



## DEVELOPMENT SERVICES CENTER



### DSC Information Notice #186

December 13, 2011

#### **Topic: Revisions to the Public Works Standards for Pavement Patches**

#### **Background**

The Public Works Specifications and Standards are in the process of being transformed into the Public Works Design Standards. As a part of this process, the pavement patch standards were revised to match past changes in the Virginia Department of Transportation pavement designations. Attached to this notice are the following revised pavement patching standards for immediate use:

- C-3a – Flexible Pavement Patch for Local & Collector Streets
- C-3b – Flexible Pavement Patch for Major & Minor Arterials
- C-4 – Rigid Pavement Patching

**Effective Date: *Immediately***

#### **For More Information, Please Contact:**

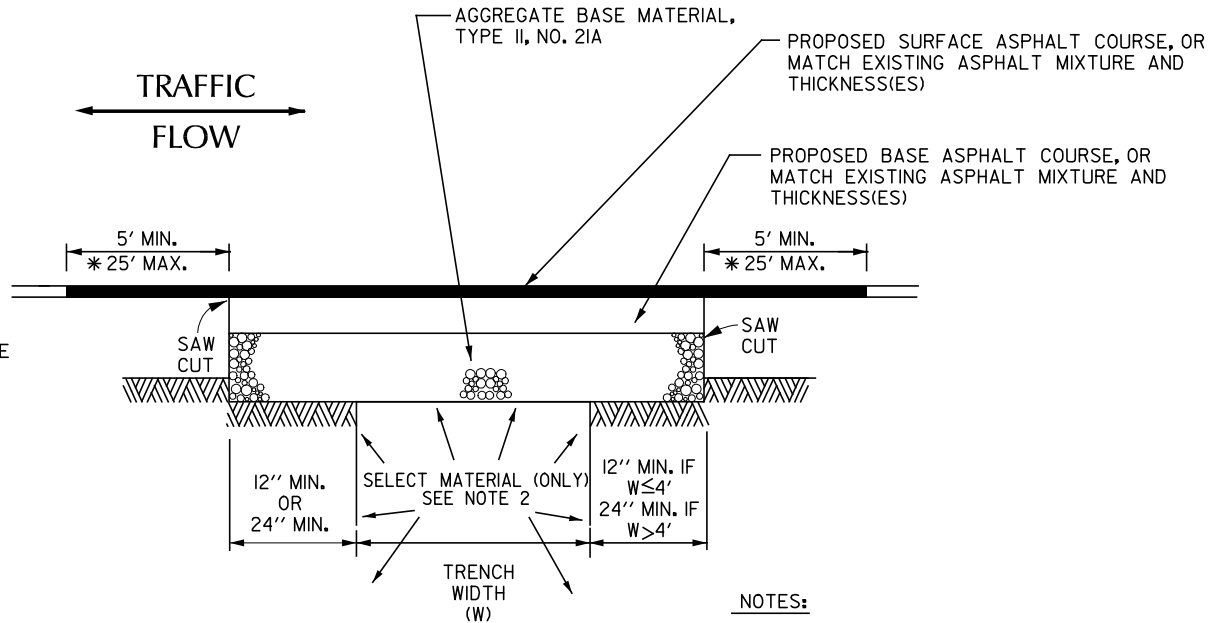
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● **ROADWAY RECONSTRUCTION** - IS DEFINED AS A RECONSTRUCTION OF PAVEMENT THAT HAS BEEN REMOVED TO SUCH EXTENT THAT THIS PAVEMENT PATCH CANNOT BE USED. IN THE CASE OF ROADWAY RECONSTRUCTION, THE CONSULTING ENGINEER SHALL DESIGN THE PAVEMENT THICKNESS BASED ON THE CBR, ETC. OF THE SOIL TO GO BACK IN THE TRENCH. SEE SECTION 5.11 OF PUBLIC WORKS DESIGN STANDARDS, AND ROADWAY PATCH DEFINITION.

