

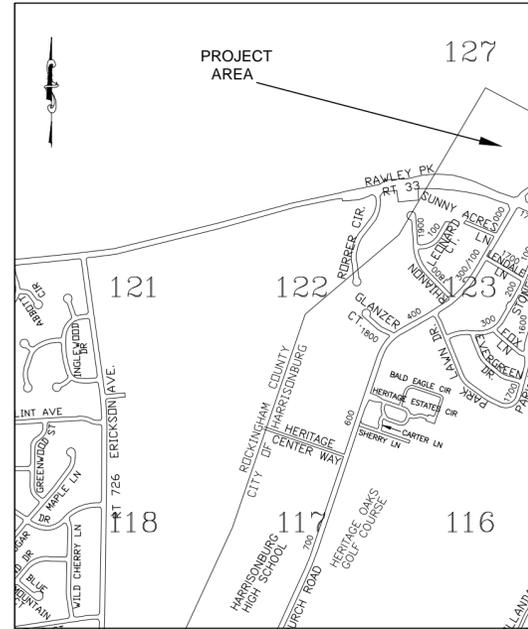
City of Harrisonburg, Virginia

WEST MARKET STREET RETAINING WALL REMEDIATION

PROJECT DESCRIPTION/SCOPE OF WORK:

- EXISTING STONE WALL WAS PRESUMABLY BUILT IN THE 1930'S. THE WALL EXPERIENCED BULGING AND JOINT CRACKING OVER THE LAST 10 YEARS OR MORE. THE SECTION SLATED FOR REPAIR COLLAPSED IN JANUARY 2014. CITY CREWS REMOVED FALLEN STONE IN VARIABLE SIZED PIECES AND STOCKPILED THEM AT THE SITE FOR RE-USE. SOIL/ROCK OVERBURDEN WAS THEN PLACED IN THE FAILURE AREA TO PROTECT THE SLOPE FROM FURTHER DETERIORATION.
- CONTRACTOR SHALL USE EXISTING STOCKPILED LIMESTONE PIECES, CLEANED OF EXCESS DRIED MORTAR AND DEBRIS, TO CONSTRUCT THE NEW WALL VENEER IN SUCH A FASHION THAT IT CAN STAND FREE WITHOUT ANCHORING TO NEW CONCRETE RETAINING WALL. SOME STONE CUTTING IS NECESSARY TO CREATE AN APPROPRIATE MATCHING LOOK/PATTERN TO MIMIC THE ADJACENT SURVIVING WALL SECTIONS. CURVED STONE PIECES SHOULD BE SEPARATED AND USED TO CREATE THE CURVED SECTION OF THE WALL ADJACENT TO THE STEPS. STONES FROM THE FAILED WALL, ALONG WITH MISCELLANEOUS PIECES LEFT FROM PREVIOUS WORK, ARE AVAILABLE FOR USE.
- CONTRACTOR SHALL HAVE THE OPTION TO REDUCE THE STONE TO A CONSISTENT, THINNER SIZE TO BE INSTALLED AS A VENEER ON THE CONCRETE RETAINING WALL. IF SUCH VENEER IS NOT OF A SIZE TO STAND FREE, CONTRACTOR SHALL INCLUDE IN HIS BID THE COSTS FOR INSTALLING A SUITABLE SYSTEM FOR ANCHORING THE VENEER.
- MORTAR COLOR USED FOR WALL VENEER SHALL MATCH THAT IN ADJACENT WALL SECTIONS. MORTAR JOINTS SHALL BE TOOLED TO MIMIC THOSE ON ADJACENT WALLS.
- PORTIONS OF SURVIVING WALL SECTIONS SHALL BE REMOVED AS NECESSARY TO REPAIR DAMAGED JOINTS FROM WALL FAILURE, AND TO ESTABLISH STONE PATTERN.
- CONTRACTOR IS RESPONSIBLE FOR ALL EXCAVATION, INCLUDING REMOVAL OF PROTECTIVE OVERBURDEN. ANY EXCESS MATERIAL NOT USED FOR SLOPE BACKFILL SHALL BE REMOVED FROM SITE AND DISPOSED OF (END DUMP) BY THE CONTRACTOR AT THE CITY'S STOCKPILE AT 901 WEST MARKET STREET (1.2 MILES FROM PROJECT SITE).
- PROTECT OR REMOVE AND RE-INSTALL EXISTING HANDRAILS ALONGSIDE STAIRS, AS WELL AS FENCE ABOVE WALL, AS NECESSARY TO ACCOMMODATE WORK.
- PHOTOS ARE INCLUDED AS PART OF THE CONTRACT DOCUMENTS TO ILLUSTRATE CONDITIONS EXISTING BEFORE AND AFTER WALL FAILURE, AND ARE ANNOTATED TO CITE MISCELLANEOUS TASKS REQUIRED FOR THE PROJECT. CONTRACTOR IS ALSO ENCOURAGED TO TAKE ADDITIONAL PICTURES AND NOTES FOR REFERENCE AT THE MANDATORY PRE BID CONFERENCE.
- CONTRACTOR SHALL INCLUDE IN HIS BID ALL COSTS TO EXCAVATE SLOPE BEHIND WALL AS NECESSARY TO CONSTRUCT NEW CONCRETE RETAINING WALL AND VENEER. ALL EXCAVATION IS UNCLASSIFIED. TEMPORARY SHORING AND OTHER SLOPE PROTECTION MEASURES SHALL BE IMPLEMENTED AS NECESSARY TO MEET SAFETY REQUIREMENTS. SLOPE ABOVE WALL SHALL BE RE-ESTABLISHED SIMILAR TO PRE-FAILURE CONDITIONS, AFTER WALL RE-CONSTRUCTION.
- ADDITIONAL REQUIREMENTS ARE SPECIFIED ON PLAN SHEETS AND IN CONTRACT MANUAL.
- TOPSOIL AND SEED ALL AREAS NOT OTHERWISE COVERED. REPAIR, TOPSOIL AND SEED ALL AREAS DISTURBED BY CONTRACTOR OPERATIONS. TOPSOIL DEPTH SHALL BE 2 INCHES MINIMUM UNLESS OTHERWISE NOTED.

