BRYAN'S ROAD

NPDES PROGRAM: DESIGN OF STORMWATER MANAGEMENT RETROFITS

PGM# VCI09-0078

SITE DATA

OWNER (P. 309 & 331)
ALEXANDRIA ONE ASSOCIATES, LP
4733 BETHESDA AVE STE 340
BETHESDA, MD 20814

OWNER (P. 261 & 529)
COUNTY COMMISSIONERS OF CHARLES COUNTY
P.O. BOX 2150
LA PLATA, MD 20646

OWNER (P. 481)
INDIAN HEAD ELDERLY LTD PARTNERSHIP
77 WEST ST STE 210
ANNAPOLIS, MD 21401

ENGINEER/SURVEYOR
VISTA DESIGN, INC.
11634 WORCESTER HWY
SHOWELL, MD 21862
PH: 410-352-3874

SITE LOCATION
TAX MAP: 5
PARCELS: 261, 309, 397, 481, 529

FLOOD ZONE
THIS SITE IS LOCATED WITHIN FLOOD ZONE "C" (AREA OF MINIMAL FLOODING) PER F.I.R.M. MAP #2400890045 B, DATED JUNE 5, 1985

NON-TIDAL WETLANDS
ENVIRONMENTAL RESOURCES, INC. HAS DETERMINED THAT THERE ARE NO WETLANDS DISTURBANCES ON THE SITE.

IMPERVIOUS AREA TREATED BY CONTROL

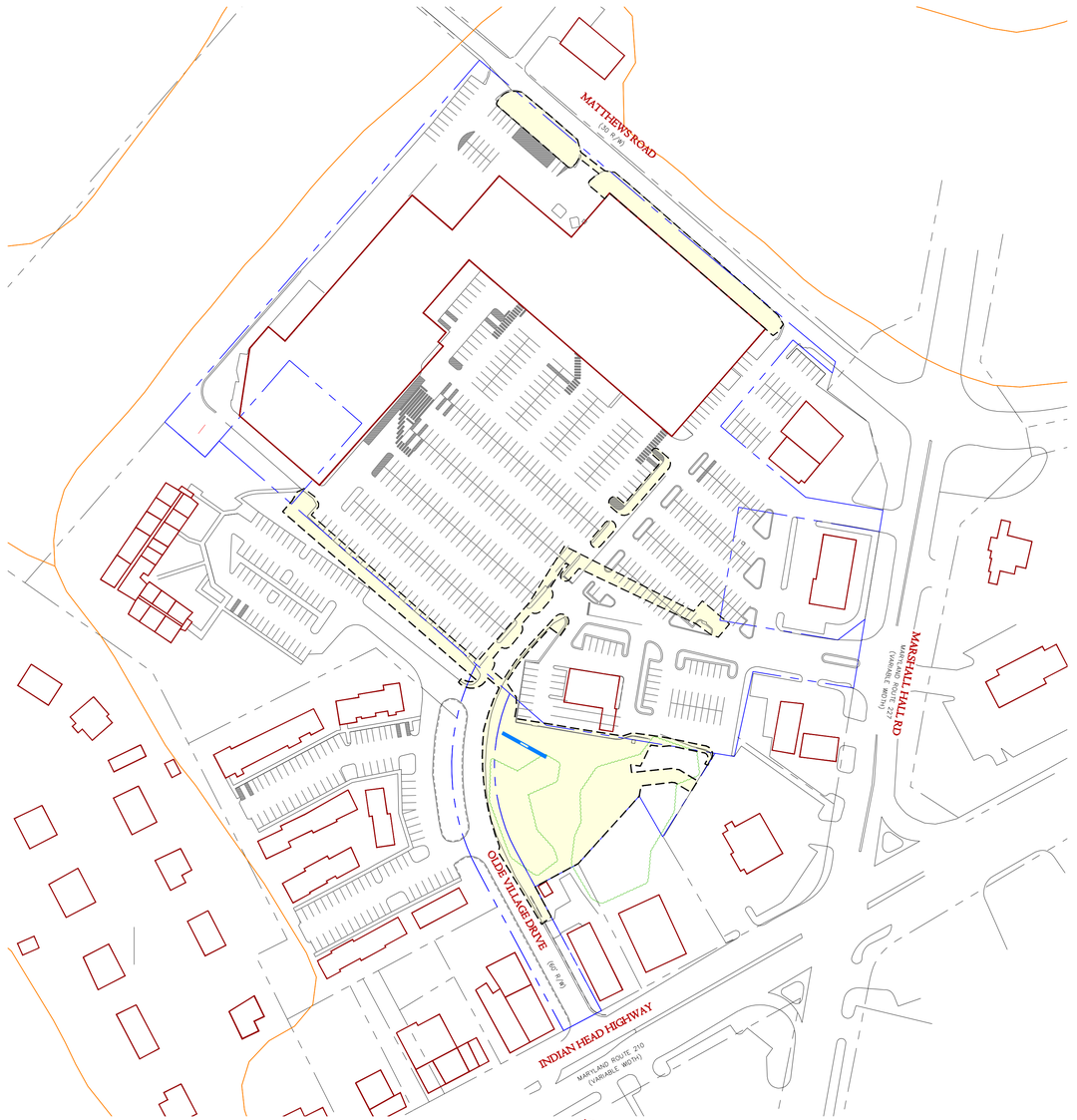
CONTROL TYPE	AREA (AC.)
DRY SWALE A	0.162
DRY SWALE B	0.565
FILTERRA	0.575
STORM FILTER	8.92

SHEET INDEX

SHEET	1	COVER
SHEET	2	EXISTING CONDITIONS
SHEET	3	STORMWATER DRAINAGE MAP
SHEET	4	PROPOSED STORM DRAIN LAYOUT
SHEET	4A	PROPOSED STORM CHAMBER LAYOUT
SHEET	5	PROPOSED GRADING PLAN
SHEET	6	PROPOSED GRADING PLAN
SHEET	7	PROPOSED DRY SWALE LAYOUT
SHEET	8	PROPOSED PROFILES AND SCHEDULES
SHEET	9	PROPOSED PARK LAYOUT PLAN
SHEETS	10-11	PROPOSED PARK LANDSCAPING PLAN
SHEET	12	CUT SHEETS
SHEETS	13-16	DETAILS
SHEETS	17-21	EROSION & SEDIMENT CONTROL PLANS

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT SPECIFICATIONS MANUAL, THE LATEST CHARLES COUNTY DETAIL MANUAL AND IN ACCORDANCE WITH CURRENT COUNTY ORDINANCES.
2. CONTRACTOR IS RESPONSIBLE FOR CONTACTING "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO ANY EXCAVATION WORK TO LOCATE ALL UTILITIES IN THE WORK AREA. ANY CONFLICTS MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.
3. THE CONTRACTOR IS RESPONSIBLE TO HOLD A "PRECONSTRUCTION" MEETING TO INCLUDE THE CONTRACTOR, CHARLES COUNTY INSPECTION PERSONNEL, PUBLIC UTILITIES, AND ANY LOCAL, STATE OR FEDERAL AGENCIES AS REQUIRED PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT/DEVELOPMENT SERVICES DIVISION 48 HOURS PRIOR TO THE START OF ALL CONSTRUCTION IN ACCORDANCE TO ALL PERMITS ISSUED @ (301) 645-0700.
5. MAXIMUM SLOPES SHALL BE NOT GREATER THAN THREE (3) FEET HORIZONTAL TO ONE (1) FOOT VERTICAL OUTSIDE THE ROAD RIGHT-OF-WAY. SLOPES WITHIN THE ROAD RIGHT-OF-WAY SHALL BE NOT GREATER THAN TWO (2) FEET HORIZONTAL TO ONE (1) FOOT VERTICAL, OR AS SPECIFIED IN THE COUNTY ROAD ORDINANCE AND IN THE CHARLES COUNTY DETAIL MANUAL.
6. CERTIFIED COMPACTION TESTS ARE REQUIRED FOR ALL TRENCH/FILL WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE COUNTY SPECIFICATIONS MANUAL AND GRADING ORDINANCE. FINAL REPORTS AND CERTIFICATIONS SHALL BE PROVIDED PRIOR TO PRE FINAL INSPECTIONS.
7. CERTIFIED COMPACTION TESTS AND GEOTECHNICAL REPORTS SHALL BE SUBMITTED ON A BIWEEKLY BASIS THROUGHOUT THE COURSE OF CONSTRUCTION AS REQUIRED BY THE SPECIFICATIONS MANUAL.
8. AS-BUILT PLANS SHALL BE SUBMITTED PRIOR TO FINAL INSPECTIONS.
9. WITH APPROVAL FROM THE CHARLES COUNTY SEDIMENT CONTROL INSPECTOR, ALL EROSION AND SEDIMENT CONTROL STRUCTURES MUST BE REMOVED PRIOR TO THE RELEASE OF BONDS.
10. PRIOR TO BOND RELEASE ALL OUTFALLS SHALL BE INSPECTED AND APPROVED BY COUNTY.
11. TOPOGRAPHY SHOWN IS AT ONE (1) FOOT CONTOUR INTERVALS AS SURVEYED BY VISTA DESIGN, INC., DATED AUGUST, 2009. THE VERTICAL DATUM IS BASED ON THE NAVD 88 DATUM. THE HORIZONTAL DATUM IS BASED ON THE NAD 83 DATUM.
12. THE CONTRACTOR SHALL NOTIFY THE CHARLES COUNTY SEDIMENT CONTROL INSPECTIONS DIVISION AT 301-645-0700, FIVE (5) DAYS PRIOR TO THE START OF WORK, AND UPON COMPLETION WHEN SEDIMENT CONTROL IS READY TO BE REMOVED.
13. ALL STREET SIGNS AND REGULATORY SIGNS WILL BE IN PLACE BEFORE PLACEMENT OF ANY ASPHALT. REFER TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR PROVIDING SIGNAGE AND PLACEMENT REQUIREMENTS.
14. ALL STORM DRAINS MUST HAVE A MINIMUM COVER OF 12" VERTICAL COVER BETWEEN ALL OTHER UTILITIES.
15. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD LOCATING AND VERIFYING ALL SERVICE LATERALS PRIOR TO THE START OF CONSTRUCTION IN PROPOSED AREAS.
16. CONTRACTOR TO IMMEDIATELY NOTIFY CHARLES COUNTY PGM AND DESIGN ENGINEER IF FIELD CONDITIONS DIFFER FROM THOSE SHOWN ON PLANS. DESIGN ENGINEER WILL REVIEW CURRENT CONDITIONS AND ADVISE PGM/CONTRACTOR ON HOW TO PROCEED.
17. THE DEVELOPER OR CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING TO THE CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT A LETTER OF MATERIAL CERTIFICATION FROM THE SUPPLIERS FOR ALL PRECAST STRUCTURES RELATED TO STORM DRAIN SYSTEMS AND STORMWATER MANAGEMENT FACILITIES IN THE FOLLOWING FORMAT:
    - 17.1. CONTRACTOR'S NAME AND ADDRESS.
    - 17.2. PROJECT NAME AND STRUCTURE NUMBER.
    - 17.3. MANUFACTURERS' PRODUCT CERTIFICATION.
    - 17.4. TYPE AND QUALITY OF PRODUCT.
    - 17.5. SHOP DRAWINGS SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND.
18. THE DEVELOPER OR HIS AGENT WILL NOTIFY THE DEPARTMENT FOR FINAL INSPECTION AFTER THE COMPLETION OF PERMITTED WORK PER APPROVED PLANS. THE DEPARTMENT WILL REQUIRE THE FOLLOWING FOR THEIR FILES:
    - 18.1. AN "AS BUILT" REPRODUCIBLE PLAN AND SURVEY BY A PROFESSIONAL LAND SURVEYOR AND/OR PROFESSIONAL ENGINEER AT THE SAME SCALE AS THE ORIGINAL PLAN AND SHOWING ALL IMPROVEMENTS AND FINAL GRADES.
    - 18.2. CERTIFICATION BY THE CONTRACTOR THAT ALL GRADING, DRAINAGE, EROSION CONTROL MEASURES, AND PERMANENT FACILITIES AND VEGETATIVE MEASURES HAVE BEEN COMPLETED IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
    - 18.3. A REPORT SUMMARIZING THE INSPECTION REPORTS AND TEST RESULTS AS PER SECTIONS 10.2 AND 10.4 OF THE CHARLES COUNTY STORMWATER ORDINANCE.
19. THE CONTRACTOR SHALL SUBMIT TO THE CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT CONCRETE CYLINDER BREAK REPORTS CERTIFIED BY A PROFESSIONAL ENGINEER FOR ALL CAST-IN-PLACE STRUCTURES USED FOR STORM DRAIN SYSTEMS AND/OR STORMWATER MANAGEMENT FACILITIES.
20. ALL SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED, MAINTAINED, AND REMOVED IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARD DETAILS GIVEN IN M.D.E.'S "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."
21. ALL SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED AND PLACED IN OPERATION BEFORE EXCAVATION IS STARTED. THE CONTRACTOR SHALL ADJUST THE SEDIMENT CONTROL DEVICES AS NECESSARY TO MEET FIELD CONDITIONS, KEEP THEM CLEAN AND IN WORKING ORDER DURING CONSTRUCTION. NO SEDIMENT CONTROL DEVICE SHALL BE REMOVED UNTIL THE ENTIRE AREA DRAINING TO IT HAS BEEN PERMANENTLY STABILIZED, INSPECTED AND APPROVED BY CHARLES COUNTY SEDIMENT CONTROL INSPECTOR.
22. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO KEEP MUD AND DEBRIS FROM BEING TRACKED ON PUBLIC ROADS.
23. APPROVAL OF CHARLES COUNTY SEDIMENT CONTROL INSPECTIONS DIVISION AT 301-645-0700 SHALL BE REQUESTED BY THE OWNER/DEVELOPER UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
24. EROSION AND SEDIMENT PRACTICES, AND SITE IN GENERAL, MUST BE INSPECTED WEEKLY AND AFTER EACH RAINFALL EVENT, BY THE CONTRACTOR OR OTHER RESPONSIBLE PERSON, AND ANY NEEDED MAINTENANCE PERFORMED IMMEDIATELY.
25. SEDIMENT AND EROSION CONTROLS CANNOT BE REMOVED UNTIL THE SITE HAS ADEQUATE STABILIZATION. ONCE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUND COVER TO BE CONSIDERED ADEQUATE STABILIZED AND THE SEDIMENT CONTROL INSPECTOR HAS APPROVED SUCH REMOVAL.



LOCATION PLAN
SCALE 1" = 100' NORTH



VICINITY MAP
NORTH

OWNER'S/DEVELOPERS CERTIFICATION

I/WE HEREBY CERTIFY THAT ALL CLEARING, GRADING, CONSTRUCTION, VEGETATIVE STABILIZATION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF EROSION AND SEDIMENT BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT TO ENTRY FOR PERIODIC ON-SITE EVALUATION BY STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS AND THE REPRESENTATIVES OF THE CHARLES SOIL CONSERVATION DISTRICT.

DATE _____ OWNER/DEVELOPER SIGNITURE _____

CARD NO. _____ PRINTED NAME AND TITLE _____

TELEPHONE NUMBER: (301) 885-1314

ADDRESS: P.O. BOX 2150 LAPLATA MD, 20646-2150

CONSULTANTS CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR CURRENT REVISIONS THEREOF, AND DEPARTMENT OF THE ENVIRONMENT STORMWATER MANAGEMENT REGULATIONS.

MD P.E. LICENSE # 36310
MD LAND SURVEYOR LICENSE # N/A
MD LANDSCAPE ARCHITECT # N/A
NAME RICHARD F POLK
FIRM NAME VISTA DESIGN, INC.
STREET ADDRESS 11634 WORCESTER HWY SHOWELL, MD 21862

STATE OF MARYLAND · RICHARD F. POLK · LICENSE #36310 · PROFESSIONAL ENGINEER

ENGINEER'S CERTIFICATION

I HEREBY CERTIFY THAT THIS PLAN MEETS OR EXCEEDS THE REQUIREMENTS OF THE STORMWATER MANAGEMENT & STORM DRAINAGE ORDINANCE, FLOODPLAIN MANAGEMENT ORDINANCE, GRADING ORDINANCE, ROAD ORDINANCE, WATER & SEWER ORDINANCE, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II, ALL STATE AND FEDERAL CODES, THE CHARLES COUNTY STANDARDS AND SPECIFICATIONS FOR CONSTRUCTION MANUAL, THE CHARLES COUNTY DETAILS MANUAL, THE APPROVED SITE PLAN OR PRELIMINARY PLAN, OTHER PGM ORDINANCES AND REGULATIONS AND ANY CONDITIONS IMPOSED BY CHARLES COUNTY.

MARYLAND REGISTERED PROFESSIONAL ENGINEER _____ DATE _____

36310
LICENSE NUMBER

STATE OF MARYLAND · RICHARD F. POLK · LICENSE #36310 · PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 36310, EXPIRATION DATE: 11/17/2012 .

CHARLES SOIL CONSERVATION DISTRICT APPROVAL

CHARLES SCD SEDIMENT AND EROSION CONTROL PLAN NUMBER 89-10

CHARLES SCD SMALL POND APPROVAL NUMBER(S) _____

SEDIMENT AND EROSION CONTROL PLAN AND SMALL POND (IF APPLICABLE) IS HEREBY APPROVED BY THE CHARLES SOIL CONSERVATION DISTRICT.

THIS APPROVAL EXPIRES _____
WRITTEN REQUEST FOR EXTENSION MAY BE SUBMITTED TO THE DISTRICT.

THIS PLAN MEETS THE TECHNICAL REQUIREMENTS OF THE U.S.D.A. NATURAL RESOURCES CONSERVATION SERVICE.

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	

SIGNED: THIS PERMIT EXPIRES ON:

DATE: DATE:

LEGEND:

- Property Line
- Adjacent Property Line
- Right of Way
- Existing 1x Contour (-173-)
- Existing 5x Contour (175)
- Existing High Water Mark
- Existing EOP/FOC
- Existing Points (+ 177.43)
- Existing Storm Drain
- Existing Building
- Existing Light Post
- Existing Monitoring Well
- Limits of Disturbance

REQUIRED PERMITS

PRIOR TO ANY DEVELOPMENT OF THE SITE, THE FOLLOWING PERMITS AND/OR AUTHORIZATIONS WILL BE REQUIRED.

- SEDIMENT CONTROL APPROVAL FROM THE CHARLES SOIL CONSERVATION DISTRICT
- DEVELOPMENT SERVICES PERMIT FROM CHARLES COUNTY PGM

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

COVER SHEET

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

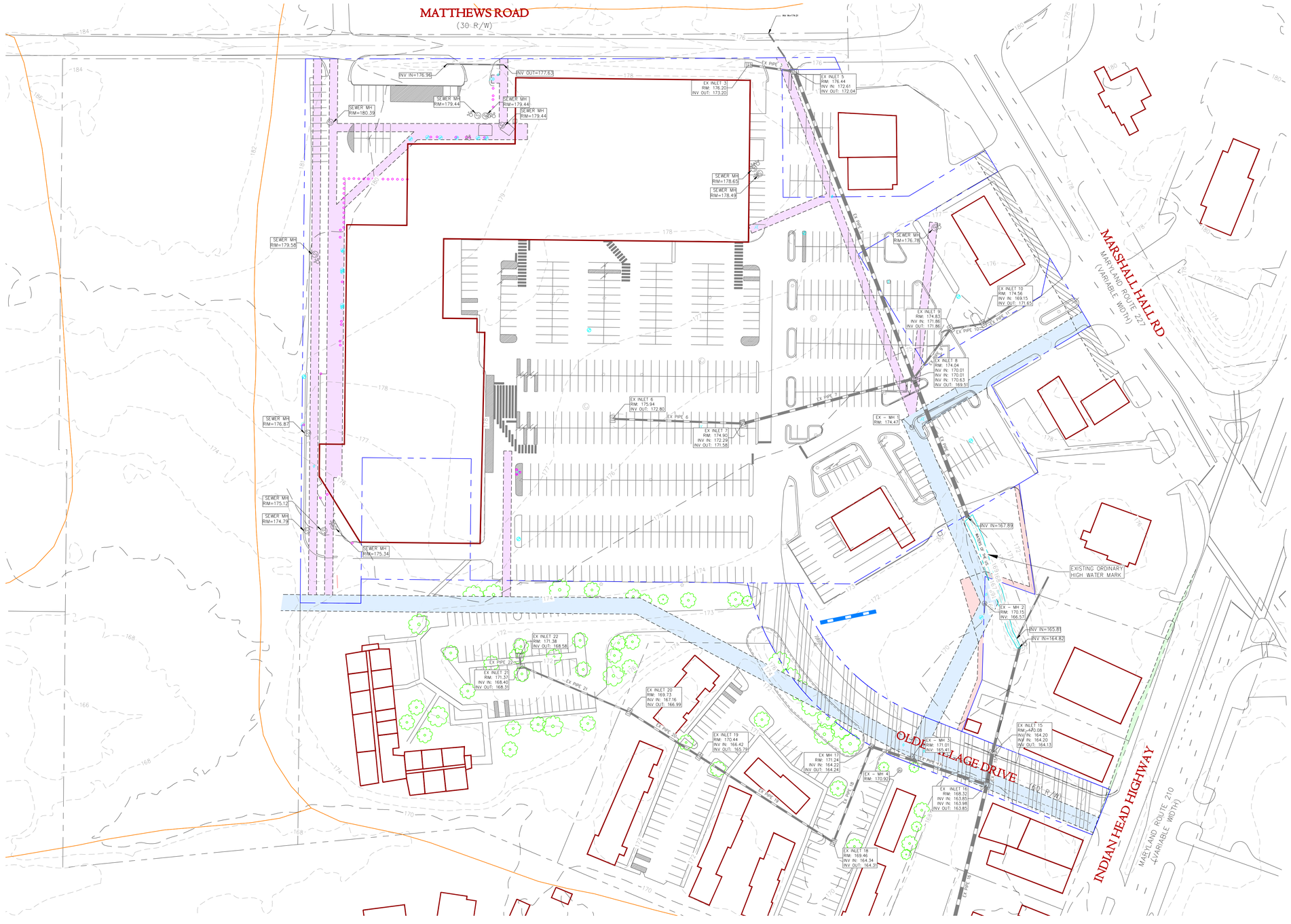
PROJECT DATA	
DRAWN BY:	RB
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	NTS

09-047 PROJ. NO.

CE 012210.dwg File Name:

1 SHEET NO.

PGM# VCI09-0078



LEGEND:

- Property Line
- Adjacent Property Line
- Right of Way
- Existing 1x Contour
- Existing 5x Contour
- Existing High Water Mark
- Existing Edge of Pavement
- Existing Points
- Existing Storm Drain
- Existing Building
- Existing Light Post
- Existing Monitoring Well
- Existing Water & Sewer Easement
- Existing Utility Easement
- Existing Drainage Easement
- Existing Gas Easement
- Existing Access Easement
- Revertible Easement
- Proposed EOP & BOC
- Proposed Storm Drain

PGM# VCI09-0078

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: 36310 , EXPIRATION DATE: 11/17/2012 .

STATE OF MARYLAND — RICHARD PORTER — 36310 — PROFESSIONAL ENGINEER

CHARLES COUNTY GOVERNMENT

DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	
SIGNED:					THIS PERMIT EXPIRES ON:
DATE:					DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

EXISTING CONDITIONS PLAN

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

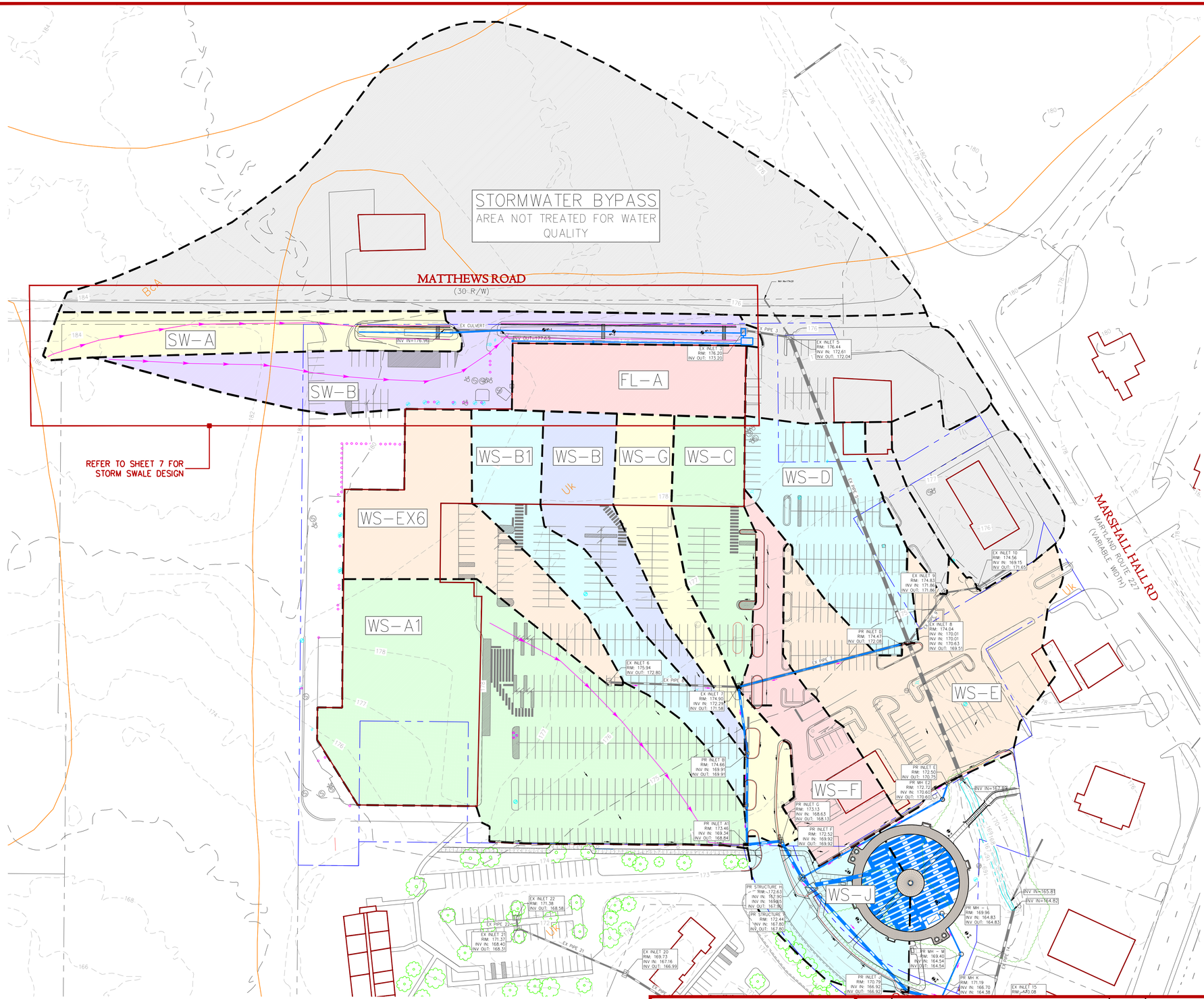
PROJECT DATA	
DRAWN BY:	RB
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	1" = 60'

09-047
PROJ. NO.

CE 012210.dwg
File Name:

2
SHEET NO.

PGM# VCI09-0078



WATERSHED KEY:

WS A	= 51,185 SF (1.18 AC.)	
WS A-1	= 65,080 SF (1.49 AC.)	
WS B	= 23,864 SF (0.55 AC.)	
WS B-1	= 30,995 SF (0.71 AC.)	
WS C	= 25,181 SF (0.58 AC.)	
WS-D	= 37,909 SF (0.87 AC.)	
WS-E	= 64,580 SF (1.48 AC.)	
WS-F	= 29,052 SF (0.67 AC.)	
WS-G	= 29,326 SF (0.67 AC.)	
WS-J	= 29,113 SF (0.67 AC.)	
WS-EX6	= 39,142 SF (0.90 AC.)	
WS-SWA	= 26,097 SF (0.60 AC.)	
WS-SWB	= 44,055 SF (1.01 AC.)	
WS-FL-A	= 25,050 SF (0.58 AC.)	
BYPASS	= 290,631 SF (6.67 AC.)	
TOTAL	= 811,260 SF (18.62 AC.)	

LEGEND

- Property Line
- Existing Vegetation Line
- Existing Edge of Pavement
- Existing Centerline of Road
- Existing Building
- Existing Contour 1x (84)
- Existing Contour 5x (80)
- Existing Culvert Pipe
- Existing Soil Line
- Proposed Watershed Line
- Proposed Contour 1x (84)
- Proposed Contour 5x (80)
- Proposed Culvert Pipe
- Proposed Top of Swale
- Proposed Bottom of Swale
- Proposed Centerline of Swale
- Proposed TOC Flowpath
- Proposed LOD Line (LOD)
- Proposed Vegetation Line
- Utility Pole
- Road Sign
- Electric Box (E)
- Telephone Box (T)
- Mailbox
- Sewer Manhole (S)
- Water Valve
- Fire Hydrant
- Light Post
- Water Meter (W)
- Flowline Grades 174.50
- Proposed Spot Shots 174.50
- Drainage Arrows
- Pipe Flow Arrows

WATERSHED DATA

WATERSHED ID	Tc VALUE	RCN #
WS A	7	98
WS A-1	7	98
WS B	7	98
WS B-1	7	98
WS C	7	98
WS D	7	98
WS E	7	97
WS F	7	95
WS G	7	97
WS J	7	91
WS EX6	7	98
WS SWA	11.6	82
WS SWB	11.6	89
WS FL-A	7	98

NOTES:

1. THE STORMWATER BYPASS WATERSHEDS ARE SHOWN FOR BREAKDOWN PURPOSED ONLY AND ARE NOT BEING TREATED FOR WATER QUALITY VOLUME.
2. TYPICAL TIME OF CONCENTRATION SHOWN, BUT COUNTY MINIMUM OF 7 MINUTES WAS USED FOR ALL CALCULATIONS
3. FOR STORMWATER CALCULATIONS, SEE SEPERATE STORMWATER REPORT.

STATE OF MARYLAND · RICHARD R. PRICE · LICENSE #23310 · PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 36310, EXPIRATION DATE: 11/17/2012.

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	
SIGNED:					THIS PERMIT EXPIRES ON:
DATE:					DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

SOIL TYPES AND DESCRIPTIONS

BcA	(C)	BELTSVILLE-AQUASCO COMPLEX, 0%-2% SLOPES
UmB	(C)	URBAN LAND-BELTSVILLE COMPLEX, 0-5% SLOPES
Uk	(D)	URBAN LAND

PROPOSED STORMWATER DRAINAGE MAP

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA

DRAWN BY:	RB
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	1" = 60'

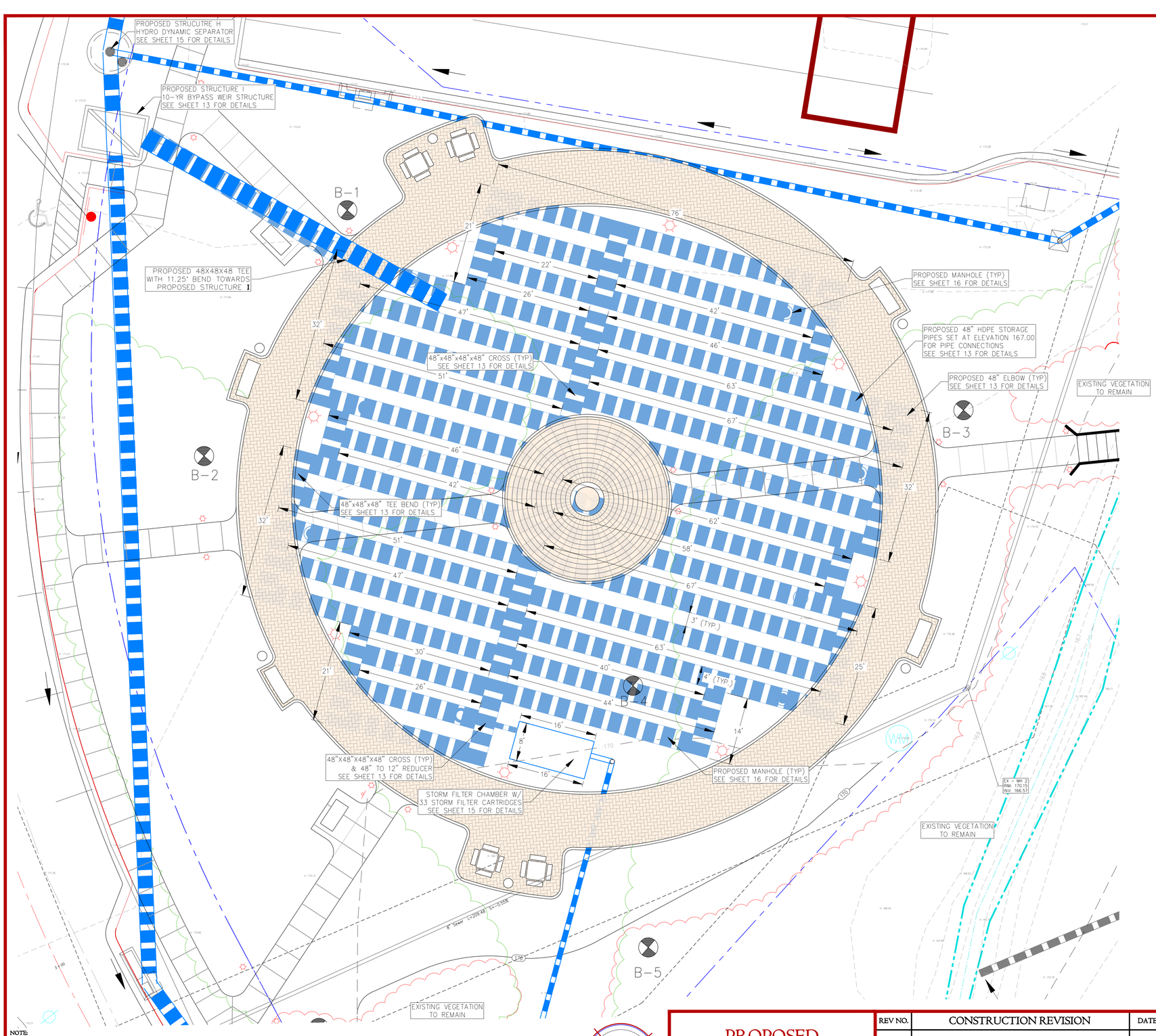
09-047
PROJ. NO.