● **ROADWAY PATCH** - IS DEFINED AS A REPAIR OF A PAVEMENT CUT THAT DOES NOT EXCEED APPROX. 5' WIDE, AT AN ANGLE BETWEEN 45 DEGREES AND 90 DEGREES TO THE LENGTH OF THE ROADWAY, OR UP TO A 10' x 10' SQUARE. MORE EXTENSIVE PAVEMENT CUTS ARE CONSIDERED ROADWAY RECONSTRUCTION.

\* IF THE EXISTING STREET HAS BEEN RESURFACED WITHIN THE LAST 2 YEARS THEN IT IS IN A MORATORIUM STATUS OF 'NO OPEN CUTS' PERMITTED WITHOUT PUBLIC WORKS APPROVAL. IF APPROVED THEN AN ADDITIONAL 25-FOOT AREA BEFORE AND AFTER THE TRENCH AREA WILL HAVE TO BE MILLED AND RESURFACED WITH AN APPROPRIATE SURFACE ASPHALT COURSE MIX TO PROVIDE A SMOOTH TRANSITION.



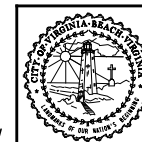
ROADWAY PATCH FOR ASPHALT (ONLY) STREETS WITH THE CLASSIFICATION OF LOCAL OR COLLECTOR SHALL BE THE GREATER OF:

- MATCH THE EXISTING PAVEMENT, OR
- 1 1/2" SM-9.5A SURFACE ASPHALT CONCRETE, OVER 3" BM-25.0A BASE MIX ASPHALT CONCRETE, OVER 6" AGGREGATE BASE MATERIAL, TYPE I NO. 21A, OVER COMPACTED SUBGRADE IF SUBGRADE IS A MINIMUM CBR OF 15. OTHERWISE SELECT MATERIAL WITH CBR ≥ 15 TO BE USED AS BACKFILL. IF CONCRETE IS UNDER ASPHALT, THEN CONCRETE MUST BE USED AND MATCH EXISTING PAVEMENT. SEE NOTE #1.

**NOTES:**

- 1) SEE SECTION 5 IN PUBLIC WORKS DESIGN STANDARDS. IN ALL CASES, IT IS ALWAYS PREFERABLE TO ACTUALLY DESIGN ANY PAVEMENT PATCH AND REPAIRS BASED ON GOOD ENGINEERING PRACTICES.
- 2) BACKFILL TO BE SELECT MATERIAL (CBR ≥ 15) COMPACTED IN 12" LAYERS TO 3' BELOW PAVEMENT AND THEN IN 6" LAYERS THEREAFTER TO 95% OF THE ASTM D-698 MAXIMUM THEORETICAL DENSITY.
- 3) USE OF TEMPORARY STEEL BRIDGE PLATE FOR TRAFFIC PRIOR TO PLACEMENT OF ASPHALT MUST BE APPROVED BY CITY INSPECTOR.

