

City of Lynchburg
Procurement Division
900 Church Street
Lynchburg, Virginia 24504
Telephone No.: (434) 455-3970
Fax No.: (434) 845-0711

Addendum for Bid

Riverside Park Parking Lot Renovations

16-012

Date: July 23, 2015

From: Stephanie Suter, CPPO, CPPB

RE: Addendum No. 1

This Addendum supplements and amends the original Plans and Specifications and shall be taken into account in preparing bids and shall become a part of the Contract Documents. The Bidder shall indicate receipt of this Addendum and any previously issued Addenda on the Bid Form.

1. The following are attached and included in Addendum No. 1:

- Addendum from Design A/E dated July 22, 2015 which extends the construction period and includes a list of drawing revisions and responses to questions submitted for clarification.
- Riverside Park Infiltration Testing Report dated May 27, 2015.
- Revised Drawing Set, 10 sheets.

READ TERMS AND CONDITIONS AND SIGN

In compliance with the above BID, and subject to all the conditions hereof, the undersigned offers and agrees to comply with any or all of the terms and conditions contained herein, or as mutually agreed upon by subsequent negotiations. This form shall become part of the final file.

Company Name: _____ *Address:* _____ *Date:* _____

Authorized Signature: _____ *Title:* _____

Print Name: _____ *Telephone No.:* _____ *Fax No.:* _____

Bidding Addendum

Addendum No. 1 dated July 22, 2015 for Riverside Park Parking Lot Redesign

To: All Bidding Document Holders of Record

From: Lardner/Klein Landscape Architects, P.C.
Alexandria, Virginia

This Addendum contains 25 pages and listed attachments, and forms a part of the bidding documents to modify the Project Manual and Drawings dated June 16, 2015. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject bidder to disqualification.

SPECIFICATIONS

1. Section: CONSTRUCTION AGREEMENT

- Item 2, 3rd line: replace "October 31, 2015" with "November 30, 2015"
-

DRAWINGS

1. Sheet 1: Under "General Project Description," last paragraph; bid alternate B) revised to read, "Post and chain fencing along the east side of the parking lot, one removable bollard, and demolition of existing wood bollards on the east side of the parking lot."
2. Sheet 2: Note revised to read, "Signs to be removed (4)"
3. Sheet 2: Note revised to read, "Gate to be operated during project per Parks and Rec direction. Will be demolished following completion of project."
4. Sheet 2: Under "Demolition" legend/key, label revised to read "Demo by others following project completion"
5. Sheet 2: City control monument shown on drawing
6. Sheet 3: "Note:" revised to read, "Contractor to maintain and/or augment safety fencing as needed to keep pedestrians out of work area."
7. Sheet 4: "Bollards (10)" callout removed
8. Sheet 4: Callout detail 7 on sheet 6 included with callout "permeable pavers"
9. Sheet 4: Site Notes, 1, revised to read, "6-inch concrete curb to be installed..."
10. Sheet 4: Site Notes, 2, revised to include "See detail 5 on page 6."
11. Sheet 4: Site Notes, 4, spelling corrected "aisle"

12. Sheet 6: Page number corrected in all numbered details
13. Sheet 6: Note provided to match existing pavers.
14. Sheet 8: Sheet title revised to read "Landscape and Site Furnishing Details"
15. Sheet 10: Erosion & Sediment Control Narrative, II. Existing Site Conditions, sentence revised to read, "The site consists of a mix of asphalt, gravel, and grassy open space."
16. Sheet 10: Erosion & Sediment Control Narrative, VII. Erosion and Sediment Control Measures, A., 2, deleted
17. Sheet 10: Erosion & Sediment Control Narrative, VII. Erosion and Sediment Control Measures, D., 4, deleted

ANSWERS TO REQUESTS FOR INFORMATION

Number	Question	Date	Answer
1	What condition will we find the lot upon beginning construction? The plans state that pavement and base material in the lot will be removed by others. Is that correct? (Sheet 2)	7/17/15	The City will remove asphalt and base material in advance.
2	Has the relocation site of the 3" cherry tree been determined? (Sheet 2)	7/17/15	The location of the cherry tree has not been determined.
3	All landscaping (plants/installation/mulch) is by others, correct?	7/17/15	Yes, landscaping (plants/installation/mulch) is by others.
4	Are the permeable pavers and pavement structure the same for both parking and pedestrian use?	7/17/15	See "PERMEABLE PAVER NOTES" and "PERMEABLE PAVER SECTION" (detail 6), on Sheet 6.
5	Who is the PaveDrain paver manufacturer?	7/22/15	PaveDrain is the manufacturer.
6	What is the specification for a PaveDrain paver to determine an equivalent? Are there other City-approved equivalents?	7/22/15	See revisions on Sheet 6 for other approved equivalents.

ATTACHMENTSDrawings

Revised plans, Sheets 1-10

Additional Information

8215 Infiltration Testing Report

End of Addendum No. 1



ENGINEERING CONSULTING SERVICES

GEOTECHNICAL • CONSTRUCTION MATERIALS • ENVIRONMENTAL • FACILITIES

REPORT OF SUBSURFACE EXPLORATION AND IN-SITU INFILTRATION TESTING

RIVERSIDE PARK – INFILTRATION TESTING
RIVERMONT AVENUE, LYNCHBURG, VIRGINIA

ECS REPORT NO. 12:8215





May 27, 2015

Ms. Kelly D. Cole, P.E.
WileyWilson
127 Nationwide Drive
Lynchburg, Virginia 24502

ECS Project No. 12:8215

Reference: Report of Subsurface Exploration and In-Situ Infiltration Testing
Riverside Park - Infiltration Testing
Rivermont Avenue, Lynchburg, Virginia

Dear Ms. Cole:

On May 21 and 22, 2015, ECS Mid-Atlantic, LLC (ECS) representatives visited the above referenced project site. The purpose of these visits was to perform hand auger borings at two infiltration testing locations chosen by ECS within the desired areas described by you, visually classify the soils, set-up the infiltration testing on the first day, and to perform field infiltration testing of soils within the areas of the proposed pervious infiltration system on the second day. Our services have been provided in accordance with ECS Proposal No. 11836-P, dated April 2, 2015. The in-situ infiltration testing was conducted in accordance with Appendix 8-A of the Virginia DCR Stormwater Design Specification, No. 8, "Infiltration Practices", Version 1.8; March 1, 2011 (referred to as **Appendix 8-A** hereafter).

Project Information

Project information has been provided by you, which included several telephone conversations and emails.

Based on the information provided, we understand that the project will consist of the construction of pervious pavement at parking spaces within an existing pavement area at Riverside Park in Lynchburg, Virginia. We understand the pavement is currently in a deteriorated condition. However, we were authorized to perform the handauger borings in the grass beside the existing pavement.

Based on the information provided, we understand that the bottom of the infiltration system will be on the order of 1.5 to 2 feet below existing grades; however, detailed infiltration system design plans are not available at this time. The testing area is currently covered with existing pavement surrounded by grass and topsoil.

Infiltration Test Procedures

Based on the presumed bottom elevation of the proposed pervious infiltration system, we utilized a handauger to excavate through the soils beside the existing parking lot to the target depth of 4 feet below existing grades. The handauger borings were performed in order to characterize the subsurface conditions up to about 2 feet below the anticipated bottom elevation of the proposed infiltration system (based on information provided by you). Dynamic Cone Penetration (DCP) testing (ASTM STP 399) was not performed in the borings.

At the testing locations for HA-1 and HA-2, infiltration testing set-up was accomplished by installing 2-inch-diameter, PVC casings 60 inches in length, to a depth of 18 to 24 inches below the anticipated bottom of the proposed pervious infiltration system (dependent upon the actual installation depth). As stated above, to achieve the required depth at each location, the soil was excavated to 4 feet below existing grades with each handauger boring. Prior to the initiation of the test at each location, loose materials were removed from the bottom of the handauger borings, and an approximately 2- to 3-inch-thick layer of clean, coarse sand was poured in the bottom of the borings. The sand serves as protection for the bottom of the hole against the effect of water scouring and sedimentation. The casings were then securely placed in the bore holes, socketed through the sand layer into the underlying soils, filled with 24 inches of clean water, and allowed to pre-soak for 24 hours.

After the 24-hour pre-soak had been completed, ECS personnel returned to the site to observe whether any of the casings had retained water from the pre-soaking. It is noted that Boring HA-1 had retained about 3.6 inches of water and Boring HA-2 had retained about 6 inches of water. The casings were then refilled with clean water to the approximate original 24 inch level and the 1-hour test was repeated three more times at 1-hour intervals, resulting in a total of four, 1-hour tests at each location. A final field infiltration rate was calculated based on the average rate of change of the four observations at each location (in inches per hour). Detailed results of the infiltration testing are included in the Appendix of this report.

Infiltration Testing Results

The observed on-site soils encountered in handauger borings HA-1 and HA-2 were visually classified in the field on the basis of texture and plasticity, in accordance with the Unified Soil Classification System (USCS) (ASTM D 2487), by an engineering field technician. Both handauger Borings HA-1 and HA-2 generally encountered 3 inches of grass and topsoil; an approximate 4-inch-thick layer of gravel was encountered below the topsoil in HA-2.

Below the surficial materials, both handauger borings generally encountered moist, orange- to red-brown, SILT WITH SAND (ML), containing slight mica, in the upper 2 to 2.5 feet. Below these soils, moist, red-brown, ELASTIC SILT WITH SAND (MH), containing mica, was encountered until termination at 4 feet below existing grades. Observable groundwater was not encountered.

Infiltration testing provided the following results:

HANDAUGER BORING NO.	LOCATION	AVERAGE RATE OF INFILTRATION (inches per hour)
HA-1	Northwestern Area	1.7
HA-2	East-Central Area	1.3

The test results indicate that the minimum field infiltration rate of 0.52 inches per hour, which is required by Appendix 8-A, was satisfied at both testing locations.

Recommendations

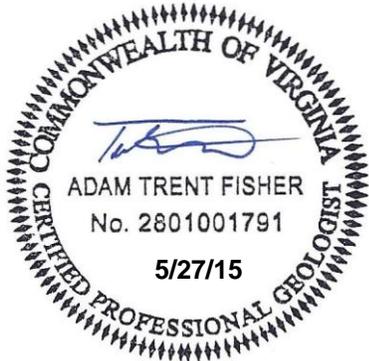
Based on our field testing results, which yielded an **overall average infiltration rate on the order of 1.5 inches per hour** in the soils 4 feet below existing grades at the testing locations, the minimum criteria of 0.52 inches per hour infiltration rate were satisfied at both testing locations. Based on the soils encountered at the above locations, it is anticipated that similar silty soils exist within the target testing depths in unexplored areas, likely possess a similar average infiltration rate. It is common for porous materials within an infiltration system to become clogged to some degree with fines over a period of time, which will negatively impact the efficiency of the system in allowing water to infiltrate into the soils below. Therefore, **we recommend utilizing one-half of the measured average infiltration rate reported above (or approximately 0.75 inches per hour), for design purposes for the anticipated infiltration system.** Detailed Infiltration Testing results are attached.

Appendix 8-A dictates that a minimum 2-foot depth to groundwater and bedrock must be maintained or identified below the anticipated bottom of the proposed infiltration system. Based on the handauger borings performed, **neither** perched/static groundwater conditions **nor** HWR/hard rock were encountered at or above the required 2-foot zone below the proposed bottom at our test locations in the subject handauger borings; therefore, these requirements will likely be satisfied in the infiltration testing areas, and the currently proposed pervious infiltration system design may be suitable.

We have appreciated the opportunity to be of service to you. If we can be of further assistance, or should you have questions concerning our test results, please contact our office.

Respectfully,

ECS MID-ATLANTIC, LLC



A. Trent Fisher, P.G.
Senior Engineering Geologist
Project Manager



Brian S. Wyatt, P.E.
Principal Engineer
Roanoke Branch Manager / V.P.

APPENDIX

Aerial Testing Location Diagram (Figure 1)

CAD Testing Location Diagram (Figure 2)

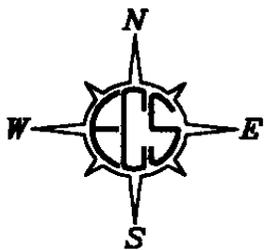
Unified Soil Classification System (USCS)

Handauger Boring Logs HA-1 and HA-2

Infiltration Test Results



LEGEND



 - Approximate Handauger Boring and Testing Locations

SCALE (IN FEET)



SOURCE:

GOOGLE EARTH

DATED:

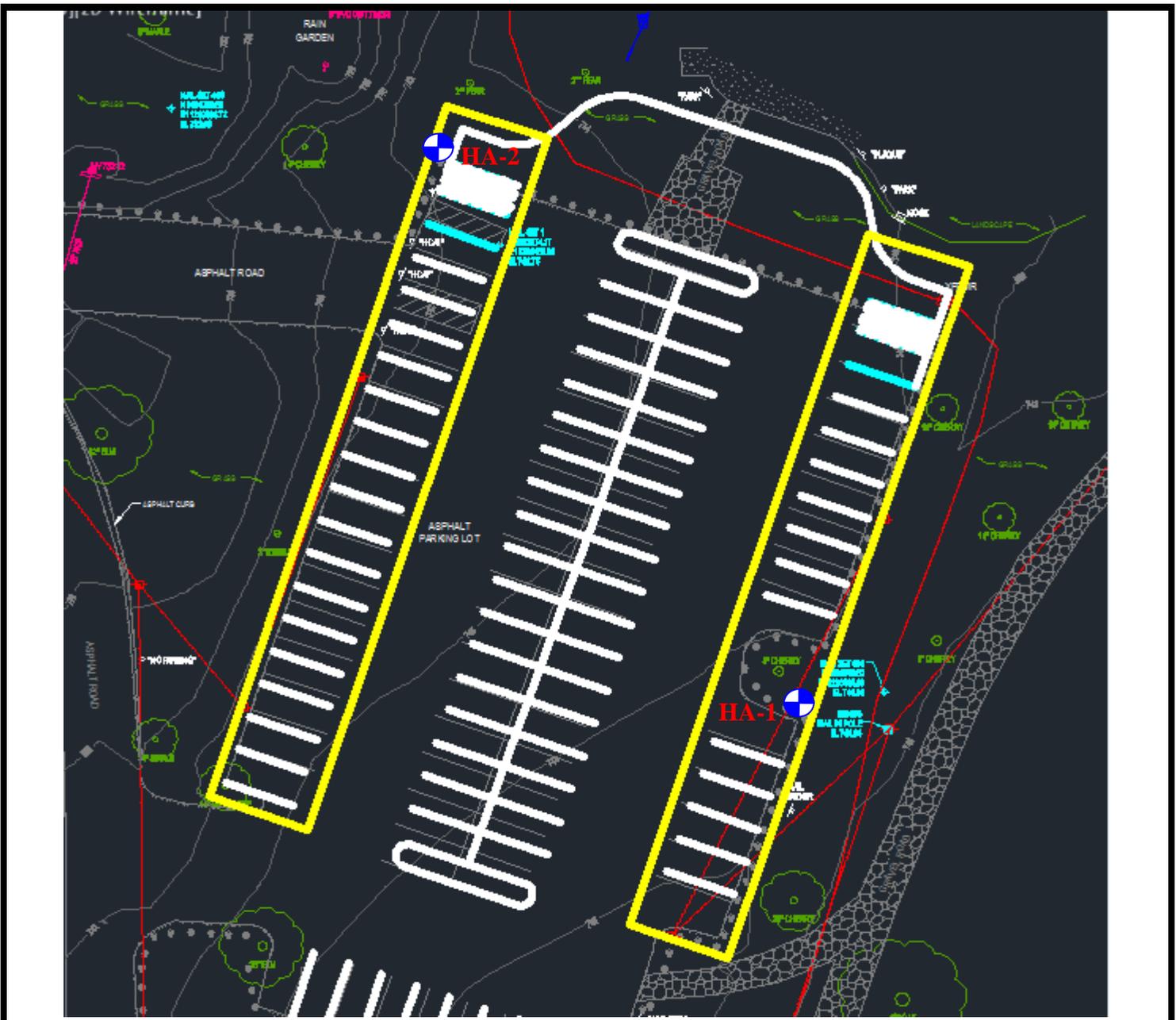
2015



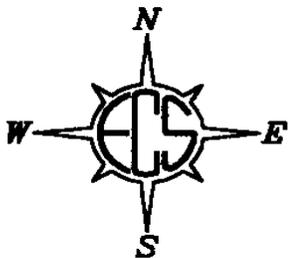
FIGURE 1

AERIAL TESTING LOCATION DIAGRAM
RIVERSIDE PARK – INFILTRATION TESTING
RIVERMONT AVENUE
LYNCHBURG, VIRGINIA

ECS PROJECT NO. 12:8215



LEGEND



- Approximate Handauger Boring and Testing Locations

SCALE:

AS SHOWN

SOURCE:

WILEYIWILSON

DATED:

UNKNOWN

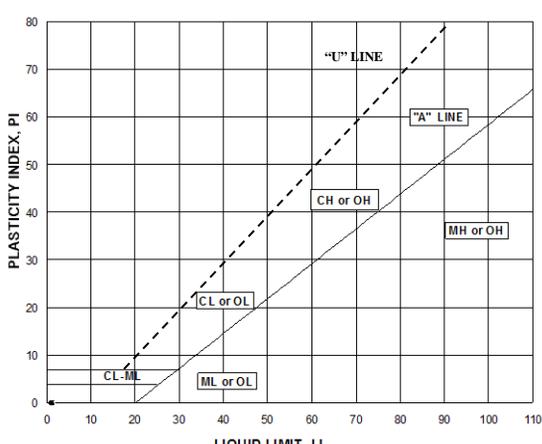


FIGURE 2

CAD TESTING LOCATION DIAGRAM
RIVERSIDE PARK – INFILTRATION TESTING
RIVERMONT AVENUE
LYNCHBURG, VIRGINIA

ECS PROJECT NO. 12:8215

Unified Soil Classification System (ASTM Designation D-2487)

Major Division	Group Symbol	Typical Names	Classification Criteria		
Coarse-grained soils More than 50% retained on No. 200 sieve	Gravels More than 50% of coarse fraction retained on No. 4 sieve Sands More than 50% of coarse fraction passes No. 4 sieve	GW Well-graded gravels and gravel-sand mixtures, little or no fines	$C_u = D_{60}/D_{10}$ Greater than 4 $C_z = (D_{30})^2/(D_{10} \times D_{60})$ Between 1 and 3		
		GP Poorly graded gravels and gravel-sand mixtures, little or no fines	Not meeting both criteria for GW		
		GM Silty gravels, gravel-sand-silt mixtures	Atterberg limits plot below "A" line or plasticity index less than 4		
		GC Clayey gravels, gravel-sand-clay mixtures	Atterberg limits plot above "A" line and plasticity index greater than 7		
		SW Well-graded sands and gravelly sands, little or no fines	$C_u = D_{60}/D_{10}$ Greater than 6 $C_z = (D_{30})^2/(D_{10} \times D_{60})$ Between 1 and 3		
		SP Poorly graded sands and gravelly sands, little or no fines	Not meeting both criteria for SW		
		SM Silty sands, sand-silt mixtures	Atterberg limits plot below "A" line or plasticity index less than 4		
		SC Clayey sands, sand-clay mixtures	Atterberg limits plot above "A" line and plasticity index greater than 7		
		Fine-grained soils 50% or more passing No. 200 sieve	Silts and Clays Liquid limit 50% or less Silts and Clays Liquid limit greater than 50%	ML Inorganic silts, very fine sands, rock flour, silty or clayey fine sands	Note: U-line represents approximate upper limit of LL and PI combinations for natural soils (empirically determined). ASTM-D2487. 
				CL Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	
OL Organic silts and organic silty clays of low plasticity					
MH Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts					
CH Inorganic clays of high plasticity, fat clays					
OH Organic clays of medium to high plasticity					
Pt Highly organic soils	Peat, muck and other highly organic soils			Fibrous organic matter; will char, burn, or glow	



UNIFIED SOIL CLASSIFICATION SYSTEM



PROJECT NAME: Riverside Park - Infiltration Testing		HAND AUGER # HA-1
CLIENT: Wiley Wilson	JOB #: 12:8215	SURFACE ELEVATION 0' [Assumed]

DEPTH (FT.)	ELEV. (FT.)	LOCATION: Rivermont Avenue, Lynchburg, Virginia	ARCH./ENG: Wiley Wilson	EXCAV. EFFORT	DCP	QP (TSF)	SAMPLE NO.	MOIST. CONT. (%)
DESCRIPTION OF MATERIAL								
0	0	Topsoil Depth [3"] (ML) SILT WITH SAND, Contains Slight Mica, Light Brown to Orange to Red, Moist		E				
2.5	-2.5	(MH) ELASTIC SILT WITH SAND, Contains Mica, Red-Brown, Moist						
5	-5	HAND AUGER TERMINATED @ 4.0'						
7.5	-7.5							
10	-10							
12.5	-12.5							
15	-15							
17.5	-17.5							

REMARKS:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT		
ECS REP.: S. Wright	DATE: 05/21/15	UNITS: Feet



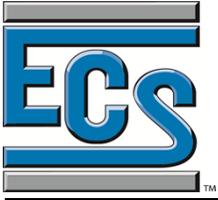
PROJECT NAME: Riverside Park - Infiltration Testing		HAND AUGER # HA-2
CLIENT: Wiley Wilson	JOB #: 12:8215	SURFACE ELEVATION 0' [Assumed]

DEPTH (FT.)	ELEV. (FT.)	LOCATION: Rivermont Avenue, Lynchburg, Virginia	ARCH./ENG: Wiley Wilson	EXCAV. EFFORT	DCP	QP (TSF)	SAMPLE NO.	MOIST. CONT. (%)
DESCRIPTION OF MATERIAL								
0	0	Topsoil Depth [3"]		E				
		Gravel Depth [4"]						
		(ML) SILT WITH SAND, Contains Slight Mica, Red-Orange and Brown, Moist						
2.5	-2.5	(MH) ELASTIC SILT WITH SAND, Contains Mica, Red-Brown, Moist						
5	-5	HAND AUGER TERMINATED @ 4.0'						
7.5	-7.5							
10	-10							
12.5	-12.5							
15	-15							
17.5	-17.5							

REMARKS:

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT		
ECS REP.: S. Wright	DATE: 05/21/15	UNITS: Feet



ECS Mid-Atlantic, LLC
7670 Enon Drive, Suite 101
Roanoke, Virginia 24019
Phone: (540) 362-2000
Fax: (540) 362-1202
www.ecslimited.com

INFILTRATION TESTING RESULTS

PROJECT NAME: Riverside Park Infiltration **PROJECT NO.** 8215
DATE OF TESTING 5/22/2015 **OBSERVED BY:** Andy Wright
24 HOUR PRE-SOAK COMPLETED? Yes

		START TIME	TEST #1	TEST #2	TEST #3	TEST #4
TEST LOCATION #1 - HA-1						
Time of Test		10:55	11:55	12:55	1:55	2:55
Measured Distance (inches)			1.8	1.2	1.8	1.8
Average Rate of from all Four Tests (inches/hour)						1.7

TEST LOCATION #2 - HA-2						
Time of Test		11:02	12:02	1:02	2:02	3:02
Measured Distance (inches)			0.9	1.1	1.5	1.5
Average Rate of from all Four Tests (inches/hour)						1.3

Average Rate from all Tests
(inches/hour)

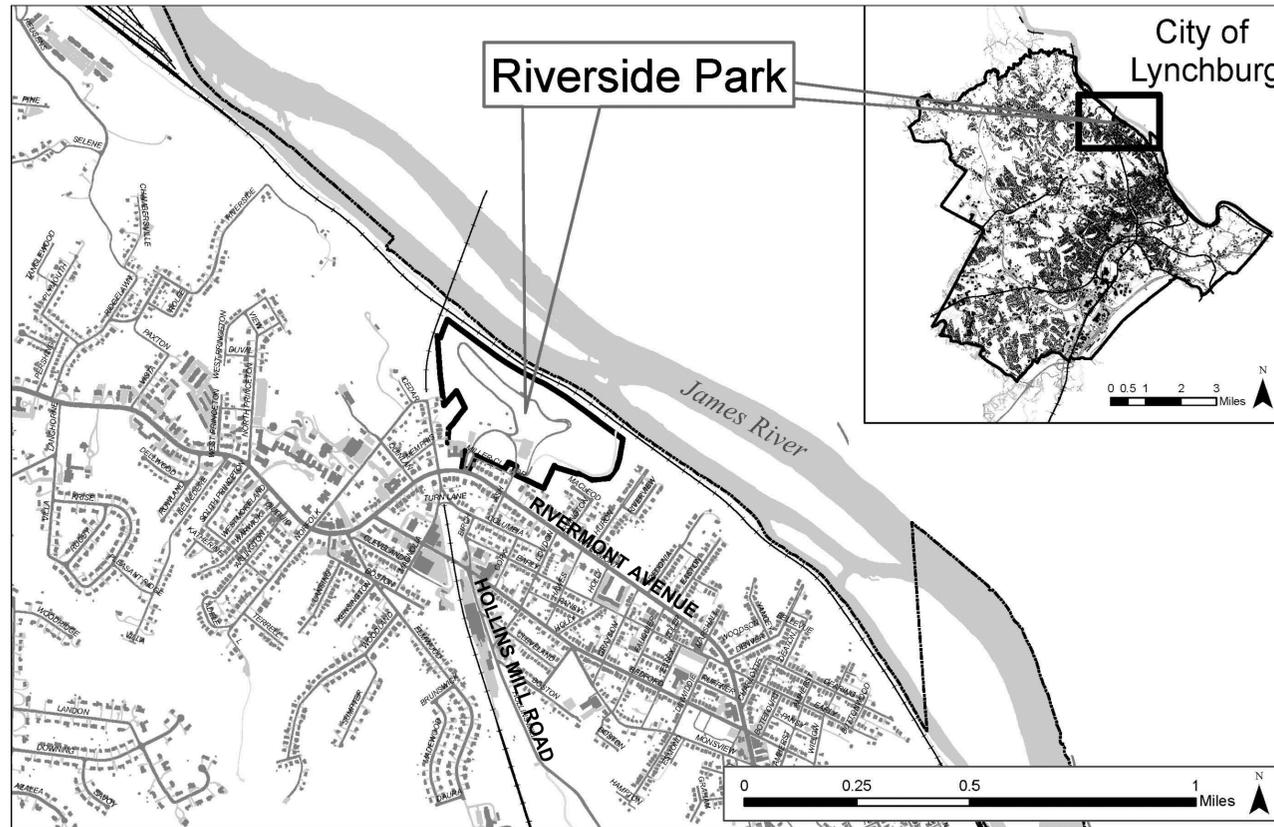
1.5

RIVERSIDE PARK RENOVATION Parking Lot Redesign City of Lynchburg, VA

INDEX OF SHEETS

GENERAL NOTES

1. THE APPROVING AUTHORITY (CITY OF LYNCHBURG) WILL ISSUE A NOTICE TO PROCEED (NTP) PROVIDING CONTRACTOR WITH A 10 DAY START DATE AND THE COMPLETION DATE.
2. CONTRACTOR RESPONSIBLE FOR OBTAINING ALL PERMITS. PERMITS MAY INCLUDE, BUT NOT LIMITED TO, CITY OF LYNCHBURG BUILDING & ELECTRICAL PERMITS AND CITY OF LYNCHBURG AND/OR VIRGINIA DCR E&S AND LAND DISTURBANCE PERMITS.
3. A COPY OF THE APPROVED CONSTRUCTION DOCUMENTS AND WRITTEN SPECIFICATIONS, SITE PERMITS AND EROSION AND SEDIMENTATION PLAN(S) SHALL BE KEPT ON SITE AT ALL TIMES.
4. ALL WORK NOT COVERED BY THE PROJECT DOCUMENTS SHALL CONFORM TO THE LATEST EDITIONS OF ROAD AND BRIDGE STANDARDS (VDOT) AND ROAD AND BRIDGE SPECIFICATIONS.
5. A PRE-CONSTRUCTION CONFERENCE WITH THE OWNER, THEIR AGENT, THE CONTRACTOR'S CERTIFIED RESPONSIBLE LAND DISTURBER AND THE OWNER'S REPRESENTATIVE WILL BE REQUIRED PRIOR TO THE ISSUANCE OF THE LAND-DISTURBING PERMIT. THE FOLLOWING MUST BE COMPLETED PRIOR TO THE SCHEDULING OF THE PRE-CONSTRUCTION CONFERENCE:
LIMITS OF CLEARING & GRADING SHOULD BE CLEARLY MARKED; LAND DISTURBANCE BOND MUST BE SUBMITTED. NO SITE WORK, LOGGING, GRUBBING OR GRADING IS PERMITTED PRIOR TO ISSUANCE OF A LAND DISTURBING PERMIT.
6. ALL WORK TO MEET APPLICABLE ADA STANDARDS: ICC/ANSI A 11.7 ACCESSIBILITY AND USABLE BUILDINGS AND FACILITIES; OUTDOOR RECREATION ACCESS ROUTES (ORAR) DRAFT FINAL ACCESSIBILITY GUIDELINES FOR OUTDOOR DEVELOPED AREAS, OCTOBER 19, 2009.
7. COORDINATE WITH THE CITY TO SET UP A STAGING AREA WITHIN THE PARK. CITY MUST APPROVE STAGING AREA PRIOR TO MOBILIZATION.
8. CONTACT THE CITY ENVIRONMENTAL REVIEWER, THE CITY CONSTRUCTION COORDINATOR AND MISS UTILITY ONE WEEK IN ADVANCE OF ANY CONSTRUCTION ACTIVITY.



