FINAL ROAD CONSTRUCTION, GRADING AND STORMWATER MANAGEMENT PLANS

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L', AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL

ZONING: TOD

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No.	DESCRIPTION	DATE
⚠	REVISED PROPOSED PARCEL LINES	8/29/13

REVISIONS

ROADWAY INFORMATION CHART				
ROAD NAME	CLASSIFICATION	DESIGN SPEED	POSTED SPEED LIMIT	R/W WIDTH
SAINT MARGARETS BOULEVARD	MAJOR COLLECTOR	30 M.P.H.	25 M.P.H.	VARIES
BANBURY DRIVE	MAJOR COLLECTOR	30 M.P.H.	25 M.P.H.	VARIES

TRAFFIC CONTROL SIGNS				
ROAD NAME	CENTERLINE STA.	OFFSET	POSTED SIGN	SIGN CODE
SAINT MARGARETS BOULEVARD	0+60	---	KEEP RIGHT w/ OBJECT MARKER	R4-7 OM1-1
	1+50	42' R	SPEED LIMIT 25	R2-1
	1+50	6' R	SPEED LIMIT 25	R2-1
	1+98 - MOUNTED TO LIGHT POLE	49.6' L	RIGHT 2 LANES MUST TURN RIGHT	R3-7R
	2+98	6' L	SIGNAL AHEAD w/ ROAD NAME PANEL	W3-3
	2+98 - MOUNTED TO LIGHT POLE	48.7'L	SIGNAL AHEAD w/ NAME PANEL	W3-3 D-3(2)
	3+92 - MOUNTED TO LIGHT POLE	39.8' L	RIGHT 2 LANES MUST TURN RIGHT	R3-7R
	2+98	6' R	ROAD CLOSED 300 ft.	W20-3
	2+98 - MOUNTED TO LIGHT POLE	41.6'R	ROAD CLOSED 300 ft.	W20-3
	4+06 - MOUNTED TO LIGHT POLE	45.4' R	RIGHT LANE MUST TURN RIGHT	R3-7R
	4+90	6' L	SPEED LIMIT 25	R2-1
	4+93 - MOUNTED TO LIGHT POLE	35' L	SPEED LIMIT 25	R2-1
	5+03 - MOUNTED TO LIGHT POLE	46.5' R	BEGIN RIGHT TURN LANE YIELD TO BIKES	R4-4
	5+92	5' L	KEEP RIGHT w/ OBJECT MARKER	R4-7 OM1-1
	6+63 - MOUNTED TO BARRICADE	---	ROAD CLOSED	R11-2
	6+63 - MOUNTED TO BARRICADE	---	ROAD CLOSED	R11-2
	6+63 - MOUNTED TO BARRICADE	---	ROAD CLOSED	R11-2
	6+63 - MOUNTED TO BARRICADE	---	ROAD CLOSED	R11-2

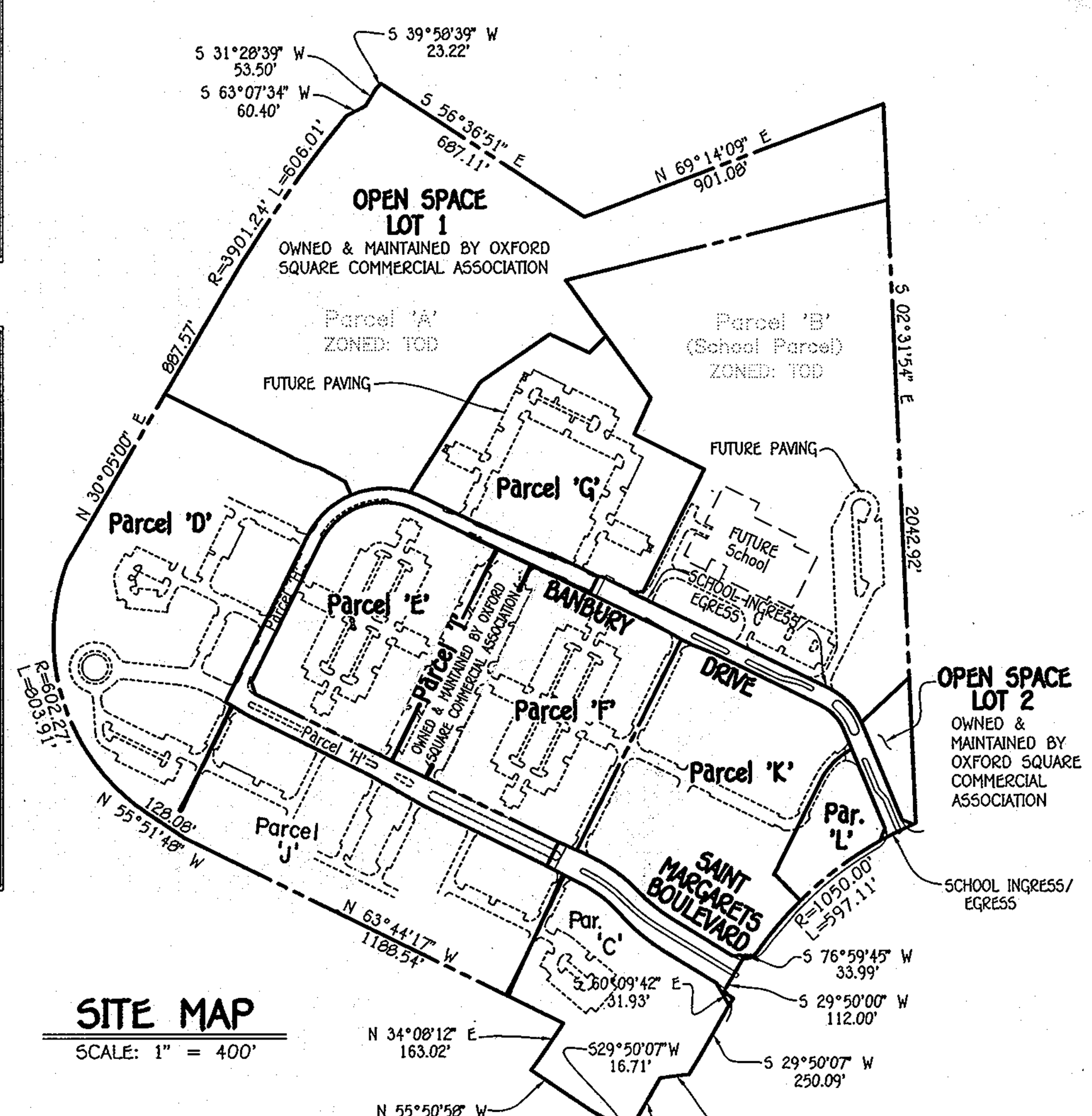
NOTES:
SEE SHEET 26 FOR COCA COLA DRIVE & SAINT MARGARETS BLVD. SIGNAGE PLAN.
SEE SHEET 27 FOR BANBURY DRIVE SIGNAGE PLAN.

TRAFFIC CONTROL SIGNS				
ROAD NAME	CENTERLINE STA.	OFFSET	POSTED SIGN	SIGN CODE
BANBURY DRIVE	0+47	6' R	KEEP RIGHT w/ OBJECT MARKER	R4-7 OM1-1
	0+49	37' L	STOP	R1-1
	0+50	2'R	STOP	R1-1
	1+25	22' R	SPEED LIMIT 25	R2-1
	2+50 - MOUNTED TO LIGHT POLE	27' L	STOP AHEAD	W3-1
	3+55	---	KEEP RIGHT	R4-7
	3+66	12' L	STOP AHEAD	W3-1
	4+60	---	KEEP RIGHT	R4-7
	5+35	5'R	KEEP RIGHT	R4-7
	7+35	5'L	KEEP RIGHT	R4-7
	7+98	5'L	KEEP RIGHT	R4-7
	9+00	28'R	ROAD CLOSED 300 ft.	W20-3
	9+00	2'L	ROAD CLOSED 300 ft.	W20-3
	12+00	---	ROAD CLOSED	R11-2
	12+00	---	ROAD CLOSED	R11-2
	12+00	---	ROAD CLOSED	R11-2
	12+00	---	ROAD CLOSED	R11-2
PARK CIRCLE DRIVE	0+40	---	KEEP RIGHT w/ OBJECT MARKER	R4-7 OM1-1
COCA COLA DRIVE	18+25	28' L	RIGHT LANE MUST TURN RIGHT	R3-7R *
COCA COLA DRIVE	31+45	28' L	RIGHT LANE MUST TURN RIGHT	R3-7R *

* SIGNS ARE PART OF PHASE ONE SIGNAGE ONLY. THESE SIGNS SHALL BE REMOVED WITH THE PHASE TWO STRIPING AND SIGNAGE PLANS.

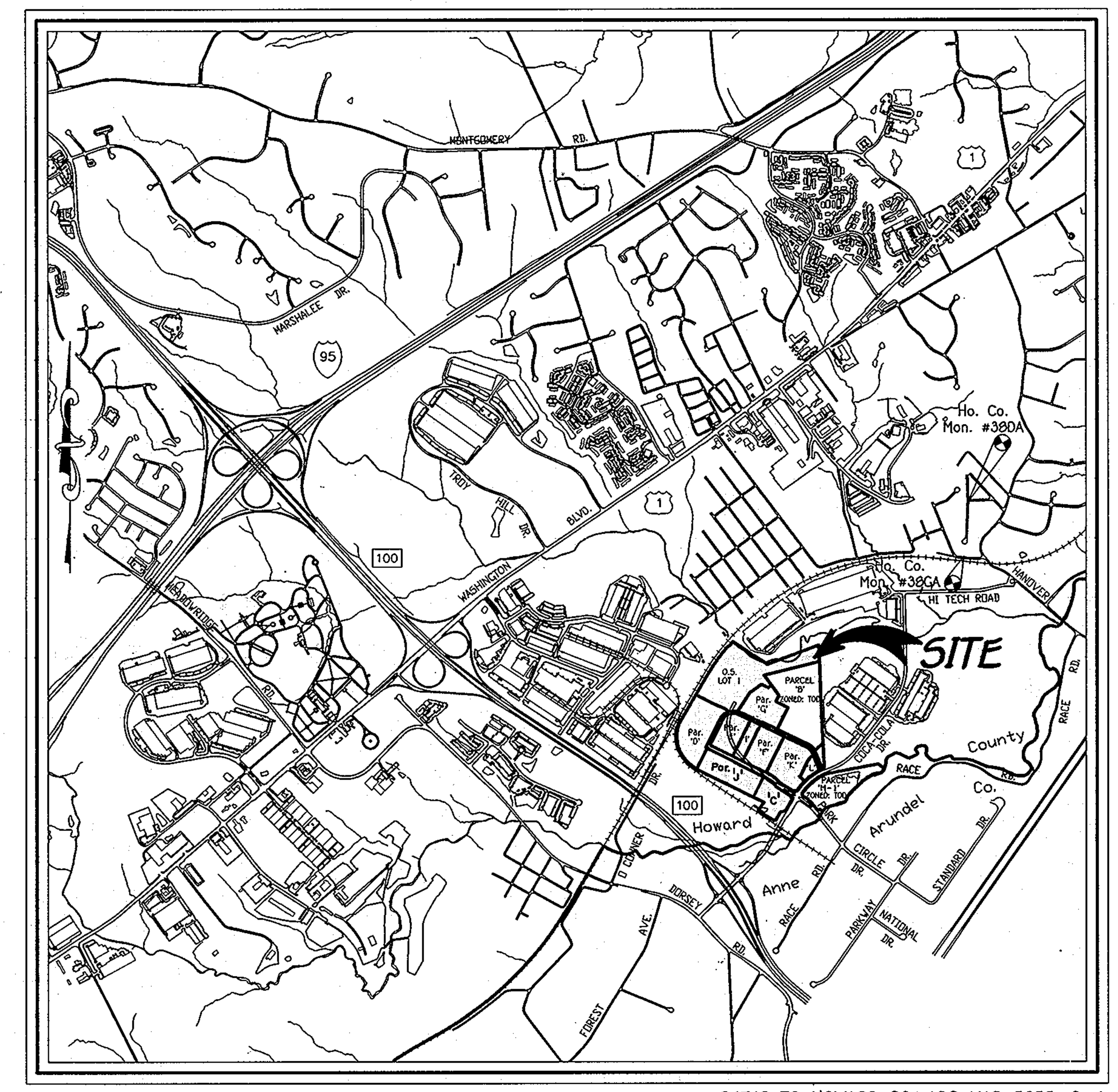
STREET LIGHT CHART			
STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
SAINT MARGARETS BOULEVARD	0+83	49.7'L	150 watt METAL HALIDE TEAR DROP FIXTURE MOUNTED AT 20' ON A 23' BLACK FIBERGLASS POLE WITH SHROUD USING A 4' ARM
	0+83	44.6'R	
	5+91	49.4'R	
	5+92	37.5'L	
	1+98	41.6'R	
	1+98	49.6'L	
	2+98	41.6'R	100 watt METAL HALIDE HAVRE DE GRACE ACORN POST TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS FLUTED POLE WITH SHROUD
	2+98	48.7'L	
	3+92	39.8'L	
	4+06	45.4'R	
	4+93	35.1'L	
	5+03	46.5'R	

STREET LIGHT CHART			
STREET NAME	STATION	OFFSET	FIXTURE/POLE TYPE
BANBURY DRIVE	0+65	27.5'L	150 watt METAL HALIDE TEAR DROP FIXTURE MOUNTED AT 20' ON A 23' BLACK FIBERGLASS POLE WITH SHROUD USING A 4' ARM
	0+65	28.0'R	
	1+70	27.8'R	
	1+70	27.5'L	
	3+35	34.8'L	
	9+20	27.8'R	
	2+50	27.1'L	100 watt METAL HALIDE HAVRE DE GRACE ACORN POST TOP FIXTURE MOUNTED ON A 14' BLACK FIBERGLASS FLUTED POLE WITH SHROUD
	2+77	27.9'R	
	3+77	27.7'R	
	4+48	27.5'L	
	4+62	28.2'R	
	5+37	27.5'L	
	5+66	29.0'R	
	6+16	27.5'L	
	6+58	27.5'R	
	6+97	27.5'R	
	7+38	28.3'R	
	7+84	27.5'L	
	8+36	27.5'R	
	8+76	31.0'L	
	9+70	29.0'L	
	10+20	27.7'R	
	10+73	27.8'L	
	11+14	31.8'R	
	11+53	27.8'L	
COCA COLA DRIVE	12+49	39'R	RELOCATED LIGHT
	10+90	40'R	



SITE MAP

SCALE: 1" = 400'



REFER TO HOWARD CO. ADC MAP 5055, B-1

VICINITY MAP

SCALE: 1" = 2000'

TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2
PARCEL No. 761
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

Owner

Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

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

APPROVED: DEPARTMENT OF PUBLIC WORKS

Diane Schwarz, Acting — 8/17/12
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kent Sheubrooks — 9/05/12
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Chad Edmondson — 8.31.12
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY PLUS MSHA STANDARDS AND SPECIFICATIONS IF APPLICABLE.
2. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS / BUREAU OF ENGINEERING / CONSTRUCTION INSPECTION DIVISION AT 410-313-1880 AT LEAST (5) WORKING DAYS PRIOR TO THE START OF WORK.
3. THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
4. THIS SUBDIVISION PLAN IS SUBJECT TO THE AMENDED FIFTH EDITION OF THE SUBDIVISION AND LAND DEVELOPMENT REGULATIONS AND THE 2004 ZONING REGULATIONS PER COUNCIL BILL NO. 45-2003 AND THE ZONING REGULATIONS AS AMENDED BY COUNCIL BILL NO. 75-2003 NAD THE COMP LITE ZONING REGULATION AMENDMENTS EFFECTIVE 7/28/06. DEVELOPMENT OR CONSTRUCTION ON THESE LOTS OR PARCELS MUST COMPLY WITH SETBACKS AND BUFFER REGULATIONS IN EFFECT AT THE TIME OF SUBMISSION OF A BUILDING OR GRADING PERMIT APPLICATION.
5. COORDINATES BASED ON NAD'83 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 38DA AND NO. 38GA
   Station No. 38DA N 556,796.3221 E 1,390,221.4576 Elev. = 126.08
   Station No. 38GA N 555,897.3373 E 1,390,132.0933 Elev. = 80.78
6. SUBJECT PROPERTY ZONED TOD PER ZB-1086M DATED 9/13/10.
7. BACKGROUND INFORMATION:
   a. SUBDIVISION NAME: OXFORD SQUARE
   b. TAX MAP NO.: 38 & 44
   c. PARCELS NOS.: 761
   d. ZONING: TOD
   e. ELECTION DISTRICT: FIRST
   f. GROSS AREA OF TRACT = 90.879 ACRES (PARCEL 'A')
   g. NUMBER OF PARCELS: 10
   h. NUMBER OF OPEN SPACE LOTS: 2 (EACH OPEN SPACE LOT SHALL BE OWNED AND MAINTAINED BY THE COMMERCIAL ASSOCIATION w/ LOT 1 TO SUPPORT GREEN NEIGHBORHOOD ENVIRONMENTAL CREDITS)
   i. AREA OF PARCELS: 64.799 ACRES
   j. AREA OF OPEN SPACE LOTS: 23.392 ACRES
   k. AREA OF PUBLIC ROADWAY TO BE DEDICATED: 2.687 ACRES
   l. PREVIOUS FILE NUMBERS: S-87-066, P-87-070, F-88-055, F-89-085, SDP-89-275, F-90-125, F-91-069, SDP-90-041, F-93-023, SDP-93-055, ZB-1086M, WP-11-130, F-11-057, WP-11-147, S-11-001, ECP-11-046.
   m. AREA OF FLOODPLAIN = 5.98 ACRES (PARCEL 'A')
   n. AREA OF 25% OR GREATER SLOPES = 2.39 ACRES (PARCEL 'A')
   o. NET AREA OF TRACT = 82.509 AC.±
8. OPEN SPACE REQUIREMENTS: T.O.D. DEVELOPMENT SHALL INCLUDE AN AMENITY AREA PER SECTION 127.4.F.I. OF THE ZONING REGULATIONS AND THE ROUTE 1 MANUAL.
   a. AMENITY AREA REQUIRED: 10.2 ACRES FOR THE ENTIRE PROJECT (101.689 x 10%)
   b. TOTAL AMENITY AREA PROVIDED: NONE UNDER THIS PHASE
9. ALL FILL AREAS WITHIN ROADWAYS AND UNDER STRUCTURES SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T-180.
10. NOISE STUDY WAS PREPARED BY MARS GROUP DATED NOVEMBER, 2009. THE 65DBA NOISE CONTOUR LINE DRAWN ON THIS PLAN IS ADVISORY AS REQUIRED BY THE HOWARD COUNTY DESIGN MANUAL, CHAPTER 5, REVISED FEBRUARY, 1992, AND CANNOT BE CONSIDERED TO EXACTLY LOCATE THE 65DBA NOISE EXPOSURE. THE 65DBA NOISE LINE WAS ESTABLISHED BY HOWARD COUNTY TO ALERT DEVELOPERS, BUILDERS AND FUTURE RESIDENTS THAT AREAS BEYOND THIS THRESHOLD MAY EXCEED GENERALLY ACCEPTED NOISE LEVELS ESTABLISHED BY THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT.
11. EXISTING WATER IS PUBLIC (CONTRACT NO. 14-1707-D)
    EXISTING SEWER IS PUBLIC (CONTRACT NO. 14-1707-D)
12. SOILS INFORMATION TAKEN ECS SOIL SURVEY DATED NOVEMBER 2, 2009. THE PROPERTY LIES WITHIN THE DEEP RUN TRIBUTARY TO THE PATAPSCO RIVER WATERSHED (2130906). MOST OF THE PARCEL 'Q' CONSISTS OF OVERGROWN FIELD HABITAT THAT DEVELOPED ON A PORTION OF THE SITE THAT WAS MASS GRADED IN THE LATE 1980'S. IT IS DUE TO THIS PREVIOUSLY MASS GRADED CONDITION THAT THE NORMAL HOWARD COUNTY SOIL SURVEY MAPS DATED JULY 1968 DO NOT APPLY. AS A RESULT OF THIS SITE CONDITION, THE OWNER/DEVELOPER HAVE CONTRACTED ECS-MID ATLANTIC, LLC OF HANOVER, MARYLAND. THE SOIL REPORT IS DATED NOVEMBER 2009 WITH AN ADDENDUM DATED FEBRUARY 2010 THAT SUMMARIZED THE SOIL GROUPS REQUIRED FOR THIS SWM REPORT.
13. EXISTING PAVING AND/OR STRUCTURES LOCATED ON SITE ARE TO BE RAZED AS SHOWN ON PLAN SHEET 40.
14. BOUNDARY OUTLINE BASED ON FIELD RUN SURVEY PERFORMED BY FISHER COLLINS AND CARTER, INC. DATED OCTOBER, 2009.
15. TOPOGRAPHIC CONTOURS BASED ON AERIAL SURVEY PERFORMED BY HARFORD AERIAL SURVEYS, INC. DATED JANUARY, 2008 AND SUPPLEMENTED WITH FIELD RUN TOPOGRAPHY PREPARED BY FISHER, COLLINS AND CARTER, INC. DATED MAY, 2010.
16. THERE IS ONE AREA OF STEEP SLOPES LOCATED ON THIS PROPERTY AS DEFINED BY THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS, SECTION 16.116.b., (0.298 Ac.).
17. STORMWATER MANAGEMENT WILL BE PROVIDED IN ACCORDANCE WITH THE 2007 MDE, CHAPTER 5 REGULATIONS AND THE LATEST HOWARD COUNTY DESIGN MANUAL, VOL. I, CHAPTER 5 ADOPTED ON OR AROUND MAY 4, 2010. RECHARGE VOLUME WILL BE PROVIDED THROUGH THE USE OF A STONE RESERVOIRS. WATER QUALITY AND CHANNEL PROTECTION VOLUME WILL BE PROVIDED BY ROOFTOP DISCONNECTION AREAS, RAINWATER HARVESTING, MICRO BIO-RETENTION FACILITIES & A SURFACE SAND FILTER. OVERBANK FLOOD PROTECTION VOLUME AND EXTREME FLOOD VOLUMES ARE NOT REQUIRED FOR THIS SITE. ALL STONE RESERVOIR, ROOFTOP, RAIN HARVESTING, INFILTRATION BERMS AND MICRO-RETENTION STORMWATER MANAGEMENT FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE H.O.A. OR COMMERCIAL ASSOCIATION. THE STREET TREES, PERFORATED UNDERDRAINS, FEEDERS, PLANTINGS AND SWALES WILL BE PRIVATELY OWNED AND MAINTAINED BY OXFORD SQUARE COMMERCIAL ASSOCIATION. HOWARD COUNTY WILL ONLY MAINTAIN THE INLET STRUCTURE WITHIN THE MICRO BIO-RETENTION FACILITIES ADJACENT TO THE RIGHT-OF-WAY.
18. SEVERAL SPECIMEN TREES ARE KNOWN TO BE LOCATED WITHIN THE EXISTING FOREST; HOWEVER THEY WERE NOT SURVEYED BECAUSE THERE WILL BE NO PROPOSED DISTURBANCES WITHIN THE EXISTING FOREST.
19. FLOODPLAIN LIMITS SHOWN HEREON WAS PREPARED BY WHITMAN REQUARDT AND ASSOCIATES AND IS DELINEATED ON PLAT 9924 (F-91-069).
20. THE FOREST CONSERVATION ACT REQUIREMENTS FOR THIS PROJECT WILL BE MET THROUGH THE RETENTION OF 10.51 ACRES OF ON-SITE FOREST AND THE PLANTING OF 5.25 ACRES OF ON-SITE FOREST. THE REQUIRED FOREST CONSERVATION SURETY FOR ON-SITE PLANTING IS $114,346.00, (5.25 ac. x 43,560 sq.ft. x $0.50). THE SURETY FOR FOREST CONSERVATION EASEMENT No. 1 (1.86 ac. x 43,560 sq.ft. x $0.50 = $40,511) IS INCLUDED, ALTHOUGH, THE RECORDATION AND PLANTING SHALL BE PROVIDED WITH THE REVISION OF PARCEL 'B'. THE FOREST CONSERVATION SURETY FOR THIS PLAN IN THE AMOUNT OF $114,346.00 WILL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT.
    "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. THE FOREST STAND DELINEATION AND WETLAND DELINEATION FOR THIS PROJECT WAS PREPARED BY ECO-SCIENCE PROFESSIONALS, INC. DATED MARCH 17, 2011 AND APPROVED UNDER S-11-001.
22. THIS PROPERTY IS LOCATED WITHIN THE METROPOLITAN DISTRICT.
23. NO CEMETERIES OR HISTORIC STRUCTURES EXIST WITHIN THIS SUBDIVISION.
24. STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURES AND POLES SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (2006), SECTION 5.5.A. A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY STREET TREE.
25. TRAFFIC CONTROL DEVICES:
    a) THE R1-1 (STOP) SIGNS AND THE STREET NAME SIGN (SNS) ASSEMBLIES FOR THIS DEVELOPMENT MUST BE INSTALLED BEFORE THE BASE PAVING IS COMPLETED.
    b) THE TRAFFIC CONTROL DEVICE LOCATIONS (SIGNS & PAVING MARKINGS) SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD APPROVED BY THE HOWARD COUNTY TRAFFIC DIVISION (410-313-5752) PRIOR TO THE INSTALLATION OF ANY OF THESE TRAFFIC CONTROL DEVICES.
    c) ALL TRAFFIC CONTROL DEVICES AND THEIR LOCATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MdMUTCD).
    d) ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT-OF-WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
26. THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY THE TRAFFIC GROUP, DATED MARCH 2011. PER THIS STUDY, ONCE THE TOTAL WEEKDAY EVENING PEAK HOUR TRIP GENERATION EXCEEDS 1100 TRIPS, THE ULTIMATE ROAD IMPROVEMENTS ARE NEEDED AT THE INTERSECTION OF COLA COLA DRIVE & PARK CIRCLE DRIVE. AN ADEQUATE ROAD RE-EVALUATION WILL BE PREFORMED FOR PARK CIRCLE DRIVE & COCA COLA DRIVE IN 2017 FOR EVENING PEAK HOUR.
27. NO CLEARING, GRADING OR CONSTRUCTION IS PERMITTED WITHIN THE WETLANDS, STREAMS, THEIR REQUIRED BUFFERS OR THEIR EXTENDED GREEN NEIGHBORHOOD BUFFERS, UNLESS THE ACTIVITIES ARE CONSIDERED NECESSARY OR WAIVERS ARE APPROVED BY THE DEPARTMENT OF PLANNING AND ZONING. ACTIVITIES PROPOSED IN WETLANDS, STREAMS, THEIR BUFFERS, AND THEIR EXTENDED GREEN NEIGHBORHOOD BUFFERS AS PART OF THE APPROVED STREAM AND WETLAND RESTORATION AND HABITAT MANAGEMENT PLANS ARE CONSIDERED NECESSARY BY THE DEPARTMENT OF PLANNING AND ZONING.
28. PERIMETER LANDSCAPING SHALL BE ADDRESSED IN ACCORDANCE WITH SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL AS PART OF SITE DEVELOPMENT PLAN STAGES. FINANCIAL SURETY FOR THE REQUIRED STORMWATER MANAGEMENT LANDSCAPING (D-1) FOR 7 SHADE AND 8 EVERGREEN TREES IN THE AMOUNT OF $3,300.00 WILL BE POSTED WITH THE DEVELOPER'S AGREEMENT. IN ADDITION, THE FINANCIAL SURETY FOR THE REQUIRED 93 STREET TREES IN THE AMOUNT OF $27,900.00 WILL BE POSTED WITH THE DEVELOPER'S AGREEMENT.
29. ON JANUARY 13, 2012, A LETTER WAS RECEIVED FROM HOWARD COUNTY PLANNING AND ZONING REGARDING A DESIGN MANUAL WAIVER FOR THE FOLLOWING SECTIONS OF DMV III; 2.2.G (BUS STOP TURNOUT LANE), SECTIONS 2.3.A.1.a (MINIMUM RADIUS BASED ON DESIGN SPEED), 2.3.A.3.c (HORIZONTAL DESIGN/DIVIDED HIGHWAYS), 2.4.B.1&2 (RIGHT-OF-WAY WIDTH & PAVEMENT WIDTH AND CROSS SLOPE), 2.5.B.1&4 (INTERSECTION SPACING & MINIMUM CURVATURE), 2.6.D. (SPACING AND CORNER CLEARANCE), 2.9.B. (OVERFLOW GUEST PARKING), 2.9.C. (24' DIVE LANE WIDTH), AND 2.10.E. (REFUSE STORAGE AREA LOCATION). THE FOLLOWING ARE THE RESPONSES AND CONDITIONS OF APPROVAL FROM PUBLIC WORKS, LAND DEVELOPMENT AND DEVELOPMENT ENGINEERING:
    (1) SECTION 2.2.G, BUS STOPS - APPROVED FOR STA. 10+00 (SAINT MARGARETS BLVD.) AND STA. 11+75 (BANBURY DRIVE)
    (2) SECTION 2.3.A.1.a., DESIGN SPEED/MINIMUM RADII - REQUEST TO REDUCE THE DESIGN SPEED FROM 40 MPH TO 30 MPH (POSTED SPEED = 25 MPH) WAS APPROVED. THE REQUEST TO REDUCE MINIMUM CENTERLINE RADII WAS APPROVED FOR SAINT MARGARETS BLVD., STA. 3+20, 4+50 AND 19+50. FOR BANBURY DRIVE, STA. 4+00, THE SIGHT DISTANCE EASEMENT WAS ADDED, GIVING APPROVAL FOR THIS LOCATION. FOR BANBURY DRIVE, STA. 19+25, THE DECISION WAS APPROVED SUBJECT TO THE REQUIRED SIGHT DISTANCE EASEMENT BEING ADDED AS PART OF PHASE 2.
    (3) SECTION 2.3.A.3.c., DIVIDED ROADWAYS - REQUEST MODIFICATIONS TO ALLOW DIVIDED ROADWAY ON A MAJOR COLLECTOR AND REDUCTION OF MEDIAN WIDTH FROM 16' TO 14'. THESE REQUESTS ARE ACCEPTABLE WITH THE SWM DEVICES WITHIN THE ISLANDS TO BE MAINTAINED BY HOA OR COMMERCIAL ASSOC. ALONG SAINT MARGARETS BLVD. THE MEDIAN FOR BANBURY DRIVE WAS APPROVED SUBJECT TO ADJUSTING MEDIAN GRADES TO PROVIDE A SUMP CONDITION. THIS WAS PROVIDED ON THE PLAN.
    (4) SECTION 2.4.B.1., RIGHT-OF-WAY WIDTHS-REQUEST A VARIABLE RIGHT-OF-WAY WIDTH TO EXTEND ONE FOOT BEHIND FACE OF CURB. THIS WAS APPROVED CONTINGENT ON PROVIDING AN EASEMENT ALONG SAINT MARGARETS BLVD. AND AN EASEMENT ALONG BANBURY DRIVE. THE EASEMENTS WERE PROVIDED.
    (5) SECTION 2.4.B.2., PAVEMENT WIDTHS AND CROSS SLOPE-REQUEST THAT SAINT MARGARETS BLVD. HAVE LANE WIDTHS OF 16' AND ALL OTHER ROADS HAVE A TOTAL WITH OF 18' FOR ONE WAY AND 22' FOR TWO WAY TRAFFIC. APPROVED FOR ALL LOCATIONS EXCEPT THREE ALONG BANBURY DRIVE AT STA. 15+75, THE REFUGE ISLAND WAS PROVIDED. THE OTHER TWO LOCATIONS NEAR THE TRAFFIC CIRCLE AND COMMUNITY CENTER ARE DEFERRED UNTIL A FUTURE SITE PLAN PHASE, WHEN FINAL PLANS AND TURNING MOVEMENTS WILL BE PROVIDED.
    (6) SECTION 2.5, TABLE 2.07, INTERSECTION SPACING-REQUEST A MINIMUM INTERSECTION SPACING OF 100 FEET. DPW RECOMMENDS APPROVAL OF THE ENTRANCES ALONG BANBURY DRIVE FOR FUTURE BUILDINGS 8, 29 & 30 (S-11-001). AND APPROVED.
    (7) SECTION 2.5, TABLE 2.08, CURB FILLET RADIUS-REQUEST A REDUCTION IN THE MINIMUM CURB FILLET RADII WAS APPROVED FOR SAINT MARGARETS LANE AND BANBURY DRIVE.
    (8) SECTION 2.6.D., DRIVEWAY SPACING AND CORNER CLEARANCE-REQUEST THAT THE CORNER CLEARANCE BE REDUCED FROM 75' TO 25' AND SPACING BETWEEN INTERSECTIONS BE REDUCED FROM 250' TO 100'. THE SPACING BETWEEN INTERSECTIONS REDUCTION TO 100' IS ACCEPTABLE. THE CORNER CLEARANCE REDUCTION TO 25' IS ACCEPTABLE.
    (9) SECTION 2.9, TABLE 2.11, OVERFLOW/GUEST PARKING-REQUEST THAT OFF-SITE PARKING BE REDUCED FROM 2.3 SPACES PER DWELLING UNIT TO 2.0 SPACES PER DWELLING UNIT. THIS REQUEST WAS DEFERRED UNTIL FUTURE SITE PLAN PHASE ON A PARCEL BASIS.
    (10) SECTION 2.10.E., SOLID WASTE STORAGE LOCATION-REQUEST THAT THE DISTANCE FROM A CENTRALIZED REFUSE STORAGE AREA TO A MULTI-FAMILY AREA BE INCREASED FROM 200' TO 300'. APPROVAL WAS GRANTED.
    (11) SECTION 2.9.C., OFF STREET PARKING LOTS-REQUEST THAT THE MINIMUM AISLE WIDTHS BETWEEN ROWS OF PARKING BE REDUCED FROM 24' TO 22'. DED HAS DENIED THIS REQUEST.
    (12) SECTION 5.5.A.2, STREET LIGHT LOCATION HAS BEEN APPROVED BASED ON MEETINGS WITH B.G.&E. AND HOWARD COUNTY DPW - TRAFFIC ENGINEERING.
30. IN ACCORDANCE WITH THE DESIGN MANUAL WAIVERS OUTLINED IN GENERAL NOTE No. 29 FOR REDUCED PUBLIC ROAD R/W, ALL PUBLIC ROADS SHALL PROVIDE A "PUBLIC SIGNAGE, STREET LIGHT AND UTILITY EASEMENT".
31. STREAM AND WETLAND RESTORATION AND THE HABITAT MANAGEMENT PLAN SHALL BE IMPLEMENTED WITHIN 3 YEARS OF FINAL APPROVAL OF THE SITE DEVELOPMENT PLAN ASSOCIATED WITH CONSTRUCTION OF THE 190th RESIDENTIAL UNIT. A COPY OF THE JOINT FEDERAL/STATE APPLICATION FOR AUTHORIZATION OF REGULATED ACTIVITIES ASSOCIATED WITH THE STREAM AND WETLAND RESTORATION AND HABITAT MANAGEMENT PLAN SHALL BE SUBMITTED TO DPZ AS PART OF THE SITE DEVELOPMENT PLAN APPLICATION ASSOCIATED WITH CONSTRUCTION OF THE 190th RESIDENTIAL UNIT.
32. THIS PLAN IS SUBJECT TO WAIVER PETITION WP-11-147 TO WAIVE SUBSECTIONS 16.144(g) AND 16.144(u) OF THE HOWARD COUNTY CODE. THIS ACTION RELIEVES THE REQUIREMENT TO SUBMIT A PRELIMINARY SUBDIVISION PLAN OR A PRELIMINARY EQUIVALENT SKETCH PLAN IN ORDER TO RECEIVE A GREEN NEIGHBORHOOD ALLOCATION. WAIVER PETITION WP-11-147 WAS APPROVED ON APRIL 27, 2011 BY THE DEPARTMENT OF PLANNING AND ZONING.
33. THE PROPOSED BUS STOP PAD LOCATED AT STA. 12+00, ROAD 'B', IS PART OF THE FUTURE GREEN NEIGHBORHOOD CREDIT B-3b. AS PART OF THIS CREDIT, A SHELTER WILL BE PROVIDED AS PART OF A FUTURE SITE PLAN TIED TO THE 250TH RESIDENTIAL UNIT.
34. PLAN IS SUBJECT TO WP-11-130 WHICH THE PLANNING DIRECTOR APPROVED ON MARCH 1, 2011 TO WAIVE SUBSECTIONS 16.120(C)(1), 16.131(C)(2)(I), 16.131(D)(1)(I) AND 16.1202(A)(1) OF THE HOWARD COUNTY SUBDIVISION AND LAND DEVELOPMENT REGULATIONS. WAIVER APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
    1) THE TEMPORARY PRIVATE ACCESS EASEMENT PROVIDED FOR PARCELS 'A' AND 'B' (SCHOOL PARCEL) AND TEMPORARY PRIVATE WATER AND SEWER HOUSE CONNECTION EASEMENT FOR PARCEL 'B' (SCHOOL PARCEL) WILL TERMINATE UPON RECORDATION OF THE PUBLIC ROAD RIGHT-OF-WAY TO PARCEL 'B'.
    2) PETITIONER SHALL FULFILL THE FOREST CONSERVATION OBLIGATION OF THE OXFORD SQUARE, PARCELS 'A' AND 'B' RESUBDIVISION IN ITS ENTIRETY UPON RESUBDIVISION OR DEVELOPMENT OF PARCEL 'A'.
35. PLAN IS SUBJECT TO WP-12-109 WHICH THE PLANNING DIRECTOR APPROVED ON JUNE 5, 2012 TO WAIVE SUBSECTIONS 16.120(C)(1), 16.121(E)(1) AND 16.134(A) WHICH REQUIRES ALL COMMERCIAL INDUSTRIAL AND APARTMENTS TO HAVE A MINIMUM OF 60' OF FRONTAGE ON A PUBLIC ROAD, OPEN SPACE LOTS WILL HAVE FRONTAGE ON A PUBLIC ROAD AND THE DEVELOPER SHALL PROVIDE FOR THE CONSTRUCTION OF SIDEWALKS. WAIVER APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
    A. PETITIONER SHALL SUBMIT A FINAL PLAN PROVIDING NO LESS THAN 60 FEET OF FRONTAGE ON AN APPROVED PUBLIC ROAD TO COMMERCIAL AND APARTMENT PARCELS PRIOR TO OR CONCURRENT WITH THE SUBMISSION OF A SITE DEVELOPMENT PLAN FOR COMMERCIAL OF RESIDENTIAL DEVELOPMENT OF SAID PARCELS.
    B. PETITIONER SHALL PROVIDE NO LESS THAN 40 FEET OF FRONTAGE ON AN APPROVED PUBLIC ROAD TO OPEN SPACE LOT 1 FOR ACCESS BY PEDESTRIANS AND MAINTENANCE VEHICLES UPON SIGNATURE APPROVAL OF THE ROAD CONSTRUCTION DRAWINGS WHICH INCLUDE THE TRAFFIC CIRCLE INTERSECTION OF BANBURY DRIVE AND THE PRIVATE ROAD (ROAD 'B') LOCATED ON PARCEL 'I' (FINAL PLAN F-12-026). A DEVELOPER AGREEMENT SHALL BE SUBMITTED AND FINANCIAL SURETY POSTED FOR CONSTRUCTION OF SAID PUBLIC ROAD NO LATER THAN 60 DAYS FOLLOWING SUBMISSION OF THE ASSOCIATED ROAD CONSTRUCTION DRAWING ORIGINALS. PUBLIC ROAD FRONTAGE TO OPEN SPACE LOT 1 SHALL BE INDICATED ON A SUBDIVISION PLAT TO BE SUBMITTED FOR SIGNATURE AND RECORDATION NO LATER THAN 120 DAYS FOLLOWING SUBMISSION OF THE ASSOCIATED ROAD CONSTRUCTION DRAWING ORIGINALS.
    C. PETITIONER SHALL, UPON APPROVAL OF THE FIRST SITE DEVELOPMENT PLAN FOR A RESIDENTIAL, OFFICE, COMMERCIAL, OR RECREATIONAL USE ABUTTING SAINT MARGARETS LANE, SUBMIT A REDLINE REVISION OF FINAL PLAN F-12-026 TO INCLUDE SIDEWALK IMPROVEMENTS ON SAINT MARGARETS LANE AS REQUIRED BY SECTION 16.134 AND THE DESIGN MANUAL.
    D. PETITIONER SHALL, UPON APPROVAL OF THE FIRST SITE DEVELOPMENT PLAN FOR A RESIDENTIAL, OFFICE, COMMERCIAL, OR RECREATIONAL USE ABUTTING BANBURY DRIVE, SUBMIT A REDLINE REVISION OF FINAL PLAN F-12-026 TO INCLUDE SIDEWALK IMPROVEMENTS ON BANBURY DRIVE AS REQUIRED BY SECTION 16.134 AND THE DESIGN MANUAL.
    E. PETITIONER SHALL, UPON APPROVAL OF THE FIRST SITE DEVELOPMENT PLAN FOR A RESIDENTIAL, OFFICE, COMMERCIAL, RECREATIONAL, OR INSTITUTIONAL USE WITHIN THE LIMITS OF SKETCH PLAN S-11-011, SUBMIT A REDLINE REVISION OF THE APPROPRIATE FINAL ROAD CONSTRUCTION DRAWING(S) TO THE DEPARTMENT OF PLANNING AND ZONING TO INCLUDE SIDEWALK IMPROVEMENTS ON BOTH SIDES OF COCA COLA DRIVE AS REQUIRED BY SECTION 16.134 AND THE DESIGN MANUAL, INCLUDING CONNECTION OF THE EXISTING SIDEWALK TO THE INTERSECTION OF PARK CIRCLE DRIVE AND COCA COLA DRIVE.
36. THE MARYLAND AVIATION ADMINISTRATION (MAA) APPROVED THIS PLAN ON APRIL 4, 2012 FOR SEDIMENT AND EROSION CONTROL, STORMWATER MANAGEMENT AND LANDSCAPING. PRIOR TO THE ISSUANCE OF ANY BUILDING PERMIT, AN APPROVED AIRPORT ZONING PERMIT MUST BE OBTAINED. THE MAA ALSO DETERMINED THAT ALTHOUGH OUTSIDE THE AIRPORT NOISE ZONE, OCCUPANTS OF THIS SUBDIVISION WILL EXPERIENCE NOISE FROM AIRCRAFT OVERFLIGHTS AND OTHER OPERATIONS DUE TO THE PROXIMITY OF THIS SITE TO THE AIRPORT.
37. A PRESENTATION TO THE MATERIALS SELECTION COMMITTEE WAS MADE ON JANUARY 10, 2012 FOR THE USE OF NATURAL BRICK AND COBBLESTONE AT SELECTED LOCATIONS ON THE PLAN. THE COMMITTEE HAS APPROVED THE USE OF THESE MATERIALS FOR THE TWO ENTRANCE LOCATIONS SHOWN ON THIS PLAN AS WELL AS THE FUTURE TRAFFIC CIRCLE AND ITHER MAJOR INTERSECTIONS WITH THE FUTURE LAWN AREA. ALL OTHER CROSSWALK LOCATIONS SHALL USE THERMOPLASTIC MATERIALS. A LICENSE AGREEMENT HAS BEEN PREPARED BY REAL ESTATE SERVICES BETWEEN THE DEVELOPER AND HOWARD COUNTY FOR THE REQUIRED MAINTENANCE RESPONSIBILITIES.

ALDO M. VITUCCI — 6/19/12 — DATE

"Professional Certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012

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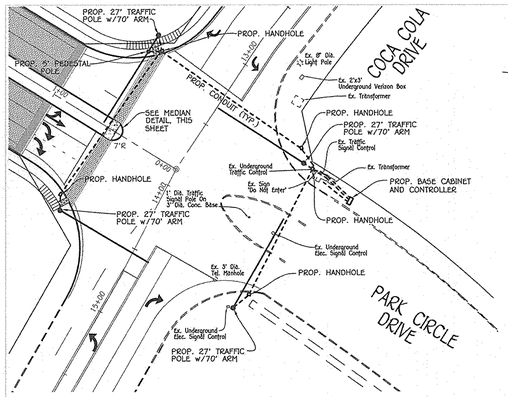
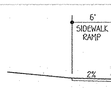


NOTE: SEE SHEET 45 FOR TRAFFIC SIGNAL PLAN.

TRAFFIC POLE DETAIL

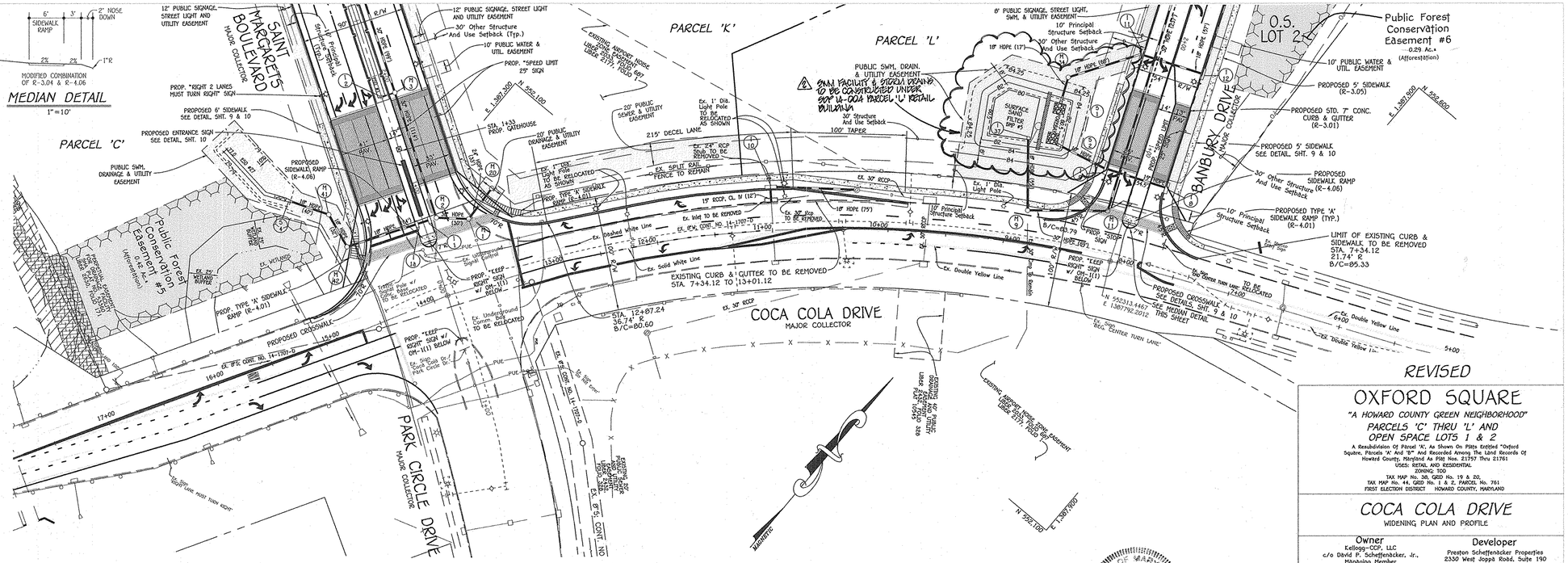
SCALE : 1"=50'



MODIFIED COMBINATION OF R-3.04 & R-4.06

MEDIAN DETAIL

1"=10'



REVISED

PLAN

SCALE : 1"=50'

- DENOTES SPECIAL PAVING SECTION SEE SHEET 9 & 10 FOR DETAILS

Notes:
1. SEE SHEET 26 FOR PROPOSED STRIPING OF SAINT MARGARETS BLVD. AND COCA COLA DRIVE.
2. SEE SHEET 27 FOR PROPOSED STRIPING OF BANBURY DRIVE
3. SEE SHEETS 9 & 10 FOR ENTRANCE FEATURE AND SPECIAL PAVING DETAILS.
4. ALL SIDEWALK RAMPS SHALL HAVE DETECTABLE WARNING SURFACES.

NO.	DESCRIPTION	DATE
2	SWM FACILITY & STORM DRAINS CONSTRUCTED UNDER SDP 14-004	9/20/14
1	REMOVED PART OF SEWER ALONG COCA COLA DRIVE AND REVISED STORM DRAIN PIPE FROM RCCP TO HDPE	8/29/13

REVISIONS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/17/13

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10.17.13

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-11-13

"Professional Certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 6-22-15."

STATE OF MARYLAND — MICHAEL V. BUSSI

ALDO V. BUSSI, P.E. — DATE 9/4/13

OXFORD SQUARE

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ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20,
TAX MAP No. 44, GRID No. 1 & 2, PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

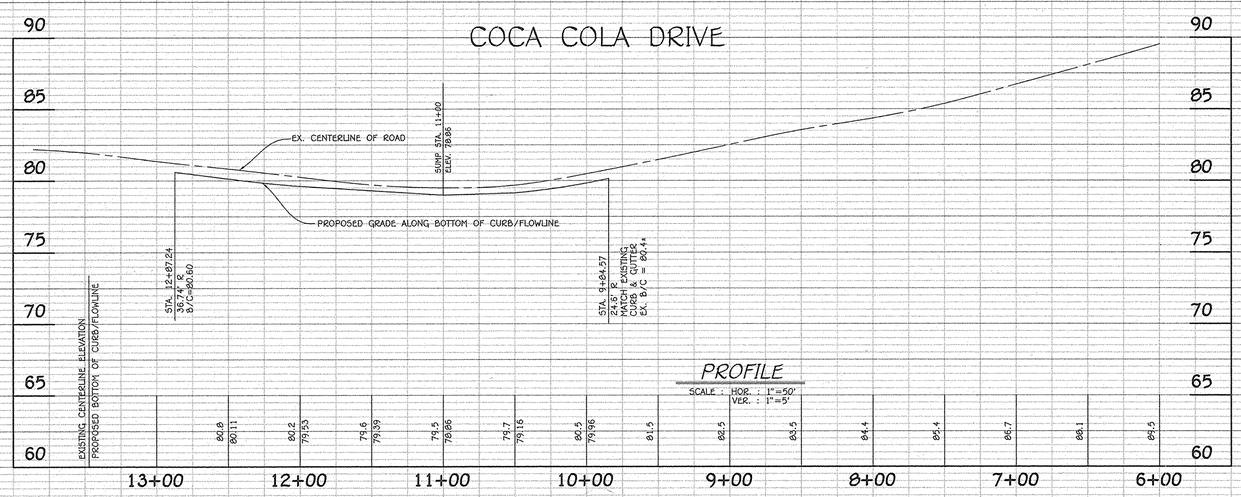
COCA COLA DRIVE

WIDENING PLAN AND PROFILE

Owner	Developer
Kellogg-CCP, LLC c/o David P. Scheffenacker, Jr., Managing Member 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3800	Preston Scheffenacker Properties 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3800

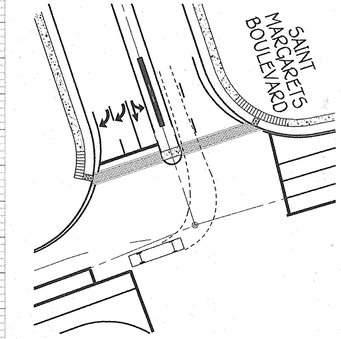
SCALE: AS SHOWN	DATE: JUNE 15, 2012	DWG. NO. 2 OF 45
DES. R.A.I.	DRN. J.C.L.	CHK. A.M.V.

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



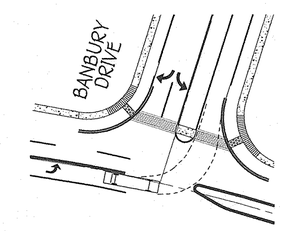
PROFILE

SCALE : HOR. : 1"=50'
VER. : 1"=5'



BUS TURNING MOVEMENT

1"=50'



BUS TURNING MOVEMENT

1"=50'

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F-12-026

APPROVED: DEPARTMENT OF PUBLIC WORKS

Diane Schwarz, Acting — 8/17/12
CHIEF, BUREAU OF HIGHWAYS — DATE

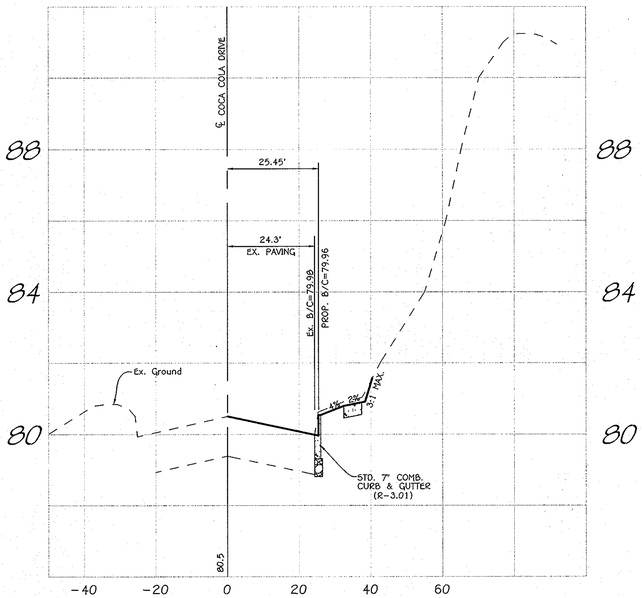
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kent Sheubrooks — 9/05/12
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Chad Edwards — 8.31.12
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

REVISIONS

NO.	DESCRIPTION	DATE



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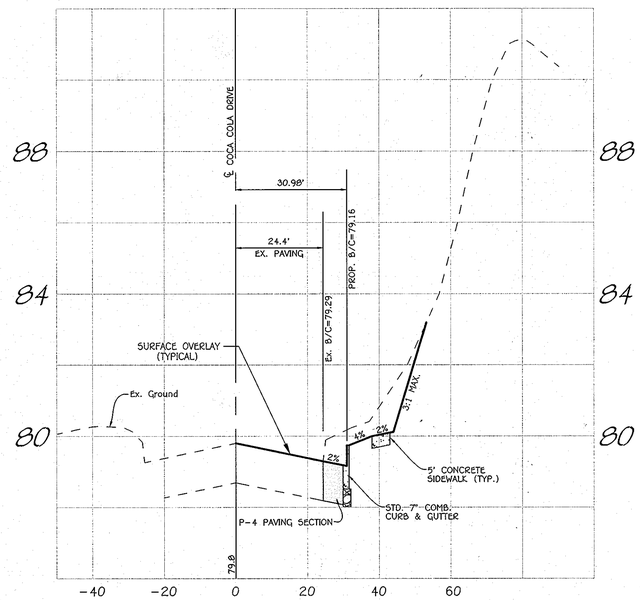
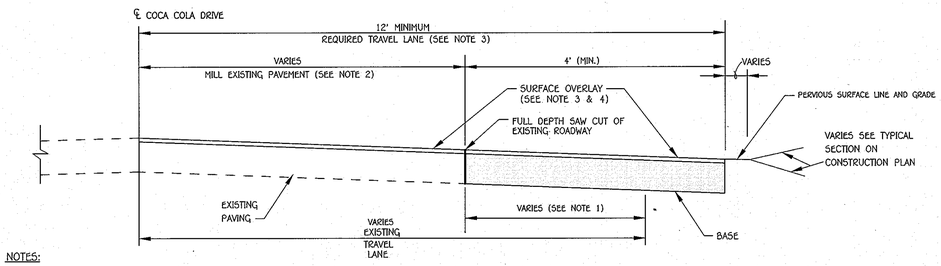


10+50

CROSS-SECTIONS

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

NOTE:
SEE SHEET 8 FOR PAVING SECTION AND CURB & GUTTER DETAILS.



NOTES:

1. WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE CONTRACTOR SHALL REMOVE A MINIMUM OF 1' FULL DEPTH OF THE EXISTING ROADWAY. IF CURB AND GUTTER IS INSTALLED, PROVIDE A MINIMUM OF 4' OF WIDENING FROM FACE OF GUTTER PAN.
2. THE EXISTING PAVEMENT TO BE RESURFACED SHALL BE MILLED AT DEPTH OF 1 1/2" (MINIMUM).
3. THE RESURFACING SHALL BE PLACED TO THE CENTERLINE OF THE ROADWAY (STA. 9+84 TO STA. 15+21).
4. RESURFACING COURSE TO BE EQUAL TO THE SURFACE COURSE OF THE TYPICAL PAVEMENT SECTION.

EXISTING ROADWAY WIDENING STRIP (R-1.08)

NO SCALE

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

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

STATE OF MARYLAND — MICHAEL VITICO — PROFESSIONAL ENGINEER

6/19/12
DATE

"Professional Engineer hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

COCA COLA DRIVE
CROSS-SECTIONS

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND
OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 3 OF 45

F-12-026

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APPROVED: DEPARTMENT OF PUBLIC WORKS

Diane Schwarz, Acting — 8/17/12
CHIEF, BUREAU OF HIGHWAYS — DATE

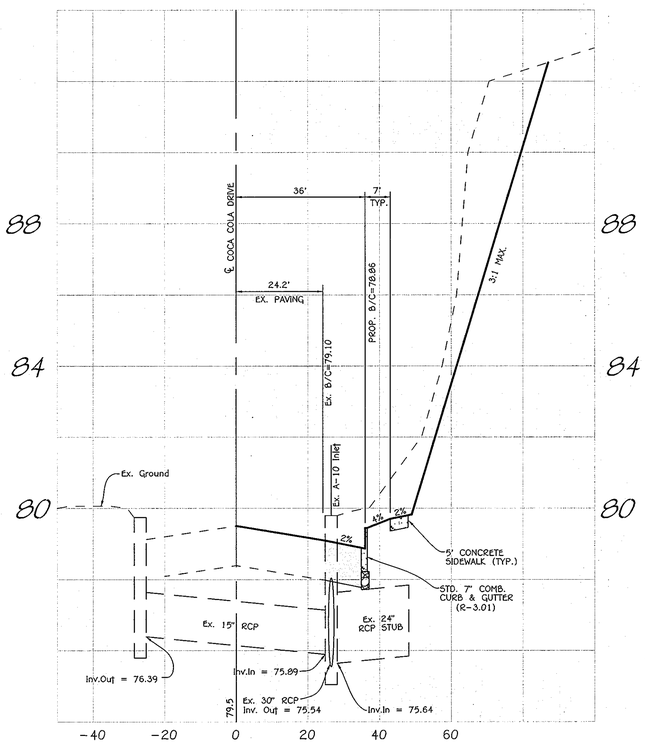
APPROVED: DEPARTMENT OF PLANNING AND ZONING

Kent Sheubrooks — 9/25/12
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

8-31-12
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

REVISIONS

NO.	DESCRIPTION	DATE



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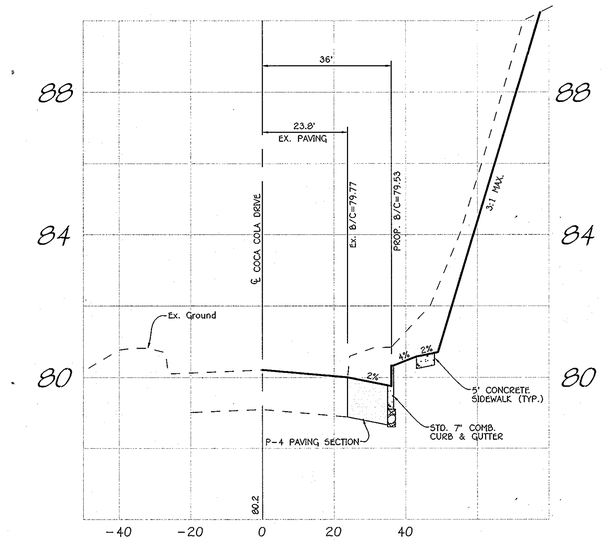

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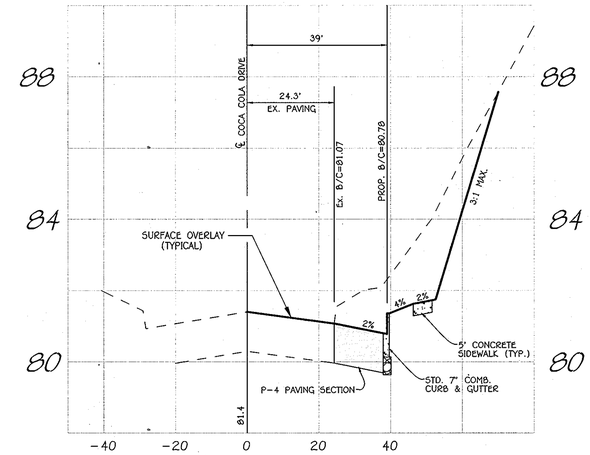

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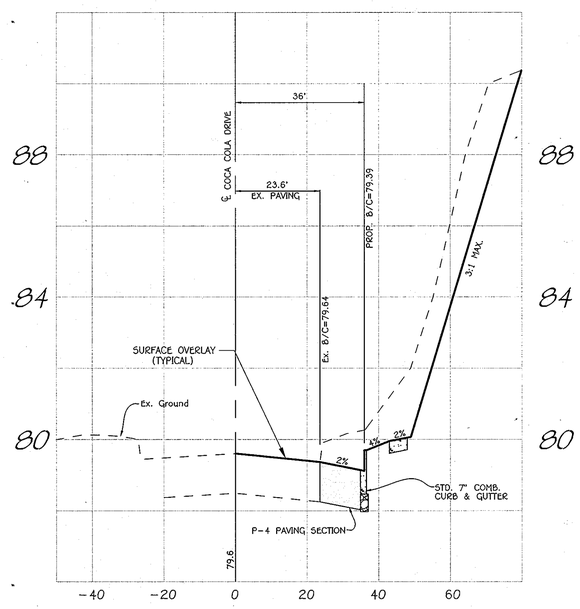

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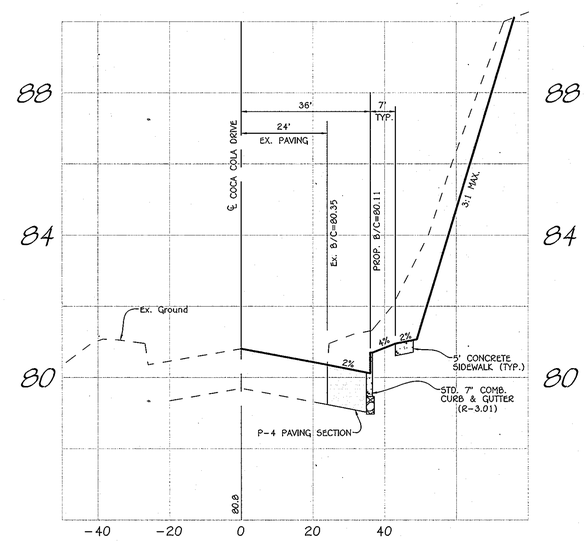

12+50

NOTE:
SEE SHEET 8 FOR PAVING SECTION AND CURB & GUTTER DETAILS.

CROSS-SECTIONS

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

Owner

Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
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Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

STATE OF MARYLAND — ALDO MICHAEL VITACCO — No. 20740 — PROFESSIONAL ENGINEER

ALDO M. VITACCO — 6/29/12 DATE

"Professional Engineer, 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. 20740, Expiration Date 2-22-13."

COCA COLA DRIVE
CROSS-SECTIONS

OXFORD SQUARE

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FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 4 OF 45

F-12-026

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CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

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NON-CONCENTRIC FACE CURB CURVE DATA

CURVE *	P.T./P.C. STATION	P.R.C. STATION	RADIUS	ARC LENGTH	TANGENT	DELTA	CHORD BEARING AND DISTANCE
C1	3+00.09	4+34.90	462.00'	126.09'	63.39'	15°37'00"	N 50°00'07" W, 124.71'
C2	6+21.09	-----	442.00'	178.08'	90.26'	23°05'01"	N 54°27'13" W, 176.87'
C3	2+68.81	4+26.37	547.00'	166.71'	84.01'	17°27'43"	N 49°41'40" W, 166.06'
C4	5+81.03	-----	363.00'	144.11'	73.01'	22°44'44"	N 52°21'03" W, 143.16'

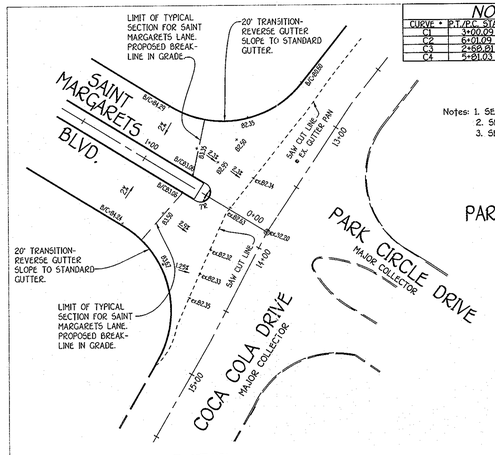
℄ CURVE DATA
SAINT MARGARETS BLVD.
STA. 4+44.88 TO STA. 5+81.03
RAD. = 397.00'
ARC LENGTH = 136.15'
TAN. = 68.75'
Δ= 19°38'58"
CHORD. = N 53°54'48" W, 135.48'

℄ CURVE DATA
SAINT MARGARETS BLVD.
STA. 3+19.76 TO STA. 4+44.88
RAD. = 500.00'
ARC LENGTH = 125.11'
TAN. = 62.89'
Δ= 14°20'13"
CHORD. = N 51°15'25" W, 124.79'

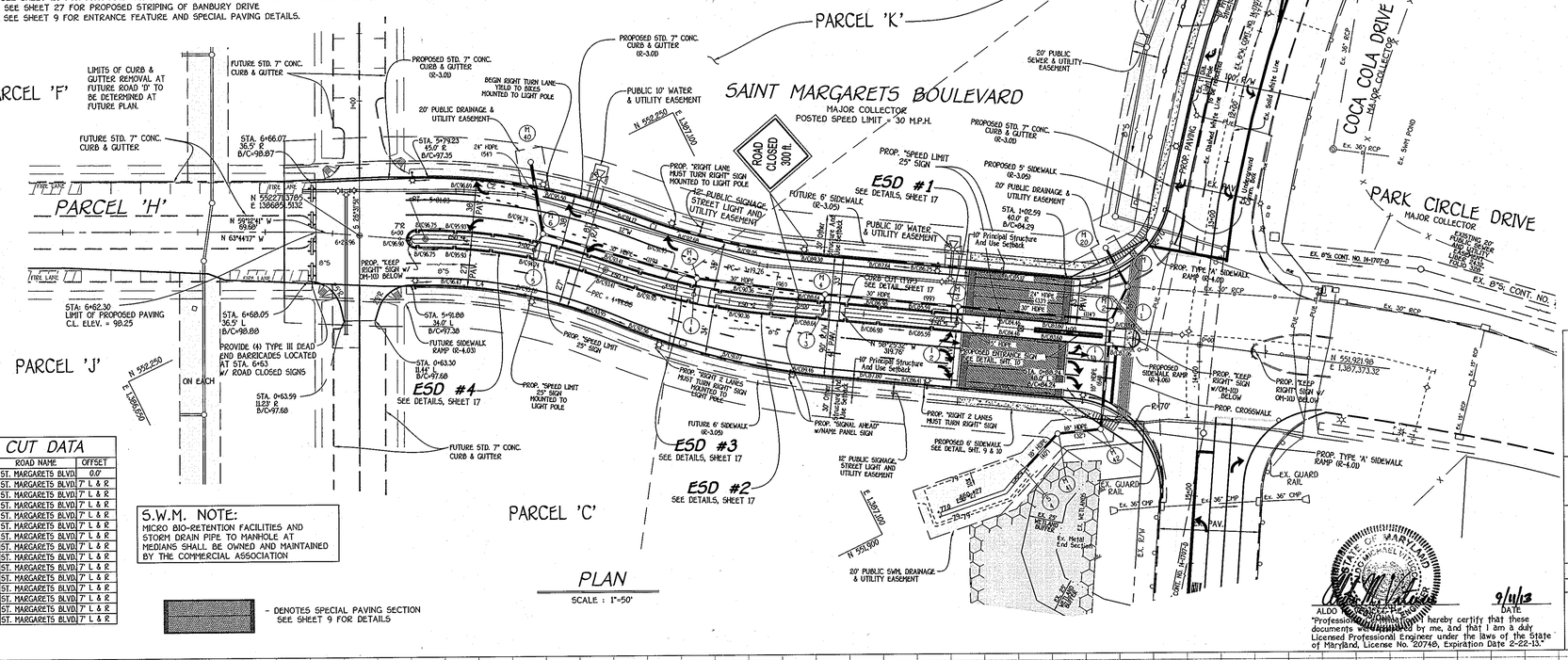
NOTE:
SEE SHEET 2 FOR COCA COLA DRIVE WIDENING.

NOTE:
ALL HANDICAP RAMPS SHALL HAVE DETECTABLE WARNING TRUNCATED DOMES (R-4.07)

Notes: 1. SEE SHEET 26 FOR PROPOSED STRIPING OF SAINT MARGARETS BLVD. AND COCA COLA DRIVE
2. SEE SHEET 27 FOR PROPOSED STRIPING OF BANBURY DRIVE
3. SEE SHEET 9 FOR ENTRANCE FEATURE AND SPECIAL PAVING DETAILS.



DETAIL
SCALE : 1"=50'



PLAN
SCALE : 1"=50'

NO.	DESCRIPTION	DATE
1	REVISED PARCELS, WATER, SEWER AND STORM DRAIN PIPE MATERIAL	8/29/13

REVISIONS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/17/13

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10-17-13

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-11-13

CURB CUT DATA

CURB CUT STATION	ROAD NAME	OFFSET
5+92.73	ST. MARGARETS BLVD.	0.0'
5+87	ST. MARGARETS BLVD.	7' L & R
5+59	ST. MARGARETS BLVD.	7' L & R
5+32	ST. MARGARETS BLVD.	7' L & R
5+03	ST. MARGARETS BLVD.	7' L & R
4+83	ST. MARGARETS BLVD.	7' L & R
4+60	ST. MARGARETS BLVD.	7' L & R
4+20	ST. MARGARETS BLVD.	7' L & R
3+80	ST. MARGARETS BLVD.	7' L & R
3+58	ST. MARGARETS BLVD.	7' L & R
3+18	ST. MARGARETS BLVD.	7' L & R
2+84	ST. MARGARETS BLVD.	7' L & R
2+63	ST. MARGARETS BLVD.	7' L & R
2+39	ST. MARGARETS BLVD.	7' L & R
1+99	ST. MARGARETS BLVD.	7' L & R

S.W.M. NOTE:
MICRO BIO-RETENTION FACILITIES AND STORM DRAIN PIPE TO MANHOLE AT MEDIANS SHALL BE OWNED AND MAINTAINED BY THE COMMERCIAL ASSOCIATION

- DENOTES SPECIAL PAVING SECTION SEE SHEET 9 FOR DETAILS

REVISED

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 23757 Thru 23761
USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20,
TAX MAP No. 44, GRID No. 1 & 2, PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

SAINT MARGARETS BOULEVARD
PLAN AND PROFILE

Owner	Developer
Kellogg-CCP, LLC c/o David P. Scheffenacker, Jr., Managing Member 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3800	Preston Scheffenacker Properties 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3800

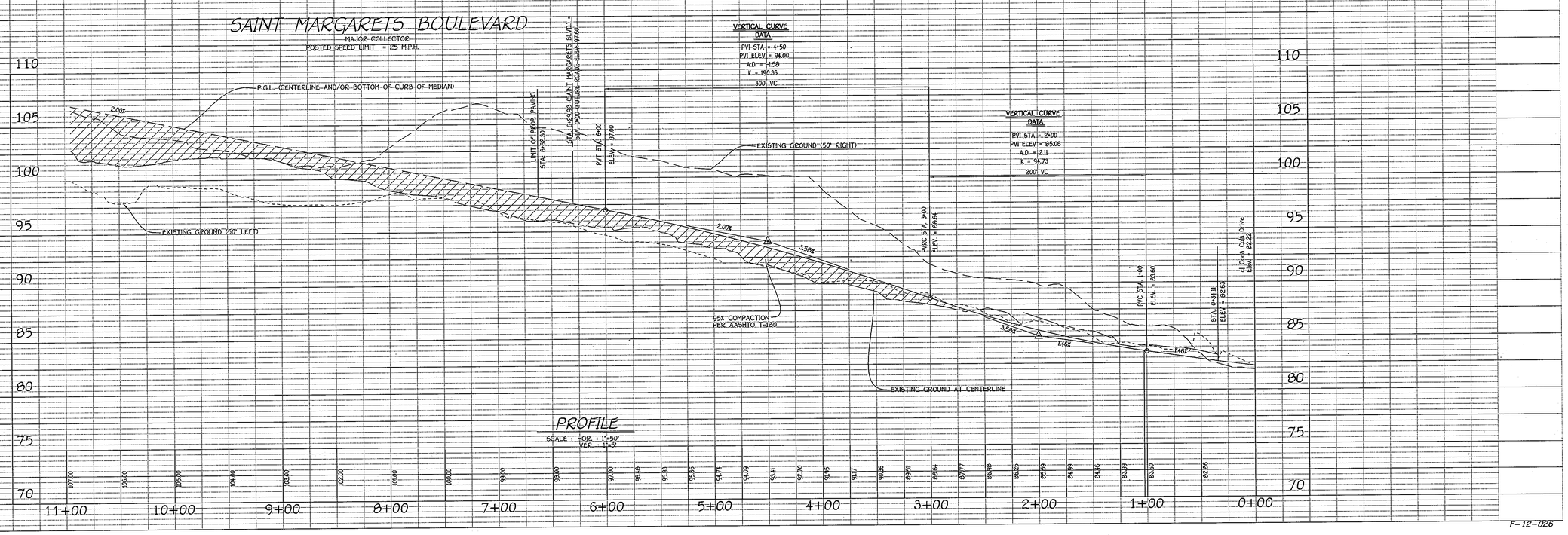
SCALE: AS SHOWN	DATE: JUNE 15, 2012	DWG. NO. 5 OF 45
DES. R.A.I./A.M.V.	DRN. J.C.L.	CHK. A.M.V.

