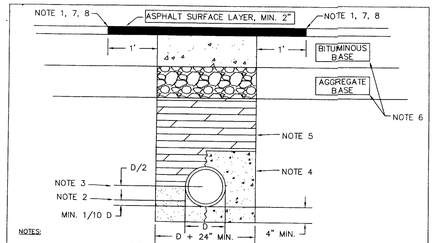


NOTES:

1. ALL PAVEMENTS SHALL BE SAW CUT WITH NEAT, UNIFORM LINES PRIOR TO EXCAVATION.
2. PIPE BEDDING MATERIAL SHALL BE CRUSHER RUN (VDOT NO. 25 OR 26) OR OPEN GRADED AGGREGATE (VDOT NO. 57, 68, 7, OR 8). ALTERNATE MATERIAL MUST BE APPROVED BY THE CITY ENGINEER.
3. MAXIMUM DEPTH OF PIPE BEDDING MATERIAL IF USING OPEN GRADED AGGREGATE FOR BEDDING.
4. OPTIONAL CONCRETE ENCASEMENT FOR POWER OR COMMUNICATION CONDUIT. PROVIDE A MINIMUM OF 4" CONCRETE COVER FROM ALL SIDES OF CONDUIT.
5. BACKFILL MATERIAL SHALL BE VDOT NO. 21A AGGREGATE, PLACED IN LOOSE LIFTS NOT EXCEEDING 6", AND COMPACTED TO AT LEAST 95% MAXIMUM DRY DENSITY WITHIN 2 PERCENTAGE POINTS OF OPTIMUM MOISTURE (WTM-1) WITH THE USE OF MECHANICAL TAMPERS OR VIBRATORY ROLLERS. WATER COMPACTION IS NOT PERMITTED. TYPE I SELECT MATERIAL MAY BE USED AS BACKFILL UPON PRIOR APPROVAL BY THE CITY ENGINEER. MATERIAL CLASSIFICATION SHALL BE PERFORMED ON THE ACTUAL SOIL TO VERIFY THAT SOIL MEETS VDOT SPECIFICATIONS FOR TYPE I SELECT MATERIAL BY A QUALIFIED TESTING LABORATORY AND TEST RESULTS SHALL BE CERTIFIED BY A VIRGINIA REGISTERED PROFESSIONAL ENGINEER. DENSITY REQUIREMENS ARE THE SAME AS ABOVE, HOWEVER, MOISTURE CONTENT FOR SOILS MAY WITH WITHIN 2% OF OPTIMUM.

   ALL TESTING SHALL BE PERFORMED AND CERTIFIED BY A GEOTECHNICAL ENGINEER OR A VDOT-CERTIFIED TECHNICIAN. RESULTS SHALL BE PROVIDED TO THE INSPECTOR WITHIN 24 HOURS OF TESTING COMPLETION. THE COST OF ALL TESTING IS THE RESPONSIBILITY OF THE PERMITTEE. FIELD DENSITY TESTING METHODS SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO PERFORMING ANY TESTING.
6. ALL PAVEMENTS SHALL BE RESTORED TO MATCH DEPTHS OF EXISTING SURFACE, BASE, AND AGGREGATE LAYERS. THE ASPHALT SURFACE LAYER SHALL BE A MINIMUM OF 2" THICK AND EXTEND OVER UNDISTURBED BASE A MINIMUM OF 12" ON ALL SIDES. ALL PAVEMENT MATERIALS SHALL MEET VDOT REQUIREMENTS FOR SURFACE MIX (SM-9.5AL, SM-9.5A, OR SM-12.5D), BASE MIX (BM-25), AND STONE AGGREGATE (21A OR 21B). PLANT CERTIFICATION FOR EACH MIX INCORPORATED INTO THE WORK SHALL BE PROVIDED TO THE INSPECTOR. WHEN MATCHING NON-STANDARD MATERIALS, THE INSPECTOR SHALL DETERMINE AN ACCEPTABLE MATERIAL.
7. THE REPAIR SHALL BE RECTANGULAR AND SAW CUT IN STRAIGHT, UNIFORM LINES THAT ARE ALIGNED WITH THE STREET CENTERLINE. WHEN EDGES OF PAVEMENT HAVE BEEN UNDERMINED, PAVEMENT SHALL BE REMOVED TO A NEAT LINE 12" BEYOND THE UNDERMINED AREA. THE FINISHED PATCH SURFACE SHALL BE WITHIN 1/4 INCH AT ANY POINT ACROSS THE PATCH AS IT RELATES TO THE SURROUNDING STREET SURFACE.

