	SHEET INDEX	
SHEET NUMBER	DESCRIPTION	*
1	TITLE SHEET	AS I
2	SITE DEVELOPMENT PLAN	A52
3	SITE DEVELOPMENT PLAN	A53
4	GEOMETRY PLAN	
5	GEOMETRY PLAN	
6	SEDIMENT AND EROSION CONTROL PLAN	
7	SEDIMENT AND EROSION CONTROL PLAN	
Ø	SOILS AND DRAINAGE AREA MAP	
9	SOILS AND DRAINAGE AREA MAP	
10	DETAIL SHEET	
11	DETAIL SHEET	
12	HANDICAP ACCESS PLAN	
13	SEDIMENT AND EROSION CONTROL NOTES AND DETAIL SHEET	~
14	TRAFFIC MAINTENANCE PLAN	
15	PAVEMENT MARKING AND SIGNAGE PLAN	
16	STOPPING SIGHT DISTANCE PLAN	- <u></u>
17	STOPPING SIGHT DISTANCE PROFILE	
18	INTERSECTION SIGHT DISTANCE PLAN	
19	INTERSECTION SIGHT DISTANCE PROFILE	
20	BORING LOGS	
21	BORING LOGS	
22	STORM DRAIN PROFILES	<u>A\$4</u>
23	STORM DRAIN PROFILES, DETAILS AND STRUCTURE SCHEDULE	_AS =
24	WATER & SEWER MAINS: PROFILES & CHARTS	A56
25	PHOTOMETRICS DIAGRAM	
26	PHOTOMETRICS DIAGRAM	
27	irrigation system design	
28	irrigation system design	
29	LANDSCAPE PLAN	
30	LANDSCAPE PLAN	
31	LANDSCAPE NOTES AND DETAIL SHEET	
32	INTEGRATED MANAGEMENT PRACTICES #1-#5 PLANTING PLANS	
33	IMP #1 EMBANKMENT & E.S. PROFILES	A57
34	STORMWATER IMP #1-#2 PROFILES	<u> </u>
35	STORMWATER IMP #3, #4 AND #5 PROFILES	A 9 9
36	IMP #1-#5 RISER DETAILS AND IMP TYPICAL SECTIONS	ASU
37	IMP DETAILS	ASU
38	IMP DETAILS	
39	IMP DETAILS	_ASI
40	IMP SPECIFICATIONS & NOTES	
41	95" DIA. URBANGREEN SRPE CISTERN	A516
42	96" DIA. URBANGREEN SRPE CISTERN	
43	96" DIA. URBANGREEN SRPE CISTERN	
44.	URBANGREEN RWH MECHANICAL SYSTEM	
45	GREEN NEIGHBORHOOD NOTES AND CALCULATIONS	***************************************
46	GREEN NEIGHBORHOOD CHARTS	A w -
47	SEDIMENT BASIN DETAILS	ASI
48	STORM DRAIN PROFILES, BUILDING DIMENSIONS AND FRONT BUILDIN	
49	MANHOLE M-5 DETAIL	A5_[
50	PLAN VIEW FOR IRRIGATION SYSTEM	······································

SITE ANALYSIS DATA

B. Total area of R/W dedication: O Ac. +

F. Total area of wetlands buffer: O Ac. +

H. Total area of floodplain buffers: O Ac. +

L. There are no erodible soils on this site.

P. Total area of impervious area: 4.77 Ac+

2. Parking Space Data: (MIDDUE 90HOOL ONLY)

O. Total area of green open space: 23.46 Ac+

J. Total area of slopes 15%-25%: 3.05 Ac* (132,030 SF)

C. Total number of bus stacking spaces provided = 17

K. Total area of slopes 25% and greater: 0.98 Ac ± (42,760 SF)

N. Proposed use of site or structure: Institutional; Public School (Middle)

a. Total area of floodplain: O Ac. *

I. Total area of forest: 2,58 Ac+

M. Limit of disturbance: 13.20 Ac+

Q. Zoned: TOD

A. Total project area: 26,728 Ac ±

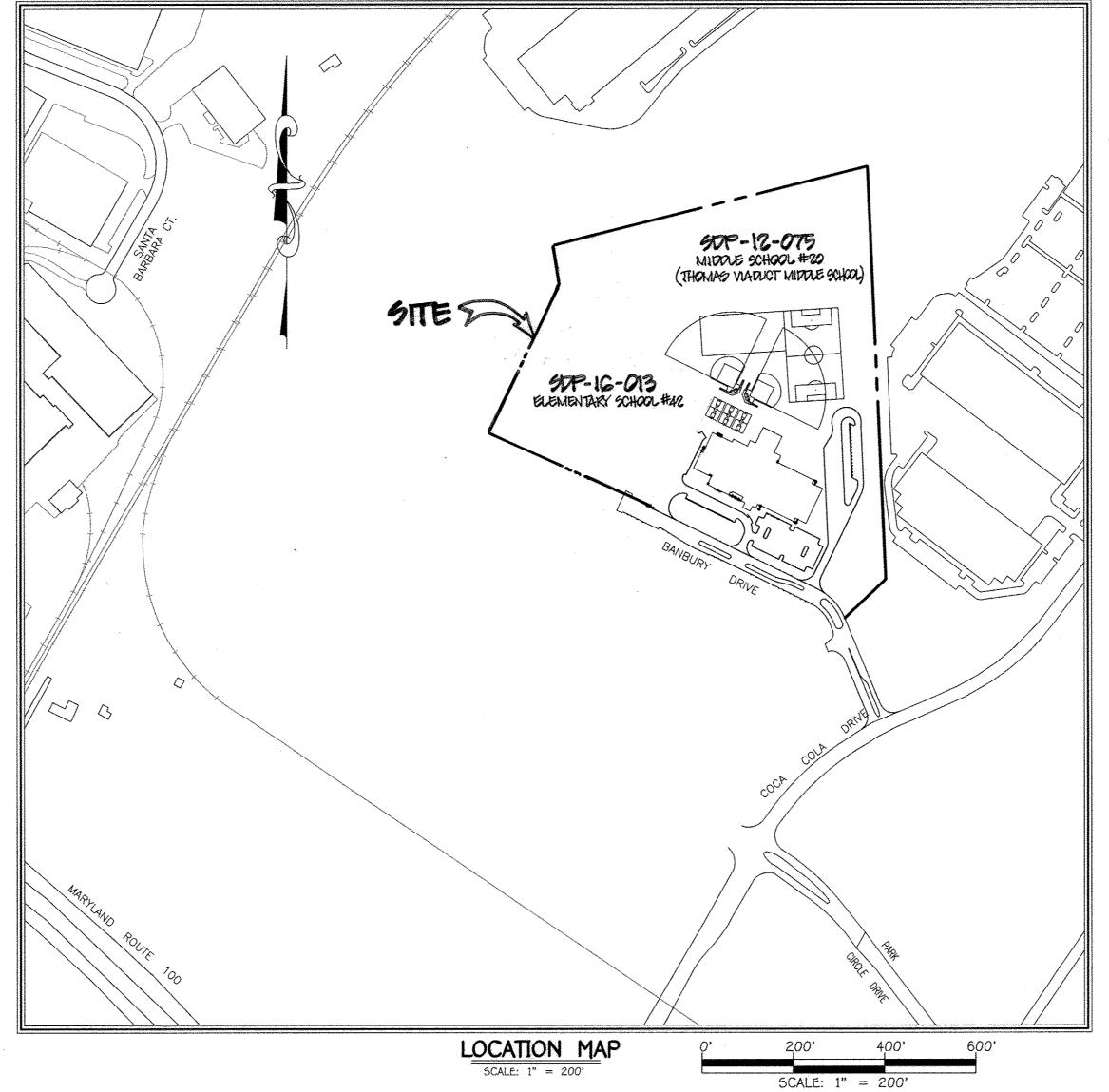
C. Total area of site: 12.728 Ac. + D. Building coverage: 1.57 Ac. ± (5,6%) E. Total area of wetlands: O Ac. +