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

STATE OF MARYLAND — ALDO M. VARGAS — No. 20746

9/4/13
DATE

"Professional Engineer certification 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. 20746, Expiration Date 2-22-13."

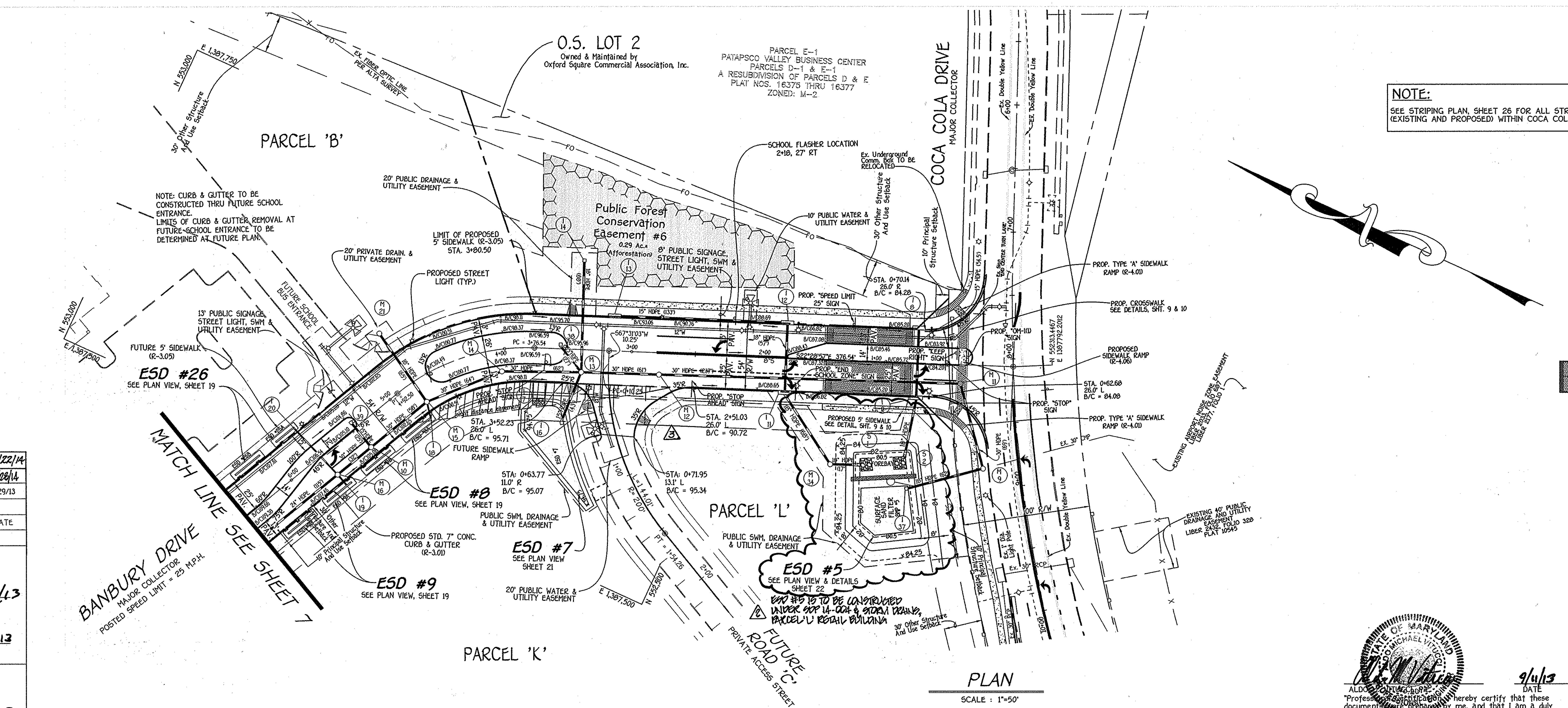


PROFILE
SCALE : HOR. : 1"=50'
VER. : 1"=5'

F-12-026

I:\2009\09014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 5-6 MYLAR.dwg, SHEET 5, 9/6/2013 2:51:34 PM, 1:1

℄ CURVE DATA
BANBURY DRIVE
STA. 3+76.54 TO STA. 4+92.50
RAD. = 160.00'
ARC LENGTH = 115.96'
TAN. = 60.66'
Δ= 41°31'32"
CHORD. = N 43°14'43" W, 113.44'



PLAN
SCALE : 1"=50'

NOTE:
SEE STRIPING PLAN, SHEET 26 FOR ALL STRIPING (EXISTING AND PROPOSED) WITHIN COCA COLA DRIVE

NOTE:
ALL HANDICAP RAMPS SHALL HAVE DETECTABLE WARNING TRUNCATED DOMES (R-4.07)

- DENOTES SPECIAL PAVING SECTION SEE SHEET 9 FOR DETAILS

NO.	DESCRIPTION	DATE
3	Removed Storm Drain From M-12 To M-19	9/22/14
2	SWM FACILITY & STORM DRAINS CONSTRUCTED UNDER SDP14-004	8/28/14
1	REVISED PARCELS, WATER, SEWER AND STORM DRAIN PIPE MATERIAL	8/29/13

REVISIONS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/17/13

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10·17·13

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-11-13

ALDO MICHAEL VITUCCI, P.E.
"Professional Certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20740, Expiration Date 2-22-13."
9/11/13 DATE

REVISED

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20,
TAX MAP No. 44, GRID No. 1 & 2, PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

BANBURY DRIVE
PLAN AND PROFILE

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr., Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph• 410-296-3800

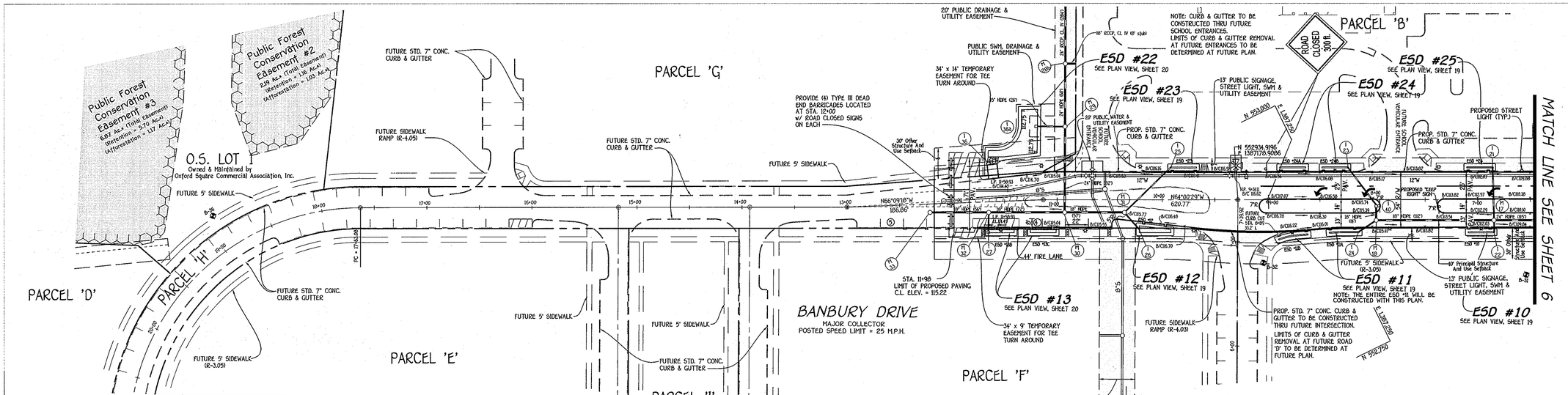
Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph• 410-296-3800

SCALE: AS SHOWN	DATE: JUNE 15, 2012	DWG. NO. 6 OF 45
DES. R.A.I./A.M.V.	DRN. J.C.L.	CHK. A.M.V.

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

F-12-026

I:\2009\09014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 5-6 MYLAR.dwg, SHEET 6, 9/6/2013 2:45:34 PM, 1:1



NOTE: SEE SHEET 27 FOR TRAFFIC SIGNS AND MARKINGS.

NOTE:
ALL HANDICAP RAMPS SHALL HAVE DETECTABLE WARNING TRUNCATED DOMES (R-4.07)

PLAN
SCALE : 1" = 50'

NO.	DESCRIPTION	DATE
1	Revised Storm Drain, Parcel Lines & Added Fire Hydrant	8/29/13

REVISIONS

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/9/13

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10-17-13

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-11-13

REVISED

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21797 Thru 21761
USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 30, GRID No. 19 & 20,
TAX MAP No. 44, GRID No. 1 & 2, PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

BANBURY DRIVE
PLAN AND PROFILE

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

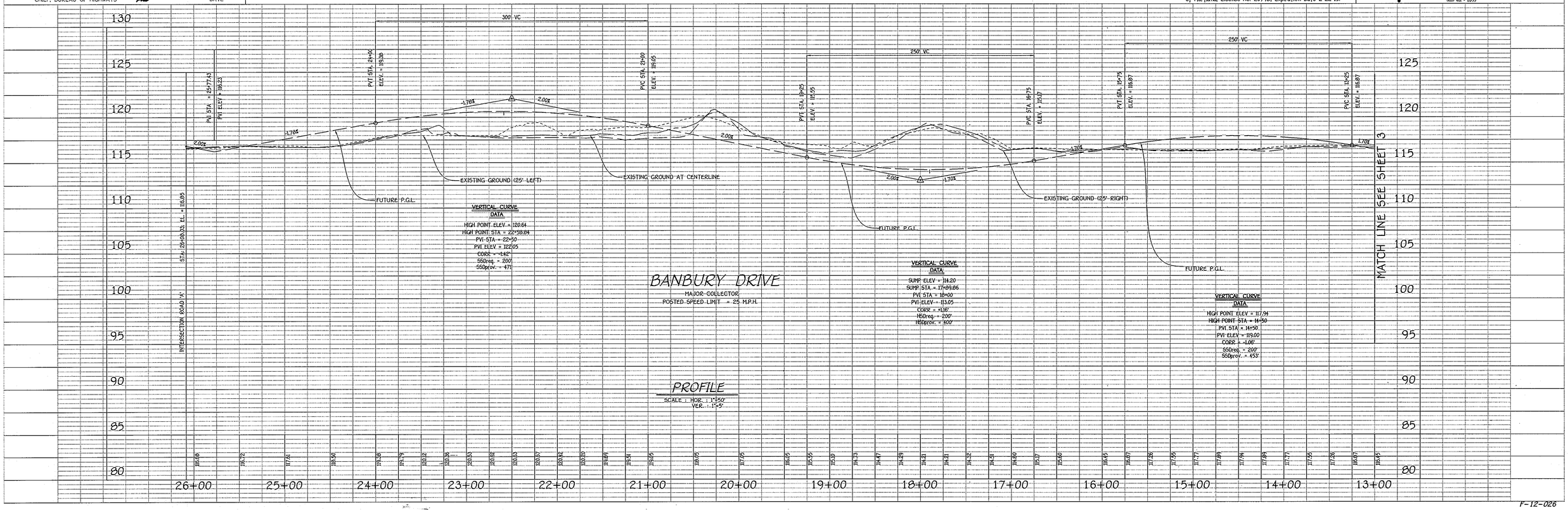
Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

SCALE: AS SHOWN	DATE: JUNE 15, 2012	DWG. NO. 7 OF 45
DES. R.A.I./A.M.V.	DRN. J.C.L.	CHK. A.M.V.

ALDO M. VITALI, PROFESSIONAL ENGINEER — DATE 9/4/13

"Professional Engineer, I do 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. 20748, Expiration Date 2-22-15."

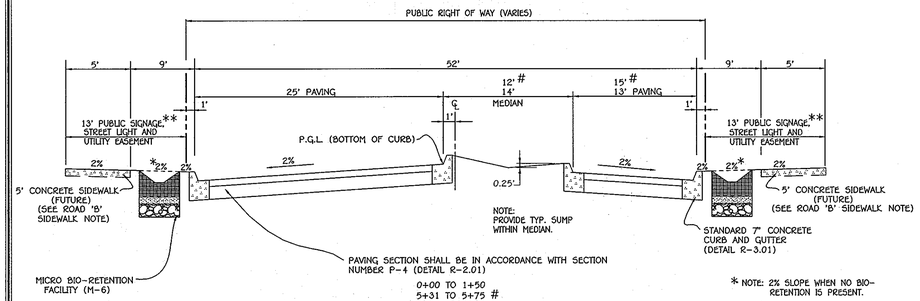
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855



PROFILE
SCALE : HOR. : 1"=50'
VER. : 1"=5'

F-12-026

1:\2009\09014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 7 MYLAR.dwg, SHEET 7, 9/6/2013 2:41:11 PM, 1:1



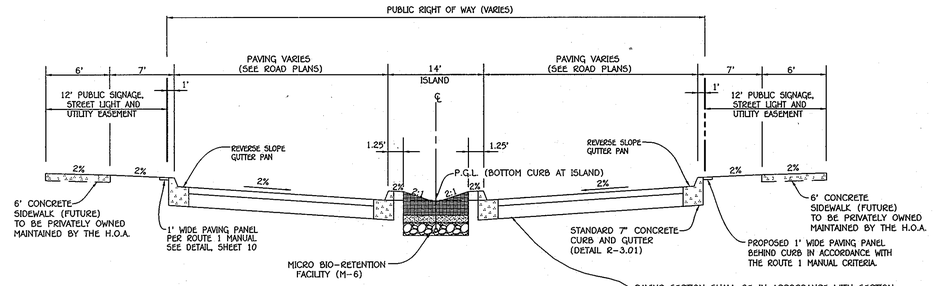
0+00 TO 1+50
5+31 TO 5+75 #

TYPICAL ROADWAY SECTION (BANBURY DRIVE)

NO SCALE

* NOTE: 2% SLOPE WHEN NO BIO-RETENTION IS PRESENT.

** NOTE: 8' PUBLIC SIGNAGE, STREET LIGHT AND UTILITY EASEMENT STA. 0+00 TO STA. 1+50



TYPICAL ROADWAY SECTION (SAINT MARGARETS BOULEVARD)

NO SCALE

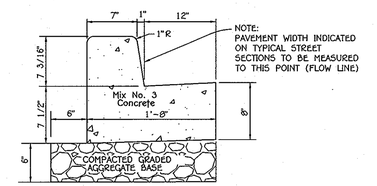
APPROVED: DEPARTMENT OF PUBLIC WORKS
Diane Schwarz, Acting — 8/17/12
CHIEF, BUREAU OF HIGHWAYS — DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING
Kent Sheubrooks — 9/25/12
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE

Chad Edmondson — 8.31.12
CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE

REVISIONS

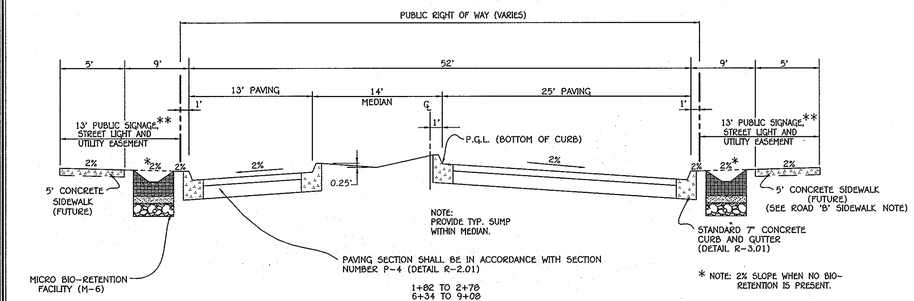
NO.	DESCRIPTION	DATE



NOTE: PAVEMENT WIDTH INDICATED ON TYPICAL STREET SECTIONS TO BE MEASURED TO THIS POINT (FLOW LINE)

STD. 7" CONC. CURB AND GUTTER

NO SCALE R-3.01



1+82 TO 2+78
6+34 TO 9+08

TYPICAL ROADWAY SECTION (BANBURY DRIVE)

NO SCALE

* NOTE: 2% SLOPE WHEN NO BIO-RETENTION IS PRESENT.

** NOTE: 8' PUBLIC SIGNAGE, STREET LIGHT AND UTILITY EASEMENT STA. 1+82 TO STA. 2+78

SAINT MARGARETS BLVD. S.W.M. NOTE:

MICRO BIO-RETENTION FACILITIES AND STORM DRAIN PIPE TO MANHOLE AT MEDIANS SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE OXFORD SQUARE COMMERCIAL ASSOCIATION, INC.

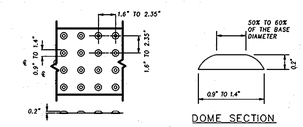
SAINT MARGARETS BLVD. SIDEWALK NOTE:

6' WIDE SIDEWALK, STA. 0+00 TO STA. 1+75 LT & RT. ARE TO BE INSTALLED WITH THIS FINAL ROAD PLAN.

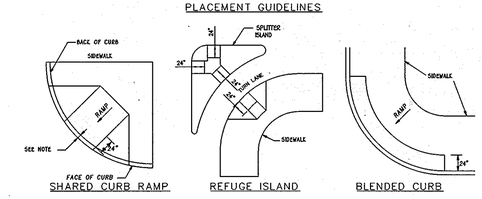
SIDEWALK NOTE:

FUTURE CONCRETE SIDEWALKS TO BE PRIVATELY OWNED & MAINTAINED BY THE OXFORD SQUARE COMMERCIAL ASSOCIATION, INC. AS RESIDENTIAL AND COMMERCIAL LOTS/PARCELS ARE DEVELOPED, PERIMETER SIDEWALKS ON EACH LOT/PARCEL SHALL BE CONSTRUCTED WITH EACH FUTURE SITE DEVELOPMENT PLAN EXCEPT FOR THE PROPOSED SIDEWALK ON OPEN SPACE LOT 2. ADDITIONALLY, SIDEWALKS FROM RESIDENTIAL LOTS/PARCELS SHALL BE CONTINUED ON AND OVER ADJACENT RESIDENTIAL LOTS/PARCELS TO PROVIDE A CONTINUOUS WALKWAY FROM THE SUBJECT LOT/PARCEL UNDER DEVELOPMENT TO THE PUBLIC SCHOOL SITE.

(MATT DETAILS OR OPTIONAL 12"x12" TILE TECH PAVERS(RED))



PLACEMENT GUIDELINES



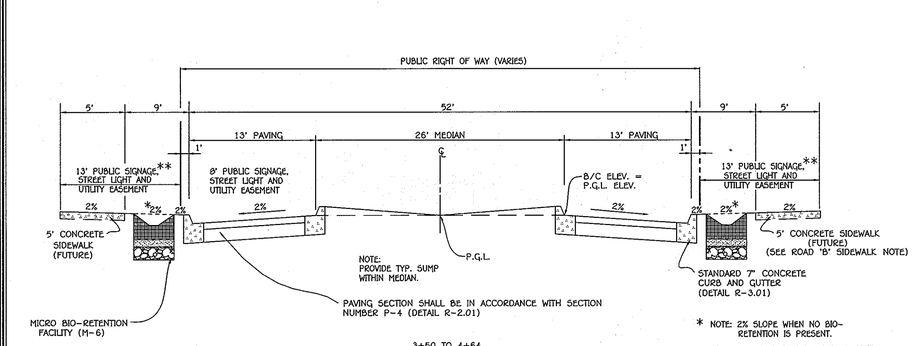
WHERE ISLANDS OR MEDIANS ARE LESS THAN 6 FEET WIDE, THE DETECTABLE WARNING SHOULD EXTEND ACROSS THE FULL LENGTH OF THE CUT THROUGH THE ISLAND OR MEDIAN

NOTES

1. THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6 TO 8 INCHES FROM THE FACE OF CURB.
2. FOR SKEWED APPLICATIONS DETECTABLE WARNING SHALL BE PLACED SUCH THAT THE DOMES CLOSEST TO THE BACK OF CURB ARE NO LESS THAN 0.5" AND NO MORE THAN 3.0" FROM THE BACK OF CURB. TRUNCATED DOME SURFACES SHALL BE FABRICATED TO PROVIDE FULL DOMES ONLY.
3. DETECTABLE WARNING SURFACE SHALL BE PAID FOR IN ACCORDANCE WITH SECTION 611 OF THE SPECIFICATIONS.
4. DETECTABLE WARNING SURFACES ARE REQUIRED AT STREET CROSSING & SIGNALIZED INTERSECTIONS.

DETECTABLE WARNING SURFACE GUIDELINES

STD. DETAIL NO. 655-40



3+50 TO 4+64

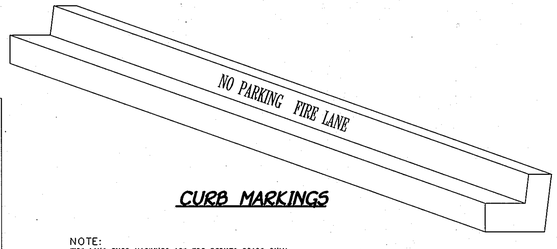
TYPICAL ROADWAY SECTION (BANBURY DRIVE)

NO SCALE

* NOTE: 2% SLOPE WHEN NO BIO-RETENTION IS PRESENT.

** NOTE: 8' PUBLIC SIGNAGE, STREET LIGHT AND UTILITY EASEMENT STA. 3+50 TO STA. 4+50

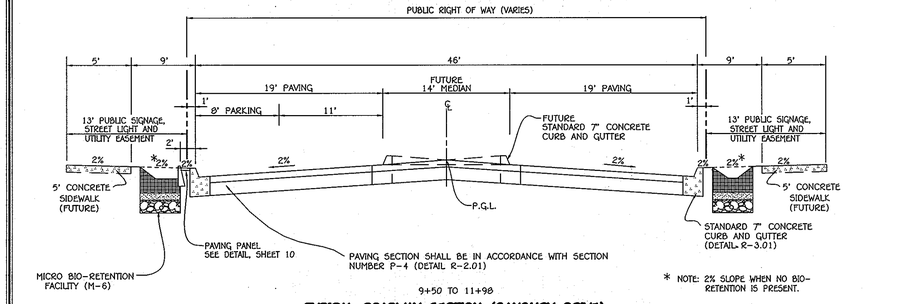
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	CALIFORNIA BEARING RATIO (CBR)	3 TO <5	5 TO <7	≥7	3 TO <5	5 TO <7	≥7
		PAVEMENT MATERIAL (INCHES)	MIN HMA WITH GAB			HMA WITH CONSTANT GAB		
P-4	MINOR COLLECTORS: NON-RESIDENTIAL MAJOR COLLECTORS:	HMA SUPERPAVE FINAL SURFACE 12.5 MM, PG 64-22, LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE INTERMEDIATE SURFACE 12.5 MM, PG 64-22; LEVEL 2 (LOW ESAL)	2.0	2.0	2.0	2.0	2.0	2.0
		HMA SUPERPAVE BASE 19.0 MM, PG 64-22, LEVEL 2 (LOW ESAL)	4.0	4.0	3.0	6.0	5.0	3.0
		GRADED AGGREGATE BASE (GAB)	13.0	7.0	4.0	6.0	6.0	6.0



CURB MARKINGS

NOTE:
FIRE LANE CURB MARKINGS ARE FOR PRIVATE ROADS ONLY.

NO PARKING FIRE LANE SIGN



9+50 TO 11+98

TYPICAL ROADWAY SECTION (BANBURY DRIVE)

NO SCALE

* NOTE: 2% SLOPE WHEN NO BIO-RETENTION IS PRESENT.

BANBURY DRIVE SIDEWALK NOTE:

5' WIDE SIDEWALK, STA. 0+00 TO STA. 3+80.50 RT. AND STA. 0+00 TO STA. 1+50 LT. ARE TO BE INSTALLED WITH THIS FINAL ROAD PLAN.

Owner

Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

STATE OF MARYLAND — ALDO MONTESSORI MICHAELI — No. 20746 — PROFESSIONAL ENGINEER

6/19/12
ALDO MONTESSORI MICHAELI DATE

"Professional Engineer I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20746, Expiration Date 2-22-13."

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

ROADWAY DETAILS

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 8 OF 45

F-12-026

I:\2009\09014\dwg\FINALS - PHASE ONE\09014 FINAL SHEET 8 ROADWAY DETAILS.dwg, sheet 8, 6/19/2012 1:31:02 PM, 1:1

Approved: Department Of Planning And Zoning

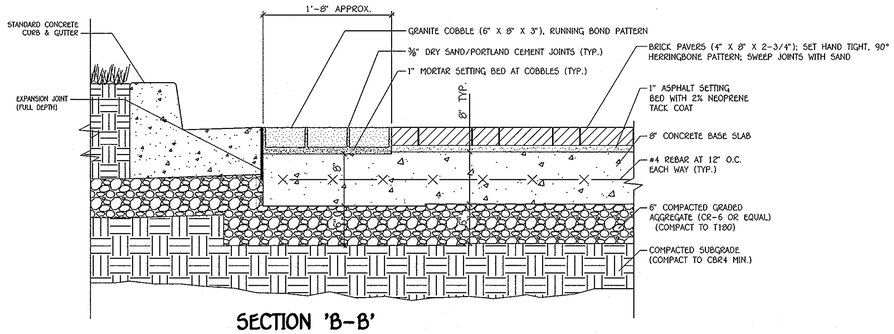
Chief, Division Of Land Development — Date 9/05/12

Chief, Development Engineering Division — Date 8-31-12

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways, Acting — Date 8/1/12

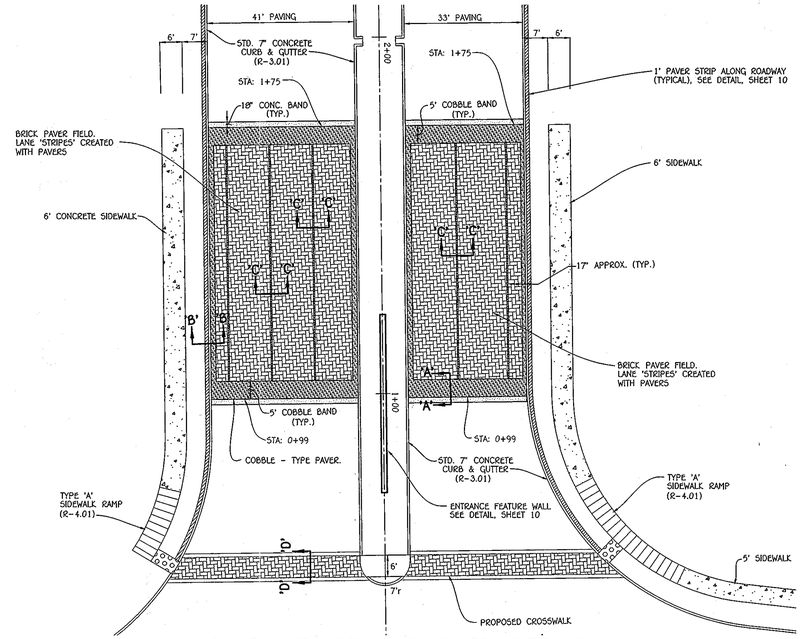
REVISIONS		
NO.	DESCRIPTION	DATE



SECTION 'B-B'

COBBLESTONE BAND AT CONCRETE CURB & GUTTER

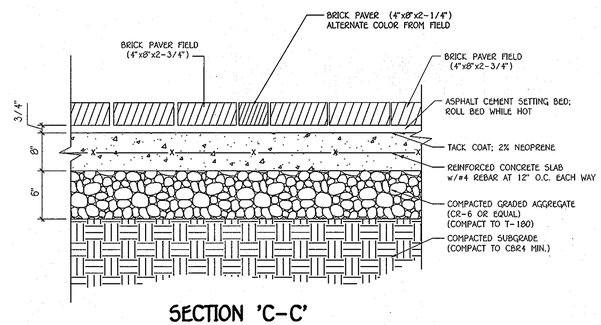
NOT TO SCALE



SAINT MARGARETS BOULEVARD ENTRANCE

SCALE: 1" = 20'

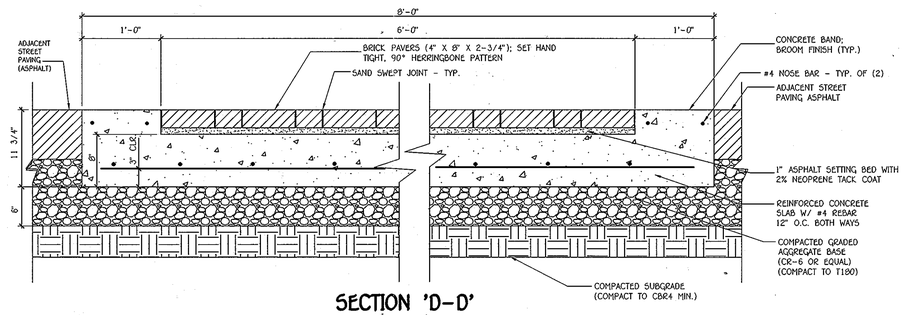
NOTE:
ALL HANDICAP RAMPS SHALL HAVE DETECTABLE WARNING TRUNCATED DOMES (R-4.07)



SECTION 'C-C'

LANE MARKING BAND - SECTION

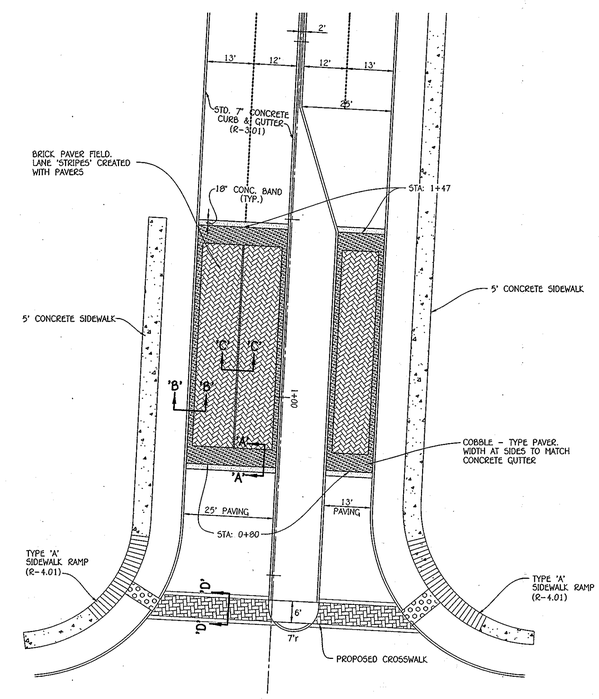
NOT TO SCALE



SECTION 'D-D'

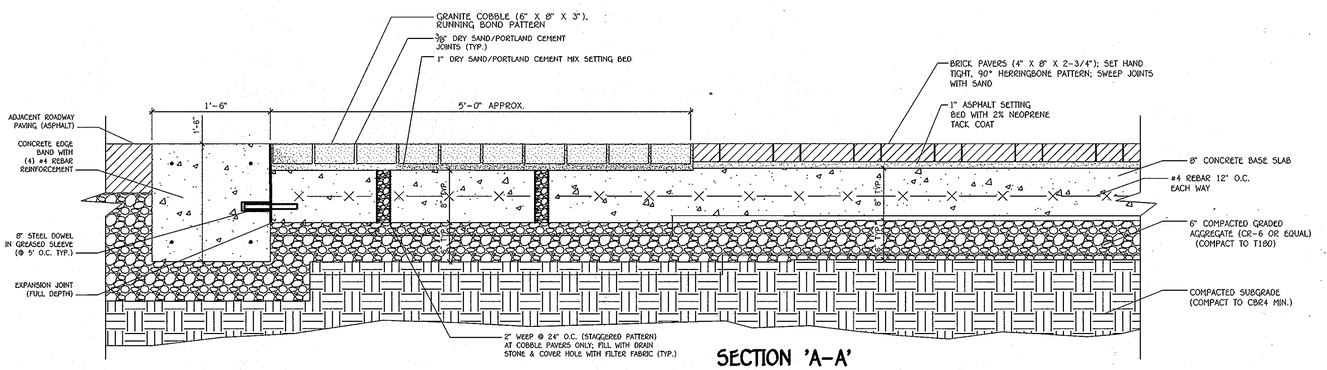
UNIT PAVER CROSSWALK DETAIL

NOT TO SCALE



BANBURY DRIVE ENTRANCE

SCALE: 1" = 20'



SECTION 'A-A'

ENTRY PAVERS ON CONCRETE BASE

NOT TO SCALE

Owner

Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

STATE OF MARYLAND — ALDO MICHAEL VITALE — No. 20748

6/13/12

"Professional Engineer's Certificate: 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. 20748, Expiration Date 2-22-13."

ROADWAY DETAILS

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 9 OF 45

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

F-12-026

I:\2009\09014\dwg\FINALS - PHASE ONE\09014 FINAL SHEET 9&10 ROADWAY DETAILS.dwg, SHEET 9, 6/19/2012 1:49:10 PM, 1:1

Approved: Department Of Planning And Zoning

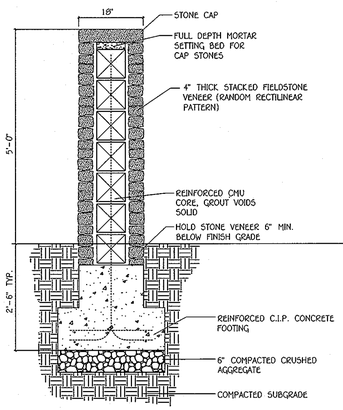
Chief, Division Of Land Development — Date 9/05/12

Chief, Development Engineering Division — Date 8.31.12

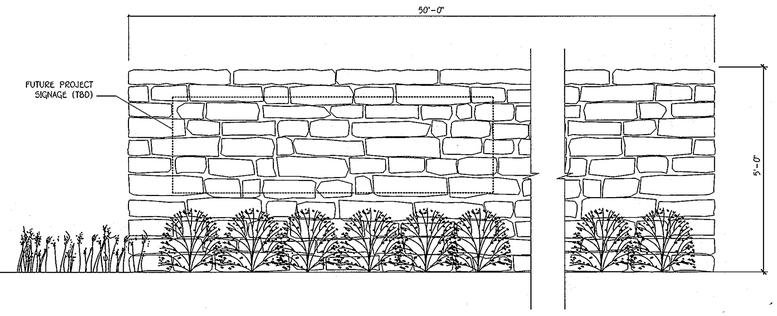
Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways, Acting — Date 8/7/12

REVISIONS		
NO.	DESCRIPTION	DATE



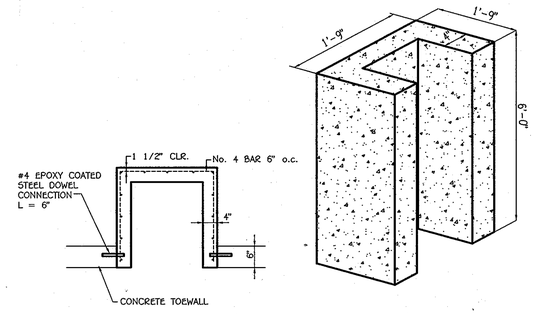
ENTRY WALL/SIGN – SECTION



ENTRY WALL/SIGN – ELEVATION

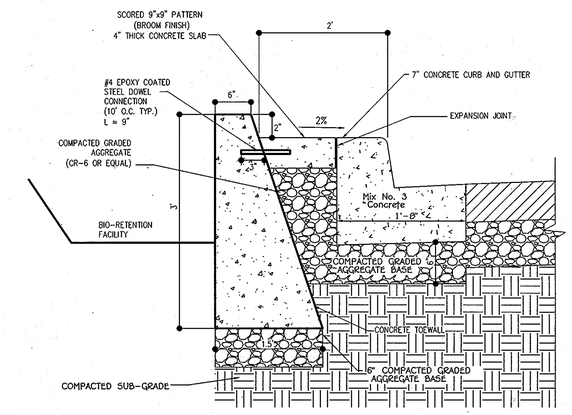
BLADE WALL AT SAINT MARGARETS BOULEVARD MEDIAN

NOT TO SCALE



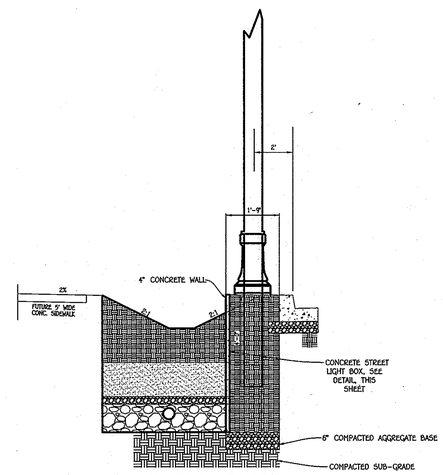
CONCRETE STREET LIGHT BOX DETAIL

NO SCALE



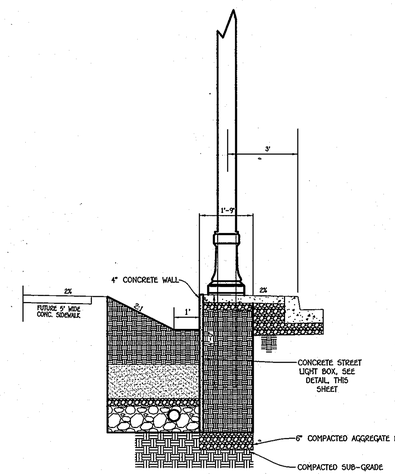
18" CONCRETE STRIP AT PARALLEL PARKING-BANBURY LANE

NOT TO SCALE



TYPICAL STREET LIGHT LOCATION WITHIN BIO-RETENTION CELL ALONG ROADWAY (NO PARKING)

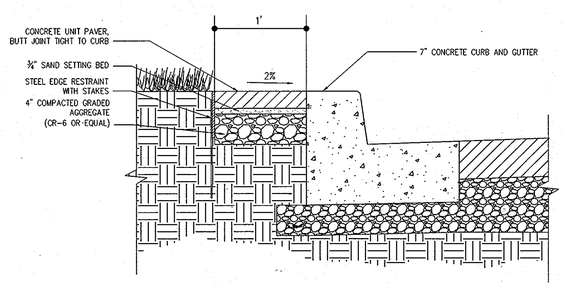
NO SCALE



TYPICAL STREET LIGHT LOCATION WITHIN BIO-RETENTION CELL ALONG PARKING

NO SCALE

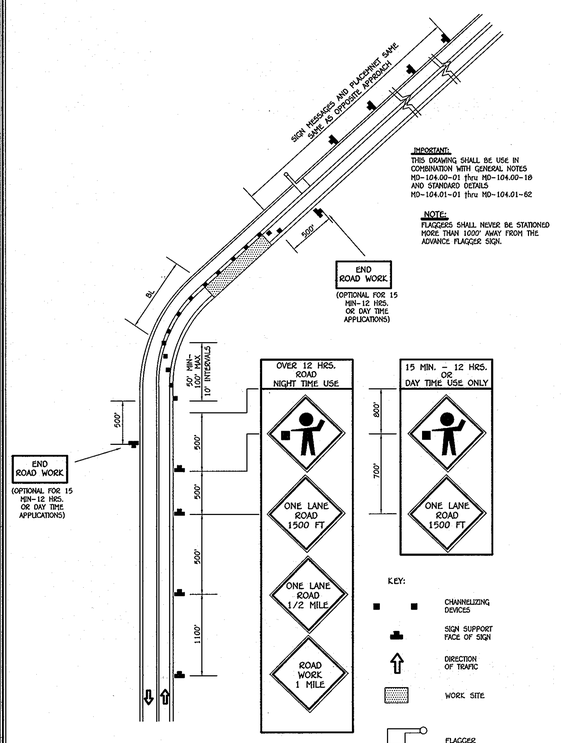
NOTES:
1. CONCRETE SHALL BE SHA MIX. No. 6.
2. CHAMFER EDGES 1/2" x 1/2".
3. REINFORCING SHALL BE No. 4 BARS @ 6" o.c. IN CENTER.



1' PAVER STRIP AT SAINT MARGARETS BOULEVARD

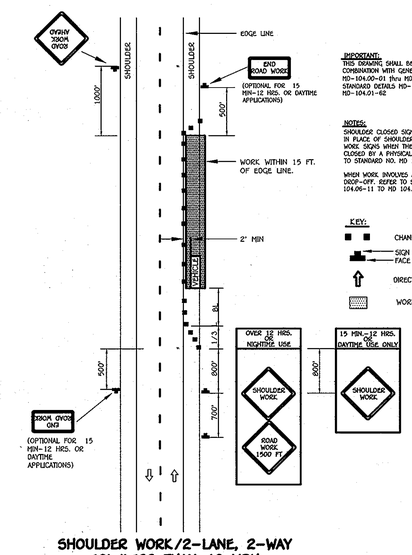
NOT TO SCALE

(IN ACCORDANCE WITH THE ROUTE 1 DESIGN MANUAL CRITERIA)



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

NO SCALE



IMPORTANT:
THIS DRAWING SHALL BE USE IN COMBINATION WITH GENERAL NOTES MD-104.00-01 thru MD-104.00-10 AND STANDARD DETAILS MD-104.01-01 thru MD-104.01-62

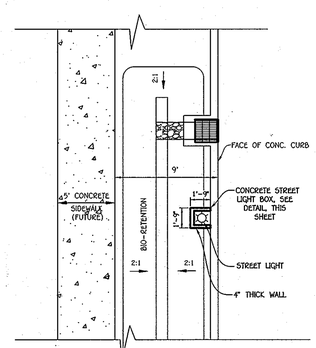
NOTES:
SHOULDER CLOSED SIGNS ARE REQUIRED IN PLACE OF SHOULDER WORK SIGNS WHEN THE SHOULDER IS CLOSED BY A PHYSICAL BARRIER REFER TO STANDARD NO. MD 104.06-14

WHEN WORK INVOLVES A PAVEMENT EDGE DROP-OFF, REFER TO STANDARD NOS. MD 104.06-11 TO MD 104.06-15.

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

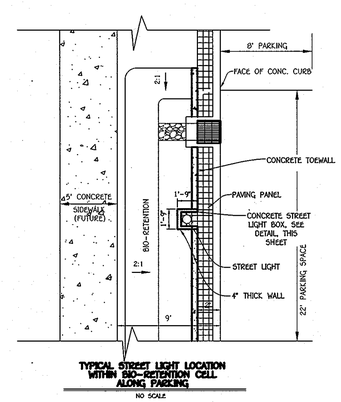
SHOULDER WORK/2-LANE, 2-WAY EQL/LESS THAN 40 MPH

NO SCALE



TYPICAL STREET LIGHT LOCATION WITHIN BIO-RETENTION CELL ALONG ROADWAY (NO PARKING)

NO SCALE



TYPICAL STREET LIGHT LOCATION WITHIN BIO-RETENTION CELL ALONG PARKING

NO SCALE

Owner

Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

STATE OF MARYLAND — ALDO MICHAEL VITALI — No. 20746 — PROFESSIONAL ENGINEER

ALDO M. VITALI — DATE 6/19/12

"Professional Engineer 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. 20746, Expiration Date 2-22-13."

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

ROADWAY DETAILS

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS "C" THRU "L" AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 30, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 10 OF 45

F-12-026

I:\2009\09014\dwg\FINALS - PHASE ONE\09014 FINAL SHEET 9&10 ROADWAY DETAILS.dwg, SHEET 10, 6/19/2012 1:50:13 PM, 1:1

Approved: Department Of Planning And Zoning

Kent Sheubrooks — 9/05/12
Chief, Division Of Land Development — Date

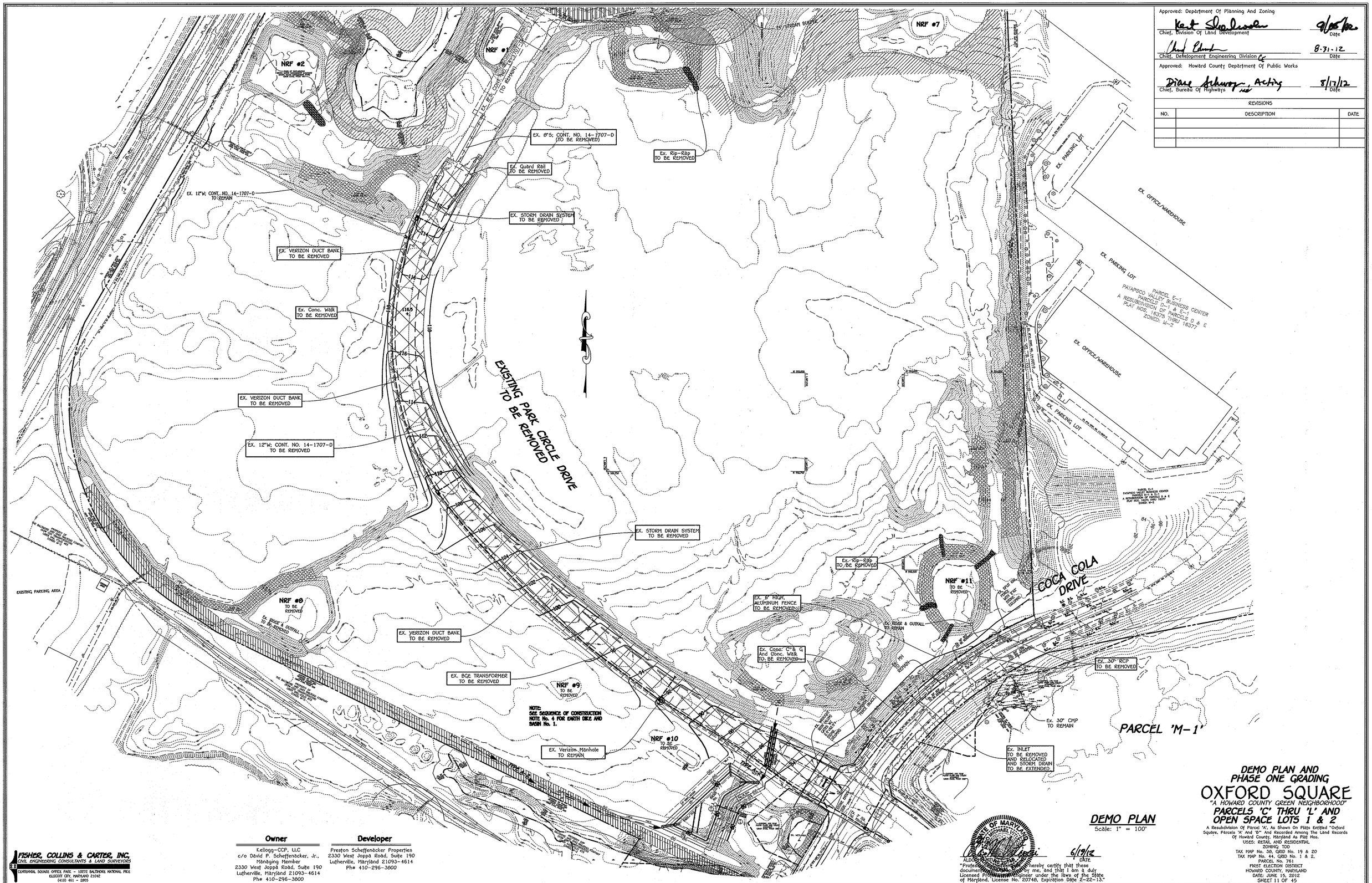
Chief, Development Engineering Division — 8-31-12 — Date

Approved: Howard County Department Of Public Works

Diane Schwoyer, Acting — 8/17/12
Chief, Bureau Of Highways — Date

REVISIONS

NO.	DESCRIPTION	DATE



DEMO PLAN

Scale: 1" = 100'

DEMO PLAN AND PHASE ONE GRADING

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos.

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 11 OF 45

STATE OF MARYLAND — MICHAEL V. LEWIS — No. 20748 — PROFESSIONAL ENGINEER

6/19/12
DATE

"Professional Engineer hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

Owner

Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

Preston Scheffenacker Properties
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FISHER, COLLINS & CARTER, INC.
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(410) 461 - 2855

F-12-026

I:\2009\09014\dwg\FINALS - PHASE ONE\09014 FINAL SHEET 11 DEMO PLAN.dwg, SHEET 11, 8/10/2012 11:22:29 AM, 1:1

By The Developer:

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

David P. Scheffenacker Jr. — 9/10/13
Signature Of Developer — Date
David P. Scheffenacker
Printed Name Of Developer

By The Engineer:

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

9/4/13
Signature Of Engineer — Date
ALDO M. VITALI
Printed Name Of Engineer

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

10/8/13
Howard Soil Conservation District — Date

Approved: Department Of Public Works

10-11-13
Chief, Bureau Of Highways — Date

Approved: Department Of Planning And Zoning

10/17/13
Chief, Division Of Land Development — Date

10.17.13
Chief, Development Engineering Division — Date

AS-BUILT CERTIFICATION

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

Signature — P.E. No.
Date:

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

REVISIONS

NO.	DESCRIPTION	DATE
1	Revised Parcel Lines, Sewer, Storm Drain Pipe From Rccp to Hdpe	8/29/13
2	ADDED ENTRANCE TO PARCEL 'I'	10/08/13

TEMPORARY SEDIMENT BASIN No. 1

INITIAL D.A. = 7.99 Ac.±
FINAL D.A. = 10.53 Ac.±
STORAGE REQUIRED
WET = 1800 x 10.53 = 18954 Cuft.
DRY = 1800 x 10.53 = 18954 Cuft.
STORAGE PROVIDED
WET = 18954 Cuft. @ ELEV. 79.28
DRY = 37908 Cuft. @ ELEV. 81.00
BOTTOM ELEV. = 77.00
STORAGE DEPTH = 9.0'
TOP OF EMBANKMENT (7' wide) = 86.85 CONSTRUCTED
CLEAN OUT ELEV. = 78.20
RISER CREST ELEV. = 82.50
1 YR. ORIFICE INV. = 79.30
Q1 exist. = 6.3 c.f.s.
Q1 prop. = 6.0 c.f.s. @ EL. = 81.83

NOTE: BASIN No. 1 IS TO REMAIN FOR THE DEVELOPMENT OF PARCEL 'C'. BASIN WILL BE REMOVED AT SITE DEVELOPMENT PLAN STAGE.

TEMPORARY SEDIMENT BASIN No. 4

INITIAL D.A. = 2.41 Ac.±
FINAL D.A. = 11.56 Ac.±
STORAGE REQUIRED
WET = 1800 x 11.56 = 20808 Cuft.
DRY = 1800 x 11.56 = 20808 Cuft.
STORAGE PROVIDED
WET = 20808 Cuft. @ ELEV. 93.60
DRY = 41616 Cuft. @ ELEV. 95.60
BOTTOM ELEV. = 91.00
STORAGE DEPTH = 9.49'
TOP OF EMBANKMENT (6' wide) = 102.35 CONSTRUCTED
CLEAN OUT ELEV. = 92.40
RISER CREST ELEV. = 96.50
1 YR. ORIFICE INV. = 93.60
Q1 exist. = 1.5 c.f.s.
Q1 prop. = 1.1 c.f.s. @ EL. = 96.50

NOTE: BASIN No. 4 IS TO REMAIN FOR THE DEVELOPMENT OF PARCEL 'C' & 'D'. BASIN WILL BE REMOVED AT SITE DEVELOPMENT PLAN STAGE.

NOTE: SEE SHEET 39 FOR FINAL GRADING PLAN AT BASIN No. 4.

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
102	PROPOSED CONTOUR 2' INTERVAL
100	PROPOSED CONTOUR 10' INTERVAL
	EXISTING BRUSH
	EXISTING TREELINE
	SLOPES (15% - 24.9%)
	SLOPES (25% AND GREATER)
	WETLANDS BUFFER
	WETLANDS LIMITS
FP	FLOODPLAIN LIMITS
N.R.F.	NON REGULATED FACILITY
ESD #1	STORMWATER MANAGEMENT DEVIC
	STORM DRAIN
FO	EXISTING FIBER OPTIC LINE
G	EXISTING GASMAIN

SEDIMENT CONTROL LEGEND

—SSF—SSF—SSF—	SUPER-SILT FENCE
—SF—SF—SF—	SILT FENCE
—SF/TP— —SF/TP—	SILT FENCE AND TREE PROTECTION FENCE
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
TYPE A-2	EARTH DIKE
L.O.D.	LIMIT OF DISTURBANCE
R.R.P.	RIP-RAP INFLOW PROTECTION
S.I.P.	STANDARD INLET PROTECTION
SSF S.I.P.	STANDARD INLET PROTECTION w/SUPER SILT FENCE
C.I.P.	CURB INLET PROTECTION
R.P.S.	REMOVEABLE PUMPING STATION
F.B.	FILTER BAG

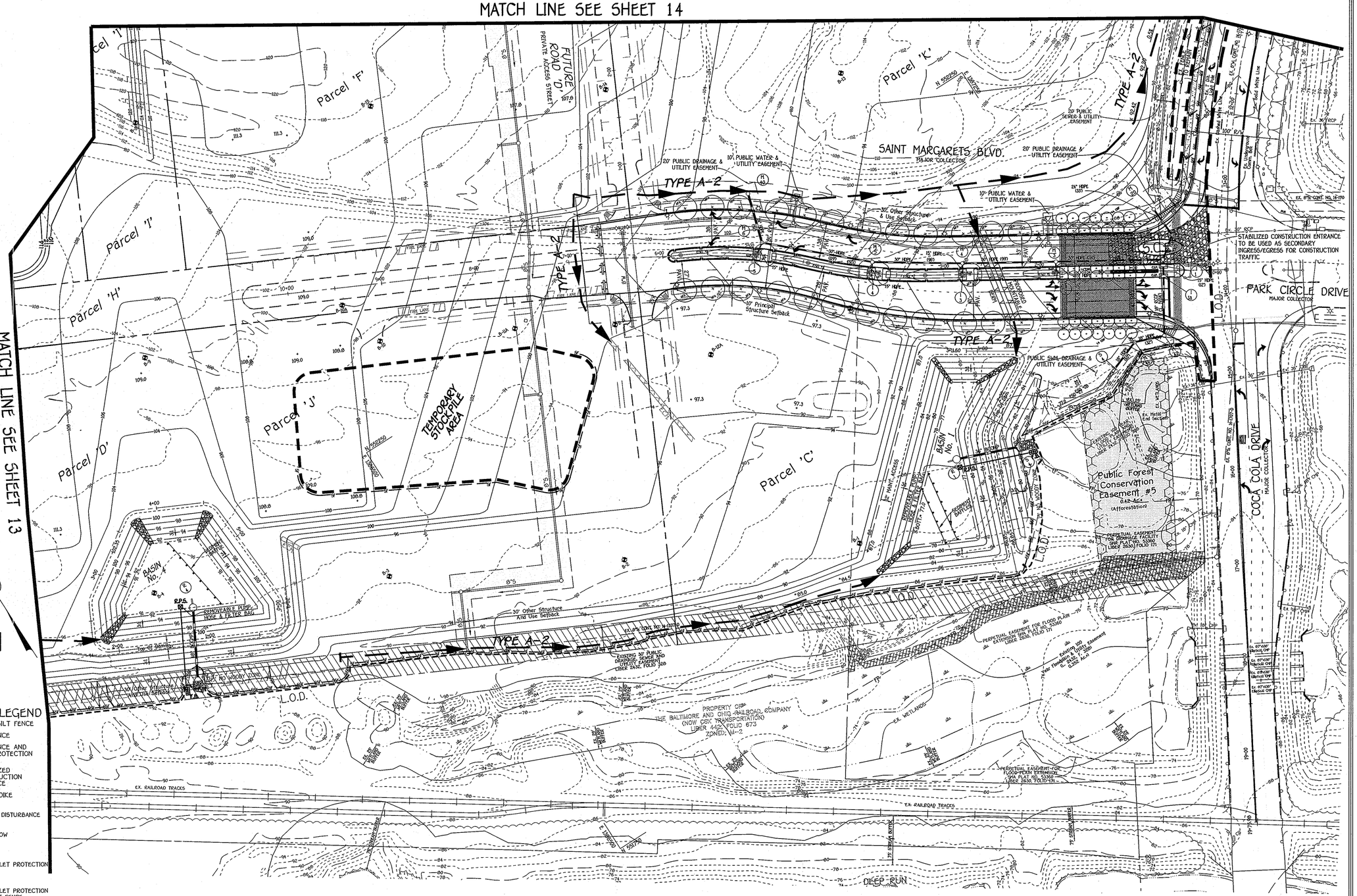
NOTE: SEE SHEET 36 FOR SEDIMENT CONTROL DETAILS.

CONTRACTOR NOTES:

1. CONTRACTOR SHALL PUMP THE SEDIMENT TRAPS/ BASINS COMPLETELY DRY THROUGH A FILTERING DEVICE TO A CLEAN WATER OUTFALL WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT.
2. CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, STREAMS, WETLANDS & THEIR BUFFERS.

MATCH LINE SEE SHEET 14

MATCH LINE SEE SHEET 13



PLAN

SCALE : 1" = 50'

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

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

STATE OF MARYLAND — ALDO MICHAEL VITALI — No. 20748

9/4/13
ALDO M. VITALI, P.E. — DATE

"Professional Engineer, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15."

REVISED GRADING & SEDIMENT CONTROL PLAN

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND
OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT, HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 12 OF 47

F-12-026

I:\2009\09014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 12 MYLAR.dwg, SHEET 12, 9/6/2013 2:37:41 PM, 1:1

By The Developer:

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

Signature Of Developer — Date: 6-20-12.

Printed Name Of Developer

By The Engineer:

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

Signature — Date: 6-19-12

Printed Name

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

Howard Soil Conservation District — Date: 7/24/12

Approved: Department Of Public Works

Chief, Bureau Of Highways — Date: 8/17/12

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 9/05/12

Chief, Development Engineering Division — Date: 8-31-12

AS-BUILT CERTIFICATION

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

Signature — P.E. No.

Date:

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

REVISIONS

NO.	DESCRIPTION	DATE
1	Revised Proposed Parcel Lines	8/29/13
2	ADDED STOCKPILE AREA, HELD WATTLES ONLY	10/7/13

SEDIMENT CONTROL LEGEND

- SSF — SUPER-SILT FENCE
- SF — SILT FENCE
- SF/TP — SILT FENCE AND TREE PROTECTION FENCE
- S.C.E. — STABILIZED CONSTRUCTION ENTRANCE
- TYPE A-2 — EARTH DIKE
- L.O.D. — LIMIT OF DISTURBANCE
- R.R.P. — RIP-RAP INFLOW PROTECTION
- S.I.P. — STANDARD INLET PROTECTION
- C.I.P. — CURB INLET PROTECTION
- R.P.S. — REMOVEABLE PUMPING STATION
- F.B. — FILTER BAG

NOTE: SEE SHEET 36 FOR SEDIMENT CONTROL DETAILS.

LEGEND

SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
102	PROPOSED CONTOUR 2' INTERVAL
100	PROPOSED CONTOUR 10' INTERVAL
	EXISTING BRUSH
	EXISTING TREELINE
	SLOPES (15% - 24.9%)
	SLOPES (25% AND GREATER)
	WETLANDS BUFFER
	WETLANDS LIMITS
FP	FLOODPLAIN LIMITS
N.R.F.	NON REGULATED FACILITY
ESD #1	STORMWATER MANAGEMENT DEVICE
	STORM DRAIN
FO	EXISTING FIBER OPTIC LINE
G	EXISTING GASMAIN

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CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
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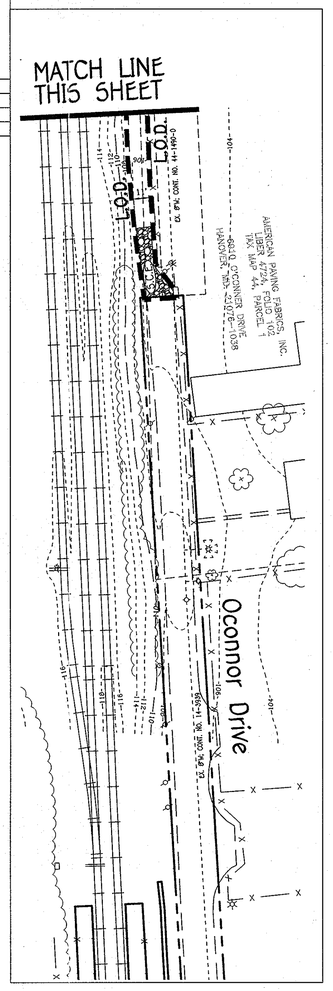

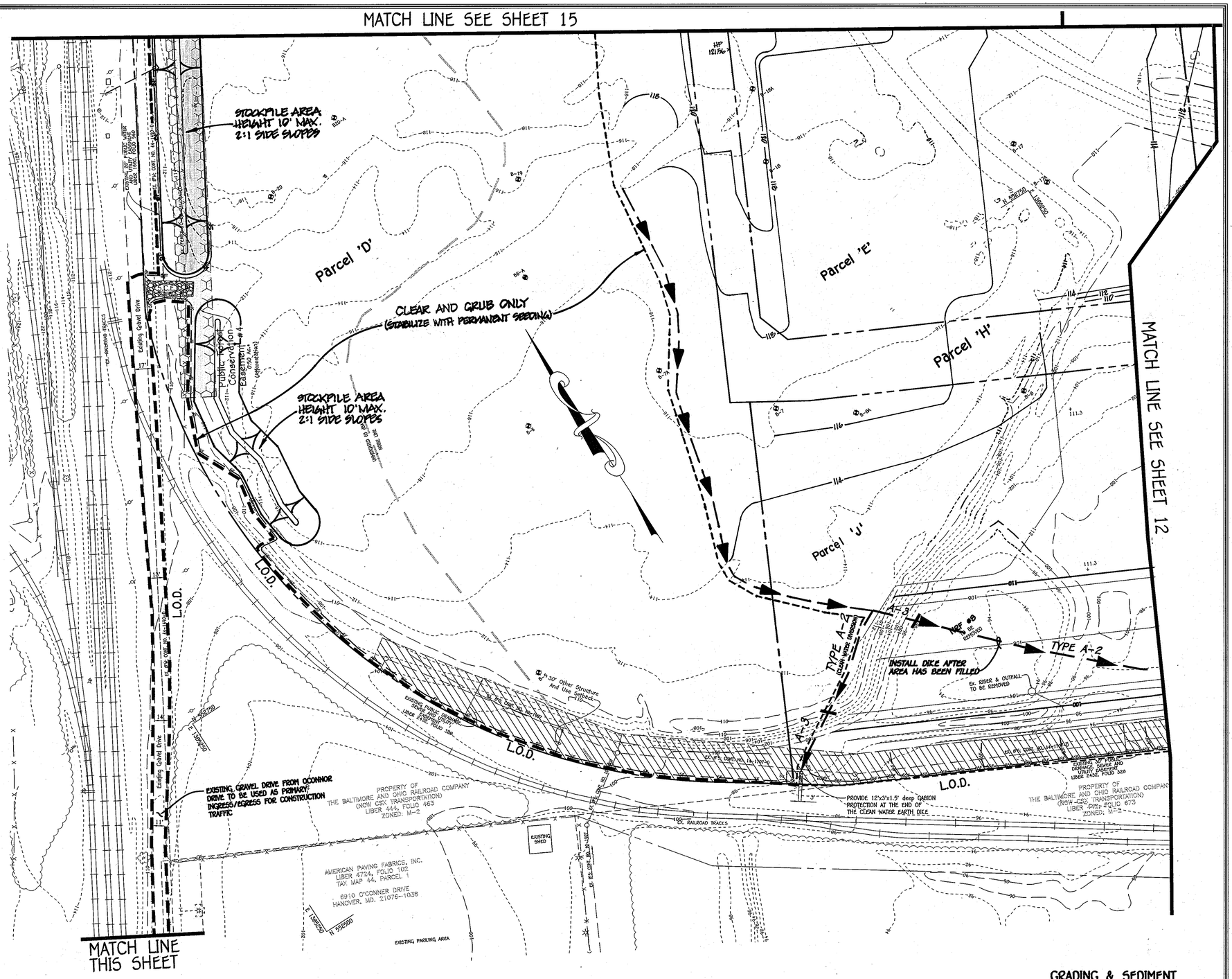

PLAN

SCALE : 1"=50'

Owner

Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
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Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

Preston Scheffenacker Properties
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Lutherville, Maryland 21093-4614
Ph# 410-296-3800

ALDO M. [illegible] — DATE: 6-19-12

"Professional Engineer's Seal Affixed" "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. 20748, Expiration Date 2-22-13."

GRADING & SEDIMENT CONTROL PLAN

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

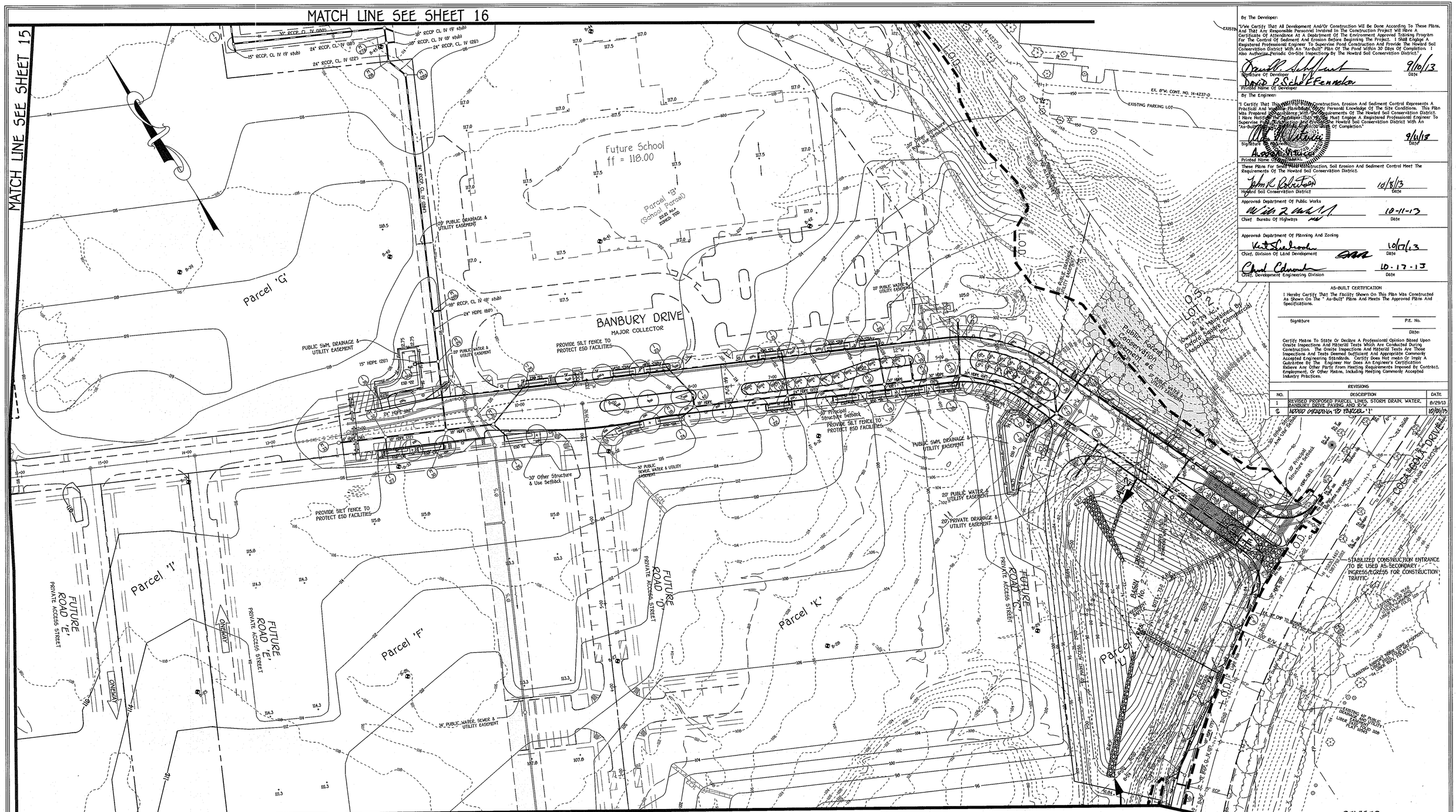
PARCELS "C" THRU "L" AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel "A", As Shown On Plats Entitled "Oxford Square, Parcels 'A' And "B" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 13 OF 45

F-12-026

I:\2009\09014\dwg\FINALS - PHASE ONE\09014 FINAL SHEET 12-16 GRAD & SED PLAN.dwg, SHEET 13, 6/19/2012 4:23:52 PM, 1:1



By The Developer:

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

Signature Of Developer — Date: 9/10/13

Printed Name Of Developer: DAVID P. SCHEFFENACKER

By The Engineer:

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

Signature Of Engineer — Date: 9/11/13

Printed Name Of Engineer: ALDO M. VITTORINI

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

Howard Soil Conservation District — Date: 10/8/13

Approved Department Of Public Works

Chief Bureau Of Highways — Date: 10-11-13

Approved Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 10/17/13

Chief, Development Engineering Division — Date: 10-17-13

AS-BUILT CERTIFICATION

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

Signature — P.E. No.

Date

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

REVISIONS

NO.	DESCRIPTION	DATE
1	REVISED PROPOSED PARCEL LINES, STORM DRAIN, WATER, BANBURY DRIVE PAVING AND R/W	8/29/13
2	ADDED GRADING TO PARCEL 'I'	10/10/13

TEMPORARY SEDIMENT
BASIN No. 2

INITIAL D.A. = 28.10 Ac.±
FINAL D.A. = 10.96 Ac.±
STORAGE REQUIRED
WET = 1800 x 28.10 = 50580 Cu.ft.
DRY = 1800 x 28.10 = 50580 Cu.ft.
STORAGE PROVIDED
WET = 50580 Cu.ft. @ ELEV. 80.60
DRY = 101160 Cu.ft. @ ELEV. 83.90
BOTTOM ELEV. = 73.00
STORAGE DEPTH = 17.25'
TOP OF EMBANKMENT (8' wide) = 91.64 CONSTRUCTED
CLEAN OUT ELEV. = 77.60
RISER CREST ELEV. = 85.50
1 YR. ORIFICE INV. = 82.60
Q1 exist. = 12.7 c.f.s.
Q1 prop. = 6.7 c.f.s. @ EL. = 85.70

PLAN
SCALE : 1"=50'

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

CONTRACTOR NOTES:

1. CONTRACTOR SHALL PUMP THE SEDIMENT TRAPS/ BASINS COMPLETELY DRY THROUGH A FILTERING DEVICE TO A CLEAN WATER OUTFALL WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT.
2. CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, STREAMS, WETLANDS & THEIR BUFFERS.