MAYOR TED BYRD
 CITY MANAGER KURT HODGEN
 CITY ENGINEER DANIEL J. RUBLEE
 DIRECTOR OF PUBLIC WORKS ..JAMES D BAKER



VICINITY SKETCH
 SCALE: 1" = 600' +/-

SPECIFICATION AND STANDARDS:

- SPECIFICATIONS AND STANDARDS:
 ALL CONCRETE WORK, DETAILS, FABRICATION, AND PLACING OF BARS AND CONCRETE SHALL BE GOVERNED BY THE LATEST REVISIONS OF:
 - ACI 301, ACI 315, AND ACI 318
 - CRSI RECOMMENDED PRACTICE FOR PLACING REINFORCING BARS
 - ACI 306 COLD WEATHER CONCRETE
 - ACI 305 HOT WEATHER CONCRETE
- PROVIDE LEAN CONCRETE OR COMPACTED DENSE AGGREGATE (VDOT 21A) UNDER FOUNDATIONS FOR EARTH FILL DUE TO ACCIDENTAL OVER EXCAVATION AND REMOVAL OF UNSUITABLE MATERIAL. SEE ALSO, CONSTRUCTION AND FOUNDATIONS NOTE #1.
- CONCRETE REQUIREMENTS AND LOCATION OF PLACEMENT:

LOCATION	F _c	REQUIREMENTS*
FOOTINGS	3000 PSI	3" TO 5" SLUMP
WALLS	4000 PSI	3" TO 5" SLUMP WITH 6.5±1.5% AIR

*SLUMP MAY BE INCREASED TO 8" WITH THE ADDITION OF SUPERPLASTICIZER
- REINFORCING REQUIREMENTS:
 - ALL REINFORCEMENT TO BE GRADE 60 DEFORMED BARS CONFORMING TO ASTM A615, A616, A617 - GRADE 60
 - BEND ALL REINFORCEMENT AT 10 X BAR DIAMETER
 - MINIMUM LAP SPLICE SHALL BE 30 INCHES UNLESS OTHERWISE NOTED

CONSTRUCTION AND FOUNDATIONS:

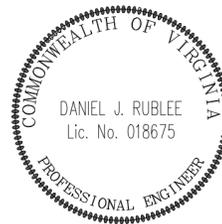
- ALLOWABLE SOIL BEARING PRESSURE: 3000 PSF. CITY'S CONSULTING ENGINEER SHALL BE ALLOWED TO CONFIRM ADEQUATE BEARING AFTER FOOTING EXCAVATION AND REMOVAL OF UNSUITABLE MATERIAL, BUT BEFORE ANY BACKFILL TO FILL IN OVER-EXCAVATED AREAS. FOOTING SUBGRADE SHALL BE GRADED TO A FIRM, CONSISTENT, UNIFORM LEVEL BEFORE STEEL REINFORCEMENT IS INSTALLED.
- FOUNDATION KEY MAY BE NEGLECTED WHEN FOOTING BEARS ON, AND IS SOCKETED INTO, COMPETENT BEDROCK, IF APPROVED BY ENGINEER. REINFORCING STEEL FOR THE HEEL OF THE WALL SHALL BE EXTENDED TO THE TOE OF THE WALL AS DISPLAYED IN ALTERNATE WALL SECTION.
- WALL BACKFILL SHALL BE OPEN GRADED STONE EQUIVALENT TO VDOT #57 STONE. NON-WOVEN FILTER FABRIC SHALL BE INSTALLED ALONG INTERFACE BETWEEN STONE BACKFILL, EXCAVATED SLOPE, AND SLOPE FILL ABOVE STONE. FILTER FABRIC FOR THIS APPLICATION SHALL BE EQUIVALENT TO ACF ENVIRONMENTAL'S N035.

