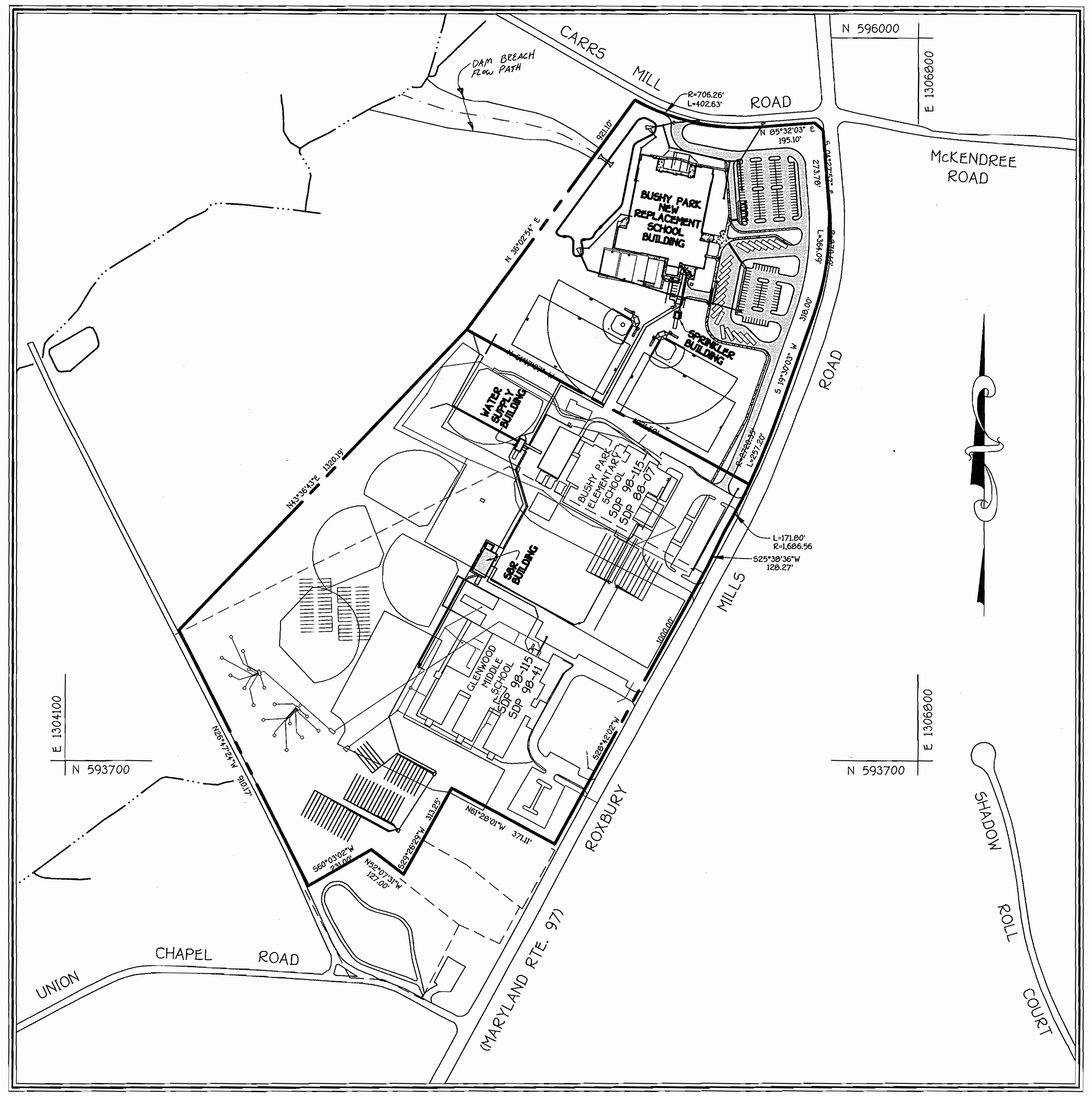
SITE DEVELOPMENT PLAN
BUSHY PARK ELEMENTARY SCHOOL
TAX MAP No.: 14 GRID No.: 10 PARCEL No.: 15, 153 and 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

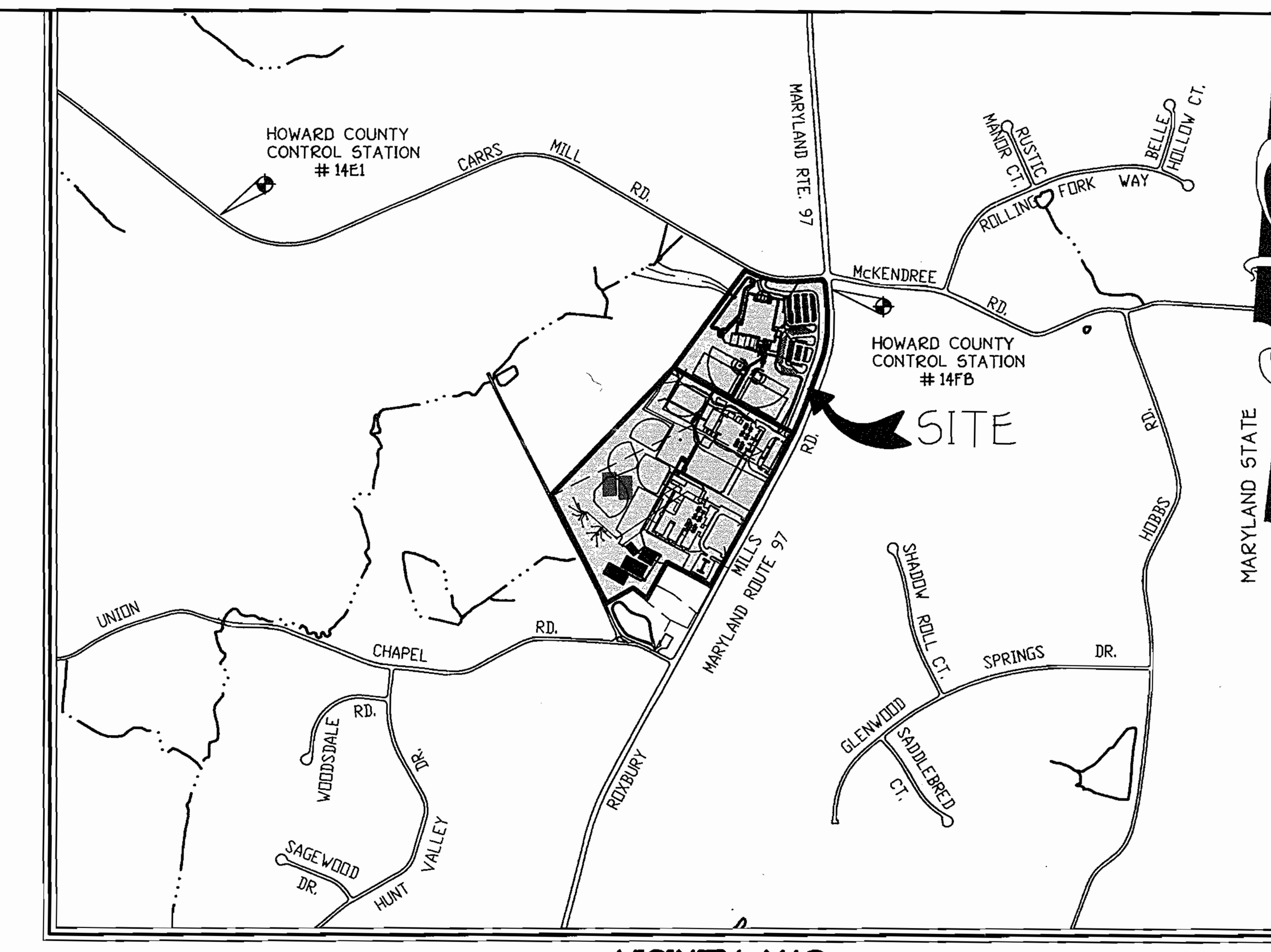
SHEET INDEX

LEGEND

Description	Symbol
Proposed Street Light	
Existing Contour	----600--------
Proposed Contour	——600——
Existing Storm Drain Line	Ex. 12" S.D.
Proposed Storm Drain Line	24" RCCP (150')
Existing Tree & Treeline	
Silt Fence	SF——SF——SF
Super Silt Fence	SSF——SSF——SSF
Existing Fence	— x — x —
Limit of Grading Disturbance (L.O.D.)	— — — —
Private Sewerage Easement	
Proposed Concrete	
Proposed Bituminous Paving	
Proposed Clay Liner	



PLAN
SCALE: 1" = 300'



VICINITY MAP
SCALE: 1" = 1200'

General Notes

1. All construction shall be accordance with the latest standards and specifications of Howard County plus MSHA standards and specifications if applicable.
2. The contractor shall notify the Bureau of Engineering/Construction Inspection Division at 410-313-1880 at least five working days prior to start of work.
3. The contractor shall notify Miss Utility at 1-800-257-7777 at least 48 hours prior to any digging and excavation work.
4. Project Background:
   Location: Tax Map 14, Grid 10, Parcel 15, 153 and 198
   Zoning: This project is zoned RC-DEO per the 2/2/04 comprehensive zoning plan.
   Election District: FOURTH
   Section/Area: N/A
   Site Area: 62.00 Ac.±
5. Traffic control devices, markings and signing shall be in accordance with the latest edition of the manual on Uniform Traffic Control Devices (MUTCD). All street and regulatory signs shall be in place prior to placement of any asphalt
6. All plan dimensions are to the face of curb or face of building unless otherwise noted. Dimensions are measured perpendicular or radial between items unless otherwise noted.
7. Existing topography and features were derived from a field run monumented boundary survey by Fisher, Collins and Carter Inc. and Harford Aerial Surveys inc. on or about November 2004.
8. Coordinates are based on NAD 83 Maryland Coordinates System as projected by Howard County Geodetic Control Stations. 14E1 N 596,213.62 E 1,301,991.89 ELEV. 590.335; 14FB N 595,657.26 E 1,306,552.16 ELEV. 619.858
9. Private water and sewer is to be utilized for this project.
10. Stormwater management is provided on-site by a retention facility and an underground recharge facility. Both BMP's will be privately owned and maintained by the Howard County Public School System.
11. All on-site storm drains under this site development plan are private.
12. The existing utilities shown hereon were derived from available public records. The contractor must dig test pits by hand at all utility crossings and connection points to verify the exact location.
13. All proposed ramps shall be in accordance with current A.D.A. Standards Accessibility Guidelines. Maximum sidewalk cross slope shall be two percent. Provide a (5'x5') five foot by five foot level landing (max. slope 2%) at the top and bottom of all ramps and building entrances and exits. Handrails shall be provided on all ramps in accordance with section 4.8.5 of the A.D.A. Standards Accessibility Guidelines.
14. All driveways and parking to be owned and maintained by the Howard County Public School System.
15. Any damage to County and or State owned right-of-way to be corrected at the contractor's expense.
16. Trench bedding for storm drains structures shall be in accordance with Howard County Standard G2.01 Class C Bedding unless otherwise noted.
17. Gutter pan of curbs shall be pitched to conform to the adjacent drainage patterns of the adjoining paving for vehicular use. See detail 9/6
18. For details of building profile, parking, road section, handicap, curb and gutter see sheets 6 and 7
19. There are no known grave sites or cemeteries on this site based on a visual site visit. and based on an examination of the Howard County Cemetery Inventory MRP.
20. This Project is recorded among the land records in Howard County, Maryland as Liber 1186 / Folio 329. AND PLAT NOS. 17812 / 17813.
21. Other topics related to this site:
    Soils Analysis prepared by: Penniman and Browne dated April 14, 2005.
22. All outside lighting shall comply with Zoning Regulations Section 134 which requires lights to be installed to direct/reflect light downwards and inwards on the site and away from all public streets and residential areas. See exterior light detail on sheet 22. Light trespass onto adjacent "RC" residential properties shall be limited to 0.1 foot candles in accordance with Section 134 of the Zoning Regulations.
23. The building shall be equipped with an automatic fire prevention sprinkler system.
24. There are no streams, flood plain or wetlands within the subject parcel "per a signed and sealed wetlands Certification prepared by Fisher, Collins and Carter dated June 15, 2005.
25. Previous DPZ file numbers Capital Project No. N-3052AA, SDP-89-199, SDP-89-218, F06-76, SDP-88-07, SDP-98-41, SDP-98-115, WP91-174, WP92-190, WP98-44, WP00-117, WP01-130, WP02-115 and WP03-138.
26. This SDP is subject to the First Amendment to the Fifth Edition of the Subdivision and Land Development Regulations dated October 2, 2003 and the Amended Zoning Regulations, per Council Bill 75-2003.
27. No landscape surety is required for this plan since it is a Howard County project. A Forest Conservation Report was Provided By Eco-Science Professionals, Inc. dated June 2005.
28. Water wells for adjoining lots within 200 feet of the property boundaries and known septic system on or within 100 feet of the property have been shown.
29. Percolation tests done in 2004 wet season.
30. The sewage disposal area for this school will be on the Glenwood Middle School Property.
31. Groundwater Appropriations Permit * HO-1983-G008 and HO-1967-G001.
32. Discharge Permit Number 05-DP-3521.
33. All sign posts used for traffic control signs installed in the County right-of-way shall be mounted on a 2" galvanized steel, perforated, square tube post (14 gauge) inserted into a 2-1/2" galvanized steel, perforated, square tube sleeve (12 gauge) - 3' long. A galvanized steel pole cap shall be mounted on top of each post.

General Notes (Continued)

34. Forest Conservation for this project is exempt due to the limits of disturbance being within the limits of disturbance for the Glenwood Park Site Development Plan Capital Project No. N-3052AA. This project is exempt for forest conservation because site development plans, SDP-89-199 and SDP-89-218, and grading permits were approved prior to 12/31/92 for the existing developed Glenwood Park in accordance with Section 16.1202(b)(1)(iii) of the Howard County Code. The proposed septic system and related work on the existing elementary and middle school sites is exempt from the forest conservation requirement because development is occuring within previously graded areas under SDP's previously approved prior to 12/30/92.
35. This SDP is subject to the Amended Fifth Edition of the Subdivision and Land Development Regulations per Council Bill No. 45-2003 and the Amended Zoning Regulations per Council Bill No. 75-2003. Development or construction on this property must comply with setback and buffer regulations in effect at the time of submission of the site development plan, waiver petition application or building/grading permit applications.
    The structure and use setbacks from lot lines internal to a development when two or more contiguous parcels are treated as a single parcel for development purposes shall not apply in accordance with Section 128.A.10 of the Zoning Regulations.
36. A Waiver Request to Design Manual, Volume III, Figure 2.18 which requires the use of a 3-centered curve curb return for commercial entrances was approved on September 13, 2005 by the Development Engineering Division.
37. A Waiver Request to Design Manual, Volume I, Section 5.2.6.D.1 which requires a 12 foot wide level area be provided around the entire Stormwater Management Facility for maintenance access was approved on October 14, 2005 by the Development Engineering Division.
38. A Waiver Request to Design Manual, Volume I, Section 5.2.4.I which requires a 25 foot setback from the end of the riprap outfall to the downstream property line was approved on October 14, 2005 by the Development Engineering Division.

SITE ANALYSIS DATA

1. General Site Data:
   A. Present Zoning: RC-DEO
   B. Proposed use of site or structure: Institutional; Public School
   C. Private water and sewer to be utilized.
2. Area Tabulation:
   A. Total project area: 62.00 Ac±
   B. Area of this plan submission: 24.80 Ac.± is the limit of submission and grading disturbance for the construction of the school and associated parking, for the new replacement school, water supply and septic system layout for the existing Bushy Park Elementary School and the Glenwood Middle School.
   C. Impervious Coverage for the new replacement school
   Proposed Paved Areas (Parking and Walkways) - 189,680.29 Sq.Ft.
   Building Coverage: 73,449.05 Sq.Ft or 8.43% for the 20.00 Ac. Parcel
3. Open Space Data:
   A. Total project area: N/A
   B. Open Space Provided: N/A
4. Parking Space Data:
   A. The Number of parking spaces in accordance with the Public School System's requirements = 183
   B. Total number of parking spaces provided on site: (Including handicap Parking) = 183
   C. Number of Handicaped parking spaces provided: (Including Handicap Van Spaces) = 7
   D. Number of bus parking spaces provided: = 22

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER MJD — 3/3/06 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/10/06 Date

Chief, Division of Land Development — 3/10/06 Date KS

Chief, Development Engineering Division — 2/22/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

Address Chart

Parcel Number	Street Address
P. 15	14601 CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02

WATER CODE	SEWER CODE
N/A	N/A

TITLE SHEET

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL
TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005
BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 1 OF 35 SDP-06-03

SDP 06-03

LEGEND

FOR DEMOLITION PLAN (SHEETS 2 AND 3)

- DENOTES EXISTING PAVING TO BE REMOVED
- DENOTES EXISTING PAVING TO REMAIN
- DENOTES EXISTING TREE TO BE REMOVED WITHIN PROPERTY BOUNDARIES
- DENOTES EXISTING TREES TO BE REMOVED WITHIN PROPERTY BOUNDARIES
- DENOTES EXISTING CONCRETE TO BE REMOVED
- DENOTES APPROX. AREA OF UNDERCUT

NOTE: THE CONTRACTOR SHALL FIRST STRIP THE PAD OF TOP SOIL AND THEN UNDERCUT THE ENTIRE BUILDING PAD BY AN ADDITIONAL 4 FEET IN DEPTH. LIMITS OF UNDERCUT SHALL BE 10 FEET OUTSIDE THE LIMITS OUTSIDE THE LIMITS OF THE BUILDING PAD. THE EXPOSED SUBGRADE SHOULD THEN BE PROOFROLLED TO IDENTIFY THE REMAINING SOFT AREAS FOR ADDITIONAL UNDERCUT.

GENERAL SITE DEMOLITION NOTES

1. All Sediment Control Measures Shown On Sheets 9 And 10 Are To Be Installed Prior To Demolition Work.
2. Abandon and remove all utilities, storm drainage inlets, utility structures and related piping located within limit of disturbance. Fill and compact resulting holes and excavations.
3. Remove all existing concrete curb and gutter, concrete walks, concrete paving, wheelstops, asphaltic paving and other site related items and materials from within limit of disturbance.
4. Remove all existing site improvements, fencing, backstops and related concrete footings located within limit of disturbance. Fill and compact resulting holes and excavations.
5. Remove all trees, shrubs, and vegetation within limit of disturbance. See planting plan for existing plant material to remain.
6. All materials, equipment, and items resulting from demolition operations are to be removed from the site and disposed of in a legal manner unless designated to be turned over to Owner.
7. Refer to project specifications for additional demolition requiremnts.

PLAN

SCALE: 1" = 40'

FISHER, COLLINS & CARTER, INC.
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CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 3/3/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — Date 3/10/06

Chief, Division of Land Development — Date 3/10/06

Chief, Development Engineering Division — Date 2/23/06

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WATER CODE N/A — SEWER CODE N/A

DEMOLITION PLAN

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"

SHEET 2 OF 35 SDP-06-03

SDP 06-03

PLAN

SCALE: 1" = 40'

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HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER — 3/3/06 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director Department of Planning and Zoning — 3/10/06 Date

Chief, Division of Land Development — 3/10/06 Date

Chief, Development Engineering Division — 2/23/06 Date

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DEMOLITION PLAN

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BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"

SHEET 3 OF 35 SDP-06-03

SDP 06-03

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APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Weber Jr. — COUNTY HEALTH OFFICER — 3/3/06 DATE

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

Signature _____ P.E. No. _____

Date: _____

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

BUSHY PARK ELEMENTARY SCHOOL
STORMWATER MANAGEMENT POND SUMMARY TABLE

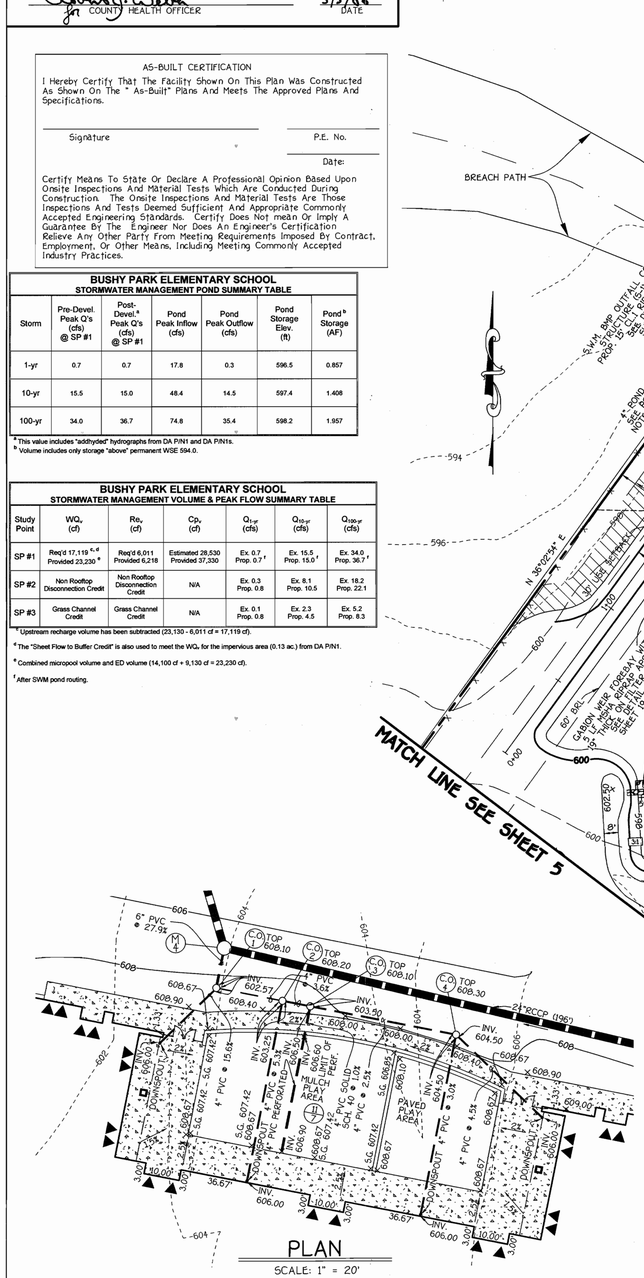
Storm	Pre-Devel. Peak Q's (cfs) @ SP #1	Post-Devel.* Peak Q's (cfs) @ SP #1	Pond Peak Inflow (cfs)	Pond Peak Outflow (cfs)	Pond Storage Elev. (ft)	Pond [b] Storage (AF)
1-yr	0.7	0.7	17.8	0.3	596.5	0.857
10-yr	15.5	15.0	48.4	14.5	597.4	1.408
100-yr	34.0	36.7	74.8	35.4	598.2	1.957

* This value includes "addyhzed" hydrographs from DA P/N1 and DA P/N1s.
[b] Volume includes only storage "above" permanent WSE 594.0.

BUSHY PARK ELEMENTARY SCHOOL
STORMWATER MANAGEMENT VOLUME & PEAK FLOW SUMMARY TABLE

Study Point	WQ_v (cf)	Re_v (cf)	Cp_v (cf)	Q_{1-yr} (cfs)	Q_{10-yr} (cfs)	Q_{100-yr} (cfs)
SP #1	Req'd 17,119 [c,d] Provided 23,230 *	Req'd 6,011 Provided 6,218	Estimated 28,530 Provided 37,330	Ex. 0.7 [f] Prop. 0.7 [f]	Ex. 15.5 [f] Prop. 15.0 [f]	Ex. 34.0 [f] Prop. 36.7 [f]
SP #2	Non Rooftop Disconnection Credit	Non Rooftop Disconnection Credit	N/A	Ex. 0.3 Prop. 0.8	Ex. 8.1 Prop. 10.5	Ex. 18.2 Prop. 22.1
SP #3	Grass Channel Credit	Grass Channel Credit	N/A	Ex. 0.1 Prop. 0.8	Ex. 2.3 Prop. 4.5	Ex. 5.2 Prop. 8.3

* Upstream recharge volume has been subtracted (23,130 - 6,011 cf = 17,119 cf).
[c] The "Sheet Flow to Buffer Credit" is also used to meet the WQ_v for the impervious area (0.13 ac.) from DA P/N1.
[d] Combined micropool volume and ED volume (14,100 cf + 9,130 cf = 23,230 cf).
[f] After SWM pond routing.



PLAN
SCALE: 1" = 20'

NOTE: SEE ARCHITECTURAL A-24 (SITE PAVING PLAN) FOR ADDITIONAL INFORMATION

PLAN
SCALE: 1" = 40'

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By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Wm. P3 — Signature Of Developer — 2.3.06 Date

Dr. William Brana — Printed Name Of Developer

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

USDA-Natural Resources Conservation Service — 2/15/06 Date

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature Of Engineer — 8/4/06 Date

CHARLES J. CROVO SR. — Printed Name Of Engineer

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Howard Soil Conservation District — 2/15/06 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/10/06 Date

Chief, Division of Land Development — 3/6/06 Date

Chief, Development Engineering Division — 2/23/06 Date

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WATER CODE	SEWER CODE
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BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"

SHEET 4 OF 35 SDP-06-03

SDP 06-03

I:\04048\dwg\NEW PLAN\SITE PLAN (SHEET 2,5,14-15).dwg, 2/22/2006 3:49:55 PM, 1:1

PLAN

SCALE: 1" = 40'

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(410) 461 - 2855

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Weber for COUNTY HEALTH OFFICER — 3/3/06 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/10/06 Date

Chief, Division of Land Development — 3/10/06 Date

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WATER CODE N/A — SEWER CODE N/A

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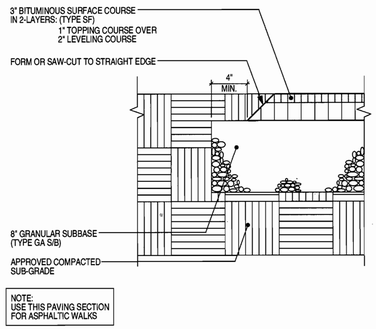
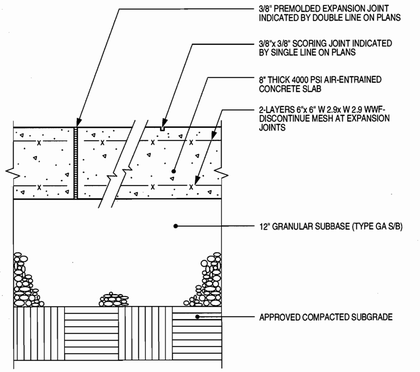
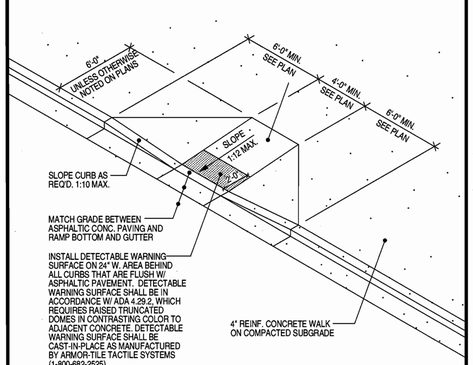
SDP 06-03



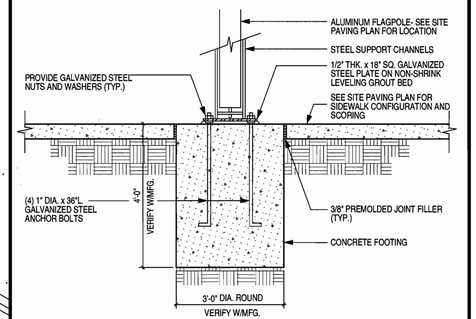
14/6 **PAVED PLAY AREA ASPHALTIC PAVING DETAIL** 1 1/2" — 1 1/2"



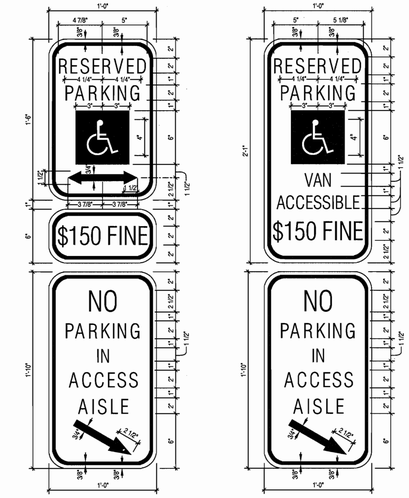
11/6 **HEAVY DUTY CONCRETE PAVING DETAIL** 1 1/2" — 1 1/2"

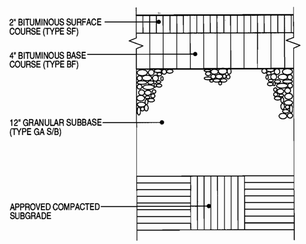


8/6 **TYPE A CURB RAMP DETAIL** HO.CO. DETAIL R4.01 — NO SCALE
HOWARD COUNTY DETAIL NOTED IS FOR REFERENCE ONLY

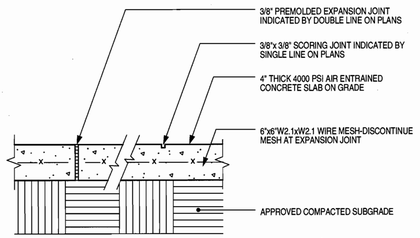


5/6 **TILT FLAGPOLE DETAIL** 1/2"





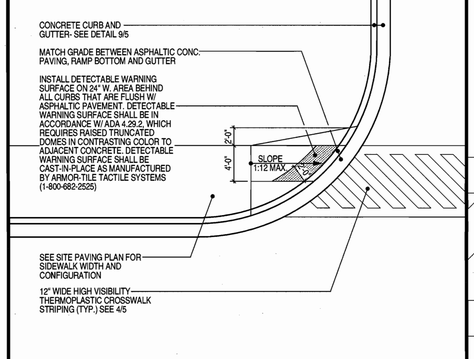
13/6 **HEAVY DUTY ASPHALTIC PAVING DETAIL** 1 1/2"



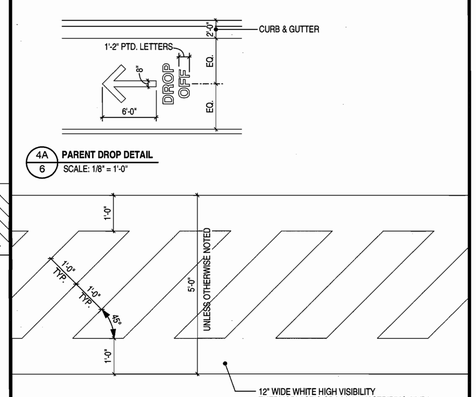
NOTE: REFER TO SITE PAVING PLAN AND FLOOR PLANS FOR LOCATIONS OF EXPANSION JOINTS AND SCORING JOINTS. WHERE NOT INDICATED, INSTALL EXPANSION JOINTS AT MAX. 15'-0" O.C. AND INSTALL SCORING JOINTS AT MAX. 5'-0" O.C.

SLOPE ACROSS SIDEWALK SHALL BE MIN. 1/8"/FT.

10/6 **CONCRETE WALK DETAIL** HO.CO. DETAIL R3.05 — 1 1/2"
HOWARD COUNTY DETAIL NOTED IS FOR REFERENCE ONLY

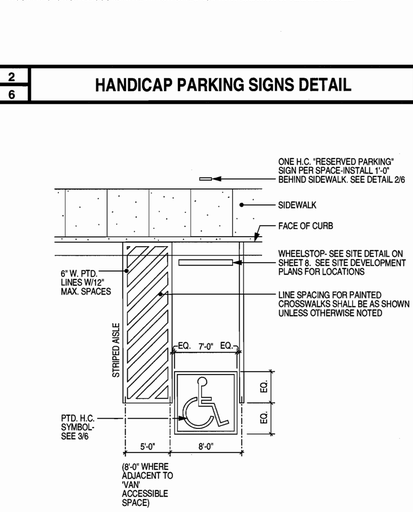


7/6 FOR USE AT RADIUS CURB — **TYPE B CURB RAMP DETAIL** HO.CO. DETAIL R4.02 — 1"/8"
HOWARD COUNTY DETAIL NOTED IS FOR REFERENCE ONLY

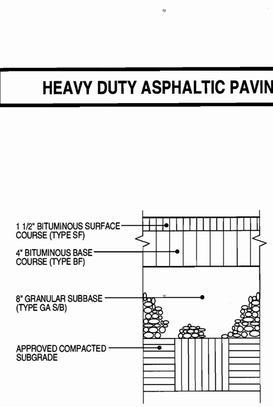


4A/6 **PARENT DROP DETAIL** SCALE: 1/8" = 1'-0"

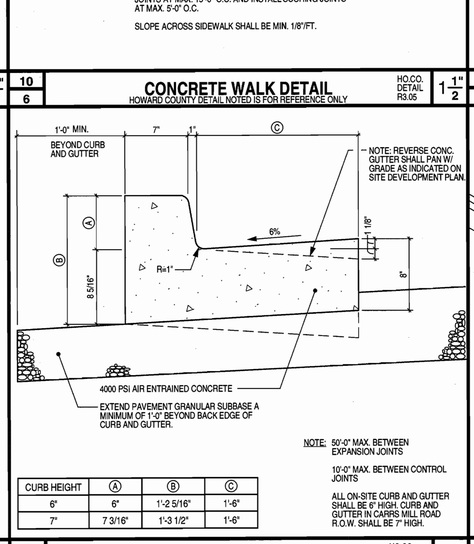
4/6 **CROSSWALK DETAIL** 1/2"



2/6 **HANDICAP PARKING SIGNS DETAIL** NO SCALE



12/6 **LIGHT DUTY ASPHALTIC PAVING DETAIL** 1 1/2"



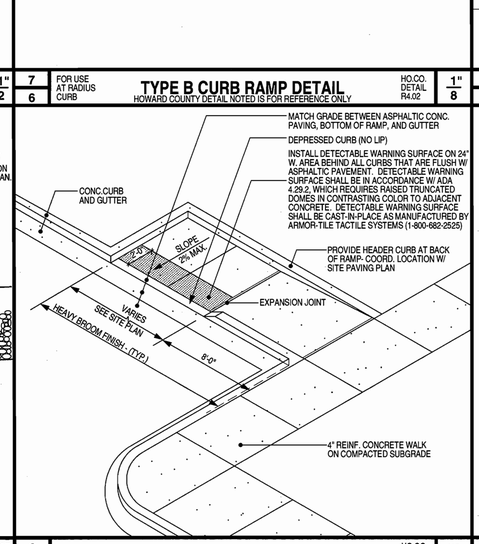
NOTE: 50'-0" MAX. BETWEEN EXPANSION JOINTS

10'-0" MAX. BETWEEN CONTROL JOINTS

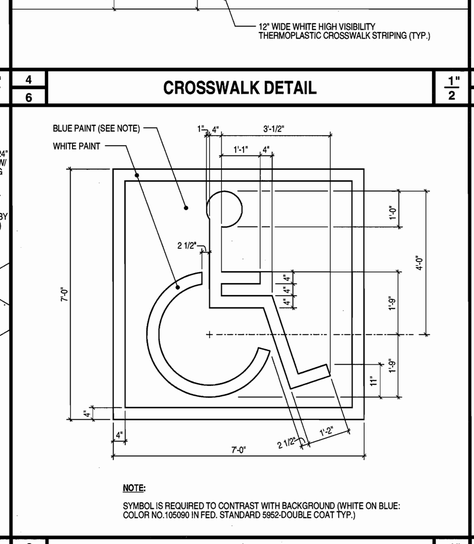
ALL ON-SITE CURB AND GUTTER SHALL BE 6" HIGH. CURB AND GUTTER IN CARRS MILL ROAD R.O.W. SHALL BE 7" HIGH.

CURB HEIGHT	Ⓐ	Ⓑ	Ⓒ
6"	6"	1'-2 5/16"	1'-6"
7"	7 3/16"	1'-3 1/2"	1'-6"

9/6 **CONCRETE CURB AND GUTTER DETAIL** HO.CO. DETAIL R3.01/R3.07 — 1 1/2"
HOWARD COUNTY DETAIL NOTED IS FOR REFERENCE ONLY



6/6 **TYPE C CURB RAMP DETAIL** HO.CO. DETAIL R4.03 — NO SCALE
HOWARD COUNTY DETAIL NOTED IS FOR REFERENCE ONLY



NOTE:
SYMBOL IS REQUIRED TO CONTRAST WITH BACKGROUND (WHITE ON BLUE: COLOR NO.105090 IN FED. STANDARD 5952-DOUBLE COAT TYP.)

3/6 **ACCESSIBLE SPACE STENCIL LAYOUT** 1"/2

1/6 **ACCESSIBLE SPACE LAYOUT** 1"/8

tca architects
2661 RIVA ROAD SUITE 120
ANNAPOLIS, MARYLAND
21401
410-841-6205

OWNER

HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 ROUTE 108
ELLICOTT CITY, MARYLAND 21043

APPROVED: FOR PRIVATE WATER & PRIVATE SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 3/3/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 3/10/06

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 3/14/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/23/06

SITE DETAILS

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY AND SEPTIC SYSTEM AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP: 14 GRID: 10 PARCEL: 15, 153, AND 198

4th ELECTION DISTRICT: HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN

New Replacement School
BUSHY PARK ELEMENTARY SCHOOL
Howard County, Maryland
Howard County Public School System

BOARD OF ARCHITECTS 6149 RACHAEL REED BOND STATE OF MARYLAND

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BUILDING PERMIT/ CD REVIEW 28 NOVEMBER 05

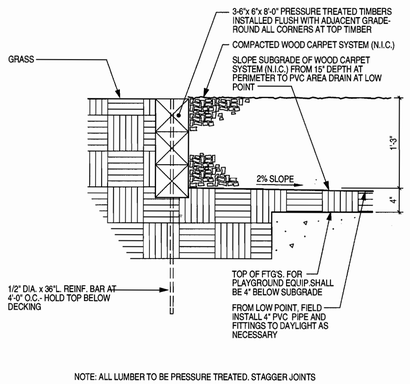
BID & CONSTRUCTION 3 JANUARY 06

6 of 35

SDP 06-03

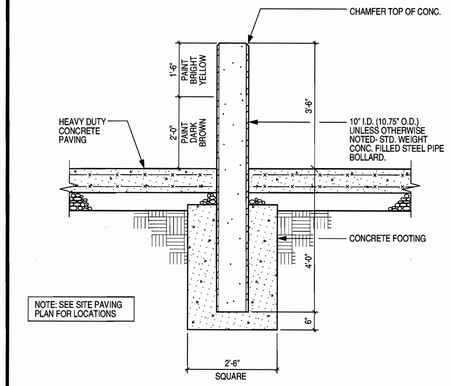
project no. 0404

SDP 06-03



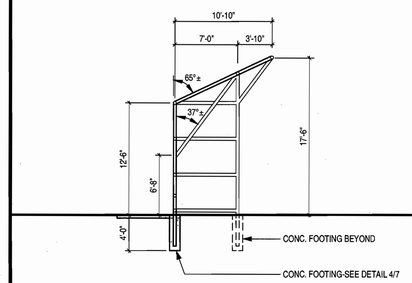
NOTE: ALL LUMBER TO BE PRESSURE TREATED. STAGGER JOINTS

11/7 **PLAY AREA SURFACE / DRAINAGE DETAIL** 1"

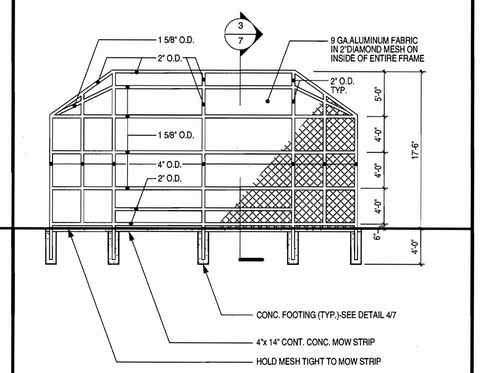


NOTE: SEE SITE PAVING PLAN FOR LOCATIONS

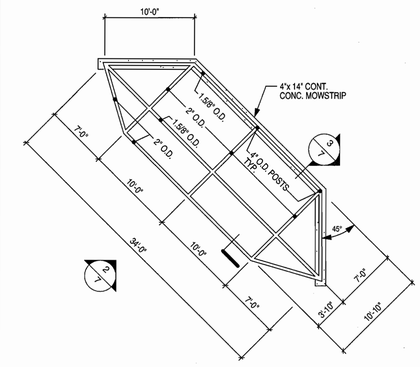
9/7 **PIPE BOLLARD DETAIL** 1"/2



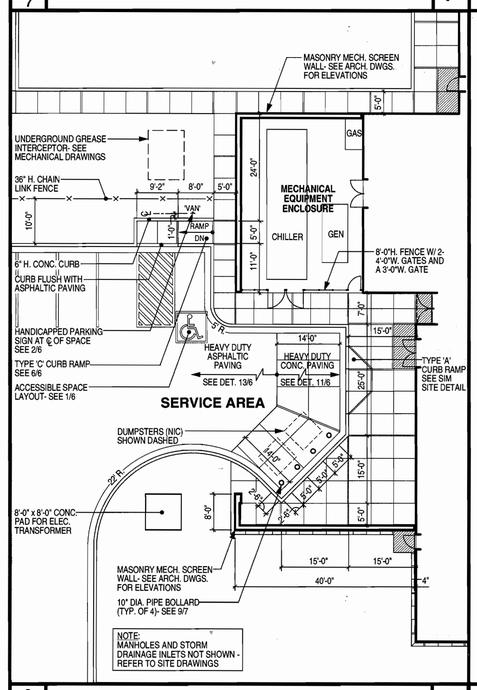
3/7 **SOFTBALL BACKSTOP SECTION** 1"/8



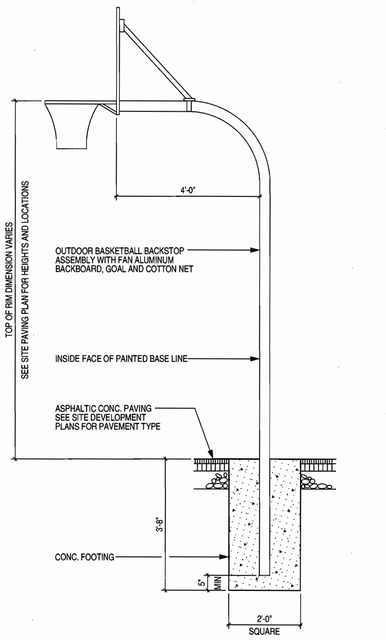
2/7 **SOFTBALL BACKSTOP ELEVATION** 1"/8



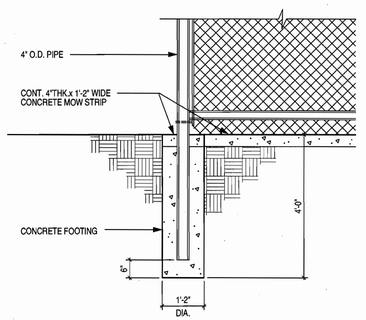
1/7 **SOFTBALL BACKSTOP PLAN** 1"/8



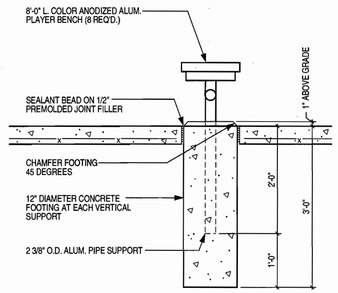
8/7 **SERVICE AREA DETAIL** 1"/16



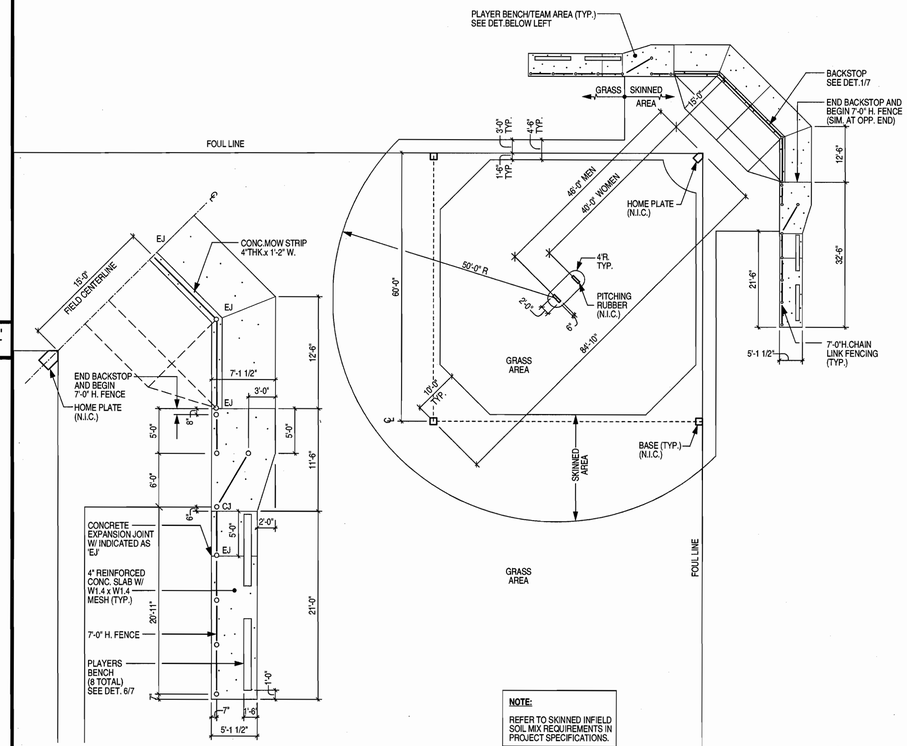
7/7 **BACKBOARD DETAIL** 1"/2



4/7 **BACKSTOP FOOTING DETAIL** 1"/2



6/7 **BENCH DETAIL** 3"/4



PLAYER BENCH/TEAM AREA DETAIL
SCALE: 1/8" = 1'-0"

NOTE:
REFER TO SKINNED INFIELD SOIL MIX REQUIREMENTS IN PROJECT SPECIFICATIONS.

5/7 **SOFTBALL FIELD DETAIL** 1"/16

10/7 **FRONT ELEVATION** 1"/32

tca architects
2661 RIVA ROAD SUITE 120
ANNAPOLIS, MARYLAND
21401
410-841-8205

OWNER

HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 ROUTE 108
ELLICOTT CITY, MARYLAND 21043

APPROVED: FOR PRIVATE WATER & PRIVATE SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 3/3/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

DIRECTOR — DATE 3/10/06

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 2/28/06

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 2/23/06

SITE DETAILS

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY AND SEPTIC SYSTEM AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP: 14 GRID: 10 PARCEL: 15, 153, AND 198

4th ELECTION DISTRICT: HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN

New Replacement School
BUSHY PARK ELEMENTARY SCHOOL
Howard County, Maryland
Howard County Public School System

BOARD OF ARCHITECTS 6149 MICHAEL REED BODIN STATE OF MARYLAND

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BUILDING PERMIT/ CD REVIEW 28 NOVEMBER 05

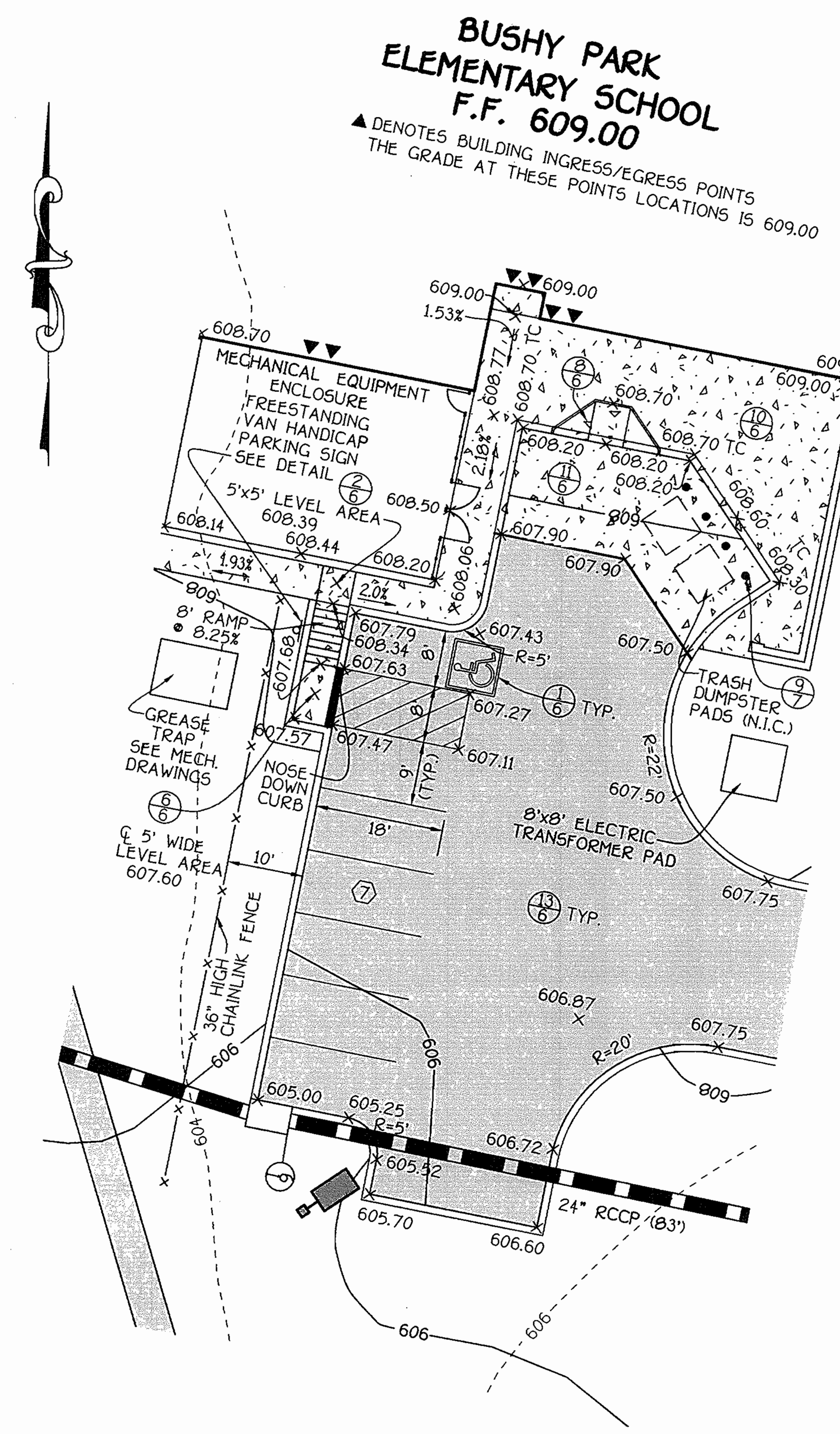
BID & CONSTRUCTION 3 JANUARY 06

7 of 35

SDP 06-03

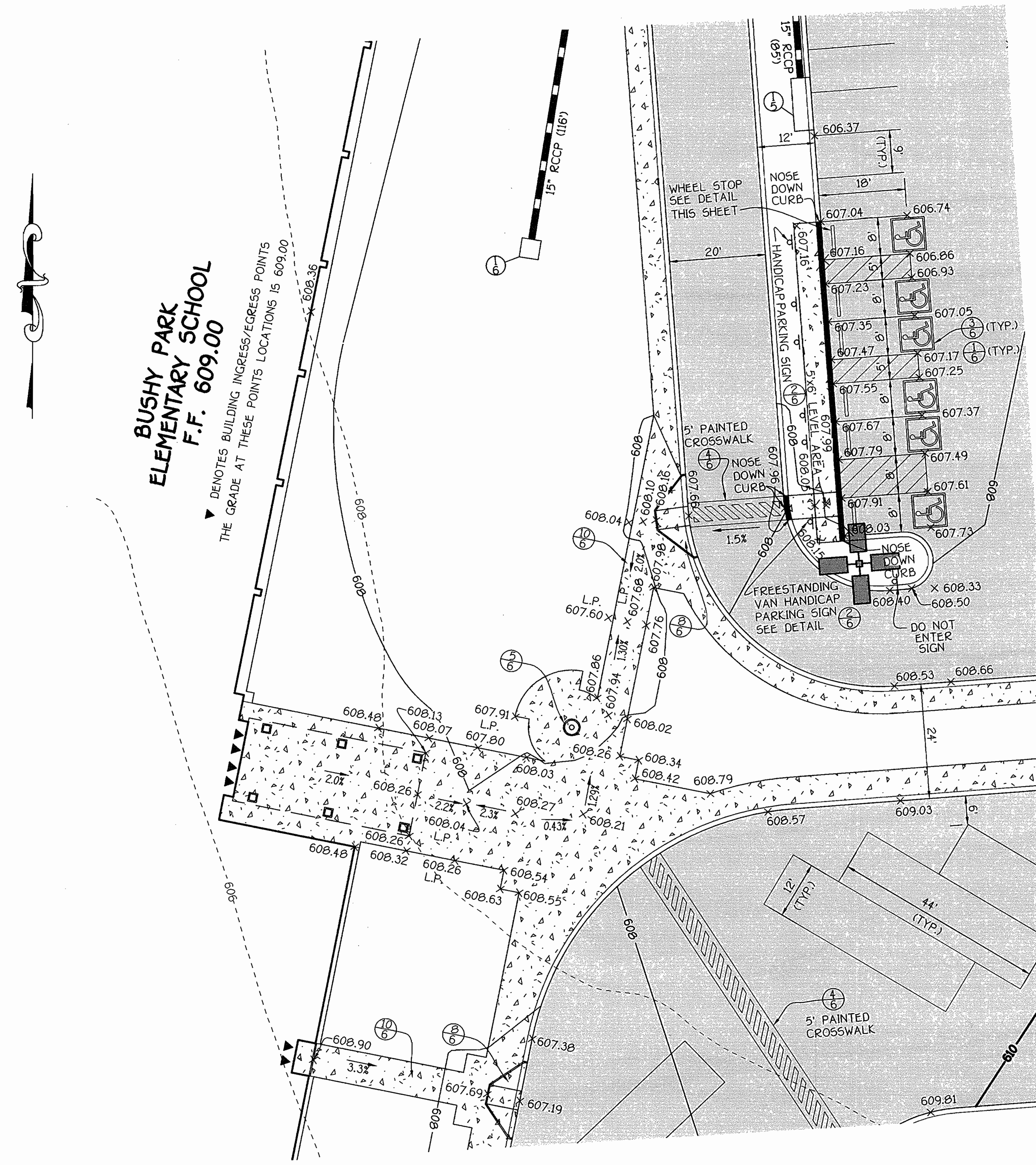
project no. 0404

SDP 06-03



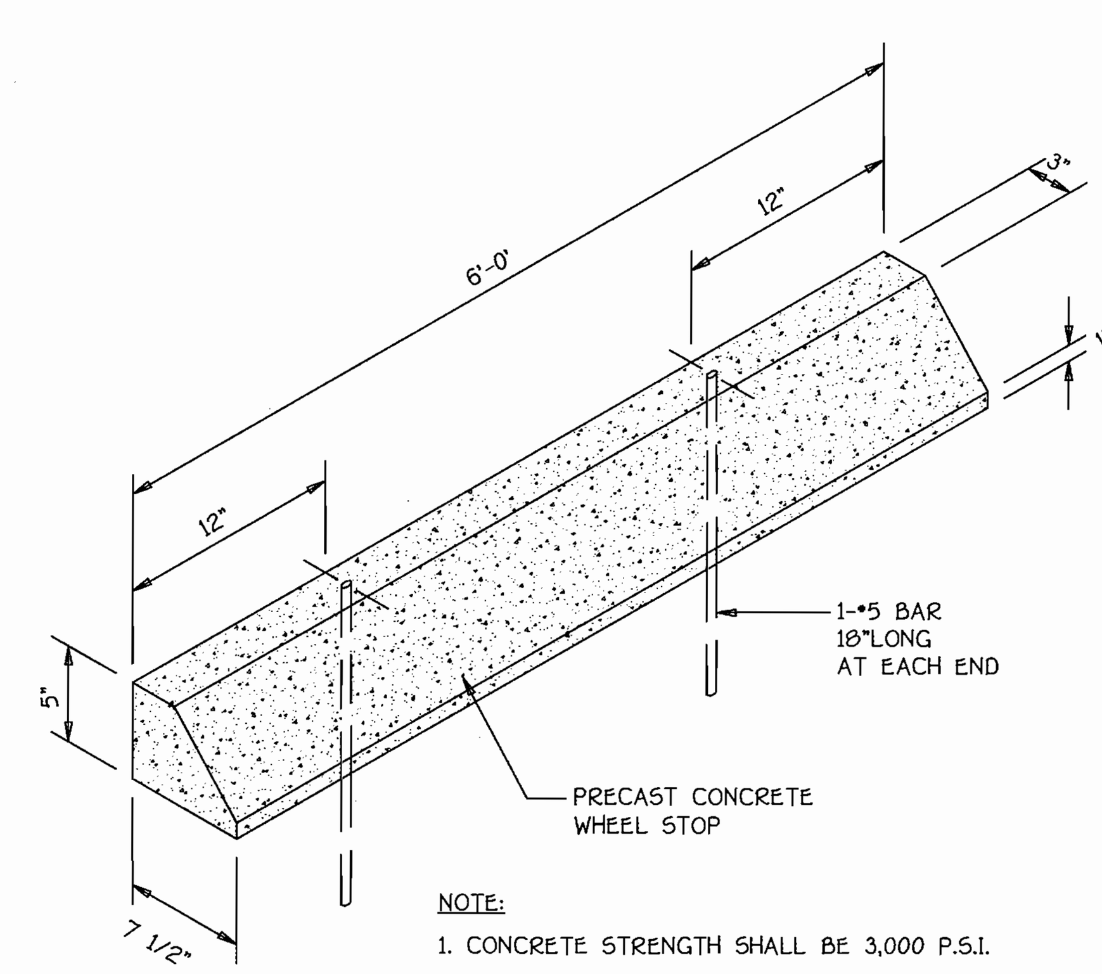
THIS PLAN FOR HANDICAP ACCESS ONLY.

