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.

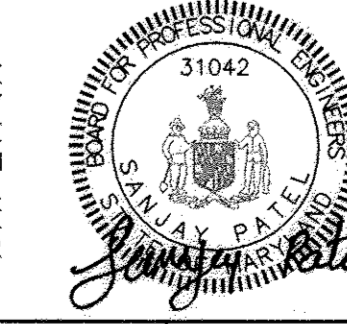
- 11. Trenches for the construction of utilities is limited to three pipe lengths or that which shall be back-filled and stabilized by the end of each work day, whichever is shorter.

REVISED FINAL ROAD CONSTRUCTION PLAN PURPOSE OF REVISION TO THIS SHEET

- 1. TO SHOW REVISED SEQUENCE OF CONSTRUCTION & SITE ANALYSIS 2. REVISED EROSION AND SEDIMENT CONTROL NOTED BASED ON 2011 MARYLAND STANDARD AND SPECIFICATIONS FOR E&S CONTROL

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THE RED-LINE REVISIONS SHOWN HEREON, INDICATED BY THE SYMBOL AND WERE PREPARED OR APPROVED BY ME, AND I AM A QUALIFIED LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31042 EXPIRATION DATE: 02/18/15"



SEQUENCE OF CONSTRUCTION

- 1. OBTAIN A GRADING PERMIT. 2. NOTIFY "MISS UTILITY" AT 1-800-257-7777, AT LEAST 48 HOURS BEFORE BEGINNING ANY WORK. 3. INSTALL STABILIZED CONSTRUCTION ENTRANCE, SILT FENCE, SUPER SILT FENCE, AND OTHER SEDIMENT CONTROL DEVICES. 4. CLEAR AND GRUB AREA EAST OF WINDING STREAM LANE, STORM DRAIN FROM HW-12 TO HW-11 AND HW-11 TO ES-1.2, INCLUDING OUTFALL PROTECTION, AFTER SWALE AND STORM DRAINS ARE CONTRACTOR STABILIZED. 5. INSTALL PRESSURE SEWER PIPES ALONG WINDING STREAM LANE, AT HIGH ROAD AND OWINGS OVERLOOK WAY.

NOTE: CONTRACTOR TO CUT AND BURY EXISTING CAST IRON PIPE OUTFALL

"AS-BUILT"

THE DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT. DATE: 7/6/13

ENGINEER'S CERTIFICATE: I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER'S CERTIFICATE: I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

APPROVED: DEPARTMENT OF PUBLIC WORKS. Chief, Bureau of Highways: 7-22-13

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. Chief, Development Engineering Division: 8/5/13

APPROVED: SANJAY PATEL, P.E. 31042. Date: 10/21/16

REVISION NOTES BASED ON 2011 STANDARD. DATE: 08/16/12. REVISION: REVISE SITE ANALYSIS QUANTITIES AND SEQUENCE OF CONSTRUCTION.

OWNER / DEVELOPER: SK HOMES AT HIGHLAND OWINGS, LLC. 7090 SAMUEL MORSE DRIVE, SUITE 500, COLUMBIA, MD 21046, 301-870-5603

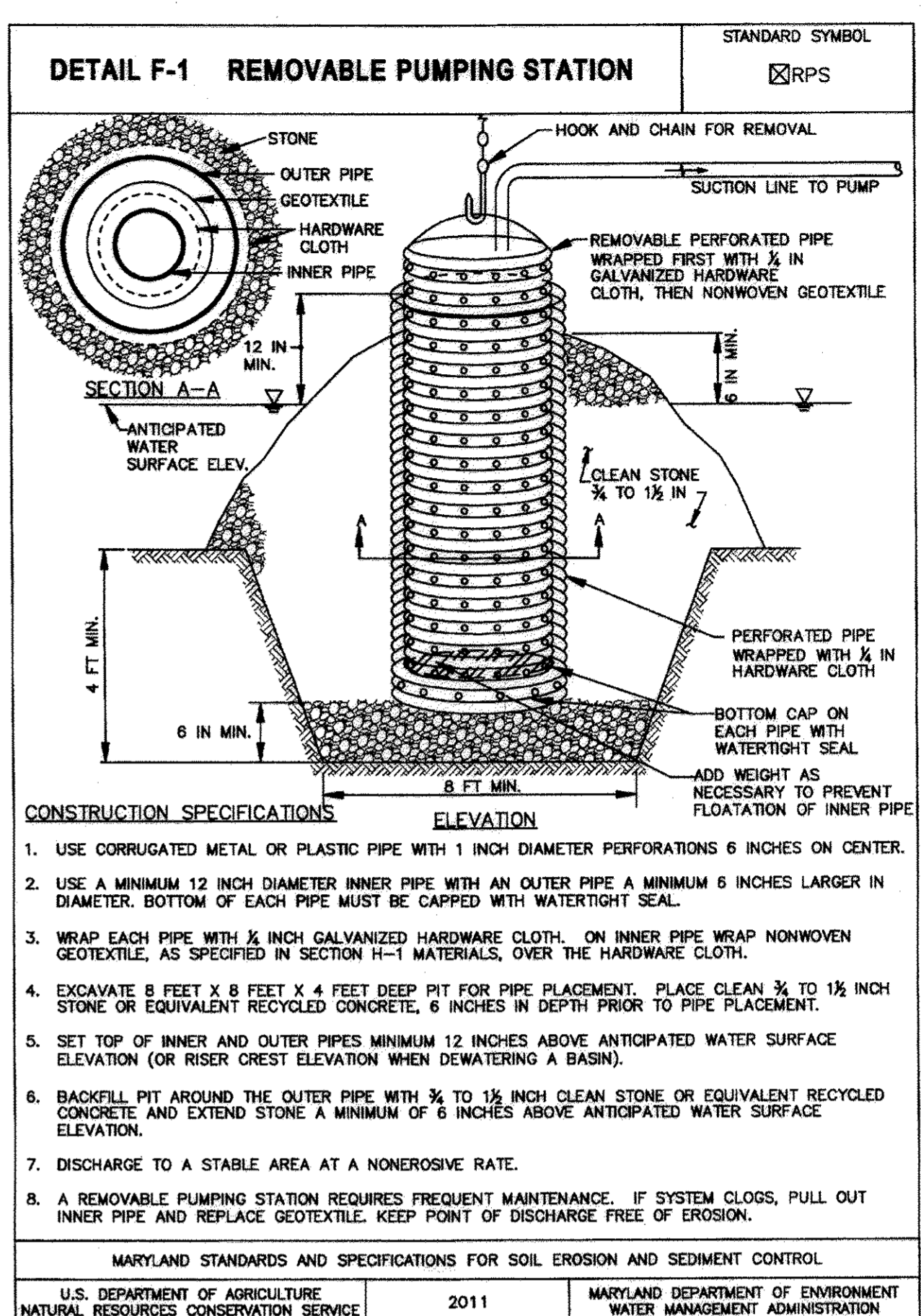
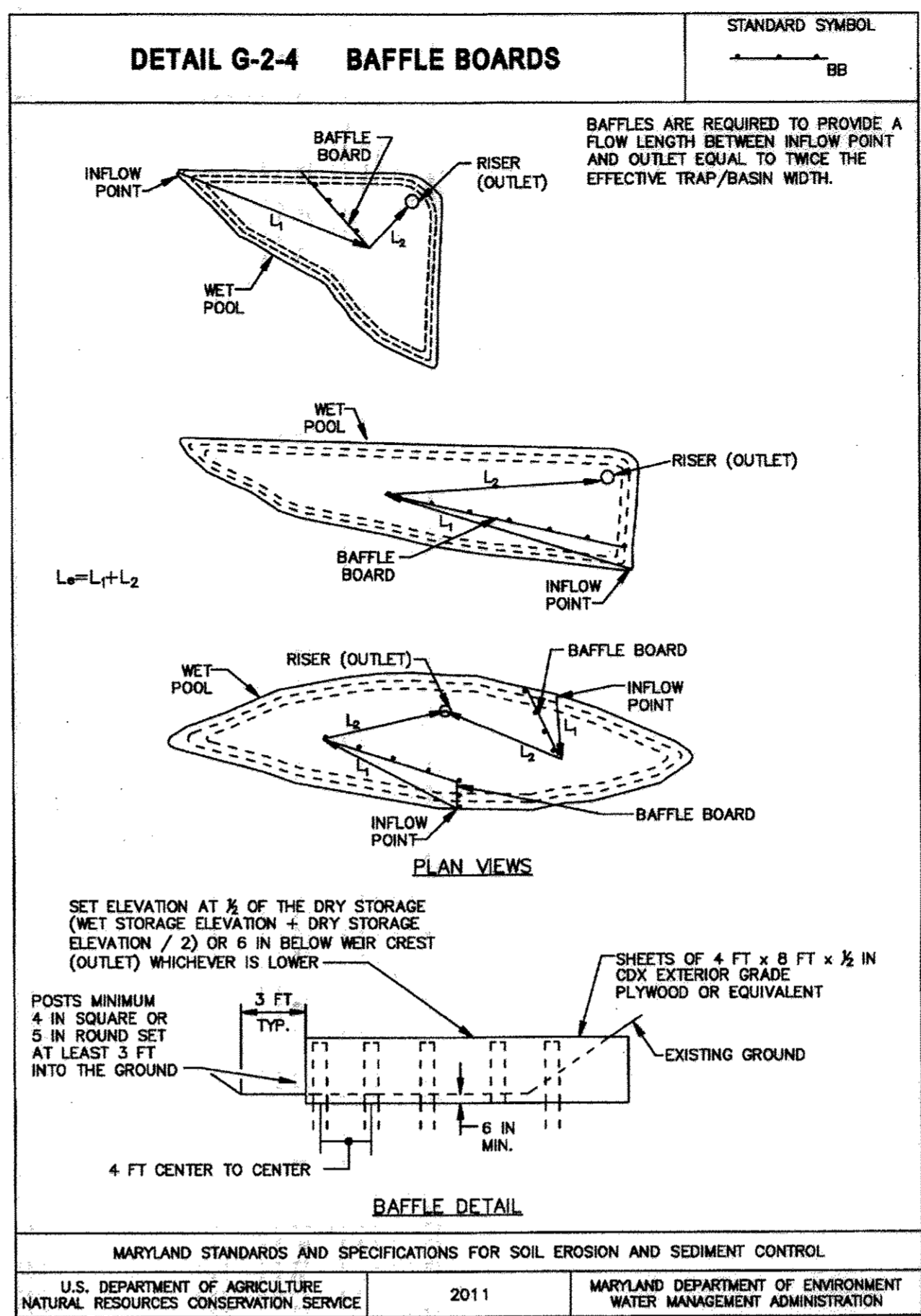
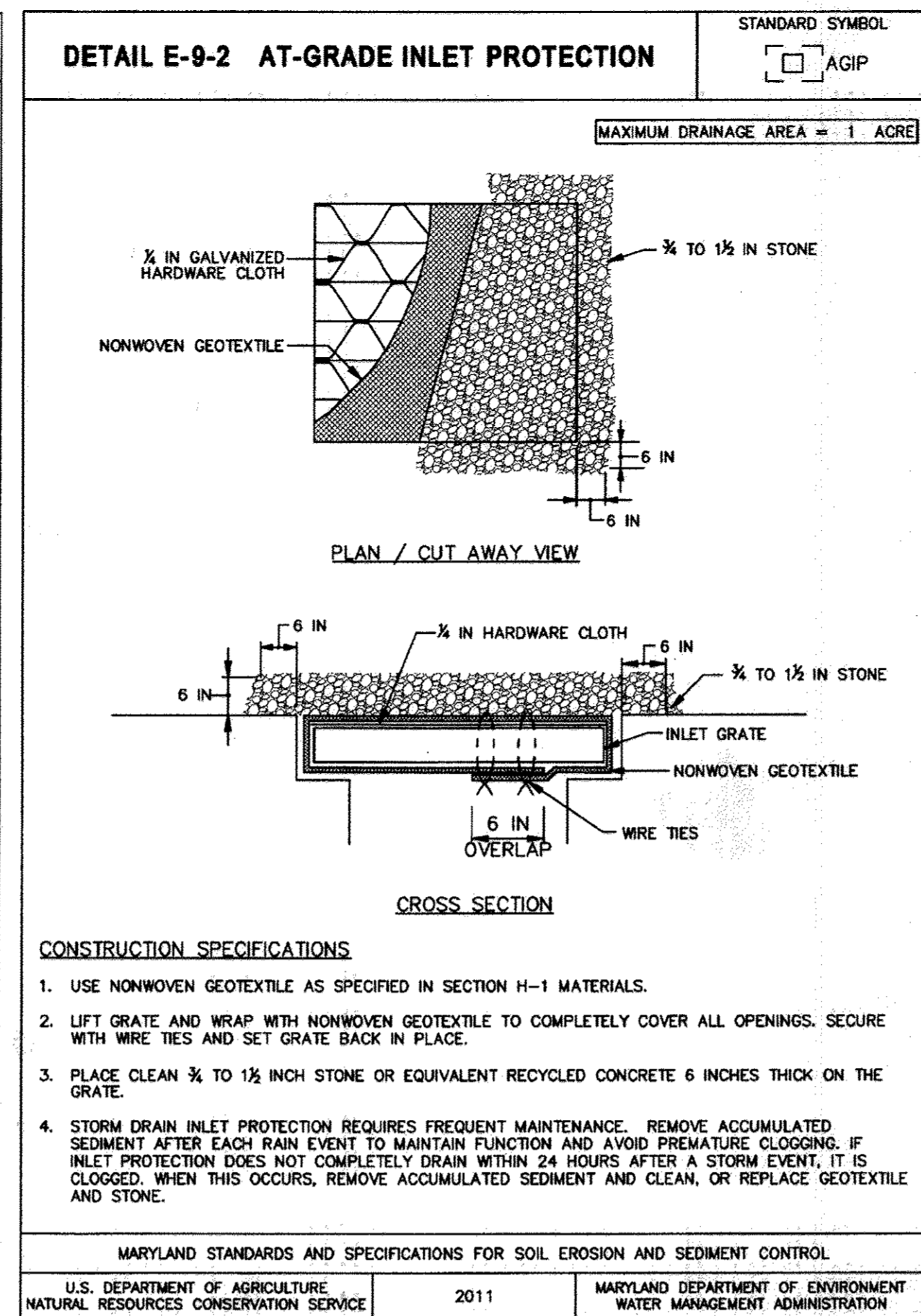
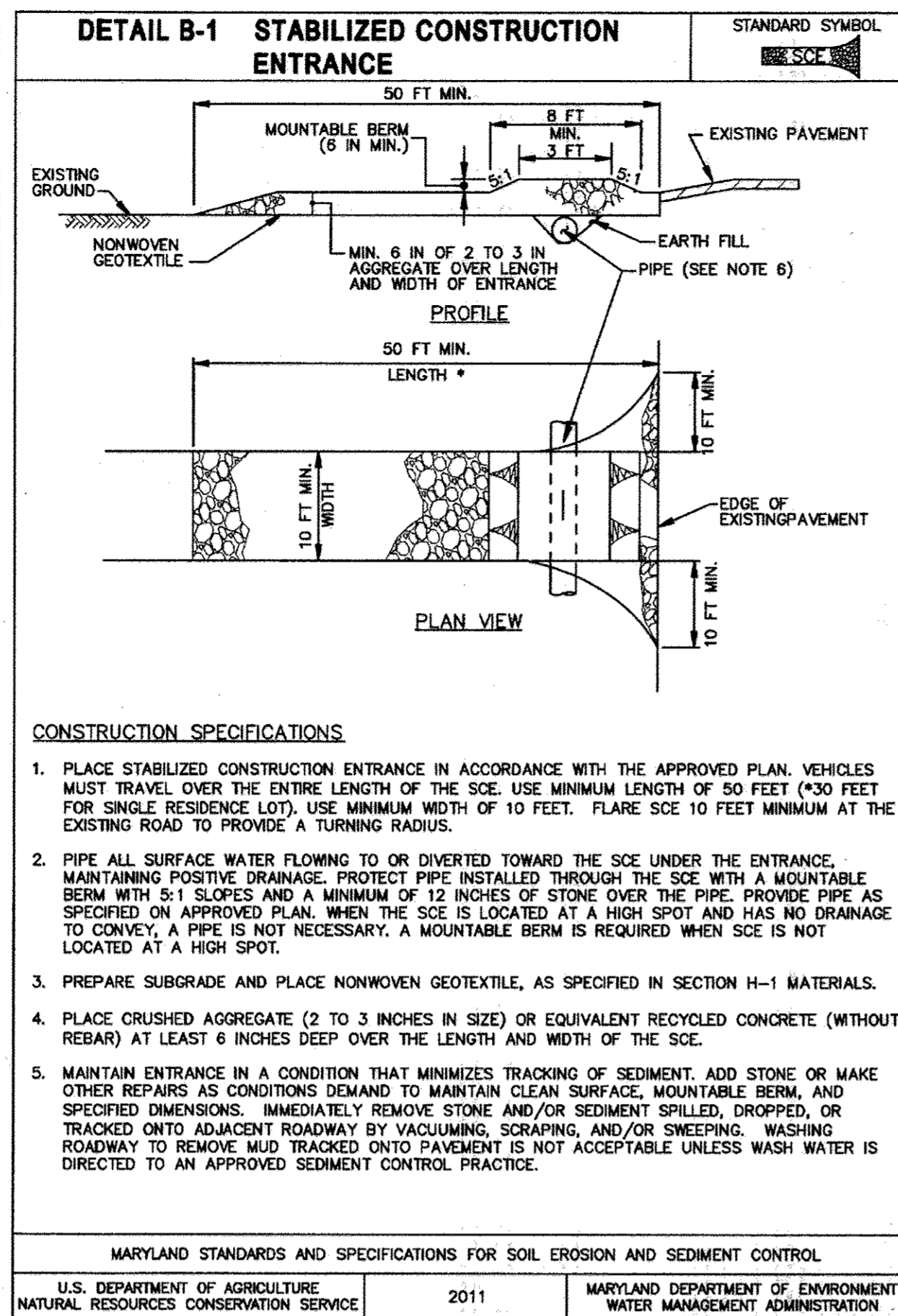
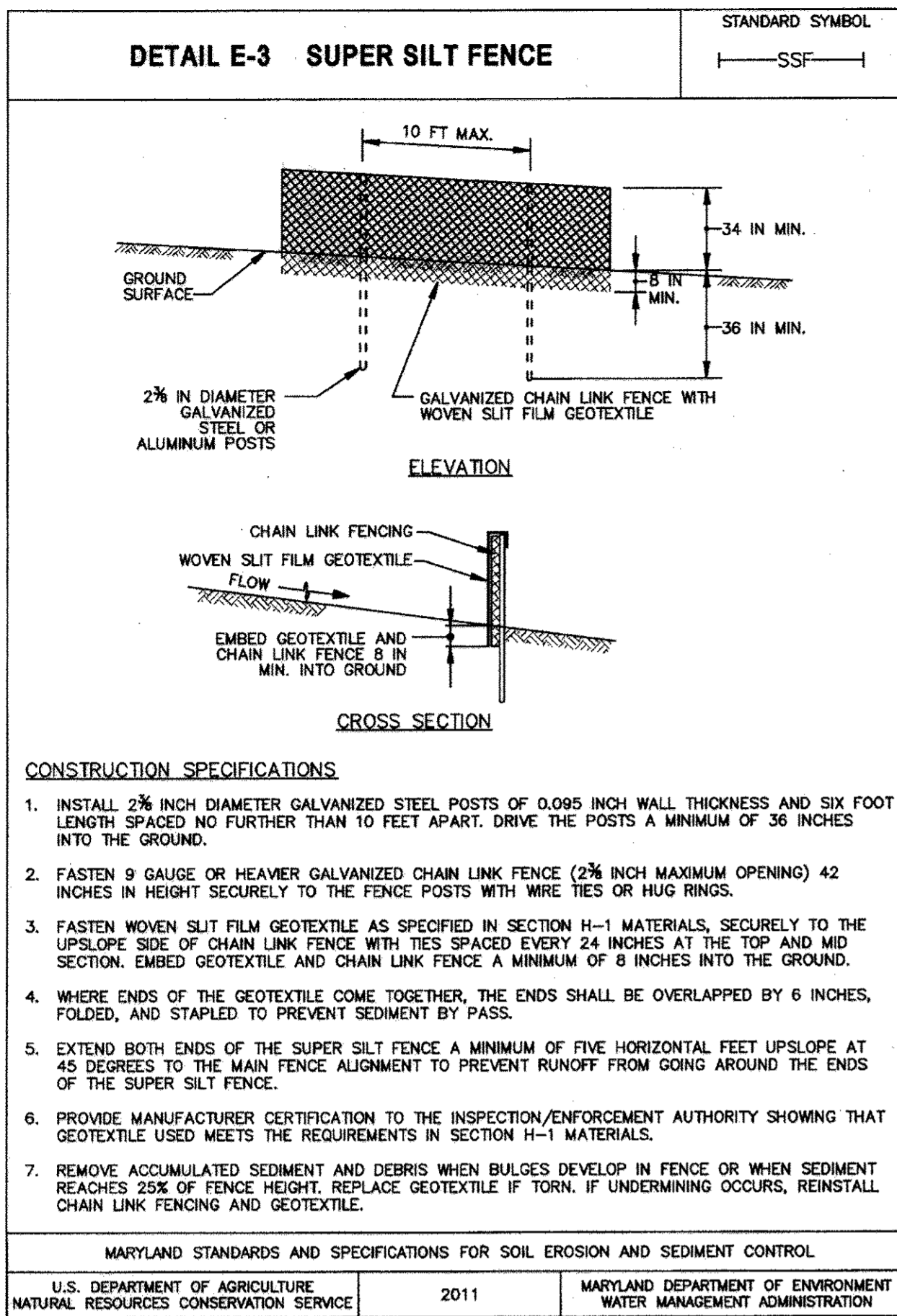
PROJECT NO. 2011200. SCALE: N/A. DATE: 06/27/12. DRAWN BY: HRP. CHECKED BY: SBP. SHEET: 16-30

CONTACT: SANJAY PATEL. PHONE: (301)-306-3091 x21

AB CONSULTANTS, INC. 9450 ANNAPOLIS ROAD, LANHAM, MARYLAND 20706. PHONE: (301) 306-3091. FAX: (301) 306-3092

EROSION AND SEDIMENT CONTROL NOTES. OWINGS PROPERTY, LOT 5. LOTS 17-22, NON-SUBDIVIDABLE PRESERVATION PARCELS F & G, AND NON-SUBDIVIDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY. TAX MAP 40, GRID 4, PARCEL 44. 5TH ELECTION DISTRICT, HOWARD COUNTY, MARYLAND.





### 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):

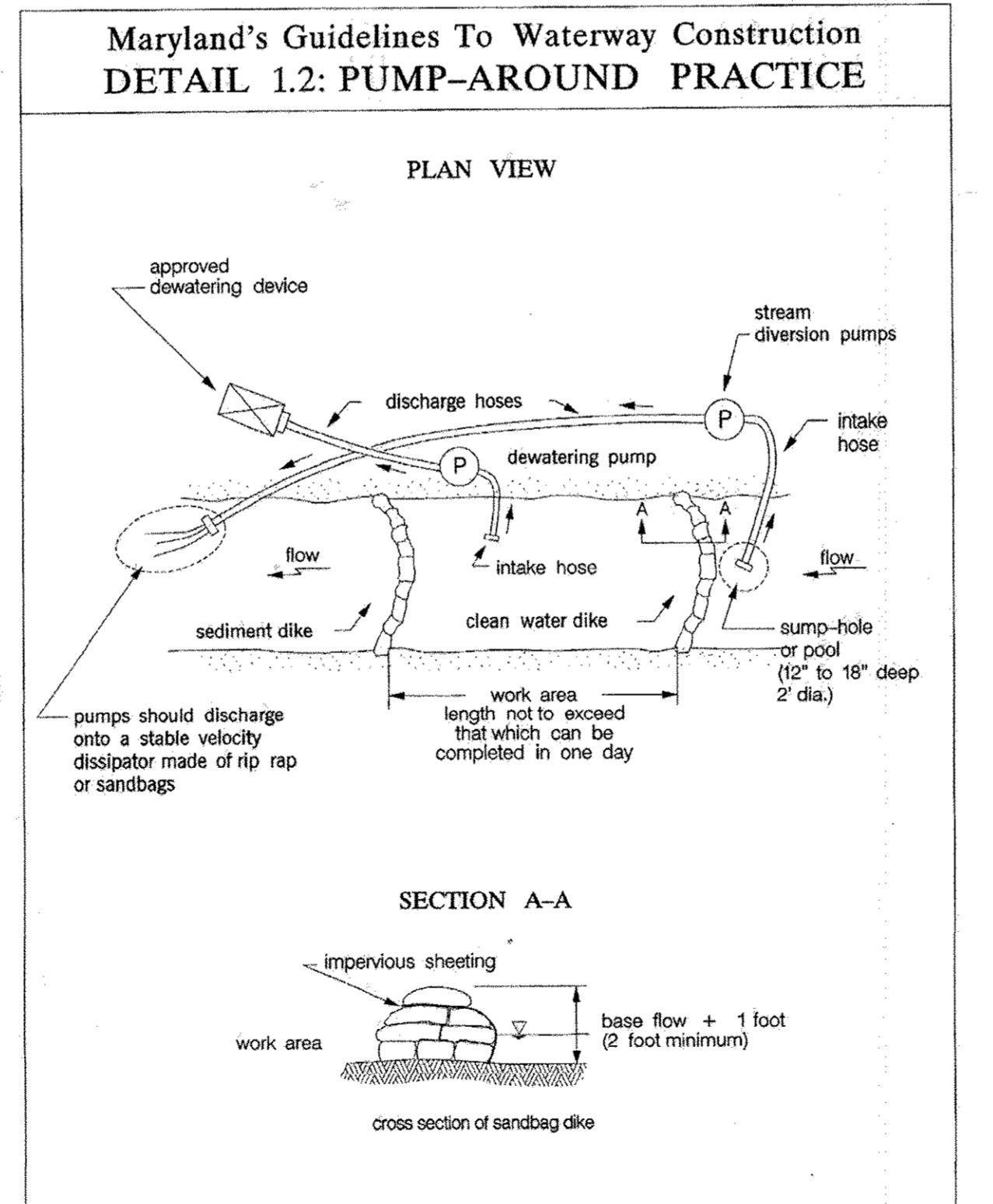
- Construction activities including the installation of erosion and sediment control measures should not begin until all necessary easements and/or right-of-ways have been acquired. All existing utilities should be marked in the field prior to construction. The contractor is responsible for any damage 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.
- 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.
- 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.
- 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.
- 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.
- 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.

TEMPORARY INSTREAM CONSTRUCTION MEASURES MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES REVISED NOVEMBER 2000  
PAGE 1.2-1

### MGWC 1.2: PUMP-AROUND PRACTICE

- 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.
- 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).
- 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.
- 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.
- A pump around must be installed on any tributary or storm drain outfall which contributes base flow 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.
- 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.
- The contractor is responsible for providing access to and maintaining all erosion and sediment control devices until the sediment control inspector approves their removal.
- After construction, all disturbed areas should be regraded and revegetated as per the planting plan.

