

SHEET INDEX	
SHEET NUMBER	DESCRIPTION
1	TITLE SHEET
2	DEMOLITION PLAN
3	SITE DEVELOPMENT PLAN
4	GEOMETRY PLAN
5	SEDIMENT AND EROSION CONTROL PLAN
6	SOILS AND DRAINAGE AREA MAP
7	DETAIL SHEET
8	DETAIL SHEET
9	HANDICAP ACCESS PLAN AND DETAIL SHEET
10	SEDIMENT CONTROL NOTES AND DETAIL SHEET
11	PAVEMENT MARKING AND SIGNAGE PLAN
12	STOPPING SIGHT DISTANCE PLAN AND PROFILE
13	ROAD SECTIONS
14	BUILDING ELEVATIONS AND BORING LOGS
15	ROBING LOGS
16	TRAFFIC MAINTENANCE PLAN
17	STORM DRAIN PROFILES
18	STORM DRAIN PROFILES
19	PROFILES AND STRUCTURE SCHEDULE
20	STORM DRAINAGE DETAILS AND SEDIMENT CONTROL DETAILS
21	FOREST CONSERVATION PLAN - OFFSITE FOREST RETENTION @ BOLLMAN ELEM. SCHOOL
22	FOREST CONSERVATION NOTES AND DETAILS
23	L.600 OVERALL LANDSCAPE PLAN
24	L.601 5M SWM LANDSCAPE PLAN
25	L.602 PLANTING DETAILS AND SCHEDULE
26	STORMWATER MANAGEMENT POND EMBANKMENT & OUTFALL PROFILES
27	STORMWATER MANAGEMENT POND RISER (5-1) DETAIL
28	STORMWATER MANAGEMENT POND DETAILS (1)
29	STORMWATER MANAGEMENT POND DETAILS (2)
30	STORMWATER INF #1-4 PROFILES
31	STORMWATER INF #1-4 DETAILS
32	STORMWATER SPECIFICATIONS & NOTES
33	STORMWATER SUMMARY TABLES
34	TEMPORARY STORMWATER MANAGEMENT DETAILS
35	PHOTOMICRIC DIAGRAM
36	INTERSECTION SIGHT DISTANCE PLAN AND PROFILE
37	L.603 BIORETENTION 1 AND 2 ENLARGEMENTS
38	L.604 BIORETENTION 3 AND 4 ENLARGEMENTS
39	DUCKETTS LANE ROAD WIDENING DEMOLITION & SITE IMPROVEMENT PLAN

LEGEND	
SYMBOL	DESCRIPTION
--- 178 ---	EXISTING CONTOUR 2' INTERVAL
--- 180 ---	EXISTING CONTOUR 10' INTERVAL
- - - - -	EXISTING SAN. SEWER LINE
- - - - -	EXISTING STORM DRAIN LINE
- - - - -	EXISTING WATER LINE
- - - - -	EXISTING ELECTRIC LINE
- - - - -	EXISTING CABLE LINE
- - - - -	EXISTING GAS LINE
- - - - -	EXISTING FENCE
--- 178 ---	PROPOSED CONTOUR 2' INTERVAL
--- 180 ---	PROPOSED CONTOUR 10' INTERVAL
+ 180.30	SPOT ELEVATION
====	PROPOSED CONCRETE WALK
====	PROPOSED MACADAM PAVING
	EXISTING TREES
====	EXISTING TREELINE
====	PROPOSED TREELINE
====	LIMIT OF DISTURBANCE
====	15% - 24.9% SLOPES
====	PROPOSED PUBLIC WATER
====	PROPOSED PRIVATE WATER
====	PROPOSED STORMDRAIN
====	PROPOSED PRIVATE SEWER
====	PROPOSED PUBLIC SEWER
====	PROPOSED GRASS PAVERS
====	PROPOSED SURFACE OVERLAY
====	SOILS DELINEATION
====	SUPER SILT FENCE
====	TREE PROTECTION

# SITE DEVELOPMENT PLAN ELEMENTARY SCHOOL #41

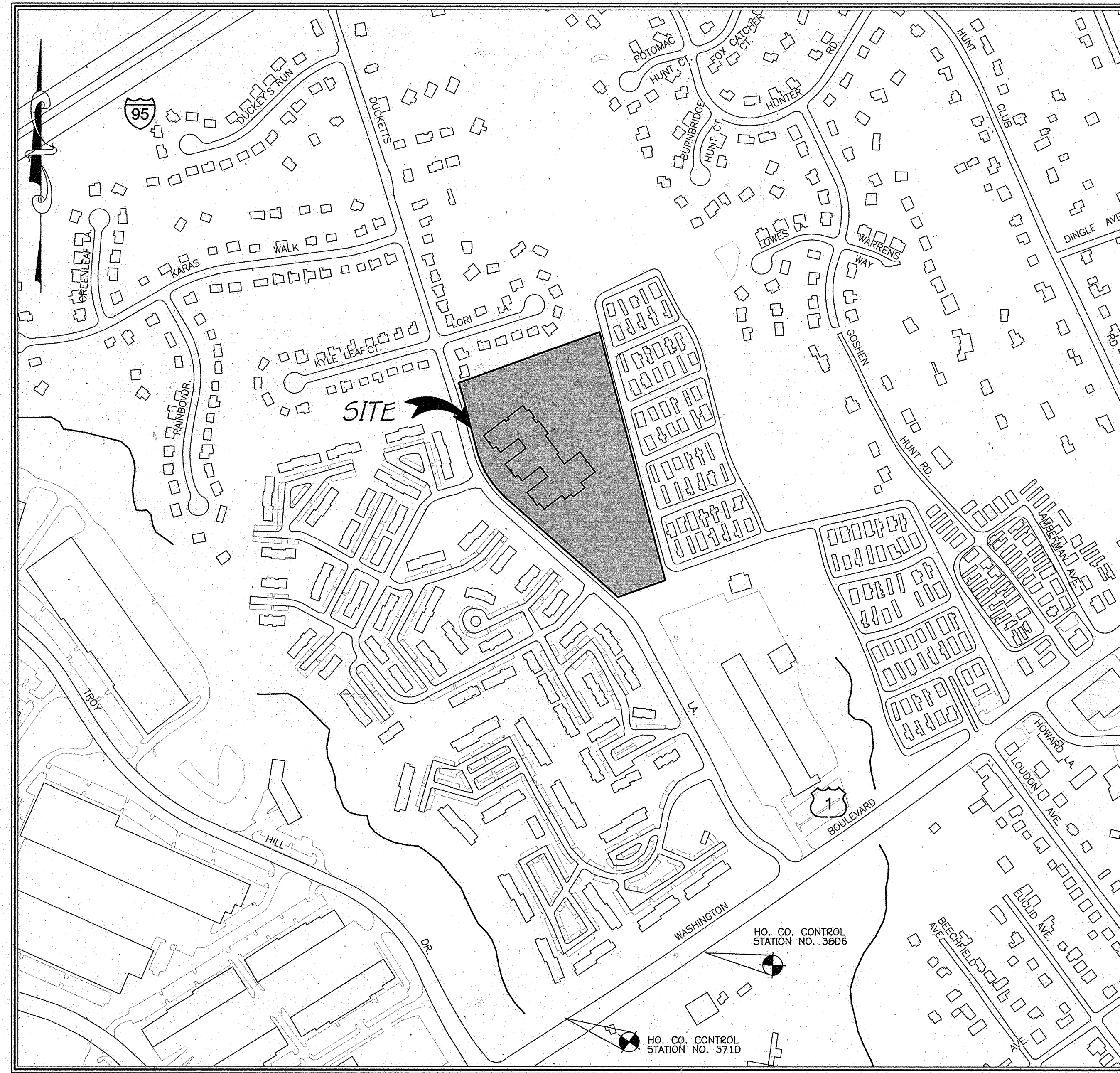
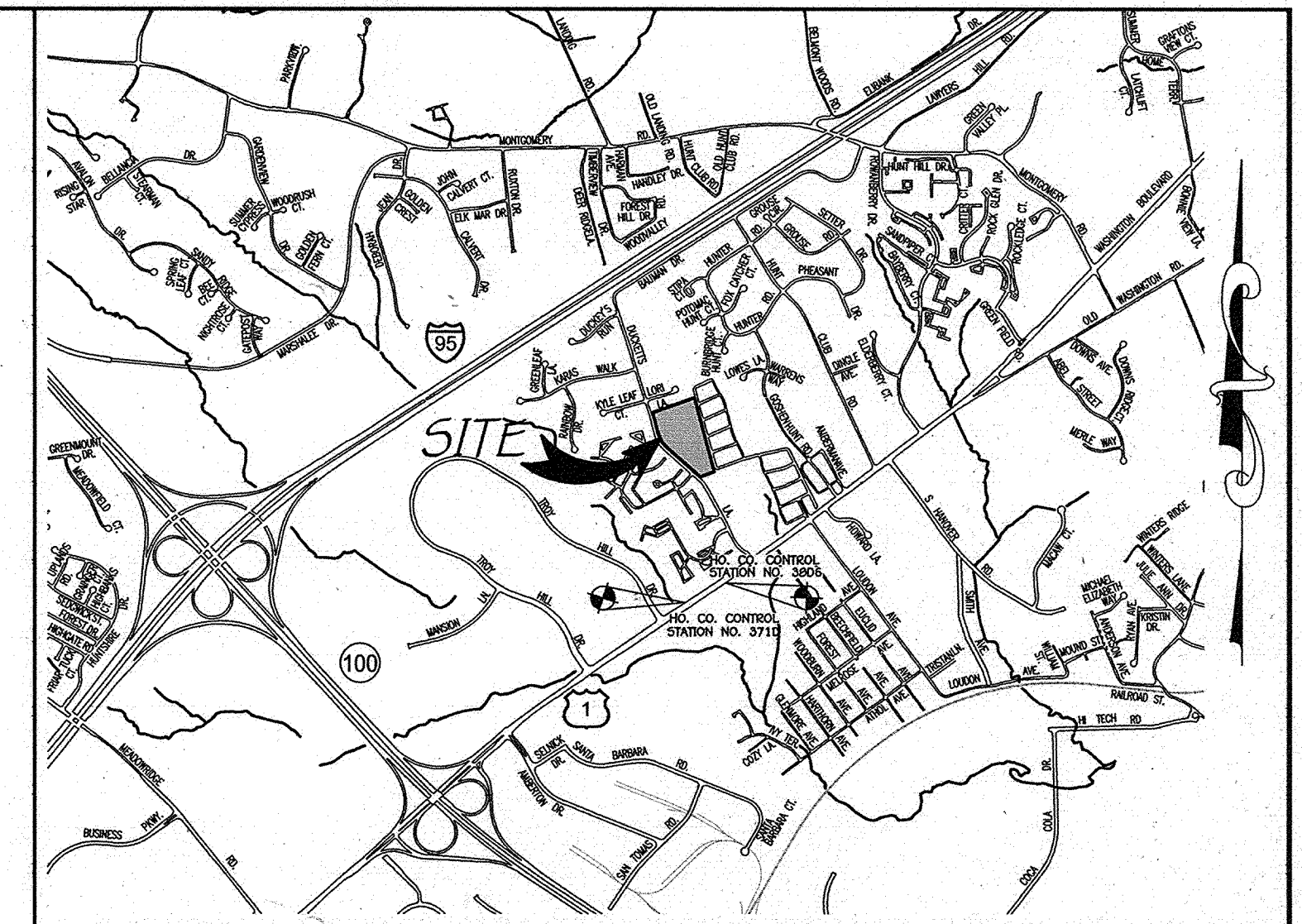
TAX MAP No.: 37

GRID No: 12

PARCEL No.: 0569

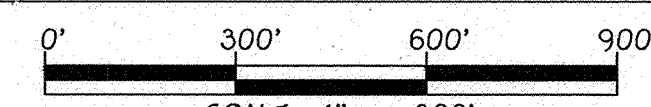
FIRST ELECTION DISTRICT

HOWARD COUNTY, MARYLAND



LOCATION MAP

SCALE: 1" = 300'



## GENERAL NOTES

- ALL CONSTRUCTION SHALL BE ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT 410-313-1800 AT LEAST FIVE WORKING DAYS PRIOR TO START OF WORK.
- THE CONTRACTOR SHALL NOTIFY MISS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY DIGGING AND EXCAVATION WORK.
- PROJECT BACKGROUND:  
TAX MAP 37, GRID 12  
PARCEL NOS. 569  
ZONING: THIS PROJECT IS ZONED R-12 PER THE 2/2/04 COMPREHENSIVE ZONING PLAN AND TO THE COMP-LITE ZONING AMENDMENTS DATED 7/26/06.  
ELECTION DISTRICT: FIRST  
SECTION/AREA: N/A  
SITE AREA: 10.029 AC.  
DATE: JUNE 2011.
- TRAFFIC CONTROL DEVICES, MARKINGS AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO PLACE ANY ASPHALT.
- ALL PLAN DIMENSIONS ARE TO THE FACE OF CURB OR FACE OF BUILDING UNLESS OTHERWISE NOTED. DIMENSIONS ARE MEASURED PERPENDICULAR OR RADIAL BETWEEN ITEMS UNLESS OTHERWISE NOTED.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY FISHER, COLLINS AND CARTER INC. DATED JUNE 2011.
- COORDINATES ARE BASED ON NAD 83 MARYLAND COORDINATES SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS.  
371D N 556,907.410 E 1,394,460.980 ELEV. 157.314  
3806 N 557,155.445 E 1,394,992.220 ELEV. 174.506
- THIS SUBDIVISION IS SUBJECT TO SECTION 18.122B OF THE HOWARD COUNTY CODE. PUBLIC WATER AND/OR SEWER SERVICE HAS BEEN GRANTED UNDER THE TERMS AND PROVISIONS, THEREOF, EFFECTIVE 2/10/12, ON WHICH DATE DEVELOPER AGREEMENT #14-4725 WAS FILED AND ACCEPTED. THE EXISTING WATER AND SEWER SYSTEMS SERVING THIS PROJECT ARE CONTRACT NO. 768-D, 755-D AND 14-4725-D.
- ALL ON-SITE STORM DRAINS UNDER THIS SITE DEVELOPMENT PLAN ARE PRIVATE.
- THE EXISTING UTILITIES SHOWN HEREON WERE DERIVED FROM AVAILABLE PUBLIC RECORDS. THE CONTRACTOR MUST DIG TEST PITS BY HAND AT ALL UTILITY CROSSINGS AND CONNECTION POINTS TO VERIFY THE EXACT LOCATION.
- ALL PROPOSED RAMPS SHALL BE IN ACCORDANCE WITH CURRENT A.D.A. STANDARDS ACCESSIBILITY GUIDELINES. MAXIMUM SIDEWALK CROSS SLOPE SHALL BE TWO PERCENT. PROVIDE A (5'X5') FIVE FOOT BY FIVE FOOT LEVEL LANDING (MAX. SLOPE 2%) AT THE TOP AND BOTTOM OF ALL RAMPS AND BUILDING ENTRANCES AND EXITS. HANDRAILS SHALL BE PROVIDED ON ALL RAMPS IN ACCORDANCE WITH SECTION 4.8.5 OF THE A.D.A. STANDARDS ACCESSIBILITY GUIDELINES.
- ALL DRIVEWAYS AND PARKING TO BE OWNED AND MAINTAINED BY THE HOWARD COUNTY PUBLIC SCHOOL SYSTEM.
- ANY DAMAGE TO COUNTY AND OR STATE OWNED RIGHT-OF-WAY TO BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
- TRENCH BEDDING FOR STORM DRAIN STRUCTURES SHALL BE IN ACCORDANCE WITH HOWARD COUNTY STANDARD G2.01 CLASS C BEDDING UNLESS OTHERWISE NOTED.
- GUTTER PAN OF CURBS SHALL BE PITCHED TO CONFORM TO THE ADJACENT DRAINAGE PATTERNS OF THE ADJOINING PAVING FOR VEHICULAR USE.
- FOR DETAILS OF PARKING, ROAD SECTION, HANDICAP, CURB AND GUTTER SEE DETAIL SHEETS 7 AND 8.
- THERE ARE NO KNOWN GRAVE SITES OR CEMETERIES ON THIS SITE BASED ON A VISUAL SITE VISIT AND BASED ON AN EXAMINATION OF THE HOWARD COUNTY CEMETERY INVENTORY MAP.
- THIS SUBDIVISION IS RECORDED AMONG THE LAND RECORDS IN HOWARD COUNTY, MARYLAND AS PLAT NOS. 20103 THRU 20105.
- ALL OUTSIDE LIGHTING SHALL COMPLY WITH ZONING REGULATIONS SECTION 134 WHICH REQUIRES LIGHTS TO BE INSTALLED TO DIRECT/REFLECT LIGHT DOWNWARDS AND INWARDS ON THE SITE AND AWAY FROM ALL PUBLIC STREETS AND RESIDENTIAL AREAS. "LIGHT TRESPASS ONTO ADJOINING RESIDENTIAL PROPERTIES SHALL BE LIMITED 0.1 FOOT CANDLES."
- PREVIOUS DPZ FILE NUMBERS: BA-04-30C, WP-06-055, F-07-007, F-07-048, S05-007, ECP12-025, WP-12-069, S0P06-070, WP-12-134, GP-12-041.
- NO LANDSCAPE SURETY IS REQUIRED FOR THIS PLAN SINCE IT IS A HOWARD COUNTY BOARD OF EDUCATION PROJECT.
- THIS SDP IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS PER COUNCIL BILL NO. 45-2003 AND THE AMENDED ZONING REGULATIONS PER COUNCIL BILL NO. 75-2003. DEVELOPMENT OR CONSTRUCTION ON THIS PROPERTY MUST COMPLY WITH SETBACK AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF THE SITE DEVELOPMENT PLAN, WAIVER PETITION APPLICATION OR BUILDING/GRAVING PERMIT APPLICATIONS.
- ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG, A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
- LANDSCAPING IS IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. LANDSCAPE MANUAL SHALL BE PROVIDED AS SHOWN ON THE LANDSCAPE PLAN SHEET OF THIS SITE PLAN. NO SURETY IS REQUIRED SINCE THIS IS A HOWARD COUNTY BOARD OF EDUCATION PROJECT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS (JUNE 1993)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREETLIGHT AND ANY TREE.
- THERE ARE NO STEEP SLOPES, FLOODPLAIN OR HISTORIC RESOURCES BEING FOUND ON THIS SITE.
- THE SPOD STUDY WAS PREPARED BY MRS. GROUP DATED JULY 2011.
- WETLANDS STUDY AND FOREST STAND DELINEATION INFORMATION SHOWN FOR THIS PROJECT WAS PREPARED BY ECO-SCIENCE PROFESSIONAL, INC. DATED OCTOBER 2011.
- WATER QUALITY MANAGEMENT WILL CONSIST OF 4 BIORETENTION FACILITIES TO CAPTURE AS MUCH IMPERVIOUS AREAS AS PRACTICABLE WHILE THE REMAINING IMPERVIOUS AREAS WILL BE TREATED IN A SHALLOW WETLAND SWM POND. THE SWM POND WILL PROVIDE 1, 10 AND 100 YEAR QUANTITY MANAGEMENT.
- THE PLANNING DIRECTOR, ON NOVEMBER 3, 2011, APPROVED WAIVER PETITION (WP-12-069) FOR A WAIVER OF SECTION 16.116(a)(1) TO GRANT PERMISSION TO REMOVE VEGETATION COVER AND TREES, GRADE, FILL, PAVE AND DEVELOP WITHIN 25 FEET OF A WETLAND ON PARCEL A, THE LEGACY AT DUCKETTS RIDGE. THE APPROVAL OF THIS WAIVER PETITION IS SUBJECT TO COMPLIANCE WITH THE FOLLOWING CONDITIONS OF APPROVAL:  
1. THE PETITIONER/DEVELOPER SHALL APPLY FOR AND OBTAIN ANY REQUIRED 404/401 PERMITS/CERTIFICATES.  
2. THE WETLAND MITIGATION AS PROFFERED UNDER THIS WAIVER PETITION APPLICATION SHALL BE PROVIDED AS PART OF A LARGER STREAM/WETLAND COMPLEX ELSEWHERE IN THE COUNTY THAT WILL PROVIDE GREATER HABITAT DIVERSITY AND POTENTIAL, AS APPROVED BY THE MDE.  
3. THE FOREST OBLIGATION FOR THIS PROJECT IS 6.07 ACRES OF REFORESTATION. A FEE-IN-LIEU WAS PAID FOR 1.0 ACRE TO THE HOWARD COUNTY FOREST CONSERVATION FUND FOR THE RECORDED SUBDIVISION OF THE LEGACY AT DUCKETTS RIDGE. THE REMAINING OBLIGATION OF 5.07 ACRES OF REFORESTATION WILL BE MET BY RETENTION OF 10.44 ACRES OF EXISTING FOREST AT THE BOLLMAN BRIDGE ELEMENTARY SCHOOL AS SHOWN ON SHEETS 21 AND 22.  
33. THE WATER METER WILL BE INSTALLED INSIDE THE BUILDING. THE BUILDING SHALL BE EQUIPPED WITH AN AUTOMATIC FIRE PREVENTION SPRINKLER SYSTEM.  
34. AN MDE PERMIT AND U.S. ARMY CORPS OF ENGINEERS PERMIT ARE REQUIRED FOR DISTURBANCE WITHIN JURISDICTIONAL WETLANDS. THE TRACKING NUMBER IS #2011-61358.  
35. NO TRAFFIC STUDY IS REQUIRED FOR THIS PROJECT.
- THE HOWARD COUNTY PUBLIC SCHOOL SYSTEM SHALL ENSURE THAT ALL STORMWATER MANAGEMENT FACILITIES AND ATTENDANT STRUCTURES ARE DESIGNED, CONSTRUCTED AND MAINTAINED TO PROTECT PUBLIC HEALTH AND SAFETY.
- THE HOWARD COUNTY PUBLIC SCHOOL SYSTEM ASSUMES ALL RESPONSIBILITY FOR MAINTENANCE OF ALL STORMWATER MANAGEMENT FACILITIES DEPICTED ON THIS PLAN.

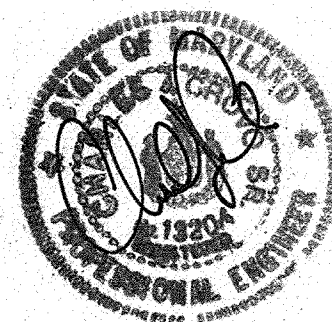
## SITE ANALYSIS DATA

- Area Tabulation:  
A. Total project area: 10.029 Ac.  
B. Total area of R/W dedication: 0.185 Ac.  
C. Total area of site: 9.844 Ac.  
D. Building coverage: 1.520 Ac. (15.4%)  
E. Total area of wetlands: 0.50 Ac.  
F. Total area of wetlands buffer: 0.44 Ac.  
G. There is no floodplain on this site.  
H. Total area of forest: 9.917 Ac.  
I. Total area of slopes 15%-25%: 0.240 Ac.  
J. There are no erodible soils on this site.  
K. Limit of disturbance: 11.004 Ac.  
L. Proposed use of site or structure: Institutional; Public School (Elementary): 10.029 Ac.  
M. Total area of green open space: 4.840 Ac.  
N. Total area of impervious area: 6.164 Ac.  
O. Zoned: R-12
- Parking Space Data:  
A. The number of parking spaces in accordance with the Public School System's requirements = 114  
B. Number of spaces proposed under this site plan = 115 (Including 5 handicapped spaces)  
C. Total number of bus stacking spaces provided = 16

## GENERAL NOTES CONTINUED

- ON FEBRUARY 8, 2012, A LETTER WAS RECEIVED FROM HOWARD COUNTY PLANNING AND ZONING REGARDING A DESIGN MANUAL WAIVER FOR THE FOLLOWING SECTIONS OF DMV III:  
A. SECTION 5.2.5.8.4 REQUIRES WET POND TO HAVE DRAINS. APPROVAL WAS GRANTED TO OMIT THE DRAIN BASED PRINCIPALLY ON THE FACT THAT THERE IS NO ADVERSE IMPACT TO EXISTING OR PROPOSED COUNTY INFRASTRUCTURE AND THAT AN ALTERNATIVE PUMP SYSTEM IS BEING PROFFERED TO ACHIEVE DRAINAGE OF THE FACILITY WHEN NEEDED.  
B. SECTION 5.2.5.9 REQUIRES A HOOD OR OTHER DEVICE TO KEEP FLOATABLE OBJECTS FROM LEAVING THE POND DURING LOW FREQUENCY STORM EVENTS FOR PONDS WITH A PERMANENT POOL. AS AN ALTERNATIVE, WE ARE PROPOSING A SMALL OPENING TRASH RACK. APPROVAL WAS GRANTED BASED PRINCIPALLY ON THE FACT THAT THERE IS NO ADVERSE IMPACT TO EXISTING OR PROPOSED COUNTY INFRASTRUCTURE AND THAT ADDITIONAL FACILITIES ARE PLACED THROUGHOUT THE SITE TO FILTER A MAJORITY OF THE IMPERVIOUS SURFACE RUNOFF.  
C. SECTION 5.1.1.A INCORPORATES THE 2000 MD SWM DESIGN MANUAL. THIS SECTION REQUIRES THAT F-6 BIORETENTION FACILITIES SHALL HAVE A 20 FOOT GRASS FILTER STRIP FOR PRETREATMENT PRIOR TO ENTERING THE F-6 FACILITY. WE ARE PROPOSING TO OMIT THE PRETREATMENT. APPROVAL WAS GRANTED BASED PRINCIPALLY ON THE FACT THAT THERE IS NO ADVERSE IMPACT TO EXISTING OR PROPOSED COUNTY INFRASTRUCTURE AS LONG AS THERE IS A SAND FILTER LAYER PRECEDING THE FACILITY FROM ANY IMPERVIOUS SURFACE.  
D. SECTION 5.2.5.10 REQUIRES A 12 FOOT WIDE LEVEL AREA SURROUNDING THE FACILITY. THE PROPOSED DESIGN PROVIDES THE DESIRED LEVEL (<3% CROSS SLOPE) AREAS ABOVE MOST OF THE POND, BUT THESE AREAS ARE NOT IN A CONTINUOUS LENGTH. APPROVAL WAS GRANTED BASED PRINCIPALLY ON THE FACT THAT THERE IS NO ADVERSE IMPACT TO EXISTING OR PROPOSED COUNTY INFRASTRUCTURE AND THAT THE FACILITY SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE BOARD OF EDUCATION.
- ON MARCH 21, 2012 A LETTER WAS RECEIVED FROM HOWARD COUNTY PLANNING AND ZONING REGARDING A DESIGN MANUAL WAIVER FOR THE FOLLOWING SECTIONS OF DMV VOLUME I:  
A. SECTION 5.2.5.A.2 WHICH STIPULATES THE SETBACK BUFFER REQUIREMENT FOR ALL STORMWATER MANAGEMENT FACILITIES. APPROVAL WAS GRANTED BASED PRINCIPALLY ON THE FACT THAT THERE IS NO ADVERSE IMPACT TO EXISTING OR PROPOSED COUNTY INFRASTRUCTURE. THE FACILITY SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE BOARD OF EDUCATION AND THAT THE AFFECTED ADJACENT PROPERTY OWNER HAS PROVIDED WRITTEN VERIFICATION OF HIS ACCEPTANCE OF THE PROPOSED ENCROACHMENT.  
B. SECTION 5.2.5.A.1 WHICH REQUIRES THAT ALL STORMWATER MANAGEMENT FACILITIES TO BE DESIGNED PER MD-378 AND ARE REQUESTING THAT THE IMPERVIOUS CORE AND CUTOFF TRENCH REQUIREMENT TO BE ELIMINATED. APPROVAL WAS GRANTED BASED PRINCIPALLY ON THE FACT THAT THERE IS NO ADVERSE IMPACT TO EXISTING OR PROPOSED COUNTY INFRASTRUCTURE, THE FACILITY SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE BOARD OF EDUCATION AND THAT THE PROPOSED WATER SURFACE ELEVATION IS APPROXIMATELY 4 FEET BELOW THE EXISTING DRIVEWAY ELEVATIONS AS STIPULATED IN THE JUSTIFICATION LETTER.
- MAINTENANCE FOR THE 9'-WIDE MACADAM SIDEWALKS ON PARCEL 76 WILL BE PROVIDED BY THE BOARD OF EDUCATION.

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21142  
(410) 461-2292



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012."

Charles J. Cervo, Sr., P.E.  
4/27/12 DATE

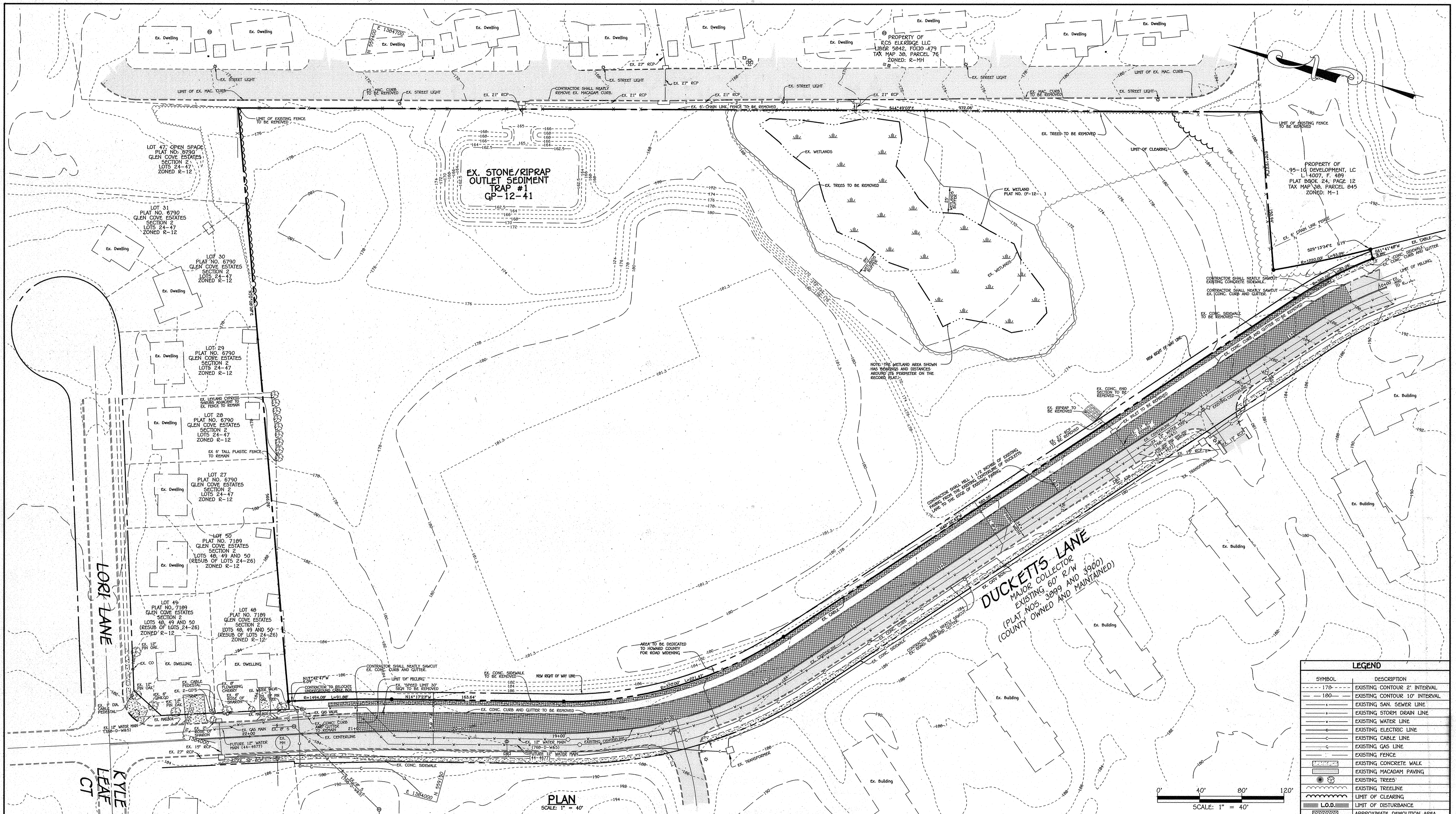
DATE	DESCRIPTION	REVISION BLOCK
6/24/12	REMOVED SHEET NUMBERS FROM 98 TO 99 & ADDED SHEET 99 TO SHEET INDEX	

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

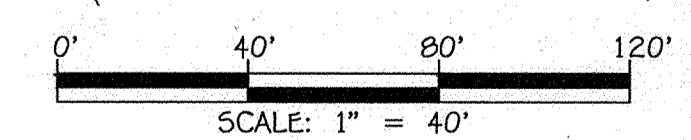
PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
10910 Maryland Route 108  
Ellicott City, Maryland 21042  
Attention: Bruce Gist  
410-313-6798

ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DIST.	CENSUS TRACT
21873-21875	12	R-12	37	FIRST	6012.01

TITLE SHEET	
ELEMENTARY SCHOOL #41 THE LEGACY AT DUCKETTS RIDGE PARCEL A	
ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569	FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN	DATE: APRIL 23, 2012
SHEET 1 OF 99	



PLAN  
SCALE: 1" = 40'



LEGEND	
SYMBOL	DESCRIPTION
---	EXISTING CONTOUR 2' INTERVAL
---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING ELECTRIC LINE
---	EXISTING WATER LINE
---	EXISTING GAS LINE
---	EXISTING FENCE
---	EXISTING CONCRETE WALK
---	EXISTING MACADAM PAVING
---	EXISTING TREES
---	EXISTING TREELINE
---	LIMIT OF CLEARING
---	L.O.D.
---	APPROXIMATE DEMOLITION AREA

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



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012."

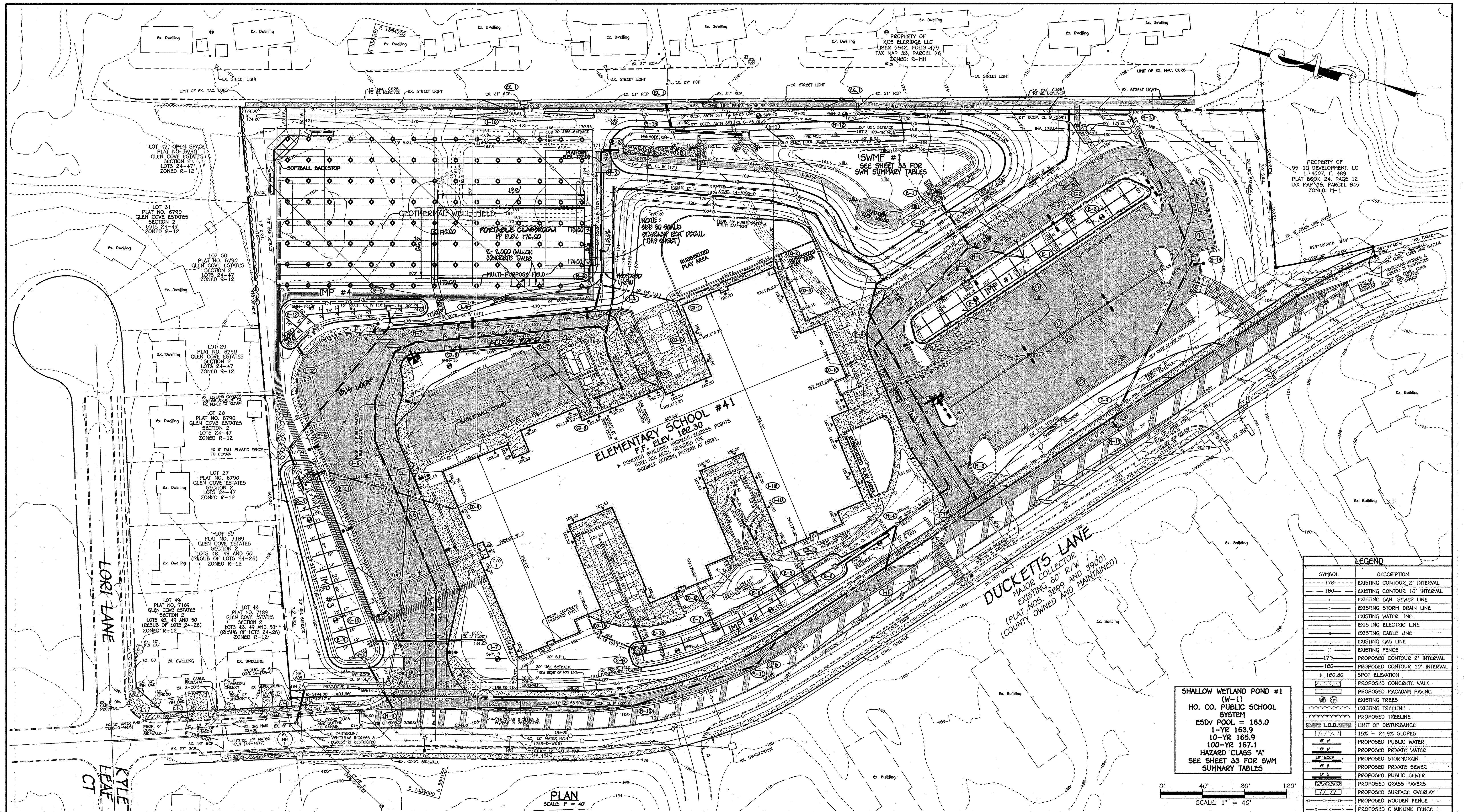
*Charles J. Grovo, Sr., P.E.*  
CHARLES J. GROVO, SR., P.E.      4/27/12      DATE

DATE	DESCRIPTION	REVISION BLOCK
9/24/10	REVISED SHEET NUMBERS FROM 30 TO 39	
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>David A. Cavali</i>	5/10/11	Date
Director - Department of Planning and Zoning		
<i>Vest Schaefer</i>	5/14/12	Date
Chief, Division of Land Development		
<i>Charles J. Grovo, Sr.</i>	5/4/12	Date
Chief, Development Engineering Division		

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

ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
21873-21875	-	R-12	37	FIRST	6012.01

DEMOLITION PLAN	
<b>ELEMENTARY SCHOOL #41</b>	
<b>THE LEGACY AT DUCKETTS RIDGE</b>	
PARCEL A	
ZONED R-12	TAX MAP No.: 37
FIRST ELECTION DISTRICT	GRID No.: 12
SCALE: 1" = 40'	PARCEL No.: 569
	HOWARD COUNTY, MARYLAND
	DATE: APRIL 23, 2012
SHEET 2 OF 22	

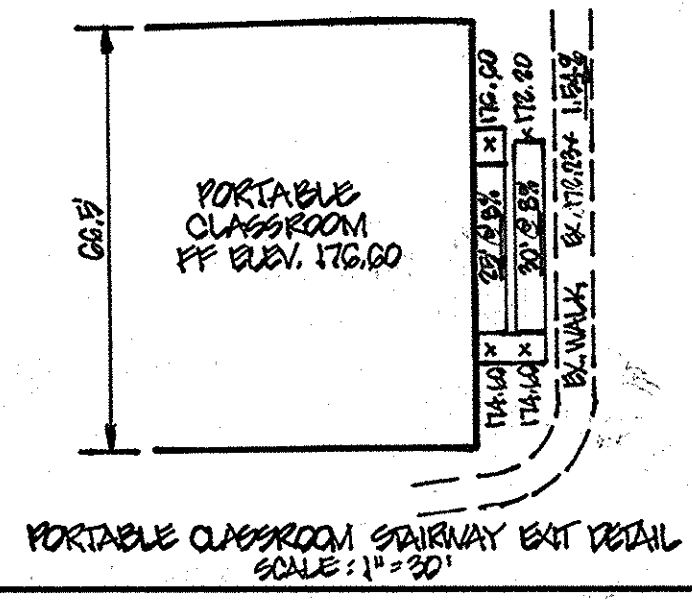


LEGEND	
SYMBOL	DESCRIPTION
--- 178 ---	EXISTING CONTOUR 2' INTERVAL
--- 180 ---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING CABLE LINE
---	EXISTING GAS LINE
---	EXISTING FENCE
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
+ 180.30	SPOT ELEVATION
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING
---	EXISTING TREES
---	EXISTING TREELINE
---	PROPOSED TREELINE
---	L.O.D. LIMIT OF DISTURBANCE
---	1% - 24.9% SLOPES
---	PROPOSED PRIVATE WATER
---	PROPOSED PUBLIC WATER
---	PROPOSED STORMDRAIN
---	PROPOSED PRIVATE SEWER
---	PROPOSED PUBLIC SEWER
---	PROPOSED GRASS PAVERS
---	PROPOSED SURFACE OVERLAY
---	PROPOSED WOODEN FENCE
---	PROPOSED CHARLINK FENCE

**SHALLOW WETLAND POND #1 (W-1)**  
 HO. CO. PUBLIC SCHOOL SYSTEM  
 ESDV POOL = 163.0  
 1-YR 163.9  
 10-YR 165.9  
 100-YR 167.1  
 HAZARD CLASS 'A'  
 SEE SHEET 33 FOR SWM SUMMARY TABLES

PLAN  
 SCALE: 1" = 40'

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 441-2999



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13504, Expiration Date: November 3, 2012."

*Charles J. Skovro, Sr., P.E.*  
 CHARLES J. SKOVRO, SR., P.E.  
 4/21/12 DATE

DATE	DESCRIPTION	REVISION BLOCK
9/4/10	ADD PORTABLE CLASSROOM & DRIVEWAY EXIT DETAIL	
9/24/10	REVISED SHEET NUMBERS FROM 30 TO 33	

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Paul A. Wynn* Date: 5/14/12  
 Director - Department of Planning and Zoning  
*Victor S. Schuchman* Date: 5/14/12  
 Chief, Division of Land Development  
*James* Date: 5/14/12  
 Chief, Development Engineering Division

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

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075

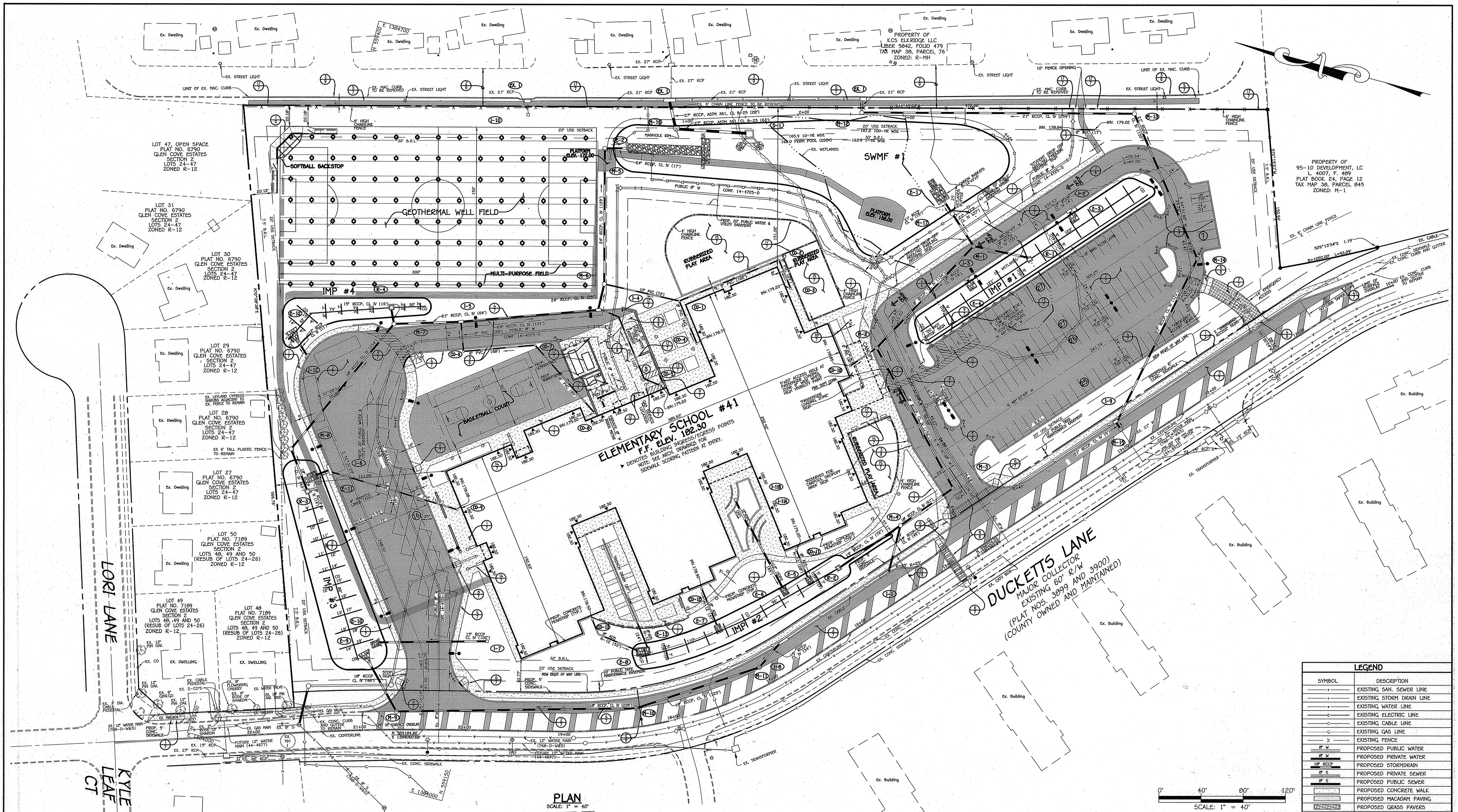
  

PERMIT INFORMATION CHART				
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.		
ELEMENTARY SCHOOL #41	N/A	P.0569		
PLAT# OR L/P	GRID#	ZONING	TAX MAP#	ELECT. DISTR.
21073-21075	-	R-12	37	FIRST
				CENSUS TRACT
				6012.01

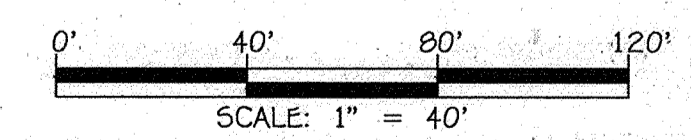
**SITE DEVELOPMENT PLAN**  
**ELEMENTARY SCHOOL #41**  
**THE LEGACY AT DUCKETTS RIDGE**  
**PARCEL A**

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 40' DATE: APRIL 23, 2012

SHEET 3 OF 39



PLAN  
SCALE: 1" = 40'



LEGEND	
—	EXISTING SAN. SEWER LINE
—	EXISTING STORM DRAIN LINE
—	EXISTING WATER LINE
—	EXISTING ELECTRIC LINE
—	EXISTING CABLE LINE
—	EXISTING GAS LINE
X	EXISTING FENCE
—	PROPOSED PUBLIC WATER
—	PROPOSED PRIVATE WATER
—	PROPOSED STORMDRAIN
—	PROPOSED PRIVATE SEWER
—	PROPOSED PUBLIC SEWER
—	PROPOSED CONCRETE WALK
—	PROPOSED MACADAM PAVING
—	PROPOSED GRASS PAVERS
—	PROPOSED SURFACE OVERLAY

**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 that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, expiration Date: November 3, 2012."

*Charles J. Crovo, Sr., P.E.*  
 CHARLES J. CROVO, SR., P.E. 4/27/12 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Paul H. Loughlin* 5/14/12 DATE  
 Director - Department of Planning and Zoning

*Victor R. ...* 5/14/12 DATE  
 Chief, Division of Land Development

*...* 5/14/12 DATE  
 Chief, Development Engineering Division

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

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075

PERMIT INFORMATION CHART				
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.		
ELEMENTARY SCHOOL #41	N/A	P.0569		
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.
21973-21975		R-12	37	FIRST
				CENSUS TRACT
				6012.01

**GEOMETRY PLAN**

**ELEMENTARY SCHOOL #41**

**THE LEGACY AT DUCKETTS RIDGE**

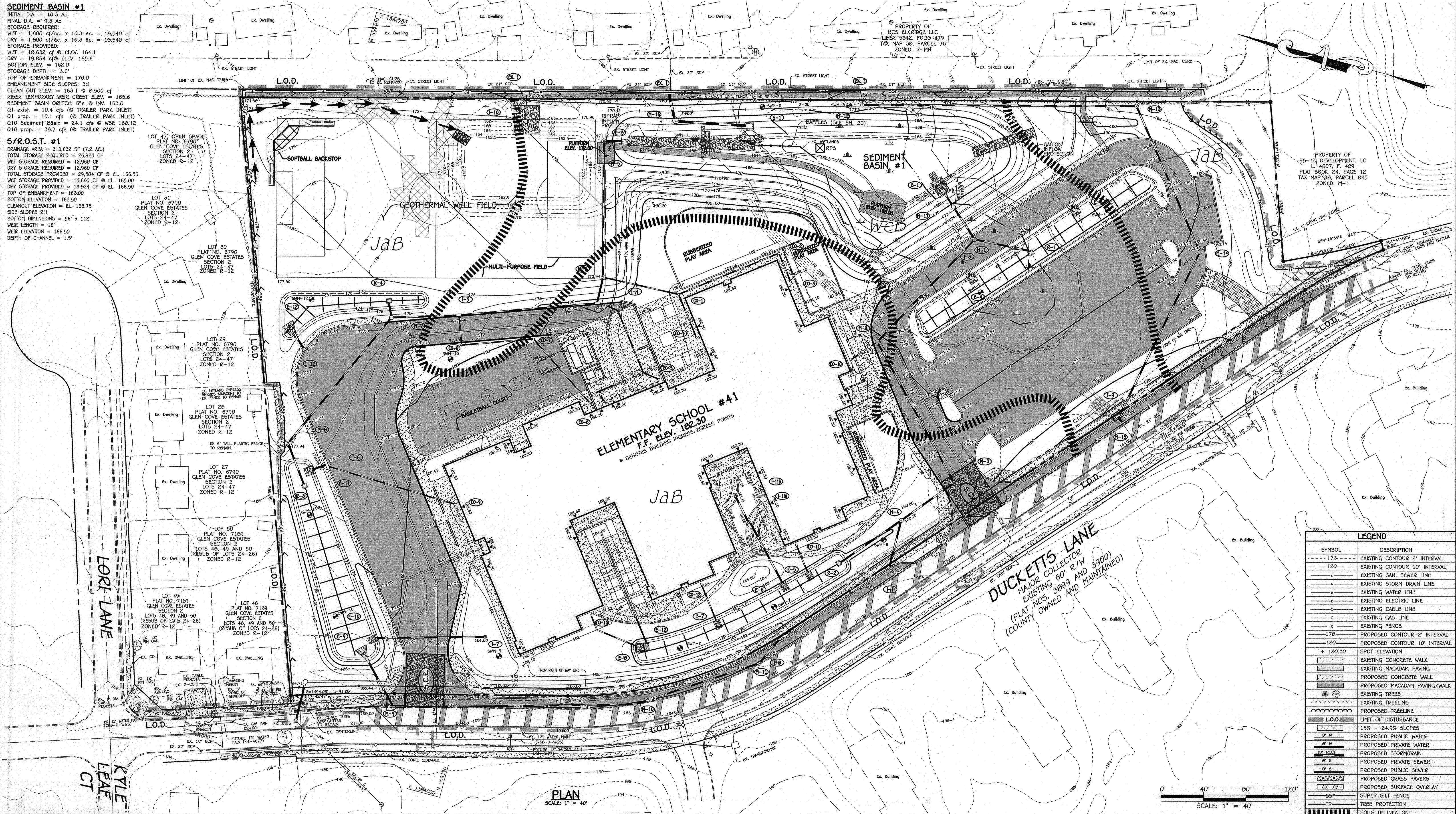
PARCEL A

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 40' DATE: APRIL 23, 2012

SHEET 4 OF 99

**SEDIMENT BASIN #1**  
 INITIAL D.A. = 10.3 Ac.  
 FINAL D.A. = 9.3 Ac.  
 STORAGE REQUIRED:  
 WET = 1,800 cf/ac. x 10.3 ac. = 18,540 cf  
 DRY = 1,800 cf/ac. x 10.3 ac. = 18,540 cf  
 STORAGE PROVIDED:  
 WET = 18,632 cf @ ELEV. 164.1  
 DRY = 19,864 cf @ ELEV. 165.6  
 BOTTOM ELEV. = 162.0  
 STORAGE DEPTH = 3.6'  
 TOP OF EMBANKMENT = 170.0  
 EMBANKMENT SIDE SLOPES: 3:1  
 CLEAN OUT ELEV. = 163.1 @ 0.500 cf  
 RISER TEMPORARY WEIR CREST ELEV. = 165.6  
 SEDIMENT BASIN ORIFICE: 6" @ INV. 163.0  
 Q1 ext. = 10.4 cfs @ TRAILER PARK INLET  
 Q1 prop. = 10.1 cfs @ TRAILER PARK INLET  
 Q10 Sediment Basin = 24.1 cfs @ WSE 168.12  
 Q10 prop. = 30.7 cfs @ TRAILER PARK INLET

**S/R.O.S.T. #1**  
 DRAINAGE AREA = 313,632 SF (7.2 AC.)  
 TOTAL STORAGE REQUIRED = 25,920 CF  
 WET STORAGE REQUIRED = 12,960 CF  
 DRY STORAGE REQUIRED = 12,960 CF  
 TOTAL STORAGE PROVIDED = 29,504 CF @ EL. 166.50  
 WET STORAGE PROVIDED = 15,850 CF @ EL. 165.00  
 DRY STORAGE PROVIDED = 13,824 CF @ EL. 166.50  
 TOP OF EMBANKMENT = 168.00  
 BOTTOM ELEVATION = 162.50  
 CLEANOUT ELEVATION = EL. 163.75  
 SIDE SLOPES 2:1  
 BOTTOM DIMENSIONS = 56' x 112'  
 WEIR LENGTH = 16'  
 WEIR ELEVATION = 166.50  
 DEPTH OF CHANNEL = 1.5'



**LEGEND**

SYMBOL	DESCRIPTION
--- 178 ---	EXISTING CONTOUR 2' INTERVAL
--- 180 ---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING CABLE LINE
---	EXISTING GAS LINE
X	EXISTING FENCE
---	PROPOSED CONTOUR 2' INTERVAL
---	PROPOSED CONTOUR 10' INTERVAL
+ 180.30	SPOT ELEVATION
---	EXISTING CONCRETE WALK
---	EXISTING MACADAM PAVING
---	PROPOSED CONCRETE WALK
---	PROPOSED MACADAM PAVING/WALK
---	EXISTING TREES
---	EXISTING TREELINE
---	PROPOSED TREELINE
L.O.D.	LIMIT OF DISTURBANCE
15% - 24.9% SLOPES	15% - 24.9% SLOPES
W	PROPOSED PUBLIC WATER
W	PROPOSED PRIVATE WATER
IP RCP	PROPOSED STORMDRAIN
S	PROPOSED PRIVATE SEWER
S	PROPOSED PUBLIC SEWER
---	PROPOSED GRASS PAVERS
---	PROPOSED SURFACE OVERLAY
---	SUPER SILT FENCE
TP	TREE PROTECTION
---	SOILS DELINEATION

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10722 BALTHORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2000

**ENGINEER'S CERTIFICATE**  
 "I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."  
 Signature of Engineer: Charles J. Crovo, Sr., P.E.  
 Date: 4/20/12

**DEVELOPER'S CERTIFICATE**  
 "I/we certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."  
 Signature of Developer: John K. Hunter  
 Date: 5/1/12

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012."  
 Signature: Charles J. Crovo, Sr., P.E.  
 Date: 4/20/12

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Director - Department of Planning and Zoning: Joanne K. Lynch  
 Chief, Division of Land Development: [Signature]  
 Chief, Development Engineering Division: [Signature]  
 Date: 5/1/12

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 10910 Maryland Route 10B  
 Ellicott City, Maryland 21042  
 Attention Bruce Gief  
 410-313-6798

DATE: 4/24/12  
 REVISION BLOCK:  
 4/24/12 REVISED SHEET NUMBERS FROM 98 TO 99

ADDRESS CHART

LOT/PARCEL#	STREET ADDRESS
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075

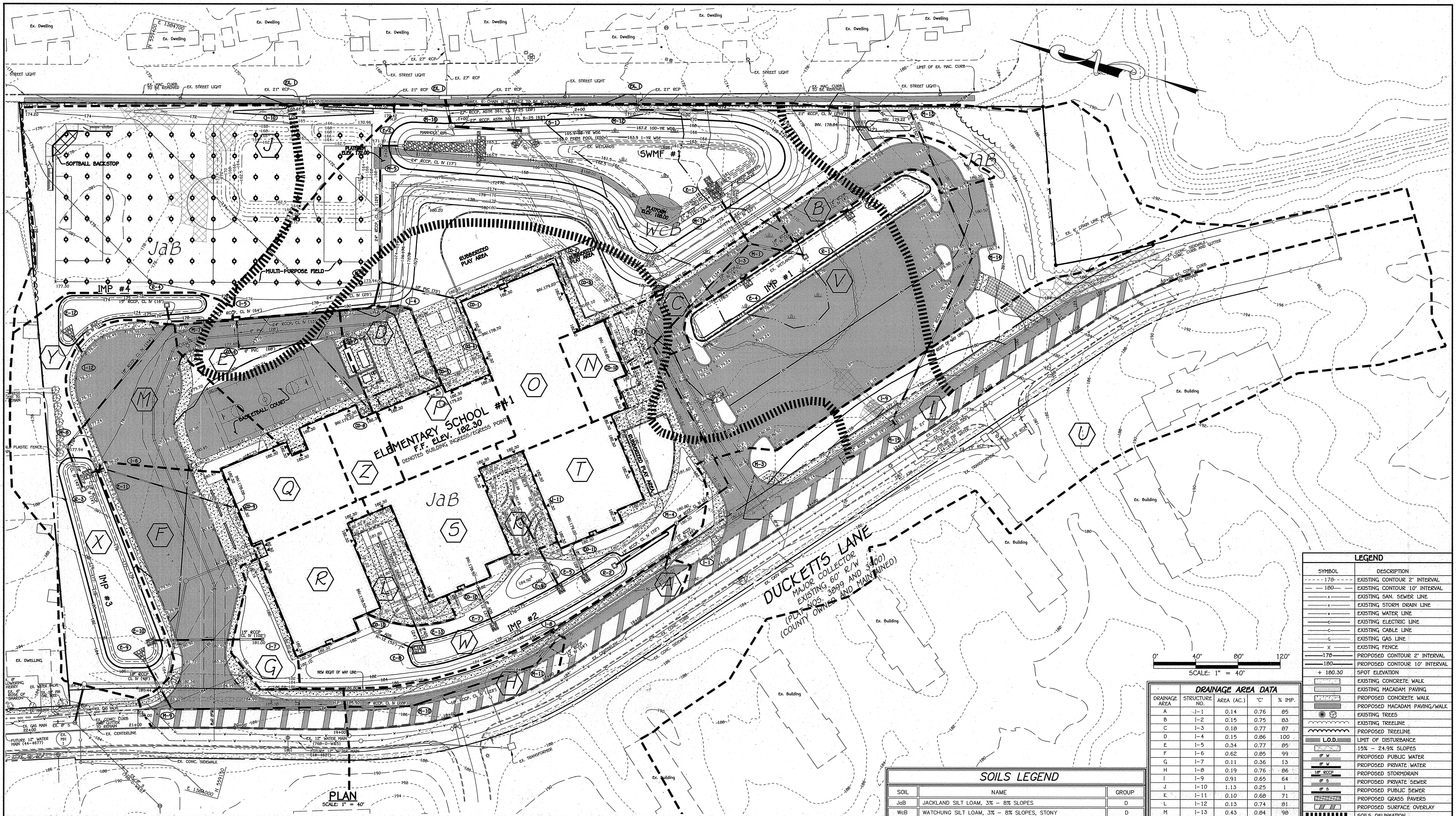
PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DIST.	CENSUS TRACT
21873-21875	-	R-12	37	FIRST	6012.01

**SEDIMENT AND EROSION CONTROL PLAN**  
**ELEMENTARY SCHOOL #41**  
**THE LEGACY AT DUCKETTS RIDGE**  
**PARCEL A**

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
 FIRST ELECTION DISTRICT: HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 40' DATE: APRIL 23, 2012

SHEET 5 OF 99



PLAN  
SCALE: 1" = 40'

0' 40' 80' 120'  
SCALE: 1" = 40'

LEGEND	
SYMBOL	DESCRIPTION
- - - 178 - - -	EXISTING CONTOUR 2' INTERVAL
- - - 180 - - -	EXISTING CONTOUR 10' INTERVAL
- - -	EXISTING SAN. SEWER LINE
- - -	EXISTING STORM DRAIN LINE
- - -	EXISTING WATER LINE
- - -	EXISTING ELECTRIC LINE
- - -	EXISTING CABLE LINE
- - -	EXISTING GAS LINE
- - -	EXISTING FENCE
- - - 178 - - -	PROPOSED CONTOUR 2' INTERVAL
- - - 180 - - -	PROPOSED CONTOUR 10' INTERVAL
+ 180.30	SPOT ELEVATION
- - -	EXISTING CONCRETE WALK
- - -	EXISTING MACADAM PAVING
- - -	PROPOSED CONCRETE WALK
- - -	PROPOSED MACADAM PAVING/WALK
- - -	EXISTING TREES
- - -	EXISTING TREELINE
- - -	PROPOSED TREELINE
- - -	L.O.D. LIMIT OF DISTURBANCE
- - -	15% - 24.9% SLOPES
- - -	PROPOSED PUBLIC WATER
- - -	PROPOSED PRIVATE WATER
- - -	PROPOSED STORMDRAIN
- - -	PROPOSED PRIVATE SEWER
- - -	PROPOSED PUBLIC SEWER
- - -	PROPOSED GRASS PAVERS
- - -	PROPOSED SURFACE OVERLAY
- - -	SOILS DELINEATION

DRAINAGE AREA DATA				
DRAINAGE AREA	STRUCTURE NO.	AREA (AC.)	C'	% IMP.
A	I-1	0.14	0.76	85
B	I-2	0.15	0.75	83
C	I-3	0.18	0.77	87
D	I-4	0.15	0.86	100
E	I-5	0.34	0.77	85
F	I-6	0.62	0.85	99
G	I-7	0.11	0.36	13
H	I-8	0.19	0.76	86
I	I-9	0.91	0.65	64
J	I-10	1.13	0.25	1
K	I-11	0.10	0.68	71
L	I-12	0.13	0.74	81
M	I-13	0.43	0.84	98

SOILS LEGEND		
SOIL	NAME	GROUP
JoB	JACKLAD SILT LOAM, 3% - 8% SLOPES	D
WeB	WATCHUNG SILT LOAM, 3% - 8% SLOPES, STONY	D

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075

PERMIT INFORMATION CHART				
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	TAX MAP#	ELECT. DIST.
ELEMENTARY SCHOOL #41	N/A	P.0569	37	FIRST
PLAT# OR L/P	GRID#	ZONING	TAX MAP#	ELECT. DIST.
21873-21875	-	R-12	37	FIRST
				CENSUS TRACT
				6012.01

SOILS AND DRAINAGE AREA MAP	
ELEMENTARY SCHOOL #41	
THE LEGACY AT DUCKETTS RIDGE	
PARCEL A	
ZONED R-12	TAX MAP No.: 37
FIRST ELECTION DISTRICT	GRID No.: 12
SCALE: 1" = 40'	PARCEL No.: 569
	HOWARD COUNTY, MARYLAND
	DATE: APRIL 23, 2012
SHEET 6 OF 99	

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10722 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21042  
(410) 461-2000



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012."