NOTE: SEE SHEET 39 FOR FINAL GRADING PLAN AT BASIN No. 2.

STATE OF MARYLAND — ALDO MICHAEL VITTORINI

"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. 20748, Expiration Date 2-22-15."

9/11/13
DATE

REVISED GRADING & SEDIMENT CONTROL PLAN

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'I' AND

OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012

SHEET 14 OF 47

F-12-026

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

1:\2009\090141\dwg\Finals - Phase One\F plan storm drain redline\SHEET 14 & 16 MYLAR.dwg, SHEET 14, 9/6/2013 2:09:23 PM, 1:1

NRF #1
EXISTING TEMPORARY SEDIMENT BASIN 'D' (SDP-93-55)
THE BARREL/RISER ASSEMBLY FOR THIS FACILITY IS TO BE REMOVED AND THE DAM BREACHED IN THE SAME AREA. ANY STANDING WATER WILL BE PUMPED THROUGH A SEDIMENT FILTER BAG AND RELEASE ON EXISTING GRADE AT NON-EROSIVE VELOCITES.

NOTE:
SEE SHEET 16 FOR SEQUENCE OF CONSTRUCTION FOR POND BREACHING AND WETLAND SEEDING MIX.

NRF # 2
EXISTING SWM FACILITY No. 2
SDP-89-275
TO BE CONVERTED INTO A FUTURE SURFACE SAND FILTER
THE BARREL/RISER ASSEMBLY FOR THIS FACILITY IS TO BE REMOVED AND THE DAM BREACHED IN THE SAME AREA. ANY STANDING WATER WILL BE PUMPED THROUGH A SEDIMENT FILTER BAG AND RELEASE ON EXISTING GRADE AT NON-EROSIVE VELOCITES.

LEGEND

SYMBOL	DESCRIPTION
- - - - - -	EXISTING CONTOUR 2' INTERVAL
— — —	EXISTING CONTOUR 10' INTERVAL
—102—	PROPOSED CONTOUR 2' INTERVAL
—100—	PROPOSED CONTOUR 10' INTERVAL
	EXISTING BRUSH
	EXISTING TREELINE
	SLOPES (15% – 24.9%)
	SLOPES (25% AND GREATER)
	WETLANDS BUFFER
	WETLANDS LIMITS
— FP —	FLOODPLAIN LIMITS
N.R.F.	NON REGULATED FACILITY
ESD #1	STORMWATER MANAGEMENT DEVICE
	STORM DRAIN
— FO —	EXISTING FIBER OPTIC LINE
— G —	EXISTING GASMAIN

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

I:\2009\09014\dwg\FINALS - PHASE ONE\09014 FINAL SHEET 12-16 GRAD & SED PLAN.dwg, SHEET 15, 6/19/2012 4:38:21 PM, 1:1

By The Developer:

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

Signature Of Developer — 6-20-12 Date
KAREN WATSIC
Printed Name Of Developer

By The Engineer:

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

Signature Of Engineer — 6-19-12 Date
Printed Name Of Engineer

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

Howard Soil Conservation District — 7/24/12 Date

Approved: Department Of Public Works
Chief Bureau Of Highways — Acting — 8/17/12 Date

Approved: Department Of Planning And Zoning
Chief, Division Of Land Development — 9/05/12 Date
Chief, Development Engineering Division — 8-31-12 Date

AS-BUILT CERTIFICATION

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

Signature — P.E. No.
Date:

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

REVISIONS

NO.	DESCRIPTION	DATE
1	ADDED STOCKPILE AREAS AND GRADED PARCEL 'E'	10/7/13

NOTE:
CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, STREAMS, WETLANDS & THEIR BUFFERS.

SEDIMENT CONTROL LEGEND

SYMBOL	DESCRIPTION
—SSF—SSF—SSF—	SUPER-SILT FENCE
—SF—SF—SF—	SILT FENCE
—SF/TP— —SF/TP—	SILT FENCE AND TREE PROTECTION FENCE
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
TYPE A-2	EARTH DIKE
L.O.D.	LIMIT OF DISTURBANCE
L.O.D.	LIMIT OF DISTURBANCE FOR ACCESS TO EXISTING BASIN/TRAP AND BREACHING AREA (NO FOREST IMPACT IS ANTICIPATED, ANY TREE REMOVED SHALL BE REPLACED)
R.R.P.	RIP-RAP INFLOW PROTECTION
S.I.P.	STANDARD INLET PROTECTION
C.I.P.	CURB INLET PROTECTION
R.P.S.	REMOVEABLE PUMPING STATION
F.B.	FILTER BAG

NOTE: SEE SHEET 36 FOR SEDIMENT CONTROL DETAILS.

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr., Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

PLAN
SCALE : 1"=50'

ALDO M. VITUSCI, P.E. — 6-19-12 DATE
"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. 20748, Expiration Date 2-22-13."

GRADING & SEDIMENT CONTROL PLAN
OXFORD SQUARE
"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2
A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 15 OF 45

F-12-026

TRAP/BASIN BREACHING SEQUENCE OF CONSTRUCTION

1. DRAIN THE POND BY AN ACCEPTABLE MEANS. IF UTILIZING A VALVE DRAIN, OPEN TO A SLOW DRAIN AS TO NOT CREATE ANY EROSION DOWNSTREAM.

2. REMOVE THE CONTROL STRUCTURE (RISER) AND OUTFALL PIPE. OPEN CUT THE EXISTING DAM TO PROVIDE
A EROSION CONTROL MATTING LINED SPILLWAY - SEE PLAN.

3. ONCE THE POND IS DRY, PLANT BOTTOM OF TRAPS/BASINS (EXCEPT NRF #2) AND REMAINDER OF POND DISTURBANCE WITH PERMANENT SEEDING MIX.

4. TOPSOIL AND MATERIAL UNSUITABLE FOR USE AS STRUCTURAL FILL MAY BE PLACED IN THESE FACILITIES.

GUIDELINES FOR SEDIMENT BASIN/TRAP REMOVAL & STABILIZATION

1. BEFORE ATTEMPTING TO REMOVE ANY SEDIMENT BASIN, ALL WATER IN THE BASIN SHALL BE DRAINED BY PHYSICALLY ALTERING THE RISER INVERT ELEVATION TO GRADUALLY LOWER THE WATER LEVEL. THIS MAY BE ACCOMPLISHED BY PUNCHING HOLES IN THE RISER BELOW THE WATER LINE. IN CASES WHERE PHYSICAL DAMAGE TO THE RISER IS UNDESIRABLE OR WHERE PHYSICAL ALTERATION OF THE RISER IS NOT FEASIBLE THE POND SHALL BE PUMPED THRU A FILTER BAG.
2. PRIOR TO COMMENCING WORK ON DAM REMOVAL, A METHOD OF MINIMIZING DOWN STREAM SEDIMENTATION SHALL BE APPROVED ON SITE BY THE HOWARD SOIL CONSERVATION DISTRICT.
3. REMOVE DAM AND SPREAD TO CONFORM WITH SURROUNDING CONTOURS.
4. AS A FINAL MEASURE ACCUMULATED SEDIMENT SHALL BE REMOVED FROM DOWN STREAM SEDIMENT CONTROL STRUCTURES REQUIRED BY ITEM #2 AND SAID STRUCTURES REMOVED AND AREA SEEDED.

TYP. PROFILE ALONG EX. POND OUTFALL

TYP. CROSS-SECTION ALONG EX. TOP OF DAM

TEMPORARY SEDIMENT BASIN No. 3

INITIAL D.A. = 8.73 Ac.±
FINAL D.A. = 11.03 Ac.±
STORAGE REQUIRED
WET = 1800 x 11.03 = 19854 Cu.ft.
DRY = 1800 x 11.03 = 19854 Cu.ft.
STORAGE PROVIDED
WET = 19854 Cu.ft. @ ELEV. 96.80
DRY = 39708 Cu.ft. @ ELEV. 98.25
BOTTOM ELEV. = 94.00
STORAGE DEPTH = 9.8'
TOP OF EMBANKMENT (7' wide) = 104.03 CONSTRUCTED
CLEAN OUT ELEV. = 95.60
RISER CREST ELEV. = 99.90
1 YR. ORIFICE INV. = 96.85
Q1 exist. = 6.3 c.f.s.
Q1 prop. = 4.6 c.f.s. @ EL. = 99.89

NOTE: BASIN No. 5 IS TO REMAIN FOR THE DEVELOPMENT OF PARCELS 'B' & 'G'. BASIN WILL BE REMOVED AT SITE DEVELOPMENT PLAN STAGE.

NRF #5
EXISTING S.W.M. FACILITY No. 1 (GP-88-03)
THE BARREL/RISER ASSEMBLY FOR THIS FACILITY IS TO BE REMOVED AND THE DAM BREACHED IN THE SAME AREA. ANY STANDING WATER WILL BE PUMPED THROUGH A SEDIMENT FILTER BAG AND RELEASE ON EXISTING GRADE AT NON-EROSIVE VELOCITES.

NRF #6
EXISTING S.O.S.T. 'A' (SDP-93-55)
THE EX. RIP-RAP OUTLET STONE WEIR IS TO BE REMOVED W/SKID STEER EQUIPMENT.
ANY STANDING WATER WILL BE PUMPED THROUGH A SEDIMENT FILTER BAG AND RELEASE ON EXISTING GRADE AT NON-EROSIVE VELOCITES.

NRF #4 EXISTING RIP-RAP OUTLET SEDIMENT TRAP 'B' (SDP-93-55)
THE EX. RIP-RAP OUTLET STONE WEIR IS TO BE REMOVED W/SKID STEER EQUIPMENT.
ANY STANDING WATER WILL BE PUMPED THROUGH A SEDIMENT FILTER BAG AND RELEASE ON EXISTING GRADE AT NON-EROSIVE VELOCITES.

NRF #7
EXISTING SEDIMENT TRAP (GP-88-03)
THE EX. RIP-RAP OUTLET STONE WEIR IS TO BE REMOVED W/SKID STEER EQUIPMENT.
ANY STANDING WATER WILL BE PUMPED THROUGH A SEDIMENT FILTER BAG AND RELEASE ON EXISTING GRADE AT NON-EROSIVE VELOCITES.

BASIN NO. 3 ENLARGEMENT DETAIL
SCALE:1"=30'

By The Developer:
"I/We Certify That All Development And/Or Construction Will Be Done According To These Plans, And That Any Responsible Personnel Involved In The Construction Project Will Have A Certificate Of Attendance At A Department Of The Environment Approved Training Program For The Control Of Sediment And Erosion Before Beginning The Project. I Shall Engage A Registered Professional Engineer To Supervise Pond Construction And Provide The Howard Soil Conservation District With An "As-Built" Plan Of The Pond Within 30 Days Of Completion. I Also Authorize Periodic On-Site Inspections By The Howard Soil Conservation District."
Signature Of Developer — Date 9/10/13
Printed Name Of Developer

By The Engineer:
"I Certify That This Plan, Pond Construction, Erosion And Sediment Control Represents A Practical And Workable Plan Based On My Personal Knowledge Of The Site Conditions. This Plan Was Prepared In Accordance With The Requirements Of The Howard Soil Conservation District. I Have Been Retained As The Responsible Person Who Must Engage A Registered Professional Engineer To Supervise Pond Construction And To Provide The Howard Soil Conservation District With An "As-Built" Plan Within 30 Days Of Completion."
Signature — Date 9/11/13
Printed Name Of Engineer

These Plans For Pond Construction, Soil Erosion And Sediment Control Meet The Requirements Of The Howard Soil Conservation District.
Howard Soil Conservation District — Date 10/3/13

Approved Department Of Public Works
Chief, Bureau Of Highways — Date 10-11-13

Approved Department Of Planning And Zoning
Chief, Division Of Land Development — Date 10/17/13
Chief, Development Engineering Division — Date 10-17-13

AS-BUILT CERTIFICATION
I Hereby Certify That The Facility Shown On This Plan Was Constructed As Shown On The " As-Built" Plans And Meets The Approved Plans And Specifications.
Signature — P.E. No. — Date:
Certify Means To State Or Declare A Professional Opinion Based Upon Onsite Inspections And Material Tests Which Are Conducted During Construction. The Onsite Inspections And Material Tests Are Those Inspections And Tests Deemed Sufficient And Appropriate Commonly Accepted Engineering Standards. Certify Does Not mean Or Imply A Guarantee By The Engineer Nor Does An Engineer's Certification Relieve Any Other Party From Meeting Requirements Imposed By Contract, Employment, Or Other Means, Including Meeting Commonly Accepted Industry Practices.

CONTRACTOR NOTES:

1. CONTRACTOR SHALL PUMP THE SEDIMENT TRAPS/ BASINS COMPLETELY DRY THROUGH A FILTERING DEVICE TO A CLEAN WATER OUTFALL WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT.

2. CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, STREAMS, WETLANDS & THEIR BUFFERS.

REVISIONS

NO.	DESCRIPTION	DATE
1	REVISED L.O.D., REMOVE SUPER-SILT FENCE, REVISE PARCEL, WATER, SEWER AND STORM DRAIN	8/29/13

TEMPORARY SEDIMENT BASIN No. 5

INITIAL D.A. = 7.98 Ac.±
FINAL D.A. = 7.74 Ac.±
STORAGE REQUIRED
WET = 1800 x 7.98 = 14364 Cu.ft.
DRY = 1800 x 7.98 = 14364 Cu.ft.
STORAGE PROVIDED
WET = 14364 Cu.ft. @ ELEV. 105.45
DRY = 28728 Cu.ft. @ ELEV. 107.00
BOTTOM ELEV. = 103.50
STORAGE DEPTH = 8.1'
TOP OF EMBANKMENT (7' wide) = 112.65 CONSTRUCTED
CLEAN OUT ELEV. = 104.50
RISER CREST ELEV. = 108.50
1 YR. ORIFICE INV. = 106.00
Q1 exist. = 5.1 c.f.s.
Q1 prop. = 4.6 c.f.s. @ EL. = 108.92

NOTE: BASIN No. 5 IS TO REMAIN FOR THE DEVELOPMENT OF PARCEL 'B'. BASIN WILL BE REMOVED AT SITE DEVELOPMENT PLAN STAGE.

SEDIMENT CONTROL LEGEND

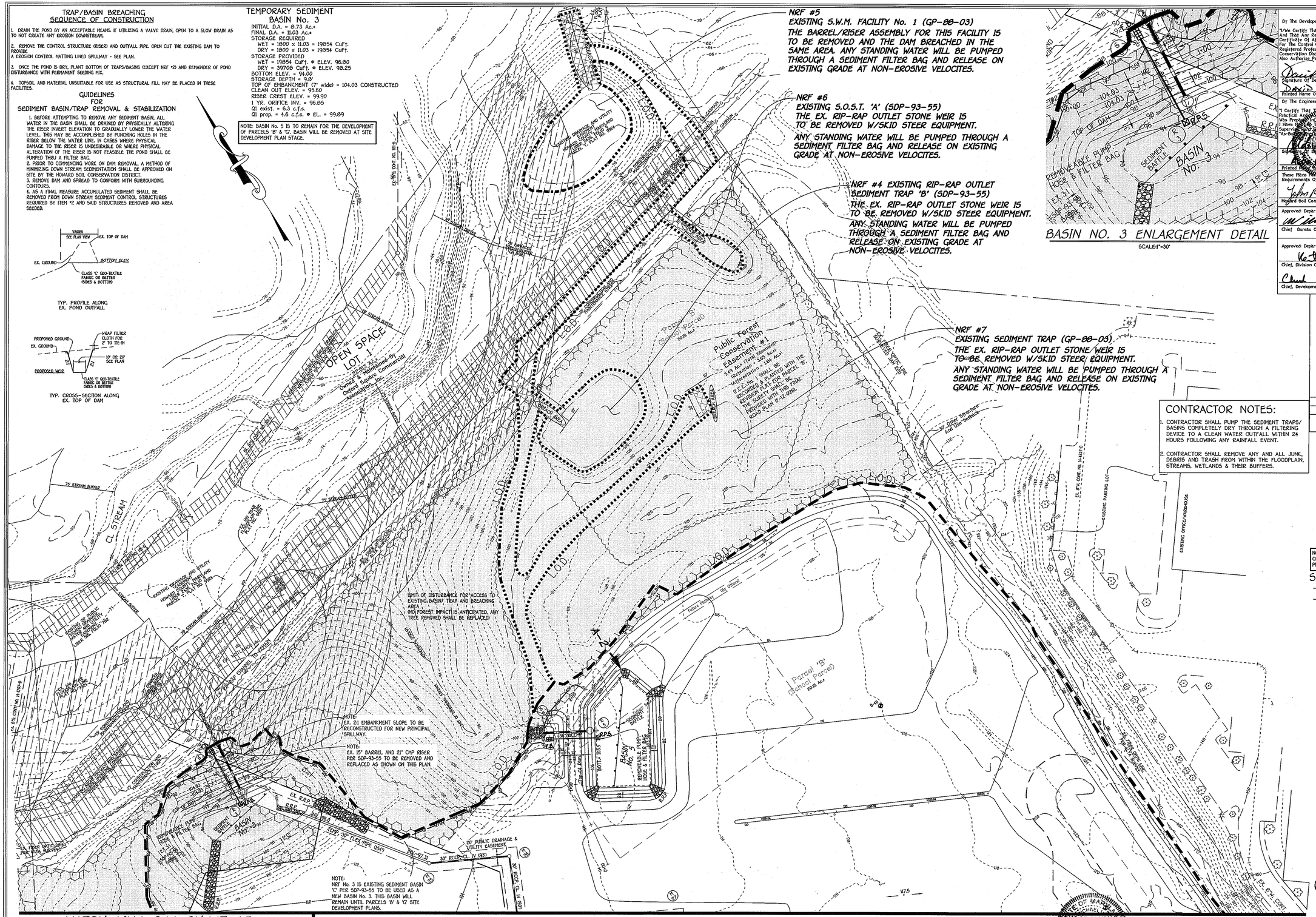
—SSF—SSF—SSF—	SUPER-SILT FENCE
—SF—SF—SF—	SILT FENCE
S.C.E.	STABILIZED CONSTRUCTION ENTRANCE
TYPE A-2	EARTH DIKE
L.O.D.	LIMIT OF DISTURBANCE
L.O.D.	LIMIT OF DISTURBANCE FOR ACCESS TO EXISTING BASIN/ TRAP AND BREACHING AREA (NO FOREST IMPACT IS ANTICIPATED, ANY TREE REMOVED SHALL BE REPLACED)
R.P.P.	RIP-RAP INFLOW PROTECTION
S.I.P.	STANDARD INLET PROTECTION
C.I.P.	CURB INLET PROTECTION
R.P.S.	REMOVEABLE PUMPING STATION
F.B.	FILTER BAG
	EROSION CONTROL MATTING

NOTE: SEE SHEET 36 FOR SEDIMENT CONTROL DETAILS.

REVISED GRADING & SEDIMENT CONTROL PLAN
OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 16 OF 47



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

NOTE: SEE SHEET 39 FOR FINAL GRADING PLAN AT BASIN No. 3 & 5 AND STORM DRAIN M-23 TO S-3

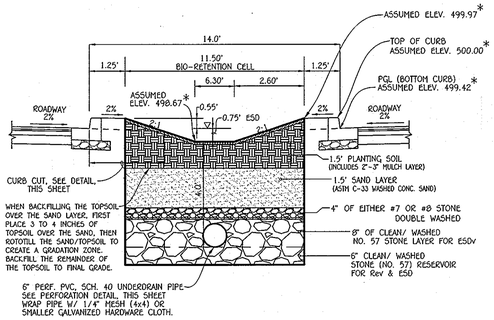
Owner	Developer
Kellogg-CCP, LLC c/o David P. Scheffenacker, Jr., Managing Member 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3800	Preston Scheffenacker Properties 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3800

PLAN
SCALE : 1"=50'

ALBERT J. STECCATO, JR. — DATE 9/4/13
"Professional Engineer 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. 20748, Expiration Date 2-22-15."

F-12-026

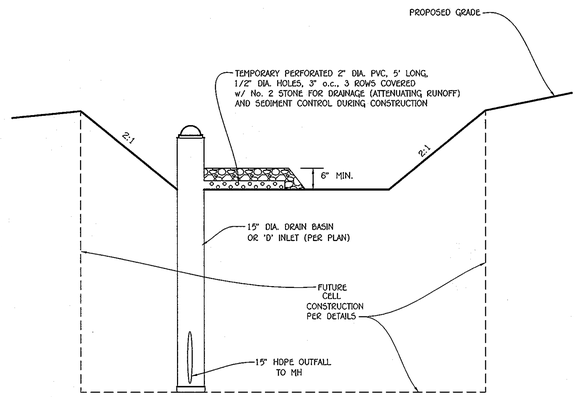
I:\2009\09014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 14 & 16 MYLAR.dwg, SHEET 16, 9/6/2013 2:18:45 PM, 1:1



TYPICAL BIO-RETENTION IN MEDIAN ALONG SAINT MARGARETS BOULEVARD @ CURB CUT

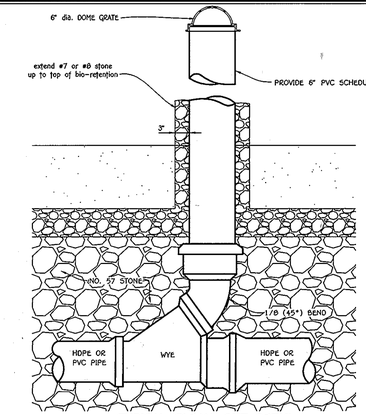
NO SCALE

ESDvol. PROVIDED PER LINEAR FOOT
SURFACE STORAGE = 6.675 SQ.FT./L.F.
STONE RESERVOIR = 6.90 SQ.FT./L.F.
TOTAL = 13.575 SQ.FT./L.F.



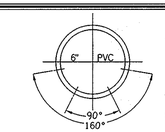
TYPICAL BIO-RETENTION CELL DURING INITIAL CONSTRUCTION PHASE PRIOR TO DRAINAGE AREA BEING STABILIZED

NO SCALE



TYPICAL CLEAN-OUT DETAIL

NO SCALE



PIPE SIZE: 6"
HOLE SIZE: 3/8"
CENTER TO CENTER: 3"
ROWS OF HOLES: 2 @ 90°
2 @ 160° (+/-3°)

SCH40 PVC PERFORATED UNDERDRAIN PIPE DETAIL FOR HORIZONTAL DRAIN PIPE

NO SCALE

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 8/05/12

Chief, Development Engineering Division — Date 8-31-12

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways, Acting — Date 8/7/12

REVISIONS		
NO.	DESCRIPTION	DATE

Operation And Maintenance Schedule For Commercial Association Owned & Maintained Bio-Retention Areas (M-6)

1. The owner shall maintain the plant material, mulch layer and soil layer annually. maintenance of mulch and soil is limited to correcting areas of erosion or wash out. Any mulch replacement shall be done in the spring. Plant material shall be checked for disease and insect infestation and maintenance will address dead material and pruning. Acceptable replacement plant material is limited to the following: 2000 Maryland stormwater design manual volume II, table A.4.1 and 2.

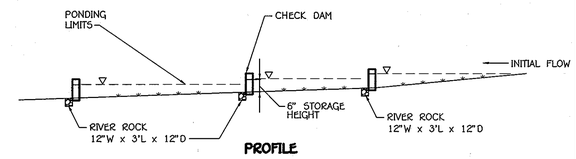
2. The owner shall perform a plant in the spring and in the fall each year. during the inspection, the owner shall remove dead and diseased vegetation considered beyond treatment. replace dead plant material with acceptable replacement plant material. Treat diseased trees and shrubs and replace all deficient stakes and wires.

3. The owner shall inspect the mulch each spring. The mulch shall be replaced every two to three years. The previous mulch layer shall be removed before the new layer is applied.

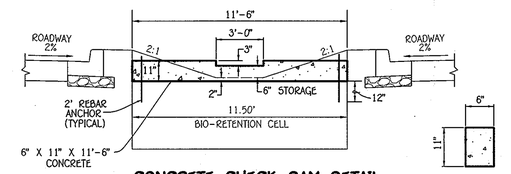
4. The owner shall correct soil erosion on an as needed basis, with a minimum of once per month and after each heavy storm.

5. The owner shall maintain all observation wells, clean-outs and perforated underdrains.

6. Filter material must be replaced when water remains on the surface of the filter bed for more than 24 hours following a 1 or 2 year storm event or more than 48 hours following a 10 year storm event.

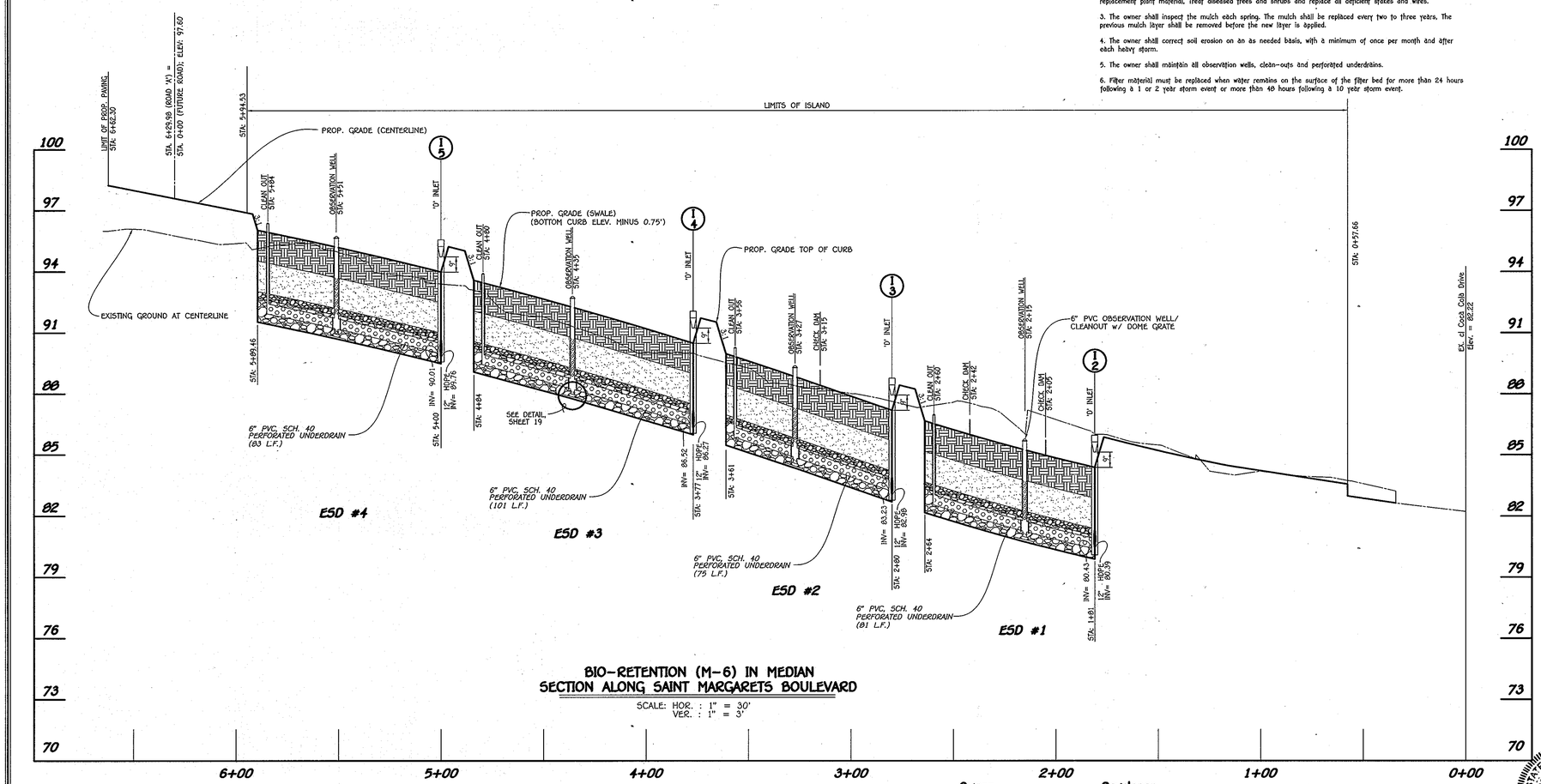


PROFILE



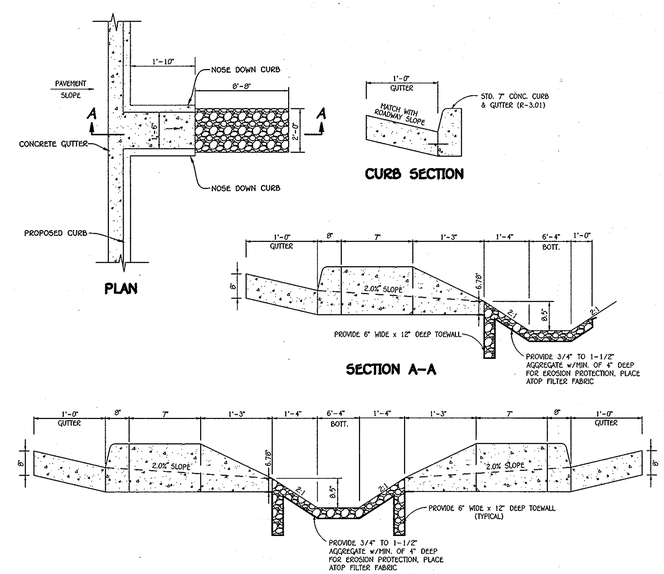
CONCRETE CHECK DAM DETAIL

NO SCALE



BIO-RETENTION (M-6) IN MEDIAN SECTION ALONG SAINT MARGARETS BOULEVARD

SCALE: HOR. : 1" = 30'
VER. : 1" = 3'



STANDARD CURB OPENING DETAIL FOR CONCRETE CURB ALONG SAINT MARGARETS BOULEVARD

NO SCALE

Owner

Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

STATE OF MARYLAND — ALDO M. VITALE — No. 20746 — PROFESSIONAL ENGINEER

6/8/12
ALDO M. VITALE DATE

"Professional Engineer, 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. 20746, Expiration Date 2-22-13."

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

STORMWATER MANAGEMENT NOTES & DETAILS (SAINT MARGARETS BOULEVARD)

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 30, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 17 OF 45

F-12-026

I:\2009\09014\dwg\FINALS - PHASE ONE\09014 FINAL SHEET 17-22 SWM DETAILS.dwg, SWM SHEET 17, 6/19/2012 2:04:40 PM, 1:1

Approved: Department Of Planning And Zoning

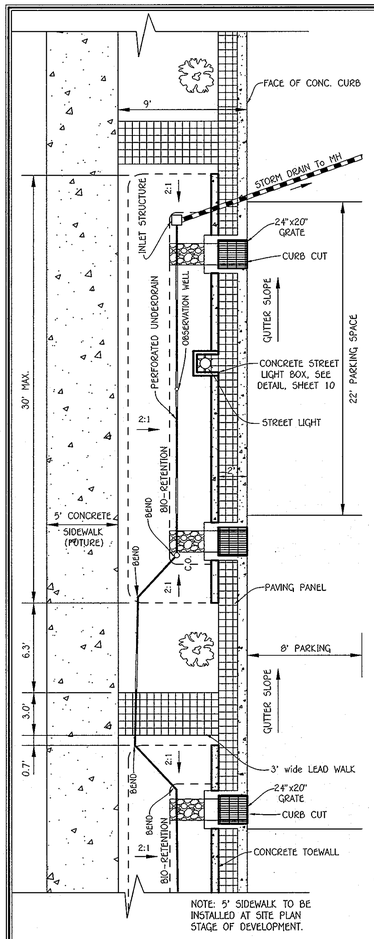
Chief, Division Of Land Development — Date 8/05/12

Chief, Development Engineering Division — Date 8-31-12

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 8/17/12

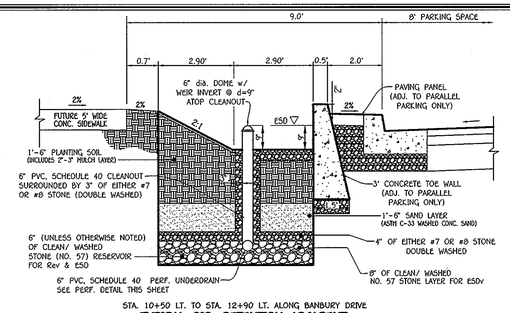
REVISIONS		
NO.	DESCRIPTION	DATE



NOTE: 5' SIDEWALK TO BE INSTALLED AT SITE PLAN STAGE OF DEVELOPMENT.

TYPICAL DOUBLE BIO-RETENTION CELL PLAN ALONG PARKING

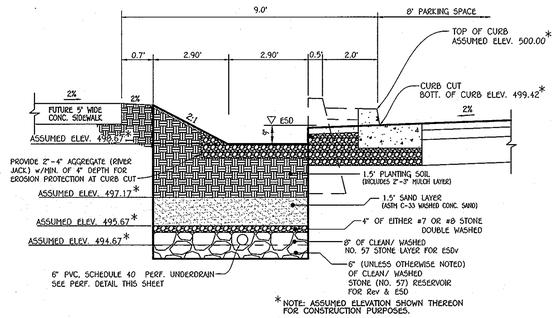
SCALE: 1" = 5'



STA. 10+50 LT. TO STA. 12+90 LT. ALONG BANBURY DRIVE

TYPICAL BIO-RETENTION ADJACENT TO ON-STREET PARKING

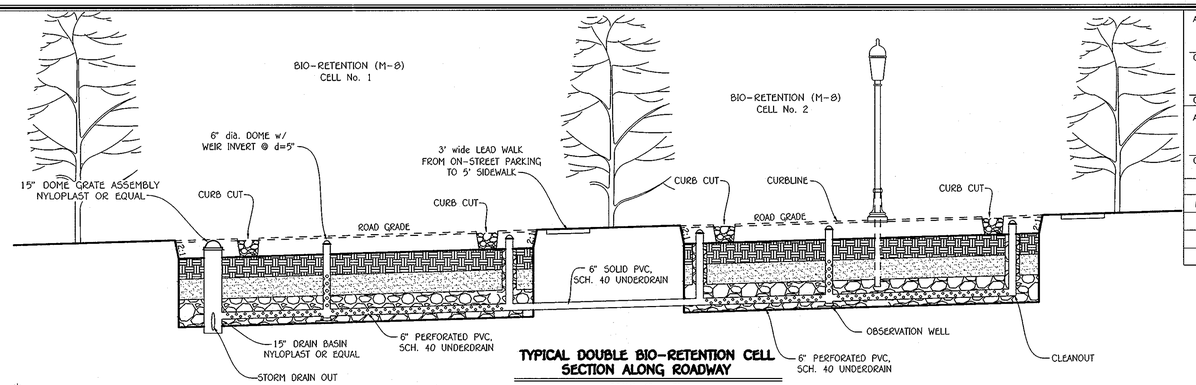
NO SCALE



* NOTE: ASSUMED ELEVATION SHOWN THEREON FOR CONSTRUCTION PURPOSES.

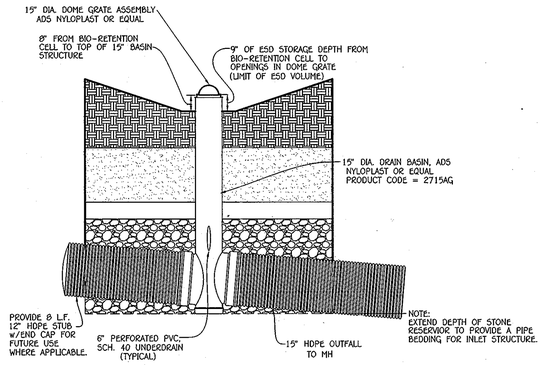
TYPICAL BIO-RETENTION (M-8) ADJACENT TO ON-STREET PARKING @ CURB CUT

NO SCALE



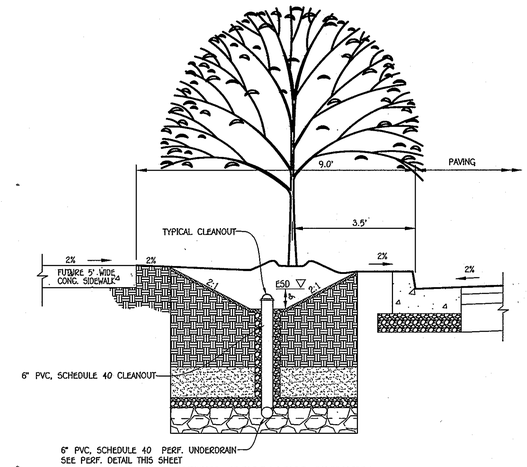
TYPICAL DOUBLE BIO-RETENTION CELL SECTION ALONG ROADWAY

SCALE: 1" = 5'



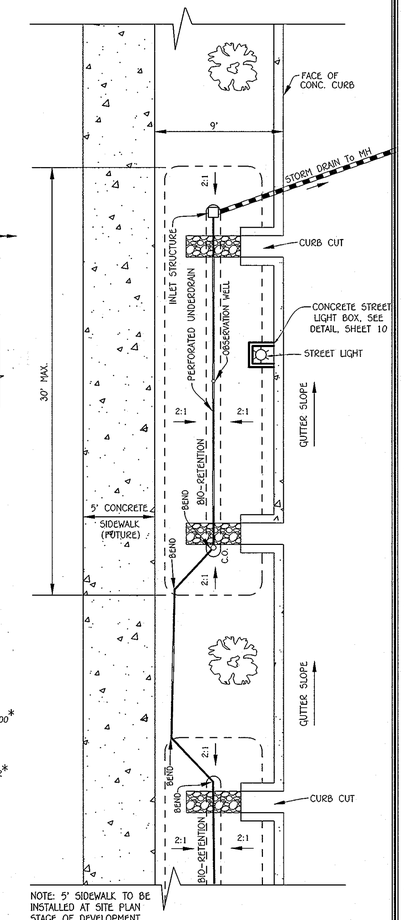
TYPICAL INLET STRUCTURE DETAIL @ BIO-RETENTION

NO SCALE



TYPICAL STREET TREE ADJACENT TO ROADWAY

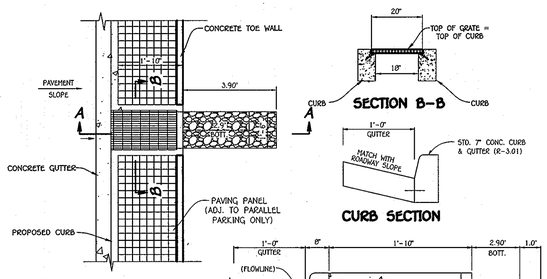
NO SCALE

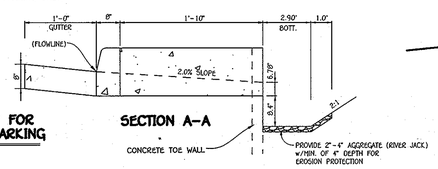


NOTE: 5' SIDEWALK TO BE INSTALLED AT SITE PLAN STAGE OF DEVELOPMENT.

TYPICAL DOUBLE BIO-RETENTION CELL PLAN ALONG ROADWAY

SCALE: 1" = 5'

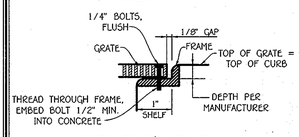




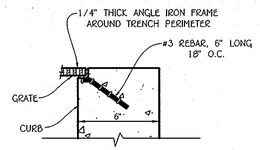
SECTION A-A

(BANBURY DRIVE) CURB OPENING DETAIL 'B' FOR CONCRETE CURB ALONG PARKING

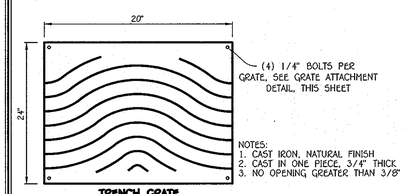
NO SCALE



GRATE ATTACHMENT DETAIL



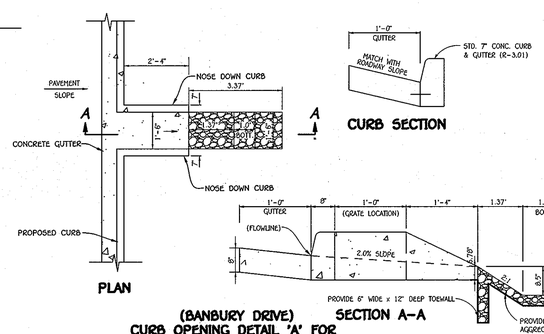
FRAME DETAIL

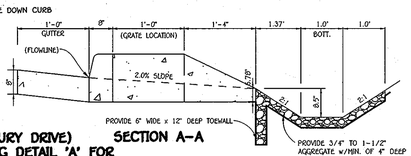


TRENCH GRATE

2.4" x 20" GRATE OVER CURB CUT

NO SCALE

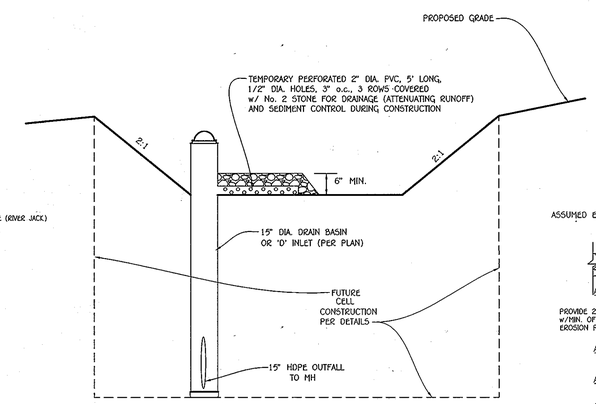




SECTION A-A

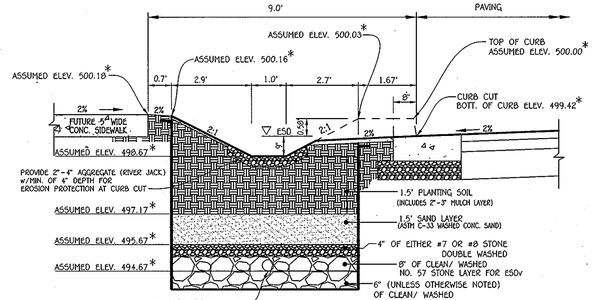
(BANBURY DRIVE) CURB OPENING DETAIL 'A' FOR CONCRETE CURB ALONG ROADWAY

NO SCALE



TYPICAL BIO-RETENTION CELL DURING INTITIAL CONSTRUCTION PHASE PRIOR TO DRAINAGE AREA BEING STABILIZED

NO SCALE



TYPICAL BIO-RETENTION (M-8) ADJACENT TO ROADWAY @ CURB CUT

NO SCALE

* NOTE: ASSUMED ELEVATION SHOWN THEREON FOR CONSTRUCTION PURPOSES.

STORAGE FOR E50:

SURFACE/WET STORAGE = 0.75' + (0.5625' x 2) = 1.875 SQ.FT./L.F.
1.875 x 30 L.F. = 56.3 CU.FT. / 150 target = 37.5%

STONE STORAGE = 6.60 x 1.5 x 0.40 = 3.96 x 30 = 118.8 CU.FT.

TOTAL E50v = 175.10 CU.FT. vs. 150 req'd.

STATE OF MARYLAND — ALOIS MICHAEL VITKO

6/19/12 — DATE

"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. 20746, Expiration Date 2-22-13."

Owner	Developer
Kellogg-CCP, LLC c/o David P. Scheffenacker, Jr., Managing Member 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3800	Preston Scheffenacker Properties 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3800

STORMWATER MANAGEMENT NOTES & DETAILS (BANBURY DRIVE)

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 30, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 18 OF 45

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

F-12-026

I:\2009\09014\dwg\FINALS - PHASE ONE\09014 FINAL SHEET 17-22 SWM DETAILS.dwg, SWM SHEET 18, 6/19/2012 2:06:30 PM, 1:1

Approved: Department Of Planning And Zoning

Kent Sheubrooks — 10/17/13
Chief, Division Of Land Development — Date

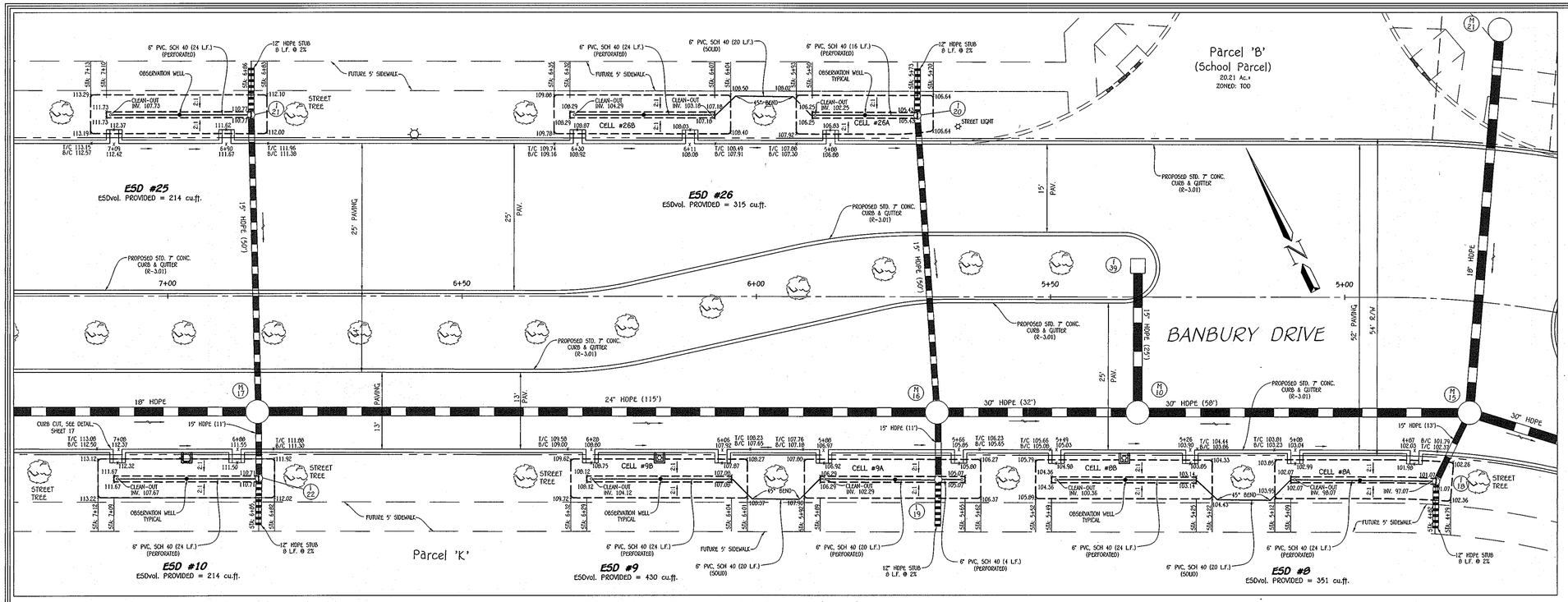
Chad Edmondson — 10-17-13
Chief, Development Engineering Division — Date

Approved: Howard County Department Of Public Works

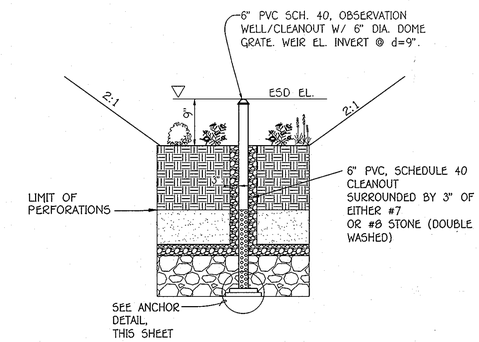
10-11-13
Chief, Bureau Of Highways — Date

REVISIONS

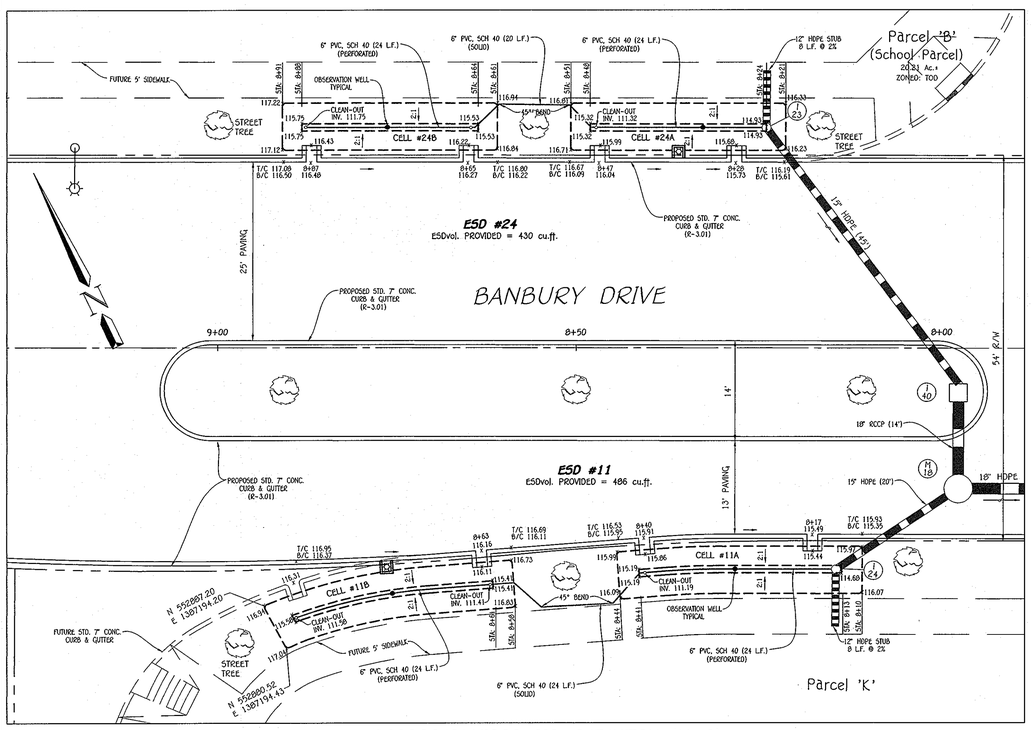
NO.	DESCRIPTION	DATE
1	REVISED LOCATION OF ESD No. 12 & STORM DRAIN PIPE FROM RCCP TO HDPE	8/29/13



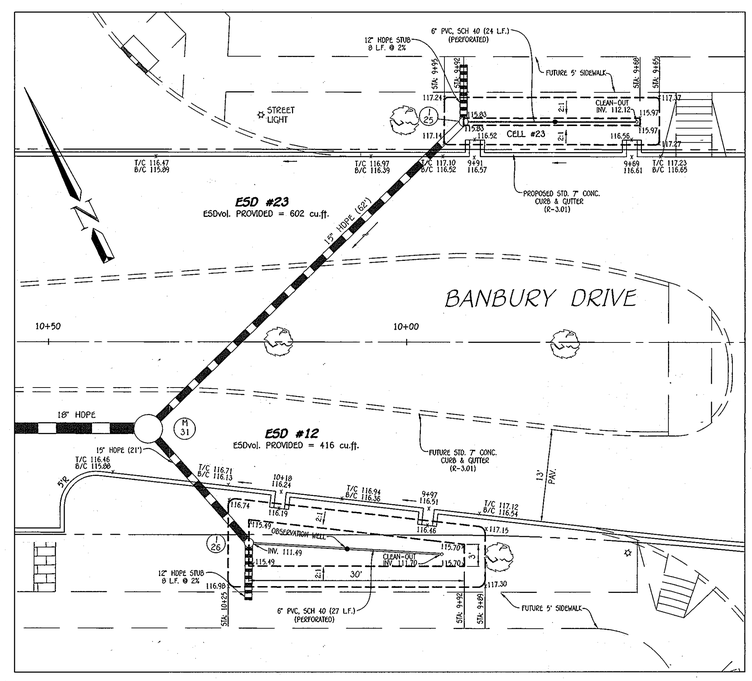
PROPOSED MICRO BIO-RETENTION (M-6)
ESD Nos. 8-10, 25 & 26 PLAN VIEW
SCALE: 1" = 10'



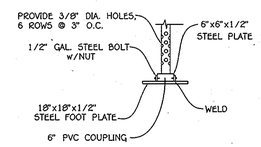
SECTION @
OBSERVATION WELL LOCATION
NOT TO SCALE



PROPOSED MICRO BIO-RETENTION (M-6)
ESD Nos. 11 & 24 PLAN VIEW
SCALE: 1" = 10'



PROPOSED MICRO BIO-RETENTION (M-6)
ESD Nos. 12 & 23 PLAN VIEW
SCALE: 1" = 10'



ANCHOR DETAIL
NO SCALE

STORMWATER MANAGEMENT
MAINTENANCE NOTE

ALL STORMWATER MANAGEMENT FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE OXFORD SQUARE COMMERCIAL ASSOCIATION, INC. THE STREET TREES, PERFORATED UNDERDRAINS, FEEDERS, PLANTINGS AND SWALES WILL ALSO BE PRIVATELY OWNED AND MAINTAINED BY THE OXFORD SQUARE COMMERCIAL ASSOCIATION. HOWARD COUNTY WILL ONLY MAINTAIN THE INLET STRUCTURE WITHIN THE MICRO BIO-RETENTION FACILITIES ADJACENT TO THE RIGHT-OF-WAY.

Owner	Developer
Kellogg-CCP, LLC c/o David P. Scheffenacker, Jr., Managing Member 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3800	Preston Scheffenacker Properties 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3800

STATE OF MARYLAND — ALDO M. ROMANO — No. 20748 — PROFESSIONAL ENGINEER

9/11/13
DATE

"Professional Engineer's Certification: I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

REVISED
STORMWATER MANAGEMENT
PLANS & DETAILS

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND
OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 19 OF 45

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

F-12-026

I:\2009\09014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 19 MYLAR.dwg, SWM SHEET 19, 9/6/2013 11:25:29 AM, 1:1

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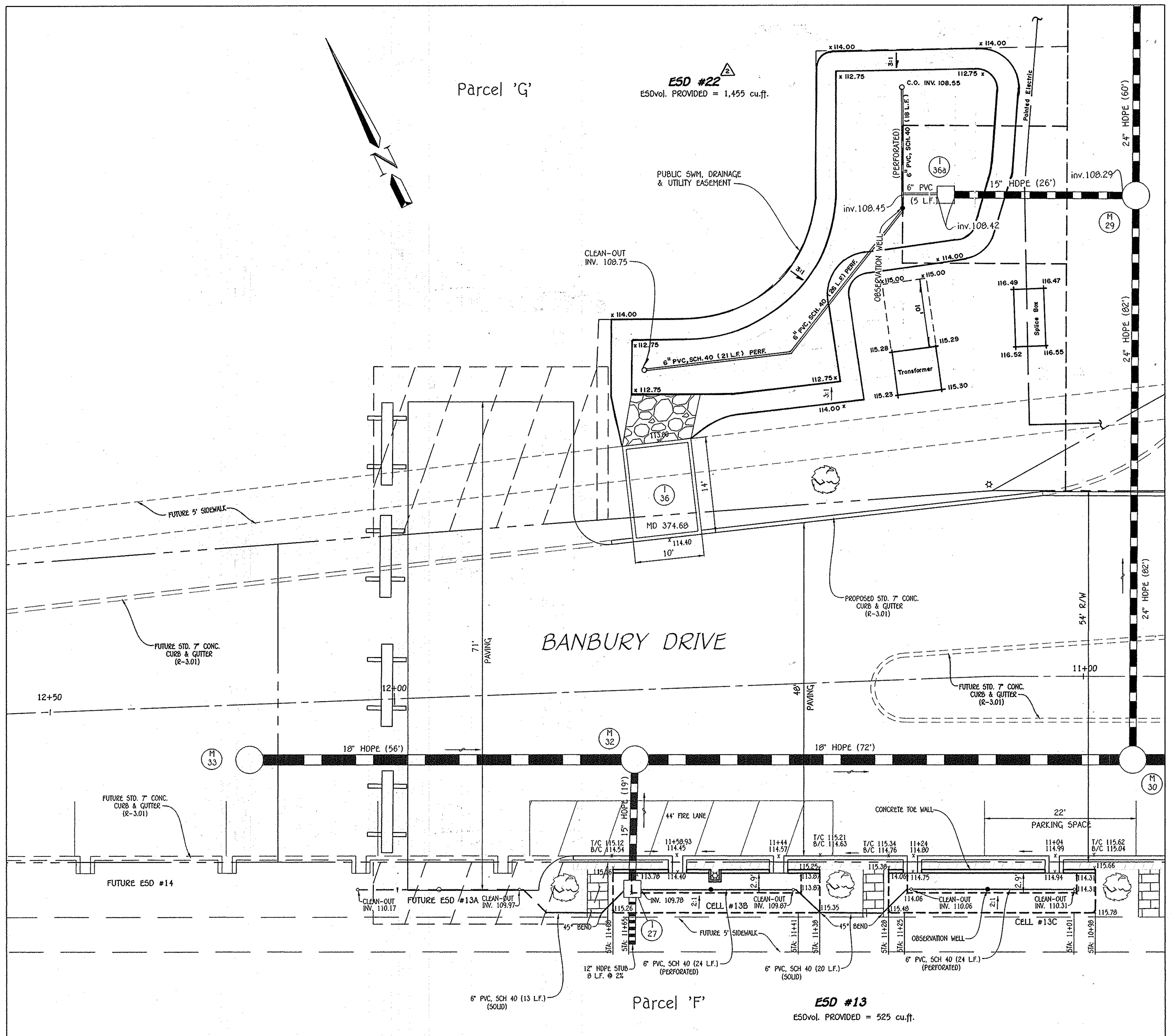
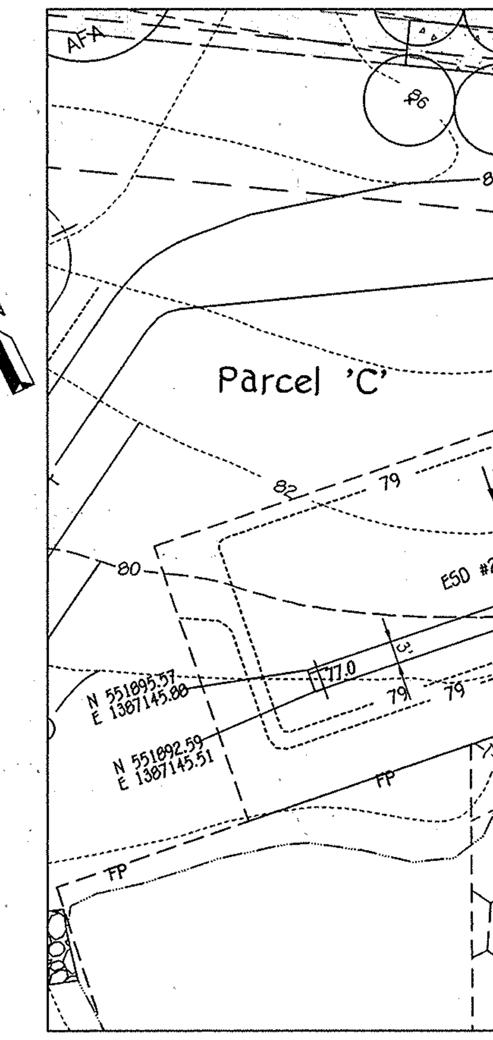
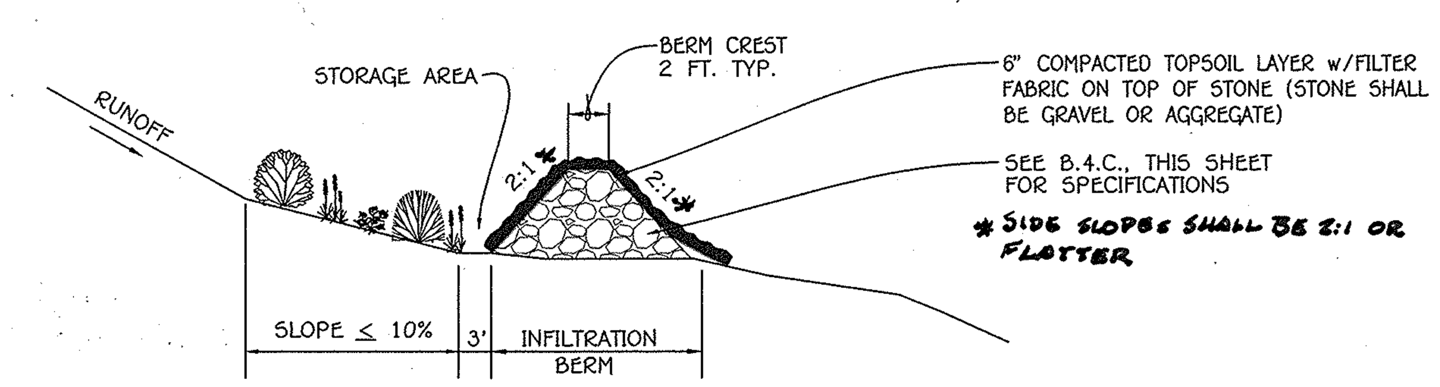


PROPOSED MICRO BIO-RETENTION (M-6)
ESD Nos. 13 & 22 PLAN VIEW
SCALE: 1" = 10'



PROPOSED INFILTRATION BERM (M-4)
ESD No. 28 PLAN VIEW
SCALE: 1" = 20'



TYPICAL SECTION - INFILTRATION BERM
NO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR INFILTRATION BERMS (M-4)

1. BERM SHOULD BE INSPECTED REGULARLY TO ENSURE THAT PONDING WATER DOES NOT CREATE NUISANCE CONDITIONS.

2. SIGNS OF CONCENTRATED FLOW AND OTHER SURFACE EROSION SHOULD BE REPAIRED TO PROMOTE SHEET FLOW.

3. A DENSE MAT OF VEGETATION SHOULD BE PRESENT AT ALL TIMES. VEGETATION SHOULD BE REPLACED AS NEEDED.

4. WHEN INFILTRATION BERM ARE INCORPORATED IN A SYSTEM USING OTHER PRACTICES, THE MAINTENANCE CRITERIA FOR THAT PRACTICE SHALL ALSO BE CONSIDERED.

STORMWATER MANAGEMENT MAINTENANCE NOTE

ALL STORMWATER MANAGEMENT FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE OXFORD SQUARE COMMERCIAL ASSOCIATION, INC. THE STREET TREES, PERFORATED UNDERDRAINS, FEEDERS, PLANTINGS AND SWALES WILL ALSO BE PRIVATELY OWNED AND MAINTAINED BY THE OXFORD SQUARE COMMERCIAL ASSOCIATION. HOWARD COUNTY WILL ONLY MAINTAIN THE INLET STRUCTURE WITHIN THE MICRO BIO-RETENTION FACILITIES ADJACENT TO THE RIGHT-OF-WAY.

Approved: Department Of Planning And Zoning

[signature] 10/17/13
Chief, Division Of Land Development — Date

[signature] 10.17.13
Chief, Development Engineering Division — Date

Approved: Howard County Department Of Public Works

[signature] 10-11-13
Chief, Bureau Of Highways — Date

REVISIONS

NO.	DESCRIPTION	DATE
1	REVISE PARCEL LINES, R/W FOR BANBURY DRIVE, STORM DRAIN PIPE FROM RCCP TO HDPE & ESD NO. 22	8/29/13
2	Revised ESD #22	9.22.14

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

1. Material Specifications

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

2. Filtering Media or Planting Soil

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

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

• Soil Component – Loamy Sand or Sandy Loam (USDA Soil Textural Classification)

• Organic Content – Minimum 10% by dry weight (ASTM D 2974). In general, this can be met with a mixture of loamy sand (60%-65%) and compost (35% to 40%) or sandy loam (30%), coarse sand (30%), and compost (40%).

• Clay Content – Media shall have a clay content of less than 5%.

• pH Range – Should be between 5.5 – 7.0. Amendments (e.g., lime, iron sulfate plus sulfur) may be mixed into the soil to increase or decrease pH.

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

3. Compaction

It is very important to minimize compaction of both the base of bioretention practices and the required backfill. When possible, use excavation hoes to remove original soil. If practices are excavated using a loader, the contractor should use wide track or marsh track equipment, or light equipment with turf type tires. Use of equipment with narrow tracks or narrow tires, rubber tires with large lugs, or high-pressure tires will cause excessive compaction resulting in reduced infiltration rates and is not acceptable. Compaction will significantly contribute to design failure.

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

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

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

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

4. Plant Material

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

5. Plant Installation

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

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

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

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

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

6. Underdrains

Underdrains should meet the following criteria:

• Pipe– Should be 4" to 6" diameter, slotted or perforated rigid plastic pipe (ASTMF 758, Type PS 28, or AASHTO-M-278) in a gravel layer. The preferred material is slotted, 4" rigid pipe (e.g., PVC or HDPE).

• Perforations – If perforated pipe is used, perforations should be ." diameter located 6" on center with a minimum of four holes per row. Pipe shall be wrapped with a ¼" (No. 4 or 4x4) galvanized hardware cloth.

• Gravel – The gravel layer (No. 57 stone preferred) shall be at least 3" thick above and below the underdrain.

• The main collector pipe shall be at a minimum 0.5% slope.

• A rigid, non-perforated observation well must be provided (one per every 1,0000 square feet) to provide a clean-out port and monitor performance of the filter.

• A 4" layer of pea gravel (." to ." stone) shall be located between the filter media and underdrain to prevent migration of fines into the underdrain. This layer may be considered part of the filter bed when bed thickness exceeds 24".

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

7. Miscellaneous

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

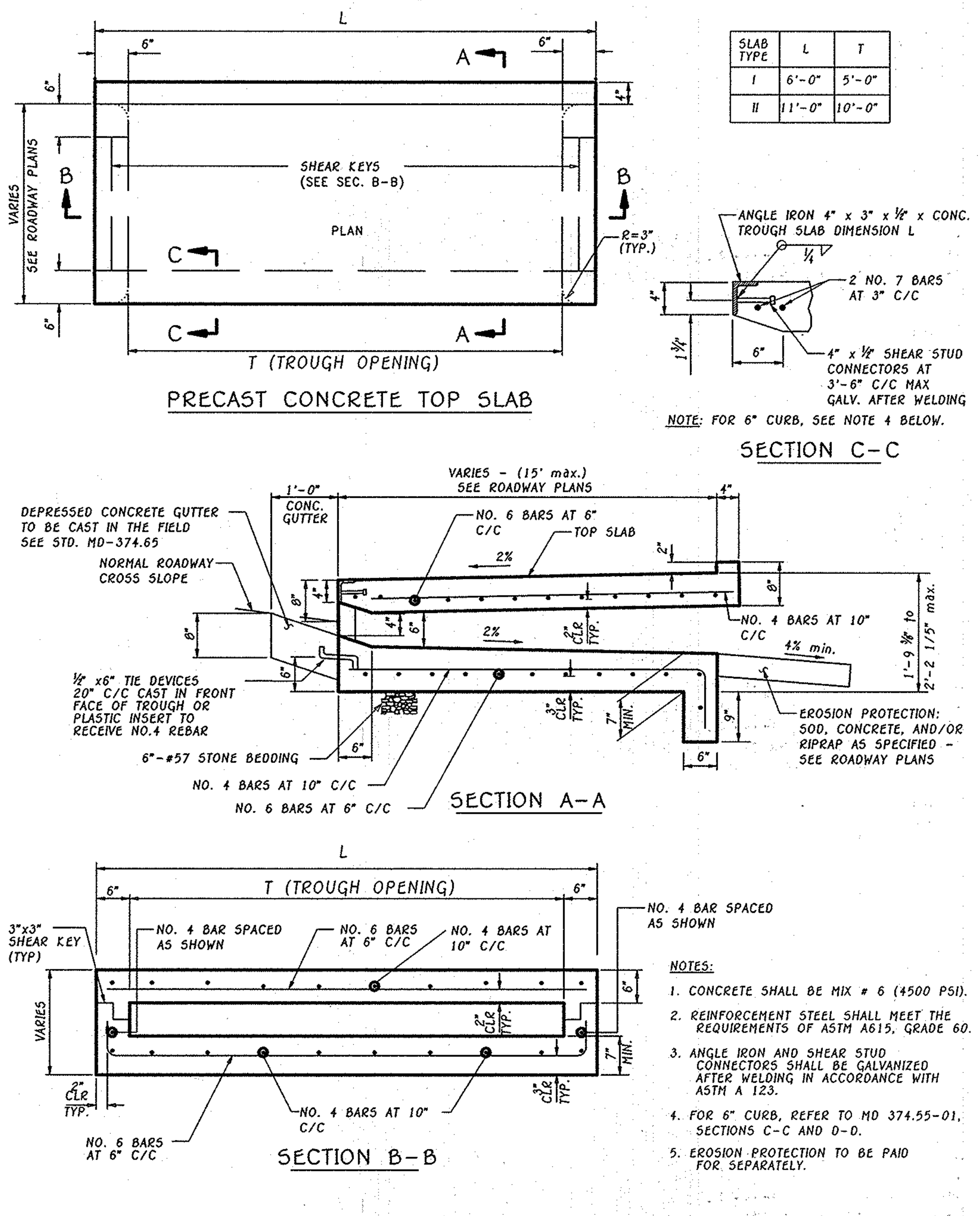
Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr., Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

[seal: STATE OF MARYLAND — ALDO MICHAEL VITUCCI — PROFESSIONAL ENGINEER] [signature] 9/11/13
ALDO M. VITUCCI, P.E. — DATE
"Professional Certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15."

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

REVISED
STORMWATER MANAGEMENT PLANS
OXFORD SQUARE
"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2
A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012



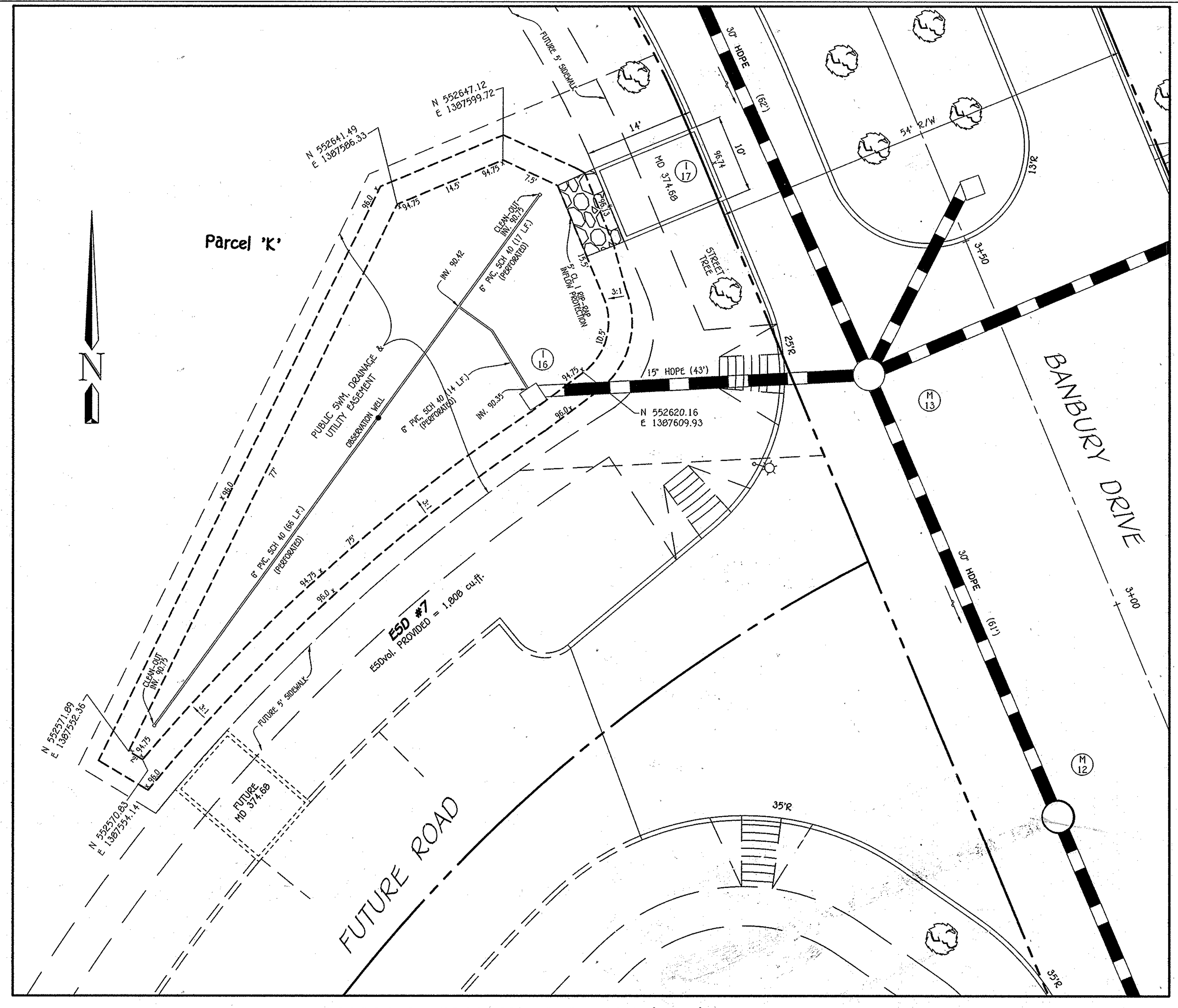
SLAB TYPE	L	T
I	6'-0"	5'-0"
II	11'-0"	10'-0"

NOTES:

1. CONCRETE SHALL BE MIX # 6 (4500 PSI).
2. REINFORCEMENT STEEL SHALL MEET THE REQUIREMENTS OF ASTM A615, GRADE 60.
3. ANGLE IRON AND SHEAR STUD CONNECTORS SHALL BE GALVANIZED AFTER WELDING IN ACCORDANCE WITH ASTM A 123.
4. FOR 6" CURB, REFER TO MD 374.55-01, SECTIONS C-C AND D-D.
5. EROSION PROTECTION TO BE PAID FOR SEPARATELY.

