

# CITY OF LYNCHBURG

## DEPARTMENT OF COMMUNITY DEVELOPMENT

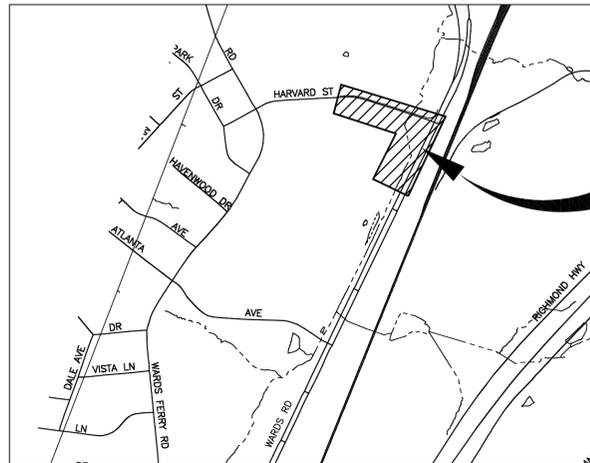
### WARDS ROAD

### PEDESTRIAN AND BICYCLE TRAIL

### PHASE IIB

DECEMBER 20, 2012

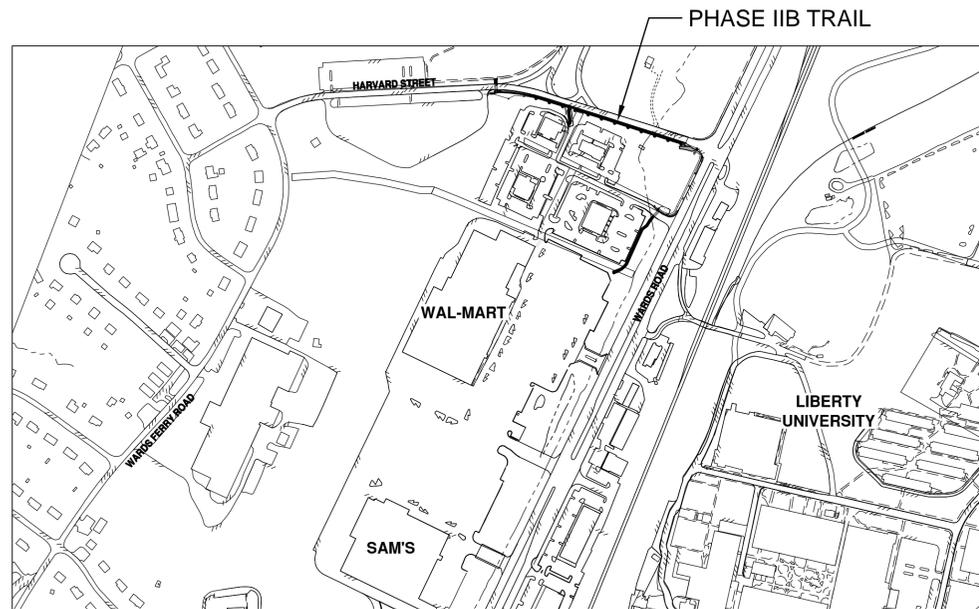
REVISED OCTOBER 18, 2013



VICINITY MAP  
SCALE 1" = 1000'

**LEGEND**

EXISTING	
FORCE MAIN	--- FM ---
SANITARY SEWER	--- SAN ---
FLOW DIRECTION	--->---
STORM PIPE	--- SS ---
OVERHEAD ELECTRIC	--- E ---
UNDERGROUND ELECTRIC	--- UGE ---
OVERHEAD TELEPHONE	--- T ---
FENCE	--- X ---
MAJOR CONTOUR	--- 860 ---
MINOR CONTOUR	--- ---
WOOD LINE	--- W ---
PROPERTY LINE	--- P ---
WETLAND	--- W ---
GRAVEL ROAD	--- GR ---
RIPRAP	--- R ---
BENCHMARK	BM
CONTROL POINT - NAIL SET	NAIL(S)
IRON PINE FOUND	IP(F)
PIPE FOUND	PIPE(F)
SANITARY MANHOLE	S
SANITARY CLEANOUT	CO
GUY WIRE	G
POWER POLE	P
TELEPHONE POLE	T
SPRING	S
TREE	T
TO BE REMOVED	X



SITE MAP  
SCALE: 1" = 400'

**ABBREVIATIONS**

AHD	AHEAD	MJ	MECHANICAL JOINT RESTRAINT
BIT	BITUMINOUS	N/F	NOW OR FORMERLY
BK	BACK	N&C	NAIL AND CAP
BM	BENCHMARK	NIC	NOT IN CONTRACT
BW	BARBED WIRE	OHW	ORDINARY HIGH WATER
CHIS	CHISELED	PEM	PALUSTRINE EMERGENT WETLAND
CIP	CAST IRON PIPE	PFO	PALUSTRINE FORESTED WETLAND
CMP	CORRUGATED METAL PIPE	PG	PAGE
CO	CLEANOUT	P	PROPERTY LINE
COMM	COMMON	PI	POINT OF INTERSECTION
CONC	CONCRETE	PT	POINT ON TANGENT
CPP	CORRUGATED PLASTIC PIPE	PP	POWER POLE
CSO	COMBINED SEWER OVERFLOW	PSS	PALUSTRINE SCRUB-SHRUB WETLAND
DB	DEED BOOK	PVD	PAVED
DBL	DOUBLE	R/W	RIGHT OF WAY
DIA	DIAMETER	RCP	REINFORCED CONCRETE PIPE
DIP	DUCTILE IRON PIPE	RR	RAILROAD
EL OR ELEV	ELEVATION	RT	RIGHT
EX OR EXIST	EXISTING	RTNG	RETAINING
FH	FIRE HYDRANT	SAN	SANITARY
FO	FIBER OPTIC	SS	STORM SEWER
FOC	FACE OF CURB	STA	STATION
GI	GALVANIZED IRON	TBA	TO BE ABANDONED
H&T	HUB & TACK	TBR	TO BE REMOVED
INV	INVERT	TEL	TELEPHONE
IPF	IRON PIN FOUND	TM	TAX MAP
LT	LEFT	TOC	TOP OF CURB
MB	MAILBOX	UG	UNDERGROUND
MH	MANHOLE	WT	WATERTIGHT
MP	MILEPOST		

- NOTES:**
- The size of the symbols may vary from those shown.
  - All abbreviations and symbols shown may not be used.

**LIST OF DRAWINGS**

DWG. NO	DISCIPLINE	TITLE
G-001	GENERAL	COVER SHEET
C-101	CIVIL	LAYOUT PLAN - STA 10+00 TO STA 19+00
C-102	CIVIL	LAYOUT PLAN - STA 19+00 TO STA 26+72
C-301	CIVIL	SITE DETAILS
C-302	CIVIL	SITE DETAILS
C-303	CIVIL	E&S CONTROL NARRATIVE
C-304	CIVIL	E&S CONTROL DETAILS

**GENERAL NOTES:**

- All work shall be performed in accordance with the latest edition of The City of Lynchburg Manual of Specifications and Standard Details.
- Work not covered by the City's standard drawings and specifications shall conform to the latest edition of Virginia Department of Transportation's Road and Bridge Specifications and Road and Bridge Standards.
- Contact city construction coordinator and Miss Utility 48 hours in advance of any construction activity.
- Contractor shall comply with all Virginia Erosion and Sediment Control Regulations.
- Minimal grading work is required for this project. Contractor shall fine grade as necessary to create positive drainage and avoid ponding of water. All areas shall be permanently seeded and stabilized in accordance with Virginia E&S Regulations immediately after reaching finished grade.
- All existing underground utility locations as shown on these plans are approximate and do not represent all underground utilities or service lines. Contractor is responsible for verifying exact location, depth, size, and type of utilities shown. Prior to excavation, the contractor shall contact the pertinent utility companies and/or utility locating services to have all underground utilities located and marked. Contractor is solely responsible for damage to property, utilities, or physical improvements.
- All property pins disturbed by construction activities shall be replaced by a Virginia licensed land surveyor.
- Contractor shall be informed and shall comply with the Virginia Overhead High Voltage Line Safety Act. Any costs to cover lines or disconnect service to nearby power lines shall be at the contractor's expense. Contractor shall retain full liability for compliance with OSHA regulations and the Safety Act.
- It is anticipated with this project that excess material will be hauled off-site. A location addendum is required, prior to the issuance of any land disturbance permit, identifying the location, adequate stabilization measures and an approved permit for any off-site borrow/fill/waste site(s) that will be used in conjunction with this project. The ultimate destination of all debris from demolition must be identified at the pre-construction conference.
- A pre-construction conference with the owner or their agent, the certified responsible land disturber and the designer will be required prior to the issuance of the land-disturbing permit. The responsible land disturber should be prepared provide his certification number at this meeting. The following must be complete prior to scheduling the pre-construction conference:
  - The limits of clearing and grading should be clearly marked.
  - A land disturbance bond must be submitted.
- No site work, logging, grubbing or grading is permitted prior to issuance of a land disturbing permit. No burning of any debris without prior approval from the Fire Marshal's Office.



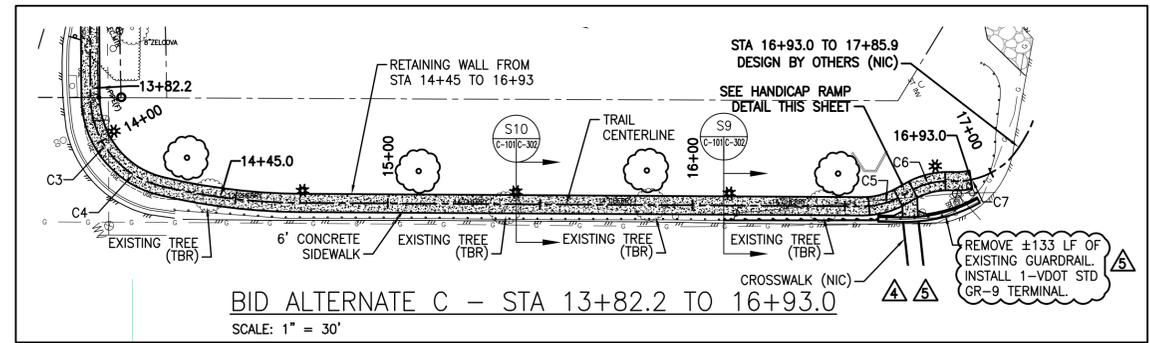
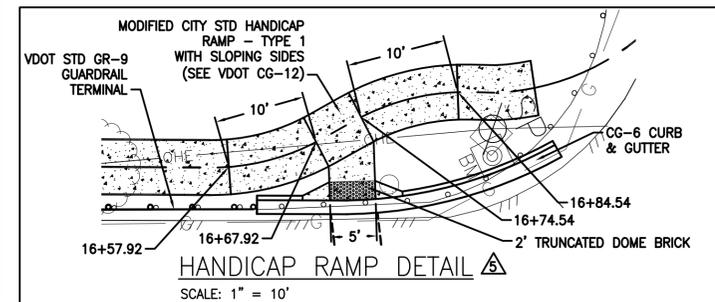
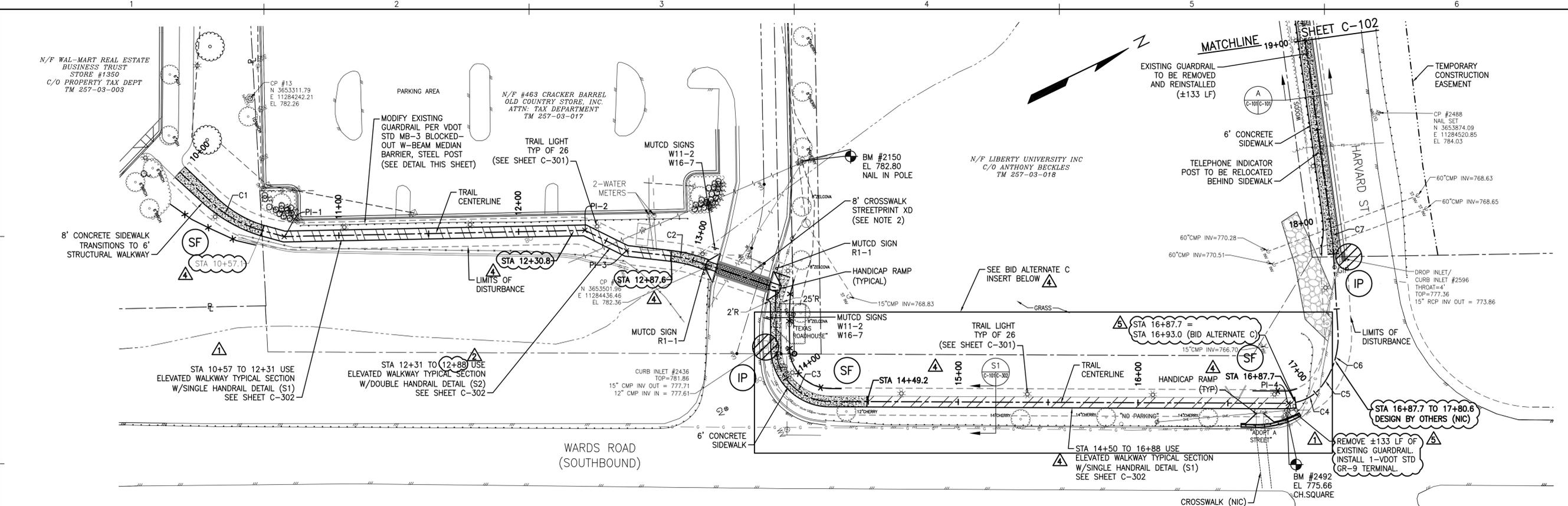
WARDS ROAD  
 PEDESTRIAN AND BICYCLE TRAIL  
 PHASE IIB  
 Department of Community Development  
 Lynchburg, Virginia