(N.T.S.)  
REV. 10/11



CITY OF VIRGINIA BEACH  
STANDARD

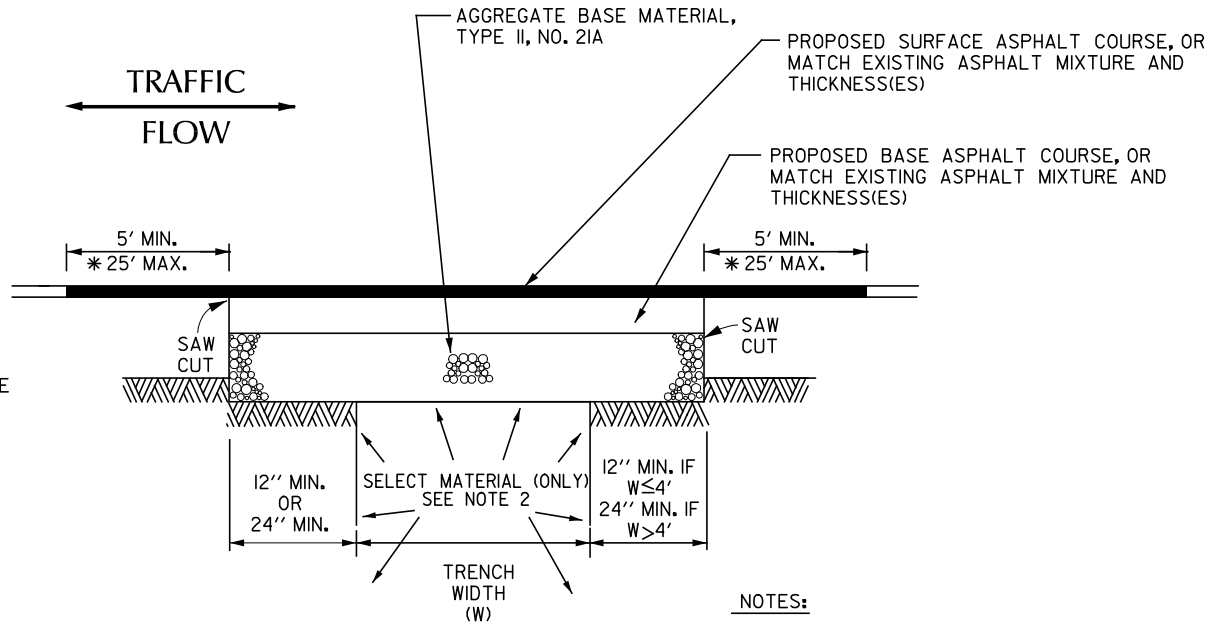
FLEXIBLE PAVEMENT PATCH FOR  
LOCAL & COLLECTOR STREETS

PUBLIC WORKS

C-3A

● **ROADWAY RECONSTRUCTION** - IS DEFINED AS A RECONSTRUCTION OF PAVEMENT THAT HAS BEEN REMOVED TO SUCH EXTENT THAT THIS PAVEMENT PATCH CANNOT BE USED. IN THE CASE OF ROADWAY RECONSTRUCTION, THE CONSULTING ENGINEER SHALL DESIGN THE PAVEMENT THICKNESS BASED ON THE CBR, ETC. OF THE SOIL TO GO BACK IN THE TRENCH. SEE SECTION 5.11 OF PUBLIC WORKS DESIGN STANDARDS, AND ROADWAY PATCH DEFINITION.

● **ROADWAY PATCH** - IS DEFINED AS A REPAIR OF A PAVEMENT CUT THAT DOES NOT EXCEED APPROX. 5' WIDE, AT AN ANGLE BETWEEN 45 DEGREES AND 90 DEGREES TO THE LENGTH OF THE ROADWAY, OR UP TO A 10' x 10' SQUARE. MORE EXTENSIVE PAVEMENT CUTS ARE CONSIDERED ROADWAY RECONSTRUCTION.



\* IF THE EXISTING STREET HAS BEEN RESURFACED WITHIN THE LAST 2 YEARS THEN IT IS IN A MORATORIUM STATUS OF 'NO OPEN CUTS' PERMITTED WITHOUT PUBLIC WORKS APPROVAL. IF APPROVED THEN AN ADDITIONAL 25-FOOT AREA BEFORE AND AFTER THE TRENCH AREA WILL HAVE TO BE MILLED AND RESURFACED WITH AN APPROPRIATE SURFACE ASPHALT COURSE MIX TO PROVIDE A SMOOTH TRANSITION.

