

GENERAL NOTES:

- All materials and construction to be in accordance with Howard County Road Construction Code and Specifications.
- Coordinates are based on the Maryland State Plane Coordinate System as projected by Howard County Monuments.
- All driveways and parking to be owned and maintained by Howard County Board of Education.
- Any damage to County owned rights-of-way to be corrected at the Contractor's expense.
- Installation of traffic control devices shall be in accordance with the latest edition of the "Manual of Uniform Traffic Control Devices for Streets and Highways" - Federal Highway Administration. Topography was furnished by others.
- The area shown is located on Tax Map #16, Parcel B.
- Trench bedding for storm drainage shall be in accordance with Howard County Std. S.D. 02.01.
- Information concerning underground utilities was obtained from available records, but the Contractor must determine the exact location by digging test pits, by hand, at all utility crossings; well in advance of construction.
- The Contractor or Developer shall contact the Construction Inspection/Survey Division 24 hours in advance of work, at 992-2417 or 792-7272.
- All downspout drains shall be connected to storm drains.
- The developer agrees to work with the Department of Licenses and Inspection to resolve any problems caused by roof water discharge. Handicap Parking Details shall be in accordance with the Maryland Building Code for the Handicapped, Code of Maryland Regulations 05.01.01.06 and details on sheet 3.
- Recording Reference: PLAT # 8661-8667.
- This site is intended to have an earthwork balance. Minor modifications to achieve earthwork balance should be done with the approval of the Architect.
- Contractor shall confirm the provided existing topographic information prior to proceeding with grading.
- Existing zoning is R-20.
- Total area of site is 16,296.1 Acres.
- All curb and gutter on site shall be 6" combination curb and gutter, unless otherwise noted.
- Storm water management to be provided by developer of Hetherburn Subdivision off of the school site. (See F 89-126)
- Improvements to Maryland Route 99, storm drains marked (NIC), (Not In Contract) and grading of adjacent subdivision and streets are to be done by others. See Wetherburn plat F 89-126.
- THE FOREST CONSERVATION AGREEMENT HAS BEEN ESTABLISHED TO FULFILL THE REQUIREMENTS OF SECTION 16.1000 OF THE HOWARD COUNTY CODE AND FOREST ACT. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION AGREEMENT. HOWEVER FOREST MANAGEMENT PRACTICES ARE PERMITTED IN THE WOODS OF FOREST CONSERVATION AGREEMENT ARE ALLOWED. THE FOREST CONSERVATION DOCUMENTS WILL BE SUPPLIED BY THE OWNER RETENTION OF 0.259 ACRES.

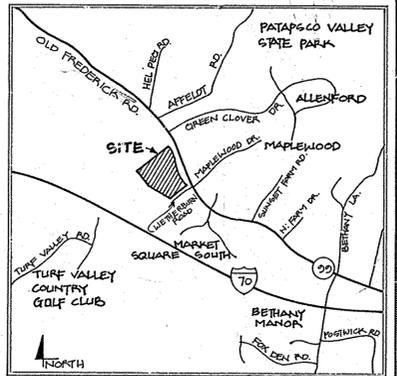
SITE ANALYSIS:

- Area of parcel = 16,296.1 Acres
- Zoning = R-20
- Proposed use = Public Elementary School
- Floor Area = 170,099 SF - 15.5% (Classrooms and Build. Additions) 2,976 SF - 50.8%
- Building Heights = 20' MAX
- Parking Spaces Required = 82 Cars (per Howard County School Specifications) 129 BUSES (INCLUDING 9 HO. BUSES)
- Parking Spaces Provided = 13 (12'x44')
- Bus loading spaces provided = 13 (12'x44')
- Open space = 110,993 SF - 15.5%
- Building Coverage = 110,993 SF - 15.5%

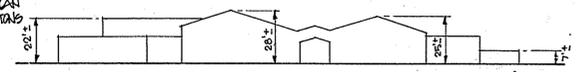
NOTE: SEE SHEET 3 FOR PLAT OF ENTIRE PARCEL.

SHEET INDEX

- NO. DESCRIPTION
1. SITE & GRADING PLAN
2. SITE & GRADING DETAIL
3. SITE & GRADING PLAN DETAILS & PROFILES
4. SITE & GRADING PLAN DETAILS & PROFILES
5. SEDIMENT & EROSION CONTROL PLAN
6. SEDIMENT & EROSION CONTROL PLAN
7. DRAINAGE AREA MAP
8. PLANNING PLAN
9. PLANNING PLAN
10. DRAINAGE PLAN
11. DRAINAGE PLAN
12. SITE IMPROVEMENT PLAN
13. SITE IMPROVEMENT PLAN
14. GEOMETRIC PLAN & SITE IMPROVEMENT PLAN
15. GEOMETRIC PLAN
16. GEOMETRIC PLAN
17. BORING LOGS
18. SEDIMENT & EROSION CONTROL PLAN & LANDSCAPE PLAN
19. SEDIMENT & EROSION CONTROL PLAN
20. DRAINAGE AREA MAP & SOIL MAP
21. DRAINAGE AREA MAP & SOIL MAP
22. DETAIL SHEET
23. DETAIL SHEET
24. SEDIMENT & EROSION CONTROL NOTES
25. SEDIMENT & EROSION CONTROL NOTES & LANDSCAPE NOTES & DETAILS
26. SEDIMENT & EROSION CONTROL DRAINAGE AREA MAP
27. STORM WATER MANAGEMENT DETAILS & SCHEDULE
28. STORM WATER MANAGEMENT FACILITY DETAILS
29. STORM WATER MANAGEMENT FACILITY DETAILS
30. STORM WATER MANAGEMENT FACILITY PROFILE & DETAIL
31. STORM WATER MANAGEMENT FACILITY DETAILS
32. STORM WATER MANAGEMENT FACILITY DETAIL
33. STORM WATER MANAGEMENT FACILITY PLANNING PLAN
34. STORM WATER MANAGEMENT FACILITY NOTES & SPECIFICATIONS
35. FOREST CONSERVATION PLAN
36. FOREST CONSERVATION NOTES & DETAILS



VICINITY MAP SCALE: 1"=2000'

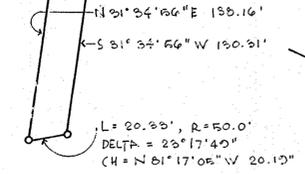


TYPICAL BUILDING HEIGHT NORTH ELEVATION

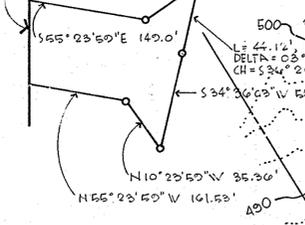
NO.	REVISION	DATE
1	ISSUED SHEET INDEX, REVISED SHEET NO. AND NEW GENERAL NOTES	2/16/89
2	ADD TWO BUILDING ADDITIONS, TWO MULCH PLAY AREAS, RELOCATE STORM STORM AND 4" SEWER LINE.	2-01-88

**APPROVED**  
DIVISION OF  
COMMUNITY PLANNING  
& LAND DEVELOPMENT  
HOWARD COUNTY,  
MARYLAND  
DATE: 2-16-89

MATCHLINE BB



MATCHLINE CC



APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT  
 COUNTY HEALTH OFFICER  
 DATE: 4/13/89

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING  
 PLANNING DIRECTOR  
 DATE: 6.6.89

CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT  
 DATE: 2/12/89

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 DIRECTOR  
 DATE: 4/12/89

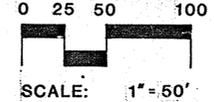
CHIEF BUREAU OF ENGINEERING  
 DATE: 4-12-89

MATCHLINE AA

MATCHLINE BB

MATCHLINE CC

LOT NUMBER	STREET ADDRESS
79	10220 WETHERBURN RD.



588-103	P 89-16	F 89-126
Subdivision Name	WETHERBURN	
Plat No.	8661-8667	
Block No.	R-20	
Zone	16	
Tax Map No.	2	
Elec. Dist.	2	
Census Tr.		
Water Code	H05	
Sewer Code	5758200	

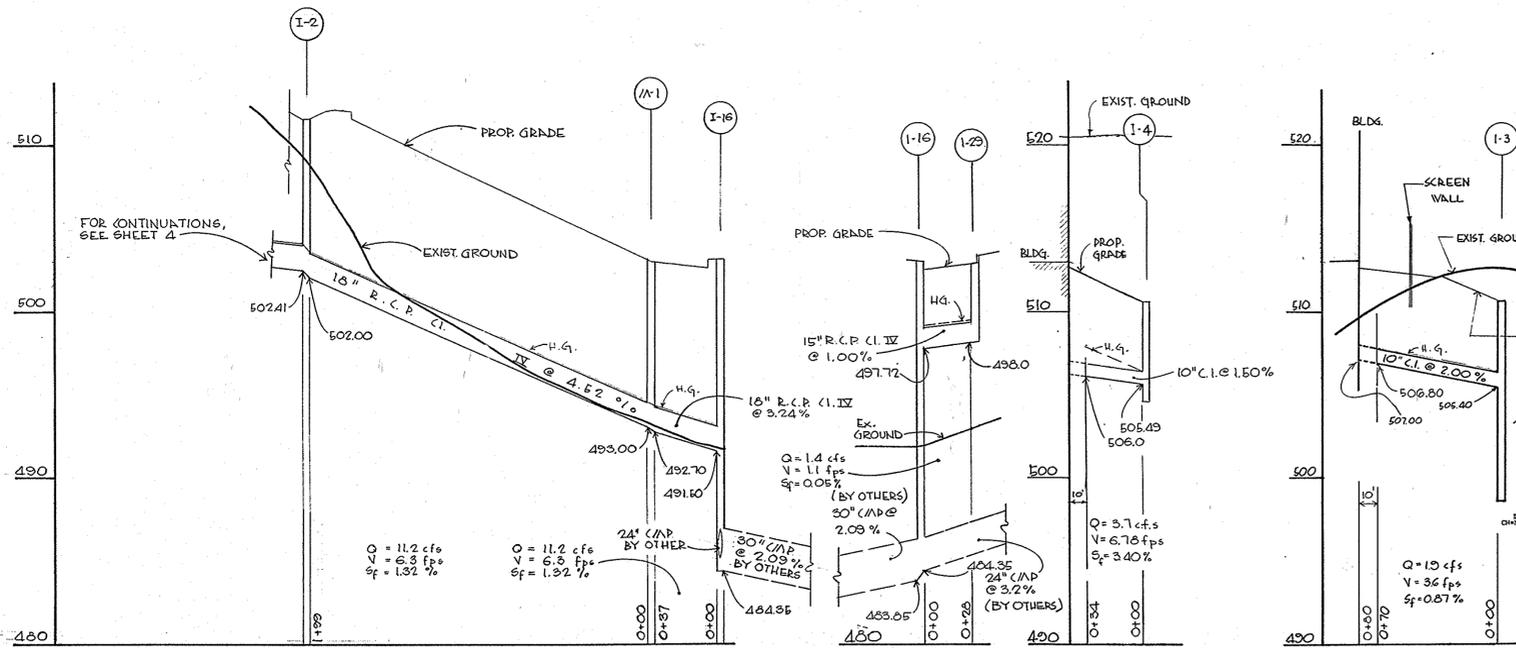
**"REVISED SITE DEVELOPMENT PLAN"**  
**WAVELY ELEMENTARY SCHOOL**  
 WETHERBURN  
 OPEN SPACE LOT 79  
 OWNER: HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 2045 HARRIET IDEMAN LANE  
 COLUMBIA, MARYLAND 21044

**GRIMM & PARKER ARCHITECTS**  
 7600 HANOVER PARKWAY  
 GREENBELT, MARYLAND 20770 345-0082



NOTE: THE PURCHASER OF THIS PLAT IS TO ADD SANITATION AND 2" DIA. 40' SPACING WITH THESE UTILITIES WITHIN SHEETS 10-36.

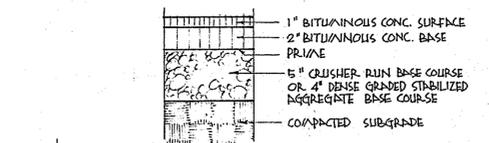




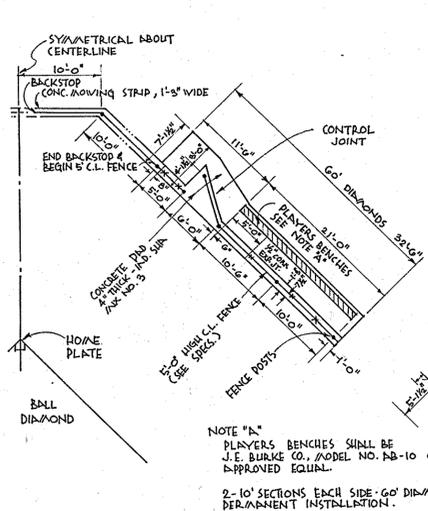
**STORM DRAIN PROFILES**

SCALES: HORIZONTAL 1" = 50'  
VERTICAL 1" = 5'-0"

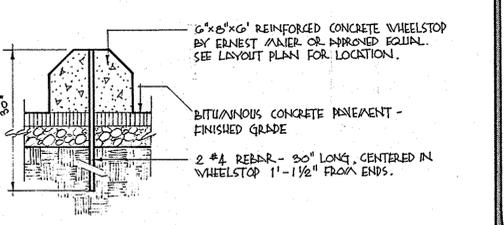
**PLAT OF PROPERTY**  
SCALE 1" = 200'



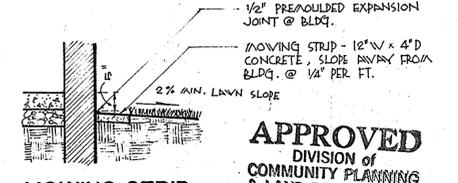
**SOFTBALL DIAMOND LAYOUT (N.T.S.)**



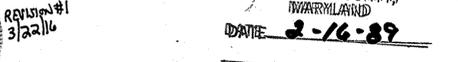
**PLAYER BENCH & TEAM AREA DETAILS (NIC)**



**CONCRETE WHEELSTOP**  
SCALE 1 1/2" = 1'-0"

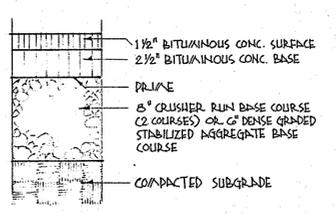


**MOWING STRIP**  
SCALE 3/8" = 1'-0"

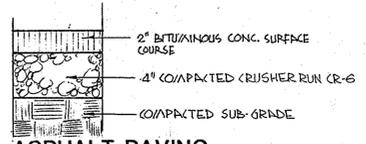


**APPROVED**  
DIVISION OF  
COMMUNITY PLANNING  
& LAND DEVELOPMENT  
HOWARD COUNTY,  
MARYLAND  
DATE: 2-16-89

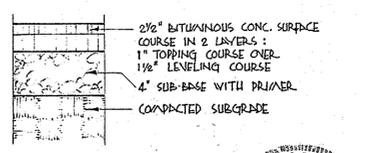
**ASPHALT PAVING - PARKING LOT (P-1)**



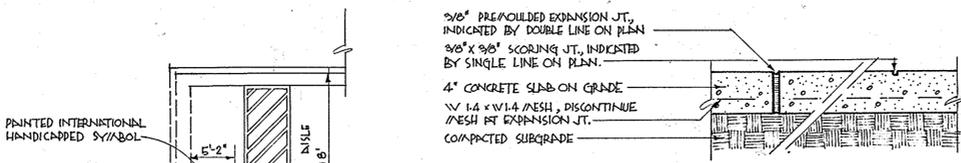
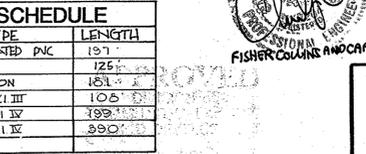
**ASPHALT PAVING - BUS LOOP & ENTRANCE ROAD (P-2)**



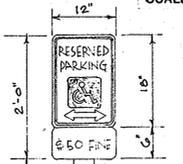
**ASPHALT PAVING - WALKING PATHS**



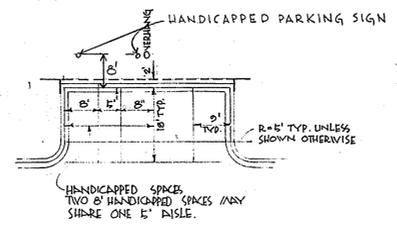
**ASPHALT PAVING - PLAY AREA**



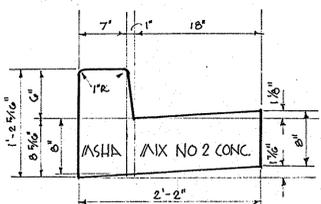
**CONCRETE WALK**  
SCALE 1 1/2" = 1'-0"



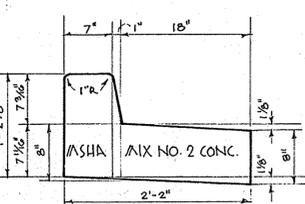
**HANDICAPPED PARKING SIGN DETAIL**  
NO SCALE



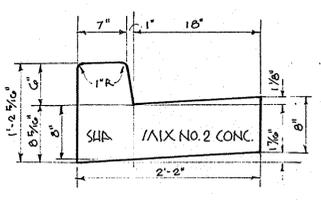
**TYPICAL PARKING**  
SCALE 1" = 20'-0"



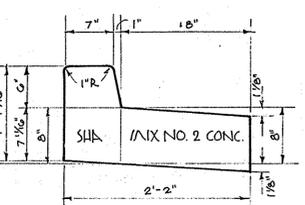
**STANDARD 7" COMBINATION CURB & GUTTER**  
SCALE 1" = 1'-0"



**REVERSE 7" COMBINATION CURB & GUTTER**  
SCALE 1" = 1'-0"



**STANDARD 6" COMBINATION CURB & GUTTER**  
SCALE 1" = 1'-0"



**REVERSE 6" COMBINATION CURB & GUTTER**  
SCALE 1" = 1'-0"

STRUCTURE SCHEDULE							
NO.	TYPE	INN. IN	INN. OUT	TOP ELEVATION *		REMARKS	LOCATION
				UPPER	LOWER		
A-1	4'-0" STD PRE-CAST MAN	493.00	492.70	503.05	-	HO CO STD. G 5.12	SEE PLAN
A-3	"	506.76	506.50	512.20	-	"	"
A-5	"	501.43	504.00	511.50	-	" (SET TOP 6" BELOW SURFACE)	"
I-2	TYPE 'S' INLET	502.41	502.00	511.6	-	HO CO STD. SD. 4.22 *	"
I-3	"	506.43	502.80	510.6	-	HO CO STD. SD. 4.22	"
I-4	TYPE 'S' INLET	503.38	504.75	510.6	-	HO CO STD. SD. 4.22	"
I-5	TYPE 'S' INLET	-	501.50	510.6	-	HO CO STD. SD. 4.22	"
I-6	TYPE 'S' COMB INLET	-	503.00	508.25	-	HO CO STD. SD. 4.32	"
I-7	TYPE 'S' COMB INLET	-	501.00	507.25	-	HO CO STD. SD. 4.32	"
I-23	TYPE 'S' COMB INLET	-	498.00	503.25	-	HO CO STD. SD. 4.32	"

PIPE SCHEDULE		
SIZE	TYPE	LENGTH
6"	PERFORATED PVC	157'
8"	PVC	125'
10"	CAST IRON	181'
15"	R.C.P. (I.IV)	105'
15"	R.C.P. (I.IV)	139'
16"	R.C.P. (I.IV)	390'

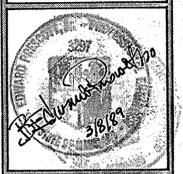
1 REVISION SHEET NO. AND REVISION NOTE DATE

**APPROVED:** FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT  
 COUNTY HEALTH OFFICER: *James M. Boyd* DATE: 2/12/89

**APPROVED:** HOWARD COUNTY OFFICE OF PLANNING & ZONING  
 PLANNING DIRECTOR: *Paul S. Zangl* DATE: 2/12/89  
 CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

**APPROVED:** FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 DIRECTOR: *James P. Shinn* DATE: 4/12/89  
 CHIEF BUREAU OF ENGINEERING: *James P. Shinn* DATE: 4-12-89

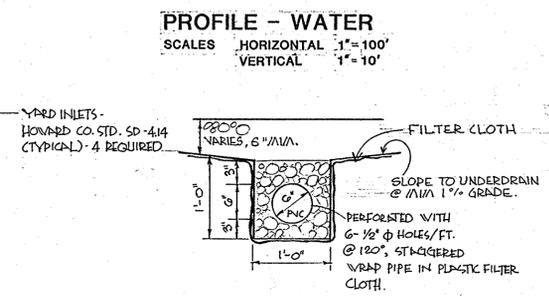
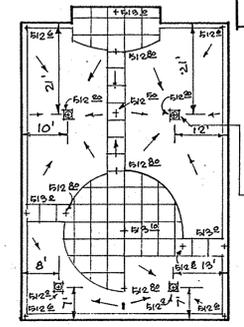
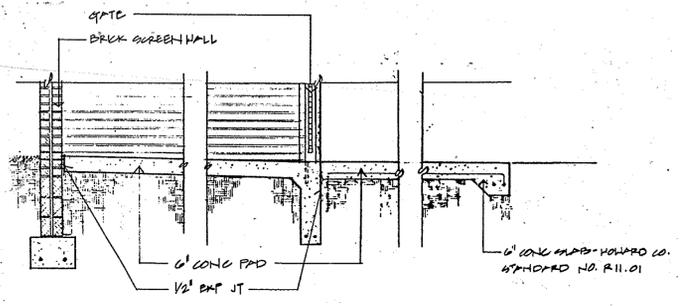
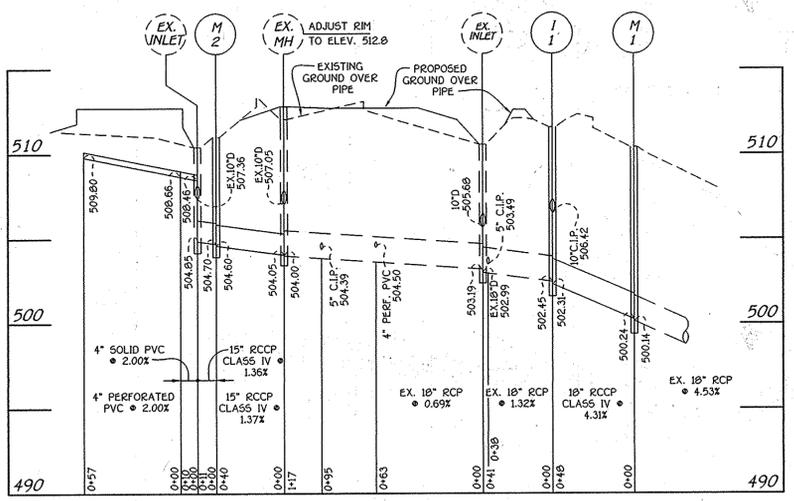
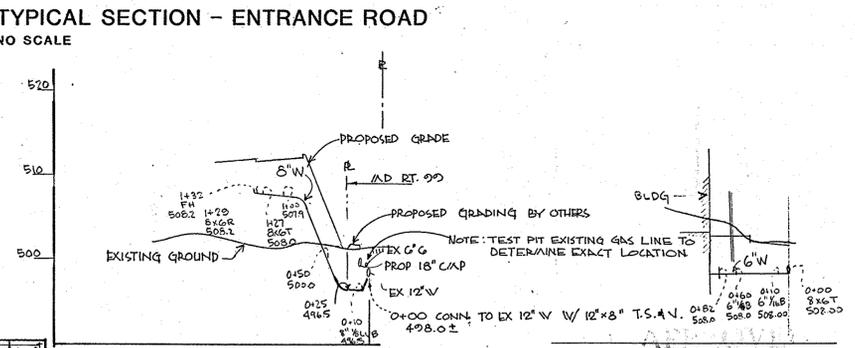
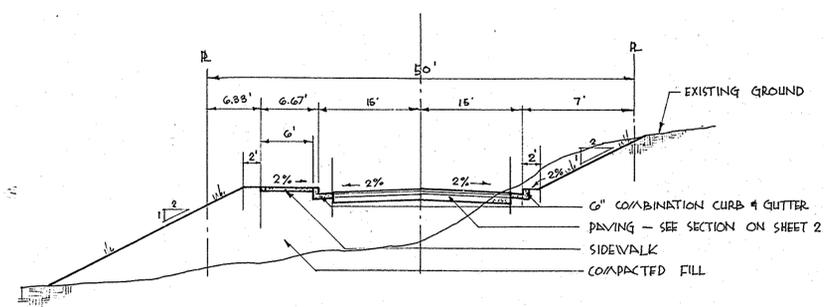
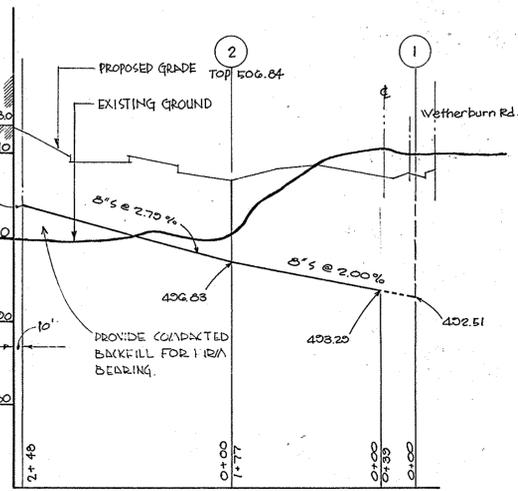
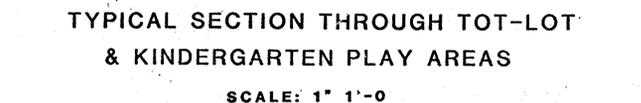
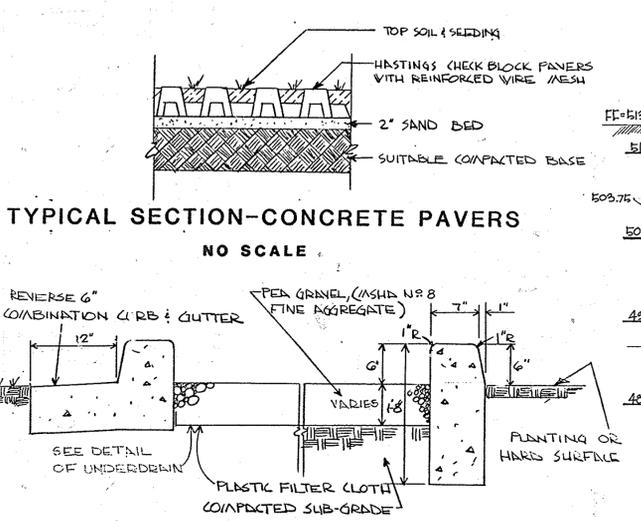
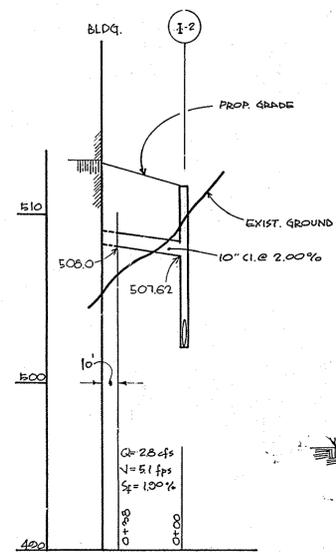
**SITE & GRADING PLAN DETAILS & PROFILES**  
**"REVISED SITE DEVELOPMENT PLAN"**  
**WAVELY ELEMENTARY SCHOOL**  
 WETHERBURN  
 OPEN SPACE LOT 70  
 OWNER: HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 2045 HANOVER PARKWAY  
 GREENBELT, MARYLAND 21044  
 DECEMBER 30, 1988



**GRIMM & PARKER ARCHITECTS**  
 7600 HANOVER PARKWAY  
 GREENBELT, MARYLAND 20770  
 345-0082



NOTE: THE REVISION OF THIS PLAN IS THE RESPONSIBILITY OF THE ARCHITECT AND ENGINEER. ANY CHANGES MADE TO THIS PLAN SHALL BE INDICATED BY A REVISION SHEET WITHIN SHEETS 10-9C.

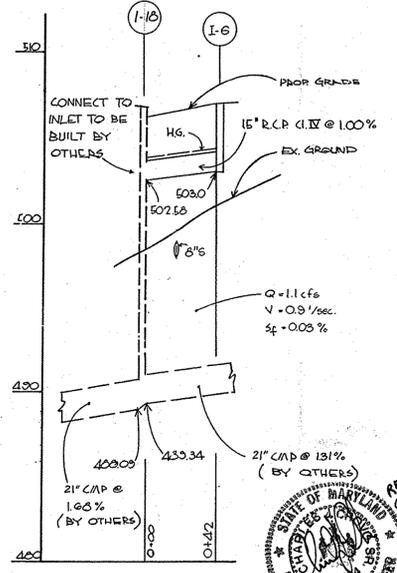
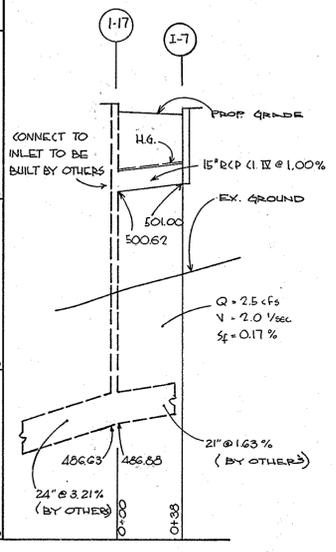
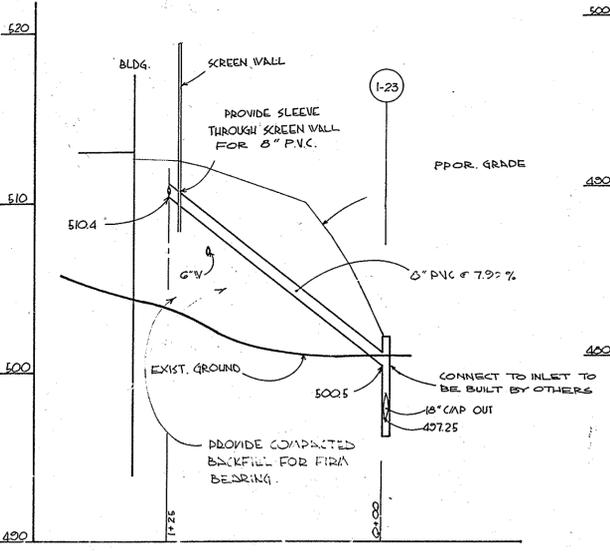
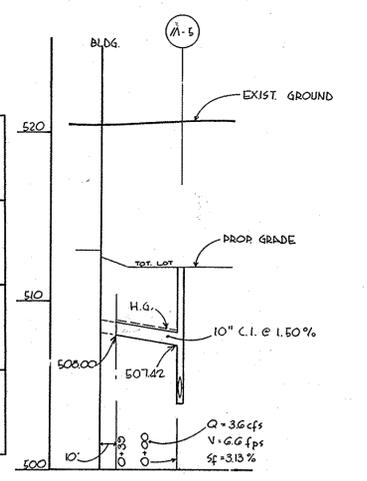
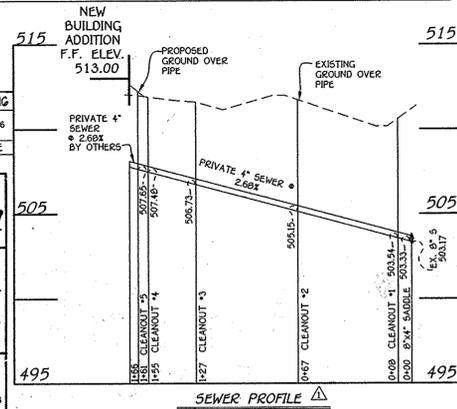


**STRUCTURE SCHEDULE**

STRUCTURE NO.	TOP ELEVATION	INV. IN	INV. OUT	LOCATION	NORTH	EAST	W	TYPE	REMARKS
I-1	511.57	502.45 (18")	502.31 (18")	535545.26	836766.71	-	-	3 INLET W/ RECTANGULAR GRATE	S.D. 4.22 W/ S.D. 4.93
M-1	510.39	500.24 (18")	500.14 (18")	535590.53	836606.92	4'	-	PRECAST MANHOLE	G. - 5.12
M-2	511.00	504.70 (18")	504.60 (18")	535663.47	836607.78	4'	-	PRECAST MANHOLE	G. - 5.12

**PIPE SCHEDULE**

SIZE	CLASS	LENGTH
4"	PERF. PVC	57'
4"	SOLID PVC	10'
15"	RCCP CLASS IV	51'
18"	RCCP CLASS IV	89'



APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT  
 COUNTY HEALTH OFFICER  
 DATE 4/13/89

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING  
 PLANNING DIRECTOR  
 CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT  
 DATE 4/13/89

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 DIRECTOR  
 CHIEF BUREAU OF ENGINEERING  
 DATE 4-12-89

APPROVED  
 DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT  
 HOWARD COUNTY, MARYLAND  
 DATE 2-16-89

SITE & GRADING PLAN DETAILS & PROFILES  
**"REVISED SITE DEVELOPMENT PLAN"**  
**WAVELY ELEMENTARY SCHOOL**  
 WETHERBURN  
 OPEN SPACE LOT 70  
 OWNER: HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 2045 HARRIST TOWMAN LANE  
 COLUMBIA, MARYLAND 21044  
 DECEMBER 30, 1988  
 SHEET 4 OF 26



**GRIMM & PARKER ARCHITECTS**  
 7600 HANOVER PARKWAY  
 GREENBELT, MARYLAND 20770  
 345-0082

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 FISHBURN & PARTNERS, INC.  
 DATE 2/16/89

NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW THE LOCATION AND 2" DIA. BUMP ALONG WITH CURB DETAILS WITHIN STREETS 10-26.

SEDIMENT CONTROL NOTES

- A minimum of 24 hours notice must be given to the Howard County Office of Inspection and Permits prior to the start of any construction. (892-2437)
- All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
- Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
- 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.
- All disturbed areas must be stabilized within the time period specified above in accordance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51), sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulch alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
- 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.
- Site Analysis:
 

Total Area of Site	16.296	Acres
Total Disturbed	14.83	Acres
Area to be roofed or paved	3.30	Acres
Area to be vegetatively stabilized	11.08	Acres
Total Cut	72.616	Cu. Yds.
Total Fill	72.616	Cu. Yds.
Offsite waste/borrow area location	N/A	
- Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- Additional sediment control must be provided, if deemed necessary by the Howard County DPH sediment control inspector.
- 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.
- All pipes to be blocked at the end of each day (see detail below).
- The total amount of straw bale dikes/silt fence equals 0 L.F.

Reviewed for Howard S.C.D. Name: \_\_\_\_\_ and meets Technical Requirements

Signature: *Robert Z. Helm* Date: 4/5/89  
 U.S. Soil Conservation Service

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

Approved: *Robert Z. Helm* Date: 4/5/89

- Contour interval 2 Feet
- Existing contours
- Existing spot elevation
- Proposed contours
- Proposed spot elevation
- Existing paving
- Proposed bituminous paving
- Proposed concrete paving
- Proposed standard G' comb. curb & gutter
- Proposed reversed G' comb. curb & gutter
- Existing tree line
- Limit of work line
- Concrete walk, single line indicates score joint, double line indicates expansion joint.



LEGEND

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 conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature: *Edward Prescott, Jr.* Date: 1/24/89  
 EDWARD PRESCOTT, JR., P.E.

