

GENERAL NOTES:

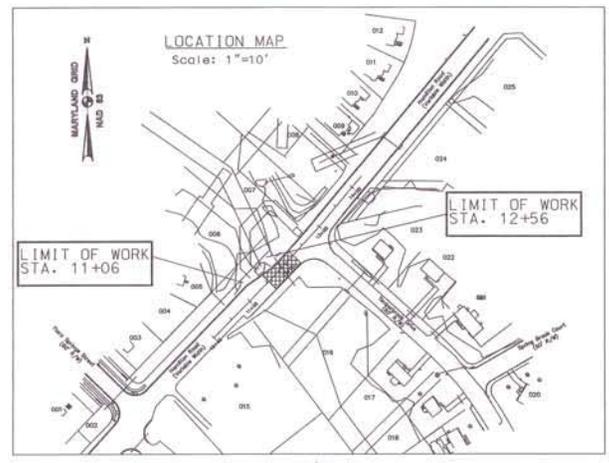
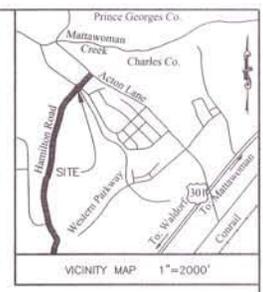
- ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST CHARLES COUNTY DEPARTMENT OF PLANNING & GROWTH MANAGEMENT SPECIFICATIONS MANUAL, THE LATEST CHARLES COUNTY DETAIL MANUAL, AND IN ACCORDANCE WITH CURRENT COUNTY STANDARDS. PLEASE CONTACT THE HIGHWAY ENGINEER III OF THE DEVELOPMENT SERVICES DIVISION AT (310) 645-0618 FOR DETAILS AND INFORMATION.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- THE DEVELOPER 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.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT SERVICES DIVISION 48 HOURS PRIOR TO THE START OF ALL CONSTRUCTION AND IN ACCORDANCE WITH ALL PERMITS ISSUED AT (301) 645-0700.
- MAXIMUM SLOPES SHALL NOT BE GREATER THAN THREE (3) FEET HORIZONTAL TO ONE (1) FOOT VERTICAL OUTSIDE THE ROAD RIGHT-OF-WAY. SLOPES WITHIN THE RIGHT-OF-WAY SHALL BE NO 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.
- CERTIFIED COMPACTION TESTS ARE REQUIRED FOR ALL TRENCH/FILL WORK IN ACCORDANCE WITH THE LATEST EDITION OF THE SPECIFICATIONS MANUAL AND GRADING ORDINANCE. FINAL REPORTS AND CERTIFICATIONS SHALL BE PROVIDED PRIOR TO PREFINAL INSPECTIONS.
- CERTIFIED COMPACTION TESTS AND GEOTECHNICAL REPORTS SHALL BE SUBMITTED ON A BI-WEEKLY BASIS THROUGHOUT THE COURSE OF CONSTRUCTION AS REQUIRED BY THE SPECIFICATIONS MANUAL.
- A PROGRESS SET OF AS-BUILT PLANS SHALL BE SUBMITTED PRIOR TO "SUBSTANTIAL INSPECTIONS" FOR WATER AND SEWER CONSTRUCTION FOR THE PURPOSES OF OBTAINING AN APPROVAL FOR SUBSTANTIAL INSPECTION.
- AS-BUILT PLANS SHALL BE SUBMITTED PRIOR TO PREFINAL INSPECTIONS FOR ALL DISCIPLINES.
- WITH APPROVAL FROM THE DEPARTMENT OF PLANNING & GROWTH MANAGEMENT ALL EROSION AND SEDIMENT CONTROL STRUCTURES MUST BE REMOVED PRIOR TO THE RELEASE OF BONDS.
- A SHOP DRAWING CERTIFIED BY A MARYLAND REGISTERED PROFESSIONAL ENGINEER MUST BE PROVIDED TO THE COUNTY PRIOR TO CONSTRUCTION OF THE BOX CULVERT, FOUNDATION, AND HEAD/END WALLS.
- CHARLES COUNTY WILL BE RESPONSIBLE FOR INSPECTION OF SOIL EROSION SEDIMENT CONTROL WORK. THE COUNTY MAY BE CONTACTED AT 301-645-0700.
- ALL TRAFFIC CONTROL SHALL CONFORM TO THE GENERAL NOTES SET FORTH IN MSHA DETAIL 104.00-01 THROUGH MD 104.00-30.
- IN ACCORDANCE WITH SECTION 5.6C OF THE ROAD ORDINANCE, AN EVALUATION OF THE PROPOSED ROADWAY PAVEMENT SECTION BASED UPON EXISTING SUBSURFACE AND SUB-GRADE SOIL CONDITIONS AND WORST CASE SCENARIO FOR TRAFFIC VOLUMES (EAL'S) IS REQUIRED TO BE SUBMITTED BY A LICENSED GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF THE SUB-BASE MATERIALS. THE SUBGRADE MUST HAVE A MINIMUM CBR VALUE OF 7.
- RIP RAP SHALL BE EMBEDDED TWO FEET TO ALLOW THE NATURAL STREAM INVERT ELEVATION TO MATCH THE TOP OF THE PROTECTIVE STONE.
- TACK COAT IS TO BE APPLIED AT ALL VERTICAL JOINTS BETWEEN EXISTING PAVEMENT AND PROPOSED ASPHALT WIDENING. A BITUMINOUS JOINT SEALER MUST BE APPLIED ALONG THE LONGITUDINAL JOINT OF THE PAVEMENT WIDENING AT THE SURFACE.
- EXISTING SURFACE ASPHALT SHALL BE MILLED AS NECESSARY TO ACHIEVE A MINIMUM OVERLAY DEPTH OF 1.5-INCHES. PROVIDE WEDGE/LEVEL COURSES AS NECESSARY TO OBTAIN THE MINIMUM CROSS SLOPE FROM THE PROPOSED CROWN.
- CONTRACTOR MUST MILL AND CUT BACK THE SURFACE ASPHALT A MINIMUM OF 10 FEET, OR THE LENGTH OF THE PAVEMENT, AT THE END OF THE EXISTING PAVEMENT IN ORDER TO STAGGER THE BASE AND SURFACE COURSE PAVEMENT JOINTS AND FOR PROPER TIE IN AND TRANSITION OF THE ROADWAY PAVEMENT.

STANDARD STABILIZATION NOTE:

"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."

WESTERN PARKWAY PHASE 1B

HAMILTON ROAD CULVERT IMPROVEMENTS 6TH ELECTION DISTRICT CHARLES COUNTY, MARYLAND



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OWNER'S/DEVELOPER'S 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."

5/21/09
DATE

37045
CARD NO.

801-896-5847
TELEPHONE NUMBER

CHARLES Co. P&M, COUNTY GOVERNMENT BUILDING, 200 BALTIMORE ST., Rm. Box 2150
LA PLATA, MD. 20646
ADDRESS

John H. Stevens, Chief of CS
OWNER/DEVELOPER SIGNATURE

John H. Stevens, Chief of CS
PRINTED NAME AND TITLE

CONSULTANT 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 # 24171

MD LAND SURVEYOR LICENSE #

MD LANDSCAPE ARCHITECT #

NAME JOSEPH MACIOS

FIRM NAME TRC ENGINEERS

STREET ADDRESS 16000 COMMERCIAL AVE, SUITE B
MTHAVEN, NJ 08054

J. Macios
SIGNATURE

2-30-2009
DATE

RECEIVED
JAN 13 2010
CHARLES SCD

CHARLES SOIL CONSERVATION DISTRICT APPROVAL

CHARLES SCD SEDIMENT AND EROSION CONTROL PLAN NUMBER 192-08

CHARLES SCD SMALL POND APPROVAL NUMBER(S) 1114

SEDIMENT AND EROSION CONTROL PLAN AND SMALL POND (IF APPLICABLE) IS HEREBY APPROVED BY THE CHARLES SOIL CONSERVATION DISTRICT. PLAN REVISION SHEETS 1 & 15

SIGNATURE/DATE *John H. Stevens 5/21/09* *John H. Stevens 11/15/10*

THIS APPROVAL EXPIRES 10/31/11

WRITTEN REQUESTS 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

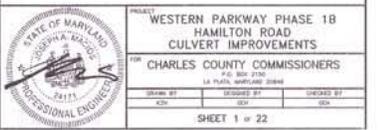
| Criteria | Contribution | Att-Build | Conditions or Remarks: |
|--------------------|--------------|-----------|------------------------|
| Grading | Contribution | att-build | |
| Right of Way | Contribution | att-build | |
| Storm Drainage | Contribution | att-build | |
| Erosion Management | Contribution | att-build | |
| Water Management | Contribution | att-build | |
| Other | Contribution | att-build | |

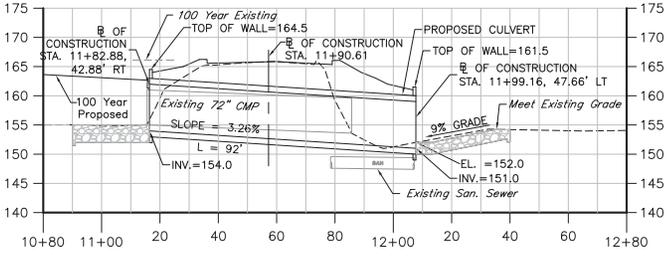
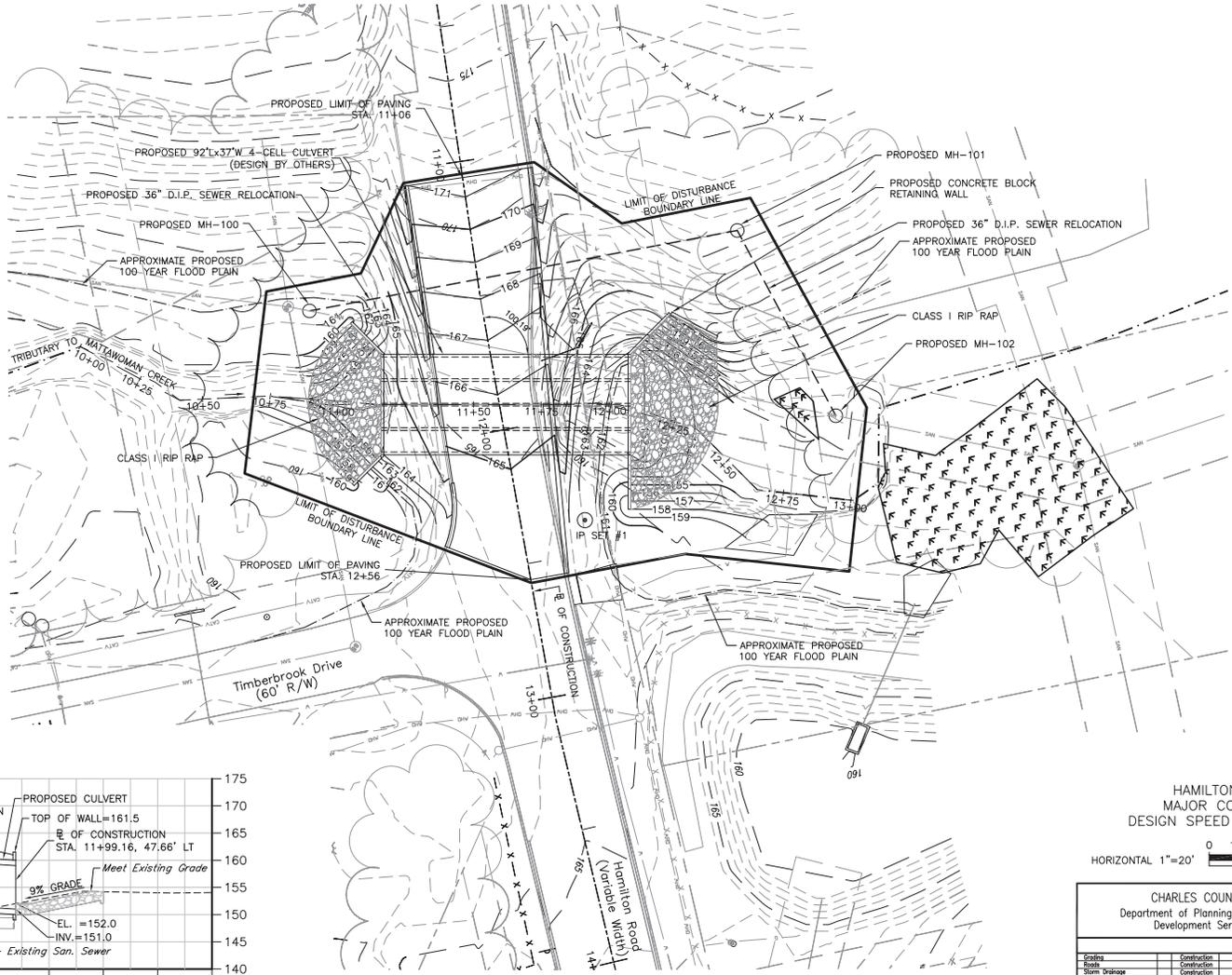
DATE: 5/21/09

SOIL CONSERVATION DISTRICT TITLE SHEET

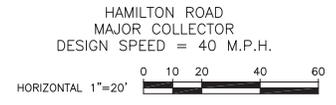
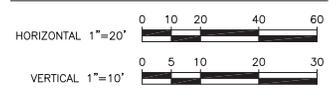
| REVIEW CERTIFICATION | APPROVAL |
|---|--|
| THIS PLAN HAS BEEN REVIEWED FOR THE CHARLES COUNTY SOIL CONSERVATION DISTRICT AND MEETS THE TECHNICAL REQUIREMENTS OF THE DISTRICT. | SED. NO. _____ IS APPROVED FOR SEDIMENT AND EROSION CONTROL WITH AN EXPIRATION DATE OF _____ |
| USDA NATURAL RESOURCES CONSERVATION SERVICE DATE _____ | CHARLES SOIL CONSERVATION DISTRICT DATE _____ |
| | REQUEST FOR EXTENSION MUST BE SUBMITTED IN WRITING TO THE DISTRICT |

| Revision Number | Construction Revision | Revision Date |
|-----------------|-----------------------|---------------|
| 1 | | |
| 2 | | |





CULVERT PROFILE



HAMILTON ROAD
MAJOR COLLECTOR
DESIGN SPEED = 40 M.P.H.