APPLICABLE CITY GENERAL NOTES:

- THE LOCATION OF EXISTING UTILITIES AS SHOWN IS APPROXIMATE ONLY. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL PUBLIC OR PRIVATE UTILITIES THAT LIE IN OR ADJACENT TO THE CONSTRUCTION SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT HIS EXPENSE, ALL EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. FORTY-EIGHT (48) HOURS PRIOR TO ANY EXCAVATION CALL MISS UTILITY 1 (800) 552-7001.
- ALL MATERIALS USED FOR FILL OR BACK-FILL SHALL BE FREE OF WOOD, ROOTS, ROCKS, BOULDERS OR ANY OTHER NON-COMPACTABLE SOIL TYPE MATERIAL. UNSATISFACTORY MATERIALS ALSO INCLUDE MAN-MADE FILLS AND REFUSE DEBRIS DERIVED FROM ANY SOURCE.
- SATISFACTORY MATERIAL FOR USE AS FILL INCLUDE MATERIAL CLASSIFIED IN ASTM D-2487 AS GW, GP, GM, GC, SW, SP, SM, SC, ML, AND CL GROUPS. THE MOISTURE CONTENT SHALL BE CONTROLLED WITHIN PLUS OR MINUS 2 PERCENTAGE POINTS OF OPTIMUM TO FACILITATE COMPACTION. GENERALLY, UNSATISFACTORY MATERIALS INCLUDE MATERIALS CLASSIFIED IN ASTM D-2487 AS PT, CH, MH, OL, OH, AND ANY SOIL TOO WET TO FACILITATE COMPACTION. CH AND MH SOILS MAY BE USED SUBJECT TO APPROVAL OF THE CITY ENGINEER.
- MATERIALS USED TO CONSTRUCT EMBANKMENTS FOR ANY PURPOSE, BACK-FILL AROUND DRAINAGE STRUCTURES OR IN UTILITY TRENCHES OR ANY OTHER DEPRESSION REQUIRING FILL OR BACK-FILL SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR TEST AS SET OUT IN ASTM STANDARD D-698. THE CONTRACTOR SHALL, PRIOR TO ANY OPERATIONS INVOLVING FILLING OR BACKFILLING, SUBMIT THE RESULT OF THE PROCTOR TEST TO THE CITY'S ON-SITE INSPECTOR TOGETHER WITH A CERTIFICATION THAT THE SOIL TESTED IS REPRESENTATIVE OF THE MATERIALS TO BE USED ON THE PROJECT. TESTS SHALL BE CONDUCTED BY A CERTIFIED MATERIALS TESTING LABORATORY AND THE CERTIFICATIONS MADE BY A LICENSED PROFESSIONAL ENGINEER REPRESENTING THE LABORATORY.
- EMBANKMENT FILL SHALL BE PLACED IN LIFTS AT A MAXIMUM UNCOMPACTED DEPTH OF 8-INCHES
- ALL EXCAVATIONS, INCLUDING TRENCHES, SHALL BE KEPT DRY TO PROTECT THEIR INTEGRITY.
- CITY INSPECTORS HAVE FULL AUTHORITY TO REJECT FILL OR BACKFILL MATERIALS, REQUIRE UNDERCUTTING OR SUB GRADE STABILIZATION, REQUIRE PROVISIONS FOR SUB DRAINAGE, OR REQUIRE OTHER MEASURES WHICH AFFECT THE INTEGRITY OF ROAD AND UTILITY CONSTRUCTION. FAILURE TO COMPLY WITH INSPECTORS' DIRECTIVES SHALL BE CAUSE FOR NON-ACCEPTANCE OF THE FACILITY.
- TRAFFIC CONTROL ON PUBLIC STREETS SHALL BE IN CONFORMANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND AS FURTHER DIRECTED BY CITY INSPECTORS. CITY INSPECTORS MUST BE NOTIFIED 24-HOURS IN ADVANCE OF ANY PLANNED WORK OR ACTIVITY IN CITY RIGHT-OF-WAY THAT REQUIRES FLAGGING, LANE CLOSURE OR STREET CLOSURE. ALL SIGNAGE AND OTHER CONTROL DEVICES SHALL BE IN PLACE BEFORE SUCH ACTIVITIES CAN COMMENCE.
- ANY DISCREPANCIES FOUND BETWEEN THE DRAWINGS AND SPECIFICATIONS AND SITE CONDITIONS OR ANY INCONSISTENCIES OR AMBIGUITIES IN DRAWINGS OR SPECIFICATIONS SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER, IN WRITING, WHO SHALL PROMPTLY ADDRESS SUCH INCONSISTENCIES OR AMBIGUITIES. WORK DONE BY THE CONTRACTOR AFTER HIS DISCOVERY OF SUCH DISCREPANCIES, INCONSISTENCIES OR AMBIGUITIES SHALL BE DONE AT THE CONTRACTOR'S RISK.