Revision Description	Date
10/18/13 HARVARD STREET INTERSECTION IMPROVEMENTS	
9/20/13 PER CITY COMMENTS (ADD BID ALTERNATE C)	
8/20/13 RAILING CONNECTION REVISION AND DIMENSIONAL CLARIFICATION	
7/26/13 GENERAL NOTES REVISED PER CITY COMMENTS	
7/17/13 HARVARD STREET INTERSECTION IMPROVEMENTS	

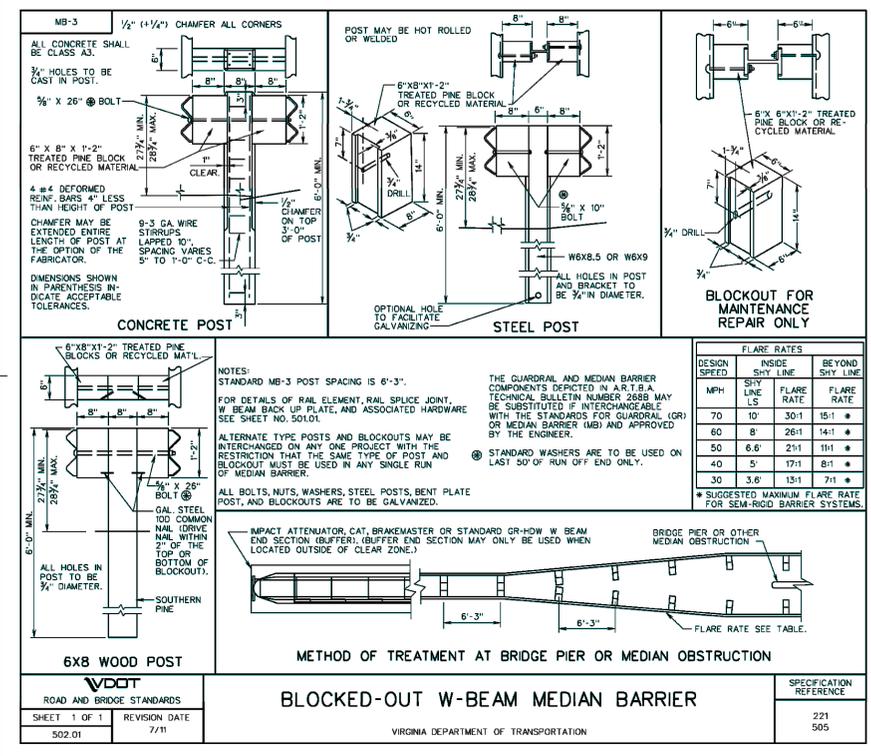
Comm No: 211077.00  
 Date: DECEMBER 20, 2012  
 Drawn: LDB Design: ETH  
 Check: ETH  
 Cad File: 11077BG-001.dwg  
 Sheet Title: COVER SHEET  
 Sht No: G-001 Rev No: 2

**Wiley Wilson**  
 Constant Progress  
 127 Nationwide Drive, Lynchburg, Virginia 24502-4272  
 phone 434.947.1901 fax 434.947.1801 web wileywilson.com

P:\2011 Projects\211077 Lyng Wards Rd Ped Bike Trail\CAD\Phase IIB\11077BC-101-102.dwg October 18, 2013

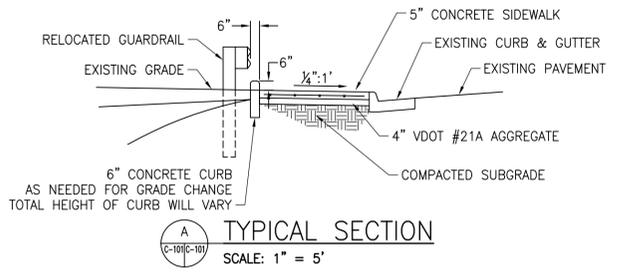


- NOTES:**
1. THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN ON THIS DRAWING ARE APPROXIMATE AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR EXACT LOCATION.
  2. STREETPRINT XD CROSSWALKS SHALL BE 6 FEET WIDE STAMPED STREET PRINT XD RED BRICK COLORED, RUNNING BOND PATTERN WITH 12" THERMOPLASTIC LINES ON EACH SIDE. TOTAL WIDTH OF CROSSWALK SHALL BE 8 FEET. SAWCUT AND MILL EXISTING ASPHALT 1-1/2" DEEP BY 6 FEET WIDE, THEN PROVIDE 1-1/2 INCHES OF SM-9.5 OVERLAY FOR STREET PRINT SURFACE.
  3. CONTRACTOR MUST COORDINATE CROSSWALK INSTALLATION WITH BUSINESS MANAGERS. ACCESS TO BUSINESSES MUST BE MAINTAINED DURING HOURS OF OPERATION.
  4. TRAIL LIGHTS ARE SHOWN IN APPROXIMATE LOCATIONS. ACTUAL LOCATION OF LIGHTS AND CONDUIT ROUTING WILL BE BASED ON ILLUMINATION / LIGHTING PLAN PROVIDED BY APPALACHIAN POWER COMPANY. CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF LIGHT POLE FOUNDATIONS AND UNDERGROUND CONDUIT TO CONNECT LIGHTS TO POWER SOURCE. AEP WILL INSTALL LIGHTS, PULL WIRE THROUGH CONDUIT AND MAKE CONNECTION TO POWER SOURCE.
  5. ALL TREES TO BE REMOVED SHALL BE REPLACED. TYPE AND LOCATIONS TO BE AGREED TO BY THE OWNER.
  6. ALL SHRUBS TO BE REMOVED SHALL BE REMOVED IN A MANNER TO FACILITATE REPLANTING OF THE SHRUBS. SHRUBS SHALL BE RELOCATED AS SHOWN ON THE PLANS AND AT LOCATIONS AGREED TO BY THE OWNER.
  7. THE HORIZONTAL TRAIL ALIGNMENT BETWEEN STATIONS 16+67.1 AND 17+95.5 HAS BEEN ADJUSTED TO COINCIDE WITH PRELIMINARY PLANS SUBMITTED BY PERKINS & ORRISON. FINAL ALIGNMENT MUST BE COORDINATED WITH HARVARD STREET INTERSECTION IMPROVEMENT PLANS BY OTHERS.
  8. ALIGNMENT WAS ADJUSTED TO ELIMINATE CURVES IN THE ELEVATED WALKWAY. THEREFORE STATIONS AND CURVE LABELS HAVE REVISED.



**POINT TABLE**

POINT #	NORTHING	EASTING
PI-1	3653295.68	11284319.43
PI-2	3653448.01	11284388.71
PI-3	3653463.89	11284408.94
PI-4	3653759.31	11284644.43

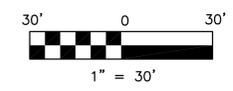
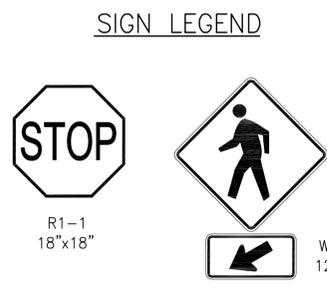


**CURVE TABLE**

CURVE	RADIUS	PC STA	PC COORD	PT STA	PT COORD
C1	65'	10+23.95	N = 3653267.30 E = 11284310.62	10+56.10	N = 3653285.51 E = 11284310.62
C2	75'	12+87.62	N = 3653485.07 E = 11284431.81	13+03.23	N = 3653497.35 E = 11284431.81
C3	30'	13+81.84	N = 3653515.78 E = 11284533.17	14+28.59	N = 3653529.85 E = 11284533.17
C4	26'	16+87.66	N = 3653763.16 E = 11284645.43	17+01.52	N = 3653776.86 E = 11284645.43
C5	44'	17+01.52	N = 3653776.86 E = 11284638.12	17+15.60	N = 3653788.82 E = 11284638.12
C6	45'	17+15.60	N = 3653788.82 E = 11284620.80	17+37.18	N = 3653801.34 E = 11284620.80
C7	200'	17+81.03	N = 3653817.96 E = 11284565.42	17+96.78	N = 3653823.35 E = 11284565.42

**ALTERNATE C CURVE TABLE**

CURVE	RADIUS	PC STA	PC COORD	PT STA	PT COORD
C3	30'	13+85.23	N = 3653514.34 E = 11284532.51	14+25.02	N = 3653522.55 E = 11284532.51
C4	30'	13+85.23	N = 3653514.34 E = 11284532.51	14+25.02	N = 3653522.55 E = 11284532.51
C5	25'	16+55.85	N = 3653727.38 E = 11284640.66	16+68.77	N = 3653739.92 E = 11284640.66
C6	25'	16+72.59	N = 3653743.73 E = 11284643.08	16+85.94	N = 3653756.64 E = 11284643.08
C7	26'	16+92.98	N = 3653763.16 E = 11284645.43	17+06.85	N = 3653776.86 E = 11284645.43



**Wiley Wilson**  
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COMMONWEALTH OF VIRGINIA  
L. H. HANCOCK, JR.  
No. 39385  
Lic. No. 12-20-12  
PROFESSIONAL ENGINEER