VICINITY MAP SCALE: 1" = 2000'

DEVELOPER'S/BUILDER'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: *Sydney Greenberg* Date: 1/24/89  
 Signature of Developer/Builder

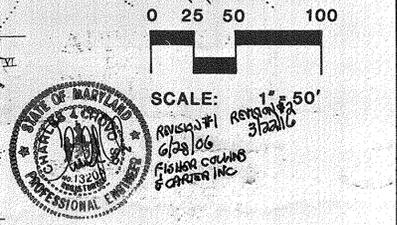
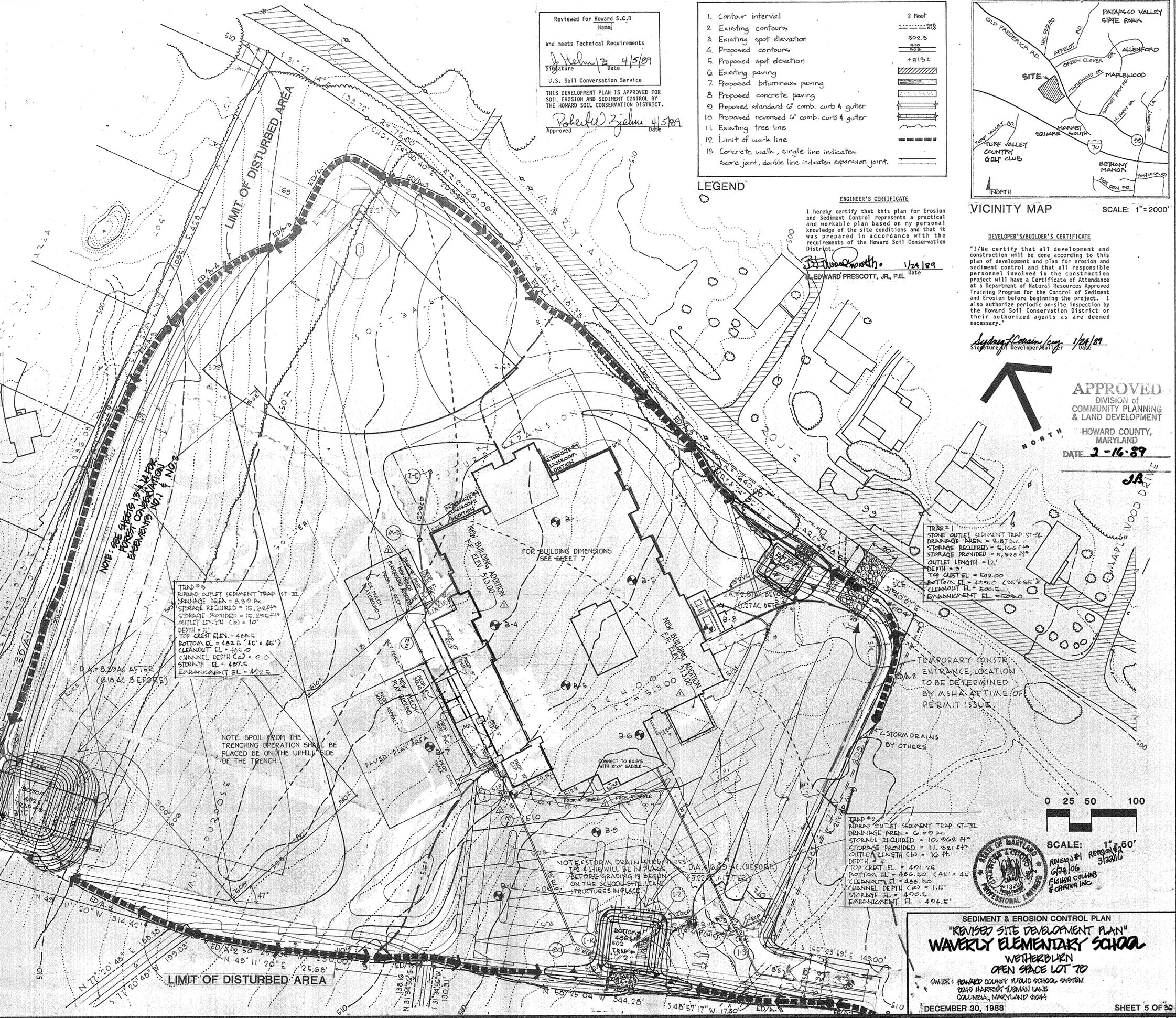
APPROVED DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT HOWARD COUNTY, MARYLAND DATE 2-16-89

NO.	REVISION	DATE
2	REVISED SHEET NO. AND ADDED PURPOSE NOTE	2/21/89
1	ADD TWO BUILDING ADDITIONS, TWO MULCH PLAY AREAS, RELOCATE STORM DRAIN AND 4" SEWER LINE	2-01-89

APPROVED: FOR PUBLIC WATER AND PUBLIC BEVERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT  
 Director: *Joyce M. Bayland* Date: 4/13/89

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING  
 Planning Director: *David A. ...* Date: 6-2-89

APPROVED: FOR PUBLIC WATER AND PUBLIC BEVERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Director: *James ...* Date: 4-12-89



SEDIMENT & EROSION CONTROL PLAN  
 "REVISED SITE DEVELOPMENT PLAN"  
 WAVERLY ELEMENTARY SCHOOL  
 WETHERBLEN  
 OPEN SPACE LOT 7D  
 OWNER: HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 2045 HARRISON TURNMAN LANE  
 COLUMBIA, MARYLAND 21044  
 DECEMBER 30, 1988 SHEET 5 OF 26



GRIMM & PARKER ARCHITECTS  
 7600 HANOVER PARKWAY  
 GREENBELT, MARYLAND 20770 345-0082



NOTE: THE PURPOSE OF THIS PLAN IS TO PROTECT THE EXISTING AND PROPOSED STORM DRAINAGE AND 4" SEWER LINES ALONG WITH THEIR RELATED MANHOLE STRUCTURES.

**PERMANENT SEEDING NOTES**

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

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

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

1. Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq. ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs./1000 sq. ft.)
2. Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq. ft.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs./1000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil.

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

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

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

**TEMPORARY SEEDING NOTES**

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

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

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

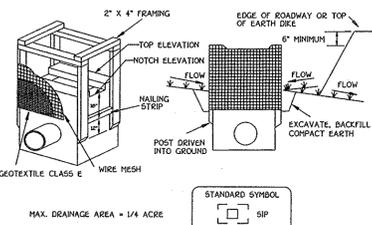
**Seeding:** For periods March 1 through April 30 and from August 15 through November 15, seed with 2-1/2 bushel per acre of annual ryegrass (3.2 lbs./1000 sq. ft.). For the period May 1 through August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs./1000 sq. ft.). For the period November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

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

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

**CONSTRUCTION SEQUENCE**

- | # OF DAYS | ACTIVITY   |
|-----------|--|
| 2         | 1. Obtain Grading Permit.  |
| 7         | 2. Install sediment & erosion control measures.  |
| 21        | 3. Clear and rough grade site.   |
| 90        | 4. Construct utilities and all storm drains except at trap no. 2.  |
| 180       | 5. Fine grade & construct paving & building.   |
| 14        | 6. Stabilize all other disturbed areas on site in accordance with standards and specs.                           |
| 14        | 7. Upon approval of the sediment control inspector, remove sediment & erosion control measures & stabilize.      |
| 5         | 8. After all areas on the site are stabilized construct fill in area of trap no. 2 and stabilize disturbed area. |



Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.
2. Drive the 2' x 4' construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2' x 4' frame using the overlap joint shown on detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.
3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.
4. Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.
5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.
6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.
7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

STANDARD INLET PROTECTION

**CONSTRUCTION SEQUENCE FOR BUILDING ADDITIONS**

1. Obtain Grading Permit.
2. Notify "Miss Utility" at least 48 hours before beginning any work at 1-800-257-7777.
3. Notify the Howard County Office of Construction/Inspection at 410-313-1330 24 hours before starting work.
4. Grade to subgrade building addition areas and play area. Install sediment control measures shown on the plans. 2 weeks.
5. Construct storm drain system and abandon the existing storm drain system shown on the plans. 2 weeks.
6. Construct building additions and play areas. 9 months.
7. Construct sewer line. 1 week.
8. Fine grade disturbed areas and stabilize with permanent seeding.
9. Notify Howard County Office of Construction/Inspection for permission for removal of sediment control measures and stabilize disturbed areas with permanent seeding.

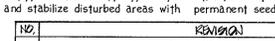
NO.	REVISION	DATE
1	ADDED STANDARD INLET PROTECTION DETAIL & ADDITIONAL SEQ. OF CONSTRUCTION	2-01-89
2	REVISED SHEET NO. AND ADDED REVISION NOTE	3/22/89

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT  
 COUNTY HEALTH OFFICER  
 DATE 4/3/89

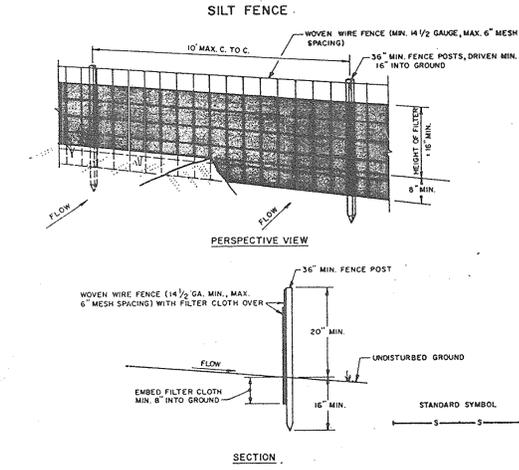
APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING  
 PLANNING DIRECTOR  
 DATE 6.6.89

APPROVED: DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT  
 CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT  
 DATE 4/12/89

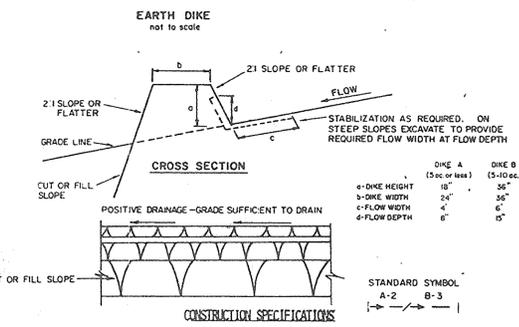
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 DIRECTOR  
 DATE 4-12-89



PIPE BLOCKING DETAIL  
NO SCALE



- CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
  2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
  3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
  4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
- POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD  
 FENCE: WOVEN WIRE, 1/4" GA., 6" MAX. MESH SPACING  
 FILTER CLOTH: FILTER X, MIRAFIL 1000, STABILINKA 1100 OR APPROVED EQUAL  
 PREFABRICATED UNIT: GEOTEX, DYNIFENCE, OR APPROVED EQUAL

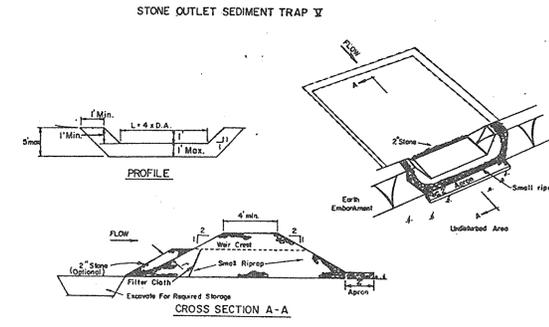


- CONSTRUCTION SPECIFICATIONS**
1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
  2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
  3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
  4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
  5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT IMMEDIATELY STABILIZED.
  6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.

**FLOW CHANNEL STABILIZATION**

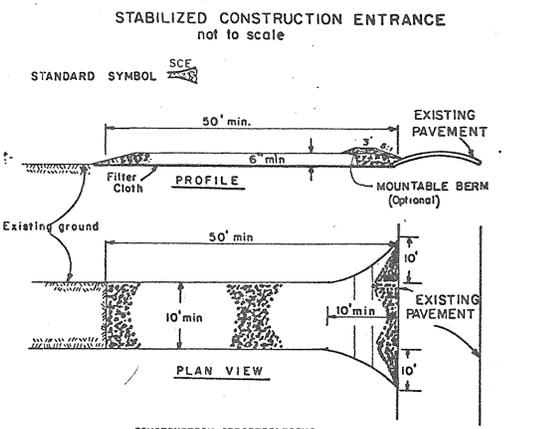
TYPE OF TREATMENT	CHANNEL GRADE	DIKE A	DIKE B
1	5-3.0%	SEED AND STRAW MULCH	SEED AND STRAW MULCH
2	3.1-5.0%	SEED AND STRAW MULCH	SEED USING JUTE, OR EXCELGRO; SOD; STONE
3	5.1-8.0%	SEED WITH JUTE, OR SOD	LINED RIP-RAP 4-8"
4	8.1-20%	LINED RIP-RAP 4-8"	ENGINEERING DESIGN

A. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.  
 B. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.  
 C. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.  
 7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.



STONE OUTLET SEDIMENT TRAP ST-VI

- CONSTRUCTION SPECIFICATIONS FOR ST-VI**
1. Area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
  2. The fill material for the embankment shall be free of roots and other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted with equipment while it is being constructed.
  3. All cut and fill slopes shall be 2:1 or flatter.
  4. The stone used in the outlet shall be small riprap 4"-8" along with a 1" thickness of 2" aggregate placed on the upgrade side on the small riprap on embedded filter cloth in the riprap.
  5. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap.
  6. The structure shall be inspected after each rain and repairs made as needed.
  7. Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
  8. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.
- OPTION: A one foot layer of 2" stone may be placed on the upstream side of the riprap in place of the embedded filter cloth.
- Maximum Drainage Area: 5 Acres



STABILIZED CONSTRUCTION ENTRANCE not to scale

- CONSTRUCTION SPECIFICATIONS**
1. Stone Size - Use 2" stone, or flacinated or recycled concrete equivalent.
  2. Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
  3. Thickness - Not less than six (6) inches.
  4. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
  5. Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
  6. Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
  7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
  8. Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
  9. Periodic inspection and needed maintenance shall be provided after each rain.

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

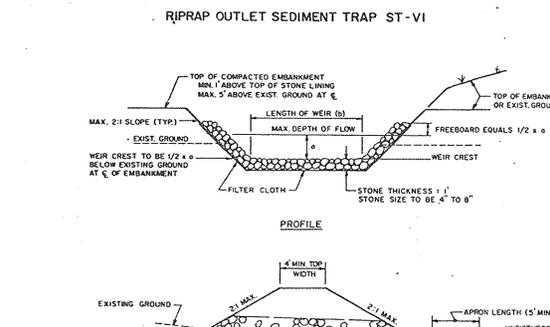
"I/We certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved 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: *Suzanne L. Cousin* Date: 1/24/89

**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 conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.

Signature: *B. Edward Prescott, Jr.* Date: 1/24/89



RIPRAP OUTLET SEDIMENT TRAP ST-VI

- CONSTRUCTION SPECIFICATIONS FOR ST-VI**
1. The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
  2. The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted with equipment while it is being constructed. Maximum height of embankment shall be five (5) feet, measured at centerline of embankment.
  3. All fill slopes shall be 2:1 or flatter; cut slopes 1:1 or flatter.
  4. Elevation of the top of any dike directing water into trap must equal or exceed the height of embankment.
  5. Storage area provided shall be figured by computing the volume available behind the outlet channel up to an elevation of one (1) foot below the level weir crest.
  6. Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Sections of fabric must overlap at least one (1) foot with section nearest the entrance placed on top. Fabric shall be embedded at least six (6) inches into existing ground at entrance of outlet channel.
  7. Stone used in the outlet channel shall be four (4) to eight (8) inches (riprap). To provide a filtering effect, a layer of filter cloth shall be embedded one (1) foot back into the upstream face of the outlet stone or a one (1) foot thick layer of two (2) inch or finer aggregate shall be placed on the upstream face of the outlet.
  8. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
  9. The structure shall be inspected after each rain and repaired as needed.
  10. Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
  11. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.
  12. Drainage area for this practice is limited to 15 acres or less.

CONSTRUCTION SPECIFICATIONS FOR ST-VI

- CONSTRUCTION SPECIFICATIONS FOR ST-VI**
1. The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
  2. The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted with equipment while it is being constructed. Maximum height of embankment shall be five (5) feet, measured at centerline of embankment.
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  9. The structure shall be inspected after each rain and repaired as needed.
  10. Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
  11. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.
  12. Drainage area for this practice is limited to 15 acres or less.

APPROVED  
 DIVISION OF COMMUNITY PLANNING & LAND DEVELOPMENT  
 HOWARD COUNTY, MARYLAND  
 DATE 2-16-89

SEDIMENT & EROSION CONTROL PLAN  
 "REVISED SITE DEVELOPMENT PLAN"  
 WAVERLY ELEMENTARY SCHOOL  
 WETHERLUKEN OPEN SPACE LOT 20  
 OWNER: HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 2045 HENRIETTA TOWMAN LANE  
 COLUMBIA, MARYLAND 21046



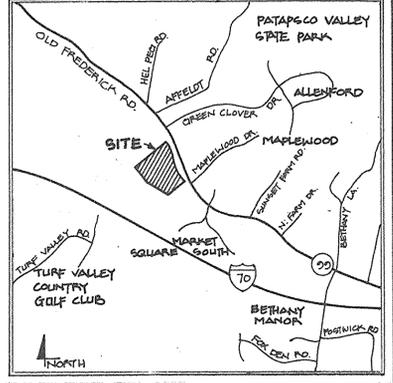
**GRIMM & PARKER ARCHITECTS**  
 7600 HANCOVER PARKWAY  
 GREENBELT, MARYLAND 20770  
 301-345-0082

NOTE: THE PRESENCE OF THIS REDLINE IS TO ADD ADDITIONS AND A SUMP BERM TO ALONG WITH THEIR DETAILED WETLAND SHEETS 10-36.

DECEMBER 30, 1988 SHEET 6 OF 22



- LEGEND**
- 1. Contour interval
  - 2. Existing contours
  - 3. Existing spot elevation
  - 4. Proposed contours
  - 5. Proposed spot elevation
  - 6. Existing paving
  - 7. Proposed bituminous paving
  - 8. Proposed concrete paving
  - 9. Proposed standard 6" comb. curb & gutter
  - 10. Proposed reversed 6" comb. curb & gutter
  - 11. Existing tree line
  - 12. Limit of work line
  - 13. Concrete walk, single line indicates score joint, double line indicates expansion joint.



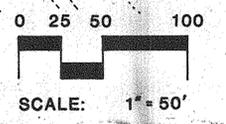
**BUILDING DIMENSIONS**  
SCALE: 1"=50'

NO.	REVISION	DATE
1	ADD TWO BUILDING ADDITIONS, TWO MULCH PLAY AREAS, RELOCATE STORM DRAIN AND ADD BUILDING DIMENSION DETAIL.	2-01-86
2	REVISED SHEET NO. AND ADDED PURPOSE NOTE	3/02/86

NOTE: SEE SHEETS 10 & 14 FOR FOREST CONSERVATION EASEMENTS NO. 1 & NO. 2



**APPROVED**  
DIVISION OF  
COMMUNITY PLANNING  
& LAND DEVELOPMENT  
HOWARD COUNTY,  
MARYLAND  
DATE: 2-16-89



**APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS** HOWARD COUNTY HEALTH DEPARTMENT  
SOCIETY HEALTH OFFICER  
*Joseph M. England per S. M.* 4/13/89  
DATE

**APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING**  
PLANNING DIRECTOR  
*Richard S. Taylor* 6-6-89  
DATE  
CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT  
DATE

**APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS,** HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
DIRECTOR  
*James P. ...* 4-12-89  
DATE  
CHIEF BUREAU OF ENGINEERING  
DATE



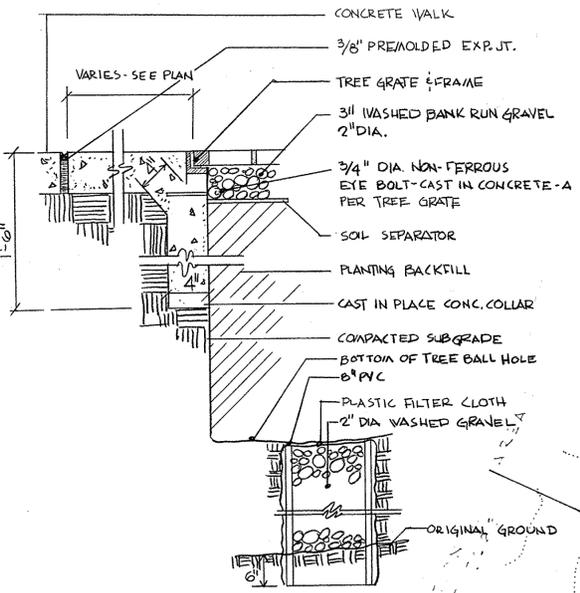
**DRAINAGE AREA MAP**  
"REVISED SITE DEVELOPMENT PLAN"  
**WAVERLY ELEMENTARY SCHOOL**  
WETHERBURN  
OPEN SPACE LOT 70  
OWNER: HOWARD COUNTY PUBLIC SCHOOLS SYSTEM  
2045 HARRIET TOWMAN LANE  
COLUMBIA, MARYLAND 21044  
DECEMBER 30, 1988 SHEET 7 OF 20



**GRIMM & PARKER ARCHITECTS**  
7600 HANOVER PARKWAY  
GREENBELT, MARYLAND 20770  
345-0082



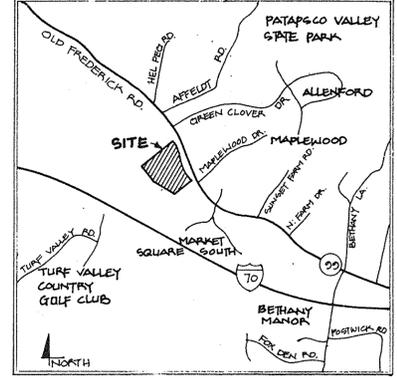
NOTE: THE PURPOSE OF THIS PLAN IS TO ADD BRICKPAVES AND 2 1/2" DIA. CURBS ALONG WITH OTHER UTILITIES WITHIN AREAS 10-20.



Tree Grate Collar Detail

REVISIONS		
No.	DESCRIPTION	DATE
1	ADDED TWO BUILDING ADDITIONS AND TWO MULCH PLAYGROUND AREAS	2-01-86
2	REVISED SHEET NO. & ADDED PAPER NOTE	3/02/89

- LEGEND**
- Contour interval
  - Existing contours
  - Existing spot elevation
  - Proposed contours
  - Proposed spot elevation
  - Existing paving
  - Proposed bituminous paving
  - Proposed concrete paving
  - Proposed standard 6' comb. curb & gutter
  - Proposed reversed 6' comb. curb & gutter
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  - Concrete walk, single line indicates score joint, double line indicates expansion joint.



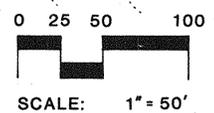
VICINITY MAP SCALE: 1" = 2000'



Refer to Sheet L-2 for Detailed Planting in this area.



**APPROVED**  
DIVISION OF  
COMMUNITY PLANNING  
& LAND DEVELOPMENT  
HOWARD COUNTY,  
MARYLAND  
DATE **3-16-89**



Subdivision Name WETHERBURN		Sect./Area 79	Lot/Parcel
Plat No.	Block No. Zone	Tax Map No.	Elec. Dist. Census Tr.
		2	
Water Code		Sewer Code	

**"REVISED SITE DEVELOPMENT PLAN"**  
**WAVERLY ELEMENTARY SCHOOL**  
WETHERBURN  
OPEN SPACE LOT 70  
OWNER: HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
2045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044

**APPROVED:** FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT  
COUNTY HEALTH OFFICER *[Signature]* DATE **4/13/89**

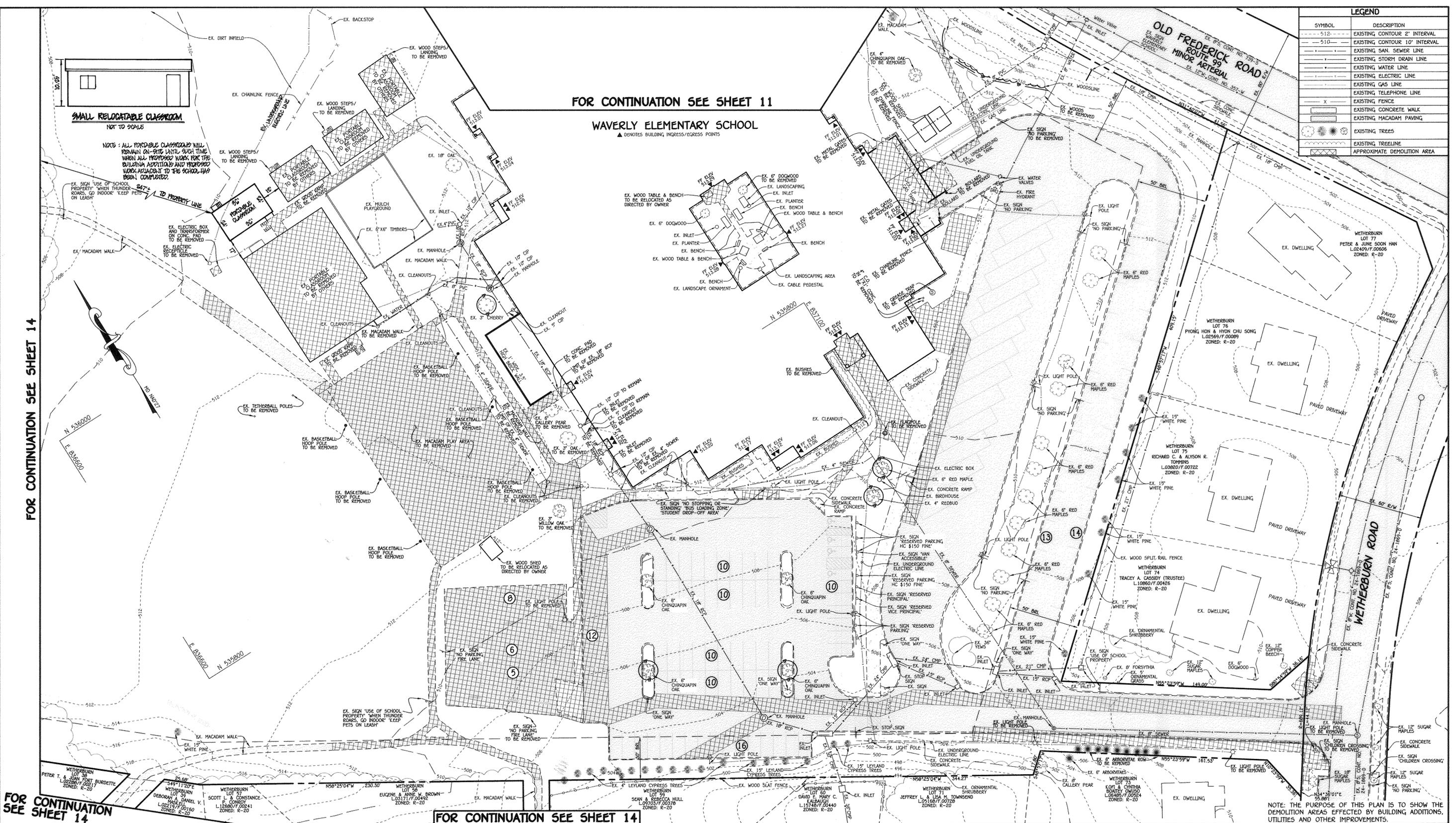
**APPROVED:** HOWARD COUNTY OFFICE OF PLANNING & ZONING  
PLANNING DIRECTOR *[Signature]* DATE **6-6-89**  
CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT *[Signature]* DATE **7/13/89**

**APPROVED:** FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
DIRECTOR *[Signature]* DATE **4-12-89**  
CHIEF BUREAU OF ENGINEERING *[Signature]* DATE

**GRIMM & PARKER ARCHITECTS**  
7600 HANOVER PARKWAY  
GREENBELT, MARYLAND 20770 345-0082

**Planting Plan**  
Scale 1" = 50'





FOR CONTINUATION SEE SHEET 11

WAVERLY ELEMENTARY SCHOOL

▲ DENOTES BUILDING INGRESS/EGRESS POINTS

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING GAS LINE
---	EXISTING TELEPHONE LINE
---	EXISTING CONCRETE WALK
---	EXISTING MACADAM PAVING
○	EXISTING TREES
---	EXISTING TREE LINE
---	APPROXIMATE DEMOLITION AREA

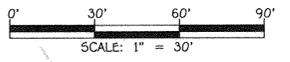
FOR CONTINUATION SEE SHEET 14

FOR CONTINUATION SEE SHEET 14

FOR CONTINUATION SEE SHEET 14

NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW THE DEMOLITION AREAS EFFECTED BY BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALDORNE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2000



"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."

*Charles J. Crovo*  
 CHARLES J. CROVO, SR., P.E.

3/23/16  
 DATE

DATE	DESCRIPTION	REVISION BLOCK
7/26/10	SMALL RELOCATABLE CLASSROOM	
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>William J. Collins</i>	Director - Department of Planning and Zoning	4-25-16
<i>Victor J. O'Neil</i>	Chief, Division of Land Development	4-25-16
<i>Charles J. Crovo</i>	Chief, Development Engineering Division	4-7-16

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805



ADDRESS CHART

LOT/PARCEL#	STREET ADDRESS
LOT 78	10220 WETHERBURN ROAD ELLICOTT CITY, MARYLAND 21042

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.
WETHERBURN	N/A	P. 712
PLAT# OR L/F#	GRID#	ZONING
87722	7	R-20
TAX MAP#	ELECT. DISTR.	CENSUS TRACT
17	SECOND	6030

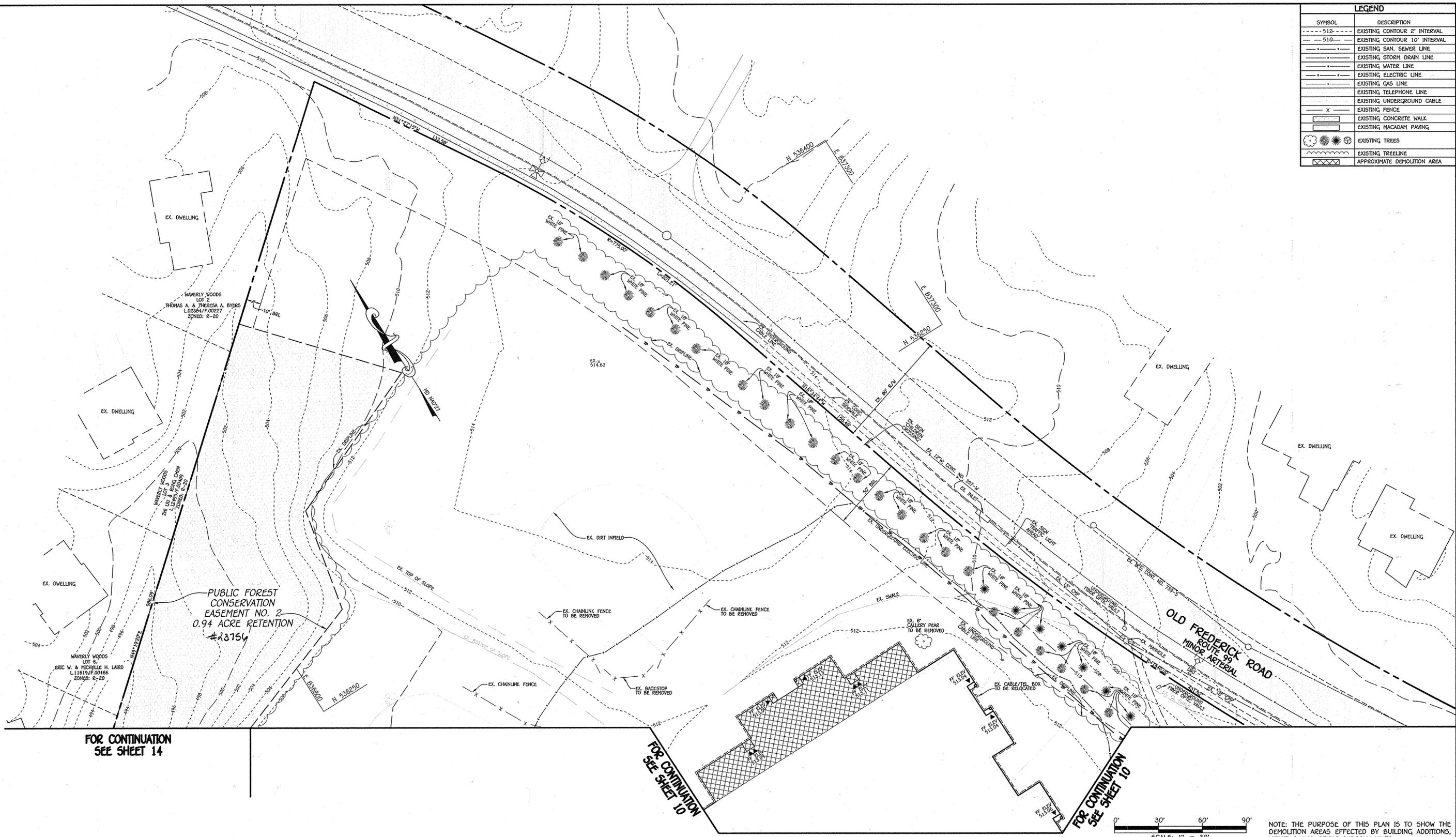
DEMOLITION PLAN

"REVISED SITE DEVELOPMENT PLAN"  
**WAVERLY ELEMENTARY SCHOOL**  
 WETHERBURN  
 OPEN SPACE LOT 78

ZONED R-20. TAX MAP No.: 17. GRID No.: 7. PARCEL: 712  
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 30' DATE: MARCH 23, 2016

SHEET 10 OF 36

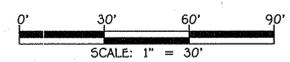
LEGEND	
SYMBOL	DESCRIPTION
--- 512 ---	EXISTING CONTOUR 2' INTERVAL
--- 510 ---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING GAS LINE
---	EXISTING TELEPHONE LINE
---	EXISTING UNDERGROUND CABLE
X	EXISTING FENCE
---	EXISTING CONCRETE WALK
---	EXISTING MACADAM PAVING
⊗	EXISTING TREES
---	EXISTING TREELINE
⊗	APPROXIMATE DEMOLITION AREA



FOR CONTINUATION  
SEE SHEET 14

FOR CONTINUATION  
SEE SHEET 10

FOR CONTINUATION  
SEE SHEET 10



NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW THE DEMOLITION AREAS EFFECTED BY BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELLICOTT CITY, MARYLAND 21114  
(410) 461-2295

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
*Charles J. Cedeno*  
CHARLES J. CEDENO, SR., P.E.  
3/23/16  
DATE

DATE	DESCRIPTION
	REVISION BLOCK
	APPROVED: DEPARTMENT OF PLANNING AND ZONING
<i>W. Douglas Jaffe</i>	4-25-16 Date
<i>Walter J. Jaffe</i>	4-25-16 Date
<i>Phil E. Jaffe</i>	4-7-16 Date
Chief, Development Engineering Division	

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
2045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
LOT 7B	10220 WETHERBURN ROAD ELLICOTT CITY, MARYLAND 21042				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
WETHERBURN	N/A	P. 712			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
8661-8667 2272C	7	R-20	17	SECOND	6030

**DEMOLITION PLAN**  
**"REVISED SITE DEVELOPMENT PLAN"**  
**WAVERLY ELEMENTARY SCHOOL**  
**WETHERBURN**  
**OPEN SPACE LOT 7B**  
ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 30' DATE: MARCH 23, 2016  
SHEET 11 OF 36

STORMWATER MANAGEMENT INFORMATION CHART				
LOT NO.	FACILITY NUMBER	PRACTICE TYPE	PUBLIC/PRIVATE	MAINTENANCE
7B	BMP-1	F-6 MICRO BIO-RETENTION	PRIVATE	bd. of Ed.
7B	BMP-2	M-6 MICRO BIO-RETENTION	PRIVATE	bd. of Ed.

FOR CONTINUATION SEE SHEET 13

**WAVERLY ELEMENTARY SCHOOL**

▲ DENOTES BUILDING INGRESS/EGRESS POINTS

LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING GAS LINE
---	EXISTING UNDERGROUND CABLE LINE
X	EXISTING FENCE
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
+511.30	SPOT ELEVATION
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
○	EXISTING TREES
---	EXISTING TREE LINE
---	PROPOSED STORM DRAIN
---	PROPOSED GRASS PAVERS
---	1-1/2" MILLING AND SURFACE OVERLAY

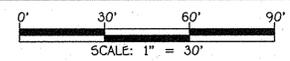
FOR CONTINUATION SEE SHEET 14

FOR CONTINUATION SEE SHEET 14

FOR CONTINUATION SEE SHEET 14

NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW THE BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21114  
 (410) 461-2295



"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."

