GENERAL NOTES

1. This project is in conformance with the latest Howard County Standards unless waivers have been approved.
2. The contractor shall notify "Miss Utility" at 1-800-257-7777 at least forty-eight (48) hours prior to any excavation work being done.
3. The contractor shall notify the Department of Public Works/Bureau of Engineering /Construction Inspection Division at 410-313-1880 at least five (5) working days prior to the start of work.
4. Traffic control devices, markings and signing shall be in accordance with the latest edition of the Manual of Uniform Traffic Control Devices ("MUTCD"). All street and regulatory signs shall be in place prior to the placement of any asphalt.
5. Street light placement and type of fixture and pole shall be in accordance with the Howard County Design Manual, Volume III (1993) and as modified by "Guidelines for Street Lights in Residential Developments" (June 1993). A minimum spacing of 20' shall be maintained between any street light and any tree.
6. The existing topography, onsite, is taken from field run survey with 2' contour intervals prepared by LDE, Inc. dated September, 2006. The offsite topography was taken from Howard County GIS and/or plans of public record.
7. The coordinates shown hereon are based upon the Howard County Geodetic Control which is based upon the Maryland State Plane Coordinate System. Howard County Monument Nos. 46FA and 47DB (NAD83) were used for this project.
8. The property is located within the Metropolitan District. Water is public. Extensions from Existing Contract Numbers 24-1818-D & 24-1830-D.
9. Sewer is public. Extension will be from Existing Contract Number 718-S.
10. Stormwater Management for this project is provided by stormwater management credits using grass channels, rooftop disconnection credits, and a privately owned and maintained Dry Detention and Bio Retention Facilities approved under SP-07-010 and detailed hereon. Facilities to be owned and maintained by the Watkins Choice Homeowners Association.
11. Existing Utilities are based on field surveys and plans of public record.
12. There is no floodplain on this site. No Floodplain Study is required.
13. There are no wetlands on this site. The wetlands investigation for this property was completed by LDE, Inc. dated November, 2006.
14. The traffic study for this project was prepared by Mars Group, dated November 2006, and was approved on 12-11-07 under SP 07-010.
15. Project Background Information:

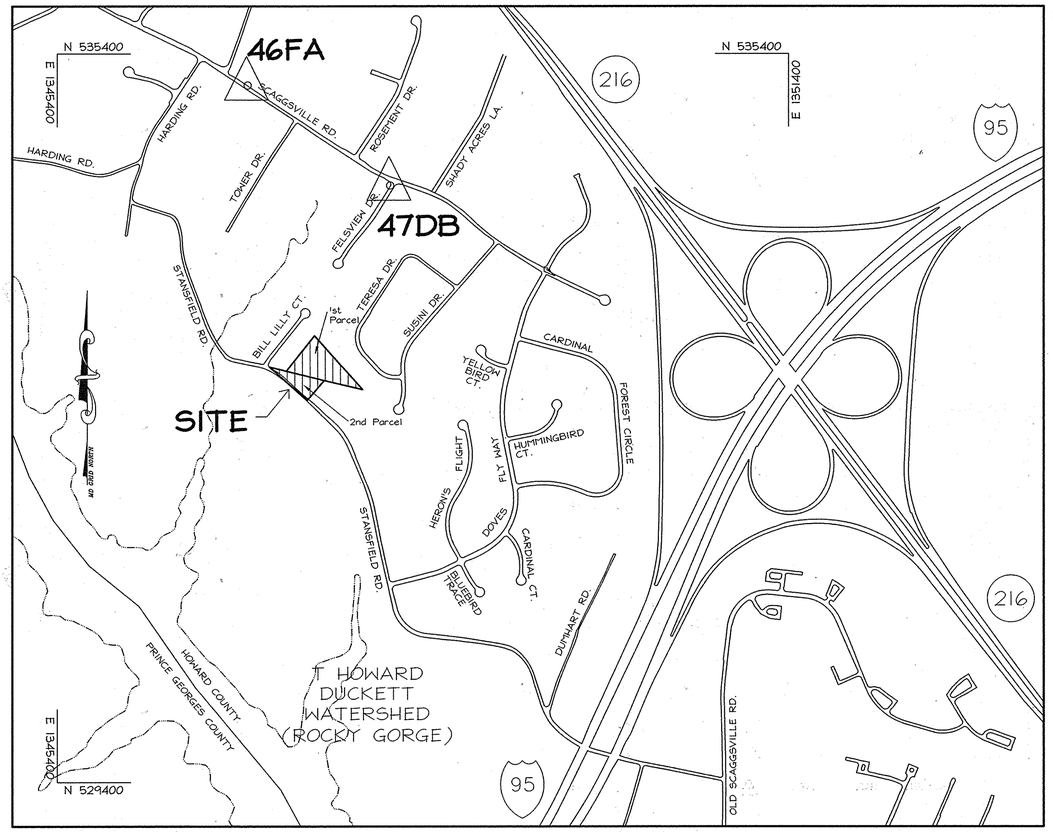
Location:	Laurel, Maryland (Zip Code 20723)
Subdivision Name:	WATKINS' CHOICE
Site Address:	10526 Stansfield Road
Tax Map:	Map 46
Parcels:	215
Existing Zoning:	R-20 (Residential: Single District)
Election District:	6 th
Total Tract Area:	3.52 Ac.
Number of Proposed Lots:	2 Residential + 1 Open Space Lot + 1 Non Buildable Bulk Parcel
DPZ Reference Numbers:	SP 07-010

16. Subject property is zoned R-20 per 2/2/2004 Comprehensive Zoning Plan and the "Comp Lite" Zoning Amendments effective 7/28/06.
17. BRL denotes Building Restriction Line.
18. For flag or pipestem lots, refuse collection, snow removal and road maintenance are provided to the junction of the flag or pipestem and the road right-of-way line and not onto the flag or pipestem lot driveway.
19. Driveway(s) shall be provided prior to residential occupancy to ensure safe access for fire and emergency vehicles per the following minimum requirements:
    a) Width - 12' (16 feet serving more than one residence).
    b) Surface - 6 inches of compacted crusher run base with tar and chip coating. (1/2" Min.)
    c) Geometry - Maximum 14% grade, with the durable and sustained grade of 8%. Maximum 10% grade change and minimum of 45 foot turning radius.
    d) Structures (culverts/bridges) Capable of supporting 25 gross tons (H25 loading).
    e) Drainage Elements - Capable of safely passing 100 year flood with no more than 1 foot depth over driveway surface.
    f) Structure Clearances - minimum 12 feet.
    g) Maintenance sufficient to ensure all weather use. Where one (1) driveway serves more than one (1) lot, a house number sign must be placed at each lot entrance and a range of street address house numbers sign where the common driveway intersects with the main road.
20. The Maintenance Agreement for the Shared Driveway for Lots 1, 2 and Non-Buildable Bulk Parcel "A" will be recorded concurrently with the Plat.
21. The Maintenance agreement for the Shared Driveway for Lots 1 & 2 will be recorded concurrently with the Plat.
22. The property was previously improved with a dwelling known as # 10526 Stansfield Road. The dwelling was razed under demolition permit # B00158241. The existing well was previously abandoned and sealed by L. Franklin Easterday on 11/22/05. In cooperation with the Howard County Health Department, the owner shall properly abandon any septic systems and/or wells discovered onsite during the construction phase of the project. At that time, any required documentation and/or certification of the abandonment shall be provided to the Howard County Health Department (410 313-2640).
23. Sight Distance study for this project was prepared by LDE, Inc. and approved under SP 07-010.
24. Geotech report for this project was prepared by LDE, Inc and approved under SP 07-010.
25. For Installation Specifications and Details of HDPE pipes see sheet 7 of this plan.
26. All construction shall be in accordance with the latest Standards and Specifications of Howard County Design Manual Vol. IV and current MSHA Standards & Specifications if applicable.
27. Any damage caused by the contractor to existing public right-of-way, existing paving, existing utilities, etc. shall be corrected at the contractor's expense in accordance with the Howard County Standards and Specifications.
28. The existing utilities shown hereon are located from field surveys and construction drawings of record. The contractor shall locate existing utilities to his own satisfaction and well in advance of any construction activities. Additionally, the contractor shall take all necessary precautions to protect all existing utilities and maintain uninterrupted service. Any damage incurred to utilities or existing features due to contractor's operation shall be repaired immediately at the contractor's expense.
29. There may be additional utilities not shown on these plans. The engineer assumes no responsibility for utility locations not shown and it shall be the responsibility of the contractor to verify the locations of all existing utilities within the limits of construction and notify the engineer of any discrepancies, prior to the start of construction.
30. Deviations from these plans and specifications without prior written consent of the civil engineer may cause the work to be unacceptable.
31. All utility poles within the limit of construction shall be braced prior to the start of work. Contractor shall contact Utility Companies prior to bracing, adjustment or relocation. Contractor shall be responsible for coordination of all relocations, adjustments, etc.
32. Adjustments to the sequence of construction shall be approved by the Howard County Construction/Inspection Division and Permits; prior to such adjustments.
33. All fill shall be rolled to a minimum degree of compaction of 95% of the dry unit weight as determined by AASHTO T-180.
34. The dimensioned distances shall govern if scaled and dimensioned distances on this plan are found to be in disagreement.
35. All lighting shall conform to Section 134 of the Zoning Regulations for Howard County.
36. There are no contiguous slopes 25% or greater within the boundaries of the site.
37. There are no burial grounds on the property being developed.
38. All sign posts used for traffic control signs installed in the County right-of-way shall be mounted on a 2" galvanized steel, perforated, square tube post (14 gauge) inserted into a 2-1/2" galvanized steel, perforated, square tube sleeve (12 gauge)-3' long. A galvanized steel pole cap shall be mounted on top of each post.
39. Earthwork quantities shown on this plan are for road and storm drain construction only. All earthwork quantities shown on sheet 9 are estimated and do not take into account depth of topsoil, rock, unsuitable materials, etc. The earthwork quantities shall not be used for bid purposes. The contractor shall perform an independent earthwork analysis to determine a bid price.
40. This project is subject to a Design Manual Waiver to Section 5.2.6.(E)(1) of Volume I, Storm Drainage, Side Slopes. On September 6, 2007, the Chief of the Development Engineering Division approved the request to allow the use of Side Slopes steeper than 3:1 principally on the following:
    1. The facility shall be privately owned & maintained and the entire perimeter shall be fenced.
    2. The retaining walls shall be constructed of reinforced concrete and be less than 3' high.
    3. The facility shall include a core and cut-off trench, a 24" barrel, anti-seep collars and a No-Woody Vegetation Zone.

    This approval is subject to the following conditions:
    1. The toe of the retaining wall shall be beyond the phreatic line of the facility.
    2. The retaining walls shall be designed for saturated soil conditions.
41. Open Space Lot 3 shall be dedicated to the Watkins' Choice Homeowners Association, Inc. (H.O.A.) and also maintained by the H.O.A.
42. Street trees will be provided in accordance with the Subdivision & Land Development Regulations. In accordance with the Howard County Landscape Manual, the required street trees shall be placed between the sidewalk and curb & gutter along Stansfield Road.
43. This plat complies with the requirements of Section 16.1200 of the Howard County Code for Forest Conservation by a payment of fee-in-lieu in the amount of $17,315.10 for 0.53 acres of afforestation. This fee in lieu addresses the Forest Conservation obligation for Lots 1 & 2 and the future resubdivision of Non Buildable Bulk Parcel "A"

GENERAL NOTES (Cont.)

44. Landscaping is provided in accordance with a certified Landscape Plan included with the road construction plan set in accordance with Section 16.124 of the Howard County Code and the Landscape Manual. Surety in the amount of $14,700.00 ($9,300 + $5,400) is included in the Developer Agreement.
45. No grading, removal of vegetative cover or trees, paving and new structures shall be permitted within the limits of wetlands, streams, or their required buffers, floodplain and forest conservation easement areas.
46. No Wetlands, Wetlands Buffers, Streams, Stream Buffers, Floodplain or Forest Conservation Areas exist on site.
47. This project is subject to Design Manual Waiver to Section 2.2 and 2.4 of Volume III, Roads and Bridges. On August 15, 2008, the Development Engineering Division approved the request to allow use of 18' half section paving in place of the required 20' along the property frontage on Stansfield Road, and to allow use of a Modified Combination Curb & Gutter in place of a Standard 7" Curb & Gutter. The request was approved based principally on the fact that the proposed design will be consistent with the existing road conditions to the East and West of the subject property and will not negatively impact the County's Road and Storm Drain Systems.
48. This project is subject to Waiver WP 09-042 from the Howard County Subdivision and Land Development Regulations. On October 29, 2008, the Planning Director approved the request to waive Section 16.120(c)(2) which requires a minimum of 20 feet of frontage for single pipestem and non pipestem lots and preservation parcels which cannot be further divided under current zoning and which requires lots or preservation parcels which share access to have sufficient frontage collectively to meet the driveway easement requirements in the Design Manual. WP 09-042 approval is subject to the following conditions:
    1. The applicant shall bond for and construct infrastructure and access for the ultimate build-out of the subdivision (Buildable Lots 1,2,4,5,6,47 and Open Space Lot 3) with F08-179.
    2. The Use-In-Common driveway proposed for Phases 1 & 11 shall be designed to provide sufficient turning radius and width for use by emergency vehicles.
49. Non Buildable Bulk Parcel "A" will be resubdivided in the future into additional residential lots (Lots 4,5,6,47). Refer to F-09-035.



LOCATION MAP

1" = 600'

ROAD & STORM DRAIN CONSTRUCTION PLANS

WATKINS' CHOICE

PHASE 1

LOTS 1, 2, OPEN SPACE LOT 3 AND NON-BUILDABLE BULK PARCEL "A"

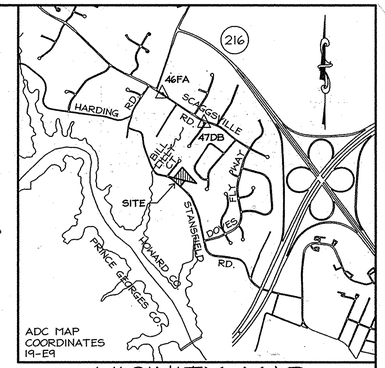
Tax Map No. 46 - Grid No. 18 - Parcel 215
6 th Election District - Howard County, Maryland

BENCHMARKS:

1. Howard County Control Station 46FA
   NAVD 88 Elevation = 403.65'
   NAD 83 Coordinates: N 535140.866, E 1346962.690.

   Standard stamped disc set on a 3' deep column of concrete located on the Northeast side of Scaggsville Road, 5.2' off edge of paving, 30.5' from G&E Pole #640720 and 33.5' from a gate corner. Pole and gate located on the Northeast side of Scaggsville Road.
2. Howard County Control Station 47DB
   NAVD 88 Elevation = 398.56'
   NAD 83 Coordinates: N 534316.917, E 1348131.250.

   Standard stamped disc set on a 3' deep column of concrete located on the West side of Felsview Drive, 3' from end of curb and 22.5' from a Gas Meter. Curb and meter located on the West side of Felsview Drive.



VICINITY MAP

1" = 2000'

SHEET INDEX

Sheet Number	Description
1	Cover Sheet
2	Plan & Profile - Stansfield Road Widening
3	Stansfield Road - Maintenance of Traffic Plan
4	Plan & Profile - Private Use in Common Drive 0+00 - 4+09.63
5	Miscellaneous Details
6	Drainage Area Map & Soils Map
7	Storm Drain Profiles & Soil Borings
8	Grading and Soil Erosion & Sediment Control Plan
9	Grading and Soil Erosion & Sediment Control Plan Details
10	Grading and Soil Erosion & Sediment Control Plan Details
11	Private Non-378 Stormwater Management Facility #1 - Details
12	Private Bioretention Facility Notes & Details and MD-378 Pond Construction Specifications
13	Landscape Plan & Forest Conservation Plan
14	Landscape Plan - Details & Notes
15	Landscape Plan - 10 Scale Detail Enlargement
16	Hillis-Carnes Eng. Assoc. - Retaining Wall Construction Details

LEGEND

- EXISTING 10' CONTOURS
- EXISTING 2' CONTOURS
- BUILDING RESTRICTION LINE
- PROPOSED CURB & GUTTER
- PROPOSED STORM DRAIN
- EX. CURB & GUTTER
- EX. STORM DRAIN
- EX SANITARY SEWER
- EX SEWER HOUSE CONNECTION
- EX SANITARY SEWER MANHOLE
- EX WATER MAIN
- EX WATER HOUSE CONNECTION
- EX WATER VALVE
- PROPOSED FIRE HYDRANTS
- EX GAS MAIN
- EX OVERHEAD UTILITIES
- WATER HOUSE CONNECTION (WHC)
- SEWER HOUSE CONNECTION (SHC)
- EX. PAVING
- TEST PITS

OWNER/
⚠ DEVELOPER
Williamsburg Group, LLC
5285 Harpers Farm Road
Suite 200
Columbia, MD 21044
410 997-8800

PHASING CHART			
PHASE	CREDITS REQUESTED	ALLOCATION YEAR	PLAN TITLE
1	2	N/A	Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A"

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-9-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/6/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1-16-9

ENGINEER'S CERTIFICATE

"I hereby certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature of Engineer Bruce D. Burton — Date 12/19/08

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan of development for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Environmental Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic onsite inspections by the Howard County Soil District."

Signature of Developer — Date 12-19-08

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 1/6/09

AS-BUILT CERTIFICATION

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

NICHOLAS D. ADCOCK, PROFESSIONAL LAND SURVEYOR
LICENSE NO. 21257, EXPIRATION DATE: JUNE 16, 2017 — DATE 8/19/2014

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19184, EXPIRATION DATE: 6/30/09."

SIGNED BRUCE D. BURTON — DATE 12/19/08

No.	Date	By	Description
⚠	6/12	LDE	REVISE OWNER/DEVELOPER

REVISIONS

LDE Inc.
Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

AS-BUILT

DESIGNED	EDS
DRAWN	LDE
CHECKED	BDB
DATE	12/2008
SCALE	As Shown
DRAWING	1 OF 16
JOB NO.	02-035.2
FILE NO.	F-08-179

COVER SHEET
WATKINS' CHOICE
PHASE 1
Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A"
Tax Map 46 - Grid 18 - Parcel 215
6 th Election District - Howard County, Maryland
Previous Submittals: SP-07-010, WP-09-042

Owner/Developer: ⚠ Williamsburg Group, LLC, 5285 Harpers Farm Road, Suite 200, Columbia, MD 21044, 410 997-8800

F-08-179

NOTES:
1. For street tree locations, see sheet 13.
2. All street trees and/or street signs shall be located 5 feet Minimum from proposed drainage and utility structures.
3. There shall be a minimum of 20 feet between street lights, street signs and any tree.
4. For storm drain profiles and structure schedule refer to sheet 7.

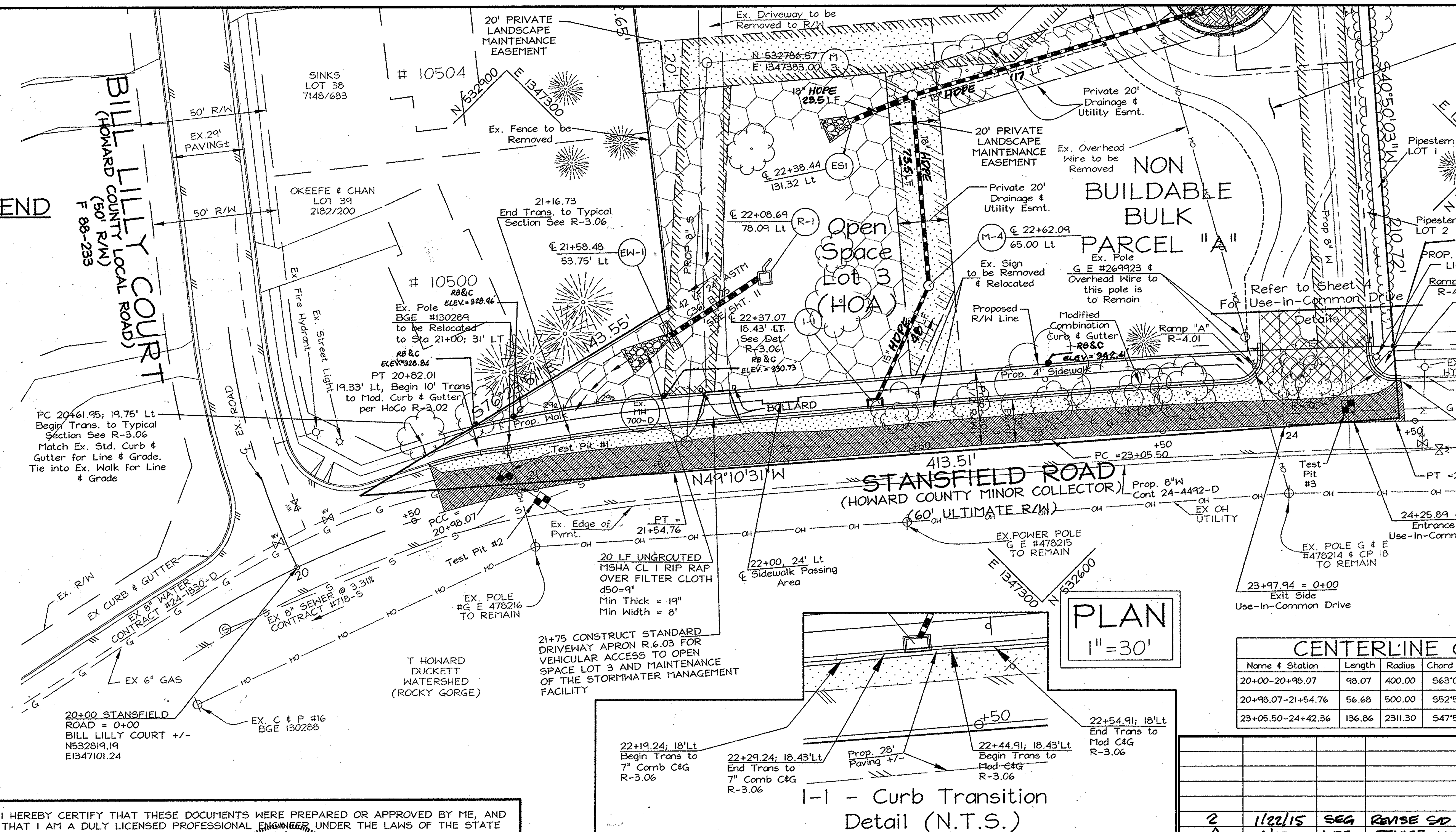
PAVING HATCH LEGEND

- PROPOSED USE-IN-COMMON DRIVE PAVING (P-2)
- PROPOSED STANSFIELD ROAD WIDENING (P-3) * See Note Below
- 1-½" MILL & OVERLAY

NOTE:
Contractor shall provide a minimum of one foot (1') Full Depth saw cut (horizontally) onto Stansfield Road prior to road widening operations.

HATCH LEGEND

- PRIVATE STORMWATER MANAGEMENT ACCESS DRAINAGE, OPEN SPACE, SEWER & UTILITY EASEMENT
- PUBLIC WATER, SEWER & UTILITY EASEMENT
- PRIVATE 20' DRAINAGE AND UTILITY EASEMENT
- PRIVATE LANDSCAPE & MAINTENANCE EASEMENT



CENTERLINE CURVE DATA						
Name & Station	Length	Radius	Chord Bearing	Chord Distance	Delta	Tangent
20+00-20+98.07	98.07	400.00	S63°08'01"E	97.83'	14°02'53"	49.28'
20+98.07-21+54.76	56.68	500.00	S52°51'42"E	56.65'	06°29'43"	28.37'
23+05.50-24+42.36	136.86	2311.30	S47°55'04"E	136.84'	03°23'34"	68.45'

STREET LIGHT TABLE

Street Name	Symbol	℄ Station	Offset	Lamp Type	Fixture Type	Pole Type
Stansfield Road	☼	24+35.44	25.95' LT	150 W HPS VAPOR	PREMIER POST TOP FIXTURE	14' BLACK FIBERGLASS

NOTE:
*Computed Centerline from previously platted subdivision Right of Way and "2006" CL Road Survey data.

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 19184, EXPIRATION DATE: 1/30/09."

SIGNED BRUCE D. BURTON DATE 12/19/08

OWNER/ DEVELOPER
Williamsburg Group, LLC
5485 Harpers Farm Rd.
Suite 200
Columbia, MD 21044
410 997-8800

AS-BUILT CERTIFICATION
I HEREBY CERTIFY, BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN IN RED ON THIS "AS-BUILT" PLAN, AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.
MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR
LICENSE NO. 21257, EXPIRATION DATE: JUNE 16, 2017
DATE 8/19/2014

APPROVED: Department of Planning & Zoning
Chief, Division of Land Development 1/20/09
Chief, Development Engineering Division 1.16.9

APPROVED: Department of Public Works for Storm Drainage Systems and Roads
Chief, Bureau of Highways 1-9-09

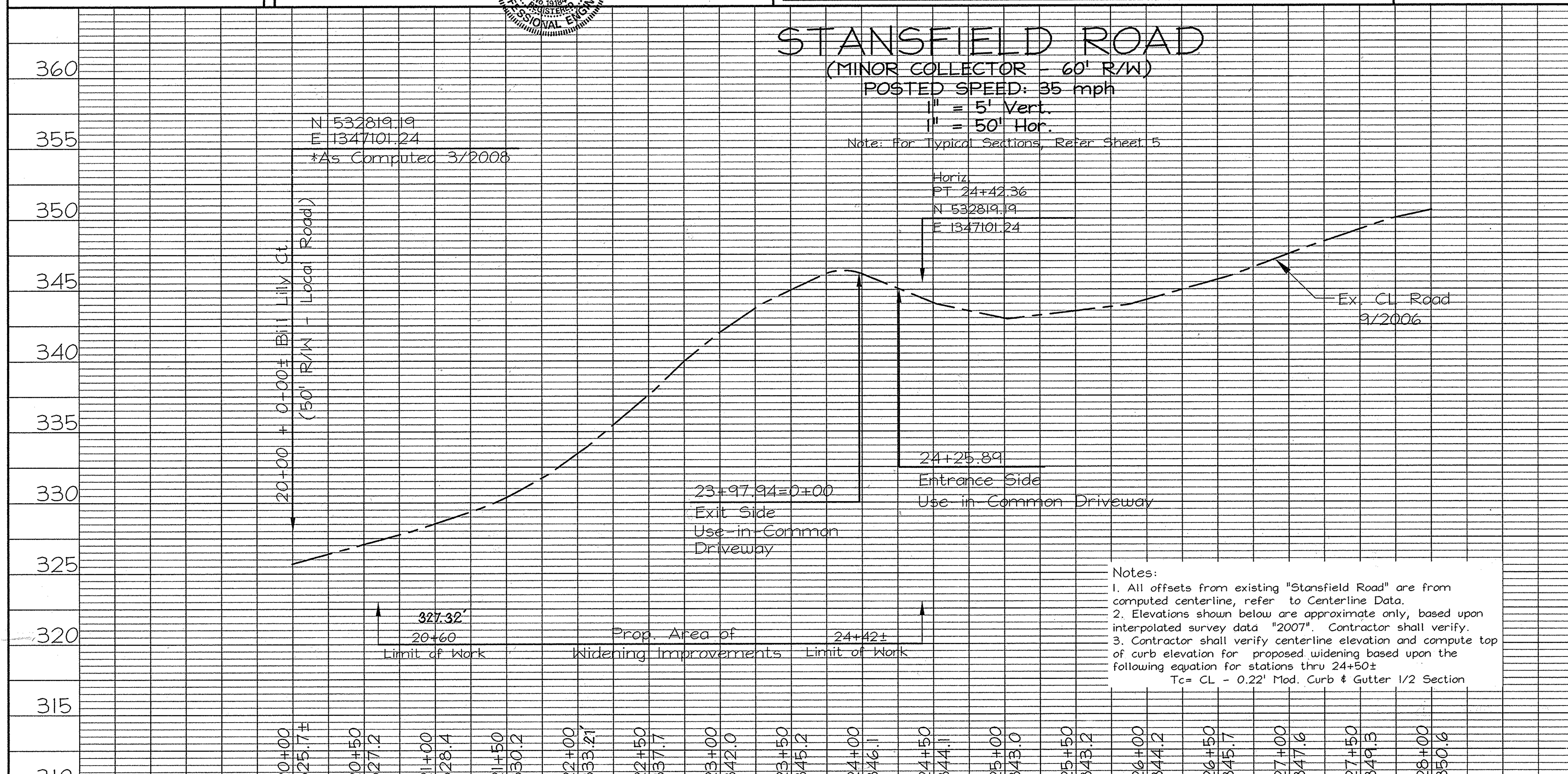
No.	Date	By	Description
2	1/22/15	SEG	REVISE SD PIPE LENGTHS AND TYPE
1	6/12	LDE	REVISE OWNER/DEVELOPER