PLAN
SCALE: 1" = 20'



THIS PLAN FOR HANDICAP ACCESS ONLY.

PLAN
SCALE: 1" = 20'



NOTE:
1. CONCRETE STRENGTH SHALL BE 3,000 P.S.I.

WHEEL STOP DETAIL
NOT TO SCALE

I:\04048\dwg\NEW PLAN\HANDICAP ACCESS (SHEET 8).dwg, 2/2/2006 11:22:35 AM, 1:1

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER — 3/3/06 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/10/06 Date

Chief, Division of Land Development — 3/10/06 Date

Chief, Development Engineering Division — 2/23/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

Address Chart

Parcel Number	Street Address
P. 15	14601 CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02

WATER CODE N/A — SEWER CODE N/A

HANDICAP PARKING/ACCESS PLAN

NEW REPLACEMENT SCHOOL
BUSHY PARK
ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING
BUSHY PARK ELEMENTARY SCHOOL
AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"

SHEET 8 OF 35 SDP-06-03

SDP 06-03

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — 3/3/06 DATE

SEDIMENT BASIN No.1 (SWM POND)
INITIAL D.A. = 10.4 Ac.
FINAL D.A. = 10.4 Ac.

STORAGE REQUIRED:
WET = 1,800 x 10.4 = 18,720 cf
DRY = 1,800 x 10.4 = 18,720 cf

STORAGE PROVIDED:
WET = 19,628 cf @ ELEV. 594.0
DRY = 49,755 cf @ ELEV. 597.0

BOTTOM ELEV. = 588.5
STORAGE DEPTH = 3'-6"
TOP OF EMBANKMENT = 600.0
SIDE SLOPES: 3:1
CLEAN OUT ELEV. = 592.0
TEMP. WEIR CREST ELEV. = 597.0
1-YR STORM/DRAW DOWN DEVICE ORIFICE = 2"ø @ EL. 594.0
Q1 pre-developed = 0.7 cfs @ BASIN OUTFALL
Q1 proposed = 0.7 cfs @ BASIN OUTFALL

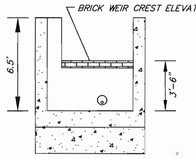
AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The "As-Built" Plans And Meets The Approved Plans And Specifications.

Signature — P.E. No.

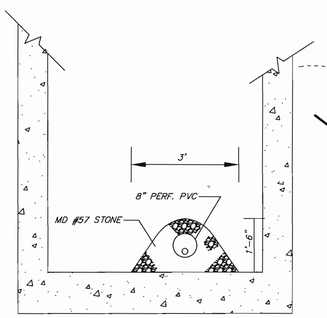
Date:

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.



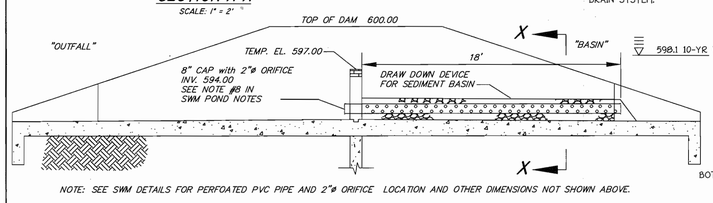
SEDIMENT BASIN No. 1 WEIR CREST DETAIL
SCALE: 1" = 5'

(TEMPORARY TRASH RACK NOT SHOWN)



CONSTRUCTION SPECIFICATIONS FOR SEDIMENT BASIN OUTFALL (DRAW DOWN DEVICE).
1. SEE SWM DETAILS FOR PERFORATED PVC PIPE AND 2" ø ORIFICE SPECIFICATIONS, LOCATION, AND OTHER DIMENSIONS/DETAILS NOT SHOWN ABOVE.
2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 4 TIMES THE AREA OF THE 2"ø ORIFICE — FOLLOWING THE SWM PERFORATED SPECIFICATION WILL MEET THIS CRITERIA. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC (GEOTEXTILE CLASS E).
3. PROVIDED SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOATATION. AN ACCEPTABLE PREVENTIVE MEASURE IS TO STAKE BOTH SIDES OF DRAW-DOWN DEVICE WITH 1" STEE ANGLE OR 1" BY 4" SQUARE OR 2" ROUND WOODEN POSTS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE MINIMUM WIRE.

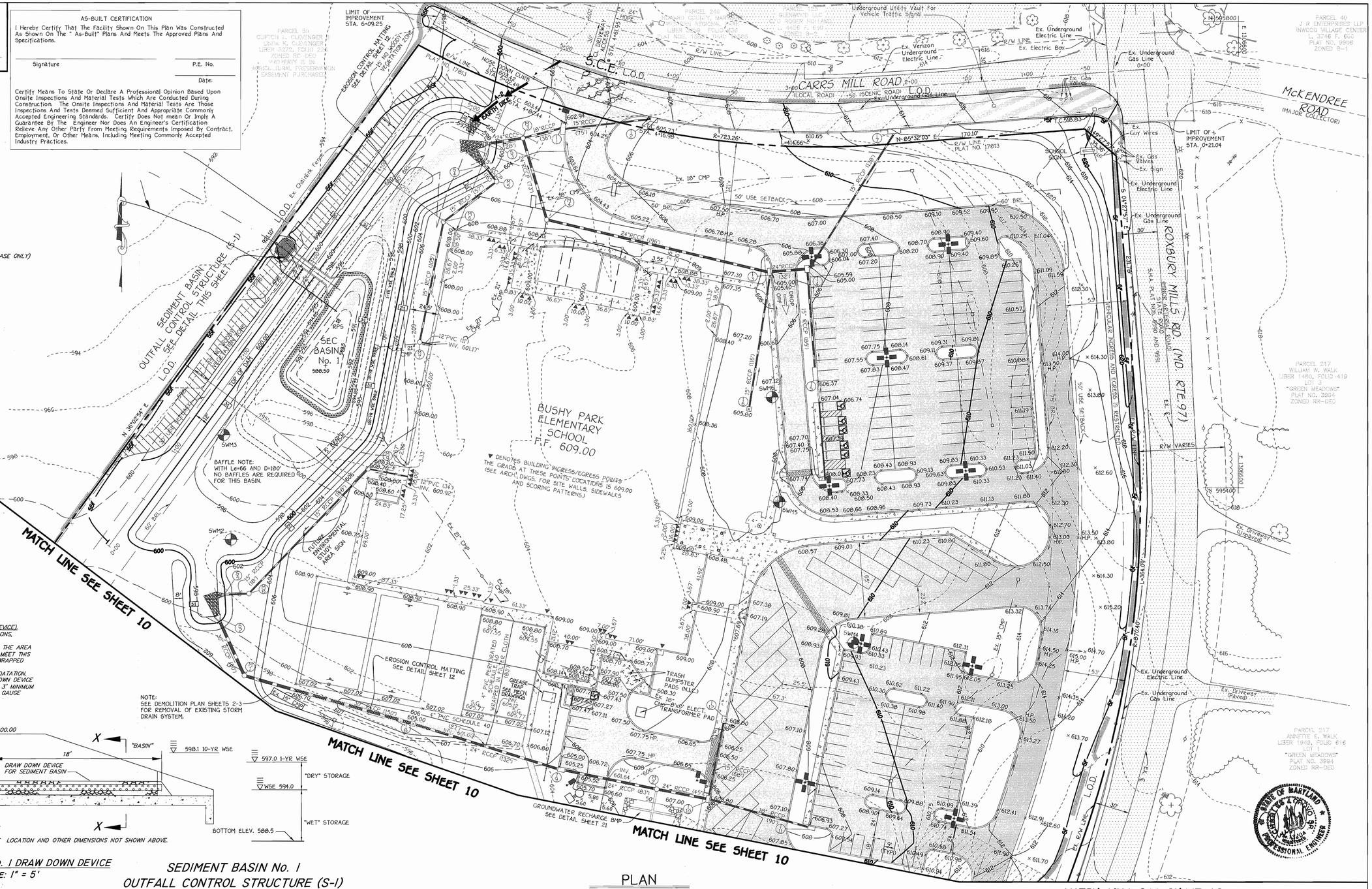
SECTION X-X
SCALE: 1" = 2'



NOTE: SEE SWM DETAILS FOR PERFOATED PVC PIPE AND 2"ø ORIFICE LOCATION AND OTHER DIMENSIONS NOT SHOWN ABOVE.

SEDIMENT BASIN No. 1 DRAW DOWN DEVICE
SCALE: 1" = 5'

SEDIMENT BASIN No. 1
OUTFALL CONTROL STRUCTURE (S-1)



PLAN
SCALE: 1" = 40'

By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Signature Of Developer — 2.3.06 Date

Dr. William Brown
Printed Name Of Developer

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature Of Engineer — 2/4/06 Date

CHARLES J. CROSIER
Printed Name Of Engineer

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

USDA-Natural Resources Conservation Service — 2/15/06 Date

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Howard Soil Conservation District — 2/16/06 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/16/06 Date

Chief, Division of Land Development — 2/10/06 Date

Chief, Development Engineering Division — 2/23/06 Date

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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(410) 461 - 2855

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

Address Chart

Parcel Number	Street Address
P. 15	**14601** CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT			SECTION/AREA		PARCELS
BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02
WATER CODE	N/A		SEWER CODE	N/A	

SEDIMENT AND EROSION CONTROL PLAN

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 9 OF 35 SDP-06-03

SDP 06-03

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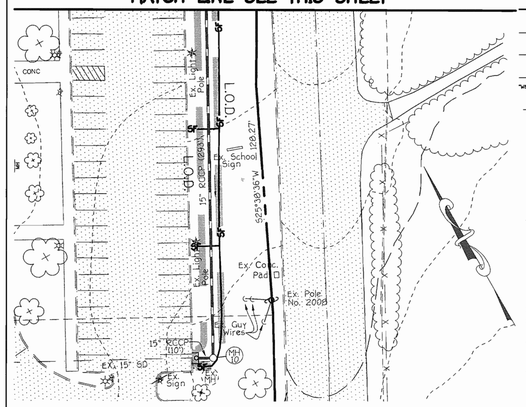
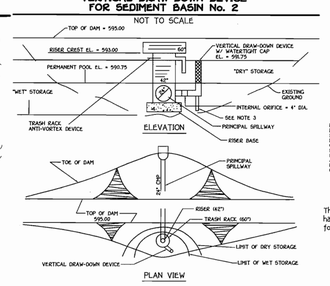


VERTICAL DRAW-DOWN DEVICE FOR SEDIMENT BASIN No. 2

NOT TO SCALE

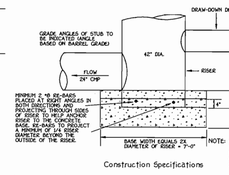


CONSTRUCTION SPECIFICATIONS

1. PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 4 TIMES THE AREA OF THE INTERNAL ORIFICE.
3. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
4. PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOATATION. AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDES OF DRAW-DOWN DEVICE WITH 1" STEEL ANGLE, OR 1" BY 4" SQUARE OR 2" ROUND WOODEN POSTS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE MINIMUM WIRE.

RISER BASE DETAIL

NOT TO SCALE



Construction Specifications

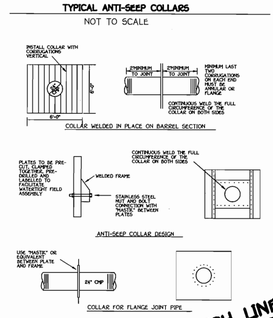
The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. Two approved bases for risers 10" or less in height are:

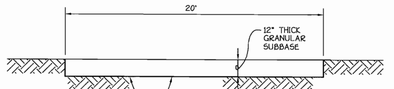
1. A concrete base 18" thick with the riser embedded 9" in the base.
2. A 1/4" minimum thickness steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2" of stone, gravel or compacted earth placed on it to prevent flotation. In either case, each side of the square base shall be twice the riser diameter.

Note: For risers greater than ten feet high computations shall be made to design a base which will prevent floatation. The minimum factor of safety shall be 1.20 (downward forces ÷ 1.20 x upward forces).

TYPICAL ANTI-SEEP COLLARS

NOT TO SCALE



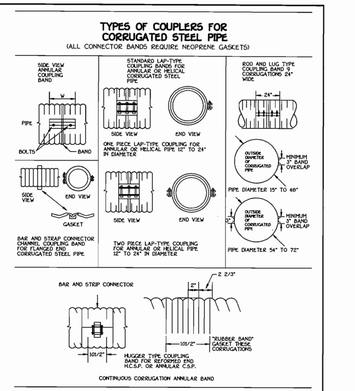


TEMPORARY ACCESS ROAD DETAIL

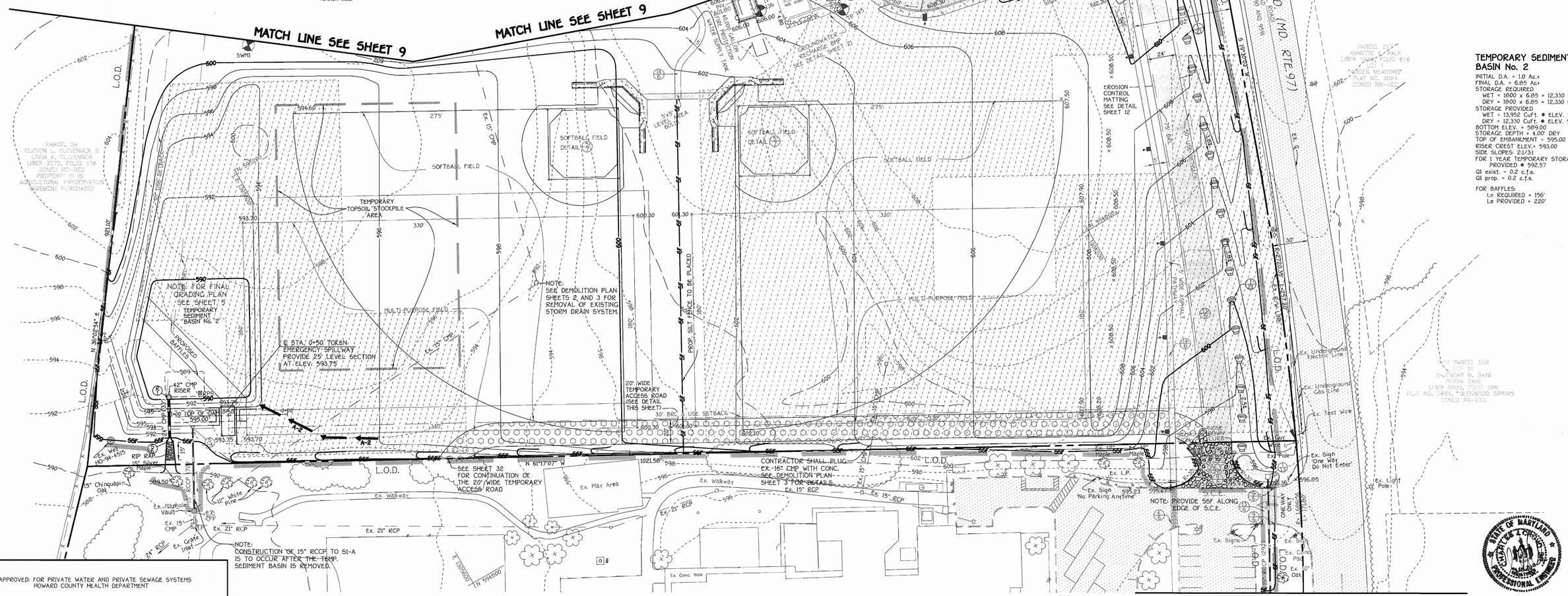
NOT TO SCALE

TYPES OF COUPLERS FOR CORRUGATED STEEL PIPE

(ALL CONNECTOR BANDS REQUIRE NEOPRENE GASKETS)



NOTE: UNDER NO CIRCUMSTANCES WILL THE SIMPLE (UNIVERSAL) CONNECTOR BAND BE ACCEPTABLE FOR USE IN ANY SEDIMENT CONTROL OR STORMWATER MANAGEMENT STRUCTURE



TEMPORARY SEDIMENT BASIN No. 2

INITIAL D.A. = 1.0 Ac.±
FINAL D.A. = 6.85 Ac±
STORAGE REQUIRED
WET = 1800 x 6.85 = 12,330 Cuft.
DRY = 1800 x 6.85 = 12,330 Cuft.
STORAGE PROVIDED
WET = 13,952 Cuft. @ ELEV. 590.75
DRY = 12,330 Cuft. @ ELEV. 591.75
BOTTOM ELEV. = 589.00
STORAGE DEPTH = 4.00' DRY
TOP OF EMBANKMENT = 595.00
RISER CREST ELEV.= 593.00
SIDE SLOPES: 2:1/3:1
FOR 1 YEAR TEMPORARY STORAGE
PROVIDED @ 592.57
Q1 exist. = 0.2 c.f.s.
Q1 prop. = 0.2 c.f.s.

FOR BAFFLES:
Le REQUIRED = 156'
Le PROVIDED = 220'

PLAN

SCALE: 1" = 40'

MATCH LINE SEE THIS SHEET

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Weber, Jr. — COUNTY HEALTH OFFICER — 3/3/06 DATE

ENGINEER'S CERTIFICATE

I Hereby Certify That This Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature of Engineer — 2/1/06 Date

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.

Jim Myers/cm — 2/15/06 Date

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Wm. Bz — Signature Of Developer — 2.3.06 Date

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

District Howard Soil Conservation Dist. — 2/15/06 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/14/06 Date

Chief, Division of Land Development — 2/16/06 Date

Chief, Development Engineering Division — 2/23/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

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PROJECT			SECTION/AREA		PARCELS
BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF. P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
	10	RC-DEO	14	FOURTH	6040.02
WATER CODE	N/A		SEWER CODE	N/A	

SEDIMENT AND EROSION CONTROL PLAN

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SHEET 10 OF 35 SDP-06-03

STATE OF MARYLAND — CHRISTOPHER T. PHILLIPS — No. 22159 — PROFESSIONAL ENGINEER

SDP 06-03

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20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

PURPOSE

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration O(up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.
Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.
Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation

i. Install erosion and sediment control structures (either temporary of permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.

ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.

iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications)

i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.

ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.

iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 98-100% will pass through a #20 mesh sieve.

iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

C. Seedbed Preparation

i. Temporary Seeding

a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.

b. Apply fertilizer and lime as prescribed on the plans.

c. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

ii. Permanent Seeding

a. Minimum soil conditions required for permanent vegetative establishment:

1. Soil pH shall be between 6.0 and 7.0.
2. Soluble salts shall be less than 500 parts per million (ppm).
3. The soil shall contain less than 40% clay, but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
4. Soil shall contain 1.5% minimum organic matter by weight.
5. Soil must contain sufficient pore space to permit adequate root penetration.
6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.

b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.

c. Apply soil amendments as per soil test or as included on the plans.

d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

D. Seed Specifications

i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.

Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.

ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.

E. Methods of Seeding

i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder.

a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous); 200 lbs/ac; K20 (potassium): 200 lbs/ac.

b. Lime - use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.

c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.

b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.

b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

F. Mulch Specifications (In order of preference)

i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.

ii. Wood Cellulose Fiber Mulch (WCFM)

a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.

b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.

c. WCFM, including dye, shall contain no germination or growth inhibiting factors.

d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.

e. WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.

f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm. , diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.

Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.

i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.

ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.

iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.

H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:

i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.

ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.

iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

I Incremental Stabilization - Cut Slopes

i. All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.

ii. Construction sequence (Refer to Figure 3 below):

a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
b. Perform Phase 1 excavation, dress, and stabilize.
c. Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as necessary.
d. Perform final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.

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

J. Incremental Stabilization of Embankments - Fill Slopes

i. Embankments shall be constructed in lifts as prescribed on the plans.

ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15", or when the grading operation ceases as prescribed in the plans.

iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.

iv. Construction sequence: Refer to Figure 4 (below).

a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
b. Place Phase 1 embankment, dress and stabilize.
c. Place Phase 2 embankment, dress and stabilize.
d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.

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

SECTION 2 - TEMPORARY SEEDING

Vegetation - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

A. Seed mixtures - Temporary Seeding

i. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Temporary seeding summary below, along with application rates, seeding dates and seeding depths. If this summary is not put on the plans and completed, then Table 26 must be put on the plans.

ii. For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.

Seed Mixture (Hardiness Zone 6a) From Table 26					Fertilizer Rate (10-10-10)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
1	Rye	140	8/1 TO 10/31 3/15 TO 5/31	1-2 IN	600 lb/ac (15 lb/1000sf)	2 tons/ac (100 lb/1000sf)
2	Barley Or Rye Plus - Foxtail Millet	150	3/15 TO 10/31	1 IN.		
3	Annual Rye Grass	50	3/15 TO 5/31 8/1 TO 10/31	1/4 -1/2 IN.		

SECTION 3 - PERMANENT SEEDING

Seeding grass and legumes to establish groung cover for a minimum of one year on disturbed areas generally receiving low maintenance.

A. Seed mixtures - Permanent Seeding

i. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26. If this summary is not put on the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-SCS Techinical Field Office Guide, Section 342 - Critical Area Planting. For special lawn maintenance areas, see Sections IV Sod and V Turfgrass.

ii. For sites having disturbed area over 5 areas, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.

iii. For areas receiving low maintenance, apply ureaform fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (150 lbs/ac), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
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 RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7) SITE ANALYSIS:

TOTAL AREA OF SITE	20.0 ACRES
AREA DISTURBED	20.0 ACRES
AREA TO BE ROOFED OR PAVED	5.57 ACRES
AREA TO BE VEGETATIVELY STABILIZED	14.43 ACRES
TOTAL CUT	26,435 CU.YDS.
TOTAL FILL	26,435 CU.YDS.
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 CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

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 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 AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12" APART, SPRING-TOOTHED HARROWS, AND 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 BALE DIKES, 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 SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

Seed Mixture (Hardiness Zone 6a) From Table 25					Fertilizer Rate (10-20-20)			
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
1	Tall Fescue (85%) Perennial Ryegrass (10%) Kentucky Bluegrass (5%)	125 15 10	3/15 TO 6/1 8/1 TO 10/1	1-2 IN	90 lb/ac (2.0 lb/ 1000sf)	175 lb/ac (4 lb/ 1000sf)	175 lb/ac (4 lb/ 1000sf)	2 tons/ac (100 lb/ 1000sf)
2	Tall Fescue (80%) Hard Fescue (20%)	120 30	3/15 TO 6/1 8/1 TO 10/1	1-2 IN.				
3	Hard Fescue (100%)	0.75	3/15 TO 6/1 8/1 TO 10/1	1-2 IN.				

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT. (1 DAY)

2. NOTIFY "MISS UTILITY" (1-800-257-7777) AT LEAST 48 HOURS BEFORE STARTING WORK AND NOTIFY THE HOWARD COUNTY DIVISION OF CONSTRUCTION INSPECTION (410-313-1870) 24 HOURS BEFORE STARTING WORK.

3. INSTALL ALL SEDIMENT CONTROL DEVICES (S.C.E., SILT FENCE, SUPER SILT FENCE, EARTH DIKE, SEDIMENT BASINS). OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING. (1 MONTH)

4. DEMOLISH AREAS SHOWN ON SHEETS 2 AND 3. ALL DEMOLISHED MATERIALS SHALL BE COMPLETELY REMOVED FROM THE SITE AND DISPOSED OF PROPERLY. (3 WEEKS)

5. GRADE SITE TO SUBGRADE. (2 MONTHS)

6. BEGIN CONSTRUCTION OF SCHOOL BUILDING. (18 MONTHS)

7. CONSTRUCT STORM DRAIN SYSTEM WITH THE EXCEPTION OF S-1A TO THE EXISTING MH. (4 WEEKS)

8. INSTALL CURB AND GUTTER. (3 WEEKS)

9. CONSTRUCT RECHARGE VOLUME BMP AND BLOCK (WATERTIGHT) ENTRANCE TO UNDERGROUND STONE TRENCH IN M-2. (2 WEEKS)

10. PAVE PARKING LOT, ROADWAYS, AND CARRS MILL ROAD WIDENING. (1 MONTH)

11. COMPLETE CONSTRUCTION OF SCHOOL, SIDEWALK, AND PLAY AREAS. (1 MONTH)

12. STABILIZE ALL DISTURBED AREAS WITH SEED AND MULCH IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS. (2 WEEKS)

13. INSPECT STORM DRAIN SYSTEM AND FLUSH/CLEAN AS NECESSARY TO ENSURE NO REMAINING SEDIMENT. (1 DAY).

14. WITH PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR AND A 5-DAY CLEAR WEATHER FORECAST REMOVE TEMPORARY SEDIMENT BASIN NO. 2. INSTALL STORM DRAIN SYSTEM S-1A TO EX. MH AND GRADE AREA AS SHOWN ON SHEET 5 AND STABILIZE WITH PERMANENT SEEDING.

15. WITH PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, CONVERT THE SEDIMENT BASIN INTO A PERMANENT STORMWATER MANAGEMENT POND; REPLACE THE DRAW DOWN DEVICE WITH A GABION "TRASH RACK" AND USE NEW PERFORATED, OR CLEANED PERFORATED PVC PIPE AND REMOVE TEMPORARY BRICK WEIR. REMOVE "MUCK" FROM POND BOTTOM AND BRING TO FINAL GRADE WITH COMPACTED (95%) SUITABLE SOIL. (1 WEEK).

16. FOLLOWING SUCCESSFUL STABILIZATION (i.e., ESTABLISHED VEGETATION OR PAVING) OF ALL DISTURBED AREAS, OBTAIN PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR TO REMOVE ALL REMAINING SEDIMENT AND EROSION CONTROL DEVICES. THEN STABILIZE THOSE AREAS DISTURBED BY THIS PROCESS WITH PERMANENT SEEDING. UNBLOCK ENTRANCE TO RECHARGE BMP IN M-2. (1 WEEK)

SEQUENCE NOTE: THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER EACH RAINFALL EVENT AND ON A DAILY BASIS. REMOVE SEDIMENTS FROM THE SEDIMENT BASINS WHEN CLEAN OUT ELEVATIONS ARE REACHED. ALL SEDIMENTS MUST BE PLACED UPSTREAM OF ANY APPROVED BASIN.

STANDARDS 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, Johnson grass, nutsedge, poison ivy, thistle, or others as specified.

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

II. 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.

III 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 soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

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

V. Topsoil Application

i. When top soiling, 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 top soiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

iii. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from top soiling 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.

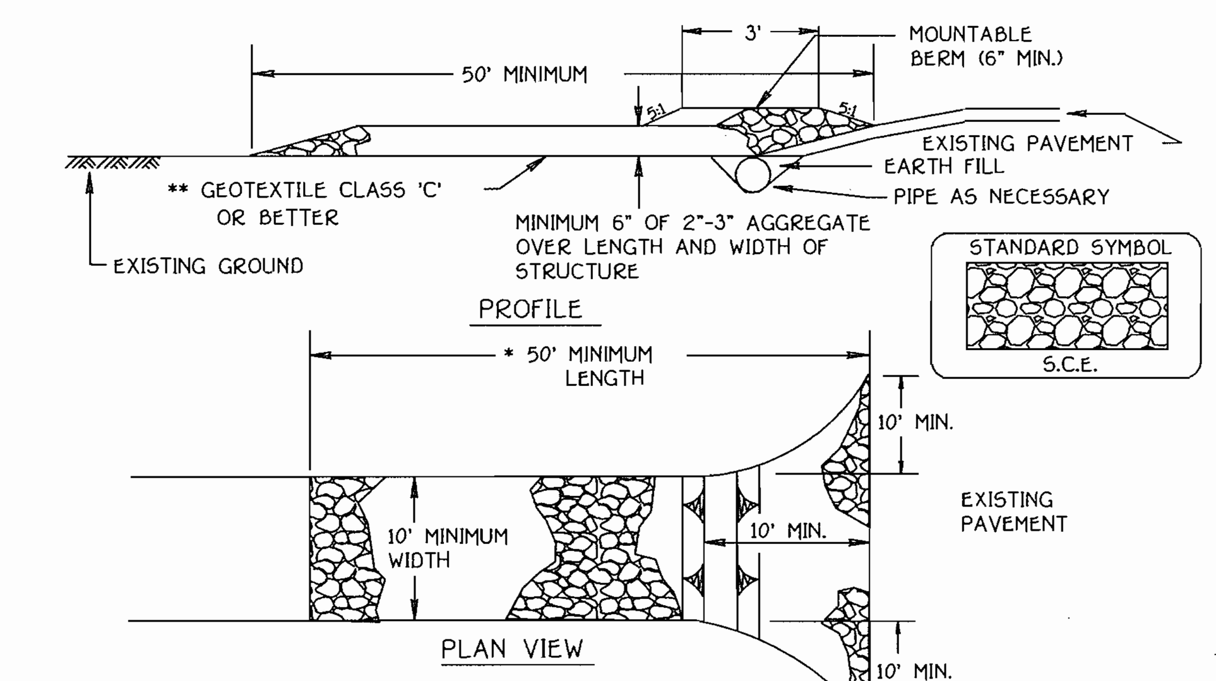
VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

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 I percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
c. Composted sludge shall be applied at a rate of I 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.



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.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

STATE OF MARYLAND — CHARLES A. FISHER, SR. — 13204 — REGISTERED — PROFESSIONAL ENGINEER

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

ENGINEER'S CERTIFICATE

I Hereby Certify That This Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature Of Engineer — Date 2/4/06

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.

Date 2/15/06

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature Of Developer — Date 2-3-06

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

District Howard Soil Conservation Dist. — Date 2/15/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director Department of Planning and Zoning — Date 3/10/06

Chief, Division of Land Development — Date 3/10/06

Chief, Development Engineering Division — Date 2/23/06

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

Address Chart

Parcel Number	Street Address
P. 15	14601 CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT			SECTION/AREA		PARCELS
BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02
WATER CODE	N/A		SEWER CODE	N/A	

SEDIMENT AND EROSION CONTROL NOTES, DETAILS AND SEQUENCE OF CONSTRUCTION

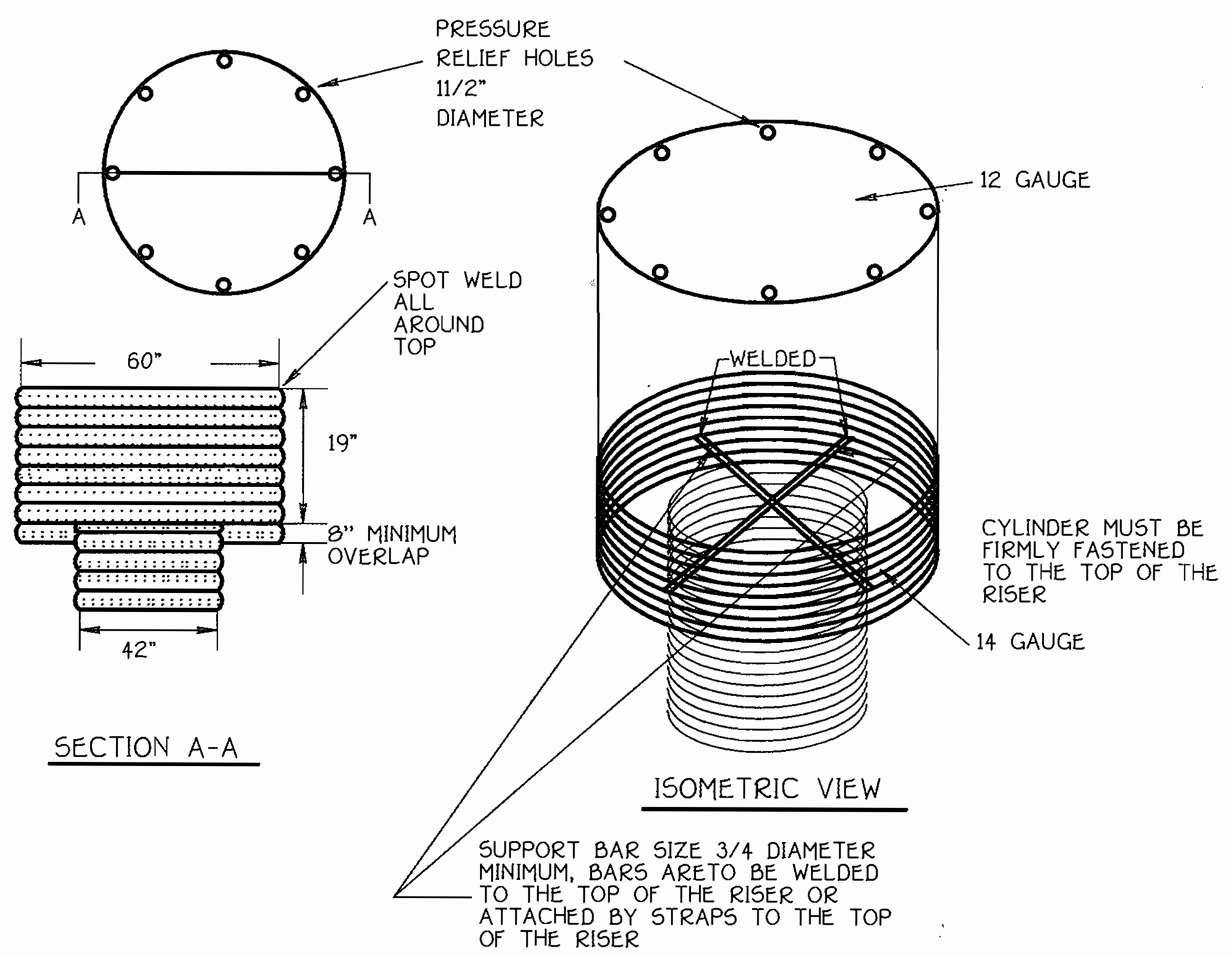
NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005
BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 11 OF 35 SDP-06-03

SDP 06-03

I:\04048\dwg\NEW PLANISED-NOTES (SHEET 11-12).dwg, 2/2/2006 11:34:05 AM, 1:1

CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE



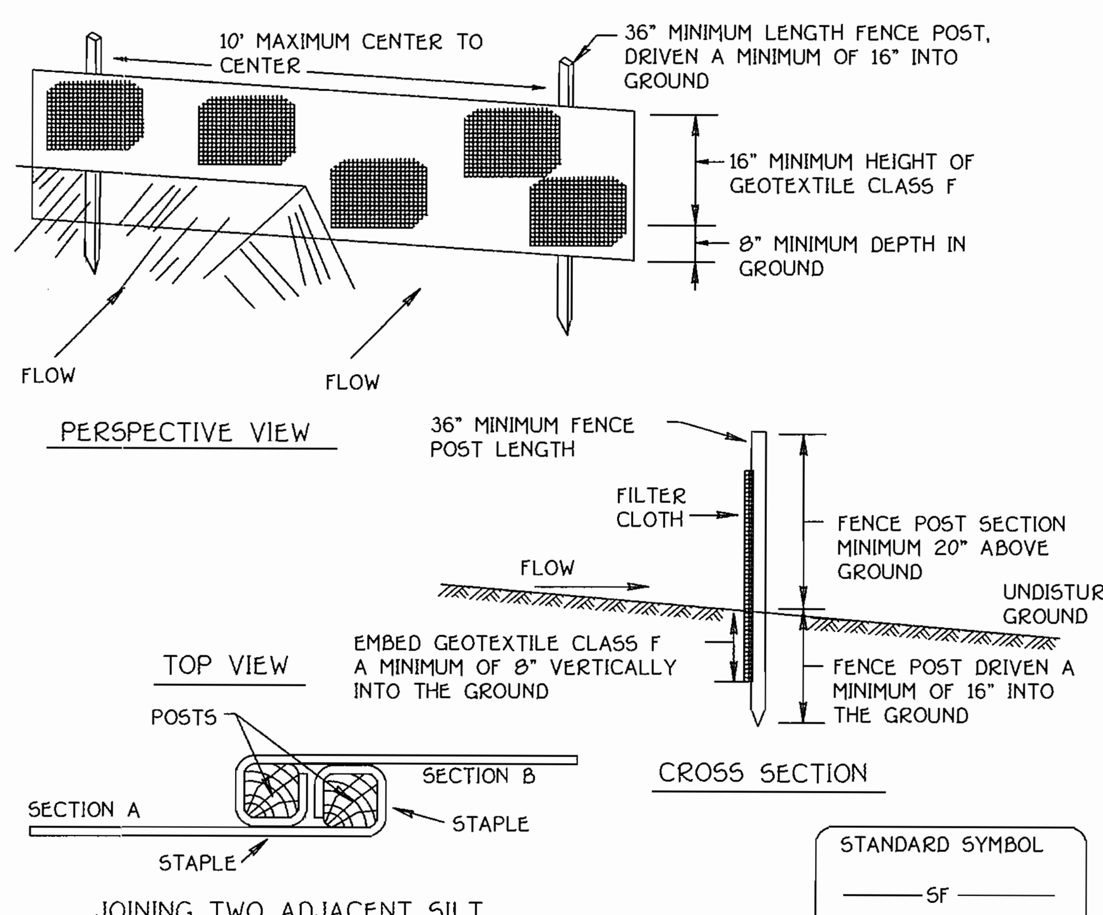
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITIES FOR BMP POND #1

ROUTINE MAINTENANCE

1. Facility shall be inspected annually and after major storms. Inspections shall be preformed during wet weather to determine if the pond is functioning properly.
2. Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes and maintenance access should be mowed as needed.
3. Debris and litter shall be removed during regular mowing operations and as needed.
4. Visible signs of erosion in the pond as well as the rip-rap or gabion outlet area shall be repairer as soon as it is noticed.

NON-ROUTINE MAINTENANCE

1. Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
2. Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond or forebay, is half full of sediment, or, when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.



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.)^2	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

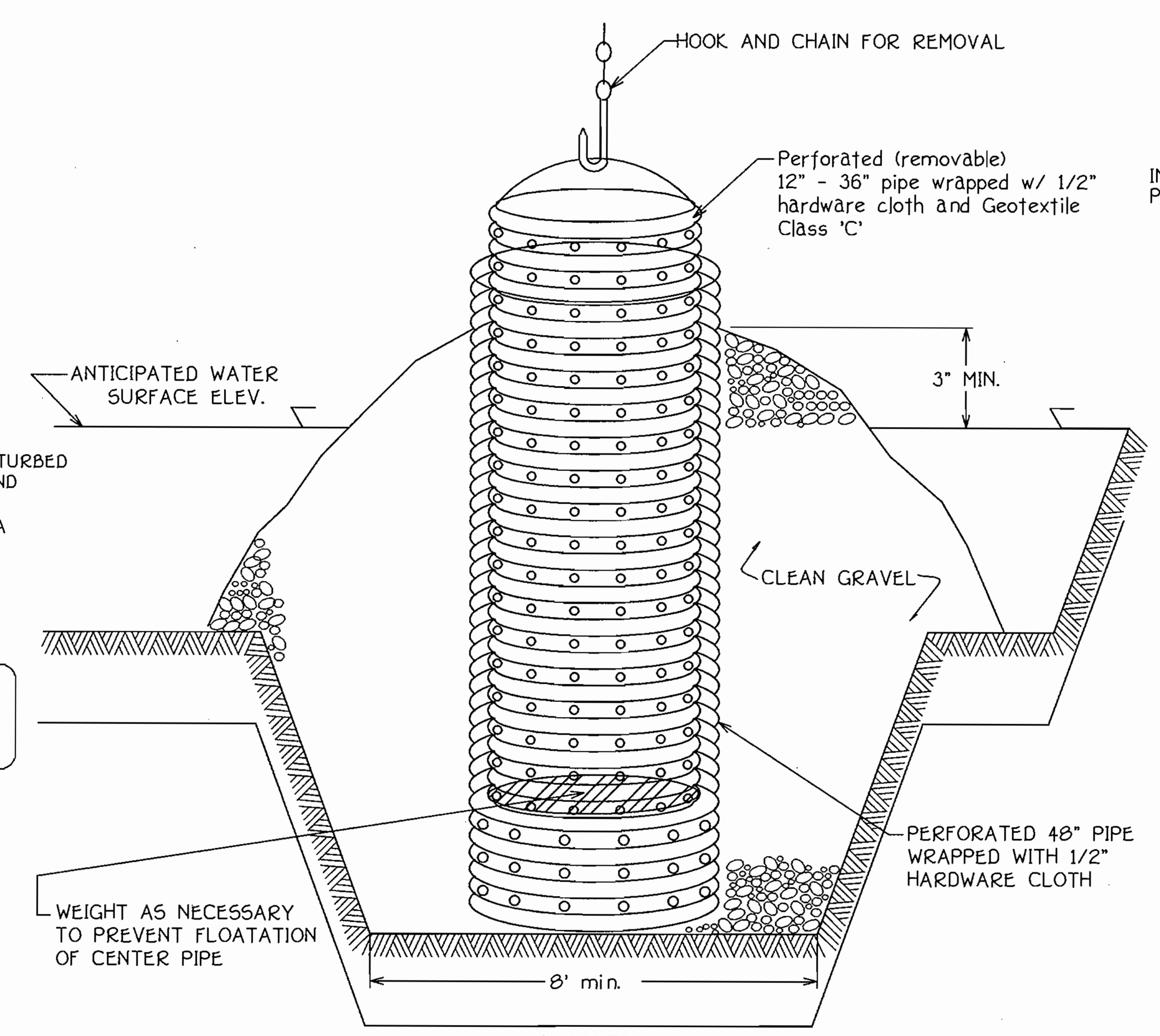
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

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.

SILT FENCE

NOT TO SCALE

REMOVABLE PUMPING STATION



Construction Specifications

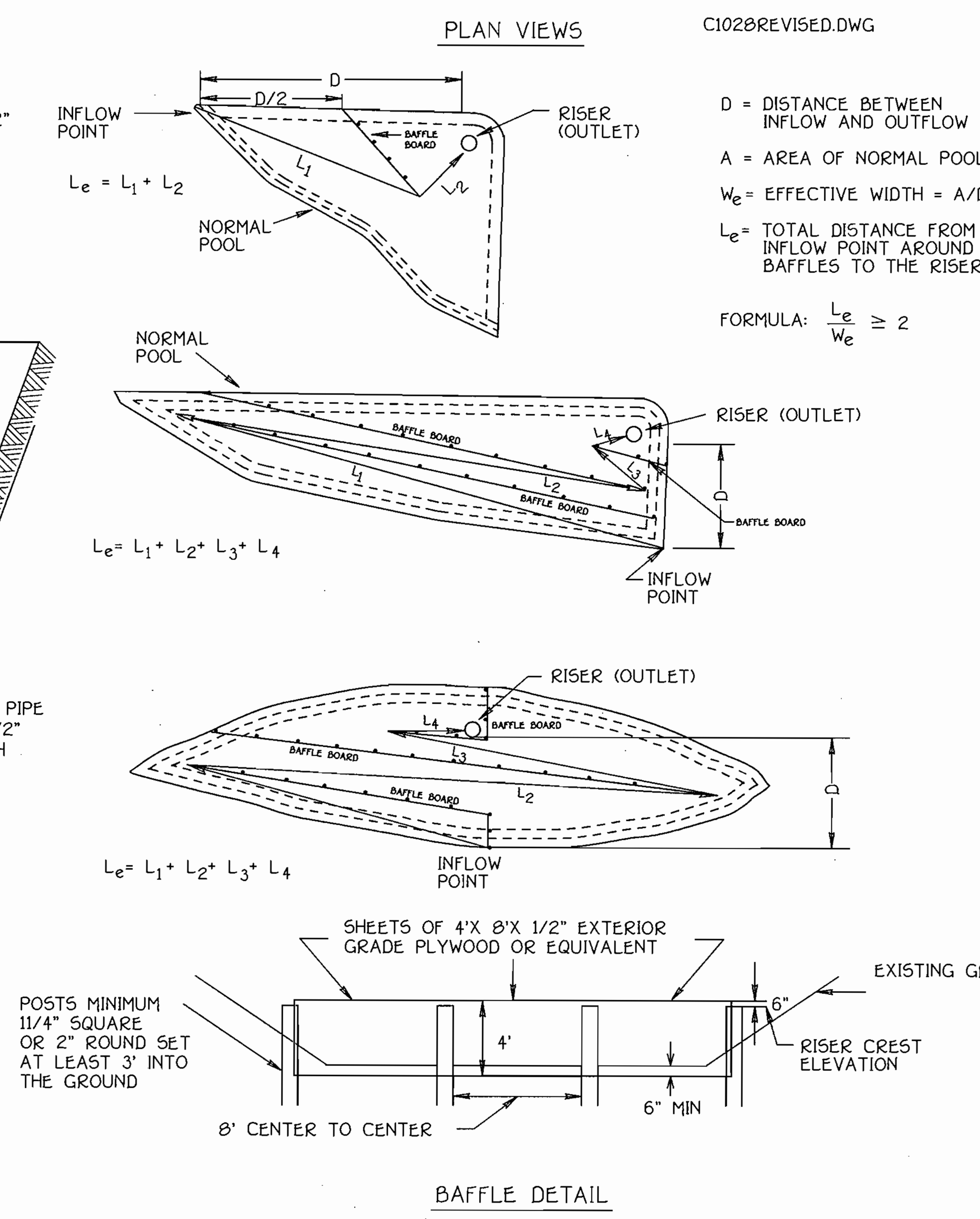
1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.

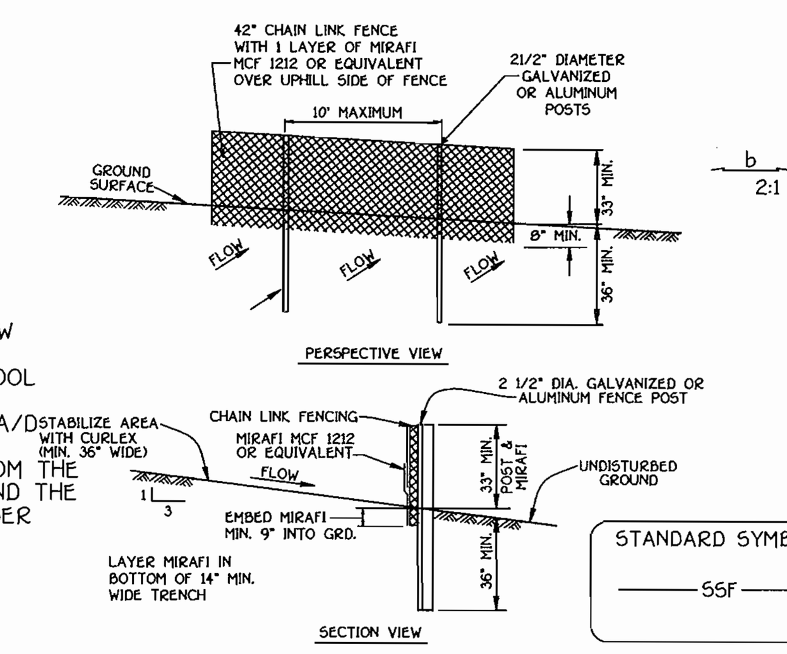
2. After installing the outer pipe, backfill around outer pipe with 2" aggregate or clean gravel.

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.

SEDIMENT BASIN BAFFLES





CONSTRUCTION SPECIFICATIONS

1. FENCING SHALL BE 42" HIGH CHAIN CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD DETAILS 690.01 AND 690.02 FOR CHAIN U FENCING. THE SPECIFICATIONS FOR A 6'-0" FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 8' POSTS. POSTS SHALL BE PLACED WITHOUT CONCRETE EMBEDMENT.
2. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE.
3. FILTER CLOTH TO BE FASTENED SECURELY TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
4. FILTER CLOTH SHALL BE IMBEDDED A MINIMUM OF 9" INTO THE GROUND.
5. WHEN TWO SECTIONS OF DIVERSION CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED.

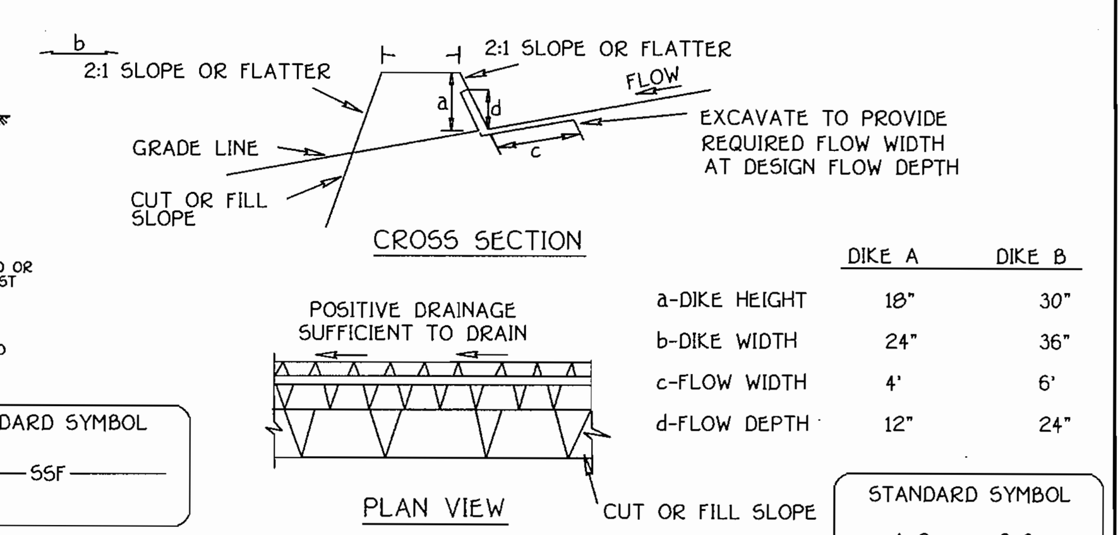
Fabric Properties	Value	Test Method
Grab Tensile Strength (lbs.)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682
Mullen Burst Strength (PSI)	190	ASTM D3786
Puncture Strength (lbs.)	40	ASTM D751
Slurry Flow Rate (gal/min/sf)	0.3	Virginia DOT VTM-51
Equivalent Opening Size	40-80	US Std Sieve CW-02215
Utraviolet Radiation Stability (%)	90	ASTM G-26

Design Criteria

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	400 feet	1,500 feet
20 - 33%	5:1 - 3:1	300 feet	1,000 feet
33 - 50%	3:1 - 2:1	200 feet	500 feet
50% +	2:1 +	100 feet	250 feet

SUPER SILT FENCE

NOT TO SCALE



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

FLOW CHANNEL STABILIZATION

GRADE 0.5% MIN. 10% MAX.

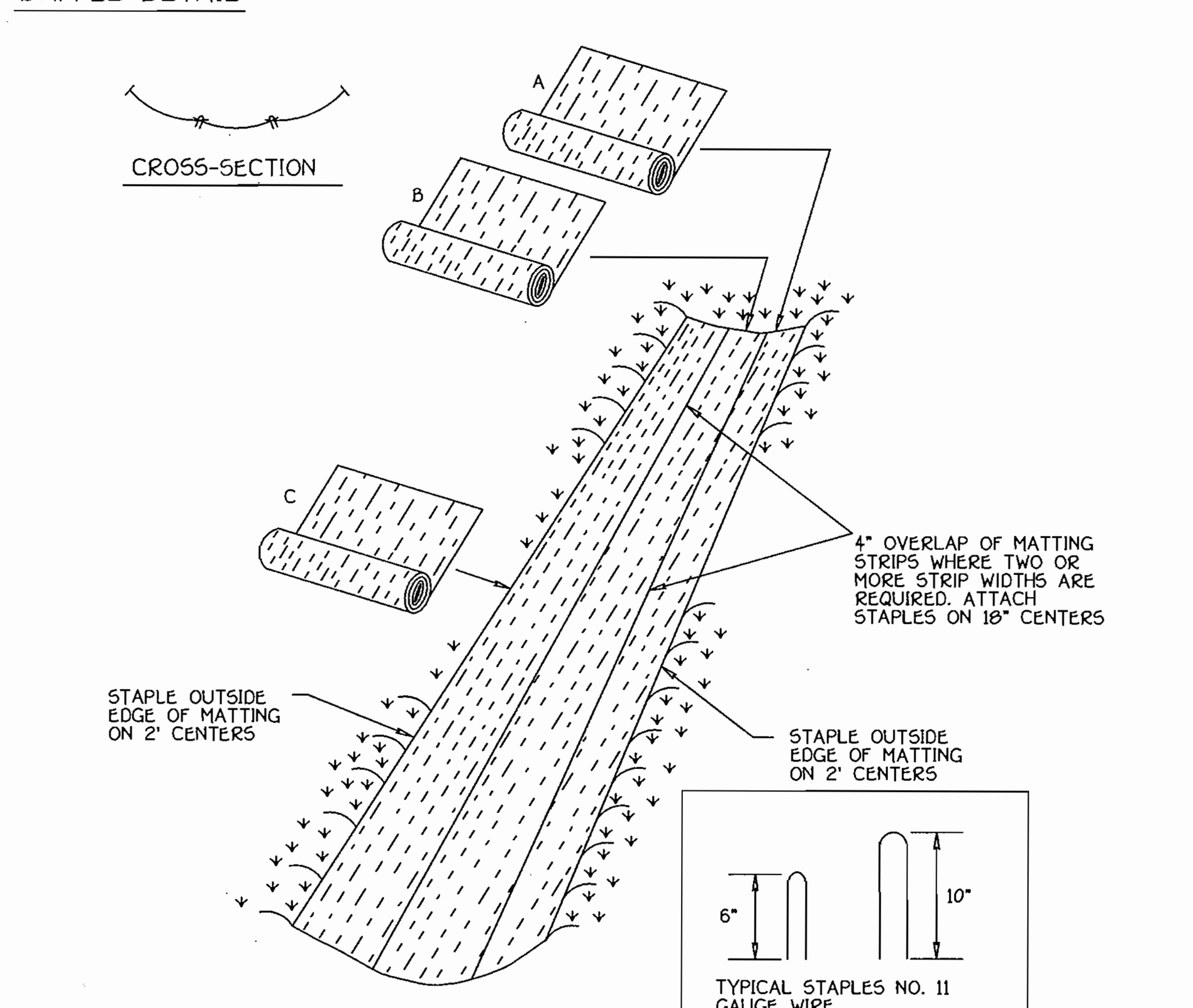
1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectionable 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.

EARTH DIKE

NOT TO SCALE



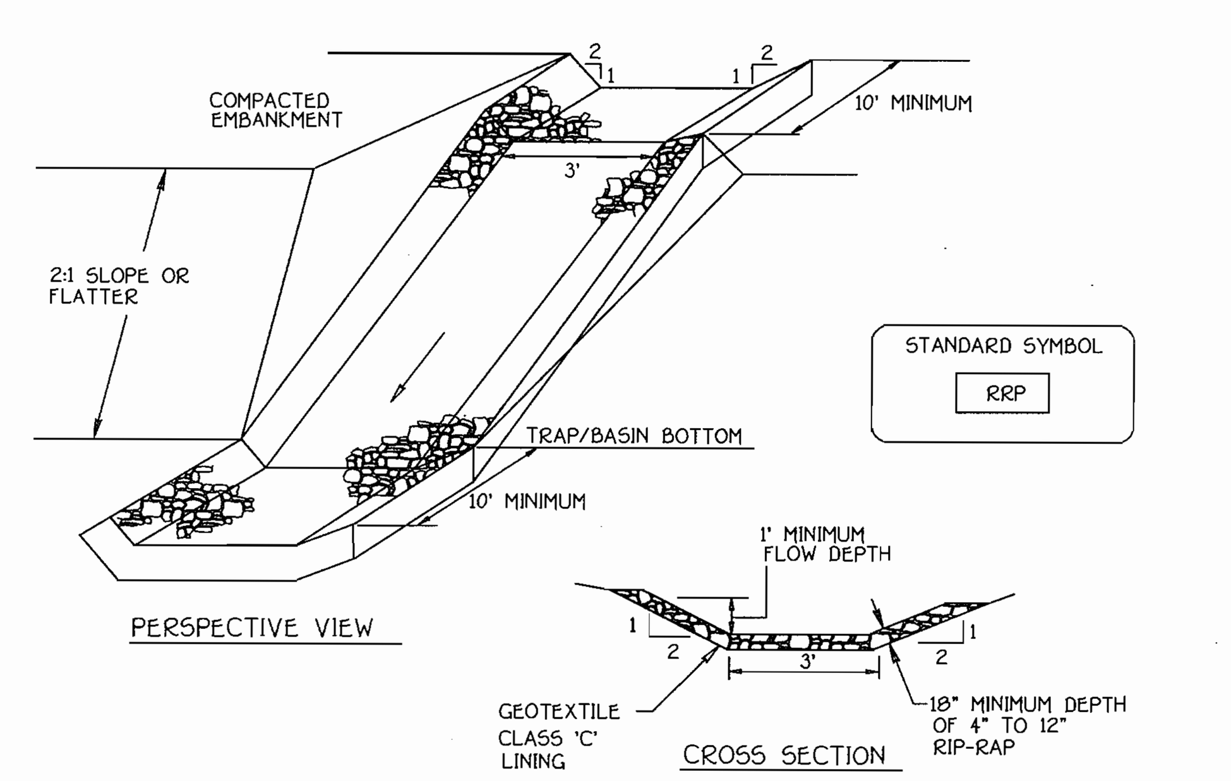
Construction Specifications

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.