*Charles J. Cravo, Sr.*  
CHARLES J. CRAVO, SR., P.E. 4/27/12 DATE

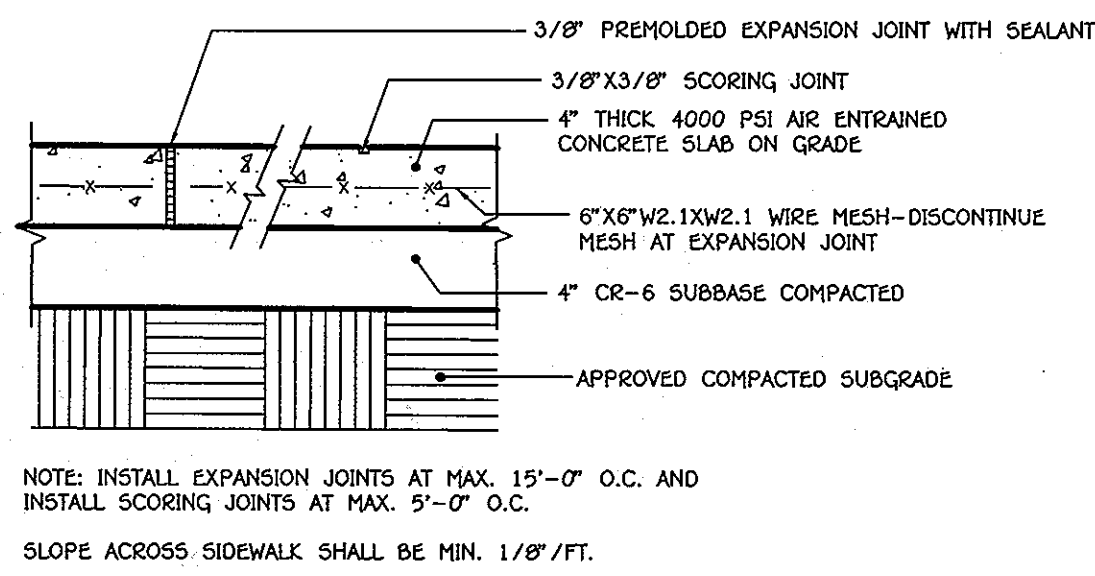
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Director - Department of Planning and Zoning  
Chief, Division of Land Development  
Chief, Development Engineering Division

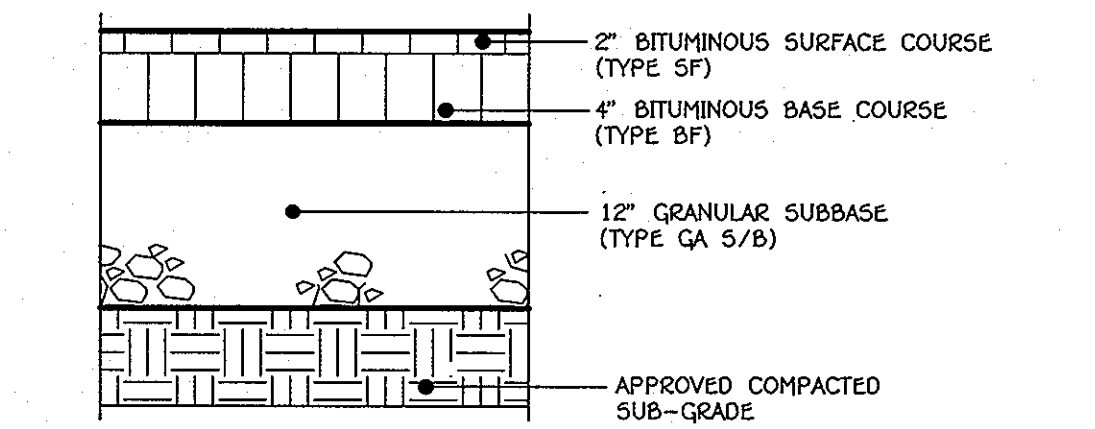
5/14/12  
5/14/12  
5/14/12

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

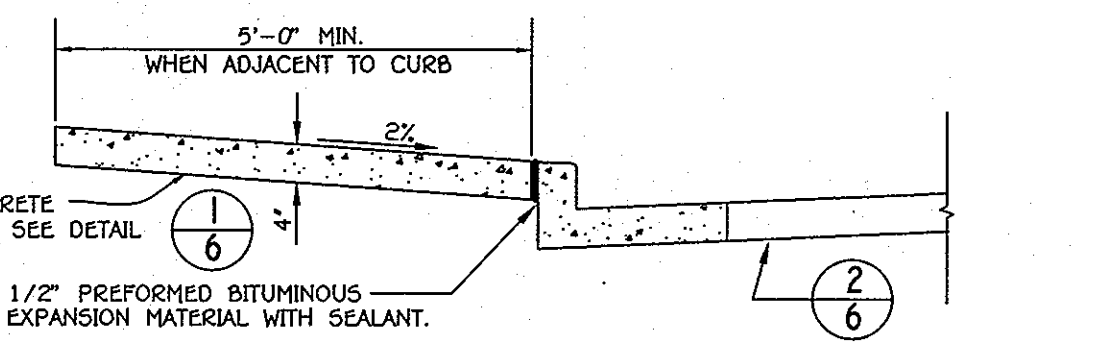
P:\2011\110214\001\11021-001 (SHEET 6) SOILS.dwg, SOILS (SHEET 6), 4/23/2012 9:05:37 AM, 11.00713



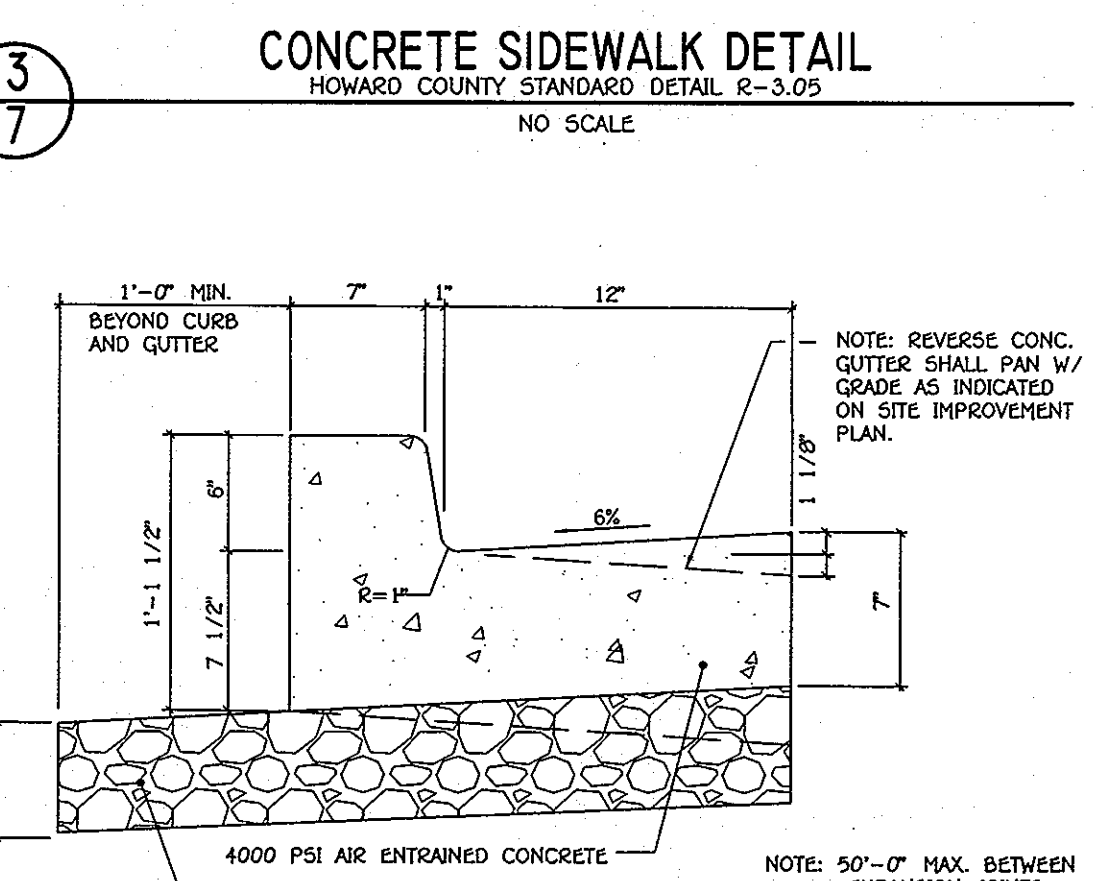
1 CONCRETE WALK DETAIL  
NO SCALE



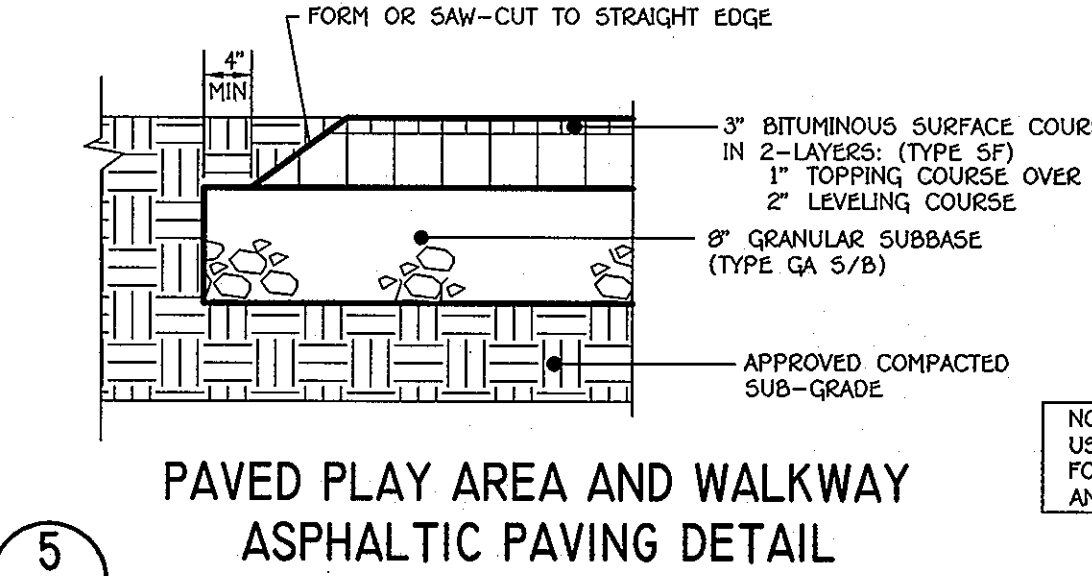
2 HEAVY DUTY ASPHALTIC PAVING DETAIL  
NO SCALE



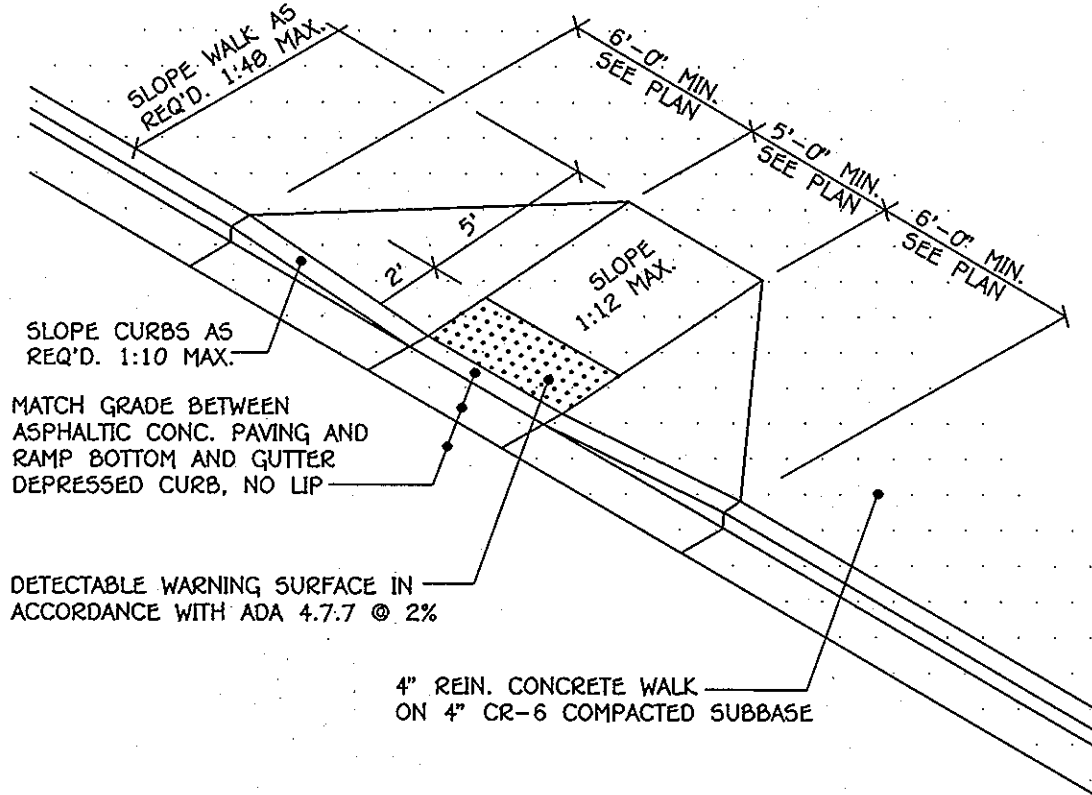
3 CONCRETE SIDEWALK DETAIL  
HOWARD COUNTY STANDARD DETAIL R-3.05  
NO SCALE



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

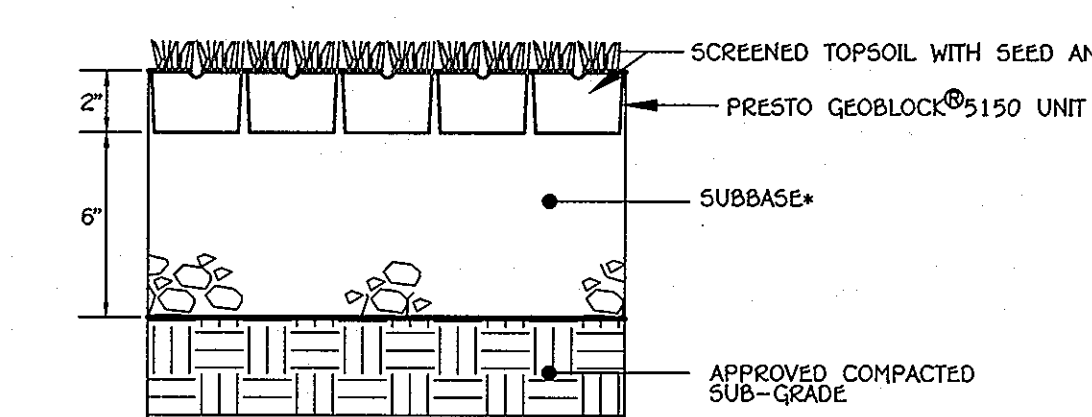


5 PAVED PLAY AREA AND WALKWAY ASPHALTIC PAVING DETAIL  
NO SCALE

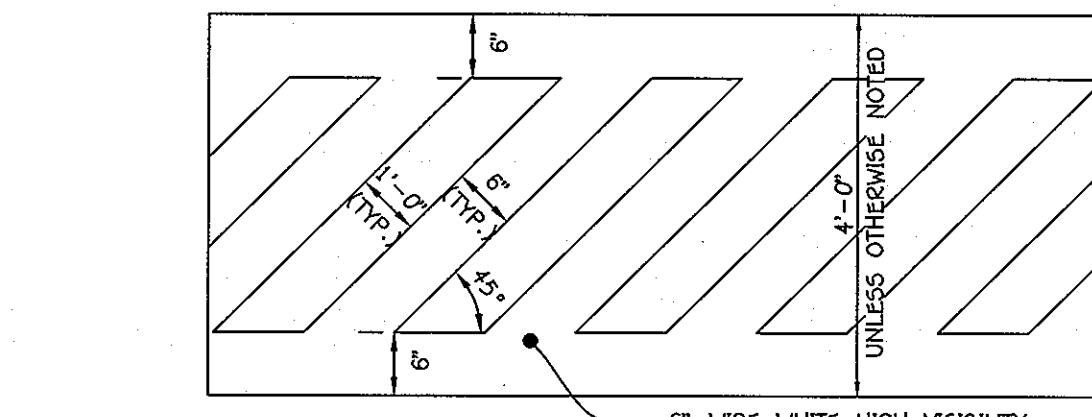


6 SIDEWALK RAMP DETAIL  
NO SCALE

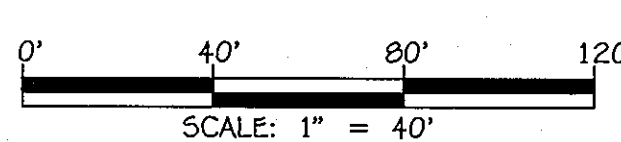
\*THE SUBBASE IS A HOMOGENOUS MIXTURE CONSISTING OF 1) A CLEAR-STONE/CRUSHED ROCK HAVING AN AASHTO#5 OR SIMILAR DESIGNATION BLENDED WITH 2) PULVERIZED TOPSOIL AND 3) A VOID COMPONENT GENERALLY CONTAINING AIR AND/OR WATER. THE AGGREGATE PORTION SHALL HAVE A PARTICLE RANGE FROM 9.5 MM TO 25 MM (0.375 TO 1.0 IN) WITH A D50 OF 13 MM (0.5 IN). THE PERCENTAGE VOID-SPACE OF THE AGGREGATE PORTION WHEN COMPACTED SHALL BE AT LEAST 30% OF THE PULVERIZED TOPSOIL PORTION SHALL EQUAL 25% OF THE TOTAL VOLUME AND BE ADDED AND BLENDED TO PRODUCE A HOMOGENOUS MIXTURE PRIOR TO PLACEMENT OR WASHED INTO THE IN-PLACE COMPACTED AGGREGATE. ONCE PLACED, THE MIXTURE SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.



7 GRASS PAVER SYSTEM PRESTO GEOSYSTEMS - GEOBLOCK® 5150  
NO SCALE



8 CROSSWALK DETAIL  
NO SCALE



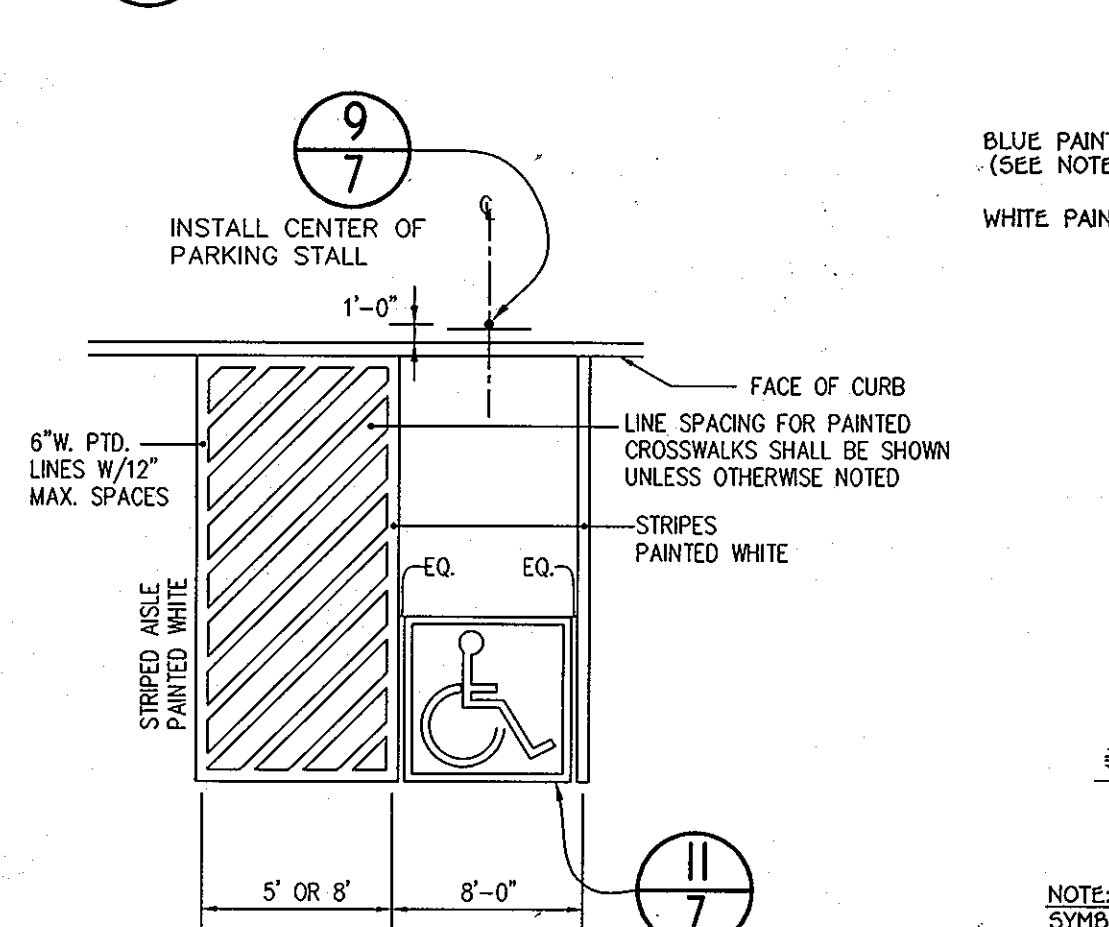
9 HANDICAP PARKING SIGN DETAIL  
NOT TO SCALE



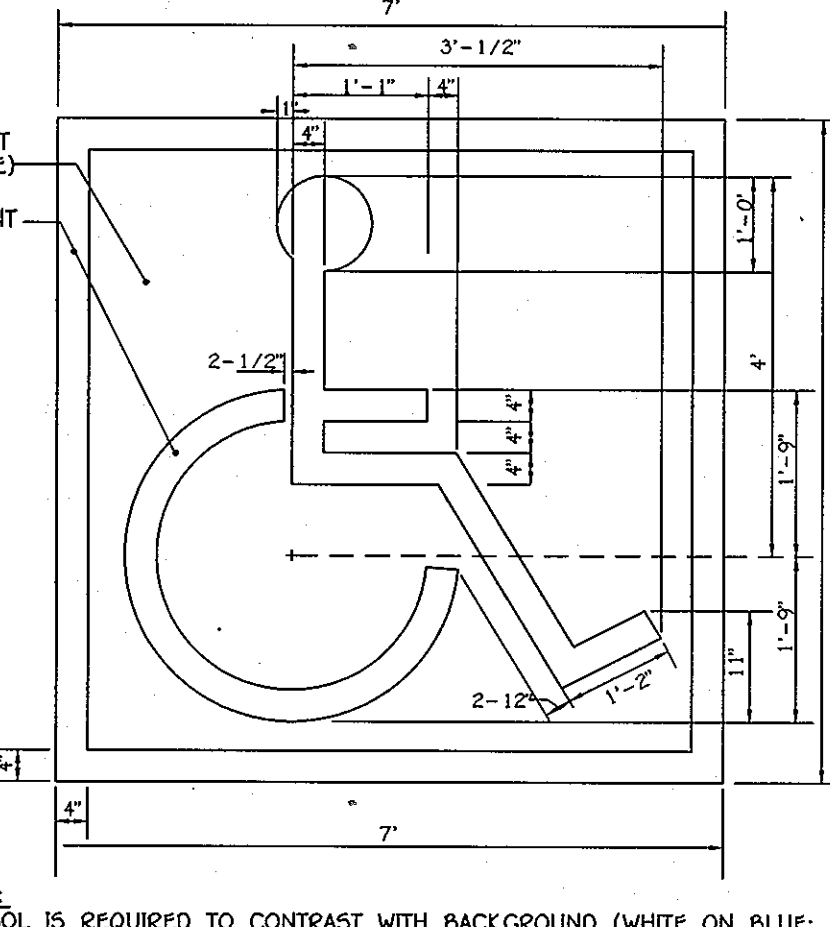
10 VAN ACCESSIBLE PARKING SIGN DETAIL  
NO SCALE

GENERAL NOTES:  
1. SIGNS SHALL MEET DESIGN STANDARDS OF THE FEDERAL HIGHWAY ADMINISTRATION AND CONFORM TO THE STATE OF MARYLAND STANDARD HIGHWAY SIGN BOOK LETTER DETAIL R7-B.  
2. ONE SIGN IS REQUIRED PER SPACE PLACED AS SHOWN ON SITE IMPROVEMENT PLAN.  
3. 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.  
4. SIGN SHALL BE ATTACHED TO FLANGED SIDE OF POST. POST SHALL EXTEND INTO GROUND 2'-6" MIN.  
5. COLORS: LEGEND AND BORDER-GREEN SYMBOL-WHITE ON BLUE BACKGROUND BACKGROUND-WHITE  
6. CONTRACTOR SHALL COORDINATE ARROW DIRECTION WITH LOCATION OF ADJACENT AISLE.  
7. SPACES INDICATED ON SITE DEVELOPMENT PLANS AS "VAN ACCESSIBLE" SHALL BE SIGNED ACCORDINGLY.

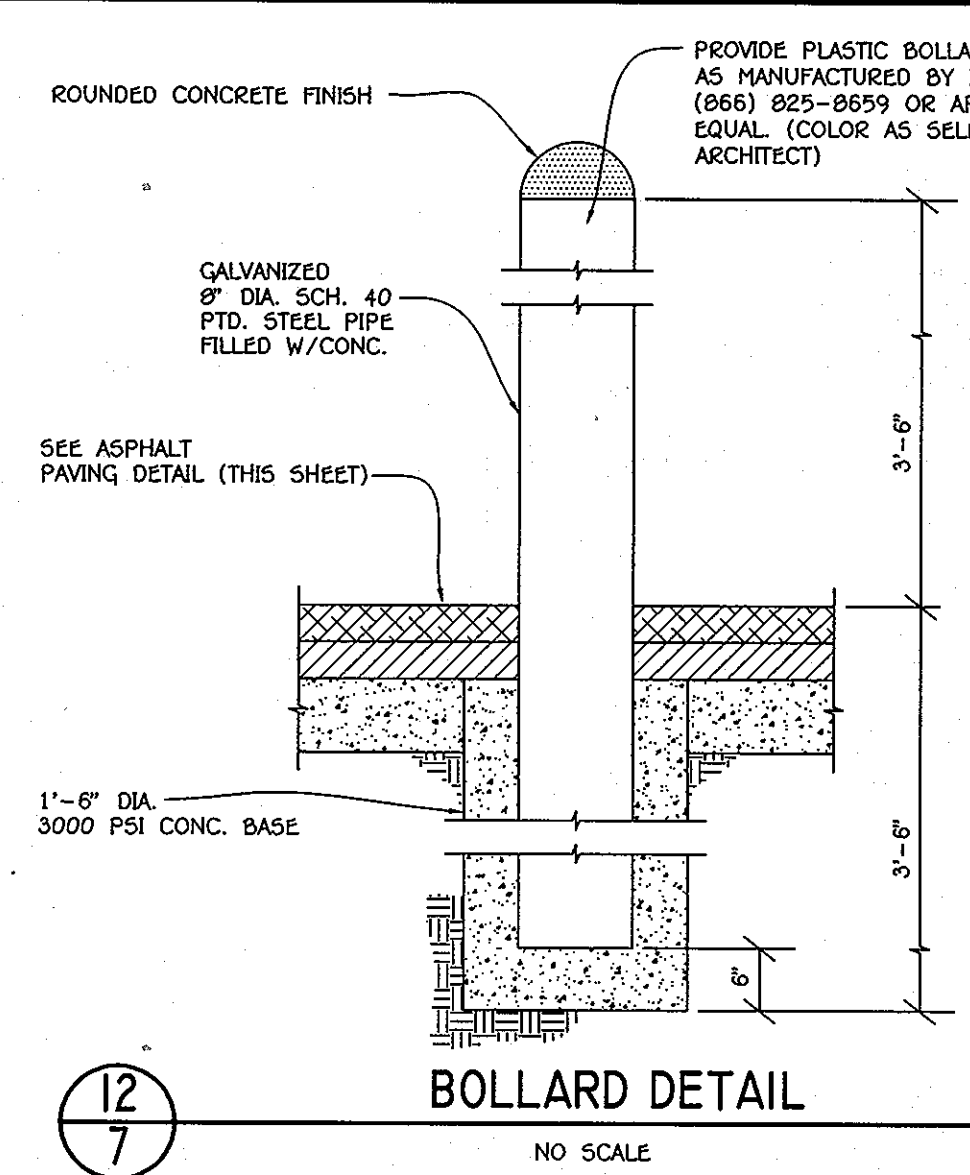
9 HANDICAP PARKING SIGN DETAIL  
NOT TO SCALE



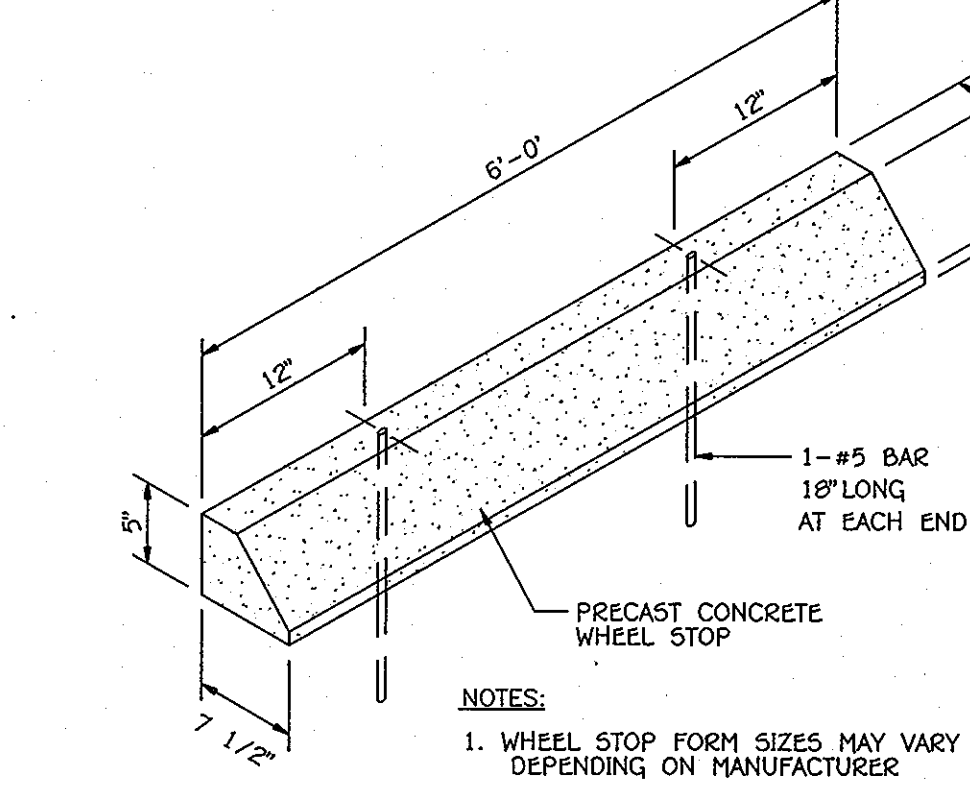
10 ACCESSIBLE SPACE LAYOUT  
NO SCALE



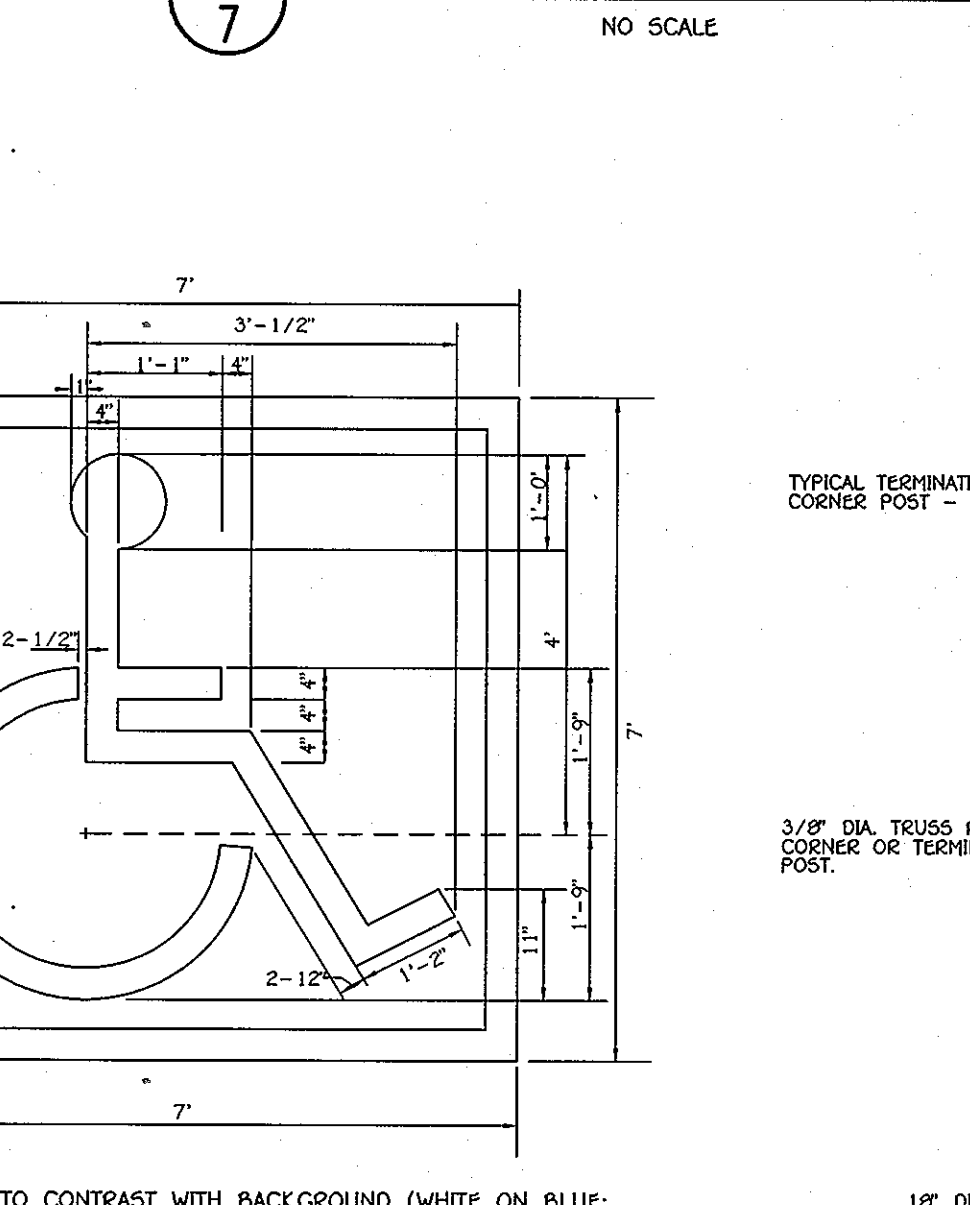
11 HANDICAP SPACE STENCIL LAYOUT  
SCALE: 1" = 20'



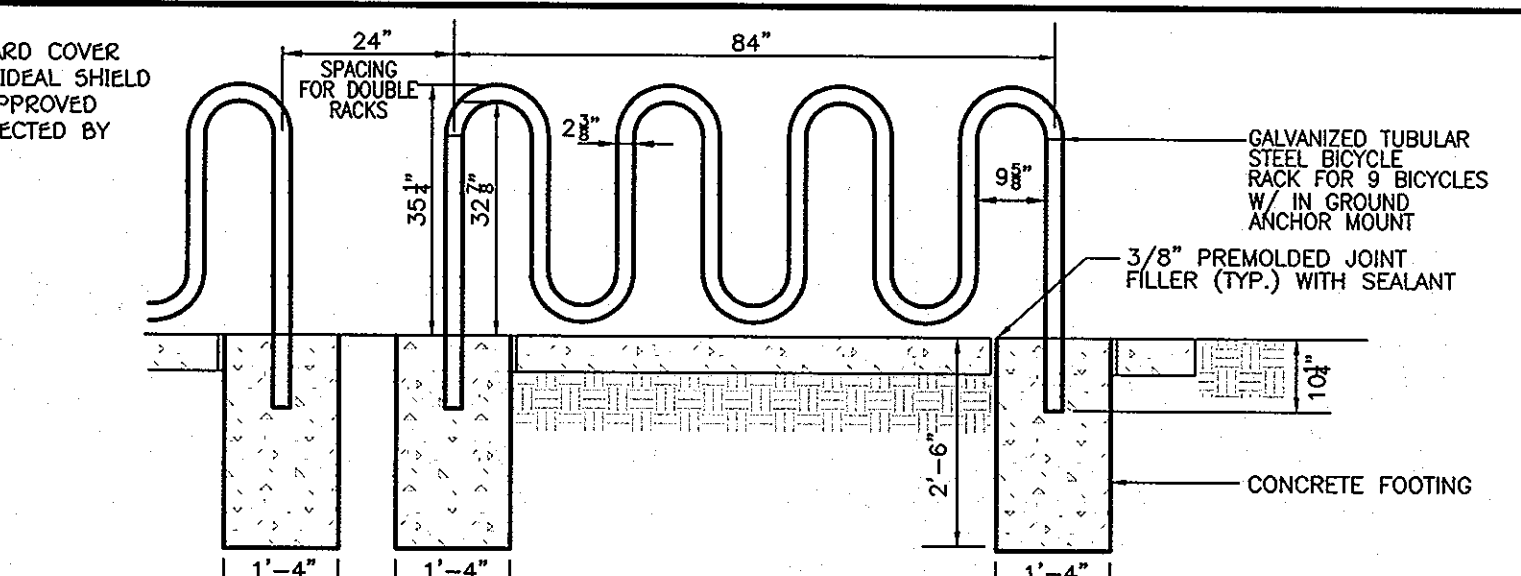
12 BOLLARD DETAIL  
NO SCALE



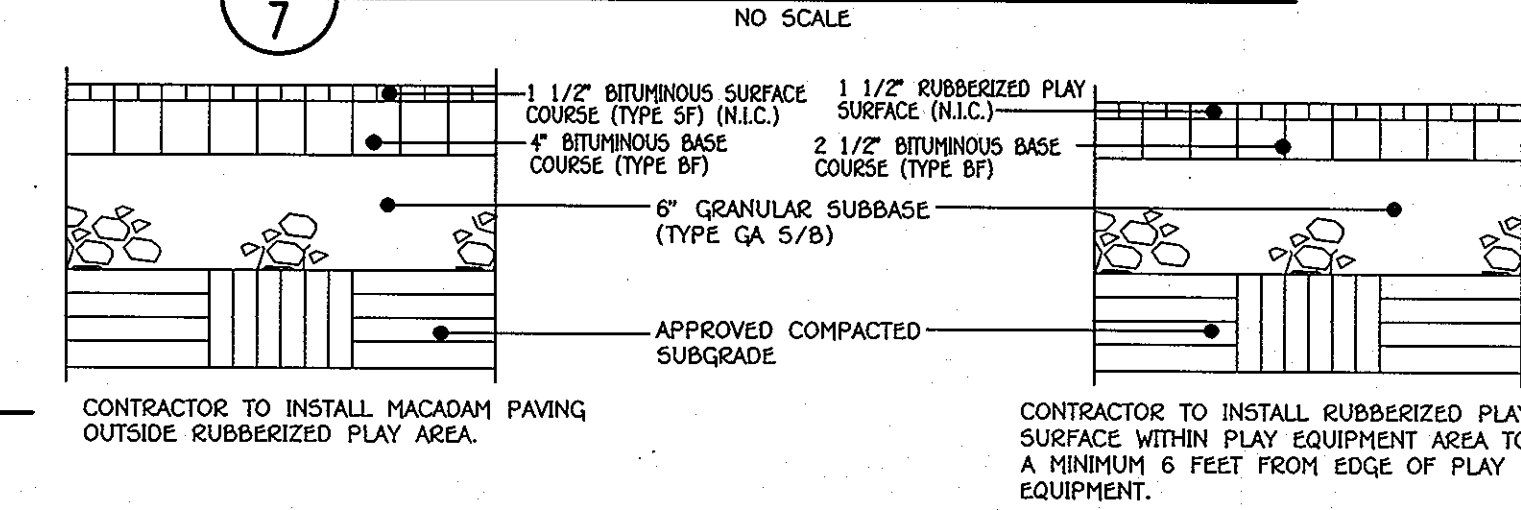
13 WHEEL STOP DETAIL  
NO SCALE



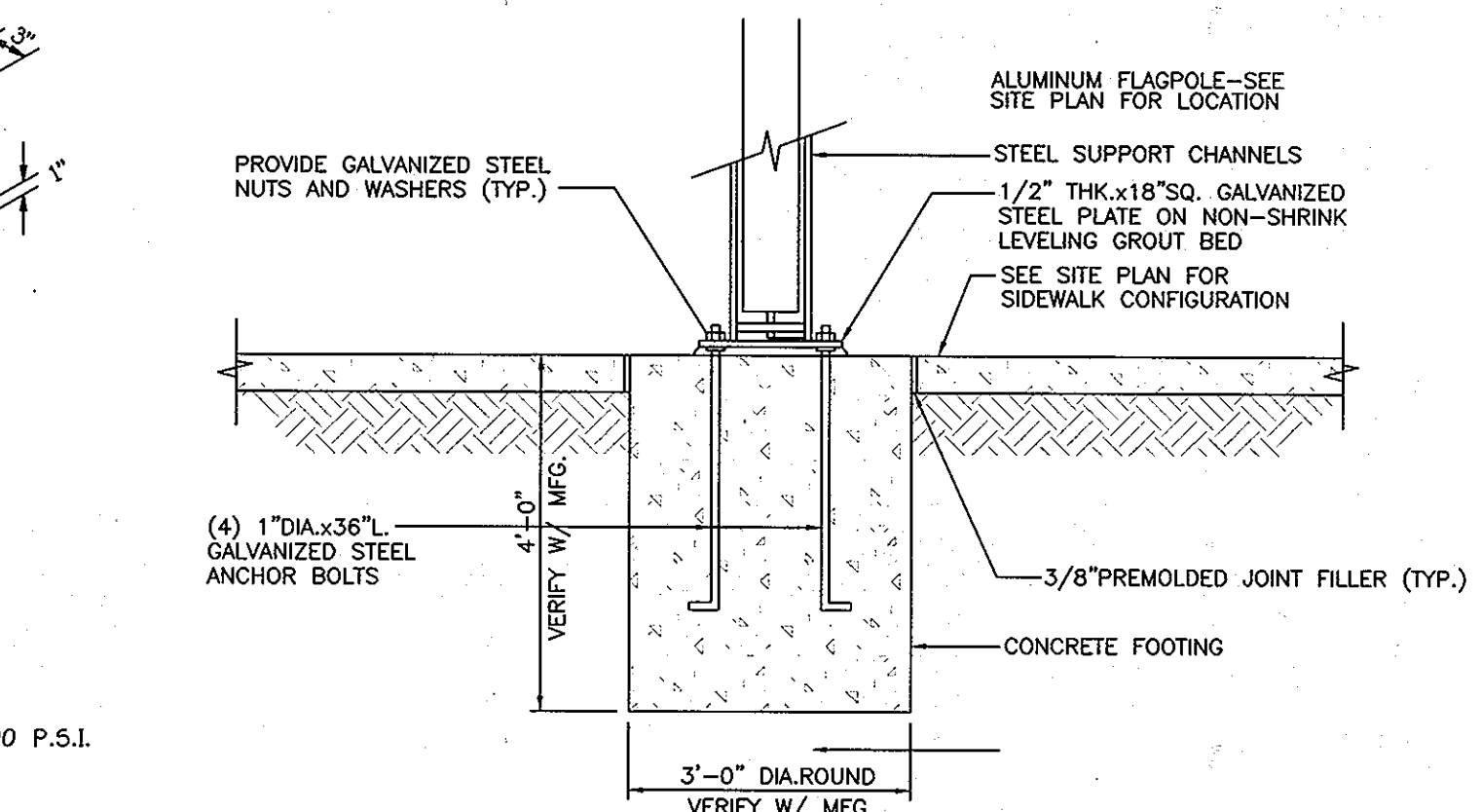
17 CHAIN LINK FENCE DETAIL  
HOWARD COUNTY STANDARD DETAIL G-7.21  
NO SCALE



14 BICYCLE RACK DETAIL  
NO SCALE



15 RUBBERIZED PLAY SURFACE DETAIL  
NO SCALE



16 TILT FLAGPOLE DETAIL  
NO SCALE

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
REGIONAL OFFICE: 1027 BALTIMORE NATIONAL PIKE  
SUITE 200, BALTIMORE, MARYLAND 21042  
(410) 461-2895



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012."  
Charles J. Grovo, Sr., P.E. 4/27/12 DATE

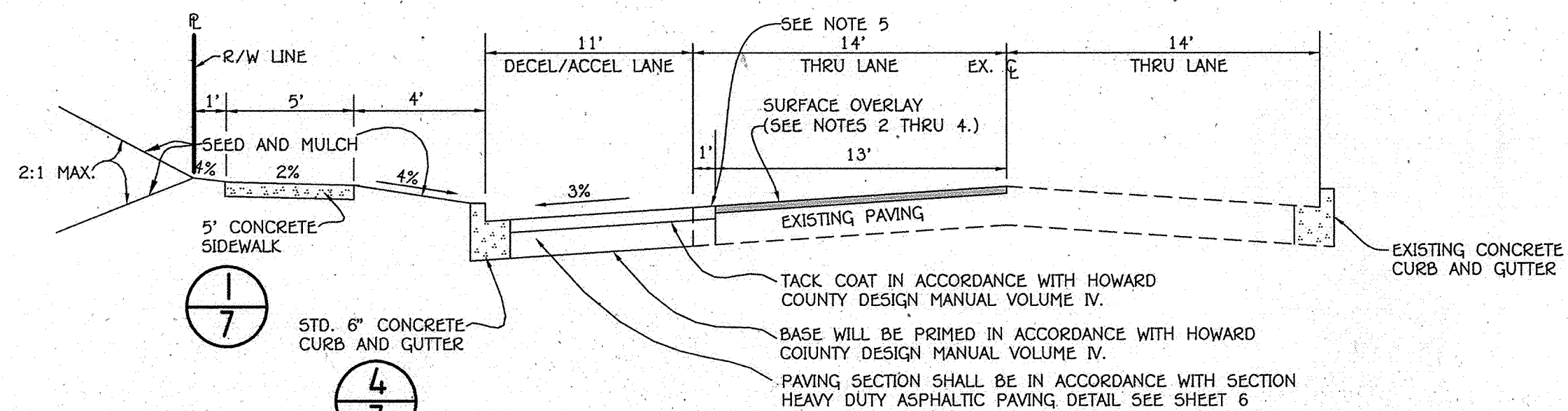
DATE	DESCRIPTION

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  
10910 Maryland Route 108  
Ellicott City, Maryland 21042  
Attention Bruce Gist  
410-313-6798

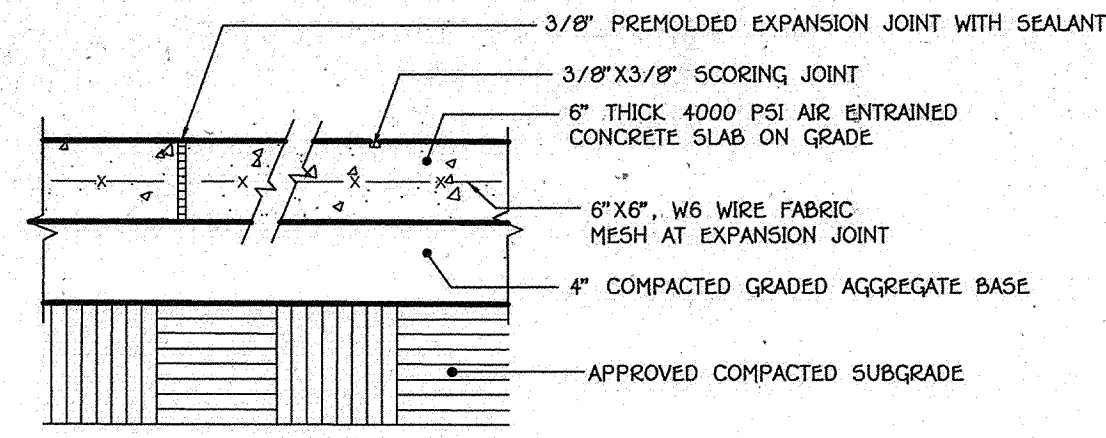
ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
21873-21875	-	R-12	37	FIRST	6012.01

DETAIL SHEET  
ELEMENTARY SCHOOL #41  
THE LEGACY AT DUCKETTS RIDGE  
PARCEL A  
ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: APRIL 23, 2012  
SHEET 7 OF 38



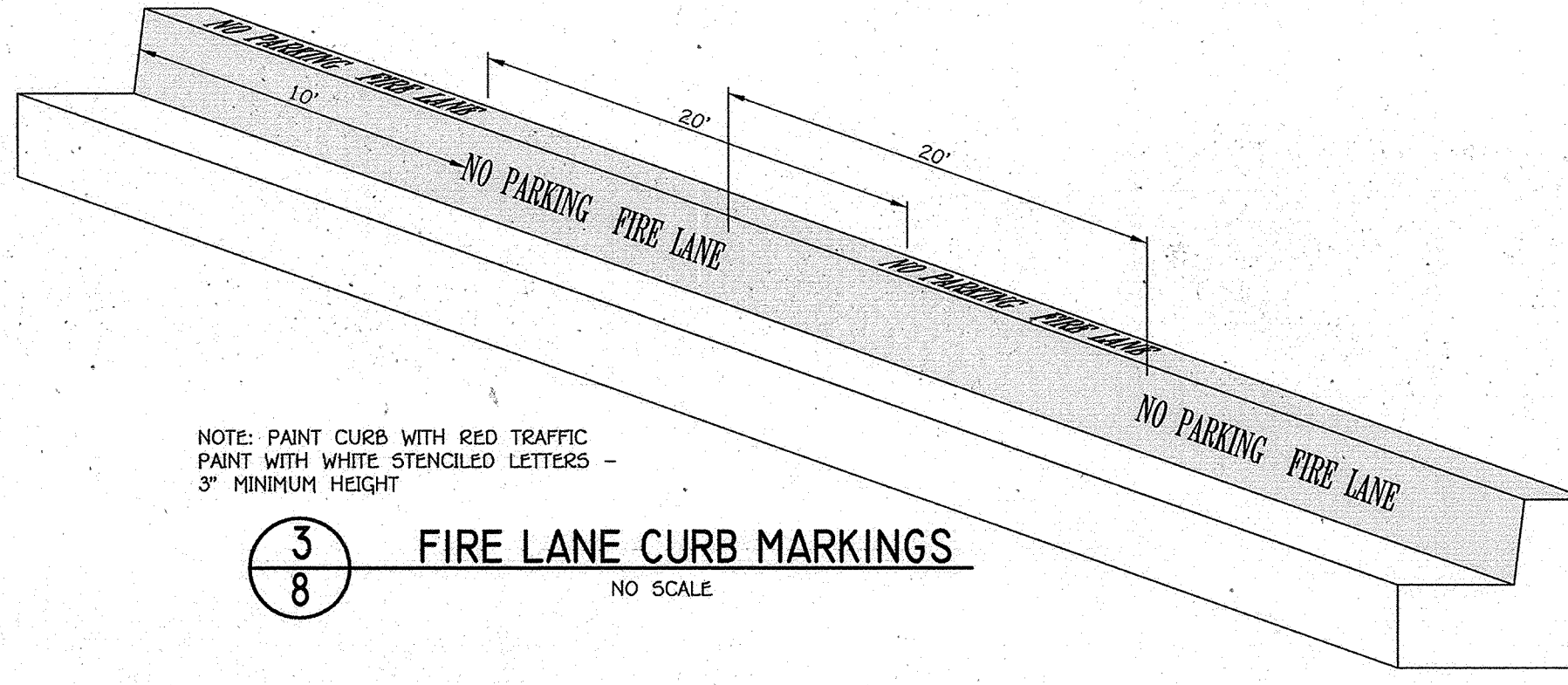
- NOTES:**
1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.
  2. THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT DEPTH OF 1 1/2" (MINIMUM).
  3. THE RESURFACING SHALL BE PLACED TO THE CENTERLINE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

**2 TYPICAL ROADWAY SECTION**  
HOWARD COUNTY STANDARD DETAIL R-1.08  
NO SCALE

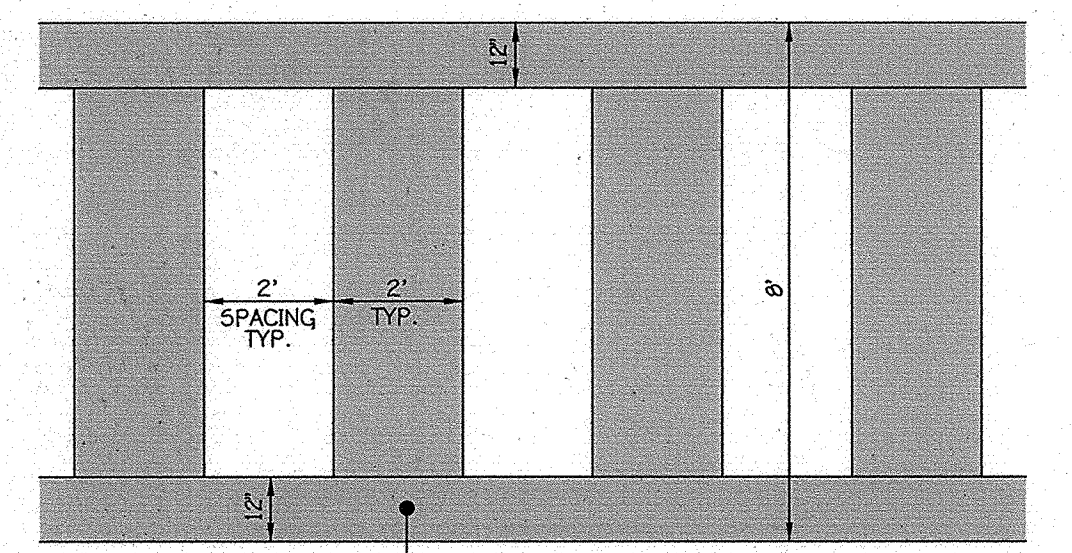


NOTE: INSTALL EXPANSION JOINTS AT MAX. 15'-0" O.C. AND INSTALL SCORING JOINTS AT MAX. 5'-0" O.C.  
SLOPE ACROSS SIDEWALK SHALL BE MIN. 1/8" / FT.

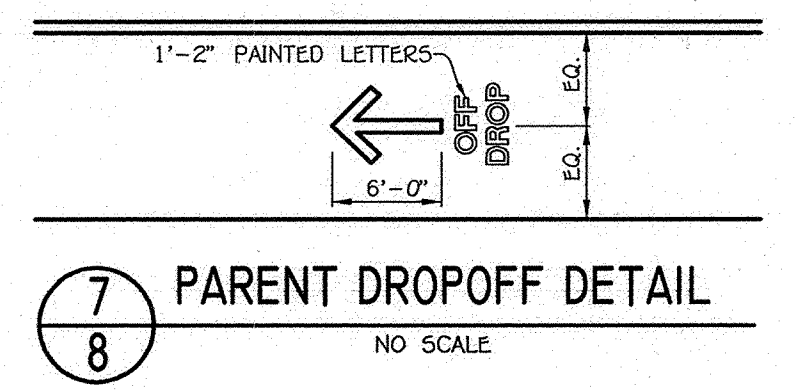
**1 CONCRETE PAVING DETAIL - LIGHT DUTY**  
NO SCALE



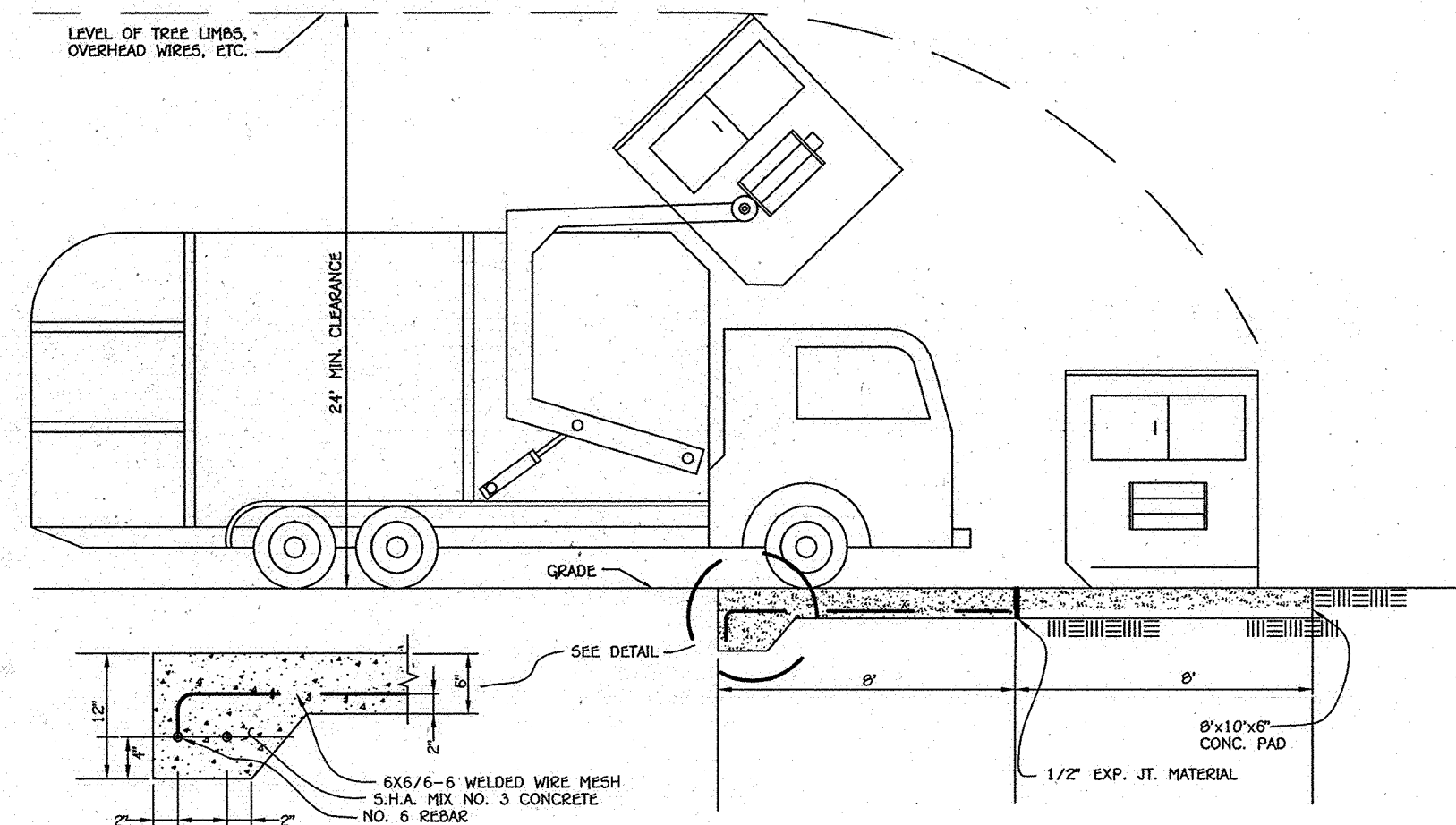
**3 FIRE LANE CURB MARKINGS**  
NO SCALE



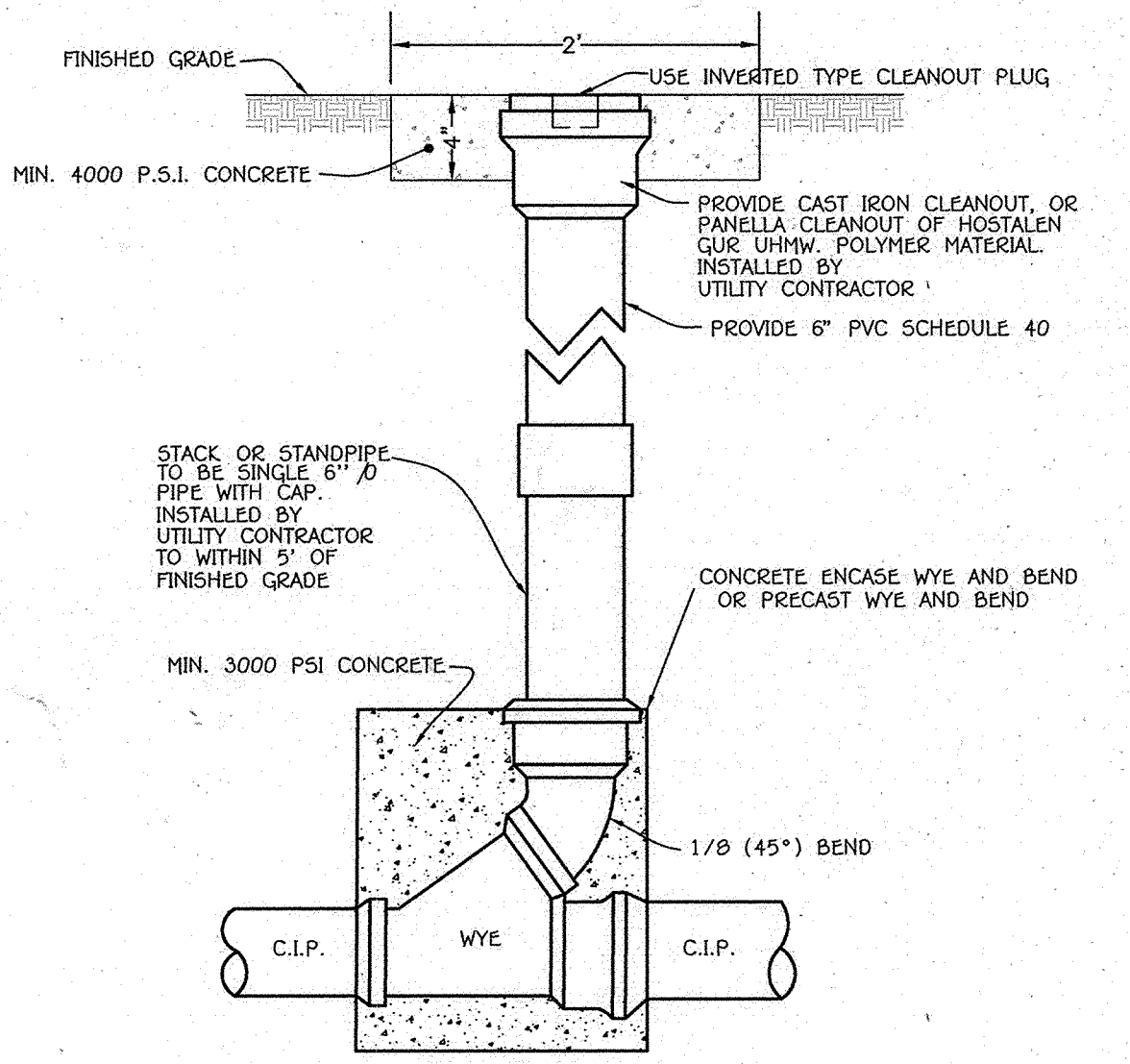
**6 PEDESTRIAN CROSSWALK DETAIL @ DUCKETTS LANE**  
HOWARD COUNTY STANDARD DETAIL T-7.03  
NO SCALE



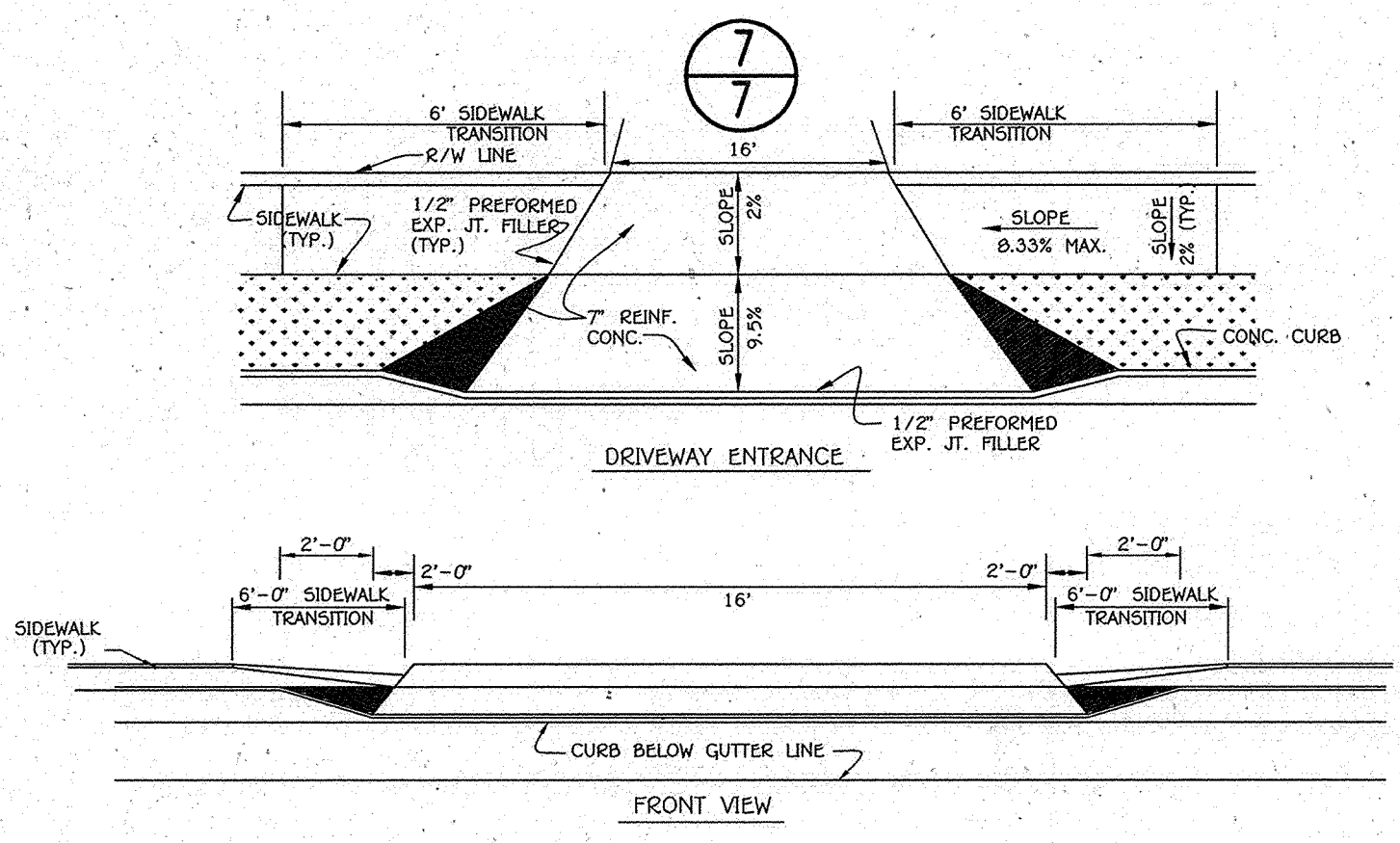
**7 PARENT DROPOFF DETAIL**  
NO SCALE



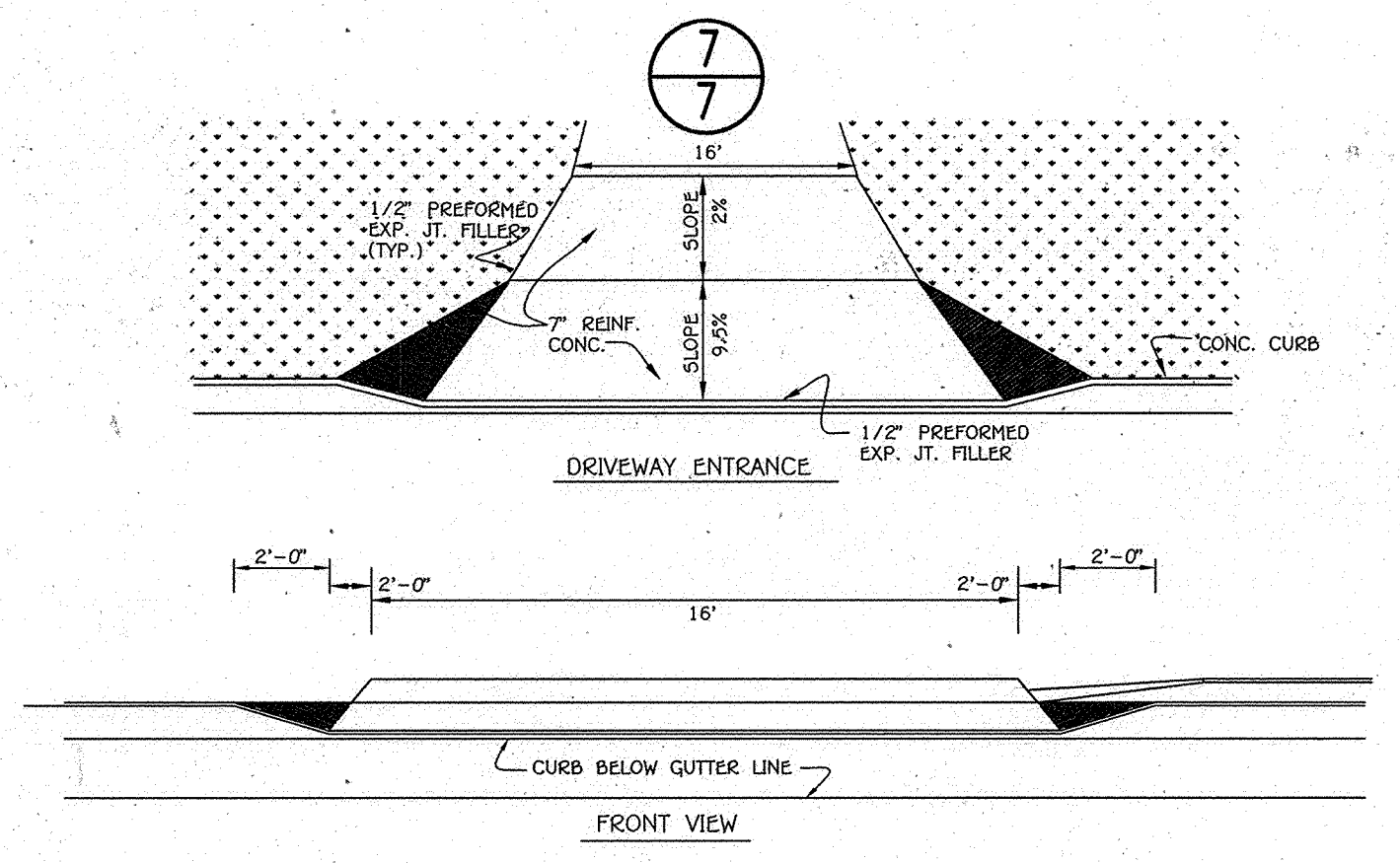
**8 SOLID WASTE SERVICE DETAIL**  
HOWARD COUNTY STANDARD DETAIL R-2.03  
NOT TO SCALE



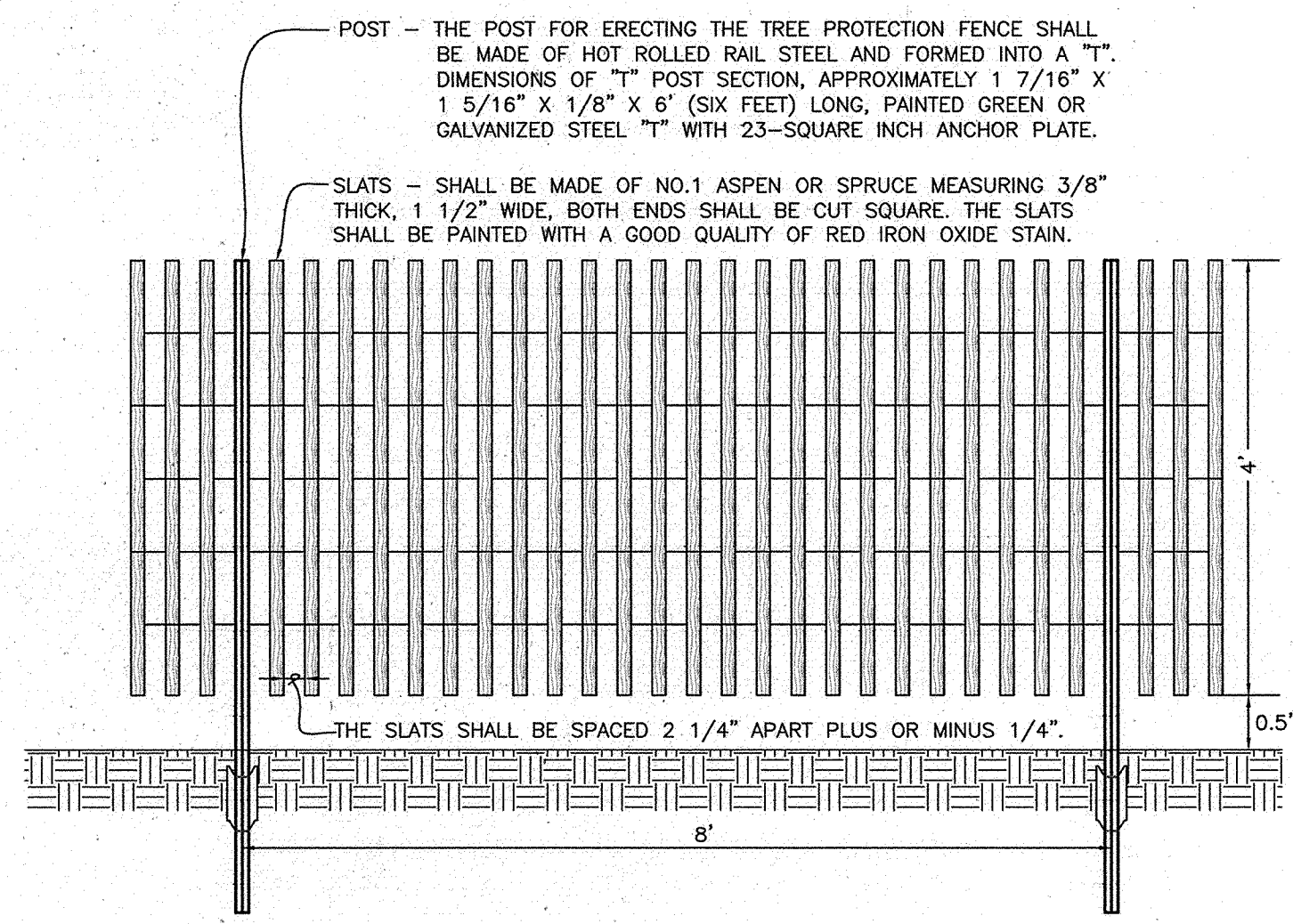
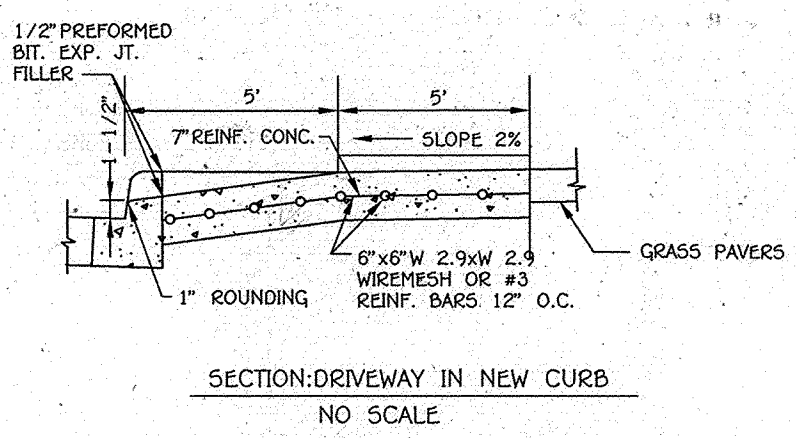
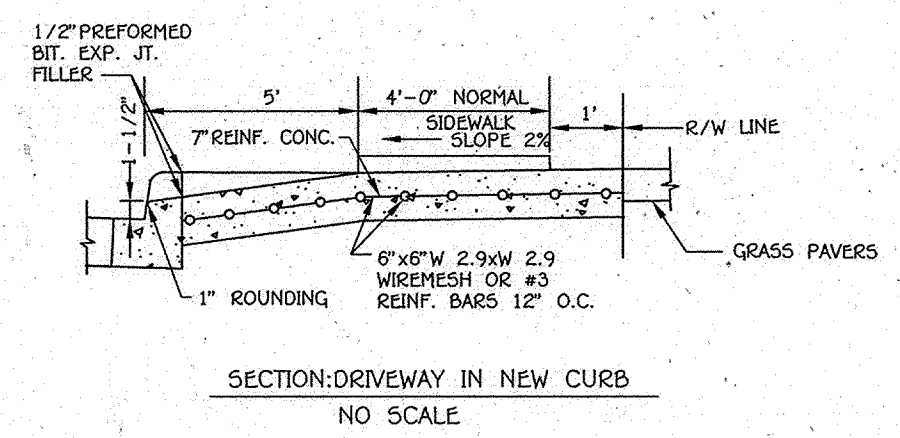
**TYPICAL ROOF LEADER CLEAN-OUT**  
HOWARD COUNTY STANDARD DETAIL S-2.22  
NO SCALE



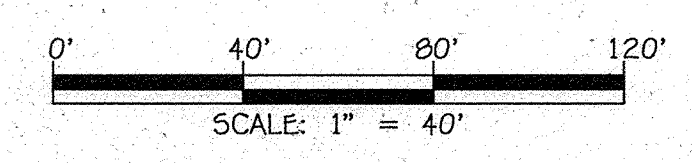
**4 CONCRETE DRIVEWAY APRON W/ SIDEWALK**  
HOWARD COUNTY STANDARD DETAIL R-6.01  
NO SCALE