CE 012210.dwg
File Name:

3
SHEET NO.

PGM# VCI09-0078

PGM# VCI09-0078



PGM# VCI09-0078

NOTES:

1. REFER TO SHEET 8 FOR STORMWATER PROFILES
2. REFER TO SHEEST 13-15 FOR STORMWATER DETAILS.
3. FOR PROPOSED PARK , PERVIOUS PAVER, INTERNAL SIDEWALK, AND LANDSCAPING PLAN, REFER TO SHEETS 9-12

TOTAL LENGTH OF 48" HDPE

REQUIRED = 1818 LF

PIPE FITTING SCHEDULE

FITTING TYPE	NUMBER
48" 11.25° BEND	1
48" ELBOW	12
48"x48"x48" TEE	30
48"x48"x48"x48" CROSS	15
48" TO 12" REDUCER	1
MANHOLE	10

LEGEND

- Property Line
- Existing Vegetation Line
- Existing Edge of Pavement
- Existing Centerline of Road
- Existing Building
- Existing Contour 1x — 84 —
- Existing Contour 5x — 80 —
- Existing Culvert Pipe
- Existing Soil Line
- Proposed Watershed Line
- Proposed Contour 1x (84)
- Proposed Contour 5x (80)
- Proposed Culvert Pipe
- Proposed Top of Swale
- Proposed Bottom of Swale
- Proposed Centerline of Swale
- Proposed TOC Flowpath
- Proposed LOD Line — LOD —
- Proposed Vegetation Line
- Utility Pole
- Electric Box (E)
- Mailbox
- Water Valve
- Light Post
- Flowline Grades 174.50
- Proposed Spot Shots 174.50
- Drainage Arrows
- Pipe Flow Arrows
- Road Sign
- Telephone Box (T)
- Sewer Manhole (S)
- Fire Hydrant
- Water Meter (WM)

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: 36310 , EXPIRATION DATE: 11/17/2012 .

STATE OF MARYLAND — RICHARD F. POOLE — LICENSE NUMBER — PROFESSIONAL ENGINEER

CHARLES COUNTY GOVERNMENT

DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

				REMARKS OR CONDITIONS
GRADING	CONSTRUCTION		AS-BUILT	
ROADS	CONSTRUCTION		AS-BUILT	
STORM DRAINAGE	CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT	CONSTRUCTION		AS-BUILT	
WATER	CONSTRUCTION		AS-BUILT	
SEWER	CONSTRUCTION		AS-BUILT	
OTHER	CONSTRUCTION		AS-BUILT	
SIGNED:				THIS PERMIT EXPIRES ON:
DATE:				DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

PROPOSED STORAGE CHAMBER LAYOUT PLAN

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA

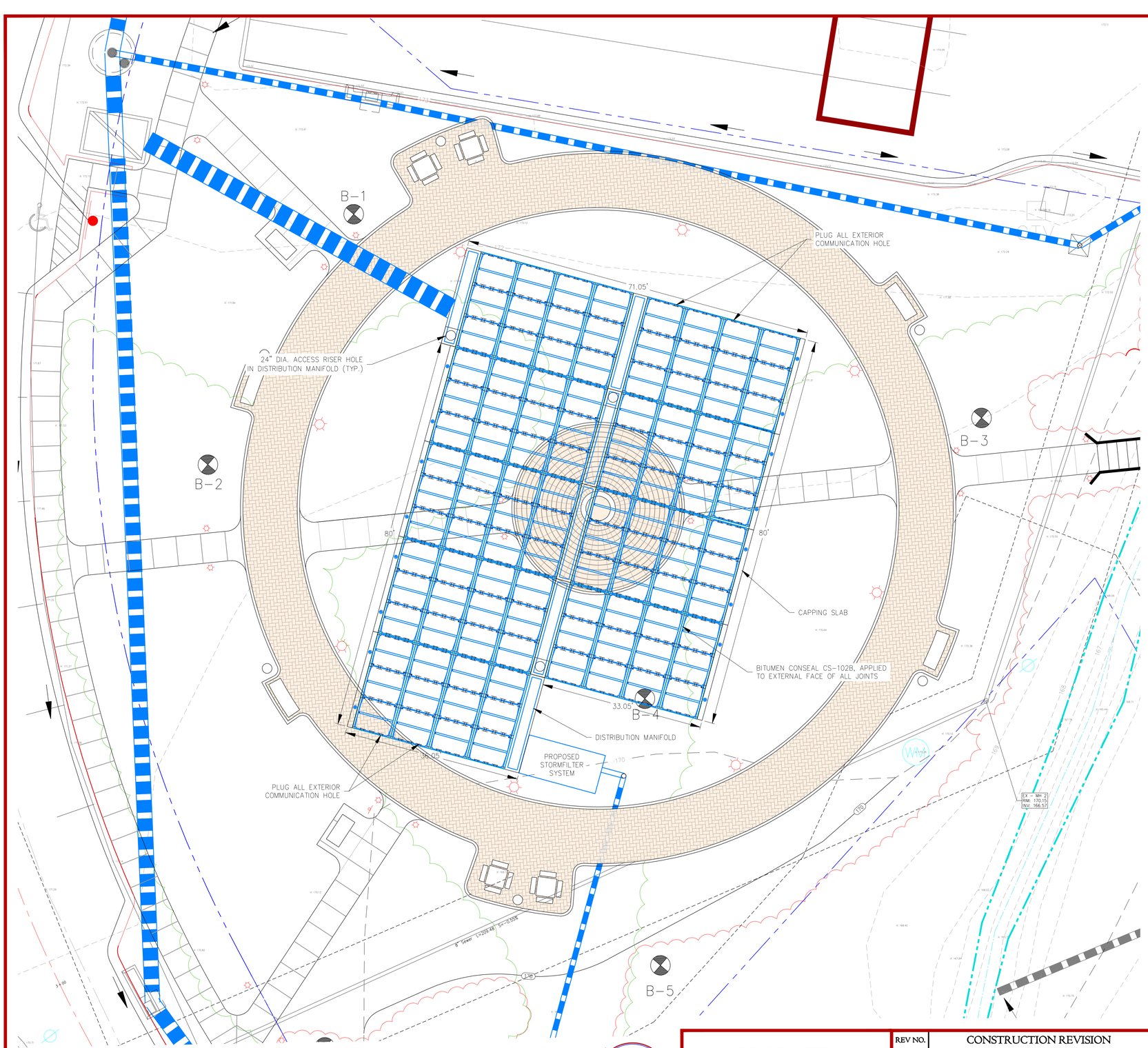
DRAWN BY: BZ
CHECK BY: RP
CHARLES COUNTY
BRYANS ROAD, MARYLAND
F.B. NO: 00-00-00
T.M. NO. 0-00-00-00
DATE: 05/20/10
SCALE: 1" = 10'

09-047
PROJ. NO.

CD 012210.dwg
File Name:

4A
SHEET NO.

PGM# VCI09-0078



PGM# VCI09-0078

NOTES:

1. REFER TO SHEET 8 FOR STORMWATER PROFILES
2. REFER TO SHEETS 13-15 FOR STORMWATER DETAILS.
3. FOR PROPOSED PARK , PERVIOUS PAVER, INTERNAL SIDEWALK, AND LANDSCAPING PLAN, REFER TO SHEETS 9-12

TERRE HILL STORMWATER SYSTEM COMPONENTS

TYPE	SYMBOL	NUMBER
TERRE STORAGE UNIT		36
CAPPING SLAB		8
DISTRIBUTION MANIFOLD		6

LEGEND

- Property Line
- Existing Vegetation Line
- Existing Edge of Pavement
- Existing Centerline of Road
- Existing Building
- Existing Contour 1x (84)
- Existing Contour 5x (80)
- Existing Culvert Pipe
- Existing Soil Line
- Proposed Watershed Line
- Proposed Contour 1x (84)
- Proposed Contour 5x (80)
- Proposed Culvert Pipe
- Proposed Top of Swale
- Proposed Bottom of Swale
- Proposed Centerline of Swale
- Proposed TOC Flowpath
- Proposed LOD Line
- Proposed Vegetation Line
- Utility Pole
- Electric Box (E)
- Mailbox
- Water Valve
- Light Post
- Flowline Grades (174.50)
- Proposed Spot Shots (174.50)
- Drainage Arrows
- Pipe Flow Arrows
- Road Sign
- Telephone Box (T)
- Sewer Manhole (S)
- Fire Hydrant
- Water Meter (W)

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: 36310 , EXPIRATION DATE: 11/17/2012 .

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

				REMARKS OR CONDITIONS
GRADING	CONSTRUCTION		AS-BUILT	
ROADS	CONSTRUCTION		AS-BUILT	
STORM DRAINAGE	CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT	CONSTRUCTION		AS-BUILT	
WATER	CONSTRUCTION		AS-BUILT	
SEWER	CONSTRUCTION		AS-BUILT	
OTHER	CONSTRUCTION		AS-BUILT	

SIGNED:

DATE:

THIS PERMIT EXPIRES ON:

DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

PROPOSED ALTERNATIVE #1 TERRE ARCH SYSTEM

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA

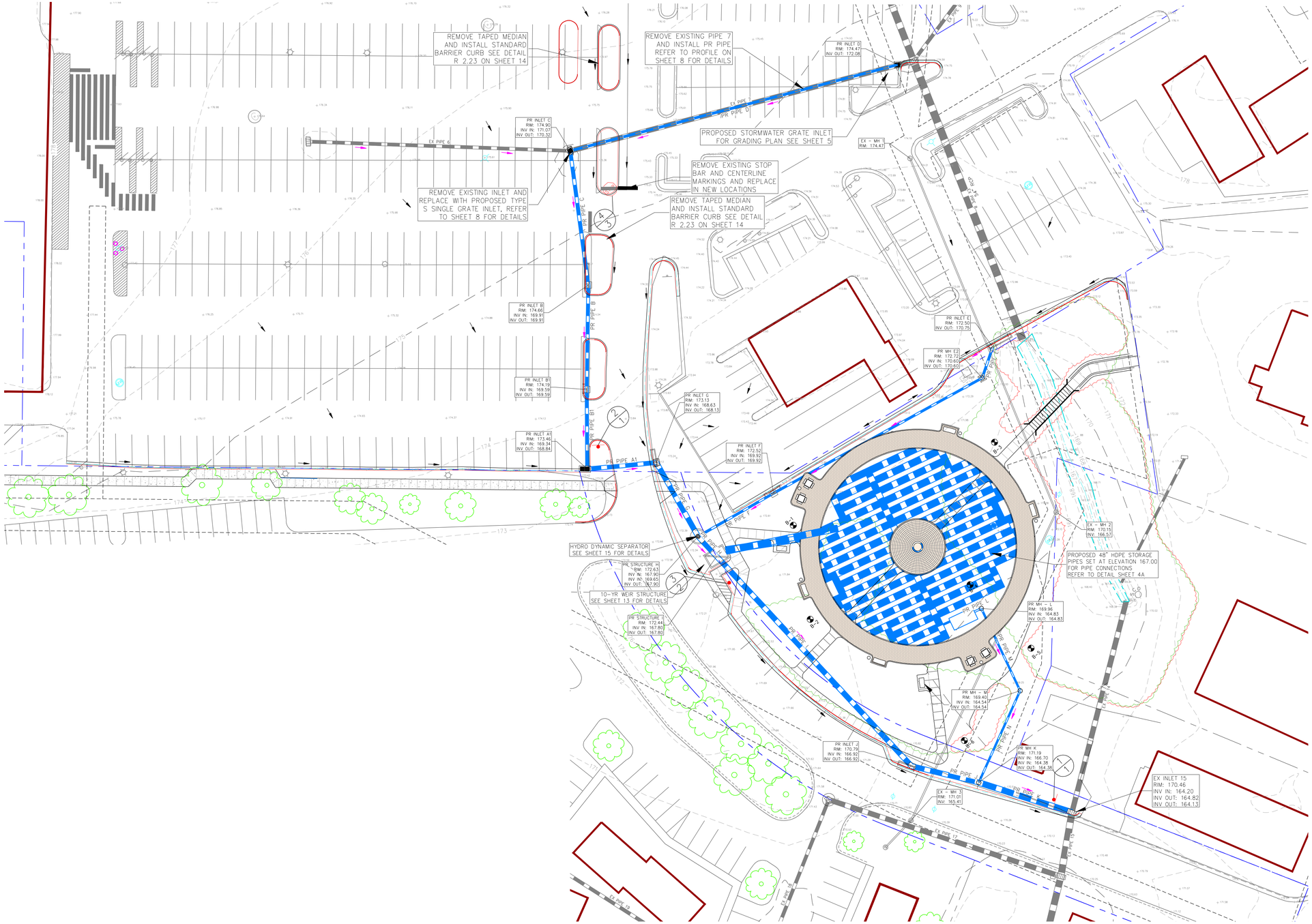
DRAWN BY:	BZ
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	1" = 10'

09-047
PROJ. NO.

CD 012210.dwg
File Name:

4B
SHEET NO.

PGM# VCI09-0078



LEGEND

- Property Line
- Existing Vegetation Line
- Existing Edge of Pavement
- Existing Centerline of Road
- Existing Building
- Existing Contour 1x
- Existing Contour 5x
- Existing Culvert Pipe
- Existing Soil Line
- Proposed Watershed Line
- Proposed Contour 1x
- Proposed Contour 5x
- Proposed Culvert Pipe
- Proposed Top of Swale
- Proposed Bottom of Swale
- Proposed Centerline of Swale
- Proposed TOC Flowpath
- Proposed LOD Line
- Proposed Vegetation Line
- Utility Pole
- Road Sign
- Electric Box
- Telephone Box
- Mailbox
- Sewer Manhole
- Water Valve
- Fire Hydrant
- Light Post
- Water Meter
- Flowline Grades
- Proposed Spot Shots
- Drainage Arrows
- Pipe Flow Arrows

PGM# VCI09-0078

NOTES:

1. REFER TO SHEET 8 FOR STORMWATER PROFILES & STRUCTURE/PIPE TABLES.
2. REFER TO SHEETS 13-15 FOR STORMWATER DETAILS.
3. FOR PROPOSED PARK , PERVIOUS PAVER, INTERNAL SIDEWALK, AND LANDSCAPING PLAN DETAILS, REFER TO SHEETS 9-12
4. REFER TO SHEET 14 FOR TRAFFIC CONTROL PLANS
5. FOR STORMWATER CALCULATIONS, SEE SEPERATE STORMWATER MANAGEMENT REPORT.

STATE OF MARYLAND · RICHARD F. POOLE · 36310 · LICENSE BOARDING · PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 36310 , EXPIRATION DATE: 11/17/2012 .

CHARLES COUNTY GOVERNMENT

DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

				REMARKS OR CONDITIONS
GRADING	CONSTRUCTION		AS-BUILT	
ROADS	CONSTRUCTION		AS-BUILT	
STORM DRAINAGE	CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT	CONSTRUCTION		AS-BUILT	
WATER	CONSTRUCTION		AS-BUILT	
SEWER	CONSTRUCTION		AS-BUILT	
OTHER	CONSTRUCTION		AS-BUILT	
SIGNED:				THIS PERMIT EXPIRES ON:
DATE:				DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

PROPOSED STORMWATER MANAGEMENT PLAN

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA

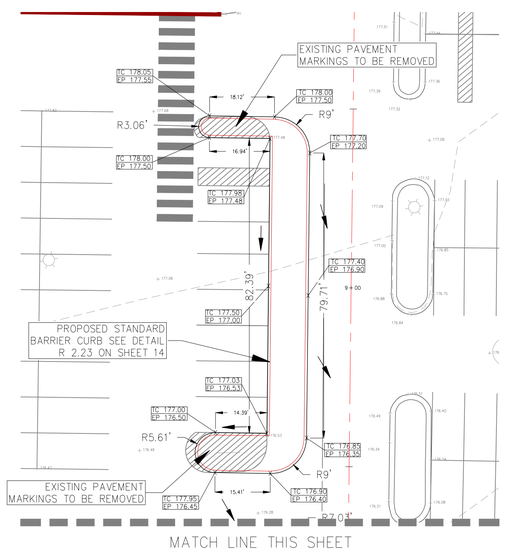
DRAWN BY:	RB
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	1" = 30'

09-047
PROJ. NO.

CE 012210.dwg
File Name:

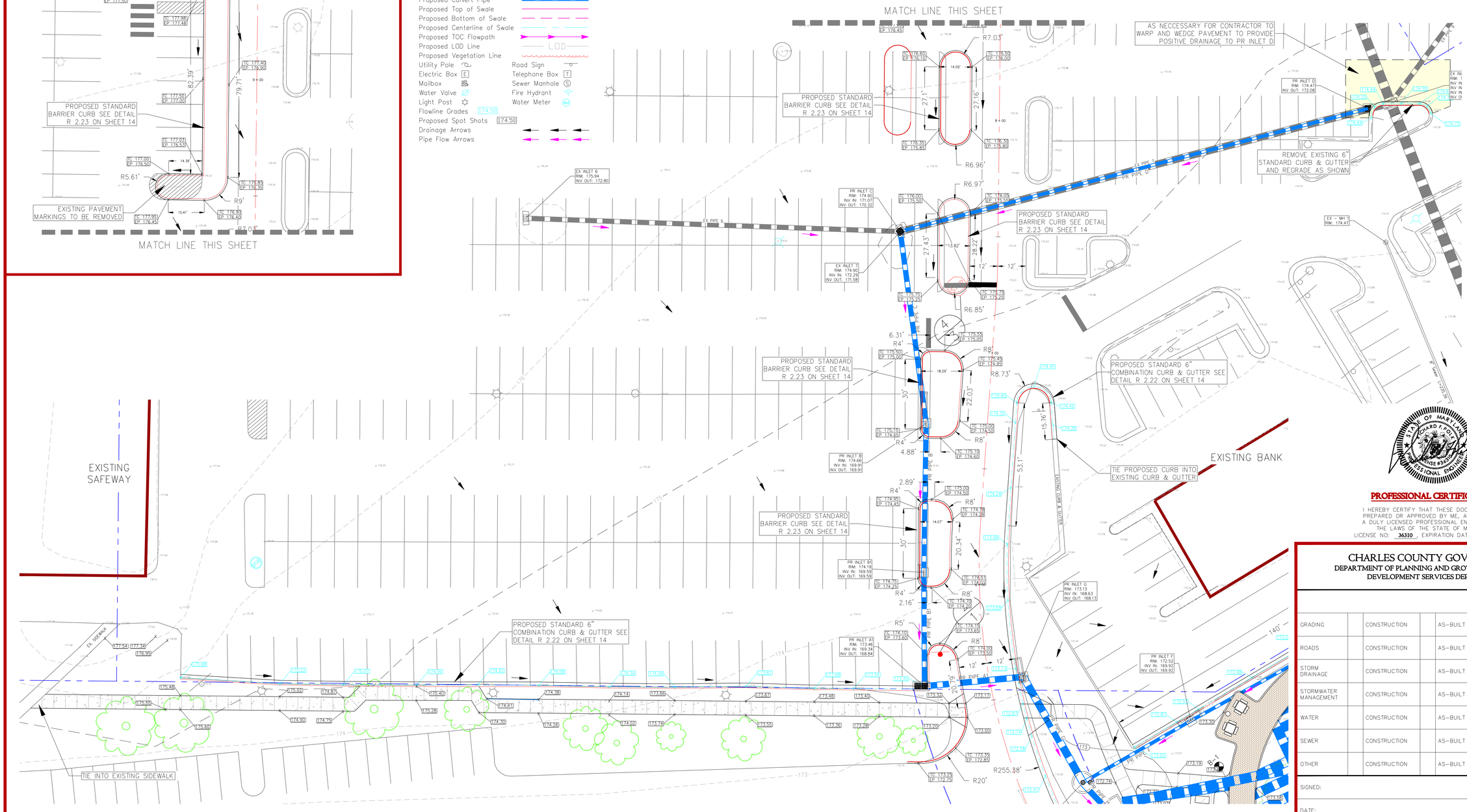
4
SHEET NO.

PGM# VCI09-0078



LEGEND

- Property Line
- Existing Vegetation Line
- Existing Edge of Pavement
- Existing Centerline of Road
- Existing Building
- Existing Contour 1x — 84
- Existing Contour 5x — 80
- Existing Culvert Pipe
- Existing Soil Line
- Proposed Watershed Line
- Proposed Contour 1x — 84
- Proposed Contour 5x — 80
- Proposed Culvert Pipe
- Proposed Top of Swale
- Proposed Bottom of Swale
- Proposed Centerline of Swale
- Proposed TOC Flowpath
- Proposed LOD Line — LOD
- Proposed Vegetation Line
- Utility Pole
- Electric Box [E]
- Mailbox [MB]
- Water Valve
- Light Post
- Flowline Grades [174.50]
- Proposed Spot Shots [174.50]
- Drainage Arrows
- Pipe Flow Arrows
- Road Sign
- Telephone Box [T]
- Sewer Manhole [S]
- Fire Hydrant
- Water Meter [WM]



STATE OF MARYLAND
RICHARD F. POTTS
LICENSE NUMBER
PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 36310, EXPIRATION DATE: 11/17/2012 .

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

			REMARKS OR CONDITIONS
GRADING	CONSTRUCTION	AS-BUILT	
ROADS	CONSTRUCTION	AS-BUILT	
STORM DRAINAGE	CONSTRUCTION	AS-BUILT	
STORMWATER MANAGEMENT	CONSTRUCTION	AS-BUILT	
WATER	CONSTRUCTION	AS-BUILT	
SEWER	CONSTRUCTION	AS-BUILT	
OTHER	CONSTRUCTION	AS-BUILT	
SIGNED:			THIS PERMIT EXPIRES ON:
DATE:			DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

PROPOSED GRADING PLAN

REV NO.	CONSTRUCTION REVISION	DATE

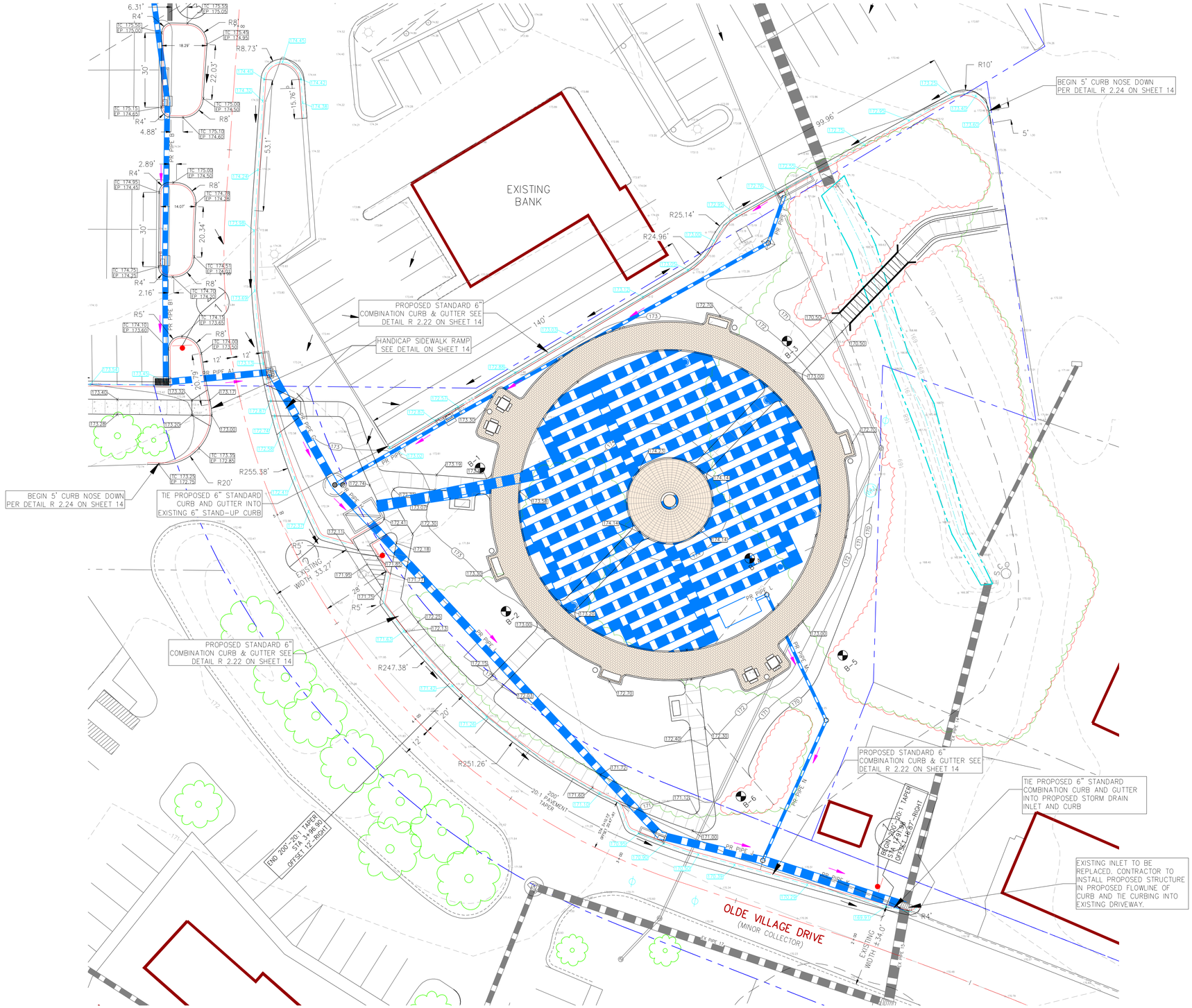
VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA	
DRAWN BY:	RB
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	1" = 20'

09-047 PROJ. NO.

CE 012210.dwg File Name:

5 SHEET NO.



LEGEND

- Property Line
- Existing Vegetation Line
- Existing Edge of Pavement
- Existing Centerline of Road
- Existing Building
- Existing Contour 1x — 84
- Existing Contour 5x — 80
- Existing Culvert Pipe
- Existing Soil Line
- Proposed Watershed Line
- Proposed Contour 1x — 84
- Proposed Contour 5x — 80
- Proposed Culvert Pipe
- Proposed Top of Swale
- Proposed Bottom of Swale
- Proposed Centerline of Swale
- Proposed TOC Flowpath
- Proposed LOD Line
- Proposed Vegetation Line
- Utility Pole
- Road Sign
- Electric Box [E]
- Telephone Box [T]
- Mailbox
- Sewer Manhole (S)
- Water Valve
- Fire Hydrant
- Light Post
- Water Meter (W)
- Flowline Grades 174.50
- Proposed Spot Shots 174.50
- Drainage Arrows
- Pipe Flow Arrows

NOTES:

1. FOR PARK DESIGN LAYOUT AND DETAILS PLEASE REFER TO SHEETS 9–11.

STATE OF MARYLAND · RICHARD A. PRICE · REVERSE #36310 · PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 36310 , EXPIRATION DATE: 11/17/2012 .

CHARLES COUNTY GOVERNMENT

DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

				REMARKS OR CONDITIONS
GRADING	CONSTRUCTION		AS-BUILT	
ROADS	CONSTRUCTION		AS-BUILT	
STORM DRAINAGE	CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT	CONSTRUCTION		AS-BUILT	
WATER	CONSTRUCTION		AS-BUILT	
SEWER	CONSTRUCTION		AS-BUILT	
OTHER	CONSTRUCTION		AS-BUILT	

SIGNED: — THIS PERMIT EXPIRES ON:

DATE: — DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

PROPOSED GRADING PLAN

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

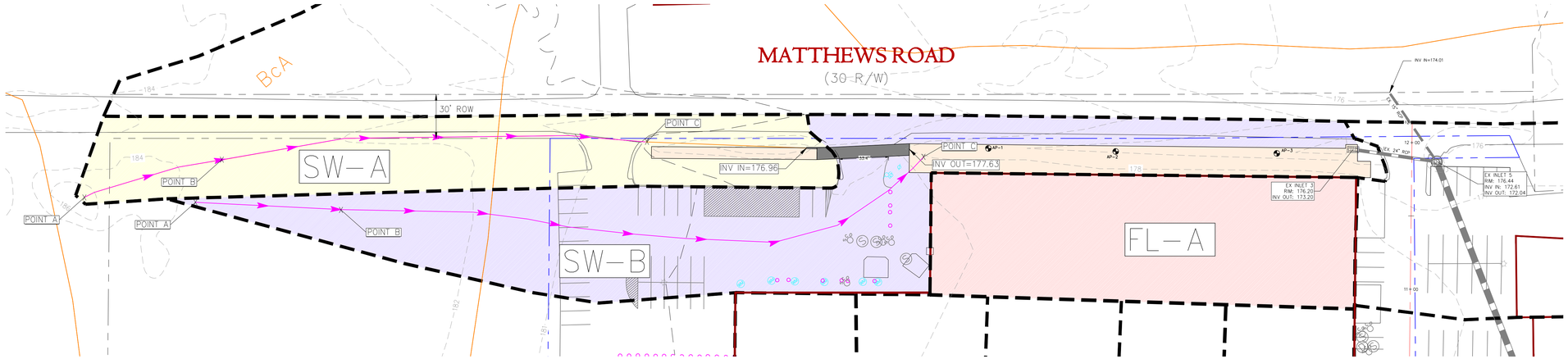
PROJECT DATA

DRAWN BY:	RB
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	1" = 20'

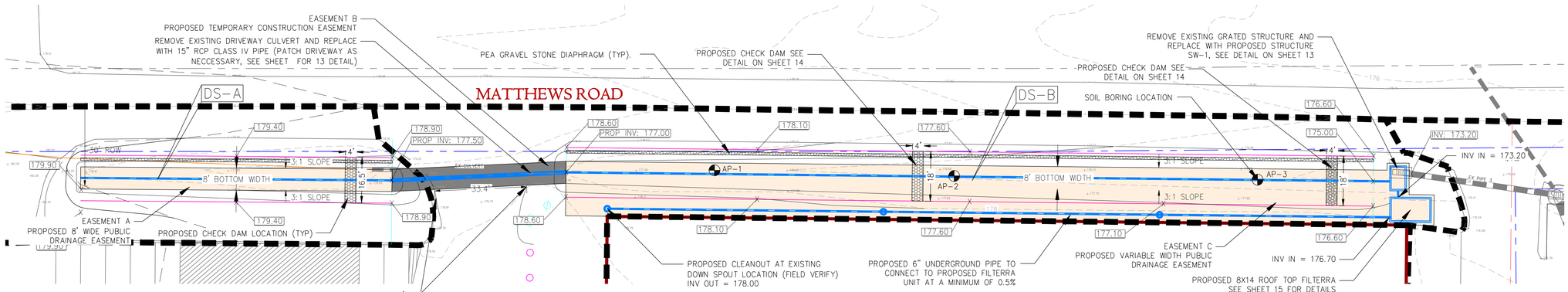
09-047 — PROJ. NO.
CE 012210.dwg — File Name:
6 — SHEET NO.