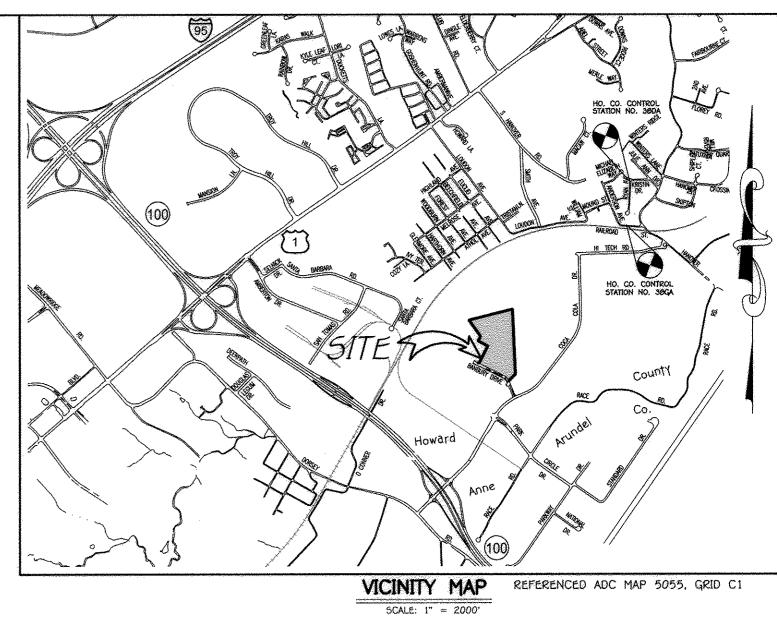
(A)	LEGEND
SYMBOL	DESCRIPTION
108	EXISTING CONTOUR 2' INTERVAL
<u> </u>	EXISTING CONTOUR 10' INTERVAL
	EXISTING SAN. SEWER LINE
designitures appropriate of the designiture of the second	EXISTING STORM DRAIN LINE
	EXISTING WATER LINE
Not the second second second to the second s	EXISTING ELECTRIC LINE
who the temperature and a submer to the till the constitution of the time and a submitted	EXISTING CABLE LINE
· · · · · · · · · · · · · · · · · · ·	EXISTING GAS LINE
X	EXISTING FENCE
108	PROPOSED CONTOUR 2' INTERVAL
110	PROPOSED CONTOUR 10' INTERVAL
+ 107.30	SPOT ELEVATION
	PROPOSED CONCRETE WALK
	PROPOSED MACADAM PAVING
~~~~~	EXISTING TREELINE
mmm.	PROPOSED TREELINE
L0.0.	LIMIT OF DISTURBANCE
- 트린크	15% - 24.9% SLOPES
	25% OR GREATER SLOPES
	PROPOSED PUBLIC WATER
Ø V	PROPOSED PRIVATE WATER
10" RCCP	PROPOSED STORMDRAIN
Ø* 5	PROPOSED PRIVATE SEWER
<i>8</i> * 5	PROPOSED PUBLIC SEWER
20000000000000000000000000000000000000	PROPOSED GRASS PAVERS
	SOILS DELINEATION
55F	SUPER SILT FENCE

# SITE DEVELOPMENT PLAN MIDDLE 5CHOOL #20

OXFORD SQUARE PARCEL 'D-D'

TAX MAP No.: 38, GRID No: 20, PARCEL No.: 761 FIRST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND





### GENERAL NOTES

I. ALL CONSTRUCTION SHALL BE IN 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 410-313-1880 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

TAX MAP 30, GRID 20, PARCEL NO. 761 ZONING: THIS PROJECT IS ZONED TOD PER ZONING BOARD CASE ZB-1086 M DATED 9/13/10

NUMBER OF BUILDABLE PARCELS: 1 AREA OF PUBLIC ROADWAY TO BE DEDICATED: 0 AC. ± AREA OF FLOODPLAIN: 0 AC. ±

AREA OF 25% OR GREATER SLOPES: 0.98 AC.+

TOPOGRAPHIC CONTOURS BASED ON AERIAL SURVEY PERFORMED BY HARFORD AERIAL SURVEYS, INC. DATED JANUARY, 2008 AND SUPPLEMENTED WITH TOPOGRAPHY SHOWN ON THE GRADING AND SEDIMENT CONTROL

D. THIS SOP 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

50P-90-041, 50P-93-055, WP12-109, WP-13-050, GP-13-021.

). STORMWATER WILL BE BE PROVIDED IN AGGREGATE RESERVOIRS. CHANNEL PROTECTION VOLUME WILL BE PROVIDED BY MICRO BIO-RETENTION FACILITIES, RAINWATER HARVESTING, AND NON-ROOF DISCONNECTION CREDITS. OVERBAN FLOOD PROTECTION AND EXTREME FLOOD VOLUMES ARE NOT REQUIRED FOR THIS SITE. THE PUBLIC SCHOOL SYSTEM WILL MAINTAIN THE ON-SITE STORMWATER FACILITIES IMP#1, #2, #3, #4, #5, AND THE RAIN HARVESTING SYSTEM WHILE THE HOMEOWNERS' ASSOCIATION WILL MAINTAIN ONLY THOSE STORMWATER FACILITIES ADJACENT TO THE PUBLIC RIGHT OF WAY (BUT ON SCHOOL PROPERTY).

20. THE FOREST CONSERVATION ACT REQUIREMENTS FOR THIS PROJECT WILL BE MET THROUGH THE RETENTION OF 3.65 ACRES OF ON-SITE FOREST AND THE PLANTING OF 1.84 ACRES OF ON-SITE FOREST. THE REQUIRED FOREST CONSERVATION SURETY FOR ON-SITE PLANTING WILL BE PROVIDED UNDER F-12-026. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE FOREST CONSERVATION EASEMENT; HOWEVER, FOREST MANAGEMENT PRACTICES AS DEFINED IN THE DEED OF FOREST CONSERVATION EASEMENT ARE ALLOWED.

21. ANY DAMAGE TO COUNTY AND OR STATE OWNED RIGHT-OF-WAY TO BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

22. ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD). 23. ALL DRIVEWAYS AND PARKING TO BE OWNED AND MAINTAINED BY THE HOWARD COUNTY PUBLIC SCHOOL SYSTEM.

24. GUTTER PAN OF CURBS SHALL BE PITCHED TO CONFORM TO THE ADJACENT DRAINAGE PATTERNS OF THE ADJOINING PAVING FOR VEHICULAR USE.

25. 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 505 OF THE A.D.A STANDARDS ACCESSIBILITY GUIDELINES

26. 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. 27. ALL PROPOSED ON-SITE STORM DRAINS UNDER THIS SITE DEVELOPMENT PLAN ARE PRIVATE AND WILL BE MAINTAINED BY THE HOWARD COUNTY PUBLIC SCHOOL SYSTEM.

CONSTRUCTION TO VERIFY THE EXACT LOCATION.

29. TRENCH BEDDING FOR STORM DRAINS STRUCTURES SHALL BE IN ACCORDANCE WITH HOWARD COUNTY STANDARD G2.01 CLASS C BEDDING UNLESS OTHERWISE NOTED. 30. ALL OUTSIDE LIGHTING SHALL COMPLY WITH ZONING REGULATIONS SECTION 134 WHIGH 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."

31. LANDSCAPING IS IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL. NO LANDSCAPE SURETY IS REQUIRED SINCE THIS IS A HOWARD COUNTY BOARD OF EDUCATION

32. ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED ("QUICK PUNCH"), SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED. SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. THE ANCHOR SHALL NOT EXTEND MORE THAN TWO "QUICK PUNCH" HOLES ABOVE THE GROUND LEVEL.

A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST. 33. THE WATER METER WILL BE INSTALLED INSIDE THE BUILDING. THE BUILDING SHALL BE EQUIPPED WITH AN AUTOMATIC FIRE PREVENTION SPRINKLER SYSTEM. 34. A MARYLAND DEPARTMENT OF THE ENVIRONMENT NATIONAL POLLUTANT DISCHARGE NOI PERMIT WILL BE REQUIRED FOR THIS PROJECT. THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS ON

35. THIS PLAN IS SUBJECT TO DESIGN ADVISORY PANEL REQUIREMENTS OF WHICH A HEARING WAS HELD ON APRIL 25, 2012.

36. THE TRENCH DRAIN ADJACENT TO THE BASKETBALL COURTS IN THE BACK OF THE SCHOOL SHALL BE POLY DRAIN AS MANUFACTURED BY ABT, INC., OR AN APPROVED EQUAL

37. USE DUCTILE IRON SLOTTED GRATE #2502. BOTH CHANNEL ONLY AND CHANNEL WITH POLYWALLS WILL BE NEEDED TO OBTAIN THE DESIGN LENGTH OF 188 L.F. EXIT THE POLY DRAIN TRENCH WITH 6" PVC (SCHEDULE 40) PIPE AT THE DOWNSTREAM END USING A MANUFACTURER'S FIFTING. THE CONTRACTOR SHALL PREPARE AND SUBMIT FOR APPROVAL A SHOP DRAWING SHOWING DESIGN DETAILS, SPECIFICATIONS, CONCRETE ENCASEMENT, STRUCTURAL REINFORCEMENT, AND NECESSARY EXPANSION AND CONTRACTION JOINTS. AND OTHER INFORMATION AS NORMALLY

ACTIVITIES ARE CONSIDERED NECESSARY OR WAIVERS ARE APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING, ACTIVITIES PROPOSED IN WETLANDS, STREAMS, THEIR BUFFERS, AND DEPARTMENT OF PLANNING AND ZONING.

39. THIS PROPERTY IS SUBJECT TO A HABITAT MANAGEMENT AGREEMENT WHICH ALLOWS PERIODIC INSPECTIONS BY THE DEPARTMENT OF PLANNING AND ZONING. 40, NOTE THIS PLAN IS SUBJECT TO WAIVER PETITION WP-13-050. THE PLANNING DIRECTOR ON OCTOBER 17, 2012 APPROVED WAIVER PETITION (WP-13-050) FOR A WAIVER OF SUBSECTION 16.155(a)(I)(i) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, WAIVER APPROVAL WOULD ALLOW GRADING PERMITS TO BE OBTAINED FOR MIDDLE SCHOOL NO. 20 (GP-13-021) WITHOUT HAVING TO SUBMIT SITE DEVELOPMENT PLANS TO DPZ FOR APPROVAL. THE APPROVAL OF THIS WAIVER PETITION IS SUBJECT TO COMPLIANCE WITH THE FOLLOWING

CONDITIONS OF APPROVAL, PETITIONER SHALL OBTAIN HOWARD SOIL CONSERVATION DISTRICT APPROVAL AND A GRADING PERMIT PRIOR TO THE START OF WORK. 41. IMPACTS TO REGULATED STEEP SLOPES RESULTING FROM CONSTRUCTION OF THE TEMPORARY ACCESS ROAD HAVE BEEN DETERMINED TO BE NECESSARY BY THE DEPARTMENT OF PLANNING AND ZONING IN ACCORDANCE WITH SUBSECTION 16.116 (c) OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS.

> NOTE: THE PURPOSE OF THIS REDUNE 15 TO REMOVE THE PROPERTY LINE BETWEEN PARCEL'B' & PARCEL'B-B'
> TO BE PARCEL 'D-D' FOR BOTH SCHOOLS.

> > TITLE SHEET

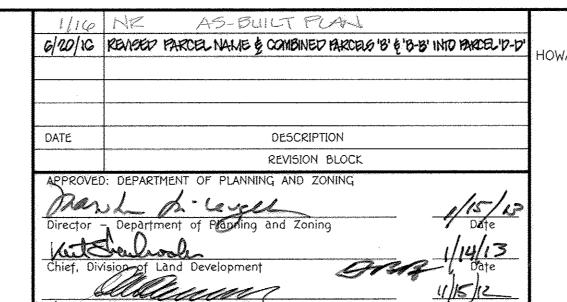


A. The Number of parking spaces in accordance with the Public School System's requirements = 119

B. Number of spaces proposed under this site plan = 119 (Including 5 handicapped spaces &

Civil Engineers, Planners, Landscape Architects, Surveyors 704 Severnside Ave., Severna Park, MD 21146 410-987-3456

"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."



NOTE: 90P-12-075 15 FOR MIDDLE SCHOOL #20 ONLY

SEE SOP-IG-013 FOR ELEMENTARY SCHOOL #42

PREPARED FOR IOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 Maryland Route 108 Ellicott City, Maryland 21042 Attention Bruce Gist 410-313-6805

Parcel Number Street Address 7000 BANBURY DRIVE D-D' HANOVER, MD 21076 PROJECT OXFORD SQUARE PARCEL 10-0 MIDDLE SCHOOL #20 N/A AX MAP ELEC. DIST. CENSUS BLOCK NO. 6012.01 TOD 38 FIRST 23788 - 23790

SEWER CODE

Address Chart

'GREEN NEIGHBORHOOD' MIDDLE 5CHOOL #20 OXFORD SQUARE PARCEL'D-D'

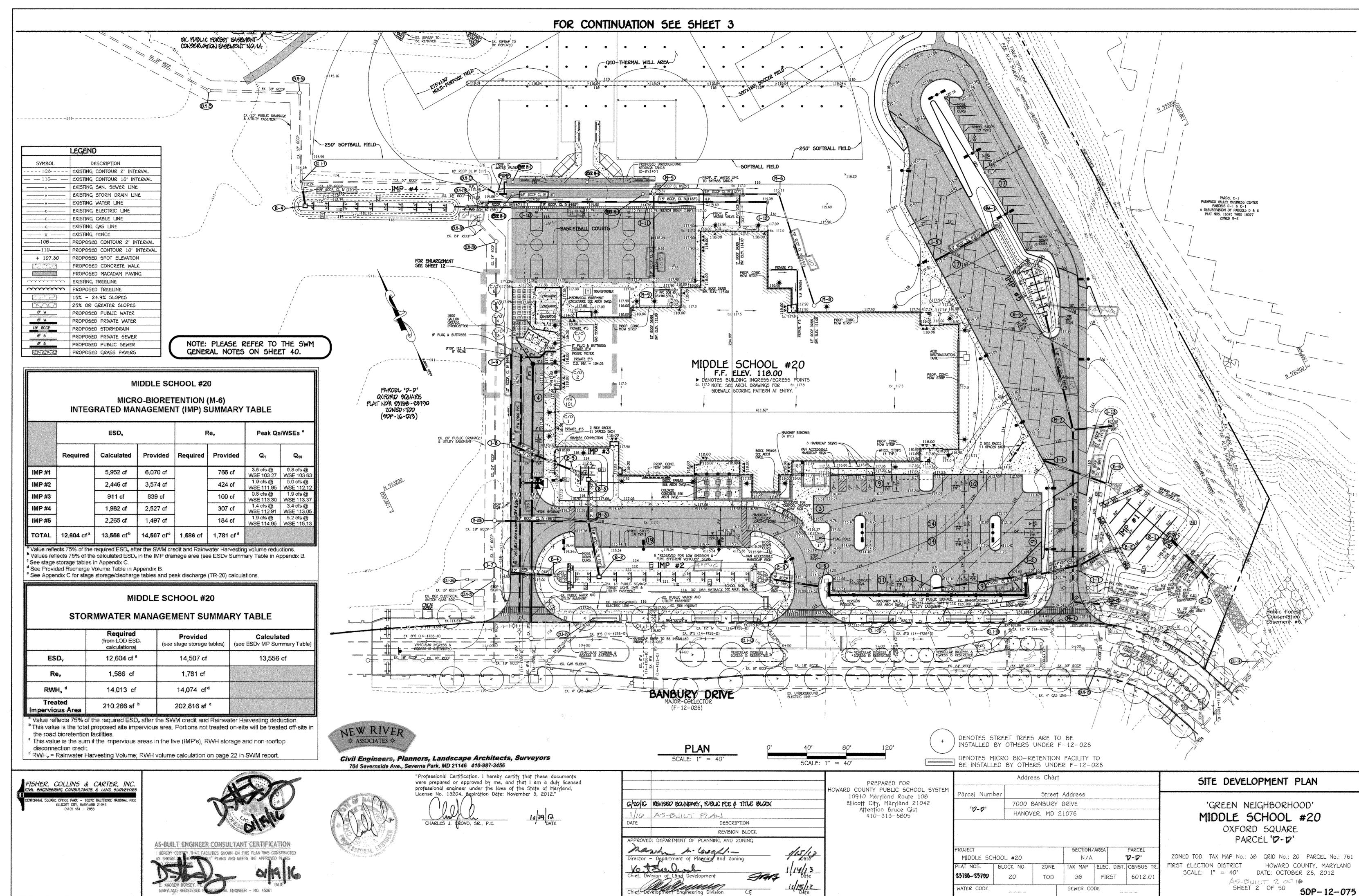
ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: OCTOBER 26, 2012

AS-BUILT 1 OF 16 SHEET 1 OF 50

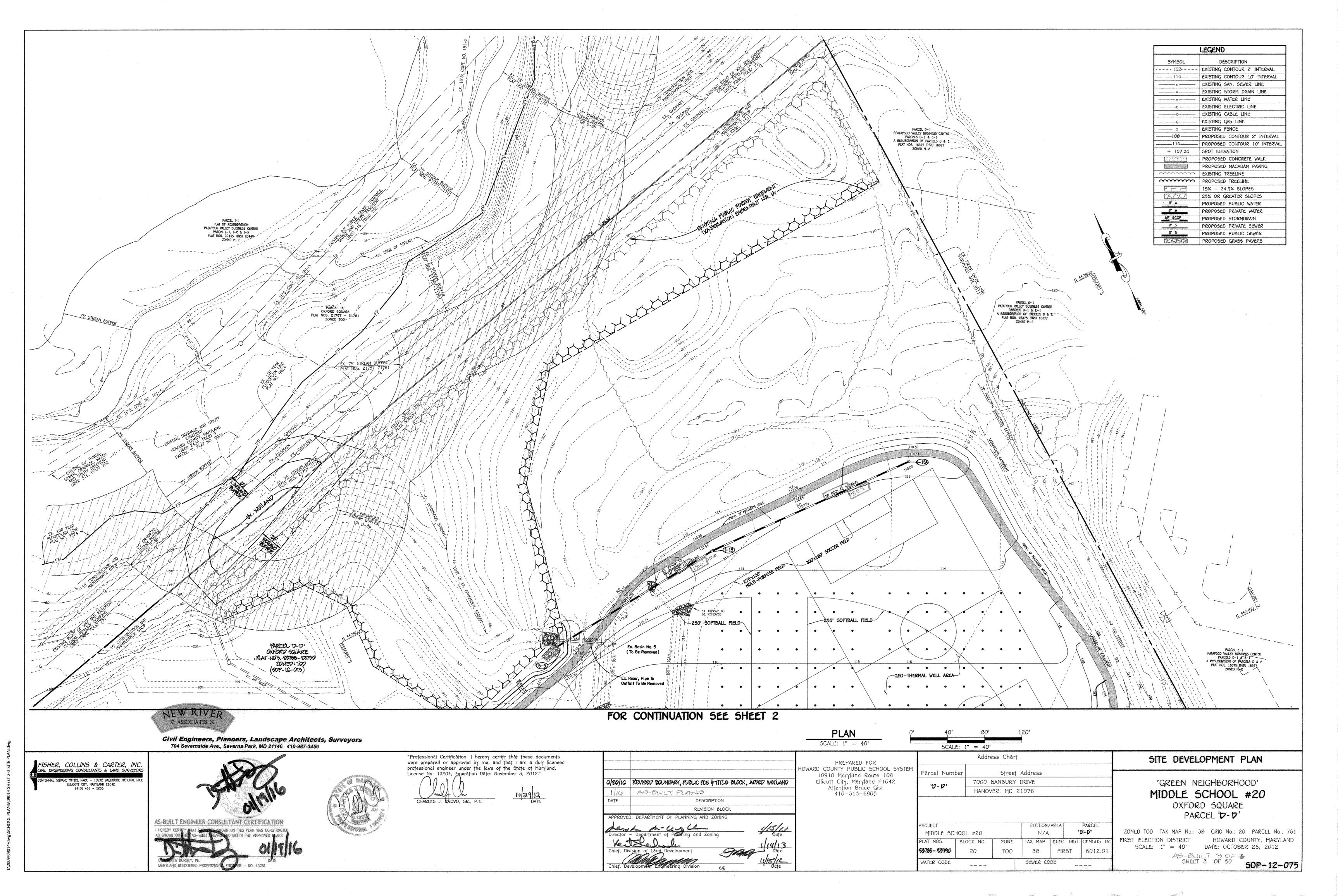
FISHER, COLLINS & CARTER. INC. CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2055

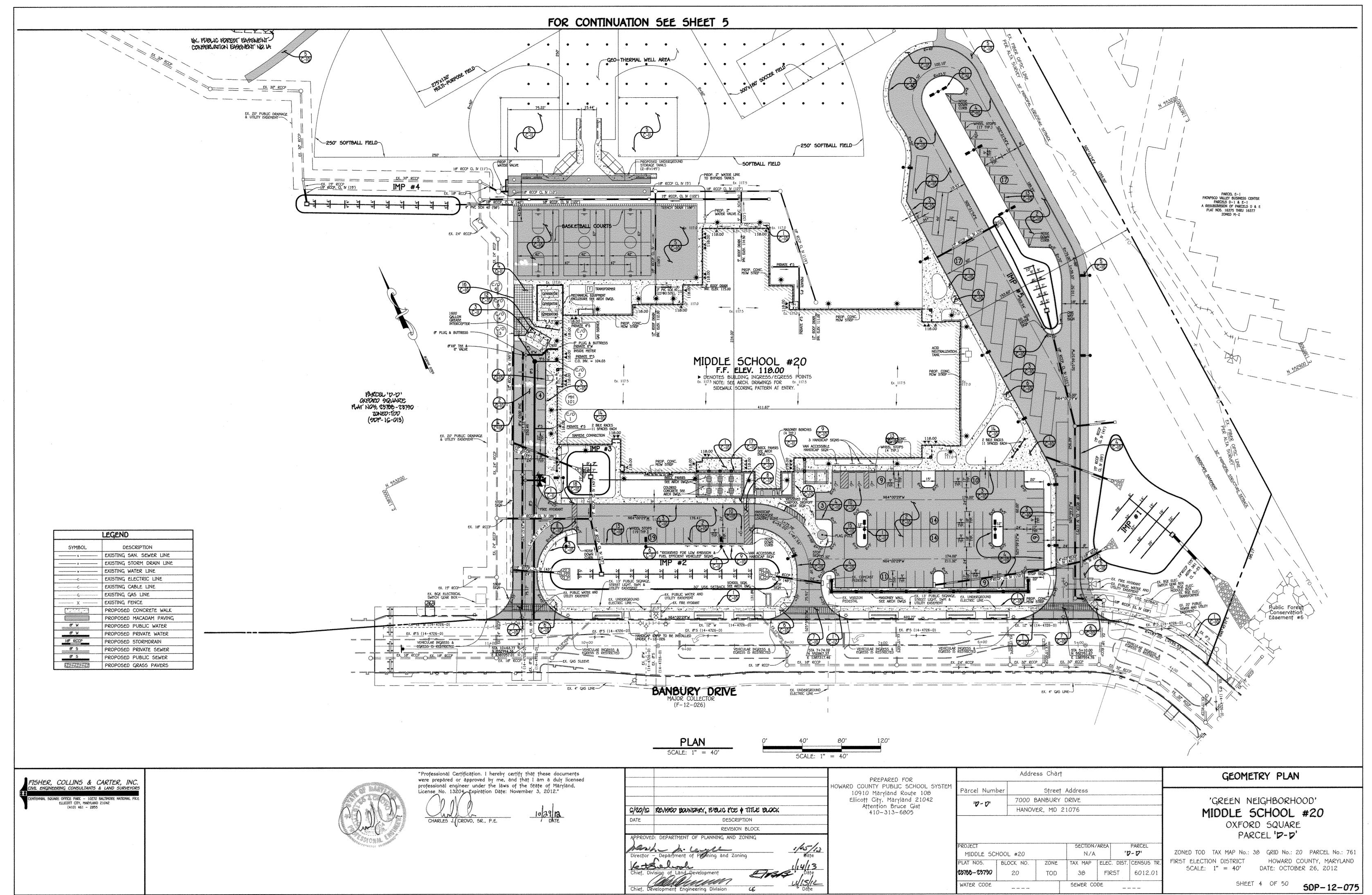
CHARLES J. CROVO, SR., P.E.

WATER CODE

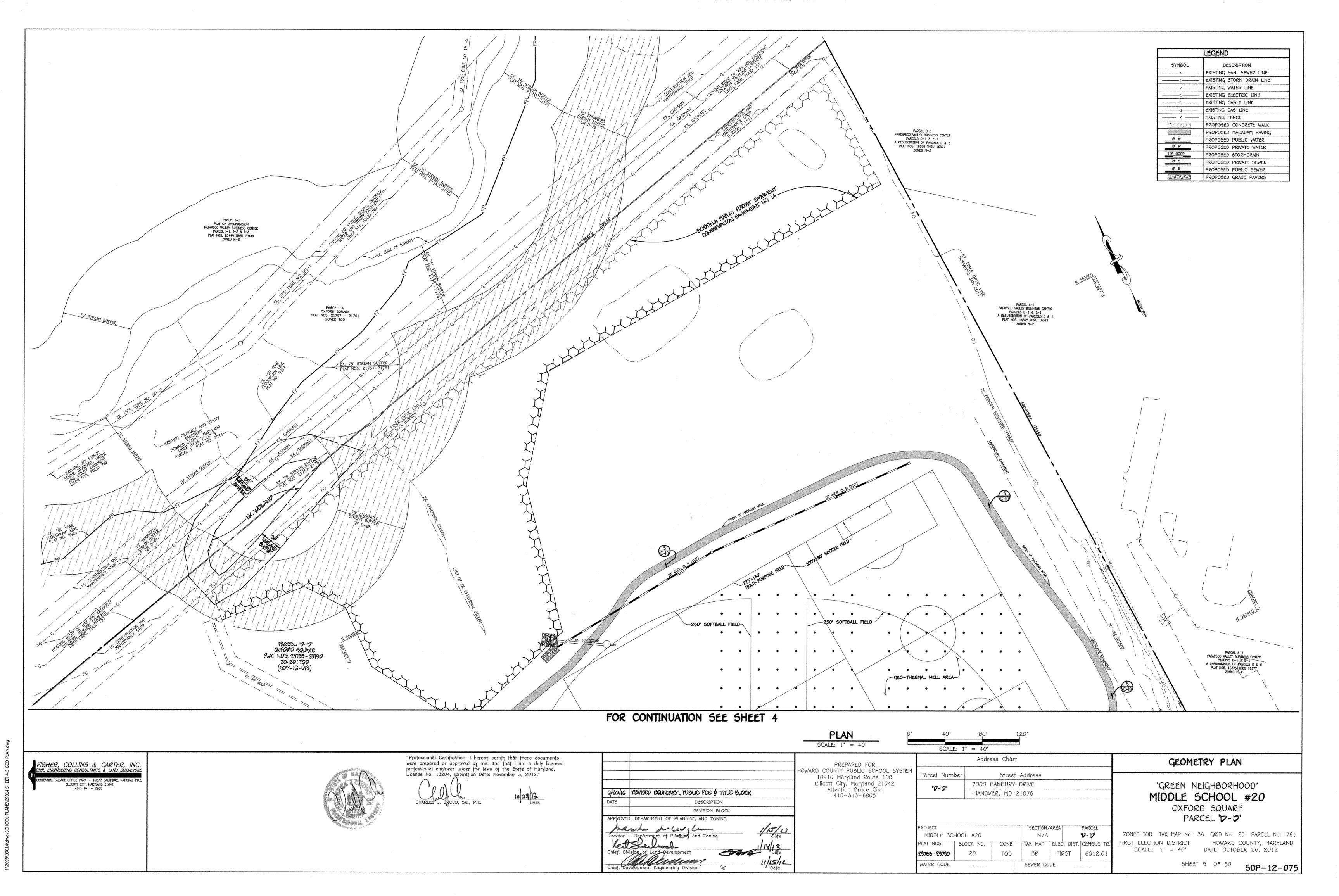


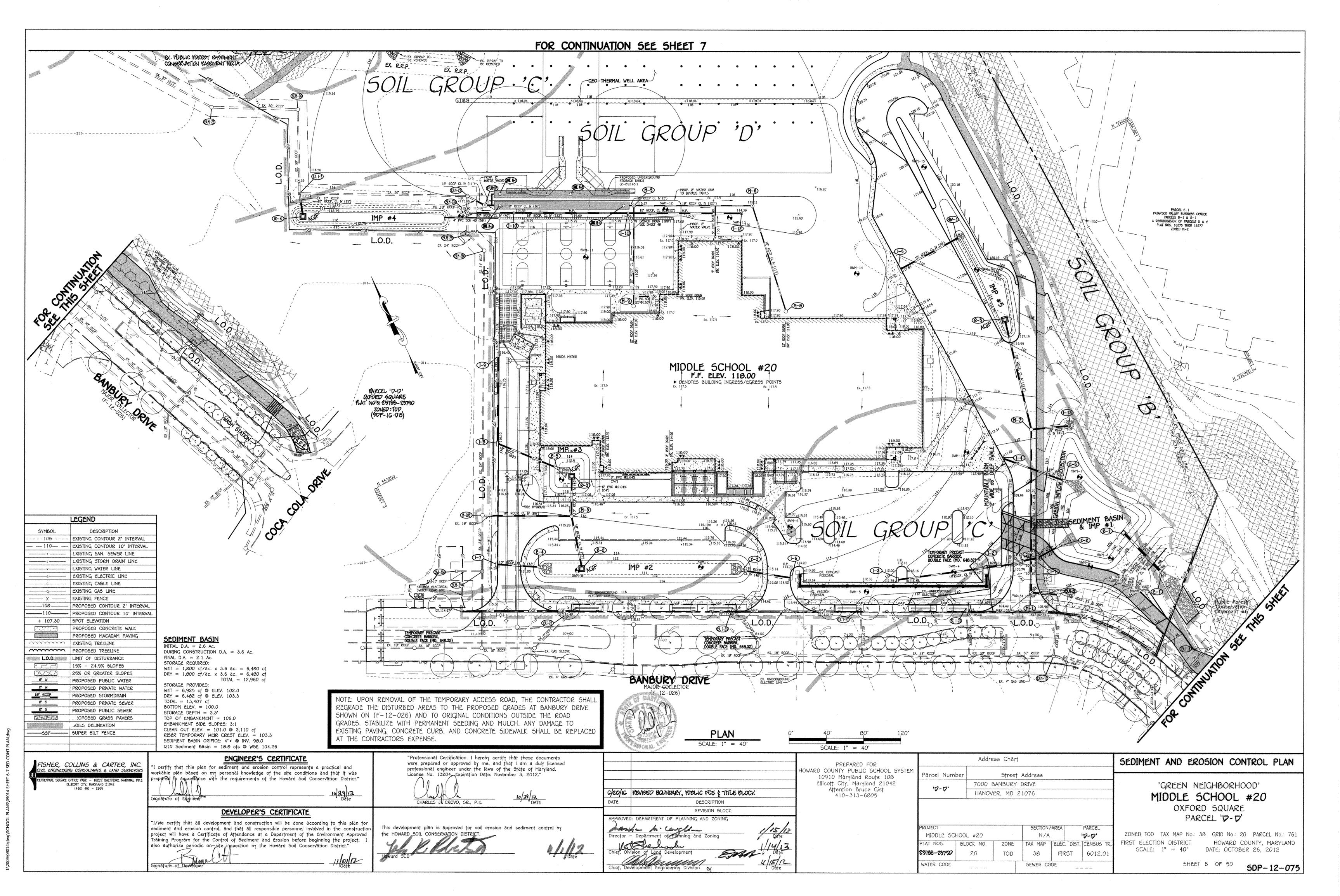
I\2009\09014\dwg\SCHOOL PLANS\09014 SHEET 2-3 SITE PLAN.dwg

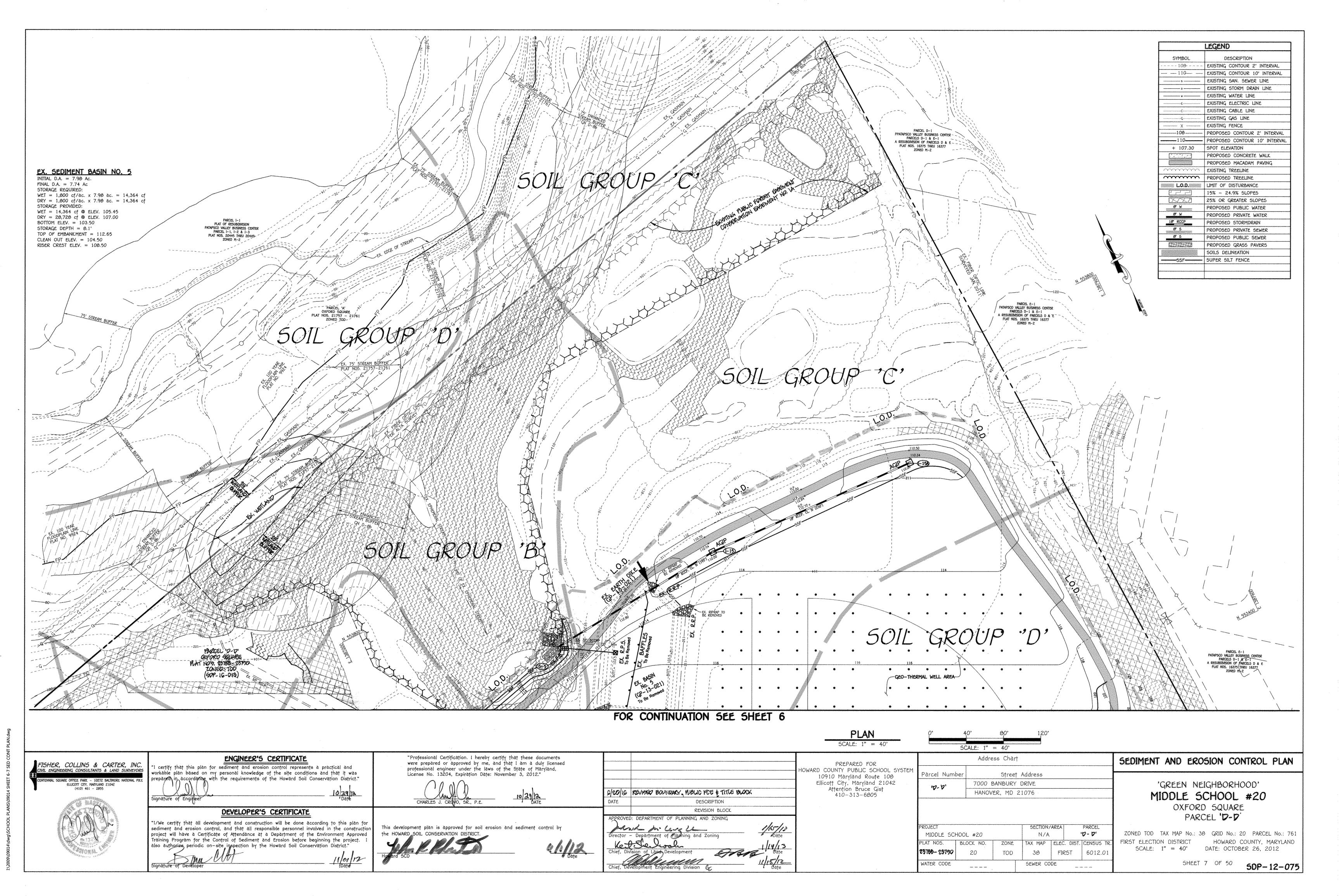


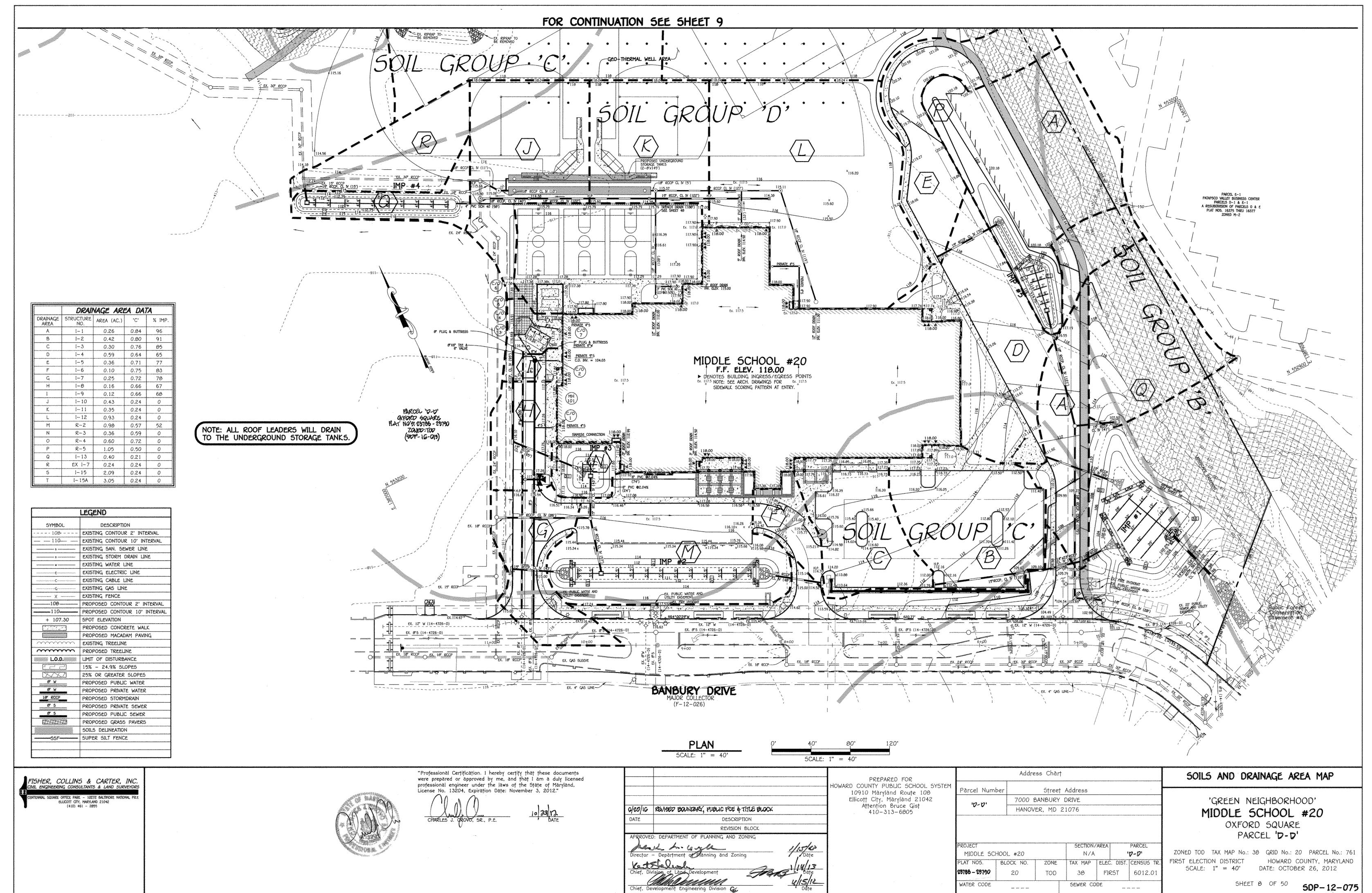


I:\2009\09014\dwg\SCHOOL PLANS\09014 SHEET 4-5 GEO PLAN.dwg

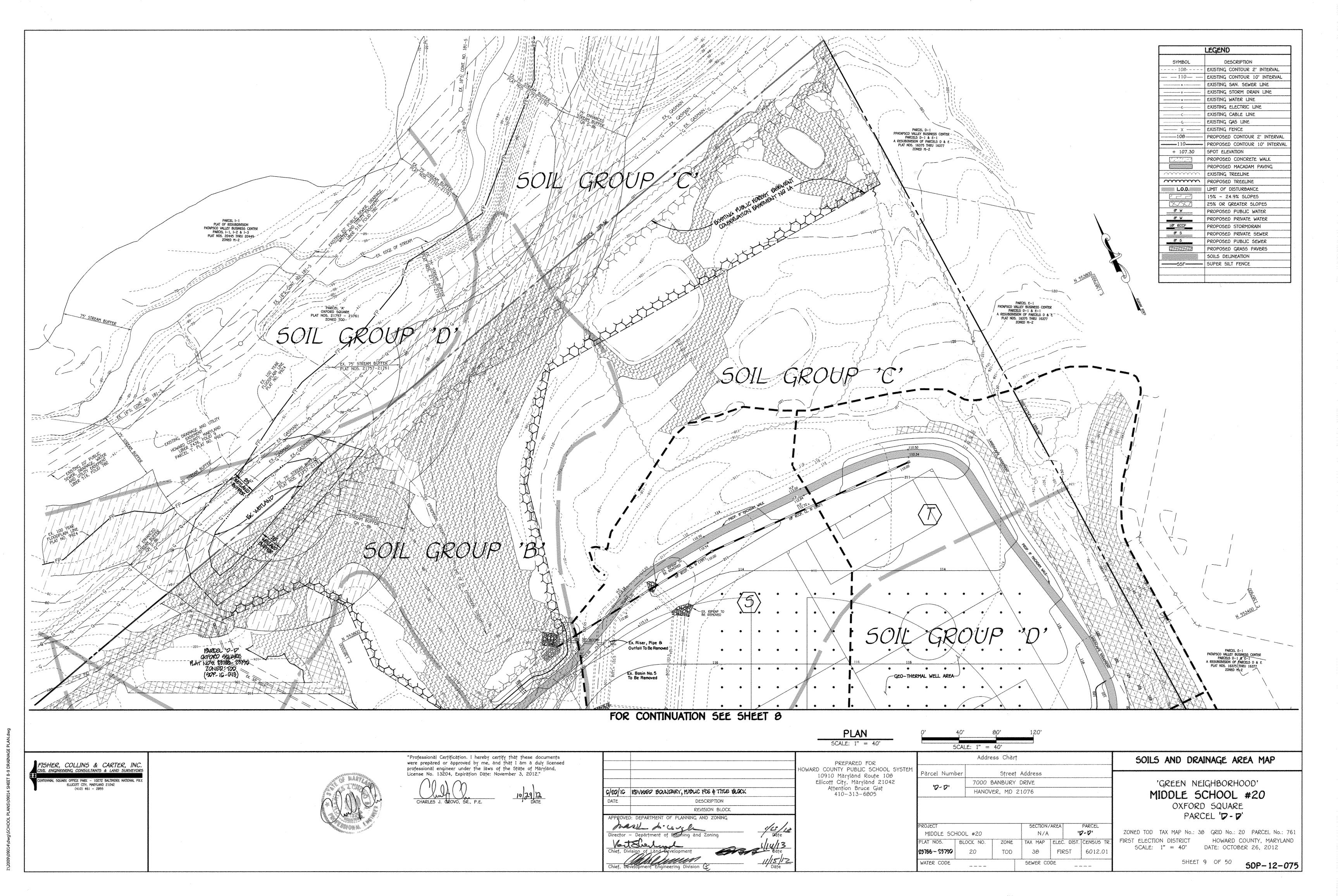


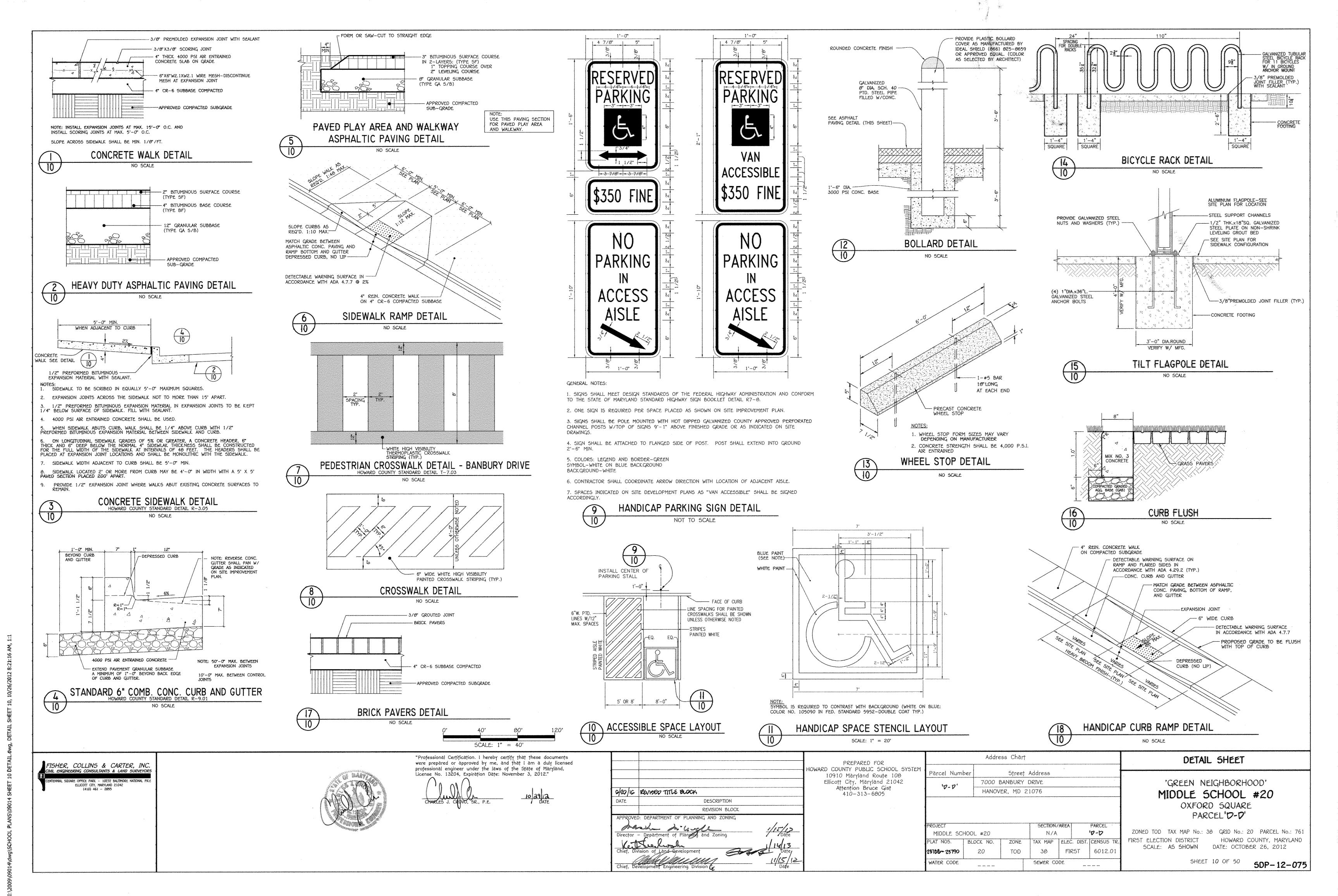


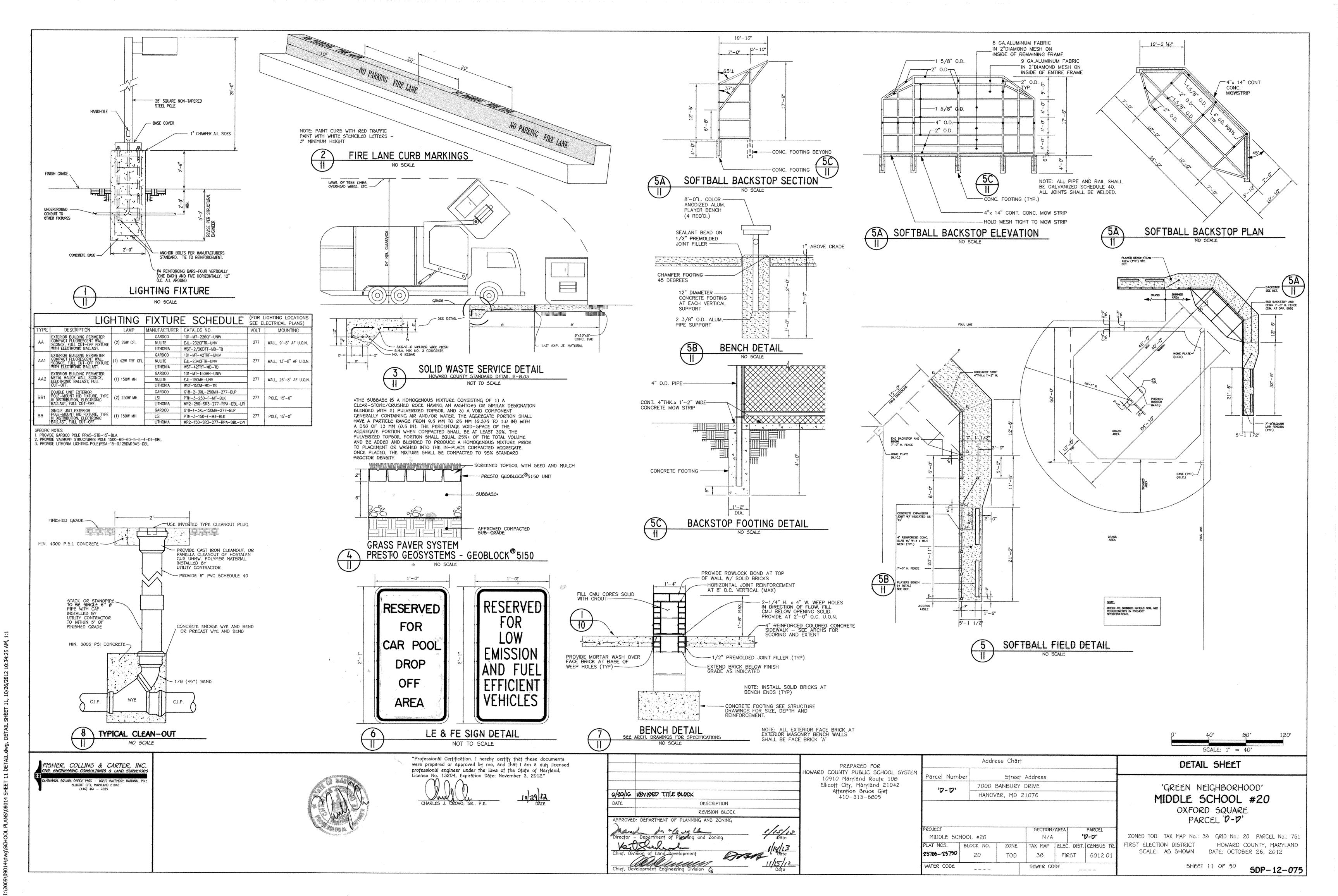


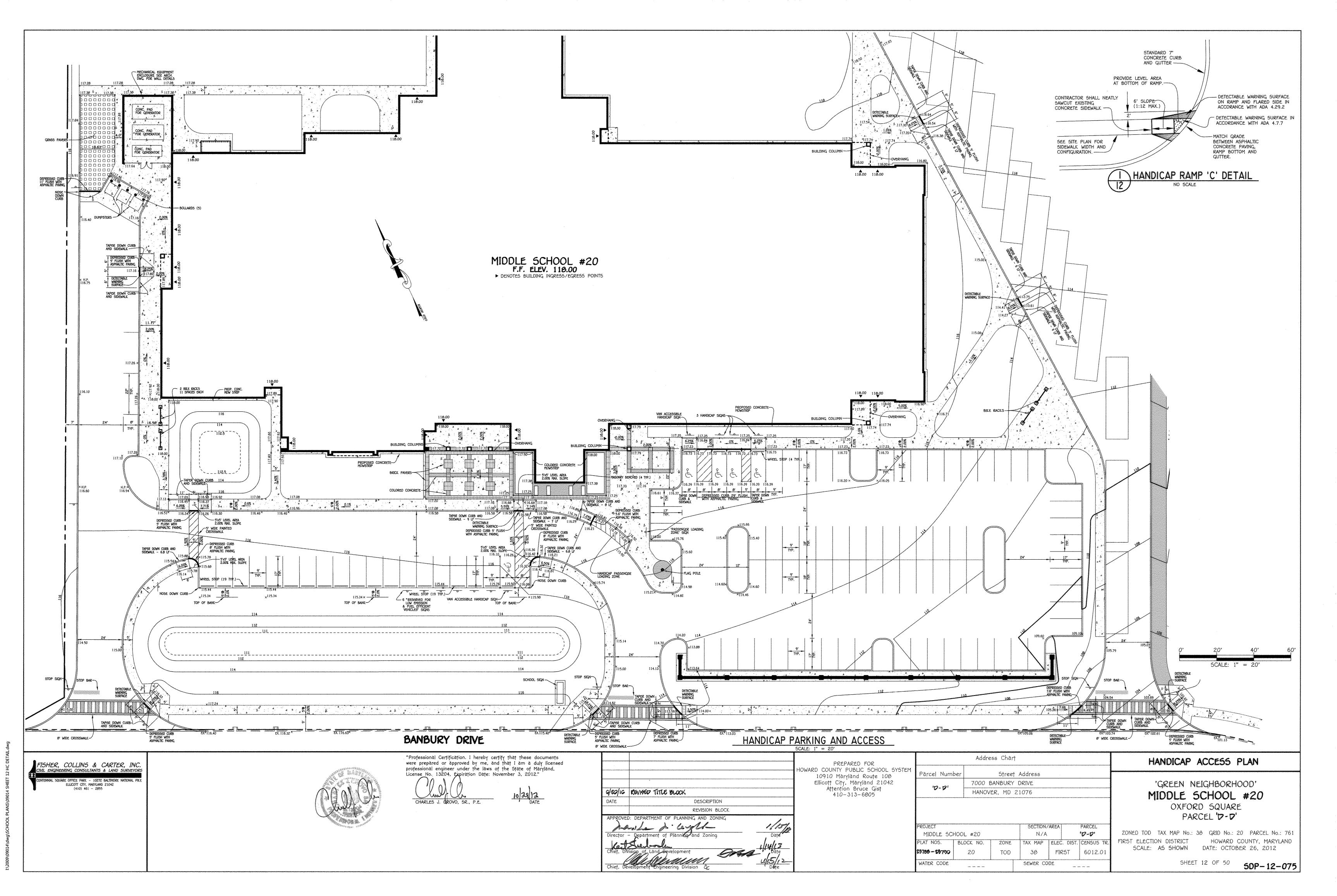


I:\2009\09014\dwg\SCHOOL PLANS\09014 SHEET 8-9 DRAINAGE PLAN.dwg









PURPOSE Vegetative stabilizațion specificațions dre used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and run-off to downstream areas, and improving wildlife habitat and visual resources. CONDITIONS WHERE PRACTICE APPLIES

DEFINITION

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

EFFECTS ON WATER QUALITY AND QUANTITY

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration evaporation, transpiration, percolation, and groundwater recharge. Vegetation, over time, will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth. Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone. Sediment control devices must remain in place during grading, seedbed preparation, seeding, mulching and vegetative establishment to prevent large quantities of sediment and associated chemicals and nutrients from washing into surface waters. SECTION 1 - VEGETATIVE STABILIZATION METHODS AND MATERIALS

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

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

iii. Schedule required soil tests to determine soil amendment composition and application rates for sites

having disturbed area over 5 acres.

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

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

iii. Lime materials shall be ground limestone (hydrated or burnt lime may be substituted) which contains at least 50% total oxides (calcium oxide plus magnesium oxide). Limestone shall be ground to such fineness that at least 50% will pass through a #100 mesh sieve and 90-100% will pass through a #20 mesh sieve. Incorporate time and fertilizer into the top  $3-5^{\circ}$  of soil by disking or other suitable means.

Seedbed Preparation

i. Temporary Seeding

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

running parallel to the contour of the slope.

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

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

Permanent Seeding

Minimum soil conditions required for permanent vegetative establishment:
1. Soil pH shall be between 6.0 and 7.0. Soluble saits shall be less than 500 parts per million (ppm). The soil shall contain less than 40% clay, but enough fine grained material (>30% silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception is if lovegrass or serecia lespedezas is to be planted, then a sandy soil (<30% si

plus clay) would be acceptable.

Soil shall contain 1.5% minimum organic matter by weight.

Soil must contain sufficient pore space to permit adequate root penetration.

If these conditions cannot be met by soils on site, adding topsoil is required in accordance with Section 21 Standard and Specification for Topsoil.

Areas previously graded in conformance with the drawings shall be maintained in a true and even grade, then scarified or otherwise loosened to a depth of 3-5" to permit bonding of

to the surface area and to create horizontal erosion check slots to prevent topsoil from sliding down a slope.

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

Mix soil amendments into the top 3-5" of topsoil by disking or other suitable means. areas should be raked to smooth the surface, remove large objects like stones and branches and ready the area for seed and application. Where site conditions will not permit normal

seedbed preparation, loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface. Steep slopes (steeper than 3:1) should be tracked by a dozer leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. The top 1-3" of soil should be loose and friable. Seedbed loosening may not be necessary on D. Seed Specifications

All seed must meet the requirements of the Maryland State Seed Law. All seed shall be subject to re-testing by a recognized seed laboratory. All seed used shall have been tested within the 6 months immediately breceding the date of sowing such material on this job. Note: Seed tags shall be made available to the inspector to verify type and rate of seed used. inoculant - The inoculant for treating legume seed in the seed mixtures shall be a pure culture of nitrogen-fixing bacteria prepared specifically for the species. Inoculants shall not be used later that the date indicated on the container. Add tresh inoculant as directed on package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75°-80° F. can weaken bacteria and make the inoculant less effective. until used. Temperatures above 75 -00° F. can weaken bacteria and make the inoculant less et Methods of Seeding

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

drop seeded, or a cultipacker seeder.

If fertilizer is being applied at the time of seeding, the application rates amounts will not exceed the following: nitrogen; maximum of 100 lbs. per acre total of soluble nitrogen; P205 (phosphorous); 200 lbs/ac; K20 (potassium): 200 lbs/ac. Lime — use only ground agricultural limestone, (Up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding by hydroseeding at any one seed and fertilizer shall be mixed on site and seeding shall be done immediately and

without interruption.

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

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

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

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

a. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting. Where practical, seed should be applied in two directions perpendicular to each other. Apply half the seeding rate in each direction.

Mulch Specifications (In order of preference)

1. Straw shall consist of thoroughly threshed wheat, rye or oat straw, reasonable bright in color, and shall be free of proving weed seeds.

 Sträw shäll consist of thoroughly threshed wheat, rye or oat sträw, reasonable bright in color, and shi not be musty, moldy, caked, decayed, or excessively dusty and shall be free of noxious weed seeds as specified in the Maryland Seed Law.
 Wood Cellulose Fiber Mulch (WCFM)

 WCFM shäll consist of specially prepared wood cellulose processed into a uniform fibrous physical state.
 WCFM shall be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
 WCFM, including dye, shall contain no germination or growth inhibiting factors.
 WCFM materials shall be manufactured and processed in such a manner that the wood cellulose fiber mulch will provide an uniform suspension in water under aditation.

 wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material shall form a blotter-like ground cover, on application, having

in contact with the soil without inhibiting the growth of the grass seedlings. WCFM material shall contain no elements or compounds at concentration levels that will be phytol-toxic.

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

Only sterile straw mulch should be used in areas where one species of grass is desired. Mulching Seeded Areas — Mulch shall be applied to all seeded areas immediately after seeding.

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

ii. When straw mulch is used, it shall be spread over all seeded areas at the rate of 2 tons/acre. Mulch shall be applied to a uniform loose depth of between 1" and 2". Mulch applied shall achieve a uniform distribution and depth so that the soil surface is not exposed. If a mulch anchoring tool is to be used, the rate should be increased to 2.5 tons/acre. iii. Wood cellulose fiber used as a mulch shall be applied at a net dry weight of 1,500 lbs. per acre. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons of water.

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

i. A mulch anchoring tool is a tractor drawn implement decisioned to such and acres are acres and acres and acres and acres and acres and acres and acres are acres and acres and acres are acres and acres and acres are acres and acres acres are acres acres and acres are acres and acres acres are acres and acres acres

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

Wood cellulose fiber may be used for anchoring straw. The fiber binder shall be applied at a net dry weight of 750 pounds/acre. The wood cellulose fiber shall be mixed with water and

e mixture shall contain a maximum of 50 pounds of wood cellulose fiber per 100 gallon water a or water.

II. Application of liquid binders should be heavier at the edges where wind catches mulch, such as in valleys and crest of banks. The remainder of area should be appear uniform after binder application. Synthetic binders — such as Acrylic DLR (Agro-Tack), DCA-70 Petroset, Terra Tic II, Terra Tack AR or other approved equal may be used at rates recommended by the manufacturer to anchor mulch. Lightweight plastic netting may be stapled over the mulch according to manufacturer's recomnendations. Netting is usually available in rolls 4' to 15' feet wide and 300 to 3,000 feet long.

Incremental Stabilization - Cut Slopes
i. All cuts slopes shall be dressed, prepared, seeded and mulched as the work progresses. Slopes shall be excavated and stabilized in equal increments not to exceed 15 Construction sequence (Refer to Figure 3 below):

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

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

Embankments shall be constructed in lifts as prescribed on the plans. i. Embankments shall be constructed in lifts as prescribed on the plans.
 ii. Slopes shall be stabilized immediately when the vertical height of the multiple lifts reaches
 15°, or when the grading operation ceases as prescribed in the plans.
 iii. At the end of each day, temporary berms and pipe slope drains should be constructed along the top edge of the embankment to intercept surface runoff and convey it down the slope in a non-erosive manner to a sediment trapping device.
 iv. Construction sequence: Refer to Figure 4 (below).
 a. Excavate and stabilize all temporary swales, side ditches, or berms that will be used to divert runoff around the fill. Construct slope silt fence on low side of fill as shown in Figure 5, unless other methods shown on the plans address this area.
 b. Place Phase 1 embankment, dress and stabilize.
 c. Place final ohase embankment, dress and stabilize.
 d. Place final ohase embankment, dress and stabilize.

Place final phase embankment, dress and stabilize. Overseed previously seeded

areas as necessary.

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

#### SECTION 2 - TEMPORARY SEEDING

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

A. Seed mixtures - Temporary Seeding

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

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

5e	ed Mixture (Har Fron	diness Zone <u>6b</u> n Table 26	)		Fertilizer Rate	Lime Rate
No.	5pecies	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	(10-10-10)	
İ	BARLEY OATS RYE	122 96 140	3/1 - 5/15, 8/15 - 10/15	1" - 2" 1" - 2" 1" - 2"	600 lb/ac (15 lb/1000sf)	2 tons/ac (100 lb/1000sf)

SECTION 3 - PERMANENT SEEDING Seeding grass and legumes to establish groung cover for a minimum of one year on disturbed areas

A. Seed mixtures - Permanent Seeding

generally receiving low maintenance

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

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

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

	Seed Mixture (Hardiness : From Table	Zone <u>6b</u> 25	_)			Fertilizer R (10-20-20	. ,	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P205	K20	
3	TALL FESCUE (05%) PERENNIAL RYE GRASS (10%) KENTUCKY BLUEGRASS (5%)	125 15 10	3/1 - 5/15. 8/15 - 10/15	1" - 2"	90  b/ac (2.0  b/	175  b/ac (4  b/		2 tons/do
10	TALL FESCUE (00%) HARD FESCUE (20%)	120 30	3/1 - 5/15, 8/15 - 10/15	1" - 2"	1000sf)	1000sf)	1000sf)	1000sf)

NOTE: THESE SEEDING SPECIFICATIONS ARE THE MINIMUM REQUIRED FOR SEDIMENT CONTROL REFER TO PROJECT SPECIFICATIONS FOR SEEDING REQUIREMENTS FOR OTHER AREAS OF THE SITE.

# SEDIMENT CONTROL NOTES

1) A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LISCENSES AND PERMITS, SEDIMENT CONTROL

DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855) 2) ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS

FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO. 3) FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: a) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1, b) 14 DAYS

AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. 4) ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. CHAPTER 12. OF THE HOWARD COUNTY DESIGN MANUAL. STORM DRAINAGE