EROSION CONTROL MATTING

NOT TO SCALE

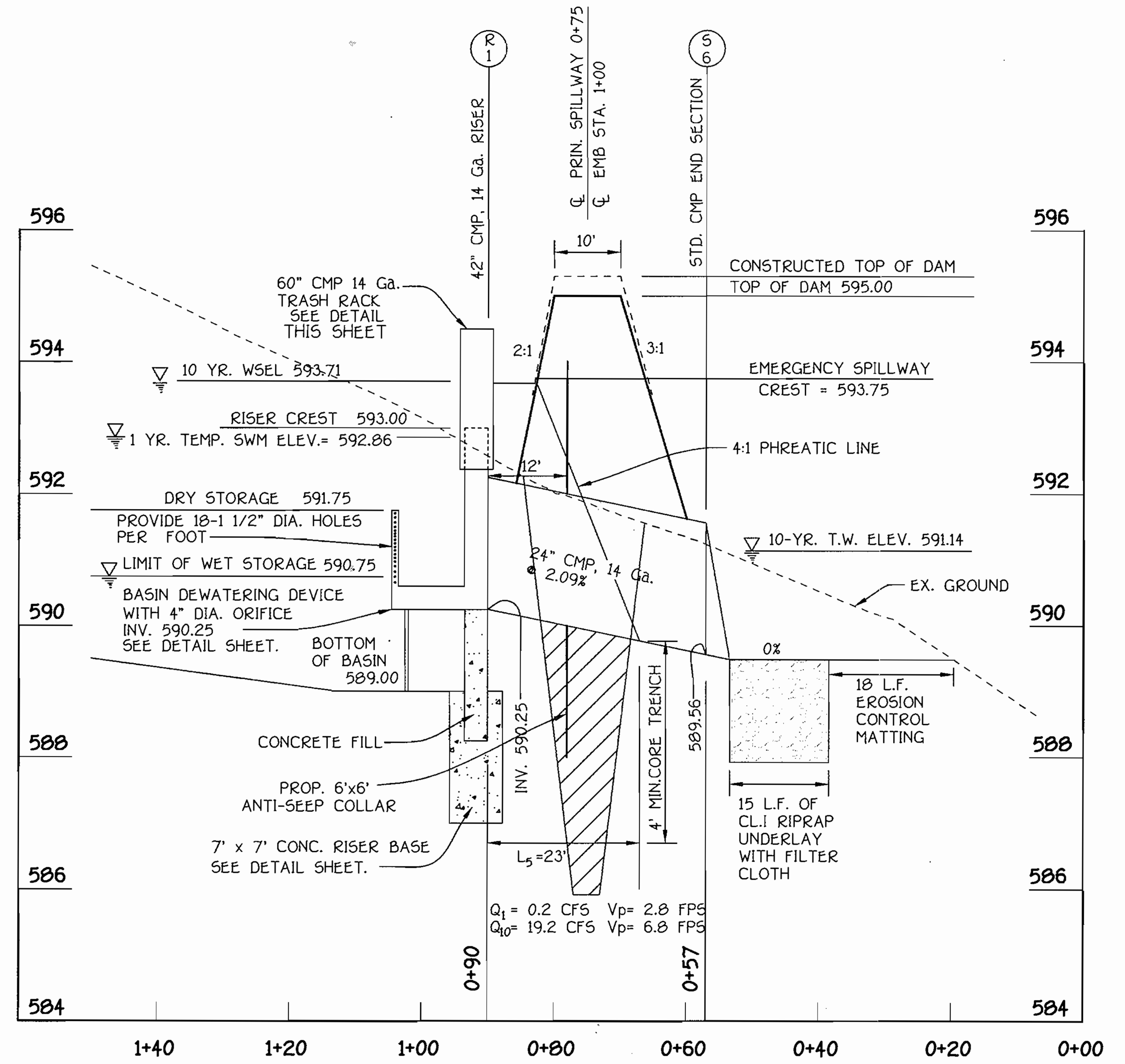


Construction Specifications

1. Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with 4" to 12" rip- rap to a depth of 18".
2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
3. Entrance and exit sections shall be installed as shown on the detail section.
4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
5. Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.
6. Rip-rap should blend into existing ground.
7. Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

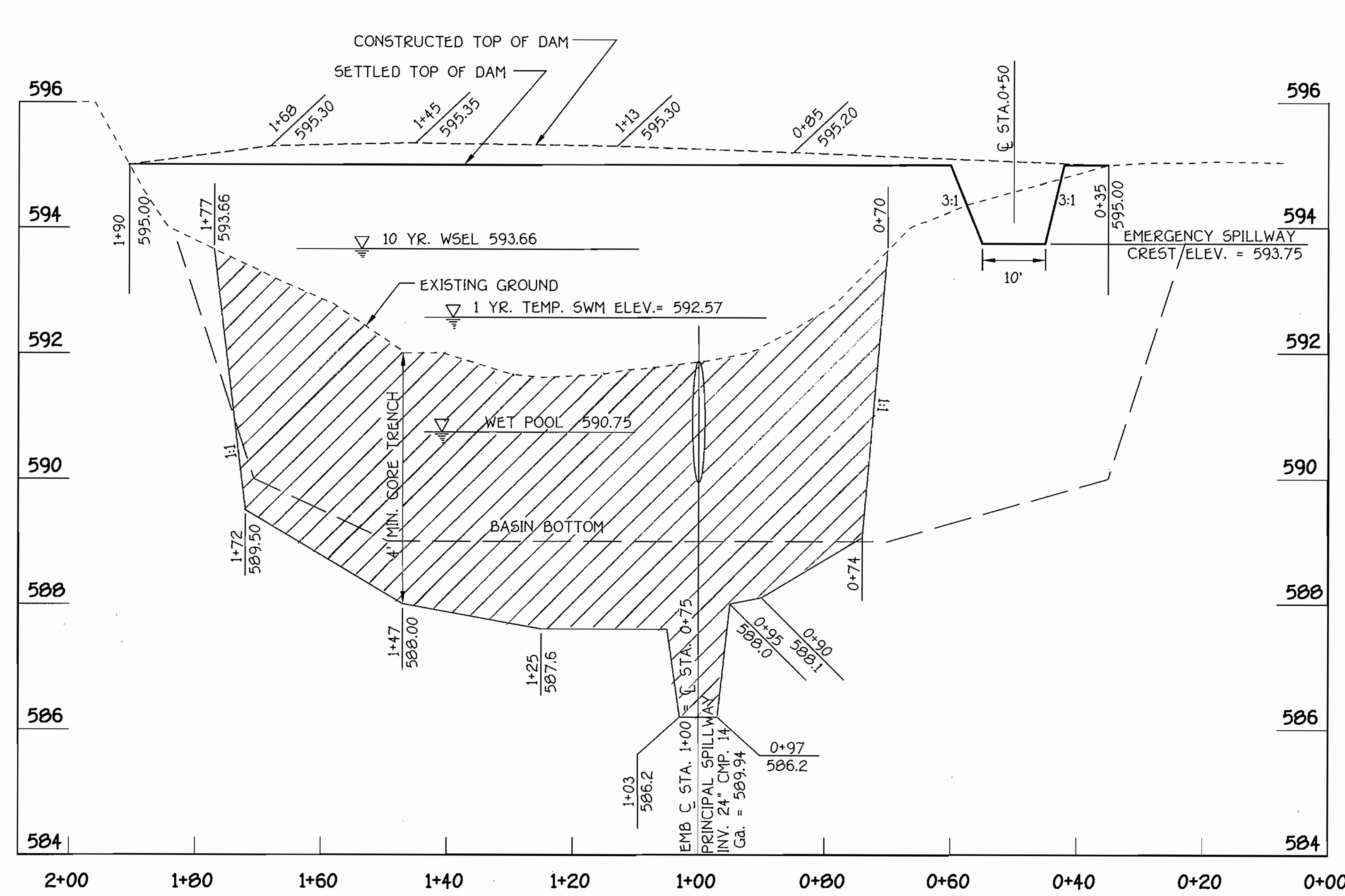
RIP-RAP INFLOW PROTECTION

NOT TO SCALE



PRINCIPAL SPILLWAY PROFILE - TEMPORARY BASIN No. 2

SCALE: 1" = 20' HOR.
1" = 2' VER.



PROFILE ALONG ℄ OF EMBANKMENT - TEMPORARY BASIN No. 2

SCALE: 1" = 20' HOR.
1" = 2' VER.

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER MDD DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

ENGINEER'S CERTIFICATE

I Hereby Certify That This Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature Of Engineer — 2/4/06 Date

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.

2/15/06 Date

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature Of Developer — 2.3.06 Date

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

District Howard Soil Conservation Dist. — 2/15/06 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/10/06 Date

Chief, Division of Land Development — 3/10/06 Date

Chief, Development Engineering Division — 2/23/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

Address Chart

Parcel Number	Street Address
P. 15	14601 CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02

WATER CODE N/A — SEWER CODE N/A

SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

NEW REPLACEMENT SCHOOL

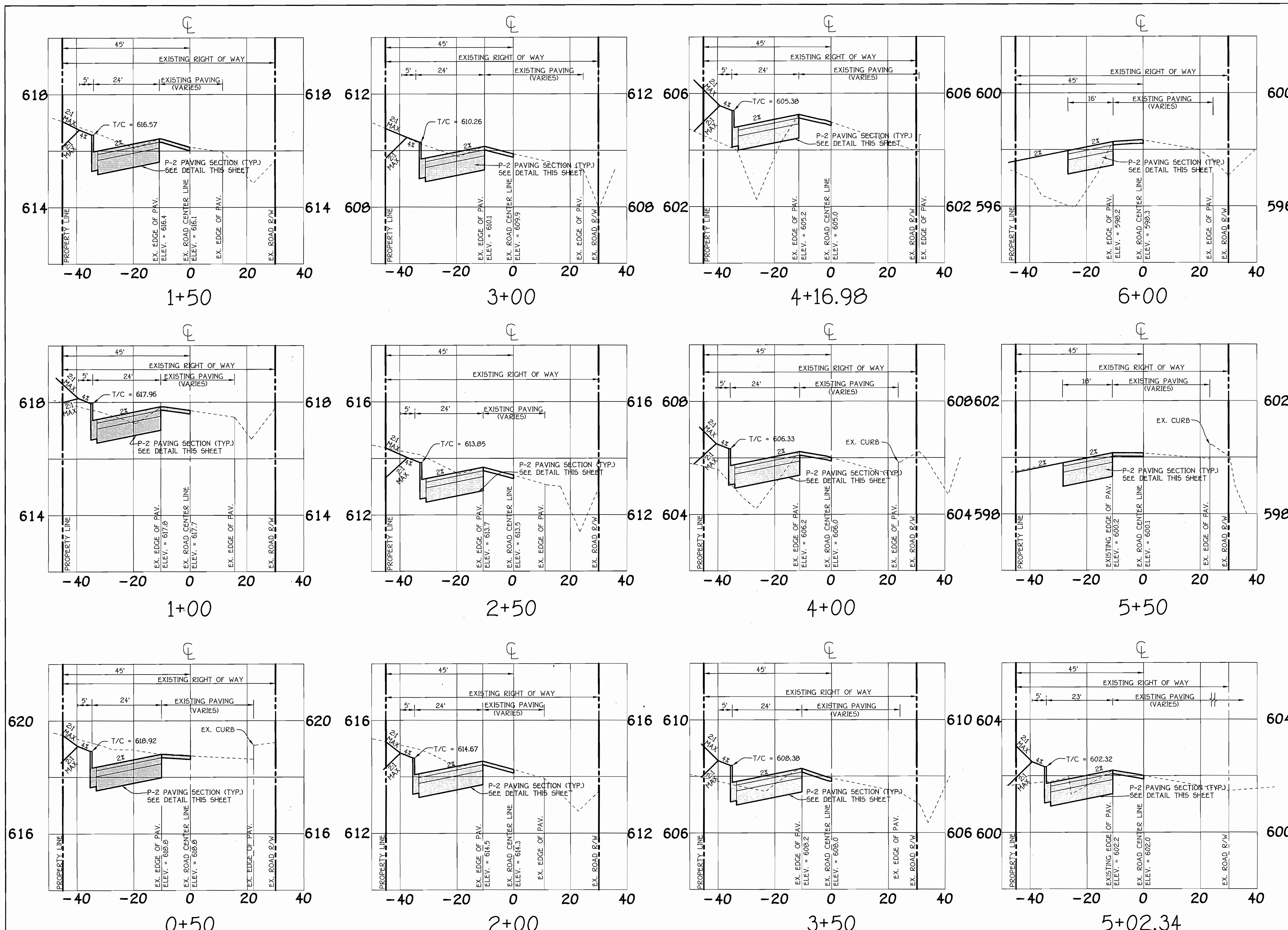
BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 12 OF 35 SDP-06-03

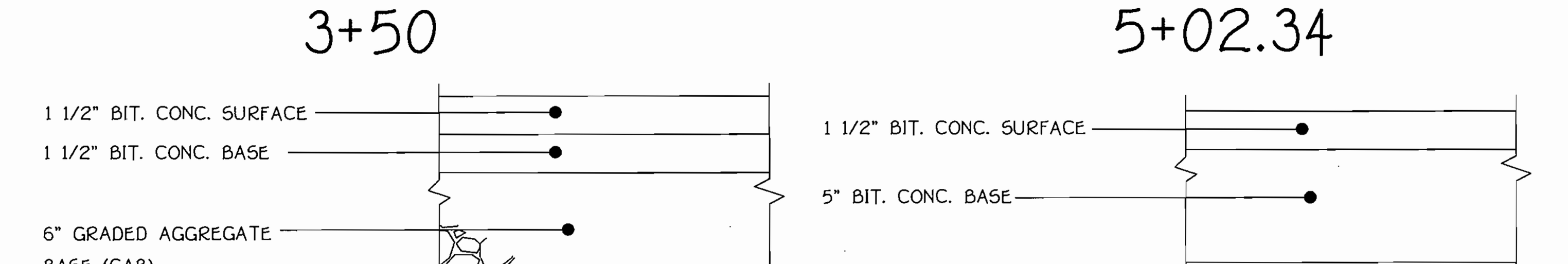
SDP 06-03



CARRS MILL ROAD CROSS SECTIONS

SCALE: HORZ. 1" = 20'
VERT. 1" = 2'

FILL AREAS ALONG THE WIDENING FOR CARRSMILLROAD SHALL BE COMPACTED TO 95% IN ACCORDANCE WITH AASHTO T-180 SPECIFICATIONS.



GRANULAR BASE ALTERNATE

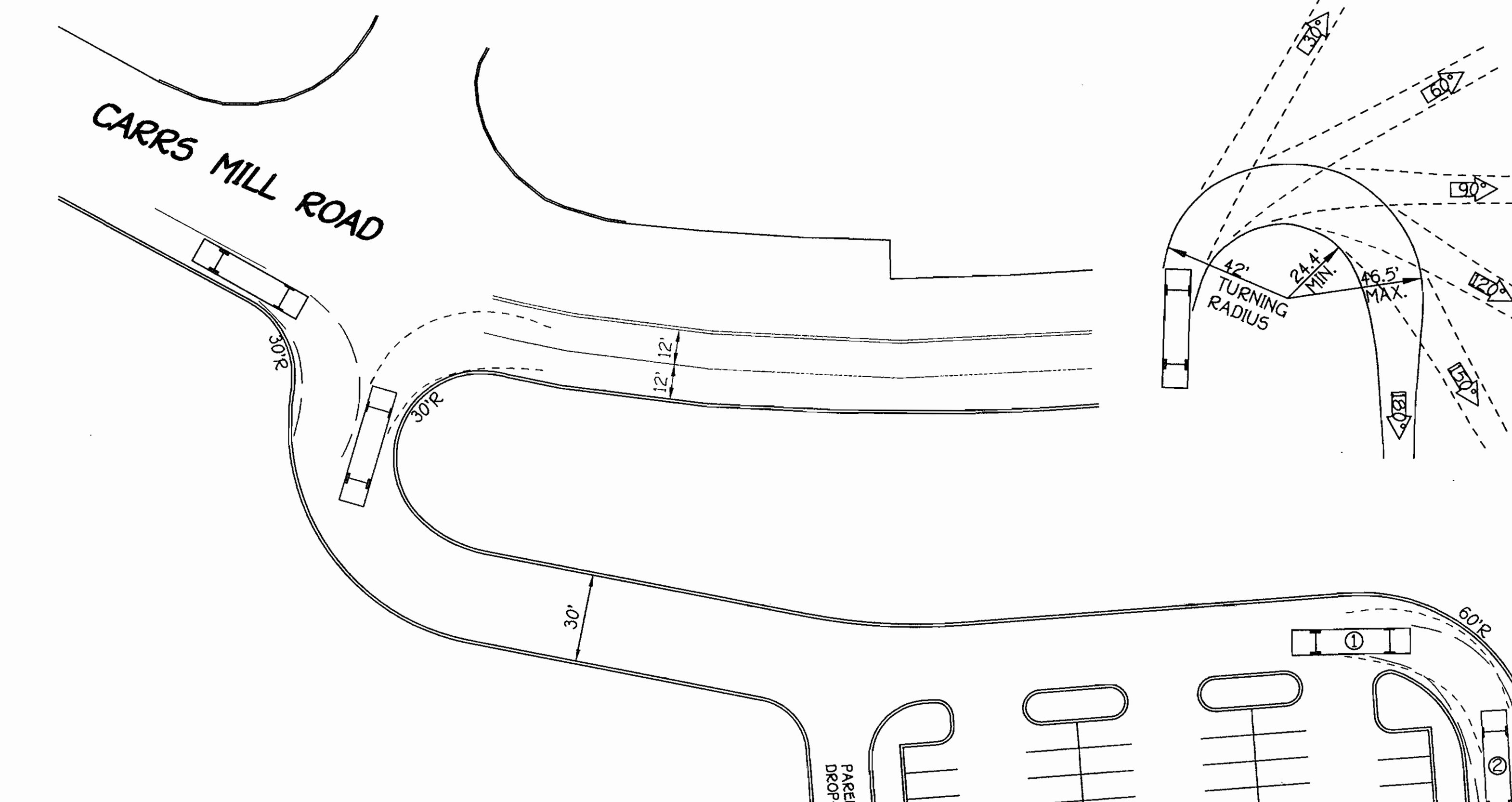
NOT TO SCALE

FULL DEPTH BIT. CONC. ALTERNATE

NOT TO SCALE

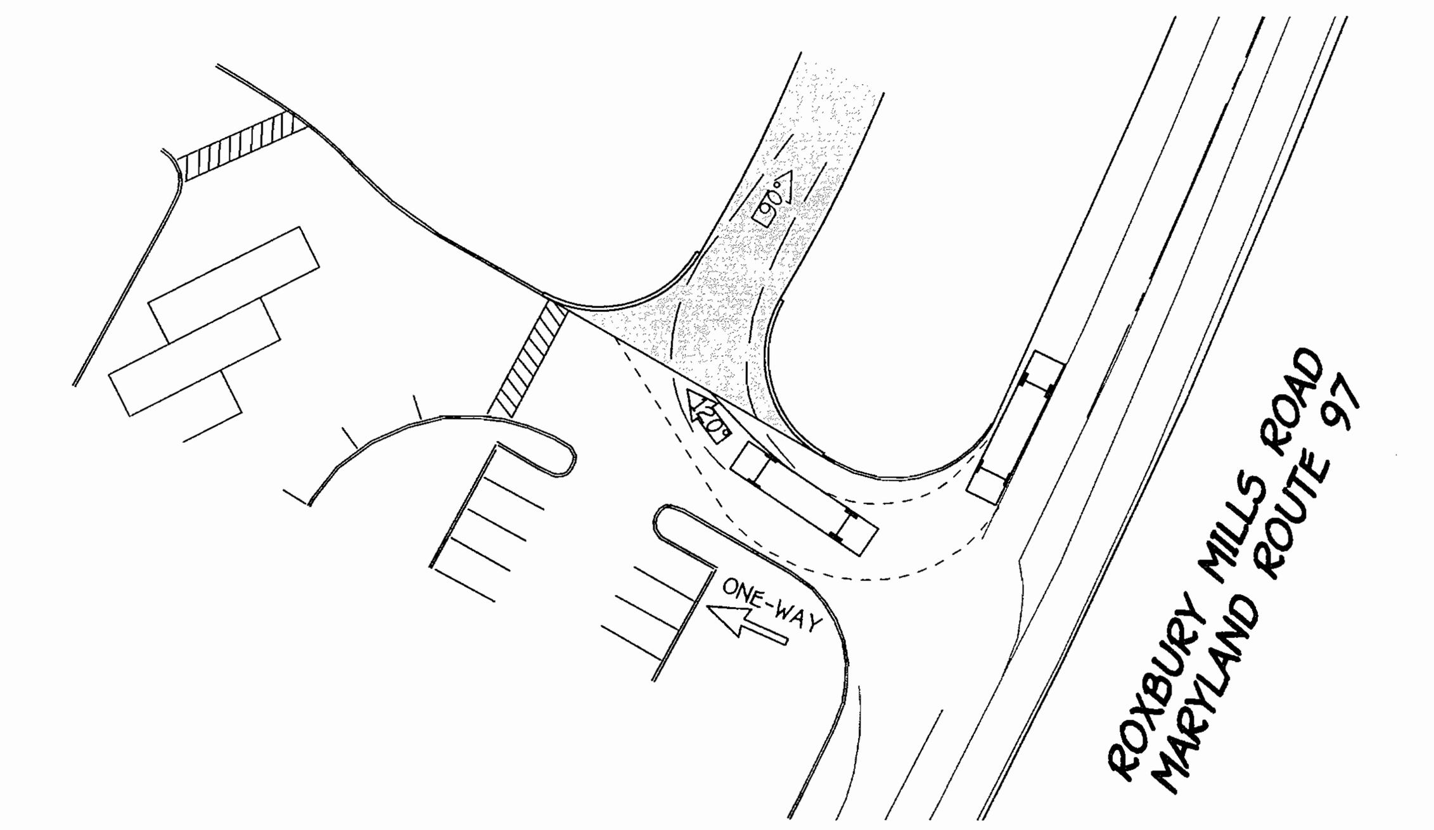
(1/13) P-2 PAVING SECTION

NO SCALE



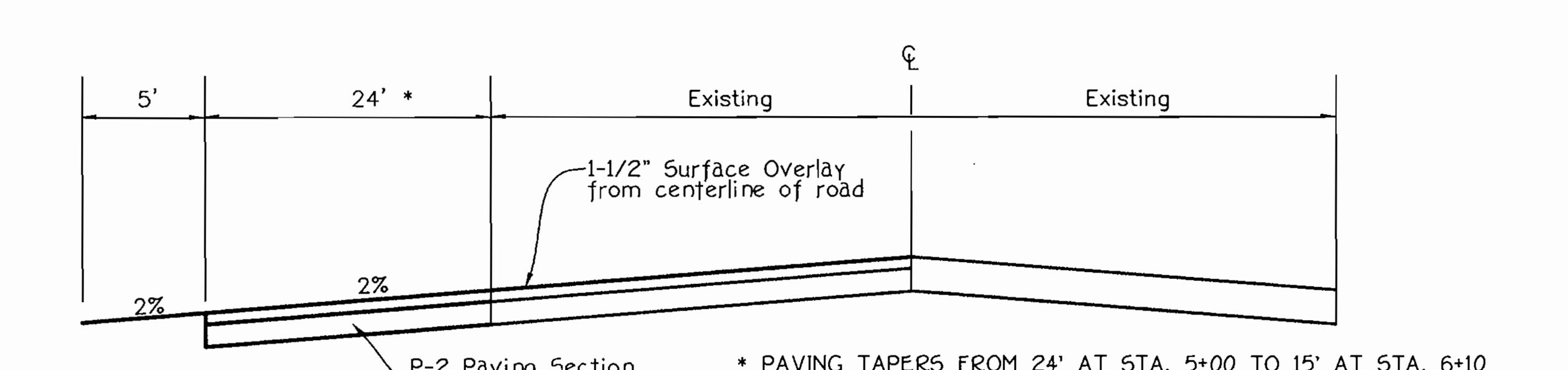
BUS TURNING MOVEMENT

SCALE: 1" = 50'



BUS TURNING MOVEMENT

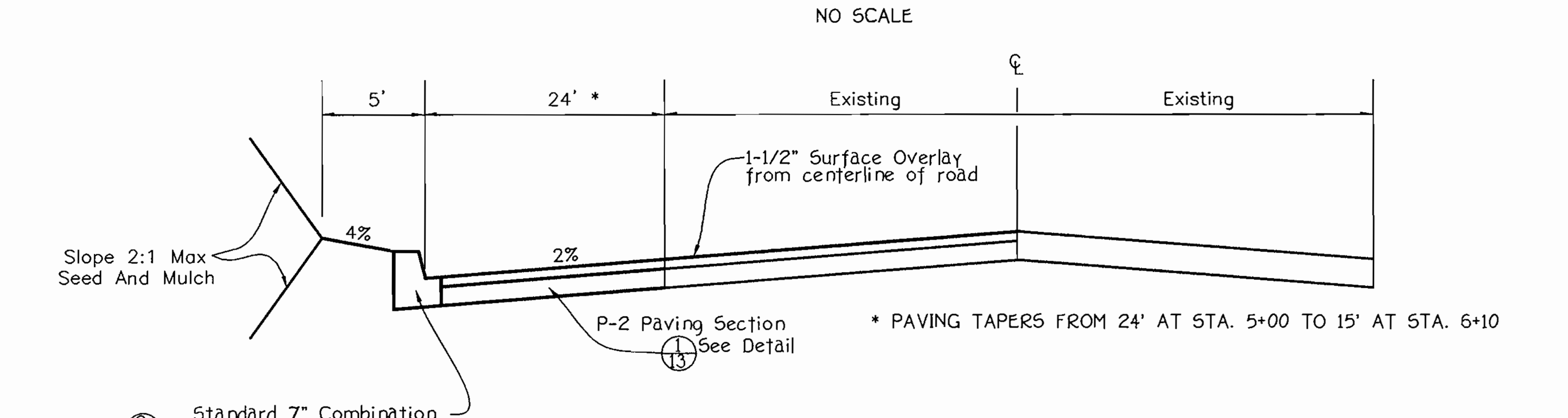
SCALE: 1" = 50'



NOTE: ROADWAY IMPROVEMENTS ALONG CARRS MILL ROAD SHALL BE IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-10.01

CARR'S MILL ROAD WIDENING SECTION ℄ STA. 5+02.49 TO ℄ STA. 6+09.25

NO SCALE



NOTE: ROADWAY IMPROVEMENTS ALONG CARRS MILL ROAD SHALL BE IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-10.01

CARR'S MILL ROAD WIDENING SECTION ℄ STA. 0+00 TO ℄ STA. 5+02.49

NO SCALE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Weber for COUNTY HEALTH OFFICER — 3/3/06 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director Department of Planning and Zoning — 3/10/06 Date

Chief, Division of Land Development — 3/10/06 Date

Chief, Development Engineering Division — 2/23/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
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Address Chart

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P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02

WATER CODE N/A — SEWER CODE N/A

CROSS SECTIONS AND DETAILS

NEW REPLACEMENT SCHOOL

BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005
BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 13 OF 35 SDP-06-03

SDP06-03

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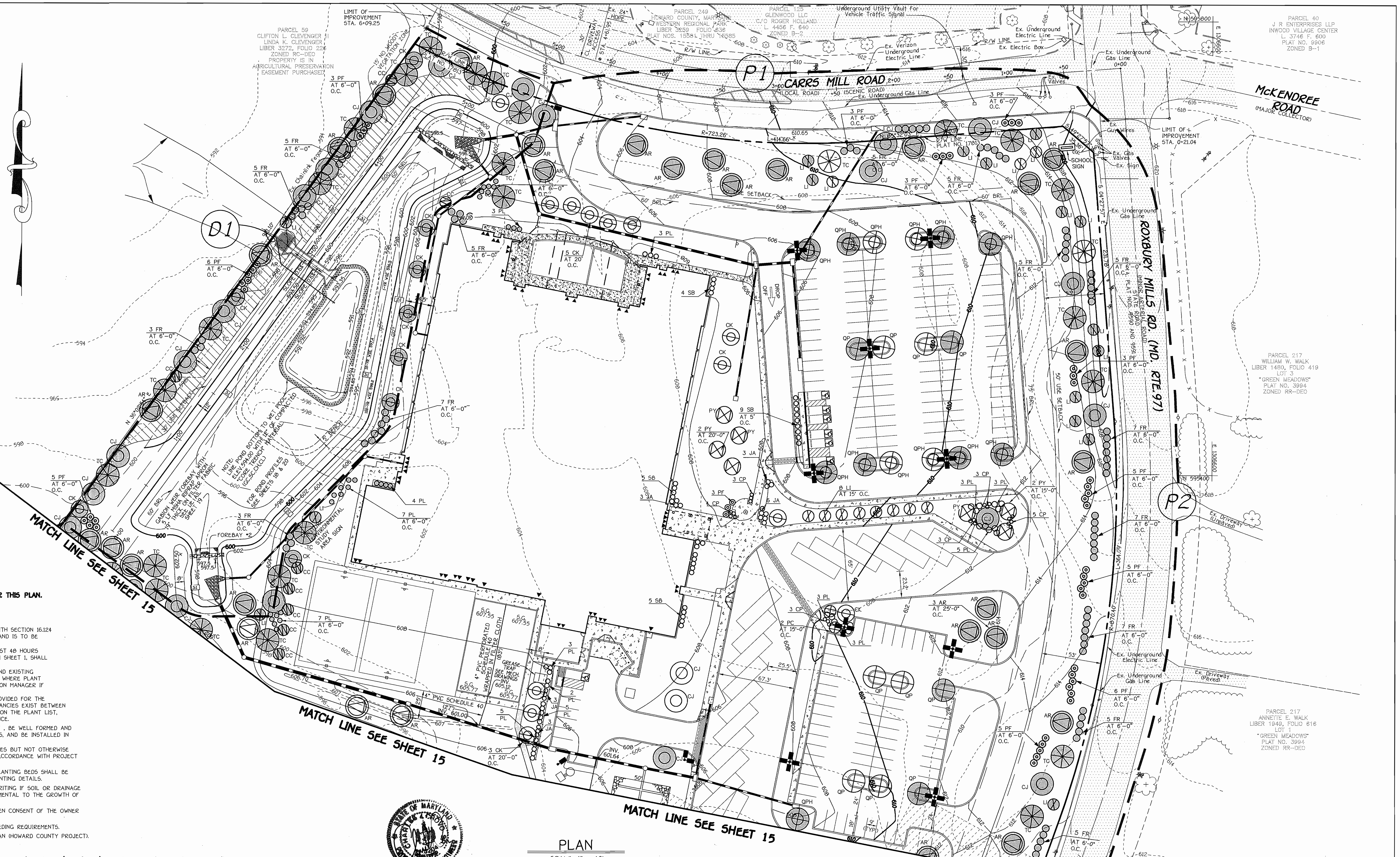

Note: THERE IS NO LANDSCAPING SURETY FOR THIS PLAN.

PLANTING NOTES:

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF HOWARD COUNTY CODE AND LANDSCAPE MANUAL AND IS TO BE USED FOR PLANTING ONLY.
2. CONTRACTOR SHALL NOTIFY ALL UTILITIES AT LEAST 48 HOURS BEFORE STARTING WORK . ALL GENERAL NOTES FROM SHEET 1, SHALL APPLY.
3. FIELD VERIFY UNDERGROUND UTILITY LOCATIONS AND EXISTING CONDITIONS BEFORE STARTING PLANTING WORK, EVEN WHERE PLANT LOCATIONS ARE DIMENSIONED . CONTACT CONSTRUCTION MANAGER IF ANY RELOCATION ARE REQUIRED.
4. PLANT QUANTITIES SHOWN ON PLANT LIST ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON THE PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN SHALL TAKE PERCEDENCE.
5. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY , BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE A.A.N. SPECIFICATIONS, AND BE INSTALLED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
6. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES BUT NOT OTHERWISE PLANTED, PAVED OR MULCHED SHALL BE SEEDED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
7. ALL EXPOSED EARTH WITHIN THE LIMITS OF THE PLANTING BEDS SHALL BE MULCHED WITH SHREDDED HARDWOOD MULCH PER PLANTING DETAILS.
8. THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING IF SOIL OR DRAINAGE CONDITIONS ARE ENCOUNTERED WHICH MAY BE DETRIMENTAL TO THE GROWTH OF PLANTS.
9. NO SUBSTITUTION SHALL BE MADE WITHOUT WRITTEN CONSENT OF THE OWNER OR HIS REPRESENTATIVE.
10. REFER TO OTHER SITE DWGS. FOR ADDITIONAL SEEDING REQUIREMENTS.
11. NO LANDSCAPE SURETY IS REQUIRED FOR THIS PLAN (HOWARD COUNTY PROJECT).

Note: This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

LANDSCAPE CERTIFICATION

I/We certify that the landscaping shown on this plan will be done according to the approved plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

Wm. Bz — 2-3-06
WILLIAM BROWN, PhD. — Date

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for Robert J. Weber — 3/3/06
COUNTY HEALTH OFFICER — DATE
MJD

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/10/06 Date

Chief, Division of Land Development — 3/10/06 Date

Chief, Development Engineering Division — 2/23/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
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	WOODBINE, MD. 21797

PROJECT			SECTION/AREA		PARCELS
BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02
WATER CODE N/A			SEWER CODE N/A		

LANDSCAPE PLAN

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1"= 40' DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 14 OF 35 SDP-06-03

SDP 06-03

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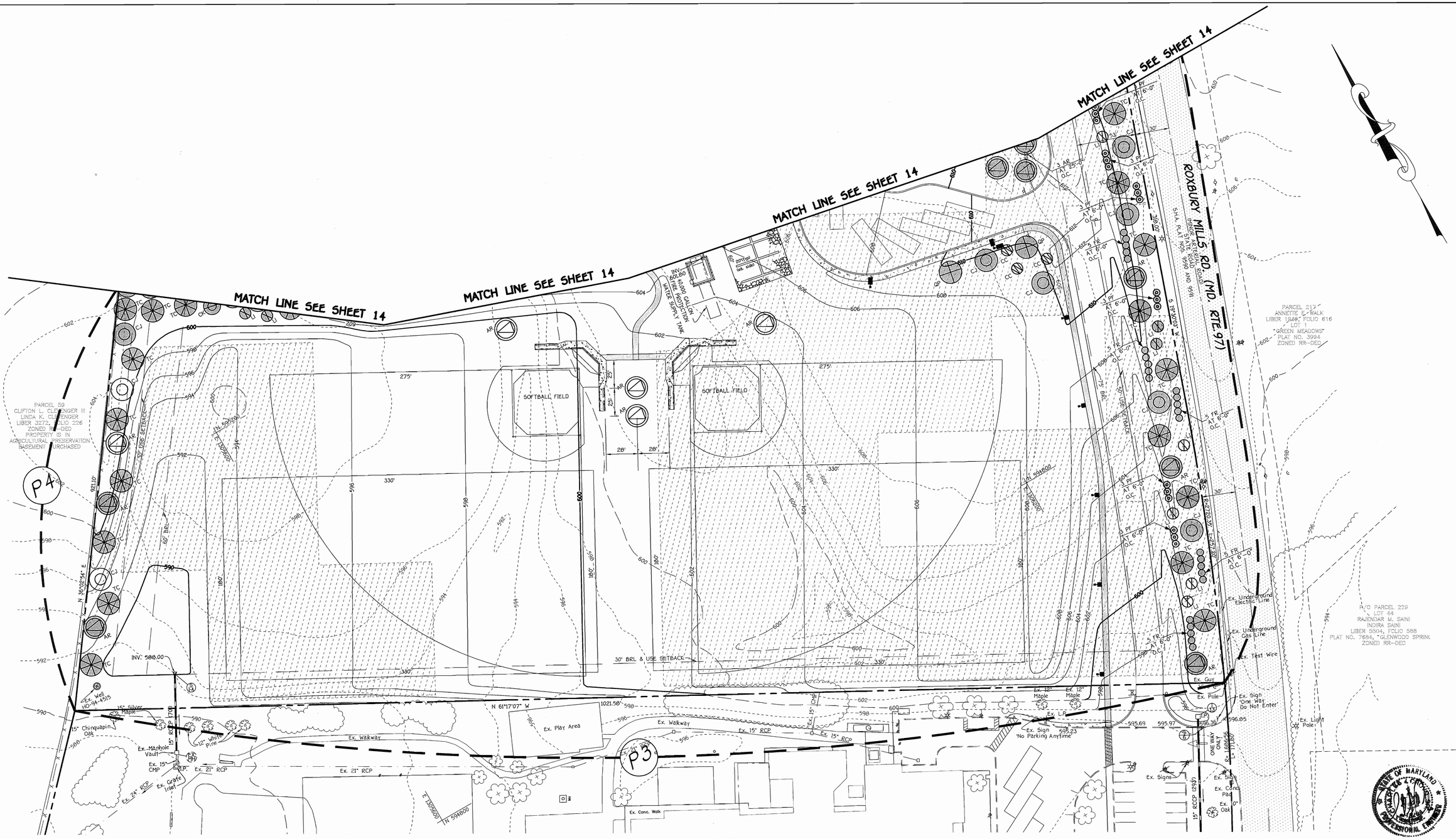

PLAN

SCALE: 1" = 40'

Note: This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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WILLIAM BROWN, PhD. — Date 2·3·06

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER — DATE 3/3/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — Date 3/10/06

Chief, Division of Land Development — Date 3/10/06

Chief, Development Engineering Division — Date

PREPARED FOR
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PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02

WATER CODE N/A — SEWER CODE N/A

LANDSCAPE PLAN

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 15 OF 35 **SDP-06-03**

SDP 06-03

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REQUIRED LANDSCAPING PLANT LIST (PER SCHEDULES A, B & D)

KEY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE & CONDITION	REMARKS	QUANTITY
FLOWERING/ORNAMENTAL TREES						
AR		ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY MAPLE	3" - 3 1/2" CAL., B & B	30' O.C. U.O.N.	35
CC		CERCIS CANADENSIS	EASTERN REDBUD	1 1/2"- 2" CAL., 8'-10' H., B & B	20' O.C. U.O.N.	8
CJ		CERCIDIPHYLLUM JAPONICUM	KATSURA TREE	3" - 3 1/2" CAL., B & B	30' O.C. U.O.N.	29
LI		LAGERSTROEMIA INDICA 'MUSKOGEE'	CREPE MYRTLE	8'-10' H., B & B	15' O.C. U.O.N.	20
CK		CORNUS FLORIDA	FLOWERING DOGWOOD	8'-10' H., B & B	20' O.C.	11
QP		QUERCUS PALUSTRIS	PIN OAK	3" - 3 1/2" CAL., B & B	25' O.C. U.O.N.	6
QPH		QUERCUS PHELLOS	WILLOW OAK	3 1/2" - 4" CAL., B & B	25' O.C. U.O.N.	9
EVERGREEN TREES						
TC		TSUGA CAROLINIANA	CAROLINA HEMLOCK	6' - 8' H., B & B	30' O.C. U.O.N.	43
SHRUBS						
FR		FORSYTHIA INTERMEDIA	BORDER FORSYTHIA	36" - 48" H., CONT.	4' O.C. U.O.N.	104
PF		PHOTINIA FRASERI	FRASER'S RED TIPPED PHOTINIA	30" - 36" H., CONT.	5' O.C. U.O.N.	65
PL		PRUNUS LAUROCERASUS 'OTTO LUYKEN'	CHERRY LAUREL	24" - 30" H., CONT.	4' O.C.	28

NOTES U.O.N. - UNLESS OTHERWISE NOTED

ADDITIONAL LANDSCAPING PLANT LIST

KEY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE & CONDITION	REMARKS	QUANTITY
FLOWERING/ORNAMENTAL TREES						
AR		ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY MAPLE	3" - 3 1/2" CAL., B & B	30' O.C.	7
CC		CERCIS CANADENSIS	EASTERN REDBUD	1 1/2"- 2" CAL., 8'-10' H., B & B	20' O.C.	3
CJ		CERCIDIPHYLLUM JAPONICUM	KATSURA TREE	3" - 3 1/2" CAL., B & B	30' O.C.	3
CK		CORNUS FLORIDA	FLOWERING DOGWOOD	8'-10' H., B & B	20' O.C.	12
LI		LAGERSTROEMIA INDICA 'MUSKOGEE'	CREPE MYRTLE	8'-10' H., B & B	15' O.C.	18
PC		PRUNUS CERASIFERA 'THUNDERCLOUD'	PURPLELEAF FLOWERING PLUM	1 1/2"- 2" CAL., 10'-14' H., B & B	15' O.C.	2
PY		PRUNUS YEDOENSIS	YOSHINO CHERRY	1 1/2"- 2" CAL., 10'-14' H., B & B	25' O.C.	7
QP		QUERCUS PALUSTRIS	PIN OAK	3" - 3 1/2" CAL., B & B	25' O.C.	6
QPH		QUERCUS PHELLOS	WILLOW OAK	3 1/2" - 4" CAL., B & B	25' O.C.	4
EVERGREEN TREES						
TC		TSUGA CANADENSIS	CANADIAN HEMLOCK	6' - 8' H., B & B	30' O.C.	2
SHRUBS						
CP		CHAMAECYPARIS PISIFERA 'FILIFERA AUREA NANA'	HINOKI FALSE CYPRESS	24" - 30" H., CONT.	3' O.C.	18
JA		JUNIPERUS ANDORRA	ANDORRA JUNIPER	18" - 24" H., CONT.	4' O.C.	21
PL		PRUNUS LAUROCERASUS 'OTTO LUYKEN'	CHERRY LAUREL	24" - 30" H., CONT.	4' O.C.	35
SB		SPIRAEA BUMALDA ' GOLDFLAME '	GOLD FLAME SPIRAEA	30" -36" H., B & B	3' O.C.	28

SCHEDULE A - PERIMETER LANDSCAPE EDGE

PERIMETER	CATEGORY (PROPERTIES/ ROADWAYS)	LANDSCAPE TYPE	LINEAR FEET OF OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	NUMBER OF PLANTS REQUIRED			NUMBER OF PLANTS PROVIDED			
						SHADE TREES	EVERGREEN TREES	SHRUBS	SHADE TREES	EVERGREEN TREES	FLOWERING/ ORNAMENTAL TREES	SHRUBS
P-1	NON-RES. TO ROAD	B	217.09'	NO	NO	4	5	-	6	-	2	-
	PARKING TO ROAD	E	258.21'	NO	NO	6	-	65	6	3	3	21
P-2	NON-RES. TO ROAD	B	508.75'	NO	NO	10	13	-	10	8	2	40
	PARKING TO ROAD	E	704.31'	NO	NO	18	-	176	20	5	8	66
P-3	* INTERNAL PERIMETER	N/A	1,021.58'	*PERIMETER ADJACENT TO EXISTING SCHOOL								
P-4	NON-RES. TO NON-RES.	A	381.14'	NO	NO	6	-	-	3	6	-	-

NOTES:
1. PERIMETER P-1 ('B' TYPE) - 2 SHADE TREES WERE SUBSTITUTED FOR 4 EVERGREEN TREES AND 2 FLOWERING/ORNAMENTAL TREES WERE SUBSTITUTED FOR 1 EVERGREEN TREE.
   PERIMETER P-1 ('E' TYPE) - 3 EVERGREEN TREES WERE SUBSTITUTED FOR 30 SHRUBS AND 3 FLOWERING/ORNAMENTAL TREES WERE SUBSTITUTED FOR 14 SHRUBS..
2. PERIMETER P-2 ('B' TYPE) - 2 FLOWERING/ORNAMENTAL TREES WERE SUBSTITUTED FOR 1 EVERGREEN TREE AND 40 SHRUBS WERE SUBSTITUTED FOR 4 EVERGREEN TREES.
   PERIMETER P-2 ('E' TYPE) - 2 SHADE TREES WERE SUBSTITUTED FOR 20 SHRUBS, 5 EVERGREEN TREES WERE SUBSTITUTED FOR 50 SHRUBS AND 8 FLOWERING/ORNAMENTAL TREES WERE SUBSTITUTED FOR 40 SHRUBS.
3. PERIMETER P-4 - 6 EVERGREEN TREES WERE SUBSTITUTED FOR 3 SHADE TREES.

SCHEDULE D - STORMWATER MANAGEMENT AREA LANDSCAPING

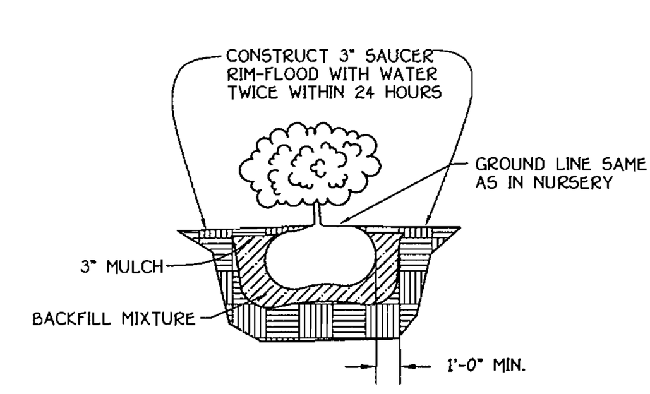
LINEAR FEET OF PERIMETER	D-1 : 1,431.94'
NUMBER OF TREES REQUIRED: SHADE TREES EVERGREEN TREES	 29 36
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF TREES PROVIDED: SHADE TREES FLOWERING/ORNAMENTAL TREES EVERGREEN TREES SHRUBS	 25 * 24 21 * 70

* NOTE: 8 FLOWERING/ORNAMENTAL TREES WERE SUBSTITUTED FOR 4 SHADE TREES.
16 FLOWERING/ORNAMENTAL TREES WERE SUBSTITUTED FOR 8 EVERGREEN TREES.
70 SHRUBS WERE SUBSTITUTED FOR 7 EVERGREEN TREES.

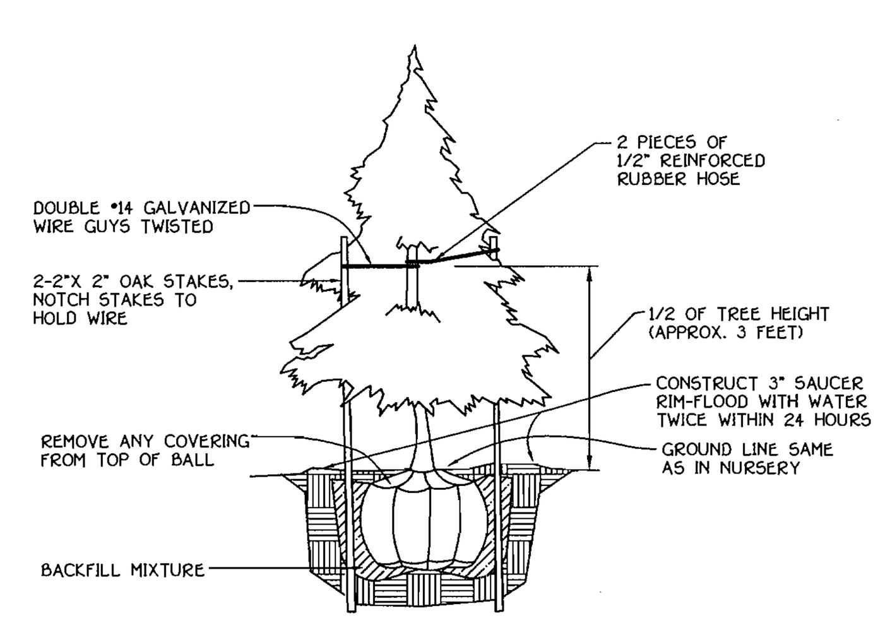
SCHEDULE B PARKING LOT INTERNAL LANDSCAPING

NUMBER OF PARKING SPACES	183
NUMBER OF TREES REQUIRED (1 TREE : 20 SPACES)	9
NUMBER OF TREES PROVIDED: SHADE TREES OTHER TREES (2:1 SUBSTITUTION)	 22 -

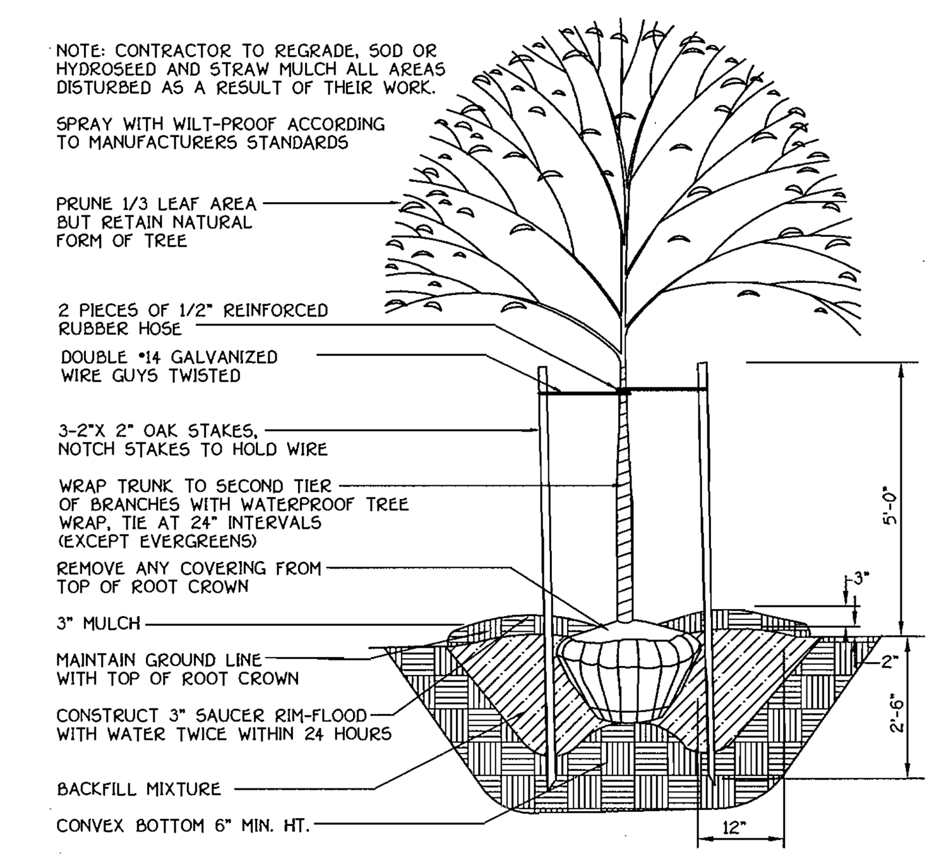
NOTE: 14 ISLANDS ARE PROVIDED WITHIN THE PARKING AREAS.
THE 22 TREES PROVIDED INCLUDE THE 9 REQUIRED SHADE TREES AND 13 ADDITIONAL SHADE TREES.



SHRUB PLANTING DETAIL



EVERGREEN PLANTING DETAIL



TREE PLANTING DETAIL

PLANTING SPECIFICATIONS

Plants, related material, and operations shall meet the detailed description as given on the plans and as described herein.

All plant material, unless otherwise specified, shall be nursery grown, uniformly branched, have a vigorous root system, and shall conform to the species, size, root and shape shown on the plant list and the American Association of Nurserymen (AAN) Standards. Plant material shall be healthy, vigorous, free from defects, decay, disfiguring roots, sun scald injuries, abrasions of the bark, plant disease, insect pest eggs, borers and all forms of insect infestations or objectionable disfigurements. Plant material that is weak or which has been cut back from larger grades to meet specified requirements will be rejected. Trees with forked leaders will not be accepted. All plants shall be freshly dug; no healed-in plants from cold storage will be accepted.

Unless otherwise specified, all general conditions, planting operations, details and planting specification shall conform to "Landscape Specification Guidelines for Baltimore-Washington Metropolitan Areas", (hereinafter "Landscape Guidelines") approved by the Landscape Contractors Association of Metropolitan Washington and the Potomac Chapter of the American Society of Landscape Architect, latest edition, including all agenda.

Contractor shall be required to guarantee all plant material for a period of one year after date of acceptance in accordance with the appropriate section of the Landscape Guidelines Contractor's attention is directed to the maintenance requirements found within the one year specifications including watering and replacement of specified plant material.

Contractor shall be responsible for notifying utility companies, utility contractors and "Miss Utility" a minimum of 48 hours prior to beginning any work. Contractor may make minor adjustments in spacing and location of plant material to avoid conflicts with utilities. Damage to existing structure and utilities shall be repaired at the expense of the Contractor.

Protection of existing vegetation to remain shall be accomplished by the temporary installation of 4 foot high snow fence or blaze orange safety fence at the drip line.

Contractor is responsible for installing all material in the proper planting season for each plant type. All planting is to be completed within the growing season of completion of site construction.

Bid shall be based on actual site conditions. No extra payment shall be made for work arising from site conditions differing from those indicated on drawings and specifications

Plant quantities are provided for the convenience of the contractor only. If discrepancies exist between quantities shown on plan and those shown on the plant list, the quantities on the plan take precedence

All shrubs shall be planted in continuous trenches or prepared planting beds and mulched with composted hardwood mulch as details and specified except where noted on plans.

Positive drainage shall be maintained in planting beds 2 percent slope).

Weed Control: Incorporate a pre-emergent herbicide into the planting bed following recommended rates on the label. Caution: Be sure to carefully check the chemical used to assure its adaptability to the specific ground cover to be treated.

All areas within contract limits disturbed during or prior to construction not designated to receive plants and mulch shall be fine graded and seeded.

Note: This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

LANDSCAPE CERTIFICATION

I/We certify that the landscaping shown on this plan will be done according to the approved plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

Wm. B[signature] 2.3.06
WILLIAM BROWN, PhD. Date

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

[signature] 3/3/06
for COUNTY HEALTH OFFICER DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] 3/10/06
Director - Department of Planning and Zoning Date

[signature] 3/9/06
Chief, Division of Land Development Date

[signature] 2/23/06
Chief, Development Engineering Division Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

Address Chart

Parcel Number	Street Address
P. 15	14601 CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT			SECTION/AREA		PARCELS
BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF. P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	BLOCK NO. 10	ZONE RC-DEO	TAX MAP 14	ELEC. DIST. FOURTH	CENSUS TR. 6040.02
WATER CODE N/A			SEWER CODE N/A		

LANDSCAPING SPECIFICATIONS AND DETAILS

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"

SDP 06-03

PENNIMAN and BROWN, Inc.

Construction Specifications For The Stormwater Management Facility

A. Site Preparations

Prior to the placement of fill in any SWM embankment or slope areas, all trees, roots, vegetation, and/or excessively organic material, and any existing surficial soils which are excessively soft, wet or frozen should be removed and wasted. Organic materials may be stockpiled and used exclusively as the final fill layer in landscaping and recreational field areas. Otherwise, any excess organic materials should be wasted. The stripping operations should be monitored by an P & B soils technicians or Geotechnical Engineer to verify the depths of stripping.

After stripping has been completed, the exposed subgrade in areas to be filled should be examined by P & B soil technicians or Geotechnical Engineer. The technician should require the exposed materials be proofrolled utilizing a heavily-loaded dump truck or other pneumatic-tired vehicle of similar size and weight to detect any excessively soft or yielding soils conditions. Relatively soft surficial materials may be improved for the adequate support newly placed structural fill by deeply discing or scarifying, aerating, and recompacting to the project specifications; alternately, excessively soft soils may be undercut and replaced with controlled fill. The existing embankment may remain in place if the proofroll indicates that the subgrade is firm and unyielding.