**5 CONCRETE DRIVEWAY APRON**  
HOWARD COUNTY STANDARD DETAIL R-6.01  
NO SCALE



**TREE PROTECTION FENCE DETAIL**  
NOT TO SCALE



**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21042  
(410) 461-2200



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204. Expiration Date: November 3, 2012."  
*Charles J. Govo, Sr., P.E.*  
DATE: 1/27/12

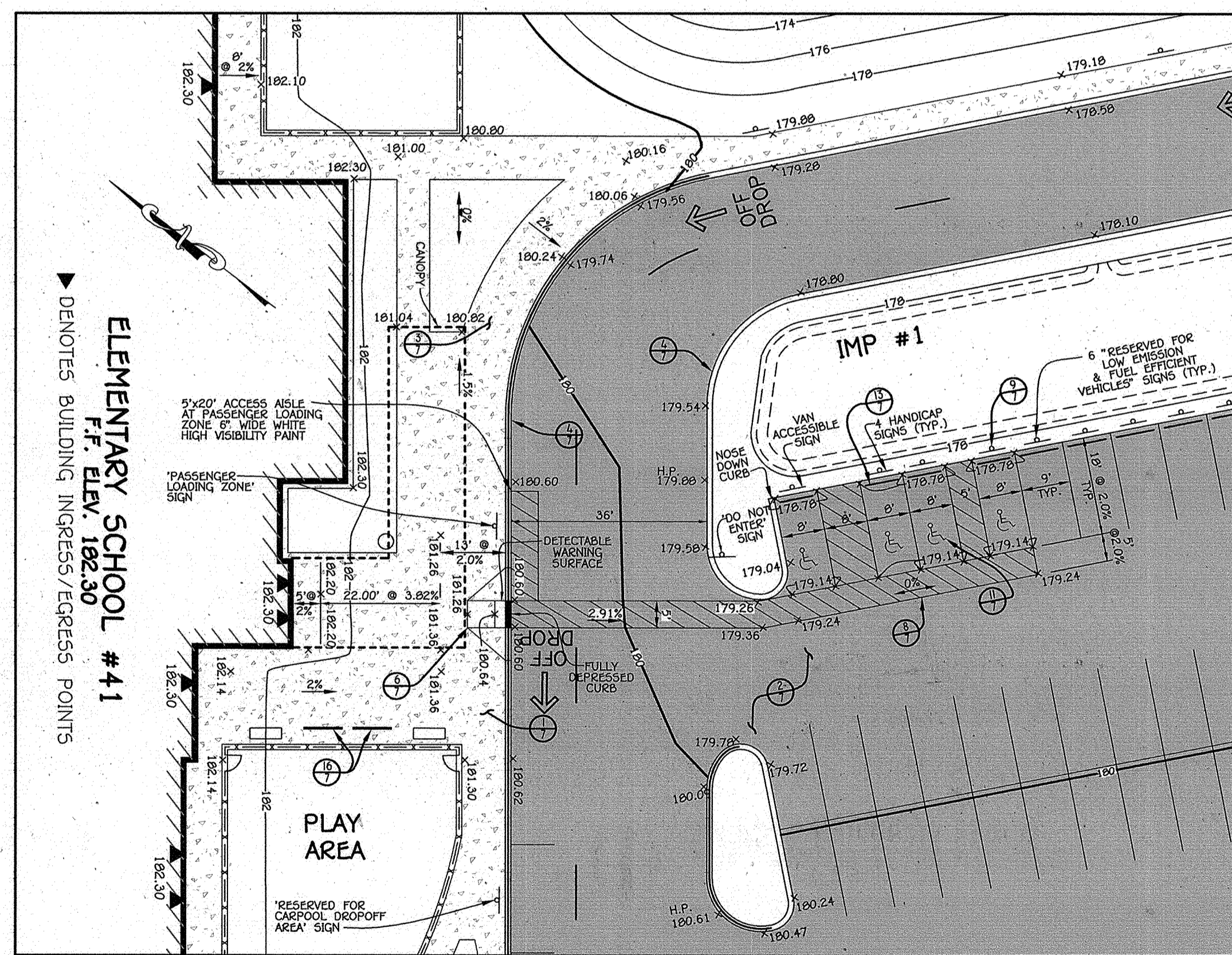
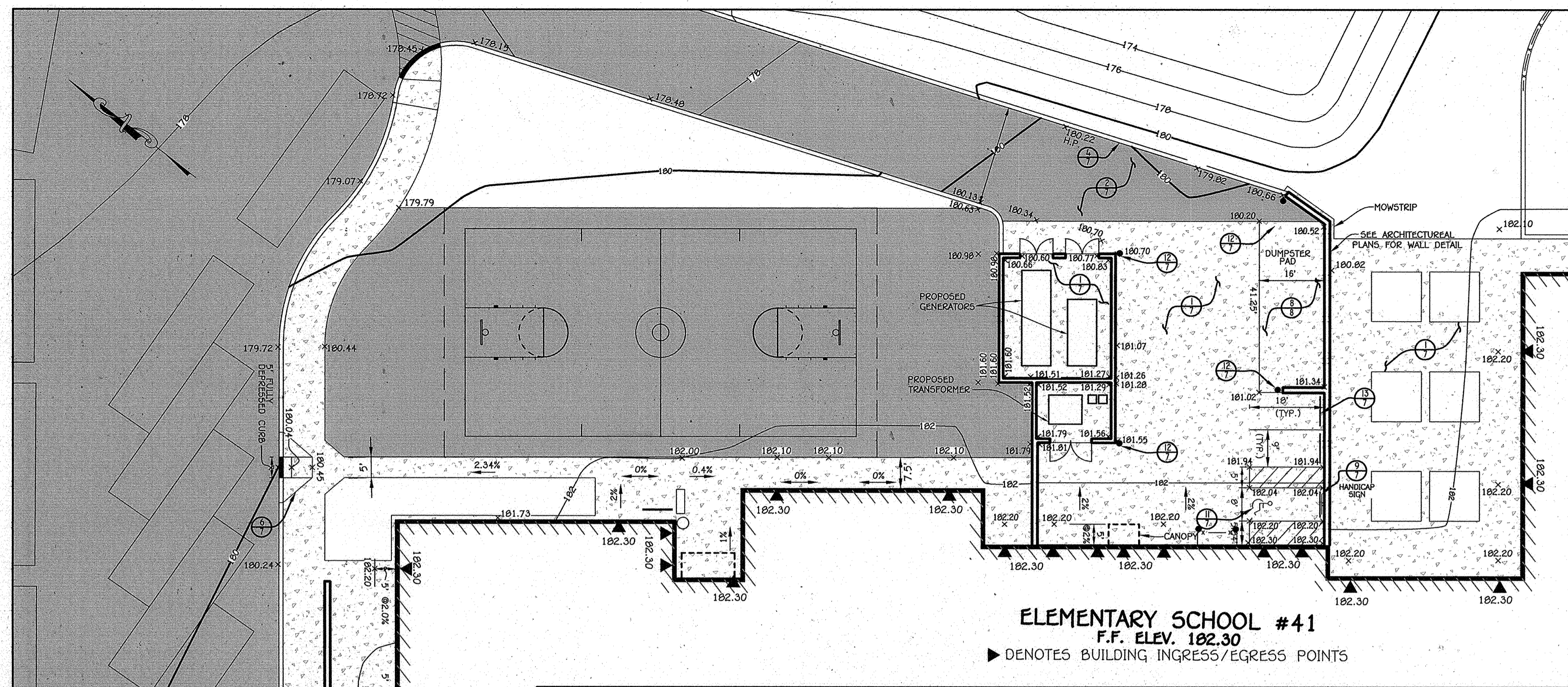
DATE	DESCRIPTION
9/24/12	REVISED SHEET NUMBERS FROM 90 TO 99
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Wanda D. Coughlin</i>	5/14/12
Director - Department of Planning and Zoning	DATE
<i>Kevin Schubert</i>	5/14/12
Chief, Division of Land Development	DATE
<i>William J. ...</i>	5/14/12
Chief, Development Engineering Division	DATE

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
10910 Maryland Route 100B  
Ellicott City, Maryland 21042  
Attention: Bruce Gist  
410-313-6798

ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DIST.	CENSUS TRACT
21873-21875	-	R-12	37	FIRST	6012.01

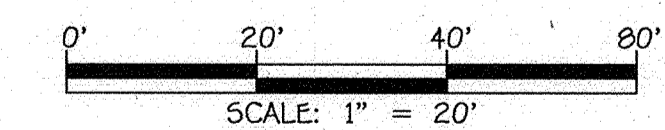
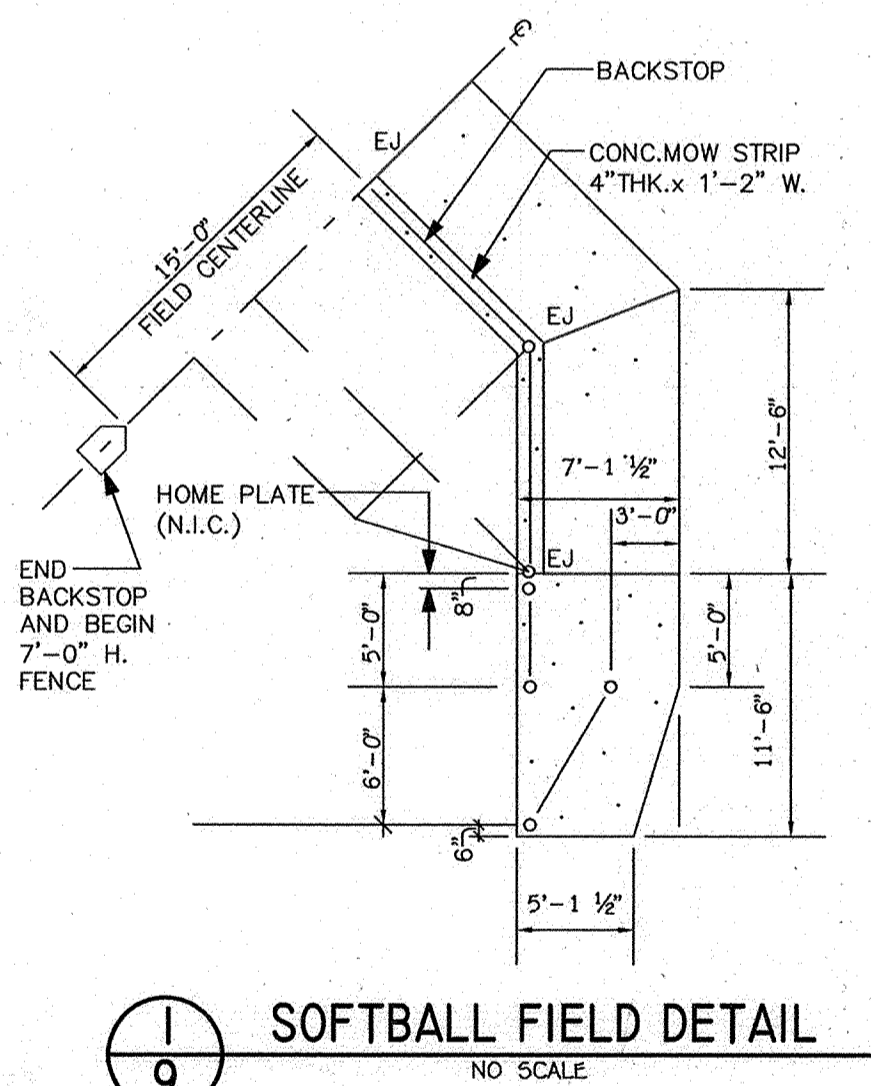
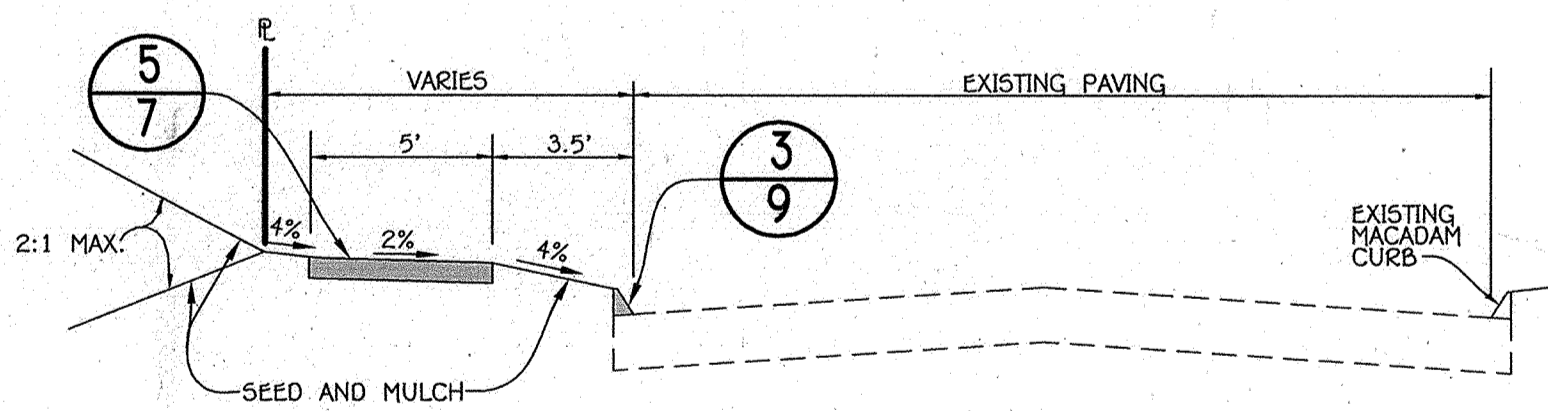
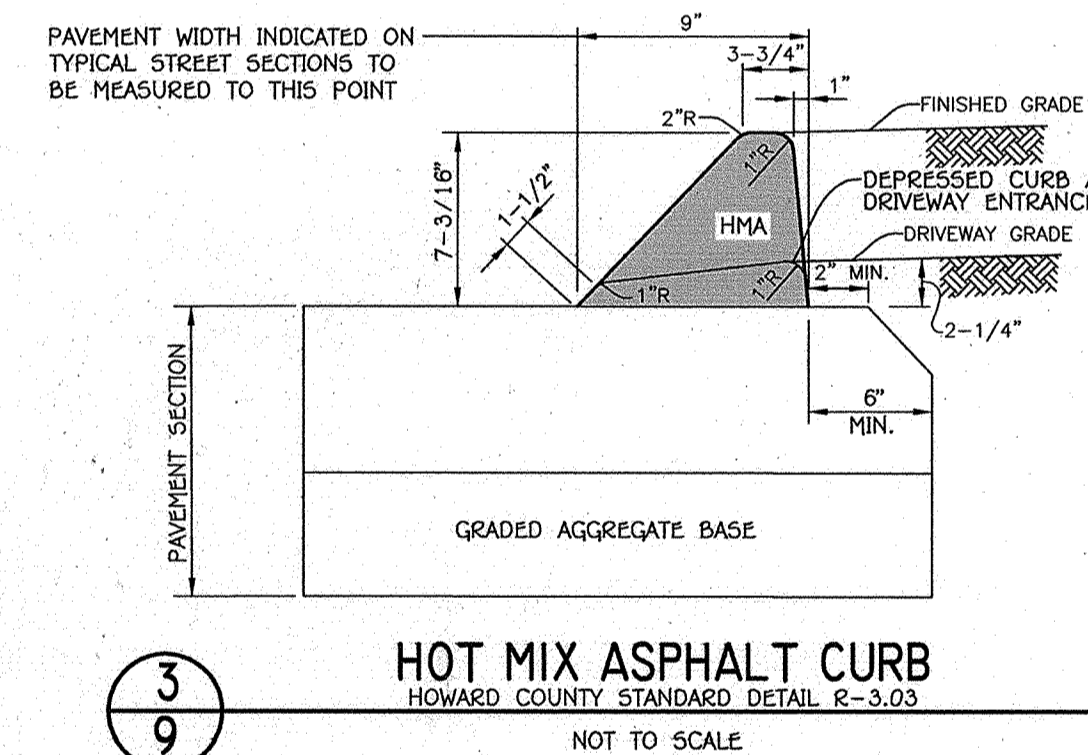
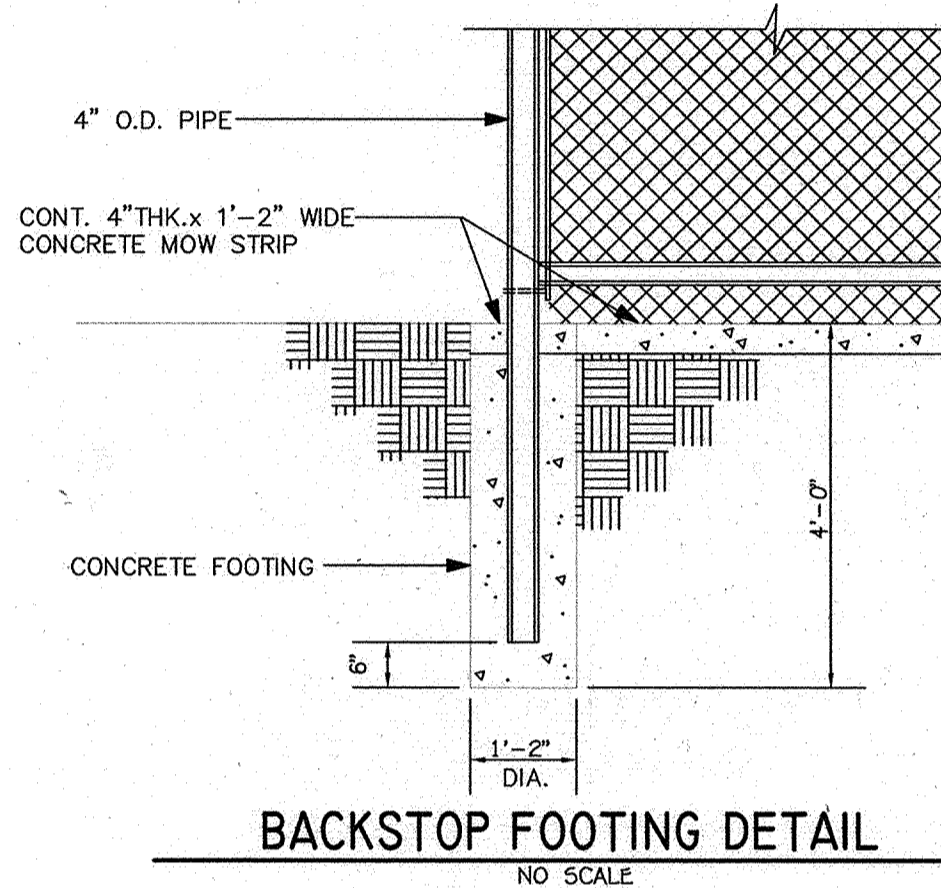
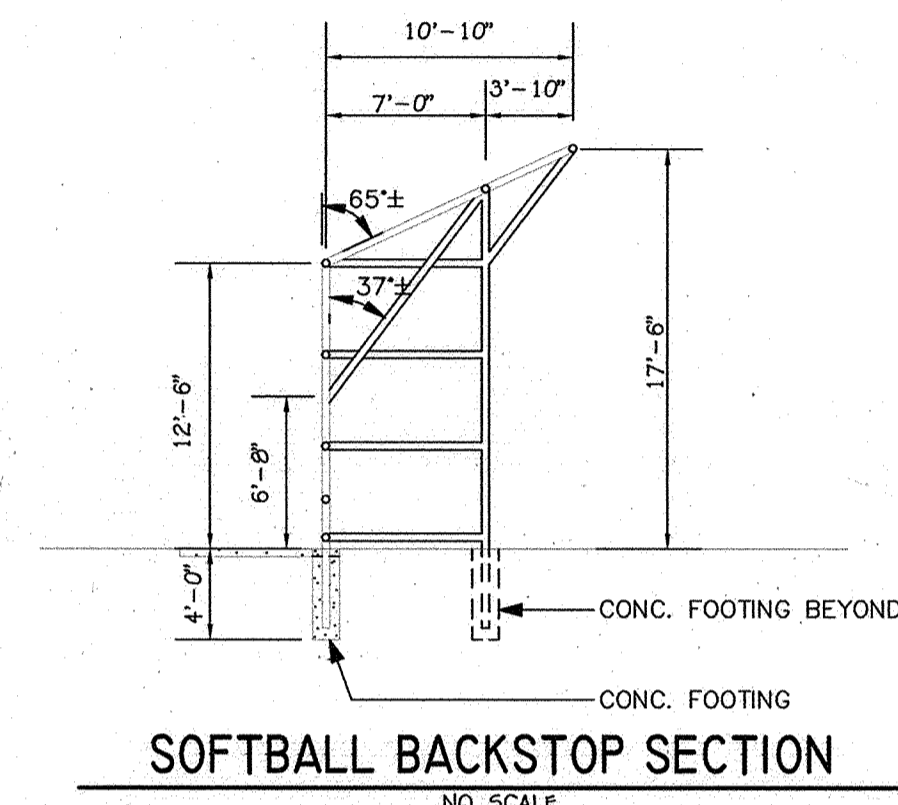
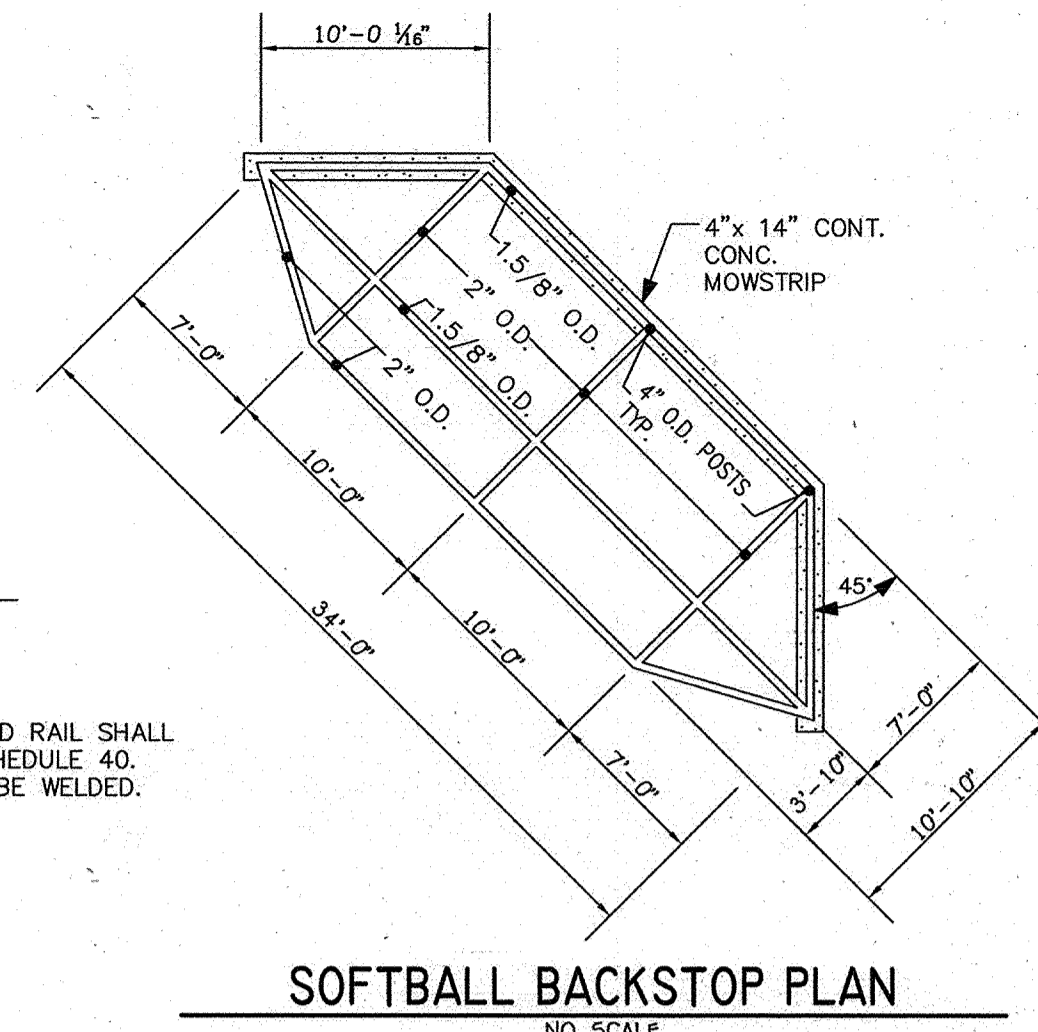
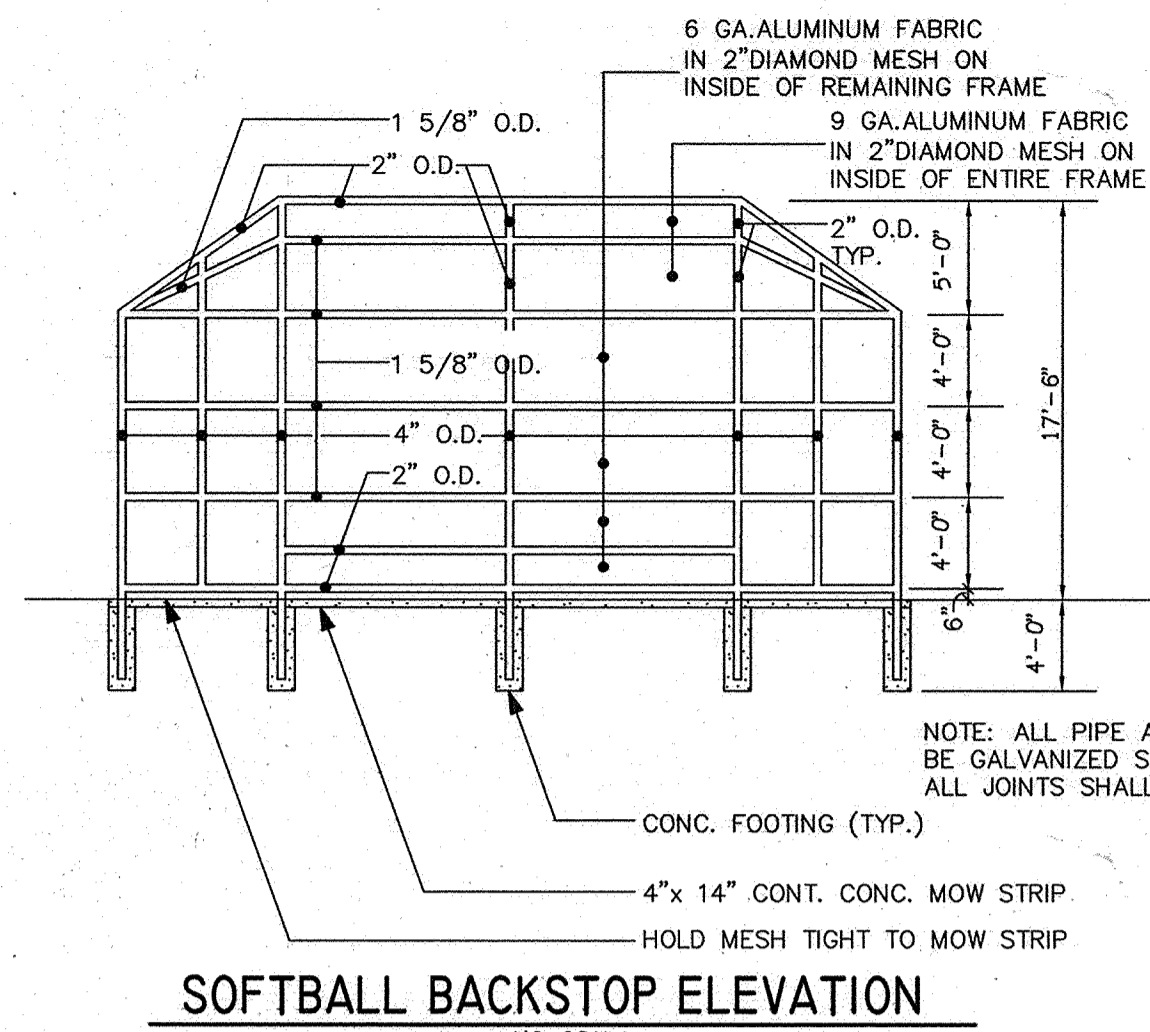
DETAIL SHEET			
ELEMENTARY SCHOOL #41			
THE LEGACY AT DUCKETTS RIDGE PARCEL A			
ZONED R-12	TAX MAP No.: 37	GRID No.: 12	PARCEL No.: 569
FIRST ELECTION DISTRICT	HOWARD COUNTY, MARYLAND		SCALE: AS SHOWN
DATE: APRIL 23, 2012		SHEET 8 OF 30	





**HANDICAP PARKING AND ACCESS**  
SCALE: 1" = 20'

**HANDICAP PARKING AND ACCESS**  
SCALE: 1" = 20'



NOTES:  
1. ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATION AND DETAILS FOR CONSTRUCTION.

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



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012."  
CHARLES J. GROVO, SR., P.E. 4/27/12 DATE

DATE	DESCRIPTION
6/24/12	REVISED SHEET NUMBERS FROM 36 TO 39
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Director - Department of Planning and Zoning	5/14/12 DATE
Chief, Division of Land Development	5/14/12 DATE
Chief, Development Engineering Division	5/14/12 DATE

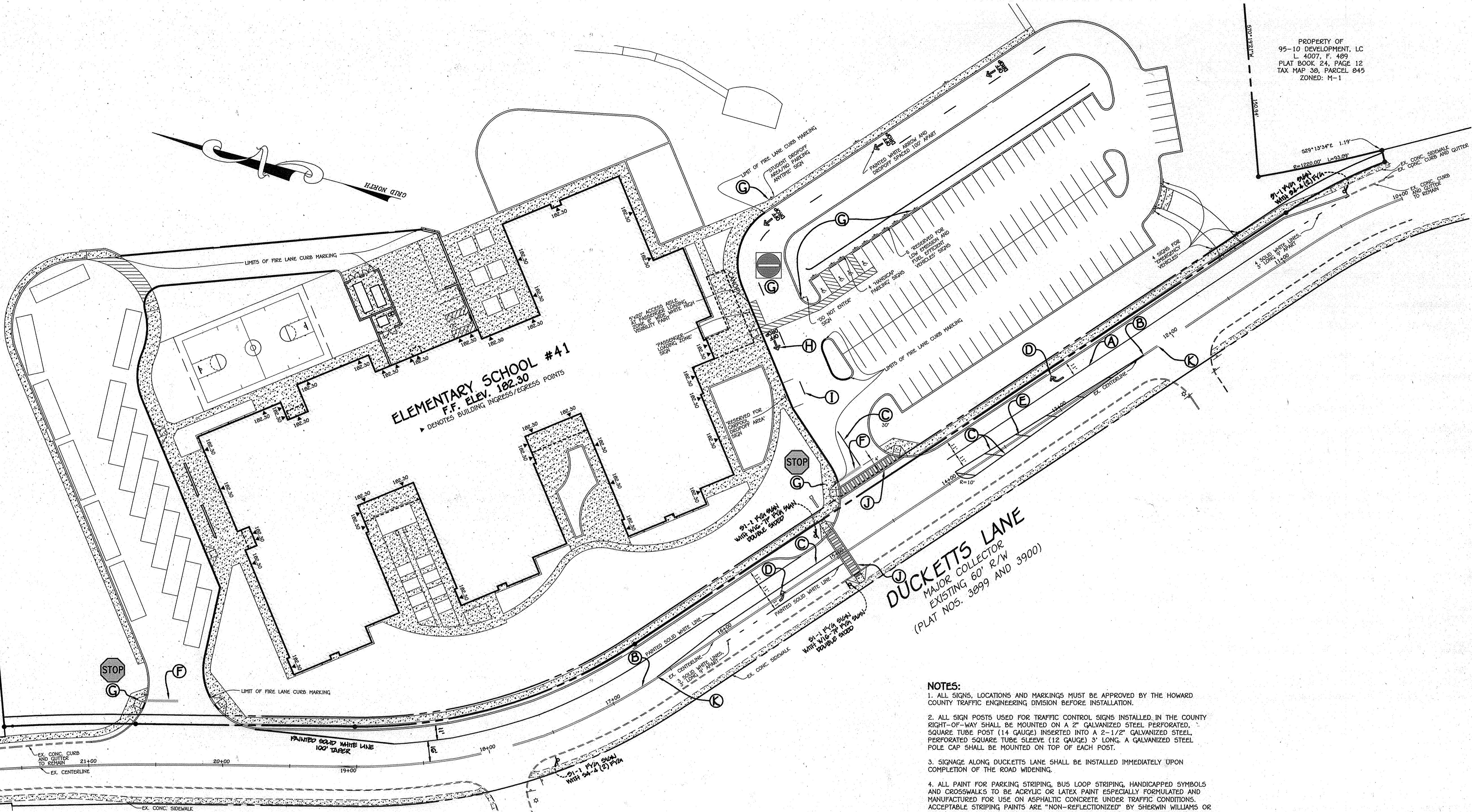
PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
10910 Maryland Route 10B  
Ellicott City, Maryland 21042  
Attention Bruce Gist  
410-313-6798

ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
21873-21875	-	R-12	37	FIRST	6012.01

<b>HANDICAP ACCESS PLAN AND DETAIL SHEET</b>	
<b>ELEMENTARY SCHOOL #41</b>	
<b>THE LEGACY AT DUCKETTS RIDGE</b>	
PARCEL A	
ZONED R-12	TAX MAP No.: 37
FIRST ELECTION DISTRICT	GRID No.: 12
SCALE: AS SHOWN	PARCEL No.: 569
	HOWARD COUNTY, MARYLAND
	DATE: APRIL 23, 2012
SHEET 9 OF 20	



PROPERTY OF  
95-10 DEVELOPMENT, LC  
L 4007, F. 489  
PLAT BOOK 24, PAGE 12  
TAX MAP 30, PARCEL 045  
ZONED: M-1



**ELEMENTARY SCHOOL #41**  
F.F. Elev. 102.30  
DENOTES BUILDING INGRESS/EGRESS POINTS

**DUCKETTS LANE**  
MAJOR COLLECTOR  
EXISTING 60' R/W  
(PLAT NOS. 3699 AND 3900)

**PAVEMENT MARKING LEGEND**

- A. INSTALL 5" SOLID WHITE PAVEMENT MARKING FOR LANE LINE.
- B. TIE TO EXISTING PAVEMENT MARKING.
- C. INSTALL 5" SOLID DOUBLE YELLOW PAVEMENT MARKING FOR CENTER LINE, 30 FT LENGTH.
- D. INSTALL WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING SYMBOL.
- E. INSTALL 10" SOLID YELLOW PAVEMENT MARKING FOR HATCH LINE.
- F. INSTALL 24" SOLID WHITE PAVEMENT MARKING FOR STOP LINE.
- G. INSTALL GROUND MOUNTED SIGN.
- H. PARENT DROPOFF, SEE (H) FOR DETAIL.
- I. INSTALL 5" WIDE, 10' LONG AND 30' GAPS SOLID WHITE LINES.
- J. PEDESTRIAN CROSSWALK, SEE (J) FOR DETAIL.
- K. REMOVE/MILL DOUBLE YELLOW STRIPING ALONG EXISTING CENTERLINE BETWEEN STATION 12+10 TO 16+60.

**PAVEMENT MARKING AND SIGNAGE PLAN**

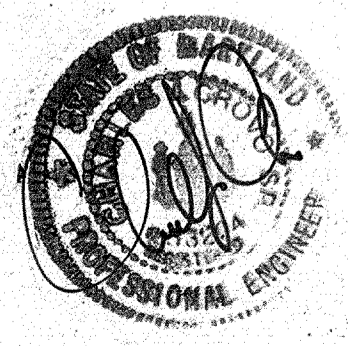
SCALE: 1" = 40'

**NOTES:**

1. ALL SIGNS, LOCATIONS AND MARKINGS MUST BE APPROVED BY THE HOWARD COUNTY TRAFFIC ENGINEERING DIVISION BEFORE INSTALLATION.
2. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL PERFORATED SQUARE TUBE SLEEVE (12 GAUGE) 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
3. SIGNAGE ALONG DUCKETTS LANE SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION OF THE ROAD WIDENING.
4. ALL PAINT FOR PARKING STRIPING, BUS LOOP STRIPING, HANDICAPPED SYMBOLS AND CROSSWALKS TO BE ACRYLIC OR LATEX PAINT ESPECIALLY FORMULATED AND MANUFACTURED FOR USE ON ASPHALTIC CONCRETE UNDER TRAFFIC CONDITIONS. ACCEPTABLE STRIPING PAINTS ARE "NON-REFLECTIONIZED" BY SHEWAN WILLIAMS OR "IRON-CLAD" BY BENJAMIN MOORE. PARKING STRIPES SHALL BE 4" WIDE WHITE UNLESS OTHERWISE NOTED. ACCESSIBLE SPACE STENCIL SHALL BE PAINTED BLUE IN ACCORDANCE WITH FEDERAL STANDARD 5952.
5. ALL PAVEMENT MARKINGS WITHIN COUNTY RIGHT OF WAY SHALL BE "PERFORMED THERMOPLASTIC PAVEMENT MARKING LINES" OF APPROPRIATE WIDTH AND COLOR. PAVEMENT ARROWS SHALL BE "WHITE PREFORMED THERMOPLASTIC PAVEMENT MARKING" MATERIAL.
6. THE FOLLOWING WILL BE REQUIRED TO BE INSTALLED ALONG DUCKETTS LANE:  
TWO (2) SOLAR POWERED SCHOOL FLASHERS  
TWO (2) 51-1 (ADVANCE SCHOOL) SIGNS (36"x36") WITH "SCHOOL" PANEL BELOW (FYG IN COLOR) (FLUORESCENT YELLOW GREEN IN COLOR)  
TWO (2) 55-2 ("END SCHOOL ZONE") SIGNS  
TWO (2) "PHOTO ENFORCED" PANELS MOUNTED BELOW EXISTING 82-1 ("SPEED LIMIT 30") SIGNS. NOTE THESE EXISTING SIGNS MAY NEED TO BE RELOCATED.

**NOTE: THE CONTRACTOR SHALL NOTIFY MR. PARRIS ZIRKENBACH (410-313-5752) AT THE TRAFFIC ENGINEERING DIVISION REGARDING COORDINATION, SCHEDULING AND LOCATION OF THE SCHOOL FLASHERS ALONG WITH SIGN LOCATION PLACEMENT ALONG DUCKETTS LANE.**

**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 that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012.

*Charles J. Provo, Sr.*  
CHARLES J. PROVO, SR., P.E. 4/22/12 DATE

DATE	DESCRIPTION
6/22/12	REVISED SHEET NUMBERS FROM 28 TO 30, ADDED 21-1 FROM SIGNAGE & ADDED 100' TAPER PAINTED WHITE LINE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Barbara A. Leavelle* 5/17/12  
Director - Department of Planning and Zoning

*John J. Schuchman* 5/17/12  
Chief, Division of Land Development

*William J. Schuchman* 5/17/12  
Chief, Development Engineering Division

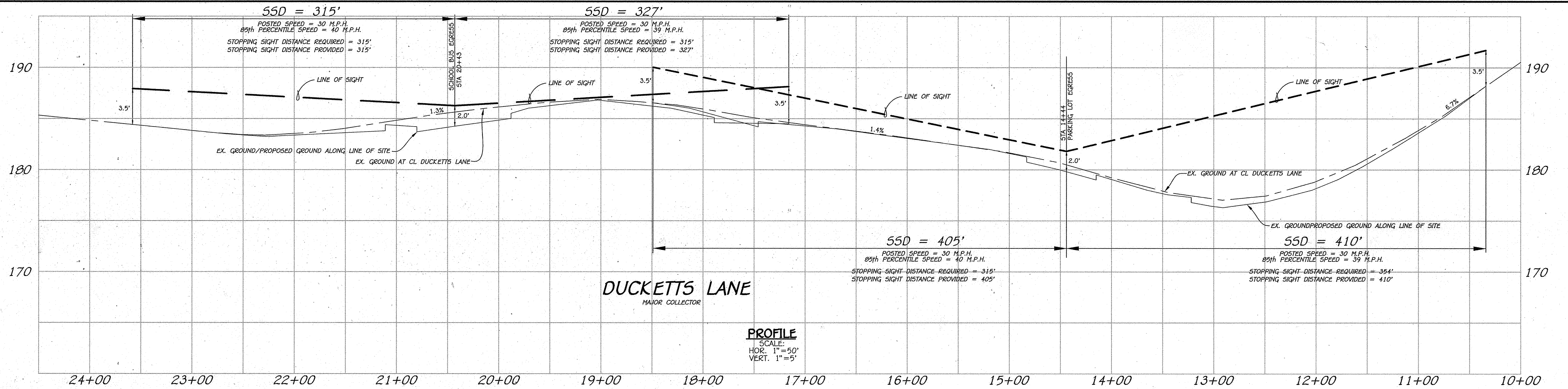
PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
10910 Maryland Route 108  
Elicott City, Maryland 21042  
Attention Bruce Gist  
410-313-6798

ADDRESS CHART				
LOT/PARCEL#	STREET ADDRESS			
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075			

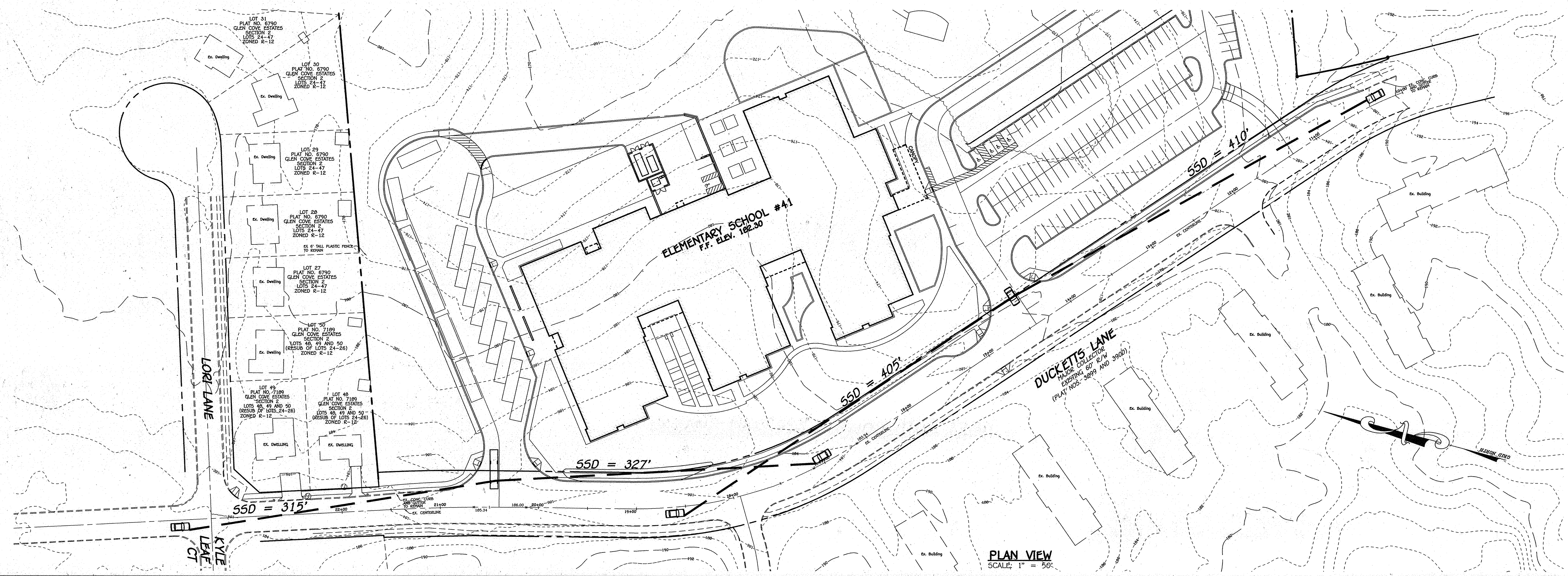
  

PERMIT INFORMATION CHART				
SUBMISSION NAME	SECTION/AREA	LOT/PARCEL NO.		
ELEMENTARY SCHOOL #41	N/A	P.0569		
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.
21873-21875	-	R-12	37	FIRST
				CENSUS TRACT
				6012.01

PAVEMENT MARKING AND SIGNAGE PLAN	
<b>ELEMENTARY SCHOOL #41</b>	
<b>THE LEGACY AT DUCKETTS RIDGE</b>	
PARCEL A	
ZONED R-12	TAX MAP No.: 37
FIRST ELECTION DISTRICT	GRID No.: 12
SCALE: AS SHOWN	PARCEL No.: 569
	HOWARD COUNTY, MARYLAND
	DATE: APRIL 23, 2012
SHEET 11 OF 22	

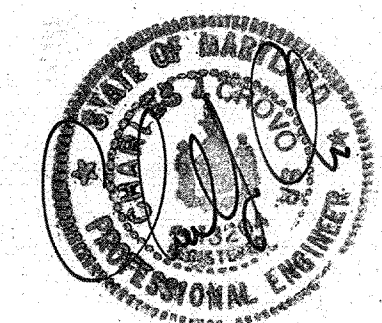


**PROFILE**  
SCALE:  
HOR. 1" = 50'  
VERT. 1" = 5'



**PLAN VIEW**  
SCALE: 1" = 50'

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



"Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012."

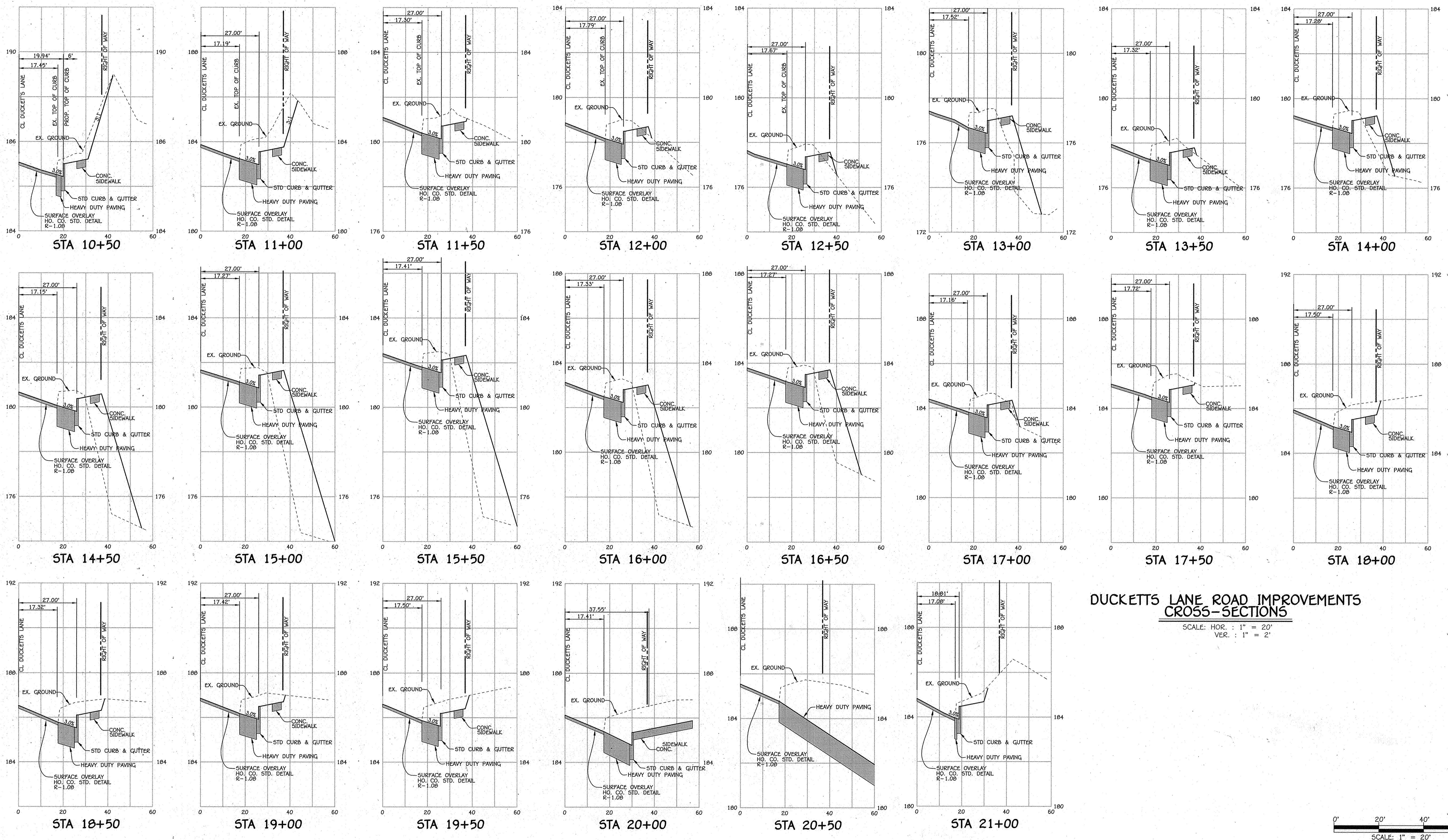
*Charles J. Crovo, Sr.*  
CHARLES J. CROVO, SR., P.E. 4/23/12 DATE

6/24/12	REVISED SHEET NUMBERS FROM 30 TO 39
DATE	DESCRIPTION
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Hand to Light</i>	5/14/12
Director - Department of Planning and Zoning	Date
<i>W. J. ...</i>	5/14/12
Chief, Division of Land Development	Date
<i>...</i>	5/14/12
Chief, Development Engineering Division	Date

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

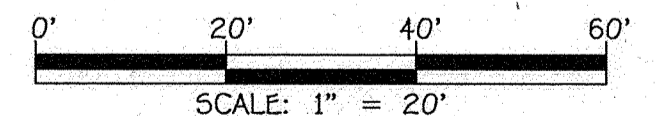
ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELK RIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
21873-21875	-	R-12	37	FIRST	6012.01

STOPPING SIGHT DISTANCE PLAN AND PROFILE	
<b>ELEMENTARY SCHOOL #41</b>	
<b>THE LEGACY AT DUCKETTS RIDGE</b>	
<b>PARCEL A</b>	
ZONED R-12	TAX MAP No.: 37
FIRST ELECTION DISTRICT	GRID No.: 12
SCALE: AS SHOWN	PARCEL No.: 569
	HOWARD COUNTY, MARYLAND
	DATE: APRIL 23, 2012
SHEET 12 OF 39	



**DUCKETTS LANE ROAD IMPROVEMENTS  
CROSS-SECTIONS**

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



**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING, CONSULTANTS & LAND SURVEYORS  
CONTINENTAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21042  
(410) 461-2999



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012."  
*Charles J. Cravo*  
CHARLES J. CRAVO, SE., P.E.  
1/2/12 DATE

9/24/12 REVISED SHEET NUMBERS FROM 30 TO 29  
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

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

ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELK RIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DIST.	CENSUS TRACT
21873-21875	-	R-12	37	FIRST	6012.01

**ROAD SECTIONS**  
**ELEMENTARY SCHOOL #41**  
**THE LEGACY AT DUCKETTS RIDGE**  
PARCEL A  
ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: APRIL 23, 2012  
SHEET 13 OF 20



Scale	Elev	Description	Depth	Scale	No	Blows / ft	Type	REC	Notes
	2.0	Dark brown, reddish brown, med. moist, med. stiff sandy silty, mica, rock, sand	1	0-6"	DS	12"	DS	4"	Topsoil
	5.0	Orange, brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	2	11-14-21"	DS	10"	DS	10"	
	6.0	Orange, light brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	3	10-15-23"	DS	10"	DS	10"	
	6.5	End of boring							

**LEGEND**  
 DS DRIVEN SPOON  
 ST SHELBY  
 PS PISTON SAMPLE  
 RC ROCK CORE  
 HSA HOLLOW STEM AUGER

**GROUND WATER**  
 WATER ON RODS:  
 WATER AT COMPLETION: Dry  
 CAVED:  
 WATER AT 24 HOURS: Dry to 4"

Scale	Elev	Description	Depth	Scale	No	Blows / ft	Type	REC	Notes
	4.0	Brown, dark brown, orange, wet, med. moist, med. stiff sandy clay, wood, mica, MH	1	2-6"	DS	4"	DS	4"	
	4.5	Light brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	2	5-12"	DS	10"	DS	10"	
	6.0	Light brown, orange, moist, med. stiff, sandy silty, mica, silt, clay, MH	3	5-7-14"	DS	10"	DS	10"	
	6.5	End of boring							

**LEGEND**  
 DS DRIVEN SPOON  
 ST SHELBY  
 PS PISTON SAMPLE  
 RC ROCK CORE  
 HSA HOLLOW STEM AUGER

**GROUND WATER**  
 WATER ON RODS:  
 WATER AT COMPLETION: Dry  
 CAVED:  
 WATER AT 24 HOURS: Dry to 4"

Scale	Elev	Description	Depth	Scale	No	Blows / ft	Type	REC	Notes
	4.5	Brown, orange, moist, med. stiff, sandy silty, mica, silt, clay, MH	1	2-6"	DS	12"	DS	12"	Topsoil
	4.5	Light brown, orange, moist, med. stiff, sandy silty, mica, silt, clay, MH	2	3-6"	DS	12"	DS	12"	
	6.0	Light brown, orange, moist, med. stiff, sandy silty, mica, silt, clay, MH	3	5-7-8"	DS	12"	DS	12"	
	6.5	End of boring							

**LEGEND**  
 DS DRIVEN SPOON  
 ST SHELBY  
 PS PISTON SAMPLE  
 RC ROCK CORE  
 HSA HOLLOW STEM AUGER

**GROUND WATER**  
 WATER ON RODS:  
 WATER AT COMPLETION: Dry  
 CAVED:  
 WATER AT 24 HOURS: Dry to 2"

Scale	Elev	Description	Depth	Scale	No	Blows / ft	Type	REC	Notes
	2.0	Dark brown, brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	1	4-6"	DS	12"	DS	12"	
	5.0	Orange, red, brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	2	5-8"	DS	12"	DS	12"	
	6.0	Orange, brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	3	10-21-24"	DS	12"	DS	12"	
	6.5	Orange, brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	4	18-21-208"	DS	12"	DS	12"	
	11.5	Orange, brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	5	201"	DS	12"	DS	12"	
	12.0	End of boring							

**LEGEND**  
 DS DRIVEN SPOON  
 ST SHELBY  
 PS PISTON SAMPLE  
 RC ROCK CORE  
 HSA HOLLOW STEM AUGER

**GROUND WATER**  
 WATER ON RODS:  
 WATER AT COMPLETION: Dry  
 CAVED:  
 WATER AT 24 HOURS: Dry to 8"

Scale	Elev	Description	Depth	Scale	No	Blows / ft	Type	REC	Notes
	2.0	Dark brown, brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	1	4-6"	DS	12"	DS	12"	
	5.0	Orange, light brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	2	10-14-14"	DS	12"	DS	12"	
	6.0	Orange, light brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	3	10-14-21"	DS	12"	DS	12"	
	6.5	Orange, light brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	4	11-14-19"	DS	12"	DS	12"	
	11.5	Orange, light brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	5	19-20-20"	DS	12"	DS	12"	
	12.0	Orange, light brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	6	19-20-20"	DS	12"	DS	12"	
	12.5	End of boring							

**LEGEND**  
 DS DRIVEN SPOON  
 ST SHELBY  
 PS PISTON SAMPLE  
 RC ROCK CORE  
 HSA HOLLOW STEM AUGER

**GROUND WATER**  
 WATER ON RODS:  
 WATER AT COMPLETION: Dry  
 CAVED:  
 WATER AT 24 HOURS: Dry to 10"

Scale	Elev	Description	Depth	Scale	No	Blows / ft	Type	REC	Notes
	2.0	Brown, dark brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	1	6-6"	DS	12"	DS	12"	Topsoil
	5.0	Orange, light brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	2	8-10-10"	DS	14"	DS	14"	
	7.0	Orange, brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	3	5-14-10"	DS	14"	DS	14"	
	14.0	Dark gray, brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	4	14-24-208"	DS	14"	DS	14"	
	14.5	Dark gray, brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	5	14-24-43"	DS	14"	DS	14"	
	14.5	Dark gray, brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	6	14-28-28"	DS	14"	DS	14"	
	14.5	End of boring							

**LEGEND**  
 DS DRIVEN SPOON  
 ST SHELBY  
 PS PISTON SAMPLE  
 RC ROCK CORE  
 HSA HOLLOW STEM AUGER

**GROUND WATER**  
 WATER ON RODS:  
 WATER AT COMPLETION: Dry  
 CAVED:  
 WATER AT 24 HOURS: Dry to 15"

Scale	Elev	Description	Depth	Scale	No	Blows / ft	Type	REC	Notes
	4.5	Orange, brown, wet, med. moist, med. stiff, sandy silty, mica, silt, clay, MH	1	4-8-10"	DS	14"	DS	14"	
	4.5	Orange, brown, wet, med. moist, med. stiff, sandy silty, mica, silt, clay, MH	2	4-8-6"	DS	19"	DS	19"	
	7.0	Orange, brown, moist, med. stiff, sandy silty, mica, silt, clay, MH	3	4-8-10"	DS	19"	DS	19"	
	7.0	Brown, orange, moist, med. moist, med. stiff, sandy silty, mica, silt, clay, MH	4	16-18-19"	DS	19"	DS	19"	
	15.0	Head	5	16-17-19"	DS	19"	DS	19"	
	15.0	Head	6	13-18-11"	DS	17"	DS	17"	
	15.0	End of boring							

**LEGEND**  
 DS DRIVEN SPOON  
 ST SHELBY  
 PS PISTON SAMPLE  
 RC ROCK CORE  
 HSA HOLLOW STEM AUGER

**GROUND WATER**  
 WATER ON RODS:  
 WATER AT COMPLETION: Dry  
 CAVED:  
 WATER AT 24 HOURS:

Scale	Elev	Description	Depth	Scale	No	Blows / ft	Type	REC	Notes
	2.0	Dark brown, orange, wet, med. moist, med. stiff, sandy silty, mica, silt, clay, MH	1	4-8-11"	DS	4"	DS	4"	
	4.0	Light brown, moist, med. moist, med. stiff, sandy silty, mica, silt, clay, MH	2	17-18-21"	DS	9"	DS	9"	
	8.0	Head	3	30"	DS	9"	DS	9"	
	8.0	Head	4	30"	DS	9"	DS	9"	
	11.5	Head	5	30"	DS	9"	DS	9"	
	11.5	End of boring							

**LEGEND**  
 DS DRIVEN SPOON  
 ST SHELBY  
 PS PISTON SAMPLE  
 RC ROCK CORE  
 HSA HOLLOW STEM AUGER

**GROUND WATER**  
 WATER ON RODS:  
 WATER AT COMPLETION: Dry  
 CAVED:  
 WATER AT 24 HOURS: Dry to 7.5"

Scale	Elev	Description	Depth	Scale	No	Blows / ft	Type	REC	Notes
	2.0	Dark brown, orange, wet, med. moist, med. stiff, sandy silty, mica, silt, clay, MH	1	3-5"	DS	4"	DS	4"	Topsoil
	4.0	Light brown, orange, moist, med. moist, med. stiff, sandy silty, mica, silt, clay, MH	2	7-8-11"	DS	6"	DS	6"	
	4.0	Light brown, orange, moist, med. moist, med. stiff, sandy silty, mica, silt, clay, MH	3	7-8-13"	DS	6"	DS	6"	
	11.5	Light brown, orange, moist, med. moist, med. stiff, sandy silty, mica, silt, clay, MH	4	17-19-24"	DS	11"	DS	11"	
	11.5	Light brown, orange, moist, med. moist, med. stiff, sandy silty, mica, silt, clay, MH	5	208"	DS	4"	DS	4"	
	11.5	End of boring							

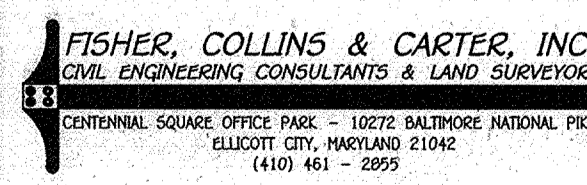
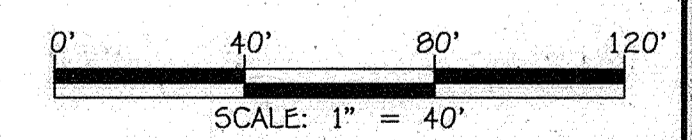
**LEGEND**  
 DS DRIVEN SPOON  
 ST SHELBY  
 PS PISTON SAMPLE  
 RC ROCK CORE  
 HSA HOLLOW STEM AUGER

**GROUND WATER**  
 WATER ON RODS:  
 WATER AT COMPLETION: Dry  
 CAVED:  
 WATER AT 24 HOURS:

Scale	Elev	Description	Depth	Scale	No	Blows / ft	Type	REC	Notes
	1.0	Dark brown, wet, med. moist, med. stiff, sandy silty, mica, silt, clay, MH	1	3-7"	DS	4"	DS	4"	
	4.0	Light brown, orange, moist, med. moist, med. stiff, sandy silty, mica, silt, clay, MH	2	8-7-8"	DS	8"	DS	8"	
	6.0	Light brown, orange, moist, med. moist, med. stiff, sandy silty, mica, silt, clay, MH	3	2-8-12"	DS	11"	DS	11"	
	6.0	End of boring							

**LEGEND**  
 DS DRIVEN SPOON  
 ST SHELBY  
 PS PISTON SAMPLE  
 RC ROCK CORE  
 HSA HOLLOW STEM AUGER

**GROUND WATER**  
 WATER ON RODS:  
 WATER AT COMPLETION: Dry  
 CAVED:  
 WATER AT 24 HOURS: Dry to 4"



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012."



*Charles J. Cravo, Sr.*  
 CHARLES J. CRAVO, SR., P.E.  
 1/22/12 DATE

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

5/18/12  
 5/14/12  
 5/14/12

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

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075

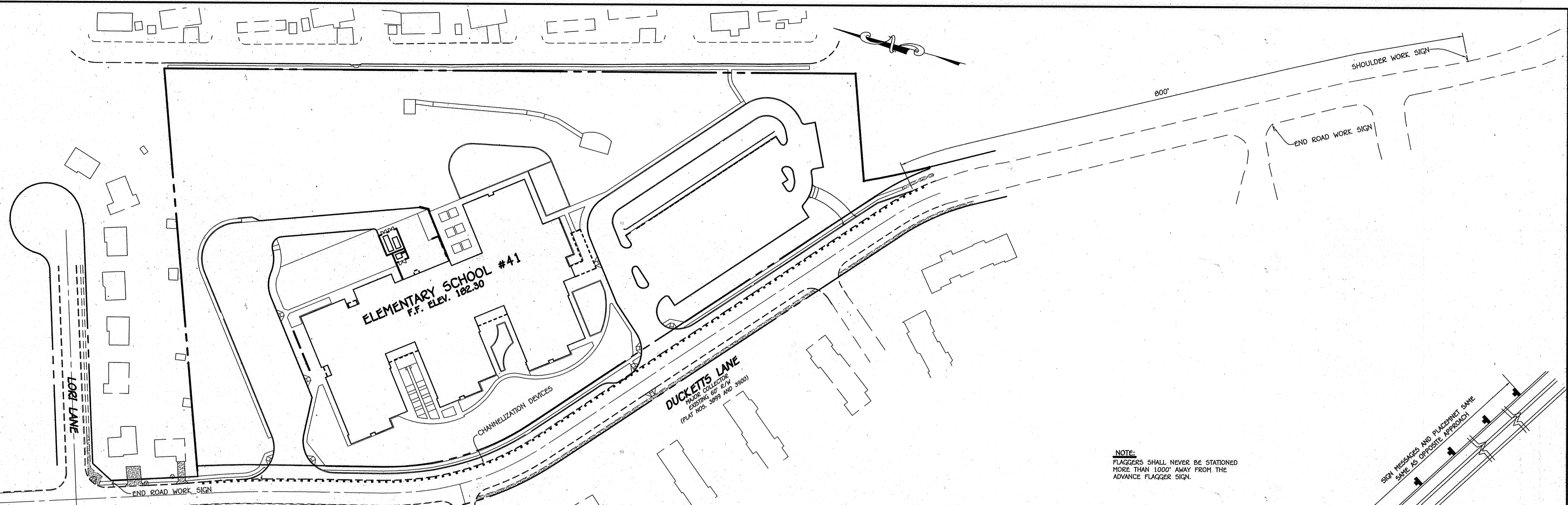
  

PERMIT INFORMATION CHART				
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.		
ELEMENTARY SCHOOL #41	N/A	P.0569		
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.
21873-21875	-	R-12	37	FIRST
CENSUS TRACT	6012.01			

**BORING LOGS**  
**ELEMENTARY SCHOOL #41**  
**THE LEGACY AT DUCKETTS RIDGE**  
**PARCEL A**

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: APRIL 23, 2012

SHEET 15 OF 39



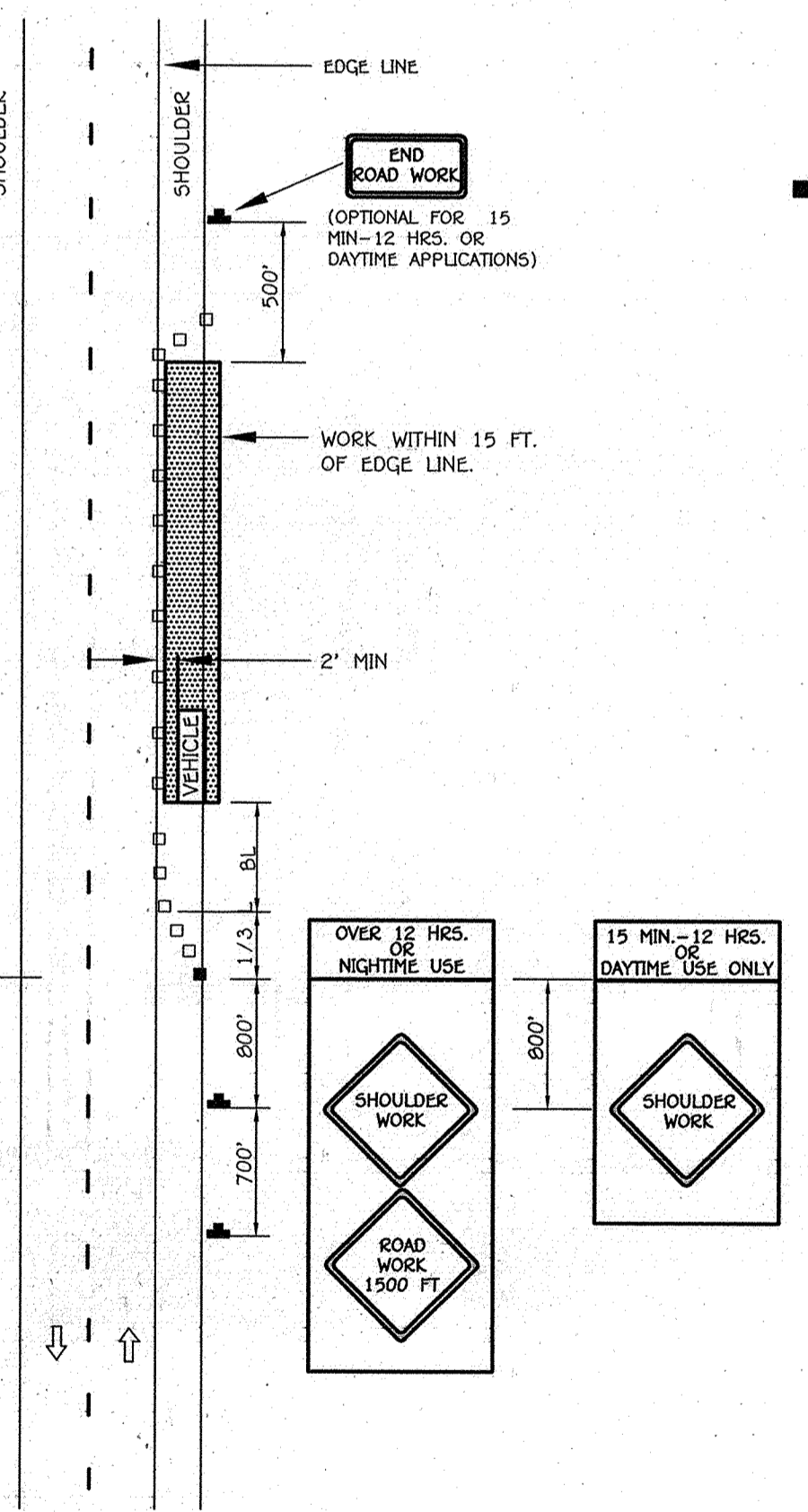
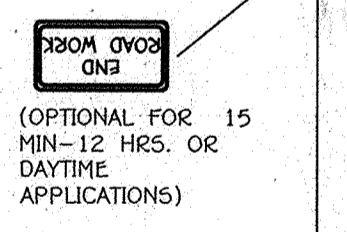
**TRAFFIC MAINTENANCE PLAN**  
SCALE: 1" = 80'

**IMPORTANT:**  
THIS DRAWING SHALL BE USED IN COMBINATION WITH GENERAL NOTES MD 104.00-01-MD 104.00-10 AND STANDARD DETAILS MD 104.01-01-MD 104.01-02

**NOTES:**  
SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY A PHYSICAL BARRIER. REFER TO STANDARD NO. MD 104.06-14  
WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-11 TO MD 104.06-15.