**WARDS ROAD AND BICYCLE TRAIL PHASE IIB**

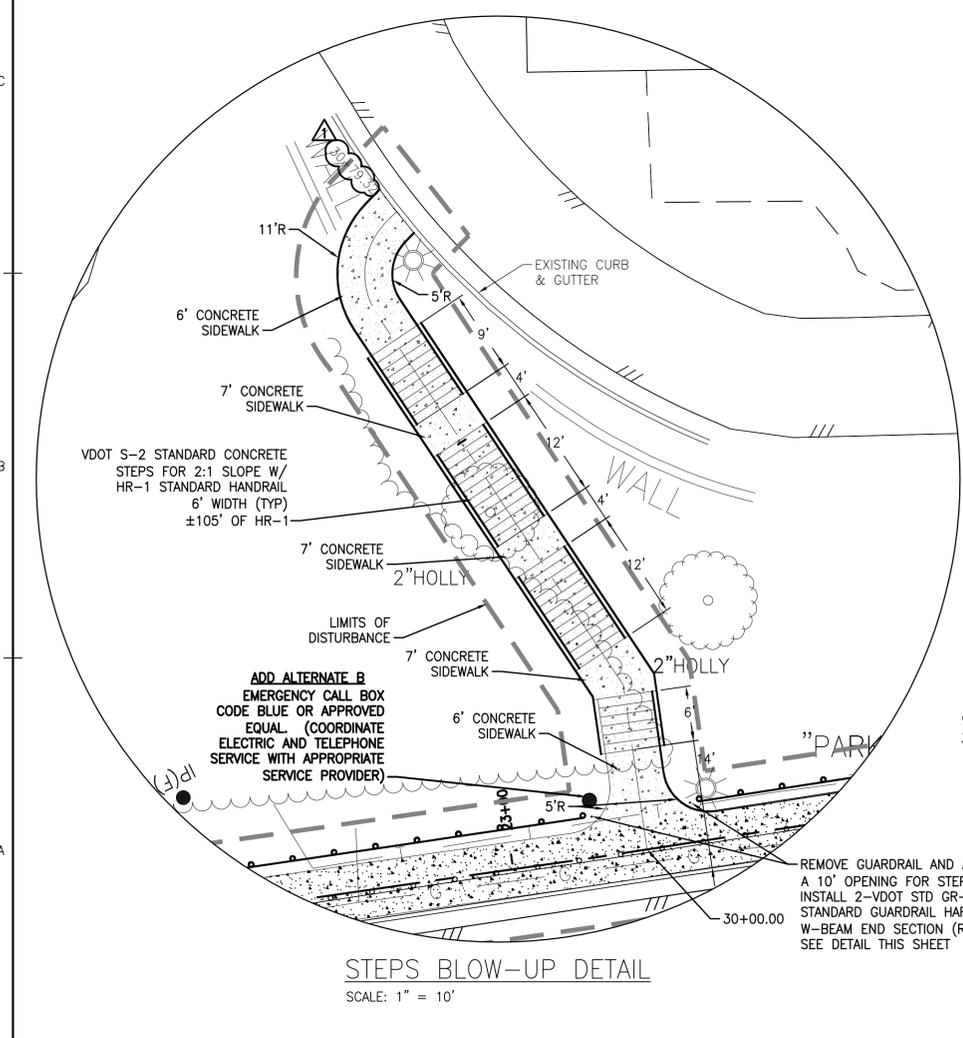
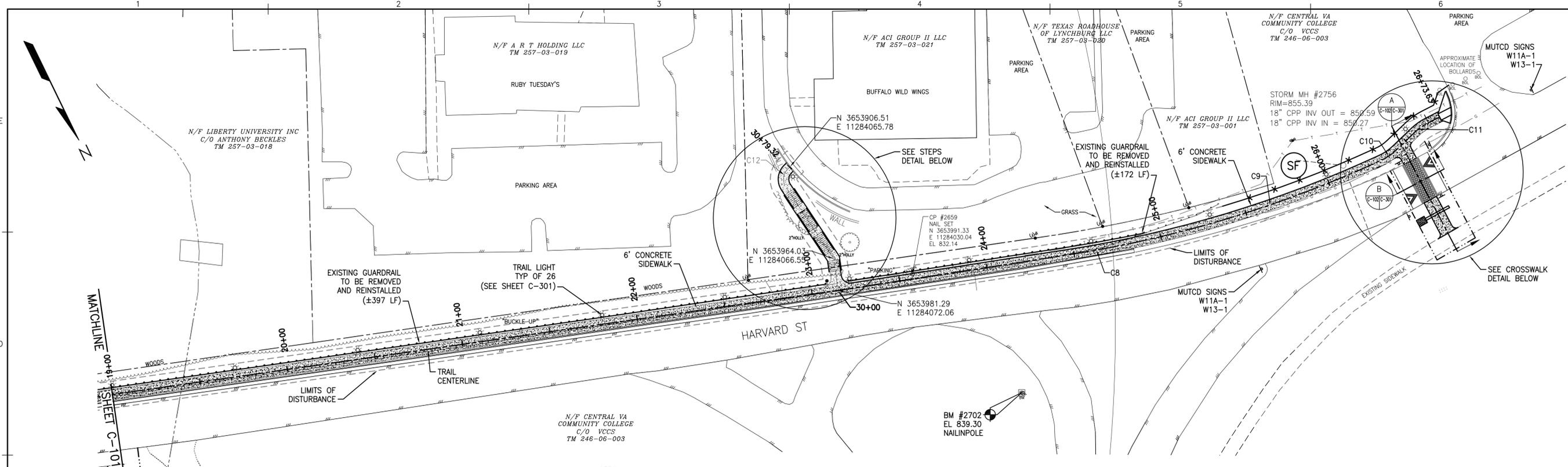
Department of Community Development  
Lynchburg, Virginia

10/18/13 HARVARD STREET INTERSECTION IMPROVEMENTS  
9/20/13 PER CITY COMMENTS (ADD BID ALTERNATE C)  
7/17/13 HARVARD STREET INTERSECTION IMPROVEMENTS

Comm No: 211077.00  
Date: DECEMBER 20, 2012  
Drawn: LDB Design: ETH  
Check: ETH  
Cad File: 11077BC-101-102.dwg  
Sheet Title: LAYOUT PLAN STA 10+00 TO STA 19+00

Sht No: C-101 Rev No: 1

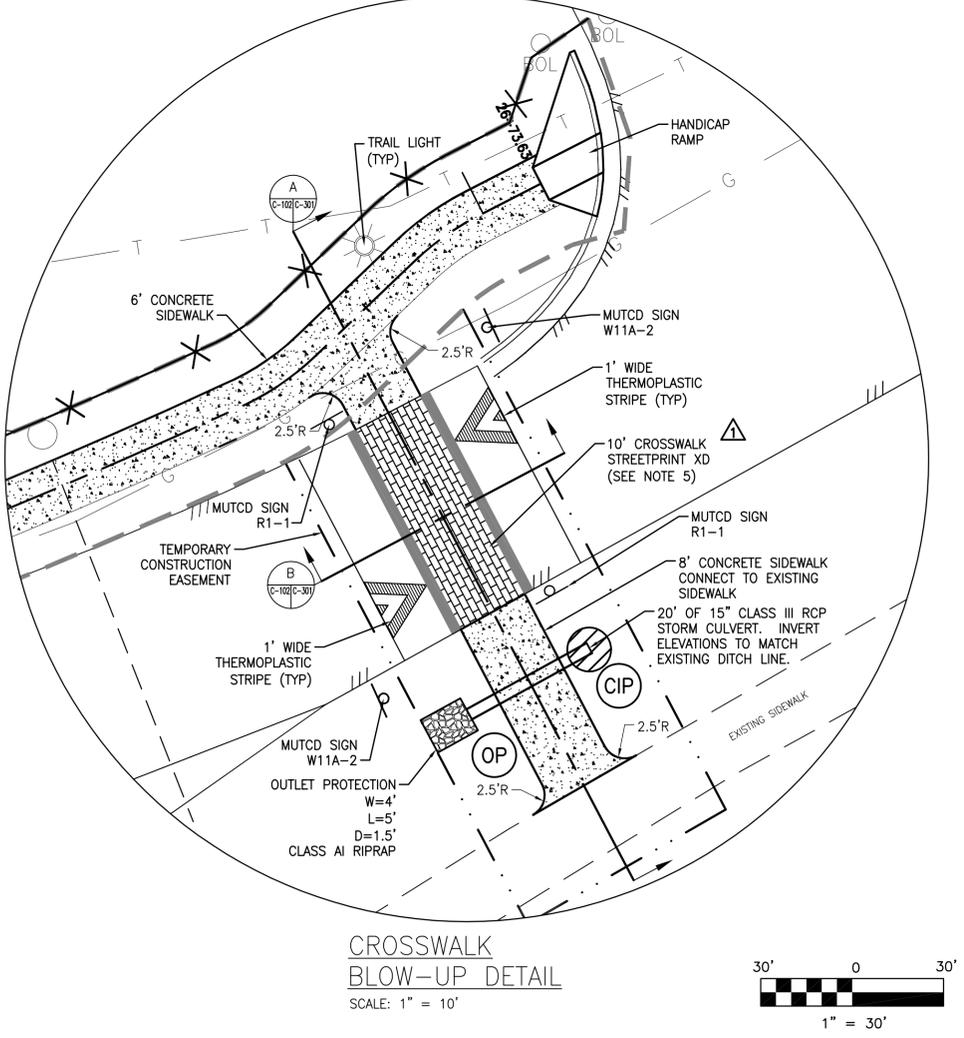
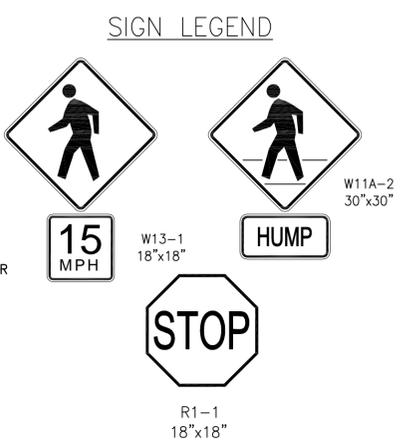
P:\2011 Projects\211077 Lyng Wards Rd Ped Bike Trail\CAD\Phase IIB\11077BC-101-102.dwg October 17, 2013



- NOTES:**
1. THE LOCATION OF ALL UNDERGROUND UTILITIES SHOWN ON THIS DRAWING ARE APPROXIMATE AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR EXACT LOCATION.
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  6. STATIONING AND CURVE NUMBERS HAVE BEEN ADJUSTED BASED ON ALIGNMENT REVISIONS PER SHEET C-101.

**CURVE TABLE**

CURVE	RADIUS	PC STA	PC COORD	PT STA	PT COORD
C8	665'	24+47.11	N = 3654020.31 E = 11283764.04	26+31.62	N = 3654049.44 E = 11283764.04
C9	665'	24+47.11	N = 3654020.31 E = 11283764.04	26+31.62	N = 3654049.44 E = 11283764.04
C10	30'	26+31.62	N = 3654049.44 E = 11283753.36	26+42.45	N = 3654048.04 E = 11283753.36
C11	30'	26+57.21	N = 3654043.52 E = 11283730.74	26+65.92	N = 3654042.09 E = 11283730.74
C12	8'	30+66.71	N = 3653915.88 E = 11284067.91	30+77.59	N = 3653907.28 E = 11284067.91



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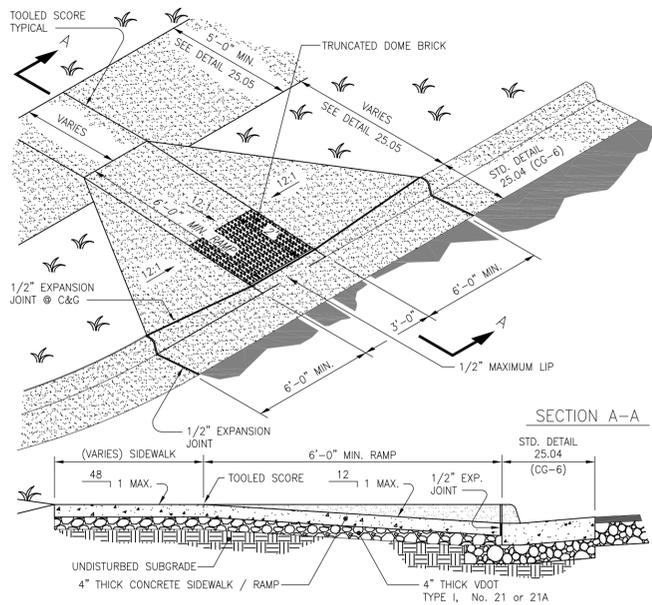
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**WARDS ROAD  
PEDESTRIAN AND BICYCLE TRAIL  
PHASE IIB**