Depending upon weather condition, and due to the presence of moisture-sensitive materials, surficial undercutting of wet, excessively soft, or yielding materials may be required. If the on-site soils exhibit high moisture contents during construction, traffic of heavy equipment, including heavy compaction equipment, will create pumping and a general deterioration of these materials. A further significant increase in moisture content and/or deterioration of these moisture-sensitive soils during construction will likely require their removal and replacement with suitable (less moisture-sensitive) material. If possible, the grading operations should be conducted during dry and warm weather (preferably late spring through early fall). This should minimize potential subgrade problems, although they may not be eliminated. If such problems arise, the P & B Geotechnical Engineer should be consulted for an evaluation of the site conditions.

B. Embankment Fill Placement

The boring and laboratory data indicate that the on-site soils are generally suitable for use as controlled, compacted fill: however, the presence of moisture-sensitive fine grain materials (i.e. Micaceous Silty Sands, Clayey Silts and Sandy Silts) will require special attention to moisture contents. Consequently, the on-site soils may require discing, aeration and/or manipulation to achieve efficient compaction. Any regions exhibiting poor drainage characteristics, and low lying areas, must be expected to display moisture contents excessively high for fill placement without drying.

It should be noted that the moisture descriptions shown on the boring logs are visual only, and such descriptions (moist, very moist) are related to wet-dry conditions and do not reflect moistures relative to optimum moisture contents. The use of the on-site soils for controlled, compacted fill will depend on the time of year that construction is accomplished and whether the construction schedule and space permit manipulation and/or aeration of the soils to ensure adequate compaction. As previously discussed above, due to the moisture-sensitivity of the on-site materials, it would be prudent to accomplish the earthwork operations during the warmer and drier seasons, i.e. late spring through early fall.

Controlled fill should be placed in relatively level lifts, eight inches maximum in loose thickness, and compacted to 95 percent of the Standard Proctor maximum dry density as established by ASTM D-698 (AASHTO T-99) specifications.

A sufficient number of in-place density tests should be performed by an P & B engineering technician to verify that the proper degree of compaction is being obtained on all fill soils. As a minimum, each lift shall be tested and one test per 2500 square feet shall be performed.

C. Slope Recommendations

The subsoils encountered by the borings generally appear acceptable to support new sloped embankment fill depending upon location and depth. Accordingly a slope flatter than 2H:1V gradient, constructed of properly classified and compacted engineered fills will typically be stable. An in-depth slope stability analysis is not typically performed in this situation unless elevated ground water, unsuitable materials or excess loadings have been identified. Slopes designed steeper than 2H:IV should have slope stability analysis performed.

Where fills are placed on hillsides or slopes, the slopes of the original ground upon which the fill is to be placed shall be plowed or scarified deeply, and where the slope of the existing ground is steeper than 5 horizontal to 1 vertical, the bank shall be stepped or benched in order to prevent the formation of any slip surfaces and to facilitate the placement of fill in horizontal layers. Additionally, a keyway should be installed at the base of the slope prior to any benched fill installation.

It is recommended that any fill required to achieve required slope subgrade be constructed as controlled embankment placed in accordance with the previously provided requirements for fill placement. The compaction should be a minimum 95% of the ASTMD698 maximum dry density performed under the direction of a Geotechnical Engineer.

D. Embankment Seepage-Impervious Core

The pond will require an impervious core constructed of materials classified as CL, CH, SC or GC containing a minimum of 30% materials finer than the •200 sieve and compacted to 95% of the Standard Proctor at or above optimum moisture content. It is not anticipated that sufficient qualities of CL material will be available in the soils excavated from the SWM area. It should be anticipated that clays must be obtained from other areas of the site or imported from offsite sources.

Impervious core fills should be placed in uniform 8" maximum lift thickness and compacted with suitable sheepfoot or smooth drum rollers. Compaction testing should be performed on each lift of clay fill placed.

All earth work activities must be performed in accordance with the latest edition of NRCS Pond Standard MD-378.

Pond MD-378: N.R.C.S. - JANUARY 2000 CONSTRUCTION SPECIFICATIONS FOR SMALL EARTHEN DAMS

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.

Pipe Conduits

All pipes shall be circular in cross section.

Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:
1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.
2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding / cradle for their entire length. This bedding / cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its out-side diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.
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 line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.
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" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.
2. Joints and connections to anti-seep collars shall be completely watertight.
3. Bedding -The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.
4. Backfilling shall conform to "Structure Backfill".
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.

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

Concrete

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

Rock Riprap

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

Care of Water During Construction

All work on permanent structures shall be carried out in areas free from water. The Con-tractor 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, in-stall, operate, and maintain all necessary pumping and other equipment required for removal of water from 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 extent required to prevent obstruction in any degree whatsoever of the flow of water to the spillway or outlet works and so as not to interfere in any way with the operation or maintenance of the structure. Stream diversions shall be maintained until the full flow can be passed through the permanent works. The removal of water from the required excavation and the foundation shall be accomplished in a manner and to the extent that will maintain stability of the excavated slopes and bottom required excavations and will allow satisfactory performance of all construction operations. During the placing and compacting of material in required excavations, the water level at the locations being refilled shall be maintained be-low the bottom of the excavation at such locations which may require draining the water sumps from which the water shall be pumped.

Stabilization

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

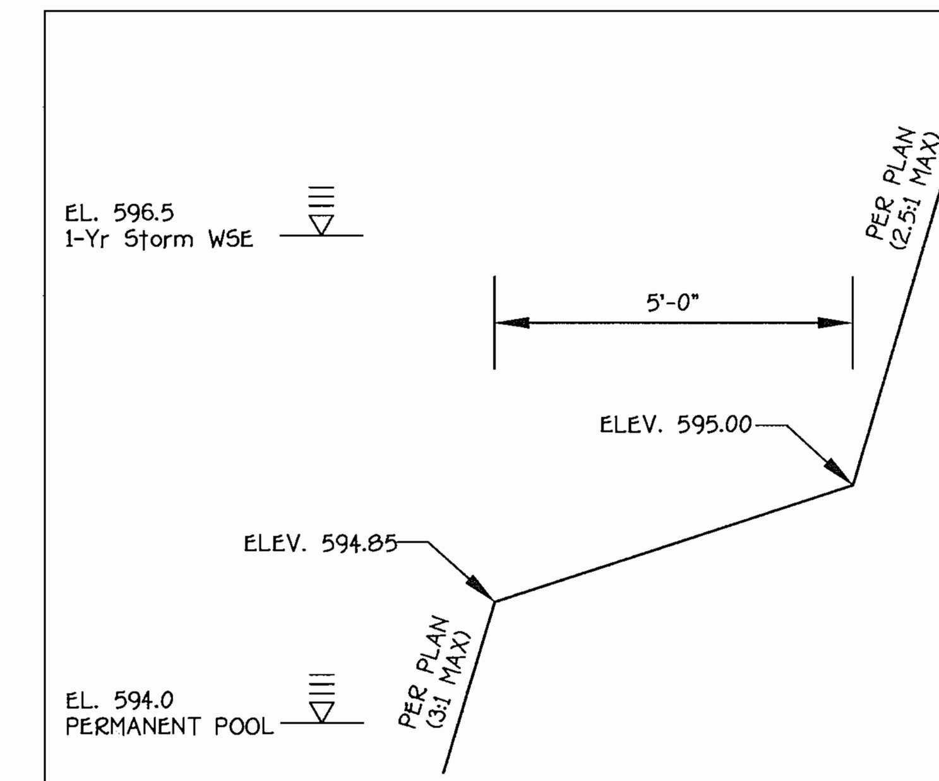
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER MANAGEMENT PONDS

ROUTINE MAINTENANCE

1. Facility shall be inspected annually and after major storms. Inspections shall be preformed during wet weather to determine if the pond is functioning properly.
2. Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes and maintenance access should be mowed as needed.
3. Debris and litter shall be removed during regular mowing operations and as needed.
4. Visible signs of erosion in the pond as well as the rip-rap or gabion outlet area shall be repairer as soon as it is noticed.

NON-ROUTINE MAINTENANCE

1. Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
2. Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond or forebay, is half full of sediment, or, when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.



TYPICAL SECTION THRU SAFETY BENCH

NOT TO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED RECHARGE FACILITIES

1. The recharge diversion manhole (M-2) shall be inspected at a minimum of three times (3X) annually. The hood shall be inspected for damage and corrosion.
2. The Owner shall remove all trash and debris during the inspections.
3. Sediment depth 6" or greater shall be promptly removed and disposed of properly (i.e., taken to the land fill).
4. Damage to the hood shall be promptly repaired.

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

Signature P.E. No.

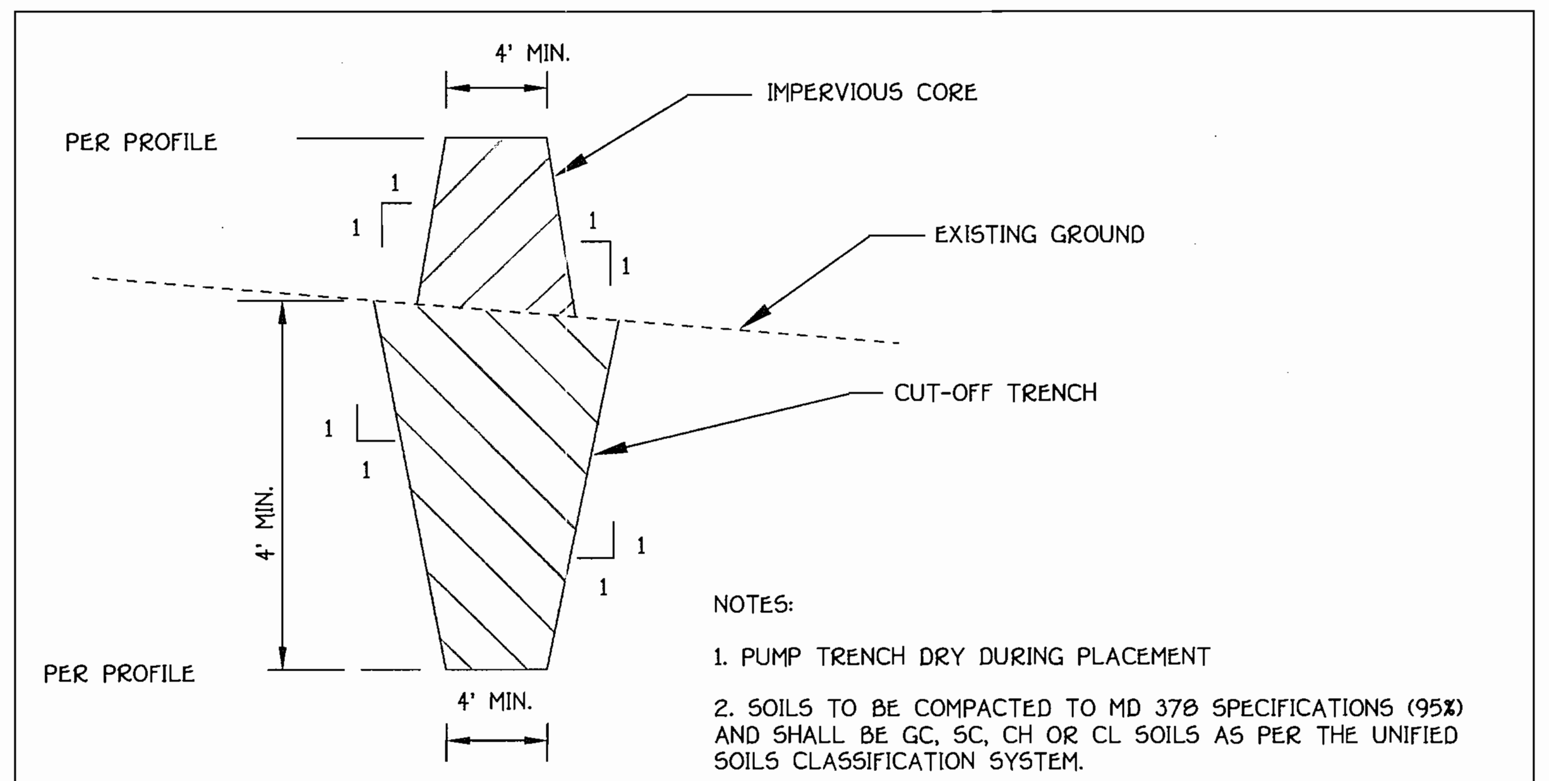
Date:

Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

Embankment and Cut-off Trench Construction

THE AREA OF THE PROPOSED SWM POND SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR 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 A GEOTECHNICAL ENGINEER OR REPRESENTATIVE USING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROOFOLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL.

A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SPECIFICATION 378 SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT AND CUT-OFF TRENCH SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL.



NOTES:

1. PUMP TRENCH DRY DURING PLACEMENT
2. SOILS TO BE COMPACTED TO MD 378 SPECIFICATIONS (95%) AND SHALL BE GC, SC, CH OR CL SOILS AS PER THE UNIFIED SOILS CLASSIFICATION SYSTEM.

CUT-OFF TRENCH & IMPERVIOUS CORE DETAIL

NOT TO SCALE

STORMWATER MANAGEMENT POND NOTES

1. The stormwater management pond shall be constructed to the latest edition of NRCS's Pond Standard MD-378.
2. The stormwater management pond shall be constructed/converted after ALL upstream areas have been stabilized (i.e., established vegetation or paved) including the pond slopes.
3. Line botttom of stormwater management pond with 12" of compacted "core trench" material (GC, SC, CH, CL) up to el. 594.0.

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER 3/3/06 DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Signature Of Developer 2-3-06 Date

Dr William Brawn
Printed Name Of Developer

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

USDA-Natural Resources Conservation Service 2/15/06 Date

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature Of Engineer 2/4/06 Date

CHARLES J. CROJO SR
Printed Name Of Engineer

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Howard Soil Conservation District 2/15/06 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning 3/10/06 Date

Chief, Division of Land Development 3/6/06 Date

Chief, Development Engineering Division 2/23/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
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Address Chart

Parcel Number	Street Address
P. 15	14601 CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT				SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL				N/A	15, 153 & 198
DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT *s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02
WATER CODE N/A			SEWER CODE N/A		

STORMWATER MANAGEMENT
NOTES & DETAILS

NEW REPLACEMENT SCHOOL
BUSHY PARK
ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 17 OF 35 SDP-06-03

SDP 06-03

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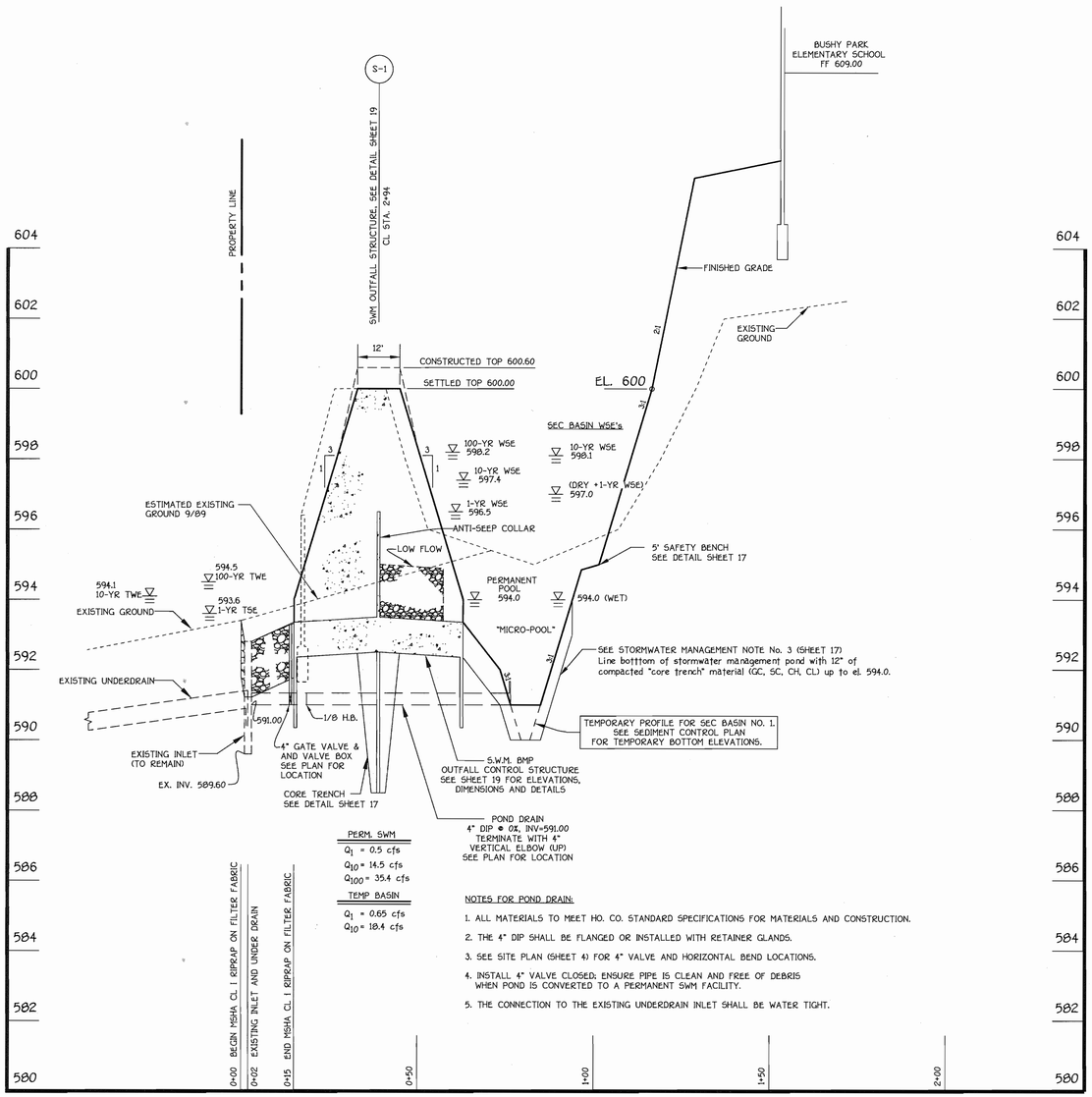
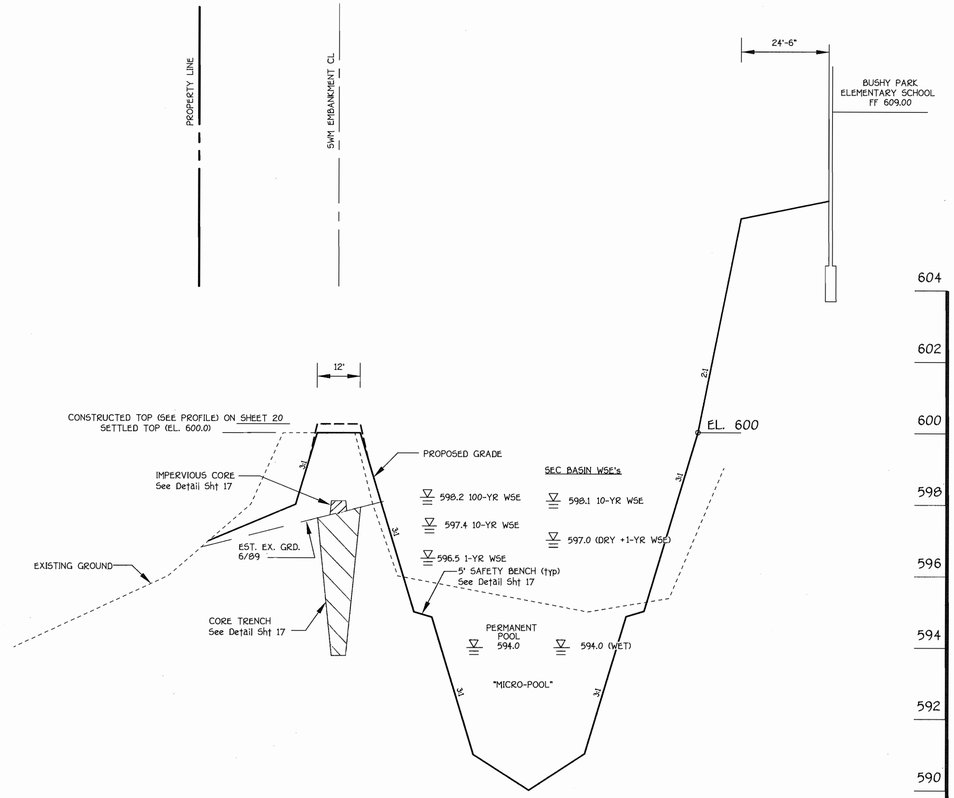


NOTES FOR POND DRAIN:

1. ALL MATERIALS TO MEET HO. CO. STANDARD SPECIFICATIONS FOR MATERIALS AND CONSTRUCTION.
2. THE 4" DIP SHALL BE FLANGED OR INSTALLED WITH RETAINER GLANDS.
3. SEE SITE PLAN (SHEET 4) FOR 4" VALVE AND HORIZONTAL BEND LOCATIONS.
4. INSTALL 4" VALVE CLOSED; ENSURE PIPE IS CLEAN AND FREE OF DEBRIS WHEN POND IS CONVERTED TO A PERMANENT SWM FACILITY.
5. THE CONNECTION TO THE EXISTING UNDERDRAIN INLET SHALL BE WATER TIGHT.

SWM PRINCIPAL SPILLWAY & POND PROFILE
SCALE:
HORZ. 1" = 20'
VERT. 1" = 2'



TYPICAL EMBANKMENT SECTION
SCALE:
HORZ. 1" = 20'
VERT. 1" = 2'

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Weber for COUNTY HEALTH OFFICER — 3/3/06 DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Wm. Brown — 2.3.06
Signature Of Developer — Date
Dr. William Brown
Printed Name Of Developer

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

USDA-Natural Resources Conservation Service — 2/15/06 Date

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature Of Engineer — 2/9/06 Date
CHARLES J. CROVO SR.
Printed Name Of Engineer

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Howard Soil Conservation District — 2/15/06 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 2/10/06 Date
Chief, Division of Land Development — 3/3/06 Date
Chief, Development Engineering Division — 2/23/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

Address Chart

Parcel Number	Street Address
P. 15	14601 CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT			SECTION/AREA		PARCELS
BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17012 & 17013	10	RC-DEO	14	FOURTH	6040.02
WATER CODE N/A		SEWER CODE N/A			

STORMWATER MANAGEMENT PROFILES & DETAILS

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005
BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 18 OF 35 SDP-06-03

SDP 06-03

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GABION/FOREBAY WEIR OUTFALL NOTES

1. Gabions shall be manufactured by Maccaferri Gabions Inc. or approved equal. The installation shall follow the manufacturer's specifications.

2. The gabion baskets shall be PVC coated and filled with clean 4" - 7" stone. Gabion stone shall be carefully placed as to create a tight interlocking stone wall with minimal voids.

3. One sheet of 8 mil or greater vinyl/plastic sheeting shall be placed on the buried upstream (forebay side) face of the baskets next to the filter fabric. Use 2 ft overlap where applicabe.

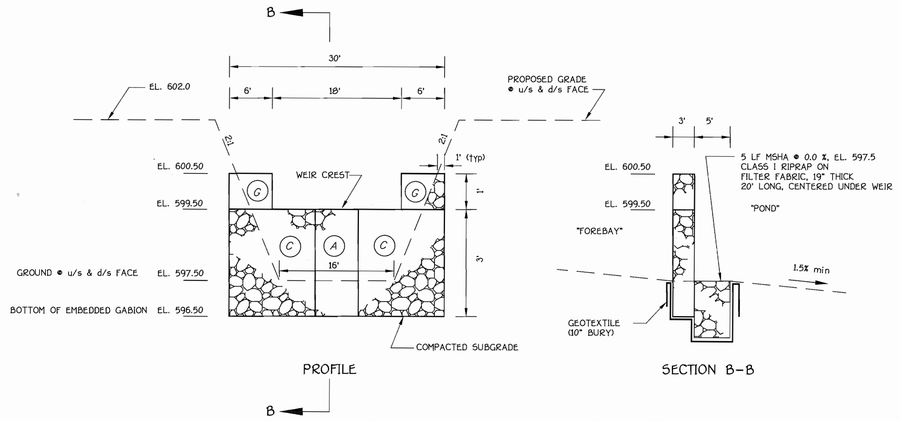
4. Gabions shall be placed on geotextile fabric (Mirafi 600x or approved equal) at all soil/gabion interfaces.

5. Gabions shall be carefully placed with no damaged wire. Earth foundation shall be firm. Fill soil around gabions shall be well-compacted.

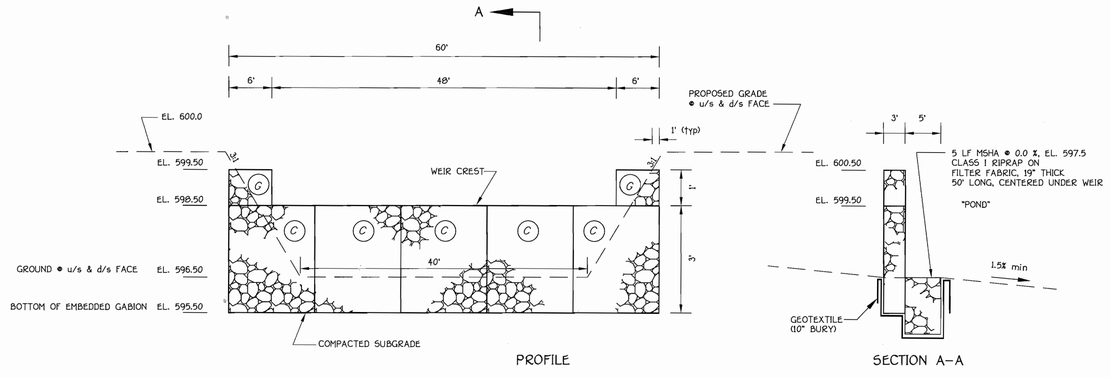
6. Gabions shall be fastened together with appropriate wiring.

GABION SCHEDULE

MANUF. LETTER CODE	QUANTITY	DIMENSIONS	LOCATION
(A)	1	6'x3'x3'	FB *2
(C)	7	12'x3'x3'	FB *1 (5) FB *2 (2)
(G)	4	6'x3'x1'	FB *1 (2) FB *2 (2)



GABION WEIR AT FOREBAY #2 (SOUTH)



GABION WEIR AT FOREBAY #1 (NORTH)

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

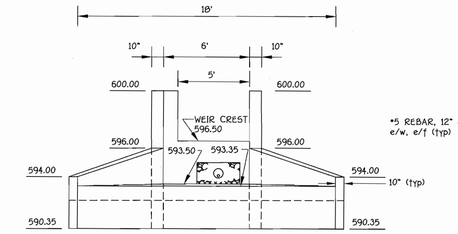
Signature P.E. No.

Date:

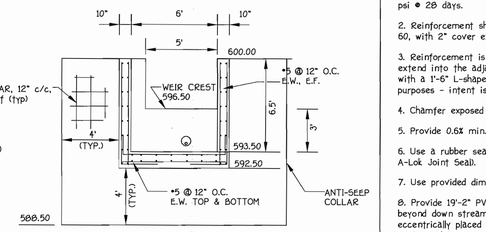
Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

GABION WEIR/FOREBAY OUTFALL DETAILS

SCALE: HOR: 1" = 10'
VERT: 1" = 2'



FRONT ELEVATION
(ANTI-SEEP COLLAR NOT SHOWN)



SECTION B-B
(GABION TRASH RACK NOT SHOWN)

STRUCTURE S-1 NOTES

1. Structure material for all walls and base shall be reinforced concrete, air entrained, f'c = 4,000 psi @ 28 days.

2. Reinforcement shall shall be deformed steel and be free of rust and meet ASTM A615, grade 60, with 2" cover except as shown.

3. Reinforcement is *5 rebars,12"x12" c/c, e/w, e/f for each wall and base. Horizontal rebar shall extend into the adjacent wall with a 1'-6" L-shaped overlap. Vertical rebar shall extend into base with a 1'-6" L-shape overlap. NOTE: Drawing only shows partial rebar for presentation and clarity purposes - intent is for entire structure to be reinforced. Rebar laps shall be 40 bar diameter.

4. Chamfer exposed edges 3/4" x 3/4".

5. Provide 0.6% min. grade on the outfall structure base from weir wall to outer ends.

6. Use a rubber seal collar to provide a water tight joint at the 8" pipe/weir wall joint (e.g., A-Lok Joint Seal). In addition, apply non-shrink grout in annular space between pipe and wall.

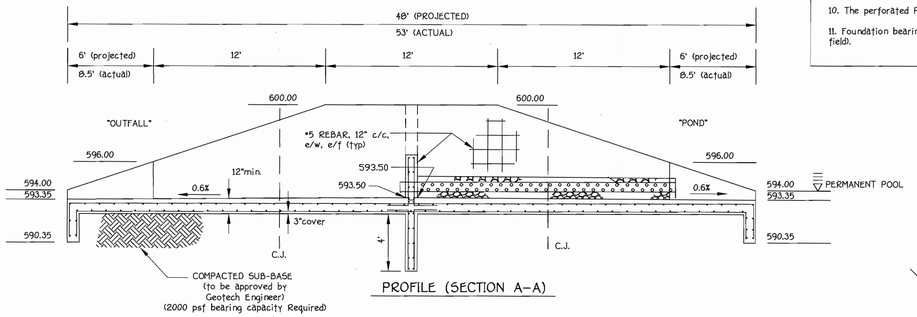
7. Use provided dimensions and elevations; do not scale drawings.

8. Provide 19'-2" PVC (18' perforated and 1'-2", non-perforated) placed through weir wall, extend 4" beyond down stream side (west) and cap with 2" ⁄ orifice at invert 594.00. Orifice shall be eccentrically placed in the cap to allow rotation to achieve exact elevation. Protect 18" perforated pipe portion with two (2) 9'x3'x1.5' gabion basket. Gabion Basket to be PVC coated. Place solid cap at "pond" end (east) of perforated pipe. PVC shall be schedule 40.

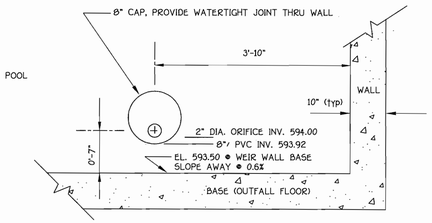
9. Provide perforations around 18 LF in the gabions pipe to act as a trash rack. Perforations to meet AASHTO M36 Class 2 perforations (50 - 3/8" ⁄ holes, staggered and uniformly spaced, per LF of 8" pipe).

10. The perforated PVC low flow drain shall be carefully placed in RIPRAP gabion stone.

11. Foundation bearing capacity shall be 2,000 psf min. (To be verified by geo-tech engineer in the field).

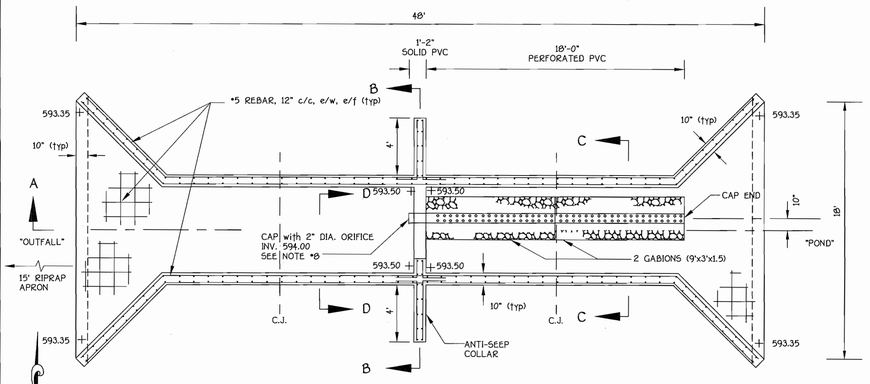


PROFILE (SECTION A-A)

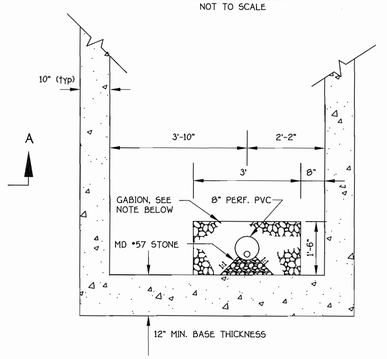


NOTE: THIS DETAIL SHOWS THE ORIFICE POSITION ON THE END CAP AT THE PVC PIPE THRU THE WEIR WALL (LOOKING EAST)

SECTION D-D
ORIFICE DETAIL
NOT TO SCALE

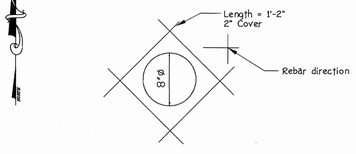


PLAN

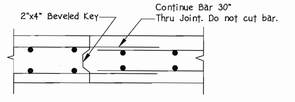


NOTE: SEE GABION SPECIFICATIONS FOR FOREBAY, THIS SHEET. MANUFACTURER'S CODE IS "E" (9'x3'x1.5').

SECTION C-C
SCALE: 1"= 2'



ADDITIONAL REBAR AROUND OPENINGS DETAIL
NOT TO SCALE



CONSTRUCTION JOINT (C.J.) @ SLAB & WALL
NOT TO SCALE

STORMWATER MANAGEMENT BMP
OUTFALL CONTROL STRUCTURE (S-1)
SCALE: 1" = 5'

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Weber, Sr. 3/3/06
By COUNTY HEALTH OFFICER DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

By The Developer:

"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."

Wm. R. 2.3.06
Signature Of Developer Date

DeWilman Brown
Printed Name Of Developer

These Plans Have Been Reviewed For The Howard Soil Conservation District, And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

2/15/06
USDA-Natural Resources Conservation Service Date

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

2/4/06
Signature Of Engineer Date

CHARLES L. CRAVOSA
Printed Name Of Engineer

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

2/15/06
Howard Soil Conservation District Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

3/10/06
Director - Department of Planning and Zoning Date

3/10/06
Chief, Division of Land Development Date

2/23/06
Chief, Development Engineering Division Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
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DEED REF	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT *s 17812 & 17913	10	RC-DEO	14	FOURTH	6040.02

WATER CODE	SEWER CODE
N/A	N/A

STORMWATER MANAGEMENT PROFILES & DETAILS

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 19 OF 35 SDP-06-03

SDP 06-03

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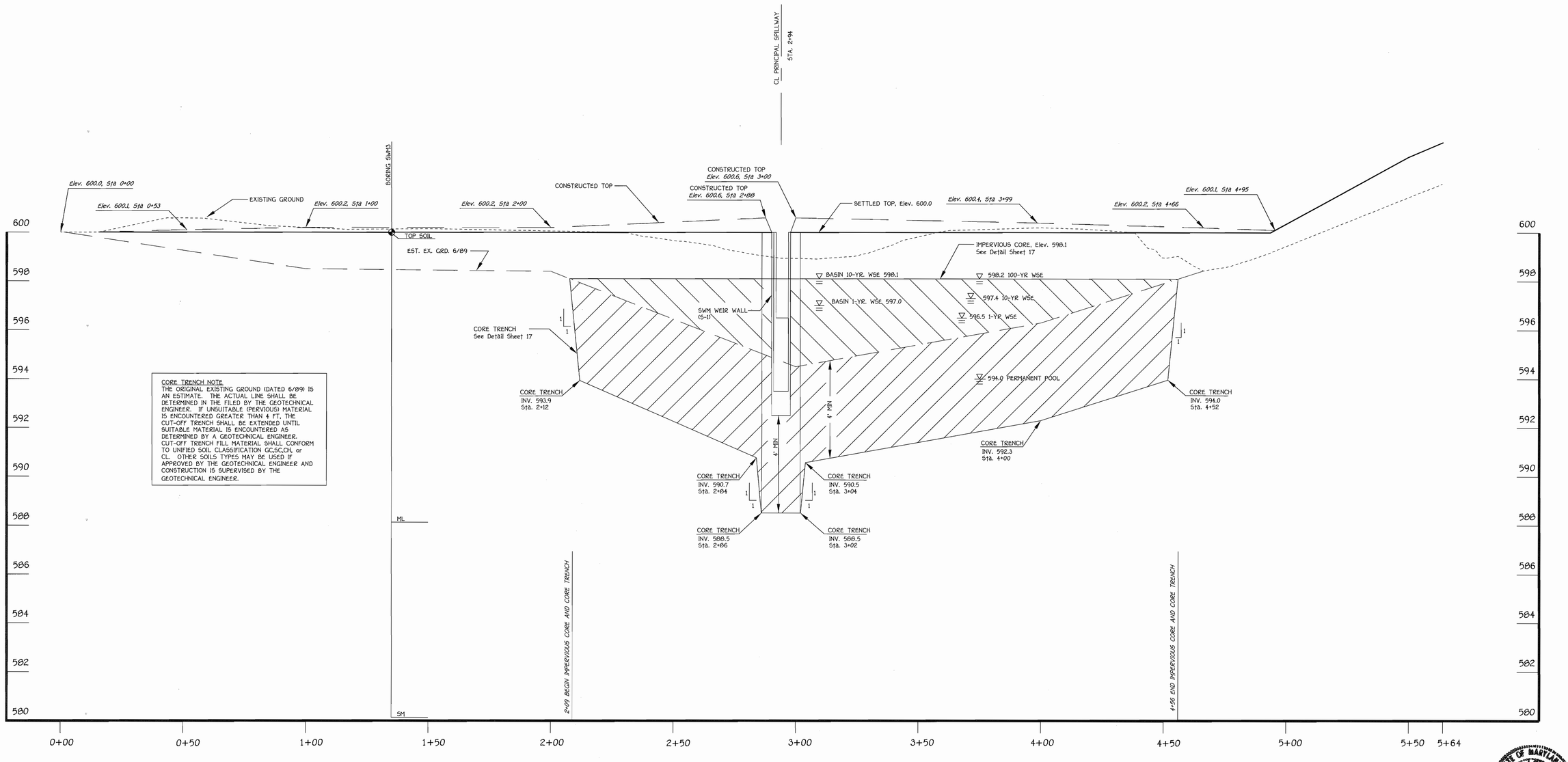

CORE TRENCH NOTE
THE ORIGINAL EXISTING GROUND (DATED 6/89) IS AN ESTIMATE. THE ACTUAL LINE SHALL BE DETERMINED IN THE FILED BY THE GEOTECHNICAL ENGINEER. IF UNSUITABLE (PERVIOUS) MATERIAL IS ENCOUNTERED GREATER THAN 4 FT. THE CUT-OFF TRENCH SHALL BE EXTENDED UNTIL SUITABLE MATERIAL IS ENCOUNTERED AS DETERMINED BY A GEOTECHNICAL ENGINEER. CUT-OFF TRENCH FILL MATERIAL SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC,SC,CH, or CL. OTHER SOILS TYPES MAY BE USED IF APPROVED BY THE GEOTECHNICAL ENGINEER AND CONSTRUCTION IS SUPERVISED BY THE GEOTECHNICAL ENGINEER.

SWM POND EMBANKMENT PROFILE

SCALE: HOR: 1" = 20'
VERT: 1" = 2'

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

Signature _____ P.E. No. _____

Date: _____

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APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert A. Weber for COUNTY HEALTH OFFICER — 3/3/06 DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
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Wm. Pz — 2.3.06
Signature Of Developer — Date

Dr. William Brand
Printed Name Of Developer

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

USDA-Natural Resources Conservation Service — Date: 2/15/06

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature Of Engineer — 2/1/06 Date

CHARLES J. CROSA
Printed Name Of Engineer

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Howard Soil Conservation District — 2/15/06 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/1/06 Date

Chief, Division of Land Development — 3/9/06 Date

Chief, Development Engineering Division — 2/23/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

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WATER CODE N/A — SEWER CODE N/A

STORMWATER MANAGEMENT PROFILES & DETAILS

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

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SDP 06-03

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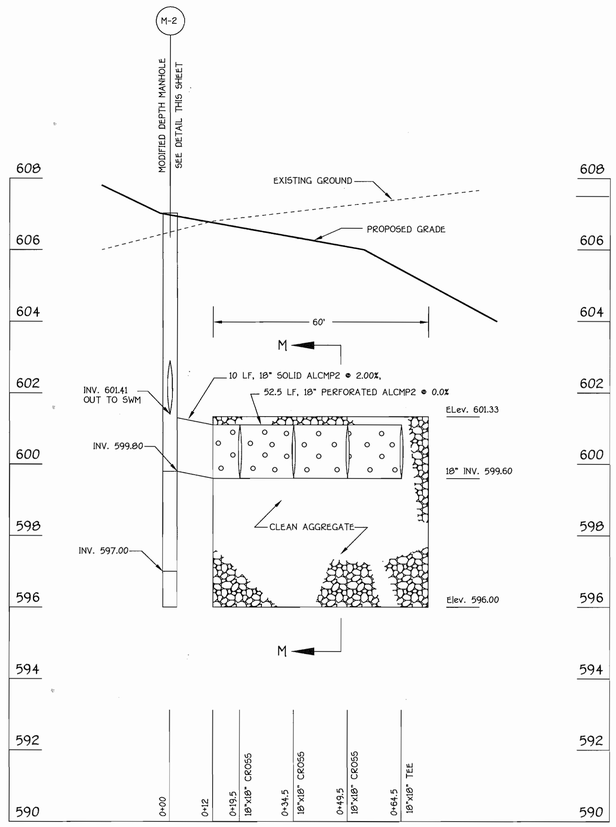


RECHARGE VOLUME PROFILE

SCALE: HOR: 1" = 20'
VERT: 1" = 2'

RECHARGE TRENCH NOTES

1. Stone shall be clean, MD #2 stone and surrounded by filter fabric (Mirafi 140N or equal).

2. Prior to allowing water to enter the recharge trench, all upstream areas shall be stabilized (established grass or paved). In addition, the storm drain system shall be flushed clean prior to connecting to the recharge system.

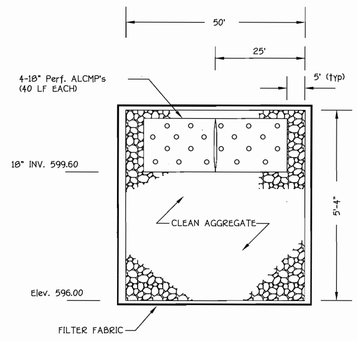
3. Place an 18" half round pipe at the entrance to the recharge distribution pipe in storm drain MH-2. The half pipe shall extend 9" below the invert and 3" above the crown.

4. Pipe shall be 16 gauge aluminized CMP (ALCMP2) type 2 . The pipe shall be perforated inside the trench and solid outside the trench. Cap ends.

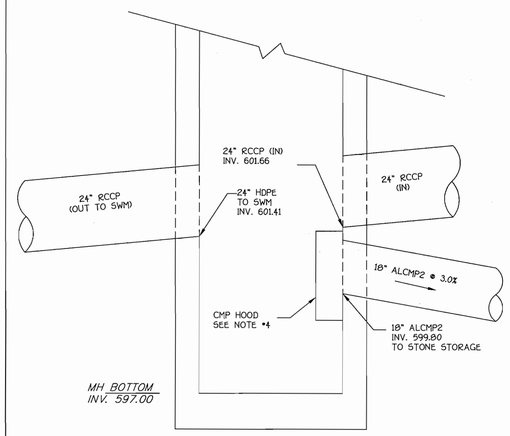
5. Perforated pipe shall be fully perforated and shall meet AASHTO M36 (3/8" perforations: 3.3 square inches per s.f. of pipe surface (15.5 square inches of perforations per L.F. of 18" pipe).

6. Wrap perforated pipe with 1/4" hardware cloth.

7. Slotted pipe maybe substituted in lieu of perforated pipe/hardware cloth if approved by the engineer (slots to be located near top and bottom of pipes).

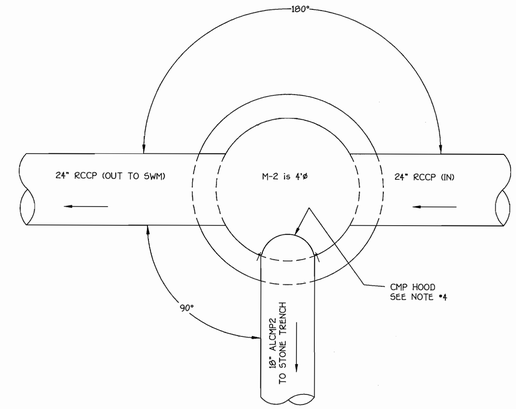


SECTION M-M



ELEVATION

SCALE: 1" = 2'



PLAN

SCALE: 1" = 2'

MANHOLE M-2 DETAIL

NOTES:
1. Contractor to submit Shop Drawings to Engineer prior to construction.
2. Coat end of outside of ALCMP2 with 2 coats of zinc chromate prior to grouting annular space between pipe and manhole.
3. Manhole shall have a "catch basin" i.e., flat invert 2'9" below lowest outfall; no benching shall be installed.
4. Secure (bolt) a half round 18" ALCMP2 to the 18" entrance to the recharge pipe draining to the stone storage. The half pipe shall extend 3" above inlet crown and 9" below inlet invert. Place appropriate gasket between half pipe and wall (neoprene, cork, or approved equal). See detail this sheet.

GABION CHECK DAM NOTES

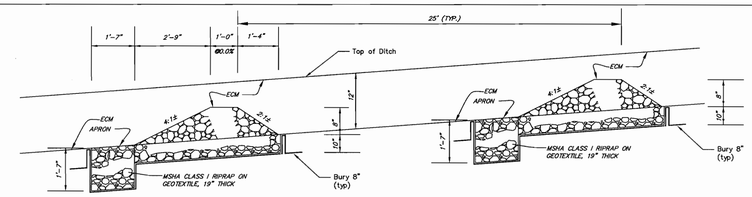
1. Check dam shall be constructed from PVC-coated gabion wiring and filled with 4"-7" stone, tightly placed within the "modified gabion" structure.

2. Gabions shall be 8" high and neatly "fit" into the trapezoidal channel section with dimensions as shown with spacing at 1/channel slope.

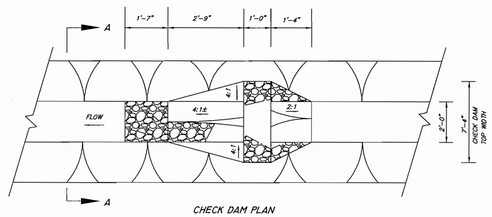
3. Gabion check dams shall be placed on geotextile (anchored 6" along edges).

4 Locate gabion check dams as shown in the grassed channel along the entrance driveway from the existing school.

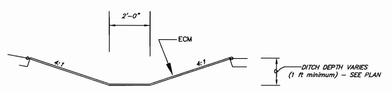
5. Line channel with ECM. Contractor shall ensure ECM extends to top of ditch and is well-stapled at each checkdam.



CHECK DAM PROFILE
NTS



CHECK DAM PLAN
NTS



SECTION A-A

GABION CHECK DAM & DITCH DETAIL (1/21)

AS-BUILT CERTIFICATION

I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.

Signature _____ P.E. No. _____

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APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Weber for COUNTY HEALTH OFFICER MD — 3/3/06 DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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By The Developer:

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Signature Of Developer — 2.3.06 Date

Dr. William Brawn
Printed Name Of Developer

These Plans Have Been Reviewed For The Howard Soil Conservation District And Meet The Technical Requirements For Small Pond Construction, Soil Erosion And Sediment Control.

USDA-Natural Resources Conservation Service — 2/15/06 Date

By The Engineer:

"I Certify That This Plan For Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Notified The Developer That He/She Must Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion."

Signature Of Engineer — 2/4/06 Date

CHARLES J. CROSER
Printed Name Of Engineer

These Plans For Small Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.

Howard Soil Conservation District — 2/15/06 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/10/06 Date

Chief, Division of Land Development — 3/10/06 Date

Chief, Development Engineering Division — 2/23/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

Address Chart

Parcel Number	Street Address
P. 15	14601 CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT			SECTION/AREA		PARCELS
BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17012 & 17013	10	RC-DEO	14	FOURTH	6040.02
WATER CODE N/A			SEWER CODE N/A		

STORMWATER MANAGEMENT PROFILES & DETAILS

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 21 OF 35 SDP-06-03

SDP 06-03

I:\04048\dwg\NEW PLAN\bushy\SWMnotes&details 17-21.dwg, 2/2/2006 11:43:28 AM, 1:20

LOG OF BORING No. SWM1

PROJECT: BUSHY PARK ELEMENTARY SCHOOL — PROJECT NO.: 05-40-0055
CLIENT: HOWARD COUNTY PUBLIC SCHOOLS
PROJECT LOCATION: CARRS MILL AND ROXBURY MILLS ROADS
LOCATION: SWM POND WEST OF SCHOOL — ELEVATION: 598.89
DRILLER: PGS — LOGGED BY: TCS
DRILLING METHOD: SPT — DATE: 2-20-05
DEPTH TO - WATER> INITIAL: 14.9 AFTER 24 HOURS: 12.3 CAVING> 12.7

Depth (feet)	Description	Sample No.	Blow Counts	% < #200
0	Topsoil - 4 inches			
.3	Brown and reddish brown moist SILT & CLAY, little to some cf sand USDA - Silt Loam USCS - ML	1	2 5 6	
3	Brown and dark brown very moist elastic SILT, little cf sand USDA - Silt Loam USCS - MH	2	4 4 6	93.7
		3	4 5 6	
6	Infiltration test @ 6 feet - 1.31 In/Hr Brown, reddish brown and gray moist micaceous cf SAND, and silt USDA - Sandy Loam USCS - SM	4	3 6 8	
12	Brown, yellowish brown and gray very moist SILT & CLAY, little cf sand USDA - Loam USCS - ML	5	2 2 3	
17	Brown and gray very moist micaceous cf SAND, and silt USDA - Sandy Loam USCS - SM	6	9 15 19	
20	Boring terminated at 20 ft.			

TEST RESULTS: Plastic Limit ├──┤ Liquid Limit; Water Content - ●; Penetration - ▨ (10 20 30 40 50)

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

PENNIMAN & BROWNE, INC
6252 FALLS ROAD
BALTIMORE, MD 21209

Figure PAGE 1 of 1

LOG OF BORING No. SWM2

PROJECT: BUSHY PARK ELEMENTARY SCHOOL — PROJECT NO.: 05-40-0055
CLIENT: HOWARD COUNTY PUBLIC SCHOOLS
PROJECT LOCATION: CARRS MILL AND ROXBURY MILLS ROADS
LOCATION: SWM POND WEST OF SCHOOL — ELEVATION: 601.16
DRILLER: PGS — LOGGED BY: TCS
DRILLING METHOD: SPT — DATE: 2-20-05
DEPTH TO - WATER> INITIAL: 15.3 AFTER 24 HOURS: 12.7 CAVING> 12.9

Depth (feet)	Description	Sample No.	Blow Counts	% < #200
0	Topsoil -= 4 inches			
.3	Brown gray moist SILT & CLAY, some cf sand USDA - Loam USCS - ML	1	6 8 6	
3	Brown moist SILT & CLAY, some cf sand, trace rock frags, trace mica USDA - Loam USCS - ML	2	4 7 9	
6	Brown moist clayey SILT, and cf sand, trace mica USDA - Loam USCS - ML	3	5 6 7	
		4	3 4 7	37.1
8	Infiltration test @ 8 feet - 1.04 In/Hr Brown and gray moist to wet micaceous cf SAND, and silt USDA - Sandy Loam USCS - SM	5	6 7 9	37.3
		6	7 7 10	
20	Boring terminated at 20 ft.			

TEST RESULTS: Plastic Limit ├──┤ Liquid Limit; Water Content - ●; Penetration - ▨ (10 20 30 40 50)

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

PENNIMAN & BROWNE, INC
6252 FALLS ROAD
BALTIMORE, MD 21209

Figure PAGE 1 of 1

LOG OF BORING No. SWM3

PROJECT: BUSHY PARK ELEMENTARY SCHOOL — PROJECT NO.: 05-40-0055
CLIENT: HOWARD COUNTY PUBLIC SCHOOLS
PROJECT LOCATION: CARRS MILL AND ROXBURY MILLS ROADS
LOCATION: SWM POND WEST OF SCHOOL — ELEVATION: 599.72
DRILLER: PGS — LOGGED BY: TCS
DRILLING METHOD: SPT — DATE: 2-20-05
DEPTH TO - WATER> INITIAL: 13.8 AFTER 24 HOURS: 11.7 CAVING> 14.6

Depth (feet)	Description	Sample No.	Blow Counts	% < #200
0	Topsoil - 2 inches			
.2	Brown moist SILT & CLAY, some cf sand, trace rock frags USDA - Silt Loam USCS - ML	1	4 5 7	
		2	4 5 7	
		3	4 7 6	
7	Brown moist micaceous SILT, and cf sand USDA - LOAM USCS - ML Infiltration test @ 8 feet - .67 In/Hr	4	3 5 7	50.4
12	Brown and gray moist micaceous cf SAND, and silt USDA - Sandy Loam USCS - SM	5	5 6 9	
17	Dark brown wet micaceous cf SAND, and silt trace rock frags USDA - Sandy Loam USCS - SM	6	6 11 7	
20	Boring terminated at 20 ft.			

TEST RESULTS: Plastic Limit ├──┤ Liquid Limit; Water Content - ●; Penetration - ▨ (10 20 30 40 50)

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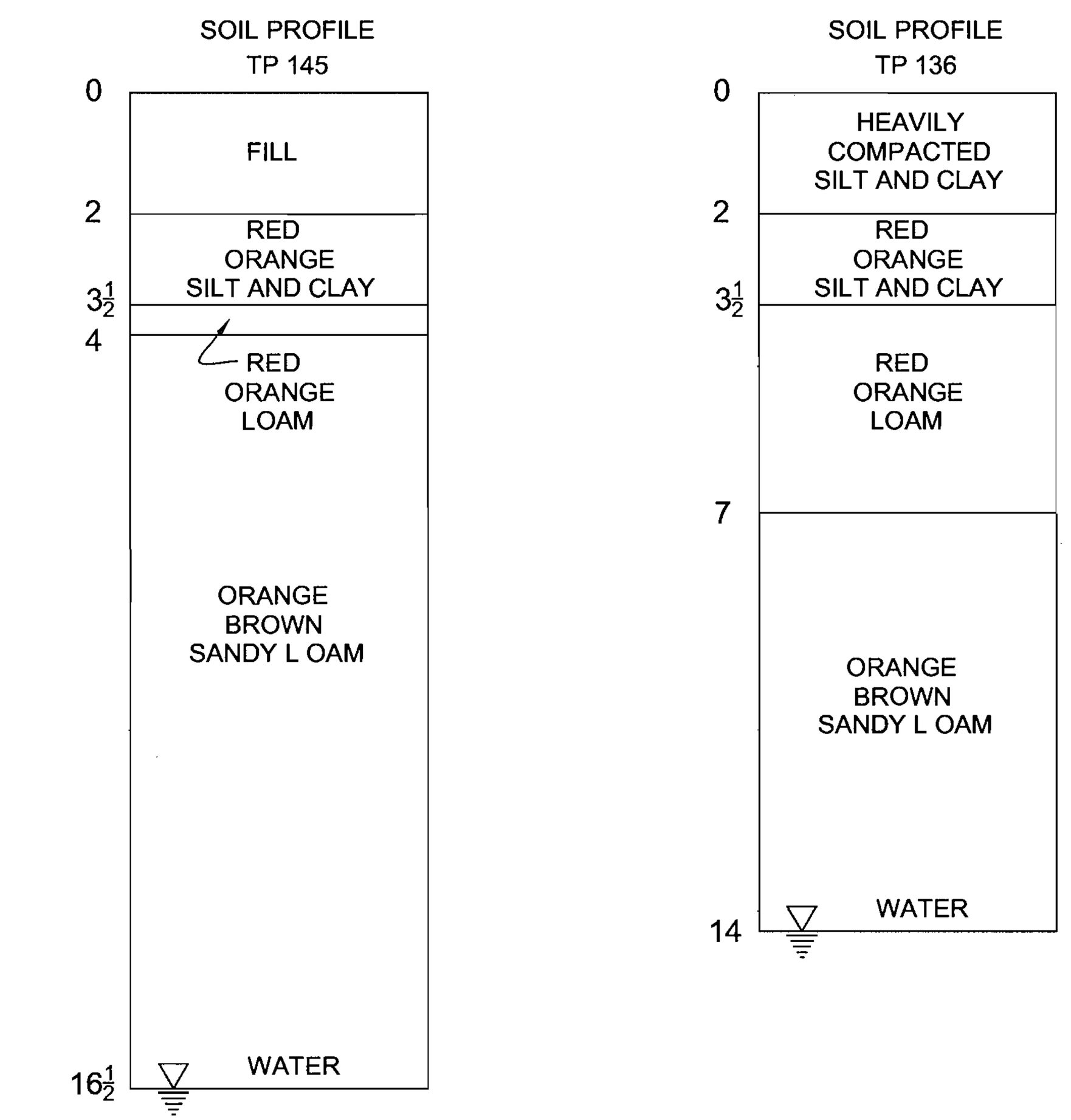
PENNIMAN & BROWNE, INC
6252 FALLS ROAD
BALTIMORE, MD 21209

Figure PAGE 1 of 1

TEST PITS
(@ RECHARGE TRENCH)



LOG OF BORING No. SWM4

PROJECT: BUSHY PARK ELEMENTARY SCHOOL — PROJECT NO.: 05-40-0055
CLIENT: HOWARD COUNTY PUBLIC SCHOOLS
PROJECT LOCATION: CARRS MILL AND ROXBURY MILLS ROADS
LOCATION: SWM FACILITY EAST OF SCHOOL — ELEVATION: 607.65
DRILLER: PGS — LOGGED BY: TCS
DRILLING METHOD: SPT — DATE: 2-20-05
DEPTH TO - WATER> INITIAL: 16.4 AFTER 24 HOURS: 14.0 CAVING> 14.6

Depth (feet)	Description	Sample No.	Blow Counts	% < #200
0	Topsoil - 4 inches			
.3	**FILL** Brown and brown gray moist SILT & CLAY, some cf sand trace rock frags USDA - Silt Loam USCS - ML	1	6 9 8	
		2	3 6 9	
3	Brown and gray moist SILT & CLAY, little cf sand USDA - Silt Loam USCS - CL	3	5 7 7	76.7
6	Infiltration test @ 6 feet - .94 IN/Hr Brown moist SILT & CLAY, some cf sand, trace rock frags, trace mica USDA - Loam USCS - ML	4	4 5 5	
8	Brown to reddish brown moist to very moist micaceous cf SAND, and silt USDA - Sandy Loam USCS - SM	5	7 6 9	
17	Brown and gray wet micaceous cf SAND, and silt, trace rock frags USDA - Sandy Loam USCS - SM	6	5 6 8	
20	Boring terminated at 20 ft.			