PGM# VCI09-0078

PGM# VCI09-0078



DRAINAGE DIVIDE MAP
SCALE 1" = 40'



PROPOSED GRADING PLAN
SCALE 1" = 20'

SWALE DETAILS:

	C	D	E	F	G	H	I	J	K	L		
Watershed	Swale Length (ft)	Swale Invert Up Stream	Swale Invert Down Stream	Swale Slope (ft/ft)	Swale Side Slope (x:1)	Swale Bottom Width (ft)	Check Dam Height (in)	Stone Depth (in)	Swale Depth (ft)	Swale Width (ft)	V10	Q10 Flow (cfs)
SW-A	112	178.60	177.50	0.98%	3	8	11.40	2	1.35	16.07	1.58	2.58
SW-B	297	177.00	175.00	0.67%	3	8	13.20	2	1.60	17.58	1.84	5.40

FOR PROPOSED EXPLANATION OF ALL DRY SWALE DETAILS, PLEASE REFER TO TYPICAL SWALE DETAIL ON SHEET 13

NOTES:
1. CONTRACTOR SHALL REVIEW EXISTING CULVERT TO DETERMINE IF IT IS SUITABLE FOR REUSE AT INVERTS INDICATED ON THE PLANS. OTHERWISE, A NEW CULVERT SHALL BE INSTALLED PER THE PROFILE ON THIS SHEET.
2. FOR DITCH SIZING COMPUTATIONS PLEASE SEE ENGINEERING REPORT.
3. CONTRACTOR TO MAINTAIN ACCESS TO SHOPPING CENTER AT ALL TIMES.
4. REFER TO SHEET 14 FOR CHECK DAM DETAIL.
5. ALL PROPOSED SWALES TO BE LINED WITH A GRASS-LEGUME OR TALL FESCUE MIXTURE. PLEASE REFER TO THE ENGINEERING REPORT FOR 2-YEAR VELOCITY CALCULATIONS.

LEGEND

Property Line		Utility Pole	
Existing Vegetation Line		Electric Box	E
Existing Edge of Pavement		Mailbox	
Existing Centerline of Road		Water Valve	
Existing Building		Light Post	
Existing Contour 1x	84	Flowline Grades	174.50
Existing Contour 5x	80	Proposed Spot Shots	174.50
Existing Culvert Pipe		Drainage Arrows	
Existing Soil Line		Pipe Flow Arrows	
Proposed Watershed Line		Public Drainage Easement	
Proposed Contour 1x	84	Temporary Construction Easement	
Proposed Contour 5x	80	Road Sign	
Proposed Culvert Pipe		Telephone Box	T
Proposed Top of Swale		Sewer Manhole	S
Proposed Bottom of Swale		Fire Hydrant	
Proposed Centerline of Swale		Water Meter	WM
Proposed TOC Flowpath			
Proposed LOD Line	LOD		
Proposed Vegetation Line			

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: 36310, EXPIRATION DATE: 11/17/2012.

STATE OF MARYLAND · RICHARD F. POWELL · 36310 · PROFESSIONAL ENGINEER

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	

SIGNED: — THIS PERMIT EXPIRES ON:

DATE: — DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

PROPOSED STORMWATER SWALE PLAN

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

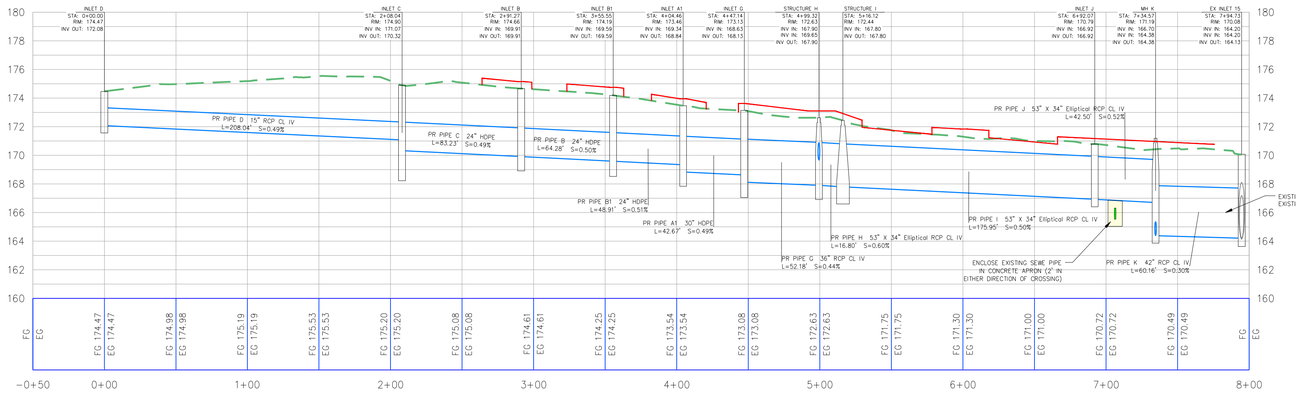
PROJECT DATA

DRAWN BY:	RB
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	AS SHOWN

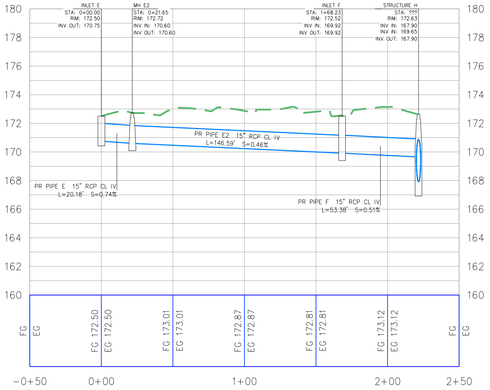
09-047 — PROJ. NO.
CE 012210.dwg — File Name:
7 — SHEET NO.

PGM# VCI09-0078

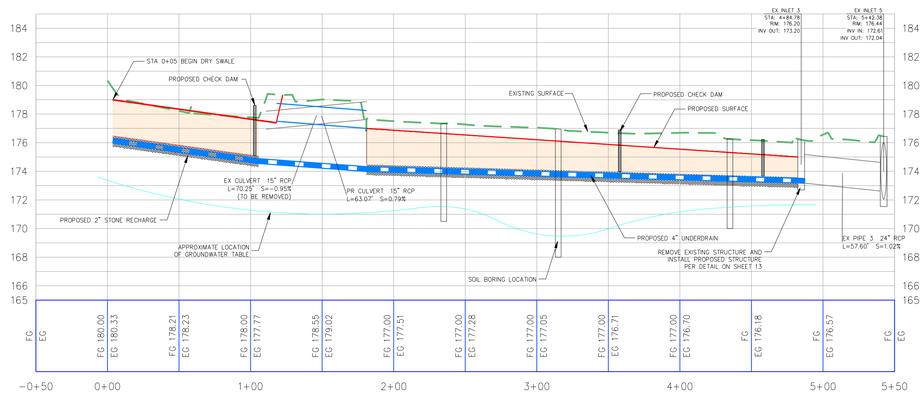
PGM# VCI09-0078



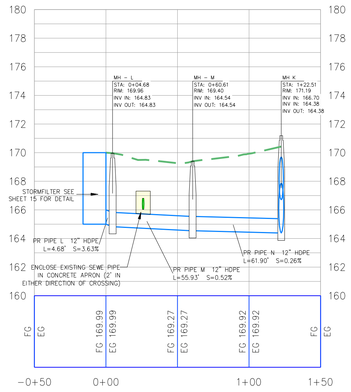
PR INLET D - EX INLET 15



INLET E - INLET G



DRY SWALE PROFILE



STORM FILTER OUTFALL

STORM DRAIN PIPE SCHEDULE

NAME	TYPE	LENGTH	SLOPE	INVERT IN	INVERT OUT
PIPE EX CULVERT	15" RCP	70.25'	−0.95%	176.96'	177.63'
PIPE EX PIPE 3	24" RCP	57.60'	1.02%	173.20'	172.61'
PIPE EX PIPE 5	48" RCP	406.90'	0.50%	172.04'	170.01'
PIPE EX PIPE 6	24" RCP	161.07'	0.32%	172.80'	172.29'
PIPE EX PIPE 7	36" RCP	218.11'	0.72%	171.58'	170.01'
PIPE EX PIPE 8	54" RCP	183.95'	0.88%	169.51'	167.89'
PIPE EX PIPE 9	24" RCP	77.01'	1.60%	171.86'	170.63'
PIPE EX PIPE 10	18" RCP	40.38'	−0.52%	171.65'	171.86'
PIPE EX PIPE 11	24" RCP	41.82'	3.00%	170.41'	169.15'
PIPE EX PIPE 14	36" RCP	134.08'	0.46%	164.82'	164.20'
PIPE EX PIPE 15	48" RCP	39.99'	0.70%	164.13'	163.85'
PIPE EX PIPE 16	48" RCP	255.11'	0.66%	163.85'	162.16'
PIPE EX PIPE 17	36" RCP	150.21'	0.17%	164.24'	163.98'
PIPE EX PIPE 18	24" RCP	127.41'	0.07%	164.31'	164.22'
PIPE EX PIPE 19	24" RCP	196.93'	0.74%	165.79'	164.34'
PIPE EX PIPE 20	24" RCP	102.56'	0.56%	166.99'	166.42'
PIPE EX PIPE 21	18" RCP	145.03'	0.79%	168.31'	167.16'
PIPE EX PIPE 22	18" RCP	12.95'	1.39%	168.58'	168.40'
PIPE PR CULVERT	15" RCP	63.07'	0.79%	177.50'	177.00'
PIPE PR PIPE A1	30" HDPE	42.67'	0.49%	168.84'	168.63'
PIPE PR PIPE B	24" HDPE	64.28'	0.50%	169.91'	169.59'
PIPE PR PIPE B1	24" HDPE	48.91'	0.51%	169.59'	169.34'
PIPE PR PIPE C	24" HDPE	83.23'	0.49%	170.32'	169.91'
PIPE PR PIPE D	15" RCP CL IV	208.04'	0.49%	172.08'	171.07'
PIPE PR PIPE E	15" RCP CL IV	20.18'	0.74%	170.75'	170.60'
PIPE PR PIPE E2	15" RCP CL IV	146.59'	0.46%	170.60'	169.92'
PIPE PR PIPE F	15" RCP CL IV	53.38'	0.51%	169.92'	169.65'
PIPE PR PIPE G	36" RCP CL IV	52.18'	0.44%	168.13'	167.90'
PIPE PR PIPE H	53" X 34" Elliptical RCP CL IV	16.80'	0.60%	167.90'	167.80'
PIPE PR PIPE I	53" X 34" Elliptical RCP CL IV	175.95'	0.50%	167.80'	166.92'
PIPE PR PIPE J	53" X 34" Elliptical RCP CL IV	42.50'	0.52%	166.92'	166.70'
PIPE PR PIPE K	42" RCP CL IV	60.16'	0.30%	164.38'	164.20'
PIPE PR PIPE L	12" HDPE	4.68'	3.63%	165.00'	164.83'
PIPE PR PIPE M	12" HDPE	55.93'	0.52%	164.83'	164.54'
PIPE PR PIPE N	12" HDPE	61.90'	0.26%	164.54'	164.38'

STORM DRAIN STRUCTURE SCHEDULE

NAME	TYPE	RIM	CONNECTED PIPES
EX INLET 16	Catch Basin	168.32'	3
EX HW 17	Catch Basin	162.16'	1
EX INLET 3	Catch Basin	176.20'	1
EX INLET 5	Catch Basin	176.44'	2
EX INLET 6	Catch Basin	175.94'	1
EX INLET 7	Catch Basin	174.90'	2
EX INLET 8	Catch Basin	174.04'	4
EX INLET 9	Catch Basin	174.83'	2
EX INLET 10	Catch Basin	174.56'	2
EX INLET 15	Catch Basin	170.08'	3
EX INLET 18	Catch Basin	169.46'	2
EX INLET 19	Catch Basin	170.44'	2
EX INLET 20	Catch Basin	169.73'	2
EX INLET 21	Catch Basin	171.37'	2
EX INLET 22	Catch Basin	171.38'	1
EX MH 17	Catch Basin	171.24'	2
INLET A1	TYPE DOUBLE S INLET – MD 379.04	173.46'	2
INLET B	15' COG INLET – MD 374.51	174.66'	2
INLET B1	5' COG INLET – MD 374.51	174.19'	2
INLET C	TYPE S INLET – MD 379.01	174.90'	2
INLET D	TYPE S INLET – MD 379.01	174.47'	1
INLET E	15' COG INLET – MD 374.61	172.50'	1
INLET F	10' COG INLET – MD 374.61	172.52'	2
INLET G	10' COG INLET – MD 374.51	173.13'	2
INLET J	10' COG INLET – MD 374.51	170.79'	2
MH – L	STANDARD MH – MD 383.01	169.96'	2
MH – M	STANDARD MH – MD 383.01	169.40'	2
MH E2	STANDARD MH – MD 383.01	172.72'	2
MH K	STANDARD DRP MH – MD 383.11	171.19'	3
STRUCTURE H	CDS5640–10	172.63'	3
STRUCTURE I	10–YEAR WEIR	172.44'	2

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: 36310, EXPIRATION DATE: 11/17/2012 .

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

				REMARKS OR CONDITIONS
GRADING	CONSTRUCTION		AS–BUILT	
ROADS	CONSTRUCTION		AS–BUILT	
STORM DRAINAGE	CONSTRUCTION		AS–BUILT	
STORMWATER MANAGEMENT	CONSTRUCTION		AS–BUILT	
WATER	CONSTRUCTION		AS–BUILT	
SEWER	CONSTRUCTION		AS–BUILT	
OTHER	CONSTRUCTION		AS–BUILT	
SIGNED:				THIS PERMIT EXPIRES ON:
DATE:				DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

PROPOSED STORMWATER PROFILES

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA	
DRAWN BY:	RB
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00–00–00
T.M. NO.	0–00–00–00
DATE:	05/20/10
SCALE:	NTS

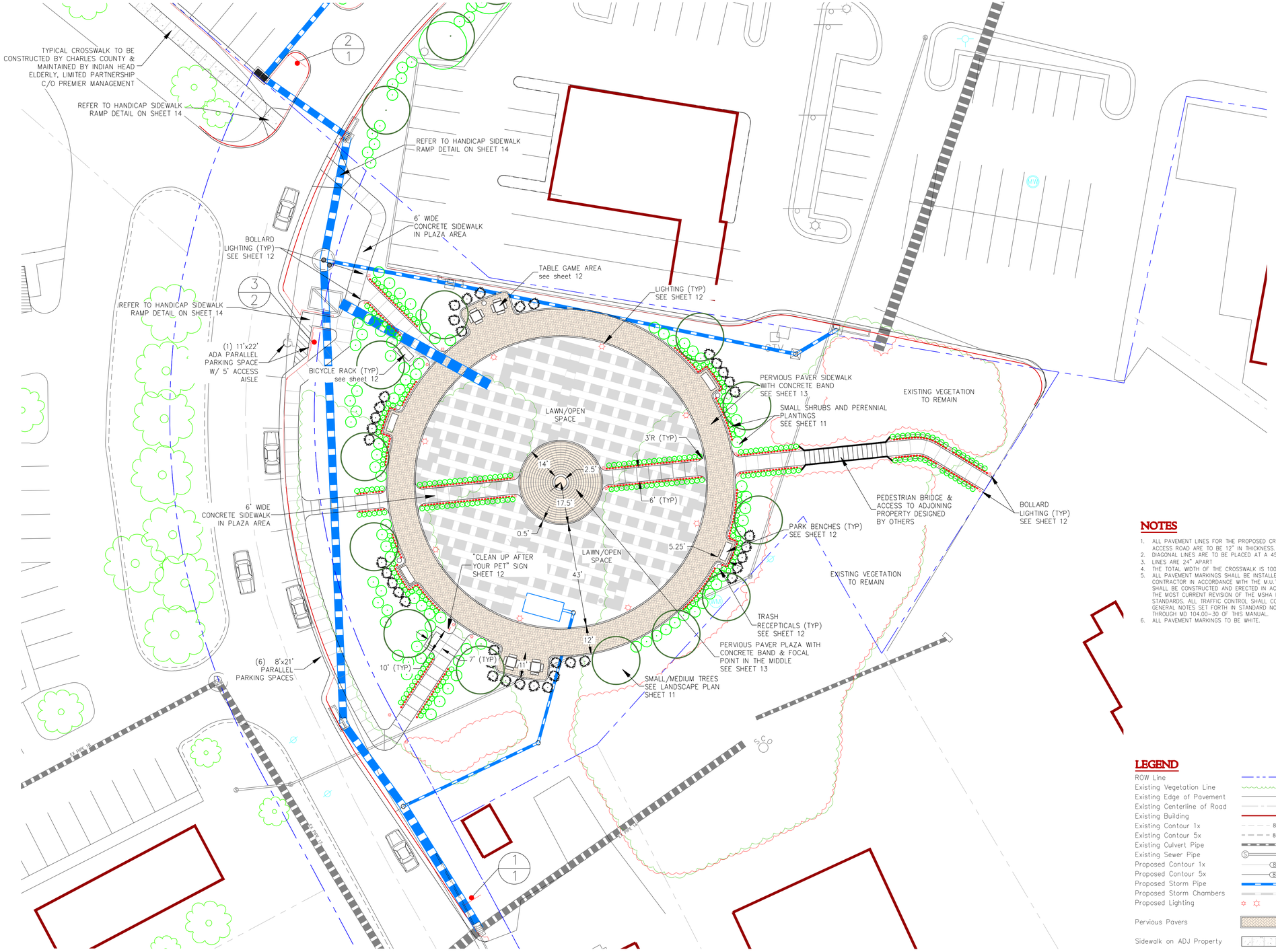
09–047
PROJ. NO.

CE 012210.dwg
File Name:

8
SHEET NO.

PGM# VCI09–0078

PGM# VCI09–0078



SIGNAGE LEGEND

LOCATION	TEXT NO.	SIGN TEXT	SIGN SIZE	MUTCD NO.	MOUNT TYPE
1, 2	1	25 MPH	24" - 30"	R2-1	EXTRUDED ALUMINUM
3	2	RESERVED PARKING	12" - 18"	R7-8	EXTRUDED ALUMINUM
4	3	STOP	30" - 30"	R1-1	EXTRUDED ALUMINUM

NOTES

1. ALL PAVEMENT LINES FOR THE PROPOSED CROSS WALKS ON ACCESS ROAD ARE TO BE 12" IN THICKNESS.
2. DIAGONAL LINES ARE TO BE PLACED AT A 45 DEGREE ANGLE
3. LINES ARE 24" APART
4. THE TOTAL WIDTH OF THE CROSSWALK IS 100" WIDE.
5. ALL PAVEMENT MARKINGS SHALL BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE M.U.T.C.D. ALL SIGNS SHALL BE CONSTRUCTED AND ERECTED IN ACCORDANCE WITH THE MOST CURRENT REVISION OF THE MSHA BOOK OF STANDARDS. ALL TRAFFIC CONTROL SHALL CONFORM TO THE GENERAL NOTES SET FORTH IN STANDARD NOS: MD 104.00-01 THROUGH MD 104.00-30 OF THIS MANUAL.
6. ALL PAVEMENT MARKINGS TO BE WHITE.

LEGEND

- ROW Line
- Existing Vegetation Line
- Existing Edge of Pavement
- Existing Centerline of Road
- Existing Building
- Existing Contour 1x (84)
- Existing Contour 5x (80)
- Existing Culvert Pipe
- Existing Sewer Pipe
- Proposed Contour 1x (84)
- Proposed Contour 5x (80)
- Proposed Storm Pipe
- Proposed Storm Chambers
- Proposed Lighting
- Pervious Pavers
- Sidewalk on ADJ Property
- Sidewalk in Plaza Area

LANDSCAPE ARCHITECT LICENSE # 3018 STEVEN D. ENGEL STATE OF MARYLAND

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: 3078, EXPIRATION DATE: 1/18/2013

CHARLES COUNTY GOVERNMENT

DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

				REMARKS OR CONDITIONS
GRADING	CONSTRUCTION	AS-BUILT		
ROADS	CONSTRUCTION	AS-BUILT		
STORM DRAINAGE	CONSTRUCTION	AS-BUILT		
STORMWATER MANAGEMENT	CONSTRUCTION	AS-BUILT		
WATER	CONSTRUCTION	AS-BUILT		
SEWER	CONSTRUCTION	AS-BUILT		
OTHER	CONSTRUCTION	AS-BUILT		
SIGNED:				THIS PERMIT EXPIRES ON:
DATE:				DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

LAYOUT PLAN

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA

DRAWN BY:	EZ
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	1" = 20'

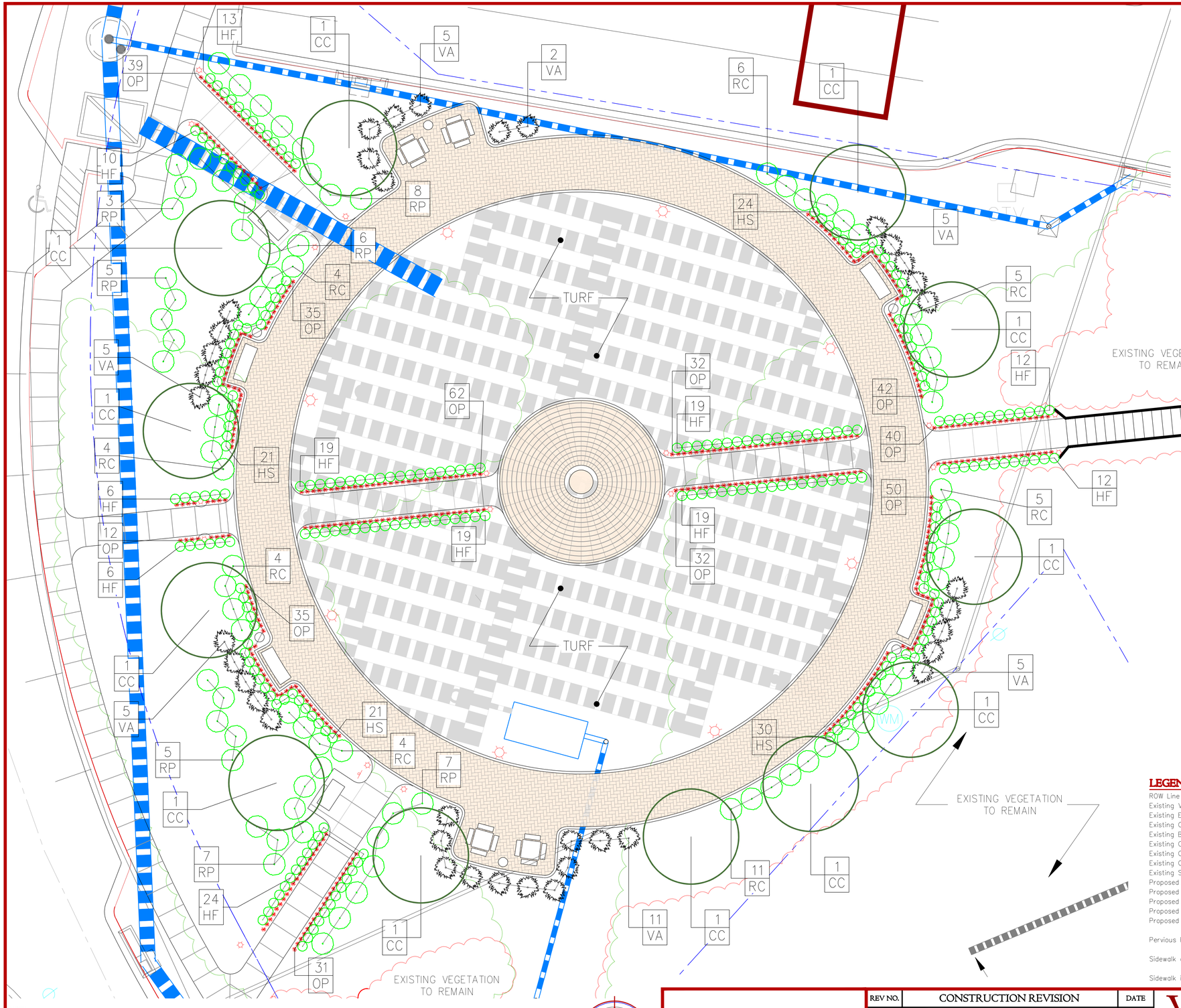
09-047
PROJ. NO.

CD 012210.dwg
File Name:

9
SHEET NO.

PGM# VCI09-0078

PGM# VCI09-0078



QT.	SYM.	BOTANICAL/ COMMON NAME	SIZE	ROOT	SPACING
TREES					
28	CC	CERCIS CANADENSIS / EASTERN REDBUD (MULTI-STEM)	2½-3" CAL.	B&B	AS SHOWN
28 TOTAL					
SHRUBS					
70	IG	ILEX GLABRA / INKBERRY	2.5-3' HT.	CONT./ B&B	AS SHOWN
43	RC	ROSA CAROLINA / PASTURE ROSE	2.5-3' HT.	CONT./ B&B	AS SHOWN
41	RP	RHODODENDRON PERICLYMENDOIDES / PINXTERBLOOM AZALEA	2.5-3' HT.	CONT./ B&B	AS SHOWN
38	VA	VIBURNUM ACERIFOLIUM / MAPLE-LEAVED ARROWWOOD	2.5-3' HT.	CONT./ B&B	AS SHOWN
192 TOTAL					
GRASSES					
472	OP	OPHIOPOGON PLANISCAPUS / BLACK MONDO GRASS	1 QT.	N.A.	12" O.C.
472 TOTAL					
PERENNIAL / ANNUALS					
191	HF	HEMEROCALLIS FULVA/ ORANGE DAYLILLY	1 QT.	N.A.	24" O.C.
96	HS	HEMEROCALLIS SP/ DAYLILLY	1 QT.	N.A.	24" O.C.
287 TOTAL					

PGM# VCI09-0078

LANDSCAPE ARCHITECT LICENSE # 3078 STEVEN D. ENGEL STATE OF MARYLAND

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: 3078, EXPIRATION DATE: 1/18/2013

LEGEND

- ROW Line
- Existing Vegetation Line
- Existing Edge of Pavement
- Existing Centerline of Road
- Existing Building
- Existing Contour 1x (84)
- Existing Contour 5x (80)
- Existing Culvert Pipe
- Existing Sewer Pipe
- Proposed Contour 1x (84)
- Proposed Contour 5x (80)
- Proposed Storm Pipe
- Proposed Storm Chambers
- Proposed Lighting
- Pervious Pavers
- Sidewalk on ADJ Property
- Sidewalk in Plaza Area

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

				REMARKS OR CONDITIONS
GRADING	CONSTRUCTION		AS-BUILT	
ROADS	CONSTRUCTION		AS-BUILT	
STORM DRAINAGE	CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT	CONSTRUCTION		AS-BUILT	
WATER	CONSTRUCTION		AS-BUILT	
SEWER	CONSTRUCTION		AS-BUILT	
OTHER	CONSTRUCTION		AS-BUILT	
SIGNED:				THIS PERMIT EXPIRES ON:
DATE:				DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

LANDSCAPE PLAN

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA

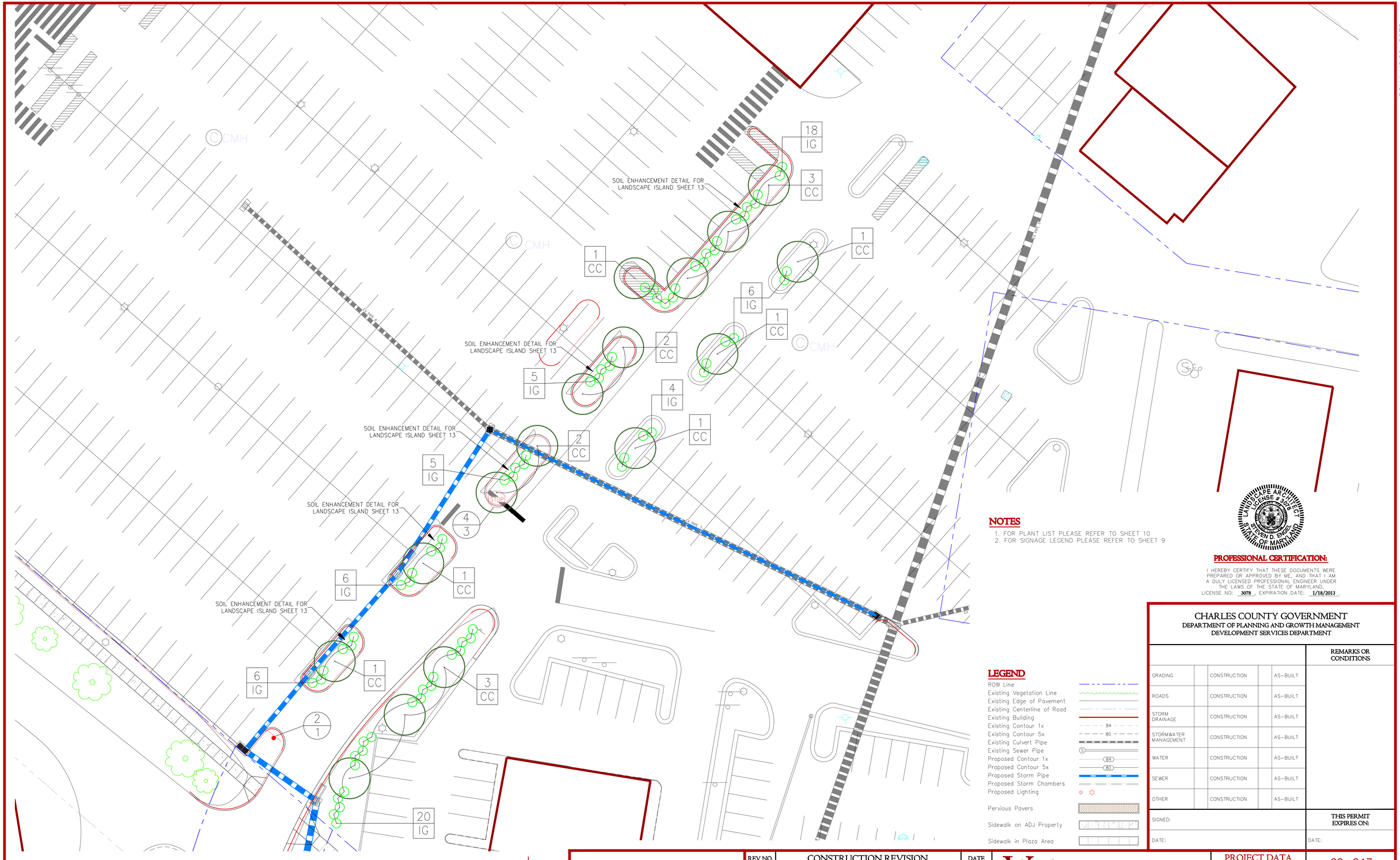
DRAWN BY:	BZ
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	1" = 10'

09-047
PROJ. NO.

CD 012210.dwg
File Name:

10
SHEET NO.

PGM# VCI09-0078



NOTES

1. FOR PLANT LIST PLEASE REFER TO SHEET 10
2. FOR SIGNAGE LEGEND PLEASE REFER TO SHEET 9

LEGEND

- ROW Line
- Existing Vegetation Line
- Existing Edge of Pavement
- Existing Centerline of Road
- Existing Building
- Existing Contour 1x (84)
- Existing Contour 5x (80)
- Existing Culvert Pipe
- Existing Sewer Pipe
- Proposed Contour 1x (84)
- Proposed Contour 5x (80)
- Proposed Storm Pipe
- Proposed Storm Chambers
- Proposed Lighting
- Pervious Pavers
- Sidewalk on ADJ Property
- Sidewalk in Plaza Area

LANDSCAPE ARCHITECT LICENSE # 3078 STEVEN D. ENGEL STATE OF MARYLAND

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: 3078, EXPIRATION DATE: 1/18/2013

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	

SIGNED: | THIS PERMIT EXPIRES ON:

DATE: | DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

LANDSCAPE PLAN

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA

DRAWN BY:	BZ
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	1" = 20'

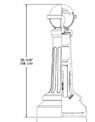
09-047
PROJ. NO.

CD 012210.dwg
File Name:

11
SHEET NO.

BL31 Specification Sheet

Project Name:	Location:	MFG: Philips Hadco
Fixture Type:	Catalog No.:	Qty:



Ordering Guide

Example: BL31 A A0 50S E N

Product Code	BL31		
Finish	A	Black	
	B	Brown	
	G	Verde	
	H	Bronze	
	F	Green	
Optics	50	Type III Reflective	
Wattage	50S	70W HPS	
	70S	70W HPS	
	100S	100W HPS	
	70H	70W MH	
	70H	70W MH	
	100H	100W MH	
	50D	50W RAC	*1
	100	100W RAC	*2
Voltage	2	120V	
	7	208V	
	G	240V	
	H	277V	
	K	347V	
Options	N	None	
	CL	Single Left Chain Loop	
	CR	Single Right Chain Loop	
	CD	Double Chain Loop	

*1 Not available in 347V (K).
*2 Available in 120V (2) only.

Specifications

HOUSING:
356-HM high-strength, low-copper, proprietary cast aluminum alloy. Cast aluminum alloy base with 0.250" minimum wall thickness. Easy access to lamp. A weatherproof ballast assembly isolates the ballast from water and heat for longer life. Access to internal components and mounting is through a handhole cover removable via one screw. All non-ferrous fasteners prevent corrosion and ensure longer life.