GENERAL PROJECT DESCRIPTION

This project entails the redesign of the existing parking lot at Riverside Park, located at 2238 Rivermont Avenue, in Lynchburg, VA. It includes the repair and overlay of existing asphalt; construction of a new asphalt apron with drive lanes and a drop off lane; a permeable paver apron between the new asphalt apron and the existing playground area; removal of existing asphalt in two center rows of parking and replacement of this material with permeable pavers and a landscaped median and two parking islands (to be planted by others). Four ADA parking spaces and two access aisles are relocated closer to the playground area. Site furnishings to be installed in this project include concrete and wood wheel stops, removable bollards, and post and chain fencing.

There are three bid alternates: A) Additional concrete wheel stops; B) Post and chain fencing along the east side of the parking lot, one removable bollard, and demolition of existing wood bollards on the east side of the parking lot; C) Post and chain fencing on the west side of the parking lot.

- 1 TITLE SHEET
- 2 EXISTING CONDITIONS & DEMOLITION PLAN
- 3 EROSION & SEDIMENT CONTROL PLAN
- 4 GRADING, SITE IMPROVEMENTS & DIMENSIONAL LAYOUT
- 5 LANDSCAPE PLAN, SITE FURNISHINGS & BID ALTERNATES
- 6 SITE IMPROVEMENT DETAILS
- 7 EROSION & SEDIMENT CONTROL DETAILS
- 8 LANDSCAPE & SITE FURNISHING DETAILS
- 9 STORMWATER MANAGEMENT SUMMARY
- 10 EROSION & SEDIMENT CONTROL NARRATIVE

"I hereby certify that, to the best of my ability, this plan has been prepared in accordance with the latest City of Lynchburg Manual of Specifications and Standard Details and City Code."

Signature: Elisabeth Lardner Registration Number: 357

Printed Name and Title: Elisabeth Lardner, Date: 7/02/15
Landscape Architect

"I/We hereby certify that all site construction, drainage and grading will be done pursuant to this plan and that the applicable Stormwater Management conditions and requirements of the City of Lynchburg, the Commonwealth of Virginia and the Federal Government and its agencies are hereby made part of this plan."

Signature: Andrew H. Reeder Title: PARKS MANAGER

Printed Name: ANDREW H. REEDER Date: 07/02/15

City Engineer: _____ Date: _____

TRC: _____ Date: _____

E&S: _____ Date: _____

design:	
Elisabeth Lardner, L/KLA landscape architect	6/16/2015 date
architect	date
Kelly Cole, WJW engineer	06/16/2015 date
Cara Smith, L/KLA drawn by	06/16/2015 date

Lardner/Klein Landscape Architects, PC
Planning, Urban Design
Landscape Architecture
815 North Royal Street, Suite 200
Alexandria, VA 22314-3039
703-739-0972 1-800-337-1370
703-739-0973 fax
elardner@lardnerklein.com

Wiley|Wilson
Constant Progress
127 Nationwide Drive, Lynchburg, Virginia 24502-4272
phone 434.947.1901 | fax 434.947.1601 | web wileywilson.com



revisions:		
rev. no.	date	description
1	7/14/15	TRC COMMENTS AND DESIGN TEAM CLARIFICATIONS

TITLE SHEET	Sheet 1
Riverside Park Parking Lot Renovations Lynchburg, VA	

DEMO NOTES:

1. EXISTING PAVEMENT SHALL BE SAW CUT.
2. EXISTING WOOD PARKING BLOCKS TO BE REMOVED PRIOR TO OVERLAY AND NEW PARKING BLOCKS INSTALLED ONCE OVERLAY IS COMPLETE.
3. REMAINING WOODEN BOLLARDS TO BE REMOVED AS BID ALTERNATE

LEGEND:

	EXISTING BENCHMARK		EXISTING EDGE OF PAVEMENT
	EXISTING CONTROL POINT - NAIL SET		EXISTING FENCELINE
	EXISTING CONTROL POINT - NAIL FOUND		EXISTING TREELINE
	EXISTING DOWNSPOUT		EXISTING MAJOR CONTOURS
	EXISTING DROP INLET		EXISTING MINOR CONTOURS
	EXISTING CURB INLET		EXISTING OVERHEAD ELECTRIC
	EXISTING STORM MANHOLE		EXISTING UNDERGROUND ELECTRIC
	EXISTING STORM CLEANOUT		EXISTING SANITARY LINE
	EXISTING SANITARY MANHOLE		EXISTING STORM LINE
	EXISTING POWER POLE		EXISTING WATER LINE
	EXISTING WATER VALVE		EXISTING DITCH
	EXISTING SIGN		
	EXISTING BOLLARD		
	EXISTING TREE		

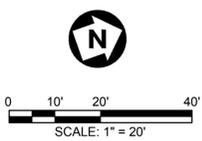
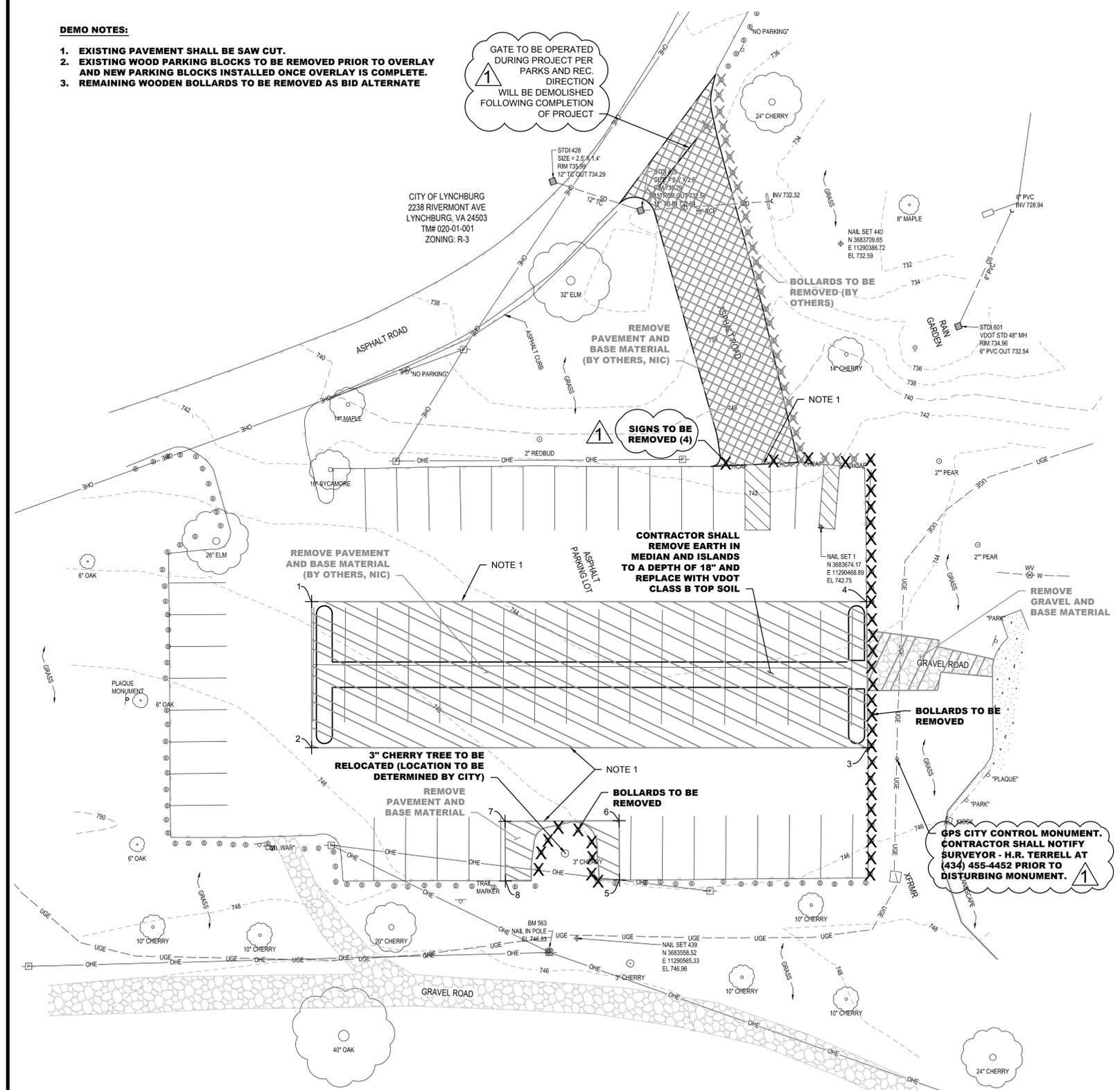
DEMOLITION

	REMOVE PAVEMENT SECTION (BY OTHERS)
	REMOVE GRAVEL
	DEMO BY OTHERS FOLLOWING PROJECT COMPLETION

GENERAL NOTES:

1. THIS TOPOGRAPHIC SURVEY WAS COMPLETED UNDER THE DIRECT AND RESPONSIBLE CHARGE OF, JAMES J. LEWIS, JR., LS FROM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION; THAT THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED ON MAY 6, 2015, AND THAT THIS PLAT, MAP, OR DIGITAL GEOSPATIAL DATA INCLUDING METADATA MEETS MINIMUM ACCURACY STANDARDS UNLESS OTHERWISE NOTED.
2. SURVEY CONDUCTED BY WILEY/WILSON, MAY, 2015. VERTICAL CONTROL: NAVD 88; HORIZONTAL CONTROL: NAD 83 VIRGINIA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, U.S. SURVEY FOOT.
3. 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. THE CONTRACTOR SHALL BEAR EXPENSE FOR POLE SUPPORT WHERE REQUIRED.
4. ALL EXISTING UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THESE PLANS ARE APPROXIMATE AND MAY NOT REPRESENT ALL UNDERGROUND UTILITIES OR SERVICE LINES. CONTRACTOR IS RESPONSIBLE FOR VERIFYING EXACT LOCATION, DEPTH, SIZE, AND TYPE OF UTILITIES SHOWN AND NOTIFYING ENGINEER OF DISCREPANCIES. 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.
5. CONTACT "MISS UTILITY" AT 1-800-552-7001 TO DETERMINE THE LOCATIONS OF UNDERGROUND UTILITIES.
6. ALL WORK NOT COVERED BY THE PROJECT DOCUMENTS SHALL CONFORM TO THE LATEST EDITION OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION'S ROAD & BRIDGE STANDARDS.
7. SEE PROJECT MANUAL FOR ADDITIONAL PROJECT REQUIREMENTS.
8. SOILS INFORMATION DETERMINED GRAPHICALLY FROM SOIL SURVEY FOR CITY OF LYNCHBURG, VIRGINIA.
9. CONTRACTOR SHALL COMPLY WITH ALL VIRGINIA EROSION & SEDIMENT CONTROL REGULATIONS.
10. PROPERTY LINE INFORMATION IS BASED ON VARIOUS PLATS AND DEEDS OF RECORD AND ACTUAL FIELD MEASUREMENTS.
11. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS NOT INTENDED TO SHOW ALL EASEMENTS THAT MAY AFFECT THE PROPERTY.
12. ALL PROPERTY PINS DISTURBED BY CONTRACTOR ACTIVITIES SHALL BE REPLACED BY A VIRGINIA LICENSED LAND SURVEYOR.
13. THE EXISTENCE OF HAZARDOUS WASTE, VEGETATED WETLANDS, OR TIDAL WETLANDS WAS NEITHER INVESTIGATED NOR CONFIRMED DURING THE PERFORMANCE OF THIS SURVEY.
14. MISS UTILITY DESIGN/DIG TICKET NUMBER B512100193-00B, DATED MAY 1, 2015
15. DOUBLE SWING GATE AND DRIVE TO BE USED AS CONSTRUCTION ACCESS BY CONTRACTOR AND WILL BE DEMOLISHED AND REMOVED BY OTHERS FOLLOWING PROJECT COMPLETION.