Department of Community Development  
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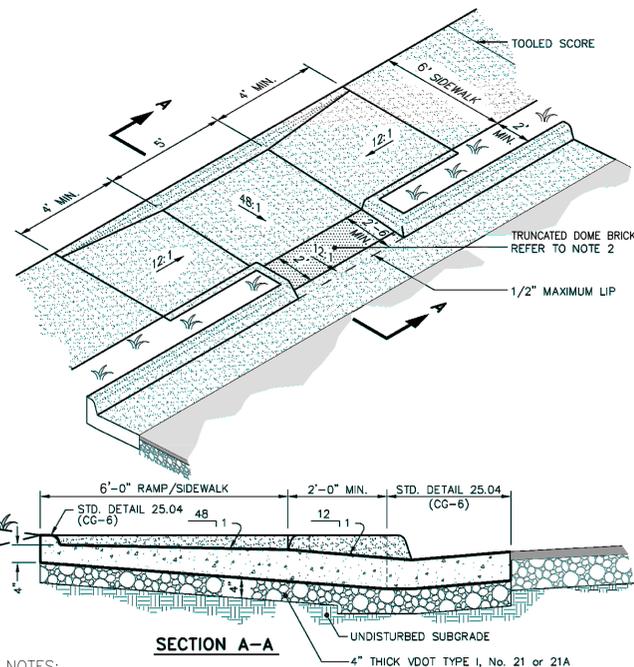
Revision	Description	Date
1	10/18/13 HARVARD STREET INTERSECTION IMPROVEMENTS	
2	9/20/13 PER CITY COMMENTS (ADD BID ALTERNATE C)	
3	7/17/13 HARVARD STREET INTERSECTION IMPROVEMENTS	

Comm No: 211077.00  
Date: DECEMBER 20, 2012  
Drawn: LDB Design: ETH  
Check: ETH  
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Sheet Title: LAYOUT PLAN STA 19+00 TO STA 26+73  
Sht No: C-102 Rev No: 1



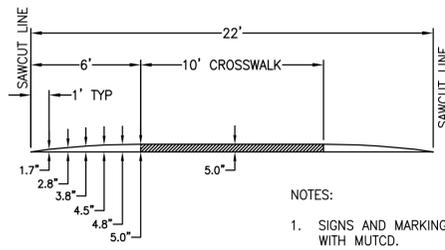
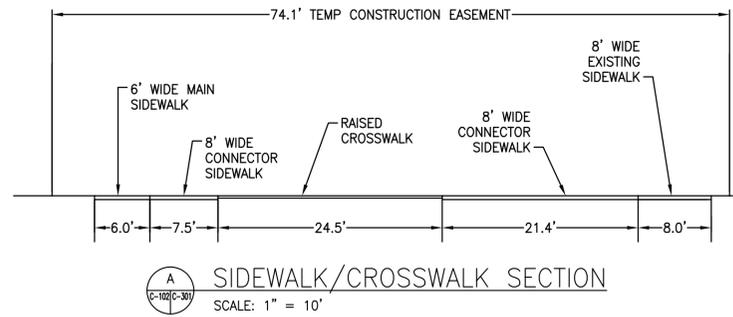
- NOTES:
- CROSS AND SIDE RAMPS SHALL NOT EXCEED A SLOPE OF 12:1.
  - CROSS RAMP SHALL HAVE A TRUNCATED DOME PATTERN MEETING THE CURRENT AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG). THE TRUNCATED DOME PATTERN SHALL EXTEND THE FULL WIDTH OF THE CROSS RAMP BY 2 FEET IN LENGTH IN THE DIRECTION OF PEDESTRIAN TRAVEL. THE TRUNCATED DOME SURFACE SHALL BE RED IN COLOR TO PRODUCE A 70% CONTRAST WITH SURROUNDING CONCRETE SURFACES. SURFACE SHALL BE INSTALLED WITH THE ELONGATED SIDE PARALLEL TO THE RAMP OPENING.
  - CURB RAMPS ARE TO BE LOCATED AS SHOWN ON PLANS OR AS DIRECTED BY CITY ENGINEER AND SHOULD NOT BE LOCATED BEHIND VEHICLE STOP LINES, EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC.

**HANDICAP RAMP**  
NOT TO SCALE



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**HANDICAP RAMP - TYPE 1**  
NOT TO SCALE



- NOTES:
- SIGNS AND MARKINGS SHALL BE IN ACCORDANCE WITH MUTCD.
  - CROSS-SECTION SHOWS APPROXIMATE ELEVATION FOR 5" (MAXIMUM) RAISED CROSSWALK.
  - DETAIL PER FIGURE A-4 RAISED CROSSWALK, FROM VDOT TRAFFIC CALMING GUIDE, REVISED JULY 2008.

**RAISED CROSSWALK SECTION**  
SCALE: 1" = 5'

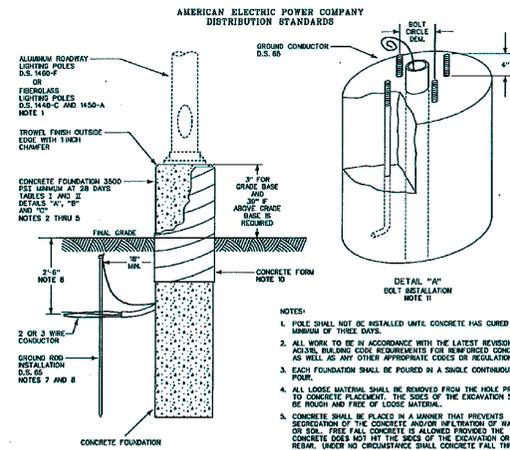


TABLE I  
CONCRETE FOUNDATION LENGTH

FOUNDATION DESIGN	DIAMETER (INCHES)	GRADE BASE FOUNDATION LENGTH (FEET)		ABOVE GRADE BASE FOUNDATION LENGTH (FEET)	
		HARD OR NORMAL	SOFT	HARD OR NORMAL	SOFT
A	18	4	5	6	7
B	18	5	6	7	8
C	24	5	6	7	8
D	24	6	7	8	9
E	24	6	8	8	10

**CONCRETE FOUNDATION**

JULY 15, 2002

D.S. 1495  
PAGE 1 OF 2

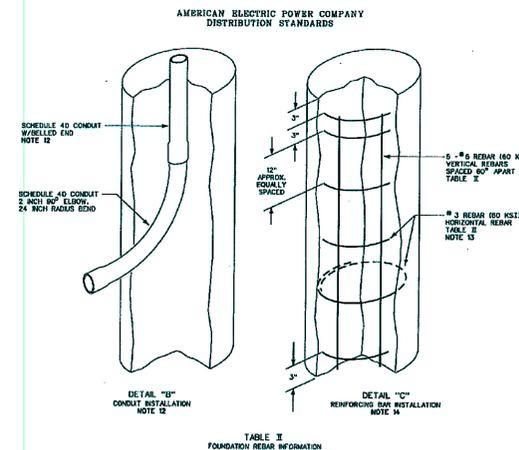


TABLE II  
FOUNDATION REBAR INFORMATION

FOUNDATION SIZE	CUBIC YARDS OF CONCRETE	#5 REBAR (60 KSI) VERTICAL REINFORCEMENT REBAR		#5 REBAR (60 KSI) HORIZONTAL REINFORCEMENT REBAR	
		LENGTH (FT-IN)	WEIGHT (LBS)	LENGTH (FT-IN)	WEIGHT (LBS)
18	4	0.26	3'-0"	34	5
	5	0.33	4'-0"	43	6
	6	0.39	5'-0"	50	7
	7	0.46	6'-0"	58	8
24	8	0.52	7'-0"	68	8
	9	0.51	8'-0"	75	9
	10	0.70	9'-0"	88	10
	11	0.81	10'-0"	98	11

**CONCRETE FOUNDATION**

JULY 15, 2002

D.S. 1495  
PAGE 2 OF 2

NOTE: CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF 24" LIGHT POLE FOUNDATIONS AND UNDERGROUND CONDUIT TO CONNECT LIGHTS TO POWER SOURCE. AEP WILL INSTALL LIGHTS, PULL WIRE THROUGH CONDUIT AND MAKE CONNECTION TO POWER SOURCE. VERIFY BOLT PATTERN REQUIRED FOR LIGHT INSTALLATION WITH AEP.

**HANDICAP RAMP - TYPE 1**  
NOT TO SCALE

**CONCRETE SIDEWALK**  
NOT TO SCALE

**Hallbrook Series**  
Single Arm Aluminum Post  
22" Dia. Base

**Specifications**

**DESCRIPTION**  
This contemporary European style lighting post shall be aluminum construction, with a one piece spun shaft, and a single bishop's crook mounting bracket, and a slender sweeping decorative clamshell base.

**MATERIALS**  
The Post shaft shall be 6063 aluminum alloy, .188 wall thickness, heat treated to a T6 condition after welding. The anchor base shall be A356 cast aluminum alloy, heat treated to a T6 condition after welding. The base plate telescopes the shaft and is circumferentially welded top and bottom. The anchor bolts are hot dipped galvanized. The bracket arms are 1-1/2" schedule 80 pipe and threaded 1-1/2 NPT at the end for luminaire mounting. The clamshell base is sand cast of A356 copper free aluminum alloy.

**DIMENSIONS**  
The pole shall be X'X'X' in height with a 9.25" square base plate. The decorative clamshell base is 22" in diameter and 45" tall. The shaft shall have a top diameter of 3.5". The bishop's crook bracket arm shall rise 44" above the pole top and form a 30" diameter arc from the center of the vertical portion of the arm to the luminaire mount centerline. The luminaire mounting end of the bracket arm shall be 21" above the top of the post.

**WIRING ACCESS**  
The post is provided with a 3" by 5" nominal hand hole and cover. A 3/8-16UNC lapped hole inside the shaft at the hand hole is provided for grounding.

**FINISH**  
The post, arm, and base cover shall be painted with a polyester powder coat paint. See Finish on the second page for available colors.

**INSTALLATION**  
The post shall be provided with four 3/4" diameter by 15" long L-type anchor bolts to be installed on a 7.5 to 9.5" diameter bolt circle.

UNIQUE SOLUTIONS ORDER NO. TYPE: DRAWING NO. US-1394

UNIQUE SOLUTIONS  
A DIVISION OF HOLOPHANE  
515 MCKINLEY AVENUE  
NEWARK, OHIO 43055

SCALE: NONE  
DRAWN: RAF  
APP'D: DATE: 07-07-97

**Hallbrook Series**  
Single Arm Aluminum Post,  
22" Dia. Base

**ORDERING GUIDE**

Post Series	Height	Material	Arm	Finish	Options
HBLK	12	A	1	B	
HBLK	15	A	1	B	
HBLK	18	A	1	B	

**Finish**  
B = BLACK  
F = BRONZE  
N = DARKGREEN  
A = AS SPECIFIED

**Optional Equipment**

Options	Description / Specification
DBX	Cast aluminum decorative base. (X = Finish)
SIBX	Screen sign bracket. (X = Finish) (Sign by others)
BAYYX	Banner arm. (YY = length) (X = finish)
WPRT	Weatherproof receptacle.
WPRTGFI	Weatherproof ground fault interrupt receptacle.