CHARLES COUNTY GOVERNMENT
Department of Planning and Growth Management
Development Services Department

| | | | Conditions or Remarks: |
|-----------------------|--------------|----------|------------------------|
| Grading | Construction | as-built | |
| Erosion | Construction | as-built | |
| Storm Drainage | Construction | as-built | |
| Stormwater Management | Construction | as-built | |
| Water | Construction | as-built | |
| Street | Construction | as-built | |
| Other | Construction | as-built | |

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS
WERE PREPARED OR APPROVED BY ME,
AND THAT I AM A FULLY LICENSED PROFESSIONAL
ENGINEER UNDER THE STATE OF MARYLAND,
LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011

| Revision Number | Construction Revision | Revision Date |
|-----------------|-----------------------|---------------|
| 1 | | |
| 2 | | |



GRADING PLAN

WESTERN PARKWAY PHASE 1B
HAMILTON ROAD
CULVERT IMPROVEMENTS

FOR CHARLES COUNTY COMMISSIONERS

LA PLATA, MARYLAND 20646

DESIGNED BY: [Signature] CHECKED BY: [Signature]

SHEET 2 of 22

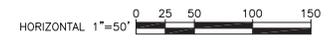
CURRENT PROPERTY OWNERS

- | | |
|---|--|
| 001 RUTH A. JONES FREDDIE L. JONES JR. LIBER 5606, FOLIO 137 9,600 SQ. FT. TM# 08-2-809-6930-2-64 | 014 PHILLIP A. WATSON C. VANDERLEY WATSON LIBER 4922, FOLIO 534 194,228 SQ. FT. TM# 08-2-812 |
| 002 CSS REALTY, INC LIBER 2390, FOLIO 195 40,127 SQ. FT. TM# 08-2-809-6930-2-OPSPC | 015 JEAN ALLEN LIBER 4024, FOLIO 19 1,0282 ACRES TM# 08-8-599 |
| 003 JOY G. BARBER LIBER 5392, FOLIO 699 9,000 SQ. FT. TM#08-2-809-6930-2-63 | 016 MARYLAND SERVICE CORPORATION LIBER 392, FOLIO 279 1,014 ACRES TM# 08-9-633-6500-2-1 |
| 004 AARON LOCKS KRISTI LOCKS LIBER 5659, FOLIO 162 9,189 SQ. FT. TM# 08-2-809-6930-2-62 | 017 KEITH RICHARDS LIBER 5421, FOLIO 128 0.420 ACRES TM# 08-9-633-6500-2-2 SPLIT LEVEL VINYL HOUSE #11503 ENTRY=166.83 GARAGE=164.32 LL=163.06 |
| 005 THOMAS J. MAYO JR. NORA A. MAYO LIBER 4145, FOLIO 469 12,752 SQ. FT. TM# 08-2-09-6930-2-61 | 018 DIANE LAVENDOSKI LIBER 1311, FOLIO 403 0.408 ACRES TM# 08-9-633-6500-2-3 SPLIT LEVEL VINYL HOUSE #11505 ENTRY=168.92 LL= 165.12 |
| 006 CSS REALTY, INC LIBER 2390, FOLIO 195 136,630 SQ. FT. TM# 08-2-809-6930-2-OPSPF | 019 ERIC NICHOLSON TONI NICHOLSON LIBER 5247, FOLIO 367 0.440 ACRES TM# 08-9-633-6500-2-4 2 STORY SPLIT FOYER VINYL HOUSE #11507 ENTRY=168.53 LL=165.87 |
| 007 WEXFORD VILLAGE 3 LLC LIBER 4873, FOLIO 168 765,013 SQ. FT. TM# 08-3-809-6930-2-OPSPA | 020 SEAN GILKERSON DIANNA GILKERSON LIBER 4595, FOLIO 276 0.348 ACRES TM# 08-9-633-6500-2-75 SPLIT LEVEL ALUMINUM HOUSE #2312 GARAGE=175.24 |
| 008 CSS REALTY, INC LIBER 2390, FOLIO 195 49,324 SQ. FT. TM# 08-3-809-6930-2-OPSPA | 021 JOSEPH W. RAHALL MARY A. RAHALL LIBER 795, FOLIO 130 0.459 ACRES TM# 08-9-633-6500-2-72 2 STORY SPLIT FOYER VINYL / BRICK TRIM HOUSE #11504 ENTRY=177.32 FF=173.47 GARAGE=172.85 |
| 009 ANTOINE J. WALKER CARLA WALKER LIBER 5061, FOLIO 152 6,714 SQ. FT. TM# 08-3-809-6930-2-10 2 STORY VINYL W/ BRICK TRIM HOUSE #11496 FF=180.55 BF=171.69 | 022 KEVIN T. KLEIN LIBER 4673, FOLIO 288 0.513 ACRES TM# 08-9-633-6500-2-73 2 STORY VINYL HOUSE #11502 FF=173.22 |
| 010 GERALD B. PLUMMER MELBA K. PLUMMER LIBER 4992, FOLIO 72 6,599 SQ. FT. TM# 08-3-809-6930-2-9 2 STORY VINYL W/ BRICK TRIM HOUSE #11492 FF=182.61 BF=173.60 | 023 REMBER MOLINA SALVADOR MOLINA LIBER 5060, FOLIO 269 0.468 ACRES TM# 08-9-633-6500-2-74 2 STORY SPLIT FOYER VINYL HOUSE #11500 ENTRY=166.48 LL=162.53 |
| 011 GIL H. V. QUENANO IVY P. QUENANO LIBER 4891, FOLIO 188 6,939 SQ. FT. TM# 08-3-809-6930-2-8 2 STORY VINYL W/ BRICK TRIM HOUSE #11488 FF=184.11 BF=175.17 | 024 CSS REALTY, INC. LIBER 2390, FOLIO 195 46,836 SQ. FT. TM# 8-3-810-3 |
| 012 CARLO P. THREATT YOLANDA D. THREATT LIBER 4917, FOLIO 420 6,944 SQ. FT. TM# 08-3-809-6930-2-7 2 STORY VINYL W/ BRICK TRIM HOUSE #11484 FF=185.23 BF=176.37 | 025 CSS REALTY, INC. LIBER 2390, FOLIO 195 29,472 SQ. FT. TM# 08-3-810-1 |
| 013 MARCUS D. COLE LIBER 4888, FOLIO 366 7,026 SQ. FT. TM#08-3-809-6930-2-6 | |



START SITE STA. 13+8

HAMILTON ROAD
MAJOR COLLECTOR
DESIGN SPEED = 40 M.P.H.



CHARLES COUNTY GOVERNMENT
Department of Planning and Growth Management
Development Services Department

| | | Conditions or Remarks: |
|-----------------------|-----------------------|------------------------|
| Grading | Construction as-built | |
| Road | 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 | |

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 STATE OF MARYLAND,
LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011

RIGHT OF WAY

PROJECT: WESTERN PARKWAY PHASE 1B
HAMILTON ROAD
CULVERT IMPROVEMENTS
FOR CHARLES COUNTY COMMISSIONERS

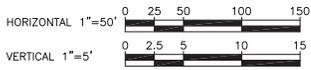
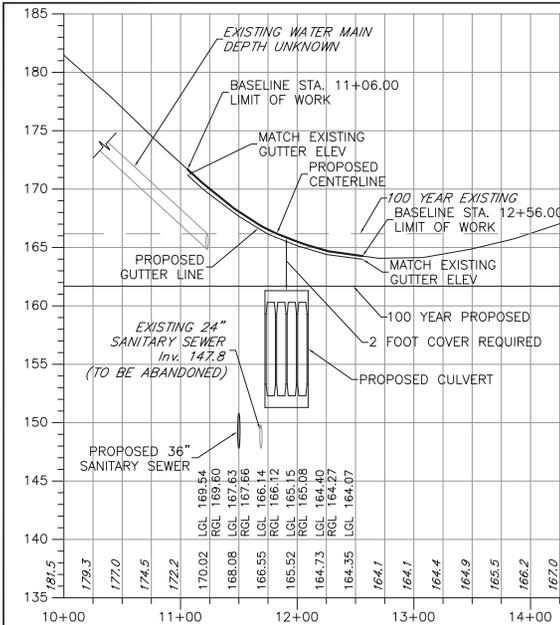
LA PLAN, MARYLAND 20446

DRAWN BY: [Signature] DESIGNED BY: [Signature] CHECKED BY: [Signature]

SHEET 3 of 22

| Revision Number | Construction Revision | Revision Date |
|-----------------|-----------------------|---------------|
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| Δ | | |





Storm Sewer

- 1 15" CMP
Inv. = 159.90
- 2 Yard Inlet
Top = 167.36
15" In = 164.85
15" Out = 161.16
- 3 Curb Drop Inlet
Top = 171.58
15" In = 166.33
15" Out = 166.13
- 4 Curb Drop Inlet
Top = 171.45
15" Out = 166.61
- 5 30" RCP
Inv. = 158.94
- 6 Storm Water
Detention Structure
W/Trash Cage
Riser = 162.49
30" RCP
Out = 159.52
- 7 Curb Drop Inlet
Top = 164.18
Out = 163.09
- 8 Curb Drop Inlet
Top = 168.12
Out = 167.03
- 9 21" CMP
Inv. = 187.73
- 10 21" CMP
Inv. = 188.77
- 11 15" CMP
Inv. = 189.31
- 12 15" CMP
Inv. = 189.74
- 13 72" CMP
Inv. = 153.78

Storm Sewer

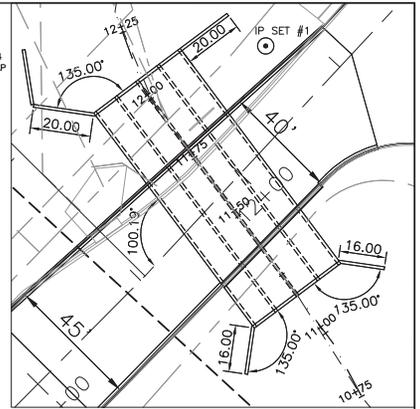
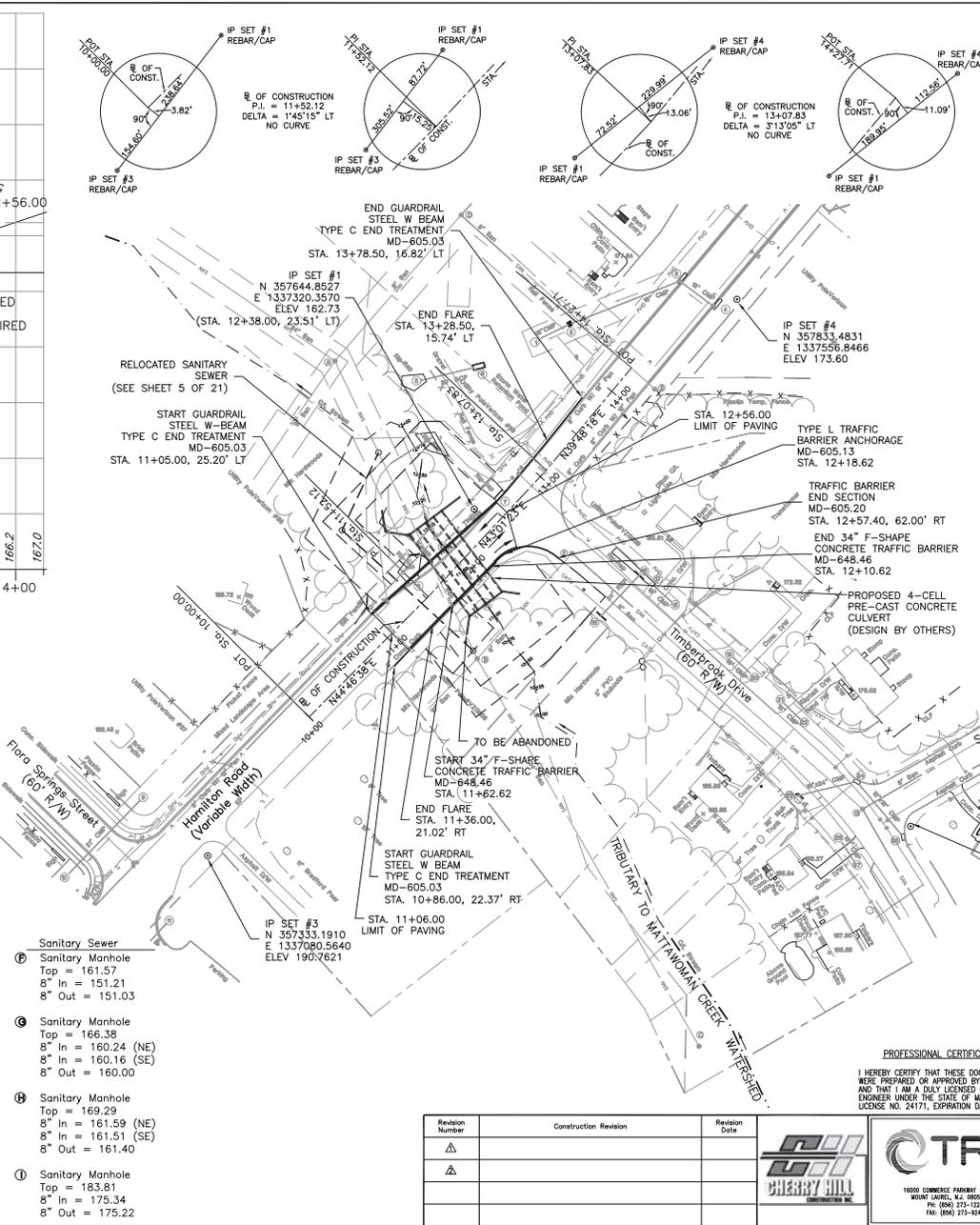
- 14 72" CMP
(Poor Condition)
Inv. = 155.78
- 15 Conc. Endwall
24" RCP
Inv. = 157.28
- 16 Conc. Headwall
24" RCP
Inv. = 158.24
- 17 15" CMP
Inv. = 159.70
- 18 15" CMP
Inv. = 160.18
- 19 15" CMP
Inv. = 161.30
- 20 15" CMP
Inv. = 161.87
- 21 15" CMP
Inv. = 162.77
- 22 15" CMP
Inv. = 163.21
- 23 Conc. Endwall
16"x24" CMP
Inv. = 162.48
- 24 Grate Inlet
Top = 165.40
12"x18" CMP
In = 163.60
16"x24" CMP
Out = 163.20

Storm Sewer

- 25 Grate Inlet
Top = 166.46
12"x18" CMP
Out = 164.96
- 26 15" CMP
Inv. = 164.57
- 27 15" CMP
Inv. = 164.61

Sanitary Sewer

- A Sanitary Manhole
Top = 157.44
8" In = 148.28 (SW)
8" In = 150.94 (NE)
24" In = 146.23
24" Out = 146.45
- B Sanitary Manhole
Top = 162.02
8" In = 149.86
10" In = 148.68
24" In = 148.46
24" Out = 148.26
- C Sanitary Manhole
Top = 161.92
(Inaccessible)
- D Sanitary Manhole
Top = 172.74
8" In = 157.35 (NE)
8" In = 157.24 (SE)
8" Out = 157.19
- E Sanitary Manhole
Top = 167.56
8" Out = 159.10



HORIZONTAL 1"=20'



NOTE:
INSTALL GUARDRAIL END
SECTIONS TO BE OFFSET ONE FOOT
FROM THE NORMAL RUN OF BARRIER

HAMILTON ROAD
MAJOR COLLECTOR
DESIGN SPEED = 40 M.P.H.



CHARLES COUNTY GOVERNMENT
Department of Planning and Growth Management
Development Services Department

| | | Conditions or Remarks: |
|-----------------------|--------------|------------------------|
| Grading | Continuation | as-built |
| Earth | Continuation | as-built |
| Storm Drainage | Continuation | as-built |
| Structural Management | Continuation | as-built |
| Water | Continuation | as-built |
| Clear | Continuation | as-built |
| Other | Continuation | as-built |

DATE: _____

PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS
WERE PREPARED OR APPROVED BY ME,
AND THAT I AM A DULY LICENSED PROFESSIONAL
ENGINEER UNDER THE STATE OF MARYLAND,
LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011

ROADWAY SHEET

PROJECT:
WESTERN PARKWAY PHASE 1B
HAMILTON ROAD
CULVERT IMPROVEMENTS

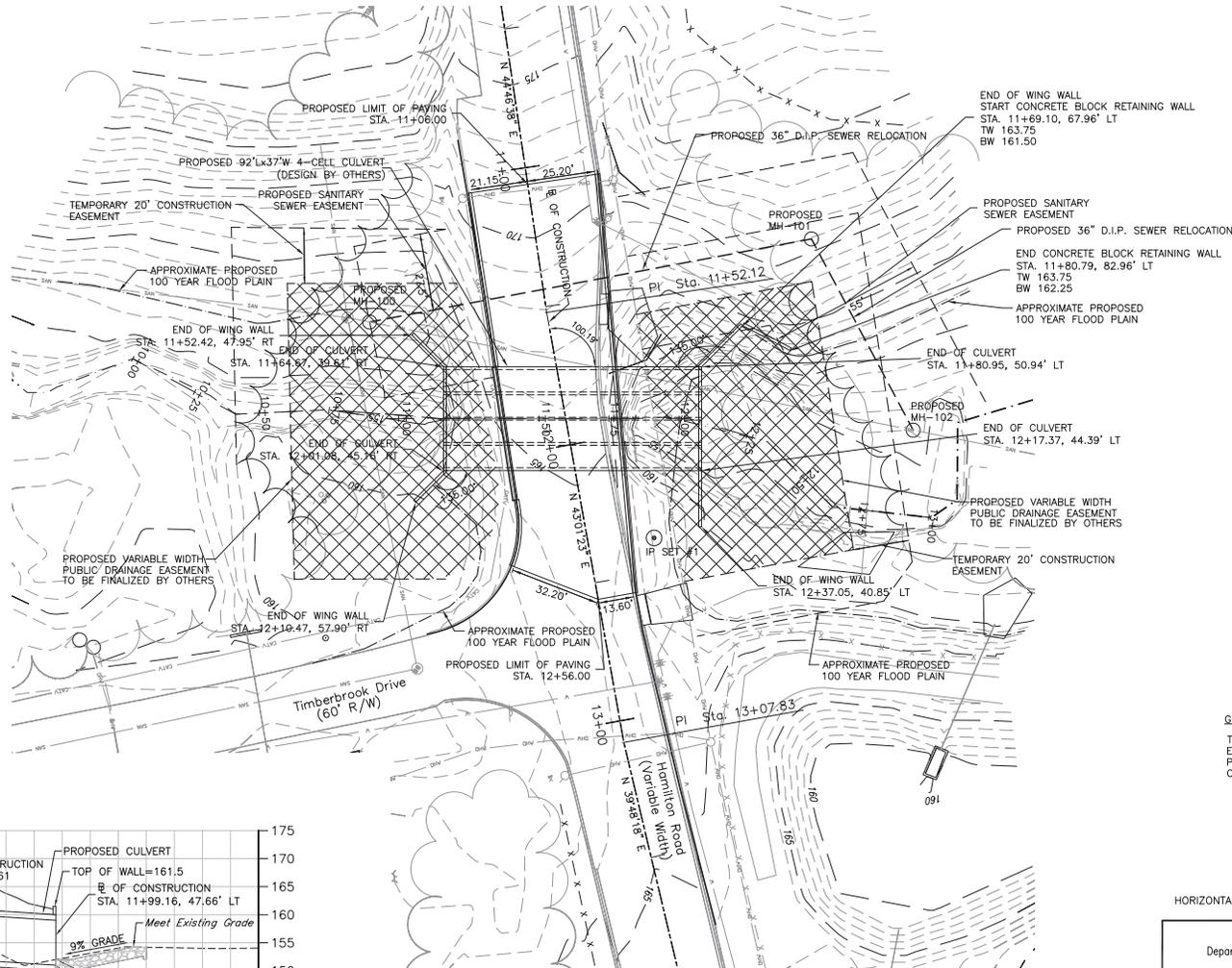
FOR CHARLES COUNTY COMMISSIONERS
LA PLATA, MARYLAND 20646

DRAWN BY: _____ DESIGNED BY: _____
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SHEET 4 of 22

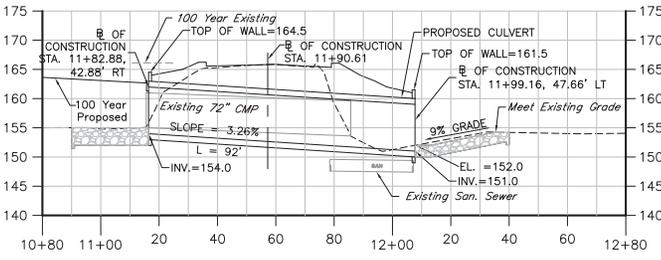
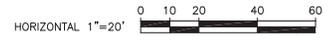
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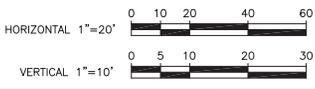


GENERAL NOTE:
 THE CULVERT IMPROVEMENTS DOES NOT ELIMINATE FLOODING OF ALL RESIDENTIAL PROPERTIES AND PORTIONS OF CHARLES COUNTY PUBLIC ROADS.