DEMO SCHEDULE		
POINT #	NORTHING	EASTING
1	3683514.72	11290437.57
2	3683499.47	11290480.97
3	3683665.12	11290539.24
4	3683679.98	11290495.71
5	3683577.31	11290552.49
6	3683583.40	11290534.82
7	3683549.38	11290523.08
8	3683543.25	11290540.80



design:	
Elisabeth Lardner, L/KLA	6/16/2015
landscape architect	date
architect	date
Kelly Cole, WIW	06/16/2015
engineer	date
Colby Shelhorse WIW	06/16/2015
drawn by	date

LKLA

Lardner/Klein Landscape Architects, PC

Planning, Urban Design
Landscape Architecture

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COMMONWEALTH OF VIRGINIA

Kelly D. Cole
KELLY D. COLE
Lic. No. 38769
6/16/15

PROFESSIONAL ENGINEER

revisions:		
rev. no.	date	description
1	7/14/15	TRC COMMENTS AND DESIGN TEAM CLARIFICATIONS

EXISTING CONDITIONS & DEMOLITION PLAN Sheet 2

Riverside Park Parking Lot Renovations
Lynchburg, VA

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- ES-1 UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE "VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK" AND THE VIRGINIA REGULATIONS 9VAC25-840 EROSION AND SEDIMENT CONTROL REGULATIONS.
- ES-2 THE PLAN APPROVING AUTHORITY MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE COMMENCEMENT OF LAND DISTURBING ACTIVITY, AND ONE WEEK PRIOR TO THE FINAL INSPECTION.
- ES-3 ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CLEARING.
- ES-4 A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- ES-5 PRIOR TO COMMENCING LAND DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING, BUT NOT LIMITED TO, OFF-SITE BORROW OR WASTE AREAS), THE CONTRACTOR SHALL SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE OWNER FOR REVIEW AND APPROVAL BY THE PLAN APPROVING AUTHORITY.
- ES-6 THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE PLAN APPROVING AUTHORITY.
- ES-7 ALL DISTURBED AREAS ARE TO DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.
- ES-8 DURING DEWATERING OPERATIONS, WATER WILL BE PUMPED INTO AN APPROVED FILTERING DEVICE.
- ES-9 THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
- ES-10 THOUGH SPECIFIC LOCATIONS ARE NOT SHOWN ON PLANS, CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND MAINTAIN SAFETY FENCE TO DESIGNATE CONSTRUCTION AREAS AND MAINTAIN PUBLIC SAFETY.
- ES-11 COORDINATE CONSTRUCTION ENTRANCES WITH THE PHASING OF SITE IMPROVEMENTS AND THE OWNER

PERMANENT SEEDING SCHEDULE

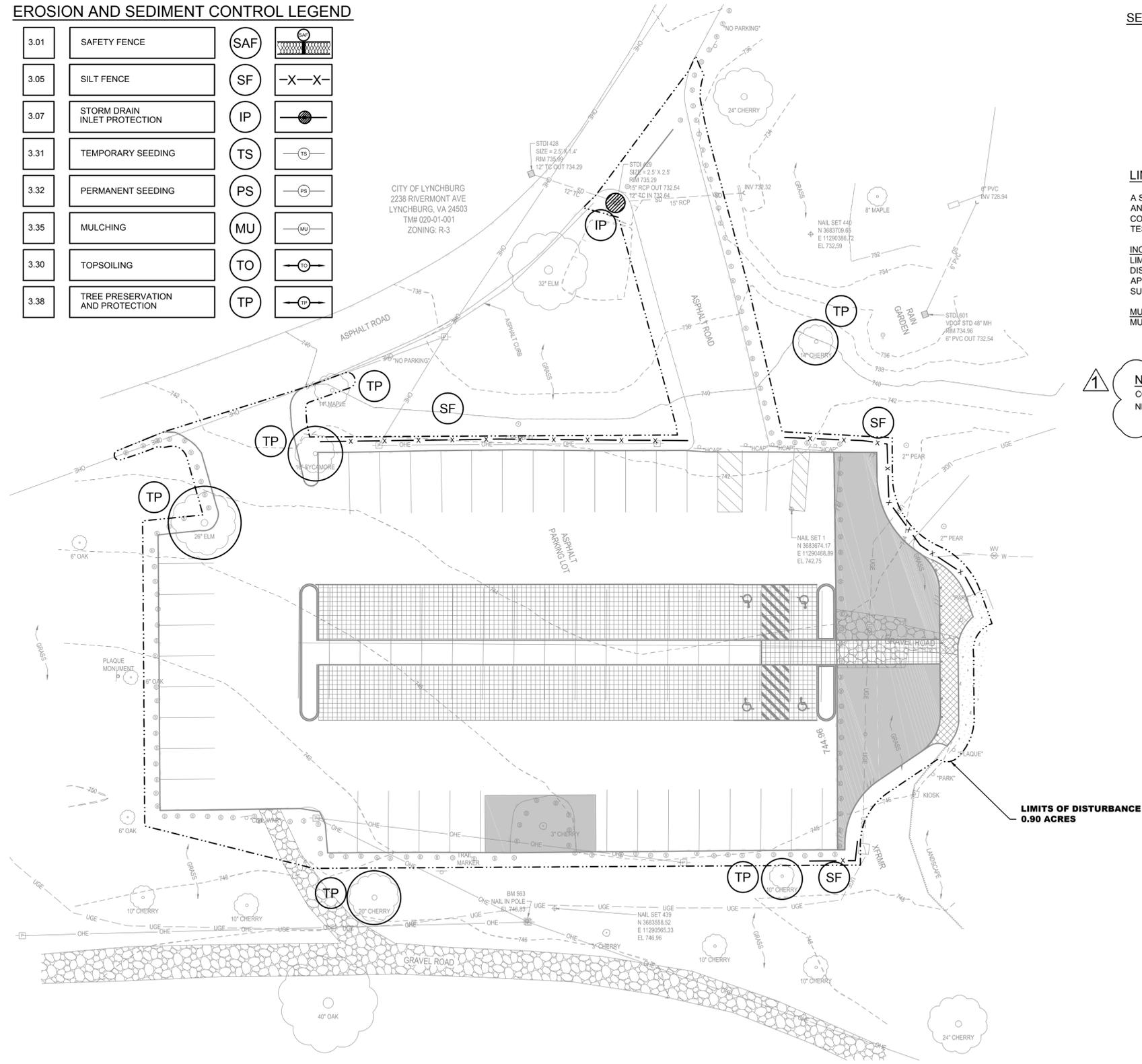
SITE SPECIFIC SEEDING MIXTURES FOR PIEDMONT AREA	
	TOTAL POUNDS PER ACRE
CITY OF LYNCHBURG PARKS MIX	350 LBS
TURF-TYPE TALL FESCUE	70%
TURF-TYPE PERENNIAL RYEGRASS	20%
BLUE GRASS	10%

*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

EROSION AND SEDIMENT CONTROL LEGEND

3.01	SAFETY FENCE	SAF	
3.05	SILT FENCE	SF	
3.07	STORM DRAIN INLET PROTECTION	IP	
3.31	TEMPORARY SEEDING	TS	
3.32	PERMANENT SEEDING	PS	
3.35	MULCHING	MU	
3.30	TOPSOILING	TO	
3.38	TREE PRESERVATION AND PROTECTION	TP	



SEQUENCE OF CONSTRUCTION

1. EXISTING NORTH DRIVE SHALL BE USED AS CONSTRUCTION ENTRANCE
2. INSTALL EROSION AND SEDIMENT CONTROL PRACTICES AS IS PRACTICABLE.
3. CLEAR THE PLANNED DISTURBED AREA AND REMOVE DEBRIS TO A SUITABLE LOCATION.
4. INSTALL UTILITIES, INLET AND OUTLET PROTECTION AS IS PRACTICABLE.
5. BRING GRADES TO DESIRED ELEVATION.
6. STABILIZE ALL DISTURBED AREAS WITH PERMANENT VEGETATION.
7. APPLY SURFACE TREATMENT AS DESIGNED.
8. EROSION CONTROL DEVICES SHALL REMAIN IN PLACE UNTIL RELEASED BY THE GOVERNING AGENCY.
9. REMOVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES.
10. STABILIZE AREAS THAT ARE AFFECTED BY THE REMOVAL OF THE TEMPORARY E&S MEASURES.

LIME & FERTILIZER SPECIFICATIONS:

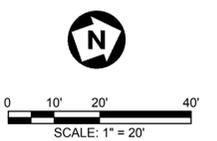
A SOILS TEST IS REQUIRED PRIOR TO FINAL SITE STABILIZATION, TO DETERMINE LIME AND FERTILIZER APPLICATION RATES FOR THE ESTABLISHMENT OF GRASS ON SITE. CONTACT VIRGINIA COOPERATIVE EXTENSION OR A GEOTECHNICAL FIRM WITH SOIL TESTING FACILITIES TO OBTAIN A SOILS REPORT FOR NUTRIENT APPLICATION.

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.

NOTE: CONTRACTOR TO MAINTAIN AND/OR AUGMENT SAFETY FENCING AS NEEDED TO KEEP PEDESTRIANS OUT OF WORK AREA.

LIMITS OF DISTURBANCE 0.90 ACRES



design:	
Elisabeth Lardner, L/KLA landscape architect	6/16/2015 date
architect	date
Kelly Cole, WJW engineer	06/16/2015 date
Colby Shelhorse WJW drawn by	06/16/2015 date

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revisions:		
rev. no.	date	description
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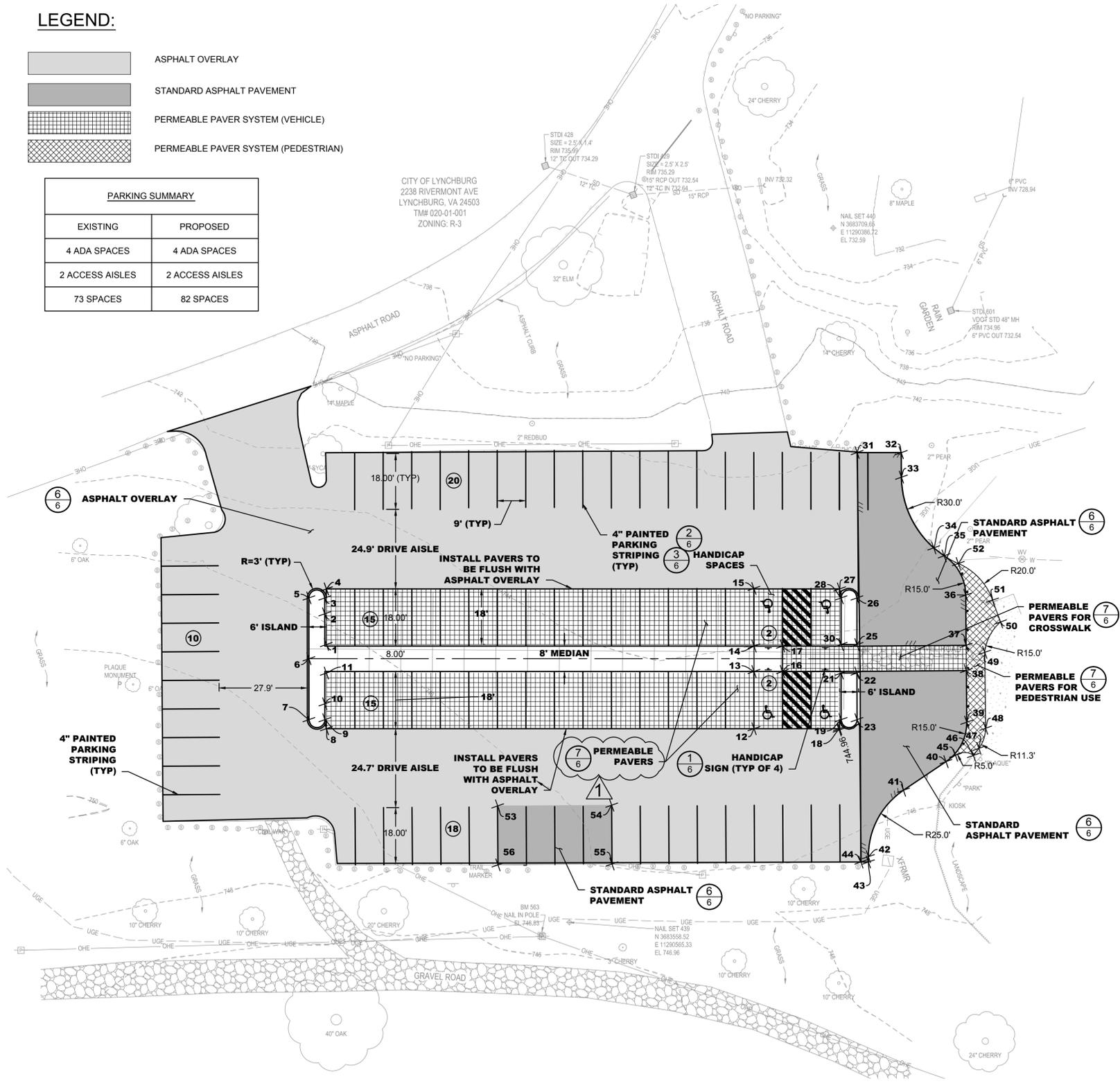
EROSION & SEDIMENT CONTROL PLAN Sheet 3

Riverside Park Parking Lot Renovations
 Lynchburg, VA

LEGEND:

-  ASPHALT OVERLAY
-  STANDARD ASPHALT PAVEMENT
-  PERMEABLE PAVER SYSTEM (VEHICLE)
-  PERMEABLE PAVER SYSTEM (PEDESTRIAN)

PARKING SUMMARY	
EXISTING	PROPOSED
4 ADA SPACES	4 ADA SPACES
2 ACCESS AISLES	2 ACCESS AISLES
73 SPACES	82 SPACES



CIVIL NOTES AND SPECIFICATIONS:

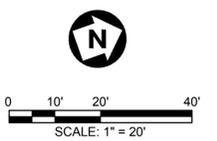
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY AT THE JOB SITE AND SHALL COMPLY WITH OSHA REGULATIONS FOR ALL WORK ASSOCIATED WITH THIS PROJECT.
2. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING SUBSURFACE STRUCTURES, UTILITIES AND PIPES PRIOR TO ANY EXCAVATION.
3. CONTRACTOR SHALL PROTECT EXISTING UNDERGROUND UTILITIES, STRUCTURES, TREES AND OTHER ITEMS TO REMAIN IN PLACE. DAMAGE OCCURRING AS A RESULT OF CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.
4. CONTRACTOR SHALL EMPLOY A LAND SURVEYOR REGISTERED IN THE COMMONWEALTH OF VIRGINIA TO PERFORM ALL STAKEOUT WORK.
5. ALL SOIL IS UNCLASSIFIED.
6. EXPLOSIVES SHALL NOT BE USED.
7. SATISFACTORY SOILS SHALL BE FREE OF ROCK OR GRAVEL LARGER THAN 3 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION, AND OTHER DELETERIOUS MATTER.
8. PLACE LOOSE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS.
9. UNIFORMLY SPREAD EACH LAYER, MOISTEN OR DRY AS REQUIRED FOR OPTIMUM MOISTURE CONTENT AND THEN COMPACT SO DENSITY OF THE COMPACTED MATERIAL MEETS OR EXCEEDS THE SPECIFIED PERCENTAGES OF OF MAXIMUM DRY DENSITY PER ASTM D 698: 95 PERCENT BELOW SLAB ON GRADE CONSTRUCTION, PAVEMENTS, SHOULDERS, SIDEWALKS, CURB AND CUTTER, AND 90 PERCENT IN NON-LOADED NEGATIVE AREAS (LAWN, PLANTINGS, ETC.). ANY LIFT, OR PORTION THEREOF, WHICH IS NOT COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS SHALL BE RECOMPACTED OR REMOVED AND REPLACED TO THE SATISFACTION OF THE SOILS TESTING AGENCY AT NO ADDITIONAL COST TO THE OWNER.
11. ALL ROADWAY IMPROVEMENTS AND MARKINGS SHALL FOLLOW VDOT STANDARDS UNLESS OTHERWISE SPECIFIED.
12. GEOTECHNICAL TESTING AGENCY SHALL BE PROVIDED BY OWNER UNLESS OTHERWISE NOTED.
13. ALL SPOT SHOTS REFLECT FINISHED GRADE.