TEST RESULTS: Plastic Limit ├──┤ Liquid Limit; Water Content - ●; Penetration - ▨ (10 20 30 40 50)

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PENNIMAN & BROWNE, INC
6252 FALLS ROAD
BALTIMORE, MD 21209

Figure PAGE 1 of 1

LOG OF BORING No. SWM5

PROJECT: BUSHY PARK ELEMENTARY SCHOOL — PROJECT NO.: 05-40-0055
CLIENT: HOWARD COUNTY PUBLIC SCHOOLS
PROJECT LOCATION: CARRS MILL AND ROXBURY MILLS ROADS
LOCATION: SWM FACILITY EAST OF SCHOOL — ELEVATION: 608.76
DRILLER: PGS — LOGGED BY: TCS
DRILLING METHOD: SPT — DATE: 2-23-05
DEPTH TO - WATER> INITIAL: 18.2 AFTER 24 HOURS: 15.5 CAVING> 15.9

Depth (feet)	Description	Sample No.	Blow Counts	% < #200
0	Topsoil - 5 inches			
.4	Brown gray moist clayey SILT, and cf sand, trace rock frags USDA - Loam USCS - ML	1	4 3 4	
3	Brown moist cf SAND, and silt, trace mica USDA - Sandy Loam USCS - SM	2	2 3 3	
		3	3 4 4	
6	Infiltration test @ 6 feet - 1.37 In/Hr Brown, dark brown and gray moist micaceous cf SAND, and to some silt, trace rock frags USDA - Sandy Loam USCS - SM	4	3 3 5	
12	Brown and gray moist to very moist micaceous cf SAND, and silt USDA - Sandy Loam USCS - SM	5	4 5 7	
		6	5 8 9	
20	Boring terminated at 20 ft.			

TEST RESULTS: Plastic Limit ├──┤ Liquid Limit; Water Content - ●; Penetration - ▨ (10 20 30 40 50)

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

PENNIMAN & BROWNE, INC
6252 FALLS ROAD
BALTIMORE, MD 21209

Figure PAGE 1 of 1

LOG OF BORING No. SWM6

PROJECT: BUSHY PARK ELEMENTARY SCHOOL — PROJECT NO.: 05-40-0055
CLIENT: HOWARD COUNTY PUBLIC SCHOOLS
PROJECT LOCATION: CARRS MILL AND ROXBURY MILLS ROADS
LOCATION: SWM FACILITY EAST OF SCHOOL — ELEVATION: 608.76
DRILLER: PGS — LOGGED BY: TCS
DRILLING METHOD: SPT — DATE: 2-23-05
DEPTH TO - WATER> INITIAL: DRY AFTER 24 HOURS: 15.2 CAVING> 15.8

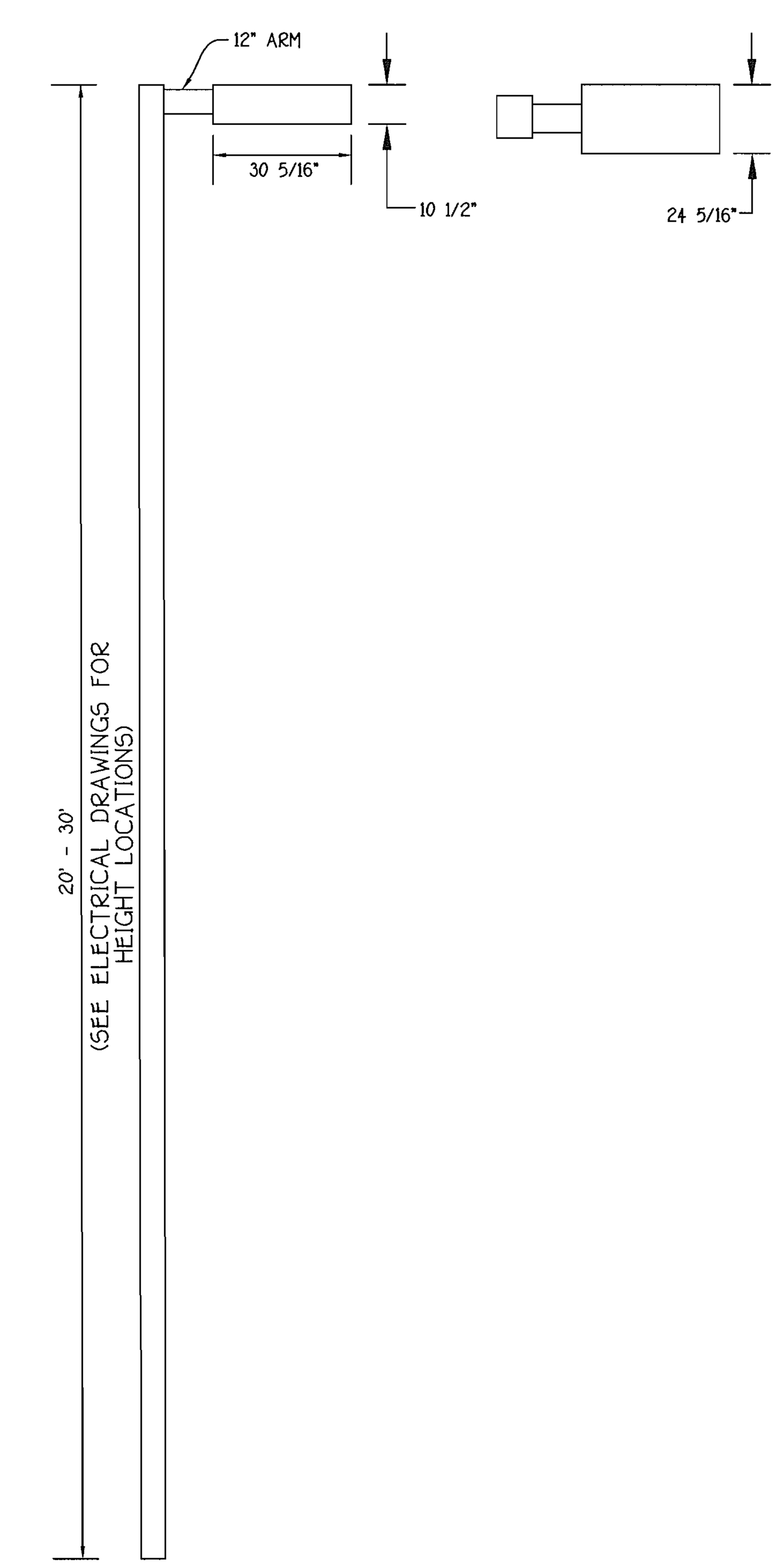
Depth (feet)	Description	Sample No.	Blow Counts	% < #200
0	Topsoil - 5 inches			
.4	Brown gray moist SILT & CLAY, and cf sand, trace rock frags USDA - Loam USCS - ML	1	8 10 9	
3	Brown moist cf SAND, and silt & clay, trace rock frags, trace mica USDA - Sandy Loam USCS - SM	2	3 4 4	
		3	3 3 5	56.7
6	Infiltration test @ 6 feet - .65 In/Hr Brown moist clayey SILT, and cf sand, tracr mica USDA - Loam USCS - ML	4	4 5 6	
12	Brown and gray moist to very moist cf SAND, and silt, trace rock frags, trace mica USDA - Sandy Loam USCS - SM	5	7 7 9	
		6	7 7 6	
20	Boring terminated at 20 ft.			

TEST RESULTS: Plastic Limit ├──┤ Liquid Limit; Water Content - ●; Penetration - ▨ (10 20 30 40 50)

This information pertains only to this boring and should not be interpreted as being indicitive of the site.

PENNIMAN & BROWNE, INC
6252 FALLS ROAD
BALTIMORE, MD 21209

Figure PAGE 1 of 1



ARM MOUNTED RECTILINEAR CUTOFF LIGHTING (400 WATT - 1000 WATT) KSF3 METAL HALIDE

NOT TO SCALE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER — 3/3/06 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/13/06 Date

Chief, Division of Land Development — 3/10/06 Date

Chief, Development Engineering Division — 2/23/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
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Address Chart

Parcel Number	Street Address
P. 15	14601 CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
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	WOODBINE, MD. 21797

PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02

WATER CODE N/A — SEWER CODE N/A

SOIL BORING PROFILES

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005
BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 22 OF 35 SDP-06-03

SDP 06-03

I:\04048\dwg\NEW PLANS\SOIL BORING (SHEET 22).dwg, 2/2/2006 12:08:31 PM, 1:1

PLAN

SCALE: 1" = 40'

THIS SHEET NOT FOR CONSTRUCTION

DRAINAGE AREA DATA

STRUCTURE NO.	DRAINAGE AREA	AREA	'C'	ZONED	% IMP.
I-1	A	0.57 Ac.	0.55	RC-DEO	42%
I-2	B	0.11 Ac.	0.95	RC-DEO	100%
I-3	C	0.48 AC.	0.70	RC-DEO	66%
I-4	D	1.25 AC.	0.61	RC-DEO	50%
I-5	E	0.84 AC.	0.70	RC-DEO	64%
I-6	F	0.32 AC.	0.47	RC-DEO	34%
I-7	G	0.13 AC.	0.95	RC-DEO	100%
I-8	H	0.60 AC.	0.68	RC-DEO	62%
I-9	I	0.20 AC.	0.90	RC-DEO	90%
I-10	J	0.53 AC.	0.92	RC-DEO	92%
I-11	K	0.91 AC.	0.76	RC-DEO	73%
I-12	L	1.00 AC.	0.69	RC-DEO	62%
I-13	M	0.85 AC.	0.47	RC-DEO	29%
Roof Drain to M-7	N	0.75 AC.	0.95	RC-DEO	100%
Roof Drain to M-9	O	0.87 AC.	0.95	RC-DEO	100%
S-1	P	6.85 AC.	0.25	RC-DEO	0%

SOILS LEGEND

SOIL	NAME	CLASS
** Ba	Baile silt loam	D
ChA	Chester silt loam, 0 to 3 percent slopes	B
ChB2	Chester silt loam, 3 to 8 percent slopes, moderately eroded	B
* CuB	Comus silt loam, local alluvium, 3 to 8 percent slopes	B

NOTES:

* Hydric soils and/or contains hydric inclusions

** May contain hydric inclusions

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — Date 3/10/06

Chief, Division of Land Development — Date 3/10/06

Chief, Development Engineering Division — Date 2/28/06

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 3/3/06

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
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PROJECT			SECTION/AREA		PARCELS
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P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02
WATER CODE N/A			SEWER CODE N/A		

SOILS MAP AND STORM DRAIN DRAINAGE AREA MAP

NEW REPLACEMENT SCHOOL

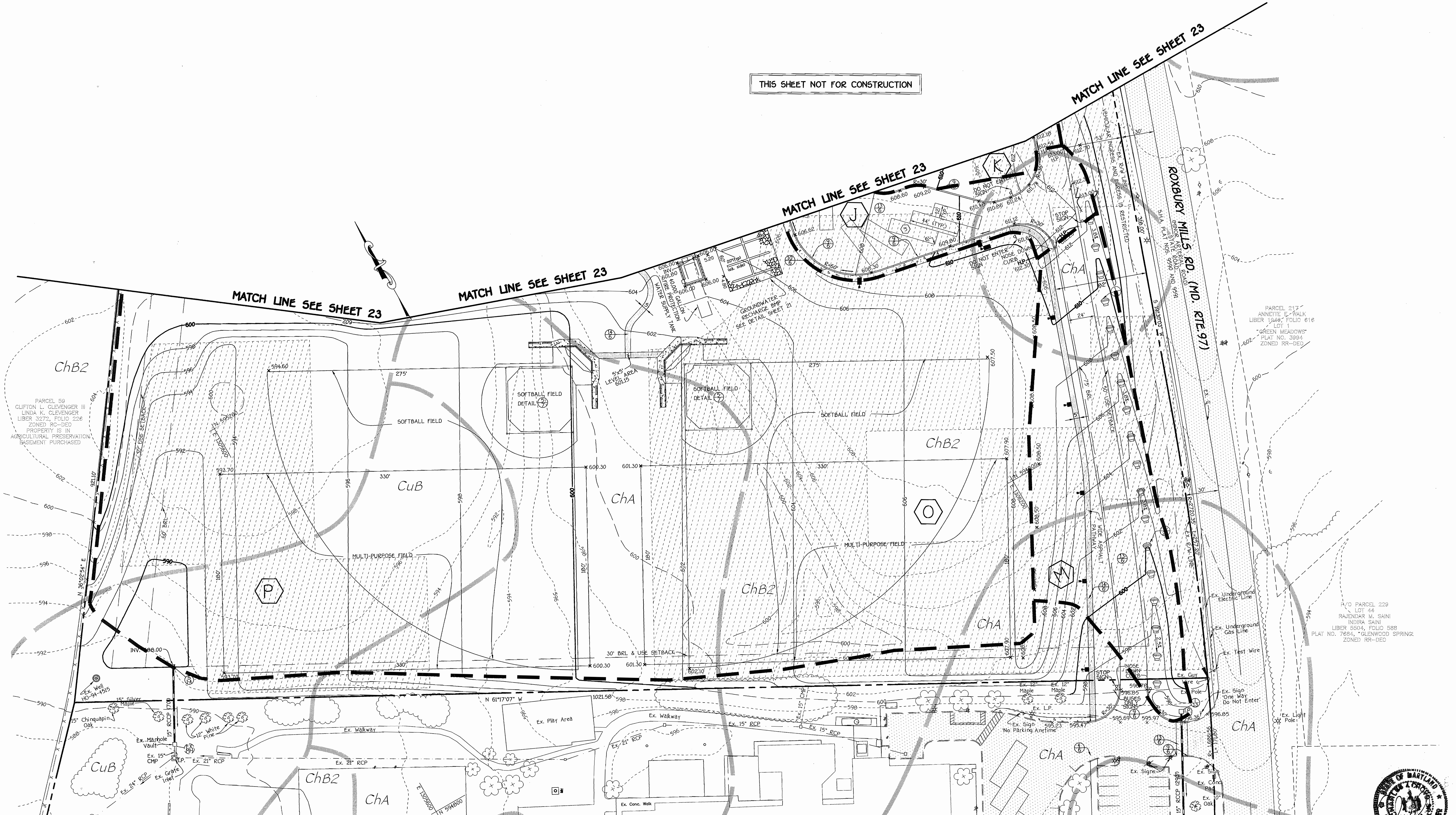
BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: SEPTEMBER 30, 2005
BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 23 OF 35 SDP-06-03

SDP 06-03

I:\04048\dwg\NEW PLAN\04048 Storm Drain Drainage Area (SHEETS 23-24).dwg, 2/3/2006 8:21:59 AM, 1:1



PLAN

SCALE: 1" = 40'

FISHER, COLLINS & CARTER, INC.
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SOILS MAP AND STORM DRAIN DRAINAGE AREA MAP

NEW REPLACEMENT SCHOOL

BUSHY PARK ELEMENTARY SCHOOL

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TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"

SHEET 24 OF 35 SDP-06-03

SDP 06-03

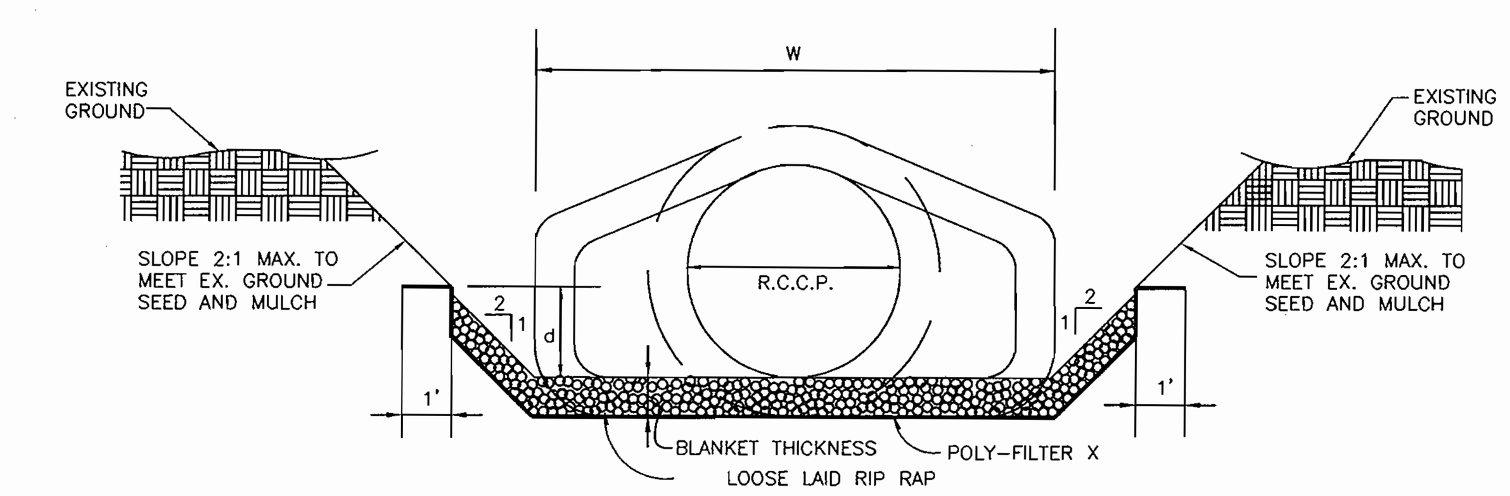
STRUCTURE SCHEDULE

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	LOCATION NORTH	LOCATION EAST	W	TYPE	REMARKS
I-1	603.50	599.00	598.75	✱N 595707.37	E 1306024.66	2.50'	A-10	S.D. 4.41
I-2	605.84	-----	601.20	✱N 595717.30	E 1306101.01	2.50'	A-5	S.D. 4.40
I-3	605.50	600.93, 600.18	599.93	✱N 595585.21	E 1306201.59	2.50'	A-5	S.D. 4.40
I-4	605.50	601.09, 601.09	600.34	✱N 595587.67	E 1306233.50	2.50'	A-5	S.D. 4.40
I-5	606.79	-----	602.50	✱N 595497.67	E 1306240.41	2.50'	A-10	S.D. 4.41
I-6	605.80	-----	602.09	N 595469.33	E 1306171.71	3.26'	SINGLE WR INLET	S.D. 4.37 W/ S.D. 4.93
I-7	613.94	-----	608.40	✱N 595707.91	E 1306305.16	2.50'	A-10	S.D. 4.41
I-8	605.00	599.75	599.25	N 595199.23	E 1305888.71	3.26'	MODIFIED SINGLE WR INLET	SEE DETAIL THIS SHEET
I-9	605.50	600.99	600.74	✱N 595158.97	E 1306021.48	3.00'	A-5	S.D. 4.40
I-10	606.30	602.39, 602.14	601.89	✱N 595132.22	E 1306149.10	2.50'	A-5	S.D. 4.40
I-11	607.43	-----	602.84	✱N 595110.09	E 1306235.71	2.50'	A-5	S.D. 4.40
I-12	606.30	-----	602.60	✱N 595200.34	E 1306162.55	2.50'	A-5	S.D. 4.40
I-13	595.50	-----	592.75	N 594543.02	E 1306227.13	3.26'	SINGLE WR INLET	S.D. 4.37 W/ S.D. 4.93
M-1	603.50	598.50	598.25	N 595238.73	E 1305750.25	5'	PRECAST SHALLOW MANHOLE	G. - 5.13
M-2	607.00	601.66	601.41, 599.80	N 595141.16	E 1306102.96	4'	PRECAST MANHOLE	MODIFIED SEE DETAIL SHEET 21
M-3	602.00	597.97, 597.47	597.22	N 595699.66	E 1305988.40	4'	PRECAST SHALLOW MANHOLE	G. - 5.12
M-4	607.50	598.75, 599.50	598.50	N 595629.58	E 1306008.81	4'	PRECAST MANHOLE	G. - 5.12
M-5	604.00	597.43	597.18	N 595662.20	E 1305965.83	4'	PRECAST MANHOLE	G 5.12
M-6	607.00	598.18	597.93	N 595627.70	E 1305920.45	4'	PRECAST MANHOLE	G 5.12
M-7	607.00	600.85	600.60	N 595524.69	E 1305900.13	4'	PRECAST MANHOLE	G 5.12
M-8	602.65	598.41	598.26	N 595309.06	E 1305754.19	4'	PRECAST SHALLOW MANHOLE	G 5.12
M-9	608.00	600.44	600.19	N 595416.00	E 1305856.11	4'	PRECAST MANHOLE	G 5.12
M-10	591.76	588.70	588.45	N 594286.03	E 1306086.32	4'	PRECAST SHALLOW MANHOLE	G 5.12
S-1A	589.25	588.00	588.00	N 595032.10	E 1305460.32	N/A	CONCRETE END SECTION	S.D. 5.52
S-2	600.50	598.00	598.00	N 595285.82	E 1305729.05	N/A	CONCRETE END SECTION	S.D. 5.52
S-3	599.00	597.00	597.00	N 595694.85	E 1305958.28	N/A	CONCRETE END SECTION	S.D. 5.52
S-4	598.29	597.04	597.00	N 595675.09	E 1305956.03	N/A	CONCRETE END SECTION	S.D. 5.52
S-5	599.29	598.04	598.00	N 595307.96	E 1305733.47	N/A	CONCRETE END SECTION	S.D. 5.52
S-6	591.56	589.56	589.49	N 595031.27	E 1305437.60	N/A	CMP END SECTION	S.D. 5.61

✱- DENOTES CENTER OF INLET AT FACE OF CURB

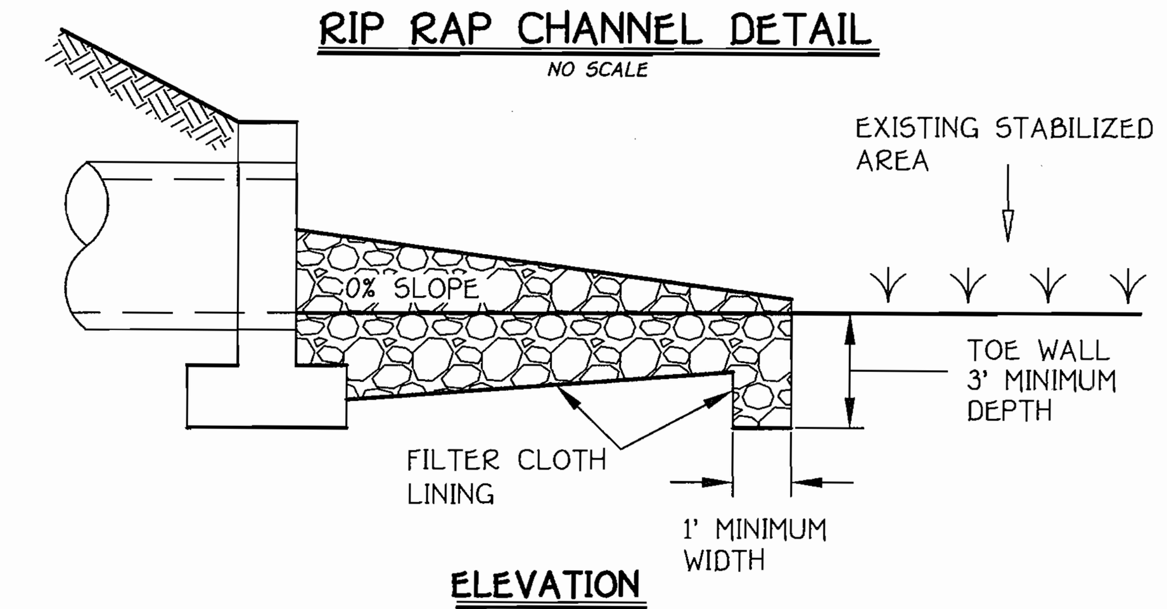
RIP RAP CHANNEL DESIGN DATA

STRUCTURE	AREA	WETTED PERIMETER	R	R 2/3	S	S 1/2	W	d	n	V fps	Q cfs	RIP RAP SIZE d 50	RIP RAP SIZE d MAX	BLANKET THICKNESS	DIAMETER
S-2	11.37 S.F.	14.98'	0.7590	0.8321	0.0050	0.0707	11'	0.89'	0.04	2.19	24.90	9.5"	15"	19"	30"
S-3	9.81 S.F.	13.76'	0.7129	0.7980	0.0050	0.0707	10'	0.84'	0.04	2.10	20.60	9.5"	15"	19"	24"

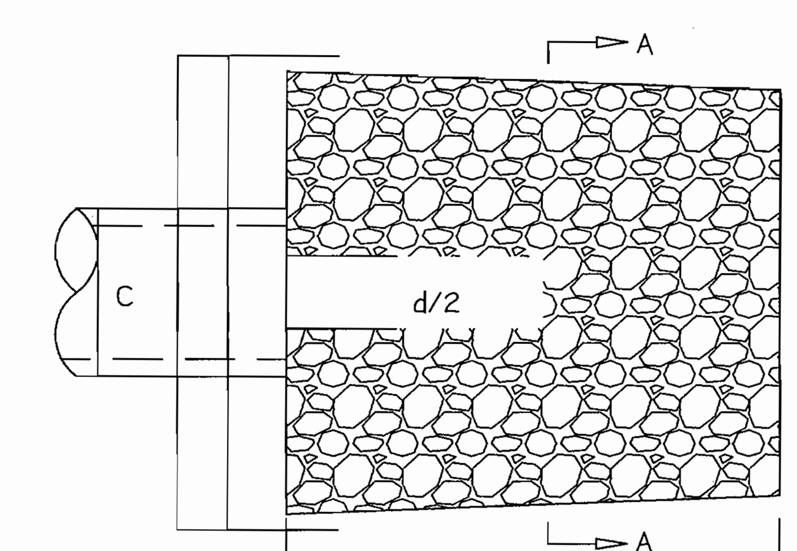


RIP RAP CHANNEL DETAIL

NO SCALE



ELEVATION



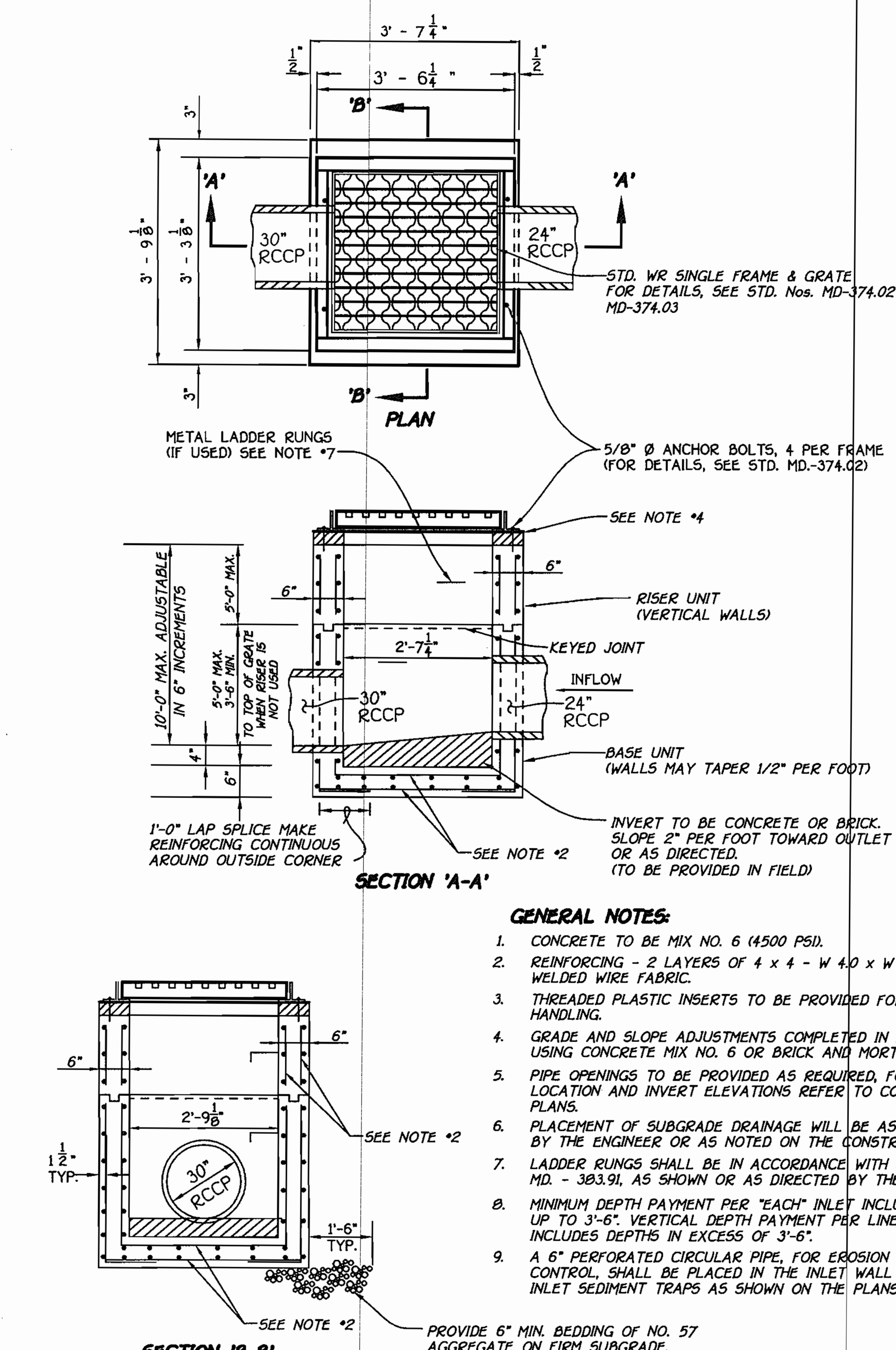
PLAN

PIPE SCHEDULE

SIZE	CLASS	LENGTH
3"	PVC SCHEDULE 40	32'
4"	PVC SCHEDULE 40	275'
4"	PVC SCHEDULE 40 PERF.	115'
6"	PVC SCHEDULE 40	10'
12"	PVC SCHEDULE 40	45'
15"	RCCP	1199'
18"	RCCP	126'
24"	RCCP	589'
30"	RCCP	200'
18"	ALCMP	10'
18"	ALCMP PERF.	212.5'
24"	CMP	33'

CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

1. The subgrade for the filter, riprap 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 riprap or filter.
3. Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occassional hole, shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
4. Stone for the riprap or gabion outlets may be placed by equipment. Both shall each 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 riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogenous with the smaller stones and spalls filling the voids between larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

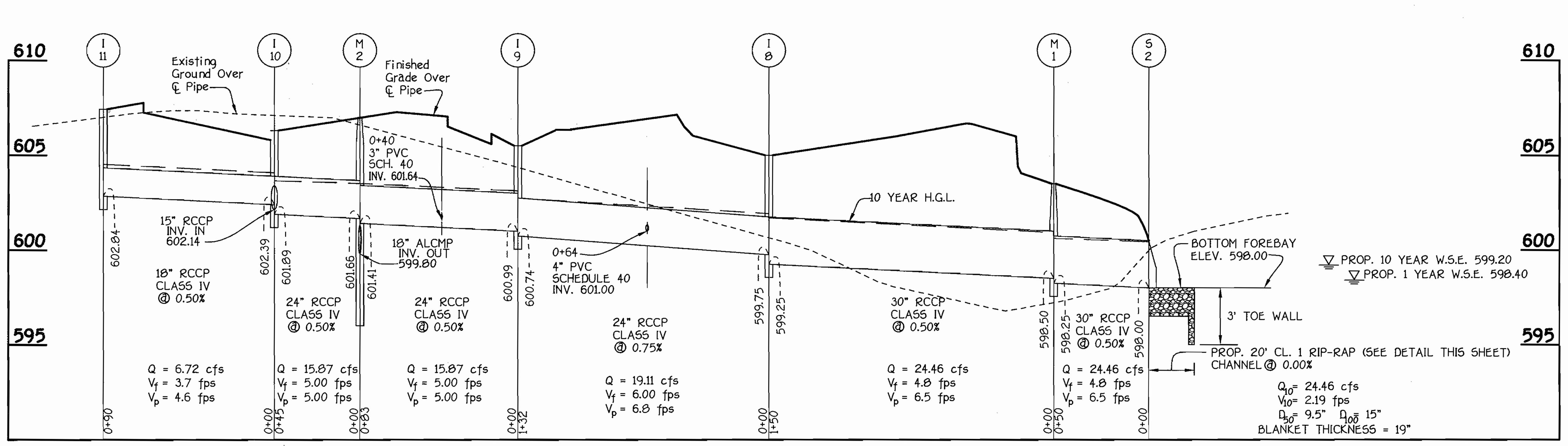


GENERAL NOTES:

1. CONCRETE TO BE MIX NO. 6 (4500 PSI).
2. REINFORCING - 2 LAYERS OF 4 x 4 - W 4.0 x W 4.0 WELDED WIRE FABRIC.
3. THREADED PLASTIC INSERTS TO BE PROVIDED FOR HANDLING.
4. GRADE AND SLOPE ADJUSTMENTS COMPLETED IN FIELD USING CONCRETE MIX NO. 6 OR BRICK AND MORTAR.
5. PIPE OPENINGS TO BE PROVIDED AS REQUIRED, FOR SIZE, LOCATION AND INVERT ELEVATIONS REFER TO CONSTRUCTION PLANS.
6. PLACEMENT OF SUBGRADE DRAINAGE WILL BE AS DIRECTED BY THE ENGINEER OR AS NOTED ON THE CONSTRUCTION PLANS.
7. LADDER RUNGS SHALL BE IN ACCORDANCE WITH STANDARD MD. - 383.91, AS SHOWN OR AS DIRECTED BY THE ENGINEER.
8. MINIMUM DEPTH PAYMENT PER "EACH" INLET INCLUDES DEPTHS UP TO 3'-6". VERTICAL DEPTH PAYMENT PER LINEAR FOOT INCLUDES DEPTHS IN EXCESS OF 3'-6".
9. A 6" PERFORATED CIRCULAR PIPE, FOR EROSION AND SEDIMENT CONTROL, SHALL BE PLACED IN THE INLET WALL AT ALL INLET SEDIMENT TRAPS AS SHOWN ON THE PLANS.

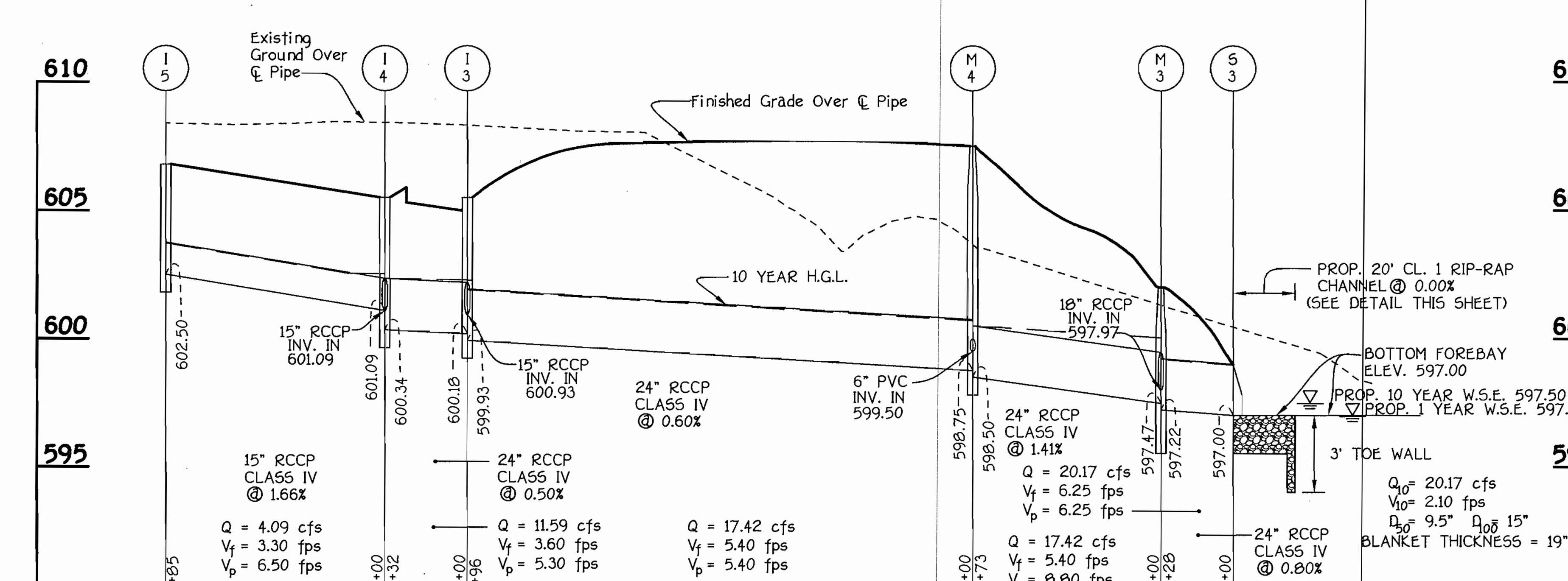
INLET I-8
MODIFIED PRECAST SINGLE WR INLET

NOT TO SCALE



PROFILE

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



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FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — 3/3/06 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/10/06 Date

Chief, Division of Land Development — 3/10/06 Date

Chief, Development Engineering Division — 2/23/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

Address Chart

Parcel Number	Street Address
P. 15	14601 CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT *s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02

WATER CODE N/A — SEWER CODE N/A

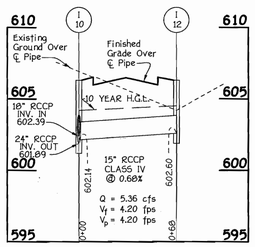
STORM DRAIN PROFILES, STRUCTURE SCHEDULE AND DETAILS

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

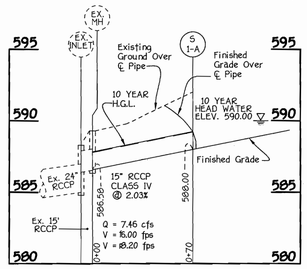
TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"

SDP 06-03



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



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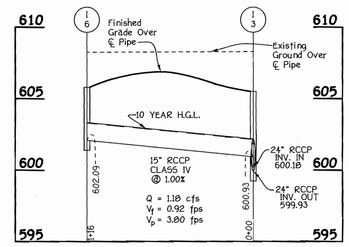

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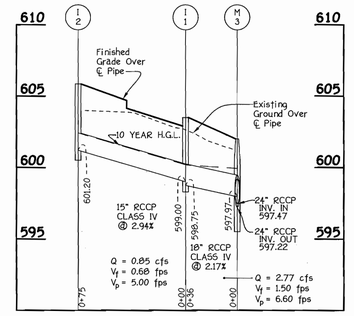

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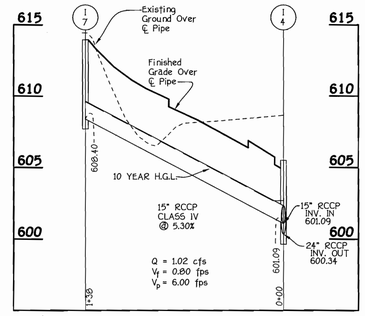

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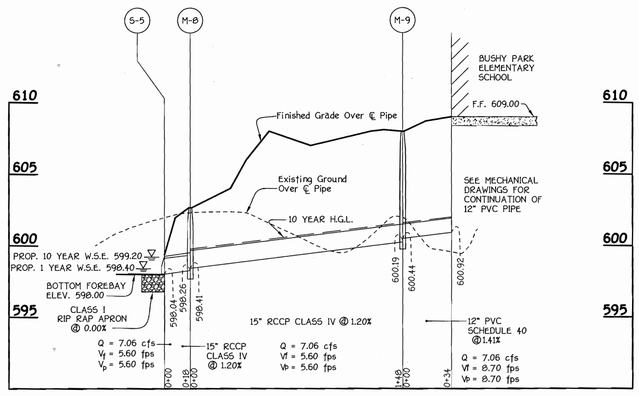

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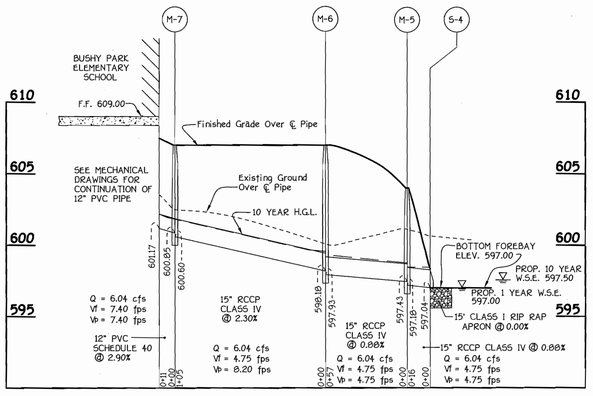

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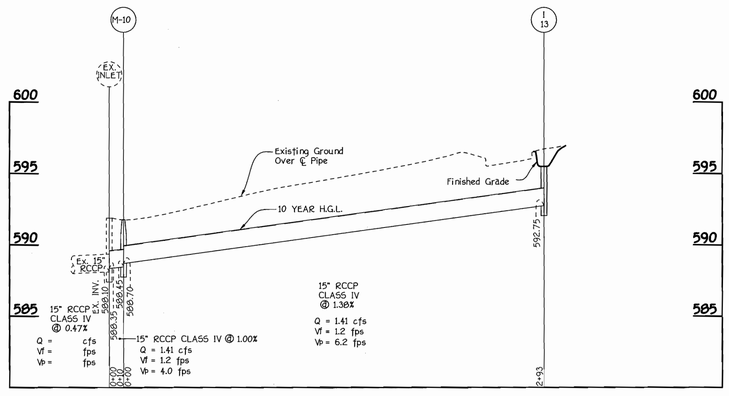

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HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER — DATE 3/3/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — Date 3/16/06

Chief, Division of Land Development — Date 3/10/06

Chief, Development Engineering Division — Date 2/23/06

PREPARED FOR
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	WOODBINE, MD. 21797

PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
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WATER CODE N/A — SEWER CODE N/A

STORM DRAIN PROFILES

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005

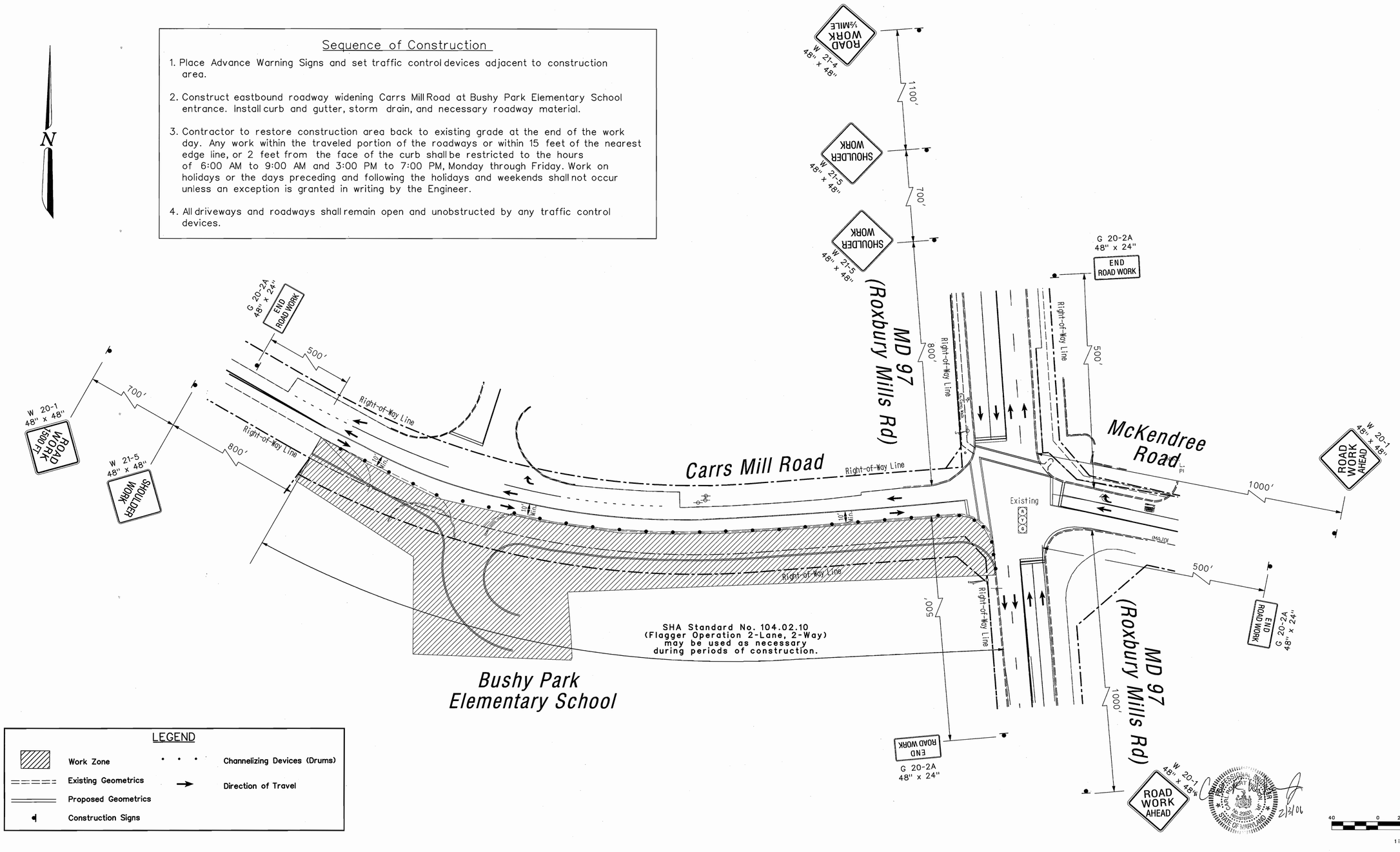
BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 26 OF 35 SDP-06-03

SDP 06-03

Sequence of Construction

1. Place Advance Warning Signs and set traffic control devices adjacent to construction area.
2. Construct eastbound roadway widening Carrs Mill Road at Bushy Park Elementary School entrance. Install curb and gutter, storm drain, and necessary roadway material.
3. Contractor to restore construction area back to existing grade at the end of the work day. Any work within the traveled portion of the roadways or within 15 feet of the nearest edge line, or 2 feet from the face of the curb shall be restricted to the hours of 6:00 AM to 9:00 AM and 3:00 PM to 7:00 PM, Monday through Friday. Work on holidays or the days preceding and following the holidays and weekends shall not occur unless an exception is granted in writing by the Engineer.
4. All driveways and roadways shall remain open and unobstructed by any traffic control devices.

N



LEGEND

- Work Zone
- Existing Geometrics
- Proposed Geometrics
- Construction Signs
- Channelizing Devices (Drums)
- Direction of Travel

Graphic Scale
40 0 20 40 80 120
(In Feet)
1 inch = 40 ft.

2/2/06

The Traffic Group
The Traffic Group, Inc.
Suite H
9900 Franklin Square Drive
Baltimore, Maryland 21236
410-931-6600
1-800-583-8411
Fax 410-931-6601

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Weber for COUNTY HEALTH OFFICER — MJD — 3/8/06 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/10/06 Date

Chief, Division of Land Development — 3/9/06 Date

Chief, Development Engineering Division — 2/23/06 Date

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PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02

WATER CODE N/A — SEWER CODE N/A

MAINTENANCE OF TRAFFIC PLAN- CARRS MILL ROAD

NEW REPLACEMENT SCHOOL
BUSHY PARK
ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: SEPTEMBER 30, 2005
BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
BID AND CONSTRUCTION 3 JANUARY 06
SHEET 27 OF 35 SDP-06-03

SDP 06-03

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GENERAL NOTES
TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS (TTCTA)

1.0 INTRODUCTION

1.1 The General Notes (GN) supplement the Standard Details and the TTCTAs, and have been assembled to provide additional direction on the installation and application of traffic control devices shown in these standards. The GNs also provide additional guidelines and other useful information that will facilitate the installation of appropriate temporary traffic controls. Users of these standards shall also comply with provisions of FHWA's Manual on Uniform Traffic Control Devices (MUTCD) and SHA's Supplement to the MUTCD, Standard Specifications for Construction and Materials, and General Provisions for Construction Contracts.

1.2 The TTCTA show the minimum requirements necessary to plan for the safety of workers, motorists, pedestrians, and other system users throughout the temporary traffic control zone for various types of work activities. Typically, more traffic control devices are required for long-term stationary work activities than for short-term stationary work activities. Additional temporary traffic control devices may be necessary because of other traffic factors, such as the roadway's accident history, expected traffic backups, high truck traffic, roadway geometrics or characteristics, and other conditions that may adversely affect the flow of traffic. Users of these TTCTA should review the temporary traffic control setup once in place to ensure that traffic is traveling smoothly throughout the traffic control zone, driver expectancy is being met, and no other adjustments to the temporary traffic control devices are necessary. This review is to be repeated on a regular basis as noted elsewhere.

1.3 The TTCTA address a wide variety of different conditions; however, every situation could not be shown. Therefore, charts have been provided showing standard devices to be used for the proposed work zone activity and the placement of these devices for certain roadway conditions and work durations. The user is expected to combine the information from these charts into a workable traffic control plan.

1.4 In applying these standards and guidelines, questions about applications and interpretations should be referred to the State Highway Administration's Assistant District Engineer-Traffic, County Traffic Engineer, City Traffic Engineer, Public Works Engineer, or other responsible party, who has expertise in traffic engineering and has jurisdiction on the appropriate roadways. Such consultation may be required, for example, to determine the appropriate TTCTA for the work zone condition.

4.0 SIGNS

4.1 Signs should be spaced at the distances shown on the TTCTA diagrams.

4.2 See the "Sign and Buffer Spacing Charts/Standard Temporary Traffic Control Operations" for the appropriate spacing of the advance warning signs for lower speed highway facilities.

4.3 At locations where queues extend beyond the first advance warning sign, additional advance warning signs (static and/or PCMS) shall be placed in advance of the longest observed queue.

4.4 When bus and/or truck volumes are high, an initial advance warning sign may be placed on the left side of a multilane undivided roadway.

4.5 As of December 31, 2003, Fluorescent Orange High Performance Wide Angle (FOHPWA) Retroflective Sign Sheeting material shall be used on all temporary post-mounted warning signs erected in work zones.

4.6 FOHPWA Retroreflective Sign Sheeting material may be used for maintenance work along freeways and major expressways at the discretion of the Engineer.

4.7 Approved temporary roll-up signs may be used for maintenance work along all roadways.

4.8 When work zone speed limits along 65 and 60 mph roadways are reduced, temporary regulatory speed signing shall be posted for work activities of one-hour duration or longer, unless otherwise directed by the Engineer. These signs are to be placed as directed in Standard Nos. MD 104.01-06 and MD 104.01-07.

4.9 Sign designations and messages for the signs most commonly used in work zones are shown within these General Notes. See Specification 104.08-03 for information on other temporary traffic signs.

4.10 G95-4 (Hat and Shovel) signs shall be used for projects lasting greater than two months in duration, unless otherwise specified by the Engineer.

4.11 Along streets in urban areas where the prevailing speed is 35 mph or less, and along secondary roads where the Average Daily Traffic (ADT) is less than 1000 vehicles, the minimum sign size of 36" x 36" may be used.

4.12 For utility operations, the word "AHEAD" may be used on warning signs in lieu of distance messages for warning signs placed up to and including 1500 feet in advance of the work area. At greater distances, the correct distance messages shall be used on such warning signs. Also, the message UTILITY WORK may be used in lieu of ROAD WORK or SHOULDER WORK. ROAD WORK AHEAD signs may also be used in lieu of distance messages on side streets and entrance ramps that intersect roads where work is being performed (as shown in the Typical Applications) and on the main road during mobile and mowing operations.

4.13 ROAD WORK AHEAD signs shall be installed on all side streets and entrance ramps that intersect roads within work zones. The signing shall be placed along the intersection approach to the right of the travel lane. Refer to Standard Detail 104.01-02 for guidance on sign placement. For side streets intersecting roads outside of work zone boundaries, no advanced signing should be installed.

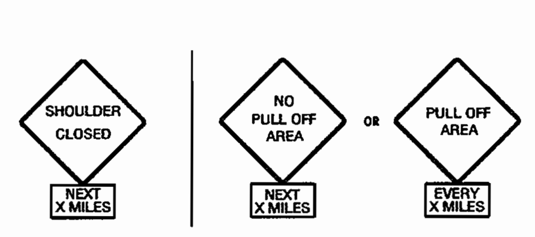
4.14 Warning signs mounted on wood posts, and those mounted on approved portable supports, shall be mounted in conformance with Standard No. MD 104.01-17. Signs mounted on concrete barrier shall be installed using clamps that are on the Office of Traffic & Safety's Approved Product List.

4.15 For shoulder closures greater than a half (1/2) mile in length, advance warning signs should be placed as follows:

a. A NEXT XX MILES supplemental plate should be provided with the first SHOULDER CLOSED sign in the sequence

b. The second SHOULDER CLOSED sign in the sequence should be replaced with either:

- a NO PULL OFF AREA warning sign with NEXT XX MILES supplemental plate, if there are no pull off areas throughout the work area, or
- a PULL OFF AREA warning sign with EVERY XX MILES supplemental plate, if pull off areas are provided (see MD 104.06-14).



4.16 A BUMP sign should be placed when there is a temporary pavement wedge along a transverse joint, a transverse construction trench with temporary backfill, or a similar transverse disturbance. Signs should be placed according to Shoulder Work Typical Applications for the appropriate prevailing speed and work duration, with BUMP signs replacing the SHOULDER WORK signs.

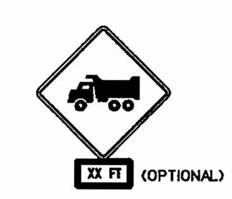
4.17 TRUCK CROSSING (W11-(10)1) signs shall only be used during the following two situations:

1) A work area entrance is allowed along a controlled access highway.

2) A work area entrance is provided along highways other than controlled access, the entrance does not have adequate decision sight distance for approaching traffic, and the entrance cannot be relocated to provide adequate decision sight distance. Refer to Standard No. MD 104.00-03 of the General Notes for decision sight distance criteria.

TRUCK CROSSING signs shall be placed according to the Shoulder Work Typical Applications, with TRUCK CROSSING signs replacing all SHOULDER WORK signs.

Any distances to be displayed on the TRUCK CROSSING sign shall be installed using supplemental distance plaques.



5.0 PORTABLE VARIABLE MESSAGE SIGNS (PVMS)

5.1 The PVMS shall not replace standard traffic control devices, but is to supplement these devices.

5.2 PVMS shall be used where a new traffic signal has been installed along State routes having a prevailing speed of 50 mph or greater.

5.3 PVMS shall display a message regarding new traffic signal installation up to 3 days prior to signal turn-on. PVMS shall be removed no later than 7 days after the signal is operational.