HAMILTON ROAD
 MAJOR COLLECTOR
 DESIGN SPEED = 40 M.P.H.



CULVERT PROFILE



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 STATE OF MARYLAND, LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011

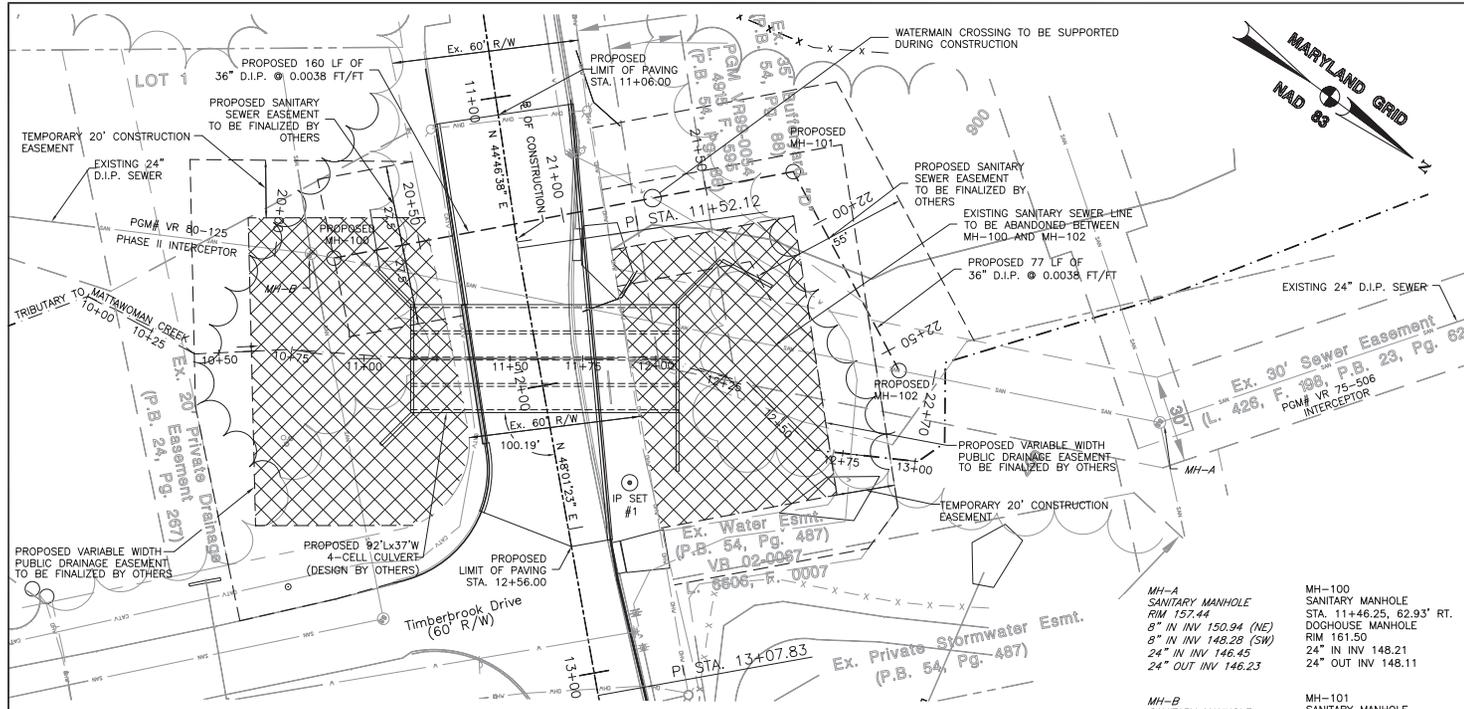
| Revision Number | Construction Revision | Revision Date |
|-----------------|-----------------------|---------------|
| 1 | | |
| 2 | | |



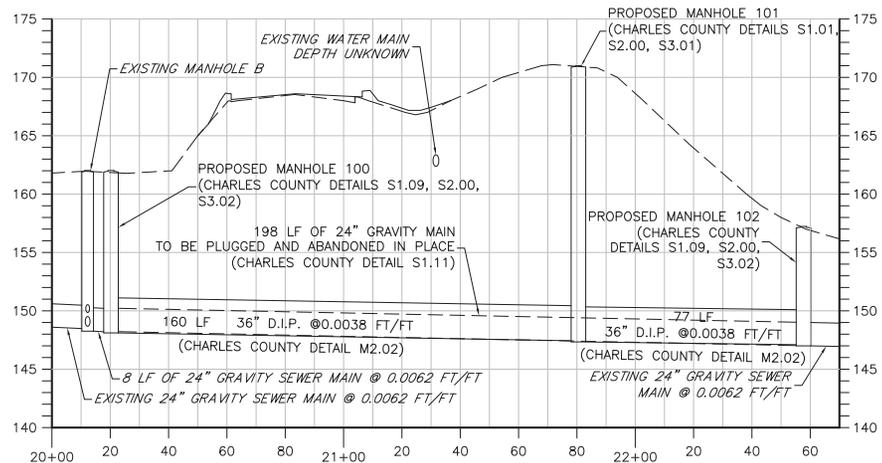
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|--|--------------|-------------|
| CHARLES COUNTY GOVERNMENT Department of Planning and Growth Management Development Services Department | | |
| CONDITIONS OR REMARKS: | | |
| Grading | Construction | as-built |
| Roads | Construction | as-built |
| Storm Drainage | Construction | as-built |
| Stormwater Management | Construction | as-built |
| Water | Construction | as-built |
| Sewer | Construction | as-built |
| Other | Construction | as-built |
| DRAWN BY: | DATE: | DATE: |
| PROJECT: WESTERN PARKWAY PHASE 1B HAMILTON ROAD CULVERT IMPROVEMENTS FOR CHARLES COUNTY COMMISSIONERS LA PLATA, MARYLAND 20646 | | |
| DRAWN BY: | DESIGNED BY: | CHECKED BY: |
| CSJ | CSJ | CSJ |
| SHEET 5 OF 22 | | |

NOTES FOR LINING DUCTILE IRON PIPE FOR SEWER SERVICE:

- Condition of Ductile Iron Prior to Surface Preparation**
All ductile pipe and fittings shall be delivered to the application facility without asphalt, cement lining, or any other lining on the interior surface.
- Lining Material**
The Standard of Quality is PROTECTO 401 Ceramic Epoxy. The material shall be an amine cured novolac epoxy containing at least 20% by volume of ceramic quartz pigment. Any request for substitution must be accompanied by a successful history of lining pipe fittings for sewer service, a test report verifying the following properties, and a certification of the test results.
- Application**
 - Applicator**
The lining shall be applied by a certified firm with a successful history of applying linings to the interior of ductile iron pipe and fittings.
 - Surface Preparation**
Prior to abrasive blasting, the entire area to receive the protective compound shall be inspected for oil, grease, etc. After the surfaces has been made free of grease, oil or other substances, all areas to receive the protective compounds shall be abrasive blasted using sand or grit abrasive media. Any area where rust reappears before lining must be reblasted.
 - Lining**
After surface preparation and within 8 hours of surface preparation, the interior of the pipe shall receive 40 mils nominal dry film thickness of PROTECTO 401. No lining shall take place when the substrate or ambient temperature is below 40°F. The surface also must be dry and dust free.
 - Due to the tolerances involved, the gasket area and spigot end up to 6 inches back from the end of the spigot end must be coated with 6 mils nominal, 10 mils maximum using Protecto Joint Compound. The Joint Compound shall be applied by brush to ensure coverage.**
- Number of Coats**
The number of coats of lining material applied shall be as recommended by the lining manufacturer. To prevent delamination between coats, no material shall be used for lining which is not indefinitely recoatable with itself without roughening of the surface.
- Touch-Up and Repair**
Protecto Joint Compound shall be used for touch-up or repair in accordance with manufacturer's recommendations.
- Inspection and Certification**
 - Inspection**
 - All ductile iron pipe and fitting linings shall be checked for thickness using a magnetic film thickness gauge.
 - The interior lining of all pipe barrels and fittings shall be tested for pinholes with a non-destructive 2,500 volt test.
 - Each pipe joint and fitting shall be marked with the date of application of the lining system along with its numerical sequence of application on that date and records maintained by the applicator of his work.
 - Certification**
The pipe or fitting manufacturer must supply a certificate attesting to the fact that the applicator met the requirements of this specification, and that the material used was as specified.
- Handling**
PROTECTO 401 lined pipe and fittings must be handled only from the outside of the pipe and fittings. No forks, chains, straps, hooks, etc. shall be placed inside the pipe and fittings for lifting, positioning or laying. The pipe shall not be dropped or unloaded by rolling. Care should be taken not to let the pipe strike sharp objects while swinging or being off loaded. Ductile iron pipe should never be placed on grade by use of hydraulic pressure from an excavator bucket or by banging with heavy hammers.



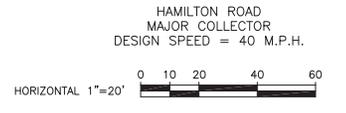
| | |
|---|---|
| MH-A SANITARY MANHOLE RIM 157.44 8" IN INV 150.94 (NE) 10" IN INV 148.28 (SW) 24" IN INV 146.45 24" OUT INV 146.23 | MH-100 SANITARY MANHOLE STA. 11+46.25, 62.93' RT. DOGHOUSE MANHOLE RIM 161.50 24" IN INV 148.21 24" OUT INV 148.11 |
| MH-B SANITARY MANHOLE RIM 162.02 8" IN INV 149.86 10" IN INV 148.68 24" IN INV 148.46 24" OUT INV 148.26 | MH-101 SANITARY MANHOLE STA. 12+16.49, 121.19' LT DOGHOUSE MANHOLE RIM 156.25 24" IN INV 147.10 24" OUT INV 147.00 |
| | MH-102 SANITARY MANHOLE STA. 11+40.03, 97.21' LT RIM 171.00 24" IN INV 147.44 24" OUT INV 147.34 |



PROPOSED SANITARY SEWER PROFILE
HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=5'

- SEQUENCE OF CONSTRUCTION:**
- MARKOUT EXISTING WATERMAIN. CLEARLY MARK LOCATION OF WATERMAIN CROSSING.
 - CONSTRUCT "DOGHOUSE" MANHOLE, MH-100.
 - INSTALL 36" DUCTILE IRON PIPE BETWEEN MH-100 AND MH-101.
 - CONSTRUCT MH-101.
 - INSTALL 36" DUCTILE IRON PIPE BETWEEN MH-101 AND DOGHOUSE MANHOLE, MH-102.
 - CONSTRUCT MH-102.
 - SET UP TEMPORARY PUMPING SYSTEM.
 - PLUG 24" OUTLET @MANHOLE B AND COMMENCE PUMPING OF SEWAGE TO MANHOLE A.
 - CUTOFF AND ABANDON EXISTING 24" SEWER LINES BETWEEN DOGHOUSE MANHOLES.
 - UNPLUG 24" OUTLET @MANHOLE B.
 - REMOVE PUMPING SYSTEM.
 - PATCH HAMILTON ROAD PAVING.

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 STATE OF MARYLAND. LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011



CHARLES COUNTY GOVERNMENT
Department of Planning and Growth Management
Development Services Department

| | | Conditions or Remarks: | |
|-----------------------|--------------|------------------------|-------------------------|
| 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 | This Permit Expires on: |

DATE: _____ DATE: _____

UTILITY PLAN AND PROFILE

PROJECT: WESTERN PARKWAY PHASE 1B HAMILTON ROAD CULVERT IMPROVEMENTS
FOR CHARLES COUNTY COMMISSIONERS
LA PLAN, MARYLAND 20446

| | | |
|------------------------|--------------------------|-------------------------|
| DESIGN BY: [Signature] | DESIGNED BY: [Signature] | CHECKED BY: [Signature] |
| DATE: 02/11/11 | DATE: 02/11/11 | DATE: 02/11/11 |

SHEET 6 of 22

| Revision Number | Construction Revision | Revision Date |
|-----------------|-----------------------|---------------|
| 1 | | |
| 2 | | |

CHERRY HILL

TRC

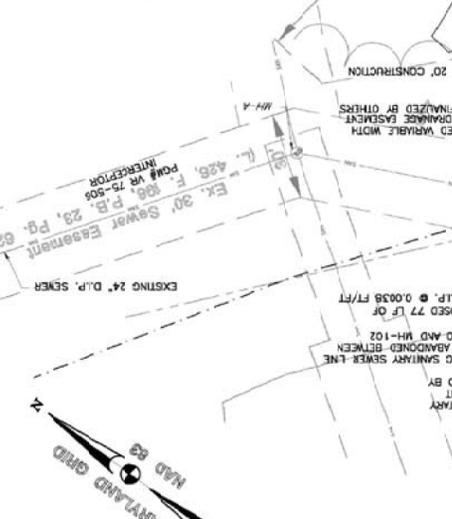
1000 COMMERCE PARKWAY - SUITE B
MOUNT LAUREL, N.J. 08054-2291
TEL: (856) 251-1554
FAX: (856) 273-8444

STATE OF MARYLAND PROFESSIONAL ENGINEER

NOTES FOR LINING DUCTILE IRON PIPE FOR SEWER SERVICE:

1. Condition of Ductile Iron Pipe, Ductile Iron Surface Preparation
All ductile pipe and fittings shall be delivered to the application facility without asphalt, cement lining, or any other lining on the interior surface.
2. Lining Material
The standard of quality is PROTECTO 401 Ceramic Epoxy. The material shall be an organic cured neopox epoxy containing at least 20% by volume of ceramic quartz pigment. Any request for substitution must be accompanied by a successful history of lining pipe fittings for sewer service, a least report verifying the following properties, and a certification of the test results.
 - A. Application
The lining shall be applied by a certified firm with a successful history of applying linings to the interior of ductile iron pipe and fittings.
 - B. Surface Preparation
Prior to concrete blasting, the entire area to receive the protective compound shall be abrasive blasted using sand or grit. After the surface has been free of grease, oil or other substances, all areas to receive the protective compound shall be dried. After the surface has been dried, the entire area to receive the protective compound shall be abrasive blasted using sand or grit.
 - C. Lining
After surface preparation and within 8 hours of surface preparation, the interior of the pipe shall receive 40 mils nominal dry film thickness of PROTECTO 401. No lining shall take place when the substrate or ambient temperature is below 40°F. The surface also must be dry and dust free.
 - D. Due to the tolerances involved, the gasket area and spigot end up to 6 inches back from the end of the spigot end must be coated with 6 mils nominal, 10 mils maximum lining thickness joint compound. The joint compound shall be applied by brush to ensure coverage.
 - E. Number of coats of lining material applied shall be as recommended by the lining manufacturer. To prevent deterioration between coats, no material shall be used for lining which is not inherently recoatable with itself without roughening of the surface.
 - F. Touch-Up and Repair
Protecto joint compound shall be used for touch-up or repair in accordance with manufacturer's recommendations.
3. Inspection and Certification
 - A. Inspection
1. All ductile iron pipe and fitting linings shall be checked for thickness using a magnetic film thickness gauge.
2. The interior lining of all pipe barrels and fittings shall be tested for PROTECTO 401 lining thickness with a thickness gauge.
3. Each joint shall be tested with a thickness gauge.
4. Each point shall be marked with the date of application on that date and records maintained by the applicator of the lining system along with its numerical sequence of application.
 - B. Certification
The pipe or fitting manufacturer must supply a certificate attesting to the fact that the applicator met the requirements of this specification, and that the material used was as specified.
 - C. Handling
1. All ductile iron pipe and fittings must be handled only from the outside PROTECTO 401 lined pipe and fittings must be handled only from the outside excavator bucket or by banging with heavy hammers. Should never be placed on grade by use of hydraulic pressure from an excavator bucket or by banging with heavy hammers.
2. The interior lining of all pipe barrels and fittings shall be tested for PROTECTO 401 lining thickness with a thickness gauge.
3. Each joint shall be tested with a thickness gauge.
4. Each point shall be marked with the date of application on that date and records maintained by the applicator of the lining system along with its numerical sequence of application.
4. Sequence of Construction
 1. MARK CUT EXISTING WATERMAIN, CLEARLY MARK LOCATION OF WATERMAIN CROSSING.
 2. CONSTRUCT DUCTILE IRON PIPE BETWEEN MH-100 AND MH-101.
 3. CONSTRUCT 36" DUCTILE IRON PIPE BETWEEN MH-100 AND MH-101.
 4. CONSTRUCT MH-101.
 5. INSTALL 36" DUCTILE IRON PIPE BETWEEN MH-101 AND DOGHOUSE MANHOLE.
 6. CONSTRUCT DOGHOUSE MANHOLE, MH-102.
 7. SET UP TEMPORARY PUMPING SYSTEM.
 8. PLUG 24" OUTLET MANHOLE B AND COMMENCE PUMPING OF SEWAGE TO MANHOLE A.
 9. CURF AND ABANDON EXISTING 24" SEWER LINES BETWEEN DOGHOUSE MANHOLES.
 10. UNPLUG 24" OUTLET MANHOLE B.
 11. REMOVE PUMPING SYSTEM.
 12. PATCH HAMILTON ROAD PAVING.

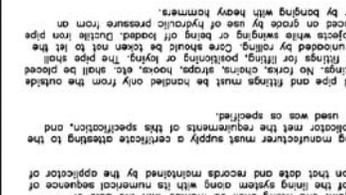
| MANHOLE | INVERT | OUTLET | INVERT |
|------------------|---------|--------|--------|
| MH-100 | 114.825 | 148.21 | 148.21 |
| DOGHOUSE MANHOLE | 114.825 | 148.21 | 148.21 |
| MH-101 | 148.21 | 147.44 | 147.44 |
| SANITARY MANHOLE | 148.21 | 147.44 | 147.44 |
| MH-102 | 148.21 | 147.44 | 147.44 |
| SANITARY MANHOLE | 148.21 | 147.44 | 147.44 |
| MH-103 | 148.21 | 147.44 | 147.44 |
| SANITARY MANHOLE | 148.21 | 147.44 | 147.44 |



| | | | | |
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| SHEET 8 OF 22 WESTERN PARKWAY PHASE 1B CURB CUT IMPROVEMENTS CHARLES COUNTY COMMISSIONERS JUNE 20, 2011 DATE | PROJECT NO. 1171, DOWNSIDE 1/22/2011 LOCATION: 1171, DOWNSIDE 1/22/2011 DRAWN BY: T.R.C. CHECKED BY: T.R.C. DATE: 1/22/2011 | T.R.C. | T.R.C. | T.R.C. |

UTILITY PLAN AND PROFILE

| NO. | DESCRIPTION | DATE |
|-----|-------------|-----------|
| 1 | Issue | 1/22/2011 |
| 2 | Revised | 1/22/2011 |
| 3 | Revised | 1/22/2011 |
| 4 | Revised | 1/22/2011 |
| 5 | Revised | 1/22/2011 |
| 6 | Revised | 1/22/2011 |
| 7 | Revised | 1/22/2011 |
| 8 | Revised | 1/22/2011 |
| 9 | Revised | 1/22/2011 |
| 10 | Revised | 1/22/2011 |
| 11 | Revised | 1/22/2011 |
| 12 | Revised | 1/22/2011 |
| 13 | Revised | 1/22/2011 |
| 14 | Revised | 1/22/2011 |
| 15 | Revised | 1/22/2011 |
| 16 | Revised | 1/22/2011 |
| 17 | Revised | 1/22/2011 |
| 18 | Revised | 1/22/2011 |
| 19 | Revised | 1/22/2011 |
| 20 | Revised | 1/22/2011 |
| 21 | Revised | 1/22/2011 |
| 22 | Revised | 1/22/2011 |
| 23 | Revised | 1/22/2011 |
| 24 | Revised | 1/22/2011 |
| 25 | Revised | 1/22/2011 |
| 26 | Revised | 1/22/2011 |
| 27 | Revised | 1/22/2011 |
| 28 | Revised | 1/22/2011 |
| 29 | Revised | 1/22/2011 |
| 30 | Revised | 1/22/2011 |
| 31 | Revised | 1/22/2011 |
| 32 | Revised | 1/22/2011 |
| 33 | Revised | 1/22/2011 |
| 34 | Revised | 1/22/2011 |
| 35 | Revised | 1/22/2011 |
| 36 | Revised | 1/22/2011 |
| 37 | Revised | 1/22/2011 |
| 38 | Revised | 1/22/2011 |
| 39 | Revised | 1/22/2011 |
| 40 | Revised | 1/22/2011 |
| 41 | Revised | 1/22/2011 |
| 42 | Revised | 1/22/2011 |
| 43 | Revised | 1/22/2011 |
| 44 | Revised | 1/22/2011 |
| 45 | Revised | 1/22/2011 |
| 46 | Revised | 1/22/2011 |
| 47 | Revised | 1/22/2011 |
| 48 | Revised | 1/22/2011 |
| 49 | Revised | 1/22/2011 |
| 50 | Revised | 1/22/2011 |



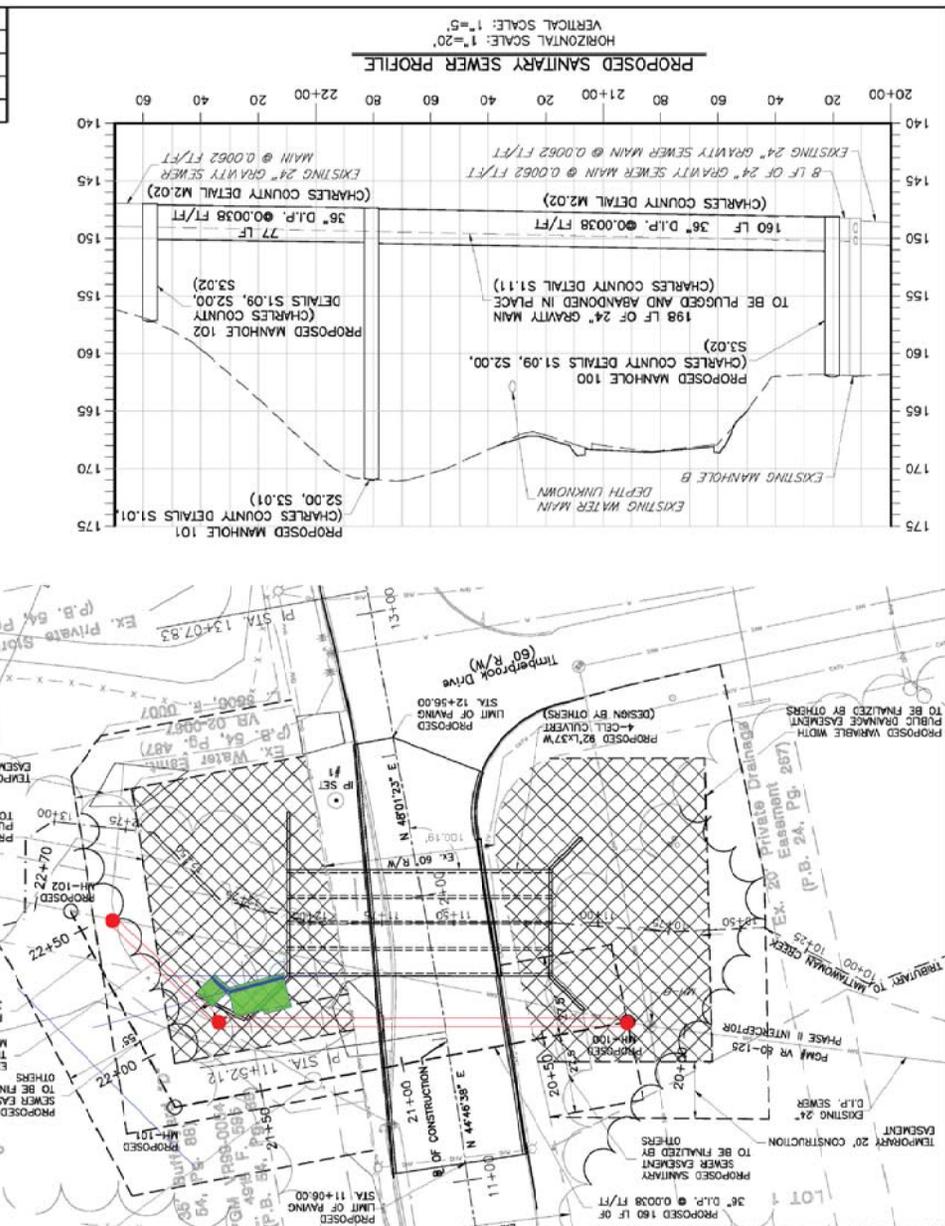
DESIGN SPEED = 40 M.P.H.

HAMILTON ROAD
MAJOR COLLECTOR

HORIZONTAL SCALE: 1"=20'

VERTICAL SCALE: 1"=5'

CHARLES COUNTY GOVERNMENT
Department of Planning and Growth Management
Development Services Department





LEGEND

————— DRAINAGE AREA BOUNDARY

- - - - - SUB-AREA BOUNDARY

A B C FLOW PATH

SHEET FLOW SHALLOW CONCENTRATED OPEN CHANNEL FLOW

① SUB-AREA NUMBER

HAMILTON ROAD
 MAJOR COLLECTOR
 DESIGN SPEED = 40 M.P.H.

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 STATE OF MARYLAND,
 LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011

CHARLES COUNTY GOVERNMENT
 Department of Planning and Growth Management
 Development Services Department

| | | | Conditions or Remarks: |
|-----------------------|--------------|----------|---|
| 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 | This Permit Expires on: _____ Date: _____ Date: _____ |

DRAINAGE AREA MAP

PROJECT: WESTERN PARKWAY PHASE 1B
 HAMILTON ROAD
 CULVERT IMPROVEMENTS

FOR: CHARLES COUNTY COMMISSIONERS
 P.O. BOX 2100
 LA PLATA, MARYLAND 20686

DESIGNED BY: KKH
 CHECKED BY: GKH

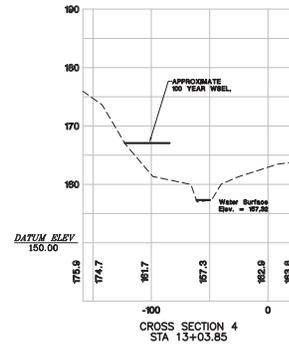
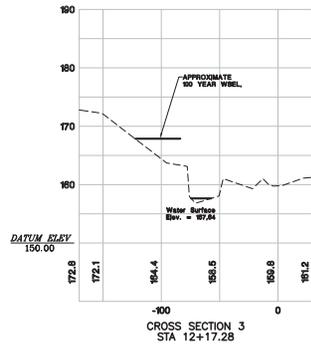
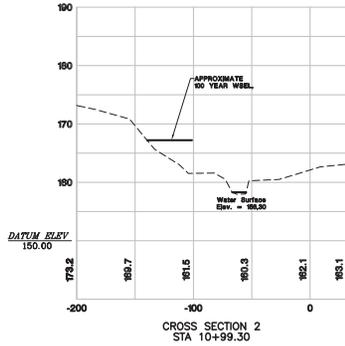
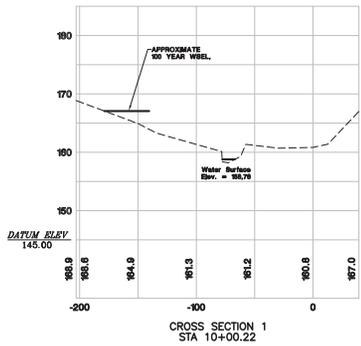
DATE: _____

SHEET 7 OF 22

HORIZONTAL 1"=500'

| Revision Number | Construction Revision | Revision Date |
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HAMILTON ROAD
MAJOR COLLECTOR
DESIGN SPEED = 40 M.P.H.

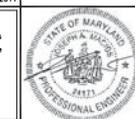
CHARLES COUNTY GOVERNMENT
Department of Planning and Growth Management
Development Services Department

| | | | Conditions or Remarks: |
|-----------------------|--------------|----------|------------------------|
| Grading | Construction | as-built | |
| Roads | Construction | as-built | |
| Storm Drainage | Construction | as-built | |
| Stormwater Management | Construction | as-built | |
| Water | Construction | as-built | |
| Clear | Construction | as-built | |
| Other | Construction | as-built | |

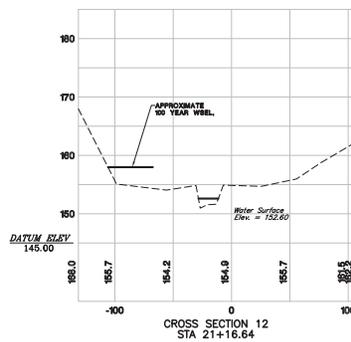
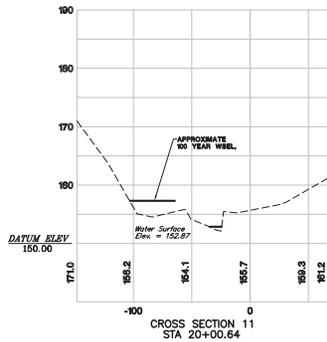
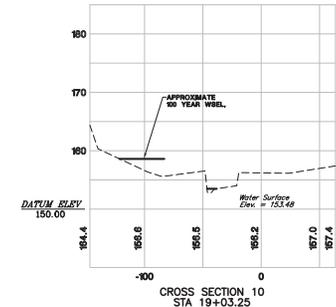
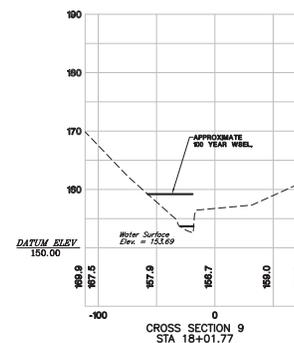
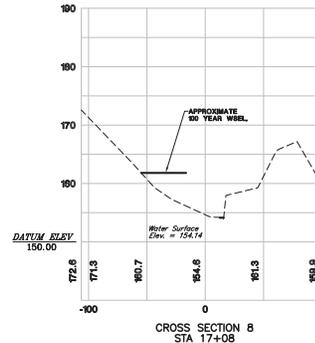
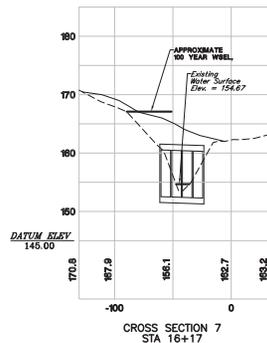
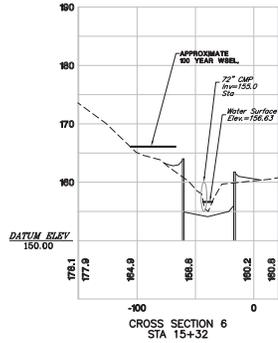
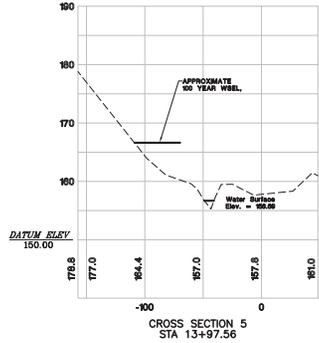
PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS
WERE PREPARED OR APPROVED BY ME,
AND THAT I AM A DULY LICENSED PROFESSIONAL
ENGINEER UNDER THE STATE OF MARYLAND,
LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011

| Revision Number | Construction Revision | Revision Date |
|-----------------|-----------------------|---------------|
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| | | | |
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| PROJECT | WESTERN PARKWAY PHASE 1B HAMILTON ROAD CULVERT IMPROVEMENTS | | |
| FOR | CHARLES COUNTY COMMISSIONERS | | |
| | LA PLATA, MARYLAND 20646 | | |
| DRAWN BY | DESIGNED BY | CHECKED BY | |
| CSJ | CSJ | CSJ | |



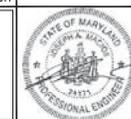
HAMILTON ROAD
MAJOR COLLECTOR
DESIGN SPEED = 40 M.P.H.