**KEY:**  

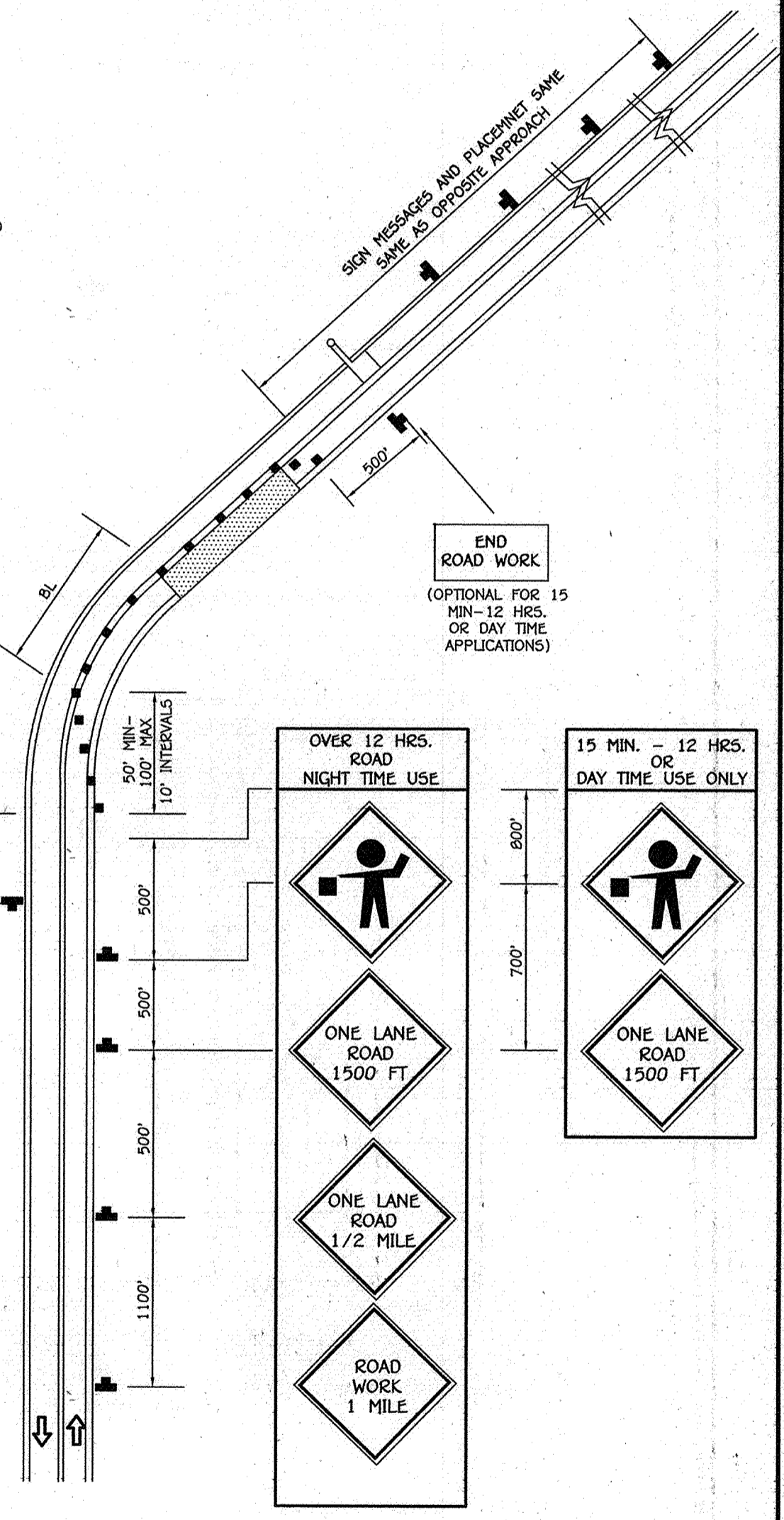
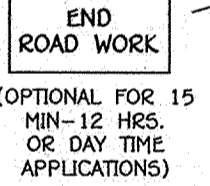
 CHANNELIZING DEVICES  
 SIGN SUPPORT FACE OF SIGN  
 DIRECTION OF TRAFFIC  
 WORK SITE



**NOTE:**  
FLAGGERS SHALL NEVER BE STATIONED MORE THAN 1000' AWAY FROM THE ADVANCE FLAGGER SIGN.

**KEY:**  

 CHANNELIZING DEVICES  
 SIGN SUPPORT FACE OF SIGN  
 DIRECTION OF TRAFFIC  
 WORK SITE  
 FLAGGER



**SHOULDER WORK / 2-LANE, 2-WAY  
EQL/LESS THAN 40 MPH**

NO SCALE

**FLAGGING OPERATION / 1-LANE, 2-WAY  
EQUAL/LESS THAN 40 MPH**

NO SCALE

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELLSWORTH CITY, MARYLAND 21042  
(410) 461-7222



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012."

*Charles J. Cervo, Sr.*  
CHARLES J. CERVO, SR., P.E.  
1/27/12 DATE

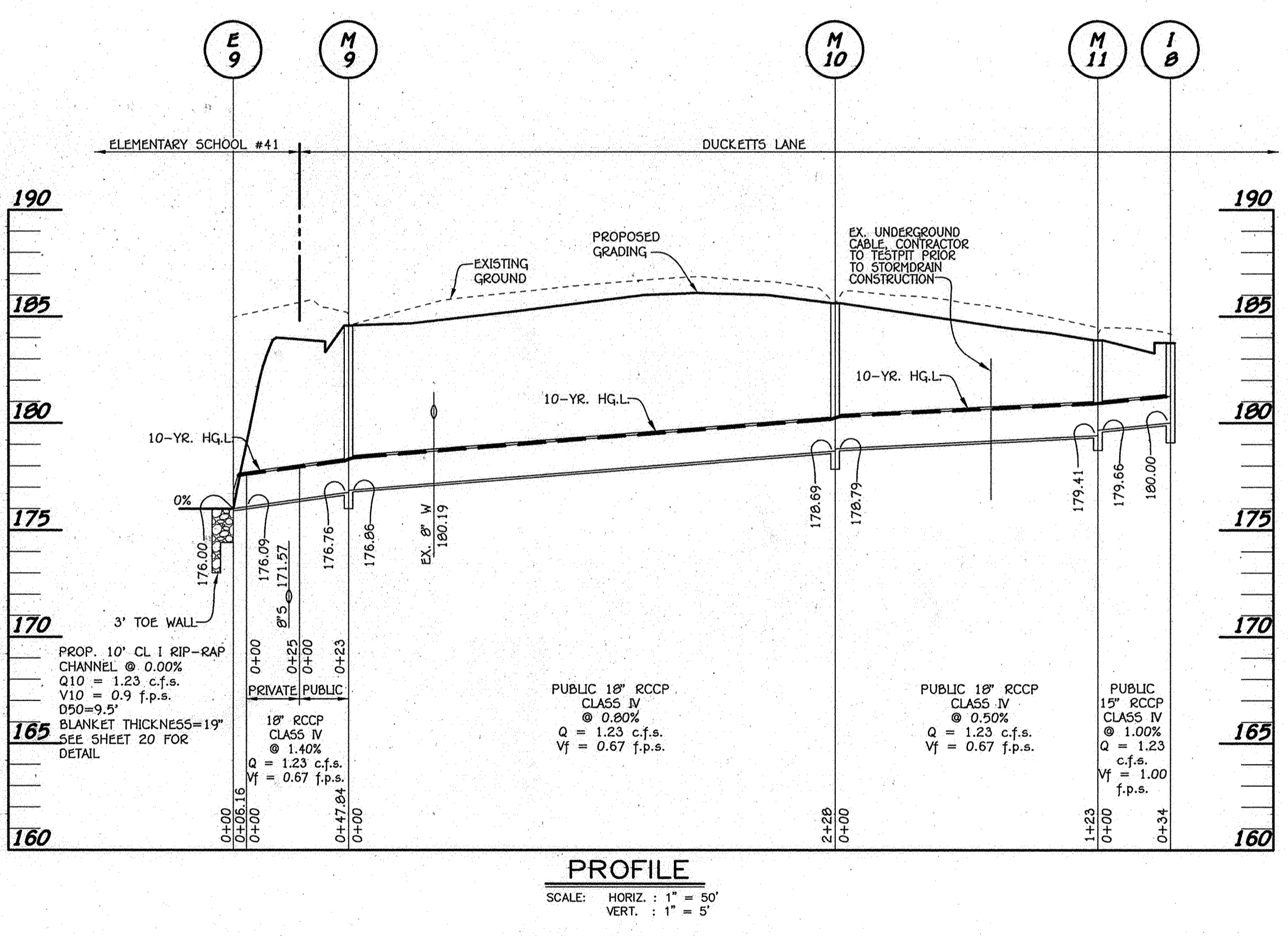
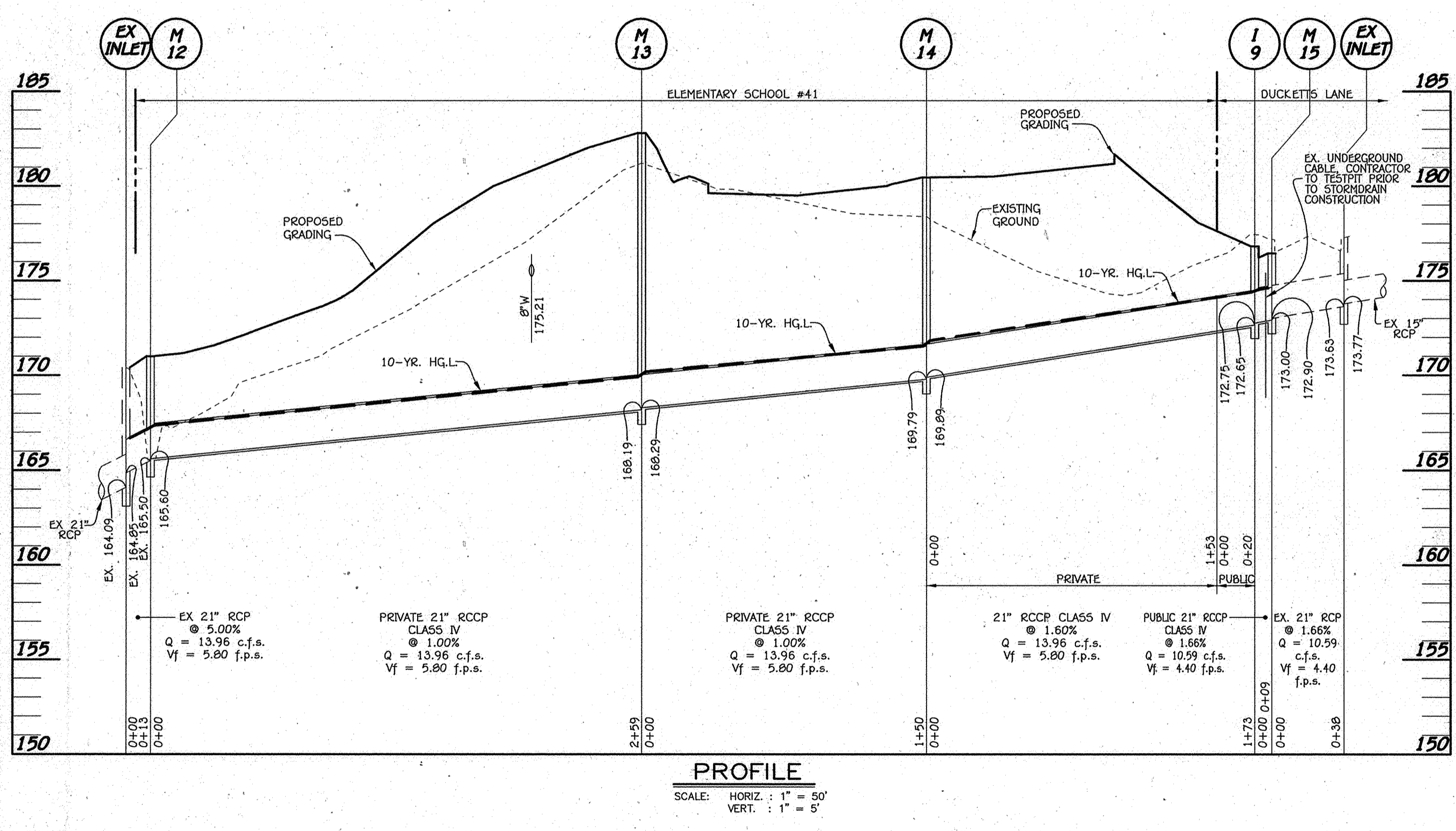
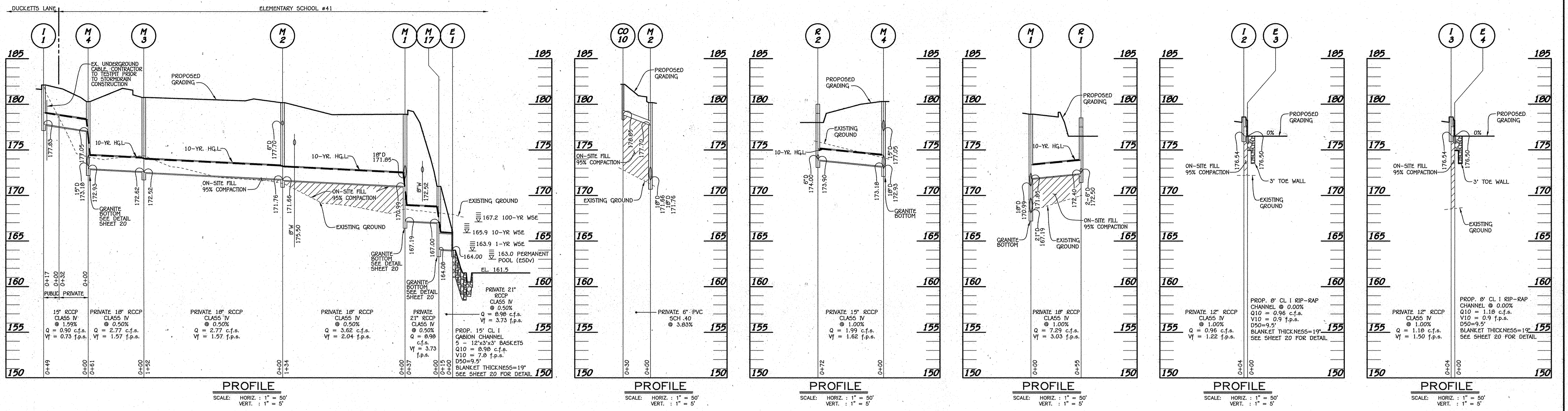
DATE	DESCRIPTION
6/24/12	REVISED SHEET NUMBERS FROM 38 TO 39
REVISION BLOCK	
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Mark A. Wigg</i>	5/14/12 DATE
Director - Department of Planning and Zoning	
<i>Victor Schuchman</i>	5/14/12 DATE
Chief, Division of Land Development	
<i>John D. ...</i>	5/14/12 DATE
Chief, Development Engineering Division	

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
10910 Maryland Route 10B  
Ellicott City, Maryland 21042  
Attention: Bruce Gist  
410-313-6798

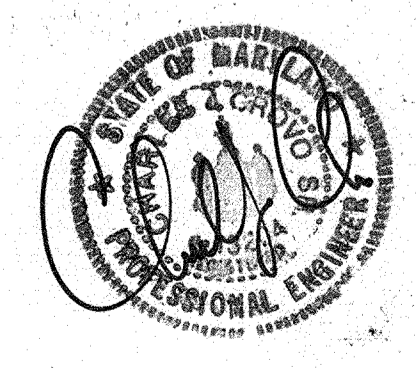
ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
21873-21875	-	R-12	37	FIRST	6012.01

TRAFFIC MAINTENANCE PLAN			
ELEMENTARY SCHOOL #41			
THE LEGACY AT DUCKETTS RIDGE PARCEL A			
ZONED R-12	TAX MAP No.: 37	GRID No.: 12	PARCEL No.: 569
FIRST ELECTION DISTRICT	HOWARD COUNTY, MARYLAND		
SCALE: AS SHOWN	DATE: APRIL 23, 2012		
SHEET 16 OF 39			





**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE PARK - 10222 BALDROSE NATIONAL PARK  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2899



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012."

*Charles J. Grovo, Sr.*  
 CHARLES J. GROVO, SR., P.E.      4/27/12 DATE

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

9/24/12 REVISED SHEET NUMBERS FROM 98 TO 99  
 DATE DESCRIPTION REVISION BLOCK

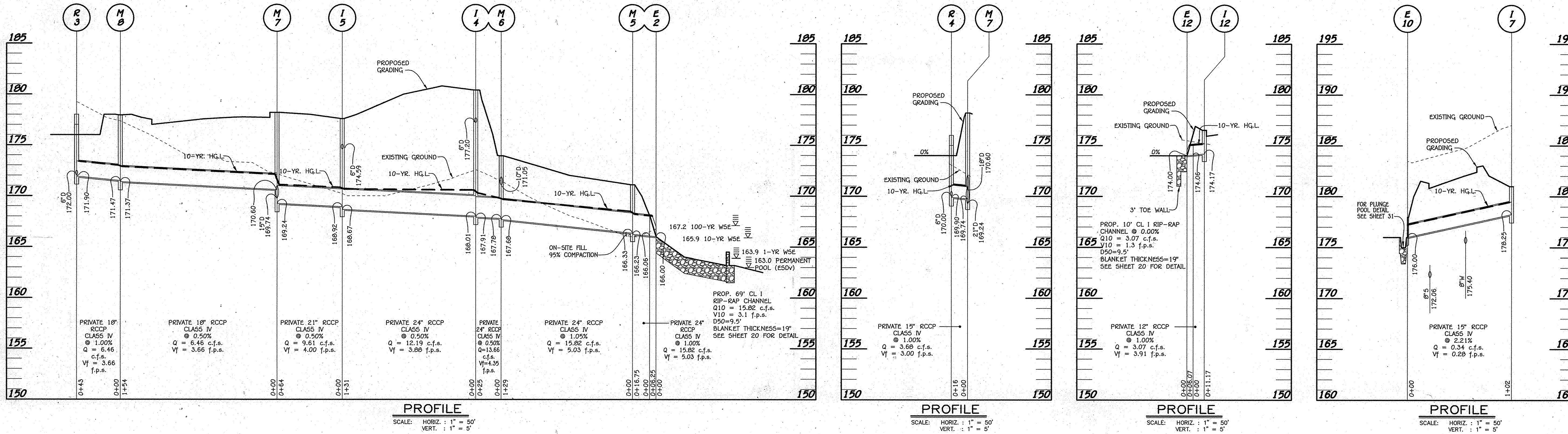
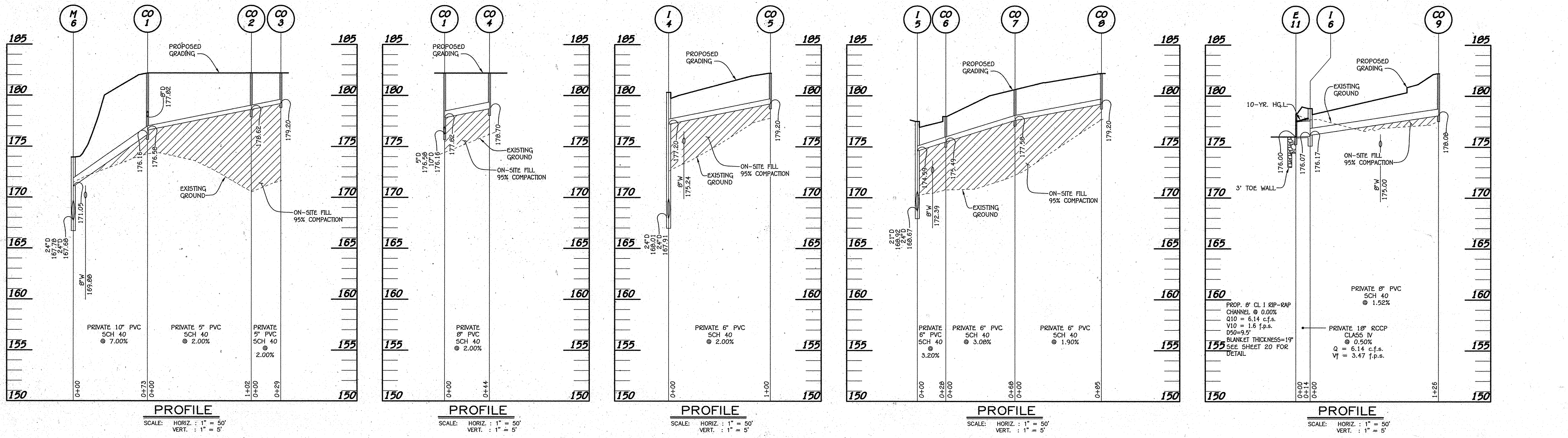
PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 10910 Maryland Route 108  
 Ellicott City, Maryland 21042  
 Attention: Bruce Gist  
 410-313-6798

ADDRESS CHART				
LOT/PARCEL#	STREET ADDRESS			
P.0569	6501 DUCKETTS LANE ELK RIDGE, MD 21075			
PERMIT INFORMATION CHART				
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.		
ELEMENTARY SCHOOL #41	N/A	P.0569		
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.
21873-21875	-	R-12	37	FIRST
		CENSUS TRACT		
		6012.01		

**STORM DRAIN PROFILES**  
**ELEMENTARY SCHOOL #41**  
**THE LEGACY AT DUCKETTS RIDGE**  
**PARCEL A**

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: APRIL 23, 2012

SHEET 17 OF 22



FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SOURCE OFFICE PARK - 10272 BALTIMORE NATIONAL FREE  
 BLUDDOCK CITY, MARYLAND 21042  
 (410) 461-2895



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012."  
 Charles J. Carvo, Sr., P.E. 1/27/12 DATE

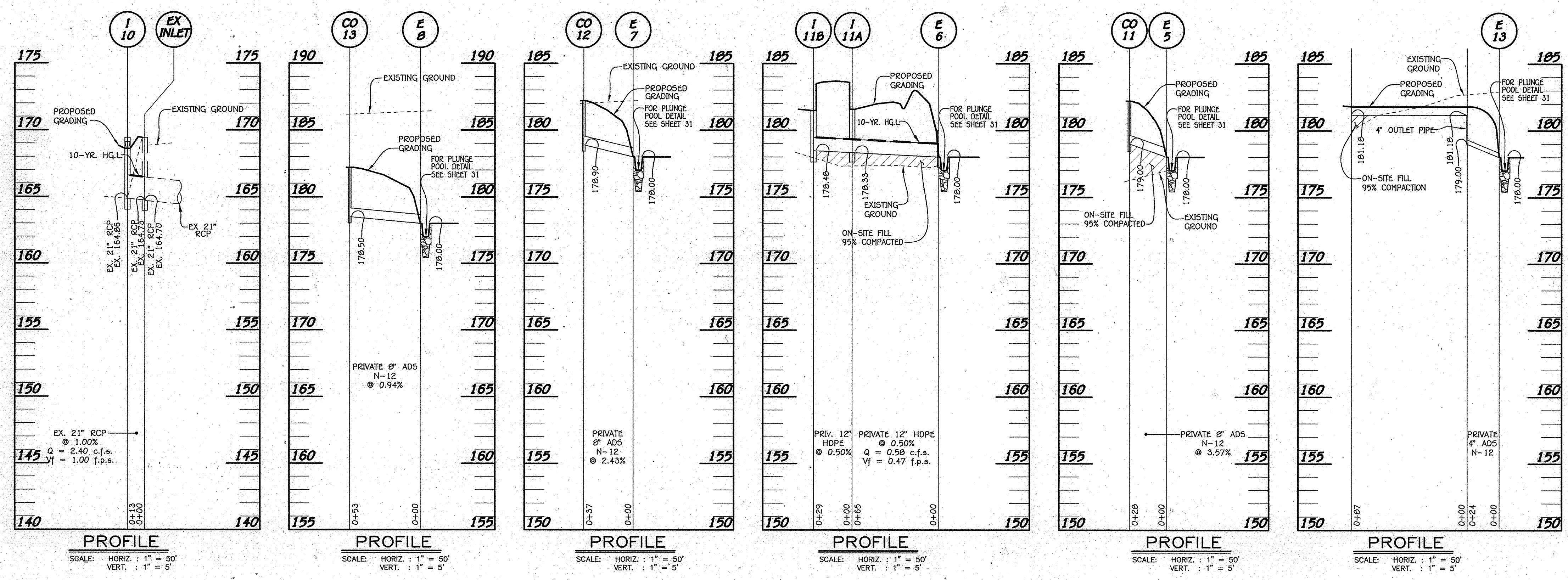
DATE	DESCRIPTION
9/24/12	REVISED SHEET NUMBERS FROM 90 TO 99
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Director - Department of Planning and Zoning	5/14/12 DATE
Chief, Division of Land Development	5/14/12 DATE
Chief, Development Engineering Division	5/14/12 DATE

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

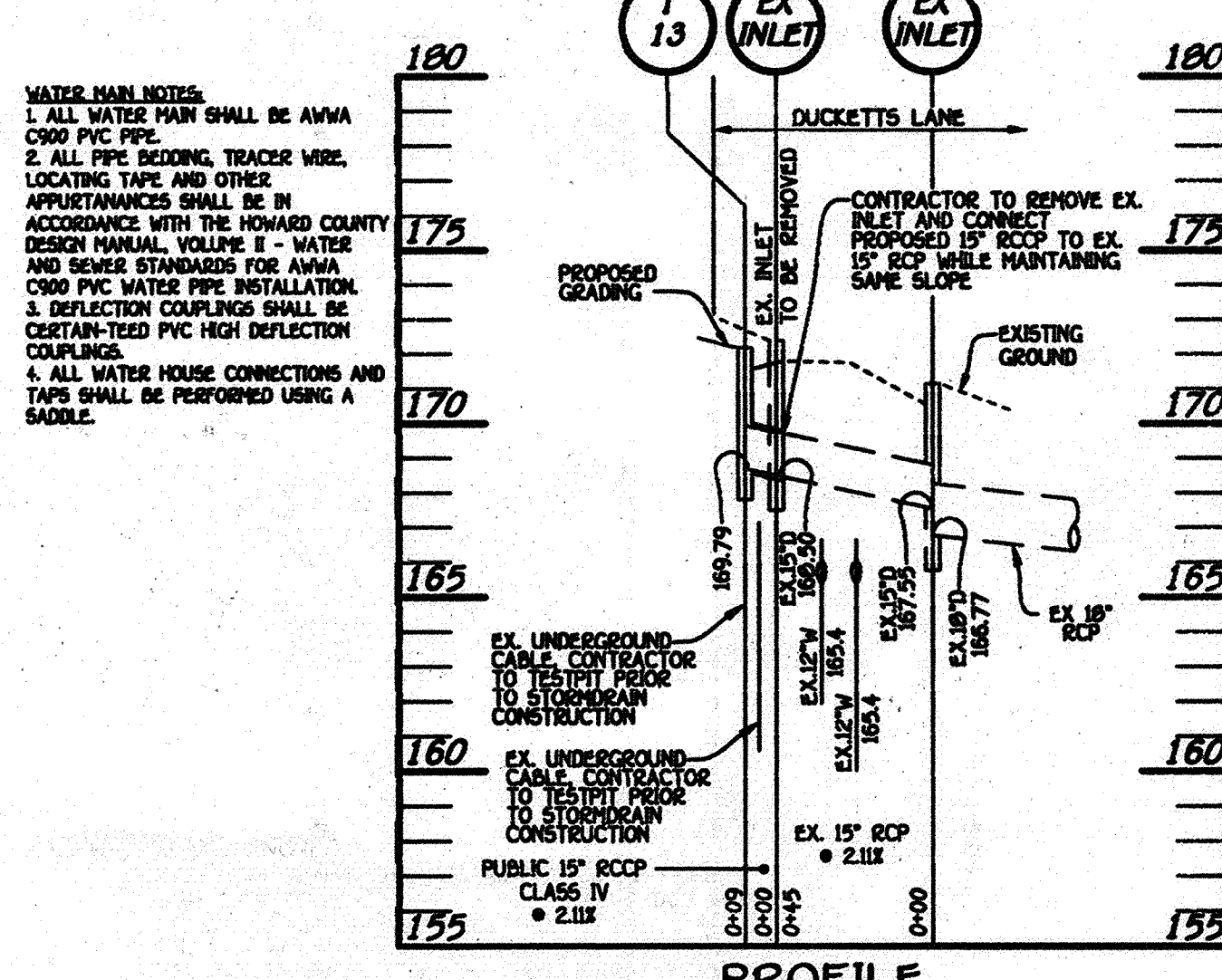
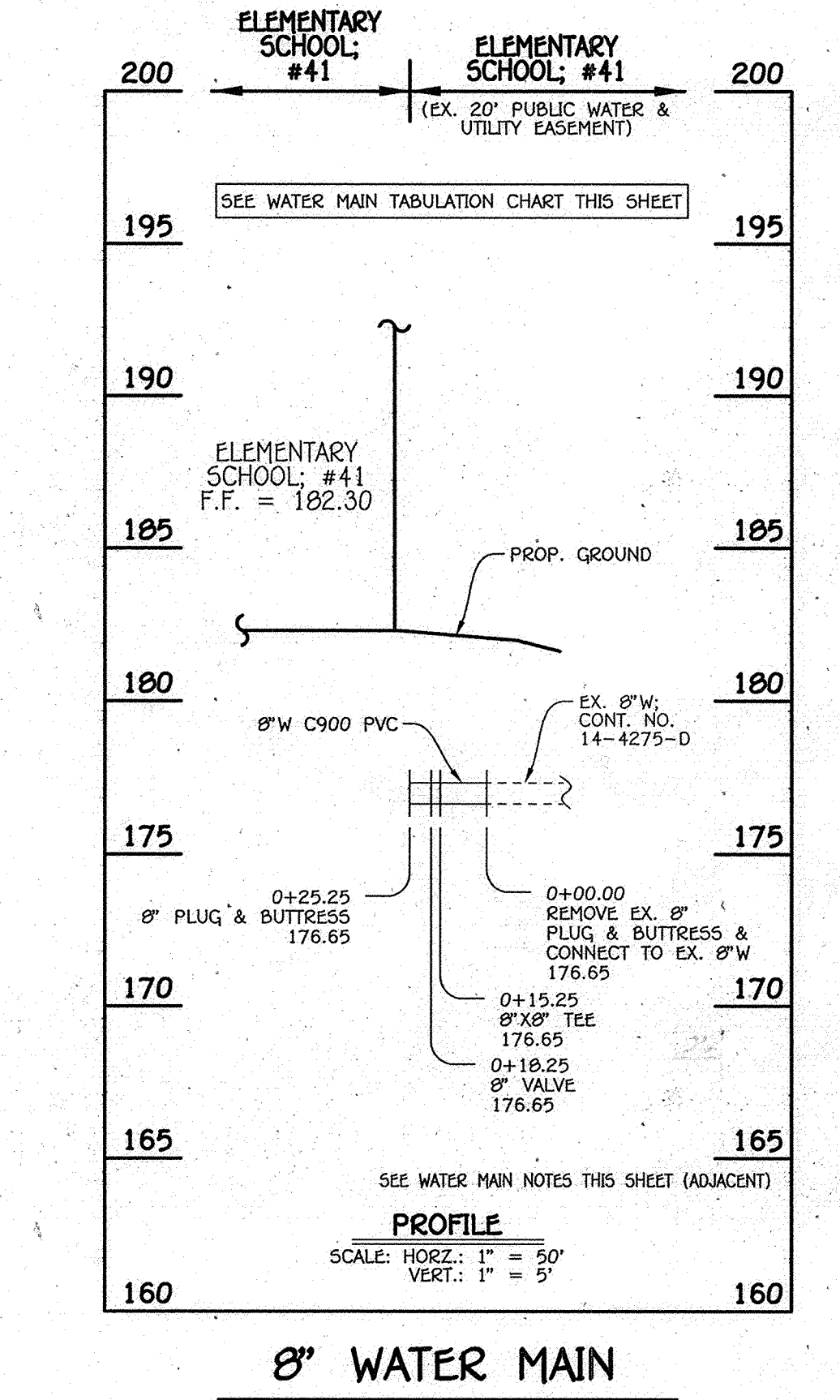
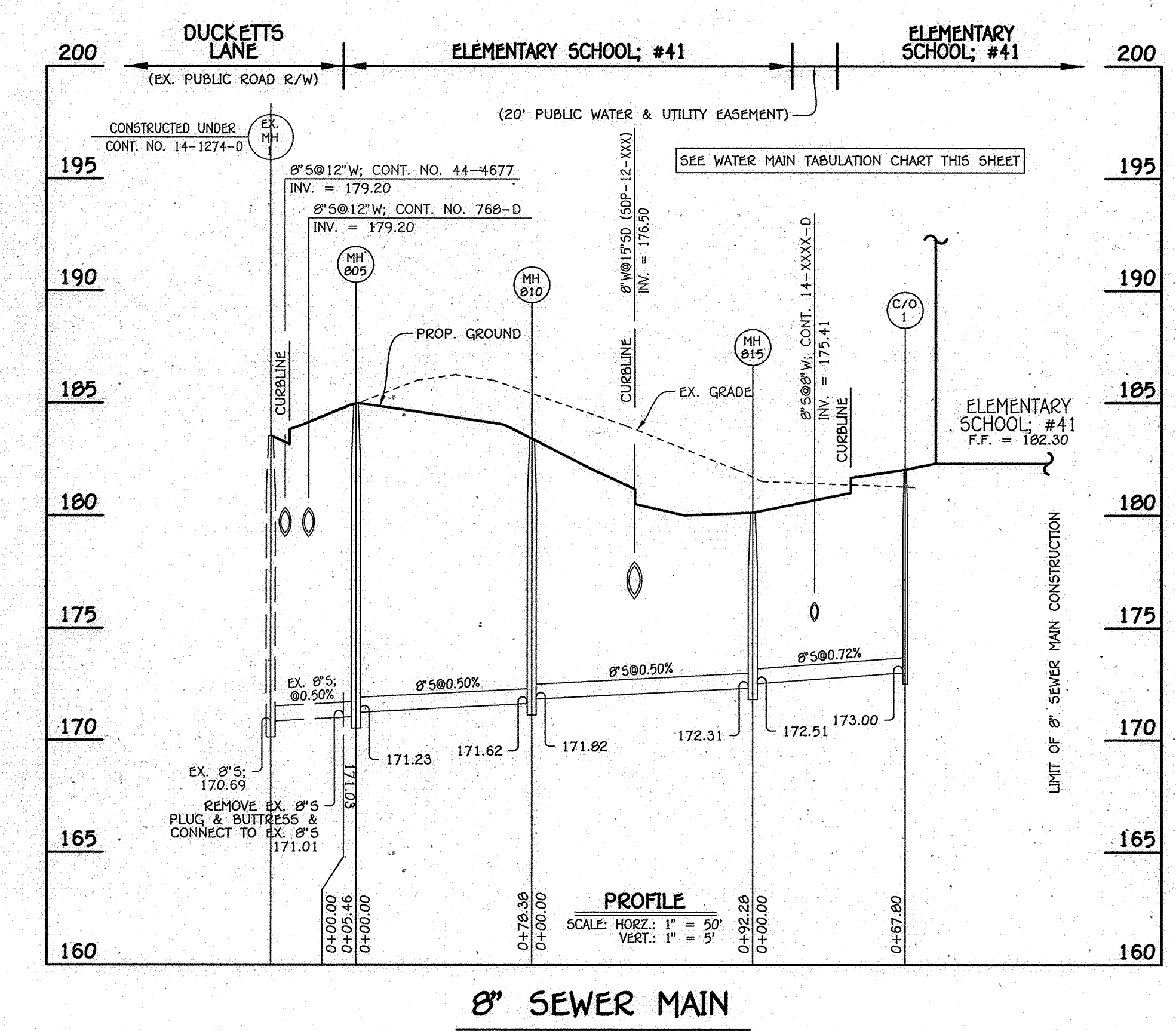
ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
21873-21875	-	R-12	37	FIRST	6012.01

**STORM DRAIN PROFILES**  
**ELEMENTARY SCHOOL #41**  
**THE LEGACY AT DUCKETTS RIDGE**  
**PARCEL A**  
 ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: APRIL 23, 2012  
 SHEET 18 OF 22

PIPE SCHEDULE (PRIVATE)			PIPE SCHEDULE (PUBLIC)		
SIZE	CLASS	LENGTH	SIZE	CLASS	LENGTH
6"	PERF PVC	1651 L.F.	15"	RCCP, CLASS IV	51 L.F.
4"	PVC, SCH. 40	24 L.F.	18"	RCCP, CLASS IV	374 L.F.
5"	PVC, SCH. 40	131 L.F.	21"	RCCP, CLASS IV	29 L.F.
6"	PVC, SCH. 40	328 L.F.			
8"	PVC, SCH. 40	288 L.F.			
10"	PVC, SCH. 40	73 L.F.			
12"	HDPE	94 L.F.			
12"	RCCP, CLASS IV	20 L.F.			
15"	RCCP, CLASS IV	222 L.F.			
18"	RCCP, CLASS IV	630 L.F.			
21"	RCCP, CLASS IV	678 L.F.			
24"	RCCP, CLASS IV	302 L.F.			
27"	RCCP, ASTM 361	86 L.F.			



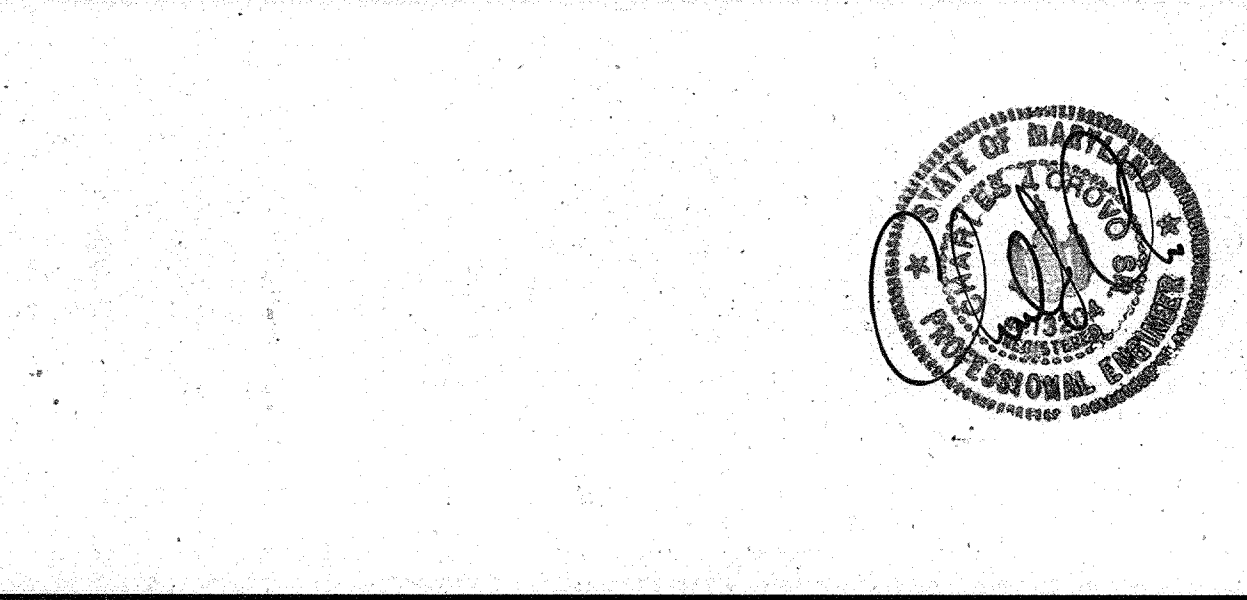
STRUCTURE SCHEDULE										
STRUCTURE NO.	OWNERSHIP AND MAINTENANCE	TOP ELEVATION	INV. IN	INV. OUT	COORDINATES	WIDTH	TYPE	REMARKS		
I-1	PUBLIC	182.12**	-	177.83 (15')	N 558799.03 E 1384316.18	2.5'	A-10 INLET	D - 4.03		
I-2	PRIVATE	178.60**	-	176.54 (12')	N 558721.11 E 1384696.90	2.5'	A-5 INLET	D - 4.01		
I-3	PRIVATE	178.60**	-	176.54 (12')	N 558798.26 E 1384609.56	2.5'	A-5 INLET	D - 4.01		
I-4	PRIVATE	180.32**	168.01 (24')	177.20 (8')	N 591127.10 E 1384487.87	2.5'	A-5 INLET	D - 4.01		
I-5	PRIVATE	177.50**	168.92 (21')	174.59 (8')	N 59250.24 E 1384443.05	2.5'	A-5 INLET	D - 4.01		
I-6	PRIVATE	178.78**	176.17 (8')	-	N 59333.65 E 1384276.71	2.5'	A-10 INLET	D - 4.03		
I-7	PRIVATE	181.00**	-	178.25 (15')	N 591148.09 E 1384157.41	2.5'	5 INLET	D - 4.22		
I-8	PUBLIC	183.75**	-	180.00 (15')	N 590875.22 E 1384230.04	2.5'	A-10 INLET	D - 4.03		
I-9	PUBLIC	176.82**	172.75 (21')	172.65 (21')	N 598624.76 E 1384513.59	3'	A-5 INLET	D - 4.01		
I-10	PRIVATE	168.61**	-	164.86 (21')	N 59240.34 E 1384650.92	2.5'	D INLET	D - 4.10		
I-11A	PRIVATE	181.58**	178.33 (12')	178.33 (12')	N 590935.25 E 1384326.71	15'	ADS DRAIN BASIN	2815AG		
I-11B	PRIVATE	181.49**	-	178.48 (12')	N 590934.86 E 1384348.70	15'	ADS DRAIN BASIN	2815AG		
I-12	PRIVATE	176.52**	-	174.17 (12')	N 59391.54 E 1384374.64	2.5'	A-5 INLET	D - 4.01		
M-1	PRIVATE	178.91	170.99 (18')	171.85 (18')	N 598799.15 E 1384640.27	4'	STD. MANHOLE	G - 5.12		
M-2	PRIVATE	180.18	171.76 (18')	177.70 (8')	N 590662.91 E 1384522.86	4'	STD. MANHOLE	G - 5.12		
M-3	PRIVATE	180.75	172.62 (18')	172.52 (18')	N 590758.28 E 1384412.90	4'	STD. MANHOLE	G - 5.12		
M-4	PRIVATE	180.30	173.18 (15')	177.09 (15')	N 590797.28 E 1384365.99	4'	STD. MANHOLE	G - 5.12		
M-5	PRIVATE	171.10	166.33 (24')	166.23 (24')	N 59161.65 E 1384638.91	4'	STD. MANHOLE	G - 5.12		
M-6	PRIVATE	173.94	171.05 (15')	167.78 (24')	N 591128.68 E 1384514.28	4'	STD. MANHOLE	G - 5.12		
M-7	PRIVATE	178.20	169.74 (15')	170.60 (18')	N 59311.50 E 1384425.68	4'	STD. MANHOLE	G - 5.12		
M-8	PRIVATE	177.94	171.47 (18')	171.37 (18')	N 59374.99 E 1384285.65	4'	STD. MANHOLE	G - 5.12		
M-9	PUBLIC	184.58	176.86 (18')	176.76 (18')	N 59213.98 E 1384070.87	4'	STD. MANHOLE	G - 5.12		
M-10	PUBLIC	185.63	178.79 (18')	178.69 (18')	N 59994.96 E 1384132.93	4'	STD. MANHOLE	G - 5.13		
M-11	PUBLIC	183.88	179.66 (15')	179.41 (18')	N 59891.85 E 1384200.83	4'	STD. MANHOLE	G - 5.12		
M-12	PRIVATE	171.00	165.60 (21')	165.50 (21')	N 590934.63 E 1384735.28	4'	STD. MANHOLE	G - 5.12		
M-13	PRIVATE	182.80	168.29 (21')	168.19 (21')	N 590894.10 E 1384801.45	4'	STD. MANHOLE	G - 5.12		
M-14	PRIVATE	180.46	169.89 (21')	169.79 (21')	N 590891.07 E 1384683.93	4'	STD. MANHOLE	G - 5.12		
M-15	PUBLIC	176.45	173.00 (21')	172.90 (21')	N 598619.19 E 1384508.84	4'	STD. MANHOLE	G - 5.12		
M-16	PRIVATE	170.00	161.30 (27')	161.20 (27')	N 59100.95 E 1384675.20	6'	STD. MANHOLE	G - 5.13***		
M-17	PRIVATE	171.00	167.00 (21')	164.08 (21')	N 590826.59 E 1384664.77	4'	STD. MANHOLE	G - 5.12		
S-1	PRIVATE	170.17	163.00 (18')	162.00 (27')	N 59032.61 E 1384687.93	-	-	SEE SHEET 27, 28		
R-1	PRIVATE	178.50	172.50 (8')	172.50 (8')	N 598744.54 E 1384641.84	3'	MOD. C INLET	SEE SHEET 31		
R-2	PRIVATE	180.00	174.00 (8')	173.90 (15')	N 590843.76 E 1384311.50	3'	MOD. C INLET	SEE SHEET 31		
R-3	PRIVATE	178.00	172.00 (8')	171.90 (18')	N 59349.34 E 1384250.63	3'	MOD. C INLET	SEE SHEET 31		
R-4	PRIVATE	176.00	170.00 (8')	169.90 (15')	N 59317.80 E 1384440.09	3'	MOD. C INLET	SEE SHEET 31		
E-1	PRIVATE	166.50	164.00 (21')	-	N 590837.60 E 1384674.74	-	TYPE 'C' HEADWALL	D - 5.21		
E-2	PRIVATE	-	166.06 (24')	166.00	N 591145.88 E 1384643.27	-	CONC. END SECTION	D - 5.51		
E-3	PRIVATE	178.25	176.50 (12')	-	N 598717.36 E 1384693.59	-	TYPE 'C' HEADWALL	D - 5.21		
E-4	PRIVATE	178.25	178.50 (12')	-	N 598794.51 E 1384606.25	-	TYPE 'C' HEADWALL	D - 5.21		
E-5	PRIVATE	-	178.00 (8')	-	N 590870.09 E 1384295.76	-	-	-		
E-6	PRIVATE	180.00	178.00 (15')	-	N 590890.22 E 1384279.65	-	TYPE 'C' HEADWALL	D - 5.21		
E-7	PRIVATE	-	178.00 (8')	-	N 590941.51 E 1384229.17	-	-	-		
E-8	PRIVATE	-	178.00 (8')	-	N 590808.34 E 1384186.14	-	-	-		
E-9	PRIVATE	-	176.00 (18')	176.00	N 59247.45 E 1384105.47	-	CONC. END SECTION	D - 5.51		
E-10	PRIVATE	178.00	176.00 (15')	-	N 59246.48 E 1384129.80	-	TYPE 'C' HEADWALL	D - 5.21		
E-11	PRIVATE	178.25	176.00 (18')	-	N 59345.69 E 1384267.75	-	TYPE 'C' HEADWALL	D - 5.21		
E-12	PRIVATE	-	174.06 (12')	174.00	N 59391.15 E 1384388.21	-	CONC. END SECTION	D - 5.51		
E-13	PRIVATE	-	178.00	-	N 59999.78 E 1384191.83	-	-	-		



SEWER MANHOLE TABULATION CHART			
NO.	NORTHING	EASTING	RIM ELEVATION
EX. 8" PLUG	599300.50	1384067.11	----
805	599300.63	1384072.57	185.00
810	599225.19	1384093.82	183.20
815	599232.67	1384191.93	180.12
C/O 1	599178.86	1384233.18	182.03

WATER MAIN TABULATION CHART			
W.M. STA.	APPURTENANCE	NORTHING	EASTING
8" WATER MAIN NO. 3 TO DUCKETTS ELEMENTARY SCHOOL			
0+00.00	EX. 8" PLUG & BUTTRISS	59992.23	1384418.80
0+15.25	8" X 8" TEE	599104.34	1384409.52
0+18.25	8" VALVE	599102.51	1384407.14
0+25.25	8" PLUG & BUTTRISS	599098.25	1384401.58

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 10272 BALDWIN NATIONAL PARK  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2899



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, expiration date: November 3, 2012.

CHARLES J. GROVO, SR., P.E.

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

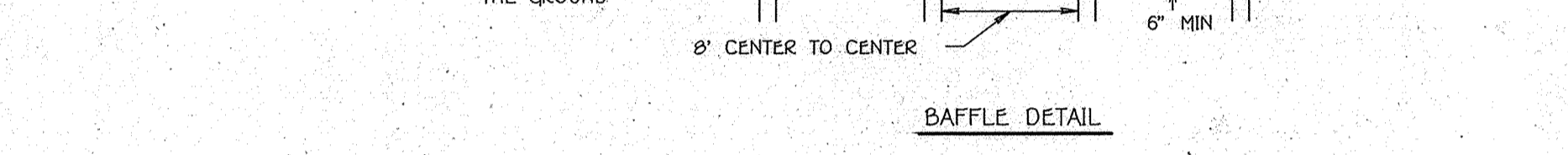
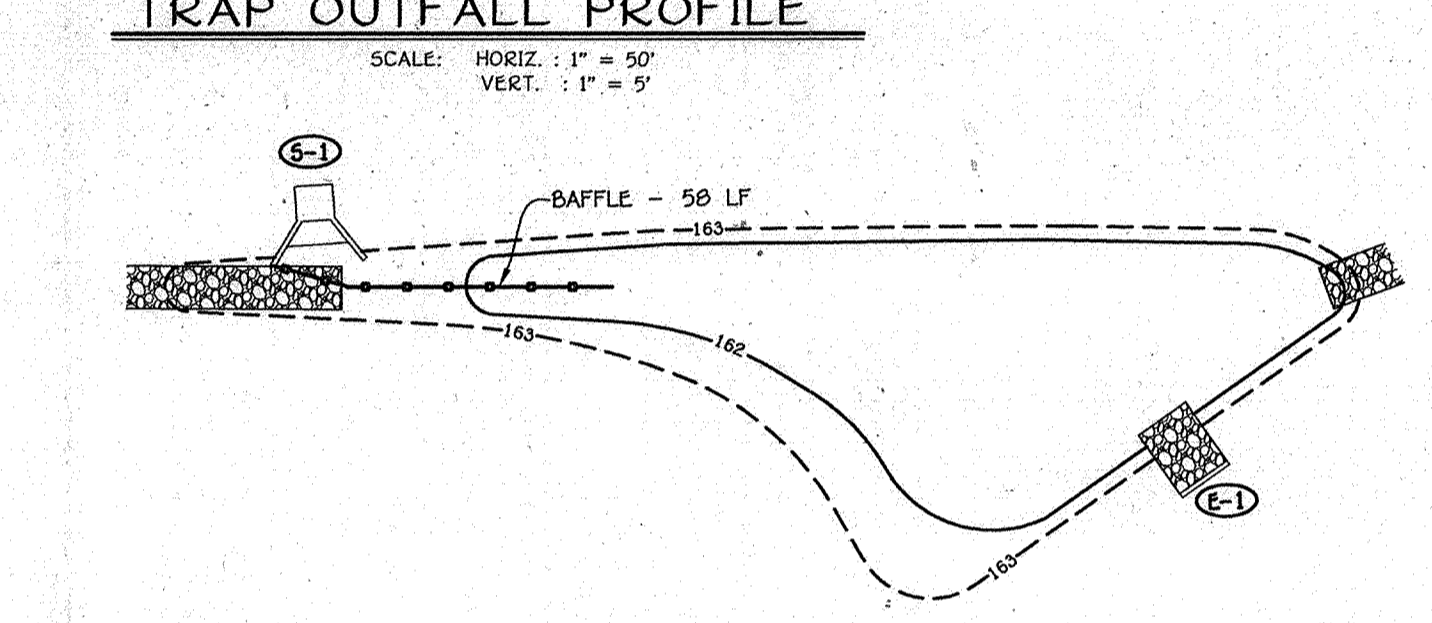
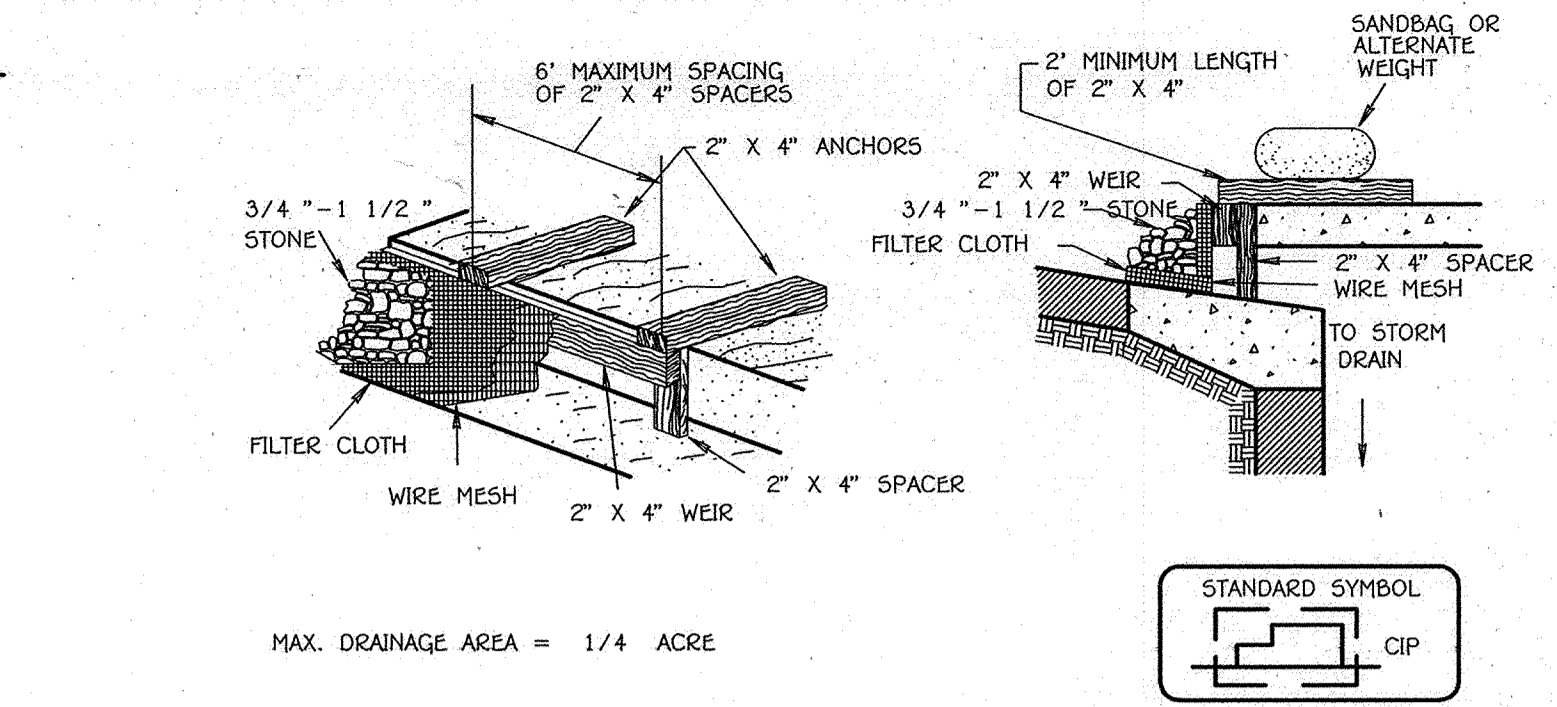
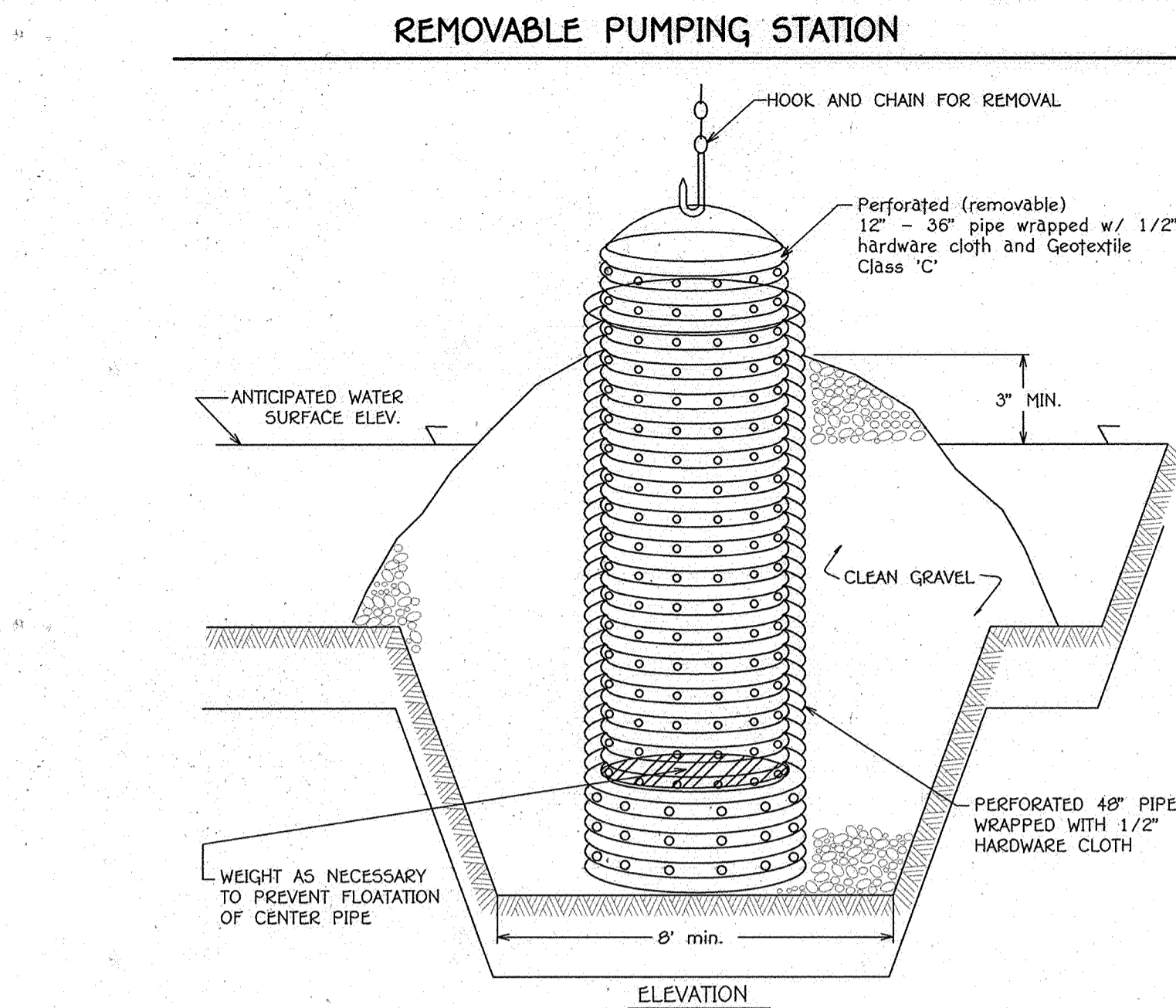
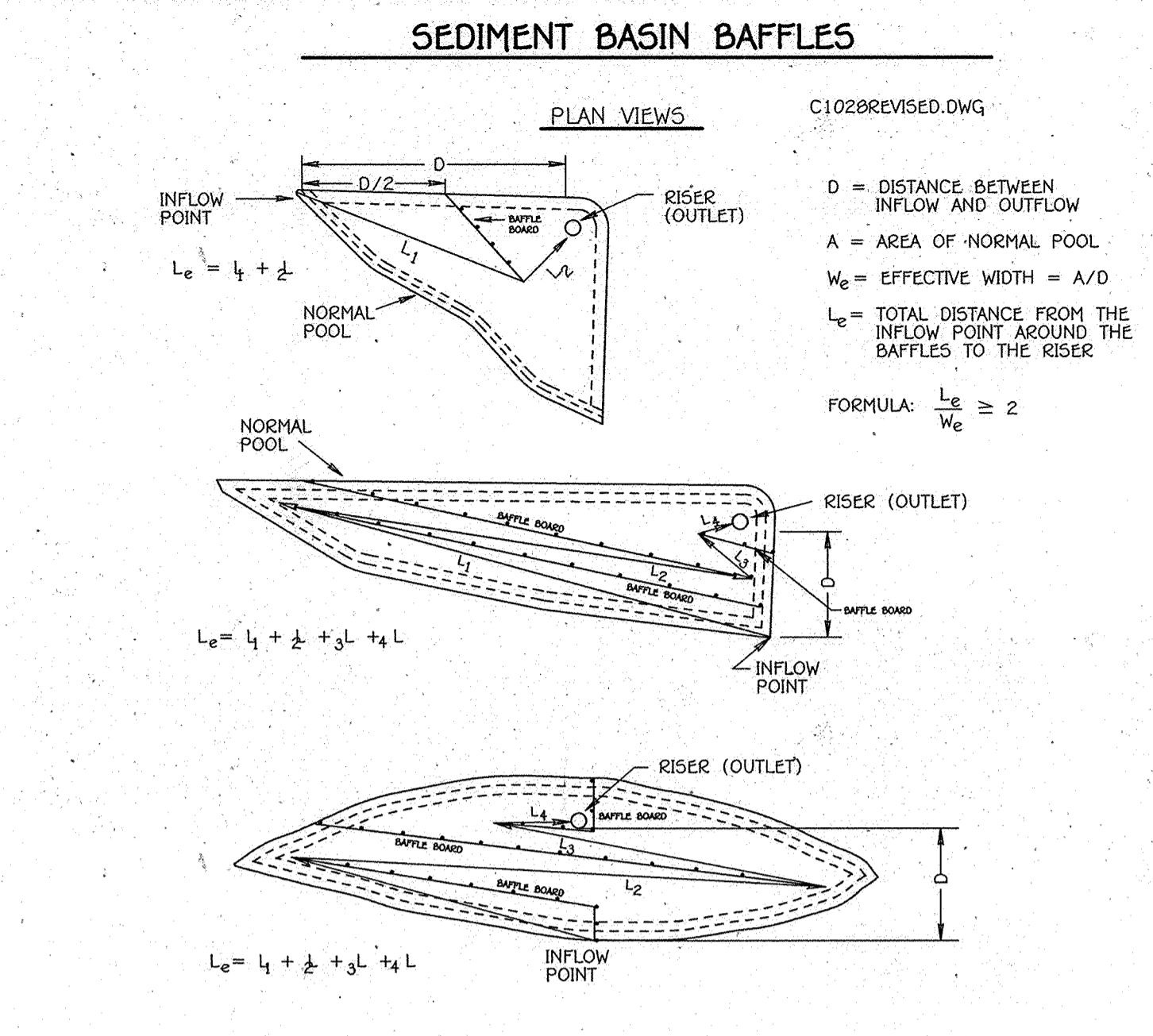
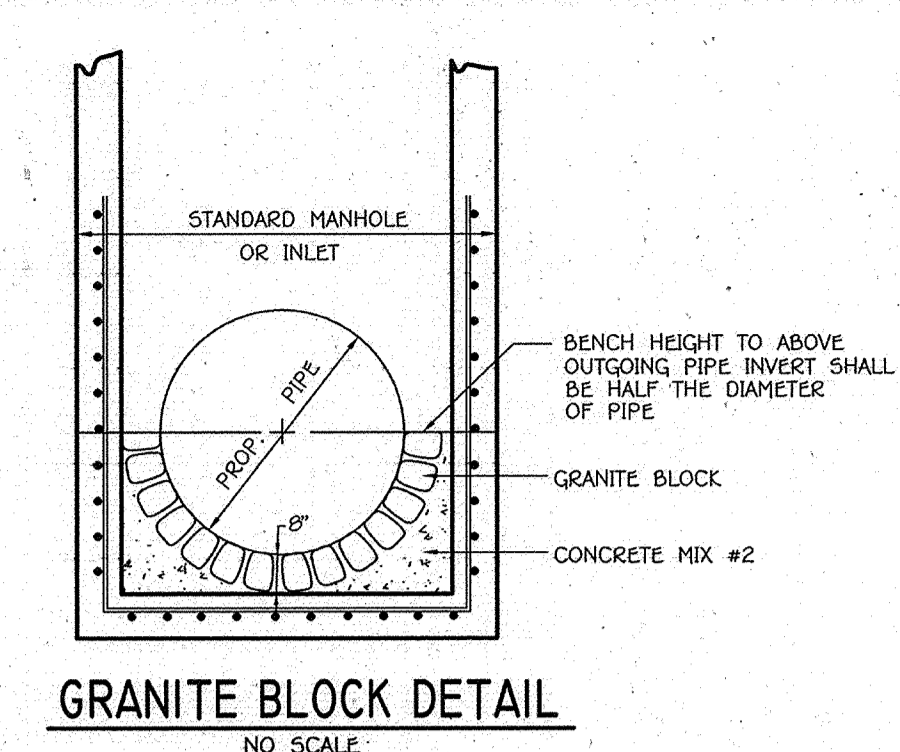
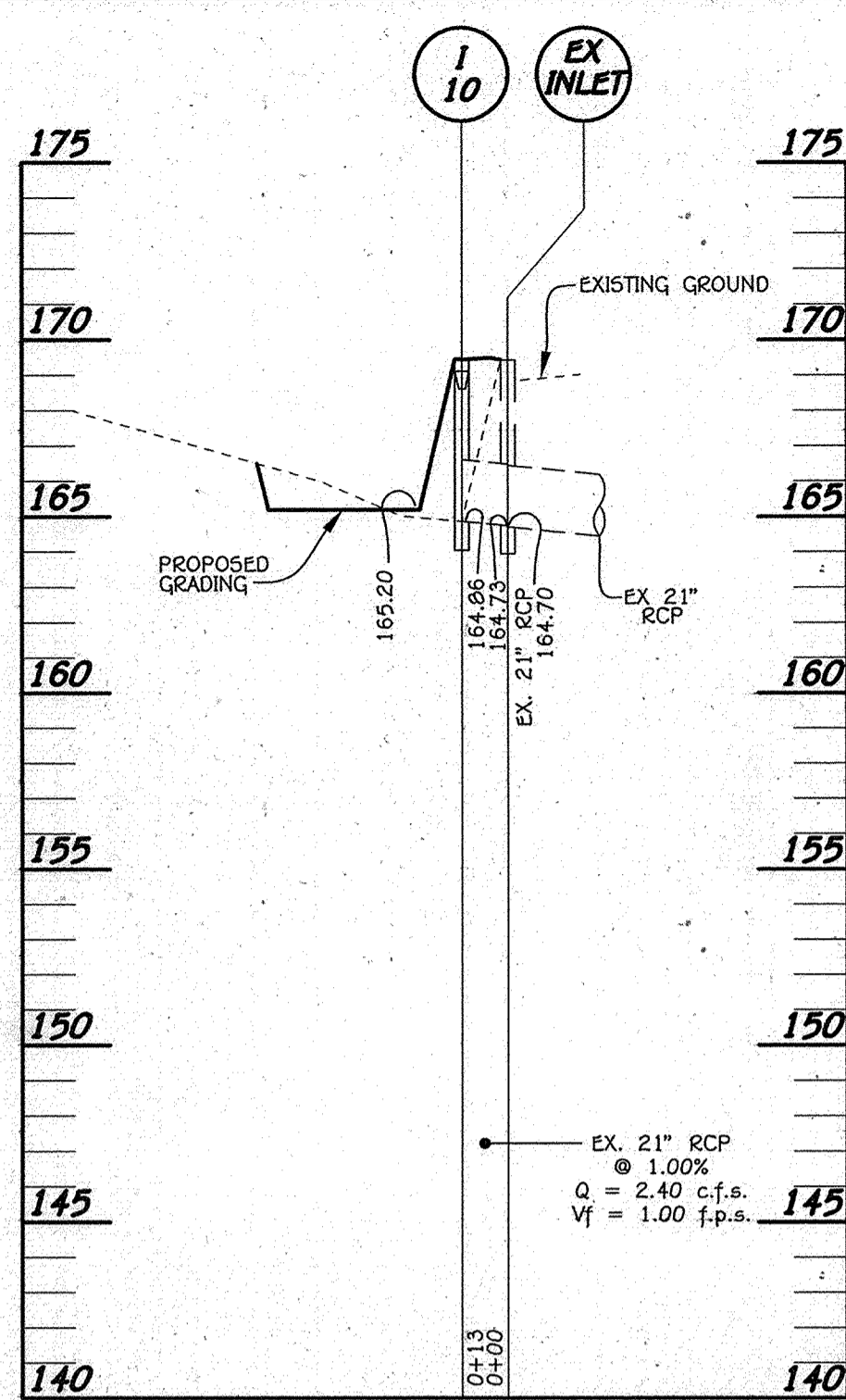
PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 10910 Maryland Route 108  
 Elicott City, Maryland 21042  
 Attention: Bruce Gist  
 410-313-6798

ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075				

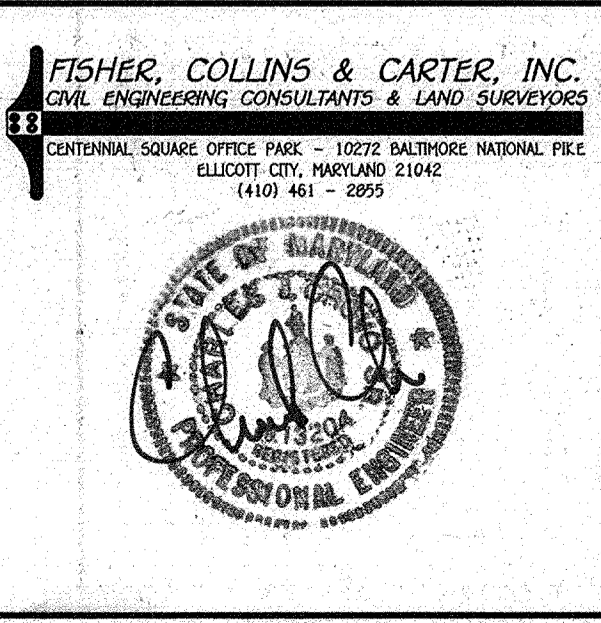
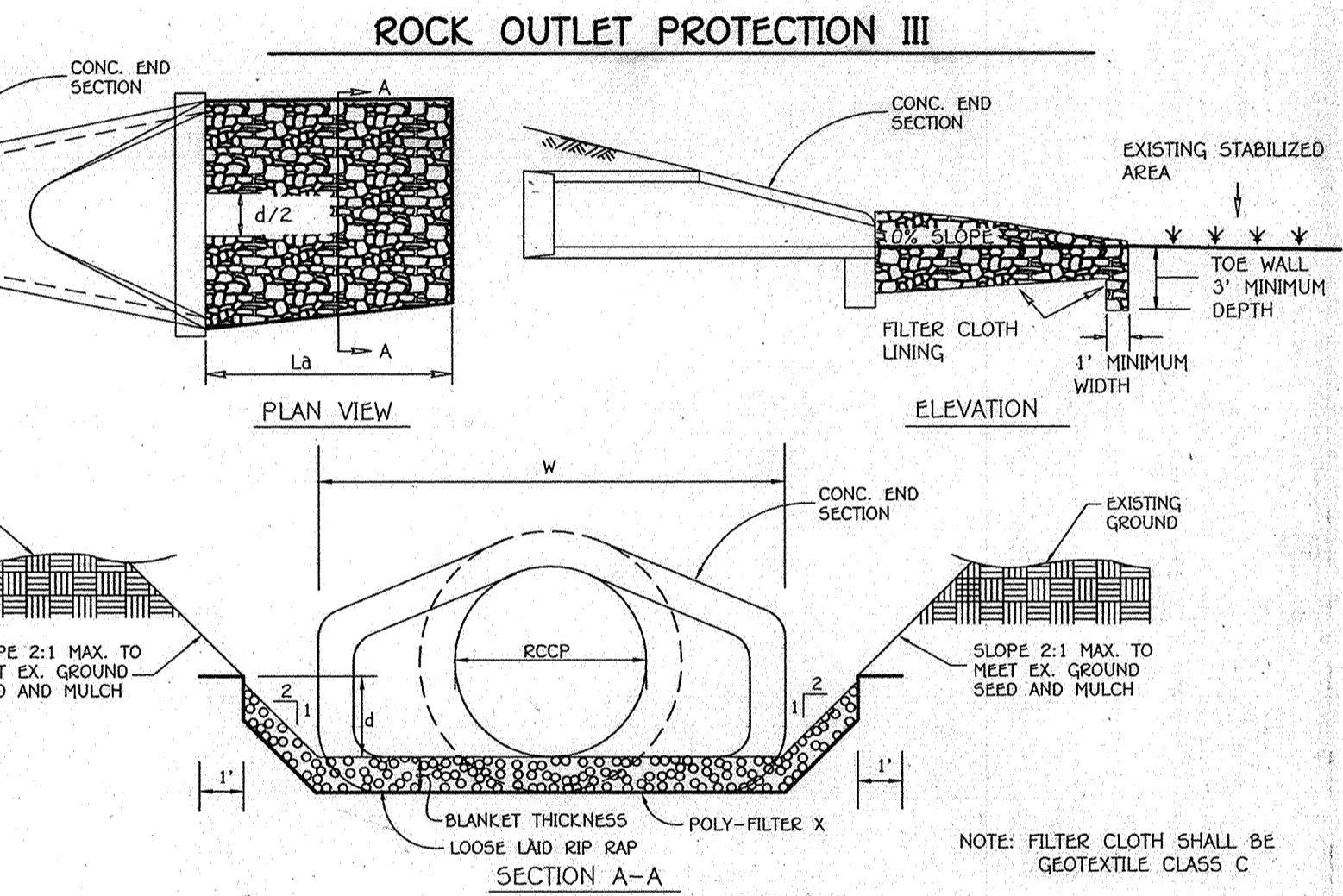
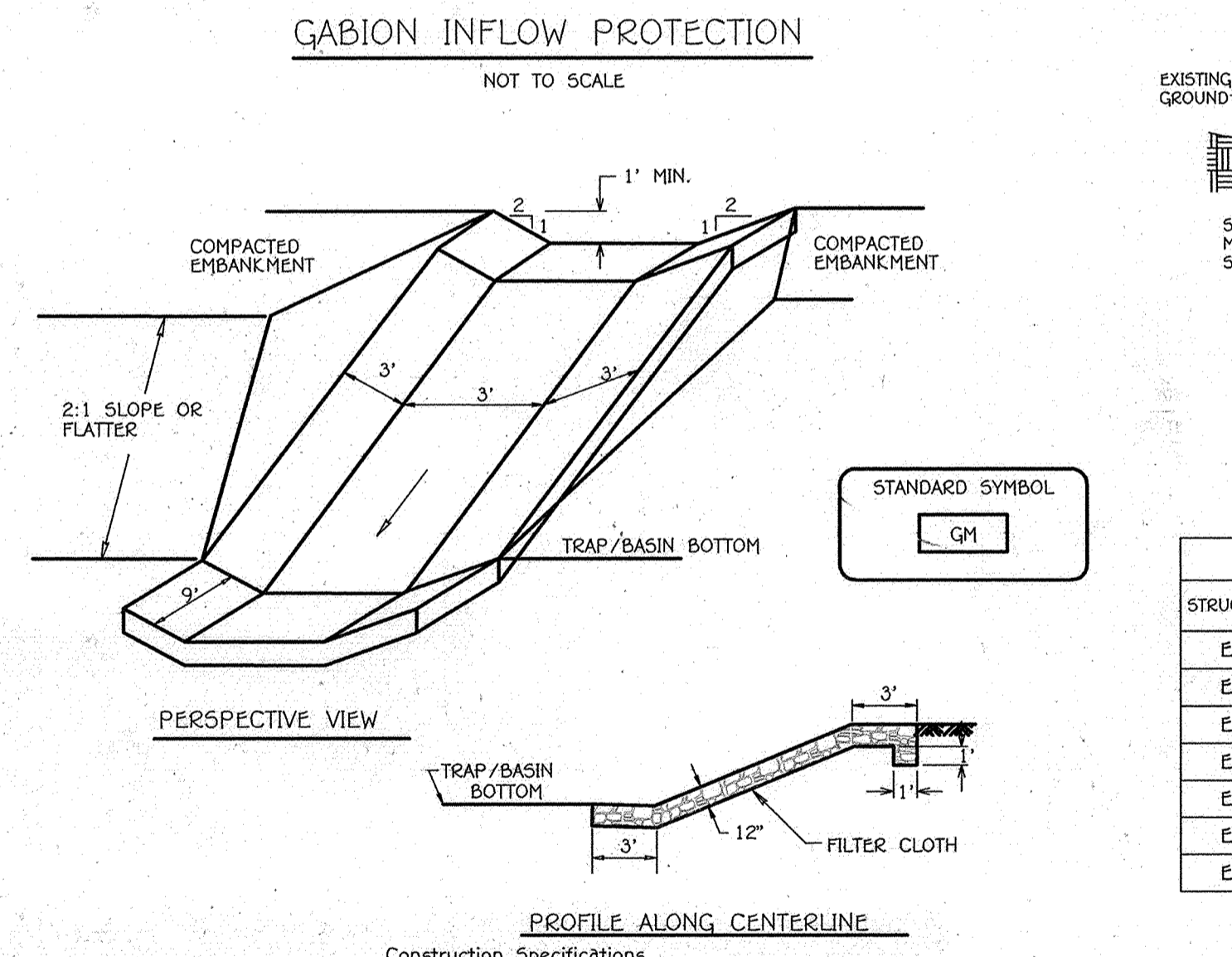
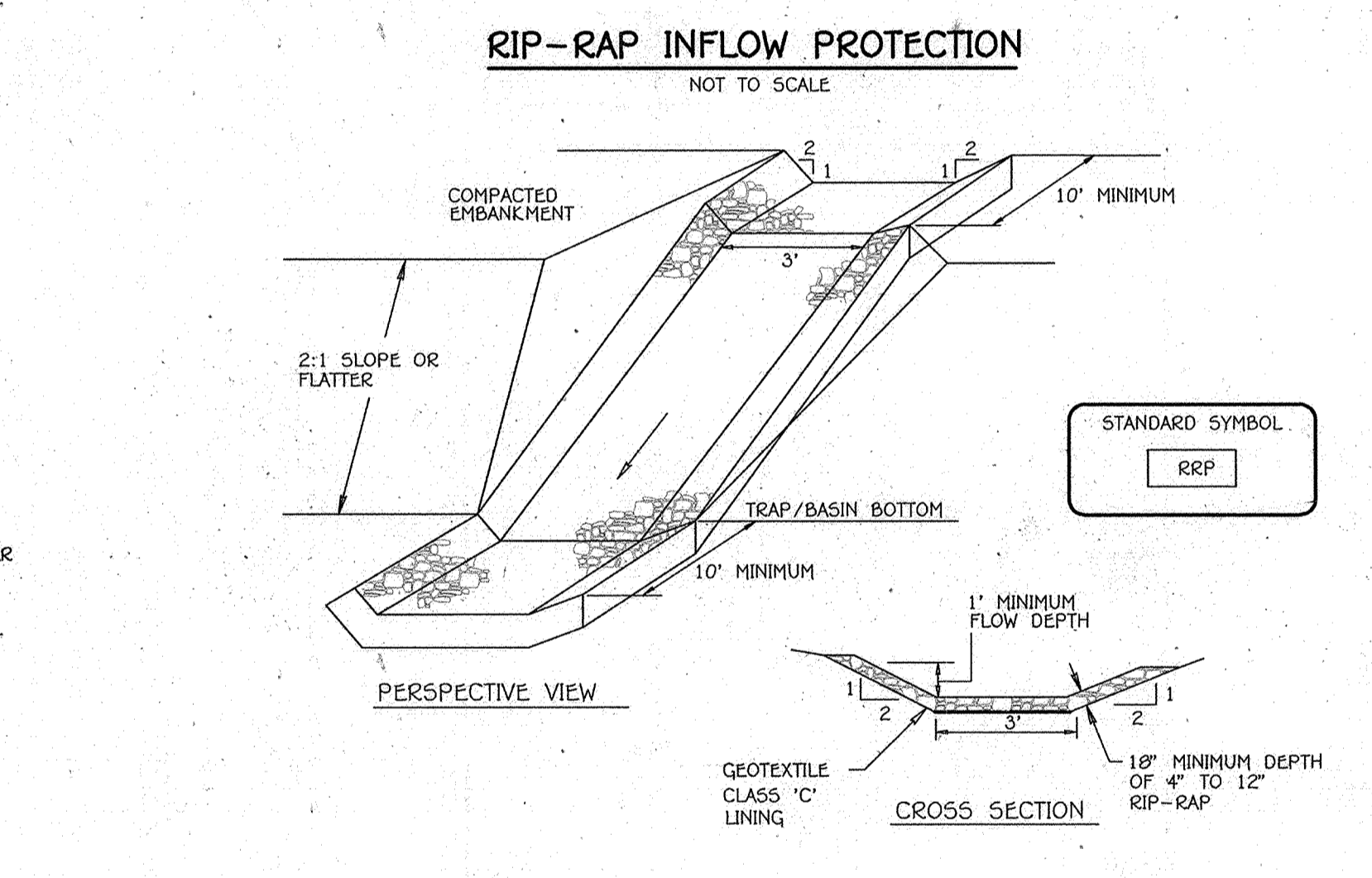
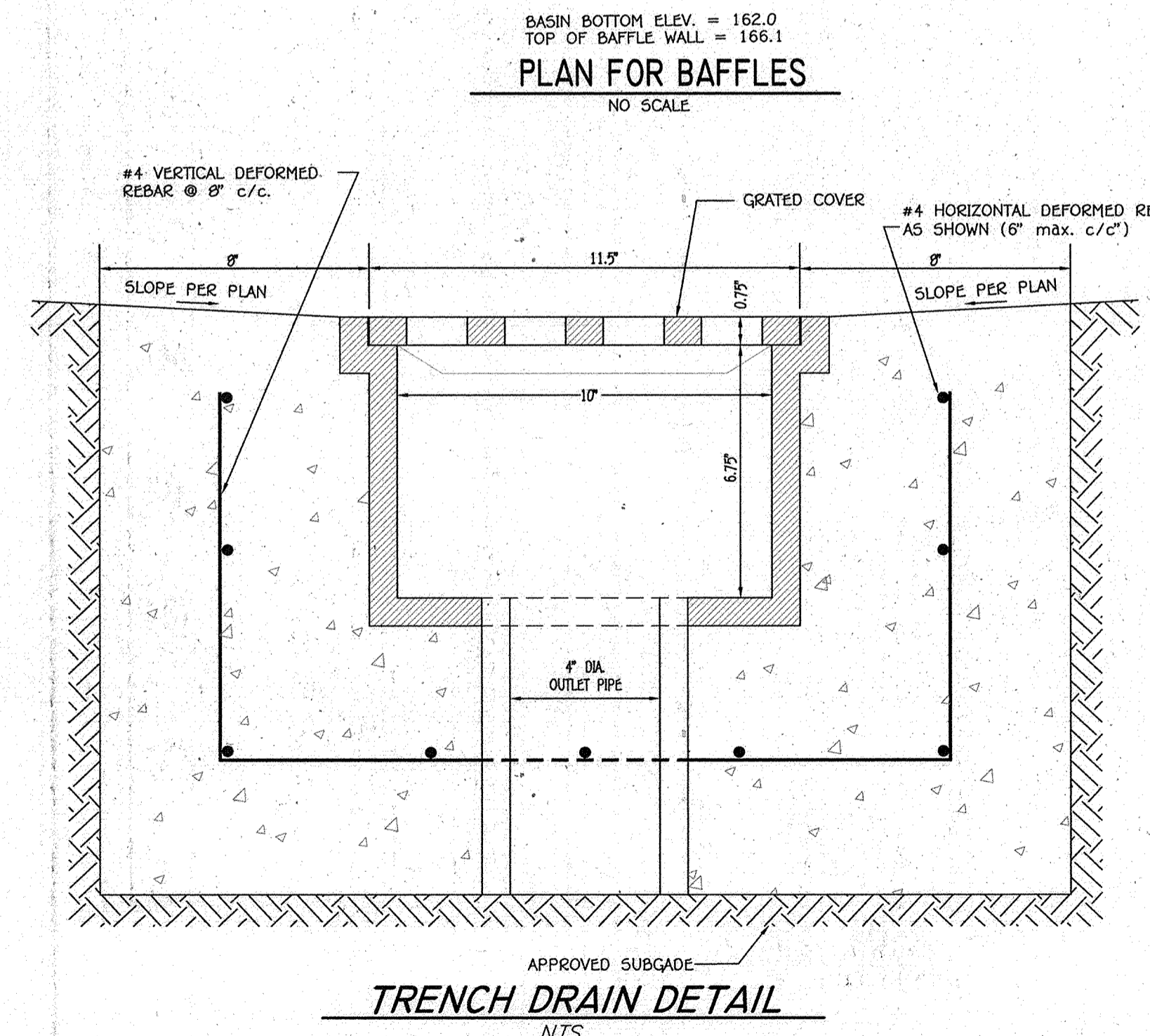
PROFILES AND STRUCTURE SCHEDULE  
**ELEMENTARY SCHOOL #41**  
 THE LEGACY AT DUCKETTS RIDGE  
 PARCEL A

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
 FIRST ELECTION DISTRICT: HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: APRIL 23, 2012

SHEET 19 OF 30



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



**ENGINEER'S CERTIFICATE**  
 I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.  
 Signature of Engineer: Charles J. Devo, Sr., P.E. Date: 4/12/12

**DEVELOPER'S CERTIFICATE**  
 I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District.  
 Signature of Developer: [Signature] Date: 4/12/12

Professional Certification: I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012.  
 Signature: Charles J. Devo, Sr., P.E. Date: 4/12/12

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.  
 Signature: [Signature] Date: 4/12/12

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

DATE: 4/24/12  
 DESCRIPTION: REVISED SHEET NUMBERS FROM 38 TO 39

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Signature: [Signature] Date: 5/14/12  
 Signature: [Signature] Date: 5/14/12

ADDRESS CHART

LOT/PARCEL#	STREET ADDRESS
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075

PERMIT INFORMATION CHART

SUBMISSION NAME	SECTION/AREA	LOT/PARCEL NO.
ELEMENTARY SCHOOL #41	N/A	P.0569
PLAT# OR L/F	GRID#	ZONING
	R-12	37
TAX MAP#	ELECT. DISTR.	CENSUS TRACT
37	FIRST	6012.01

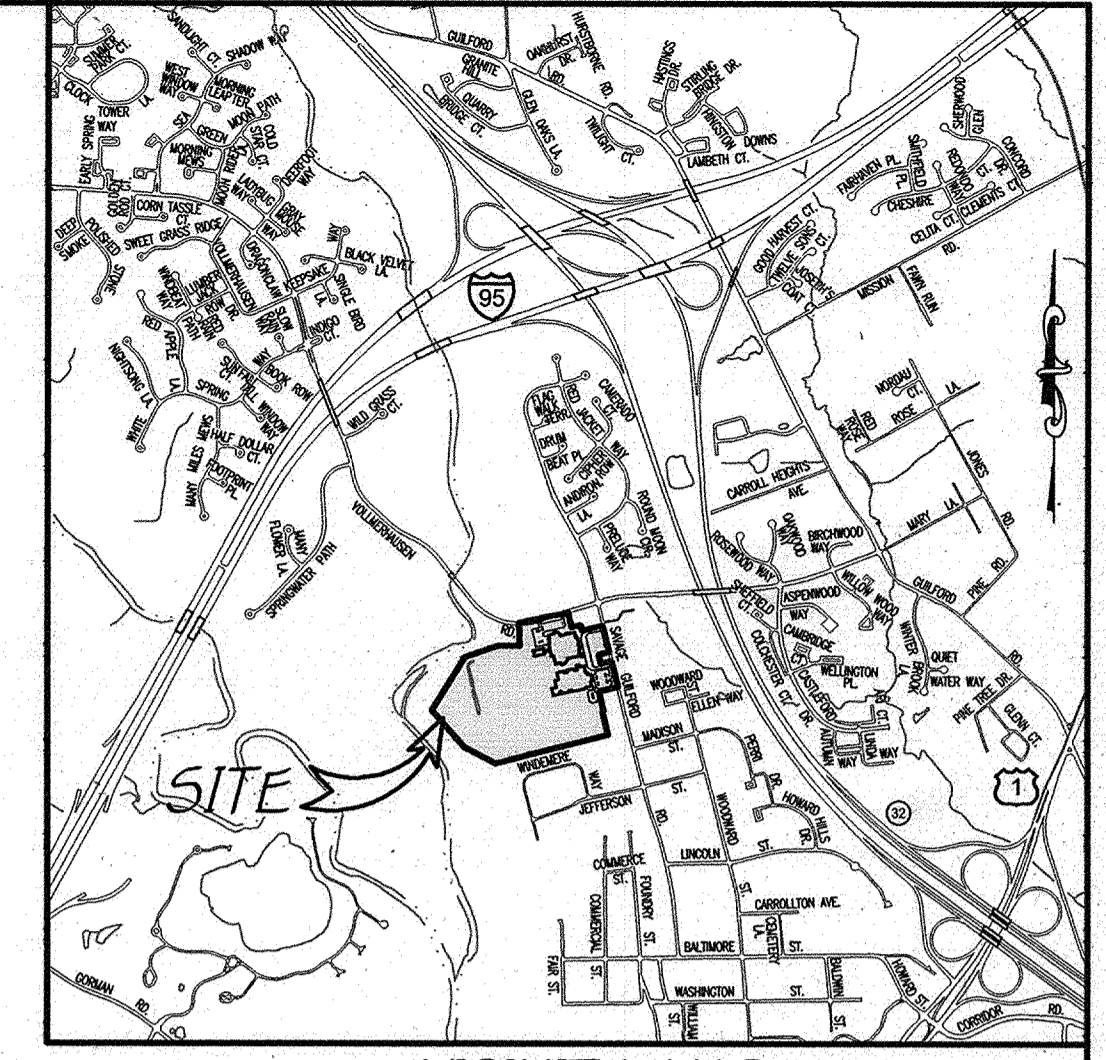
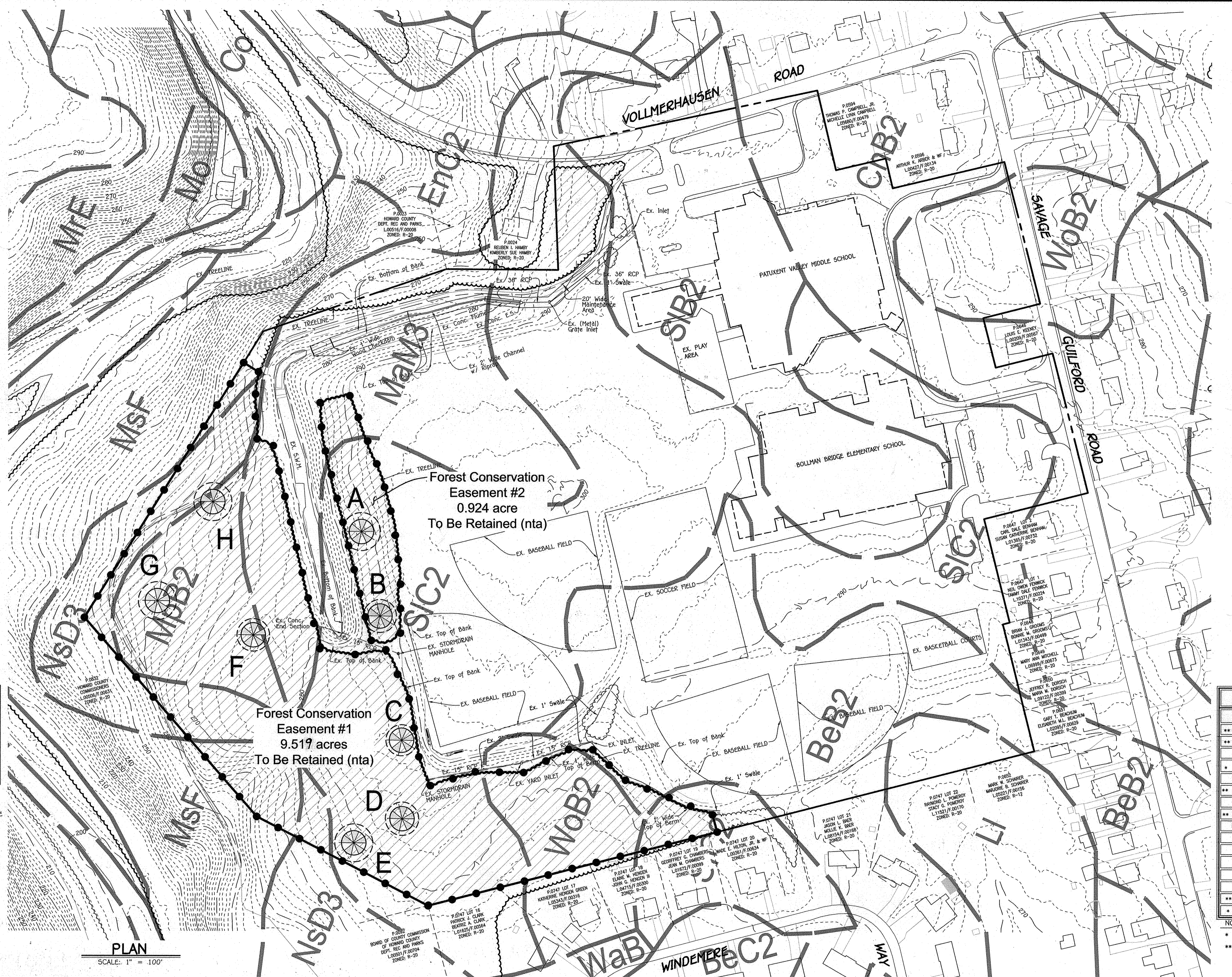
**STORM DRAINAGE DETAILS AND SEDIMENT CONTROL DETAILS**

**ELEMENTARY SCHOOL #41**

**THE LEGACY AT DUCKETTS RIDGE**  
 PARCEL A

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
 FIRST ELECTION-DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MARCH 22, 2012

SHEET 20 OF 30



VICINITY MAP  
SCALE: 1" = 2000'

**LEGEND**

SYMBOL	DESCRIPTION
--- 282 ---	EXISTING CONTOUR 2' INTERVAL
--- 280 ---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING TREELINE
---	EXISTING FOREST LIMITS
---	PROPOSED FCE-RETENTION AREA
---	PERMANENT PROTECTIVE SIGNAGE
---	SOIL TYPES



PLAN  
SCALE: 1" = 100'

**SOILS LEGEND**

SOIL	NAME	CLASS
** BeB2	Beltville silt loam, 1 to 5 percent slopes, moderately eroded	C
** BeC2	Beltville silt loam, 5 to 10 percent slopes, moderately eroded	C
CnB2	Chillum-Fairfax loams, 1 to 5 percent slopes, moderately eroded	C
Co	Codorus silt loam	C
EnC2	Elsinboro loam, 0 to 15 percent slopes, moderately eroded	B
** LI	Leonardtown silt loam	D
MqC3	Montalto silty clay loam, 0 to 15 percent slopes, severely eroded	B
** Mo	Mixed alluvial land	B
MpB2	Montalto silt loam, 3 to 0 percent slopes, moderately eroded	B
MRE	Montalto and Relay soils, 15 to 45 percent slopes	B
MsF	Montalto and Relay very stony silt loams, 25 to 60 percent slopes	B
NsD3	Neshaminy silt loam, 15 to 25 percent slopes, severely eroded	B
SIB2	Sassafras loam, 1 to 5 percent slopes, moderately eroded	B
SIC2	Sassafras loam, 5 to 10 percent slopes, moderately eroded	B
** WaB	Watchung silt loam, 3 to 0 percent slopes	D
** WOB2	Woodstown sandy loam, 1 to 5 percent slopes, moderately eroded	C

NOTES:  
 \* Hydric soils and/or contains hydric inclusions  
 \*\* May contain hydric inclusions

0' 1200' 2400' 3600'  
 SCALE: 1" = 1200'

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 481-1285

**Eco-Science Professionals, Inc.**  
 CONSULTING ECOLOGISTS  
 MD ONE Qualified Professional  
 USACE Wetland Delimitator  
 Certification # WDCP93MD06100448  
 JOHN P. CANALES



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012.

*Charles J. Govo, Sr.*  
 CHARLES J. GOVO, SR., P.E. 4/22/12 DATE

DATE	DESCRIPTION
6/24/10	REVISED SHEET NUMBERS FROM 98 TO 99
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Mark de la Cruz</i>	5/14/12 Dir.
<i>Kevin D. ...</i>	5/14/12 Dir.
<i>John ...</i>	5/14/12 Dir.

PREPARED FOR  
 HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
 10910 Maryland Route 100  
 Ellicott City, Maryland 21042  
 Attention: Bruce Gist  
 410-313-6798

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075

PERMIT INFORMATION CHART				
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	TAX MAP#	ELECT. DISTR.
ELEMENTARY SCHOOL #41	N/A	P.0569	37	FIRST
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.
21873-21875	-	R-12	37	FIRST
CENSUS TRACT		6012.01		

FOREST CONSERVATION PLAN  
 OFF-SITE FOREST RETENTION @  
 BOLLMAN BRIDGE ELEMENTARY SCHOOL

**ELEMENTARY SCHOOL #41**  
**THE LEGACY AT DUCKETTS RIDGE**  
 PARCEL A

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 100' DATE: APRIL 23, 2012

SHEET 21 OF 22

**BOLLMAN BRIDGE ELEMENTARY  
Forest Stand Data**

Key	Community Type	Acreage	Dominant Vegetation	General Condition	Priority Acreage
F1	Oak-Poplar	10.441	Quercus velutina, Quercus alba, Liriodendron tulipifera, Quercus frandifolia, Prunus serotina	Good	0

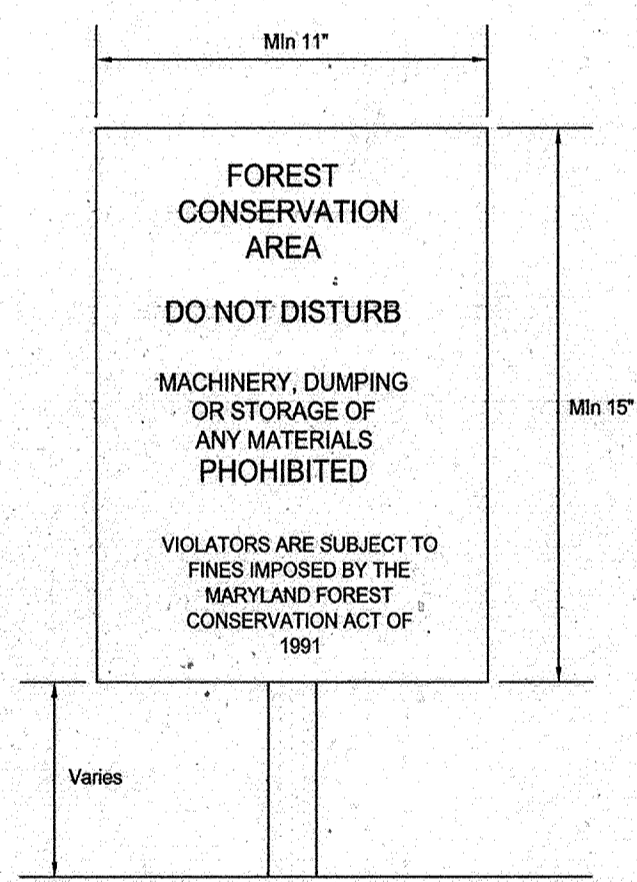
See accompanying report for complete stand descriptions  
\*Approximately 3.5 acres of offsite forest area is present within 100 feet of the property.

**BOLLMAN BRIDGE ELEMENTARY  
Specimen Tree Chart**

Key	Species, Size (dbh)	Condition	Proposed Impact/Comment
A	Black oak, 36.5"	Good	to remain
B	Black oak, 32.5"	Poor	to remain
C	Red oak, 31"	Good	to remain
D	Pin oak, 33"	Good	to remain
E	Pin oak, 37.5"	Fair	to remain
F	Tulip poplar, 32"	Good	to remain
G	Red oak, 38.5"	Good	to remain
H	Red oak, 35"	Poor	to remain

**BOLLMAN BRIDGE FSD NOTES:**

- No rare, threatened or endangered species or their appropriate habitat were observed on the property.
- Surrounding land use is high density residential development and parkland.
- All forest on the site is within Stand F-1.
- Not wetlands, streams or their buffers are present on the subject property.
- Existing paved pedestrian trails are present within the forest. The location of the trail is shown on the plan.
- Specimen tree information provided by KCI Technologies. Trees were field located during field survey on November 28, 2010.



- Notes:
- Bottom of signs to be higher than top of tree protection fence.
  - Signs to be placed approximately 50 feet apart. Conditions on site affecting visibility may warrant placing signs closer or farther apart.
  - Attachment of signs to trees is prohibited.

**Permanent Protective Signage**

**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 area 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.**

- Install all signage and sediment control devices.
- Hold pre-construction meeting between developer, contractor and County inspector.
- Build access roads, install water and sewer, and construct houses. Stabilize all disturbed areas accordingly.
- Remove sediment control.
- 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.

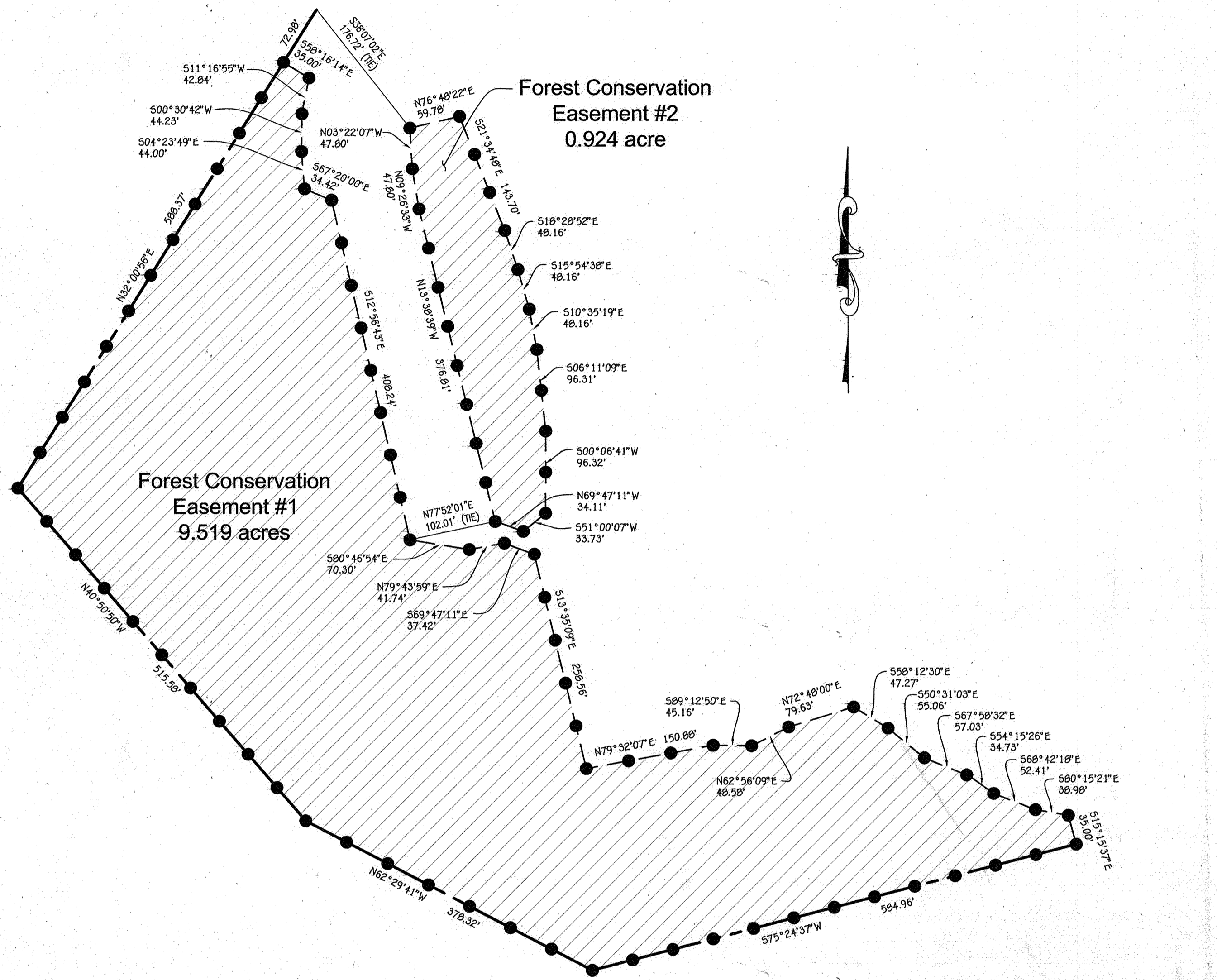
**FOREST CONSERVATION EASEMENTS**

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.

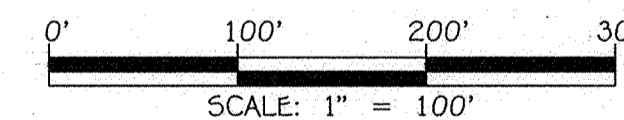
**FOREST CONSERVATION WORKSHEET**  
Version 1.0

Project: Elementary School #41  
Date: December 6, 2011

NET TRACT AREA	Acres
A. Total Tract Area	10.03
B. Area within 100 Year Floodplain	0
C. Area of existing impervious surface/unchanged use	0
D. Net Tract Area	10.03
<b>LAND USE CATEGORY: (from table 3.2.1, page 40, Manual ARA MDR IDA HDR MPD CIA)</b>	
E. Afforestation Threshold (percentage)	15% 1.50
F. Conservation Threshold (percentage)	20% 2.01
<b>EXISTING FOREST COVER:</b>	
G. Existing forest cover (excluding floodplain)	4.03
H. Area of forest above afforestation threshold	8.53
I. Area of forest above conservation threshold	8.02
<b>BREAK EVEN POINT</b>	
J. Forest retention above threshold with no mitigation	1.60
K. Break-Even Point	3.61
K. Clearing permitted without mitigation	6.42
<b>PROPOSED FOREST CLEARING</b>	
L. Total area of forest to be cleared or Retained Outside FCE	10.03
M. Total area of forest to be Retained in FCE	0
<b>PLANTING REQUIREMENTS</b>	
N. Reforestation for clearing above Conservation Threshold	2.05
P. Reforestation for clearing below Conservation Threshold	4.02
Q. Credit for retention above Conservation Threshold	0
R. Total reforestation required	6.07
S. Total afforestation required	0
T. Total reforestation and afforestation required	6.07



**FOREST CONSERVATION EASEMENTS #1 & #2  
@ BOLLMAN BRIDGE ELEMENTARY SCHOOL**  
SCALE: 1" = 100'



□ DENOTES PROPOSED FCE-RETENTION AREA  
● DENOTES PERMANENT PROTECTIVE SIGNAGE

**FCP NOTES**

- 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 use of these areas.
- Limits of disturbance shall be restricted to areas outside the limit of temporary fencing.
- There shall be no clearing, grading, construction or disturbance of vegetation beyond the depicted limits of disturbance, except as permitted by Howard County DPZ.
- No Stockpiles, parking areas, equipment cleaning areas etc. shall occur within areas designated as non-disturbance areas.
- The Forest Conservation Act requirements for this project require 6.07 acres of reforestation. A fee-in-lieu payment for 1 acre of reforestation has been previously paid for this property. This leaves an outstanding reforestation obligation of 5.07 acres. This obligation will be met through the offsite retention of a 10.441 acres of forest at the Bollman Bridge Elementary School Property.

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012."

*Charles J. Casano*  
CHARLES J. CASANO, SR., P.E.  
1/22/12 DATE



FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTONIAL SQUARE OFFICE PARK - 10712 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21042  
(410) 461-2999

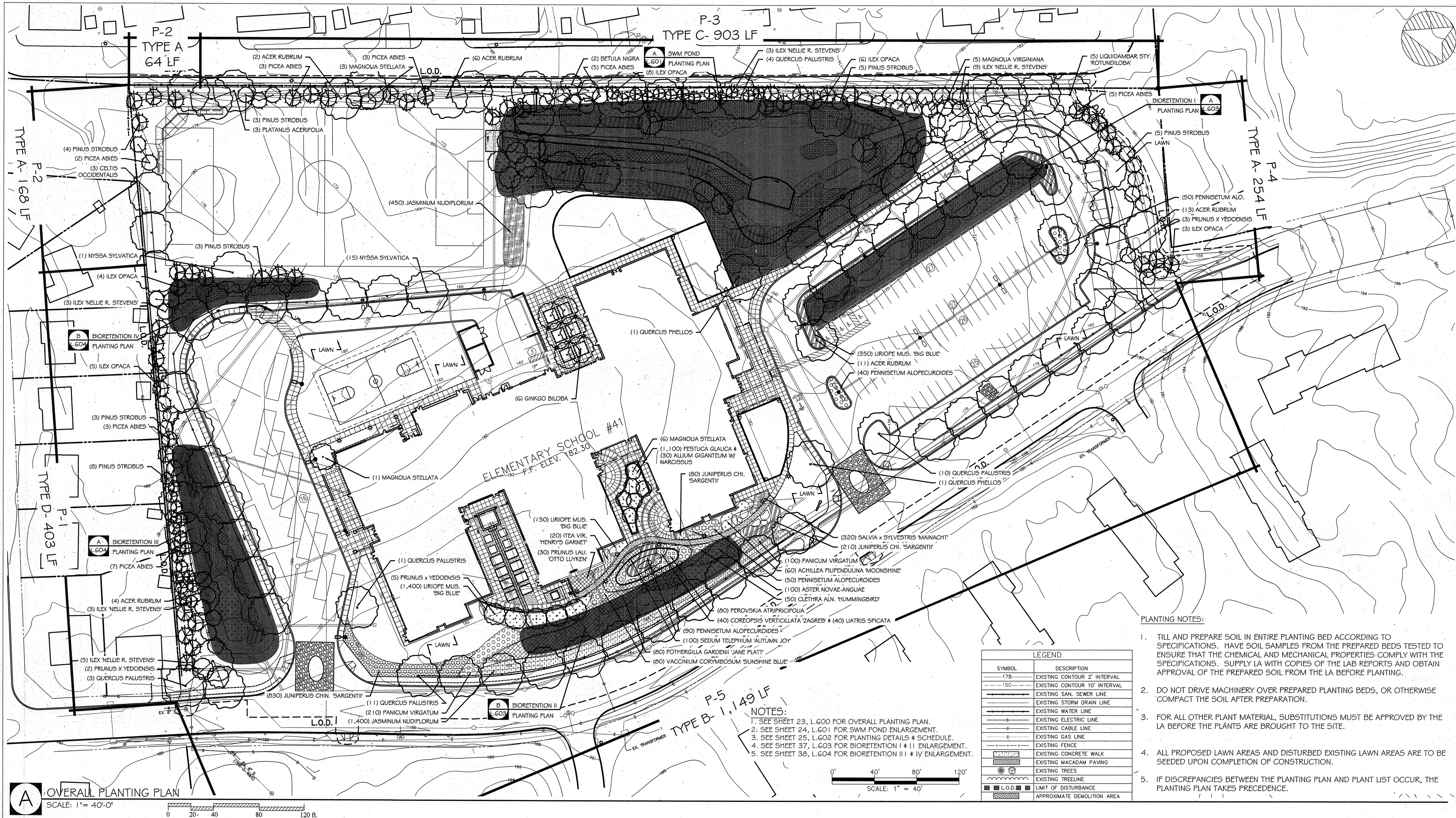
Eco-Science Professionals, Inc.  
CONSULTING ECOLOGISTS  
MD DMC Qualified Professional  
USACOE Wetland Delineator  
Certification # WDCP93MD06100448  
JOHN P. CANDLES

DATE	DESCRIPTION	REVISION BLOCK
9/21/12	REVISED SHEET NUMBERS FROM 90 TO 99	
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>Paul H. Casano</i>	Director - Department of Planning and Zoning	5/1/12
<i>Keith...</i>	Chief, Division of Land Development	5/1/12
<i>...</i>	Chief, Development Engineering Division	5/1/12

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

ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
21873-21875	-	R-12	37	FIRST	6012.01

FOREST CONSERVATION NOTES AND DETAILS	
<b>ELEMENTARY SCHOOL #41</b>	
<b>THE LEGACY AT DUCKETTS RIDGE PARCEL A</b>	
ZONED R-12	TAX MAP No.: 37
GRID No.: 12	PARCEL No.: 569
FIRST ELECTION DISTRICT	HOWARD COUNTY, MARYLAND
SCALE: AS SHOWN	DATE: APRIL 23, 2012
SHEET 22 OF 30	



P-3  
TYPE C- 903 LF

P-2  
TYPE A  
64 LF

P-4  
TYPE A- 254 LF

P-2  
TYPE A- 168 LF

P-1  
TYPE D- 403 LF

P-5  
TYPE B- 1,149 LF

**A** OVERALL PLANTING PLAN  
SCALE: 1" = 40'-0"

0 20 40 80 120 ft.

0' 40' 80' 120'  
SCALE: 1" = 40'

PLANTING NOTES:

- TILL AND PREPARE SOIL IN ENTIRE PLANTING BED ACCORDING TO SPECIFICATIONS. HAVE SOIL SAMPLES FROM THE PREPARED BEDS TESTED TO ENSURE THAT THE CHEMICAL AND MECHANICAL PROPERTIES COMPLY WITH THE SPECIFICATIONS. SUPPLY LA WITH COPIES OF THE LAB REPORTS AND OBTAIN APPROVAL OF THE PREPARED SOIL FROM THE LA BEFORE PLANTING.
- DO NOT DRIVE MACHINERY OVER PREPARED PLANTING BEDS, OR OTHERWISE COMPACT THE SOIL AFTER PREPARATION.
- FOR ALL OTHER PLANT MATERIAL, SUBSTITUTIONS MUST BE APPROVED BY THE LA BEFORE THE PLANTS ARE BROUGHT TO THE SITE.
- ALL PROPOSED LAWN AREAS AND DISTURBED EXISTING LAWN AREAS ARE TO BE SEEDED UPON COMPLETION OF CONSTRUCTION.
- IF DISCREPANCIES BETWEEN THE PLANTING PLAN AND PLANT LIST OCCUR, THE PLANTING PLAN TAKES PRECEDENCE.

LEGEND	
SYMBOL	DESCRIPTION
---178---	EXISTING CONTOUR 2' INTERVAL
---180---	EXISTING CONTOUR 10' INTERVAL
---	EXISTING SAN. SEWER LINE
---	EXISTING STORM DRAIN LINE
---	EXISTING WATER LINE
---	EXISTING ELECTRIC LINE
---	EXISTING CABLE LINE
---	EXISTING GAS LINE
---	EXISTING FENCE
---	EXISTING CONCRETE WALK
---	EXISTING MACADAM PAVING
---	EXISTING TREES
---	EXISTING TREELINE
---	EXISTING L.O.D.
---	LIMIT OF DISTURBANCE
---	APPROXIMATE DEMOLITION AREA

- NOTES:
- SEE SHEET 23, L.600 FOR OVERALL PLANTING PLAN.
  - SEE SHEET 24, L.601 FOR SWM POND ENLARGEMENT.
  - SEE SHEET 25, L.602 FOR PLANTING DETAILS & SCHEDULE.
  - SEE SHEET 37, L.603 FOR BIORETENTION I & II ENLARGEMENT.
  - SEE SHEET 38, L.604 FOR BIORETENTION III & IV ENLARGEMENT.

**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21042  
(410) 461-2555

**BRADLEY SITE DESIGN, INC.**  
LANDSCAPE ARCHITECTURE  
1743 Connecticut Ave., NW  
Washington, D.C. 20009  
P. 202-516-9534  
F. 202-516-9535  
www.bradleydesign.com

STREET TREE PLANT LIST

Qty	Botanical / Common Name	Size	Spacing	Remarks
<b>Shade Trees</b>				
21	QUERCUS PALUSTRIS Pin Oak	3-3 1/2" cal.	As shown	Strong Single Leader/ Specimen
<b>Ornamental Trees</b>				
5	PRUNUS x YEDOENSIS Yoshino Cherry	2-2 1/2" cal.	As shown	Strong Single Leader/ Specimen
<b>Shrubs</b>				
1,400	JASMINUM NUDIFLORUM Winter Jasmine	15-18" o.c.		

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
  
 Paul A. Coughlin  
 Director - Department of Planning and Zoning  
  
 David S. Deane  
 Chief, Division of Land Development  
  
 William J. McManus  
 Chief, Development Engineering Division

5/14/12  
5/14/12  
5/14/12

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

Address Chart	
Parcel Number	Street Address
0569	6501 DUCKETTS LANE, ELKRIDGE, MD 21075

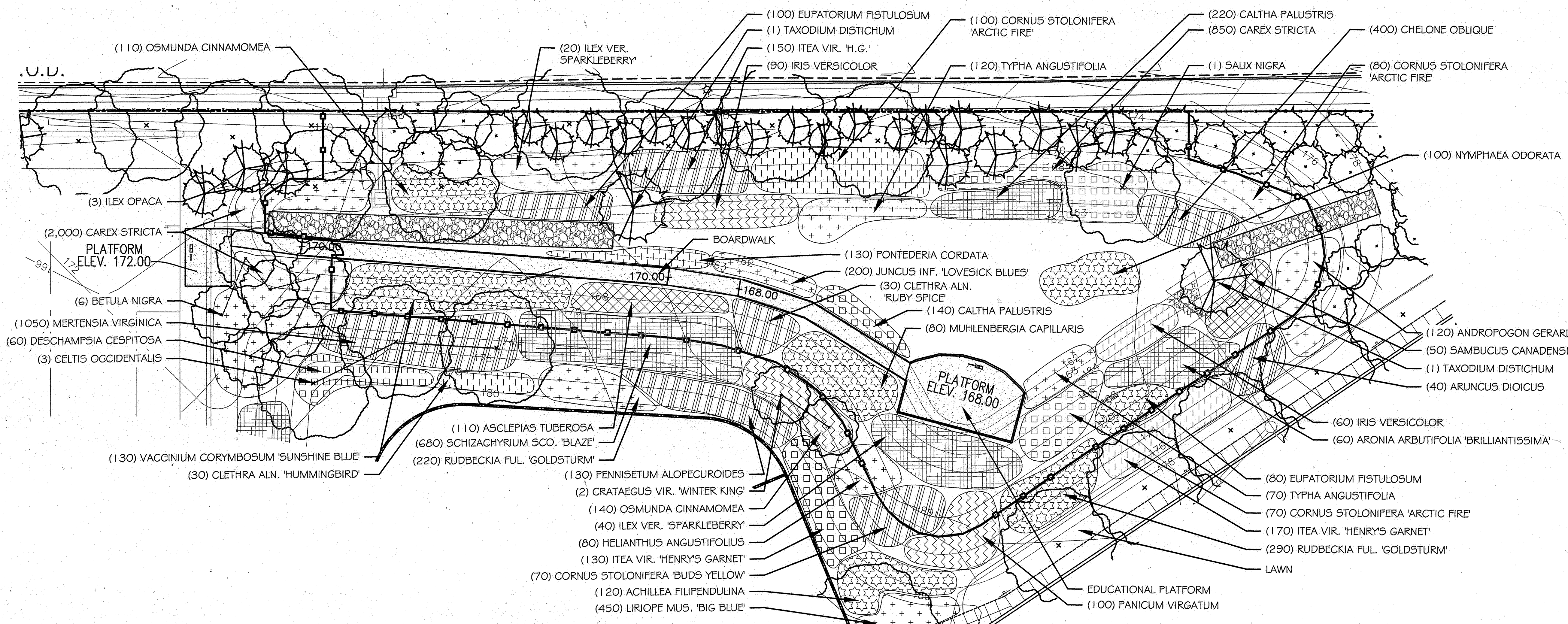
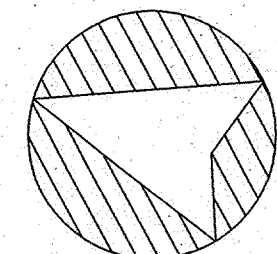
  

PERMIT INFORMATION CHART				
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	TAX MAP#	ELECT. DISTR.
ELEMENTARY SCHOOL #41	N/A	P.0569		
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.
21873-21875		R-12	37	FIRST

**L.600 OVERALL PLANTING PLAN**  
**ELEMENTARY SCHOOL #41**  
**THE LEGACY AT DUCKETTS RIDGE**  
**PARCEL A**

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 40' DATE: APRIL 23, 2012

SHEET 23 OF 39



- PLANTING NOTES:**
1. TILL AND PREPARE SOIL IN ENTIRE PLANTING BED ACCORDING TO SPECIFICATIONS. HAVE SOIL SAMPLES FROM THE PREPARED BEDS TESTED TO ENSURE THAT THE CHEMICAL AND MECHANICAL PROPERTIES COMPLY WITH THE SPECIFICATIONS. SUPPLY LA WITH COPIES OF THE LAB REPORTS AND OBTAIN APPROVAL OF THE PREPARED SOIL FROM THE LA BEFORE PLANTING.
  2. DO NOT DRIVE MACHINERY OVER PREPARED PLANTING BEDS, OR OTHERWISE COMPACT THE SOIL AFTER PREPARATION.
  3. FOR ALL OTHER PLANT MATERIAL, SUBSTITUTIONS MUST BE APPROVED BY THE LA BEFORE THE PLANTS ARE BROUGHT TO THE SITE.
  4. ALL PROPOSED LAWN AREAS AND DISTURBED EXISTING LAWN AREAS ARE TO BE SEEDED UPON COMPLETION OF CONSTRUCTION.
  5. IF DISCREPANCIES BETWEEN THE PLANTING PLAN AND PLANT LIST OCCUR, THE PLANTING PLAN TAKES PRECEDENCE.

**SWM POND PLANT LIST**

Qty	Botanical / Common Name	Size	Spacing	Remarks
<b>Shade Trees</b>				
3	CELTIS OCCIDENTALIS Common Hackberry	3-3 1/2" cal.	As shown	Strong Single Leader/ Specimen
1	SALIX NIGRA Black Willow	3-3 1/2" cal.	As shown	Strong Single Leader/ Specimen
2	TAXODIUM DISTICHUM Bald-Cypress	3-3 1/2" cal.	As shown	Strong Single Leader/ Specimen
<b>Evergreen Trees</b>				
3	ILEX OPACA American Holly	6'-8' ht.	As shown	Strong Single Leader
<b>Ornamental Trees</b>				
6	BETULA NIGRA River Birch	8'-10' ht.	As shown	Multi-stem/ Heavy/ Specimen
2	CRATAEGUS VIRIDIS 'WINTER KING' Washington Hawthorn	2-2 1/2" cal.	As shown	Strong Single Leader/ Specimen

**SWM POND PLANT LIST**

Qty	Botanical / Common Name	Size	Spacing	Remarks
<b>Shrubs</b>				
60	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA' Red Chokeberry	24-36"	36" o.c.	
30	CLETHRA ALNIFOLIA 'HUMMINGBIRD' Summersweet Pepperbush	24-36"	36" o.c.	
30	CLETHRA ALNIFOLIA 'RUBY SPICE' Summersweet	24-36"	48" o.c.	
250	CORNUS STOLONIFERA 'ARCTIC FIRE' Red Stem Dogwood	36"	36" o.c.	
70	CORNUS STOLONIFERA 'BUDS YELLOW' Red Stem Dogwood	36"	36" o.c.	
60	ILEX VERTICILLATA 'SPARKLEBERRY' Winterberry	36"	60" o.c.	
450	ITEA VIRGINICA 'HENRY'S GARNET' Virginia Sweetspire	24"-36"	24" o.c.	
50	SAMBUCUS CANADENSIS 'ADAMS' American Elderberry		24-36" o.c.	
130	VACCINIUM CORYMBOSUM 'SUNSHINE BLUE' Highbush Blueberry	24-36"	36" o.c.	

**SWM POND PLANT LIST**

Qty	Botanical / Common Name	Size	Spacing	Remarks
<b>Perennials, Ornamental Grasses, Ferns, Bulbs &amp; Groundcovers</b>				
120	ACHILLEA FILIPENDULINA 'MOONSHINE' Moonshine Yarrow	quart	24" o.c.	
120	ANDROPOGON GERARDII Big Blue Stem	1 Gal.	30" o.c.	
40	ARUNCUS DIOICUS Goats Beard	1 Gal.	36" o.c.	
110	ASCLEPIAS TUBEROSA Butterfly Milkweed	1 Gal.	24" o.c.	
360	CALTHA PALUSTRIS Kingcup	quart	18" o.c.	
2,850	CAREX STRICTA Tussock Sedge	quart	12" o.c.	
400	CHELONE OBLIQUE Rose Turtlehead	quart	12" o.c.	
60	DESCHAMPSIA CESPITOSA Tufted Hair Grass	1 Gal.	36" o.c.	
180	EUPATORIUM FISTULOSUM Joe Pye Weed	1 Gal.	24" o.c.	
80	HELIANTHUS ANGUSTIFOLIUS Swamp Sunflower	quart	24" o.c.	
150	IRIS VERSICOLOR Marquain Blueflag	quart	30" o.c.	
200	JUNCUS INFLEXUS 'LOVESICK BLUES' Lovesick Blues Rush	1 Gal.	12" o.c.	
450	LIRIOPE MUSCARI 'BIG BLUE' Lilyturf	quart	12" o.c.	
1,050	MERTENSIA VIRGINICA Virginia Bluebells	quart	12" o.c.	
530	MUHLENBERGIA CAPILLARIS Pink Muhly Grass	1 Gal.	36" o.c.	

**SWM POND PLANT LIST**

Qty	Botanical / Common Name	Size	Spacing	Remarks
<b>Perennials, Ornamental Grasses, Ferns, Bulbs &amp; Groundcovers</b>				
100	NYMPHAEA ODORATA American White Waterlily	quart		
250	OSMUNDA CINNAMOMEA Cinnamon Fern	1 Gal.	24" o.c.	
100	PANICUM VIRGATUM Switch Grass	1 Gal.	30" o.c.	
130	PENNISETUM ALOPECUROIDES Fourtain Grass	1 Gal.	30" o.c.	
130	PONTEDERIA CORDATA Pickerel Weed	1 Gal.	18" o.c.	
510	RUDBECKIA FULGIDA 'GOLDSTURM' Black-Eyed Susan	1 Gal.	18" o.c.	
680	SCHIZACHYRIUM SCOPARIUM 'BLAZE' Blaze Little Blue Stem	1 Gal.	18" o.c.	
190	TYPHA ANGUSTIFOLIA Narrowleaf Cattail	1 Gal.	24" o.c.	

- NOTES:**
1. SEE SHEET 23, L.600 FOR OVERALL PLANTING PLAN.
  2. SEE SHEET 24, L.601 FOR SWM POND ENLARGEMENT.
  3. SEE SHEET 25, L.602 FOR PLANTING DETAILS & SCHEDULE.
  4. SEE SHEET 37, L.603 FOR BIORETENTION I & II ENLARGEMENT.
  5. SEE SHEET 38, L.604 FOR BIORETENTION III & IV ENLARGEMENT.

**A** PLANTING PLAN- SWP ENLARGEMENT  
SCALE: 1" = 20'-0"

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

**BRADLEY SITE DESIGN, INC.**  
LANDSCAPE ARCHITECTURE  
1743 CONNECTICUT AVE., NW  
WASHINGTON, D.C. 20009  
P: 202-518-8534  
F: 202-518-8535  
www.bradleysitedesign.com

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

DATE: 5/14/12  
REVISION: 5/14/12

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

Address Chart

Parcel Number	Street Address
0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
21873-21875	-	R-12	37	FIRST	6012.01

**L.601 PLANTING PLAN- SWP ENLARGEMENT**

**ELEMENTARY SCHOOL #41**

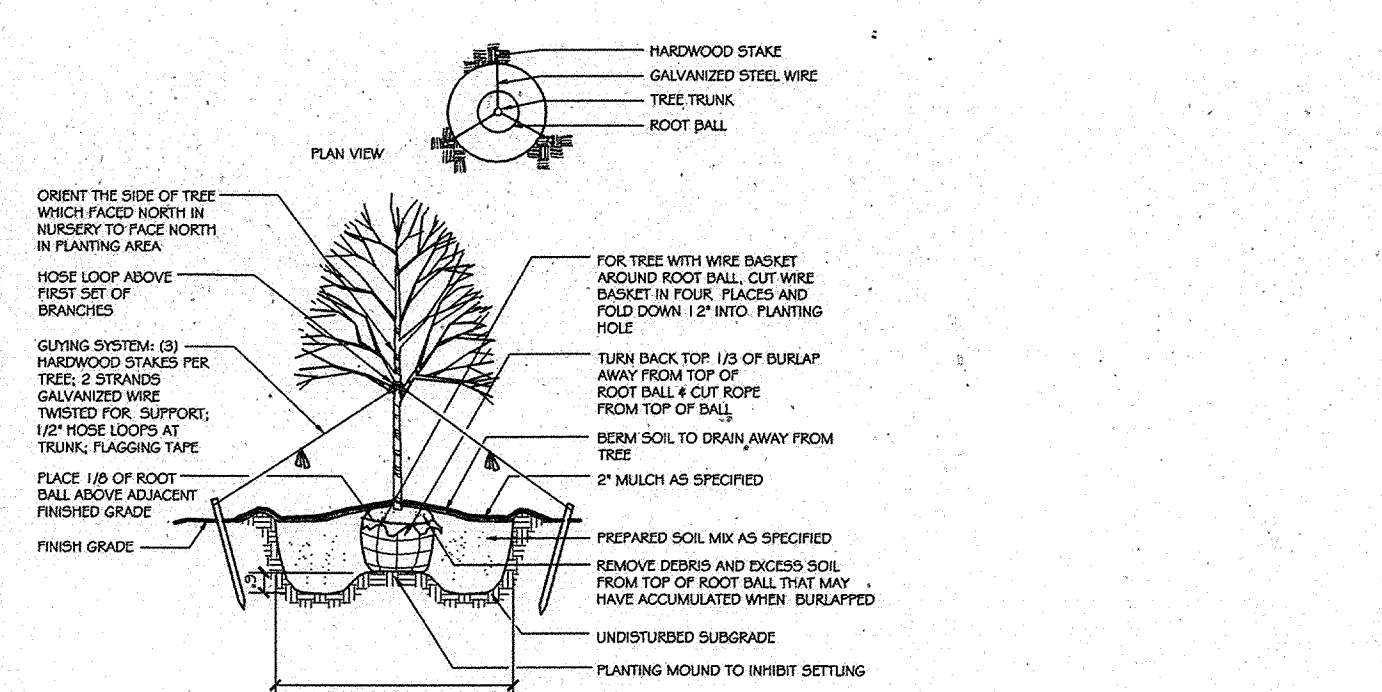
**THE LEGACY AT DUCKETTS RIDGE**

**PARCEL A**

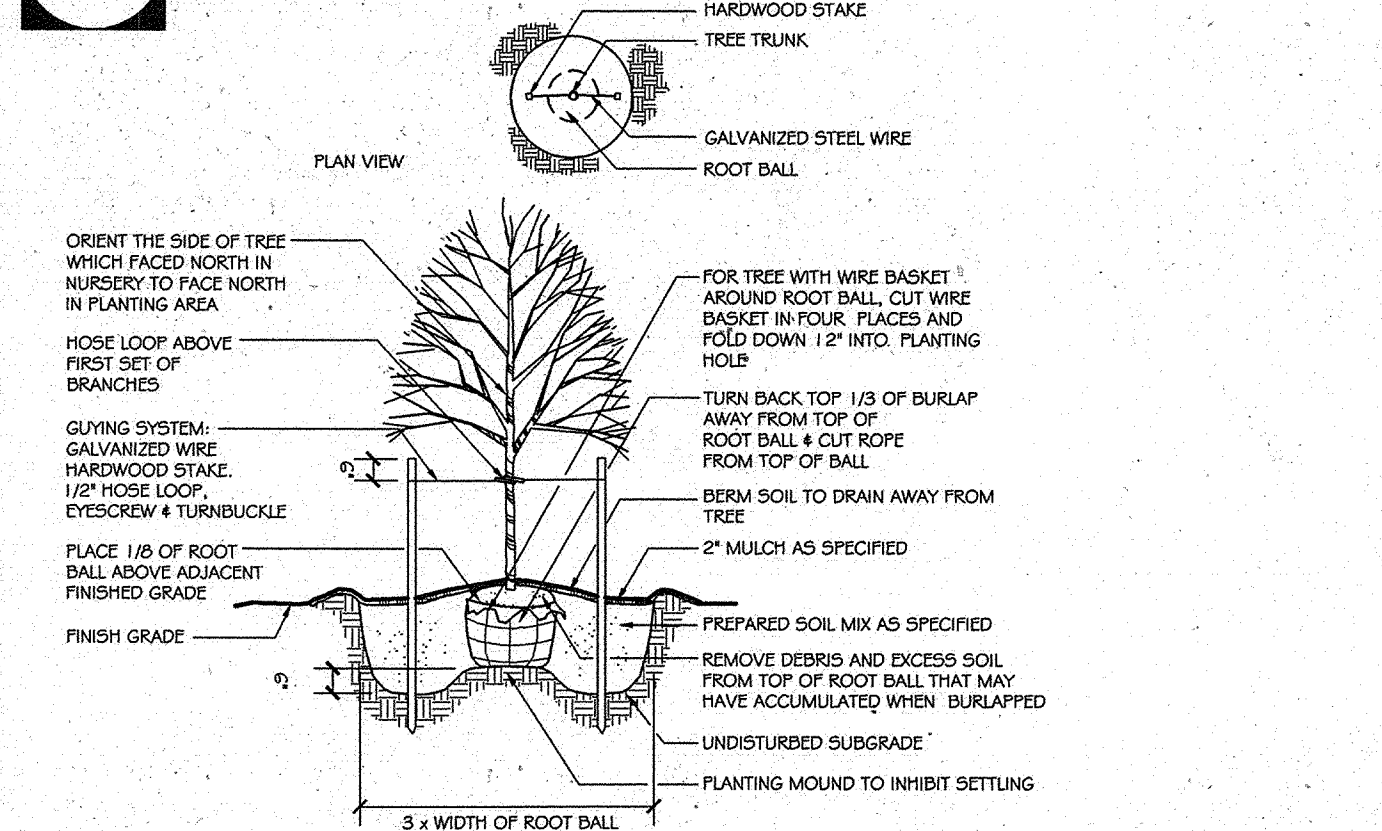
ZONED R-12 TAX MAP No.: 37 GRID No.: 12; PARCEL No.: 569  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 20' DATE: APRIL 23, 2012

SHEET 24 OF 39

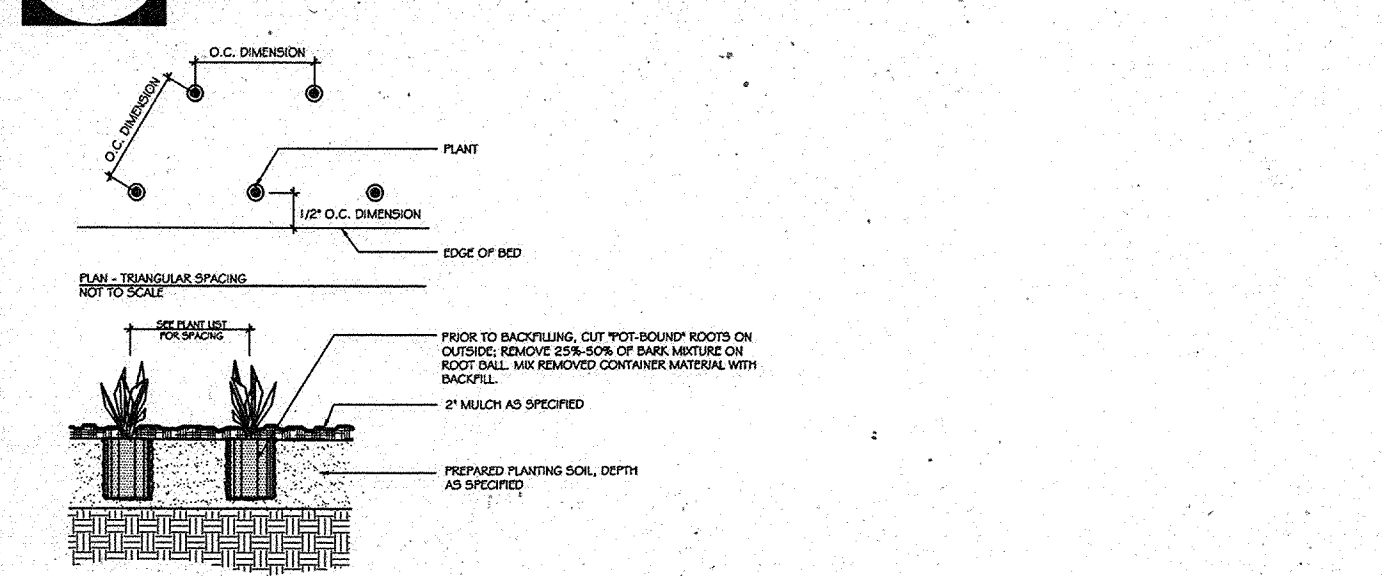




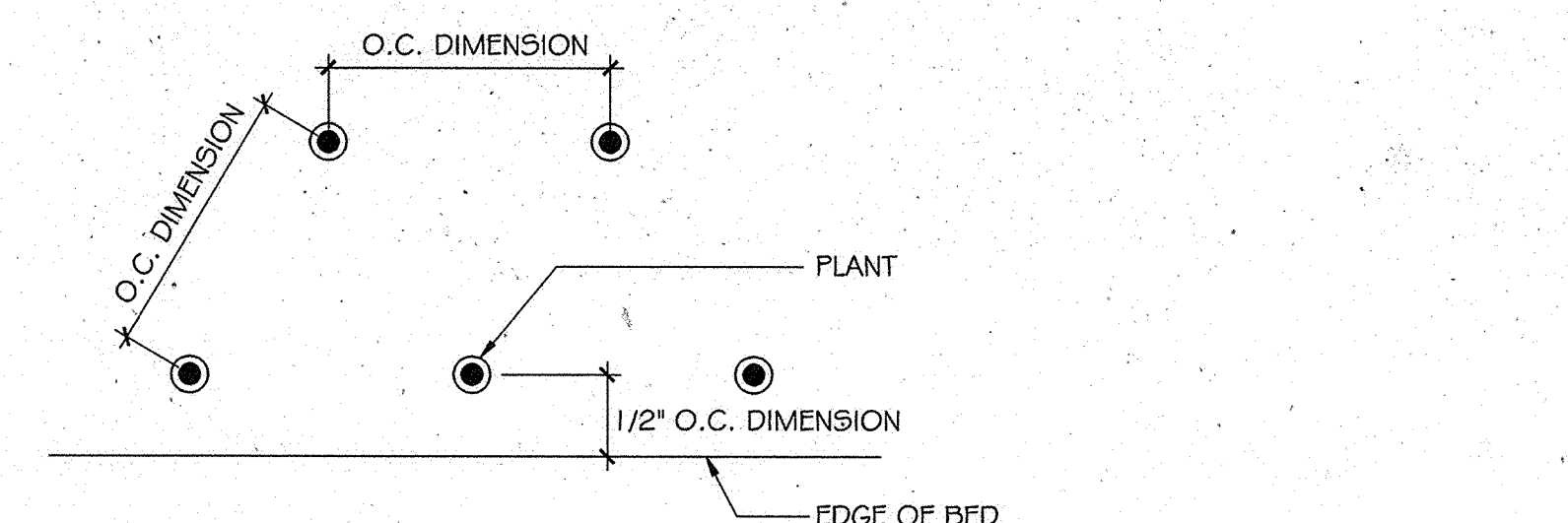
**A** DECIDUOUS TREE PLANTING (OVER 3" CALIPER)  
NOT TO SCALE



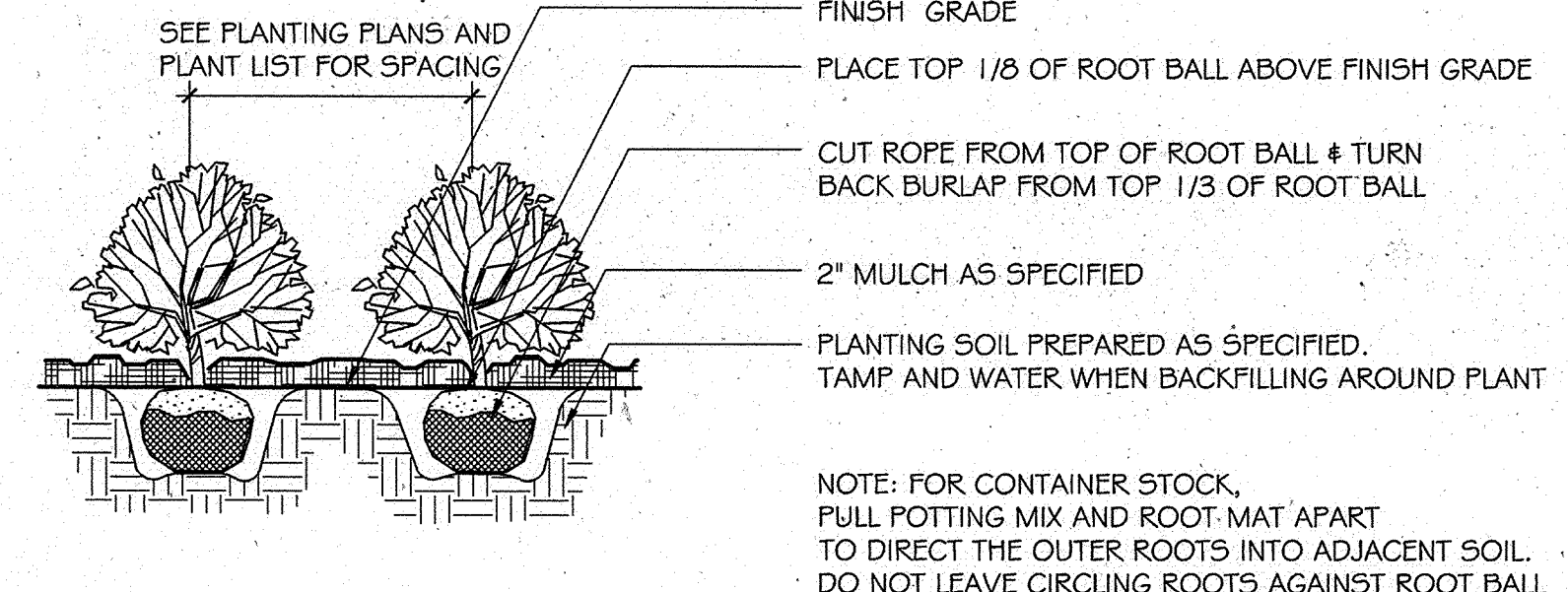
**B** DECIDUOUS TREE PLANTING (UNDER 3" CALIPER)  
NOT TO SCALE



**C** PERENNIAL PLANTING  
NOT TO SCALE



**D** SHRUB PLANTING  
NOT TO SCALE



**E** BULB PLANTING  
NOT TO SCALE

**MASTER PLANT LIST**

Qty	Botanical / Common Name	Size	Spacing	Remarks
<b>Shade Trees</b>				
36	ACER RUBRUM Red Maple	3-3 1/2" cal.	As shown	Strong Single Leader/ Specimen
6	CELTIS OCCIDENTALIS Common Hackberry	3-3 1/2" cal.	As shown	Strong Single Leader/ Specimen
5	LIQUIDAMBAR STYRACIFLUA 'ROTUNDOLOBA' Seedless Sweetgum	3-3 1/2" cal.	As shown	Strong Single Leader/ Specimen
6	GINKGO BILOBA Ginkgo Tree	3-3 1/2" cal.	As shown	Strong Single Leader/ Specimen
16	NYSSA SYLVATICA Blackgum	3-3 1/2" cal.	As shown	Strong Single Leader/ Specimen
3	PLATANUS ACERIFOLIA London Plane Tree	3-3 1/2" cal.	As shown	Strong Single Leader/ Specimen
29	QUERCUS PALUSTRIS Pin Oak	3-3 1/2" cal.	As shown	Strong Single Leader/ Specimen
2	QUERCUS PHELLOS Willow Oak	3-3 1/2" cal.	As shown	Strong Single Leader/ Specimen
1	SALIX NIGRA Black Willow	3-3 1/2" cal.	As shown	Strong Single Leader/ Specimen
2	TAXODIUM DISTICHUM Bald Cypress	3-3 1/2" cal.	As shown	Strong Single Leader/ Specimen
<b>Evergreen Trees</b>				
29	ILEX OPACA American Holly	6'-8' ht.	As shown	Strong Single Leader
25	ILEX 'NELLIE R. STEVENS' Nellie Stevens Holly	6'-8' ht.	As shown	Strong Single Leader
31	PINUS STROBUS White Pine	6'-8' ht.	As shown	Strong Single Leader
28	PICEA ABIES Norway Spruce	6'-8' ht.	As shown	Strong Single Leader
<b>Ornamental Trees</b>				
14	BETULA NIGRA River Birch	8'-10' ht.	As shown	Multi-stem/ Heavy/ Specimen
2	CRATAEGUS VIRIDIS 'WINTER KING' Washington Hawthorn	2-2 1/2" cal.	As shown	Strong Single Leader/ Specimen
10	MAGNOLIA STELLATA Star Magnolia	8'-10' ht.	As shown	Multi-stem/ Specimen
5	MAGNOLIA VIRGINIANA Sweetbay Magnolia	8'-10' ht.	As shown	Multi-stem/ Specimen
10	PRUNUS x YEDOENSIS Yoshino Cherry	2-2 1/2" cal.	As shown	Strong Single Leader/ Specimen
<b>Shrubs</b>				
60	ARONIA ARBUTIFOLIA 'BRILLIANTISSIMA' Red Chokeberry	24-36"	36" o.c.	
60	CEANOTHUS AMERICANUS New Jersey Tea	24-36"	36" o.c.	
110	CEPHALANTHUS OCCIDENTALIS Common Buttonbush	30"	30" o.c.	
120	CLETHRA ALNIFOLIA 'HUMMINGBIRD' Summersweet Pepperbush	24-36"	36" o.c.	
183	CLETHRA ALNIFOLIA 'RUBY SPICE' Summersweet	24-36"	48" o.c.	
580	CORNUS STOLONIFERA 'ARCTIC FIRE' Red Stem Dogwood	36"	36" o.c.	
160	CORNUS STOLONIFERA 'BUDS YELLOW' Red Stem Dogwood	36"	36" o.c.	
80	FOTHERGILLA GARDENII 'JANE PLATT' Jane Platt Fothergilla	36"	36" o.c.	
133	ILEX VERTICILLATA 'SPARKLEBERRY' Winterberry	36"	60" o.c.	
530	ITEA VIRGINICA 'HENRY'S GARNET' Virginia Sweetgum	24-36"	24" o.c.	
1,850	JASMINUM NUDIFLORUM Winter Jasmine	15-18" o.c.		
1,120	JUNIPERUS CHINENSIS 'SARGENTII' Sargent Juniper	15-18" o.c.		
120	MYRICA PENNSYLVANICA 'MORTON' Dwarf Northern Bayberry	24-36"	48" o.c.	
50	SAMBUCUS CANADENSIS 'ADAMS' American Elderberry	24-36" o.c.		
30	PRUNUS LAUROCERASUS 'OTTO LUYKEN' Otto Luyken Cherry Laurel	48" o.c.		
210	VACCINIUM CORYMBOSUM 'SUNSHINE BLUE' Highbush Blueberry	24-36"	36" o.c.	