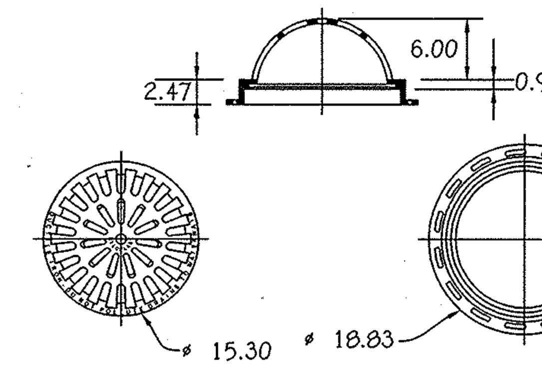
COG/COS OPENING

S.H.A. DETAIL MD-374.68



PROPOSED MICRO BIO-RETENTION (M-6)
ESD No. 7 PLAN VIEW

SCALE: 1" = 10'



ALL DIMENSIONS IN INCHES UNLESS NOTED OTHERWISE
QUALITY: MATERIAL SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT LOCKING DEVICE AVAILABLE UPON REQUEST
SEE DRAWING NO. 7001-110-230

Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com

15" DOME GRATE ASSEMBLY

NYLOPLAST OR EQUAL

Approved: Department Of Planning And Zoning	
Chief, Division Of Land Development	Date 9/05/12
Chief, Development Engineering Division	Date 8-31-12
Approved: Howard County Department Of Public Works	
Chief, Bureau Of Highways (Diane Schwarzman, Acting)	Date 8/17/12

REVISIONS

NO.	DESCRIPTION	DATE
1	Revised Storm Drain Pipe From Rccp To Hdpe	8/29/13
2	Removed Storm Drain From M-12 To M-19	9/22/14

Infiltration and Filter System Construction Specifications

Infiltration and filter systems either take advantage of existing permeable soils or create a permeable medium such as sand for WC), and Re v. In some instances where permeability is great, these facilities may be used for Qp as well. The most common systems include infiltration trenches, infiltration basins, sand filters, and organic filters.

When properly planted, vegetation will thrive and enhance the functioning of these systems. For example, pre-treatment buffers will trap sediments that often are bound with phosphorous and metals. Vegetation planted in the facility will aid in nutrient uptake and water storage. Additionally, plant roots will provide arteries for stormwater to permeate soil for groundwater recharge. Finally, successful plantings provide aesthetic value and wildlife habitat making these facilities more desirable to the public.

Design Constraints:

> Planting buffer strips of at least 20 feet will cause sediments to settle out before reaching the facility, thereby reducing the possibility of clogging.
> Determine areas that will be saturated with water and water table depth so that appropriate plants may be selected (hydrology will be similar to bioretention facilities, see figure A.5 and Table A.4 for planting material guidance).
> Plants known to send down deep taproots should be avoided in systems where filter fabric is used as part of facility design.
> Test soil conditions to determine if soil amendments are necessary.
> Plants shall be located so that access is possible for structure maintenance.
> Stabilize heavy flow areas with erosion control mats or sod.
> Temporarily divert flows from seeded areas until vegetation is established.
> See Table A.5 for additional design considerations.

Bio-retention

Soil Bed Characteristics

The characteristics of the soil for the bioretention facility are perhaps as important as the facility location, size, and treatment volume. The soil must be permeable enough to allow runoff to filter through the media, while having characteristics suitable to promote and sustain a robust vegetative cover crop. In addition, much of the nutrient pollutant uptake (nitrogen and phosphorus) is accomplished through absorption and microbial activity within the soil profile. Therefore, soils must balance their chemical and physical properties to support biotic communities above and below ground.

The planting soil should be a sandy loam, loamy sand, loam (USDA), or a loam/sand mix (should contain a minimum 35 to 60% sand, by volume). The clay content for these soils should be less than 25% by volume [Environmental Quality Resources (EQR), 1996; Engineering Technology Inc. and Biohabitats, Inc. (ETAB), 1993]. Soils should fall within the SM, ML, SC classifications or the Unified Soil Classification System (USCS). A permeability of at least 1.0 feet per day (0.5"/hr) is required (a conservative value of 0.5 feet per day is used for design). The soil should be free of stones, stumps, roots, or other woody material over 1" in diameter. Brush or seeds from noxious weeds (e.g., Johnson Grass, Mugwort, Nutsedge, and Canada Thistle or other noxious weeds as specified under COMAR 15.08.01.05.) should not be present in the soils. Placement of the planting soil should be in 12 to 18 lifts that are loosely compacted (tamped lightly with a backhoe bucket or traversed by dozer tracks). The specific characteristics are presented in Table A.3.

Table A.3 Planting Soil Characteristics

Parameter	Value
pH range	5.2 to 7.00
Organic matter	1.5 to 4.0% (by weight)
Magnesium	35 lbs. per acre, minimum
Phosphorus (phosphate - P205)	75 lbs. per acre, minimum
Potassium (potash - 1(K20)	85 lbs. per acre, minimum
Soluble salts	500 ppm
Clay	10 to 25 %
Silt	30 to 55 %
Sand	35 to 60%

Mulch Layer

The mulch layer plays an important role in the performance of the bioretention system. The mulch layer helps maintain soil moisture and avoids surface sealing, which reduces permeability. Mulch helps prevent erosion, and provides a microenvironment suitable for soil biota at the mulch/soil interface. It also serves as a pretreatment layer, trapping the finer sediments, which remain suspended after the primary pretreatment.

The mulch layer should be standard landscape style, single or double shredded hardwood mulch or chips. The mulch layer should be well aged (stockpiled or stored for at least 12 months), uniform in color, and free of other materials, such as weed seeds, soil, roots, etc. The mulch should be applied to a maximum depth of three inches. Grass clippings should not be used as a mulch material.

Planting Guidance

Plant material selection should be based on the goal of simulating a terrestrial forested community of native species. Bioretention simulates an upland-species ecosystem. The community should be dominated by trees, but have a distinct community of understory trees, shrubs and herbaceous materials. By creating a diverse, dense plant cover, a bioretention facility will be able to treat stormwater runoff and withstand urban stresses from insects, disease, drought, temperature, wind, and exposure.
The proper selection and installation of plant materials is key to a successful system. There are essentially three zones within a bioretention facility (Figure A.5). The lowest elevation supports plant species adapted to standing and fluctuating water levels. The middle elevation supports plants that like drier soil conditions, but can still tolerate occasional inundation by water. The outer edge
is the highest elevation and generally supports plants adapted to dryer conditions. For appropriate plant materials for bioretention facilities, Refer To MAA Approved Species List. The layout of plant material should be flexible, but should follow the general principals described in Table A.5. The objective is to have a system, which resembles a random, and natural plant layout, while maintaining optimal conditions for plant establishment and growth. For a more extensive bioretention plan, consult ETAB, 1993 or Claytor and Schueler, 1997.

STORMWATER MANAGEMENT MAINTENANCE NOTE

ALL STORMWATER MANAGEMENT FACILITIES WILL BE PRIVATELY OWNED AND MAINTAINED BY THE OXFORD SQUARE COMMERCIAL ASSOCIATION, INC. THE STREET TREES, PERFORATED UNDERDRAINS, FEEDERS, PLANTINGS AND SWALES WILL ALSO BE PRIVATELY OWNED AND MAINTAINED BY THE OXFORD SQUARE COMMERCIAL ASSOCIATION. HOWARD COUNTY WILL ONLY MAINTAIN THE INLET STRUCTURE WITHIN THE MICRO BIO-RETENTION FACILITIES ADJACENT TO THE RIGHT-OF-WAY.

FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
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c/o David P. Scheffenacker, Jr.,
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ALDO M. VITUCCI, P.E. DATE 6/19/12
"Professional Certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

STORMWATER MANAGEMENT NOTES & DETAILS
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F-12-026

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Sand Filter Specifications

1. Material Specifications for Sand Filters
The allowable materials for sand filter construction are detailed in Table B.3.1.
2. Sand Filter Testing Specifications

Underground sand filters, facilities within sensitive groundwater aquifers, and filters designed to serve urban hot spots are to be tested for water tightness prior to placement of filter media. Entrances and exits should be plugged and the system completely filled with water to demonstrate water tightness. Water tightness means no leakage for a period of 8 hours.

All overflow weirs, multiple orifices and flow distribution slots are to be field-tested to verify adequate distribution of flows.

3. Sand Filter Construction Specifications

Provide sufficient maintenance access (i.e., 12-foot-wide road with legally recorded easement). Vegetated access slopes are to be a maximum of 10% ; gravel slopes to 15% ; paved slopes to 25%.

Absolutely no runoff is to enter the filter until all contributing drainage areas have been stabilized.

Surface of filter bed is to be level.

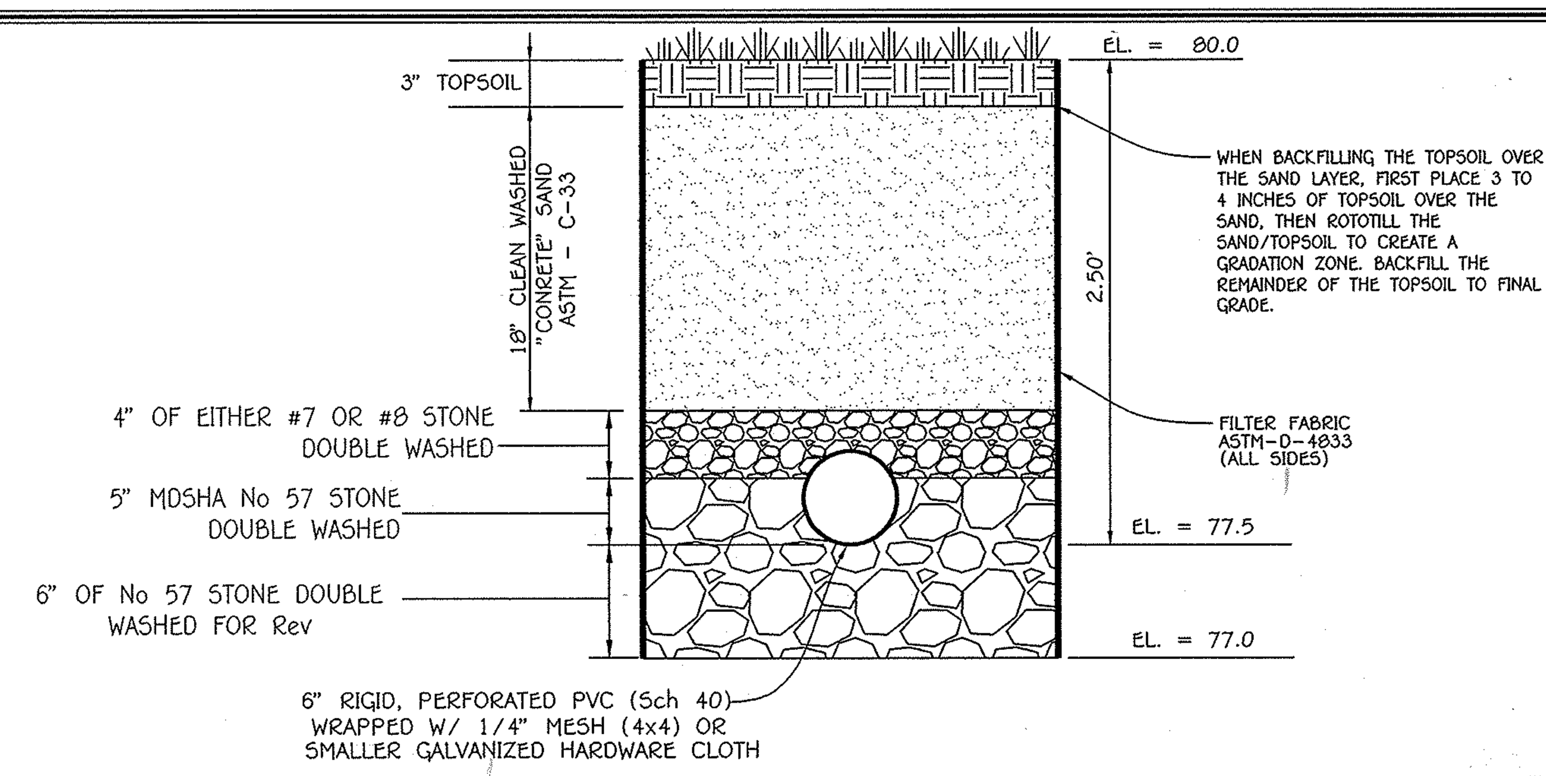
All underground sand filters should be clearly delineated with signs so that they may be located when maintenance is due.

Surface sand filters may be planted with appropriate grasses; see MAA Approved Species List.

"Pocket" sandfilters (and residential bio-retention facilities treating areas larger than an acre) shall be sized with a' stone "window" that covers approximately 10% of the filter area. This "window" shall be filled pea gravel (3/4 inch stone).

Table B.3.1 Material Specifications for Sand filters

Material	Specifications/Test Method	Size	Notes
sand	clean AASHTO-M-6 of ASTM-Cconcrete sand	0.02" to 0.04"	Sand substitutions such as Diabase and Graystone #10 are note acceptable. No calcium carbonated or dolomitic sand substitutions are: acceptable. No' "rock dust" can be used for sand:
peat	ash content: < 15% pH range: 5.2 to 4.9 loose bulk density 0.12 to 0.15 g/cc	N/a	The material must be reed-sedge hemic peat, shredded, uncompacted, uniform, and clean.
leaf compost		N/a	
underdrain gravel	AASHTO-M-43	0.375" to 0.75"	
geotextile fabric (if required)	ASTM-D-4833 (puncture strength lb.) ASTM-D-4632 (Tensile Strength lb.)	0.08" thick equivalent opening size of #80 sieve	Must maintain 125 gpm per sq. ft. flow rate. Note: a 4" pea gravel layer may be substituted for geotextiles meant to "separate" sand filter layers.
impermeable liner (if required)	ASTM-D-4833 (thickness) ASTM-D-412 (tensile strength 1,100 lb., elongation 200%) ASTM-D-624 (Tear resistance - 150 lb./in) ASTM-D-471 (water adsorption: +8 to -2% mass)	30 mil thickness	Liner to be ultraviolet resistant. A geotextile fabric should be used to protect the liner from puncture.
underdrain piping	F 758, Type PS 28 or AASHTO-M-278	4" - 6" rigid schedule 40 PVC or SDR35	3/8" perf. @ 6" on center, 4 holes per row; minimum of 3" of gravel over pipes; not necessary underneath pipes
concrete (cast-in-place)	MSHA Standards and Specs. Section 902, Mix No. 3, f'c = 3500 psi, normal weight, air-entrained; reinforcing to meet ASTM-615-60	N/a	on-site testing of poured-in-place concrete required: 28 day strength and slump test; all concrete design (cast-in-place or precast) not using previously approved State or local standards requires design drawings sealed and approved by a professional structural engineer licensed in the State of Maryland
concrete (pre-cast)	per pre-cast manufacturer	N/a	SEE ABOVE NOTE
non-rebar steel	ASTM A-36	N/a	structural steel to be hot-dipped galvanized ASTM-A-123



TYPICAL SECTION - SURFACE SAND FILTER

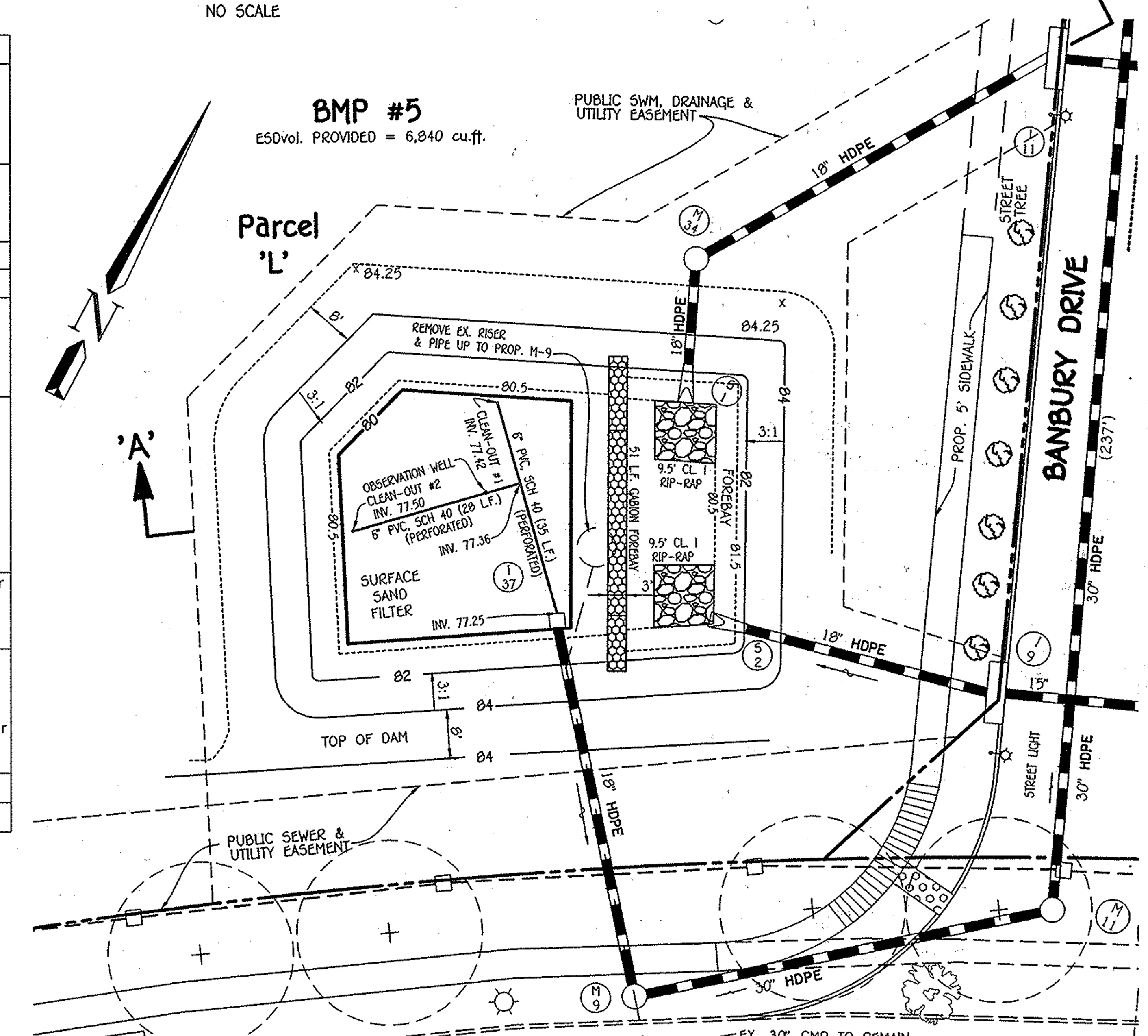
NO SCALE

OPERATION AND MAINTENANCE SCHEDULE FOR PRIVATELY OWNED AND MAINTAINED SURFACE STORMWATER FILTRATION SYSTEMS

1. THE STORMWATER WETLAND FACILITY SHALL BE INSPECTED ANNUALLY AND AFTER MAJOR STORMS. INSPECTIONS SHALL BE PERFORMED DURING WET WEATHER TO DETERMINE IF THE FACILITY IS FUNCTIONING PROPERLY.
2. THE TOP AND SIDE SLOPES OF THE EMBANKMENT SHALL BE MOWED A MINIMUM OF ONCE PER YEAR, WHEN VEGETATION REACHES 18" IN HEIGHT OR AS NEEDED.
3. FILTERS THAT HAVE A GRASS COVER SHALL BE MOWED A MINIMUM OF THREE (3) TIMES PER GROWING SEASON TO MAINTAIN A MAXIMUM GRASS HEIGHT OF LESS THAN 12 INCHES.
4. DEBRIS AND LITTER SHALL BE REMOVED DURING REGULAR MOWING OPERATIONS AND AS NEEDED.
5. VISIBLE SIGNS OF EROSION IN THE FACILITY SHALL BE REPAIRED AS SOON AS IT IS NOTICED.
6. REMOVE SILT WHEN IT EXCEEDS FOUR (4) INCHES DEEP IN THE FOREBAY.
7. FILTER MATERIAL MUST BE REPLACED WHEN WATER REMAINS ON THE SURFACE OF THE FILTER BED FOR MORE THAN 24 HOURS FOLLOWING A 1 OR 2 YEAR STORM EVENT OR MORE THAN 48 HOURS AFTER A 10 YEAR STORM EVENT.
8. A LOGBOOK SHALL BE MAINTAINED TO DETERMINE THE RATE AT WHICH THE FACILITY DRAINS.
9. THE MAINTENANCE LOGBOOK SHALL BE AVAILABLE TO HOWARD COUNTY FOR INSPECTION TO INSURE COMPLIANCE WITH OPERATION AND MAINTENANCE CRITERIA.
10. ONCE THE PERFORMANCE CHARACTERISTICS OF THE INFILTRATION SYSTEM HAVE BEEN VERIFIED, THE MONITORING SCHEDULE CAN BE REDUCED TO AN ANNUAL BASIS UNLESS THE PERFORMANCE DATA INDICATES THAT A MORE FREQUENT SCHEDULE IS REQUIRED.

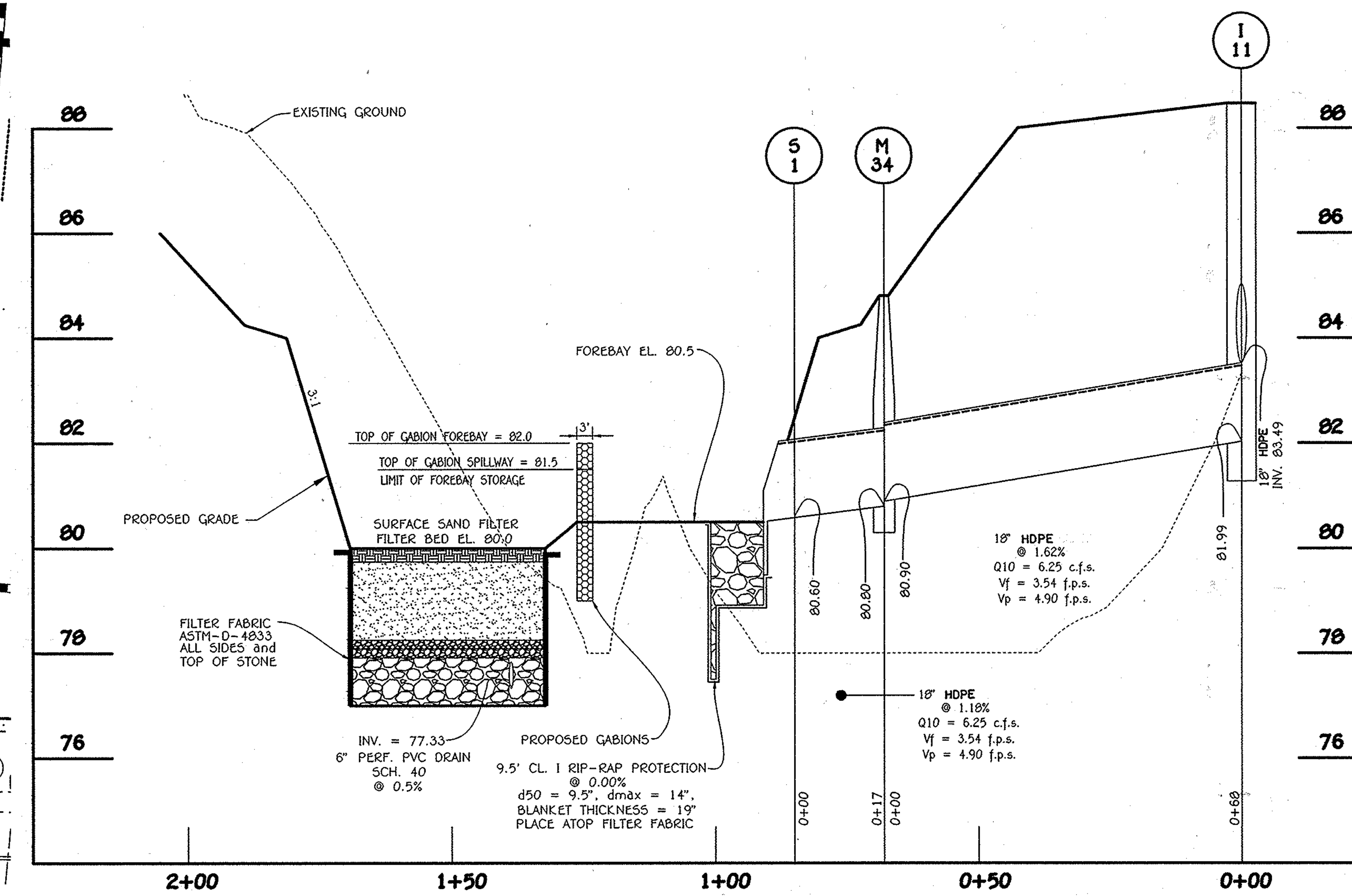
Approved: Department Of Planning And Zoning
[signature] 9/05/12
Chief, Division Of Land Development — Date
[signature] 8-31-12
Chief, Development Engineering Division — Date
Approved: Howard County Department Of Public Works
Diane Schwarz, Acting 8/17/12
Chief, Bureau Of Highways — Date

REVISIONS		
NO.	DESCRIPTION	DATE
1	Revised Storm Drain Pipe From Rcp To Hdpe	8/29/13
2	SWM FACILITY & STORM DRAINS CONSTRUCTED UNDER SDP 14-004	8/28/14



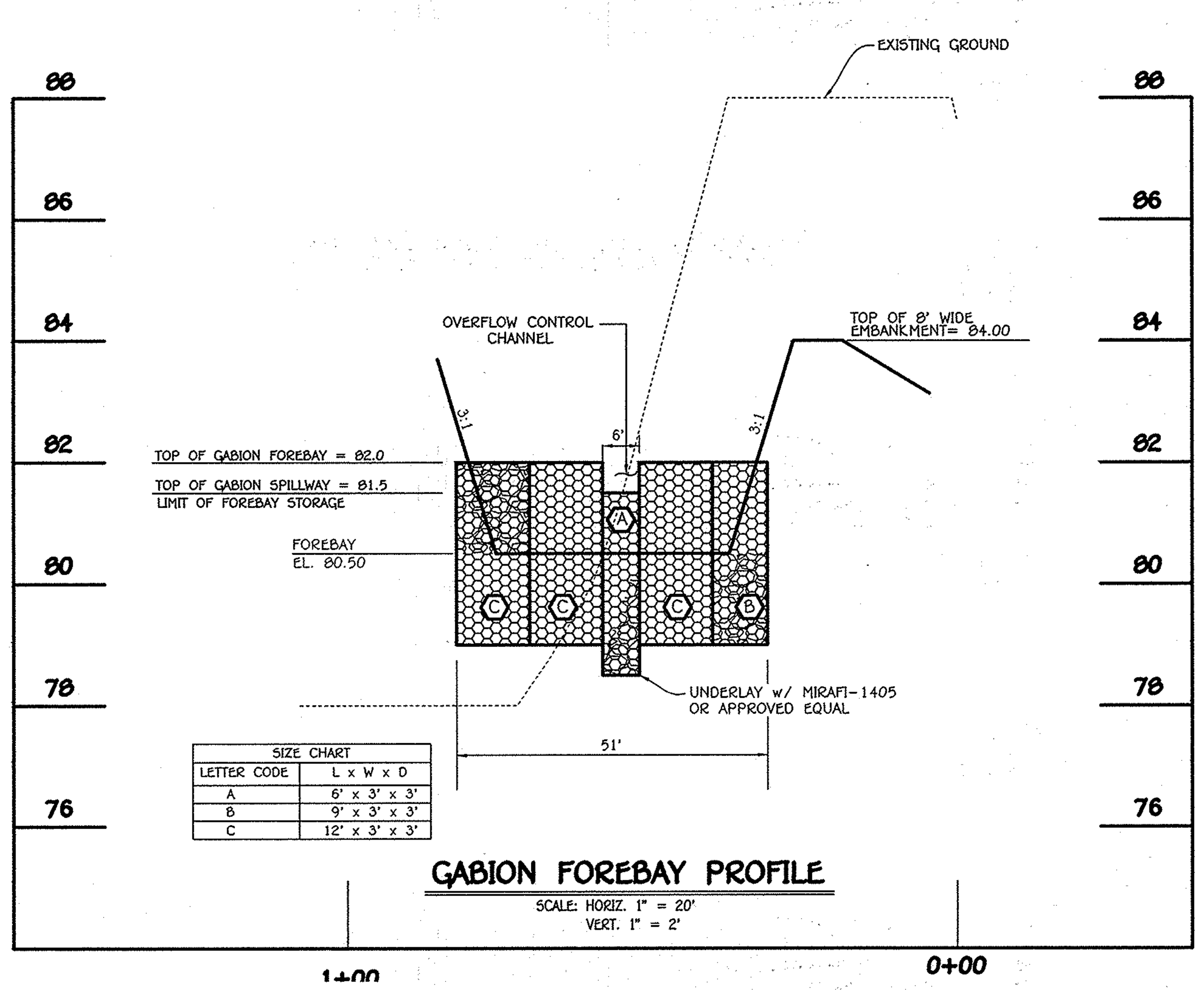
PROPOSED SURFACE SAND FILTER BMP No. 5 PLAN VIEW

SCALE: 1" = 20'



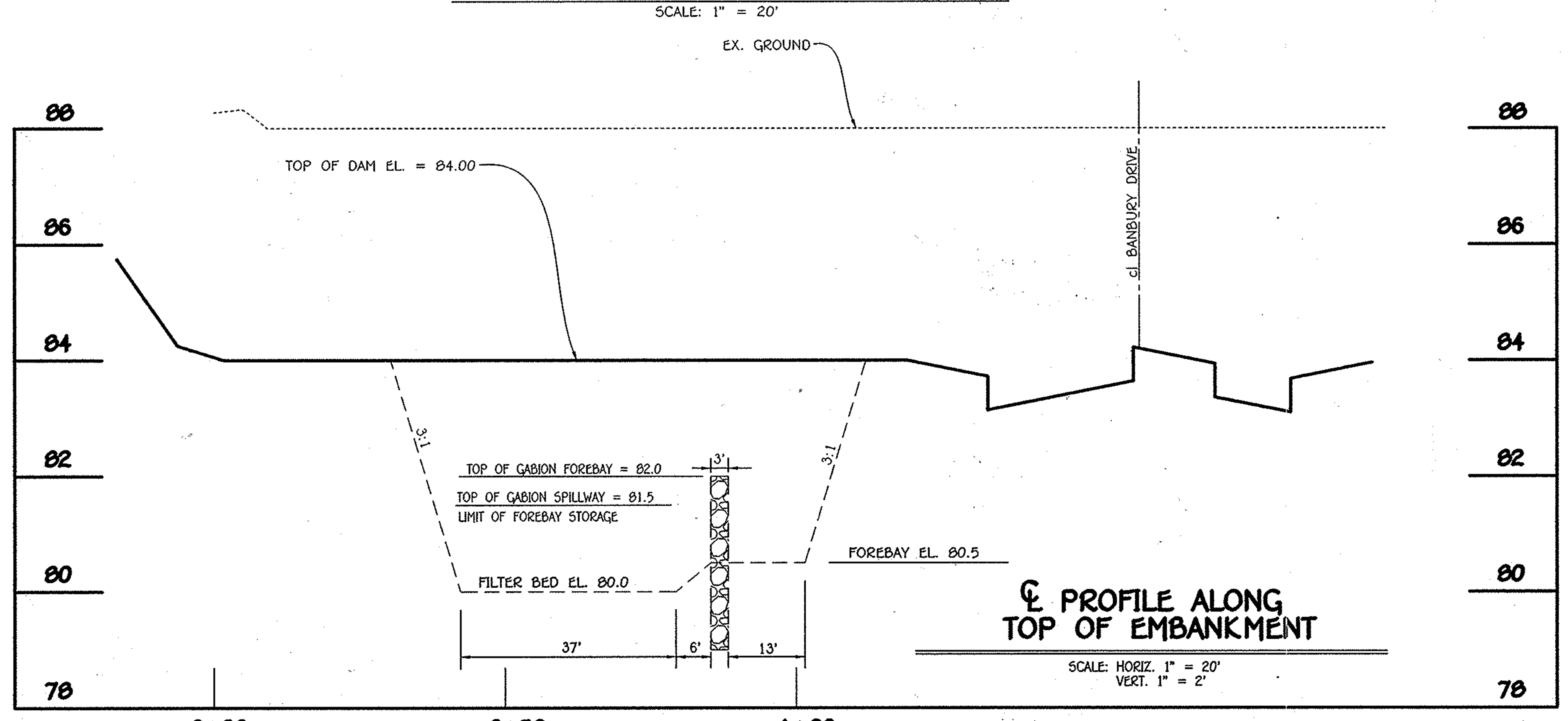
S.W.M. FACILITY PROFILE ALONG SECTION 'A-A'

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



GABION FOREBAY PROFILE

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



℄ PROFILE ALONG TOP OF EMBANKMENT

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

2 BMP #5 & STORM DRAIN SYSTEM FROM I-9 AND I-11 ARE TO BE CONSTRUCTED UNDER SDP 14-004 PARCEL 'L' RETAIL BUILDING

Owner

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c/o David P. Scheffenacker, Jr., Managing Member
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Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

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ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

ALDO M. VITUCCI, P.E. — 6/19/12 DATE
"Professional Certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

STORMWATER MANAGEMENT NOTES & DETAILS (BMP No. 5 - SURFACE SANDFILTER)

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2
A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
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DATE: JUNE 15, 2012
SHEET 22 OF 45

F-12-026

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STRUCTURE SCHEDULE (SAINT MARGARETS BLVD.)

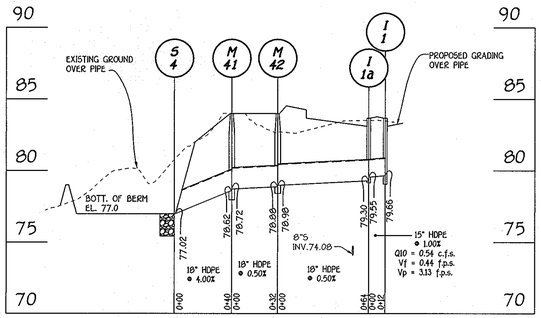
STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	LOCATION	ROAD STA./ COORDINATE	OFFSET	TYPE AND WIDTH	REMARKS
I-1	83.69	---	79.66	SAINT MARGARETS BOULEVARD	0+67	7.0'R	A-5 (2'-6")	D - 4.01
I-1a	83.69	79.55	79.30	SAINT MARGARETS BOULEVARD	0+67	7.0'L	A-5 (2'-6")	D - 4.01
I-2	* 85.13	80.43 (6")	80.39	SAINT MARGARETS BOULEVARD	1+01	---	TYPE 'D' INLET	D - 4.10
I-3	* 87.94	83.23 (6")	82.98	SAINT MARGARETS BOULEVARD	2+80	---	TYPE 'D' INLET	D - 4.10
I-4	* 91.23	86.52 (6")	86.27	SAINT MARGARETS BOULEVARD	3+77	---	TYPE 'D' INLET	D - 4.10
I-5	* 94.74	90.01 (6")	89.76	SAINT MARGARETS BOULEVARD	5+00	---	TYPE 'D' INLET	D - 4.10
M-1	82.80	75.50, 76.00	75.38+ (EX. 30")	SAINT MARGARETS BOULEVARD	0+57	38.2' R	5' DIA. MANHOLE	G - 5.13
M-2	83.21	76.74	76.49	SAINT MARGARETS BOULEVARD	0+67	12.0' R	5' DIA. MANHOLE	G - 5.13
M-3	85.23	79.27, 80.27	79.02	SAINT MARGARETS BOULEVARD	1+01	12.0' R	5' DIA. MANHOLE	G - 5.13
M-4	88.05	81.82, 82.82	81.57	SAINT MARGARETS BOULEVARD	2+80	12.0' R	5' DIA. MANHOLE	G - 5.13
M-5	91.33	85.11, 86.11	84.86	SAINT MARGARETS BOULEVARD	3+77	12.0' R	5' DIA. MANHOLE	G - 5.13
M-6	94.77	87.52, 88.53	87.27	SAINT MARGARETS BOULEVARD	4+96	13.0' R	5' DIA. MANHOLE	G - 5.13
M-20	84.50	FUTURE	76.66	SAINT MARGARETS BOULEVARD	0+76	65.4' R	4' DIA. MANHOLE	G - 5.12
M-40	96.41	FUTURE	88.06	SAINT MARGARETS BOULEVARD	5+13.33	63.6' R	4' DIA. MANHOLE	G - 5.12
M-41	84.00	78.72	78.62	SAINT MARGARETS BOULEVARD	0+99	75.4' L	4' DIA. MANHOLE	G - 5.12
M-42	84.00	78.98	78.88	SAINT MARGARETS BOULEVARD	0+67	69.2' L	4' DIA. MANHOLE	G - 5.12
S-4	78.52	77.02	---	SAINT MARGARETS BOULEVARD	1+20	103.0' L	18" FLARED END SECT.	ADS, Inc. or Equal

* - DENOTES THROAT ELEVATION

PIPE SCHEDULE (TOTAL)

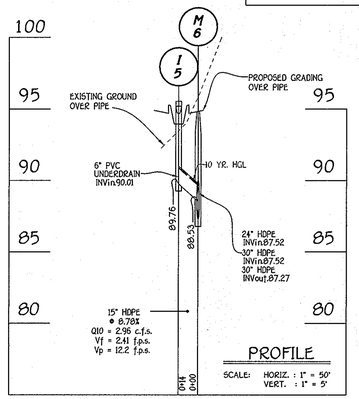
SIZE	CLASS	LENGTH
6"	PVC, SCH. 40 (PERFORATED)	623'
6"	PVC, SCH. 40 (SOLID)	137'
12"	HDPE	80'
15"	HDPE	667'
18"	HDPE	1398'
24"	HDPE	344'
30"	HDPE	1211'
15"	RCCP, CL. IV	21'
18"	RCCP, CL. IV	25'
24"	RCCP, CL. IV	350'
30"	RCCP, CL. IV	634'

NOTE: HDPE PIPE MATERIAL MAY BE SUBSTITUTED FOR RCCP, CL. IV EXCEPT WHERE DEPTH IS EXCEEDED (PER DETAIL D-3.01)



PROFILE

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



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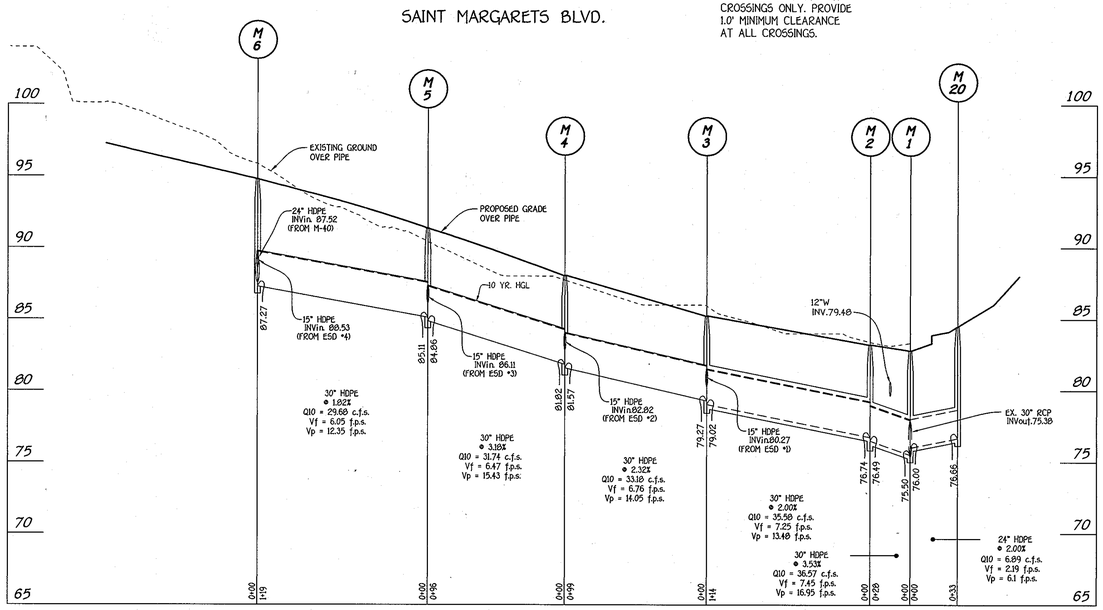

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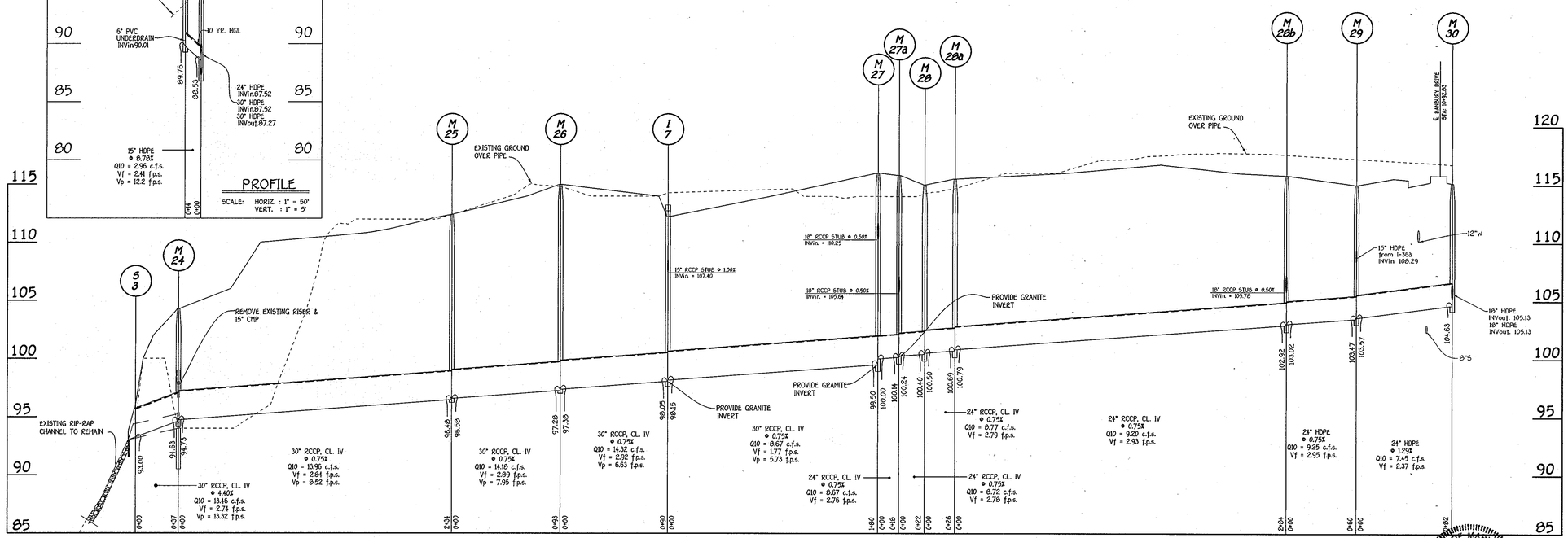

⚠ PROFILE

SCALE: HORIZ. : 1" = 50'
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APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-11-13

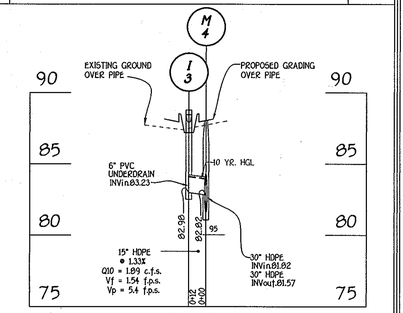
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/17/13

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10.17.13

REVISIONS

NO.	DESCRIPTION	DATE
1	REVISED STORM DRAIN ALONG SCHOOL BOUNDARY AND REVISED STORM DRAIN MATERIAL FROM RCCP TO HDPE	8/29/13



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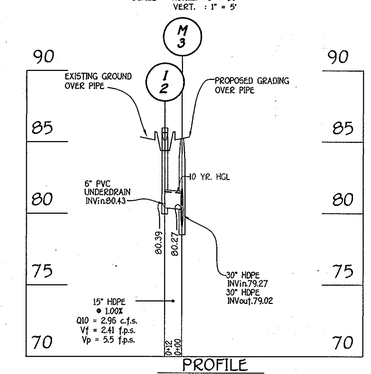

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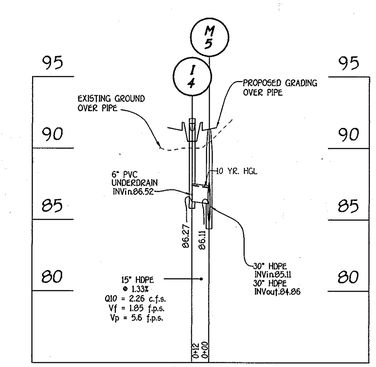

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REVISED
STORM DRAIN PROFILES

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND
OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 23 OF 45

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph: 410-296-3800

Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph: 410-296-3800

STATE OF MARYLAND — ALDO MICHELL VITALE — No. 20748

ALDO M. VITALE — DATE 9/11/13
"Professional Engineer and 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. 20748, Expiration Date 2-22-15."

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

F-12-026

I:\2009\09014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 23 & 24 MYLAR.dwg, SHEET 23, 9/6/2013 2:26:59 PM, 1:1

STRUCTURE SCHEDULE (BANBURY DRIVE)

STRUCTURE NO.	TOP ELEVATION	INV.IN	INV.OUT	LOCATION	ROAD STA./ COORDINATE	OFFSET	TYPE AND WIDTH	REMARKS
I-7	*112.24	98.15, 107.40	98.05	----	N 553519.56 E 1387062.07	----	D INLET	D-4.10
I-8	85.02	----	81.38	BANBURY DRIVE	0+75	26'R	A-10	D-4.03
I-9	85.02	80.97	80.72	BANBURY DRIVE	0+75	26'L	A-10	D-4.03
I-10	79.44	75.76	75.51	COCA-COLA DRIVE	11+00	36'L	A-10	D-4.03
I-11	88.45	83.49	81.99	BANBURY DRIVE	1+78.50	26'L	A-10	D-4.03
I-12	88.45	84.03	83.78	BANBURY DRIVE	1+78.50	26'R	A-10	D-4.03
I-13	94.31	---	89.35	BANBURY DRIVE	3+14.50	26'R	A-10	D-4.03
I-14	*93.50	---	88.43	BANBURY DRIVE	3+40	70'R	D INLET	D-4.10
I-15	*110.00	105.85	105.75	----	N 553713.04 E 1387400.33	----	D INLET	D-4.10
I-15a	*110.00	---	107.00	----	N 553706.30 E 1387632.30	----	D INLET	D-4.10
I-16	*95.50	(6") 90.35, (6") 90.35	88.75	BANBURY DRIVE	3+53	58'L	15" BASIN	Nyloplast OR EQUAL
I-17	97.41	---	---	BANBURY DRIVE	3+71	26'L	COG/COS OPENING	MD-374.68
I-18	** 101.74	(6") 97.07, 96.07	95.82	BANBURY DRIVE	4+82	31'L	15" BASIN	Nyloplast OR EQUAL
I-19	** 105.98	(6") 101.05, (6") 101.05, 100.05	99.80	BANBURY DRIVE	5+69	31'L	15" BASIN	Nyloplast OR EQUAL
I-20	** 106.10	(6") 101.43, 99.14	98.89	BANBURY DRIVE	5+73	31'R	15" BASIN	Nyloplast OR EQUAL
I-21	** 111.44	(6") 106.77, 105.10	104.85	BANBURY DRIVE	6+86	31'R	15" BASIN	Nyloplast OR EQUAL
I-22	** 111.38	(6") 106.71, 105.71	105.46	BANBURY DRIVE	6+84	31'L	15" BASIN	Nyloplast OR EQUAL
I-23	** 115.60	(6") 110.93, 110.91	109.21	BANBURY DRIVE	8+23	31'R	15" BASIN	Nyloplast OR EQUAL
I-24	** 115.35	(6") 110.68, 110.38	110.38	BANBURY DRIVE	8+14	31'L	15" BASIN	Nyloplast OR EQUAL
I-25	** 116.50	(6") 112.00, 109.50	109.25	BANBURY DRIVE	9+92	31'R	15" BASIN	Nyloplast OR EQUAL
I-26	** 116.24	(6") 111.49, 110.49	110.24	BANBURY DRIVE	10+22	28'L	15" BASIN	Nyloplast OR EQUAL
I-27	* 114.53	(6") 109.78, (6") 109.78, 108.78	108.53	BANBURY DRIVE	11+65	31'L	D INLET	D-4.10
I-36	115.07	---	---	BANBURY DRIVE	11+60	30'R	COG/COS OPENING	MD-374.68
I-36a	* 113.50	(6") 108.42	108.42	BANBURY DRIVE	11+20	70'R	D INLET	D-4.10
(2)								
I-38	95.80	---	89.00	BANBURY DRIVE	3+56	3.4'R	15" BASIN ***	Nyloplast OR EQUAL
I-39	104.95	---	101.00	BANBURY DRIVE	5+35	5.3'R	15" BASIN ***	Nyloplast OR EQUAL
I-40	115.74	108.76	108.51	BANBURY DRIVE	7+96	6.3'L	15" BASIN ***	Nyloplast OR EQUAL
M-9	83.60	75.44, 74.44	74.24 (EX. 30")	COCA COLA DRIVE	8+83.50	29.4' R	5' DIA. MANHOLE	G - 5.13
M-10		100.75, 95.61	95.51	BANBURY DRIVE	5+35	19.7' L	5' DIA. MANHOLE	G - 5.13
M-11	83.61	75.45	75.35	BANBURY DRIVE	0+41	15.1' L	5' DIA. MANHOLE	G - 5.13
M-12	92.17	82.86	82.61	BANBURY DRIVE	2+78	17.3' L	5' DIA. MANHOLE	G - 5.13
M-13	95.07	86.28, 86.53, 87.55, 88.73	86.03	BANBURY DRIVE	3+39	17.8' L	5' DIA. MANHOLE	G - 5.13
M-14	98.49	89.47	89.22	BANBURY DRIVE	4+04	17.5' L	5' DIA. MANHOLE	G - 5.13
M-15	101.69	92.82, 93.82, 95.69	92.57	BANBURY DRIVE	4+77	19.0' L	5' DIA. MANHOLE	G - 5.13
M-16	106.11	97.64, 99.69, 98.39	97.14	BANBURY DRIVE	5+69	19.7' L	5' DIA. MANHOLE	G - 5.13
M-17	111.57	104.06, 105.35, 104.35	103.56	BANBURY DRIVE	6+85	19.7' L	4' DIA. MANHOLE	G - 5.12
M-18	115.20	110.18, 108.23	107.93	BANBURY DRIVE	7+97	19.7' L	4' DIA. MANHOLE	G - 5.12
~~M-19~~	~~96.50~~	~~FUTURE~~	~~90.00~~	~~BANBURY DRIVE~~	~~2+77~~	~~69.5' L~~	~~4' DIA. MANHOLE~~	~~G - 5.12~~
M-21	103.00	-----	94.47	BANBURY DRIVE	4+78	46.5' R	4' DIA. MANHOLE	G - 5.12
M-27a	115.80	100.24, 105.64	100.14	-----	N 553421.95 E 1387215.11	-----	4' DIA. MANHOLE	G - 5.12
M-28a	115.50	100.79	100.69	-----	N 553377.70 E 1387213.82	-----	4' DIA. MANHOLE	G - 5.12
M-28b	115.80	103.02, 105.78	102.92	-----	N 553123.20 E 1387088.24	-----	4' DIA. MANHOLE	G - 5.12
M-24	104.30	94.73	94.63	-----	N 553833.80 E 1386880.71	-----	5' DIA. MANHOLE	G - 5.13
M-25	112.40	96.58	96.48	-----	N 553643.88 E 1387017.42	-----	5' DIA. MANHOLE	G - 5.13
M-26	115.00	97.38	97.28	-----	N 553601.17 E 1387099.56	-----	5' DIA. MANHOLE	G - 5.13
M-27	116.00	100.00, 110.25	99.50	-----	N 553438.20 E 1387222.92	-----	5' DIA. MANHOLE	G - 5.13
M-28	115.00	100.50	100.40	-----	N 553402.14 E 1387205.59	-----	4' DIA. MANHOLE	G - 5.12
M-29	115.80	108.29, 103.57	103.47	-----	N 553069.75 E 1387061.87	-----	4' DIA. MANHOLE	G - 5.12
M-30	115.13	105.13, 105.13	104.63	BANBURY DRIVE	10+92.83	12.1' L	4' DIA. MANHOLE	G - 5.12
M-31	116.10	109.80, 108.80	108.17	BANBURY DRIVE	13+10	43.4' R	4' DIA. MANHOLE	G - 5.12
M-32	114.73	108.34, 105.77	105.67	BANBURY DRIVE	11+65	12.1' L	4' DIA. MANHOLE	G - 5.12
M-33	115.09	FUTURE FUTURE FUTURE 106.28, 108.68, 108.68	106.18	BANBURY DRIVE	12+21	12.1' L	4' DIA. MANHOLE	G - 5.12
(2)								
S-3	95.50	93.00	---	-----	N 553876.59 E 1386884.90	-----	30" CONC. END SECT.	D - 5.51
S-5	106.85	104.60	---	-----	N 553693.83 E 1387205.13	-----	18" FLARED END SECT.	ADS, Inc. or Equal

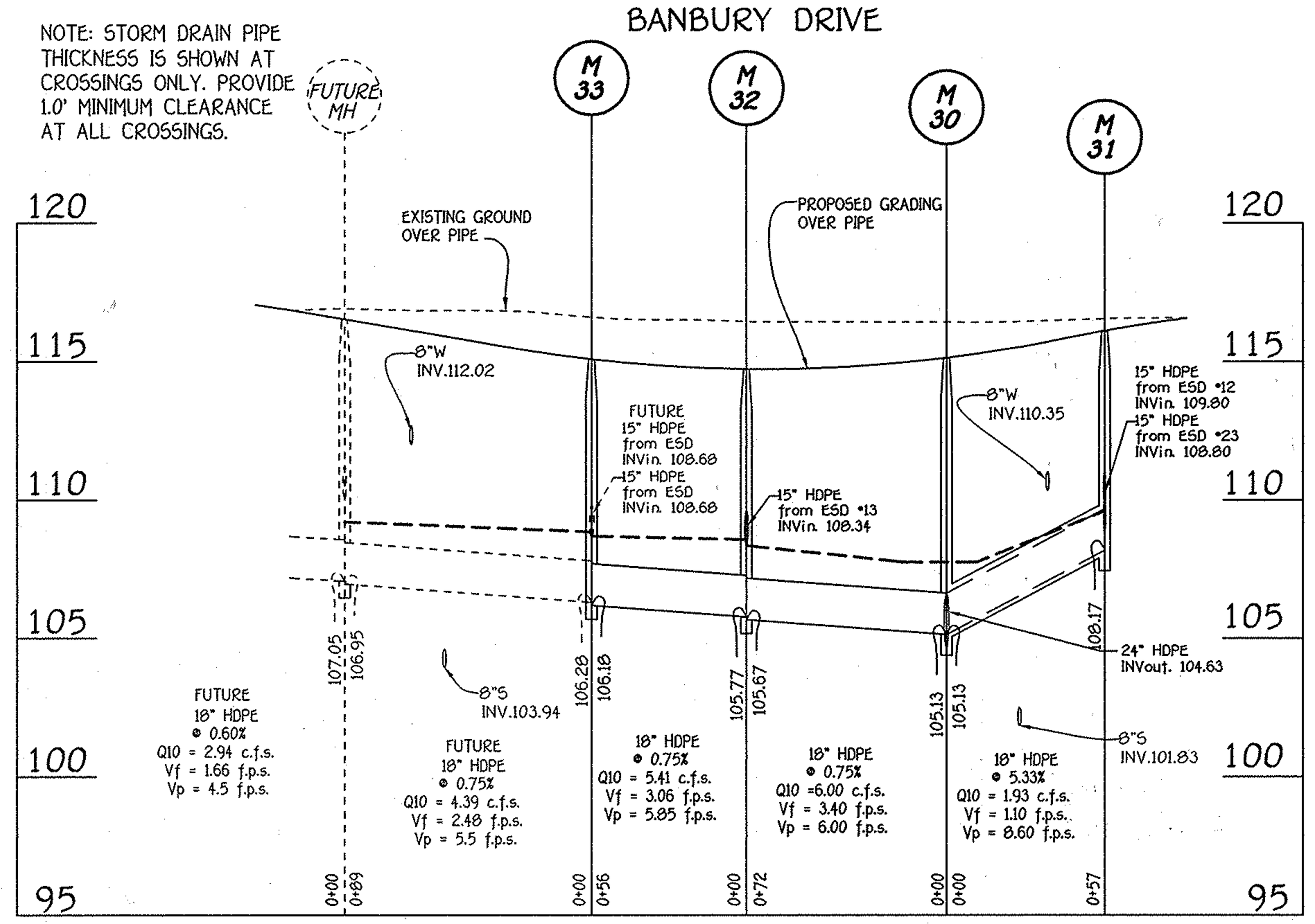
* - DENOTES THROAT ELEVATION
** - DENOTES TOP OF 15" BASIN ELEVATION (TOP OF PIPE IS 8" ABOVE BIO-RETENTION CELL)
*** PROVIDE FLAT TOP GRATE FOR INLETS (I-38 THRU I-41) LOCATED WITH THE MEDIAN (CATALOG No. R-4040-15)

NOTE: SEE SHEET 38 FOR BASIN RISERS AND END SECTIONS IN PROFILE VIEW.

(2) STORM DRAIN STRUCTURES S-1, S-2, M-34 & I-37 ARE BEING REVISED ON SDP 14-004 PARCEL 'L' RETAIL BUILDING

Nyloplast
3130 VERONA AVE
BUFORD, GA 30518
PHN (770) 932-2443
FAX (770) 932-2490
www.nyloplast-us.com

NOTE: STORM DRAIN PIPE THICKNESS IS SHOWN AT CROSSINGS ONLY. PROVIDE 1.0' MINIMUM CLEARANCE AT ALL CROSSINGS.



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

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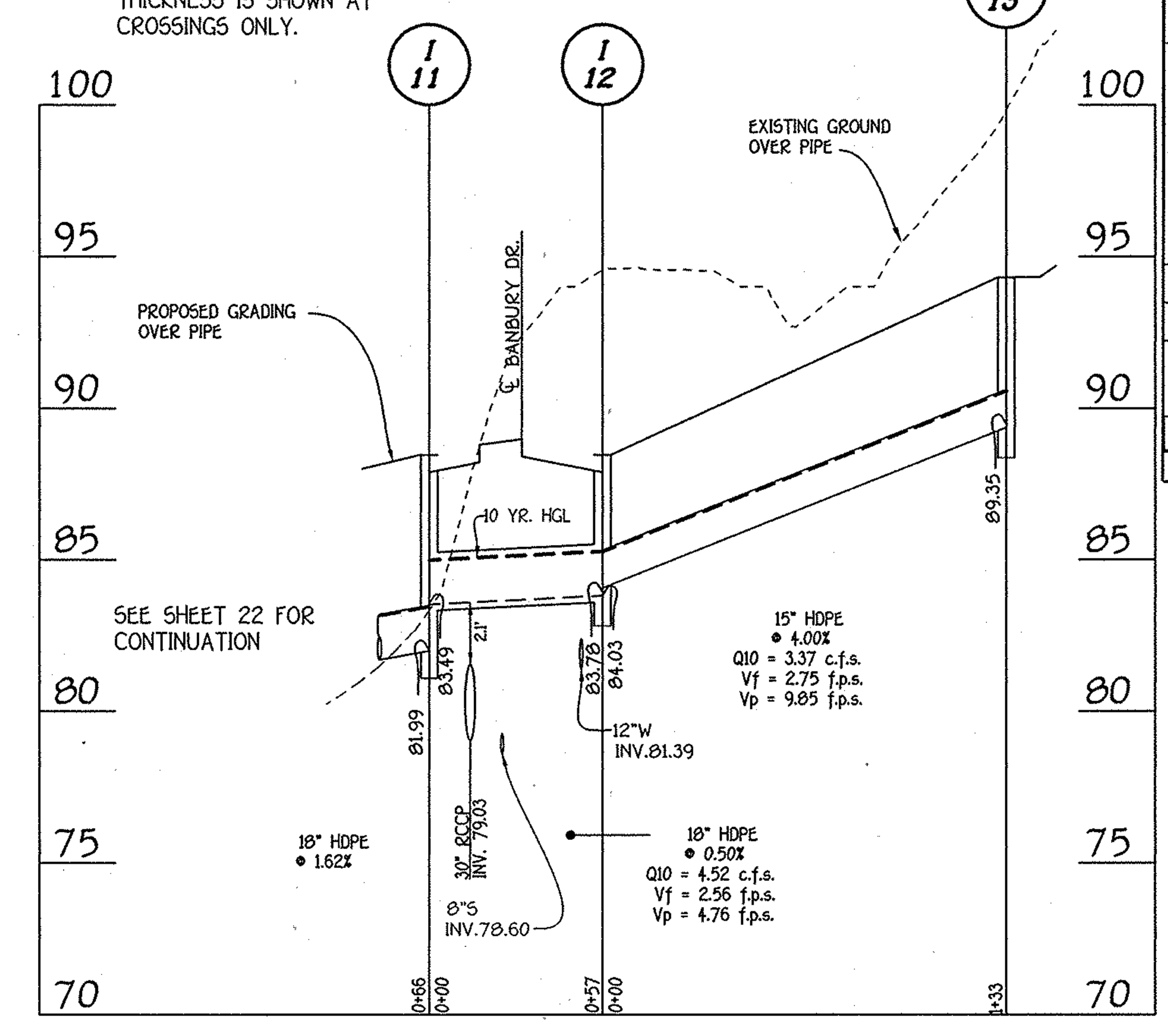

PROFILE
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APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — 10-11-13 DATE

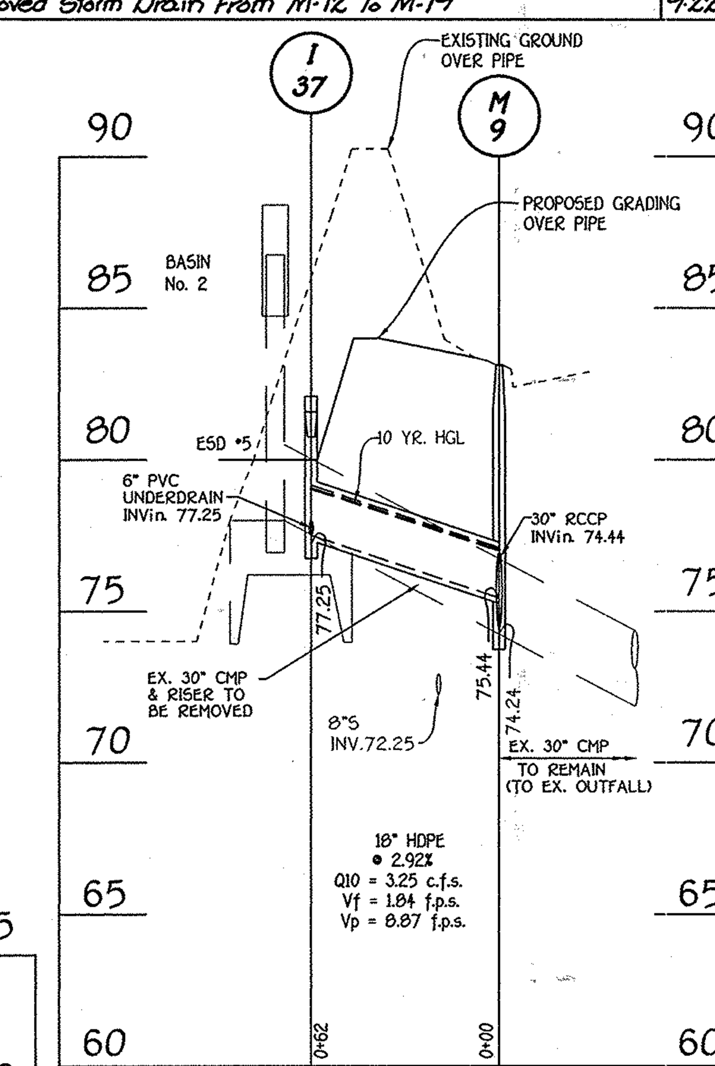
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — 10/17/13 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION — 10.17.13 DATE

REVISIONS

NO.	DESCRIPTION	DATE
1	REVISED STORM DRAIN ALONG SCHOOL BOUNDARY AND REVISED STORM DRAIN MATERIAL FROM RCCP TO HDPE	8/29/13
2	SWM FACILITY & STORM DRAINS CONSTRUCTED UNDER SDP 14-004	8/28/14
3	Removed Storm Drain From M-12 To M-19	9.22.14



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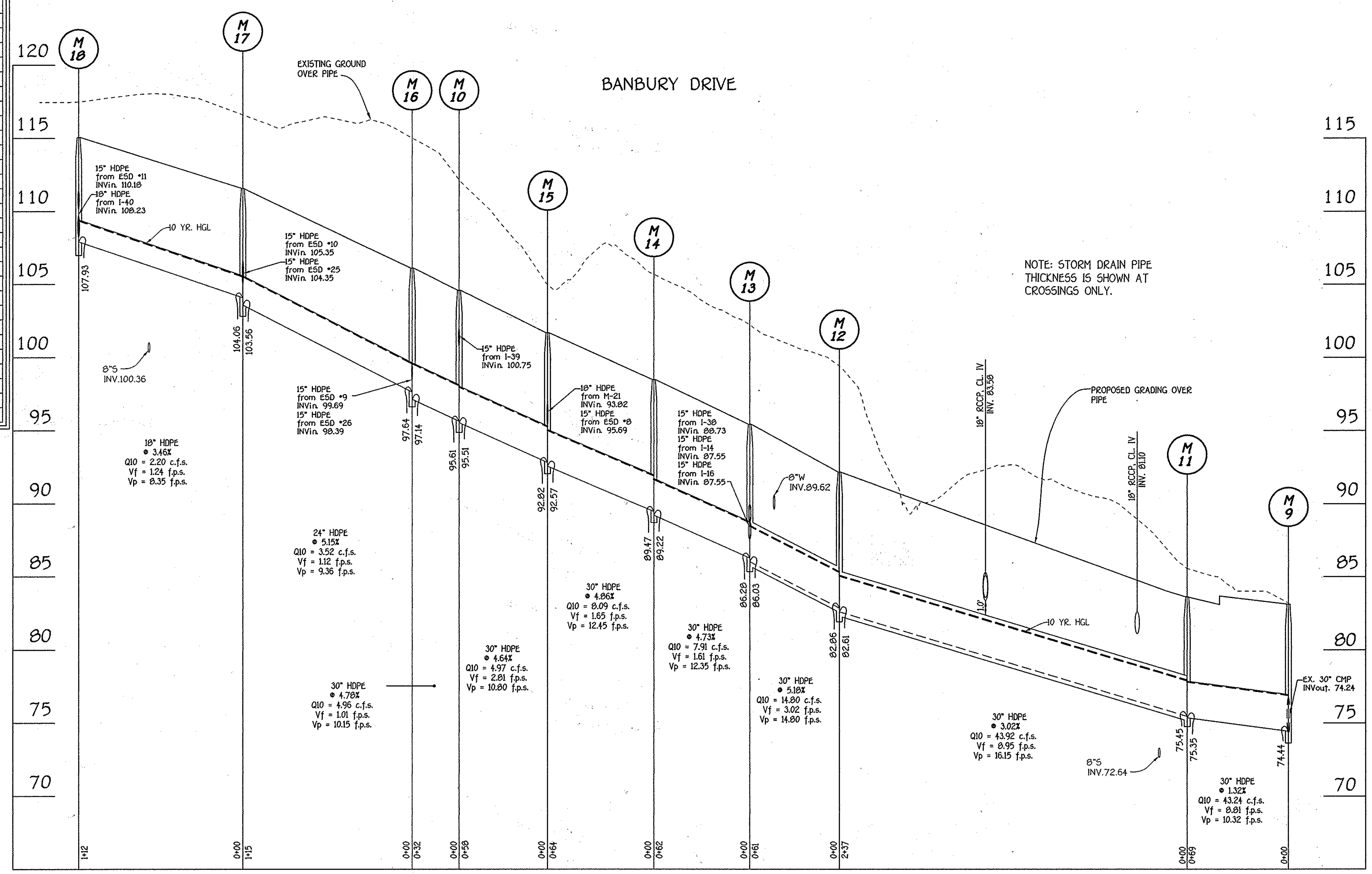

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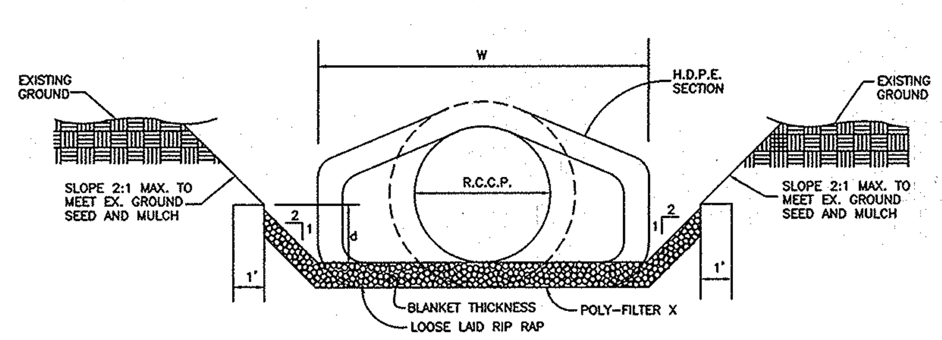

RIP RAP CHANNEL DETAIL
NO SCALE

CONSTRUCTION SPECIFICATIONS FOR RIP-RAP OUTFALLS

1. The subgrade for the filter, riprap or gabion shall be prepared to the required lines and grades. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
2. The rock or gravel shall conform to the specified grading limits when installed respectively in the riprap or filter.
3. Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional shall hole shall be repaired by placing another piece of cloth over the damaged part or by completely replacing the cloth. All overlaps whether for repairs or for joining two pieces of cloth shall be a minimum of one foot.
4. Stone for the riprap or gabion outlets may be placed by equipment. Both shall each be constructed to the full course thickness in one operation and in such a manner as to avoid displacement of underlying materials. The stone for riprap or gabion outlets shall be delivered and placed in a manner that will insure that it is reasonably homogenous with the smaller stones and spalls filling the voids between the larger stones. Riprap shall be placed in a manner to prevent damage to the filter blanket or filter cloth. Hand placement will be required to the extent necessary to prevent damage to the permanent works.