CHARLES COUNTY GOVERNMENT
Department of Planning and Growth Management
Development Services Department

| | | | Conditions or Remarks: |
|-----------------------|--------------|----------|------------------------|
| 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 | |

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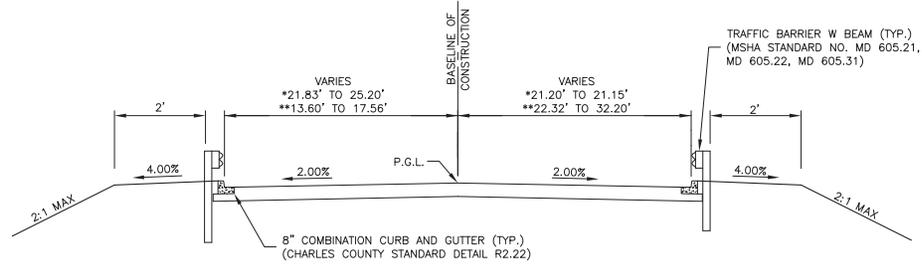
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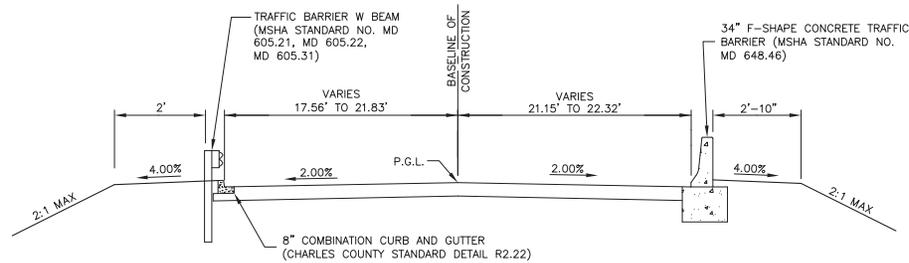
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| PROJECT | WESTERN PARKWAY PHASE 1B HAMILTON ROAD CULVERT IMPROVEMENTS | | |
| FOR | CHARLES COUNTY COMMISSIONERS | | |
| | LA PLATA, MARYLAND 20646 | | |
| DRAWN BY | DESIGNED BY | CHECKED BY | |
| | | | |
| SHEET 9 of 22 | | | |

CHARLES COUNTY STANDARD DETAILS

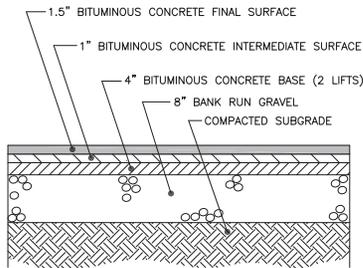
- S 1.01 PRECAST CONCRETE MANHOLE DETAIL 60" DIAMETER.
- S 1.09 PRECAST CONCRETE MANHOLE BUILT OVER EXISTING SEWER TYPE II.
- S 1.11 ABANDONMENT OF PIPE AT MANHOLE - SANITARY SEWER. REFER TO PIPE PORTION OF DETAIL.
- M 2.05 CONCRETE ENLARGEMENT & CRADLE DETAILS.
- R/2.22 8" COMBINATION CURB & GUTTER.
- S 2.00 PLAN OF TYPICAL CHANNELIZATION OF MAINLINE SEWER MANHOLES.
- S 3.01 VENTED EASEMENT FRAME AND COVER (BOLT DOWN).
- S 3.02 WATER TIGHT EASEMENT FRAME AND COVER (BOLT DOWN).
- M 2.02 BEDDING AND TRENCH WIDTHS FOR DUCTILE IRON SANITARY SEWER PIPE.
- M 6.00 MARKER STAKES FOR MANHOLES, VALVES, BOXES AND VENTS.



HAMILTON ROAD - TYPICAL SECTION
 *STATION 11+06 TO STATION 11+62.62
 **STATION 12+10.62 TO STATION 12+56



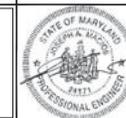
HAMILTON ROAD - TYPICAL SECTION
 STATION 11+62.62 TO STATION 12+10.62



ASPHALT PAVING SECTION
 CHARLES COUNTY STANDARD P-4
 NOT TO SCALE

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 STATE OF MARYLAND,
 LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011

| Revision Number | Construction Revision | Revision Date |
|-----------------|-----------------------|---------------|
| 1 | | |
| 2 | | |
| | | |
| | | |



CHARLES COUNTY GOVERNMENT
 Department of Planning and Growth Management
 Development Services Department

| | | | Conditions or Remarks: |
|-----------------------|--------------|----------|------------------------|
| Grading | Construction | as-built | |
| Erods | 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 | |

DATE: _____ TIME: _____ DATE: _____

TYPICAL SECTIONS

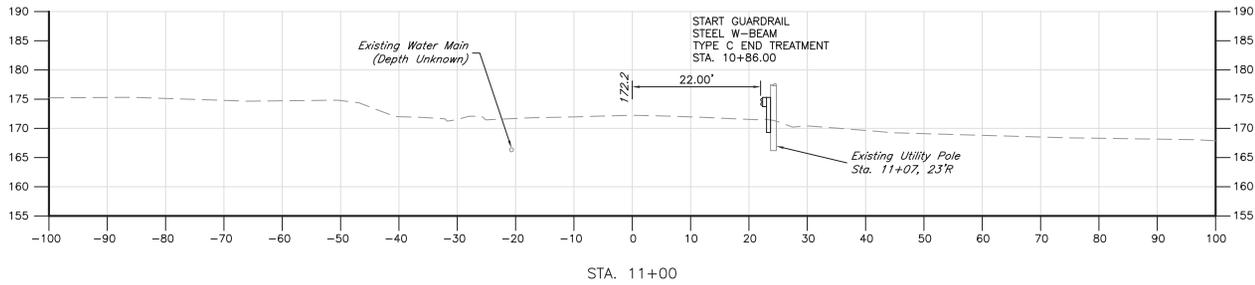
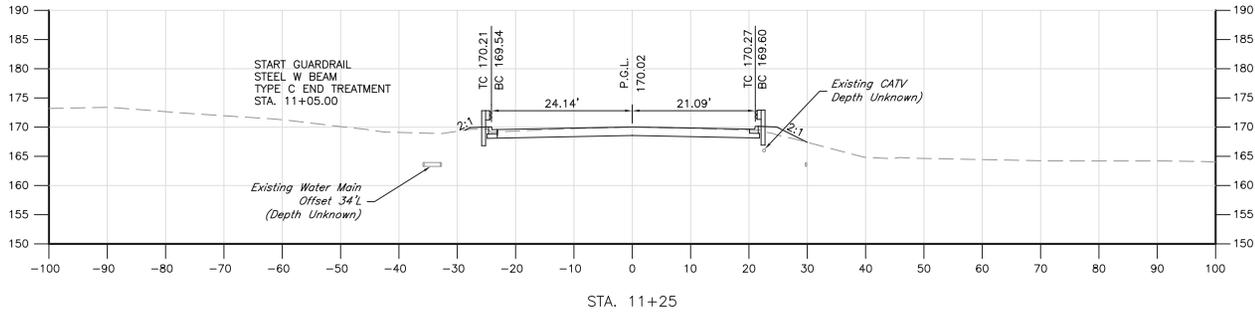
PROJECT: WESTERN PARKWAY PHASE 1B
 HAMILTON ROAD
 CULVERT IMPROVEMENTS

FOR CHARLES COUNTY COMMISSIONERS

LA PLATA, MARYLAND 20646

DESIGNED BY: _____ CHECKED BY: _____
 DATE: _____ DATE: _____

SHEET 10 of 22



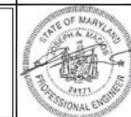
HAMILTON ROAD
 MAJOR COLLECTOR
 DESIGN SPEED = 40 M.P.H.

CHARLES COUNTY GOVERNMENT
 Department of Planning and Growth Management
 Development Services Department

| | | | Conditions or Remarks: |
|-----------------------|--------------|----------|------------------------|
| 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 | |

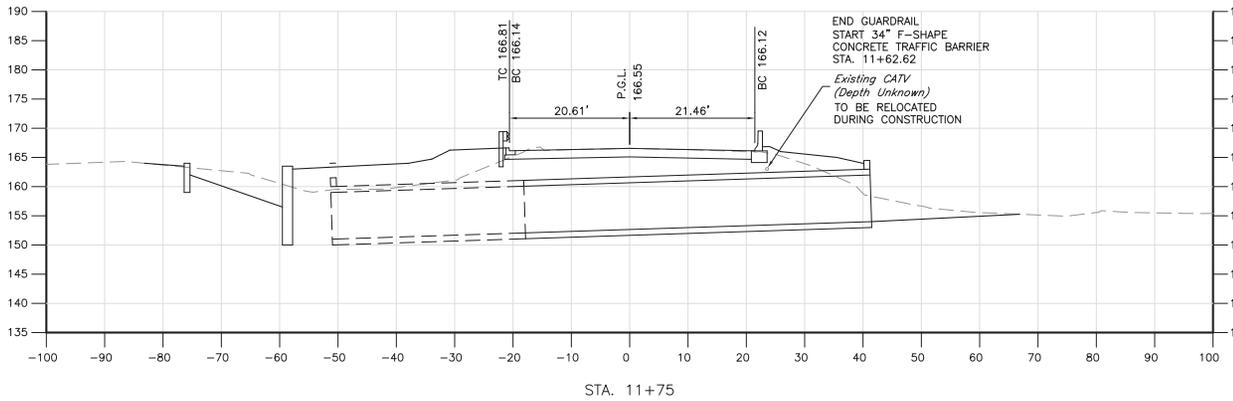
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS
 WERE PREPARED OR APPROVED BY ME,
 AND THAT I AM A FULLY LICENSED PROFESSIONAL
 ENGINEER UNDER THE STATE OF MARYLAND,
 LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011

| Revision Number | Construction Revision | Revision Date |
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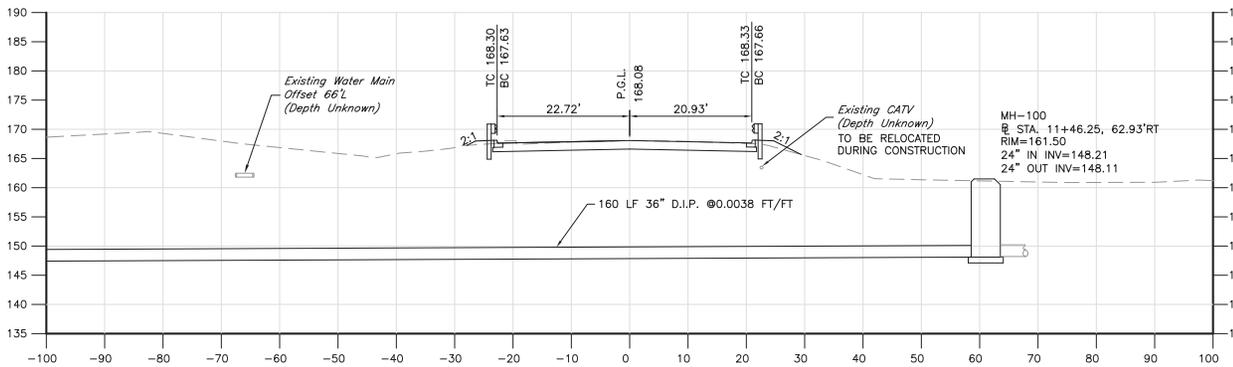


CROSS SECTIONS - 1

| | | | |
|----------------|---|-------------|-------------|
| PROJECT: | WESTERN PARKWAY PHASE 1B HAMILTON ROAD CULVERT IMPROVEMENTS | | |
| FOR: | CHARLES COUNTY COMMISSIONERS | | |
| DATE: | NOV 21/10 | FILED: | NOV 21/10 |
| DESIGNED BY: | DESIGNED BY: | CHECKED BY: | CHECKED BY: |
| CSJ | CSJ | CSJ | CSJ |
| SHEET 11 of 22 | | | |



STA. 11+75



STA. 11+50

HAMILTON ROAD
 MAJOR COLLECTOR
 DESIGN SPEED = 40 M.P.H.

CHARLES COUNTY GOVERNMENT
 Department of Planning and Growth Management
 Development Services Department

| | | Conditions or Remarks: |
|-----------------------|-----------------------|------------------------|
| 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 | |

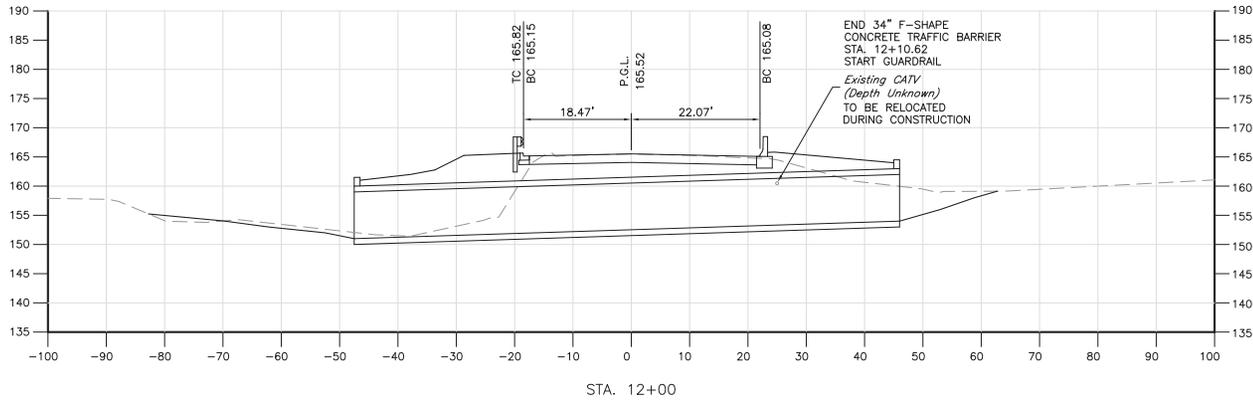
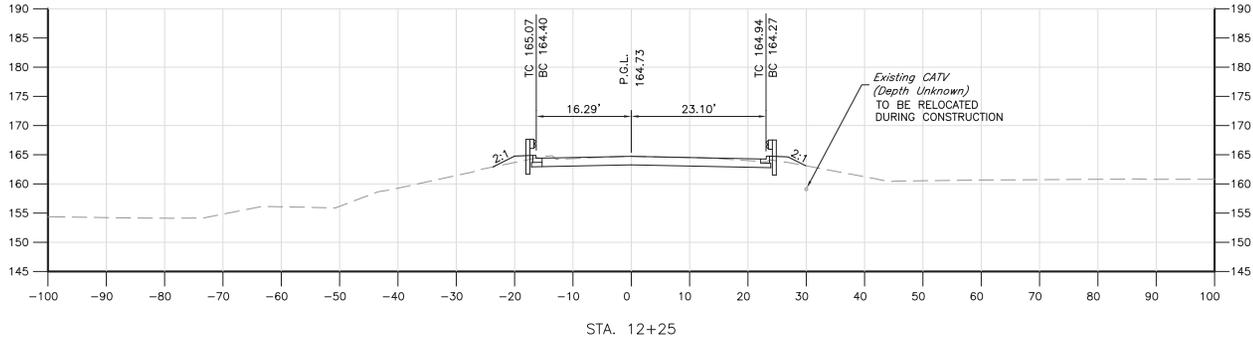
PROFESSIONAL CERTIFICATION

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 ENGINEER UNDER THE STATE OF MARYLAND,
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| Revision Number | Construction Revision | Revision Date |
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| 2 | | |



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|--|--------------------------|-------------------------|--------------|
| DRAWING TITLE: CROSS SECTIONS - 2 | | | |
| PROJECT: WESTERN PARKWAY PHASE 1B HAMILTON ROAD CULVERT IMPROVEMENTS | | | |
| FOR: CHARLES COUNTY COMMISSIONERS | | | |
| DESIGN BY: [Signature] | DESIGNED BY: [Signature] | CHECKED BY: [Signature] | DATE: [Date] |
| SHEET 12 OF 22 | | | |



HAMILTON ROAD
 MAJOR COLLECTOR
 DESIGN SPEED = 40 M.P.H.