TEMPORARY INSTREAM CONSTRUCTION MEASURES MARYLAND DEPARTMENT OF THE ENVIRONMENT WATERWAY CONSTRUCTION GUIDELINES REVISED NOVEMBER 2000  
PAGE 1.2-2



### "AS-BUILT"

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

*John C. Barba* 7/6/13  
DISTRICT HOWARD SOIL CONSERVATION DATE

**ENGINEER'S CERTIFICATE**  
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Sanjay Patel* 04/25/2013  
SIGNATURE OF ENGINEER DATE

**DEVELOPER'S CERTIFICATE**  
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDANCE WITH THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZED PERFORM ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE REEM NECESSARY.

*William C. Elmer* 7/8/2013  
SK HOMES AT HIGHLAND OWINGS, LLC DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Miss R. Smith* 7-22-13  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*8/5/13*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*8/26/13*  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE NO. REVISION  
08/16/12 1 REVISE SITE ANALYSIS QUANTITIES AND SEQUENCE OF CONSTRUCTION  
04/25/13 2 REVISED DETAILS BASED ON 2011 STANDARD.

**PROFESSIONAL CERTIFICATION**  
I HEREBY CERTIFY THAT THE RED-LINE REVISIONS SHOWN HEREON, INDICATED BY THE SYMBOL AND , WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 31042 EXPIRATION DATE: 02/18/15"

*Sanjay Patel* 31042  
31042  
P.E. NO.  
10/31/16  
Date

AS-BUILT CERTIFICATION  
Note: There is no "AS-BUILT" information provided on this sheet.

Name: *SANJAY PATEL*  
31042  
P.E. NO.  
10/31/16  
Date

REVISOR'S SIGNATURE: *Sanjay Patel*

REVISOR'S TITLE: *Professional Engineer*

REVISOR'S LICENSE NO.: *31042*

REVISOR'S EXPIRATION DATE: *02/18/15*

REVISOR'S FIRM: *AB CONSULTANTS, INC.*

REVISOR'S ADDRESS: *9450 ANNAPOLIS ROAD, LANHAM, MARYLAND 20706*

REVISOR'S PHONE: *(301) 306-3091*

REVISOR'S FAX: *(301) 306-3092*

REVISOR'S CONTACT: *CONTACT: SANJAY PATEL, PHONE: (301)-306-3091 x21*

REVISOR'S SIGNATURE: *Sanjay Patel*

REVISOR'S TITLE: *Professional Engineer*

REVISOR'S LICENSE NO.: *31042*

REVISOR'S EXPIRATION DATE: *02/18/15*

REVISOR'S FIRM: *AB CONSULTANTS, INC.*

REVISOR'S ADDRESS: *9450 ANNAPOLIS ROAD, LANHAM, MARYLAND 20706*

REVISOR'S PHONE: *(301) 306-3091*

REVISOR'S FAX: *(301) 306-3092*

REVISOR'S CONTACT: *CONTACT: SANJAY PATEL, PHONE: (301)-306-3091 x21*

OWNER / DEVELOPER:  
SK HOMES AT HIGHLAND OWINGS, LLC  
7990 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD 21046  
301-870-5603

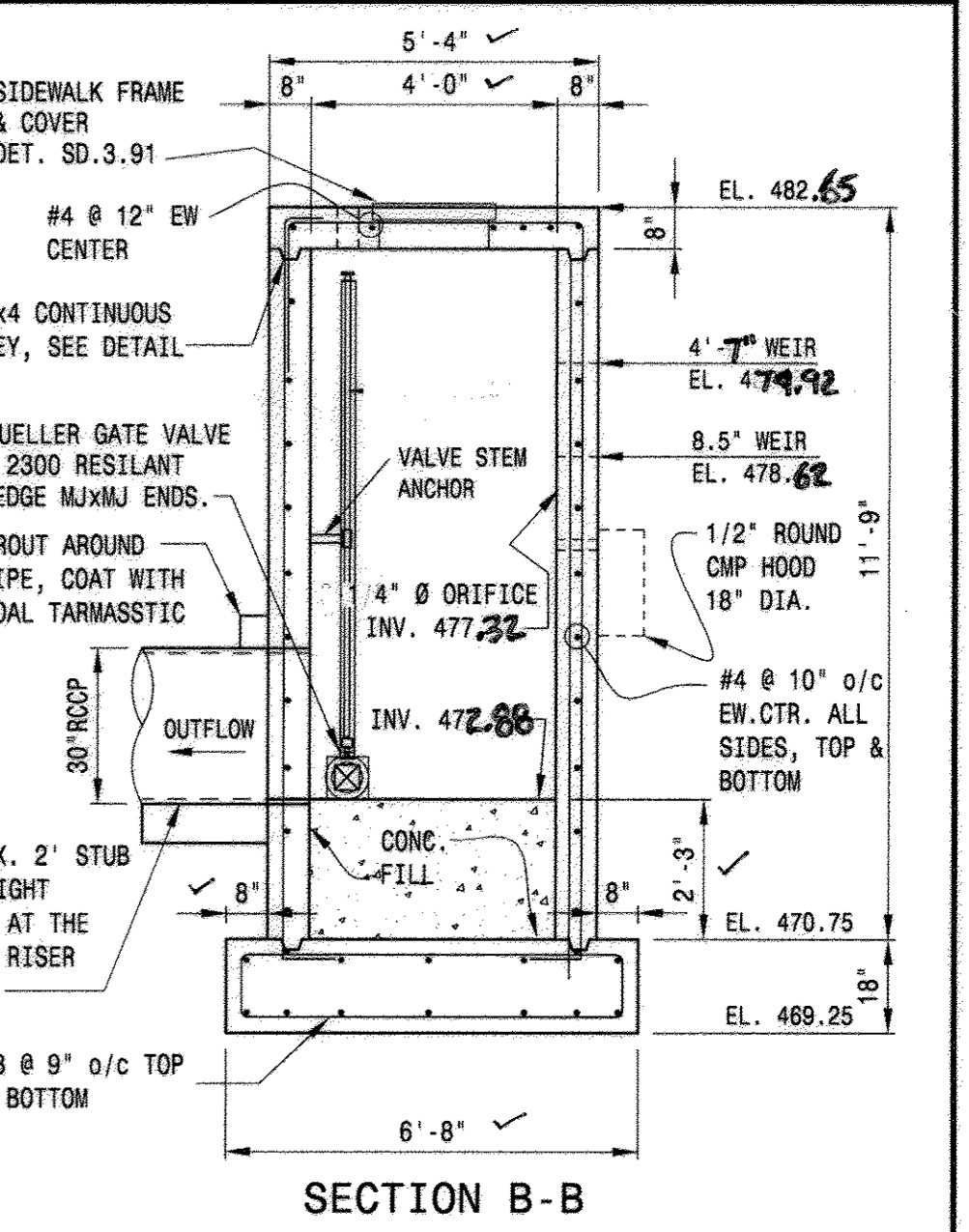
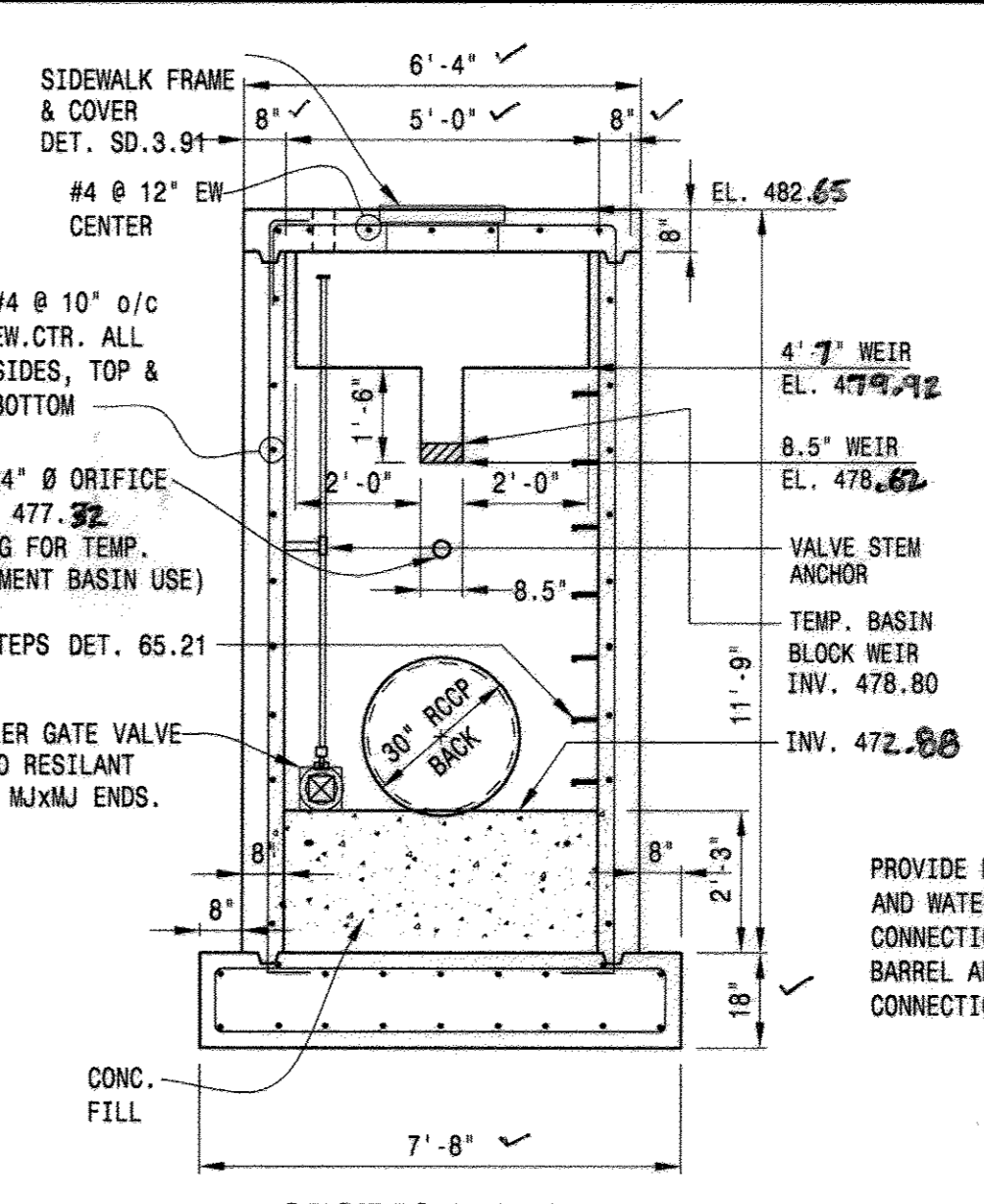
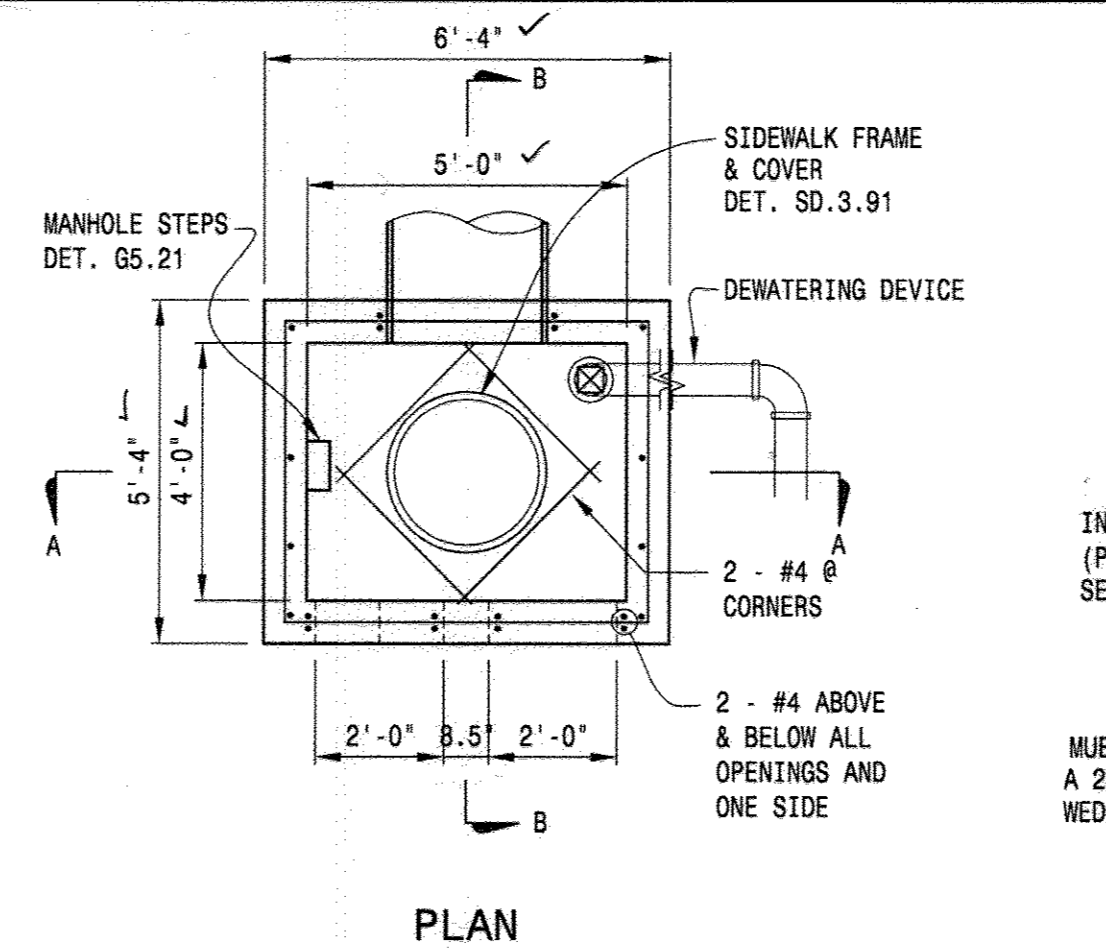
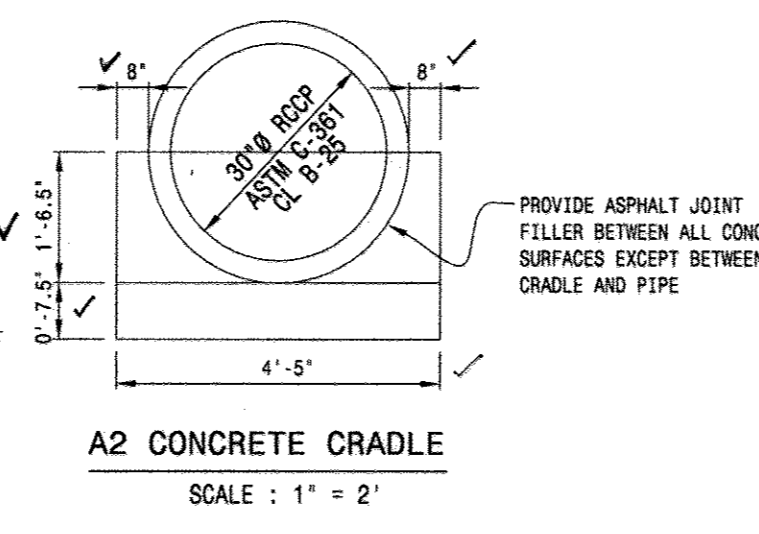
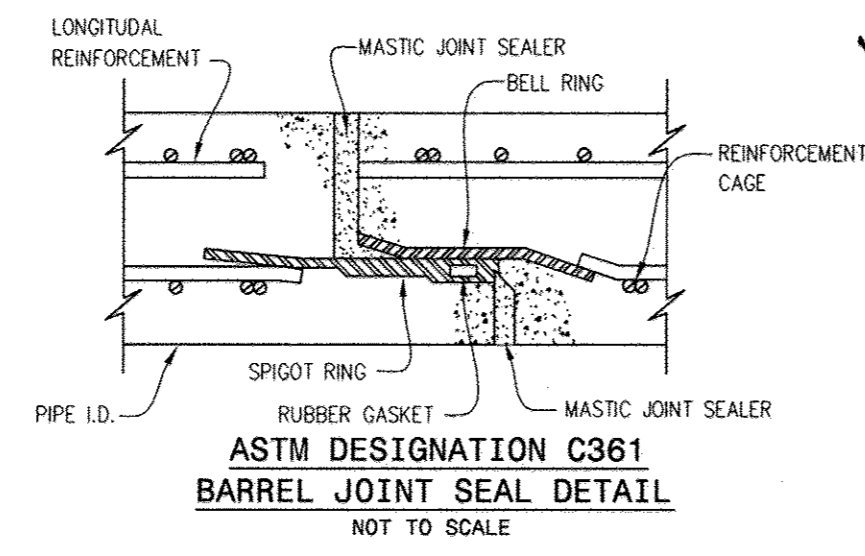
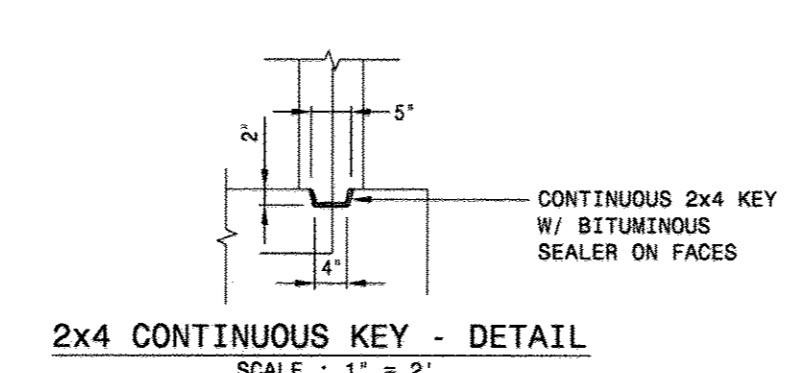
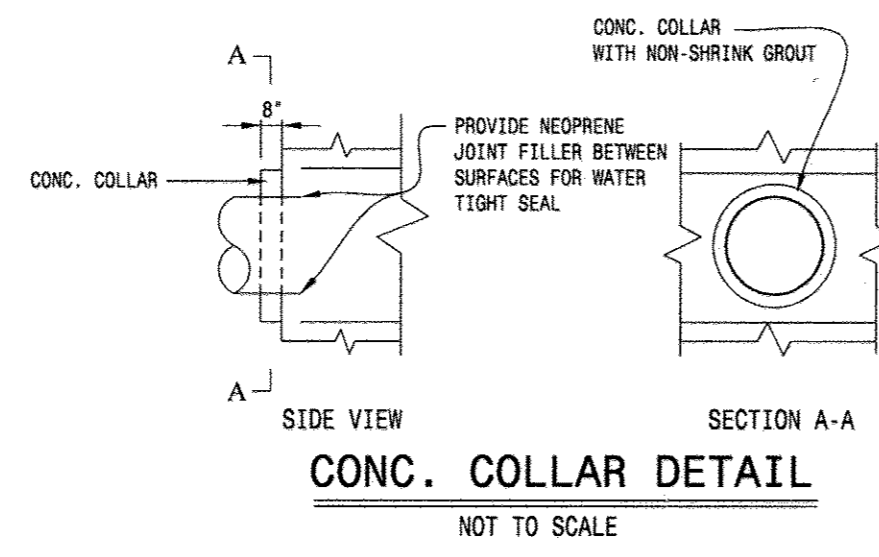
PROJECT NO. 2011200  
SCALE: N.T.S.  
DATE: 06/27/12  
DRAWN BY: HRP  
CHECKED BY: SBP  
SHEET: 17-30

PROJECT: EROSION AND SEDIMENT CONTROL DETAILS  
OWINGS PROPERTY, LOT 5  
LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL A A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY  
TAX MAP 40, GRID 4, PARCEL 44  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND.









**STORMWATER MANAGEMENT POND MAINTENANCE SCHEDULE SWM FACILITY NO. 2**  
(OWNED AND MAINTAINED BY H.O.A.)

**ROUTINE MAINTENANCE (BY H.O.A.)**

FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHOULD BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE POND IS FUNCTIONING PROPERLY.

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

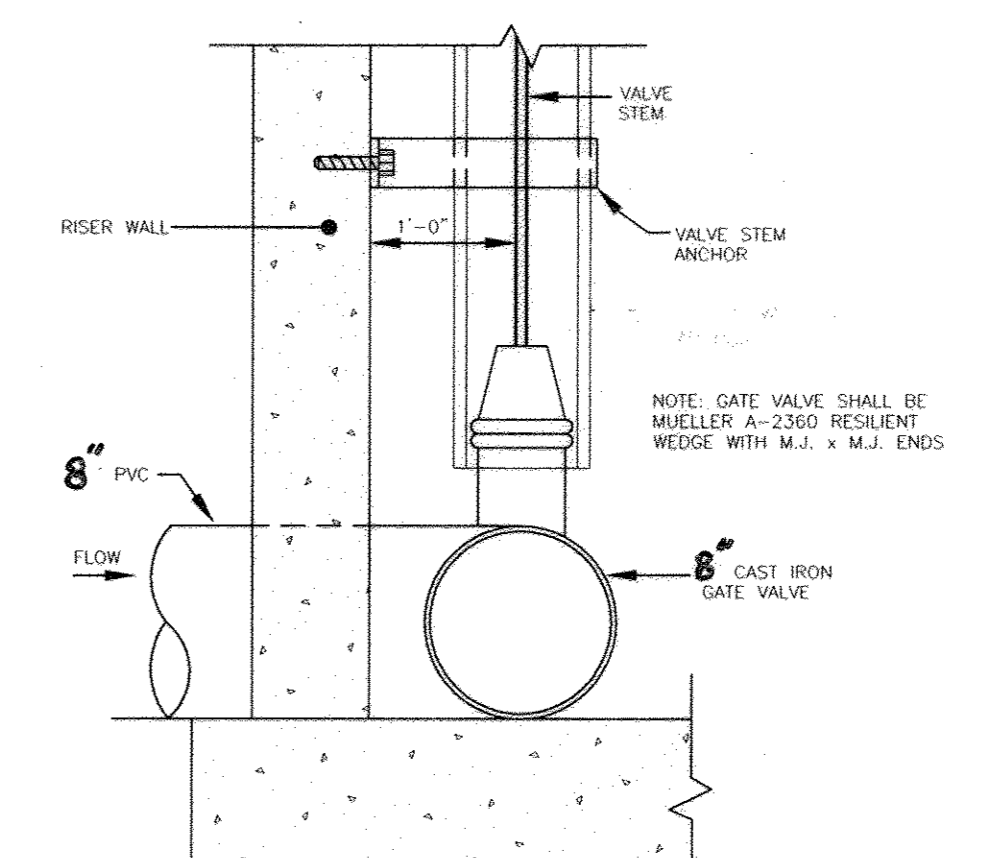
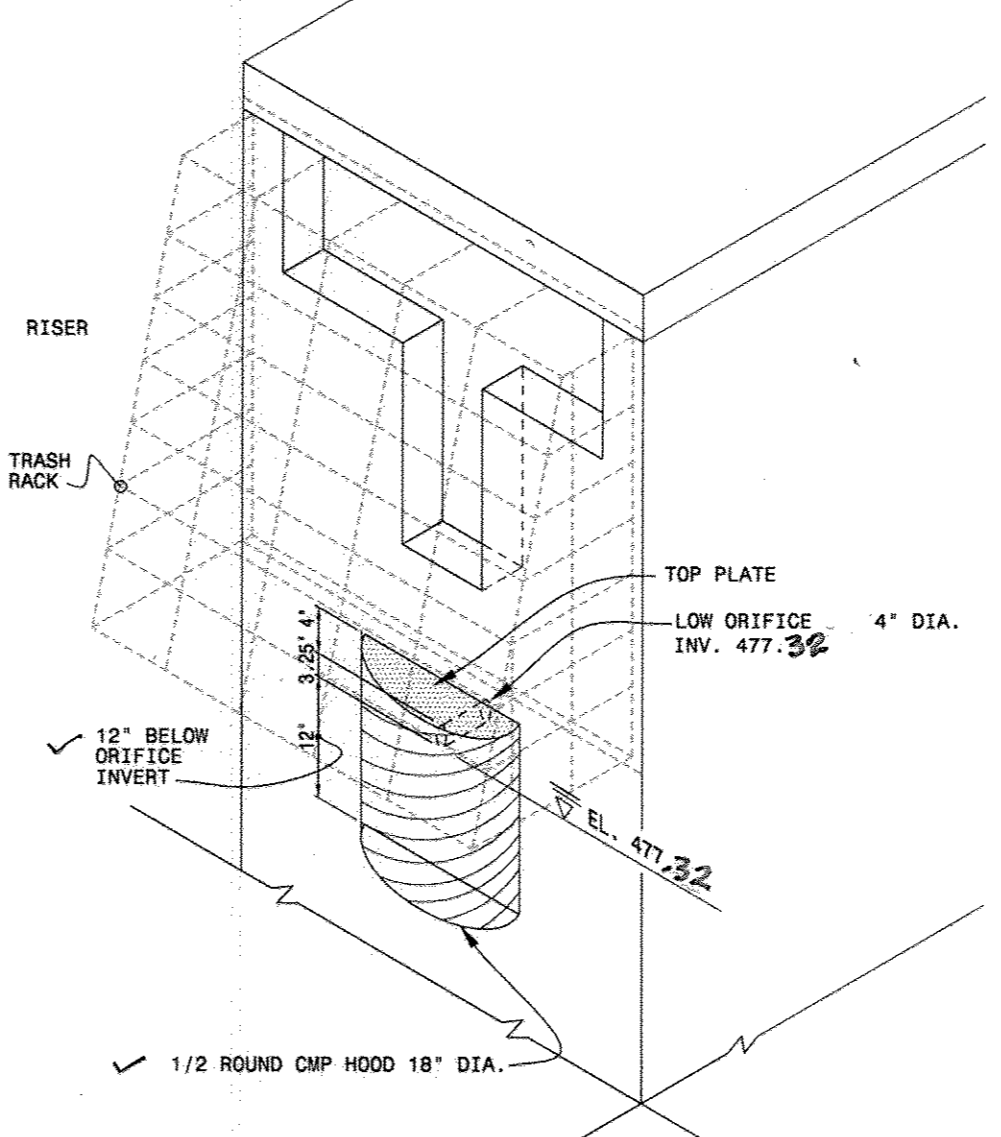
DEBRIS AND LITTER NEXT TO THE OUTLET STRUCTURE SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.

VISIBLE SIGNS OF EROSION IN THE POND AS WELL AS RIP-RAP OUTLET AREA SHALL BE RETAINED AS SOON AS IT IS NOTICED.

NON-ROUTINE MAINTENANCE (BY H.O.A.)

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

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



**AS-BUILT CERTIFICATION**

I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the Approved Plans and Specifications.

Name: SAMJAY PAMEL

No.: 31042

P.E. NO. 1012116

Date: 10/21/16

**OPERATION, MAINTENANCE AND INSPECTION NOTE**

INSPECTIONS OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, SCS "STANDARDS AND SPECIFICATIONS FOR POND" (NO. 278). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS, OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION, AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.