RIP-RAP CHANNEL DESIGN DATA

STRUCTURE	AREA	WETTED PERIMETER	R	R 2/3	S	S 1/2	W	d	N	V	Q	RIP-RAP SIZE D_{50}	RIP-RAP SIZE D_{MAX}	BLANKET THICKNESS
S-4	7.09 SF	12.82'	0.5530	0.6724	0.0050	0.0707	10'	0.63'	0.04	5.60 f.p.s.	39.4 c.f.s.	9.5"	14"	19"
S-6	8.59 SF	11.94'	0.7194	0.8020	0.0050	0.0707	8'	0.88'	0.04	6.67 f.p.s.	56.0 c.f.s.	9.5"	14"	19"
S-7	6.36 SF	11.04'	0.5761	0.6911	0.0050	0.0707	8'	0.68'	0.04	5.75 f.p.s.	36.4 c.f.s.	9.5"	14"	19"
S-8	5.45 SF	8.92'	0.6111	0.7189	0.0050	0.0707	6'	0.63'	0.04	5.83 f.p.s.	31.5 c.f.s.	9.5"	14"	19"
S-1	1.84 SF	7.25'	0.2538	0.3990	0.0050	0.0707	6'	0.28'	0.04	3.33 f.p.s.	5.92 c.f.s.	9.5"	14"	19"
S-2	0.62 SF	6.45'	0.0961	0.2082	0.0050	0.0707	6'	0.10'	0.04	1.74 f.p.s.	0.07 c.f.s.	9.5"	14"	19"

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

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

ALDO M. VITUCCI, P.E. — 9/11/13 DATE

"Professional Certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15."

REVISED
STORM DRAIN PROFILES

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND
OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
USES: RETAIL AND RESIDENTIAL
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TAX MAP No. 38, GRID No. 19 & 20
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FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
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F-12-026

I:\2009\09014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 23 & 24 MYLAR.dwg, SHEET 24, 9/6/2013 2:29:43 PM, 1:1

APPROVED: DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 10-11-13

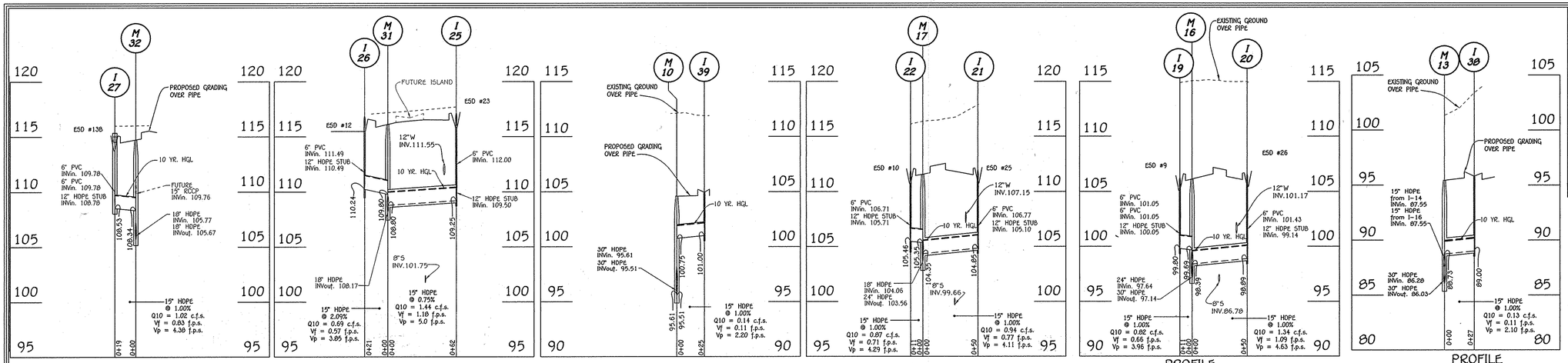
APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 10/17/13

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 10.17.13

REVISIONS

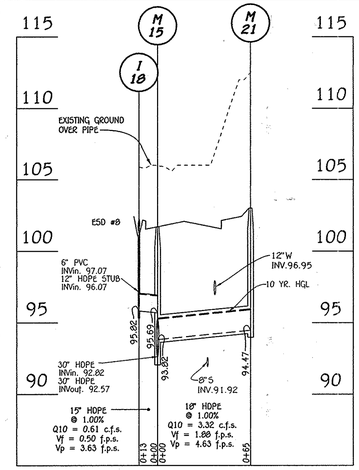
NO.	DESCRIPTION	DATE
1	REVISED PROFILE FROM I-26 TO M-31 & REVISED STORM DRAIN PIPE FROM RCCP TO HDPE	8/29/13
2	SWM FACILITY & STORM DRAINS CONSTRUCTED UNDER SDP 14-024	8/28/14



PROFILE

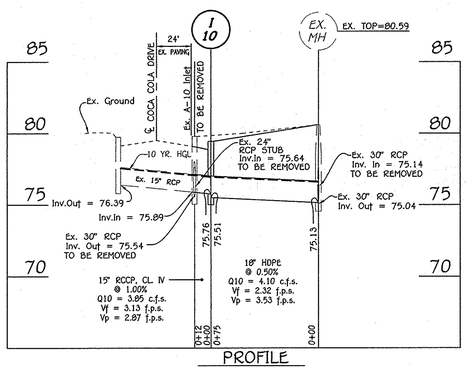
SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'

Revisions		
No.	Description	Date
3	Removed Storm Drain From M-12 To M-19	9.22.14



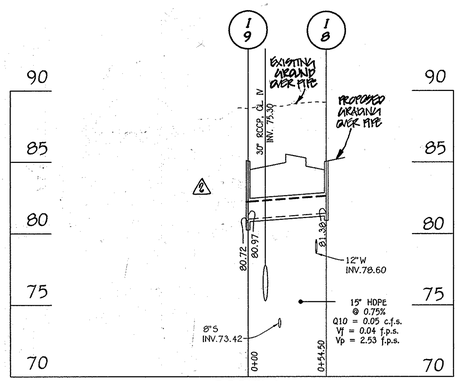
PROFILE

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



PROFILE

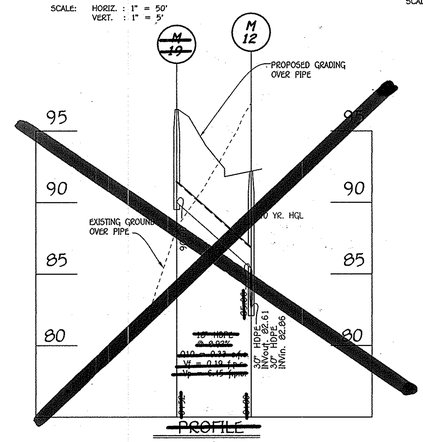
SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'



PROFILE

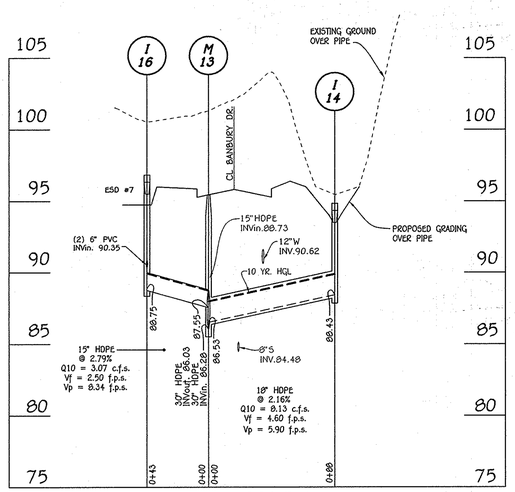
SCALE: HORIZ. : 1" = 50' VERT. : 1" = 5'

2 THE STORM DRAIN PIPE FROM I-9 TO S-2 IS BEING CHANGED ON SDP 14-024 PARCEL 'L' RETAIL BUILDING



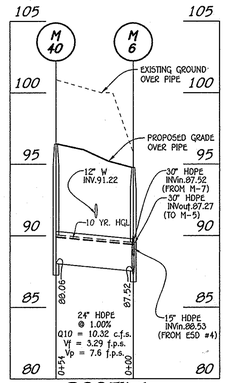
PROFILE

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



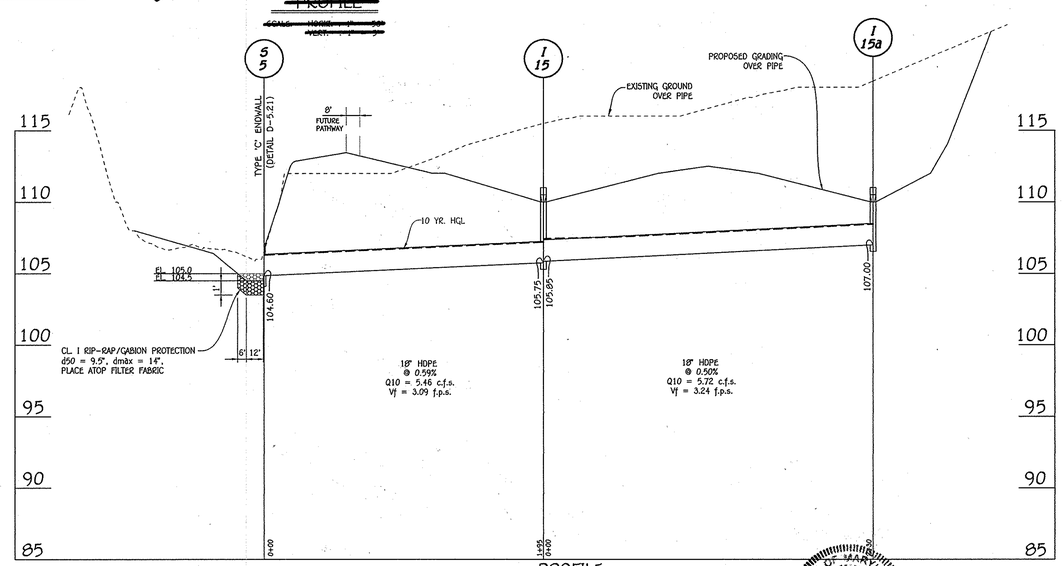
PROFILE

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



PROFILE

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



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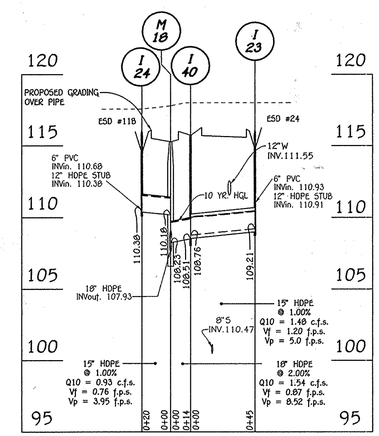


PROFILE

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

Owner

Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

STATE OF MARYLAND — ALDO C. CONTI, JR. — No. 20748

9/4/13 — DATE

"Professional Engineer, I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

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

REVISED STORM DRAIN PROFILES

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS "C" THRU "L" AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 36, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 25 OF 45

F-12-026

I:\2009\09014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 25 MYLAR.dwg, SHEET 25, 9/6/2013 11:34:27 AM, 1:1

APPROVED: DEPARTMENT OF PLANNING AND ZONING

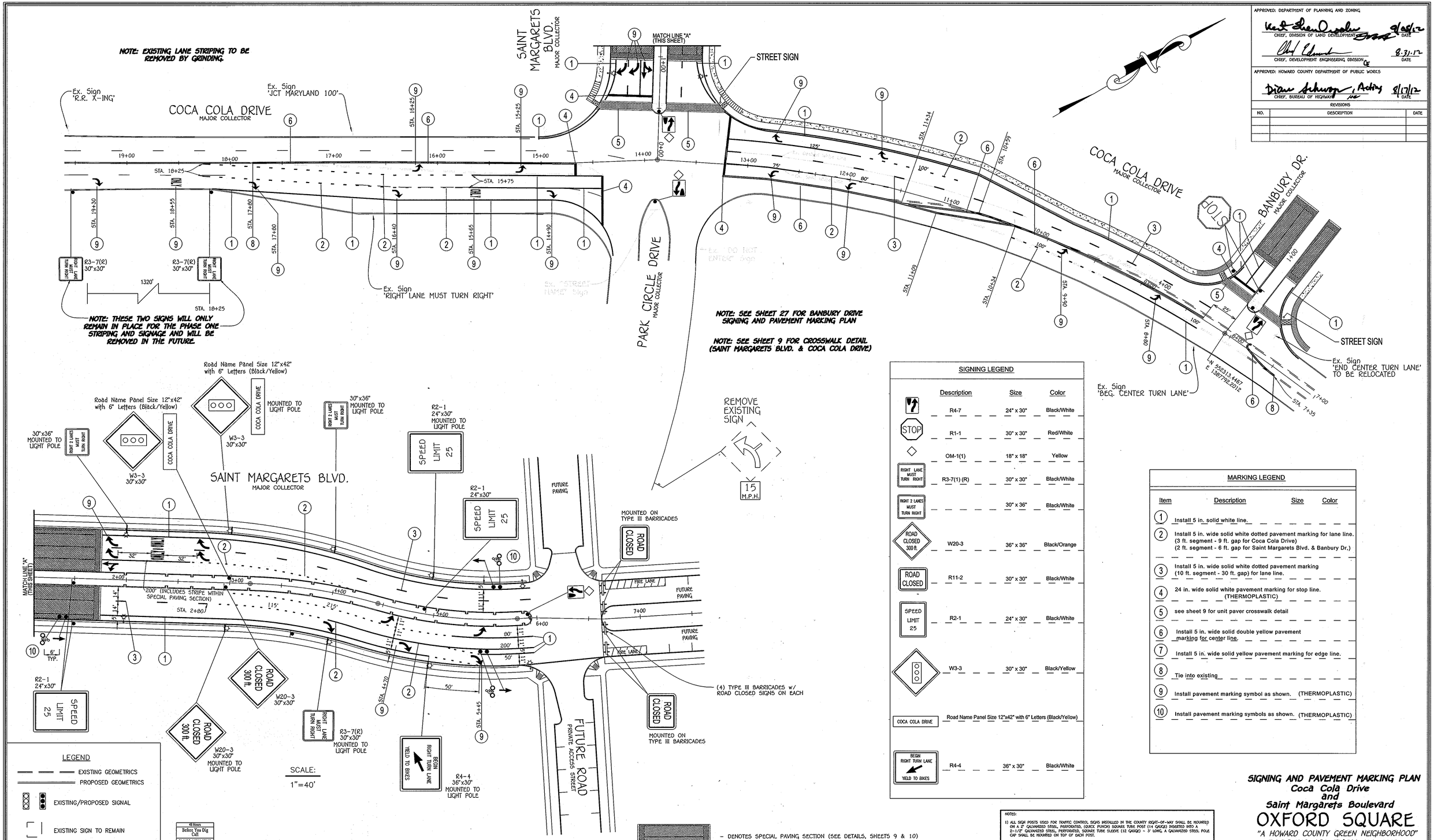
CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 8/08/12

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8-31-12

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 8/17/12

REVISIONS		
NO.	DESCRIPTION	DATE



SIGNING LEGEND

Description	Size	Color
R4-7	24" x 30"	Black/White
R1-1	30" x 30"	Red/White
OM-1(1)	18" x 18"	Yellow
R3-7(1) (R)	30" x 30"	Black/White
30" x 36"		Black/White
W20-3	36" x 36"	Black/Orange
R11-2	30" x 30"	Black/White
R2-1	24" x 30"	Black/White
W3-3	30" x 30"	Black/Yellow
Road Name Panel Size 12"x42" with 6" Letters (Black/Yellow)		
R4-4	36" x 30"	Black/White

MARKING LEGEND

Item	Description	Size	Color
1	Install 5 in. solid white line.		
2	Install 5 in. wide solid white dotted pavement marking for lane line. (3 ft. segment - 9 ft. gap for Coca Cola Drive) (2 ft. segment - 6 ft. gap for Saint Margarets Blvd. & Banbury Dr.)		
3	Install 5 in. wide solid white dotted pavement marking (10 ft. segment - 30 ft. gap) for lane line.		
4	24 in. wide solid white pavement marking for stop line. (THERMOPLASTIC)		
5	see sheet 9 for unit paver crosswalk detail		
6	Install 5 in. wide solid double yellow pavement marking for center line.		
7	Install 5 in. wide solid yellow pavement marking for edge line.		
8	Tie into existing		
9	Install pavement marking symbol as shown.	(THERMOPLASTIC)	
10	Install pavement marking symbols as shown.	(THERMOPLASTIC)	

48 Hours Before You Dig Call "MISS UTILITY" Service Protection Center

CALL TOLL FREE 1-800-257-7777

"MISS UTILITY"

Call "MISS UTILITY" at 1-800-257-7777, 48 hours prior to the start of work the excavator must notify all public utility companies with under ground facilities in the area of proposed excavation and have those facilities located by the utility companies prior to commencing excavation. the excavator is responsible for compliance with requirements of Chapter 36a of the Montgomery County Code.

Owner

Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

NOTES:

1) 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 (16 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

2) ALL SIGN LOCATIONS AND ALL PAVEMENT MARKINGS SHALL BE APPROVED BY HOWARD COUNTY TRAFFIC PRIOR TO ANY SIGNING OR PAVEMENT MARKING INSTALLATIONS.

STATE OF MARYLAND — ALDO MICHAEL VIVONA — No. 20746

6/19/12

ALDO M. VIVONA, P.E. — DATE

"Professional Engineer and Land Surveyor, 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. 20746, Expiration Date 2-22-13."

SIGNING AND PAVEMENT MARKING PLAN
Coca Cola Drive and Saint Margarets Boulevard

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL, RESIDENTIAL AND ELEMENTARY SCHOOL

ZONING: TOD

TAX MAP No. 30, GRID No. 19 & 20, PARCEL No. 761

FIRST ELECTION DISTRICT - HOWARD COUNTY, MARYLAND

DATE: JUNE 15, 2012

SHEET 26 OF 45

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

F-12-026

E:\2009\09014\dwg\FINALS - PHASE ONE\09014 FINAL SHEET 26 STRIPING PLAN.dwg, Model, 6/20/2012 11:41:08 AM, 1:40

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 10/17/13
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 10-17-13

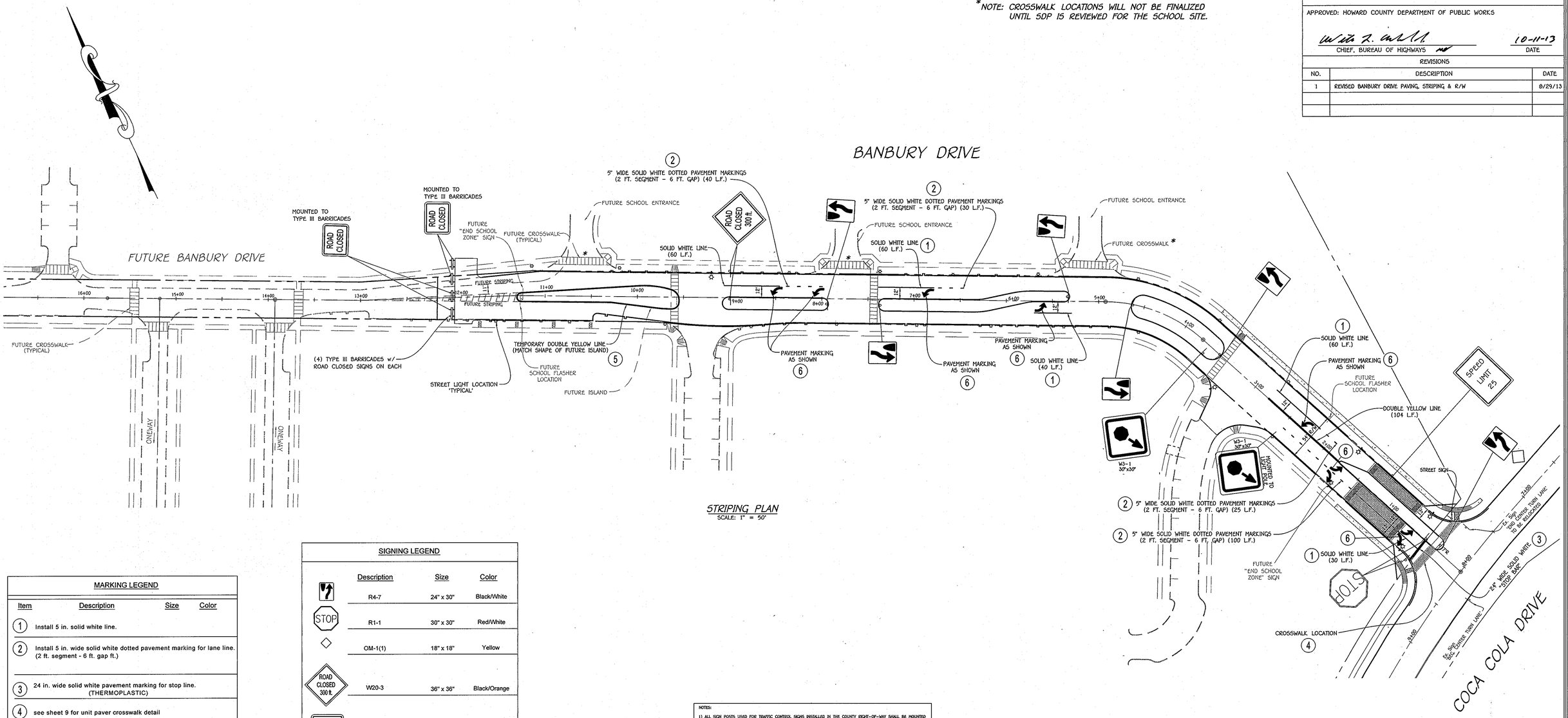
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS	DATE 10-11-13

REVISIONS

NO.	DESCRIPTION	DATE
1	REVISED BANBURY DRIVE PAVING, STRIPING & R/W	8/29/13

*NOTE: CROSSWALK LOCATIONS WILL NOT BE FINALIZED UNTIL SDP IS REVIEWED FOR THE SCHOOL SITE.



STRIPING PLAN
SCALE: 1" = 50'

MARKING LEGEND			
Item	Description	Size	Color
1	Install 5 in. solid white line.		
2	Install 5 in. wide solid white dotted pavement marking for lane line. (2 ft. segment - 6 ft. gap ft.)		
3	24 in. wide solid white pavement marking for stop line. (THERMOPLASTIC)		
4	see sheet 9 for unit paver crosswalk detail		
5	Install 5 in. wide solid double yellow pavement marking for center line.		
6	Install pavement marking symbol as shown. (THERMOPLASTIC)		

SIGNING LEGEND			
	Description	Size	Color
	R4-7	24" x 30"	Black/White
STOP	R1-1	30" x 30"	Red/White
	OM-1(1)	18" x 18"	Yellow
ROAD CLOSED 300 ft.	W20-3	36" x 36"	Black/Orange
ROAD CLOSED	R11-2	30" x 30"	Black/White
SPEED LIMIT 25	R2-1	24" x 30"	Black/White
	W3-1	30" x 30"	Black/Yellow

NOTES:

1) 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, A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.

2) ALL SIGN LOCATIONS AND ALL PAVEMENT MARKINGS SHALL BE APPROVED BY HOWARD COUNTY TRAFFIC PRIOR TO ANY SIGNING OR PAVEMENT MARKING INSTALLATIONS.

3) ALL CROSSWALK LOCATIONS WILL BE FINALIZED ONLY AFTER SDP PLAN FOR THE PROPOSED SCHOOL IS REVIEWED AND APPROVED.

NOTE: SEE SHEET 26 FOR COCA COLA DRIVE & SAINT MARGARETS BLVD. STRIPING.

NOTE: SEE SHEET 9 FOR CROSSWALK DETAIL (COCA COLA DRIVE & BANBURY DRIVE)

Owner	Developer
Kellogg-CCP, LLC c/o David P. Scheffenacker, Jr., Managing Member 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3800	Preston Scheffenacker Properties 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3800

STATE OF MARYLAND
ALDO M. VERCELLOTTI
No. 20748

9/4/13
DATE

"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. 20748, Expiration Date 2-22-15."

REVISED
SIGNING AND PAVEMENT MARKING PLAN
(BANBURY DRIVE)

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND
OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 27 OF 47

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

F-12-026

I:\2009\09014\dwg\Finals - Phase OneYF plan storm drain redline\SHEET 27 MYLAR.dwg, SHT 27, 9/6/2013 11:37:22 AM, 1:1

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 10/17/13

Chief, Development Engineering Division — Date 10.17.13

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 10-11-13

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISED STORM DRAIN, WATERMAIN, BANBURY DRIVE PAVING AND R/W & PARCEL LINES	8/29/13
2	Removed Storm Drain From M-12 & M-19 & Revised ESD #22	9.22.14
3	Removed Swm Landscaping (D-1) & Added Note	11.13.15

NOTE: SEE SHEETS 19-22 FOR ESD DEVICE PLAN VIEWS.

LANDSCAPE DEVELOPER'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.

Name — Date 9/10/13

LEGEND	
SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
102	PROPOSED CONTOUR 2' INTERVAL
100	PROPOSED CONTOUR 10' INTERVAL
SF SF	SILT FENCE
	DRAINAGE LIMITS
L.O.D.	LIMIT OF DISTURBANCE
	EXISTING BRUSH
	EXISTING TREELINE
	WETLANDS BUFFER
	WETLANDS LIMITS
FP	FLOODPLAIN LIMITS
ESD #21	STORMWATER MANAGEMENT DEVICE
	STORM DRAIN
FO	EXISTING FIBER OPTIC LINE
G	EXISTING GASMAIN

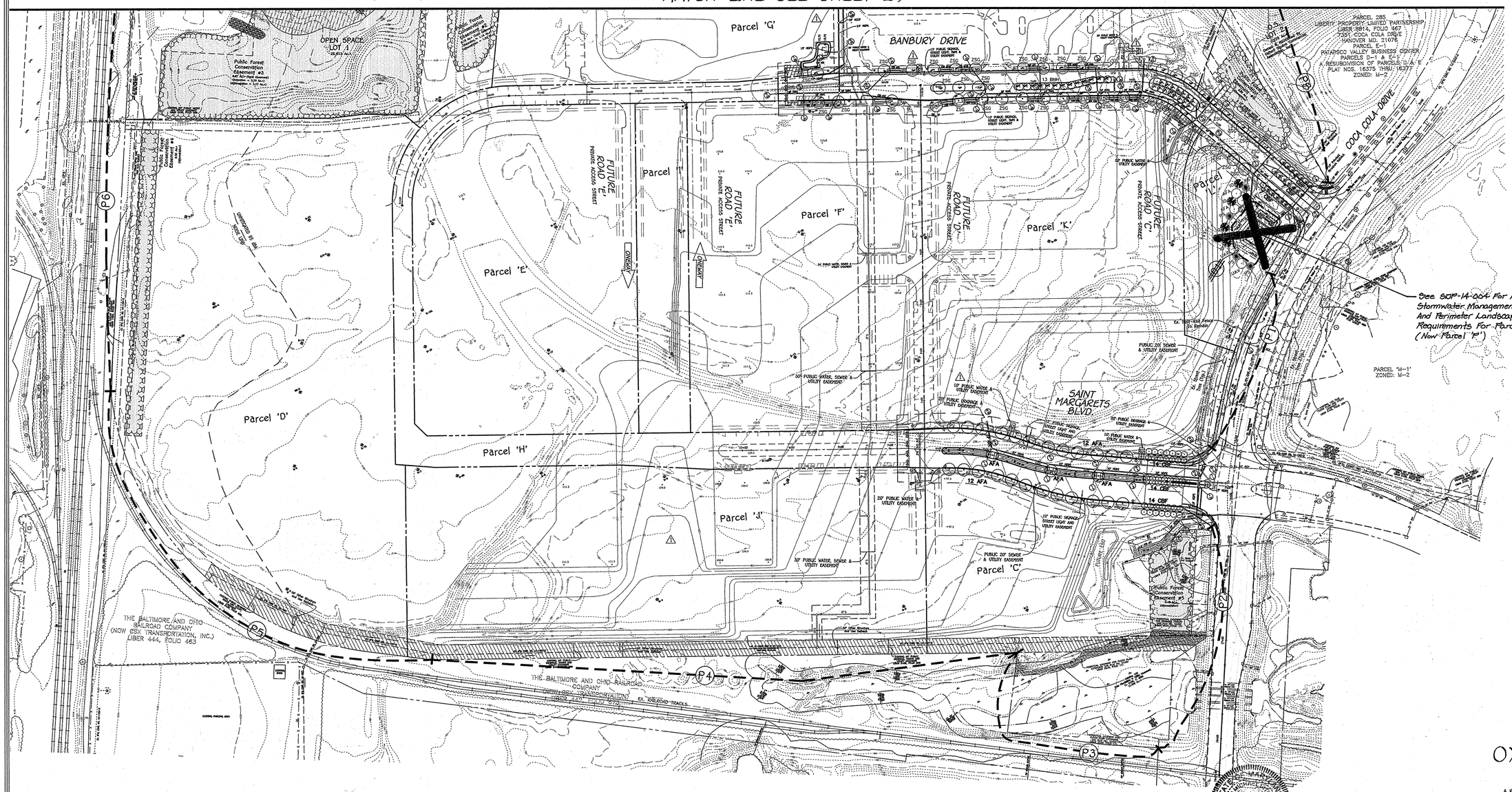
NOTES:

Should any tree designated for preservation for which landscaping credit is given, die prior to release of bonds, the owner will be required to replace the tree with the equivalent species or with a tree which will obtain the same height, spread and growth characteristics. The replacement tree must be a minimum of 3 inches in caliper and installed as required in the Howard County landscape manual.

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

The Owner, tenants and/or their agents shall be responsible for 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.

MATCH LINE SEE SHEET 29



Owner
Kellogg-CCP, LLC
c/o David F. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3600

Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3600

PLAN
SCALE: 1" = 100'

ALDO [illegible] 9/4/13 DATE
"Professional Engineer 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. 20746, Expiration Date 2-22-15."

REVISED
STREET TREE & LANDSCAPE PLAN
OXFORD SQUARE
"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND
OPEN SPACE LOTS 1 & 2
A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 30, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 28 OF 47

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

F-12-026

1:\2009\09014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 28 & 29 MYLAR.dwg, SHEET 28, 9/6/2013 11:43:10 AM, 1:1

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 10/17/13

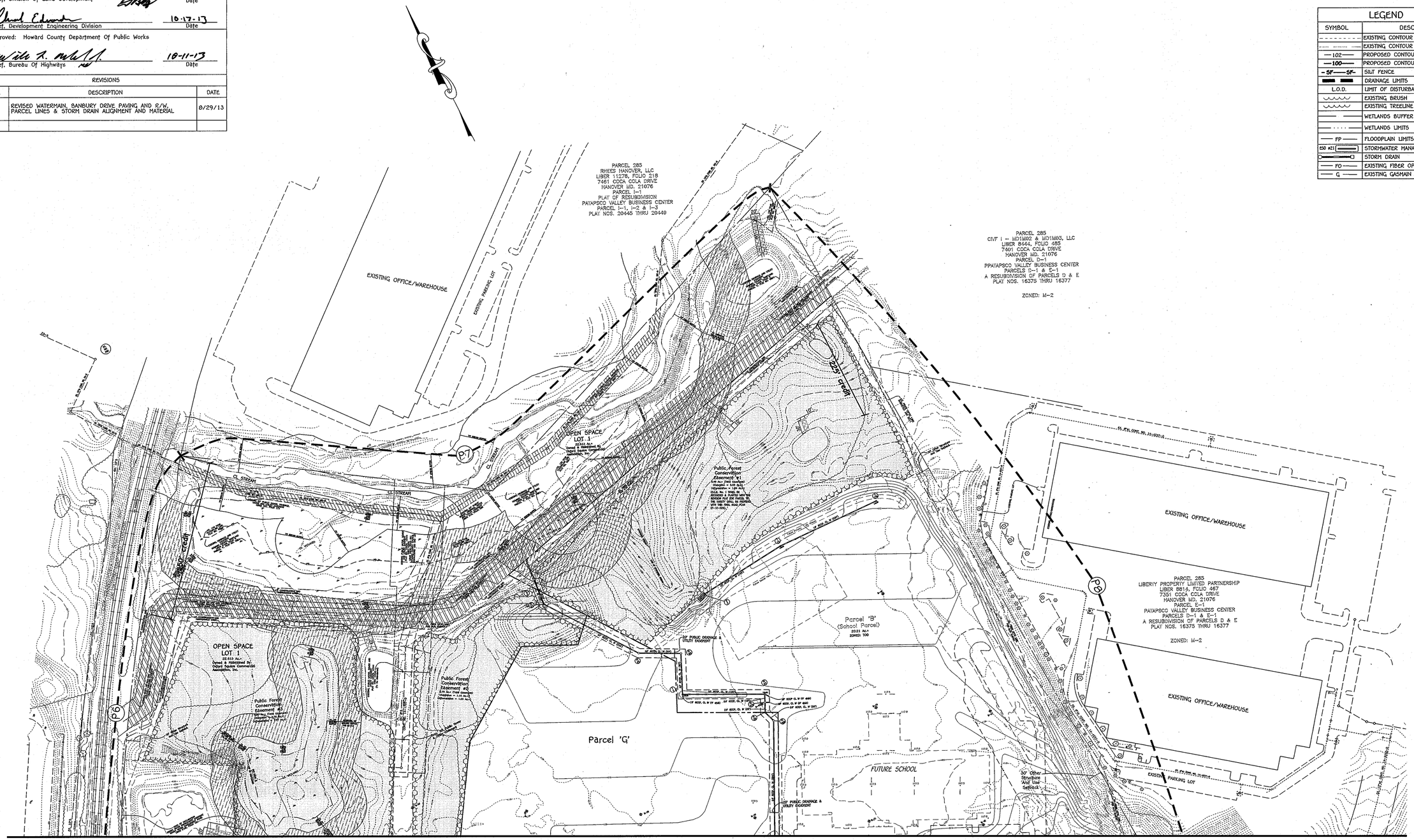
Chief, Development Engineering Division — Date 10-17-13

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 10-11-13

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISED WATERMAIN, BANBURY DRIVE PAVING AND S/W, PARCEL LINES & STORM DRAIN ALIGNMENT AND MATERIAL	8/29/13

LEGEND	
SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
102	PROPOSED CONTOUR 2' INTERVAL
100	PROPOSED CONTOUR 10' INTERVAL
SF SF	SILT FENCE
	DRAINAGE LIMITS
L.O.D.	LIMIT OF DISTURBANCE
	EXISTING BRUSH
	EXISTING TREELINE
	WETLANDS BUFFER
	WETLANDS LIMITS
FP	FLOODPLAIN LIMITS
ESD #21	STORMWATER MANAGEMENT DEVICE
	STORM DRAIN
FO	EXISTING FIBER OPTIC LINE
G	EXISTING GASMAIN



MATCH LINE SEE SHEET 28

PLAN

SCALE: 1" = 100'

LANDSCAPE DEVELOPER'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.

Name — Date 9/10/13

Owner	Developer
Kellogg-CCP, LLC c/o David P. Scheffenacker, Jr., Managing Member 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3800	Preston Scheffenacker Properties 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3800

STATE OF MARYLAND — ALDO M. VITALE — PROFESSIONAL ENGINEER — No. 20746

9/11/13
DATE

"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. 20746, Expiration Date 2-22-15."

REVISED

STREET TREE & LANDSCAPE PLAN

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

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TAX MAP No. 44, GRID No. 1 & 2,
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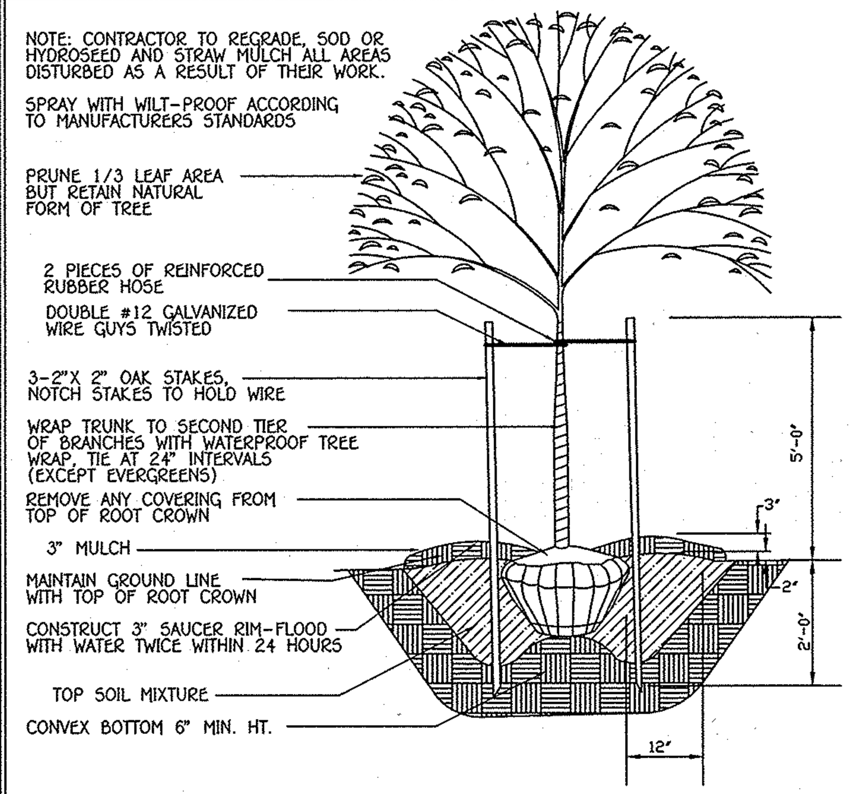
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 29 OF 47

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

F-12-026

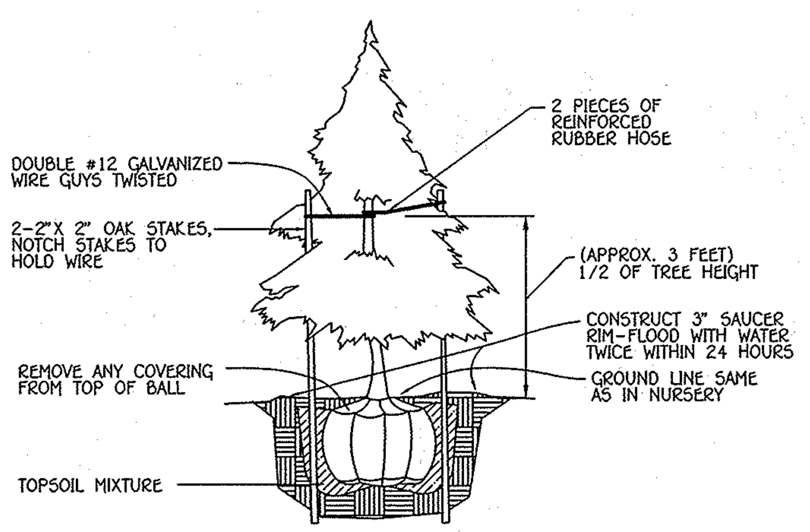
I:\2009\09014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 28 & 29 MYLAR.dwg, SHEET 29, 9/6/2013 11:46:34 AM, 1:1

I:\2009\09014\dwg\FINALS - PHASE ONE\09014 FINAL SHEET 28-30 LANDSCAPE PLAN.dwg, SHEET 30, 6/20/2012 1:07:10 PM, 1:1



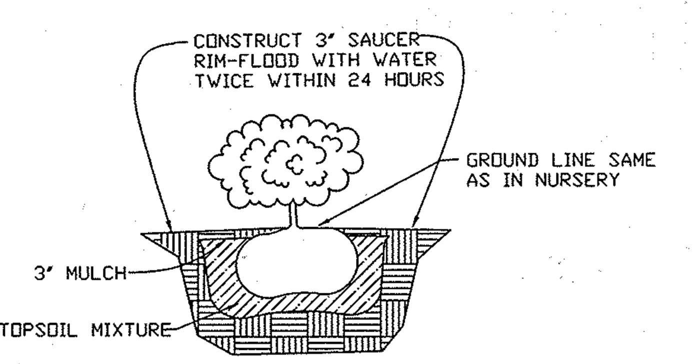
SHADE TREE PLANTING DETAIL

NO SCALE



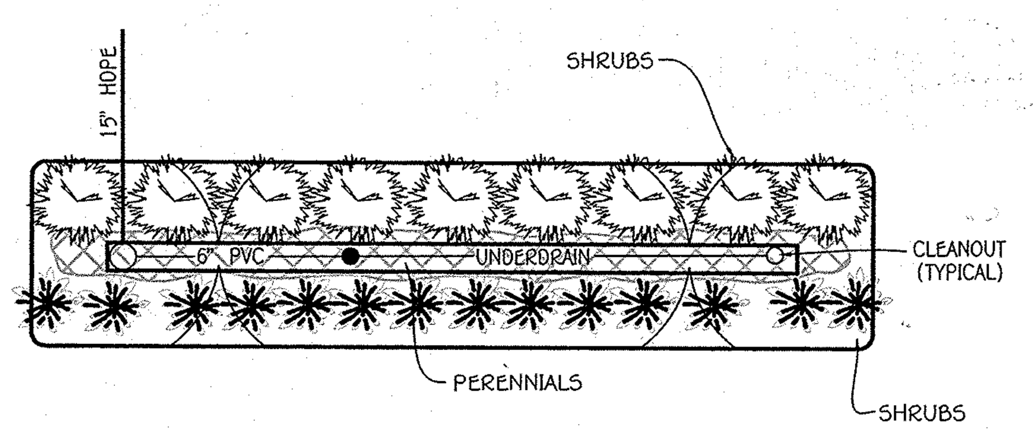
EVERGREEN TREE PLANTING DETAIL

NO SCALE



SHRUB PLANTING DETAIL

NO SCALE



PERENNIALS (CHOICE OF THE FOLLOWING)

Narcissus Mix, Daffodils
Hemerocallis Mix, Variety For All Season Bloom
Note: Hemerocallis Fulva (common names incl. common orange daylily, tawny daylily, ditch lily and tiger lily) shall not be planted as it is considered invasive.

SHRUBS (CHOICE OF THE FOLLOWING)

Itea Virginica 'Little Henry', Virginia Sweetspire
Rosa 'Blushing Knockout Rose', Light Pink Knockout Rose
Ilex Glabra 'Shamrock', Shamrock Inkberry
Hypericum Calycinum, Aaronsbeard St. John's Wort
Liriope Muscari 'Big Blue', Big Blue Lilyturf
Pennisetum Alopecuroides, Fountain Grass
Panicum Virgatum 'Shenandoah, Red Switch Grass
Pennisetum Alopecuroides 'Hameln', Dwarf Fountain Grass

NOTES:
Plant Material Must Cover At Least 50% Of The Surface Area Of The Bio-retention

See Plant Material Charts For Quantities And Spacing

TYPICAL BIO-RETENTION FILTER PLANTING DETAIL

NO SCALE

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

PLANTING SPECIFICATIONS

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

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

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

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

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

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

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

Bid shall be 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

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

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

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

Planting mix shall be as follows: Deciduous Plants - Two parts topsoil, one part well-rotted cow or horse manure. Add 3 lbs. of standard fertilizer per cubic yard of planting mix. Evergreen Plants - two parts topsoil, one part humus or other approved organic material. Add 3 lbs. of evergreen (acidic) fertilizer per cubic yard of planting mix. Topsoil shall conform to the Landscape Guidelines.

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

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

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

SCHEDULE D STORMWATER MANAGEMENT AREA LANDSCAPING

LINEAR FEET OF TYPE 'B' PERIMETER	D-1 : 330' (ESD No. 5)
CREDIT FOR EXISTING VEGETATION (NO, YES AND %)	NO
NUMBER OF TREES REQUIRED: SHADE TREES: (1/50 l.f.) EVERGREEN TREES: (1/40 l.f.)	 7 8
NUMBER OF TREES PROVIDED: SHADE TREES: EVERGREEN TREES:	 7 8

STREET TREE SCHEDULE

QTY. REQUIRED	BOTANICAL AND COMMON NAME	SIZE	COMMENTS
1/40 l.f. = 662'/40 x 2 = 33 trees	Carpinus Betulus 'fastigiata' Upright European Hornbeam	3" - 3½" CAL.	ALONG PUBLIC R/W SAINT MARGARETS BLVD. (SEE PLAN)
	Acer x Fremmanii 'Autumn Blaze' Autumn Blaze Freeman Maple (seedless only)	4" - 4½" CAL.	
1/40 l.f. = 1200'/40 x 2 = 60 trees	Zelkova Serrata 'Green Vase'	4" - 4½" CAL.	ALONG PUBLIC R/W BANBURY DRIVE (SEE PLAN)
	Carpinus Betulus 'fastigiata' * Upright European Hornbeam	3" - 3½" CAL.	
	Betula Nigra 'heritage' River Birch	10'-12' Ht. 3 Trunks (min.)	
	Lagerstroemia Indica 'natchez' natchez Crapemyrtle	10'-12' Ht. 5 Canes (min.)	*matched; high Branching
	Ulmus Americana 'valley Forge' Valley Forge American Elm	4" - 4½" CAL.	
1/40 l.f. = 444' / 40 = 11 trees	CREDIT FOR 26 STREET TREES PLANTED UNDER GRADING AND LANDSCAPE PLAN (G11000203) & WP-12-051.		40' APART ON PUBLIC R/W COCA COLA DRIVE

NOTE: FINAL PLACEMENT OF STREET TREES WILL OCCUR IN THE FIELD AND BE PLACED A MINIMUM OF 30 FEET FROM ALL SIGNS AND INTERSECTIONS WHEN PLANTED BETWEEN SIDEWALK AND CURB, BE LOCATED WITH CONSIDERATION OF UNDERGROUND UTILITIES AND STRUCTURES AND MAINTAIN A MINIMUM 5 FEET DISTANCE ON CENTER FROM A DRAIN INLET STRUCTURE, 5 FEET FROM AN OPEN SPACE ACCESS STRIP AND 10 FEET FROM A DRIVEWAY.

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

Approved: Department Of Planning And Zoning
Chief, Division Of Land Development — Date 9/05/12
Chief, Development Engineering Division — Date 8-31-12

Approved: Howard County Department Of Public Works
Diane Schwarz, Acting
Chief, Bureau Of Highways — Date 8/17/12

REVISIONS

NO.	DESCRIPTION	DATE
1	Remove SWM Landscaping (D-1) & Add Note	11-13-16

SCHEDULE A PERIMETER LANDSCAPE EDGE

PERIMETER	P1	P2	P3	P4	P5	P6	P7	P8
CATEGORY	Front to Roadway (residential)	Adjacent to Roadway (non-residential)	Non-Res. Adjacent to Non-Res.	Non-Res. Adjacent to Non-Res.	Non-Res. Adjacent to Non-Res.	Non-Res. Adjacent to Non-Res.	Non-Res. Adjacent to Non-Res.	Non-Res. Adjacent to Non-Res.
LANDSCAPE TYPE	N/A	B	C	C	C	C	C	C
LINEAR FEET OF PERIMETER	376.08'	506.98'	470.63'	1188.54'	931.99'	1630.70'	1588.13'	2042.92'
CREDIT FOR EXISTING VEGETATION (YES, NO, LINEAR FEET) (DESCRIBE BELOW IF NEEDED)	-	NO	NO	NO	NO	YES-350'	100% CREDIT	YES-225'
CREDIT FOR WALL, FENCE OR BERM (YES, NO, LINEAR FEET) (DESCRIBE IF NEEDED)	-	NO	NO	NO	NO	NO	NO	NO
NUMBER OF PLANTS REQUIRED SHADE TREES EVERGREEN TREES SHRUBS	 0 0 -	 10 13 -	 12 24 -	 30 60 -	 23 47 -	 32 64 -	 0 0 -	 46 91 -
NUMBER OF PLANTS PROVIDED SHADE TREES EVERGREEN TREES OTHER TREES (2:1 SUBSTITUTION) SHRUBS (10:1 SUBSTITUTION) (DESCRIBE PLANT SUBSTITUTION CREDITS BELOW IF NEEDED)	 0 0 - - -	 - - - - -	 - - - - -	 - - - - -	 - - - - -	 - - - - -	 0 0 - - -	 - - - - -

NOTE: SCHEDULE 'A' LANDSCAPING SHALL BE DEFERRED UNTIL SITE PLAN STAGE.

STREET TREE PLANT LIST

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE
ZSG	43	Zelkova Serrata 'Green Vase'	4" - 4½" CAL.
CBF	63	Carpinus Betulus 'fastigiata' Upright European Hornbeam	3" - 3½" CAL.
BNH	13	Betula Nigra 'heritage' River Birch	10'-12' HT. 3 Trunks (min.)
LIN	16	Lagerstroemia Indica 'natchez' natchez Crapemyrtle	10'-12' HT. 5 Canes (min.)
AFA	27	Acer x Fremmanii 'Autumn Blaze' Autumn Blaze Freeman Maple (seedless only)	4" - 4½" CAL.

FINANCIAL SURETY FOR THE REQUIRED 93 STREET TREES HAS SHALL BE POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $27,900.00

THE DEVELOPER IS PROPOSING 70 SHADE & 92 ORNAMENTAL STREET TREES.

PLANT MATERIAL-BIO-RETENTION ESD No. 1

QUANTITY	NAME	MAXIMUM SPACING (FT.)
-	MIXED PERENNIALS	-
114	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 2

QUANTITY	NAME	MAXIMUM SPACING (FT.)
186	MIXED PERENNIALS	12" o.c.
82	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 3

QUANTITY	NAME	MAXIMUM SPACING (FT.)
186	MIXED PERENNIALS	12" o.c.
96	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 4

QUANTITY	NAME	MAXIMUM SPACING (FT.)
187	MIXED PERENNIALS	12" o.c.
121	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 7

QUANTITY	NAME	MAXIMUM SPACING (FT.)
-	MIXED PERENNIALS	-
150	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 8A

QUANTITY	NAME	MAXIMUM SPACING (FT.)
70	MIXED PERENNIALS	12" o.c.
35	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 8B

QUANTITY	NAME	MAXIMUM SPACING (FT.)
70	MIXED PERENNIALS	12" o.c.
35	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 9A

QUANTITY	NAME	MAXIMUM SPACING (FT.)
70	MIXED PERENNIALS	12" o.c.
35	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 9B

QUANTITY	NAME	MAXIMUM SPACING (FT.)
70	MIXED PERENNIALS	12" o.c.
35	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 10

QUANTITY	NAME	MAXIMUM SPACING (FT.)
70	MIXED PERENNIALS	12" o.c.
35	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 11A

QUANTITY	NAME	MAXIMUM SPACING (FT.)
-	MIXED PERENNIALS	-
35	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 11B

QUANTITY	NAME	MAXIMUM SPACING (FT.)
-	MIXED PERENNIALS	-
36	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 12

QUANTITY	NAME	MAXIMUM SPACING (FT.)
-	MIXED PERENNIALS	-
69	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 13B

QUANTITY	NAME	MAXIMUM SPACING (FT.)
43	MIXED PERENNIALS	12" o.c.
42	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 13C

QUANTITY	NAME	MAXIMUM SPACING (FT.)
43	MIXED PERENNIALS	12" o.c.
42	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 22

QUANTITY	NAME	MAXIMUM SPACING (FT.)
-	MIXED PERENNIALS	-
111	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 23

QUANTITY	NAME	MAXIMUM SPACING (FT.)
-	MIXED PERENNIALS	-
33	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 24A

QUANTITY	NAME	MAXIMUM SPACING (FT.)
-	MIXED PERENNIALS	-
33	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 24B

QUANTITY	NAME	MAXIMUM SPACING (FT.)
-	MIXED PERENNIALS	-
31	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 25

QUANTITY	NAME	MAXIMUM SPACING (FT.)
70	MIXED PERENNIALS	12" o.c.
35	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 26A

QUANTITY	NAME	MAXIMUM SPACING (FT.)
46	MIXED PERENNIALS	12" o.c.
35	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 26B

QUANTITY	NAME	MAXIMUM SPACING (FT.)
70	MIXED PERENNIALS	12" o.c.
35	SHRUBS	18"-36" o.c.

PLANT MATERIAL-BIO-RETENTION ESD No. 27

QUANTITY	NAME	MAXIMUM SPACING (FT.)
30	MIXED PERENNIALS	12" o.c.
20	SHRUBS	18"-36" o.c.

See SDP-14-004 For SWM Redesign And Landscaping.

D-1 PLANT LIST

SYMBOL	QTY.	BOTANICAL AND COMMON NAME	SIZE
AFA	3	Acer x Fremmanii 'Autumn Blaze' Autumn Blaze Freeman Maple (seedless only)	4" - 4½" CAL.
UAV	4	Ulmus Americana 'valley Forge' Valley Forge American Elm	4" - 4½" CAL.
PS	4	Pinus Strobus - Eastern White Pine	6'-8' HT.
IO	4	Ilex Opaca - 'Jersey Knight' Jersey Knight American Holly (seedless only)	5'-6' HT.

"THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 16.124 OF THE HOWARD COUNTY CODE AND THE LANDSCAPE MANUAL". FINANCIAL SURETY FOR THE REQUIRED 7 SHADE & 8 EVERGREEN TREES HAS BEEN POSTED AS PART OF THE DEVELOPER'S AGREEMENT IN THE AMOUNT OF $3,300.00.

LANDSCAPE DEVELOPER'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.

Name — Date 6-20-12

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr., Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

ALDO — DATE 6/19/12
"Professional Certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

LANDSCAPE NOTES & DETAILS

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2.
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 30 OF 45

F-12-026

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 10/17/13 — Date

Chief, Development Engineering Division — 10-17-13 — Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — 10-11-13 — Date

REVISIONS

NO.	DESCRIPTION	DATE
1	REVISED PARCEL LINES, STORM DRAIN, WATER & SEWER	8/29/13

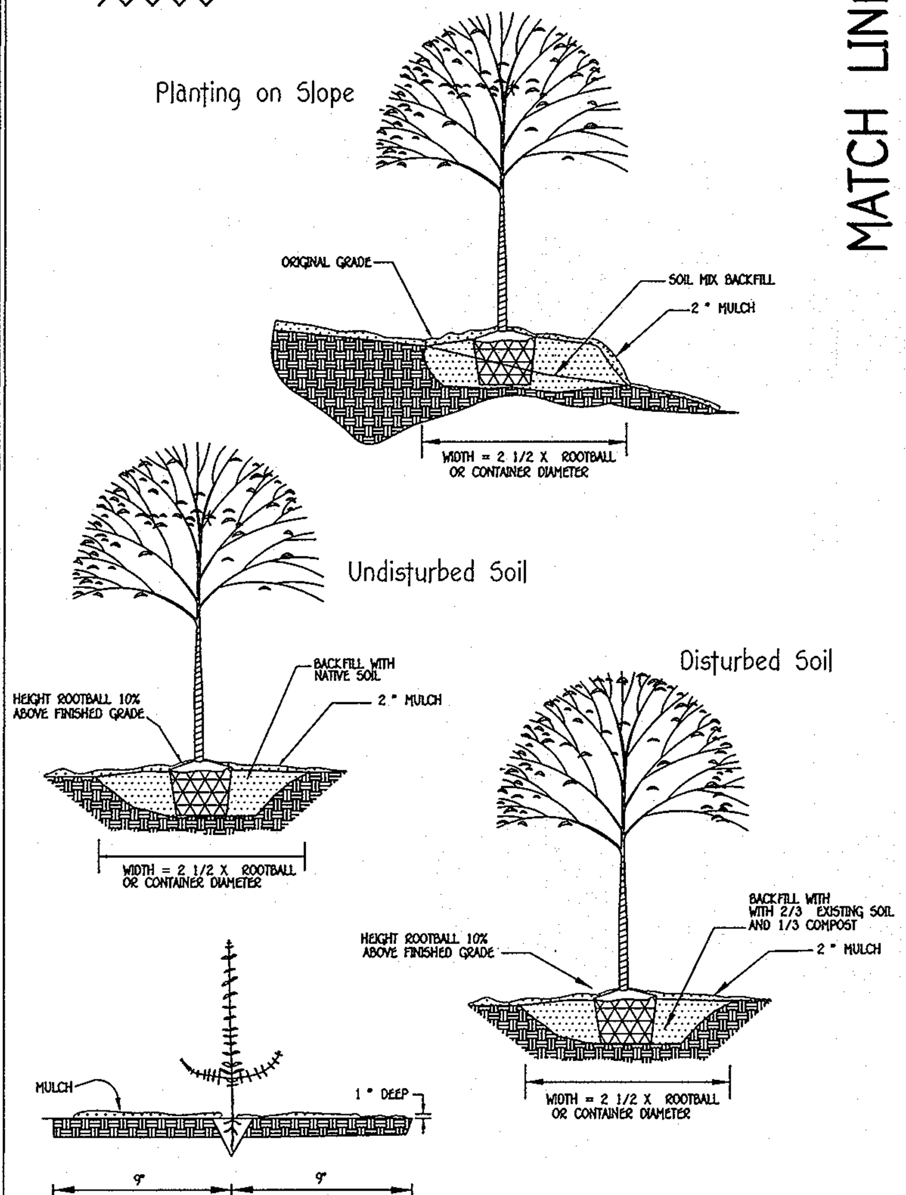
FOREST CONSERVATION DATA

EASEMENT NO.	RETENTION AREA	PLANTING AREA	TOTAL EASEMENT AREA
* 1	3.65 AC.	1.84 AC.	5.49 AC.
2	1.16 AC.	1.03 AC.	2.19 AC.
3	5.70 AC.	1.17 AC.	6.87 AC.
4	0.00 AC.	0.50 AC.	0.50 AC.
5	0.00 AC.	0.40 AC.	0.40 AC.
6	0.00 AC.	0.29 AC.	0.29 AC.
TOTAL	10.51 AC.	5.23 AC.	15.74 AC.

* (F.C.E. No. 1 SHALL BE RECORDED, PLANTED AND SURETY PROVIDED WITH THE REVISION PLAT FOR PARCEL 'B')

LEGEND

- Existing Contours
- Wetland Limits
- Wetland/Stream Buffer
- Proposed Contours
- Forest Conservation Easement (Retention Area)
- Forest Conservation Easement To Be Planted
- Forest Conservation Signs
- Tree Protection Fence
- Slopes (15% – 24.9%)
- Slopes (25% And Greater)



Seeding and Whip Planting Specification

PLAN

SCALE : 1"=50'

Owner

Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

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

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP93MD0610044B
9/11/13
JOHN P. CANOLES

ALDO [illegible] — 9/11/13 — DATE

"Professional Certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15."

REVISED FOREST CONSERVATION PLAN

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND
OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 31 OF 47

F-12-026

I:\2009\09014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 31 MYLAR.dwg, SHEET 31, 9/6/2013 1:11:47 PM, 1:1

Approved: Department Of Planning And Zoning

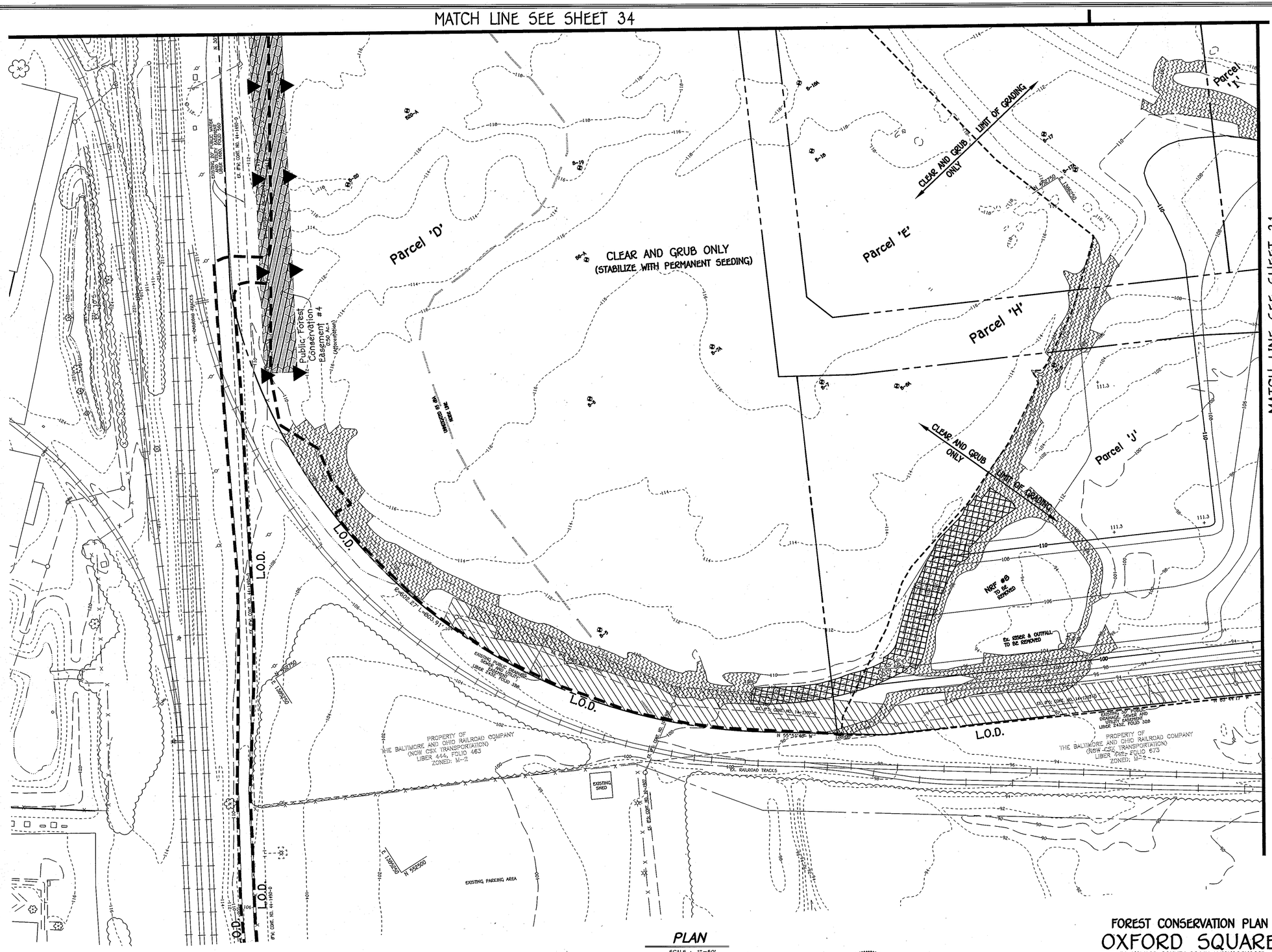
Chief, Division Of Land Development — Date 9/05/12

Chief, Development Engineering Division — Date 8-31-12

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 8/17/12

REVISIONS		
NO.	DESCRIPTION	DATE
1	Revised Proposed Parcel Lines	8/29/13



LEGEND

- Existing Contours
- Wetland Limits
- Wetland/Stream Buffer
- Proposed Contours
- Forest Conservation Easement (Retention Area)
- Forest Conservation Easement To Be Planted
- Forest Conservation Signs
- TP — Tree Protection Fence
- Slopes (15% – 24.9%)
- Slopes (25% And Greater)

FOREST CONSERVATION WORKSHEET
VERSION 1.0

NET TRACT AREA	ACRES
A. TOTAL TRACT AREA	111.0
B. DEDUCTIONS (AREA WITHIN 100 YEAR FLOODPLAIN)	6.0
C. AREA IN UNDERGROUND EASEMENT	11.6
D. NET TRACT AREA	93.4
LAND USE CATEGORY: ARA MDR IDA HDR MPD CIA — X	
E. AFFORESTATION THRESHOLD (NET TRACT AREA (C) x 15%)	14.0
F. CONSERVATION THRESHOLD (NET TRACT AREA (C) x 15%)	14.0
EXISTING FOREST COVER	
G. EXISTING FOREST COVER (EXCLUDING FLOODPLAIN)	10.5
H. AREA OF FOREST ABOVE AFFORESTATION TRESHOLD	0
I. AREA OF FOREST ABOVE CONSERVATION TRESHOLD	0
BREAKEVEN POINT	
J. FOREST RETENTION ABOVE THRESHOLD WITH NO MITIGATION	N/A
BREAKEVEN POINT	N/A
K. CLEARING PERMITTED WITHOUT MITIGATION	0
PROPOSED FOREST CLEARING	
L. TOTAL AREA OF FOREST TO BE CLEARED OR RETAINED OUTSIDE FCE	0
M. TOTAL AREA OF FOREST TO BE RETAINED	10.5
PLANTING REQUIREMENTS	
N. REFORESTATION FOR CLEARING ABOVE THE CONSERVATION TRESHOLD	0
P. REFORESTATION FOR CLEARING BELOW THE CONSERVATION TRESHOLD	0
Q. CREDIT FOR RETENTION ABOVE THE CONSERVATION TRESHOLD	0
R. TOTAL REFORESTATION REQUIRED	0
S. TOTAL AFFORESTATION REQUIRED	3.5
T. TOTAL PLANTING REQUIREMENT	3.5

PLAN
SCALE : 1"=50'

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer
Preston Scheffenacker Properties
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Lutherville, Maryland 21093-4614
Ph# 410-296-3800

STATE OF MARYLAND — ALDO MICHAEL UGOLINI — No. 20740 — PROFESSIONAL ENGINEER

"Professional Engineer 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. 20740, Expiration Date 2-22-13."

6/19/12
DATE

FOREST CONSERVATION PLAN
OXFORD SQUARE
"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND
OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
USES: RETAIL AND RESIDENTIAL
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PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 32 OF 45

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CENTENNIAL SQUARE OFFICE PARK – 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 – 2855

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

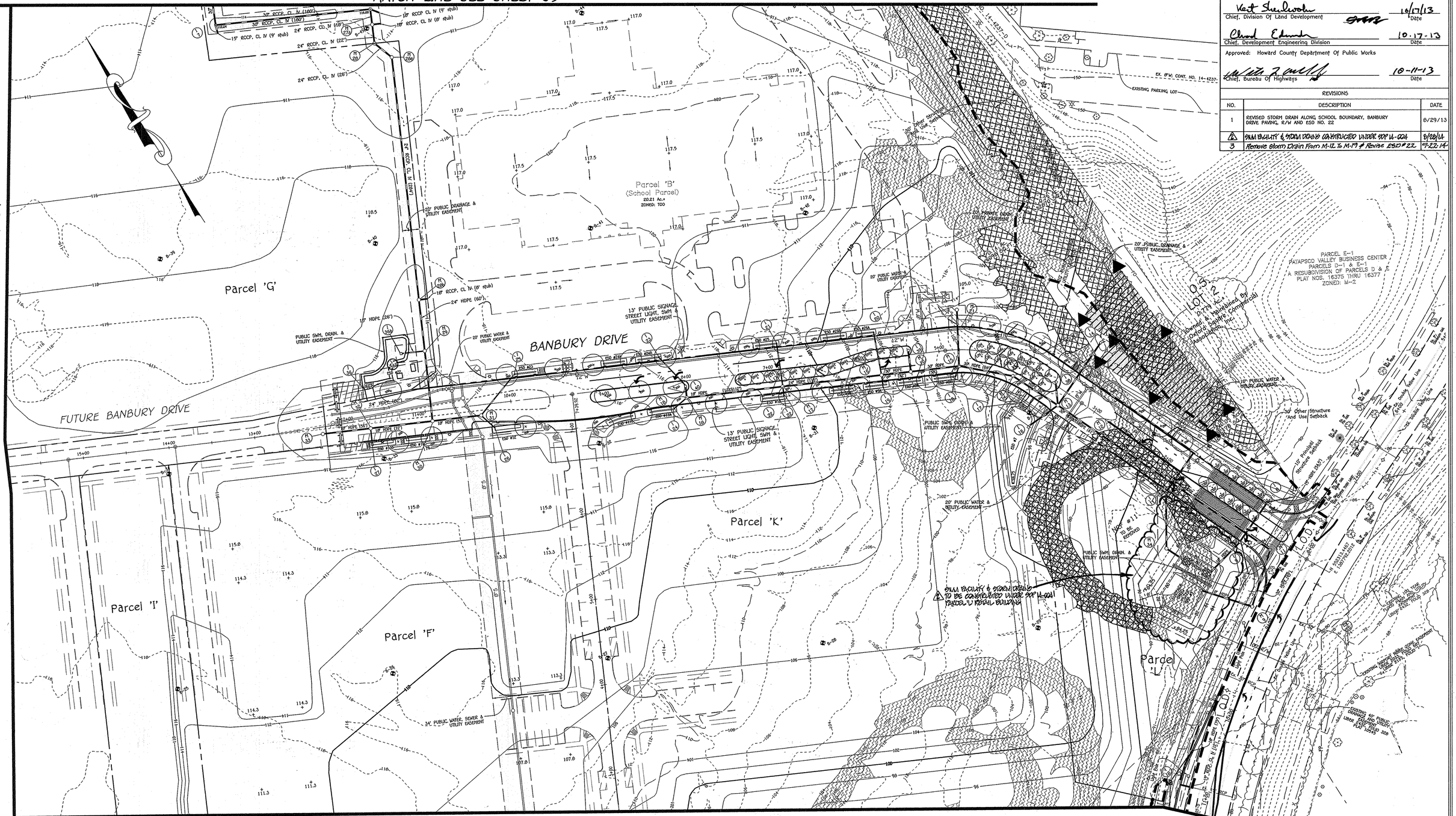
MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP93M0061044B
JOHN P. CANOLES 6/19/12

F-12-026

1:\2009\09014\dwg\FINALS - PHASE ONE\09014 FINAL SHEET 31-35 forest con PLAN.dwg, SHEET 32, 6/20/2012 8:33:15 AM, 1:1

MATCH LINE SEE SHEET 35

MATCH LINE SEE SHEET 34



MATCH LINE SEE SHEET 31

- Denotes Slopes (15% - 24.9%)

- Denotes Slopes (25% And Greater)

PLAN

SCALE : 1"=50'

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 10/17/13

Chief, Development Engineering Division — Date 10-17-13

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 10-11-13

REVISIONS

NO.	DESCRIPTION	DATE
1	REVISED STORM DRAIN ALONG SCHOOL BOUNDARY, BANBURY DRIVE PAVING, R/W AND ESD NO. 22	8/29/13
2	SWM FACILITY & STORM DRAINS CONSTRUCTED UNDER SDP 14-004	8/28/14
3	Remove Storm Drain From M-12 To M-19 & Revise ESD #22	9-22-14

REVISED

FOREST CONSERVATION PLAN

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND

OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL

ZONING: TOD

TAX MAP No. 38, GRID No. 19 & 20

TAX MAP No. 44, GRID No. 1 & 2,

PARCEL No. 761

FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND

DATE: JUNE 15, 2012

SHEET 33 OF 47

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

Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP93MD0610044B
JOHN P. CANOLES 9/11/13

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

STATE OF MARYLAND — MICHAEL VITELLI — LICENSED PROFESSIONAL ENGINEER — 20748

9/11/13
DATE

"Professional Engineer hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15."