FINISH:
A durable polyurethane enamel finish is applied after assemblies are shot blasted to create a surface profile which allows for the highest level of paint adhesion. Laboratory tested for superior weatherability and fade resistance in accordance with ASTM B-117-64 and ANSI/ASTM G53-77 specifications. For larger projects where a custom color is required, contact the factory for more information.

OPTICAL ASSEMBLY:
Symmetric. Optically designed, U.V. stabilized, injection molded, acrylic reflective glove.

LAMPING:
Incandescent Medium Base A19. 42W CFL (GX24Q-4). MH and HPS Medium base: E17.

ELECTRICAL ASSEMBLY:
Key-slotted Ballast Assembly is mounted to an aluminum plate, which is mounted inside the base. Quick disconnects for easy installation and removal. 4kv rated medium base porcelain socket. Nickel-plated screw shell with center contact. 42W Fluorescent socket is a GX24Q-4 base. (With also accept 26W and 32W PLT lamps).

BALLAST:
All HID ballasts are core and coil and regulated with power factors better than 90% (HPF). Ballast provides +/- 5% lamp power regulation with +/- 10% input voltage regulation. Ballasts are factory pre-wired and tested. Metal halide ballasts are capable of starting at -20° F or -29° C and HPS at -40°F or -40°C. NOTE: All ballasts are ESA / TIA 20 / Title

PHILIPS HADCO Note: Hadco reserves the right to modify the above details to reflect changes in the cost of materials and/or production and/or design without prior notice. 100 Craftway Littlestown, PA 17340 tel(717) 359-7131 fax (717) 359-9285 www.hadco.com Copyright 2006 Philips

BL31 Specification Sheet

Project Name:	Location:	MFG: Philips Hadco
Fixture Type:	Catalog No.:	Qty:

24 compliant where applicable. 42W Fluorescent ballast is electronic. Ballast is capable of starting at 0° F or -18° C. Ballast is factory wired and tested.

CERTIFICATIONS:
UL Listed to U.S. safety standards for wet locations. cUL Listed to Canadian safety standards for wet locations. Manufactured to ISO 9001:2000 Standards.

WARRANTY:
Three-year limited warranty.

Height :
38.5/8" (98cm)

Width:
17" (43cm)

Bolt Circle:
8"-12" (20cm-30cm)

Anchor Rods:
(6) 3/4" dia. x 18" long (2cm x 46cm)

Base Diameter:
17" (43cm)

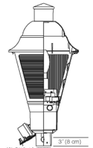
Hand Hole :
5 1/4" x 8" (13cm x 10cm)

Max. Weight:
80 lbs

PHILIPS HADCO Note: Hadco reserves the right to modify the above details to reflect changes in the cost of materials and/or production and/or design without prior notice. 100 Craftway Littlestown, PA 17340 tel(717) 359-7131 fax (717) 359-9285 www.hadco.com Copyright 2006 Philips

Independence (V151) Specification Sheet

Project Name:	Location:	MFG: Philips Hadco
Fixture Type:	Catalog No.:	Qty:



Ordering Guide

Example: V151 A B3 N D 70S E

Product Code	V151	Independence	
Finish	A	Black	
	B	Brown	
	G	Verde	
	H	Bronze	
	F	Green	
Optics	B3	Type III Reflective Panels	
	B5	Type V Reflective Panels	
	T3	Type III Cutoff	
	T5	Type V Cutoff	
	V3	Vertical Rib Type III	
	V5	Vertical Rib Type V	
Photo Control	N	None	
	P	Twist-lock Pin Photo Control	
	R	Twist-lock Receptacle	*1
Socket	M	Medium	
	G	Mogul	
Wattage	70S	70W HPS	
	100S	100W HPS	
	150S	150W HPS	
	250S	250W HPS	*2
	70H	70W MH	*3
	100H	100W MH	*3
	150H	150W PMH	
	250H	250W PMH	*2
Voltage	2	120V	
	7	208V	
	G	240V	
	H	277V	

*1 Twistlock receptacle (R) not available with 347V (K).
*2 Available with Mogul base (G) socket only.
*3 Available with Medium base (D) socket only.
NOMB "-LLH" to end of fixture coding for "Less Ladder Rest" option.

Specifications

HOUSING:
365 low-copper die-cast aluminum alloy. Tool-less lamp access. Tool-less ballast access. Twistlock ballast assembly with quick disconnects for easy maintenance. A weatherproof ballast assembly isolates the ballast from water and heat for longer life. The optional photo control eye or twist-lock receptacle is located in the ballast enclosure for easy access. All non-ferrous fasteners prevent corrosion and ensure longer life. Stainless steel spring latch. All non-ferrous fasteners prevent corrosion and ensure longer life. Decorative cast aluminum Ladder Rest. Slip Fitter Dimensions: 3" I.D. x 3" deep.

FINISH:
Thermoset polyester powdercoat is electrostatically applied after a five-stage conversion cleaning process and bonded by heat fusion thermosetting. Laboratory tested for superior weatherability and fade resistance in accordance with ASTM B-117-64 and ANSI/ASTM G53-77 specifications. For larger projects where a custom color is required, contact the factory for more information.

OPTICAL ASSEMBLY:
Symmetric. Optically designed. Type V Reflective Panels. Optically designed, U.V. stabilized, injection molded, acrylic reflective panels. Type III Cutoff. Type V Cutoff. Precision formed, segmented specular aluminum internal cutoff reflector with horizontal lamp mounting. Decorative frosted glass chimney. U.V. stabilized, injection molded, clear acrylic panels. Type III Vertical Rib (precision formed, segmented specular aluminum internal cutoff reflector with horizontal lamp mounting). Type V Vertical Rib (specular aluminum internal cutoff reflector with vertical lamp mounting). (NOTE: No decorative frosted glass chimney.) U.V. stabilized, injection molded ribbed acrylic panels with internal vertical ribs. Tool-less removal panels for ease of cleaning.

LAMPING:
MH and HPS Medium base: E17, MH Mogul base: E22/E. 70W-150W HPS Mogul base: E22/3.5. 250W HPS Mogul base: E18.

ELECTRICAL ASSEMBLY:
Twistlock Ballast Assembly with Quick Disconnects for easy maintenance. Ballasts are HPF core and coil. 4kv rated medium base porcelain socket. Nickel-plated screw shell with center contact. 4kv rated mogul base porcelain socket. Nickel-plated screw shell with center contact.

PHILIPS HADCO Note: Hadco reserves the right to modify the above details to reflect changes in the cost of materials and/or production and/or design without prior notice. 100 Craftway Littlestown, PA 17340 tel(717) 359-7131 fax (717) 359-9285 www.hadco.com Copyright 2006 Philips

Independence (V151) Specification Sheet

Project Name:	Location:	MFG: Philips Hadco
Fixture Type:	Catalog No.:	Qty:

BALLAST:
All HID ballasts are core and coil and regulated with power factors better than 90% (HPF). Ballast provides +/- 5% lamp power regulation with +/- 10% input voltage regulation. Ballasts are factory pre-wired and tested. Metal halide ballasts are capable of starting at -20° F or -29° C and HPS at -40°F or -40°C. NOTE: All ballasts are ESA / TIA 20 / Title 24 compliant where applicable. (NOTE: For plug-in ignitor option, consult factory.).

CERTIFICATIONS:
UL Listed to U.S. safety standards for wet locations. cUL Listed to Canadian safety standards for wet locations. Manufactured to ISO 9001:2000 Standards.

WARRANTY:
Three-year limited warranty.

Height :
33 1/2" (85cm)

Width:
16 1/2" (42cm)

Max. EPA:
1.65 sq. ft.

Max. Weight:
28 lbs

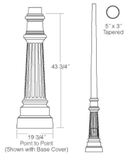
IESNA Classifications:
Semi Cutoff. Reflective Panels

IESNA Classifications:
Cutoff. Cutoff optics

PHILIPS HADCO Note: Hadco reserves the right to modify the above details to reflect changes in the cost of materials and/or production and/or design without prior notice. 100 Craftway Littlestown, PA 17340 tel(717) 359-7131 fax (717) 359-9285 www.hadco.com Copyright 2006 Philips

P2520 Specification Sheet

Project Name:	Location:	MFG: Philips Hadco
Fixture Type:	Catalog No.:	Qty:



Ordering Guide

Example: P2520 10 A

Product Code	P2520	
Pole Height	10	10'
	12	12'
	14	14'
	16	16'
Finish	A	Black
	B	Brown
	G	Verde
	J	Green

Specifications

HOUSING:
330 HM high-strength, low-copper, proprietary cast aluminum alloy. 319 Permanent mold aluminum. 6063-T6 Extruded aluminum. Anchor rods are hot-dipped galvanized steel

FINISH:
A durable polyurethane enamel finish is applied after assemblies are shot blasted to create a surface profile which allows for the highest level of paint adhesion. Laboratory tested for superior weatherability and fade resistance in accordance with ASTM B-117-64 and ANSI/ASTM G53-77 specifications. For larger projects where a custom color is required, contact the factory for more information.

WARRANTY:
Three-year limited warranty.

Tenon/Top:
3" OD

Bolt Circle:
11" I.P.

Anchor Rods:
(4) 3/4" dia. x 18"

Base Dimensions:
12 3/4 sq. x 43 3/4"

Base Cover:
(Included) 14" sq. x 4 3/4"

Hand Hole :
4 3/8" x 5 3/4"

Shaft:
5" to 3" Tapered

PHILIPS HADCO Note: Hadco reserves the right to modify the above details to reflect changes in the cost of materials and/or production and/or design without prior notice. 100 Craftway Littlestown, PA 17340 tel(717) 359-7131 fax (717) 359-9285 www.hadco.com Copyright 2006 Philips

P2520 Specification Sheet

Project Name:	Location:	MFG: Philips Hadco
Fixture Type:	Catalog No.:	Qty:

Wall Thickness:
0.125 Aluminum

Height :
10', 12', 14', 16'

Pole EPA Values

	Height			
Windspeed(mph)	10'	12'	14'	16'
90	27.8200	22.8900	19.2900	12.7900
100	17.2700	14.6200	9.1900	7.4600

PHILIPS HADCO Note: Hadco reserves the right to modify the above details to reflect changes in the cost of materials and/or production and/or design without prior notice. 100 Craftway Littlestown, PA 17340 tel(717) 359-7131 fax (717) 359-9285 www.hadco.com Copyright 2006 Philips

Bench (SAMB01) Specification Sheet

Project Name:	Location:	MFG: Philips Hadco
Fixture Type:	Catalog No.:	Qty:



Ordering Guide

Example: SAMB01 S A 6 VS R

Product Code	SAMB01	Bench
Material	S	Steel
Finish	A	Black
	I	Gray
	J	Green
Length	6	6 foot
Style	VS	Vertical Slats
Options	R	Arm Rest

Specifications

FINISH:
All fabricated metal components are steel shot-blasted, etched, phosphatized, sealed, then preheated and electrostatically powder-coated with TGIC polyester powder coating. Available in Black, Bronze, Gray and Green.

ACCESSORIES:
Optional intermediate (center) bolt-on arm rest that adds comfort and discourages people from sleeping on the bench- consult factory.

WARRANTY:
For special projects exposed to corrosive environments (including but not limited to by the sea with saltwater exposure or by sand where the wind creates a sandblasting effect), we offer hot dip galvanizing as an option - consult factory. All Site Amenities backed by 1 year manufacturer's Limited Warranty.

MOUNTING:
We recommend that all Site Amenities be affixed to the ground (hardware by others). Site Amenities can easily be surface mounted. Pre-welded tabs at the bottom of the legs to enable convenient surface. Minimal assembly required (bolt and u-nits to seat, hardware included)

Height :
31 1/4"

Width:
24"

Length:
6'

Max. Weight:
286 lbs

PHILIPS HADCO Note: Hadco reserves the right to modify the above details to reflect changes in the cost of materials and/or production and/or design without prior notice. 100 Craftway Littlestown, PA 17340 tel(717) 359-7131 fax (717) 359-9285 www.hadco.com Copyright 2006 Philips

Litter Receptacle (SAML01) Specification Sheet

Project Name:	Location:	MFG: Philips Hadco
Fixture Type:	Catalog No.:	Qty:



Ordering Guide

Example: SAML01 S A 36 TL

Product Code	SAML01	Litter Receptacle
Material	S	Steel
Finish	A	Black
	I	Gray
	J	Green
Capacity	36	36 Gallon
Lid	TL	Tapered Lid

Specifications

FINISH:
All fabricated metal components are steel shot-blasted, etched, phosphatized, sealed, then preheated and electrostatically powder-coated with TGIC polyester powder coating. Available in Black, Bronze, Gray and Green.

WARRANTY:
For special projects exposed to corrosive environments (including but not limited to by the sea with saltwater exposure or by sand where the wind creates a sandblasting effect), we offer hot dip galvanizing as an option - consult factory. All Site Amenities backed by 1 year manufacturer's Limited Warranty.

MOUNTING:
We recommend that all Site Amenities be affixed to the ground (hardware by others). Site Amenities can easily be surface mounted. Requires just one anchor bolt. Shipped fully assembled. Includes inner black plastic liner, four adjustable leveling feet and vertical solid steel bars 3/8" thick x 1" wide.

Base Diameter:
19"

Diameter:
20" at the top

Height :
38 5/8"

Max. Weight:
290 lbs

PHILIPS HADCO Note: Hadco reserves the right to modify the above details to reflect changes in the cost of materials and/or production and/or design without prior notice. 100 Craftway Littlestown, PA 17340 tel(717) 359-7131 fax (717) 359-9285 www.hadco.com Copyright 2006 Philips



Vintage U Bike Rack (plymouth design)

BQ279-1001

Specifications
5 Racks required for Inground Mount
Color Black or Federal Green
Weight 33lbs
Dimensions 24"W x 36"H
Surface-Mount
- 3/8" Steel Plate
- 5/8" Holes
- 4.5" Centers

Outdoor Bike Racks
3350 NW Boca Raton Blvd., Suite B2
Boca Raton, FL 33431
Ph (800) 434-8981
www.outdoorbikeracks.net



NEW Signature Outdoor Game Table, in ground

WVSGT-R-BL (square, blue)

Specifications
- Plastisol covered mesh
- Seat height: 19 3/8"
- Table Height: 30"

Quality Tablegames, Inc.
PO Box 8650
Aspen, CO 81612
Ph. 970-704-1122
www.qualitytablegames.com



Fido Kit with "Please Clean Up After Your Pet" Dog Sign SN 3939

Item Number: HLMFDKT 16

- Durable, rustproof aluminum construction lasts for years!
- Easy-fill dispenser holds 400 low-priced Fido™ Baggies!
- Long-lasting U-Channel post holds it all together!
- Receptacle lid keeps out rain, keeps in offensive odors
- Receptacle holds bags securely
- Trash Receptacle is 10 gallon capacity
- Fido House™ is 17" H x 11" W x 5" D; U-Channel Post is 8' L; Sign is 12" W x 18" H

Peachtree Business Products
Ph (800) 241-4623
www.pbp1.com/Property



PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 3078, EXPIRATION DATE: 1/18/2013

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	
SIGNED:					THIS PERMIT EXPIRES ON:
DATE:					DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

CUT SHEETS

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

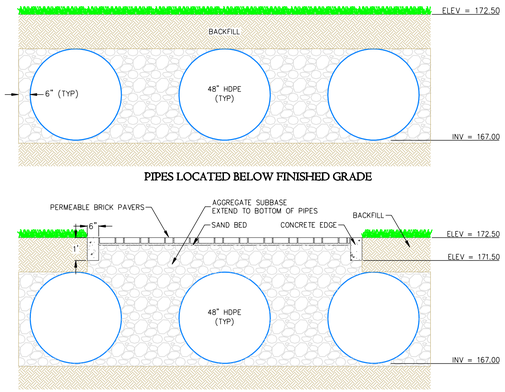
PROJECT DATA	
DRAWN BY:	BZ
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	1" = 10'

09-047
PROJ. NO.

CD 012210.dwg
File Name:

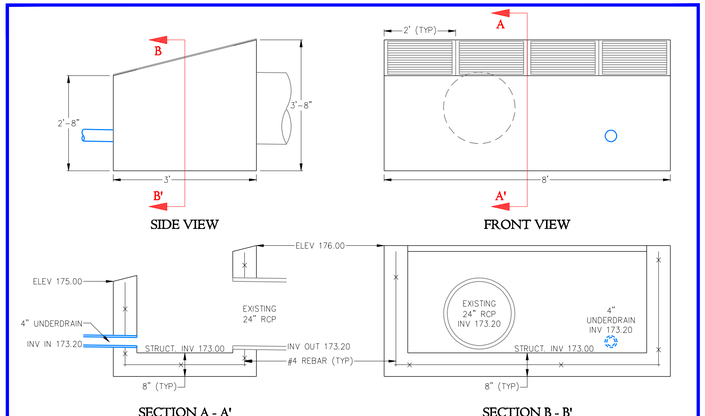
12
SHEET NO.

PGM# VCI09-0078



STORAGE CHAMBERS DETAIL

N.T.S.

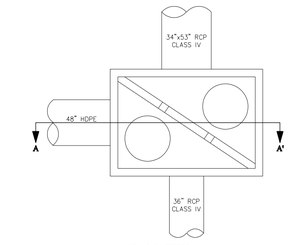


NOTES:

1. STRUCTURE SHALL BE CONCRETE CAST IN PLACE OR PRECAST. CONCRETE BLOCK OR BRICK IS NOT ACCEPTABLE.
2. GRATE SHALL BE GALVANIZED STEEL OR ALUMINUM AND SHALL BE REMOVABLE FOR MAINTENANCE.
3. OPENINGS FOR PIPES TO BE PRECAST 2" LARGER THAN O.D. OF PIPE AND BE GROUTED TO PREVENT SEEPAGE.
4. SPACE BETWEEN PIPES TO BE FILLED WITH #7 OR #57 STONE OR FLOWABLE FILL.
5. FILL VOID BELOW INVERTS WITH 2500 PSI CONCRETE.

UNDERDRAIN STRUCTURE DETAIL

N.T.S.

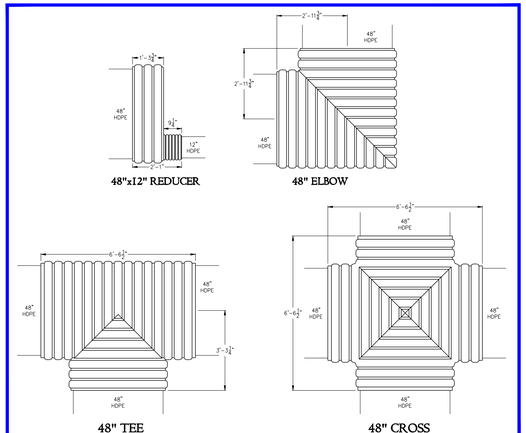


NOTES:

1. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ENGINEER TO APPROVE PRIOR TO CONSTRUCTION

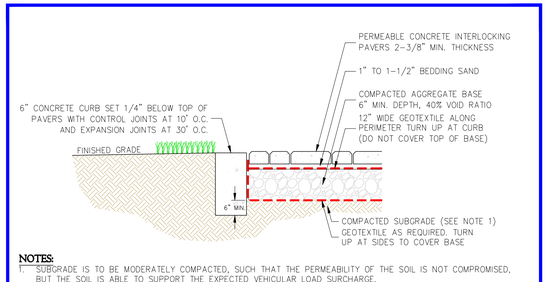
10-YEAR WEIR STRUCTURE DETAIL

N.T.S.



HDPE PIPE FITTINGS DETAIL

N.T.S.



NOTES:

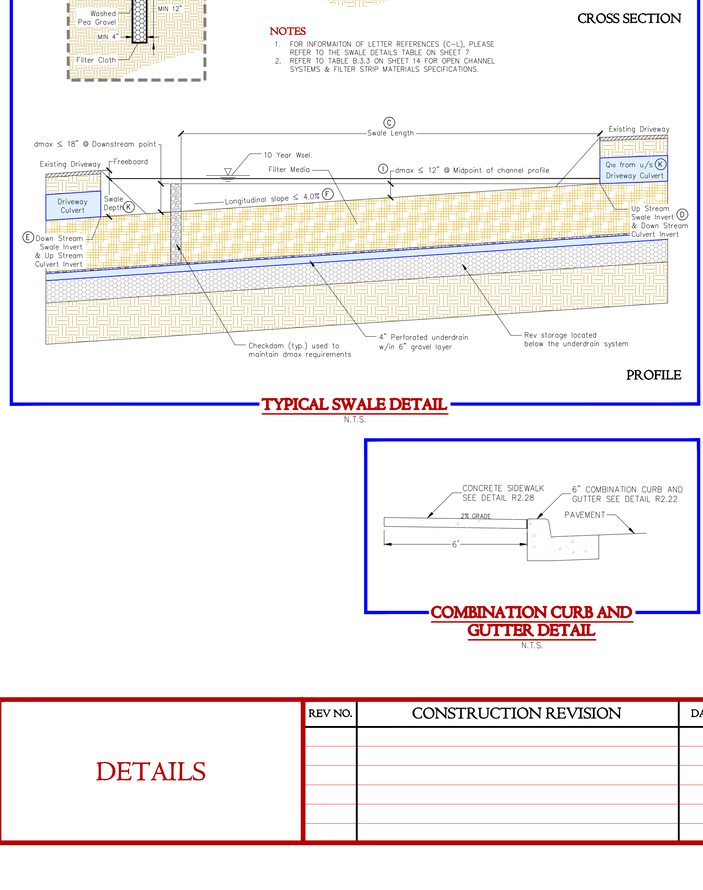
1. SUBGRADE IS TO BE MODERATELY COMPACTED, SUCH THAT THE PERMEABILITY OF THE SOIL IS NOT COMPROMISED, BUT THE SOIL IS ABLE TO SUPPORT THE EXPECTED VEHICULAR LOAD SURCHARGE.
2. **BEARING CAPACITY AND PERMEABILITY OF SOIL SUBGRADE SHOULD BE EVALUATED FOR SUITABILITY WITH APPLICATION, TRAFFIC & STORM WATER MANAGEMENT CRITERIA. DRAINAGE OF SUBGRADE MAY BE REQUIRED.**
3. CONSULT ICPI FOR GUIDELINES ON SPECIFICATIONS FOR BASE MATERIALS, SUBGRADE SOIL AND BASE COMPACTION.
4. EDGE ENTIRE PERIMETER WITH EDGE RESTRAINT SYSTEM APPROVED BY ICPI.

PERMEABLE PAVER/LANDSCAPING TIE-IN DETAIL

N.T.S.

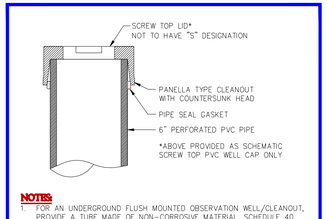
LIGHTED BOLLARD DETAIL

N.T.S.



TYPICAL SWALE DETAIL

N.T.S.

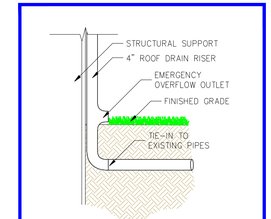


NOTES:

1. FOR AN UNDERGROUND FLUSH MOUNTED OBSERVATION WELL/CLEANOUT, PROVIDE A TUBE MADE OF NON-CORROSIVE MATERIAL, SCHEDULE 40 OR EQUAL, AT LEAST THREE FEET LONG WITH AN INSIDE DIAMETER OF AT LEAST 6 INCHES.
2. THE TUBE SHALL HAVE A FACTORY ATTACHED CAST IRON OR HIGH IMPACT PLASTIC COLLAR WITH RIBS TO PREVENT ROTATION WHEN REMOVING SCREW TOP LID. THE SCREW TOP LID SHALL BE CAST IRON OR HIGH IMPACT PLASTIC THAT WILL WITHSTAND ULTRA-VIOLET RAYS.

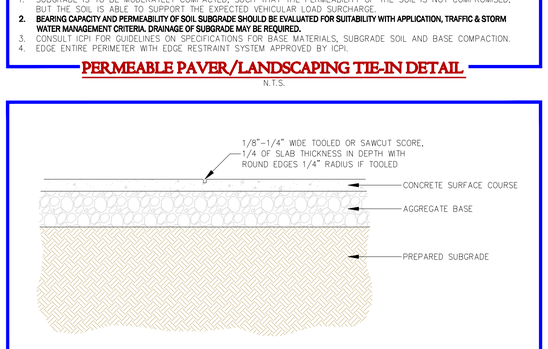
CLEAN OUT DETAIL

N.T.S.



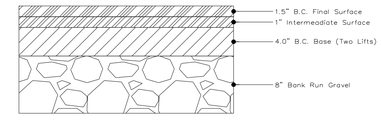
DOWNSPOUT DETAIL

N.T.S.



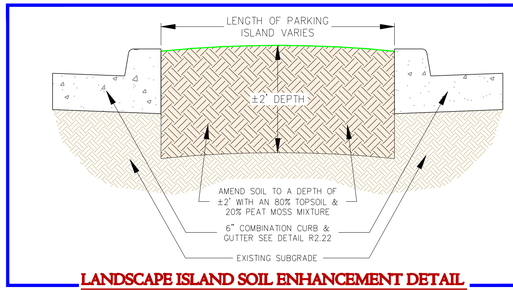
LIGHT-DUTY SIDEWALK DETAIL

N.T.S.



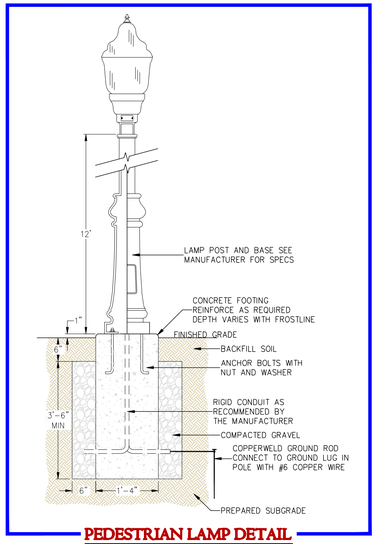
CHARLES COUNTY STANDARD 'P-4' PAVING DETAIL

NOT TO SCALE -- MINOR COLLECTOR (COMMERCIAL-INDUSTRIAL ZONES)



LANDSCAPE ISLAND SOIL ENHANCEMENT DETAIL

N.T.S.



PEDESTRIAN LAMP DETAIL

N.T.S.

COMBINATION CURB AND GUTTER DETAIL

N.T.S.

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: 36310, EXPIRATION DATE: 11/17/2012

STATE OF MARYLAND — RICHARD F. POLA — LICENSE #36310 — PROFESSIONAL ENGINEER

CHARLES COUNTY GOVERNMENT

DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	

SIGNED: — THIS PERMIT EXPIRES ON:

DATE: — DATE:

NOTE:

This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:

This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

DETAILS

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.

Landscape Architects, Land Planning Consultants, Engineers & Surveyors

11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA	
DRAWN BY:	BZ
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	1" = 10'

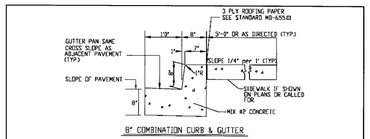
09-047
PROJ. NO.

CD 012210.dwg
File Name:

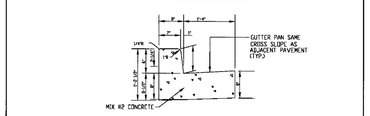
13
SHEET NO.

PGM# VCI09-0078

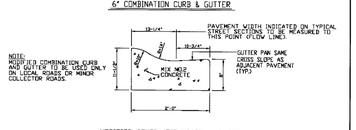
PGM# VCI09-0078



8" COMBINATION CURB & GUTTER



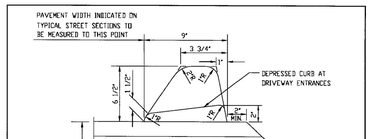
6" COMBINATION CURB & GUTTER



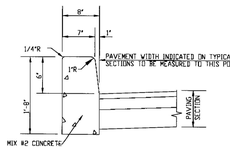
MODIFIED COMBINATION CURB & GUTTER

NOTES:
1. MAX JOINT SPACING FOR CONCRETE CURB AND COMBINATION CURB & GUTTER - 10'
2. SEE SPECIFICATIONS FOR LOCATION AND DESCRIPTION OF TREATMENT FOR THE TYPES OF JOINTS USED.
3. 6" MIN MODIFIED COMBINATION CURB AND GUTTER TO BE USED ONLY ON LOCAL ROADS OR MINOR COLLECTOR ROADS.

CHARLES COUNTY GOVERNMENT DEPARTMENT OF PLANNING & GROWTH MANAGEMENT	STANDARD DETAIL	REVISIONS:	R
APPROVED: [signature] DIRECTOR, DEPARTMENT OF PLANNING & GROWTH MANAGEMENT 11/14/99 DATE	COMBINATION CURB & GUTTER		2.22



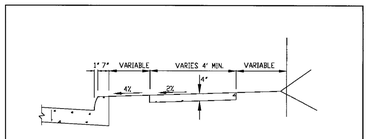
STANDARD BITUMINOUS CURB



STANDARD BARRIER CURB

NOTES:
1. MAX JOINT SPACING FOR STANDARD CURB - 10'
2. SEE SPECIFICATIONS FOR LOCATION AND DESCRIPTION OF TREATMENT FOR THE TYPES OF JOINTS USED.

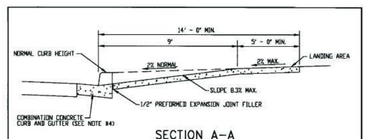
CHARLES COUNTY GOVERNMENT DEPARTMENT OF PLANNING & GROWTH MANAGEMENT	STANDARD DETAIL	REVISIONS:	R
APPROVED: [signature] DIRECTOR, DEPARTMENT OF PLANNING & GROWTH MANAGEMENT 11/14/99 DATE	STANDARD CURBS		2.23



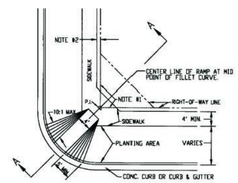
DETAIL A

NOTE:
1. SIDEWALK TO BE SCRIBED IN 5' MAXIMUM SQUARES.
2. EXPANSION JOINTS ACROSS THE SIDEWALK NOT TO BE MORE THAN 15' APART.
3. 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL IN EXPANSION JOINTS TO BE KEPT 1/4" BELOW SURFACE OF SIDEWALK.
4. CONCRETE TO BE MIX NO. 2
5. WHEN SIDEWALK ABUTS CURB, WALK SHALL BE 1/4" ABOVE CURB WITH 1/2" PREFORMED BITUMINOUS EXPANSION MATERIAL BETWEEN SIDEWALK AND CURB AND RESTING ON A COMPACTED CRUSHED STONE BASE. SEE DETAIL "A" THIS SHEET.
6. ON LONGITUDINAL SIDEWALK GRADES OF 5% OR GREATER, A EXPANSION HEADER, 6" THICK AND 6" DEEP BELOW THE NORMAL 5" SIDEWALK THICKNESS SHALL BE CONSTRUCTED FOR THE FULL WIDTH OF THE SIDEWALK AT INTERVALS OF 40 FEET. THE HEADERS SHALL BE PLACED AT EXPANSION JOINT LOCATIONS AND SHALL BE MONOLITHIC WITH THE SIDEWALK.

CHARLES COUNTY GOVERNMENT DEPARTMENT OF PLANNING & GROWTH MANAGEMENT	STANDARD DETAIL	REVISIONS:	R
APPROVED: [signature] DIRECTOR, DEPARTMENT OF PLANNING & GROWTH MANAGEMENT 11/14/99 DATE	CONCRETE SIDEWALK		2.28



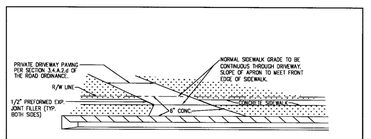
SECTION A-A



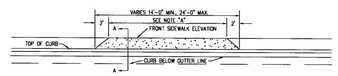
PLAN

NOTES:
1. RIGHT-OF-WAY TRUNCATION TO BE SET 20' FROM P.I. ALONG EACH OF THE INTERSECTING LINES.
2. MINIMUM DISTANCE BETWEEN BACK OF SIDEWALK AND RIGHT-OF-WAY LINE SHALL BE ONE FOOT.
3. SURFACE TEXTURE OF CONCRETE RAMP & FLARES SHALL BE COURSE BROOMING OR OTHER NON-SKID TYPE SURFACE.
4. STANDARD COMBINATION CURB AND GUTTER IS SHOWN. DETAILS TO BE SIMILAR FOR MODIFIED CURB & GUTTER EXCEPT THAT FLOW LINE LIP IS TO BE OMITTED.

CHARLES COUNTY GOVERNMENT DEPARTMENT OF PLANNING & GROWTH MANAGEMENT	STANDARD DETAIL	REVISIONS:	R
APPROVED: [signature] CHIEF, DEVELOPMENT SERVICES DIVISION 11/14/99 DATE	PEDESTRIAN RAMP		2.29

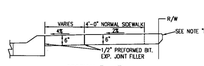


DRIVEWAY ENTRANCE



NOTE: A. 1) FOR DRIVEWAYS SERVING ONE LOT THE MINIMUM WIDTH SHALL BE 10' & A MAXIMUM OF 20'.
2) FOR DRIVEWAYS SERVING TWO OR MORE LOTS THE MINIMUM WIDTH SHALL BE 16' PER SECTION 3.4.A.2.e OF THE ROAD ORDINANCE.