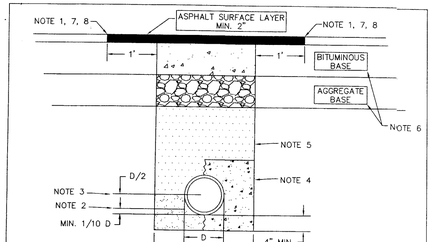
8. A FULL COVERAGE TACK COAT IS REQUIRED ON ALL SURFACES THAT WILL CONTACT THE NEW SURFACE LAYER.

APPROVED: _____ CITY ENGINEER
DATE: 12/01/04

OFFICE OF THE CITY ENGINEER – ROANOKE, VIRGINIA

UTILITY TRENCH REPAIR IN PAVEMENT USING VDOT NO. 21A AGGREGATE

3 OF 9



NOTES:

1. ALL PAVEMENTS SHALL BE SAW CUT WITH NEAT, UNIFORM LINES PRIOR TO EXCAVATION.
2. PIPE BEDDING MATERIAL SHALL BE CRUSHER RUN (VDOT NO. 25 OR 26) OR OPEN GRADED AGGREGATE (VDOT NO. 57, 68, 7, OR 8). ALTERNATE MATERIAL MUST BE APPROVED BY THE CITY ENGINEER.
3. MAXIMUM DEPTH OF PIPE BEDDING MATERIAL IF USING OPEN GRADED AGGREGATE FOR BEDDING.
4. OPTIONAL CONCRETE ENCASEMENT FOR POWER OR COMMUNICATION CONDUIT. PROVIDE A MINIMUM OF 4" CONCRETE COVER FROM ALL SIDES OF CONDUIT.
5. BACKFILL MATERIAL SHALL BE FLOWABLE FILL MEETING THE REQUIREMENTS OF VDOT SPECIAL PROVISION FOR FLOWABLE BACKFILL. THE MATERIAL MUST BE PLANT-CERTIFIED TO PROVIDE A 28-DAY COMPRESSIVE STRENGTH BETWEEN 30 AND 200 PSI. A CERTIFICATE OF MIX DESIGN MUST BE SUBMITTED TO THE INSPECTOR PRIOR TO PLACING THE MATERIAL IN THE TRENCH.

   A MINIMUM OF FOUR 6x12 TEST CYLINDERS SHALL BE TAKEN EVERY 50 CY OF PLACEMENT. CYLINDERS SHALL BE TESTED BY A QUALIFIED TESTING LABORATORY FOR 28-DAY STRENGTH. RESULTS SHALL BE PROVIDED TO THE INSPECTOR WITHIN 24 HOURS OF TESTING COMPLETION. THE COST OF ALL TESTING IS THE RESPONSIBILITY OF THE PERMITTEE. IF THE REPORT INDICATES THE COMPRESSIVE STRENGTHS ARE NOT BETWEEN 30 AND 200 PSI, THE PERMITTEE WILL BE RESPONSIBLE FOR REMOVING AND REPLACING THE BACKFILL WITH ACCEPTABLE BACKFILL AND COMPLETING THE RESTORATION OF THE STREET AT NO COST TO THE CITY.
6. ALL PAVEMENTS SHALL BE RESTORED TO MATCH DEPTHS OF EXISTING SURFACE, BASE, AND AGGREGATE LAYERS. THE ASPHALT SURFACE LAYER SHALL BE A MINIMUM OF 2" THICK AND EXTEND OVER UNDISTURBED BASE A MINIMUM OF 12" ON ALL SIDES. ALL PAVEMENT MATERIALS SHALL MEET VDOT REQUIREMENTS FOR SURFACE MIX (SM-9.5AL, SM-9.5A, OR SM-12.5D), BASE MIX (BM-25), AND STONE AGGREGATE (21A OR 21B). PLANT CERTIFICATION FOR EACH MIX INCORPORATED INTO THE WORK SHALL BE PROVIDED TO THE INSPECTOR. WHEN MATCHING NON-STANDARD MATERIALS, THE INSPECTOR SHALL DETERMINE AN ACCEPTABLE MATERIAL.
7. THE REPAIR SHALL BE RECTANGULAR AND SAW CUT IN STRAIGHT, UNIFORM LINES THAT ARE ALIGNED WITH THE STREET CENTERLINE. WHEN EDGES OF PAVEMENT HAVE BEEN UNDERMINED, PAVEMENT SHALL BE REMOVED TO A NEAT LINE 12" BEYOND THE UNDERMINED AREA. THE FINISHED PATCH SURFACE SHALL BE WITHIN 1/4 INCH AT ANY POINT ACROSS THE PATCH AS IT RELATES TO THE SURROUNDING STREET SURFACE.