5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER

GERMINATION AND ESTABLISHMENT OF GRASSES. 6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT

20.21 ACRES

13.35 ACRES

4.76 ACRES

8.58 ACRES

CONTROL INSPECTOR. 7) SITE ANALYSIS: TOTAL AREA OF SITE AREA DISTURBED AREA TO BE ROOFED OR PAVED AREA TO BE VEGETATIVELY STABILIZED TOTAL CUT

SAME DAY OF DISTURBANCE.

7754 CU.YDS. TOTAL FILL 6879 CU.YD5. OFFSITE WASTE/BORROW AREA LOCATION N/A 8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE

9) ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. 10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES. APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH. DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

# STANDARDS AND SPECIFICATIONS FOR TOPSOIL

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

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

This practice is limited to areas having 2:1 or flatter slopes where:

a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.

c. The original soil to be vegetated contains material toxic to plant growth d. The soil is so acidic that treatment with limestone is not feasible

For the purpose of these Standards and Specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 Construction and Material Specifications

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

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

i. Topsoil shall be a loam, sandy loam, clay loam, sitt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the textured subsoils and shall contain less than 5% by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 11/2" in diameter.

ii. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, Johnson grass,

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

For sites having, disturbed areas under 5 acres:

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

For sites having disturbed areas over 5 acres: i. On soil meeting Topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following

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

b. Organic content of topsoil shall be not less than 1.5 percent by weight c. Topsoil having soluble salt content greater than 500 parts per million shall not be used.

d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials. Note: Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil

scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil ii. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative

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

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

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

iv. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

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

a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted (at the time of acquisition of the compost) by the Maryland Department of the invironment under COMAR 26.04.06

b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a Ph of 7.0 to 8.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use. c. Composted sludge shall be applied at a rate of I ton/1,000 square feet.

iv. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 References: Guideline Specifications, Soil Preparation and Sodding,. MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

Construction Specifications

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

for Geotextile Class F: Tensile Strenath 50 (bs/in (min.) Test: MSMT 509 Tensile Modulus 20 lbs/in (min.) Test: M5MT 509 0.3 gal ft / minute (max?) Test: MSMT 322 Flow Rate Filtering Efficiency Test: MSMT 322 75% (min.) 3. Where ends of geotextile fabric come together, they shall be overlapped folded and stapled to prevent sediment bypass.

4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height. Silt Fence Design Criteria

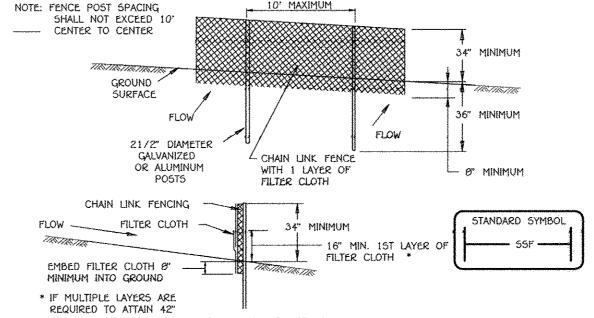
(Maximum) (Maximum) Silt Fence Length Slope Steepness Slope Length Flatter than 50:1 unlimited unlimited 125 feet 1,000 feet 50:1 to 10:1 100 feet 10:1 to 5:1 750 feet 60 feet 5:1 to 3:1 500 feet 3:1 to 2:1 40 feet 250 feet

Note: In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control

6/20/16 REVISED TITLE BLOCK

20 feet

# SUPER SILT FENCE



Construction Specifications 1. Fencing shall be 42" in height and constructed in accordance with the latest Maryland State Highway Details for Chain Link Fencing. The specification for a 6' fence shall be used, substituting 42" fabric and 6' length

2. Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section. 4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped

6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height 7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

> Tensile Strenath 50 lbs/in (min.) Test: MSMT 509 Tensile Modulus 20 lbs/in (min.) 0.3 gal/ff /mihute (max.) Test: M5MT 322 Flow Rate Test: MSMT 322 Filtering Efficiency 75% (min.)

	Desig	n Crițeria	
Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (māximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet

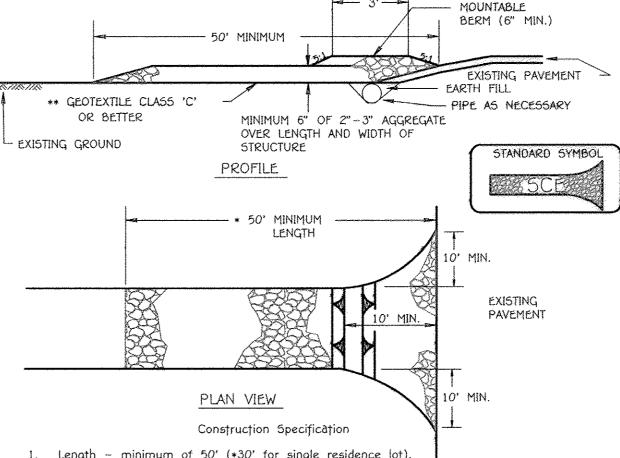
2:1 +

50% +

# STABILIZED CONSTRUCTION ENTRANCE

50 feet

250 feet



1. Length - minimum of 50' (*30' for single residence lot).

2. Width - 10' minimum, should be flared at the existing road to provide a turning

3. Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. **The plan approval authority may not require single family

4. Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.

Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

# DUST CONTROL

DEFINITION

CONTROLLING DUST BLOWING AND MOVEMENT ON CONSTRUCTION SITES AND ROADS. <u>PURPOSE</u>

TO PREVENT BLOWING AND MOVEMENT OF DUST FROM EXPOSED SOIL SURFACES. REDUCE ON AND OFF-SITE DAMAGE, HEALTH HAZARDS AND IMPROVE TRAFFIC SAFETY.

CONDITIONS WHERE PRACTICE APPLIES

THIS PRACTICE IS APPLICABLE TO AREAS SUBJECT TO DUST BLOWING AND MOVEMENT WHERE ON AND OFF-SITE DAMAGE IS LIKELY WITHOUT TREATMENT.

PLOWING ON WINDWARD SIDE OF THE SITE. CHISEL-TYPE PLOWS SPACED ABOUT 12"

1. MULCHES - SEE STANDARDS FOR VEGETATIVE STABILIZATION WITH MULCHES ONLY.

MULCH SHOULD BE CRIMPED OR TACKED TO PREVENT BLOWING. 2. VEGETATIVE COVER - SEE STANDARDS FOR TEMPORARY VEGETATIVE COVER. 3. TILLAGE - TO ROUGHEN SURFACE AND BRING CLODS TO THE SURFACE. THIS IS AN EMERGENCY MEASURE WHICH SHOULD BE USED BEFORE SOIL BLOWING STARTS. BEGIN

APART, SPRING-TOOTHED HARROWS AND SIMILAR PLOWS ARE EXAMPLES OF EQUIPMENT WHICH MAY PRODUCE THE DESIRED EFFECT. 4. IRRIGATION - THIS IS GENERALLY DONE AS AN EMERGENCY TREATMENT. SITE IS SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST, REPEAT AS NEEDED. AT NO TIME SHOULD THE SITE BE IRRIGATED TO THE POINT THAT RUNOFF BEGINS TO FLOW.

5. BARRIERS - SOLID BOARD FENCES SILT FENCES, SNOW FENCES, BURLAP FENCES, STRAW BALE DIKES AND SIMILAR MATERIAL CAN BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF ABOUT 10 TIMES THEIR HEIGHT ARE EFFECTIVE IN

CONTROLLING SOIL BLOWING. 6. CALCIUM CHLORIDE - APPLY AT RATES THAT WILL KEEP SURFACE MOIST, MAY NEED RETREATMENT.

PERMANENT METHODS

1. PERMENENT VEGETATION - SEE STANDARDS FOR PERMANENT VEGETATIVE COVER AND PERMANENT STABILIZATION WITH SOD, EXISTING TREES OR LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.

2. TOPSOILING - COVERING WITH LESS EROSIVE SOIL MATERIALS. SEE STANDARDS FOR TOPSOILING 3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL

# MIDDLE SCHOOL No. 20 - SEQUENCE OF CONSTRUCTION

1. OBTAIN GRADING PERMIT. (1 DAY)

2. NOTIFY MISS UTILITY (1-800-257-7777) 48 HOURS BEFORE STARTING WORK, NOTIFY THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION (410-313-1855) 24 HOURS BEFORE STARTING WORK, AND NOTIFY THE BALTIMORE GAS ELECTRIC CO. (410-291-5739) FIVE (5) WORKING DAYS PRIOR TO STARTING WORK. (1 WEEK)

3. BEGIN CONSTRUCTION OF SCHOOL BUILDING. (12 MONTHS)

4. INSTALL ALL PERIMETER CONTROLS: TEMPORARY ACCESS ROADWAY, SCE, WASH STATION, SUPER SILT FENCE AND PROPOSED SEDIMENT BASIN AND OUTFALL BARREL (2 WEEKS)

5. CONTRACTOR SHALL INSPECT ALL SEDIMENT CONTROL DEVICES INSTALLED UNDER F-12-026 AND MAKE ANY NECESSARY REPAIRS. (1 WEEK)

6. ALL CONSTRUCTION WASTE GENERATED FROM THE CONSTRUCTION OF NEW WORK AT THIS SITE SHALL BE COMBINED TOGETHER IN COMMON BINS AND TRANSFERRED BY AN INDEPENDENT RECYCLER TO A MATERIALS RECOVERY FACILITY (MRF) FOR REMOTE SORTING AND WEIGHING OF ALL WASTE INCLUDING WASTE WHICH IS DIVERTED FROM LANDFILLS AND COMPLY WITH THE CONSTRUCTION WASTE MANAGEMENT GOALS FOR THIS PROJECT

7. WITH APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, CONSTRUCT THE SEDIMENT BASIN AND STABILIZE OUTFALL. NOTE: THE EMERGENCY SPILLWAY SHALL NOT BE INSTALLED UNTIL THE SEDIMENT BASIN IS CONVERTED TO IMP #1. (1 WEEK)

8. INSTALL STORM DRAIN AND INLETS I-2, I-1, E-2 AND STABILIZE OUTFALL. (1 WEEK)

9. INSTALL MOUNTABLE BERM AS PART OF THE TEMPORARY ACCESS ROADWAY TO MAINTAIN FLOW INTO SEDIMENT BASIN RE-BUILD IF NECESSARY AS GRADING PROGRESSES. (1 DAY)

10. INSTALL STORM DRAIN AND INLETS (I-10, I-11, I-12) FROM EX. M-27 TO I-12 FOR ROOF DRAINS, AND INSTALL INLET PROTECTION ON FACH INLET (1 WEEK)

11. BEGIN SITE GRADING; AS FINAL OR INTERMEDIATE GRADES ARE REACHED, STABILIZE WITH EITHER TEMPORARY OR PERMANENT SEEDING AS APPROPRIATE (3 WEEKS) 12. INSTALL REMAINING STORM DRAINS EXCEPT I-15A, I-15, 5-5 AND PARTIALLY EXCAVATE INTEGRATED MANAGEMENT

PRACTICE (IMP) AREAS TO A SUFFICIENT DEPTH TO ALLOW POSITIVE DRAINAGE FROM THE STORM DRAINS. DO NOT CONSTRUCT IMPS #1-#5 AT THIS TIME. IMMEDIATELY PLACE INLET PROTECTION AT ALL NEW INLETS NOT DRAINING TO THE SEDIMENT BASIN. PLACE INLET PROTECTION ON RISERS R-2, R-3, R-4, AND R-5 WHEN CONSTRUCTED. (

13. INSTALL WATER, SEWER, RAINWATER HARVESTING SYSTEM, GEOTHERMAL WELL SYSTEM AND UTILITIES (GAS, ELECTRIC

(2 WEEKS) 14. INSTALL CURB AND GUTTER AND BASE PAVING. (2 WEEKS)

15. INSTALL SIDEWALKS, LIGHTING AND LANDSCAPING. (3 WEEKS)

16 COMPLETE SCHOOL CONSTRUCTION (1 MONTH) 17. REMOVE SEDIMENT BASIN #5 AND INSTALL STORM DRAINS I-15A, I-15, 5-5 AND STABILIZE OUTFALL.

18. COMPLETE SITE GRADING (I WEEK)

19. STABILIZE ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS. (1 WEEK)

20. INSTALL SURFACE COURSE PAVING. (1 WEEK)

21 THOROUGHLY CLEAN (FLUSH) THE STORM DRAIN SYSTEMS. (1 DAY)

22. WHEN THE DRAINAGE AREAS ARE STABLE (i.e., HAVING FULLY ESTABLISHED 3" GRASS OR PAVEMENT), INSTALL IMPS #2, #3, #4, AND #5. WORK INCLUDES EXCAVATION, INSTALLING UNDERDRAINS, FOREBAYS, STONE, PLANTING SOIL, AND MULCH LAYERS, AND PLANTING PER PLANTING PLAN. (3 WEEKS)

23. WITH APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR, CONVERT THE SEDIMENT BASIN INTO THE PERMANENT SWM FACILITY (IMP #1). THIS WORK INCLUDES, REMOVING SEDIMENT, RE-GRADING TO DESIGN ELEVATIONS, REPLACING DEWATERING DEVICE WITH PERMANENT LOW FLOW OUTFALL, INSTALLING FOREBAYS, UNDERDRAINS, STONE AND PLANTING SOILS LAYERS AND MULCH. STABILIZE POND WITH PERMANENT SEEDING AND INSTALLING POND LANDSCAPING.

24. REMOVE TEMPORARY ACCESS ROAD, RESTORE TO ORIGINAL CONDITIONS AND STABILIZE IN ACCORDANCE WITH THE PERMANENT SEEDING SPECIFICATIONS. (1 WEEK)

25. FOLLOWING SUCCESSFUL STABILIZATION (I.E., FULLY-ESTABLISHED VEGETATION (3" GRASS OR PAVING) OF ALL DISTURBED AREAS, OBTAIN PERMISSION FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR TO REMOVE ALL REMAINING SEDIMENT & EROSION CONTROL DEVICES AND THEN STABILIZE THOSE AREAS DISTURBED BY THIS PROCESS WITH PERMANENT SEEDING, (1 WEEK)

EROSION AND SEDIMENT CONTROL NOTE: THE CONTRACTOR SHALL INSPECT AND PROVIDE THE NECESSARY MAINTENANCE ON ALL SEDIMENT CONTROL DEVICES/PRACTICES ON A DAILY BASIS, AND IMMEDIATELY AFTER A RAINFALL.

REPORTED TO THE HOWARD COUNTY DEVELOPMENT ENGINEERING DIVISION.

SHOULD GROUNDWATER BE ENCOUNTERED IN THE INTEGRATED MANAGEMENT PRACTICES (IMP'S #1-#5), PAVEMENT SUBGRADE, OR IN ANY OTHER CRITICAL AREA. THE GEOTECHNICAL ENGINEER SHALL CONTACT THE SITE ENGINEER TO DISCUSS HOW TO PRECLUDE STANDING WATER AND/OR PAVEMENT PROBLEMS. SUBSEQUENT SOLUTIONS SHALL BE

THE CONTRACTOR IS RESPONSIBLE FOR PUMPING ALL STANDING WATER FROM EXCAVATED AREAS THAT REMAINS 24 HOURS AFTER A 1- OR

2-YEAR STORM EVENT OR 48 HOURS AFTER A 10-YEAR STORM EVENT.

FISHER, COLLINS & CARTER, INC CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS ELLICOTT CITY, MARYLAND 21042

ENGINEER'S CERTIFICATE

certify that this plan for sediment and erosion control represents a practical and orkable 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."

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan fo 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. also authorize periodic an-site inspection by the Howard Soil Conservation District."

the HOWARD SOIL CONSERVATION DISTRICT.

"Professional Certification. I hereby certify that these documents

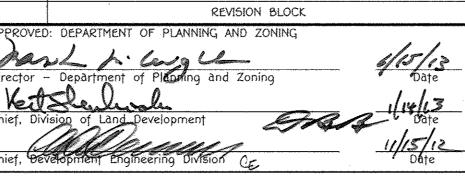
professional engineer under the laws of the State of Maryland.

License No. 13204, Expiration Date: November 3, 2012."

CHARLES J. CROVO, SR., P.E.

were prepared or approved by me, and that I am a duly licensed

2:1 and steeper



125 feet

PREPARED FOR HOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 Maryland Route 108 Ellicott City, Maryland 21042 Attention Bruce Gist 410-313-6805

7000 BANBURY DRIVE HANOVER, MD 21076 SECTION/AREA PARCEL ワーワ' MIDDLE 5CHOOL #20 LAT NOS. DIST. CENSUS BLOCK NO.

Address Chart

Street Address

'GREEN NEIGHBORHOOD' MIDDLE 5CHOOL #20 OXFORD SQUARE PARCEL 'D-D' ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: OCTOBER 26, 2012

SEDIMENT AND EROSION CONTROL

NOTES AND DETAIL SHEET

50P-12-075

This development plan is approved for soil erosion and sediment control by

0 29 12

Director Chief, Division of Land Development

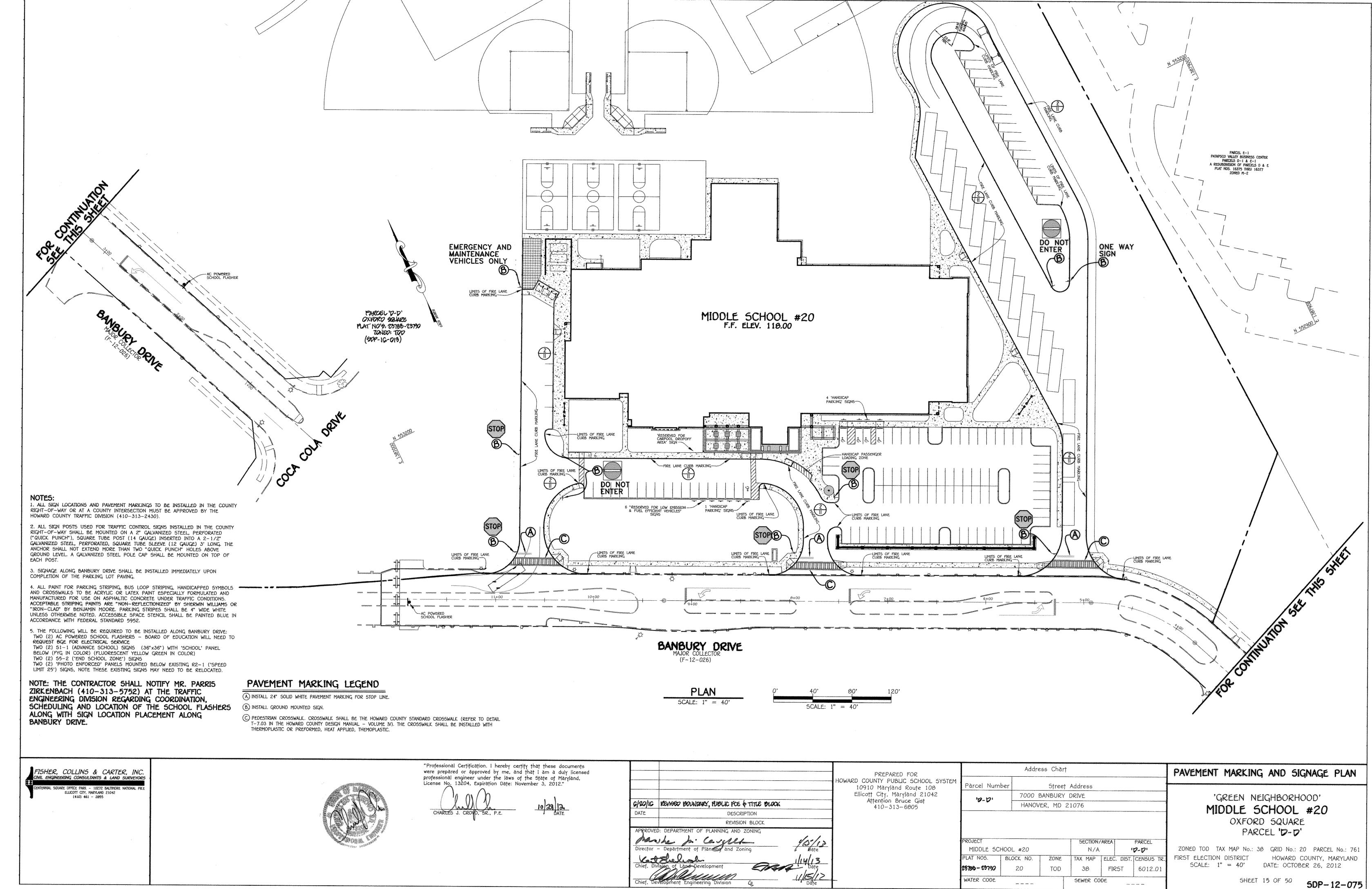
23788-23790

Parcel Number

WATER CODE

38 6012.0 FIR5T SEWER CODE

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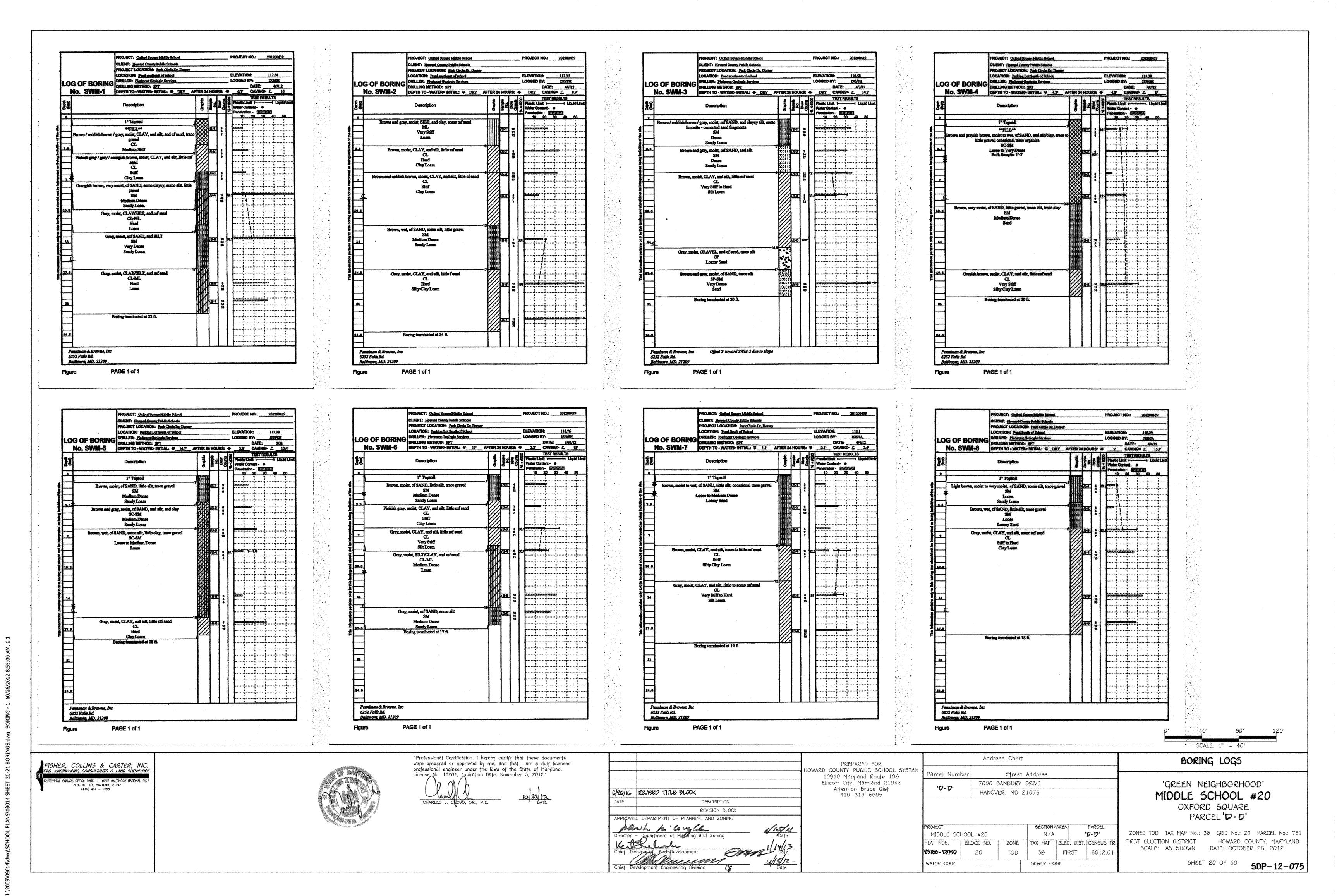
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WATER CODE

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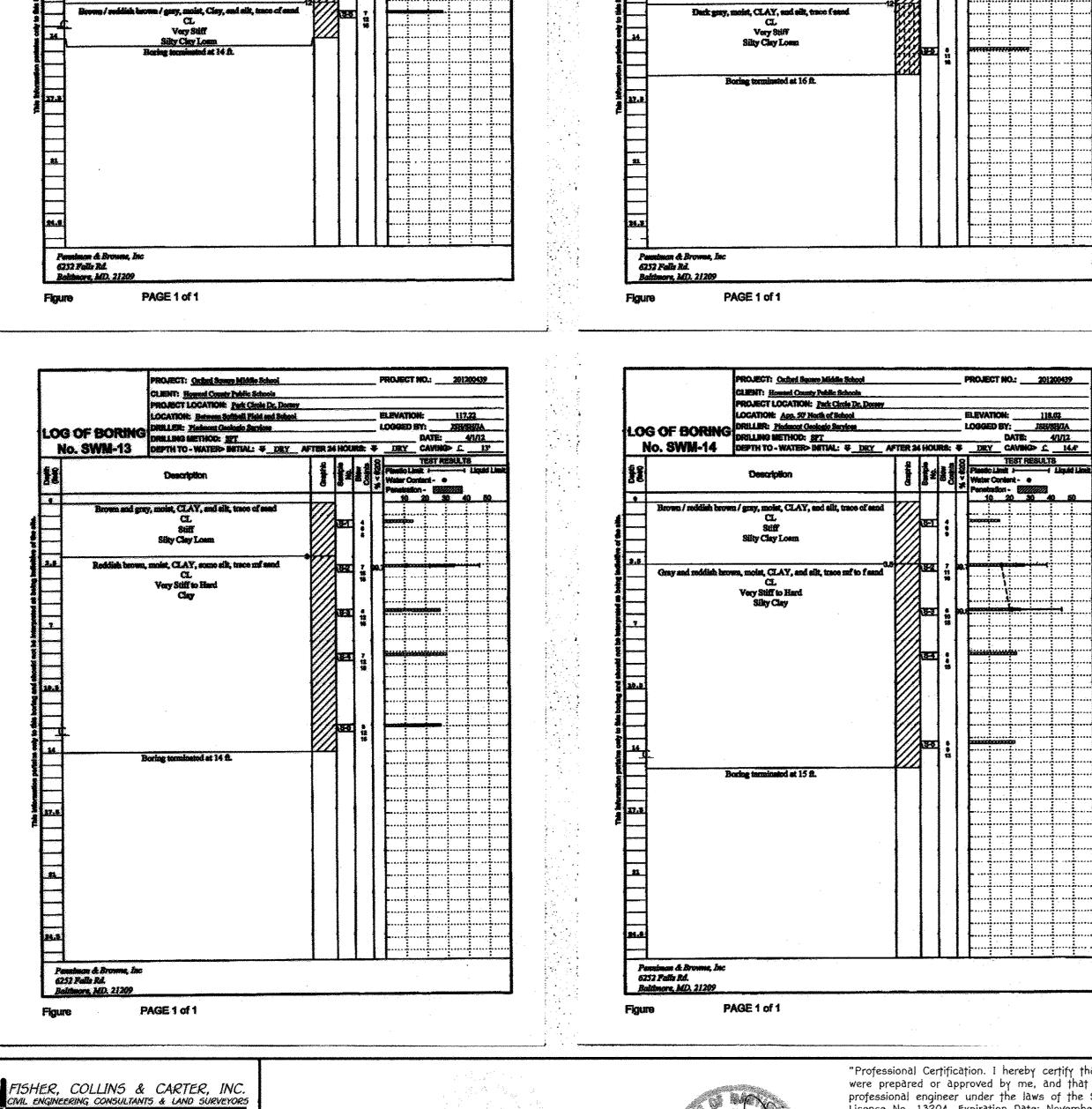
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il square office park – 10272 baltimore national pike

ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2055



PROJECT NO: 201200439

PROJECT: Oxford Square Middle Schoo

Brown, saoist, CLAY, and silt, and of send

en and complete brown, wet, of SAND, some gravel, little still

Brown, moist, CLAY, and silt, trace mf sand

CLIENT: Howard County Public Schools
PROJECT LOCATION: Ped: Cloud Dr. Done
LOCATION: App. 50 Seedlesst of School

LOG OF BORING DIRLLER: Moderate Geologic Services LOGGED BY: DOSS DATE: 477/12

No. SWM-10 DEPTH TO - WATERS-BITTAL: # 0 AFTER 24 HOURS: # 2 CAVING> £ 10.7

PROJECT NO.: 201209439

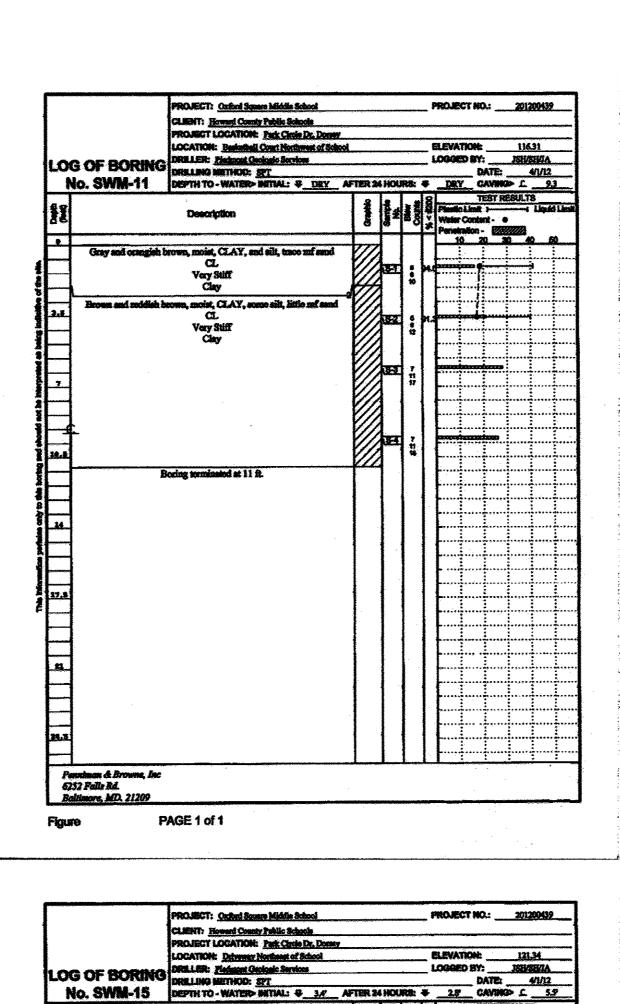
PROJECT: Orbyt Square Middle School

CLUSTO: Howard County Public Schools

Brown, moist to wet, saf SAND, trace silt, trace clay

Gray, moist, CLAY, some silt, little mf and

LOG OF BORING DIRELER: Platent Gedook Services LOGGED BY: INSUREMA DIRELENG METHOD: ST DATE: 4/1/2 DEPTH TO - WATER- INTIAL: \$ 15 AFTER \$4 HOURS: \$ 14 CAYING C. 134



I" Topsoil

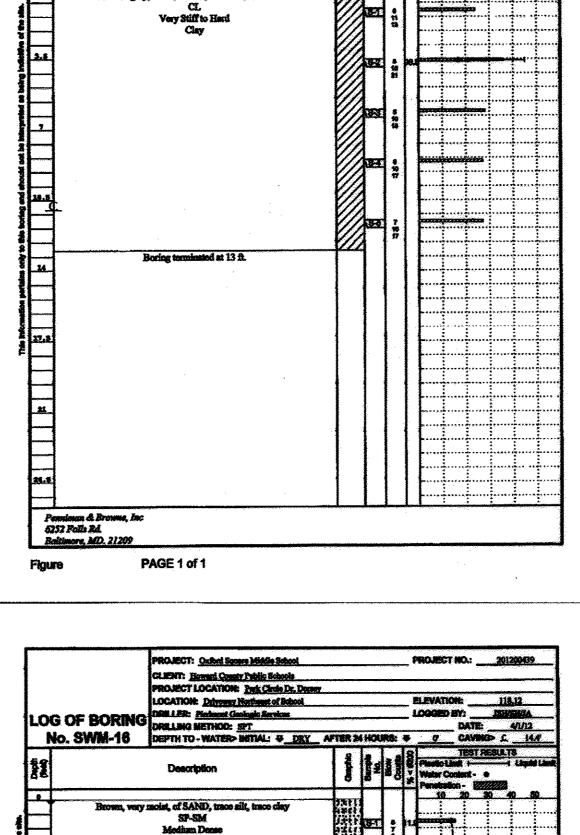
Brown, wet, of SAND, trace to little silt, trace clay, occasional clay

Medium Dome Loussy sand

Prove, moist, CLAY, and silt, and of send, with reddish brown of send

Very Stiff
Loam Gray, maint, CLAY, and silt, little our word

Company brown and gray, moist to very moist, and SAND, little all:

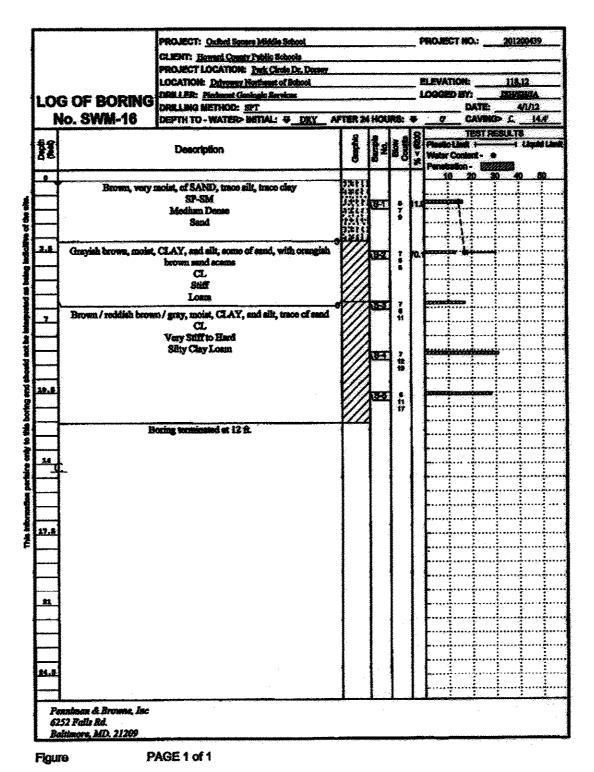


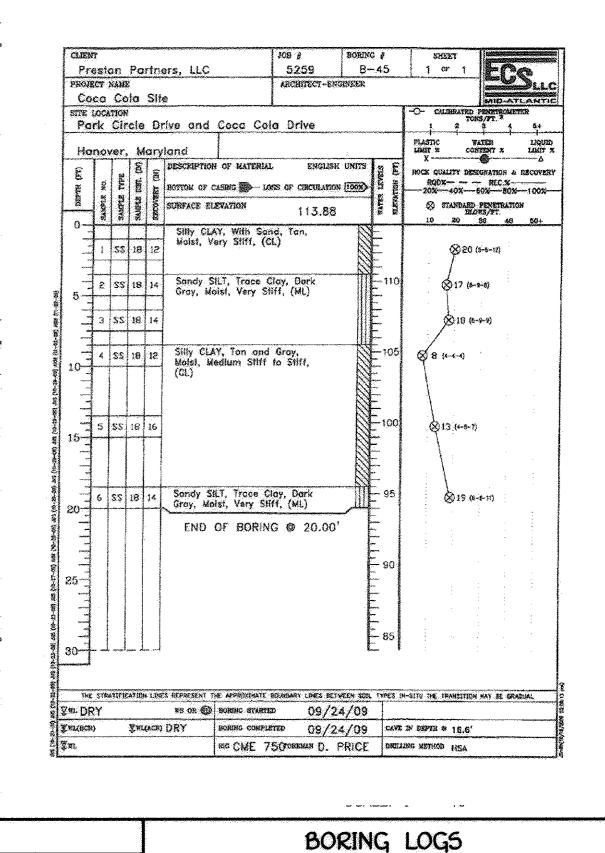
ROJECT: Oxford Screen Middle School

CLERT: Howard County Public Schools
PROJECT LOGATION: Park Circle Dr. Dorson
LOGATION: Between Softhell Field and School

LOG OF BORING ORALLER: Pickage Geologic Services LOGGIED BY: ISRUBIJI.

No. SWM-12 DEPTH TO - WATER- BITTIAL: # DRY AFTER 24 HOURS: # DRY CAVING- C.

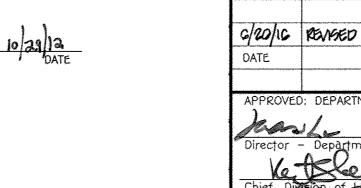






"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012."

CHARLES J. CROVO, SR., P.E.



Penniman & Browns, Inc. 6257 Fells Rd.

PAGE 1 of 1

6/20/16	REVISED TITLE BLOCK
DATE	DESCRIPTION
Marcoldon and Marcoldon and American Con-	REVISION BLOCK
APPROVE	D: DEPARTMENT OF PLANNING AND ZONING
Director Ve	DEPARTMENT OF PLANNING AND ZONING  Department of Planning and Zoning  Department of Planning and Zoning  Date  Date

PREPARED FOR		Address Chart
RD COUNTY PUBLIC SCHOOL SYSTEM : 10910 Maryland Route 108	Parcel Number	Street A
Ellicott City, Maryland 21042	ומ מו	7000 BANBURY D
Attention Bruce Gist 410-313-6805	10-01	HANOVER, MD 21
	PROJECT	

PLAT NOS.

23788-23790

WATER CODE

Street Address 'GREEN NEIGHBORHOOD' VBURY DRIVE MD 21076 MIDDLE 5CHOOL #20 PARCEL SECTION/AREA MIDDLE 5CHOOL #20 'D-D' N/A FIRST ELECTION DISTRICT BLOCK NO. TAX MAP | ELEC. DIST. CENSUS 1 SCALE: AS SHOWN DATE: OCTOBER 26, 2012

6012.0

38

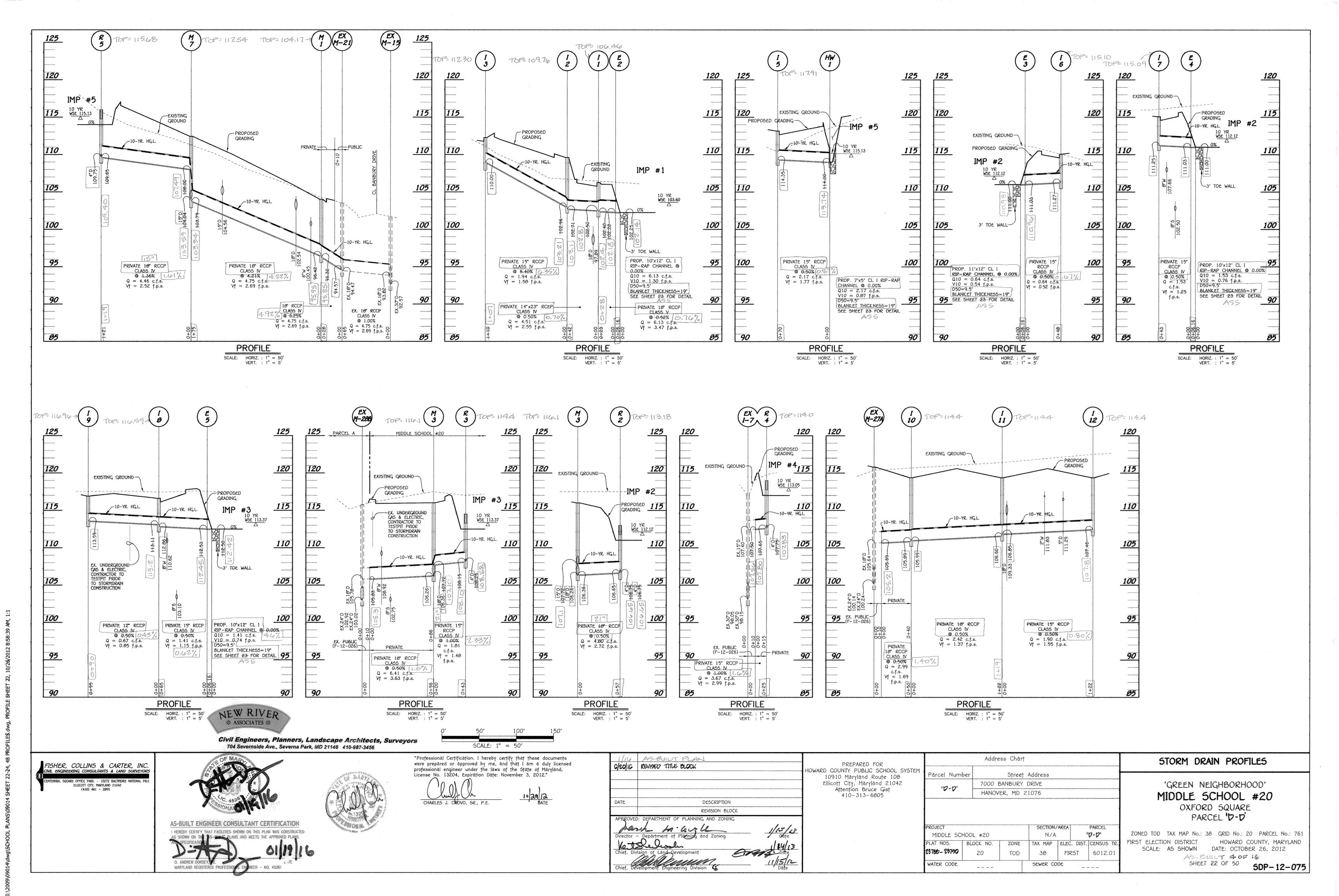
SEWER CODE

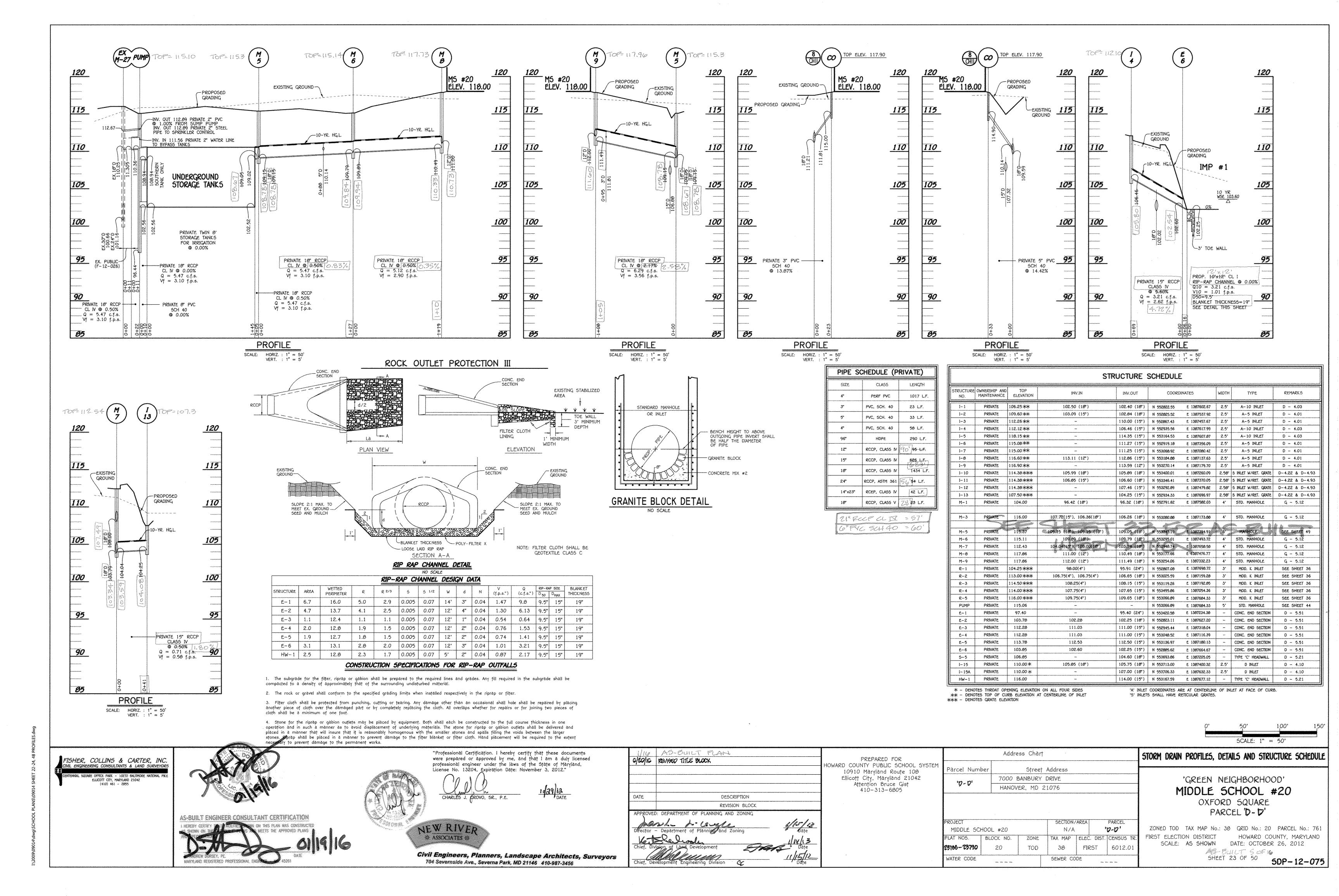
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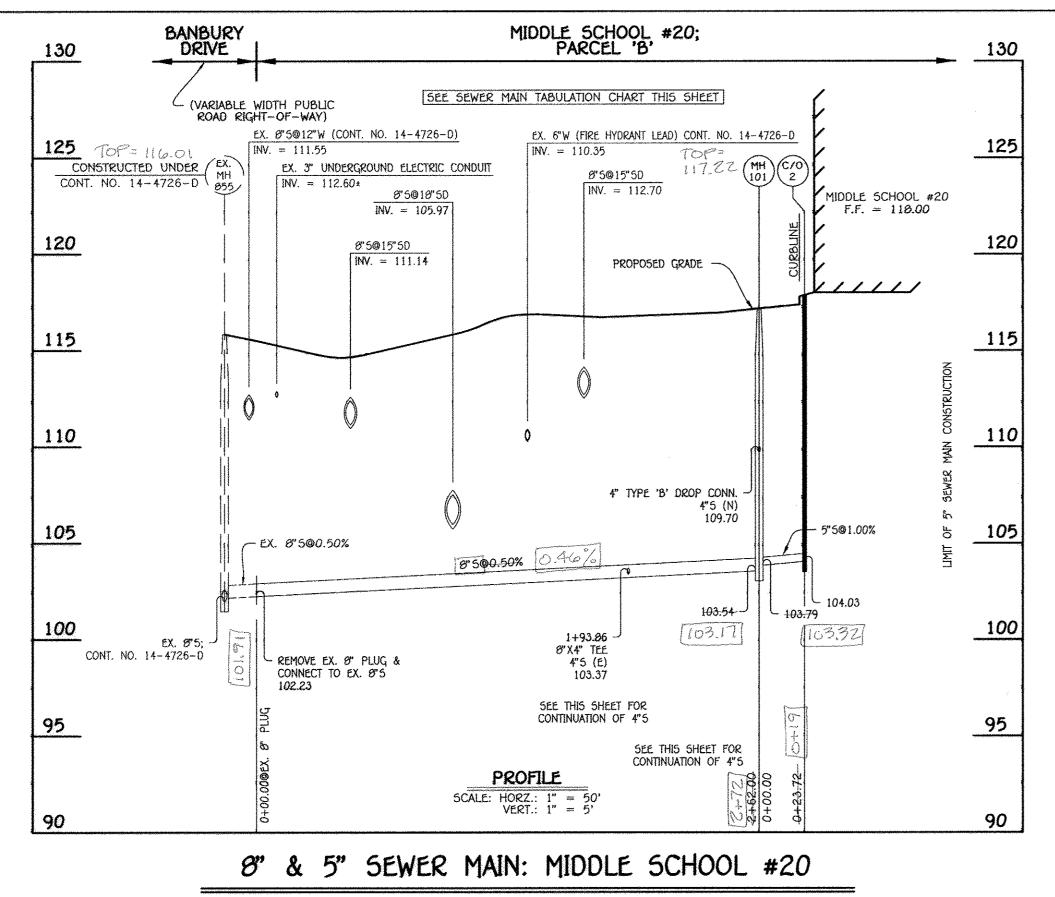
OXFORD SQUARE PARCEL 'D-D' ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 HOWARD COUNTY, MARYLAND

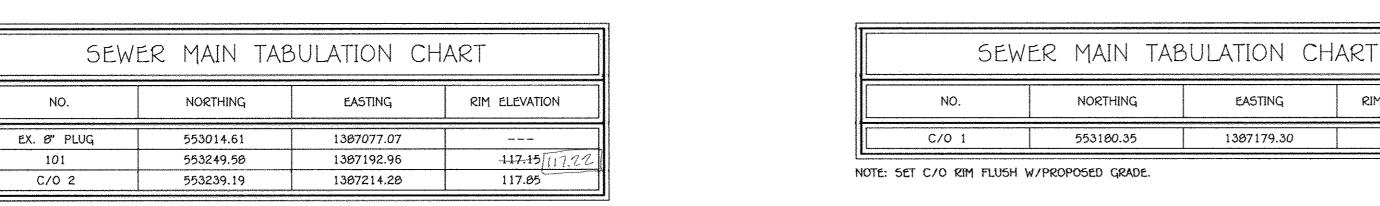
SHEET 21 OF 50

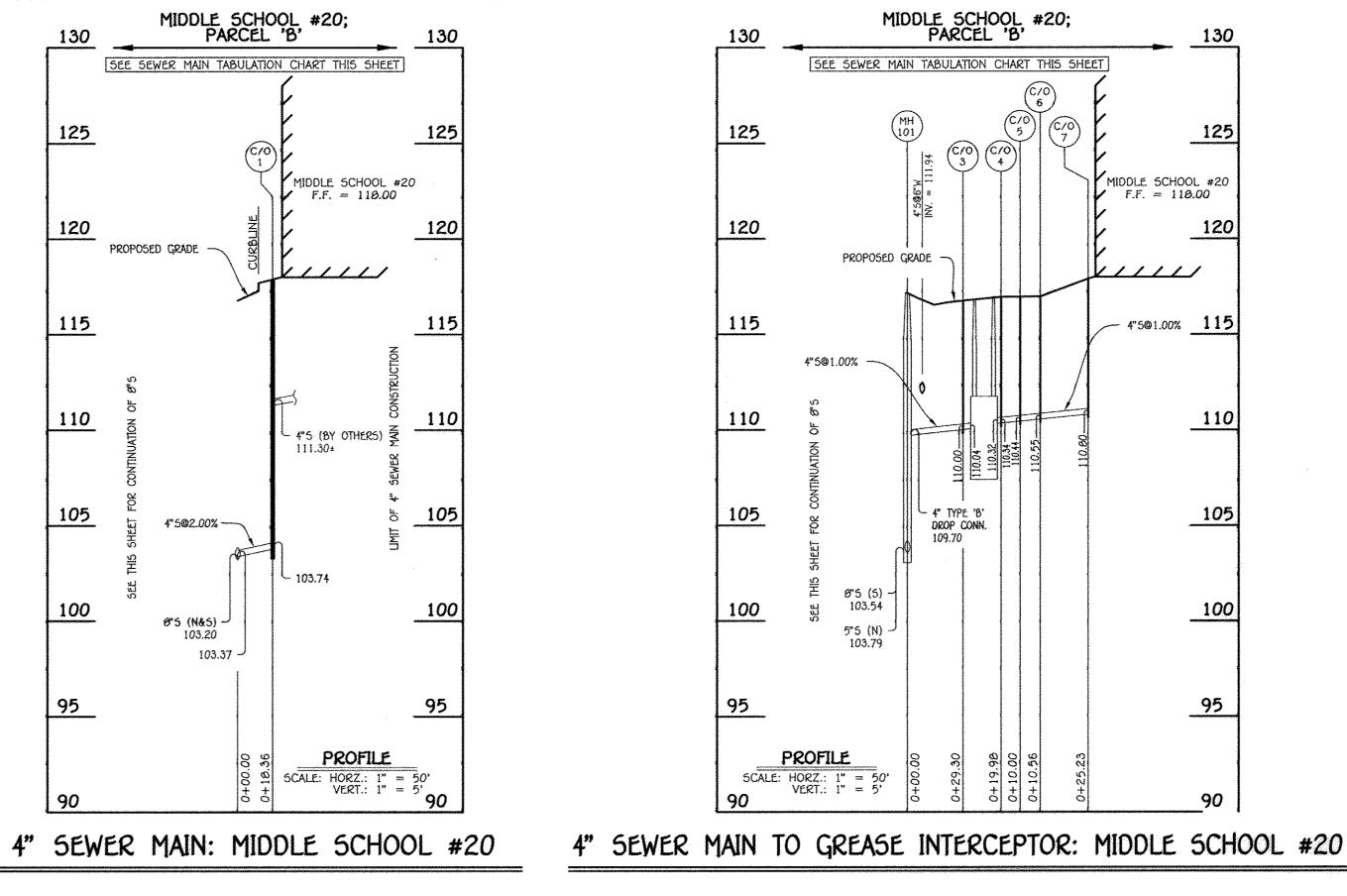
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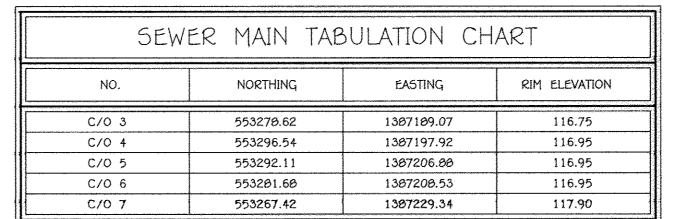




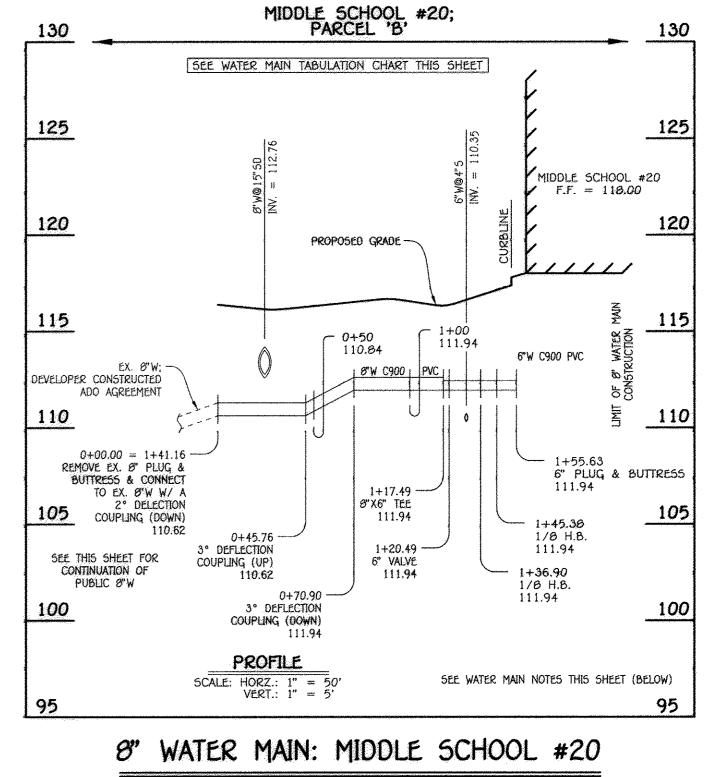








NOTE: SET C/O RIM FLUSH W/PROPOSED GRADE.



3"	WATER	MAIN:	MIDDLE	5CHOOL	#20
to may make the					

WA	ITER MAIN TABU	LATION CH	IART
W.M. 5TA.	APPURTENANCE	NORTHING	EASTING
	8" WATER MAIN: MIDDLE	5CHOOL #20	
0+00.00	EX. 8" PLUG & BUTTRESS	553155.43	1307133.15
1+17.49	8"X6" TEE	553260.80	1387185.12
1+20.49	8" VALVE	553259.48	1387187.81
1+36.90	1/8 H.B.	553252.22	1307202.53
1+45.38	1/0 H.B.	553254.94	1307210.56
1+55.63	Ø' PLUG & BUTTRESS	553250.41	1387219.75

WATER MAIN NOTES: 1. ALL WATER MAINS SHALL BE AWWA C900 PVC PIPE; DR-18. 2. ALL PIPE BEDDING, TRACER WIRE, LOCATING TAPE AND OTHER APPURTENANCES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME II - WATER AND SEWER STANDARDS FOR AWWA

C900 PVC WATER PIPE INSTALLATION. 3. DEFLECTION COUPLINGS SHALL BE CERTAIN-TEED PVC HIGH DEFLECTION COUPLINGS.

4. ALL WATER HOUSE CONNECTIONS AND TAPS SHALL BE PERFORMED USING

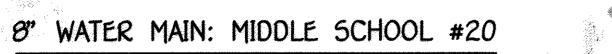
125	BANBURY DRIVE	MIDDLE SCHOOL #20; PARCEL 'B'	125
		, (20' PUBLIC WATER & UTILITY EASEMENT)	
	l <del>-1</del>	<i>8</i> "₩@15"50	ŀ
	*	INV. = 111.20	
	IBLIC WATER &	Ø"₩@18"5D	
120 UTIL	JTY EASEMENT)	1	120
ELECTRIC CO	EX. 3" UNDERGROUNE MOUIT; INV. = 111.98;	_	
115			115
EX. 8"W	f; CONT. NO.	1+00 109.18 PRIVATE 8'W (5DP-12-075)	
110		V 10766   LH-L-)	110
	0+00.00 — OVE 8" PLUG & ESS & CONNECT TO EX. 8"W 109.53	8"W C900 PVC  1+41.16 = 0+00.00  LIMIT OF PUBLIC MAIN 110.62	105
<u>100</u>	0+09.37 - 1/32 V.B. (UP) 107.66	2° DEFLECTION —	100
	sc <del>ā</del> ī	1+37.31 — 107.66	CENT)
95	A STATE OF THE STA	The state of the s	95

NOTE: SET MH & C/O RIMS FLUSH W/PROPOSED GRADE.

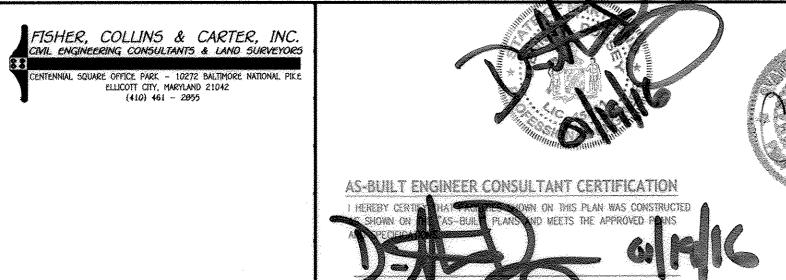
W	ATER MAIN TABU	LATION CH	IART
W.M. STA.	APPURTENANCE	NORTHING	EASTING
	8" WATER MAIN: MIDDL	E 5CHOOL #20	
0+00.00	EX. 8" PLUG & BUTTRESS	553028.84	1307070.71
1+31.31	8"X6" F.H. TEE	553146.60	1387128.80
1+37.31	8" VALVE	553151.98	1387131.45
1+41.16	8" PLUG & BUTTRESS	553155.43	1387133.15

110

100

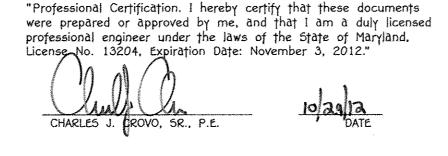








* ASSOCIATES *



1/10	AS-BUILT PLAN	_
G/20/16	REAGED TITLE BLOCK	HO'
010000 m-0001001 m-1-m-1		1
		1
DATE	DESCRIPTION	
***************************************	REVISION BLOCK	1
APPROVE	D: DEPARTMENT OF PLANNING AND ZONING	1
APPROVE	D: DEPARTMENT OF PLANNING AND ZONING  LANGE LANGE LANGE WESTER	
Ja	D: DEPARTMENT OF PLANNING AND ZONING  - Department of Planning and Zoning  Date	
Ja	wh he lave 4 415/10	
Director	wh he lave 4 415/10	
Director	- Department of Planning and Zoning  Date  1/4/13	

PREPARED FOR	
HOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 Maryland Route 108	Parc
Ellicott City, Maryland 21042	
Attention Bruce Gist	
410-313-6805	
	l

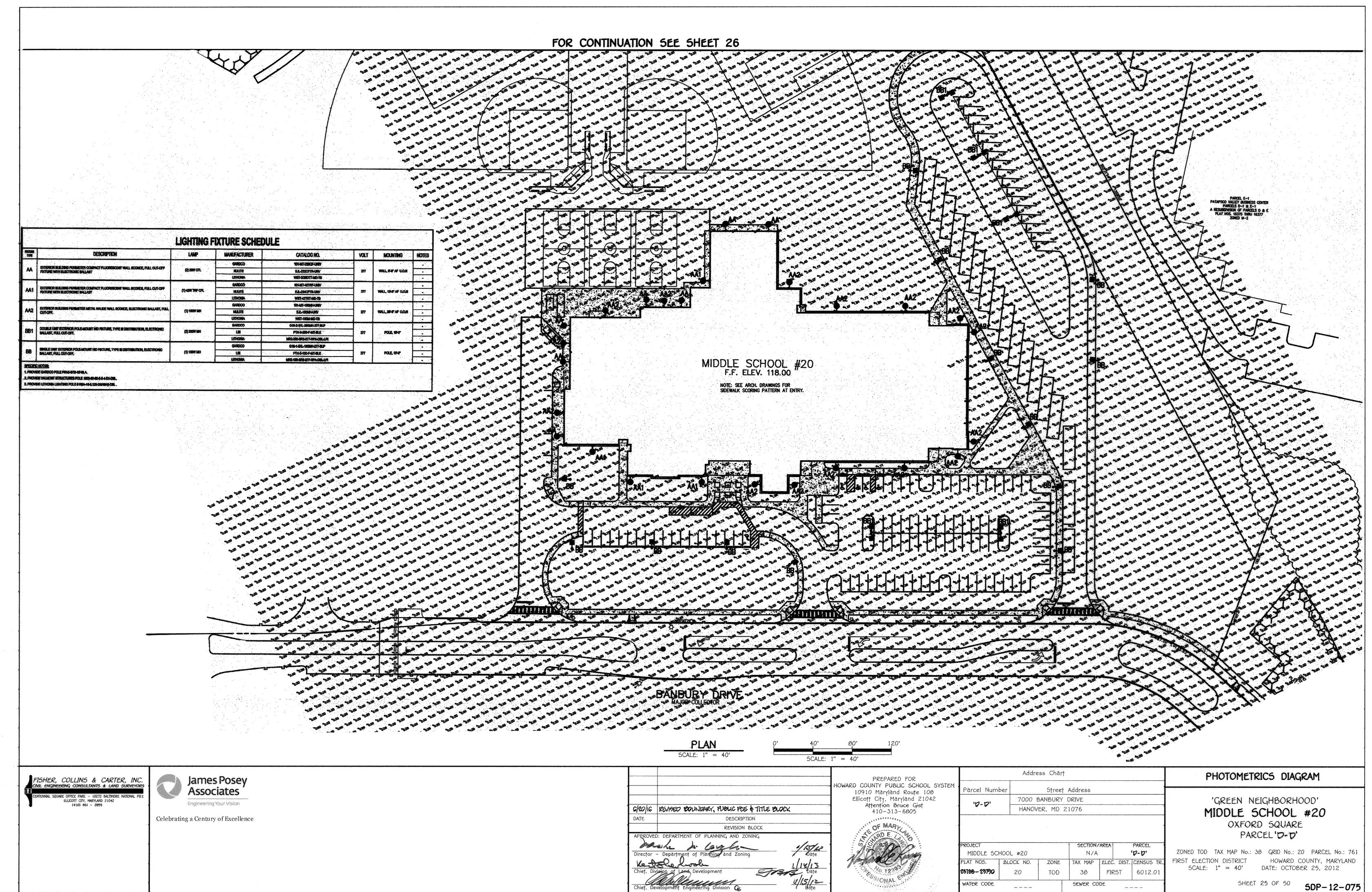
	Address Chart	WATER & SEWER MAINS: PROFILES & CHARTS
Parcel Number	Street Address	
יט-טי	7000 BANBURY DRIVE	'GREEN NEIGHBORHOOD'
	HANOVER, MD 21076	MIDDLE 5CHOOL #20
		OXFORD SQUARE PARCEL <b>'D-D'</b>

ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: OCTOBER 26, 2012 AS-BUILT 6 OF 16 SHEET 24 OF 50

RIM ELEVATION

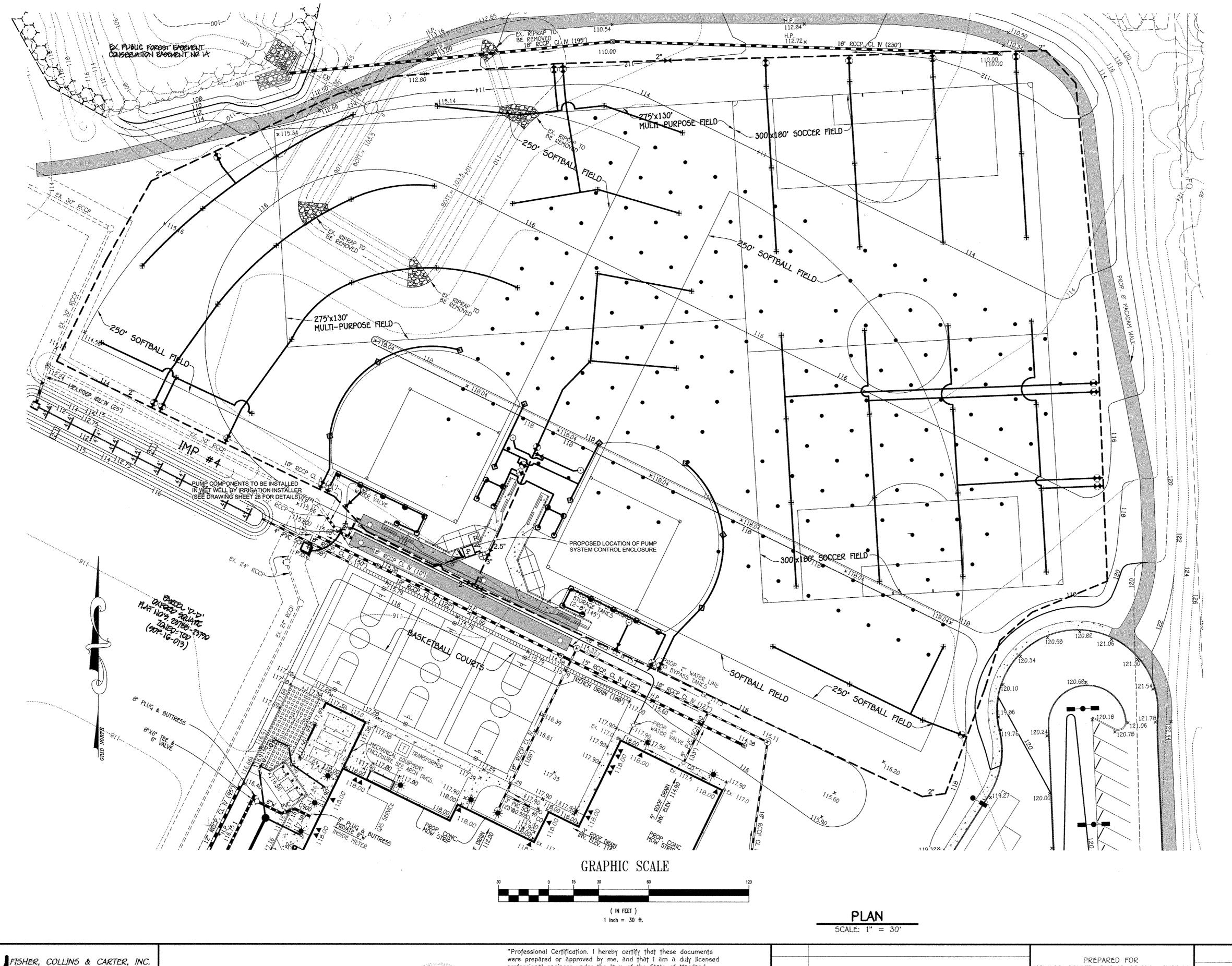
117.85

'D-D' N/A MIDDLE SCHOOL #20 PLAT NOS. TAX MAP | ELEC. DIST. CENSUS TO BLOCK NO. 6012.01 23788-23790 38 FIR5T WATER CODE SEWER CODE



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LEGEND

SYMBOL	PART NO.#	DESCRIPTION
$\Delta$	SSAK24PS16NS4 ETH	TORO CUSTOM COMMAND SERIES CONTROLLER, 24 STATION W/ BLUE HEAT SERIES ETHERNET MODEM
R	TWRS	TORO WIRELESS RAIN SENSOR
$\otimes$	102P1.5	IRRITROL 102 SERIES NORMALLY OPEN MASTER VALVE, 1.5"
•	P220-26-06 P220-26-04	TORO P220 SERIES ELECTRIC VALVE, 1.5" FOR FLOWS OF 30-56 GPM TORO P220 SERIES ELECTRIC VALVE, 1" FOR FLOWS OF 5-30 GPM
lacktriangle	P220-27-06 P220-27-04	TORO P220 SERIES ELECTRIC VALVE W/ PRESSURE REGULATOR, 1.5" FOR FLOWS OF 30-56 GP TORO P220 SERIES ELECTRIC VALVE W/ PRESSURE REGULATOR, 1" FOR FLOWS OF 5-30 GPM
	644-02-42	TORO 640 SERIES SPRINKLER, #42 NOZZLE, 14 GPM @ 60 PSI