**ANCHORAGE DETAIL**

UNIQUE SOLUTIONS  
INNOVATIVE LIGHTING PRODUCTS



WARDS ROAD  
PEDESTRIAN AND BICYCLE TRAIL  
PHASE IIB

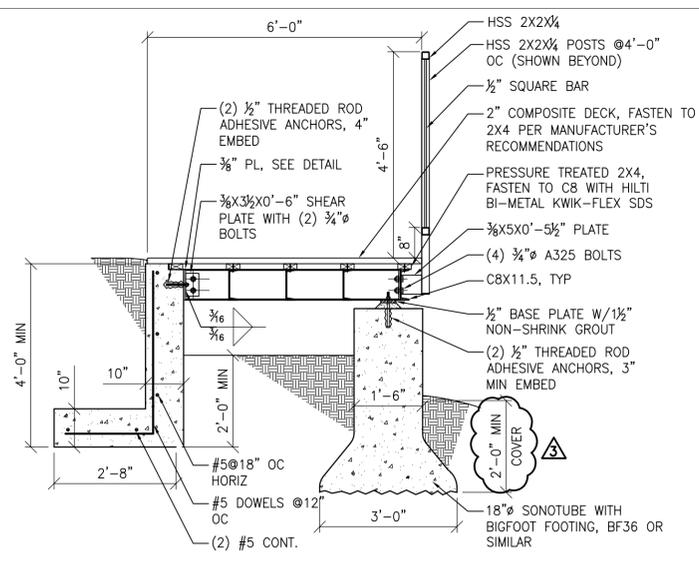
Department of Community Development  
Lynchburg, Virginia

Revision Description	Date
10/18/13 HARVARD STREET INTERSECTION IMPROVEMENTS	
7/17/13 HARVARD STREET INTERSECTION IMPROVEMENTS	

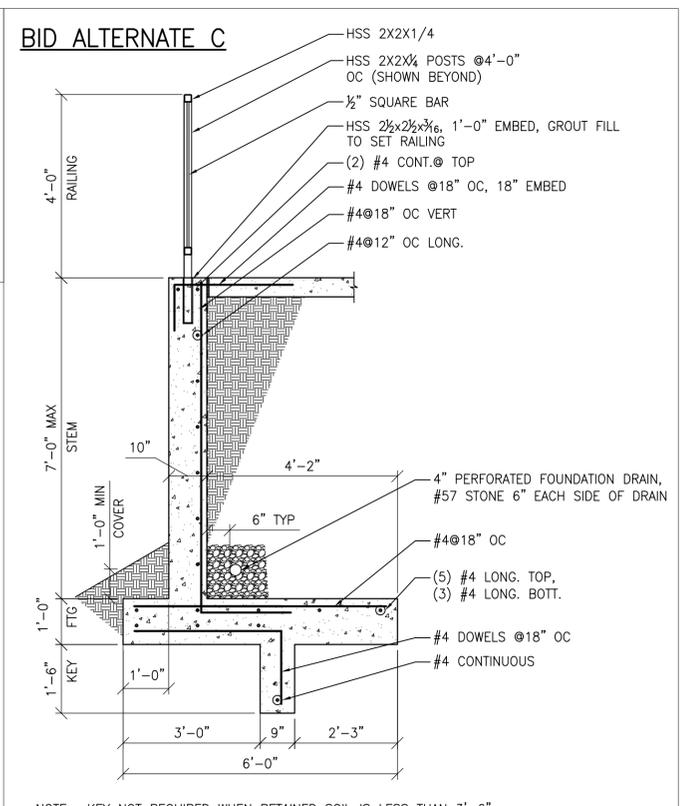
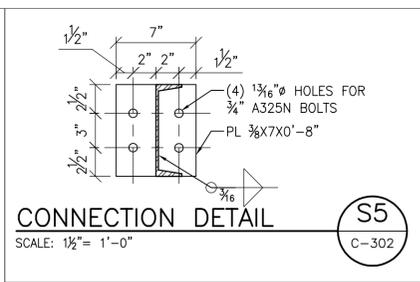
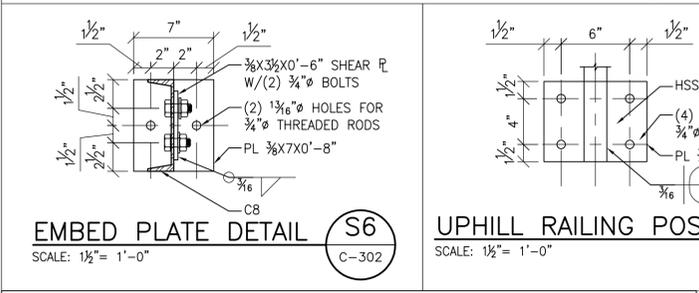
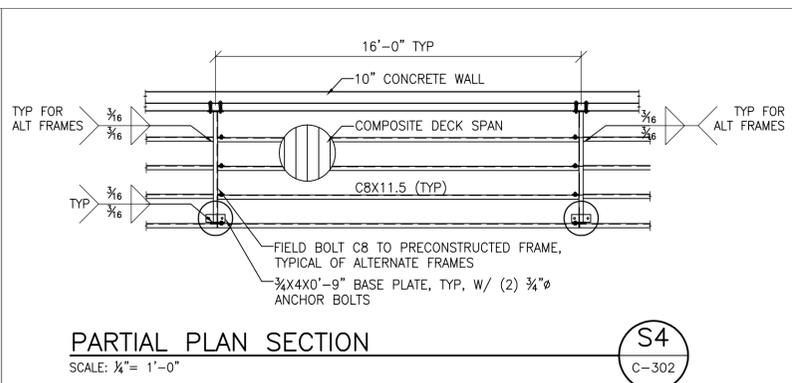
Comm No: 211077.00  
Date: DECEMBER 20, 2012  
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Cad File: 11077BC-301.dwg  
Sheet Title: SITE DETAILS

Sht No: C-301 Rev No: 1

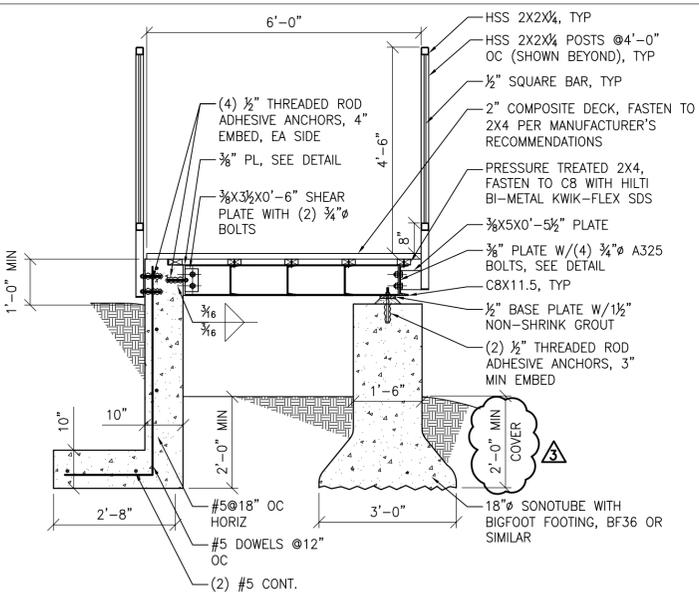
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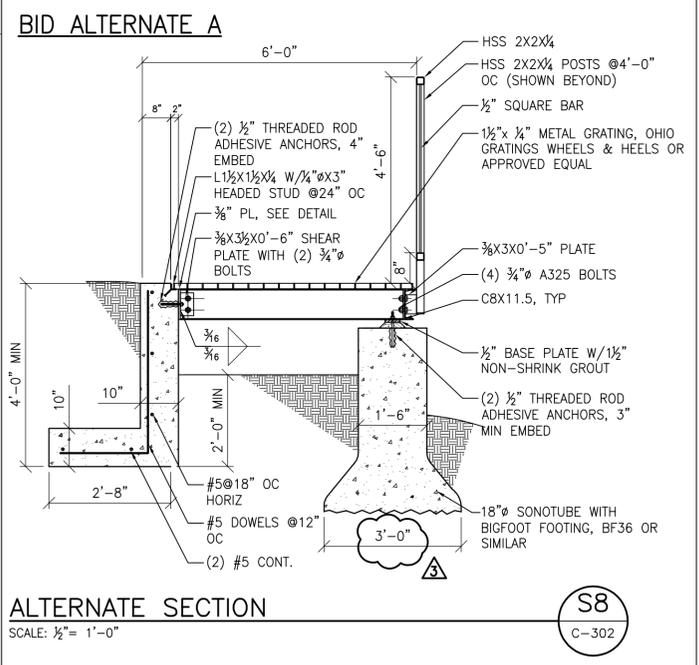
**ELEVATED WALKWAY W/ SINGLE HANDRAIL**  
**TYPICAL SECTION**  
**STA 10+57 TO 12+31 & 14+50 TO 16+88** (S1)  
 SCALE: 1/2" = 1'-0"



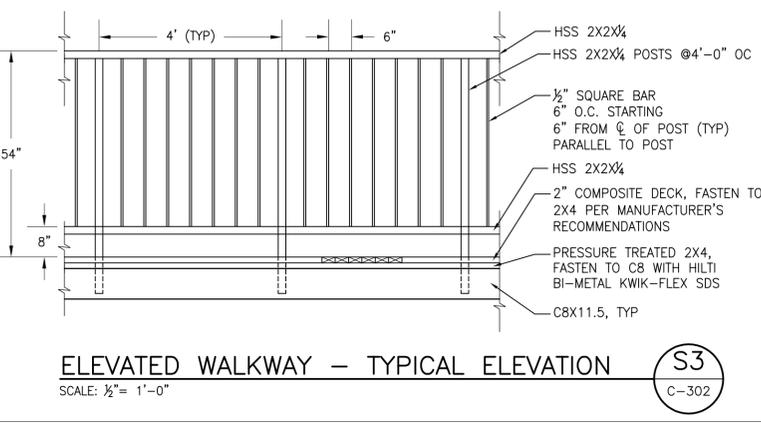
**BID ALTERNATE C**  
**RETAINING WALL SECTION**  
**(STA 14+45 TO 16+93)** (S9)  
 SCALE: 1/2" = 1'-0"



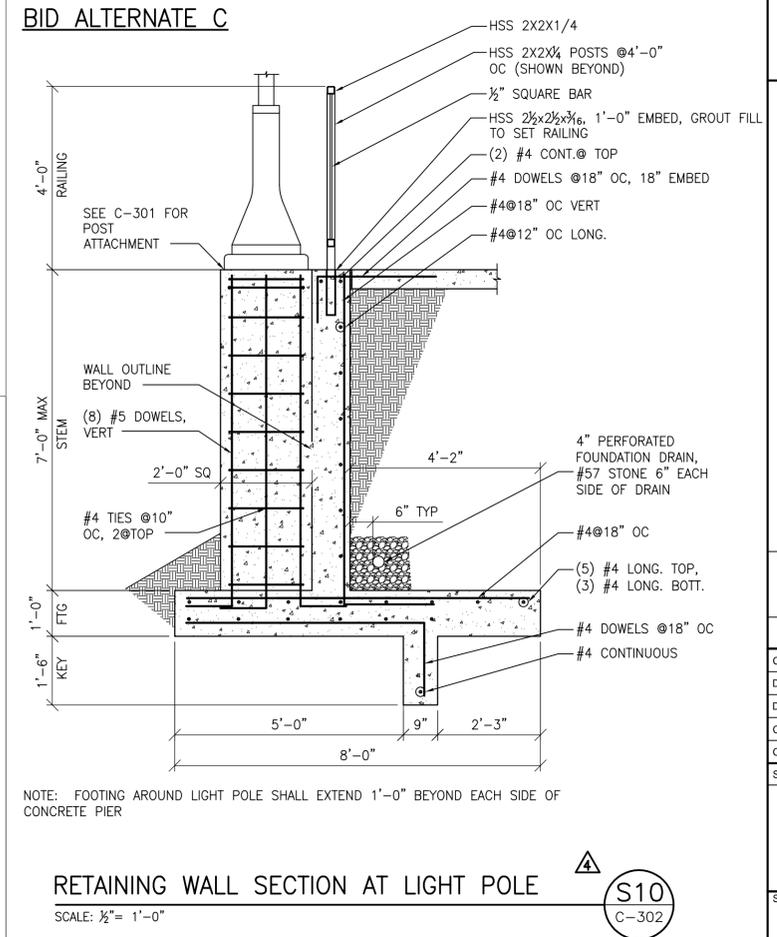
**ELEVATED WALKWAY W/ DOUBLE HANDRAIL**  
**TYPICAL SECTION**  
**STA 12+31 TO 12+88** (S2)  
 SCALE: 1/2" = 1'-0"