5.4 When PVMS are used to advise/warn motorists regarding a new traffic signal installation, they shall be installed along all the major approaches to the intersection, and shall be used in such a way as to supplement the standard traffic control devices required for a new traffic signal installation.

5.5 No more than two displays shall be used within any message cycle unless approved by the District Engineer or ADE-T.

5.6 For a list of standard messages/abbreviations, contact appropriate District Engineer or ADE-T. All customized messages shall be approved by the ADE-T.

5.7 A single message shall be displayed for 2-3 seconds with an "off" interval of 0.5 to 1.0 second. When two messages comprise a message cycle, neither message shall exceed 2 seconds duration. The second message shall follow the first message immediately without any "off" interval. If an off-interval is used between the first and second messages, it shall not exceed 0.5 second.

5.8 The text of the message shall not scroll or travel (horizontally or vertically) across the face of the sign.

5.9 A PVMS should not be used for more than 14 continuous days as part of the same application. A PVMS should be used 3 to 5 days in advance of planned roadwork, if needed.

5.10 PVMS should be used if there is significant change in traffic patterns, unexpected road conditions, or safety concerns that may result in delays/queues and may require caution/diversion.

5.11 PVMS should not be used in place of an arrow panel. The PVMS should be visible from 0.5 mile under day and night conditions and should be legible from a minimum distance of 650 feet.

5.12 PVMS should be placed on the shoulder of the roadway or, if practical, farther from the traveled lane (Standard MD 104.01-22).

5.13 In order to reduce the effect of sun behind the PVMS, the PVMS should be placed so that the sun is not directly behind it (such as during sunrise or sunset).

5.14 The entire message should be readable at least twice at the off-peak 85th-percentile speed prior to work starting or the anticipated prevailing speed.

6.0 ARROW PANELS

6.1 Arrow panels that are installed along roadways with prevailing speeds greater than 40 mph shall be provided with a minimum shoulder closure taper of 1/3 the taper length, (see 7.0 Channelizing Devices). For all other roadways a 100-foot minimum shoulder closure taper shall be used.

7.0 CHANNELIZING DEVICES

7.1 Taper Formulas:

$L = WS$ for speeds greater than (>) 40 mph

$L = WS^2/60$ for speeds equal to or less than (≤) 40 mph

Where: L = minimum length of taper (ft)
S = numerical value of prevailing travel speed or speed limit (MPH), whichever is higher, prior to work starting,
W = width of offset (ft)

7.2 Maximum spacing between channelizing devices:

Taper Channelization: equal in feet to the posted speed limit.

Tangent Channelization: equal in feet to twice the posted speed limit.

7.3 At horizontal or vertical curves, channelizing devices should be extended to a point where they are visible to approaching traffic. On two-lane, two-way roadways, a full taper length shall always be provided in advance of curves.

7.4 Drums, not cones, should always be used to form the taper on roadways having a prevailing travel speed greater than 40 MPH.

7.5 Storing channelizing devices within 30 feet of the edge of open section roadway or 15 feet of a closed section roadway along any roadway is prohibited without approval of the Engineer.

7.6 Type 3 object markers (VP-1) are required for barrier flare / tangent points.

7.7 The appropriate channelizing devices (including approved barrier) to separate opposing traffic shall be as shown on the plans or as directed by the Engineer.

7.8 On straight sections of roadway with full dimension center and / or lane lines, but without edge lines, channelizing drums shall be used to delineate the edge of the roadway, except at locations designated by the Engineer. Examples would include roadways with curbs, parking, bicycle lanes, or other markings. The channelizing drums may be spaced up to 500' apart where no undue hazards exist unless otherwise directed by the Engineer. On curves, these spacings shall be reduced to a value equal to the posted speed limit, unless otherwise directed by the Engineer.

8.0 PAVEMENT MARKINGS

8.1 Temporary pavement markings should be installed according to Section 104.02-03(f), Specific Requirements for Temporary Pavement Markings, from the Standard Specifications for Construction and Materials and from SHA's "Pavement Marking Policy and Guidelines" issued by OOTS.

8.2 Pavement markings that are no longer applicable shall be completely removed or obliterated. Temporary markings shall be used as necessary. Operations less than 12 hours or undertaken during the daytime may require that the permanent markings be temporarily covered with black tape as specified in Section 8.3.

8.3 Pavement marking lines adjacent to any long duration lane transition or lane closure taper shall be removed (or covered with SHA approved black pavement marking tape), unless otherwise directed by the Engineer. Pavement marking lines shall be re-installed (or uncovered) prior to re-opening the closed lane(s).

8.4 Temporary markings on intermediate pavement surfaces (e.g. base course) shall be placed to full dimensions per the Contract Documents (i.e. continuous double yellow center lines; single dashed yellow center line @ 10' segments, 30' gaps where passing is allowed; lane lines @ 10' segments, 30' gaps).

8.5 Guidance on UNMARKED PAVEMENT signing:

1. Daytime: If the pavement is not marked to SHA's standards/specifications during the daytime, no sign is needed, provided item #3 below is adhered to.

2. Nighttime: If, due to unforeseen circumstances as determined by the Engineer, the pavement is left in a condition overnight that does not meet SHA pavement marking standards/specifications, then UNMARKED PAVEMENT signing shall be used.

3. In all instances where less than standard markings are in place (permanent or short-term), appropriate channelizing devices and other traffic control devices shall be used to guide traffic through the work zone in an effective, safe, and positive manner.

9.0 FLAGGING

9.1 Where two or more flaggers are used and are unable to see each other, two-way radio communications shall be used.

9.2 If the entire work area is visible from one station, a single flagger may be used, subject to other safety considerations.

9.3 Guidance on flagging at signalized intersections:

1. Issues regarding flagging at signalized intersections should be discussed in the planning/design stages of the project and the recommended intersection control strategy should be specified in the contract documents.

2. At the pre-construction conference, SHA staff and the contractor should discuss the need for flagging operations, MSP (or local police) presence, and the Standard Operating Procedures to request signal operating mode modifications (if needed).

3. In general, all persons (contractors, maintenance, and utility) should contact the Assistant District Engineer - Traffic (ADE-T) to determine the best method for temporary traffic control at a signalized intersection from the following two (2) cases:

Case 1: The signal is turned to flashing mode during flagging operation.

Case 2: The signal is turned off (dark mode) during flagging operation.

Note: Except for police, flagging shall not occur at a signalized intersection operating in a full-color stop-and-go mode (Normal Operation).

10.0 VEHICLES

10.1 If work vehicles need to be stopped in a lane beyond a horizontal curve or a vertical curve (hill), non-essential vehicles are to be pulled as far off the road as possible or be otherwise parked in a manner as to inhibit the movement of traffic as little as possible. If no protection vehicle is available, channelizing devices shall be placed as specified in 7.0, Channelizing Devices.

10.2 Work vehicles should not occupy any part of the buffer area.

10.3 Vehicle safety lights (amber in color) shall be from the Office of Traffic & Safety's Approved Products list.

10.4 A protection vehicle with a rear truck-mounted-attenuator (TMA) is required for all freeway work operations that have no formal lane closure. A formal lane closure is one that includes a full complement of advance warning devices and a lane closure taper and a work area delineated by channelizing devices placed in accordance with these TTCTAs.

A protection vehicle is also required for highway marking operations and may be required under other traffic and work conditions in conformance with SHA policy or as directed by the Engineer. The protection vehicle may be considered as a substitute for the initial advance warning sign for some mobile work operations. A protection vehicle should also be used in advance of a work operation that is located beyond a horizontal and/or vertical curve. Consideration should also be given to placing an additional temporary advance warning sign(s) or truck mounted variable message sign no less than 500' and no more than 1500' (1/2 mile for expressway conditions) in advance of the protection vehicle, when one or more of the traffic factors listed under General Notes 1.2 exist.

10.5 When a police vehicle is required, the vehicle shall not be located in the buffer and/or taper, but should be located as directed by the Engineer, depending on the type of work. It is sometimes preferable to deploy the police vehicle in advance of the work zone or queue (if queue exists) to encourage speed reduction prior to the work zone.

11.0 WORK HOUR RESTRICTIONS

11.1 Unless otherwise specified in the Contract Document or permitted by the Engineer, work within a lane, within 15 feet of the nearest edge line (open section roadway), or within 2 feet of the face of curb (closed section roadway), is prohibited during peak hours 6 a.m. - 9 a.m. and 4 p.m. - 7 p.m., Monday - Friday. Also, such work is not permitted on Saturdays, Sundays, National or State holidays, or days preceding and following said holidays.

13.0 PAVEMENT DROP-OFF

13.1 When pavement drop-offs are present, the placement of temporary traffic control devices, including signs, channelizing devices, and barriers, as well as slope fillet wedges, shall follow SHA Standard Nos. MD 104.06-11, MD 104.06-12, MD 104.06-13, MD 104.06-14, MD 104.06-15, and MD 104.01-28. The Engineer may recommend alternative methods to protect the pavement edge drop-off, considering factors such as: pedestrian, bicycle, and traffic volumes, vehicle speeds, size of work zone, duration of work, etc.

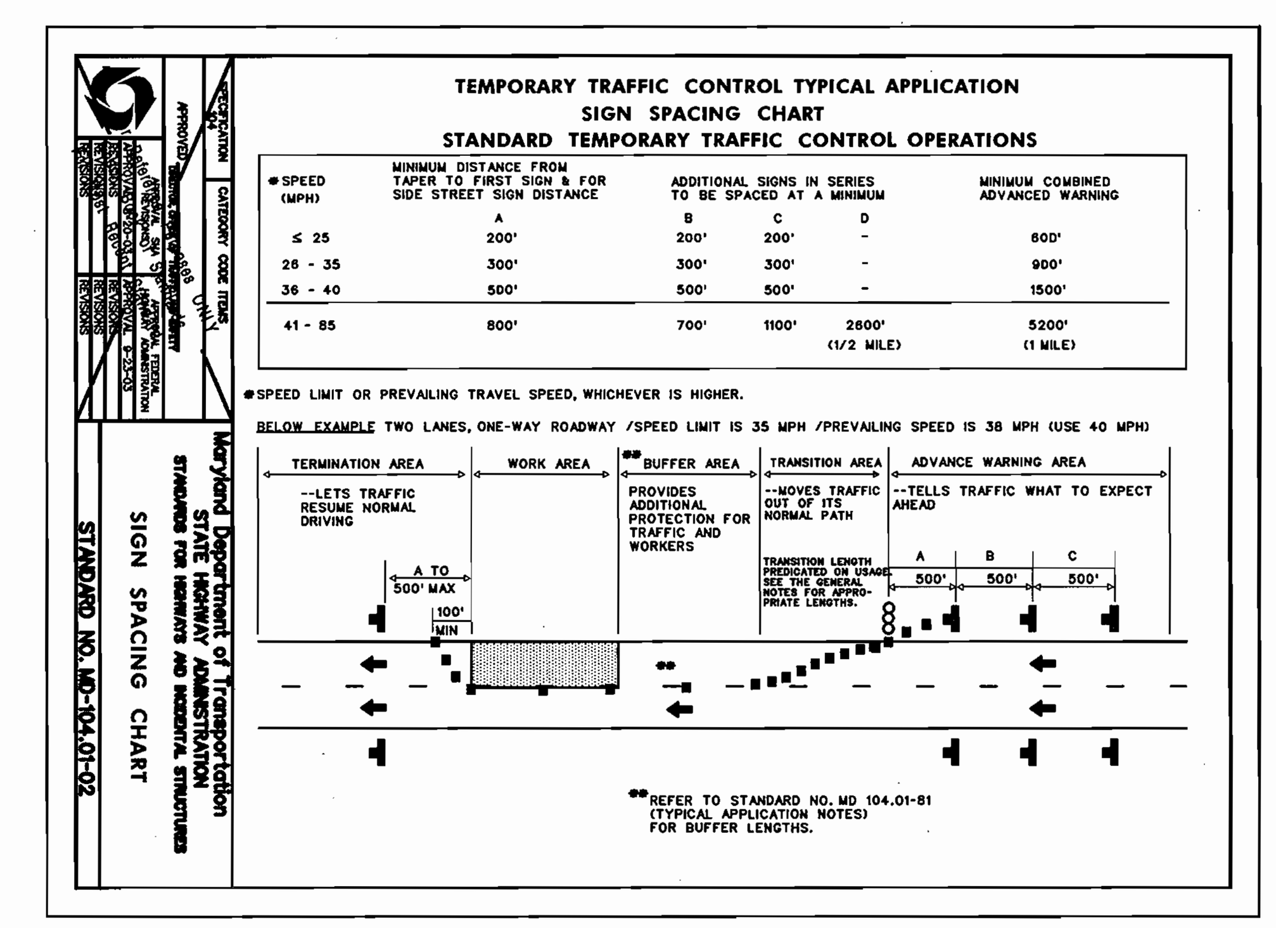
18.0 TRAFFIC CONTROL PLANS

18.1 Alternate traffic control plans may be presented to the SHA District Office for approval in conformance with Section 104.01 of the Standard Specifications for Construction and Materials.

18.2 For emergency repair operations, a lesser number of traffic control devices (TCDs) than the full compliment may be used. This generally will consist of one sign per direction, flashing lights on the vehicle, and minimum number of channelizing devices, flags, or high level warning devices. Additional TCDs such as arrow panel(s), additional signing, etc., shall be placed as soon as possible in accordance with the standard TTCTA.

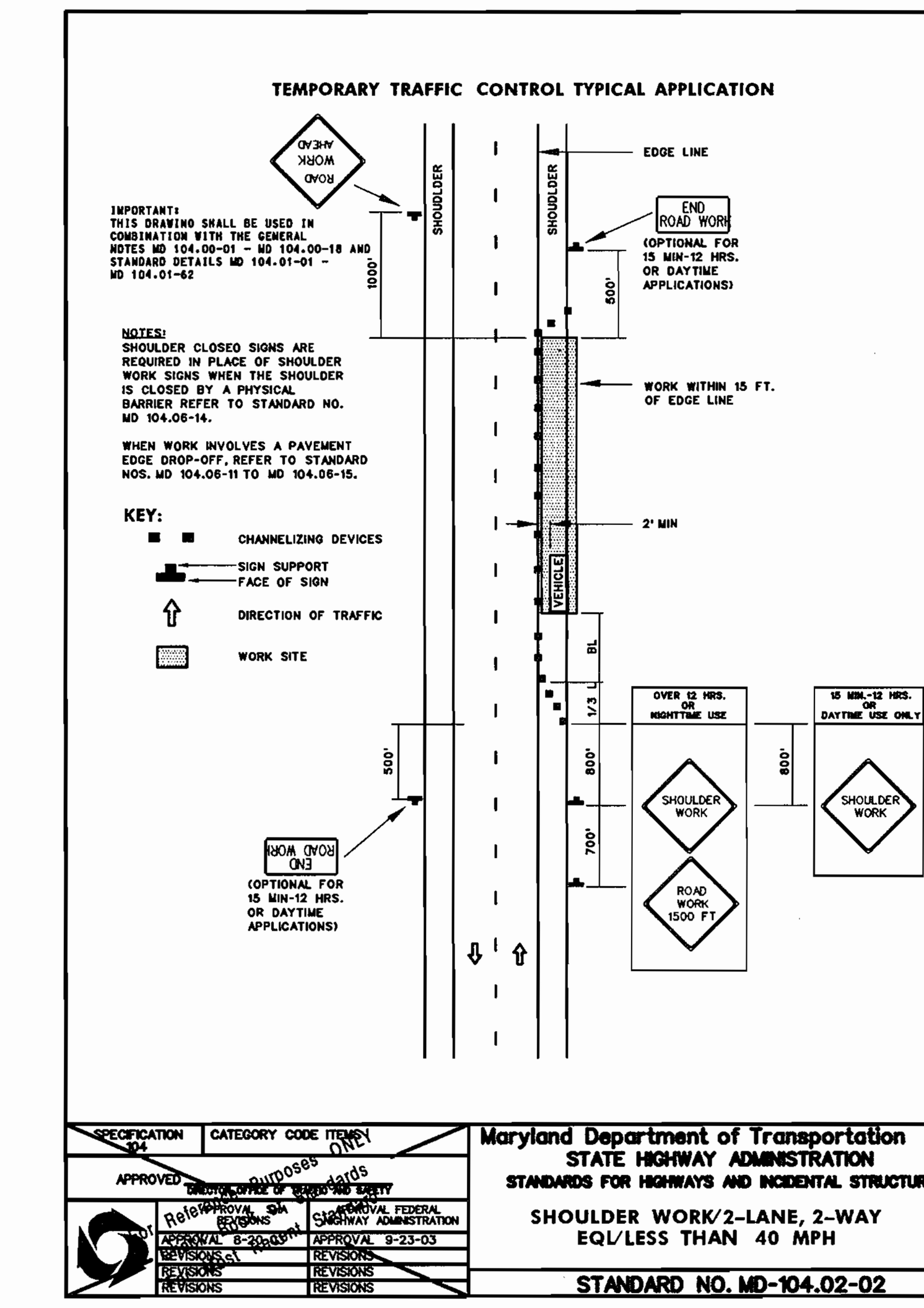
18.3 Where closely spaced work zones create conflicting traffic patterns (e.g. left-lane closure followed by right-lane closure), they should be no closer than 1.5 miles apart (last sign to first sign). Where work zones are closely spaced, but where traffic patterns are not significantly altered and no conflicts exist, no minimum spacing is required; however, care should be exercised to present appropriate and non-conflicting guidance to the public.

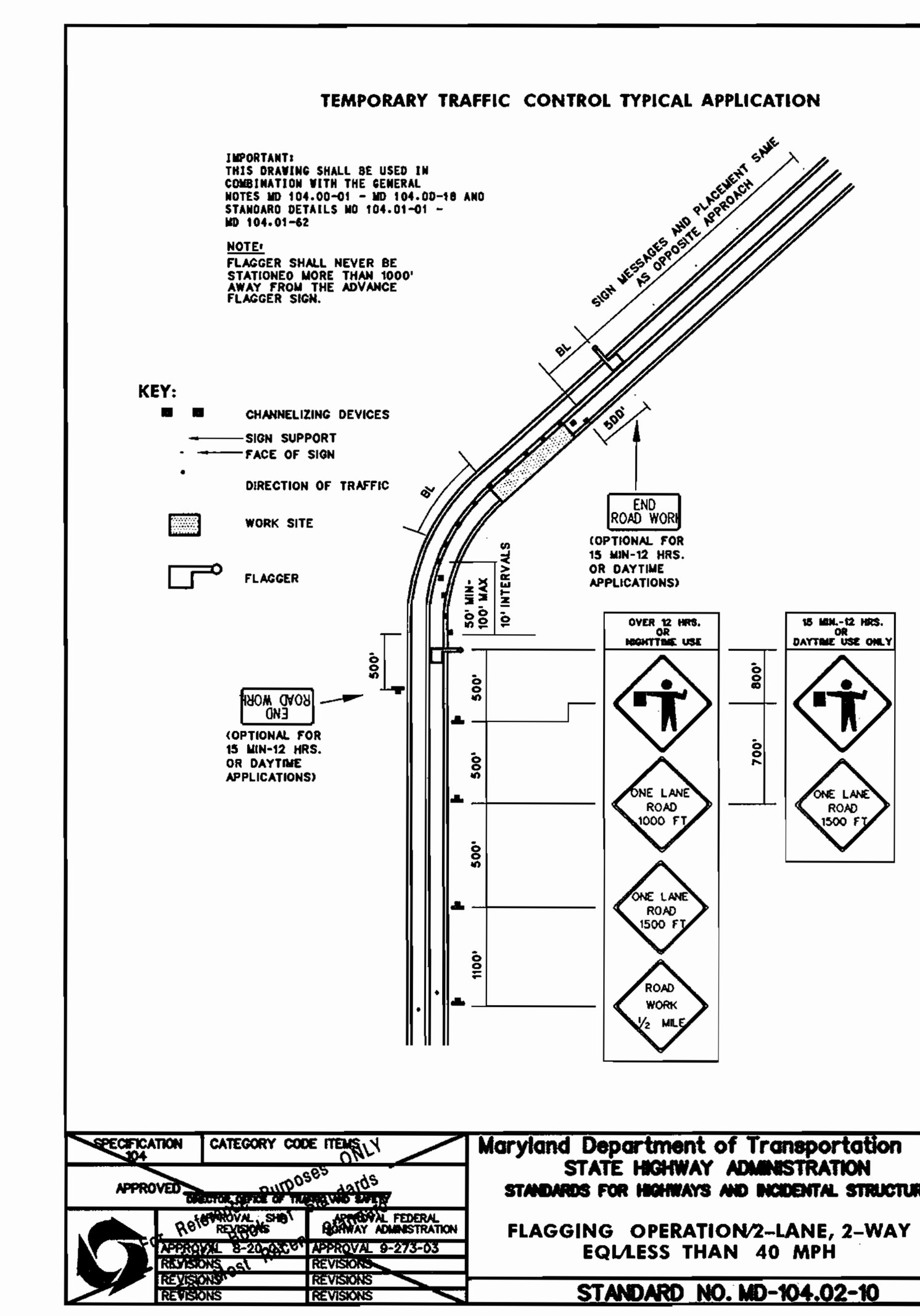
18.4 All signs, channelizing devices, and other traffic control devices shall be in conformance with the latest edition of the MUTCD.

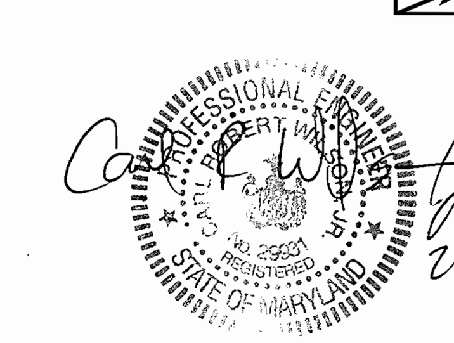


General Notes & Standards Are For Reference Purposes ONLY Check the MD-SHA Standards For Highway and Incidental Structures For The Most Recent Standards

All Construction Signs Are To Be Fabricated Utilizing Fluorescent Orange High Performance Sign Material







The Traffic Group

The Traffic Group, Inc.
Suite H
9900 Franklin Square Drive
Baltimore, Maryland 21236
410-931-6600
1-800-583-8411
Fax 410-931-6601

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER MOD — 3/3/06 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — Date 3/10/06

Chief, Division of Land Development — Date 3/10/06

Chief, Development Engineering Division — Date 2/23/06

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

Address Chart

Parcel Number	Street Address
P. 15	14601 CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT			SECTION/AREA		PARCELS
BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02
WATER CODE N/A			SEWER CODE N/A		

MAINTENANCE OF TRAFFIC PLAN-
CARRS MILL ROAD

NEW REPLACEMENT SCHOOL
BUSHY PARK
ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING
BUSHY PARK ELEMENTARY SCHOOL
AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005
BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 28 OF 35 SDP-06-03

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SDP 06-03

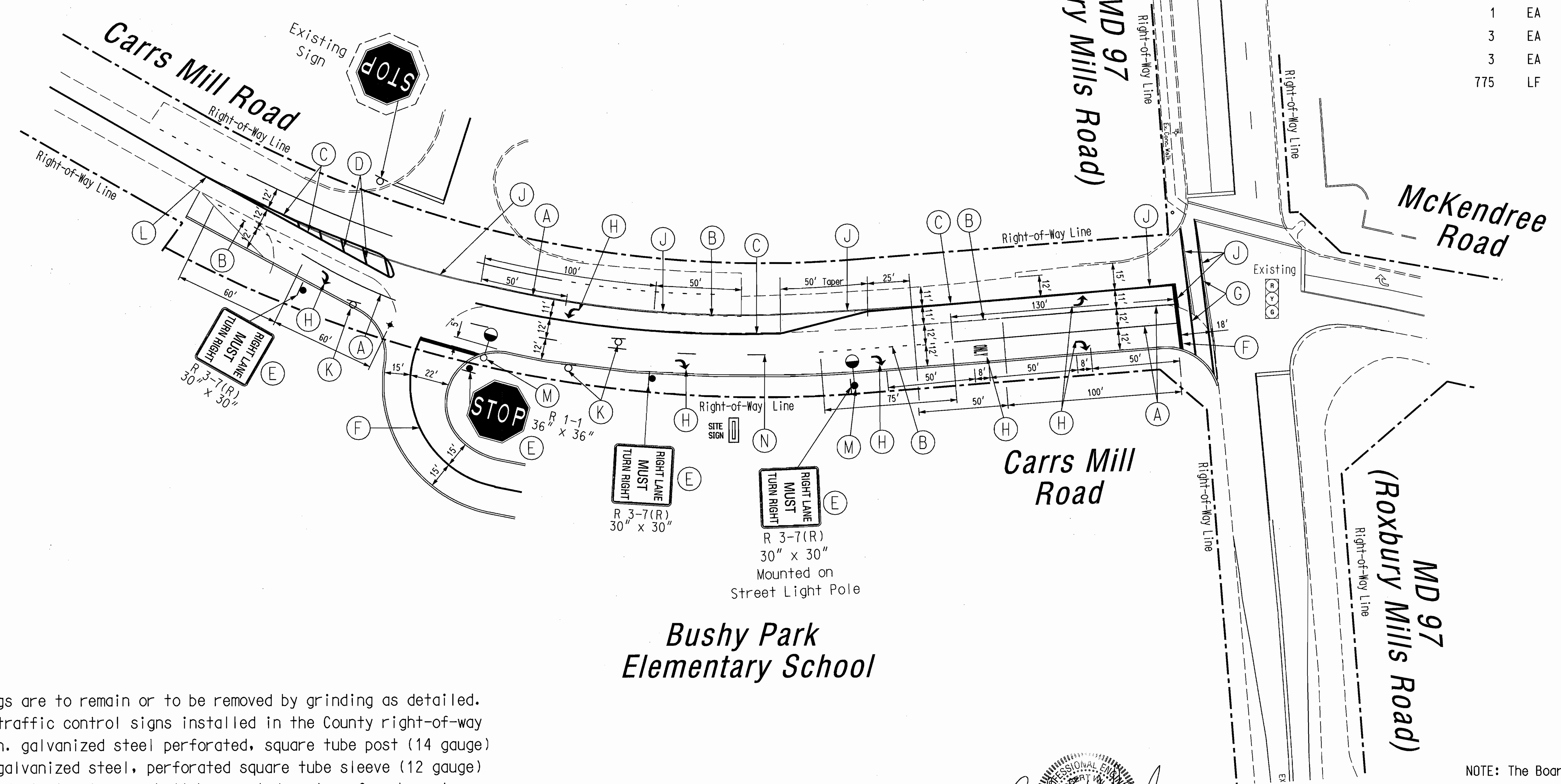
PAVEMENT MARKING DETAILS

A. Install 5 in. wide solid white thermoplastic pavement marking for lane line.
B. Install 5 in. wide solid white broken thermoplastic pavement marking (2 ft. segment - 6 ft. gap) for lane line.
C. Install 5 in. wide solid double yellow thermoplastic pavement marking for center line.
D. Install 12 in. wide solid yellow thermoplastic pavement marking for gore area.
E. Install ground mounted sign as shown.
F. Install 24 in. wide solid white thermoplastic pavement marking for stop line.
G. Install 12 in. wide solid white thermoplastic pavement markings for crosswalk.
H. Install pavement marking symbol as shown.
J. Remove existing pavement markings by grinding.
K. Remove existing ground mounted sign.
L. Tie new pavement markings into existing pavement markings.
M. Street Light (400 watt HPS vapor sag fixture, mounted at 30' on a bronze fiberglass pole using a 12' arm) to be installed by Howard County DPW.
N. Install 5 in. wide solid white broken thermoplastic pavement marking (10 ft. segment - 30 ft. gap) for lane line.

MATERIAL LIST

Material to be furnished and/or installed by the Contractor.
All material in this list shall have catalog cuts submitted for approval prior to installation.

Quantity	Units	MD-SHA Specification Section	Description
Lump Sum	LS	108	Mobilization.
Lump Sum	LS	104	Maintenance of traffic.
500	LF	539	5 in. wide white pavement marking - (Thermoplastic).
1650	LF	549	5 in. wide yellow pavement marking - (Thermoplastic).
50	LF	549	12 in. wide yellow pavement marking - (Thermoplastic).
1	EA	549	Thermoplastic symbol - white "ONLY".
4	EA	549	Thermoplastic symbol - white "Right Arrow".
2	EA	549	Thermoplastic symbol- white "Left Arrow".
160	LF	549	12 in. wide Thermoplastic - white for crosswalk.
100	LF	549	24 in. wide Thermoplastic - white for stop line.
53.5	LF	812	Square tube steel sign post.
1	EA	813	36 in. x 36 in. R 1-1 Sign for ground mounting.
3	EA	813	30 in. x 30 in. R 3-7R sign for ground mounting.
3	EA	813	Removal of existing sign and post.
775	LF	---	Removal of existing pavement markings by grinding.



NOTES:
1) Existing pavement markings are to remain or to be removed by grinding as detailed.
2) All sign posts used for traffic control signs installed in the County right-of-way shall be mounted on a 2 in. galvanized steel perforated, square tube post (14 gauge) inserted into a 2-1/ in. galvanized steel, perforated square tube sleeve (12 gauge) - 3 ft. long. A galvanized steel pole cap shall be mounted on top of each post.
3) All pavement marking and sign locations shall be marked and/or approved by the Traffic Engineer prior to the installation of any markings and/or signs.

NOTE: The Board of Education will pay for the installation of two (2) school flashers along Carrs Mill Road. Coordination will be thru DPW-Traffic Division.

Graphic Scale
40 0 20 40 80 120
(In Feet)
1 inch = 40 ft.

CARL R. ... No. 29931 REGISTERED STATE OF MARYLAND 2/3/06

The Traffic Group
The Traffic Group, Inc.
Suite H
9900 Franklin Square Drive
Baltimore, Maryland 21236
410-931-6600
1-800-583-8411
Fax 410-931-6601

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT
for COUNTY HEALTH OFFICER — 3/3/06 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Director - Department of Planning and Zoning — Date 3/10/06
Chief, Division of Land Development — Date 3/10/06
Chief, Development Engineering Division — Date 2/23/06

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

Address Chart

Parcel Number	Street Address
P.15	14601 CARRS MILL ROAD
P.153	2680 MARYLAND ROUTE 97
P.198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02

WATER CODE N/A — SEWER CODE N/A

SIGNING & PAVEMENT MARKING PLAN-
CARRS MILL ROAD

NEW REPLACEMENT SCHOOL
BUSHY PARK
ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING
BUSHY PARK ELEMENTARY SCHOOL
AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40 ' DATE: SEPTEMBER 30, 2005
BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 29 OF 35 SDP-06-03

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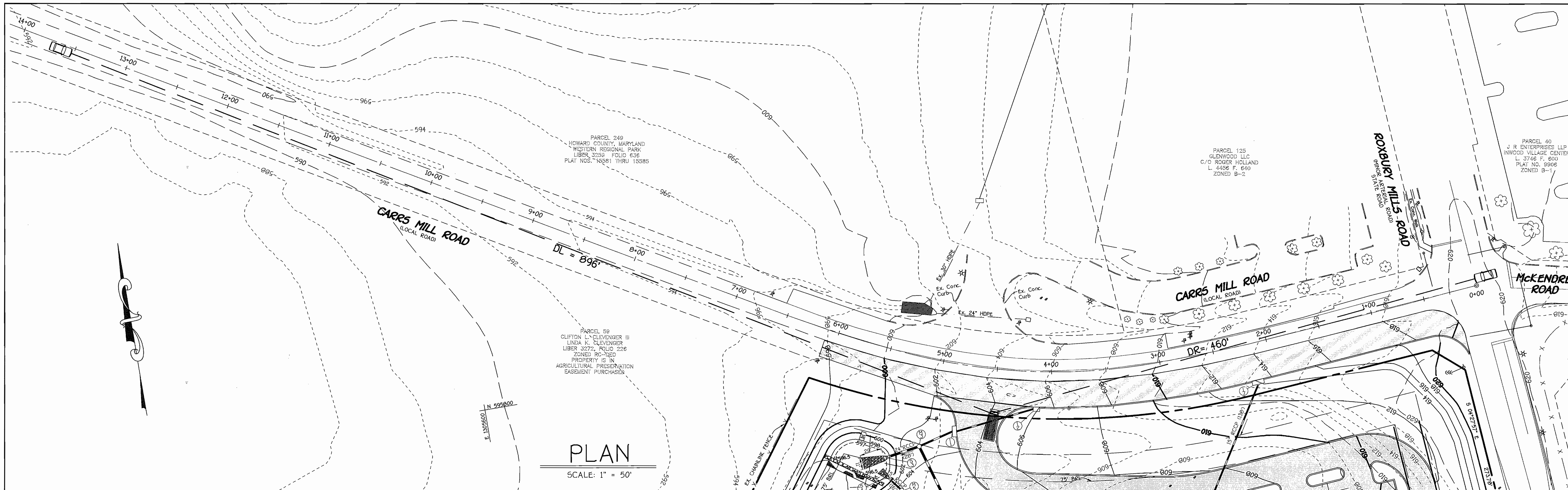
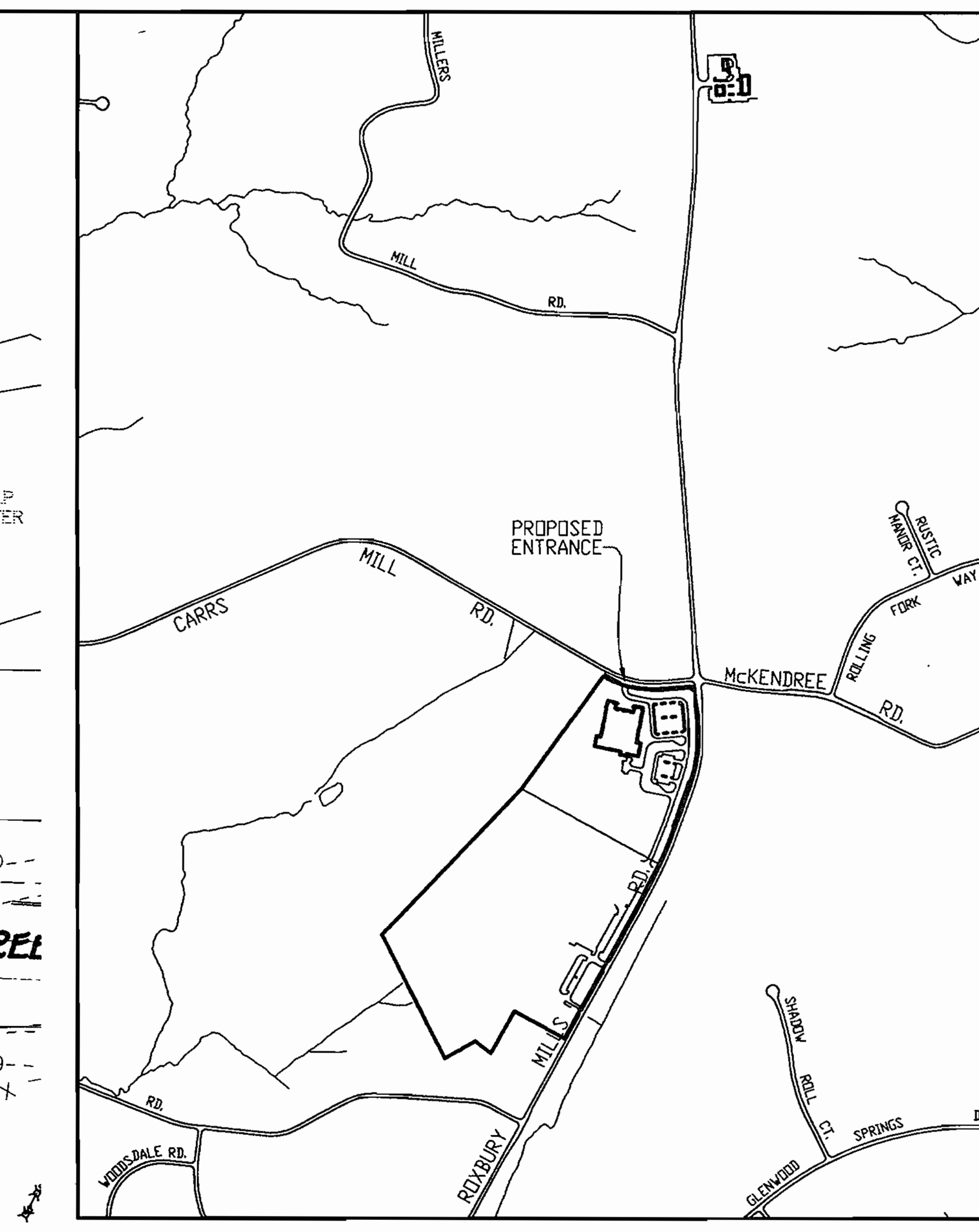
SDP 06-03



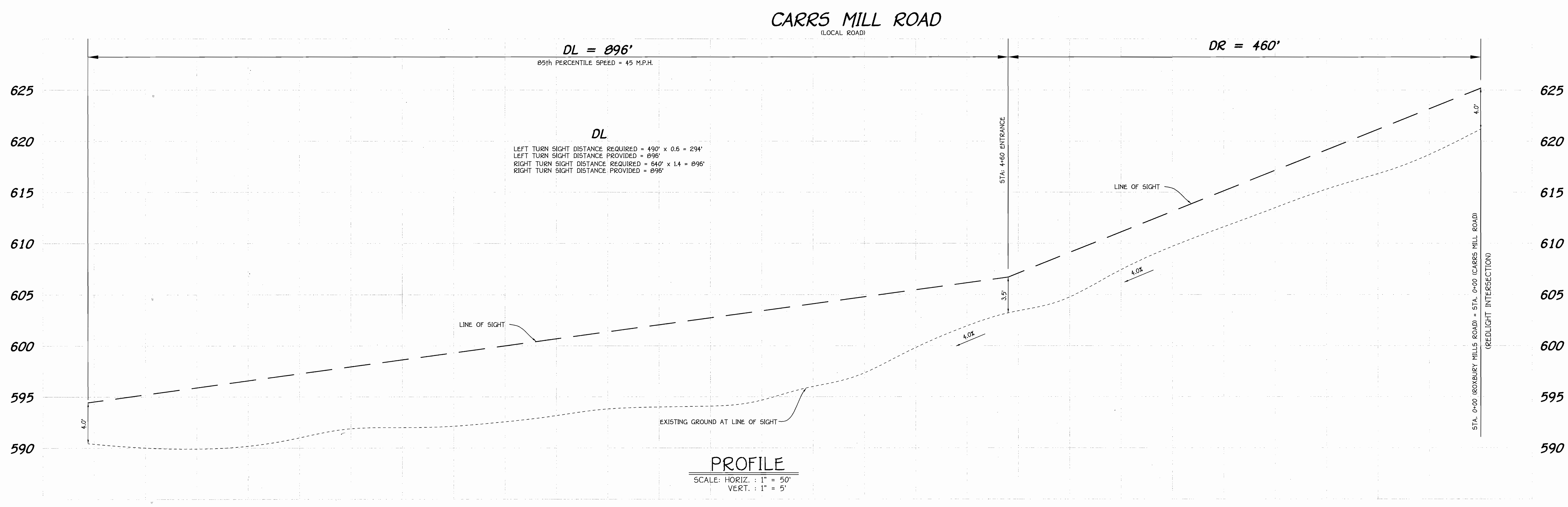
PLAN

SCALE: 1" = 50'



VICINITY MAP

SCALE: 1" = 1200'



PROFILE

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

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER — DATE 3/3/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — Date 3/10/06

Chief, Division of Land Development — Date 3/10/06

Chief, Development Engineering Division — Date 2/23/06

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
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	WOODBINE, MD. 21797

PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02

WATER CODE N/A — SEWER CODE N/A

SIGHT DISTANCE PLAN & PROFILE

NEW REPLACEMENT SCHOOL

BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"

SHEET 30 OF 35 SDP-06-03

SDP 06-03

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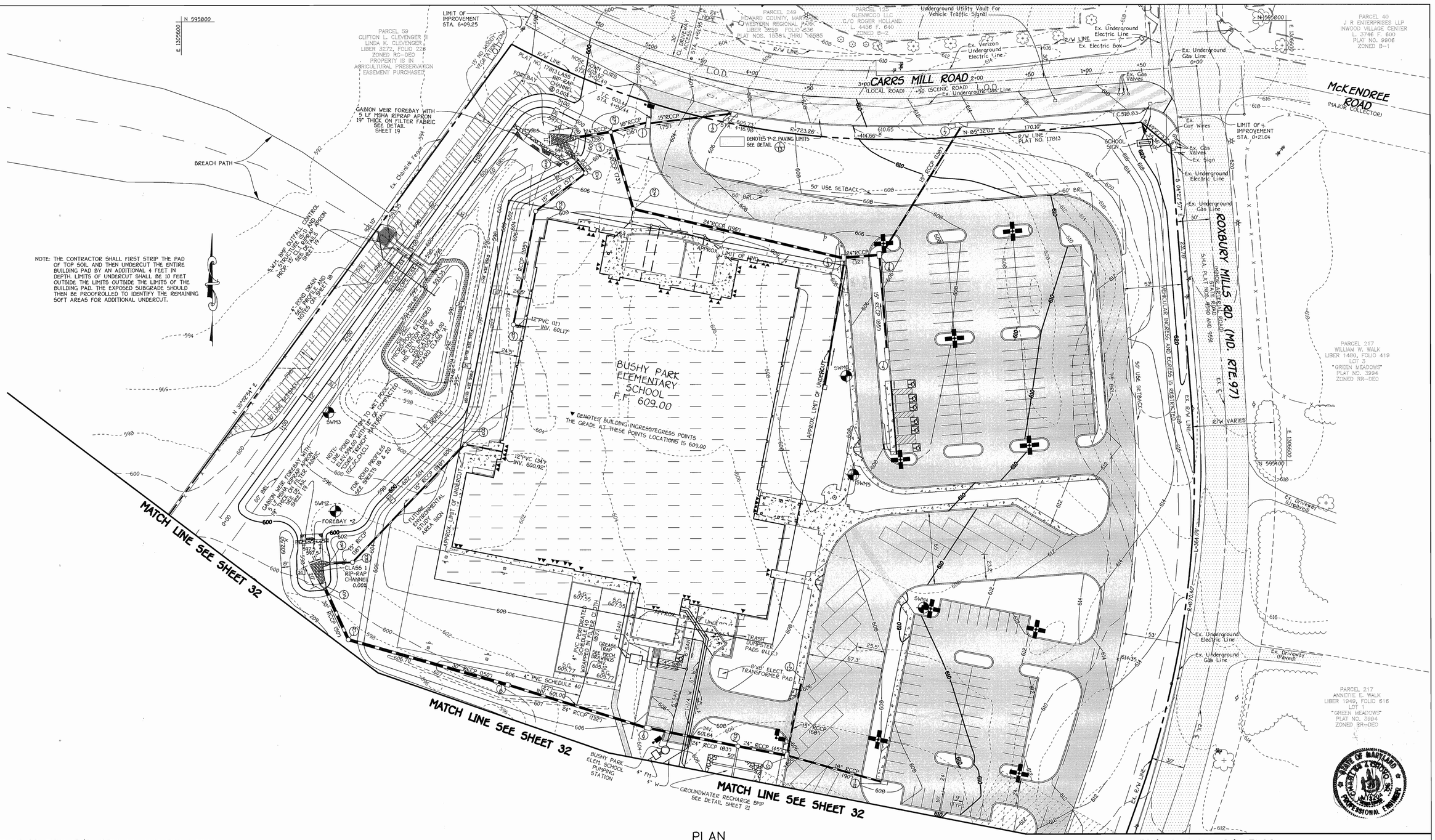

NOTE: THIS PLAN IS FOR THE SEPTIC SYSTEM ONLY.

PLAN
SCALE: 1" = 40'

MATCH LINE SEE SHEET 32

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Weber, Jr. for COUNTY HEALTH OFFICER — DATE 3/3/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — Date 3/10/06

Chief, Division of Land Development — Date 3/9/06

Chief, Development Engineering Division — Date 2/22/06

PREPARED FOR
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PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02

WATER CODE N/A — SEWER CODE N/A

SITE DEVELOPMENT PLAN FOR WATER & SEPTIC SYSTEMS

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: SEPTEMBER 30, 2005
BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 31 OF 35 SDP-06-03

SDP 06-03

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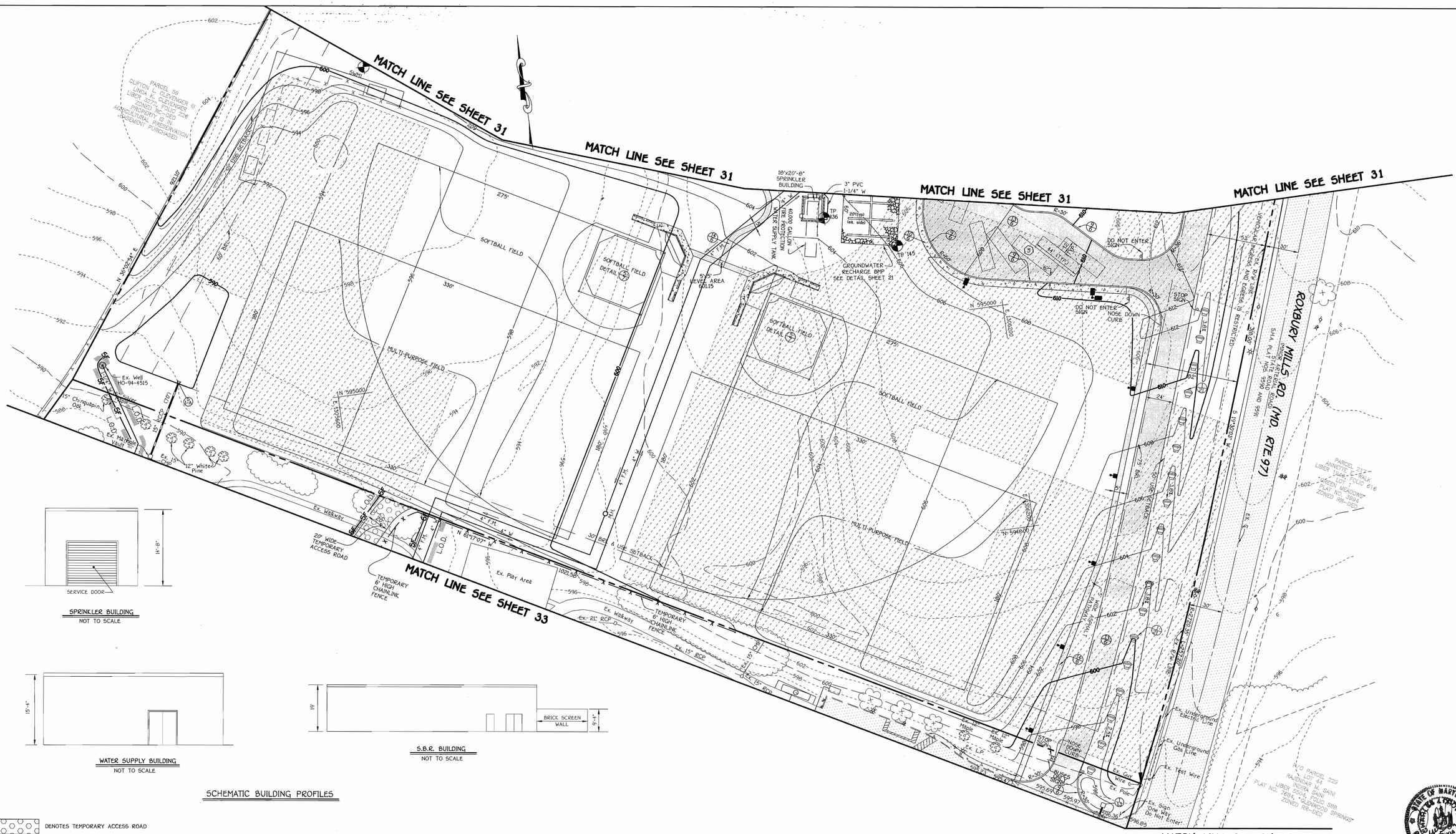

NOTE: THIS PLAN IS FOR THE SEPTIC SYSTEM ONLY.

PLAN
SCALE: 1" = 40'

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FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER — DATE 3/3/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — Date 3/10/06

Chief, Division of Land Development — Date 3/10/06

Chief, Development Engineering Division — Date 2/27/06

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
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	WOODBINE, MD. 21797

PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02

WATER CODE	SEWER CODE
N/A	N/A

SITE DEVELOPMENT PLAN AND SEDIMENT CONTROL PLAN FOR WATER & SEPTIC SYSTEMS

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"

SHEET 32 OF 35 SDP-06-03

SDP 06-03

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER — 3/3/06 DATE

NOTE: EXACT LIMITS AND PLACEMENT OF SILT FENCE SHALL BE COORDINATED BETWEEN CONTRACTOR AND SEDIMENT CONTROL INSPECTOR.

MATCH LINE SEE SHEET 32

DENOTES TEMPORARY ACCESS ROAD

MATCH LINE SEE SHEET 35

MATCH LINE SEE SHEET 34

PLAN

SCALE: 1" = 40'

NOTE: THIS PLAN IS FOR THE SEPTIC SYSTEM AND SEDIMENT CONTROL ONLY.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

ENGINEER'S CERTIFICATE

I Hereby Certify That This Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature Of Engineer — 2/4/06 Date

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.

USDA-Natural Resources Conservation Service — 2/15/06 Date

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Wm. B. — Signature Of Developer — 2.3.06 Date

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

District Howard Soil Conservation Dist. — 2/15/06. Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/10/06 Date

Chief, Division of Land Development — 3/10/06 Date

Chief, Development Engineering Division — 2/23/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

Address Chart

Parcel Number	Street Address
P. 15	14601 CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT			SECTION/AREA		PARCELS
BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF. P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	BLOCK NO. 10	ZONE RC-DEO	TAX MAP 14	ELEC. DIST. FOURTH	CENSUS TR. 6040.02
WATER CODE N/A			SEWER CODE N/A		

SITE DEVELOPMENT PLAN AND SEDIMENT CONTROL PLAN FOR WATER & SEPTIC SYSTEMS

NEW REPLACEMENT SCHOOL

BUSHY PARK ELEMENTARY SCHOOL

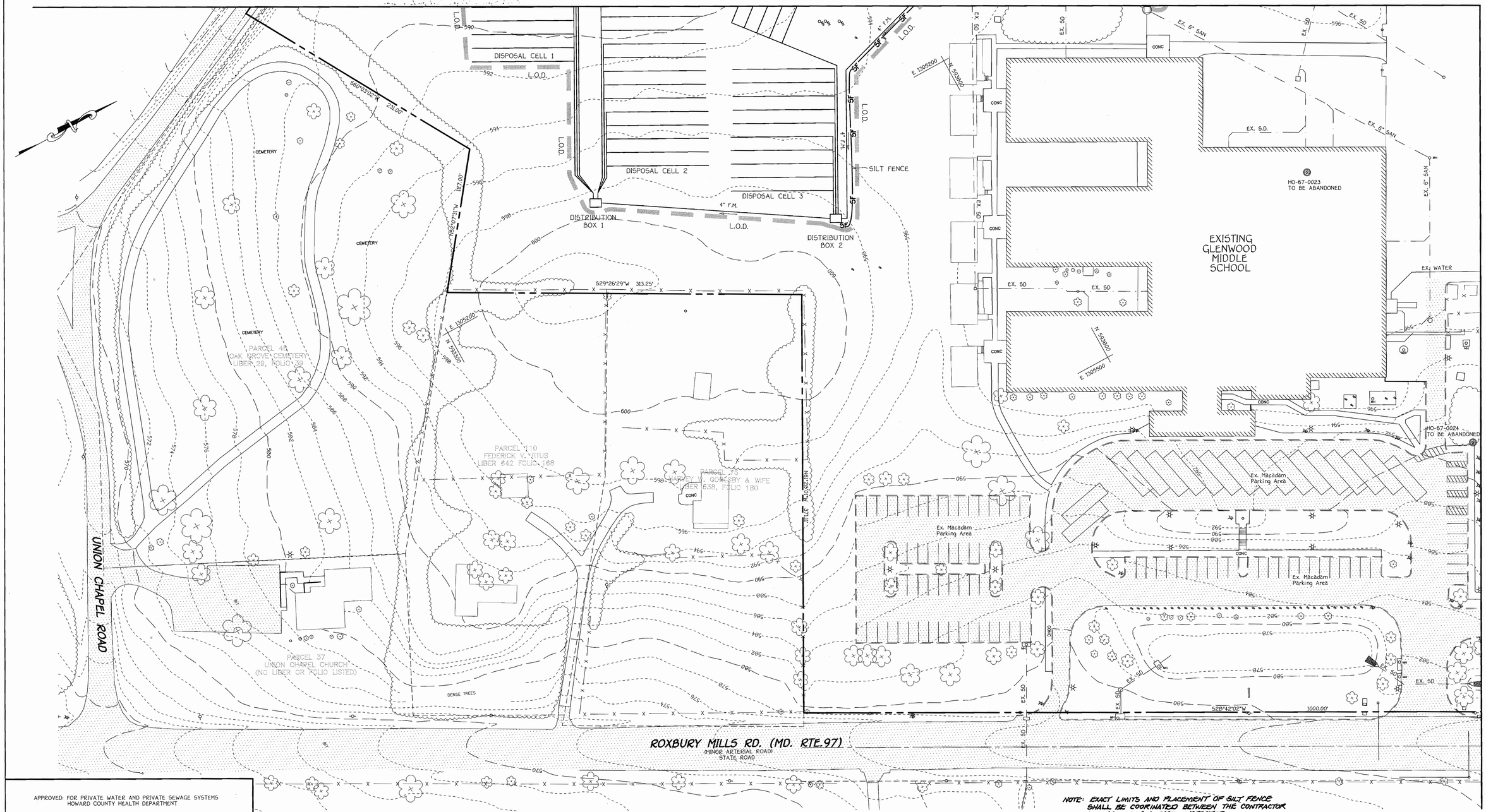
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"

SDP 06-03

MATCH LINE SEE SHEET 35



MATCH LINE SEE SHEET 33

NOTE: EXACT LIMITS AND PLACEMENT OF SILT FENCE SHALL BE COORINATED BETWEEN THE CONTRACTOR AND SEDIMENT CONTROL INSPECTOR.

PLAN
SCALE: 1" = 40'

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 3/10/06

NOTE: THIS PLAN IS FOR THE SEPTIC SYSTEM AND SEDIMENT CONTROL ONLY.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

ENGINEER'S CERTIFICATE

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Signature Of Engineer — Date 2/1/06

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.

USDA-Natural Resources Conservation Service — Date 2/15/06

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature Of Developer — Date 2.3.06

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

District Howard Soil Conservation Dist. — Date 2/15/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — Date 3/10/06

Chief, Division of Land Development — Date 3/6/06

Chief, Development Engineering Division — Date 2/23/06

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
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	WOODBINE, MD. 21797

PROJECT			SECTION/AREA		PARCELS
BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF. P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
	10	RC-DEO	14	FOURTH	6040.02
WATER CODE	N/A	SEWER CODE	N/A		

SITE DEVELOPMENT PLAN
FOR WATER & SEPTIC SYSTEMS

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 34 OF 35 SDP-06-03

SDP 06-03

I:\04048\dwg\NEW PLAN\SEPTIC SYSTEM (SHEET 31-35).dwg, 2/22/2006 1:02:29 PM, 1:1

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER — 3/3/06 DATE

NOTE: EXACT LIMITS AND PLACEMENT OF SILT FENCE SHALL BE COORINATED BETWEEN THE CONTRACTOR AND SEDIMENT CONTROL INSPECTOR

NOTE: THIS PLAN IS FOR THE SEPTIC SYSTEM AND SEDIMENT CONTROL ONLY.

MATCH LINE SEE SHEET 34

PLAN

SCALE: 1" = 40'

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

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Signature Of Engineer — 2/6/06 Date

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.