**ENGINEER'S CERTIFICATE**

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

Signature of Engineer: Jose H. Escalante DATE: 06/06/08

**DEVELOPER'S CERTIFICATE**

"I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY."

Signature of Developer: Dale Thompson DATE: 06/06/08

APPROVED: DEPARTMENT OF PUBLIC WORKS  
Signature: William E. Marshall DATE: 7-1-09

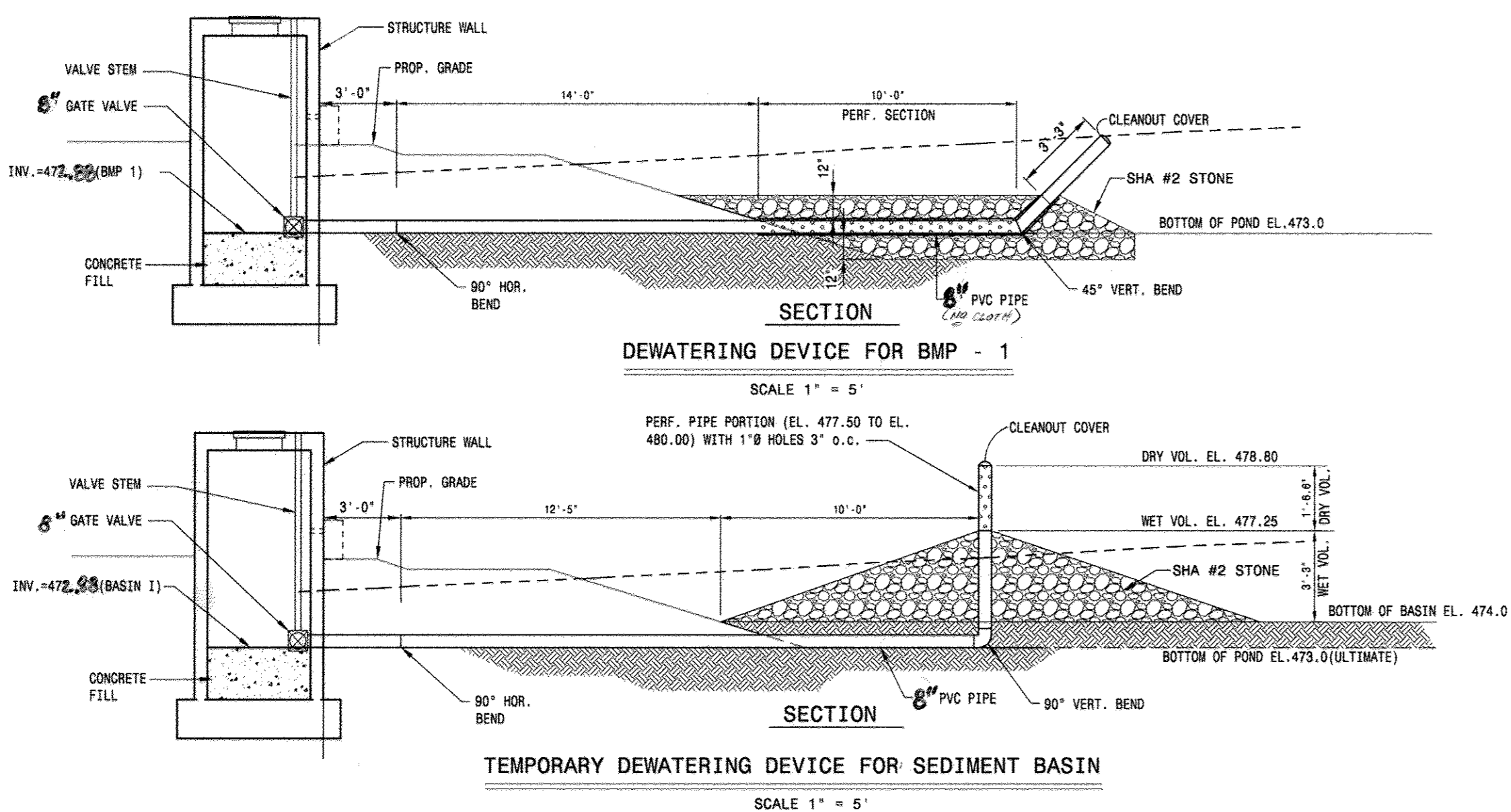
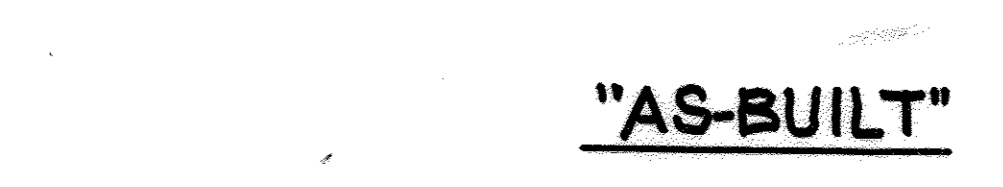
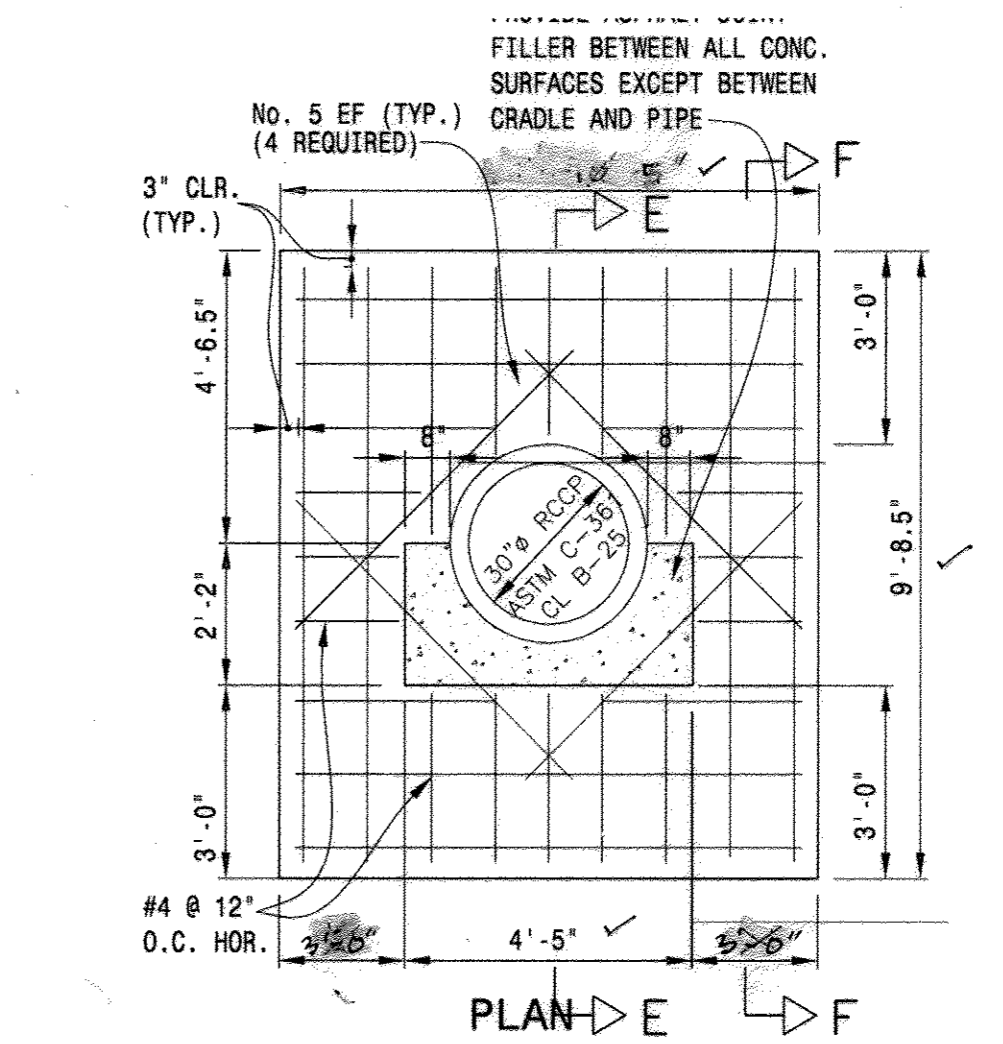
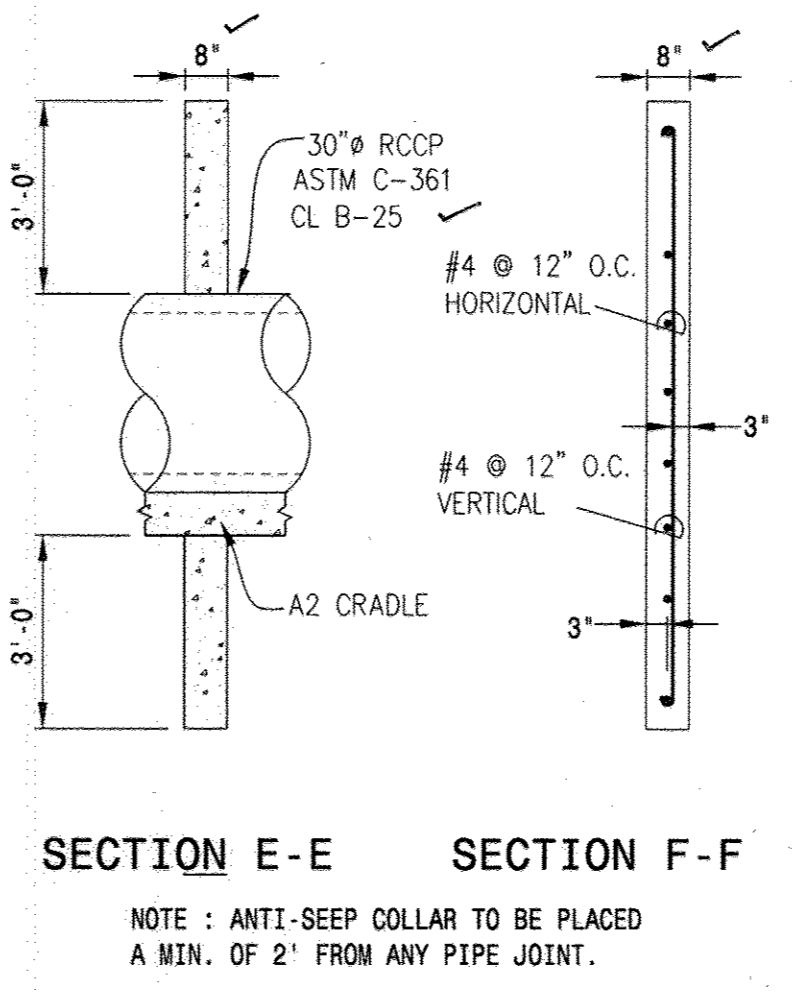
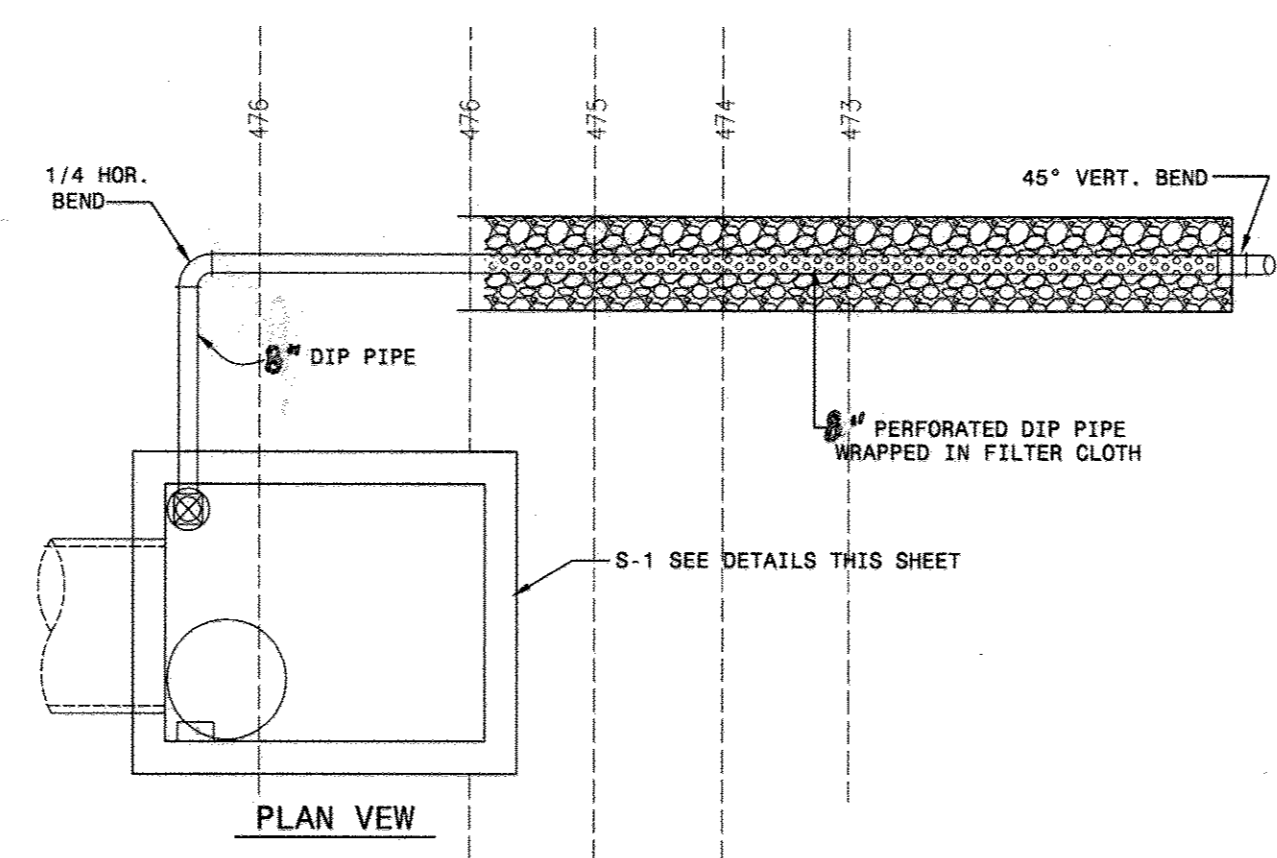
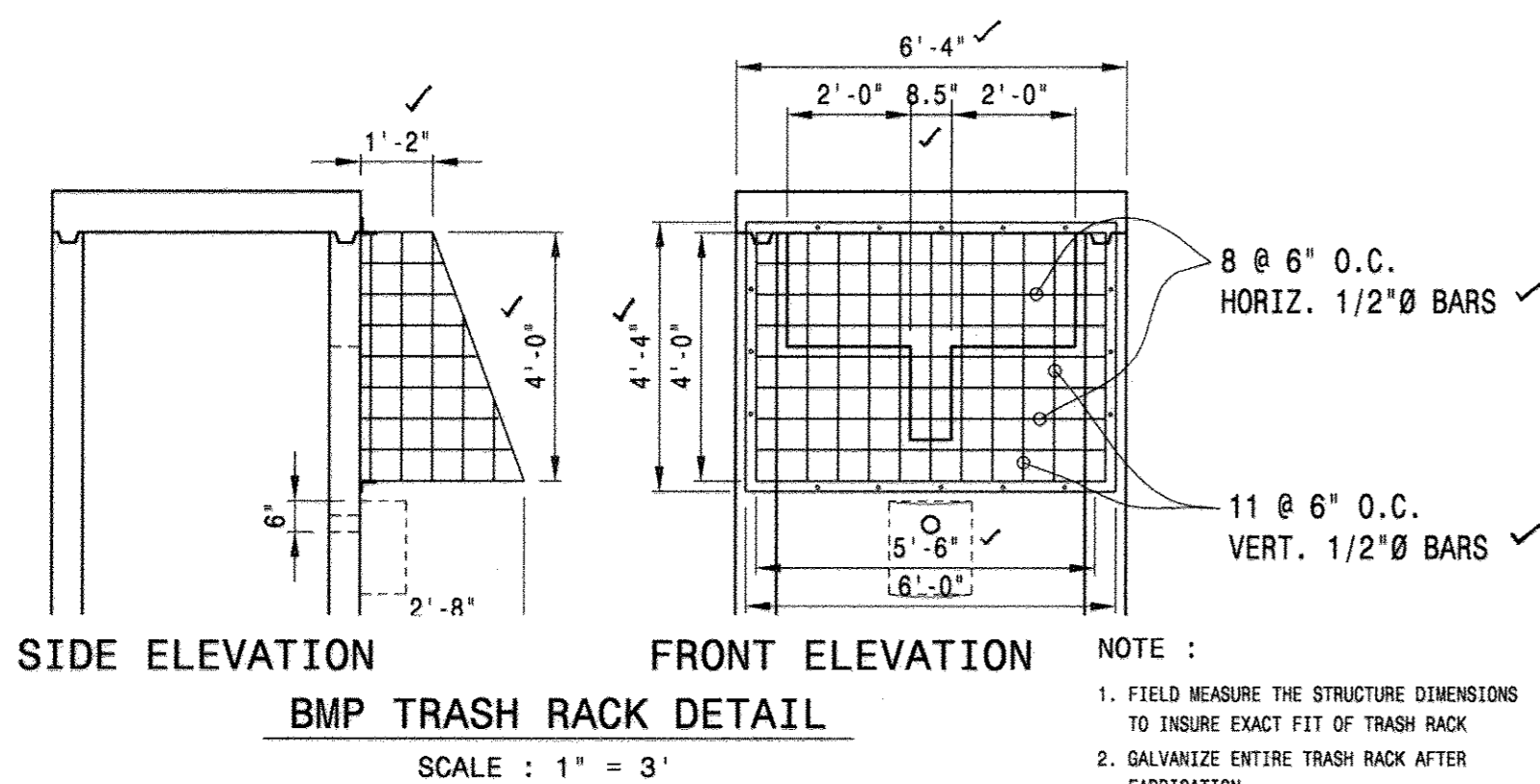
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
Signature: Dale Thompson DATE: 7/2/08

DATE	NO.	REVISION

**"AS-BUILT"**

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-26-08.

OWNER / DEVELOPER  
**SK HOMES AT HIGHLAND OWINGS, LLC**  
1060 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD. 21046  
PHONE: 301.870.5603



**DALE THOMPSON**  
BUILDERS  
6300 Woodside Court Suite A  
Columbia, MD 21045  
410-993-6736  
301-596-7280  
FAX: 410-381-8747

**PROJECT:** STORMWATER MANAGEMENT - DETAILS  
**OWINGS PROPERTY, LOT 5**  
LOTS 17-22, NON-BUILDABLE PRESERVATION  
PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H  
A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY  
TAX MAP 40, GRID 4, PARCEL 44  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND.

PROJECT NO. \_\_\_\_\_  
SCALE: AS SHOWN  
DATE: 06/06/08  
DRAWN BY: AVG  
CHECKED BY: JHE  
SHEET: 19 - 30  
F-06-112



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

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

Area 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 streamwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared.

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

Earth Fill

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

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

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable bottom 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 track tread 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 the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet 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.

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 at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, roller.

ers, or hand tampers to assure maximum density and minimum permeability.

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

Structure Backfill

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

Structure backfill may be flowable fill meeting the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 313 as modified. The mixture shall have a 100-200 psi, 28 day unconfined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm-cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding) over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags,

Materials - (Aluminum Coated Steel Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-274 with wa-tertight coupling bands or flanges. Aluminum Coated Steel Pipe, when used in excess of 24" diameter, 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 surface 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 in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

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

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 connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the 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, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type band with 1/2-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide zipper 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 nuts, 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.

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

Backfilling shall conform to "Structure Backfill".

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

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

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

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 be equal or exceed ASTM C-361.

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

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

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

Backfilling shall conform to "Structure Backfill".

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

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

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

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

formance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained below the bottom of the excavation at such locations which may require draining the water ramps from which the water shall be pumped.

Stabilization

All borrow areas shall be graded to provide proper drainage and left in a slightly condition. All exposed surfaces of the embankment, spillway, spoil and borrow areas, and berms shall be stabilized by seeding, liming, fertilizing and mulching in accordance with the Natural Resources Conservation Service Standards and Specifications for Critical Area Planning (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.

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.

Basin Excavation and Embankment Construction

Based on boring data and review of the referenced plans, excavation of the basin to depths up to 15 feet can generally be accomplished by standard means, such as scraping and possibly ripping. Groundwater was observed in all of the borings ranging from approximate elevations of 470.2 to 474.2 MSL, respectively. Depending on final design, groundwater may be encountered above the proposed basin bottom elevations. Dewatering of basin and of outfall structure embankments may be required during the construction phase. The contractor should provide means for maintaining trafficability of the pond area during construction.

Basin slopes composed of the predominant, micaceous sandy soils are highly erodible. Proposed pond slopes subject to groundwater seepage will be susceptible to erosion and sloughing. Stabilization of the pond slopes may be required depending upon the actual conditions encountered. This determination should be made in the field by the geotechnical engineer during the pond construction phase. GRA can provide designs for erosion control and slope stabilization as needed.

Topsoil and very loose unstable materials are not considered suitable for support of the proposed embankment of structures. Prior to the placement of compacted fill or the construction of the outfall and structures, areas supporting the proposed embankment and structures should be stripped and grubbed to remove topsoil and any organic matter. An average stripping thickness of 12 inches should be used for earthwork estimates. The actual stripping thickness will be impacted by contractor methodology, season of construction, and localized topsoil development.

After stripping, the subgrade should be proof-rolled as directed by a geotechnical engineer of his qualified representative. Unstable soils identified by proof rolling should be removed from subgrade. No fills should be placed or foundations constructed until the subgrade is approved by the geotechnical engineer.

Fills for cutoff trench and embankment construction should be placed in eight-inch loose lifts, and compacted to at least 95 percent of the maximum dry density in accordance with the Standard Proctor, ASTM D-698. Fills around the outfall works should be placed in 4-inch lifts and compacted to the same standard with hand equipment. Based on laboratory analysis, the fine-grained on-site soils are likely to be wet of the optimum moisture for compaction, and moisture conditioning may be required. Construction during a dry season is recommended to facilitate the drying of soils. Compactive effort should be monitored with in-place testing as performed by a qualified representative under the direction of a professional engineer.

OPERATION AND MAINTENANCE

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

APPENDIX A

DAM INSPECTION CHECKLIST

To help the dam owner perform periodic safety inspections of the structure, a checklist is provided. Each item of the checklist should be completed. Repair is required when obvious problems are observed. Maintaining is recommended if there is potential for a problem to occur in the future. Investigation is necessary if the reason for the observed problem is not obvious. A brief description should be made of any noted irregularities, needed maintenance, or problems. Abbreviations and short descriptions are recommended. Space at the bottom of the form should be used for any items not listed.

Table with columns for DAM OWNER, DATE, WEATHER, POOL LEVEL, and various inspection items (a-g) with checkboxes for 'OK', 'NEEDS ATTENTION', and 'REPAIR NEEDED'.

INSPECTION CHECKLIST - PAGE 2

Table with columns for INSPECTED BY, DATE, and various inspection items (a-g) with checkboxes for 'OK', 'NEEDS ATTENTION', and 'REPAIR NEEDED'.

INSPECTION CHECKLIST - PAGE 3

Table with columns for INSPECTED BY, DATE, and various inspection items (a-g) with checkboxes for 'OK', 'NEEDS ATTENTION', and 'REPAIR NEEDED'.

AS-BUILT CERTIFICATION stamp with signature of SANJAY PATEL, P.E. NO. 31042, dated 10/21/16.

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-26-08.

Professional Engineer Seal for DALE THOMPSON, License No. 13265, State of Maryland.

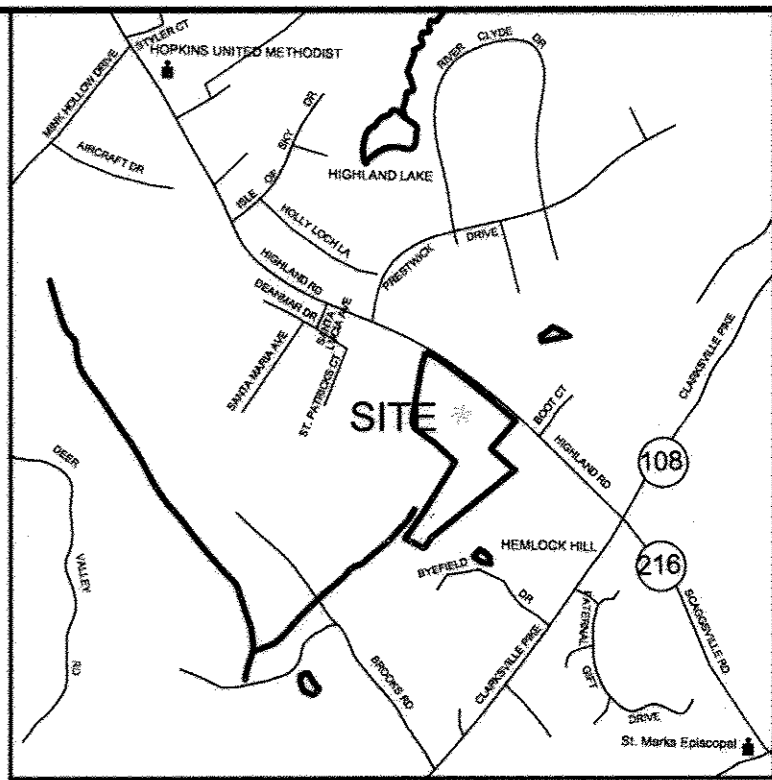
"AS-BUILT"

OWNER / DEVELOPER: SK HOMES AT HIGHLAND OWINGS, LLC, 1060 SAMUEL MORSE DRIVE, SUITE 500, COLUMBIA, MD. 21046, PHONE: 301-870-5603.