Ō	TR70XTPSS-02	TORO TR70XT SERIES SPRINKLER NOZZLES: 90=#7, 180=#12, 270=#20
<b>•••</b>	590GF-6	TORO 590GF SERIES SPRAY SPRINKLER WITH 15' PRECISION SERIES NOZZLES
H	T-113-IRR-x	NIBCO BRONZE THREADED GATE VALVE, LINE-SIZED
0	474-01	TORO QUICK COUPLER VALVE, 1"
	SDR 21	PVC Class 200 MAIN LINE, SIZED AS NOTED
	SDR 21	PVC Class 200 LATERAL LINE 2" FOR FLOWS OF 35-56 GPM PVC Class 200 LATERAL LINE 1.5" FOR FLOWS OF 15-35 GPM PVC Class 200 LATERAL LINE 1" FOR FLOWS OF 0-15 GPM
		SLEEVE - TWO TIMES THE SIZE OF THE PIPE
		POINT OF CONNECTION - BY OTHERS AT CISTERN/PUMP LOCATION MANHOLE: M.E.P. CONTRACTOR TO PROVIDE 3" PVC STUB FOR CONNECTION TO IRRIGATION SYSTEM
P		PROPOSED LOCATION OF PUMP SYSTEM CONTROL ENCLOSURE (REFER TO SHEET #x-xx FOR ENCLOSURE INSTALLATION DETAIL DRAWINGS)
IDDICATION	NOTES	

#### IRRIGATION NOTES:

- 1. Irrigation system designed for 10-56 GPM at a constant pressure of 80 PSI downstream of the P.O.C.. Contractor shall verify these parameters and notify owner's representative if
- 2. Contractor shall verify all site measurements and their accuracy prior to construction. A new irrigation design may be required if major discrepancies exist between actual site layout 3. Irrigation system design drawing is diagrammatic in nature. Field adjustments may be
- 4. System to be installed per manufacturer's specifications. Consult Mechanical, Electrical,
- and Plumbing drawings to coordinate these trades with the irrigation layout. If any discrepancies or conflicts arise, communicate them to the owner's representative.

  5. All mainline to be SDR 21 Class 200 PVC pipe sized as noted.
- 6. Mainline and valves are shown in hardscape areas for clarity only. Mainline and valves should be installed in planting bed or turf areas when possible.
- 7. Control wires shall be UL—approved for direct burial in ground.
  8. All field wire above grade or within structure to be installed in conduit per local code.
  9. All underground splices and connection of wiring to remote control valves to utilize 3M
- water proof splice kits in appropriate size valve box.

  10. Depth of irrigation piping: 24" on mainline; 18" on laterals.

  11. Underground utilities to be verified before any installation begins.
- 12. Controller to be grounded per manufacturer's specifications.
- 13. All mainline to be SDR 21 Class 200 PVC pipe sized as noted. Any piping 3" and greater
- shall be gasket-joint. Pipe under 3" shall be solvent-weld. All pipe 3" and over shall utilize gasketed ductile iron fittings, installed with manufactured joint restraints or properly engineered concrete thrust blocks.
- 14. All sprinkler heads shall utilize manufactured 'o'-ring swing joints, sized to match inlet of sprinkler. Swing joints shall be installed according to manufacturer's specifications.

  15. In order to maintain the integrity of the irrigation system, sprinklers, valves, and controllers, must be as specified. Alternate products will be considered at the discretion of
- the owner. Alternate product submittals must include a complete new system design by and Irrigation Association Certified Irrigation Designer (Commercial or Residential Option), installation details, product performance data, hydraulic data, and a list of product

IL ENGINEERING CONSULTANTS & LAND SURVEYORS ELLICOTT CITY, MARYLAND 21042



professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012."

CHARLES J. CROVO, SR., P.E.

6/20/16 REVISED BOUNDARY, PUBLIC FOE & TITLE BLOCK DESCRIPTION REVISION BLOCK

HOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 Maryland Route 108 Ellicott City, Maryland 21042 Attention Bruce Gist 410-313-6805

Parcel Number Street Address 7000 BANBURY DRIVE 'ワーワ' HANOVER, MD 21076

Address Chart

'GREEN NEIGHBORHOOD' MIDDLE 5CHOOL #20 OXFORD SQUARE PARCEL 'D-D'

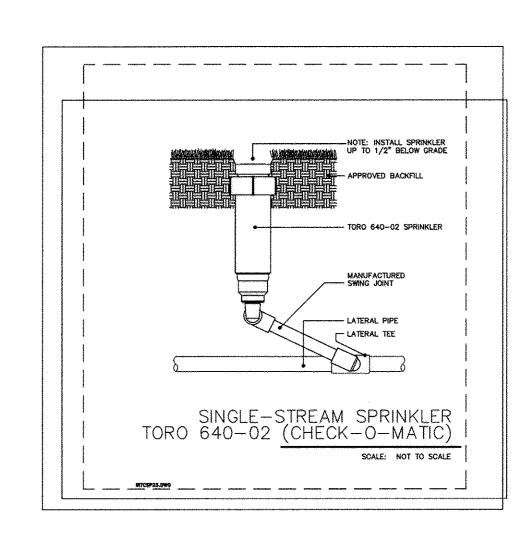
IRRIGATION SYSTEM DESIGN

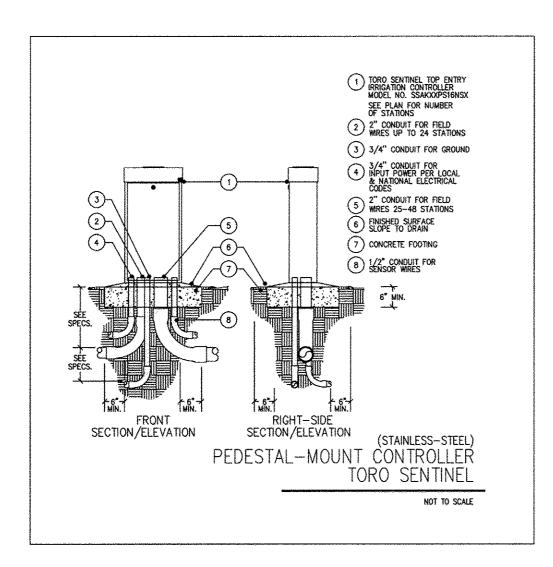
ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: 1" = 30' DATE: OCTOBER 26, 2012

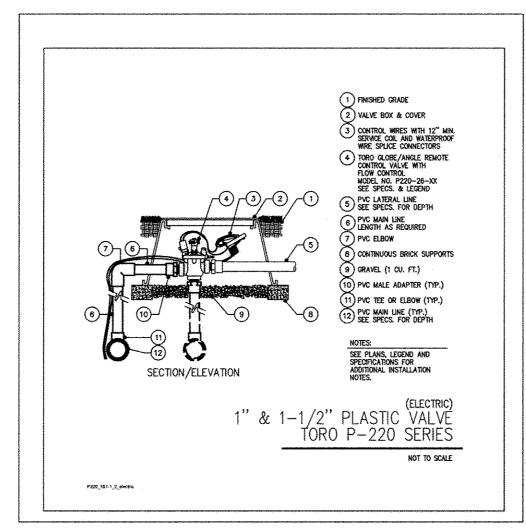
SECTION/AREA PARCEL MIDDLE SCHOOL #20 N/A 'D-D' BLOCK NO. ELEC. DIST. CENSUS T 23788-23790 20 TOD FIRST WATER CODE SEWER CODE

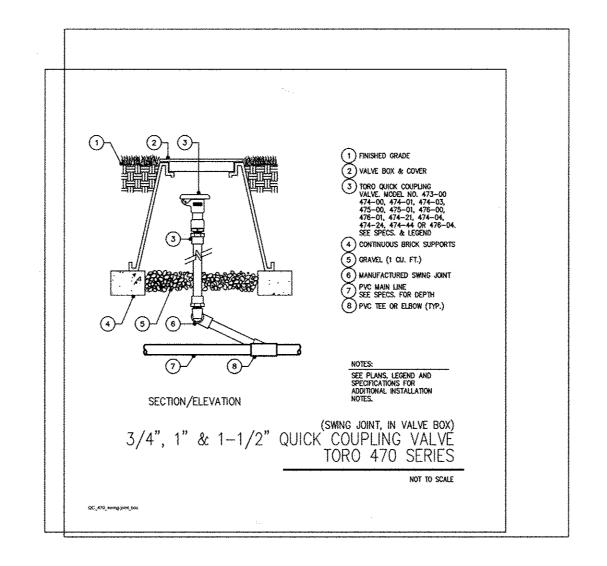
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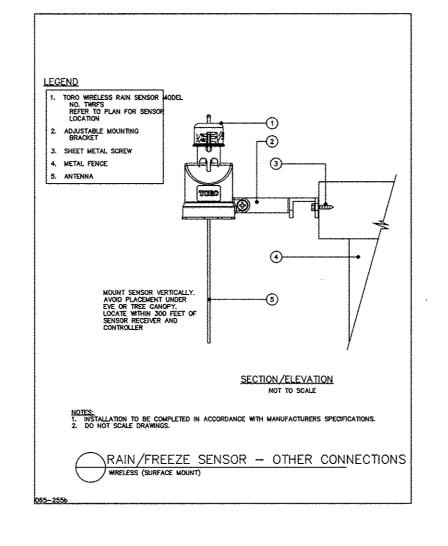
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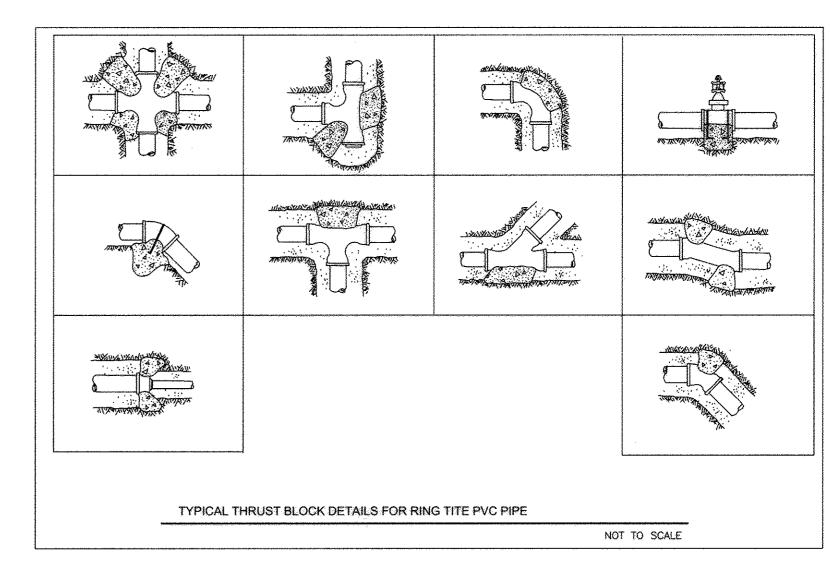


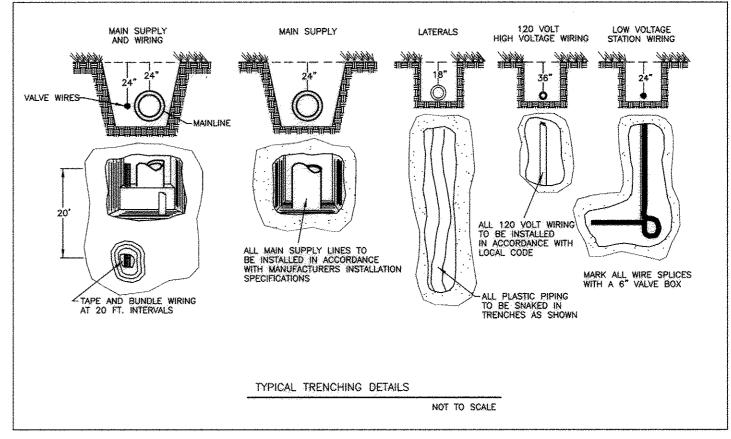




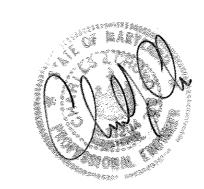












"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012."

) | 10/29/12 DATE

• ··· · · · · · · · · · · · · · · · · ·	
6/20/16	REVISED TITUE BLOCK
DATE	DESCRIPTION
	REVISION BLOCK
APPROVE	
D	DEPARTMENT OF PLANNING AND ZONING  Department of Planning and Zoning  Date
Director	D: DEPARTMENT OF PLANNING AND ZONING  - Department of Planning and Zoning  Date  1/19/13
Director Chief, Di	D: DEPARTMENT OF PLANNING AND ZONING

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 100
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6005

PLAT NOS.

23700-23790

WATER CODE

BLOCK NO.

20

Address Chart

Parcel Number Street Address

10-0' 7000 BANBURY DRIVE

HANOVER, MD 21076

ROJECT SECTION/AREA PARCEL
MIDDLE SCHOOL #20 N/A 10-0' ZO

ZONE

TAX MAP ELEC. DIST. CENSUS TR

FIRST

SEWER CODE

6012.01

'GREEN NEIGHBORHOOD'
MIDDLE SCHOOL #20
OXFORD SQUARE
PARCEL 'D-D'

IRRIGATION SYSTEM DESIGN

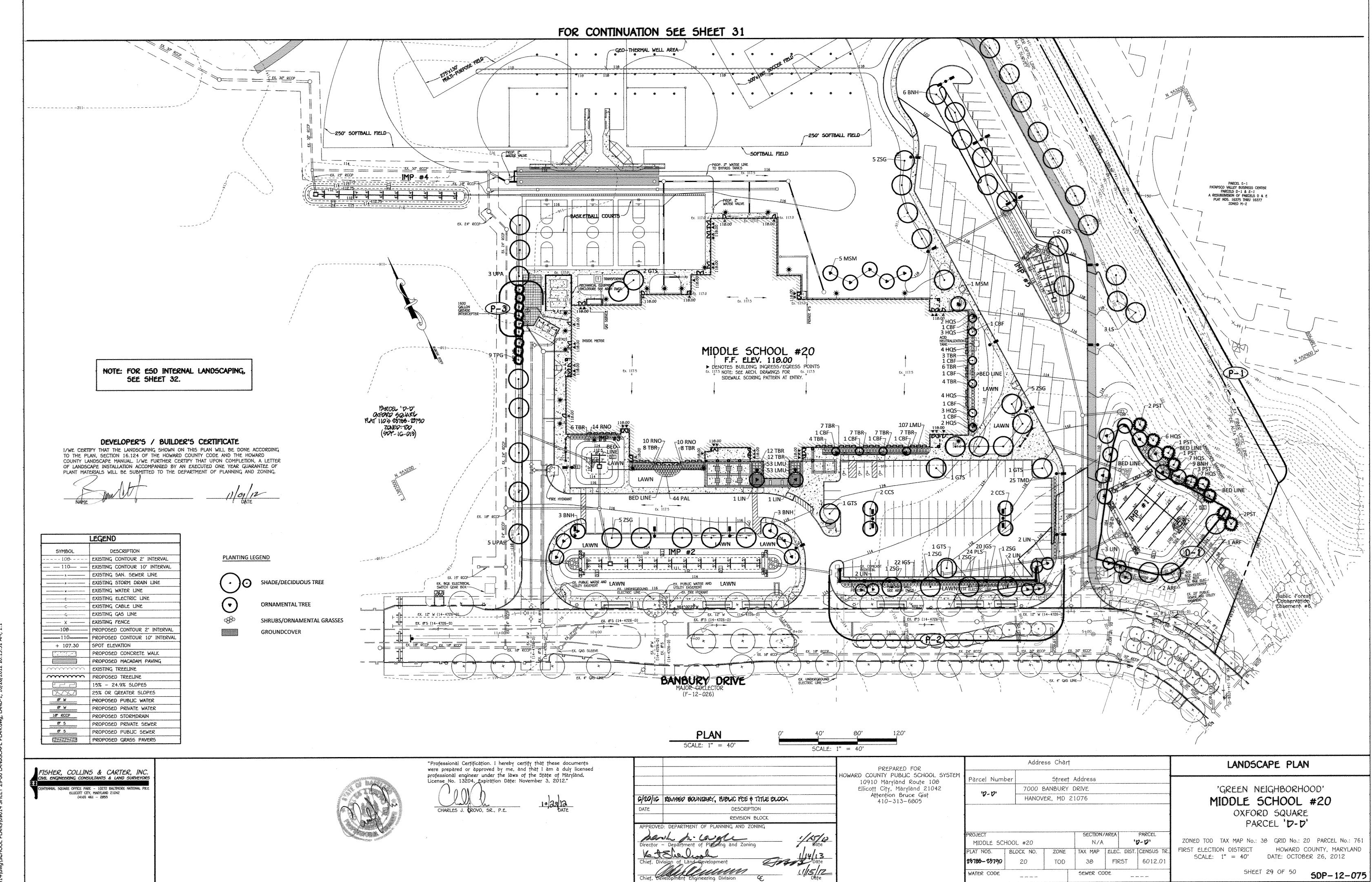
ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761

FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: 1" = 30' DATE: OCTOBER 26, 2012

SHEET 28 OF 50 50P-12-075

:\2009\09014\dwg\SCHOOL PLANS\09014 SHEET 27-28 IRRIGATION PLANS.



CONTRACTOR OF ANICOGNAL CHEET 20, 20 | ANIDECADE BLAN 44/4 | ANICA 10/26/2012 10:13:21 AM 1:1

I:\2009\09014\dwg\\$CHOOL PLANS\09014 SHEET 29-30 LANDSCAPE PLAN.dwg, LAND-2, 10/26/2012 10:15:00 AM, 1:1

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 nutrient uptake are located just below the soil surface.

The limit of disturbance (LOD) line depicted on the plan shows the proposed extent of construction activities. Eco-Science Professionals, or another qualified professional designated by the developer, will assist in the field flagging of the LOO to ensure that the Critical Root Zone for the Forest Retention Area is determined in accordance with the in-Field Edge Determination Guidelines in Appendix 8. Eco-Science Professionals, or another qualified professional, will also assess the condition of the new forest edge to determine if selective thinning or pruning is needed to improve the condition of the edge.

2. Fencing and Signage

All forest retention areas will be protected from unauthorized intrusion by appropriate signage and fencing. Signage and fencing will be installed prior to any construction activity. Installation of these devices will be supervised by Eco-Science Professionals or another qualified professional. Fencing will placed along all LOO lines that occur within 35 feet of existing treelines. Signage will be placed along the edge of the FCE every 100 feet. Fencing will consist of blaze orange mesh fence or super silt fence. See Forest Conservation Plan for standard specifications.

B. Pre-Construction Meeting

Upon staking of limits of disturbance and installation of all signage, 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 tree protection measures outlined in the FCP are in place, 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 stockpilling, etc. associated with construction of the project will be restricted to those areas shown within the limit of disturbance. Meaning of equipment will be prohibited from all forest retention areas. Wastewater resulting from equipment cleaning will be controlled to prevent runoff into wetlands, streams and other environmentally sensitive areas.

D. Sequence of Construction

The following timetable represents the proposed timetable for construction of the proposed project. The construction start date for this project has not been formalized. The actual project start date is predicated on the issuance of all necessary permits and approvals for the project. The items outlined in the Forest Conservation Plan will be enacted upon commencement of the project.

Below find a sequence of construction 1. Install all tree protection signage, fencing, and sediment control devices.

2. Hold pre-construction meeting between developer, contractor and County inspector. 3. Grade site and construct improvements. Stabilize all disturbed areas in accordance with grading plan.

4. Remove sediment control. Replace any forest retention signage in poor condition.

5. Hold post-construction meeting with County inspectors to assure compliance with FCP. 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. This will include inspections to ensure that signage is properly maintained and that no unauthorized intrusions have been made into forest retention areas.

F. Activities Permitted During Construction

The forest conservation plan will allow the following activities within forest resources during the construction phase of the project:

1. Passive recreation (birdwatching, hiking, etc.)

These activities will not damage or negatively impact the forest resources on the property.

G. 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 all Forest Conservation Easement areas have been properly retained and that all post construction

# Post-Construction Management Plan

The post-construction management plan will further ensure that all Forest Conservation Easement Areas are maintained. 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. Signage

Signage indicating the limits of the forest retention areas shall be maintained.

"At the time of plant installation, all trees listed and approved on the landscape Plan, shall comply with the proper height requirement in accordance with the Howard County Landscape Manual. In addition, no subtitutions or relocations of the required plantings may be made without prior review and approval from the Department of Planning and Zoning. Any deviations from the approved Landscape Plan may result in denial or delay in the release of landscape surety until such time as all required materials are planted and/or revisions are made to the road drawing plans".

"The Owner, tenants and/or their agents shall be responsible for maintenace of the required perimeter landscaping. All plant materials shall be maintained in good growing condition, and when necessary, replaced with new materials to ensure continued compliance with applicable regulations. All the other required landscaping shall be permanently maintained in good condition, and when necessary, repaired or replaced".

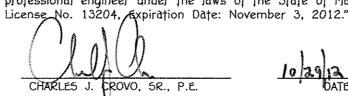
# DEVELOPER'S / BUILDER'S CERTIFICATE

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





"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.





PLANT LIST

23

10

8

9

6

**SHRUBS** 

117

38

42

24

GRASSES

PERENNIALS

60

TREES - DECIDUOUS SHADE

ARF

BNH

CBF

GTS

LS

LTU

UPA

ZSG

TPG

PST

LIN

MSM

CLA

CSE

HQS

IGS

ΙΤV

PLS

RNO

TBR

**TMD** 

VNO

TREES - EVERGREEN

TREES - ORNAMENTAL

BOTANICAL NAME

Freeman Maple

River Birch

Betula nigra 'Heritage'

Carpinus betulus 'Fastigiata'

Thornless Honeylocust

Liquidambar styraciflua

Liriodendron tulipifera

Japanese Zelkova

Tulip Poplar

Pinus stronus

CCS Cercis canadensis

Chinese Flm

American Sweetgum

Ulmus parvifoilia 'Frontier

Zelkova serrata var. 'Greenvase'

Thuja x plicata 'Green Giant'

Lagerstroemia indica 'Arapaho'

Green Giant Arborvitae

**Eastern White Pine** 

Eastern Redbud

Red Crapemyrtle

Saucer Magnolia

Magnolia x soulangiana

Clethra alnifolia 'Pinkspire

Red Osier Dogwood

Oakleaf Hydrangea

Itea virginica 'Little Henry'

Prunus laurocerasus 'Schiokaensis

Taxus baccata 'Rependens

Spreading English Yew Taxus media 'Densiformis'

Spreading English Yew

Pennisetum alopecuroides

Panicum virgatum 'Shenandoah'

Eupatorium purpureum atropurpureum

SCHEDULE A

Fountain Grass

**Red Switchgrass** 

Big Blue Lilvturf

Liriope muscari 'Big Blue'

Purple Joe Pye Weed

Purple Coneflower

Vernonia noveboracensis

PERIMETER

CATEGORY

LANDSCAPE TYPE

LINEAR FEET OF PERIMETER

(YES, NO, LINEAR FEET)

(YES, NO, LINEAR FEET)

BELOW IF NEEDED)

(DESCRIBE IF NEEDED)
NUMBER OF PLANTS REQUIRED

SHRUBS
NUMBER OF PLANTS PROVIDED

SHADE TREES

SHADE TREES

EVERGREEN TREES

EVERGREEN TREES

(DESCRIBE PLANT SUBSTITUTION CREDITS

OTHER TREES (2:1 SUBSTITUTION)

SHRUBS (10:1 SUBSTITUTION)

CREDIT FOR EXISTING VEGETATION

(DESCRIBE BELOW IF NEEDED)
CREDIT FOR WALL, FENCE OR BERM

New York Ironweed

Echinacea purpurea 'Magnus'

Flower Carpet White Groundcover Rose

Ilex glabra 'Shamrock'

Inkberry Holly

Sweetspire

Cherrylaurel

Rosa x 'Noaschnee'

Hydrangea quercifolia 'Snow Queen'

Sweet Pepperbush

Cornus sericea

Upright European Hornbean

Gleditsia triacanthos inermis 'Shademaster'

**COMMON NAME** 

Acer x freemanii 'Autumn Blaze'

CONT

B&B

Cont.

Cont.

Cont.

Cont.

Cont.

Cont.

Cont.

Cont.

Cont.

Buffer — Parking Adj. to Roadway

240'

PERIMETER LANDSCAPE EDGE (P-#)

Non-Res. Adiacent

to Non-Res.

925'

3" - 3-1/2" cal.

10-12' ht. min.

3" - 3-1/2" cal.

3" - 3-1/2" cal.

2-1/2" - 3" cal.

2-1/2" - 3" cal.

2-1/2" - 3" cal.

2-1/2" - 3" cal.

10'-12'Ht.

10'-12'Ht.

8'-10' Ht.

8'-10' Ht.

10'-12'Ht.

24"-30" Ht.

18"-74" Ht.

24"-30" ht

24"-30" Ht.

18"-24" Spd

24"-30" Ht.

4"-30" Ht.

24"-30" Spd.

24"-30" Spd.

1 Gal.

1 Gal.

1 Qt.

REMARKS

Multistem/3 trunks min.

Seedless

Single stem

40" o.c.

48" o.c.

40" o.c.

Cont./B&B 40" o.c./Male Only

36" o.c.

30" O.C.

36" O.C.

18" O.C.

42" O.C.

18" O.C.

24" O.C.

РЗ

Dumpster Screening

92'

NO

NO

36" o.c./Male Only

36" o.c./Male Only

Cont./B&B 30" o.c.

Multistem/4 trunks min.

Multistem/3 trunks min.

			·
6/20	16	REVISED TITLE BLOCK	
DATE		DESCRIPTION	
		REVISION BLOCK	
Direc	tor K, Div	DEPARTMENT OF PLANNING AND ZONING  Department of Planning and Zoning  ision of Land Development  Velopment Engineering Division	Date  Date  1/15/12  Date

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

410-313-6805

PLANTING NOTES:

PERCEDENCE.

REPRESENTATIVE.

1. THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH SECTION 16,124 OF HOWARD

2. CONTRACTOR SHALL NOTIFY ALL UTILITIES AT LEAST FIVE (5) DAYS BEFORE STARTING

3. FIELD VERIFY UNDERGROUND UTILITY LOCATIONS AND EXISTING CONDITIONS BEFORE

STARTING PLANTING WORK, EVEN WHERE PLANT LOCATIONS ARE DIMENSIONED, CONTACT

4. PLANT QUANTITIES SHOWN ON PLANT LIST ARE PROVIDED FOR THE CONVENIENCE OF

THE CONTRACTOR ONLY. IF DISCREPANCIES EXIST BETWEEN QUANTITIES SHOWN ON THE

6. ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES BUT NOT OTHERWISE PLANTED.

8. THE CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING IF SOIL OR DRAINAGE

Note: THERE IS NO LANDSCAPING SURETY FOR THE LANDSCAPE PLAN.

MAY BE REVISED TO A COUNTY APPROVED EQUIVALENT FROM THE

IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE

10. REFER TO OTHER SITE DWGS. FOR ADDITIONAL SEEDING REQUIREMENTS.

HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL."

LINEAR FEET OF PERIMETER

NUMBER OF TREES REQUIRED

CREDIT FOR EXISTING VEGETATION

NUMBER OF TREES PROVIDED

SHRUBS (10:1 SUBSTITUTION)

LANDSCAPE TYPE

EVERGREEN TREES

(NO, YES AND %)

EVERGREEN TREES

SHADE TREES

1/2" RUBBER HOSE-

GALVANIZED WIRE

BURLAP WRAP ---

DOUBLE STRAND OF 14 GAUGE-

2"x 2" HARDWOOD STAKE -

BURLAP AND ROPE CUT

2"-3" EARTH SAUCER -

COMPACTED SUBGRADE

FIRM BEARING (MIN. 2'-6")

EXTEND STAKE TO

FINISHED GRADE -

FROM TOP OF TREE BALL-LEAVE 1/8 DEPTH OF ROOT

BALL ABOVE FINISHED GRADE

SHADE TREES

PAVED OR MULCHED SHALL BE SEEDED IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

7. ALL EXPOSED EARTH WITHIN THE LIMITS OF THE PLANTING BEDS SHALL BE MULCHED

CONDITIONS ARE ENCOUNTERED WHICH MAY BE DETRIMENTAL TO THE GROWTH OF PLANTS.

9. NO SUBSTITUTION SHALL BE MADE WITHOUT WRITTEN CONSENT OF THE OWNER OR HIS

NOTE: TREE AND SHRUB TYPES ARE ONLY AN RECOMMENDATION, THESE

HOWARD COUNTY LANDSCAPE MANUAL. "THIS PLAN HAS BEEN PREPARED

SCHEDULE D (D-1)

445'

11

NO

12

9

20

STORMWATER MANAGEMENT AREA LANDSCAPING

PLAN AND THOSE SHOWN ON THE PLANT LIST, THE QUANTITIES ON THE PLAN SHALL TAKE

COUNTY CODE AND LANDSCAPE MANUAL AND IS TO BE USED FOR PLANTING ONLY.

REQUIRED SINCE THIS IS A HOWARD COUNTY BOARD OF EDUCATION PROJECT.

5. ALL PLANT MATERIALS SHALL BE FULL AND HEAVY, BE WELL FORMED AND

SYMMETRICAL, CONFORM TO THE A.A.N. SPECIFICATIONS, AND BE INSTALLED IN

WORK. ALL GENERAL NOTES FROM SHEET 1, SHALL APPLY.

CONSTRUCTION MANAGER IF ANY RELOCATION ARE REQUIRED.

WITH SHREDDED HARDWOOD MULCH PER PLANTING DETAILS.

ACCORDANCE WITH PROJECT SPECIFICATIONS.

LANDSCAPING SHALL BE PROVIDED AS SHOWN ON THIS PLAN SHEET. NO SURETY IS

4							<u> </u>
Parcel Num	ber	Street /	Address			.,	
ים-טי	7000 1	BANBURY (	PIVE				
V-V	HANOV	ER, MD 2	1.076				
	<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>						
PROJECT		•	SECTION/AREA PARCEL			PARCEL	1
MIDDLE 5C		N/A 'D-			D-D'	Z	
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP	ELEC	. DIST.	CENSUS TR.	FIR
23788-23790	20	TOD	38	FIR	:5T	6012.01	i.

SEWER CODE

TREE PLANTING DETAIL

Address Chart

# PLANTING SPECIFICATIONS

PLANTS, RELATED MATERIAL, AND OPERATIONS SHALL MEET THE DETAILED DESCRIPTION AS GIVEN ON THE PLANS AND AS DESCRIBED HEREIN.

ALL PLANT MATERIAL, UNLESS OTHERWISE SPECIFIED, SHALL BE NURSERY GROWN, UNIFORMLY BRANCHED, HAVE A VIGOROUS ROOT SYSTEM, AND SHALL CONFORM TO THE SPECIES, SIZE, ROOT AND SHAPE SHOWN ON THE PLANT LIST AND THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN) STANDARDS. PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, FREE FROM DEFECTS, DECAY, DISFIGURING ROOTS, SUN SCALD INJURIES, ABRASIONS OF THE BARK, PLANT DISEASE, INSECT PEST EGGS, BORERS AND ALL FORMS OF INSECT INFESTATIONS OR OBJECTIONABLE DISFIGUREMENTS. PLANT MATERIAL THAT IS WEAK OR WHICH HAS BEEN CUT BACK FROM LARGER GRADES TO MEET SPECIFIED REQUIREMENTS WILL BE REJECTED. TREES WITH FORKED LEADERS WILL NOT BE ACCEPTED. ALL PLANTS SHALL BE FRESHLY DUG; NO HEALED-IN PLANTS FROM COLD STORAGE WILL BE ACCEPTED.

UNLESS OTHERWISE SPECIFIED, ALL GENERAL CONDITIONS, PLANTING OPERATIONS, DETAILS AND PLANTING SPECIFICATION SHALL CONFORM TO "LANDSCAPE SPECIFICATION GUIDELINES FOR BALTIMORE-WASHINGTON METROPOLITAN ARFAS". (HEREINAFTER "LANDSCAPE GUIDELINES") APPROVED BY THE LANDSCAPE CONTRACTORS ASSOCIATION OF METROPOLITAN WASHINGTON AND THE POTOMAC CHAPTER OF THE AMERICAN SOCIETY OF LANDSCAPE ARCHITECT, LATEST EDITION, INCLUDING ALL AGENDA.

CONTRACTOR SHALL BE REQUIRED TO GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR AFTER DATE OF ACCEPTANCE IN ACCORDANCE WITH THE APPROPRIATE SECTION OF THE LANDSCAPE GUIDELINES CONTRACTOR'S ATTENTION IS DIRECTED TO THE MAINTENANCE REQUIREMENTS FOUND WITHIN THE ONE YEAR SPECIFICATIONS INCLUDING WATERING AND REPLACEMENT OF SPECIFIED PLANT MATERIAL.

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

ALL SHRUBS SHALL BE PLANTED IN CONTINUOUS TRENCHES OR PREPARED PLANTING BEDS AND MULCHED WITH COMPOSTED HARDWOOD MULCH AS DETAILS AND SPECIFIED EXCEPT WHERE NOTED ON PLANS.

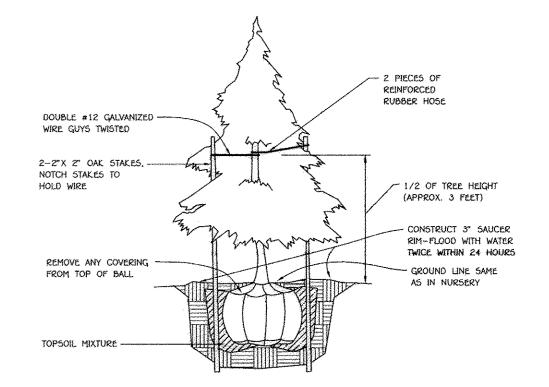
POSITIVE DRAINAGE SHALL BE MAINTAINED IN PLANTING BEDS 2 PERCENT SLOPE).

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

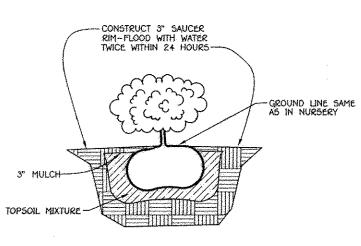
WEED CONTROL: INCORPORATE A PRE-EMERGENT HERBICIDE INTO THE PLANTING BED FOLLOWING RECOMMENDED RATES ON THE LABEL. CAUTION: BE SURE TO CAREFULLY CHECK THE CHEMICAL USED TO ASSURE ITS ADAPTABILITY TO THE SPECIFIC GROUND COVER TO BE TREATED.

ALL AREAS WITHIN CONTRACT LIMITS DISTURBED DURING OR PRIOR TO CONSTRUCTION NOT DESIGNATED TO RECEIVE PLANTS AND MULCH SHALL BE FINE GRADED AND SEEDED.

SCHEDULE B PARKING LOT INTERNAL LANDS	CAPING
NUMBER OF PARKING SPACES	119
NUMBER OF TREES REQUIRED (1/20 SP)	6
NUMBER OF TREES PROVIDED	
SHADE TREES	21
OTHER TREES (2:1 SUBSTITUTION)	



# EVERGREEN PLANTING DETAIL



SHRUB PLANTING DETAIL

FISHER, COLLINS & CARTER, INC. VIL ENGINEERING CONSULTANTS & LAND SURVEYORS ELLICOTT CITY, MARYLAND 21042



WATER CODE

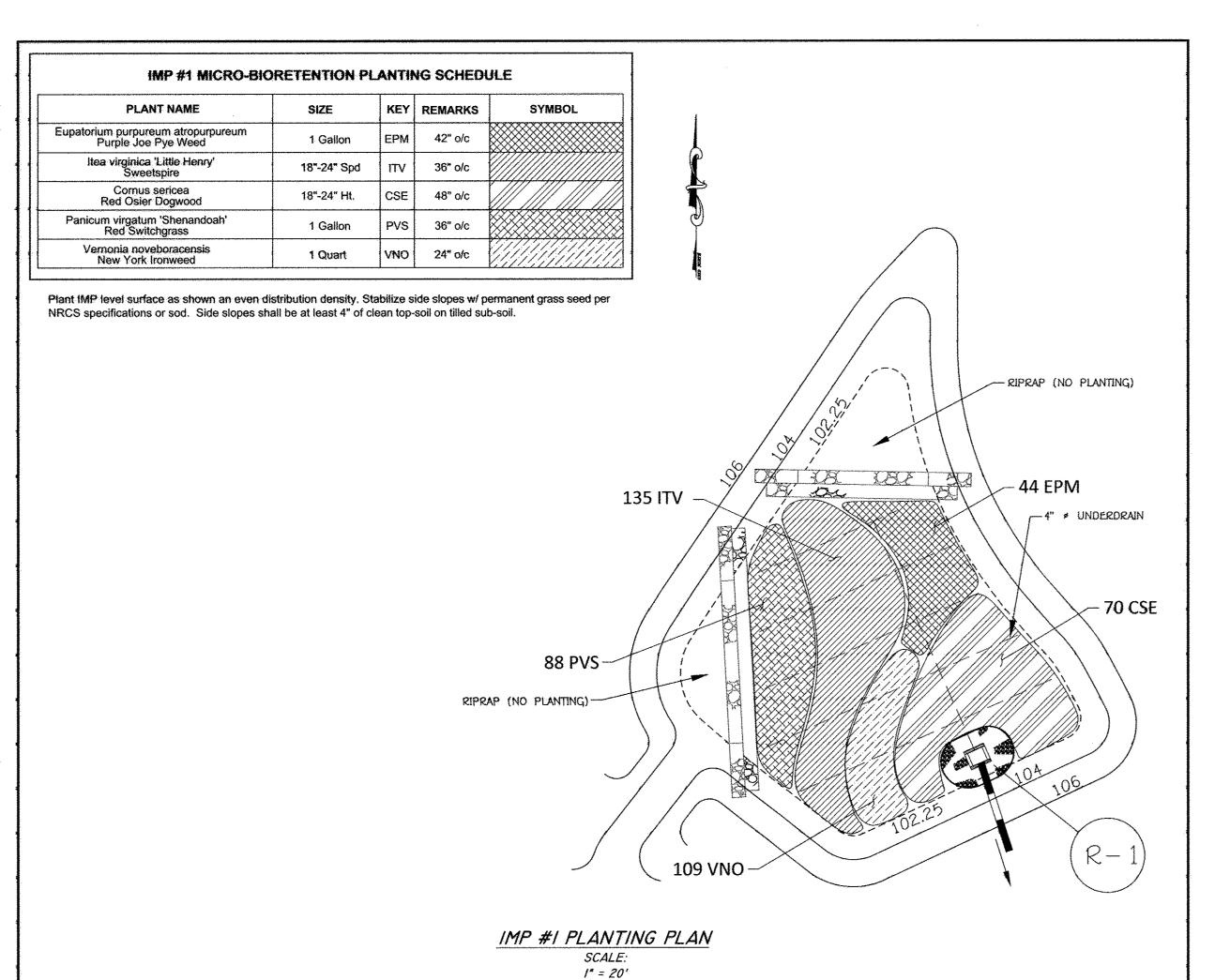
LANDSCAPE NOTES AND DETAIL SHEET 'GREEN NEIGHBORHOOD'

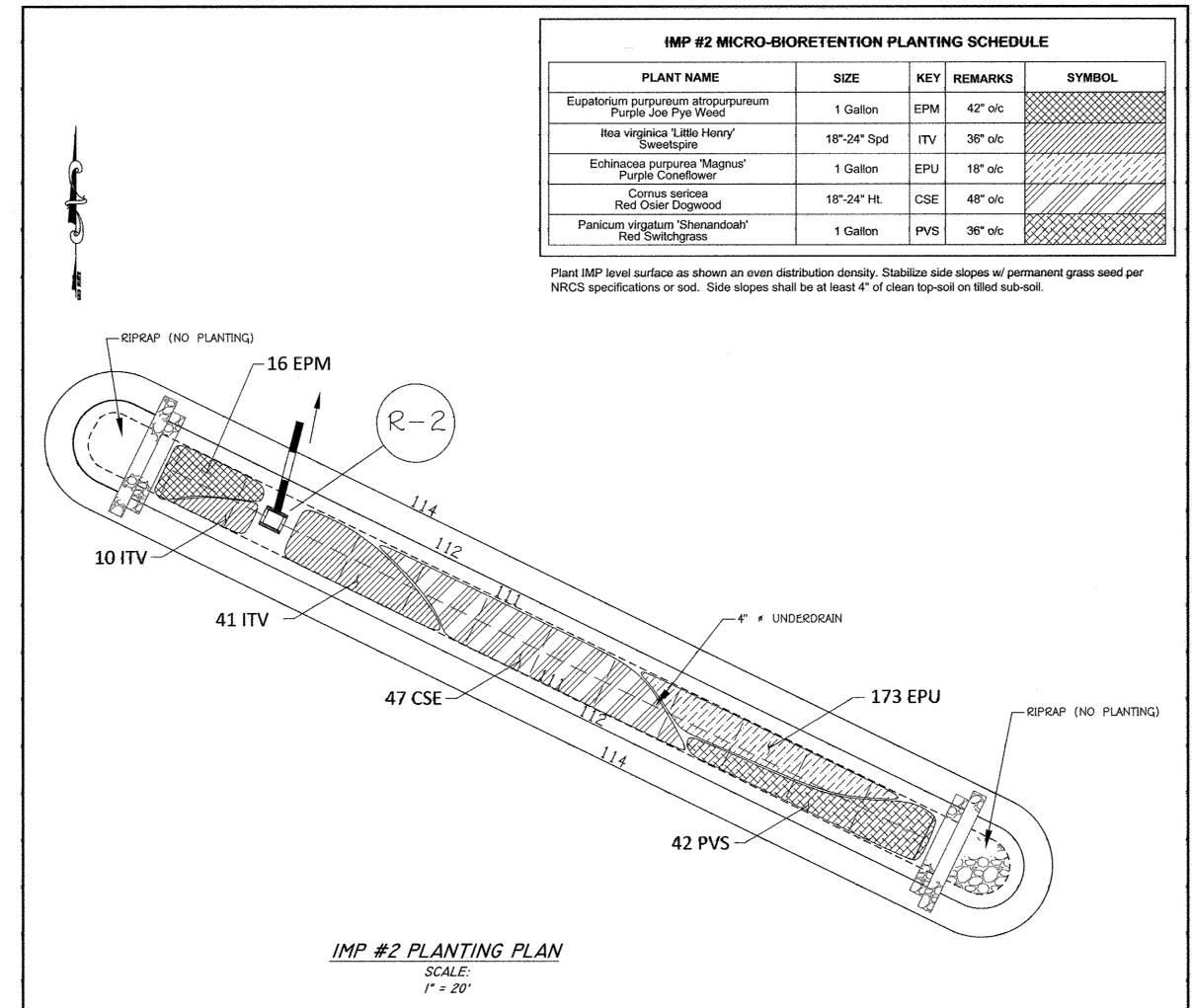
MIDDLE 5CHOOL #20 OXFORD SQUARE PARCEL 'D-D'

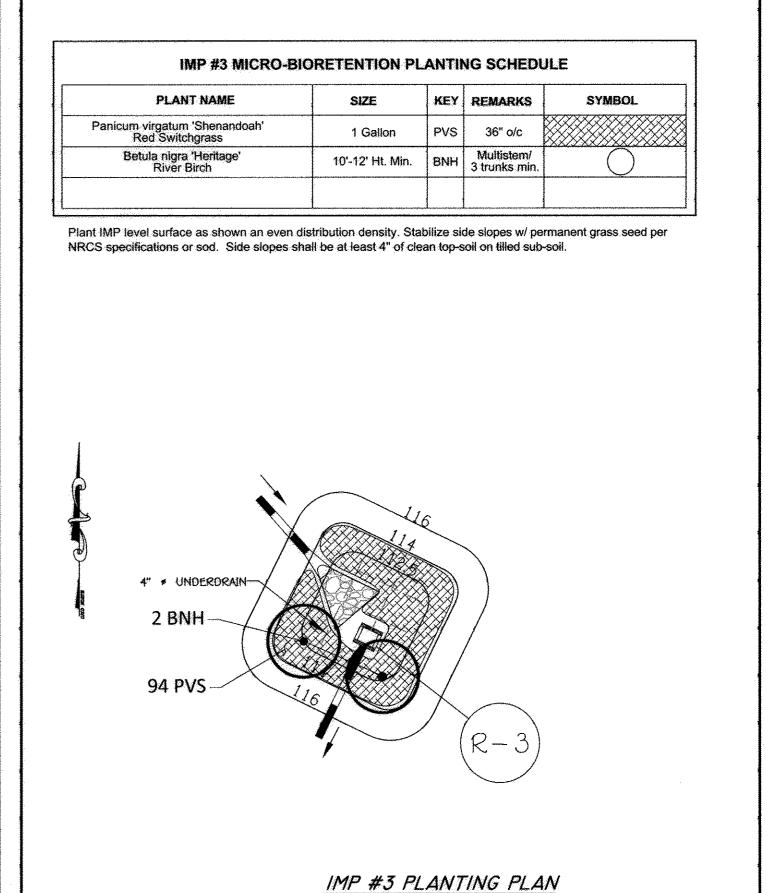
ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 HOWARD COUNTY, MARYLAND RST ELECTION DISTRICT SCALE: A5 SHOWN DATE: OCTOBER 26, 2012

5DP-12-075

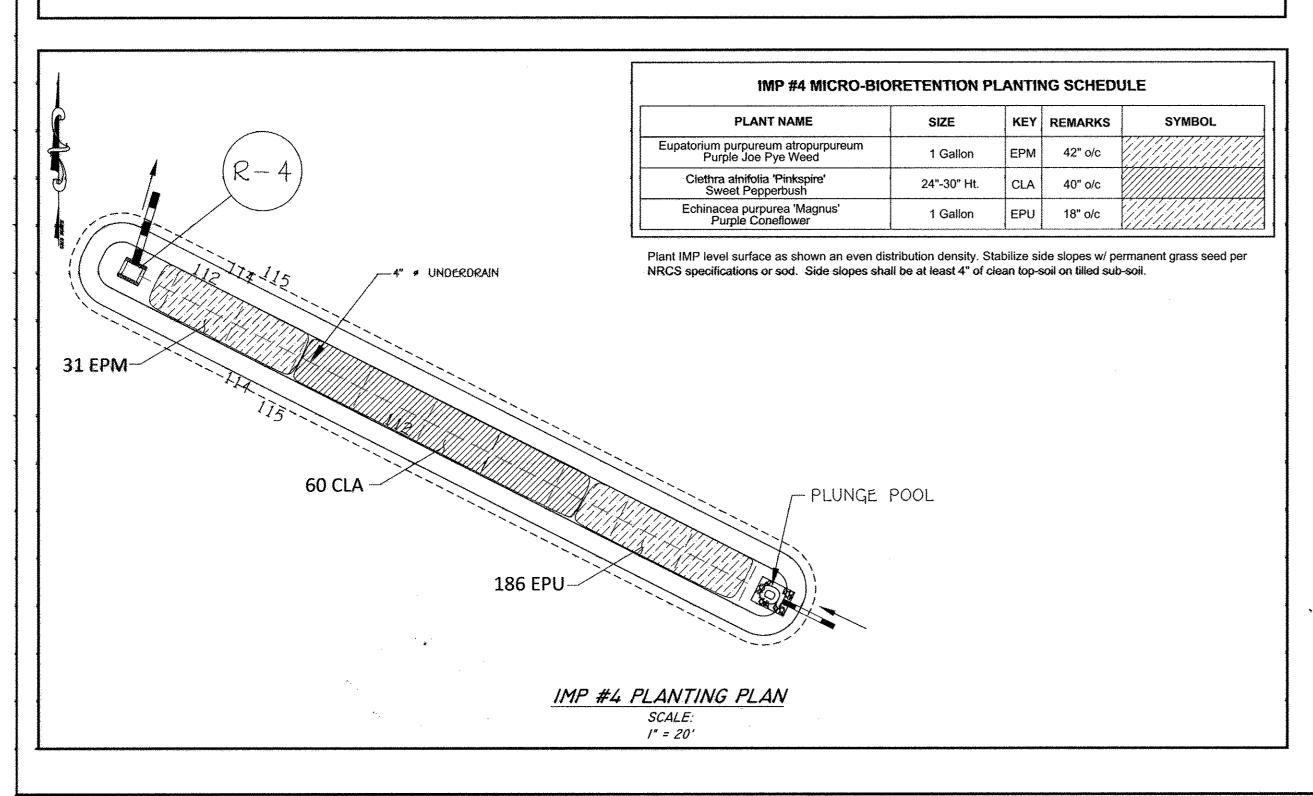


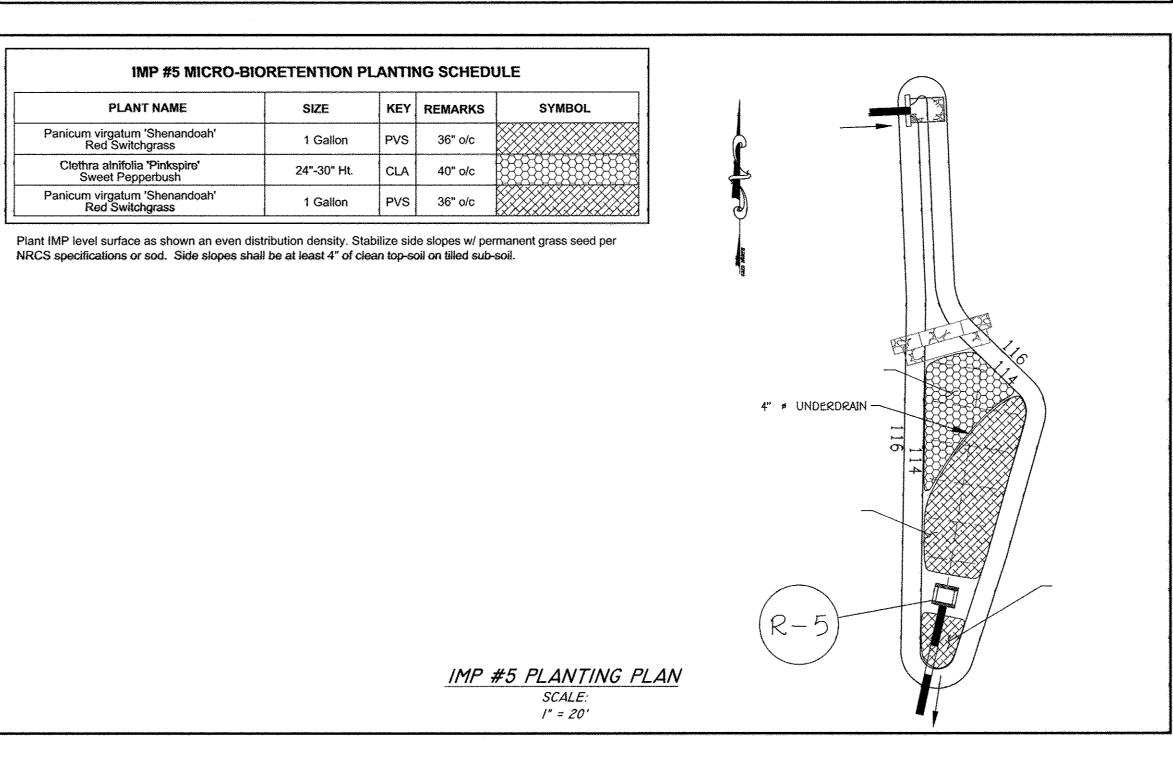


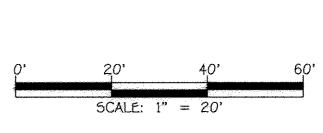




/" = 20'



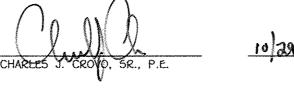








"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 13204, Expiration Date: November 3, 2012."



0/20/16	REVISED TITLE BLOCK
DATE	DESCRIPTION
	REVISION BLOCK
Director	DEPARTMENT OF PLANNING AND ZONING  Department of Planning and Zoning  Sate  Solution of Land Development  Date

PREPARED FOR OWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 Maryland Route 108 Ellicott City, Maryland 21042 Attention Bruce Gist

410-313-6805

'D-D' HA	NOVER, MD 2	1076	A Add to global property and the Control
			41

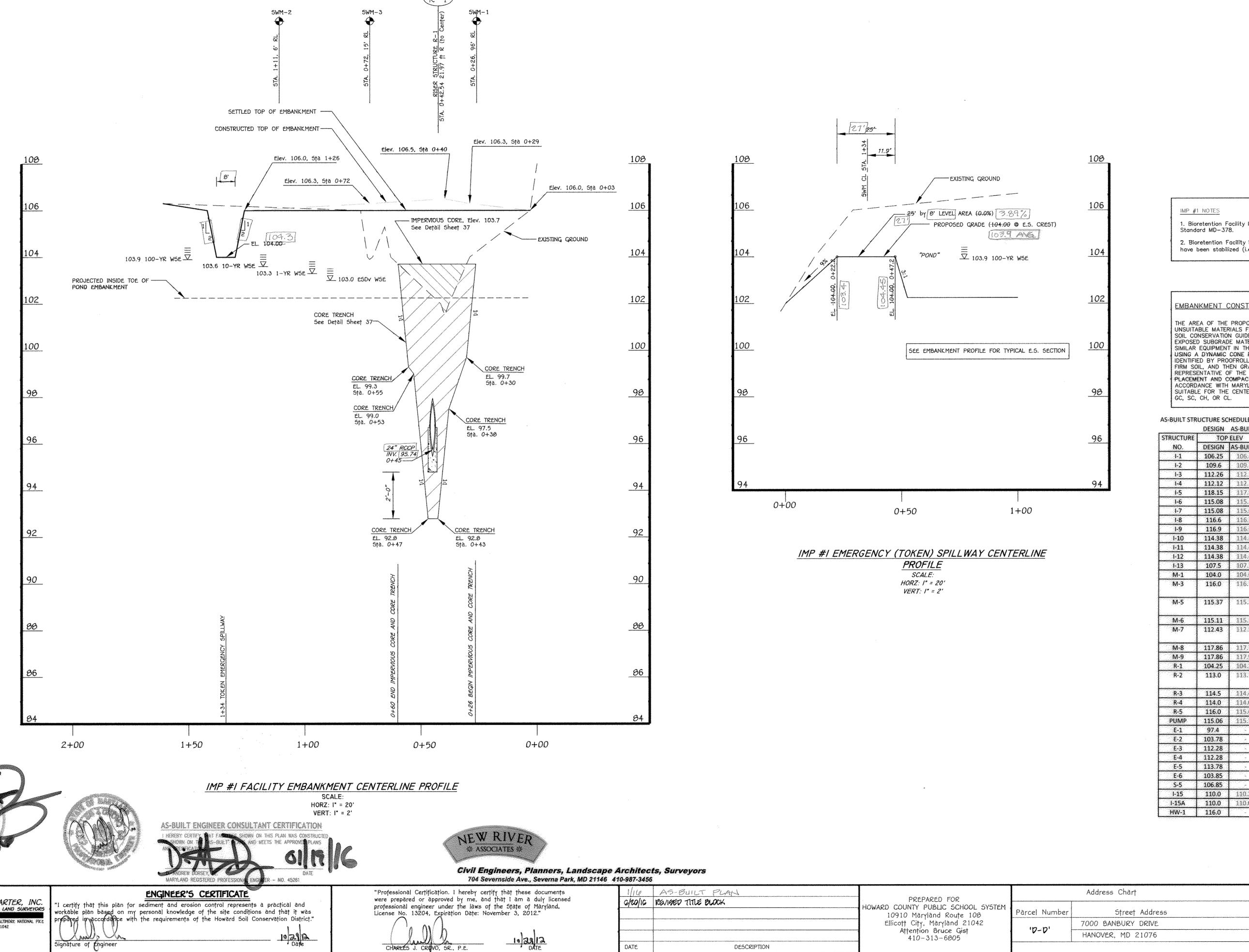