REVISIONS

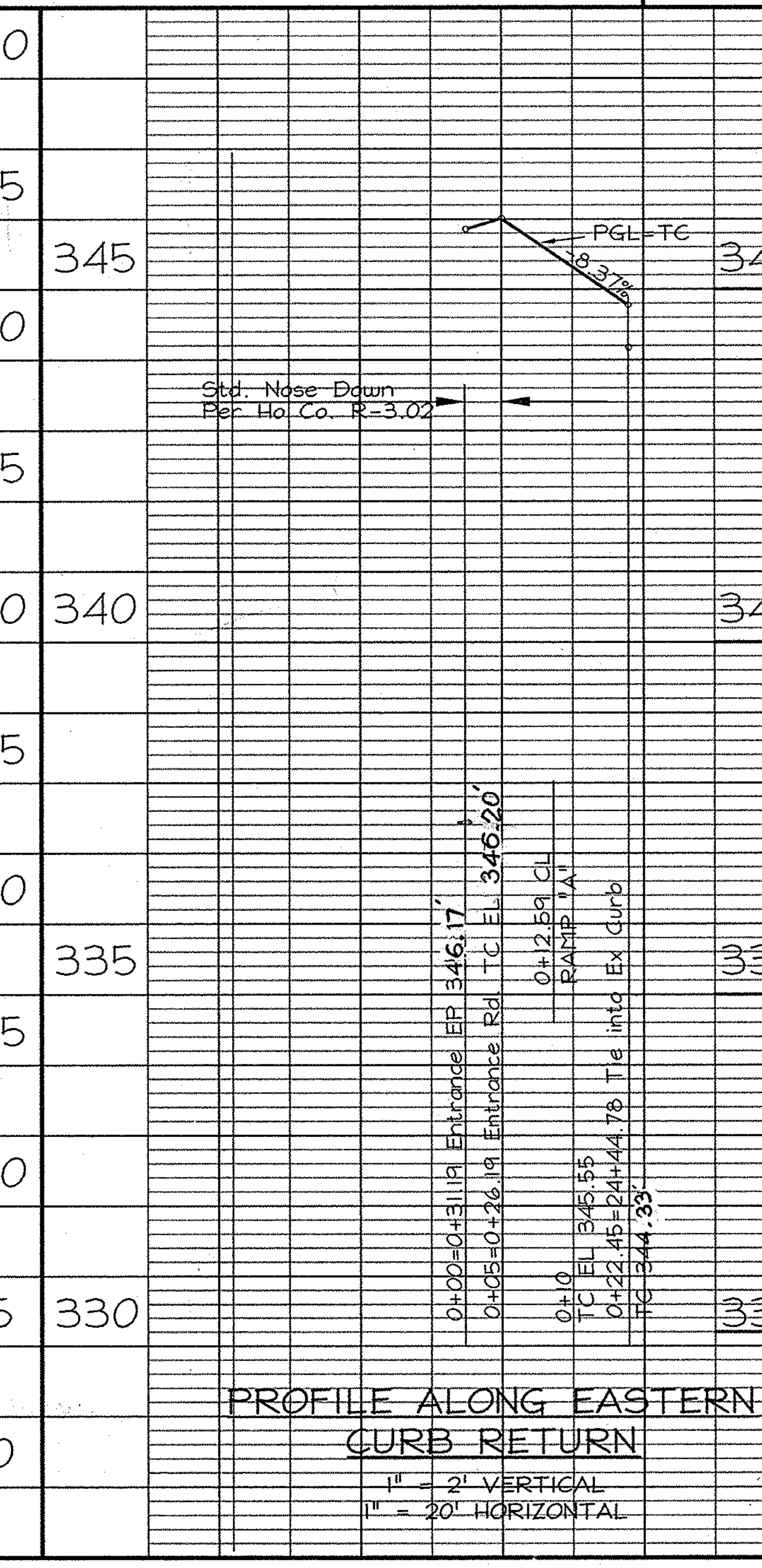
LDE Inc. AS-BUILT
Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

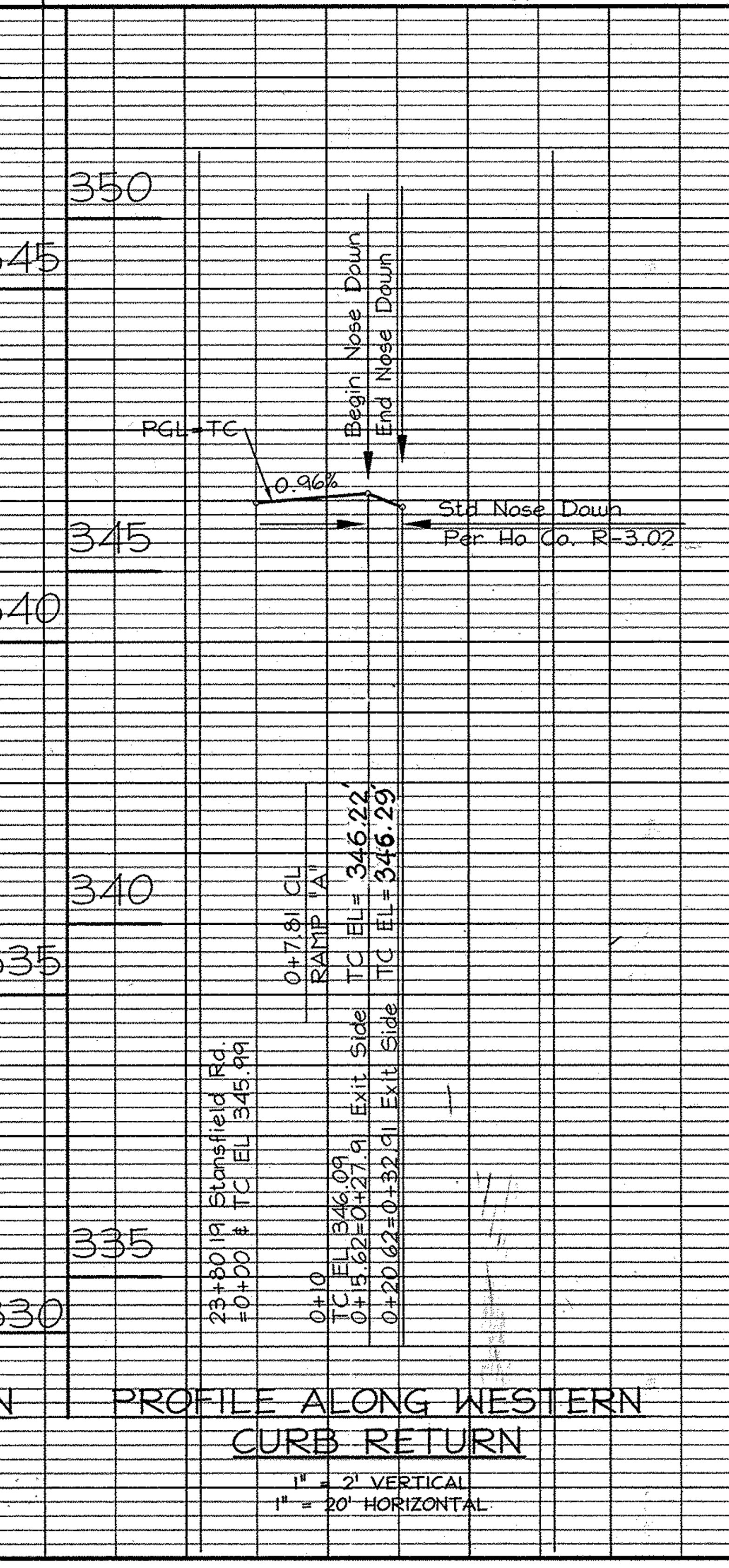
STANSFIELD ROAD - ROAD WIDENING PLAN & PROFILE
WATKINS' CHOICE PHASE I
Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A"
Tax Map 46 - Grid 18 - Parcel 215
6 th Election District - Howard County, Maryland
Previous Submittals: SP 07-010, WP 09-042
Owner/Developer: Williamsburg Group, LLC 5485 Harpers Farm Rd. Suite 200 Columbia, MD 21044 (410)997-8800

DESIGNED	DRAWN	CHECKED	DATE	SCALE	DRAWING	JOB NO.	FILE NO.
EDS	LDE	BDB	12/2008	As Shown	2 OF 16	02-035.2	F-08-179



Notes:
1. All offsets from existing "Stansfield Road" are from computed centerline, refer to Centerline Data.
2. Elevations shown below are approximate only, based upon interpolated survey data "2007". Contractor shall verify.
3. Contractor shall verify centerline elevation and compute top of curb elevation for proposed widening based upon the following equation for stations thru 24+50±
Tc= CL - 0.22' Mod. Curb & Gutter 1/2 Section





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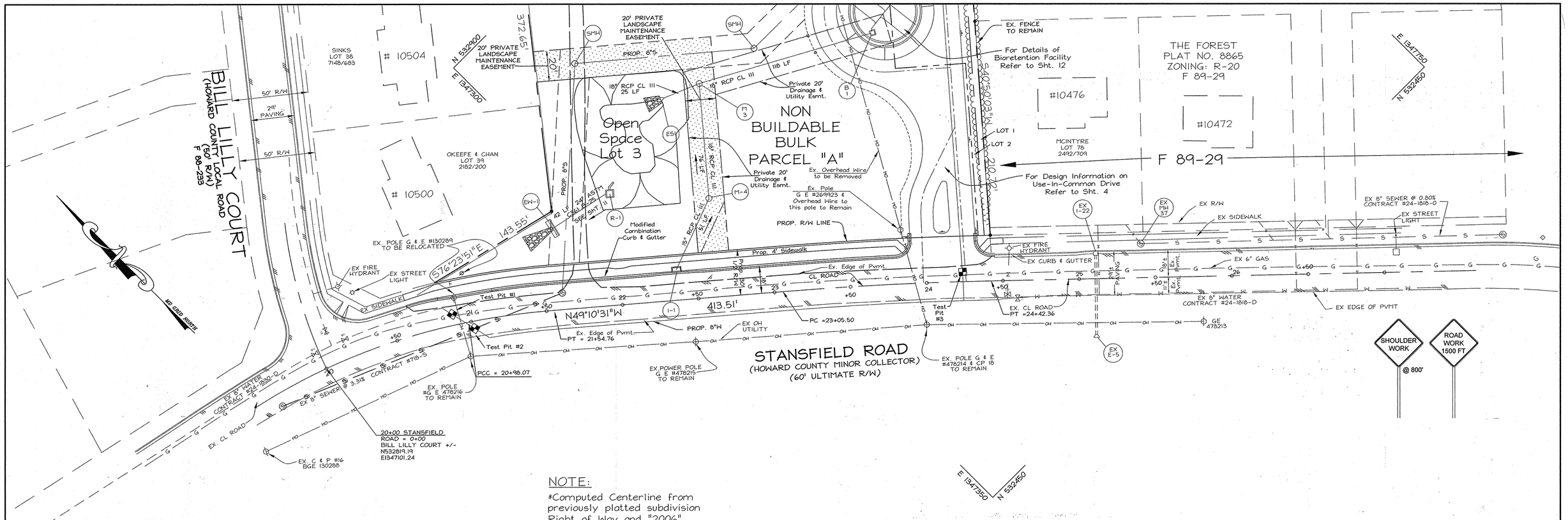
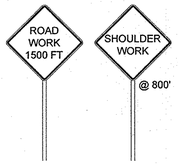
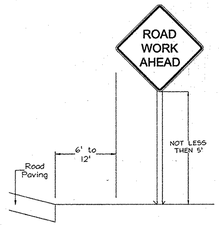






Typical Sign Location and Height

NOTE:

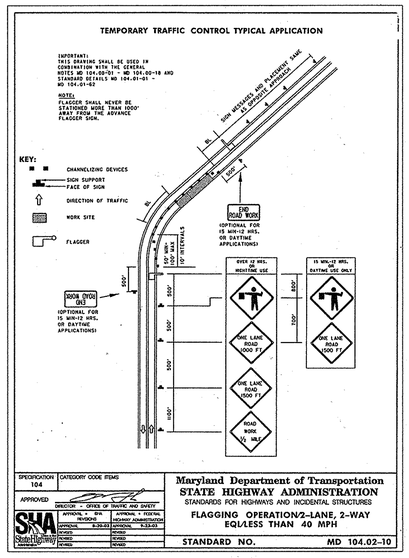
*Computed Centerline from previously platted subdivision Right of Way and "2006" CL Road Survey data.

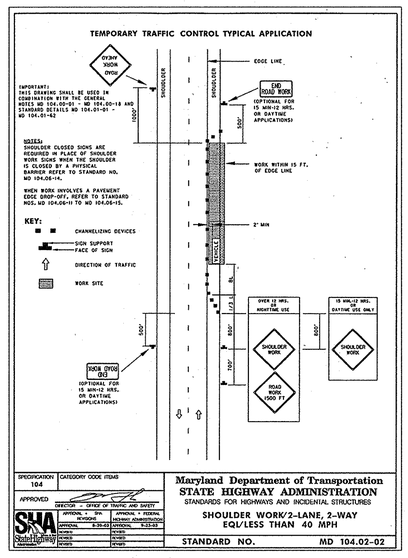
MAINTENANCE OF TRAFFIC

NOTES:

A Existing traffic patterns on Stansfield Road shall remain throughout project work.
B. During proposed water main construction, contractor should take all necessary precautions to protect existing utilities.

1. Obtain Grading Permit.
2. Stakeout limits of disturbance.
3. Install stabilized construction entrance where shown on sheet 8.
4. Install sediment controls as shown on sheet 8 or as directed by the sediment control inspector.
5. Install signage as shown hereon, to protect construction activities from existing traffic flows; per standard detail MD 104.02-02. Existing traffic pattern shall remain undisturbed during work within Stansfield Road.
6. Complete test pits for the end of the water main. Test pit should also find existing gas main and existing sewer main.
7. Complete water main construction across Stansfiled Road by open cutting existing Stansfield Road
8. All necessary precautions shall be taken as existing utilities; i.e. gas, sewer & water are present.
9. Only that portion of water main installation which can be installed in one working day should be open cut. Any portion which is unfinished, steel plates shall be used to cover any open cut roadway. Proper warning signage should be utilized.
10. Open cut existing Stansfield Road for the construction of water main on the southern side of Stansfield Road.
11. Complete water main construction as detailed on Contract # 24-4492-D





NOTE: 1. Please Refer to Sheet 1 for Standard Linetype Legend.
2. Test Pits required per Contract #24-4492-D

AS-BUILT CERTIFICATION

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

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR
LICENSE NO. 21257. EXPIRATION DATE: JUNE 16, 2011

8/19/2014
DATE

STATE OF MARYLAND · MICHAEL DAVID ADCOCK · No. 21257 · PROFESSIONAL LAND SURVEYOR

OWNER/
⚠ DEVELOPER
Williamsburg Group, LLC
5485 Harpers Farm Rd.
Suite 200
Columbia, MD 21044
410 997-8800

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-9-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/20/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1.16.9

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 19184, EXPIRATION DATE: 9/30/09.*

SIGNED Bruce D. Burton — DATE 12/19/08
BRUCE D. BURTON

STATE OF MARYLAND · BRUCE DAVID BURTON · No. 19184 · REGISTERED PROFESSIONAL ENGINEER

No.	Date	By	Description
⚠	08/12	LDE	REVISE OWNER/DEVELOPER

REVISIONS

AS-BUILT

LDE Inc.
Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

STANSFIELD ROAD - MAINTENANCE OF TRAFFIC PLAN

WATKINS' CHOICE PHASE 1

Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A"
Tax Map 46 - Grid 18 - Parcel 215
6 th Election District - Howard County, Maryland

Previous Submittals: SP-07-010, WP-09-042

Owner/Developer: ⚠ Williamsburg Group, LLC, 5485 Harpers Farm Rd. Suite 200 Columbia, MD 21044 410 997-8800

DESIGNED	SCALE
EDS	1" = 30'
DRAWN: LDE	DRAWING: 3 OF 16
CHECKED: BDB	JOB NO.: 02-035.2
DATE: 12/2008	FILE NO.: F-08-179

F-08-179

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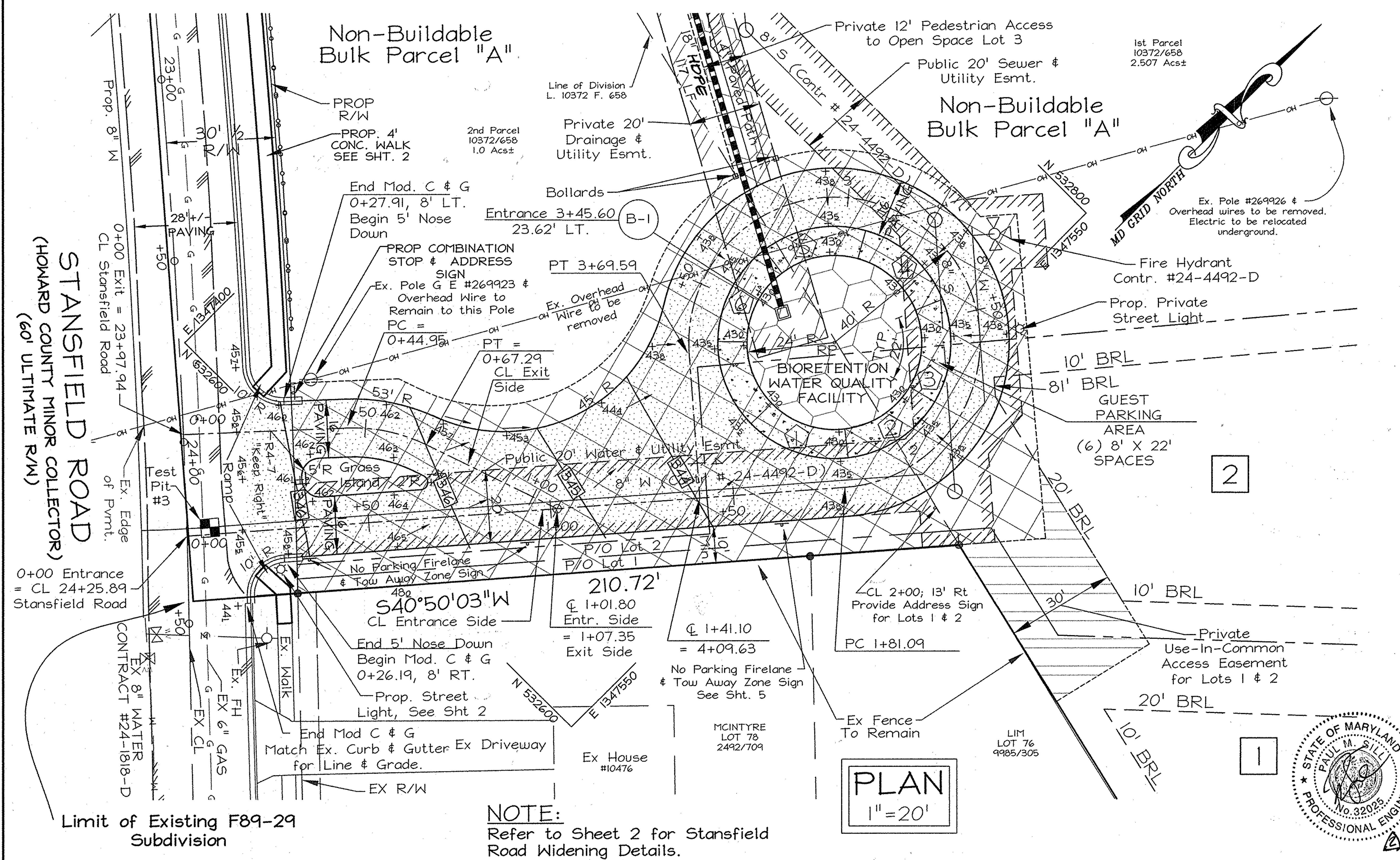


STREET LIGHT TABLE

Street Name	Symbol	℄ Station	Offset	Lamp Type	Fixture Type	Pole Type
Use In Common Drive	☼	2+43.97	11.03' RT	150 W HPS VAPOR	PREMIER POST TOP FIXTURE	14' BLACK FIBERGLASS

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN IN RED ON THIS "AS-BUILT" PLAN, AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

8/19/2014
DATE

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR
LICENSE NO. 21257, EXPIRATION DATE: JUNE 16, 2017

STATE OF MARYLAND — MICHAEL DAVID ADCOCK — No. 21257 — PROFESSIONAL LAND SURVEYOR

HATCH LEGEND

- PRIVATE USE-IN-COMMON ACCESS EASEMENT FOR LOTS 1, 2 & NON-BUILDABLE BULK PARCEL "A" AND FUTURE LOTS CREATED FROM BULK PARCEL "A" AS SHOWN ON SP-07-010
- PRIVATE STORMWATER MANAGEMENT ACCESS DRAINAGE & UTILITY EASEMENT
- PRIVATE 30' USE-IN-COMMON ACCESS EASEMENT FOR LOTS 1 & 2
- PUBLIC WATER, SEWER & UTILITY EASEMENT
- PRIVATE 20' DRAINAGE & UTILITY EASEMENT
- 12' PRIVATE EASEMENT FOR PEDESTRIAN ACCESS TO OPEN SPACE LOT 3

CENTERLINE CURVE DATA

Name & Station	Length	Radius	Chord Bearing	Chord Distance	Delta	Tangent
Entrance 1+81.09-3+69.59	22.34	45.00	N56°58'24"E	22.11'	28°26'33"	11.40
Exit 0+44.95-0+67.29	188.50	40.00	N87°43'30"W	51.33'	270°00'18"	40.00

Radius Point (RP) N 532725.95 E 1347526.23

OWNER/ DEVELOPER
Williamsburg Group, LLC
5485 Harpers Farm Rd.
Suite 200
Columbia, MD 21044
410 997-8800

NOTES:
1. For street tree locations, see sheet 13.
2. All street trees and/or street signs shall be located 5 feet Minimum from proposed drainage and utility structures.
3. There shall be a minimum of 20 feet between street lights, street signs and any street trees.
4. For storm drain profiles and structure schedule refer to sheet 7.
5. For Traffic Control Sign Legend, See Sheet 5.

APPROVED: Department of Planning & Zoning

1/21/09
Chief, Division of Land Development

1.16.9
Chief, Development Engineering Division

APPROVED: Department of Public Works for Storm Drainage Systems and Roads

1-9-09
Chief, Bureau of Highways

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND,
LICENSE NO: 19184, EXPIRATION DATE: 6/30
SIGNED BRUCE D. BURTON 12/19/08

