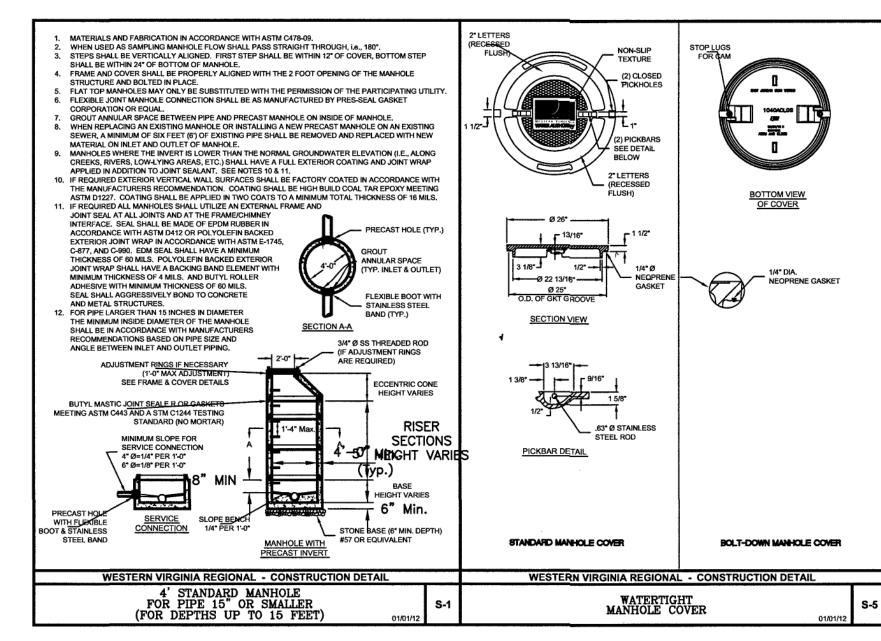
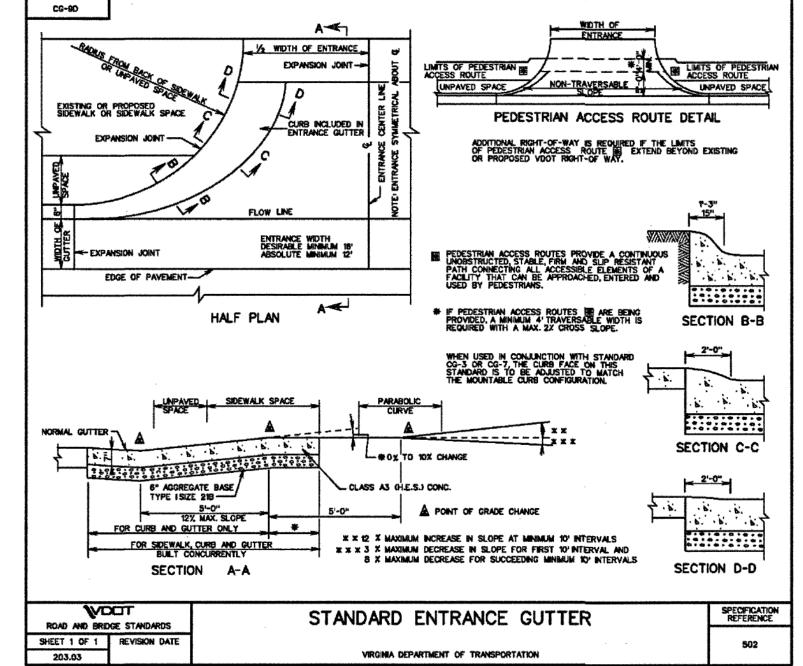
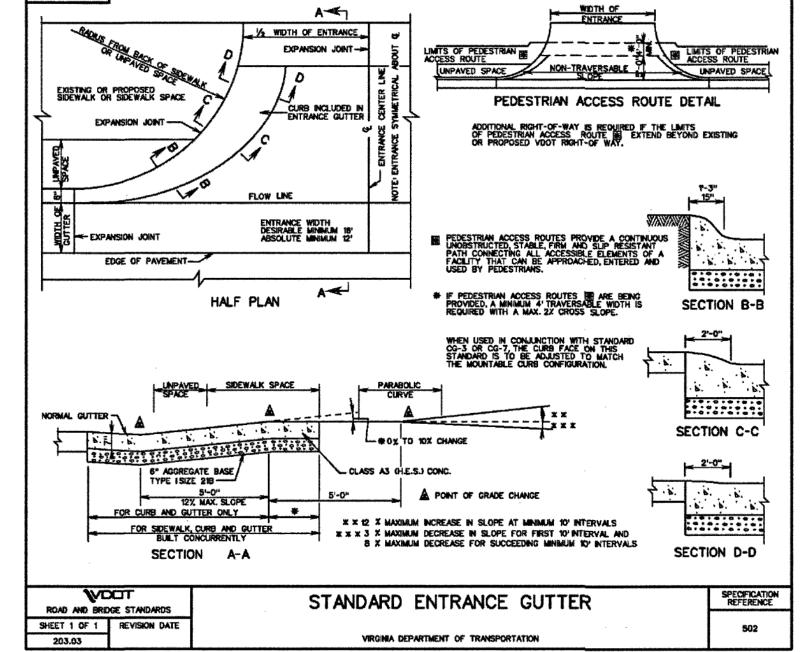
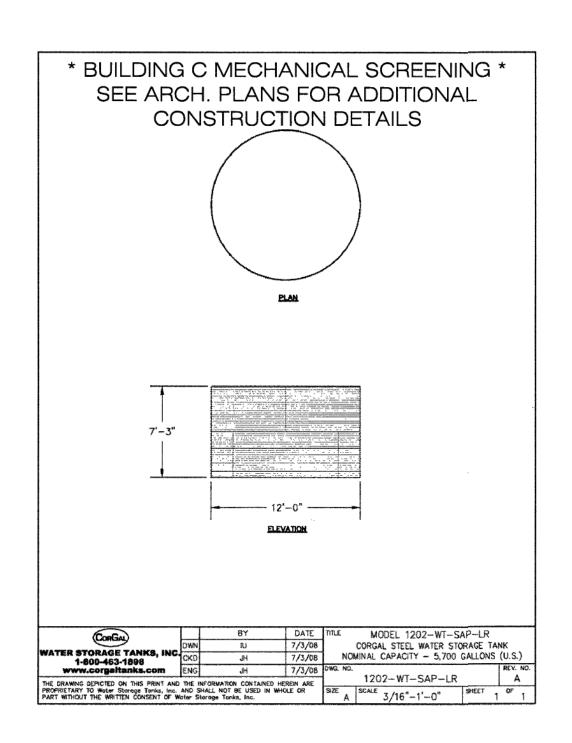