- ALTERNATE SECTION** (S8)  
 SCALE: 1/2" = 1'-0"
- NOTES:**
- THE DESIGN OF THIS SUPPORT COMPLIES WITH THE INTERNATIONAL BUILDING CODE 2009 GRAVITY LOADS:  
 DEAD LOAD: SELF WEIGHT  
 LIVE LOAD: 100 PSF
  - STRUCTURAL STEEL CHANNELS, PLATES, AND RAILING BARS SHALL CONFORM TO ASTM A36.
  - STRUCTURAL STEEL TUBES SHALL CONFORM TO ASTM A500, GRADE B.
  - STEEL SHALL BE PAINTED BLACK UNO. ALL SURFACES SHALL BE GIVEN A SHOP COAT OF APPROVED PRIMER TO MINIMUM DRY THICKNESS OF 1.5 MILS. TOUCH UP PAINT OF ALL FIELD WELDS AND SERIOUS ABRASIONS TO THE SHOP COAT WITH PAINT COMPATIBLE WITH THE SHOP COAT. DO NOT PAINT SURFACES THAT ARE TO BE EMBEDDED IN CONCRETE.
  - BOLTS SHALL BE HIGH STRENGTH AND CONFORM TO ASTM A325N, TYPE 1, UNO. TYPICAL CONNECTIONS ARE "SNUG TIGHT" BEARING CONNECTIONS WITH STANDARD WASHERS.
  - THREADED RODS SHALL CONFORM TO ASTM F1554, GRADE 36, UNO.
  - DETAIL, FABRICATE AND ERECT STRUCTURAL STEEL IN ACCORDANCE WITH THE 13TH EDITION OF AISC "MANUAL OF STEEL CONSTRUCTION AND AISC CODE OF STANDARD PRACTICE".
  - WELDING ELECTRODES OR WIRES: E70XX, UNO.
  - WELDING SHALL CONFORM TO CURRENT AWS "CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION." ALL WELDING SHALL BE PERFORMED BY AN AWS CERTIFIED WELDER.
  - SHOP OR FIELD WELDS NOT SPECIFICALLY DETAILED SHALL BE 3/16" CONTINUOUS FILLET WELD AT EACH CONTACT EDGE OR SURFACE.
  - RETURN ALL WELDS TWICE THE NOMINAL SIZE OF THE WELD MINIMUM, UNO.
  - ALL COPES, BLOCKS, CUT-OUTS AND CUTTING OF STRUCTURAL MEMBERS SHALL HAVE ALL REINFORCED CORNERS SHAPED, NOTCH-FREE, TO A MINIMUM RADIUS OF 1/2".
- CONCRETE**
- CONCRETE: PORTLAND CEMENT ASTM C150 TYPE 1/II FLY ASH ASTM C618, 10%-25% BY WEIGHT WATER/CEMENT + FLY ASH = .50 MAXIMUM 28 DAY F'c = 3000 PSI AIR CONTENT 4.5%-7.0% 1 1/2" MAX NORMAL WEIGHT AGGREGATE
  - PERFORM CONCRETE WORK IN ACCORDANCE WITH ACI 301-05 "STANDARD SPECIFICATION FOR STRUCTURAL CONCRETE" UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.
  - MINIMUM REINFORCING BAR COVER:  
 3" AT UNFORMED SURFACES EXPOSED TO EARTH.  
 2" AT FORMED SURFACES EXPOSED TO EARTH OR WEATHER FOR #6 AND LARGER.  
 1 1/2" AT FORMED SURFACES EXPOSED TO EARTH OR WEATHER FOR #3-#5.  
 1" AT SLABS AND WALLS NOT EXPOSED TO EARTH OR WEATHER.
  - SECURE ALL REINFORCING, INCLUDING WWF, IN POSITION WITH CHAIRS BEFORE CONCRETE PLACEMENT. CONCRETE DOBBIES MAY BE USED TO POSITION SLAB ON GRADE REINFORCEMENT.
  - INSTALL AND SECURE EMBEDMENTS SUCH AS ANCHOR BOLTS AND EMBEDMENT PLATES WITHIN SPECIFIED TOLERANCES BEFORE CONCRETE PLACEMENT.
  - FREE WATER ON THE SLAB SURFACE DURING FINISHING OPERATIONS IS PROHIBITED. SOFT CUT CONTRACTION JOINTS AS SOON AS POSSIBLE - GENERALLY WITHIN 6 HOURS AFTER FINISHING.
  - PROTECT AND CURE ALL CONCRETE SURFACES. BEGIN CURING WALLS IMMEDIATELY AFTER STRIPPING FORMS AND FLATWORK IMMEDIATELY AFTER FINISHING.
  - CONCRETE SURFACES TO RECEIVE GROUT UNDER COLUMN BASE PLATES MUST BE PREPARED BY PRE-SOAKING.



**ELEVATED WALKWAY - TYPICAL ELEVATION** (S3)  
 SCALE: 1/2" = 1'-0"



**BID ALTERNATE C**  
**RETAINING WALL SECTION AT LIGHT POLE** (S10)  
 SCALE: 1/2" = 1'-0"

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**WARDS ROAD**  
**PEDESTRIAN AND BICYCLE TRAIL**  
**PHASE IIB**

Department of Community Development  
 Lynchburg, Virginia

Date	Revision Description	Mk	Date
9/20/13	PER CITY COMMENTS (ADD BID ALTERNATE C)		
8/20/13	RAILING CONNECTION REVISION & DIMENSION CLARIFICATION		
7/17/13	HARVARD STREET INTERSECTION IMPROVEMENTS		

Comm No: 211077.00  
 Date: DECEMBER 20, 2012  
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 Cad File: 11077BC-302-2010.dwg  
 Sheet Title:

SITE DETAILS

Sht No: C-302

Rev No: 1

**EROSION & SEDIMENT CONTROL NARRATIVE**

**I. PROJECT DESCRIPTION**

THIS PROJECT INVOLVES THE INSTALLATION OF A PEDESTRIAN / BICYCLE TRAIL TO CONNECT THE WARDS ROAD PEDESTRIAN BRIDGE TO BUSINESSES IN THE AREA. THIS PHASE OF THE TRAIL RUNS FROM THE GRASSED ISLAND BETWEEN WAL-MART AND CRACKER BARREL RESTAURANT TO HARVARD STREET, JUST BELOW THE PARKING AREA. THE PROJECT INVOLVES APPROXIMATELY 0.60 ACRES OF LAND DISTURBANCE.

**II. EXISTING SITE CONDITIONS**

THIS SITE CONSISTS EXISTING GRASS AND LANDSCAPED AREAS EAST OF THE PARKING LOT FOR WALMART ON WARDS ROAD AND A WOODED AREA WEST OF HARVARD STREET.

**III. ADJACENT PROPERTIES**

ADJACENT PROPERTIES INCLUDE RETAIL BUSINESSES AND RESTAURANTS.

**IV. OFF-SITE AREAS**

FILL MATERIAL WILL BE OBTAINED FROM AREAS OF BORROW EXCAVATION LOCATED OFF THE SITE. UNSUITABLE MATERIAL WILL BE HAULED FROM THE SITE AND DISPOSED OF IN AN APPROVED MANNER. THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION AND SEDIMENT CONTROL PLAN TO THE EROSION AND SEDIMENT CONTROL REGULATOR PERTAINING TO OFF-SITE DISTURBED AREAS (IF ANY SUCH AREAS ARE REQUIRED) SUCH AS STOCKPILES, STAGING AREAS, AND SPOIL AREAS THAT ARE USED FOR THIS PROJECT.

**V. SOILS**

ACCORDING TO USDA SCS SOIL MAPPING, THE PROJECT SITE LIES ON SOIL TYPES

CJ2 - CULLEN LOAM, 15 TO 25 PERCENT SLOPES, ERODED MAP UNIT:  
DESCRIPTION CATEGORY: S01

CULLEN IS A MODERATELY STEEP TO STEEP, VERY DEEP, WELL DRAINED SOIL. TYPICALLY THE SURFACE LAYER IS LOAM ABOUT 5 INCHES THICK. THE SURFACE LAYER HAS A MODERATELY LOW CONTENT OF ORGANIC MATTER. THE SLOWEST PERMEABILITY IS MODERATE. IT HAS A MODERATE AVAILABLE WATER CAPACITY AND A MODERATE SHRINK SWELL POTENTIAL. THIS SOIL IS NOT FLOODED AND IS NOT PONDED. THE SEASONAL HIGH WATER TABLE IS AT A DEPTH OF MORE THAN 6 FEET. THE LAND CAPABILITY CLASSIFICATION IS 4E. THE VIRGINIA SOIL MANAGEMENT GROUP IS N. THIS SOIL IS NOT HYDRIC.

TO - TOCCOA FINE SANDY LOAM MAP UNIT:  
DESCRIPTION CATEGORY: S01

TOCCOA IS A NEARLY LEVEL TO GENTLY SLOPING, VERY DEEP, MODERATELY WELL DRAINED SOIL. TYPICALLY THE SURFACE LAYER IS FINE SANDY LOAM ABOUT 23 INCHES THICK. THE SURFACE LAYER HAS A MODERATELY LOW CONTENT OF ORGANIC MATTER. THE SLOWEST PERMEABILITY IS MODERATE. IT HAS A MODERATE AVAILABLE WATER CAPACITY AND A LOW SHRINK SWELL POTENTIAL. THIS SOIL IS FREQUENTLY FLOODED AND IS NOT PONDED. THE TOP OF THE SEASONAL HIGH WATER TABLE IS AT 45 INCHES. THE LAND CAPABILITY CLASSIFICATION IS 3W. THE VIRGINIA SOIL MANAGEMENT GROUP IS II. THIS SOIL IS NOT HYDRIC.

**VI. CRITICAL AREAS**

THERE ARE NO CRITICAL AREAS ADDRESSED ON THE SITE.

**VII. EROSION AND SEDIMENT CONTROL MEASURES**

ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED BY THE CONTRACTOR IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. SYMBOLS, DETAILS, AND DIMENSIONS USED ARE TAKEN FROM THE HANDBOOK, AS WELL AS THE LATEST EDITION OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S ROAD AND BRIDGE STANDARDS.

**A. STRUCTURAL PRACTICES**

- SILT FENCE (SF), SPEC. 3.05: SILT FENCE BARRIERS SHALL BE PROVIDED WHERE SHOWN AND AS NEEDED TO PREVENT SEDIMENT FROM LEAVING THE SITE.
- STORM DRAIN INLET PROTECTION (IP), SPEC. 3.07: STORM DRAIN INLET PROTECTION SHALL BE PROVIDED FOR INLETS AS SHOWN ON THE PLANS.
- CULVERT INLET PROTECTION (CIP), SPEC. 3.08: CULVERT INLET PROTECTION SHALL BE PROVIDED FOR THE CULVERTS AS SHOWN ON THE PLANS.
- OUTLET PROTECTION (OP), SPEC. 3.18: PROVIDE OUTLET PROTECTION FOR STORM WATER SYSTEM OUTLETS AS SHOWN ON THE PLANS.
- SURFACE ROUGHENING (SR), SPEC. 3.29: PRIOR TO SEEDING PROVIDE SURFACE ROUGHENING ON ALL SLOPES STEEPER THAN 3:1. FOR GRADES LESS THAN 3:1 SOIL SHALL BE ROUGHENED AND LOOSE TO A DEPTH OF 2 TO 4 INCHES PRIOR TO SEEDING.
- SOIL STABILIZATION BLANKETS AND MATTING (B/M), SPEC. 3.36: PROVIDE SOIL STABILIZATION BLANKETS AND MATTING ALONG THE STORM WATER CONVEYANCE CHANNELS AS SHOWN ON THE PLANS. IN AREAS WHERE SEEDING OR HYDROSEEDING OF SLOPES ARE UNSUCCESSFUL, PROVIDE EC-2 BLANKETS AND OVERSEED.
- DUST CONTROL (DC), SPEC. 3.39: PROVIDE DUST CONTROL IN AREAS SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST WHERE ON-SITE AND OFF-SITE DAMAGE IS LIKELY TO OCCUR IF PREVENTIVE MEASURES ARE NOT TAKEN.