CHARLES COUNTY GOVERNMENT
 Department of Planning and Growth Management
 Development Services Department

| | | | Conditions or Remarks: |
|-----------------------|--------------|----------|------------------------|
| Grading | Construction | as-built | |
| Erosion | Construction | as-built | |
| Storm Drainage | Construction | as-built | |
| Stormwater Management | Construction | as-built | |
| Water | Construction | as-built | |
| Tree | Construction | as-built | |
| Other | Construction | as-built | |

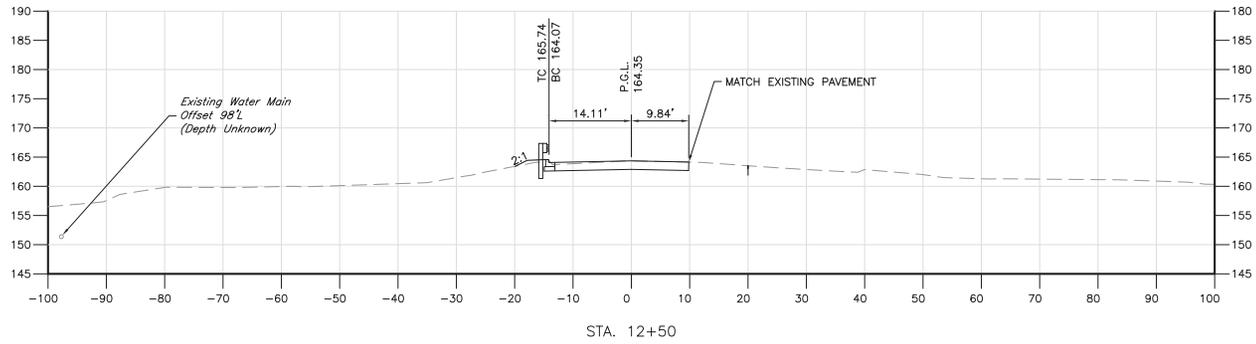
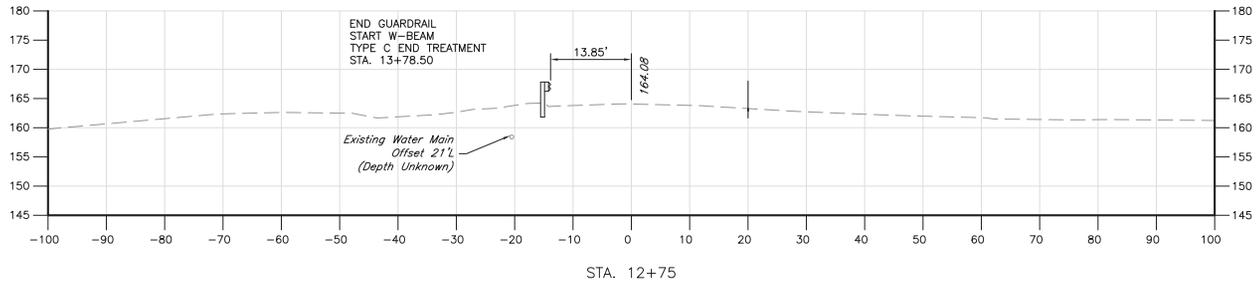
PROFESSIONAL CERTIFICATION

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 ENGINEER UNDER THE STATE OF MARYLAND,
 LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011

| Revision Number | Construction Revision | Revision Date |
|-----------------|-----------------------|---------------|
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| CROSS SECTIONS - 3 | | |
| PROJECT: WESTERN PARKWAY PHASE 1B HAMILTON ROAD CULVERT IMPROVEMENTS | | |
| FOR CHARLES COUNTY COMMISSIONERS | | |
| DESIGNED BY: KSI | CHECKED BY: KSI | DATE: 02/22/11 |
| SHEET 13 OF 22 | | |



HAMILTON ROAD
MAJOR COLLECTOR
DESIGN SPEED = 40 M.P.H.

CHARLES COUNTY GOVERNMENT
Department of Planning and Growth Management
Development Services Department

| | | | Conditions or Remarks: |
|-----------------------|--------------|----------|------------------------|
| Grading | Construction | as-built | |
| Erosion | Construction | as-built | |
| Storm Drainage | Construction | as-built | |
| Stormwater Management | Construction | as-built | |
| Water | Construction | as-built | |
| Soils | Construction | as-built | |
| Other | Construction | as-built | |

PROFESSIONAL CERTIFICATION

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ENGINEER UNDER THE STATE OF MARYLAND,
LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011

| Revision Number | Construction Revision | Revision Date |
|-----------------|-----------------------|---------------|
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CROSS SECTIONS - 4

PROJECT: WESTERN PARKWAY PHASE 1B
HAMILTON ROAD
CULVERT IMPROVEMENTS
FOR CHARLES COUNTY COMMISSIONERS
LA PLATA, MARYLAND 20646

DATE: 08-21-10

DRAWN BY: [] DESIGNED BY: [] CHECKED BY: []

SHEET 14 of 22

SITE ANALYSIS

TOTAL AREA = 0.60 ACRE
 DISTURBED AREA = 0.60 ACRE
 VOLUME OF EXCAVATION: 3,250 C.Y.
 VOLUME OF SOIL BORROW MATERIAL: TBD
 OFF-SITE BORROW/WASTE AREA LOCATION: TBD

STANDARD STABILIZATION NOTE

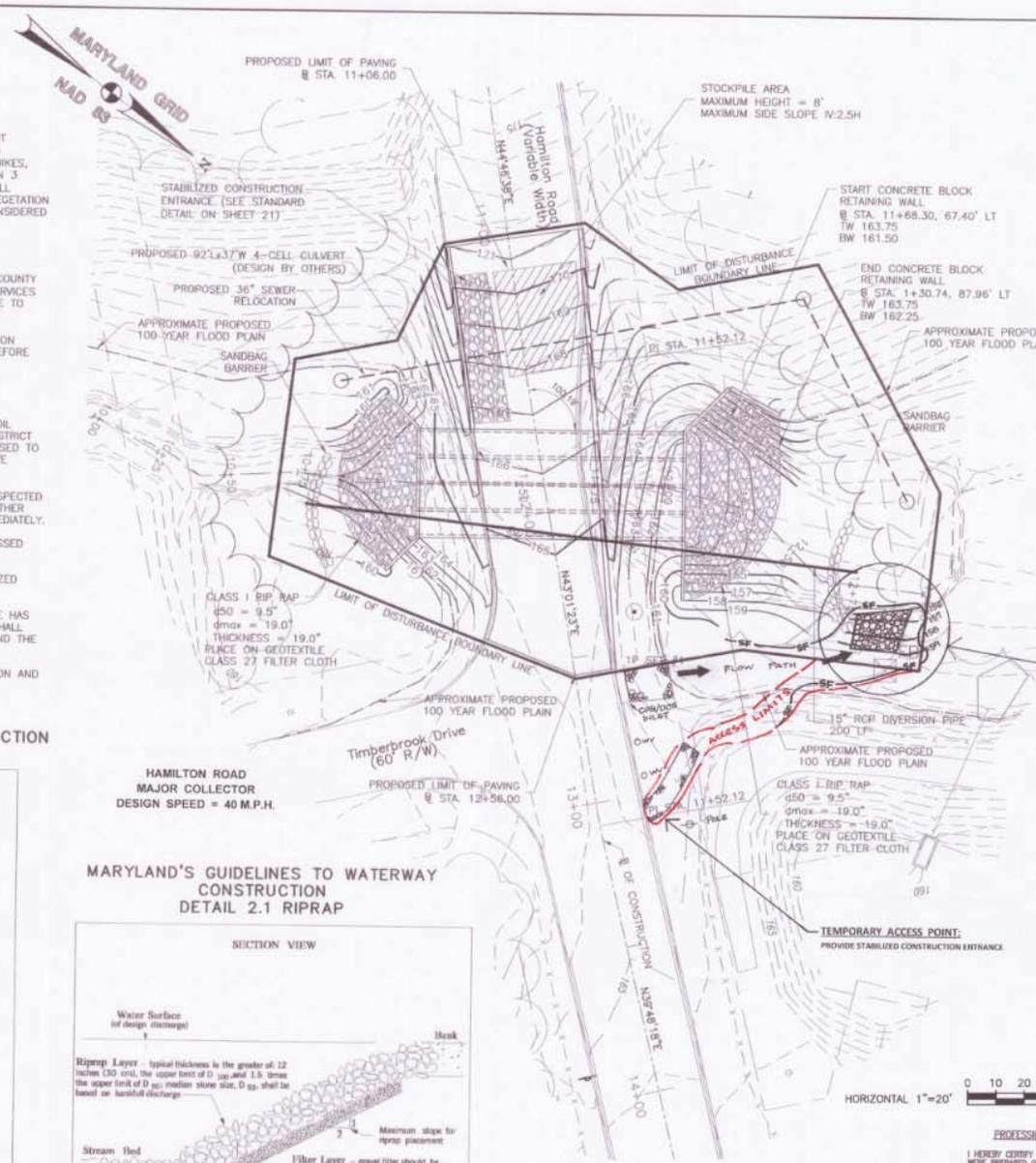
FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN (7) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1) AND FOURTEEN 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.

GENERAL NOTES FOR SEDIMENT CONTROL

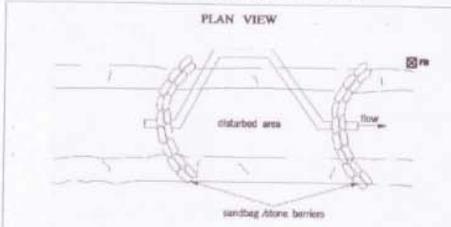
- CONTRACTOR/DEVELOPER IS RESPONSIBLE FOR CONTRACTING CHARLES COUNTY DEPARTMENT OF PLANNING AND GROWTH MANAGEMENT/DEVELOPMENT SERVICES 48 HOURS PRIOR TO THE START OF ALL CONSTRUCTION IN ACCORDANCE TO ALL PERMITS ISSUED AT (301) 645-0700.
- THE APPROVAL OF THE SEDIMENT CONTROL INSPECTOR IS REQUIRED UPON INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING "MISS UTILITY" AT 1-800-257-7777, 48 HOURS PRIOR TO ANY EXCAVATION WORK.
- OBTAIN AND FOLLOW THE 1994 STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. THE CHARLES SOIL CONSERVATION DISTRICT DETAILS AND SPECIFICATIONS FOR VEGETATIVE ESTABLISHMENT CAN BE USED TO SATISFY THE REQUIREMENTS FOR PERMANENT AND TEMPORARY VEGETATIVE STABILIZATION SPECIFICATIONS. (SEE SHEET 21 FOR NOTES).
- 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.
- ALL AREAS REQUIRING INTERIM OR FINAL STABILIZATION MUST BE ADDRESSED IMMEDIATELY UPON COMPLETION OF THE DISTURBANCE.
- ANY DISTURBED AREA ON WHICH ACTIVITY HAS CEASED MUST BE STABILIZED IMMEDIATELY.
- 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 ADEQUATELY STABILIZED AND THE SEDIMENT CONTROL INSPECTOR HAS APPROVED SUCH REMOVAL.
- AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT POLLUTION CONTROLS MUST BE REMOVED. AREAS DISTURBED DURING REMOVAL OF THE CONTROLS MUST BE STABILIZED IMMEDIATELY.

SEQUENCE OF CONSTRUCTION

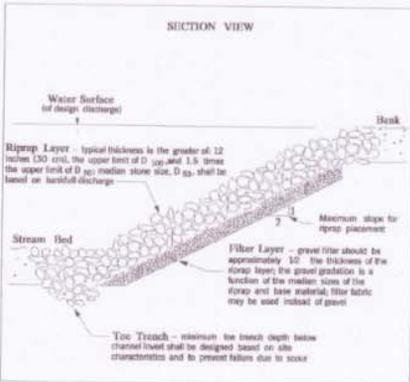
- INSTALL TRAFFIC CONTROL DEVICES FOR DETOUR, CLOSE ROADWAY. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE (1 DAY)
- REMOVE EXISTING PAVEMENT, PERFORM CLEARING AND GRUBBING AS NECESSARY. STOCKPILE EMBANKMENT MATERIAL (1 DAY)
- BEGIN INSTALLATION OF PROPOSED 36" D.I.P. SEWER LINE RELOCATION. REMOVE EXISTING 66" CMP. (1 DAY)
- TEMPORARILY STABILIZE ALL DISTURBED SOILS, PERIMETER SEDIMENT CONTROL DEVICES, SWALES, DITCHES AND SLOPES GREATER THAN 3:1 WITH AN APPROVED GRASS SEED (GROUND COVER) MIX. USE JUTE MATTING OR CURLEX REINFORCING MATERIAL TO ACHIEVE PROPER SOIL STABILIZATION. (0.5 DAY)
- INSTALL SANDBAG BARRIERS AND 15" RCP DIVERSION PIPE. INSTALL SEDIMENT FILTER BAG. NOTE: 15" RCP DIVERSION PIPE SHOWN AS STRAIGHT LINE ON THIS SHEET IS FOR ILLUSTRATIONAL PURPOSES ONLY. CONTRACTOR MAY NEED TO MODIFY SHAPE AND LOCATION OF DIVERSION PIPE SIMILAR TO AS SHOWN ON DETAIL 1.4 AND/OR TO FIT FIELD CONDITIONS. (1 DAY)
- INSTALL PROPOSED BOX CULVERT IN STAGES, RELOCATE DIVERSION PIPE AS NECESSARY TO ALLOW STAGED CONSTRUCTION. THE SANDBAG BARRIERS AND DIVERSION PIPE ALONG WITH THE FILTER BAG MUST REMAIN IN PLACE THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD. IN ORDER TO REMAIN FUNCTIONAL, THE DIVERSION PIPE MUST BE REDIRECTED THROUGH THE NEW CULVERT AND REMOVED ONLY ONCE THE SITE IS ADEQUATELY STABILIZED AND THE PROJECT IS COMPLETE. PERFORM FINAL ADJUSTMENT AND WATERPROOFING TO BOX CULVERT. COMPLETE BACKFILLING OPERATION. COMPLETE SEWER LINE RELOCATION CONSTRUCTION AND INSTALLATION OF PROPOSED MANHOLES. IMMEDIATELY STABILIZE DISTURBED AREAS AS DESCRIBED IN POINT #4 ABOVE. (10 DAYS)
- COMPLETE CONSTRUCTION OF ROADWAY WITH FINAL PAVING AND GUARDRAIL INSTALLATION. CONSTRUCT WING WALLS AND PROPOSED CONCRETE BLOCK RETAINING WALL. PLACE RIP RAP STONE PROTECTION AT INVERT AND OUTLET OF NEW CULVERT AS SHOWN ON PLAN. (10 DAYS)
- WITH WRITTEN PERMISSION OF THE EROSION AND SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION AND SEDIMENT CONTROL MEASURES.
- PERMANENTLY APPLY AN APPROVED GRASS SEED (GROUND COVER) MIX TO ALL DISTURBED SOILS ALONG SWALES, DITCHES AND SLOPES GREATER THAN 3:1 TO ACHIEVE FINAL STABILIZATION. WHERE NECESSARY, USE JUTE MATTING OR CURLEX REINFORCING MATERIAL TO ACHIEVE PROPER STABILIZATION. (1 DAY)



MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION DETAIL 1.4 DIVERSION PIPE



MARYLAND'S GUIDELINES TO WATERWAY CONSTRUCTION DETAIL 2.1 RIPRAP



"FIRST PRIORITY" - REPAIR SCOUR HOLE

TOTAL SCOUR HOLE AREA = 88 SQ. FT.
 PONDING AREA = 6'W x 81' x 15'D H.