SPOT SHOT TABLE				
POINT #	NORTHING	EASTING	DESCRIPTION	ELEVATION
1	3683515.20	11290457.34	EDGE OF PAVER	746.50
2	3683517.92	11290448.06	TOP/BACK OF CURB	745.95
3	3683519.58	11290443.34	TOP/BACK OF CURB	746.12
4	3683521.01	11290440.88	EDGE OF PAVER	745.56
5	3683514.86	11290441.68	TOP/BACK OF CURB	746.36
6	3683508.51	11290459.77	TOP/BACK OF CURB	747.41
7	3683502.16	11290477.85	TOP/BACK OF CURB	748.20
8	3683506.41	11290482.35	EDGE OF PAVER	747.61
9	3683506.90	11290479.51	TOP/BACK OF CURB	0.00
10	3683508.55	11290474.79	TOP/BACK OF CURB	747.32
11	3683512.22	11290465.84	EDGE OF PAVER	746.93
12	3683633.75	11290527.15	EDGE OF PAVER	744.86
13	3683639.71	11290510.16	EDGE OF PAVER	744.51
14	3683642.38	11290502.62	EDGE OF PAVER	744.33
15	3683648.39	11290485.50	EDGE OF PAVER	743.97
16	3683648.20	11290513.15	EDGE OF PAVER/CONC	744.56
17	3683650.87	11290505.61	EDGE OF PAVER/CONC	744.38
18	3683659.22	11290536.11	EDGE OF PAVER	745.08
19	3683660.64	11290533.60	TOP/BACK OF CURB	745.51
21	3683665.51	11290519.77	TOP/BACK OF CURB	745.21
22	3683670.24	11290521.40	TOP/BACK OF CURB	745.19
23	3683665.38	11290535.26	TOP/BACK OF CURB	745.60
25	3683673.20	11290512.96	TOP/BACK OF CURB	744.95
26	3683678.06	11290499.09	TOP/BACK OF CURB	744.20
27	3683673.83	11290494.61	EDGE OF PAVER	743.59
28	3683673.34	11290497.44	TOP/BACK OF CURB	744.73
30	3683668.49	11290511.28	TOP/BACK OF CURB	745.03

SPOT SHOT TABLE				
POINT #	NORTHING	EASTING	DESCRIPTION	ELEVATION
31	3683693.31	11290455.93	EDGE OF PAVEMENT	742.30
32	3683706.44	11290460.59	EDGE OF PAVEMENT	743.26
33	3683703.93	11290467.89	EDGE OF PAVEMENT	743.28
34	3683706.16	11290492.27	EDGE OF PAVEMENT	744.13
35	3683708.44	11290495.74	EDGE OF PAVEMENT	744.38
36	3683710.76	11290509.67	EDGE OF PAVEMENT	744.87
37	3683705.64	11290524.63	EDGE OF PAVEMENT	745.00
38	3683703.06	11290532.12	EDGE OF PAVEMENT	745.05
39	3683697.79	11290547.51	EDGE OF PAVEMENT	745.57
40	3683687.46	11290557.07	EDGE OF PAVEMENT	745.72
41	3683671.81	11290561.11	EDGE OF PAVEMENT	745.78
42	3683654.43	11290577.16	EDGE OF PAVEMENT	746.38
43	3683653.88	11290578.74	EDGE OF PAVEMENT	746.57
44	3683651.62	11290577.96	EDGE OF PAVEMENT	746.31
45	3683690.96	11290556.16	EDGE OF PAVEMENT	745.72
46	3683696.29	11290558.10	EDGE OF PAVER	745.97
47	3683698.65	11290556.56	EDGE OF PAVER	745.97
48	3683702.76	11290551.29	EDGE OF PAVER	745.86
49	3683710.44	11290528.65	EDGE OF PAVER	745.10
50	3683718.30	11290521.28	EDGE OF PAVER	745.24
51	3683718.23	11290513.96	EDGE OF PAVER	745.22
52	3683711.85	11290499.51	EDGE OF PAVER	744.13
53	3683549.35	11290523.24	EDGE OF PAVEMENT	746.89
54	3683583.38	11290534.98	EDGE OF PAVEMENT	745.77
55	3683577.31	11290552.49	EDGE OF PAVEMENT	746.04
56	3683543.25	11290540.80	EDGE OF PAVEMENT	747.57

SITE NOTES:

1. 6-INCH CONCRETE CURB TO BE INSTALLED FROM POINTS 3 THRU 9, 19 THRU 23, AND 25 THRU 30.
2. FLUSH CONCRETE CURB TO BE INSTALLED FROM POINTS 2, 14, AND 17 AND 10, 11, 13 AND 16. (SEE DETAIL 5 ON PAGE 6.)
3. CONCRETE CURB WILL BE TAPERED FROM 6-INCH REVEAL TO FLUSH BETWEEN POINTS 3 AND 2; AND 9 AND 10.
4. A MINIMUM OF 1.5-INCHES OF OVERLAY SHALL BE INSTALLED OVER ENTIRE PARKING AREA. OVERLAY WEST OF THE HANDICAP PARKING SHALL BE DEEPER TO ACCOMMODATE A MAX 2% SLOPE IN HANDICAP PARKING AND ACCESSIBLE AISLE.



design:	
Elisabeth Lardner, L/KLA landscape architect	6/16/2015 date
architect	date
Kelly Cole, WIW engineer	06/16/2015 date
Colby Shelhorse WIW drawn by	06/16/2015 date

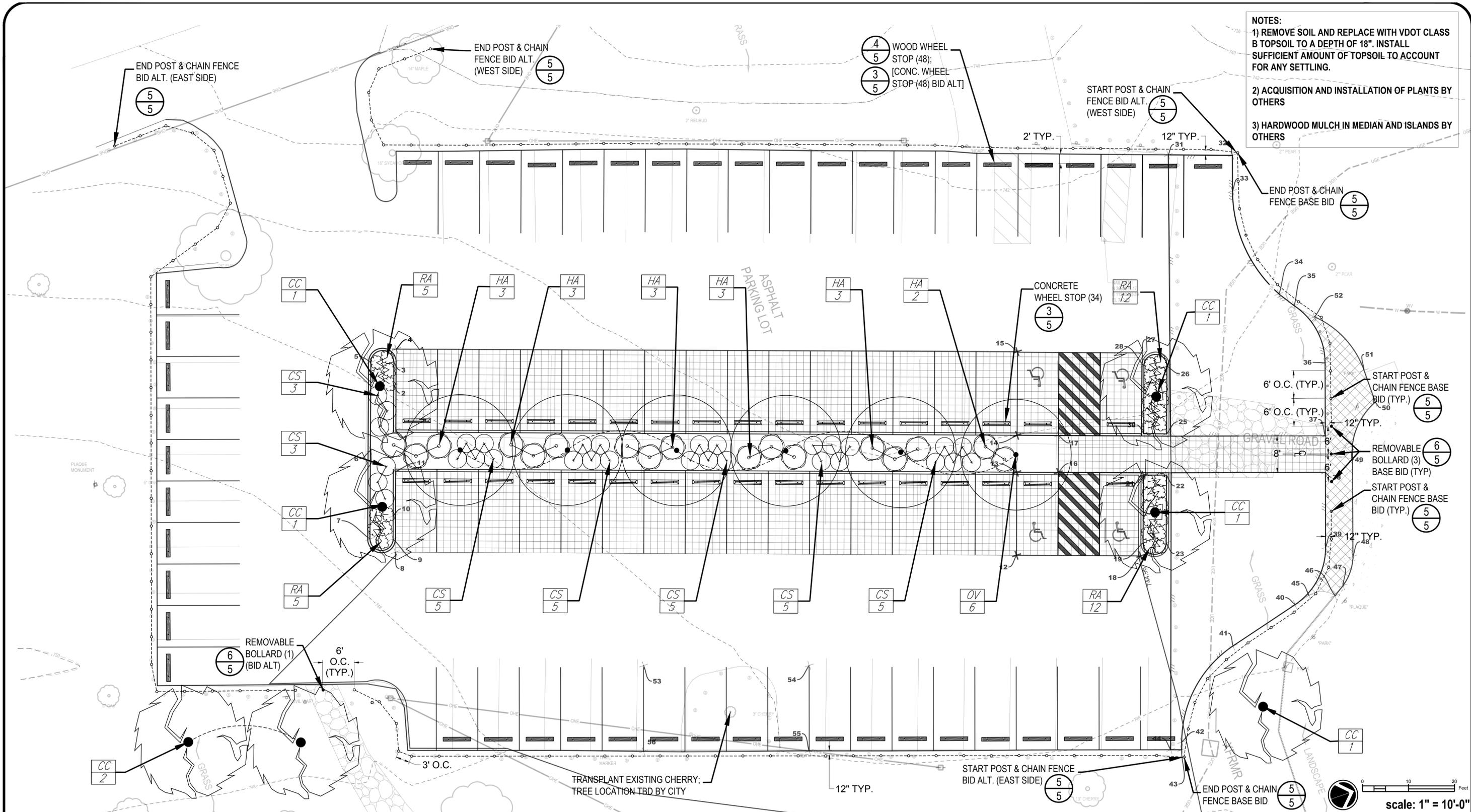
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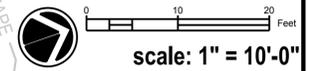
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revisions:		
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1	7/14/15	TRC COMMENTS AND DESIGN TEAM CLARIFICATIONS

GRADING, SITE IMPROVEMENTS & DIMENSIONAL LAYOUT
 Sheet 4
 Riverside Park Parking Lot Renovations
 Lynchburg, VA



NOTES:
 1) REMOVE SOIL AND REPLACE WITH VDOT CLASS B TOPSOIL TO A DEPTH OF 18". INSTALL SUFFICIENT AMOUNT OF TOPSOIL TO ACCOUNT FOR ANY SETTLING.
 2) ACQUISITION AND INSTALLATION OF PLANTS BY OTHERS
 3) HARDWOOD MULCH IN MEDIAN AND ISLANDS BY OTHERS



design:
 Elisabeth Lardner, L/KLA
 landscape architect 07/16/2015
 date
 architect date
 Kelly Cole, WIW
 engineer 07/16/2015
 date
 Cara Smith, L/KLA
 drawn by 07/16/15
 date

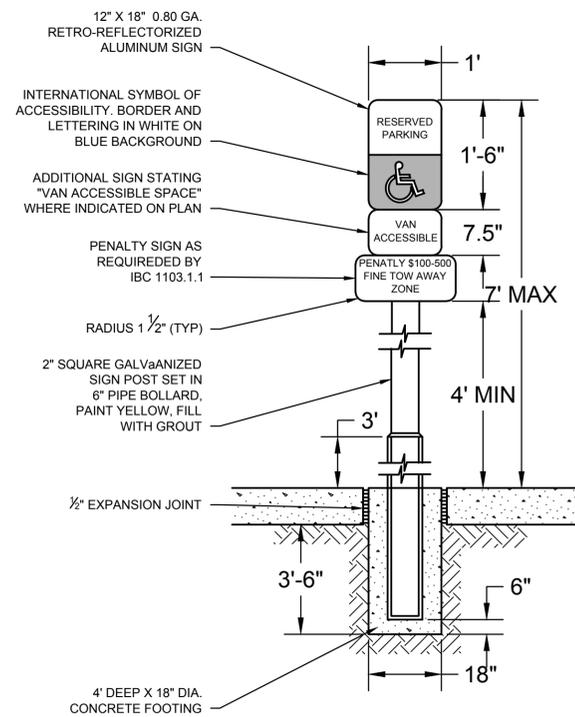
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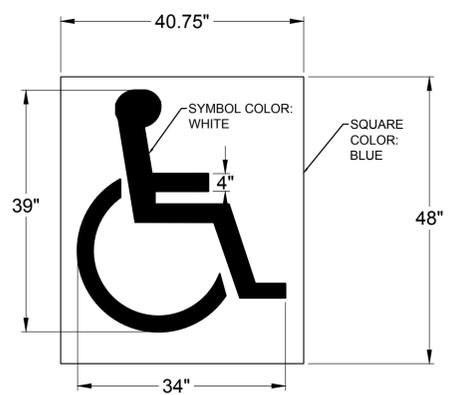
revisions:		
rev. no.	date	description

LANDSCAPE PLAN, SITE FURNISHINGS & BID ALTERNATES Sheet 5
 Riverside Park Parking Lot Renovations
 2238 Rivermont Avenue, Lynchburg, VA

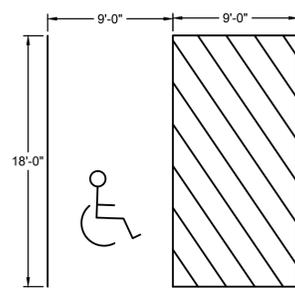


- NOTES:**
- HANGING ORDER OF THE VAN ACCESSIBLE SPACE AND PENALTY SIGN DOES NOT MATTER.
 - THE VAN ACCESSIBLE SIGN IS NOT REQUIRED BY CODE AND SHALL ONLY BE HUNG WHEN INDICATED ON THE PLAN.