Address Chart

PROJECT MIDDLE 5C	HOOL #20	and the second s	SECTION.			PARCEL 'D-D'	
PLAT NOS.	BLOCK NO.	ZONE	TAX MAP			CENSUS	TR.
23788-23790	20	TOD	38	FIR	ST	6012.	01

INTEGRATED MANAGEMENT PRACTICES #1-#5 PLANTING PLANS

> 'GREEN NEIGHBORHOOD' MIDDLE 5CHOOL #20 OXFORD SQUARE PARCEL 'D-D'

ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND DATE: OCTOBER 26, 2012 SCALE: 1" = 20"



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

IMP #1 NOTES

1. Bioretention Facility IMP #1 shall be constructed to the latest edition of NRCS's Pond

2. Bioretention Facility IMP #1 shall be converted to a SWM facility after ALL upstream areas have been stabilized (i.e., established vegetation or paved) including the pond slopes.

## EMBANKMENT CONSTRUCTION NOTES

DESIGN AS-BUILT

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.

#### AS-BUILT STRUCTURE SCHEDULE

STRUCTURE	TOP	ELEV		IN)	/. IN		1NV.	OUT			
NO.	DESIGN	AS-BUILT	DESIGN	PIPE	AS-BUILT	PIPE	DESIGN	PIPE	AS-BUILT	PIPE	
1-1	106.25	106.46	102.5	18 IN	102.8	18 IN	102.4	18 IN	102.40	18 IF	
1-2	109.6	109.76	103.09	15 IN	103.21	15 M	102.84	18 IN	103.10	18 H	
1-3	112.26	112.30	-				110.0	15 IN	110.00	15 IA	
1-4	112.12	112.10					106.46	15 IN	105,80	15 IP	
1-5	118.15	127.91	-		y managan na ya a sa aa		114.35	15 IN	114.35	15 ft	
J-6	115.08	115.10	-			3	111.27	15 IN	111.27	15 M	
1-7	115.08	115,09	-				111.25	15 IN	111.25	15 N	
I-8	116.6	116.59	113.11	12 IN	113.2	12 IN	112.86	15 IN	112.86	15 IP	
1-9	116.9	116.96					113.59	12 IN	113.59	12 II	
1-10	114.38	114.40	105.99	18 IN	105.99	18 IN	105.89	18 IN	105.89	18 II	
I-11	114.38	114.40	106.85	15 IN	106.85	15 IN	106.6	18 IN	106,60	1811	
1-12	114.38	114.40	-				107.46	15 IN	107.80	15 (	
I-13	107.5	107.30		entre d'al construit de la constitue. Constitue de la constitue de l			104.25	15 IN	104.08	15 IP	
W-1	104.0	104.07	95.42	18 IN	95.95	18 IN	96.32	18 IN	95.85	18 IN	
M-3	116.0	116.10	107.72	15 IN	107.10	15 IN	106.26	18 IN	106.26	1811	
			106.36	18 IN	106.36	21 IN					
M-5	115.37	115.30	109.15	18 IN	108.78	18 IN	109.05	18 IN	108.67	18 IP	
	) Bernanda ar anda ar anda		109.15	18 IN	108.78	18 IN					
M-6	115.11	115.14	109.89	18 IN	109.94	18 IN	109.79	18 IN	109.84	18 II	
M-7	112.43	112.54	104.04	15 IN	103.59	15 IN	103.79	18 IN	103,34	18 IA	
	i Leonalia anno antario de la control de		108.0	18 IN	107.49	18 IN	6 6: 8-4:				
M-8	117.86	117.73	111,0	12 IN	110.73	12 IN	110.49	18 IN	110.33	1817	
M-9	117.86	117.96	112.0	12 IN	111.60	12 IN	111,49	18 IN	111.49	18 II	
R-1	104.25	104.38	98.0	4 IN	98.00	41N	95.91		96.03		
R-2	113.0	113.18	106.75	4 IN	106.65	4 IN	106.65	18 IN	106.65	21 10	
	Salahan unusu kabupat salah		106.75	4 IN	106.65	4 IN	Žiri				
R-3	114.5	114.40	108.25	4 IN	108.58	4 IN	108.15	15 IN	108.10	15 H	
R-4	114.0	114.00	107.75	4 IN	107.83	4 JN	107.65	15 IN	107.80	15 lÀ	
R-5	116.0	115.68	109.75	4 IN	109.75	4 IN	109.65	18 IN	109.40	18 IA	
PUMP	115.06	135.10	-				_				
E-1	97.4						95.4	24 IN	95.57	24 11	
E-2	103.78	÷	102.28		102.18		102,25	18 IN	102.14	18 11	
E-3	112.28		111.03		110.96		111.0	15 IN	110.93	15 iA	
E-4	112.28	-	111.03		111.05		111.0	15 IN	111.0	15 in	
E-5	113.78		112.53		112.45		112.5	15 IN	100,42	15 II	
E-6	103.85		102.6		112.54		102.25	15 IN	102,25	15 II	
S <b>-</b> 5	106.85			a de la companya de l La companya de la companya de			104.6	18 IN	104.75	18 11	
1-15	110.0	110.23	105.85	18 IN	105.85	18 IN	105.75	18 IN	105.75	1811	
I-15A	110.0	110.08	<u> </u>	adalah dari dari dari basar dari dari dari dari dari dari dari da			107.0	18 IN	107,10	18 iii	
HW-1	116.0		-	The State of the S			114.0	15 IN	113.74	15 IA	

FISHER, COLLINS & CARTER, INC. ELLICOTT CITY, MARYLAND 21042 (410) 461 - 2055

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. also authorize periodic on-site inspection by the Howard Soil Conservation District."

This development plan is approved for soil erosion and sediment control by

DATE DESCRIPTION REVISION BLOCK

WATER CODE

PROJECT PARCEL N/A **'**D-D' MIDDLE SCHOOL #20 PLAT NOS. TAX MAP | ELEC. DIST. CENSUS BLOCK NO. ZONE 23788-23790 6012.01 38 FIRST

SEWER CODE

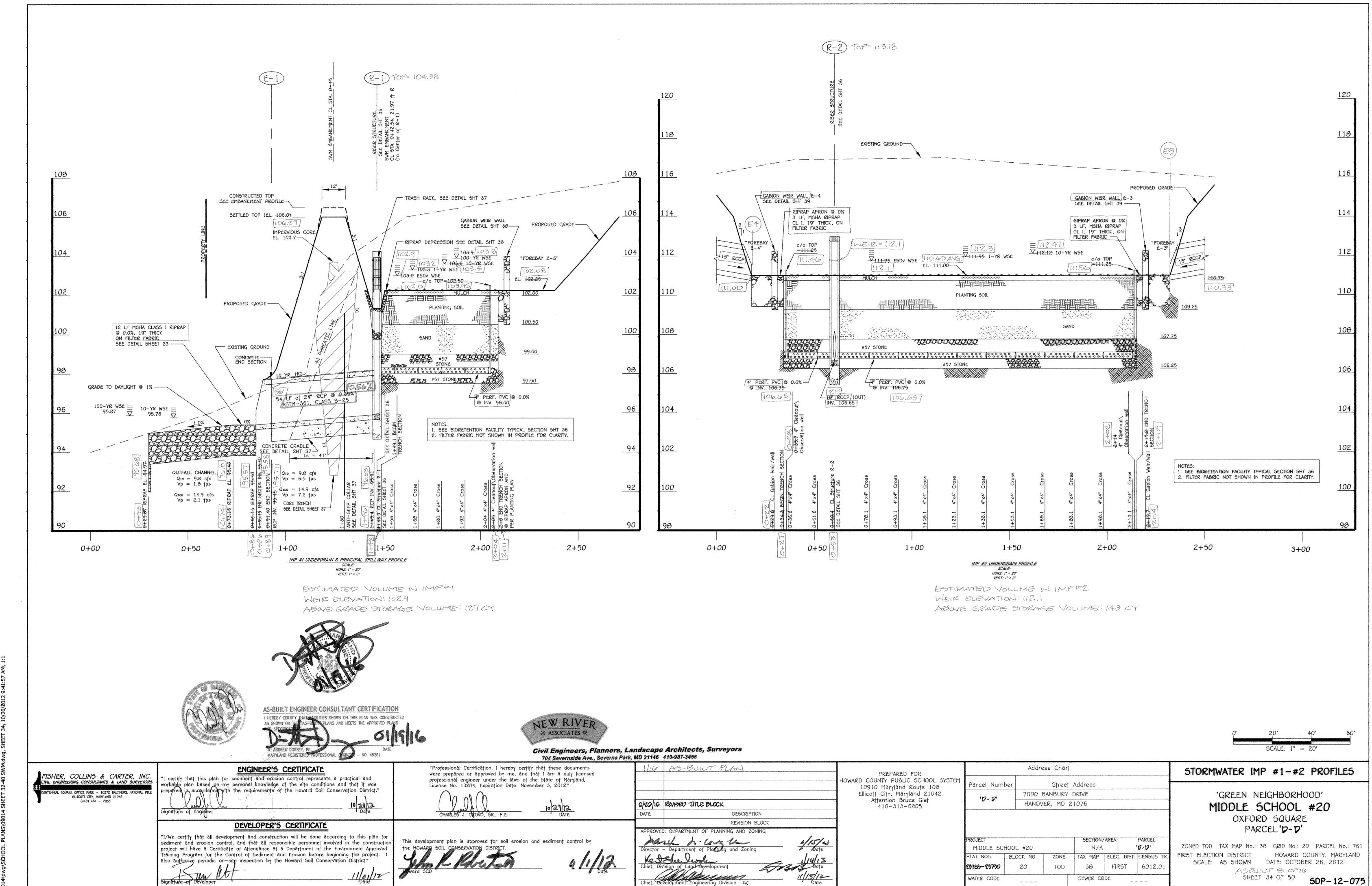
'GREEN NEIGHBORHOOD' MIDDLE 5CHOOL #20 OXFORD SQUARE PARCEL 'D-D'

IMP #1 EMBANKMENT & E.S. PROFILES

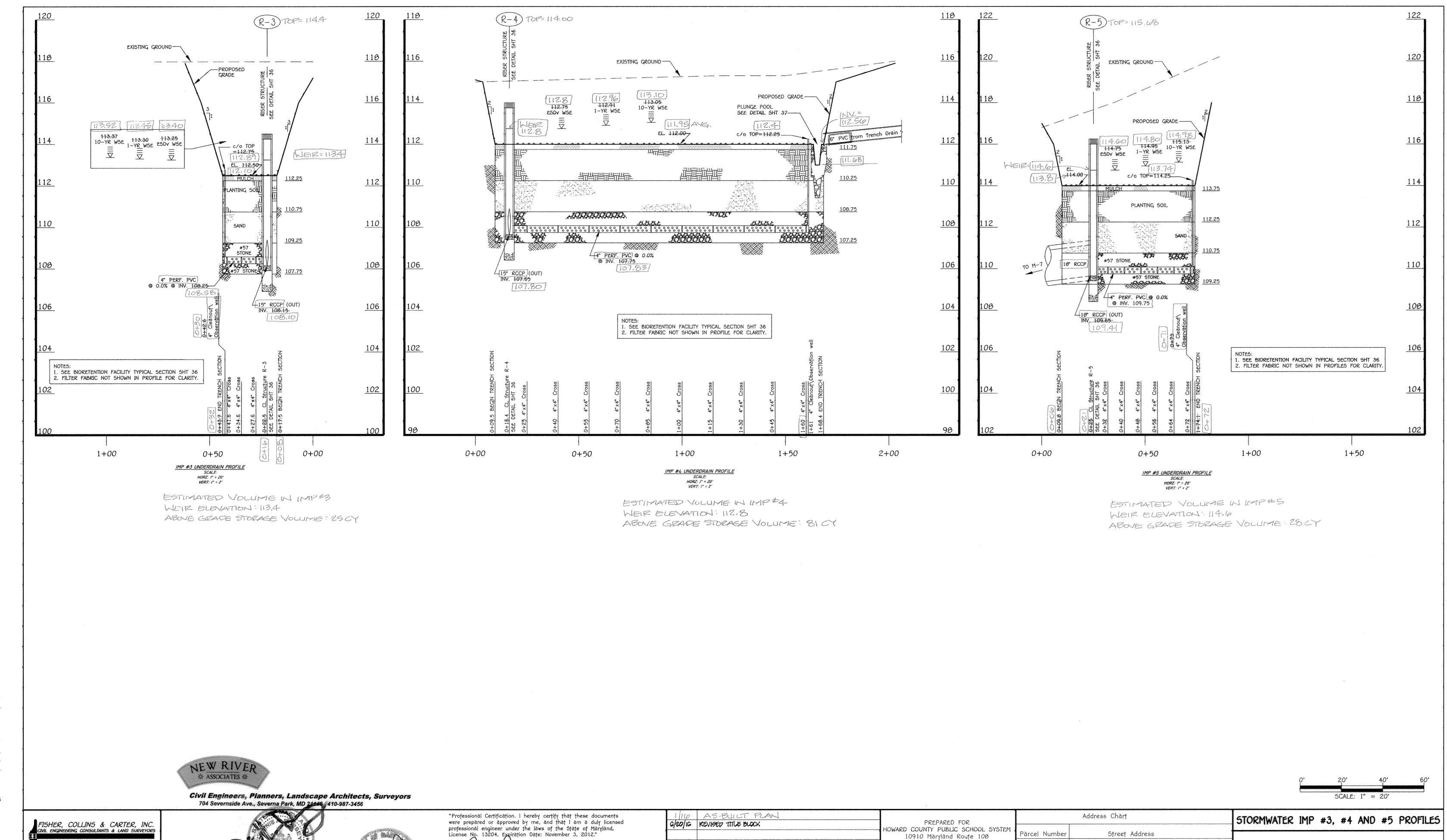
5CALE: 1" = 20"

ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 HOWARD COUNTY, MARYLAND FIRST ELECTION DISTRICT SCALE: AS SHOWN DATE: OCTOBER 26, 2012

AS-BUILT 7 OF 16 SHEET 33 OF 50



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DATE

DESCRIPTION

REVISION BLOCK

CHARLES J. CROVO, SR., P.E.

Ellicott City, Maryland 21042 Attention Bruce Gist

410-313-6805

7000 BANBURY DRIVE HANOVER, MD 21076

TOD

BLOCK NO. | ZONE

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MIDDLE 5CHOOL #20

PLAT NOS.

23788-23790

WATER CODE

PARCEL

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N/A

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TAX MAP | ELEC. DIST. CENSUS T

FIRST

I:\2009\09014\dwq\S¢HOOL PLANS\09014 SHEET 32-40 SWM.dwg, SHEET 35; 10/26/201

IARE OFFICE PARK — 10272 BALTIMORE NATIONAL PIK ELLICOTT CITY, MARYLAND 21042

AS-BUILT ENGINEER CONSULTANT CERTIFICATION

MIDDLE SCHOOL #20 OXFORD SQUARE PARCEL 'D-D'

ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761

FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

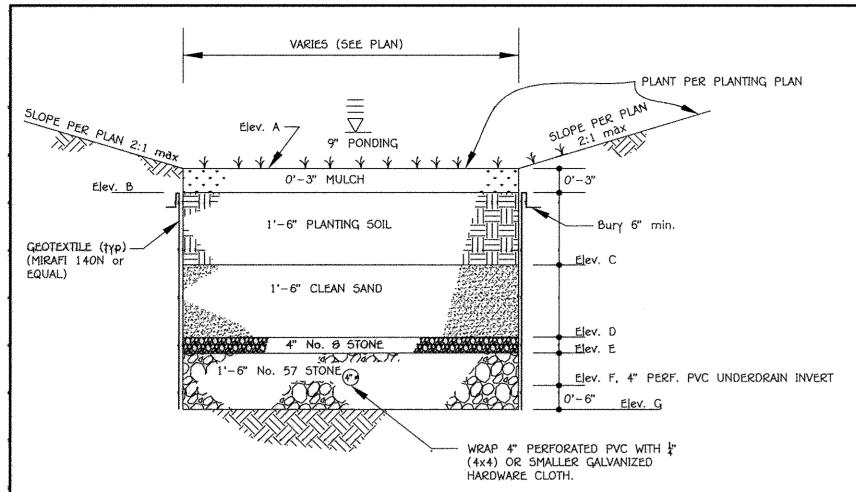
SCALE: AS SHOWN DATE: OCTOBER 26, 2012

ASBUILT 9 OF 16

SHEET 35 OF 50

SDP-12-075

'GREEN NEIGHBORHOOD'



IMP BIORETENTION FACILITY (M-6) ELEVATION TABLE									
	IMP #1	IMP #2 110.65	IMP #3	IMP #4	IMP #4				
Elev. A	102.25	111.00	112.50	112.00	114.00				
Elev. B	102.00	110.75	112.25	111.75	113.75				
Elev. C	100.50	109.25	110.75	110.25	112.25				
Elev. D	99.00	107.75	109.25	108.75	110.75				
Elev. E	98.67	107.42	108.92	108.42	110.42				
Elev. F	[98.00]	106.75	108.25	107.75	[109.75]				
Elev. G	97.50	106.25	107.75	107.25	109.25				
		\$106.65]	10858	107.83					

TYPICAL SECTION

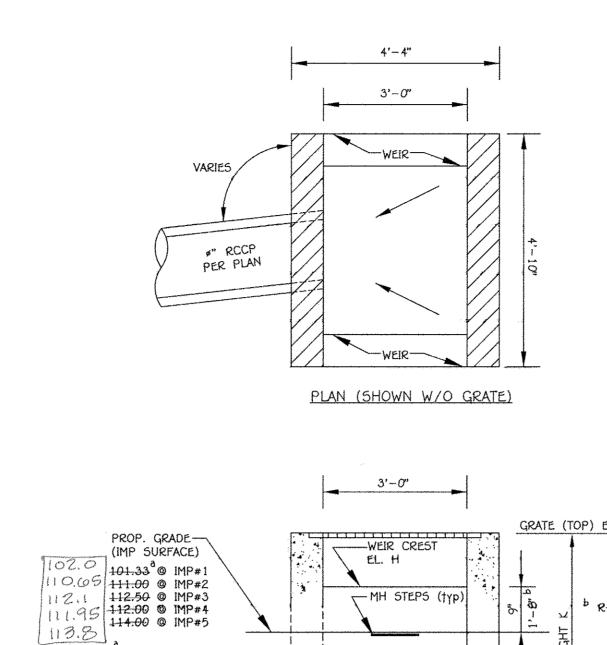
# IMP MICRO-BIORETENTION FACILITY NOTES AND SPECIFICATIONS

1. THE LIMITS OF THE TYPICAL SECTION (i.e., PLANTING SOIL, SAND ETC.) IS THE ENTIRE LEVEL SURFACE OF THE MICRO-BIORETENTION FACILITIES EXCLUDING THE FOREBAY AREAS AND THE RIPRAP GABION APRONS.

2. REFER TO THE 2000 MARYLAND 5WM DESIGN MANUAL FOR BIORETENTION SPECIFICATIONS (PG. B.3.7) FOR INFORMATION NOT LISTED HEREIN AND FOR ADDITIONAL INFORMATION.

- 3. THE BIORETENTION IMP MATERIALS ARE AS FOLLOWS:
- PLANTING SOIL: PER PLANTING SOIL SPECIFICATIONS OUTLINED IN THE LATEST MDE SOIL SPECIFICATIONS.
- PVC PIPE: SCHEDULE 40. PERFORATED PIPE SHALL HAVE NO SLOPE (0.0%).
- STONE AGGREGATE: MSHA SPECIFICATIONS AS SHOWN ON TYPICAL SECTION; AGGREGATE MUST BE FREE OF FINES, DIRT & DEBRIS. - GEOTEXTILE: PER MDE 5WM MANUAL OR MIRAFI 140N.
- MULCH: SHREDDED, WELL-AGED (6-12 MONTHS) HARDWOOD MULCH; NO WOOD CHIPS OR PINE MULCH.
- 4. 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-ESTABLISTED VEGETATION.
- 5. BOARDS SHALL NOT BE LEFT IN PLACE DURING THE CONSTRUCTION OF THE BIORETENTION IMP.
- 6. 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.
- 7. THE CONTRACTOR SHALL OBTAIN INDEPENDENT CERTIFICATION THAT THE SOILS AND OTHER MATERIALS MEET THE SPECIFICATIONS DURING THE AS-BUILT STAGE.
- 8. THE BIORETENTION FACILITIES SHALL BE VEGETATED IN ACCORDANCE WITH THE PLANTING SCHEDULE PER MDE SPECIFICATIONS IN THE 2000 SWM DESIGN MANUAL.
- 9. USE PERFORATED PVC PIPE INSIDE THE BIORETENTION FACILITIES AND WRAP PERFORATED PIPE WITH 1/2" HARDWARE CLOTH TO PREVENT AGGREGATE FROM ENTERING THE PERFORATIONS.
- 10. INSTALL CLEANOUTS/OBSERVATION WELLS (SOLID PVC PIPE) AS SHOWN. THE CLEANOUT/OBSERVATION WELL TOP SHALL EXTEND 3" ABOVE TOP OF MULCH.

IMP MICRO-BIORETENTION FACILITY (M-6) TYPICAL SECTION



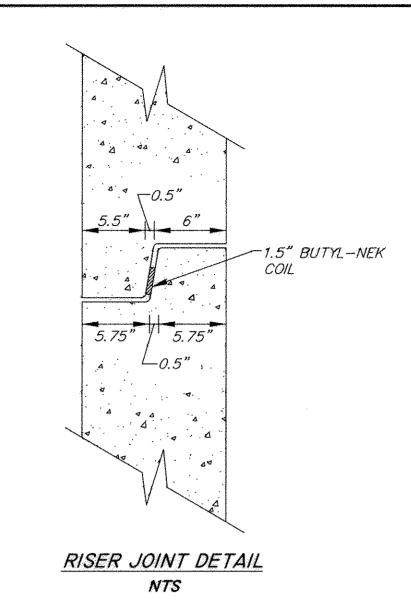
b R-1 ONLY ^aRIPRAP SUMP SURFACE -INV. RCCP SEE DETAIL SHT 30 WATER TIGHT SEAL note 4. 7 DENOTES MIX No.3
CONCRETE " RCCP PER PROFILES

- 1 SEE MSHA STO DETAIL MO-378.11 FOR DETAILS NOT SHOWN ABOVE.
- 2. ALL STRUCTURAL REQUIREMENTS (INCLUDING WALLS) SHALL CONFORM TO THE D-INLET (DETAIL D-4.10) REQUIREMENTS DUE TO THE INCREASED INLET DEPTH. 3. USE DOUBLE OPENING WITH NO CONCRETE GUTTER APPROACHES.
- 4. PVC UNDERDRAIN MAY ENTER INLET AT AN ANGLE TO MAINTAIN IN CENTER OF IMP. SEE SITE DEVELOPMENT PLAN (SDP) FOR UNDERDRAIN ENTRANCE WALL LOCATION.
- 5. SLOPE RISER INVERT 1:1' TOWARD RCCP OUTFALL.
- 6. PROVIDE STEPS PER HOCO STD. DETAIL G-5.21.
- 7. CHAMFER EXPOSED EDGES & x& .
  8. ORIENT INLET AS SHOWN ON SDP (GRATE SUPPORT WALL IS HATCHED). 9. INSTALL TRASH RACKS ON WEIR OPENINGS PER DETAIL ON R-1 ONLY.

IMP RISER STRUCTURE ELEVATION TABLE										
	R-1 (IMP#1)		R-3 (IMP #3)	R-4 (IMP #4)	R-5 (IMP #5)					
ELEV. G	104.38	113.00	114.50	[114.00]	116.00	Top of Grate				
ELEV. H	103.00	117.75	113.4	112.75	4.75	Weir Crest				
ELEV. I	98.00	106.65	108.58	107.75	109.75	Inv. 4" Perfor. u/d				
ELEV. J	95.91	(106.65)	108.15	107.65	109.65	RCCP Invert Out				
HEIGHT K	8'=7"	6 ²	6'-7"	6'-7"	6'-7"	Structure Height				
And the second s	[8,351]	6.53	(0.3')	(0.2'	6.281					

RISER STRUCTURES R-I, R-2, R-3 R-4 & R-5 MODIFIED K-INLET TYPICAL SECTION

NTS



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



Civil Engineers, Planners, Landscape Architects, Surveyors 704 Severnside Ave., See a Park, ND 21146 410-987-3456

AS-BUILT ENGINEER CONSULTANT CERTIFICATION SHOWN ON THIS PLAN WAS CONSTRUCTED

"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.

1/16 AS-BUILT PLAN G/20/16 REVISED TITLE BLOCK DATE DESCRIPTION REVISION BLOCK

PREPARED FOR HOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 Maryland Route 108 Ellicott City, Maryland 21042 Attention Bruce Gist 410-313-6805

Address Chart Parcel Number Street Address 7000 BANBURY DRIVE 'D-D' HANOVER, MD 21076

ים-סי MIDDLE SCHOOL #20 N/A PLAT NOS. TAX MAP | ELEC. DIST. CENSUS T BLOCK NO. ZONE 23786-23790 TOD 38 FIRST 6012.01 WATER CODE SEWER CODE

'GREEN NEIGHBORHOOD' MIDDLE SCHOOL #20 OXFORD SQUARE PARCEL'D-D'

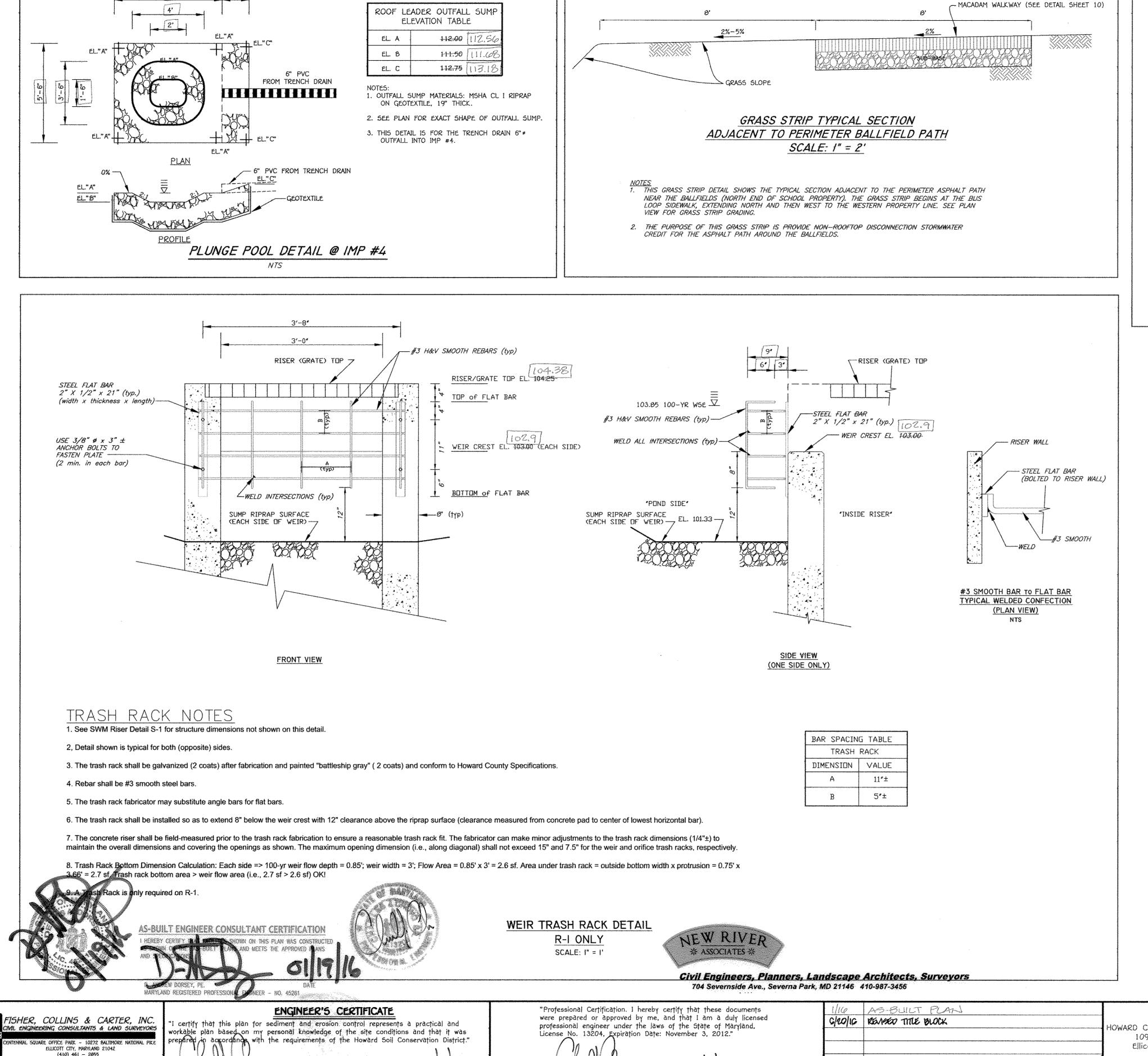
IMP #1-#5 RISER DETAILS AND

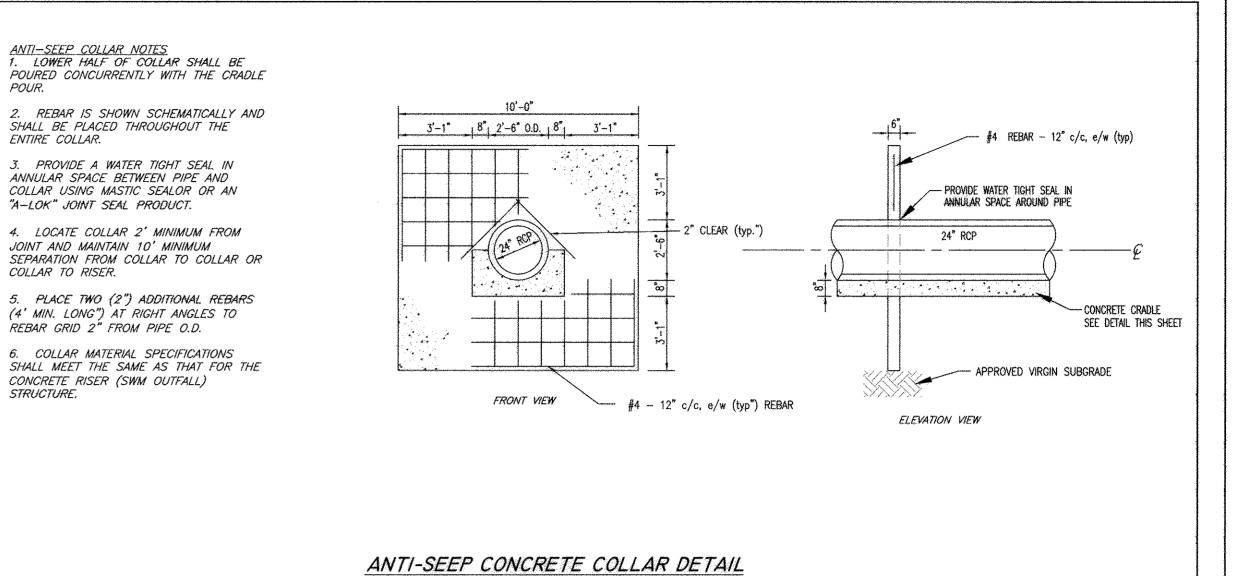
IMP TYPICAL SECTIONS

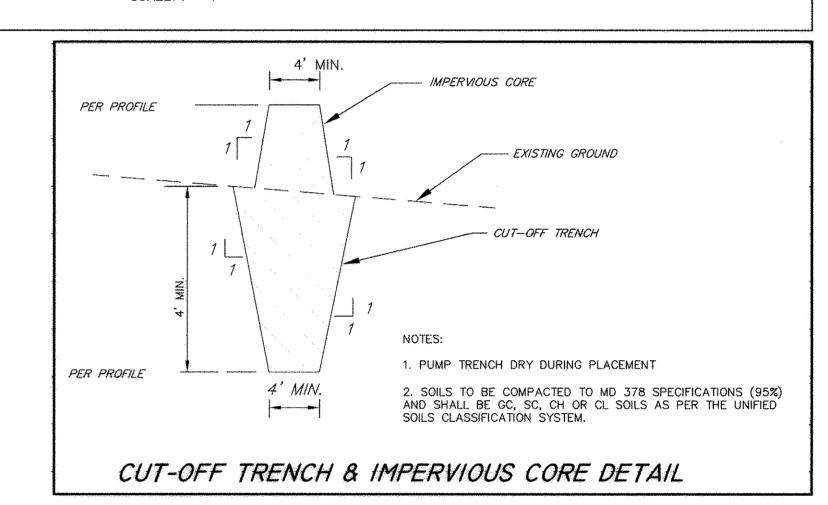
ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: OCTOBER 26, 2012

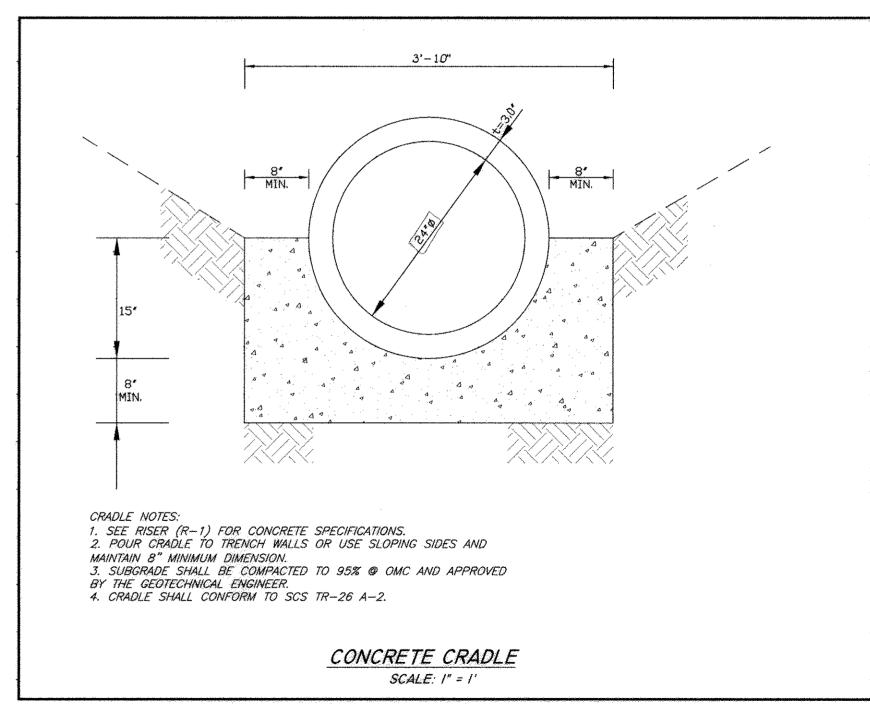
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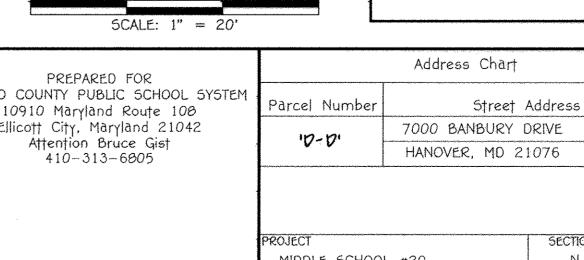
FISHER, COLLINS & CARTER, INC. ENGINEERING CONSULTANTS & LAND SURVEYORS











WATER CODE

IMP DETAILS 'GREEN NEIGHBORHOOD' MIDDLE 5CHOOL #20 OXFORD SQUARE PARCEL'D-D'

ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: OCTOBER 26, 2012 ASBUILT 11 OF 16

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. also authorize periodic on-site inspection by the Howard Soil Conservation District."

This development plan is approved for soil erosion and sediment control by

CHARLES J. (ROVO, SR., P.E.

DATE

REVISION BLOCK

DESCRIPTION

HOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 Maryland Route 108 Ellicott City, Maryland 21042

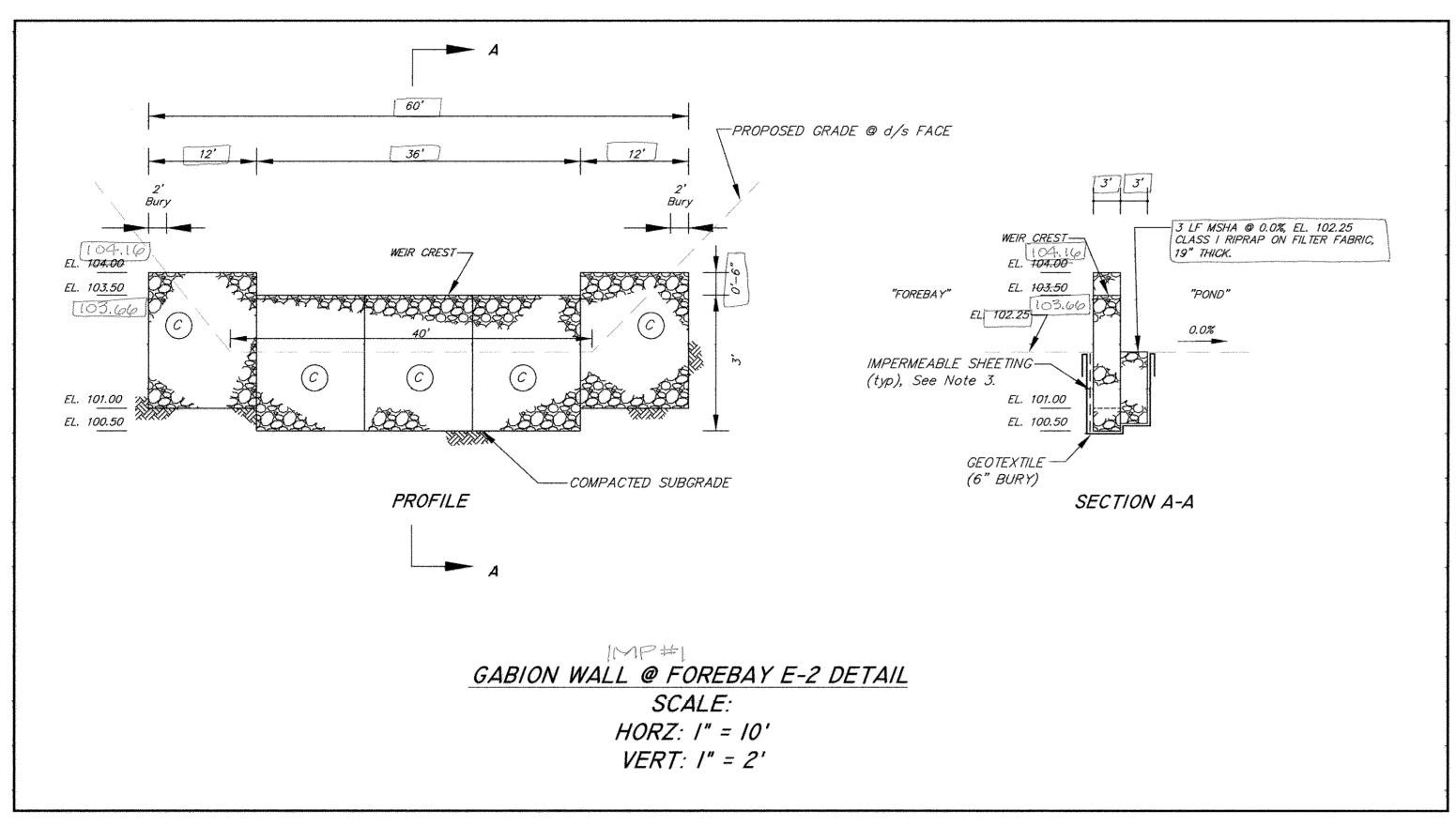
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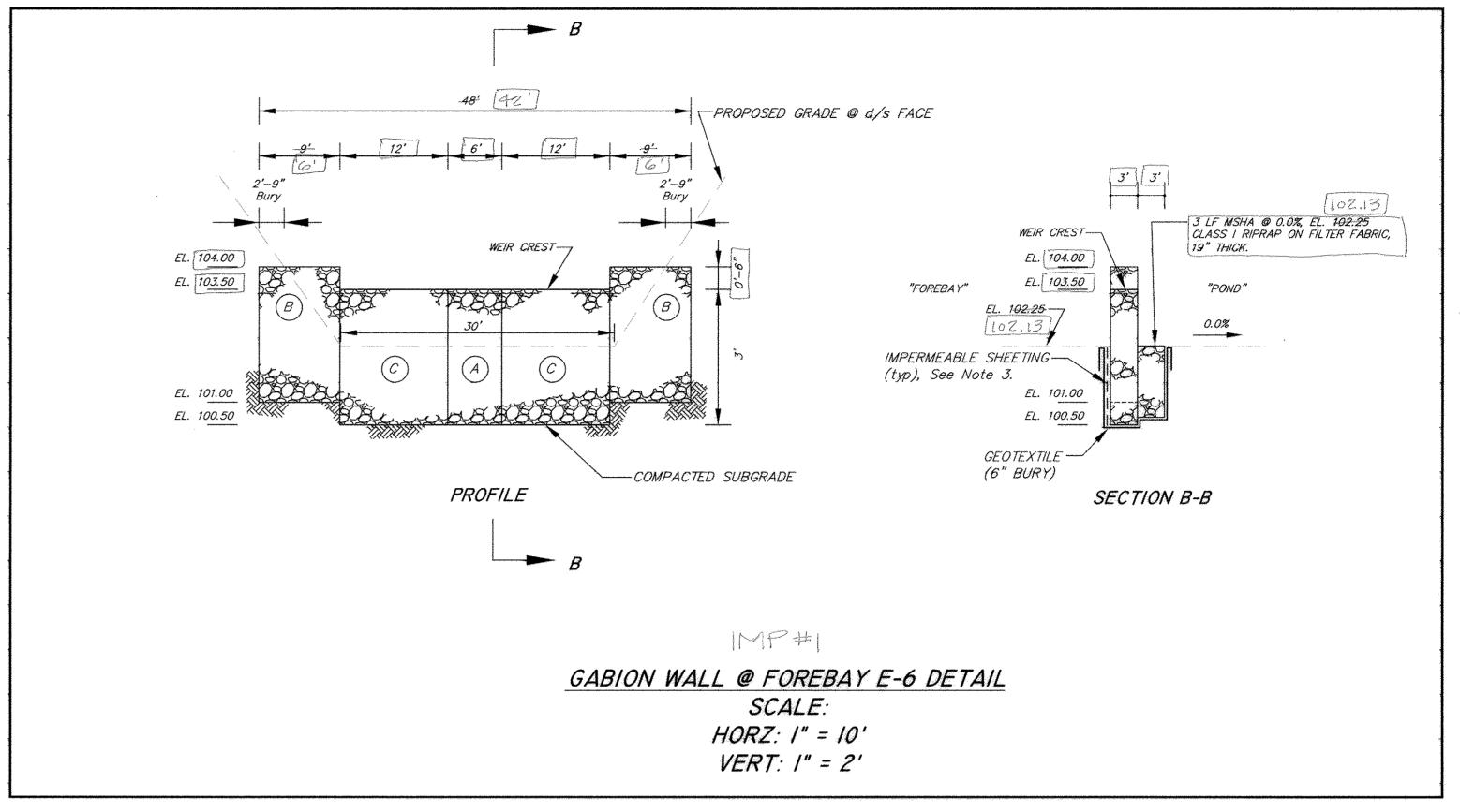
COLLAR TO RISER.

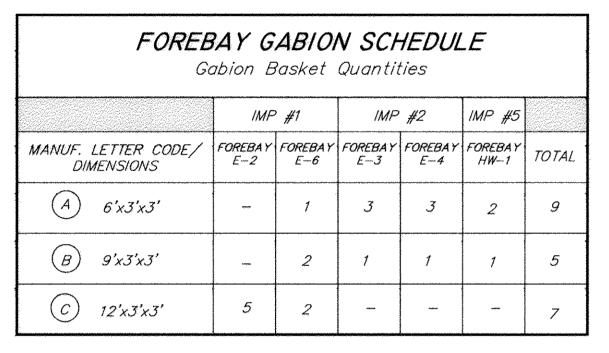
STRUCTURE.

SECTION/AREA PARCEL 10-0 MIDDLE SCHOOL #20 N/A PLAT NOS. BLOCK NO. TAX MAP ELEC. DIST. CENSUS 23788-237.90 FIRST 6012.01

SEWER CODE

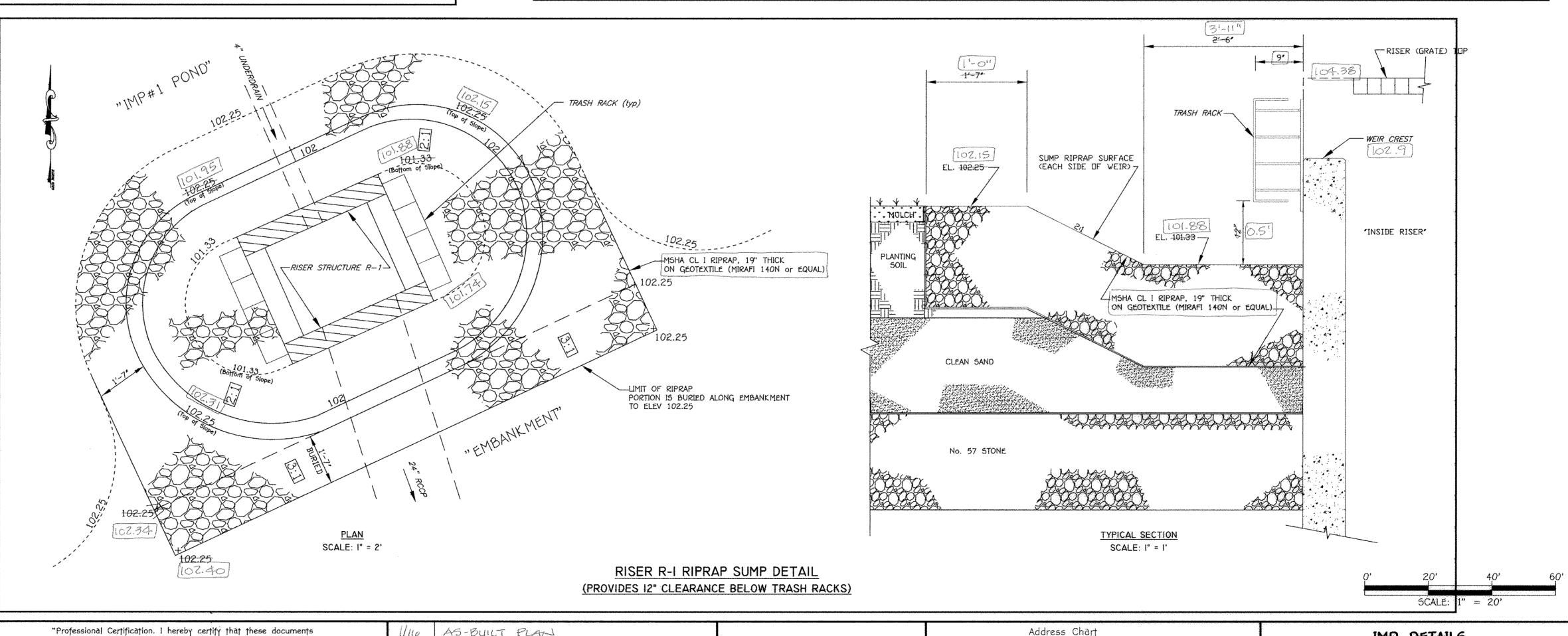




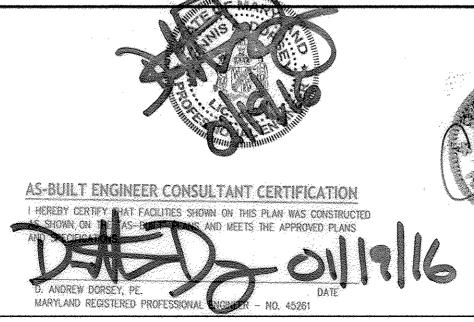


## GABION/FOREBAY WEIR OUTFALL NOTES

- 1. Gabions shall be manufactured by Maccaferri Gabions Inc. or approved equal. The installation shall follow the manufacturer's specifications and installation guidelines.
- 2. The gabion baskets shall be PVC coated and filled with clean 4" 7" stone. Gabion stone shall be carefully placed as to create a tight interlocking stone wall with minimal voids.
- 3. One sheet of 8 mil or greater vinyl/plastic sheeting or Mirafi MCF-1212 shall be placed on the buried upstream (forebay side) face of the gabion baskets next to the filter fabric. Use 2 ft overlap where applicable.
- 4. Geotextile fabric (Mirafi 600x or approved equal) shall be placed against all buried gabions (including the buried top of gabions) including the impermeable layer on the upstream buried face.
- 5. Gabions shall be carefully placed with no damaged wire. Earth foundation shall be firm. Fill soil around gabions shall be well-compacted (95%).
- 6. Gabions shall be fastened together with lacing or rings per manufacturer's recommendations/specifications. Rings shall be per ASTM A975–97 section 6.3. Spacing shall not exceed 6". See Maccaferri's Gabion installation quide.
- 7. Minimum Gabion embedment into side slope is a 2'-0" bury.
- 8. Additional gabions may be needed to meet the minimum embedment into the side slopes. Gabions can be "nested".







"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." NEW RIVER

704 Severnside Ave., Severna Park, MD 21146 410-987-3456

AS-BUILT PLAN G/20/16 REVISED TITLE BLOCK **DESCRIPTION** REVISION BLOCK APPROVED: DEPARTMENT OF PLANNING AND ZONING Civil Engineers, Planners, Landscape Architects, Surveyors

PREPARED FOR HOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 Maryland Route 108 Ellicott City, Maryland 21042 Attention Bruce Gist 410-313-6805

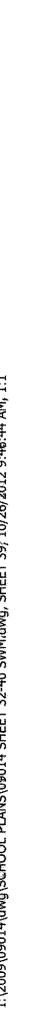
WATER CODE

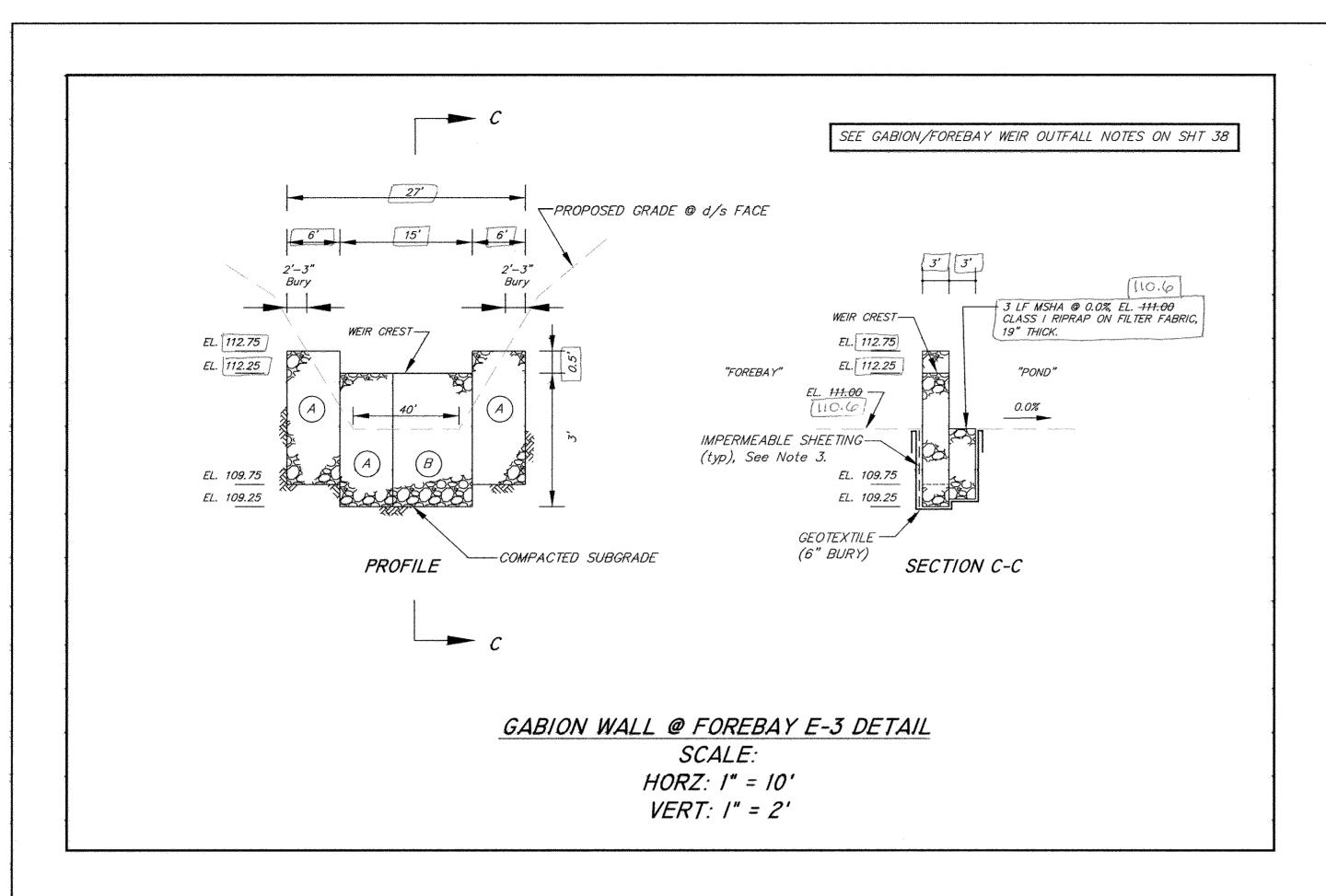
Parcel Number Street Address 7000 BANBURY DRIVE HANOVER, MD 21076 PARCEL SECTION/AREA MIDDLE 5CHOOL #20 'D-D' PLAT NOS. BLOCK NO. TAX MAP | ELEC. DIST. CENSUS I 23788-23790 6012.01 38 FIRST

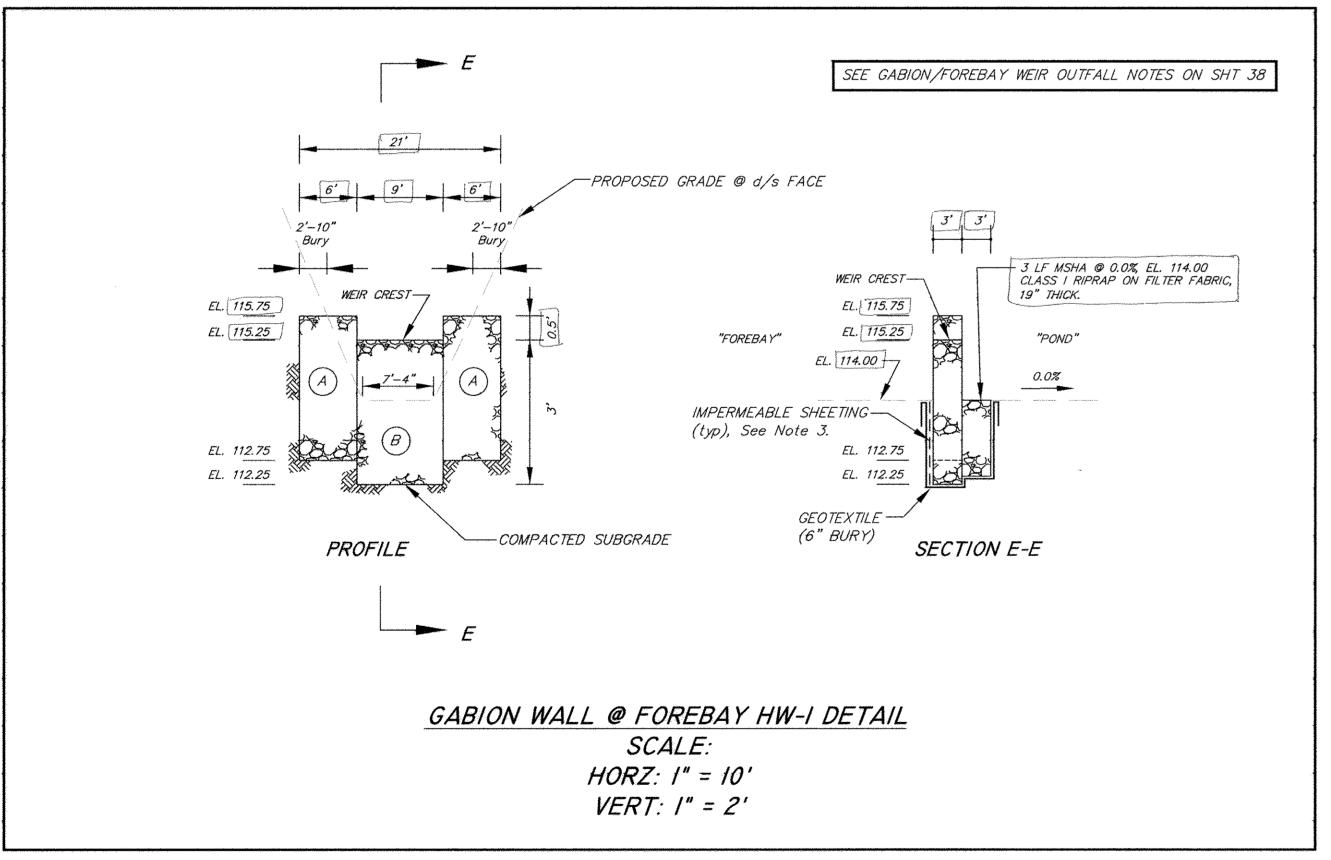
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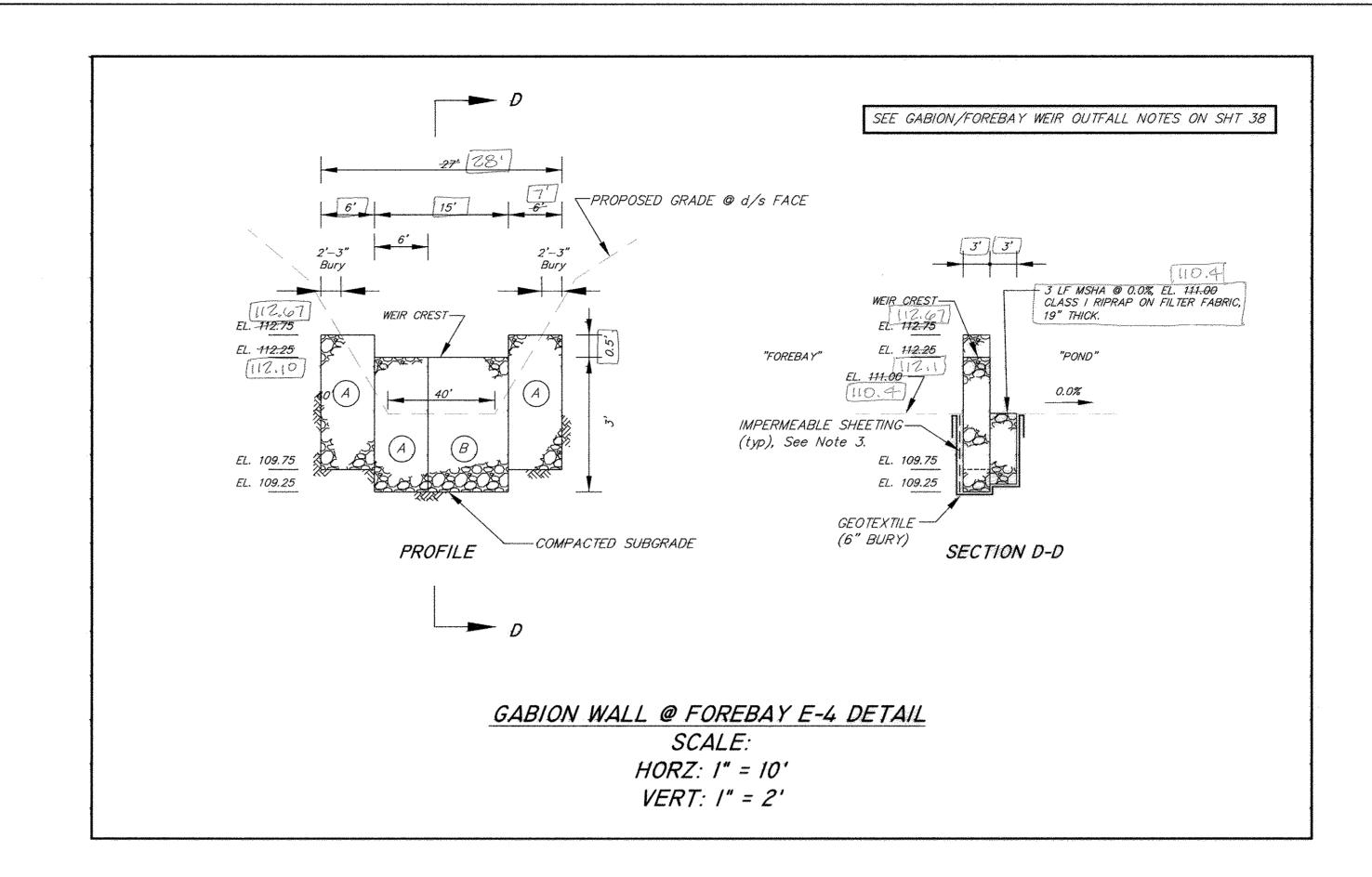
IMP DETAILS 'GREEN NEIGHBORHOOD' MIDDLE SCHOOL #20 OXFORD SQUARE PARCEL 'D-D'

ZONED TOD TAX MAP No.: 30 GRID No.: 20 PARCEL No.: 761 HOWARD COUNTY, MARYLAND FIRST ELECTION DISTRICT SCALE: AS SHOWN DATE: OCTOBER 26, 2012 AS-BUILT 12 OF 16 SHEET 30 OF 50















"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.

DATE



Civil Engineers, Planners, Landscape Architects, Surveyo 704 Severnside Ave., Severna Park, MD 21146 410-987-3456

	1/16	AS-BUILT PLAN	
	6/20/16	REVISO TITLE BLOCK	HOW
			. 1104
	DATE	DESCRIPTION	
		REVISION BLOCK	
	APPROVEC	EDEPARTMENT OF PLANNING AND ZONING	
	100	24 p. 646 1/5/6	
		- Department of Planning and Zoning Date	
	Cet	Janliode 1/14/13	
The state of	Chief, Div	ision of Land Development Date	
ors	_6	10/15/12	
-	Chief, Dev	velopment Engineering Division & Date	

PREPARED FOR
DWARD COUNTY PUBLIC SCHOOL SYSTEM |
10910 Maryland Route 100
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6805

PLAT NOS.

23788 - 23790

WATER CODE

BLOCK NO.

____

Parcel Number Street Address

10-D' 7000 BANBURY DRIVE

HANOVER, MD 21076

PROJECT SECTION/AREA PARCEL

MIDDLE SCHOOL #20 N/A 10-D' 2

TOD

38

SEWER CODE

TAX MAP | ELEC. DIST. CENSUS T

FIRST

6012.01

'GREEN NEIGHBORHOOD'
MIDDLE SCHOOL #20
OXFORD SQUARE
PARCEL 'D-D'

IMP DETAILS

ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761

FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: OCTOBER 26, 2012

AS-BUILT 13 OF 16

SHEET 39 OF 50 SDP-12-075

#### OPERATION AND MAINTENANCE SCHEDULE FOR MICRO BIORETENTION IMPs #1 - #5

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:

- 1. 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. 2.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
- 3.50IL LAYER: THE TOP 6 INCHES (MINIMUM) OF THE SOIL LAYER SHALL BE REPLACED IF STORMWATER PONDS FOR MORE THAN 24 HOURS FOLLOWING A 1- OR 2-YEAR STORM EVENT OR 48 HOURS FOLLOWING A 10-YRAR STORM EVENT.
- 4. SPILLWAY OUTFALL, INTERIOR SLOPES: ERODED AREAS SHALL BE REPAIRED (FILLED IN AND SEEDED) AS NEEDED, BARE AREAS SHALL BE TREATED AND
- RE-SEEDED. 5.INLET: REPAIR CRACKS, DAMAGED CONCRETE, ETC. AS NECESSARY.
- 6. REMOVE AND PROPERLY DISPOSE ACCUMULATED SEDIMENT GREATER THAN ONE (1) INCH.

NECESSARY.

1. IF SPECIFIC PLANTS ARE NOT SURVIVING; THE PLANT TYPE SHOULD CHANGED TO BETTER SUITED SPECIES.

#### 2.PLANT WATERING MAY BE NEEDED DURING PROLONGED DRY PERIODS.

#### GENERAL STORMWATER MANAGEMENT NOTES

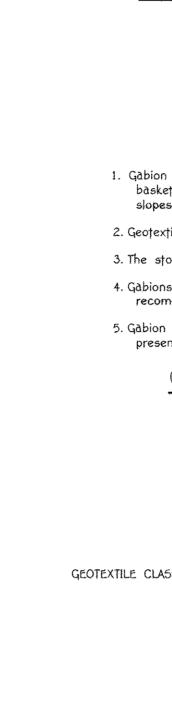
- . STORMWATER MANAGEMENT HAS BEEN PROVIDED WITH FIVE (5) MICRO-BIORETENTION FACILITIES. PLEASE REFER TO THE SWM REPORT PREPARED BY FISHER, COLLINS, & CARTER, INC. DATED JULY 2, 2012.
- 2. ALL CONSTRUCTION SHALL MEET THE LATEST EDITION OF THE HOWARD COUNTY STANDARDS AND SPECIFICATIONS, SMALL EARTHEN 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 36.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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).
- 8. THE STORMWATER MANAGEMENT BIORETENTION IMPS FOR THIS PROJECT WILL BE PRIVATELY OWNED AND MAINTAINED.
- 9. THE IMPS SHALL BE AT LEAST 10 FT FROM THE SCHOOL BUILDING (TEMPORARY BUILDINGS EXCLUDED) AS MEASURED FROM THE 9" DEPTH WATER SURFACE ELEVATION TO THE BUILDING.
- 10. THE RUNOFF FROM THE ASPHALT PATH AROUND THE BALL FIELDS FIRST SHEET FLOWS TO A GRASS FILTER STRIP THEN SHEET FLOWS TO A CONSERVATION AREA FOR A SIGNIFICANT PORTION OF ITS LENGTH. THIS "TREATMENT TRAIN" OF DISCONNECTION AND SHEET FLOW TO CONSERVATION AREA MEETS THE ESD VOLUME FOR THE PATH AREA. IN ADDITION, WATER QUANTITY MANAGEMENT IS STILL PROVIDED FOR THE PATH AREA ELSEWHERE. THEREFORE, THE REQUIRED ESDV IS EXCEEDED.
- 11. THE BALL FIELDS CONTAIN GEOTHERMAL WELLS.
- 12. THE CONSTRUCTION OF THE IMP #1 EMBANKMENT SHALL FOLLOW MD-378 CONSTRUCTION STANDARDS AS SHOWN ON SHEET 40. HOWEVER, NRCS DOES NOT REQUIRE THIS FACILITY TO MEET MD-378.

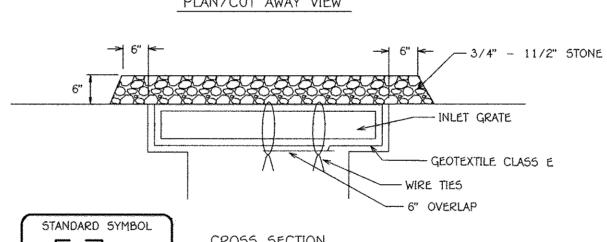
## OPERATION AND MAINTENANCE SCHEDULE FOR RAIN WATER HARVESTING SYSTEM

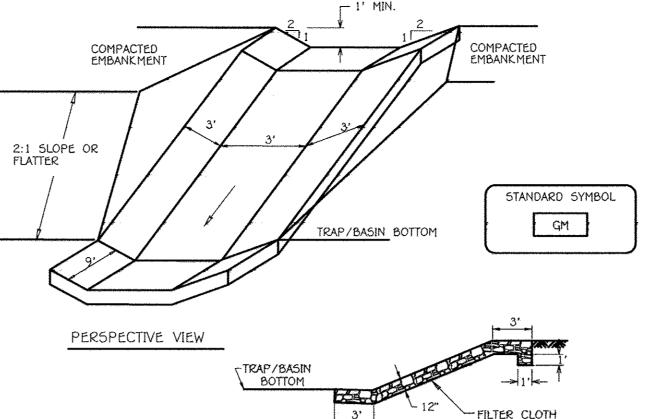
THE RAINWATER HARVESTING SYSTEM (UNDERGROUND CHAMBERS) SHALL BE INSPECTED AT LEAST TWICE PER YEAR (ONCE EACH IN THE SPRING AND FALL) THE OWNER IS RESPONSIBLE FOR MAINTAINING A DETAILED LOG OF THE MAINTENANCE INSPECTION FINDINGS AND A HISTORY OF THE COMPLETED WORK. THE LOG SHALL BE MADE AVAILABLE TO HOWARD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

SPECIFIC COMPONENTS TO BE INSPECTED AND MAINTAINED INCLUDE THE ITEMS AS FOLLOWS:

- I. REMOVE DEBRIS
- 2. EXAMINE STRUCTURES FOR SIGNS OF STRUCTURAL ISSUES (DAMAGE.
- CORROSION, ETC). 3. REMOVE AND PROPERLY DISPOSE ACCUMULATED SEDIMENT GREATER THAN
- ONE (1) INCH.
- 1. THE RAINWATER HARVESTING STORAGE SHALL BE 80% EMPTIED MINIMUM) WHEN A 2" OR GREATER RAINFALL EVENT IS FORECASTED. THIS IS TO ALLOW STORAGE TO PROVIDE QUANTITY MANAGEMENT NEEDED TO PROTECT DOWNSTREAM WAYWAYS







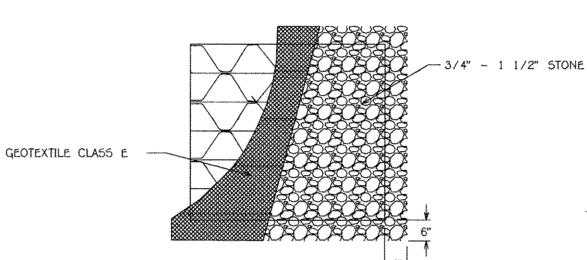
### PROFILE ALONG CENTERLINE

#### Construction Specifications

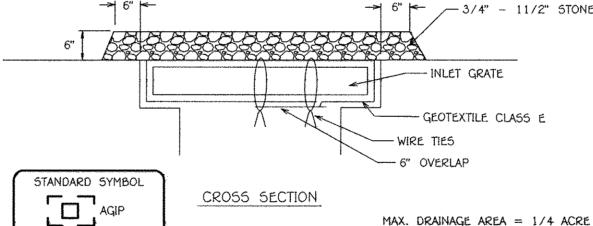
- 1. Gabion inflow protection shall be constructed of 9' x 3' x 9" gabion baskets forming a trapezoidal cross section 1' deep, with 2:1 side slopes, and a 3' bottom width.
- 2. Geotextile Class C shall be installed under all gabion baskets.
- 3. The stone used to fill the gabion baskets shall be 4" 7".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

# GABION INFLOW PROTECTION

NOT TO SCALE



PLAN/CUT AWAY VIEW



## Construction Specifications

- 1. Lift grate and wrap with Geotextile Class E to completely cover all openings. then set grate back in place.
- 2. Place 3/4" to 11/2" stone, 4"-6" thick on the grate to secure the fabric and provide additional filtration.

## AT GRADE INLET PROTECTION

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

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

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.

# 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

grubbed within 15 feet of the toe of the embankment.

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 un-confined compressive strength. The flowable fill shall have a minimum pH of 4.0 and a minimum resistivity of 2,000 ohm—cm. Material shall be placed such that a minimum of 6" (measured perpendicular to the outside of the pipe) of flowable fill shall be under (bedding), over and, on the sides of the pipe. It only needs to extend up to the spring line for rigid conduits. Average slump of the fill shall be 7" to assure flowability of the material. Adequate measures shall be taken (sand bags, etc.) to prevent floating the pipe. When using flowable fill, all metal pipe shall be bituminous coated. Any adjoining soil fill shall be placed in horizontal lavers 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 outside the structural backfill (flowable fill) zone shall be of the type and quality conforming to that specified for the core of the embankment or other embankment materials.

## Pipe Conduits All pipes shall be circular in cross section.

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

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

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

4. Backfilling shall conform to "Structure Backfill". 5. Other details (anti-seep collars, valves, etc.) shall be as shown on the drawings. Drainage Diaphragms — When a drainage diaphragm is used, a registered professional engineer will supervise the design and construction inspection.

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

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

Parcel Number

WATER CODE