STATE OF MARYLAND — BRUCE DAVID BURTON — No. 19184 — PROFESSIONAL ENGINEER

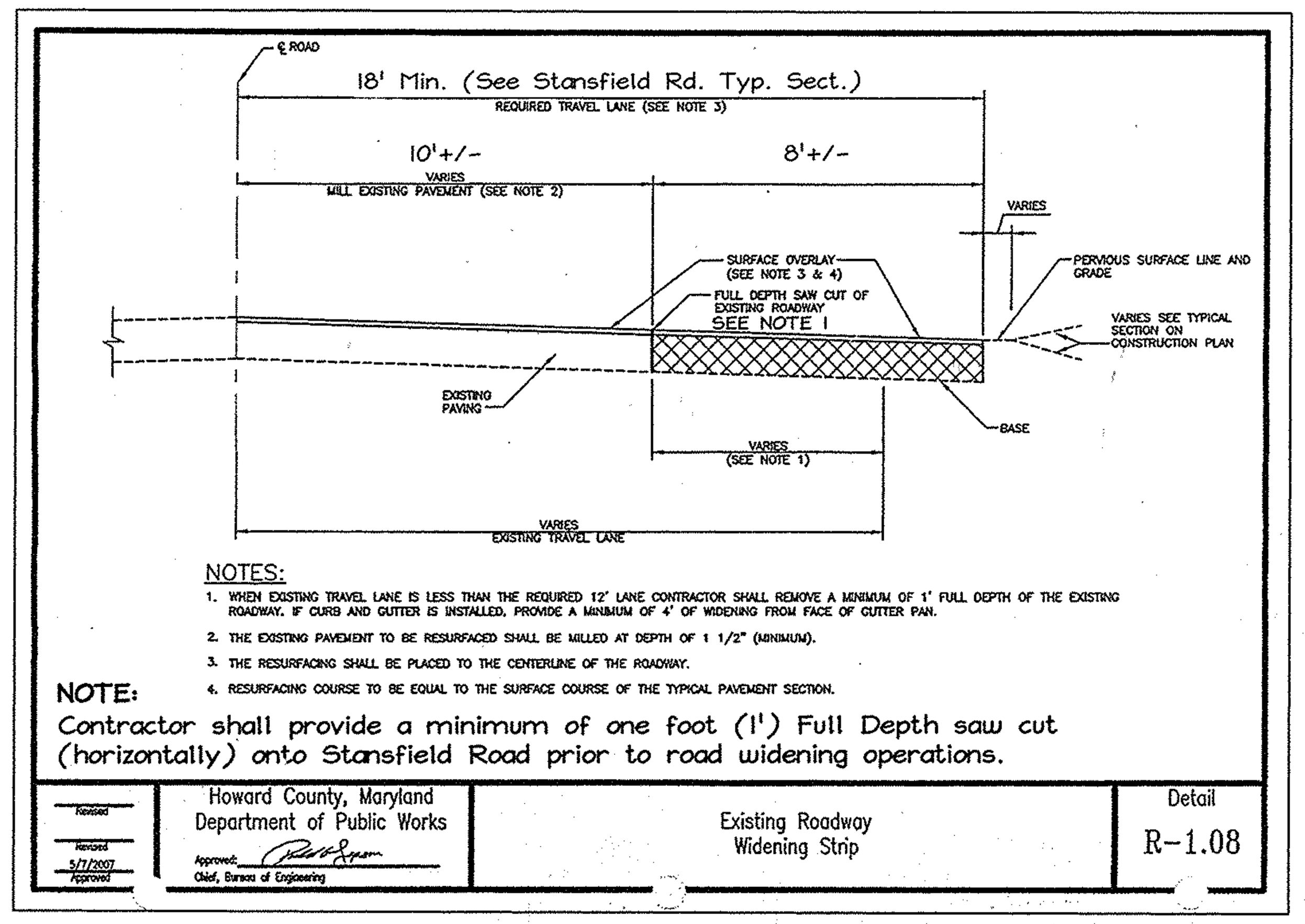
STATE OF MARYLAND — PAUL M. SILL — No. 32025 — PROFESSIONAL ENGINEER

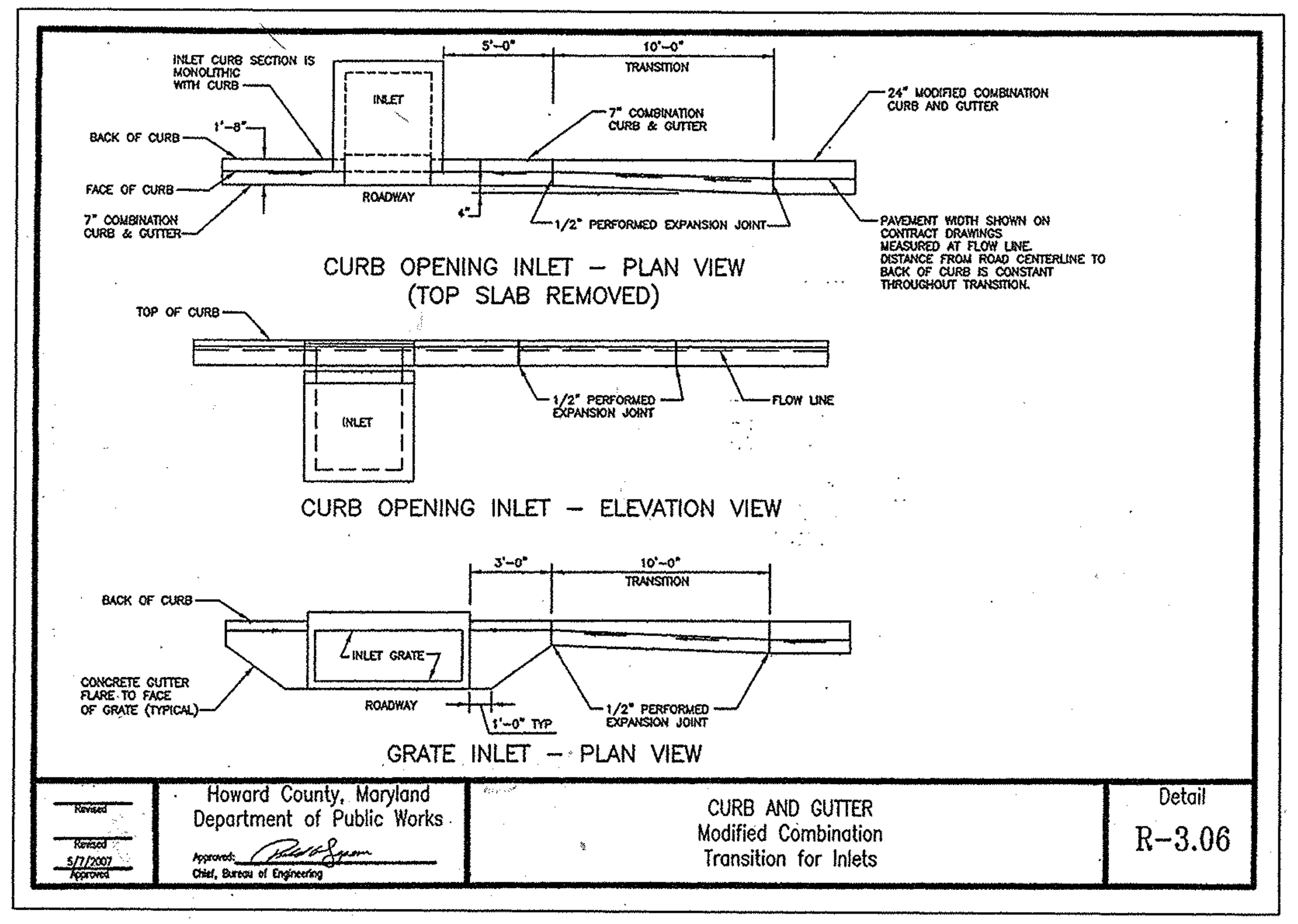
REVISIONS

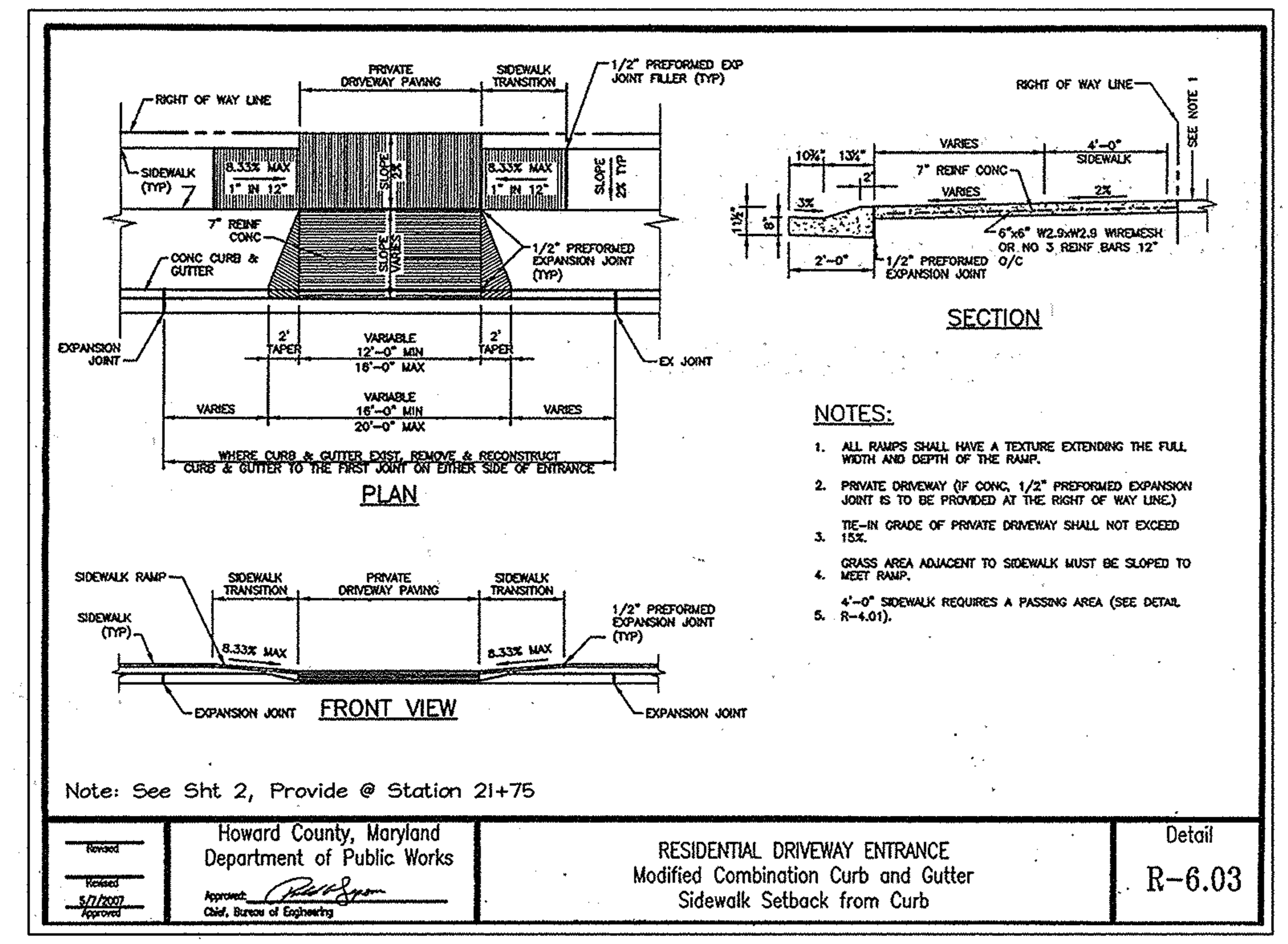
No.	Date	By	Description
2	1/22/15	SEG	REVISE SD PIPE LENGTHS AND TYPES
1	6/12	LDE	REVISE OWNER/DEVELOPER

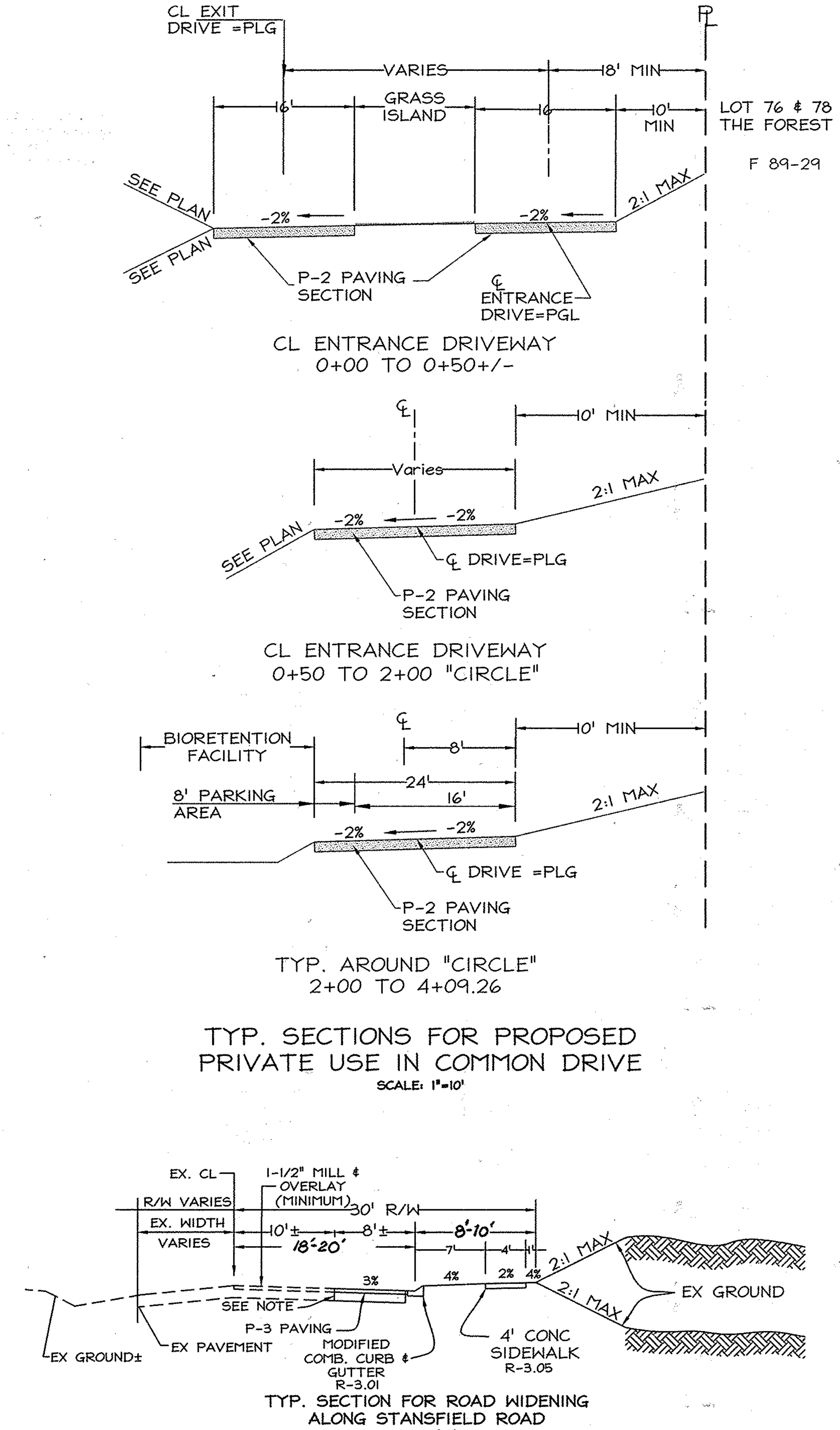
LDE Inc. AS-BUILT
Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

DESIGNED	PRIVATE USE-IN-COMMON DRIVEWAY - PLAN & PROFILE	SCALE
EDS	WATKINS' CHOICE PHASE 1	As Shown
DRAWN LDE	Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A"	DRAWING 4 OF 16
CHECKED BDB	Tax Map 46 - Grid 18 - Parcel 215; 6 th Election District - Howard County, Maryland; Previous Submittals: SP-07-010, WP-09-042	JOB NO. 02-035.2
DATE 12/2008	Owner/Developer: Williamsburg Group, LLC 5485 Harpers Farm Rd. Suite 200 Columbia, MD 21044 (410)997-8800	FILE NO. F-08-179

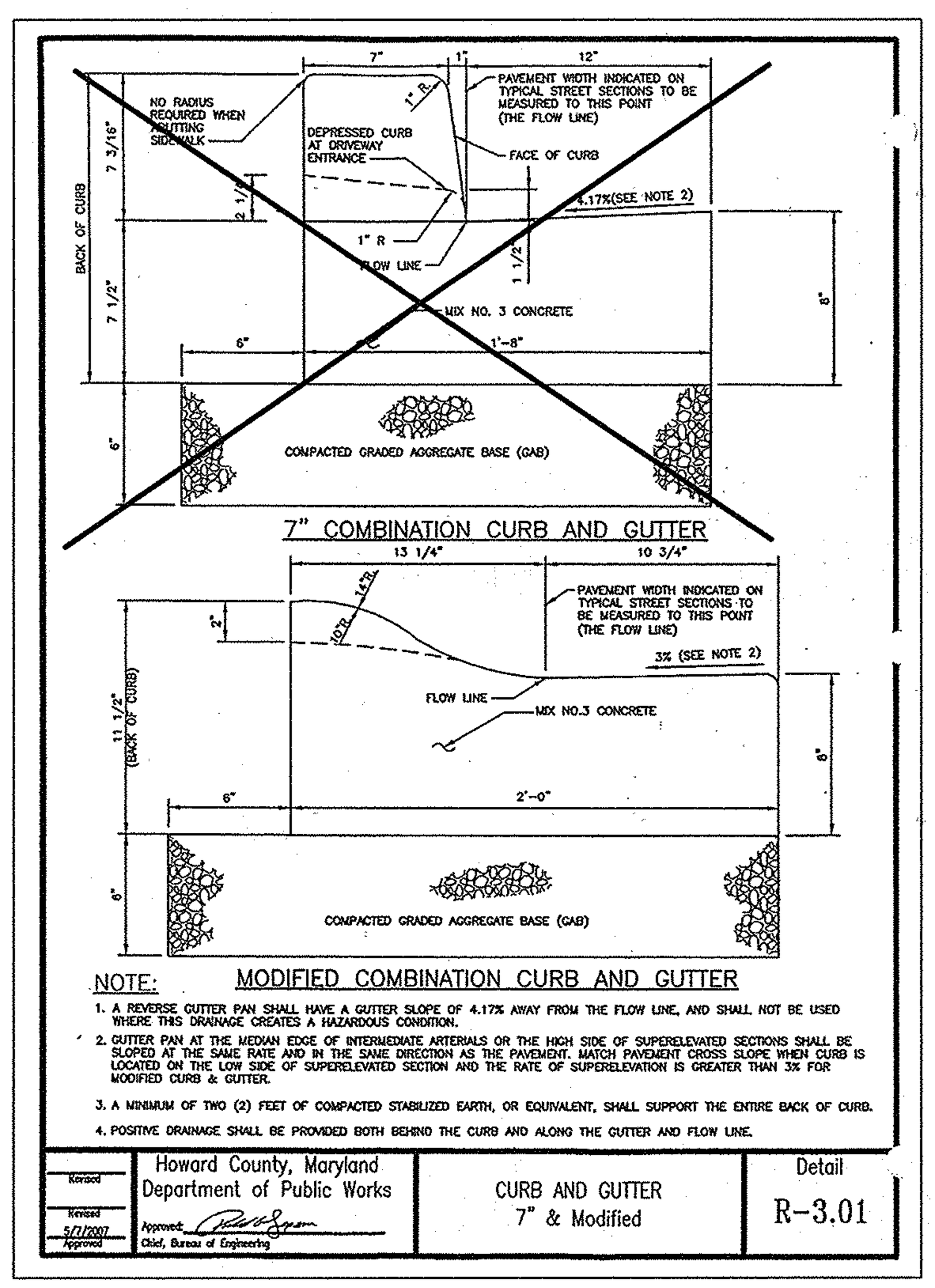


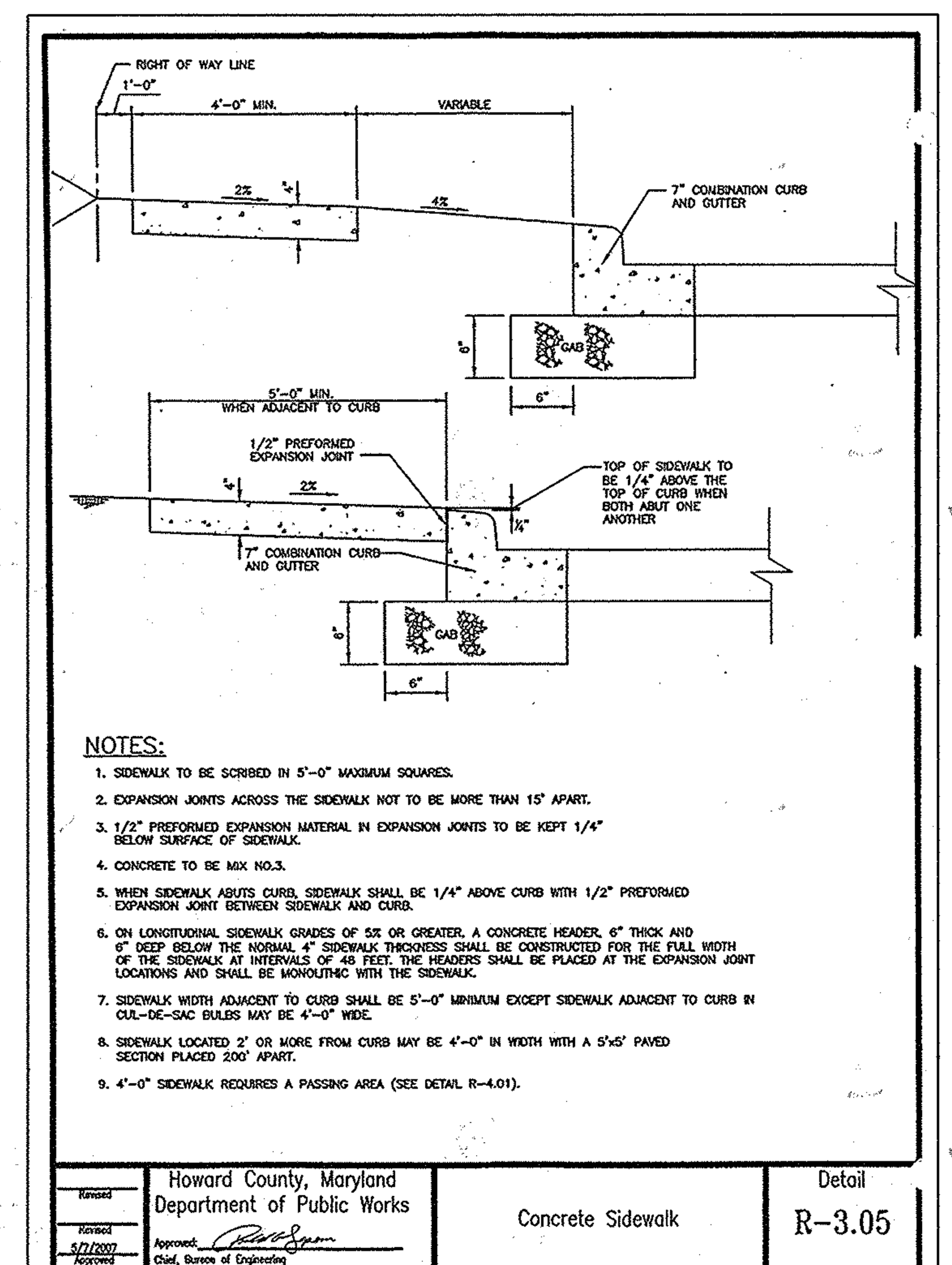


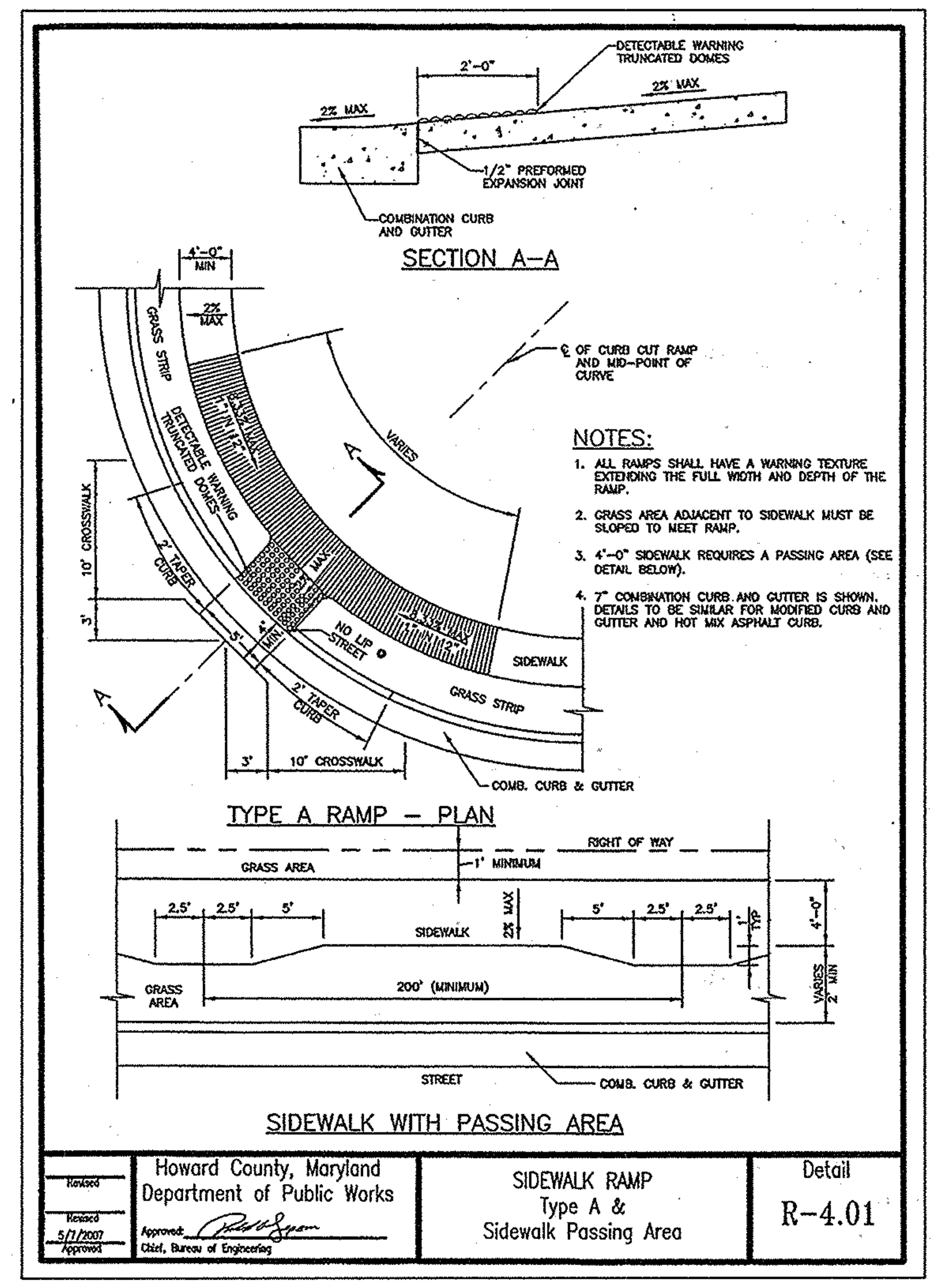


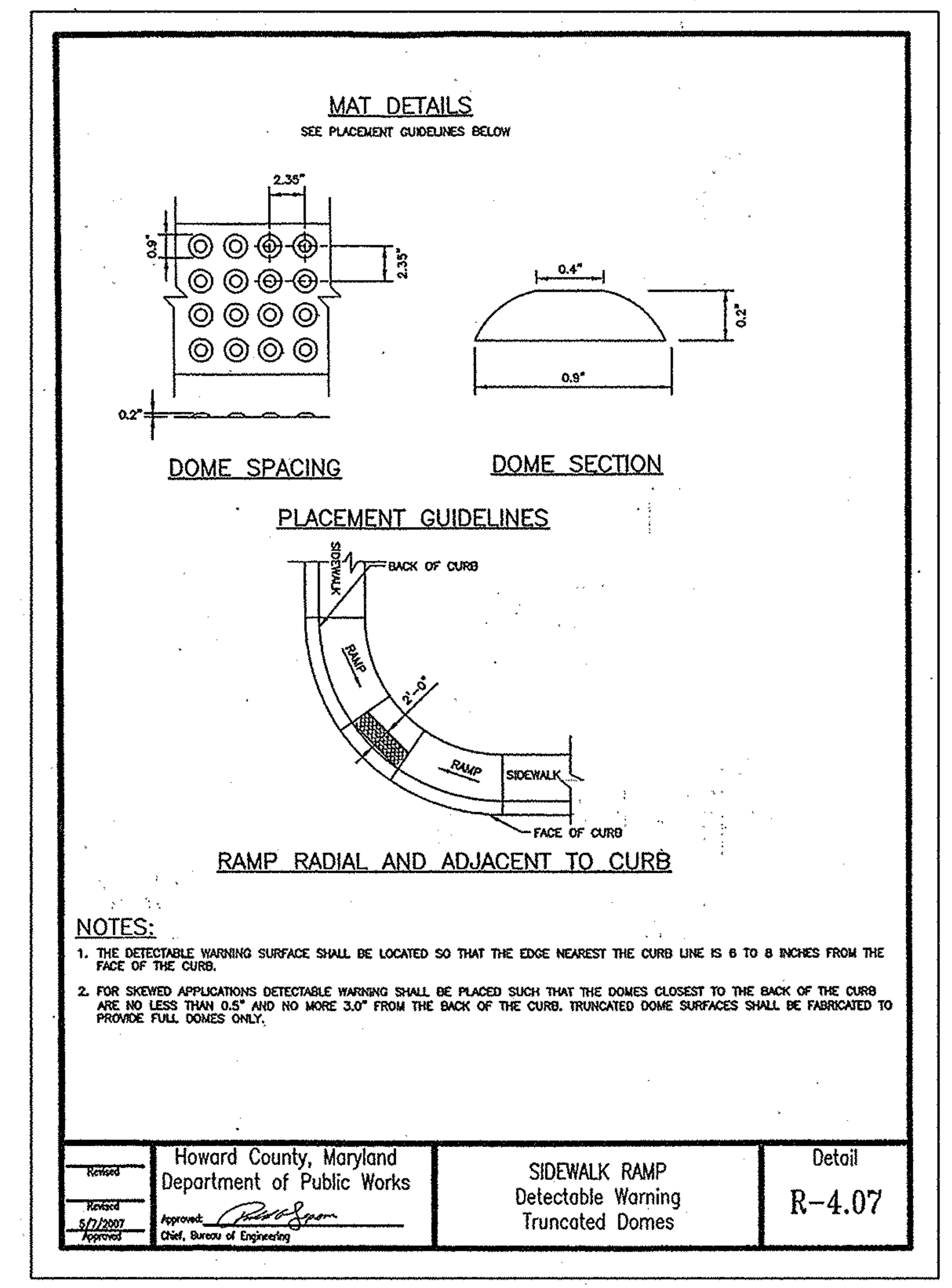


NOTE:
Contractor shall provide a minimum of one foot (1') Full Depth saw cut (horizontally) onto Stansfield Road prior to road widening operations.









TRAFFIC CONTROL SIGN LEGEND				
Symbol	Location	℄ Station	Offset	Type
—•—	STANSFIELD ROAD	23+87.81	30.59' Rt	ADDRESS SIGN & R1-1, "STOP" SIGN; 30" x 30" OCTAGON **
—•—	USE-IN-COMMON DRIVE	0+34	13.34' Rt	R4-7, "KEEP RIGHT" SIGN; 24" x 30"
—•—	USE-IN-COMMON DRIVE	0+33	9.00' Rt	"NO PARKING FIRE LANE-TOW AWAY ZONE" (LEFT ARROW) SIGN; 12" x 18"
—•—	USE-IN-COMMON DRIVE	0+93	9.00' Rt	"NO PARKING FIRE LANE-TOW AWAY ZONE" (DOUBLE ARROW) SIGN; 12" x 18"
—•—	USE-IN-COMMON DRIVE	1+53	9.00' Rt	"NO PARKING FIRE LANE-TOW AWAY ZONE" (RIGHT ARROW) SIGN; 12" x 18"
—•—	USE-IN-COMMON DRIVE	2+00	13.00' Rt	ADDRESS SIGN (LOTS 1 & 2)

** Private range of address signs and/or private road street name signs (SNS) as well as public SNS shall be fabricated and installed by Howard County Bureau of Highways at the developer's / owner's expense. Contact Howard County Traffic Division at 410-313-5752 for details and cost estimates.