FRONT VIEW



SECTION "A-A"

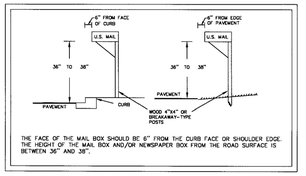
NOTE B: IF PRIVATE DRIVEWAY IS CONCRETE PROVIDE 1/2" PREFORMED EXPANSION JOINT FILLER AT R/W LINE.

CHARLES COUNTY GOVERNMENT DEPARTMENT OF PLANNING & GROWTH MANAGEMENT	STANDARD DETAIL	REVISIONS:	R
APPROVED: [signature] CHIEF, DEVELOPMENT SERVICES DIVISION 11/14/99 DATE	RESIDENTIAL ENTRANCE CLOSED SECTION WITH MODIFIED COMBINATION CURB & GUTTER & SIDEWALK SET BACK FROM CURB		2.37

COUNTY REGULATIONS AND THE CHARLES COUNTY ROAD ORDINANCE PROHIBITS ANY PRIVATELY OWNED PERMANENT OR SEMI-PERMANENT STRUCTURES WITHIN THE ROAD RIGHTS-OF-WAY SUCH AS:

FENCES
BASKETBALL HOOPS
SIGNS
GAZEBOS
ETC.

THE ONLY EXCEPTION IS A REGULATION U.S. MAIL BOX AND/OR NEWSPAPER BOX AS INDICATED BELOW.

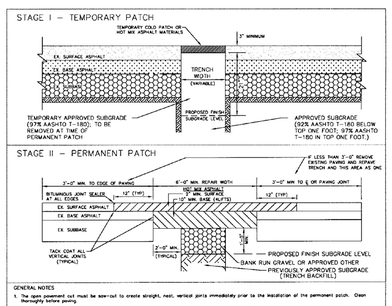


THE FACE OF THE MAIL BOX SHOULD BE 6" FROM THE CURB FACE OR SHOULDER EDGE. THE HEIGHT OF THE MAIL BOX AND/OR NEWSPAPER BOX FROM THE ROAD SURFACE IS BETWEEN 36" AND 38".

TO AVOID THE COST AND AGGRAVATION OF REMOVING STRUCTURES PLACED WITHIN THE ROAD RIGHTS-OF-WAY, PLEASE CONTACT THE PUBLIC FACILITIES DEPARTMENT AT (301)932-3450 PRIOR TO CONSTRUCTION TO DETERMINE THE RIGHT-OF-WAY WIDTH.

ADHERENCE TO THESE RULES WILL GREATLY REDUCE LIABILITY AND WILL ASSIST IN ASSURING THE SAFETY OF PEDESTRIANS AND VEHICLES.

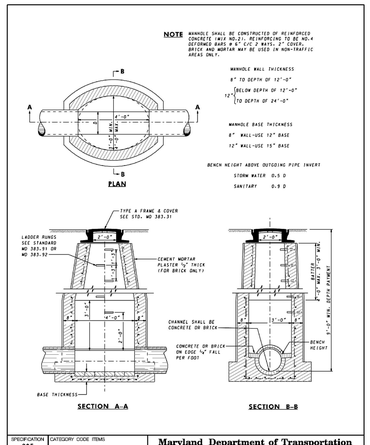
CHARLES COUNTY GOVERNMENT DEPARTMENT OF PLANNING & GROWTH MANAGEMENT	STANDARD DETAIL	REVISIONS:	R
APPROVED: [signature] CHIEF, DEVELOPMENT SERVICES DIVISION 11/14/99 DATE	PLACEMENT OF PRIVATELY OWNED STRUCTURES WITHIN COUNTY ROAD RIGHTS-OF-WAY		2.46



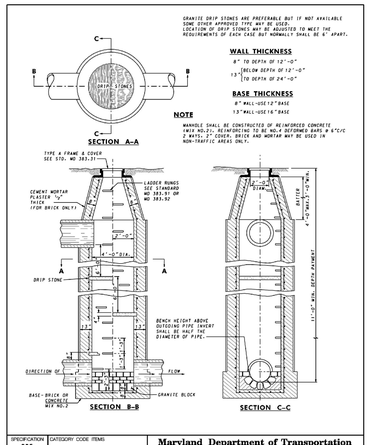
GENERAL NOTES

1. The open pavement cut must be saw-cut to create straight, neat, vertical joints immediately prior to the installation of the permanent patch. Clean thoroughly before paving.
2. The initial open pavement cut and utility trench must be backfilled, compacted, and restored with 3" (compacted depth) of temporary cold patch or hot mix asphalt (HMA) the same day that the cut is made, unless otherwise approved by the County Highway Engineer. The use of steel plates in the surface of the roadway to cover an open cut or trench must be approved by the Highway Engineer and installed in accordance with the County's blanket permit requirements specified in the conditions titled "Specifications and Submittal Requirements for Pavement Cuts for Utilities".
3. The permanent patch must be installed per Charles County standards and completed within ten (10) working days of the initial open cut. Exceptions to this time period will be public/private utility companies with a current blanket permit, when asphalt plants are closed during the winter months, or when the ambient air and surface temperatures do not meet required County specifications at time of placement. Blanket permit holders must adhere to the permit requirements specified in the conditions titled "Specifications and Submittal Requirements for Pavement Cuts for Utilities".
4. Tack coat all vertical joints between existing bound paving and proposed hot mix asphalt pavement repair before the HMA is placed. A bituminous joint sealer must be applied at the surface edges for all permanent pavement patches where the existing asphalt has been cut.
5. All work and materials used shall be tested in accordance with the Charles County Standard Specifications for Construction Manual, including but not limited to compaction, concrete compressive strength (if applicable), surface tolerances, etc. All work must be certified by a Professional Geotechnical Engineer registered in the state of Maryland.
6. Additional milling and overlay may be evaluated on a case by case basis dependent upon the number, size, and locations of the proposed utility pavement cuts. The minimum depth of milling and/or thickness of overlay shall be 1-1/2". Open pavement cuts within the shoulder area will not require unnecessary milling or surface asphalt cut-back into an adjacent travel lane.
7. If appropriate for the type of construction or repair, the keyhole technique may be used as an alternative to the conventional pavement cut, in accordance with Section 02813 of the Charles County Standard Specification for Construction Manual.

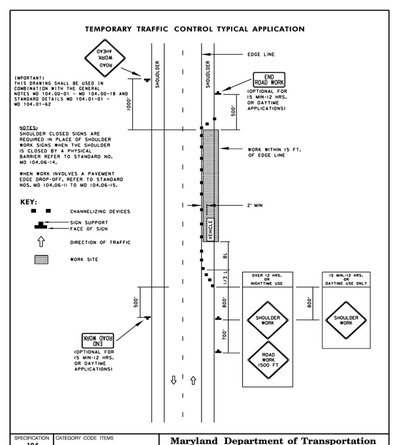
CHARLES COUNTY GOVERNMENT DEPARTMENT OF PLANNING & GROWTH MANAGEMENT	STANDARD DETAIL	REVISIONS	R
APPROVED: [signature] CHIEF, DEVELOPMENT SERVICES DIVISION 11/14/99 DATE	REPAIRING PAVEMENT OPENINGS FOR UTILITY TRENCHES IN FLEXIBLE PAVING		2.48



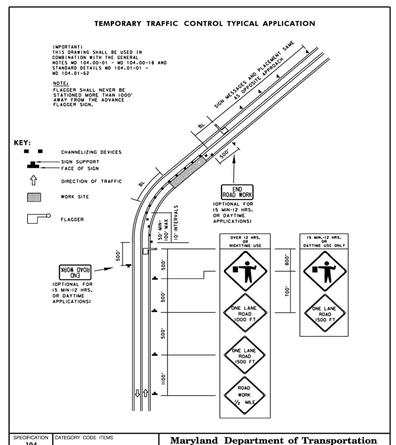
SPECIFICATION 305	CATEGORY CODE ITEMS	Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES STANDARD MANHOLE STANDARD NO. MD 383.01
APPROVED: [signature] DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT		
SHA APPROVAL 6-7-01 REVISION 3-22-04 REVISION 10-1-01 REVISION	APPROVAL 3-22-04 REVISION 7-14-08 REVISION	



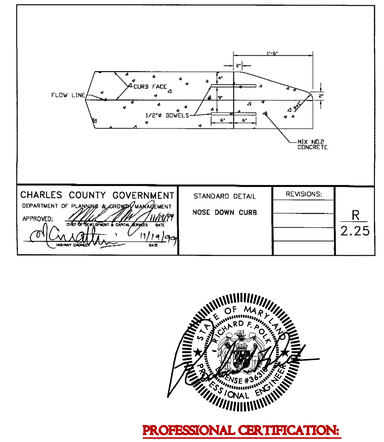
SPECIFICATION 305	CATEGORY CODE ITEMS	Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES STANDARD DROP MANHOLE STANDARD NO. MD 383.11
APPROVED: [signature] DIRECTOR - OFFICE OF HIGHWAY DEVELOPMENT		
SHA APPROVAL 6-7-01 REVISION 3-22-04 REVISION 10-1-01 REVISION	APPROVAL 3-22-04 REVISION 7-14-08 REVISION	



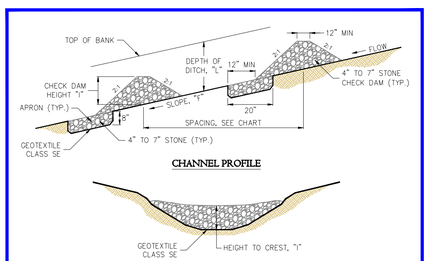
SPECIFICATION 104	CATEGORY CODE ITEMS	Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES SHOULDER WORK/2-LANE, 2-WAY EQU/LESS THAN 40 MPH STANDARD NO. MD 104.02-02
APPROVED: [signature] DIRECTOR - OFFICE OF TRAFFIC AND SAFETY		
SHA APPROVAL 6-7-01 REVISION 3-22-04 REVISION 10-1-01 REVISION	APPROVAL 3-22-04 REVISION 7-14-08 REVISION	



SPECIFICATION 104	CATEGORY CODE ITEMS	Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES FLAGGING OPERATION/2-LANE, 2-WAY EQU/LESS THAN 40 MPH STANDARD NO. MD 104.02-10
APPROVED: [signature] DIRECTOR - OFFICE OF TRAFFIC AND SAFETY		
SHA APPROVAL 6-7-01 REVISION 3-22-04 REVISION 10-1-01 REVISION	APPROVAL 3-22-04 REVISION 7-14-08 REVISION	



CHARLES COUNTY GOVERNMENT DEPARTMENT OF PLANNING & GROWTH MANAGEMENT	STANDARD DETAIL	REVISIONS:	R
APPROVED: [signature] CHIEF, DEVELOPMENT SERVICES DIVISION 11/14/99 DATE	NOSE DOWN CURB		2.25



CHANNEL PROFILE

CROSS SECTION

STANDARD STONE CHECK DAM DESIGN

SLOPE	SPACING
2% OR LESS	80'-0"
2.1% - 4%	40'-0"
4.1% - 7%	25'-0"
7.1% - 10%	15'-0"
OVER 10%	USE LINED WATERWAY DESIGN

CONSTRUCTION SPECIFICATIONS

1. PREPARE SWALES AND DITCHES IN ACCORDANCE WITH THE CONSTRUCTION SPECIFICATIONS.
2. CONSTRUCT THE CHECK DAM OF 4 TO 7 INCH STONE WITH MINIMUM SIDE SLOPES OF 2:1 AND A MINIMUM TOP WIDTH OF 12 INCHES. PLACE THE STONE SO THAT IT COMPLETELY COVERS THE WIDTH OF HTE CHANNEL AND IS KEYED INTO THE CHANNEL BANKS.
3. EXTEND GEOTEXTILE 12 INCHES BEYOND DOWNSTREAM FACE OF CHECK DAM. PROVIDE A 20 INCH LONG BY 8 INCH DEEP APRON OF 4 TO 7 INCH STONE EMBEDDED UNDER AND ALONG THE DOWSTREAM SIDE OF THE DAM.

STONE CHECK DAM DETAIL
(NTS)

Table B.3.3 Open Channel Systems and Filter Strip Materials Specifications

Material	Specification	Size	Notes
dry swale soil	USCS; ML, SM, SC	n/a	soil with a higher percent organic content is preferred
dry swale sand	ASTM C-33 fine aggregate concrete sand	0.02" to 0.04"	
check dam (pressure treated)	AWPA Standard C6	6" by 6" or 8" by 8"	do not coat with creosote; embed at least 3' into side slopes
check dam (natural wood)	Black Locust, Red Mulberry, Cedars, Catalpa, White Oak, Chestnut Oak, Black Walnut	6" to 12" diameter; notch as necessary	do not use the following, as these species have a predisposition towards rot: Ash, Beech, Birch, Elm, Hackberry, hemlock, Hickories, Maples, Red and Black Oak, Pines, Poplar, Spruce, Sweetgum, Willow
filter strip sand/gravel pervious berm	sand: per dry swale sand gravel; AASHTO M-43	sand: 0.02" to 0.04" gravel: ⅛" to 1"	mix with approximately 25% loam soil to support grass cover crop; sand (35-60%), silt (30-55%), and gravel (10-25%) see Bioretention planting soil notes for more detail.
pea gravel diaphragm and curtain drain	ASTM D 448	varies (No. 6) or (1/8" to 3/8")	use clean bank-run gravel
underdrain gravel	AASHTO M-43	0.25" to 0.75"	
underdrain	F 758 Type PS 28 or AASHTO M-278	4" to 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
geotextile	Class "C" - apparent opening size (ASTM-D-4751), grab tensile strength (ASTM-D-4632), puncture resistance (ASTM-D-4833)	n/a	
rip rap	per county criteria; if none given, use MSHA Standards and Specs Section 905	size per county DOT requirements based on 10-year design flows	

B.3.10

Appendix B.3 .....Construction Specifications for Sand Filters, Bioretention and Oper

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

DETAILS

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA	
DRAWN BY:	BZ
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	1" = 10'

09-047
PROJ. NO.

CD 012210.dwg
File Name:

14
SHEET NO.

STATE OF MARYLAND — RICHARD PAUL — No. 9437 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 36310, EXPIRATION DATE: 11/17/2012

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

				REMARKS OR CONDITIONS
GRADING	CONSTRUCTION		AS-BUILT	
ROADS	CONSTRUCTION		AS-BUILT	
STORM DRAINAGE	CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT	CONSTRUCTION		AS-BUILT	
WATER	CONSTRUCTION		AS-BUILT	
SEWER	CONSTRUCTION		AS-BUILT	
OTHER	CONSTRUCTION		AS-BUILT	

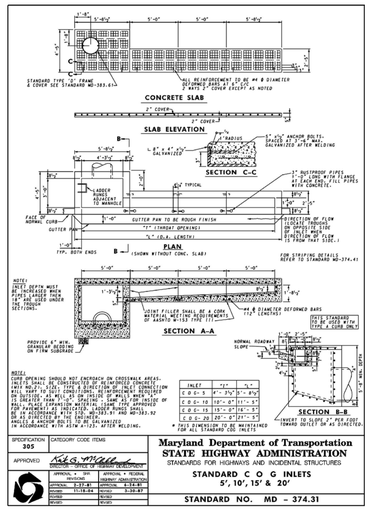
SIGNED:

DATE:

THIS PERMIT EXPIRES ON:

DATE:

PGM# VCI09-0078



SPECIFICATION	CATEGORY CODE ITEMS
305	

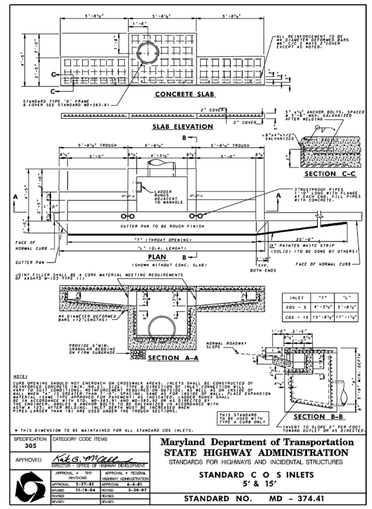
APPROVED

	APPROVAL + DATE RECEIVED	APPROVAL + FEDERAL HIGHWAY ADMINISTRATION
APPROVED	2-27-81	4-24-80
REVISED	11-15-84	5-30-91
REVISED		5-30-97
REVISED		

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STANDARD C O G INLETS
5', 10', 15' & 20'

STANDARD NO. MD - 374.31



SPECIFICATION	CATEGORY CODE ITEMS
305	

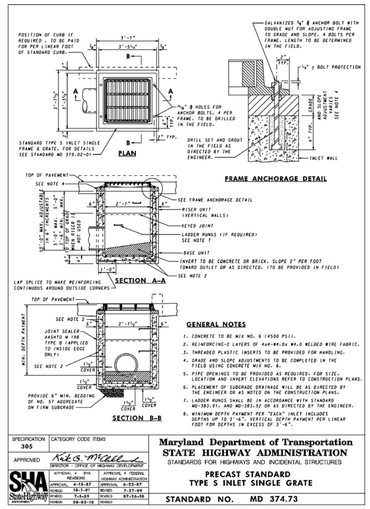
APPROVED

	APPROVAL + DATE RECEIVED	APPROVAL + FEDERAL HIGHWAY ADMINISTRATION
APPROVED	1-27-81	4-24-80
REVISED	11-15-84	5-30-91
REVISED		5-30-97
REVISED		

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

STANDARD C O S INLETS
5' & 15'

STANDARD NO. MD - 374.41



SPECIFICATION	CATEGORY CODE ITEMS
305	

APPROVED

	APPROVAL + DATE RECEIVED	APPROVAL + FEDERAL HIGHWAY ADMINISTRATION
APPROVED	4-15-97	4-25-97
REVISED	10/1-01	7-27-99
REVISED	7/1/05	07-25-08
REVISED	02-01-18	

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES

PRECAST STANDARD
TYPE S INLET SINGLE GRATE

STANDARD NO. MD 374.73

NOTES FOR CONNECTING TO EXISTING DRAINAGE STRUCTURES.

1. HOLES FOR INSTALLING NEW PIPES IN EXISTING STRUCTURES SHALL BE CAREFULLY CORED, DRILLED, OR CUT IN SUCH A MANNER TO MINIMIZE DAMAGE TO THE STRUCTURE. ANY DAMAGE TO THE EXISTING STRUCTURE SHALL BE PROMPTLY REPAIRED TO THE SATISFACTORY OF THE COUNTY ENGINEER OR THE STRUCTURE REPLACED. REINFORCING MANHOLES AND INLETS SHALL BE CUT ONLY TO THE EXTENT NECESSARY TO ACCOMMODATE THE NEW PIPE.
2. THE NEW PIPE SHALL BE ROUGHLY CENTERED IN THE HOLE AND THE PIPE END SET FLUSH WITH THE INSIDE WALL. THE ENTIRE SPACE BETWEEN THE PIPE AND THE WALL SHALL BE FILLED WITH BRICK AND MORTAR SO AS TO MAKE IT WATERTIGHT.

REFERENCES AND QUALITY CONTROL

A. All planting material shall conform to the latest edition of the American Standard for Nursery Stock as published by the American Association of Nurserymen. All trees shall be balled and burlapped, nursery-grown, not 'collected stock'.
B. All plants shall be nursery grown within a U.S.D.A. plant hardiness zone which is the same as, or colder than, the zone in which the project is located.
C. Do not make substitutions: If specified material is unavailable, landscape architect requires proof of non-availability and specifications for proposed equivalent materials. Landscape architect will make final selection of substitutions.
D. Size: Provide trees and shrubs of sizes shown or specified. Trees and shrubs of larger size may be used if acceptable to the landscape architect.
E. Inspection: Landscape architect reserves the right to inspect trees and shrubs before planting, either at place of growth or at site, compliance with requirements of name, variety, size and quality. Landscape architect has right to reject any plant material for any reason, including, but not limited to those listed above. All rejected plant material shall be immediately removed from the site.
F. Topsoil: Material shall be immediately removed from the site.
G. All planting to be completed by November 15th; or as directed by the landscape architect.

PRODUCTS

Mulch: Material shall be well aged, finely shredded or ground hardwood bark, dark brown in color, or approved equal. Material shall be mulching grade: uniform in size and free of foreign matter and weed seeds.
Leaf Mold: Composted for one year. Composed of leaves from mixed hardwoods.
Sewerage Sludge: Composted wood mulch containing organic matter. Obtained from Sewer Treatment Plant.
Soil Mix: A thorough mixture of 1 part Leaf Mold to 3 parts topsoil & mycorrhizal fungi at specified rate by manufacturer.
Anti-desiccant: "Wilt-Pruf" NCF as manufactured by Nursery Specialty Products of New York or approved equal.
Pre-emergence Weed Killer: shall be Treflan or approved equivalent.
Transit Trunk Guard: waxed corrugated cardboard or approved equal.
Guying Materials: Double reinforced rubber hose and 10 gauge metal wire.
Mycorrhizal Fungi: Broadcast type product, use as an inoculant for trees, shrubs, ground covers, perennials, and turf.
MYCORTREE
Plant Health Care Inc.
440 William Pitt Way
Pittsburgh, PA 15233
1-800-421-9051
Or equivalent
Fertilizer:
For new plant material provide packet, tablet or pellet forms of slow release fertilizers conforming to Fed. Spec. O-F-241, bearing the manufacturer's guaranteed statement of analysis. Slow release fertilizers shall contain a minimum percentage by weight of five nitrogen (of which 50% will be organic), 10 available phosphonic acid and five potash.

For bed preparation and existing trees, provide granular fertilizer conforming to Fed. Spec. O-F-241, Type I, Class 2 which shall bear the manufacturer's guaranteed statement of analysis. Granular fertilizer shall contain a minimum percentage by weight of 10 nitrogen (of which 50% shall be organic), six available phosphonic acid and four potash.

SOIL EXCAVATIONS

A. The excavation must not be less than 12 inches wider or deeper than necessary to accommodate the ball of the plant.
B. When conditions detrimental to plant growth are encountered; such as rubble fill or adverse drainage conditions, notify landscape architect before proceeding with planting operations.
C. Upon completion of planting of trees, cultivate a ring five times the diameter of the ball or 48", which ever is greater, 15" deep around trees; or as directed by landscape architect. Restore disturbed areas.

PREPARATION OF PLANTING AREAS

A. All planting areas shall be brought to proposed grade using topsoil mix as specified. No existing on-site soil shall be incorporated into the topsoil mix, unless directed by the landscape architect.
B. The planting bed shall be loosened prior to planting by one of the following methods: roto-tilling or with pick and shovel. Soil shall be loosened to a depth of 8" to 10".
C. Organic matter shall be spread over the bed to a depth of 2" for leaf mold and other organics, or 1" deep for sludge, (2 cubic yards of composed sludge/1000 square feet), after the soil has been loosened. The organic matter shall then be worked into the bed with a roto-tiller or other approved method.
D. Fertilizer shall be incorporated into the top 4-6" of bed at manufacturer's specified rate.
E. The entire bed shall be mulched to minimum depth of 3" with mulch as specified.
F. Soil shall be tested for Ph and amended as required to maintain an optimum Ph of 6.5 to 7.0 or as directed.

PLANTING PROCEDURES FOR TREES AND SHRUBS

A. Trees and shrubs shall bear same relationship to grade as they did in the nursery row.
B. Before placing shrubs in pits, place a 6" layer of soil mix material into bottom of pit and tamp.
C. All trees shall be placed directly on the scarified subgrade.
D. The plant pit shall be filled with soil mix material as specified and placed in 6" layers around the ball. Each layer shall be carefully tamped in place in a manner to avoid injury to the roots or ball, or disturbing the position of the plant. When approximately two-thirds (2/3) of the plant has been back-filled, the pit shall be filled with water and the soil allowed to settle around the roots. B&B plants shall have all the twine, wire and burlap cut away or folded back from the top 1/3 of the ball and trunks before applying water. After the water has been absorbed, the plant hole shall be filled with soil mix and tamped lightly to grade.
E. All containerized stock shall be removed from containers and the root mass should either be physically loosened or sliced to prevent strangulation.
F. Failure to comply with planting procedures outlined above is basis for rejection of plant material by landscape architect.
G. Transit trunk guard shall be removed only after inspection at site by landscape architect.

PRUNING

A. Trees and shrubs shall be pruned to remove broken branches only and/or to preserve their natural character and shape. Pruning shall be restricted in general to the secondary branches and soft, sucker growth. Never cut a leader.
B. ALL PLANTS DISFIGURED BY POOR PRUNING PRACTICES WILL BE REJECTED BY THE LANDSCAPE ARCHITECTS.
C. All pruning cuts shall remain unpainted.

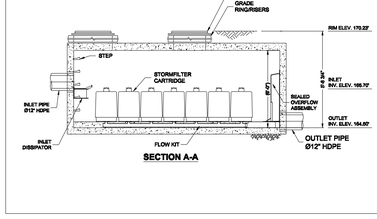
MULCHING

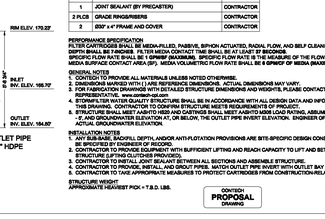
A. All planting beds shown on the plans shall be mulched with 3" of mulch over entire area.
B. Before mulch is installed, apply pre-emergence weed killer and incorporate into soil according to manufacturer's directions.
C. All surfaces to receive mulch shall be raked smooth and be free of all rocks, debris and large bark pieces. Mulch shall not be mounded up around base of tree.

STAKING AND GUYING

A. All trees to be staked and guyed within 48 hours of planting.
B. Methods and materials for staking and guying are illustrated in individual planting details.
C. Neatly flag all guy wires with rot resistant yellow tree marking ribbon.
D. Staking may not be required dependent on plant location as directed by landscape architect.
E. Brace plants upright in position by guy wires and rubber hose protection and stakes:

Tree Caliper	Tree Support Method
1 - 3 inches	2 guy wires (2 strand wire)
3 - 6 inches	3 guy wires (2 strand wire)
over 6 inches	4 guy wires (4 strand wire)





MATERIAL LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
33	27", 7.5 GPM, CSF CARTRIDGE (PRF)	CONTECH
7	2" PVC SLIP PLUG	CONTECH
1	FLOW KIT	CONTECH
1	INLET DISSIPATOR	CONTECH
1	SEALED OVERFLOW ASSEMBLY	CONTECH
1	JOINT SEALANT (BY PRECASTER)	CONTRACTOR
2 PLCS	GRADE RINGS/RISERS	CONTRACTOR
2	Ø30" x 4" FRAME AND COVER	CONTRACTOR

SITE DESIGN DATA	
WATER QUALITY FLOW RATE	N/A CFS
PEAK FLOW RATE	N/A CFS
RETURN PERIOD OF PEAK FLOW	N/A YRS
FILTER MEDIA TYPE	CSF

PERFORMANCE SPECIFICATION
FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. RADIAL MEDIA DEPTH SHALL BE 7-INCHES. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 37 SECONDS.
SPECIFIC FLOW RATE SHALL BE 1 GPM/SF (MAXIMUM). SPECIFIC FLOW RATE IS THE MEASURE OF THE FLOW (GPM) DIVIDED BY THE MEDIA SURFACE CONTACT AREA (SF). MEDIA VOLUMETRIC FLOW RATE SHALL BE 6 GPM/CF OF MEDIA (MAXIMUM).

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH (.) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH CONSTRUCTION PRODUCTS REPRESENTATIVE.
4. STORMFILTER WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET AASHTO M306 LOAD RATING, ASSUMING EARTH COVER OF 2' - 0", AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.

INSTALLATION NOTES
1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE (LIFTING CLUTCHES PROVIDED).
3. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL SECTIONS AND ASSEMBLE STRUCTURE.
4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH OUTLET PIPE INVERT WITH OUTLET BAY FLOOR.
5. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CONTRACTORS FROM CONSTRUCTION-RELATED EROSION RUNOFF.

STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = T.B.D. LBS.

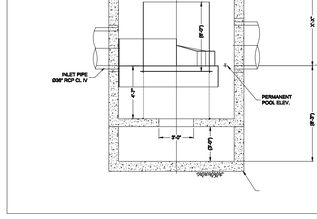
CONTECH
PROPOSAL DRAWING

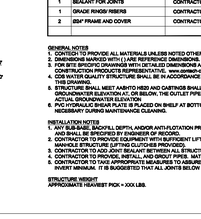
REVISION DESCRIPTION	DATE	BY

8' x 16' STORMFILTER - 419592-002
BRYANS ROAD SHOPPING CENTER
BRYANS ROAD, MD
SITE DESIGNATION: SF

CONTECH
STORMWATER SOLUTIONS

DATE	9/21/2010	
DESIGNED	BCI	BCI
DRAWN	BCI	BCI
CHECKED	JAMIESON	P
PROJECT NUMBER	419592	
SHEET	1	





MATERIALS LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
1	FIBERGLASS INLET & CYLINDER	CONTECH
1	5940 MICRON BKP. SCREEN	CONTECH
1	SEALANT FOR JOINTS	CONTRACTOR
1	GRADE RINGS/ RISERS	CONTRACTOR
2	Ø54" FRAME AND COVER	CONTRACTOR

SITE DESIGN DATA	
WATER QUALITY FLOW RATE	XX CFS
PEAK FLOW RATE	XX CFS
RETURN PERIOD OF PEAK FLOW	XX YRS

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

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

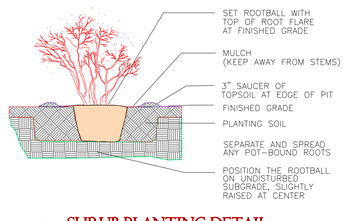
STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = XXX LBS.

REVISION DESCRIPTION	DATE	BY

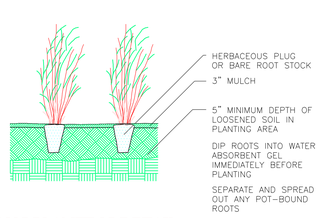
CDS5640-10-C - 419592-003
BRYANS ROAD SHOPPING CENTER
BRYANS ROAD, MD
SITE DESIGNATION: CDS

CONTECH
STORMWATER SOLUTIONS

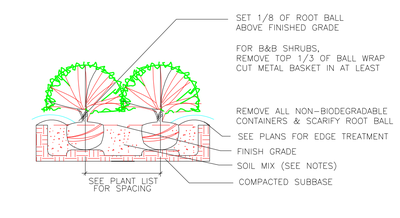
DATE	9/21/2010	
DESIGNED	BCI	BCI
DRAWN	BCI	BCI
CHECKED	JAMIESON	P
PROJECT NUMBER	419592	
SHEET	1	



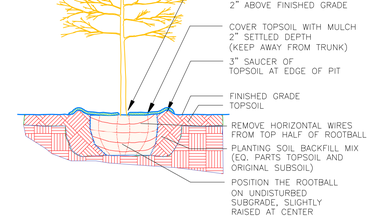
1/15 SHRUB PLANTING DETAIL
SCALE: NTS



2/15 PLUG PLANTING DETAIL
SCALE: NTS



3/15 MULTIPLE PLANTING DETAIL
SCALE: NTS



4/15 TREE PLANTING DETAIL
SCALE: NTS

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety, All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.



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: 36310, EXPIRATION DATE: 11/17/2012

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	
SIGNED:					THIS PERMIT EXPIRES ON:
DATE:					DATE:

DETAILS

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

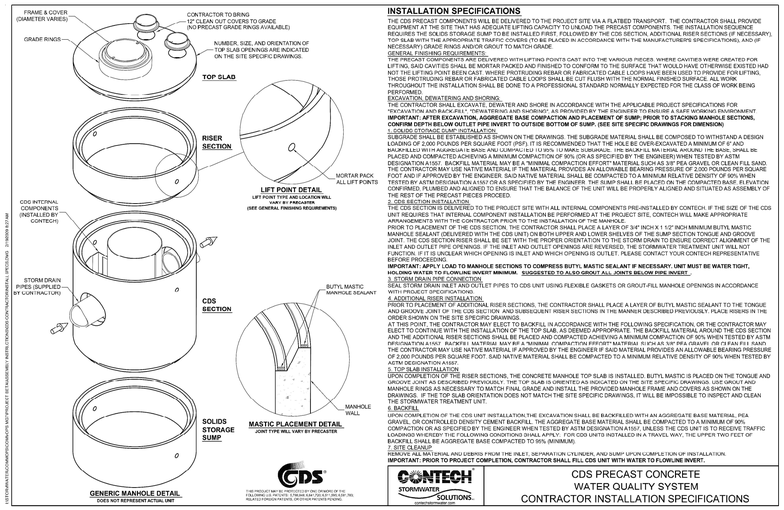
PROJECT DATA	
DRAWN BY:	BZ
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	1" = 10'

09-047
PROJ. NO.