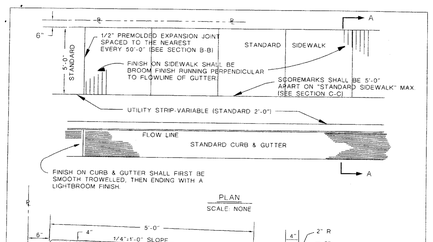
8. A FULL COVERAGE TACK COAT IS REQUIRED ON ALL SURFACES THAT WILL CONTACT THE NEW SURFACE LAYER.

APPROVED: _____ CITY ENGINEER
DATE: 12/01/04

OFFICE OF THE CITY ENGINEER – ROANOKE, VIRGINIA

UTILITY TRENCH REPAIR IN PAVEMENT USING CONTROLLED DENSITY FILL

4 OF 9



GENERAL NOTES:

1. All concrete shall be Class A 3000 p.s.i.
2. Spacing for Expansion Joints shall be the same for sidewalks as that for "Curb and Gutter."
3. Sidewalk Finish: Sidewalk shall be smooth trowelled, then ending with a "Light Broom Finish" unless otherwise noted.
4. When sidewalk abuts Curb or Building a 1/2" Premolded Expansion Joint is to be used.
5. Curing shall be accomplished by the use of a liquid membrane seal containing White Pigment, applied at the rate of one (1) gallon per 150 square feet.
6. All concrete "Curb and Gutter", and "Sidewalks" shall be constructed under the City of Roanoke's specifications and is to be in line and grade approved by the City Engineering Department.

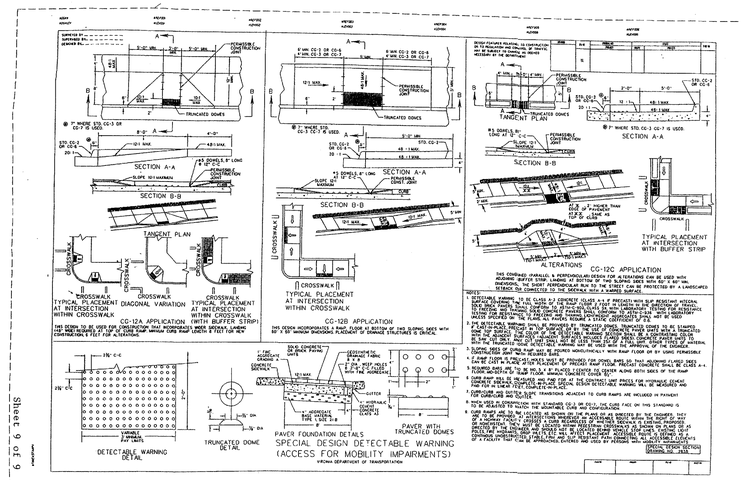
NOTE: City of Roanoke 6" Curb and Gutter shall be used as Replacement of Existing Curb and Gutter where adjacent or existing 7" curb is present. All new Curb and Gutter shall be Standard CG-6 Virginia Department of Transportation Road and Bridge Standards.

APPROVED: _____ CITY ENGINEER
DATE: 12/18/07

OFFICE OF THE CITY ENGINEER - ROANOKE, VIRGINIA

CITY OF ROANOKE
CONCRETE SIDEWALK
6" CURB AND GUTTER
NEW

SHEET 7 OF 9



Sheet 6 of 9

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ENVIRONMENTAL & SOIL SCIENCE
WETLAND DELINEATIONS & STREAM EVALUATIONS

Balzer and Associates, Inc.
1208 Corporate Circle
Roanoke, VA 24018
540-772-9580
FAX 540-772-8050

COMMONWEALTH OF VIRGINIA
CHRISTOPHER P. BURNS
Lic. No.047338
07/22/14
PROFESSIONAL ENGINEER

THE BRIDGES - PHASE II

DETAILS B

CITY OF ROANOKE, VIRGINIA

DRAWN BY BTC
DESIGNED BY BTC
CHECKED BY CPB
DATE 05/21/2014
SCALE N/A

REVISIONS:
7/22/2014

APPROVED
AUG 20 2014

SHEET NO.
C14

JOB NO. R1200033.02