AS BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN IN RED ON THIS "AS-BUILT" PLAN, AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

STATE OF MARYLAND – MICHAEL DAVID ADCOCK – No. 21257 – PROFESSIONAL LAND SURVEYOR

MICHAEL D. ADCOCK PROFESSIONAL LANDSURVEYOR
LICENSE NO. 21257, EXPIRATION DATE: JUNE 16, 2017

8/19/2014
DATE

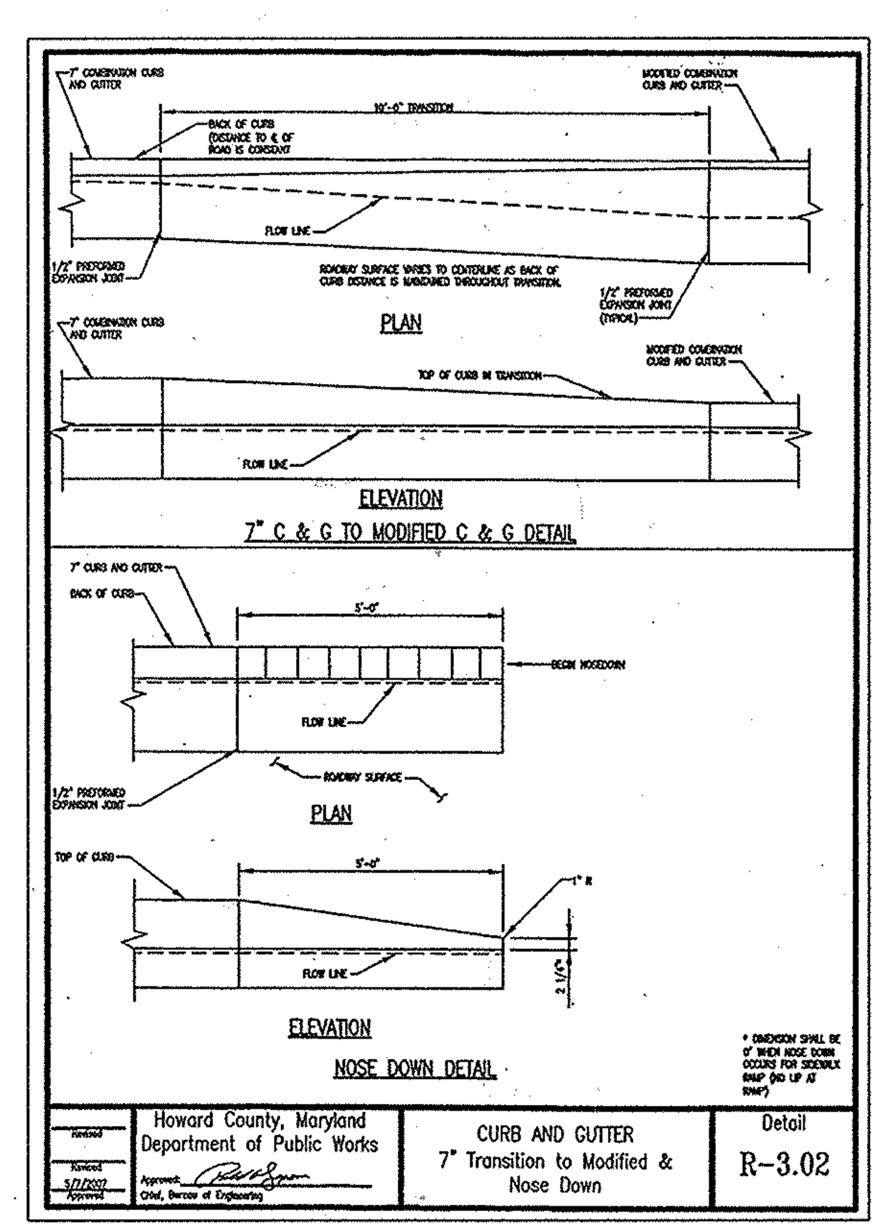
APPROVED: DEPARTMENT OF PUBLIC WORKS

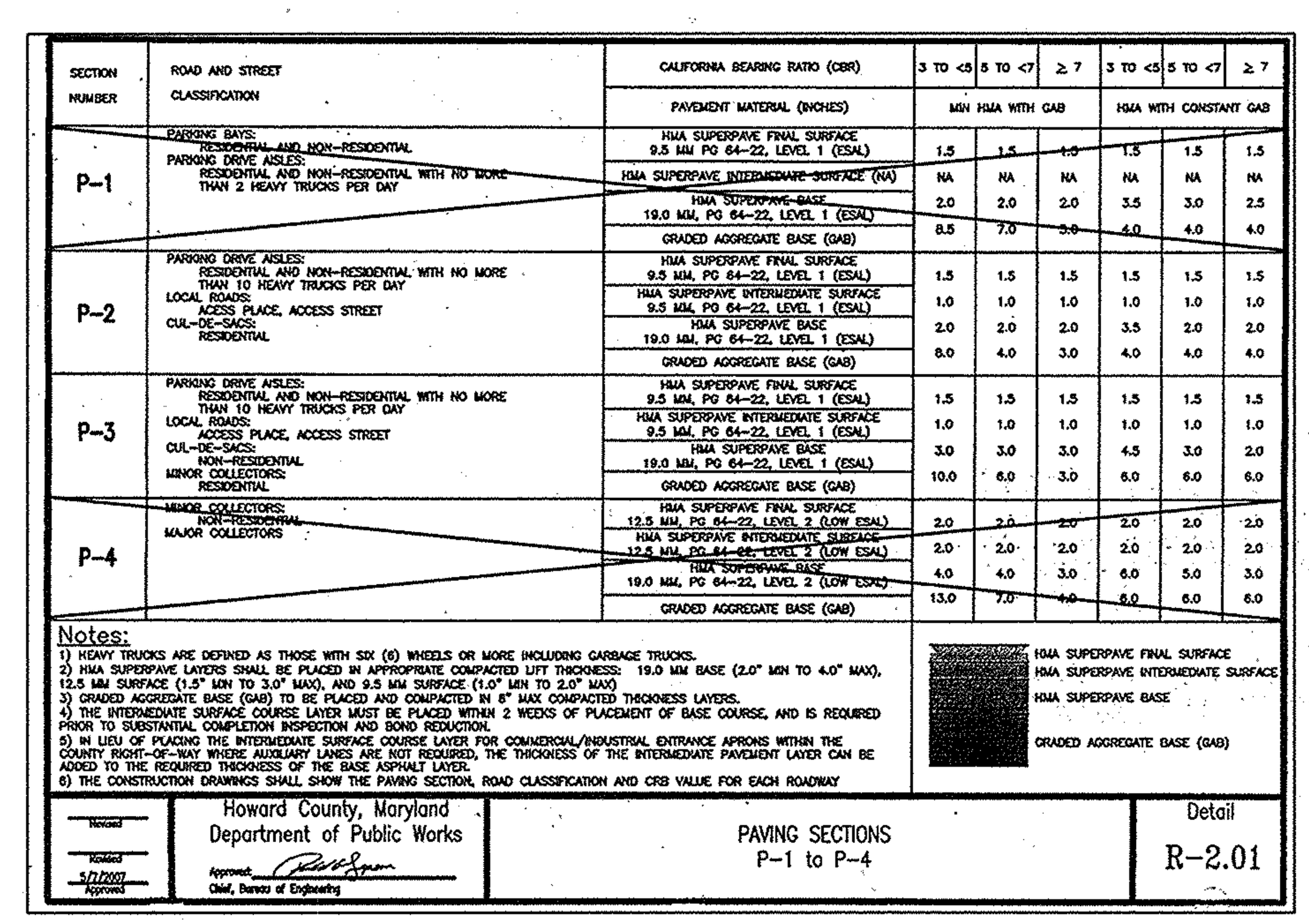
CHIEF, BUREAU OF HIGHWAYS — 1-9-09 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 1/20/09 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 1.16.9 DATE





I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19184, EXPIRATION DATE 2/20/09.

SIGNED — BRUCE D. BURTON — DATE 12/19/08

OWNER/ DEVELOPER
⚠ Williamsburg Group, LLC
5485 Harpers Farm Rd.
Suite 200
Columbia, MD 21044
410 997-8800

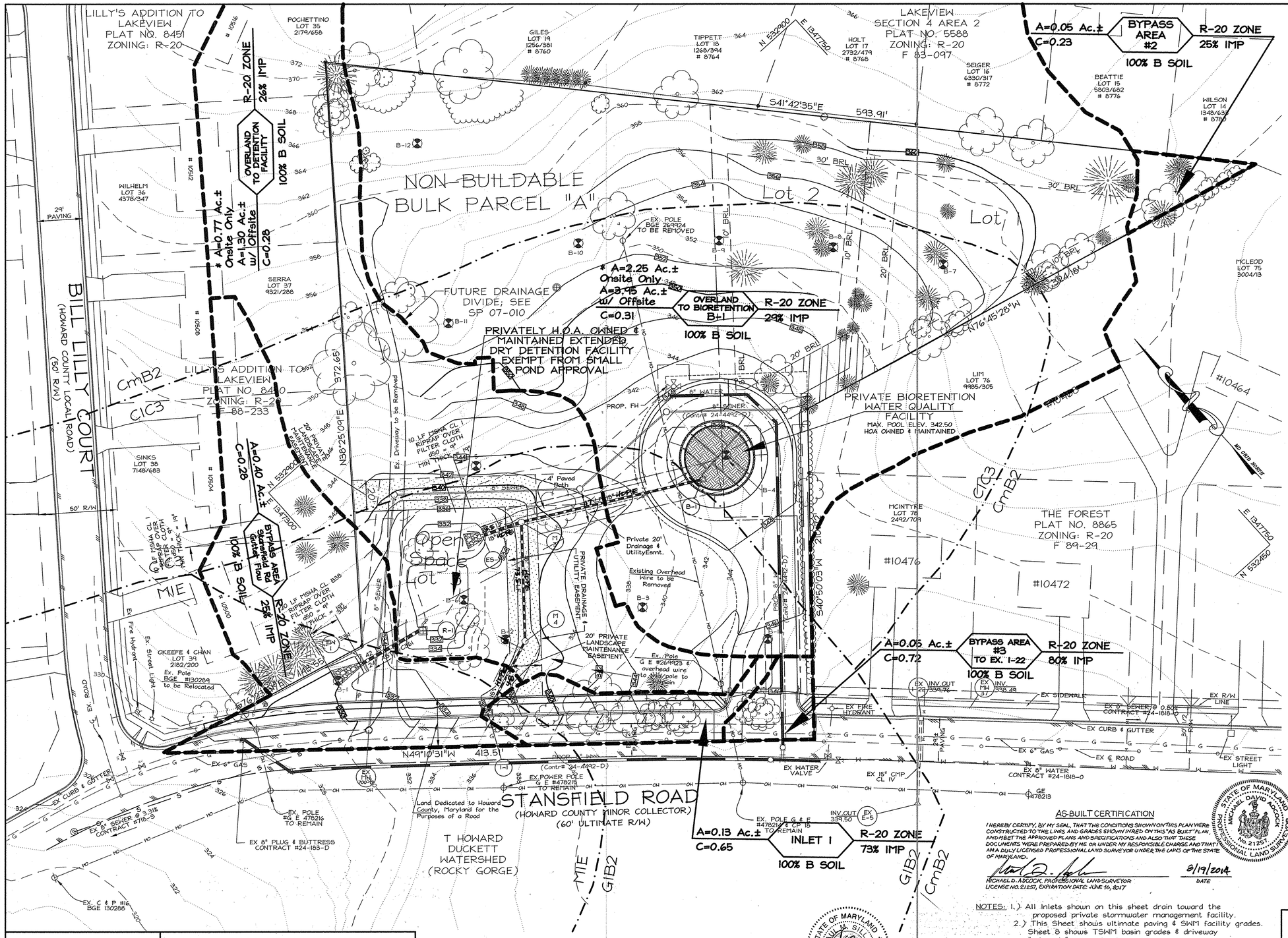
No.	Date	By	Description
⚠1	6/12	LDE	REVISE OWNER/DEVELOPER

REVISIONS

LDE Inc. — AS-BUILT
Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

DESIGNED EDS	MISCELLANEOUS DETAILS WATKINS' CHOICE PHASE 1 Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A" Tax Map 46 - Grid 18 - Parcel 215 6 th Election District - Howard County, Maryland Previous Submittals: SP 07-010, WP 09-042	SCALE AS SHOWN
DRAWN LDE		DRAWING 5 OF 16
CHECKED BDB		JOB NO. 02-035.2
DATE 12/2008	Owner/Developer: ⚠ Williamsburg Group, LLC 5485 Harpers Farm Rd. Suite 200 Columbia, MD 21044 410 997-8800	FILE NO. F-08-179

F-08-179



LEGEND

ACREAGE / *C* FACTOR — INLET / SUBAREA — ZONING / % IMPERVIOUS

% OF SOIL GRP

- PROPOSED DRAINAGE DIVIDE
- SOILS DIVIDE
- B-1 STORMWATER MANAGEMENT SOIL BORING
- DRAINAGE FLOW ARROW

OWNER/
⚠ DEVELOPER
Williamsburg Group, LLC
5485 Harpers Farm Rd
Suite 200
Columbia, MD 21044
410 997-8800

NOTE:

REFER TO SOILS MAP NUMBER 33 SITE LIES NEAR "LAKEVIEW" LABEL

SOILS LEGEND

HYDROLOGIC SOIL GROUP	MAP SYMBOL	MAPPING UNIT	REMARKS
B	CmB2	Chillum silt loam, 1% - 5% slopes,	-
		moderately eroded	
B	C1C3	Chillum gravelly loam, 5% - 10% slopes,	-
		severely eroded	
B	G1B2	Glenelg loam, 3% - 8% slopes,	-
		moderately eroded	
B	M1E	Manor loam, 25% - 45% slopes	-

ALL SOILS ONSITE ARE HYDROLOGIC SOIL GROUP "B"

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN WHICH ON THIS "AS BUILT" PLAN, AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR
LICENSE NO. 21257, EXPIRATION DATE: JUNE 16, 2017

8/19/2014
DATE

STATE OF MARYLAND · MICHAEL DAVID ADCOCK · No. 21257 · PROFESSIONAL LAND SURVEYOR

NOTES:
1.) All inlets shown on this sheet drain toward the proposed private stormwater management facility.
2.) This Sheet shows ultimate paving & SWM facility grades. Sheet 8 shows TSWM basin grades & driveway "subgrade" +/- prior to paving.
3.) No Time of Concentration has been computed. 5 Min. (worst case) Tc has been assumed for all proposed inlets.
4.) For Standard Legend, refer to Sheet 1.
5.) For Soil Boring information, refer to sheet 7.

No.	Date	By	Description
2	1/22/15	SEG	REVISE SD PIPE LENGTHS AND TYPE
⚠1	6/12	LDE	REVISE OWNER/DEVELOPER

REVISIONS

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-9-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/20/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/16/09

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 19184, EXPIRATION DATE: 09/09/09."

SIGNED BRUCE D. BURTON — 12/9/08

STATE OF MARYLAND · BRUCE DAVID BURTON · No. 19184 · REGISTERED PROFESSIONAL ENGINEER

STATE OF MARYLAND · PAUL M. SILL · No. 32025 · PROFESSIONAL ENGINEER

LDE Inc. — Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

AS-BUILT

DRAINAGE AREA MAP & SOILS MAP

WATKINS' CHOICE PHASE 1

Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A"
Tax Map 46 - Grid 18 - Parcel 215
6 th Election District - Howard County, Maryland
Previous Submittals: SP-07-010, WP-09-042

DESIGNED	EDS
DRAWN	LDE
CHECKED	BDB
DATE	12/2008
SCALE	1" = 30'
DRAWING	6 OF 16
JOB NO.	02-035.2
FILE NO.	F-08-179

Owner/Developer: Williamsburg Group, LLC, ⚠ 5485 Harpers Farm Rd. Suite 200 Columbia, MD 21044 410 997-8800

F-08-179

F:\02-035-2\dwg\02-035-2 SHT 6 PRO DAM 90.dwg, DRAINAGE AREA MAP, 12/17/2008 11:02:26 AM

HDPE SPECIFICATIONS

Trenches shall be excavated in such a manner as to ensure that the sides shall be stable under all working conditions. Trench walls shall be sloped or supported in conformance with all standards of safety. Only as much trench length as can be safely maintained shall be opened. All trenches shall be backfilled as soon as possible, but not later than the end of each working day.
Trench widths shall be sufficient to ensure working room to properly place and compact haunching and other backfill materials. Minimum trench width shall not be less than 1.5 times the pipe outside diameter plus 12 inches. If a trench box is used the bottom of the trench box shall be placed no lower than the top of the pipe. The minimum width of the trench, when a sub-trench is used in conjunction with a trench box, shall be three times the diameter of the pipe in order to prevent disruption of bedding material when moving the trench box.
Determination of trench width in unsupported, unstable soils shall include consideration of the size of the pipe, the stiffness of the backfill and in situ soil, and other site-specific conditions as applicable. The trench shall be excavated to the width, depth, and grade as indicated on the plans and/or given by the engineer.

Bedding Material and Structural Backfill: Bedding and structural backfill materials shall meet the requirements of ASTM D2321 as follows:

Class 1A	Manufactured aggregates; open graded clean
Class 1B	Manufactured processed aggregates; dense graded clean
Class 11	Coarse-grained soils, clean
Class 111	Coarse-grained soils with fines
Class 1VA	Fine –grained soils – inorganic

For all pipes greater than 24 inches in diameter only Class 1A, Class1B, and Class 11 will be allowed.

Bedding material shall have a maximum size of 1 ½ inches. Backfill shall be free of organic material, stones larger than 1 ½ inches in greatest dimensions, or frozen lumps. Moisture content shall be in the range of optimum content, typically minus 3 per cent to plus 2 percent, so as to permit thorough compaction. Consideration should be given to the potential for migration of fines from adjacent materials into open-graded backfill and bedding materials.
For pipe types that are not smooth on the outside, i.e. pipes with corrugated or profile walls, backfill gradations should be selected that will permit the filling of the corrugation of profile wall.
Flowable fills, such as controlled low strength mortar, CLSM, or controlled density fill, CDF, may be used for backfill provided adequate flotation resistance can be achieved by restraints, weighting or placement technique. With CLSM backfill, trench width can be reduced provided an engineer for the contractor has performed a satisfactory analysis of the combined CLSM/in situ soil strength. When CLSM is used all joints must be gasketed.

The following specifications detail material, installation and acceptance requirements for thermoplastic pipe used for storm sewer and drainage applications.

2

MATERIAL SPECIFICATIONS

Thermoplastic Pipe: All thermoplastic pipe materials shall conform to the workmanship and inspection requirements of :

- ASTM F679 - Standard Specification for PolyVinyl Chloride (PVC) Large-Diameter Plastic Gravity Sewer Pipe and Fittings – 18" to 48"
- ASTM F 794 - Standard Specification for PolyVinyl Chloride (PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter – 4" to 48"
- ASTM F949 –Standard Specification for PolyVinyl Chloride (PVC) Corrugated Sewer Pipe With a Smooth Interior and Fittings – 4" to 36"
- AASHTO M294 – Standard Specification for Corrugated Polyethylene Pipe - 12" to 48"

except, that all thermoplastic pipe supplied under this contract will have a minimum pipe stiffness of **46psi** at 5% deflection when tested in accordance with ASTM D 2412.

A Professional engineer registered in the State of Maryland shall provide a signed and sealed letter to the Engineer. This letter will certify that High Density Polyethylene Pipe - HDPE - supplied under this project was manufactured from raw materials in accordance with Section 6 – Materials - AASHTO M294, and that the material met or exceeded the Slow Crack Resistance Growth requirement of Section 9.5 of AASHTO M294.

INSTALLATION SPECIFICATIONS

General Installation Requirements: The installation of all thermoplastic pipe will be in accordance with ASTM D 2321 and as described in this specification. United States Department of Labor Occupational Safety &Health Administration Standard Number 1926.652 shall be observed at all times and shall supercede any requirement of this specification in the event of a conflict.
A trench box or shoring system shall be used in excavations greater than 5 feet in depth. Excavations of earth material to a level not greater than two feet below the bottom of the trench box or shoring system shall be permitted, but only if the trench box is designed to resist the forces calculated for the full depth of the trench and there are no indications while the trench is open of a possible loss of soil from behind or below the bottom of the trench box.

1

Structural Backfill: Structural backfill shall:

- be placed in layers not exceeding 8 inches loose lift thickness
- brought up evenly and simultaneously on both sides of the pipe
- be to an elevation not less than twelve inches above the top of the pipe
- be worked into the haunch area and compacted by hand
- have a minimum compaction level of 90 percent standard proctor density
- All compaction equipment used within 36 inches of the pipe shall be approved by the Engineer
- Ponding or jetting the structural backfill to achieve compaction shall not be permitted without written permission from the Engineer.

Connection of Flexible Pipe to Manholes
The installer shall use flexible water stops, resilient connectors, or other flexible systems approved by the project engineer to make watertight connections to manholes and other structures. Grouting between the thermoplastic pipe and the manhole shall not be permitted.

ACCEPTANCE SPECIFICATIONS

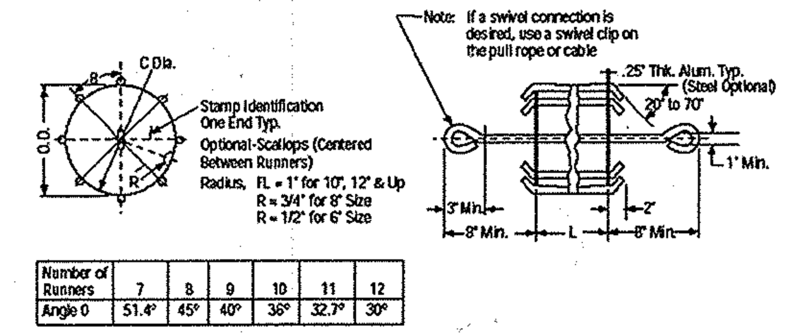
Thermoplastic Pipe
For all thermoplastic pipe materials short and long-term deflection shall be less than 5% of the pipe's actual internal diameter measured prior to installation. Short-term deflection shall be deemed to be any deflection measured not sooner than 30 days after backfilling and installation up to 1 year after backfilling and installation.
Deflection tests shall not be carried out sooner than 30 days after installation and backfilling is complete to assess short term deflection and not sooner than 11 months to assess long-term deflection.
A total of two tests will be carried out. All tests shall be carried out in the presence of the Project Engineer or his representative.
Any section of pipe failing the test will be uncovered and reinstalled. Any damaged pipe will be replaced with new pipe at the contractor's expense. Reinstalled pipe will be subject to deflection testing as per this specification.
Re-rounding will not be allowed.

3

Inspection Method:
All pipe up to and including 36 in. diameter shall be inspected with a go/no-go mandrel device as described herein. Pipe larger than 36 in. diameter shall be inspected with a suitable proving device to confirm that vertical deflection does not exceed either the maximum allowable short or long term deflection limits.
The mandrel or proving device shall be pulled through the pipe in such a manner so as to ensure that excessive force is not used to advance the device through any deflected portion of the pipe.

The mandrel shall be cylindrical in shape, constructed with 9 evenly spaced arms and shall generally conform to Figure A1.

Figure A1 – General Mandrel Configuration



Number of Runners	7	8	9	10	11	12
Angle θ	51.4°	45°	40°	36°	32.7°	30°

Mandrels larger than 18 in. in diameter shall be constructed of special breakdown devices to facilitate entry through access manholes.

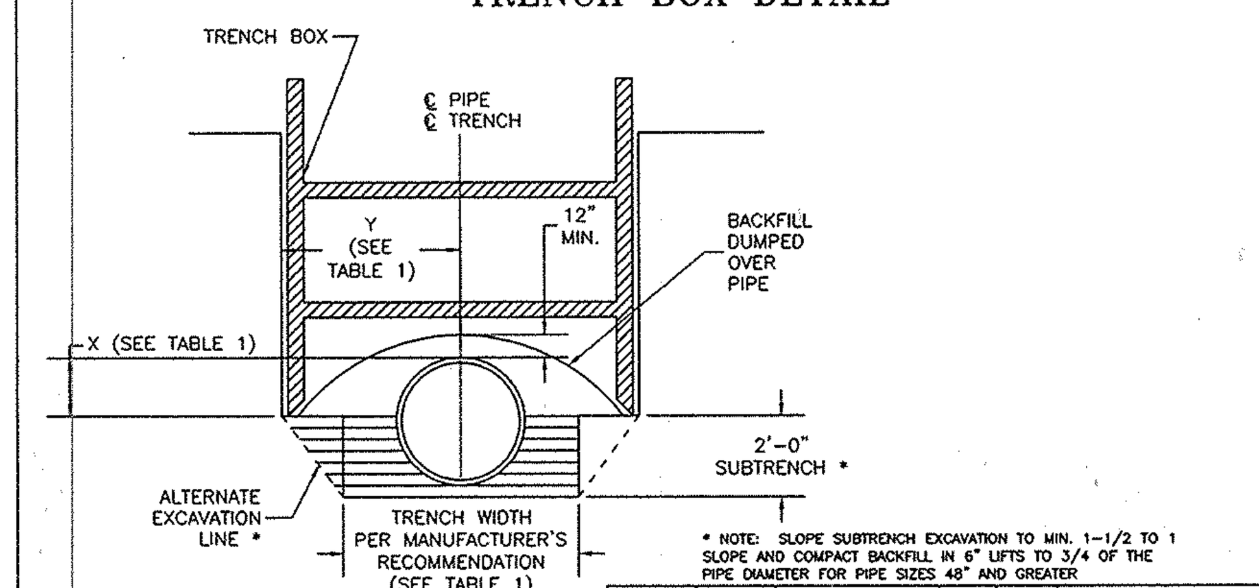
Mandrel Dimensional Requirements
The minimum diameter of the circle scribed around the outside of the mandrel arms shall be equal to the values for each specific pipe material, within a tolerance of +/- 1/100th inch . The contact length of the mandrel shall be measured between the points of contact on the mandrel arm as indicated in Figure A1. The outside radius of the mandrel arms shall be checked for conformance with these specifications with a proving ring.

4

An oversized proving ring may be used, which shall be manufactured to a diameter equal to the outside diameter of the mandrel plus, to facilitate undertaking measurements to confirm that the size of the mandrel conforms the dimensions and dimensional tolerances specified herein. The proving ring shall be manufactured to within 1/100th inch of the specified size. The proving ring shall be fabricated from ¼ inch minimum thick steel.

As an alternative, a go/no-go proving ring device shall be permitted in which case the proving ring shall be sized up to 1/100th inch less than the circle that would be scribed by the specified mandrel size. If a go/no-go proving ring is utilized, an acceptable mandrel will not be able to pass through the proving ring. Go/no-go proving rings shall not be less than 1/100th inch of the specified dimension.

TRENCH BOX DETAIL



* NOTE: SLOPE SUBTRENCH EXCAVATION TO MIN. 1-1/2 TO 1 SLOPE AND COMPACT BACKFILL IN 6" LIFTS TO 3/4 OF THE PIPE DIAMETER FOR PIPE SIZES 48" AND GREATER

PIPE DIA.	PIPE OD	TRENCH WIDTH (in.)	X (in.)	Y (in.)	TRENCH BOX WIDTH (in.)
12	14.45	31	N/A	N/A	31
15	17.57	34	N/A	N/A	34
18	21.20	39	1.2	23.8	48
24	27.80	48	7.8	33.7	68
30	35.10	66	15.1	44.7	90
36	41.70	78	21.7	54.5	109
42	47.70	83	27.7	63.6	127
42 HC	46.75	83	26.8	62.1	124
48 HC *	52.70	89	32.7	71.1	142
60 HC *	65.50	102	45.5	90.3	180

ADS STANDARD DETAILS DISCLAIMER: "ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") HAS PREPARED THIS STANDARD DETAIL TO DEMONSTRATE ADS' RECOMMENDED INSTALLATION OF ITS PRODUCTS FOR THE DEPICTED APPLICATION. IN ADDITION TO ADS' RECOMMENDATIONS, THERE MAY BE OTHER NATIONAL, STATE OR LOCAL SPECIFICATIONS THAT ARE PERTINENT TO THIS APPLICATION. ADS' STANDARD DETAIL IS NOT INTENDED TO SUPERSEDE ANY NATIONAL, STATE OR LOCAL SPECIFICATIONS, AND ADS RECOMMENDS THAT THOSE REQUIREMENTS BE REVIEWED AND CONSULTED PRIOR TO THE INSTALLATION OF ADS' PRODUCTS. ADS HAS NOT AUTHORIZED, AND IT BEARS NO RESPONSIBILITY FOR, ANY REVISIONS, ALTERATIONS OR DEVIATIONS FROM THIS STANDARD DETAIL."

ADS — ADVANCED DRAINAGE SYSTEMS, INC.