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

### FISHER. COLLINS & CARTER. INC AL ENGINEERING CONSULTANTS & LAND SURVEYOR ELLICOTT CITY, MARYLAND 21042

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

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan 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. also authorize periodic on-site inspection by the Howard Soil Conservation District.

"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. OROVO, SR., P.E.

This development plan is approved for soil erosion and sediment control by

G/20/1G REVISED TITLE BLOCK **DESCRIPTION** REVISION BLOCK 1/15/12 Date

PREPARED FOR HOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 Maryland Route 108 Ellicott City, Maryland 21042 Attention Bruce Gist 410-313-6805

7000 BANBURY DRIVE 'D-D' HANOVER, MD 21076 PARCEL ROJECT MIDDLE SCHOOL #20 'ローロ' N/A AT NOS. BLOCK NO. ELEC. DIST. CENSUS 23788-23790 TOD FIR5T

SEWER CODE

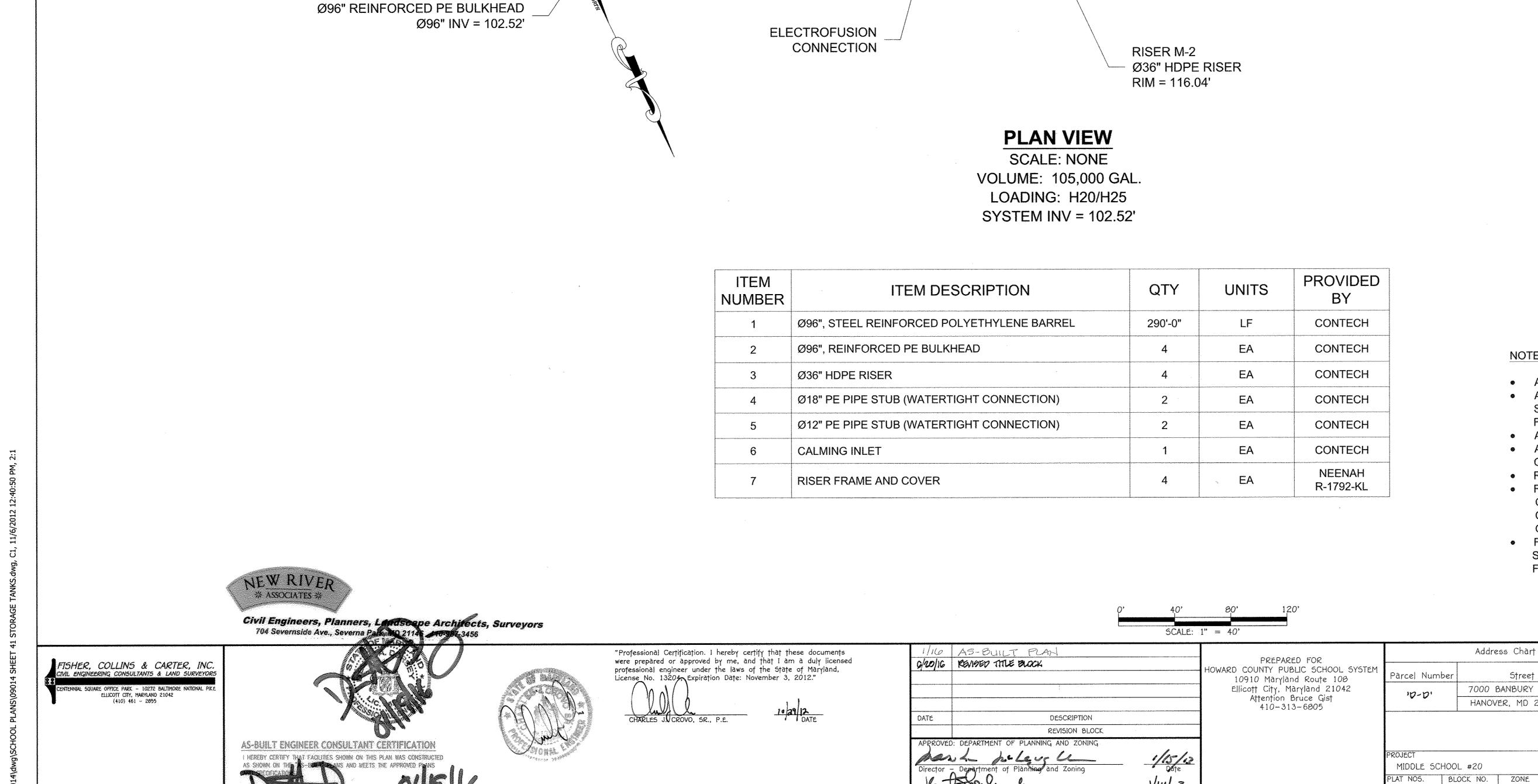
Street Address

Address Chart

'GREEN NEIGHBORHOOD' MIDDLE SCHOOL #20 OXFORD SQUARE PARCEL 'D-D'

IMP SPECIFICATIONS & NOTES

ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: OCTOBER 26, 2012



RISER M-4

RIM = 115.37'

- 24'-0"

6'-0"

4'-0"

Ø36" HDPE RISER

NORTHERN CISTERN

Ø96" SRPE PIPE

- 63'-0"

Ø96" REINFORCED PE BULKHEAD

W/ SOLIDWALL PE INLET STUB

WATER TIGHT CONNECTION

PROVIDED BY CONTECH

Ø18" INLET INV = 109.15'

Ø18" INLET INV = 109.15'

Ø18" OUTLET INV = 109.05'

STR M-5: CDS3025

RIM = 115.37

115.33

Ø18" INLET PIPE

INV. 108.94'

Ø96" INV = 102.52'

**CALMING INLET** 

Ø96" REINFORCED PE BULKHEAD W/ Ø12" SOLIDWALL PE STUB TO PUMP MH AND Ø18" SOLIDWALL PE OVERFLOW STUB TO CONNECT TO PUMP MH W/ WATERTIGHT CONNECTIONS Ø12" INV = 102.56' Ø18" INV = 108.94' Ø96" INV. = 102.52'
Ø18" OVERFLOW PIPE
RIM ELEV. 115.06 (ISJO) Ø60" PUMP MH PUMP INV = 96.44' (INSIDE) Ø12" INLET INV = 102.56' Ø18" INLET INV = 108.94' Ø18" OUTLET = 110.36' Ø12" PVC SCH 40 TRANSFER PIPE BETWEEN TANKS AND TO PUMP MH @ 0.00% INV. 102.56
Ø96" REINFORCED PE BULKHEAD W/ Ø12" SOLIDWALL PE STUB W/ WATERTIGHT CONNECTION Ø12" INV. = 102.56' Ø96" INV. = 102.52'

## NOTES

- 24'**-0"** ----

RISER M-3

RIM = 115.06'

Ø4" VENT PIPES

RISER M-1

RIM = 116.04'

Ø4" VENT PIPE

Ø36" HDPE RISER

SEE SHEET 50 FOR DETAIL

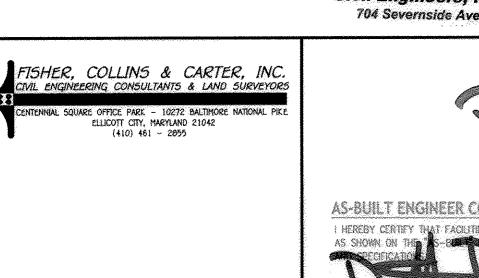
Ø36" HDPE RISER

Ø4" VENT PIPE TO GRADE

- 145'-0"

SOUTHERN CISTERN

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE.
- ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM D3350.
- ALL RISERS AND STUBS ARE HIGH DENSITY POLYETHYLENE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- FLOTATION CONTROL IS CRITICAL AND THE RESPONSIBILITY OF THE CONTRACTOR. THE INFORMATION IS SUBMITTED AS A GUIDELINE ONLY. CONTECH IS NOT RESPONSIBLE FOR THE USE AND INTERPRETATION OF THIS INFORMATION.
- FIELD INSTALLED ELECTROFUSION JOINTS PERFORMED AFTER BACKFILL. SYSTEM MUST BE DEWATERED TO BELOW CISTERN INVERT AND PIPE DRY FOR ELECTROFUSION PROCESS TO OCCUR.

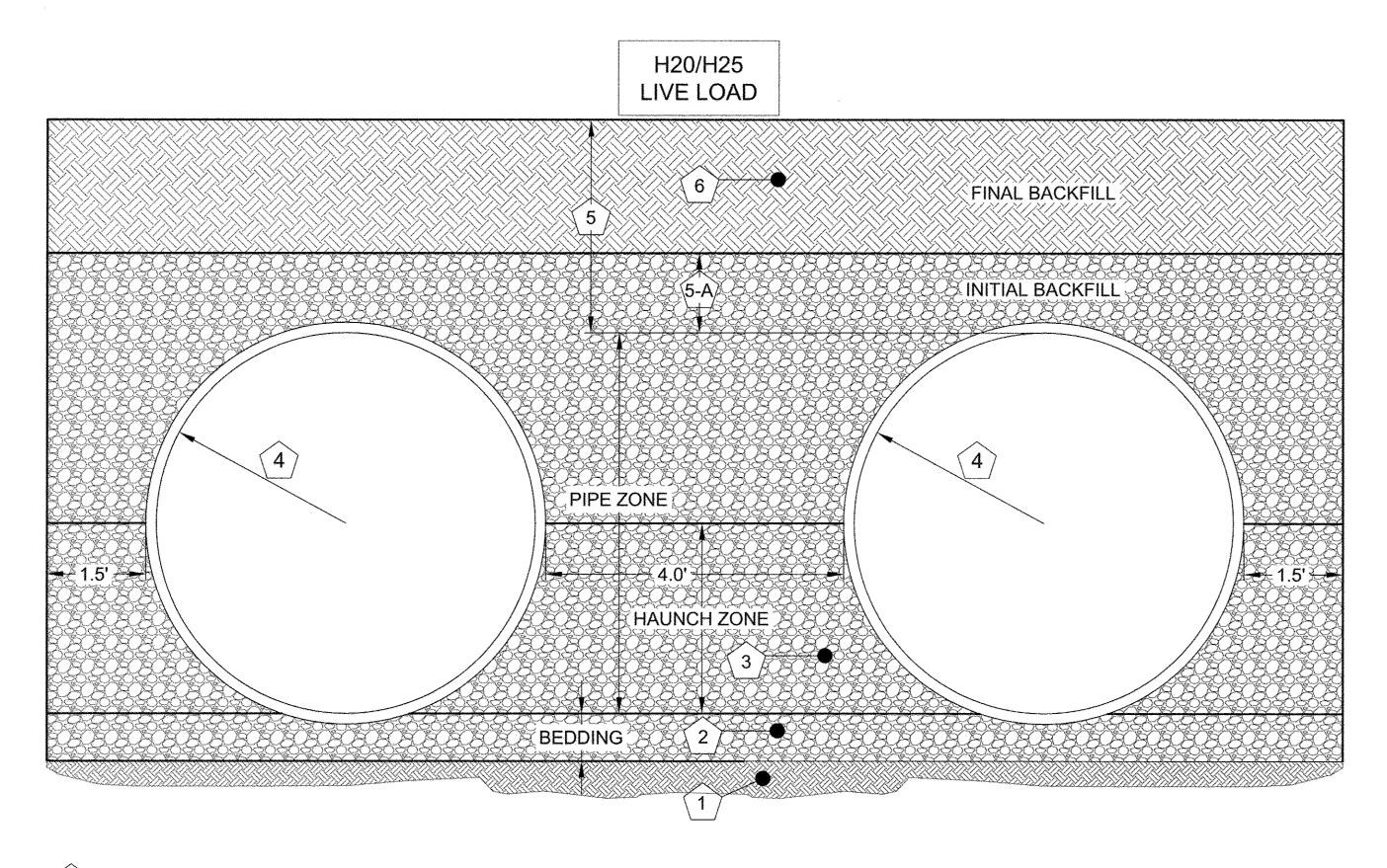


Street Address 7000 BANBURY DRIVE HANOVER, MD 21076 PARCEL SECTION/AREA יס-סי N/A TAX MAP ELEC. DIST. CENSUS TOD 38 FIR5T 23786 - 23790 SEWER CODE WATER CODE

96" DIA. URBANGREEN SRPE CISTERN

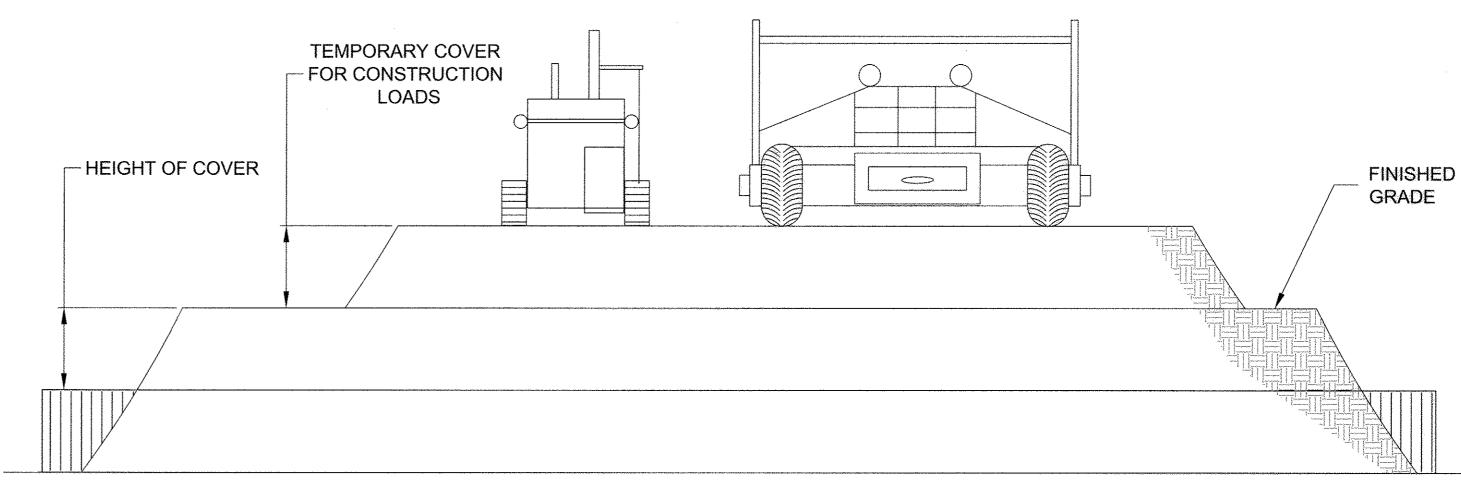
'GREEN NEIGHBORHOOD' MIDDLE 5CHOOL #20 OXFORD SQUARE PARCEL 'D-D'

ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 HOWARD COUNTY, MARYLAND FIRST ELECTION DISTRICT SCALE: AS SHOWN DATE: OCTOBER 26, 2012 SHEET 41 OF 50



- FOUNDATION TO BE WELL CONSOLIDATED & STABLE. FILL MATERIAL MUST BE COMPACTED TO 90% STANDARD DENSITY AND APPROVED BY A GEOTECHNICAL ENGINEER OR REPRESENTATIVE.
- BEDDING MATERIAL SHALL MEET ASTM D2321 CLASS I, II, III OR APPROVED EQUAL, COMPACTED TO 90% STANDARD DENSITY. THE TOP 6" SHALL NOT BE COMPACTED AND BE LOOSE, ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE.
- INITIAL BACKFILL & HAUNCHING ZONE MATERIAL TO MEET ASTM D2321 CLASS I, II, III OR APPROVED EQUAL, COMPACTED TO 90% STANDARD DENSITY (A NATIVE MATERIAL CAN BE UTILIZED THAT MEETS ASTM D2321 OR APPROVED EQUAL SPECIFICATION).
  - FOR COVER HEIGHTS THAT ARE AT 75% OF MAXIMUM OR EXCEED COVER LIMITS INITIAL BACKFILL MATERIAL TO BE CLASS LOR II AS PER ASTM 2321
  - 120" TO USE CLASS 1 ONLY
  - ALL LIFTS TO BE DONE IN CONTROLLED MANNER, TO PREVENT UNEVEN LOADING LIFTS SHOULD NOT EXCEED 6" TO 8" LIFT HEIGHTS OR BY GEOTECH ON-SITE.
- (SRPE) STEEL REINFORCED PIPE.
- MINIMUM HEIGHT OF COVERS PER DIAMETER (DISTANCE AS MEASURED FROM TOP-OF-PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT): 24" MINIMUM FOR PIPE DIAMETERS 96"
- (5-A) FOR INSTALLATION COVERS THAT EXCEED MINIMUM HEIGHTS OF COVER; MINIMUM HEIGHT OF INITIAL BACKFILL ABOVE PIPE: 12" MINIMUM FOR PIPE DIAMETERS 96"
- FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS PER THE SHOP DWGS, SPECIFICATIONS, AND ENGINEER-OF-RECORD. MAY INCLUDE APPROVED NATIVE MATERIALS.
- OTHER STRUCTURAL BACKFILL INCLUDING NATIVE MATERIALS MAY BE USED AS DIRECTED BY THE PROJECT ENGINEER. BACKFILL MATERIALS ARE DEFINED UNDER ASTM D2321. GEOTEXTILE SHOULD BE USED AS REQUIRED TO PREVENT SOIL MIGRATION.
- STANDARD SPACING BETWEEN PARALLEL PIPE RUNS TO BE = PIPE DIA./2. SPACING BELOW THE AFOREMENTIONED FORMULA FOR PIPE DIAMETERS IS ALLOWED BASED ON PROJECT REQUIREMENTS AND APPROVAL/DESIGN BY CONTECH ENGINEERED SOLUTIONS.

# 96" DIAMETER URBANGREEN CISTERN BACKFILL DETAIL SCALE: N.T.S.



## **CONSTRUCTION LOADS:**

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS. AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN,	AXLE LOADS (kips)			
INCHES	18-50	50-75	75-110	110-150
		MINIMUM C	OVER (FT)	
96	3.0	3.5	4.0	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE **MAINTAINED** CONSTRUCTION ROADWAY SURFACE.

CONTRACTOR TO AVOID HEAVY EQUIPMENT/VEHICLES ON RWH CISTERNS. HOWEVER, IF UNAVOIDABLE FOLLOW THIS TABLE.

# CONSTRUCTION LOADING DIAGRAM

SCALE: N.T.S.

## SPECIFICATION FOR STEEL REINFORCED POLYETHYLENE PIPE

## SCOPE

THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE STEEL REINFORCED POLYETHYLENE PIPE DETAILED IN THE PROJECT PLANS.

## **MATERIAL**

VIRGIN HIGH DENSITY POLYETHYLENE PRESSURE-RATED RESINS SHALL CONFORM TO THE MINIMUM REQUIREMENTS OF CELL CLASSIFICATION 345464 C AS DEFINED AND DESCRIBED IN THE LATEST VERSION OF ASTM D3350 "STANDARD SPECIFICATION FOR POLYETHYLENE PLASTICS PIPE AND FITTINGS MATERIALS"

## PIPE AND FITTINGS

ALL FITTINGS SHALL BE FABRICATED FROM STEEL REINFORCED POLYETHYLENE PIPE. ANY FITTINGS 24"Ø AND BELOW WILL BE HDPE PIPE.

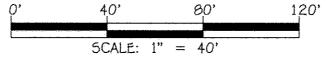
ALL FABRICATION OF THE PRODUCT SHALL OCCUR WITHIN THE UNITED STATES.

PREPARED FOR

10910 Maryland Route 108

Attention Bruce Gist

410-313-6805



## INSTALLATION

## PRE-CONSTRUCTION MEETING

PRIOR TO INSTALLATION OF THE DRAINAGE SYSTEM A PRE-CONSTRUCTION MEETING SHALL BE CONDUCTED. THOSE REQUIRED TO ATTEND ARE THE SUPPLIER OF THE DRAINAGE SYSTEM. THE GENERAL CONTRACTOR, SUB CONTRACTORS AND THE ENGINEER.

## **INSTALLATION OF PIPE:**

IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND/OR PROJECT ENGINEER TO ENSURE THAT ALL QUESTIONS ABOUT INSTALLATION ARE ADDRESSED PRIOR TO APPROVAL OF SYSTEM, ALL DETAILS FOR INSTALLATION ARE LOCATED IN THIS DRAWING PACKAGE ANY QUESTIONS CONCERNING THESE STANDARD DETAILS CAN BE ADDRESSED BY YOUR CONTECH REPRESENTATIVE PRIOR TO **APPROVAL** 

BACKFILL SHALL BE PLACED TO THE PROPER ELEVATION OVER THE SYSTEM AS OUTLINED IN THE PLANS. MINIMUM COVER FOR CONSTRUCTION LOADING NEEDS TO BE DETERMINED BASED ON THE TYPE OF EQUIPMENT THAT IS PLANNED FOR CONSTRUCTION. PROPER COVER FOR CONSTRUCTION EQUIPMENT SHALL BE DETERMINED PRIOR TO THE PRE-CONSTRUCTION MEETING BY THE ENGINEER.





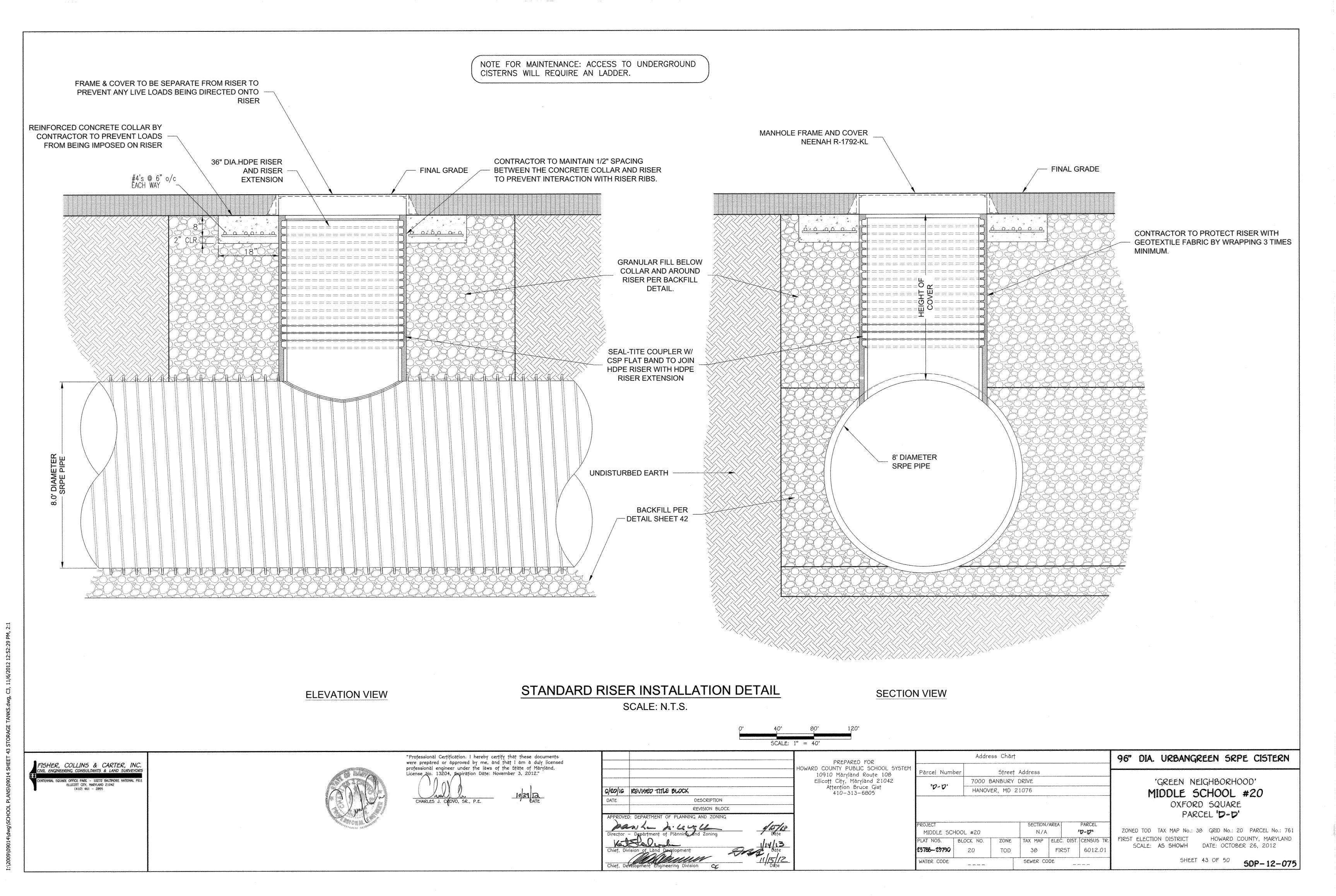
"Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012." CHARLES J. (CROVO, SR., P.E.

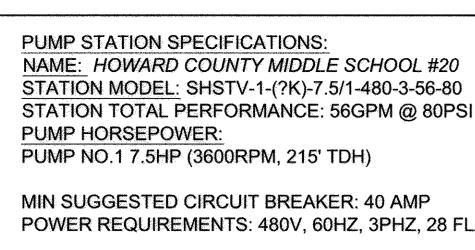
OWARD COUNTY PUBLIC SCHOOL SYSTEM Ellicott City, Maryland 21042 G/20/16 REVISED TITLE BLOCK DATE REVISION BLOCK

Address Chart 96" DIA. URBANGREEN SRPE CISTERN Parcel Number Street Address 7000 BANBURY DRIVE ים-םי HANOVER, MD 21076 PARCEL FCTION/ARE MIDDLE 5CHOOL #20 יט-טי PLAT NOS. BLOCK NO. CENSUS 38 FIRST 6012.0 13786 - 23790 WATER CODE SEWER CODE

'GREEN NEIGHBORHOOD' MIDDLE SCHOOL #20 OXFORD SQUARE PARCEL 'D-D'

ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: OCTOBER 26, 2012





POWER REQUIREMENTS: 480V, 60HZ, 3PHZ, 28 FLA

### SKYHARVESTER SYSTEM COMPONENTS A 7.5HP SUBMERSIBLE PUMP AND MOTOR

- B FLOW INDUCER SLEEVE FOR MOTOR COOLING
- C CHECK VALVE
- D PRESSURE RELIEF VALVE
- E SYSTEM DISCHARGE ISOLATION VALVE
- F UV ISOLATION VALVE ea.
- G PUMP FLOW SENSOR
- H PRESSURE GAUGE
- I POTABLE FLOW SENSOR J 5 MICRON AUTOMATIC FILTER ASSEMBLY (2)
- K UL 508 CONTROL PANEL ASSEMBLY
- L LEVEL SENSOR & FLOAT ASSEMBLY
- M FILTER FLUSH VALVE
- N PRESSURE TANSDUCER W/ GAUGE ASSEMBLY
- O UV UNIT RATED FOR 30GPM ea (2)
- P NEMA 4X REMOTE DISCONNECT
- Q 1 HP SUMP PUMP
- R ALUMINUM ENCLOSURE
- S FORMED AND PAINTED STEEL SKID & PIPING
- T FILTER ISOLATION VALVE
- U AIR BLEED VALVE
- V BLIND FLANGE
- W PUMP DISCHARGE PIPE
- X HEAT EXCHANGER
- Y FLEX CONNECTOR
- Z SOLENOID VALVE FOR POTABLE FILL AA OPTOCOUPLER

DESCRIPTION OF OPERATION (RAINWATER): -TANK FULL, WATER SYSTEM PRESSURIZED

AND SUSTAINED REGULATE PRESSURE.

MAKE UP WATER USED.

PUMP WILL START VIA PRESSURE DROP SENSED IN WATER MAINLINE AND REGULATE A CONSTANT PRESSURE AT VARIABLE FLOW RATE. PUMP WILL RETIRE BASED UPON AN ADJUSTABLE MINIMUM WATER DEMAND (FLOW)

WATER WILL BE DRAWN OUT OF TANK, ONCE USER ADJUSTABLE LEVEL SETPOINT IS SATISFIED THE AUTOMATIC VALVE WILL ALLOW POTABLE WATER TO ENTER INTO THE TANK. IF LEVEL CONTINUES TO DROP PUMP WILL SHUT DOWN ON LOW LEVEL ALARM. PUMP WILL RE-ENABLE UPON USER DEFINED SET POINT. TANK FILL LOGIC IS INDEPENDENT FROM PUMP ENABLE-DISABLE LOGIC. AUTOMATIC FILL VALVE CONTROLS SHALL MAINTAIN A MINIMUM WATER LEVEL. LEAVING THE MOST AMOUNT OF ROOM TO CAPTURE THE NEXT RAIN EVENT, WHILE MAINTAINING PROPER LEVEL FOR PUMP. CONTROL SYSTEM WILL TOTALIZE ALL WATER PUMPED AND ALL POTABLE

AUTOMATIC DISCHARGE FILTRATION SHALL BE FLUSHED UPON (3) INPUTS. DIFFERENTIAL PRESSURE, GALLONS PUMPED, AND TIMED INTERVAL WHICHEVER OCCURS FIRST. FILTER SHALL ALSO HAVE ALARM AFTER (3) FLUSH CYCLES AND PRESSURE DIFFERENTIAL IS NOT RESTORED TO CLEAN SCREEN.

OWNER RESPONSIBLE FOR WATER METER. BACKFLOW PREVENTOR AND ANY OTHER REGULATING DEVICES THAT MAY BE REQUIRED AND ASSOCIATED WITH CITY WATER. MAKE UP WATER LINE SHOULD BE SIZED TO DELIVER MIN. OF 56 GPM TO TANK.

SUMP PUMP TO CONTAIN AN HOA SWITCH. WHEN SWITCH IS IN AUTO, PUMP WILL OPERATE VIA FLOAT SWITCH SETTINGS. WHEN SWITCH IS IN HAND, PUMP WILL RUN, AND ONLY STOP VIA LOW LEVEL FLOAT FOR SUMP PUMP.

UV UNITS WILL BE ACTIVE 24/7 - 365. CHANGE BULB EVERY 365 DAYS. TIMER AND ALARM ARE INCLUDED TO NOTIFY USER.

SYSTEM CONTROL PANEL SHALL HAVE THE

**FOLLOWING ALARMS AT MINIMUM** 

-HIGH DISCHARGE PRESSURE -LOW DISCHARGE PRESSURE

-VFD FAULT

-LOW LOW LEVEL SHUT DOWN (HARD FAULT) -LOW LEVEL ALARM (SOFT FAULT)

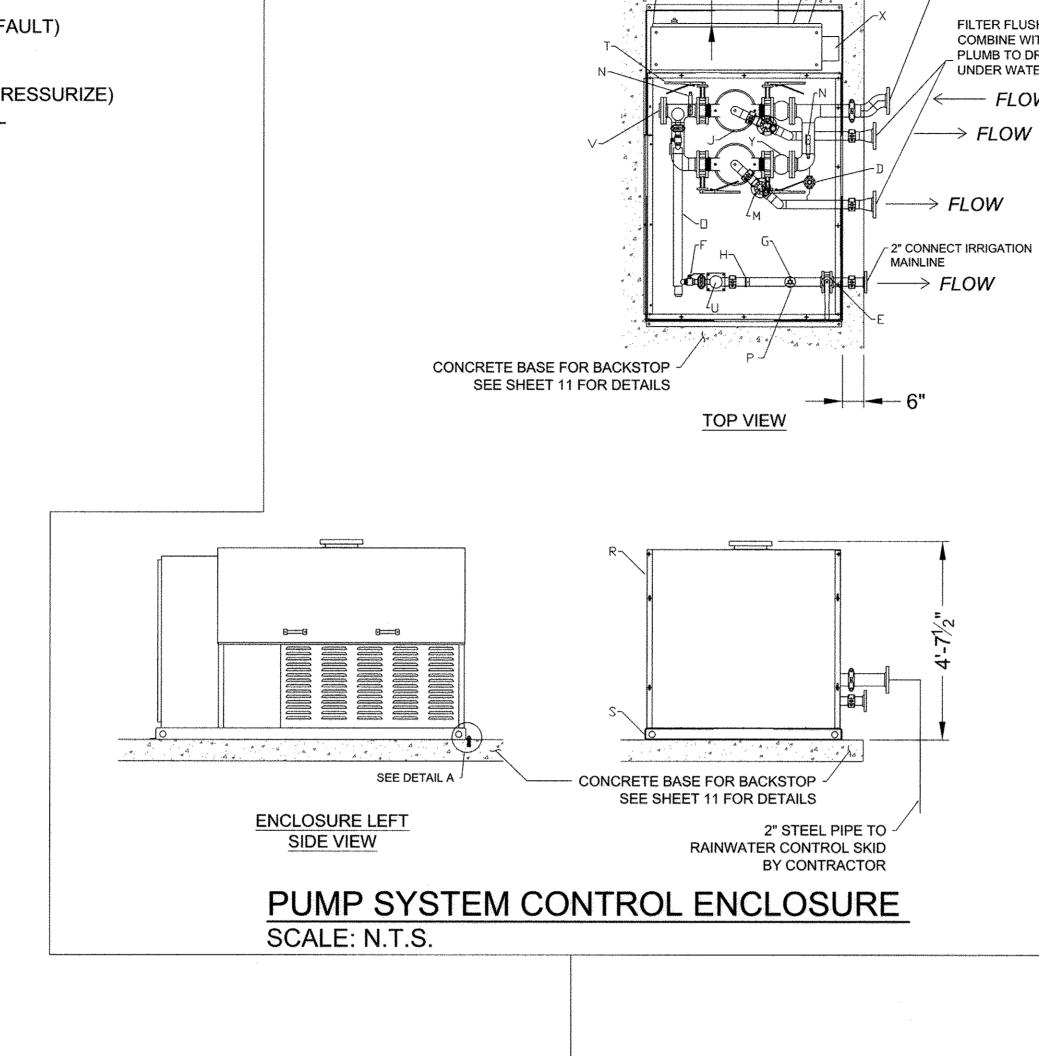
-FILTER ALARM -PIPE FILL ALARM (SYSTEM CAN NOT PRESSURIZE)

-LOSS OF PHASE OR PHASE REVERSAL

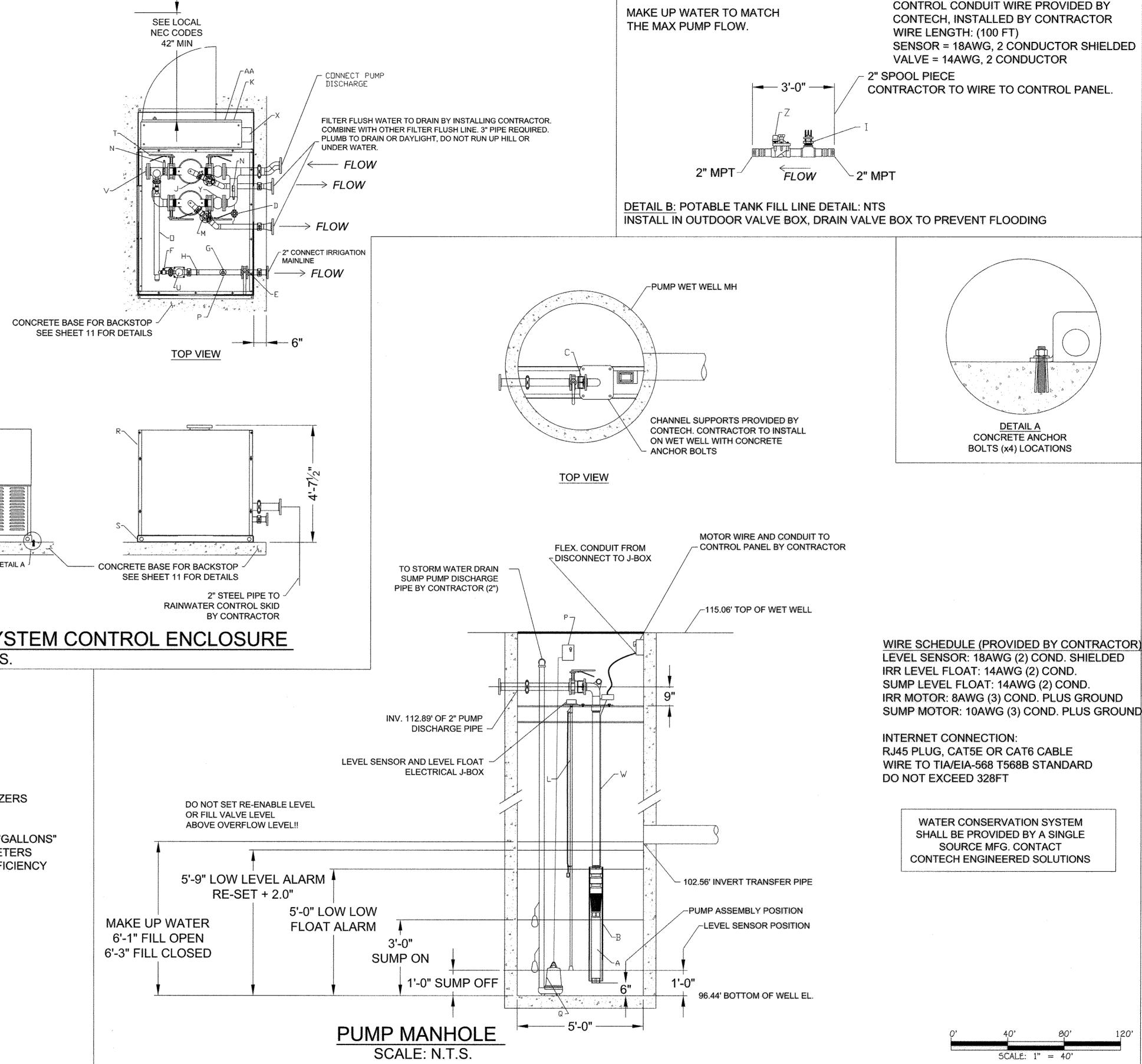
-HIGH VOLTAGE **-LOW VOLTAGE** 

-CONTROL POWER ALARM

**-UV BULB ALARM & TIMER** 



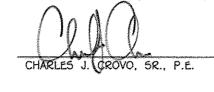
CONTROL PANEL TO INCLUDE: -COLOR TOUCHSCREEN OPERATOR INTERFACE -FILTER CONTROLS AND DISPLAY -MULTIPLE FLOW SENSOR DISPLAY AND TOTALIZERS -PSI DISPLAY AND SET POINTS -PUMP RUNNING STATUS & RUN-TIME HRS -LEVEL CONTROLS AND DISPLAY IN "INCHES" & "GALLONS" -USER ABILITY TO ADJUST ALL SYSTEM PARAMETERS -VFD PRESSURE REGULATION FOR ENERGY EFFICIENCY -BRANCH CIRCUIT PROTECTION -U.L. 508 LISTED CONTROL PANEL ASSEMBLY -PROGRAMABLE PLC "programable logic controller" -NON-FUSABLE MAIN DISCONNECT -HOA (hand, off, auto) SWITCH FOR PUMP -EMERGENCY STOP BUTTON





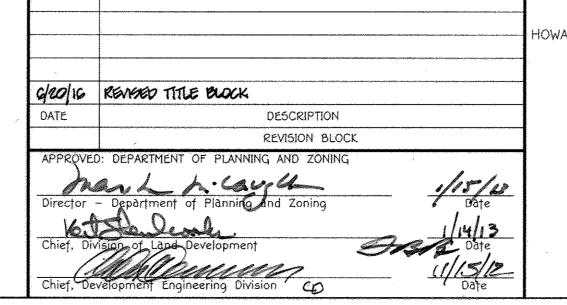


"Professional Certification. I hereby certify that these documents were prepared or approved by me. and that I am a duly licensed professional engineer under the laws of the State of Maryland, License No. 13204, Expiration Date: November 3, 2012."



-SERIAL MODBUS COMMUNICATION





PREPARED FOR OWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 Maryland Route 108 Ellicott City, Maryland 21042 Attention Bruce Gist 410-313-6805

Parcel Number Street Address 7000 BANBURY DRIVE 'ט-ט' HANOVER, MD 21076 PARCEL SECTION/AREA MIDDLE SCHOOL #20 N/A ים-סי PLAT NO5. TAX MAP ELEC. DIST. CENSUS T BLOCK NO. ZONE TOD 6012.01 23788-23790 20 38 FIR5T WATER CODE SEWER CODE ----

Address Chart

URBANGREEN RWH MECHANICAL SYSTEM

'GREEN NEIGHBORHOOD' MIDDLE SCHOOL #20 OXFORD SQUARE PARCEL 'D-D'

ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: OCTOBER 26, 2012

THE THIRD PARTY CERTIFICATION IS PROVIDED BY CHARLES ALEXANDER, LEED-AP OF ALEXANDER DESIGN STUDIOS.

THE 82.2 ACRES GREEN NEIGHBORHOOD BOUNDARY AREA CONSISTS OF 24.4 ACRES OF PREVIOUSLY DEVELOPED LAND (29.7% OF THE OVERALL OXFORD SQUARE GREEN NEIGHBORHOOD SITE AREA).

OXFORD SQUARE WILL PROVIDE TWO TRANSIT STOPS FOR THE PROPOSED PRIVATE SHUTTLE SERVICE CONNECTING OXFORD SQUARE TO THE DORSEY MARC COMMUTER RAIL STATION. THE STOPS WILL BE WITHIN 1/4 WALKING DISTANCE TO ALL DWELLING UNITS.

OXFORD SQUARE WILL PROVIDE ONE SHELTER AT ONE OF THE PRIVATE SHUTTLE STOPS. THE SHELTER WILL COMPLY WITH COUNTY -APPROVED CRITERIA INCLUDING BENCHES AND LIGHTING.

OXFORD SQUARE GREEN NEIGHBORHOOD BOUNDARY IS WITHIN 1/4 MILE WALKING DISTANCE OF THREE COMMUNITY RESOURCES:

OXFORD SQUARE GREEN NEIGHBORHOOD BOUNDARY WILL PROVIDE TWO DIVERSE USES OTHER THAN RESIDENTIAL: INSTITUTIONAL (MIDDLE SCHOOL BUILDING AND OUTDOOR CLASSROOM SPACE) AND CIVIC (SCHOOL'S RECREATIONAL PLAYING FIELDS AND

OXFORD SQUARE IS LOCATED WITHIN THE EXISTING PLANNED WATER AND SEWER SERVICE AREA.

OXFORD SQUARE GREEN NEIGHBORHOOD BOUNDARY WILL PROVIDE A MINIMUM OF TWO PEDESTRIAN SYSTEM AMENITY EXPERIENCES: 1) SHARED USE PATH AND NATURE TRAIL (TRAIL SIGNS AND MARKERS, BENCHES, LITTER RECEPTACLES, EXTERIOR LIGHTING, INFORMATIONAL SIGNS, BIKE RACKS), 2) THE LAWN (BENCHES, EXTERIOR LIGHTING, SHADE TREES, INFORMATIONAL SIGNS), AND 3) MIDDLE SCHOOL SITE (RECREATIONAL PLAYING FIELDS, SEATING, BIKE RACKS).

PUBLIC FOREST CONSERVATION EASEMENT #1 LOCATED IN THE NORTHERN PORTION OF HOWARD COUNTY MIDDLE SCHOOL'S SITE CONTRIBUTES 1.84 ACRES OF AFFORESTATION TO OXFORD SQUARE'S TOTAL FOREST CONSERVATION GOAL.

OXFORD SQUARE GREEN NEIGHBORHOOD BOUNDARY WILL PROVIDE A MINIMUM 75 FT ENHANCED STREAM

OXFORD SQUARE GREEN NEIGHBORHOOD BOUNDARY WILL PROVIDE A MINIMUM 50 FT ENHANCED WETLAND BUFFER.

OXFORD SQUARE GREEN NEIGHBORHOOD BOUNDARY WILL NOT PLANT INVASIVE PLANTS.

OXFORD SQUARE GREEN NEIGHBORHOOD BOUNDARY WILL USE NATIVE PLANTS WHEN PLANTING BEDS ARE LOCATED IN DENSELY SHADED AREAS.

OXFORD SQUARE WILL PROVIDE 25%-50% WATER QUALITY VOLUME STORED AND INFILTRATED/RE-USED ON-SITE.

# GREEN NEIGHBORHOOD CALCULATIONS & TABLES

## A-4b Priority Parking for Low-Emitting and Fuel Efficient Vehicles¹

Howard County Middle School #20 Total Number of Off-Street Parking Spaces: 119 Spaces Total Number of Proposed Preferred Parking Spaces: 6 Spaces Percent of Preferred Parking Spaces:

Complete Build Out (Sketch Plan S-11-001)

Total Number of Off-Street Parking Spaces: 2,055 Spaces **Total Number of Proposed Preferred Parking Spaces:** 104 Spaces

Percent of Preferred Parking Spaces:

## **A-4c Compact Development**

954 DU **Total Dwelling Units:** 33.0 AC Residential Land Area: 28.9 DU/AC

## A-4d Walkable Streets

	Overall GN Development ¹	Middle School
Length of Buildings Frontage Orientd Towards the Public Space:	5,737 FT	263 FT
Total Length of Building Frontage:	6,430 FT	411 FT
% of Building Frontage Oriented Towards the Public Spaces:	89.2 %	64.0 %
	τ	
Length of Building Frontage with Service or Garage Openings:	240 FT	O FT
Total Length of Building Frontage (Oriented Towards Public Spaces):	5,737 FT	263 FT
% of Building Frontage with Service or Garage Openings:	4.2 %	0.0 %

Overall GN Development Frontage Calculation is based on Approved Sketch Plan (S-11-001) modified to

reflect changes to building frontage per Middle School SDP

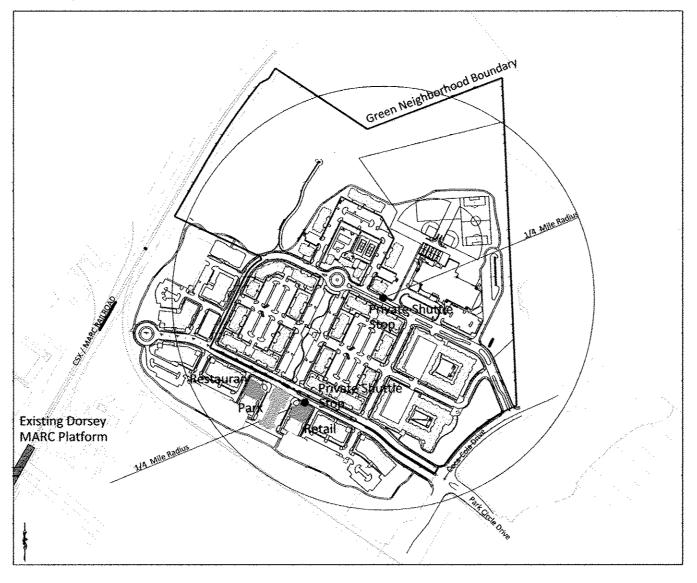
## **B-1a Redevelopment Site**

Gross Site Area: 82.2 Acres Area of Existing Development (Acres): 24.4 Acres Percent of Previously Developed:

## B-3a Transit Access & Amenities for Reduced Auto Dependence (Stop)

Total Number of Building Number for Units within 1/4 Mile Percent of all Units 100% Buildings 10- 34 (Sketch Plan S-11-001) 954 DU

# B-3a, B-3b & B-4 VICINITY MAP (Scale: 1": 600')



## **B-4 Proximity to Community Resources**

Community Resources		Walking D	istrance to Resource
Resturant		0-1,320	FT
Retail		0-1,320	FT
Park		0-1,320	FT .
	Number of Qualifying Resources:	3	Resources

## C-1 Diversity of Uses

Residential Uses	Number of Units	Percent of Total Units
Apartments	954 DU	100%

Nonresidentia	l Uses	Area	SF per Dwelling Unit
Institional:	School	95,747 SF	
	Outdoor Classroom Space	2,500 SF	
		98,247 SF	103 SF/DU
Civic:	Recreational Playing Fields (School Site)	230,598 SF	
	Shared-Use Path (8 FT wide) _	31,509 SF ¹	
	Civic Subtotal:	262,107 SF	275 SF/DU

12,801 SF of the Shared-Use Path will be constructed on the Middle School site.

# C-3a Pedestrian System (Paths and Trails)

Overall GN Development¹ Width of Path: 8 FT Shared Use Path: Length: 3,262 FT (0.6 Miles) Mulch Nature Trail Width of Path: 5 FT

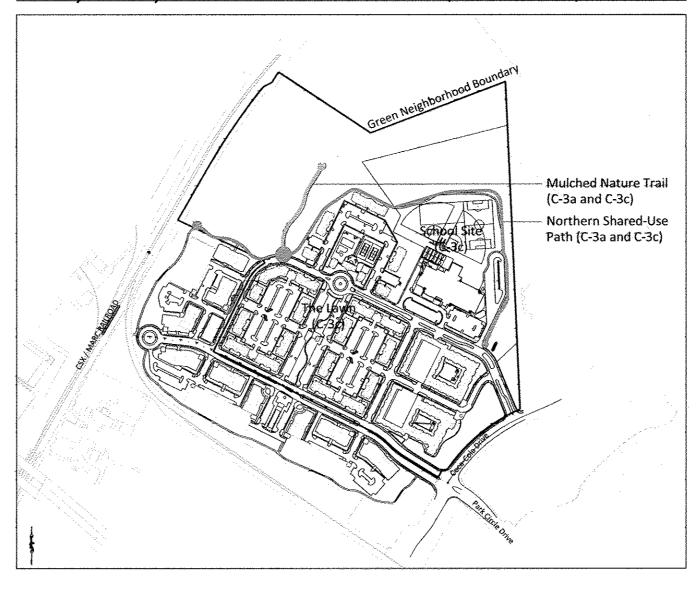
## **C-4 Street Connections**

Total Connected Street Length:

Street Name / ID	Street Length	Qualifying Street
Road A	1,683 FT	Yes
Road B	2,838 FT	Yes
Road C	807 FT	Yes
Road D	740 FT	Yes
Road E (North and South)	1,450 FT	Yes
Summary		
Total Street Length:	7,518 FT	

Percent Connected Streets:

# C-3a, C-3b, C-3c VICINITY MAP (Scale 1"=600')



## **C-5 Parking Does Not Exceed Required Minimum**

Number of Surface Parking Required:	2,043 spaces
Number of Spaces Provided:	2,238 spaces
Number of Shared Spaces (On-Street):	310 spaces
Number of Spaces within a Common Parking Structure:	1,128 spaces
Number of Spaces within Walk Up Integral Garages:	40 spaces
Number of Spaces in Surface Parking Lots:	760 spaces
Number of Spaces in Surface Parking Lots:	760 spaces

## C-6 Exceed Minimum Open Space

	Complete Build Out	Middle School SDP*
Net Acreage*:	75.0 AC	······································
Required Amenity Space (TOD: 10% of Net Acreage):	7.5 AC	
Provided Amenity Space:	11.9 AC	6.6 AC
Percent Increase above the Minimum Required	: 58.7 %	

* Net Acreage= Gross Acreage less floodplain, less steep slopes within GN boundary. 1 Middle School Site Development Plan's amenity space contribution. 2 Proposed Complete Build Out amenity area as described in Sketch Plan S-11-001 GN Report

## **C-7 Green Spaces and Amenity Areas**

Parcel .	Road Frontage	Amenity Type	Amenity Area
Open Space 1: Clubhouse and Pool	314 FT	Residential	59,741 SF
		Community	(1.37 AC)
		Clubhouse,	
		Pool, Other	
		Active, and	
		Passive	
		Recreational	
,		Spaces	
Open Space 2: The Nature Trail	160 FT	Nature Trail,	31,448 SF
		Benches, Trail	(0.72 AC)
		Signage,	
,		Educational	

# **D-4 15% Slope Preservation**

	Complete Build Out ²	Middle School SDP ¹
Total Area of Slopes 15-24.9%:	430,065 SF	132,833 SF
Area of Undisturbed Slopes 15-24.9%:	258,913 SF	97,374 SF
Percent of Undisturbed Slopes:	<del>6</del> 0.2 %	73.3 %

1 Calculations are based on the Middle School Site Development Plan submission and do not reflect the complete project build out. 2 Calculations include Complete Build Out disturbances described in Final Plan submission (05/09/12) in addition to changes made to the Middle School Site, as described in the Site Development Plan.

HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING GREEN NEIGHBORHOOD PLAN FOR SITES

LEED ACCREDITED PROFESSIONAL CERTIFICATE GREEN NEIGHBORHOOD PLAN FOR SITES

## **D-5 Minimize Grading and Site Disturbance**

	Complete Build Out ²	Middle School SDP ¹
Gross Area of Site	82.2 AC	82.2 AC
Existing Impervious Cover	24.4 AC	24.4 AC
Area of Site	57.8 AC	57.8 AC
Area of Site to Remain Undisturbed	25.0 AC	56.5 AC
Precent of Site to Remain Undistrubed:	43.3 %	97.7 %
Ratio of Cut to Fill:	1.13 Ratio	1.13 Ratio
Retaining Wall:	0 FT	0 FT

1 Calculations are based on the Middle School Site Development Plan submission and do not reflect the complete project build out. 2 Calculations include Complete Build Out disturbances described in Final Plan submission (05/09/12) in addition to changes made to the Middle School Site, as described in the Site Development Plan.

# **D-6 Exceed Minimum Forest Conservation Requirements**

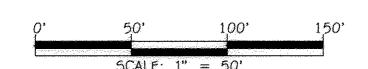
Afforestation Obligation:	3.50
Afforestation Provided in Excess of Obligation:	1.75
Percentage of Provided in Excess of Obligation:	50.00

## **D-8b Exceed Minimum Stream Buffer Requirements**

Percent of Stream Buffer Outside Other Buffers:	62.0	a
Length of Stream Buffer Outside Other Buffers:	1,230.0	Ţ
Total Length of Stream Buffer:	1,984.2	F
Width of Buffer Exceeding Requirements:	75	ľ
Total Stream Buffer Width:	150	F

## **D-9 Exceed Minimum Wetland Buffer Requirements**

Percent of Wetland Buffer Outside Other	71.2