**SCHEDULE B- PARKING LOT INTERNAL ISLAND**

NUMBER OF PARKING SPACES	112
NUMBER OF TREES REQUIRED	6
NUMBER OF TREES PROVIDED	6
SHADE TREES	6
OTHER TREES (2:1 SUB)	

**MASTER PLANT LIST**

Qty	Botanical / Common Name	Size	Spacing	Remarks
<b>Perennials, Ornamental Grasses, Ferns, Bulbs &amp; Groundcovers</b>				
180	ACHILLEA FILIPENDULINA 'MOONSHINE' Moonshine Yarrow	quart	24" o.c.	
30	ALLIUM GIGANTEUM Giant Onion	18" o.c.		
120	ANDROPOGON GERARDII Big Blue Stem	1 Gal.	30" o.c.	
40	ARUNCUS DIOICUS Goats Beard	1 Gal.	36" o.c.	
110	ASCLEPIAS TUBEROSA Butterfly Milkweed	1 Gal.	24" o.c.	
430	ASTER NOVAE-ANGLIAE New England Aster	1 Gal.	24" o.c.	
360	CALTHA PALUSTRIS Kingcup	quart	18" o.c.	
7,150	CAREX STRICTA Tussock Sedge	quart	12" o.c.	
1,000	CHELONE OBLIQUE Rose Turtlehead	quart	12" o.c.	
80	CHRYSOGONUM VIRGINIANUM Green and Gold	quart	12" o.c.	
40	COREOPSIS VERTICILLATA 'ZAGREB' Threadleaf	1 Gal.	18" o.c.	
60	DESCHAMPSIA CESPITOSA Tufted Hair Grass	1 Gal.	36" o.c.	
180	EUPATORIUM FISTULOSUM Joe Pye Weed	1 Gal.	24" o.c.	
1,100	FESTUCA GLAUCA Elyah Blue	1 Gal.	12" o.c.	
200	HELIANTHUS ANGSTIFOLIUS Swamp Sunflower	quart	24" o.c.	
90	HIBISCUS MOSCHEUTUS Swamp Mallow	1 Gal.	30" o.c.	
150	IRIS VERSICOLOR Harlequin Blueflag	quart	30" o.c.	
200	JUNCUS INFLEXUS 'LOVESICK BLUES' Lovesick Blues Rush	1 Gal.	12" o.c.	
40	LIATRIS SPICATA Dense Blazing Star	1 Gal.	18" o.c.	
2,800	LIRIOPE MUSCARI 'BIG BLUE' Lilyturf	quart	12" o.c.	
1,050	MERTENSIA VIRGINICA Virginia Bluebells	quart	12" o.c.	
530	MUHLENBERGIA CAPILLARIS Pink Muhly Grass	1 Gal.	36" o.c.	
100	NYMPHAEA ODORATA American White Waterlily	quart	12" o.c.	
2,500	NARCISSUS Daffodil	12" o.c.		
380	OSMUNDA CINNAMOMEA Cinnamon Fern	1 Gal.	24" o.c.	
710	PANICUM VIRGATUM Switch Grass	1 Gal.	30" o.c.	
360	PENNISETUM ALOPECUROIDES Fountain Grass	1 Gal.	30" o.c.	
80	PEROVSKIA ATRIPRIGIFOLIA Russian Sage	1 Gal.	24" o.c.	
130	PONTEDERIA CORDATA Pickerel Weed	1 Gal.	18" o.c.	
510	RUDBECKIA FULGIDA 'GOLDSTURM' Black-Eyed Susan	1 Gal.	18" o.c.	
320	SALVIA x SYLVESTRIS 'MAINACHT' May Night	1 Gal.	12" o.c.	
680	SCHIZACHYRIUM SCOPARIUM 'BLAZE' Blaze Little Blue Stem	1 Gal.	18" o.c.	
100	SEDUM TELEPHIUM 'AUTUMN JOY' Autumn Joy Sedum	1 Gal.	18" o.c.	
190	TYPHA ANGUSTIFOLIA Narrowleaf Cattail	1 Gal.	24" o.c.	

**SCHEDULE D- STORMWATER MANAGEMENT AREA LANDSCAPING**

LINEAR FEET OF PERIMETER	862 LF- TYPE B
NUMBER OF TREES REQUIRED	
SHADE TREES	18
EVERGREEN TREES	22
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO
CREDIT FOR OTHER LANDSCAPING (NO, YES AND %)	NO
NUMBER OF PLANTS PROVIDED	
SHADE TREES	6
EVERGREEN TREES	3
SHRUBS (10:1 SUB)	1130
OTHER TREES (2:1 SUB)	8

**SCHEDULE A- PERIMETER LANDSCAPE EDGE**

PERIMETER	CATEGORY PROPERTIES/ROADWAYS	LANDSCAPE TYPE	LINEAR FEET OF ROADWAY FRONTAGE PERIMETER	CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET)	CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET)	NUMBER OF PLANTS REQUIRED			NUMBER OF PLANTS PROVIDED				
						SHADE TREES	EVERGREEN TREES	SHRUBS	SHADE TREES	EVERGREEN TREES	SHRUBS (10:1 SUB)	OTHER TREES (2:1 SUB)	
P-1	Loading to Residential	D	403	-	-	7	41	-	8	41	-	-	-
P-2	Non-Residential to Other	A	232	-	-	4	-	-	4	6	-	-	-
P-3	Non-Residential to Residential	C	903	-	-	23	46	-	18	46	-	10	-
P-4	Non-Residential to Other	A	254	-	-	5	-	-	5	13	-	-	-
P-5	Non-Residential to Front/ Side	B	1,149	-	-	23	29	-	21	-	1400	5	-

FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELLCOTT CITY, MARYLAND 21042  
(410) 461-2000

BRADLEY SITE DESIGN, INC.  
LANDSCAPE ARCHITECTURE  
1743 CONNECTICUT AVE., NW  
WASHINGTON, D.C. 20009  
P: 202-510-8534  
F: 202-510-8535  
www.bradleysitedesign.com

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

DATE: 6/24/10  
DESCRIPTION: REVISED SHEET NUMBERS FROM 30 TO 39  
REVISION BLOCK

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

Address Chart

Parcel Number	Street Address
0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.
ELEMENTARY SCHOOL #41	N/A	P.0569
PLAT# OR L/F	GRID#	ZONING
21873-21875	-	R-12
TAX MAP#	ELECT. DISTR.	CENSUS TRACT
37	FIRST	6012.01

**L.602 PLANTING DETAILS & SCHEDULE**

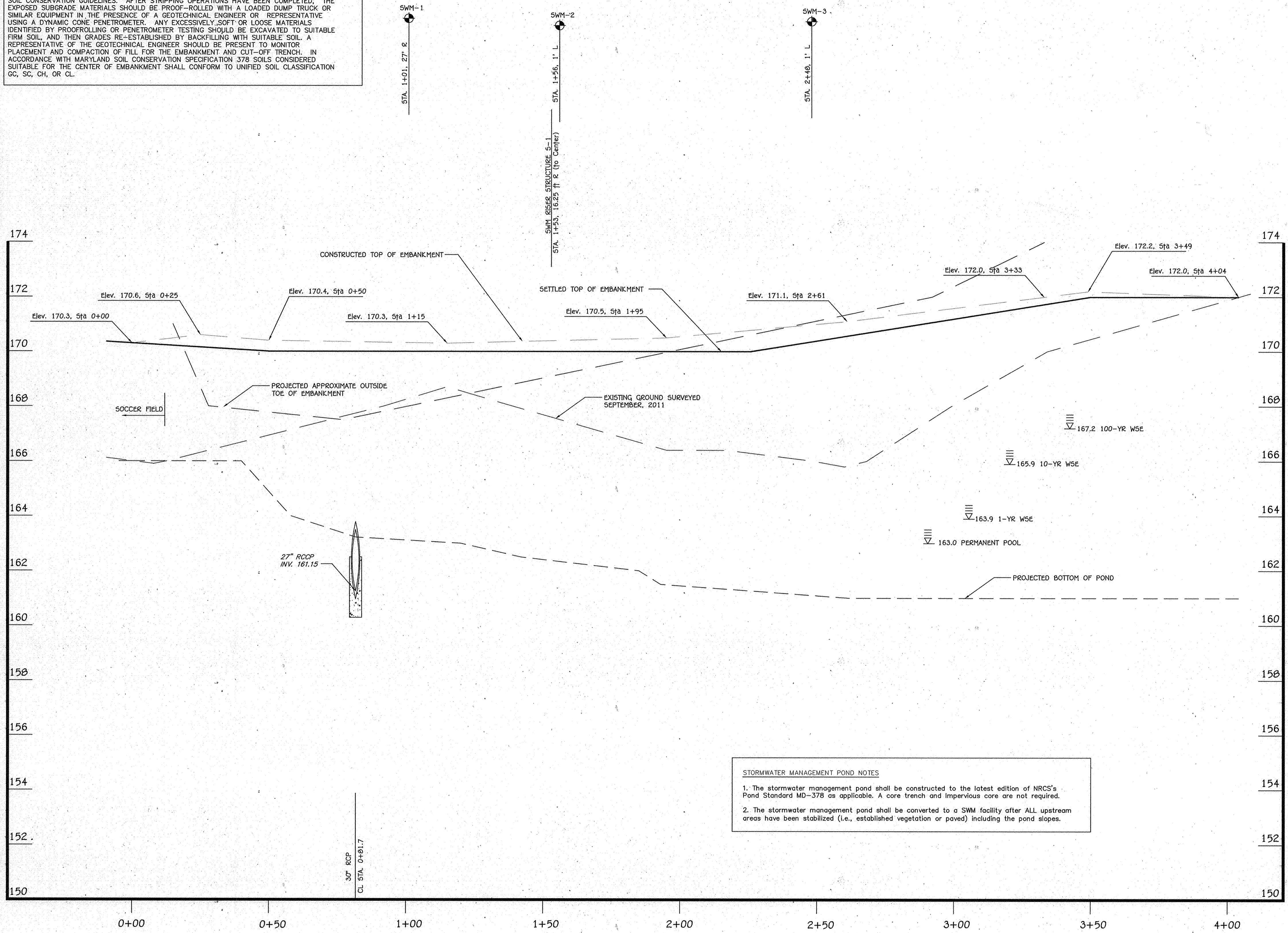
ELEMENTARY SCHOOL #41  
THE LEGACY AT DUCKETTS RIDGE  
PARCEL A

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: NTS DATE: APRIL 10, 2012

SHEET 25 OF 39

**EMBANKMENT CONSTRUCTION NOTES**

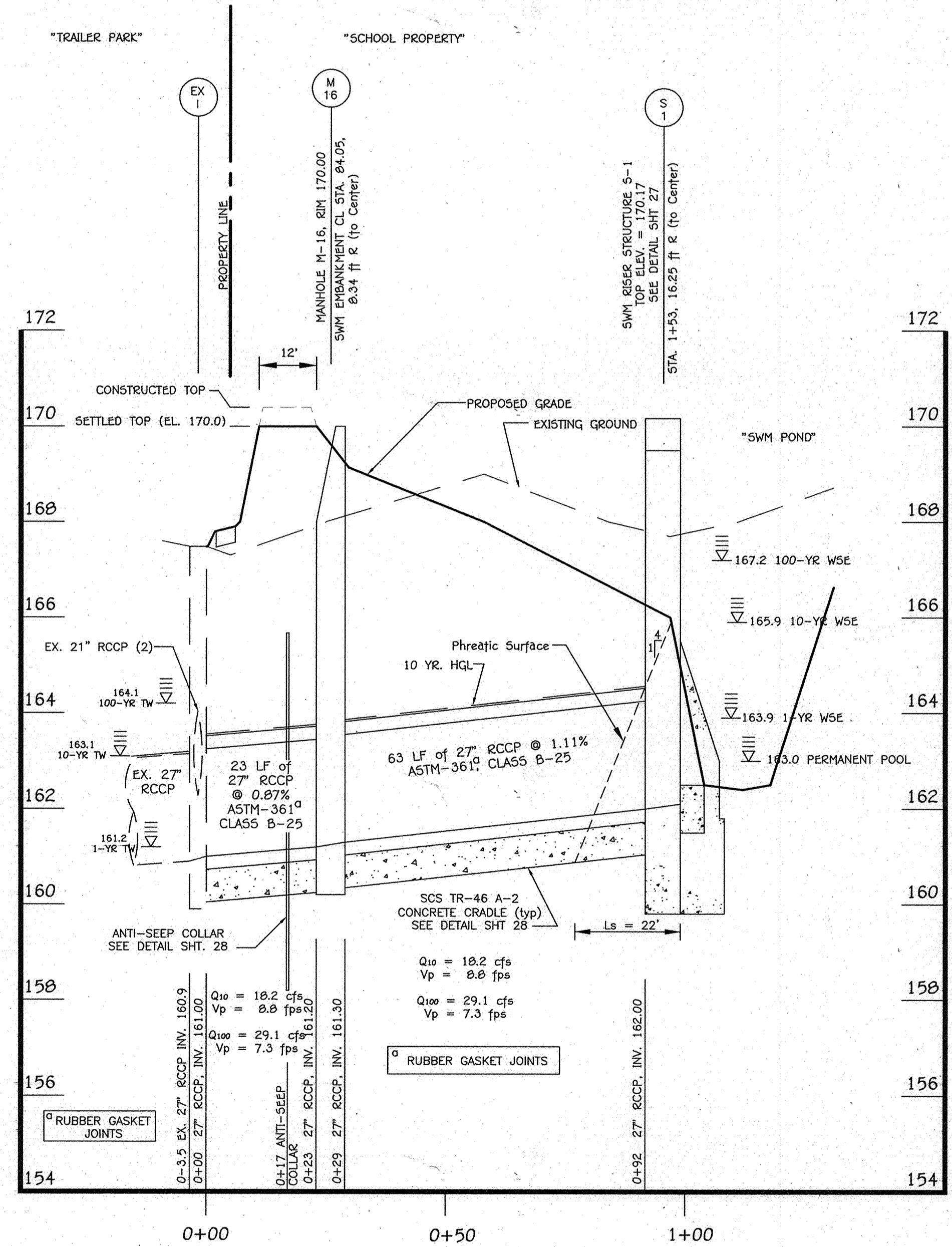
THE AREA OF THE PROPOSED SWM POND SHOULD BE STRIPPED OF TOPSOIL AND ANY OTHER UNSUITABLE MATERIALS FROM THE EMBANKMENT OR STRUCTURE AREA IN ACCORDANCE WITH SOIL CONSERVATION GUIDELINES. AFTER STRIPPING OPERATIONS HAVE BEEN COMPLETED, THE EXPOSED SUBGRADE MATERIALS SHOULD BE PROOF-ROLLED WITH A LOADED DUMP TRUCK OR SIMILAR EQUIPMENT IN THE PRESENCE OF A GEOTECHNICAL ENGINEER OR REPRESENTATIVE USING A DYNAMIC CONE PENETROMETER. ANY EXCESSIVELY SOFT OR LOOSE MATERIALS IDENTIFIED BY PROOFROLLING OR PENETROMETER TESTING SHOULD BE EXCAVATED TO SUITABLE FIRM SOIL, AND THEN GRADES RE-ESTABLISHED BY BACKFILLING WITH SUITABLE SOIL. A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER SHOULD BE PRESENT TO MONITOR PLACEMENT AND COMPACTION OF FILL FOR THE EMBANKMENT AND CUT-OFF TRENCH. IN ACCORDANCE WITH MARYLAND SOIL CONSERVATION SPECIFICATION 378 SOILS CONSIDERED SUITABLE FOR THE CENTER OF EMBANKMENT SHALL CONFORM TO UNIFIED SOIL CLASSIFICATION GC, SC, CH, OR CL.



**STORMWATER MANAGEMENT POND NOTES**

1. The stormwater management pond shall be constructed to the latest edition of NRCS's Pond Standard MD-378 as applicable. A core trench and impervious core are not required.
2. The stormwater management pond shall be converted to a SWM facility after ALL upstream areas have been stabilized (i.e., established vegetation or paved) including the pond slopes.

**SWM #1 POND EMBANKMENT CENTERLINE PROFILE**  
 SCALE:  
 HORIZ: 1" = 20'  
 VERT: 1" = 2'



**SWM #1 FACILITY PRINCIPAL SPILLWAY PROFILE**  
 SCALE:  
 HORIZ: 1" = 20'  
 VERT: 1" = 2'

**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING, CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE: P.O. BOX 10272, BALTIMORE, MARYLAND 21042  
 410.461.2099

**ENGINEER'S CERTIFICATE**  
 "I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."  
 Signature of Engineer: *Charles J. Crovo, Sr.* Date: 4/4/12

**DEVELOPER'S CERTIFICATE**  
 "I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."  
 Signature of Developer: *Ryan Curt* Date: 4/12/12

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012."  
 Signature: *Charles J. Crovo, Sr.* Date: 4/4/12  
 CHARLES J. CROVO, SR., P.E.

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.  
 Signature: *John K. Robertson* Date: 4/5/12  
 John K. Robertson  
 Howard SCD

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Director - Department of Planning and Zoning: *Paul A. Unger* Date: 5/1/12  
 Chief, Division of Land Development: *Kentley Jacob* Date: 5/1/12  
 Chief, Development Engineering Division: *Steve Sluiter* Date: 5/1/12

DATE: 9/24/13  
 REVISION SHEET NUMBERS FROM 90 TO 99

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

ADDRESS CHART				
LOT/PARCEL#	STREET ADDRESS			
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075			
PERMIT INFORMATION CHART				
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.		
ELEMENTARY SCHOOL #41	N/A	P.0569		
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.
-	-	R-12	37	FIRST
		CENSUS TRACT		
		6012.01		

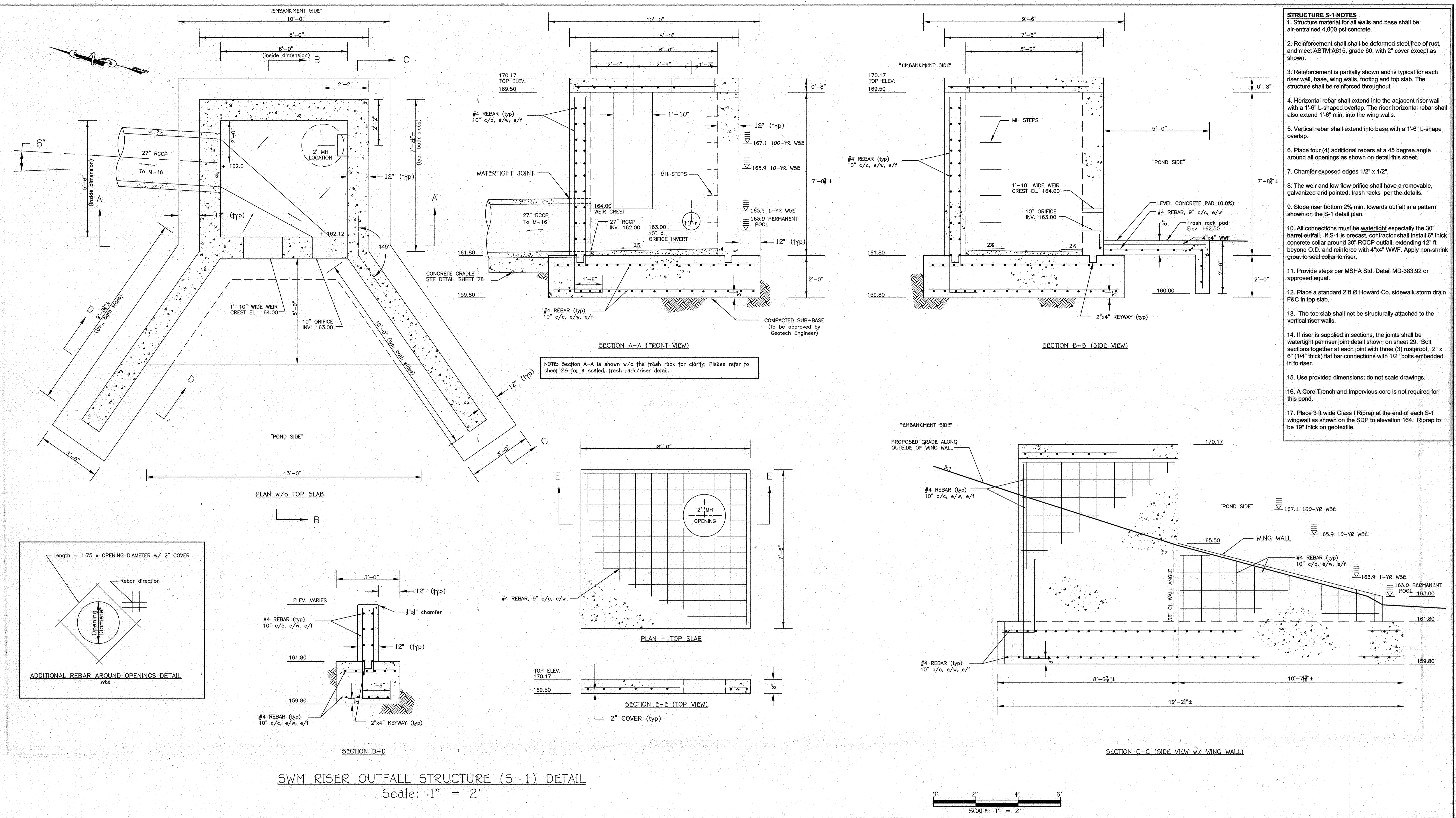
**STORMWATER MANAGEMENT POND EMBANKMENT & OUTFALL PROFILES**

**ELEMENTARY SCHOOL #41**

**THE LEGACY AT DUCKETTS RIDGE PARCEL A**

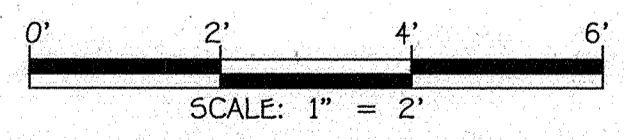
ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MARCH 22, 2012

SHEET 26 OF 30



- STRUCTURE S-1 NOTES**
- Structure material for all walls and base shall be air-entrained 4,000 psi concrete.
  - Reinforcement shall be deformed steel, free of rust, and meet ASTM A615, grade 60, with 2" cover except as shown.
  - Reinforcement is partially shown and is typical for each riser wall, base, wing walls, footing and top slab. The structure shall be reinforced throughout.
  - Horizontal rebar shall extend into the adjacent riser wall with a 1'-6" L-shaped overlap. The riser horizontal rebar shall also extend 1'-6" min. into the wing walls.
  - Vertical rebar shall extend into base with a 1'-6" L-shape overlap.
  - Place four (4) additional rebars at a 45 degree angle around all openings as shown on detail this sheet.
  - Chamfer exposed edges 1/2" x 1/2".
  - The weir and low flow orifice shall have a removable, galvanized and painted, trash racks per the details.
  - Rise riser bottom 2% min. towards outfall in a pattern shown on the S-1 detail plan.
  - All connections must be watertight especially the 30" barrel outfall. If S-1 is precast, contractor shall install 6" thick concrete collar around 30" RCCP outfall, extending 12" thick beyond O.D. and reinforce with 4"x4" WWF. Apply non-shrink grout to seal collar to riser.
  - Provide steps per MSHA Std. Detail MD-383.92 or approved equal.
  - Place a standard 2 ft Ø Howard Co. sidewalk storm drain F&C in top slab.
  - The top slab shall not be structurally attached to the vertical riser walls.
  - If riser is supplied in sections, the joints shall be watertight per riser joint detail shown on sheet 29. Bolt sections together at each joint with three (3) rustproof, 2" x 6" (1/4" thick) flat bar connections with 1/2" bolts embedded in to riser.
  - Use provided dimensions; do not scale drawings.
  - A Core Trench and Impervious core is not required for this pond.
  - Place 3 ft wide Class I Riprap at the end of each S-1 wingwall as shown on the SDP to elevation 164. Riprap to be 19" thick on geotextile.

**SWM RISER OUTFALL STRUCTURE (S-1) DETAIL**  
Scale: 1" = 2'



**FISHER, COLLINS & CARTER, INC.**  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE: P.O. BOX 10272 BALTIMORE, MARYLAND 21286  
ELICOTT CITY, MARYLAND 21042

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

Signature of Engineer: *Charles J. Provo, Sr.* Date: 4/4/12

**DEVELOPER'S CERTIFICATE**  
"I/we certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature of Developer: *John K. Robertson* Date: 5/11/12

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012."

Signature: *Charles J. Provo, Sr., P.E.* Date: 4/4/12

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Signature: *John K. Robertson* Date: 5/11/12

DATE	DESCRIPTION
6/24/13	REVISED SHEET NUMBERS FROM 95 TO 99
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Signature: <i>Hand A. Coyle</i> Date: 5/14/12	
Signature: <i>Vicki Deane</i> Date: 5/14/12	
Signature: <i>John K. Robertson</i> Date: 5/14/12	
Chief, Development Engineering Division	

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

ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
-	-	R-12	37	FIRST	6012.01

**STORMWATER MANAGEMENT POND RISER (S-1) DETAIL**

**ELEMENTARY SCHOOL #41**

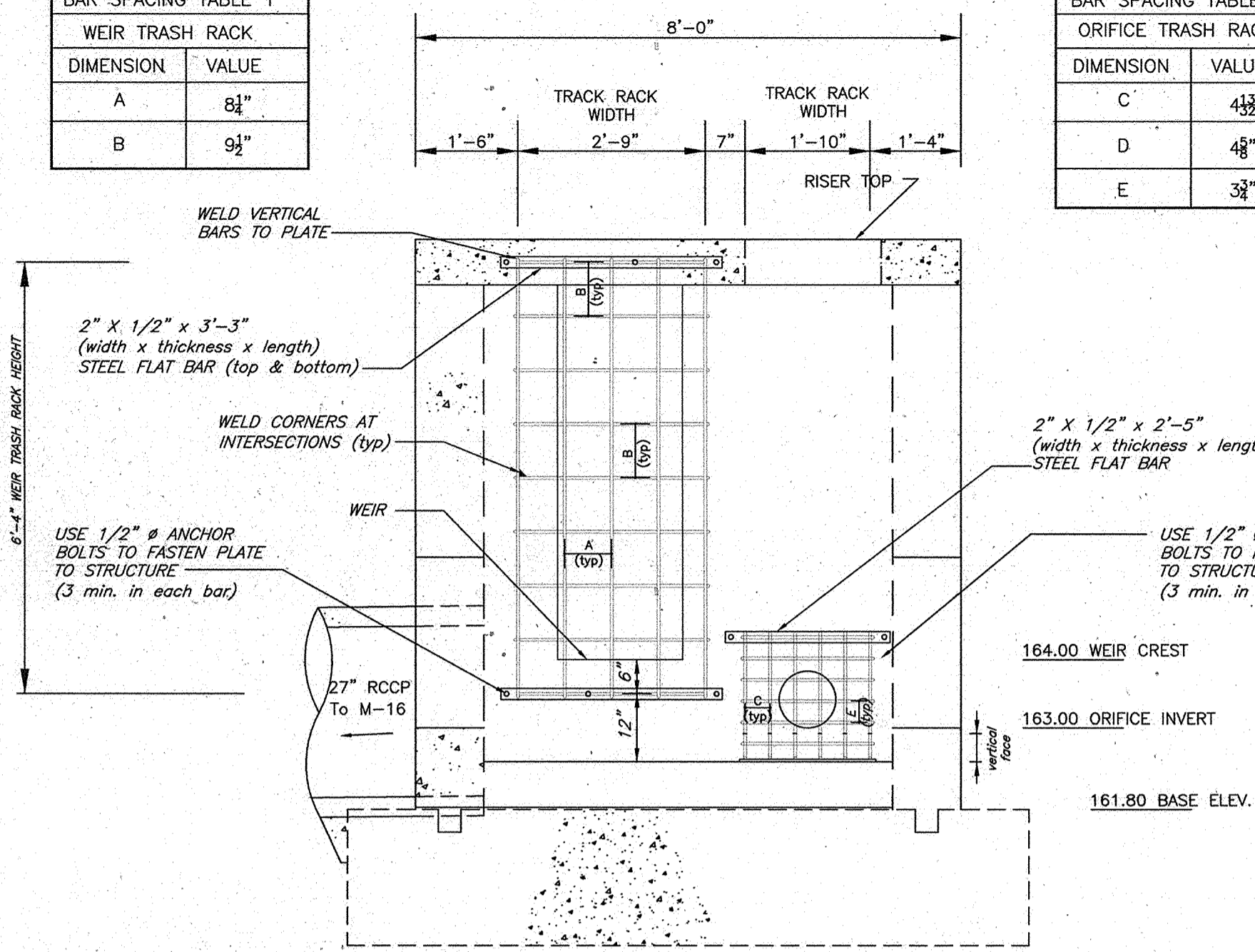
**THE LEGACY AT DUCKETTS RIDGE PARCEL A**

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 22, 2012

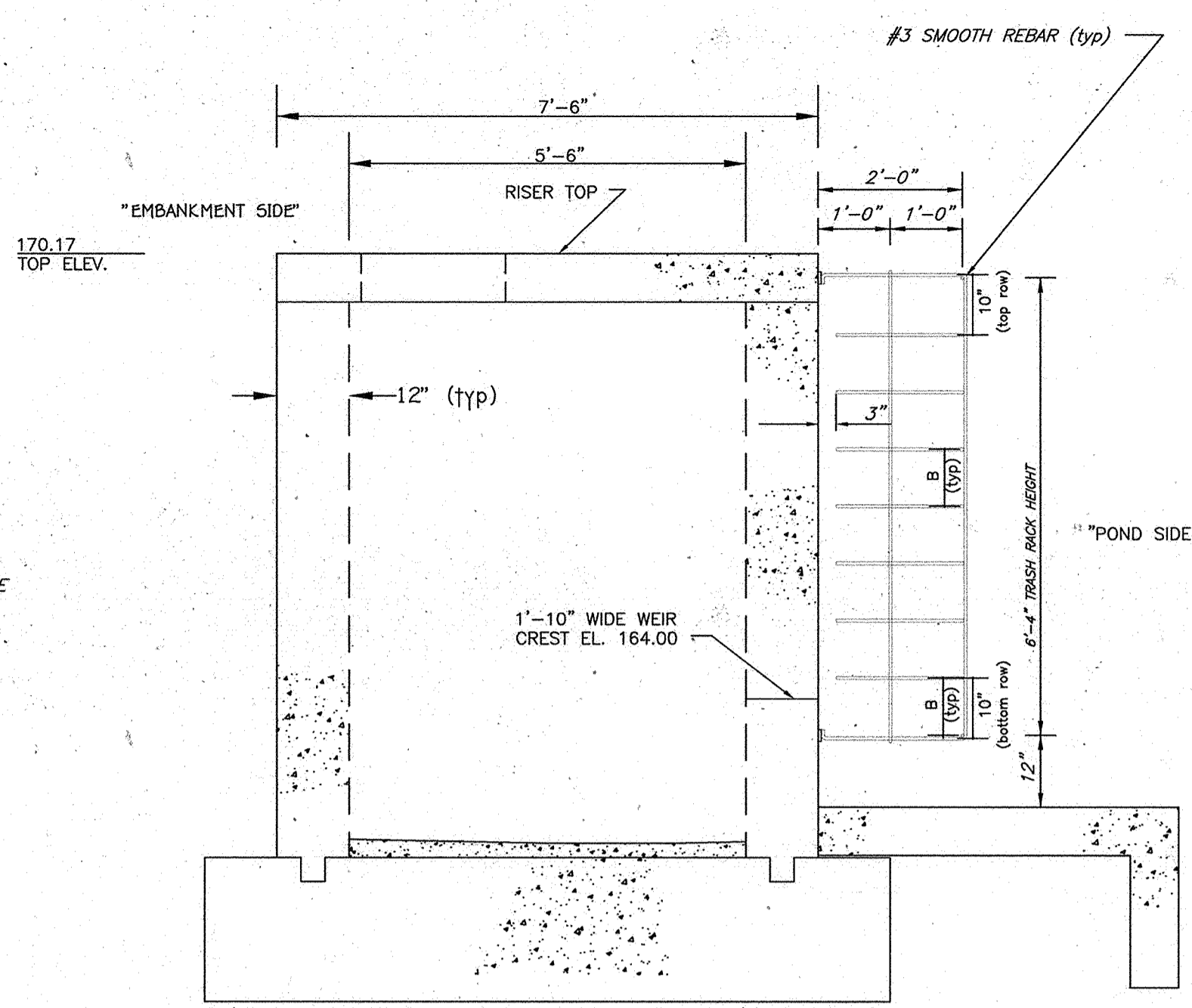
SHEET 27 OF 30

BAR SPACING TABLE 1	
WEIR TRASH RACK	
DIMENSION	VALUE
A	8 1/2"
B	9 1/2"

BAR SPACING TABLE 2	
ORIFICE TRASH RACK	
DIMENSION	VALUE
C	4 1/2" ±
D	4 1/2" ±
E	3 1/2" ±



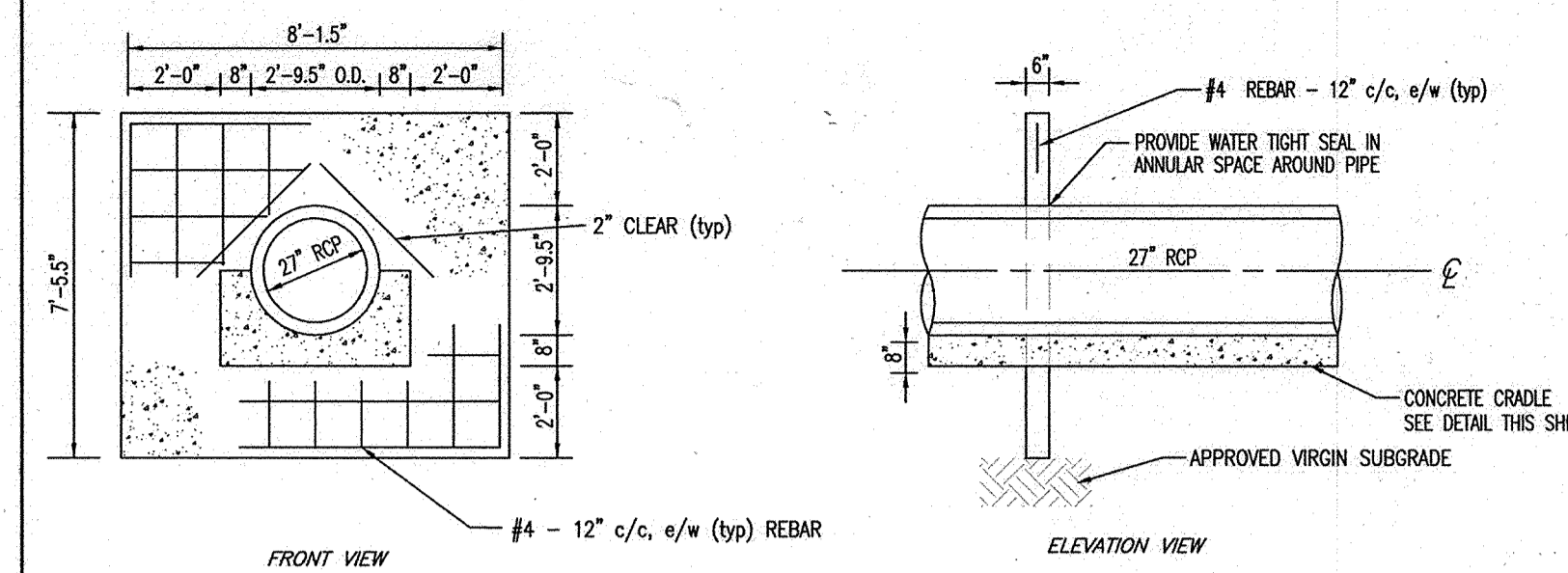
FRONT VIEW



SIDE VIEW WITH WEIR TRASH RACK ONLY

**TRASH RACK NOTES**

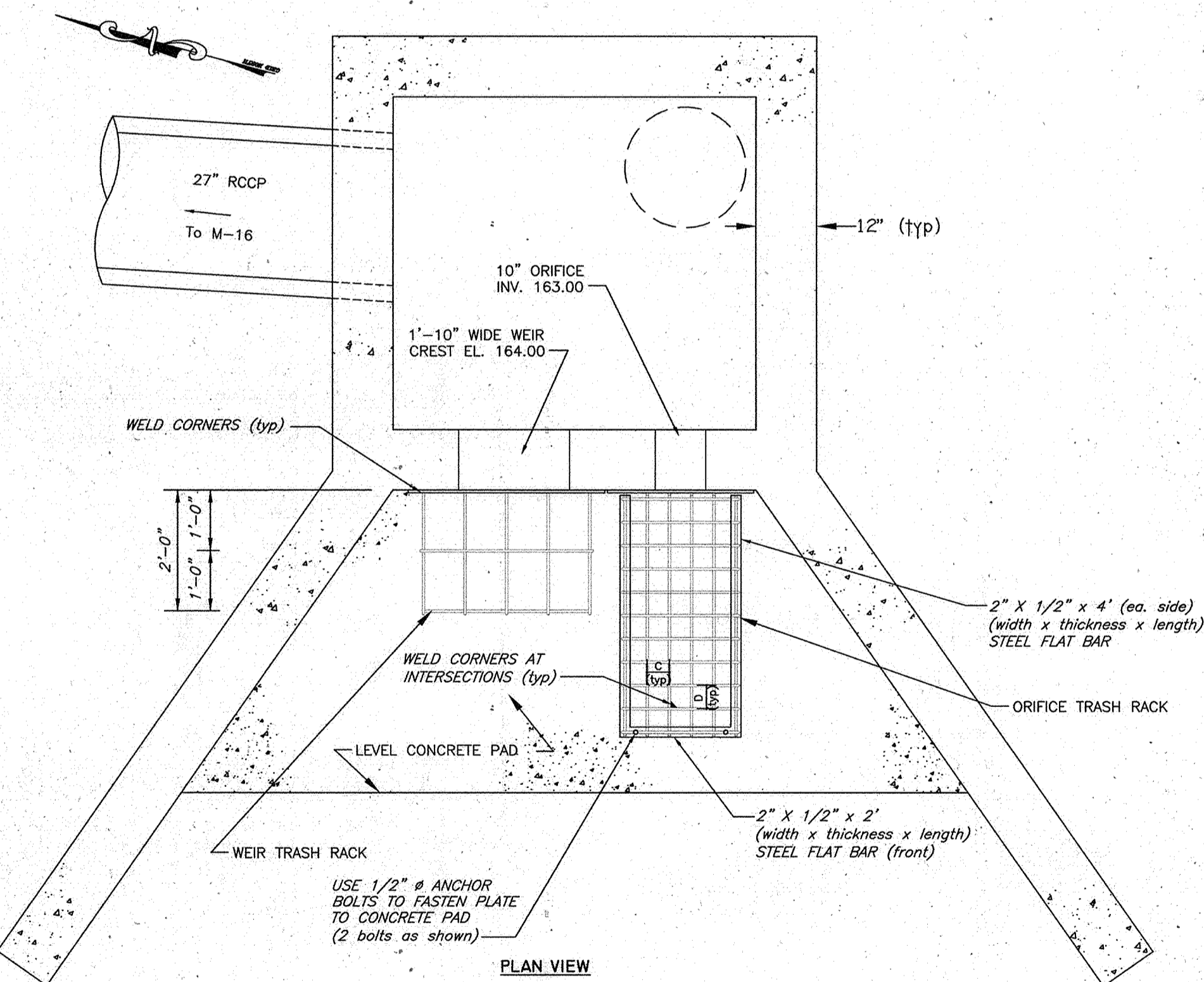
- See SWM Riser Detail S-1 for structure dimensions not shown on this detail.
- The trash rack shall be galvanized (2 coats) after fabrication and painted "battleship gray" (2 coats) and conform to Howard County Specifications.
- Rebar shall be #3 smooth steel bars.
- The trash rack fabricator may substitute angled bars for flat bars.
- The trash rack shall be installed so as to extend 6" below the weir crest with 12" clearance above the concrete pad (clearance measured from concrete pad to center of lowest horizontal bar).
- The concrete riser shall be field-measured prior to the trash rack fabrication to ensure an exact trash rack fit. The fabricator can make minor adjustments to the trash rack dimensions (1/4") to maintain the overall dimensions and covering the openings as shown. The maximum opening dimension (i.e., along diagonal) shall not exceed 15" and 7.5" for the weir and orifice trash racks, respectively.
- Weir Trash Rack Bottom Dimension Calculation: 100-yr flow weir depth = 3.1'; weir width = 1.83'; Flow Area = 3.1' x 1.83' = 5.7 sf. Area under trash rack = outside bottom width x protrusion = 2.83' x 2.0' = 5.7 sf. Trash rack bottom area = weir flow area (i.e., 5.7 sf = 5.7 sf) OK!
- Orifice Trash Rack Area Calculation: Orifice Flow Area = 0.545 sf. Trash Rack Opening Area = 14 sf >> 6 x 0.545 = 3.3 sf OK!



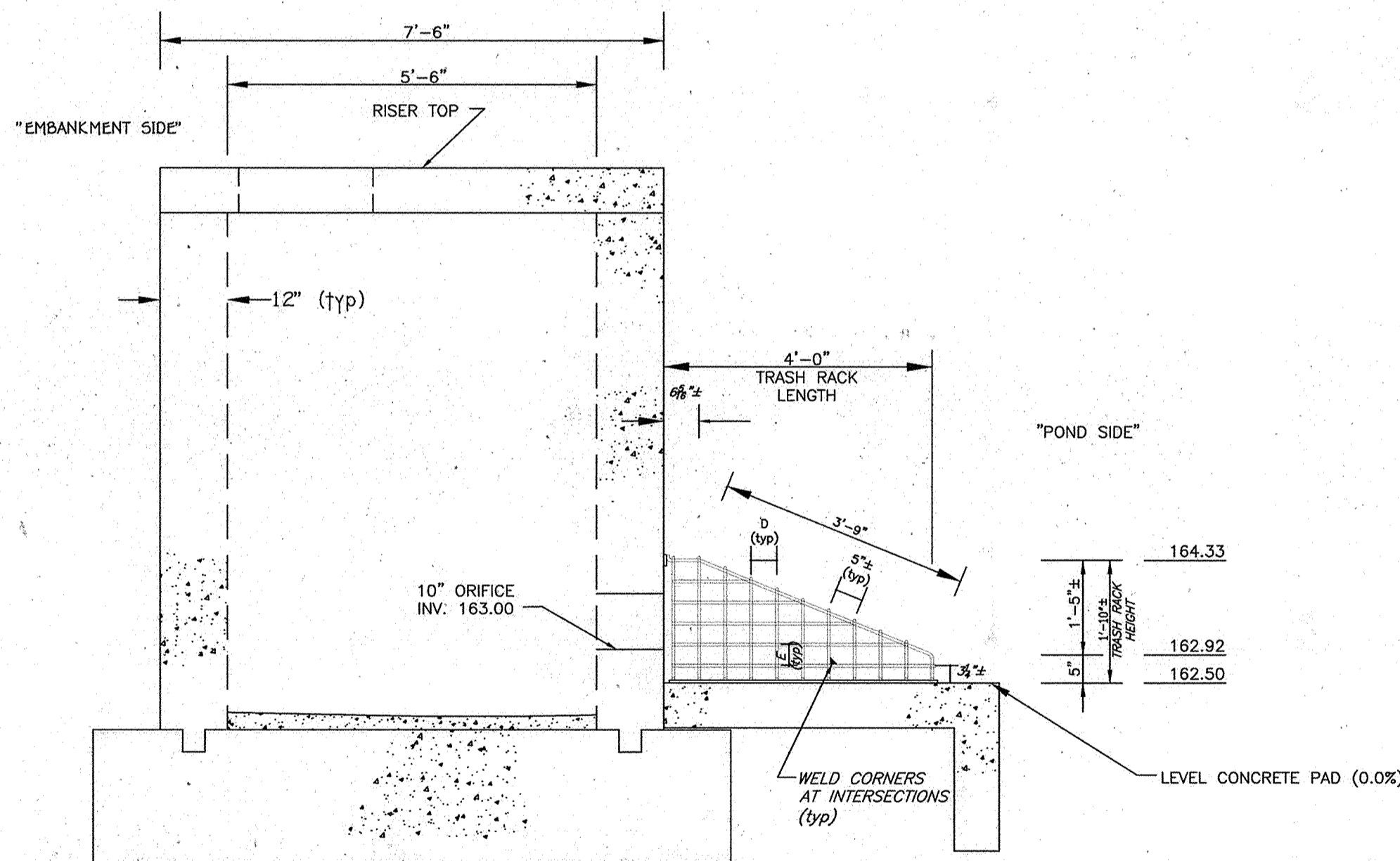
**ANTI-SEEP COLLAR NOTES**

- LOWER HALF OF COLLAR SHALL BE POURED CONCURRENTLY WITH THE CRADLE POUR.
- REBAR IS SHOWN SCHEMATICALLY AND SHALL BE PLACED THROUGHOUT THE ENTIRE COLLAR.
- PROVIDE A WATER TIGHT SEAL IN ANNULAR SPACE BETWEEN PIPE AND COLLAR USING MASTIC SEALOR. USE AN "A-LOK" JOINT SEAL PRODUCT.
- LOCATE COLLAR 2" MINIMUM FROM JOINT AND MAINTAIN 10" MINIMUM SEPARATION FROM COLLAR TO COLLAR OR COLLAR TO RISER.
- PLACE TWO (2") ADDITIONAL REBARS (4" MIN. LONG) AT RIGHT ANGLES TO REBAR GRID 2" FROM PIPE O.D.
- COLLAR MATERIAL SPECIFICATIONS SHALL MEET THE SAME AS THAT FOR THE CONCRETE RISER (SWM OUTFALL) STRUCTURE.

**ANTI-SEEP CONCRETE COLLAR DETAIL**  
SCALE: 1" = 4"

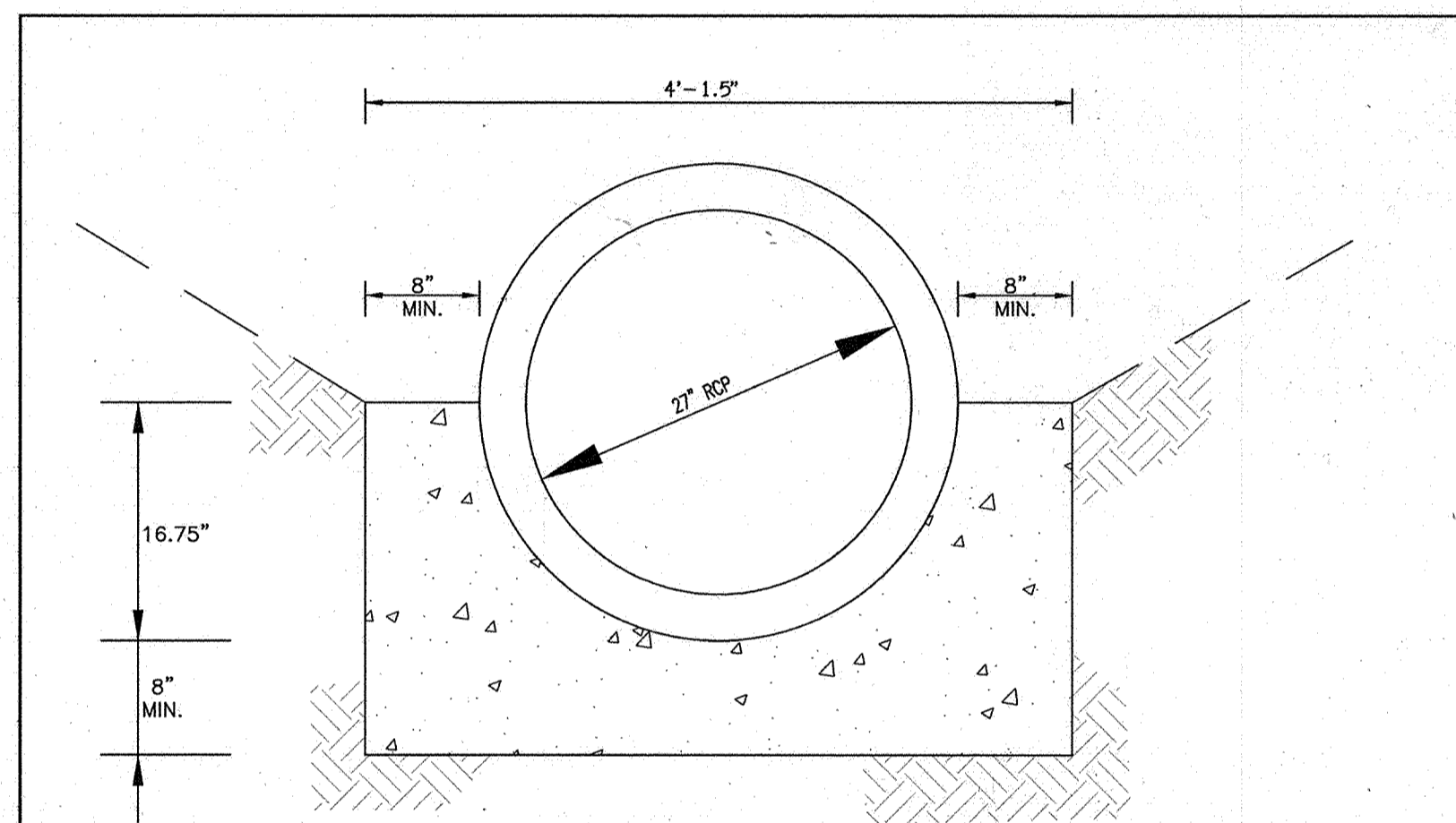


PLAN VIEW



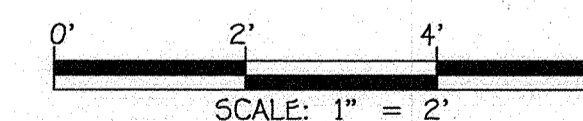
SIDE VIEW WITH ORIFICE TRASH RACK ONLY

**WEIR & ORIFICE TRASH RACK DETAIL**  
SCALE: 1" = 2"



- CRADLE NOTES:**
- SEE RISER (S-1) FOR CONCRETE SPECIFICATIONS.
  - POUR CRADLE TO TRENCH WALLS OR USE SLOPING SIDES AND MAINTAIN 8" MINIMUM DIMENSION.
  - SUBGRADE SHALL BE COMPACTED TO 95% @ OMC AND APPROVED BY THE GEOTECHNICAL ENGINEER.
  - CRADLE SHALL CONFORM TO SCS TR-26 A-2.

**CONCRETE CRADLE**  
SCALE: 1" = 1"



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

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

Signature of Engineer: *Charles J. Grovo* Date: 4/4/12

**DEVELOPER'S CERTIFICATE**  
"I/we certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."

Signature of Developer: *Brian Cut* Date: 4/2/12

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012."

Signature: *Charles J. Grovo* Date: 4/4/12  
CHARLES J. GROVO, SE., P.E.

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.

Signature: *John K. Robertson* Date: 4/5/12  
John K. Robertson  
Howard SO

9/24/13 REVISED SHEET NUMBERS FROM 90 TO 99

DATE	DESCRIPTION	REVISION BLOCK
5/19/12	MAJOR REVISIONS	
5/16/12	REVISED SHEET NUMBERS	
5/14/12	REVISED SHEET NUMBERS	

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Director - Department of Planning and Zoning: *Mark A. G. J. C.* Date: 5/19/12  
Chief, Division of Land Development: *John K. Robertson* Date: 5/16/12  
Chief, Development Engineering Division: *William J. ...* Date: 5/14/12

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
10910 Maryland Route 108  
Ellicott City, Maryland 21042  
Attention: Bruce Gist  
410-313-6790

ADDRESS CHART

LOT/PARCEL#	STREET ADDRESS
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075

PERMIT INFORMATION CHART

SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.
ELEMENTARY SCHOOL #41	N/A	P.0569

PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DIST.	CENSUS TRACT
-	-	R-12	37	FIRST	6012.01

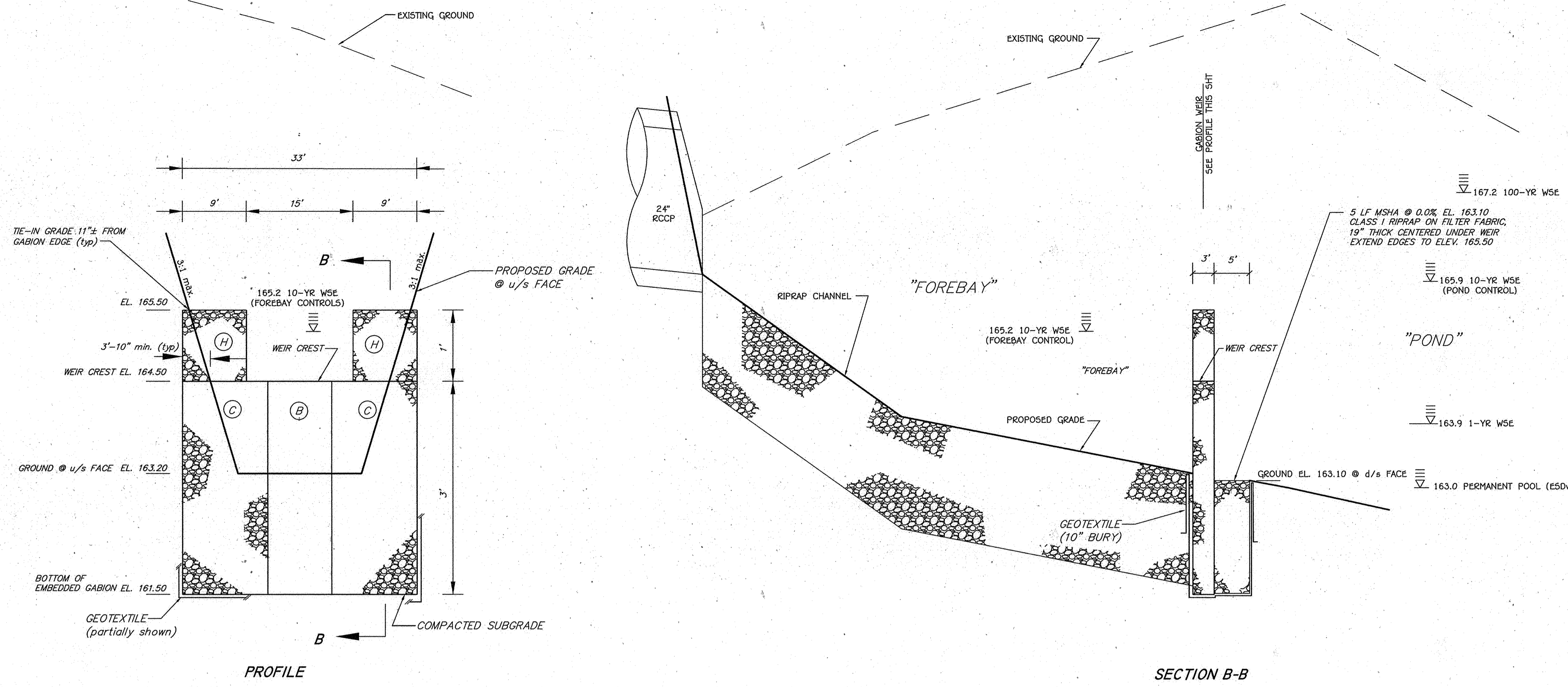
**STORMWATER MANAGEMENT POND DETAILS (1)**

**ELEMENTARY SCHOOL #41**

**THE LEGACY AT DUCKETTS RIDGE PARCEL A**

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 22, 2012

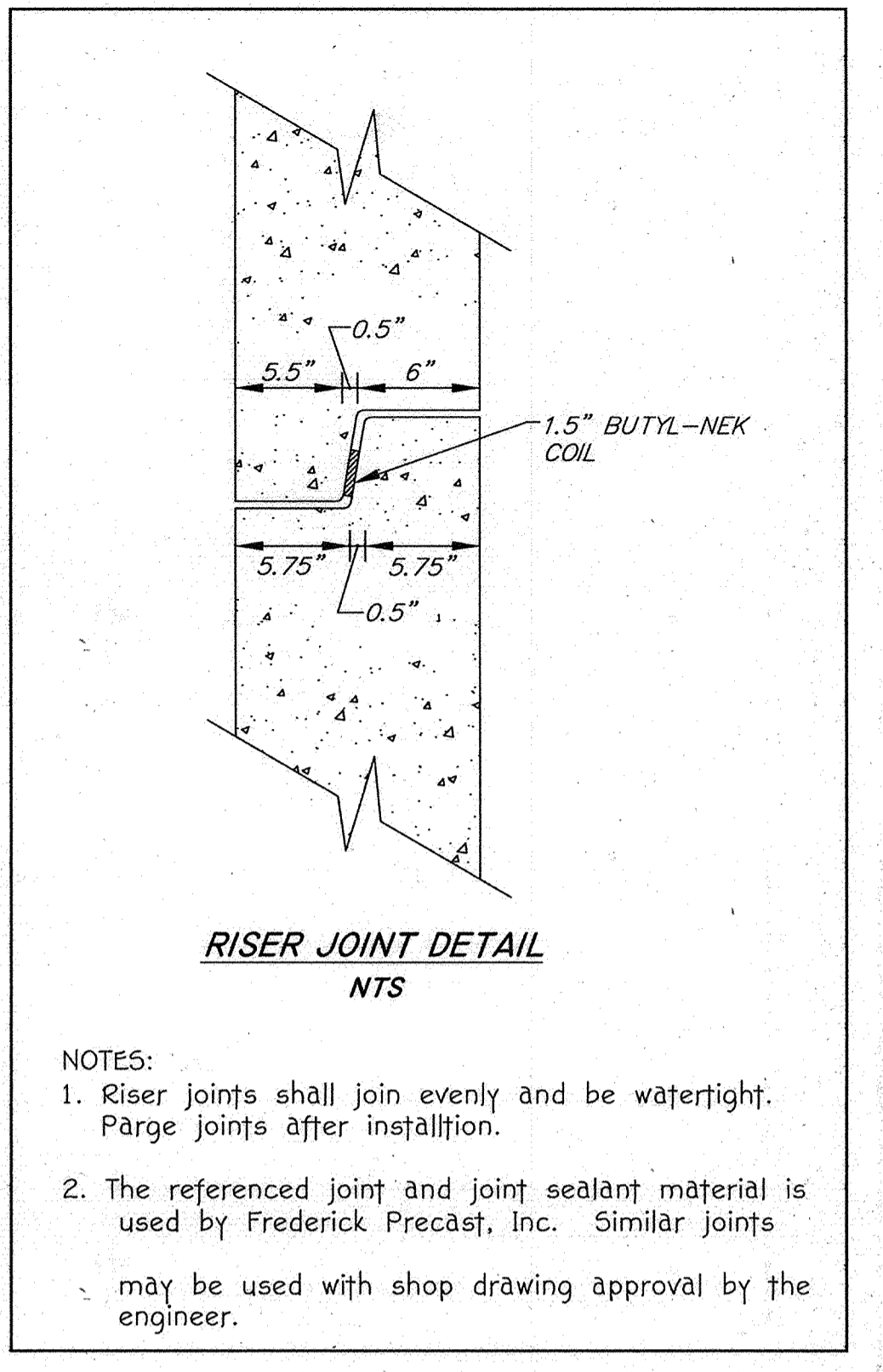
SHEET 28 OF 29



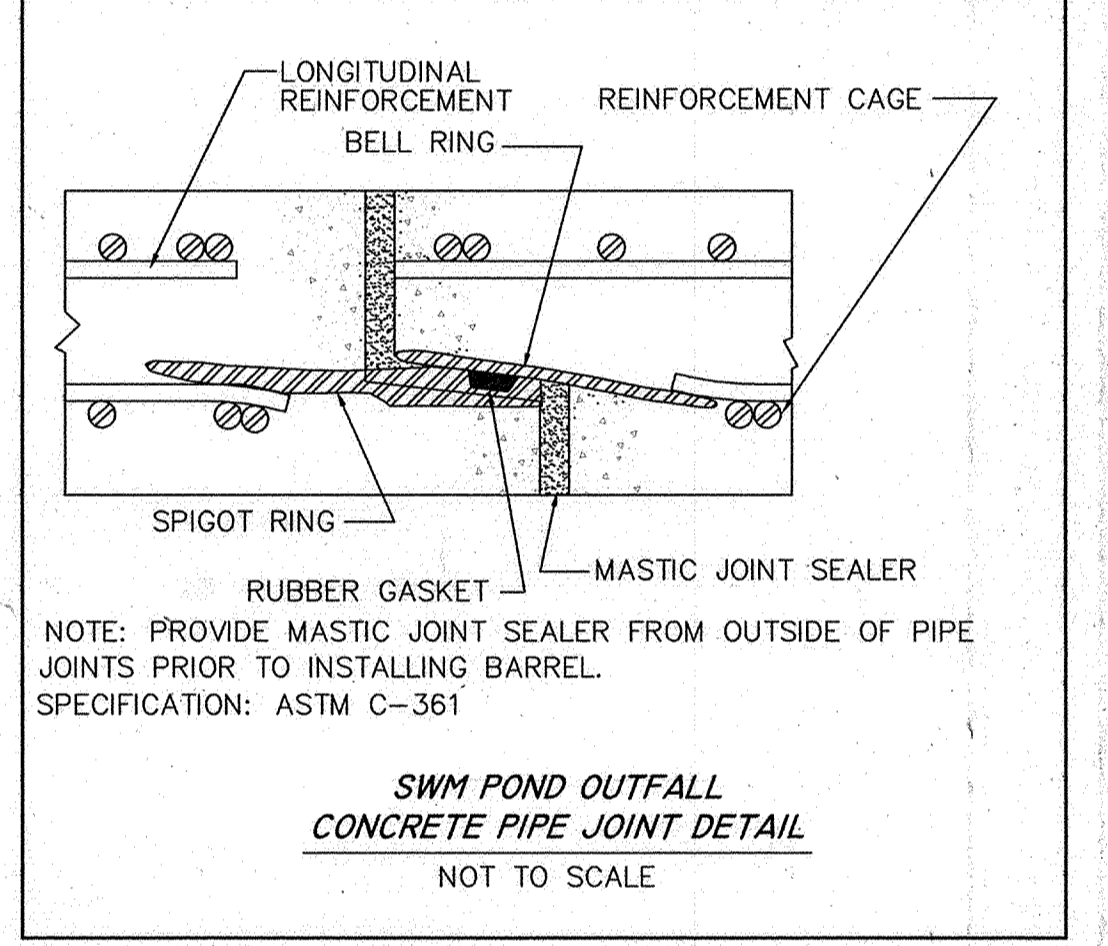
- FOREBAY OUTFALL (GABION) OUTFALL NOTES**
- Gabions shall be manufactured by Maccaferri Gabions Inc. or approved equal. The installation shall follow the manufacturer's specifications.
  - The gabion baskets shall be PVC coated and filled with clean 4" - 7" stone. The Gabion stone shall be carefully placed to create tight interlocking aggregate with minimal voids.
  - Two sheets of 8 mil or greater vinyl/plastic sheeting shall be placed on the buried upstream (forebay side) face of the baskets next to the filter fabric. Mirafi's MCF-1212 impervious fabric may also be used in lieu of the plastic sheeting. Use 2 ft overlap.
  - 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 appropriate wiring.