DRAWN BY	APPROVED BY	DRAWING #	REVISIONS BY	DATE
P.X.C. 11-20-99	G.H.S. 11-20-99	STD-106		

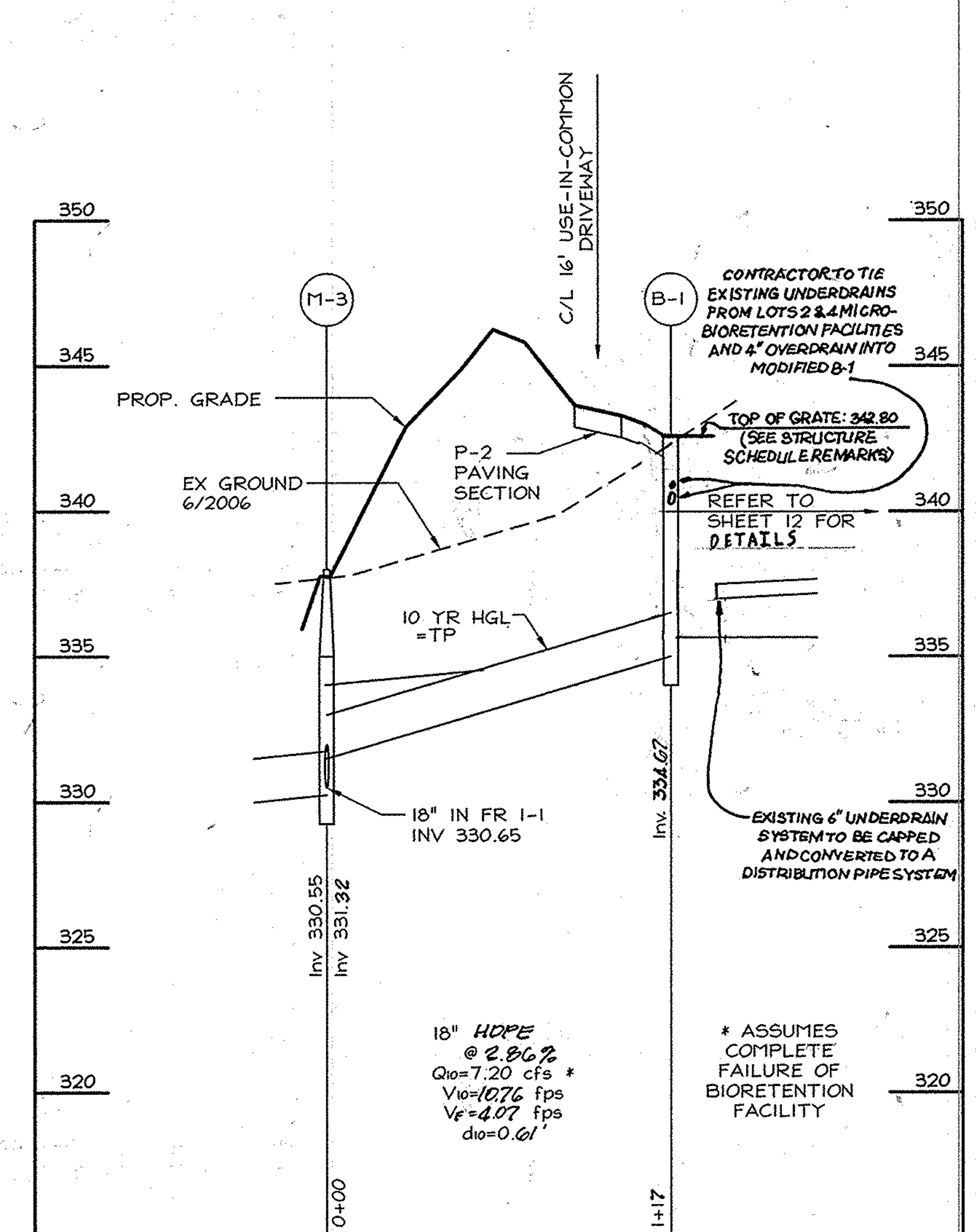
PIPE SCHEDULE

Size	Class	Total Length *
15"	HDPE	48
18"	HDPE	214

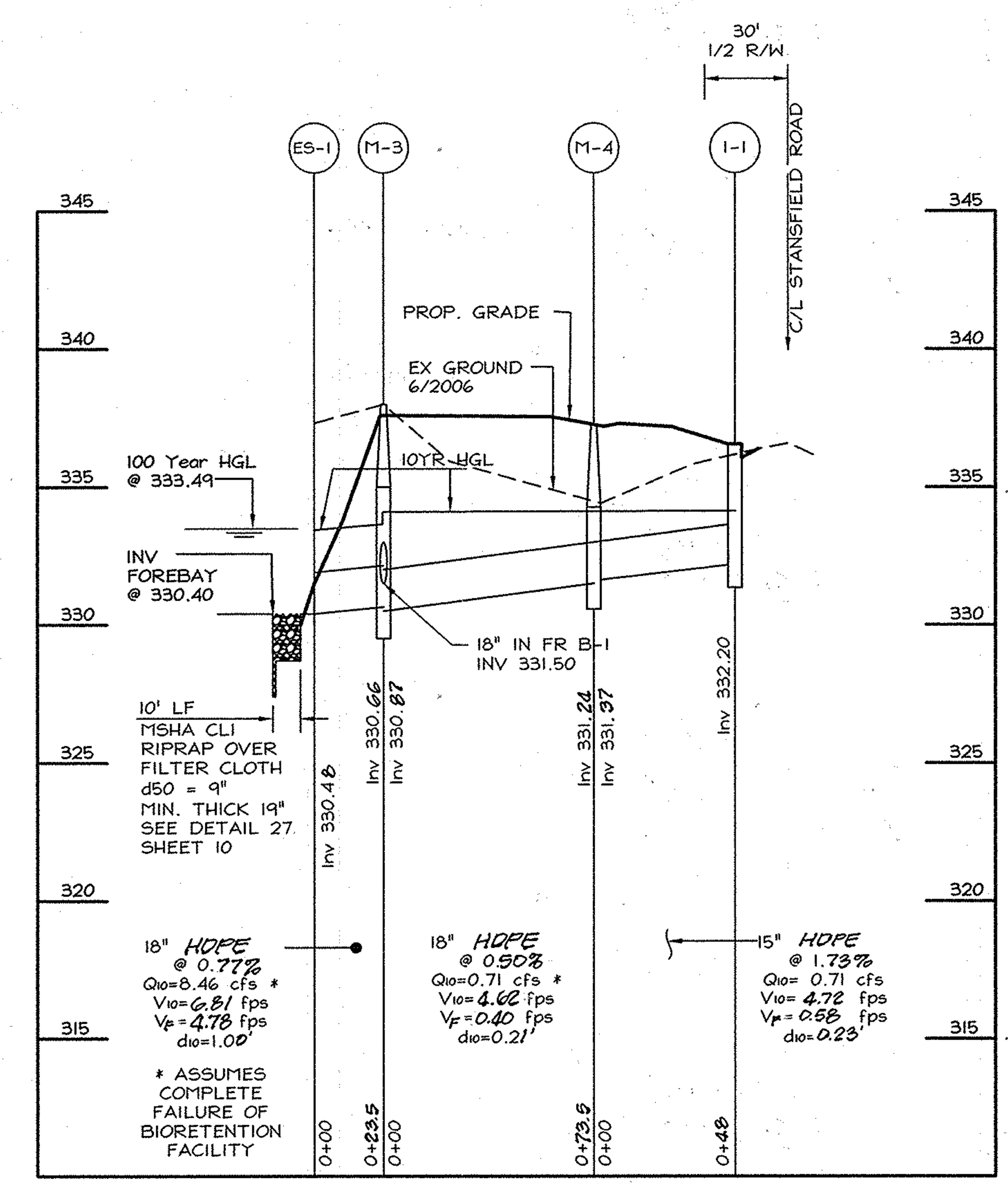
STRUCTURE SCHEDULE

Str. No.	Structure Type	Inv. In	Inv. Out	Top Elevation or Upper / Lower	Detail	Location	Remarks
I-1	A-5	-	332.20	336.62/336.10	D-4.01	See Plan View	
I-2	ADS INLET (OR EQUIVALENT)	-	336.60	342.50			
M-3	48" Manhole	330.65/331.50	330.55	337.87	G 5.12	See Plan View	(1) N 532778.74 E 1347406.54
M-4	48" Manhole	331.65	331.40	336.24	G 5.12	See Plan View	(1) N 532720.74 E 1347357.54
ES-1	18" End Scetion	330.40	330.40	301.90	D-5.51	See Plan View	(2) 18" End Section
EW-1	"C" Endwall	330.00	330.00	332.75	D-5.21	See Plan View	(2) 24" Conc. Endwall
B-1	MODIFIED D *	-	335.00	342.82 *	D-4.10	See Plan View	(1) N 532721.76 E 1347510.40
							* CONTRACTOR TO REMOVE "D" INLET TOP AND REPLACE WITH GRATE INLET TOP AND BRICK TO GRADE AS NECESSARY.

(1) Coordinate for Proposed Structure = Centerline of Structure
(2) Coordinate for End Section = Centerline of Pipe @ Downstream Face



Storm Drain Profile: M-3 thru B-1
Scale: Hor. 1"=50'
Ver. 1"=5'



Storm Drain Profile: ES-2 thru I-1
Scale: Hor. 1"=50'
Ver. 1"=5'

SOIL BORINGS

DEPTH	DESCRIPTION	USDA CLASS	ANTICIPATED PERC RATE IN. / HR.
	B-1		
0 – 0.5'	Loamy Topsoil		
0.5' - 2.5'	Brown micaceous loamy clay – moist (likely fill)	CL	0.17
2.5' - 4.0'	Brown micaceous silty / sandy loam, moist	ML	0.27
4.0' - 5.5'	Brown and rusty micaceous clayey sand – moist	SC	0.52
5.5' - 7.5'	Rusty, tan and brown micaceous loamy sand with iron ore frags, damp to moist	SM	1.02
7.5'	Hand auger refusal		
	B-2		
0 – 0.75'	Topsoil		
0.75' - 1.5'	Dark grey to tan micaceous wet silty clay (likely fill)	CL	0.17
1.5' - 4.0'	Tan silty micaceous clay loam, moist	MH	0.27
4.0' - 5.0'	Yellowish tan micaceous silty clayey sand, moist	SC	0.52
6.5' - 10.0'	Quartziferous sandstone and iron ore mixed with brown loamy micaceous sand	GM	0.52
5.0' - 6.5'	Tan and rusty micaceous sandy loam, moist, trace clay and gravel	SM	1.02
10.0' – 11.5'	Variegated loamy sand	SM	1.02
	B-3		
0 – 1.0'	Plowed topsoil – gravelly, clayey loam		
1.0' - 3.0'	Tan and rusty micaceous loamy sand, trace clay (moist)	SC	.52
3.0' - 5.0'	Black, orange, tan and rust micaceous loamy sand (damp)	SM	1.02
5.0' - 11.0'	Greyish micaceous loamy sand (dry)	SM – SP	2.0
	B-4		
0.0 – 1.0'	Plowed loamy moist topsoil with gravel		
1.0' - 4.0'	Brown and rusty micaceous clayey sand loam (moist)	SC	0.52
4.0' - 6.0'	Brown and rusty micaceous silty sand loam (moist)	SM	1.02
6.0' - 6.5'	Grey layer – micaceous loamy sand (damp)	SM	1.02
6.5' - 11.0'	Brown and rusty micaceous loamy sand (dry)	SW – SM	2.41
	B-5		
0 – 1.0'	Topsoil – clayey sand and gravel (moist)		
1.0' - 3.5'	Light brown micaceous sandy clay (moist)	SC – CL	0.27
3.5' - 4.0'	Light brown micaceous clayey sand (damp)	SC	0.27
4.0' – 9.0'	Reddish brown micaceous silty sand with some gravel (damp)	SM – SP	0.52
9.0' – 12.0'	Variegated micaceous loamy sand (dry)	SP	1.02
	B-6		
0 – 0.8'	Topsoil – gravelly silt loam (moist)		
0.8' – 2.5'	Tan gravelly sandy silt, some mica (damp to dry)	MH	0.52
2.5' – 7.0'	Mixed quartziferous rock and tan and brown micaceous loamy silt (damp)	GM – MH	0.52
7.0' – 12.0'	Brown to variegated micaceous gravelly loamy sand (dry)	GM	1.02
	B-7		
0 – 0.3'	Topsoil – gravelly silt loam (moist)		
0.3' – 3.0'	Tan loamy gravelly silt – ½" thick iron ore layer underlain with soil, some mica dry)	ML	0.52
3.0' – 6.5'	Tan to reddish micaceous silty sand (dry)	SM	1.02
6.5' – 11.0'	Rusty brown micaceous sandy silt with some gravel (dry)	GM	1.02
	B-8		
0 – 0.3'	Loamy topsoil (moist)		
0.3' – 5.0'	Tan micaceous loamy sand and gravel (damp to dry)	GM	1.02
5.0' – 6.0'	Tan micaceous loamy sand (dry)	SM	1.02
6.0'	Quartziferous iron ore layer	N/A	
6.0' – 11.0'	Quartziferous rocks mixed with tan to red micaceous loamy sand (dry)	GM	1.02
	B-9		
0 – 0.5'	Loamy topsoil (moist)		
0.5' – 3.0'	Tan micaceous gravelly sandy clay loam (damp to dry)	CL	0.17
3.0' – 7.0'	Tan, beige and gold micaceous silty sand loam (dry)	ML	0.52
7.0' – 9.0'	Variegated micaceous silty sand mixed with quartziferous rocks (dry)	ML	0.52
9.0' – 11.0'	Tan to red micaceous clayey sand (dry)	SC	0.27
	B-10		
0 – 0.5'	Silty topsoil (moist)		
0.5' – 2.0'	Tan micaceous gravelly silt with some clay (damp)	GM	0.52
2.0' – 5.0'	Brown micaceous loamy silt, (damp)	MH	0.27
5.0' – 6.5'	Brown micaceous clayey silt mixed with quartziferous iron ore rocks, (damp)	CL	0.17
6.5' – 8.0'	Tan micaceous clayey silt (moist)	CL	0.09
8.0' – 11.0'	Variegated micaceous clayey sand (moist)	CH	0.09
	B-11 (No Topsoil)		
0 – 0.5'	Tan and orange silty gravelly clay (wet)	CL	0.17
0.5' – 3.5'	Tan gravelly silt, quartzite (moist)	GM	0.52
3.5' – 5.0	Tan to brown micaceous loam sand (damps)	ML	0.52
5.0' – 9.0'	Reddish micaceous loamy sand (dry)	SM	0.52
9.0' – 9.5'	Quartziferous oxidized iron ore with some loamy sand (dry)	SM	0.52
9.5' – 11.0'	Tan to orange micaceous loamy sand (dry)	SP – SM	1.02
	B-12		
0.0 – 0.5'	Gravelly topsoil (moist)		
0.5' – 3.0'	Tan micaceous gravely sand silt (moist)	MH	0.27
3.0' – 5.5'	Tan to brown micaceous clayey silt (moist)	CL	0.17
5.5' – 9.0'	Variegated micaceous clayey sand (moist)	SC	0.27
9.0'	1/2" thick quartziferous iron ore	–	—
9.0' – 12.0'	Grey micaceous clayey sand (damp)	SC	0.17
	B-13		
0.0 – 1.0'	Topsoil (moist)		
1.0' – 3.5'	Brown loamy silt, some micaceous (moist)	ML	0.17
3.5' – 6.0'	Reddish brown micaceous silty fine sand and gravel (damp)	GM	0.27
6.0' – 13.0'	Brown to grey micaceous silty sand (dry)	SM	1.02

OWNER/
⚠ DEVELOPER
Williamsburg Group, LLC
5485 Harpers Farm Rd.
Suite 200
Columbia, MD 21044
410 997-8800

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN IN RED ON THIS "AS-BUILT" PLAN. AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR — 8/19/2014 — DATE
LICENSE NO. 21257, EXPIRATION DATE: JUNE 16, 2017

(Seal: STATE OF MARYLAND — MICHAEL DAVID ADCOCK — No. 21257 — PROFESSIONAL LAND SURVEYOR)
(Seal: STATE OF MARYLAND — PAUL M. SILL — No. 32025 — PROFESSIONAL ENGINEER)

APPROVED: DEPARTMENT OF PUBLIC WORKS	
CHIEF, BUREAU OF HIGHWAYS	1-9-09 DATE
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
CHIEF, DIVISION OF LAND DEVELOPMENT	1/20/09 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	1.16.09 DATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 19184, EXPIRATION DATE: 2/20/09.

SIGNED: BRUCE D. BURTON — DATE 12/19/08

No.	Date	By	Description
3	1/22/15	SEG	REVISE SD PIPE COMPS, LENGTH & TYPE
⚠2	02/07/14	SAA	REPLACE BIORETENTION FACILITY WITH STONE STORAGE- REVISE INLET B-1 & ADD A-2.
⚠1	6/12	LDE	REVISE OWNER/DEVELOPERS

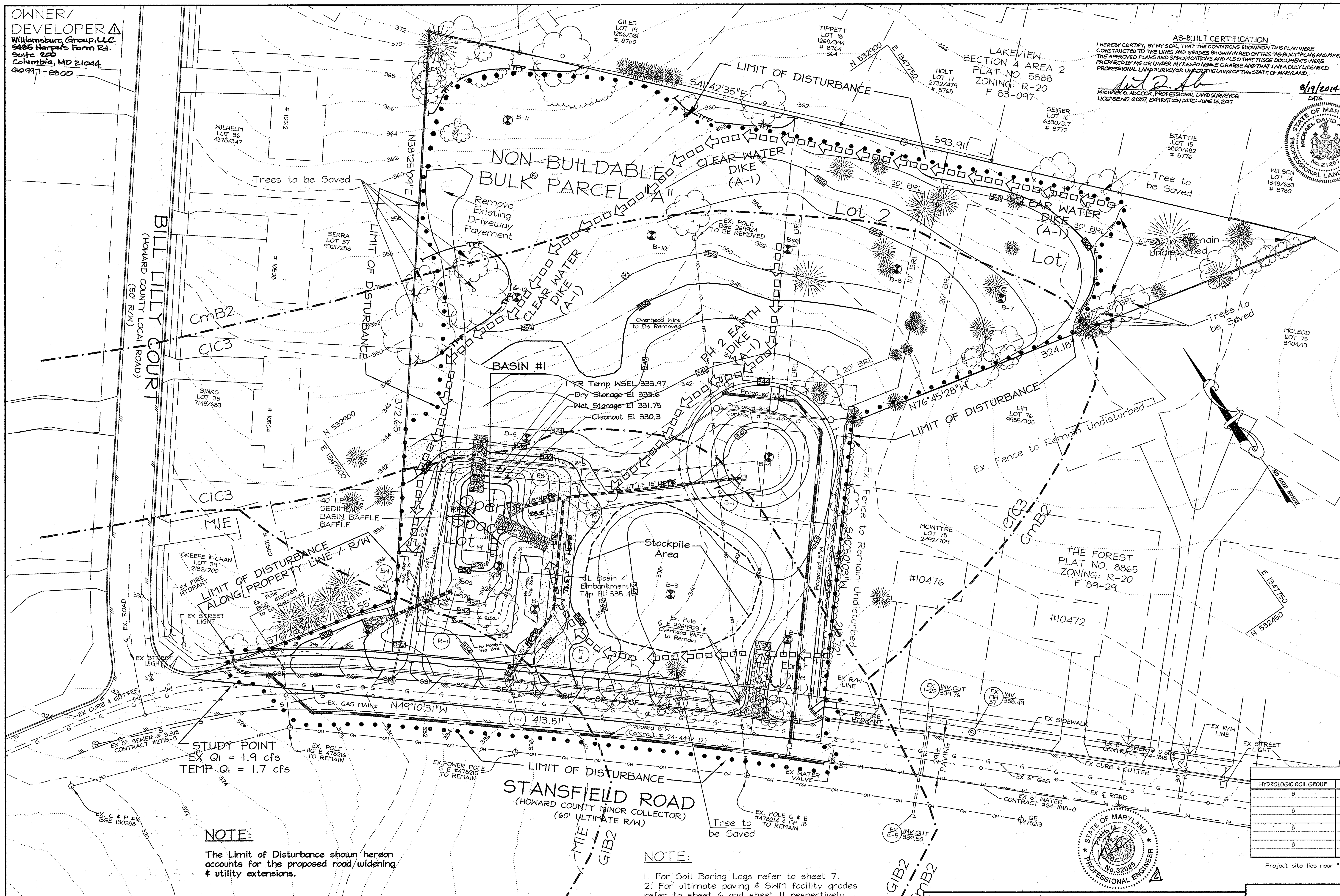
REVISIONS

LDE Inc. — **AS - BUILT**
Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

DESIGNED	STORM DRAIN PROFILES & SOIL BORINGS	SCALE
EDS	WATKINS' CHOICE PHASE I	1" = 5' V. 1" = 50' H
DRAWN: LDE	Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A"	DRAWING: 7 OF 16
CHECKED: BDB	Tax Map 46 - Grid 18 - Parcel 215; 6 th Election District - Howard County, Maryland; Previous Submittals: SP-07-010, WP-09-042	JOB NO.: 02-035.2
DATE: 12/2008	Owner/Developer: ⚠ Williamsburg Group, LLC, 5485 Harpers Farm Rd., Suite 200, Columbia, MD 21044, 410 997-8800	FILE NO.: F-08-179

F-08-179

OWNER/
DEVELOPER ⚠
Williamsburg Group, LLC
5485 Harpers Farm Rd.
Suite 200
Columbia, MD 21044
410 997-8800



AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN IN RED ON THIS "AS-BUILT" PLAN, AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR
LICENSE NO. 21257, EXPIRATION DATE: JUNE 16, 2017
8/19/2014
DATE

STATE OF MARYLAND MICHAEL DAVID ADCOCK No. 21257 PROFESSIONAL LAND SURVEYOR

LEGEND

- 470 — EXISTING 10' CONTOURS
- 468 — EXISTING 2' CONTOURS
- BUILDING RESTRICTION LINE
- PROPOSED CURB & GUTTER
- PROPOSED STORM DRAIN
- EX. CURB & GUTTER
- EX. STORM DRAIN
- EX SANITARY SEWER
- EX SEWER HOUSE CONNECTION
- EX SANITARY SEWER MANHOLE
- EX WATER MAIN
- EX WATER HOUSE CONNECTION
- EX WATER VALVE
- EX GAS MAIN
- EX OVERHEAD UTILITIES
- WATER HOUSE CONNECTION (WHC)
- SEWER HOUSE CONNECTION (SHC)
- EX. PAVING
- 470 PROPOSED 10' CONTOURS
- 468 PROPOSED 2' CONTOURS
- B-1 STORMWATER MANAGEMENT SOIL BORING
- LIMIT OF DISTURBANCE
- SCE STABILIZED CONSTRUCTION ENTRANCE
- (A-2) EARTH DIKE / CLEAR WATER DIVERSION
- GM GABION INFLOW PROTECTION
- RPS REMOVABLE PUMPING STATION
- SF SILT FENCE
- SSF SUPER SILT FENCE
- TPF TREE PROTECTION FENCE

BASIN #1	
Drainage Area	3.40 Acres
Storage Required	12,240 cu.ft.
Storage Provided	12,320 cu.ft.
Wet Storage Required	6,120 cu.ft.
Wet Storage Provided	6,177 cu.ft.
Dry Storage Required	6,120 cu.ft.
Dry Storage Provided	6,143 cu.ft.
Storage Elevation - Wet	331.75
Dry	333.60
Storage Depth - Wet	3.75 ft.
Dry	1.85 ft.
Basin Bottom Elev.	328.00
Cleanout Elevation	330.30
Barrel Diam.	24"
Barrel Inv @ Riser	330.30
Barrel Inv Outlet	330.00
Riser Size	See Plan - Sht 10
Trash Rack Diam.	See Plan - Sht 11
Riser Crest	333.60
Begin Riser Perf.	331.75
End Riser Perf.	333.60
# Anti Seep Collars	1
Anti Seep Collar Size	8' Tall x 9' Wide
Basin Top Elevation	335.40
Basin Size	See Plan
Trap/Basin Type	ST-1

SOILS LEGEND

HYDROLOGIC SOIL GROUP	MAP SYMBOL	MAPPING UNIT	REMARKS
B	CmB2	Chillum silt loam, 1% - 5% slopes, moderately eroded	-
B	C1C3	Chillum gravelly loam, 5% - 10% slopes, severely eroded	-
B	G1B2	Glenelg loam, 3% - 8% slopes, moderately eroded	-
B	M1E	Manor loam, 25% - 45% slopes	-

Project site lies near "Lakeview" label shown on Soils MAp #33.

NOTE:

The Limit of Disturbance shown hereon accounts for the proposed road/widening & utility extensions.

NOTE:

1. For Soil Boring Logs refer to sheet 7.
2. For ultimate paving & SWM facility grades refer to sheet 6 and sheet 11 respectively.

STATE OF MARYLAND PAUL M. SILL No. 32025 PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-9-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/20/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1-16-9

ENGINEER'S CERTIFICATE

"I hereby certify that this plan for sediment and erosion control represents a pratical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature of Engineer — Date 12/19/08
Bruce D. Burton

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan of development for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Environmental Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic onsite inspections by the Howard County Soil District."

Signature of Developer — Date 12-19-08

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

HOWARD SOIL CONSERVATION DISTRICT — DATE 1/6/09

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 19184, EXPIRATION DATE: 6/30/09."

SIGNED BRUCE D. BURTON — DATE 12/19/08

STATE OF MARYLAND BRUCE DAVID BURTON No. 19184 REGISTERED PROFESSIONAL ENGINEER

No.	Date	By	Description
2	1/22/15	SEG	REVISE SD PIPE LENGTHS AND TYPE
⚠1	6/12	LDE	REVISE OWNER/DEVELOPER & LIMIT OF DISTURBANCE

REVISIONS

LDE Inc. AS-BUILT

Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

DESIGNED EDS	GRADING AND SOIL EROSION & SEDIMENT CONTROL PLAN	SCALE 1" = 30'
DRAWN LDE	WATKINS' CHOICE PHASE I	DRAWING 8 OF 16
CHECKED BDB	Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A" Tax Map 46 - Grid 18 - Parcel 215 6 th Election District - Howard County, Maryland Previous Submittals: SP-07-010, WP-09-042	JOB NO. 02-035.2
DATE 12/2008	Owner/Developer: ⚠1 Williamsburg Group, LLC 5485 Harpers Farm Rd. Suite 200 Columbia, MD 21044 410 997 8800	FILE NO. F-08-179

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, Sediment Control Division prior to the start of any construction, (313-1855).
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current"MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", and revisions thereto.
3. Following initial soil disturbance or redisturbance, permanent or temporary stabilization shall be completed within:
   a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1,
   b) 14 days as to all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. I, Chapter 7, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5. All disturbed areas must be stabilized within the time period specified above in accordance with the 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL (Section G) for permanent seeding, sod, temporary seeding, and mulching. Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Site Analysis:

Total Area of Site	3.50	Acres
⚠ Area Disturbed	3.50	Acres
Area to be roofed or paved	0.60	Acres
⚠ Area to be vegetatively stabilized	2.90	Acres
Total Cut	2,100	Cu. Yds. *
Total Fill	6,100	Cu. Yds. *
Need	4,000	Cu. Yds. *

* Contractor shall complete their own earthwork analysis - See Note 39 Sheet 1

Offsite waste/borrow area location N/A

8. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
9. Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
10. On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
11. Trenches for the construction of utilities is limited to three pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.

HOWARD SOIL CONSERVATION DISTRICT
PERMANENT SEEDING NOTES

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

SEEDBED PREPARATION:
Loosen upper three inches of soil by raking, disking, or other acceptable means before seeding, if not previously loosened.

SOIL AMENDMENTS:
In lieu of soil test recommendations, use one of the following schedules:
1) PREFERRED Apply 2 tons per acres dolomitic limestone (92 lbs/1000sq, ft.) and 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq, ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs per acre 30-0-0 ureaform fertilizer (9 lbs/1000sq, ft.)
2) ACCEPTABLE Apply 2 tons per acres dolomitic limestone (92 lbs/1000sq, ft.) and 1000 lbs per acre 10-10-10 fertilizer (23 lbs/1000 sq, ft.) before seeding. Harrow or disk into upper three inches of soil.

SEEDING
For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000sq, ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs per acre (1.4 lbs/1000sq, ft.) of Kentucky 31, Tall Fescue and 2 lbs. per acre (.05 lbs/1000sq, ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by:
Option (1) - 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring.
Option (2) - Use sod.
Option (3) - Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch 2 tons / acre well anchored straw.

MULCHING
Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000sq, ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000sq, ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000sq, ft.) for anchoring.

MAINTENANCE
Inspect all seeding areas and make needed repairs, replacements and reseedings.

AS-BUILT CERTIFICATION

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

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR
LICENSE NO. 21251, EXPIRATION DATE: JUNE 16, 2017

8/19/2014
DATE

STATE OF MARYLAND — MICHAEL DAVID ADCOCK — No. 21251 — PROFESSIONAL LAND SURVEYOR

HOWARD SOIL CONSERVATION DISTRICT
TEMPORARY SEEDING NOTES

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

SEEDBED PREPARATION:
Loosen upper three inches of soil by raking, disking, or other acceptable means before seeding, if not previously loosened.

SOIL AMENDMENTS:
Apply 600 lbs per acre 10-10-10 fertilizer (14 lbs/1000sq, ft.).

SEEDING
For periods March 1 thru April 30, and from August 15 thru October 15 seed with 2-12 bushels per acre of annual rye (3.2 lbs/1000sq, ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs/1000sq, ft.). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

MULCHING
Apply 1-1/2 to 2 tons per acre (70 to 90 lbs/1000sq, ft.) of unrotted weed free small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000sq, ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000sq, ft.) for anchoring.

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

SEQUENCE OF CONSTRUCTION

NOTE:

Contractor shall contact the Construction Inspection Division 24 hours in advance of commencement of work at 410-313-1880

PHASE 1

1. Obtain Grading Permit. - 1 day
2. Stakeout limits of disturbance. - 1 day
3. Install stabilized construction entrance with mountable berm, where shown hereon. - 1 day
4. Install silt fence ¢ super silt fence along the north side of Stansfield Road. - 2 days
5. Install water main and sewer extensions in accordance with Contract # 24-4492-D. Water main shall loop / connect existing Contract 24-1830-D to the west of the site and existing Contract 24-1818-D to the east. This work shall include extension into Watkins' Choice across Stansfield Road and includes service connections. - 3 weeks
6. Only that portion of water main which can be installed and backfilled on any given day shall be started. - Daily
7. During open cutting of Stansfield Road for water ¢ sewer extensions, if work is to continue to the next day, steel plates shall be used to allow traffic to flow uninterrupted. - Daily
8. When offsite work is completed; ie water main extension, immediately stabilize any and all disturbed areas with permanent seed mixture ¢ straw mulch or sod. - 1 day
9. With sediment controls in place and with permission from sediment control inspector, install BASIN outfall from EW-1 to R-1 and rip rap outfall. See Profile Along CL of Embankment and Profile Along CL of Principal Spillway on sheet 11. - 5 days
10. Immediately protect disturbed areas around outfall, within Limits of Disturbance with sod. - 2 days
11. With all offsite work completed, provide any maintenance on silt fence ¢ super silt fence along edge of Stansfield Road and complete construction of BASIN per specifications and design data on sheet 11 (Profile Along CL of Embankment and Principal Spillway) and Riser Details on Sheet 10. Stabilize basin with seed and straw mulch. - 3 days
12. With BASIN in place, install remainder of perimeter controls to include Clearwater Dike along western boundary of site. This control convey clean offsite water toward the Basin as well as dirty water. Install perimeter sediment controls as directed by sediment control inspector, to include Silt Fence and Super Silt Fence. Again, earth dike will direct sediment laden water toward the sediment basin. All Dikes shall be installed where shown hereon or as directed by the sediment control inspector. - 3 days
13. The sediment basin shall be dewatered by pumping. The accumulated sediment from the structure shall be placed up grade from the structure in such a manner as not to interfere with construction operations or cause erosion down grade from the structure. - 2 days
14. The sediment shall be removed from the structure when the cleanout elevation has been reached. - 1 day
15. With the sediment basin in place and with permission from the sediment control inspector, begin construction of the proposed widening for Stansfield Road. - 2 weeks
16. Install remainder of storm drain system. - 1 week
17. With Stansfield Road widening / grading complete, install curb ¢ gutter and stone base, in accordance with details hereon. - 2 days
18. With curb ¢ gutter in place, backfill curb ¢ gutter, install sidewalk and base course paving. - 1 week
19. Stabilize any disturbance associated with Stansfield Road widening with permanent seed mixture ¢ straw mulch - 1 day
20. Complete remainder of onsite grading operations to construct private use-in-common driveway and parking area and site mass grading as shown hereon. - 2 weeks
21. Construct Homes on Lots 1 ¢ 2. - 3 months
22. Grading should occur in accordance with the requirements of the Dust Control Schedule shown on sheet 10. - Daily
23. Install the private use-in-common driveway ¢ parking areas stone base and base coat paving. - 2 days
24. Backfill any areas along driveway work and stabilize all disturbed areas with permanent seed mixture ¢ straw mulch - 1 day
25. Mill existing ½ section of Stansfield Road and install final coat paving along Stansfield Road widening - 2 days
26. Upon completion of:
    a.) home construction on Lot 1 ¢ 2,
    b.) with a 2" stand of grass on Lots 1 ¢ 2 ¢ areas along eastern edge of site and around use-in-common driveway
    c.) with a 5 day clear weather forecast
    d.) with permission from sediment control inspector

Proceed to Phase 2.