GENERAL STRUCTURAL NOTES:

- THE GENERAL STRUCTURAL NOTES ARE INTENDED TO AUGMENT THE DRAWING AND SPECIFICATIONS. SHOULD CONFLICTS EXIST BETWEEN THE DRAWINGS, SPECIFICATIONS, AND THE GENERAL STRUCTURAL NOTES, THE STRICTEST PROVISION SHALL GOVERN.
- GOVERNING CODE: 2009 VIRGINIA UNIFORM STATEWIDE BUILDING CODE
- IT IS SOLELY THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY AND BUILDINGS CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS RELATING TO EXISTING CONSTRUCTION AND STRUCTURAL DRAWINGS.
- LIMESTONE ROCK SHALL BE INSTALLED AT THE FRONT FACE OF THE CONCRETE RETAINING WALL, TO RESTORE THE EXISTING RETAINING WALL TO SIMILAR APPEARANCE EXISTING PRIOR TO THE COLLAPSE.
- CITY ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES FOUND ON THE PLANS OR DURING CONSTRUCTION.
- OWNER'S INSPECTORS WILL PROVIDE TESTING OF CONCRETE AT DELIVERY, TO CONFIRM COMPLIANCE WITH MIX DESIGN AND OTHER SPECIFICATIONS, AND TO PREPARE CYLINDERS FOR OWNER'S TESTING. INSPECTORS ARE AUTHORIZED TO REJECT CONCRETE THAT DOES NOT CONFORM TO PROJECT REQUIREMENTS.

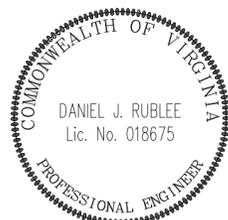
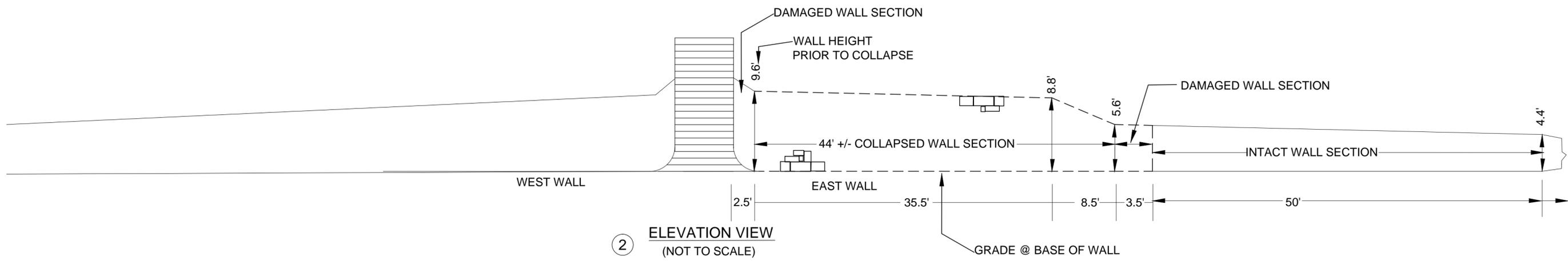
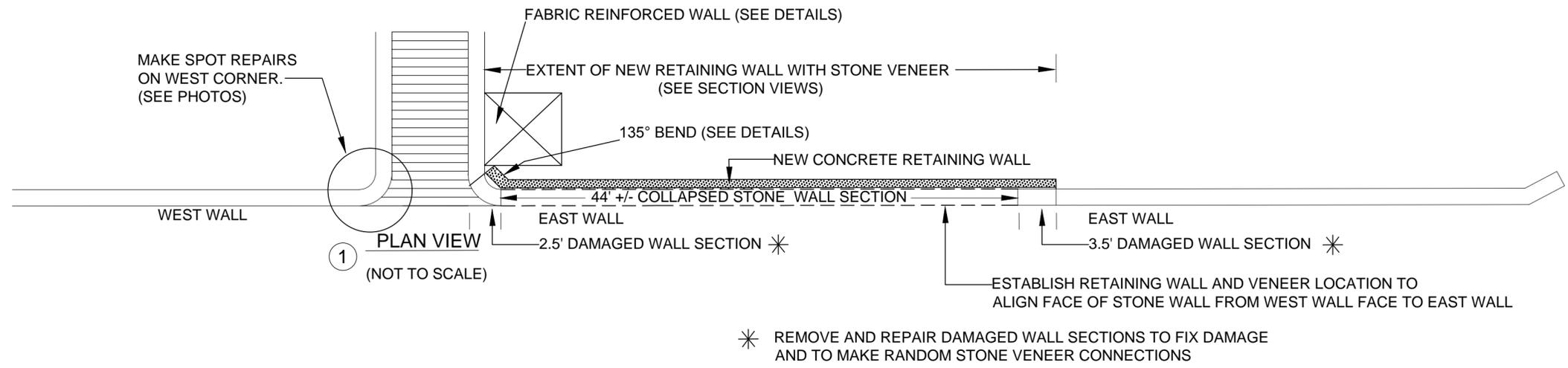