**B. VEGETATIVE PRACTICES**

- TOPSOILING (TO), SPEC. 3.30: TOPSOIL WILL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. STOCKPILES ARE TO BE STABILIZED WITH TEMPORARY VEGETATION AND HAVE SILT FENCE INSTALLED ALONG THE LOWER PERIMETER TO PROTECT DOWNSTREAM AREAS.
- TEMPORARY SEEDING (TS), SPEC. 3.31: TEMPORARY SEEDING SHALL BE PROVIDED ON SITE TO PROVIDE STABILIZATION UNTIL SITE DEVELOPMENT OCCURS. APPLY SEED BASED ON TEMPORARY SEEDING SCHEDULE SHOWN ON THE PLANS.
- PERMANENT SEEDING (PS), SPEC. 3.32: PERMANENT SEEDING SHALL BE PROVIDED ON SITE TO PROVIDE STABILIZATION FOR ALL DISTURBED AREAS. APPLY SEED BASED ON TEMPORARY SEEDING SCHEDULE SHOWN ON THE PLANS.
- MULCHING (MU), SPEC. 3.35: ALL PERMANENT AND TEMPORARY SEEDING SHALL BE STRAW MULCHED IMMEDIATELY UPON COMPLETION OF SEED APPLICATION. STRAW ON STEEP SLOPES SHALL BE ANCHORED UNLESS SEEDING WAS PROVIDED BY MEANS OF A HYDROSEEDING, IN WHICH CASE, MULCHING IS NOT REQUIRED.
- TREE PRESERVATION AND PROTECTION (TP), SPEC. 3.38: TREES IDENTIFIED ON THE E&S PLAN SHEET SHALL BE PROTECTED DURING CONSTRUCTION.

**C. MINIMUM STANDARDS**

**MS-1. STABILIZATION OF DENUDED AREAS:**  
PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN 7 DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE, BUT WILL REMAIN DORMANT OR UNDISTURBED FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

**MS-2. STABILIZATION OF SOIL STOCKPILES:**  
DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES AND BORROW AREAS SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL STOCKPILES ON SITE AS WELL AS BORROW AREAS AND SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

**MS-3. PERMANENT VEGETATIVE COVER:**  
A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE E&S INSPECTOR, IS UNIFORM AND MATURE ENOUGH TO SURVIVE AND INHIBIT EROSION.

**MS-5. STABILIZATION OF EARTHEN STRUCTURES:**  
STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

**MS-7. CUT AND FILL SLOPES:**  
CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZING MEASURES UNTIL THE PROBLEM IS CORRECTED.

**MS-8. CONCENTRATED RUNOFF DOWN CUT OR FILL SLOPES:**  
CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.

**MS-9. WATER SEEPAGE FROM A SLOPE FACE:**  
WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

**MS-10. STORM SEWER INLET PROTECTION:**  
ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

**MS-16. UNDERGROUND UTILITIES:**  
UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS, IN ADDITION TO OTHER APPLICABLE CRITERIA:  
A. NO MORE THAN 500-LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.  
B. WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATIONS, EXCAVATED MATERIAL IS TO BE PLACED ON THE UPHILL SIDE OF TRENCHES, EXCEPT FOR ANY DIVERSION DITCHES.  
C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFFSITE PROPERTY.  
D. TRENCH BACKFILL MATERIAL SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION.  
E. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.  
F. ALL APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH AT ALL TIMES.

**MS-17. CONSTRUCTION ACCESS ROUTES:**  
WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL DEVELOPMENT LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.

**MS-18. TEMPORARY E&S CONTROL MEASURE REMOVAL:**  
ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAY AFTER FINAL SITE STABILIZATION OR AFTER TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL E&S AUTHORITY. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

**MS-19. ADEQUACY OF RECEIVING CHANNELS:**  
PROPERTIES AND WATERWAYS DOWNSTREAM FROM THE DEVELOPMENT SITE SHALL BE PROTECTED FROM SEDIMENT DEPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATES OF STORM WATER RUNOFF FOR THE STATED FREQUENCY STORM OF 24-HOUR DURATION.

TEMPORARY SEEDING SCHEDULE		
PLANTING SPECIES	SPECIES	RATE (LBS/ACRE)
SEPT 1 - FEB 15	50/50 MIX OF ANNUAL RYEGRASS (LOLIUM MULTI-FLOSUM) & CEREAL (WINTER) RYE (SECALE CERALE)	50 - 100
FEB 16 - APR 30	ANNUAL RYEGRASS (LOLIUM MULTI-FLOSUM)	60 - 100
MAY 1 - AUG 31	GERMAN MILLET (SETARIA ITALICA)	50

PERMANENT SEEDING SCHEDULE	
SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA	
	TOTAL POUNDS PER ACRE
HIGH MAINTENANCE LAWN CARE	200-250 LBS
TURF - TYPE TALL FESCUE	100%
GENERAL SLOPE (3:1 OR LESS)	
KENTUCKY 31 FESCUE	128 LBS
INDIAN GRASS	2 LBS
SEASONAL NURSE CROP*	20 LBS
TOTAL	150 LBS
LOW MAINTENANCE SLOPE (STEEPER THAN 3:1)	
KENTUCKY 31 FESCUE	108 LBS
SEASONAL NURSE CROP*	20 LBS
INDIAN GRASS	22 LBS
TOTAL	150 LBS

**A. MAINTENANCE:** ALL EROSION AND SEDIMENT CONTROL STRUCTURES AND SYSTEMS SHALL BE MAINTAINED, INSPECTED, AND REPAIRED AS NEEDED TO INSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED AT THE END OF EACH DAY AND AFTER EVERY RAINFALL EVENT.

- DAMAGE TO EROSION CONTROL MEASURES CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY SHALL BE REPAIRED BEFORE THE END OF EACH WORKING DAY.
- MAINTAIN ALL SEEDED AREAS UNTIL A UNIFORM STAND IS ACCEPTED.
- (SPEC. 3.01) SAFETY FENCE SHALL BE CHECKED REGULARLY FOR DAMAGE. CARE SHALL BE TAKEN TO SECURE ALL ACCESS POINTS AT THE END OF EACH WORKING DAY.
- (SPEC. 3.02) PROVIDE FOR EQUIPMENT WASHING AS NEEDED TO PREVENT THE TRANSPORT OF SOIL ONTO EXISTING ASPHALT ROADWAYS. ANY SEDIMENT ON THE PAVEMENT SHALL BE REMOVED IMMEDIATELY.
- (SPEC. 3.05) SILT FENCE BARRIERS WILL BE CHECKED DAILY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL REACHES HALF WAY TO THE TOP OF THE BARRIER.
- (SPEC. 3.07) SEDIMENT SHALL BE REMOVED FROM AROUND THE INLET PROTECTION TRAP STRUCTURE AND RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. THE TRAP STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
- (SPEC. 3.29) ROUGHENED AREAS SHALL BE SEED AND MULCHED AS SOON AS POSSIBLE TO OBTAIN OPTIMUM SEED GERMINATION AND SEEDLING GROWTH.
- (SPEC. 3.30) TOPSOIL SHALL NOT BE PLACED WHILE IN A FROZEN OR MUDDY CONDITION, WHEN TOPSOIL OR SUBGRADE IS EXCESSIVELY WET, OR IN A CONDITION THAT MAY OTHERWISE BE DETRIMENTAL TO PROPER GRADING OR PROPOSED SODDING OR SEEDING. THE TOPSOIL SHALL BE UNIFORMLY DISTRIBUTED TO A MINIMUM COMPACTED DEPTH OF 2-INCHES ON 3:1 OR STEEPER SLOPES AND 4-INCHES ON FLATTER SLOPES.
- (SPEC. 3.31 & 3.32) AREAS WHICH FAIL TO ESTABLISH VEGETATIVE COVER ADEQUATE TO PREVENT RILL EROSION WILL BE RESEDED AS SOON AS SUCH AREAS ARE IDENTIFIED.
- (SPEC. 3.35) WHERE EROSION OR WASHOUT IS OBSERVED IN MULCHED AREAS, ADDITIONAL MULCH SHOULD BE APPLIED.
- (SPEC. 3.36) ALL SOIL STABILIZATION BLANKETS AND MATTING SHALL BE INSPECTED AFTER RAINSTORMS TO CHECK FOR EROSION AND UNDERMINING. IF WASHOUT OR BREAKAGE OCCURS, REINSTALL THE MATERIAL AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH.
- (SPEC. 3.38) IF THE SOIL HAS BECOME COMPACTED OVER THE ROOT ZONE OF ANY TREE, THE GROUND SHALL BE AERATED BY PUNCHING HOLES WITH AN IRON BAR. ANY DAMAGE TO THE CROWN, TRUNK, OR ROOT SYSTEM OF ANY TREE RETAINED ON THE SITE SHALL BE REPAIRED IMMEDIATELY. BROADLEAF TREES THAT HAVE BEEN STRESSED OR DAMAGED SHALL RECEIVE A HEAVY APPLICATION OF FERTILIZER TO AID THEIR RECOVERY.
- WATER SHALL BE USED ON DENUDED AREAS THAT CONSTRUCTION VEHICLES TRAVERSE TO MINIMIZE DUST.

**VIII. STORMWATER MANAGEMENT**

MANAGEMENT OF RUNOFF DURING CONSTRUCTION WILL COMPLY WITH THE EXISTING VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION (DCR) EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONSTRUCTION PLANS INDICATE ALL ACTIVITIES AND STRATEGIES NECESSARY TO MINIMIZE EROSION AND SEDIMENTATION DURING CONSTRUCTION.

- HYDROLOGICAL ANALYSIS:  
STORMWATER RUNOFF RATES ARE COMPUTED FOR THE 2 AND 10-YEAR STORM EVENTS USING THE RATIONAL METHOD. THESE RUNOFF RATES ARE USED TO DESIGN STORMWATER CONVEYANCE CHANNELS AND PIPES.
- DRAINAGE AREA CHARACTERISTICS  
RUNOFF COEFFICIENTS (C)  
DRAINAGE SUBAREAS FOR THIS PROJECT CONSIST OF A MIXTURE OF WOODED AND PAVED AREAS. A C-FACTOR OF 0.3 IS USED FOR WOODED AREAS, AND A C-FACTOR OF 0.9 IS USED FOR PAVED AREAS. WEIGHTED C-FACTORS AND INCREMENTAL RUNOFF RATES ARE COMPUTED FOR EACH DRAINAGE SUBAREA, AND ACCUMULATED ALONG THE DITCH SEGMENT TO DETERMINE REQUIRED DITCH LINING MATERIALS AND MINIMUM CHANNEL DEPTHS.
- TIME OF CONCENTRATION (Tc)  
TIME OF CONCENTRATION IS DETERMINED USING SCS TR-55 METHODOLOGY. A MINIMUM Tc OF 5-MINUTES IS USED FOR ALL SMALL SUBAREAS. THE RAINFALL INTENSITY FOR RUNOFF CALCULATIONS USING THE RATIONAL METHOD IS DETERMINED USING THE I-D-F CURVE FOR LYNCHBURG, VIRGINIA. AS PER THE VDOT METHOD, RAINFALL INTENSITY FOR DITCH SEGMENTS AFTER A MINIMUM Tc OF 5-MINUTES IS ACHIEVED, BEYOND THE INITIAL DITCH SEGMENT, IS THE PREVIOUS DITCH SEGMENT INTENSITY MINUS 0.1-INCHES PER HOUR, UNLESS THE CONTRIBUTING DRAINAGE SUBAREA HAS A GREATER Tc.
- HYDRAULIC ANALYSIS  
ALL PIPES AND CHANNELS ARE DESIGNED TO ACCOMMODATE A 2-YEAR STORM FOR EROSION RESISTANCE, AND A 10-YEAR STORM FOR CAPACITY.
- WATER QUALITY ANALYSIS  
MANAGEMENT OF RUNOFF DURING CONSTRUCTION WILL COMPLY WITH THE EXISTING VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION (DCR) EROSION AND SEDIMENT CONTROL REGULATIONS. THE CONSTRUCTION PLANS INDICATE ALL ACTIVITIES AND STRATEGIES NECESSARY TO MINIMIZE EROSION AND SEDIMENTATION DURING CONSTRUCTION.