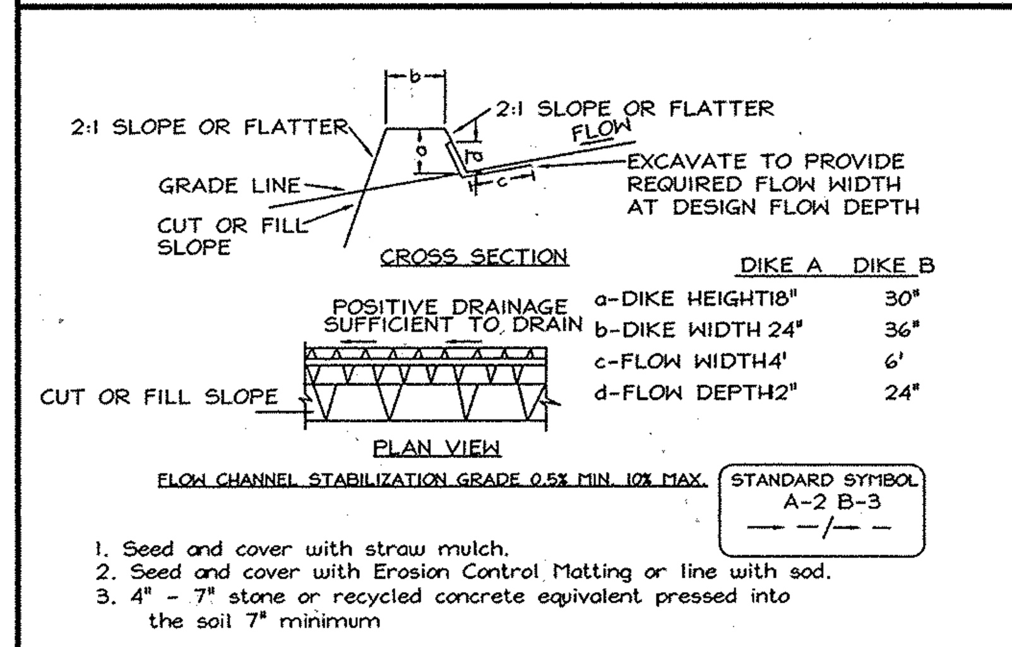
PHASE 2

27. Install interior Phase 2 Earth Dike to direct "dirty" water away from flowing toward the "Bioretention Facility". - 1 day
28. Begin construction of the proposed Bioretention facility and conversion of sediment basin to Stormwater Facility in accordance with details hereon. - 1 week
29. Basin Conversion to Stormwater Facility includes re-grading facility, construction of retaining walls, construction of forebay and riser conversion to that shown on Sheet 11. - 4 days
30. Upon completion of basin conversion to Stormwater Facility, stabilize any disturbances with permanent seeding mixture ¢ straw mulch.
31. With permission from sediment control inspector, remove any remaining perimeter controls and stabilize any disturbed areas with permanent seed mixture ¢ straw mulch or sod. - 1 day

NOTE:

Quantities are provided for informational purposes only and are based upon comparison of existing ground to proposed grades shown hereon. Contractor to make his own analysis prior to placing a bid on grading work / earthwork.

DETAIL 1- EARTH DIKE



	DIKE A	DIKE B
a-DIKE HEIGHT18"	30"	
b-DIKE WIDTH 24"	36"	
c-FLOW WIDTH4'	6'	
d-FLOW DEPTH2"	24"	

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

STANDARD SYMBOL A-2 B-3

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

Construction Specifications

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

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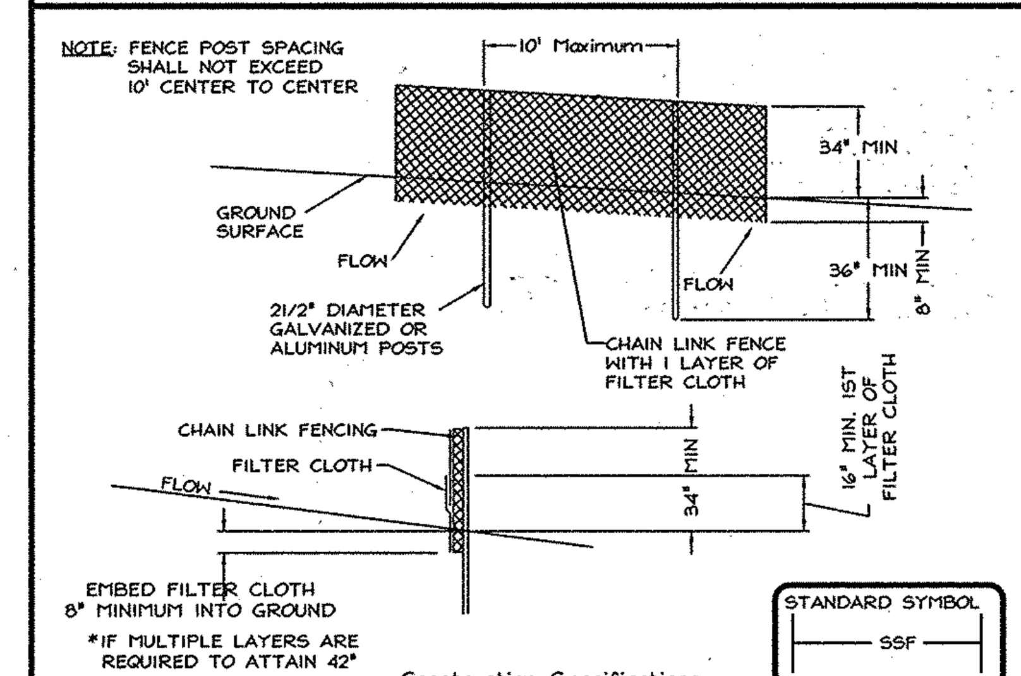
DETAIL 33 - SUPER SILT FENCE



STANDARD SYMBOL SSF

Construction Specifications

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

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

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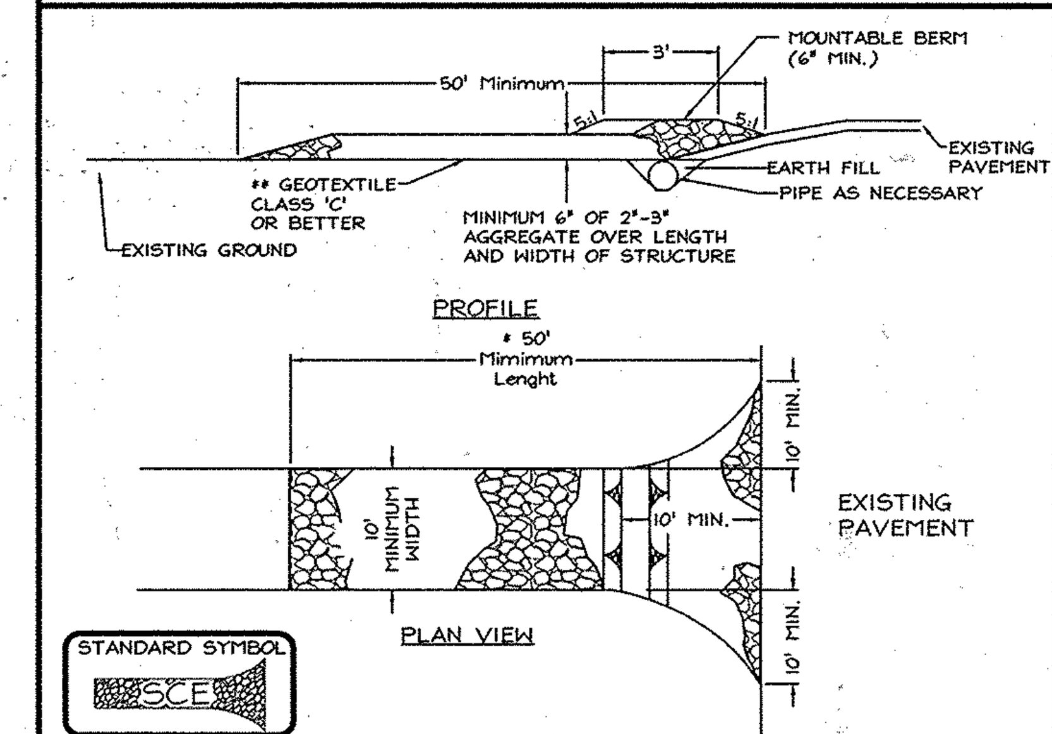
DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



STANDARD SYMBOL SCE

Construction Specification

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

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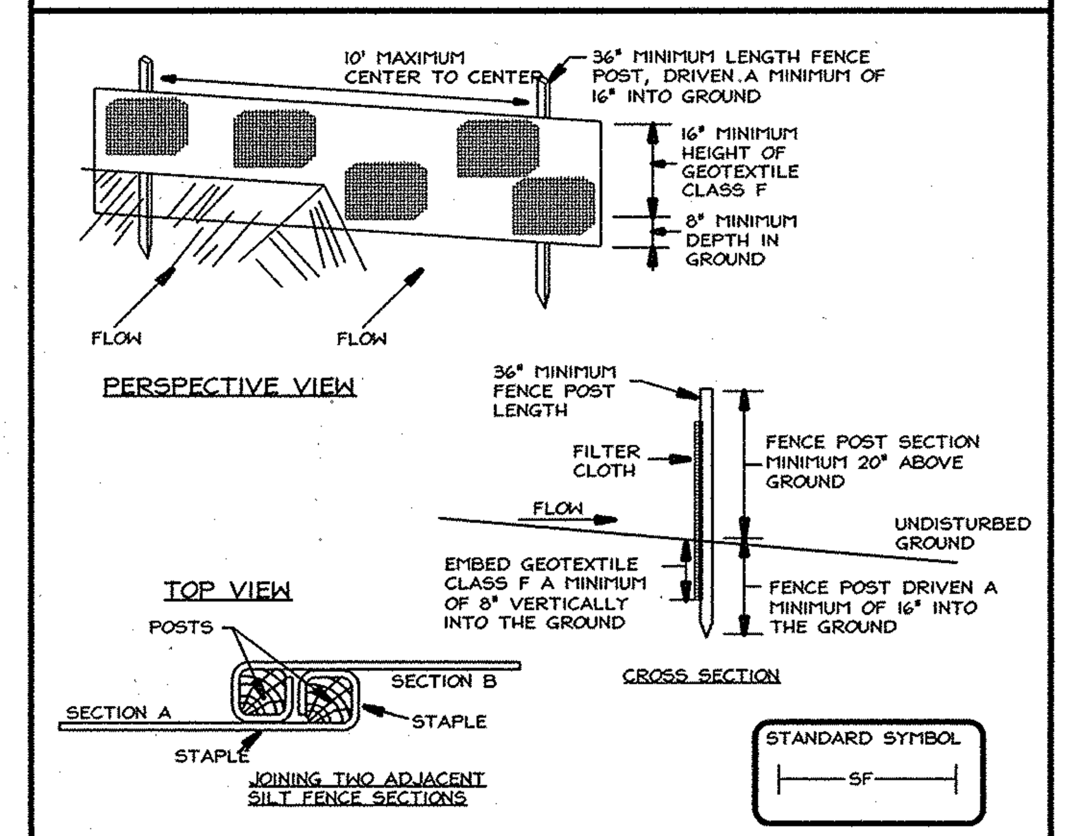
DETAIL 22 - SILT FENCE



STANDARD SYMBOL SF

Construction Specifications

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

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

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

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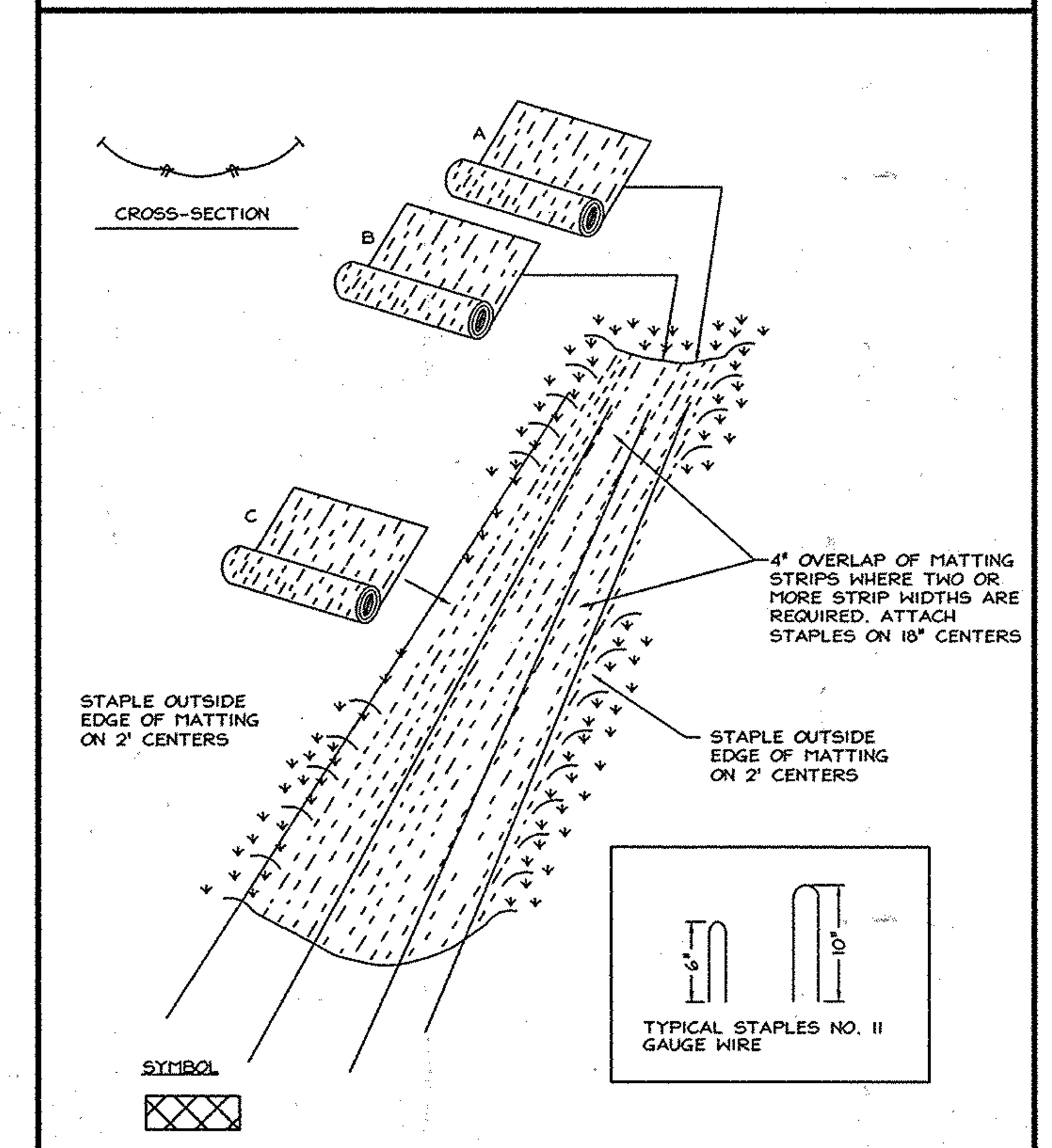
DETAIL 30 - EROSION CONTROL MATTING



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EROSION CONTROL MATTING

Construction Specifications

1. Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
2. Staple the 4" overlap in the channel center using an 18" spacing between staples.
3. Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
4. Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
5. Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", shiplap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
6. The discharge end of the matting liner should be similarly secured with 2 double rows of staples.

Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

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OWNER/
⚠ DEVELOPER
Williamsburg Group, LLC
5485 Harpers Farm Rd.
Suite 200
Columbia, MD 21044
410 997-8800

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 1-9-09 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 1/20/09 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 1.16.9 DATE

ENGINEER'S CERTIFICATE

"I hereby certify that this plan for sediment and erosion control represents a pratical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature of Engineer — Bruce D. Burton — Date 12/19/08

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan of development for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic onsite inspections by the Howard County Soil District."

Signature of Developer — Date 12-19-08

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

HOWARD SOIL CONSERVATION DISTRICT — 1/6/09 DATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 19184, EXPIRATION DATE: 1/30/09."

SIGNED — BRUCE D. BURTON — DATE 12/19/08

STATE OF MARYLAND — BRUCE DAVID BURTON — No. 19184 — REGISTERED PROFESSIONAL ENGINEER

No.	Date	By	Description
⚠	6/12	LDE	REVISE OWNER/DEVELOPER, REVISE SITE ANALYSIS

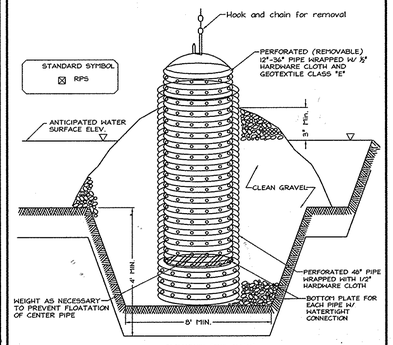
REVISIONS

LDE Inc. — **AS-BUILT**

Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

DESIGNED: EDS	GRADING ¢ SOIL EROSION AND SEDIMENT CONTROL PLAN DETAILS	SCALE: As Shown
DRAWN: LDE	WATKINS' CHOICE PHASE 1	DRAWING: 9 OF 16
CHECKED: BDB	Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A" — Tax Map 46 - Grid 18 - Parcel 215 — 6 th Election District - Howard County, Maryland — Previous Submittals: SP-07-010, WP-09-042	JOB NO. 02-035.2
DATE: 12/2008	Owner/Developer: ⚠ Williamsburg Group, LLC 5485 Harpers Farm Rd Suite 200 Columbia, MD 21044 410 997-8800	FILE NO. F-08-179

DETAIL 20A - REMOVABLE PUMPING STATION



ELEVATION (CUT AWAY)

1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.
3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe between 12" and 36" in diameter. The perforations shall be 1/2" x 6" slits or 1" diameter holes 6" on center. The center pipe shall be wrapped with 1/2" hardware cloth first, then wrapped again with Geotextile Class C.
4. The center pipe should extend 12" to 18" above the anticipated water surface elevation or riser crest elevation when dewatering a basin.

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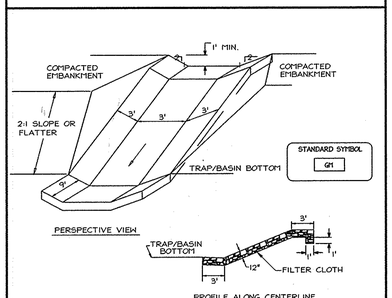
DETAIL 6 - GABION INFLOW PROTECTION



PROFILE ALONG CENTERLINE

Construction Specifications

1. Gabion inflow protection shall be constructed of 9' x 3' x 9' gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.
2. Geotextile Class C shall be installed under all gabion baskets.
3. The stone used to fill the gabion baskets shall be 4" - 7".
4. Gabions shall be installed in accordance with manufacturers recommendations.
5. Gabion Inflow Protection shall be used where concentrated flow is present on slopes steeper than 4:1.

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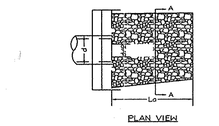
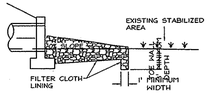
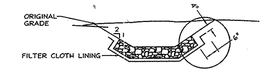
DETAIL 27- ROCK OUTLET PROTECTION III



PLAN VIEW



ELEVATION



SECTION A-A

FILTER FABRIC LINING SHALL BE EMBEDDED A MINIMUM OF 4" AND SHALL EXTEND AT LEAST 6" BEYOND THE EDGE OF THE RIP-RAP

NOTE: FILTER CLOTH SHALL BE GEOTEXTILE CLASS C

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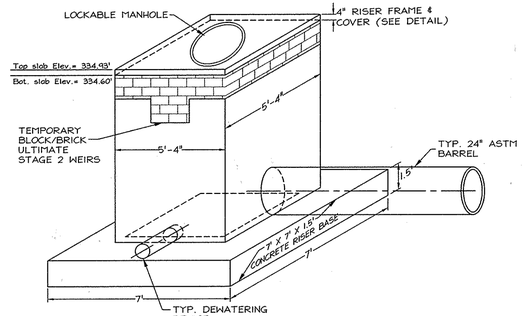
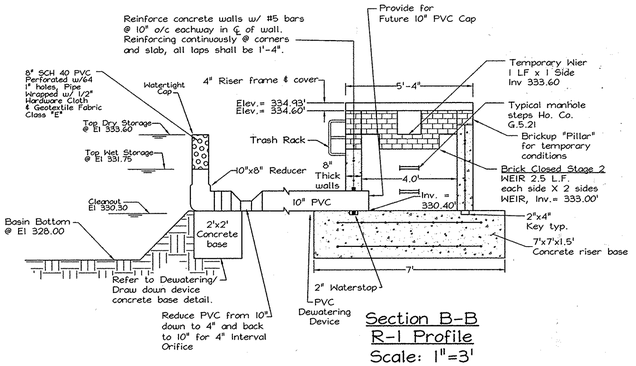


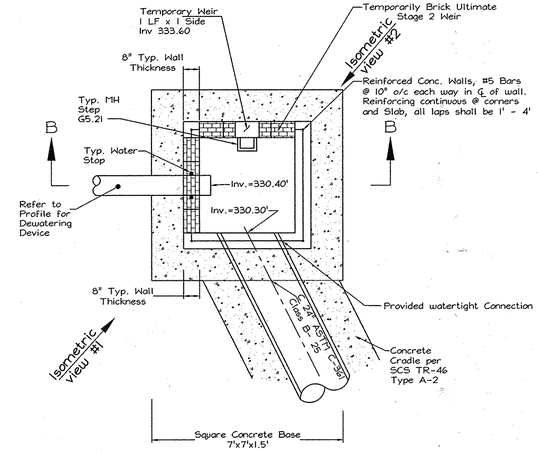
ISOMETRIC VIEW #1
NOT TO SCALE



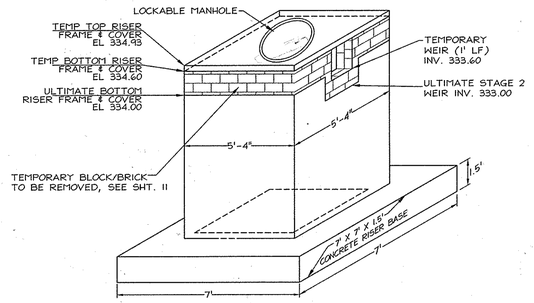
Section B-B
R-1 Profile
Scale: 1"=3'

NOTES: 1. Refer to plan view for weir location.

SEDIMENT BASIN RISER DETAILS



R-1 Plan View
Scale: 1"=3'



ISOMETRIC VIEW #2
NOT TO SCALE

SECTION 30.0 - DUST CONTROL

30.0 DUST CONTROL

Definition
Controlling dust blowing and movement on construction sites and roads.

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

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

Specifications

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

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

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

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ROCK OUTLET PROTECTION III

Construction Specifications

1. The subgrade for the filter, rip-rap, or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the rip-rap or filter.
3. Geotextile shall be protected from punching, cutting, or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of geotextile over the damaged part or by completely replacing the geotextile. All overlaps whether for repairs or for joining two pieces of geotextile shall be a minimum of one foot.
4. Stone for the rip-rap or gabion outlets may be placed by equipment. They shall be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for rip-rap or gabion outlets shall be delivered and placed in a manner that will ensure that it is reasonably homogeneous with the smaller stones and spalls filling the voids between the larger stones. Rip-rap shall be placed in a manner to prevent damage to the filter blanket or geotextile. Hand placement will be required to the extent necessary to prevent damage to the permanent works.
5. The stone shall be placed so that it blends in with the existing ground. If the stone is placed too high then the flow will be forced out of the channel and scour adjacent to the stone will occur.

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21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

I. This practice is limited to areas having 2: 1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.

II. For the purpose of these Standards and Specifications, areas having slopes steeper than 2: 1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2: 1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

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

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

i. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 11/2" in diameter.

ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnsongrass, nutsedge, poison ivy, thistle, or others as specified.

iii. Where the subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

III. For sites having disturbed areas under 5 acres:

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

IV. For sites having disturbed areas over 5 acres:

i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:

   a. pH for topsoil shall be between 6.0 and 7.5. If the tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.

   b. Organic content of topsoil shall be not less than 1.5 percent by weight.

   c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.

   d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.

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

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

V. Topsoil Application

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

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

iii. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compact to a minimum thickness of 4". Spreading shall be perform in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.

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

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

i. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for sites having disturbed areas under 5 acres shall conform to the following requirements:

   a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the Environment under COMAR 26.04.06.
   b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a PH of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
   c. Composted sludge shall be applied a rate of 1 ton / 1,000 square feet.

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

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

OWNER/
⚠ DEVELOPER
Williamsburg Group, LLC
5465 Harpers Farm Rd.
Suite 200
Columbia, MD 21044
410 997-8800

AS-BUILT CERTIFICATION

STATE OF MARYLAND — MICHAEL DAVID ADCOCK — No. 21257 — PROFESSIONAL LAND SURVEYOR

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

"MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR, LICENSE NO. 21257, EXPIRATION DATE: JUNE 16, 2011"

8/19/2014
DATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 19184, EXPIRATION DATE: 09/20/09."

SIGNED BRUCE D. BURTON — 12/19/08

STATE OF MARYLAND — BRUCE DAVID BURTON — No. 19184 — PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 1-9-09 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 1/20/09 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 1.16.9 DATE

ENGINEER'S CERTIFICATE

"I hereby certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

BRUCE D. BURTON — 12/19/08
Signature of Engineer Bruce D. Burton — Date

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan of development for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Environmental Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic onsite inspections by the Howard County Soil District."