PROJECT: STORMWATER MANAGEMENT POND SPECIFICATION AND NOTES, OWINGS PROPERTY, LOT 5, SCALE: NTS, DATE: 08/06/08, DRAWN BY: AVG, CHECKED BY: JHE, SHEET: 20 - 30, F-06-112



- LEGEND:**
- EXISTING 2 FOOT CONTOURS
  - EXISTING 10 FOOT CONTOURS
  - SOIL LINE
  - GIB2 SOIL TYPE
  - DRAINAGE DIVIDE



VICINITY MAP  
SCALE: 1"=2000'

SUB-AREA D  
AREA = 2.94 Ac.  
CN = 71.0  
Tc = 0.30 hrs.  
NO OFFSITE AREA

SUB-AREA C.1  
AREA = 7.03 Ac.  
CN = 73.0  
Tc = 0.27 hrs.  
SITE & OFFSITE AREA

SUB-AREA B  
AREA = 5.83 Ac.  
CN = 63.0  
Tc = 0.29 hrs.  
OFFSITE AREA = 1.05 Ac.  
ON-SITE AREA = 4.78 Ac.  
"B" TYPE SOILS = 4.12 Ac.,  
% = 70.73  
"C" TYPE SOILS = 1.71 Ac.,  
% = 29.36

SUB-AREA C  
AREA = 35.50 Ac.  
CN = 68.0  
Tc = 0.49 hrs.  
OFFSITE AREA = 19.81 Ac.  
ON-SITE AREA = 15.69 Ac.  
"B" TYPE SOILS = 18.60 Ac.,  
% = 52.4  
"C" TYPE SOILS = 16.75 Ac.,  
% = 47.2  
"D" TYPE SOILS = 0.15 Ac.,  
% = 0.4

**SUMMARY TABLE**  
EXISTING CONDTION, SITE AND OFFSITE AREAS ONLY

STUDY POINT	AREA (ACRE)	CN	Tc (Hrs)	DISCHARGES, CFS			
				1YR	2YR	10 YR	100 YR
B	5.83	63.0	0.29	1.00	2.62	9.68	19.43
C	35.50	68.0	0.49	9.38	18.58	56.11	105.35
D	2.94	71.0	0.30	1.50	2.63	6.96	12.41

**SOILS LEGEND**  
HOWARD COUNTY

NON-HYDRIC SOILS LIST	HYDROLOGIC SOIL GROUP
CHB2 CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
GLB2 GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
GLC2 GLENELG LOAM 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
EKC2 ELIOAK SILT LOAM 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	C
EKB2 ELIOAK SILT LOAM 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
GNB2 GLENVILLE SILT LOAM 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
ELD3 ELIOAK SILTY CLAY LOAM 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	C
HYDRIC SOILS LIST	
BA BAILE SILT LOAM	D

DESCRIPTION PER HOWARD COUNTY SOIL SURVEY

**AS-BUILT CERTIFICATION**  
Note: There is no "AS-BUILT" information provided on this sheet.

Name: SANJAY PAHEL  
P.E. NO.: 21042  
Date: 10/21/16

**ENGINEER'S CERTIFICATE**  
"I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Signature of Engineer: Jose H. Escalante  
DATE: 06/06/08

**DEVELOPER'S CERTIFICATE**  
"I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE REEMED NECESSARY."

Signature of Developer: Dale Thompson  
DATE: 06/06/08

APPROVED: DEPARTMENT OF PUBLIC WORKS  
Signature: Walter J. ...  
DATE: 7-1-08  
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
Signature: ...  
DATE: 7/2/08  
CHIEF, DEVELOPMENT ENGINEERING DIVISION

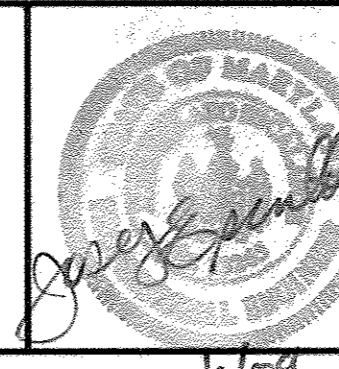
Signature: ...  
DATE: 7/1/08  
CHIEF, DIVISION OF LAND DEVELOPMENT

DATE	NO.	REVISION

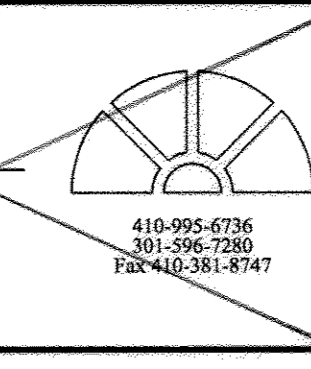
OWNER / DEVELOPER  
SK HOMES AT HIGHLAND OWING, LLC  
7060 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD, 21046  
PHONE: 301-870-5603

**"AS-BUILT"**

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date : 12-26-08.



**DALE THOMPSON**  
BUILDERS  
6300 Woodside Court Suite A  
Columbia, MD 21045  
410-995-6736  
301-595-7280  
FAX 410-361-8747



PROJECT : EXISTING SWM DRAINAGE AREA MAP  
SITE AND OFFSITE AREAS  
**OWINGS PROPERTY, LOT 5**  
LOTS 17-22, NON-BUILDABLE PRESERVATION  
PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H  
A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY  
TAX MAP 40, GRID 4, PARCEL 44  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND.

PROJECT NO.

SCALE:
1"=100'

DATE:
06/06/08

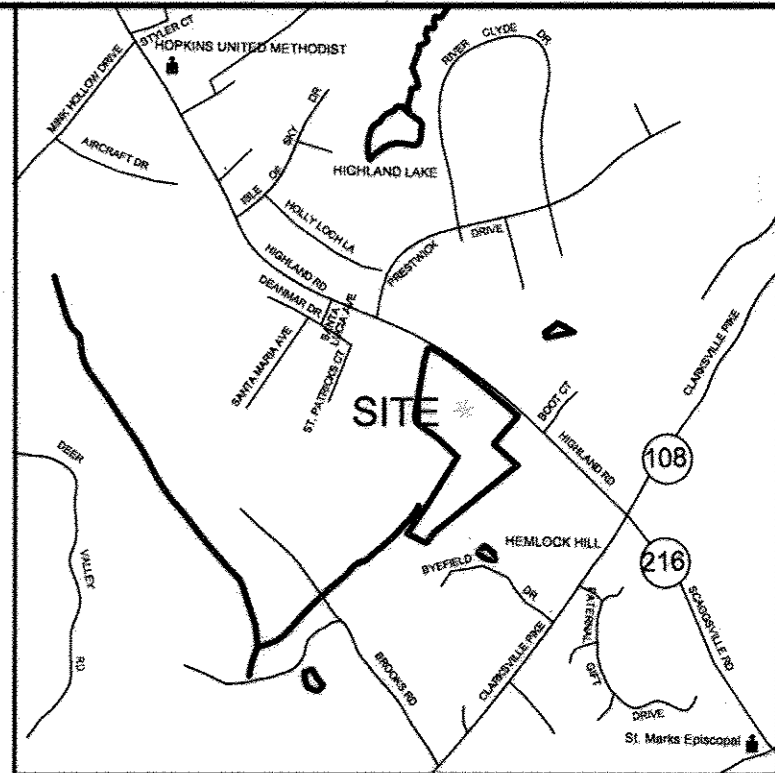
DRAWN BY:
JVG

CHECKED BY:
AHE

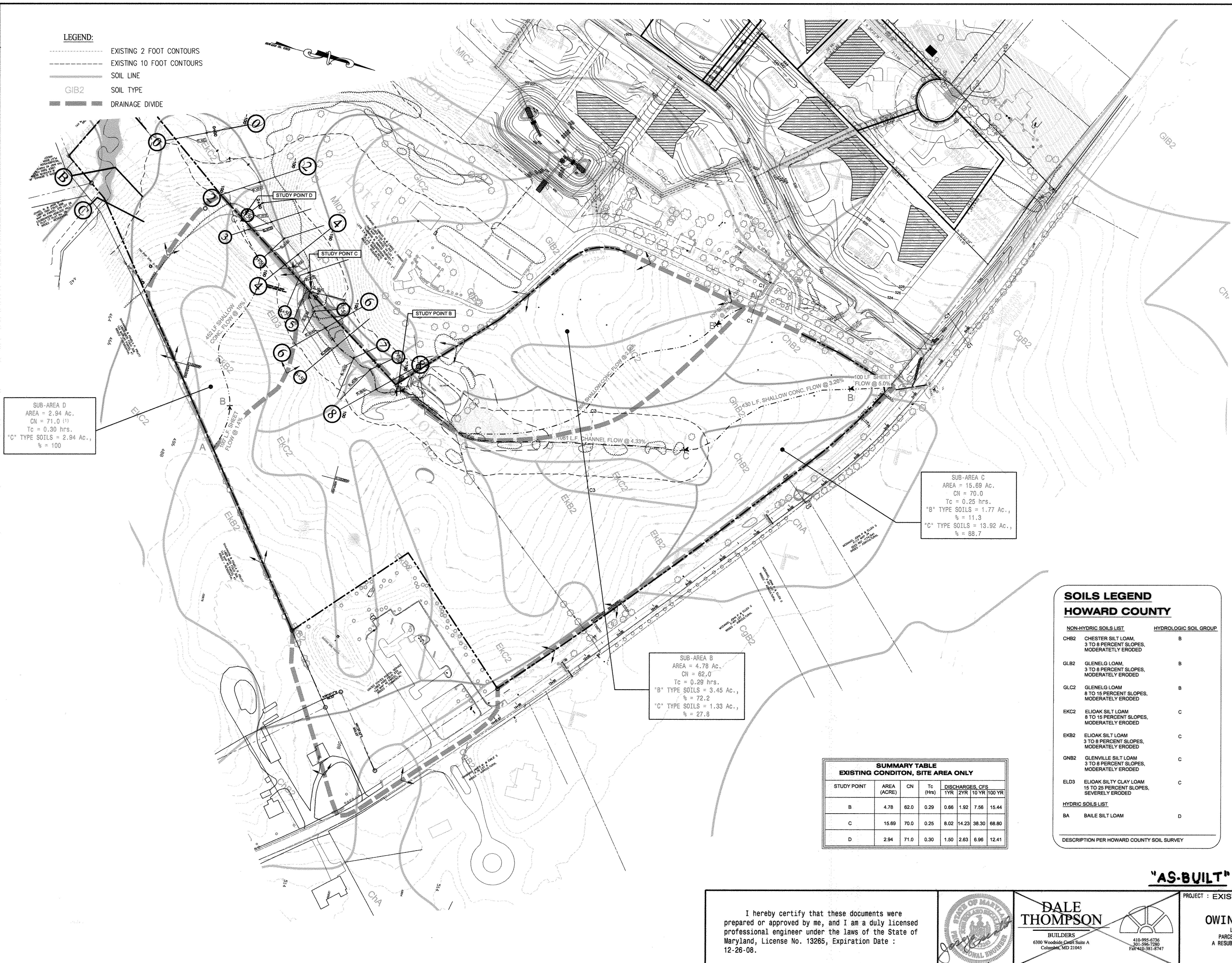
SHEET:
21 - 30



- LEGEND:**
- - - - - EXISTING 2 FOOT CONTOURS
  - - - - - EXISTING 10 FOOT CONTOURS
  - SOIL LINE
  - GIB2 SOIL TYPE
  - ▬ DRAINAGE DIVIDE



VICINITY MAP  
SCALE: 1"=2000'



SUB-AREA D  
AREA = 2.94 Ac.  
CN = 71.0 (1)  
Tc = 0.30 hrs.  
"C" TYPE SOILS = 2.94 Ac.,  
% = 100

SUB-AREA C  
AREA = 15.69 Ac.  
CN = 70.0  
Tc = 0.25 hrs.  
"B" TYPE SOILS = 1.77 Ac.,  
% = 11.3  
"C" TYPE SOILS = 13.92 Ac.,  
% = 88.7

SUB-AREA B  
AREA = 4.78 Ac.  
CN = 62.0  
Tc = 0.29 hrs.  
"B" TYPE SOILS = 3.45 Ac.,  
% = 72.2  
"C" TYPE SOILS = 1.33 Ac.,  
% = 27.8

**SUMMARY TABLE  
EXISTING CONDTION, SITE AREA ONLY**

STUDY POINT	AREA (ACRE)	CN	Tc (Hrs)	DISCHARGES, CFS		
				1YR	2YR	10 YR
B	4.78	62.0	0.29	0.66	1.92	7.56
C	15.69	70.0	0.25	8.02	14.23	38.30
D	2.94	71.0	0.30	1.50	2.63	6.96

**SOILS LEGEND  
HOWARD COUNTY**

NON-HYDRIC SOILS LIST	HYDROLOGIC SOIL GROUP
CHB2 CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
GLB2 GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
GLC2 GLENELG LOAM 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
EKC2 ELOAK SILT LOAM 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	C
EKB2 ELOAK SILT LOAM 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
GNB2 GLENVILLE SILT LOAM 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
ELD3 ELOAK SILTY CLAY LOAM 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	C
HYDRIC SOILS LIST	
BA BAILE SILT LOAM	D

DESCRIPTION PER HOWARD COUNTY SOIL SURVEY

**AS-BUILT CERTIFICATION**  
Note: There is no "AS-BUILT" information provided on this sheet.

Name: SANDHY PATEL  
P.E. NO.: 31042  
Date: 10/31/16

**ENGINEER'S CERTIFICATE**  
"I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Signature: [Signature] DATE: 06/06/08  
JOSE H. ESCALANTE

**DEVELOPER'S CERTIFICATE**  
"I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY."

Signature: [Signature] DATE: 06/06/08  
PRESIDENT DALE THOMPSON BUILDERS, INC.  
SOLE MEMBER RUNNING BROOK, LLC

APPROVED: DEPARTMENT OF PUBLIC WORKS  
CHIEF, BUREAU OF HIGHWAYS  
Signature: [Signature] DATE: 7-1-08

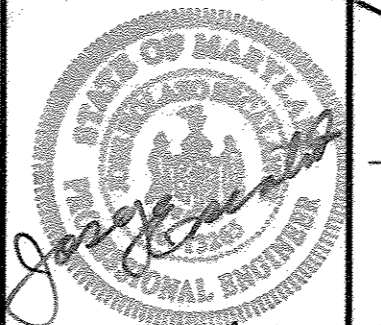
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
Signature: [Signature] DATE: 7/3/08  
CHIEF, DIVISION OF LAND DEVELOPMENT  
Signature: [Signature] DATE: 7/3/08

DATE	NO.	REVISION

OWNER / DEVELOPER  
**SK HOMES AT HIGHLAND OWINGS, LLC**  
1060 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD. 21046  
PHONE: 301-670-5603

**"AS-BUILT"**

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-26-08.



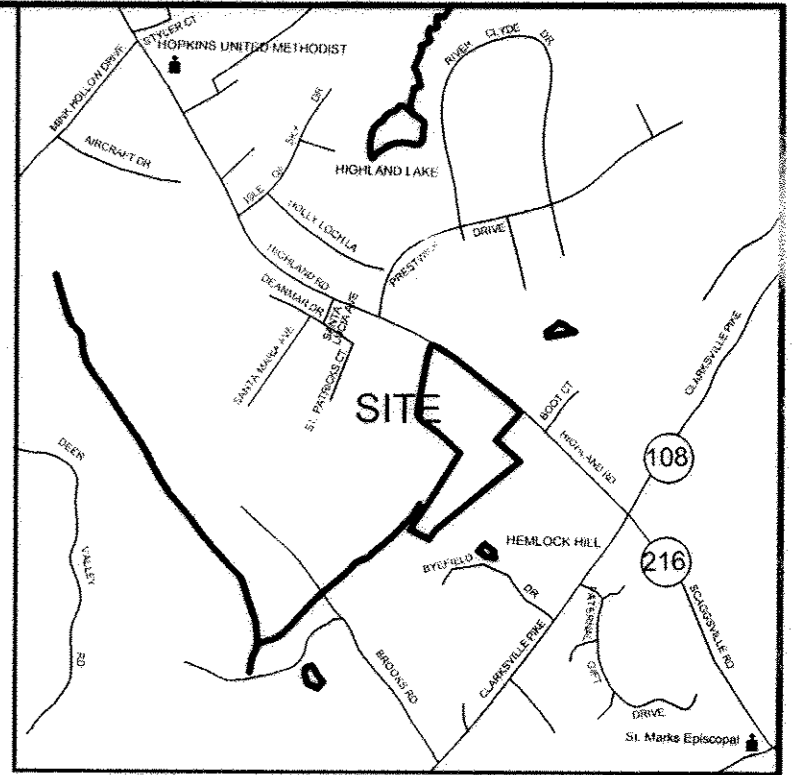
**DALE THOMPSON**  
BUILDERS  
6300 Woodlands Court Suite A  
Columbia, MD 21045  
410-995-6736  
301-596-7390  
F26-410-361-6747

PROJECT: EXISTING SWM DRAINAGE AREA MAP  
SITE AREA ONLY  
**OWINGS PROPERTY, LOT 5**  
LOTS 17-22, NON-BUILDABLE PRESERVATION  
PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H  
A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY  
TAX MAP 40, GRID 4, PARCEL 44  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND.

PROJECT NO.:  
SCALE: 1"=100'  
DATE: 06/06/08  
DRAWN BY: AVG  
CHECKED BY: JHE  
SHEET: 22 - 30



- LEGEND:**
- EXISTING 2 FOOT CONTOURS
  - EXISTING 10 FOOT CONTOURS
  - SOIL LINE
  - GIB2 SOIL TYPE
  - DRAINAGE DIVIDE



VICINITY MAP  
SCALE: 1"=2000'

**AS-BUILT CERTIFICATION**

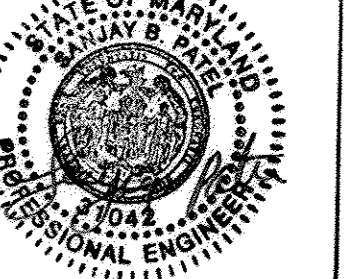
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan meet the Approved Plans and Specifications.

SIGNATURE: **PANEL**

PLATE NO.: **31042**

P.E. NO.: **1013116**

Date: **06/06/08**



**SUMMARY - WATER QUALITY REQUIRED / PROVIDED SITE AREA ONLY TABLE**

SUBAREA	WATER QUALITY	CATEGORY			
		RECHARGE	CHANNEL PROTECTION	OVERBANK FLOOD PROTECTION	EXTREME FLOOD
1. Subarea A1 & A2	Required: 6,294 CF	926 CF	15,420 CF	Not Required	Not Required
Provided:	19,612 CF <sup>(1)</sup>	Included in the Water Quality Volume	6,739 CF <sup>(2)</sup>	N/A	N/A
2. Subarea B	Required: 3,470 CF	737 CF OR 7,283 SF	Q < 2.0 cfs Exempt	Not Required	Not Required
Provided:	Roof-top & Non-Roof-top Disconnect used. RCN REDUCED TO EQUAL WOODS BECAUSE OF DISCONNECT. PRE & POST RCN VALUES BECOME SAME.	Sheet Flow to Buffer Credit = 24,354 SF		N/A	N/A
3. Subarea D	Required: 2,134 CF	1,133 SF	Q < 2.0 cfs Exempt	Not Required	Not Required
Provided:	Non-roof-top & roof-top disconnected (4). RCN REDUCED TO EQUAL WOODS BECAUSE OF DISCONNECT. PRE & POST RCN VALUE BECOME SAME.	19,890 SF Sheet Flow to Buffer	Please see above	N/A	N/A

**NOTES:**

(1) WQV AND 1/2 OF CPV VOLUMES EQUAL TO 14,009 CF (6.294 + 7715) ARE PROVIDED IN THE MICROPOOL (PERMANENT POOL) AT ELEVATION = 477 = 14,058 CF.

(2) THE OTHER 1/2 OF CPV AND WQV VOLUMES ARE PROVIDED ABOVE THE MICRO POOL TO ELEVATION 481.50 = 75,087 CF

**ENGINEER'S CERTIFICATE**

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

Signature: *Jose H. Escalante* DATE: 06/06/08

JOSE H. ESCALANTE

**DEVELOPER'S CERTIFICATE**

I HAVE CERTIFIED THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PROFESSIONALS INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE REMED NECESSARY.

Signature: *Dale Thompson* DATE: 06/06/08

DALE THOMPSON

APPROVED: DEPARTMENT OF PUBLIC WORKS  
Signature: *William R. Marshall* DATE: 7-1-08  
WILLIAM R. MARSHALL, CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
Signature: *David R. ...* DATE: 7/3/08  
DAVID R. ..., CHIEF, DEVELOPMENT ENGINEERING DIVISION

Signature: *Conita Hamm* DATE: 7/5/08  
CONITA HAMM, CHIEF, DIVISION OF LAND DEVELOPMENT

**OWNER / DEVELOPER**

SK HOMES AT HIGHLAND OWINGS, LLC  
1060 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD. 21046  
PHONE: 301-870-5603

**SUMMARY TABLE DEVELOPED CONDITION, SITE AND OFFSITE AREAS**

STUDY POINT	AREA (Acre)	CN	TC (hrs.)	COMPARATIVE DISCHARGES, CFS													
				1 Year Storm		2 Year Storm		10 Year Storm		100 Year Storm							
				Exist.	Dev.	Exist.	Dev.	Exist.	Dev.	Exist.	Dev.						
B	(a)																
W/O Credits	5.83	68	0.28		1.56		4.29		12.48		23.10						
W/ Credits	5.83	64	0.28	1.00	0.93	2.62	2.97	9.68	10.34	19.43	20.34						
C	(b)																
W/O Credits	32.47																
W/ Credits	32.47			9.38	8.44	18.58	16.97	56.11	63.76	105.35	138.25						
D																	
W/O Credits	2.94	74	0.30		1.57		3.20		7.79		13.40						
W/ Credits	2.94	71	0.30	1.50	1.04	2.63	2.63	6.96	6.96	12.41	12.41						

(a) Peak runoff discharge from Subarea B at Study Point B only.  
(b) Combined peak runoff discharges of Subareas B and C at Study Point C as it leaves site.

**"AS-BUILT"**

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-26-08.

**DALE THOMPSON**  
BUILDERS  
6308 Woodside Court Suite A  
Columbia, MD 21045  
410-995-6736  
410-596-7280  
FAX: 410-381-8747

PROJECT: DEVELOPED DRAINAGE AREA MAP SITE AND OFFSITE AREA  
**OWINGS PROPERTY, LOT 5**  
LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 HARWOOD OWINGS PROPERTY  
TAX MAP 40, GRID 4, PARCEL: 44  
5TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND.

PROJECT NO.:  
SCALE: 1"=100'  
DATE: 06/06/08  
DRAWN BY: AVG  
CHECKED BY: JHE  
SHEET: 23 - 30  
F-06-112

**SOILS LEGEND HOWARD COUNTY**

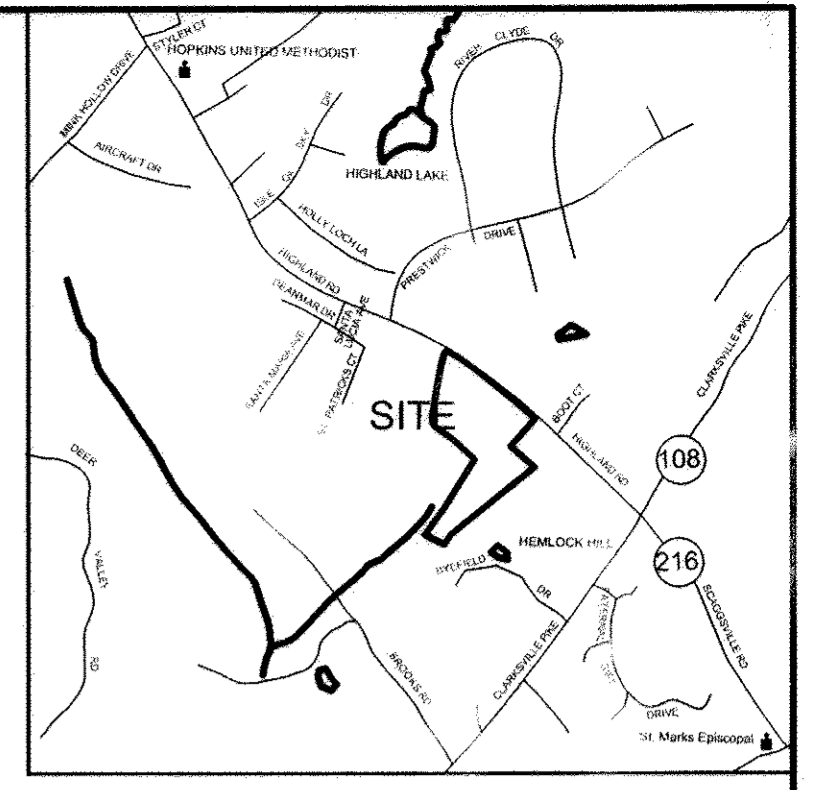
NON-HYDRIC SOILS LIST	HYDRIC SOIL GROUP
CH2: CHESTER SILT LOAM, 1 TO 8 PERCENT SLOPES, MODERATELY ERODED	
GL2: GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	
GLC: GLENELG LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	
EKC2: ELIOAK SILT LOAM, 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	
EBK2: ELIOAK SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	
GNB2: GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	
ELD3: ELIOAK SILTY CLAY LOAM, 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	
HYDRIC SOILS LIST	
BA: BAILE SILT LOAM	D

DESCRIPTION PER HOWARD COUNTY SOIL

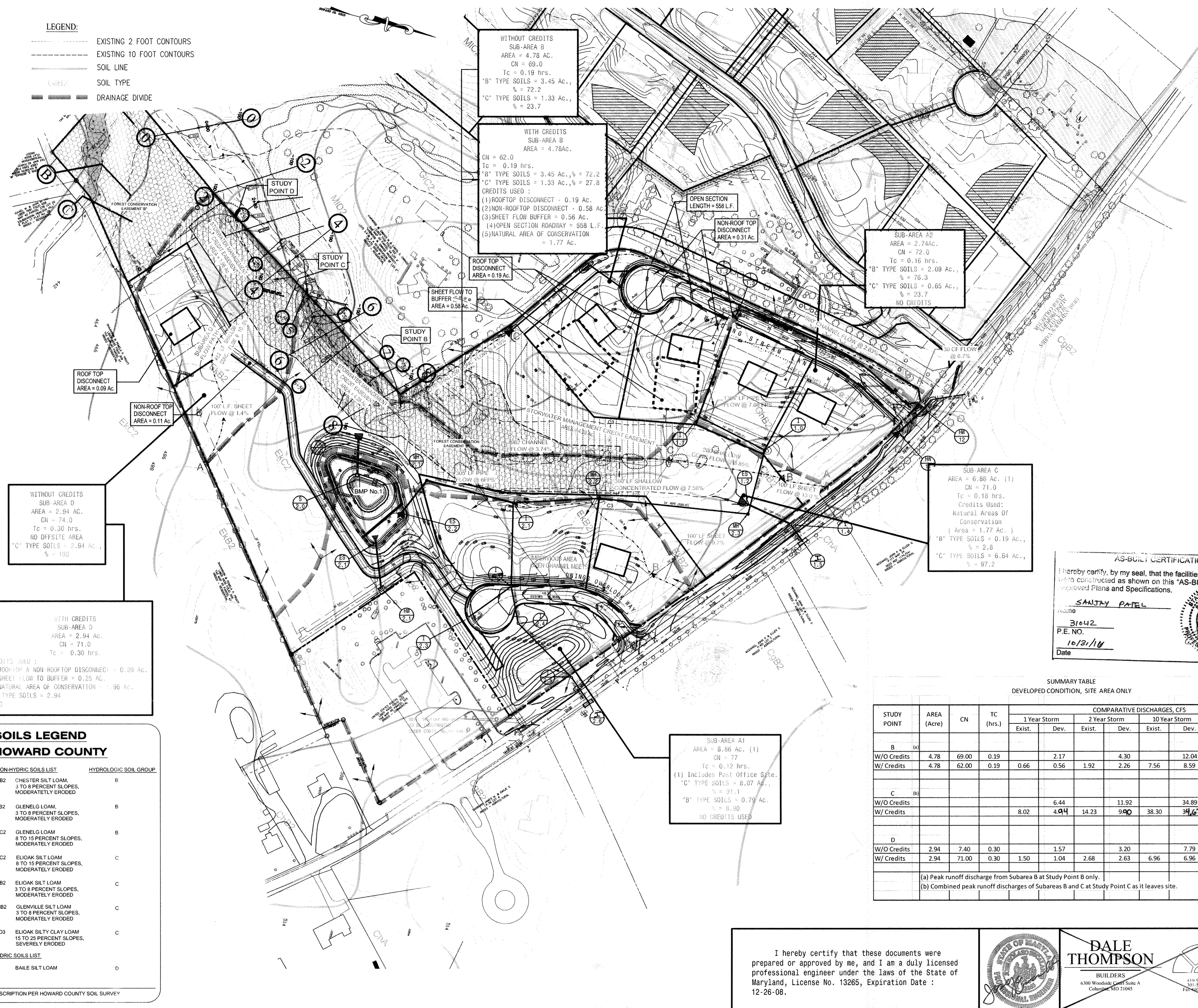
I:\OWINGS\SDP\OWINGS-10-29-07\FP22-23-24-25-SM-DAM.dwg, SITEOFFSITE AREAS 23, 8/1/2008 9:48:28 PM, giz



- LEGEND:**
- - - - - EXISTING 2 FOOT CONTOURS
  - - - - - EXISTING 10 FOOT CONTOURS
  - SOIL LINE
  - SOIL TYPE
  - DRAINAGE DIVIDE



VICINITY MAP  
SCALE: 1"=2000'



WITHOUT CREDITS  
SUB-AREA B  
AREA = 4.78 AC.  
CN = 69.0  
Tc = 0.19 hrs.  
"B" TYPE SOILS = 3.45 Ac.,  
% = 72.2  
"C" TYPE SOILS = 1.33 Ac.,  
% = 23.7

WITH CREDITS  
SUB-AREA B  
AREA = 4.78 AC.  
CN = 62.0  
Tc = 0.19 hrs.  
"B" TYPE SOILS = 3.45 Ac., % = 72.2  
"C" TYPE SOILS = 1.33 Ac., % = 27.8  
CREDITS USED:  
(1) ROOFTOP DISCONNECT - 0.19 AC.  
(2) NON-ROOFTOP DISCONNECT - 0.58 AC.  
(3) SHEET FLOW BUFFER = 0.56 AC.  
(4) OPEN SECTION ROADWAY = 568 L.F.  
(5) NATURAL AREA OF CONSERVATION = 1.77 AC.