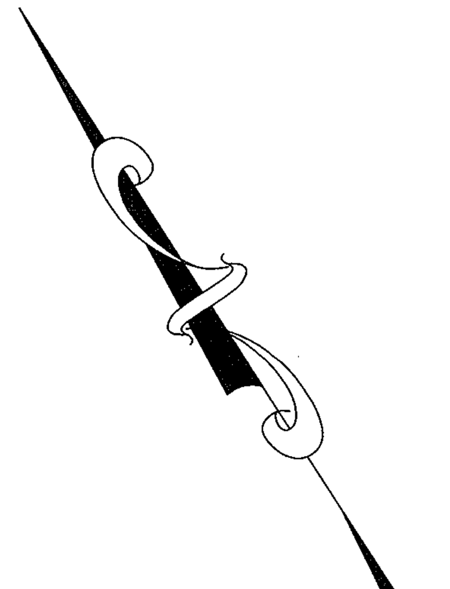
F-12-026

I:\2009\09014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 33 MYLAR.dwg, SHEET 33, 9/6/2013 1:35:06 PM, 1:1

Approved: Department Of Planning And Zoning	
Chief, Division Of Land Development	9/05/12 Date
Chief, Development Engineering Division	8.31.12 Date
Approved: Howard County Department Of Public Works	
Chief, Bureau Of Highways, Acting	8/17/12 Date

REVISIONS

NO.	DESCRIPTION	DATE
1	Revised Banbury Drive Future Paving & Walk	8/29/13



Construction Period Protection Program

A. Forest Protection Techniques

1. Soil Protection Area (Critical Root Zone)

The soil protection area, or critical root zone, of a tree is that portion of the soil column where most of its roots may be found. The majority of roots responsible for water and 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 LOD 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 LOD 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 stockpiling, 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 protection measures (permanent signage) have been installed.

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.

FOREST CONSERVATION EASEMENT

UNAUTHORIZED DISTURBANCE OF VEGETATION IS PROHIBITED. VIOLATORS SUBJECT TO PENALTIES UNDER THE HOWARD COUNTY FOREST CONSERVATION ACT OF 1991.

TREES FOR YOUR FUTURE

15" MINIMUM

11" MINIMUM

ON-SITE SIGNAGE

Planting/Soil Specifications

1. Installation of bareroot plant stock shall take place between March 15 – April 20; b&b/container stock March 15 –May 30 or September 15 – November 15. Fall planting of B&B stock is not recommended.
2. Disturbed areas shall be seeded and stabilized as per general construction plan for project. Planting areas not impacted by site grading shall have no additional topsoil installed.
3. Bareroot plants shall be installed so that the top of root mass is level with the top of existing grade. Roots shall be dipped in an anti-desiccant gel prior to planting. Backfill in the planting pits shall consist of 3 parts existing soil to 1 part pine fines or equivalent.
4. Fertilizer shall consist of Agriform 22-8-2, or equivalent, applied as per manufacturer's specifications, for woody plants. Herbaceous plants shall be fertilized with Osmocote 8-6-12.
5. Plant material shall be transported to the site in a tarped or covered truck. Plants shall be kept moist prior to planting.
6. All non-organic debris associated with the planting operation shall be removed from the site by the contractor.

Sequence of Construction

1. Sediment control shall be installed in accordance with general construction plan for site.
2. Plants shall be installed as per Plant Schedule and the Planting/Soil Specifications for the project.
3. Upon completion of the planting, signage shall be installed as shown.
4. Plantings shall be maintained and guaranteed in accordance with the Maintenance and Guarantee requirements for project.

Maintenance of Plantings

1. Maintenance of plantings shall last for a period of 2 years.
2. Plantings must receive 2 gallons of water, either through precipitation or watering, weekly during the 1st growing season, as needed. During second growing season, once a month during May–September, if needed.
3. Invasive exotics and noxious weeds will be removed, as required, from planting areas mechanically and/or with limited herbicide application (see groundcover note where appropriate). Old field successional species will be retained.
4. Plants will be examined a minimum two times during the growing season for serious plant pests and diseases. Serious problems will be treated with the appropriate agent.
5. Dead branches will be pruned from plantings.

Guarantee Requirements

1. A 75 percent survival rate of forestation plantings will be required at the end of 2 growing seasons. All plant material below the 75 percent threshold will be replaced at the beginning of the next growing season. Wild trees arising from natural regeneration may be counted up to 50 percent towards the total survival number if they are healthy, native species at least 12 inches tall.

Surety for Forestation

1. The developer shall post a surety (bond, letter of credit) to ensure that forestation plantings are completed. SEE GENERAL NOTE 20, SHEET 1.

Planting Notes

When possible, plants shall be installed within 24 hours of delivery. If installation cannot be performed within this time frame, plant stock shall be watered and protected from dessication

Application of herbicide, Round-up or equivalent, may be used to reduce plant competition from old field successional growth at the time of installation. Mowing, re-application of herbicide, or a combination thereof, may be used to control unwanted, competing vegetation.

Planting shall be installed within one year or two growing seasons of subdivision approval. Plantings shall be installed in accordance with the time schedule included in Note 1 of the planting /Seeding Specifications.

- Denotes Slopes (15% – 24.9%)
- Denotes Slopes (25% And Greater)

PLAN

SCALE : 1"=50'

Owner

Kellogg-CCP, LLC
c/o David P. Scheffenäcker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

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MD DNR Qualified Professional
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Certification # WDCP93MD0610044B
JOHN P. CANOLES 6/19/12

ALDO [...] 6/19/12 DATE
"Professional Certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

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TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 34 OF 45

F-12-026

I:\2009\09014\dwg\FINALS - PHASE ONE\09014 FINAL SHEET 31-35 forest cor. PLAN.dwg, SHEET 34, 6/20/2012 8:41:58 AM, 1:1

MATCH LINE SEE SHEET 34

MATCH LINE SEE SHEET 33

- Denotes Slopes (15% - 24.9%)
- Denotes Slopes (25% And Greater)

PLAN

SCALE : 1"=50'

*FCE Planting Area # 1 - 1.84 acres

Planting units required: 1302 (651 whips)
Planting units provided: 1302 (546 whips and 60 trees)

Qty	Species	Size	Spacing	Total FCA Units
30	Acer x Fremmanii 'Autumn Blaze' - Freeman Maple	1" cal.	15' o.c.	
30	Ulmus Americana 'valley Forge' Valley Forge American Elm	1" cal.	15' o.c.	
	60 Total 1" caliper trees (3.5 planting units per tree) =			210 Total FCA unit credit
80	Acer x Fremmanii 'Autumn Blaze' - Freeman Maple	2-3' whip	11' o.c.	
80	Cercis canadensis - Red bud	2-3' whip	11' o.c.	
80	Carpinus caroliniana - American Hornbeam	2-3' whip	11' o.c.	
76	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.	
60	Betula Nigra 'heritage' - River Birch	2-3' whip	11' o.c.	
60	Ostrya virginiana - American Hophornbeam	2-3' whip	11' o.c.	
60	Ulmus Americana 'valley Forge' Valley Forge American Elm	2-3' whip	11' o.c.	
50	Acer campestre - Hedge Maple	2-3' whip	11' o.c.	
	546 Total whip plantings (2 planting units per tree) =			1092 Total FCA unit credit
	Total Unit Credit	(210 + 1092)		1302

1" CAL. TREES = 200/ACRE (60 TREES/200 = 0.30 AC.)
WHIPS w/shelters = 350/ACRE = 350 x 1.56 AC. = 546 WHIPS
3.5 Planting units = 1 - 1" Cal. Tree
2 Planting units = 1 Whip

* (F.C.E. No. 1 SHALL BE RECORDED & PLANTED WITH THE REVISION PLAT FOR PARCEL 'B')

FCE Planting Area # 2 - 1.03 acres

Planting units required: 720 (360 whips)
Planting units provided: 722 (256 whips and 60 trees)

Qty	Species	Size	Spacing	Total FCA Units
30	Acer x Fremmanii 'Autumn Blaze' - Freeman Maple	1" cal.	15' o.c.	
30	Ulmus Americana 'valley Forge' Valley Forge American Elm	1" cal.	15' o.c.	
	60 Total 1" caliper trees (3.5 planting units per tree) =			210 Total FCA unit credit
56	Acer x Fremmanii 'Autumn Blaze' - Freeman Maple	2-3' whip	11' o.c.	
50	Cercis canadensis - Red bud	2-3' whip	11' o.c.	
30	Carpinus caroliniana - American Hornbeam	2-3' whip	11' o.c.	
30	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.	
30	Betula Nigra 'heritage' - River Birch	2-3' whip	11' o.c.	
20	Ostrya virginiana - American Hophornbeam	2-3' whip	11' o.c.	
20	Ulmus Americana 'valley Forge' Valley Forge American Elm	2-3' whip	11' o.c.	
20	Acer campestre - Hedge Maple	2-3' whip	11' o.c.	
	256 Total whip plantings (2 planting units per tree) =			512 Total FCA unit credit
	Total Unit Credit	(210 + 512)		722

1" CAL. TREES = 200/ACRE (60 TREES/200 = 0.30 AC.)
WHIPS w/shelters = 350/ACRE = 350 x 0.73 AC. = 256 WHIPS
3.5 Planting units = 1 - 1" Cal. Tree
2 Planting units = 1 Whip

Approved: Department Of Planning And Zoning
[signature] 9/05/12
Chief, Division Of Land Development — Date
[signature] 8-31-12
Chief, Development Engineering Division — Date
Approved: Howard County Department Of Public Works
Diane Schwarz, Acting 8/17/12
Chief, Bureau Of Highways — Date

REVISIONS		
NO.	DESCRIPTION	DATE
1	Revised Planting Area For Area # 1	8/29/13

FCE Planting Area # 3 - 1.17 acres

Planting units required: 820 (410 whips)
Planting units provided: 820 (305 whips and 60 trees)

Qty	Species	Size	Spacing	Total FCA Units
30	Acer x Fremmanii 'Autumn Blaze' - Freeman Maple	1" cal.	15' o.c.	
30	Ulmus Americana 'valley Forge' Valley Forge American Elm	1" cal.	15' o.c.	
	60 Total 1" caliper trees (3.5 planting units per tree) =			210 Total FCA unit credit
50	Acer x Fremmanii 'Autumn Blaze' - Freeman Maple	2-3' whip	11' o.c.	
50	Cercis canadensis - Red bud	2-3' whip	11' o.c.	
45	Carpinus caroliniana - American Hornbeam	2-3' whip	11' o.c.	
40	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.	
30	Betula Nigra 'heritage' - River Birch	2-3' whip	11' o.c.	
30	Ostrya virginiana - American Hophornbeam	2-3' whip	11' o.c.	
30	Ulmus Americana 'valley Forge' Valley Forge American Elm	2-3' whip	11' o.c.	
30	Acer campestre - Hedge Maple	2-3' whip	11' o.c.	
	305 Total whip plantings (2 planting units per tree) =			610 Total FCA unit credit
	Total Unit Credit	(210 + 610)		820

1" CAL. TREES = 200/ACRE (60 TREES/200 = 0.30 AC.)
WHIPS w/shelters = 350/ACRE = 350 x 0.87 AC. = 305 WHIPS
3.5 Planting units = 1 - 1" Cal. Tree
2 Planting units = 1 Whip

FCE Planting Area # 4 - 0.50 acres

Planting units required: 350 (175 whips)
Planting units provided: 350 (175 whips)

Qty	Species	Size	Spacing	Total FCA Units
30	Acer x Fremmanii 'Autumn Blaze' - Freeman Maple	2-3' whip	11' o.c.	
25	Cercis canadensis - Red bud	2-3' whip	11' o.c.	
20	Carpinus caroliniana - American Hornbeam	2-3' whip	11' o.c.	
20	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.	
20	Betula Nigra 'heritage' - River Birch	2-3' whip	11' o.c.	
20	Ostrya virginiana - American Hophornbeam	2-3' whip	11' o.c.	
20	Ulmus Americana 'valley Forge' Valley Forge American Elm	2-3' whip	11' o.c.	
20	Acer campestre - Hedge Maple	2-3' whip	11' o.c.	
	175 Total whip plantings (2 planting units per tree) =			350 Total FCA unit credit
	Total Unit Credit			350

WHIPS w/shelters = 350/ACRE = 350 x 0.50 AC. = 175 WHIPS
2 Planting units = 1 Whip

FCE Planting Area # 5 - 0.40 acres

Planting units required: 280 (140 whips)
Planting units provided: 280 (140 whips)

Qty	Species	Size	Spacing	Total FCA Units
20	Acer x Fremmanii 'Autumn Blaze' - Freeman Maple	2-3' whip	11' o.c.	
20	Cercis canadensis - Red bud	2-3' whip	11' o.c.	
20	Carpinus caroliniana - American Hornbeam	2-3' whip	11' o.c.	
20	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.	
15	Betula Nigra 'heritage' - River Birch	2-3' whip	11' o.c.	
15	Ostrya virginiana - American Hophornbeam	2-3' whip	11' o.c.	
15	Ulmus Americana 'valley Forge' Valley Forge American Elm	2-3' whip	11' o.c.	
15	Acer campestre - Hedge Maple	2-3' whip	11' o.c.	
	140 Total whip plantings (2 planting units per tree) =			280 Total FCA unit credit
	Total Unit Credit			280

WHIPS w/shelters = 350/ACRE = 350 x 0.40 AC. = 140 WHIPS
2 Planting units = 1 Whip

FCE Planting Area # 6 - 0.29 acres

Planting units required: 204 (102 whips)
Planting units provided: 204 (102 whips)

Qty	Species	Size	Spacing	Total FCA Units
22	Acer x Fremmanii 'Autumn Blaze' - Freeman Maple	2-3' whip	11' o.c.	
20	Cercis canadensis - Red bud	2-3' whip	11' o.c.	
10	Carpinus caroliniana - American Hornbeam	2-3' whip	11' o.c.	
10	Liriodendron tulipifera - Tulip poplar	2-3' whip	11' o.c.	
10	Betula Nigra 'heritage' - River Birch	2-3' whip	11' o.c.	
10	Ostrya virginiana - American Hophornbeam	2-3' whip	11' o.c.	
10	Ulmus Americana 'valley Forge' Valley Forge American Elm	2-3' whip	11' o.c.	
10	Acer campestre - Hedge Maple	2-3' whip	11' o.c.	
	102 Total whip plantings (2 planting units per whip) =			204 Total FCA unit credit
	Total Unit Credit			204

WHIPS w/shelters = 350/ACRE = 350 x 0.29 AC. = 102 WHIPS
2 Planting units = 1 Whip

PATTERN SPACING DIAGRAM

* * * * * * * * * * *
* * * * * * * * * * * *
* * * * * * * * * * *
# # # # # # # # #
# # # # # # # #

* - whip w/shelter 11' on center spacing
# - 1" caliper tree 15' on center spacing
Species shall be randomly interspersed, rows should be planting along contours

Planting Notes:

Planting units defined by the spacing requirements established in the FCA Manual. One plant unit is defined as 1 seedling or whip without shelter. The Manual states that 700 seedlings/whips without shelters are required per acre, or 350 whips w/shelters, or 200 1" caliper trees, or 100 2" caliper trees. By conversion it has been determined that a seeding or whip without shelter = 1 unit, whip with shelter = 2 units, 1"caliper tree = 3.5 units and 2" caliper tree = 7 units. The use of plant units simplifies the plant density calculations when mixing stock size.

** - These species should not be planted within the wetland limits.

1" caliper trees should be staggered along the outer perimeter of the planting area to serve as demarcation of the boundary. The trees should be no closer than 15 Foot Spacing. Whip spacing to be placed on 11 foot centers, shelters will be required per Howard County policy.

Planting shall be made in a curvilinear fashion along contour. The planting should avoid a grid appearance but should be spaced to facilitate maintenance

Multiflora rose/heavy brush removal/control may be required prior to installation [illegible]

All whips are required to be installed with tree shelters per Howard County FCA requirements.

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr., Managing Member
2330 West Joppa Road, Suite 190
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Ph# 410-296-3800

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Eco-Science Professionals, Inc.
CONSULTING ECOLOGISTS

MD DNR Qualified Professional
USACOE Wetland Delineator
Certification # WDCP93MD0610044B
[signature] 6/19/12
JOHN P. CANOLES

[seal: STATE OF MARYLAND, ALDO MICHAEL VITTUCCI, No. 20748, PROFESSIONAL ENGINEER]
[signature] 6/19/12
ALDO M. VITTUCCI, P.E. — DATE
"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. 20748, Expiration Date 2-22-13."

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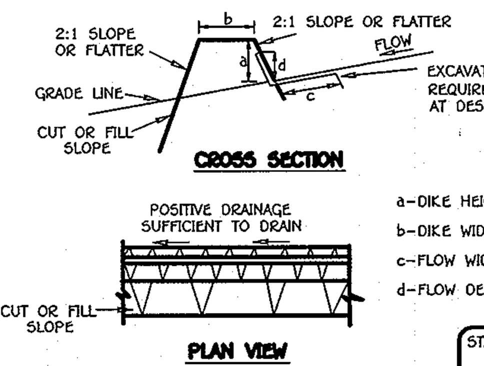


	DIKE A	DIKE B
a-DIKE HEIGHT	18"	30"
b-DIKE WIDTH	24"	36"
c-FLOW WIDTH	4'	6'
d-FLOW DEPTH	12"	24"

STANDARD SYMBOL A-2 B-3

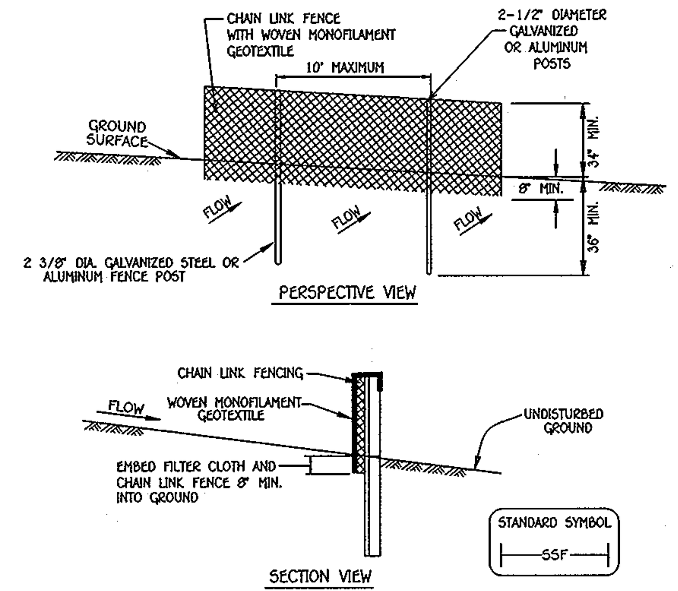
1. Seed and cover with straw mulch.
2. Seed and cover with Erosion Control Matting or line with sod.
3. 4" - 7" stone or recycled concrete equivalent pressed into the soil 7" minimum

Construction Specifications

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

EARTH DIKE

NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

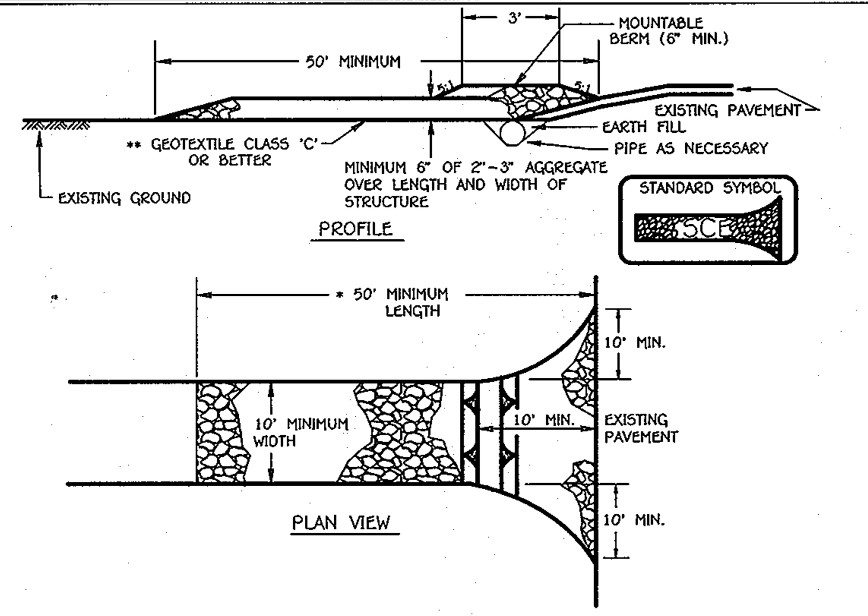
1. INSTALL 2 3/8" DIAMETER GALVANIZED STEEL OR ALUMINUM POSTS SIX FEET IN LENGTH, PLACED NO FURTHER THAN 10 FEET APART. DRIVE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN MINIMUM 9 GAUGE CHAIN LINK FENCE (2 3/8" MAX. DIAMOND) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES.
3. FASTEN WOVEN MONOFILAMENT GEOTEXTILE AS SPECIFIED IN SECTION H-1 MATERIALS, SECURELY TO THE CHAIN LINK WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BYPASS.
5. REMOVE ACCUMULATED SEDIMENTS WHEN "BULGES" DEVELOP IN THE SILT FENCE, OR WHEN SEDIMENTS REACH 25% OF THE FENCE HEIGHT.
6. EXTEND BOTH ENDS OF THE SUPER-SILT FENCE A MINIMUM OF 5 FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER-SILT FENCE.
7. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS SET FORTH IN THE MATERIALS SPECIFICATION.
8. INSPECT AND PROVIDE NECESSARY MAINTENANCE PERIODICALLY AND AFTER EACH RAIN EVENT.

Design Criteria

Slope	Slope Steepness	Slope Length (maximum)	Super Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	150 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

SUPER SILT FENCE

NOT TO SCALE

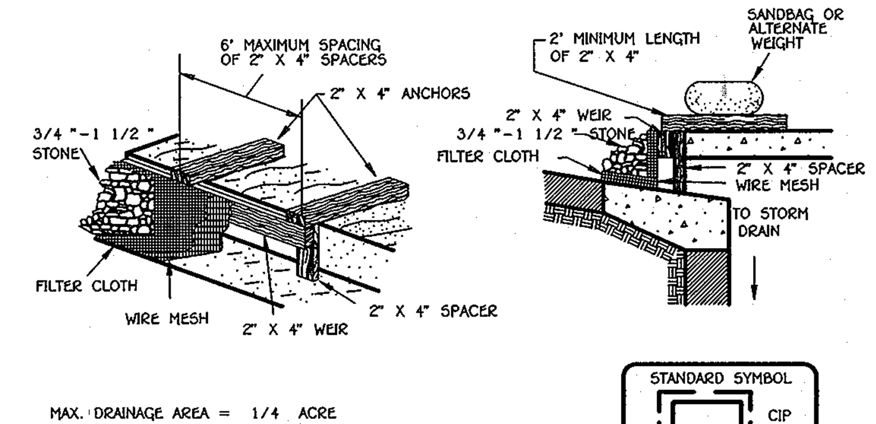


CONSTRUCTION SPECIFICATION

1. LENGTH - MINIMUM OF 50' (*30' FOR SINGLE RESIDENCE LOT).
2. WIDTH - 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE. **THE PLAN APPROVAL AUTHORITY MAY NOT REQUIRE SINGLE FAMILY RESIDENCES TO USE GEOTEXTILE.
4. STONE - CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
5. SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.
6. LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

STABILIZED CONSTRUCTION ENTRANCE

NOT TO SCALE



MAX. DRAINAGE AREA = 1/4 ACRE

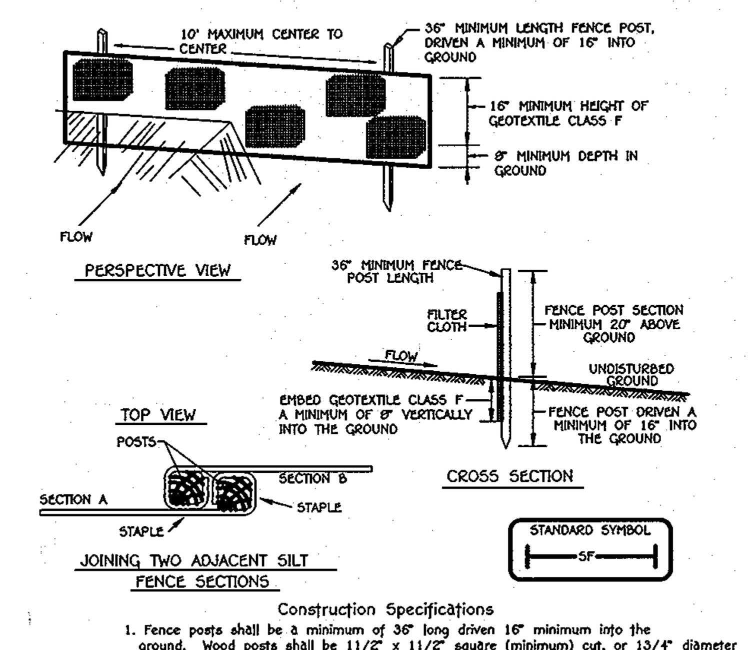
STANDARD SYMBOL CIP

Construction Specifications

1. Attach a continuous piece of wire mesh (30" minimum width by throat length plus 4') to the 2" x 4" weir (measuring throat length plus 2') as shown on the standard drawing.
2. Place a continuous piece of Geotextile Class E the same dimensions as the wire mesh over the wire mesh and securely attach it to the 2" x 4" weir.
3. Securely nail the 2" X 4" weir to a 9" long vertical spacer to be located between the weir and the inlet face (max. 4' apart).
4. Place the assembly against the inlet throat and nail (minimum 2' lengths of 2" x 4" to the top of the weir at spacer locations). These 2" x 4" anchors shall extend across the inlet top and be held in place by sandbags or alternate weight.
5. The assembly shall be placed so that the end spacers are a minimum 1' beyond both ends of the throat opening.
6. Form the 1/2 " x 1/2 " wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4 " x 1 1/2 " stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.
7. This type of protection must be inspected frequently and the filter cloth and stone replaced when clogged with sediment.
8. Assure that storm flow does not bypass the inlet by installing a temporary earth or asphalt dike to direct the flow to the inlet.

CURB INLET PROTECTION

NOT TO SCALE



Construction Specifications

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

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

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

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 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 required.

SILT FENCE

NOT TO SCALE

ENGINEER'S CERTIFICATE

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

Signature Of Engineer — 6/19/12 Date

DEVELOPER'S CERTIFICATE

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

Signature Of Developer — 6-20-12 Date

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

District Howard Soil Conservation Dist. — 7/24/12 Date

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — 9/05/12 Date

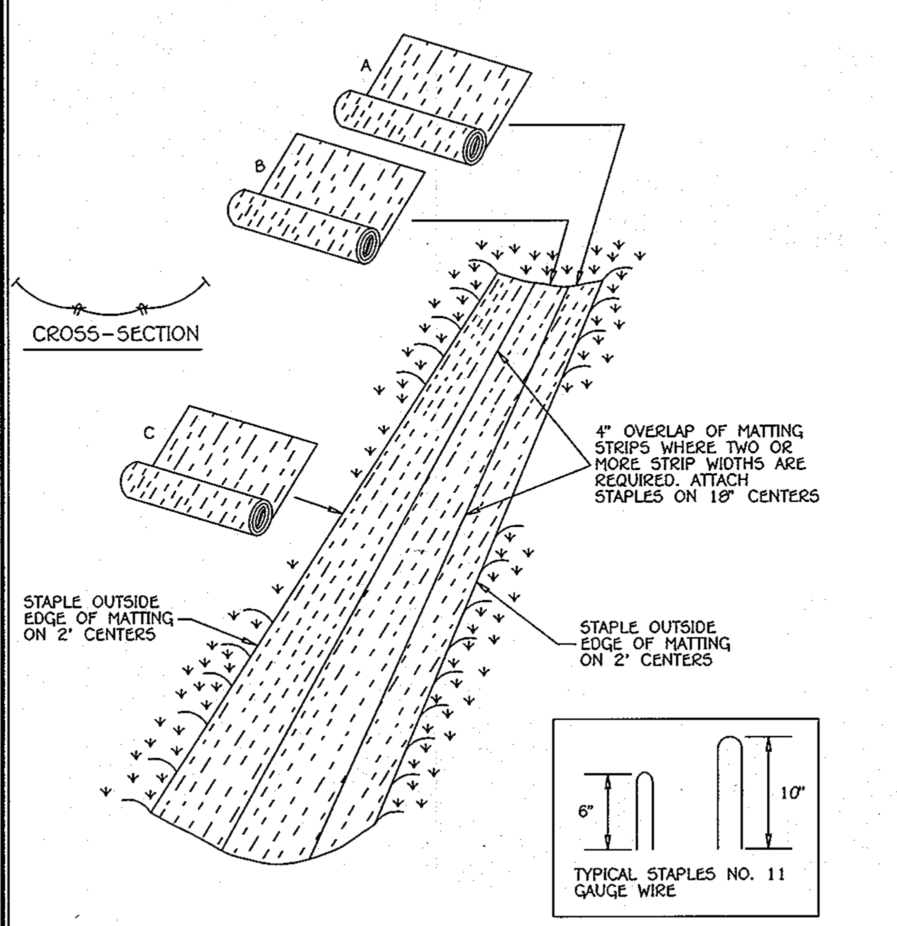
Chief, Development Engineering Division — 8-31-12 Date

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Acting — 8/17/12 Date

REVISIONS

NO.	DESCRIPTION	DATE



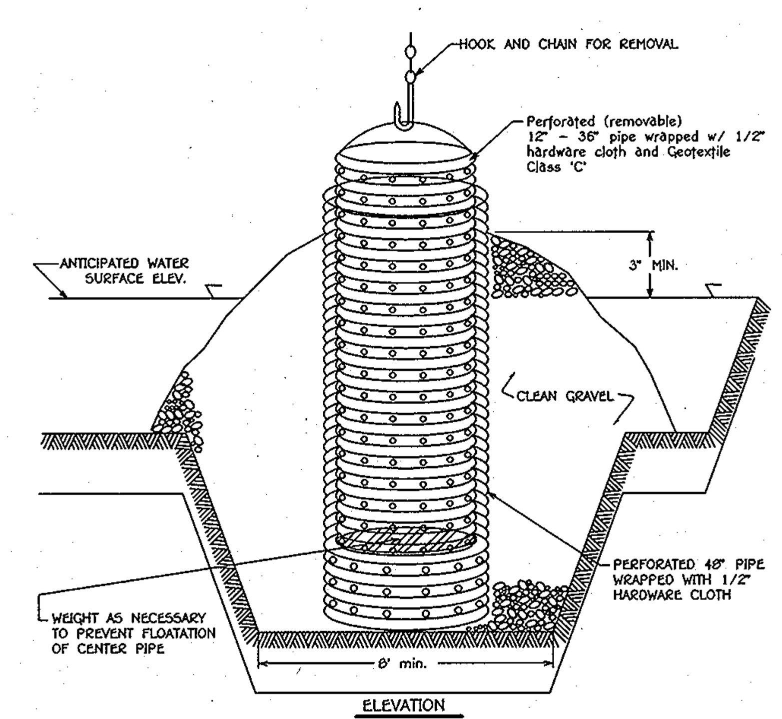
CONSTRUCTION SPECIFICATIONS

1. KEY-IN THE MATTING BY PLACING THE TOP ENDS OF THE MATTING IN A NARROW TRENCH, 6" IN DEPTH. BACKFILL THE TRENCH AND TAMP FIRMLY TO CONFORM TO THE CHANNEL CROSS-SECTION. SECURE WITH A ROW OF STAPLES ABOUT 4" DOWN SLOPE FROM THE TRENCH. SPACING BETWEEN STAPLES IS 6".
2. STAPLE THE 4" OVERLAP IN THE CHANNEL CENTER USING AN 18" SPACING BETWEEN STAPLES.
3. BEFORE STAPLING THE OUTER EDGES OF THE MATTING, MAKE SURE THE MATTING IS SMOOTH AND IN FIRM CONTACT WITH THE SOIL.
4. STAPLES SHALL BE PLACED 2' APART WITH 4 ROWS FOR EACH STRIP, 2 OUTER ROWS, AND 2 ALTERNATING ROWS DOWN THE CENTER.
5. WHERE ONE ROLL OF MATTING ENDS AND ANOTHER BEGINS, THE END OF THE TOP STRIP SHALL OVERLAP THE UPPER END OF THE LOWER STRIP BY 4", SHIPLAP FASHION. REINFORCE THE OVERLAP WITH A DOUBLE ROW OF STAPLES SPACED 6" APART IN A STAGGERED PATTERN ON EITHER SIDE.
6. THE DISCHARGE END OF THE MATTING LINER SHOULD BE SIMILARLY SECURED WITH 2 DOUBLE ROWS OF STAPLES.

NOTE: IF FLOW WILL ENTER FROM THE EDGE OF THE MATTING THEN THE AREA EFFECTED BY THE FLOW MUST BE KEYED-IN.

EROSION CONTROL MATTING

NOT TO SCALE

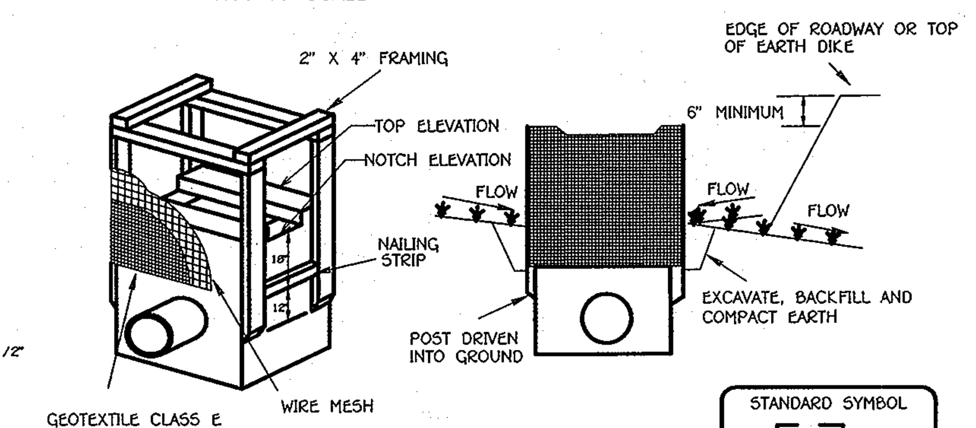


Construction Specifications

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

REMOVABLE PUMPING STATION

NOT TO SCALE



STANDARD SYMBOL SIP

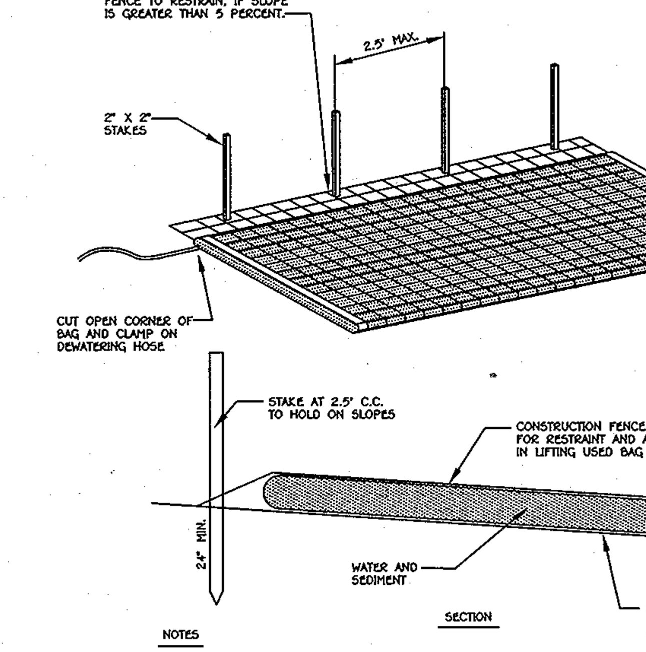
MAX. DRAINAGE AREA = 1/4 ACRE

Construction Specifications

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

STANDARD INLET PROTECTION

NOT TO SCALE



NOTES

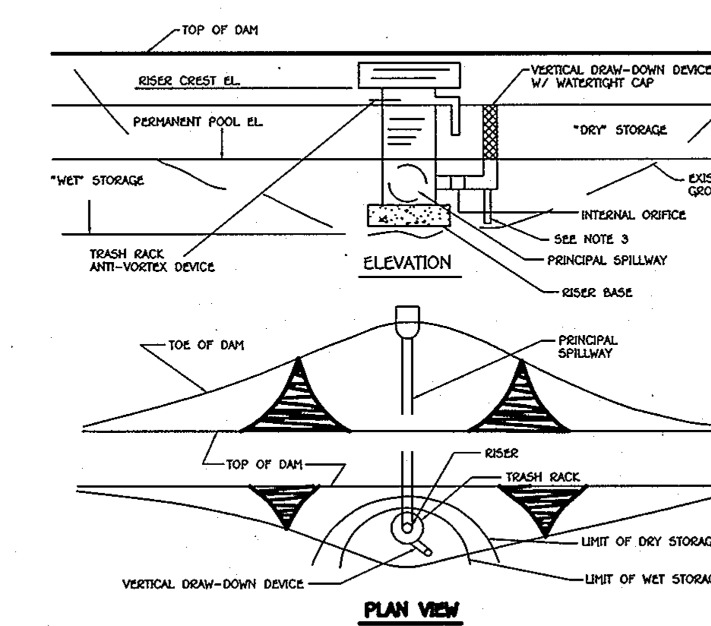
1. FILTER BAG SHALL BE PLACED ON A SLOPING OR LEVEL, WELL GRADED VEGETATED SITE SUCH THAT WATER WILL FLOW AWAY FROM DEVICE AND ANY WORK AREAS.
2. WITDH AND LENTH SHALL BE AS SHOWN IN THE TABLE.
3. THE FILTER BAG MUST BE STAKED IN PLACE AND SECURED TO THE PUMP DISHARGE LINE.
4. FILTER BAG SHALL NOT BE USED FOR DISCHARGE FLOWS GREATER THAN 300 GPM. DEVICE SHALL BE REMOVED AND DISPOSED OF AFTER BAG IS FILLED WITH SEDIMENT.
5. SEDIMENT FROM BAG SHALL BE SPREAD IN AN UPLAND AREA.

AVAILABLE FROM:

INDIAN VALLEY INDUSTRIES, INC. P.O. BOX 810 JOHNSON CITY, NEW YORK 13790 (800) 659-5111 OR A.C.F. ENVIRONMENTAL 1801-A WILLIS ROAD RICHMOND, VIRGINIA 23237 TOLL FREE 1-800-448-3636 OR PRICE AND COMPANY, INC. 425 36TH STREET WYOMING, MI. 49548 (616) 530-8230

FILTER BAG DETAIL

NOT TO SCALE

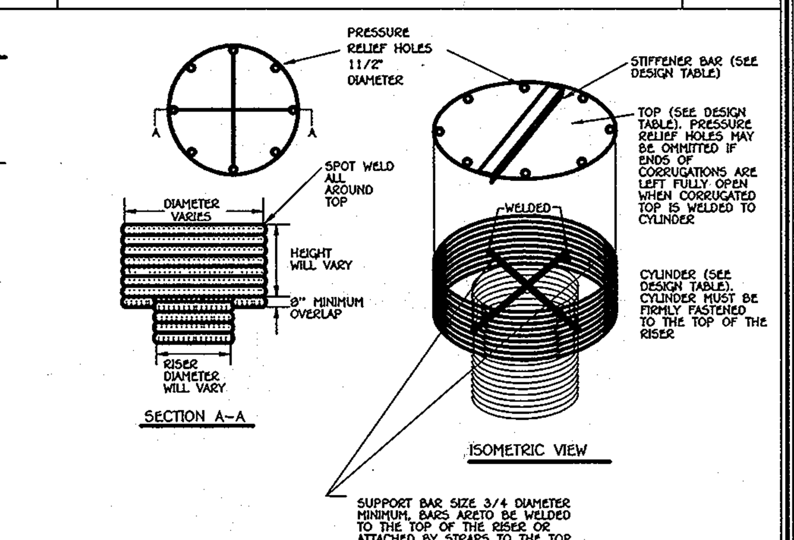


CONSTRUCTION SPECIFICATIONS

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

VERTICAL DRAW-DOWN DEVICE

NOT TO SCALE

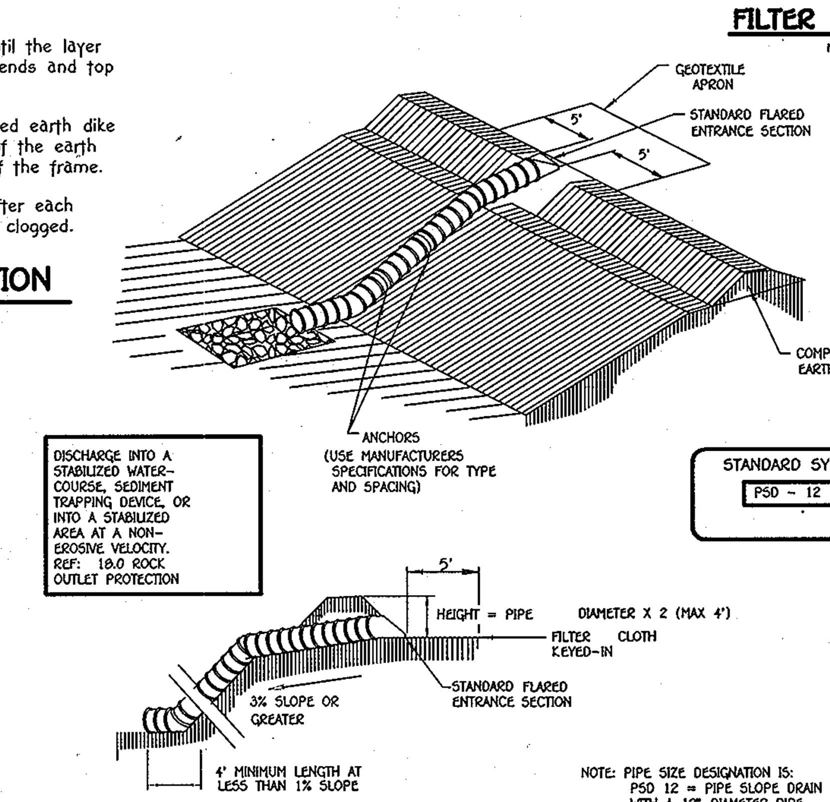


Riser Diam., in.	Trash Rack Cylinder Diam. in.	Thick., gage	H, in.	Minimum Size Support Bar	Minimum Top Thickness	Stiffener
12	18	16	14	#6 rebar	16 ga.	--
15	21	16	15	#6 rebar	16 ga.	--
18	27	16	16	#6 rebar	16 ga.	--
21	30	16	19	#6 rebar	16 ga.	--
24	36	16	21	#6 rebar	14 ga.	--
27	42	16	21	#6 rebar	14 ga.	--
36	54	14	25	#8 rebar	12 ga.	--
42	60	14	27	#8 rebar	12 ga.	--
48	72	12	29	1-1/4" pipe or 1-1/4x1-1/4x1/4 angle	10 ga.	--
54	78	12	33	"	10 ga.	--
60	90	12	37	1-1/2" pipe or 1-1/2x1-1/2x1/4 angle	8 ga.	--
66	96	10	41	2" pipe or 2x2x3/16 angle	8 ga. w/stiffener	2x2x1/4 angle
72	102	10	44	"	8 ga. w/stiffener	2-1/2x2-1/2x 1/4 angle
78	114	10	47	2-1/2" pipe or 2x2x1/4 angle	8 ga. w/stiffener	2-1/2x2-1/2x 1/4 angle
84	120	10	50	2-1/2" pipe or 2-1/2x2-1/2x1/4 angle	8 ga. w/stiffener	2-1/2x2-1/2x 5/16 angle

Note: The above trash rack and anti-vortex device information is only for corrugated metal pipe. Concrete risers must meet the requirements of MD 378.

CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE

NOT TO SCALE



STANDARD SYMBOL PSD - 12

NOTE: PIPE SIZE DESIGNATION IS: PSD 12 = PIPE SLOPE DRAIN WITH A 12" DIAMETER PIPE.

Table 6 Design Criteria for Pipe Slope Drain

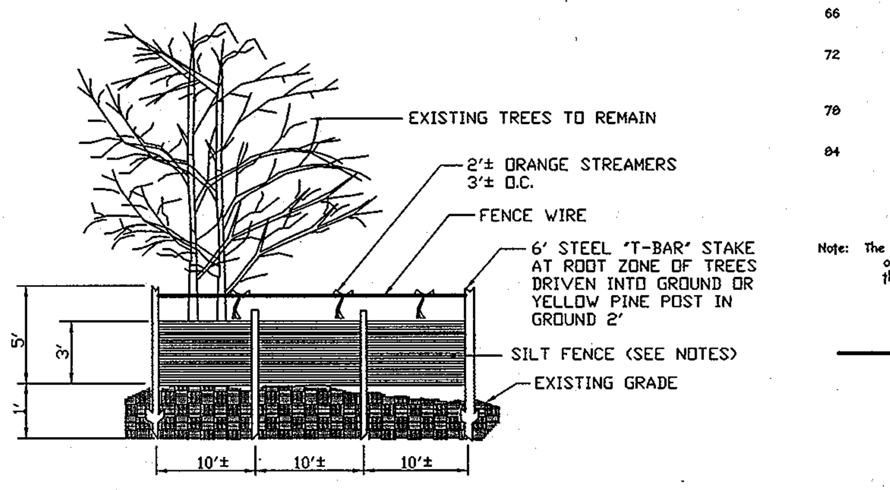
Size	Pipe/Tubing Diameter (D) in	Maximum Drainage Area (Acres)
PSD-12	12	0.5
PSD-18	18	1.5
PSD-21	21	2.5
PSD-24	24	3.5
PSD-24 (2)	24	5.0

PIPE SLOPE DRAIN

NOT TO SCALE

Construction Specifications - Pipe Slope Drain

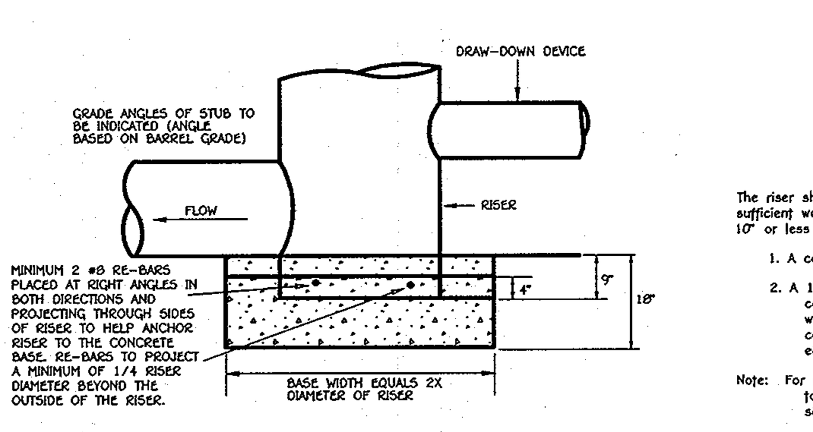
1. The Pipe Slope Drain (PSD) shall have a slope of 3 percent or steeper.
2. The top of the earth dike over the inlet pipe shall be at least 2 times the pipe diameter measured at the invert of the pipe.
3. Flexible tubing is preferred. However, corrugated metal pipe or equivalent PVC pipe can be used. All connections shall be watertight.
4. A flared end section shall be attached to the inlet end of pipe with a watertight connection. Filter cloth shall be placed under the inlet of the pipe slope drain and shall extend out 5' from the inlet. The filter cloth shall be "keyed in" on all sides.
5. The Pipe Slope Drain shall be securely anchored to the slope by staking at the grommets provided. Spacing for anchors shall be as provided by manufacturer's specification. In no case shall less than two (2) anchors be provided, equally spaced along the length of pipe. These details should be provided by pipe suppliers.
6. The soil around and under the pipe and end section shall be hand tamped in 4 inch lifts to the top of the earth dike.
7. All pipe connections shall be watertight.
8. Whenever possible where a PSD drains an unstabilized area, it shall outlet into a sediment trap or basin. If this is not possible then the slope drain will discharge into a stable conveyence that leads to a sediment trap or basin. When discharging into a trap or basin the PSD shall discharge at the same elevation as the wet pool elevation. The discharge from the PSD must be as far away from the sediment control outlet as possible.
9. When the drainage area is stabilized, the PSD shall discharge onto a stabilized area at a non-erosive velocity.
10. Inspection and any required maintenance shall be performed periodically and after each rain event.
11. The inlet must be kept open at all times.



1. SILT FENCE TO BE HEELED INTO THE SOIL.
2. WIRE, SNOW FENCE, ETC. FOR TREE PROTECTION ONLY.
3. BOUNDARIES OF RETENTION AREA WILL BE ESTABLISHED AS PART OF THE FOREST CONSERVATION PLAN REVIEW PROCESS.
4. BOUNDARIES OF RETENTION AREA SHOULD BE STAKED AND FLAGGED PRIOR TO INSTALLING DEVICE.
5. AVOID ROOT DAMAGE WHEN PLACING ANCHOR POSTS.
6. DEVICE SHOULD BE PROPERLY MAINTAINED THROUGHOUT CONSTRUCTION.
7. PROTECTION SIGNS ARE ALSO REQUIRED, SEE FIGURE C-4. 8. LOCATE FENCE OUTSIDE THE CRICTICAL ROOT ZONE.

SILT FENCE AND TREE PROTECTION

NOT TO SCALE



Construction Specifications

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

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

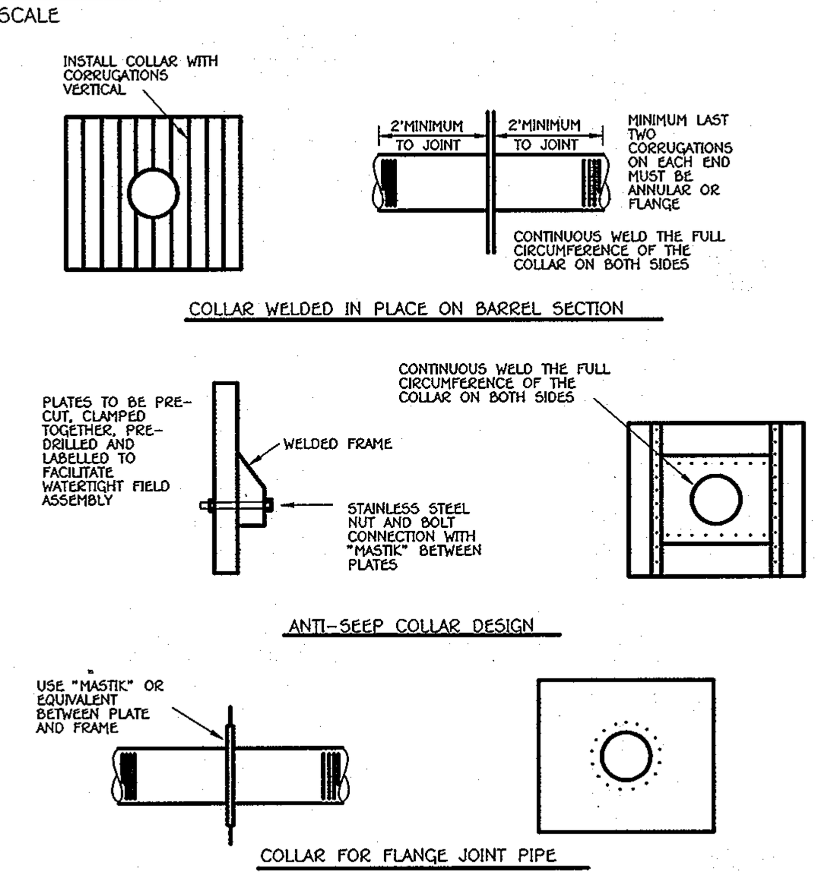
Note: For risers greater than ten feet high computations shall be made to design a base which will prevent floatation. The minimum factor of safety shall be 1.50 (downward forces = 1.50 x upward forces).

NOTE: ANCHORING BARS SHOULD PROJECT 1/4 DIAMETER BEYOND OUTSIDE OF THE RISER.

Basin #	Riser Dia.	Barrel Dia.	Low Flow Orifice Dia.	Draw Down Size w/ Perforation Data
1	54"	36"	12"	6" w/ 12 - 1.5" Dia. Perf.
2	EX. 72"	EX. 30"	12"	8" w/ 10 - 1.5" Dia. Perf.
3	60"	36"	10"	10" w/ 36 - 1.5" Dia. Perf.
4	60"	48"	4"	6" w/ 15 - 1.5" Dia. Perf.
5	60"	36"	12"	6" w/ 15 - 1.5" Dia. Perf.

RISER BASE DETAIL

NOT TO SCALE



TYPICAL ANTI-SEEP COLLARS

NOT TO SCALE

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

Owner

Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr., Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

ALDO — 6/19/12 DATE

"Professional Certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

SEDIMENT CONTROL DETAILS

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 36 OF 45

F-12-026

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STANDARDS AND SPECIFICATIONS FOR VEGETATIVE STABILIZATION per MARYLAND AVIATION ADMINISTRATION

ITEM 903 SEEDING

DESCRIPTION

903-1.1 GENERAL. This item provides specifications for seeding of areas as designated on plans or as directed by the MAA Engineer. The species, mixtures, and methods of application provided in this item have been designed to reduce the attractiveness of airport grounds to wildlife. Only MAA-approved species, mixtures, and rates of application provided in this item may be used to establish vegetation. All activities associated with seeding including soil preparation, seed application, fertilization, and maintenance shall also conform to these approved standards.

MATERIALS

903.2.1 SEED. All seed shall comply with the Maryland Seed Law (Agricultural Article of the Annotated Code of Maryland). Only MAA-approved species, mixtures, and rates of application provided in this item may be used to establish vegetation. Seed will be sampled and tested by an inspector from the Turf and Seed Section, Maryland Department of Agriculture (MDA), Annapolis, Maryland. All lawn and turf seed and mixtures shall be free from the following state-listed restricted noxious weeds:

corn cockle (Agrostemma githago),
bentgrass (Agrostis spp.)4,
redtop (Agrostis gigantean)1,
wild onion (Allium canadense),
wild garlic (Allium vineale),
bindweed (Calstegia spp.),
dodder (Cuscuta spp.),
Bermuda grass (Cynodon dactylon),
orchardgrass (Dactylis glomerata),
tall fescue (Festuca arundinacea)1,
meadow fescue (Festuca pratensis)1,
velvetgrass (Holcus lanatus),
annual bluegrass (Poa annua),
rough bluegrass (Poa trivialis)1,
timothy (Phleum pretense), and
Johnson grass (Sorgum halepense).

Restricted noxious-weed seed may not exceed 0.5 percent by weight of any seed mixture. In addition, all seeds sold in Maryland shall be free from the following listed prohibited noxious weeds: ballonvine (Cardiospermum halicacabum), quackgrass (Elytrigia repens), sicklepod (Senna obtusifolia), sorghum (Sorghum spp.), Canada thistle (Cirsium arvense), plumeless thistle

4 These species may be included as a labeled component of mixture when each is present in excess of five percent of the mixture by weight.
(Carduus spp.-includes musk thistle and curled thistle), and serrated tussock (Nassella trichotoma).

903-2.1.1 APPROVED SPECIES. The following table contains species that are approved by MAA for use in seed mixtures. Purity requirements and germination requirements are also provided.

APPROVED PLANT SPECIES
MAA SEED MIXTURES

	Purity[a] Not Less than %	Minimum % Germination[b]	Live Seed Factor
Certified Turf-Type Tall Fescue (Festuca arundinacea)	98	90	1.13
Certified Kentucky Bluegrass (Poa pratensis)	90	80	1.39
Fowl Bluegrass (Poa palustris)	90	80	1.39
Hard Fescue (Festuca longifolia)	98	90	1.13
Chewings Red Fescue (Festuca rubra commutate)	98	90	1.13
Annual Ryegrass (Lolium multiflorum)	95	85	1.24
Perennial Rygrass (Lolium perenne)	90	80	1.39
Creeping Bentgrass (Agrostis stolonifera)	90	80	1.39
Switchgrass (Panicum virgatum)	90	80	1.39
Little Bluestem (Andropogon scoparius)	62	94	1.71

[a] The percentage weight of pure seed present shall be free of any agriculture seeds, inert matter, and other seeds distinguishable by their appearance.
[b] The percentage of germination shall be actual sprouts and shall not include hard seeds unless specifically permitted by the MAA Engineer.

903-2.1.2 PURITY. All seed shall be free of all state-designated noxious weeds listed in Paragraph 2.1.1 and conform to MAA specifications. To ensure compliance, MAA requires sampling and testing of seed by the Turf and Seed Section, Maryland Department of Agriculture (MDA). The Contractor shall furnish the MAA Engineer with duplicate signed copies of a statement by the Turf and Seed Section certifying that each lot of seed has been laboratory tested within six months of date of delivery. This statement shall include the following information:
- name and address of laboratory,
- date of test,
- lot number,
- the results of tests as to name, percentages of purity and of germination,
- percentage of weed content for the seed furnished,
- and, in the case of a mixture, the proportions of each kind of seed.

Seed shall be furnished in standard containers with the seed name, lot number, net weight, percentages of purity, germination rate and hard seed, and percentage of maximum weed seed content clearly marked. All seed containers shall be tagged with a MDA supervised mix program seed tag.

903-2.1.3 MIXTURES AND APPLICATION RATES. Only seed mixtures and application rates described in this item may be used unless otherwise approved by the MAA Engineer. Seed mixtures shall meet criteria detailed in Paragraph 903-2.1.2. Seed mixtures have been formulated to minimize the attractiveness of areas to wildlife of common landscape scenarios. The appropriate seed mixture for application will be designated based on environmental conditions and may vary from site to site. All planting rates listed are in pounds of Pure Live Seed (PLS) per acre.

Seed mixtures, application scenarios, and rates for permanent cool-season grasses are as follows:

a. Seed Mixture No. 1 - relatively flat areas (grade less than 4:1) subject to normal conditions and regular mowing (Application rate = 234 lbs PLS/acre);
b. Seed Mixture No. 2 - slopes areas (grade greater than 4:1) not subject to regular mowing (Application rate = 115 lbs PLS/acre); and
c. Seed Mixture No. 3 - wetlands and their associated buffer zones (Application rate = 131 lbs PLS/acre).

Seed Mixture No. 1: Relatively flat areas regularly mowed and exposed to normal conditions (Application rate = 234 lbs PLS/acre)

Seed	Rate of Application (lbs of PLS/acre)
85% Certified Turf-Type Tall Fescue	192
10% Certified Kentucky Bluegrass	28
5% Perennial Ryegrass	14
Supplemental Seed	
Annual Ryegrass	25

Seed Mixture No. 2: Sloped areas not subject to regular mowing (Application rate = 115 lbs PLS/acre)

Seed	Rate of Application (lbs of PLS/acre)
75% Hard Fescue	85
20% Chewings Fescue	23
5% Kentucky Bluegrass	7
Supplemental Seed	
Redtop	3

Seed Mixture No. 3: Wetland areas and their associated buffer zones (Application rate = 131 lbs PLS/acre)

Seed	Rate of Application (lbs of PLS/acre)
60% Creeping Bent Grass	83
30% Fowl bluegrass	34
10 % Switchgrass	14
Supplemental Seed	
Redtop	3

903-2.1.4 SEEDING SEASONS. Application of seed and seed mixtures shall occur within a specified seeding season unless otherwise approved by the MAA Engineer. No seed or seed mixtures are to be applied on frozen ground or when the temperature is at or below 35 degrees Fahrenheit (7.2 degrees Centigrade). Under these conditions, a layer of mulch should be applied in accordance with Item 905, Mulching, to stabilize the site, and permanent seeding should occur in the subsequent seeding season. Seed application may occur during the seeding season dates listed below. Seeding performed after October 20 should be a temporary cover of annual ryegrass and followed by overseeding of the appropriate seed mixture during the spring seeding season.

SEEDING SEASONS	
Permanent Cool-Season Grasses	March 1 to April 20 and August 1 to October 20, inclusive
Temporary Cover of Annual Rye/Redtop	March 1 to April 30 and August 1 to November 30, inclusive
Temporary Cover of Warm-Season Grasses (Little Bluestem only)	May 1 to July 31, inclusive. Rate of application should be 13.6 lbs. PLS per acre.

Seeding seasons are based on typical years and can be subject to variation, which may be modified by the MAA Engineer based on seasonal trends.

If the time required to complete any of the operations necessary under this item, within the specified planting season or any authorized extensions thereof, extends beyond the Contract period, then such time will be charged against the Contract time, and liquidated damages will be enforced with respect to this portion of work.

903-2.2 LIME. Lime shall consist of ground limestone and contain at least 85 percent total carbonates. Lime shall be ground to fineness so that at least 90 percent will pass through a No. 20 mesh sieve and 50 percent will pass through a No. 100 mesh sieve. Dolomitic lime or a high magnesium lime shall contain at least 10 percent magnesium oxide. Lime shall be applied by approved methods detailed in Section 903-3.3 of this item. The rate of application will be based on results of soil tests.

903-2.3 FERTILIZER. Fertilizer shall be standard commercial fertilizer (supplied separately or in mixtures) and meet the requirements of applicable state and federal laws (O-F-241) as well as standards of the Association of Official Agricultural Chemists. Nitrogen-Phosphorus-Potassium (N-P-K) concentrations shall be determined from analysis of soil samples. Methods of fertilizer application shall conform to standards described in Section 903-3.3 of this item. Fertilizer shall be furnished in standard containers that are clearly labeled with name, weight, and guaranteed analysis of the contents (percentage of total nitrogen, available phosphoric acid, and water-soluble potash). Mixed fertilizers shall not contain any hydrated lime or cyanamide compounds. Fertilizers failing to meet the specified analysis may be approved by the MAA Engineer, providing sufficient materials are applied to conform with the specified nutrients per unit of measure without additional cost to MAA.

The fertilizers may be supplied in the following forms:

a. A dry, fee-flowing fertilizer suitable for application by a common fertilizer spreader;

b. A finely ground fertilizer soluble in water, suitable for application by power sprayers; or

d. A granular or pellet form suitable for application by blower equipment.

The rate of application will be based on results of soil tests performed by the University of Maryland Soil Testing Laboratory. By law, persons applying fertilizer to State-owned land shall follow the recommendations of the University of Maryland as set forth in the "Plant Nutrient Recommendations Based on Soil Tests for Turf Maintenance" and the "Plant Nutrient Recommendations Based on Soil Tests for Sod Production." Application of the fertilizer shall be in a manner that is consistent with the recommendations of the University of Maryland Cooperative Extension.

CONSTRUCTION METHODS AND EQUIPMENT

903-3.1 GENERAL. This section provides approved methods for the application of and includes standards for seedbed preparation, methods of application, and equipment to be used during the process. Lime and fertilizer shall be applied to seeded areas before the seed is spread. The mixture of seed will be determined for sites based on environmental conditions as described in Paragraph 903-2.1.3.

903-3.2 ADVANCE PREPARATION. Areas designated for seeding shall be properly prepared in advance of seed application. The area shall be tilled and graded prior to application of lime and fertilizer, and the surface area shall be cleared of any stones larger than 1 inch in diameter, sticks, stumps, and other debris that might interfere with sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas. Damage caused by erosion or other forces that occur after the completion of grading shall be repaired prior to the application of fertilizer and lime. The Contractor will repair such damage, which may include filling gullies, smoothing irregularities, and repairing other incidental damage before beginning the application of fertilizer and ground limestone.

If an area to be seeded is sparsely sodded, weedy, barren and unworked, or packed and hard, all grass and weeds shall first be cut or otherwise satisfactorily disposed of, and the soil then scarified or otherwise loosened to a depth not less than 5 inches (125 mm). Clods shall be broken and the top 3 inches (75 mm) of soil shall be worked into a satisfactory condition by discing or by use of cultipackers, rollers, drags, harrows, or other appropriate means.

An area to be seeded shall be considered a satisfactory seedbed (without requiring additional treatment) if it has recently been thoroughly loosened and worked to a depth of not less than 5 inches; the top 3 inches of soil is loose, friable, and is reasonably free from large clods, rocks, large roots, or other undesirable matter; appropriate amounts of fertilizer and lime have been added; and, if it has been shaped to the required grade immediately prior to seeding. For slope areas steeper than 3:1 (three horizontal to one vertical), the subsoil shall be loose to a depth of 1 inch.

After completion of tilling and grading, lime and fertilizer shall be applied within 48 hours according to the specified rate (Paragraphs 903-2.2 and 2.3) and methods (Paragraphs 903-3.3.1 and 903-3.3.2) approved by MAA. The seeding mixture shall be applied within 48 hours after application of lime and fertilizer. To firm the seeded areas, cultipacking shall occur immediately after seeding.

903-3.3 METHODS OF APPLICATION. Lime, fertilizer, and seed mixes shall be applied by either the dry or wet application methods that have been approved by MAA and are detailed below.

903-3.3.1 DRY APPLICATION METHOD

a. Liming. If soil test results indicate that lime is needed, the following procedures will be used: following advance preparation of the seedbed, lime shall be applied prior to the application of any fertilizer or seed and only on seedbeds that have been prepared as described in paragraph 903-3.2. The lime shall be uniformly spread and worked into the top 2 inches of soil, after which the seedbed shall be properly graded again.

b. Fertilizing. Following advance preparations (and liming if necessary(, fertilizer shall be spread uniformly at the specified rate to provide no less than the minimum quantity stated in Paragraph 903-2.3.

c. Seeding. Seed mixtures shall be sown immediately after fertilization of the seedbed. The fertilizer and seed shall be lightly raked to a depth of 1 inch for newly graded and disturbed areas.

d. Rolling. After the seed has been properly covered, the seedbed shall immediately compacted using a cultipacker or an approved lawnroller.

903-3.3.2 WET APPLICATION METHOD/HYDROSEEDING

a. General. The Contractor may elect to apply seed and fertilizer as per Paragraphs c and d of this section in the form of an aqueous mixture by spraying over the previously prepared seedbed using methods and equipment approved by MAA. The rates of application shall be as specified in Paragraphs 903-2.1 through 903-2.3.

b. Spraying Equipment. The spraying equipment shall have a container of water tank equipped with a liquid level gauge capable of reading increments of 50 gallons or less over the entire range of the tank capacity. The liquid level gauge shall be mounted so as to be visible to the nozzle operator at all times. The container or tank shall also be equipped with a mechanical power-driven agitator capable of keeping all the solids in the mixture in complete suspension at all times until used.

The spraying equipment shall also include a pressure pump capable of delivering 100 gallons per minute at a pressure of 100 pounds per square inch. The pressure pump assemblage shall be configured to allow the mixture to flow through the tank when not being sprayed from the nozzle. All pump passages and pipelines shall be capable of providing clearance for 5/8-inch solids. The power unit for the pump and agitator shall have controls mounted so as to be accessible to the nozzle operator. A pressure gauge shall be connected to and mounted immediately behind the nozzle.
The nozzle pipe shall be mounted on an elevated supporting stand in such a manner that it can be rotated through 360 degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the recirculating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture to be supplied so that mixtures may be properly sprayed over a distance varying from 20 feet to 100 feet. One shall be a close-range ribbon nozzle, one a medium-range ribbon nozzle, and one a long-range jet nozzle. For ease of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings. In order to reach areas inaccessible to the regular equipment, an extension hose at least 50 feet in length shall be provided to which the nozzles may be connected.

c. Mixtures. Lime shall be applied separately in the quantity specified, prior to the fertilizing and seed operations. Lime should be added to and mixed with water at a concentration not to exceed 220 pounds of lime for every 100 gallons of water. After lime has been applied, the tank should be emptied and rinsed with fresh water. Seed and fertilizer shall be mixed together in the relative proportions specified, but the resulting concentration should not exceed 220 pounds of mixture per 100 gallons of water and should be applied within 30 minutes to prevent fertilizer burn of the seeds.

All water used shall be obtained from fresh water sources and shall be free from injurious chemicals and other toxic substances harmful to plant life. Brackish water shall not be used at any time. The Contractor shall identify all sources of water to the MAA Engineer at least two weeks prior to use. The Engineer may take samples of the water at the source or from the tank at any time and have a laboratory test the samples for chemical and saline content. The Contractor shall not use any water from any source that is disapproved by the Engineer following such tests.

All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within 30 minutes from the time they were mixed or they shall be wasted and disposed of at a location acceptable to the Engineer.

d. Spraying. Lime shall be sprayed upon previously prepared seed beds on which the lime, if required, shall have been worked in already. The mixtures shall be applied using a high-pressure spray which shall always be directed upward into the air so that the mixtures will fall to the ground in a uniform spray. Nozzles or sprays shall never be directed toward the ground in such a manner that might produce erosion or runoff. Particular care shall be exercised to ensure that the application is made uniformly, at the prescribed rate, and to guard against misses and overlapped areas. Predetermined quantities of the mixture shall be used in accordance with specifications to cover specified sections of known areas. To checks the rate and uniformity of application, the applicator will observe the degree of wetting of the ground or distribute test sheets of paper or pans over the area at intervals and observe the quantity of material deposited thereon.
On surfaces that are to be mulched as indicated by the plans or designated by the MAA Engineer, seed and fertilizer applied by the spray method need not be raked into the soil or rolled. However, on surfaces on which mulch is not to be used, the raking and rolling operations will be required after the soil has dried.

903-3.4 MAINTENANCE OF SEEDED AREAS. The contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the Engineer. Surfaces gullied or otherwise damaged following seeding shall be repaired by regarding and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.

When either the dry or wet application method outlined above is used for work performed out of season, the Contractor will be required to establish a good stand of grass of uniform color and density to the satisfaction of the Engineer. If at the time when the contract has been otherwise completed it is not possible to make an adequate determination of the color, density, and uniformity of such stand of grass, payment for the unaccepted portions of the areas seeded out of season will be withheld until such time as these requirements have been met.

METHOD OF MEASUREMENT

903-4 The quantity of seeding to be paid for shall be the numbers of acres (or square yard) or portions thereof, measured on the ground surface, completed, and accepted. Separate measurements will be made of the areas seeded with the several seed mixtures specified. No distinction will be made between "graded" areas and "undisturbed" areas in arriving at the total acreage (or square yard) for each area seeded with specified seed mixes. No separate measurements will be made of graded and undisturbed areas for purposes of separate payments.

BASIS OF PAYMENT

903-5.1 The quantity, determined as provided above, will be paid for at the contract unit price per acre (or square yard), or fraction thereof, for seeding, which price and payment shall be full compensation for furnishing and placing all material, including fertilizers, and for all labor, equipment, tools, and incidentals necessary to complete the work prescribed in the item.

Payment will be made under:
Item 903-5.1 Seeding Mixture No. 1 -- per acre
Item 903-5.2 Seeding Mixture No. 1 -- per square yard
Item 903-5.3 Seeding Mixture No. 2 -- per acre
Item 903-5.4 Seeding Mixture No. 2 -- per square yard
Item 903-5.5 Seeding Mixture No. 3 -- per acre
Item 903-5.6 Seeding Mixture No. 3 - per square yard
Item 903-5.7 Amendments - per acre
Item 903-5.8 Amendments - per square yard
Item 903-5.9 Fertilizer - per acre
Item 903-5.10 Fertilizer - per square yard

ITEM 904 SODDING

DESCRIPTION

904-1 This item provides standards for furnishing, hauling, and placing approved live sod on prepared areas as indicated on site plans. Sod will only be applied to landscape areas and shall be mowed frequently. All sodding activities shall conform to these specifications at the locations shown on site plans or as directed by the MAA Engineer.

MATERIALS {tc "MATERIALS"}

904-2.1 SOD. Sod furnished by the Contractor shall have a good cover of living or growing grass. This includes grass that is seasonally dormant during the cold or dry seasons and capable of renewing growth after the dormant period. All sod shall be obtained from areas in which the soil is reasonably fertile and contains a high percentage of loamy topsoil. Sod shall be cut or stripped from living, thickly matted turf relatively free of weeds or other undesirable foreign plants, large stones, roots, or other materials that might be detrimental to the development of the sod or to future maintenance. Grass sod shall be Maryland-certified or approved and shall comply with the Maryland Sod Law of the Annotated Code of Maryland (Agricultural Article Sections 9-101 thru 9-110). Each load of sod shall bear a Maryland State Approved or Certified label at the time of delivery on the job. Sod shall be either: (1) Bluegrass sod containing not less than 80 percent Kentucky bluegrass (Poa pratensis) and not more than 20 percent Red Fescue (Festuca rubra); or (2) certified turf type-tall fescue (Festuca arundinacea) sod containing not less than 80 percent certified turf type-tall fescue (Festuca arundinacea) grass and not more than 20 percent Kentucky Bluegrass (Poa pratensis) Red Fescue (Festuca rubra). Any vegetation more than 6 inches in height shall be mowed to a height of 3 inches or less before sod is lifted. Sod, including the soil containing the roots and the emergent plant growth, shall be cut uniformly to a thickness not less than that specified in Section 904-3.4.