Signature of Developer — 12-9-08 Date

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

HOWARD SOIL CONSERVATION DISTRICT — 1/6/09 DATE

No.	Date	By	Description
⚠1	6/12	LDE	REVISE OWNER/DEVELOPER

REVISIONS

LDE Inc. — Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

AS- BUILT

DESIGNED	EDS
DRAWN	LDE
CHECKED	BDB
DATE	12/2008

GRADING & SOIL EROSION AND SEDIMENT CONTROL PLAN DETAILS

WATKINS' CHOICE PHASE 1

Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A"
Tax Map 46 - Grid 18 - Parcel 215
6 th Election District - Howard County, Maryland
Previous Submittals: SP-07-010, WP-09-042

Owner/Developer: ⚠1 Williamsburg Group, LLC, 5465 Harpers Farm Rd. Suite 200 Columbia, MD 21044 410 997-8800

SCALE	As Shown
DRAWING	10 OF 16
JOB NO.	02-035.2
FILE NO.	F-08-179

F-08-179

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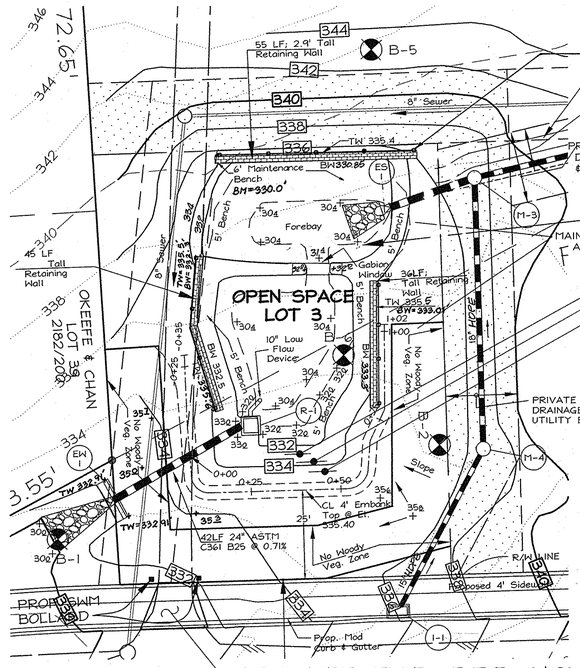


PRIVATE EXT. DET. NON MD-378* FACILITY

SCALE: 1"=20'

*EXEMPT FROM SMALL POND APPROVAL

PROVIDE STANDARD DRIVEWAY APRON R.6.03 FOR VEHICULAR ACCESS FOR MAINTENANCE OF OPEN SPACE LOT 3 AND MAINTENANCE OF THE STORM-WATER MANAGEMENT FACILITY

PRIVATELY H.O.A. OWNED & MAINTAINED EXTENDED DRY DETENTION FACILITY EXEMPT FROM SMALL POND APPROVAL

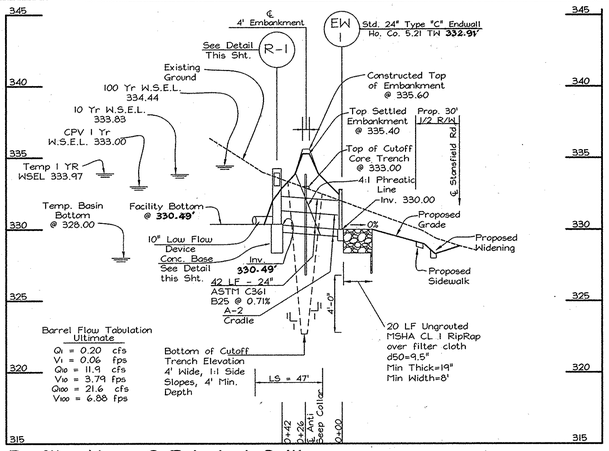
HAZARD CLASS 'A'

Cpv WSEL = 333.00
Qp10 WSEL = 333.83
Qp100 WSEL = 334.44

CONTROLLED SUBAREA

PRIVATE (NON MD 378) FACILITY # 1 - Extended Detention		
Private Maintenance	Hazard Classification "A"	
Drainage Area = 5.20 Acres		
Water Quality Management = BIORETENTION / CREDITS		
Water Quantity (Cpv) Management = EXTENDED DETENTION		
Groundwater Recharge Volume (Rev) Required =	9,627	cu.ft.
Groundwater Recharge Volume (Rev) Provided =	10,307	cu.ft. *
Water Quality Volume (WQv) Required =	2,526	cu.ft.
Water Quality Volume (WQv) Provided =	2,770	cu.ft. **
Channel Protection Volume (Cpv) Required =	3,677	cu.ft.
Channel Protection Volume (Cpv) Provided =	5,192	cu.ft. ***
* Provided per use of "Disconnection of Rooftop Runoff Credit"		
Percent Area Computations		
** Volume reduced per "Disconnection of Rooftop Runoff Credit"		
Volume provided within Bioretention Facility		
*** Cpv required is for Onsite 3.5 Acres		
Cpv provided is within Facility # 1		
NOTE: Qp10 & Qp100 management not required		

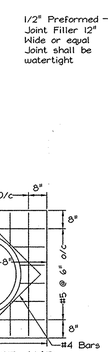
STUDY POINT #1 - NON MD-378 - EXT. DET. FACILITY				
		1 Year (Cpv)	Qp10 Year	Qp100 Year
Total Existing Flow	(cfs)	1.9	13.1	25.1
Unmanaged Flow	(cfs)	0	2	4
Acceptable Release*	(cfs)	2	11	21
Computed Inflow	(cfs)	2.8	13.7	24.8
Facility Discharge	(cfs)	0.2	11.9	21.6
Elevation at Discharge		333.00	333.83	334.44
Total Developed Flow	(cfs)	0.5	13.1	24.1



Profile Along ℄ Principal Spillway

Scale: 1"= 5' Vertical
1"= 50' Horizontal

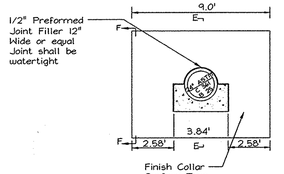
NOTES:
1. All pipe joints must conform to ASTM C 361 Specifications
2. Use only County Approved fill material for Core / Cutoff trench.
3. All pipe joints shall be watertight. Grout joints w/ Mastic Sealer to ensure watertight connection.
4. Anti-Seep collar locations may require modification if pipe lengths are longer than 4 ft, sections. Contractor shall notify the engineer prior to construction for modified locations.
5. Maximum stub from riser = 2 Ft.
6. Refer to detail, this sheet, for Anti-Seep Collar (1 Required)



RISER FRAME AND COVER DETAIL

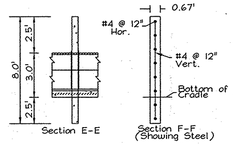
Not to Scale

Notes: 1. Riser Frame & Cover shall be bolted top Riser Structure.



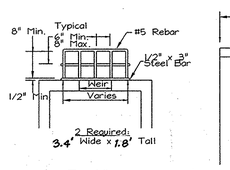
Detail of Anti-Seep Collar

8.0' x 9.0'
Not to Scale



Collars must be 2' from Pipe Joint

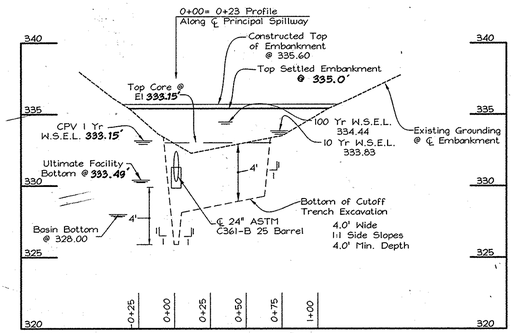
Detail shown for Earth foundation for Rock foundation found bottom of Cradle on Rock line and Key collar "6" into Rock



Trash Rack Detail

Not to scale

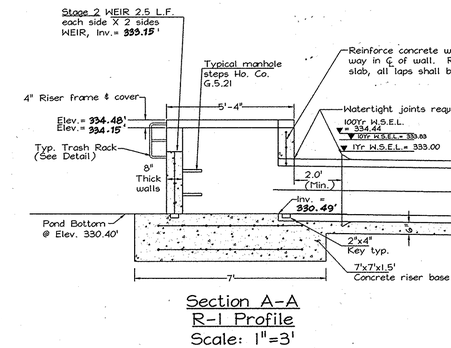
NOTES:
1. The steel used in the trash rack shall be galvanized and painted battleship grey after fabrication.
2. The #5 rebar to be welded to the 1/2" x 3" steel bar and bolted to the face of the structure.
3. All bolts used to be fasten track rack to the riser structure shall be galvanized.
4. The openings between the bars shall be a minimum of 6" in all directions.



Profile Along ℄ Embankment

Scale: 1"= 5' Vertical
1"= 50' Horizontal

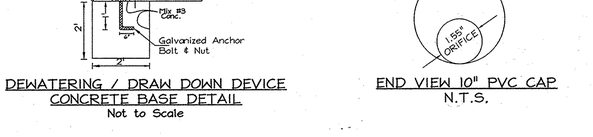
NOTES:
1. A Geotechnical Engineer is to be present on-site to supervise the construction of the core / cutoff trench, per MD 378 Specifications.
2. Core trench shall be dewatered prior to the placement of County Approved fill material.
3. The site shall be stripped of topsoil and any other unsuitable materials from the embankment of structure area in accordance with Soil Conservation guidelines. After stripping operations have been completed, the exposed subgrade materials should be proof-rolled with a loaded dump truck or similar equipment in the presence of the Geotechnical Engineer or his representative. For areas that are not accessible to a dump truck, exposed material shall be observed and tested by a geotechnical engineer or his representative utilized a Dynamic Cone Pen. Any excessive soft or loose materials identified by proof rolling or penetrometer testing should be excavated to suitably firm soil, and then reestablished by backfilling with suitable soil.



Section A-A
R-1 Profile

Scale: 1"=3'

NOTES: 1. Refer to plan view R-1 for weir location.
2. Refer to trashrack details, this sheet.

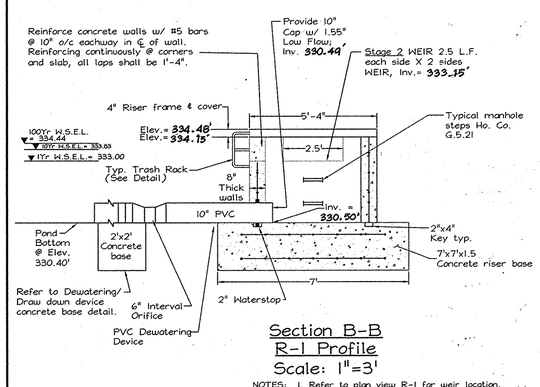


DEWATERING / DRAW DOWN DEVICE CONCRETE BASE DETAIL

Not to Scale

END VIEW 10" PVC CAP

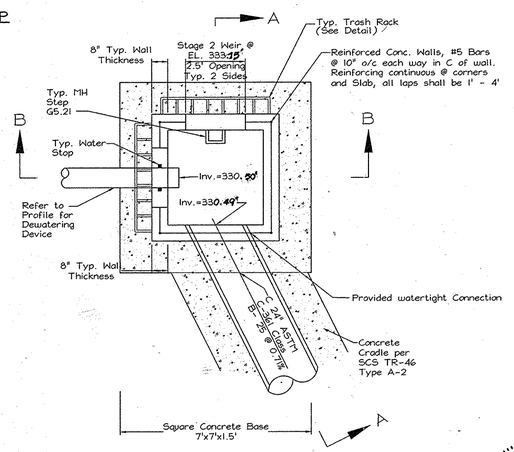
N.T.S.



Section B-B
R-1 Profile

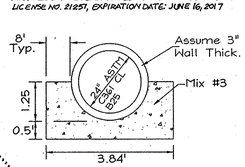
Scale: 1"=3'

NOTES: 1. Refer to plan view R-1 for weir location.
2. Refer to trashrack details, this sheet.



R-1 Plan View

Scale: 1"=3'



SCS TR - 46
A-2 Cradle

Not to Scale

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN IN RED ON THIS "AS-BUILT" PLAN, AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

MICHAEL D. ADCOCK PROFESSIONAL LAND SURVEYOR LICENSE NO. 21257, EXPIRATION DATE: JUNE 16, 2017

8/19/2014
DATE

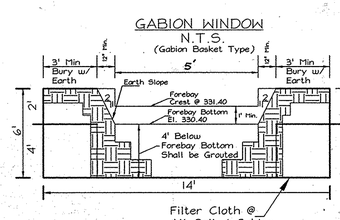
STATE OF MARYLAND MICHAEL DAVID ADCOCK No. 21257 PROFESSIONAL LAND SURVEYOR

Maintenance Requirements

a. Removal of silt when accumulation exceeds six (6) inches in basins without forebays. In basins with forebays, removal of silt shall occur when the accumulation exceeds four (4) inches in the forebay.
b. Removal of accumulated paper, trash and debris as necessary.
c. Vegetation growing on the embankment top and faces is not allowed to exceed 18 inches in height at any time.
d. Annual inspection and repair of the structure.
e. Corrective maintenance is required any time an extended detention basin does not drain the equivalent of the Water Quality Volume within 60 hours (i.e., no standing water is allowed).
f. Corrective maintenance is required any time the forebay does not drain down completely within 60 hours (i.e., no standing water is allowed).

GABION WINDOW

N.T.S.
(Gabion Basket Type)



OWNER/ DEVELOPER
⚠1 Williamsburg Group, LLC
5485 Harpers Farm Rd.
Suite 200
Columbia, MD 21044
410-997-8800

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-9-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/20/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1/16/09

ENGINEER'S CERTIFICATE

"I hereby certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature of Engineer Bruce D. Burton — Date 12/19/08

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan of development for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Environmental Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic onsite inspections by the Howard County Soil District."

Signature of Developer — Date 12-19-08

STATE OF MARYLAND BRUCE D. BURTON No. 32025 PROFESSIONAL ENGINEER

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19184, EXPIRATION DATE: 06/30/09."

SIGNED Bruce D. Burton — DATE 12/19/08
BRUCE D. BURTON

STATE OF MARYLAND BRUCE DAVID BURTON No. 19184 PROFESSIONAL ENGINEER

No.	Date	By	Description
3	5/20/15	SEG	ADD FENCE ALONG TOP OF RET. WALLS
2	1/22/13	SEG	REVISE SD PIPE TYPE & REVISE GRADES AT FOREBAY
⚠1	6/12	LJE	REVISE OWNER/DEVELOPER

REVISIONS

LDE Inc. — **AS-BUILT**

Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

DESIGNED	EDS
DRAWN	LDE
CHECKED	BDB
DATE	12/2008
Owner/Developer:	⚠1 Williamsburg Group, LLC 5485 Harpers Farm Rd. Suite 200 Columbia, MD 21044 410 997 8800

PRIVATE NON MD-378 STORMWATER MANAGEMENT FACILITY #1 - DETAILS

WATKINS' CHOICE PHASE 1

Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A"
Tax Map 46 - Grid 18 - Parcel 215
6 th Election District - Howard County, Maryland
Previous Submittals: SP-07-010, WP-09-042

SCALE	As Shown
DRAWING	11 OF 16
JOB NO.	02-035.2
FILE NO.	F-08-179

F-08-179

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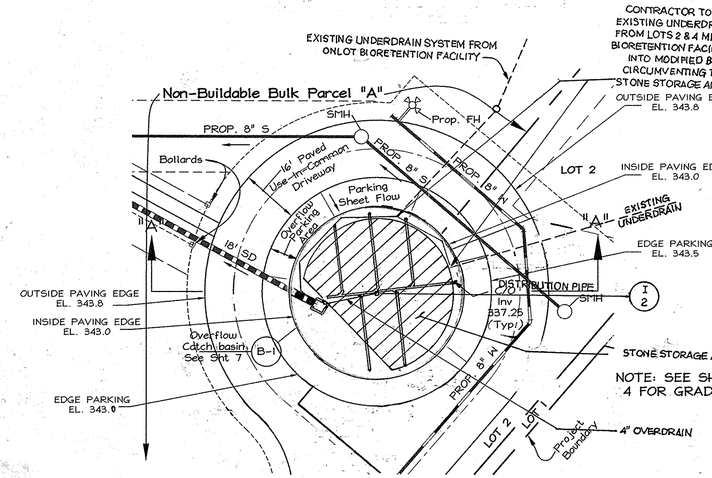
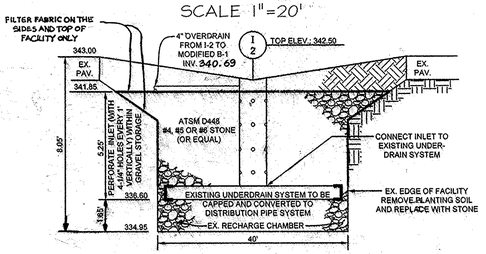
MD 378 POND CONSTRUCTION SPECIFICATIONS



H.O.A. OWNED & MAINTAINED- PRIVATE STONE STORAGE FACILITY

MAX. POOL ELEV. 342.50

SCALE 1"=20'



STABILIZATION:

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

EROSION AND SEDIMENT CONTROL:

Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.
These specifications are appropriate to all ponds within the scope of the Standard for practice MD-378. All references to ASTM and AASHTO specifications apply to the most recent version.

SITE PREPARATION

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

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

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

EARTH FILL

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

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

Placement - Areas on which fill is to be placed shall be scarified prior to the 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 fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

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

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

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

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

STRUCTURAL BACKFILL

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

PIPE CONDUITS

All pipes shall be circular in cross section.

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

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

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

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specifications M-196 or M211 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 Specifications M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

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

3. Connections - All connections with pipes must be completely watertight. The drain 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 band width. The following type connections are acceptable for pipes less than 24" in diameter: flanges on both ends of the pipe, with a circular 3/8" closed cell neoprene gasket, pre-punched to the flange bolt circle, sandwiched between adjacent flanges; a 12 inch wide standard lap type band with 12" wide by 3/8" thick closed cell circular neoprene gasket; and a 12 inch wide hugger type band with O-ring gaskets having a minimum diameter of 1/2 inch greater than the corrugated depth. Pipes 24" in diameter and larger shall be connected by a 24" long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24" wide by 3/8" thick closed cell circular neoprene gasket will be installed with 12 inches on the end of each pipe. Flanged joints with 3/8" closed cell gaskets the full width of the flange is also acceptable.

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

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

5. Backfilling shall conform to "Structure Backfill."

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

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

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

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

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

4. Backfilling shall conform to "Structure Backfill."

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

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

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

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

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

4. Backfilling shall conform to "Structure Backfill."

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

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

CONCRETE:

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

ROCK RIPRAP:

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

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

CARE OF WATER DURING CONSTRUCTION:

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

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STONE STORAGE FACILITY

- TO BE INSPECTED AND CLEANED ANNUALLY INCLUDING THE INLET AND OVERDRAIN TO AVOID THE POTENTIAL FOR CLOGGING.
- PONDING, STANDING WATER OR ALGAE GROWTH ON THE TOP MAY INDICATE FAILURE DUE TO SEDIMENTATION IN THE GRAVEL MEDIA.
- IF WATER PONDS FOR MORE THAN 48 HOURS AFTER A MAJOR STORM OR MORE THAN 6" OF SEDIMENT HAS ACCUMULATED, THE GRAVEL MEDIA SHOULD BE EXCAVATED AND REPLACED.
- THE WATKINS CHOICE HOMEOWNERS ASSOCIATION IS RESPONSIBLE FOR MAINTENANCE OF THE STORMWATER MANAGEMENT FACILITY AS RECORDED UNDER PLAT NO 22958.

OWNER/ DEVELOPER
Williamsburg Group, LLC
5485 Harpers Farm Rd.
Suite 200
Columbia, MD 21044
410 997-8800

STONE STORAGE FACILITY DIMENSION TABLE

Facility No.	Circle	Square Feet	Depth Stone	Top Stone	Inv. Overdrain	Top Pavement	Top Inlet Elev.	Location
1	20' Radius	1,049	5.25'	341.85	341.85	343.0	342.50	Use in Common Driveway

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-9-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/12/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1.16.9

Bruce D. Burton, P.E. No. 19184

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN IN RED ON THIS "AS-BUILT" PLAN, AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR
LICENSE NO. 21257, EXPIRATION DATE: JUNE 16, 2017

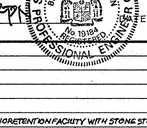
8/19/2008 DATE

SUMMARY TABLE - STUDY POINT # 2

USE-IN-COMMON DRIVEWAY		
PRIVATE BIORETENTION FACILITY # 1		
Private Maintenance — Hazard Classification "A"		
Drainage Area = 0.66 Acres		
Water Quality Management = BIORETENTION		
Water Quantity (Qpv) Management = See Note Below		
Groundwater Recharge Volume (Rev) Required =	101	cu.ft.
Groundwater Recharge Volume (Rev) Provided =	101	cu.ft. *
Water Quality Volume (WQv) Required =	773	cu.ft.
Water Quality Volume (WQv) Provided =	784	cu.ft. **
Channel Protection Volume (Cpv) Required =	N/A	cu.ft.
Channel Protection Volume (Cpv) Provided =	N/A	cu.ft.
* Provided per use of "Grass Channel Credit"		
** Volume provided within Bioretention Facility		

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 19184, EXPIRATION DATE: 12/20/09."

SIGNED Bruce D. Burton — BRUCE D. BURTON — DATE 12/19/08



No.	Date	By	Description
3	08/01/14	SAA	REPLACE BIORETENTION FACILITY WITH STONE STORAGE-REVISE INLET BY 2. ADD A-2.
1	6/12	LDE	REVISE OWNER/DEVELOPER

REVISIONS

LDE Inc. — AS-BUILT

Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

DESIGNED	EDS
DRAWN	LDE
CHECKED	BDB
DATE	12/2008

PRIVATE BIORETENTION FACILITY - NOTES & DETAILS AND MD-378 SPECIFICATIONS

WATKINS' CHOICE
PHASE 1
Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A"
Tax Map 46 - Grid 18 - Parcel 215
6 th Election District - Howard County, Maryland

Previous Submittals: SP-07-010, WP-09-042

Owner/Developer: Williamsburg Group, LLC, 5485 Harpers Farm Rd. Suite 200 Columbia, MD 21044 410 997-8800

SCALE	As Shown
DRAWING	12 OF 16
JOB NO.	02-035.2
FILE NO.	F-08-179

F-08-179

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08/20/07

FOREST CONSERVATION WORKSHEET
VERSION 1.0
(Enter in Yellow Cells)

NET TRACT AREA:

A. Total tract area	=	3.52
B. Area within 100 year floodplain	=	0.00
C. Area to remain in agricultural production	=	0.00
D. Net tract area	=	3.52

LAND USE CATEGORY: (from table 3.2.1, page 40, Manual)

Input the number "1" under the appropriate land use zoning, and limit to only one entry.

ARA	MDR	IDA	HDR	MPD	CIA
0	0	0	1	0	0

E. Afforestation Threshold	15% x D =		0.53
F. Conservation Threshold	20% x D =		0.70

EXISTING FOREST COVER:

G. Existing forest cover (excluding floodplain)	=	0.00
H. Area of forest above afforestation threshold	=	0.00
I. Area of forest above conservation threshold	=	0.00

BREAK EVEN POINT:

J. Forest retention above threshold with no mitigation	=	0.00
K. Clearing permitted without mitigation	=	0.00

PROPOSED FOREST CLEARING:

L. Total area of forest to be cleared	=	0.00
M. Total area of forest to be retained	=	0.00

PLANTING REQUIREMENTS:

N. Reforestation for clearing above conservation threshold	=	0.00	
P. Reforestation for clearing below conservation threshold	=	0.00	1.0` 1.0`
Q. Credit for retention above conservation threshold	=	0.00	
R. Total reforestation required	=	0.00	1.0` 1.0`
S. Total afforestation required	=	0.53	
T. Total reforestation and afforestation required	=	0.53	

SITE TABULATIONS

1. TOTAL SITE AREA: 3.52 ACRES
2. TOTAL DISTURBED AREA: 3.26 ACRES +/-
3. AREA OF 100 YEAR FLOODPLAIN: 0 AC
4. NET SITE AREA: 3.26 ACRES +/-

FOREST CONSERVATION NOTES:

1.) This plan complies with the requirements of Section 16.1200 of the Howard County Code for Forest Conservation by payment of a fee-in-lieu in the amount of $17,315.10 for 0.53 acres of afforestation.

LANDSCAPE LEGEND

- Prop. Street Tree
- Prop. Fence
- Ex. Tree to be Saved
- Ex. Tree to be Removed

NOTES:

1. Should any tree designated for preservation for which landscaping credit is given, die prior to release of bonds, the owner will be required to replace the tree with the equivalent species or with a tree which will obtain the same height, spread and growth characteristics. The replacement tree must be a minimum of 3 inches in caliper and installed as required in the Howard County Landscape Manual.
2. The owner, tenant and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant material shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition and when necessary repaired and replaced.
3. At the time of installment, all shrubs and other plantings herewith listed and approved for this site, shall be of the proper height requirements in accordance with the Howard County Landscaping Manual. In addition, no substitutions or relocation of required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from this approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revision made to applicable plans and certificates.

OWNER/
DEVELOPER
Williamsburg Group, LLC
5485 Harpers Farm Rd.
Suite 200
Columbia, MD 21044
410 997-8800

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-9-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/20/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1.16.09

NOTES:
1. THIS PLAN IS NOT FOR GRADING. SEE SHEET 8 FOR GRADING.
2. REFER TO SHEET 4 FOR USE-IN-COMMON DRIVEWAY DETAILING.

PROFESSIONAL CERTIFICATION:
Steve Weiss, Qualified Proffessional, MDFCA

AS-BUILT CERTIFICATION

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

MICHAEL D. ADCOCK PROFESSIONAL LAND SURVEYOR
LICENSE NO. 21237 EXPIRATION DATE: JUNE 16, 2017

8/19/2014
DATE

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 Subdivision and Land Development Regulations and the Landscape Manual. I/We further certify that upon completion a letter of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Name — Date 12-19-08

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 19184, EXPIRATION DATE: 09/29/09.

SIGNED BRUCE D. BURTON — DATE 12/19/08

No.	Date	By	Description
2	5/1/18	JCV	ADJUST LANDSCAPE PERIMETER PLANTING
1	6/12	LDE	REVISE OWNER/DEVELOPER

REVISIONS

LDE Inc. — Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

AS-BUILT

LANDSCAPE AND FOREST CONSERVATION PLAN

WATKINS' CHOICE PHASE 1

Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A"
Tax Map 46 - Grid 18 - Parcel 215
6 th Election District - Howard County, Maryland

Previous Submittals: SP 07-010, WP 09-042

Owner/Developer: Williamsburg Group, LLC, 5485 Harpers Farm Rd. Suite 200 Columbia, MD 21044 410 997-8800

DESIGNED	EDS
DRAWN	LDE
CHECKED	BDB
DATE	12/2008
SCALE	1"= 30'
DRAWING	13 OF 16
JOB NO.	02-035.2
FILE NO.	F-08-179

F-08-179

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SCHEDULE A
PERIMETER LANDSCAPE EDGE

CATEGORY	ADJACENT TO ROADWAYS	ADJACENT TO PERIMETER PROPERTIES		
	(4) Stansfield Road 'B'	(1) Lilly's Addition 'A'	(2) Lakeview 'A'	(3) The Forest 'A'
Landscape Type				
Linear Feet of Roadway Frontage/Perimeter	190 L.F.	287 L.F.	594 L.F.	535 L.F.
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	No	Yes 2 Shade	Yes 2 Shade	Yes 3 Shade 3 Evergreen
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	No	YES 130' FENCE NOTE 1.	No	No
Number of Plants Required Shade Trees 1:40=5 Evergreen Trees 1:50=4 Shrubs Surety=1500+600=2100	190 L.F.	287 L.F. 1:60=3 Surety=1500	594 L.F. 1:60=10 Surety=3000	535 L.F. 1:60=9 Surety=2700
Number of Plants Provided Shade Trees Evergreen Trees Other Trees (2:1 substitution) Shrubs (10:1 substitution) (Describe plant substitution credits below if needed)	2 Shade 10 Evergreen (2:1 - 6 FOR 3 SHADE)	0 Shade SEE NOTE 2	5 Shade 6 EVERGREEN (2:1 - 6 FOR 3 SHADE)	0 Shade 10 EVERGREEN (2:1 - 10 FOR 5 SHADE)

Total Surety=9,300

NOTE: 1. 6' HIGH VINYL FENCE
2. MOVED TO PREI.2 - 2:1 EVERGREEN FOR SHADE (2)

SCHEDULE D
STORMWATER MANAGEMENT AREA LANDSCAPING
1:50 Shade / 1:40 Evergreen

Linear Feet of Perimeter	#5 - 'B' Buffer - 560 LF
Number of Plants Required Shade Trees 1 : 50 Evergreen Trees 1 : 40	11 Shade 14 Evergreen Surety=5400
Credit for Existing Vegetation (Yes, No and %)	NO
Credit for Other Landscaping (Yes, No and %)	YES 100% - 300 L.F. 5' High Closed Section Fence and 106 L.F. 4' High Open Section Fence with Supplemental Plantings
Number of Trees Provided Shade Trees	8
Evergreen Trees	20 (2:1 - 6 FOR 3 SHADE)
Other Trees (2:1 substitution)	0
Flowering Trees	0
Shrubs	0
Total Sum of Landscape Surety=$5,400.00	

STREET TREE SCHEDULE (PUBLIC ROADS)

Category	Stansfield Road
Landscape Type	Street Tree
Linear Feet of Roadway Frontage/Perimeter	365 L.F.
Credit for Existing Vegetation (Yes, No, Linear Feet) (Describe below if needed)	No
Credit for Wall, Fence or Berm (Yes, No, Linear Feet) (Describe below if needed)	No
Number of Plants Required Shade Trees 1:40' Evergreen Trees Shrubs	9
Number of Plants Provided Shade Trees	9

NOTES:
1. NO STREET TREES ARE REQUIRED FOR THE PROPOSED USE-IN-COMMON DRIVEWAY

STREET TREE PLANTING SCHEDULE (PUBLIC ROADS)

NO	KEY	BOTANICAL/ COMMON NAME	SIZE	COMMENT
9	⊕	Platanus x Acerifolia London Plane	2-1/2" to 3" cal.	B&B

PERIMETER PLANTING SCHEDULE

NO	KEY	BOTANICAL/ COMMON NAME	SIZE	COMMENT
		SHADE TREES		
3	⊕	Acer rubrum 'October Glory' October Glory Red Maple	2-1/2"-3" cal.	B&B
3	●	Quercus Rubra Northern Red Oak	2-1/2"-3" cal.	B&B
8*	▫	Liquidambar styraciflus American Sweetgum	2-1/2"-3" cal.	B&B
* 6 PROVIDED AT SWM FACILITY				
		EVERGREENS		
4	⊗	Pinus Strobus Eastern White Pine	6'-8' Ht. B&B	B&B
37*	◯	THUJA ARBORVITAE	5'+	
* 13 PROVIDED AT SWM FACILITY				

STORMWATER MANAGEMENT PLANTING SCHEDULE

NO	KEY	BOTANICAL/ COMMON NAME	SIZE	COMMENT
2	RB △	BETULA NIGRA RIVER BIRCH	10'-12' HT.	3 STEM CLUMP MIN.
0	BG ○	NYSSA SYLVATICA BLACK GUM	2-1/2"-3" cal.	—
2	AH ⊕	ILEX OPACA AMERICAN HOLLY	5'-6' HT.	—
5	WP ⊗	PINUS STROBUS WHITE PINE	6'-8' Ht.	—
0	BP ⊗	PINUS NIGRA BLACK PINE	6'-8' Ht.	—
62	FRG ◯	CALAMAGROSTIS "KARL FOERSTER" FEATHER REED GRASS	1 GAL POT	PLANT AT 30" O/C CUT DOWN TO 10" IN SPRING
150	BEG ×	SISYRINCHIUM ANGUSTIPOLIUM BLUE EYED GRASS	#3 PLUG OR BARE ROOT	PLANT AT 14" O/C AFTER FLOWERING & SEED SET SHEAR BACK 1/2. DO NOT PRUNE AGAIN UNTIL NEXT SPRING

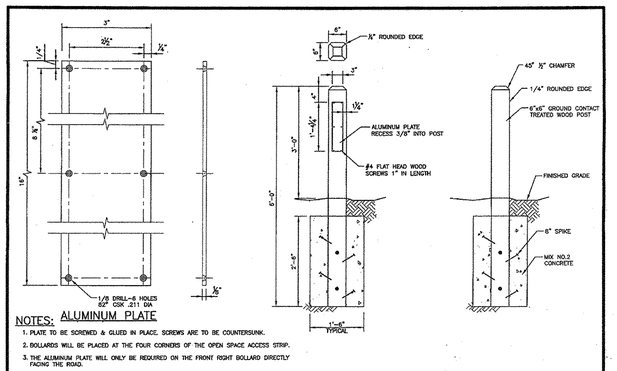
NOTE: Refer to sheet 15 for plan view of planting locations.
*SEE PERIMETER PLANTING SCHEDULE FOR ADDITIONAL SWM PLANTINGS. (2)

GENERAL NOTES

1. This plan has been prepared in accordance with the provisions of Section 16.124 of the Howard County Code, Landscape Manual and Forest Conservation Manual.
2. The Owner/Developer is responsible for the planting of all plant material required to meet the standards established by the Howard County Landscape Manual.
3. Financial Surety for the required landscaping has been posted as part of the Department of Public Works Developer's Agreement in the amount of $13,520.00. A separate street Tree Bond = $2,700.00
4. Should any tree designated for preservation for which landscaping credit is given, die prior to release of bonds, the owner will be required to replace the tree with the equivalent species or with a tree which will obtain the same height, spread and growth characteristics. The replacement tree must be a minimum of 3 inches in caliper and installed as required in the Howard County Landscape Manual.
5. The owner, tenant and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant material shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition and when necessary repaired and replaced.
6. At the time of installment, all shrubs and other plantings herewith listed and approved for this site, shall be of the proper height requirements in accordance with the Howard County Landscaping Manual. In addition, no substitutions or relocation of required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from this approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revision made to applicable plans and certificates.