SUB-AREA A2  
AREA = 2.74 AC.  
CN = 72.0  
Tc = 0.16 hrs.  
"B" TYPE SOILS = 2.09 AC.,  
% = 76.3  
"C" TYPE SOILS = 0.65 AC.,  
% = 23.7  
NO CREDITS

SUB-AREA C  
AREA = 6.86 AC. (1)  
CN = 71.0  
Tc = 0.18 hrs.  
Credits Used:  
Natural Areas Of  
Conservation  
(Area = 1.77 Ac.)  
"B" TYPE SOILS = 0.19 AC.,  
% = 2.8  
"C" TYPE SOILS = 6.64 AC.,  
% = 97.2

SUB-AREA A1  
AREA = 8.86 AC. (1)  
CN = 77  
Tc = 0.12 hrs.  
(1) Includes Post Office Site.  
"C" TYPE SOILS = 8.07 AC.,  
% = 91.1  
"B" TYPE SOILS = 0.79 AC.,  
% = 8.90  
NO CREDITS USED

WITHOUT CREDITS  
SUB-AREA D  
AREA = 2.94 AC.  
CN = 74.0  
Tc = 0.30 hrs.  
NO OFFSITE AREA  
"C" TYPE SOILS = 2.94 AC.,  
% = 100

WITH CREDITS  
SUB-AREA D  
AREA = 2.94 AC.  
CN = 71.0  
Tc = 0.30 hrs.  
CREDITS USED:  
(1) ROOFTOP & NON-ROOFTOP DISCONNECT - 0.20 AC.  
(2) SHEET FLOW TO BUFFER = 0.25 AC.  
(3) NATURAL AREA OF CONSERVATION = 1.96 AC.  
"C" TYPE SOILS = 2.94  
% 100

**SOILS LEGEND**  
**HOWARD COUNTY**

NON-HYDRIC SOILS LIST	HYDROLOGIC SOIL GROUP
CHB2 CHESTER SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
GLB2 GLENELG LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	B
GLC2 GLENELG LOAM 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	B
EKC2 ELIOAK SILT LOAM 8 TO 15 PERCENT SLOPES, MODERATELY ERODED	C
EKB2 ELIOAK SILT LOAM 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
CNB2 GLENVILLE SILT LOAM, 3 TO 8 PERCENT SLOPES, MODERATELY ERODED	C
ELD3 ELIOAK SILTY CLAY LOAM 15 TO 25 PERCENT SLOPES, SEVERELY ERODED	C
HYDRIC SOILS LIST	
BA BAILE SILT LOAM	D

DESCRIPTION PER HOWARD COUNTY SOIL SURVEY

**SUMMARY - WATER QUALITY REQUIRED / PROVIDED**  
**SITE AREA ONLY TABLE**

SUBAREA	CATEGORY				
	WATER QUALITY	RECHARGE	CHANNEL PROTECTION	OVERBANK FLOOD PROTECTION	EXTREME FLOOD
1. Subarea A1 & A2	Required: 6,294 CF Provided: 17,018 CF(1)	926 CF	15,429 CF	Not Required	Not Required
2. Subarea B	Required: 3,470 CF Provided: 3,470 CF	737 CF (R) 7263 SF	Q = 2.0 cfs Exempt	Not Required	Not Required
3. Subarea D	Required: 2,134 CF Provided: 10,800 S.F. Sheet Flow To Buffer	1,133 SF	Q=2.0 cfs Exempt	Not Required	Not Required

NOTES:  
(1) WQV AND 1/2 OF CPV VOLUMES EQUAL TO 14,009 CF (6,294 + 7715) ARE PROVIDED IN THE MICROPOOL (PERMANENT POOL) AT ELEVATION = 477 = 14,058 CF  
(2) THE OTHER 1/2 OF CPV, AND WQV VOLUMES ARE PROVIDED ABOVE THE MICRO POOL TO ELEVATION 481.50 = 75,067 CF

**AS-BUILT CERTIFICATION**  
I hereby certify, by my seal, that the facilities shown on this plan were constructed as shown on this "AS-BUILT" plan, meet the approved Plans and Specifications.

**SANJAY PATEL**  
P.E. NO. 31642  
Date: 10/21/08

**ENGINEER'S CERTIFICATE**  
"I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

**JOSE H. ESCALANTE**  
SIGNATURE OF ENGINEER  
06/06/08  
DATE

**DEVELOPER'S CERTIFICATE**  
"I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONS INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE ADEQUATE ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERSONS TO BE INSPECTED BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS AS REQUIRED NECESSARY."

**DALE THOMPSON**  
PRESIDENT DALE THOMPSON BUILDERS, INC  
SOLE MEMBER RUNNING BROOK, LLC  
06/06/08  
DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
**Walter Z. Swartz**  
CHIEF, BUREAU OF HIGHWAYS  
7-1-08  
DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
**Chris Williams**  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
7/8/08  
DATE

APPROVED: DIVISION OF LAND DEVELOPMENT  
**Chris Swann**  
CHIEF, DIVISION OF LAND DEVELOPMENT  
7/8/08  
DATE

**OWNER / DEVELOPER**  
**SK HOMES AT HIGHLAND OWINGS, LLC**  
1060 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD. 21046  
PHONE 301-870-5603

**SUMMARY TABLE**  
DEVELOPED CONDITION, SITE AREA ONLY

STUDY POINT	AREA (Acre)	CN	TC (hrs.)	COMPARATIVE DISCHARGES, CFS											
				1 Year Storm		2 Year Storm		10 Year Storm		100 Year Storm					
				Exist.	Dev.	Exist.	Dev.	Exist.	Dev.	Exist.	Dev.				
B (a)															
W/O Credits	4.78	69.00	0.19		2.17		4.30		12.04		21.98				
W/ Credits	4.78	62.00	0.19	0.66	0.56	1.92	2.26	7.56	8.59	15.44	17.52				
C (b)															
W/O Credits					6.44		11.92		34.89		81.21				
W/ Credits				8.02	4.94	14.23	9.90	38.30	34.67	68.80	84.60				
D															
W/O Credits	2.94	7.40	0.30		1.57		3.20		7.79		13.40				
W/ Credits	2.94	71.00	0.30	1.50	1.04	2.68	2.63	6.96	6.96	12.43	12.41				

(a) Peak runoff discharge from Subarea B at Study Point B only.  
(b) Combined peak runoff discharges of Subareas B and C at Study Point C as it leaves site.

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-26-08.

**DALE THOMPSON**  
BUILDERS  
6380 Woodside Court Suite A  
Columbia, MD 21045  
410-995-6736  
410-596-7289  
FAX: 410-591-8747

**PROJECT:** DEVELOPED SWM DRAINAGE AREA MAP SITE AREA ONLY  
**OWINGS PROPERTY, LOT 5**  
LOTS 17-22, NON-BUILDABLE PARCELS F & G, AND NON-BUILDABLE PARCELS H & I A RESUBDIVISION OF LOT 5 - HARBORWOOD OWINGS PROPERTY TAX MAP 40, GRID 4, PARCEL 44 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1"=100'  
DATE: 06/06/08  
DRAWN BY: AVG  
CHECKED BY: JHE  
SHEET: 24 - 30  
F-06-112



PROJECT: Owings Property  
 PROJECT NO: 051423.1  
 PROJECT LOCATION: Howard County, Maryland  
 DATE STARTED: March 9, 2006  
 DATE COMPLETED: March 9, 2006  
 DRILLING CONTRACTOR: GTA  
 DRILLER: J. Balk  
 DRILLING METHOD: HSA  
 SAMPLING METHOD: Split Spoon

WATER LEVEL: 6.8  
 DATE: 03/09/06  
 CAVED IN: 6.8  
 GROUND SURFACE ELEVATION: 55.2  
 DATUM: Survey  
 EQUIPMENT: 55-2  
 LOGGED BY: J. Balk  
 CHECKED BY: J. Rizzo

SAMPLE NUMBER	DEPTH (ft)	DIAMETER (in)	REMARKS
1	0.0	3-3/4	Top of 8 in.
2	2.5	3-4-4	
3	5.0	2-4-0	Water encountered at 5.0 feet
4	8.0	3-3-0	
5	13.6	2-2-2	Bottom of hole at 13.0 Feet.

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive Suite A  
 Laurel, MD 20707  
 LOG OF BORING NO. SWM-01  
 Sheet 1 of 1

PROJECT: Owings Property  
 PROJECT NO: 051423.1  
 PROJECT LOCATION: Howard County, Maryland  
 DATE STARTED: March 9, 2006  
 DATE COMPLETED: March 9, 2006  
 DRILLING CONTRACTOR: GTA  
 DRILLER: J. Balk  
 DRILLING METHOD: HSA  
 SAMPLING METHOD: Split Spoon

WATER LEVEL: 6.0  
 DATE: 03/09/06  
 CAVED IN: 6.0  
 GROUND SURFACE ELEVATION: 55.2  
 DATUM: Survey  
 EQUIPMENT: 55-2  
 LOGGED BY: J. Balk  
 CHECKED BY: J. Rizzo

SAMPLE NUMBER	DEPTH (ft)	DIAMETER (in)	REMARKS
1	0.0	3-3-0	Top of 8 in.
2	2.5	3-4-4	
3	5.0	4-6-0	Water encountered at 7.0 feet
4	8.0	3-3-4	
5	13.5	7-13-10	Bottom of hole at 13.0 Feet.

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive Suite A  
 Laurel, MD 20707  
 LOG OF BORING NO. SWM-02  
 Sheet 1 of 1

PROJECT: Owings Property  
 PROJECT NO: 051423.1  
 PROJECT LOCATION: Howard County, Maryland  
 DATE STARTED: March 9, 2006  
 DATE COMPLETED: March 9, 2006  
 DRILLING CONTRACTOR: GTA  
 DRILLER: J. Balk  
 DRILLING METHOD: HSA  
 SAMPLING METHOD: Split Spoon

WATER LEVEL: 6.5  
 DATE: 03/09/06  
 CAVED IN: 6.5  
 GROUND SURFACE ELEVATION: 55.2  
 DATUM: Survey  
 EQUIPMENT: 55-2  
 LOGGED BY: J. Balk  
 CHECKED BY: J. Rizzo

SAMPLE NUMBER	DEPTH (ft)	DIAMETER (in)	REMARKS
1	0.0	3-3-2	Top of 8 in.
2	2.5	3-4-4	
3	5.0	5-6-0	Water encountered at 8.0 feet
4	8.5	4-4-0	
5	14.5	7-6-0	Bottom of hole at 15.0 Feet.

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive Suite A  
 Laurel, MD 20707  
 LOG OF BORING NO. SWM-03  
 Sheet 1 of 1

PROJECT: Owings Property  
 PROJECT NO: 051423.1  
 PROJECT LOCATION: Howard County, Maryland  
 DATE STARTED: March 9, 2006  
 DATE COMPLETED: March 9, 2006  
 DRILLING CONTRACTOR: GTA  
 DRILLER: J. Balk  
 DRILLING METHOD: HSA  
 SAMPLING METHOD: Split Spoon

WATER LEVEL: 12.7  
 DATE: 03/09/06  
 CAVED IN: 12.6  
 GROUND SURFACE ELEVATION: 55.2  
 DATUM: Survey  
 EQUIPMENT: 55-2  
 LOGGED BY: J. Balk  
 CHECKED BY: J. Rizzo

SAMPLE NUMBER	DEPTH (ft)	DIAMETER (in)	REMARKS
1	0.0	2-4-4	Top of 8 in.
2	2.5	7-4-4	
3	5.0	7-7-2	Water encountered at 11.0 feet
4	8.0	23-41-400' 500'	
5	13.0	6-11-2	
6	18.0	6-6-3	
7	24.0	6-6-3	Bottom of hole at 25.0 Feet.

NOTES:  
 GEO-TECHNOLOGY ASSOCIATES, INC.  
 14280 Park Center Drive Suite A  
 Laurel, MD 20707  
 LOG OF BORING NO. SWM-04  
 Sheet 1 of 1

**AS-BUILT CERTIFICATION**  
 Note: There is no "AS-BUILT" information provided on this sheet.  
 Name: SANDHYA PATEL  
 P.E. NO.: 31042  
 Date: 10/21/16



**ENGINEER'S CERTIFICATE**  
 I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.  
 SIGNATURE OF ENGINEER: [Signature] DATE: 06/06/08  
 JOSE H. ESCALANTE

**DEVELOPER'S CERTIFICATE**  
 I HEREBY CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.  
 SIGNATURE OF DEVELOPER: [Signature] DATE: 06/06/08  
 PRESIDENT DALE THOMPSON BUILDERS, INC.  
 SOLE MEMBER RUNNING BROOK, LLC

APPROVED: DEPARTMENT OF PUBLIC WORKS  
 SIGNATURE: [Signature] DATE: 7-1-08  
 CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING  
 SIGNATURE: [Signature] DATE: 7/3/08  
 CHIEF, DEVELOPMENT ENGINEERING DIVISION &  
 SIGNATURE: [Signature] DATE: 7/21/05  
 CHIEF, DIVISION OF LAND DEVELOPMENT

DATE	NO.	REVISION

OWNER / DEVELOPER  
**SK HOMES AT HIGHLAND OWINGS, LLC**  
 7060 SAMUEL MORSE DRIVE  
 SUITE 500  
 COLUMBIA, MD. 21046  
 PHONE: 301-870-5603

**"AS-BUILT"**

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-26-08.	DALE THOMPSON BUILDERS 6300 Woodside Court Suite A Columbia, MD 21045 410-995-6736 301-596-7280 FAX 410-581-8747	PROJECT : <b>SOIL BORING LOG</b> <b>OWINGS PROPERTY, LOT 5</b> LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY TAX MAP 40, GRID 4, PARCEL 44 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.	PROJECT NO. SCALE: NTS DATE: 06/06/08 DRAWN BY: AVG CHECKED BY: JHE SHEET: 25 - 30 F-06-112
		OWNER / DEVELOPER <b>SK HOMES AT HIGHLAND OWINGS, LLC</b> 7060 SAMUEL MORSE DRIVE SUITE 500 COLUMBIA, MD. 21046 PHONE: 301-870-5603	

I:\OWINGS\SP\OWINGS-10-28-07\F226-SOIL BORING.dwg, SOIL BORING LOG 25, 6/5/2008 5:54:09 PM, guz



**PLANTING SPECIFICATIONS**

1. Plants, related material, and operations shall meet the detailed description, as given on the plans and as described herein. Where discrepancies exist between Standards & Guidelines referenced within these specifications and the Howard County Landscape Manual, the latter takes precedence.
2. All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, does not have a vigorous root system, and does not conform to the most recent edition of the American Association of Nurserymen (AAN) Standards will be rejected. Plant material that is not healthy, vigorous, free from defects, decay, disfiguring roots, sunscald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable deformations will be rejected. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will be rejected. All B & B plants shall be freshly dug; no heated-in plants or plants from cold storage will be accepted.
3. Unless otherwise specified, all general conditions, planting operations, details and planting specifications shall conform to the most recent edition of the "Landscape Specification Guidelines by the Landscape Contractors Association of MD, DC, & VA", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architects.
4. Contractor shall guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section on the Landscape Guidelines. Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.
5. Contractor shall be responsible for notifying all relevant and appropriate utility companies, utility contractors, and "Miss Utility" a minimum of 48 hours prior to the beginning of any work. Contractor may make minor adjustments to spacing and location of plant material to avoid conflicts with utilities. Major changes will require the approval of the landscape architect. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.
6. Protection of existing vegetation to remain shall be accomplished with the temporary installation of 4 foot high snow fence at the drip line, see detail.
7. Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within growing season of completion of site construction. Do not plant Pinus strobus or Xyprsoxyptis leafy until between November 15 and March 15. Landscape plants are not to be installed before site is graded to final grade.
8. Contractor to regrade, fine grade, sod, hydroseed and straw mulch all areas disturbed by their work.
9. Bid shall be based on actual site conditions. No extra payment shall be made for work arising from actual site conditions differing from those indicated on drawings and specifications.
10. Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence. Where discrepancies on the plan exist between the symbols and the callout leader, the number of symbols take precedence.
11. All shrubs and groundcover areas shall be planted in continuous planting beds, prepared as specified, unless otherwise indicated on plans. (See Specification 13). Beds to be mulched with minimum 2" and maximum 3" of composted, double-shredded hardwood mulch throughout.
12. Positive drainage shall be maintained on planting beds (minimum 2 percent slope).
13. Bed preparation shall be as follows: Till into a minimum depth of 6" 1 yrd of Compro or Leogro per 200 SF of planting bed, and 1 yrd of topsoil per 100 SF of bed. Add 3 lbs of standard 5-10-5 fertilizer per cubic yard of planting mix and till. Ericaceous plants (Azaleas, Rhododendrons, etc.); top dress after planting with iron sulfate or comparable product according to package directions. Toxicus toxa (Hepanans) (English weeping yew); Top dress after planting with 1/4 to 1/2 cup lime each.
14. Planting mix: For trees not in a prepared bed, mix 50% Compro or Leogro with 50% soil to use as backfill, see tree planting detail.
15. Weed & insect control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. For tree planting, apply a pre-emergent on top of soil and root ball before mulching. Caution: For areas to be planted with a ground cover, be sure to carefully check the chemical used to assure its compatibility to the specific groundcover to be treated. Maintain the mulch weed-free for the extent of the warranty period. Under no circumstances is a pesticide containing chlorpyrifos to be used as a means of pest control.
16. Water: All plant material planted shall be watered thoroughly the day of planting. All plant material not yet planted shall be properly protected from drying out until planted. At a minimum, water unplanted plant material daily and as necessary to avoid desiccation.
17. Pruning: Do not heavily prune trees and shrubs at planting. Prune only broken, dead, or diseased branches.
18. All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded, grass seed planted, and covered with straw mulch.

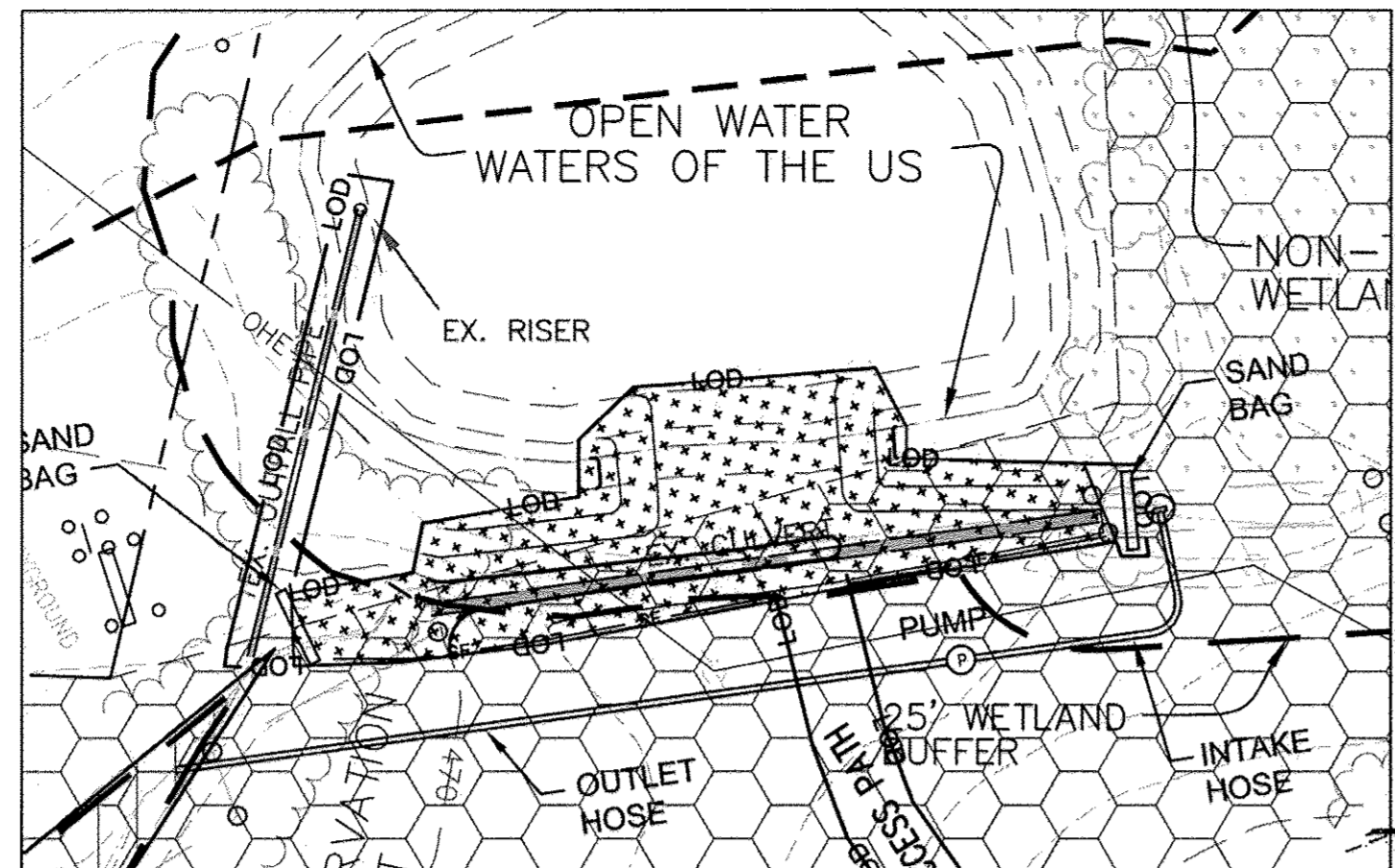
**GENERAL NOTES:**

1. ONE (1) FOREST STAND EXISTS ON-SITE.
2. 100-YEAR FLOODPLAIN EXISTS ON-SITE AS SHOWN.
3. NO CRITICAL HABITATS OF RARE, THREATENED OR ENDANGERED SPECIES WERE OBSERVED.
4. NO TREES, SHRUBS, OR PLANTS IDENTIFIED AS RARE, THREATENED OR ENDANGERED WERE OBSERVED.
5. THERE ARE NO KNOWN CEMETERY OR BURIAL PLOTS LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY CEMETERY SITE MAP.
6. THERE ARE NO KNOWN HISTORIC STRUCTURES OR SITES LOCATED ON THE SITE, ACCORDING TO THE HOWARD COUNTY HISTORIC PROPERTIES MAP.
7. THE SITE CONTAINS Bc, WHICH IS ON HOWARD COUNTY HYDRIC SOIL LIST.
8. THE HOWARD COUNTY FOREST CONSERVATION MANUAL SUPERSEDES ANY DISCREPANCIES BETWEEN THE MANUAL AND THESE PLANS.
9. SEE FOREST STAND DELINEATION REPORT DATED DECEMBER 27, 2001 FOR FIELD INVESTIGATION NARRATIVE.
10. THE ON-SITE REFORESTATION CONSERVATION SURETY IS \$73,398.80 (3.37 AC x \$0.80/SF). ON-SITE FOREST RETENTION BOND AMOUNT IS \$14,636.16 (1.68 AC x \$0.20/SF). TOTAL FOREST CONSERVATION SURETY AMOUNT IS \$88,034.96.
11. FINANCIAL SURETY FOR THE REQUIRED LANDSCAPING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$32,850 FOR REQUIRED PLANTS ONLY.  
89 SHADE TREES @ \$300 = \$26,700  
41 EVERGREEN TREES @ \$150 = \$6,150
12. FINANCIAL SURETY FOR THE REQUIRED STREET TREE PLANTING MUST BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF \$29,400 FOR REQUIRED PLANTS ONLY.  
98 STREET TREES @ \$300 = \$29,400.