CD 012210.dwg
File Name:

15
SHEET NO.

PGM# VCI09-0078



INSTALLATION SPECIFICATIONS

THE CDS PRECAST COMPONENTS WILL BE DELIVERED TO THE PROJECT SITE VIA A FLATBED TRANSPORT. THE CONTRACTOR SHALL PROVIDE EQUIPMENT ON SITE WITH SUFFICIENT LIFTING CAPACITY TO UNLOAD THE PRECAST COMPONENTS. THE INSTALLATION SEQUENCE REQUIRES THE SOLIDS STORAGE SUMP TO BE INSTALLED FIRST, FOLLOWED BY THE CDS SECTION. ADDITIONAL RISER SECTIONS (IF NECESSARY), TOP SLAB WITH THE APPROPRIATE TRAFFIC COVERS (TO BE PLACED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS), AND (IF NECESSARY) GRADE RINGS AND/OR GROUT TO MATCH GRADE.

GENERAL FINISHING REQUIREMENTS:

THE PRECAST COMPONENTS ARE DELIVERED WITH LIFTING POINTS CAST INTO THE VARIOUS PIECES. WHERE CAVITIES WERE CREATED FOR LIFTING, SAID CAVITIES SHALL BE MORTAR PACKED AND FINISHED TO CONFORM TO THE SURFACE THAT WOULD HAVE OTHERWISE EXISTED HAD NOT THE LIFTING POINT BEEN CAST. WHERE PROTRUDING REBAR OR FABRICATED CABLE LOOPS HAVE BEEN USED TO PROVIDE FOR LIFTING, THOSE PROTRUDING REBAR OR FABRICATED CABLE LOOPS SHALL BE CUT FLUSH WITH THE NORMAL FINISHED SURFACE. ALL WORK THROUGHOUT THE INSTALLATION SHALL BE DONE TO A PROFESSIONAL STANDARD NORMALLY EXPECTED FOR THE CLASS OF WORK BEING PERFORMED.

EXCAVATION, DEWATERING AND SHORING:

THE CONTRACTOR SHALL EMPLOY ALL EXCAVATION, DEWATER AND SHORE IN ACCORDANCE WITH THE APPLICABLE PROJECT SPECIFICATIONS FOR EXCAVATION, DEWATERING, BACKFILL, TRENCHING AND SHORING", AS PROVIDED BY THE ENGINEER TO ENSURE A SAFE WORKING ENVIRONMENT.

IMPORTANT: AFTER EXCAVATION, AGGREGATE BASE COMPACTION AND PLACEMENT OF SUMP, PRIOR TO STACKING MANHOLE SECTIONS, CONFIRM DEPTH BELOW OUTLET PIPE INVERT TO OUTSIDE BOTTOM OF SUMP. (SEE SITE SPECIFIC DRAWINGS FOR DIMENSION)

1. SOLIDS STORAGE SUMP INSTALLATION:

SUBGRADE SHALL BE ESTABLISHED AS SHOWN ON THE DRAWINGS. THE SUBGRADE MATERIAL SHALL BE COMPOSED TO WITHSTAND A DESIGN LOADING OF 2,000 POUNDS PER SQUARE FOOT (PSF). IT IS RECOMMENDED THAT THE HOLE BE OVER-EXCAVATED A MINIMUM OF 6" AND BACKFILLED WITH AGGREGATE BASE AND COMPACTED TO 90% TO MAKE SUBGRADE. THE BACKFILL MATERIAL AROUND THE BASE SHALL BE PLACED AND COMPACTED ACHIEVING A MINIMUM COMPACTION OF 90% (OR AS SPECIFIED BY THE ENGINEER) WHEN TESTED BY ASTM DESIGNATION A1557. BACKFILL MATERIAL MAY BE A "MINIMAL COMPACTION EFFORT" MATERIAL SUCH AS 3/8" PEA GRAVEL OR CLEAN FILL SAND. THE CONTRACTOR MAY USE NATIVE MATERIAL IF THE MATERIAL PROVIDES AN ALLOWABLE BEARING PRESSURE OF 2,000 POUNDS PER SQUARE FOOT AND IF APPROVED BY THE ENGINEER. SAID NATIVE MATERIAL SHALL BE COMPACTED TO A MINIMUM RELATIVE DENSITY OF 90% WHEN TESTED BY ASTM DESIGNATION A1557 OR AS SPECIFIED BY THE ENGINEER. THE SUMP SHALL BE PLACED ON THE COMPACTED BASE. ELEVATION CONFIRMED. PLUMBED AND ALIGNED TO ENSURE THAT THE BALANCE OF THE UNIT WILL BE PROPERLY ALIGNED AND SITUATED AS ASSEMBLY OF THE REST OF THE PRECAST PIECES PROCEED.

2. CDS SECTION INSTALLATION:

THE CDS SECTION IS DELIVERED TO THE PROJECT SITE WITH ALL INTERNAL COMPONENTS PRE-INSTALLED BY CONTECH. IF THE SIZE OF THE CDS UNIT REQUIRES THAT INTERNAL COMPONENT INSTALLATION BE PERFORMED AT THE PROJECT SITE, CONTECH WILL MAKE APPROPRIATE ARRANGEMENTS WITH THE CONTRACTOR PRIOR TO THE INSTALLATION OF THE MANHOLE.

PRIOR TO PLACEMENT OF THE CDS SECTION, THE CONTRACTOR SHALL PLACE A LAYER OF 3/4" INCH X 1 1/2" INCH MINIMUM BUTYL MASTIC MANHOLE SEALANT (DELIVERED WITH THE CDS UNIT) ON BOTH UPPER AND LOWER SHELVES OF THE SUMP SECTION TONGUE AND GROOVE JOINT. THE CDS SECTION RISER SHALL BE SET WITH THE PROPER ORIENTATION TO THE STORM DRAIN TO ENSURE CORRECT ALIGNMENT OF THE INLET AND OUTLET PIPE OPENINGS. IF THE INLET AND OUTLET OPENINGS ARE REVERSED, THE STORMWATER TREATMENT UNIT WILL NOT FUNCTION. IF IT IS UNCLEAR WHICH OPENING IS INLET AND WHICH OPENING IS OUTLET, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE BEFORE PROCEEDING.

IMPORTANT: APPLY 1 LOAD TO MANHOLE SECTIONS TO COMPRESS BUTYL MASTIC SEALANT IF NECESSARY. UNIT MUST BE WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. SUGGESTED TO ALSO GROUT ALL JOINTS BELOW PIPE INVERT.

3. STORM DRAIN PIPE INSTALLATION:

SEAL STORM DRAIN INLET AND OUTLET PIPES TO CDS UNIT USING FLEXIBLE GASKETS OR GROUT-FILL MANHOLE OPENINGS IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

4. ADDITIONAL RISER INSTALLATION:

PRIOR TO PLACEMENT OF ADDITIONAL RISER SECTIONS, THE CONTRACTOR SHALL PLACE A LAYER OF BUTYL MASTIC SEALANT TO THE TONGUE AND GROOVE JOINT OF THE CDS SECTION AND SUBSEQUENT RISER SECTIONS IN THE MANNER DESCRIBED PREVIOUSLY. PLACE RISERS IN THE ORDER SHOWN ON THE SITE SPECIFIC DRAWINGS.

AT THIS POINT, THE CONTRACTOR MAY ELECT TO BACKFILL IN ACCORDANCE WITH THE FOLLOWING SPECIFICATION, OR THE CONTRACTOR MAY ELECT TO CONTINUE WITH THE INSTALLATION OF THE TOP SLAB, AS DEEMED APPROPRIATE. THE BACKFILL MATERIAL AROUND THE CDS SECTION AND THE ADDITIONAL RISER SECTIONS SHALL BE PLACED AND COMPACTED ACHIEVING A MINIMUM COMPACTION OF 90% WHEN TESTED BY ASTM DESIGNATION A1557. BACKFILL MATERIAL MAY BE A "MINIMAL COMPACTION EFFORT" MATERIAL SUCH AS 3/8" PEA GRAVEL OR CLEAN FILL SAND. THE CONTRACTOR MAY USE NATIVE MATERIAL IF APPROVED BY THE ENGINEER IF SAID MATERIAL PROVIDES AN ALLOWABLE BEARING PRESSURE OF 2,000 POUNDS PER SQUARE FOOT. SAID NATIVE MATERIAL SHALL BE COMPACTED TO A MINIMUM RELATIVE DENSITY OF 90% WHEN TESTED BY ASTM DESIGNATION A1557.

5. TOP SLAB INSTALLATION:

UPON COMPLETION OF THE RISER SECTIONS, THE CONCRETE MANHOLE TOP SLAB IS INSTALLED. BUTYL MASTIC IS PLACED ON THE TONGUE AND GROOVE JOINT AS DESCRIBED PREVIOUSLY. THE TOP SLAB IS ORIENTED AS INDICATED ON THE SITE SPECIFIC DRAWINGS. USE GROUT AND MANHOLE RINGS AS NECESSARY TO MATCH FINAL GRADE AND INSTALL THE PROVIDED MANHOLE FRAME AND COVERS AS SHOWN ON THE DRAWINGS. IF THE TOP SLAB ORIENTATION DOES NOT MATCH THE SITE SPECIFIC DRAWINGS, IT WILL BE IMPOSSIBLE TO INSPECT AND CLEAN THE STORMWATER TREATMENT UNIT.

6. BACKFILL

UPON COMPLETION OF THE CDS UNIT INSTALLATION, THE EXCAVATION SHALL BE BACKFILLED WITH AN AGGREGATE BASE MATERIAL, PEA GRAVEL, OR CONTROLLED DENSITY CEMENT BACKFILL. THE AGGREGATE BASE MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 90% COMPACTION OR AS SPECIFIED BY THE ENGINEER WHEN TESTED BY ASTM DESIGNATION A1557, UNLESS THE CDS UNIT IS TO RECEIVE TRAFFIC LOADING WHEREBY THE FOLLOWING CONDITIONS SHALL APPLY: FOR CDS UNITS INSTALLED IN A TRAVEL WAY, THE UPPER TWO FEET OF BACKFILL SHALL BE AGGREGATE BASE COMPACTED TO 95% (MINIMUM).

7. SITE CLEAN UP:

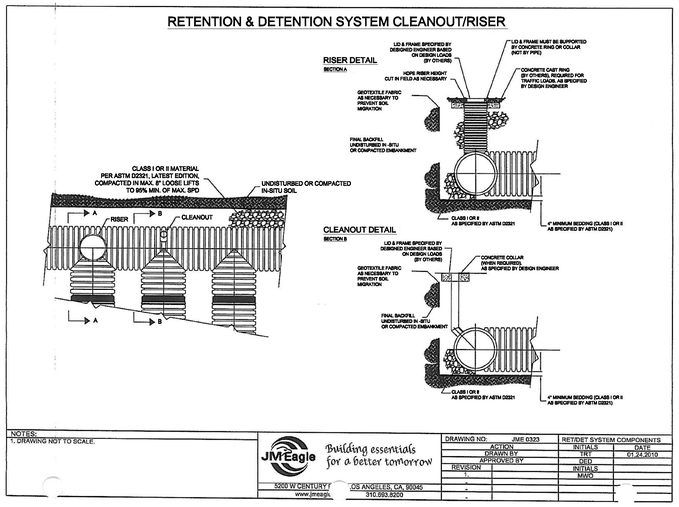
REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM THE INLET, SEPARATION CYLINDERS, AND SUMP UPON COMPLETION OF INSTALLATION.

IMPORTANT: PRIOR TO PROJECT COMPLETION, CONTRACTOR SHALL FILL CDS UNIT WITH WATER TO FLOWLINE INVERT.

CDS PRECAST CONCRETE
WATER QUALITY SYSTEM
CONTRACTOR INSTALLATION SPECIFICATIONS

CONTECH STORMWATER SOLUTIONS
www.contechstw.com

RETENTION & DETENTION SYSTEM CLEANOUT/RISER



NOTES:
1. DRAWING NOT TO SCALE.

JM Eagle — Building essentials for a better tomorrow
5200 W CENTURY I www.jmeagle.com LOS ANGELES, CA. 90045 310.893.8200

DRAWING NO: JMR 0323		RETIDET SYSTEM COMPONENTS	
ACTION		INITIALS	DATE
DRAWN BY		TRT	01.24.2013
APPROVED BY		DEO	
REVISION		INITIALS	
1.	-	MWO	
2.	-		
3.	-		

CDS MAINTENANCE NOTES

THE CDS SYSTEM SHOULD BE INSPECTED AT REGULAR INTERVALS AND MAINTAINED WHEN NECESSARY TO ENSURE OPTIMUM PERFORMANCE. THE RATE AT WHICH THE SYSTEM COLLECTS POLLUTANTS WILL DEPEND MORE HEAVILY ON SITE ACTIVITIES THAN THE SIZE OF THE UNIT, E.G., UNSTABLE SOILS OR HEAVY WINTER SANDING WILL CAUSE THE GRIT CHAMBER TO FILL MORE QUICKLY BUT REGULAR SWEEPING OF PAVED SURFACES WILL SLOW ACCUMULATION.

CDS INSPECTION NOTES

INSPECTION IS THE KEY TO EFFECTIVE MAINTENANCE AND IS EASILY PERFORMED. POLLUTANT DEPOSITION AND TRANSPORT MAY VARY FROM YEAR TO YEAR AND REGULAR INSPECTIONS WILL HELP INSURE THAT THE SYSTEM IS CLEANED OUT AT THE APPROPRIATE TIME. AT A MINIMUM, INSPECTIONS SHOULD BE PERFORMED TWICE PER YEAR (I.E. SPRING AND FALL) HOWEVER MORE FREQUENT INSPECTIONS MAY BE NECESSARY IN CLIMATES WHERE WINTER SANDING OPERATIONS MAY LEAD TO RAPID ACCUMULATIONS, OR IN EQUIPMENT WASHDOWN AREAS. ADDITIONALLY, INSTALLATIONS SHOULD BE INSPECTED MORE FREQUENTLY WHERE EXCESSIVE AMOUNTS OF TRASH ARE EXPECTED. THE VISUAL INSPECTION SHOULD ASCERTAIN THAT THE SYSTEM COMPONENTS ARE IN WORKING ORDER AND THAT THERE ARE NO BLOCKAGES OR OBSTRUCTIONS TO INLET AND/OR SEPARATION SCREEN. THE INSPECTION SHOULD ALSO IDENTIFY EVIDENCE OF VECTOR INFESTATION AND ACCUMULATIONS OF HYDROCARBONS, TRASH, AND SEDIMENT IN THE SYSTEM. MEASURING POLLUTANT ACCUMULATION CAN BE DONE WITH A CALIBRATED DIPSTICK, TAPE MEASURE OR OTHER MEASURING INSTRUMENT. IF SORBENT MATERIAL IS USED FOR ENHANCED REMOVAL OF HYDROCARBONS THEN THE LEVEL OF DISCOLORATION OF THE SORBENT MATERIAL SHOULD ALSO BE IDENTIFIED DURING INSPECTION. IT IS USEFUL AND OFTEN REQUIRED AS PART OF A PERMIT TO KEEP A RECORD OF EACH INSPECTION. A SIMPLE FORM FOR DOING SO IS PROVIDED.

ACCESS TO THE CDS UNIT IS TYPICALLY ACHIEVED THROUGH TWO MANHOLE ACCESS COVERS. ONE OPENING ALLOWS FOR INSPECTION AND CLEANOUT OF THE SEPARATION CHAMBER (SCREEN/CYLINDER) AND ISOLATED SUMP. THE OTHER ALLOWS FOR INSPECTION AND CLEANOUT OF SEDIMENT CAPTURED AND RETAINED BEHIND THE SCREEN. FOR UNITS POSSESSING A SIZABLE DEPTH BELOW GRADE (DEPTH TO PIPE), A SINGLE MANHOLE ACCESS POINT WOULD ALLOW BOTH SUMP CLEANOUT AND ACCESS BEHIND THE SCREEN.

THE CDS SYSTEM SHOULD BE CLEANED WHEN THE LEVEL OF SEDIMENT HAS REACHED 75% OF CAPACITY IN THE ISOLATED SUMP AND/OR WHEN AN APPRECIABLE LEVEL OF HYDROCARBONS AND TRASH HAS ACCUMULATED. IF SORBENT MATERIAL IS USED, IT SHOULD BE REPLACED WHEN SIGNIFICANT DISCOLORATION HAS OCCURRED. PERFORMANCE WILL NOT BE IMPACTED UNTIL 100% OF THE SUMP CAPACITY IS EXCEEDED HOWEVER IT IS RECOMMENDED THAT THE SYSTEM BE CLEANED PRIOR TO THAT FOR EASIER REMOVAL OF SEDIMENT. THE LEVEL OF SEDIMENT IS EASILY DETERMINED BY MEASURING FROM FI NISHED GRADE DOWN TO THE TOP OF THE SEDIMENT PILE. TO AVOID UNDERESTIMATING THE LEVEL OF SEDIMENT IN THE CHAMBER, THE MEASURING DEVICE MUST BE LOWERED TO THE TOP OF THE SEDIMENT PILE CAREFULLY. FINER, SILTY PARTICLES AT THE TOP OF THE PILE TYPICALLY OFFER LESS RESISTANCE TO THE END OF THE ROD THAN LARGER PARTICLES TOWARD THE BOTTOM OF THE PILE. ONCE THIS MEASUREMENT IS RECORDED, IT SHOULD BE COMPARED TO THE AS-BUILT DRAWING FOR THE UNIT TO DETERMINE IF THE HEIGHT OF THE SEDIMENT PILE OFF THE BOTTOM OF THE SUMP FL OOR EXCEEDS 75% OF THE TOTAL HEIGHT OF ISOLATED SUMP.

HDPE PIPE INSPECTION NOTES

INSPECT EACH PIPE SHIPMENT WITH CARE UPON ARRIVAL. EACH PIPE SHIPMENT IS CAREFULLY LOADED AT THE FACTORY USING METHODS ACCEPTABLE TO THE CARRIER. THE CARRIER IS THEN RESPONSIBLE FOR DELIVERING THE PIPE AS RECEIVED FROM JM EAGLE. ALL SHIPMENTS INCLUDE AN ADEQUATE AMOUNT OF LUBRICANT FOR THE PIPE IF NECESSARY. IT IS THE RESPONSIBILITY OF THE RECEIVER TO MAKE CERTAIN THERE HAS BEEN NO LOSS OR DAMAGE UPON ARRIVAL.

CHECK THE MATERIALS, PIPE, GASKETS AND FITTINGS RECEIVED AGAINST THE BILL OF LADING (TALLY SHEET THAT ACCOMPANIES EVERY SHIPMENT) IN ACCORDANCE WITH THE GENERAL GUIDELINES BELOW. REPORT ANY ERROR OR DAMAGE TO THE TRANSPORTATION COMPANY REPRESENTATIVE, AND HAVE PROPER NOTATION MADE ON THE DELIVERY RECEIPT AND SIGNED BY THE DRIVER. PRESENT THE CLAIM IN ACCORDANCE WITH THE CARRIER'S INSTRUCTIONS. DO NOT DISPOSE OF ANY DAMAGED MATERIAL. THE CARRIER WILL ADVISE YOU OF THE PROCEDURE TO FOLLOW IN ORDER TO PROCURE SAMPLES AND REPORT THE INCIDENT.

1. MAKE OVERALL EXAMINATION OF THE LOAD. IF THE LOAD IS INTACT, ORDINARY INSPECTION WHILE UNLOADING SHOULD BE ENOUGH TO MAKE SURE PIPE HAS ARRIVED IN GOOD CONDITION.
2. IF LOAD HAS SHIFTED OR SHOWS ROUGH TREATMENT, THEN EACH PIECE MUST BE CAREFULLY INSPECTED FOR DAMAGE.
3. CHECK THE TOTAL QUANTITIES OF EACH ITEM AGAINST THE TALLY SHEET (PIPE, FITTINGS, LUBRICANT, ETC.).
4. ANY DAMAGED OR MISSING ITEMS MUST BE NOTED ON THE DELIVERY RECEIPT AND RETURNED TO THE TRANSPORTATION COMPANY.
5. NOTIFY CARRIER IMMEDIATELY AND MAKE CLAIM IN ACCORDANCE WITH THEIR INSTRUCTIONS.
6. DO NOT DISPOSE OF ANY DAMAGED MATERIAL. CARRIER WILL NOTIFY YOU OF THE PROCEDURE TO FOLLOW.
7. SHORTAGES AND DAMAGED MATERIALS ARE NOT AUTOMATICALLY RESHIPPED. IF REPLACEMENT MATERIAL IS NEEDED, REORDER THROUGH YOUR DISTRIBUTOR AND MAKE THEM AWARE OF THE CLAIM.

PGM# VCI09-0078

STATE OF MARYLAND — RICHARD E. FOX — LICENSE #36310 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 36310, EXPIRATION DATE: 11/17/2012

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	
SIGNED:					THIS PERMIT EXPIRES ON:
DATE:					DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

DETAILS

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA

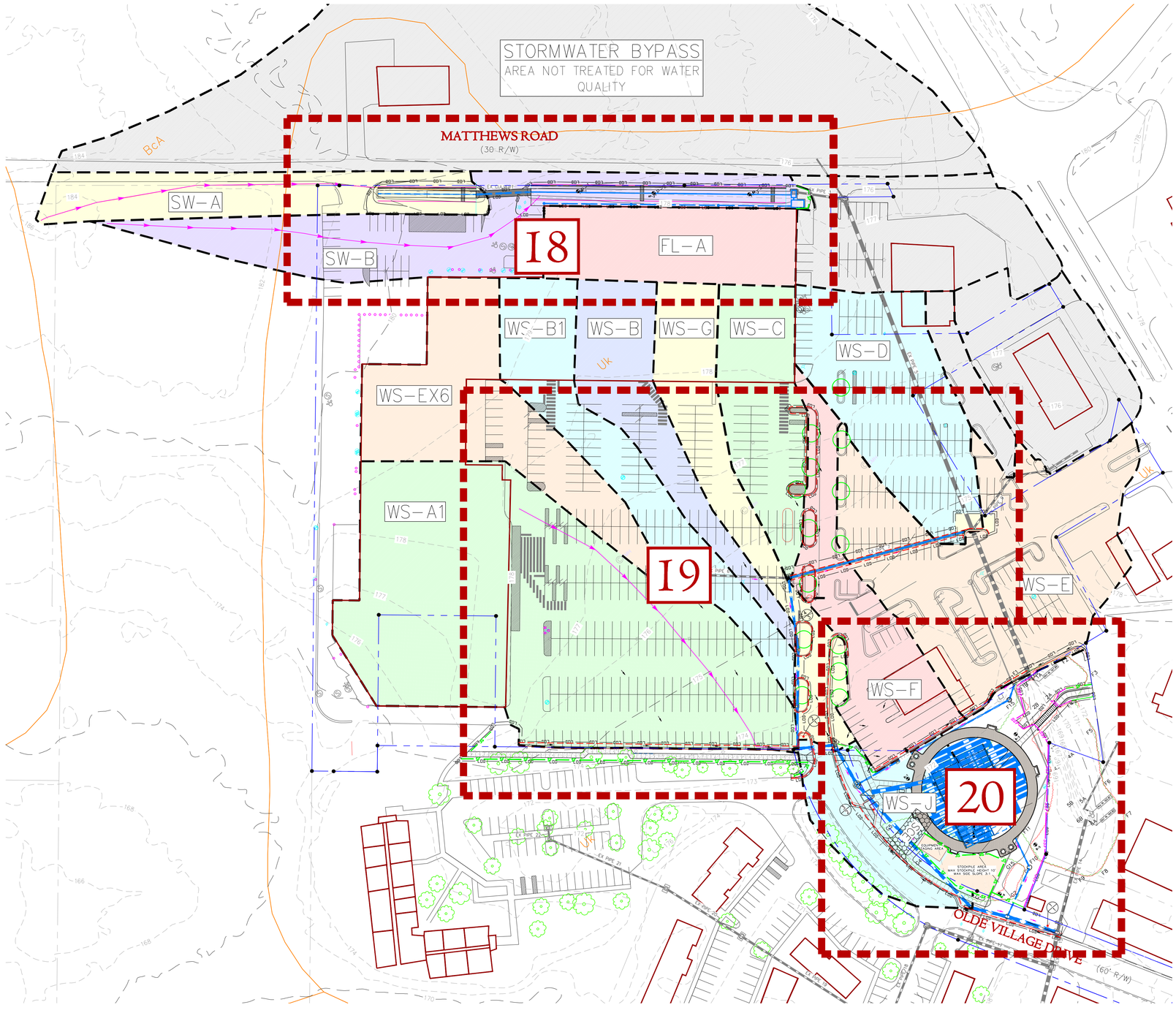
DRAWN BY:	BZ
CHECK BY:	RP
CHARLES COUNTY	
BRYANS ROAD, MARYLAND	
F.B. NO:	00-00-00
T.M. NO.	0-00-00-00
DATE:	05/20/10
SCALE:	1" = 10'

09-047
PROJ. NO.

CD 012210.dwg
File Name:

16
SHEET NO.

PGM# VCI09-0078



WATERSHED KEY:

WS A	= 51,185 SF (1.18 AC.)
WS A-1	= 65,080 SF (1.49 AC.)
WS B	= 23,864 SF (0.55 AC.)
WS B-1	= 30,995 SF (0.71 AC.)
WS C	= 25,181 SF (0.58 AC.)
WS-D	= 37,909 SF (0.87 AC.)
WS-E	= 64,580 SF (1.48 AC.)
WS-F	= 29,052 SF (0.67 AC.)
WS-G	= 29,326 SF (0.67 AC.)
WS-J	= 29,113 SF (0.67 AC.)
WS-EX6	= 39,142 SF (0.90 AC.)
WS-SWA	= 26,097 SF (0.60 AC.)
WS-SWB	= 44,055 SF (1.01 AC.)
WS-FLA	= 25,050 SF (0.58 AC.)

LEGEND

- Existing ROW Line
- Existing Vegetation Line
- Existing Edge of Pavement
- Existing Centerline of Road
- Existing Building
- Existing Contour 1x (84)
- Existing Contour 5x (80)
- Existing Culvert Pipe
- Existing Soil Line
- Existing Rip Rap
- Proposed Watershed Line
- Proposed Sub-Watershed Line
- Proposed Contour 1x (84)
- Proposed Contour 5x (80)
- Proposed Culvert Pipe
- Proposed Top of Swale
- Proposed Bottom of Swale
- Proposed Centerline of Swale
- Proposed TOC Flowpath
- Proposed Rip Rap
- Soil Testing Location
- Drainage Arrows
- Utility Pole
- Road Sign
- Electric Box (E)
- Telephone Box (T)
- Mailbox
- Sewer Manhole (S)
- Water Valves
- Fire Hydrant
- Monitor Well
- Light Post
- Inlet Protection
- SIP/CIP
- Stone Construction Entrance
- SCE
- Limits of Disturbance
- LOD
- Silt Fence
- SF
- Super Silt Fence
- SSF
- Saw Cut

SOIL TYPES AND DESCRIPTIONS

BcA	(C)	BELTSVILLE-AQUASCO COMPLEX, 0%-2% SLOPES
UmB	(C)	URBAN LAND-BELTSVILLE COMPLEX, 0-5% SLOPES
Uk	(D)	URBAN LAND

AREA DISTRIBUTION

TOTAL DRAINAGE AREA: 11.66 ACRES
TOTAL DISTURBED AREA: 1.84 ACRES

PGM# VCI 09-0078

STATE OF MARYLAND — RICHARD P. ROSS — LICENSE #36310 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 36310, EXPIRATION DATE: 11/17/2012 .

CHARLES COUNTY GOVERNMENT
DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	
SIGNED:					THIS PERMIT EXPIRES ON:
DATE:					DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

EROSION AND SEDIMENT CONTROL PLAN KEY SHEET

REV NO.	CONSTRUCTION REVISION	DATE

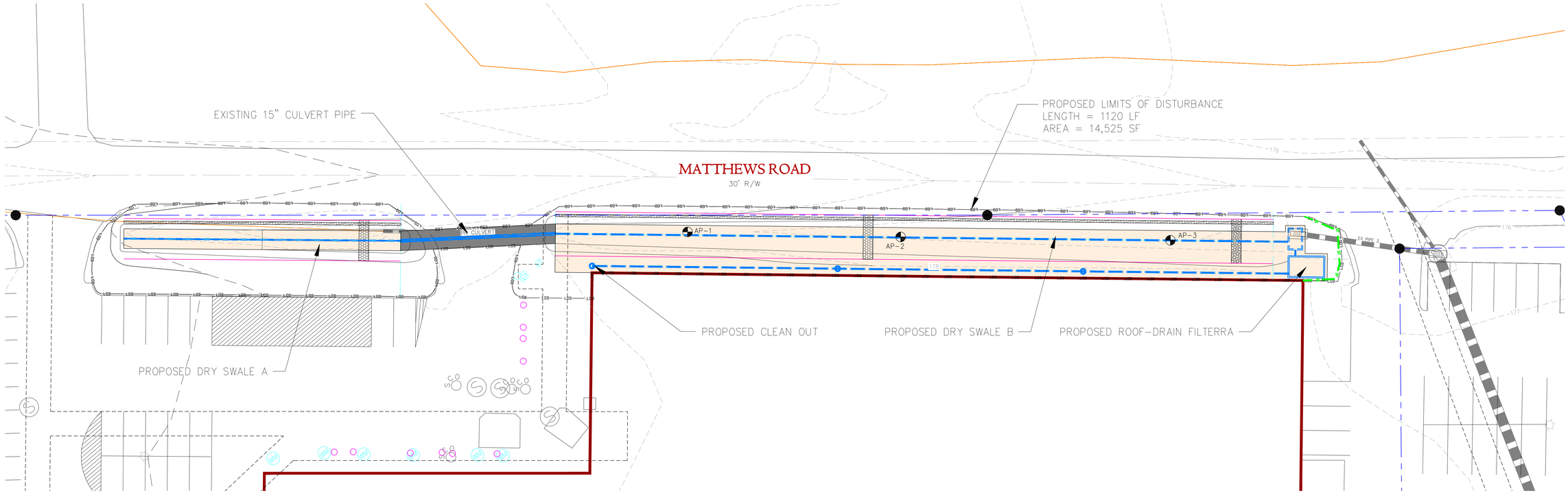
VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA

DRAWN BY:	BZ
CHECK BY:	RP
CHARLES COUNTY	
WALDORF, MARYLAND	
F.B. NO:	
T.M. NO.	
DATE:	08/04/10
SCALE:	1" = 60'

09-047
PROJ. NO.
ES 080410.dwg
File Name:
17
SHEET NO.

PGM# VCI 09-0078



DRY SWALE

SOUTHSIDE OF MATTHEWS ROAD
SCALE 1" = 20'

NOTES:

1. FOR PROPOSED DESIGN PLANS PLEASE REFER TO THE CONSTRUCTION SET OF PLANS, SHEETS 1-15.
2. FOR EROSION AND SEDIMENT CONTROL DETAILS, PLEASE REFER TO SHEET 21.
3. FOR STORMWATER MANAGEMENT COMPUTATIONS, PLEASE REFER TO SEPARATE STORMWATER REPORT.

SEDIMENT CONTROL NOTES

1. ALL SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED, MAINTAINED, AND REMOVED IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARD DETAILS GIVEN IN M.D.E.'S "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."
2. ALL SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED AND PLACED IN OPERATION BEFORE EXCAVATION IS STARTED. THE CONTRACTOR SHALL ADJUST THE SEDIMENT CONTROL DEVICES AS NECESSARY TO MEET FIELD CONDITIONS, KEEP THEM CLEAN AND IN WORKING ORDER DURING CONSTRUCTION. NO SEDIMENT CONTROL DEVICE SHALL BE REMOVED UNTIL THE ENTIRE AREA DRAINING TO IT HAS BEEN ADEQUATELY STABILIZED, INSPECTED AND APPROVED BY CHARLES COUNTY SEDIMENT CONTROL INSPECTOR.
3. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO KEEP MUD AND DEBRIS FROM BEING TRACKED ON PUBLIC ROADS.
4. APPROVAL OF CHARLES COUNTY SEDIMENT CONTROL INSPECTIONS DIVISION AT 301-645-0700 SHALL BE OBTAINED BY THE OWNER/DEVELOPER UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
5. APPROVAL SHALL BE OBTAINED BY THE OWNER/DEVELOPER UPON FINAL STABILIZATION OF THE SITE BEFORE REMOVAL OF THE SEDIMENT CONTROLS. ONCE THE VEGETATION IS ESTABLISHED, THE SITE SHOULD HAVE A 95% GRASS COVER TO BE CONSIDERED ADEQUATELY STABILIZED.
6. ALL EXCAVATED MATERIAL TO BE TEMPORARILY STOCKPILED IN THE LOCATION SHOW ON THE PLANS.
7. ANY EXCAVATED MATERIAL THAT IS HAULED OFFSITE MUST BE TAKEN TO A SITE WITH AN ACTIVE AND APPROVED SEDIMENT CONTROL PLAN. THE PROPOSED SITE INFORMATION IS TO BE PROVIDED TO THE SEDIMENT CONTROL INSPECTOR AT THE TIME OF THE PRE-CON MEETING.
8. THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR IS REQUIRED UPON INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PRECEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
9. EROSION AND SEDIMENT PRACTICES AND SITE IN GENERAL, MUST BE INSPECTED WEEKLY AND AFTER EACH RAIN FALL EVENT, BY THE CONTRACTOR OR OTHER RESPONSIBLE PERSON, AND ANY NEEDED MAINTENANCE PERFORMED IMMEDIATELY.