*Charles J. Urovo*  
 CHARLES J. UROVO, SR., P.E.  
 3/23/16  
 DATE

DATE	DESCRIPTION	REVISION BLOCK

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Valerie Kelly* 4-25-16  
 Director, Department of Planning and Zoning, Date

*Walter Dine* 4-25-16  
 Chief, Division of Land Development/PL, Date

*Edith...* 4-7-16  
 Chief, Development Engineering Division, Date

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6205



ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
LOT 7B	10220 WETHERBURN ROAD ELICOTT CITY, MARYLAND 21042

PERMIT INFORMATION CHART			
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	
WETHERBURN	N/A	P. 712	
PLAT# OR L/F	GRID#	ZONING	TAX MAP#
8661-2667-2273c	7	R-20	17
ELECT. DISTR.	CENSUS TRACT		
SECOND	6030		

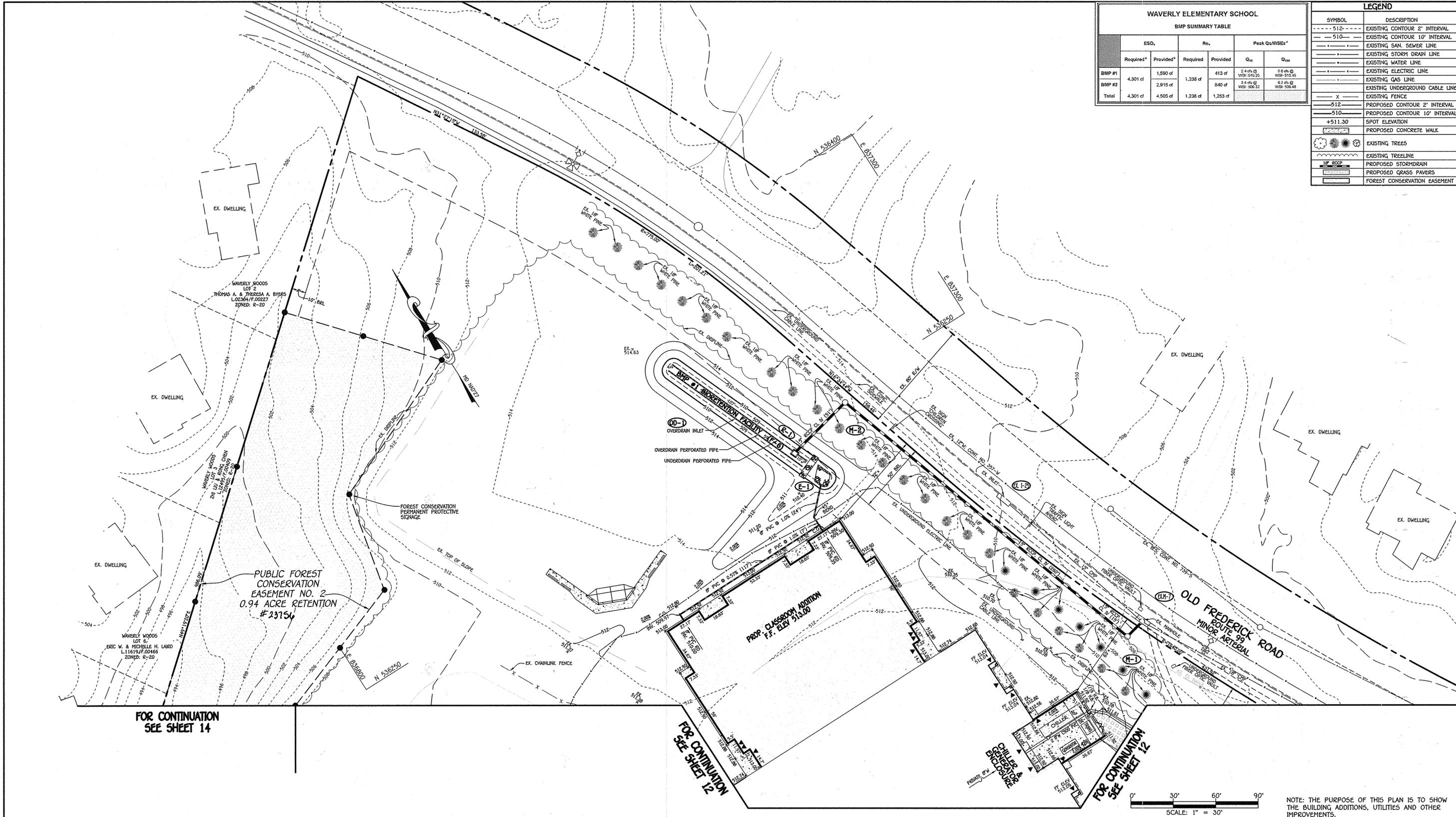
**SITE IMPROVEMENT PLAN**

**"REVISED SITE DEVELOPMENT PLAN"  
 WAVERLY ELEMENTARY SCHOOL  
 WETHERBURN  
 OPEN SPACE LOT 7B**

ZONED R-20, TAX MAP NO.: 17, GRID NO.: 7, PARCEL: 712  
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 30' DATE: MARCH 23, 2016

WAVERLY ELEMENTARY SCHOOL						
BMP SUMMARY TABLE						
BMP #	ESD,		Re,		Peak Qs/WSEs*	
	Required <sup>1</sup>	Provided <sup>2</sup>	Required	Provided	Q <sub>15</sub>	Q <sub>100</sub>
BMP #1	4,301 cf	1,580 cf	1,238 cf	413 cf	2.4 cfs @ WSE 510.25	5.6 cfs @ WSE 510.45
BMP #2	2,815 cf	2,815 cf	840 cf	840 cf	3.4 cfs @ WSE 500.32	6.2 cfs @ WSE 500.49
Total	4,301 cf	4,505 cf	1,238 cf	1,253 cf		

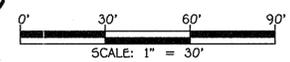
LEGEND	
SYMBOL	DESCRIPTION
--- 512 ---	EXISTING CONTOUR 2' INTERVAL
--- 510 ---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING GAS LINE
---	EXISTING UNDERGROUND CABLE LINE
X	EXISTING FENCE
-512	PROPOSED CONTOUR 2' INTERVAL
-510	PROPOSED CONTOUR 10' INTERVAL
+511.30	SPOT ELEVATION
---	PROPOSED CONCRETE WALK
☼	EXISTING TREES
☼	EXISTING TREELINE
---	PROPOSED STORMDRAIN
---	PROPOSED GRASS PAVERS
---	FOREST CONSERVATION EASEMENT



FOR CONTINUATION  
SEE SHEET 14

FOR CONTINUATION  
SEE SHEET 12

FOR CONTINUATION  
SEE SHEET 12



NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW THE BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PARK  
ELICOTT CITY, MARYLAND 21042  
(410) 461-2299

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
*Charles Crovo, Sr., P.E.*  
CHARLES CROVO, SR., P.E.  
3/23/16  
DATE

DATE	DESCRIPTION	REVISION BLOCK
4-25-16	APPROVED: DEPARTMENT OF PLANNING AND ZONING Director - Department of Planning and Zoning	
4-25-16	Chief, Division of Land Development	
4-7-16	Chief, Development Engineering Division	

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
2045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
LOT 7B	10220 WETHERBURN ROAD ELICOTT CITY, MARYLAND 21042

PERMIT INFORMATION CHART			
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	
WETHERBURN	N/A	P. 712	
PLAT# OR L/F	GRID#	ZONING	TAX MAP#
8661-8667 22732	7	R-20	17
ELECT. DISTR.		CENSUS TRACT	
SECOND		6030	

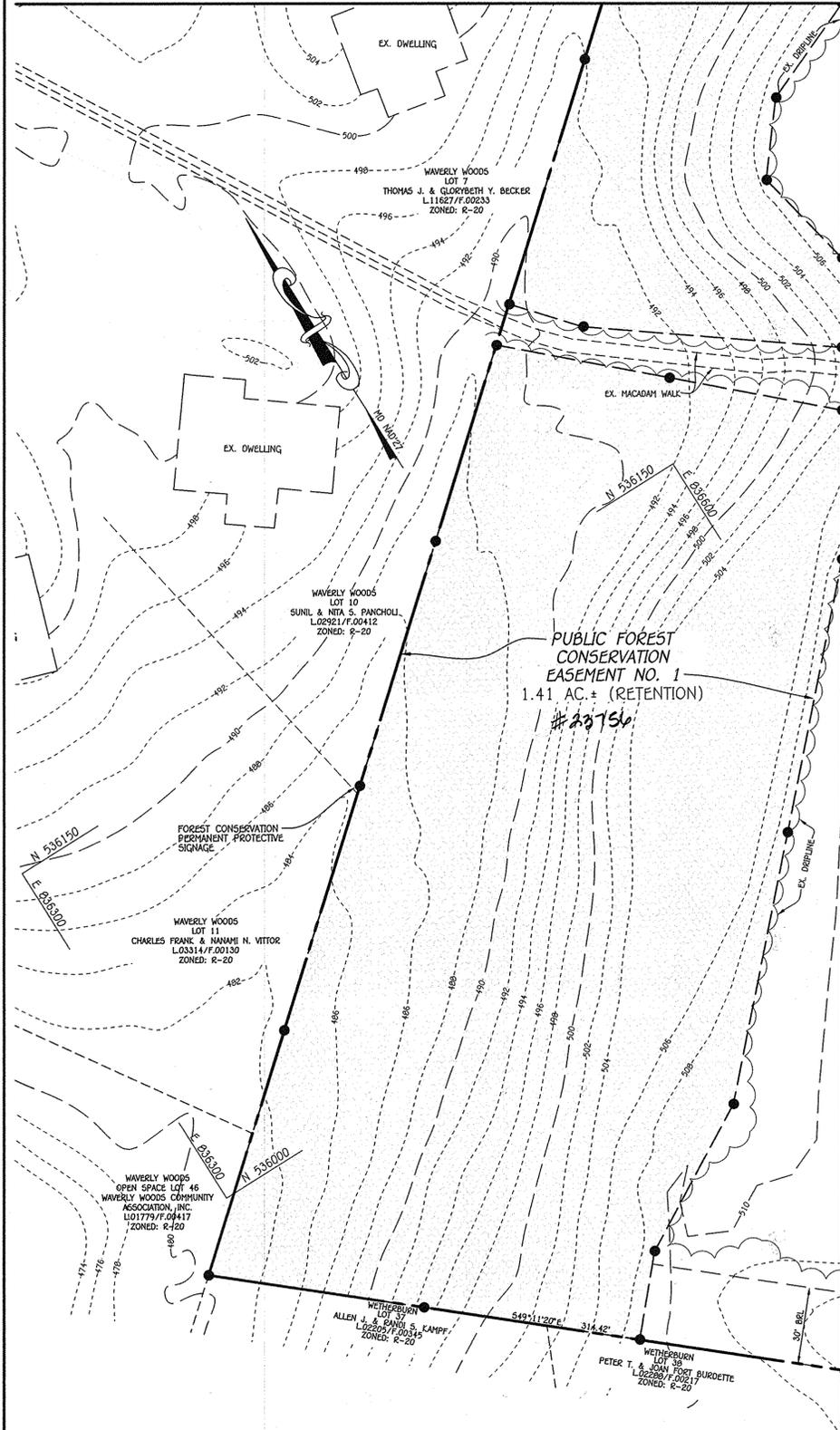
**SITE IMPROVEMENT PLAN**

**"REVISED SITE DEVELOPMENT PLAN"**  
**WAVERLY ELEMENTARY SCHOOL**  
WETHERBURN  
OPEN SPACE LOT 7B

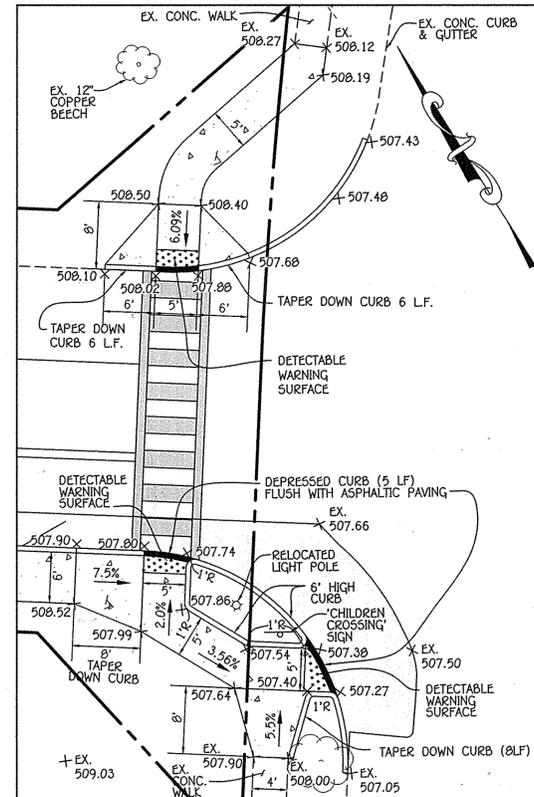
ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 30' DATE: MARCH 23, 2016

SHEET 13 OF 36

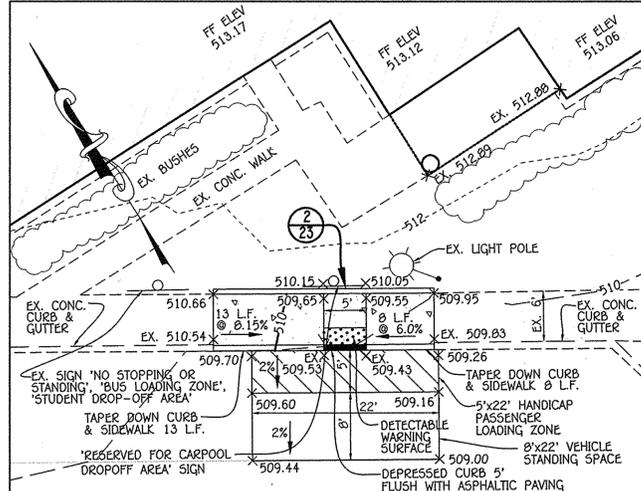
FOR CONTINUATION SEE SHEET 13



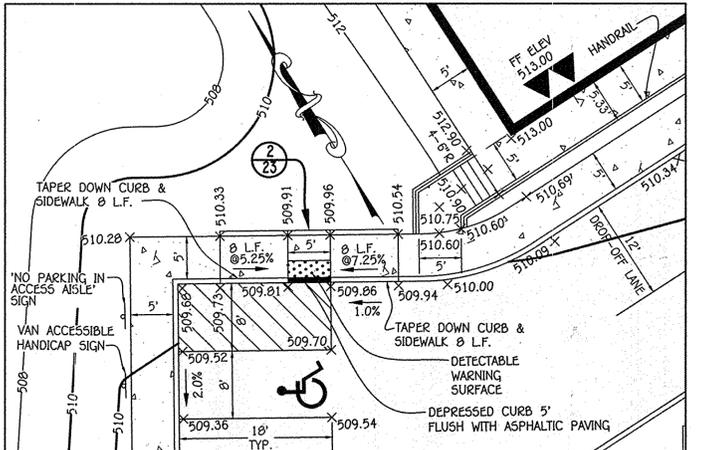
FOR CONTINUATION SEE SHEET 12



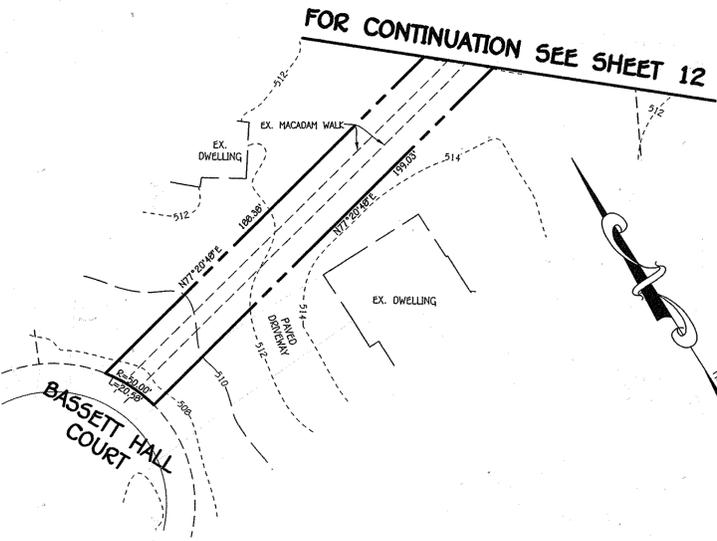
ENLARGED DETAIL  
SCALE: 1" = 10'



ENLARGED DETAIL  
SCALE: 1" = 10'

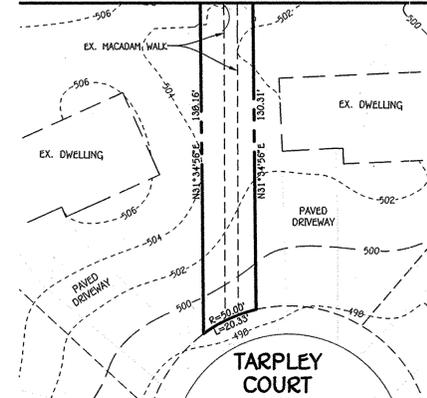


ENLARGED DETAIL  
SCALE: 1" = 10'

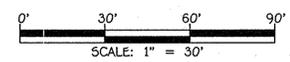


ENLARGED DETAIL  
SCALE: 1" = 10'

FOR CONTINUATION SEE SHEET 12



ENLARGED DETAIL  
SCALE: 1" = 10'



NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW THE BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE: PARK - 10772 BALDWIN NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21044  
(410) 461-2295

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
*Charles J. Crovo, Sr., P.E.*  
DATE: 3/23/16

DATE	DESCRIPTION
	REVISION BLOCK
4-25-16	APPROVED: DEPARTMENT OF PLANNING AND ZONING Director - Department of Planning and Zoning
4-25-16	Chief, Division of Land Development
4-7-16	Chief, Development Engineering Division

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
LOT 7B	10220 WETHERBURN ROAD ELICOTT CITY, MARYLAND 21042

PERMIT INFORMATION CHART			
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	
WETHERBURN	N/A	P. 712	
PLAT# OR L/F	GRID#	ZONING	TAX MAP#
8661-8667 2275C	7	R-20	17
ELECT. DISTR.	CENSUS TRACT		
SECOND	6030		

DEMOLITION PLAN AND SITE IMPROVEMENT PLAN

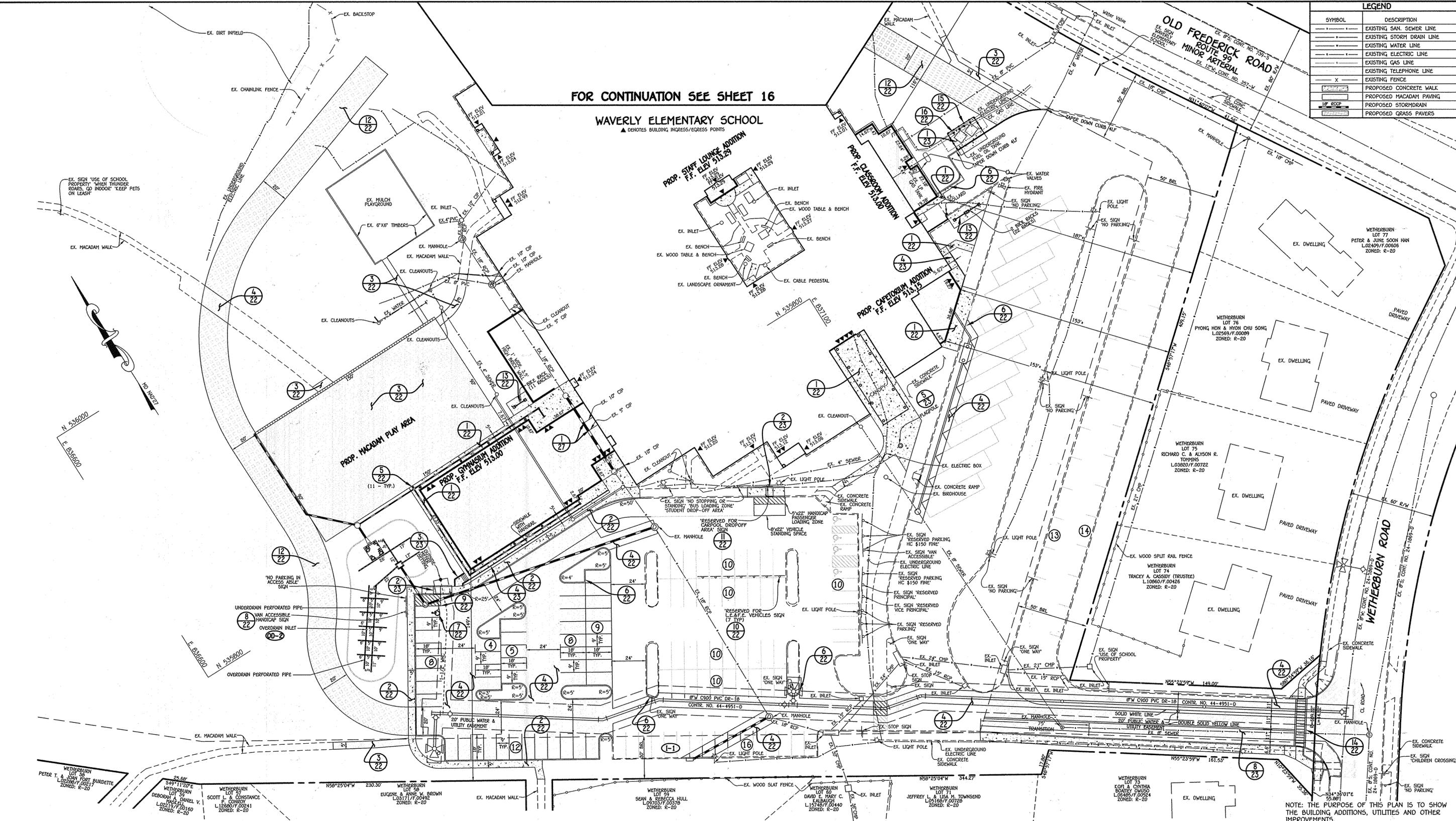
"REVISED SITE DEVELOPMENT PLAN"  
WAVERLY ELEMENTARY SCHOOL  
WETHERBURN  
OPEN SPACE LOT 7B

ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
DATE: MARCH 23, 2016

LEGEND	
SYMBOL	DESCRIPTION
	EXISTING SAN. SEWER LINE
	EXISTING STORM DRAIN LINE
	EXISTING WATER LINE
	EXISTING ELECTRIC LINE
	EXISTING GAS LINE
	EXISTING TELEPHONE LINE
	EXISTING FENCE
	PROPOSED CONCRETE WALK
	PROPOSED MACADAM PAVING
	PROPOSED STORM DRAIN
	PROPOSED GRASS PAVERS

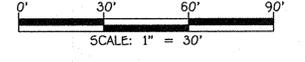
FOR CONTINUATION SEE SHEET 16

WAVERLY ELEMENTARY SCHOOL  
▲ DENOTES BUILDING INGRESS/EGRESS POINTS



NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW THE BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PARK  
ELICOTT CITY, MARYLAND 21114  
(410) 461-2295



"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
*Charles Crovo, Sr., P.E.*  
CHARLES CROVO, SR., P.E.  
3/23/16 DATE

DATE	DESCRIPTION	REVISION BLOCK
	APPROVED: DEPARTMENT OF PLANNING AND ZONING	
	Director - Department of Planning and Zoning	4-25-16 Date
	Chief, Division of Land Development	4-25-16 Date
	Chief, Development Engineering Division	4-7-16 Date

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
2045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
LOT 7B	10220 WETHERBURN ROAD ELICOTT CITY, MARYLAND 21042

PERMIT INFORMATION CHART			
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	
WETHERBURN	N/A	P. 712	
PLAT# OR L/F	GRID#	ZONING	TAX MAP#
8661-2567	7	R-20	17
		ELECT. DISTR.	CENSUS TRACT
		SECOND	6030

**GEOMETRY PLAN**  
"REVISED SITE DEVELOPMENT PLAN"  
WAVERLY ELEMENTARY SCHOOL  
WETHERBURN  
OPEN SPACE LOT 7B

ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 30' DATE: MARCH 23, 2016

SHEET 15 OF 36



**BORING LOG**  
Boring: SWM-1 (1 of 1)

Project No: 75T0124 Elevation: 514.3 ±  
Client: Howard County Public School System Total Depth: 18.0'  
Project: Waverly Elementary School Location:  
City/State: Ellicott City, MD

Drilling Method: HSA  
Hammer Type: Automatic  
Date Drilled: 11/14/15  
Driller: J. Hanson

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
514.2	0.1	Surficial Soils - 1"				
		RESIDUUM: Brown to gray, moist, micaceous coarse to fine silty SAND (SM), loose to medium dense	5-7-6 REC=78%	1.0	13	
			6-5-4 REC=83%	3.5		
			4-4-4 REC=89%	5.0	9	USDA Classification - Sandy Loam Gravel=2.4%, Sand=64.6%, Silt=28.5%, Clay=4.5%
			5-6-7 REC=100%	7.5	8	
				8.5		
				10.0	13	
				13.5		
500.3	14.0	PARTIALLY WEATHERED ROCK: Gray, moist, micaceous coarse to fine silty SAND with trace rock fragments (SM), very dense	27-50 REC=22%	14.5	50	
			10-36-47 REC=67%	16.5		
496.3	18.0	Boring Terminated at 18 ft		18.0	83	

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

**BORING LOG**  
Boring: SWM-2 (1 of 1)

Project No: 75T0124 Elevation: 515.1 ±  
Client: Howard County Public School System Total Depth: 3.3'  
Project: Waverly Elementary School Location:  
City/State: Ellicott City, MD

Drilling Method: HSA  
Hammer Type: Automatic  
Date Drilled: 11/14/15  
Driller: J. Hanson

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
514.9	0.2	Surficial Soils - 2"				
		PARTIALLY WEATHERED ROCK: Gray, moist, micaceous coarse to fine SAND with some rock fragments and trace silt (SP), very dense	13-36-45 REC=44%	1.0	81	
				2.5		
511.8	3.3	Auger Refusal at 3.3 ft				

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

**BORING LOG**  
Boring: SWM-3 (1 of 1)

Project No: 75T0124 Elevation: 512.6 ±  
Client: Howard County Public School System Total Depth: 9.0'  
Project: Waverly Elementary School Location:  
City/State: Ellicott City, MD

Drilling Method: HSA  
Hammer Type: Automatic  
Date Drilled: 11/14/15  
Driller: J. Hanson

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
512.5	0.1	Surficial Soils - 1"				
		RESIDUUM: Brown to gray, moist, micaceous coarse to fine silty SAND with trace to little rock fragments, loose to very dense	9-5-5 REC=89%	1.0	10	
			6-7-5 REC=89%	2.5		
			17-15-22 REC=67%	5.0	12	USDA Classification - Sandy Loam Gravel=15.8%, Sand=60.7%, Silt=18.3%, Clay=5.2%
				7.5	37	
				8.5		
503.6	9.0	Auger Refusal at 9.0 ft			50	

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

**BORING LOG**  
Boring: SWM-4 (1 of 1)

Project No: 75T0124 Elevation: 512.9 ±  
Client: Howard County Public School System Total Depth: 3.5'  
Project: Waverly Elementary School Location:  
City/State: Ellicott City, MD

Drilling Method: HSA  
Hammer Type: Automatic  
Date Drilled: 11/14/15  
Driller: J. Hanson

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
512.8	0.1	Surficial Soils - 1"				
		RESIDUUM: Brown to gray, moist, micaceous coarse to fine silty SAND with little rock fragments (SM), dense	10-16-20 REC=33%	1.0	36	
510.5	2.4			2.5		
509.4	3.5	PARTIALLY WEATHERED ROCK: Brown to gray, moist, micaceous coarse to fine SAND with rock fragments and trace silt (SP), very dense	50 REC=5%	3.5	0	
		Auger Refusal at 3.5 ft				

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

**BORING LOG**  
Boring: SWM-5 (1 of 1)

Project No: 75T0124 Elevation: 512.1 ±  
Client: Howard County Public School System Total Depth: 6.7'  
Project: Waverly Elementary School Location:  
City/State: Ellicott City, MD

Drilling Method: HSA  
Hammer Type: Automatic  
Date Drilled: 11/14/15  
Driller: J. Hanson

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
511.9	0.2	Surficial Soils - 2"				
		RESIDUUM: Brown to gray, moist, micaceous coarse to fine silty SAND with little rock fragments (SM), medium dense	10-8-8 REC=89%	1.0	16	
509.1	3.0			2.5		
		Brown to gray, moist, coarse to fine silty SAND with little rock fragments and trace mica (SM), medium dense	6-8-10 REC=83%	3.5	18	
				5.0		
505.1	6.0	PARTIALLY WEATHERED ROCK: Brown to gray, moist, coarse to fine silty SAND with little rock fragments and trace mica (SM), very dense	30-50 REC=100%	6.0	50	
505.4	6.7	Auger Refusal at 6.7 ft				

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

**BORING LOG**  
Boring: SWM-6 (1 of 1)

Project No: 75T0124 Elevation: 513.9 ±  
Client: Howard County Public School System Total Depth: 11.0'  
Project: Waverly Elementary School Location:  
City/State: Ellicott City, MD

Drilling Method: HSA  
Hammer Type: Automatic  
Date Drilled: 11/14/15  
Driller: J. Hanson

Elevation	Depth	Description of Materials (Classification)	* Sample Blows	Sample Depth (feet)	N-Value (blows/ft)	Remarks
513.8	0.1	Surficial Soils - 1"				
		PROBABLE FILL: Brown to gray, moist, coarse to fine silty SAND with little rock fragments and trace mica (SM), medium dense	8-36-8 REC=33%	1.0	24	
510.9	3.0			2.5		
		RESIDUUM: Brown to gray, moist, micaceous coarse to fine SAND with little to some rock fragments and trace silt (SP), medium dense	13-14-23 REC=69%	3.5	27	
508.4	5.5			5.0		
		PARTIALLY WEATHERED ROCK: Brown to gray, moist, micaceous coarse to fine SAND with little to some rock fragments and trace silt (SP), very dense	32-50 REC=83%	6.0	50	
			16-40-35 REC=67%	7.0		
				8.5		
				10.0	76	
502.9	11.0	Auger Refusal at 11.0 ft				

\*Number of blows required for a 140 lb hammer dropping 30" to drive 2" O.D., 1.375" I.D. sampler a total of 18 inches in three 6" increments. The sum of the second and third increments of penetration is termed the standard penetration resistance, N-Value.

NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW BORING LOGS FOR THE BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10772 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21042  
(410) 461-2999

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."

*Charles J. Carvo, Sr., P.E.*  
CHARLES J. CARVO, SR., P.E.

3/23/16  
DATE

DATE DESCRIPTION REVISION BLOCK

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Director - Department of Planning and Zoning  
Chief, Division of Land Development  
Chief, Development Engineering Division

4-25-16  
4-28-16  
4-7-16  
Date

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
2045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



ADDRESS CHART

LOT/PARCEL#	STREET ADDRESS
LOT 7B	10220 WETHERBURN ROAD ELICOTT CITY, MARYLAND 21042

PERMIT INFORMATION CHART

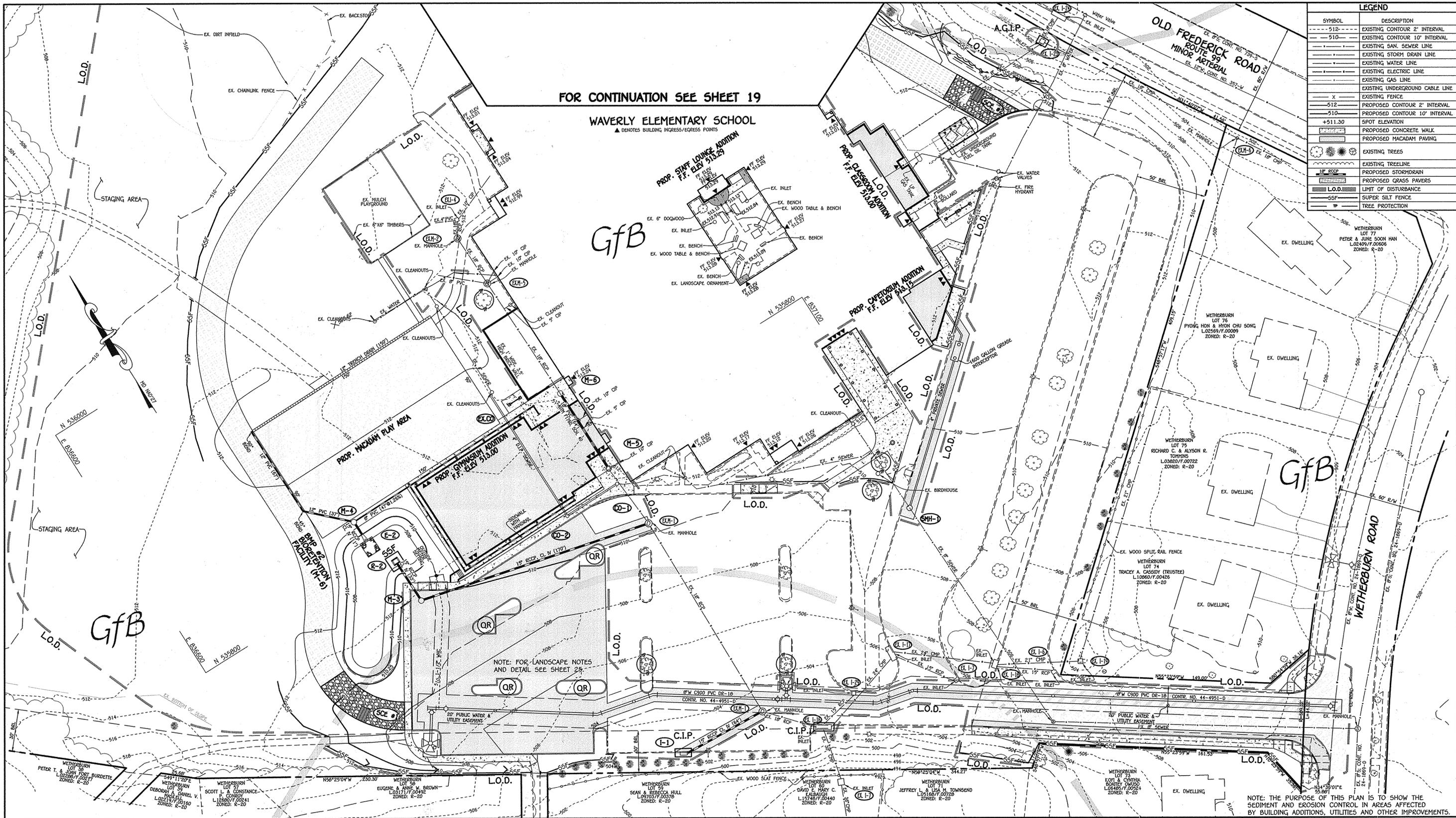
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.
WETHERBURN	N/A	P. 712
PLAT# OR L/F	GRID#	ZONING
8661-8667 227%	7	R-20
TAX MAP#	ELECT. DIST.	CENSUS TRACT
17	SECOND	6030

**BORING LOGS**

"REVISED SITE DEVELOPMENT PLAN"  
WAVERLY ELEMENTARY SCHOOL  
WETHERBURN  
OPEN SPACE LOT 7B

ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 23, 2016

SHEET 17 OF 36



NOTE: FOR LANDSCAPE NOTES AND DETAIL SEE SHEET 25

NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW THE SEDIMENT AND EROSION CONTROL IN AREAS AFFECTED BY BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

**FISHER COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10732 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21114  
(410) 461-2099

**ENGINEER'S CERTIFICATE**  
"I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

*Charles J. Cervo, Sr.*  
SIGNATURE OF ENGINEER  
DATE: 2/25/16

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."

*Charles J. Cervo, Sr.*  
SIGNATURE OF ENGINEER  
DATE: 2/25/16

**DEVELOPER'S CERTIFICATE**  
"I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

*Scott W. Washburn*  
SIGNATURE OF DEVELOPER  
DATE: 2/25/16

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

*Yuhel Blanton*  
SIGNATURE OF DISTRICT ENGINEER  
DATE: 2/26/16

DATE	DESCRIPTION	REVISION BLOCK
4-25-16	APPROVED: DEPARTMENT OF PLANNING AND ZONING	
4-25-16	Director - Department of Planning and Zoning	
4-7-16	Chief, Division of Land Development	
4-7-16	Chief, Development Engineering Division	

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805

**STATE OF MARYLAND**  
DEPARTMENT OF THE ENVIRONMENT  
PROFESSIONAL ENGINEER

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
LOT 78	10220 WETHERBURN ROAD ELICOTT CITY, MARYLAND 21042

PERMIT INFORMATION CHART			
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	
WETHERBURN	N/A	P. 712	
PLAT# OR L/F	GRID#	ZONING	TAX MAP#
8661-8667	7	R-20	17
ELECT. DISTR.	CENSUS TRACT		
SECOND	6030		

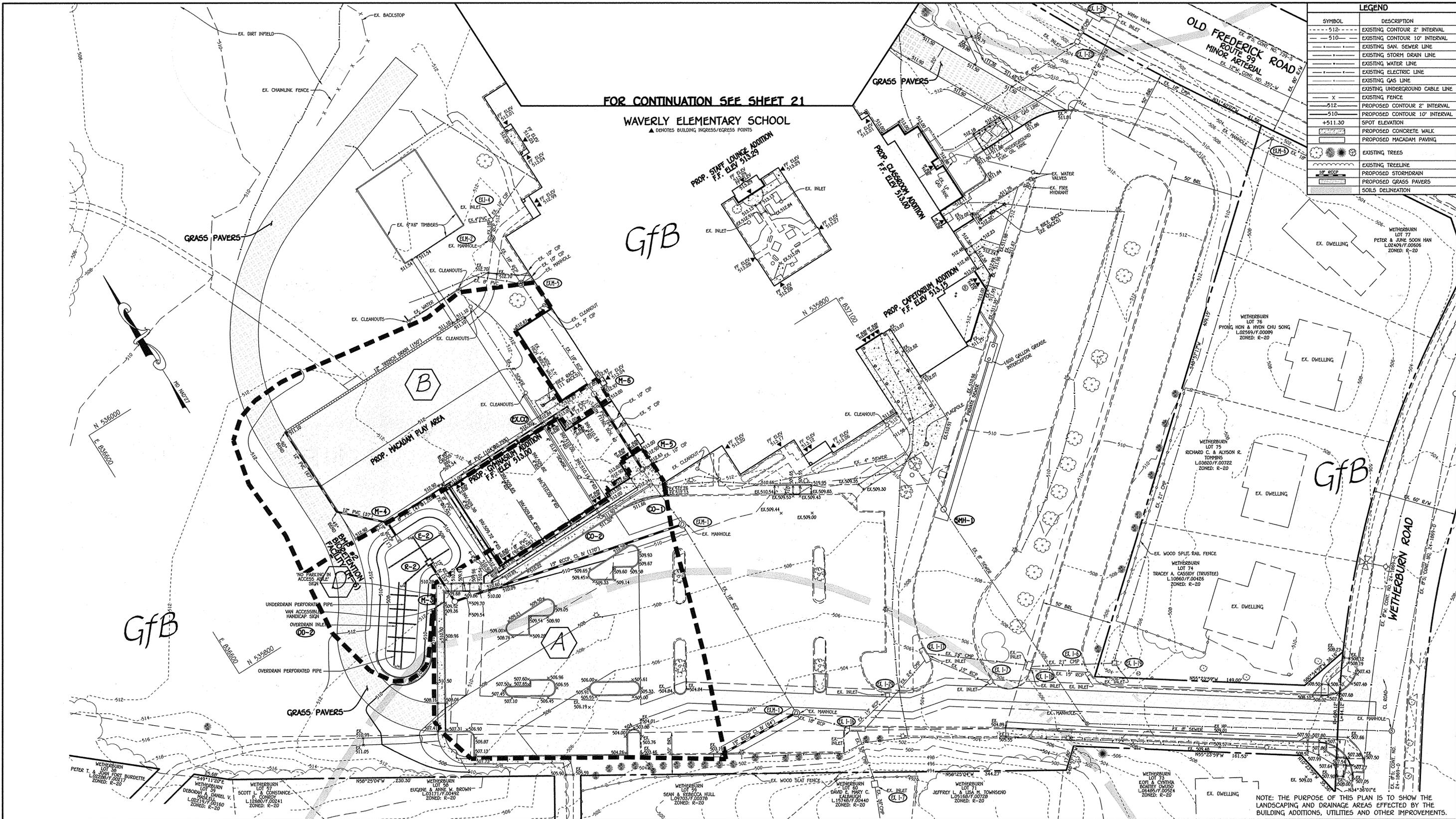
**SEDIMENT AND EROSION CONTROL PLAN, AND LANDSCAPE PLAN**

**"REVISED SITE DEVELOPMENT PLAN"**  
**WAVERLY ELEMENTARY SCHOOL**  
**WETHERBURN**  
**OPEN SPACE LOT 78**

ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 30' DATE: FEBRUARY 22, 2016

SHEET 18 OF 36





SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
- - -	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING GAS LINE
---	EXISTING UNDERGROUND CABLE LINE
X	EXISTING FENCE
- - -	PROPOSED CONTOUR 2' INTERVAL
- - -	PROPOSED CONTOUR 10' INTERVAL
+511.30	SPOT ELEVATION
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
---	EXISTING TREES
---	EXISTING TREELINE
---	PROPOSED STORMDRAIN
---	PROPOSED GRASS PAVERS
---	SOILS DELINEATION

FOR CONTINUATION SEE SHEET 21

WAVERLY ELEMENTARY SCHOOL

▲ DENOTES BUILDING INGRESS/EGRESS POINTS

GfB

GfB

NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW THE LANDSCAPING AND DRAINAGE AREAS EFFECTED BY THE BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2895

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
  
 CHARLES J. CROVO, SR., P.E.  
 3/23/16 DATE

DATE	DESCRIPTION	REVISION BLOCK

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
  
 Director - Department of Planning and Zoning 4-25-16 Date  
  
 Chief, Division of Land Development 4-25-16 Date  
  
 Chief, Development Engineering Division 4-7-16 Date

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6905

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
LOT 78	10220 WETHERBURN ROAD ELICOTT CITY, MARYLAND 21042

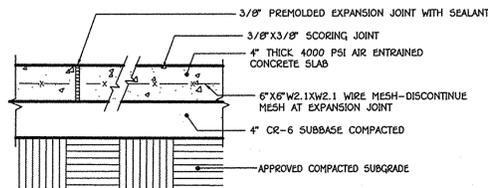
PERMIT INFORMATION CHART			
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	
WETHERBURN	N/A	P. 712	
PLAT# OR L/F	GRID#	ZONING	TAX MAP#
8661-8667	7	R-20	17
22152			
		ELECT. DISTR.	CENSUS TRACT
		SECOND	6030

**DRAINAGE AREA MAP AND SOILS MAP**

"REVISED SITE DEVELOPMENT PLAN"  
 WAVERLY ELEMENTARY SCHOOL  
 WETHERBURN  
 OPEN SPACE LOT 78

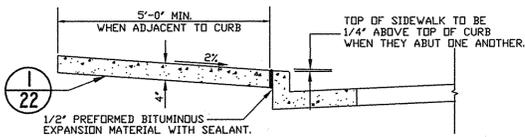
ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 30'  
 DATE: MARCH 23, 2016

SHEET 20 OF 36



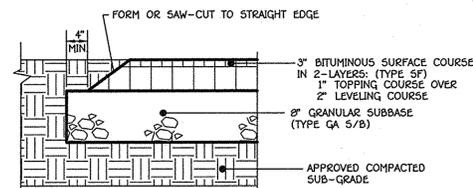
NOTE: INSTALL EXPANSION JOINTS AT MAX. 15'-0" O.C. AND INSTALL SCORING JOINTS AT MAX. 5'-0" O.C.  
SLOPE ACROSS SIDEWALK SHALL BE MIN. 1/8" / FT.