1
HANDICAP PARKING SIGNAGE
SCALE: NOT TO SCALE



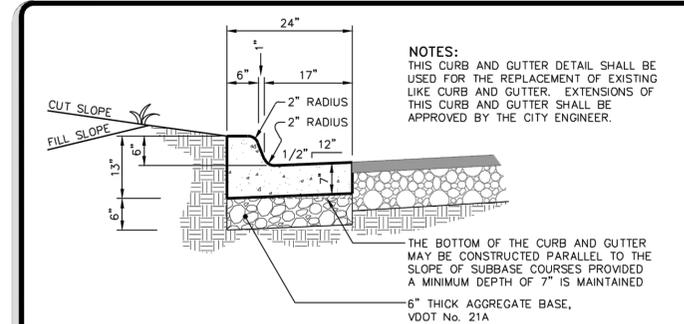
2
ADA PARKING PAVEMENT MARKER
SCALE: NOT TO SCALE



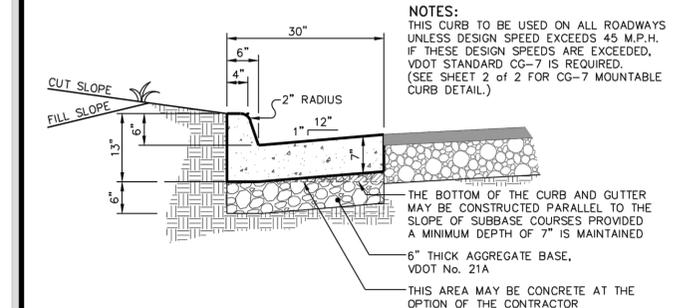
3
HANDICAP PARKING 9' ACCESS AISLE
SCALE: NOT TO SCALE

PERMEABLE PAVER NOTES:

- PERMEABLE PAVERS SHALL BE SOLID CONCRETE INTERLOCKING PAVING UNITS COMPLYING WITH ASTM C 936 OR ASTM D 6684-04. RESISTANT TO FREEZING AND THAWING WHEN TESTED ACCORDING TO ASTM C 67.
- PAVERS SHALL BE ADA COMPLIANT AND HAVE THE CAPACITY TO ACCOMMODATE SURFACE INFILTRATION OF A MINIMUM OF 100-INCHES PER HOUR.
- PAVERS SHALL BE DESIGNED FOR USE ON PARKING/ROADWAY SURFACES.
- PAVERS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ASTM C 1701.
- CONTRACTOR SHALL SUBMIT SELECTED PAVER FOR REVIEW AND APPROVAL.
- PAVER COLOR TO BE CONSISTANT WITH EXISTING PARK PAVERS.



25.04A - STANDARD CITY COMBINED 6" CURB & GUTTER

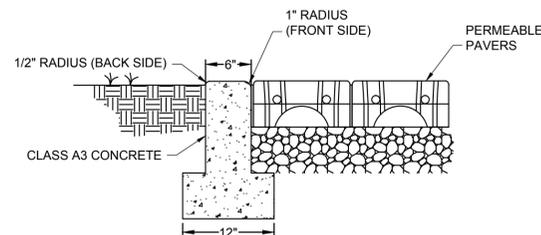


25.04B - STANDARD VDOT COMBINATION 6" CURB & GUTTER (CG-6)*

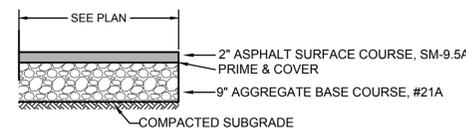
* PER 2001 VDOT ROAD AND BRIDGE STANDARDS OR LATEST REVISION

- NOTES:**
- SCORE CURB / VALLEY GUTTER AT 10' O.C.
 - PROVIDE 1/2" EXPANSION JOINTS AT 90' O.C.
 - CONCRETE TO BE 3000 P.S.I. @ 28 DAYS, AIR ENTRAINED.
 - THESE NOTES APPLY TO SHEETS 1 THRU 3 OF THIS DETAIL.

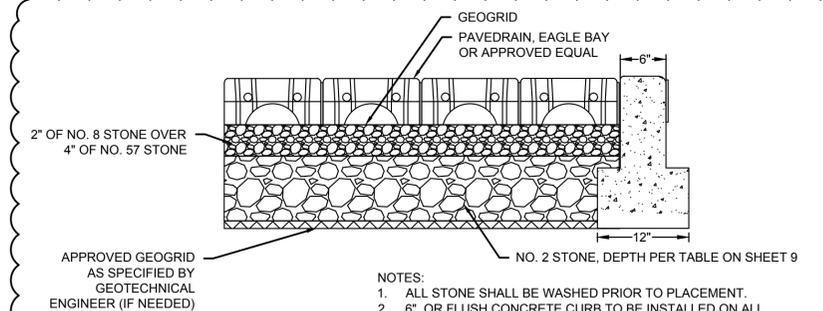
THE CITY OF LYNCHBURG
CURB & GUTTER DETAILS
SCALE: NOT TO SCALE
REVISION DATE: 12-12-2014
SHEET #: 1 OF 5
DETAIL # 25.04



6
FLUSH CONCRETE CURB
NOT TO SCALE



6
STANDARD ASPHALT PAVEMENT SECTION
NOT TO SCALE



- NOTES:**
- ALL STONE SHALL BE WASHED PRIOR TO PLACEMENT.
 - 6" OR FLUSH CONCRETE CURB TO BE INSTALLED ON ALL FOUR SIDES OF PAVER INSTALLATION.
 - CONTRACTOR AND GEOGRID MATERIAL RECOMMENDATION PER GEOTECHNICAL ENGINEER LICENSED IN THE COMMONWEALTH OF VIRGINIA. ALL WORK PERFORMED BY GEOTECHNICAL ENGINEER SHALL BE SEALED AND PROVIDED TO THE ENGINEER FOR REVIEW.
 - A CBR OF 5 IS ASSUMED FOR DESIGN PURPOSES.

6
PERMEABLE PAVER SECTION
NOT TO SCALE

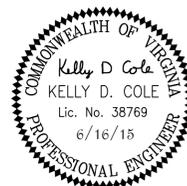
design:

Elisabeth Lardner, L/KLA landscape architect	6/16/2015 date
architect	date
Kelly Cole, WIW engineer	06/16/2015 date
Colby Shelhorse WIW drawn by	06/16/2015 date

Lardner/Klein Landscape Architects, PC
Planning, Urban Design
Landscape Architecture
815 North Royal Street, Suite 200
Alexandria, VA 22314-3039
703-739-0972 1-800-337-1370
703-739-0973 fax
elardner@lardnerklein.com

Wiley Wilson
Constant Progress

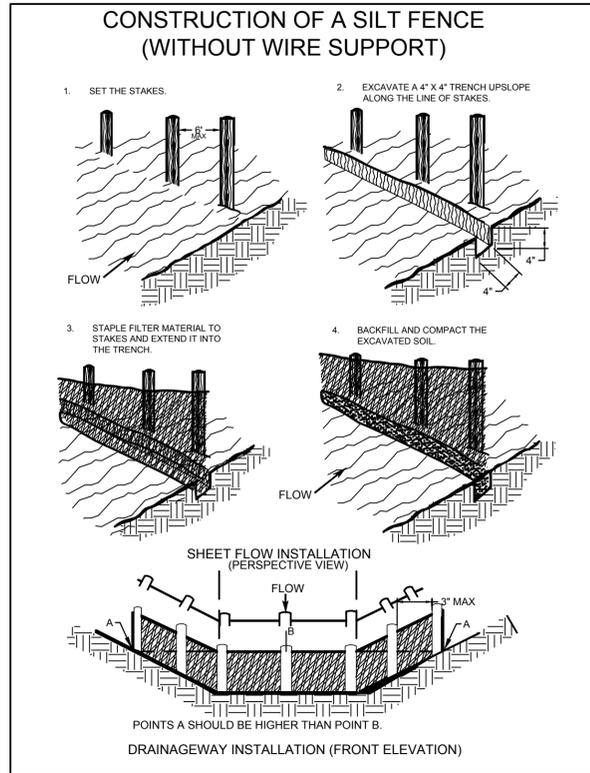
127 Nationwide Drive, Lynchburg, Virginia 24502-4272
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revisions:

rev. no.	date	description
1	7/14/15	TRC COMMENTS AND DESIGN TEAM CLARIFICATIONS

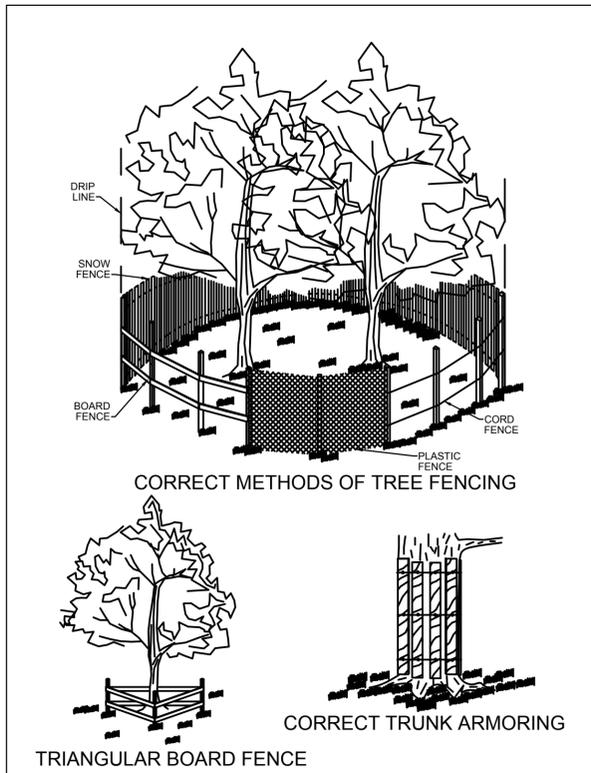
Site Improvements Details
Riverside Park Parking Lot Renovations
Lynchburg, VA
Sheet 6



SOURCE: Adapted from *Installation of Straw and Fabric Filter Barriers for Sediment Control*, Sherwood & Wyant

SILT FENCE
NOT TO SCALE

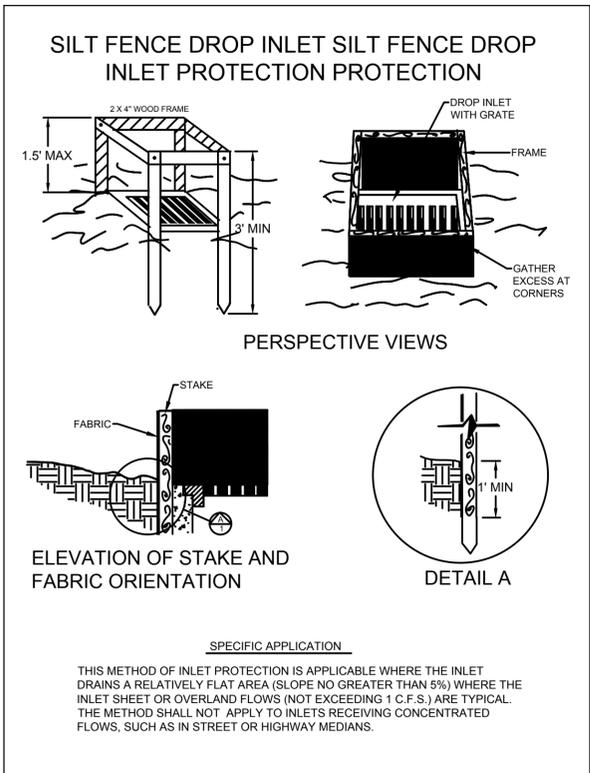
PLATE 3.05-2 **SF**



SOURCE: VA, DSCW

TREE PRESERVATION AND PROTECTION
NOT TO SCALE

PLATE 3.38-2 **TP**



SOURCE: N.C. *Erosion and Sediment Control Planning and Design Manual*, 1988

STORM DRAIN INLET PROTECTION
NOT TO SCALE

PLATE 3.07-1 **IP**

design:

Elisabeth Lardner, L/KLA landscape architect	6/16/2015 date
architect	date
Kelly Cole, WIW engineer	06/16/2015 date
Colby Shelhorse WIW drawn by	06/16/2015 date

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COMMONWEALTH OF VIRGINIA
KELLY D. COLE
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6/16/15
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revisions:

rev. no.	date	description

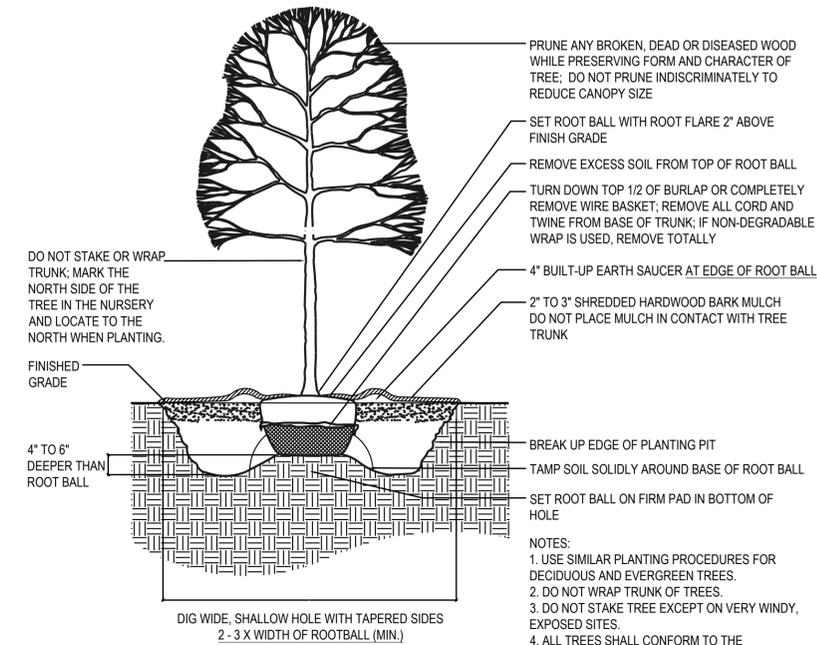
Erosion & Sediment Control Details Sheet 7

Riverside Park Parking Lot Renovations
Lynchburg, VA

NOTES:

1) PLANT ACQUISITION AND PLANT INSTALLATION TO BE DONE BY OTHERS.

2) INSTALLATION OF HARDWOOD MULCH TO BE DONE BY OTHERS.



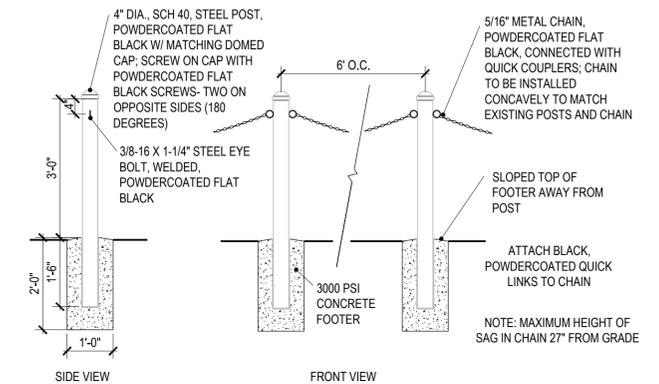
- NOTES:
1. USE SIMILAR PLANTING PROCEDURES FOR DECIDUOUS AND EVERGREEN TREES.
 2. DO NOT WRAP TRUNK OF TREES.
 3. DO NOT STAKE TREE EXCEPT ON VERY WINDY, EXPOSED SITES.
 4. ALL TREES SHALL CONFORM TO THE STANDARDS SET FORTH IN THE MOST RECENT AMERICAN STANDARDS FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (A.A.N.)