**DEVELOPER'S/BUILDER'S CERTIFICATE:**

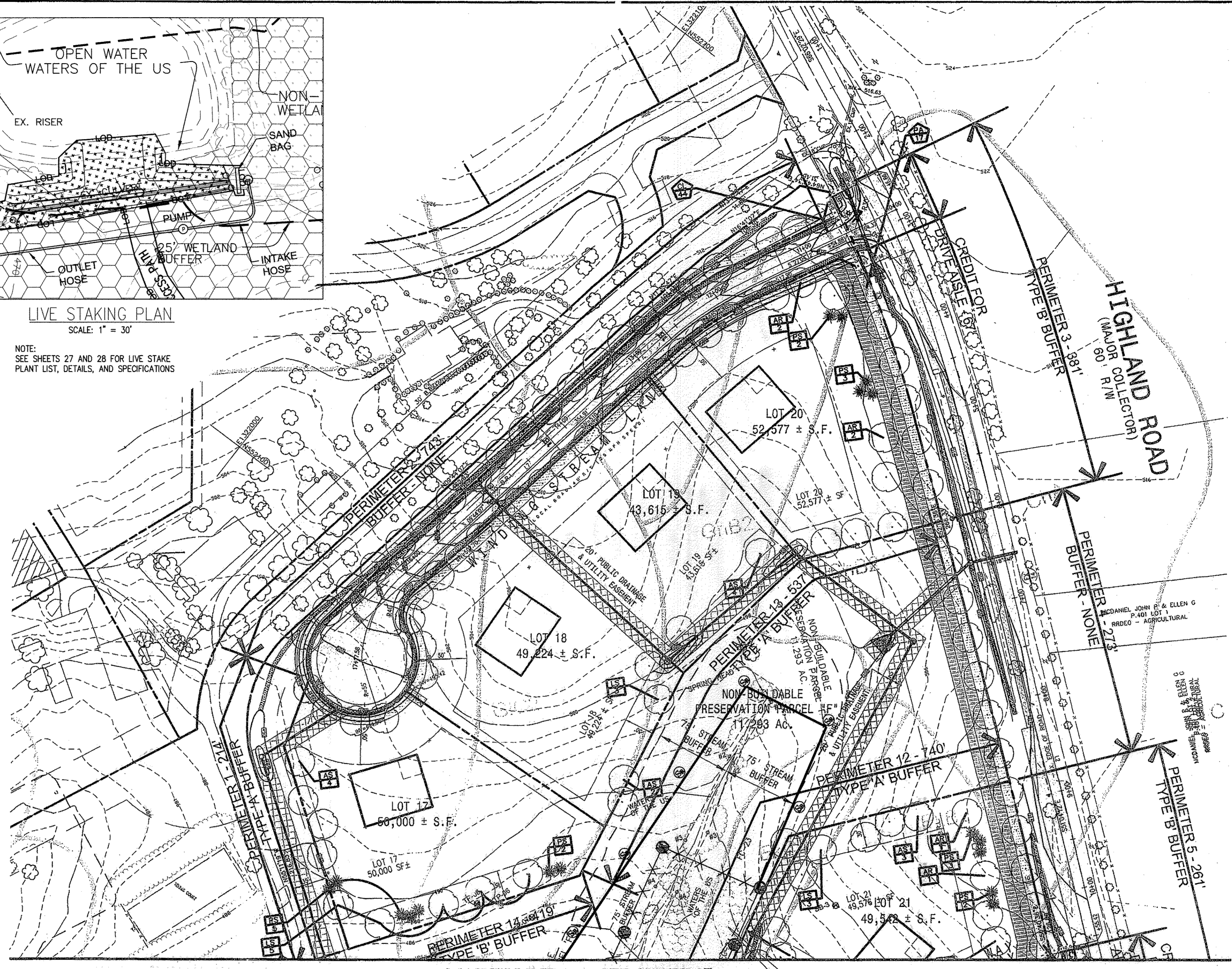
I/WE CERTIFY THAT THE LANDSCAPING SHOWN ON THIS PLAN WILL BE DONE ACCORDING TO THE PLAN, SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE HOWARD COUNTY LANDSCAPE MANUAL. I/WE FURTHER CERTIFY THAT UPON COMPLETION, A CERTIFICATION OF LANDSCAPE INSTALLATION, ACCOMPANIED BY AN EXECUTED ONE YEAR GUARANTEE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

*[Signature]*  
SIGNATURE DATE June 11, 2012



**LIVE STAKING PLAN**  
SCALE: 1" = 30'

NOTE:  
SEE SHEETS 27 AND 28 FOR LIVE STAKE  
PLANT LIST, DETAILS, AND SPECIFICATIONS



MATCH LINE A-A, SEE SHEET 27

**LEGEND**

- LOD LIMIT OF DISTURBANCE
- (S) FOREST RETENTION SIGN
- (SR) REFORESTATION SIGN
- (Tree symbol) EXIST. TREE >24" D.B.H. TO BE SAVED
- (Tree symbol with X) TREE >24" D.B.H. TO BE REMOVED
- (Tree symbol in circle) SPECIMEN TREE
- (Hatched area) FOREST CONSERVATION EASEMENTS
- (Grid area) FOREST TO BE REMOVED
- FP FLOODPLAIN

FOREST CONSERVATION  
EASEMENT 'B'  
GROSS FOREST: 0 ACRE  
(FLOODPLAIN-0.87 ACRE) 0.29  
FOREST PLANTED: 0.87 ACRE 3.40  
EASEMENT AREA: 0.64 ACRE 3.69

**LEGEND**

- CRZ CRITICAL ROOT ZONE (CRZ) (ESTIMATED RADIUS = 1.5 X DBH)
- (Hatched area) AREAS WITH 15-25% SLOPES
- (Hatched area) AREAS WITH 25% & GREATER SLOPES
- (Wavy line) EXIST. TREE LINE
- (Dashed line) PROP. TREE LINE
- (Tree symbol) EXIST. TREE
- (Tree symbol) PROP. TREE
- (AR 1) STREET TREE REQUIREMENT
- (AR 1) PERIMETER LANDSCAPE REQUIREMENT
- (Hatched area) 10' PUBLIC TREE MAINTENANCE EASEMENT

**AS-BUILT CERTIFICATION**  
Note: There is no "AS-BUILT" information provided on this sheet.

Name: SANDRA PATEL  
P.E. NO.: 31042  
Date: 10/21/12

Professional Engineer Seal for Sandra Patel, State of Maryland, License No. 31042.

**LANDSCAPE ARCHITECT'S CERTIFICATE**  
I HEREBY CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITION AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*[Signature]* 09/04/12  
SIGNATURE OF LANDSCAPE ARCHITECT DATE

**DEVELOPER'S CERTIFICATE**  
I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

*[Signature]* 9/4/12  
SIGNATURE OF DEVELOPER DATE

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*[Signature]* 10/2/12  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*[Signature]* 10/4/12  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

**"AS-BUILT"**  
*[Signature]* 10/28/12  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION
06/26/12	1	REVISE FOREST CONSERVATION EASEMENTS

OWNER / DEVELOPER:  
SK HOMES AT HIGHLAND OWINGS, LLC  
7090 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD 21046  
301-870-5603

**REVISED FINAL ROAD CONSTRUCTION PLAN**

**PURPOSE OF REVISION TO THIS SHEET**

1. TO SHOW NEW FOREST CONSERVATION EASEMENT
2. TO SHOW BLOW UP OF THE AREA AROUND EXISTING FARM POND

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-26-08.



**DALE THOMPSON**  
BUILDERS  
6300 Woodside Court  
Columbia, MD 21045  
410-995-6736  
410-995-7989  
Fax: 410-381-6747

**LANDSCAPE & FOREST CONSERVATION PLAN OWINGS PROPERTY, LOT 5**  
LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY "AX MAP" 40, GRID 4, PARCEL 44 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.

PROJECT NO. 02/01/08  
DRAWN BY: AVG  
CHECKED BY: JHE  
SCALE: 1"=60'  
DATE: 02/01/08  
SHEET: 26 - 30  
F-06-112



### LEGEND

- CRZ CRITICAL ROOT ZONE (CRZ) (ESTIMATED RADIUS = 1.5' X DBH)
- AREAS WITH 15-25% SLOPES
- AREAS WITH 25% & GREATER SLOPES
- EXIST. TREE LINE
- PROP. TREE LINE
- EXIST. TREE
- PROP. TREE
- STREET TREE REQUIREMENT
- PERIMETER LANDSCAPE REQUIREMENT
- 10' PUBLIC TREE MAINTENANCE EASEMENT

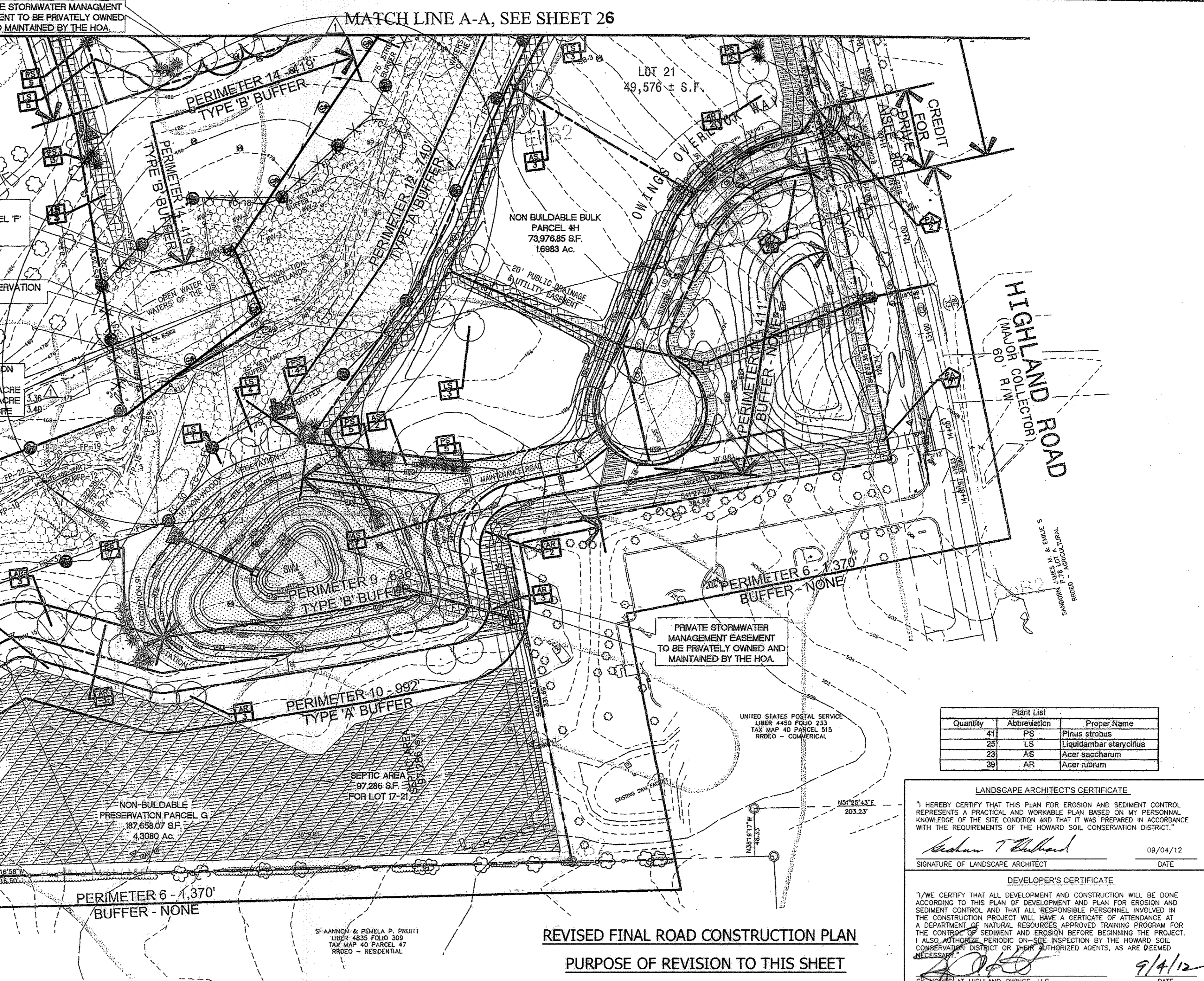
### LEGEND

- LOD LIMIT OF DISTURBANCE
- PROPOSED FOREST RETENTION AREA SIGN (TO BE INSTALLED PRIOR TO CONSTRUCTION)
- FOREST RETENTION SIGN
- REFORESTATION SIGN
- EXIST. TREE >24" D.B.H. TO BE SAVED
- TREE >24" D.B.H. TO BE REMOVED
- SPECIMEN TREE
- FOREST CONSERVATION EASEMENTS
- FOREST TO BE REMOVED
- FLOODPLAIN

### AS-BUILT CERTIFICATION

Note: There is no "AS-BUILT" information provided on this sheet.

**SANDY PAEL**  
Name  
31042  
P.E. NO.  
10/31/16  
Date



**FOREST CONSERVATION EASEMENT 'A'**  
GROSS FOREST: 189 ACRE  
(FLOODPLAIN: 6.27 ACRE)  
RETENTION: 169 ACRE  
EASEMENT AREA: 189 ACRE

### RESTORATION PLANT LIST

SEE SHEET 26 FOR PLAN VIEW

QTY.	COMMON NAME	BOTANICAL NAME	SIZE
10	Red Maple	<i>Acer rubrum</i>	2 gal. or larger containers
10	Black Willow	<i>Salix nigra</i>	2 gal. or larger containers
10	Silky Dogwood	<i>Cornus amomum</i>	2 gal. or larger containers
10	Arrowwood	<i>Viburnum dentatum</i>	2 gal. or larger containers

Specifications: 2 gallon or larger containers = 24" or greater in height

Plant list (To be planted on average 2 to 3 feet apart)

QTY.	Scientific Name	Common Name	Size
240	<i>Cornus sericea</i>	Red Osier Dogwood	Whips or Live Stake 18-24"
240	<i>Salix nigra</i>	Black Willow	Whips or Live Stake 18-24"
240	<i>Viburnum dentatum</i>	Arrowwood	Whips or Live Stake 18-24"
240	<i>Saburus canadensis</i>	American Elderberry	Whips or Live Stake 18-24"

Total 960 Plants

### PLANTING SPECIFICATIONS:

- Plant Materials**
  - Plant material will be inspected by an authorized representative prior to planting. All plant material deemed unacceptable due to damage or poor health will be required to be replaced with acceptable plant material by the authorized representative.
- Planting Schedule**
  - All plants shall be installed between March 1 to May 30 or September 1 to October 30.
  - The representative retains the right to inspect the storage site, and plants prior to delivery to the site.
- Bed Preparation**
  - Bed preparation will include the seeding and stabilization of the graded areas prior to planting of bare root or live stake plant material.
  - The contractor shall mark the locations of each planting area. The locations shall be field verified by an authorized representative prior to planting.
  - Live stakes shall be planted on 7-3-foot centers across the stabilized stream banks.
  - Container grown material shall be planted on 8-10-foot centers across gradient within the designated stabilization area.
  - Final cleanup shall be the responsibility of the contractor and consist of removing all trash and materials incidental to the project and the proper disposal of the material off-site.
  - Cleanup procedure activities shall not damage existing plants.
- Plant Maintenance and Management**
  - Vegetation demonstrating immediate stress or dieback will be replaced.
  - In addition, soil and climatic factors will be analyzed in relation to plant growth. The following management technique will be utilized.
    - Replace dead or dying plant species with same species or approved alternative.
    - Remove debris that impacts plant growth quarterly, during the growing season.
    - All excessive noxious and invasive plant growth shall be eradicated using an acceptable method.

### STREET TREE PLANT SCHEDULE

QTY	KEY	NAME	SIZE/TYPE	ROOT CONDITION	REMARKS
72	CL	SHADE TREES CLADRASTIS LUTEA YELLOW WOOD	1 1/2" - 2" CAL	B & B	40' D.C. OR AS SHOWN WITHIN 10' TREE EASEMENT EXCEPT WHERE NOTED ON PLAN
26	PA	PLANTINUS X ACERIFOLIA BLOODGOOD LONDON PLANE	2 1/2" - 3" CAL	B & B	

### GRAND TOTAL OF ONSITE LANDSCAPING REQUIREMENTS (PERIMETER LANDSCAPING AND STREET TREES)

GRAND TOTAL OF PLANTINGS REQUIRED:	179 SHADE TREES
	41 EVERGREEN TREES
GRAND TOTAL OF PLANTINGS PROVIDED:	187 SHADE TREES
	41 EVERGREEN TREES

### SPECIMEN TREE IDENTIFICATION LIST

BOTANICAL NAME / COMMON NAME	TRUNK (C.D.B.)	TREE HEIGHT	TREE CANOPY	TREE CONDITION	TREE PROTECTION MEASURES
1. LIRODENDRON TULIPIFERA TULIP POPLAR	31"	65'	40'	FAIR	REMOVE
2. LIRODENDRON TULIPIFERA TULIP POPLAR	31"	60'	30'	FAIR	SAVE, ROOT PRUNE
3. CATALPA BIGNONIODES SOUTHERN CATALPA	32"	65'	20'	POOR	REMOVE

### STREET TREE REQUIREMENT / PROVIDED TABLE

NUMBER OF SHADE TREES REQUIRED	STREET TREES PROVIDED
HIGHLAND ROAD - 1,011' @ 1 LARGE TREE @ 40' O.C. (AVG.)	26 STREET TREES
WINDING STREAM LANE - 1,540' @ 1 LARGE TREE @ 40' O.C. (AVG.)	39 STREET TREES
OWINGS OVERLOOK - 999' @ 1 LARGE TREE @ 40' O.C. (AVG.)	25 STREET TREES
TOTAL NUMBER OF SHADE TREES REQUIRED	90 STREET TREES
TOTAL NUMBER OF SHADE TREES PROVIDED	98 STREET TREES

### PROFESSIONAL CERTIFICATION

"I HEREBY CERTIFY THAT THE RED-LINE REVISIONS SHOWN HEREON, INDICATED BY THE SYMBOL WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3608 EXPIRATION DATE: 12/21/12"

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-26-08.

### DALE THOMPSON

BUILDERS  
6200 Woodside Court  
Columbia, MD 21045

410-995-6736  
301-596-7124  
FAX: 410-261-4247

### LANDSCAPE & FOREST CONSERVATION PLAN

OWINGS PROPERTY, LOT 5

LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY, TAX MAP 40 GRID 4, PARCEL 44 40 GRID 4, PARCEL 44 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.

OWNER / DEVELOPER:  
SK HOMES AT HIGHLAND OWINGS, LLC  
7090 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD 21046  
301-870-5603

PROJECT NO. 02/0108  
SCALE: 1"=60'  
DATE: 02/01/08  
DRAWN BY: AVG  
CHECKED BY: JHE  
SHEET: 27 - 30

### Plant List

Quantity	Plant List Abbreviation	Proper Name
41	PS	Pinus strobus
25	LS	Liquidambar styraciflua
23	AS	Acer saccharum
38	AR	Acer rubrum

### LANDSCAPE ARCHITECT'S CERTIFICATE

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

*Sharon T. Hubbard*  
SIGNATURE OF LANDSCAPE ARCHITECT  
09/04/12  
DATE

### DEVELOPER'S CERTIFICATE

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

*Diane Shroyer*  
DATE: 9/4/12

APPROVED: DEPARTMENT OF PUBLIC WORKS  
*Diane Shroyer, Acting*  
CHIEF, BUREAU OF HIGHWAYS  
DATE: 10/2/12

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.  
*John Deane*  
CHIEF, DEVELOPMENT ENGINEERING DIVISION  
DATE: 10/4/12

*Vet Sheldon*  
CHIEF, DIVISION OF LAND DEVELOPMENT  
DATE: 10/08/12

DATE	NO.	REVISION
06/26/12	1	REVISE FOREST CONSERVATION EASEMENTS

OWNER / DEVELOPER:  
SK HOMES AT HIGHLAND OWINGS, LLC  
7090 SAMUEL MORSE DRIVE  
SUITE 500  
COLUMBIA, MD 21046  
301-870-5603

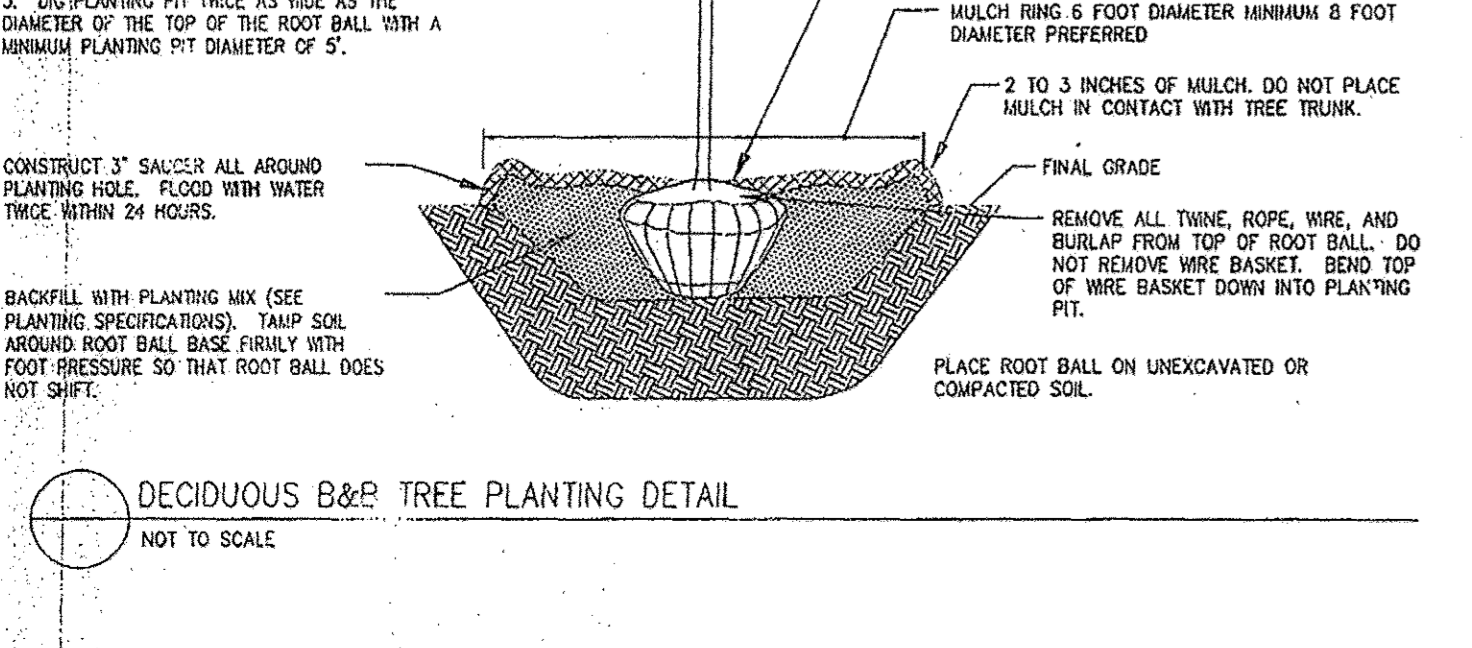
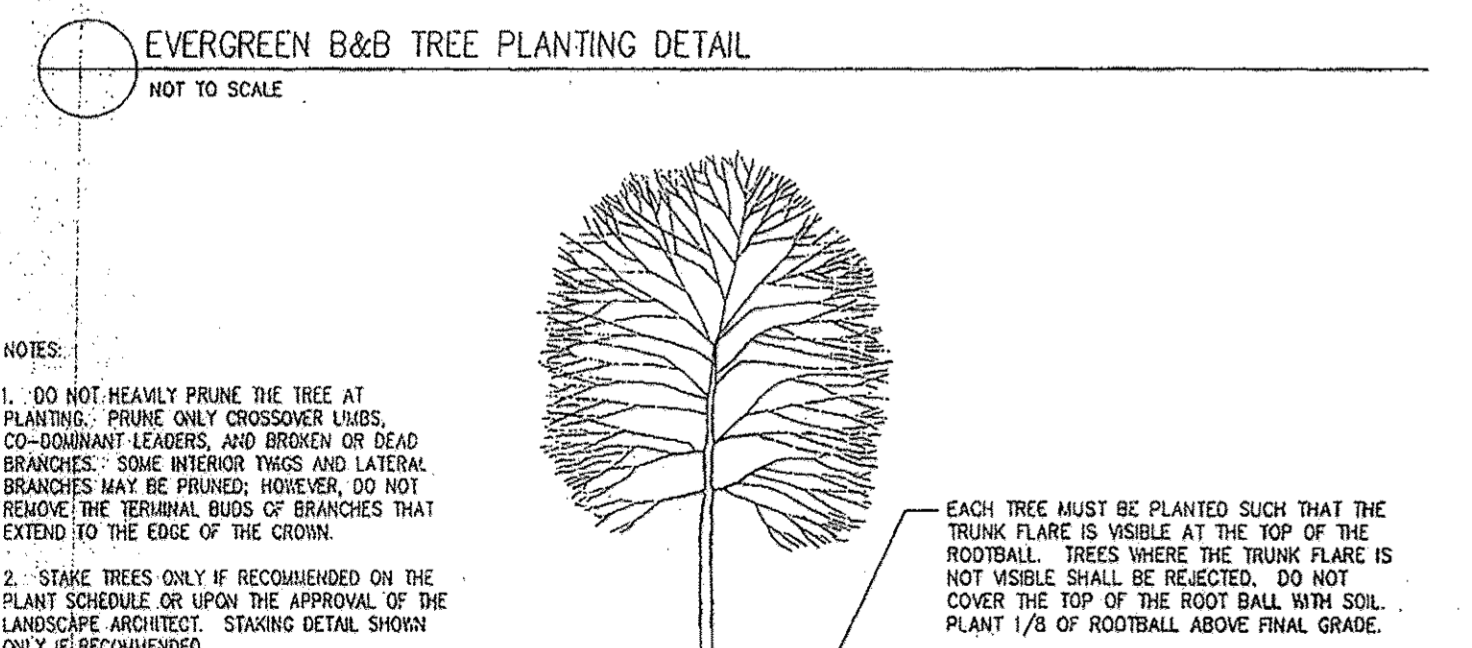
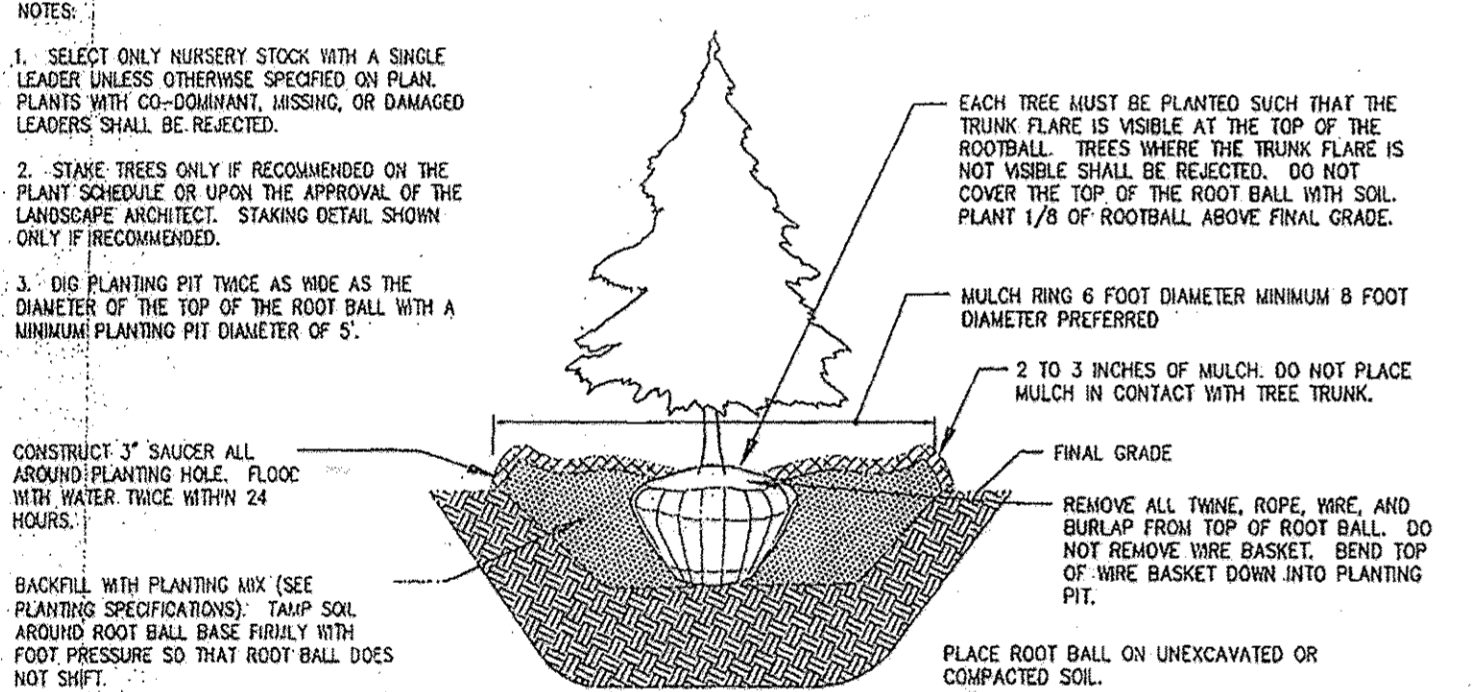
PROJECT NO. 02/0108  
SCALE: 1"=60'  
DATE: 02/01/08  
DRAWN BY: AVG  
CHECKED BY: JHE  
SHEET: 27 - 30



SCHEDULE "A" PERIMETER LANDSCAPE EDGE (FOR EACH PERIMETER)											
PERIMETER	CATEGORY (PROPERTIES/ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF ROADWAY FRONTAGE/PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)		NUMBER OF PLANTS REQUIRED			NUMBER OF PLANTS PROVIDED		
				YES	NO	SHADE TREES	EVERGREEN TREES	SHRUBS	SHADE TREES	EVERGREEN TREES	SHRUBS
1	SFD TO SFD	A	214'	NO	NO	4	---	---	4	---	---
2	SFD TO ROAD	NONE**	743'	NO	NO	---	---	---	---	---	---
3	SFD TO ROAD	B	288'	NO	NO	4	5	---	4	5	---
4	PRESERVATION PARCEL TO ROAD	NONE***	354'	NO	NO	---	---	---	---	---	---
5	SFD TO ROAD	B	281'	NO	NO	4	5	---	4	5	---
6	PRESERVATION PARCEL TO A ROAD & PROPERTIES	NONE***	1,370'	NO	NO	---	---	---	---	---	---
7	SFD TO SFD	A	254'	NO	NO	5	---	---	5	---	---
8	SFD TO PRESERVATION PARCEL	A	712'	YES - 180' OF FOREST TO BE RETAINED IN EASEMENT	NO	9	---	---	9	---	---
9	SFD TO SWM	B	835'	NO	NO	17	21	---	17	21	---
10	SFD TO PRESERVATION PARCEL	A	892'	NO	NO	17	---	---	17	---	---
11	SFD TO ROAD	NONE**	411'	NO	NO	---	---	---	---	---	---
12	SFD TO PRESERVATION PARCEL	A	740'	NO	NO	12	---	---	12	---	---
13	SFD TO PRESERVATION PARCEL	A	525'	NO	NO	9	---	---	9	---	---
14	SFD TO SWM	B	419'	NO	NO	8	10	---	8	10	---
<b>TOTAL TABULATION FOR LOT 5:</b>						<b>89</b>	<b>41</b>	<b>---</b>	<b>89</b>	<b>41</b>	<b>---</b>

\* A = 1 SHADE TREE/ 60 LF  
 B = 1 SHADE TREE/ 50 LF; 1 EVERGREEN/ 40 LF  
 \*\* PER H.O.C.O. LANDSCAPE MANUAL, NO PERIMETER IS REQUIRED FOR SINGLE FAMILY DETACHED UNITS FACING THE ROAD.  
 \*\*\* PER H.O.C.O. LANDSCAPE MANUAL, NO BUFFER OR SCREEN IS REQUIRED BETWEEN PRESERVATION PARCELS AND ADJACENT PROPERTIES.

QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE/TYPE	ROOT CONDITION	REMARKS
<b>SHADE TREES</b>						
72	CL	CLADRASTIS LUTEA	YELLOW WOOD	2 1/2"-3"	CAL B & B	
39	AR	ACER RUBRUM	RED MAPLE (OCTOBER GLORY)	2 1/2"-3"	CAL B & B	
26	PA	PLANTINUS X ACERIFOLIA	BLOODGOOD LONDON PLANE	2 1/2"-3"	CAL B & B	
21	AS	ACER SACCHARUM	SUGAR MAPLE	2 1/2"-3"	CAL B & B	
29	LS	LIQUIDAMBAR STRYACIFLUA	SWEETGUM	2 1/2"-3"	CAL B & B	
<b>EVERGREEN TREES</b>						
41	PS	PINUS STROBUS	WHITE PINE	6" - 8" HEIGHT	B & B	



**FOREST PROTECTION PROCEDURES—CONSTRUCTION PHASE**  
 FOREST AND TREE CONDITIONS SHOULD BE MONITORED DURING CONSTRUCTION AND CORRECTIVE MEASURES TAKEN WHEN APPROPRIATE.

THE FOLLOWING SHALL BE MONITORED:

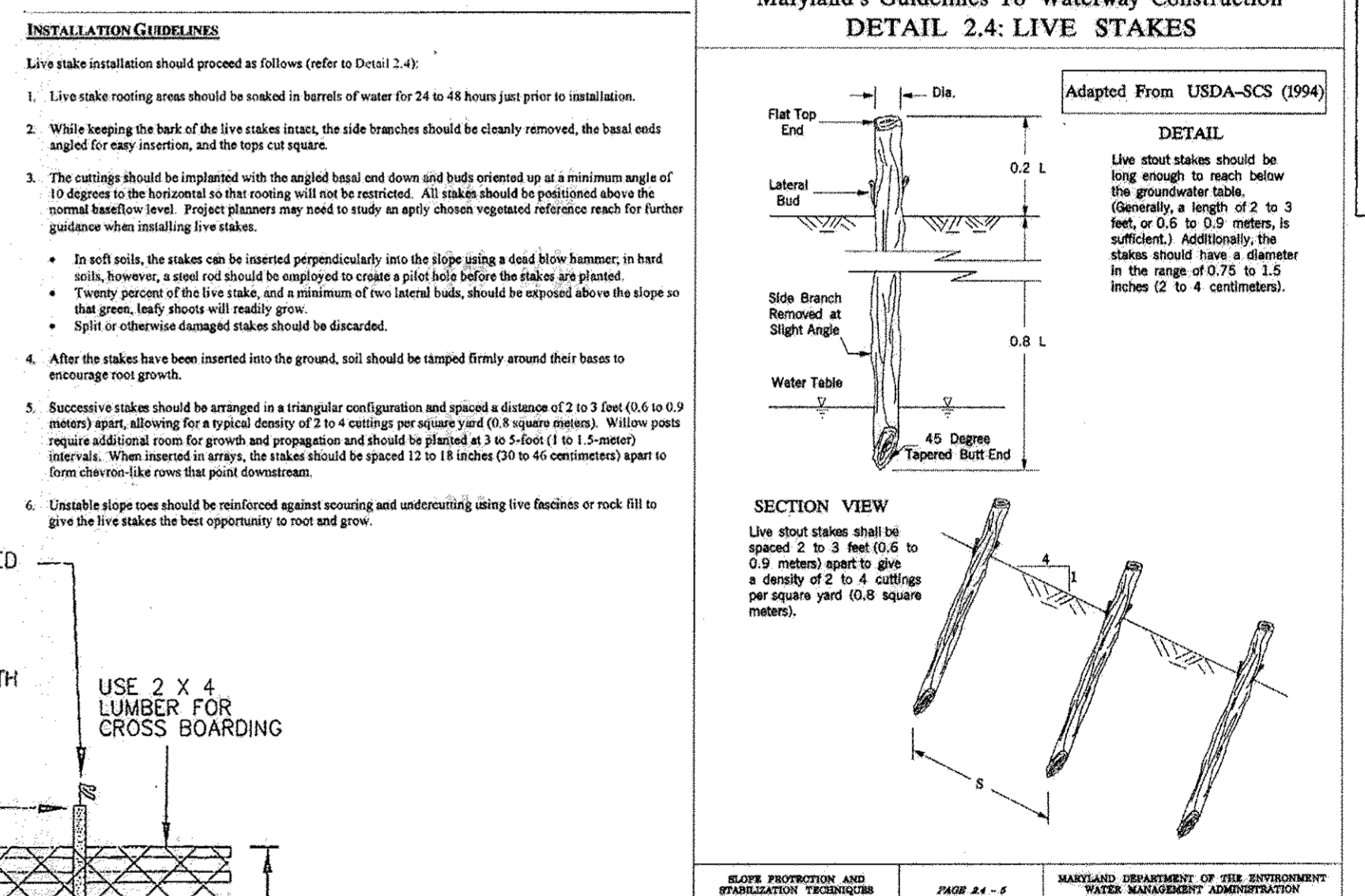
- SOIL COMPACTION
- ROOT INJURY—PRUNE AND MONITOR; CONSIDER CROWN REDUCTION
- LIMB INJURY—PRUNE AND MONITOR
- FLOODED CONDITION—DRAIN AND MONITOR; CORRECT PROBLEM
- DROUGHT CONDITIONS—WATER AND MONITOR; CORRECT PROBLEM
- OTHER STRESS SIGNS—DETERMINE REASON, CORRECT, AND MONITOR

**FOREST PROTECTION PROCEDURES—POST—CONSTRUCTION PHASE**

THE FOLLOWING MEASURES SHALL BE TAKEN:

- CORRECTIVE MEASURES IF DAMAGES WERE INCURRED DUE TO NEGLIGENCE:
  - STRESS REDUCTION
  - REMOVAL OF DEAD OR DYING TREES. THIS MAY BE DONE ONLY IF TREES POSE AN IMMEDIATE SAFETY HAZARD.
- REMOVAL OF TEMPORARY STRUCTURES:
  - NO BURIAL OF DISCARDED MATERIALS WILL OCCUR ON-SITE WITHIN THE CONSERVATION AREA
  - NO OPEN BURNING WITHIN 100 FEET OF A WOODED AREA
  - ALL TEMPORARY FOREST PROTECTION STRUCTURES WILL BE REMOVED AFTER CONSTRUCTION
  - REMOVE TEMPORARY ROADS BY REMOVING STONE OR BROADCASTING MULCH; PRE-CONSTRUCTION ELEVATION SHOULD BE MAINTAINED
  - AERATE COMPACTED SOIL
  - REPLANT DISTURBED SITES WITH TREES, SHRUBS AND/OR HERBACEOUS PLANTS
  - RETAIN SIGNS FOR RETENTION AREAS OR SPECIMEN TREES
  - A COUNTY OFFICIAL SHALL INSPECT THE ENTIRE SITE

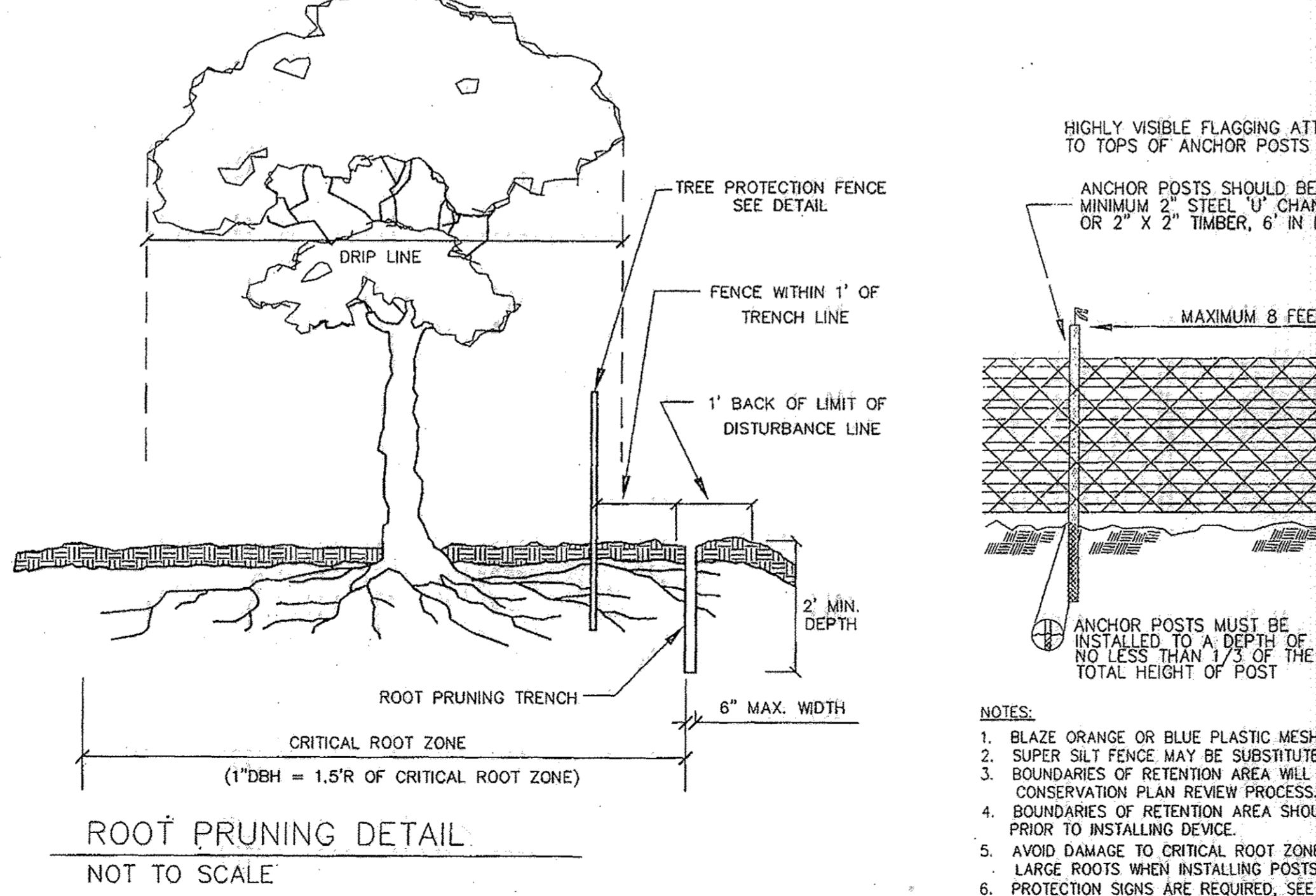
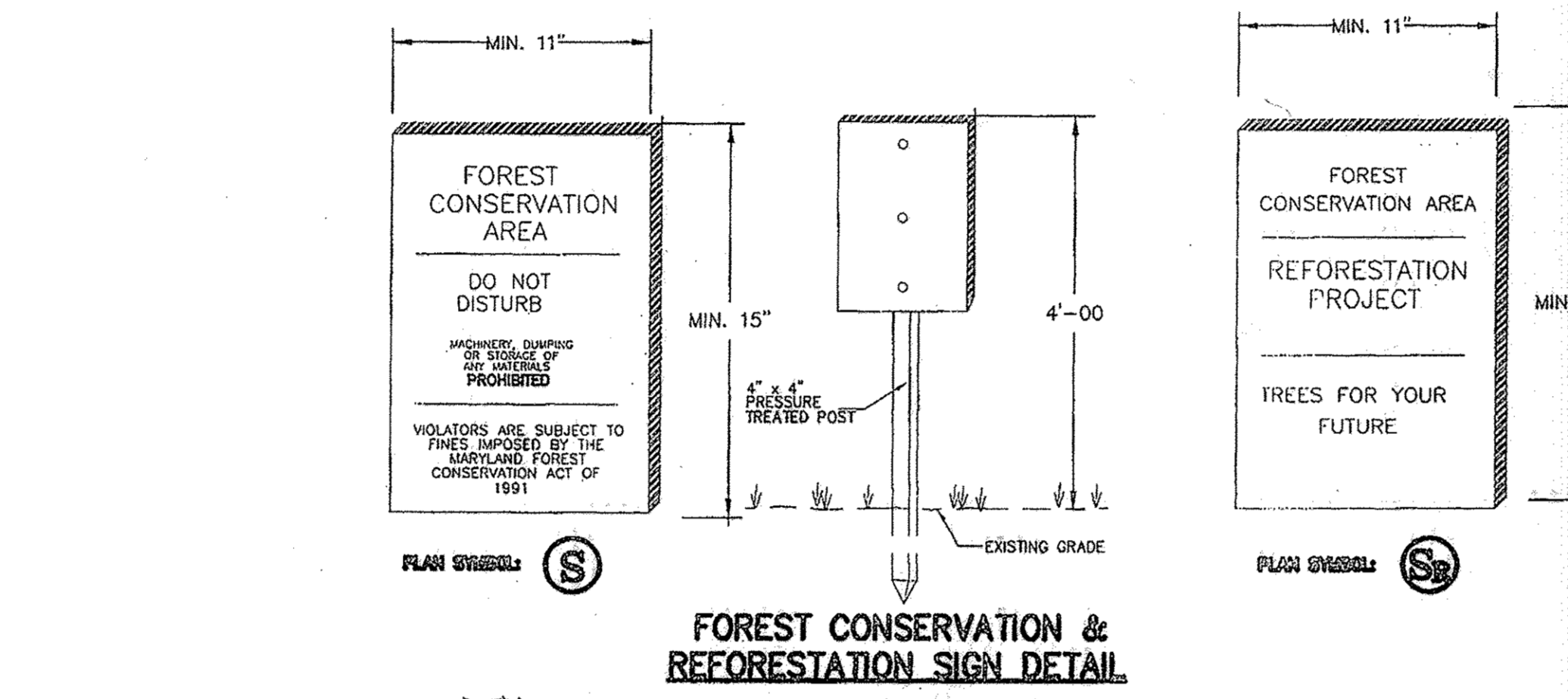
Howard County Forest Conservation Worksheet		Acres
Project Name: <u>Owings Property</u>		
State File #: <u>11-0000000000</u>		
Date: <u>November 14, 2006</u> - <u>June 21, 2012</u>		
<b>Net Tract Area</b>		
A. Total Tract Area		25.64
B. Sweet Gum		0.48
C. Net Tract Area	Net Tract Area = (A-B-C)	25.13
<b>Land Use Category: Residential - Suburban</b>		
D. Afforestation Threshold (Net Tract Area X .20%)		5.03
E. Conservation Threshold (Net Tract Area X .25%)		6.28
<b>Existing Forest Cover</b>		
F. Existing Forest Cover within the Net Tract Area		1.70
G. Area of Forest Above Conservation Threshold		0.00
If the Existing Forest Cover (F) is greater than Conservation Threshold (E), then G = Existing Forest Cover (F) - Conservation Threshold (E); Otherwise G = 0		
<b>Break Even Point</b>		
H. Break Even (Amount of forest that must be retained so that no mitigation is required)		FALSE
If the area of forest above the Conservation Threshold (G) is greater than zero, then H = (0.2 X the area of forest above Conservation Threshold (G)) + the Conservation Threshold (E)		
<b>Proposed Forest Clearing</b>		
I. Total Area of Forest to be Cleared		4.70
J. Total Area of Forest to be Retained		0.02
K. Existing Forest Cover (F) - forest to be cleared (I)		1.65
<b>Planting Requirements</b>		
L. If the Total Area of Forest to be Cleared (K) is at or above the Break Even Point (H), no planting is required and no further calculations are necessary (L=0, M=0, N=0, P=0);		0.00
If the Total Area of Forest to be Cleared (K) is less than the Break Even Point (H), calculate the planting requirement below:		
<b>Reforestation for Clearing Above the Conservation Threshold</b>		
(1) If the total area of forest to be retained (K) is greater than the Conservation Threshold (E), then L = the area of forest to be cleared (I) X 0.25; (2) If the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then L = area of forest above Conservation Threshold (G) X 0.25		
<b>Reforestation for Clearing Below the Conservation Threshold</b>		
(1) If Existing Forest Cover (F) is greater than Conservation Threshold (E) and the forest to be retained (K) is less than or equal to the Conservation Threshold (E), then M = 2.0 X (the Conservation Threshold (E) - the forest to be retained (K)) (2) If Existing Forest (F) is less than or equal to the Conservation Threshold (E), then M = 2.0 X Forest to be cleared (I)		
<b>Credit for Retention Above the Conservation Threshold</b>		
If the area of forest to be retained (K) is greater than the Conservation Threshold (E), then N = K - E		
<b>Total Reforestation Required P = L + M - N</b>		
P. Total Reforestation Required		0.04
Q. Afforestation Threshold (D) - the Existing Forest Cover (F)		3.36
R. Total Planting Requirement R = P + Q		3.40



REFORESTATION REQUIREMENT VS. PROVIDED PLANTING TABULATION	
FOREST CONSERVATION EASEMENT 'B'	TOTAL REFORESTATION AREA
	3.37 AC.
# OF 1" CALIPER REQUIRED:	3.37 AC X 350 WHIPS PER AC = 1,180 WHIPS
# OF WHIPS PROVIDED:	1,180 WHIPS
	* DENSITY: 350 WHIPS PER ACRE

**FOREST CONSERVATION EASEMENT STANDARD NOTES:**

THE FOREST CONSERVATION EASEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.12.000 OF THE HOWARD COUNTY CODE, FOREST CONSERVATION ACT. NO CLEARING, GRADING, OR CONSTRUCTION PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.



**NOTE:**

- RETENTION AREAS WILL BE SET AS PART OF THE REVIEW PROCESS.
- BOUNDARIES OF RETENTION AREAS SHOULD BE STAKED AND FLAGGED PRIOR TO TRENCING.
- EXACT LOCATION OF TRENCH SHOULD BE IDENTIFIED.
- TRENCH SHOULD BE IMMEDIATELY BACKFILLED WITH SOIL REMOVED OR OTHER HIGH ORGANIC SOIL.
- ROOTS SHOULD BE CLEANLY CUT USING VIBRATORY KNIFE OR OTHER ACCEPTABLE EQUIPMENT.
- ALL TREES LESS THAN 10' FROM TRAIL REQUIRE ROOT PRUNING.

**REVISED FINAL ROAD CONSTRUCTION PLAN**

**PURPOSE OF REVISION TO THIS SHEET**

- TO SHOW NEW FOREST CONSERVATION WORKSHEET DUE TO ELIMINATION OF GRADING AT EXISTING FARM POND

**PROFESSIONAL CERTIFICATION**

I HEREBY CERTIFY THAT THE RED-LINE REVISIONS SHOWN HEREON, INDICATED BY THE SYMBOL WERE PREPARED OR APPROVED BY ME, AND I AM A DULY LICENSED PROFESSIONAL LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 3608 EXPIRATION DATE: 12/21/12"

**DALE THOMPSON**  
 BUILDERS  
 6300 Woodbine Court  
 Columbia, MD 21046  
 410-955-5736  
 FAX: 410-381-8747

**PLANTING PLAN**

The tree species selected are consistent with the mixed upland oak association native to the upland soils, and the river birch association in the riparian areas (i.e., wetter soils). The County Manual recommends a planting density of 350 per acre with tree shelters, and the schedule below meets the recommendation. Species will be randomly mixed and planted approximately 11' apart from other plantings. Straight rows should be avoided to simulate a more natural arrangement. The total number of plants will be 1180 trees based on 3.37 ac. at 350 whips/ac.

UPLAND SPECIES	SIZE QUANTITY/ACRE
acer rubrum	WHIPS 148
liquidambar styraciflua	WHIPS 148
platanus occidentalis	WHIPS 148
cerals canadensis	WHIPS 148
<b>Climax species</b>	<b>WHIPS 148</b>
quercus alba	WHIPS 148
quercus prinus	WHIPS 148
service berry	WHIPS 148
pinus strobus	WHIPS 148
<b>Total Provided = 1,180</b>	

**OTHER PLANTING INSTRUCTIONS**

Plant material should be obtained from a reputable nursery and ordered 3 to 6 months before desired delivery. Delivery should be arranged to occur as close to planting time as possible, and stock should be protected from direct sun and drying until planting. Planting dates are October through May, with spring months preferred.

Stock should be inspected before planting for signs of damage, disease, or insect infestation, vigor, and size. Damaged or inferior plants should be replaced.

Upon planting container grown stock, plants should be removed from the container and the soil gently loosened from the roots. If roots encircle the root ball, or are J-shaped or knotted, consider resection. Do not trim roots severely.

The planting field should be dug and backfilled with the native soil. Break the surface and cover the disturbed area with approximately 4 inches of mulch, but avoid burying the base of the stem to prevent fungal rot. Water immediately to settle the soil around the roots.

**MAINTENANCE AND PROTECTION OF PLANTED AREA**

Soils should be tested to determine the need for fertilizers. If fertilizer is needed, it should be applied at the testing lab's recommended rates after the first growing season (fall or early spring). Organic or slow-release fertilizers are preferred.

Watering should be planned to compensate for deficient rainfall. New plantings need water once a week for the first growing season, the second year watering may only be necessary in dry and August, and in subsequent years only water during drought periods. Watering should be done slowly enough to permit deep soaking of the root zone.

Monitor the young trees for several years for health, insect damage, and invasive vines. Replace dead, moribund, or by careful and selective use of appropriate herbicides.

Post protective signage that states that this area is a Forest Conservation Area and trees have been planted for reforestation. An effort should be made to inform and gain the cooperation of the adjacent residents to monitor and protect the plantings.

**FOREST PROTECTION PLAN**

The forest conservation and reforestation areas will need to be protected from injury during the land clearing and construction process, and from any future land use changes. Long-term protection will require placing the forest in a permanent, reserved, non-developable open space or conservation easement. The legal document establishing this protection will be required for final ECP approval.

**CONSTRUCTION PHASE**

Protective measures during the construction phase will focus on protecting the critical root zone of the retained trees along the new forest edge. The first 100 feet will be staked in the field by a qualified professional who will determine which individual trees will be retained and the critical root zone based on tree species and size. The resulting boundary will be fenced with approved flagging and posted as a preservation area, and no disturbance to the vegetation within the retention area will be allowed, except that which may be necessary to manage the health of the trees, such as thinning, pruning, or vine control. Any grading and construction that will occur within the forest will require sediment control measures such as a silt fence or other device that will prevent siltation in the critical root zone of retained trees.

**TWO-YEAR POST-CONSTRUCTION MANAGEMENT PROGRAM**

Howard County requires the developer to commit to a minimum of two years of responsibility for the management of the Forest Conservation Area. The program must be supervised by a qualified professional. The obligations include: periodic (beginning and end of growing season) inspection of the condition of the forest; necessary management such as maintenance of flagging and signage, treatment or removal of damaged or dying trees, or invasive plant control; reduction of new land owners or occupants about allowable activities and future responsibilities for the forest; and a final inspection and condition that the forest is intact and the conditions of ECP have been met submitted to the County upon review of the final certification. The County will notify the developer of release from final obligations, and their transfer to the state.

**AS-BUILT CERTIFICATION**

Note: There is no "AS-BUILT" information provided on this sheet.