1 CONCRETE WALK DETAIL  
NO SCALE

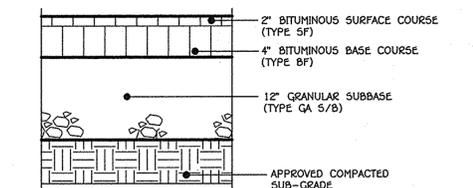


- NOTES:
- SIDEWALK TO BE SCRIBED IN EQUALLY 5'-0" MAXIMUM SQUARES.
  - EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO MORE THAN 15' APART.
  - 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK. FILL WITH SEALANT.
  - 4000 PSI AIR ENTRAINED CONCRETE SHALL BE USED.
  - WHEN SIDEWALK ABUTS CURB, WALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL BETWEEN SIDEWALK AND CURB.
  - ON LONGITUDINAL SIDEWALK GRADES OF 5% OR GREATER, A CONCRETE HEADER, 6" THICK AND 6" DEEP BELOW THE NORMAL 4" SIDEWALK THICKNESS SHALL BE CONSTRUCTED FOR THE FULL WIDTH OF THE SIDEWALK AT INTERVALS OF 48 FEET. THE HEADERS SHALL BE PLACED AT EXPANSION JOINT LOCATIONS AND SHALL BE MONOLITHIC WITH THE SIDEWALK.
  - SIDEWALK WIDTH ADJACENT TO CURB SHALL BE 5'-0" MIN.
  - SIDEWALK LOCATED 2' OR MORE FROM CURB MAY BE 4'-0" IN WIDTH WITH A 5' X 5' PAVED SECTION PLACED 200' APART.
  - PROVIDE 1/2" EXPANSION JOINT WHERE WALKS ABUT EXISTING CONCRETE SURFACES TO REMAIN.

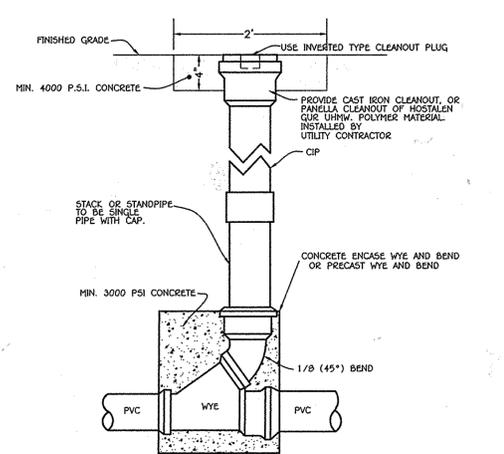
2 CONCRETE SIDEWALK DETAIL  
NO SCALE



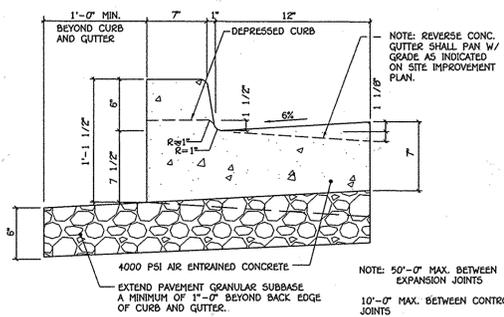
3 PAVED PLAY AREA AND WALKWAY ASPHALTIC WALKWAY DETAIL  
NO SCALE



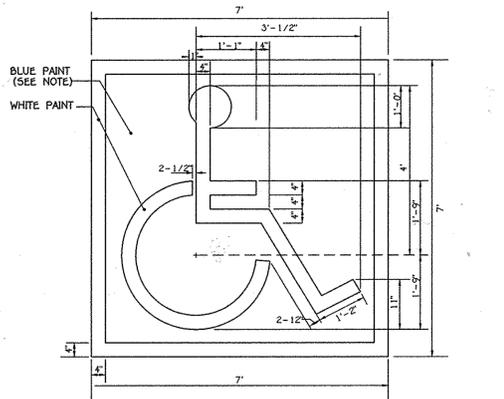
4 HEAVY DUTY ASPHALTIC PAVING DETAIL  
NO SCALE



5 TYPICAL ROOF LEADER CLEAN-OUT  
NO SCALE



6 STANDARD 6" COMB. CONC. CURB AND GUTTER  
HOWARD COUNTY STANDARD DETAIL R-9.01  
NO SCALE



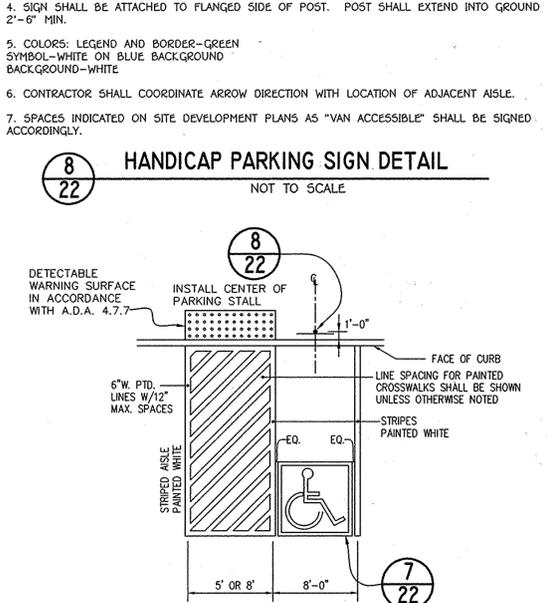
7 HANDICAP SPACE STENCIL LAYOUT  
SCALE: 1" = 20"



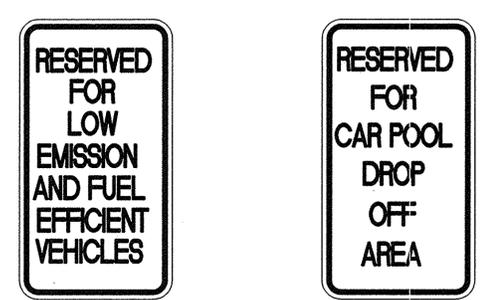
GENERAL NOTES:

- SIGNS SHALL MEET DESIGN STANDARDS OF THE FEDERAL HIGHWAY ADMINISTRATION AND CONFORM TO THE STATE OF MARYLAND STANDARD HIGHWAY SIGN BOOKLET DETAIL R7-8.
- ONE SIGN IS REQUIRED PER SPACE PLACED AS SHOWN ON SITE IMPROVEMENT PLAN.
- SIGNS SHALL BE POLE MOUNTED WITH HOT DIPPED GALVANIZED COUNTY APPROVED PERFORATED CHANNEL POSTS W/TOP OF SIGNS 9'-1" ABOVE FINISHED GRADE OR AS INDICATED ON SITE DRAWINGS.
- SIGN SHALL BE ATTACHED TO FLANGED SIDE OF POST. POST SHALL EXTEND INTO GROUND 2'-6" MIN.
- COLORS: LEGEND AND BORDER-GREEN SYMBOL-WHITE ON BLUE BACKGROUND BACKGROUND-WHITE
- CONTRACTOR SHALL COORDINATE ARROW DIRECTION WITH LOCATION OF ADJACENT AISLE.
- SPACES INDICATED ON SITE DEVELOPMENT PLANS AS "VAN ACCESSIBLE" SHALL BE SIGNED ACCORDINGLY.

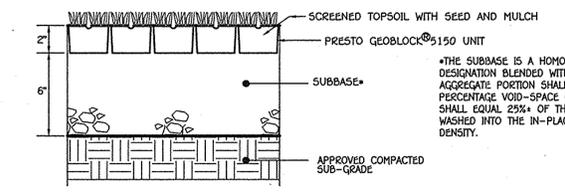
8 HANDICAP PARKING SIGN DETAIL  
NOT TO SCALE



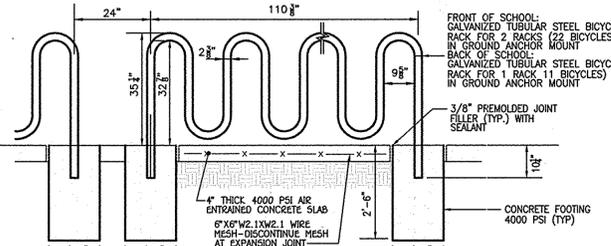
9 ACCESSIBLE SPACE LAYOUT  
NO SCALE



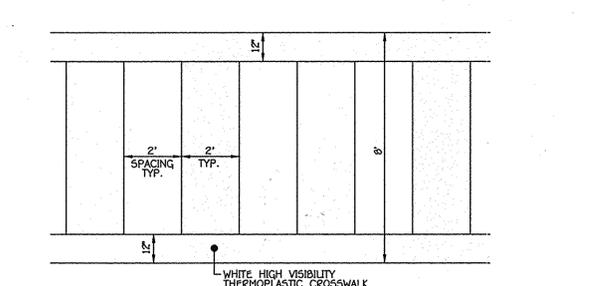
10 LE & FE SIGN DETAIL NOT TO SCALE  
11 LE & FE SIGN DETAIL NOT TO SCALE



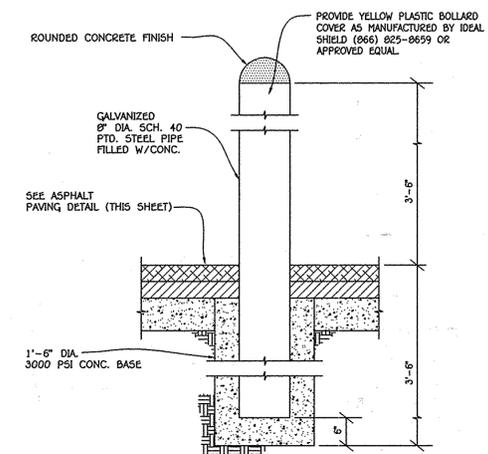
12 GRASS PAVERS SYSTEM PRESTO GEOSYSTEMS - GEOBLOCK® 5150  
NO SCALE



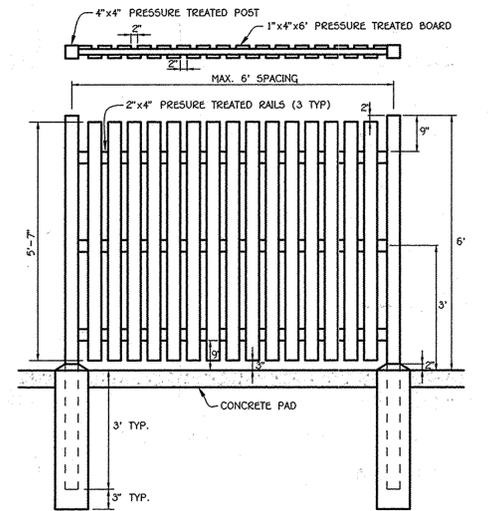
13 BICYCLE RACK DETAIL  
NO SCALE



14 PEDESTRIAN CROSSWALK DETAIL  
HOWARD COUNTY STANDARD DETAIL T-7.03  
NO SCALE



15 BOLLARD DETAIL  
NO SCALE



16 BOARD ON BOARD FENCE FOR DUMPSTER ENCLOSURE  
NO SCALE

NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW DETAILS FOR THE BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALDWIN NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21042  
(410) 461-2995

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
*Charles J. Brovo*  
CHARLES J. BROVO, SR., P.E.  
3/23/16  
DATE

DATE	DESCRIPTION	REVISION BLOCK
4-25-16	APPROVED: DEPARTMENT OF PLANNING AND ZONING	
4-25-16	Director, Department of Planning and Zoning	
4-7-16	Chief, Division of Land Development	
4-7-16	Chief, Development Engineering Division	

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805

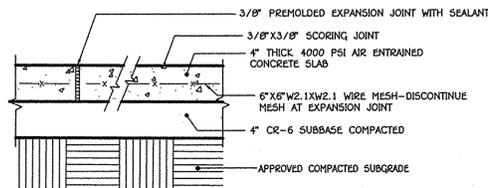


ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
LOT 7B	10220 WETHERBURN ROAD ELICOTT CITY, MARYLAND 21042

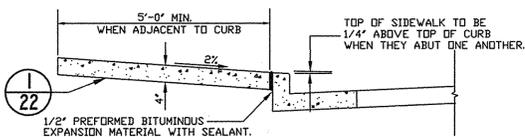
PERMIT INFORMATION CHART			
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	
WETHERBURN	N/A	P. 712	
PLAT# OR L/F	GRID#	ZONING	TAX MAP#
8661-8667	7	R-20	17
2015c		ELECT. DISTR.	CENSUS TRACT
		SECOND	6030

DETAIL SHEET  
"REVISED SITE DEVELOPMENT PLAN"  
WAVERLY ELEMENTARY SCHOOL  
WETHERBURN  
OPEN SPACE LOT 7B  
ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 23, 2016  
SHEET 22 OF 36



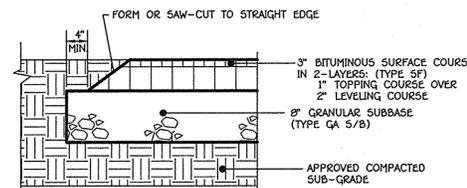
NOTE: INSTALL EXPANSION JOINTS AT MAX. 15'-0" O.C. AND INSTALL SCORING JOINTS AT MAX. 5'-0" O.C.  
SLOPE ACROSS SIDEWALK SHALL BE MIN. 1/8" / FT.

1 CONCRETE WALK DETAIL  
NO SCALE

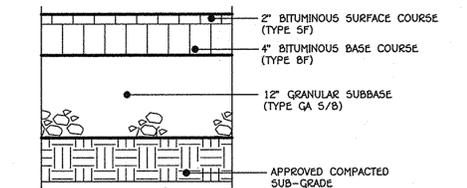


- NOTES:
- SIDEWALK TO BE SCRIBED IN EQUALLY 5'-0" MAXIMUM SQUARES.
  - EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO MORE THAN 15' APART.
  - 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK. FILL WITH SEALANT.
  - 4000 PSI AIR ENTRAINED CONCRETE SHALL BE USED.
  - WHEN SIDEWALK ABUTS CURB, WALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL BETWEEN SIDEWALK AND CURB.
  - ON LONGITUDINAL SIDEWALK GRADES OF 5% OR GREATER, A CONCRETE HEADER, 6" THICK AND 6" DEEP BELOW THE NORMAL 4" SIDEWALK THICKNESS SHALL BE CONSTRUCTED FOR THE FULL WIDTH OF THE SIDEWALK AT INTERVALS OF 48 FEET. THE HEADERS SHALL BE PLACED AT EXPANSION JOINT LOCATIONS AND SHALL BE MONOLITHIC WITH THE SIDEWALK.
  - SIDEWALK WIDTH ADJACENT TO CURB SHALL BE 5'-0" MIN.
  - SIDEWALK LOCATED 2' OR MORE FROM CURB MAY BE 4'-0" IN WIDTH WITH A 5' X 5' PAVED SECTION PLACED 200' APART.
  - PROVIDE 1/2" EXPANSION JOINT WHERE WALKS ABUT EXISTING CONCRETE SURFACES TO REMAIN.

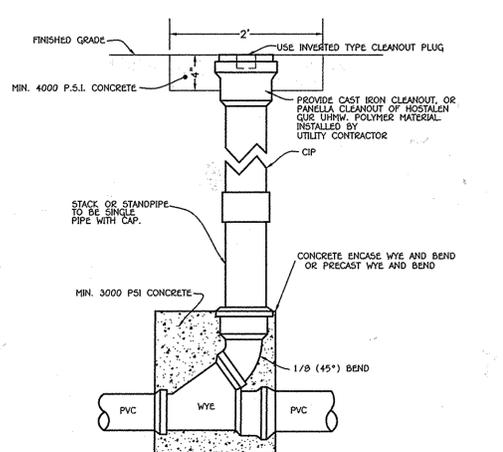
2 CONCRETE SIDEWALK DETAIL  
NO SCALE



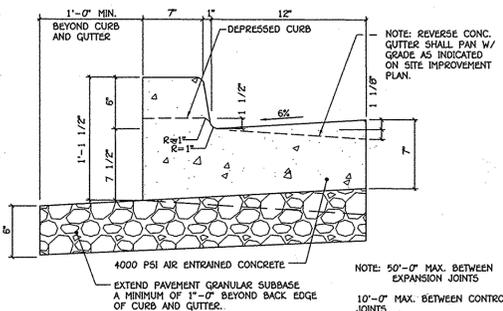
3 PAVED PLAY AREA AND WALKWAY ASPHALTIC WALKWAY DETAIL  
NO SCALE



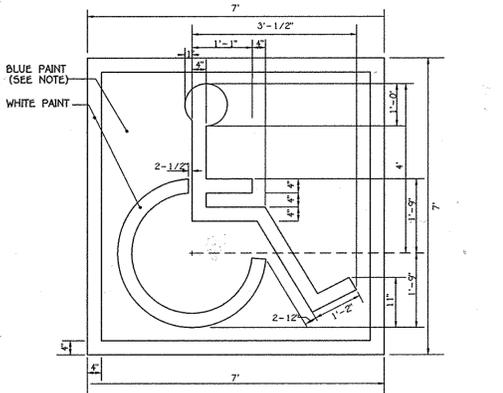
4 HEAVY DUTY ASPHALTIC PAVING DETAIL  
NO SCALE



5 TYPICAL ROOF LEADER CLEAN-OUT  
NO SCALE



6 STANDARD 6" COMB. CONC. CURB AND GUTTER  
HOWARD COUNTY STANDARD DETAIL R-9.01  
NO SCALE

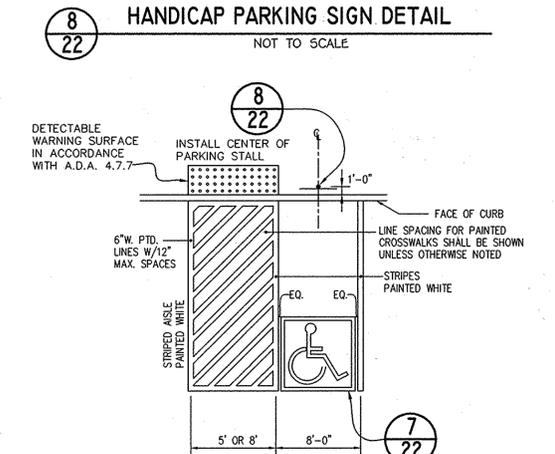


7 HANDICAP SPACE STENCIL LAYOUT  
SCALE: 1" = 20"

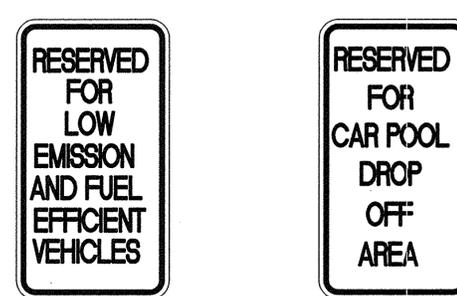


8 HANDICAP PARKING SIGN DETAIL  
NOT TO SCALE

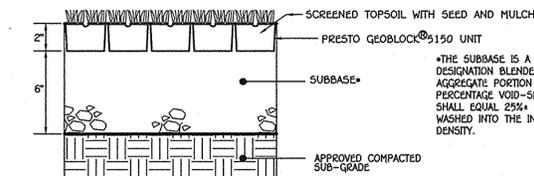
- GENERAL NOTES:
- SIGNS SHALL MEET DESIGN STANDARDS OF THE FEDERAL HIGHWAY ADMINISTRATION AND CONFORM TO THE STATE OF MARYLAND STANDARD HIGHWAY SIGN BOOKLET DETAIL R7-8.
  - ONE SIGN IS REQUIRED PER SPACE PLACED AS SHOWN ON SITE IMPROVEMENT PLAN.
  - SIGNS SHALL BE POLE MOUNTED WITH HOT DIPPED GALVANIZED COUNTY APPROVED PERFORATED CHANNEL POSTS W/TOP OF SIGNS 9'-1" ABOVE FINISHED GRADE OR AS INDICATED ON SITE DRAWINGS.
  - SIGN SHALL BE ATTACHED TO FLANGED SIDE OF POST. POST SHALL EXTEND INTO GROUND 2'-6" MIN.
  - COLORS: LEGEND AND BORDER-GREEN SYMBOL-WHITE ON BLUE BACKGROUND BACKGROUND-WHITE
  - CONTRACTOR SHALL COORDINATE ARROW DIRECTION WITH LOCATION OF ADJACENT AISLE.
  - SPACES INDICATED ON SITE DEVELOPMENT PLANS AS "VAN ACCESSIBLE" SHALL BE SIGNED ACCORDINGLY.



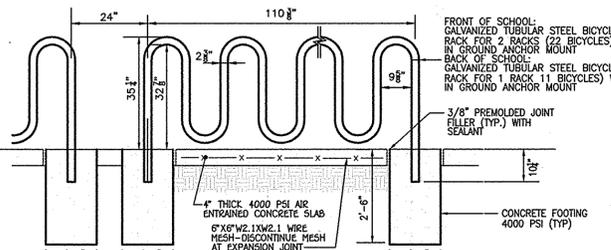
9 ACCESSIBLE SPACE LAYOUT  
NO SCALE



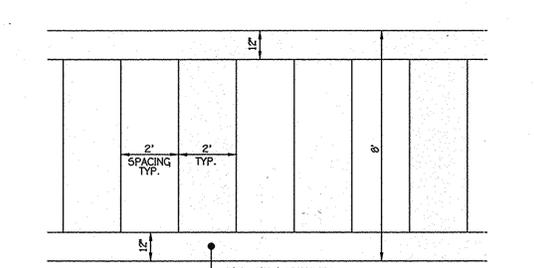
10 LE & FE SIGN DETAIL NOT TO SCALE  
11 LE & FE SIGN DETAIL NOT TO SCALE



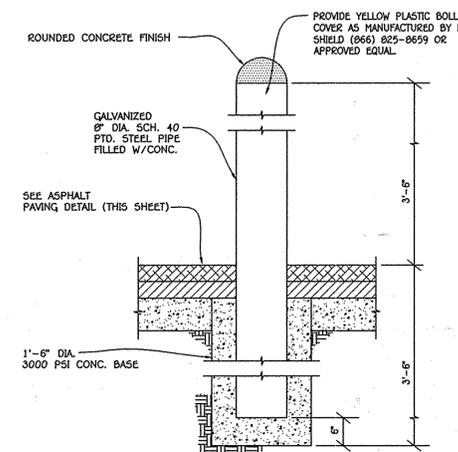
12 GRASS PAVERS SYSTEM PRESTO GEOSYSTEMS - GEOBLOCK® 5150  
NO SCALE



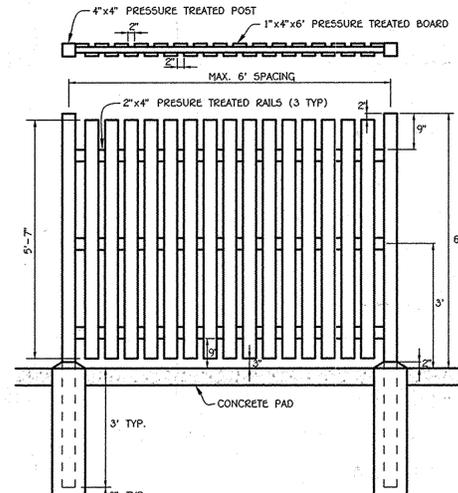
13 BICYCLE RACK DETAIL  
NO SCALE



14 PEDESTRIAN CROSSWALK DETAIL  
HOWARD COUNTY STANDARD DETAIL T-7.03  
NO SCALE



15 BOLLARD DETAIL  
NO SCALE



16 BOARD ON BOARD FENCE FOR DUMPSTER ENCLOSURE  
NO SCALE

NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW DETAILS FOR THE BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALDWIN NATIONAL PIKE  
ELLICOTT CITY, MARYLAND 21044  
(410) 461-2995

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
*Charles J. Brovo*  
CHARLES J. BROVO, SR., P.E.  
3/23/16  
DATE

DATE	DESCRIPTION	REVISION BLOCK
4-25-16	APPROVED: DEPARTMENT OF PLANNING AND ZONING	
4-25-16	Director, Department of Planning and Zoning	
4-7-16	Chief, Division of Land Development	
4-7-16	Chief, Development Engineering Division	

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805

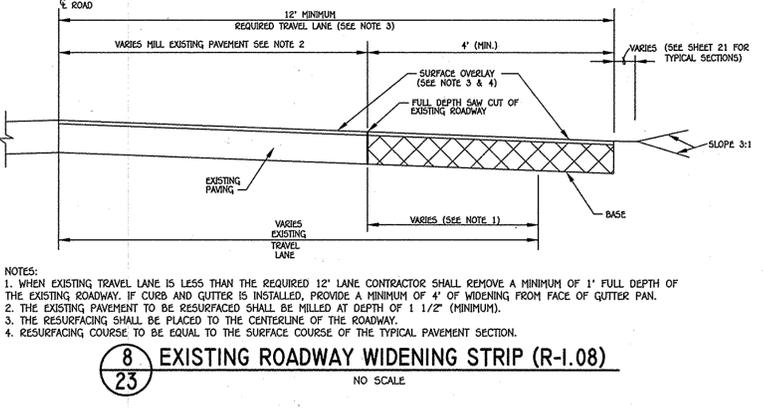
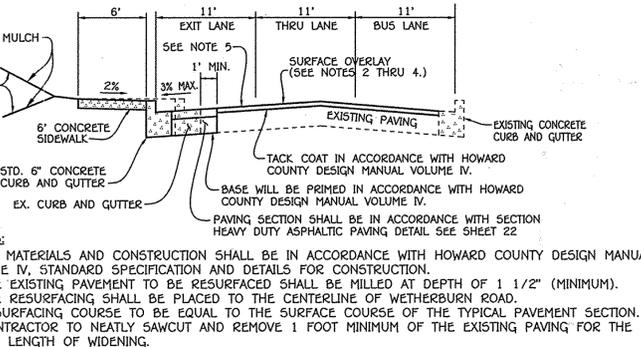
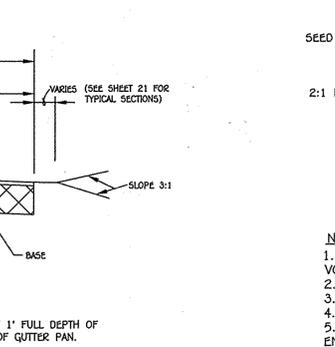
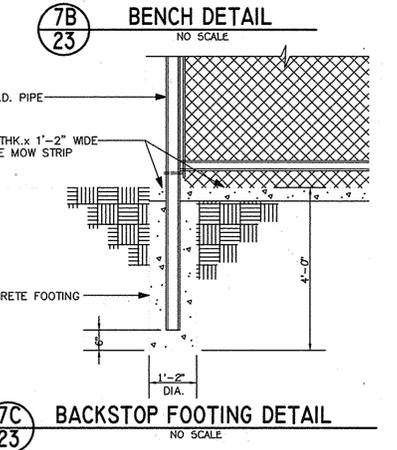
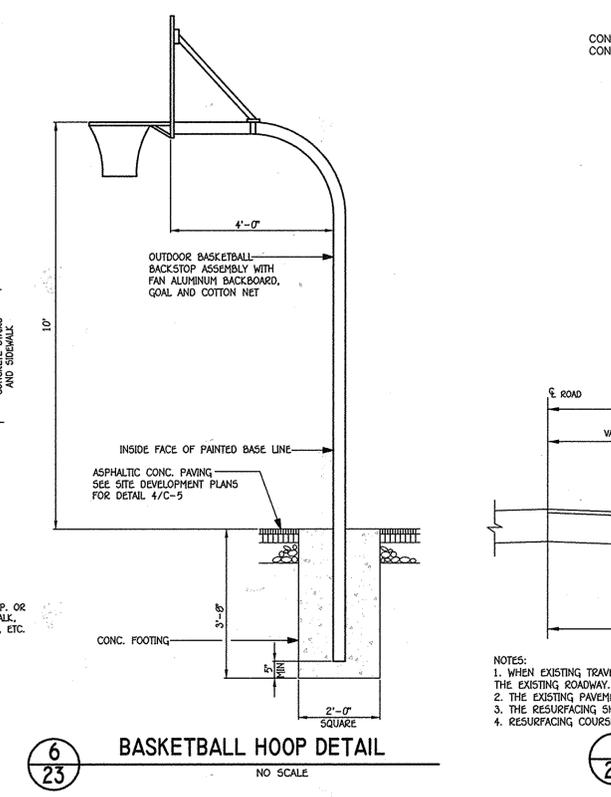
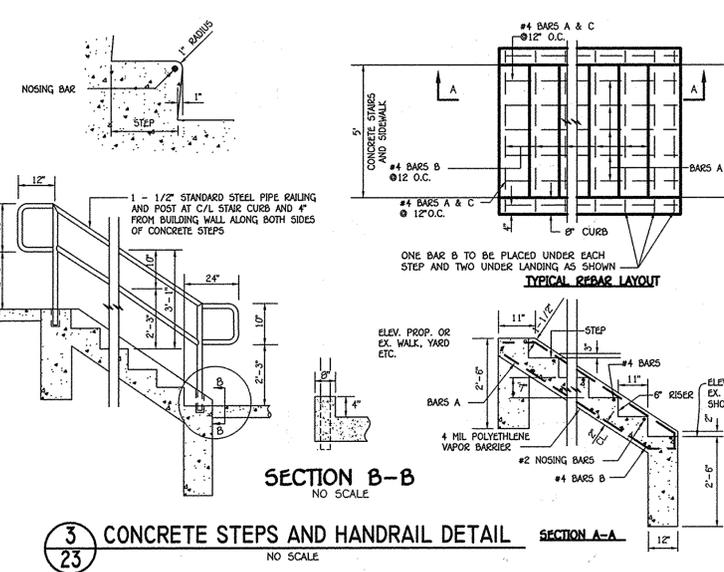
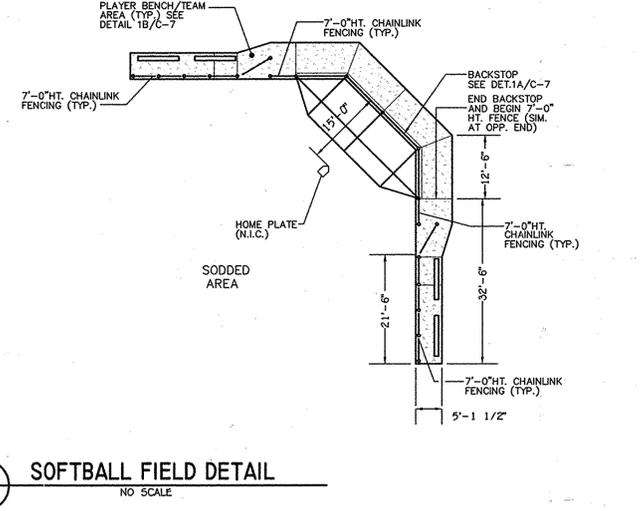
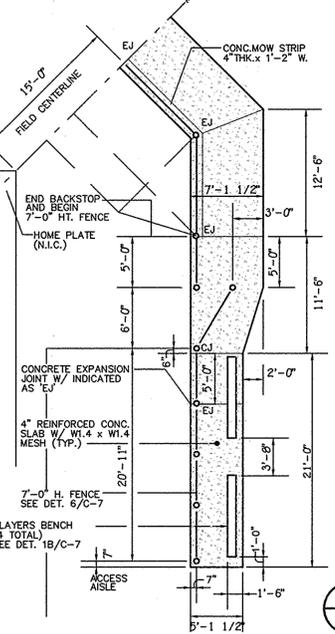
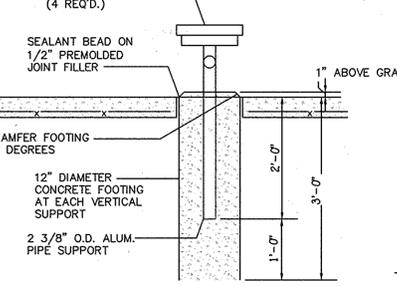
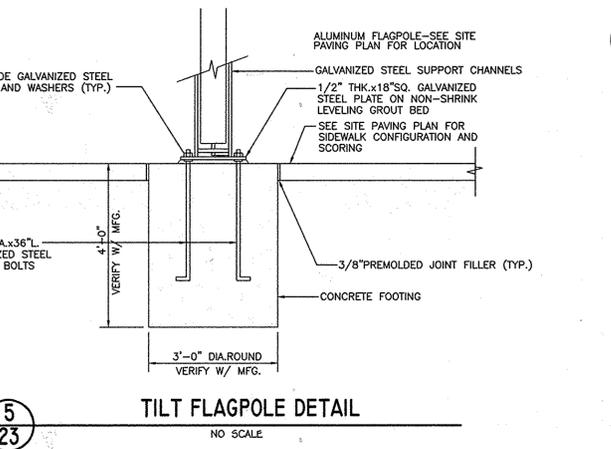
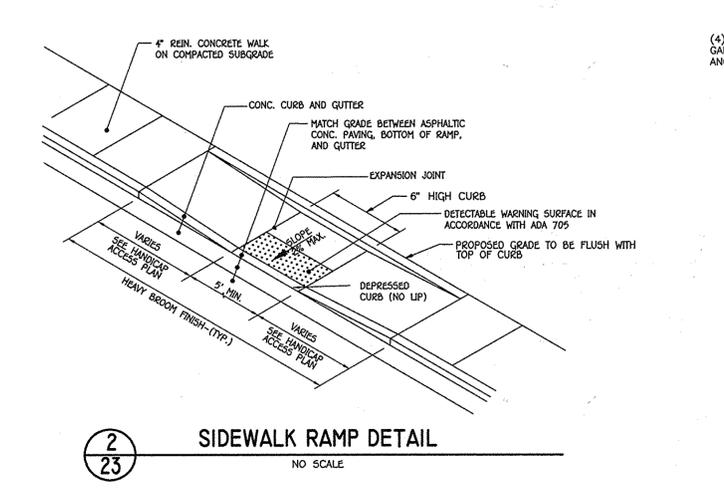
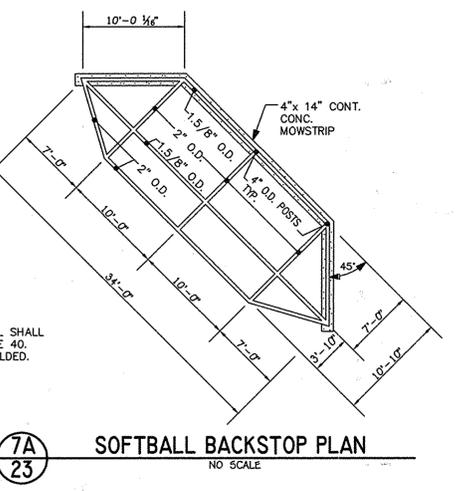
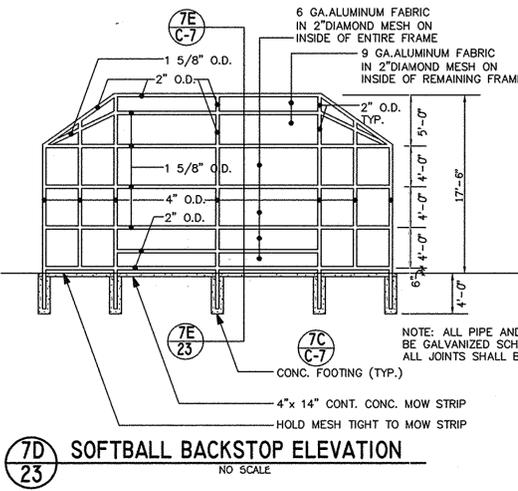
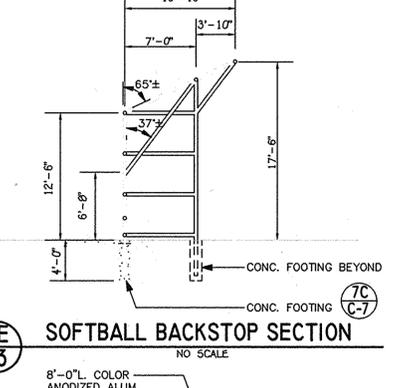
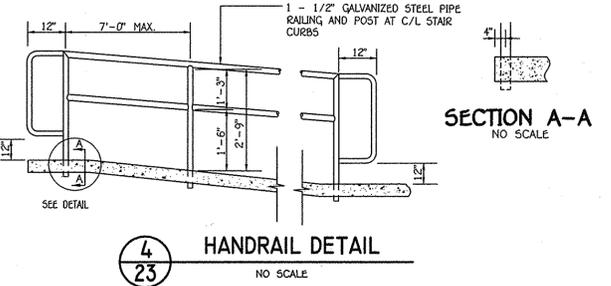
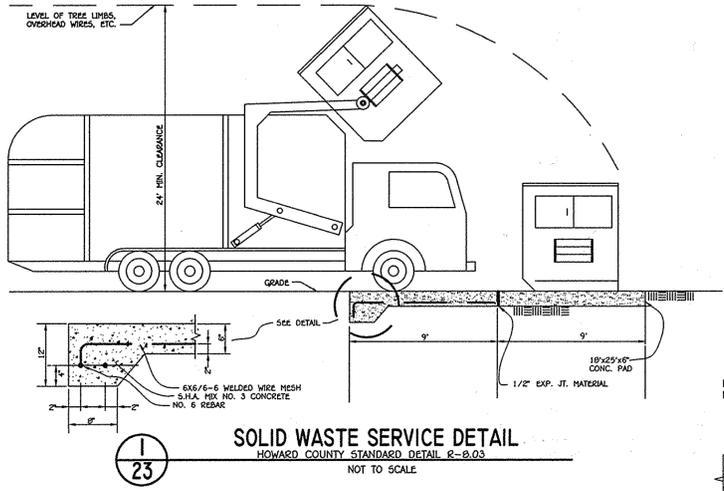


ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
LOT 7B	10220 WETHERBURN ROAD ELLICOTT CITY, MARYLAND 21042

PERMIT INFORMATION CHART			
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	
WETHERBURN	N/A	P. 712	
PLAT# OR L/F	GRID#	ZONING	TAX MAP#
8661-8667	7	R-20	17
2015c		ELECT. DISTR.	CENSUS TRACT
		SECOND	6030

DETAIL SHEET  
"REVISED SITE DEVELOPMENT PLAN"  
WAVERLY ELEMENTARY SCHOOL  
WETHERBURN  
OPEN SPACE LOT 7B  
ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 23, 2016  
SHEET 22 OF 36



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

NOTES:  
1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.  
2. THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT DEPTH OF 1 1/2" (MINIMUM).  
3. THE RESURFACING SHALL BE PLACED TO THE CENTERLINE OF WETHERBURN ROAD.  
4. RESURFACING COURSE TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION.  
5. CONTRACTOR TO NEATLY SAWCUT AND REMOVE 1 FOOT MINIMUM OF THE EXISTING PAVING FOR THE ENTIRE LENGTH OF WIDENING.

NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW DETAILS FOR THE BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK, 10272 BALDWIN NATIONAL PARK  
ELICOTT CITY, MARYLAND 21044  
(410) 461-2295

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
*Charles J. Drovo, Sr., P.E.*  
CHARLES J. DROVO, SR., P.E.  
3/23/16  
DATE

DATE	DESCRIPTION	REVISION BLOCK
4-25-16	Director - Department of Planning and Zoning	
4-28-16	Chief, Division of Land Development	
4-7-16	Chief, Development Engineering Division	

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
2045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-8205



ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
LOT 7B	10220 WETHERBURN ROAD ELICOTT CITY, MARYLAND 21042

PERMIT INFORMATION CHART			
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	
WETHERBURN	N/A	P. 712	
PLAT# OR L/F	GRID#	ZONING	TAX MAP#
8661-8567	7	R-20	17
		ELECT. DISTR.	CENSUS TRACT
		SECOND	6030

**DETAIL SHEET**  
"REVISED SITE DEVELOPMENT PLAN"  
WAVERLY ELEMENTARY SCHOOL  
WETHERBURN  
OPEN SPACE LOT 7B  
ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 23, 2016  
SHEET 23 OF 36

**SOIL PREPARATION, TOPSOILING AND SOIL AMENDMENTS (B-4-2)**

- A. SOIL PREPARATION**
- TEMPORARY STABILIZATION**
    - SEEDBED PREPARATION CONSISTS OF LOOSING SOIL TO A DEPTH OF 3 TO 5 INCHES 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 LOOSERED, IT MUST NOT BE ROLLED OR DRAGGED SHOOTING BUT LEFT IN THE ROUGHENED CONDITION. SLOPES 3:1 OR FLATTER ARE TO BE TRACKED WITH ROUGHENED PARALLEL TO THE CONTOUR OF THE SLOPE.
    - APPLY FERTILIZER LINE AND AS PRESCRIBED ON THE PLANS.
    - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
  - PERMANENT STABILIZATION**
    - A SOIL TEST IS REQUIRED FOR ANY EARTH DISTURBANCE OF 4 ACRES OR MORE. THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE COVER ARE:
      - SOIL PH BETWEEN 6.0 AND 7.0.
      - SOIL CONTAINS LESS THAN 500 PARTS PER MILLION (PPM).
      - SOIL CONTAINS LESS THAN 40 PERCENT CLAY BUT ENOUGH FINE GRAINED MATERIAL (GREATER THAN 30 PERCENT SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF WATER. AN EXCEPTION IF LOESS-LIKE SOILS WILL BE PLANTED, THEN A SANDY SOIL (LESS THAN 30 PERCENT SILT PLUS CLAY) WOULD BE ACCEPTABLE.
      - SOIL CONTAINS 1.5 PERCENT MINIMUM ORGANIC MATTER BY WEIGHT.
      - SOIL CONTAINS SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
      - APPLICATION OF AMENDMENTS OR TOPSOIL IS REQUIRED IF ON-SITE SOILS DO NOT MEET THE ABOVE CONDITIONS.
    - GRADED AREAS MUST BE MAINTAINED IN A TRUE AND EVEN GRADE AS SPECIFIED ON THE APPROVED PLAN, THEN SCAPED OR OTHERWISE LOOSESED TO A DEPTH OF 3 TO 5 INCHES.
    - APPLY SOIL AMENDMENTS AS SPECIFIED ON THE APPROVED PLAN OR AS INDICATED BY THE RESULTS OF A SOIL TEST.
    - FOR SOIL AMENDMENTS INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS, RAKE LAWN AREAS TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY GRAB OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION. TRACK SLOPES 3:1 OR FLATTER WITH TRACKED EQUIPMENT LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. LEAVE THE TOP 1 TO 3 INCHES OF SOIL LOOSE AND FRAGILE. SEEDBED LOOSENING MAY BE UNNECESSARY ON NEWLY DISTURBED AREAS.
- B. TOPSOILING**
- TOPSOIL IS PLACED OVER PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION. THE PURPOSE IS TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE, LOW NUTRIENT LEVELS, LOW PH, HYDROLOGICALLY TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL COMPOSITION.
  - TOPSOIL SALVAGED FROM AN EXISTING SITE MAY BE USED PROVIDED 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-NRCS.
  - TOPSOILING IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
    - THE TEXTURE OF THE EXPOSED SUBSOIL MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
    - THE SOIL MATERIAL IS SO SANDY THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
    - THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
    - THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIME IS NOT FEASIBLE.
  - AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN.
- C. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)**
- SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OF 5 ACRES OR MORE. SOIL ANALYSIS MAY BE PERFORMED BY A RECOGNIZED PRIVATE OR COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSIS.
  - FERTILIZERS MUST BE UNIFORM IN COMPOSITION, FINE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROPRIATE EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS MUST ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE LAWS AND MUST BEAR THE NAME, TRADE NAME OR TRADEMARK, AND WEIGHABILITY OF THE PRODUCT.
  - LIME MATERIALS MUST BE GROUND LIMESTONE (HYDRATED OR BURNED LIME MAY BE SUBSTITUTED EXCEPT WHEN HYDROSEEDING) WHICH CONTAINS AT LEAST 50 PERCENT TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE MUST BE GROUND TO SUCH FINENESS THAT AT LEAST 50 PERCENT WILL PASS THROUGH A #100 MESH SIEVE AND 98 TO 100 PERCENT WILL PASS THROUGH A #20 MESH SIEVE.
  - LIME AND FERTILIZER ARE TO BE EVENLY DISTRIBUTED AND INCORPORATED INTO THE TOP 3 TO 5 INCHES OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
  - WHERE THE SUBSOIL IS EITHER HEAVILY ACIDIC OR COMPOSED OF HEAVY CLAYS, SPREAD GROUND LIMESTONE AT THE RATE OF 4 TO 8 TONS/ACRE (2000-4000 POUNDS PER 1000 SQUARE FEET) PRIOR TO THE PLACEMENT OF TOPSOIL.

**PERMANENT SEEDING NOTES (B-4-5)**

- A. SEED MIXTURES**
- GENERAL USE**
    - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED IN TABLE B.3 FOR THE APPROPRIATE PLANT HARDNESS ZONE (FROM FIGURE B.3) AND BASED ON THE SITE CONDITION OR PURPOSE FOUND ON TABLE B.2. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
    - ADDITIONAL PLANTING SPECIFICATIONS FOR EXCEPTIONAL SITES SUCH AS SHOULDER, STREAM BANKS, OR DUNES OR FOR SPECIAL PURPOSES SUCH AS WILDLIFE OR AESTHETIC TREATMENT MAY BE FOUND IN USDA-NRCS TECHNICAL FIELD OFFICE GUIDE, SECTION 442 - CRITICAL AREA PLANTING.
    - FOR SITES HAVING DISTURBED AREAS OVER 5 ACRES, USE AND SHOW THE RATES RECOMMENDED BY THE SOIL TESTING AGENCY. D. FOR AREAS RECEIVING LOW MAINTENANCE, APPLY URGA FORM FERTILIZER (46-0-0) AT 3 1/2 POUNDS PER 1000 SQUARE FEET (150 POUNDS PER ACRE) AT THE TIME OF SEEDING IN ADDITION TO THE SOIL AMENDMENTS SHOWN IN THE PERMANENT SEEDING SUMMARY.
  - TURFGRASS MIXTURES**
    - AREAS WHERE TURFGRASS MAY BE DESIRED INCLUDE LAWNS, PARKS, PLAYGROUNDS, AND COMMERCIAL SITES WHICH WILL RECEIVE A MEDIUM TO HIGH LEVEL OF MAINTENANCE.
    - SELECT ONE OR MORE OF THE SPECIES OR MIXTURES LISTED BELOW BASED ON THE SITE CONDITIONS OR PURPOSE. ENTER SELECTED MIXTURE(S), APPLICATION RATES, AND SEEDING DATES IN THE PERMANENT SEEDING SUMMARY. THE SUMMARY IS TO BE PLACED ON THE PLAN.
    - KENTUCKY BLUEGRASS: FULL SUN MIXTURE; FOR USE IN AREAS THAT RECEIVE INTENSIVE MANAGEMENT. INDICATION REQUIRED IN THE AREA OF CENTRAL MARYLAND AND EASTERN SHORE. RECOMMENDED CERTIFIED KENTUCKY BLUEGRASS CULTIVARS SEEDING RATE: 1.5 TO 2.0 POUNDS PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
      - KENTUCKY BLUEGRASS/PERENNIAL RYE: FULL SUN MIXTURE; FOR USE IN FULL SUN AREAS WHERE MAINTENANCE IS NECESSARY AND WHEN TURF WILL RECEIVE MEDIUM TO INTENSIVE MANAGEMENT. CERTIFIED PERENNIAL RYEGRASS CULTIVARS/CERTIFIED KENTUCKY BLUEGRASS SEEDING RATE: 2 POUNDS MIXTURE PER 1000 SQUARE FEET. CHOOSE A MINIMUM OF THREE KENTUCKY BLUEGRASS CULTIVARS WITH EACH RANGING FROM 10 TO 35 PERCENT OF THE TOTAL MIXTURE BY WEIGHT.
      - TALL FESCUE/KENTUCKY BLUEGRASS: FULL SUN MIXTURE; FOR USE IN DROUGHT PRONE AREAS AND/OR AREAS RECEIVING LOW TO MEDIUM MAINTENANCE IN FULL SUN TO MEDIUM SHADE. RECOMMENDED MIXTURE INCLUDES: CERTIFIED TALL FESCUE CULTIVARS 95 TO 100 PERCENT, CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 0 TO 5 PERCENT. SEEDING RATE: 5 TO 8 POUNDS PER 1000 SQUARE FEET, ONE OR MORE CULTIVARS MAY BE BLENDED.
      - KENTUCKY BLUEGRASS/FINE FESCUE: SHADE MIXTURE; FOR USE IN AREAS WITH SHADE IN BLUEGRASS LAWNS. FOR ESTABLISHMENT IN HIGH QUALITY, INTENSIVELY MANAGED TURF AREA, MIXTURE INCLUDES: CERTIFIED KENTUCKY BLUEGRASS CULTIVARS 30 TO 40 PERCENT AND CERTIFIED FINE FESCUE AND 60 TO 70 PERCENT. SEEDING RATE: 1 1/2 TO 3 POUNDS PER 1000 SQUARE FEET.
- NOTES:**  
SELECT TURFGRASS VARIETIES FROM THOSE LISTED IN THE MOST CURRENT UNIVERSITY OF MARYLAND PUBLICATION, AGRONOMY MEMO #77, "TURFGRASS CULTIVAR RECOMMENDATIONS FOR MARYLAND"
- CHOOSE CERTIFIED MATERIAL. CERTIFIED MATERIAL IS THE BEST GUARANTEE OF CULTIVAR PURITY. THE CERTIFICATION PROGRAM OF THE MARYLAND DEPARTMENT OF AGRICULTURE, TURF AND SEED SECTION, PROVIDES A RELIABLE MEANS OF CONSUMER PROTECTION AND ASSURES A PURE GENETIC LINE.
- C. IDEAL TIMES OF SEEDING FOR TURF GRASS MIXTURES:** WESTERN MD: MARCH 15 TO JUNE 1, AUGUST 1 TO OCTOBER 15 (HARDNESS ZONES: 5B, 6A) CENTRAL MD: MARCH 15 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONES: 6B) SOUTHERN MD, EASTERN SHORE: MARCH 1 TO MAY 15, AUGUST 15 TO OCTOBER 15 (HARDNESS ZONES: 7A, 7B)
- D. TILL AREAS TO RECEIVE SEED BY DISKING OR OTHER APPROVED METHODS TO A DEPTH OF 2 TO 4 INCHES. LEVEL AND RAKE AREAS TO PREPARE A PROPER SEEDBED. EXPOSED STONES AND DEBRIS OVER 1 1/2 INCHES IN DIAMETER. THE RESULTING SEEDBED MUST BE IN SUCH CONDITION THAT FUTURE GROWING OF GRASSES WILL POSE NO DIFFICULTY.**
- E. IF SOIL MOISTURE IS DEFICIENT, SUPPLY NEW SEEDINGS WITH ADEQUATE WATER FOR PLANT GROWTH (1/2 TO 1 INCH EVERY 3 TO 4 DAYS DEPENDING ON SOIL TEXTURE) UNTIL THEY ARE FIRMLY ESTABLISHED. THIS IS ESPECIALLY TRUE WHEN SEEDINGS ARE MADE LATE IN THE PLANTING SEASON, IN ABNORMALLY DRY OR HOT SEASONS, OR ON ADVANCE SITES.**

PERMANENT SEEDING SUMMARY		FERTILIZER RATE (10-20-20)		LIME RATE		
HARDNESS ZONE (FROM FIGURE B.3):		SEEDING RATE (10-20-20)		SEEDING RATE (10-20-20)		
A		B		C		
NO.	SPECIES	APPLICATION RATE (LB./AC)	SEEDING DATES	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
1	TALL FESCUE	100	MAR 1-MAY 15 AUG 1-OCT 15	45 LB./AC (1.0 LB./1000 SF)	90 LB./AC (2.0 LB./1000 SF)	90 LB./AC (2.0 LB./1000 SF)
2				2 TONS/AC (4000 SF)		

STANDARD STABILIZATION NOTE	
FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION MUST BE COMPLETED WITHIN:	
A.) 3(CALENDAR DAYS) AS TO THE SURFACE OF ALL PERIMETER DICES, SHOALS, DITCHES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND	
B.) SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE NOT UNDER ACTIVE GRADING.	

**STANDARDS AND SPECIFICATIONS FOR STOCKPILE AREA (B-4-8)**

**DEFINITION**  
THE MOUND OR PILE OF SOIL PROTECTED BY APPROPRIATELY DESIGNED EROSION AND SEDIMENT CONTROL MEASURES.

**PURPOSE**  
TO PROVIDE A DESIGNATED LOCATION FOR THE TEMPORARY STORAGE OF SOIL THAT CONTROLS THE POTENTIAL FOR EROSION, SEDIMENTATION, AND CHANGES TO DRAINAGE PATTERNS.

**CONDITIONS WHERE PRACTICE APPLIES**  
STOCKPILE AREAS ARE UTILIZED WHEN IT IS NECESSARY TO SALVAGE AND STORE SOIL FOR LATER USE.

- CRITERIA**
- THE STOCKPILE LOCATION AND ALL RELATED SEDIMENT CONTROL PRACTICES MUST BE CLEARLY INDICATED ON THE EROSION AND SEDIMENT CONTROL PLAN.
  - THE FOOTPRINT OF THE STOCKPILE MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED VOLUME OF MATERIAL AND BASED ON A SIDE SLOPE RATIO NO STEEPER THAN 2:1. BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.
  - RUNOFF FROM THE STOCKPILE AREA MUST DRAIN TO A SUITABLE SEDIMENT CONTROL PRACTICE.
  - ACCESS TO THE STOCKPILE AREA FROM THE UPGRADE SIDE.
  - CLEAR WATER RUNOFF INTO THE STOCKPILE AREA MUST BE MINIMIZED BY USE OF A DIVERSION DEVICE SUCH AS AN EARTH DIKE, TEMPORARY SWALE OR DIVERSION FENCE. PROVISIONS MUST BE MADE FOR DISCHARGING CONCENTRATED FLOW IN A NON-EROSIVE MANNER.
  - WHERE RUNOFF CONCENTRATES ALONG THE TOE OF THE STOCKPILE FILL, AN APPROPRIATE EROSION/SEDIMENT CONTROL PRACTICE MUST BE USED TO INTERCEPT THE DISCHARGE.
  - STOCKPILES MUST BE STABILIZED IN ACCORDANCE WITH THE 3/7 DAY STABILIZATION REQUIREMENT AS WELL AS STANDARD B-4-1 INCREMENTAL STABILIZATION AND STANDARD B-4-4 TEMPORARY STABILIZATION.
  - IF THE STOCKPILE IS LOCATED ON AN IMPERVIOUS SURFACE, LIME SHOULD BE PROVIDED BELOW THE STOCKPILE TO FACILITATE CLEANUP. STOCKPILES CONTAINING CONTAMINATED MATERIAL MUST BE COVERED WITH IMPERMEABLE SHEETING.

**MAINTENANCE**

THE STOCKPILE AREA MUST CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION. SIDE SLOPES MUST BE MAINTAINED AT NO STEEPER THAN A 2:1 RATIO. THE STOCKPILE AREA MUST BE KEPT FREE OF EROSION. IF THE VERTICAL HEIGHT OF A STOCKPILE EXCEEDS 20 FEET FOR 2:1 SLOPES, 30 FEET FOR 3:1 SLOPES, OR 40 FEET FOR 4:1 SLOPES, BENCHING MUST BE PROVIDED IN ACCORDANCE WITH SECTION B-3 LAND GRADING.

**STANDARDS AND SPECIFICATIONS FOR SEEDING AND MULCHING (B-4-3)**

**DEFINITION**  
THE APPLICATION OF SEED AND MULCH TO ESTABLISH VEGETATIVE COVER.

**PURPOSE**  
TO PROTECT DISTURBED SOILS FROM EROSION DURING AND AT THE END OF CONSTRUCTION.

**CONDITIONS WHERE PRACTICE APPLIES**  
TO THE SURFACE OF ALL PERIMETER CONTROLS, SLOPES, AND ANY DISTURBED AREA NOT UNDER ACTIVE GRADING.

**CRITERIA**

- SEEDING**
  1. SPECIFICATIONS
    - ALL SEED MUST MEET THE REQUIREMENT OF THE MARYLAND STATE SEED LAW. ALL SEED MUST BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED MUST HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON ANY PROJECT. REFER TO TABLE B.4 REGARDING THE QUALITY OF SEED. SEED TAGS MUST BE AVAILABLE UPON REQUEST TO THE INSPECTOR TO VERIFY TYPE OF SEED AND SEEDING RATE.
    - MULCH ALONE MAY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES ONLY IF THE GROUND IS FROZEN. THE APPROPRIATE SEEDING MIXTURE MUST BE APPLIED WHEN THE GROUND THAW.
    - INCULCATE THE INCULCATOR FOR TREATING LEIGURE SEED IN THE SEED MIXTURES MUST BE A PURE CULTURE OF FOURTEEN FRING BACTERIA PREPARED SPECIFICALLY FOR THE SPECIES. INCULCANTS MUST NOT BE USED LATER THAN THE DATE INDICATED ON THE CONTAINER. ADD FRESH INCULCANT AS DIRECTED ON THE PACKAGE. USE THROUGH THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INCULCANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75 TO 80 DEGREES FAHRENHEIT CAN KILL BACTERIA AND MAKE THE INCULCANT LESS EFFECTIVE.
    - 500 OR SEED MUST NOT BE PLACED ON SOIL WHICH HAS BEEN TREATED WITH SOIL STERILANTS OR CHEMICALS USED FOR WEEDCONTROL UNTIL SUFFICIENT TIME HAS ELAPSED (14 DAYS MIN.) TO PERMIT DISSIPATION OF PHYTO-TOXIC MATERIALS.
  2. APPLICATION
    - DOY SEEDING THIS INCLUDES USE OF CONVENTIONAL DRIP OR BROADCAST SPREADERS.
    - INCREASE SEED INTO THE SUBSTRATE AT THE RATE PRESCRIBED ON TEMPORARY SEEDING TABLE B.1, PERMANENT SEEDING TABLE B.3, OR SITE-SPECIFIC SEEDING SUMMARIES.
    - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION. ROLL THE SEEDED AREA WITH WEIGHTED ROLLERS TO PROVIDE GOOD SEED TO SOIL CONTACT.
    - DRILL OR COUNTERPART SEEDING MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.
    - HYDROSEEDING SHOULD BE USED TO OVER THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH OF SOIL COVER. SEEDING MUST BE FROM AFTER PLANTING.
    - APPLY SEED IN TWO DIRECTIONS, PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
    - HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER). 1. IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES SHOULD NOT EXCEED THE FOLLOWING: NITROGEN, 100 POUNDS PER ACRE TOTAL OF SOLUBLE NITROGEN, P O (PHOSPHORUS), 200 POUNDS PER ACRE; K O (POTASSIUM), 200 POUNDS PER ACRE.
    - 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 BURST OR HYDRATED LIME WHEN HYDROSEEDING.
    - SEE SEED AND FERTILIZER ON SITE AND SEED IMMEDIATELY AND WITHOUT INTERRUPTION.
    - WHEN HYDROSEEDING DO NOT INCORPORATE SEED INTO THE SOIL.
  3. MULCH MATERIALS (IN ORDER OF PREFERENCE)
    - STRAW CONSISTING OF THOROUGHLY THRESHED WHEAT, RYE, OAT, OR BARLEY AND REASONABLY DRY IN COLOR. STRAW IS TO BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW AND NOT MUSTY, MOULDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY. NOTE: USE ONLY STEERLE STRAW MULCH IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
    - WOOD CELLULOSE FIBER MULCH (WCFM) CONSISTING OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO UNIFORM FIBROUS PHYSICAL STATE.
    - WCFM MUST BE TO BE GIVEN GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORM SPREAD SLURRY.
    - WCFM INCLUDING DYE MUST BE TESTED WITHIN 12 MONTHS OF MANUFACTURE FOR DECOMPOSITION OR GREENING FACTORS.
    - WCFM MATERIALS ARE TO 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 MUST BE BLOTTER-LIKE GROUND COVER. ON APPLICATION, HUMIDITY, MOISTURE ABSORPTION AND PRECIPITATION PROPERTIES MUST COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDLINGS.
    - WCFM MATERIAL MUST NOT CONTAIN ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
    - WCFM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH OF APPROXIMATELY 10 MILLIMETERS, DIAMETER APPROXIMATELY 1 MILLIMETER, PH RANGE OF 4.0 TO 6.5, ASH CONTENT OF 1.8 PERCENT MAXIMUM AND WATER HOLDING CAPACITY OF 50 PERCENT MINIMUM.
  4. APPLICATION
    - APPLY MULCH TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.
    - WHEN STRAW MULCH IS USED, SPREAD IT OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS PER ACRE TO A UNIFORM LOOSE DEPTH OF 1 TO 2 INCHES. APPLY MULCH TO ACHIEVE A UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. WHEN USING A MULCH ANCHORING TOOL, INCREASE THE APPLICATION RATE TO 2.5 TONS PER ACRE.
    - WOOD CELLULOSE FIBER USED AS MULCH MUST BE APPLIED TO A NET DRY WEIGHT OF 1500 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER TO ATTAIN A MIXTURE WITH A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
    - ANCHORING
      - A PERFORM MULCH ANCHORING IMMEDIATELY FOLLOWING APPLICATION OF MULCH TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (USED BY PREFERENCE), DEPENDING UPON THE SIZE OF THE AREA AND EROSION HAZARD:
        - A MULCH ANCHORING TOOL IS A TRACTOR DRAWN IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE TO A DEPTH OF 2 TO 3 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 FOLLOW THE CONTOUR.
        - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 75 POUNDS PER ACRE. MIX THE WOOD CELLULOSE FIBER WITH WATER AT A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
        - SYNTHETIC BINDERS SUCH AS ACRYLIC URE (AGRO-TACK), DCA-70, RETROSET, TERZA TACK E, TERZA TACK OR OTHER APPROVED EQUAL MAY BE USED FOR ANCHORING STRAW. MULCH MATERIAL MUST BE MANUFACTURED. APPLICATION OF LIQUID BINDERS NEEDS TO BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. USE OF ASPHALT BINDERS IS STRICTLY PROHIBITED.
        - LIGHTWEIGHT PLASTIC NETTING MAY BE STAPLED OVER THE MULCH ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. NETTING IS USUALLY AVAILABLE IN ROLLS 4-15 FEET WIDE AND 300 TO 3,000 FEET LONG.

**PERMANENT METHODS**

1. PERMANENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER AND PERMANENT STABILIZATION WITH SOIL EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
2. TOPSOILING - COVERING WITH LOESS EXPOSED SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.
3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

**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 FROM ON AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.

- CRITERIA**
1. MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY. MULCH SHOULD BE COMPACT OR TRACKED TO PREVENT BLOWING.
  2. VEGETATIVE COVER - SEE STANDARDS FOR VEGETATIVE COVER.
  3. TILAGE - TO ROUGHEN SURFACE AND BRING GLOBS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN BLOWING ON WINDWARD SIDE OF THE SITE. CHISEL-TYPE PLOWS SPACED ABOUT 10 FEET, SPRING-TOOTH HARROW 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 THE GROUND THE SITE BE IRIGATED TO THE POINT THAT RUNOFF BEGINS TO FLOW.
  5. BARBERS - SOLID BARRIERS SUCH AS FENCES, BURLAP FENCES, STONY WALL DICES AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARBERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 FEET 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 SOIL EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.  
2. TOPSOILING - COVERING WITH LOESS EXPOSED SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING.  
3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL.

**HOWARD SOIL CONSERVATION DISTRICT (HSCD) STANDARD SEDIMENT CONTROL NOTES**

1. A PRE-CONSTRUCTION MEETING MUST OCCUR WITH THE HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS, CONSTRUCTION INSPECTION DIVISION (CID), 410-313-1895 AFTER THE FUTURE LOD AND PROTECTED AREAS ARE MARKED CLEARLY IN THE FIELD. A MINIMUM OF 48 HOUR NOTICE TO CID MUST BE GIVEN AT THE FOLLOWING STAGES: A. PRIOR TO THE START OF EARTH DISTURBANCE.
2. UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
3. PRIOR TO THE START OF ANOTHER PHASE OF CONSTRUCTION OR OPENING OF ANOTHER GRADING UNIT, D. PRIOR TO THE REMOVAL OR MODIFICATION OF SEDIMENT CONTROL PRACTICES.
4. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE. OTHER RELATED STATE AND FEDERAL PERMITS SHALL BE REFERENCED, TO ENSURE COORDINATION AND TO AVOID CONFLICTS WITH THIS PLAN.
5. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND REVISIONS THEREOF.
6. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION IS REQUIRED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DICES, SHOALS, DITCHES, PERIMETER SLOPES, AND ALL SLOPES STEEPER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) CALENDAR DAYS AS TO ALL OTHER DISTURBED AREAS ON THE PROJECT SITE EXCEPT FOR THOSE AREAS UNDER ACTIVE GRADING.
7. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR TOPSOIL (SEC. B-4-2), PERMANENT SEEDING (SEC. B-4-5), TEMPORARY SEEDING (SEC. B-4-4) AND MULCHING (SEC. B-4-3). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE APPLIED BETWEEN THE FALL AND SPRING SEEDING DATES IF THE GROUND IS FROZEN. IMPROVEMENT STABILIZATION (SEC. B-4-1) SPECIFICATIONS SHALL BE ENFORCED IN AREAS WITH >15' OF CUT AND/OR FILL. STOCKPILES (SEC. B-4-8) IN EXCESS OF 20 FT. MUST BE BENCHED WITH STABLE OUTLET. ALL CONCENTRATED FLOW, STEEP SLOPE, AND HIGHLY ERODIBLE AREAS SHALL RECEIVE SOIL STABILIZATION MATING (SEC. B-4-6).
8. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE, AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE CID.
9. SITE ANALYSIS:
 

16.3 ACRES	AREA DISTURBED:	5.07 ACRES
1.17 ACRES	AREA TO BE ROOFED OR PAVED:	3.90 ACRES
2500 CU. YDS.	AREA TO BE VEGETATIVELY STABILIZED:	0 CU. YDS.
	TOTAL CUT:	
	OFFSITE WASTE/BORROW AREA LOCATION:	
10. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
11. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE CID, THE SITE AND ALL OTHER INSPECTION BY THE CONTRACTOR. THE CONTRACTOR MUST, AND THE NEXT DAY AFTER EACH RAIN EVENT, A WRITTEN REPORT BY THE CONTRACTOR, MADE AVAILABLE UPON REQUEST, IS PART OF EVERY INSPECTION AND SHOULD INCLUDE:
  - INSPECTION DATE
  - INSPECTION TYPE (ROUTINE, PRE-STORM EVENT, DURING RAIN EVENT)
  - NAME AND TITLE OF INSPECTOR
  - WEATHER INFORMATION (CURRENT CONDITIONS AS WELL AS TIME AND AMOUNT OF LAST RECORDED PRECIPITATION)
  - DESCRIPTION OF PROJECT'S STATUS (E.G., PERCENT COMPLETE) AND/OR CURRENT ACTIVITIES
  - EVIDENCE OF SEDIMENT DISCHARGES
  - IDENTIFICATION OF PLAN DEFICIENCIES
  - IDENTIFICATION OF SEDIMENT CONTROL STRUCTURES THAT REQUIRE MAINTENANCE
  - IDENTIFICATION OF MISSING OR IMPROPERLY INSTALLED SEDIMENT CONTROLS
  - COMPLIANCE STATUS REGARDING THE SEQUENCE OF CONSTRUCTION AND STABILIZATION REQUIREMENTS
  - MONITORING/SAMPLING
  - MAINTENANCE AND/OR CORRECTIVE ACTION PERFORMED
12. OTHER INSPECTION BY THE CONTRACTOR MUST BE PERFORMED BY THE GENERAL PERMIT FOR STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES (NPDES, MDE).
13. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH CAN AND SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORKDAY, WHICHEVER IS SHORTER.
14. ANY MAJOR CHANGES OR REVISIONS TO THE PLAN OR SEQUENCE OF CONSTRUCTION MUST BE REVIEWED AND APPROVED BY THE HSCD PRIOR TO PROCEEDING WITH CONSTRUCTION. MINOR REVISIONS MAY ALLOWED BY THE CID PER THE LIST OF HSCD-APPROVED FIELD CHANGES.
15. DISTURBANCE SHALL NOT OCCUR OUTSIDE THE L.O.D. A PROJECT IS TO BE SEQUENCED SO THAT GRADING ACTIVITIES BEGIN ON ONE GRADING UNIT (MAXIMUM ACREAGE OF 20 AC. PER GRADING UNIT) AT A TIME, WORK MAY PROCEED TO A SUBSEQUENT GRADING UNIT WHEN AT LEAST 50 PERCENT OF THE DISTURBED AREA IN THE PRECEDING GRADING UNIT HAS BEEN STABILIZED AND APPROVED BY THE CID, UNLESS OTHERWISE SPECIFIED AND APPROVED BY THE CID, NO MORE THAN 30 ACES CUMULATIVELY MAY BE DISTURBED AT A GIVEN TIME.
16. WASH WATER FROM ANY EQUIPMENT, VEHICLES, WHEELS, PAVEMENT, AND OTHER SOURCES MUST BE TREATED IN A SEDIMENT BASIN OR OTHER APPROVED WASHOUT STRUCTURE.
17. TOPSOIL SHALL BE STOCKPILED AND PRESERVED ON-SITE FOR REDISTRIBUTION ONTO FINAL GRADE.
18. ALL SALT FENCE AND SUPER SALT FENCE SHALL BE PLACED ON THE CONTOUR, AND BE IMBRICATED AT 25' MINIMUM INTERVALS, WITH LOWER ENDS CURBED UPHILL BY 2' IN ELEVATION.
19. STREAM CHANNELS MUST NOT BE DISTURBED DURING THE FOLLOWING RESTRICTED TIME PERIODS (INCLUSIVE):
  - USE I AND II: MARCH 1 - JUNE 15
  - USE III AND III: OCTOBER 1 - APRIL 30
  - USE IV: MARCH 1 - MAY 31
20. A COPY OF THIS PLAN, THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND ASSOCIATED PERMITS SHALL BE ON-SITE AND AVAILABLE WHEN THE SITE IS ACTIVE.

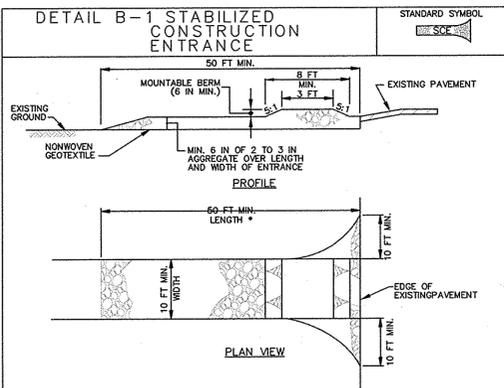
**SEQUENCE OF CONSTRUCTION**

1. OBTAIN GRADING PERMIT. (1 DAY)
2. NOTIFY "MSS UTILITY" AT 48 HOURS BEFORE BEGINNING ANY WORK AT 1-800-257-7777. NOTIFY THE HOWARD COUNTY OFFICE OF CONSTRUCTION INSPECTION AT 410-1330 24 HOURS BEFORE STARTING WORK AND NOTIFY THE BALTIMORE GAS ELECTRIC CO. 410-291-5739 FIVE (5) WORKING DAYS PRIOR TO STARTING WORK.
3. INSTALL ALL TREE PROTECTION FENCE FOR TREES TO BE UNDISTURBED AS INDICATED ON THE PLANS (1 DAY). INSTALL STABILIZED CONSTRUCTION ENTRANCES. (1 DAY)
4. INSTALL SEDIMENT CONTROL MEASURES (SUPER SILT FENCE AND INLET PROTECTIONS, CONTRACTOR TO INSPECT AFTER EVERY RAINFALL, REPAIR OR REPLACE AS NECESSARY IF DAMAGING USER COMPLETION OF PROJECT. (1 WEEK)
5. INSTALL TEMPORARY ACCESS ROADS. (1 WEEK)
6. BEGIN DEMOLITION WORK. SHOWN ON SHEETS 10 AND 11. (3 WEEKS)
7. WITH APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR BEGIN SITE GRADING AND BUILDING CONSTRUCTION. (18 MONTHS)
8. REPLACE STORM DRAIN AND SEWER PIPES FOR QPMANNUAL ADDITIONS. (2 WEEKS)
9. INSTALL STORM DRAIN SYSTEM AND EXCAVATE BHP AREA TO ALLOW POSITIVE DRAINAGE FROM THE STORM DRAINS WITH THE EXCEPTION OF RIPRAP UNDERDRAIN PIPE, PLANTING SOIL AND MULCH IN BHP. (8 WEEKS)
10. REMOVE EXISTING PARKING LOT AND CURBS. (2 WEEKS)
11. INSTALL CURBS AND GUTTER, PAVING AND SIDEWALKS AS SHOWN ON SHEETS 12, 13 AND 14. (6 WEEKS)
12. INSTALL LANDSCAPING AND BACKSTOP. (2 WEEKS)
13. THE CONTRACTOR SHALL NOTIFY MR. GREG CONNOR AT GROUND SERVICES (410-313-2977) ONE WEEK PRIOR TO FINE GRADING ANY AREAS ON THE SCHOOL SITE. FINE GRADE ALL AREAS, INSTALL PERMANENT SEEDING, SOIL AND LANDSCAPING. (2 WEEKS)
14. WHEN DISTURBED AREAS HAVE BEEN STABILIZED (E.G. HAVING FULLY ESTABLISHED 3" GRASS OR PAVEMENT) INSTALL BHP. WORK INCLUDES EXCAVATION, INSTALLING UNDERDRAINS, RIPRAP, PLANTING SOIL, MULCH LAYERS AND PLANTINGS. (3 WEEKS)
15. 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. (1 WEEK)
16. NOTIFY HOWARD COUNTY OFFICE OF INSPECTION AND PERMITS FOR FINAL INSPECTION OF THE COMPLETED PROJECT.
17. SECURE 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 SEDIMENT FROM THE SUPER SILT FENCE WHEN SEDIMENT REACHES 25% OF THE FENCE HEIGHT.
18. CONTRACTOR SHALL MAINTAIN A LOG BOOK, DETAILING RESULTS OF INSPECTIONS AFTER EACH RAIN EVENT OR WEEKLY WHICHEVER OCCURS MOST OFTEN. LOG SHALL DOCUMENT FINDINGS, CORRECTIONS AND DURATION AT A MINIMUM. UPON COMPLETION OF PROJECT OR REMOVAL OF SEDIMENT AND EROSION CONTROLS, CONTRACTOR SHALL PREPARE A PDF OF COMPLETE LOG BOOK AND SUBMIT TO ENGINEER.

NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW NOTES FOR THE BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALDOR NATIONAL PIKE  
ELKTON CITY, MARYLAND 21042  
(410) 461 - 2099

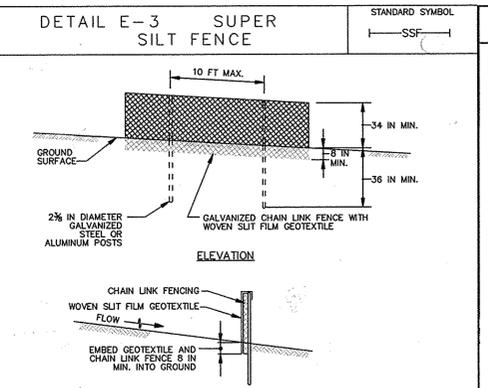
**ENGINE**



**CONSTRUCTION SPECIFICATIONS**

- PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE. MAINTAIN POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
- PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H-1 MATERIALS.
- PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
- MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ON PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

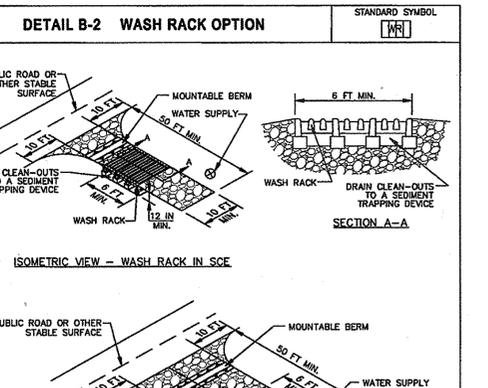
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



**CONSTRUCTION SPECIFICATIONS**

- INSTALL 2 1/2 INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
- FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 1/2 INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 6 INCHES INTO THE GROUND.
- WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
- EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
- PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H-1 MATERIALS.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BUILDS UP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

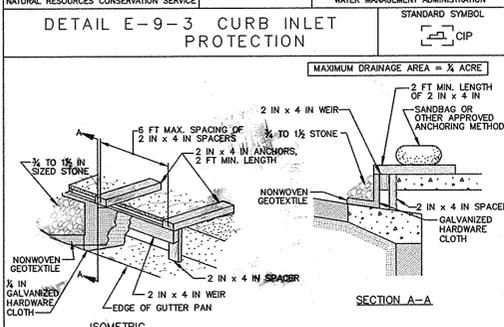
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**CONSTRUCTION SPECIFICATIONS**

- USE A WASH RACK DESIGNED AND CONSTRUCTED/MANUFACTURED FOR THE ANTICIPATED TRAFFIC LOADS. CONCRETE, STEEL, OR OTHER MATERIALS ARE ACCEPTABLE. PRE-FABRICATED UNITS SUCH AS CATTLE GUARDS ARE ACCEPTABLE. USE MINIMUM DIMENSION OF 6 FEET X 10 FEET. ORIENT DIRECTION OF RESS AS SHOWN ON THE DETAIL.
- INSTALL PRIOR TO, ALONG SIDE OF, OR AS PART OF THE SCE.
- DIRECT WASH WATER TO AN APPROVED SEDIMENT TRAPPING DEVICE.
- KEEP AREA UNDER WASH RACK FREE OF ACCUMULATED SEDIMENT. IF DAMAGED, REPAIR OR REPLACE WASH RACK.

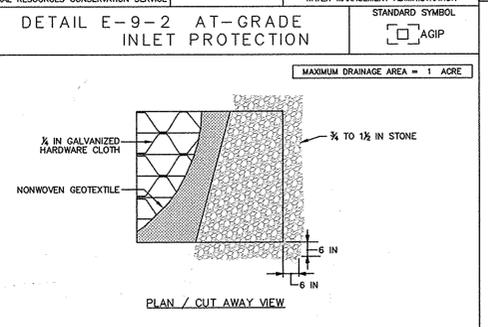
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**CONSTRUCTION SPECIFICATIONS**

- USE NOMINAL 2 INCH X 4 INCH LUMBER
- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
- NAIL THE 2x4 WEIR TO 9 INCH LONG VERTICAL SPACERS (MAXIMUM 6 FEET APART).
- ATTACH A CONTINUOUS PIECE OF 1/2 INCH GALVANIZED HARDWARE CLOTH WITH A MINIMUM WIDTH OF 30 INCHES AND A MINIMUM LENGTH OF 4 FEET LONGER THAN THE THROAT OPENING, TO THE 2x4 WEIR, EXTENDING IT 2 FEET BEYOND THROAT ON EACH SIDE.
- PLACE A CONTINUOUS PIECE OF NONWOVEN GEOTEXTILE OF THE SAME DIMENSIONS AS THE HARDWARE CLOTH OVER THE HARDWARE CLOTH AND SECURELY ATTACH TO THE 2x4 WEIR.
- PLACE THE ASSEMBLY AGAINST THE INLET THROAT AND NAIL TO 2x4 ANCHORS (MINIMUM 2 FEET LENGTH). EXTEND THE ANCHORS ACROSS THE INLET TOP AND HOLD IN PLACE BY SANDBAGS OR OTHER APPROVED ANCHORING METHOD.
- INSTALL END SPACERS A MINIMUM OF 1 FOOT BEYOND THE ENDS OF THE THROAT OPENING.
- FORM THE HARDWARE CLOTH AND THE GEOTEXTILE TO THE CONCRETE GUTTER AND FACE OF CURB TO SPAN THE INLET OPENING. COVER THE HARDWARE CLOTH AND GEOTEXTILE WITH CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE.
- AT NON-SUMP LOCATIONS, INSTALL A TEMPORARY SANDBAG OR ASPHALT BERM TO PREVENT INLET BYPASS.
- STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

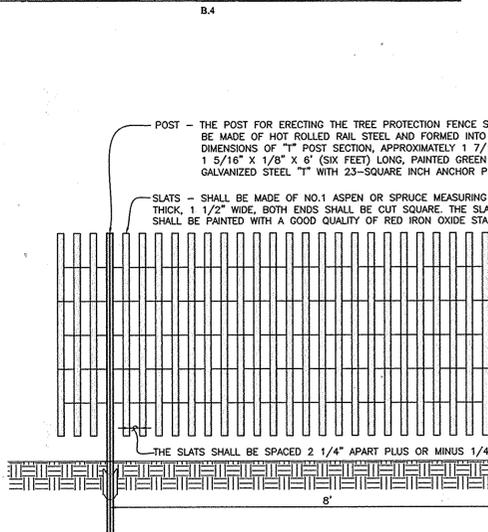
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**CONSTRUCTION SPECIFICATIONS**

- USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS.
- LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
- PLACE CLEAN 3/4 TO 1 1/2 INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
- STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
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**TREE PROTECTION FENCE DETAIL**  
 NOT TO SCALE

POST - THE POST FOR ERECTING THE TREE PROTECTION FENCE SHALL BE MADE OF HOT ROLLED RAIL STEEL AND FORMED INTO A "T" DIMENSIONS OF "T" POST SECTION, APPROXIMATELY 1 7/16" X 1 5/16" X 1/8" X 6" (SIX FEET) LONG, PAINTED GREEN OR GALVANIZED STEEL "T" WITH 23-SQUARE INCH ANCHOR PLATE.

SLATS - SHALL BE MADE OF NO.1 ASPEN OR SPRUCE MEASURING 3/8" THICK, 1 1/2" WIDE, BOTH ENDS SHALL BE CUT SQUARE. THE SLATS SHALL BE PAINTED WITH A GOOD QUALITY OF RED IRON OXIDE STAIN.

TREE PROTECTION FENCING SHALL CONSIST OF WOOD SLATS WOVEN TOGETHER WITH FIVE 2-WIRE STRANDS OF 13 STEEL WIRE GAUGE GALVANIZED WIRE. NOT LESS THAN (2) THREE HUNDRED AND SIXTY (360) DEGREE TWISTS OF THE WIRE IN THE WEAVE BETWEEN THE SLATS.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL  
 U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE 2011 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

**PLANTING NOTES:**

- 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. LANDSCAPING SHALL BE PROVIDED AS SHOWN ON THIS PLAN SHEET. NO SURETY IS REQUIRED SINCE THIS IS A HOWARD COUNTY BOARD OF EDUCATION PROJECT.
- CONTRACTOR SHALL NOTIFY ALL UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK. ALL GENERAL NOTES FROM SHEET 1, SHALL APPLY.
- 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.
- 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 PRECEDENCE.
- 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.
- ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES BUT NOT OTHERWISE PLANTED, PAVED OR MULCHED SHALL BE SEEDED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
- ALL EXPOSED EARTH WITHIN THE LIMITS OF THE PLANTING BEDS SHALL BE MULCHED WITH SHREDDED HARDWOOD MULCH PER PLANTING DETAILS.
- THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING IF SOIL OR DRAINAGE CONDITIONS ARE ENCOUNTERED WHICH MAY BE DETRIMENTAL TO THE GROWTH OF PLANTS.
- NO SUBSTITUTION SHALL BE MADE WITHOUT WRITTEN CONSENT OF THE OWNER OR HIS REPRESENTATIVE.
- REFER TO OTHER SITE DWGS. FOR ADDITIONAL SEEDING REQUIREMENTS.

NOTE: THERE IS NO LANDSCAPING SURETY FOR THE LANDSCAPE PLAN.  
 NOTE: TREE AND SHRUB TYPES ARE ONLY AN RECOMMENDATION, THESE MAY BE REVISED TO A COUNTY APPROVED EQUIVALENT FROM THE HOWARD COUNTY LANDSCAPE MANUAL. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL.

"AT THE TIME OF PLANT INSTALLATION, ALL TREES LISTED AND APPROVED ON THE LANDSCAPE PLAN, SHALL COMPLY WITH THE PROPER HEIGHT REQUIREMENT IN ACCORDANCE WITH THE HOWARD COUNTY LANDSCAPE MANUAL. IN ADDITION, NO SUBSTITUTIONS OR RELOCATIONS OF THE REQUIRED PLANTINGS MAY BE MADE WITHOUT PRIOR REVIEW AND APPROVAL FROM THE DEPARTMENT OF PLANNING AND ZONING. ANY DEVIATIONS FROM THE APPROVED LANDSCAPE PLAN MAY RESULT IN DENIAL OR DELAY IN THE RELEASE OF LANDSCAPE SURETY UNTIL SUCH TIME AS ALL REQUIRED MATERIALS ARE PLANTED AND/OR REVISIONS ARE MADE TO THE ROAD DRAWING PLANS".  
 "THE OWNER, TENANTS AND/OR THEIR AGENTS SHALL BE RESPONSIBLE FOR MAINTENANCE OF THE REQUIRED PERIMETER LANDSCAPING. ALL PLANT MATERIALS SHALL BE MAINTAINED IN GOOD GROWING CONDITION, AND WHEN NECESSARY, REPLACED WITH NEW MATERIALS TO ENSURE CONTINUED COMPLIANCE WITH APPLICABLE REGULATIONS. ALL THE OTHER REQUIRED LANDSCAPING SHALL BE PERMANENTLY MAINTAINED IN GOOD CONDITION, AND WHEN NECESSARY, REPAIRED OR REPLACED".

**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 FORCED 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.

BID SHALL BE BASE ON ACTUAL SITE CONDITIONS. NO EXTRA PAYMENT SHALL BE MADE FOR WORK ARISING FROM SITE CONDITIONS DIFFERING FROM THOSE INDICATED ON DRAWINGS AND SPECIFICATIONS.

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.

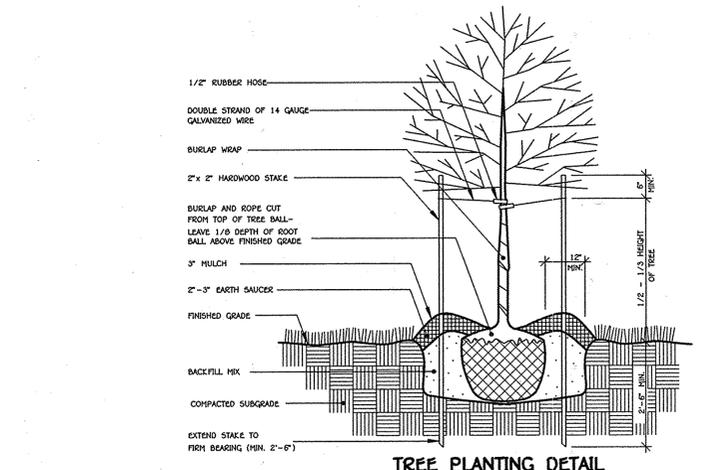
POSITIVE DRAINAGE SHALL BE MAINTAINED IN PLANTING BEDS 2 PERCENT SLOPE.

PLANTING MIX SHALL BE AS FOLLOWS: DECIDUOUS PLANTS - TWO PARTS TOPSOIL, ONE PART WELL-ROTTED COW OR HORSE MANURE, ADD 3 LBS. OF STANDARD FERTILIZER PER CUBIC YARD OF PLANTING MIX. EVERGREEN PLANTS - TWO PARTS TOPSOIL, ONE PART HUMUS OR OTHER APPROVED ORGANIC MATERIAL, ADD 3 LBS. OF EVERGREEN (ACIDIC) FERTILIZER PER CUBIC YARD OF PLANTING MIX. TOPSOIL SHALL CONFORM TO THE LANDSCAPE GUIDELINES.

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.

QTY.	KEY	BOTANICAL NAME COMMON NAME	SIZE	CONT.	REMARKS
<b>TREES - DECIDUOUS SHADE</b>					
4	QR	Quercus rubra Red Oak	2-1/2" - 3" cal.	B & B	



**TREE PLANTING DETAIL**

NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW DETAILS FOR THE BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10772 MALTBY NATIONAL PIKE  
 ELIXOTT CITY, MARYLAND 21042  
 (410) 461-2999

**ENGINEER'S CERTIFICATE**  
 "I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

Signature: Charles J. Rovov, Sr., P.E.  
 Date: 2/25/16

**DEVELOPER'S CERTIFICATE**  
 "I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."

Signature: Scott W. Dwyer  
 Date: 2/25/16

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."

Signature: Charles J. Rovov, Sr., P.E.  
 Date: 2/25/16

Signature: John W. Dwyer  
 Date: 2/25/16

HOWARD SOIL CONSERVATION DISTRICT

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 9045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805

DATE: 4-25-16  
 REVISION BLOCK: 4-25-16  
 4-7-16

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Director - Department of Planning and Zoning  
 Chief, Division of Land Development  
 Chief, Development Engineering Division

STATE OF MARYLAND  
 PROFESSIONAL ENGINEER  
 License No. 13204

ADDRESS CHART

LOT/PARCEL#	STREET ADDRESS
LOT 78	10220 WETHERBURN ROAD ELLICOTT CITY, MARYLAND 21042

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.
WETHERBURN	N/A	P. 712
PLAT# OR L/F	GRID#	ZONING
8661-8667	7	R-20
TAX MAP#	N/ELECT. DISTR.	CENSUS TRACT
17	SECOND	6030

**SEDIMENT AND EROSION CONTROL DETAILS, & LANDSCAPE NOTES AND DETAILS**

**"REVISED SITE DEVELOPMENT PLAN" WAVERLY ELEMENTARY SCHOOL WETHERBURN OPEN SPACE LOT 78**

ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: FEBRUARY 22, 2016

SHEET 25 OF 36



LEGEND	
SYMBOL	DESCRIPTION
---512---	EXISTING CONTOUR 2' INTERVAL
---510---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING GAS LINE
---	EXISTING UNDERGROUND CABLE LINE
X	EXISTING FENCE
---512---	PROPOSED CONTOUR 2' INTERVAL
---510---	PROPOSED CONTOUR 10' INTERVAL
+511.30	SPOT ELEVATION
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
⊙	EXISTING TREES
⊙	EXISTING TREELINE
---	PROPOSED STORMDRAIN
---	PROPOSED GRASS PAVERS
---	LIMIT OF DISTURBANCE
---	SUPER SILT FENCE
---	TREE PROTECTION
---	DRAINAGE AREA

NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW DRAINAGE AREAS TO THE SEDIMENT AND EROSION CONTROL IN AREAS AFFECTED BY BUILDING ADDITIONS, UTILITIES AND OTHER IMPROVEMENTS.

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2295

**ENGINEER'S CERTIFICATE**  
 "I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE CURRENT MARYLAND EROSION AND SEDIMENT CONTROL LAWS, REGULATIONS, AND STANDARDS REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THIS SITE, AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."  
 Signature: Charles J. Krovo, Sr., P.E.  
 Date: 2/25/16

**DEVELOPER'S CERTIFICATE**  
 "I/WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, INCLUDING INSPECTING AND MAINTAINING CONTROLS, AND THAT THE RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF TRAINING AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL ON EROSION AND SEDIMENT PRIOR TO BEGINNING THE PROJECT. I CERTIFY RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY HOWARD COUNTY, THE HOWARD SOIL CONSERVATION DISTRICT AND/OR MDE."  
 Signature: John R. Pelotas  
 Date: 2/25/16

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
 Signature: Charles J. Krovo, Sr., P.E.  
 Date: 2/25/16

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 Signature: John R. Pelotas  
 Date: 2/26/16

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Director - Department of Planning and Zoning  
 Chief, Division of Land Development  
 Date: 4-25-16  
 Date: 4-25-16  
 Date: 4-7-16

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
LOT 78	10220 WETHERBURN ROAD ELICOTT CITY, MARYLAND 21042

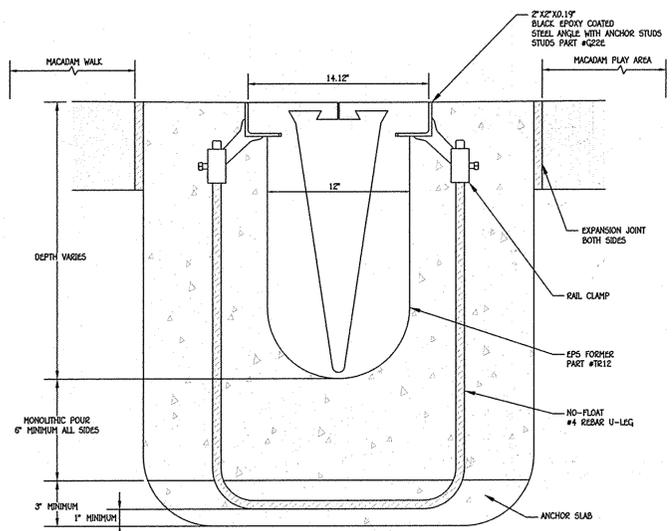
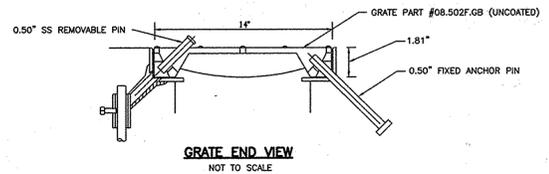
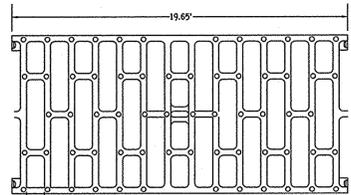
PERMIT INFORMATION CHART			
SUBMISSION NAME	SECTION/AREA	LOT/PARCEL NO.	
WETHERBURN	N/A	P. 712	
PLAT# OR L/F	GRID#	ZONING	TAX MAP#
0661-2667	7	R-20	17
ELECT. DISTR.	CENSUS TRACT		
SECOND	6030		

**SEDIMENT AND EROSION CONTROL PLAN  
 DRAINAGE AREA MAP**

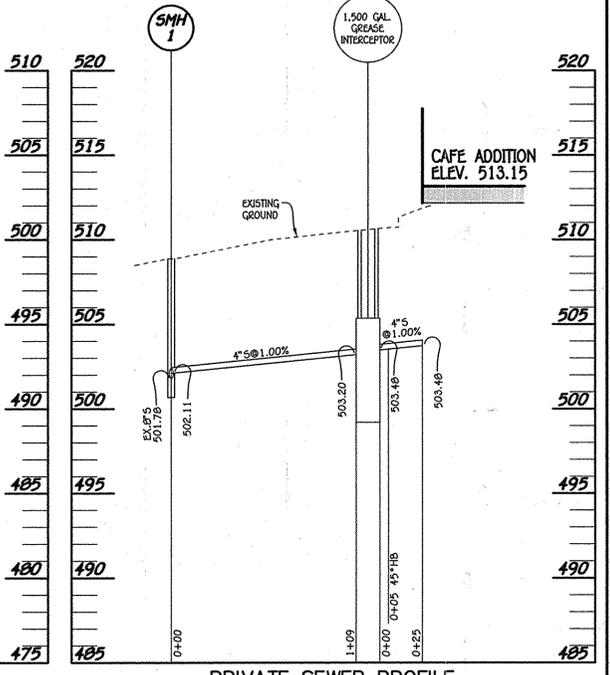
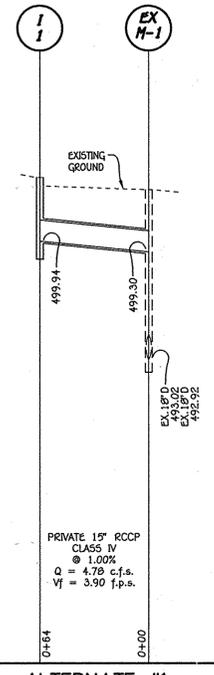
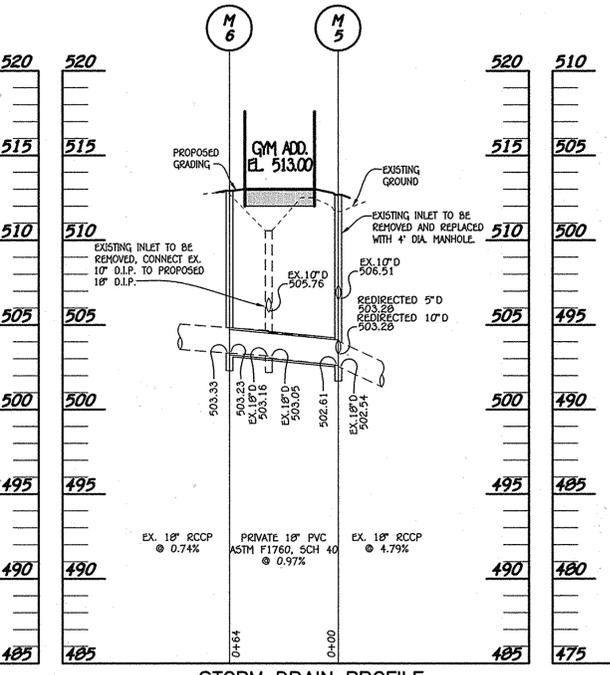
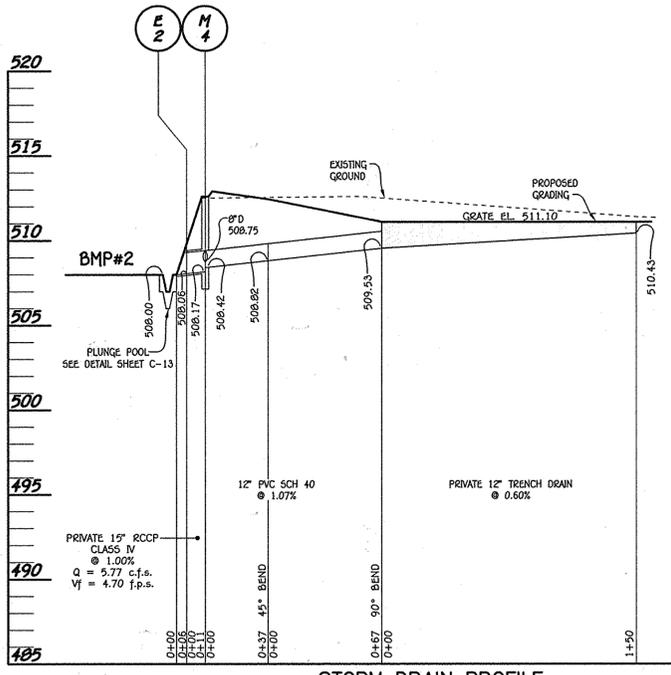
**"REVISED SITE DEVELOPMENT PLAN"  
 WAVERLY ELEMENTARY SCHOOL  
 WETHERBURN  
 OPEN SPACE LOT 78**

ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL 712  
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 50' DATE: FEBRUARY 22, 2016

SHEET 26 OF 36



- TRENCH DRAIN PARTS AND DETAILS SHALL CONFORM TO ABT, INC. PRODUCTS.
- GRATING - TR08.B-08.502F.GB-G22E GRATES SHALL COMPLY WITH ALL THE REQUIREMENTS OF AASHTO M306.
- FORMS - TR08.B FORMWORK ASSEMBLY MUST BE PREVENTED FROM FLOATING DURING CONCRETE PLACEMENT WITHOUT PENETRATING THE SUB GRADE. FORMWORK TO BE ANCHORED TO THE EARTH USING STEEL NO-FLOAT LEGS AND AN ANCHOR SLAB POUR. THE WIRES THAT ASSURE CONSTANT FRAME SPACING AND GRATE SEAT DIMENSION TO BE PROVIDED.
- BLACK EPOXY COATED 2.0' x 2.0' x 0.19\"/>

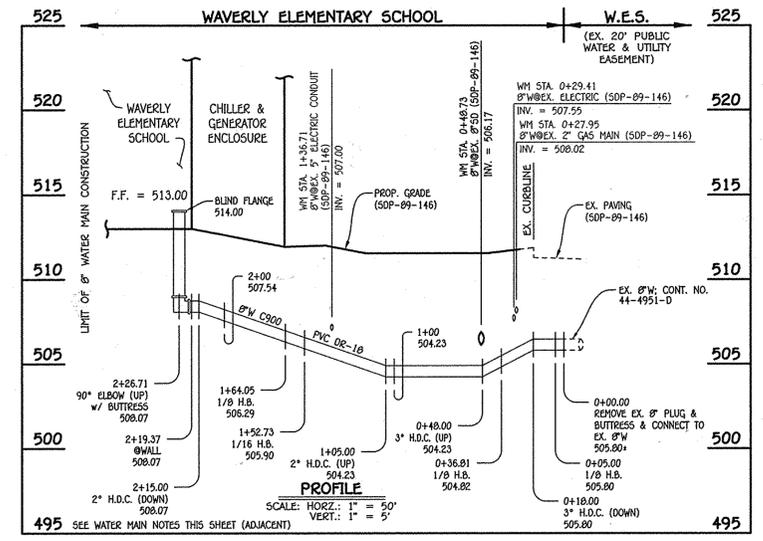
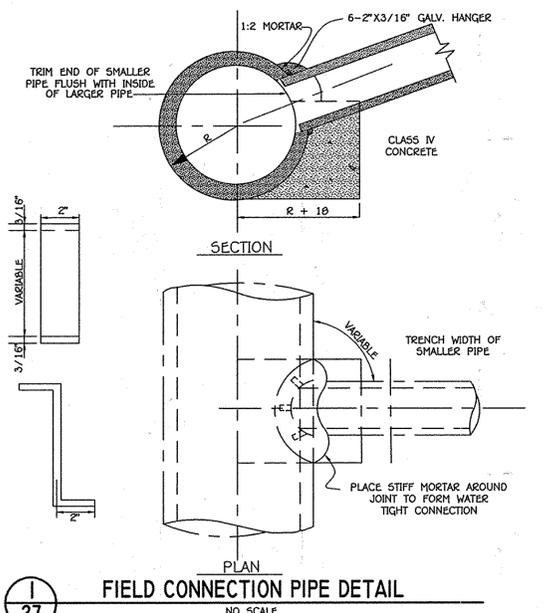


STRUCTURE SCHEDULE									
STRUCTURE NO.	OWNERSHIP AND MAINTENANCE	TOP ELEVATION	INV. IN	INV. OUT	COORDINATES	WIDTH	TYPE	REMARKS	
I-1	PRIVATE	503.69	-	499.94 (15')	N 535571.23 E 835895.40	2.50'	A-5 INLET	D-4.01	
M-1	PRIVATE	505.70	501.85 (15')	501.75 (15')	N 535994.81 E 837275.99	4'	STD. MANHOLE	G - 5.12	
M-2	PRIVATE	514.32	504.84 (15')	504.74 (15')	N 536241.64 E 837194.96	4'	STD. MANHOLE	G - 5.12	
M-3	PRIVATE	509.44	503.70 (15')	503.60 (15')	N 535761.74 E 836756.45	4'	STD. MANHOLE	G - 5.12	
M-4	PRIVATE	512.80	508.42 (12')	508.75 (8')	N 535834.61 E 836745.80	4'	STD. MANHOLE	G - 5.12	
M-5	PRIVATE	512.63	502.51(10'),506.51(10'),503.28(10'),503.28(5')	502.54 (10')	N 535770.23 E 836518.93	4'	STD. MANHOLE	G - 5.12	
M-6	PRIVATE	512.89	503.33 (10')	503.23 (10')	N 535833.05 E 836518.54	4'	STD. MANHOLE	G - 5.12	
R-1	PRIVATE	511.00***	505.50 (8')	505.50 (8')	N 536229.89 E 837145.49	3'	MOD. K INLET	SEE SHEET 31	
R-2	PRIVATE	510.00***	504.50 (8')	504.50 (8')	N 535795.12 E 836756.06	3'	MOD. K INLET	SEE SHEET 31	
OD-1	PRIVATE	509.75	505.00 (8')	505.00 (8')	N 536273.17 E 837123.19	6"	8" STANDPIPE	SEE SHEET 31	
OD-2	PRIVATE	508.75	504.00 (8')	504.00 (8')	N 535769.17 E 836712.13	6"	8" STANDPIPE	SEE SHEET 31	
E-1	PRIVATE	509.67	509.00 (8')	-	N 536201.58 E 837149.65	8"	-	MITER END OF PIPE @3:1	
E-2	PRIVATE	509.25	508.00 (15')	-	N 535824.10 E 836746.08	15'	CONC. END SECTION	D - 5.51	

PIPE SCHEDULE (PRIVATE)		
SIZE	CLASS	LENGTH
6"	PERF PVC	673 L.F.
8"	PVC SCH 40	471 L.F.
12"	PVC SCH 40	93 L.F.
15"	RCCP, CLASS IV	604 L.F.
18"	PVC, ASTM F1760	64 L.F.

MANHOLE TABULATION CHART			
NO.	NORTHING	EASTING	RIM ELEVATION
SMH - 1	535632.48	837084.57	508.88
@SCHOOL WALL	535737.66	837181.36	---

NOTE: SET MH RIMS & CLEAN-OUTS FLUSH W/ EXISTING GRADE.



**8" WATER MAIN: WAVERLY ELEMENTARY SCHOOL (CHILLER & GENERATOR ENCLOSURE)**

WATER MAIN TABULATION CHART			
W.M. STA.	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN: WAVERLY ELEMENTARY SCHOOL (CHILLER & GENERATOR ENCLOSURE)			
0+00.00	EX. 8" PLUG & BUTTRESS	596565.82	1349695.14
0+05.00	1/8" H.B.	596570.14	1349692.62
0+36.81	1/8" H.B.	596600.36	1349702.54
1+52.73	1/16" H.B.	596705.67	1349654.06
1+64.05	1/8" H.B.	596713.32	1349645.72
2+19.37	@WALL	596712.74	1349590.40

- WATER MAIN NOTES:**
- ALL WATER MAINS SHALL BE AWWA C900 PVC PIPE: DE-18.
  - ALL PIPE BEDDING, TRACER WIRE, LOCATING TAPE AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV - WATER AND SEWER STANDARDS FOR AWWA C900 PVC WATER PIPE INSTALLATION.
  - DEFLECTION COUPLINGS SHALL BE CERTAIN-TIED PVC HIGH DEFLECTION COUPLINGS.
  - ALL WATER HOUSE CONNECTIONS AND TAPS SHALL BE PERFORMED USING A SADDLE.

"PROFESSIONAL CERTIFICATION, I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."

*Charles J. Crovo, Sr., P.E.*  
CHARLES J. CROVO, SR., P.E.  
DATE: 3/23/16

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Walter J. Taylor*  
Director - Department of Planning and Zoning  
DATE: 4-25-16

*Kurt S. ...*  
Chief, Division of Land Development  
DATE: 4-25-16

*...*  
Chief, Development Engineering Division  
DATE: 4-7-16

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
LOT 78	10220 WETHERBURN ROAD ELLCOTT CITY, MARYLAND 21042

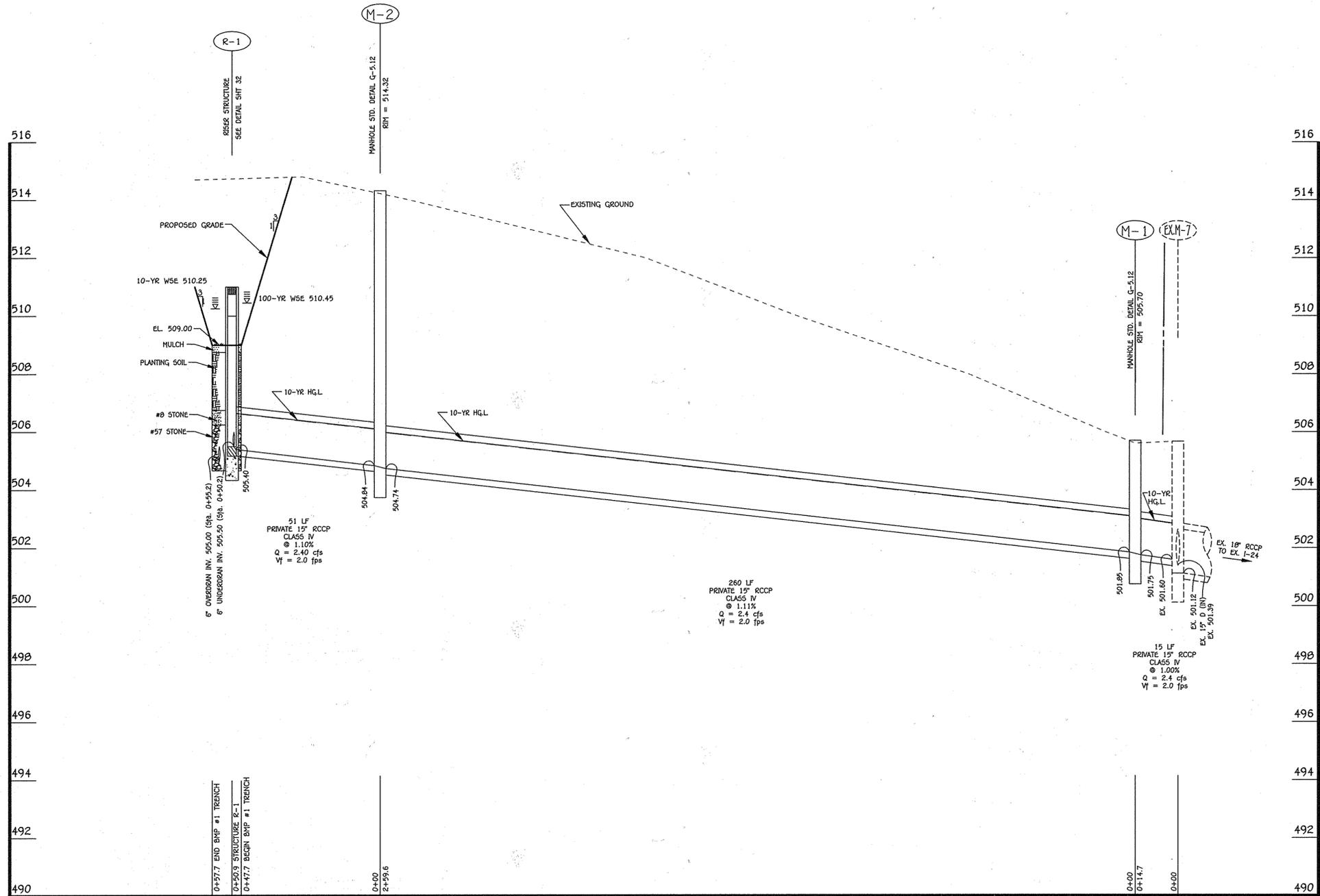
PERMIT INFORMATION CHART			
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	
WETHERBURN	N/A	P. 712	
PLAT# OR L/F	GRID#	ZONING	TAX MAP#
8661-8667	7	R-20	17
22762			

**STORM DRAIN PROFILES, DETAILS AND STRUCTURE SCHEDULE**

**"REVISED SITE DEVELOPMENT PLAN" WAVERLY ELEMENTARY SCHOOL WETHERBURN OPEN SPACE LOT 78**

ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 23, 2016

SHEET 27 OF 36



**BMP #1 STORM DRAIN OUTFALL PROFILE**  
 SCALE:  
 HORZ: 1" = 20'  
 VERT: 1" = 2'

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*Charles J. Crovo, Sr.*  
 CHARLES J. CROVO, SR., P.E.