1 TYPICAL TREE PLANTING DETAIL (BY OTHERS)
Scale: Not to scale

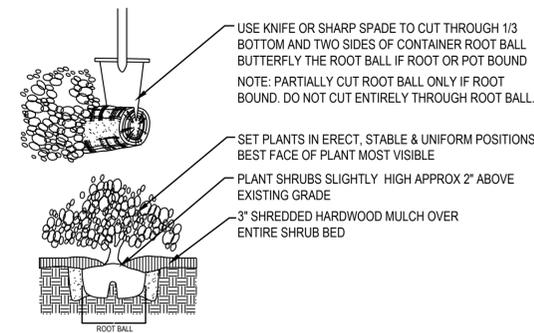
PLANT SCHEDULE

QTY	KEY	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING	STOCK	NOTES
		TREES					
7	CC	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	2" CAL.	AS SHOWN	B&B	VIGOROUS AND FULL
6	OV	OSTRYA VIRGINIANA	EASTERN HOPHORNBEAM	2" CAL.	AS SHOWN	B&B	VIGOROUS AND FULL
		SHRUBS					
17	HA	HYDRANGEA ARBORESCENS	WILD HYDRANGEA	18"-24"	5'	CONT.	VIGOROUS AND FULL
31	CS	CORNUS SERICA 'FLAVIRAMEA'	YELLOW-TWIG DOGWOOD	18"-24"	5'	CONT.	VIGOROUS AND FULL
34	RA	RHUS AROMATICA	FRAGRANT SUMAC	18"-24"	3'	CONT.	VIGOROUS AND FULL

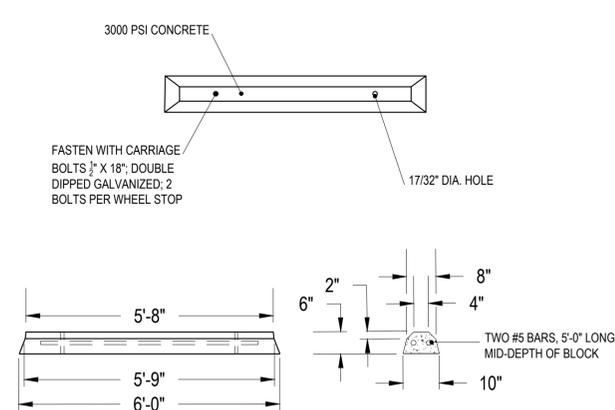
- GENERAL NOTES (**PLANT ACQUISITION AND INSTALLATION BY OTHERS**):
1. ALL PLANTS SHALL CONFORM TO THE STANDARDS SET FORTH IN THE MOST RECENT "AMERICAN STANDARD FOR NURSERY STOCK," PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN (AAN)
 2. THE CONTRACTOR SHALL FIELD VERIFY EXISTING SITE CONDITIONS AND ALL DIMENSIONS PRIOR TO BIDDING/CONSTRUCTION AND CONFIRM ALL POST BUILDING CONSTRUCTION CONDITIONS ASSUMED ON THE PLANS PRIOR TO STAKING OUT TREES, SHRUBS, GROUNDCOVERS AND PLANTING BEDS NOTING ANY CHANGES RESULTING FROM CONSTRUCTION OF BUILDING AND NON-LANDSCAPE SITE IMPROVEMENTS. NOTIFY THE OWNER, OWNER'S AGENT AND/OR LANDSCAPE ARCHITECT AND REQUEST ADJUSTMENTS TO THE DESIGN TO ACCOMMODATE CHANGES TO THE PLANS AS A RESULT OF BUILDING AND NON-LANDSCAPE SITE IMPROVEMENTS.
 3. MAJOR TREES SHALL NOT BE PLACED UNDER OVERHEAD WIRES AT ANY TIME.
 4. POSITIVE DRAINAGE ACROSS ALL SURFACES SHALL BE MAINTAINED. ALL TREES, SHRUBS, GROUNDCOVERS AND PLANTING BEDS SHALL BE LOCATED SO AS NOT TO IMPEDE CONCENTRATED SURFACE DRAINAGE SUCH AS SWALES, ROOF DRAIN OUTFALLS, OR OTHER DESIGNED STORMWATER MANAGEMENT FEATURES INTENDED TO DIRECT SURFACE WATER RUNOFF.
 5. STAKE OUT LOCATION OF TREES AND OUTLINE OF BED AREA. PLACE SHRUBS AND GROUNDCOVERS IN POSITION IN BED AREAS BEFORE CONTAINERS HAVE BEEN REMOVED. OBTAIN OWNER OR OWNER'S AGENT APPROVAL. LANDSCAPE ARCHITECT, OWNER, OR OWNER'S AGENT RESERVES RIGHT TO INTERCHANGE OR SHIFT PLANT LOCATIONS PRIOR TO PLANTING.
 6. PLANTS SHALL BE SET IN THE PLANTING PIT, AT THE PROPER DEPTH, ON TAMPED SOIL MIX. SOIL MIX SHALL THEN BE FILLED AROUND THE ROOTS TO APPROXIMATELY 75% OF THE DEPTH OF THE PIT, TAMPED AND THOROUGHLY WATERED. AFTER SETTLEMENT OF THE SOIL, THE REMAINDER OF THE PIT SHALL BE FILLED WITH SOIL MIX, FERTILIZED, TAMPED, AND AGAIN WATERED, ALL WITHIN THE SAME DAY OF PLANTING. THE SAME PROCEDURE SHALL BE FOLLOWED IN PLANTING REPLACEMENTS.
 7. SHOULD THE BALL SIZE EXCEED THE MINIMUM SIZE GIVEN, THE PIT SIZE NEED NOT BE INCREASED PROVIDED THAT THERE IS SUFFICIENT SPACE BETWEEN THE BALL AND THE SIDE OF THE PIT TO BACKFILL AND TAMP PROPERLY.
 8. A REPRESENTATIVE OF THE OWNER SHALL BE GIVEN THE OPPORTUNITY TO INSPECT AND APPROVE ALL PLANT MATERIAL AT ITS SOURCE PRIOR TO DIGGING OR DELIVERY. IF THIS OPPORTUNITY IS WAIVED, A REPRESENTATIVE SAMPLE OF EACH SPECIES MAY BE REQUIRED FOR APPROVAL PRIOR TO SHIPMENT OF THE TOTAL QUANTITY.
 9. DEFINITION OF PLANT CALLOUTS:
- AA — KEY
1 — QUANTITY
10. MULCH SHALL BE PREMIUM GRADE FINE SHREDDED HARDWOOD BARK 3/4" TO 1-1/2" IN DIAMETER FREE OF STICKS, DIRT, DUST, WEEDS AND OTHER DEBRIS, AS APPROVED.
 11. THIS PLAN DOES NOT GUARANTEE THE EXISTENCE OR NON-EXISTENCE OF ANY UTILITIES. PRIOR TO ANY CONSTRUCTION, EXCAVATION, OR LANDSCAPING, THE CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF LOCATING AND VERIFYING ALL UTILITIES, ABOVE AND/OR BELOW GROUND, PUBLIC AND/OR PRIVATE THAT MAY EXIST AND CROSS THROUGH THE AREAS OF CONSTRUCTION.
 12. THE CONTRACTOR IS REQUIRED TO CALL "MISS UTILITY" AND HAVE UTILITIES LOCATED BEFORE UNDERTAKING ANY EXCAVATION OR SITE WORK. THIS ACTION DOES NOT RELIEVE THE CONTRACTOR OF INDEPENDENT VERIFICATION BY HIS OWN FORCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING AT HIS EXPENSE ANY UTILITIES DAMAGED DURING CONSTRUCTION.
 13. EXISTING TREES MARKED AS "TO REMAIN" SHALL BE PROTECTED AS NECESSARY AS SHOWN ON ENGINEERING DRAWINGS.
 14. ANY SUBSTITUTIONS IN PLANT MATERIALS MUST BE APPROVED IN WRITING BY THE PROJECT LANDSCAPE ARCHITECT.



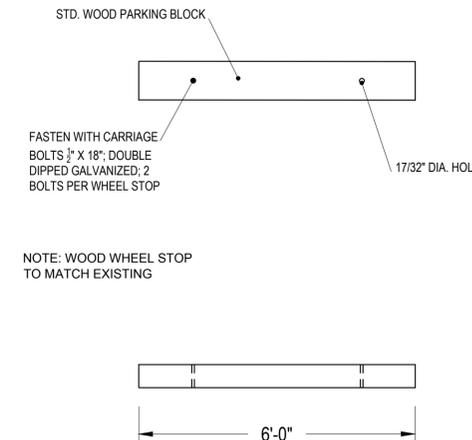
5 POST AND CHAIN FENCE
Scale: 1/2" = 1'-0"



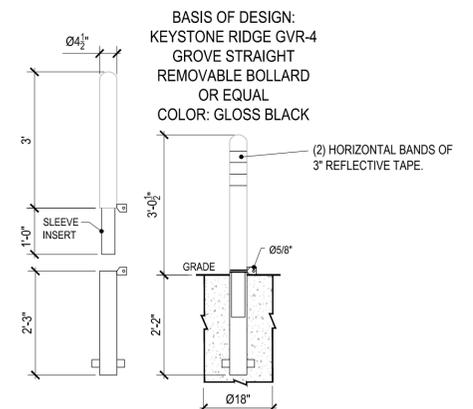
2 CONTAINER SHRUB PLANTING DETAIL (BY OTHERS)
Scale: Not to scale



3 PRECAST CONCRETE WHEEL STOP
Scale: NTS



4 WOOD WHEEL STOP
Scale: NTS



6 METAL BOLLARD
Scale: 1/2" = 1'-0"

design:
Elisabeth Lardner, L/KLA
landscape architect 07/16/2015 date

architect date

Kelly Cole, WIW
engineer 07/16/2015 date

Cara Smith, L/KLA
drawn by 07/16/15 date

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revisions:

rev. no.	date	description
1	7/14/15	TRC COMMENTS AND DESIGN TEAM CLARIFICATIONS

LANDSCAPE AND SITE FURNISHING DETAILS Sheet 8

Riverside Park Parking Lot Renovations
2238 Rivermont Avenue, Lynchburg, VA

STORMWATER MANAGEMENT NARRATIVE

A. DESCRIPTION OF STORMWATER QUANTITY/QUALITY MEASURES

STORMWATER RUNOFF FROM PORTIONS OF THE PROJECT FLOWS INTO THE PERVIOUS PAVEMENT SECTIONS AND INFILTRATES INTO THE SUBSOIL. THE EXISTING ASPHALT DRIVE ADJACENT TO THE CURRENT HANDICAP PARKING WILL BE REMOVED AS WELL AS A SECTION OF ASPHALT IN THE MIDDLE OF THE PARKING AREA. THIS AREA WILL BE REPLACED WITH A LANDSCAPED MEDIAN AND ISLANDS CAPPING THE PARKING AISLE.

B. HYDROLOGIC ANALYSIS

STORMWATER RUNOFF RATES ARE COMPUTED FOR THE 2, 10, AND 25-YEAR STORM EVENTS USING THE RATIONAL METHOD AND SCS TR-55. SCS TR-55 IS USED TO CALCULATE THE PRE AND POST RUNOFF RATES. THE RATIONAL METHOD IS USED TO CALCULATE THE 1" STORM FLOW RATE TO THE PERVIOUS PAVERS.

C. DRAINAGE AREA CHARACTERISTICS

RUNOFF COEFFICIENTS (C): DRAINAGE SUBAREAS FOR THIS PROJECT CONSIST OF A MIXTURE OF GRASS AND PAVED AREAS. A C-FACTOR OF 0.125 IS USED FOR GRASS AND PERMEABLE PAVEMENT AREAS, A C-FACTOR OF 0.3 IS USED FOR FORESTED AREAS AND A C-FACTOR OF 0.9 IS USED FOR PAVED AREAS.

CURVE NUMBERS (CN): BASED ON SITE SOILS WITHIN HYDRAULIC SOIL GROUP "B", THE CN FOR PAVED AREAS IS 98, CN FOR FORESTED AREA IS 72 AND CN FOR OPEN SPACE IS 58.

WEIGHTED C-FACTORS (OR CN FACTORS) AND INCREMENTAL RUNOFF RATES ARE COMPUTED FOR EACH DRAINAGE SUBAREA, AND ACCUMULATED ALONG THE STORM SYSTEM SEGMENT TO DETERMINE REQUIRED SYSTEM SIZES.

D. 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 AND 24-HOUR RAINFALL DEPTHS FOR RUNOFF CALCULATIONS USING THE RATIONAL METHOD AND TR-55 IS DETERMINED USING THE VDOT'S 05-03 AND HDA 05-04.

E. HYDRAULIC ANALYSIS

ALL STORMWATER WILL SHEET FLOW OFF THE SITE.

F. WATER QUALITY TREATMENT ANALYSIS

TOTAL SITE AREA = 0.89 AC.

TOTAL PRE-DEVELOPMENT IMPERVIOUS COVER = 0.71 AC.
TOTAL POST-DEVELOPMENT IMPERVIOUS COVER = 0.53 AC.