- SEQUENCE OF CONSTRUCTION**
- INSTALL BILT FENCE AROUND PERIMETER OF PROPOSED SCOUR HOLE SITE. SEE APPROXIMATE LIMITS SHOWN ON THIS PLAN. **1 DAY**
 - PUMP STANDING WATER FROM EXISTING SCOUR HOLE. DISCHARGE WATER TO HIGH SIDE OF BILT FENCE TO FILTER RUNOFF. **1 HOUR**
 - REMOVE AND DISPOSE OF LEAF MULCH, LOOSE SOIL DEBRIS, DETERIORATED ROOTS AND VINES FROM THE SCOUR HOLE. PREPARE SCOUR HOLE FOR RESTORATION. **1 DAY**
 - BEGIN BACKFILLING OF SCOUR HOLE VOID. NOTE: LIMIT EXCAVATION TO AN AREA THAT CAN BE BACKFILLED THE SAME WORKING DAY. USE SELECT BASE BANK RUN GRAVEL BACKFILL TO ACHIEVE FINAL STABILIZATION. WHERE NECESSARY, USE JUTE MATTING OR CURLEX REINFORCING MATERIAL IN EACH THICK LIFT TO AT LEAST 87 PERCENT OF THE MAXIMUM DRY DENSITY. **1 DAY**
 - RESTORE SCOUR HOLE ALONG CHANNEL SIDESLOPE TO MATCH ORIGINAL TOPOGRAPHY. PLACE AT LEAST 12 INCHES OF CLASS 1 STONE RIP RAP PROTECTION (2" MAX. SLOPE) ON AN APPROVED FAS-TR FABRIC MATERIAL. **2 DAYS**
 - ONCE ALL RESTORATION WORK HAS BEEN COMPLETED, REMOVE BILT FENCE AND PROCEED WITH THE "SEQUENCE OF CONSTRUCTION" LISTED ABOVE. **TOTAL = 6 DAYS**

NOTE: USE SMALL CONSTRUCTION EQUIPMENT TO RESTORE EXISTING SCOUR HOLE SITE. THE CONTRACTOR SHALL CALL CHARLES COUNTY FOR INSPECTION AT LEAST 5 DAYS PRIOR TO ANY DISTURBANCE OF EXISTING GROUND AT (301) 645-0700.

RECEIVED
 CHARLES COUNTY GOVERNMENT
 Department of Planning and Growth Management CHARLES SCC
 Development Services Department
 JAN 13 2008

| Item | Construction | Inspected | Conditions or Remarks |
|------------|--------------|-----------|-----------------------|
| Excavation | Construction | Inspected | |
| Structure | Construction | Inspected | |
| Grading | Construction | Inspected | |
| Other | Construction | Inspected | |
| Other | Construction | Inspected | |
| Other | Construction | Inspected | |

SEDIMENT CONTROL PLAN

PROJECT: WESTERN PARKWAY PHASE 1B
 HAMILTON ROAD
 CULVERT IMPROVEMENTS

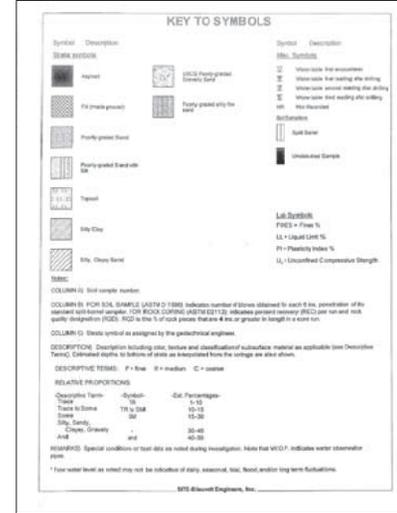
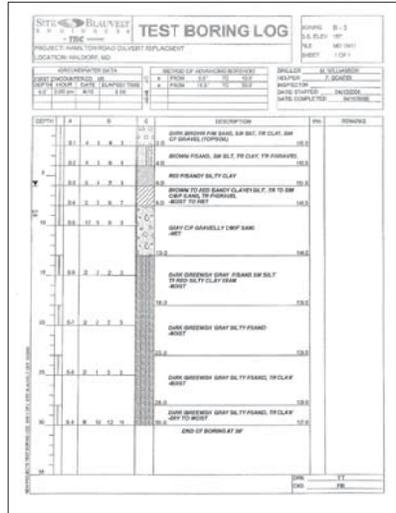
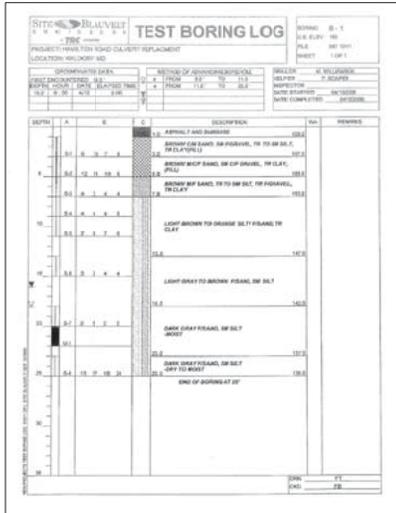
DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 DATE: 2/22/2011

SHEET 15 of 22

PROFESSIONAL CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DAILY LICENSED PROFESSIONAL ENGINEER UNDER THE STATE OF MARYLAND LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011

TRC
 1000 CONVENT ROAD - SUITE 8
 WINTERSVILLE, VA 22684-2217
 TEL: (540) 271-3334
 FAX: (540) 271-3334



CHARLES COUNTY GOVERNMENT
Department of Planning and Growth Management
Development Services Department

| | | | Conditions or Remarks: |
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| Grading | Construction | as-built | |
| Roads | Construction | as-built | |
| Storm Drainage | Construction | as-built | |
| Stormwater Management | Construction | as-built | |
| Water | Construction | as-built | |
| Street | Construction | as-built | |
| Other | Construction | as-built | |

DATE: _____ TIME: _____

SOIL BORING PLAN-2

PROJECT: WESTERN PARKWAY PHASE 1B
HAMILTON ROAD
CHULVERT IMPROVEMENTS
FOR CHARLES COUNTY COMMISSIONERS
LA PLATA, MARYLAND 20646

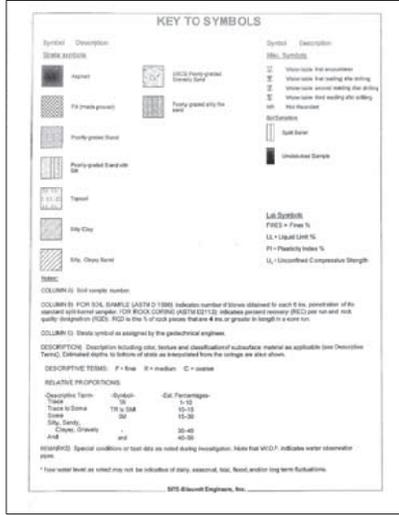
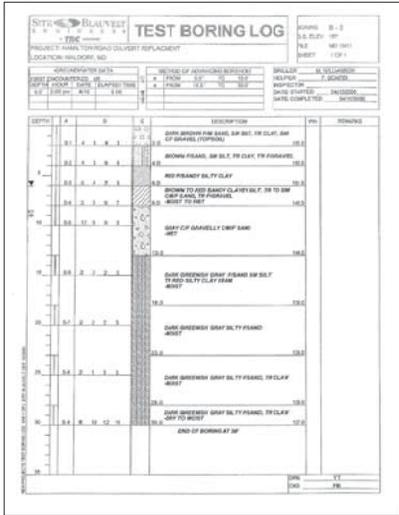
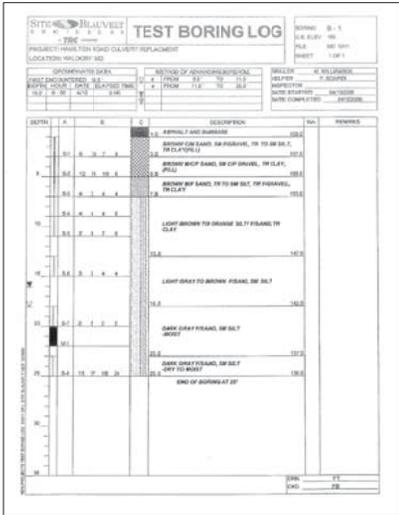
DESIGNED BY: _____ CHECKED BY: _____
DATE: _____ DATE: _____

SHEET 17 OF 22

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LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011

| Revision Number | Construction Revision | Revision Date |
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CHARLES COUNTY GOVERNMENT
Department of Planning and Growth Management
Development Services Department

| | | | Conditions or Remarks: |
|-----------------------|--------------|----------|------------------------|
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| Roads | Construction | as-built | |
| Storm Drainage | Construction | as-built | |
| Stormwater Management | Construction | as-built | |
| Water | Construction | as-built | |
| Street | Construction | as-built | |
| Other | Construction | as-built | |

DATE: _____ TIME: _____

SOIL BORING PLAN-2

PROJECT: **WESTERN PARKWAY PHASE 1B
HAMILTON ROAD
CHULVERT IMPROVEMENTS**

FOR: **CHARLES COUNTY COMMISSIONERS**
LA PLATA, MARYLAND 20646

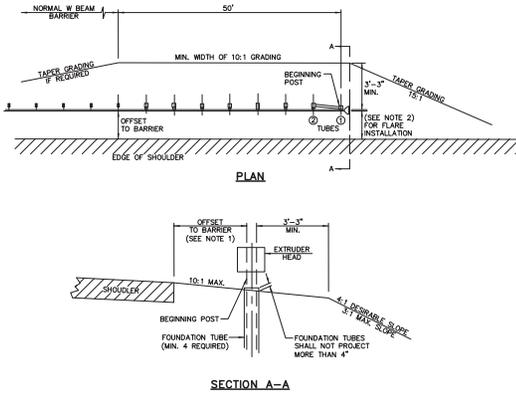
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COT COT COT

SHEET 17 OF 22

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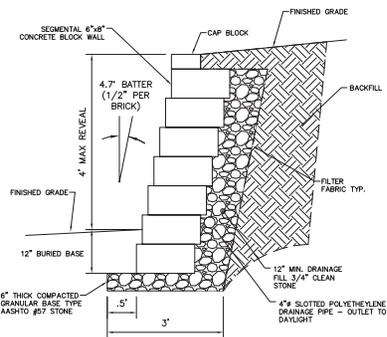


NOTES APPLICABLE TO ALL TYPE C TERMINALS

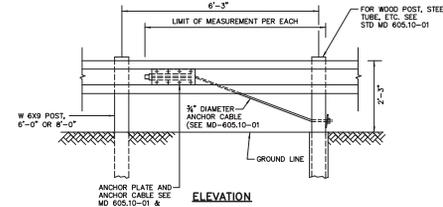
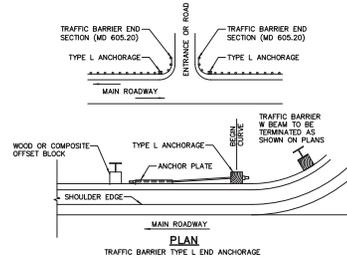
1. 6:1 MAX GRADING IS ALLOWABLE WHEN THE BARRIER IS LOCATED 12 FT. OR MORE FROM THE OUTSIDE EDGE OF SHOULDER.
2. WHEN THE TRAFFIC BARRIER POST IS PLACED LESS THAN 4' FROM THE EDGE OF SHOULDER/PAVEMENT THE END TREATMENT SHALL BE FLARED AT A RATE OF 50:1.
3. GRADING SHALL BE AS SHOWN ABOVE.

TYPE C TRAFFIC BARRIER AND TREATMENT MD 605.03

N.T.S.

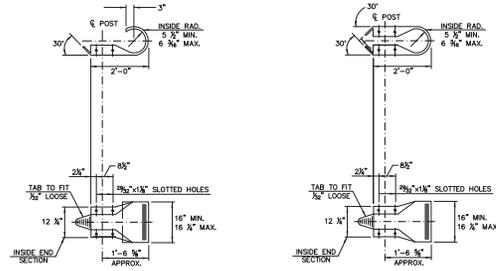


BLOCK RETAINING WALL DETAIL
N.T.S.



- NOTES**
1. APPLICABLE USING OPTION 2 & 3 ANCHORAGE. LOCATED ON STD MD 605.10-01.
 2. ALL ITEMS (ANCHOR PLATE, CABLE, ROD, DRILLED HOLES, NUTS, BOLTS, ETC.) NECESSARY FOR THE ANCHOR SHALL BE MEASURED AND PAID PER INCH OF "TYPE L TRAFFIC BARRIER ANCHORAGE".
 3. THE "TYPE L" ANCHORAGE IS PERMITTED WITHIN A SINGLE RUN OF TRAFFIC BARRIER AS SHOWN. IF A TYPE L IS USED A TYPE K IS NOT REQUIRED ON THE TRAFFIC BARRIER END.

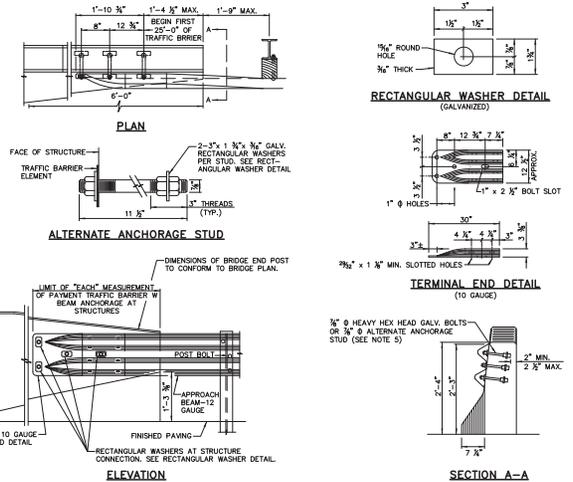
TYPE L TRAFFIC BARRIER ANCHORAGE MD 605.13
N.T.S.



NOTE
THE END SECTIONS SHOWN ARE INCIDENTAL TO THE PAY ITEMS TRAFFIC BARRIER W BEAM USING 6 FT POSTS OR TRAFFIC BARRIER W BEAM USING 8 FT POSTS.

TRAFFIC BARRIER W BEAM END SECTIONS MD 605.20

N.T.S.

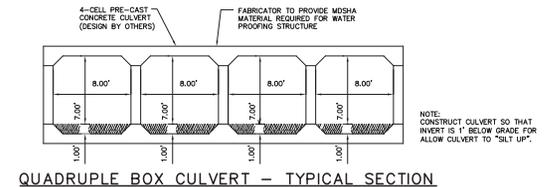


NOTES

1. APPROACH END: FIRST 25'-0" OF TRAFFIC BARRIER AFFIXED TO BRIDGE STRUCTURE SHALL HAVE THE FIRST POST PLACED AT A MAXIMUM OF 1'-0" FROM THE BRIDGE AND THE NEXT SEVEN POSTS SPACED AT 3'-1 3/4" C/C, WHERE NECESSARY, AN ADDITIONAL OFFSET BRACKET MAY BE INSTALLED AT THE FOURTH AND FIFTH POSTS FROM THE BRIDGE TO AVOID CONFLICT WITH THE DRAINAGE INLETS. THIS TYPE OF "ANCHORAGE AT STRUCTURES" SHALL BE APPLIED TO ALL FOUR CORNERS OF THE BRIDGE STRUCTURE WHEREVER THERE IS TWO-WAY TRAFFIC UNDIVIDED SECTION, OR NARROW DIVIDED SECTION WHEREBY AN ERRANT VEHICLE MAY REACH THE OPPOSITE CORNER OF THE BRIDGE STRUCTURE. WHEREVER THERE IS A BARRIER-DIVIDED SECTION OR WIDE DIVIDED SECTION WHEREBY AN ERRANT VEHICLE COULD NOT REACH THE OPPOSITE CORNER OF THE BRIDGE STRUCTURE, THIS TYPE OF "ANCHORAGE AT STRUCTURES" SHALL BE APPLIED ONLY AT THE APPROACH END WITH THE TRAILING ENDS TO BE TREATED AS DESIGNATED IN THE FOLLOWING NOTE.
2. TRAILING END: USE NORMAL POST SPACING. WHERE NECESSARY AN ADDITIONAL OFFSET BRACKET MAY BE INSTALLED AT THE SECOND POST TO AVOID CONFLICT WITH DRAINAGE INLETS.
3. ADDITIONAL OFFSET BRACKETS SHALL NOT EXCEED A MAXIMUM OF TWO PER POST IN ALL CASES.
4. COST OF ADDITIONAL POSTS AND OFFSET BRACKETS TO BE INCLUDED IN BID PRICE PER LINEAR FOOT OF TRAFFIC BARRIER WITH BEAM.
5. THE CONTRACTOR SHALL FURNISH AND INSTALL FOUR (4) 3/8" Ø HEAVY HEX HEAD GALV. BOLTS WITH GALV. HEX. HEAD NUT AND GALV. RECTANGULAR WASHER CAST IN BRIDGE END POST. ATTACH W BEAM WITH GALV. THREADED STUDS WITH GALV. RECTANGULAR WASHER AND TWO (2) GALV. HEX. NUTS CAST IN BRIDGE END POST. ATTACH W BEAM WITH GALV. RECTANGULAR WASHER AND GALV. HEX. NUT AS SHOWN IN ALTERNATE ANCHORAGE STUD DETAIL. STEEL SHALL CONFORM TO ASTM-A507 AND IS NOT DIPPED GALV. TO ASTM-A123 AFTER FABRICATION.

TRAFFIC BARRIER WITH BEAM ANCHORAGE AT STRUCTURES MD 605.47

N.T.S.



N.T.S.