SEQUENCE OF CONSTRUCTION DRY SWALES

1. CONTRACTOR MUST NOTIFY THE CHARLES COUNTY SEDIMENT CONTROL INSPECTOR, 301-645-0700, 5 DAYS PRIOR TO CONSTRUCTION TO SCHEDULE INSPECTION OF EROSION AND SEDIMENT CONTROL PLAN IMPLEMENTATION.

1 DAYS 1.1. STARTING AT THE OUTFALL OF THE MOST DOWNSTREAM SWALE SECTION, REMOVE DRIVEWAY CULVERT DIRECTLY UPSTREAM.
1 DAYS 1.2. INSTALL PROPOSED DRAINAGE SWALE, UNDERDRAIN, AND RECHARGE STONE.
1 DAYS 1.3. REPLACE EXISTING UPSTREAM DRIVEWAY CULVERT AND REPAIR DRIVEWAY WITHIN THE COUNTY ROW.
1 DAYS 1.4. PROVIDE SAME DAY SODDING TO ALL DISTURBED AREAS.
14 DAYS 1.5.1 SOD TO BE WATERED FOR A MINIMUM OF 2 WEEKS AFTER INSTALLATION
1 DAYS 1.5.2 SOD NEEDS TO BE PINNED/STAPLED TO EXISITNG SURFACE.
1 DAYS 1.5.3 ANY AREAS NOT COMPLETED AT THE END OF BUSINESS DAY WILL NEED TO BE COVERED WITH PLASTIC & ANCHORED. TRAFFIC CONES TO BE SET UP FOR SAFETY AS NEEDED.
1 DAYS 1.5.4 WHEN PLASTIC COVERING IS REMOVED ANY CLEAN ACCUMULATED WATER SHALL BE DIRECTED TO STABILIZED AREAS OR IF DIRTY, PUMPED THROUGH A DIRTBAG.
1 DAYS 1.5. REPEAT STEPS 1.1 TO 1.5 FOR NEXT UPSTREAM DRAINAGE SWALE.

SEQUENCE OF CONSTRUCTION FOR ROOFTOP FILTERRA

1. CONTRACTOR MUST NOTIFY THE CHARLES COUNTY SEDIMENT CONTROL INSPECTOR, 301-645-0700, 5 DAYS PRIOR TO CONSTRUCTION TO SCHEDULE INSPECTION OF EROSION AND SEDIMENT CONTROL PLAN IMPLEMENTATION.

1 DAYS 2. UPON SEDIMENT CONTROL INSPECTOR APPROVAL CLEAR AND GRUB FOR THE INSTALLATION OF ALL PERIMETER SEDIMENT CONTROL DEVICES PRIOR TO ANY EARTH DISTURBING ACTIVITY.

1 DAYS 2.1. REMOVE VEGETATION AS IT PERTAINS TO THE INSTALLATION OF THE PROPOSED FILTERRA.
2 DAYS 2.2. INSTALL PROPOSED FILTERRA AND TIE OUTFALL INTO THE PROPSOED STRUCTURE.
1 DAYS 2.2. INSTALL PROPOSED CLEANOUTS AND ROOFTOP COLLECTION SYSTEM AND CONNECT INTO PROPOSED FILTERRA.

1 DAYS 3. STABILIZE ALL DISTURBED AREAS WITH SAME DAY SODDING.
14 DAYS 3.5.1 SOD TO BE WATERED FOR A MINIMUM OF 2 WEEKS AFTER INSTALLATION
1 DAYS 3.5.2 SOD NEEDS TO BE PINNED/STAPLED TO EXISITNG SURFACE.
1 DAYS 3.5.3 ANY AREAS NOT COMPLETED AT THE END OF BUSINESS DAY WILL NEED TO BE COVERED WITH PLASTIC & ANCHORED. TRAFFIC CONES TO BE SET UP FOR SAFETY AS NEEDED.
1 DAYS 3.5.4 WHEN PLASTIC COVERING IS REMOVED ANY CLEAN ACCUMULATED WATER SHALL BE DIRECTED TO STABILIZED AREAS OR IF DIRTY, PUMPED THROUGH A DANDY BAG.

LEGEND

- Existing ROW Line
- Existing Vegetation Line
- Existing Edge of Pavement
- Existing Centerline of Road
- Existing Building
- Existing Contour 1x (84)
- Existing Contour 5x (80)
- Existing Culvert Pipe
- Existing Soil Line
- Existing Rip Rap
- Proposed Watershed Line
- Proposed Sub-Watershed Line
- Proposed Contour 1x (84)
- Proposed Contour 5x (80)
- Proposed Culvert Pipe
- Proposed Top of Swale
- Proposed Bottom of Swale
- Proposed Centerline of Swale
- Proposed TOC Flowpath
- Proposed Rip Rap
- Soil Testing Location
- Drainage Arrows
- Utility Pole
- Road Sign
- Electric Box (E)
- Telephone Box (T)
- Mailbox
- Sewer Manhole (S)
- Water Valves
- Fire Hydrant
- Monitor Well (M)
- Light Post
- Inlet Protection (SIP/CIP)
- Stone Construction Entrance (SCE)
- Limits of Disturbance (LOD)
- Silt Fence (SF)
- Super Silt Fence (SSF)
- Saw Cut

STATE OF MARYLAND — RICHARD J. PORTER — 21677 — PROFESSIONAL ENGINEER

PROFESSIONAL CERTIFICATION:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO: 36310, EXPIRATION DATE: 11/17/2012.

CHARLES COUNTY GOVERNMENT

DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

				REMARKS OR CONDITIONS
GRADING	CONSTRUCTION	AS-BUILT		
ROADS	CONSTRUCTION	AS-BUILT		
STORM DRAINAGE	CONSTRUCTION	AS-BUILT		
STORMWATER MANAGEMENT	CONSTRUCTION	AS-BUILT		
WATER	CONSTRUCTION	AS-BUILT		
SEWER	CONSTRUCTION	AS-BUILT		
OTHER	CONSTRUCTION	AS-BUILT		

SIGNED: THIS PERMIT EXPIRES ON:

DATE: DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

EROSION & SEDIMENT CONTROL PLAN

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

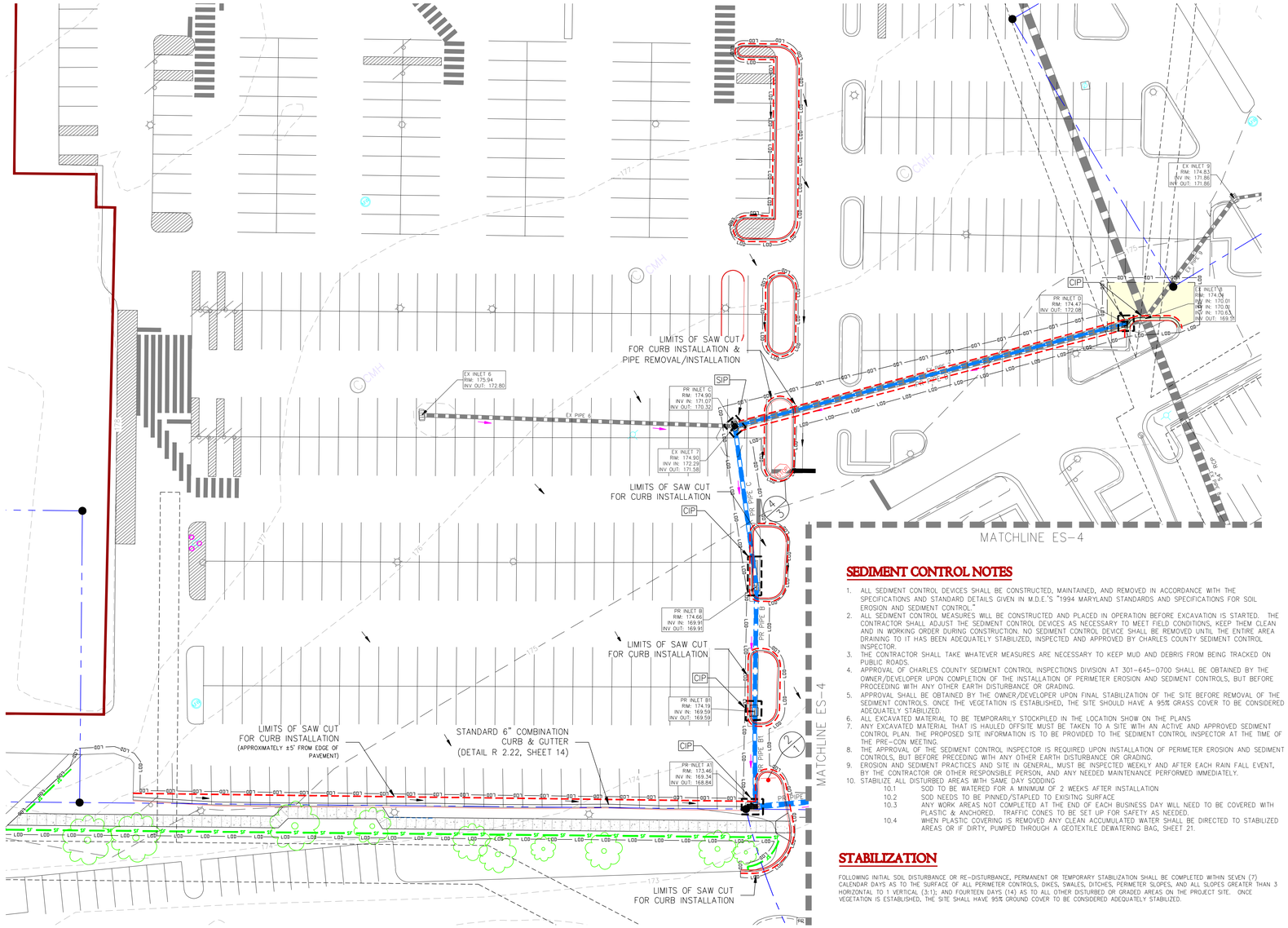
PROJECT DATA

DRAWN BY:	RB
CHECK BY:	RP
CHARLES COUNTY	
WALDORF, MARYLAND	
F.B. NO:	
T.M. NO.	
DATE:	08/04/10
SCALE:	1" = 20'

09-047 PROJ. NO.
ES 080410.dwg File Name:
18 SHEET NO.

PGM# VCI 09-0078

PGM# VCI 09-0078



SEQUENCE OF CONSTRUCTION FOR:

PARKING LOT, UNDERGROUND DETENTION & PARK AREA

ALL CONSTRUCTION MUST BE PERFORMED IN ACCORDANCE WITH THE "CHARLES CONSERVATION DISTRICT DETAILS AND SPECIFICATIONS FOR VEGETTIVE ESTABLISHMENT" ON SHEET 21, OR THE MORE RESTRICTIVE STANDARDS BELOW.

5 DAYS 1. CONTRACTOR MUST NOTIFY THE CHARLES COUNTY SEDIMENT CONTROL INSPECTOR, 301-645-0700, 5 DAYS PRIOR TO CONSTRUCTION TO SCHEDULE INSPECTION OF EROSION AND SEDIMENT CONTROL PLAN IMPLEMENTATION.

2 DAYS 2. UPON SEDIMENT CONTROL INSPECTOR APPROVAL CLEAR AND GRUB FOR THE INSTALLATION OF ALL PERIMETER SEDIMENT CONTROL DEVICES PRIOR TO ANY EARTH DISTURBING ACTIVITY.

2 DAYS 2.1. STARTING AT MOST DOWNSTREAM STRUCTURE (EXISTING INLET 15), REPLACE EXISTING INLET 15 AND INSTALL STORM DRAIN PIPE NETWORK TO PROPOSED MANHOLE K. TRENCH & BACKFILL PER DETAIL 2/21, INSTALL INLET PROTECTION TO EXISTING INLET 15, PER DETAILS 23A & 23C/21, INSTALL SAME DAY SODDING OVER IMPACTED AREA PER SEDIMENT CONTROL NOTE #10.

2 DAYS 2.2. AT MH K, INSTALL 12" PIPE N & M TO MH L, THEN INSTALL 12" STUB WITH PLUG FOR FUTURE STORMFILTER SYSTEM (TO BE INSTALLED LATER). TRENCH & BACKFILL PER DETAIL 2/21, INSTALL SAME DAY SODDING OVER IMPACTED AREA PER SEDIMENT CONTROL NOTE #10

3 DAYS 2.3. AT MH K, INSTALL PROPOSED PIPES G, H, I, & J. (INSTALL STRAIGHT SECTION OF PIPE BETWEEN STRUCTURES H & J. STRUCTURE I TO BE INSTALLED LATER). TRENCH & BACKFILL PER DETAIL 2/21, INSTALL SAME DAY SODDING OVER IMPACTED AREA PER SEDIMENT CONTROL NOTE #10.

5 DAYS 2.4. AT INLET G, INSTALL PIPES A-1, B-1, B, & C. BACKFILL PER TRENCH DETAIL R/2.48, SHEET 14, INSTALL INLET PROTECTION TO INLETS G, A, B & C PER DETAILS 23A & 23C/21. CONTRACTOR TO BACKFILL TRENCH EACH NIGHT & CAP WITH GRAVEL TO ENSURE THE AREA IS PASSABLE, AND BROOM SWEEP AREA OF ANY ACCUMULATED SOIL AT THE END OF EACH WORK DAY.

5 DAYS 2.5. REMOVE EXISTING STRUCTURE 7 AND INSTALL PR INLET C. PROVIDE INLET PROTECTION FOR PR INLET C PER DETAILS 23A & 23C/21, PROTECT WITH CONES & BROOM SWEEP AREA OF ANY ACCUMULATED SOIL AT THE END OF EACH WORK DAY.

2 DAYS 2.6. REMOVE EXISTING PIPE 7 AND INSTALL PR PIPE D & PR STRUCUTRE D. WHILE REMOVING EXISTING PIPE 7, INSTALL PR PIPE D IN EXISTING TRENCH. BACKFILL PER TRENCH DETAIL R/2.48, SHEET 14 & INSTALL INLET PROTECTION FOR PR INLET D PER DETAILS 23A & 23C/21. CONTRACTOR TO BACKFILL TRENCH EACH NIGHT & CAP WITH GRAVEL TO ENSURE THE AREA IS PASSABLE, AND BROOM SWEEP AREA OF ANY ACCUMULATED SOIL AT THE END OF EACH WORK DAY.

2 DAYS 2.7. PLUG EXISTING INLET B WHERE PIPE WAS REMOVED AND CONVERT INLET TO MH BY INSTALLING SOLID LID. (NOTE: CONTRACTOR TO INSTALL CRUSHER RUN EVEN WITH SURROUNDING ASPHALT & PITCHED TO NEW INLET D UNTIL NEW ASPHALT IS INSTALLED TO PREVENT PONDING.)

2 DAYS 2.8. AT STRUCTURE H, INSTALL PR PIPES & STRUCUTRES F, E2, AND E. INSTALL INLET PROTECTION FOR PR INLETS F & E PER DETAIL 23A & 23C/21 & INSTALL SAME DAY SODDING OVER IMPACTED AREAS PER SEDIMENT CONTROL NOTE #10.

3. INSTALLATION OF CURB & GUTTER:

2 DAYS 3.1. SAW-CUT EXISTING ASPHALT ALONG SOUTHWEST EDGE OF SAFEWAY LOT AS SHOWN, AND REMOVE ASPHALT.

2 DAYS 3.2. INSTALL STANDARD 6" CURB & GUTTER (DETAIL R/2.22, SHEET 14) FROM INLET A-1 TO THE END OF THE PARKING BAY.

2 DAYS 3.3. BACKFILL TRENCH AREA IN FRONT OF NEW CURB WITH STONE & INSTALL BACKFILL AND SAME DAY SODDING BEHIND NEW CURB PER SEDIMENT CONTROL NOTE #10.

3 DAYS 3.4. SAW-CUT & REMOVE EXISTING ASPHALT FROM INLET A1 TO NORTHERN SIDE OF RETIREMENT HOME ENTRANCE. INSTALL 6" STANDARD CURB PER DETAIL R/2.23 ON SHEET 14. BACKFILL CURB & INSTALL STONE ALONG ROADWAY TO ENSURE ROAD IS PASSABLE.

3 DAYS 3.5. SAW-CUT EXISTING ASPHALT ALONG SOUTH SIDE OF BANK PROPERTY TO THE EASTERN CORNER OF THE LOT THROUGH PR INLETS F, E2 & E AS SHOWN, ALONG EXISTING EDGE OF PAVEMENT LINE. REMOVE EXISTING ASPHALT CURB AND INSTALL STANDARD 6" CURB & GUTTER CONNECTING TO EXISTING HEADER CURB IN SOUTHWEST CORNER OF BANK LOT. BACKFILL TRENCH AREA WITH STONE & INSTALL SAME DAY SODDING OVER IMPACTED AREAS PER SEDIMENT CONTROL NOTE #10

4 DAYS 3.6. SAW-CUT EXISTING ASPHALT AROUND PROPOSED LANDSCAPE ISLANDS AS SHOWN AND INSTALL STANDARD 6" FACE CURB AT PROPOSED LANDCAPED ISLANDS THROUGHOUT THE PARKING LOT. BACKFILL TRENCH AREA WITH STONE & INSTALL SAME DAY SODDING OVER IMPACTED AREAS PER SEDIMENT CONTROL NOTE #10.

1 DAY 3.7. PATCH & PAVE ALL DISTURBED PARKING LOT ASPHALT & RESTRIPE AS NECESSARY.

4. INSTALLATION OF PARK:

1 DAYS 4.1. VERIFY ADEQUACY OF ALL PREVIOUSLY INSTALLED PERIMETER CONTROLS, AND INSTALL CONSTRUCTION ENTRANCE.

3 DAYS 4.2. CLEAR AND GRUB EXISITNG TOPSOIL. CONTRACTOR TO STOCKPILE ONLY THAT SOIL WHICH IS TO BE REUSED ON THE SITE AFTER COMPLETION OF PARK. ALL STOCKPILED MATERIAL IS TO BE SEEDED AND STRAW MULCHED.

5 DAYS 4.3. EXCAVATE FOR INSTALLATION OF 48" STORAGE PIPES & STORMFILTER CHAMBER. CONTRACTOR SHALL NOT STOCKPILE EXCESS DIRT ON THE SITE BUT SHALL REMOVE IT AS IT IS EXCAVATED TO AN OFFSITE LOCATION WHICH HAS AN APPROVED EROSION & SEDIMENT CONTROL PERMIT.

2 DAYS 4.4. INSTALL GRAVEL BED PER MANUFACTURERS REQUIREMENTS.

1 DAY 4.5. INSTALL GEOTEXTILE DEWATERING DEVICE PER DETAIL 1/21 AND AS SHOWN ON PLANS & PUMP ANY WATER THAT MAY ACCUMULATE IN EXCAVATED AREA FOR 48" STORAGE PIPES & STORMFILTER CHAMBER THROUGH A DIRT BAG.

10 DAYS 4.6. INSTALL ALL PIPE CONNECTIONS, TEES, BENDS & CAPS TO COMPLETE STORAGE FACILITY PER MANUFACTURERS REQUIREMENTS. (NOTE: CONTRACTOR SHALL PERFORM AN AS-BUILT SURVEY AND HAVE IT APPROVED BY THE ENGINEER BEFORE CONTINUING)

4 DAYS 4.7. INSTALL STORM FILTER FACILITY PER MANUFACTURERS REQUIREMENTS & CONNECT 12" INFLOW & OUTFALL PIPES. (NOTE: CONTRACTOR SHALL PERFORM AN AS-BUILT SURVEY AND HAVE IT APPROVED BY THE ENGINEER BEFORE CONTINUING)

3 DAYS 4.8. AFTER APPROVALS OF AS-BUILT SURVEYS, INSTALL STORMFILTER CARTRIDGES & STURCTURE I & BACKFILL AREAS PER STORM CHAMBER DETAIL ON SHEET 13. PROTECT DISTURBED AREAS BY IMMEDIATELY SEEDING & MULCHING ALL DISTURBED AREAS.

1 DAY 4.9. SAW CUT EXISTING ASPHALT FROM EX INLET 15 (NORTHEAST SIDE) ALONG OLD VILLAGE DRIVE TO THE LIMITS SHOWN FOR THE BANK PARKING LOT.

3 DAYS 4.10. INSTALL STANDARD 6" COMBINATION CURB & GUTTER (DETAIL R/2.22, SHEET 14) ALONG NORTHEAST SIDE OF OLD VILLAGE DRIVE TO THE PARKING LOT FOR THE BANK, OR INSTALL MONOLITHIC CURB & SIDEWALK ALONG OLDE VILLAGE DRIVE AS APPROPRIATE PER PLANS. BACKFILL TRENCH WITH STONE AND INSTALL SAME DAY SODDING PER SEDIMENT CONTROL NOTE #10.

5 DAYS 4.11. INSTALL PERVIOUS PAVER CIRCULAR SIDEWALK PER DETAILS ON SHEET 13.

3 DAYS 4.12. INSTALL BRIDGE BEING CAREFUL NOT TO INSTALL PILINGS IN THE MAIN CHANNEL.

3 DAYS 4.13. INSTALL CONCRETE SIDEWALK CONNECTING ALL PARTS OF THE PARK TO THE BRIDGE AND TO THE ADJACENT PARCEL (BURGER KING).

2 DAYS 4.14. INSTALL REMAINING SIDEWALK BETWEEN OLD VILLAGE ROAD & SAFEWAY.

5 DAYS 4.15. INSTALL LIGHTING FIXTURES, GAME TABLES, TRASH CANS & OTHER PARK FEATURES PER SHEET 12.

3 DAYS 4.16. INSTALL LANDSCAPE PLAN PER SHEETS 10-11

2 DAYS 5. UPON SEDIMENT CONTROL INSPECTOR APPROVAL, REMOVE ALL PERIMETER DEVICES.

SEDIMENT CONTROL NOTES

1. ALL SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED, MAINTAINED, AND REMOVED IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARD DETAILS GIVEN IN M.D.E.'S "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."
2. ALL SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED AND PLACED IN OPERATION BEFORE EXCAVATION IS STARTED. THE CONTRACTOR SHALL ADJUST THE SEDIMENT CONTROL DEVICES AS NECESSARY TO MEET FIELD CONDITIONS, KEEP THEM CLEAN AND IN WORKING ORDER DURING CONSTRUCTION. NO SEDIMENT CONTROL DEVICE SHALL BE REMOVED UNTIL THE ENTIRE AREA DRAINING TO IT HAS BEEN ADEQUATELY STABILIZED, INSPECTED AND APPROVED BY CHARLES COUNTY SEDIMENT CONTROL INSPECTOR.
3. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO KEEP MUD AND DEBRIS FROM BEING TRACKED ON PUBLIC ROADS.
4. APPROVAL OF CHARLES COUNTY SEDIMENT CONTROL INSPECTIONS DIVISION AT 301-645-0700 SHALL BE OBTAINED BY THE OWNER/DEVELOPER UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
5. APPROVAL SHALL BE OBTAINED BY THE OWNER/DEVELOPER UPON FINAL STABILIZATION OF THE SITE BEFORE REMOVAL OF THE SEDIMENT CONTROLS. ONCE THE VEGETATION IS ESTABLISHED, THE SITE SHOULD HAVE A 95% GRASS COVER TO BE CONSIDERED ADEQUATELY STABILIZED.
6. ALL EXCAVATED MATERIAL TO BE TEMPORARILY STOCKPILED IN THE LOCATION SHOW ON THE PLANS.
7. ANY EXCAVATED MATERIAL THAT IS HAULED OFFSITE MUST BE TAKEN TO A SITE WITH AN ACTIVE AND APPROVED SEDIMENT CONTROL PLAN. THE PROPOSED SITE INFORMATION IS TO BE PROVIDED TO THE SEDIMENT CONTROL INSPECTOR AT THE TIME OF THE PRE-CON MEETING.
8. THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR IS REQUIRED UPON INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PRECEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
9. EROSION AND SEDIMENT PRACTICES AND SITE IN GENERAL, MUST BE INSPECTED WEEKLY AND AFTER EACH RAIN FALL EVENT, BY THE CONTRACTOR OR OTHER RESPONSIBLE PERSON, AND ANY NEEDED MAINTENANCE PERFORMED IMMEDIATELY.
10. STABILIZE ALL DISTURBED AREAS WITH SAME DAY SODDING
    - 10.1 SOD TO BE WATERED FOR A MINIMUM OF 2 WEEKS AFTER INSTALLATION
    - 10.2 SOD NEEDS TO BE PINNED/STAPLED TO EXISITNG SURFACE
    - 10.3 ANY WORK AREAS NOT COMPLETED AT THE END OF EACH BUSINESS DAY WILL NEED TO BE COVERED WITH PLASTIC & ANCHORED. TRAFFIC CONES TO BE SET UP FOR SAFETY AS NEEDED.
    - 10.4 WHEN PLASTIC COVERING IS REMOVED ANY CLEAN ACCUMULATED WATER SHALL BE DIRECTED TO STABILIZED AREAS OR IF DIRTY, PUMPED THROUGH A GEOTEXTILE DEWATERING BAG, SHEET 21.

STABILIZATION

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND FOURTEEN DAYS (14) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. ONCE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUND COVER TO BE CONSIDERED ADEQUATELY STABILIZED.

LEGEND

- Existing ROW Line
- Existing Vegetation Line
- Existing Edge of Pavement
- Existing Centerline of Road
- Existing Building
- Existing Contour 1x (84)
- Existing Contour 5x (80)
- Existing Culvert Pipe
- Existing Soil Line
- Existing Rip Rap
- Proposed Watershed Line
- Proposed Sub-Watershed Line
- Proposed Contour 1x (84)
- Proposed Contour 5x (80)
- Proposed Culvert Pipe
- Proposed Top of Swale
- Proposed Bottom of Swale
- Proposed Centerline of Swale
- Proposed TOC Flowpath
- Proposed Rip Rap
- Soil Testing Location
- Drainage Arrows
- Utility Pole
- Electric Box (E)
- Mailbox
- Water Valves
- Monitor Well (M)
- Inlet Protection
- Stone Construction Entrance (SCE)
- Limits of Disturbance (LOD)
- Silt Fence (SF)
- Super Silt Fence (SSF)
- Saw Cut
- Road Sign
- Telephone Box (T)
- Sewer Manhole (S)
- Fire Hydrant
- Light Post
- SIP/CIP

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: 36310, EXPIRATION DATE: 11/17/2012.

STATE OF MARYLAND — RICHARD F. VISTA — No. 36310 — PROFESSIONAL ENGINEER

CHARLES COUNTY GOVERNMENT

DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT
DEVELOPMENT SERVICES DEPARTMENT

					REMARKS OR CONDITIONS
GRADING		CONSTRUCTION		AS-BUILT	
ROADS		CONSTRUCTION		AS-BUILT	
STORM DRAINAGE		CONSTRUCTION		AS-BUILT	
STORMWATER MANAGEMENT		CONSTRUCTION		AS-BUILT	
WATER		CONSTRUCTION		AS-BUILT	
SEWER		CONSTRUCTION		AS-BUILT	
OTHER		CONSTRUCTION		AS-BUILT	

SIGNED: — THIS PERMIT EXPIRES ON:

DATE: — DATE:

NOTE:
This drawing, specifications, and work produced by Vista Design, Inc. (VDI) for this project are instruments of service for this project only, and remains the copyrighted property of VDI. Reuse or reproduction of any of the instruments of service of VDI by the Client or assignees without the written permission of VDI will be at the Clients risk and be a violation of the copyright laws of the United States of America and the respective state within which the work was completed.

NOTE:
This Drawing does not include necessary components for construction safety. All construction must be done in compliance with the occupational safety and health act of 1970 and all rules and regulations thereto appurtenant.

EROSION & SEDIMENT CONTROL PLAN

REV NO.	CONSTRUCTION REVISION	DATE

VISTA DESIGN, INC.
Landscape Architects, Land Planning Consultants, Engineers & Surveyors
11634 Worcester Hwy, Showell, MD 21862
ph. 410-352-3874 fax 410-352-3875 email vista@vistadesigninc.com

PROJECT DATA	
DRAWN BY:	EZ
CHECK BY:	RP
CHARLES COUNTY	
WALDORF, MARYLAND	
F.B. NO:	
T.M. NO.	
DATE:	08/04/10
SCALE:	1" = 50'

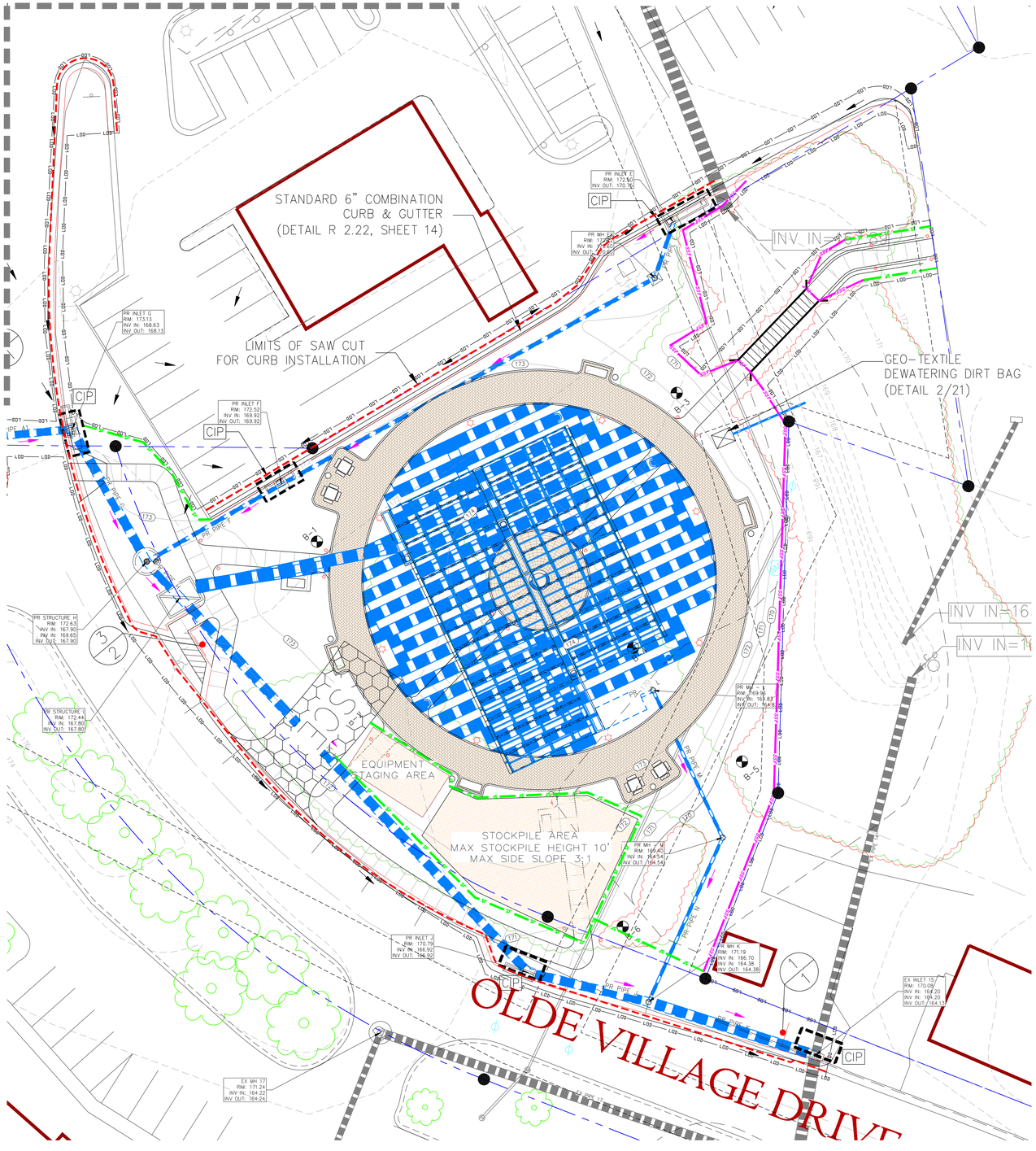
09-047 PROJ. NO.