CONTENTS	
SHEET	DESCRIPTION
COVER	NOTES AND LEGEND
1	DETAIL SHEET
2	DETAIL SHEET
3	DETAIL SHEET
4	DETAIL SHEET

REV	DATE	DESCRIPTION	BY	SCALE:	HORZ.	N/A	WEST MARKET STREET RETAINING WALL REMEDAITION	PROJECT # 0734
A				DRAWN BY	DATE			
B				JRS	AUG 2014			
C				CHECKED BY	DATE			
				DJR	AUG 2014			
				DESIGN BY	DATE			
				DMB	AUG 2014			
				TAX MAP				
				xxx				

DIVISION OF ENGINEERING
 CITY OF HARRISONBURG
 409 SOUTH MAIN STREET
 HARRISONBURG, VIRGINIA

TITLE
 SHEET



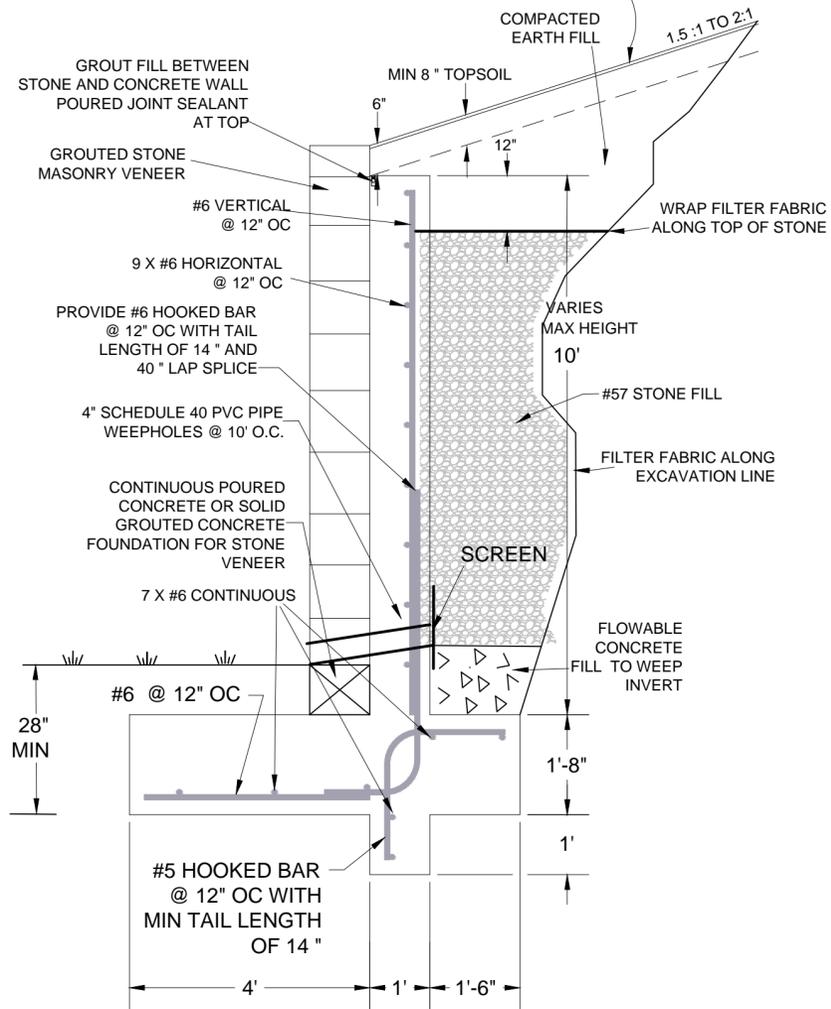
PROJECT:
WEST MARKET ST.
RETAINING WALL REMEDIATION
CITY OF HARRISONBURG, VA

DIVISION OF ENGINEERING
CITY OF HARRISONBURG
409 SOUTH MAIN STREET
HARRISONBURG, VA 22801

DRAWN BY		DATE	
JRS		AUG 2014	