904-2.2 LIME. Lime shall conform to standards described in Section 903, "Seeding."

904-2.3 FERTILIZER. Fertilizers and application methods shall conform to the standards previously described in Section 903, "Seeding."

904-2.4 WATER. All water shall conform to the standards previously described in Paragraph 902-2.4. "Water."

904-2.5 SOILS FOR REPAIR. All soils for repairs shall conform to the standards previously described in Paragraph 901-2.3, "Soils for Repair."

CONSTRUCTION REQUIREMENTS {tc "CONSTRUCTION REQUIREMENTS"}

904-3.1 GENERAL. Areas to be sodded shall be clearly indicated by site plans. Areas requiring special ground surface preparation, such as tilling, and those areas in a satisfactory condition that are to remain undisturbed shall also be shown on the plans.

Suitable equipment necessary for proper preparation of the ground surface and for the handling and placing of all required materials shall be on hand, in good condition, and shall be approved by the MAA Engineer before sodding operations begin. The Contractor shall demonstrate to the MAA Engineer, before starting the various operations, that the application of required materials, such as fertilizer and limestone, will be made at the specified rates.

904-3.2 ADVANCE PREPARATION. If the area to be sodded is sparsely vegetated, weedy, barren and unworked, or packed and hard, all existing herbaceous vegetation shall be removed. The soil shall then be scarified or otherwise loosened to a depth of at least 5 inches (125 mm). Clods shall be pulverized, and the top 3 inches (75 mm) of soil shall be worked into a satisfactory bed by discing or use of cultipackers, rollers, drags, harrows, or other equipment approved by the MAA Engineer. The area shall then be properly graded as indicated by site plans.

After grading of areas is complete and prior to the application of fertilizer and limestone, areas to be sodded shall be raked or otherwise cleared of stones larger than 1 inch in diameter, sticks, stumps, and other debris which might interfere with sodding, growth of grasses, or subsequent maintenance of grass-covered areas. If any damage by erosion or other causes has occurred after grading of areas and before beginning the application of fertilizer and ground limestone, the Contractor shall repair such damage. This may include filling gullies, smoothing irregularities, and repairing other incidental damage.

An area to be sodded will be considered a satisfactory seedbed without requiring additional treatment if it recently has been thoroughly loosened and worked to a depth of at least 5 inches as a result of grading operations and, if immediately prior to sodding, the top 3 inches of soil is loose, friable, reasonably free from large clods, rocks, large roots, or other undesirable matter, and is shaped to the required grade. For slope areas steeper than 3:1 (three horizontal to one vertical) the subsoil shall be loosened to a depth of 1 inch. Lime and fertilizer shall be applied within 48 hours after tilling as described in 903-3.3 and 3.4. The sod shall be applied immediately after the lime and fertilizer have been worked into the soil.

904-3.3 APPLICATION OF FERTILIZER AND LIME. Following ground surface preparation, fertilizer shall be uniformly spread as described in Section 903-3.3 at a rate that will provide at least the minimum quantity of fertilizer required. If the use of ground limestone is specified, it shall be spread as described in Section 903-3.3, "Methods of Application"; at a rate that will provide at least the minimum quantity of lime required. These materials shall be incorporated into the soil to a depth of at least 2 inches by discing, raking, or other methods approved by the MAA Engineer. Any stones larger than 1 inch in diameter, large clods, roots, and other litter brought to the surface by this operation shall be removed.

904-3.4 OBTAINING AND DELIVERING SOD. The sod shall be well rooted, grown in the State of Maryland, and field grown for a minimum of 12 months. After inspection and approval of the sod by the MAA Engineer, the sod shall be cut with approved sod cutters to such a thickness that after placement on the prepared bed, but before compaction, it shall have a uniform attached soil thickness of at least 0.75 inch. Sod sections or strips shall be cut in uniform widths of a least 14 inches and in lengths of at lest 18 inches, but not to lengths that might inhibit placement without breaking, tearing, or loss of soil. Where strips are required, the sod shall be rolled or folded undamaged, with the grass facing inward. The Contractor may be required to mow high grass before cutting sod.

Sod shall be transplanted within 24 hours from the time of harvest unless circumstances beyond the Contractor's control make storage necessary. In such cases, sod shall be stacked, kept moist, protected from exposure to the air and sun, and shall be kept from freezing. Sod shall only be harvested and moved when soil moisture conditions are such that favorable results can be expected. Where soil is too dry, permission to cut sod may be granted only after it has been sufficiently watered to moisten the soil to the depth at which the sod will be cut.

904-3.5 placing sod. Sodding shall only be performed during seasons when satisfactory results can be expected. Frozen sod shall not be used and sod shall not be placed upon frozen soil. Sod may be transplanted during periods of drought with the approval of the MAA Engineer, provided the sod bed is watered to moisten the soil to a depth of at least 4 inches immediately prior to laying the sod.

The sod shall be moist and shall be placed on a bed, prepared according to Paragraphs 904-3.2 "Advance Preparation", and 904-3.3, "Application of Fertilizer and Lime" by hand. Pitchforks shall not be used to handle sod, and dumping from vehicles shall not be permitted. The sod shall be placed carefully by hand, edge to edge and with staggered joints, in rows at right angles to the slopes, starting at the base of the area to be sodded and working upward. The sod shall immediately be pressed firmly into contact with the sod bed by tamping or rolling with approved equipment to provide a true and even surface, and ensure knitting without displacement of the sod or deformation of the surfaces of sodded areas. Where the sod has been displaced during sodding operations, the workmen replacing it shall work from ladders or treaded planks to prevent further displacement. Where the grades are such that the flow of water will be from paved surfaces across sodded areas, the surface of the soil in the sod after compaction shall be set approximately 1.5 inches below the pavement edge. Where the flow will be over the sodded areas and onto the paved surfaces around manholes and inlets, the surface of the soil in the sod after compaction shall be placed flush with pavement edges.

On slopes steeper than 1:2.5 and in V-shaped or flat-bottom ditches or gutters, the sod shall be secured with wooden pegs at least 18 inches long and a cross-sectional area of at least 0.75-square inch, or by other methods of securing sod approved by the MAA Engineer. The pegs shall be driven flush with the surface of the sod. The pegs shall be of sufficient number and at adequate spacing to secure sod from displacement. The use of sod staples or other means of securing the sod from displacement may be approved by the MAA Engineer provided satisfactory results are expected.

904-3.6 WATERING. Adequate water and watering equipment shall be on hand before sodding begins, and sod shall be kept moist until it has become established and its continued growth assured. In all cases, watering shall be done in a manner that will avoid erosion from the application of excessive quantities and will avoid damage to the finished surface.

904-3.7 ESTABLISHING TURF.

904-3.7.1 GENERAL. The Contractor shall provide general care for the sodded areas as soon as the sod has been laid and shall continue to provide such care until final inspection and acceptance of the work.

904-3.7.2 PROTECTION. All sodded areas shall be protected against traffic or other use by warning signs and barricades approved by the MAA Engineer.

904-3.7.3 MOWING. The Contractor shall mow the sodded areas with approved mowing equipment, depending upon climatic and growth conditions and the needs for mowing of specific areas. In the event that weeds or other undesirable vegetation establishes to such an extent that, either cut or uncut, they threaten to smother the sodded species, the weeds shall be mowed and the clippings raked and removed from the area. Spot applications of an appropriate herbicide by a licensed applicator shall be approved by the MAA Engineer to remove invasive species. The appropriate herbicide shall be determined on a case-by-case basis, depending on the location and type of weed.

904-3.7.4 REPAIR. When the surface has become gullied or otherwise damaged during the period covered by this contract, the affected areas shall be repaired to re-establish the grade and the condition of the soil and shall then be re-sodded as specified in Paragraph 904-3.5, "Placing Sod", at the Contractor's expense.

METHOD OF MEASUREMENT{tc "METHOD OF MEASUREMENT}

904-4 This item will be measured on the basis of the area in square yards of the surface covered with sod and accepted.

BASIS OF PAYMENT {tc BASIS OF PAYMENT}

904-5 This item will be paid for on the basis of the contract unit price per square yard for sodding. The price will provide full compensation for all labor, equipment, material, staking, and incidentals necessary to satisfactorily complete the items as specified.

Payment will be made under:

Item 904-5.1 Sodding - per square yard
Item 904-5.2 Amendments - per square yard
Item 904-5.3 Fertilizer - per square yard

ITEM 905 MULCHING

DESCRIPTION

905-1.1 GENERAL. This item provides the Contractor with MAA-approved specifications for mulch and the application of mulch including distribution of mulch and securing of mulched areas. Areas to be mulched will be clearly shown on site plans or otherwise designated by the MAA Engineer.

MATERIALS

905-2.1 TYPES OF MULCH. Acceptable mulch shall be composed of the materials listed below or composed of any locally available materials that are similar to those specified and approved by the MAA Engineer. Low-grade, shalely, soiled, partially rotted hay, straw, or other materials unfit for animal consumption will not be acceptable for use as mulch. Straw or other material that is fresh, excessively brittle, or is in such an advanced stage of decomposition as to smother or retard the planted grass, is not acceptable. Clean, weed-free straw may be used. Mulch materials containing matured seed with the potential to establish and be detrimental to the project or the surrounding area is not acceptable.

a. Shredded Hardwood Bark. Shredded hardwood bark shall consist of hardwood tree bark that has been milled and screened to ensure a maximum 4-inch (100-mm) particle size. Provide a uniform texture, and be free from sawdust, toxic substances, and other foreign materials.

b. Wood Chips. Wood chips shall be produced by a chipping machine to a size specified by the MAA Engineer. Chips may not have been subjected to any conditions that would shorten their useful life or cause them to lose any of their value as mulch. Wood chips shall be free from bark, leaves, twigs, wood shavings, sawdust, toxic substances, and other foreign material.

c. Wood Cellulose Fiber. Wood cellulose fiber shall consist of a processed wood product with uniform fiber characteristics. The fiber shall be capable of remaining in a uniform suspension under agitation in water and blending with seed, fertilizer, and other additives to form a homogeneous slurry. The fiber shall perform satisfactorily in hydraulic seeding equipment without clogging or damaging the system. The slurry shall contain a green dye to provide easy visual inspection for uniformity of application.

Certification showing that the fiber material conforms to the following specifications shall be provided by the manufacturer:

Wood Cellulose Fiber Requirements	
Particle Length, in. (mm)	Approximately 1/2 (13)
Particle Thickness, in. (mm)	Approximately 1/16 (1.5)
Net dry Weight Content	Minimum as stated on bag
TAPPI* T 509, pH	4.0 to 8.5
Ash Content, TAPPI* Standard T 413, % max	7.0
Water Holding Capacity, % min	90

*Technical Association of Pulp and Paper Industry

The material shall be delivered in packages of uniform net weight of 75 lbs (34 kg) or less and shall be clearly labeled with the name of the manufacturer, net weight, and a supplemental statement of the net weight content.

905-2.2 INSPECTION. Within five days after acceptance of the bid, the Contractor shall provide representative samples of mulch material to be used to the MAA Engineer and identify the source of the material and quantities of mulch materials available. The samples provided may be used as standards with the approval of the MAA Engineer and any materials brought on the site that do not meet these standards may be rejected.

CONSTRUCTION REQUIREMENTS

905-3.1 ADVANCE PREPARATION. Before spreading mulch, all large clods, stumps, stones, brush, roots, and other foreign material shall be removed from the area to be mulched. Mulch shall be applied immediately after seeding unless otherwise specified. The application and spreading of mulch may be by hand methods, blower, or other mechanical methods, provided a uniform covering is obtained.

905-3.2 APPLICATION OF MULCH. The Contractor shall evenly apply mulch materials to areas indicated by site plans or otherwise designated by the MAA Engineer. Cellulose-fiber or wood-pulp mulch shall be applied at the rate of 1,500 pounds (dry weight) per acre. Mulch may be blown on the slopes and use of cutters in the equipment for this purpose will be permitted to the extent that at least 95 percent of the mulch in place on the slope is 6 inches or more in length. When mulch applied by the blowing methods is cut, the loose depth in place shall be 1 to 2 inches. Cellulose fiber or wood-pulp mulch shall be applied as an aqueous mixture by spraying at the rate of 1,500 pounds (dry weight) per acre using spraying equipment approved by the MAA Engineer.

905-3.3 SECURING MULCH. Mulch shall be held in place by light discing, a thin coating of topsoil, pins, stakes, wire mesh, or other methods approved by the MAA Engineer. If the "peg and string" method is used, the mulch shall be secured with stakes or wire pins driven into the ground on 5-foot centers or less. Binder twine shall be strung between adjacent stakes in straight lines and crossed diagonally over the mulch. The stakes shall be firmly driven nearly flush to the ground to draw the twine down tightly onto the mulch.

905-3.4 MAINTENANCE OF MULCHED AREAS. The Contractor shall care for mulched areas until final acceptance of the project. Care required may consist of providing protection against traffic or other disturbances by placement of warning signs and/or barricades before or immediately after mulching has been completed.

The Contractor may be required to repair or replace any mulching that is defective or becomes damaged before the project is finished and deemed satisfactory by the MAA Engineer. When, in the judgment of the MAA Engineer, defects or damage result from poor workmanship or failure to meet the requirements of the specifications, the cost of the necessary repairs or replacement will be borne by the Contractor. However, once the Contractor has completed the mulching of an area in accordance with the provisions of the specifications and to the satisfaction of the Engineer, no additional work at his expense will be required. Any subsequent repairs and/or replacements deemed necessary by the Engineer may be made by the Contractor and will be paid for as additional or extra work.

METHOD OF MEASUREMENT

905-4 Mulching will be measured in square yards on the basis of the actual surface area acceptably mulched to depths of 1-, 2-, or 4-inch depths.

BASIS OF PAYMENT

905-5 Payment will be made at the contract unit price per square yard for mulching. This price will provide full compensation for furnishing all materials, for placing and anchoring the materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item 905-5.1 Mulching - per square yard at 1-inch depth
Item 905-5.2 Mulching - per square yard at 2-inch depth
Item 905-5.3 Mulching - per square yard at 3-inch depth

STANDARDS AND SPECIFICATIONS FOR TOPSOIL

Definition

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

Purpose

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

Conditions Where Practice Applies

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

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

Construction and Material Specifications

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

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

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

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

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

II. For sites having, disturbed areas under 5 acres:
i. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

III. For sites having disturbed areas over 5 acres:

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

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

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

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

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

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

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

V. Topsoil Application

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

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

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

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

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

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

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

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

c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.

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

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

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. 1, CHAPTER 12, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5) ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50), AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6) ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7) SITE ANALYSIS:

TOTAL AREA OF SITE	90.879	ACRES
AREA DISTURBED	62.52	ACRES
AREA TO BE ROOFED OR PAVED	3.57	ACRES
AREA TO BE VEGETATIVELY STABILIZED	58.95	ACRES
TOTAL CUT	209,600	CU.YDS.
TOTAL FILL	183,600	CU.YDS.
OFFSITE WASTE/BORROW AREA LOCATION	N/A	CU.YDS.

8) ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9) ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10) ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11) TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGHTS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

6/19/12
ALDO [illegible] DATE
"Professional Certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

ENGINEER'S CERTIFICATE

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

Signature Of Engineer — Date 6/19/12

DEVELOPER'S CERTIFICATE

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

Signature Of Developer — Date 6.20.12

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

District Howard Soil Conservation Dist. — Date 7/24/12

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 9/05/12

Chief, Development Engineering Division — Date 8.31.12

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 8/17/12

SEQUENCE OF CONSTRUCTION

1. CALL MISS UTILITY AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION TO MARK THE EXISTING UTILITIES IN THE FIELD. 1 DAY
2. OBTAIN GRADING PERMIT. 7 DAYS
   NOTE: THE NORTH STABILIZED CONSTRUCTION ENTRANCE (BANBURY DRIVE) SHALL BE UTILIZED AS THE ONLY CONSTRUCTION ENTRANCE UNTIL TRAFFIC SIGNAL MODIFICATIONS ARE COMPLETED AT THE SOUTH ENTRANCE (SAINT MARGARETS LANE).
3. INSTALL STABILIZED CONSTRUCTION ENTRANCES AND MOUNTABLE BERMS AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN. 1 DAY
4. INSTALL BASIN #1, A-2 EARTH DIKES & MOUNTABLE BERM TO BASIN #1 (TO FUNCTION AS SEDIMENT EROSION CONTROL DURING THE ROAD DEMOLISH PHASE INCLUDING THE REMOVAL OF EX. PAVING, EX. SIDEWALK, EX. GUARDRAIL, EX. FENCE LINE, CURB & GUTTER, STORM DRAINS, FIRE HYDRANTS, WATER LINE, SEWER LINE, ELECTRIC LINES AND ALL OTHER ASSOCIATED UTILITIES.) 3 MONTHS
   NOTE: THE REMOVAL OF EXISTING MATERIALS SHALL BE IN ACCORDANCE WITH THE GREEN NEIGHBORHOOD WASTE MANAGEMENT PLAN
5. STABILIZE ALL DISTURBED AREAS WITH TEMPORARY SEEDING. CONTACT THE COUNTY SEDIMENT EROSION AND CONTROL INSPECTOR BEFORE PROCEEDING. 2 DAYS
6. BREACH THE EXISTING TRAPS/BASINS OF NON-REGULATED FACILITIES (NRF) #2, #4, #8 & #11. NRF FACILITY #'S 1 AND 3 MAY RECEIVE RUNOFF DURING DEMOLITION OPERATION SO THEY SHOULD REMAIN IN PLACE UNTIL TASK #4 IS COMPLETED. SEE NOTE #26. 7 DAYS
7. INSTALL THE REMAINING SEDIMENT BASINS #2 THRU #5 AS SHOWN ON THE PLAN ALONG WITH ALL PERIMETER CONTROLS FOR SEDIMENT RUNOFF, INCLUDING SUPER SILT FENCE AND EARTH DIKES. THE NRF FACILITY #1 CAN NOW BE BREACHED AND STABILIZED AS NECESSARY. NRF FACILITY #3 IS TO BE RECONSTRUCTED AS NEW SEDIMENT BASIN #3. ONCE SEDIMENT HAS ACCUMILATED TO THE CLEAN OUT ELEVATIONS FOR THE BASINS AND PLACE SEDIMENT UPHILL FROM THE BASINS. 30 DAYS
   NOTE: BASIN No. 2 REQUIRES RAISING THE EXISTING RISER WEIR ELEVATION. SEE BASIN #2 PROFILE THRU C.L. DAM ON SHEET 38.
8. INSTALL REMAINING EARTH DIKES TO DIRECT FLOWS TO BASINS IN CONJUNCTION WITH THE MASS GRADING PLANS. FILL IN NRF #8 BEFORE INSTALLING EARTH DIKE IN THAT AREA. 2 DAYS
9. GRADE SITE TO MASS GRADING CONTOURS AND GRADE ROADWAYS TO SUB BASE. 8 WEEKS
10. STABILIZE ALL DISTURBANCE WITH TEMPORARY SEEDING. RECEIVE PERMISSION TO CONTINUE FROM THE EROSION AND SEDIMENT CONTROL INSPECTOR 2 DAYS
11. BEGIN ROAD WIDENING CONSTRUCTION OF COCA COLA DRIVE FOR DECELERATION TURNING LANE. GRADE THIS AREA TO SUB-GRADE. SAWCUT EXISTING PAVING INSTALL BASE COURSE FOR WIDENING. 10 DAYS
12. INSTALL PROPOSED STORM DRAIN INCLUDING CONNECTIONS TO EACH OF THE SWM FACILITIES, WATER LINE AND SEWER LINE CONSTRUCTION FOR SAINT MARGARETS LANE AND COCA COLA DRIVE. 4 WEEKS
13. ONCE STORM DRAINS ARE INSTALLED, PLACE STANDARD INLET PROTECTION AT THE INLETS AS SHOWN IN SAINT MARGARETS LANE WITH THE EXCEPTION OF INLETS I-2 THRU I-5, WRAP THESE INLETS WITH SUPER-SILT FENCE. THE CONSTRUCTION OF THE FILTER MEDIA, UNDERDRAIN AND PLANTINGS FOR EACH BIO-RETENTION CELL SHALL BE DELAYED UNTIL THE CONTRIBUTING DRAINAGE AREA IS PERMANENTLY STABLIZED. PLACE ROADWAY SUB-BASE WITHIN SAINT MARGARETS LANE. PAVE SAINT MARGARETS LANE AND ASSOCIATED WIDENING UP TO THE INTERMEDIATE SURFACE LAYER WITHIN THE P-4 PAVING SECTION. SEE R-2.01 OF THE HOWARD COUNTY DESIGN MANUAL VOLUME IV. 5 DAYS
    NOTE: FUTURE SITE PLANS WILL PROTECT BIO-RETENTION FACILITIES WITH SILT FENCE AS WELL.
14. INSTALL STORM DRAIN INLETS, WATER LINE AND SEWER LINE PER PLAN FOR BANBURY DRIVE. ONCE STORM DRAINS ARE INSTALLED, PLACE STANDARD INLET PROTECTION AT THE INLETS AS SHOWN IN SAINT MARGARETS LANE. THE CONSTRUCTION OF THE FILTER MEDIA, UNDERDRAIN AND PLANTINGS FOR EACH BIO-RETENTION CELL SHALL BE DELAYED UNTIL THE CONTRIBUTING DRAINAGE AREA IS PERMANENTLY STABILIZED. 6 WEEKS
    NOTE: FUTURE SITE PLANS WILL PROTECT BIO-RETENTION FACILITIES WITH SILT FENCE AS WELL.
15. INSTALL SUB-BASE WITHIN BANBURY DRIVE. PAVE BANBURY DRIVE UP TO THE INTERMEDIATE SURFACE LAYER WITHIN THE P-4 SECTION. SEE R-2.01 OF HOWARD COUNTY DESIGN MANUAL VOLUME IV. 1 WEEK
16. INSTALL BASE COURSE OF PAVING FOR BANBURY DRIVE AND SAINT MARGARETS LANE. 2 WEEKS
17. INSTALL THE PROPOSED SWM DEVICES WITHIN THE MEDIAN OF SAINT MARGARETS LANE. ONCE THIS AREA IS STABILIZED, REMOVE THE INLET PROTECTION LOCATED AROUND THE INLETS. 4 DAYS
18. STABILIZE ALL DISTURBED AREAS THAT DRAIN ONTO BANBURY DRIVE WITH PERMANENT SEEDING. INSTALL THE PROPOSED MICRO-BIORETENTION FACILITIES INCLUDING THE FILTER MEDIA AND UNDERDRAINS LOCATED OUTSIDE OF THE ROADWAY. 3 WEEKS
19. NOTE: THE CONSTRUCTION OF THE PROPOSED FINAL SURFACE SAND FILTER LOCATED IN THE AREA OF BASIN #2 IS TO BE DELAYED UNTIL A FUTURE SITE PLAN PHASE SINCE THIS SEDIMENT CONTROL MEASURES IS REQUIRED FOR FUTURE PHASES OF WORK.
20. NOTE: REMOVAL OF THE PERIMETER SEDIMENT CONTROL FEATURES AND BASINS SHALL BE COORDINATED WITH FUTURE SITE PLANS BEFORE THE FINAL SWM CONVERSIONS TAKE PLACE AS SHOWN ON THIS PLAN.
21. PROVIDE PERMANENT SEEDING TO ANY DISTURBED AREAS ONSITE AND STABILIZE THE ENTIRE SITE. 3 DAYS
22. WITH THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR START REMOVING ANY SEDIMENT CONTROL FEATURES NOT REQUIRED TO REMAIN FOR FUTURE SITE PLAN PHASES AND STABILIZE THE AREAS WITH PERMANENT SEEDING INCLUDING THE RISER CREST FOR BASIN #2. 1 WEEK
23. NOTE: CONTRACTOR SHALL PUMP THE SEDIMENT TRAPS/ BASINS COMPLETELY DRY THROUGH A FILTERING DEVICE TO A CLEAN WATER OUTFALL WITHIN 24 HOURS FOLLOWING ANY RAINFALL EVENT.
24. NOTE: CONTRACTOR SHALL REMOVE ANY AND ALL JUNK, DEBRIS AND TRASH FROM WITHIN THE FLOODPLAIN, STREAMS, WETLANDS & THEIR BUFFERS.
25. NOTE: CONTRACTOR SHALL HAVE THE OPTION TO PLACE MATERIAL FROM GRADING OPERATIONS UNSUITABLE TO BE PLACED AS CONTROLLED FILL WITHIN THE OLD TRAPS/BASINS BREACH IN ITEM 6 ABOVE. A LAYER OF TOPSOIL SHOULD CAP OFF THESE OPERATIONS.
26. IN ACCORDANCE WITH THE GREEN NEIGHBORHOOD CRITERIA, NO FOREST IMPACT IS ANTICIPATED. HOWEVER, THE CONTRACTOR SHALL REPLACE ANY TREES IMPACTED BY THE BREACHING AND WETLAND/STREAM RESTORATION EFFORTS.

SEDIMENT CONTROL NOTES

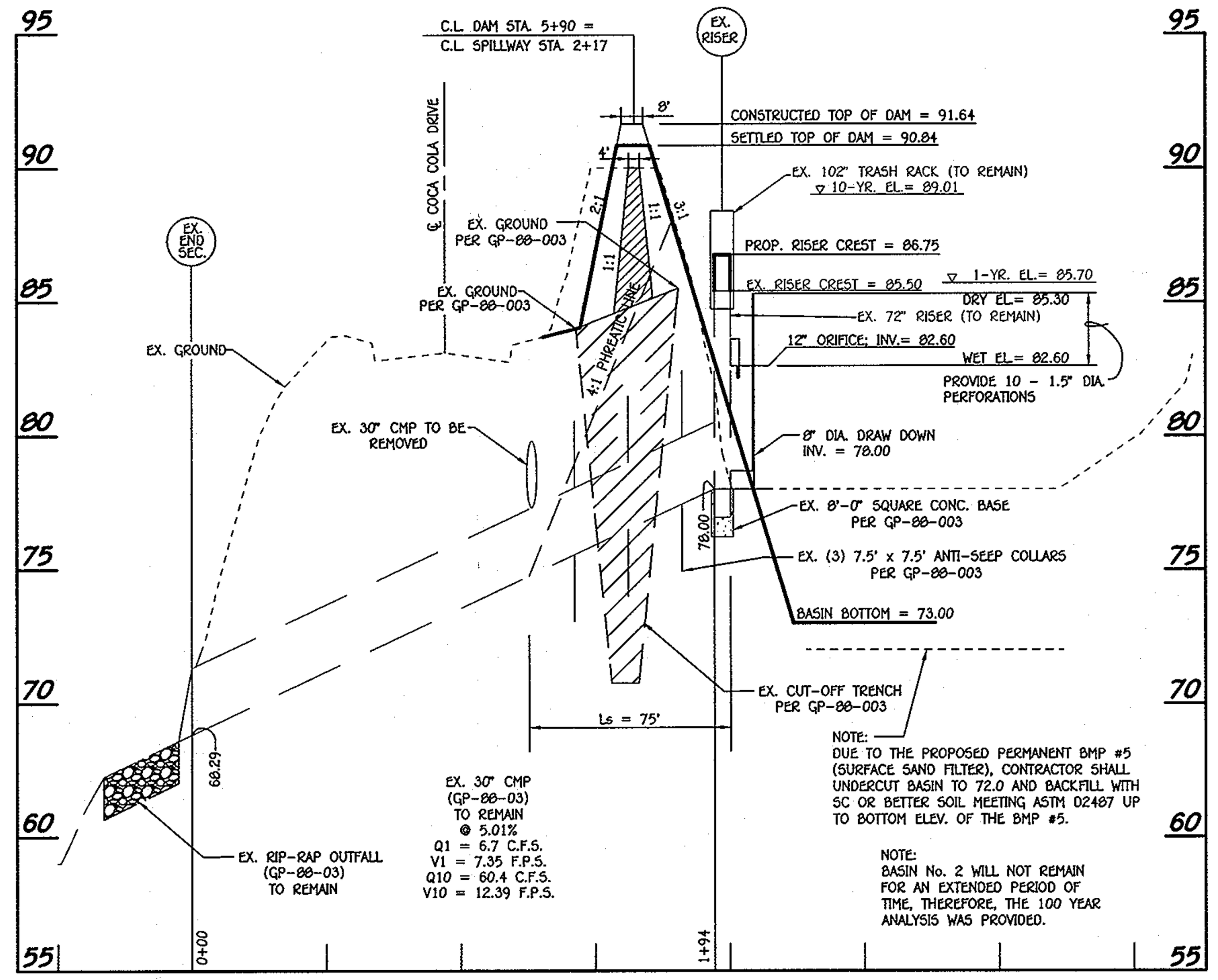
OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

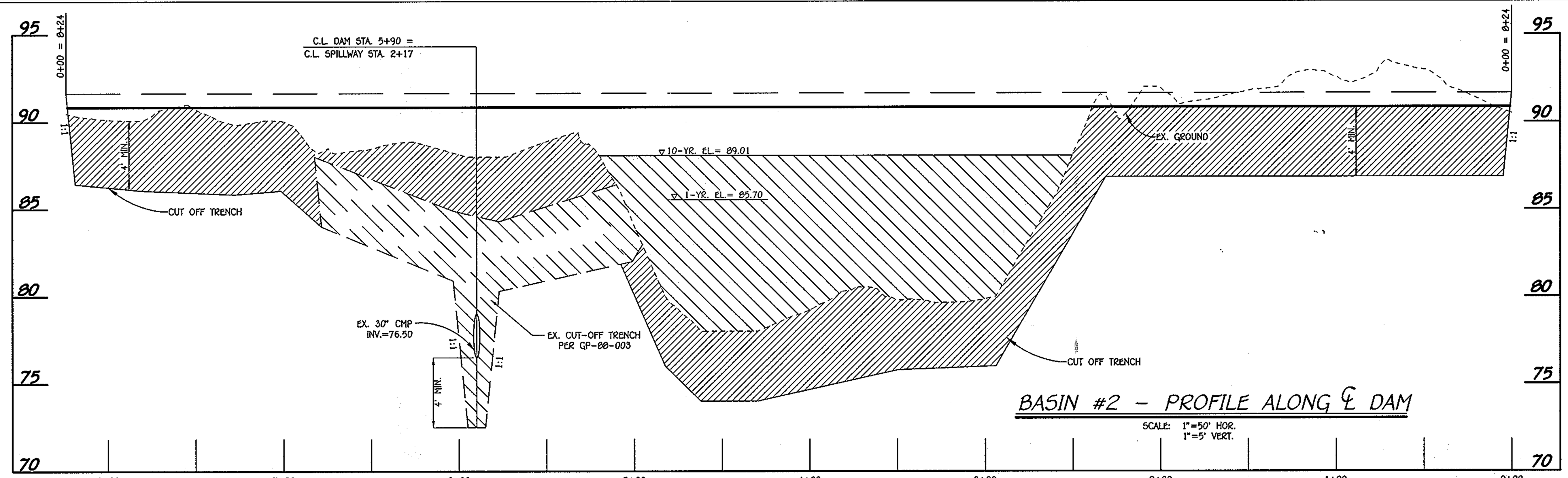
A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 37 OF 45

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



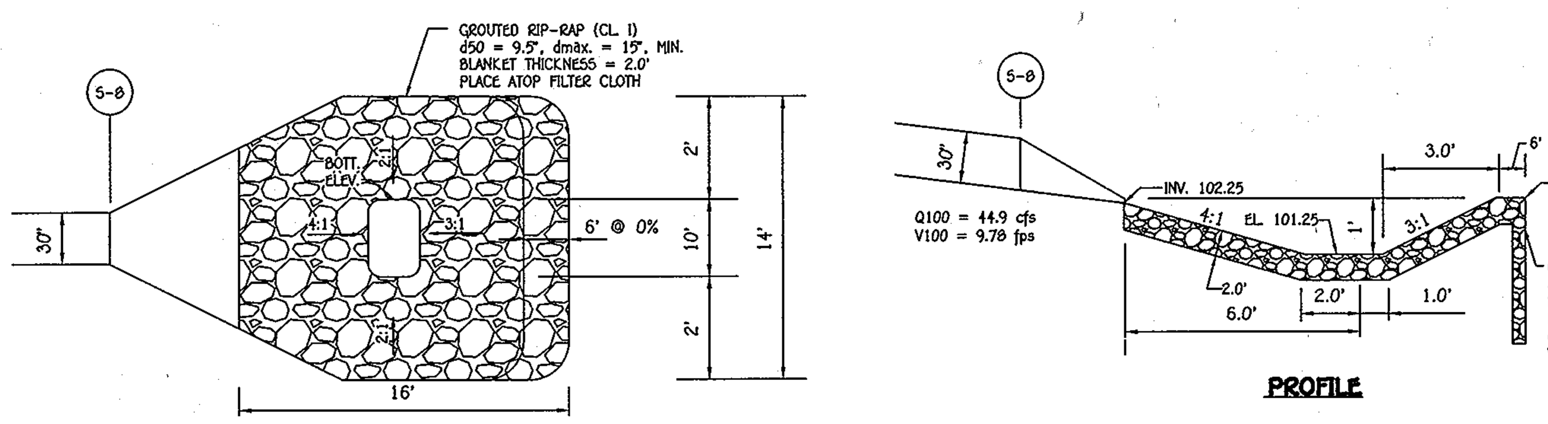
BASIN #2 - PROFILE THRU ℄ DAM

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



BASIN #2 - PROFILE ALONG ℄ DAM

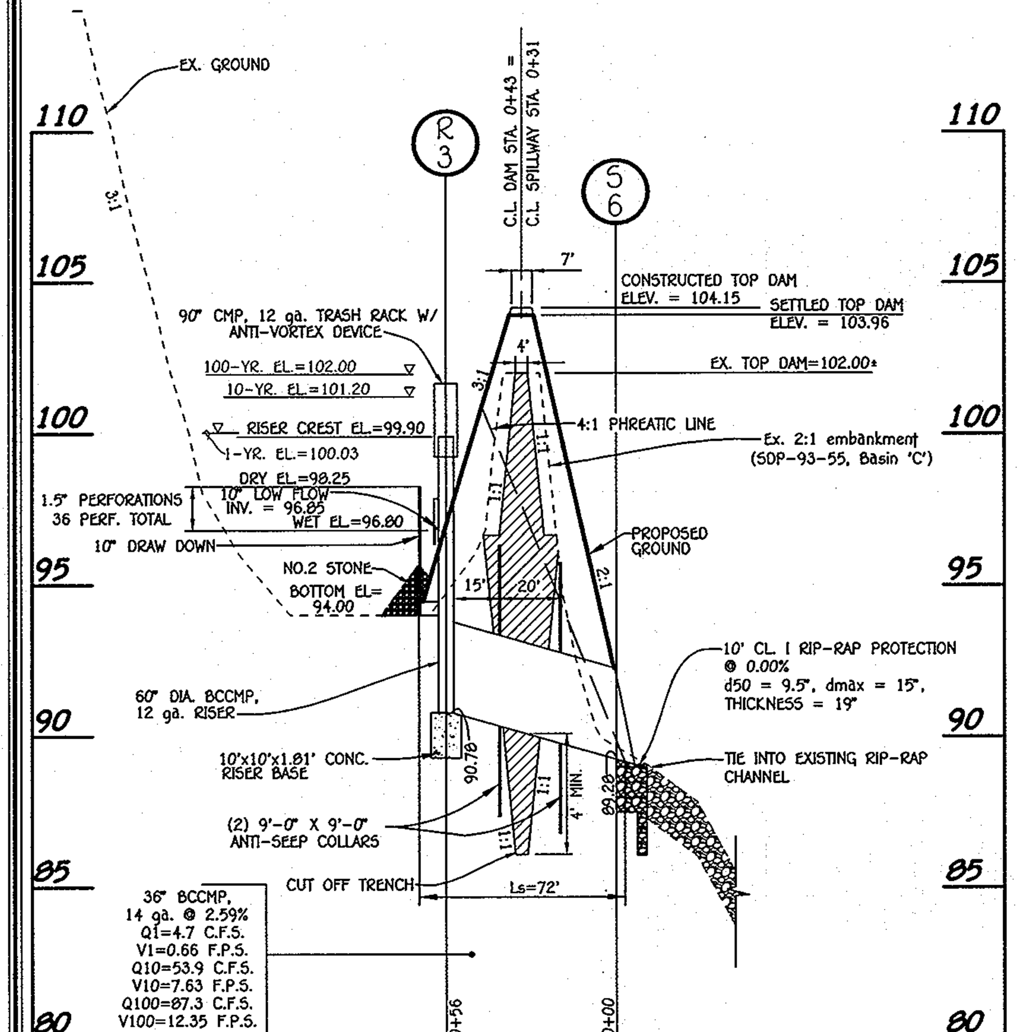
SCALE: 1"=50' HOR. 1"=5' VERT.



TYP. STILLING BASIN OUTFALL @ BASIN No. 5

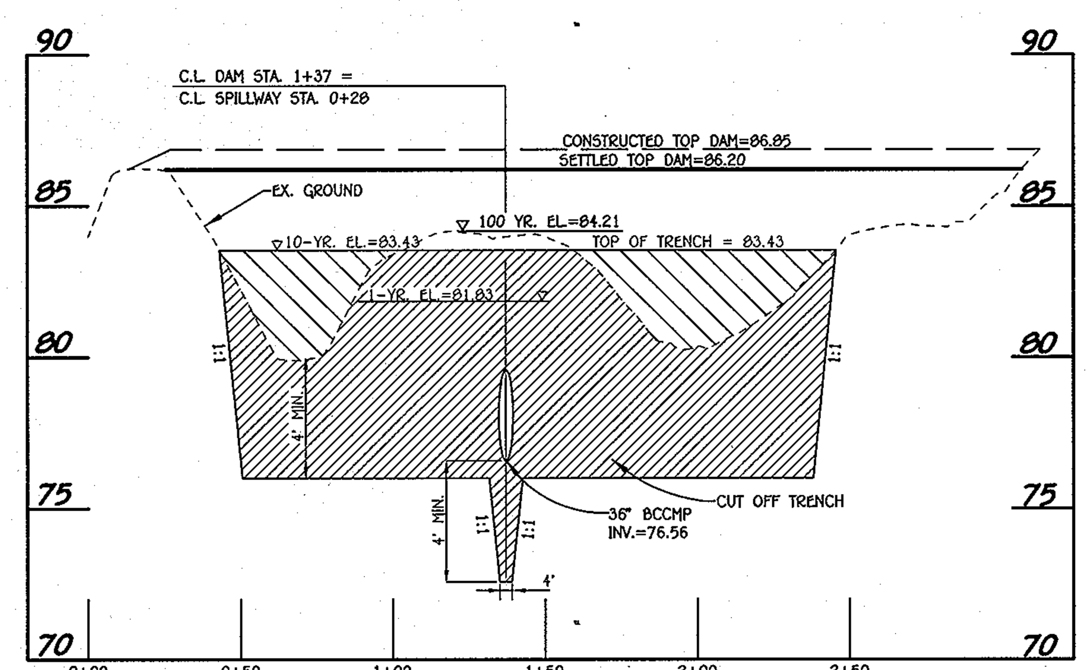
NO SCALE

NOTE:
THE ORIGINAL GROUND LINE ON POND/BASIN Nos. 2 & 3 CLAY CORES SHALL EXTEND BELOW THE FILL FOR THESE TWO BASINS. A GEOTECH WILL BE ONSITE TO CONFIRM THIS IN THE FIELD DURING CONSTRUCTION.



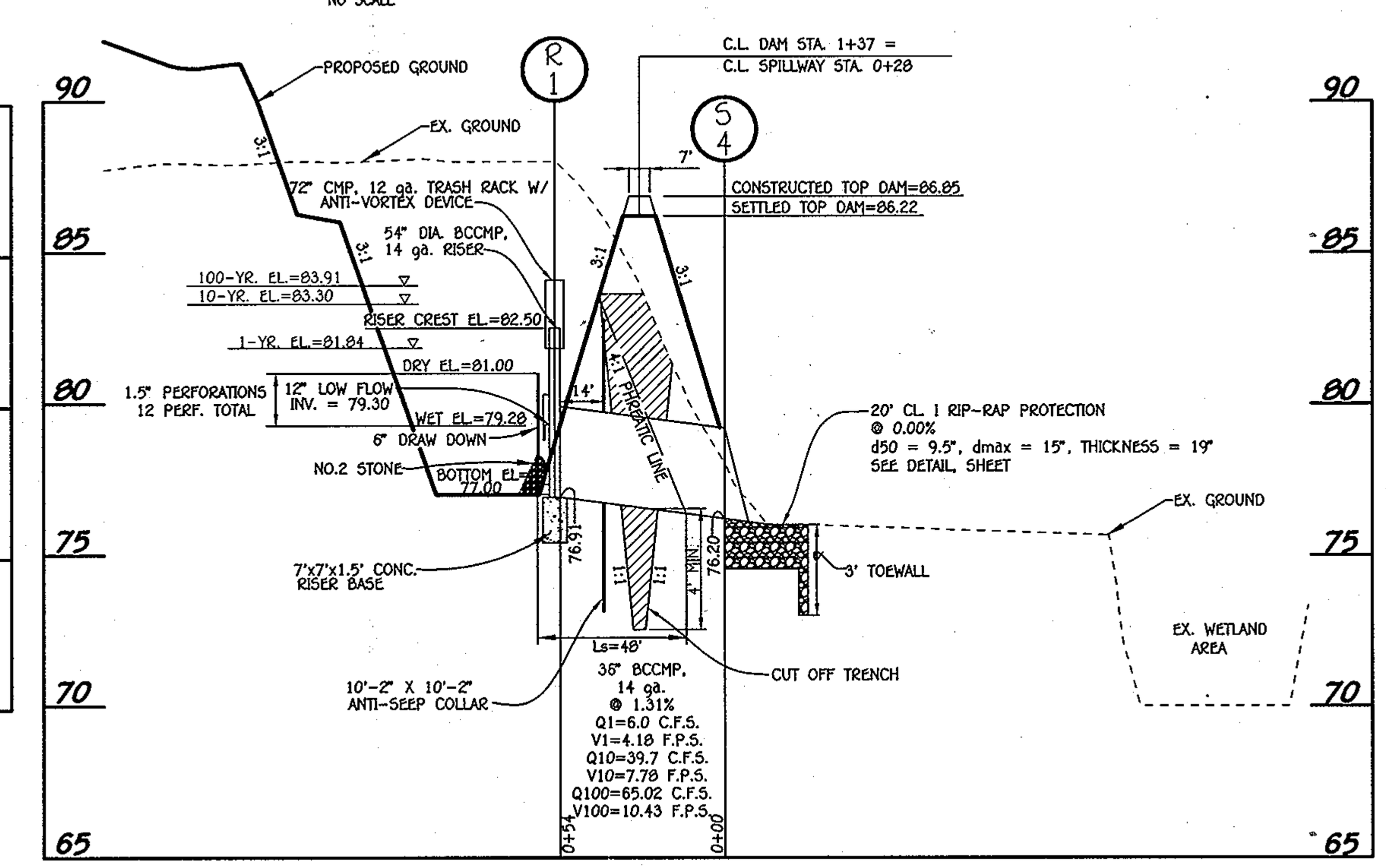
BASIN #3 - PROFILE THRU ℄ DAM

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



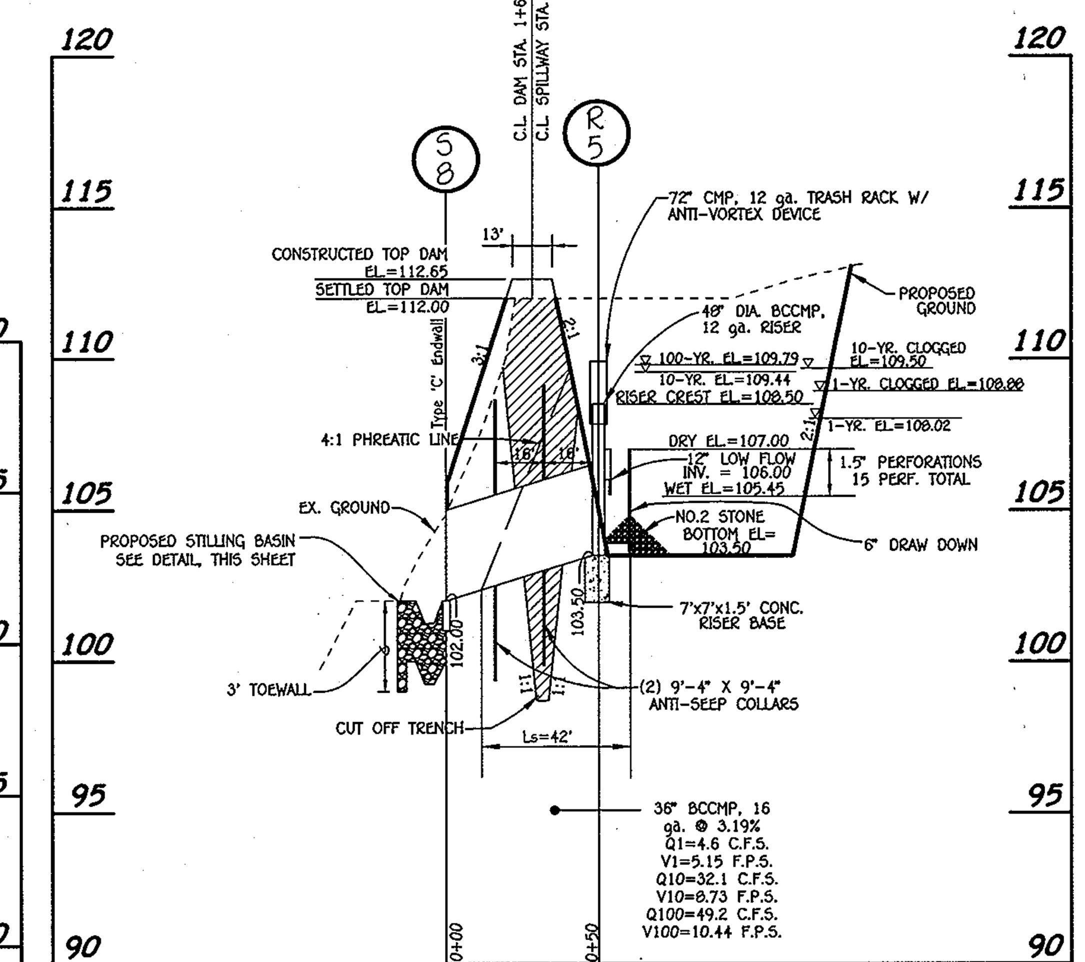
BASIN #1 - PROFILE ALONG ℄ DAM

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



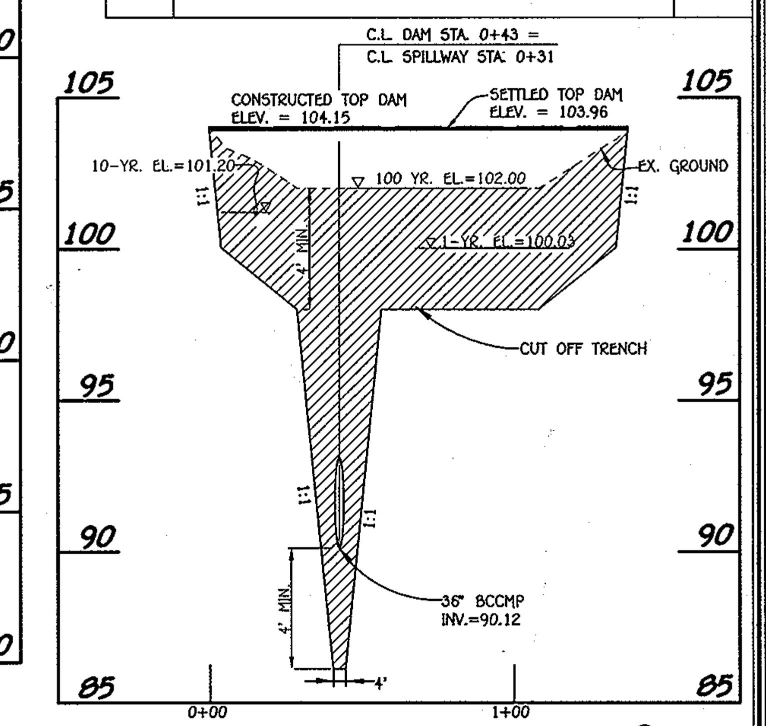
BASIN #1 - PROFILE THRU ℄ DAM

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



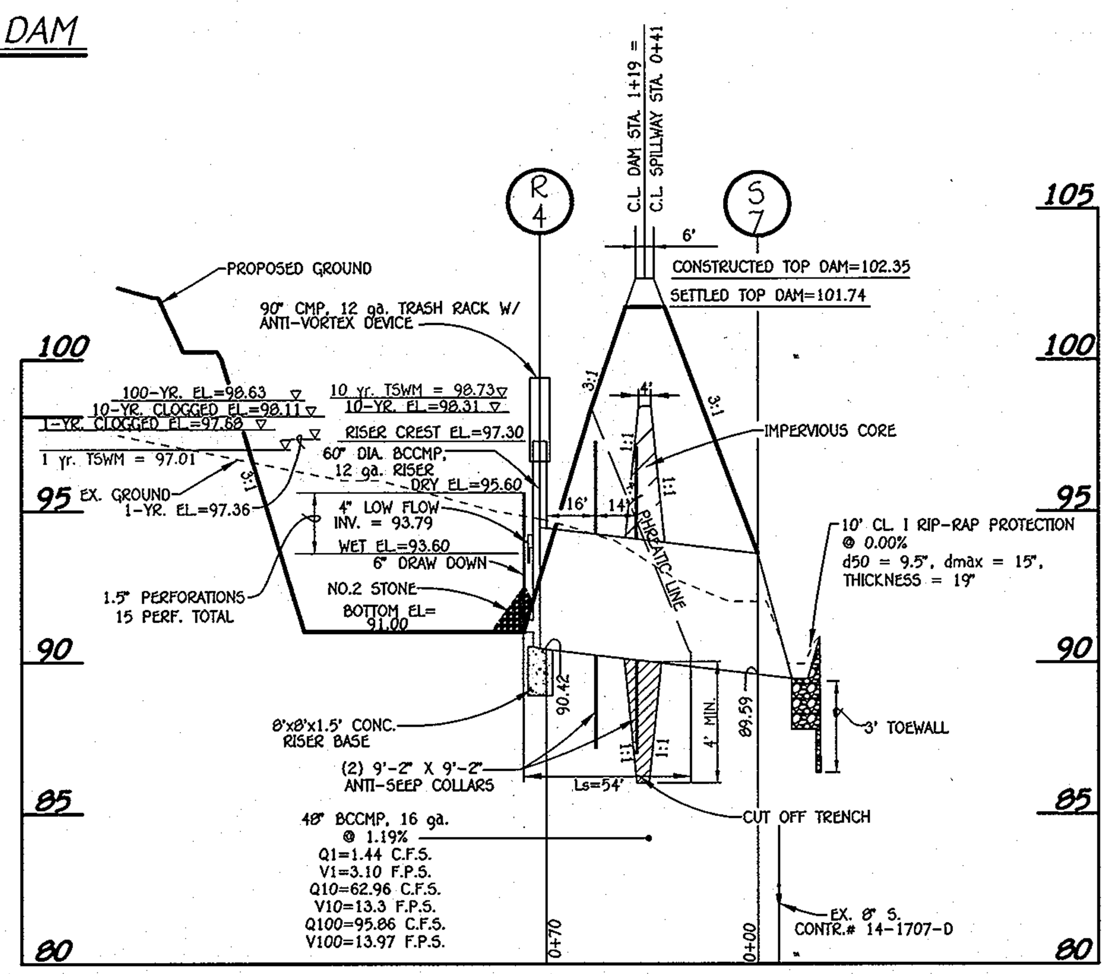
BASIN #5 - PROFILE THRU ℄ DAM

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



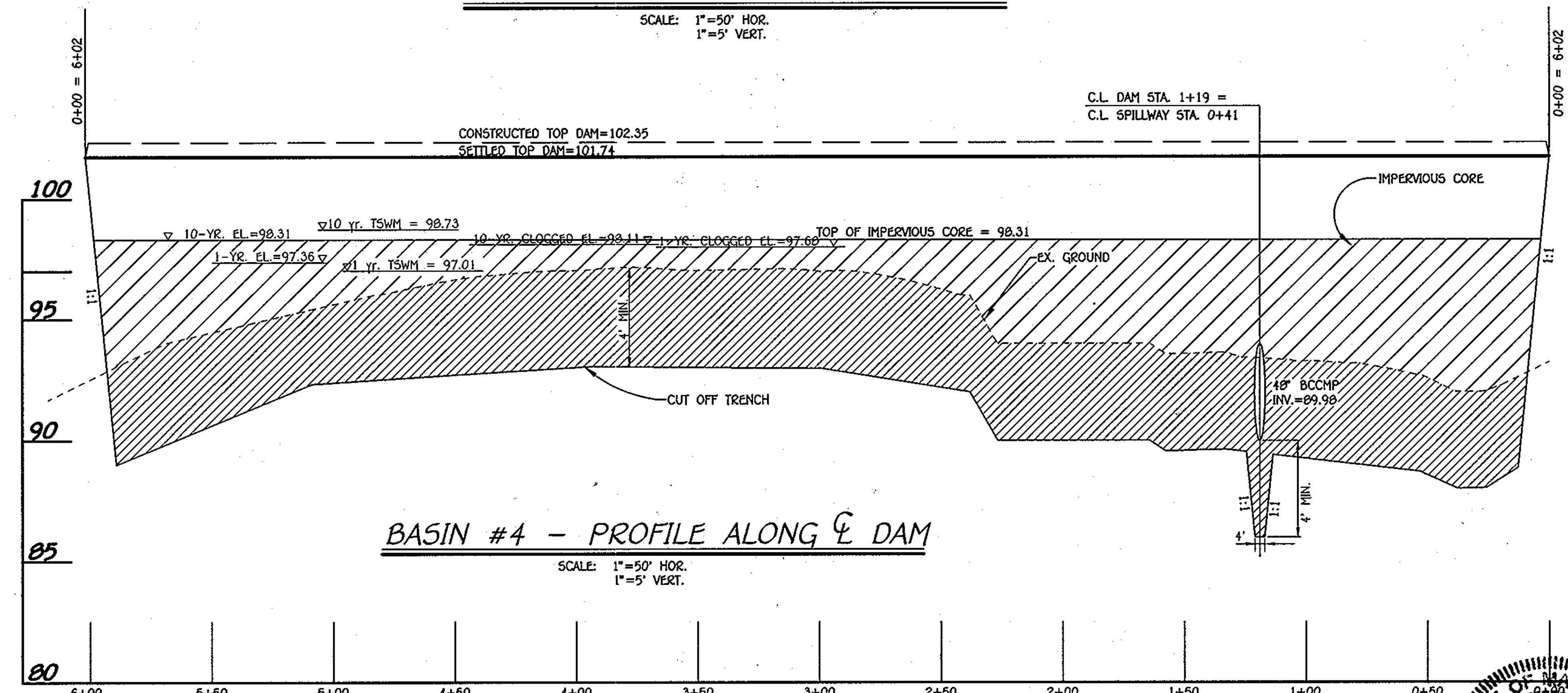
BASIN #3 - PROFILE ALONG ℄ DAM

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



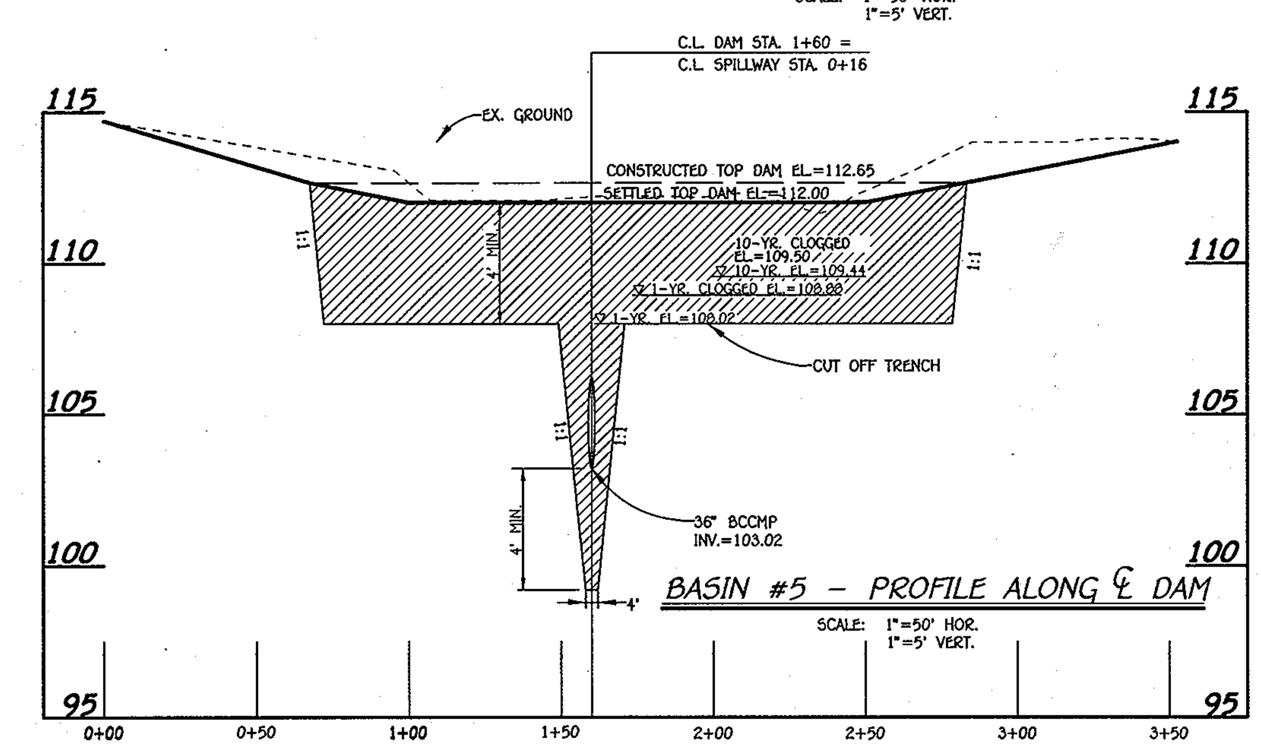
BASIN #4 - PROFILE THRU ℄ DAM

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



BASIN #4 - PROFILE ALONG ℄ DAM

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



BASIN #5 - PROFILE ALONG ℄ DAM

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

STANDARD AND SPECIFICATIONS FOR SEDIMENT BASINS

Definition

A temporary barrier or dam constructed across a drainage way or at other suitable locations to intercept sediment laden runoff. This barrier may be combined with excavation to achieve the required storage.

Purpose

Sediment basins protect downstream properties and drainageways by trapping sediment and controlling the release of stormwater runoff.

Wet and Dry Storage

The minimum storage volume requirement for sediment basis is 3600 cubic feet per acre of contributory drainage area. The basin storage volume of 3600 cubic feet per acre shall be divided equally into "dry" or dewatered storage and "wet" or retention storage. Basins shall be dewatered to the wet pool elevation corresponding to 1800 cubic feet of storage per acre of drainage area.

Conditions Where Practice Applies

A sediment basin required to control runoff and sediment from large areas where sediment traps are not appropriate. Stormwater management ponds may be used as sediment basins provided that they meet the requirements of this section and that the construction sequence addresses converting the sediment basin to the permanent stormwater management pond.

Conditions of Use

This standard applies to the installation of temporary sediment basins on sites where: (a) failure of the structure would not result in loss of life, damage to homes or buildings, or interruption of use or service of public roads or utilities; (b) the drainage area does not exceed 100 acres; (c) the maximum embankment height does not exceed 15 feet measured from the natural ground to the embankment top along the centerline of embankment; and (d) the basin is to be removed within 36 months after the beginning of construction of the basin. Where these criteria cannot be met, the structure shall be designed to conform with the Natural Resources Article, Title 8, Subtitle 8, Annotated Code of Maryland or Maryland SCS Standards and Specifications No. 378 for Ponds. The total volume of permanent sediment basins shall equal or exceed the capacity requirements for temporary basins contained herein.

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

Owner

Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr., Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer

Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

By The Developer:

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

Karen Watsic (signature) — 6-20-12
Signature Of Developer — Date
KAREN WATSIC
Printed Name Of Developer

By The Engineer:

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

(signature) — 6/19/12
Signature Of Engineer — Date
Printed Name Of Engineer

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

(signature) — 7/24/12
Howard Soil Conservation District — Date

Approved: Department Of Public Works
(signature), Acting — 8/17/12
Chief Bureau Of Highways — Date

Approved: Department Of Planning And Zoning
(signature) — 8/05/12
Chief, Division Of Land Development — Date
(signature) — 8-31-12
Chief, Development Engineering Division — Date

AS-BUILT CERTIFICATION

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

Signature — P.E. No.
Date:

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

REVISIONS

NO.	DESCRIPTION	DATE

(signature) — 6/19/12
ALDO M. VITULLO — DATE
"Professional Certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

SEDIMENT CONTROL BASIN PROFILES

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 38 OF 45

F-12-026

I:\2009\09014\dwg\FINALS - PHASE ONE\09014 FINAL SHEET 38 SED CON BASIN PROFILES.dwg, 7/11/2012 2:49:54 PM, 36 Mylar (temporary).pc3

STORM WATER MANAGEMENT POND CONSTRUCTION SPECIFICATIONS

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

Site Preparation

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

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

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

Earth Fill

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

Placement - Areas on which fill is to be placed shall be scarified prior to placement of fill. Fill materials shall be placed in maximum 8-inch thick (before compaction) layers which are to be continuous over the entire length of the fill. The most permeable borrow material shall be placed in the downstream portions of the embankment. The principal spillway must be installed concurrently with fill placement and not excavated into the embankment.

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

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

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

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

Structure Backfill

Backfill adjacent to pipes or structures shall be of the type and quality conforming to that specified for the adjoining fill material. The fill shall be placed in horizontal layers not to exceed four inches in thickness and compacted by hand tampers or other manually directed compaction equipment. The material needs to fill completely all spaces under and adjacent to the pipe. At no time during the backfilling operation shall driven equipment be allowed to operate closer than four feet, measured horizontally, to any part of a structure. Under no circumstances shall equipment be driven over any part of a concrete structure or pipe, unless there is a compacted fill of 24" or greater over the structure or pipe.

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

Pipe Conduits

All pipes shall be circular in cross section.

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

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

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

Materials - (Aluminum Pipe) - This pipe and its appurtenances shall conform to the requirements of AASHTO Specification M-196 or M-211 with watertight coupling banks or flanges. Aluminum Pipe, when used with flowable fill or when soil and/or water conditions warrant for increased durability, shall be fully bituminous coated per requirements of AASHTO Specification M-190 Type A. Aluminum surfaces that are to be in contact with concrete shall be painted with one coat of zinc chromate primer or two coats of asphalt. Hot dip galvanized bolts may be used for connections. The pH of the surrounding soils shall be between 4 and 9.

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

3. Connections- All connections with pipes must be completely watertight. The drain pipe or barrel connection to the riser shall be welded all around when the pipe and riser are metal. Anti-seep collars shall be connected to the pipe in such a manner as to be completely watertight. Dimple bands are not considered to be watertight.

All connections shall use a rubber or neoprene gasket when joining pipe sections. The end of each pipe shall be re-rolled an adequate number of corrugations to accommodate the bandwidth. The following type connections are acceptable for pipes less than 24-inches in diameter: flanges on both ends of the pipe with a circular 3/8 inch closed cell neoprene gasket, prepunched to the flange bolt circle, sandwiched between adjacent flanges; a 12-inch wide standard lap type band with 12-inch wide by 3/8-inch thick closed cell circular neoprene gasket; and a 12-inch wide hugger type band with o-ring gaskets having a minimum diameter of 1/2-inch greater than the corrugation depth. Pipes 24-inches in diameter and larger shall be connected by a 24-inch long annular corrugated band using a minimum of 4 (four) rods and lugs, 2 on each connecting pipe end. A 24-inch wide by 3/8-inch thick closed cell circular neoprene gasket will be installed with 12-inches on the end of each pipe. Flanged joints with 3/8-inch closed cell gaskets the full width of the flange is also acceptable.

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

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

5. Backfilling shall conform to "Structure Backfill".

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

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

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

2. Bedding - Reinforced concrete pipe conduits shall be laid in a concrete bedding/cradle for their entire length. This bedding/cradle shall consist of high slump concrete placed under the pipe and up the sides of the pipe at least 50% of its outside diameter with a minimum thickness of 6 inches. Where a concrete cradle is not needed for structural reasons, flowable fill may be used as described in the "Stucture 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 requirement of AASHTO M252 Type S, and 12" through 24" inch shall meet the requirement of AASHTO M294 Type S.

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

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

4. Backfilling shall conform to "Structure Backfill".

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

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

Concrete

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

Rock Riprap

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

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

Care of Water during Construction

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

Stabilization

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

Erosion and Sediment Control

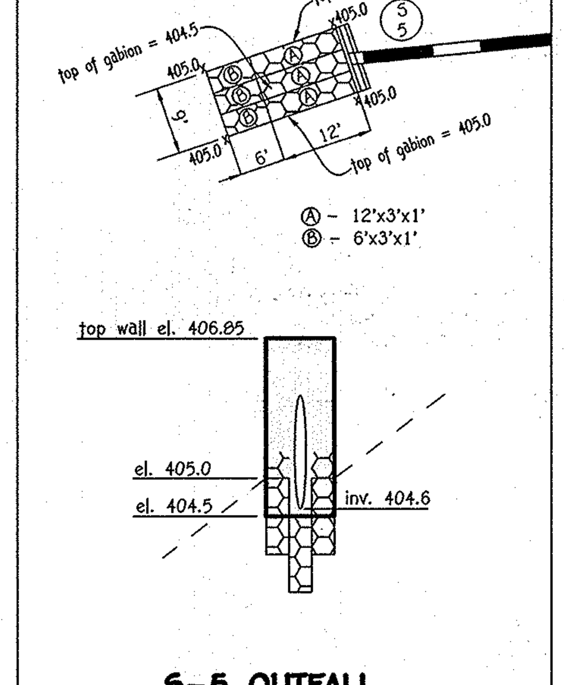
Construction operations will be carried out in such a manner that erosion will be controlled and water and air pollution minimized. State and local laws concerning pollution abatement will be followed. Construction plans shall detail erosion and sediment control measures.

Operation And Maintenance

An operation and maintenance plan in accordance with Local or State Regulations will be prepared for all ponds. As a minimum, the dam inspection checklist located in Appendix A shall be included as part of the operation and maintenance plan and performed at least annually. Written records of maintenance and major repairs needs to be retained in a file. The issuance of a Maintenance and Repair Permit for any repairs or maintenance that involves the modification of the dam or spillway from its original design and specifications is required. A permit is also required for any repairs or reconstruction that involve a substantial portion of the structure. All indicated repairs are to be made as soon as practical.

OPERATION, MAINTENANCE AND INSPECTION

INSPECTION OF THE POND(S) SHOWN HEREON SHALL BE PERFORMED AT LEAST ANNUALLY, IN ACCORDANCE WITH THE CHECKLIST AND REQUIREMENTS CONTAINED WITHIN USDA, NRCS "STANDARDS AND SPECIFICATIONS FOR PONDS" (MD-378). THE POND OWNER(S) AND ANY HEIRS, SUCCESSORS OR ASSIGNS SHALL BE RESPONSIBLE FOR THE SAFETY OF THE POND AND THE CONTINUED OPERATION, SURVEILLANCE, INSPECTION AND MAINTENANCE THEREOF. THE POND OWNER(S) SHALL PROMPTLY NOTIFY THE SOIL CONSERVATION DISTRICT OF ANY UNUSUAL OBSERVATIONS THAT MAY BE INDICATIONS OF DISTRESS SUCH AS EXCESSIVE SEEPAGE, TURBID SEEPAGE, SLIDING OR SLUMPING.