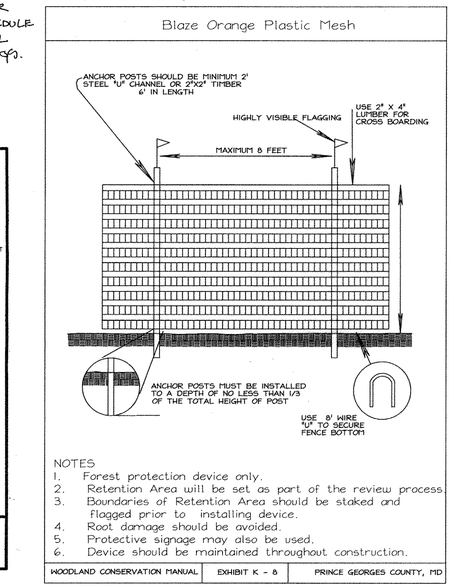
TREE PLANTING NOTES

1. Notify "Miss Utility" 72 hours prior to installation of all plant material.
2. Plant installation must conform to the minimum standards cited in the latest edition of Landscape Specification Guidelines, published by the Landscape Contractors Association.
3. Plants to be located in the field by the owner or owner's representative. Notify owner 72 hours in advance of planting.
4. A Certification of Landscape Installation is required as per the Howard County Landscape Ordinance.
5. The number, size, location of plants shall not be changed without the approval of the Landscape Architect. Substitutions must be included in the recommended plant list in the Howard County Landscape Ordinance.
6. Trees may not be planted within 5 feet of drain inlets, 5 feet of an open space access strip and 10 feet of a driveway.
7. Balled and burlapped plant material shall not be accepted if ball is cracked or broken before or during planting. Protect all plants from drying by either sun of wind.
8. Tree pits shall be backfilled with 50% topsoil, 25% peat 25% sand with one pound of 10-10-10 fertilizer per pit.
9. Top soil shall be sandy loam soil free from noxious weeds or grasses, roots, clay clumps, stones, sticks, etc. Peat moss shall be commercial with ph 4.5 to 5.5, free of woody material or harmful minerals.
10. All plants shall be watered at planting with weekly watering thereafter for the first 80 days. Watering shall continue bimonthly or as necessary to maintain plants in a healthy condition during the guarantee period.
11. Maintain the site in an orderly manner. Streets and sidewalks shall be swept clean. All rejected or dead materials shall be immediately removed from the site.
12. Plant material to be alive and healthy at the time of the guarantee period (one year), as specified in the Howard County Landscape Ordinance.
13. Maintenance shall begin immediately after planting and continue to the end of guaranteed period.
14. Maintenance consists of pruning, watering weeding, re-mulching, resetting plants to proper grades as needed and repairing guys and stakes as needed.



NOTES: ALUMINUM PLATE
1. PLATE TO BE SCREWED & GLUED IN PLACE. SCREWS ARE TO BE COUNTERSUNK.
2. BOLLARDS WILL BE PLACED AT THE FOUR CORNERS OF THE OPEN SPACE ACCESS STRIP.
3. THE ALUMINUM PLATE WILL ONLY BE REQUIRED ON THE FRONT RIGHT BOLLARD DIRECTLY FACING THE ROAD.

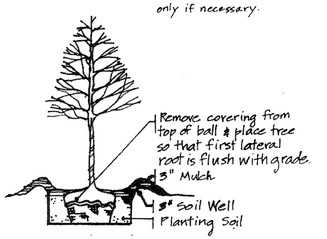
Revised 5/1/2007 Approved	Howard County, Maryland Department of Public Works Approved: Chief, Bureau of Engineering	Open Space Bollard	Detail G-7.41



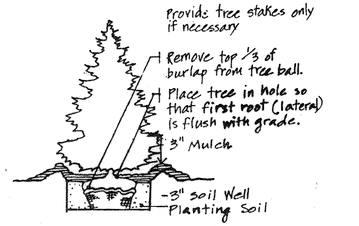
NOTES
1. Forest protection device only.
2. Retention Area will be set as part of the review process.
3. Boundaries of Retention Area should be staked and flagged prior to installing device.
4. Root damage should be avoided.
5. Protective signage may also be used.
6. Device should be maintained throughout construction.

WOODLAND CONSERVATION MANUAL	EXHIBIT K - 8	PRINCE GEORGES COUNTY, MD

TREE PLANTING DETAILS

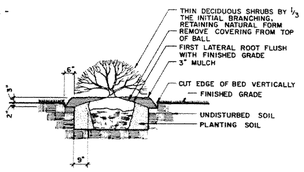


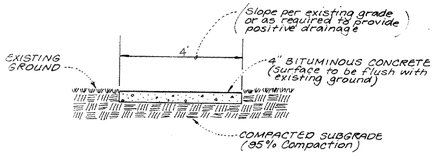
DECIDUOUS TREE PLANTING DETAIL
N.T.S.



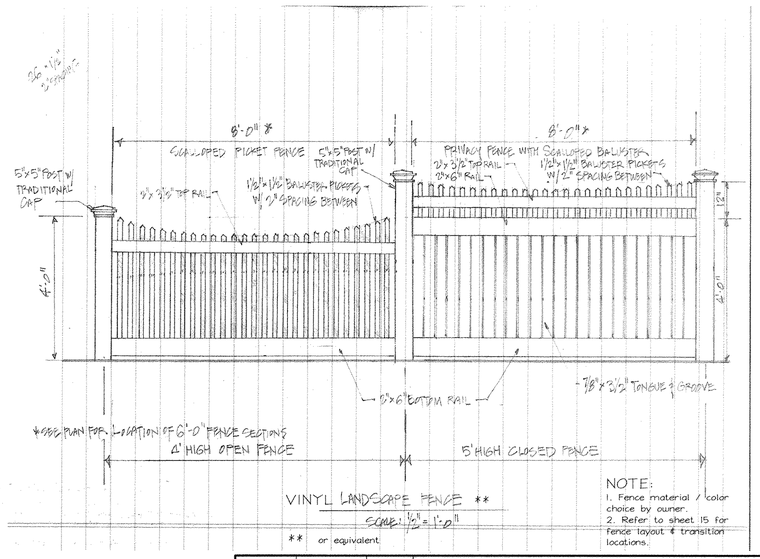
EVERGREEN TREE PLANTING DETAIL
N.T.S.

Figure 6-3. Planting Details - Shrub





TYPICAL ASPHALT PATHWAY SECTION
Not To Scale



VINYL LANDSCAPE FENCE **
SCALE: 1/4" = 1'-0"
** or equivalent

NOTE:
1. Fence material / color choice by owner.
2. Refer to sheet 15 for fence layout & transition locations.

AS-BUILT CERTIFICATION

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

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR
LICENSE NO. 21257, EXPIRATION DATE: JUNE 16, 2017

12/19/2014
DATE

STATE OF MARYLAND · MICHAEL DAVID ADCOCK · No. 21257 · PROFESSIONAL LAND SURVEYOR

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 Subdivision and Land Development Regulations and the Landscape Manual. I/We further certify that upon completion a letter of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning.

Name — 12-19-08 Date

OWNER/ DEVELOPER (1)
Williamsburg Group, LLC
5485 Harpers Farm Rd.
Suite 200
Columbia, MD. 21044
410 997-8800

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 1-9-09 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 1/20/09 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 1/6/09 DATE

STATE OF MARYLAND · BRUCE DAVID BURTON · No. 19184 · REGISTERED PROFESSIONAL ENGINEER

FOR Revision #2 ONLY

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 19184, EXPIRATION DATE: JULY 09, 2009.*

SIGNED: BRUCE D. BURTON — 12/19/08 DATE

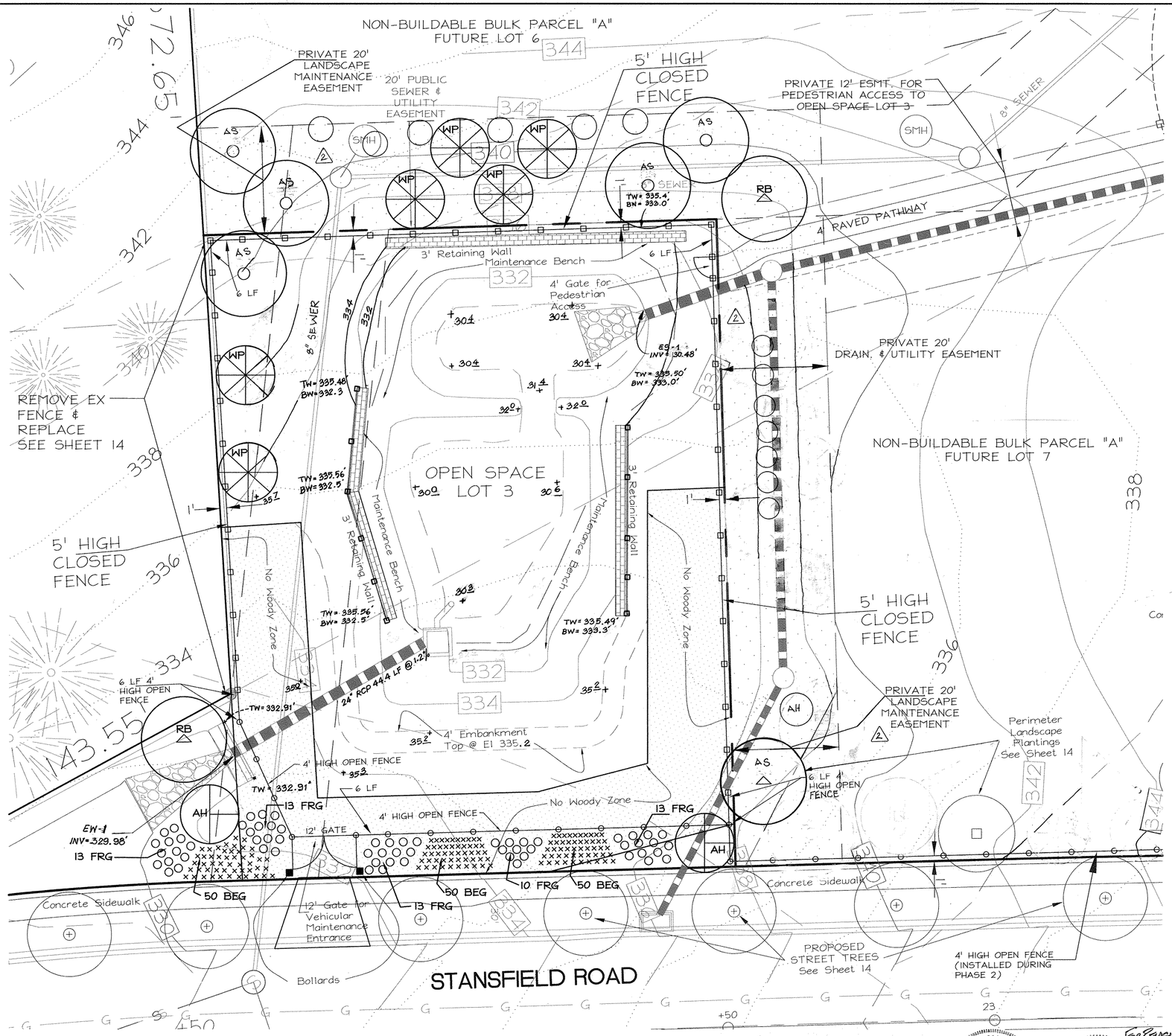
No.	Date	By	Description
2	5/1/18	JCV	ADJUST PERIMETER PLANTING
1	6/12	LDE	REVISE OWNER/DEVELOPER

REVISIONS

LDE Inc. — **AS-BUILT**
Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9540

DESIGNED EDS	LANDSCAPE PLAN NOTES & DETAILS		SCALE AS SHOWN
DRAWN LDE	WATKINS' CHOICE PHASE 1		DRAWING 14 OF 16
CHECKED BDB	Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A"		JOB NO. 02-035.2
DATE 12/2008	Tax Map 46 - Grid 18 - Parcel 215 6 th Election District - Howard County, Maryland		FILE NO. F-08-179
	Previous Submittals: SP 07-010, WP 09-042		
	Owner/Developer: (1) Williamsburg Group, LLC 5485 Harpers Farm Rd Suite 200 Columbia, MD 21044 410 997-8800		

F:\02-035-2.dwg\02-035-2 SHT 14 LAND DET.dwg, Land Det, 12/17/2008 11:38:59 AM



NOTES:

1. Should any tree designated for preservation for which landscaping credit is given, die prior to release of bonds, the owner will be required to replace the tree with the equivalent species or with a tree which will obtain the same height, spread and grouth characteristics. The replacement tree must be a minimum of 3 inches in caliper and installed as required in the Howard County Landscape Manual.
2. The owner, tenant and/or their agents shall be responsible for maintenance of the required landscaping, including both plant materials and berms, fences and walls. All plant material shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All other required landscaping shall be permanently maintained in good condition and when necessary repaired and replaced.
3. At the time of installment, all shrubs and other plantings herewith listed and approved for this site, shall be of the proper height requirements in accordance with the Howard County Landscaping Manual. In addition, no substitutions or relocation of required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviation from this approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revision made to applicable plans and certificates.

LANDSCAPE LEGEND

Ex. Tree to be Saved

Gate — 5' High Closed Fence

Corner Post 5' High

4' High Open Fence

Corner Post 4' High

NOTES:

1. THIS PLAN IS NOT FOR GRADING. SEE SHEET 8 & 11 FOR GRADING.

⚠ OWNER/ DEVELOPER
Williamsburg Group, LLC
5485 Harpers Farm Rd.
Suite 200
Columbia, MD 21044
410 997-8800

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-9-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/20/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1-16-9

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 Subdivision and Land Development Regulations and the Landscape Manual. I/We further certify that upon completion a letter of Landscape Installation, accompanied by an executed one year guarantee of plant materials, will be submitted to the Department of Planning and Zoning."

P Mercer — 12-19-08
Name — Date

AS-BUILT CERTIFICATION

I HEREBY CERTIFY, BY MY SEAL, THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN IN RED ON THIS "AS-BUILT" PLAN AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AMA DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

MICHAEL D. ADCOCK, PROFESSIONAL LAND SURVEYOR
LICENSE NO. 21257, EXPIRATION DATE: JUNE 16, 2017
8/19/2014
DATE

STATE OF MARYLAND — MICHAEL DAVID ADCOCK — No. 21257 — PROFESSIONAL LAND SURVEYOR

STATE OF MARYLAND — PAUL M. SITE — PROFESSIONAL ENGINEER — For Revision Only

PROFESSIONAL CERTIFICATION:
Steve Heiss, Qualified Proffessional, MDFCA

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 19184, EXPIRATION DATE: 9/30/09."

SIGNED: Bruce D. Burton — BRUCE D. BURTON — DATE 12/19/08

STATE OF MARYLAND — BRUCE DAVID BURTON — NO. 19184 — REGISTERED PROFESSIONAL ENGINEER

No.	Date	By	Description
2	5/1/18	JCV	ADJUST PERIMETER PLANTING
1	6/12	LDE	REVISE OWNER/DEVELOPER

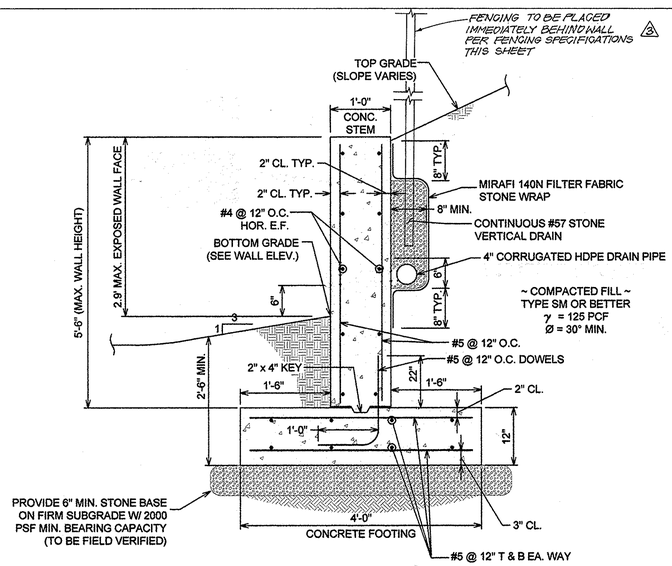
REVISIONS

LDE Inc. — **AS-BUILT**
Engineers, Surveyors, Planners
9250 Rumsey Road, Suite 106 Columbia, Maryland - 21045
(410)715-1070 - (301)596-3424 - FAX(410)715-9340

LANDSCAPE PLAN - 10 SCALE DETAIL ENLARGEMENT
WATKINS' CHOICE PHASE 1
Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A"
Tax Map 46 - Grid 18 - Parcel 215
6 th Election District - Howard County, Maryland
Previous Submittals: SP 07-010, WP 09-042
Owner/Developer: Williamsburg Group, LLC, 5485 Harpers Farm Rd Suite 200 Columbia, MD 21044 410 997-8800

DESIGNED	SCALE
EDS	1"= 10'
DRAWN: LDE	DRAWING: 15 OF 16
CHECKED: BDB	JOB NO.: 02-035.2
DATE: 12/2008	FILE NO.: F-08-179

F:\02-035-2\dwg\02-035-2 SHT 15 PLAND 10 SCALE DETAILS.dwg, LAND & F/C PLN, 12/17/2008 11:44:18 AM

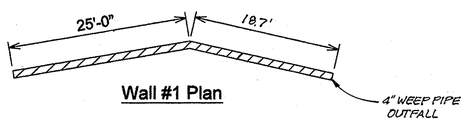


TYPICAL CONCRETE WALL SECTION
NOT TO SCALE

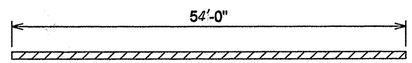
⚠2 FENCING SPECIFICATION
- FABRIC : 42" 9GA, 2"MESH, BLACK
- TOP RAIL : 1-5/8" O.D. BLACK HMV LG-40 PIPE
- LINE POST : 2-1/2" O.D. BLACK HMV LG-40 PIPE CUT POST, 120" O/G
- TERMINAL POST : 3" O.D. BLACK HMV LG-40 PIPE CUT POST
- TENSION WIRE : 9 GAUGE BLACK EX SMOOTH
- FITTINGS : BLACK HM VINYL
- TIE WIRE : 8-1/4" BLACK ALUMINIUM FRETIED 9 GAUGE
- POST FOOTING: HAND MIXED 80 LB BAGS CONCRETE, 30" DEEP, 8" DIAMETER

NOTE:

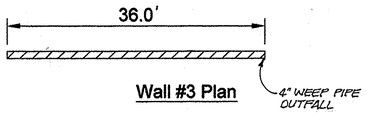
1. All retaining wall concrete shall be 4000 psi at 28 days with air entrainment.
2. Reinforcing steel shall conform to ASTM-615 Grade 60
3. Wall backfill shall be compacted to 95% of T-99
4. Concrete work shall comply with the latest ACI 318 Building code for concrete structures
5. All rebar splices not shown shall be a minimum 30 bar diam.
6. All wall exposed surfaces shall be mortar patched and sack-rubbed finished with grout and burlap to the satisfaction of the project architect.
7. Verify length of each wall with civil engineering drawing.



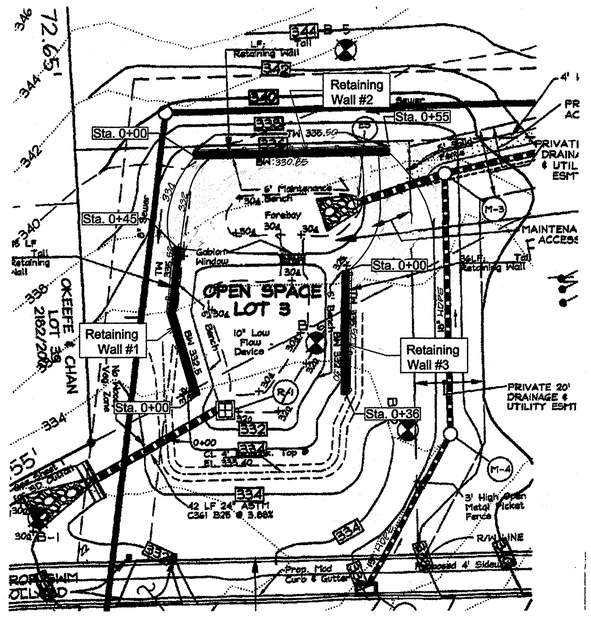
Wall #1 Plan



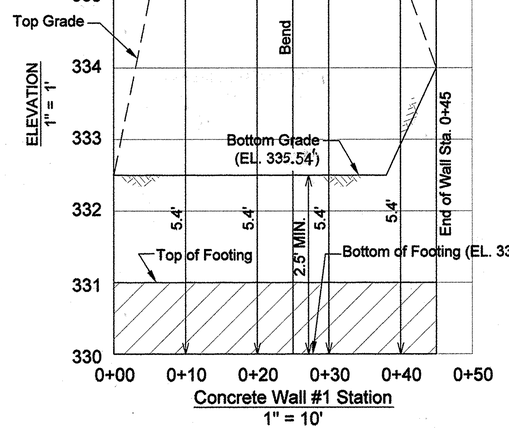
Wall #2 Plan

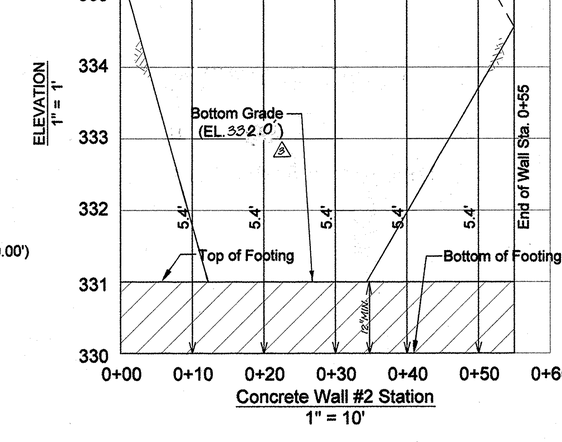


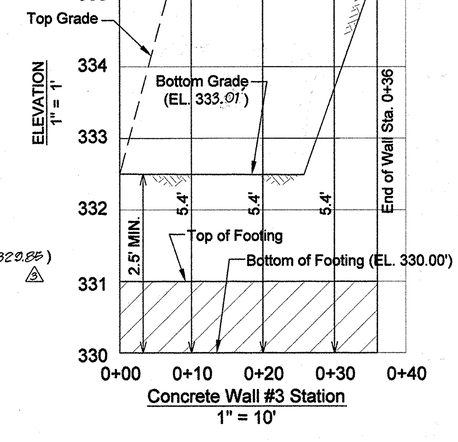
Wall #3 Plan



RETAINING WALL LOCATION PLAN
1" = 20'







AS-BUILT CERTIFICATION

I HEREBY CERTIFY BY MY SEAL THAT THE CONDITIONS SHOWN ON THIS PLAN WERE CONSTRUCTED TO THE LINES AND GRADES SHOWN IN RED ON THIS "AS-BUILT" PLAN AND MEET THE APPROVED PLANS AND SPECIFICATIONS AND ALSO THAT THESE DOCUMENTS WERE PREPARED BY ME OR UNDER MY RESPONSIBLE CHARGE AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF MARYLAND.

MICHAEL D. ADCOCK PROFESSIONAL LAND SURVEYOR
LICENSE NO. 21237, EXPIRATION DATE: JUNE 16, 2017

8/19/2014
DATE

STATE OF MARYLAND · MICHAEL DAVID ADCOCK · No. 21237 · PROFESSIONAL LAND SURVEYOR

STATE OF MARYLAND · PAUL M. SILL · No. 32025 · PROFESSIONAL ENGINEER

AS-BUILT

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 9454, EXPIRATION DATE: 09/09/09.

STATE OF MARYLAND · JOHN J. CHOMA · 9454 · REGISTERED PROFESSIONAL ENGINEER

13/08

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 1-9-09

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 1/20/09

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 1-16-9

ENGINEER'S CERTIFICATE

"I hereby certify that this plan for sediment and erosion control represents a pratical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."

Signature of Engineer Bruce D. Burton — Date

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan of development for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Environmental Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic onsite inspections by the Howard County Soil District."

Signature of Developer — Date 12-19-08

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

HOWARD SOIL CONSERVATION DISTRICT — DATE

No.	Date	By	Description
3	9/26/13	SEG	ADD FENCE, REMOVE WALL CHAMFER, REVISE WALL #2 ELEVATIONS
2	1/22/13	SEG	REVISE SD PIPE TYPE, GRADES AT WALL #2, AND REMOVE WEEPHOLES
⚠1	6/12	LDE	Revise Owner / Developer

REVISIONS

HILLIS-CARNES ENGINEERING ASSOCIATES
10975 Guilford Road, Suite A, Annapolis Junction, MD (410) 880-4788 Fax: (410)880-4092

DESIGNED HM · DRAWN HM · CHECKED JJC · DATE 11/2008

WATKINS' CHOICE
PHASE 1
Lots 1, 2, Open Space Lot 3 and Non-Buildable Bulk Parcel "A"
Tax Map 46 - Grid 18 - Parcel 215
6 th Election District - Howard County, Maryland

SCALE AS SHOWN · DRAWING 16 OF 16 · JOB NO. 02-035.2

Previous Submittals: SP 07-010, WP 09-

⚠Owner/Developer: Williamsburg Group, LLC, 5485 Harpers Farm Rd, Suite 200, Columbia, MD 21044, 410 997-8800

FILE NO. F-08-179

F-08-179