SHEET	BLOCK	LOT	
127	A	2	
SHEET 1 OF 4			



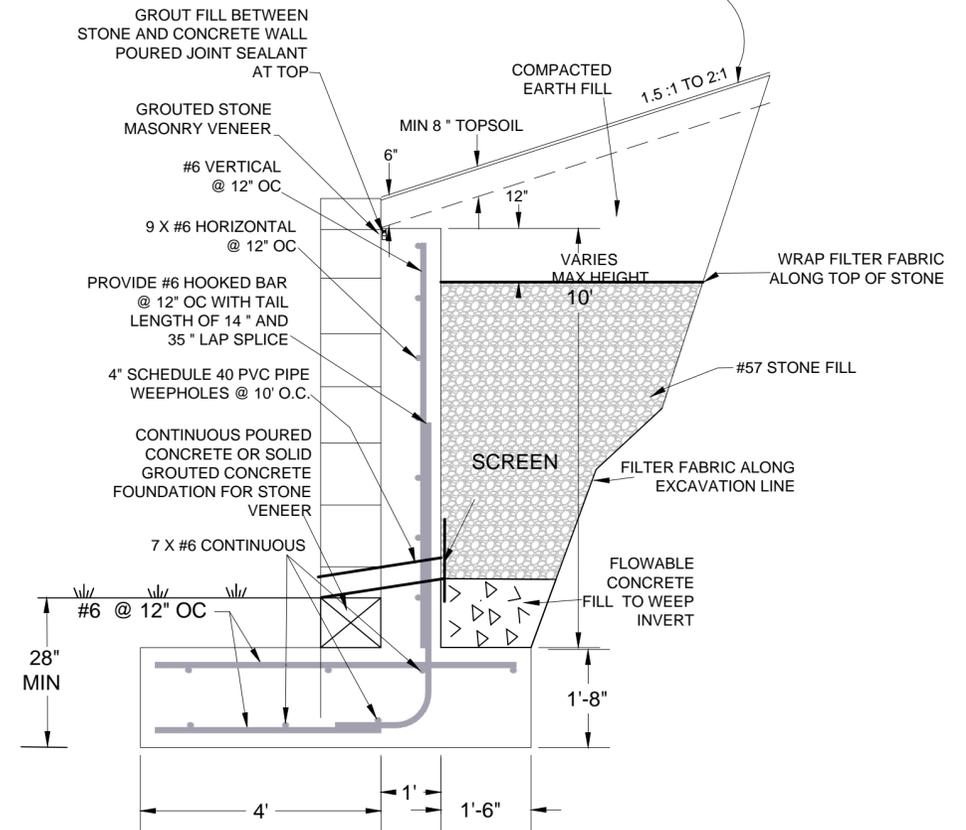
COVER TOPSOILED SLOPE AREA WITH LANDSCAPE FABRIC SIMILAR TO THAT ON ADJACENT PLANTED SLOPES. STAKE DOWN ACCORDING TO MANUFACTURER RECOMMENDATION. DO NOT SEED SLOPE FROM WALL TO FENCE LINE.



FOR BEARING ON SOIL *

* SEE CONSTRUCTION & FOUNDATION NOTE #2

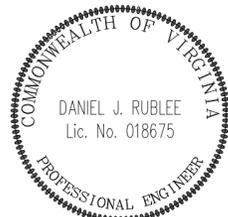
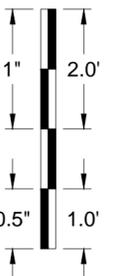
COVER TOPSOILED SLOPE AREA WITH LANDSCAPE FABRIC SIMILAR TO THAT ON ADJACENT PLANTED SLOPES. STAKE DOWN ACCORDING TO MANUFACTURER RECOMMENDATION. DO NOT SEED SLOPE FROM WALL TO FENCE LINE.



FOR BEARING SOCKETED INTO COMPETENT ROCK *

③ CONCRETE RETAINING WALL SECTIONS WITH STONE VENEER

SCALE: 1" = 2'