ROADWAY PATCH FOR ASPHALT (ONLY) STREETS WITH THE CLASSIFICATION OF MAJOR OR MINOR ARTERIALS SHALL BE THE GREATER OF:

- MATCH THE EXISTING PAVEMENT SECTION, OR
- 2" SM-9.5D SURFACE ASPHALT CONCRETE, OVER 4" BM-25.0D BASE MIX ASPHALT CONCRETE, OVER 8" AGGREGATE BASE MATERIAL, TYPE I NO. 21A, OVER COMPACTED SUBGRADE IF SUBGRADE IS A MINIMUM CBR OF 15. OTHERWISE, SELECT GRANULAR MATERIAL WITH CBR ≥ 15 AND USE AS BACKFILL. IF CONCRETE IS UNDER ASPHALT, THEN CONCRETE MUST BE USED AND MATCH EXISTING PAVEMENT. SEE NOTE #1.

**NOTES:**

- 1) SEE SECTION 5 IN PUBLIC WORKS DESIGN STANDARDS. IN ALL CASES, IT IS ALWAYS PREFERABLE TO ACTUALLY DESIGN ANY PAVEMENT PATCH AND REPAIRS BASED ON GOOD ENGINEERING PRACTICES.
- 2) BACKFILL TO BE SELECT MATERIAL (CBR ≥ 15) COMPACTED IN 12" LAYERS TO 3' BELOW PAVEMENT AND THEN IN 6" LAYERS THEREAFTER TO 95% OF THE ASTM D-698 MAXIMUM THEORETICAL DENSITY.
- 3) USE OF TEMPORARY STEEL BRIDGE PLATE FOR TRAFFIC PRIOR TO PLACEMENT OF ASPHALT MUST BE APPROVED BY CITY INSPECTOR.

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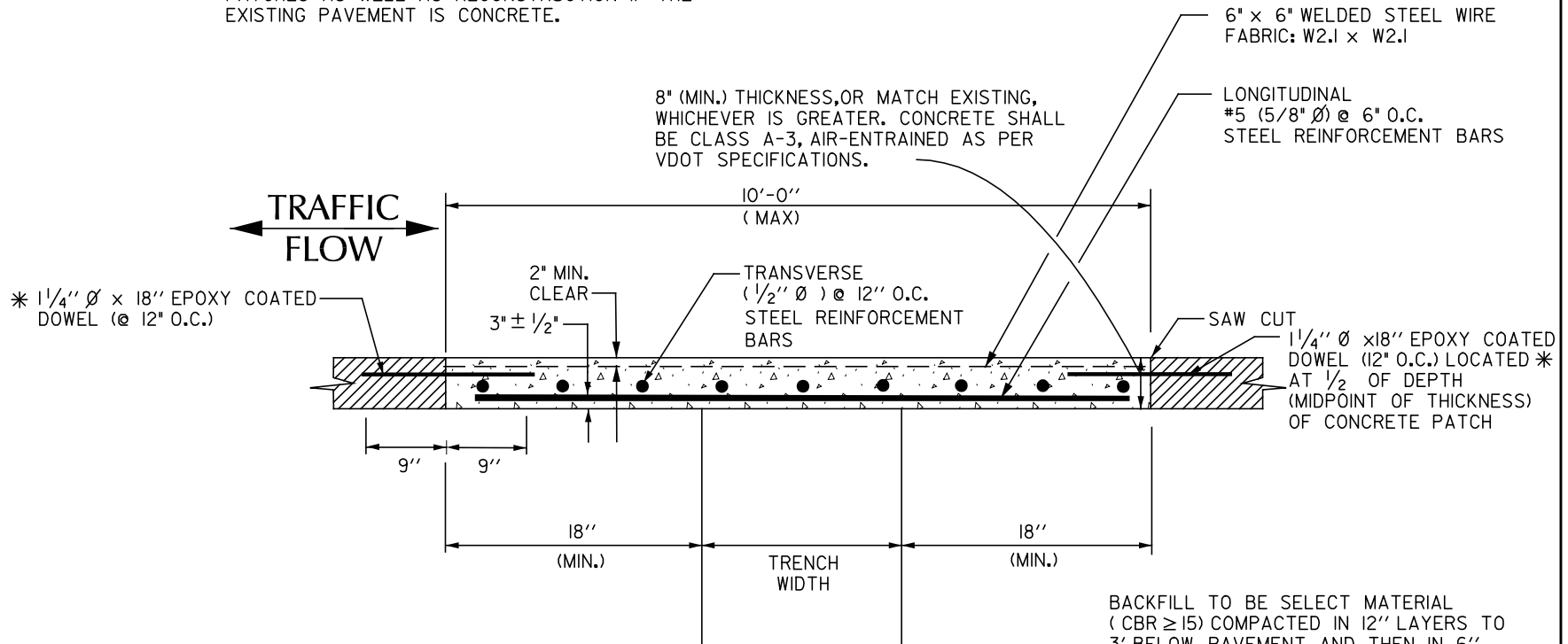
CITY OF VIRGINIA BEACH  
STANDARD