3/23/16  
 DATE

DATE	DESCRIPTION	REVISION BLOCK

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Valerie Taylor* 4-25-16  
 Director - Department of Planning and Zoning Date

*Keith Schuch* 4-25-16  
 Chief, Division of Land Development Date

*Chris...* 4-7-16  
 Chief, Development Engineering Division Date

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6605



ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
LOT 78	10220 WETHERBURN ROAD				
	ELLCOTT CITY, MARYLAND 21042				

PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
WETHERBURN	N/A	P. 712			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
8661-8667 2878C	7	R-20	17	SECOND	6030

**STORMWATER MANAGEMENT FACILITY PROFILE**

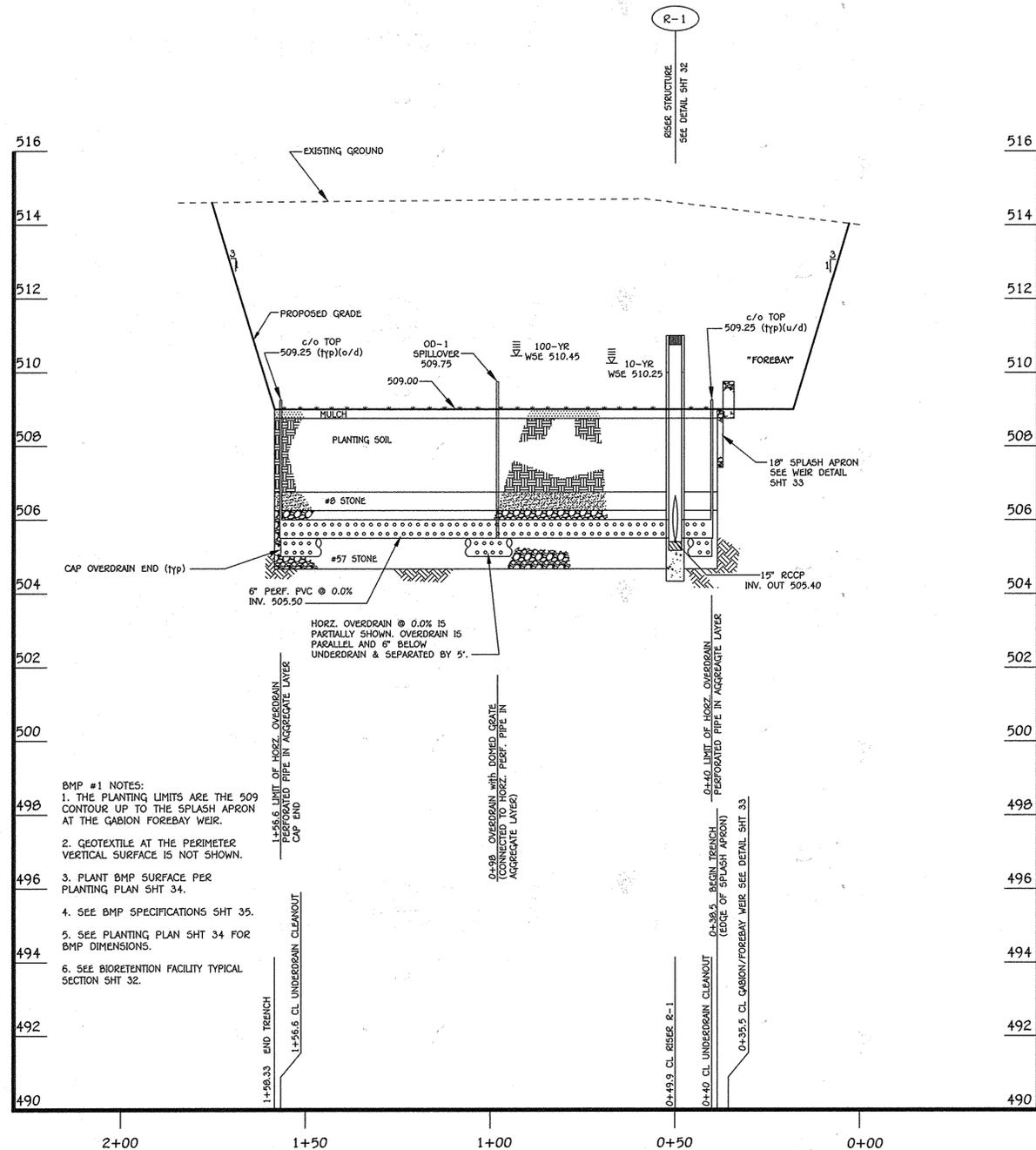
**"REVISED SITE DEVELOPMENT PLAN"**  
**WAVERLY ELEMENTARY SCHOOL**  
**WETHERBURN**  
**OPEN SPACE LOT 78**

ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MARCH 23, 2016

SHEET 28 OF 36

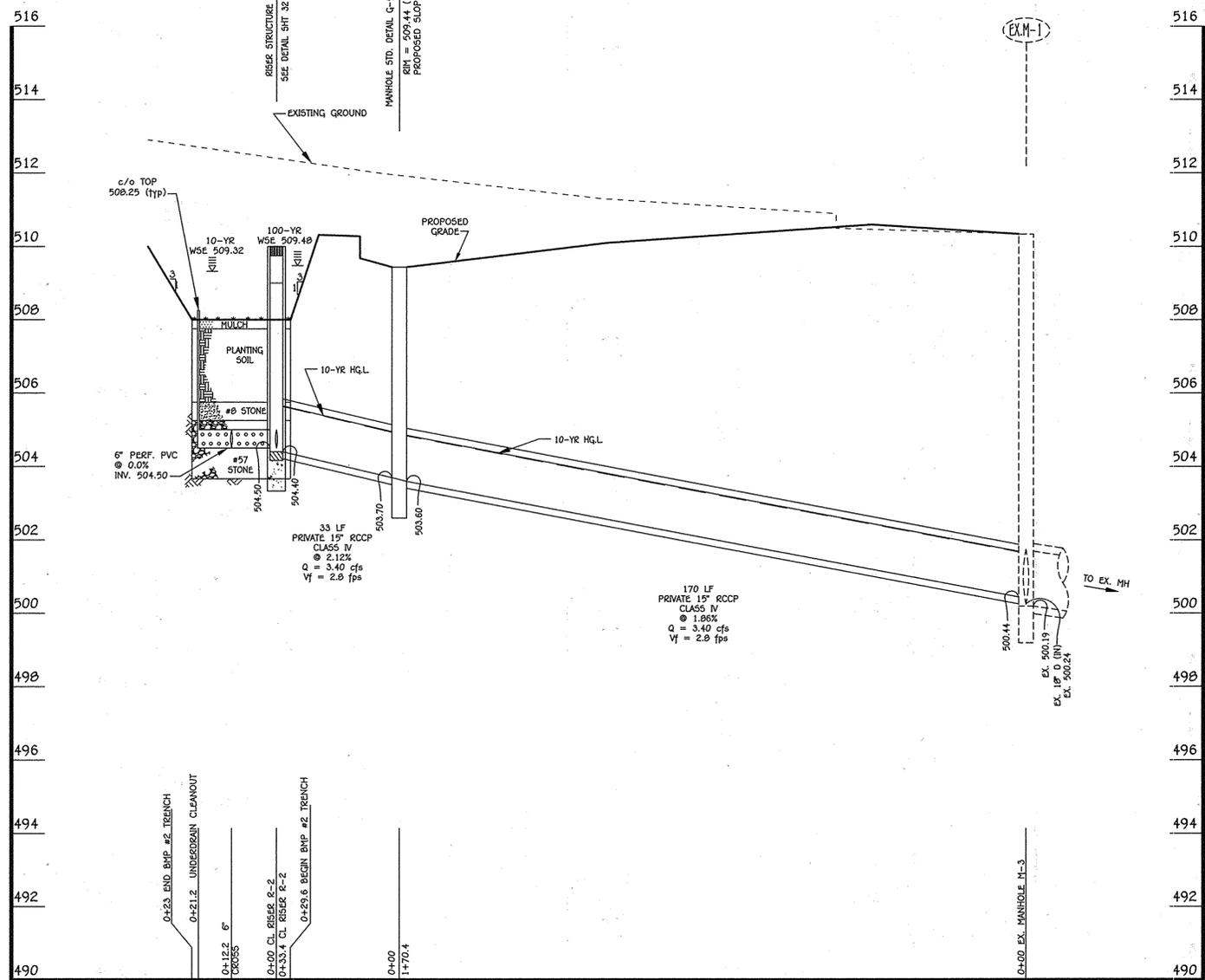
**FISHER, COLLINS & CARTER, INC.**  
 CIVIL, ENGINEERING, CONSULTANTS & LAND SURVEYORS

CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLCOTT CITY, MARYLAND 21042  
 (410) 461-2995



**BMP #1 UNDERDRAIN PROFILE**

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



**BMP #2 UNDERDRAIN & STORMDRAIN OUTFALL PROFILE**

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

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2099

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*Charles J. Grovo, Sr.*  
 CHARLES J. GROVO, SR., P.E.  
 DATE: 3/23/16

DATE	DESCRIPTION
	REVISION BLOCK
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Walter J. Taylor</i>	4-25-16
Director, Department of Planning and Zoning	Date
<i>Walter J. Taylor</i>	4-25-16
Chief, Division of Land Development	Date
<i>Walter J. Taylor</i>	4-7-16
Chief, Development Engineering Division	Date

PREPARED FOR:  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 8045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805



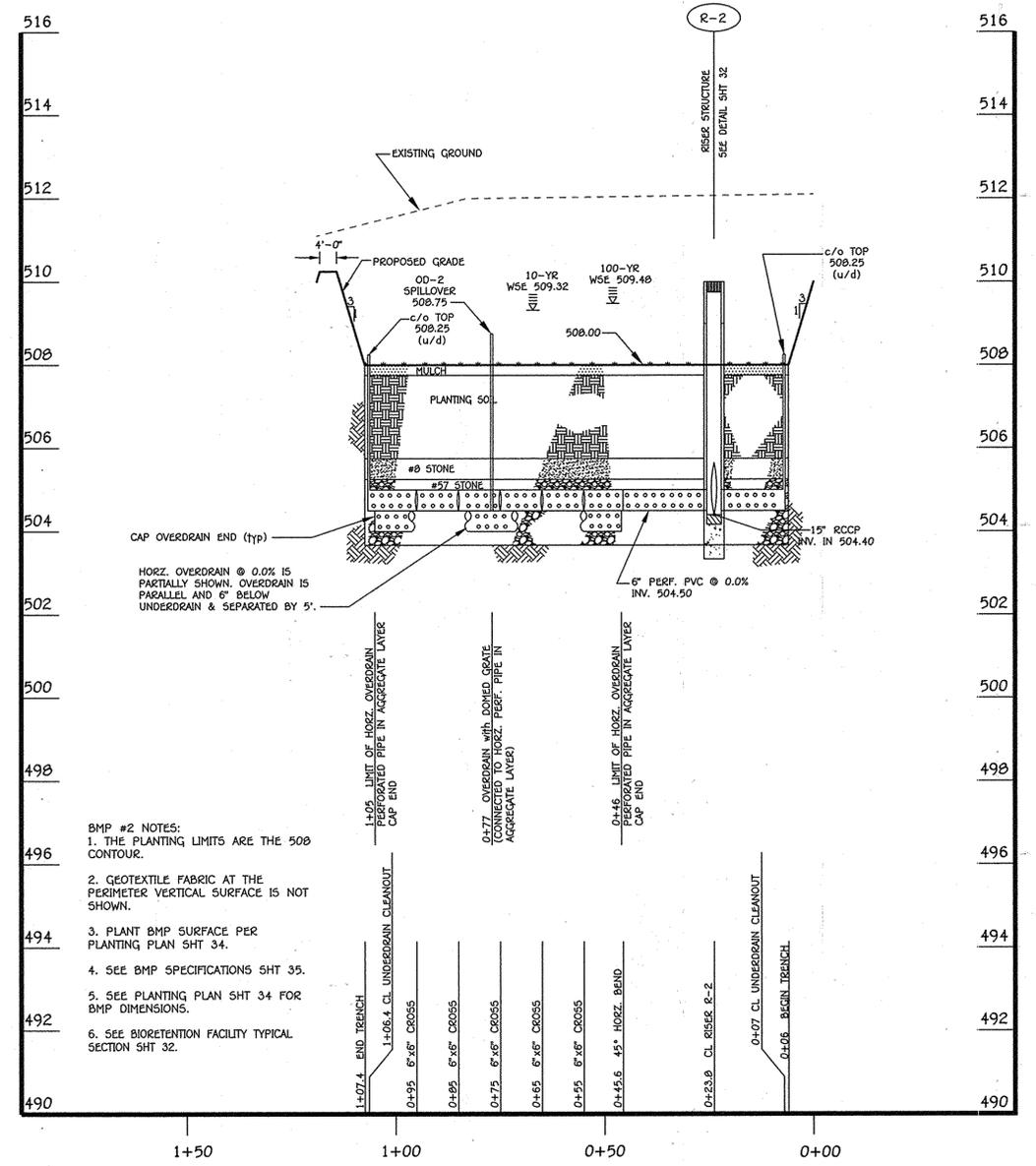
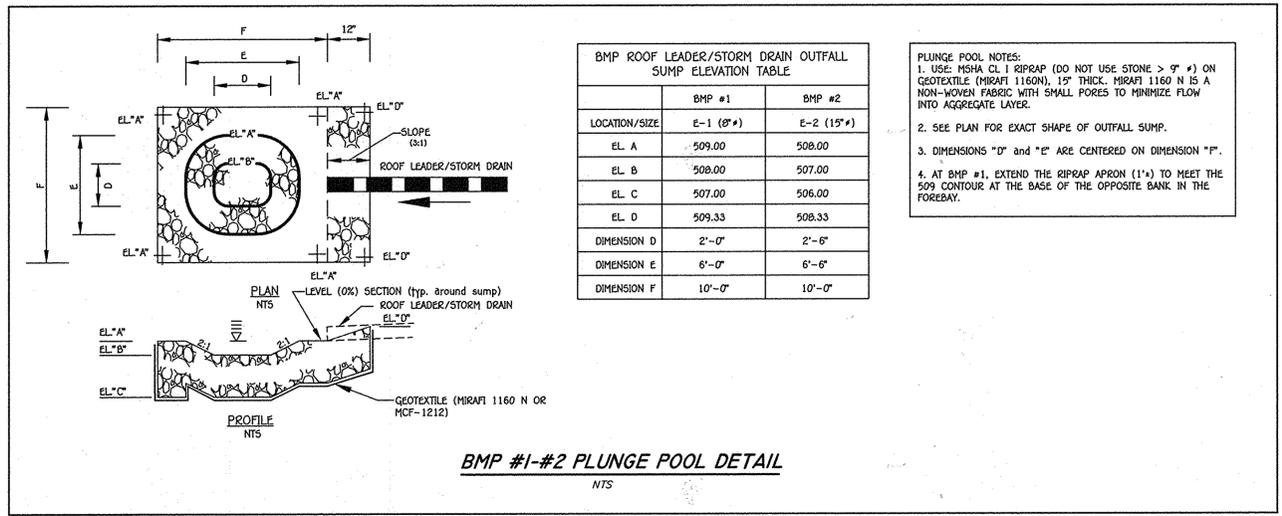
ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
LOT 7B	10220 WETHERBURN ROAD ELICOTT CITY, MARYLAND 21042				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
WETHERBURN	N/A	P. 712			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
8661-8667	7	R-20	17	SECOND	6030

**STORMWATER MANAGEMENT FACILITY PROFILES**

**"REVISED SITE DEVELOPMENT PLAN" WAVERLY ELEMENTARY SCHOOL WETHERBURN OPEN SPACE LOT 7B**

ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MARCH 23, 2016

SHEET 29 OF 36



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2895

"PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016."  
 CHARLES J. GROVO, SR., P.E.  
 DATE: 3/23/16

DATE	DESCRIPTION
	REVISION BLOCK
4-25-16	APPROVED: DEPARTMENT OF PLANNING AND ZONING Director - Department of Planning and Zoning
4-25-16	Chief, Division of Land Development
4-7-16	Chief, Development Engineering Division

PREPARED FOR:  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 HARRIET TUBMAN BUILDING  
 2045 HARRIET TUBMAN LANE  
 COLUMBIA, MARYLAND 21044  
 Attention: SCOTT WASHINGTON  
 410-313-6805

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
LOT 78	10220 WETHERBURN ROAD ELICOTT CITY, MARYLAND 21042

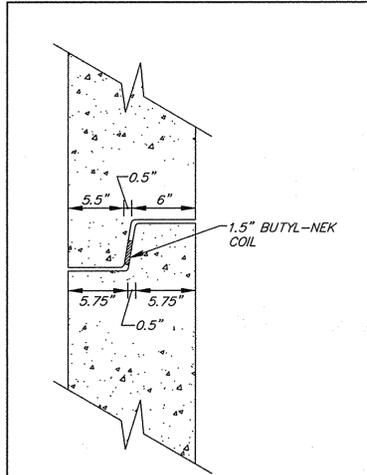
  

PERMIT INFORMATION CHART				
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.		
WETHERBURN	N/A	P. 712		
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.
8661-8667	7	R-20	17	SECOND
				CENSUS TRACT
				6030

**STORMWATER MANAGEMENT FACILITY PROFILE AND DETAIL**  
**"REVISED SITE DEVELOPMENT PLAN"**  
**WAVERLY ELEMENTARY SCHOOL**  
**WETHERBURN**  
**OPEN SPACE LOT 78**

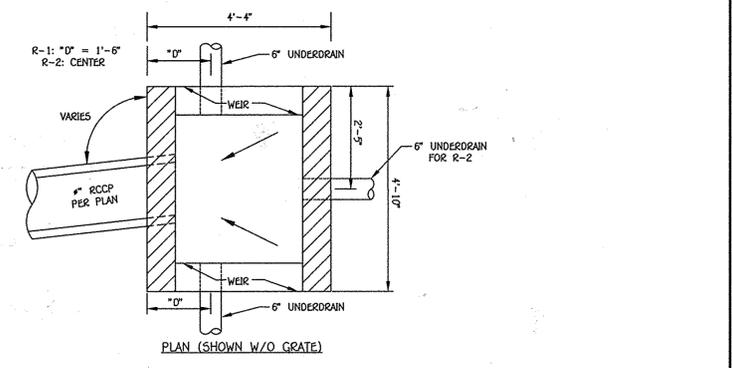
ZONED R-20, TAX MAP No.: 17, GRID No.: 7, - PARCEL: 712  
 SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MARCH 23, 2016

SHEET 30 OF 36

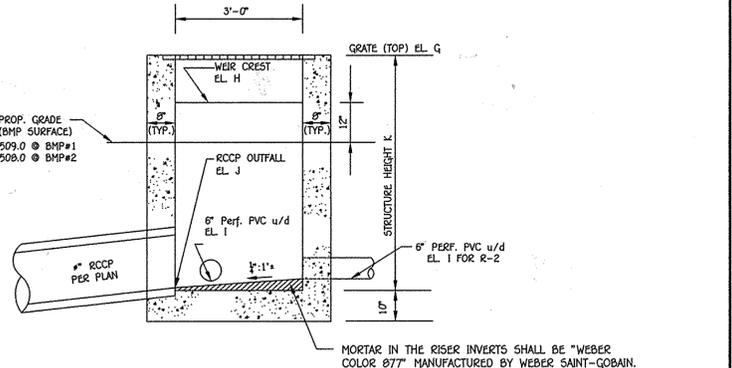


**RISER JOINT DETAIL**  
NTS

- NOTES:
1. Riser joints shall join evenly and be watertight. Parge joints after installation.
  2. The referenced joint and joint sealant material is used by Frederick Precast, Inc. Similar joints may be used with shop drawing approval by the engineer.



PLAN (SHOWN W/O GRATE)

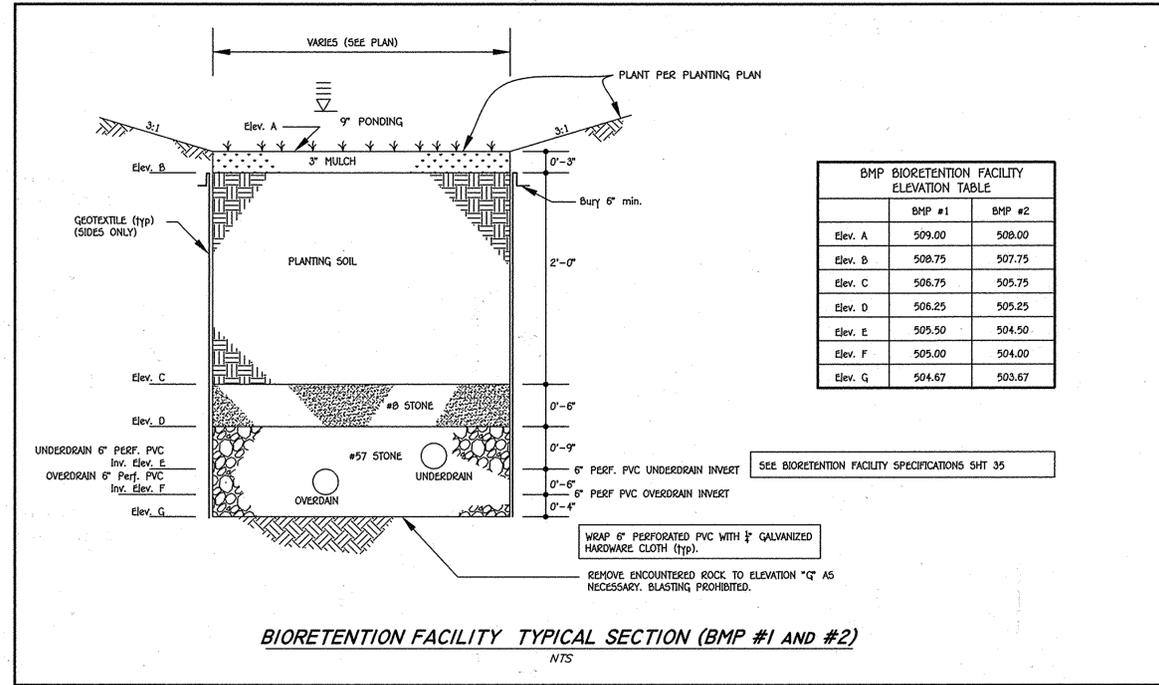


ELEVATION

- NOTES:
1. SEE MSHA STD. DETAIL MD-378.11 FOR DETAILS NOT SHOWN ABOVE.
  2. USE DOUBLE OPENING WITH NO CONCRETE GUTTER APPROACHES.
  3. SLOPE RISER INVERT 1/2":1" TOWARD RCCP OUTFALL.

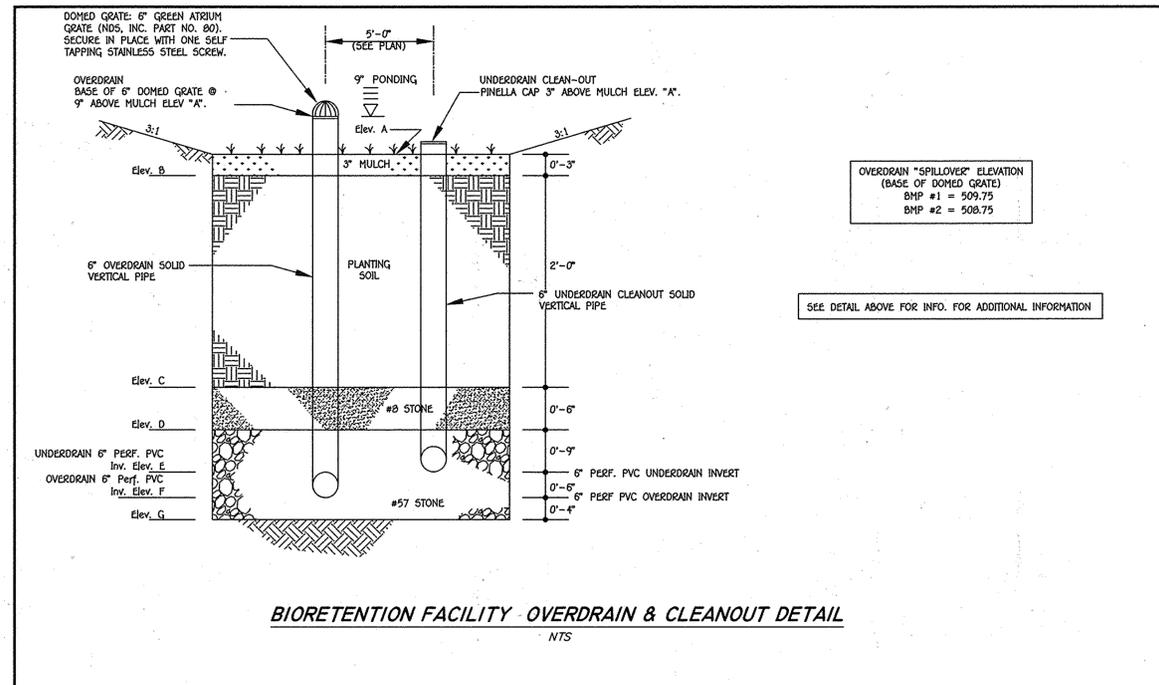
	R-1 (BMP#1)	R-2 (BMP #2)	
ELEV. G	511.00	510.00	Top of Grate
ELEV. H	510.00	509.00	Weir Crest
ELEV. I	505.50	504.50	Inv. 6" Perfor. u/d
ELEV. J	505.40	504.40	RCCP Invert Out
ELEV. K	5'-10"	5'-10"	Structure Height

**MODIFIED K-INLET TYPICAL SECTION FOR STRUCTURES R-1 AND R-2**  
NTS



	BMP #1	BMP #2
Elev. A	509.00	508.00
Elev. B	508.75	507.75
Elev. C	506.75	505.75
Elev. D	506.25	505.25
Elev. E	505.50	504.50
Elev. F	505.00	504.00
Elev. G	504.67	503.67

**BIORETENTION FACILITY TYPICAL SECTION (BMP #1 AND #2)**  
NTS



BMP #1	509.75
BMP #2	508.75

**BIORETENTION FACILITY OVERDRAIN & CLEANOUT DETAIL**  
NTS

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FREE  
ELLCOTT CITY, MARYLAND 21042  
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*Charles Crovo*  
CHARLES CROVO, SR., P.E.  
3/23/16  
DATE

DATE	DESCRIPTION
	REVISION BLOCK
4-25-16	DATE
4-25-16	DATE
4-7-16	DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Director - Department of Planning and Zoning  
Chief, Division of Land Development  
Chief, Development Engineering Division

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
2045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention SCOTT WASHINGTON  
410-313-6805



ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
LOT 78	10220 WETHERBURN ROAD ELLCOTT CITY, MARYLAND 21042

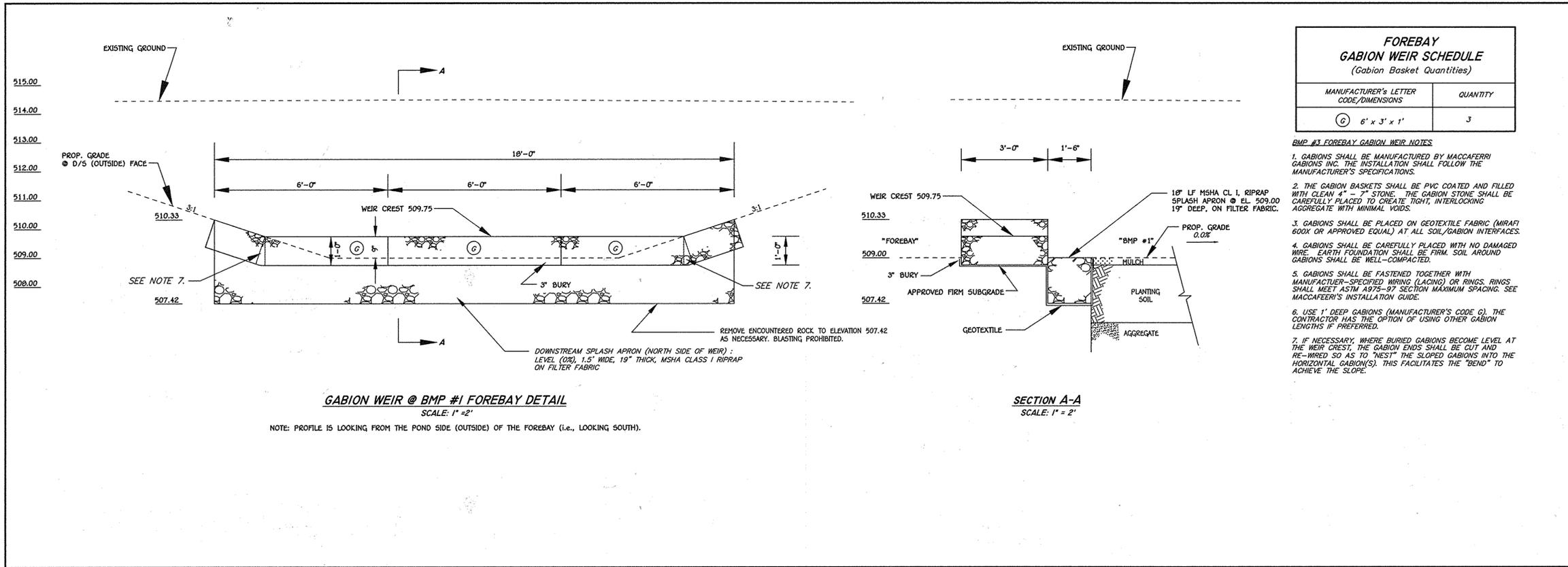
PERMIT INFORMATION CHART				
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.		
WETHERBURN	N/A	P. 712		
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.
0661-0667	7	R-20	17	SECOND
				CENSUS TRACT
				6030

**STORMWATER MANAGEMENT FACILITY DETAILS**

"REVISED SITE DEVELOPMENT PLAN"  
WAVERLY ELEMENTARY SCHOOL  
WETHERBURN  
OPEN SPACE LOT 78

ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 23, 2016

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FOREBAY GABION WEIR SCHEDULE (Gabion Basket Quantities)	
MANUFACTURER'S LETTER CODE/DIMENSIONS	QUANTITY
ⓐ 6' x 3' x 1'	3

- BMP #3 FOREBAY GABION WEIR NOTES:**
- GABIONS SHALL BE MANUFACTURED BY MACCAFERRI GABIONS INC. THE INSTALLATION SHALL FOLLOW THE MANUFACTURER'S SPECIFICATIONS.
  - THE GABION BASKETS SHALL BE PVC COATED AND FILLED WITH CLEAN 4" - 7" STONE. THE GABION STONE SHALL BE CAREFULLY PLACED TO CREATE TIGHT, INTERLOCKING AGGREGATE WITH MINIMAL VOIDS.
  - GABIONS SHALL BE PLACED ON GEOTEXTILE FABRIC (MIRAFI 600X OR APPROVED EQUAL) AT ALL SOIL/GABION INTERFACES.
  - GABIONS SHALL BE CAREFULLY PLACED WITH NO DAMAGED WIRE. EARTH FOUNDATION SHALL BE FIRM. SOIL AROUND GABIONS SHALL BE WELL-COMPACTED.
  - GABIONS SHALL BE FASTENED TOGETHER WITH MANUFACTURER-SPECIFIED WIRING (LACING) OR RINGS. RINGS SHALL MEET ASTM A975-97 SECTION MAXIMUM SPACING. SEE MACCAFERRI'S INSTALLATION GUIDE.
  - USE 1' DEEP GABIONS (MANUFACTURER'S CODE G). THE CONTRACTOR HAS THE OPTION OF USING OTHER GABION LENGTHS IF PREFERRED.
  - IF NECESSARY, WHERE BURIED GABIONS BECOME LEVEL AT THE WEIR CREST, THE GABION ENDS SHALL BE CUT AND RE-WIRED SO AS TO "NEST" THE SLOPED GABIONS INTO THE HORIZONTAL GABION(S). THIS FACILITATES THE "BEND" TO ACHIEVE THE SLOPE.

**GABION WEIR @ BMP #1 FOREBAY DETAIL**  
SCALE: 1" = 2'

**SECTION A-A**  
SCALE: 1" = 2'

NOTE: PROFILE IS LOOKING FROM THE POND SIDE (OUTSIDE) OF THE FOREBAY (i.e., LOOKING SOUTH).

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELLICOTT CITY, MARYLAND 21042  
(410) 481-2995

\*PROFESSIONAL CERTIFICATION. I HEREBY CERTIFY THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 13204, EXPIRATION DATE: NOVEMBER 3, 2016.  
*Charles J. Grovo*  
CHARLES J. GROVO, SR., P.E.  
DATE: 3/23/16

DATE	DESCRIPTION
	REVISION BLOCK
4-25-16	APPROVED: DEPARTMENT OF PLANNING AND ZONING Director - Department of Planning and Zoning
4-25-16	Chief, Division of Land Development
4-7-16	Chief, Development Engineering Division

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-8805



ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
LOT 78	10220 WETHERBURN ROAD ELLICOTT CITY, MARYLAND 21042				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA		LOT/PARCEL NO.		
WETHERBURN	N/A		P. 712		
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
8661-8667 2215c	7	R-20	17	SECOND	6030

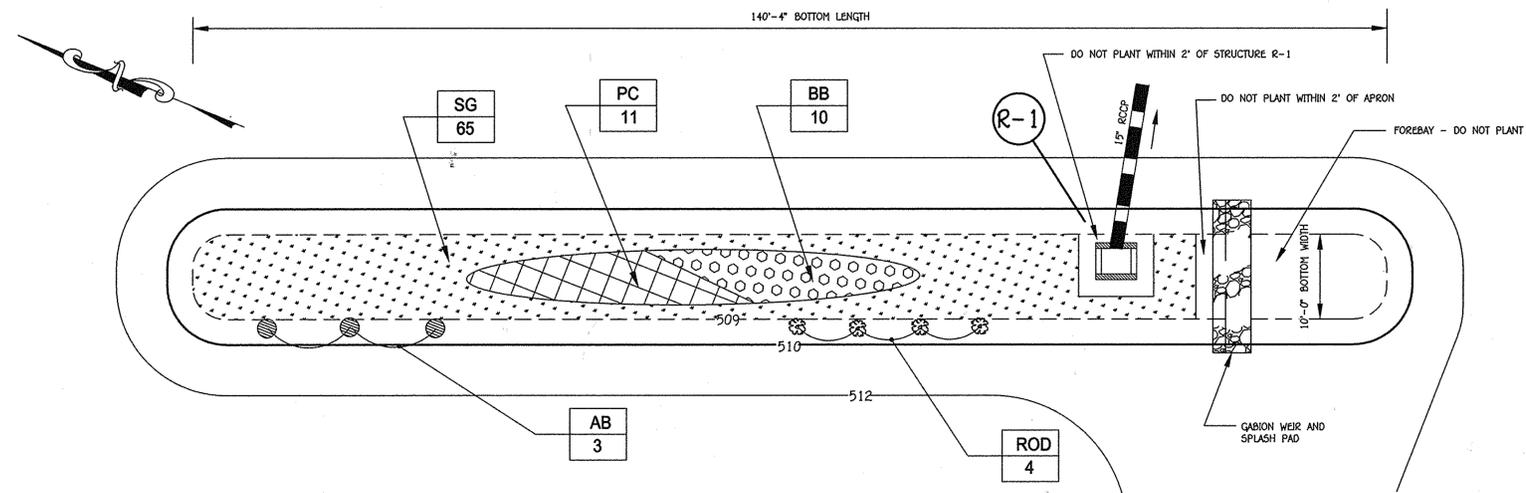
**STORMWATER MANAGEMENT FACILITY DETAIL**

**"REVISED SITE DEVELOPMENT PLAN"  
WAVERLY ELEMENTARY SCHOOL  
WETHERBURN  
OPEN SPACE LOT 78**

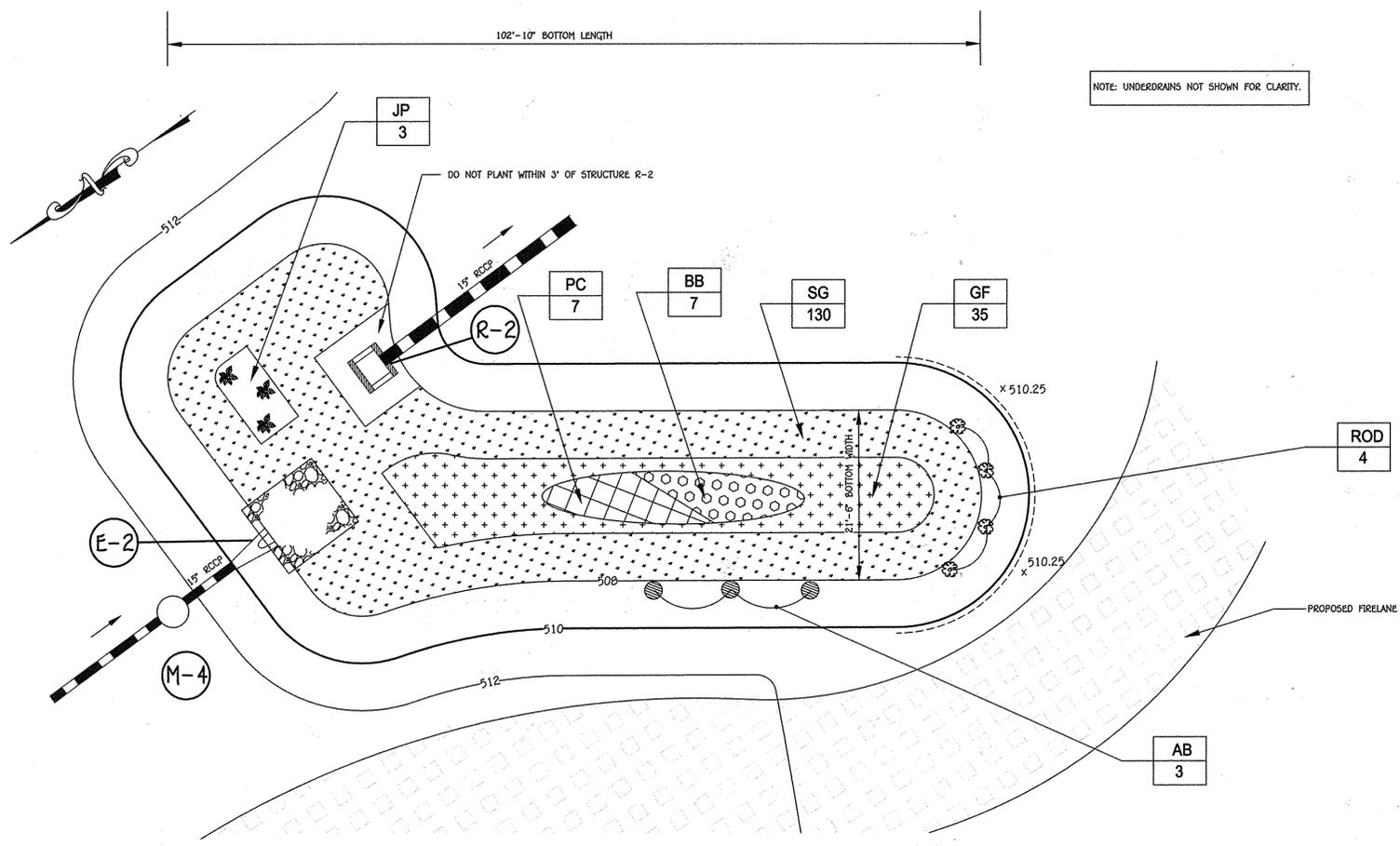
ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 23, 2016

SHEET 32 OF 36

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**BMP #1 PLANTING PLAN**  
SCALE:  
1" = 10'



**BMP #2 PLANTING PLAN**  
SCALE:  
1" = 10'

BIORETENTION FACILITY (BMP) PLANTING SCHEDULE						
KEY	PLANT NAME	MIN. SIZE	BMP #1 QUANTITY	BMP #2 QUANTITY	NOTES	SYMBOL
SG	SWITCH GRASS ( <i>Panicum virgatum</i> )	1 qt	65	130	Grass @ 3' c/c min.	[Symbol]
GF	GAYFEATHER ( <i>Liatris Spicata</i> )	1 qt	-	35	Grass @ 3' c/c min.	[Symbol]
PC	PURPLE CONEFLOWER ( <i>Echinacea Purpurea</i> )	1 qt	11	7	Flower @ 3' c/c min.	[Symbol]
BB	BEEBALM ( <i>Monarda didyma</i> )	1 qt	10	7	Flower @ 4' c/c min.	[Symbol]
JP	JOE PYE WEED ( <i>Eupatorium maculatum 'Gateway'</i> )	1 gal	-	3	Perennial @ 5' c/c min.	[Symbol]
ROD	RED OSIER DOGWOOD ( <i>Cornus sericea</i> )	2 gal	4	4	Shrub @ 7' c/c.	[Symbol]
AB	AMERICAN BEAUTYBERRY ( <i>Callicarpa americana</i> )	1 qt	3	3	Shrub @ 10' c/c min.	[Symbol]

- PLANTING SPECIFICATIONS:**
- PLANT INSTALLATION SHALL BE PER MDE SPECIFICATIONS IN THE 2000 STORMWATER DESIGN MANUAL, PER THE PROJECT SPECIFICATIONS AND AS BELOW.
- ADDITIONAL SPECIFICATIONS:**
- PLANT BMP LEVEL SURFACE AS SHOWN IN THE ABOVE TABLE WITH AN EVEN DISTRIBUTION DENSITY. STABILIZE BMP SIDE SLOPES WITH PERMANENT GRASS SEED PER NRCS SPECIFICATIONS. SIDE SLOPE PERMANENT GRASS AREAS SHALL HAVE 3" OF CLEAN TOPSOIL ON TILLED SUB-SOIL AND CURLEX MATTING, WATER AS NECESSARY UNTIL ESTABLISHED VEGETATION.
  - THE CONTRACTOR SHALL PROVIDE PLANT MAINTENANCE AND GUARANTEE IN ACCORDANCE WITH THE PROJECT LANDSCAPING SPECIFICATIONS.
  - PLANT MATERIAL SHALL CONFORM TO THE U.S. STANDARD FOR NURSERY STOCK BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
  - PLANTING PERENNIALS & GRASSES: ROOT SYSTEMS SHALL BE SPLIT OR CRUMBLED. POTTED PLANTS SHALL BE SET SO THAT THE TOP OF THE POT IS EVEN WITH EXISTING GRADE.
  - TREAT THE MULCHED AND PLANTED AREA WITH A PRE-EMERGENT HERBICIDE.
  - ALL PLANTS MUST BE THOROUGHLY AND REGULARLY WATERED PRIOR TO ACCEPTANCE.
  - DO NOT PLANT VEGETATION WITHIN 2 FT OF THE FOREBAY WEIR SPLASH APRON AND IN THE NO PLANTING ZONE NEAR THE RISER.
  - PLANT SHRUBS ON SLOPE 2'-4" ABOVE BMP INVERT.