PROJECT:
WEST MARKET ST.
RETAINING WALL REMEDIATION

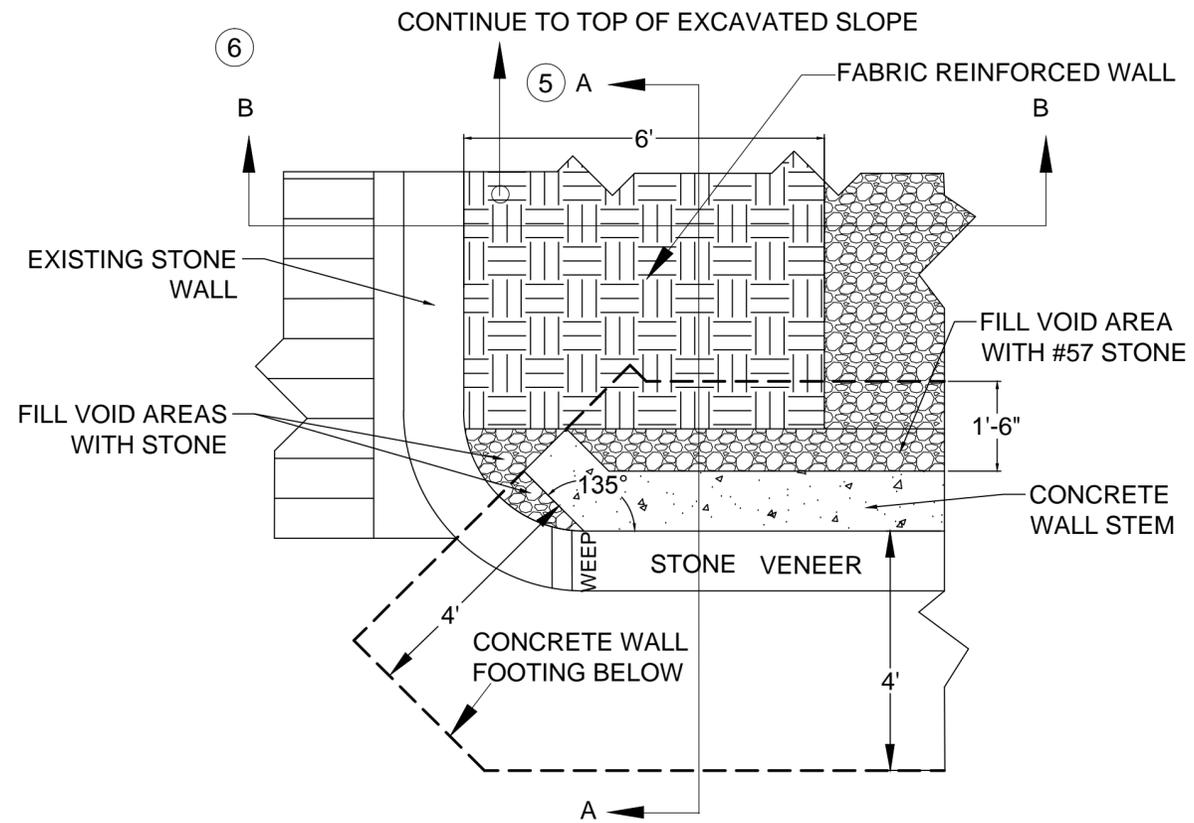
CITY OF HARRISONBURG, VA

DIVISION OF ENGINEERING
CITY OF HARRISONBURG
409 SOUTH MAIN STREET
HARRISONBURG, VA 22801

DRAWN BY		DATE	
JRS		AUG 2014	
SHEET	BLOCK	LOT	
127	A	2	
SHEET 2 OF 4			

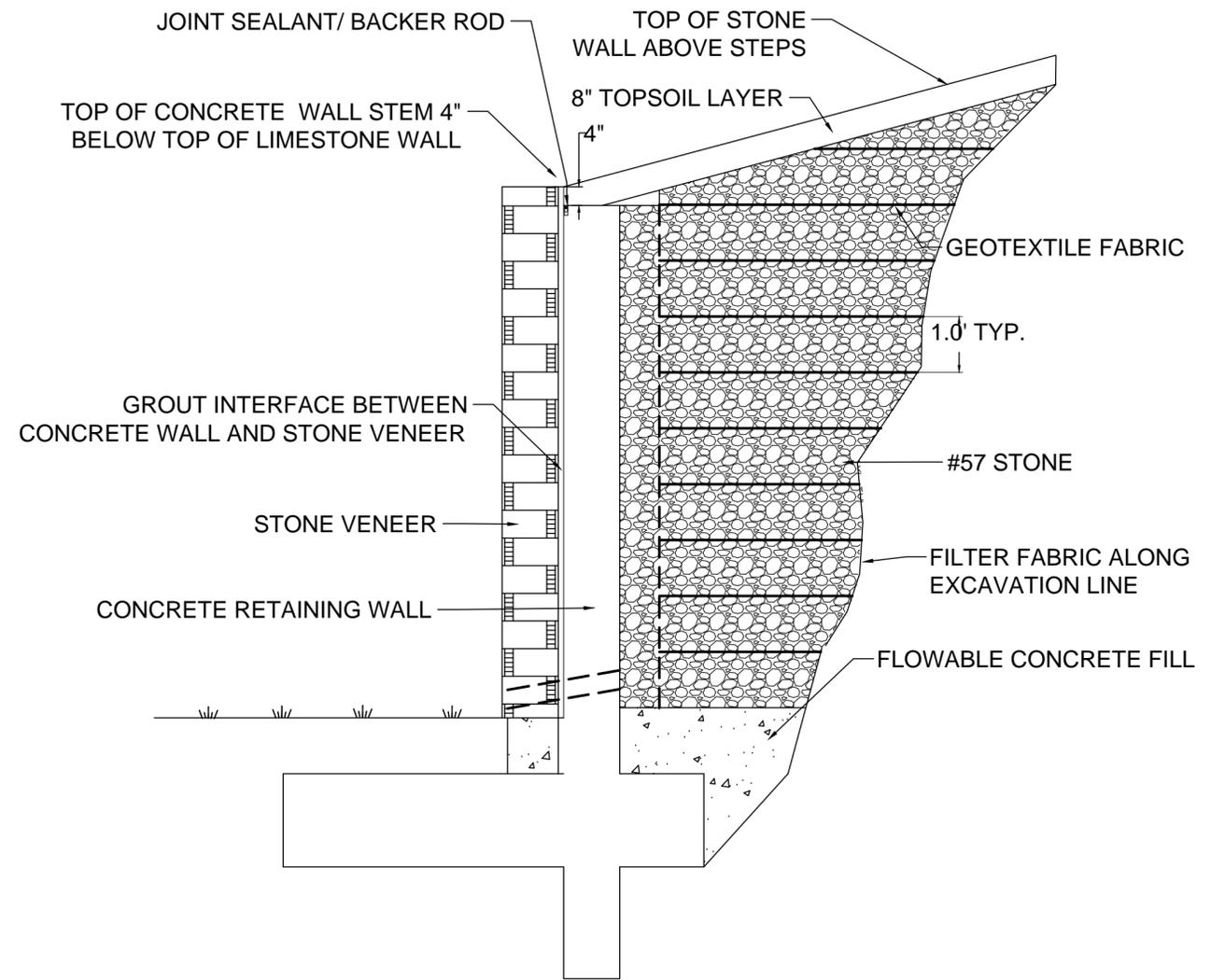


PROJ
073



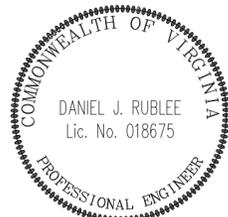
④ CONCRETE RETAINING WALL CORNER & FABRIC REINFORCED WALL

NTS



⑤ CONCRETE RETAINING WALL FABRIC REINFORCED WALL SECTION VIEW (CUT A-A)

NTS



PROJECT:
WEST MARKET ST.
RETAINING WALL REMEDIATION

CITY OF HARRISONBURG, VA

DIVISION OF ENGINEERING
CITY OF HARRISONBURG
409 SOUTH MAIN STREET
HARRISONBURG, VA 22801

DRAWN BY		DATE	
JRS		AUG 2014	
SHEET	BLOCK	LOT	
127	A	2	
SHEET 3 OF 4			



PROJ
073

1" OFFSET AT EACH LAYER.
FILL VOID SPACE WITH #57 STONE.
AFTER FABRIC WALL IS COMPLETE