Length of Wetland Buffer Outside Other Buffers:	2,046.6
Total Length of Wetland Buffer:	2,874.7
Width of Buffer Exceeding Requirements:	50
Total Width of Wetland Buffer:	75



hord copian machi 750 E. Pratt Street, Suite 1100 Baltimore MD 21202 410.837.7311 | www.hcm2.com ? Hord Coplan Macht, Inc. 2012





"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."

7,518 FT

100.0%

6/20/16 REVISED THE BLOCK DESCRIPTION REVISION BLOCK

PREPARED FOR HOWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 Maryland Route 108 Ellicott City, Maryland 21042

Attention Bruce Gist 410-313-6805

Parcel Number

WATER CODE

Street Address 7000 BANBURY DRIVE HANOVER, MD 21076

Address Chart

PROJECT PARCEL SECTION/AREA 'D-D' MIDDLE SCHOOL #20 N/A TAX MAP | ELEC. DIST. CENSUS BLOCK NO. ZONE TOD FIR5T 23766-23790

SEWER CODE

'GREEN NEIGHBORHOOD' MIDDLE 5CHOOL #20 OXFORD SQUARE PARCEL 'D-D'

GREEN NEIGHBORHOOD NOTES AND CALCULATIONS

ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 HOWARD COUNTY, MARYLAND FIRST ELECTION DISTRICT SCALE: AS SHOWN DATE: OCTOBER 19, 2012

Length: 595 FT

edit	Credit	Champion	Requirement	Sketch Plan (S-11-001)	Final Plan (F-12-026)	Site Development Plan (SDP-12-075)	Documentation Location	M ez Points	hataanbah binia
No.	innovative / integra	(Name, Role)	955	Strategies	Strategies	Strategies	FOCRUOL	4	4
A-1	Green Development Plan		Shows how plans meet criteria, includes checklist, natural resource inventory	Provide documentation	Provide documentation	Provide documentation	GN Plan GN Report	REQ'D	
<b>A-2</b>	Interdisciplinary	HCPSS/Petitioner	and energy analysis Includes U.S. Green	The design team	The design team	The design team	GN Plan	REQ'D	
	Project Team		Building Council Leadership in Energy and	includes a LEED AP professional, an	includes a LEED AP professional, an	includes a LEED AP professional,a civil	GN Report		
	åverde de server en		Environmental Design (LEED) Accredited	ecologist, a civil engineer, an	ecologist, a civil engineer, an	engineer, an architect and			
			professional, ecologist /	architect and	architect and	landscape			
		Arman de la companya	environmental professional / landscape architect, and	landscape architect.	landscape architect.	architect.			
A 2	Third Dayle	HCPSS/Petitioner	engineer	Alexander Design	Alexander Design	Alexander Design	GN Plan	REQ'D	
A-3	Third Party Certification	HCF55/Fetilioner	independent LEED	Studio Design	Studio	Studio Cesign	GN Report	NEW D	
	***	A THE STATE OF THE	accredited professional					:	
			and the state of t						
	reasonate de la constanta de l		Antonia de A						
-4a	Innovative Design A	HCM/Planners	Green Streets	Green Streets	Green Streets	Provide 17-Foot	GN Report	1	1
				TELEVISION		deep parking stalls where	SDP Plan (SDP-12- 075)		Avenue de la companya del companya de la companya del companya de la companya de
			-	againment of the second of the		appropriate.	Sheet 4,12		
\-4b	Innovative Design B	HCM/Hanners	Priority Parking for Fuel Efficient Cars	Priority Parking for Fuel Efficient Cars	Priority Parking for Fuel Efficient Cars	Provide 5% of total standard vehicular	GN Plan GN Report	1	1
		Account the second	Chicen Case	, acramonen cars	(future submission)	parking for fuel	SDP Plan (SDP-12-		
		· · · · · · · · · · · · · · · · · · ·		1		efficient cars	075) Sheet 4,11	•	
\-4c	Innovative Design C	HCM/Planners	Compact Development	Compact	Compact	N/A	GN Plan	1	1
			,	Development	Development		GN Report		
\-4d	innovative Design D	HCM/Planners	Walkable Streets	Walkable Streets	(future submission) Walkable Streets	School Site:	GN Report	1	1
			-	Proveninth	(future submission)	64% Frontage, 0% Service			- Andread
		1	Personalization	manage to the state of the stat		Frontage;			***************************************
			de la company de	Newsonia de la companya de la compan	***	Complete Project 89.2% Frontage,		and the state of t	Advantage of the second of the
		***************************************	-		***************************************	4.2% Service Frontage			uben de martinistische und
8	Location, Linkages	A Commence	Context					27	11
<b>8</b> 3-1a	Redevelopment Site	HCM/Planners	Reuse of previously	>29.7% area	>29.7% area	>29.7% area	Reference:	4	2
		FOC/Civil	developed site (minimum 25% existing impervious,	previously developed (former sand and	previously developed (former sand and	previously developed (former sand and	Sketch Plan Submission	and the second s	
		- Paragraphical Control of Contro	with sliding scale for	gravel operation).	gravel operation). Actual area of	gravel operation). Actual area of	(5-11-001);	A STATE OF THE STA	
	Lawrence Marchael		credits based on amount or % impervious)	impervious is 24.4	impervious is 24.4	impervious is 24.4	Vanassage	Annual Value	· Constitution of the Cons
3-1b	Redevelopment Site	N/A	Brow of ield cleanup of	Acres.	Acres. N/A	Acres.	NA	8	0
	(Brow nfield)		redevelopment site	K H A	ANA	N/A	NA	4	0
B-2	Historic Buildings	N/A	Preserve, restore or rehabilitate historic	N/A	N/A	NA	INA	4	v
			properties.		AA44	pewin minute even	***************************************		and and a second
B-3a	Transit Access &	HCM/Planners	Site is served by transit	Private Shuttle	Provide bus stop pad	Provide bus stop pad	Reference:	2	2
	Amenities for Reduced Auto		stop w ithin 1/2 mile (1 point) or 1/4 mile (2 points)	Service with 2 stops (100% DU within 1/4	on Road B; Private Shuttle	on Road B; Private Shuttle	Sketch Flan Submission	ļ	
	Dependence (Stop)	***	w alk from property	mile w alking	Service with 2 stops	Service with 2 stops	(\$11-001);	<u> </u> 	
				distance)	(100% DU within 1/4 mile walking	(100% DU w ithin 1/4 mile w alking	Final Plan Submission		1
					distance) (future submission)	distance) (future submission)	(F-12-026)		
B-3b	Transit Access &	HCMPlanners	Provide county-specified	Provide HoCo transit	Provide HoCo transit	Provide HoCo transit	Reference:	4	4
	Amenities for Reduced Auto		transit shelter with benches and lighting at	approved shelter for private shuttle	approved shelter for private shuttle	approved shelter for private shuttle	Sketch Plan Submission	***************************************	
	Dependence		transit stop within 1/2 mile	service	service	service	(S-11-001);		
	(Shelter)		of property and provided pedestrian link to stop if	- Certifornia de la Certifornia del Certifornia de la Certifornia	(future submission)	(future submission)		***************************************	***************************************
B-4	Proximity to Community	HCM/Planners	Credit for 1/2 mile proximity to existing or proposed	Provide Retail, Resturant and Park	Provide Retail, Resturant and Park	Provide Retail, Resturant and Park	Reference: Sketch Plan	5	3
	Resources		community resources such	space within 1/2 mile	space within 1/2 mile	space within 1/2 mile	Submission		
			as schools, parks, library, post office, etc.	of GN boundary	of GN boundary (future submission)	of GN boundary (future submission)	(S-11-001);	-	
C	Compact, Complet	e & Connected	Development					27	24
C-1	Diversity of Uses	HCMPlanners	1 point per different	Provide Institutional uses (121 SF/DU 1	Provide Institutional uses and Civic uses	Provide Institutional uses	GN Plan GN Report	3	2
			landuse; minimum 100 sf for ech non-residential per	point)	(future submission)	(103 SF/DU 1	ONTREPORT		
			DU. Minimmum of 113,600. SF each of office, retail	Provide Civic uses (288 SF/DU- 1 point)		point) Provide Civic uses	7		
		***************************************	and civic			(275 SF/DU 1	the control of the co		
						point)			
C-2	Planned Service Area	HCW/Hanners	Locate the project within the Planned Service Area	The project is within the Planned Service	The project is within the Planned Service	The project is within the Planned Service	Reference: Sketch Plan	5	5
		-	***************************************	Area	Area	Area	Submission (S-11-001);		
								<u> </u>	
C-3a	Pedestrian System (Path)	HCMPlanners	Provide an off-site pathw ay/trail system with	Provide a shared use path system	Provide a shared use path system	Construct approximately 40%	GN Plan GN Report	2	2
	T		2 connections to internal or	T' T	(future submission)	of shared use path.	SDP Plan (SDP-12- 075)		
		-	external sidew alks, with minimal environmental	Vones vones (			075) Sheet 2,3, 10		
		1	impacts, long-term meintenance	-					***
C-3b	Pedestrian System	NA	Provide an off-site	NA	NA	NA	NA	2	0
C-3c	(Connections) Pedestrian System	HCM/Hanners	Provide at least two	Provide pedestrian	Provide pedestrian	Provide	GN Plan;	2	2
	(Amenities)	1	different pedestrian experience features	amenities at trailheads, the law n	amenities at trailheads, the law n	pedestrian amenities at	GN Report; SDP Plan (SDP-12-		***
		1	author much resimings	and school site	and school site	School Site:	075)		
			Text design and the second of	Permanent	(future submission)	seating areas, recreational	\$3,4612 2,3.18.13		
		The state of the s	The second section of the sect		reference	playing fields, bike recks	-		
C-4	Connected On-site	HCMPlanners	Provide a gridded street	Percent connected	Percent connected	Percent connected	Reference:	2	2
•	Street Network		netw ork	100%	100%	100% (future submission)	Sketch Plan Submission		1
		***************************************			(future submission)	(rusus audinission)	(S11-001);		
Ç-5	Parking does not	HCMPlanners	Surface parking lots do not	Provide common	Provide common	The school site	GN Plan;	4	4
-	exceed Required		exceed required parking	parking structures (4	parking structures	does not provide	GN Report; SDP Plan (SDP-12-		
	Minimum	4**************************************	ratios (1 point); plan takes advantage of shared	points)	(future submission)	more surface parking spaces	075)	1	
			parking provisions parking structure provided (in deck		And the second s	than is required by the Howard	Sheet 1, 2, 4		
	1	Manage special state of the sta	or beneath building, does		The contract of the contract o	County Public			
		Parameter	not include garages within individual units) (4 points)		***	School System.	A		1
·		 		E0.70/ 5	E0 705	lost - 1 fee	CALE-	<u> </u>	
Ç-6	Exceed Minimum Open Space	HCMPlanners	1 point for every 5% above required minimum open	58.7% of amenity space above the	58.7% of amenity space above the	School Site will provide 6.6 acres	GN Plan GN Report	5	5
	Requirements		space for the TOD zone. 1	required minimum	required minimum	of projected 11.9 acres of Amenity	SDP Plan (SDP-12-		
			point for every 10% of non- buildable HOA parcels	zoning regulations)	amenity space (TOD zoning regulations)	Area for entire	075) Sheet 2,3	-	1
			above 50% of the site (up tp 3 points).		(future submission)	Green Neighborhood	- Automorphism		
				<u></u>		Area			
	Green Spaces and Amenity Areas	HCMPlanners	Open space along public/private roads	Publicly accessible open space will be	Publicly accessible open space will be	Publicly accessible open space will be	Reference: Sketch Plan	2	2
C-7		<b>f</b>	1'	provided at the	provided at the	provided at the	Submission		***************************************
G-7		1	available for public use	1	A 1.2-1	l ob the	1/0 44 004		\$
G-7			datable to public use	clubhouse and pool and the nature trail.	clubhouse and pool and the nature trail.	clubhouse and pool and the nature trail.	(8-11-001);		

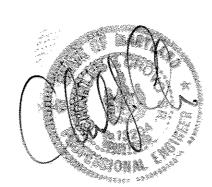
Credit No.	Credit	Champion (Name, Role)	Requirement	(S-11-001) Strategies	(F-12-026) Strategies	Plan (SDP-12-075) Strategies	Location	Psiale	fold!*
D-1	Environmental Pres Stream Restoration or Wetland Creation or Restoration	ervation EcoScience	restoration of degraded w etland or creation of	restoration for 91,000 SF and Stream restoration	Provide w etland restoration for 91,000 SF and Stream restoration	Cooperate with Master Developer to implement the stream restoration	Reference: Sketch Plan Submission (S-11-001);	<b>52</b> 16	<b>43</b> 16
			additional w etlands (sliding scale based on % or length of stream restored and % or acres of w etland created or restored)	for intermittent stream segment ST-2 (100-120 FT of channel).	for intermittent stream segment ST-2 (100-120 FT of channel) (future submission)				makarikiitissiyiyissiyiyissiyiya
D-2	Habitat Management Plan	EcoScience	Prepare and implement plan that identifies, conserves and enhances natural resources and ecological communities (may include clean up of debris, removal of invasives, etc.)	Provide Habitat Management Plan	Provide Habitat Management Han (future submission)	Cooperate with Master Developer to implement the habitat management plan	Reference: Sketch Plan Submission (S-11-001);	4	- 45
D-3	25% Steep Slope Preservation	N/A	Protect all existing steep slopes as defined by County regulations required; provide 25' minimum buffer at top of	N/A	N/A	N/A	N/A	2	
D-4	15% Slope Preservation	FCC/Civil; HCM/Ranners	25% slope (2 points) Protect existing 15%+ slopes (protect minimum 1/2 acre, w ith sliding scale based on area or % protected)	Preserve 65.3% of 15%-24.9% steep slopes	Phase 1 (F-12-026): Preserve 63.8% of 15%-24.9% steep slopes; Complete Project Build Out: Preserve 61.1% of 15%-24.9% steep slopes	School Site: Preserve 73.3% of 15%-24.9% steep slopes; Complete Project Build Out: Preserve 60.2% of 15%-24.9% steep slopes	GN Plan; GN Report; SDP Plan. (SDP-12- 075) Sheet 6, 7	4	
D-5	Minimize Grading and Site Disturbance	FCC/Civil, HCWPlanners	Minimize limit of disturbance: leave at least 20% of site undisturbed (1 point), 30% (2 points), 40% (3 points); balancecut and fill on site (2 points); retaining w alls 3-5.9' (deduct 1 point) retaining w alls 6-8.9' (deduct 2 points), w alls 9' and higher	points Minimize Retaining Walls 0 points No new > 25% Steep slopes- 1 point Leave 43.1% of site undisturbed 3	Balance Cut and Fill on entire site: Phase1: 1.14; Complete Project Build out (S-11-001) 1.13 2 points; Minimize Retaining Walls 0 points; No new > 25% Steep slopes- 1 point; Percent of Site to Remain Undisturbed: Phase 1 (F-12-026)-45.8%; Complete Project Build out (S-11-001)-43.4%- 3 points	Balance Cut and Fill on entire site: School Site: 1.13; Complete Project Build out 1.13 2 points; Minimize Retaining Walls 0 points; No new > 25% Steep slopes-1 point; Percent of Site to Remain Undisturbed: School Site: 97.7%; Complete Project Build out-43.3%- 3points			5
D-6	Exceed Minimum Forest Conservation Requirements	FOC/Ovil; HCWPlanners	site forest planted in excess of afforestation	Provide 5.25 acres of planting area (50% over afforestation obligation)	Provide 5.25 acres of planting area (50% over afforestation obligation)	Provide 1.84 acres of planting area to contribute to the afforestation goal of 5.25 acres.	GN Plan; GN Report; SDP Plan (SDP-12- 075) Sheet 3, 5	5	65
0.7	Save Trees above 12" Mnimum Caliper	N/A	obligation  1 point for protecting each 25% of all specimen trees (does not include specimen trees within forest conservation area or within forests that are being	er de	N/A	N/A	NA	atestinates verification de la constitución de la c	C)
D-8a	Exceed Minimum Stream Buffer Requirements	FCC/Civil;	cleared) 75' buffer required for perennial and intermittent streams inside PSA, 100' buffer required for perennial and intermittent	75' buffer required for perennial and intermittent streams inside PSA,	75' buffer required for perennial and intermittent streams inside PSA	75' buffer required for perennial and intermittent streams inside PSA	GN Plan; SDP Plan (SDP-12- 075) Sheet 3, 5	REQ'D	
D-8b	Exceed Minimum Stream Buffer Requirements	EcoScience FCC/Civil; HCWPlanners	streams outside PSA 2 points for each additional 25 of buffer provided in excess of requirements in D-8a outside w etland buffer or floodplain		Provide 150 FT Stream Buffer (75 FT enhanced buffer)	Provide 150 FT Stream Buffer (75 FT enhanced buffer)	GN Plan; SDP Plan (SDP-12- 075) Sheet 3, 5	6	6
D-9	Exceed Minimum Wetland Buffer Requirements	EcoScience FCC/Civil; HCWPlanners	2 points for each additional 25' of wetland buffer buffer outside stream buffer or floodplain	Provide 50 FT enhanced Wetland Buffer 4 points	Provide 50 FT enhanced Wetland Buffer	Provide 50 FT enhanced Wetland Buffer (no w etland buffers on school site)	Reference: Sketch Plan Submission (S-11-001);	4	4
D-10	Floodplain Buffer	N/A	1 point for each 25 of buffer to floodplain outside required or provided	NA	NA	WA	N/A	2	0
<b>E</b> 51	Site Landscape Implements and Reduces Heat Island Effect	provements N/A	1 point for each 10% increase in number of plants (must be native plants) provided above total minimum required in Landscape Manual; retain or plant trees on south and west sides of buildings and increase trees within parking areas and along	1	N/A	NA	N/A	5	1 0
<b>6</b> -2	Native Plants	NA NA	sidew alks and 1 point for 80%, 2 points for 90%, 3 points for 100% of all plants native to within 200 miles of site		N/A	N/A	N/A	3	0
E-3	No invasive Plants	HCWLandscape Architect	No plants that are on DNR, USDA or Cooperative Extension Service lists of invasive plants	Will not plant invasive plants	Will not plant invasive plants	Will not plant invasive plants	GN Plan; SDP Plan (SDP-12- 075) Sheets 29-32	REQ'D	urken skeine Lyden gemeine Berkelen
E-4	Limit Turf	HCM/Planners	Turf does not exceed 30% of unpaved site (1 point); no turf on new created steep slopes 25%+ or in densely shaded areas (1. point); nonturf areas must be planted in native vegetation	conventional turf in densely shaded areas and on new ly created >25% steep	Will not plant conventional turf in densely shaded areas and on new ly created >25% steep slopes	Will not plant conventional turf in densely shaded areas and on new ly created >25% steep slopes	Reference: Sketch Plan Submission (S11-001);	2	4
	A-10-		Th ndersigned does hereby o leighborhood Site Complia		How ard County tha	4.	Neighborhood Sit	e credits	s and
		4	PRINCIPAL	· • • • • • • • • • • • • • • • • • • •	1043920		10.1	7.1	
Sig	gnature	•	Title		LEED Accredit		rexe prac	_	ate

•	Credit	Champion (Name, Role)	Requirement	(S-11-001) Strategies	(F-12-026) Strategies	Plan (SDP-12-075) Strategies	Documentation Location	Haz Faints	Puints
15000	Water Conservation	n / Efficiency / M. FCC/Civil	anagement Collect and make use of	Provide rainw ater	Provide rainw ater	Provide rainwater	GN Plan;	<b>17</b> 5	<b>9</b> 5
1-3	Harvesting System	, 000,00	w ater runoff from minimum	harvesting for school	harvesting for school	harvest system	GN Report;		
			50% of roof area; provide storage systemand	and recreational fields	and recreational fields	with capacity to hold 109,036	SDP Plan (SDP-12- 075)		
			monitoring device and		(future submission)	gallons of rain to	Sheets 27, 28, 41-44		
			maintenance / management program			irrigate recreational fields	41 <del>-44</del>	- Landers	
F-2	Water-Permeable	N/A	Use w ater-permeable	N∕A	N/A	NA	N/A	4	0
	Walkw ays		materials in 50% or more of pathways; provide						
			maintenance program						
F-3a	Low impact Development (LID)	FCC/Civil	Meets minimum Design Manual requirements; no	No dry ponds	No dry ponds	No dry ponds	GN Plan; SDP Plan (SDP-12-	REQ'D	
	Stormw ater		dry ponds allow ed				075)		
F-3b	Treatment Low Impact	FCC/Civil	Exceeds Design Manual	Will provide 25%-	Will provide 25%-	Will provide 25%-	Sheets 22, 23 GN Plan;	8	4
, 52	Development (LID)		requirements; maximize	50% w ater quality	50% w ater quality	50% water quality	GN Report;		
	Stornw ater Treatment		use of bioretention (esp. for parking lots), rain	volume stored and infiltrated/re-used On-	volume stored and infiltrated/re-used on-	volume stored and infiltrated/re-used	SDP Plan (SDP-12- 075)		
			gardens, rain barrels, stormwater wetlands,	Site	site	on-site	Sheets 22, 23		A CONTRACTOR OF THE CONTRACTOR
			green roof, etc.						
	Snergy Efficiency Light Pollution	IN/A	Shield all site lighting	Will not exceed 80%	N/A	N/A	WA	13 4	0
	Reduction	liev		of lighting pow er					
			spillover below county code requirements; install	densities for exterior areas and 50% for					
			sensors or timers on all	landscape areas as					
			exterior site lighting fixtures	defined by ASHRAE 90.1-2004 (Credit					Arthumiliatur 44
				still under					number and a second
G-2	Solar Orientation	N/A	Orient 50% (1 point) or	investigation) NA	NA	N/A	N/A	3	0
-			75% (2 points) or 100% (3						******
		· ·	points) of buildings to make available for solar						
		***	strategies (longer axis of		-				
į			SFD homes, TH blocks and apartment blocks is east /						1
<u> </u>	Infrastructure C	N/A	w est)	N/A	N/A	N/A	N/A	6	0
G-3	Infrastructure Energy Efficiency	NAV.	Select high efficiency fixtures for parking lot and	1.4V		***	7 TA		
	· ·		other site light fixtures and						
			design delivery systems to reduce energy demands;					***************************************	
			install photovoltaic (PV) panels to provide electricity						
			for site energy needs				**************************************	***************************************	
			(sliding scale points for % of energy provide		***************************************		or other bridge	-	
	Parkagasarana		or energy provide			Avenue de la companya del companya de la companya del companya de la companya de		-	
			MINING THE PROPERTY OF THE PRO		Administration of the Control of the	***************************************			