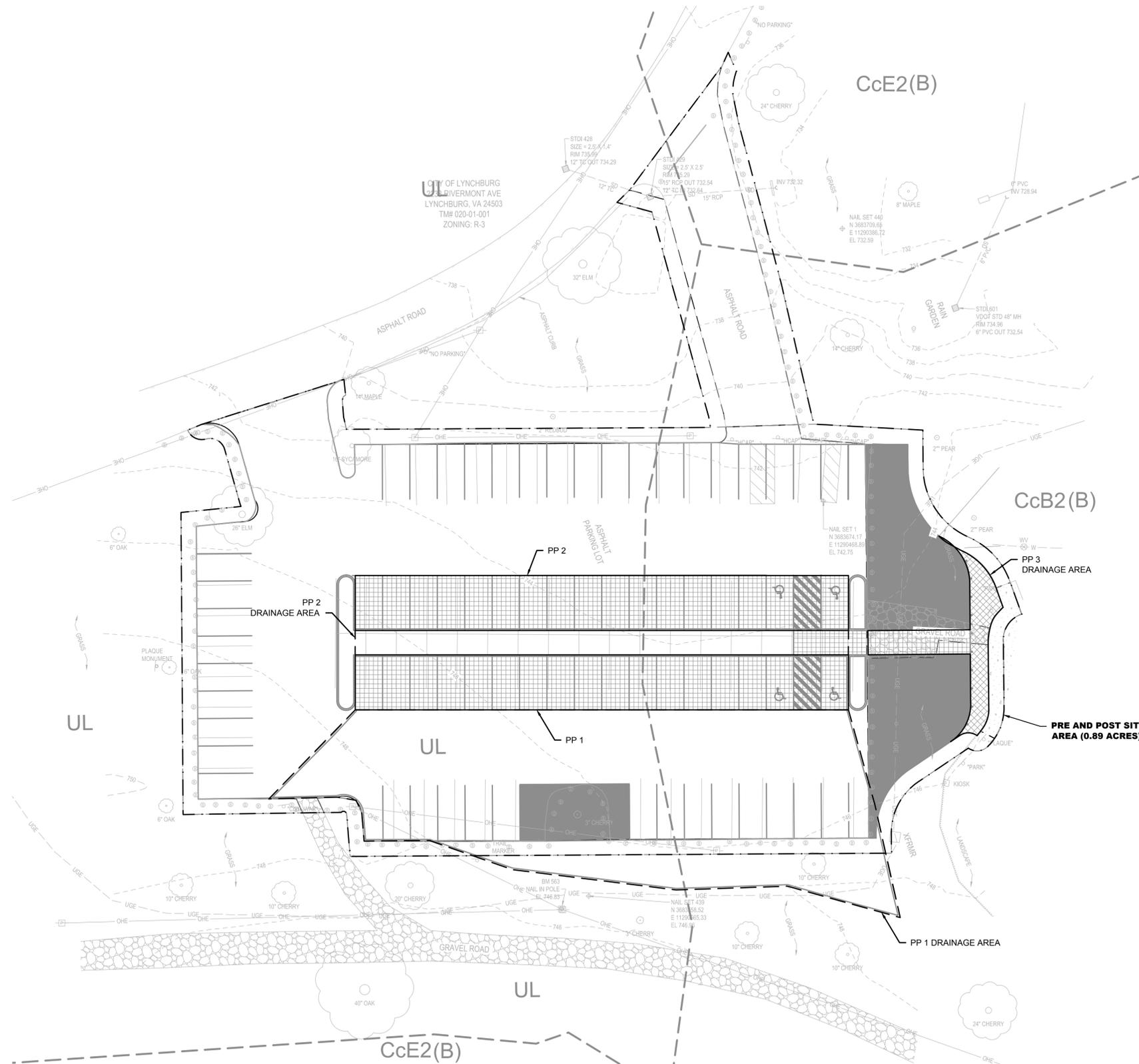
% IMPERVIOUS COVER (PRE) = 0.71/0.89 = 80%
% IMPERVIOUS COVER (POST) = 0.53/0.89 = 60%

L (POST) = $[0.05 + (0.009 \times 1)] \times 0.89 \times 2.28 = 1.20$ POUNDS/YEAR
L (PRE) = $[0.05 + (0.009 \times 7)] \times 0.89 \times 2.28 = 1.56$ POUNDS/YEAR

RR = 1.20 - (0.9 x 1.56) = -0.20

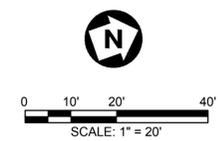
BASED ON THE IMPERVIOUS AREA REMOVED FROM THE PRE-DEVELOPMENT CONDITION THE PERVIOUS PAVERS ADDED MEET THE REQUIRED REMOVAL EFFICIENCIES

BMP SELECTION = PERMEABLE PAVERS



DESIGN FLOW SUMMARY				
	UNITS	1	1	1
DESIGN EVENT FREQUENCY	YEARS	2	10	25
SCS 24-HR PRECIPITATION	IN	3.3	5.0	6.2
PRE DEVELOPMENT				
TIME OF CONCENTRATION	MINUTES	5	5	5
TR-55 CURVE NUMBER		91	91	91
DRAINAGE AREA	ACRES	0.89	0.89	0.89
DESIGN FLOW	CFS	2.38	4.01	5.12
POST DEVELOPMENT				
TIME OF CONCENTRATION	MINUTES	5	5	5
TR-55 CURVE NUMBER		83	83	83
DRAINAGE AREA	ACRES	0.89	0.89	0.89
DESIGN FLOW	CFS	1.72	3.20	4.25

FLOW SUMMARY TABLE			
FEATURE ID	PP-1	PP-2	PP-3
DESIGN EVENT FREQUENCY	1" STORM	1" STORM	1" STORM
DRAINAGE AREA (SF)	12,540	4,210	665
PAVER AREA (SF)	2,916	2,916	665
TIME OF CONCENTRATION (MINUTES)	5	5	5
RUNOFF VOLUME (CF)	803	233	53
AVERAGE INFILTRATION RATE (IN/HR)	1.45	1.45	1.45
POROSITY OF RESERVOIR LAYER	0.4	0.4	0.4
RESERVOIR STONE DEPTH (IN)	9.00	3.00	3.00



design:	
Elisabeth Lardner, L/KLA landscape architect	6/16/2015 date
architect	date
Kelly Cole, WIW engineer	06/16/2015 date
Colby Shelhorse WIW drawn by	06/16/2015 date

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COMMONWEALTH OF VIRGINIA
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revisions:		
rev. no.	date	description

STORMWATER MANAGEMENT SUMMARY Sheet 9

Riverside Park Parking Lot Renovations
 Lynchburg, VA

EROSION & SEDIMENT CONTROL NARRATIVE

I. PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF RENOVATIONS TO RIVERSIDE PARK PARKING LOT. RENOVATIONS INCLUDE INSTALLATIONS OF PERMEABLE PAVERS TO ACCESS AISLES, HANDICAP SPACES, VEHICLE DROP OFF AREA, AND PEDESTRIAN AREA. THIS PROJECT ALSO INCLUDES THE INSTALLATION OF A LANDSCAPED MEDIAN/ISLAND BETWEEN PARKING AISLES. EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INCLUDED TO PREVENT EROSION AND TRAP SEDIMENT ON SITE. THE PROJECT INVOLVES APPROXIMATELY 0.89 ACRES OF LAND DISTURBANCE.

II. EXISTING SITE CONDITIONS

THIS SITE CONSISTS OF A MIX OF ASPHALT, GRAVEL, AND GRASSY OPEN SPACE.

III. ADJACENT PROPERTIES

THE PROJECT SITE IS BOUNDED BY THE JAMES RIVER TO THE NORTH, RANDOLPH COLLEGE TO THE WEST, AND HOUSING ALONG RIVERMONT AVENUE TO THE EAST AND SOUTH.

IV. OFF-SITE AREAS

FILL MATERIAL WILL BE OBTAINED FROM AREAS OF EXCAVATION CONTAINED WITHIN 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 MAURERTOWN, OPEQUON, AND UDORTMENTS.

URBAN LAND - UL
URBAN LAND IS ALTERED, REWORKED, OR REMOVED SOIL MATERIAL. COMMERCIAL, INDUSTRIAL, AND RESIDENTIAL DEVELOPMENTS COVER MUCH OF THE SURFACE.

CECIL SERIES CcB2 - FINE SANDY LOAM, 2 TO 6 PERCENT SLOPES, ERODED
CECIL IS A GENTLY SLOPING TO MODERATELY SLOPING, VERY DEEP, WELL DRAINED SOIL. TYPICALLY THE SURFACE LAYER IS FINE SANDY LOAM ABOUT 5 INCHES THICK. THE SURFACE LAYER HAS A 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 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 2e. THE VIRGINIA SOIL MANAGEMENT GROUP IS X. THIS SOIL IS NOT HYDRIC.

CECIL SERIES CcE2 - FINE SANDY LOAM, 15 TO 25 PERCENT SLOPES, ERODED
CECIL IS A MODERATELY STEEP TO STEEP, VERY DEEP, WELL DRAINED SOIL. TYPICALLY THE SURFACE LAYER IS FINE SANDY LOAM ABOUT 5 INCHES THICK. THE SURFACE LAYER HAS A 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 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 6e. THE VIRGINIA SOIL MANAGEMENT GROUP IS X. THIS SOIL IS NOT HYDRIC.

VI. CRITICAL AREAS

THERE ARE SEVERAL CRITICAL AREAS ADDRESSED BY THIS EROSION AND SEDIMENT CONTROL PLAN. THE EXISTING RAIN GARDEN (BIORETENTION AREA) IS LOCATED WEST OF THE PARKING LOT. THE EXISTING SLOPES ARE APPROXIMATELY 2:1 INCLINE. CARE WILL BE TAKEN TO PROVIDE PROTECTIVE MEASURES IN THESE AREAS TO ENSURE PROPER DRAINAGE OF THE RAIN GARDEN AND TO STABILIZE THE SLOPES. SEDIMENT WILL BE TRAPPED ON 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

- SAFETY FENCE (SAF), SPEC. 3.01: A SAFETY FENCE SHALL BE PROVIDED AS SHOWN ON THE PLANS TO PROHIBIT ACCESS BY THE PUBLIC.
- TEMPORARY CONSTRUCTION ENTRANCE (CE), SPEC. 3.02: A CONSTRUCTION ENTRANCE SHALL BE PROVIDED AS SHOWN ON THE PLANS AT THE EXISTING ROAD. EQUIPMENT WHEELS SHALL BE CLEAN WHEN ENTERING UPON A PAVED ROAD. ALL VEHICLES ENTERING AND EXITING THE PROJECT SITE SHALL USE A CONSTRUCTION ENTRANCE.
- SILT FENCE (SF), SPEC. 3.06: 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.

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.
- TREES, SHRUBS, VINES AND GROUND COVERS (VEG), SPEC. 3.37:
- 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 14 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 IS UNIFORM AND MATURE ENOUGH TO SURVIVE AND INHIBIT EROSION.

MS-4. TIMING AND STABILIZATION OF SILT TRAPPING MEASURES:

SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

MS-5. STABILIZATION OF EARTHEN STRUCTURES:

STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

MS-6. SEDIMENT BASINS AND TRAPS:

SEDIMENT TRAPS AND BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.
A. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT TRAP SHALL BE 134-CUBIC YARDS PER ACRE OF DRAINAGE AREA, AND THE TRAP SHALL ONLY CONTROL DRAINAGE AREAS LESS THAN 3-ACRES.
B. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO 3-ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE MINIMUM STORAGE CAPACITY OF A SEDIMENT BASIN SHALL BE 134-CUBIC YARDS PER ACRE OF DRAINAGE AREA. THE OUTFALL SYSTEM SHALL, AT A MINIMUM, MAINTAIN THE STRUCTURAL INTEGRITY OF THE BASIN DURING A 25-YEAR STORM OF 24-HOUR DURATION. RUNOFF COEFFICIENTS SHALL CORRESPOND TO A BARE EARTH CONDITION OR THOSE CONDITIONS EXPECTED TO EXIST WHILE THE SEDIMENT BASIN IS UTILIZED.

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-11. STABILIZATION OF OUTLETS:

BEFORE NEWLY CONSTRUCTED STORM WATER CONVEYANCE CHANNELS OR PIPES ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

MS-12. WORK IN LIVE WATERCOURSES:

WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED WITH NONERODIBLE COVER MATERIALS.

MS-13. CROSSING A LIVE WATERCOURSE:

WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX MONTH PERIOD, A TEMPORARY VEHICULAR STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIALS SHALL BE PROVIDED.

MS-14. APPLICABLE REGULATIONS:

ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.

MS-15. STABILIZATION OF BED AND BANKS:

THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

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.
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 DAYS AFTER FINAL SITE STABILIZATION OR AFTER TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE VESCP 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.

D. 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 DETEIORATION 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. 3.30) 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 RESEEDDED 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. 3.37) MAINTAIN A MULCH OR TURF COVER FOR SHRUBS AND TREES.
- (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.

VIII. PERMANENT STABILIZATION

ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH SEEDING FOLLOWING GRADING IN ACCORDANCE WITH THE MINIMUM STANDARDS. SEEDING SHALL BE IN ACCORDANCE WITH THE TEMPORARY OR PERMANENT SEEDING SCHEDULES SHOWN ON THIS PLAN. IN ALL SEEDING OPERATIONS, TOPSOIL, SEED, FERTILIZER AND LIME SHALL BE APPLIED PRIOR TO INSTALLATION OF MULCHING OR EROSION CONTROL BLANKETS AND MATTING.

IX. STORMWATER MANAGEMENT

MANAGEMENT OF STORMWATER RUNOFF DURING CONSTRUCTION WILL COMPLY WITH THE EXISTING VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS 9VAC25-840. THE EROSION AND SEDIMENT CONTROL PLANS INDICATE ALL ACTIVITIES AND STRATEGIES NECESSARY TO MINIMIZE EROSION AND SEDIMENTATION DURING CONSTRUCTION.

MANAGEMENT OF STORMWATER RUNOFF AFTER CONSTRUCTION WILL COMPLY WITH THE EXISTING VIRGINIA STORMWATER MANAGEMENT PROGRAM (VSMP) REGULATIONS 9VAC25-870. THE STORMWATER MANAGEMENT PLANS INDICATE ALL ACTIVITIES AND STRATEGIES NECESSARY TO COMPLY WITH THE VSMP REGULATIONS AFTER CONSTRUCTION.

X. SOIL STOCKPILES AND BORROW AREAS

FILL MATERIAL SHALL BE OBTAINED FROM AREAS OF EXCAVATION ON 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.

XI. SEQUENCE OF CONSTRUCTION

- EXISTING NORTH DRIVE SHALL BE USED AS CONSTRUCTION ENTRANCE
- 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 AREAS THAT ARE AFFECTED BY THE REMOVAL OF THE TEMPORARY E&S MEASURES.

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1	7/14/15	TRC COMMENTS AND DESIGN TEAM CLARIFICATIONS

EROSION & SEDIMENT CONTROL NARRATIVE

Sheet 10

Riverside Park Parking Lot Renovations
Lynchburg, VA