NOTE: UNDERDRAINS NOT SHOWN FOR CLARITY.

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CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
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ELLICOTT CITY, MARYLAND 21042  
410.461.0200

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*Charles J. Govo*  
CHARLES J. GOVO, SR., P.E.  
DATE: 3/23/16

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Director - Department of Planning and Zoning  
Chief, Division of Land Development  
Chief, Development Engineering Division  
DATE: 4-25-16  
DATE: 4-25-16  
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PREPARED FOR  
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Attention SCOTT WASHINGTON  
410-313-6805



ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
LOT 7B	10220 WETHERBURN ROAD ELLICOTT CITY, MARYLAND 21042				
PERMIT INFORMATION CHART					
SUBMISSION NAME	SECTION/AREA	LOT/PARCEL NO.			
WETHERBURN	N/A	P. 712			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
0661-8667	7	R-20	17	SECOND	6030

**STORMWATER MANAGEMENT FACILITY PLANTING PLANS**

**"REVISED SITE DEVELOPMENT PLAN" WAVERLY ELEMENTARY SCHOOL WETHERBURN OPEN SPACE LOT 7B**

ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 23, 2016

SHEET 33 OF 36

**BMP BIORETENTION FACILITY NOTES AND SPECIFICATIONS**

- REFER TO THE LATEST MARYLAND SWM DESIGN MANUAL FOR BIORETENTION SPECIFICATIONS FOR INFORMATION NOT LISTED HEREIN AND FOR ADDITIONAL INFORMATION. THE MDE SWM DESIGN MANUAL'S APPENDIX B.4 HAS BEEN REPRODUCED ON THIS SHEET. THE 3/4" PERFORATION SPECIFICATION SHOWN BELOW SHALL BE USED IN LIEU OF THE 3/8" MDE UNDERDRAIN PIPE SPECIFICATION IN APPENDIX B.4.
- THE BIORETENTION BMP MATERIALS ARE AS FOLLOWS:
  - PLANTING SOIL: PER PLANTING SOIL SPECIFICATIONS OUTLINED IN MDE'S 2000 SWM MANUAL, APPENDIX B.4. DO NOT MECHANICALLY COMPACT PLANTING SOIL, BUT CAN BE "WATERED" TO FACILITATE SETTLING. PLANTING SOIL MAY NEED TO BE ADDED TO ACHIEVE DESIGN ELEVATION SHOULD NATURAL SETTLING OCCUR.
  - PVC UNDERDRAIN PIPE OUTSIDE BMP: SCHEDULE 40 SOLID PIPE WITH MINIMUM SLOPE OF 0.5% OR AS PER PLAN.
  - PVC UNDERDRAIN IN BMP: SCHEDULE 40 AND PERFORATED WITH 3/4" HOLES. WRAP UNDERDRAIN WITH GALVANIZED 1/4" HARDWARE CLOTH (WELDED WIRE MESH). PROVIDE 4 - 3/4" HOLES EVENLY SPACED AROUND THE 6" UNDERDRAIN PIPE CIRCUMFERENCE, SPACE PERFORATIONS ALONG PIPE AT 6" ON CENTER. ADJACENT SETS OF PERFORATIONS SHALL BE STAGGERED AT 45°. PERFORATIONS MUST TOTAL 3.5 sq. inch PER LF OF PIPE.
  - STONE AGGREGATE: MSHA SPECIFICATIONS AS SHOWN ON TYPICAL SECTION; AGGREGATE MUST BE WASHED, AND BE FREE OF FINES, SAND, DIRT & DEBRIS.
  - GEOTEXTILE: MIRAFI 140N.
  - MULCH: SHREDDED, WELL-AGED (6-12 MONTHS) HARDWOOD MULCH; NO WOOD CHIPS OR PINE MULCH.
- THE CONTRACTOR SHALL UNDER NO CIRCUMSTANCES ALLOW SURFACE DRAINAGE INTO THE BIORETENTION BMPs UNTIL ALL UPSTREAM AREAS HAVE BEEN STABILIZED (i.e., PAVED, OR HAVE WELL-ESTABLISHED VEGETATION).
- BOARDS SHALL NOT BE LEFT IN PLACE DURING THE CONSTRUCTION OF THE BIORETENTION BMPs.
- GEOTEXTILE (FILTER FABRIC) SHALL BE PLACED AGAINST EXCAVATED VERTICAL SURFACES. SCARIFY EARTH PRIOR TO GEOTEXTILE PLACEMENT. INSTALL GEOTEXTILE PER MANUFACTURER'S SPECIFICATIONS/RECOMMENDATIONS AND USE A 2 FT MINIMUM OVERLAP AND NOTCH ENDS WITH A 6" MINIMUM BURY OR EQUIVALENT ANCHORING METHOD.
- THE CONTRACTOR SHALL PROVIDE, TO THE OWNER, INDEPENDENT CERTIFICATION THAT THE PLANTING SOILS AND OTHER BIORETENTION MATERIALS MEET THE SPECIFICATIONS.
- THE BIORETENTION FACILITIES SHALL BE VEGETATED (LEVEL SURFACE ONLY) IN ACCORDANCE WITH THE PLANTING PLAN AND THE BMP SPECIFICATIONS IN MDE'S CURRENT STORMWATER MANAGEMENT DESIGN MANUAL.
- INSTALL CLEANOUTS (SOLID PVC PIPE) AS SHOWN. THE CLEANOUT TOP SHALL EXTEND 3" ABOVE TOP OF THE LEVEL SURFACE MULCH. INSTALL 6" OVERDRAIN 9" ABOVE MULCH LAYER PER DETAIL. THE OVERDRAIN SHALL HAVE A DOME TOP. THE OVERDRAIN SHALL CONNECT TO HORIZ. PERFORATED PVC PIPE (SAME SPEC AS UNDERDRAIN) SEPARATED 5 FT FROM UNDERDRAIN PIPE AND 6" BELOW THE UNDERDRAIN INVERT. SEE SITE PLAN FOR OVERDRAIN LOCATIONS. THE OVERDRAIN ENDS SHALL BE CAPPED AND ARE NOT TO BE CONNECTED TO THE UNDERDRAINS AND/OR THE OUTFALL RISER STRUCTURE.
- REFER TO THE PLANTING PLANS FOR THE LIMIT OF THE TYPICAL SECTION (i.e., PLANTING SOIL, AGGREGATE, ETC.). IN GENERAL IT IS THE LEVEL SURFACE OF THE BIORETENTION FACILITY EXCLUDING FOREBAY AREA AND GABION WEIRS. THE AREA 2' FROM RISER R-1 AND 3' FROM RISER R-2 IS ALSO EXCLUDED FOR PLANTS.
- THE TOP WIDTH OF THE SOUTH SIDE "EMBANKMENT" FOR BMP #2 SHALL BE 4 ft WITH A TOP ELEVATION OF 510.25. COMPACT EMBANKMENT TO 95% @ OMC.
- DURING THE EXCAVATION OF BMPs, ROCK WILL MOST LIKELY BE ENCOUNTERED (SEE SOIL BORING LOGS). THE CONTRACTOR SHALL REMOVE ROCK TO THE LOWEST ELEVATION LISTED ON THE TYPICAL TRENCH SECTION ON SHEET 32. BLASTING IS PROHIBITED.

**OPERATION AND MAINTENANCE SCHEDULE FOR BIORETENTION BMPs**

THE BIORETENTION FACILITIES SHALL BE INSPECTED AT LEAST TWICE PER YEAR (ONCE EACH IN THE SPRING AND FALL) AND AFTER HEAVY STORMS. THE OWNER IS RESPONSIBLE FOR MAINTAINING A DETAILED LOG OF THE MAINTENANCE INSPECTION FINDINGS AND A HISTORY OF THE COMPLETED WORK. THE LOG SHALL BE MADE AVAILABLE TO HOWARD COUNTY DPZ AND/OR THE MARYLAND DEPARTMENT OF THE ENVIRONMENT UPON REQUEST.

MICRO-BIORETENTION FACILITY COMPONENTS TO BE INSPECTED AND MAINTAINED INCLUDE THE ITEMS AS FOLLOWS:

- PLANT MATERIAL: PLANTS SHALL BE CHECKED FOR DISEASE AND INSECT INFESTATION. REMOVE AND REPLACE DEAD OR DYING VEGETATION CONSIDERED BEYOND TREATMENT (SEE NOTE BELOW). MAINTENANCE ALSO INCLUDES PRUNING, AND REPLACEMENT OF DEFICIENT STAKES AND WIRE.
- MULCH LAYER: SHALL BE REPLACED ONCE EVERY SPRING DUE TO THE HEAVY METALS GENERATED FROM THE PARKING LOT. THE OWNER SHALL PROPERLY DISPOSE OF THE OLD MULCH SO AS NOT TO CAUSE STORMWATER CONTAMINATION ELSEWHERE. WASHED OUT AREAS SHALL BE REPAIRED AS NECESSARY.
- SOIL LAYER: SHOULD STORMWATER POND FOR MORE THAN 48 HOURS, THE TOP 6 INCHES (MINIMUM) OF THE SOIL LAYER SHALL BE REPLACED. THE OLD SOILS SHALL BE PROPERLY DISPOSED.
- SPILLWAY OUTFALL, INTERIOR SLOPES: ERODED AREAS SHALL BE REPAIRED (FILLED IN AND SEEDED) AS NEEDED. BARE AREAS SHALL BE TREATED AND RE-SEEDED.
- INLET: REPAIR CRACKS, DAMAGED CONCRETE, ETC. AS NECESSARY.
- REMOVE AND PROPERLY DISPOSE ACCUMULATED SEDIMENT GREATER THAN ONE (1) INCH.

**NOTES:**

- IF SPECIFIC PLANTS ARE NOT SURVIVING; THE PLANT TYPE SHOULD CHANGED TO BETTER SUITED SPECIES.
- PLANT WATERING IS REQUIRED DURING PROLONGED DRY PERIODS.

**GENERAL STORMWATER MANAGEMENT NOTES**

- STORMWATER MANAGEMENT HAS BEEN PROVIDED WITH THE TWO (2) BIORETENTION FACILITIES. PLEASE REFER TO THE SWM REPORT PREPARED BY FISHER, COLLINS, & CARTER, INC. DATED DECEMBER 31, 2015.
- ALL CONSTRUCTION SHALL MEET THE LATEST EDITION OF THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS, AND THE MARYLAND DEPARTMENT OF THE ENVIRONMENT'S CURRENT STORMWATER DESIGN MANUAL, OR AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL CONSULT THE ENGINEER SHOULD THERE BE ANY DISCREPANCIES. SEE MICRO-BIORETENTION FACILITY SPECIFICATIONS ON THIS SHEET.
- THE UTILITY LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL TEST PIT ALL KNOWN EXISTING UTILITIES TO VERIFY, SIZE, SHAPE, LOCATION, AND TYPE PRIOR TO PERFORMING CONSTRUCTION. ANY UTILITY DAMAGED DUE TO CONSTRUCTION MUST BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE CONSTRUCTION MANAGER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. IF THE CONTRACTOR MAKES FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE CONSTRUCTION MANAGER, THEN THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR THOSE CHANGES.
- CONTRACTOR SHALL NOTIFY MISS UTILITY 1-800-257-7777 AND THE HOWARD COUNTY DEPARTMENT OF INSPECTION LICENSES & PERMITS THREE (3) WORKING DAYS BEFORE BEGINNING CONSTRUCTION.
- FISHER, COLLINS & CARTER, INC. IS NOT RESPONSIBLE FOR THE CONTRACTOR'S UTILIZATION OF MEN, MATERIALS, EQUIPMENT, OR SAFETY MEASURES IN THE PERFORMANCE OF ANY WORK FOR THIS PROJECT. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR PERFORMING THE WORK CORRECTLY AND IN CONFORMANCE WITH CODE/SPECIFICATION REQUIREMENTS.
- THE BMPs MAY BE GRADED, HOWEVER, THE PLANTING SOIL IN THE BMPs SHALL NOT BE INSTALLED UNTIL ALL UPSTREAM AREAS HAVE BEEN STABILIZED (i.e., THICK GRASS COVER, OR PAVED).
- THE STORMWATER MANAGEMENT BIORETENTION BMP FACILITIES FOR THIS PROJECT WILL BE PRIVATELY OWNED AND MAINTAINED BY THE HOWARD COUNTY PUBLIC SCHOOL SYSTEM.

**Appendix B.4. Construction Specifications for Environmental Site Design Practices**

**B.4.C Specifications for Micro-Bioretenion, Rain Gardens, Landscape Infiltration & Infiltration Berms**

**1. Material Specifications**

The allowable materials to be used in these practices are detailed in Table B.4.1.

**2. Filtering Media or Planting Soil**

The soil shall be a uniform mix, free of stones, stumps, roots or other similar objects larger than two inches. No other materials or substances shall be mixed or dumped within the micro-bioretenion practices that may be harmful to plant growth, or prove a hindrance to the planting or maintenance operations. The planting soil shall be free of Bermuda grass, Quackgrass, Johnson grass, or other noxious weeds as specified under COMAR 15.08.01.05.

The planting soil shall be tested and shall meet the following criteria:

- Soil Component - Loamy Sand or Sandy Loam (USDA Soil Textural Classification)
- Organic Content - Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).
- Clay Content - Media shall have a clay content of less than 5%.
- pH Range - Should be between 5.5 - 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

There shall be at least one soil test per project. Each test shall consist of both the standard soil test for pH, and additional tests of organic matter, and soluble salts. A textural analysis is required from the site stockpiled topsoil. If topsoil is imported, then a texture analysis shall be performed for each location where the topsoil was excavated.

**3. Compaction**

It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices are

**Appendix B.4. Construction Specifications for Environmental Site Design Practices**

excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

Compaction can be alleviated at the base of the bioretention facility by using a primary tilling operation such as a chisel plow, ripper, or subsoiler. These tilling operations are to refracture the soil profile through the 12 inch compaction zone. Substitute methods must be approved by the engineer. Rototillers typically do not till deep enough to reduce the effects of compaction from heavy equipment.

Rototill 2 to 3 inches of sand into the base of the bioretention facility before backfilling the optional sand layer. Pump any ponded water before preparing (rototilling) base.

When backfilling the topsoil over the sand layer, first place 3 to 4 inches of topsoil over the sand, then rototill the sand/topsoil to create a gradation zone. Backfill the remainder of the topsoil to final grade.

When backfilling the bioretention facility, place soil in lifts 12" to 18". Do not use heavy equipment within the bioretention basin. Heavy equipment can be used around the perimeter of the basin to supply soils and sand. Grade bioretention materials with light equipment such as a compact loader or a dozer/loader with marsh tracks.

**4. Plant Material**

Recommended plant material for micro-bioretenion practices can be found in Appendix A, Section A.2.3.

**5. Plant Installation**

Compost is a better organic material source, is less likely to float, and should be placed in the invert and other low areas. Mulch should be placed in surrounding to a uniform thickness of 2" to 3". Shredded or chipped hardwood mulch is the only accepted mulch. Pine mulch and wood chips will float and move to the perimeter of the bioretention area during a storm event and are not acceptable. Shredded mulch must be well aged (6 to 12 months) for acceptance.

Rootstock of the plant material shall be kept moist during transport and on-site storage. The plant root ball should be planted so 1/8" of the ball is above final grade surface. The diameter of the planting pit shall be at least six inches larger than the diameter of the planting ball. Set and maintain the plant straight during the entire planting process. Thoroughly water ground bed cover after installation.

**Appendix B.4. Construction Specifications for Environmental Site Design Practices**

Trees shall be braced using 2" by 2" stakes only as necessary and for the first growing season only. Stakes are to be equally spaced on the outside of the tree ball.

Grasses and legume seed should be drilled into the soil to a depth of at least one inch. Grass and legume plugs shall be planted following the non-grass ground cover planting specifications.

The topsoil specifications provide enough organic material to adequately supply nutrients from natural cycling. The primary function of the bioretention structure is to improve water quality. Adding fertilizers defeats, or at a minimum, impedes this goal. Only add fertilizer if wood chips or mulch are used to amend the soil. Rototill urea fertilizer at a rate of 2 pounds per 1000 square feet.

**6. Underdrains**

Underdrains should meet the following criteria:

- Pipe - Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTM F 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).
- Perforations - If perforated pipe is used, perforations should be 3/8" diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a 1/4" (No. 4 or 4x4) galvanized hardware cloth.
- Gravel - The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.
- The main collector pipe shall be at a minimum 0.5% slope.
- A rigid, non-perforated observation well must be provided (one per every 1,000 square feet) to provide a clean-out port and monitor performance of the filter.
- A 4" layer of pea gravel (1/2" to 3/4" stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

The main collector pipe for underdrain systems shall be constructed at a minimum slope of 0.5%. Observation wells and/or clean-out pipes must be provided (one minimum per every 1000 square feet of surface area).

**7. Miscellaneous**

These practices may not be constructed until all contributing drainage area has been stabilized

**Appendix B.4. Construction Specifications for Environmental Site Design Practices**

**Table B.4.1 Materials Specifications for Micro-Bioretenion, Rain Gardens & Landscape Infiltration-**

Material	Specification	Size	Notes
Plantings	see Appendix A, Table A.4	n/a	plantings are site-specific
Planting soil [2' to 4' deep]	loamy sand (60 - 65%) & compost (35 - 40%) or sandy loam (30%), coarse sand (30%) & compost (40%)	n/a	USDA soil types loamy sand or sandy loam; clay content < 5%
Organic content	Min. 10% by dry weight (ASTM D 2974)		
Mulch	shredded hardwood		aged 6 months, minimum; no pine or wood chips
Pea gravel diaphragm	pea gravel: ASTM-D-448	NO. 8 OR NO. 9 (1/8" TO 3/8")	
Curtain drain	ornamental stone: washed cobbles	stone: 2" to 5"	
Geotextile		n/a	PE Type 1 nonwoven
Gravel (underdrains and infiltration berms)	AASHTO M-43	NO. 57 OR NO. 6 AGGREGATE (3/8" to 3/4")	
Underdrain piping	F 758, Type PS 28 or AASHTO M-278	4" to 6" rigid schedule 40 PVC or SDR35	Slotted or perforated pipe; 3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes. Perforated pipe shall be wrapped with 1/4-inch galvanized hardware cloth
Poured in place concrete (if required)	MSHA Mix No. 3; f'c = 3500 psi @ 28 days, normal weight, air-entrained, reinforcing to meet ASTM-615-60	n/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or pre-cast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland - design to include meeting ACI Code 350.R/89; vertical loading [H-10 or H-20]; allowable horizontal loading (based on soil pressures); and analysis of potential cracking
Sand	AASHTO-M-6 or ASTM-C-33	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone (AASHTO) #10 are not acceptable. No calcium carbonated or dolomitic sand substitutions are acceptable. No "rock dust" can be used for sand.



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*Charles J. Groves, Sr., P.E.*  
CHARLES J. GROVES, SR., P.E.

3/20/16  
DATE

DATE	DESCRIPTION
	REVISION BLOCK
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Nadine J. J. J.</i>	4-25-16 Date
Director - Department of Planning and Zoning	
<i>V. J. J.</i>	4-25-16 Date
Chief, Division of Land Development	
<i>J. J.</i>	4-7-16 Date
Chief, Development Engineering Division	

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



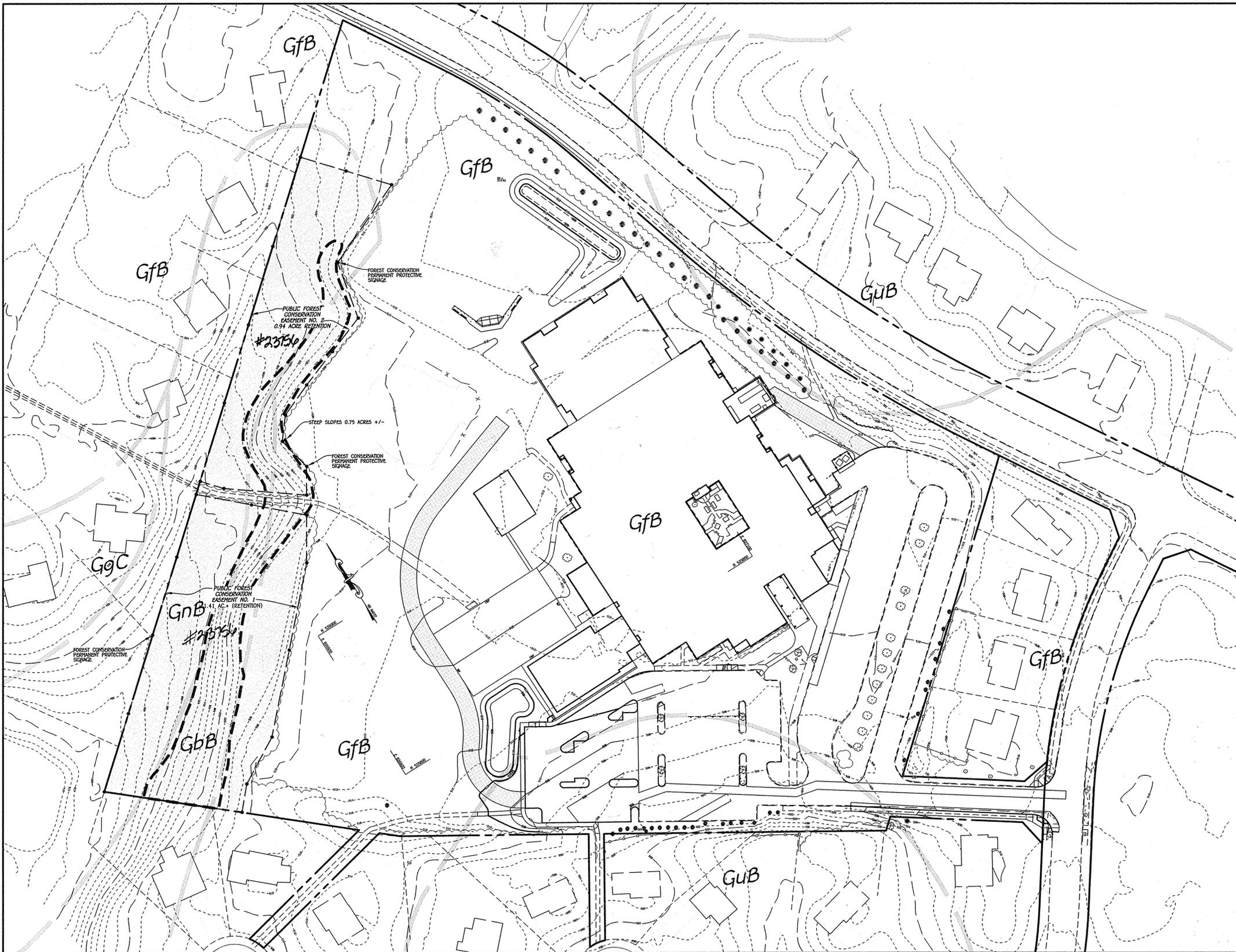
ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
LOT 78	10220 WETHERBURN ROAD ELICOTT CITY, MARYLAND 21042				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
WETHERBURN	N/A	P. 712			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
8661-8667	2716	R-20	17	SECOND	6030

**STORMWATER MANAGEMENT FACILITY NOTES AND SPECIFICATIONS**

**"REVISED SITE DEVELOPMENT PLAN" WAVERLY ELEMENTARY SCHOOL WETHERBURN OPEN SPACE LOT 78**

ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 23, 2016

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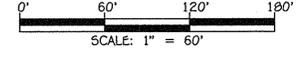
LEGEND	
SYMBOL	DESCRIPTION
---512---	EXISTING CONTOUR 2' INTERVAL
---510---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING GAS LINE
---	EXISTING UNDERGROUND CABLE LINE
X	EXISTING FENCE
---512---	PROPOSED CONTOUR 2' INTERVAL
---510---	PROPOSED CONTOUR 10' INTERVAL
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
☼	EXISTING TREES
---	EXISTING TREELINE
---	PROPOSED STORMDRAIN
---	PROPOSED GRASS PAVERS
---	SOILS DELINEATION
---	STEEP SLOPES
---	FOREST CONSERVATION EASEMENT

**Hydrologic Soil Group**

Hydrologic Soil Group—Summary by Map Unit — Howard County, Maryland (MD027)					
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI	
GbB	Gladstone loam, 3 to 8 percent slopes	A	0.6	3.7%	
GfB	Gladstone-Urban land complex, 0 to 8 percent slopes	A	12.8	80.0%	
GnB	Glenville-Basis silt loams, 0 to 8 percent slopes	C	1.4	8.5%	
GuB	Glenville-Urban land-Udorthents complex, 0 to 8 percent slopes	C	1.3	7.9%	
Totals for Area of Interest			16.0	100.0%	

NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW THE FOREST CONSERVATION AREA.

FISHER, COLLINS & CARTER, INC.  
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CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELLCOTT CITY, MARYLAND 21114  
(410) 461-2895



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*Charles J. Cravo, Sr.*  
CHARLES J. CRAVO, SR., P.E.  
3/23/16  
DATE

DATE	DESCRIPTION	REVISION BLOCK
4-25-16	Director - Department of Planning and Zoning	
4-25-16	Chief, Division of Land Development	
4-7-16	Chief, Development Engineering Division	

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention: SCOTT WASHINGTON  
410-313-6805



**ADDRESS CHART**

LOT/PARCEL#	STREET ADDRESS
LOT 7B	10220 WETHERBURN ROAD ELLCOTT CITY, MARYLAND 21042

**PERMIT INFORMATION CHART**

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
WETHERBURN	N/A	P. 712			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
8661-8667 29792	7	R-20	17	SECOND	6030

**FOREST CONSERVATION PLAN**

"REVISED SITE DEVELOPMENT PLAN"  
WAVERLY ELEMENTARY SCHOOL  
WETHERBURN  
OPEN SPACE LOT 7B

ZONED R-20, TAX MAP No.: 17, GRID No.: 7, -PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 60' DATE: MARCH 23, 2016

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**CONSTRUCTION PERIOD PROTECTION PROGRAM**

**A. Forest Protection Techniques**

**1. Soil Protection Area (Critical Root Zone)**  
The soil protection area, or critical root zone, of a tree is that portion of the soil column where most of its roots may be found. The majority of roots responsible for water and nutrients uptake are located just below the soil surface. Temporary fencing shall be placed around the critical root zone of the forest in areas where the forest limits occur within 25 feet of the limit of disturbance.

**2. Fencing and Signage**  
Existing forest limits occurring within 25 feet of the limits of disturbance shall be protected using temporary protective fencing. Permanent signage shall be placed around the afforestation area prior to plant installation, as shown on the plan.

**B. Pre-Construction Meeting**  
Upon staking of limits of disturbance a pre-construction meeting will be held between the developer, contractor and appropriate County inspector. The purpose of the meeting will be to verify that all sediment control is in order, and to notify the contractor of possible penalties for non-compliance with the FCP.

**C. Storage Facilities/Equipment Cleaning**  
All equipment storage, parking, sanitary facilities, material stockpiling, etc. associated with the construction of the project will be restricted to those areas outside of the proposed Forest Conservation Easement. Cleaning of equipment will be limited to areas within LOD of the proposed homesites. Wastewater resulting from equipment cleaning will be controlled to prevent runoff into environmentally sensitive areas.

**D. Sequence of Construction**  
The following timetable represents the proposed timetable for development of the subject property. The items outlined in the Forest Conservation Plan will be enacted within two (2) years of subdivision approval.

Below find a proposed sequence of construction.

1. Install all signage and sediment control devices.
2. Hold pre-construction meeting between developer, contractor and County inspector.
3. Build access roads, install water and sewer, and construct houses. Stabilize all disturbed areas accordingly.
4. Remove sediment control.
5. Hold post-construction meeting with County inspectors to assure compliance with FCP. Submit Certification of Retention.

**E. Construction Monitoring**  
Eco-Science Professionals, or another qualified professional designated by the developer, will monitor construction of the project to ensure that all activities are in compliance with the Forest Conservation Plan.

**F. Post-Construction Meeting**  
Upon completion of construction, Eco-Science Professionals, or another qualified professional designated by the developer, will notify the County that construction has been completed and arrange for a post-construction meeting to review the project site. The meeting will allow the County inspector to verify that forest retention requirements have been met.

**POST-CONSTRUCTION MANAGEMENT PLAN**

Howard County requires a two year post-construction management plan be prepared as part of the Forest Conservation Plan. The plan goes into effect upon acceptance of the construction certification of completion by the County. Eco-Science Professionals, or another qualified professional designated by the developer, will be responsible for implementation of the post-construction management plan.

The following items will be incorporated into the plan for the subject property:

**A. Fencing and Signage**  
Permanent signage indicating the limits of the retention/planting area shall be maintained.

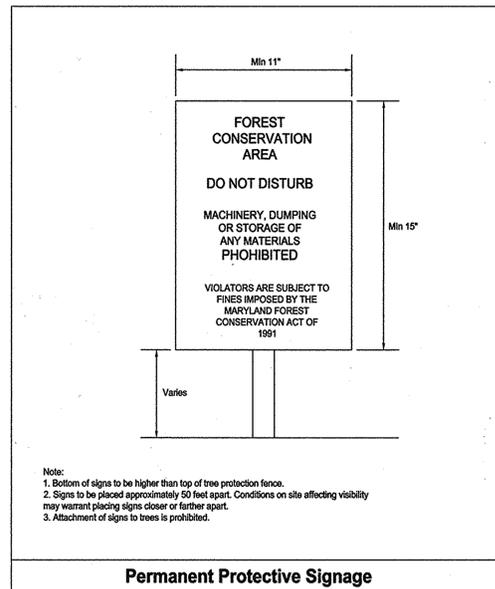
**B. General Site Inspections**  
Site inspections will be performed to insure that retention of the forest is met in accordance with this plan and that the forest edge remains healthy and stable.

**C. Education**  
The developer will provide appropriate materials to property owners informing them of the location and purpose of the forest conservation easement. Materials may include site plans and information explaining the intent of the forest conservation law.

**D. Final Inspection**  
At the end of the two year post-construction management period, Eco-Science Professionals, or another qualified professional will submit to the administrator of the Howard County Forest Conservation Program certification that all retention/afforestation requirements have been met. Upon acceptance of this certification, the County will release the developer from all future obligations and release the developer's bond.

**FOREST CONSERVATION EASEMENTS**

Easements are a legal means of providing permanent protection of forest, farmland and open space. In accordance with the criteria outlined in the Howard County Forest Conservation Manual, a forest conservation easement will be recorded for the retention areas of the subject property. Submission of the easements for recordation will occur prior to commencement of construction activities.



**PFCEP NOTES**

1. The Forest Conservation Act requirements will be satisfied by the onsite retention of forest equal to the break even point, 2.3 acres. Forest areas retained outside the Forest Conservation Easement (FCE), 0.4 acres, may be cleared for future development.
2. Any Forest Conservation Easement (FCE) area shown hereon is subject to protective covenants which may be found in the Land Records of Howard County which restrict the disturbance and uses of these areas.
3. There shall be no clearing, grading, construction or disturbance of vegetation beyond the depicted limits of disturbance, except as permitted by Howard County DPZ.
4. No Stockpiles, parking areas, equipment cleaning areas etc. shall occur within areas designated as non-disturbance areas.
5. Temporary fencing shall be used to protect forest resources during construction. Fencing shall be installed along limits of disturbance occurring within 50 feet of the proposed forest retention limits.

**FOREST CONSERVATION WORKSHEET**  
Version 1.0

Project: Waverly Elementary School  
Date: January 6, 2016

NET TRACT AREA		Acres
A. Total Tract Area		16.3
B. Area within 100 Year Floodplain		0
C. Area of existing impervious surface		5.0
D. Net Tract Area		11.3

LAND USE CATEGORY: (from table 3.2.1, page 40, Manual ARA MDR IDA HDR MPD CIA R-20)			
E. Afforestation Threshold (percentage)	15%		1.7
F. Conservation Threshold (percentage)	20%		2.2

EXISTING FOREST COVER:		
G. Existing forest cover (excluding floodplain)		2.7
H. Area of forest above afforestation threshold		1.0
I. Area of forest above conservation threshold		0.5

BREAK EVEN POINT		
J. Forest retention above threshold with no mitigation		0.1
	Break-Even Point	2.3
K. Clearing permitted without mitigation		0.4

PROPOSED FOREST CLEARING		
L. Total area of forest to be Cleared or Retained Outside FCE		0.4
M. Total area of forest to be Retained in FCE		2.3

PLANTING REQUIREMENTS		
N. Reforestation for clearing above Conservation Threshold		0.1
P. Reforestation for clearing below Conservation Threshold		0
Q. Credit for retention above Conservation Threshold		0.1
R. Total reforestation required		0
S. Total afforestation required		0
T. Total reforestation and afforestation required		0

**SFSD NOTES**

1. No rare, threatened or endangered species, or their habitats, were observed on the property.
2. Surrounding land use is primarily high density residential development.
3. Approximately 0.2 acres of forest is present within 100 feet of the subject property.
4. All wetlands and streams on the property are part of a Use IV-P watershed of the Little Patuxent River (02-13-11). Perennial streams will require 100 foot buffers, intermittent streams will require 50 foot buffers and wetlands will require 25 foot buffers.
5. No historic elements or cemeteries are known to occur on the property.
6. No 100 year floodplain is present on the property.
7. Approximately 0.75 acres of steep slopes are present on the site. There are no steep slopes within the proposed limits of disturbance.

**SIMPLIFIED FOREST STAND DELINEATION SITE CONDITION OVERVIEW**

The subject property is used as an elementary school campus with a large main building facility, parking, and recreational areas. Portable classrooms are currently present on the property. The majority of the site under active use and maintenance. A successional forest is present along the rear, northwestern, property boundary. This forest community occurs on descending slopes and associated drainage swale. The forest is comprised of a mixed hardwood community that includes tulip poplar, black cherry, black locust, red maple, mulberry and box elder. Multiflora rose, bush honeysuckle and Russian olive are present within the understory of the stand. Japanese honeysuckle, grapevines, Oriental bittersweet and poison ivy are also common within the community. The forest occupies roughly 2.7 acres of the property. An existing paved pathway bisects the forest and provides access between the subject property and the adjacent residential community.

Scattered individual landscaping trees and evergreen screens, primarily white pine, are present on the property. No specimen trees were observed outside the forest on the site. Specimen trees the forest were not specifically sampled.

No wetlands, streams or their buffers are present on the site.

NOTE: THE PURPOSE OF THIS PLAN IS TO SHOW THE FOREST CONSERVATION AREA.

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**Eco-Science Professionals, Inc.**  
Consulting Ecologists  
P.O. Box 5906 Glen Arm, Maryland 21057 Telephone (410) 832-2480 Fax (410) 832-2488

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*Charles J. Grovo, Sr., P.E.*  
CHARLES J. GROVO, SR., P.E.  
3/23/16  
DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Valerio J. J. J. J.*  
Director - Department of Planning and Zoning  
4-25-16  
Date

*John P. Cramer*  
Chief, Development Engineering Division  
4-7-16  
Date

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HARRIET TUBMAN BUILDING  
8045 HARRIET TUBMAN LANE  
COLUMBIA, MARYLAND 21044  
Attention SCOTT WASHINGTON  
410-315-8805

**ADDRESS CHART**

LOT/PARCEL#	STREET ADDRESS
LOT 78	10220 WETHERBURN ROAD ELLICOTT CITY, MARYLAND 21042

**PERMIT INFORMATION CHART**

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.
WETHERBURN	N/A	P. 712

PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DIST.	CENSUS TRACT
0661-8667 2278C	7	R-20	17	SECOND	6030

**FOREST CONSERVATION NOTES AND DETAIL**

**"REVISED SITE DEVELOPMENT PLAN" WAVERLY ELEMENTARY SCHOOL WETHERBURN OPEN SPACE LOT 78**

ZONED R-20, TAX MAP No.: 17, GRID No.: 7, PARCEL: 712  
SECOND ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 60' DATE: MARCH 23, 2016

SHEET 36 OF 36

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