USDA-Natural Resources Conservation Service — 2/15/06 Date

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature Of Developer — 2.3.06 Date

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

District Howard Soil Conservation Dist. — 2/15/06 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/10/06 Date

Chief, Division of Land Development — 3/10/06 Date

Chief, Development Engineering Division — 2/23/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
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PROJECT			SECTION/AREA		PARCELS
BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02
WATER CODE N/A			SEWER CODE N/A		

SITE DEVELOPMENT PLAN FOR WATER & SEPTIC SYSTEMS

NEW REPLACEMENT SCHOOL

BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"

SHEET 35 OF 35 SDP-06-03

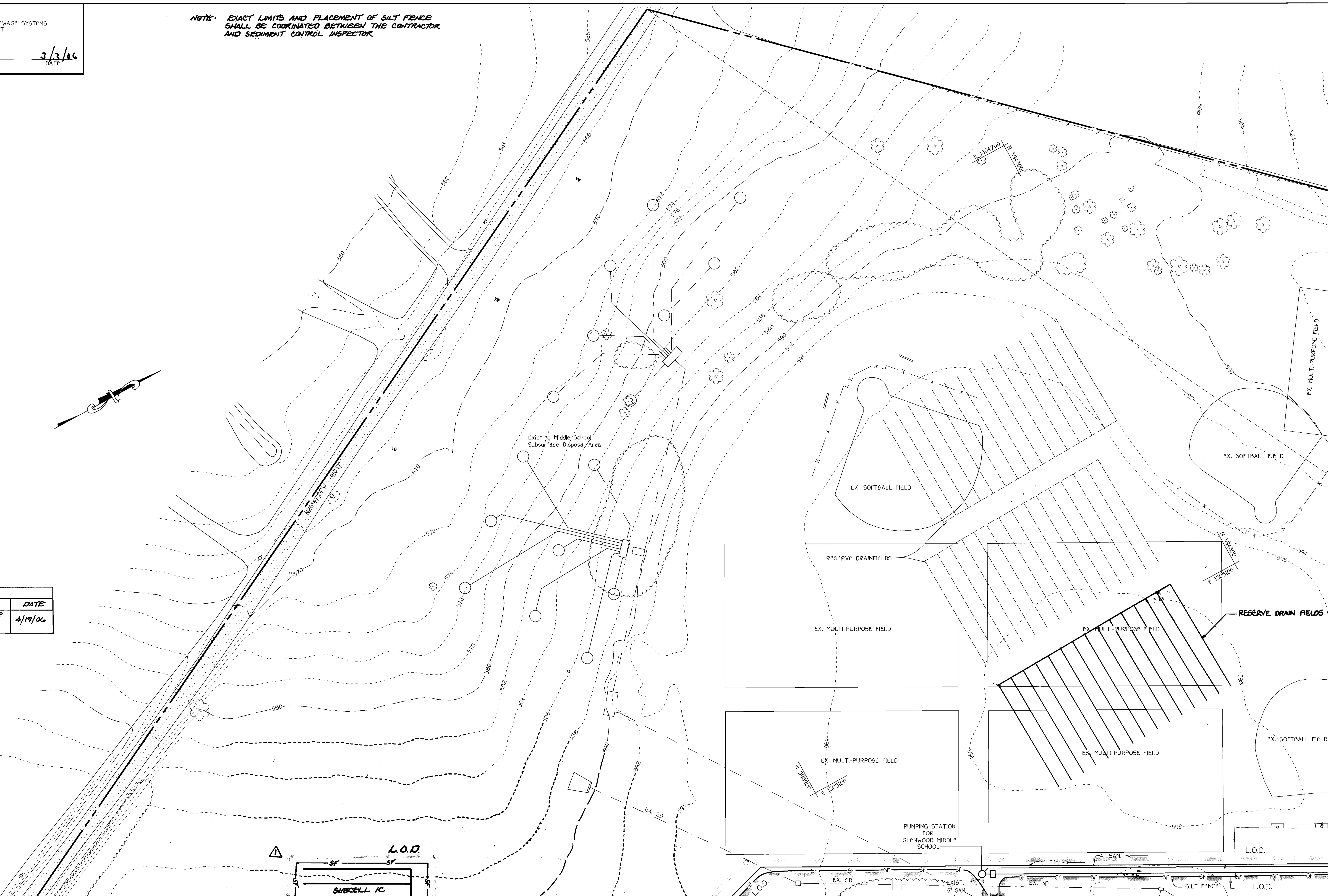
SDP 06-03

I:\04048\dwg\NEW PLAN\SEPTIC SYSTEM (SHEET 31-35).dwg, 2/2/2006 1:03:25 PM, 1:1

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER — 3/3/06 DATE

NOTE: EXACT LIMITS AND PLACEMENT OF SILT FENCE SHALL BE COORDINATED BETWEEN THE CONTRACTOR AND SEDIMENT CONTROL INSPECTOR



REVISIONS

No.	DESCRIPTION	DATE
△	REVISED SEPTIC FIELD, SILT FENCE & L.O.D.	4/19/06

NOTE: THIS PLAN IS FOR THE SEPTIC SYSTEM AND SEDIMENT CONTROL ONLY.

PLAN
SCALE: 1" = 40'

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/10/06 Date

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BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02
WATER CODE N/A			SEWER CODE N/A		

SITE DEVELOPMENT PLAN
FOR WATER & SEPTIC SYSTEMS

NEW REPLACEMENT SCHOOL
BUSHY PARK
ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 35 OF 35 SDP-06-03

SDP 06-03

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APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE

NOTE: THIS PLAN IS FOR THE SEPTIC SYSTEM AND SEDIMENT CONTROL ONLY.

PLAN
SCALE: 1" = 40'

NOTE: EXACT LIMITS AND PLACEMENT OF SILT FENCE SHALL BE COORINATED BETWEEN THE CONTRACTOR AND SEDIMENT CONTROL INSPECTOR.

FISHER, COLLINS & CARTER, INC.
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District Howard Soil Conservation Dist. — Date 2/15/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — Date 3/10/06

Chief, Division of Land Development — Date 3/10/06

Chief, Development Engineering Division — Date 2/23/06

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10910 Maryland Route 108
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PROJECT			SECTION/AREA		PARCELS
BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02
WATER CODE N/A			SEWER CODE N/A		

SITE DEVELOPMENT PLAN
FOR WATER & SEPTIC SYSTEMS

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: SEPTEMBER 30, 2005
BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 34 OF 35 SDP-06-03

SDP 06-03

I:\04048\dwg\NEW PLAN\SEPTIC SYSTEM (SHEET 31-35).dwg, 2/2/2006 1:02:29 PM, 1:1

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER — 3/3/06 DATE

NOTE: EXACT LIMITS AND PLACEMENT OF SILT FENCE SHALL BE COORDINATED BETWEEN CONTRACTOR AND SEDIMENT CONTROL INSPECTOR.

MATCH LINE SEE SHEET 32

DENOTES TEMPORARY ACCESS ROAD

MATCH LINE SEE SHEET 35

MATCH LINE SEE SHEET 34

NOTE: THIS PLAN IS FOR THE SEPTIC SYSTEM AND SEDIMENT CONTROL ONLY.

PLAN

SCALE: 1" = 40'

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PROJECT			SECTION/AREA		PARCELS
BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02
WATER CODE N/A			SEWER CODE N/A		

SITE DEVELOPMENT PLAN AND SEDIMENT CONTROL PLAN FOR WATER & SEPTIC SYSTEMS

NEW REPLACEMENT SCHOOL

BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"

SHEET 33 OF 35 SDP-06-03

SDP 06-03

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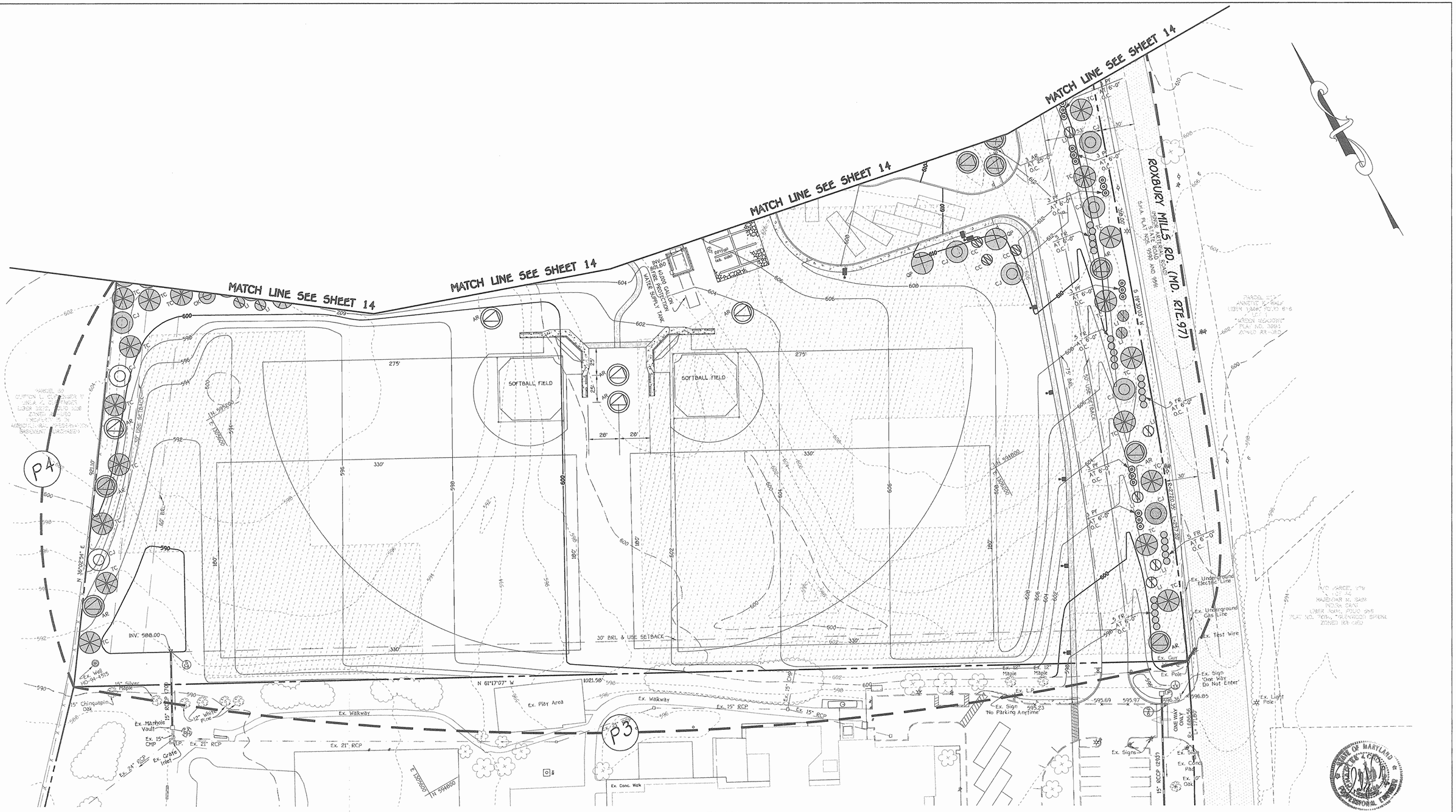

PLAN

SCALE: 1" = 40'

Note: This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

LANDSCAPE CERTIFICATION

I/We certify that the landscaping shown on this plan will be done according to the approved plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

WILLIAM BROWN, PHD. — Date 2.3.06

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER — DATE 3/3/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — Date 3/10/06

Chief, Division of Land Development — Date 3/10/06

Chief, Development Engineering Division — Date 2/28/06

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
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PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02

WATER CODE N/A — SEWER CODE N/A

LANDSCAPE PLAN

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1" = 40' DATE: SEPTEMBER 30, 2005
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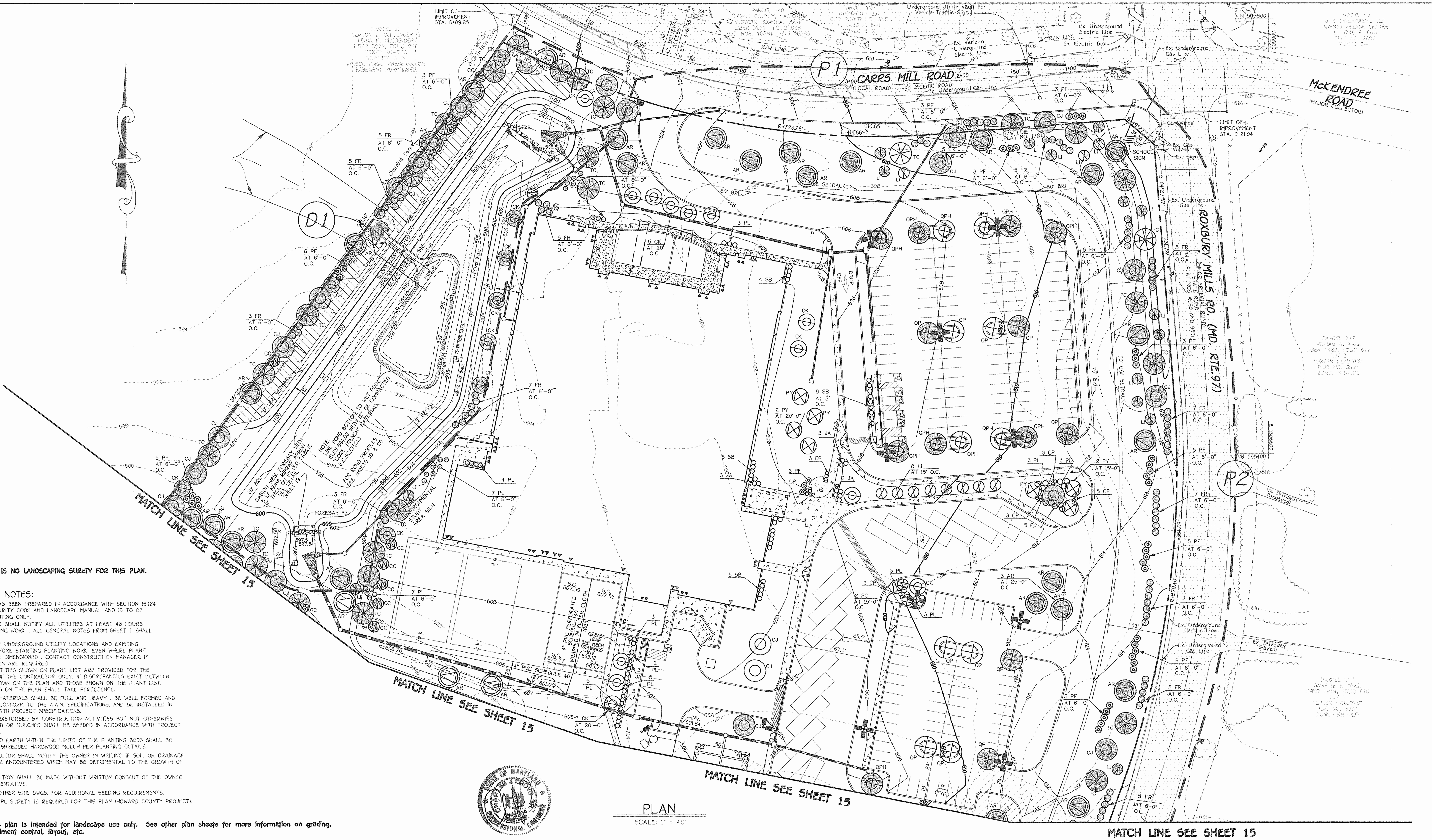
SHEET 15 OF 35 SDP-06-03

SDP 06-03

I:\94\94Bid\dwg\NEW PLAN\SITE PLAN (SHEET 2-5-14-15).dwg, 2/2/2006 10:35:44 AM, 1:1



Note: THERE IS NO LANDSCAPING SURETY FOR THIS PLAN.

PLANTING NOTES:

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16.124 OF HOWARD COUNTY CODE AND LANDSCAPE MANUAL AND IS TO BE USED FOR PLANTING ONLY.
2. CONTRACTOR SHALL NOTIFY ALL UTILITIES AT LEAST 48 HOURS BEFORE STARTING WORK . ALL GENERAL NOTES FROM SHEET 1, SHALL APPLY.
3. FIELD VERIFY UNDERGROUND UTILITY LOCATIONS AND EXISTING CONDITIONS BEFORE STARTING PLANTING WORK, EVEN WHERE PLANT LOCATIONS ARE DIMENSIONED . CONTACT CONSTRUCTION MANAGER IF ANY RELOCATION ARE REQUIRED.
4. PLANT QUANTITIES SHOWN ON PLANT LIST ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON THE PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN SHALL TAKE PERCEDENCE.
5. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY , BE WELL FORMED AND SYMMETRICAL, CONFORM TO THE A.A.N. SPECIFICATIONS, AND BE INSTALLED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
6. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES BUT NOT OTHERWISE PLANTED, PAVED OR MULCHED SHALL BE SEEDED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
7. ALL EXPOSED EARTH WITHIN THE LIMITS OF THE PLANTING BEDS SHALL BE MULCHED WITH SHREDDED HARDWOOD MULCH PER PLANTING DETAILS.
8. THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING IF SOIL OR DRAINAGE CONDITIONS ARE ENCOUNTERED WHICH MAY BE DETRIMENTAL TO THE GROWTH OF PLANTS.
9. NO SUBSTITUTION SHALL BE MADE WITHOUT WRITTEN CONSENT OF THE OWNER OR HIS REPRESENTATIVE.
10. REFER TO OTHER SITE DWGS. FOR ADDITIONAL SEEDING REQUIREMENTS.
11. NO LANDSCAPE SURETY IS REQUIRED FOR THIS PLAN (HOWARD COUNTY PROJECT).

Note: This plan is intended for landscape use only. See other plan sheets for more information on grading, sediment control, layout, etc.

PLAN

SCALE: 1" = 40'

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461-2855

LANDSCAPE CERTIFICATION

I/We certify that the landscaping shown on this plan will be done according to the approved plan, Section 16.124 of the Howard County Code and the Howard County Landscape Manual. I/We further certify that upon completion a letter of landscape installation accompanied by an executed one year guarantee of plant materials will be submitted to the Department of Planning and Zoning.

Wm. [signature] — WILLIAM BROWN, PhD. — 2-3-06 Date

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

Robert J. Weber [signature] for COUNTY HEALTH OFFICER — 3/3/06 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

[signature] Director - Department of Planning and Zoning — 3/10/06 Date

[signature] Chief, Division of Land Development — 3/10/06 Date

[signature] Chief, Development Engineering Division — 2/23/06 Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

Address Chart

Parcel Number	Street Address
P. 15	14601 CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT	SECTION/AREA	PARCELS
BUSHY PARK ELEMENTARY SCHOOL	N/A	15, 153 & 198

DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT #s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02

WATER CODE	N/A	SEWER CODE	N/A

LANDSCAPE PLAN

NEW REPLACEMENT SCHOOL

BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

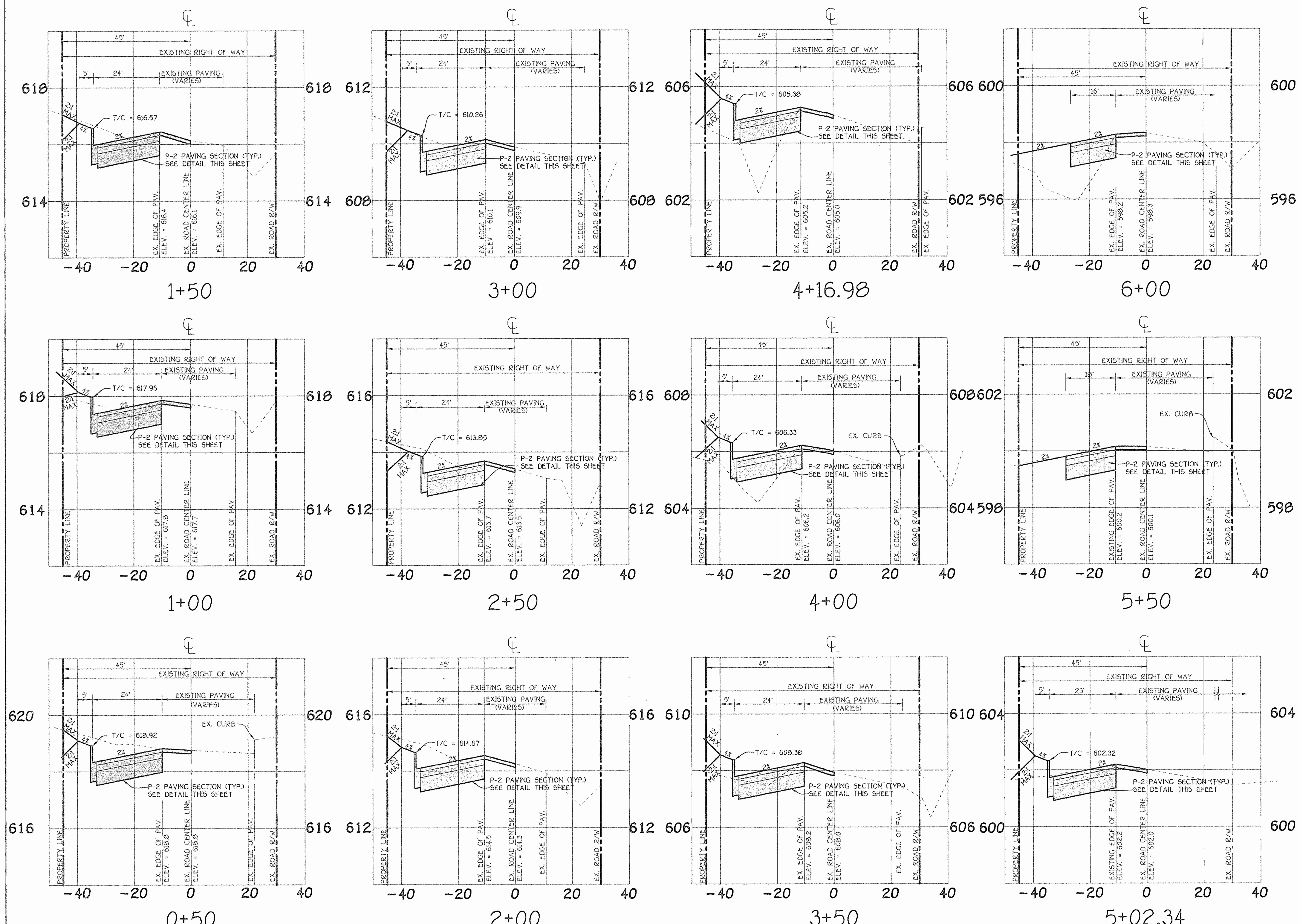
TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: 1"= 40' DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"

SHEET 14 OF 35 SDP-06-03

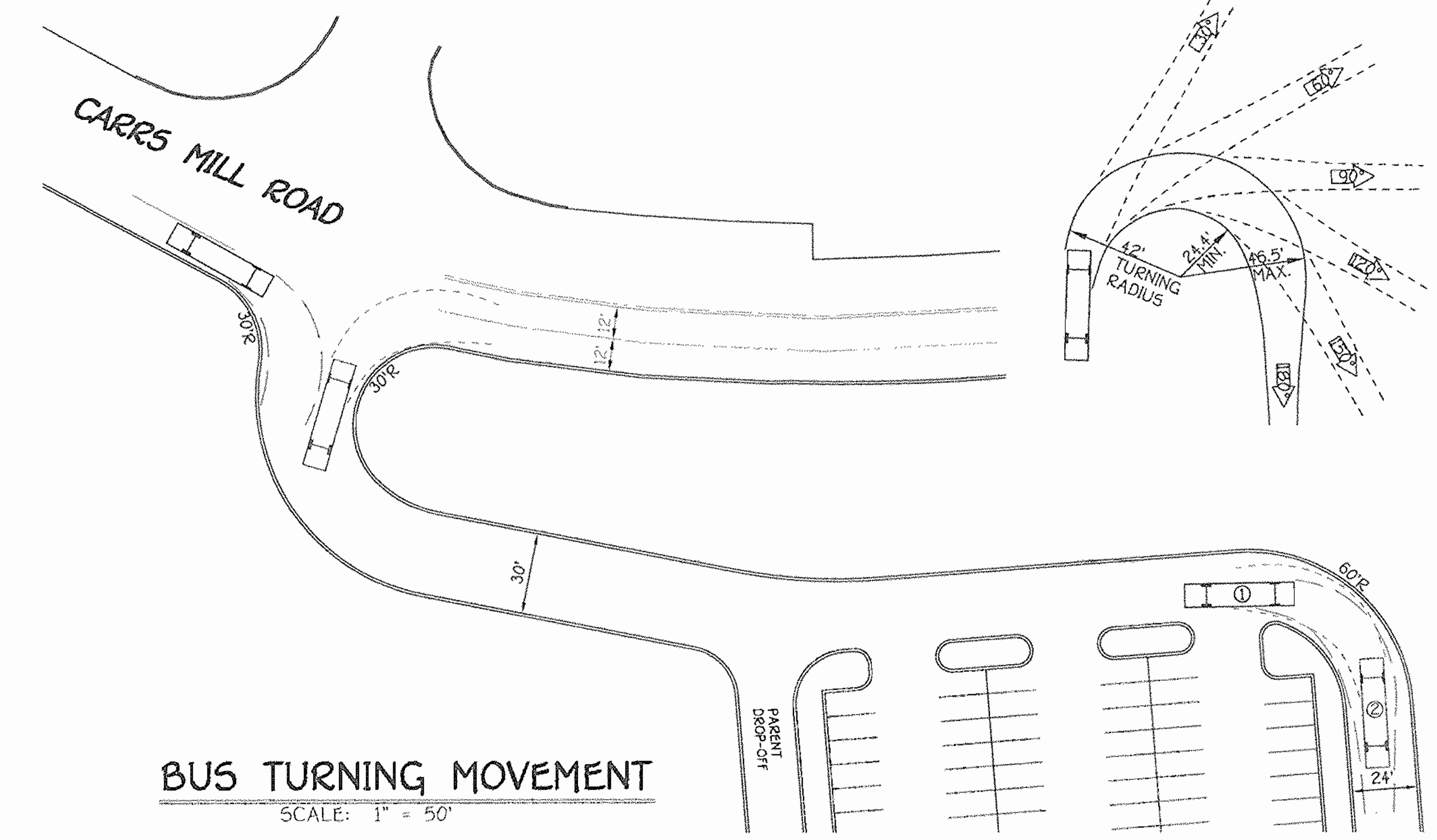
SDP 06-03

I:\04048\dwg\NEW PLANS\SITE PLAN (SHEET 2-5,14-15).dwg, 2/2/2006 10:33:12 AM, 1:1



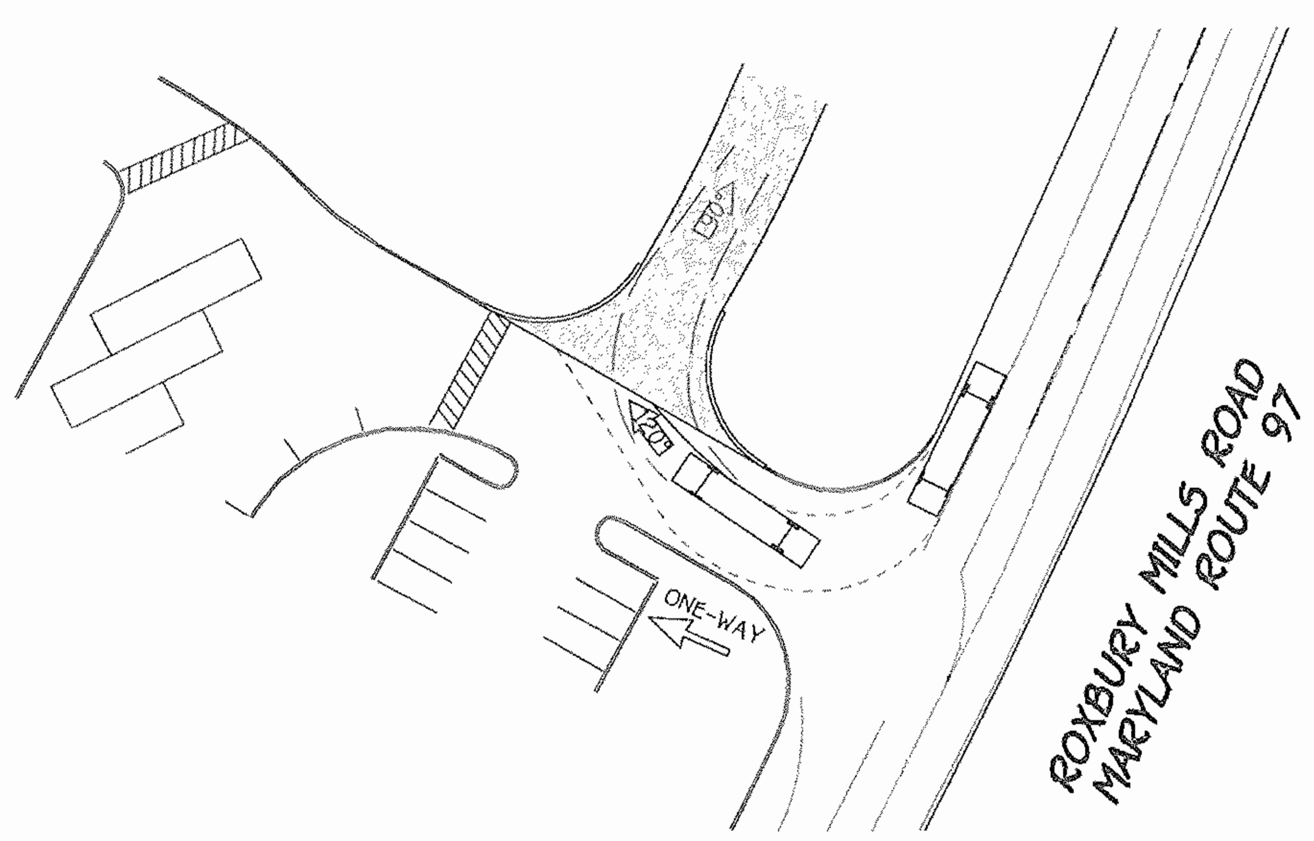
CARRS MILL ROAD CROSS SECTIONS

SCALE: HORZ. 1" = 20'
VERT. 1" = 2'



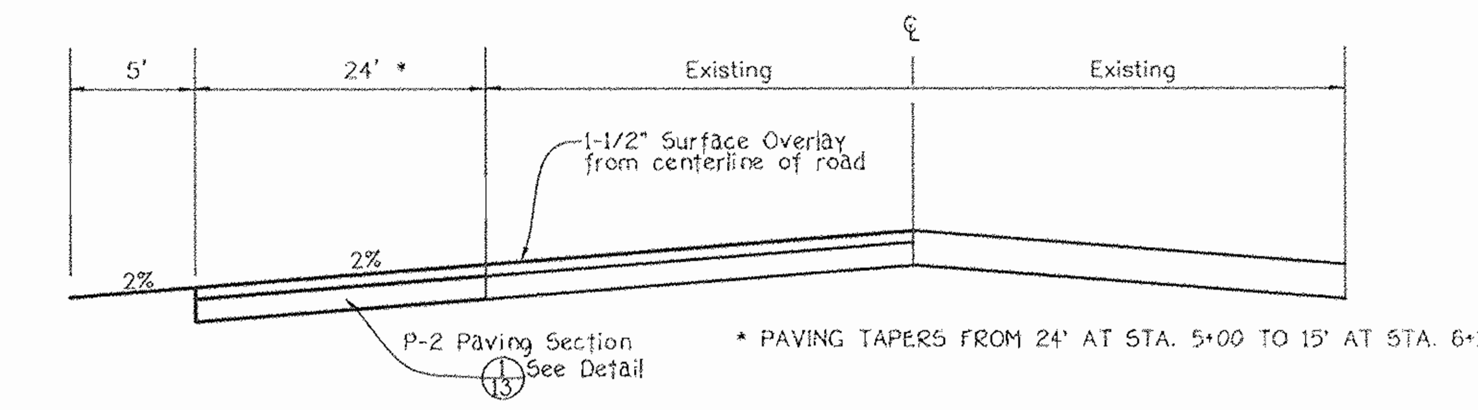
BUS TURNING MOVEMENT

SCALE: 1" = 50'



BUS TURNING MOVEMENT

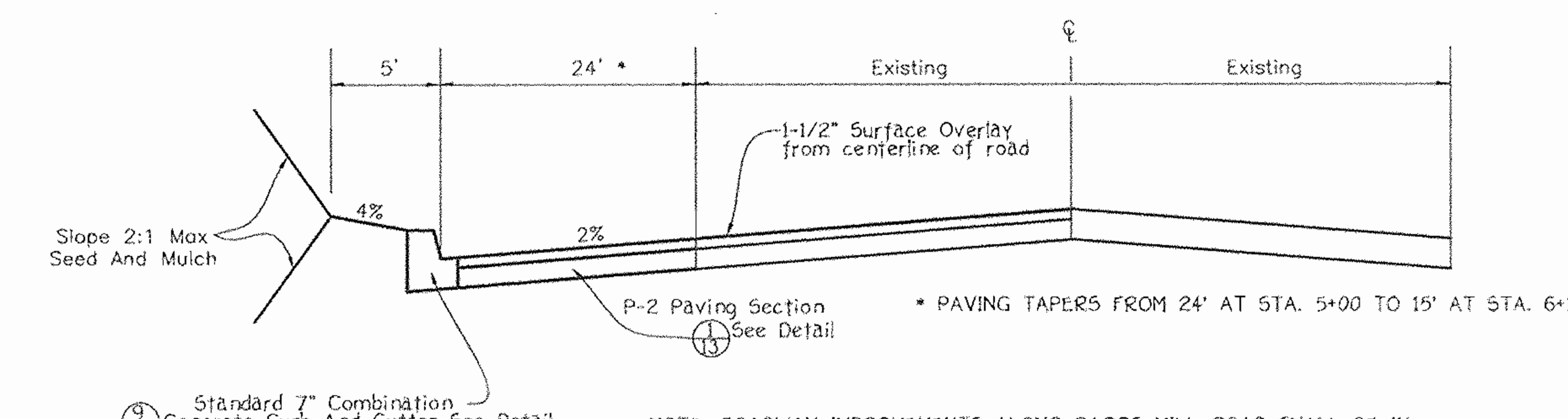
SCALE: 1" = 50'



NOTE: ROADWAY IMPROVEMENTS ALONG CARRS MILL ROAD SHALL BE IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-10.01

CARR'S MILL ROAD WIDENING SECTION ℄ STA. 5+02.49 TO ℄ STA. 6+09.25

NO SCALE



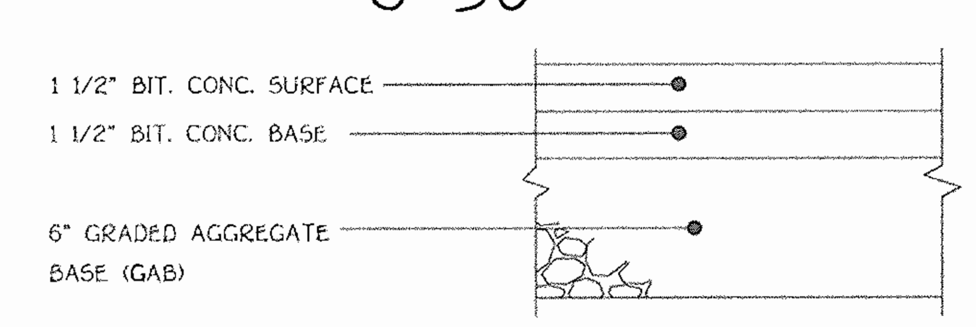
NOTE: ROADWAY IMPROVEMENTS ALONG CARRS MILL ROAD SHALL BE IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-10.01

CARR'S MILL ROAD WIDENING SECTION ℄ STA. 0+00 TO ℄ STA. 5+02.49

NO SCALE

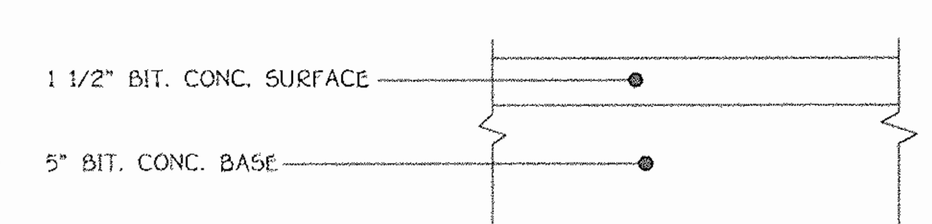
FILL AREAS ALONG THE WIDENING FOR CARRSMILLROAD SHALL BE COMPACTED TO 95% IN ACCORDANCE WITH AASHTO T-180 SPECIFICATIONS.

STATE OF MARYLAND PROFESSIONAL ENGINEER



GRANULAR BASE ALTERNATE

NOT TO SCALE



FULL DEPTH BIT. CONC. ALTERNATE

NOT TO SCALE

1/13 P-2 PAVING SECTION

NO SCALE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

for COUNTY HEALTH OFFICER — 3/3/06 DATE

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WATER CODE N/A — SEWER CODE N/A

CROSS SECTIONS AND DETAILS

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SHEET 13 OF 35 SDP-06-03

SDP06-03

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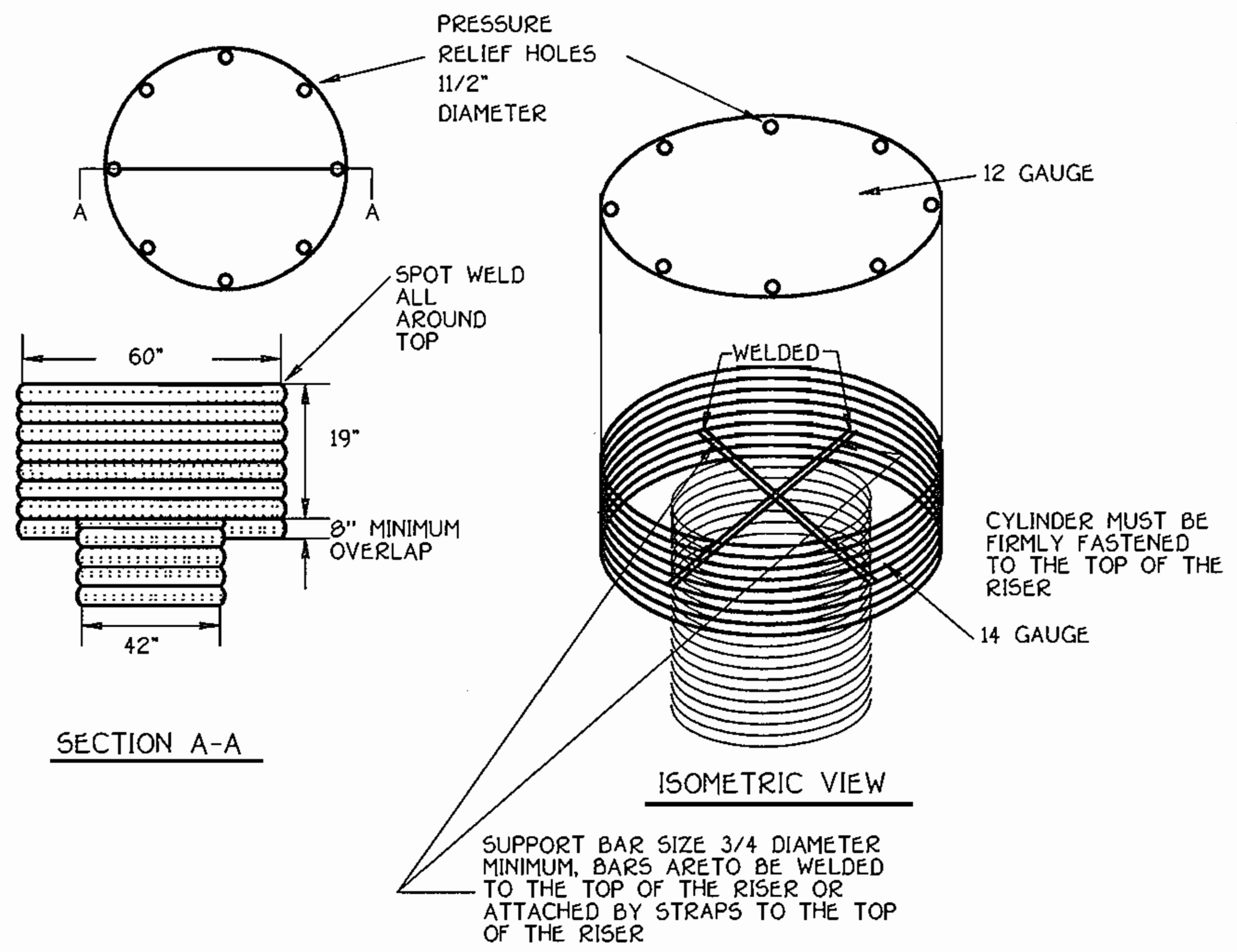
CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE



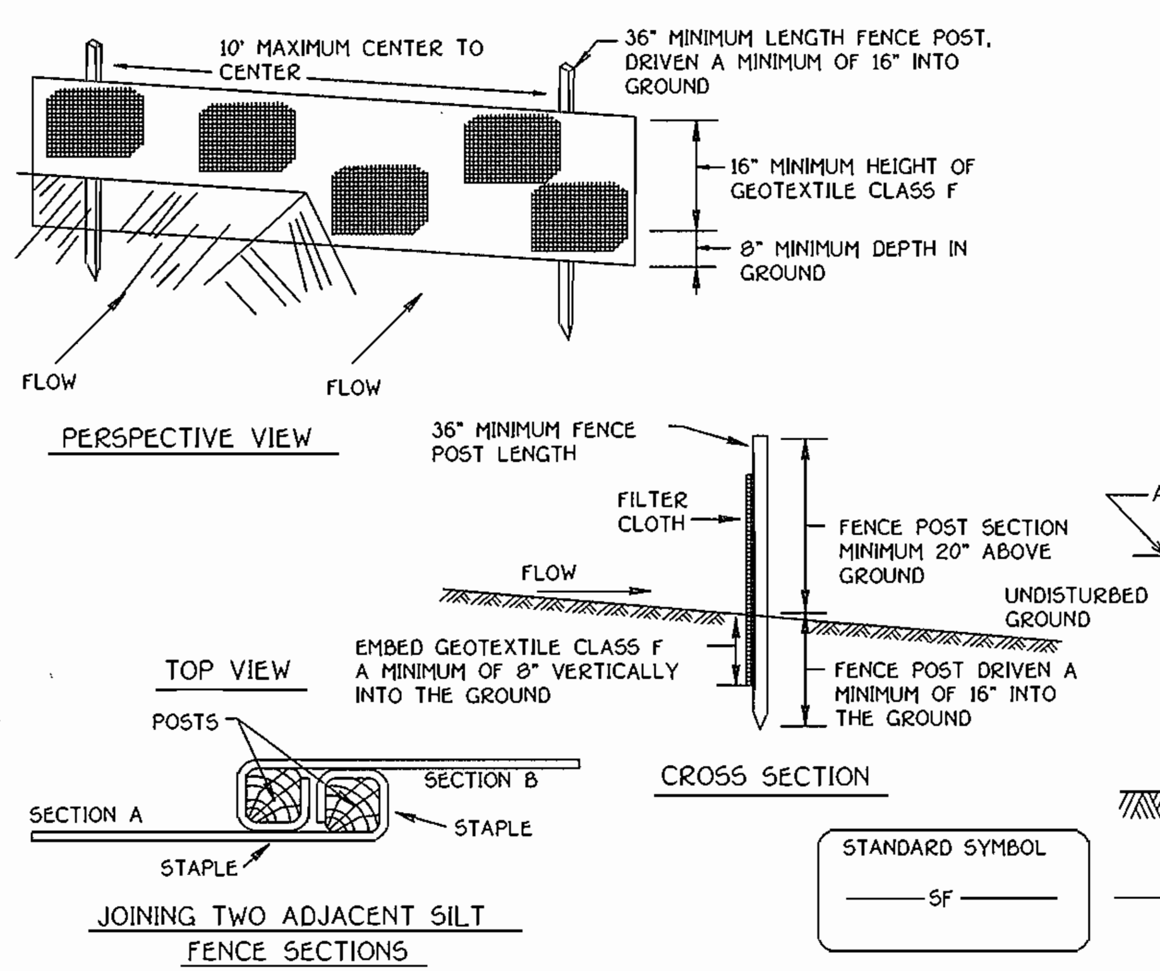
OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED STORMWATER MANAGEMENT FACILITIES FOR BMP POND #1

ROUTINE MAINTENANCE

1. Facility shall be inspected annually and after major storms. Inspections shall be preformed during wet weather to determine if the pond is functioning properly.
2. Top and side slopes of the embankment shall be mowed a minimum of two (2) times a year, once in June and once in September. Other side slopes and maintenance access should be mowed as needed.
3. Debris and litter shall be removed during regular mowing operations and as needed.
4. Visible signs of erosion in the pond as well as the rip-rap or gabion outlet area shall be repairer as soon as it is noticed.

NON-ROUTINE MAINTENANCE

1. Structural components of the pond such as the dam, the riser, and the pipes shall be repaired upon the detection of any damage. The components shall be inspected during routine maintenance operations.
2. Sediment shall be removed from the pond, and forebay, no later than when the capacity of the pond or forebay, is half full of sediment, or, when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.



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.)[2]	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

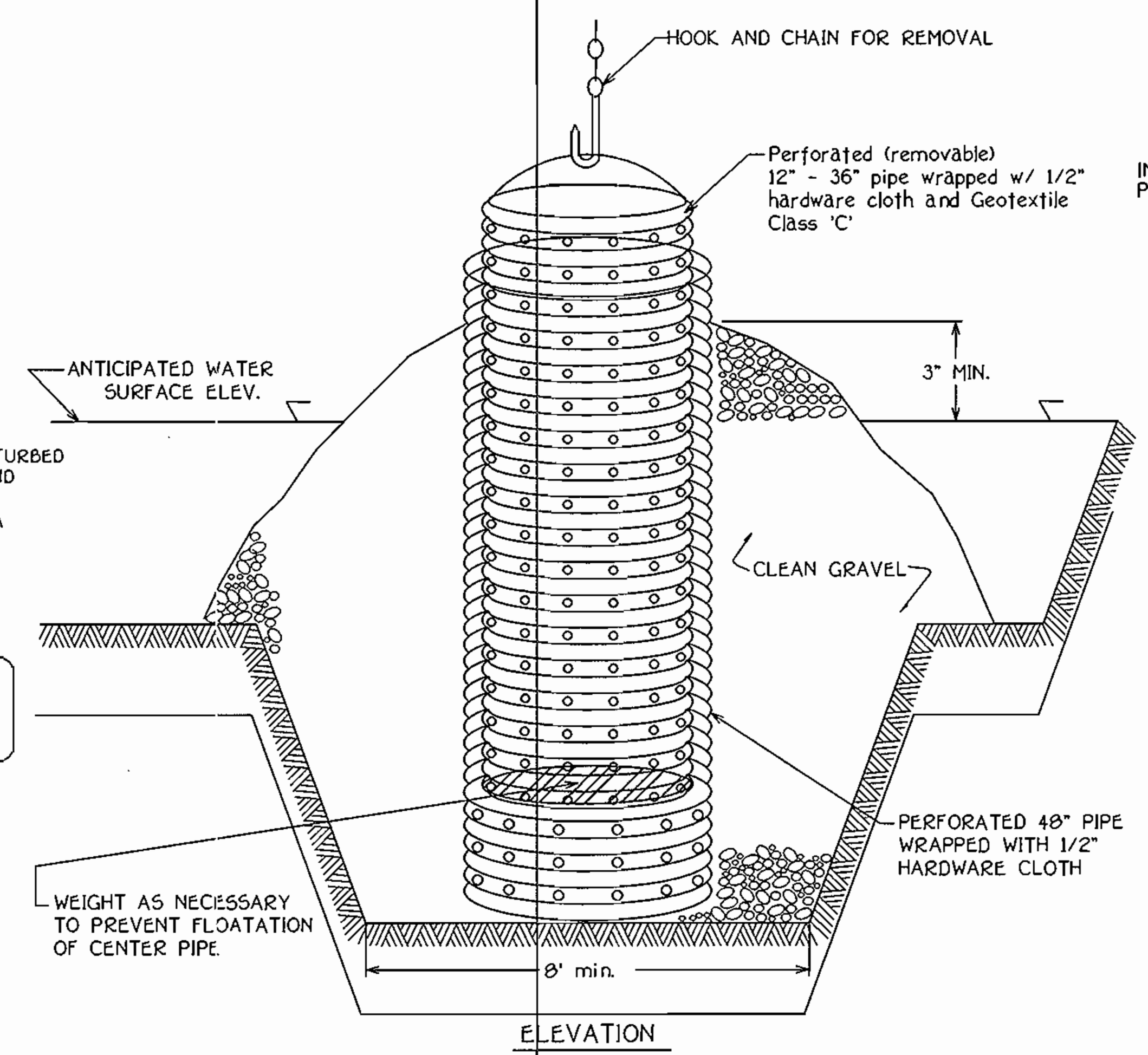
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.

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.

SILT FENCE

NOT TO SCALE

REMOVABLE PUMPING STATION



Construction Specifications

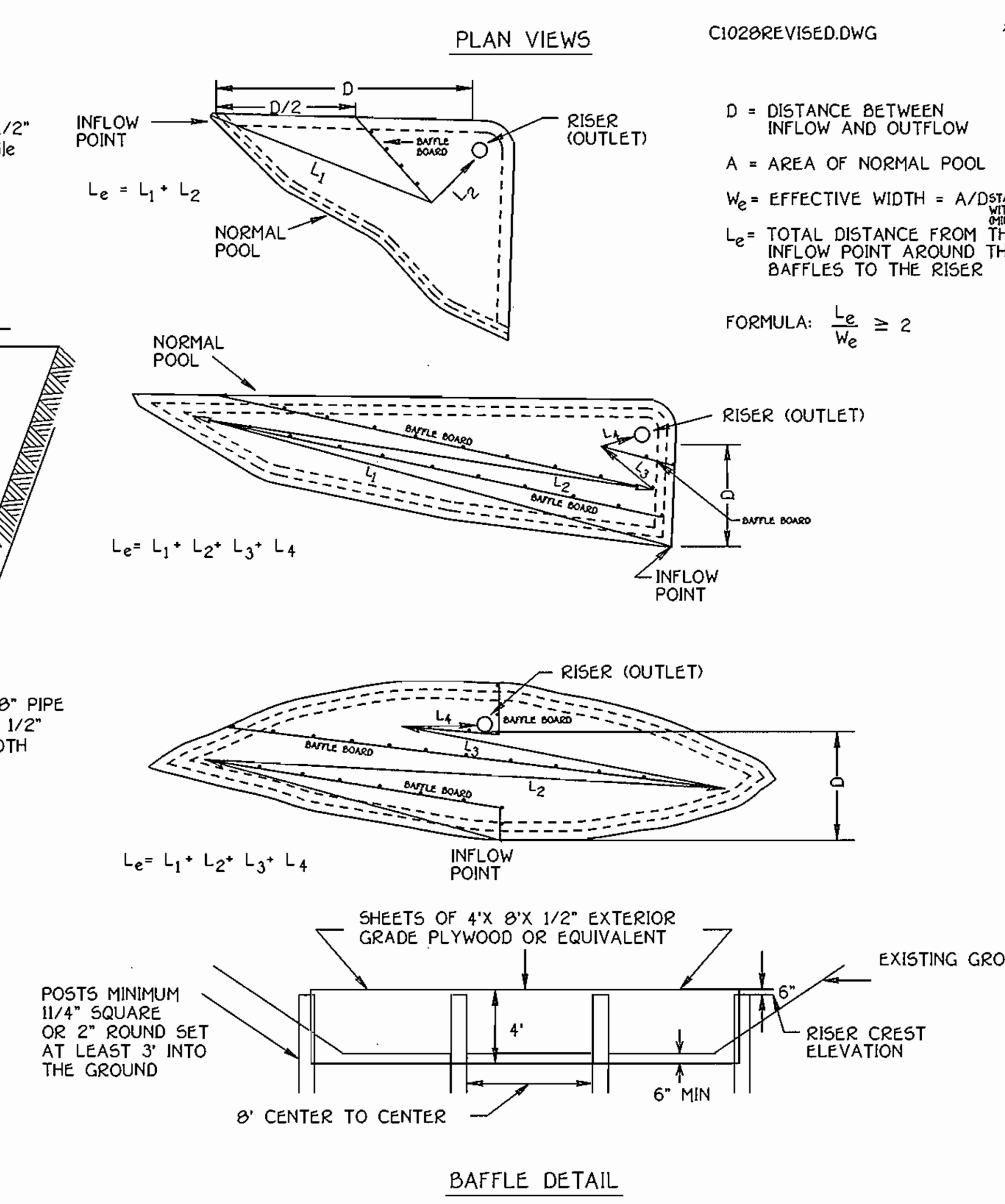
1. The outer pipe should be 48" dia. or shall, in any case, be at least 4" greater in diameter than the center pipe. The outer pipe shall be wrapped with 1/2" hardware cloth to prevent backfill material from entering the perforations.

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.

SEDIMENT BASIN BAFFLES



D = DISTANCE BETWEEN INFLOW AND OUTFLOW

A = AREA OF NORMAL POOL

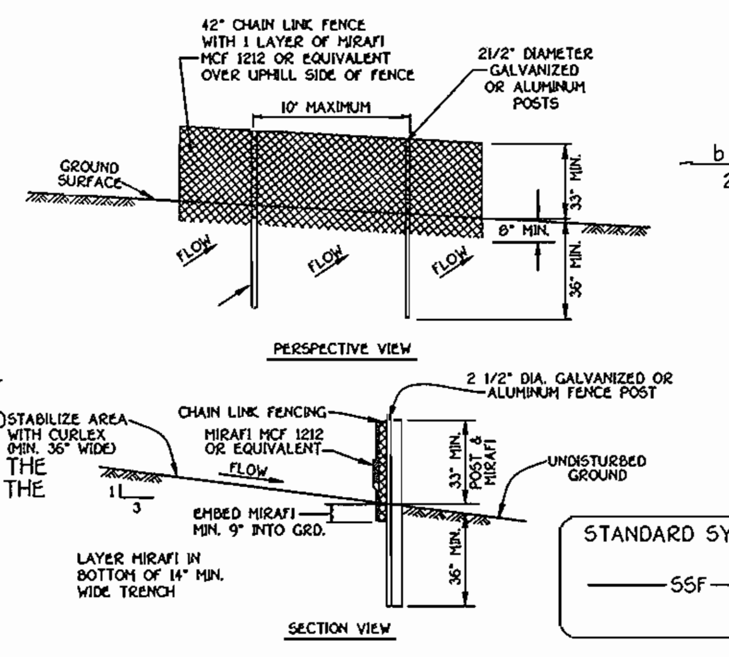
W_e = EFFECTIVE WIDTH = A/D

L_e = TOTAL DISTANCE FROM THE INFLOW POINT AROUND THE BAFFLES TO THE RISER

FORMULA: $\frac{L_e}{W_e} \geq 2$

$L_e = L_1 + L_2$

$L_e = L_1 + L_2 + L_3 + L_4$



CONSTRUCTION SPECIFICATIONS

1. FENCING SHALL BE 42" HIGH CHAIN CONSTRUCTED IN ACCORDANCE WITH THE LATEST MARYLAND STATE HIGHWAY ADMINISTRATION STANDARD DETAILS 690.01 AND 690.02 FOR CHAIN U FENCING. THE SPECIFICATIONS FOR A 6'-0" FENCE SHALL BE USED, SUBSTITUTING 42" FABRIC AND 8' POSTS. POSTS SHALL BE PLACED WITHOUT CONCRETE EMBEDMENT.
2. CHAIN LINK FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. THE LOWER TENSION WIRE, BRACE AND TRUSS RODS, ANCHORS AND POST CAPS ARE NOT REQUIRED EXCEPT ON THE ENDS OF THE FENCE.
3. FILTER CLOTH TO BE FASTENED SECURELY TO CHAIN LINK FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
4. FILTER CLOTH SHALL BE IMBEDDED A MINIMUM OF 9" INTO THE GROUND.
5. WHEN TWO SECTIONS OF DIVERSION CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED.

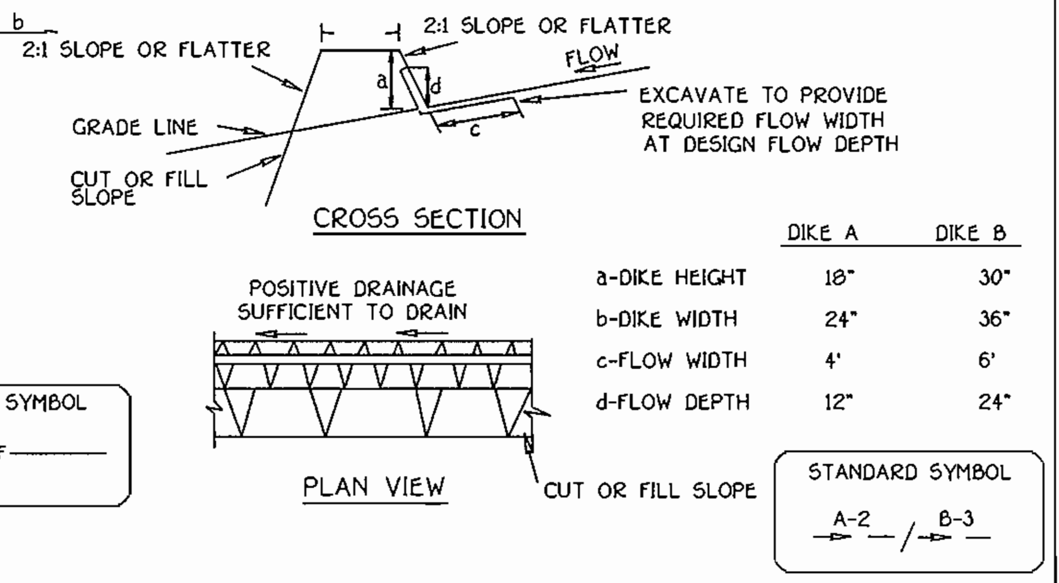
Fabric Properties	Value	Test Method
Grab Tensile Strength (lbs.)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682
Mullen Burst Strength (PSI)	190	ASTM D3786
Puncture Strength (lbs.)	40	ASTM D751
Slurry Flow Rate (gal/min/sf)	0.3	Virginia DOT VTM-51
Equivalent Opening Size	40-80	US Std Sieve CW-02215
Ultraviolet Radiation Stability (%)	90	ASTM G-26

Design Criteria

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	400 feet	1,500 feet
20 - 33%	5:1 - 3:1	300 feet	1,000 feet
33 - 50%	3:1 - 2:1	200 feet	500 feet
50% +	2:1 +	100 feet	250 feet

SUPER SILT FENCE

NOT TO SCALE



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

FLOW CHANNEL STABILIZATION

GRADE 0.5% MIN. 10% MAX.