CHARLES COUNTY GOVERNMENT
Department of Planning and Growth Management
Development Services Department

| | | | Conditions or Remarks: |
|-----------------------|--------------|----------|------------------------|
| Grading | Construction | as-built | |
| Erosion | Construction | as-built | |
| Storm Drainage | Construction | as-built | |
| Stormwater Management | Construction | as-built | |
| Water | Construction | as-built | |
| Street | Construction | as-built | |
| Other | Construction | as-built | |

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 STATE OF MARYLAND, LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011

DETAILS - 2

| Revision Number | Construction Revision | Revision Date |
|-----------------|-----------------------|---------------|
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| PROJECT | WESTERN PARKWAY PHASE 1B HAMILTON ROAD CULVERT IMPROVEMENTS |
|-------------|---|
| FOR | CHARLES COUNTY COMMISSIONERS |
| LA PLAN | MARYLAND 20446 |
| DESIGNED BY | DESIGNED BY |
| CHECKED BY | CHECKED BY |

**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% GROUND COVER TO BE CONSIDERED ADEQUATELY STABILIZED.

1. PERMANENT SEEDING:

A. SOIL TESTS: LIME AND FERTILIZER WILL BE APPLIED PER SOIL TESTS RESULTS FOR 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 BE 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 SEEDBED SHALL BE LOOSE AND FRABLE TO A DEPTH OF AT LEAST 3 INCHES. THE TOP LAYER SHALL BE LOOSENEED BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING OCCURS. FOR SITES LESS THAN 5 ACRES, APPLY 100 POUNDS DOLOMITIC LIMESTONE AND 21 POUNDS OF 10-10-10 FERTILIZER PER 1,000 SQUARE FEET. HARROW 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, CULPACKER SEEDER OR HYDROSEEDER (SLURRY INCLUDES SEEDS AND FERTILIZER, RECOMMENDED ON STEEP SLOPES ONLY). MAXIMUM SEED DEPTH SHOULD BE 1/4 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 CURRENT STANDARDS 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.

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 CRESTS 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 OF 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.

NOTES CONTINUE:

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. PERMANENT 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 COUNTER 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 TRANSPORTED 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.

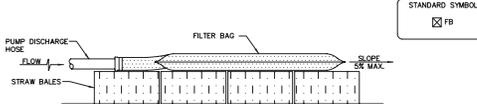
5. MINING OPERATIONS:

SEDIMENT CONTROL PLANS FOR MINING OPERATIONS MUST BE INCLUDED THE FOLLOWING SEEDING DATES AND MIXTURES:
 FOR SEEDING DATES IF 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 SERICIA LESPEDEZA AT THE MINIMUM RATE OF 0.5 POUNDS PER 1,000 SQUARE FEET.

6. TOPSOIL SHALL BE APPLIED AS PER THE STANDARDS 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.

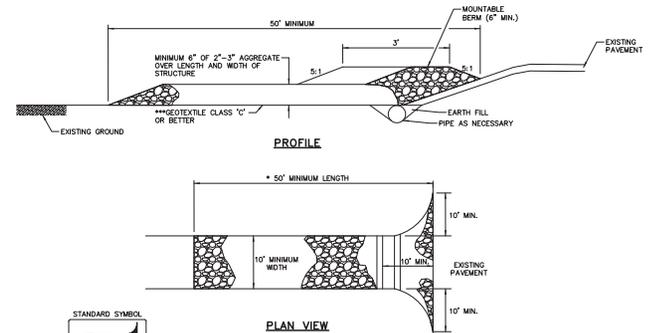
DETAIL-FILTER BAG



CONSTRUCTION SPECIFICATIONS

1. FILTER BAG SHALL BE OF NON-WOVEN GEOTEXTILE FABRIC WITH A MINIMUM SURFACE AREA OF 225 SQUARE FEET PER SIDE.
2. ALL STRUCTURAL SEAMS SHALL BE SEWN WITH A DOUBLE STITCH USING A DOUBLE NEEDLE MACHINE WITH HIGH STRENGTH THREAD. SEAM STRENGTH SHALL WITHSTAND 100 POUNDS/INCH USING ASTM D 4884 TEST METHOD.
3. FILTER BAG SHALL HAVE A SLEEVE LARGE ENOUGH TO ACCOMMODATE A 4 INCH DIAMETER PUMP DISCHARGE HOSE.
4. SLEEVE SHALL BE SEALED TIGHTLY AROUND THE PUMP DISCHARGE HOSE WITH A STRAP OR SIMILAR DEVICE TO PREVENT UNFILTERED WATER FROM ESCAPING.
5. FILTER BAG SHALL BE PLACED ON STRAW BALES LOCATED ON A LEVEL OF GENTLY SLOPING (5% MAXIMUM) STABILIZED AREA.
6. PUMPING RATE SHALL BE CONTROLLED TO PREVENT EXCESSIVE PRESSURE WITHIN THE FILTERBAG. AS THE BAG FILLS WITH SEDIMENT, THE PUMPING RATE SHALL BE REDUCED.
7. FILTER BAG SHALL BE DEWATERED, REMOVED AND DISPOSED OF UPON COMPLETION OF PUMPING OPERATIONS OF AFTER IT HAS REACHED CAPACITY, WHICHEVER OCCURS FIRST. THE DEWATERED SEDIMENT FROM THE BAG SHALL BE SPREAD IN AN APPROVED UPLAND AREA AND STABILIZED BY END OF THE WORK DAY. THE SURFACE AREA BENEATH THE DEWATERING BAG SHALL BE RESTORED TO ORIGINAL CONDITION UPON REMOVAL OF THE DEVICE.
8. THE GEOTEXTILE FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS WITH PROPERTIES DETERMINED IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:

| | | |
|-----------------------------|---------------|-------------|
| WEIGHT | 10 OZ/YD | ASTM D-3776 |
| GRAB TENSILE STRENGTH | 21C LB | ASTM D-4632 |
| PUNCTURE | 15C LB | ASTM D-4833 |
| FLOW RATE | 70 GAL/MIN/SF | ASTM D-4491 |
| PERMITIVITY | 1.3 SEC-1 | ASTM D-4991 |
| UV RESISTANCE | 70% | ASTM D-4356 |
| APPARENT OPENING SIZE (AOS) | 0.04-0.08 MM | ASTM D-4751 |



**STABILIZED CONSTRUCTION ENTRANCE
N.T.S.**

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

CHARLES COUNTY GOVERNMENT
 Department of Planning and Growth Management
 Development Services Department

| | | | |
|-----------------------|--------------|----------|------------------------|
| Grading | Construction | as-built | Conditions or Remarks: |
| Erosion | Construction | as-built | |
| Slope Drainage | Construction | as-built | |
| Stormwater Management | Construction | as-built | |
| Water | Construction | as-built | |
| Other | Construction | as-built | |

DATE: _____ THIS PERMIT EXPIRES ON: _____

DETAILS - 3

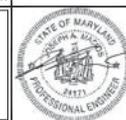
PROJECT: WESTERN PARKWAY PHASE 1B
 HAMILTON ROAD
 CULVERT IMPROVEMENTS

FOR CHARLES COUNTY COMMISSIONERS
 LA PLATA, MARYLAND 20646

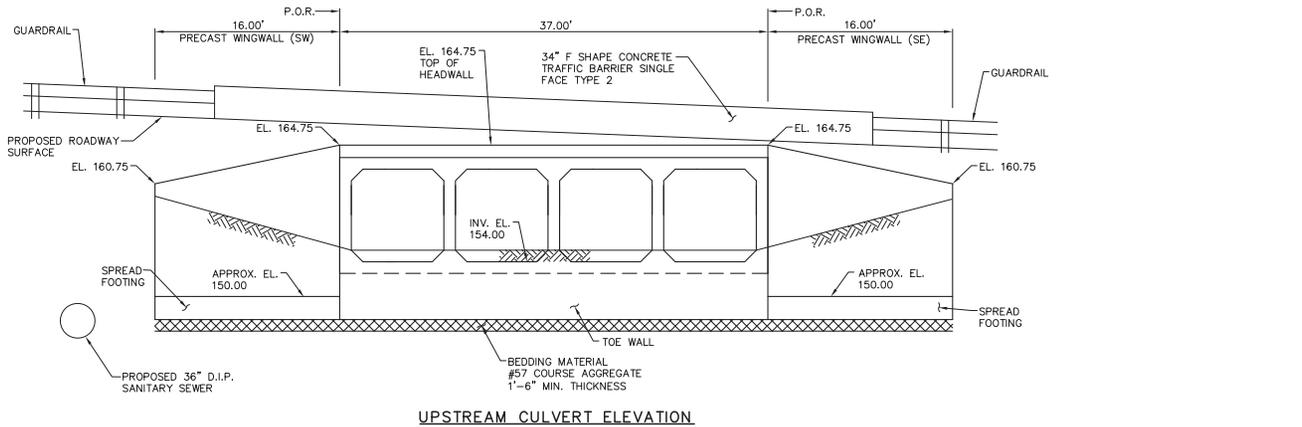
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SHEET 21 of 22

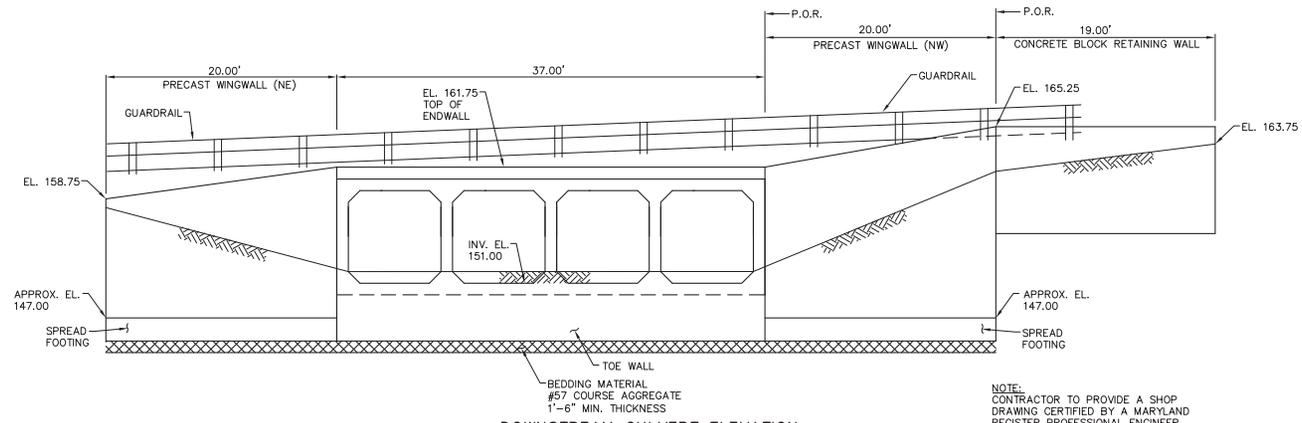
PROFESSIONAL CERTIFICATION
 I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE STATE OF MARYLAND. LICENSE NO. 24171, EXPIRATION DATE: 2/22/2011



| Revision Number | Construction Revision | Revision Date |
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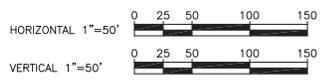
UPSTREAM CULVERT ELEVATION



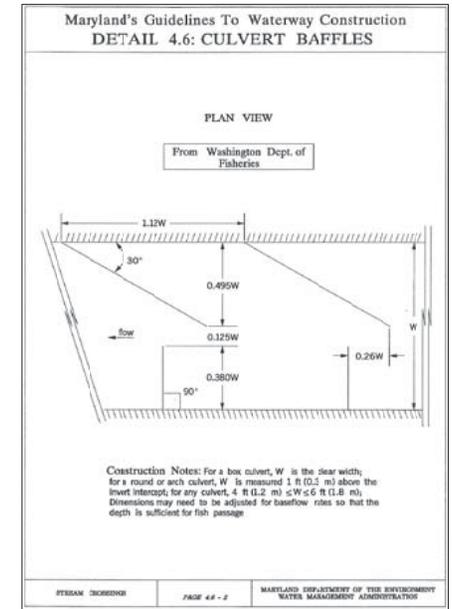
DOWNSTREAM CULVERT ELEVATION

NOTES:

1. DISCLAIMER: THE DETAILS SHOWN ON THIS SHEET ARE INFORMATION ONLY. PRIOR TO CONSTRUCTION, CONTRACTOR IS TO VERIFY STRUCTURAL AND SUBSTRUCTURAL COMPONENTS BASED ON SPECIFICATIONS PROVIDED BY THE SELECTED FABRICATOR.
2. PROVIDE A MINIMUM EMBEDMENT DEPTH OF 4' FROM FINISHED GRADE TO BOTTOM OF FOOTINGS.
3. CONTRACTOR TO DETERMINE DIMENSIONS NECESSARY TO PROVIDE A PROPER FOUNDATION.
4. USE $f'_c = 5000$ PSI STRENGTH CONCRETE FOR BOX CULVERT.
5. USE $f'_c = 3000$ PSI STRENGTH CONCRETE FOR TOE WALLS AND WINGWALLS.
6. USE $f'_c = 3500$ PSI STRENGTH CONCRETE FOR HEADWALLS.
7. PRIOR TO CONSTRUCTION, CAREFULLY EVALUATE EXCAVATED MATERIAL UNDER STRUCTURES. REPLACE INADEQUATE SOILS WITH CLEAN, WASHED #57 COARSE AGGREGATE OR OTHER APPROVED FREELY DRAINING COARSE GRANULAR MATERIAL BACK TO CULVERT AND WINGWALL AREA.



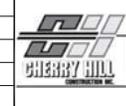
NOTE:
CONTRACTOR TO PROVIDE A SHOP DRAWING CERTIFIED BY A MARYLAND REGISTER PROFESSIONAL ENGINEER FOR THE BOX CULVERT AND HEADWALL AND ENDWALL.



INSTALLATION GUIDELINES FOR CULVERT BAFFLES

1. THE WORK CONSISTS OF INSTALLING BAFFLES IN CULVERTS TO PROVIDE ENERGY DISSIPATION AND AREAS OF LOW FLOW VELOCITY FOR FISH PASSAGE.
2. BAFFLED CULVERTS MAY REQUIRE ROUTINE MAINTENANCE TO REMOVE SEDIMENT DEPOSITS.
3. WOOD, CONCRETE, OR METAL CAN BE USED FOR CULVERT BAFFLES. WOOD PROVIDES GREATER RESILIENCY AND IS MORE EASILY REPLACED THAN EITHER CONCRETE OR METAL. CONCRETE BAFFLES CAN BE PRECAST AND DRILLED OR GROUTED INTO PLACE WHILE METAL BAFFLES ARE BOLTED INTO THE CULVERT FLOOR.
4. BAFFLES SHOULD BE INSTALLED UPON RECOMMENDATION OF A BIOLOGIST IF ALL POSSIBLE ALTERNATIVES TO IMPROVED FISH PASSAGE HAVE BEEN THOROUGHLY EXPOSED.
5. TO ACHIEVE OPTIMUM EFFECTIVENESS, BAFFLES SHOULD BE DESIGNED TO JSUT OVERTOP. FOR THIS PURPOSE, A MINIMUM HEIGHT OF 1 FOOT (0.3 METERS) IS RECOMMENDED.
6. ONLY ONE CELL OF A MULTI-CELLED CULVERT SHOULD BE EMPLOYED FOR FISH PASSAGE. EACH CULVERT CELL DOES NOT NEED TO BE BAFFLED.
7. BOX CULVERTS SHOULD BE DESIGNED ACCORDING TO CHANNEL CAPACITY AND DIMENSIONS. ROUND, CORRUGATED METAL PIPES SHOULD BE AT LEAST 5 FEET (1.6 METERS) IN DIAMETER. A SEPARATING WALL SHOULD BE INSTALLED IN CULVERTS GREATER THAN 6 FEET (1.8 METERS) IN WIDTH AND SHOULD BE 3 TIMES THE HEIGHT OF THE BAFFLES.

| Revision Number | Construction Revision | Revision Date |
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PROFESSIONAL CERTIFICATION
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE STATE OF MARYLAND, LICENSE NO. 24171, EXPIRATION DATE: 7/22/2011

| CHARLES COUNTY GOVERNMENT Department of Planning and Growth Management Development Services Department | | Conditions or Remarks: |
|--|--------------|-------------------------|
| Design | Construction | as-built |
| Books | 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 |
| Date: | Date: | This Permit Expires on: |

DETAILS - 4

| | |
|-------------|---|
| PROJECT: | WESTERN PARKWAY PHASE 1B HAMILTON ROAD CULVERT IMPROVEMENTS |
| FOR: | CHARLES COUNTY COMMISSIONERS |
| DESIGN BY: | LA PLUS, MARYLAND 2044 |
| CHECKED BY: | SEN |
| DATE: | SEN |

SHEET 22 of 22