	Anthropological designation of the control of the c				- Secretary Control of the Control o	announ province of the control of th	7		
	The second secon		A CONTRACTOR OF THE CONTRACTOR		weekerter		-		
H	Materials Beneficia							17	7
H-1 .	Environmentally Preferable Site	NA	Select products from a list including: recycled	Use 26-50% environmentally	NA	WA	N∕A	8	0
	Products		materials (concrete,	preferrable materials				me Profeste de Company	
	descriptions		asphalt, tires, plastic, etc.), materials with recycled			PA-1000	and the second	Amagados Ama	
	NAMES OF THE PARTY		content, salvaged or	American			enance management	-may externate see	
	olinia versiteralia		engineered materials; reuse of existing on-site	- American de la company de la			www	A-11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	*
			materials; environmentally	Antonina de la constanta de la	The state of the s	and the second s	A CONTRACTOR OF THE CONTRACTOR	, was a second	***
			preferable pedestrian paving, play			en control de la			
H-2	Reduce Heat-Island Effect of Paving	N/A	Use light-colored or high albedo materials and/or	NA	NA	N/A	NA	2	0
	Elector Favilg	-	porous paving with a	van remaining	***************************************	niles was man		444	
	-		minimum Solar Reflective Index of 0.6 or over for at			ýsmusívene agi		-	
	***************************************		least 30% of the site		William William III				
11.0	Site Construction	FCC/Ovil;	hardscape	Divert 75% or more	Divert 75% or more	Divert 75% or more	CN Papart	ļ	4
H-3	Site Construction Waste Management	1	Develop and implement a construction waste	}	site construction	1	Givreport		~
	I ANGORE INGREDICITION	TCA/Architect;		site construction	TORC COLIDERACION	site construction	1	4 4	
	vasic warayaneri	HCPSS/Petitioner	management plan to divert,	w aste	w aste	site construction waste	1	4	-
	Anasis managenera	•	1	<b>(</b>	1	1		4	
	vvaste warragenzen	•	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25%	w aste	1	1		4	
	yvaste wanagenera	•	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points)	w aste	1	1		4	
H-4	Regionally Provided	HCPSS/Petitioner	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points)	w aste Use regionally	w aste Use regionally	waste Use regionally	GN Report	4	3
H-4		HCPSS/Petitioner	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points)	w aste	w aste	waste	GN Report		3
11-4	Regionally Provided	HCPSS/Petitioner	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points)  20% of common and public infrastructure materials	w aste  Use regionally produced materials	w aste  Use regionally produced materials	Use regionally produced materials for 20% of total site	GN Report		3
H-4	Regionally Provided	HCPSS/Petitioner	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points)  20% of common and public infrastructure materials	w aste  Use regionally produced materials for 20% of total site	w aste  Use regionally produced materials for 20% of total site	Waste Use regionally produced materials for 20%	GN Report		33
H-4	Regionally Provided Materials	HCPSS/Petitioner FCC/Ctvil; TCA/Architect; HCPSS/Petitioner	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points) 20% of common and public infrastructure materials from within 200 miles	w aste  Use regionally produced materials for 20% of total site	w aste  Use regionally produced materials for 20% of total site	Use regionally produced materials for 20% of total site	GN Report		
H-4	Regionally Provided	HCPSS/Petitioner FCC/Ctvil; TCA/Architect; HCPSS/Petitioner	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points) 20% of common and public infrastructure materials from within 200 miles	Use regionally produced materials for 20% of total site materials	Use regionally produced materials for 20% of total site materials	Use regionally produced materials for 20% of total site materials	GN Report GN Report	(C)	3
1	Regionally Provided Materials	HCPSS/Petitioner  FCC/Ctvil; TCA/Architect; HCPSS/Petitioner	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points) 20% of common and public infrastructure materials from within 200 miles	Use regionally produced materials materials	Use regionally produced materials materials	Use regionally produced materials for 20% of total site materials			
<b>1</b> <b>∔1</b>	Regionally Provided Materials  Operations and Materials	FCC/Civil; TCA/Architect; HCPSS/Petitioner	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points) 20% of common and public infrastructure materials from within 200 miles  ation  Include information about green site features and maintenance requirements in HOA documents	Waste  Use regionally produced materials for 20% of total site materials  Provide HOA document	Use regionally produced materials for 20% of total site materials  Provide HOA document (future submission)	Use regionally produced materials for 20% of total site materials  Provide with first Residential SDP	GN Report	3 RECTO	
1	Regionally Provided Materials	FCC/Civil; TCA/Architect; HCPSS/Petitioner	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points) 20% of common and public infrastructure materials from within 200 miles  atton  Include information about green site features and maintenance requirements	Use regionally produced materials for 20% of total site materials	Use regionally produced materials for 20% of total site materials  Provide HOA document	Use regionally produced materials for 20% of total site materials			
<b>1</b> ∔1	Regionally Provided Materials  Operations and Materials  HOA Documents	FCC/Civil; TCA/Architect; HCPSS/Petitioner	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points) 20% of common and public infrastructure materials from within 200 miles  tion Include information about green site features and maintenance requirements in HOA documents Provide a manual that includes information on how to maintain the green	Waste  Use regionally produced materials for 20% of total site materials  Provide HOA document	Use regionally produced materials for 20% of total site materials  Provide HOA document (future submission)	Use regionally produced materials for 20% of total site materials  Provide with first Residential SDP	GN Report	3 RECTO	
<del>1</del>	Regionally Provided Materials  Operations and Ma HOA Documents  Maintenance Manual for Owner / HOA /	FCC/Civil; TCA/Architect; HCPSS/Petitioner	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points) 20% of common and public infrastructure materials from within 200 miles  atton  Include information about green site features and maintenance requirements in HOA documents  Provide a manual that includes information on	Waste  Use regionally produced materials for 20% of total site materials  Provide HOA document	Use regionally produced materials for 20% of total site materials  Provide HOA document (future submission)	Use regionally produced materials for 20% of total site materials  Provide with first Residential SDP	GN Report	3 RECTO	
<del>1</del>	Regionally Provided Materials  Operations and Ma HOA Documents  Maintenance Manual for Owner / HOA /	FCC/Civil; TCA/Architect; HCPSS/Petitioner	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points) 20% of common and public infrastructure materials from within 200 miles  ation  Include information about green site features and maintenance requirements in HOA documents  Provide a manual that includes information on how to maintain the green features of the site, including paving materials, landscaping and	Waste  Use regionally produced materials for 20% of total site materials  Provide HOA document	Use regionally produced materials for 20% of total site materials  Provide HOA document (future submission)	Use regionally produced materials for 20% of total site materials  Provide with first Residential SDP	GN Report	3 RECTO	
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<del>1</del>	Regionally Provided Materials  Operations and Ma HOA Documents  Maintenance Manual for Owner / HOA /	FCC/Civil; TCA/Architect; HCPSS/Petitioner	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points) 20% of common and public infrastructure materials from within 200 miles  stion Include information about green site features and maintenance requirements in HOA documents Provide a manual that includes information on how to maintain the green features of the site, including paving materials, landscaping and stormwater management LID and encourages additional green activities	Waste  Use regionally produced materials for 20% of total site materials  Provide HOA document	Use regionally produced materials for 20% of total site materials  Provide HOA document (future submission)	Use regionally produced materials for 20% of total site materials  Provide with first Residential SDP	GN Report	3 RECTO	
<del>1</del>	Regionally Provided Materials  Operations and Ma HOA Documents  Maintenance Manual for Owner / HOA /	FCC/Civil; TCA/Architect; HCPSS/Petitioner	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points) 20% of common and public infrastructure materials from within 200 miles  stion Include information about green site features and maintenance requirements in HOA documents Provide a manual that includes information on how to maintain the green features of the site, including paving materials, landscaping and stormwater management LID and encourages	Waste  Use regionally produced materials for 20% of total site materials  Provide HOA document	Use regionally produced materials for 20% of total site materials  Provide HOA document (future submission)	Use regionally produced materials for 20% of total site materials  Provide with first Residential SDP	GN Report	3 RECTO	
<b>1</b> <b>∔1</b>	Regionally Provided Materials  Operations and Ma HOA Documents  Maintenance Manual for Owner / HOA / Manager  Public Awareness of	FCC/Civil; TCA/Architect; HCPSS/Petitioner interiance Educ Straughan;	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points) 20% of common and public infrastructure materials from within 200 miles  tion  Include information about green site features and maintenance requirements in HOA documents  Provide a manual that includes information on how to maintain the green features of the site, including paving materials, landscaping and stormwater management LID and encourages additional green activities such as recycling, gardening, etc.  Develop a program to	Waste  Use regionally produced materials for 20% of total site materials  Provide HOA document  Provide manual	Use regionally produced materials for 20% of total site materials  Provide HOA document (future submission)  Provide manual (future submission)	Waste  Use regionally produced materials for 20% of total site materials  Provide with first Residential SDP  Provide with first Residential SDP	GN Report GN Report Reference:	3 RECTO	
1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	Regionally Provided Materials  Operations and Ma HOA Documents  Maintenance Manual for Ow ner / HOA / Manager	FCC/Civil; TCA/Architect; HCPSS/Petitioner interiance Educ Straughan;	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 50% (3 points) or 75% (4 points) 20% of common and public infrastructure materials from within 200 miles  ation  Include information about green site features and maintenance requirements in HOA documents  Provide a manual that includes information on how to maintain the green features of the site, including paving materials, landscaping and stormwater management LID and encourages additional green activities such as recycling, gardening, etc.	Waste  Use regionally produced materials for 20% of total site materials  Provide HOA document  Provide manual	Use regionally produced materials for 20% of total site materials  Provide HOA document (future submission)  Provide manual (future submission)	Use regionally produced materials for 20% of total site materials  Provide with first Residential SDP  Provide with first Residential SDP	GN Report	O REOTO	
1 +1	Regionally Provided Materials  Operations and Ma HOA Documents  Maintenance Manual for Owner / HOA / Manager  Public Awareness of Sustainable	FCC/Civil; TCA/Architect; HCPSS/Petitioner interiance Educ Straughan;	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 75% (4 points) 20% (3 points) 20% of common and public infrastructure materials from within 200 miles  ation  Include information about green site features and maintenance requirements in HOA documents  Provide a manual that includes information on how to maintain the green features of the site, including paving materials, landscaping and stormwater management LID and encourages additional green activities such as recycling, gardening, etc.  Develop a program to advertise the environmental	Waste  Use regionally produced materials for 20% of total site materials  Provide HOA document  Provide manual	Use regionally produced materials for 20% of total site materials  Provide HOA document (future submission)  Provide manual (future submission)	Waste  Use regionally produced materials for 20% of total site materials  Provide with first Residential SDP  Provide with first Residential SDP  HCPSS will work with master developer and Oxford Square	GN Report  GN Report  Reference: Sketch Han	O REOTO	we will be the state of the sta
1 +1	Regionally Provided Materials  Operations and Ma HOA Documents  Maintenance Manual for Owner / HOA / Manager  Public Awareness of Sustainable	FCC/Civil; TCA/Architect; HCPSS/Petitioner interiance Educ Straughan;	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 75% (4 points) 20% (3 points) 20% of common and public infrastructure materials from within 200 miles  ation  Include information about green site features and maintenance requirements in HOA documents  Provide a manual that includes information on how to maintain the green features of the site, including paving materials, landscaping and stormwater management LID and encourages additional green activities such as recycling, gardening, etc.  Develop a program to advertise the environmental	Waste  Use regionally produced materials for 20% of total site materials  Provide HOA document  Provide manual	Use regionally produced materials for 20% of total site materials  Provide HOA document (future submission)  Provide manual (future submission)	Waste  Use regionally produced materials for 20% of total site materials  Provide with first Residential SDP  Provide with first Residential SDP  HCPSS will work with master developer and	GN Report  GN Report  Reference: Sketch Han Submission	O REOTO	
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1-1	Regionally Provided Materials  Operations and Ma HOA Documents  Maintenance Manual for Owner / HOA / Manager  Public Awareness of Sustainable	FCC/Civil; TCA/Architect; HCPSS/Petitioner interiance Educ Straughan;	management plan to divert, reuse, recycle or reduce the amount of site material sent to the landfill by 25% (2 points) or 75% (4 points) 20% (3 points) 20% of common and public infrastructure materials from within 200 miles  ation  Include information about green site features and maintenance requirements in HOA documents  Provide a manual that includes information on how to maintain the green features of the site, including paving materials, landscaping and stormwater management LID and encourages additional green activities such as recycling, gardening, etc.  Develop a program to advertise the environmental	Waste  Use regionally produced materials for 20% of total site materials  Provide HOA document  Provide manual	Use regionally produced materials for 20% of total site materials  Provide HOA document (future submission)  Provide manual (future submission)	Waste  Use regionally produced materials for 20% of total site materials  Provide with first Residential SDP  Provide with first Residential SDP  HCPSS will w ork with master developer and Oxford Square Commercial Association Inc. to	GN Report  GN Report  Reference: Sketch Han Submission	O REOTO	

HOWARD COUNTY DEPARTMENT OF PLANNING & ZONING GREEN NEIGHBORHOOD PLAN FOR SITES LEED ACCREDITED PROFESSIONAL CERTIFICATE

GREEN NEIGHBORHOOD PLAN FOR SITES I hereby certify that this plan represents a practical and workable plan for achieving the targeted credits and point total shown on the Green Neighborhood for Sites Compliance Checklist.

hord copian macht 750 E. Pratt Street, Suite 1100 Baltimore MD 21202 410.837.7311 | www.hcm2.com ? Hord Coplan Macht, Inc. 2012



"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."

G/20/16 REVISED TITLE BLOCK DATE **DESCRIPTION** REVISION BLOCK

PREPARED FOR HOWARD COUNTY PUBLIC SCHOOL SYSTEM

10910 Maryland Route 108

Ellicott City, Maryland 21042

Attention Bruce Gist

410-313-6805

Parcel Number Street Address 7000 BANBURY DRIVE יט-טי HANOVER, MD 21076 PROJECT

Address Chart

WATER CODE

'GREEN NEIGHBORHOOD' MIDDLE 5CHOOL #20 OXFORD SQUARE PARCEL'D-D'

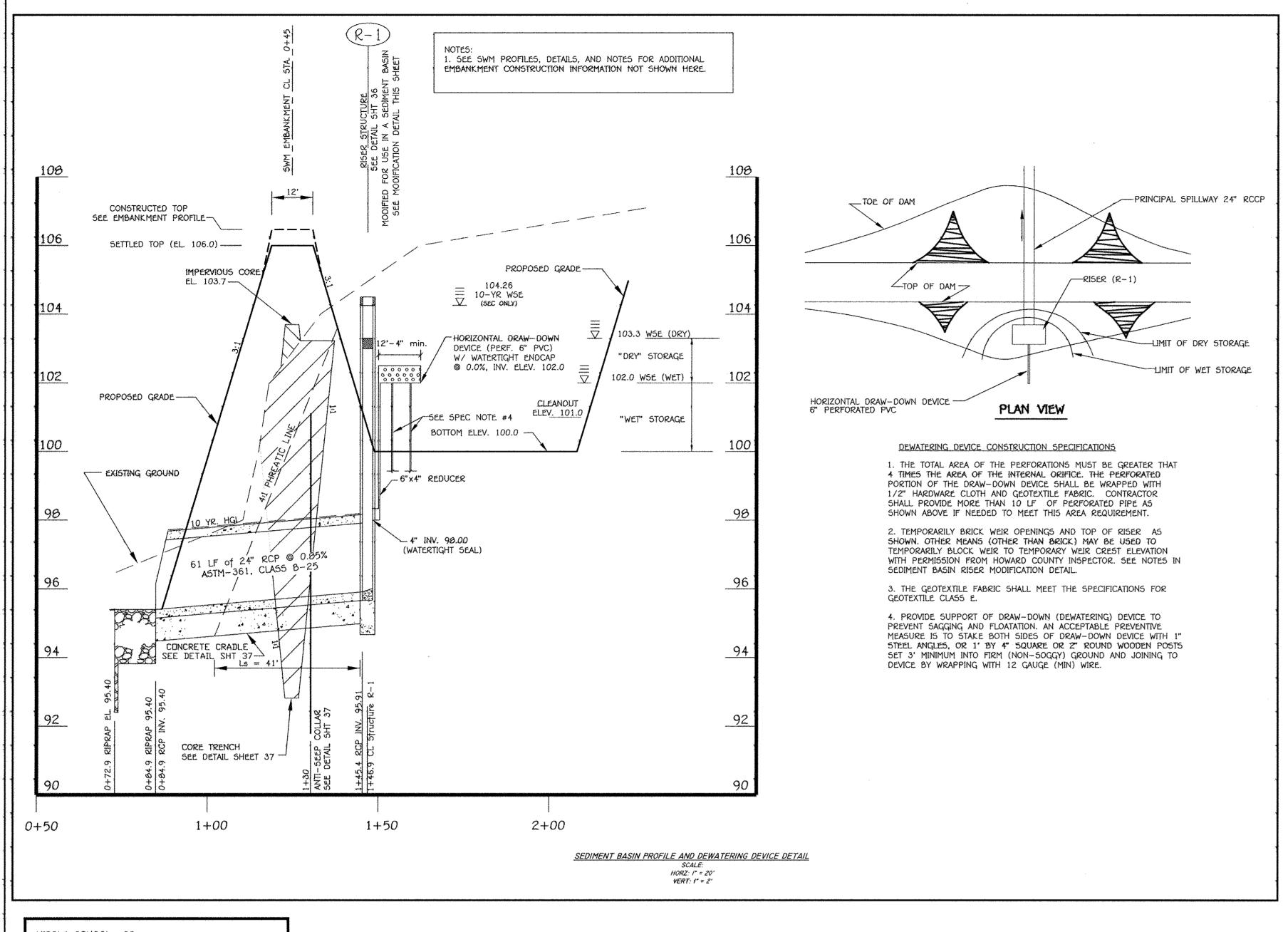
GREEN NEIGHBORHOOD CHARTS

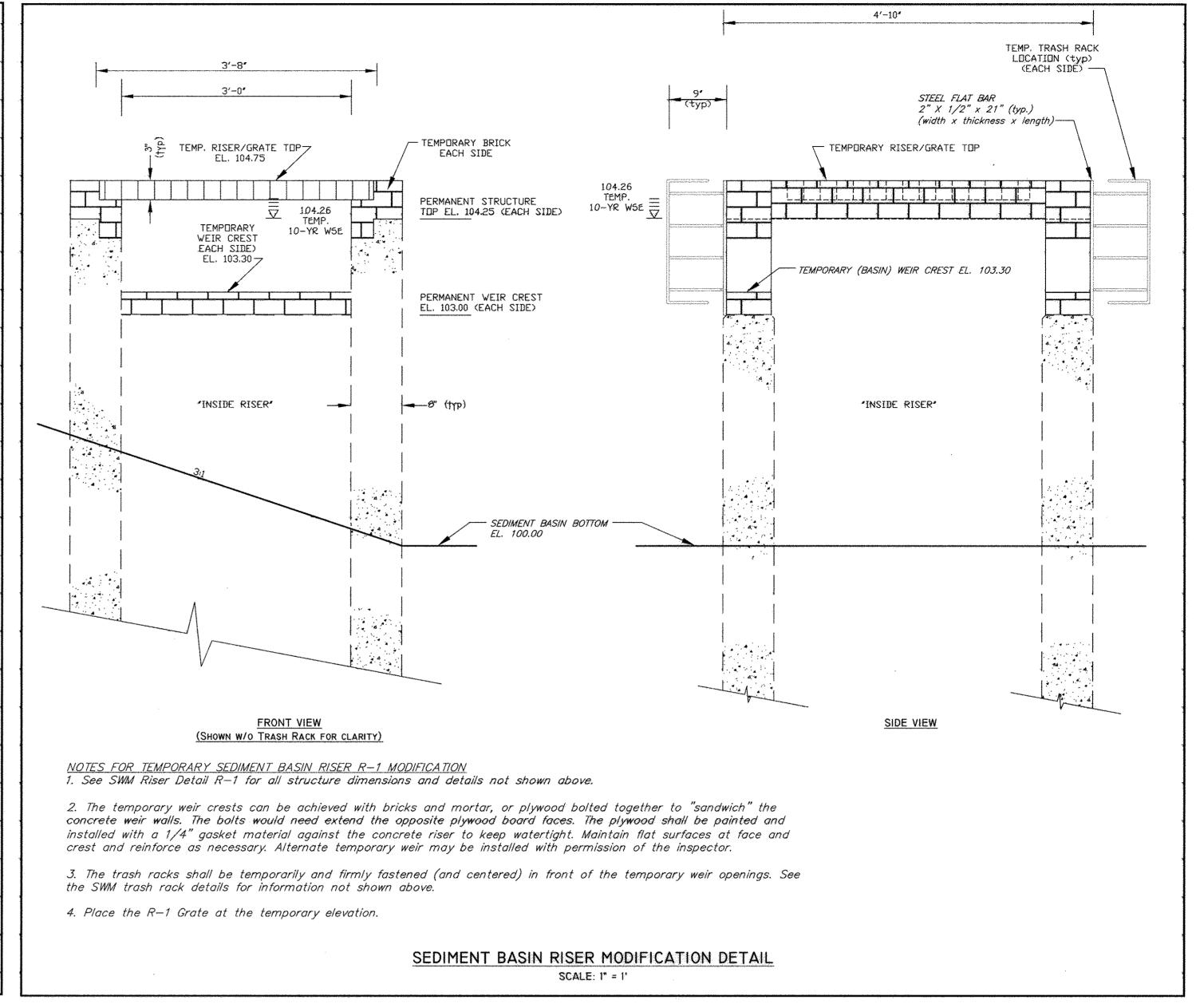
ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND SCALE: AS SHOWN DATE: OCTOBER 16, 2012

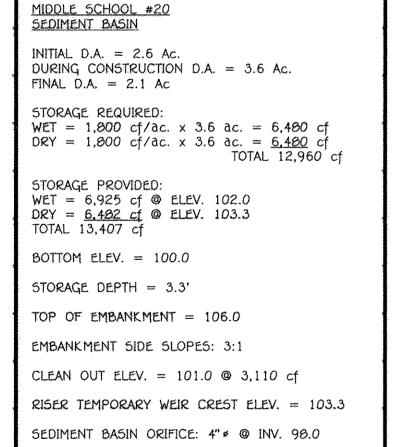
50P-12-075

PARCEL SECTION/AREA MIDDLE 5CHOOL #20 N/A PLAT NOS. TAX MAP | ELEC. DIST. CENSUS TR 20 TOD 38 **FIRST** 23788-23790

SEWER CODE







Q10 Sediment Basin = 18.8 cfs @ WSE 104.26

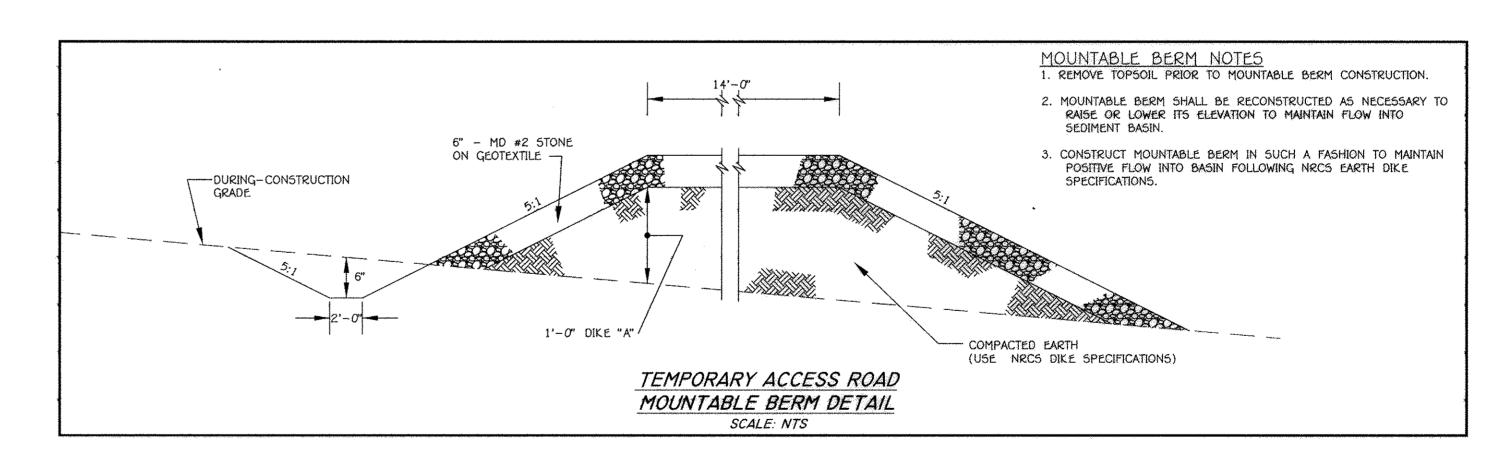


sediment and erosion control, and that all responsible personnel involved in the construction

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."



FISHER, COLLINS & CARTER, INC.

CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS

CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE

ELLICOTT CITY, MARYLAND 21042

(410) 461 - 28959

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

DEVELOPER'S CERTIFICATE

"I/We certify that all development and construction will be done according to this plan for

"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.

DATE

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

control by

/////
Date

C/20/IC REVISED TITLE BLOCK

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 & Date

PREPARED FOR
HOWARD COUNTY PUBLIC SCHOOL SYSTEM
10910 Maryland Route 108
Ellicott City, Maryland 21042
Attention Bruce Gist
410-313-6805

Parcel Number Street Address
7000 BANBURY DRIVE
HANOVER, MD 21076

WATER CODE

____

7000 BANBURY DRIVE

HANOVER, MD 21076

PROJECT SECTION/AREA PARCEL

MIDDLE 5CHOOL #20 N/A 'D-D' ZO

PLAT NOS. BLOCK NO. ZONE TAX MAP ELEC. DIST. CENSUS TR. FIRST

23788-23790 20 TOD 38 FIRST 6012.01

SEWER CODE

_ _ _ _

Address Chart

SEDIMENT BASIN DETAILS

'GREEN NEIGHBORHOOD'

MIDDLE SCHOOL #20

OXFORD SQUARE

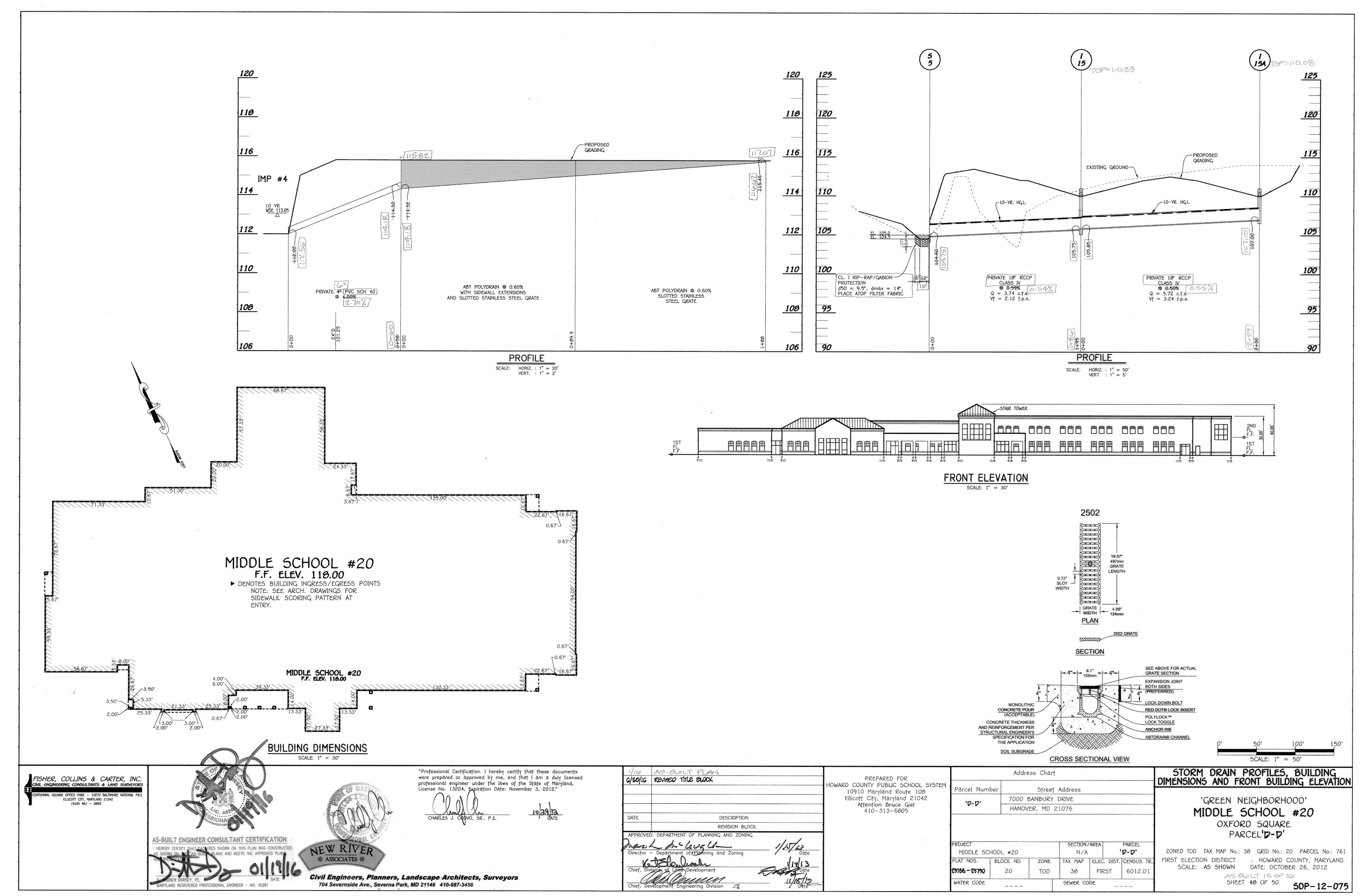
PARCEL'D-D'

ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761

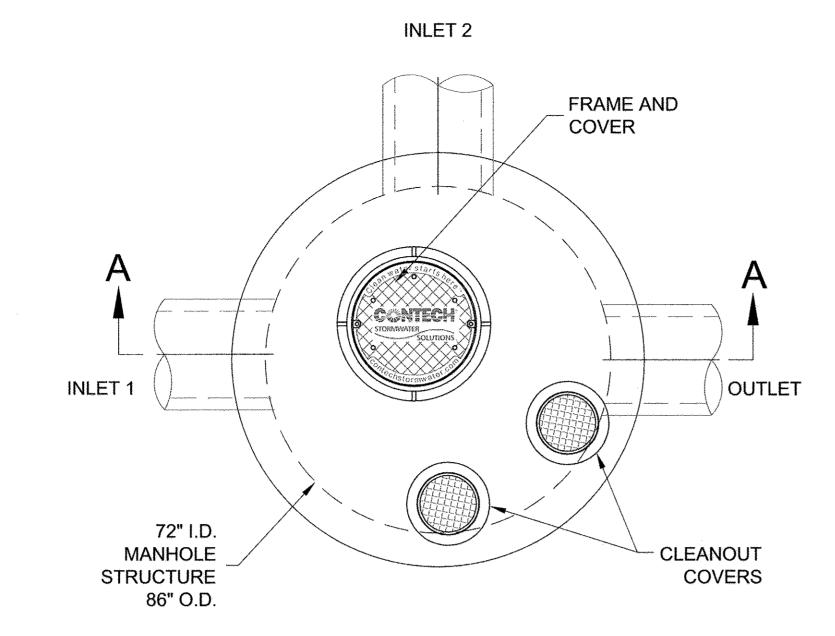
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SCALE: AS SHOWN DATE: OCTOBER 26, 2012

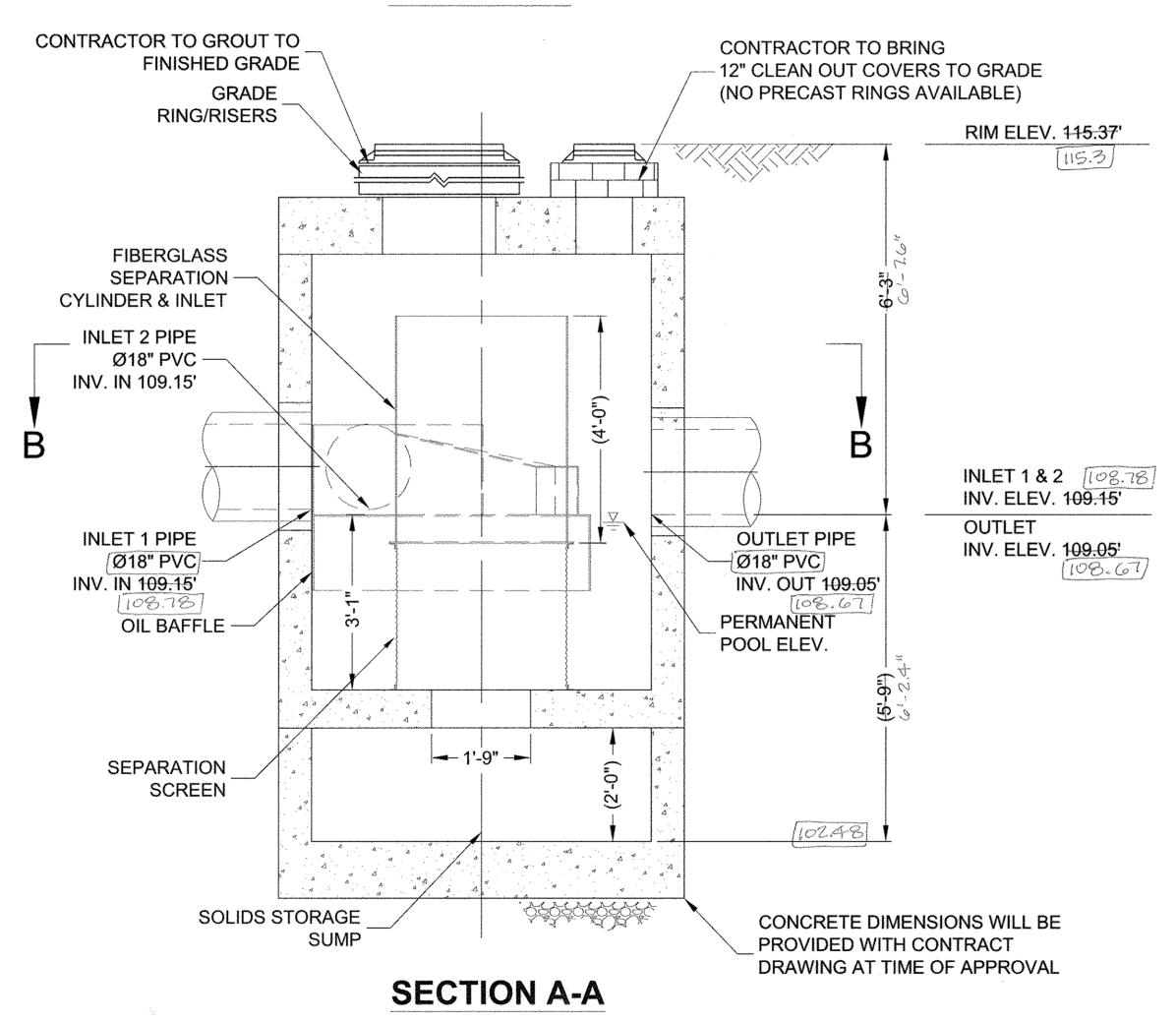
SHEET 47 OF 50

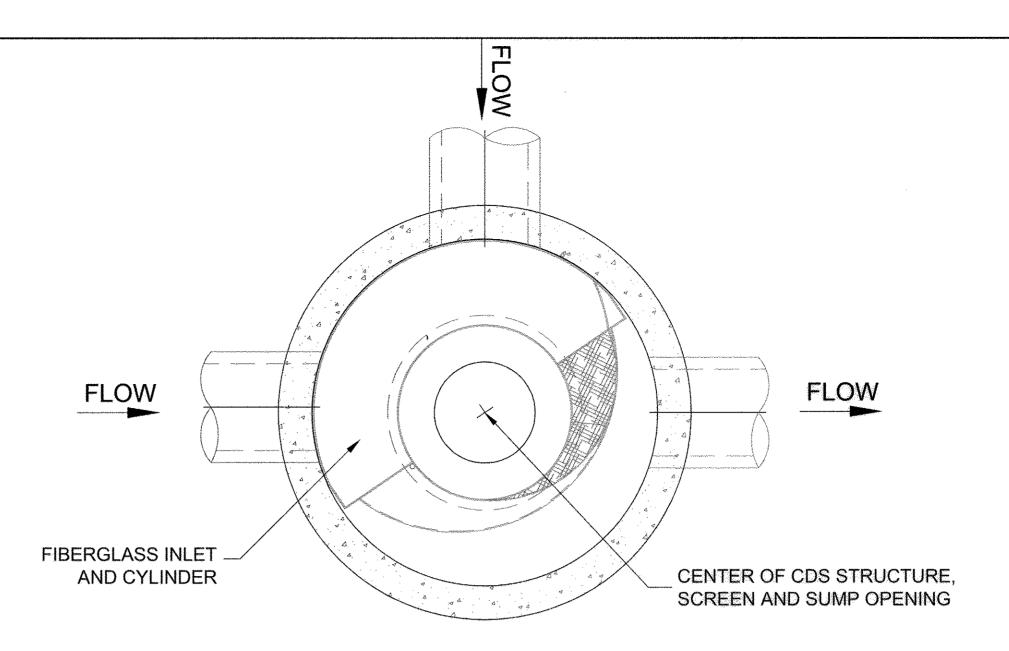


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# **PLAN VIEW**





# **SECTION B-B**

## MATERIALS LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
1	FIBERGLASS INLET & CYLINDER	CONTECH
1	2400 MICRON SEP. SCREEN	CONTECH
1	SEALANT FOR JOINTS	CONTRACTOR
1	GRADE RINGS/ RISERS	CONTRACTOR

### SITE DESIGN DATA

WATER QUALITY FLOW RATE	2.4 CFS
PEAK FLOW RATE	9.8 CFS
RETURN PERIOD OF PEAK FLOW	10 YRS

## **GENERAL NOTES**

1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.

WATER CODE

- 2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY BE PROVIDED ON SHOP **DRAWINGS**
- 3. FOR SITE SPECIFIC DRAWINGS WITH DETAILED DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH CONSTRUCTION PRODUCTS REPRESENTATIVE. www.contech-cpi.com
- 4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
- 5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET AASHTO M306 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION.
- 6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

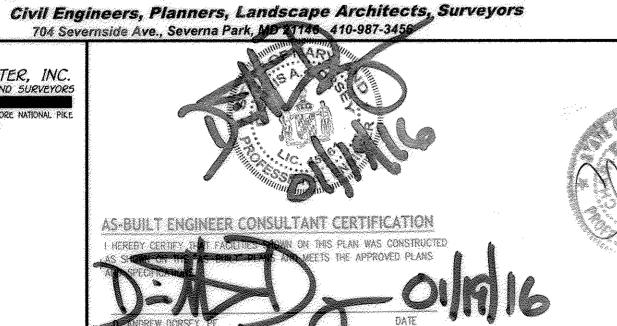
## **INSTALLATION NOTES**

- 1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- 2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
- 3. CONTRACTOR TO ADD WATERTIGHT JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE. 4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
- 5. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE

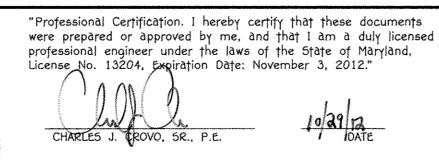
INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.



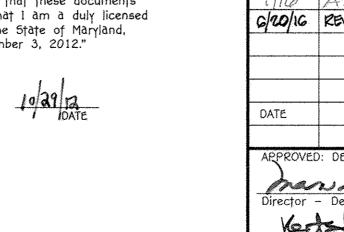
IEW RIVER 

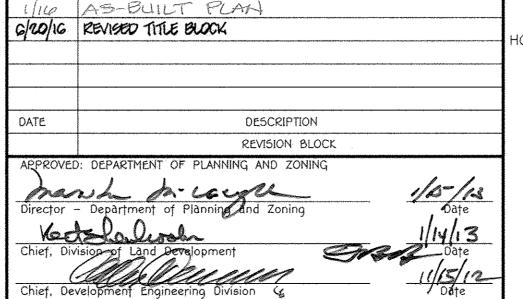






M-5 RWH PRE-TREATMENT UNIT (CDS-3025)





PREPARED FOR OWARD COUNTY PUBLIC SCHOOL SYSTEM 10910 Maryland Route 108 Ellicott City, Maryland 21042 Attention Bruce Gist 410-313-6805

Address Chart Parcel Number Street Address 7000 BANBURY DRIVE HANOVER, MD 21076 PARCEL SECTION/AREA MIDDLE 5CHOOL #20 N/A ים-סי BLOCK NO. TAX MAP ELEC. DIST. CENSUS T 20 TOD FIR5T

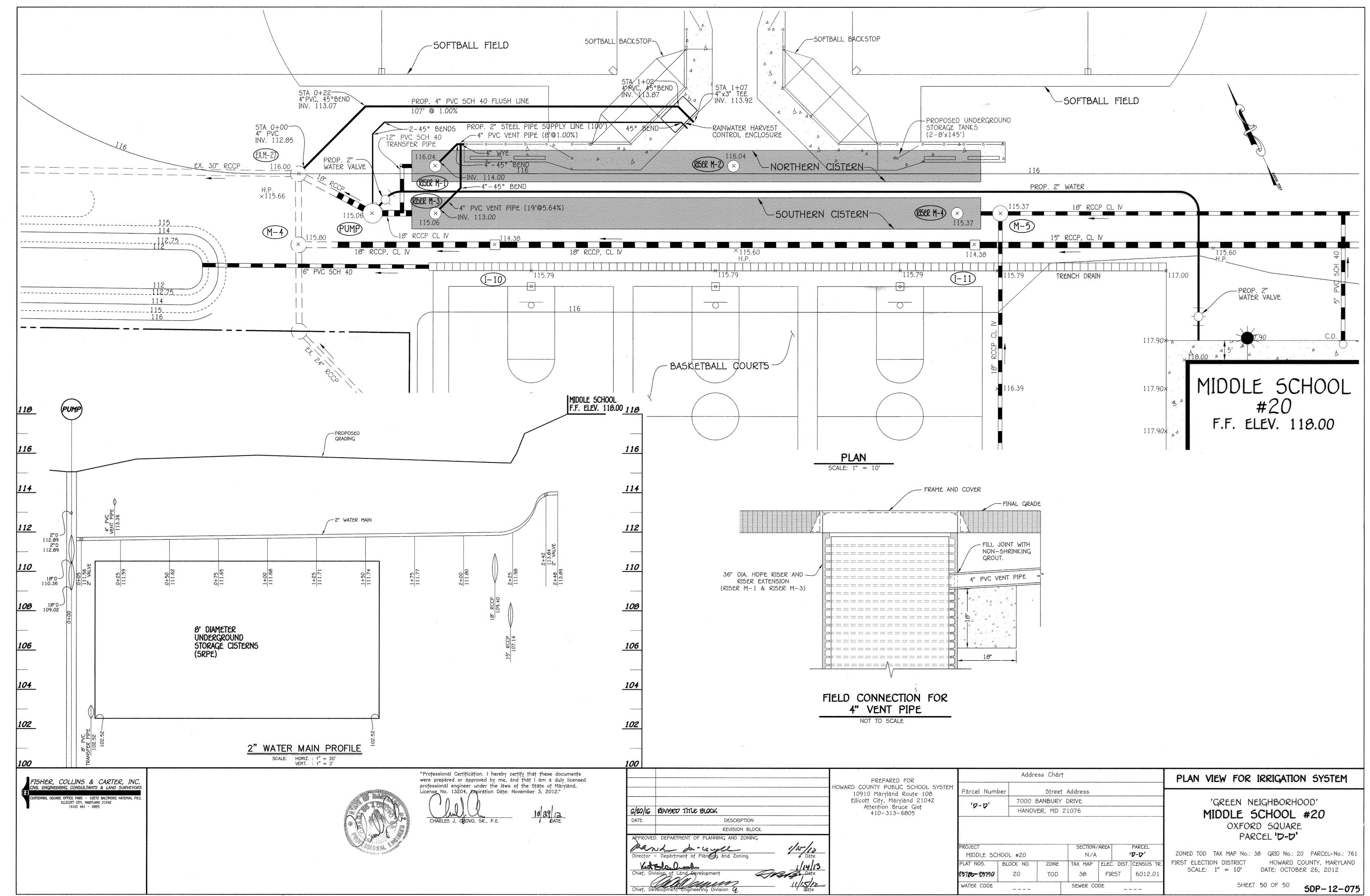
SEWER CODE

'GREEN NEIGHBORHOOD' MIDDLE SCHOOL #20

SCALE: AS SHOWN DATE: OCTOBER 26, 2012

MANHOLE M-5 DETAIL

OXFORD SQUARE PARCEL 'D-D' ZONED TOD TAX MAP No.: 38 GRID No.: 20 PARCEL No.: 761 HOWARD COUNTY, MARYLAND FIRST ELECTION DISTRICT



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