FOREBAY GABION SCHEDULE		
MANUF. LETTER CODE	QUANTITY	DIMENSIONS
C	2	12'x3'x3'
B	1	9'x3'x3'
H	2	9'x3'x1'

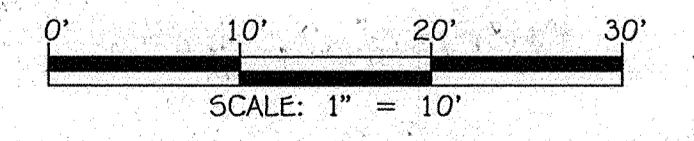
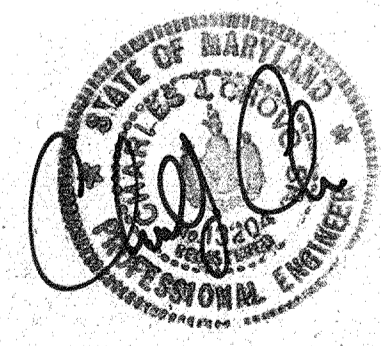
**FOREBAY OUTFALL (GABION) DETAIL & PROFILE**  
 SCALE:  
 HORZ: 1" = 10'  
 VERT: 1" = 1'



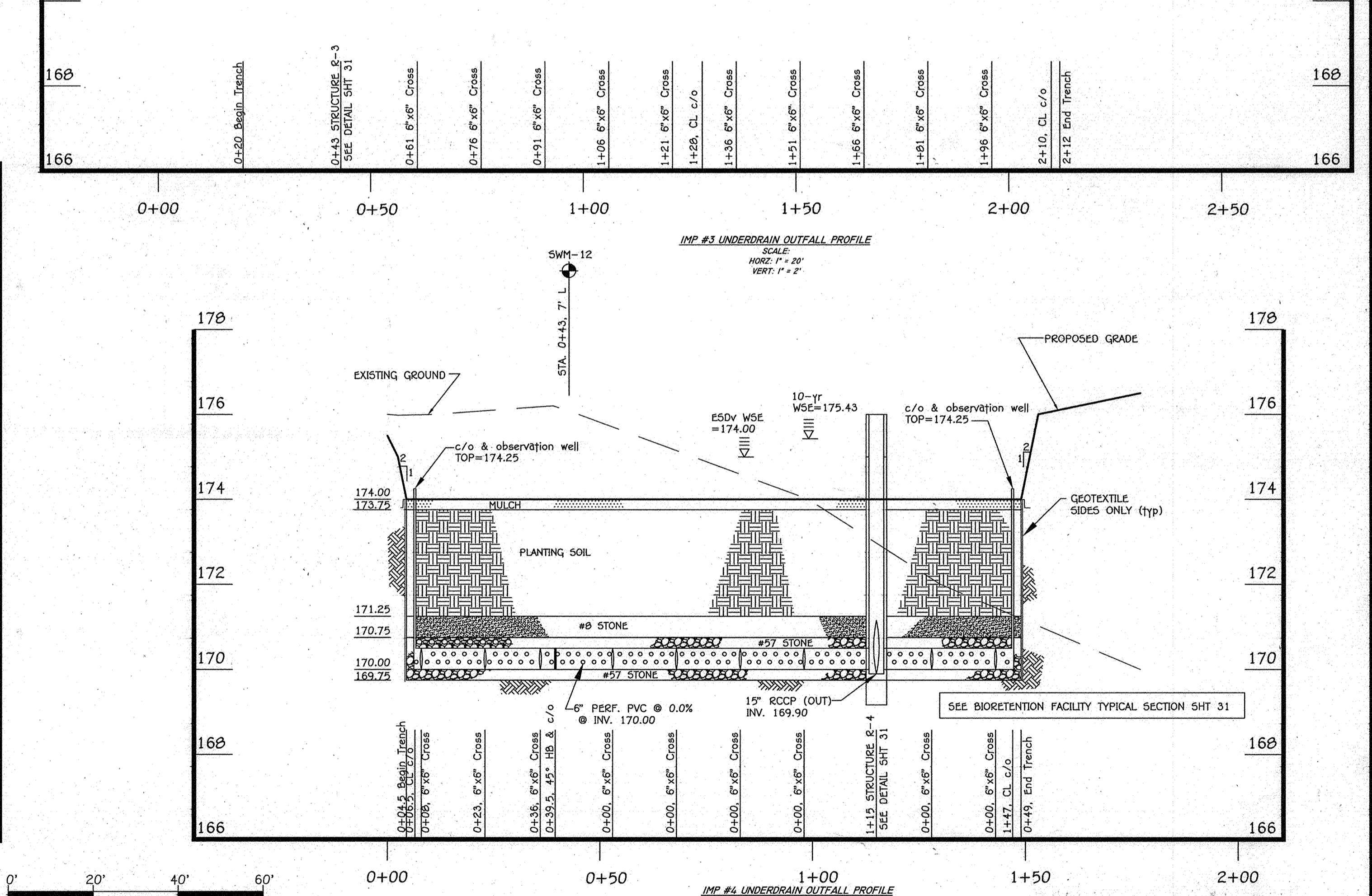
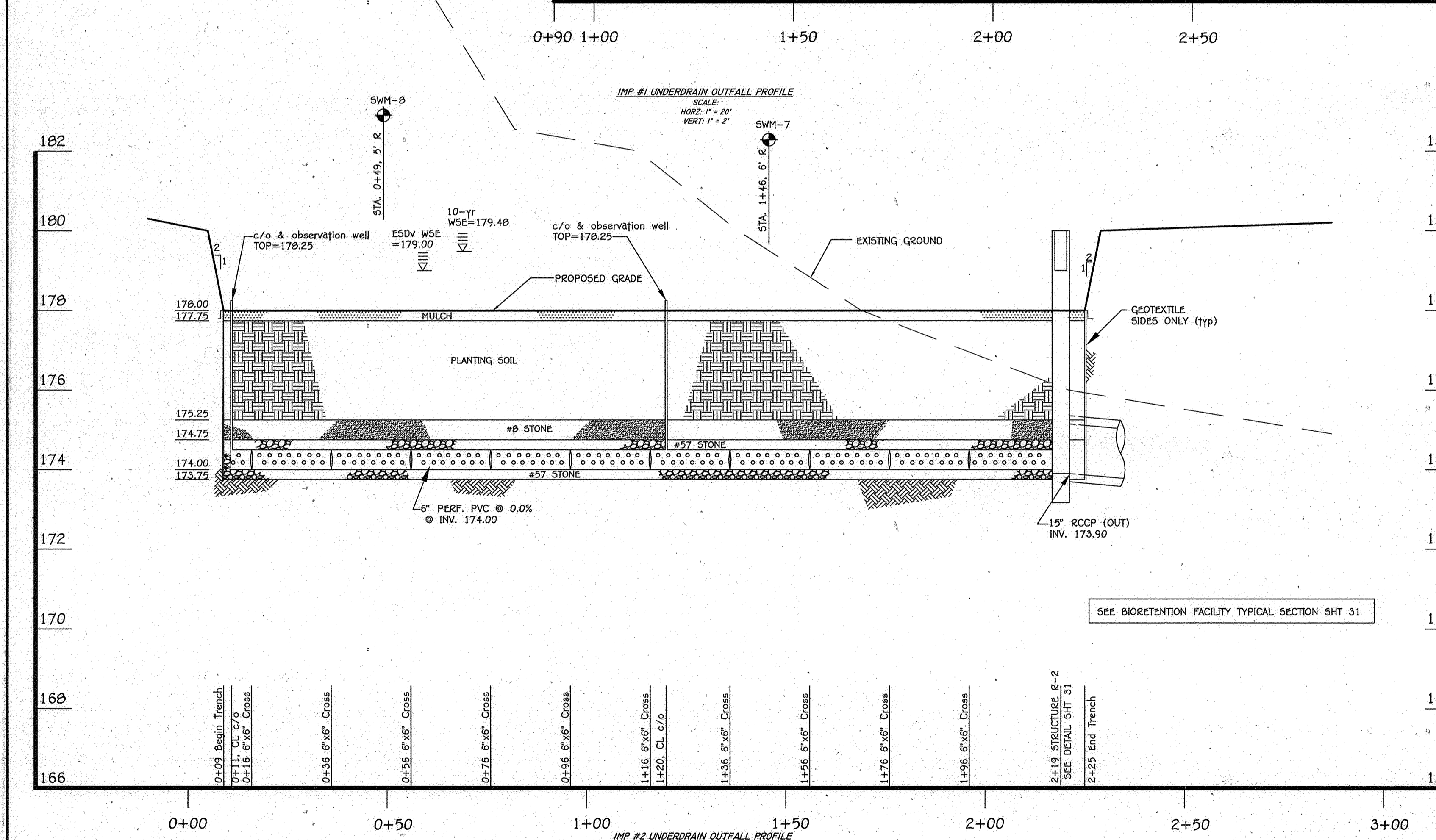
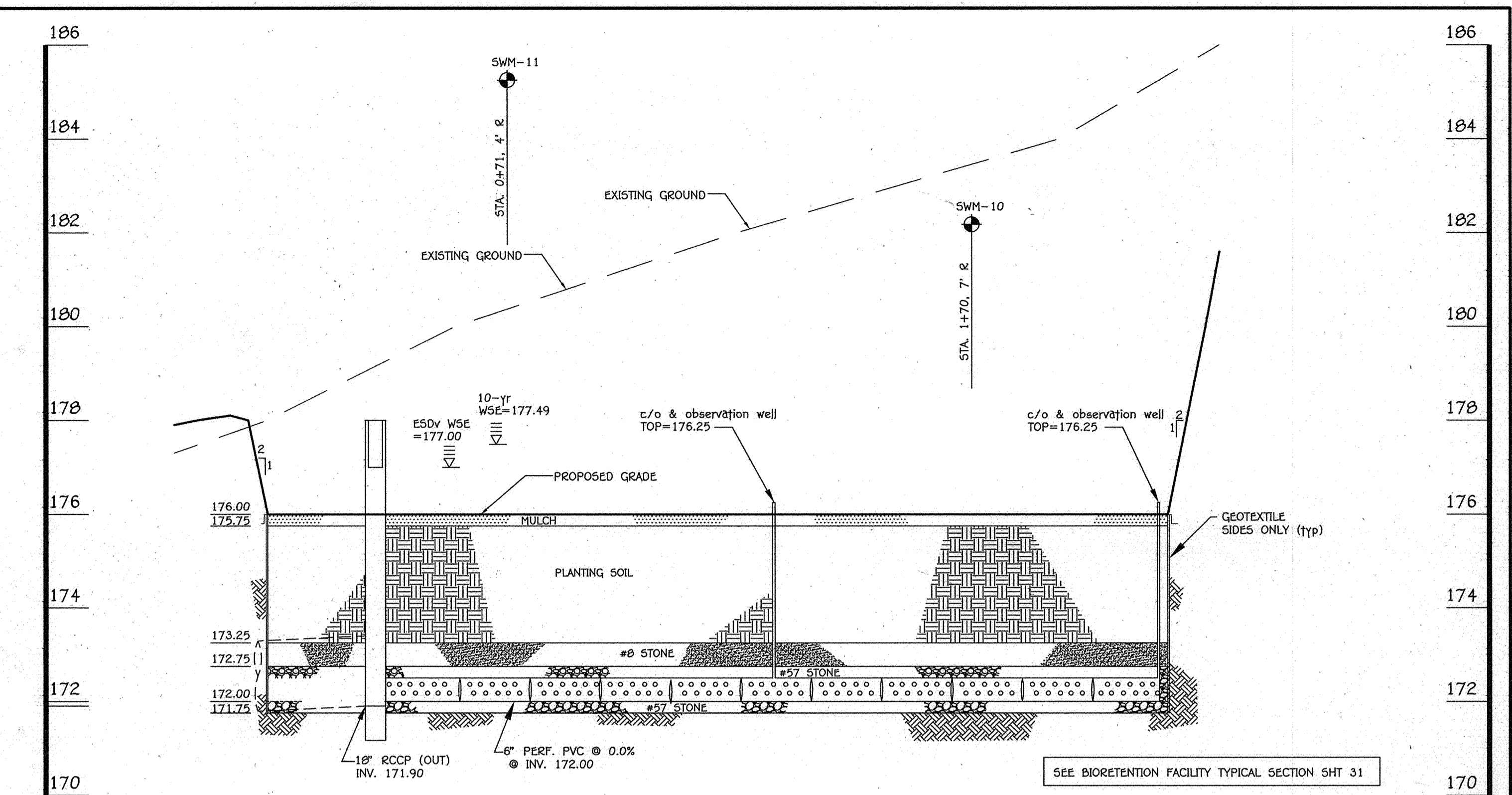
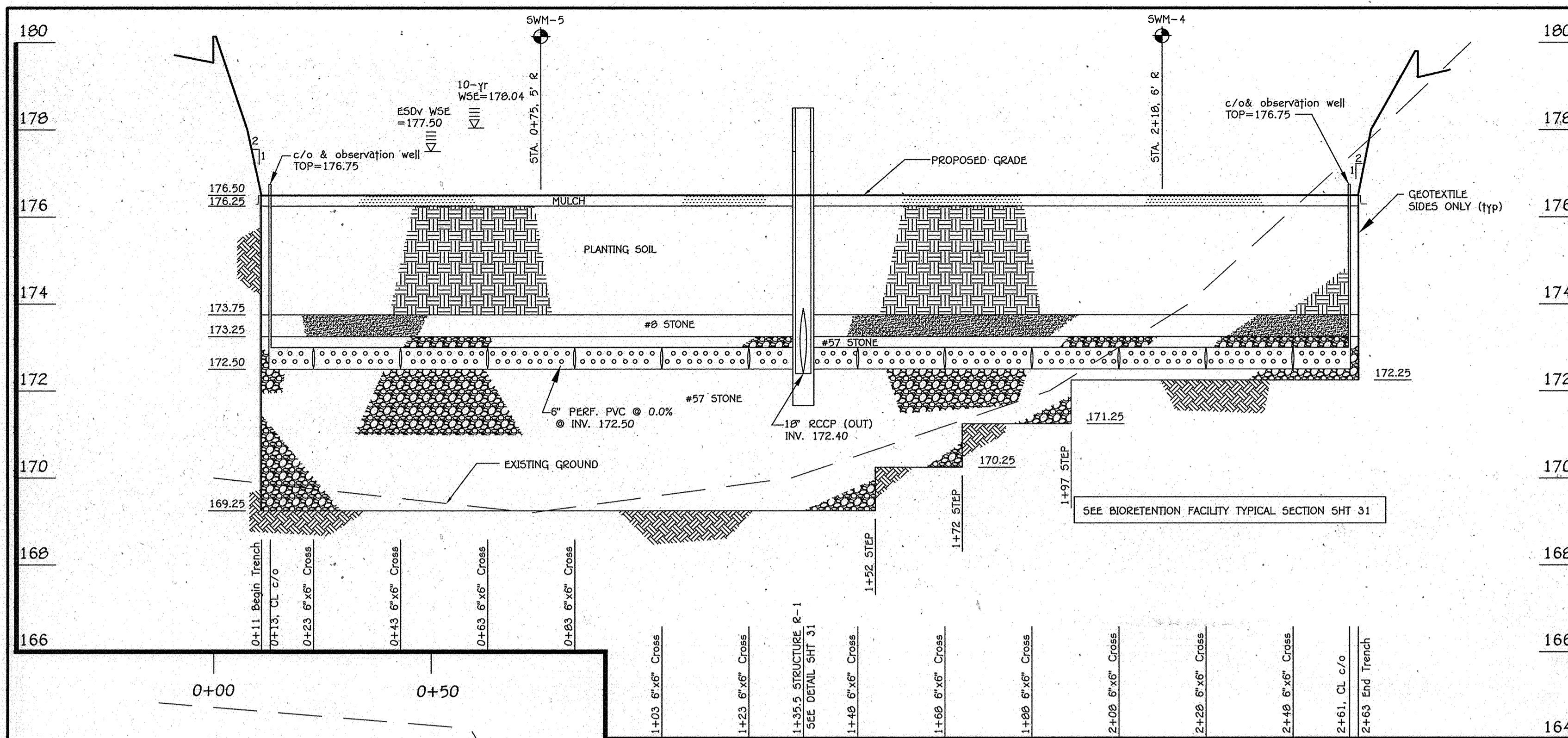
- NOTES:**
- Riser joints shall join evenly and be watertight. Parge joints after installation.
  - The referenced joint and joint sealant material is used by Frederick Precast, Inc. Similar joints may be used with shop drawing approval by the engineer.



- NOTE:** PROVIDE MASTIC JOINT SEALER FROM OUTSIDE OF PIPE JOINT PRIOR TO INSTALLING BARREL. SPECIFICATION: ASTM C-361
- SWM POND OUTFALL CONCRETE PIPE JOINT DETAIL**  
 NOT TO SCALE



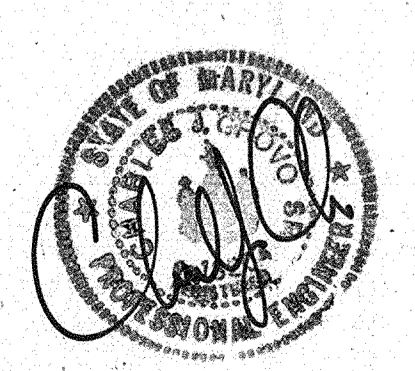
<b>FISHER, COLLINS &amp; CARTER, INC.</b> CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS CENTRAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE ELLETT CITY, MARYLAND 21042 (410) 461-2295	<b>ENGINEER'S CERTIFICATE</b> "I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District." Signature of Engineer: <i>Charles J. Casvo</i> Date: 4/4/12 Signature of Developer: <i>Bruce Gist</i> Date: 4/2/12	"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012." Signature: <i>Charles J. Casvo</i> Date: 4/4/12 CHARLES J. CASVO, SR., P.E.	PREPARED FOR HOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 Maryland Route 108 Ellicott City, Maryland 21042 Attention: Bruce Gist 410-313-6798	<b>ADDRESS CHART</b> LOT/PARCEL# P.0569 STREET ADDRESS 6501 DUCKETTS LANE ELK RIDGE, MD 21075	<b>STORMWATER MANAGEMENT POND DETAILS (2)</b> <b>ELEMENTARY SCHOOL #41</b> <b>THE LEGACY AT DUCKETTS RIDGE</b> PARCEL A ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: MARCH 22, 2012 SHEET 29 OF 39
	<b>DEVELOPER'S CERTIFICATE</b> "I/we certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District." Signature of Developer: <i>Bruce Gist</i> Date: 4/2/12	"This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT." Signature: <i>John R. Robertson</i> Date: 4/5/12 JOHN R. ROBERTSON Chief, Development Engineering Division	<b>PERMIT INFORMATION CHART</b> SUBDIVISION NAME ELEMENTARY SCHOOL #41 SECTION/AREA N/A LOT/PARCEL NO. P.0569 PLAT# OR L/F - GRID# - ZONING R-12 TAX MAP# 37 ELECT. DIST. FIRST CENSUS TRACT 6012.01		



IMP #2 UNDERDRAIN OUTFALL PROFILE  
SCALE: HORIZ. 1" = 20' VERT. 1" = 2'

IMP #4 UNDERDRAIN OUTFALL PROFILE  
SCALE: HORIZ. 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) 461-3995



Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204. Expiration Date: November 3, 2012.  
*Charles J. Cervino, Sr., P.E.*  
CHARLES J. CERVINO, SR., P.E.  
1/27/12 DATE

DATE	DESCRIPTION	REVISION BLOCK
9/22/13	REVISED SHEET NUMBERS FROM 30 TO 39	

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Director - Department of Planning and Zoning *Paul R. Wyle* 5/12/12  
Chief, Division of Land Development *Kat Shindler* 5/12/12  
Chief, Development Engineering Division *[Signature]* 5/4/12

PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
10910 Maryland Route 108  
Ellicott City, Maryland 21042  
Attention: Bruce Gist  
410-313-6796

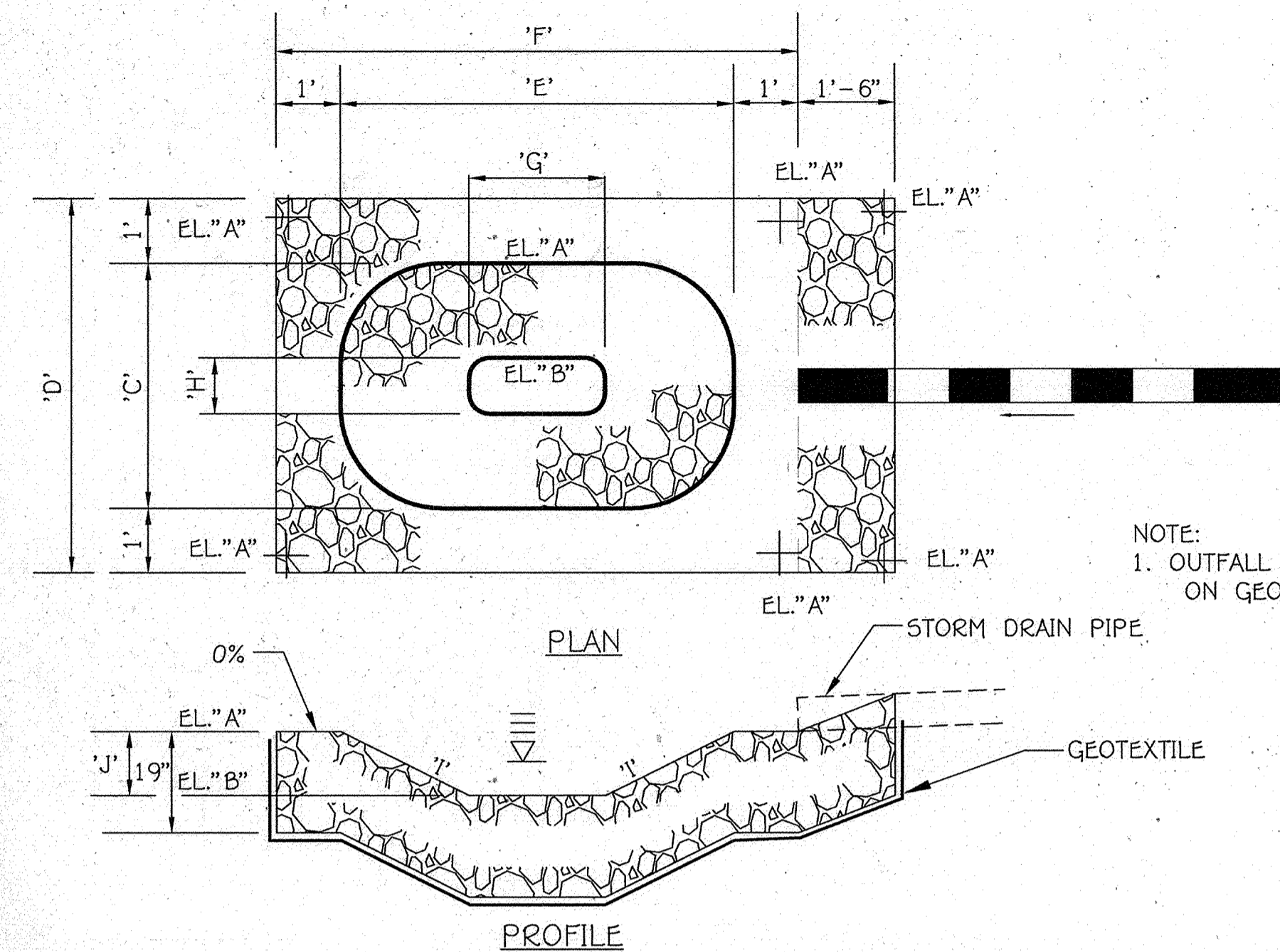
ADDRESS CHART	
LOT/PARCEL#	P.0569
STREET ADDRESS	6501 DUCKETTS LANE ELKRIDGE, MD 21075

STORMWATER IMP #1 - #4 PROFILES  
**ELEMENTARY SCHOOL #41**  
THE LEGACY AT DUCKETTS RIDGE  
PARCEL A

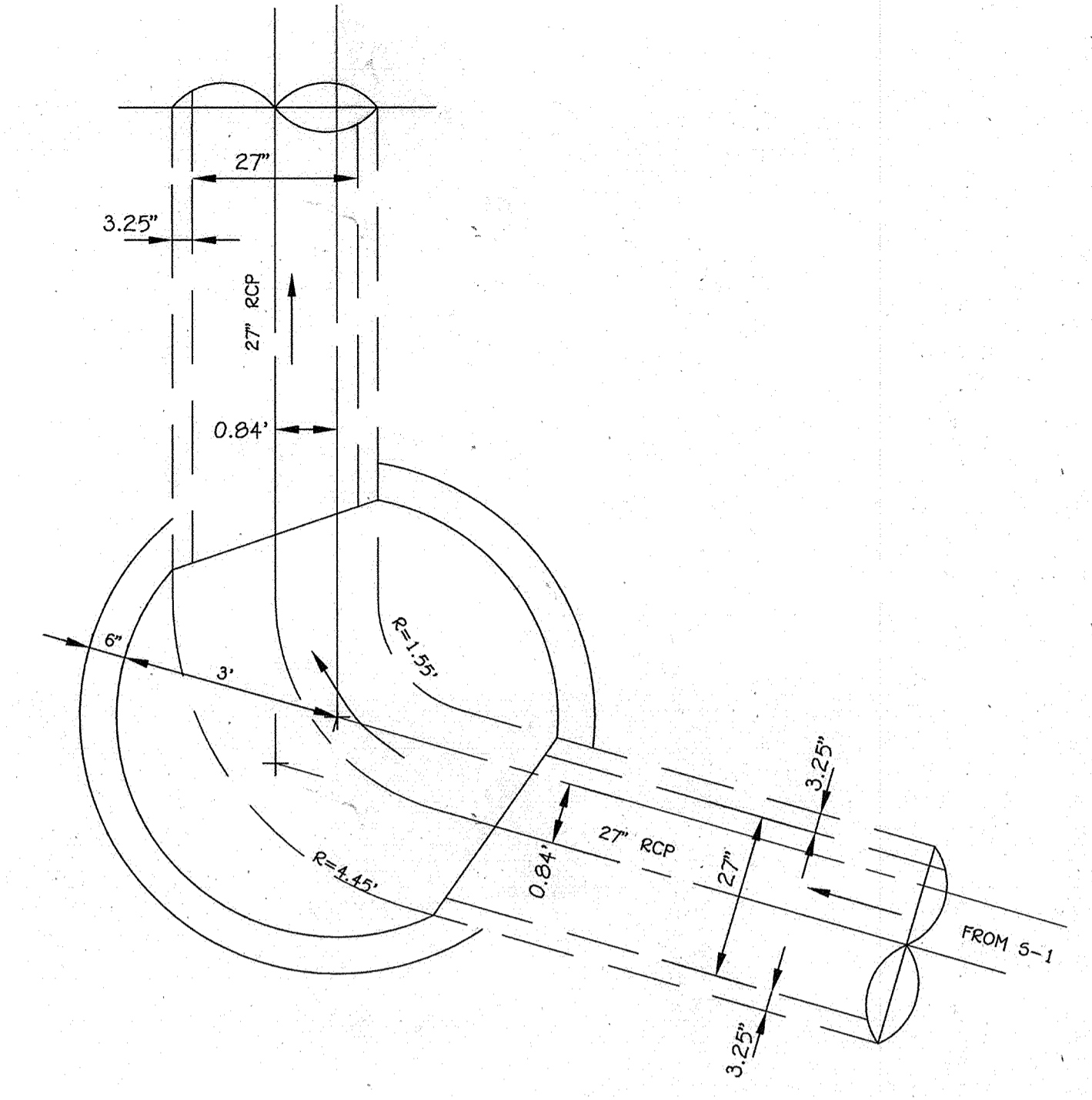
ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: APRIL 23, 2012  
SHEET 30 OF 39

END SECTION	A	B	C	D	E	F	E	E	E	E
E-1	161.00	160.00	8'	10'	10'	12'	4'	2'	3:1	12"
E-5	178.00	177.50	3'	5'	4'	6'	2'	1'	2:1	6"
E-6	178.00	177.50	3'	5'	4'	6'	2'	1'	2:1	6"
E-7	178.00	177.50	3'	5'	4'	6'	2'	1'	2:1	6"
E-8	178.00	177.50	6'	8'	11'	13'	9'	4'	2:1	6"
E-9	176.00	177.50	3'	5'	4'	6'	2'	1'	2:1	6"
E-10	176.00	175.50	3'	5'	4'	6'	2'	1'	2:1	6"

NOTE:  
1. OUTFALL SUMP MATERIALS: MSHA CL I RIPRAP ON GEOTEXTILE, 19" THICK.



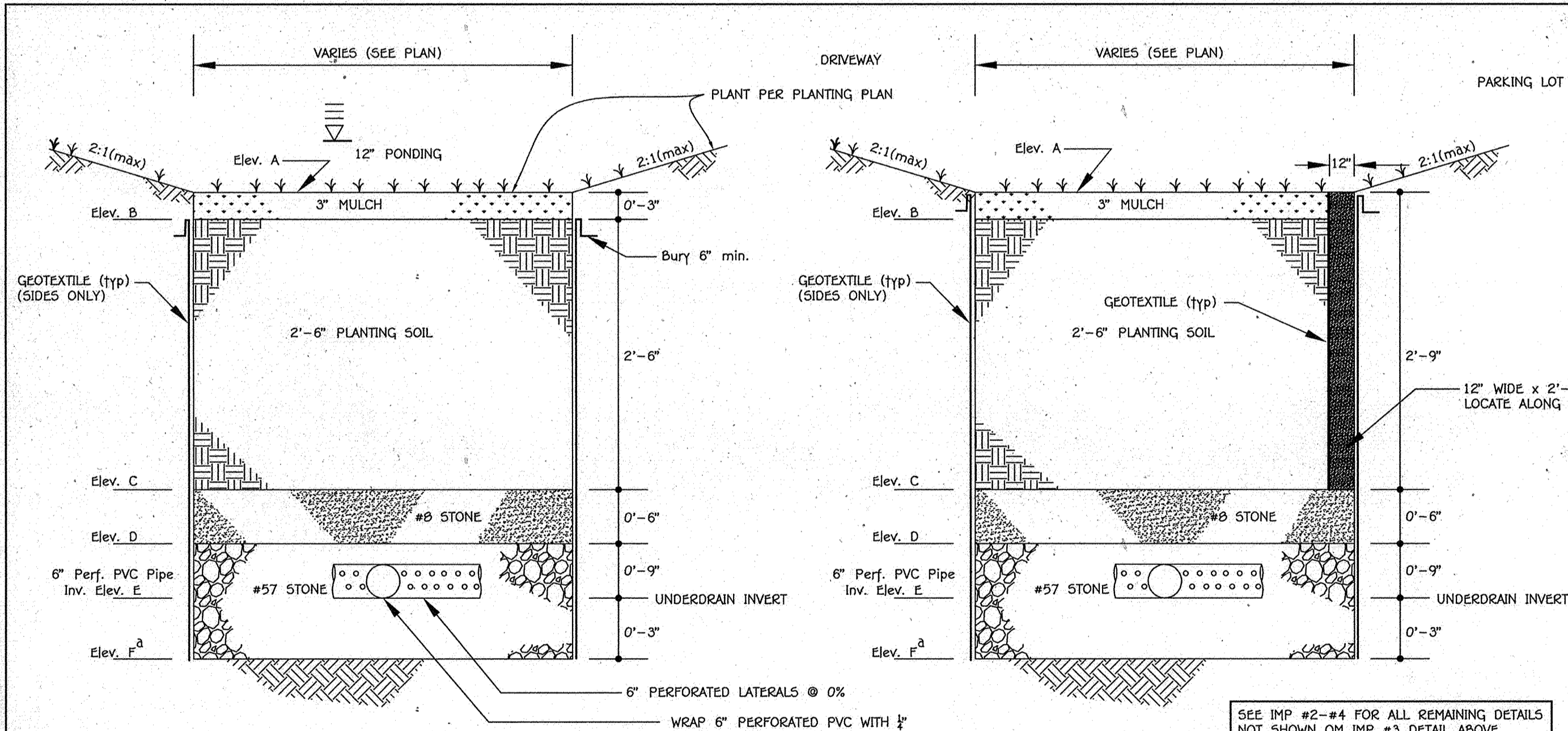
**PLUNGE POOL DETAIL**  
NTS



**MANHOLE M-16 CHANNEL CONFIGURATION**  
SCALE: 1" = 2'

	IMP #1	IMP #2	IMP #3	IMP #4
Elev. A	176.50	178.00	176.00	174.00
Elev. B	176.25	177.75	175.75	173.75
Elev. C	173.75	175.25	173.25	171.25
Elev. D	173.25	174.75	172.75	170.75
Elev. E	172.50	174.00	172.00	170.00
Elev. F	172.25 <sup>a</sup>	173.75	171.75	169.75

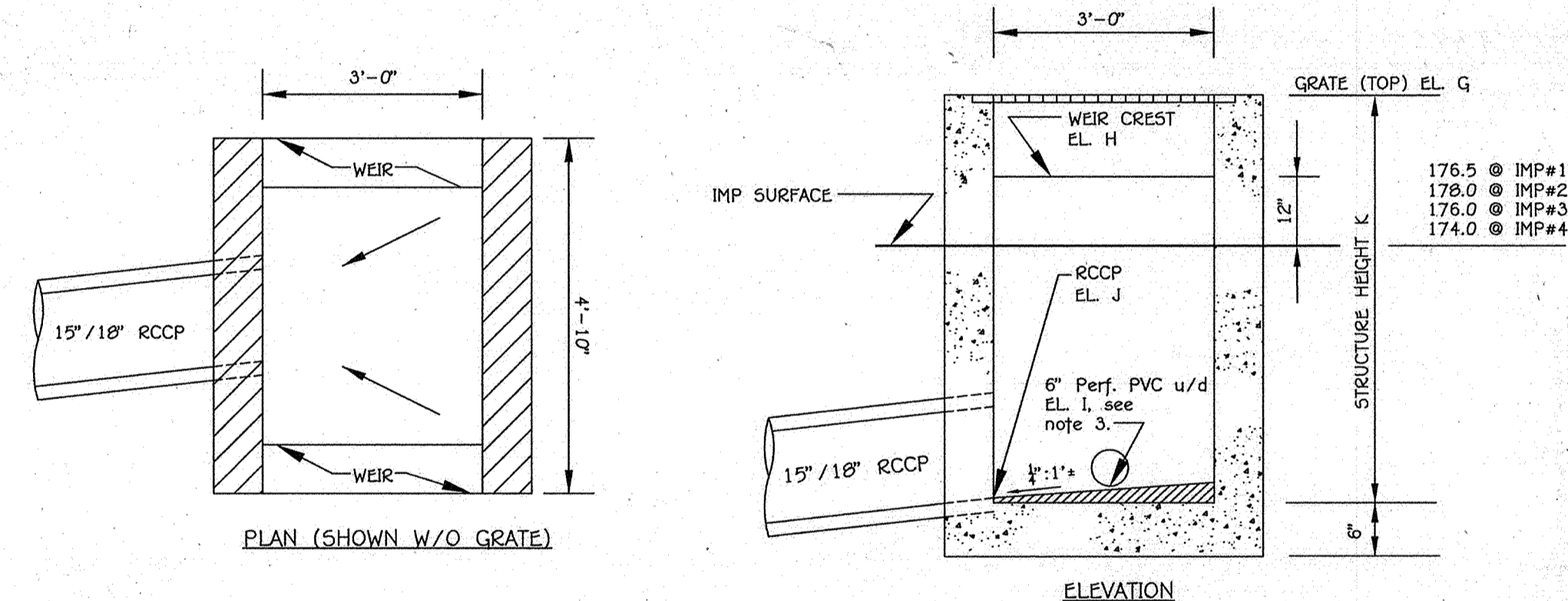
<sup>a</sup> Elevation F for this IMP varies. See IMP #1 profile sheet 30 for the varying depth of MD 57 stone.



**IMP #2, #3 AND #4 BIORETENTION FACILITY (F-6) TYPICAL SECTION**

**IMP #1 BIORETENTION FACILITY (F-6) TYPICAL SECTION**

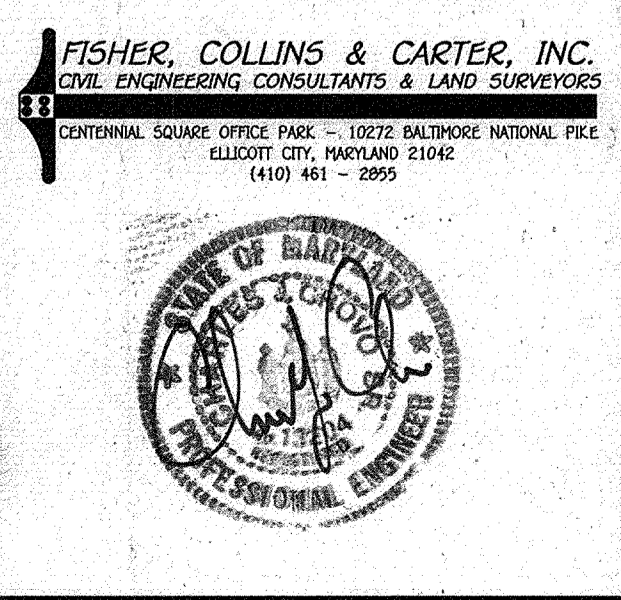
**IMP BIORETENTION FACILITY (F-6) TYPICAL SECTION**  
NTS



	R-1 (IMP#1)	R-2 (IMP #2)	R-3 (IMP #3)	R-4 (IMP #4)	
ELEV. G	178.50	180.00	178.00	176.00	Top of Grate
ELEV. H	177.50	179.00	177.00	175.00	Weir Crest
ELEV. I	172.50	174.00	172.00	170.00	Inv. 6" Perf. Underdrain (u/d)
ELEV. J	172.40	173.90	171.90	169.90	RCCP Invert Out
ELEV. K	6'-4"	6'-4"	6'-4"	6'-4"	Structure Height

**MODIFIED K-INLET TYPICAL SECTION FOR STRUCTURES R-1, R-2, R-3 & R-4**  
NTS

SCALE: 1" = 2'



**ENGINEER'S CERTIFICATE**  
"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."  
Signature of Engineer: *Charles J. Grovo* Date: 4/12/12

**DEVELOPER'S CERTIFICATE**  
"I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance of a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."  
Signature of Developer: *Brian Curt* Date: 4/12/12

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012."  
Signature: *Charles J. Grovo* Date: 4/12/12  
CHARLES J. GROVO, SR., P.E.

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.  
Signature: *John Robert* Date: 4/12/12  
John Robert, Howard SCD

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
Director - Department of Planning and Zoning: *Mark J. Lyle* Date: 5/14/12  
Chief, Division of Land Development: *Kit Sanderson* Date: 5/14/12  
Chief, Development Engineering Division: *William* Date: 5/14/12

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

ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075

PERMIT INFORMATION CHART				
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.		
ELEMENTARY SCHOOL #41	N/A	P.0569		
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.
-	-	R-12	37	FIRST
		CENSUS TRACT		
		6012.01		

**STORMWATER MANAGEMENT**  
**IMP #1-#4 DETAILS**  
**ELEMENTARY SCHOOL #41**  
**THE LEGACY AT DUCKETTS RIDGE**  
PARCEL A

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: AS SHOWN DATE: MARCH 22, 2012

SHEET 31 OF 39

- REFER TO THE 2000 MARYLAND SWM DESIGN MANUAL FOR BIORETENTION SPECIFICATIONS (PG. B.3.7) FOR INFORMATION NOT LISTED HEREIN AND FOR ADDITIONAL INFORMATION.
- THE BIORETENTION IMP MATERIALS ARE AS FOLLOWS:
  - PLANTING SOIL: PER PLANTING SOIL SPECIFICATIONS OUTLINED IN MDE'S 2000 SWM MANUAL.
  - PVC PIPE: SCHEDULE 40, PERFORATED PIPE SHALL HAVE NO SLOPE (0.0%).
  - SAND: ASTM C33 "CONCRETE SAND" - VERY CLEAN AND FREE OF DIRT AND DEBRIS.
  - STONE AGGREGATE: MSHA SPECIFICATIONS AS SHOWN ON TYPICAL SECTION; AGGREGATE MUST BE FREE OF FINES, DIRT & DEBRIS.
  - GEOTEXTILE: PER MDE SWM MANUAL OR 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 MICRO-BIORETENTION IMPs 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 IMP.
- GEOTEXTILE (FILTER FABRIC) SHALL BE PLACED AGAINST EXCAVATED 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 OBTAIN INDEPENDENT CERTIFICATION THAT THE SOILS AND OTHER MATERIALS MEET THE SPECIFICATIONS DURING THE AS-BUILT STAGE.
- THE BIORETENTION FACILITIES SHALL BE VEGETATED (TOP LEVEL SURFACE ONLY) IN ACCORDANCE WITH THE PLANTING SCHEDULE AND PLANT PER MDE SPECIFICATIONS IN THE 2000 SWM DESIGN MANUAL.
- USE PERFORATED PVC PIPE INSIDE THE BIORETENTION FACILITIES AND WRAP PERFORATED PIPE WITH 1/4" HARDWARE CLOTH TO PREVENT AGGREGATE FROM ENTERING THE PERFORATIONS.
- INSTALL CLEANOUTS (SOLID PVC PIPE) AS SHOWN. THE CLEANOUT TOP SHALL EXTEND 2-3" ABOVE TOP OF MULCH.

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

**ROUTINE MAINTENANCE**

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

**NON-ROUTINE MAINTENANCE**

- Structural components of the pond such as the dam, the riser, and the pipes shall be repaired immediately upon the detection of any damage. The components shall be inspected during routine maintenance operations.
- Sediment shall be removed from the micro-pool and forebay when either one is half full of sediment, or when deemed necessary for aesthetic reasons, upon approval from the Department of Public Works.

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

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

**Site Preparation**  
Areas designated for borrow areas, embankment, and structural works shall be cleared, grubbed and stripped of topsoil. All trees, vegetation, roots and other objectionable material shall be removed. Channel banks and sharp breaks shall be sloped to no steeper than 1:1. All trees shall be cleared and grubbed within 15 feet of the toe of the embankment. Areas to be covered by the reservoir will be cleared of all trees, brush, logs, fences, rubbish and other objectionable material unless otherwise designated on the plans. Trees, brush, and stumps shall be cut approximately level with the ground surface. For dry stormwater management ponds, a minimum of a 25-foot radius around the inlet structure shall be cleared. All cleared and grubbed material shall be disposed of outside and below the limits of the dam and reservoir as directed by the owner or his representative. When specified, a sufficient quantity of topsoil will be stockpiled in a suitable location for use on the embankment and other designated areas.

**Earth Fill**  
Material - The fill material shall be taken from approved designated borrow areas. It shall be free of roots, stumps, wood, rubbish, stones greater than 6", frozen or other objectionable materials. Fill material for the center of the embankment, and cut off trench shall conform to Unified Soil Classification GC, SC, CH, or CL and must have at least 30% passing the #200 sieve. Consideration may be given to the use of other materials in the embankment if designed by a geotechnical engineer. Such special designs must have construction supervised by a geotechnical engineer. Materials used in the outer shell of the embankment must have the capability to support vegetation of the quality required to prevent erosion of the embankment.  
Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8 inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.  
Compaction - The movement of the hauling and spreading equipment over the fill shall be controlled so that the entire surface of each lift shall be traversed by not less than one tread track of heavy equipment or compaction shall be achieved by a minimum of four complete passes of a sheepsfoot, rubber tired or vibratory roller. Fill material shall contain sufficient moisture such that the required degree of compaction will be obtained with the equipment used. The fill material shall contain sufficient moisture so that if formed into a ball it will not crumble, yet not be so wet that water can be squeezed out.  
The minimum required density shall not be less than 95% of maximum dry density with a moisture content within ±2% of the optimum. Each layer of fill shall be compacted as necessary to obtain that density, and is to be certified by the Engineer at the time of construction. All compaction is to be determined by AASHTO Method T-99 (Standard Proctor).  
Cut Off Trench - The cutoff trench shall be excavated into impervious material along or parallel to the centerline of the embankment as shown on the plans. The bottom width of the trench shall be governed by the equipment used for excavation, with the minimum width being four feet. The depth shall be at least four feet below existing grade or as shown on the plans. The side slopes of the trench shall be 1 to 1 or flatter. The backfill shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability.  
Embankment Core - The core shall be parallel to the centerline of the embankment as shown on the plans. The top width of the core shall be a minimum of four feet. The height shall extend up to at least the 10 year water elevation or as shown on the plans. The side slopes shall be 1 to 1 or flatter. The core shall be compacted with construction equipment, rollers, or hand tampers to assure maximum density and minimum permeability. In addition, the core shall be placed concurrently with the outer shell of the embankment.

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

**Pipe Conduits**  
All pipes shall be circular in cross section.  
Reinforced Concrete Pipe - All of the following criteria shall apply for reinforced concrete pipe:  
1. Materials - Reinforced concrete pipe shall have bell and spigot joints with rubber gaskets and shall equal or exceed ASTM C-361.  
2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding / cradle for their entire length. This bedding / cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its out-side diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Structure Backfill" section of this standard. Gravel bedding is not permitted.  
3. Laying pipe - Bell and spigot pipe shall be placed with the bell end upstream. Joints shall be made in accordance with recommendations of the manufacturer of the material. After the joints are sealed for the entire line, the bedding shall be placed so that all spaces under the pipe are filled. Care shall be exercised to prevent any deviation from the original line and grade of the pipe. The first joint must be located within 4 feet from the riser.  
4. Backfilling shall conform to "Structure Backfill".  
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.  
Plastic Pipe - The following criteria shall apply for plastic pipe:  
1. Materials - PVC pipe shall be PVC-1120 or PVC-1220 conforming to ASTM D-1785 or ASTM D-2241. Corrugated High Density Polyethylene (HDPE) pipe, couplings and fittings shall conform to the following: 4" - 10" inch pipe shall meet the requirements of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirements of AASHTO M294 Type S.  
2. Joints and connections to anti-seep collars shall be completely watertight.  
3. Bedding - The pipe shall be firmly and uniformly bedded throughout its entire length. Where rock or soft, spongy or other unstable soil is encountered, all such material shall be removed and replaced with suitable earth compacted to provide adequate support.  
4. Backfilling shall conform to "Structure Backfill".  
5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings.  
Drainage Diaphragms - When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

**OPERATION AND MAINTENANCE SCHEDULE FOR BIORETENTION IMPs #1 - #4**

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 THE 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-SEEDING.
  - 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 MAY BE NEEDED DURING PROLONGED DRY PERIODS.

**GENERAL STORMWATER MANAGEMENT NOTES**

- STORMWATER MANAGEMENT HAS BEEN PROVIDED WITH THREE (3) MICRO-BIORETENTION FACILITIES. PLEASE REFER TO THE SWM REPORT PREPARED BY FISHER, COLLINS, & CARTER, INC. DATED JANUARY 16, 2012.
- ALL CONSTRUCTION SHALL MEET THE LATEST EDITION OF THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS, SMALL EARTHEN DAM SPECIFICATION MD-378, 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 SHEET C-15.
- 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.
- SHOULD THE CONTRACTOR DISCOVER DISCREPANCIES BETWEEN THE PLANS AND FIELD CONDITIONS, THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY TO RESOLVE THE SITUATION. IF THE CONTRACTOR MAKES FIELD CORRECTIONS OR ADJUSTMENTS WITHOUT NOTIFYING THE ENGINEER, 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 IMPs MAY BE GRADED, HOWEVER, THE PLANTING SOIL IN THE IMPs SHALL NOT BE INSTALLED UNTIL ALL UPSTREAM AREAS HAVE BEEN STABILIZED (i.e., THICK GRASS COVER, OR PAVED).
- THE STORMWATER MANAGEMENT BIORETENTION IMPs FOR THIS PROJECT WILL BE PRIVATELY OWNED AND MAINTAINED.
- THE IMPs SHALL BE AT LEAST 10 FT FROM THE SCHOOL BUILDING (TEMPORARY BUILDINGS EXCLUDED) AS MEASURED FROM THE 1 FT DEPTH WATER SURFACE ELEVATION TO THE BUILDING.
- ALL ROOF LEADER OUTFALLS SHALL BE CONSTRUCTED PER THE ROOF LEADER OUTFALL SUMP DETAIL AS SHOWN ON THIS SHEET.

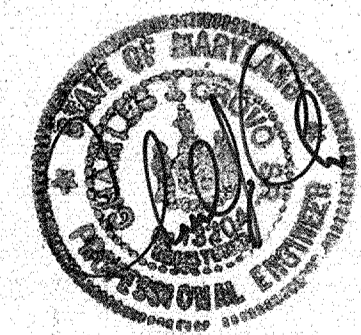
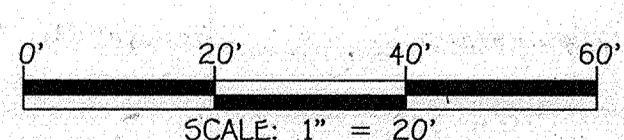
**Concrete**  
Concrete shall meet the requirements of Maryland Department of Transportation, State Highway Administration Standard Specifications for Construction and Materials, Section 414, Mix No. 3.

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

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

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

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



<p><b>ENGINEER'S CERTIFICATE</b></p> <p>"I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."</p> <p><i>Charles J. Crovo</i> (Signature) Signature of Engineer 1/4/12 (Date) DATE</p> <p>Charles J. Crovo, Sr., P.E. (Name) 1/4/12 (Date) DATE</p>		<p>*Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012.</p>	
<p><b>DEVELOPER'S CERTIFICATE</b></p> <p>"I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."</p> <p><i>Bruce Gist</i> (Signature) Signature of Developer 4/2/12 (Date) DATE</p>		<p>This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.</p> <p><i>John K. Roberts</i> (Signature) John K. Roberts 4/2/12 (Date) DATE</p>	

DATE	DESCRIPTION	DATE
9/24/13	REVISION SHEET NUMBERS FROM 30 TO 33	
REVISION BLOCK		
APPROVED: DEPARTMENT OF PLANNING AND ZONING		
<i>Frank M. Conley</i> (Signature)	5/14/12 (Date)	
Director - Department of Planning and Zoning	5/14/12 (Date)	
<i>John K. Roberts</i> (Signature)	5/14/12 (Date)	
Chief, Division of Land Development	5/14/12 (Date)	
<i>John K. Roberts</i> (Signature)	5/14/12 (Date)	
Chief, Development Engineering Division	5/14/12 (Date)	

ADDRESS CHART		
LOT/PARCEL#	STREET ADDRESS	
P.0569	6501 DUCKETTS LANE ELK RIDGE, MD 21075	
PERMIT INFORMATION CHART		
SUBMISSION NAME	SECTION/AREA	LOT/PARCEL NO.
ELEMENTARY SCHOOL #41	N/A	P.0569
PLAT# OR L/F	GRID#	ZONING
		R-12
		TAX MAP#
		37
		ELECT. DIST.
		FIRST
		CENSUS TRACT
		6012.01

STORMWATER SPECIFICATIONS & NOTES	
ELEMENTARY SCHOOL #41	
THE LEGACY AT DUCKETTS RIDGE	
PARCEL A	
ZONED R-12	TAX MAP No.: 37
FIRST ELECTION DISTRICT	GRID No.: 12
SCALE: AS SHOWN	PARCEL No.: 569
	HOWARD COUNTY, MARYLAND
	DATE: MARCH 22, 2012
SHEET 32 OF 33	

1/2011110216W/1102-4011 (SHEET 26-33) SWM NOTES.dwg, Model



ELEMENTARY SCHOOL No. 41			
STORMWATER MANAGEMENT SUMMARY TABLE No. 1			
ESD VOLUMES			
		ESDv	Rev
REQUIRED	LOD Required Volume (1)	32,601 cf <sup>a</sup> (w/o credits) 32,184 cf <sup>a</sup> (w/ credits)	1,431 cf (part of ESDv)
	Non-Rooftop Disconnection credits (2)	417 cf	-
PROVIDED	Bioretention IMP's #1-#4 (MDE F-6)	22,473 cf <sup>a</sup>	1,641 cf (part of ESDv)
	Provided ESD Volume (3)		
	Shallow Wetland SWM Pond (MDE W-1)	9,865 cf	0 cf
PROVIDED ESDv TOTALS		22,473 (3) + 9,865 (4) = 32,338 cf 32,338 cf > 32,184 cf (1)	1,641 cf > 1,431 cf

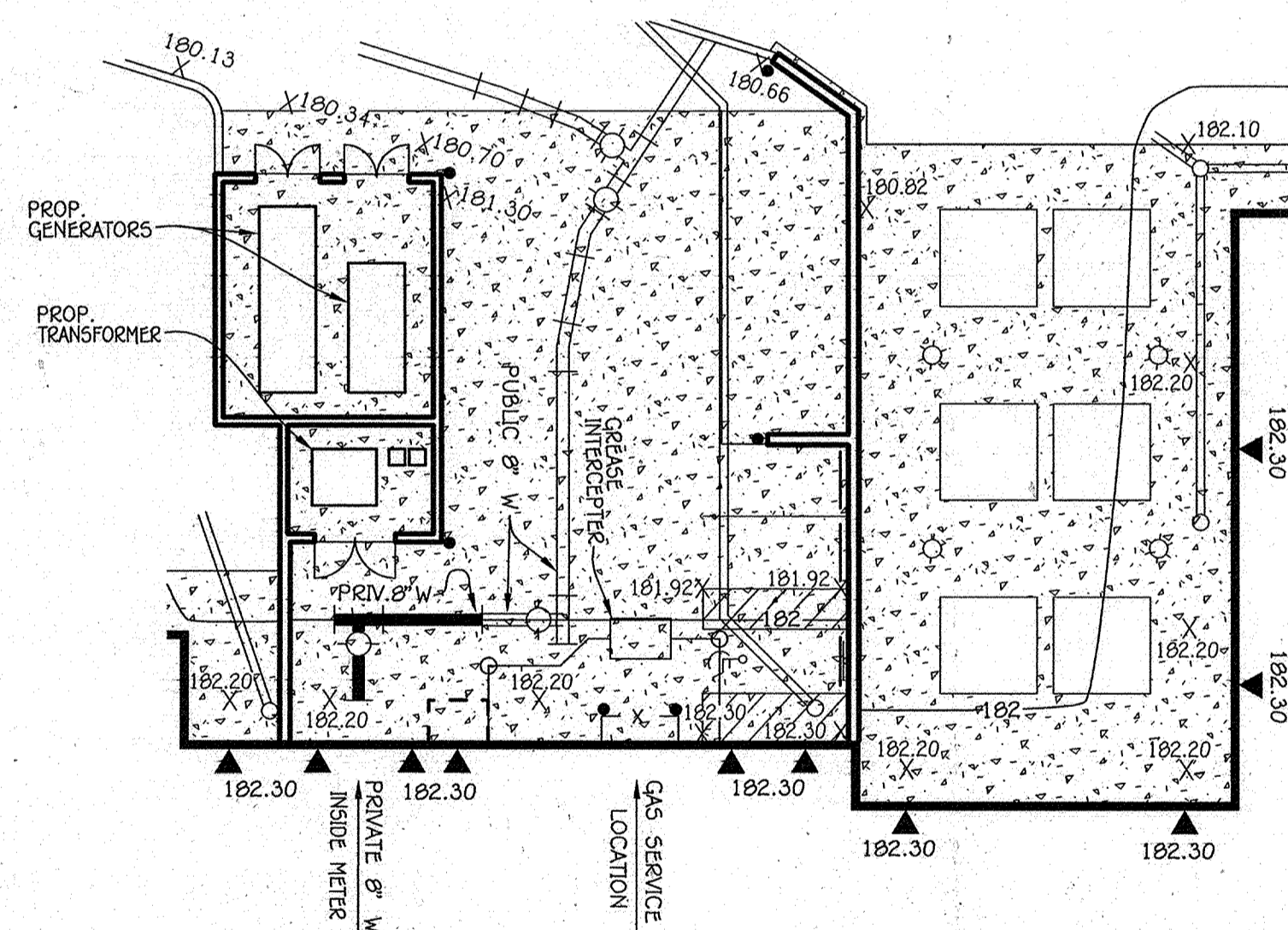
<sup>a</sup> Value based on the sum of the calculated ESDv for all four IMP's plus the Rev subtracted from the ESDv in the pond. The provided IMP storage volume is the sum of 22,027 cf + 446 cf = 22,473 cf.

ELEMENTARY SCHOOL No. 41			
STORMWATER MANAGEMENT SUMMARY TABLE No. 2			
PEAK DISCHARGES @ STUDY POINT C (Trailer Park Exist Inlet)			
	1-yr Peak Q (cfs)	10-year Peak Q (cfs)	100-year Peak Q (cfs)
Existing	10.4	38.1	64.3
Proposed w/o SWM	24.6	65.8	101.6
Proposed w/ SWM	6.8	31.9	56.9

ELEMENTARY SCHOOL No. 41						
STORMWATER MANAGEMENT SUMMARY TABLE No. 3						
BIORETENTION FACILITY IMP (MDE F-6) SUMMARY TABLE						
PEAK DISCHARGES, STORAGE VOLUMES AND ELEVATIONS						
	ESDv		Rev		Peak Qs/WSEs <sup>a</sup>	
	Calculated <sup>b</sup>	Provided <sup>c</sup>	Calculated	Provided <sup>c</sup>	Q <sub>10</sub>	Q <sub>100</sub>
IMP #1	7,976 cf	8,080 cf	310 cf	551 cf	7.3 cfs @ WSE 178.04	13.5 cfs @ WSE 178.28
IMP #2	4,970 cf	5,320 cf	193 cf	353 cf	8.4 cfs @ WSE 179.49	10.3 cfs @ WSE 179.05
IMP #3	6,466 cf	7,610 cf	387 cf	527 cf	8.4 cfs @ WSE 177.49	11.1 cfs @ WSE 177.89
IMP #4	2,615 cf	3,220 cf	102 cf	210 cf	3.7 cfs @ WSE 175.28	6.6 cfs @ WSE 175.43
TOTAL	22,027 cf	24,230 cf	992 cf	1,641 cf		

<sup>a</sup> Value is the calculated ESDv based on DA, %, PE (value is not the 75% ESDv used to size storage).  
<sup>b</sup> Value is based on the provided 12" of storage divided by 75% to show theoretical maximum ESDv stored in the facility. However, only the "calculated" ESDv is used in satisfy volume requirements because the "extra" ESDv does not provide quality management for impervious area that does not drain into the IMP.  
<sup>c</sup> The "provided" Rev value is the key (useful) value and needs to be greater than the calculated Rev for the LOD.  
<sup>d</sup> Taken from TR-20.

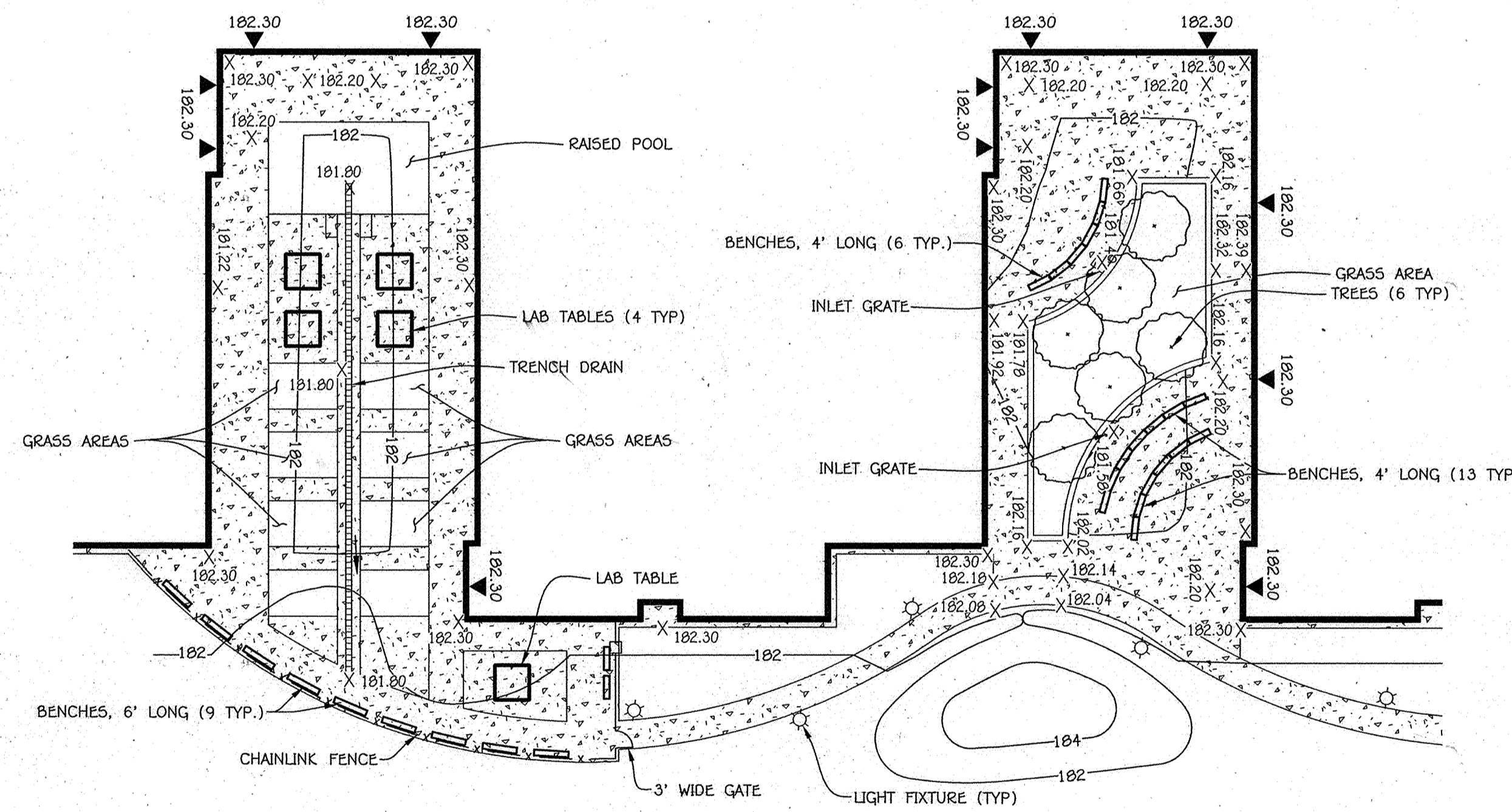
ELEMENTARY SCHOOL No. 41				
STORMWATER MANAGEMENT SUMMARY TABLE No. 4				
PEAK POND DISCHARGES, STORAGE & WATER SURFACE ELEVATIONS				
	Peak Pond Discharges @ str 05 (1)	Peak Bypass Discharges @ xsec 005 (2)	Total (1) + (2) =	SWM POND (W-1) STORAGE @ WSE
1-yr storm	1.8	5.8	7.6 cfs < 10.4 cfs exist Q...OK!	0.209 AF @ 163.92
10-year storm	18.2	19.8	38.0 cfs = 38.1 cfs exist Q...OK!	0.810 AF @ 165.91
100-year storm	29.1	32.8	61.9 cfs < 64.3 cfs exist Q...OK!	1.323 AF @ 167.18



**ELEMENTARY SCHOOL #41**  
F.F. ELEV. 182.30  
► DENOTES BUILDING INGRESS/EGRESS POINTS

**ENLARGEMENT OF SERVICE DRIVE COURTYARD**

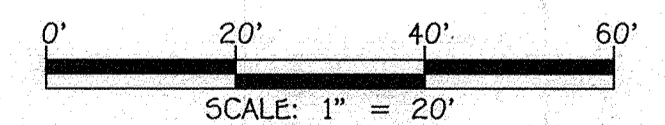
Scale: 1" = 20'



**ELEMENTARY SCHOOL #41**  
F.F. ELEV. 182.30  
► DENOTES BUILDING INGRESS/EGRESS POINTS

**ENLARGEMENT OF COURTYARDS**

Scale: 1" = 20'



FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21042  
(410) 461-2255



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012."