PATIO PAVER DETAIL









OR APPROVED EQUAL

DP 200 Channelizer Posts & Bases Installation Procedures - Standard Base

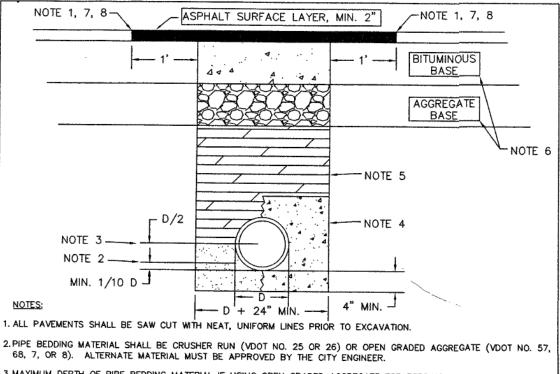
- Installation Using 2-part Epoxy, Hot-melt Bitumen, or 1-part Urethane Adhesive 795A

 1) Adhesive will adhere well to most clean, dry and well unified surfaces. Ideal application temperature is 50° to 100° degrees F. All surfaces must be free of dust, dirt, oil and moisture 2) Assemble posts and bases together with quick release pins provided. Wipe the spot on which the 3) Mix equal parts A & B of standard road marker epoxy and apply evenly 1/8 inch thick to the DP 200 base. Single-component hot melt bitumen or urethane Adhesive 795A may also be used. 4) Place DP 200 post & base assembly onto the roadway and apply firm downward pressure for five (5) seconds. Flat front or curved back side of post should face oncoming traffi 5) After application bond strength increases & achieves ultimate strength after 72 hours at 70° F. 6) Posts should be protected from traffic for a minimum of one (1) hour after installation.
- Temporary Mounting Using Butyl Adhesive Pad) Adhesive will adhere well to most clean, dry and well unified surfaces. Ideal application temperature is 50° to 100° degrees F. All surfaces must be free of dust, dirt, oil and moisture. 2) Assemble posts and bases together with quick release pins provided. Wipe the spot on which the post will be placed. 3) Remove one side of release paper from butyl pad and apply centered on base. Press firmly onto base. Remove second side of release paper; base is now ready for installation on the road. 4) Press base onto desired location on road and apply apply firm downward pressure for five (5) seconds. Flat front or curved back side of post should face oncoming traffic. 5) Posts are now ready for traffic.
- DP 200 Anchor Bolts) Using a standard hammer drill and 3/8" SDS bit, drill holes through the holes in each base approx. 4" into asphalt pavements (2 1/2" into concrete pavements). 2) Blow the bolt holes and area below the base clean of dust, rocks or other material. 3) Insert proper length anchor bolt through holes in the base. Using an impact wrench, drill the bolt into the hole in the pavement. Begin tightening the bolt by applying slight downward pressure when engaging the first few threads. 4) Continue tightening until the head is firmly seated; do not over-tighten the bolt.
- <u>Limitations of Adhesive System</u>