S-5 OUTFALL
SCALE: 1" = 20'

FISHER, COLLINS & CARTER, INC.
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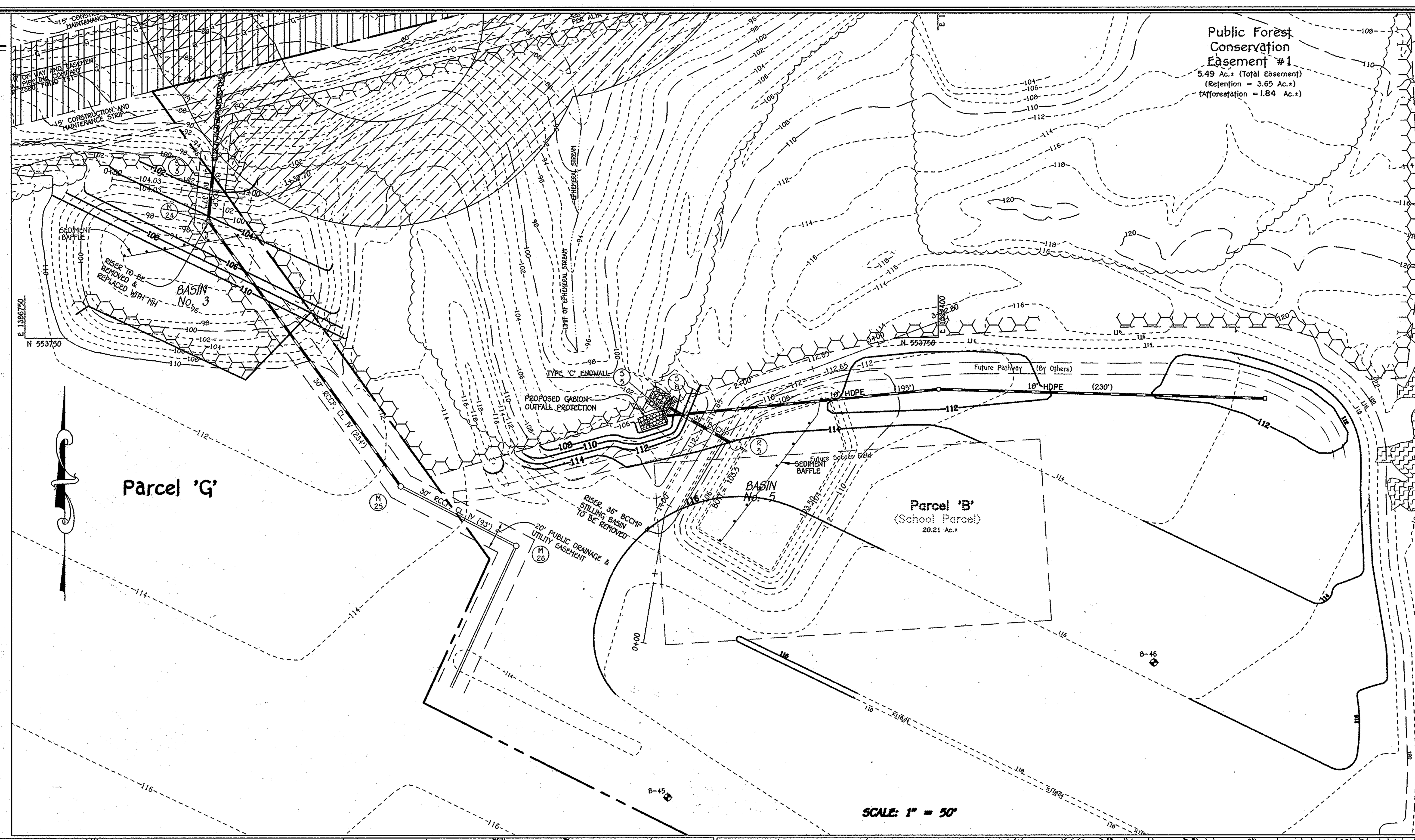

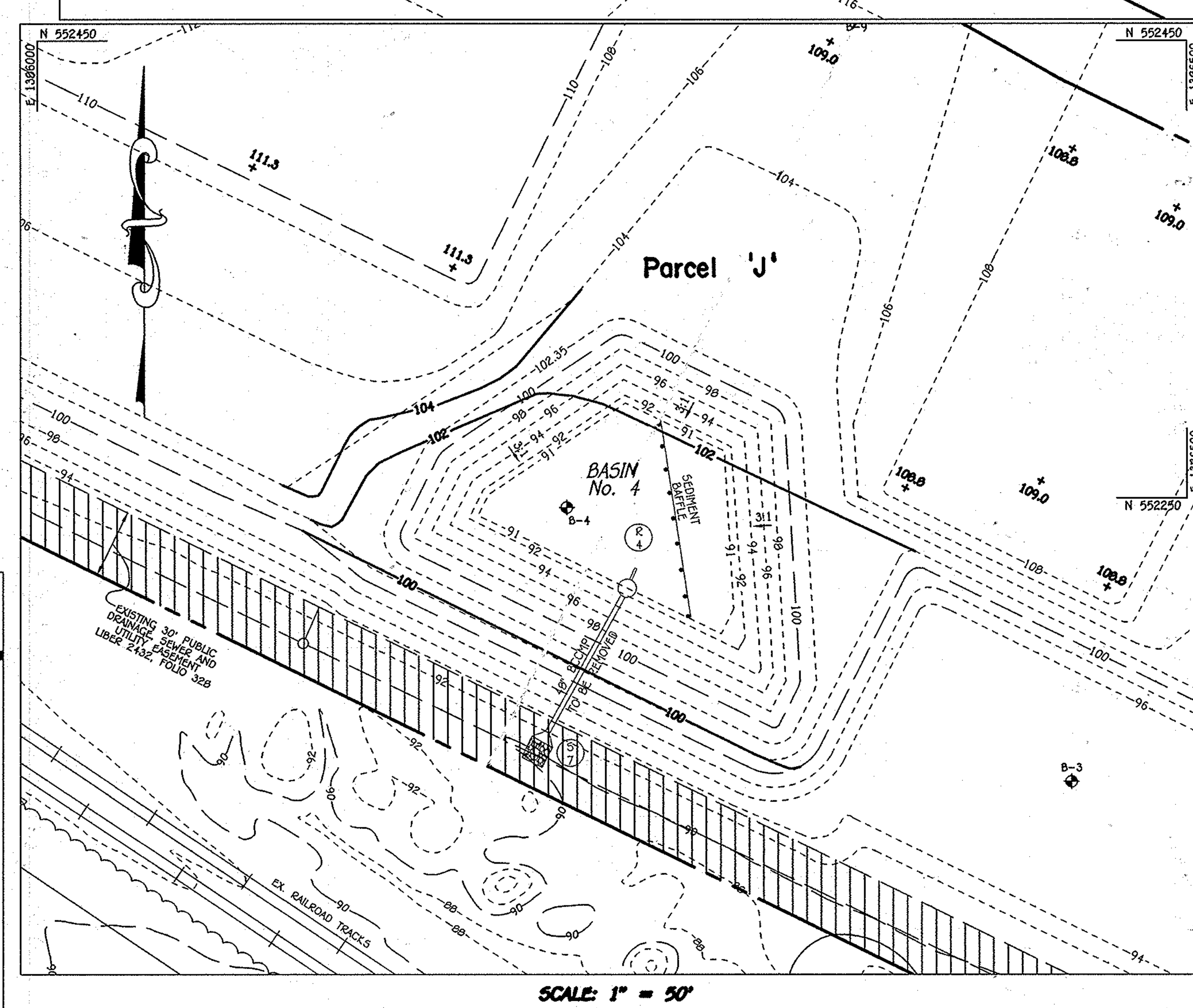

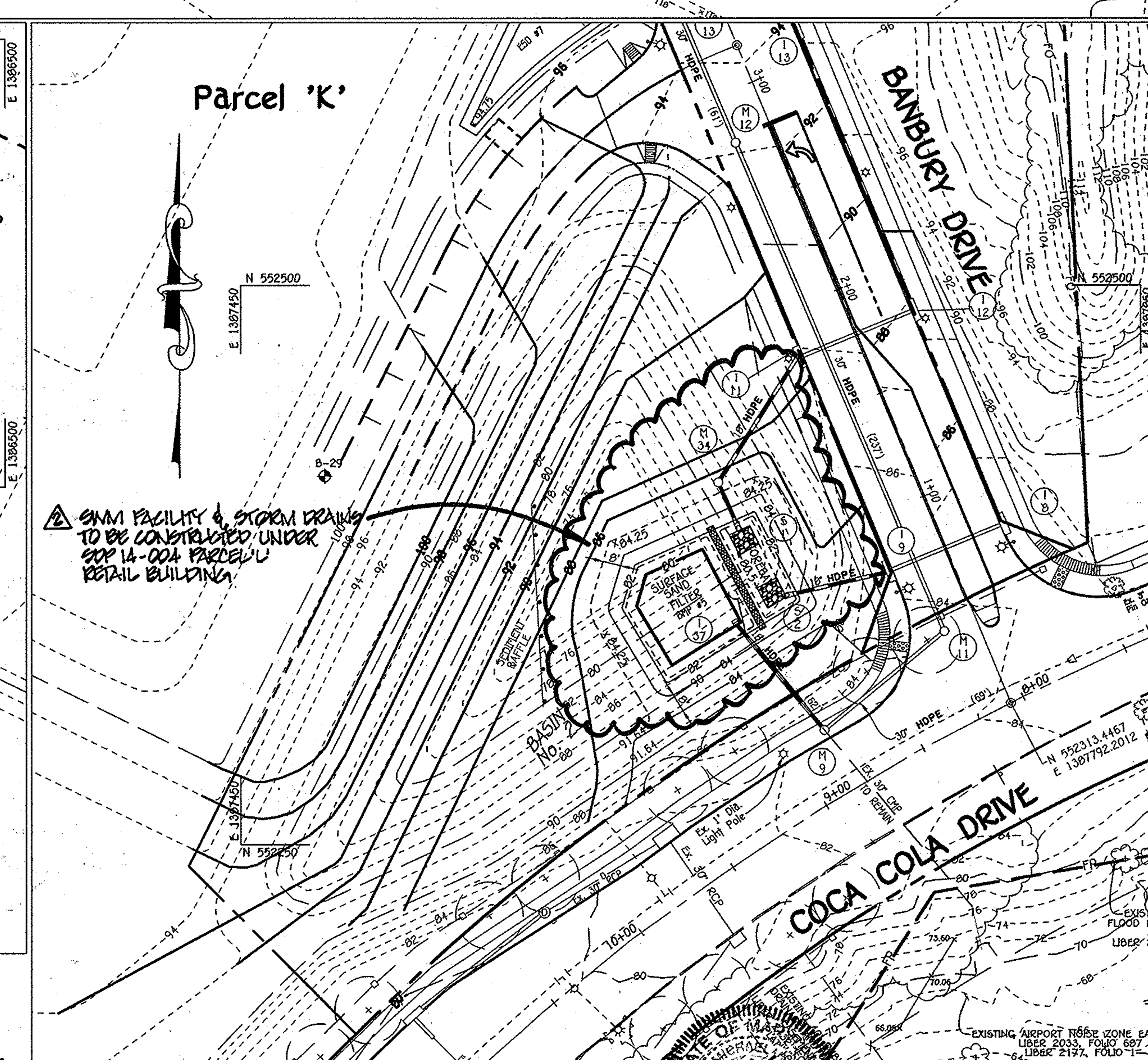

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
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Ph# 410-296-3800

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By The Developer:

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

Karen Watsic — 6-20-12
Signature Of Developer — Date

KAREN WATSIC
Printed Name Of Developer

By The Engineer:

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

Signature Of Engineer — 6/19/12 — Date

Printed Name Of Engineer

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

Howard Soil Conservation District — 7/24/12 — Date

Approved: Department Of Public Works
Chief, Bureau Of Highways — 8/17/12 — Date

Approved: Department Of Planning And Zoning
Chief, Division Of Land Development — 9/05/12 — Date

Chief, Development Engineering Division — 8-31-12 — Date

AS-BUILT CERTIFICATION

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

Signature — P.E. No.

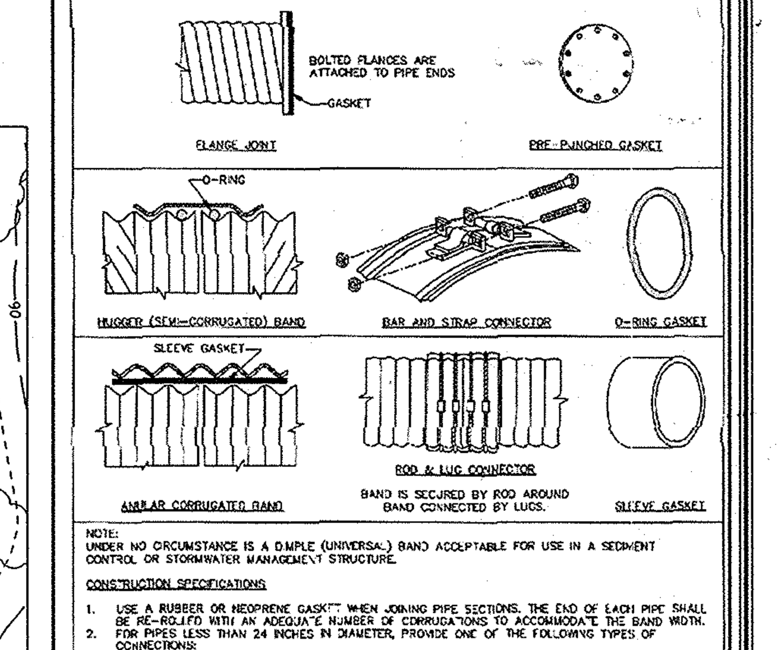
Date:

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

REVISIONS

NO.	DESCRIPTION	DATE
1	Revised Parcel Lines, F.C.E. #1 Area & Storm Drain Pipe From Rccp To Hdpe	8/29/13
⚠2	SWM FACILITY & STORM DRAINS CONSTRUCTED UNDER SDP 14-004	8/28/14
3	Removed Storm Drain From M-12 To M-17	7/22/14

DETAIL G-2-5 TYPES OF COUPLERS FOR CORRUGATED STEEL PIPE — STANDARD SYMBOL



NOTE:
UNDER NO CIRCUMSTANCE IS A DIMPLE (UNIVERSAL) BAND ACCEPTABLE FOR USE IN A SEDIMENT CONTROL OR STORMWATER MANAGEMENT STRUCTURE.

CONSTRUCTION SPECIFICATIONS

1. USE A RUBBER OR NEOPRENE GASKET WHEN JOINING PIPE SECTIONS. THE END OF EACH PIPE SHALL BE RE-ROLLED WITH AN ADEQUATE NUMBER OF CORRUGATIONS TO ACCOMMODATE THE BAND WIDTH.
2. FOR PIPES LESS THAN 24 INCHES IN DIAMETER, PROVIDE ONE OF THE FOLLOWING TYPES OF CONNECTIONS:
   a. FLANGED JOINTS WITH ⅜ INCH CLOSED CELL GASKET THE FULL WIDTH OF THE FLANGE, PRE-PUNCHED TO THE FLANGE BOLT CIRCLES, SANDWICHED BETWEEN ADJACENT FLANGES, OR
   b. 12 INCH WIDE HUGGER TYPE BAND WITH O-RING GASKET HAVING A MINIMUM DIAMETER OF ½ INCH GREATER THAN THE CORRUGATION DEPTH.
3. FOR PIPES 24 INCHES IN DIAMETER AND LARGER, PROVIDE ONE OF THE FOLLOWING TYPES OF CONNECTIONS:
   a. 24 INCH WIDE ANNULAR CORRUGATED BAND WITH 24 INCH WIDE BY ⅜ INCH THICK CLOSED CELL CIRCULAR SLEEVE GASKET WITH 12 INCHES ON THE END OF EACH PIPE, CONNECTED WITH A MINIMUM OF 4 RODS AND LUGS, 2 ON EACH CONNECTING PIPE END, OR
   b. FLANGED JOINTS WITH ⅜ INCH CLOSED CELL GASKET THE FULL WIDTH OF THE FLANGE, PRE-PUNCHED TO THE FLANGE BOLT CIRCLES, AND SANDWICHED BETWEEN ADJACENT FLANGES.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

G.47

ALDO M. VITUCCI, P.E. — 6/19/12 — DATE

"Professional Certification. I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-13."

FINAL GRADING FOR SEDIMENT BASINS

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"

PARCELS 'C' THRU 'L' AND OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 39 OF 45

F-12-026

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GREEN NEIGHBORHOOD COMPLIANCE CHECKLIST

Credit No.	Credit	Champion (Name, Role)	Requirement	Sketch Plan (S-11-001) Strategies	Final Plan (F-12-026) Strategies	Site Development Plan Strategies	Documentation Location	[illegible]	[illegible]
A	Innovative / Integrated Design Process							4	4
A-1	Green Development Plan	PCM/Petitioner , HCM/Planners	Show s how plans meet criteria, includes checklist, natural resource inventory and energy analysis	Provide documentation	Provide documentation		GN Plan GN Report	REQ'D	
A-2	Interdisciplinary Project Team	PCM/Petitioner	Includes U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) Accredited professional, ecologist / environmental professional / landscape architect, and engineer	The design team includes a LEED AP professional, an ecologist, a civil engineer, an architect and landscape architect.	The design team Includes a LEED AP professional, an ecologist, a civil engineer, an architect and landscape architect.		GN Plan GN Report	REQ'D	
A-3	Third Party Certification	PCM/Petitioner	Certification of credits by independent LEED accredited professional	Alexander Design Studio	Alexander Design Studio		GN Plan GN Report	REQ'D	
A-4a	Innovative Design A	HCM/Planners	Green Streets	Green Streets	Green Streets		GN Report F Plan (F-12-026) Sheet 8	1	1
A-4b	Innovative Design B	HCM/Planners	Priority Parking for Fuel Efficient Cars	Priority Parking for Fuel Efficient Cars	Priority Parking for Fuel Efficient Cars (future submission)		GN Plan GN Report	1	1
A-4c	Innovative Design C	HCM/Planners	Compact Development	Compact Development	Compact Development (future submission)		GN Plan GN Report	1	1
A-4d	Innovative Design D	HCM/Planners	Walkable Streets	Walkable Streets	Walkable Streets (future submission)		GN Report	1	1
B	Location, Linkages & Community Context							27	11
B-1a	Redevelopment Site	HCM/Planners FCO/Civil	Reuse of previously developed site (minimum 25% existing impervious, w ith sliding scale for credits based on amount or % impervious)	>29.7% area previously developed (former sand and gravel operation). Actual area of impervious is 24.4 Acres.	>29.7% area previously developed (former sand and gravel operation). Actual area of impervious is 24.4 Acres.		GN Plan GN Report	4	2
B-1b	Redevelopment Site (Brow nfield)	N/A	Brow nfield cleanup of redevelopment site	N/A	N/A		N/A	8	0
B-2	Historic Buildings	N/A	Preserve, restore or rehabilitate historic properties.	N/A	N/A			4	0
B-3a	Transit Access & Amenities for Reduced Auto Dependence (Stop)	HCM/Planners	Site is served by transit stop w ithin 1/2 mile (1 point) or 1/4 mile (2 points) w alk from property	Private Shuttle Service w ith 2 stops (100% DU w ithin 1/4 mile w alking distance)	Provide bus stop pad on Road B; Private Shuttle Service w ith 2 stops (100% DU w ithin 1/4 mile w alking distance) (future submission)		GN Plan GN Report	2	2
B-3b	Transit Access & Amenities for Reduced Auto Dependence (Shelter)	HCM/Planners	Provide county-specified transit shelter w ith benches and lighting at transit stop w ithin 1/2 mile of property and provided pedestrian link to stop if	Provide HoCo transit approved shelter for private shuttle service	Provide HoCo transit approved shelter for private shuttle service (future submission)		GN Plan GN Report	4	4
B-4	Proximity to Community Resources	HCM/Planners	Credit for 1/2 mile proximity to existing or proposed community resources such as schools, parks, library, post office, etc.	Provide Retail, Resturant and Park space w ithin 1/2 mile of GN boundary	Provide Retail, Resturant and Park space w ithin 1/2 mile of GN boundary (future submission)		GN Plan GN Report	5	3
C	Compact/Complete & Connected Development							27	24
C-1	Diversity of Uses	HCM/Planners	1 point per different landuse; minimum 100 sf for ech non-residential per DU. Minimmum of 113,600 SF each of office, retail and civic	Provide Institutional uses (121 SF/DU– 1 point) Provide Civic uses (288 SF/DU– 1 point)	Provide Institutional uses and Civic uses (future submission)		GN Plan GN Report	3	2
C-2	Planned Service Area	HCM/Planners	Locate the project w ithin the Planned Service Area	The project is within the Planned Service Area	The project is within the Planned Service Area		GN Plan GN Report	5	5
C-3a	Pedestrian System (Path)	HCM/Planners	Provide an off-site pathw ay/trail system w ith 2 connections to internal or external sidew alks, w ith minimal environmental impacts, long-term maintenance	Provide a shared use path system.	Provide a shared use path system (future submission)		GN Report	2	2
C-3b	Pedestrian System (Connections)	N/A	Provide an off-site pathw ay/trail connection	N/A	N/A		N/A	2	0
C-3c	Pedestrian System (Amenities)	HCM/Planners	Provide at least tw o different pedestrian experience features	Provide pedestrian amenities at trailheads, the law n and school site	Provide pedestrian amenities at trailheads, the law n and school site (future submission)		GN Plan GN Report	2	2
C-4	Connected On-site Street Netw ork	HCM/Planners	Provide a gridded street netw ork	Percent connected 100%	Percent connected 100% (future submission)		GN Plan GN Report	2	2
C-5	Parking does not exceed Required Minimum	HCM/Planners	Surface parking lots do not exceed required parking ratios (1 point); plan takes advantage of shared parking provisions parking structure provided (in deck or beneath building; does not include garages w ithin individual units) (4 points)	Provide common parking structures (4 points)	Provide common parking structures (future submission)		GN Plan GN Report	4	4
C-6	Exceed Minimum Open Space Requirements	HCM/Planners	1 point for every 5% above required minimum open space for the TOD zone. 1 point for every 10% of non-buildable HOA parcels above 50% of the site (up tp 3 points).	58.7% of amenity space above the required minimum amenity space (TOD zoning regulations)	58.7% of amenity space above the required minimum amenity space (TOD zoning regulations) (future submission)		GN Plan GN Report	5	5
C-7	Green Spaces and Amenity Areas	HCM/Planners	Open space along public/private roads available for public use	Publicly accessible open space w ill be provided at the clubhouse and pool and the nature trail.	Publicly accessible open space w ill be provided at the clubhouse and pool and the nature trail. (future submission)		GN Plan GN Report	2	2

Credit No.	Credit	Champion (Name, Role)	Requirement	Sketch Plan (S-11-001) Strategies	Final Plan (F-12-026) Strategies	Site Development Plan Strategies	Documentation Location	[illegible]	[illegible]
D	Environmental Preservation							82	43
D-1	Stream Restoration or Wetland Creation or Restoration	EcoScience	Restoration of degraded on site stream channel, on-site restoration of degraded w etland or creation of additional w etlands (sliding scale based on % or length of stream restored and % or acres of w etland created or restored)	Provide w etland restoration for 91,000 SF and Stream restoration for intermittent stream segment ST-2 (100-120 FT of channel).	Provide w etland restoration for 91,000 SF and Stream restoration for intermittent stream segment ST-2 (100-120 FT of channel) (future submission)		GN Report Sketch Plan (S-11-001) Sheets 6, 7	16	16
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 Plan (future submission)		GN Report Sketch Plan (S-11-001) Sheets 5, 6 7	4	4
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 25% slope (2 points)	N/A	N/A		N/A	2	0
D-4	15% Slope Preservation	FCO/Civil; HCM/Planners	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**		GN Plan GN Report	4	3
D-5	Minimize Grading and Site Disturbance	FCO/Civil; HCM/Planners	Minimize limit of disturbance: leave at least 20% of site undisturbed (1 point), 30% (2 points), 40% (3 points); balance cut 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 (deduct 3 points), no new created steep slopes over 25% (1 point); areas (1 point) amend soil nutrients in turf and planting	Balance Cut and Fill on entire site– 2 points Minimize Retaining Walls-- 0 points No new > 25% Steep slopes- 1 point Leave 43.1% of site undisturbed -- 3 points *Amended Soils-- 1 point*	**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**		GN Plan GN Report F Plan (F-12-026) Sheets 12-16	5	5
D-6	Exceed Minimum Forest Conservation Requirements	EcoScience FCO/Civil; HCM/Planners	1 point for every 10% of existing forest retained above break even point; 1 point for every 10% of on-site forest planted in excess of afforestation obligation	Provide 5.25 acres of planting area (50% over afforestation obligation)	**Provide 5.25 acres of planting area (50% over afforestation obligation)**		F Plan (F-12-026) Sheets 31-35	5	5
D-7	Save Trees above 12" Minimum Caliper	N/A	1 point for protecting each 25% of all specimen trees (does not include specimen trees within forest conservation area or w ithin forests that are being cleared)	N/A	N/A		N/A	4	0
D-8a	Exceed Minimum Stream Buffer Requirements	FCO/Civil;	75' buffer required for perennial and intermittent streams inside PSA, 100' buffer required for perennial and intermittent streams outside PSA	75' buffer required for perennial and intermittent streams inside PSA,	**75' buffer required for perennial and intermittent streams inside PSA**		GN Plan GN Report Final Plan (F-12-026) Sheets 15,16	REQ'D	
D-8b	Exceed Minimum Stream Buffer Requirements	EcoScience FCO/Civil; HCM/Planners	2 points for each additional 25' of buffer provided in excess of requirements in D-8a outside wetland buffer or floodplain	Provide 150 FT Stream Buffer (75 FT enhanced buffer)-- 6 points	**Provide 150 FT Stream Buffer (75 FT enhanced buffer)**		GN Plan GN Report F Plan (F-12-026) Sheets 12-16	6	6
D-9	Exceed Minimum Wetland Buffer Requirements	EcoScience FCO/Civil; HCM/Planners	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**		GN Plan GN Report F Plan (F-12-026) Sheets 12-16	4	4
D-10	Floodplain Buffer	N/A	1 point for each 25' of buffer to floodplain outside required or provided w etland or stream buffer	N/A	N/A		N/A	2	0
E	Site Landscape Improvements							10	1
E-1	Landscaping exceeds Minimum Requirements and Reduces Heat Island Effect	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 w est sides of buildings and increase trees w ithin parking areas and along sidew alks and	N/A	N/A		N/A	5	0
E-2	Native Plants	N/A	1 point for 80%, 2 points for 90%, 3 points for 100% of all plants native to w ithin 200 miles of site	N/A	N/A		N/A	3	0
E-3	No Invasive Plants	HCM/Planners	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		GN Plan GN Report	REQ'D	
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	Will not plant conventional turf in densely shaded areas and on newly created >25% steep slopes	Will not plant conventional turf in densely shaded areas and on newly created >25% steep slopes		GN Report	2	1

Credit No.	Credit	Champion (Name, Role)	Requirement	Sketch Plan (S-11-001) Strategies	Final Plan (F-12-026) Strategies	Site Development Plan Strategies	Documentation Location	[illegible]	[illegible]
F	Water Conservation / Efficiency / Management							17	6
F-1	Rainw ater Harvesting System	Straughan	Collect and make use of w ater runoff from minimum 50% of roof area; provide storage system and monitoring device and maintenance / management program	Provide rainw ater harvesting for school and recreational fields	Provide rainw ater harvesting for school and recreational fields (future submission)		GN Report	5	5
F-2	Water-Permeable Walkw ays	N/A	Use w ater-permeable materials in 50% or more of pathw ays; provide maintenance program	N/A	N/A		N/A	4	0
F-3a	Low Impact Development (LID) Stormw ater Treatment	FCO/Civil	Meets minimum Design Manual requirements; no dry ponds allow ed	No dry ponds	**No dry ponds**		F Plan (F-12-026) Sheets 17-25	REQ'D	
F-3b	Low Impact Development (LID) Stormw ater Treatment	FCO/Civil	Exceeds Design Manual requirements; maximize use of bioretention (esp. for parking lots), rain gardens, rain barrels, stormw ater w etlands, green roof, etc.	Will provide 25%-50% w ater quality volume stored and infiltrated/re-used On-Site	**Will provide 25%-50% w ater quality volume stored and infiltrated/re-used on-site**		GN Plan GN Report F Plan (F-12-026) Sheets 17-25	8	4
G	Energy Efficiency							13	0
G-1	Light Pollution Reduction	FCO/Civil; HCM/Planners	Shield all site lighting fixtures to reduce light and spillover below county code requirements; install sensors or timers on all exterior site lighting fixtures	Will not exceed 80% of lighting pow er densities for exterior areas and 50% for landscape areas as defined by ASHRAE 90.1-2004 *(Credit still under investigation)*	N/A		GN Report	4	0
G-2	Solar Orientation	N/A	Orient 50% (1 point) or 75% (2 points) or 100% (3 points) of buildings to make available for solar strategies (longer axis of SFD homes, TH blocks and apartment blocks is east / w est)	N/A	N/A		N/A	3	0
G-3	Infrastructure Energy Efficiency	N/A	Select high efficiency fixtures for parking lot and 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	N/A	N/A		N/A	6	0
H	Materials Beneficial to the Environment / Waste							17	12
H-1	Environmentally Preferable Site Products	Straughan FCO/Civil; HCM/Planners	Select products from a list including: recycled materials (concrete, asphalt, tires, plastic, etc.), materials w ith recycled content, salvaged or engineered materials; reuse of existing on-site materials; environmentally preferable pedestrian paving, play	Use 26-50% environmentally preferrable materials	N/A		GN Report	8	0
H-2	Reduce Heat-Island Effect of Paving	N/A	Use light-colored or high albedo materials and/or porous paving w ith a minimum Solar Reflective Index of 0.6 or over for at least 30% of the site hardscape	N/A	N/A		N/A	2	0
H-3	Site Construction Waste Management	Straughan	Develop and implement a construction w aste 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)	Divert 75% or more site construction w aste	**Divert 75% or more site construction w aste**		GN Report	4	4
H-4	Regionally Provided Materials	Straughan FCO/Civil; HCM/Planners	20% of common and public infrastructure materials from w ithin 200 miles	Use regionally produced materials for 20% of total site materials	**Use regionally produced materials for 20% of total site materials**		GN Report	3	3
I	Operations and Maintenance Education							10	0
I-1	HOA Documents	Straughan;	Include information about green site features and maintenance requirements in HOA documents	Provide HOA document	Provide HOA document (future submission)		GN Report	REQ'D	
I-2	Maintenance Manual for Ow ner / HOA / Manager	Straughan	Rovide a manual that includes information on how to maintain the green features of the site, including paving materials, landscaping and stormw ater management LID and encourages additional green activities such as recycling, gardening, etc.	Provide manual	Provide manual (future submission)		GN Report	REQ'D	
I-3	Public Aw areness of Sustainable Community	Straughan; HCM	Develop a program to advertise the environmental benefits of the community	Implement public aw areness strategy	Implement public aw areness strategy (future submission)		GN Report	REQ'D	
	TOTAL GREEN NEIGHBORHOOD SITE POINTS							167	99

Number of points required to obtain Green Neighborhood Allocations 90

Third Party Certification

By affixing my signature below, the undersigned does hereby declare and affirm to How ard County that the targeted Green Neighborhood Site credits and point total, as specified in this Green Neighborhood Site Compliance Checklist, are reasonable and achiev

Signature	Title	LEED Accreditation Number	Date
	PRINCIPAL	10439208	6 20 12

Name	Organization	Telephone	Email
CHARLES ALEXANDER	ALEXANDER DESIGN STUDIO	410-465-9207	CALEX@BROADUSBOOKS.com

Submission (mark "X" w here applicat ___ Preliminary Equivalent Sketch Plan (ES ___ X Final Plan ___ Site Development Plan

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-05-12

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8-31-12

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS — DATE 8/7/12

NO.	DESCRIPTION	DATE
	REVISIONS	

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

CHIEF, RESOURCE CONSERVATION DIVISION — DATE 7/16/12

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.

MATTHEW J FITZSIMMONS, LEED AP — LEED ACCREDITATION NUMBER 10007912 — DATE 6/15/12

GREEN NEIGHBORHOOD PLAN

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND
OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761

USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: June 19th, 2012
SHEET 40 OF 45

F-12-026

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

STRAUGHAN ENVIRONMENTAL

Eco-Science Professionals, Inc.
Consulting Ecologists

hord | coplan | macht
750 E. Pratt Street, Suite 1100 Baltimore MD 21202
410.837.3311 | www.hcm2.com

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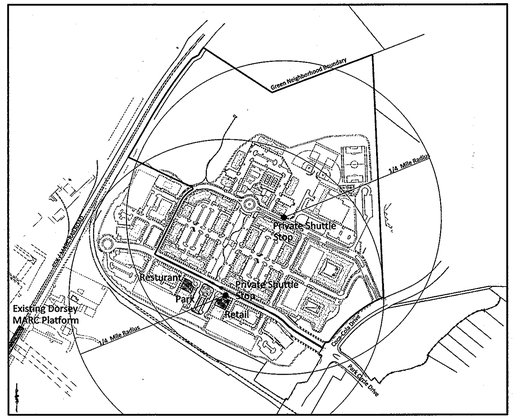
Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3600

Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3600

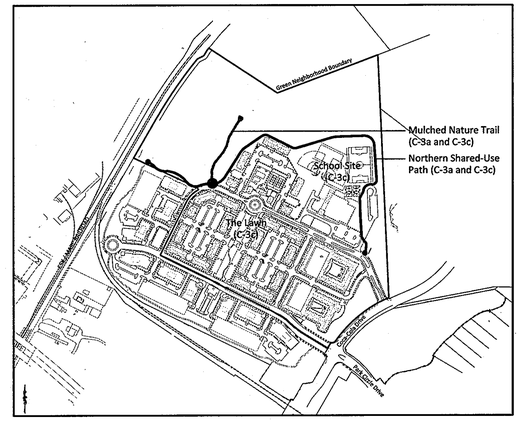
GREEN NEIGHBORHOOD NOTES:

A-2	THE DESIGN AND DEVELOPMENT TEAM INCLUDES A LEED AP (MATTHEW FITZSIMMONS- HORD COPLAN MACHT), LEED GA (EILEEN STRAUGHAN- STRAUGHAN ENVIRONMENTAL), ENVIRONMENTAL PROFESSIONAL (JOHN CANOLES- ECO-SCIENCE PROFESSIONALS, INC.), AND AN ENGINEER (ALDO VITUCCI- FISHER, COLLINS & CARTER INC.)
A-3	THE THIRD PARTY CERTIFICATION IS PROVIDED BY CHARLES ALEXANDER, LEED-AP OF ALEXANDER DESIGN STUDIOS.
B-1a	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).
B-3a	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.
B-3b	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.
B-4	OXFORD SQUARE GREEN NEIGHBORHOOD BOUNDARY IS WITHIN 1/4 MILE WALKING DISTANCE OF THREE COMMUNITY RESOURCES: RESTAURANT, RETAIL AND PARK SPACE.
C-1	OXFORD SQUARE GREEN NEIGHBORHOOD BOUNDARY WILL PROVIDE TWO DIVERSE USES OTHER THAN RESIDENTIAL: INSTITUTIONAL (ELEMENTARY SCHOOL BUILDING AND OUTDOOR CLASSROOM SPACE & PLAYGROUND) AND CIVIC (SCHOOL'S RECREATIONAL PLAYING FIELDS AND SHARED-USE PATH).
C-2	OXFORD SQUARE IS LOCATED WITHIN THE EXISTING PLANNED WATER AND SEWER SERVICE AREA.
C-3c	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) ELEMENTARY SCHOOL SITE (RECREATIONAL PLAYING FIELDS, PLAYGROUNDS, SEATING, BIKE RACKS).
D-8a	OXFORD SQUARE GREEN NEIGHBORHOOD BOUNDARY WILL PROVIDE A MINIMUM 75 FT ENHANCED STREAM BUFFER.
D-9	OXFORD SQUARE GREEN NEIGHBORHOOD BOUNDARY WILL PROVIDE A MINIMUM 50 FT ENHANCED WETLAND BUFFER.
E-3	OXFORD SQUARE GREEN NEIGHBORHOOD BOUNDARY WILL NOT PLANT INVASIVE PLANTS.
E-4	OXFORD SQUARE GREEN NEIGHBORHOOD BOUNDARY WILL USE NATIVE PLANTS WHEN PLANTING BEDS ARE LOCATED IN DENSELY SHADED AREAS.
F-3b	OXFORD SQUARE WILL PROVIDE 25%-50% WATER QUALITY VOLUME STORED AND INFILTRATED/RE-USED ON-SITE.

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



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



APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 9-05-12
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 8-31-12

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, BUREAU OF HIGHWAYS	DATE 8/17/12

NO.	DESCRIPTION	DATE

REVISIONS

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

CHIEF, RESOURCE CONSERVATION DIVISION	DATE 7/16/12

LEED ACCREDITED PROFESSIONAL CERTIFICATE
GREEN NEIGHBORHOOD PLAN FOR SITES

I hereby certify that this plan represnets a practical and workable plan for achieving the targeted credits and point total shown on the Green Neighborhood for Sites Compliance Checklist.

MATTHEW J FITZSIMMONS, LEED AP	LEED ACCREDITATION NUMBER 10007912	DATE 6/15/12

GREEN NEIGHBORHOOD CALCULATIONS & TABLES

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

Total Number of Off-Street Parking Spaces:	1,928 Spaces
Total Number of Proposed Preferred Parking Spaces:	97 Spaces
Percent of Preferred Parking Spaces:	**5.0%**

A-4c Compact Development

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

A-4d Walkable Streets

Length of Buildings Frontage Orientd Towards the Public Space:	5,740 FT
Total Length of Building Frontage:	6,357 FT
% of Building Frontage Oriented Towards the Public Spaces:	**90.9%**
Length of Building Frontage with Service or Garage Openings:	240 FT
Total Length of Building Frontage:	5,474 FT
% of Building Frontage with Service or Garage Openings:	**4.4%**

B-1a Redevelopment Site

Gross Site Area:	82.2 Acres
Area of Existing Development (Acres):	24.4 Acres
Percent of Previously Developed:	**29.7%**

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

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

B-4 Proximity to Community Resources

Community Resources	Walking Distrance 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%
Nonresidential Uses		**Area**	**SF per Dwelling Unit**
Institional:	School	92,181 SF	
	Outdoor Classroom Space	23,037 SF	
		115,218 SF	121 SF/DU
Civic:	Recreational Playing Fields (School Site)	243,647 SF	
	Loop Bike Path (8 FT wide) and Trail heads	31,509 SF	
	Civic Subtotal:	275,156 SF	288 SF/DU

C-3a Pedestrian System (Paths and Trails)

Northern Shared Use Path:	Width of Path: 8 FT *Length:* 3,262 FT (0.6 Miles)
Mulch Nature Trail	Width of Path: 5 FT *Length:* 595 FT

C-4 Street Connections

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
Total Connected Street Length:	7,518 FT
Percent Connected Streets:	**100.0%**

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

C-6 Exceed Minimum Open Space

Net Acreage:	75.0 AC
Required Amenity Space (TOD: 10% of Net Acreage):	7.5 AC
Provided Amenity Space:	11.9 AC
Percent Increase above the Minimum Required:	**58.7 %**

C-7 Green Spaces and Amenity Areas

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

D-4 15% Slope Preservation

	Complete Build Out[2]	Phase 1 (F-12-026)[1]
Total Area of Slopes 15-24.9%:	430,065 SF	430,065 SF
Area of Undisturbed Slopes 15-24.9%:	262,691 SF	274,267 SF
Percent of Undisturbed Slopes:	**61.1 %**	**63.8 %**

1 Calculations are based on the Final Plan (F-12-026) submission and do not reflect the complete project build out.
2 Calculations modify the LOD area of Approved Sketch Plan (S-11-001) to include changes made to the site during phase 1 improvements (F-12-026).

D-5 Minimize Grading and Site Disturbance

	Complete Build Out[2]	Phase 1 (F-12-026)[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	25.1 AC	26.5 AC
Precent of Site to Remain Undistrubed:	**43.4 %**	**45.8 %**
Ratio of Cut to Fill:	**1.13 Ratio**	**1.14 Ratio**
Retaining Wall:	**0 FT**	**0 FT**

1 Calculations are based on the Final Plan (F-12-026) submission and do not reflect the complete project build out.
2 Calculations modify the LOD area of Approved Sketch Plan (S-11-001) to include changes made to the site during phase 1 improvements (F-12-026).

D-6 Exceed Minimum Forest Conservation Requirements

Afforestation Obligation:	3.50 AC
Afforestation Provided in Excess of Obligation:	1.75 AC
Percentage of Provided in Excess of Obligation:	**50.00 %**

D-8b Exceed Minimum Stream Buffer Requirements

Total Stream Buffer Width:	150 FT
Width of Buffer Exceeding Requirements:	75 FT
Total Length of Stream Buffer:	1,984.2 FT
Length of Stream Buffer Outside Other Buffers:	1,230.0 FT
Percent of Stream Buffer Outside Other Buffers:	**62.0 %**

D-9 Exceed Minimum Wetland Buffer Requirements

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

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

STRAUGHAN ENVIRONMENTAL

Eco-Science Professionals, Inc.
Consulting Ecologists

hord | coplan | macht
750 E. Pratt Street, Suite 1100 Baltimore MD 21202
410.837.3311 | www.hcm2.com

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Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

GREEN NEIGHBORHOOD PLAN

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND
OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
DATE: June 19th, 2012
SHEET 41 OF 45

F-12-026

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date: 10/7/13

Chief, Development Engineering Division — Date: 10.17.13

Approved: Howard County Department Of Public Works

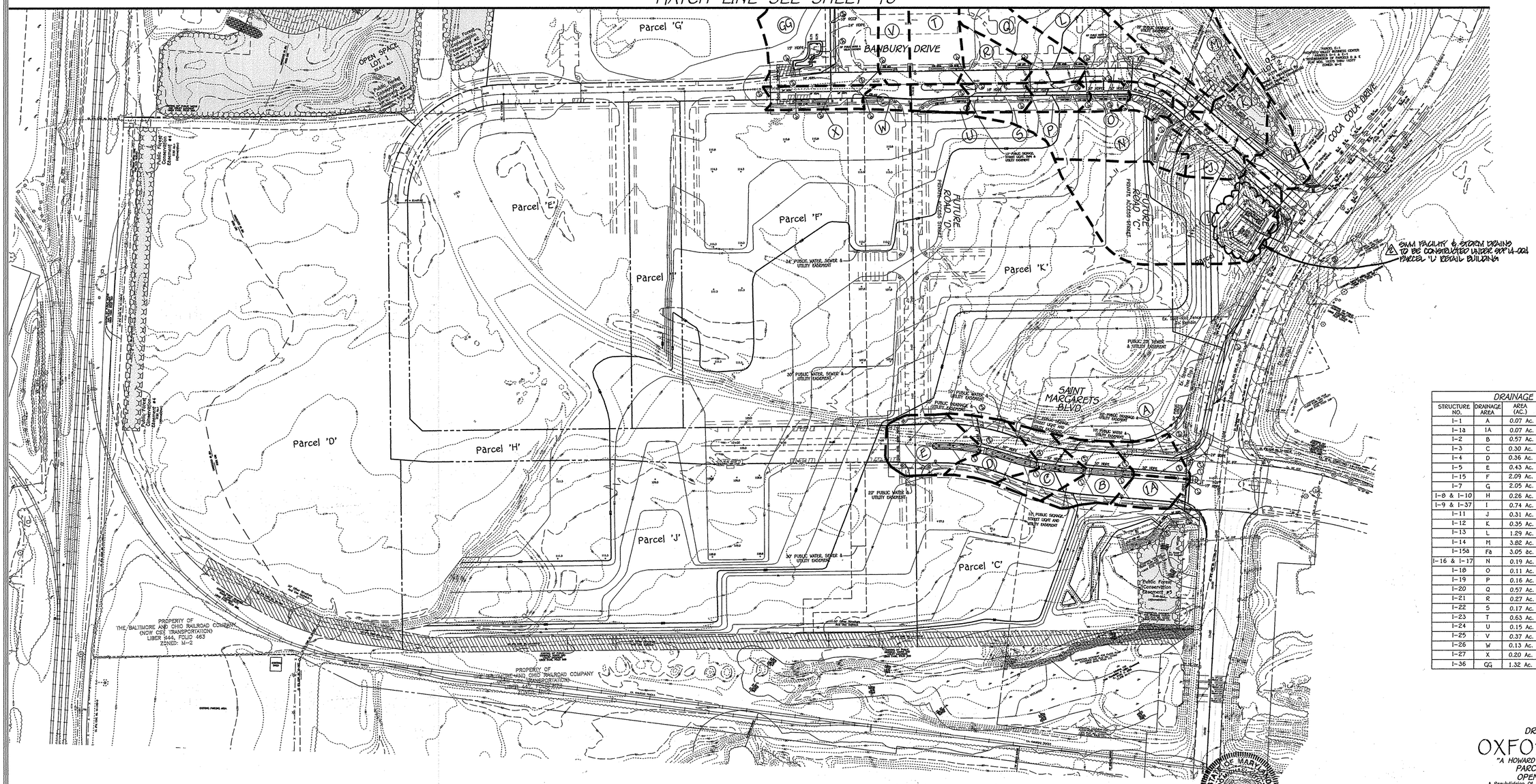
Chief, Bureau Of Highways — Date: 10-11-13

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISED STORM DRAIN ALONG SCHOOL BOUNDARY, BANBURY DRIVE PAVING, S/W, WATER AND SEWER EASEMENTS, ESD NO. 12 & 22	8/29/13
2	SWM FACILITY & STORM DRAIN CONSTRUCTED UNDER SDP 14-001	8/22/14
3	Remove Storm Drain From M-12 To M-19 & Revise ESD #22	9/22/14

NOTE: SEE SHEETS 19-22 FOR ESD DEVICE PLAN VIEWS.

LEGEND	
SYMBOL	DESCRIPTION
	EXISTING CONTOUR 2' INTERVAL
	EXISTING CONTOUR 10' INTERVAL
102	PROPOSED CONTOUR 2' INTERVAL
100	PROPOSED CONTOUR 10' INTERVAL
	EXISTING BRUSH
	EXISTING TREELINE
	SLOPES (15% - 24.9%)
	SLOPES (25% AND GREATER)
	WETLANDS BUFFER
	WETLANDS LIMITS
FP	FLOODPLAIN LIMITS
N.R.F.	NON REGULATED FACILITY
ESD #1	STORMWATER MANAGEMENT DEVICE
	STORM DRAIN
FO	EXISTING FIBER OPTIC LINE
G	EXISTING GASMAIN

MATCH LINE SEE SHEET 43



DRAINAGE AREA DATA						
STRUCTURE NO.	DRAINAGE AREA	AREA (AC.)	AREA (SQ.FT.)	'C'	ZONED	% IMP.
I-1	A	0.07 Ac.	3,049 Sq Ft	0.90	TOD	93%
I-1a	1A	0.07 Ac.	3,049 Sq Ft	0.90	TOD	93%
I-2	B	0.57 Ac.	24,805 Sq Ft	0.94	TOD	92%
I-3	C	0.30 Ac.	13,112 Sq Ft	0.90	TOD	95%
I-4	D	0.36 Ac.	15,633 Sq Ft	0.90	TOD	93%
I-5	E	0.43 Ac.	18,851 Sq Ft	0.88	TOD	90%
I-15	F	2.09 Ac.	91,048 Sq Ft	0.25	TOD	0%
I-7	G	2.05 Ac.	89,126 Sq Ft	0.26	TOD	2%
I-8 & I-10	H	0.26 Ac.	11,199 Sq Ft	0.43	TOD	25%
I-9 & I-37	I	0.74 Ac.	32,317 Sq Ft	0.35	TOD	14%
I-11	J	0.31 Ac.	13,362 Sq Ft	0.67	TOD	50%
I-12	K	0.35 Ac.	15,363 Sq Ft	0.46	TOD	30%
I-13	L	1.29 Ac.	56,000 Sq Ft	0.32	TOD	10%
I-14	M	3.82 Ac.	166,569 Sq Ft	0.25	TOD	0%
I-15a	Fa	3.05 ac.	132,808 Sq Ft	0.25	TOD	0%
I-16 & I-17	N	0.19 Ac.	8,329 Sq Ft	0.50	TOD	35%
I-18	O	0.11 Ac.	4,974 Sq Ft	0.64	TOD	55%
I-19	P	0.16 Ac.	7,020 Sq Ft	0.60	TOD	50%
I-20	Q	0.57 Ac.	24,627 Sq Ft	0.92	TOD	95%
I-21	R	0.27 Ac.	11,631 Sq Ft	0.92	TOD	95%
I-22	S	0.17 Ac.	7,428 Sq Ft	0.60	TOD	50%
I-23	T	0.63 Ac.	27,289 Sq Ft	0.81	TOD	80%
I-24	U	0.15 Ac.	6,560 Sq Ft	0.88	TOD	90%
I-25	V	0.37 Ac.	16,117 Sq Ft	0.92	TOD	95%
I-26	W	0.13 Ac.	5,621 Sq Ft	0.78	TOD	75%
I-27	X	0.20 Ac.	8,813 Sq Ft	0.67	TOD	60%
I-36	GG	1.32 Ac.	57,499 Sq Ft	0.87	TOD	65%

REVISED
DRAINAGE AREA MAP

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND
OPEN SPACE LOTS 1 & 2

A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
USES: RETAIL AND RESIDENTIAL
ZONING: TOD
TAX MAP No. 38, GRID No. 19 & 20
TAX MAP No. 44, GRID No. 1 & 2,
PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 42 OF 47

Owner
Kellogg-CCP, LLC
c/o David P. Scheffenacker, Jr.,
Managing Member
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

Developer
Preston Scheffenacker Properties
2330 West Joppa Road, Suite 190
Lutherville, Maryland 21093-4614
Ph# 410-296-3800

PLAN
SCALE: 1" = 100'

ALDO M. [illegible] — 9/4/13 DATE

"Professional Engineer I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20746, Expiration Date 2-22-15."

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

F-12-026

1:\2005\05014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 42 & 43 MYLAR.dwg, SHEET 42, 9/6/2013 1:39:14 PM, 1:1

Approved: Department Of Planning And Zoning

Chief, Division Of Land Development — Date 10/17/13

Chief, Development Engineering Division — Date 10.17.13

Approved: Howard County Department Of Public Works

Chief, Bureau Of Highways — Date 10-11-13

REVISIONS		
NO.	DESCRIPTION	DATE
1	REVISED STORM DRAIN ALONG SCHOOL BOUNDARY, BANBURY DRIVE PAVING, R/W, WATER AND SEWER EASEMENTS, ESD NO. 12 & 22	8/29/13

LEGEND

SYMBOL	DESCRIPTION
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	EXISTING CONTOUR 10' INTERVAL
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100	PROPOSED CONTOUR 10' INTERVAL
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	EXISTING TREELINE
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	WETLANDS BUFFER
	WETLANDS LIMITS
FP	FLOODPLAIN LIMITS
N.R.F.	NON REGULATED FACILITY
ESD #1	STORMWATER MANAGEMENT DEVICE
	STORM DRAIN
FO	EXISTING FIBER OPTIC LINE
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I-36	GG	1.32 Ac.	57,499 Sq Ft	0.87	TOD	65%

MATCH LINE SEE SHEET 42

PLAN

SCALE: 1" = 100'

Owner	Developer
Kellogg-CCP, LLC c/o David P. Scheffenacker, Jr., Managing Member 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3600	Preston Scheffenacker Properties 2330 West Joppa Road, Suite 190 Lutherville, Maryland 21093-4614 Ph# 410-296-3600

STATE OF MARYLAND — ALDO MICHELUTTI — REGISTERED PROFESSIONAL ENGINEER

ALDO — DATE 9/11/13

"Professional Engineer Certification: I hereby certify that these documents were prepared by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 20748, Expiration Date 2-22-15."

REVISED
DRAINAGE AREA MAP

OXFORD SQUARE

"A HOWARD COUNTY GREEN NEIGHBORHOOD"
PARCELS 'C' THRU 'L' AND
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A Resubdivision Of Parcel 'A', As Shown On Plats Entitled "Oxford Square, Parcels 'A' And 'B'" And Recorded Among The Land Records Of Howard County, Maryland As Plat Nos. 21757 Thru 21761
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PARCEL No. 761
FIRST ELECTION DISTRICT HOWARD COUNTY, MARYLAND
DATE: JUNE 15, 2012
SHEET 43 OF 47

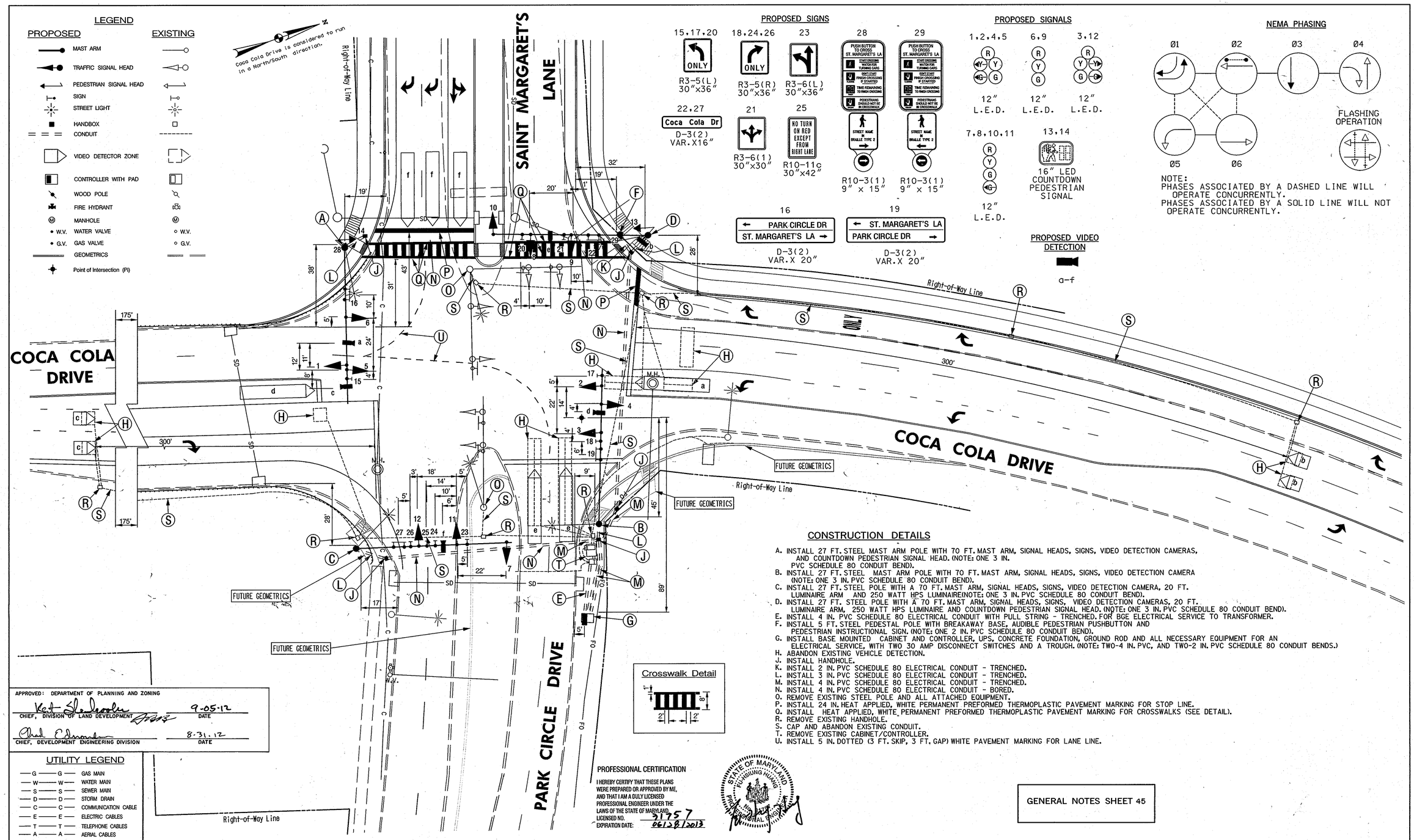
FISHER, COLLINS & CARTER, INC.
CIVIL ENGINEERING CONSULTANTS & LAND SURVEYORS
CENTENNIAL SQUARE OFFICE PARK - 10272 BALTIMORE NATIONAL PIKE
ELLICOTT CITY, MARYLAND 21042
(410) 461 - 2855

F-12-026

I:\2009\09014\dwg\Finals - Phase One\F plan storm drain redline\SHEET 42 & 43 NYLAR.dwg, SHEET 43, 9/6/2013 1:41:19 PM, 1:1

LEGEND

PROPOSED	EXISTING
MAST ARM	
TRAFFIC SIGNAL HEAD	
PEDESTRIAN SIGNAL HEAD	
SIGN	
STREET LIGHT	
HANDBOX	
CONDUIT	
VIDEO DETECTOR ZONE	
CONTROLLER WITH PAD	
WOOD POLE	
FIRE HYDRANT	
MANHOLE	
W.V. WATER VALVE	W.V.
G.V. GAS VALVE	G.V.
GEOMETRICS	
Point of Intersection (PI)	



CONSTRUCTION DETAILS

A. INSTALL 27 FT. STEEL MAST ARM POLE WITH 70 FT. MAST ARM, SIGNAL HEADS, SIGNS, VIDEO DETECTION CAMERAS, AND COUNTDOWN PEDESTRIAN SIGNAL HEAD. (NOTE: ONE 3 IN. PVC SCHEDULE 80 CONDUIT BEND).
B. INSTALL 27 FT. STEEL MAST ARM POLE WITH 70 FT. MAST ARM, SIGNAL HEADS, SIGNS, VIDEO DETECTION CAMERA (NOTE: ONE 3 IN. PVC SCHEDULE 80 CONDUIT BEND).
C. INSTALL 27 FT. STEEL POLE WITH A 70 FT. MAST ARM, SIGNAL HEADS, SIGNS, VIDEO DETECTION CAMERA, 20 FT. LUMINAIRE ARM AND 250 WATT HPS LUMINAIRE(NOTE: ONE 3 IN. PVC SCHEDULE 80 CONDUIT BEND).
D. INSTALL 27 FT. STEEL POLE WITH A 70 FT. MAST ARM, SIGNAL HEADS, SIGNS, VIDEO DETECTION CAMERAS, 20 FT. LUMINAIRE ARM, 250 WATT HPS LUMINAIRE AND COUNTDOWN PEDESTRIAN SIGNAL HEAD. (NOTE: ONE 3 IN. PVC SCHEDULE 80 CONDUIT BEND).
E. INSTALL 4 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT WITH PULL STRING - TRENCHED. FOR BGE ELECTRICAL SERVICE TO TRANSFORMER.
F. INSTALL 5 FT. STEEL PEDESTAL POLE WITH BREAKAWAY BASE, AUDIBLE PEDESTRIAN PUSHBUTTON AND PEDESTRIAN INSTRUCTIONAL SIGN. (NOTE: ONE 2 IN. PVC SCHEDULE 80 CONDUIT BEND).
G. INSTALL BASE MOUNTED CABINET AND CONTROLLER, UPS, CONCRETE FOUNDATION, GROUND ROD AND ALL NECESSARY EQUIPMENT FOR AN ELECTRICAL SERVICE, WITH TWO 30 AMP DISCONNECT SWITCHES AND A TROUGH. (NOTE: TWO-4 IN. PVC, AND TWO-2 IN. PVC SCHEDULE 80 CONDUIT BENDS.)
H. ABANDON EXISTING VEHICLE DETECTION.
J. INSTALL HANDHOLE.
K. INSTALL 2 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT - TRENCHED.
L. INSTALL 3 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT - TRENCHED.
M. INSTALL 4 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT - TRENCHED.
N. INSTALL 4 IN. PVC SCHEDULE 80 ELECTRICAL CONDUIT - BORED.
O. REMOVE EXISTING STEEL POLE AND ALL ATTACHED EQUIPMENT.
P. INSTALL 24 IN. HEAT APPLIED, WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING FOR STOP LINE.
Q. INSTALL HEAT APPLIED, WHITE PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING FOR CROSSWALKS (SEE DETAIL).
R. REMOVE EXISTING HANDHOLE.
S. CAP AND ABANDON EXISTING CONDUIT.
T. REMOVE EXISTING CABINET/CONTROLLER.
U. INSTALL 5 IN. DOTTED (3 FT. SKIP, 3 FT. GAP) WHITE PAVEMENT MARKING FOR LANE LINE.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT	DATE 9-05-12
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE 8-31-12

UTILITY LEGEND

G	GAS MAIN
W	WATER MAIN
S	SEWER MAIN
D	STORM DRAIN
C	COMMUNICATION CABLE
E	ELECTRIC CABLES
T	TELEPHONE CABLES
A	AERIAL CABLES

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.
LICENSED NO. 31757
EXPIRATION DATE: 06/28/2013

STATE OF MARYLAND — FUSHUNG HUANG — No. 31757 — PROFESSIONAL ENGINEER

GENERAL NOTES SHEET 45

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

~~DIRECTOR OF PUBLIC WORKS~~	DATE		
Diane Schwarz, CHIEF, TRAFFIC ENGINEERING DIVISION	DATE 8/17/12	Diane Schwarz, Acting CHIEF, BUREAU OF HIGHWAYS	DATE 8/17/12

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

DES: J.N.W.	FJH	1	GEOMETRIC CHANGES TO ADD FORTH LEG TO THE INTERSECTION	5/9/12
DRN: C.D.F.				
CHK: Z.A.S.				
DATE: 9/03	BY	NO.	REVISION	DATE

600' SCALE MAP NO. _____ DATE: _____

TRAFFIC SIGNAL PLAN SHEET

COCA COLA DRIVE
AT PARK CIRCLE DRIVE/
SAINT MARGARET'S LANE

SCALE: 1" = 20'

SHEET 44 OF 45

PLOTTED: Wednesday, June 20, 2012 AT 11:22 AM
FILE: F:\2009\2009-0821\Des\TEDD\TS -Oxford Square,-Coca Cola Drive.dgn

F-12-026

PROJECT DESCRIPTION

GENERAL

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE TRAFFIC CONTROL SIGNAL AT THE INTERSECTION OF COCA COLA DRIVE AT PARK CIRCLE DRIVE/ SAINT MARGARET'S LANE IN HOWARD COUNTY, MARYLAND. COCA COLA DRIVE IS CONSIDERED TO RUN IN A NORTH/SOUTH DIRECTION.

INTERSECTION OPERATION

THE INTERSECTION IS TO OPERATE IN A NEMA 6 PHASE, FULL-TRAFFIC-ACTUATED MODE. THERE WILL BE A PROTECTED\PERMISSIVE LEFT TURN PHASE FOR THE NORTHBOUND AND SOUTHBOUND MOVEMENTS OF COCA COLA DRIVE WITH A RIGHT TURN OVERLAP FOR THE EASTBOUND MOVEMENT OF SAINT MARGARET'S LANE. THE COCA COLA THROUGH MOVEMENTS WILL OPERATE CONCURRENTLY WITH AN ACTUATED PEDESTRIAN MOVEMENT ACROSS THE WEST LEG OF THE INTERSECTION. THE PARK CIRCLE DRIVE/SAINT MARGARET'S LANE MOVEMENTS WILL OPERATE AS A SIDE STREET SPLIT OPERATION WITH A RIGHT TURN OVERLAP FOR THE NORTHBOUND MOVEMENT OF COCA COLA DRIVE.

AN EIGHT PHASE, FULL-TRAFFIC-ACTUATED, SOLID STATE DIGITAL CONTROLLER WITH INTERSECTION MONITOR AND HARNESS, BATTERY BACK-UP, AND VIDEO DETECTION EQUIPMENT HOUSED IN A BASE MOUNTED CABINET ARE TO BE INSTALLED AT THIS LOCATION.

EQUIPMENT LIST

A. EQUIPMENT TO BE FURNISHED BY THE COUNTY WHEN REIMBURSED BY THE DEVELOPER AND INSTALLED BY THE CONTRACTOR.

QUANTITY	UNITS	DESCRIPTION
1	EA	TRAFFIC SIGNAL CONTROLLER, BASE MOUNTED CABINET, VIDEO DETECTION INTERFACE, AND UPS BATTERY BACKUP SYSTEM.
2	EA	12 IN., ONE-WAY, THREE SECTION L.E.D. (R,Y,G) ADJUSTABLE YELLOW FACED TRAFFIC SIGNAL HEAD WITH MAST ARM MOUNTING HARDWARE AND TUNNEL VISORS.
6	EA	12 IN., ONE-WAY, FIVE SECTION L.E.D. (R,Y,YA,G,GA) ADJUSTABLE YELLOW FACED TRAFFIC SIGNAL HEAD WITH MAST ARM MOUNTING HARDWARE AND TUNNEL VISORS.
4	EA	12 IN., ONE-WAY, FOUR SECTION L.E.D. (R,Y,G,GA) ADJUSTABLE YELLOW FACED TRAFFIC SIGNAL HEAD WITH MAST ARM MOUNTING HARDWARE AND TUNNEL VISORS.
2	EA	16 IN., ONE-WAY, ONE SECTION L.E.D. (COUNTDOWN INDICATIONS) ADJUSTABLE PEDESTRIAN SIGNAL HEAD WITH POLE MOUNTING HARDWARE AND CUT-AWAY VISORS.
6	EA	VIDEO DETECTION CAMERA.
1725	LF	VIDEO DETECTION CABLE.
2	EA	PEDESTRIAN PUSHBUTTON ASSEMBLY WITH PUSHBUTTON SIGN.

EQUIPMENT LIST CONT.

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY THE TRAFFIC SIGNAL CONTRACTOR.

QUANTITY	UNITS	DESCRIPTION
LUMP SUM	LS	MOT - HWY.
6	CY	TEST PIT EXCAVATION.
22.0	CY	CONCRETE FOUNDATION.
4	EA	27 FT. STEEL MAST ARM POLE WITH 70 FT. MAST ARM.
1	EA	5 FT. STEEL PEDESTAL POLE WITH BREAK AWAY TRANSFORMER BASE.
3	EA	30 IN. X 36 IN. R 3-5(L) SIGN WITH MAST ARM MOUNTING HARDWARE.
3	EA	30 IN. X 36 IN. R 3-5(R) SIGN WITH MAST ARM MOUNTING HARDWARE.
1	EA	30 IN. X 30 IN. R 3-5(1) SIGN WITH MAST ARM MOUNTING HARDWARE.
1	EA	30 IN. X 36 IN. R 3-6(R) SIGN WITH MAST ARM MOUNTING HARDWARE.
2	EA	16 IN. X VAR. D3-(2) SIGN WITH MAST ARM MOUNTING HARDWARE.
2	EA	20 IN. X VAR. D3-(2) SIGN WITH MAST ARM MOUNTING HARDWARE.
1	EA	30 IN. X 42 IN. R10-11c SIGN MAST ARM MOUNTING HARDWARE.
4	EA	20 FT. LUMINAIRE ARM.
4	EA	250 WATT SAG LAMP AND LUMINAIRE.
35	LF	2 IN. CONDUIT PVC SCHED 80 TRENCHED.
105	LF	3 IN. CONDUIT PVC SCHED 80 TRENCHED.
55	LF	4 IN. CONDUIT PVC SCHED 80 TRENCHED.
380	LF	4 IN. CONDUIT PVC SCHED 80 BORED.
1	EA	METER SOCKET.
2	EA	DISCONNECT SWITCH NEMA TYPE 4 - 30 AMP STAINLESS STEEL.
5	EA	GROUND ROD WITH CLAMP.
595	LF	2 COND 14 AWG IMSA 19-1.
610	LF	3 COND 14 AWG IMSA 19-1.
70	LF	5 COND 14 AWG IMSA 19-1.
1625	LF	7 COND 14 AWG IMSA 19-1.
795	LF	2 COND 12 AWG COPPER TYPE TC.
385	LF	1 COND 6 AWG THWN - COPPER.
25	LF	1 COND 8 AWG THWN - COPPER.
225	LF	THERMOPLASTIC PVMT MKG LINE 24 IN. WIDE, WHITE.
200	LF	THERMOPLASTIC PVMT MKG LINE 12 IN. WIDE, WHITE.
5	LF	TRAFFIC SIGNAL HANDBOX.
12	EA	INSTALL SIGNAL HEAD.
2	EA	INSTALL PEDESTRIAN SIGNAL HEAD.
2	EA	INSTALL PEDESTRIAN BUSHBUTTON & SIGN.
6	EA	INSTALL VIDEO CAMERA DETECTOR WITH COUNTY SUPPLIED CLAMP.
1	EA	INSTALL CONTROL CABINET - BASE MOUNTED.
1	EA	TROUGH
135	LF	5 IN. WIDE HEAT APPLIED THERMOPLASTIC PAVEMENT MARKING - WHITE.
LUMP SUM	LS	REMOVAL OF EXISTING TRAFFIC SIGNAL EQUIPMENT.

C. EQUIPMENT TO BE RETURNED TO HOWARD COUNTY

QUANTITY	UNITS	DESCRIPTION
1	EA	TRAFFIC SIGNAL CONTROLLER, BASE MOUNTED CABINET, WITH UPS CABINET.

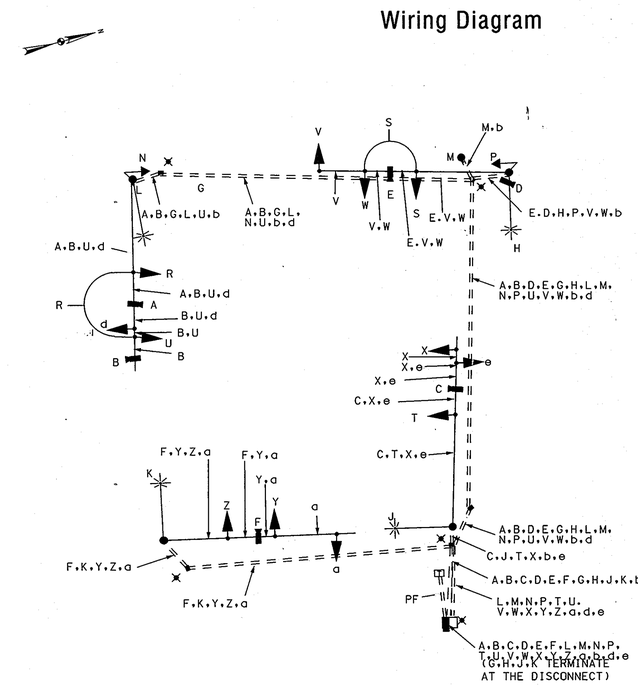
GENERAL NOTES

1. VIDEO CAMERA LOCATION/ALIGNING SHALL BE COORDINATED WITH THE COUNTY ENGINEER.
2. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE AND CABINET LOCATIONS IN THE FIELD WITH THE COUNTY ENGINEERING PRIOR TO INSTALLATION. PLEASE CONTACT MR. KRIS JAGARAPU AT 410-313-5753
3. FOR FINAL PAVEMENT MARKINGS REFER TO THE PAVEMENT MARKING PLANS. OTHER THAN THOSE DETAILED ON THE PLAN. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH COUNTY STANDARDS.
4. ALL EXISTING TRAFFIC SIGNAL EQUIPMENT REMOVED SHALL BECOME THE PROPERTY OF THE SIGNAL CONTRACTOR UPON COMPLETION OF THE NEW SIGNAL.
5. ALL PROPOSED LUMINAIRES SHALL BE SUPPLIED WITH A PHOTOCELL.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ANY AND ALL TRAFFIC SIGNAL RELATED CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABEL EACH CABLE.
7. THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO INSTALLING PROPOSED SIGNAL EQUIPMENT. IF ANY UTILITY CONFLICTS SHOULD ARISE THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER.
8. ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT THE FINAL SIDEWALK OR CURB GRADE FOR CLOSED SECTIONS. HIGHEST ROADWAY PROFILE GRADE FOR OPEN SECTIONS. TO MEET CLEARANCES AS SPECIFIED IN MD 816.03. MD 818.04. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.

Phase Chart

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
PHASE 1 AND 5	←G/R	←G/R	R	←G/R	←G/R	R	R	R	R	R	R	R/G→	DW	DW
1 AND 5 CHANGE TO 1 AND 6, 2 AND 5, OR 2 AND 6														
PHASE 1 AND 6	←G/G	←G/G	G	R	R	R	R	R	R	R	R	R/G→	DW	DW
1 CHANGE	←Y/G	←Y/G	G	R	R	R	R	R	R	R	R	R/Y→	DW	DW
PHASE 2 AND 5	R	R	R	←G/G	←G/G	G	R	R	R	R	R	R	DW	DW
5 CHANGE	R	R	R	←Y/G	←Y/G	G	R	R	R	R	R	R	DW	DW
PHASE 2 AND 6	G	G	G	G	G	G	R	R	R	R	R	R	WK	WK
PED CLEARANCE	G	G	G	G	G	G	R	R	R	R	R	R	FL/DW	FL/DW
2 AND 6 CHANGE	Y	Y	Y	Y	Y	Y	R	R	R	R	R	R	DW	DW
PHASE 3	R	R	R	R	R	R	R	R	R	←G/G	←G/G	G	DW	DW
3 CHANGE	R	R	R	R	R	R	R	R	R	Y	Y	Y	DW	DW
PHASE 4	R	R	R/G→	R	R	R	←G/G	←G/G	G	R	R	R	DW	DW
4 CHANGE	R	R	R/Y→	R	R	R	Y	Y	Y	R	R	R	DW	DW
FLASHING OPERATION	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/Y	FL/R	FL/R	FL/R	FL/R	FL/R	FL/R	DARK	DARK

Wiring Diagram



KEY

- A D B E C F } VIDEO DETECTOR CABLE
- G J } 2-CONDUCTOR TRAY CABLE (NO. 12 A.W.G.)
- H L K M } 2-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- N P } 3-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- R S } 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- T U V W X Y Z a d e } 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- b – THWN GREEN COPPER GROUND WIRE (NO. 6 A.W.G.)
- c – 1-CONDUCTOR (NO. 8 A.W.G.) (3 PIECES) FOR TRAFFIC SIGNAL ELECTRICAL SERVICE
- PF – PROPOSED UNDERGROUND ELECTRICA SERVICE BY BG&E
- ✦ – PROPOSED GROUND ROD

PROFESSIONAL CERTIFICATION

I HEREBY CERIFY THAT THESE PLANS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSED NO. 31757
EXPIRATION DATE: 06/28/2013

STATE OF MARYLAND · FURNISHING HUMANITY · No. 31757 · PROFESSIONAL ENGINEER

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DIVISION OF LAND DEVELOPMENT — DATE 9-05-12

CHIEF, DEVELOPMENT ENGINEERING DIVISION — DATE 8-31-12

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR, DEPARTMENT OF PUBLIC WORKS — DATE

CHIEF, TRAFFIC ENGINEERING DIVISION — DATE 8/17/12

CHIEF, BUREAU OF HIGHWAYS — DATE 8/17/12 (Acting)

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

DRN: FJH
CHK: JJD
DATE: 5-8-2012

BY	NO.	REVISION	DATE

600' SCALE MAP NO. _____ DATE: _____

GENERAL INFORMATION SHEET

COCA COLA DRIVE
AT PARK CIRCLE DRIVE/
SAINT MARGARET'S LANE

SCALE: N / A

SHEET 45 OF 45

PLOTTED: Wednesday, June 20, 2012 AT 11:22 AM
FILE: F:\2009\2009-0821\Des\TEDD\TS -Oxford Square.-Coca Cola Drive.dgn

F-12-026