**IX. SOIL STOCKPILES AND BORROW AREAS**

FILL MATERIAL SHALL BE OBTAINED FROM AREAS OF EXCAVATION OFF SITE. LOCATIONS OF SOIL STOCKPILES SHALL BE DETERMINED BY THE CONTRACTOR WITH THE APPROVAL OF THE OWNER/DEVELOPER. ALL STOCKPILES SHALL BE LOCATED ON SITE AND PROTECTED WITH SURROUNDING SILT FENCING AND STABILIZED WITH A VEGETATIVE COVER. THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION AND SEDIMENT CONTROL PLAN FOR ALL SOILS INTENTIONALLY TRANSPORTED OFFSITE IF THE TRANSPORTED MATERIAL DISTURBS MORE THAN 10,000 SQUARE FEET IN AREA.

**X. SEQUENCE OF CONSTRUCTION**

- INSTALL EROSION AND SEDIMENT CONTROL PRACTICES AS IS PRACTICABLE.
- CLEAR THE PLANNED DISTURBED AREA AND REMOVE DEBRIS TO A SUITABLE LOCATION.
- INSTALL UTILITIES, INLET AND OUTLET PROTECTION AS IS PRACTICABLE.
- BRING GRADES TO DESIRED ELEVATION.
- STABILIZE ALL DISTURBED AREAS WITH PERMANENT VEGETATION.
- APPLY SURFACE TREATMENT AS DESIGNED.
- EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL RELEASED BY THE GOVERNING AGENCY.
- REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
- STABILIZE AFFECTED AREAS.

**XI. CONTACT PARTY FOR E&S IMPLEMENTATION**

PROPERTY OWNER

\*USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:

ANNUAL RYE: FEBRUARY 16TH THROUGH APRIL  
FOXTAIL MILLET: MAY 1ST THROUGH AUGUST 15TH  
ANNUAL RYE: AUGUST 16TH THROUGH OCTOBER  
WINTER RYE: NOVEMBER THROUGH FEBRUARY 15TH

**LIME & FERTILIZER SPECIFICATIONS**

A SOILS TEST IS REQUIRED PRIOR TO FINAL SITE STABILIZATION, TO DETERMINE LIME AND FERTILIZER APPLICATION RATES FOR THE ESTABLISHMENT OF GRASS ON SITE. CONTACT VIRGINIA COOPERATIVE EXTENSION OR A GEOTECHNICAL FIRM WITH SOIL TESTING FACILITIES TO OBTAIN A SOILS REPORT FOR NUTRIENT APPLICATION.

**INCORPORATION:**

LIME AND FERTILIZER SHALL BE INCORPORATED INTO THE TOP 4 INCHES OF TOPSOIL BY DISCING OR OTHER MEANS WHENEVER POSSIBLE. FOR EROSION CONTROL, WHEN APPLYING LIME AND FERTILIZER WITH A HYDROSEEDER, APPLY TO A ROUGH, LOOSE SURFACE.

**MULCHING**

MULCH WITH STRAW AT A RATE OF 2 TONS/ACRE OR EQUIVALENT.

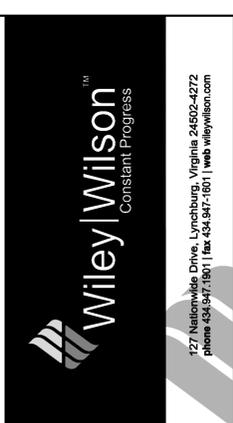
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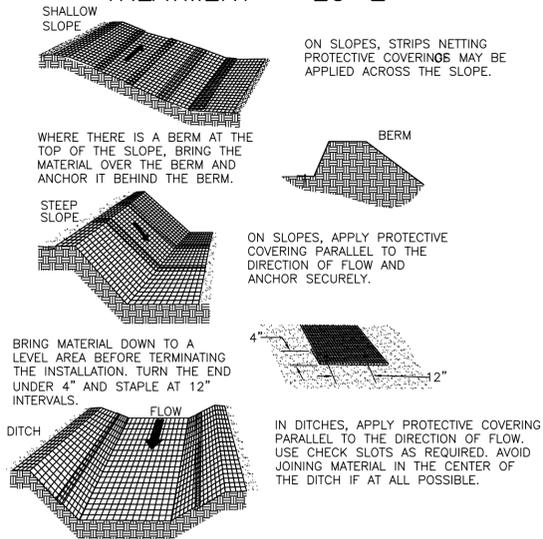
WARDS ROAD  
PEDESTRIAN AND BICYCLE TRAIL  
PHASE IIB  
Department of Community Development  
Lynchburg, Virginia

Revision Description	Date

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EROSION & SEDIMENT CONTROL NARRATIVE  
Sht No: C-303 Rev No: 0

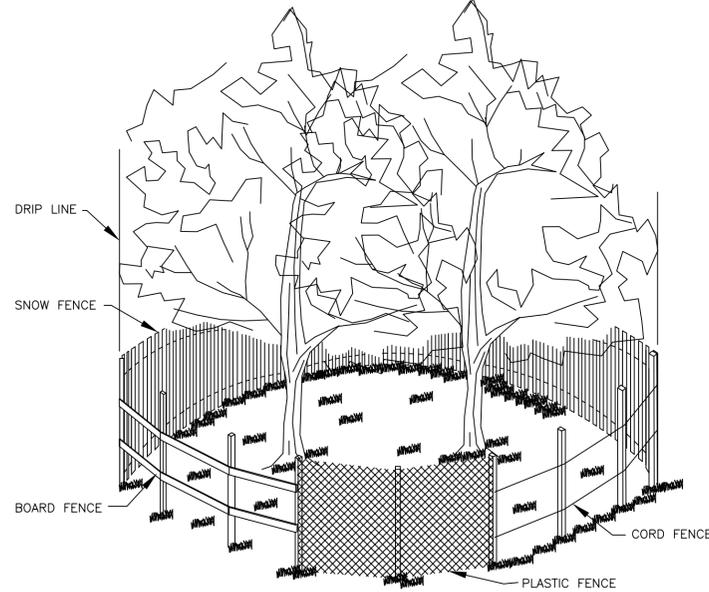


**TYPICAL ORIENTATION OF TREATMENT - EC-2**

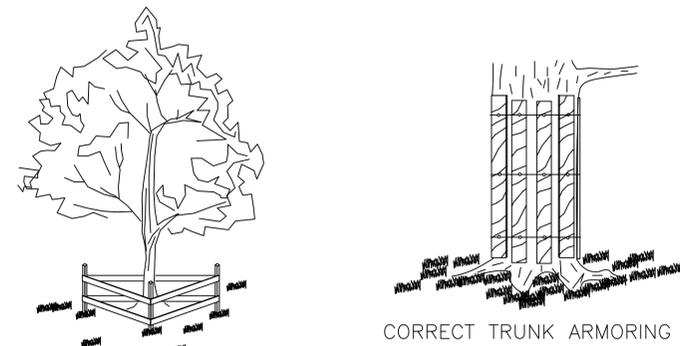


**SOIL STABILIZATION BLANKETS & MATTING**

**FENCING AND ARMORING**

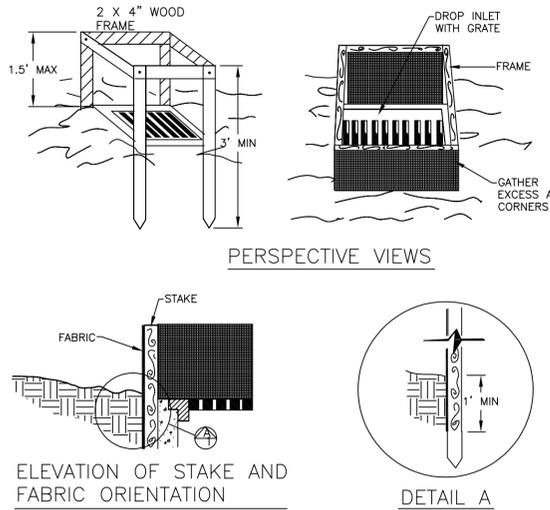


**CORRECT METHODS OF TREE FENCING**



**TREE PRESERVATION AND PROTECTION**

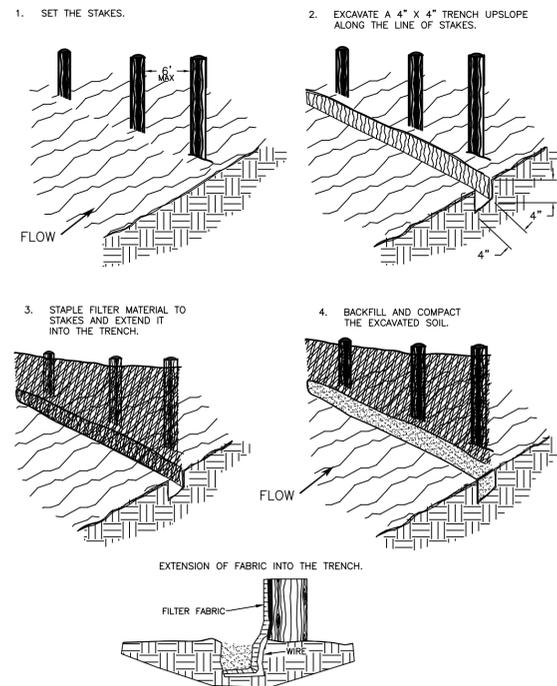
**SILT FENCE DROP INLET PROTECTION**



THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

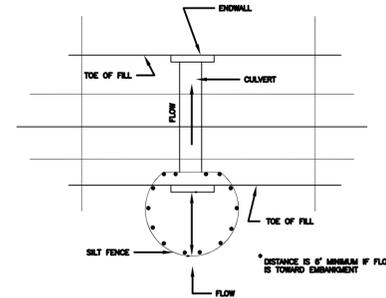
**INLET PROTECTION**

**CONSTRUCTION OF A SILT FENCE (WITHOUT WIRE SUPPORT)**

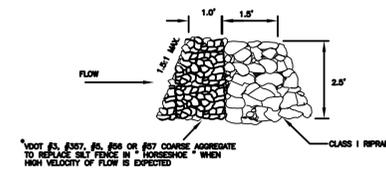


**SILT FENCE**

**SILT FENCE CULVERT INLET PROTECTION**

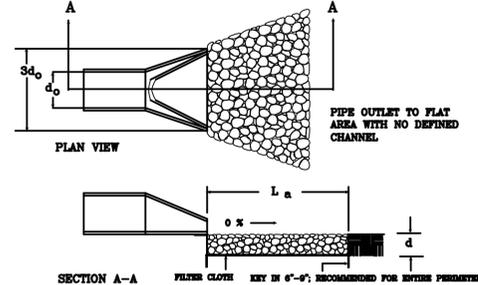


**\*OPTIONAL STONE COMBINATION**



**CULVERT INLET PROTECTION**

**PIPE OUTLET CONDITIONS**



NOTES: 1. APRON LINING MAY BE REPRAP, GROUTED REPRAP, GABION BASKET, OR CONCRETE.  
2. L<sub>a</sub> IS THE LENGTH OF THE REPRAP APRON AS CALCULATED USING PLATES 3.10-3 AND 3.10-4.  
3. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES.

**OUTLET PROTECTION**

**Wiley Wilson**  
Constant Progress  
127 Nationwide Drive, Lynchburg, Virginia 24502-4272  
phone 434.947.1901 | fax 434.947.1801 | web wileywilson.com

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