ES 080410.dwg File Name:

19 SHEET NO.

PGM# VCI 09-0078

PGM# VCI 09-0078



SEDIMENT CONTROL NOTES

1. ALL SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED, MAINTAINED, AND REMOVED IN ACCORDANCE WITH THE SPECIFICATIONS AND STANDARD DETAILS GIVEN IN M.D.E.'S "1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL."
2. ALL SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED AND PLACED IN OPERATION BEFORE EXCAVATION IS STARTED. THE CONTRACTOR SHALL ADJUST THE SEDIMENT CONTROL DEVICES AS NECESSARY TO MEET FIELD CONDITIONS, KEEP THEM CLEAN AND IN WORKING ORDER DURING CONSTRUCTION. NO SEDIMENT CONTROL DEVICE SHALL BE REMOVED UNTIL THE ENTIRE AREA DRAINING TO IT HAS BEEN ADEQUATELY STABILIZED, INSPECTED AND APPROVED BY CHARLES COUNTY SEDIMENT CONTROL INSPECTOR.
3. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES ARE NECESSARY TO KEEP MUD AND DEBRIS FROM BEING TRACKED ON PUBLIC ROADS.
4. APPROVAL OF CHARLES COUNTY SEDIMENT CONTROL INSPECTIONS DIVISION AT 301-645-0700 SHALL BE OBTAINED BY THE OWNER/DEVELOPER UPON COMPLETION OF THE INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
5. APPROVAL SHALL BE OBTAINED BY THE OWNER/DEVELOPER UPON FINAL STABILIZATION OF THE SITE BEFORE REMOVAL OF THE SEDIMENT CONTROLS. ONCE THE VEGETATION IS ESTABLISHED, THE SITE SHOULD HAVE A 95% GRASS COVER TO BE CONSIDERED ADEQUATELY STABILIZED.
6. ALL EXCAVATED MATERIAL TO BE TEMPORARILY STOCKPILED IN THE LOCATION SHOW ON THE PLANS
7. ANY EXCAVATED MATERIAL THAT IS HAULED OFFSITE MUST BE TAKEN TO A SITE WITH AN ACTIVE AND APPROVED SEDIMENT CONTROL PLAN. THE PROPOSED SITE INFORMATION IS TO BE PROVIDED TO THE SEDIMENT CONTROL INSPECTOR AT THE TIME OF THE PRE-CON MEETING.
8. THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR IS REQUIRED UPON INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PRECEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
9. EROSION AND SEDIMENT PRACTICES AND SITE IN GENERAL, MUST BE INSPECTED WEEKLY AND AFTER EACH RAIN FALL EVENT, BY THE CONTRACTOR OR OTHER RESPONSIBLE PERSON, AND ANY NEEDED MAINTENANCE PERFORMED IMMEDIATELY.
10. STABILIZE ALL DISTURBED AREAS WITH SAME DAY SODDING
    - 10.1 SOD TO BE WATERED FOR A MINIMUM OF 2 WEEKS AFTER INSTALLATION
    - 10.2 SOD NEEDS TO BE PINNED/STAPLED TO EXISTING SURFACE
    - 10.3 ANY WORK AREAS NOT COMPLETED AT THE END OF EACH BUSINESS DAY WILL NEED TO BE COVERED WITH PLASTIC & ANCHORED. TRAFFIC CONES TO BE SET UP FOR SAFETY AS NEEDED.
    - 10.4 WHEN PLASTIC COVERING IS REMOVED ANY CLEAN ACCUMULATED WATER SHALL BE DIRECTED TO STABILIZED AREAS OR IF DIRTY, PUMPED THROUGH A GEOTEXTILE DEWATERING BAG, SHEET 21.

STABILIZATION

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN DAYS (14) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. ONCE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUND COVER TO BE CONSIDERED ADEQUATELY STABILIZED.

SEQUENCE OF CONSTRUCTION FOR:

PARKING LOT, UNDERGROUND DETENTION & PARK AREA

ALL CONSTRUCTION MUST BE PERFORMED IN ACCORDANCE WITH THE "CHARLES CONSERVATION DISTRICT DETAILS AND SPECIFICATIONS FOR VEGETTIVE ESTABLISHMENT" ON SHEET 21, OR THE MORE RESTRICTIVE STANDARDS BELOW.

5 DAYS 1. CONTRACTOR MUST NOTIFY THE CHARLES COUNTY SEDIMENT CONTROL INSPECTOR, 301-645-0700, 5 DAYS PRIOR TO CONSTRUCTION TO SCHEDULE INSPECTION OF EROSION AND SEDIMENT CONTROL PLAN IMPLEMENTATION.

2 DAYS 2. UPON SEDIMENT CONTROL INSPECTOR APPROVAL CLEAR AND GRUB FOR THE INSTALLATION OF ALL PERIMETER SEDIMENT CONTROL DEVICES PRIOR TO ANY EARTH DISTURBING ACTIVITY.

2 DAYS 2.1. STARTING AT MOST DOWNSTREAM STRUCTURE (EXISTING INLET 15), REPLACE EXISTING INLET 15 AND INSTALL STORM DRAIN PIPE NETWORK TO PROPOSED MANHOLE K. TRENCH & BACKFILL PER DETAIL 2/21, INSTALL INLET PROTECTION TO EXISTING INLET 15, PER DETAILS 23A & 23C/21, INSTALL SAME DAY SODDING OVER IMPACTED AREA PER SEDIMENT CONTROL NOTE #10.

2 DAYS 2.2. AT MH K, INSTALL 12" PIPE N & M TO MH L, THEN INSTALL 12" STUB WITH PLUG FOR FUTURE STORMFILTER SYSTEM (TO BE INSTALLED LATER). TRENCH & BACKFILL PER DETAIL 2/21, INSTALL SAME DAY SODDING OVER IMPACTED AREA PER SEDIMENT CONTROL NOTE #10.

3 DAYS 2.3. AT MH K, INSTALL PROPOSED PIPES G, H, I, & J. (INSTALL STRAIGHT SECTION OF PIPE BETWEEN STRUCTURES H & J. STRUCTURE I TO BE INSTALLED LATER). TRENCH & BACKFILL PER DETAIL 2/21, INSTALL SAME DAY SODDING OVER IMPACTED AREA PER SEDIMENT CONTROL NOTE #10.

5 DAYS 2.4. AT INLET G, INSTALL PIPES A-1, B-1, B, & C. BACKFILL PER TRENCH DETAIL R/2.48, SHEET 14, INSTALL INLET PROTECTION TO INLETS G, A, B & C PER DETAILS 23A & 23C/21. CONTRACTOR TO BACKFILL TRENCH EACH NIGHT & CAP WITH GRAVEL TO ENSURE THE AREA IS PASSABLE, AND BROOM SWEEP AREA OF ANY ACCUMULATED SOIL AT THE END OF EACH WORK DAY.

5 DAYS 2.5. REMOVE EXISTING STRUCTURE 7 AND INSTALL PR INLET C. PROVIDE INLET PROTECTION FOR PR INLET C PER DETAILS 23A & 23C/21, PROTECT WITH CONES & BROOM SWEEP AREA OF ANY ACCUMULATED SOIL AT THE END OF EACH WORK DAY.

2 DAYS 2.6. REMOVE EXISTING PIPE 7 AND INSTALL PR PIPE D & PR STRUCUTRE D. WHILE REMOVING EXISTING PIPE 7, INSTALL PR PIPE D IN EXISTING TRENCH. BACKFILL PER TRENCH DETAIL R/2.48, SHEET 14 & INSTALL INLET PROTECTION FOR PR INLET D PER DETAILS 23A & 23C/21. CONTRACTOR TO BACKFILL TRENCH EACH NIGHT & CAP WITH GRAVEL TO ENSURE THE AREA IS PASSABLE, AND BROOM SWEEP AREA OF ANY ACCUMULATED SOIL AT THE END OF EACH WORK DAY.

2 DAYS 2.7. PLUG EXISTING INLET B WHERE PIPE WAS REMOVED AND CONVERT INLET TO MH BY INSTALLING SOLID LID. (NOTE: CONTRACTOR TO INSTALL CRUSHER RUN EVEN WITH SURROUNDING ASPHALT & PITCHED TO NEW INLET D UNTIL NEW ASPHALT IS INSTALLED TO PREVENT PONDING.)

2 DAYS 2.8. AT STRUCTURE H, INSTALL PR PIPES & STRUCUTRES F, E2, AND E. INSTALL INLET PROTECTION FOR PR INLETS F & E PER DETAIL 23A & 23C/21 & INSTALL SAME DAY SODDING OVER IMPACTED AREAS PER SEDIMENT CONTROL NOTE #10.

3. INSTALLATION OF CURB & GUTTER:

2 DAYS 3.1. SAW-CUT EXISTING ASPHALT ALONG SOUTHWEST EDGE OF SAFEWAY LOT AS SHOWN, AND REMOVE ASPHALT.

2 DAYS 3.2. INSTALL STANDARD 6" CURB & GUTTER (DETAIL R/2.22, SHEET 14) FROM INLET A-1 TO THE END OF THE PARKING BAY.

2 DAYS 3.3. BACKFILL TRENCH AREA IN FRONT OF NEW CURB WITH STONE & INSTALL BACKFILL AND SAME DAY SODDING BEHIND NEW CURB PER SEDIMENT CONTROL NOTE #10.

3 DAYS 3.4. SAW-CUT & REMOVE EXISTING ASPHALT FROM INLET A1 TO NORTHERN SIDE OF RETIREMENT HOME ENTRANCE. INSTALL 6" STANDARD CURB PER DETAIL R/2.23 ON SHEET 14. BACKFILL CURB & INSTALL STONE ALONG ROADWAY TO ENSURE ROAD IS PASSABLE.

3 DAYS 3.5. SAW-CUT EXISTING ASPHALT ALONG SOUTH SIDE OF BANK PROPERTY TO THE EASTERN CORNER OF THE LOT THROUGH PR INLETS F, E2 & E AS SHOWN, ALONG EXISTING EDGE OF PAVEMENT LINE. REMOVE EXISTING ASPHALT CURB AND INSTALL STANDARD 6" CURB & GUTTER CONNECTING TO EXISTING HEADER CURB IN SOUTHWEST CORNER OF BANK LOT. BACKFILL TRENCH AREA WITH STONE & INSTALL SAME DAY SODDING OVER IMPACTED AREAS PER SEDIMENT CONTROL NOTE #10

4 DAYS 3.6. SAW-CUT EXISTING ASPHALT AROUND PROPOSED LANDSCAPE ISLANDS AS SHOWN AND INSTALL STANDARD 6" FACE CURB AT PROPOSED LANDCAPED ISLANDS THROUGHOUT THE PARKING LOT. BACKFILL TRENCH AREA WITH STONE & INSTALL SAME DAY SODDING OVER IMPACTED AREAS PER SEDIMENT CONTROL NOTE #10.

1 DAY 3.7. PATCH & PAVE ALL DISTURBED PARKING LOT ASPHALT & RESTRIPE AS NECESSARY.

4. INSTALLATION OF PARK:

1 DAYS 4.1. VERIFY ADEQUACY OF ALL PREVIOUSLY INSTALLED PERIMETER CONTROLS, AND INSTALL CONSTRUCTION ENTRANCE.

3 DAYS 4.2. CLEAR AND GRUB EXISITNG TOPSOIL. CONTRACTOR TO STOCKPILE ONLY THAT SOIL WHICH IS TO BE REUSED ON THE SITE AFTER COMPLETION OF PARK. ALL STOCKPILED MATERIAL IS TO BE SEEDED AND STRAW MULCHED.

5 DAYS 4.3. EXCAVATE FOR INSTALLATION OF 48" STORAGE PIPES & STORMFILTER CHAMBER. CONTRACTOR SHALL NOT STOCKPILE EXCESS DIRT ON THE SITE BUT SHALL REMOVE IT AS IT IS EXCAVATED TO AN OFFSITE LOCATION WHICH HAS AN APPROVED EROSION & SEDIMENT CONTROL PERMIT.

2 DAYS 4.4. INSTALL GRAVEL BED PER MANUFACTURERS REQUIREMENTS.

1 DAY 4.5. INSTALL GEOTEXTILE DEWATERING DEVICE PER DETAIL 1/21 AND AS SHOWN ON PLANS & PUMP ANY WATER THAT MAY ACCUMULATE IN EXCAVATED AREA FOR 48" STORAGE PIPES & STORMFILTER CHAMBER THROUGH A DIRT BAG.

10 DAYS 4.6. INSTALL ALL PIPE CONNECTIONS, TEES, BENDS & CAPS TO COMPLETE STORAGE FACILITY PER MANUFACTURERS REQUIREMENTS. (NOTE: CONTRACTOR SHALL PERFORM AN AS-BUILT SURVEY AND HAVE IT APPROVED BY THE ENGINEER BEFORE CONTINUING)

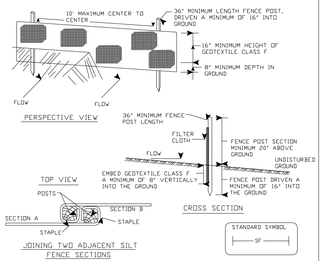
4 DAYS 4.7. INSTALL STORM FILTER FACILITY PER MANUFACTURERS REQUIREMENTS & CONNECT 12" INFLOW & OUTFALL PIPES. (NOTE: CONTRACTOR SHALL PERFORM AN AS-BUILT SURVEY AND HAVE IT APPROVED BY THE ENGINEER BEFORE CONTINUING)

3 DAYS 4.8. AFTER APPROVALS OF AS-BUILT SURVEYS, INSTALL STORMFILTER CARTRIDGES & STURCTURE I & BACKFILL AREAS PER STORM CHAMBER DETAIL ON SHEET 13. PROTECT DISTURBED AREAS BY IMMEDIATELY SEEDING & MULCHING ALL DISTURBED AREAS.

1 DAY 4.9. SAW CUT EXISTING ASPHALT FROM EX INLET 15 (NORTHEAST SIDE) ALONG OLD VILLAGE DRIVE TO THE LIMITS SHOWN FOR THE BANK PARKING LOT.

3 DAYS 4.10. INSTALL STANDARD 6" COMBINATION CURB & GUTTER (DETAIL R/2.22, SHEET 14) ALONG NORTHEAST

DETAIL 22 - SILT FENCE



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1½" x 1½" 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/ft²/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 fence height.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 15 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SILT FENCE

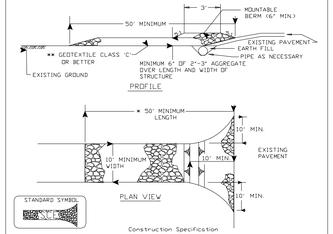
Silt Fence Design Criteria

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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 15 - 3A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



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.

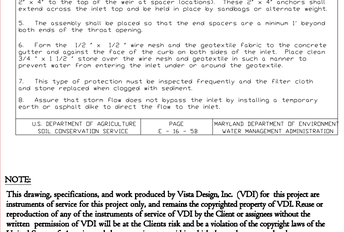
4. Stone - crushed aggregate (2" to 3") or recleaned or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.

5. Surface Water - all surface water flowing to or diverted toward construction entrance 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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE F - 17 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 33 - SUPER SILT FENCE



Construction Specifications

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

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

3. Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.

4. Filter cloth shall be embedded a minimum of 8" into the ground.

5. When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.

6. Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height

7. Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements for Geotextile Class F:

Tensile Strength	50 lbs/in (min.)	Test: MSMT 509
Tensile Modulus	20 lbs/in (min.)	Test: MSMT 509
Flow Rate	0.3 gal/ft²/minute (max.)	Test: MSMT 322
Filtering Efficiency	75% (min.)	Test: MSMT 322

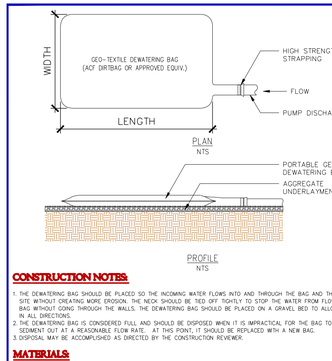
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 26 - 3	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SUPER SILT FENCE

Design Criteria

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

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE H - 26 - 3A	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



CONSTRUCTION NOTES:

1. THE DEWATERING BAG SHOULD BE PLACED SO THE INCOMING WATER FLOWS INTO AND THROUGH THE BAG AND THEN FLOW OFF THE SITE WITHOUT CREATING MORE EROSION. THE NECK SHOULD BE TIED OFF TIGHTLY TO STOP THE WATER FROM FLOWING OUT OF THE BAG WITHOUT GOING THROUGH THE WALLS. THE DEWATERING BAG SHOULD BE PLACED ON A GRAVEL BED TO ALLOW WATER TO FLOW IN ALL DIRECTIONS.
2. THE DEWATERING BAG IS CONSIDERED FULL AND SHOULD BE DISPOSED WHEN IT IS IMPRACTICAL FOR THE BAG TO FILTER THE SEDIMENT OUT AT A REASONABLE FLOW RATE. AT THIS POINT, IT SHOULD BE REPLACED WITH A NEW BAG.
3. DISPOSAL MAY BE ACCOMPLISHED AS DIRECTED BY THE CONSTRUCTION REVIEWER.

MATERIALS:

1. THE GEO-TEXTILE FABRIC SHALL BE TYPE GD-HV.
2. THE DEWATERING BAG SHALL BE SEWN WITH A DOUBLE NEEDLES MACHINE USING HIGH STRENGTH THREAD. ALL STRUCTURAL SEAMS WILL BE SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE. SEAM STRENGTH TEST WILL HAVE THE FOLLOWING MINIMUM AVERAGE ROLL VALUES:

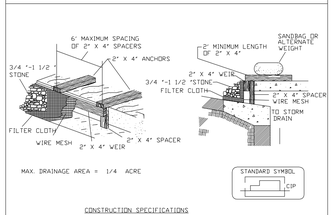
TYPE	TEST METHOD	TEST RESULT
HEAVY DUTY	ASTM D-4884	100 LB/ IN

3. THE DEWATERING BAG SHALL HAVE AN OPENING LARGE ENOUGH TO ACCOMMODATE A FOUR (4) INCH DISCHARGE HOSE WITH ATTACHED STRAP TO TIE OFF THE HOSE TO PREVENT THE PUMPED WATER FROM ESCAPING FROM THE BAG WITHOUT BEING FILTERED.

1/21

GEO-TEXTILE DEWATERING DIRT BAG

DETAIL 23C- CURB INLET PROTECTION (COG OR COS INLETS)



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.

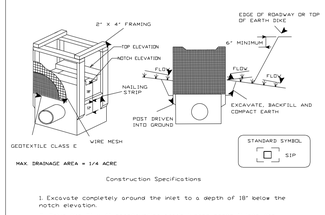
6. Form the 1/2 " x 1/2 " wire mesh and the geotextile fabric to the concrete gutter and against the face of the curb on both sides of the inlet. Place clean 3/4 " x 1 1/2" stone over the wire mesh and geotextile in such a manner to prevent water from entering the inlet under or around the geotextile.

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.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 58	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL 23A - STANDARD INLET PROTECTION



Construction Specifications

1. Excavate completely around the inlet to a depth of 18" below the notch elevation.

2. Drive the 2" x 4" construction grade lumber posts 1' into the ground at each corner of the inlet. Place nail strips between the posts on the ends of the inlet. Assemble the top portion of the 2" x 4" frame using the overlap joint shown on Detail 23A. The top of the frame (weir) must be 6" below adjacent roadways where flooding and safety issues may arise.

3. Stretch the 1/2" x 1/2" wire mesh tightly around the frame and fasten securely. The ends must meet and overlap at a post.

4. Stretch the Geotextile Class E tightly over the wire mesh with the geotextile extending from the top of the frame to 18" below the inlet notch elevation. Fasten the geotextile firmly to the frame. The ends of the geotextile must meet at a post, be overlapped and folded, then fastened down.

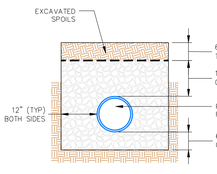
5. Backfill around the inlet in compacted 6" layers until the layer of earth is level with the notch elevation on the ends and top elevation on the sides.

6. If the inlet is not in a sump, construct a compacted earth dike across the ditch line directly below it. The top of the earth dike should be at least 6" higher than the top of the frame.

7. The structure must be inspected periodically and after each rain and the geotextile replaced when it becomes clogged.

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	PAGE E - 16 - 9	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

MINIMUM TRENCH WIDTH WHERE COMPACTION IS REQUIRED	
PIPE DIA.	MINIMUM TRENCH
24"	56"
30"	60"
36"	65"
42"	84"
48"	91"
54"	97"
60"	103"



2/21

TRENCH & BACKFILL DETAIL FOR PIPE

CHARLES SOIL CONSERVATION DISTRICT DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT

FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND FOURTEEN DAYS (14) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. ONCE VEGETATION IS ESTABLISHED, THE SITE SHALL HAVE 95% GROUNDCOVER TO BE CONSIDERED ADEQUATELY STABILIZED.

1) PERMANENT SEEDING:
   A) SOIL TESTS: LIME AND FERTILIZER WILL BE APPLIED PER SOIL TESTS RESULTS FOR SITES GREATER THAN 5 ACRES. SOIL TESTS WILL BE DONE AT COMPLETION OF INITIAL ROUGH GRADING OR AS RECOMMENDED BY THE SEDIMENT CONTROL INSPECTOR. RATES AND ANALYSES WILL BE PROVIDED TO THE GRADING INSPECTOR AS WELL AS THE CONTRACTOR.
   THE MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT ARE:
      a) SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.
      b) SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).
      c) THE SOIL SHALL CONTAIN LESS THAN 40% CLAY BUT ENOUGH FINE GRAINED MATERIAL (>30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOVEGRASS OR SERECIA LESPEDEZA IS TO BE PLANTED, THEN A SANDY SOIL (< 30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.
      d) SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.
      e) SOIL MUST CONTAIN SUFFICIENT PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
      f) IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH SECTION 21 STANDARD AND SPECIFICATION FOR TOPSOIL OR AMENDMENTS MADE AS RECOMMENDED BY A CERTIFIED AGRONOMIST.
   B) SEEDBED PREPARATION: AREA TO BE SEEDED SHALL BE LOOSE AND FRIABLE TO A DEPTH OF AT LEAST 3 INCHES. THE TOP LAYER SHALL BE LOOSENED BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING OCCURS. FOR SITES LESS THAN 5 ACRES, APPLY 100 POUNDS DOLOMITIC LIMESTONE AND 2 1 POUNDS OF 10- 10- 10 FERTILIZER PER 1,000 SQUARE FEET, HAN-OW OR DISK LIME AND FERTILIZER INTO THE SOIL TO A DEPTH OF AT LEAST 3 INCHES ON SLOPES FLATTER THAN 3:1.
   C) SEEDING: APPLY 5-6 POUNDS PER 1,000 SQUARE FEET OF TALL FESCUE BETWEEN MARCH 1 AND MAY 15 OR BETWEEN AUGUST 15 AND OCTOBER 15. APPLY SEED UNIFORMLY ON A MOIST FIRM SEEDBED WITH A CYCLONE SEEDER, CULTIPACKER SEEDER OR HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER, HYDROSEEDING ON STEEP SLOPES ONLY) MAXIMUM SEED DEPTH SHOULD BE 24 INCH IN CLAYEY SOILS AND 1/2 INCH IN SANDY SOILS WHEN USING OTHER THAN THE HYDROSEEDER METHOD. IRRIGATE WHERE NECESSARY TO SUPPORT ADEQUATE GROWTH UNTIL VEGETATION IS FIRMLY ESTABLISHED. IF OTHER SEED MIXES ARE TO BE USED, SELECT FROM TABLE 25, ENTITLED "PERMANENT SEEDING FOR LOW MAINTENANCE AREAS" FROM THE MOST STANDARD AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. MIXES SUITABLE FOR THIS ARE: 1, 3, AND 5-7. MIXES 5-7 ARE SUITABLE IN NON-MOWABLE SITUATIONS.
   D) MULCHING: MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING. DURING THE TIME PERIODS WHEN SEEDING IS NOT PERMITTED, MULCH SHALL BE APPLIED IMMEDIATELY AFTER GRADING.
      MULCH MUST BE UNROTTED, UNCHOPPED, SMALL GRAIN STRAW APPLIED AT A RATE OF 2 TONS PER ACRE OR 90 POUNDS PER 1,000 SQUARE FEET (2 BALES). IF A MULCH-ANCHORING TOOL IS USED, APPLY 2.5 TOLS PER ACRE. MULCH MATERIALS SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE COMPLETELY FREE OF PROHIBITED NOXIOUS WEEDS. SPREAD MULCH UNIFORMLY, MECHANICALLY OR BY HAND, TO A DEPTH OF 1-2 INCHES.
   E) SECURING STRAW MULCH: STRAW MULCH SHALL BE SECURED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE MOVEMENT BY WIND OR WATER. THE FOLLOWING METHODS ARE PERMITTED:
      (i) USE A MULCH-ANCHORING TOOL WHICH IS DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE TO A MINIMUM DEPTH OF 2 INCHES. THIS IS THE MOST EFFECTIVE METHOD FOR SECURING MULCH, HOWEVER, IT IS LIMITED TO RELATIVELY FLAT AREAS WHERE EQUIPMENT CAN OPERATE SAFELY.
      (ii) WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. APPLY THE FIBER BINDER AT A NET DRY WEIGHT OF 750 POUNDS PER ACRE. IF MIXED WITH WATER, USE 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
      (iii) LIQUID BINDERS MAY BE USED. APPLY AT HIGHER RATES AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CREST OF SLOPES. THE REMAINDER OF THE AREA SHOULD APPEAR UNIFORM AFTER BINDER APPLICATION. BINDERS LISTED IN THE 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL OR APPROVED EQUAL SHALL BE APPLIED AT RATES RECOMMENDED BY THE MANUFACTURERS.
      (iv) LIGHTWEIGHT PLASTIC NETTING MAY BE USED TO SECURE MULCH. THE NETTING WILL BE STAPLED TO THE GROUND ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

2) TEMPORARY SEEDING:
   LIME: 100 POUNDS OF DOLOMITIC LIMESTONE PER 1,000 SQUARE FEET.
   FERTILIZER: 15 POUNDS OF 10- 10- 10 PER 1,000 SQUARE FEET.
   SEED: PERENNIAL RYE - 0.92 POUNDS PER 1,000 SQUARE FEET (FEBRUARY 1 THROUGH APRIL 30 OR AUGUST 15 THROUGH NOVEMBER 1).
   MILLET - 0.92 POUNDS PER 1,000 SQUARE FEET (MAY 1 THROUGH AUGUST 15).
   MULCH: SAME AS 1 D AND E ABOVE.

3) NO FILLS MAY BE PLACED ON FROZEN GROUND. ALL FILL TO BE PLACED IN APPROXIMATELY HORIZONTAL LAYERS, EACH LAYER HAVING A LOOSE THICKNESS OF NOT MORE THAN 8 INCHES. ALL FILL IN ROADWAYS AND PARKING AREAS ARE TO BE CLASSIFIED AS PER CHARLES COUNTY REQUIREMENTS. ANY FILL WITHIN THE BUILDING AREA IS TO BE COMPACTED TO A MINIMUM OF 95% DENSITY. FILLS FOR POND EMBANKMENTS SHALL BE COMPACTED AS PER MD-378 CONSTRUCTION SPECIFICATIONS. ALL OTHER FILLS SHALL BE COMPACTED SUFFICIENTLY SO AS TO BE STABLE AND PREVENT EROSION AND SLIPPAGE.

4) PERMANENT SOD:
   INSTALLATION OF SOD SHOULD FOLLOW PERMANENT SEEDING DATES. SEEDBED PREPARATION FOR SOD SHALL BE AS NOTED IN SECTION (B) ABOVE. FERTILIZER SOD IS TO BE TALL FESCUE, STATE APPROVED SOD; LIME AND FERTILIZER PER PERMANENT SEEDING SPECIFICATIONS AND LIGHTLY IRRIGATE SOIL PRIOR TO LAYING SOD. SOD IS TO BE LAID ON THE CONTOUR WITH ALL ENDS TIGHTLY ABUTTING. JOINTS ARE TO BE STAGGERED BETWEEN ROWS. WATER AND ROLL OR TAMP SOD TO INSURE POSITIVE ROOT CONTACT WITH THE SOIL. ALL SLOPES STEEPER THAN 3:1, AS SHOWN, ARE TO BE PERMANENTLY SODDED OR PROTECTED WITH AN APPROVED EROSION CONTROL NETTING.
   ADDITIONAL WATERING FOR ESTABLISHMENT MAY BE REQUIRED. SOD IS NOT TO BE INSTALLED ON FROZEN GROUND. SOD SHALL NOT BE TRANSPLANTED WHEN MOISTURE CONTENT (DRY OR WET) AND/OR EXTREME TEMPERATURE MAY ADVERSELY AFFECT ITS SURVIVAL. IN THE ABSENCE OF ADEQUATE RAINFALL, IRRIGATION SHOULD BE PERFORMED TO ENSURE ESTABLISHMENT OF SOD.

5) MINING OPERATIONS:
   SEDIMENT CONTROL PLANS FOR MINING OPERATIONS MUST INCLUDE THE FOLLOWING SEEDING DATES AND MIXTURES:
   FOR SEEDING DATES OF FEBRUARY 1 THROUGH APRIL 30 AND AUGUST 15 THROUGH OCTOBER 31, USE SEED MIXTURE OF TALL FESCUE AT THE RATE OF 2 POUNDS PER 1,000 SQUARE FEET AND SERICEA LESPEDEZA AT THE MINIMUM RATE OF 0.5 POUNDS PER 1,000 SQUARE FEET.

6) TOPSOIL SHALL BE APPLIED AS PER THE STANDARD AND SPECIFICATIONS FOR TOPSOIL FROM THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

   NOTE: USE OF THIS INFORMATION DOES NOT PRECLUDE MEETING ALL OF THE REQUIREMENTS OF THE CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.

1994 MD SPECS. FOR SOIL EROSION AND SEDIMENT CONTROL SECTION G-21: STANDARDS AND SPECIFICATIONS FOR TOPSOIL

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

DEFINITION
PLACEMENT OF TOPSOIL OVER A PREPARED SUBSOIL PRIOR TO ESTABLISHMENT OF PERMANENT VEGETATION.

PURPOSE
TO PROVIDE A SUITABLE SOIL MEDIUM FOR VEGETATIVE GROWTH. SOILS OF CONCERN HAVE LOW MOISTURE CONTENT, LOW NUTRIENT LEVELS, LOW PH, MATERIALS TOXIC TO PLANTS, AND/OR UNACCEPTABLE SOIL GRADATION.

CONDITIONS WHERE PRACTICE APPLIES
I. THIS PRACTICE IS LIMITED TO AREAS HAVING 2:1 OR FLATTER SLOPES WHERE:
A. THE TEXTURE OF THE EXPOSED SUBSOIL/PARENT MATERIAL IS NOT ADEQUATE TO PRODUCE VEGETATIVE GROWTH.
B. THE SOIL MATERIAL IS SO SHALLOW THAT THE ROOTING ZONE IS NOT DEEP ENOUGH TO SUPPORT PLANTS OR FURNISH CONTINUING SUPPLIES OF MOISTURE AND PLANT NUTRIENTS.
C. THE ORIGINAL SOIL TO BE VEGETATED CONTAINS MATERIAL TOXIC TO PLANT GROWTH.
D. THE SOIL IS SO ACIDIC THAT TREATMENT WITH LIMESTONE IS NOT FEASIBLE.
II. FOR THE PURPOSE OF THESE STANDARDS AND SPECIFICATIONS, AREAS HAVING SLOPES STEEPER THAN 2:1 REQUIRE SPECIAL CONSIDERATION AND DESIGN FOR ADEQUATE STABILIZATION. AREAS HAVING SLOPES STEEPER THAN 2:1 SHALL HAVE THE APPROPRIATE STABILIZATION SHOWN ON THE PLANS.

CONSTRUCTION AND MATERIAL SPECIFICATIONS
I. TOPSOIL SALVAGED FROM THE EXISTING SITE MAY BE USED PROVIDED THAT IT MEETS THE STANDARDS AS SET FORTH IN THESE SPECIFICATIONS. TYPICALLY, THE DEPTH OF TOPSOIL TO BE SALVAGED FOR A GIVEN SOIL TYPE CAN BE FOUND IN THE REPRESENTATIVE SOIL PROFILE SECTION IN THE SOIL SURVEY PUBLISHED BY USDA-SCS IN COOPERATION WITH MARYLAND AGRICULTURAL EXPERIMENTAL STATION.

II. TOPSOIL SPECIFICATIONS - SOIL TO BE USED AS TOPSOIL MUST MEET THE FOLLOWING:
I. TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, OR 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 1 FT IN DIAMETER.
II. TOPSOIL MUST BE FREE OF PLANTS OR PLANT PARTS SUCH AS BERMUDA GRASS, QUACK GRASS, JOHNSON GRASS, NUT SEDGE, 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 48 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 TOPSOILING, 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 TOPSOILED, 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 TOPSOILING 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 ME