 1) Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure develops better adhesive contact and thus improves bond strength. 2) Moisture on roadway surfaces will inhibit bonding of the adhesive. 3) Insufficient pressure will not allow the adhesive to bond properly. Placing the post incorrectly could result in adhesive failure!
- Important Notice To Purchaser

 The following is made in lieu of all warrantes expressed or implied, including the implied warrantes of merchandability and fitness for purpose: Seller's and manufacturers only obligation shall be to replace such quantity of the product proved to be defective. Before using, user shall determine the suitability of the product for it's intended use, and user assumes all risk and liability whatsoever in connection herewith. Neither manufacturer nor seller shall be liable eitner in tort or in contract for any loss or damage, direct, incidental, or

PEXCO LLC - TACOMA - 3110 70" Ave, East - Tacoma WA 98424 USA - ph 253,284,8000 - fax 253,284,8080 www.davidsontraff.c.com



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 (VTM-1) WITH THE USE OF MECHANICAL TAMPERS OR VIBRATORY ROLLERS. WATER COMPACTION IS NOT PERMITTED. TYPE I WITH THE USE OF MECHANICAL TAMPERS ON VIBRATORY RULLERS. 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 VOOT 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 20% OF OPTIMUM.

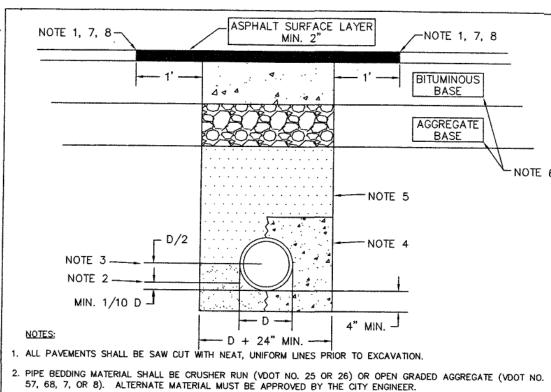
ALL TESTING SHALL BE PERFORMED AND CERTIFIED BY A GEOTECHNICAL ENGINEER OR A VDOT-CERTIFIED TECHNICIAN. RESULTS SHALL BE PROVIDED TO THE INSPECTOR WITHIN 24 HOURS OF TESTING COMPLETION. THE COST OF ALL TESTING IS THE RESPONSIBILITY OF THE PERMITTEE. FIELD DENSITY TESTING METHODS SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO DEPENDING ANY TESTING. 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.

OFFICE OF THE CITY ENGINEER — ROANOKE, VIRGINIA

APPROVED Chiru 12/01/04

UTILITY TRENCH REPAIR IN PAVEMENT 3 OF 9 USING VDOT NO. 21A AGGREGATE



57, 68, 7, OR 8). ALTERNATE MATERIAL MUST BE APPROVED BY THE CITY ENGINEER.

5. MAXIMUM DEPTH OF PIPE BEDDING MATERIAL IF USING OPEN GRADED AGGREGATE FOR BEDDING. OPTIONAL CONCRETE ENCASEMENT FOR POWER OR COMMUNICATION CONDUIT. PROVIDE A MINIMUM OF 4" CONCRETE COVER FROM ALL SIDES OF CONDUIT.

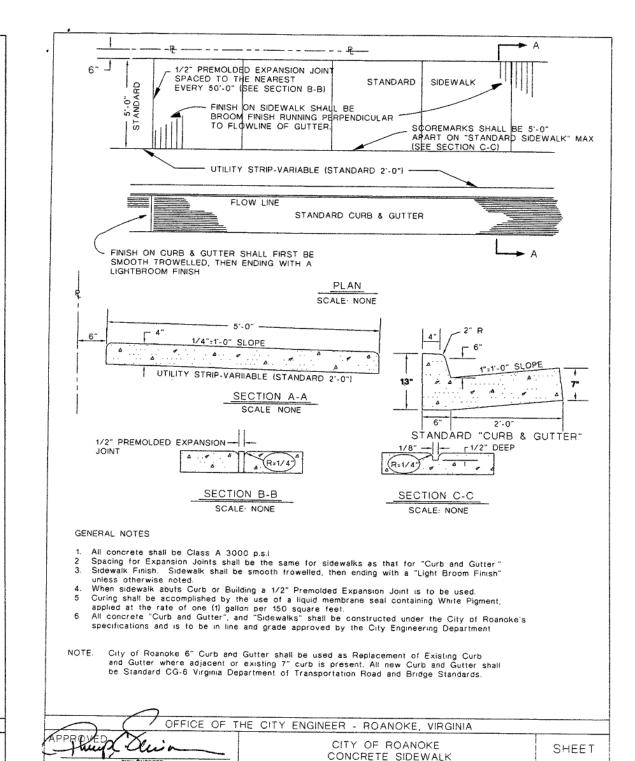
BACKFILL MATERIAL SHALL BE FLOWABLE FILL MEETING THE REQUIREMENTS OF VDOT SPECIAL PROVISION FOR FLOWABLE BACKFILL. THE MATERIAL MUST BE PLANT—CERTIFIED TO PROVIDE A 28—DAY COMPRESSIVE STRENGTH BETWEEN 30 AND 200 PSI. A CERTIFICATE OF MIX DESIGN MUST BE SUBMITTED TO THE INSPECTOR PRIOR TO PLACING THE 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