FLEXIBLE PAVEMENT PATCH  
FOR MAJOR & MINOR ARTERIALS

PUBLIC WORKS C-3B

● **ROADWAY RECONSTRUCTION** - IS DEFINED AS A RECONSTRUCTION OF PAVEMENT THAT HAS BEEN REMOVED TO SUCH EXTENT THAT THIS PAVEMENT PATCH CAN'T BE USED. IN THE CASE OF ROADWAY RECONSTRUCTION, THE CONSULTING ENGINEER SHALL DESIGN THE PAVEMENT THICKNESS BASED ON THE CBR, ETC. OF THE SOIL TO GO BACK IN THE TRENCH. SEE SECTION 5.11 OF PUBLIC WORKS DESIGN STANDARDS. HOWEVER, ONLY CONCRETE IS TO BE USED FOR PATCHES AS WELL AS RECONSTRUCTION IF THE EXISTING PAVEMENT IS CONCRETE.

● **ROADWAY PATCH** - IS DEFINED AS A REPAIR OF A PAVEMENT CUT HAS NOT BEEN CUT NO MORE THAN 5' WIDE, AT AN ANGLE BETWEEN 45 AND 90 DEGREES TO THE LENGTH OF THE ROADWAY, OR UP TO A 10' x 10' SQUARE. MORE EXTENSIVE PAVEMENT CUTS ARE CONSIDERED ROADWAY RECONSTRUCTION.



**NOTES:**

- 1) ASPHALT PATCHES AND ASPHALT PAVEMENT WIDENING SHALL NOT BE UTILIZED ON CONCRETE, OR ASPHALT ROAD OVER CONCRETE PAVEMENTS UNLESS APPROVED BY CITY INSPECTOR.
- 2) ONLY CONCRETE IS TO BE USED ON ROADWAY PATCHES AND RECONSTRUCTION WHERE THE EXISTING PAVEMENT IS CONCRETE.
- 3) IF THE EXISTING PAVEMENT HAS ASPHALT OVERLAY ON CONCRETE, THEN A SPECIAL PAVEMENT PATCH SECTION SHALL BE DESIGNED BY THE DESIGN ENGINEER.

BACKFILL TO BE SELECT MATERIAL (CBR ≥ 15) COMPACTED IN 12" LAYERS TO 3' BELOW PAVEMENT AND THEN IN 6" LAYERS THEREAFTER TO 95% OF THE ASTM D-698 MAXIMUM THEORETICAL DENSITY.

\* THE 1/4" DIAMETER x 18" DOWEL MAY BE OMITTED IF AT LEAST 9" OF EXISTING REINFORCING STEEL STRAIGHTENED, EPOXY APPLIED, AND LEFT IN PLACE, IS IN EXCELLENT SHAPE.

(N.T.S.)  
REV. 10/11



**CITY OF VIRGINIA BEACH**  
STANDARD

RIGID PAVEMENT PATCHING

PUBLIC WORKS

C-4