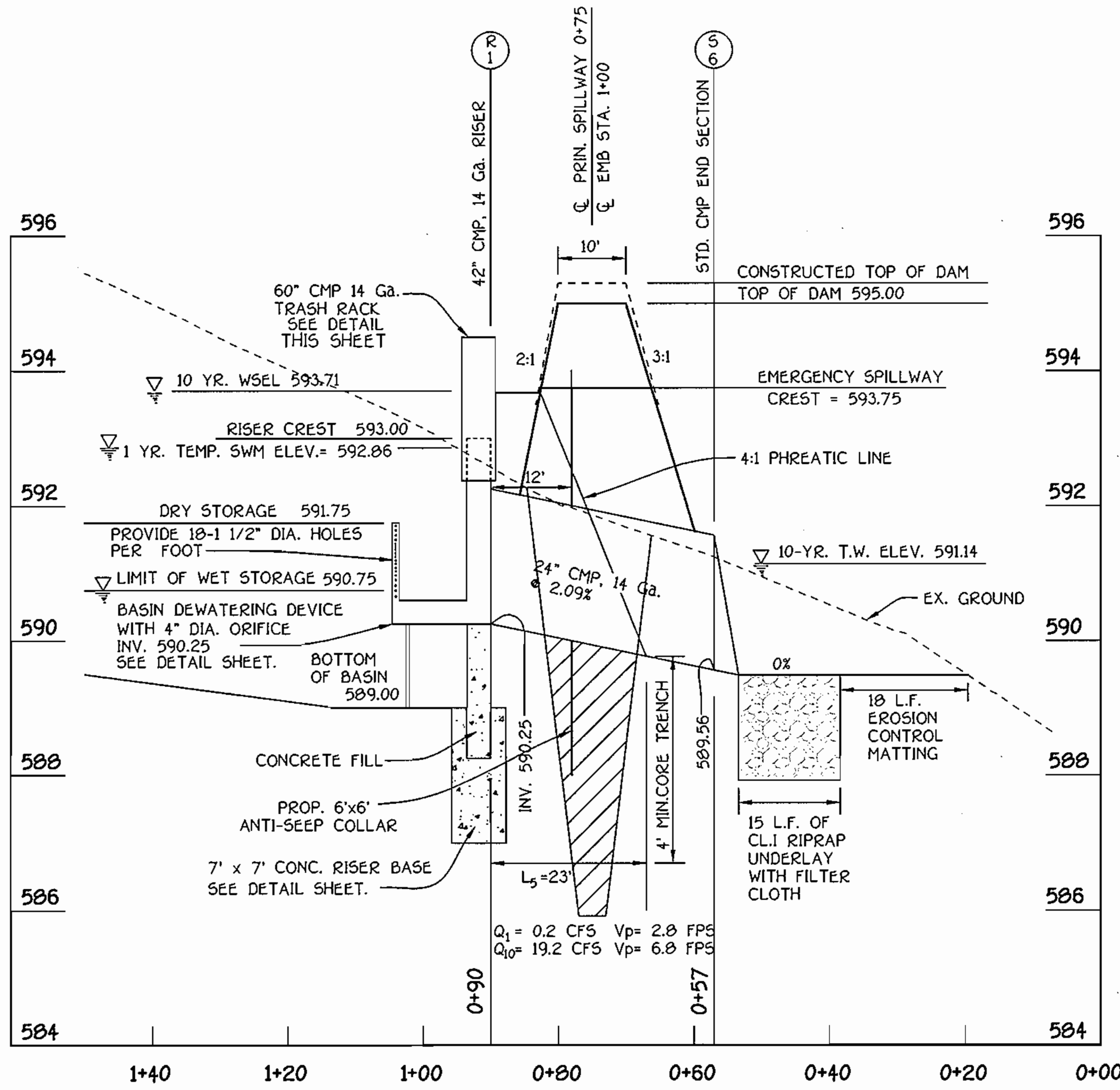
1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

1. All temporary earth dikes shall have uninterrupted positive grade to an outlet. Spot elevations may be necessary for grades less than 1%.
2. Runoff diverted from a disturbed area shall be conveyed to a sediment trapping device.
3. Runoff diverted from an undisturbed area shall outlet directly into an undisturbed, stabilized area at a non-erosive velocity.
4. All trees, brush, stumps, obstructions, and other objectionable 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.

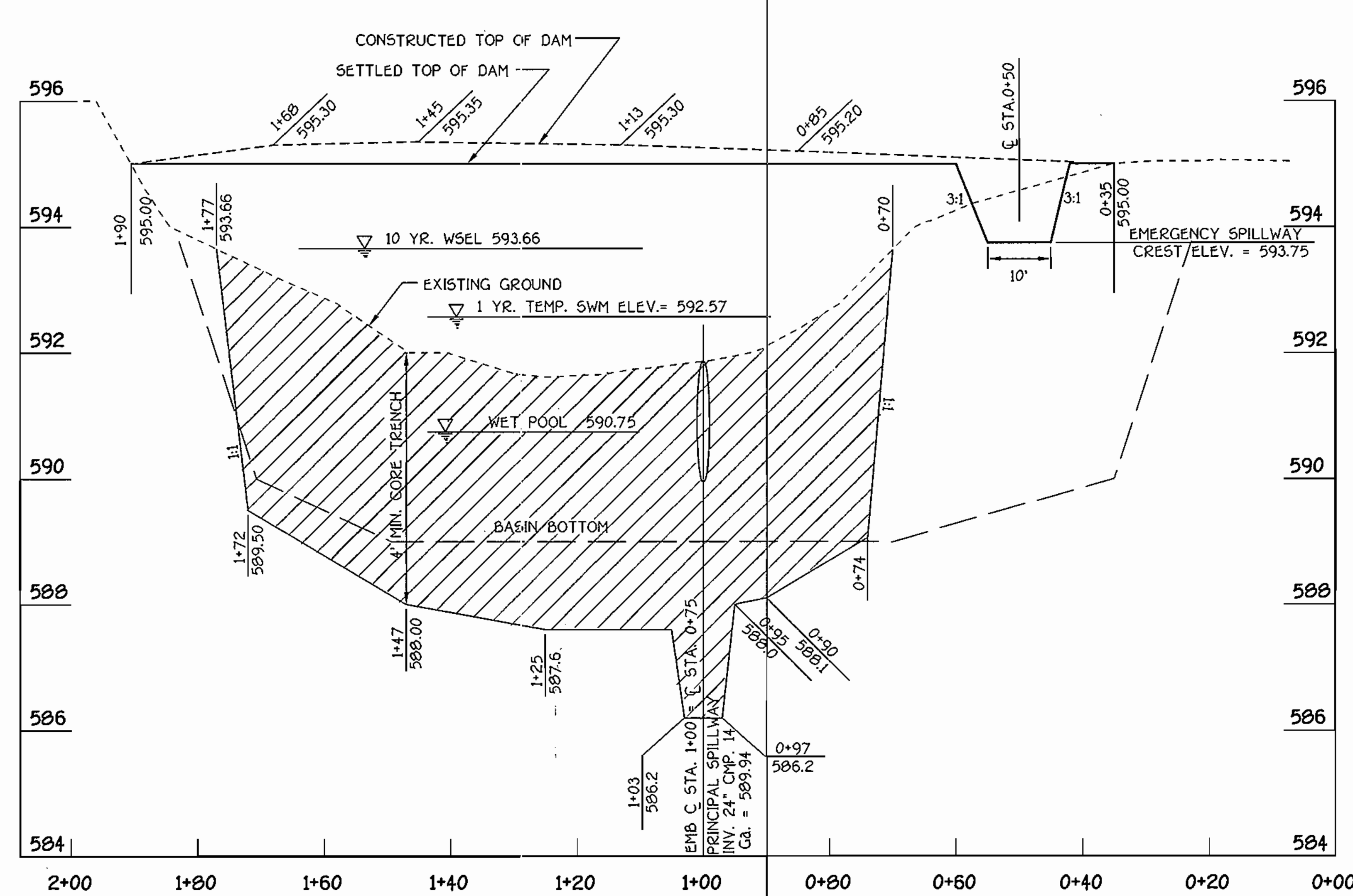
EARTH DIKE

NOT TO SCALE



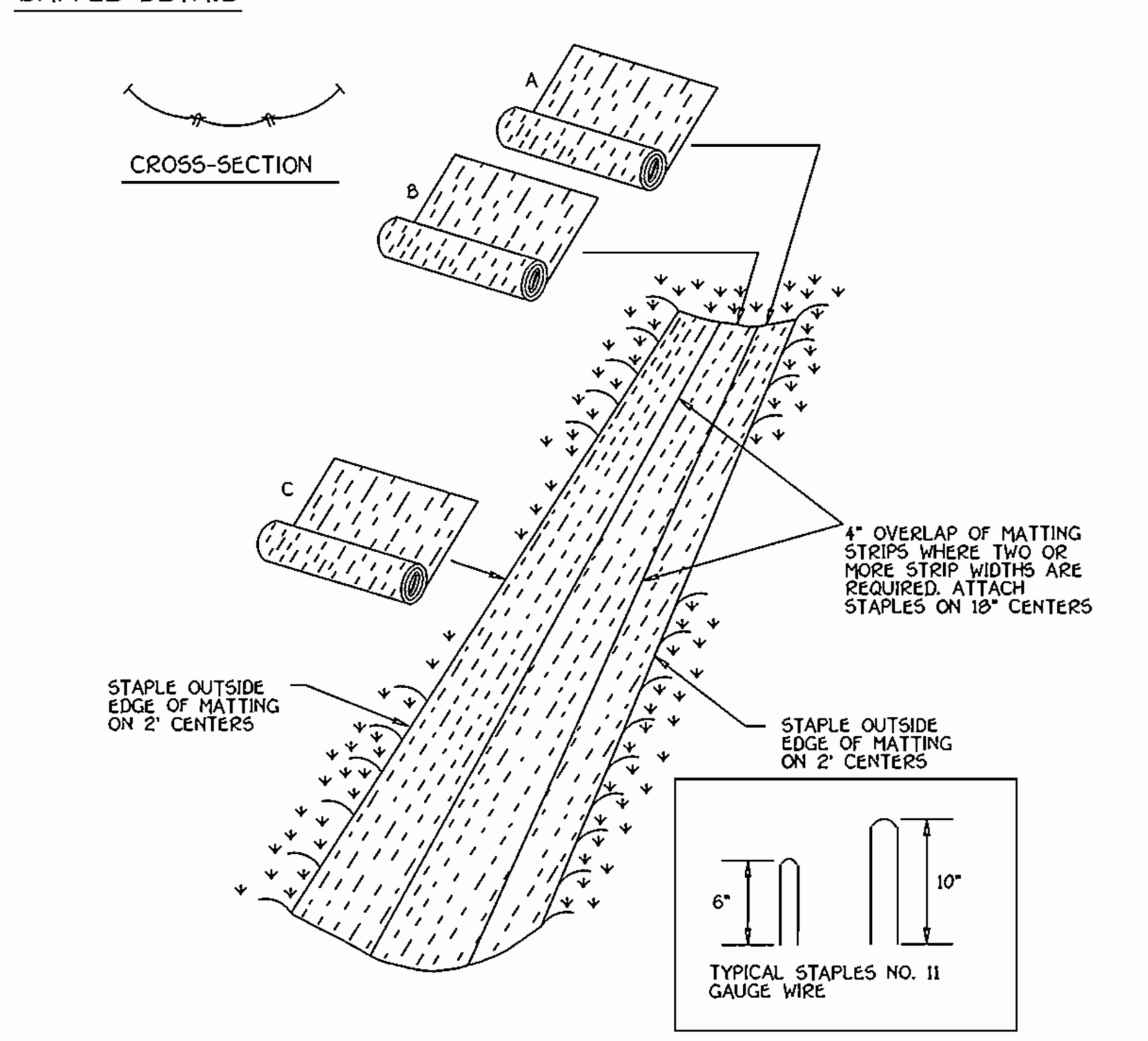
PRINCIPAL SPILLWAY PROFILE - TEMPORARY BASIN No. 2

SCALE: 1" = 20' HOR.
1" = 2' VER.



PROFILE ALONG ℄ OF EMBANKMENT - TEMPORARY BASIN No. 2

SCALE: 1" = 20' HOR.
1" = 2' VER.



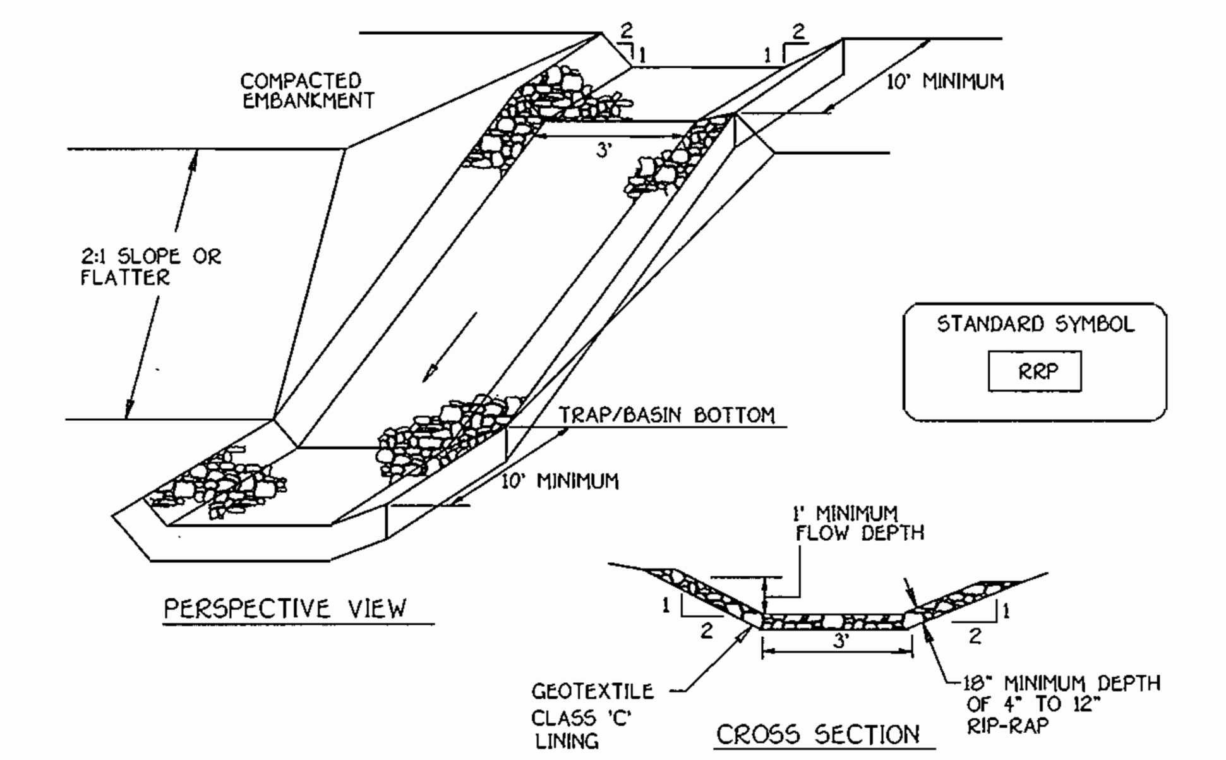
Construction Specifications

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.

EROSION CONTROL MATTING

NOT TO SCALE



Construction Specifications

1. Rip-rap lined inflow channels shall be 1' in depth, have a trapezoidal cross section with 2:1 or flatter side slopes and 3' (min.) bottom width. The channel shall be lined with 4" to 12" rip- rap to a depth of 18".
2. Filter cloth shall be installed under all rip-rap. Filter cloth shall be Geotextile Class C.
3. Entrance and exit sections shall be installed as shown on the detail section.
4. Rip-rap used for the lining may be recycled for permanent outlet protection if the basin is to be converted to a stormwater management facility.
5. Gabion Inflow Protection may be used in lieu of Rip-rap Inflow Protection.
6. Rip-rap should blend into existing ground.
7. Rip-rap Inflow Protection shall be used where the slope is between 4:1 and 10:1, for slopes flatter than 10:1 use Earth Dike or Temporary Swale lining criteria.

RIP-RAP INFLOW PROTECTION

NOT TO SCALE

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER MJD — DATE

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

ENGINEER'S CERTIFICATE

I Hereby Certify That This Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature Of Engineer — 2/4/06 Date

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements. — 2/15/06 Date

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature Of Developer — 2.3.06 Date

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

District Howard Soil Conservation Dist. — 2/15/06 Date

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — 3/10/06 Date

Chief, Division of Land Development — 3/10/06 Date

Chief, Development Engineering Division — 2/23/06 Date

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WATER CODE N/A			SEWER CODE N/A		

SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

NEW REPLACEMENT SCHOOL

BUSHY PARK ELEMENTARY SCHOOL

WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

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"BID AND CONSTRUCTION 3 JANUARY 06"

SHEET 12 OF 35 SDP-06-03

SDP 06-03

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20.0 STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION

DEFINITION

Using vegetation as cover for barren soil to protect it from forces that cause erosion.

PURPOSE

Vegetative stabilization specifications are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources.

CONDITIONS WHERE PRACTICE APPLIES

This practice shall be used on denuded areas as specified on the plans and may be used on highly erodible or critically eroding areas. This specification is divided into Temporary Seeding, to quickly establish vegetative cover for short duration O(up to one year), and Permanent Seeding, for long term vegetative cover. Examples of applicable areas for Temporary Seeding are temporary Soil Stockpiles, cleared areas being left idle between construction phases, earth dikes, etc. and for Permanent Seeding are lawns, dams, cut and fill slopes and other areas at final grade, former stockpile and staging areas, etc.

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.
Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.
Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters.

SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

A. Site Preparation

i. Install erosion and sediment control structures (either temporary of permanent) such as diversions, grade stabilization structures, berms, waterways, or sediment control basins.

ii. Perform all grading operations at right angles to the slope. Final grading and shaping is not usually necessary for temporary seeding.

iii. Schedule required soil tests to determine soil amendment composition and application rates for sites having disturbed area over 5 acres.

B. Soil Amendments (Fertilizer and Lime Specifications)

i. Soil tests must be performed to determine the exact ratios and application rates for both lime and fertilizer on sites having disturbed areas over 5 acres. Soil analysis may be performed by the University of Maryland or a recognized commercial laboratory. Soil samples taken for engineering purposes may also be used for chemical analyses.

ii. Fertilizers shall be uniform in composition, free flowing and suitable for accurate application by approved equipment. Manure may be substituted for fertilizer with prior approval from the appropriate approval authority. Fertilizers shall all be delivered to the site fully labeled according to the applicable state fertilizer laws and shall bear the name, trade name or trademark and warrantee of the producer.

iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a •100 mesh sieve and 98-100% will pass through a •20 mesh sieve.

iv. Incorporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

C. Seedbed Preparation

i. Temporary Seeding

a. Seedbed preparation shall consist of loosening soil to a depth of 3" to 5" by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened it should not be rolled or dragged smooth, but left in the roughened condition. Sloped areas (greater than 3:1) should be tracked leaving the surface in an irregular condition with ridges running parallel to the contour of the slope.

b. Apply fertilizer and lime as prescribed on the plans.

c. In corporate lime and fertilizer into the top 3-5" of soil by disking or other suitable means.

ii. Permanent Seeding

a. Minimum soil conditions required for permanent vegetative establishment:

1. Soil pH shall be between 6.0 and 7.0.
2. Soluble salts shall be less than 500 parts per million (ppm).
3. The soil shall contain less than 40% clay, but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% silt plus clay) would be acceptable.
4. Soil shall contain 1.5% minimum organic matter by weight.
5. Soil must contain sufficient pore space to permit adequate root penetration.
6. If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.

b. Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of the topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.

c. Apply soil amendments as per soil test or as included on the plans.

d. Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. Lawn areas should be raked to smooth the surface, remove large objects like stones and branches, and ready the area for seed and application. Where site conditions will not permit normal seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on newly disturbed areas.

D. Seed Specifications

i. All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately preceding the date of sowing such material on this job.

Note: Seed tags shall be made available to the inspector to verify type and rate of seed used.

ii. Inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later than the date indicated on the container. Add fresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective.

E. Methods of Seeding

i. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer), broadcast or drop seeded, or a cultipacker seeder.

a. If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous): 200 lbs/ac; K20 (potassium): 200 lbs/ac.

b. Lime - use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.

c. Seed and fertilizer shall be mixed on site and seeding shall be done immediately and without interruption.

ii. Dry Seeding: This includes use of conventional drop or broadcast spreaders.

a. Seed spread dry shall be incorporated into the subsoil at the rates prescribed on the Temporary or Permanent Seeding Summaries or Tables 265 or 26. The seeded area shall then be rolled with a weighted roller to provide good seed to soil contact.

b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

iii. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.

a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.

b. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

F. Mulch Specifications (In order of preference)

i. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.

ii. Wood Cellulose Fiber Mulch (WCFM)

a. WCFM shall consist of specially prepared wood cellulose processed into a uniform fibrous physical state.

b. WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.

c. WCFM, including dye, shall contain no germination or growth inhibiting factors.

d. WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having moisture absorption and percolation properties and shall cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.

e. WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.

f. WCFM must conform to the following physical requirements: fiber length to approximately 10 mm. , diameter approximately 1 mm., pH range of 4.0 to 8.5, ash content of 1.6% maximum and water holding capacity of 90% minimum.

Note: Only sterile straw mulch should be used in areas where one species of grass is desired.

G. Mulching Seeded Areas - Mulch shall be applied to all seeded areas immediately after seeding.

i. If grading is completed outside of the seeding season, mulch along shall be applied as prescribed in this section and maintained until the seeding season returns and seeding can be performed in accordance with these specifications.

ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre.

iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.

H. Securing Straw Mulch (Mulch Anchoring): Mulch anchoring shall be performed immediately following mulch application to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon size of area and erosion hazard:

i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of two (2) inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should be used on the contour if possible.

ii. Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.

iii. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders - such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch.

iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recommendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

I Incremental Stabilization - Cut Slopes

i. All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15'.

ii. Construction sequence (Refer to Figure 3 below):

a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to convey runoff from the excavation.
b. Perform Phase 1 excavation, dress, and stabilize.
c. Perform Phase 2 excavation, dress and stabilize. Overseed Phase 1 areas as necessary.
d. Perform final phase excavation, dress and stabilize. Overseed previously seeded areas as necessary.

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

J. Incremental Stabilization of Embankments - Fill Slopes

i. Embankments shall be constructed in lifts as prescribed on the plans.

ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches 15", or when the grading operation ceases as prescribed in the plans.

iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.

iv. Construction sequence: Refer to Figure 4 (below).
a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
b. Place Phase 1 embankment, dress and stabilize.
c. Place Phase 2 embankment, dress and stabilize.
d. Place final phase embankment, dress and stabilize. Overseed previously seeded areas as necessary.

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

SECTION 2 - TEMPORARY SEEDING

Vegetation - annual grass or grain used to provide cover on disturbed areas for up to 12 months. For longer duration of vegetative cover, Permanent Seeding is required.

A. Seed mixtures - Temporary Seeding

i. Select one or more of the species or mixtures listed in Table 26 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Temporary seeding summary below, along with application rates, seeding dates and seeding depths. If this summary is not put on the plans and completed, then Table 26 must be put on the plans.

ii. For sites having soil tests performed, the rates shown on this table shall be deleted and the rates recommended by the testing agency shall be written in. Soil tests are not required for Temporary Seeding.

Seed Mixture (Hardiness Zone 6a) From Table 26					Fertilizer Rate (10-10-10)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
1	Rye	140	8/1 TO 10/31 3/15 TO 5/31	1-2 IN	600 lb/ac (15 lb/1000sf)	2 tons/ac (100 lb/1000sf)
2	Barley Or Rye Plus - Foxtail Millet	150	3/15 TO 10/31	1 IN.		
3	Annual Rye Grass	50	3/15 TO 5/31 8/1 TO 10/31	1/4 -1/2 IN.		

SECTION 3 - PERMANENT SEEDING

Seeding grass and legumes to establish groung cover for a minimum of one year on disturbed areas generally receiving low maintenance.

A. Seed mixtures - Permanent Seeding

i. Select one or more of the species or mixtures listed in Table 25 for the appropriate Plant Hardiness Zone (from Figure 5) and enter them in the Permanent Seeding Summary below, along with application rates and seeding dates. Seeding depths can be estimated using Table 26. If this summary is not put on the construction plans and completed, then Table 25 must be put on the plans. Additional planting specifications for exceptional sites such as shorelines, streambanks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-SCS Techinical Field Office Guide, Section 342 - Critical Area Planting. For special lawn maintenance areas, see Sections IV Sod and V Turfgrass.

ii. For sites having disturbed area over 5 areas, the rates shown on this table shall be deleted and the rates recommended by the soil testing agency shall be written in.

iii. For areas receiving low maintenance, apply ureaform fertilizer (46-0-0) at 3 1/2 lbs/1000 sq. ft. (150 lbs/ac), in addition to the above soil amendments shown in the table below, to be performed at the time of seeding.

SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTION, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
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 RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7) SITE ANALYSIS:

TOTAL AREA OF SITE	20.0 ACRES
AREA DISTURBED	20.0 ACRES
AREA TO BE ROOFED OR PAVED	5.57 ACRES
AREA TO BE VEGETATIVELY STABILIZED	14.43 ACRES
TOTAL CUT	26,435 CU.YDS.
TOTAL FILL	26,435 CU.YDS.
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 CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

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 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 AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12" APART, SPRING-TOOTHED HARROWS, AND 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 BALE DIKES, 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 SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

Seed Mixture (Hardiness Zone 6a) From Table 25					Fertilizer Rate (10-20-20)			
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
1	Tall Fescue (85%) Perennial Ryegrass (10%) Kentucky Bluegrass (5%)	125 15 10	3/15 TO 6/1 8/1 TO 10/1	1-2 IN	90 lb/ac (2.0 lb/ 1000sf)	175 lb/ac (4 lb/ 1000sf)	175 lb/ac (4 lb/ 1000sf)	2 tons/ac (100 lb/ 1000sf)
2	Tall Fescue (80%) Hard Fescue (20%)	120 30	3/15 TO 6/1 8/1 TO 10/1	1-2 IN.				
3	Hard Fescue (100%)	0.75	3/15 TO 6/1 8/1 TO 10/1	1-2 IN.				

SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT. (1 DAY)

2. NOTIFY "MISS UTILITY" (1-800-257-7777) AT LEAST 48 HOURS BEFORE STARTING WORK AND NOTIFY THE HOWARD COUNTY DIVISION OF CONSTRUCTION INSPECTION (410-313-1870) 24 HOURS BEFORE STARTING WORK.

3. INSTALL ALL SEDIMENT CONTROL DEVICES (S.C.E., SILT FENCE, SUPER SILT FENCE, EARTH DIKE, SEDIMENT BASINS). OBTAIN PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR PRIOR TO PROCEEDING. (1 MONTH)

4. DEMOLISH AREAS SHOWN ON SHEETS 2 AND 3. ALL DEMOLISHED MATERIALS SHALL BE COMPLETELY REMOVED FROM THE SITE AND DISPOSED OF PROPERLY. (3 WEEKS)

5. GRADE SITE TO SUBGRADE. (2 MONTHS)

6. BEGIN CONSTRUCTION OF SCHOOL BUILDING. (18 MONTHS)

7. CONSTRUCT STORM DRAIN SYSTEM WITH THE EXCEPTION OF S-1A TO THE EXISTING MH. (4 WEEKS)

8. INSTALL CURB AND GUTTER. (3 WEEKS)

9. CONSTRUCT RECHARGE VOLUME BMP AND BLOCK (WATERTIGHT) ENTRANCE TO UNDERGROUND STONE TRENCH IN M-2. (2 WEEKS)

10. PAVE PARKING LOT, ROADWAYS, AND CARRS MILL ROAD WIDENING. (1 MONTH)

11. COMPLETE CONSTRUCTION OF SCHOOL, SIDEWALK, AND PLAY AREAS. (1 MONTH)

12. STABILIZE ALL DISTURBED AREAS WITH SEED AND MULCH IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS. (2 WEEKS)

13. INSPECT STORM DRAIN SYSTEM AND FLUSH/CLEAN AS NECESSARY TO ENSURE NO REMAINING SEDIMENT. (1 DAY).

14. WITH PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR AND A 5-DAY CLEAR WEATHER FORECAST REMOVE TEMPORARY SEDIMENT BASIN NO. 2. INSTALL STORM DRAIN SYSTEM S-1A TO EX. MH AND GRADE AREA AS SHOWN ON SHEET 5 AND STABILIZE WITH PERMANENT SEEDING.

15. WITH PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, CONVERT THE SEDIMENT BASIN INTO A PERMANENT STORMWATER MANAGEMENT POND; REPLACE THE DRAW DOWN DEVICE WITH A GABION "TRASH RACK" AND USE NEW PERFORATED, OR CLEANED PERFORATED PVC PIPE AND REMOVE TEMPORARY BRICK WEIR. REMOVE "MUCK" FROM POND BOTTOM AND BRING TO FINAL GRADE WITH COMPACTED (95%) SUITABLE SOIL. (1 WEEK).

16. FOLLOWING SUCCESSFUL STABILIZATION (i.e., ESTABLISHED VEGETATION OR PAVING) OF ALL DISTURBED AREAS, OBTAIN PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR TO REMOVE ALL REMAINING SEDIMENT AND EROSION CONTROL DEVICES. THEN STABILIZE THOSE AREAS DISTURBED BY THIS PROCESS WITH PERMANENT SEEDING. UNBLOCK ENTRANCE TO RECHARGE BMP IN M-2. (1 WEEK)

SEQUENCE NOTE: THE CONTRACTOR SHALL INSPECT AND PROVIDE NECESSARY MAINTENANCE ON ALL SEDIMENT AND EROSION CONTROL STRUCTURES SHOWN HEREON AFTER EACH RAINFALL EVENT AND ON A DAILY BASIS. REMOVE SEDIMENTS FROM THE SEDIMENT BASINS WHEN CLEAN OUT ELEVATIONS ARE REACHED. ALL SEDIMENTS MUST BE PLACED UPSTREAM OF ANY APPROVED BASIN.

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

II. 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.

III 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.

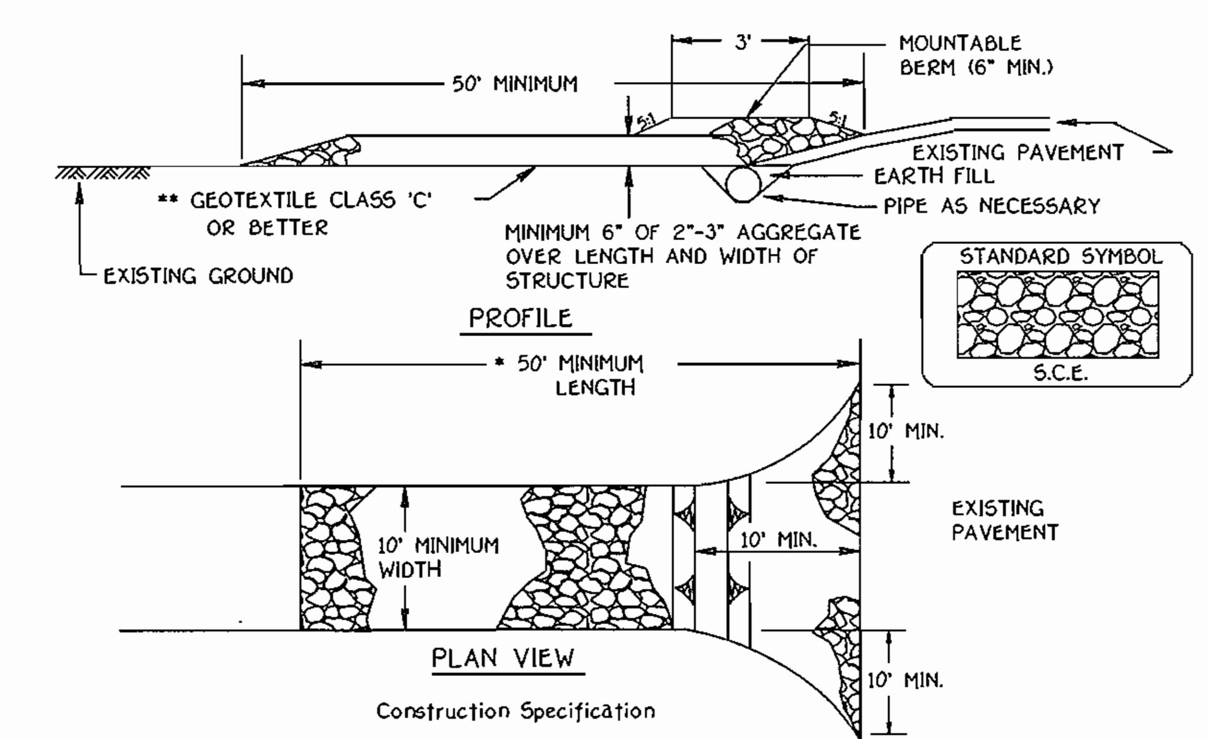
Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.

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

V. Topsoil Application
i. When top soiling, 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 top soiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.
iii. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from top soiling 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 at a rate of 1 ton/1,000 square feet.
iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

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



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.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE

STATE OF MARYLAND CHARLES G. CROUCH PROFESSIONAL ENGINEER 13204 REGISTERED

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

ENGINEER'S CERTIFICATE

I Hereby Certify That This Plan For Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Condition And That It Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District.

Signature Of Engineer — Date 2/4/06

Reviewed For Howard County Soil Conservation District And Meets Technical Requirements.

Date 2/15/06

DEVELOPER'S CERTIFICATE

"I/We Certify That All Development And Construction Will Be Done According To This Plan Of Development And Plan For Erosion And Sediment Control And That All Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of Natural Resources Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Also Authorize Periodic On-Site Inspection By The Howard Soil Conservation District Or Their Authorized Agents, As Are Deemed Necessary."

Signature Of Developer — Date 2-3-06

Approved: This Development Is Approved For Erosion And Sediment Control By The Howard Soil Conservation District.

District Howard Soil Conservation Dist. — Date 2/15/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director Department of Planning and Zoning — Date 3/10/06

Chief, Division of Land Development — Date 3/10/06

Chief, Development Engineering Division — Date 2/23/06

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6798

TCA ARCHITECTS
2661 RIVA ROAD, SUITE 120
ANNAPOLIS, MARYLAND 21401
(410) 841-6205

Address Chart	
Parcel Number	Street Address
P. 15	14601 CARRS MILL ROAD
P. 153	2680 MARYLAND ROUTE 97
P. 198	2670 MARYLAND ROUTE 97
	WOODBINE, MD. 21797

PROJECT			SECTION/AREA		PARCELS
BUSHY PARK ELEMENTARY SCHOOL			N/A		15, 153 & 198
DEED REF.	BLOCK NO.	ZONE	TAX MAP	ELEC. DIST.	CENSUS TR.
P.198, 0704/649 P.153, 433/729 PLAT •s 17812 & 17813	10	RC-DEO	14	FOURTH	6040.02
WATER CODE N/A			SEWER CODE N/A		

SEDIMENT AND EROSION CONTROL NOTES, DETAILS AND SEQUENCE OF CONSTRUCTION

NEW REPLACEMENT SCHOOL
BUSHY PARK ELEMENTARY SCHOOL
WATER SUPPLY & SEPTIC SYSTEM LAYOUT AT THE EXISTING BUSHY PARK ELEMENTARY SCHOOL AND THE GLENWOOD MIDDLE SCHOOL

TAX MAP No.: 14 GRID No: 10 PARCEL No.: 15, 153 & 198
FOURTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN DATE: SEPTEMBER 30, 2005

BUILDING PERMIT/CD REVIEW 28 NOVEMBER 05
"BID AND CONSTRUCTION 3 JANUARY 06"
SHEET 11 OF 35 SDP-06-03

SDP 06-03

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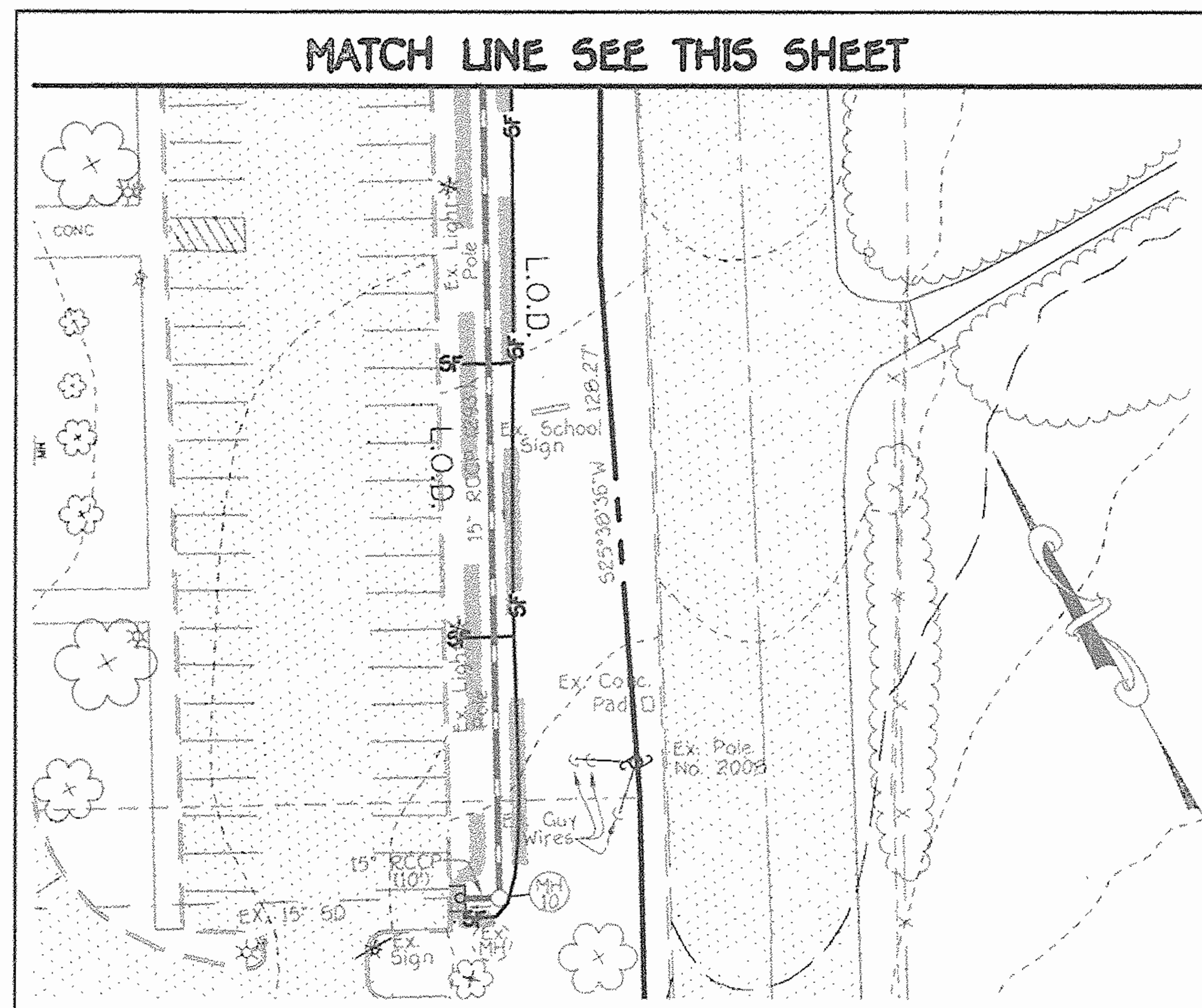
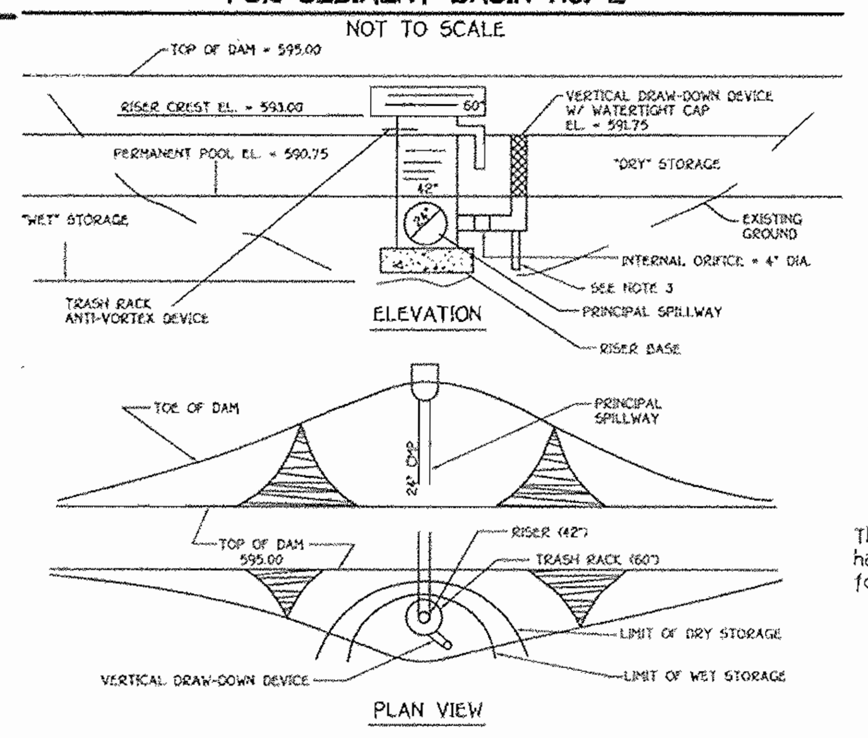


VERTICAL DRAW-DOWN DEVICE FOR SEDIMENT BASIN No. 2

NOT TO SCALE

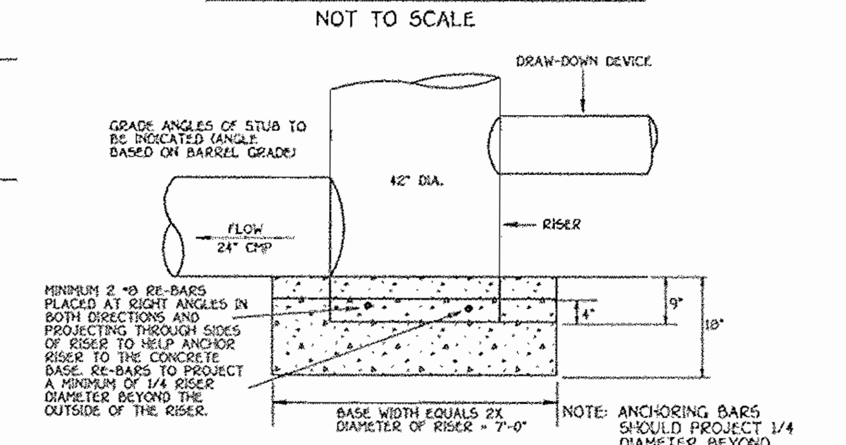


CONSTRUCTION SPECIFICATIONS

1. PERFORATIONS IN THE DRAW-DOWN DEVICE MAY NOT EXTEND INTO THE WET STORAGE.
2. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 4 TIMES THE AREA OF THE INTERNAL ORIFICE.
3. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
4. PROVIDE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOATATION. AN ACCEPTABLE PREVENTATIVE MEASURE IS TO STAKE BOTH SIDES OF DRAW-DOWN DEVICE WITH 1" STEEL ANGLE, OR 1" BY 4" SQUARE OR 2" ROUND WOODEN POSTS SET 3' MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE MINIMUM WIRE.

RISER BASE DETAIL

NOT TO SCALE



Construction Specifications

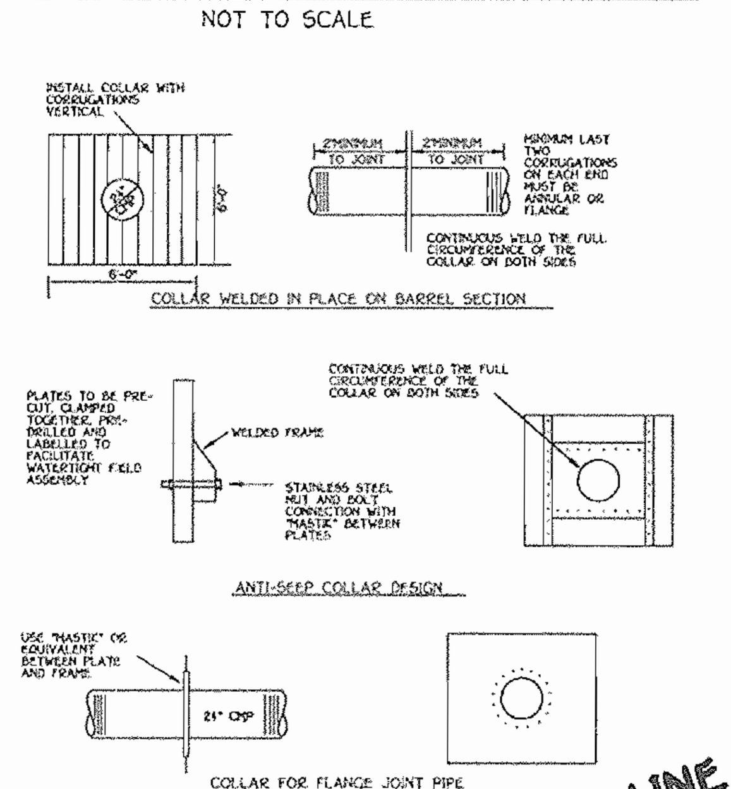
The riser shall have a base attached with a watertight connection and shall have sufficient weight to prevent flotation of the riser. Two approved bases for risers 10" or less in height are:

1. A concrete base 18" thick with the riser embedded 9" in the base.
2. A 1/4" minimum thickness steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2' of stone, gravel, or compacted earth placed on it to prevent flotation. In either case, each side of the square base shall be twice the riser diameter.

Note: For risers greater than ten feet high computations shall be made to design a base which will prevent floatation. The minimum factor of safety shall be 1.20 (downward forces = 1.20 x upward forces).

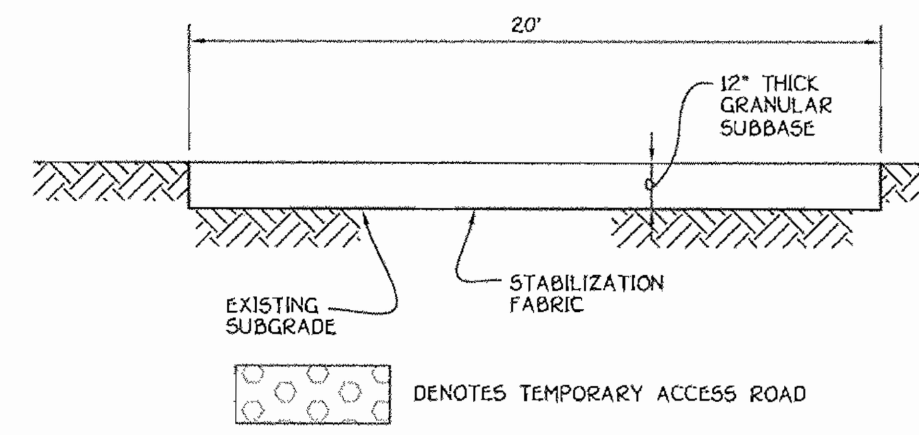
TYPICAL ANTI-SEEP COLLARS

NOT TO SCALE



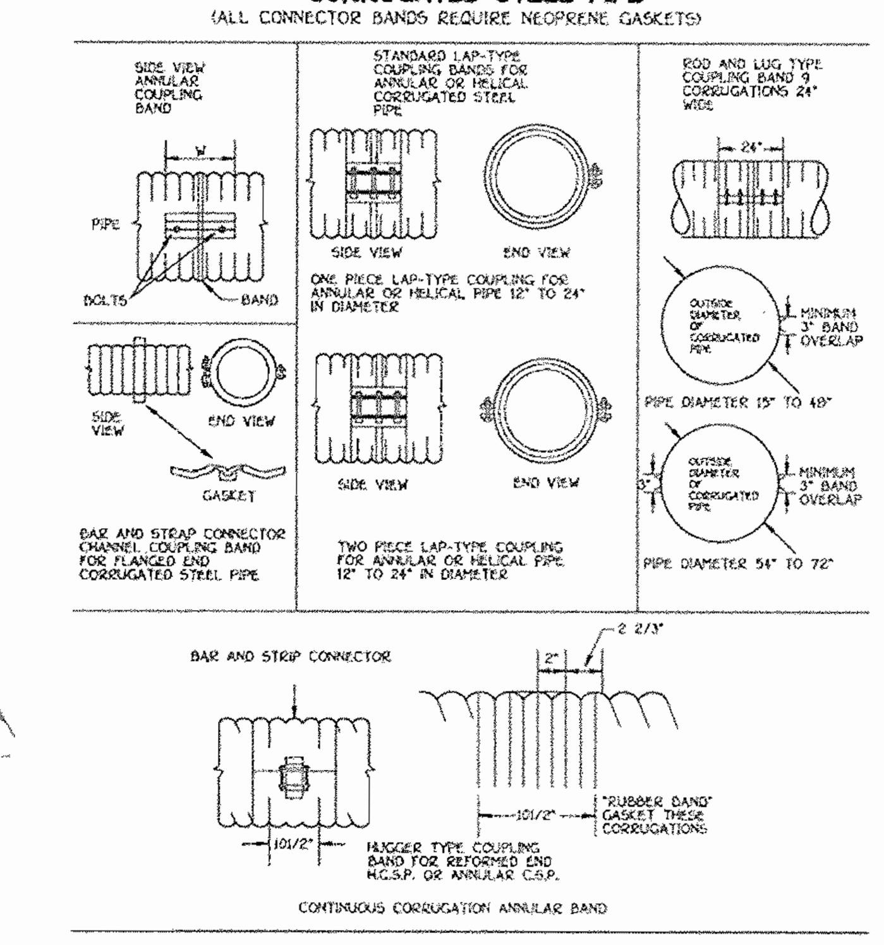
TEMPORARY ACCESS ROAD DETAIL

NOT TO SCALE

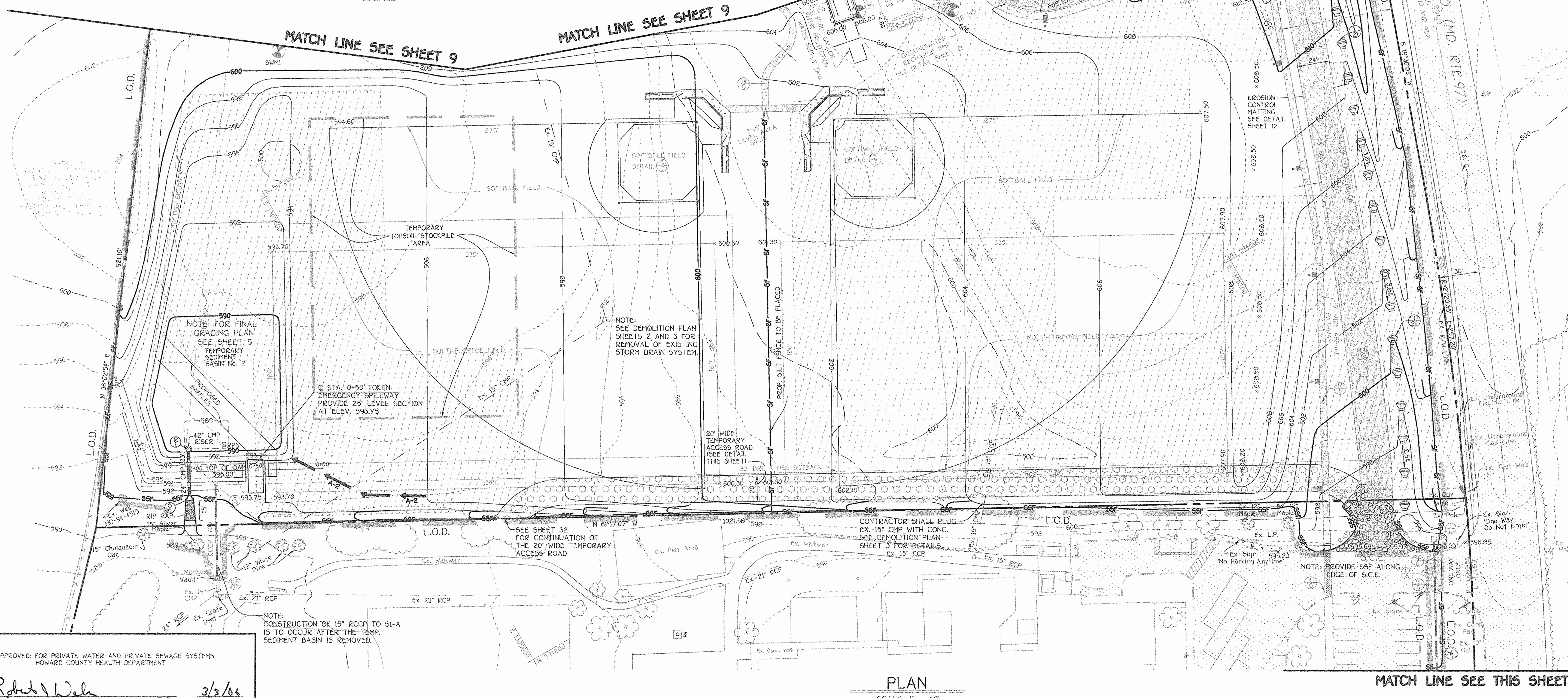


TYPES OF COUPLERS FOR CORRUGATED STEEL PIPE

(ALL CONNECTOR BANDS REQUIRE NEOPRENE GASKETS)



NOTE: UNDER NO CIRCUMSTANCES WILL THE DIMPLE (UNIVERSAL) CONNECTOR BAND BE ACCEPTABLE FOR USE IN ANY SEDIMENT CONTROL OR STORMWATER MANAGEMENT STRUCTURE



TEMPORARY SEDIMENT BASIN No. 2

INITIAL D.A. = 1.0 Ac.±
FINAL D.A. = 6.85 Ac±
STORAGE REQUIRED
WET = 1800 x 6.85 = 12,330 CuFt.
DRY = 1800 x 6.85 = 12,330 CuFt.
STORAGE PROVIDED
WET = 13,952 CuFt. @ ELEV. 590.75
DRY = 12,330 CuFt. @ ELEV. 591.75
BOTTOM ELEV. = 589.00
STORAGE DEPTH = 4.00' DRY
TOP OF EMBANKMENT = 595.00
RISER CREST ELEV.= 593.00
SIDE SLOPES: 2:1/3:1
FOR 1 YEAR TEMPORARY STORAGE PROVIDED @ 592.57
Q1 exist. = 0.2 c.f.s.
Q1 prop. = 0.2 c.f.s.

FOR BAFFLES:
Le REQUIRED = 156'
Le PROVIDED = 220'

PLAN
SCALE: 1" = 40'

APPROVED: FOR PRIVATE WATER AND PRIVATE SEWAGE SYSTEMS
HOWARD COUNTY HEALTH DEPARTMENT

COUNTY HEALTH OFFICER — DATE 3/3/06

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District-Howard Soil Conservation Dist. — Date 2/15/06

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning — Date 3/10/06

Chief, Division of Land Development — Date 3/10/06

Chief, Development Engineering Division — Date 2/23/06

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WATER CODE N/A			SEWER CODE N/A		

SEDIMENT AND EROSION CONTROL PLAN

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BUSHY PARK ELEMENTARY SCHOOL

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SDP 06-03

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