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

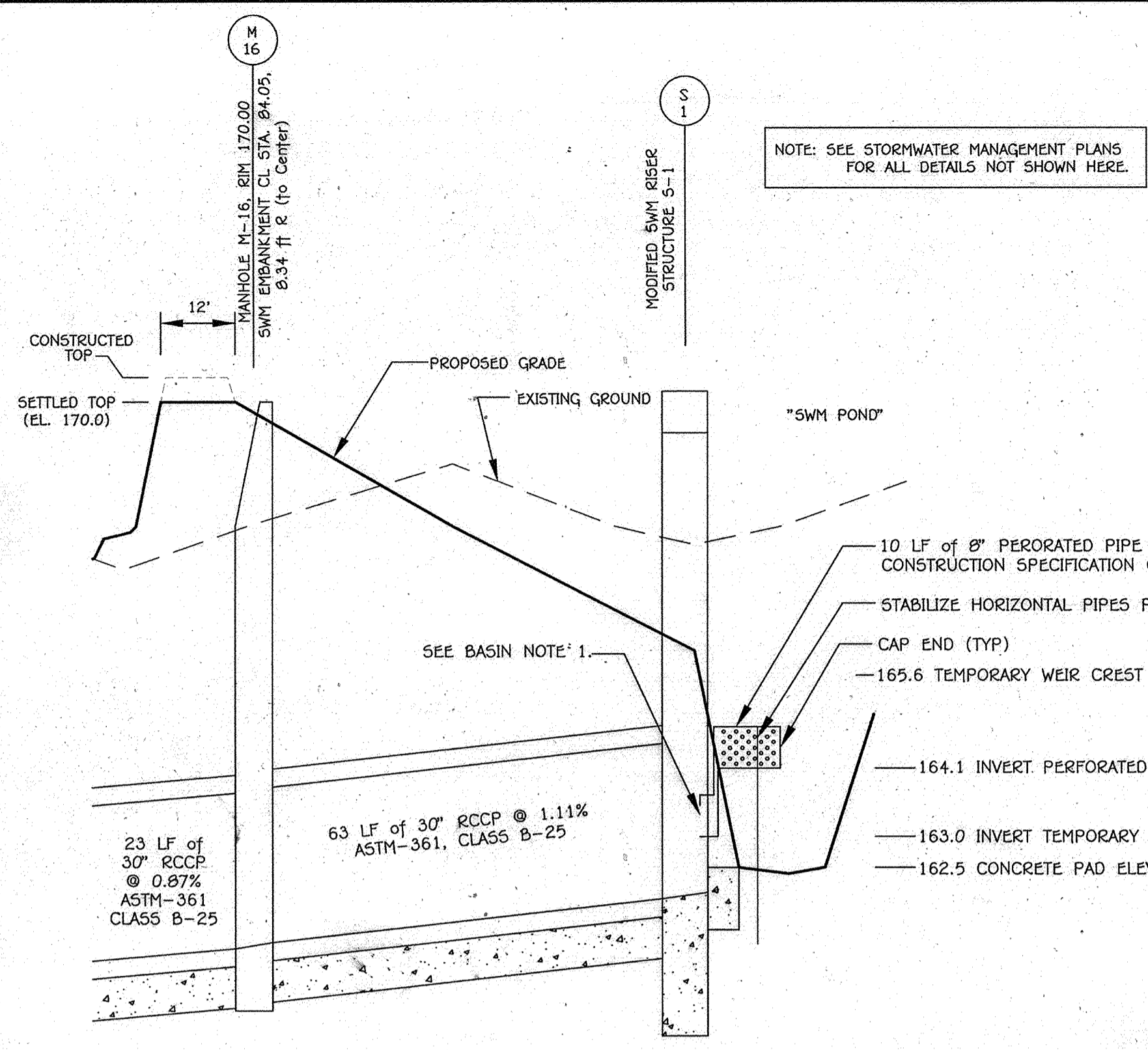
1/20/12  
DATE

9/24/13	REVISION SHEET NUMBERS FROM 38 TO 39
DATE	DESCRIPTION
	REVISION BLOCK
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>David K. Lytle</i>	5/14/12
Director - Department of Planning and Zoning	Date
<i>Paul S. ...</i>	5/14/12
Chief, Department of Land Development	Date
<i>...</i>	5/14/12
Chief, Development Engineering Division	Date

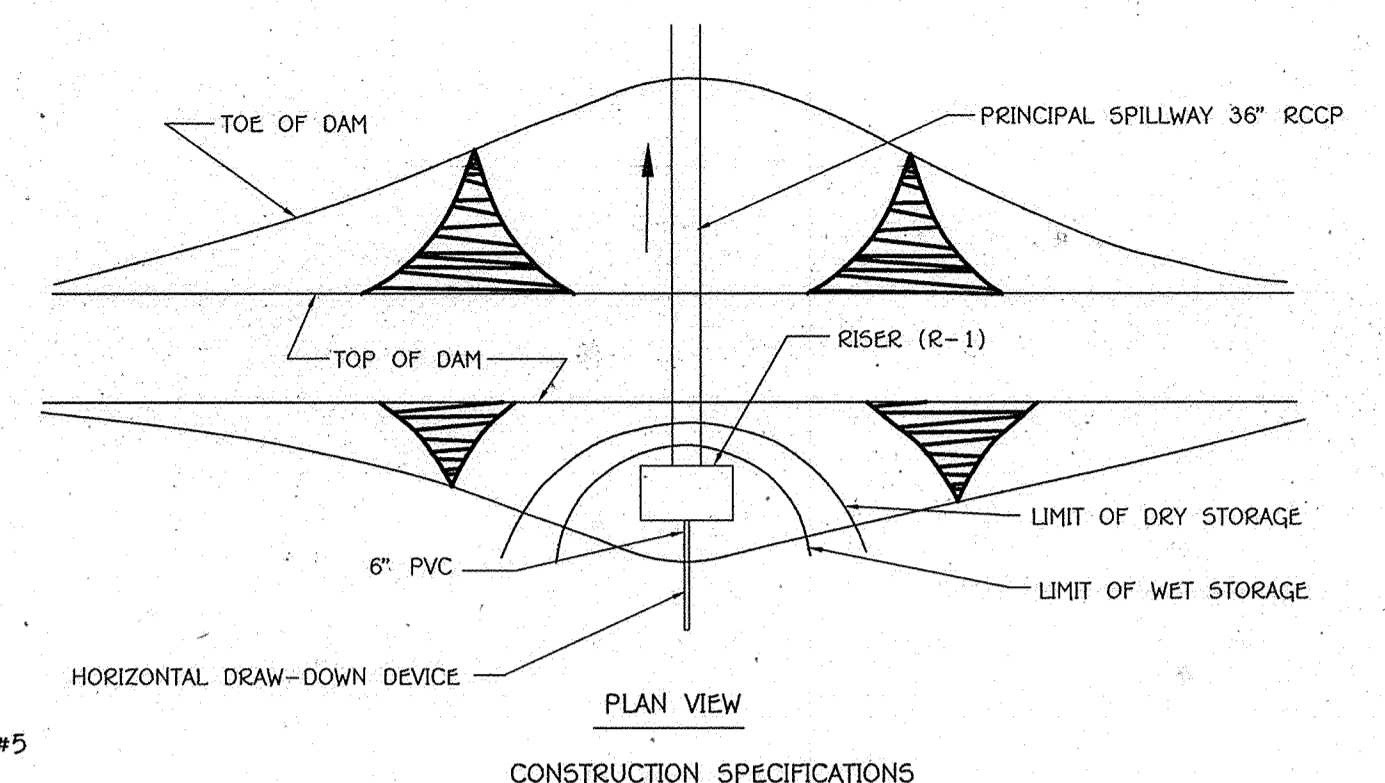
PREPARED FOR  
HOWARD COUNTY PUBLIC SCHOOL SYSTEM  
10910 Maryland Route 108  
Ellicott City, Maryland 21042  
Attention Bruce Gist  
410-313-6798

ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELK RIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBMISSION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
21873-21875	-	R-12	37	FIRST	6012.01

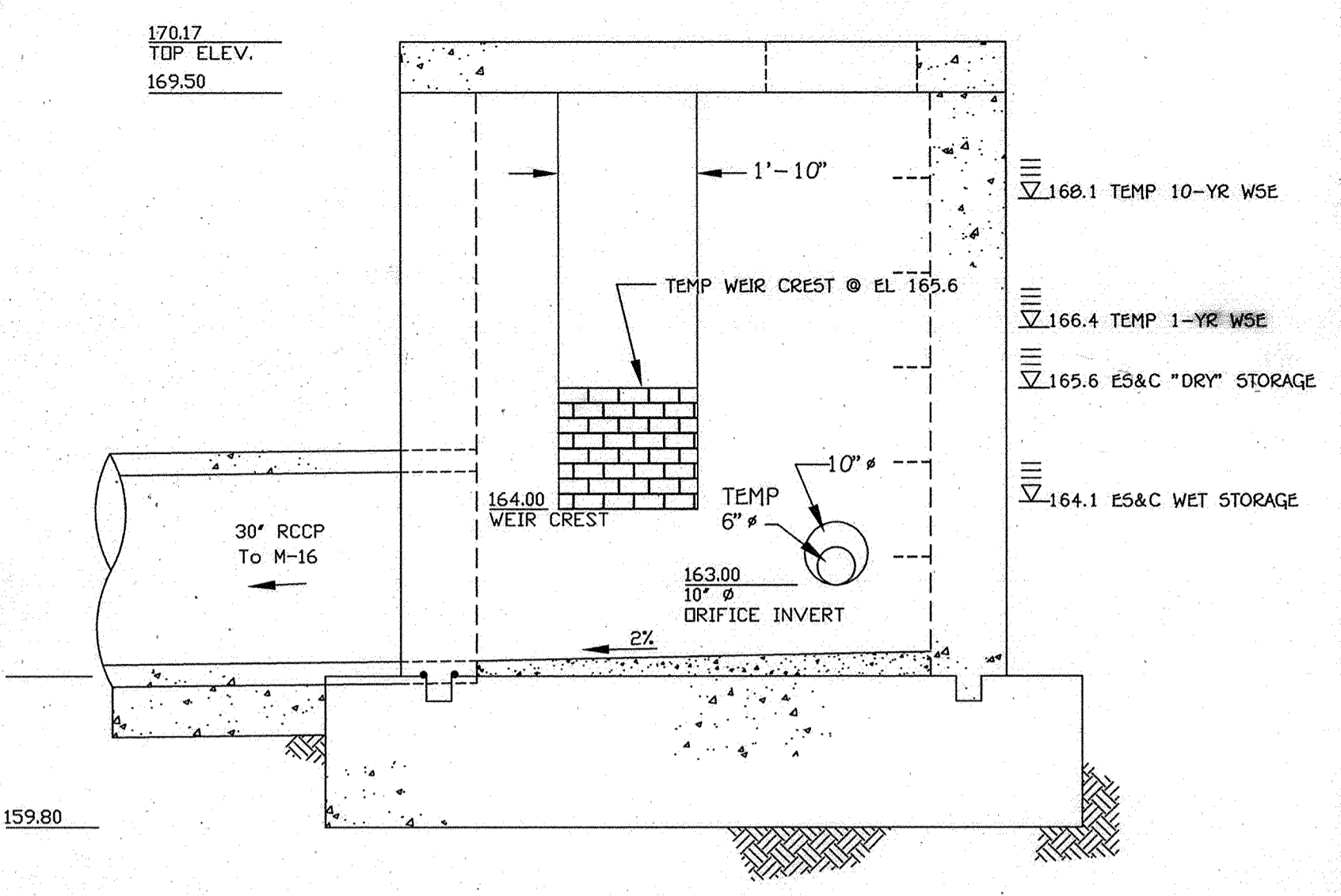
STORMWATER SUMMARY TABLES			
ELEMENTARY SCHOOL #41			
THE LEGACY AT DUCKETTS RIDGE PARCEL A			
ZONED R-12	TAX MAP No.: 37	GRID No.: 12	PARCEL No.: 569
FIRST ELECTION DISTRICT	HOWARD COUNTY, MARYLAND		
SCALE: AS SHOWN	DATE: APRIL 23, 2012		
SHEET 33 OF 39			



PROFILE VIEW (w/o WINGWALLS)



PLAN VIEW



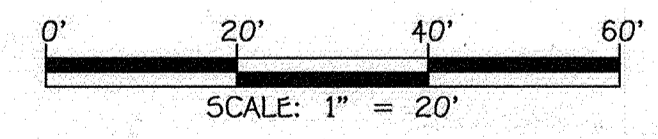
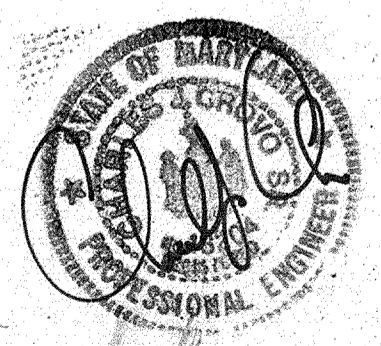
SEDIMENT BASIN (SWM RISER) FRONT VIEW

**SEDIMENT BASIN NOTES/CONSTRUCTION SPECIFICATIONS:**

1. THE SWM RISER (S-1) SHALL BE CONSTRUCTED PER THE SWM PLANS WITH TEMPORARY MODIFICATIONS FOLLOWS:  
 INSERT 8" PVC PIPE AS SHOWN INTO THE 10" LOW FLOW ORIFICE. TEMPORARILY GROUT SHUT THE ANNULAR SPACE BETWEEN THE 8" PIPE AND RISER 10" ORIFICE OPENING. EITHER EXTEND 8" DRAWDOWN PIPE INTO RISER AND TERMINATE WITH A CAP WITH A 6" ORIFICE @ INVERT 163. OR PROVIDE A 1/4" THICK GALVANIZED METAL ORIFICE PLATE ON THE INSIDE OF THE SWM RISER WITH A 6" OPENING AT INVERT 163.00 AND CENTERED ON THE 10" RISER LOW FLOW OPENING. THE ORIFICE PLATE SHALL BE INSTALLED WITH A RUBBER GASKET AND 4 SMALL BOLTS AT LEAST 5" AWAY FROM THE OPENING. PLACE TEMPORARY ORIFICE PLATE BOLTS SO AS NOT TO INTERFERE WITH FUTURE TRASH RACK BOLTS.
2. TEMPORARILY BRICK WEIR OPENING TO ELEVATION 165.60. OTHER MEANS (OTHER THAN BRICK) MAY BE USED TO TEMPORARILY BLOCK WEIR TO TEMPORARY WEIR CREST ELEVATION WITH PERMISSION FROM HOWARD COUNTY INSPECTOR.
3. THE TOTAL AREA OF THE PERFORATIONS MUST BE GREATER THAN 8 TIMES THE AREA OF THE INTERNAL ORIFICE. THE PERFORATED PORTION OF THE DRAW-DOWN DEVICE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH AND GEOTEXTILE FABRIC. CONTRACTOR SHALL PROVIDE MORE THAN 10 LF OF PERFORATED PIPE AS SHOWN ABOVE IF NEEDED TO MEET THIS AREA REQUIREMENT. THE 8" HORIZONTAL PERFORATED PIPE MAY BE CONSTRUCTED IN A MULTI-PIPE MANIFOLD CONNECTED WITH TEES TO THE VERTICAL 8" PIPE. CONNECTED TO THE RISER (AND 6" ORIFICE).
4. THE GEOTEXTILE FABRIC SHALL MEET THE SPECIFICATIONS FOR GEOTEXTILE CLASS E.
5. PROVIDE ADEQUATE SUPPORT OF DRAW-DOWN DEVICE TO PREVENT SAGGING AND FLOATATION. ALSO, PROVIDE A PIPE CLAMP LOCATED ADJACENT TO RISER WALL TO KEEP HYDROSTATIC PRESSURE FROM FORCING DRAWDOWN DEVICE FROM BEING PUSHED INTO RISER ORIFICE. AN ACCEPTABLE PREVENTIVE MEASURE IS TO STAKE BOTH SIDES OF DRAW-DOWN DEVICE WITH 1" STEEL ANGLE, OR 1" BY 4" SQUARE OR 2" ROUND WOODEN POSTS SET 3" MINIMUM INTO THE GROUND THEN JOINING THEM TO THE DEVICE BY WRAPPING WITH 12 GAUGE MINIMUM WIRE.
6. INSTALL WEIR TRASH RACK ONLY DURING SEDIMENT BASIN PHASE. IT CAN BE REMOVED AS NEEDED TO REMOVE THE TEMPORARY WEIR CREST BRICKS.

**SEDIMENT BASIN DEWATERING DEVICE DETAIL**  
SCALE: NTS

**ELEMENTARY SCHOOL No. 41  
SEDIMENT BASIN**  
 INITIAL D.A. = 10.3 Ac.  
 FINAL D.A. = 9.3 Ac  
**STORAGE REQUIRED:**  
 WET = 1,800 cf/ac. x 10.3 ac. = 18,540 cf  
 DRY = 1,800 cf/ac. x 10.3 ac. = 18,540 cf  
**STORAGE PROVIDED:**  
 WET = 18,632 cf @ ELEV. 164.1  
 DRY = 19,864 cf @ ELEV. 165.6  
 BOTTOM ELEV. = 162.0  
 STORAGE DEPTH = 3.6'  
 TOP OF EMBANKMENT = 170.0  
 EMBANKMENT SIDE SLOPES: 3:1  
 CLEAN OUT ELEV. = 163.1 @ 0.500 cf  
 RISER TEMPORARY WEIR CREST ELEV. = 165.6  
 SEDIMENT BASIN ORIFICE: 6" @ INV. 163.0  
 Q1 exist. = 10.4 cfs (@ TRAILER PARK INLET)  
 Q1 prop. = 10.1 cfs (@ TRAILER PARK INLET)  
 Q10 Sediment Basin = 24.1 cfs @ WSE 168.12  
 Q10 prop. = 38.7 cfs (@ TRAILER PARK INLET)



**FISHER, COLLINS & CARTER, INC.**  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE  
 ELLETTTS CITY, MARYLAND 21042  
 (410) 461-7999

**ENGINEER'S CERTIFICATE**  
 "I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."  
 Signature of Engineer: *Charles J. Grovo, Sr.* Date: 4/1/12

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012."  
 Signature: *Charles J. Grovo, Sr.* Date: 4/1/12  
 CHARLES J. GROVO, SR., P.E.

**DEVELOPER'S CERTIFICATE**  
 "I/We certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."  
 Signature of Developer: *Sam Cat* Date: 4/2/12

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.  
 Signature: *John K. Roberts* Date: 4/5/12  
 HOWARD SCD

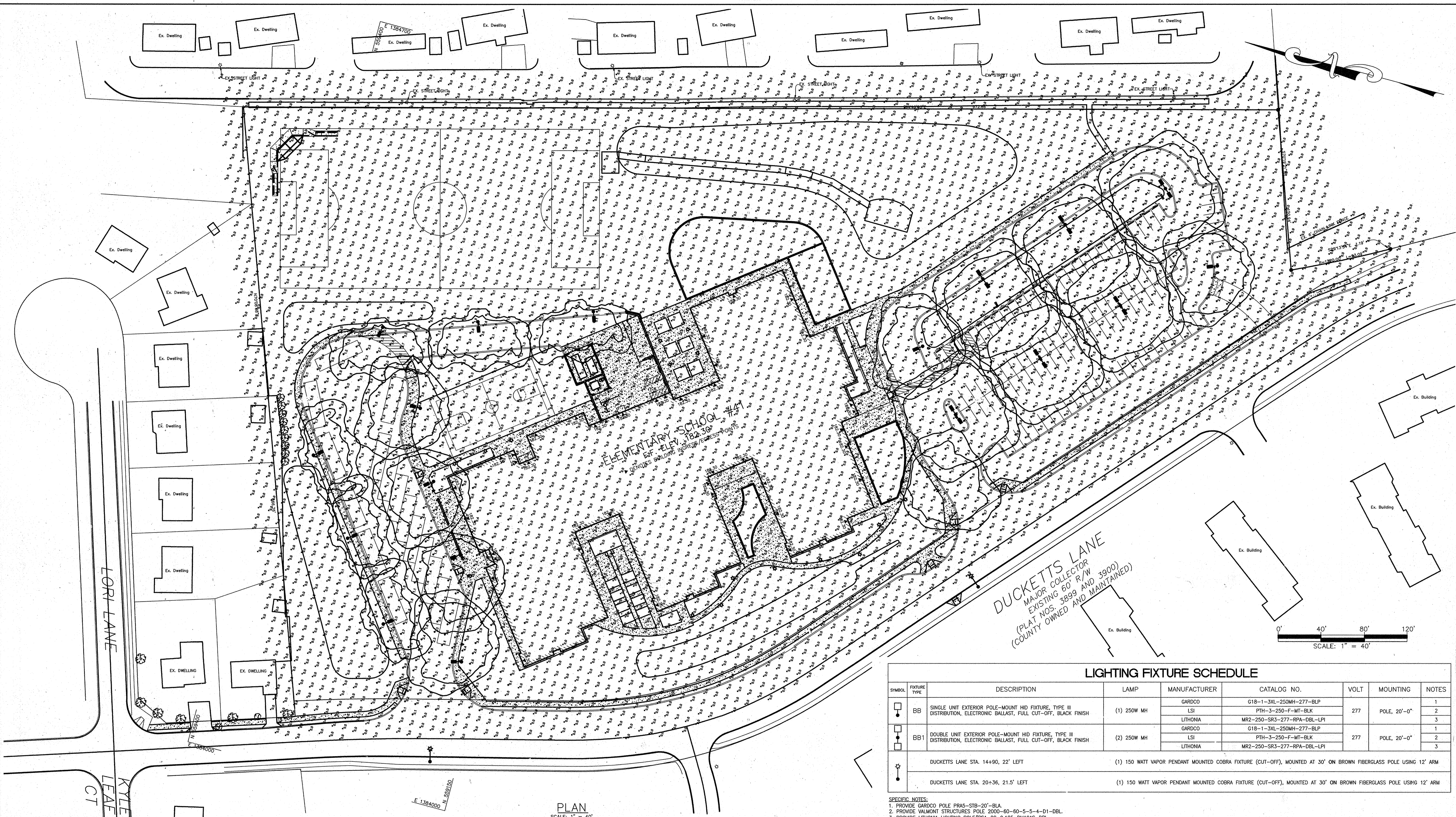
DATE	DESCRIPTION	REVISION BLOCK
4/24/12	REVISED SHEET NUMBERS FROM 98 TO 99	

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
 Director - Department of Planning and Zoning  
 Signature: *David J. Coy* Date: 5/1/12  
 Chief, Division of Planning and Zoning  
 Signature: *John K. Roberts* Date: 5/1/12  
 Chief, Development Engineering Division

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

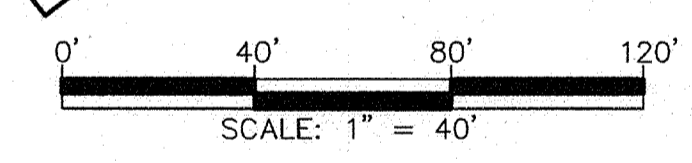
ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
FLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
-	-	R-12	37	FIRST	6012.01

**TEMPORARY STORMWATER  
MANAGEMENT DETAILS**  
**ELEMENTARY SCHOOL #41**  
**THE LEGACY AT DUCKETTS RIDGE**  
 PARCEL A  
 ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: AS SHOWN DATE: MARCH 22, 2012  
 SHEET 34 OF 39



ELEMENTARY SCHOOL #41  
 EX. ELEV. 182.30'  
 RENOVATED BUILDING (1989) / EXISTING POINTS

DUCKETTS LANE  
 MAJOR COLLECTOR  
 EXISTING 60' R/W  
 (PLAT NOS. 3899 AND 3900)  
 (COUNTY OWNED AND MAINTAINED)



PLAN  
 SCALE: 1" = 40'

LIGHTING FIXTURE SCHEDULE								
SYMBOL	FIXTURE TYPE	DESCRIPTION	LAMP	MANUFACTURER	CATALOG NO.	VOLT	MOUNTING	NOTES
□	BB	SINGLE UNIT EXTERIOR POLE-MOUNT HID FIXTURE, TYPE III DISTRIBUTION, ELECTRONIC BALLAST, FULL CUT-OFF, BLACK FINISH	(1) 250W MH	GARCO	G18-1-3XL-250MH-277-BLP	277	POLE, 20'-0"	1
				LSI	PTH-3-250-F-MT-BLK			2
				LITHONIA	MR2-250-SR3-277-RPA-DBL-LPI			3
□	BB1	DOUBLE UNIT EXTERIOR POLE-MOUNT HID FIXTURE, TYPE III DISTRIBUTION, ELECTRONIC BALLAST, FULL CUT-OFF, BLACK FINISH	(2) 250W MH	GARCO	G18-1-3XL-250MH-277-BLP	277	POLE, 20'-0"	1
				LSI	PTH-3-250-F-MT-BLK			2
				LITHONIA	MR2-250-SR3-277-RPA-DBL-LPI			3
⊙		DUCKETTS LANE STA. 14+90, 22' LEFT	(1) 150 WATT VAPOR PENDANT MOUNTED COBRA FIXTURE (CUT-OFF), MOUNTED AT 30' ON BROWN FIBERGLASS POLE USING 12' ARM					
⊙		DUCKETTS LANE STA. 20+36, 21.5' LEFT	(1) 150 WATT VAPOR PENDANT MOUNTED COBRA FIXTURE (CUT-OFF), MOUNTED AT 30' ON BROWN FIBERGLASS POLE USING 12' ARM					

SPECIFIC NOTES:  
 1. PROVIDE GARCO POLE PRA5-STB-20'-BLA.  
 2. PROVIDE VALMONT STRUCTURES POLE 2000-60-60-5-5-4-D1-DBL.  
 3. PROVIDE LITHONIA LIGHTING POLE#RSA-20-0.125-DM19AS-DBL.

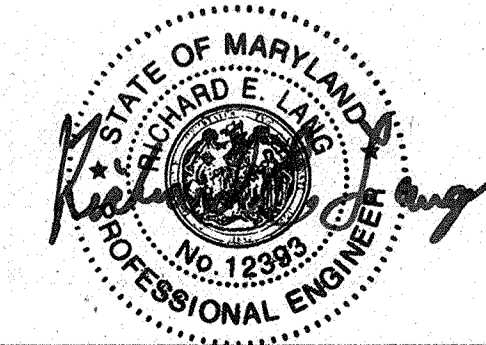
FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL FREE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 481-2000

DATE: 6/24/13  
 DESCRIPTION: REVISED SHEET NUMBERS FROM 90 TO 99  
 REVISION BLOCK

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

5/14/12  
 5/14/12  
 5/14/12

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



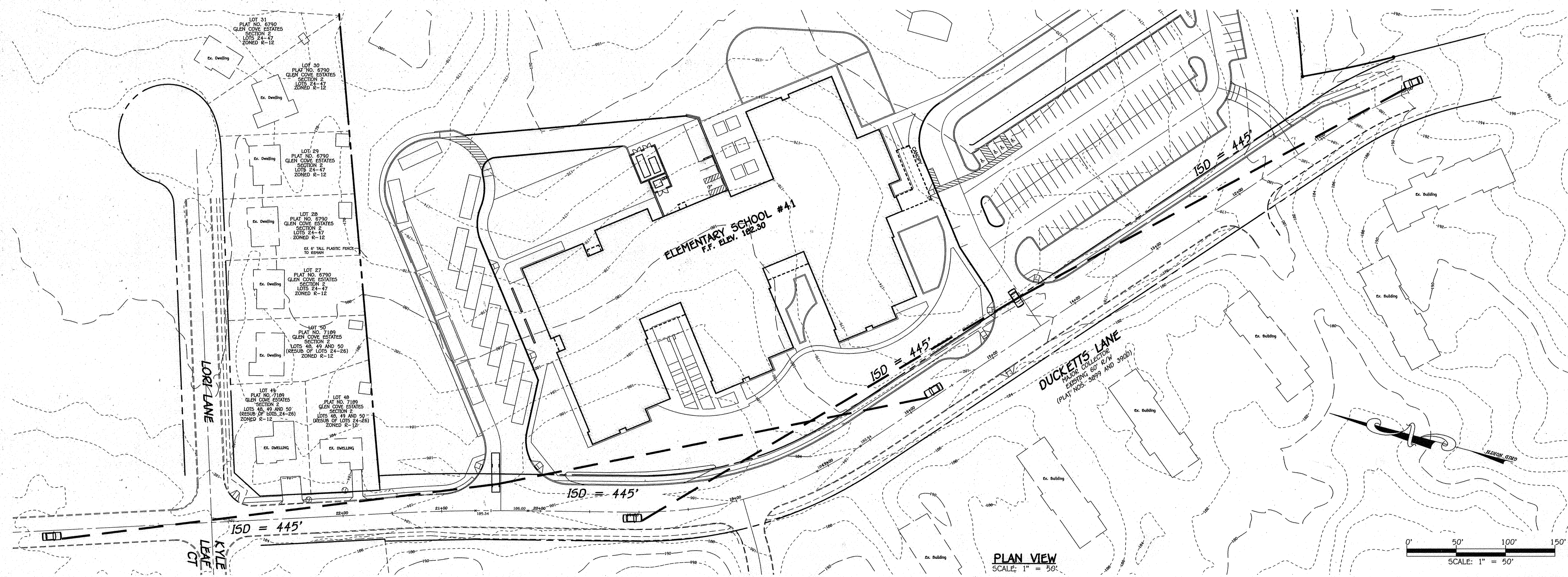
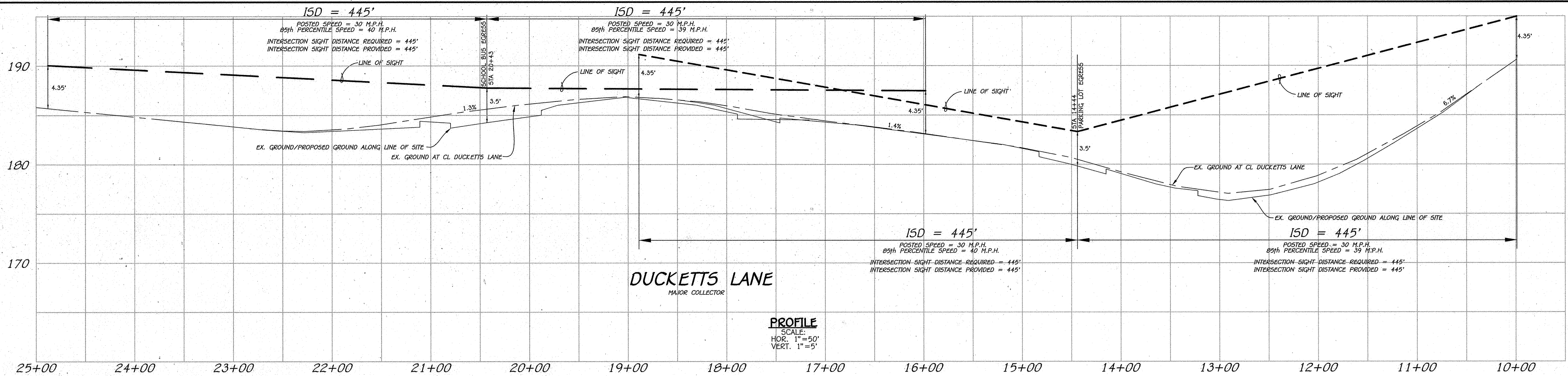
ADDRESS CHART	
LOT/PARCEL#	STREET ADDRESS
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075

PERMIT INFORMATION CHART				
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.		
ELEMENTARY SCHOOL #41	N/A	P.0569		
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DIST.
-	-	R-12	37	FIRST
			CENSUS TRACT	
			6012.01	

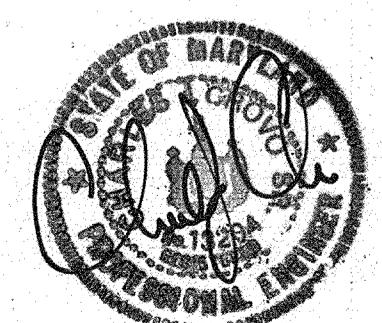
PHOTOMETRICS DIAGRAM  
 ELEMENTARY SCHOOL #41  
 THE LEGACY AT DUCKETTS RIDGE  
 PARCEL A

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 40' DATE: MARCH 22, 2012

SHEET 35 OF 39



FISHER, COLLINS & CARTER, INC.  
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
REGIONAL SQUARE OFFICE PARK - 10275 BALTIMORE NATIONAL PIKE  
ELICOTT CITY, MARYLAND 21042  
(410) 461-2999



"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012."

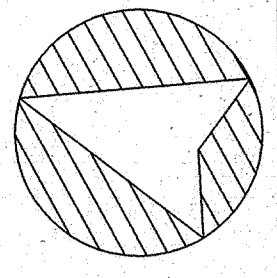
*Charles J. Covo, Sr.*  
CHARLES J. COVO, SR., P.E.  
4/23/12  
DATE

DATE	DESCRIPTION
4/23/12	REVISED SHEET NUMBERS FROM 28 TO 30
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
<i>Paul A. Galle</i> Director - Department of Planning and Zoning	5/14/12
<i>Kevin J. ...</i> Chief, Division of Land Development	5/14/12
<i>...</i> Chief, Development Engineering Division	5/14/12

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

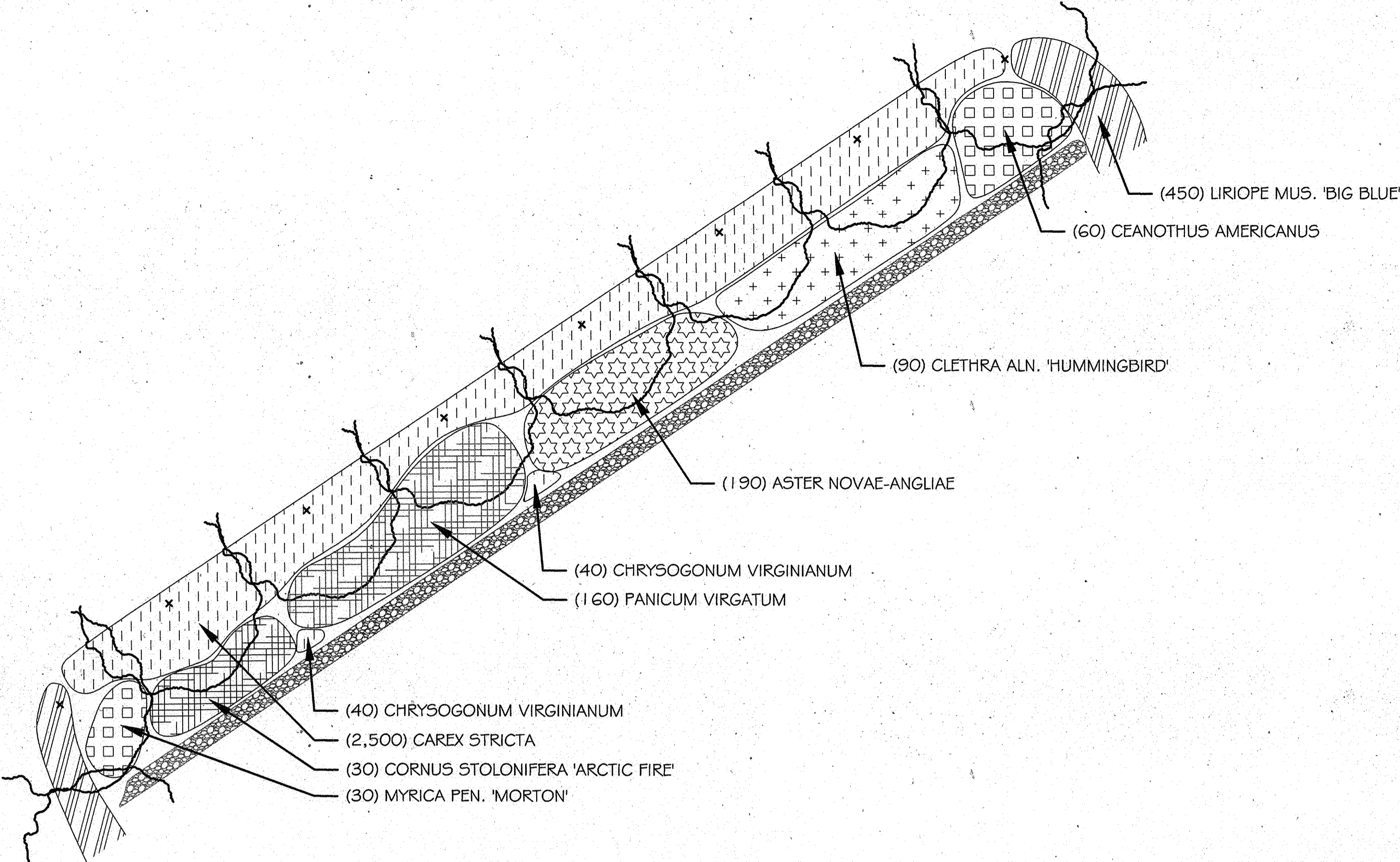
ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
P.0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
ELEMENTARY SCHOOL #41	N/A	P.0569			
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
21873-21875	-	R-12	37	FIRST	6012.01

INTERSECTION SIGHT DISTANCE PLAN AND PROFILE	
ELEMENTARY SCHOOL #41	
THE LEGACY AT DUCKETTS RIDGE PARCEL A	
ZONED R-12	TAX MAP No.: 37
FIRST ELECTION DISTRICT	GRID No.: 12
SCALE: AS SHOWN	PARCEL No.: 569
	HOWARD COUNTY, MARYLAND
	DATE: APRIL 23, 2012
SHEET 36 OF 39	



**BIORETENTION I PLANT LIST**

Qty	Botanical / Common Name	Size	Spacing	Remarks
<b>Shrubs</b>				
60	CEANOTHUS AMERICANUS New Jersey Tea	24-36"	36" o.c.	
90	CLETHRA ALNIFOLIA 'HUMMINGBIRD' Summersweet Pepperbush	24-36"	36" o.c.	
30	CORNUS STOLONIFERA 'ARCTIC FIRE' Red Stem Dogwood	36"	36" o.c.	
30	MYRICA PENNSYLVANICA 'MORTON' Dwarf Northern Bayberry	24-36"	48" o.c.	
<b>Perennials, Ornamental Grasses, Ferns, Bulbs &amp; Groundcovers</b>				
190	ASTER NOVAE-ANGLIAE New England Aster	1 Gal.	24" o.c.	
2,500	CAREX STRICTA Tussock Sedge	quart	12" o.c.	
80	CHRYSOGONUM VIRGINIANUM Green and Gold	quart	12" o.c.	
450	LIRIOPE MUSCARI 'BIG BLUE' Lilyturf	quart	12" o.c.	
160	PANICUM VIRGATUM Switch Grass	1 Gal.	30" o.c.	



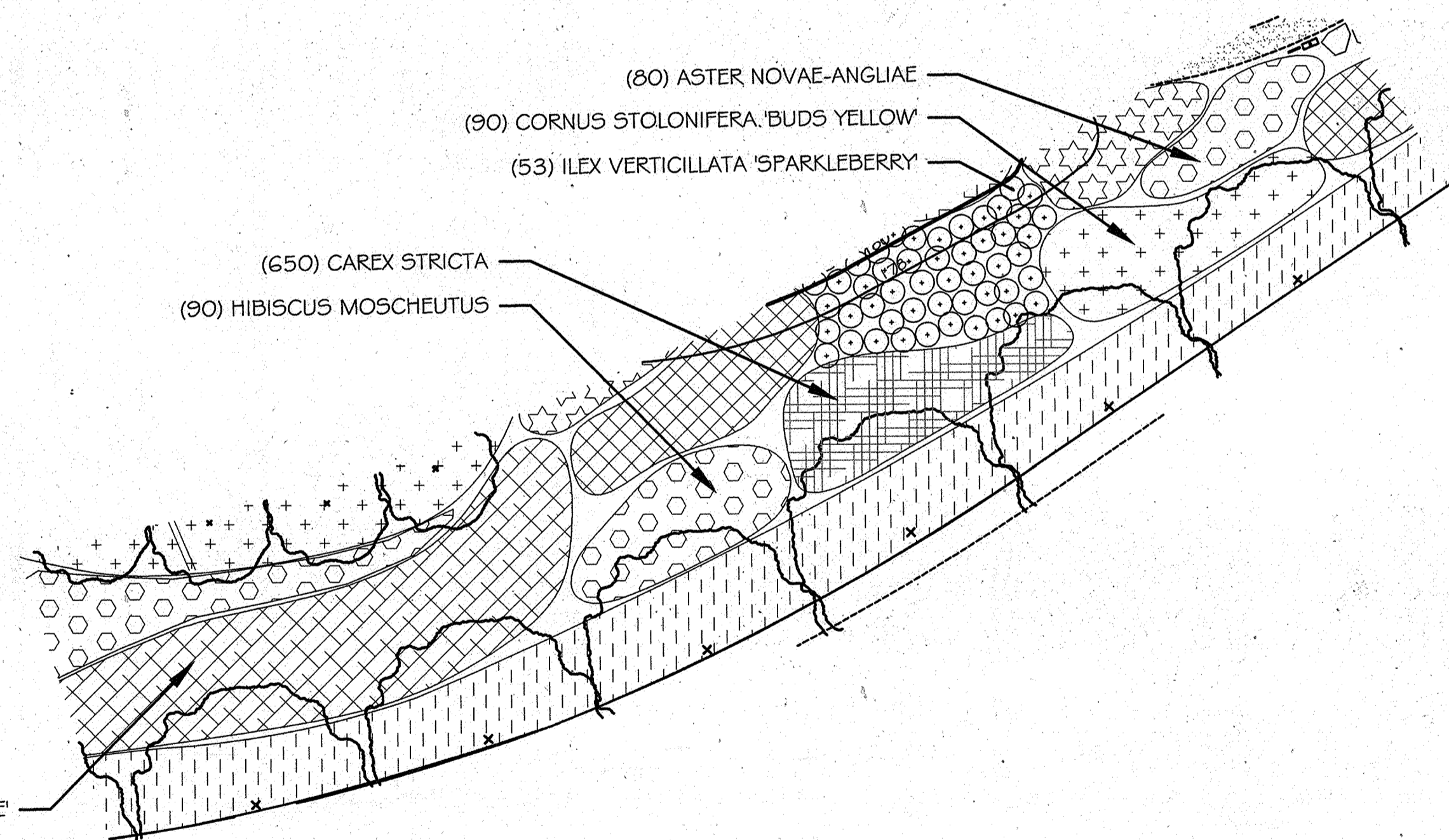
**A PLANTING PLAN- BIORETENTION I ENLARGEMENT**

SCALE: 1" = 20'-0"



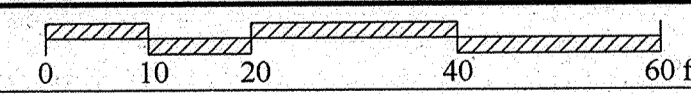
**BIORETENTION II PLANT LIST**

Qty	Botanical / Common Name	Size	Spacing	Remarks
<b>Shrubs</b>				
210	CORNUS STOLONIFERA 'ARCTIC FIRE' Red Stem Dogwood	30"	36" o.c.	
90	CORNUS STOLONIFERA 'BUDS YELLOW' Red Stem Dogwood	36"	36" o.c.	
53	ILEX VERTICILLATA 'SPARKLEBERRY' Winterberry	36"	60" o.c.	
<b>Perennials, Ornamental Grasses, Ferns, Bulbs &amp; Groundcovers</b>				
80	ASTER NOVAE-ANGLIAE New England Aster	1 Gal.	24" o.c.	
650	CAREX STRICTA Tussock Sedge	quarts	12" o.c.	
90	HIBISCUS MOSCHEUTUS Swamp Mallow	1 Gal.	30" o.c.	



**B PLANTING PLAN- BIORETENTION II ENLARGEMENT**

SCALE: 1" = 20'-0"



- NOTES:**
- SEE SHEET 23, L.600 FOR OVERALL PLANTING PLAN.
  - SEE SHEET 24, L.601 FOR SWM POND ENLARGEMENT.
  - SEE SHEET 25, L.602 FOR PLANTING DETAILS & SCHEDULE.
  - SEE SHEET 37, L.603 FOR BIORETENTION I & II ENLARGEMENT.
  - SEE SHEET 38, L.604 FOR BIORETENTION III & IV ENLARGEMENT.

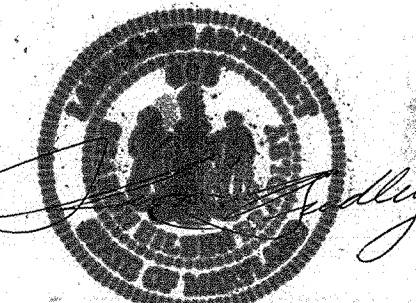
- PLANTING NOTES:**
- TILL AND PREPARE SOIL IN ENTIRE PLANTING BED ACCORDING TO SPECIFICATIONS. HAVE SOIL SAMPLES FROM THE PREPARED BEDS TESTED TO ENSURE THAT THE CHEMICAL AND MECHANICAL PROPERTIES COMPLY WITH THE SPECIFICATIONS. SUPPLY LA WITH COPIES OF THE LAB REPORTS AND OBTAIN APPROVAL OF THE PREPARED SOIL FROM THE LA BEFORE PLANTING.
  - DO NOT DRIVE MACHINERY OVER PREPARED PLANTING BEDS, OR OTHERWISE COMPACT THE SOIL AFTER PREPARATION.
  - FOR ALL OTHER PLANT MATERIAL, SUBSTITUTIONS MUST BE APPROVED BY THE LA BEFORE THE PLANTS ARE BROUGHT TO THE SITE.
  - ALL PROPOSED LAWN AREAS AND DISTURBED EXISTING LAWN AREAS ARE TO BE SEEDED UPON COMPLETION OF CONSTRUCTION.
  - IF DISCREPANCIES BETWEEN THE PLANTING PLAN AND PLANT LIST OCCUR, THE PLANTING PLAN TAKES PRECEDENCE.

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

BRADLEY  
SITE DESIGN, INC.  
LANDSCAPE ARCHITECTURE  
1743 CONNECTICUT AVE., NW  
WASHINGTON, D.C. 20009  
P: 202-916-0534  
F: 202-916-0535  
www.bradleydesign.com

DATE	DESCRIPTION
6/24/13	REVISED SHEET NUMBERS FROM 98 TO 99
APPROVED: DEPARTMENT OF PLANNING AND ZONING	
Director - Department of Planning and Zoning	<i>Mark P. Longli</i> 5/14/12
Chief, Division of Land Development	<i>Robert S. Salomon</i> 5/14/12
Chief, Development Engineering Division	<i>Robert S. Salomon</i> 5/14/12

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



Address Chart	
Parcel Number	Street Address
0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075

PERMIT INFORMATION CHART				
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.		
ELEMENTARY SCHOOL #41	N/A	P.0569		
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.
21873-21875	-	R-12	37	FIRST
			CENSUS TRACT	
			6012.01	

**L.603 PLANTING PLAN- BIORETENTION I & II ENLARGEMENT**

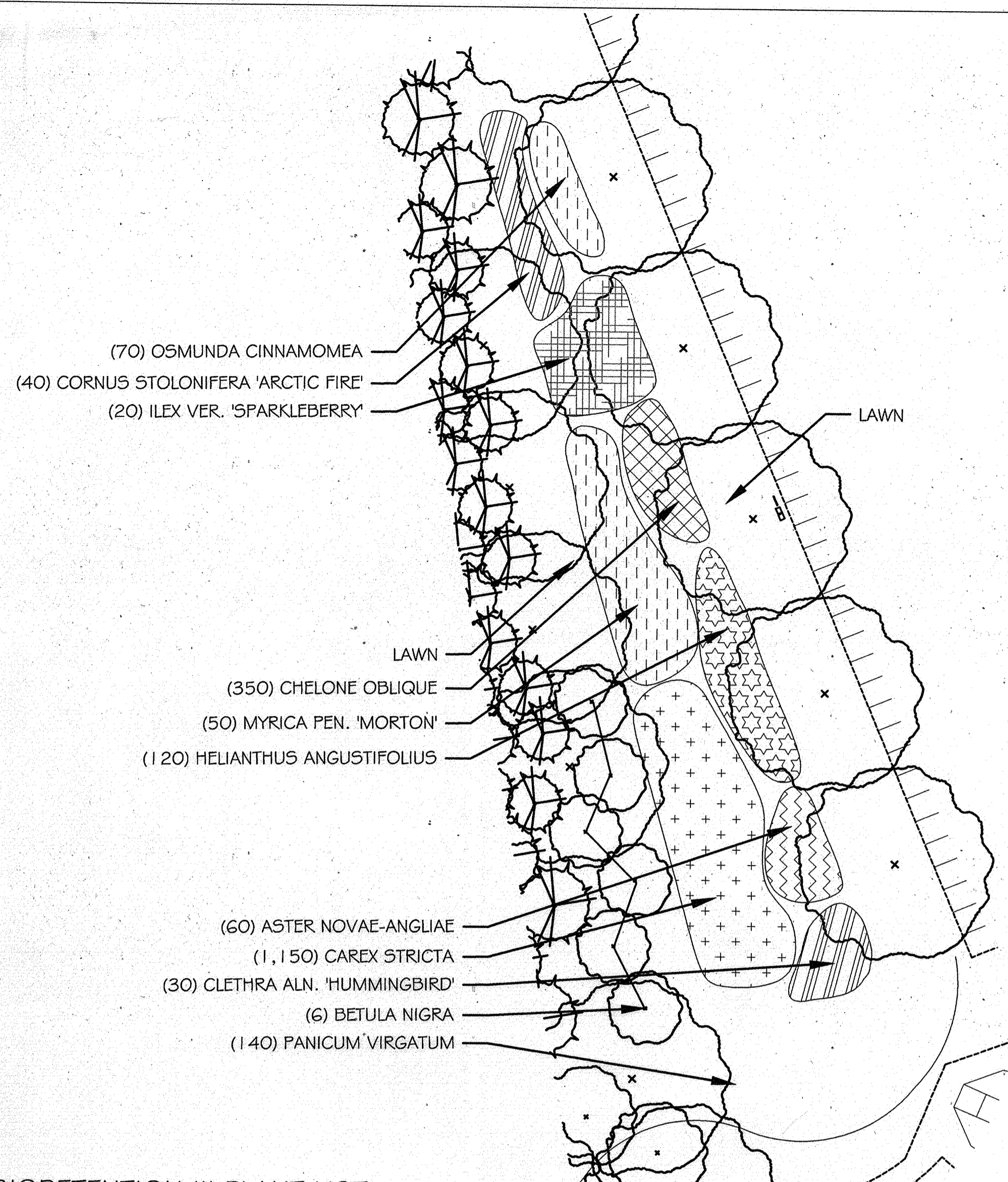
**ELEMENTARY SCHOOL #41**

**THE LEGACY AT DUCKETTS RIDGE**

**PARCEL A**

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 20' DATE: APRIL 23, 2012

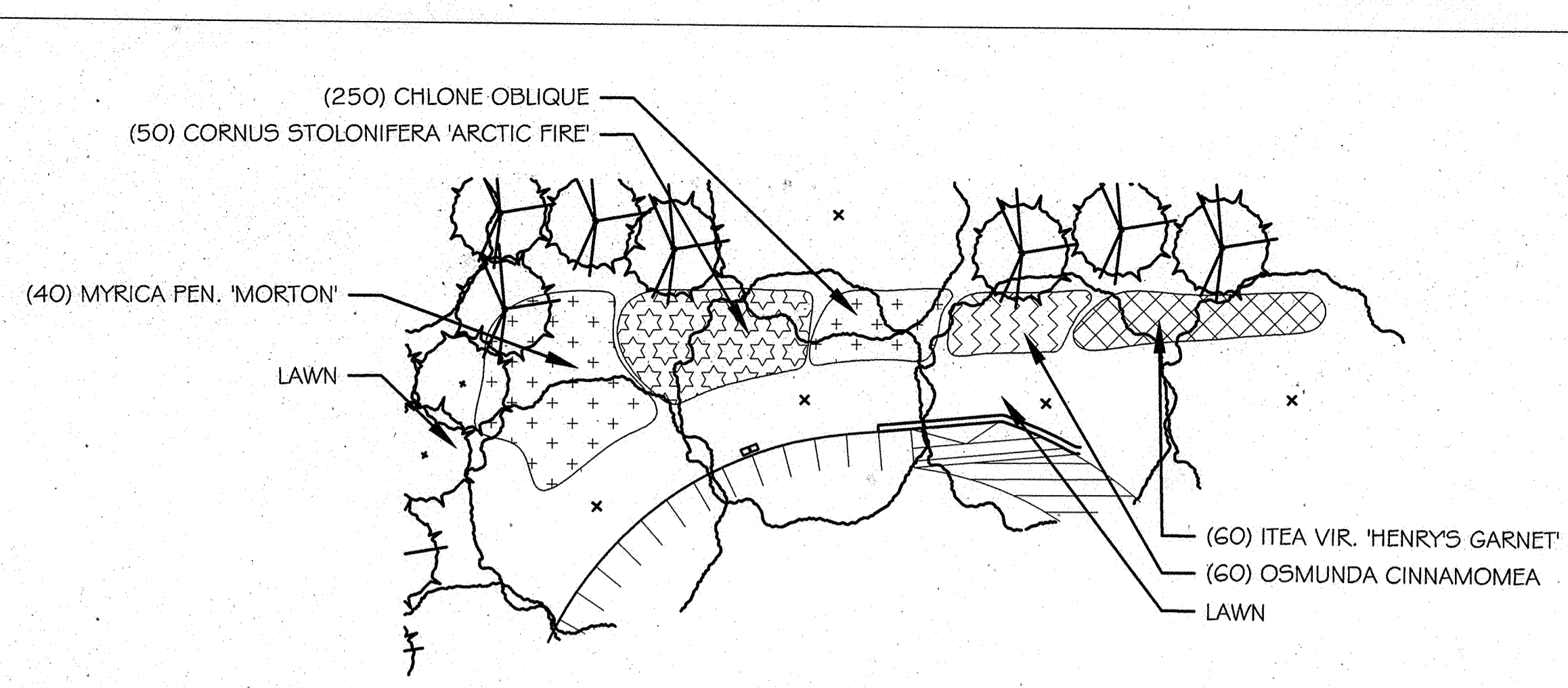
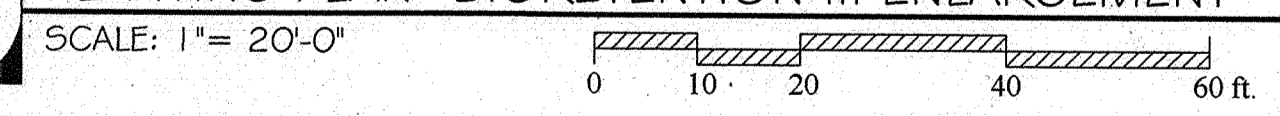
SHEET 37 OF 39



**BIORETENTION III PLANT LIST**

Qty	Botanical / Common Name	Size	Spacing	Remarks
<b>Ornamental Trees</b>				
6	BETULA NIGRA River Birch	8'- 10' ht.	As shown	Multi-stem/ Heavy/ Specimen
<b>Shrubs</b>				
30	CLETHRA ALNIFOLIA 'HUMMINGBIRD' Summersweet Pepperbush	24-36"	36" o.c.	
40	CORNUS STOLONIFERA 'ARCTIC FIRE' Red Stem Dogwood	30"	48" o.c.	
20	ILEX VERTICILLATA 'SPARKLEBERRY' Winterberry	36"	60" o.c.	
50	MYRICA PENNSYLVANICA 'MORTON' Dwarf Northern Bayberry	24-36"	48" o.c.	
<b>Perennials, Ornamental Grasses, Ferns, Bulbs &amp; Groundcovers</b>				
60	ASTER NOVAE-ANGLIAE New England Aster	1 Gal.	24" o.c.	
1, 150	CAREX STRICTA Tussock Sedge	quart.	12" o.c.	
350	CHELONE OBLIQUE Rose Turtlehead	quart.	12" o.c.	
120	HELIANTHUS ANGUSTIFOLIUS Swamp Sunflower	quart.	24" o.c.	
70	OSMUNDA CINNAMOMEA Cinnamon Fern	1 Gal.	24" o.c.	
140	PANICUM VIRGATUM Switch Grass	1 Gal.	30" o.c.	

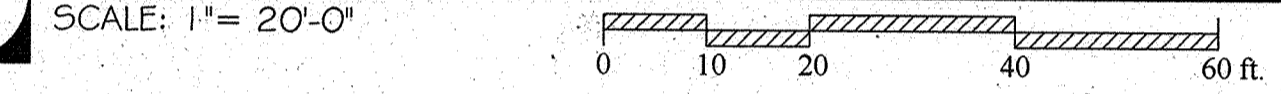
**A PLANTING PLAN- BIORETENTION III ENLARGEMENT**



**BIORETENTION IV PLANT LIST**

Qty	Botanical / Common Name	Size	Spacing	Remarks
<b>Shrubs</b>				
50	CORNUS STOLONIFERA 'ARCTIC FIRE' Red Stem Dogwood	30"	36" o.c.	
60	ITEA VIRGINICA 'HENRY'S GARNET' Virginia Sweetspire	24-36"	24" o.c.	
40	MYRICA PENNSYLVANICA 'MORTON' Dwarf Northern Bayberry	24-36"	48" o.c.	
<b>Perennials, Ornamental Grasses, Ferns, Bulbs &amp; Groundcovers</b>				
250	CHELONE OBLIQUE Rose Turtlehead	quart.	12" o.c.	
60	OSMUNDA CINNAMOMEA Cinnamon Fern	1 Gal.	24" o.c.	

**B PLANTING PLAN- BIORETENTION IV ENLARGEMENT**



- NOTES:**
- SEE SHEET 23, L.600 FOR OVERALL PLANTING PLAN.
  - SEE SHEET 24, L.601 FOR SWM POND ENLARGEMENT.
  - SEE SHEET 25, L.602 FOR PLANTING DETAILS & SCHEDULE.
  - SEE SHEET 37, L.603 FOR BIORETENTION I & II ENLARGEMENT.
  - SEE SHEET 38, L.604 FOR BIORETENTION III & IV ENLARGEMENT.

- PLANTING NOTES:**
- TILL AND PREPARE SOIL IN ENTIRE PLANTING BED ACCORDING TO SPECIFICATIONS. HAVE SOIL SAMPLES FROM THE PREPARED BEDS TESTED TO ENSURE THAT THE CHEMICAL AND MECHANICAL PROPERTIES COMPLY WITH THE SPECIFICATIONS. SUPPLY LA WITH COPIES OF THE LAB REPORTS AND OBTAIN APPROVAL OF THE PREPARED SOIL FROM THE LA BEFORE PLANTING.
  - DO NOT DRIVE MACHINERY OVER PREPARED PLANTING BEDS, OR OTHERWISE COMPACT THE SOIL AFTER PREPARATION.
  - FOR ALL OTHER PLANT MATERIAL, SUBSTITUTIONS MUST BE APPROVED BY THE LA BEFORE THE PLANTS ARE BROUGHT TO THE SITE.
  - ALL PROPOSED LAWN AREAS AND DISTURBED EXISTING LAWN AREAS ARE TO BE SEEDED UPON COMPLETION OF CONSTRUCTION.
  - IF DISCREPANCIES BETWEEN THE PLANTING PLAN AND PLANT LIST OCCUR, THE PLANTING PLAN TAKES PRECEDENCE.

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

BRADLEY  
SITE DESIGN, INC.  
LANDSCAPE ARCHITECTURE  
1743 CONNECTICUT AVE., NW  
WASHINGTON, D.C. 20009  
P: 202-518-9534  
F: 202-518-9535  
www.bradleydesign.com

DATE: 4/24/12  
DESCRIPTION: REVISION BLOCK  
REVISION BLOCK  
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  
10910 Maryland Route 108  
Ellicott City, Maryland 21042  
Attention: Bruce Gist  
410-313-8798

Address Chart	
Parcel Number	Street Address
0569	6501 DUCKETTS LANE ELKRIDGE, MD 21075

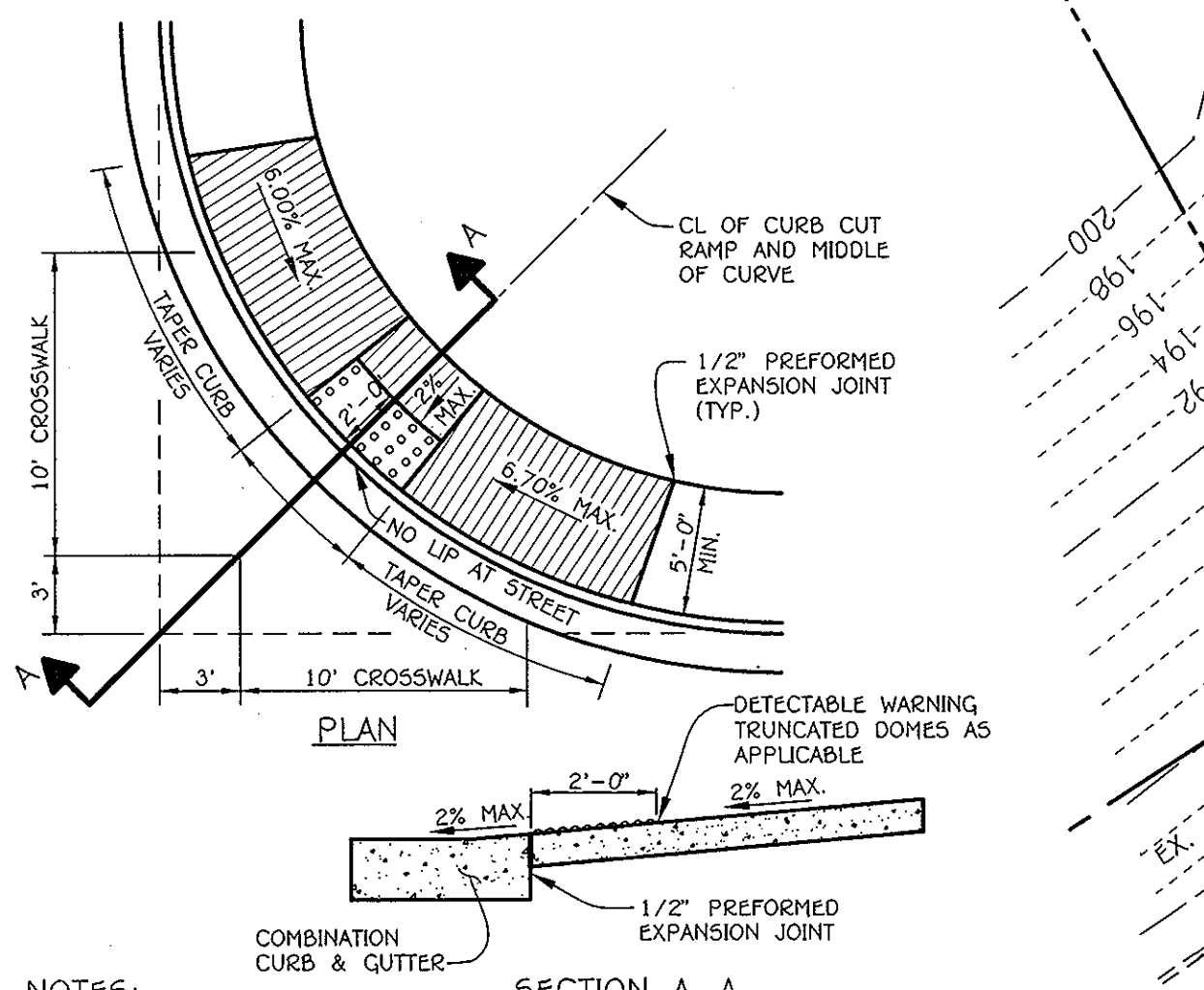
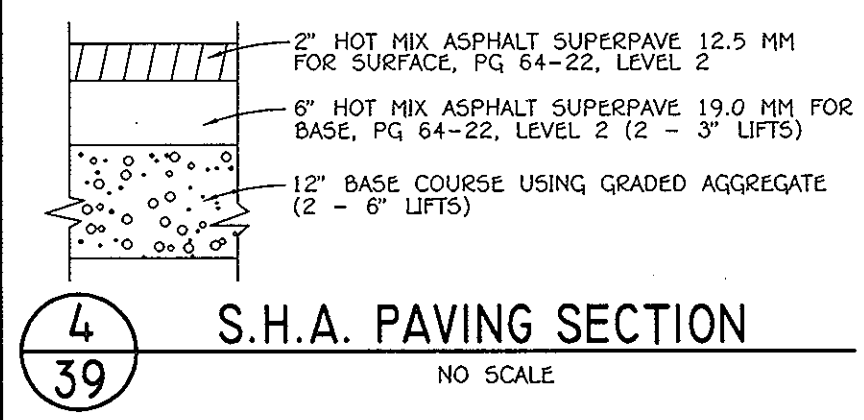
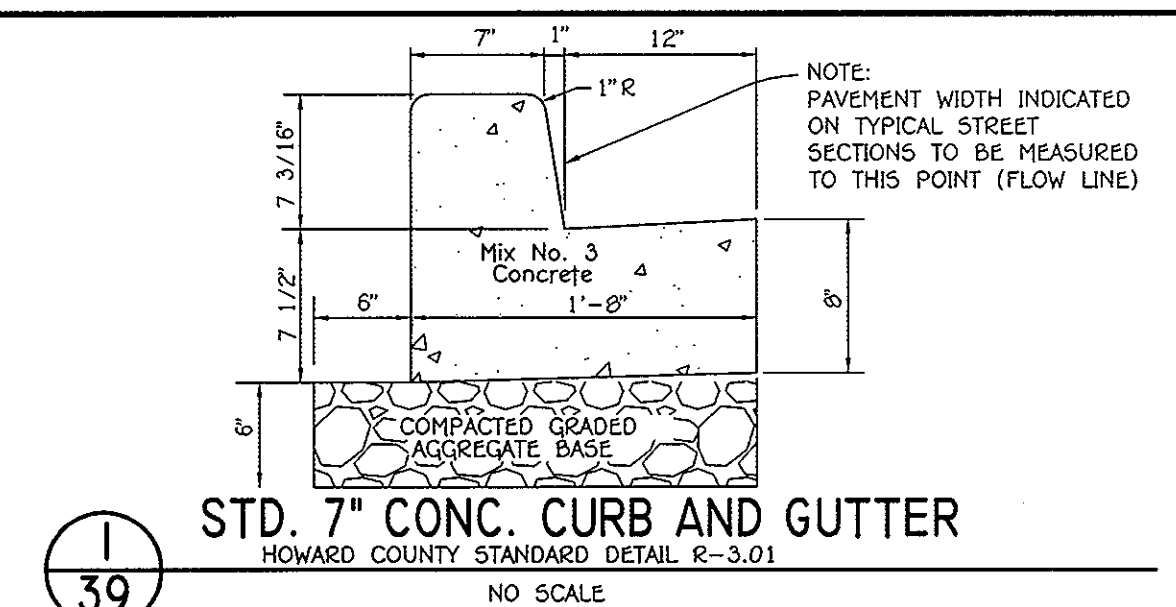
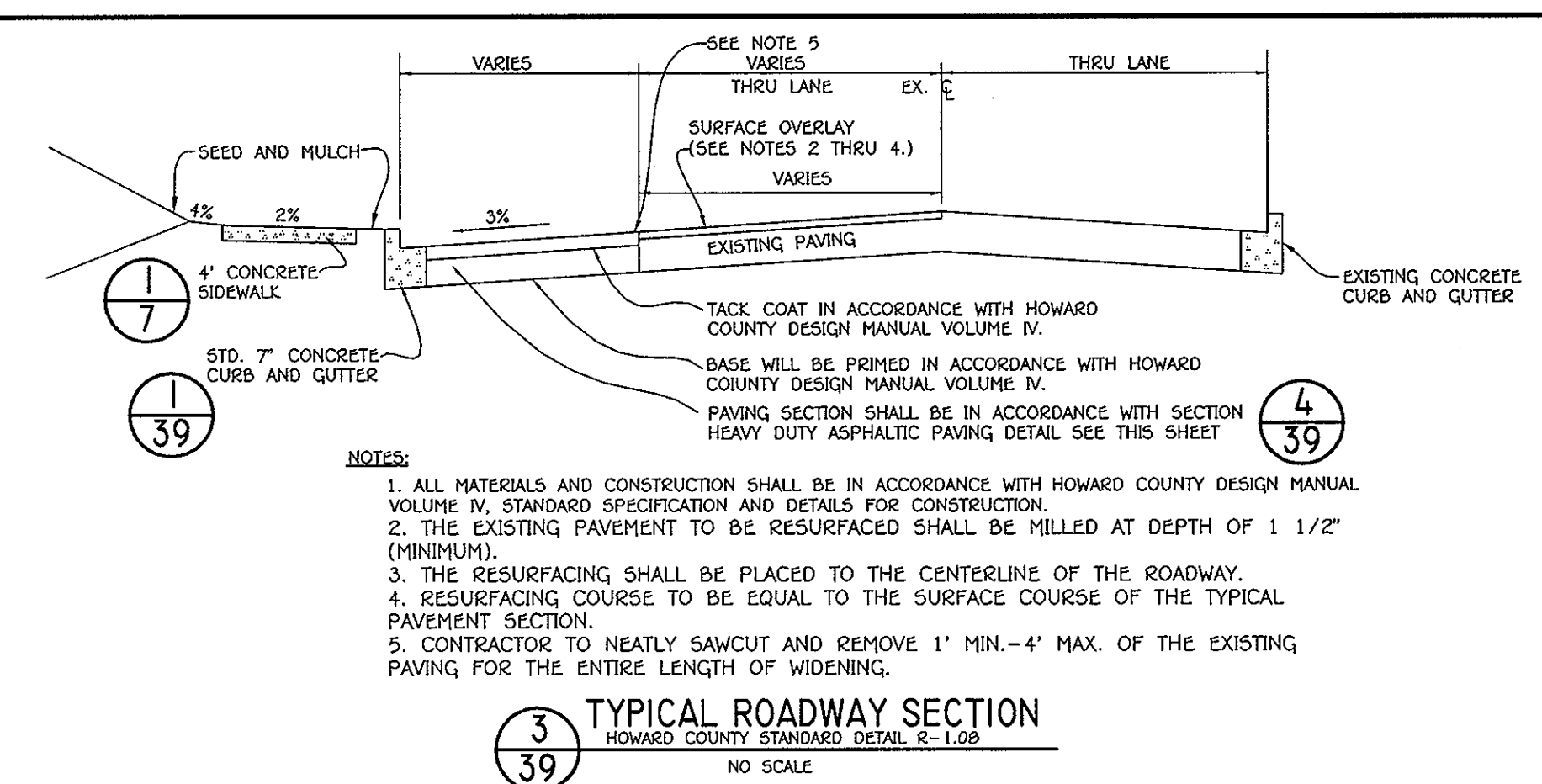
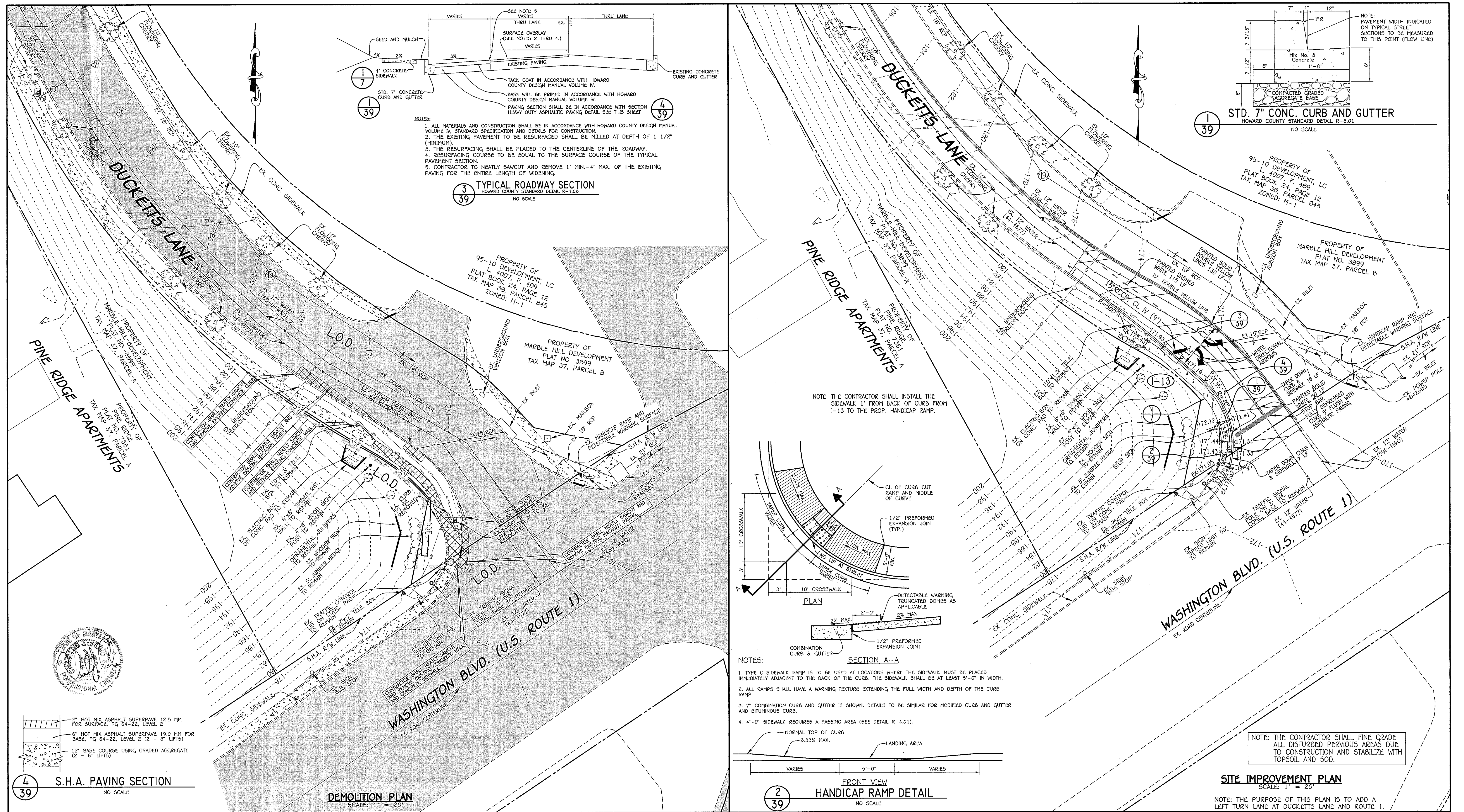
PERMIT INFORMATION CHART			
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.	
ELEMENTARY SCHOOL #41	N/A	P.0569	
PLAT# OR L/F	GRID#	ZONING	TAX MAP#
21873-21875	-	R-12	37
		ELECT. DISTR.	CENSUS TRACT
		FIRST	6012.01

**L.604 PLANTING PLAN- BIORETENTION III & IV ENLARGEMENT**

ELEMENTARY SCHOOL #41  
THE LEGACY AT DUCKETTS RIDGE  
**PARCEL A**

ZONED R-12 TAX MAP No.: 37 GRID No.: 12 PARCEL No.: 569  
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
SCALE: 1" = 20'  
DATE: APRIL 23, 2012

SHEET 38 OF 39



DEMOLITION PLAN  
SCALE: 1" = 20'

NOTES:  
 1. TYPE C SIDEWALK RAMP IS TO BE USED AT LOCATIONS WHERE THE SIDEWALK MUST BE PLACED IMMEDIATELY ADJACENT TO THE BACK OF THE CURB. THE SIDEWALK SHALL BE AT LEAST 5'-0" IN WIDTH.  
 2. ALL RAMP SHALL HAVE A WARNING TEXTURE EXTENDING THE FULL WIDTH AND DEPTH OF THE CURB RAMP.  
 3. 7" COMBINATION CURB AND GUTTER IS SHOWN. DETAILS TO BE SIMILAR FOR MODIFIED CURB AND GUTTER AND BITUMINOUS CURB.  
 4. 4'-0" SIDEWALK REQUIRES A PASSING AREA (SEE DETAIL R-4.01).  
 NORMAL TOP OF CURB  
 8.33% MAX.  
 LANDING AREA

SITE IMPROVEMENT PLAN  
SCALE: 1" = 20'

NOTE: THE PURPOSE OF THIS PLAN IS TO ADD A LEFT TURN LANE AT DUCKETTS LANE AND ROUTE 1.

FISHER, COLLINS & CARTER, INC.  
 CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS  
 CENTRAL SQUARE OFFICE BLDG. - 1272 BALTIMORE NATIONAL PIKE  
 ELICOTT CITY, MARYLAND 21042  
 (410) 461-2895

**ENGINEER'S CERTIFICATE**  
 "I certify that this plan for sediment and erosion control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District."  
 Signature of Engineer: *Charles J. Cropp*  
 Date: 7/11/13

"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2014."  
 Signature: *Charles J. Cropp*  
 Date: 7/11/13  
 CHARLES J. CROPP, SR., P.E.

**DEVELOPER'S CERTIFICATE**  
 "I/we certify that all development and construction will be done according to this plan for sediment and erosion control, and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of the Environment Approved Training Program for the Control of Sediment and Erosion before beginning the project. I also authorize periodic on-site inspection by the Howard Soil Conservation District."  
 Signature of Developer: *David Klein*  
 Date: 7/11/13

This development plan is approved for soil erosion and sediment control by the HOWARD SOIL CONSERVATION DISTRICT.  
 Signature: *John P. Roberts*  
 Date: 7/16/13  
 John P. Roberts  
 Howard SCD

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	

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

ADDRESS CHART					
LOT/PARCEL#	STREET ADDRESS				
	DUCKETTS LANE				
	ELKRIDGE, MD 21075				
PERMIT INFORMATION CHART					
SUBDIVISION NAME	SECTION/AREA	LOT/PARCEL NO.			
	N/A				
PLAT# OR L/F	GRID#	ZONING	TAX MAP#	ELECT. DISTR.	CENSUS TRACT
	12	R-12	37	FIRST	6012.01

**DUCKETTS LANE ROAD WIDENING DEMOLITION AND SITE IMPROVEMENT PLAN**  
**"REVISED SITE DEVELOPMENT PLAN" ELEMENTARY SCHOOL #41**  
 ZONED R-12 TAX MAP No.: 37 GRID No.: 12  
 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND  
 SCALE: 1" = 20' DATE: MAY 22, 2013  
 SHEET 39 OF 39