8" TOPSOIL LAYER

NOTE: NONWOVEN
GEOTEXTILE FABRIC - 200 lb TENSILE STRENGTH.
US FABRICS US200NW OR EQUIVALENT.

STONE WALL
ALONG STEPS

1 INCH BATTER
PER 12 INCH LIFT
TYP.

1 FT TYP

#57 STONE

3' MIN
6' MIN

TOP LINE OF
FLOWABLE FILL
ABOVE FOOTING

⑥ FABRIC REINFORCED WALL
SECTION VIEW (CUT B-B)
NTS

TYPICAL 4"
WEEPHOLE LOCATED
EVERY 10' ON CENTER

USE LARGER STONES
TO BRIDGE OVER
WEEPHOLES

FILL VOID
WITH MORTAR

SCREEN BEHIND ALONG INSIDE
OF STEM WALL - 12" X 12"
HARDWARE CLOTH, GALVANIZED
STEEL 1/4" MESH WITH MIN. 0.03"
WIRE DIAMETER SECURED FIRMLY TO WALL

⑦ WEEPHOLE DETAIL TYP.
NTS



PROJECT:
WEST MARKET ST.
RETAINING WALL REMEDIATION

CITY OF HARRISONBURG, VA

DIVISION OF ENGINEERING
CITY OF HARRISONBURG
409 SOUTH MAIN STREET
HARRISONBURG, VA 22801

DRAWN BY		DATE	
JRS		AUG 2014	
SHEET	BLOCK	LOT	
127	A	2	
SHEET 4 OF 4			



PROJ
073