**LANDSCAPE ARCHITECT'S CERTIFICATE**

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

**DEVELOPER'S CERTIFICATE**

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL, AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT HAVE HAD ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. ALSO AUTHORIZED INSPECTION BY THE HOWARD COUNTY CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE DEEMED NECESSARY.

**APPROVED: DEPARTMENT OF PUBLIC WORKS**

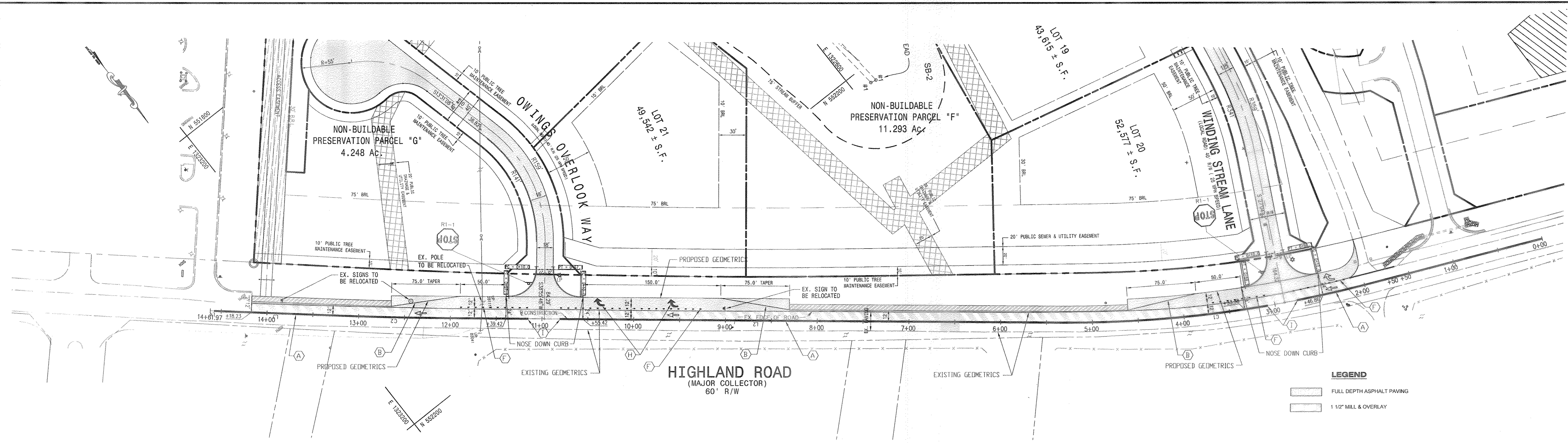
**APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING**

**OWNER / DEVELOPER:**  
 SK HOMES AT HIGHLAND OWINGS, LLC  
 7090 SAMUEL MORSE DRIVE  
 SUITE 500  
 COLUMBIA, MD 21046  
 301-870-5603

**PROJECT:** LANDSCAPE AND FOREST CONSERVATION NOTES & DETAILS  
**OWINGS PROPERTY, LOT 5**  
 LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARWOOD OWINGS PROPERTY TAX MAP 40, GRID 4, PARCEL 44  
 5TH FLECTION DISTRICT  
 HOWARD COUNTY, MARYLAND.

**PROJECT NO.:** SCALE: AS SHOWN  
**DATE:**  
**DRAWN BY:**  
**CHECKED BY:**  
**SHEET: 28 - 30**





**LEGEND**

FULL DEPTH ASPHALT PAVING  
 1 1/2" MILL & OVERLAY

**GENERAL NOTES**

1. THE ROAD MUST BE PRE-MARKED AND APPROVED BY TRAFFIC DIVISION PRIOR TO INSTALLING PAVEMENT MARKINGS.
2. SPECIFICATIONS FOR MATERIALS MUST BE SUBMITTED TO THE COUNTY FOR APPROVAL.
3. THE CONTRACTOR SHALL PROVIDE STOPPING SIGHT DISTANCE (FOR 40 MPH) FOR THEIR TRAFFIC CONTROL DUE TO THE VERTICAL AND HORIZONTAL ALIGNMENT OF THE ROAD.

**PAVEMENT MARKING LEGEND**

- A. INSTALL 5 IN. DOUBLE YELLOW PAVEMENT MARKING LINE
- B. INSTALL 5 IN. WHITE PAVEMENT MARKING LINE
- C. REMOVE EXISTING PAVEMENT MARKINGS STA. 2+75 TO 3+10, AND STA. 10+80 TO STA. 11+15 HIGHLAND ROAD BY GRINDING (AS DIRECTED BY TRAFFIC ENGINEER)
- D. INSTALL 5 IN. WHITE PUPPY TRACKS (2' / 6" SPACE / 2' / ...)
- E. INSTALL SOLID DIRECTION ARROWS, THERMOPLASTIC HEAT APPLIED TAPE.

RI-1

SIGN SIZE	DIMENSIONS (INCHES)					
	A	B	C	D	E	F
MIN	24	1/2	8	8	4	10
STD	30	3/4	10	10	5	12-1/2
EXPIRY	36	1	12	12	6	15
SPECIAL	48	1	16	16	8	20
BIKE	18	3/8	6	6	3	7-3/4

REFERENCES

MUTCD SECTION - 2B-4, 2B-5, 2B-4, 2B-9

MUTCD SUPPLEMENT - 2B-5, 2B-5.1, 2B-6.1, 2B-9

COLORS

LEGEND - WHITE

BACKGROUND - RED

APPROVED

DIRECTOR - TRAFFIC & SAFETY

DATE

DATE

APPROVAL

ADMINISTRATOR

MARYLAND DEPARTMENT OF TRANSPORTATION

State Highway Administration

OFFICE OF TRAFFIC & SAFETY

STOP

Section: 808085

Drawn By: FJMA Date: RI-1

**AS-BUILT CERTIFICATION**

Note: There is no "AS-BUILT" information provided on this sheet.

Name: SAMJAY PATEL

P.E. NO.: 31042

Date: 10/21/16

**ENGINEER'S CERTIFICATE**

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

*Joseph M. ...* 06/06/08  
SIGNATURE OF ENGINEER DATE

**DEVELOPER'S CERTIFICATE**

I HAVE CERTIFIED THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS ARE REQUIRED NECESSARY.

*Dale Thompson* 06/06/08  
PRESIDENT DALE THOMPSON BUILDERS, INC. DATE  
SOLE MEMBER RUNNING BROOK, LLC

APPROVED: DEPARTMENT OF PUBLIC WORKS

*Walter Z. ...* 7-1-08  
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*John ...* 7/2/08  
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

*Chris ...* 7/4/05  
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

DATE	NO.	REVISION

OWNER / DEVELOPER

**SK HOMES AT HIGHLAND OWINGS, LLC**

1060 SAMUEL MORSE DRIVE

SUITE 500

COLUMBIA, MD. 21046

PHONE 301-870-5603

**DEPARTMENT OF PUBLIC WORKS**

HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS \_\_\_\_\_

CHIEF, TRAFFIC ENGINEERING DIVISION \_\_\_\_\_

CHIEF, BUREAU OF HIGHWAYS \_\_\_\_\_

DATE \_\_\_\_\_

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-26-08.

**DALE THOMPSON**

BUILDERS

6300 Woodlands Court Suite A

Columbia, MD 21045

PROJECT: **PAVEMENT MARKING PLAN HIGHLAND ROAD OWINGS PROPERTY, LOT 5**

LOTS 17-22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE BULK PARCEL H A RESUBDIVISION OF LOT 5 - HARROD OWINGS PROPERTY TAX MAP 40, GRID 4, PARCEL 44 5TH ELECTION DISTRICT HOWARD COUNTY, MARYLAND.

PROJECT NO. \_\_\_\_\_

SCALE: 1" = 50'

DATE: 06/06/08

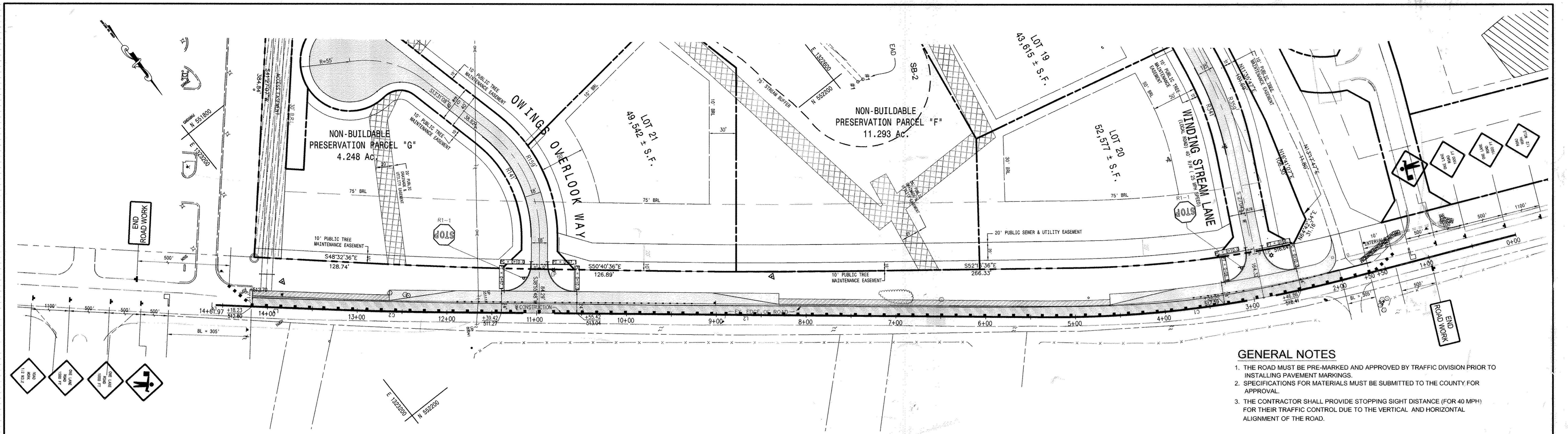
DRAWN BY: AVG

CHECKED BY: JHE

SHEET: 29 - 30

F-06-112





**GENERAL NOTES**

1. THE ROAD MUST BE PRE-MARKED AND APPROVED BY TRAFFIC DIVISION PRIOR TO INSTALLING PAVEMENT MARKINGS.
2. SPECIFICATIONS FOR MATERIALS MUST BE SUBMITTED TO THE COUNTY FOR APPROVAL.
3. THE CONTRACTOR SHALL PROVIDE STOPPING SIGHT DISTANCE (FOR 40 MPH) FOR THEIR TRAFFIC CONTROL DUE TO THE VERTICAL AND HORIZONTAL ALIGNMENT OF THE ROAD.

**I. GENERAL REQUIREMENTS**

Each phase of construction, including the follow up restoration operation shall be provided with appropriate zone traffic controls.

The contractor will be solely responsible for all accidents and/or damage to persons and/or property damage resulting from his operation.

The contractor shall refer to the attached Traffic Control Plan (TCP) drawings to select the appropriate work zone traffic control for each phase. TCP shall conform to the guidelines set forth in Section of the MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAY (MUTCD). Most recent edition.

The Inspector has the authority to modify the TCP as deemed necessary.

The Inspector has the authority to order the contractor to stop work and vacate the public right-of-way if the TCP is not complied with.

Road closures of any duration shall require the submission of a written request to the inspector with justification as to why work activity cannot occur while traffic is being maintained. Road closure shall require additional traffic including advance notification approached and detour signage as approved by the inspector.

All work within the travel portion of the roadways shall be restricted to the hours of 9:00 AM to 4:00 PM Monday through Friday.

Construction activity, loading or unloading of equipment shall not block any traffic lane other than those delineated with the work zone.

Exclusive of emergency work, the permittee shall contact occupants of all adjoining properties and inform them of the scope and the timing of construction. A minimum of 24 hours notification shall be required prior to the commencement of any activity on the site.

Access shall be maintained to all driveways unless permission for closure is granted by the property owner/manager. However, accessibility for emergency vehicles shall be maintained at all times.

Pavement excavation shall be limited to a maximum of one travel lane at any time unless otherwise specified on the TCP.

Hazardous materials shall not be stored within public right-of-way.

Mats: Mats or equipment shall not be stored on the roadway surface or sidewalks during non-work periods. All stored materials and equipment shall be set back at least six (6) feet behind the curb along a closed section roadway and at least thirty (30) feet from the edge of open section roadway.

Any excavation in the roadway shall be paved to level grade or plated with cold patch along all four sides and the roadway reopened to its full cross-section prior to the end of each workday.

"STEEL PLATES AHEAD" (W21-9) signs shall be placed approximately 250 feet in advance to any steel plate.

Any excavation in the sidewalk shall be backfilled or plated prior to the end of each workday and sidewalk reopened to its full cross-section.

Traffic shall not be permitted with in ten (10) feet of any excavation that results in a vertical drop-off of than five (5) inches in the level of pavement during non-working hours unless protected by temporary concrete barrier or ramped with aggregate material at a 3:1 or flatter slope from the edge of pavement. When ramping is utilized, traffic drums shall be positioned adjacent to the edge of the work area on the traffic side of the slope.

Traffic shall not be permitted with in two (2) feet of any excavation that results in a vertical drop-off of than two (2) inches but more than five (5) inches in the level of pavement during non-working hours unless either ramped aggregate material at a 3:1 or flatter slope, provided with an abutting wedge of bituminous material at a 3:1 of flatter slope or protected by traffic drums.

In areas where a drop-off in the level of pavement is two (2) inches or less, traffic may be allowed to freely cross under the following conditions:

Where longitudinal paving joints of two (2) inches or less are exposed to traffic warning signs shall be posted indicating "UNEVEN PAVEMENT" (W8-11 modified). These signs should be placed 250 feet in advance of the uneven joints and be spaced at appropriate intervals throughout the area of the uneven joint.

Where lateral paving joints of two (2) inches or less are exposed to traffic, a "BUMP" (W8-1) sign shall be posted 100 feet in advance of the joint.

When milled pavement is left exposed to traffic a "ROUGH ROAD" (W8-8) or "GROOVED PAVEMENT" (W8-8a) signs shall be placed 250 feet in advance of the milled area.

All existing traffic control devices (i.e. signs, marking, etc.) that must be removed shall be replaced in their proper location prior to the completion of the project. Cost for the replacement and/or repair of devices damaged as a result of the project shall be assessed to the contractor.

All traffic control devices shall conform to the most recent edition of the MUTCD.

The implementation date and continuance of work activities may be altered at the discretion of the inspector in the event of conflicts with previously approved or emergency activities.

At the completion of work activities, conditions within the public space shall be fully restored to those that existed prior to the work activity.

**TRAFFIC CONTROL REQUIREMENTS**

**11. Specific Requirements:**

Begin installing sewer as shown on the approved plans. Sewer excavation to be backfilled as the construction commences with no more than 100 l.f. of excavation open at one time. All excavation will be backfilled at the end of the work day.

When possible, Two-way traffic shall be maintained. Otherwise, flaggers shall be used to control traffic with appropriate signage.

At least one 10-foot travel lane shall be available for traffic at all times in each direction.

Provisions shall be made for safe maintenance of pedestrian and bicycle traffic, subject to approval of the inspector.

**Installation of Traffic Control Devices**

Signage, traffic drums and arrow panels shall be placed in accordance with the appropriate typical and spacing chart.

All signs, traffic drums and cones shall be fully reflectorized with high intensity, reflective sheeting as per the MUTCD.

Appropriate distance for sign legends are "AHEAD", "500 FT.", "1000 FT.", or "1/2 MILE". For distances less than 500 feet, "AHEAD" shall be used.

All warning signs, unless otherwise specified, shall be a minimum of 48"x48", block symbol or legend on orange background and diamond shaped.

All portable signs shall be mounted a minimum of one (1) foot above the level of the roadway, with higher mounting heights desirable.

All warning signs not applicable to the actual situation shall be removed or covered during non-applicable periods.

Work Area Ahead (W20-1 modified) signs must be installed at the end of each workday when temporary aggregate ramping is implemented.

Reflectorized traffic drums or cones shall be used to delineate the work zone. These channelizing devices shall be placed along excavations at ten (10) intervals.

During nighttime operation reflectorized traffic drums should be used. However, for emergency work activities where traffic drums are not readily available, reflectorized traffic cones that are a minimum of twenty eight (28) inches in height and having six (6) inch and four (4) inch reflective collars within the top sixteen (16) inches of the cone may be used. All work areas left unattended at night shall be delineated with reflectorized traffic drums.

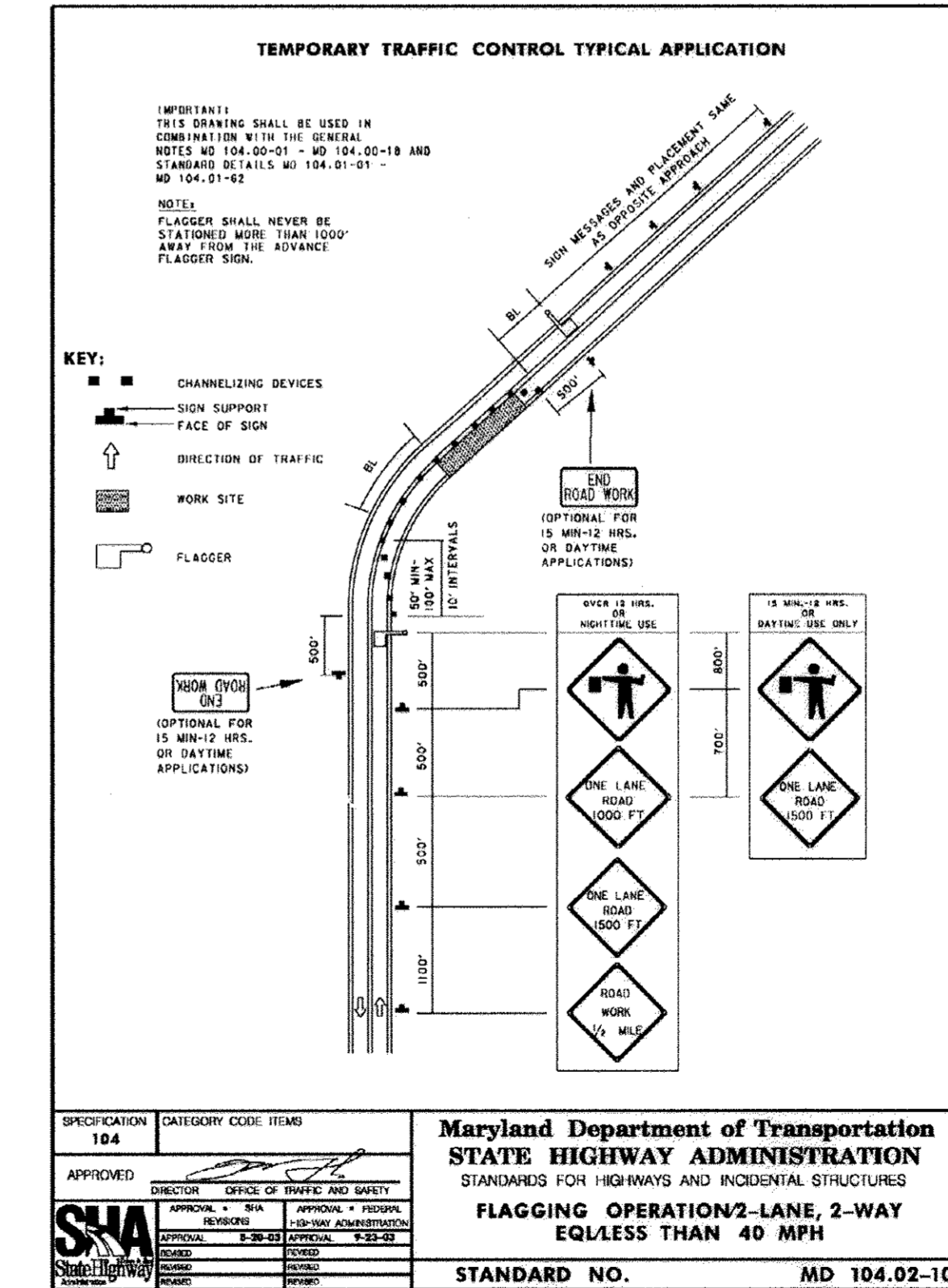
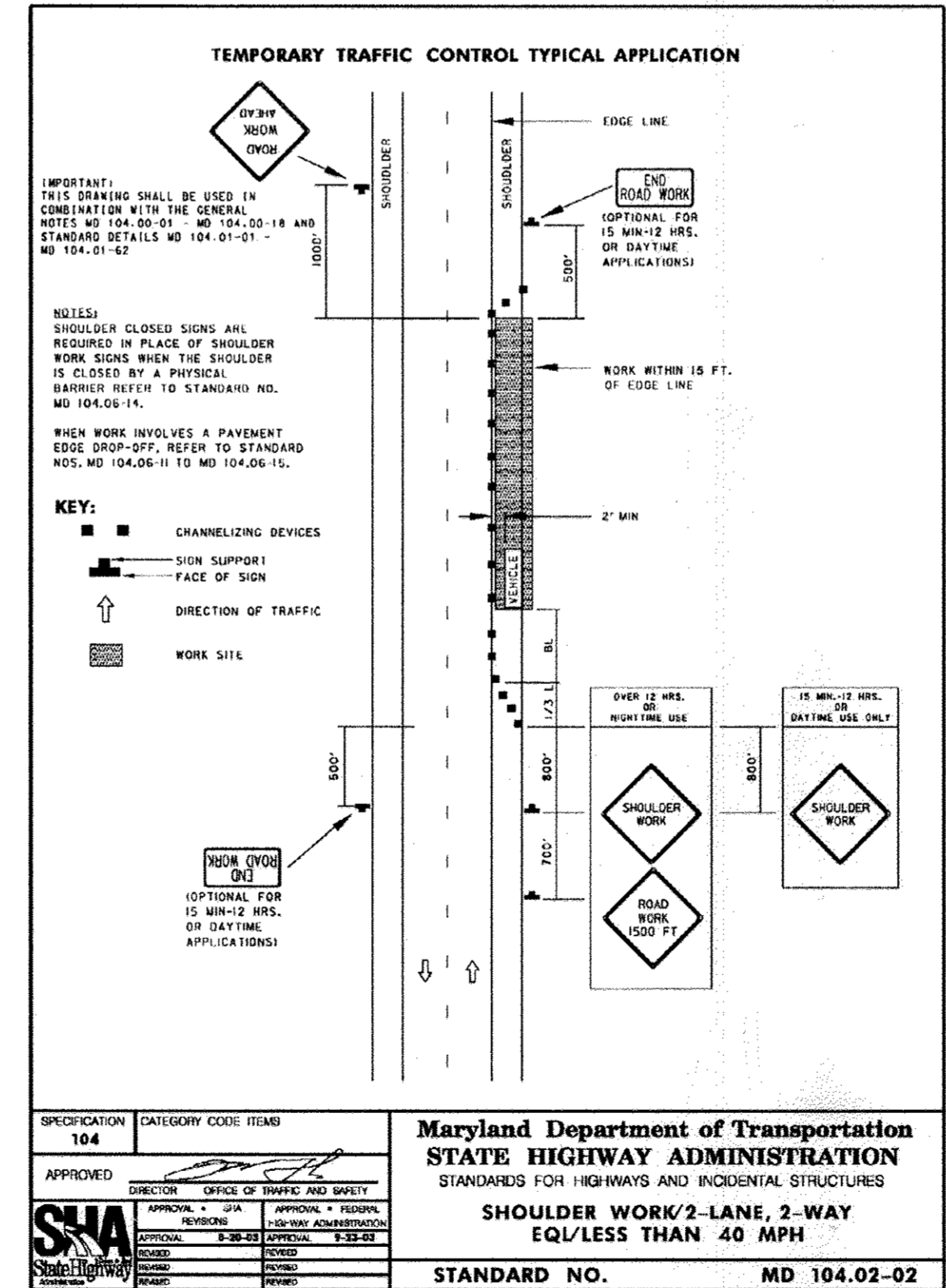
Flashing Arrow Panels shall be used at the beginning of any lane closure on a multi-lane roadway.

When temporary concrete barrier (TCB) is used, reflectorized markers are required as per TCP 109.02. Also, a 12"x36" object marker (vertical panel as per TCP 109.01) shall be installed.

When pavement markings have been obliterated by the work activity, the contractor shall install any critical Interim pavement markings prior to the end of the workday as specified by the Inspector.

On road sections that are not schedule to be overlaid, all temporary pavement markings shall be (removable) detour grade marking tape. Any conflicting markings, which need to be temporarily removed, are to be masked using "3M removable Block Lane Mask" or an approved equal.

On road sections that are to be overlaid, temporary markings can be either tape or paint. Any conflicting marking should be removed with a pavement grinder.



**AS-BUILT CERTIFICATION**

Note: There is no "AS-BUILT" information provided on this sheet.

Name: SANTRY PAHEL

P.E. NO.: 21012

Date: 10/21/16

**ENGINEER CERTIFICATE**

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD COUNTY CONSERVATION DISTRICT.

Signature of Engineer: Jose H. Escalante

Date: 06/06/08

**DEVELOPER CERTIFICATE**

I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION SHALL BE DONE ACCORDING TO THIS PLAN OF DEVELOPMENT AND PLAN FOR EROSION AND SEDIMENT CONTROL AND THAT ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL MAINTAIN THE LOCATION OF ALL STRUCTURES AT A DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC MONITORING EMPLOYED BY THE HOWARD COUNTY CONSERVATION DISTRICT OR THEIR AUTHORIZED AGENTS, AS DEEMED NECESSARY.

Signature of Developer: Dale Thompson

Date: 06/06/08

APPROVED: DEPARTMENT OF PUBLIC WORKS

Signature: Walter Z. Marshall

Date: 7-1-08

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Signature: Chad DeWinn

Date: 7/3/08

Signature: Conda Hanna

Date: 7/3/08

OWNER / DEVELOPER:

**SK HOMES AT HIGHLAND OWINGS, LLC**

1060 SAMUEL MORSE DRIVE

SUITE 500

COLUMBIA, MD. 21046

PHONE: 201-870-5603

**DEPARTMENT OF PUBLIC WORKS**

HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS: \_\_\_\_\_ DATE: \_\_\_\_\_

CHIEF, TRAFFIC ENGINEERING DIVISION: \_\_\_\_\_ DATE: \_\_\_\_\_

CHIEF, BUREAU OF HIGHWAYS: \_\_\_\_\_ DATE: \_\_\_\_\_

I hereby certify that these documents were prepared or approved by me, and I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13265, Expiration Date: 12-26-08.

**DALE THOMPSON**

BUILDERS

6300 Woodbury Court Suite A

Columbia, MD 21045

410-995-6736

410-596-7280

FAX: 410-361-8747

PROJECT: MAINTENANCE OF TRAFFIC HIGHLAND

**OWINGS PROPERTY, LOT 5**

LOTS 17, 22, NON-BUILDABLE PRESERVATION PARCELS F & G, AND NON-BUILDABLE PRESERVATION PARCEL H

A RESUBDIVISION OF LOT 5 - HIGHLAND OWINGS PROPERTY

TAX MAP 48 810 6 PARCELS A-H

5th ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

SCALE: 1" = 50'

DATE: 06/06/08

DRAWN BY: AMO

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