COMPLETING THE RESTORATION OF THE STREET AT NO COST TO THE CITY 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.

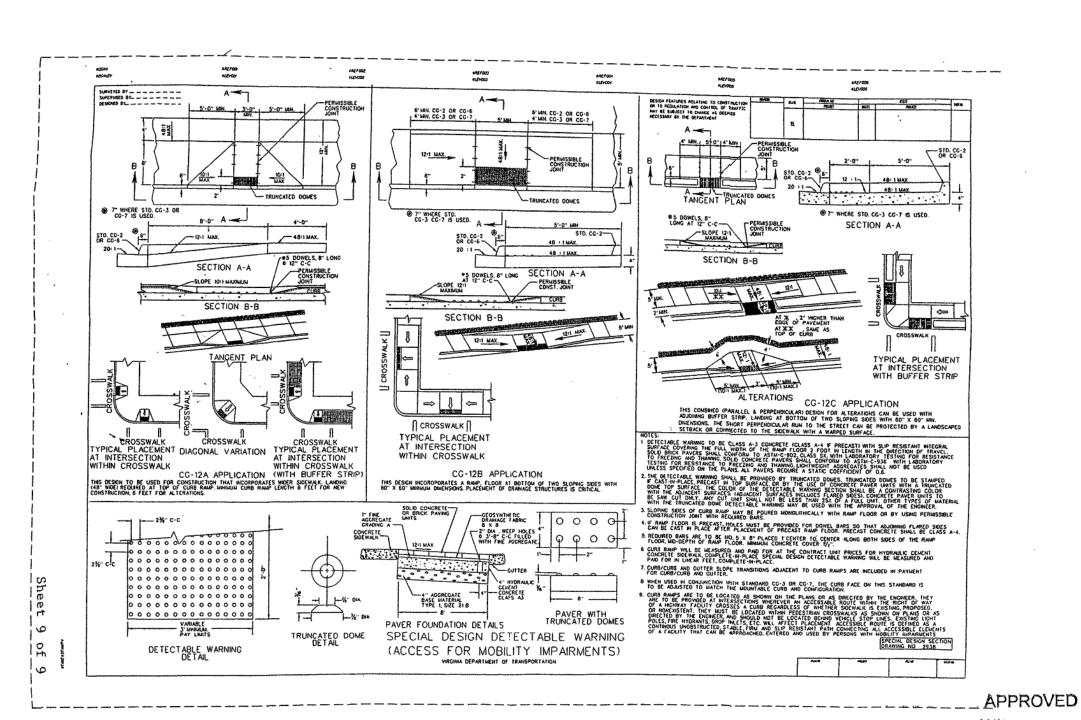
OFFICE OF THE CITY ENGINEER — ROANOKE, VIRGINIA APPROVED Cluru UTILITY TRENCH REPAIR IN PAVEMENT 4 OF 9 USING CONTROLLED DENSITY FILL 12/01/04



6" CURB AND GUTTER

NEW

7 OF 9



REFLECTING TOMORROW

www.balzer.cc

New River Valley Richmond Roanoke Shenandoah Valley

RESIDENTIAL LAND DEVELOPMENT ENGINEERING SITE DEVELOPMENT ENGINEERING LAND USE PLANNING & ZONING LANDSCAPE ARCHITECTURE LAND SURVEYING ARCHITECTURE STRUCTURAL ENGINEERING TRANSPORTATION ENGINEERING ENVIRONMENTAL & SOIL SCIENCE WETLAND DELINEATIONS & STREAM EVALUATIONS

Balzer and Associates, Inc.

1208 Corporate Circle Roanoke, VA 24018 540-772-9580 FAX 540-772-8050

3 Christopher P. Burn Lic. No.047338 5/20/13

T--ഗ TRIC

DIS.

RIVER

 \mathbf{O} DESIGNED BY CHECKED BY 2-8-2013

REVISIONS: 4-5-2013 4-19-2013 5-20-2013