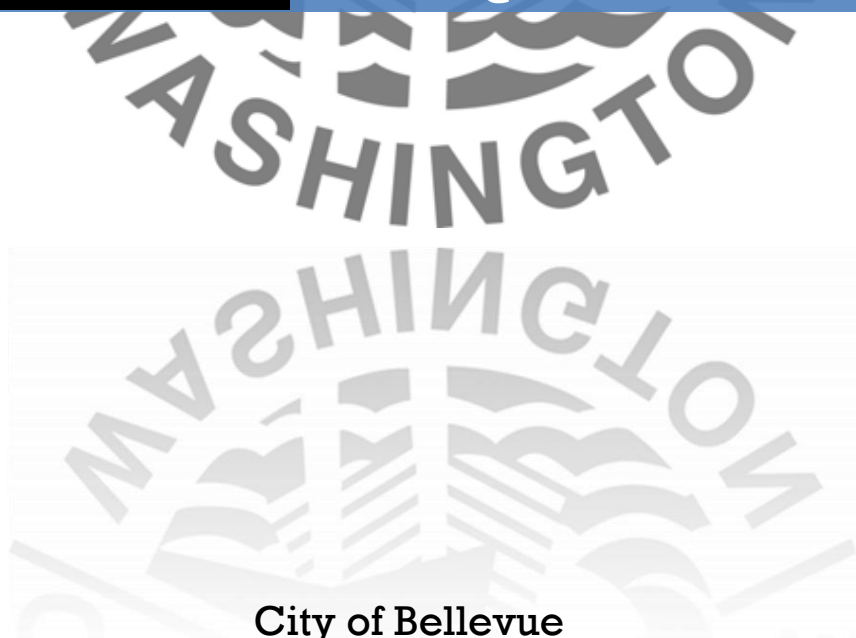


March 20<sup>th</sup>, 2015



**TRANSPORTATION  
DEPARTMENT**

**TRENCH  
RESTORATION  
REQUIREMENTS**



City of Bellevue



# Contents

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The following are excerpts from the Bellevue Transportation Design Manual:

1. Trench Backfill and Restoration
2. Transportation Design Manual Trench & Pavement Restoration Drawings:
  - ROW-1 – Flexible Pavement Patching and Restoration Details Transverse Cut
  - ROW-2 – Rigid Pavement patching and Restoration Details Transverse Cut
  - ROW-3 – Flexible Pavement patch with Grind Overlay Restoration Longitudinal Cut
  - ROW-4 – Flexible Pavement Patching and Restoration Details Longitudinal Cut
  - ROW-5 – Rigid Pavement patching and Restoration Details Longitudinal Cut
  - ROW-7 – Pavement Restoration for Window Cuts
  - ROW-8 – Utility Adjustment Detail
  - ROW-9 – Typical Asphalt Pavement Details

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# I N T R O D U C T I O N

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The City of Bellevue Trench Restoration Requirements handout is designed to communicate requirements for the restoration of disturbed streets in the City of Bellevue Right of Way.

A permit that establishes conditions for the restoration requirements must be obtained prior to any street surface disturbance in City of Bellevue Right of Way. Street restoration is assigned by the reviewer and are determined as rated by the City's Pavement Manager. Contact the permit reviewer to find out the street restoration requirements on any street.

Permits can be obtained electronically through [www.mybuildingpermit.com](http://www.mybuildingpermit.com) or through the permit counter at Bellevue City Hall. Electronic application is strongly encouraged as it will result in faster approval of your permit, and fewer trips to City Hall.

# Trench Backfill and Restoration

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- A. Materials and workmanship shall be in conformance with the WSDOT/APWA *Standard Specifications for Road, Bridge, and Municipal Construction*. Construction shall be in conformance with *Design Manual* Drawings ROW-1 through ROW-9, the details and conditions outlined in the Right of Way Use Permit, and the following:
- (1) Trench restoration shall be accomplished with a patch or an overlay as required by the Pavement Restoration Requirement Map or the Review Engineer.
  - (2) If a patch is used, the trench limits shall be sawcut prior to final patch.
  - (3) All trench and pavement cuts shall be made by sawcuts or by grinding. The sawcuts or grinding shall have a minimum distance outside the trench width as shown in Design Manual Drawings ROW-1 through ROW-9.
  - (4) If the Right of Way Use Permit requires an overlay, then the contractor may use a jackhammer or drum grinder for the cutting of the existing pavement.
  - (5) Within the top four feet of trenching, backfill shall be crushed surfacing materials or a controlled-density fill material conforming to section 4-04 of the WSDOT/APWA Standard Specifications. Backfill materials must be inspected and accepted by the Review Engineer.
  - (6) If the existing material is determined by the Inspector to be suitable for backfill and the trench is not perpendicular to a travel lane or driveway, the contractor may use the native material as long as the top eight inches is crushed surfacing material.
  - (7) Material used for backfill below four feet in depth must be approved by the Inspector.
  - (8) All trench backfill shall be compacted to 95% maximum density, as described in section 2-03 of the WSDOT/APWA Standard Specifications.
  - (9) Backfill compaction shall be performed in eight-inch to 12-inch lifts. The compaction tests shall be performed in maximum backfill increments of two feet. The test results shall be given to the Inspector for review and approval prior to paving. Material testing will be required for trench backfill (native or imported), asphalt, and concrete. Testing shall be performed by a certified independent testing laboratory. The cost of testing is the responsibility of the franchise utility or contractor. The number of tests required shall be the same as for asphalt density testing, or as directed by the Inspector. Acceptance testing may also be performed by the City Materials Engineers as required.

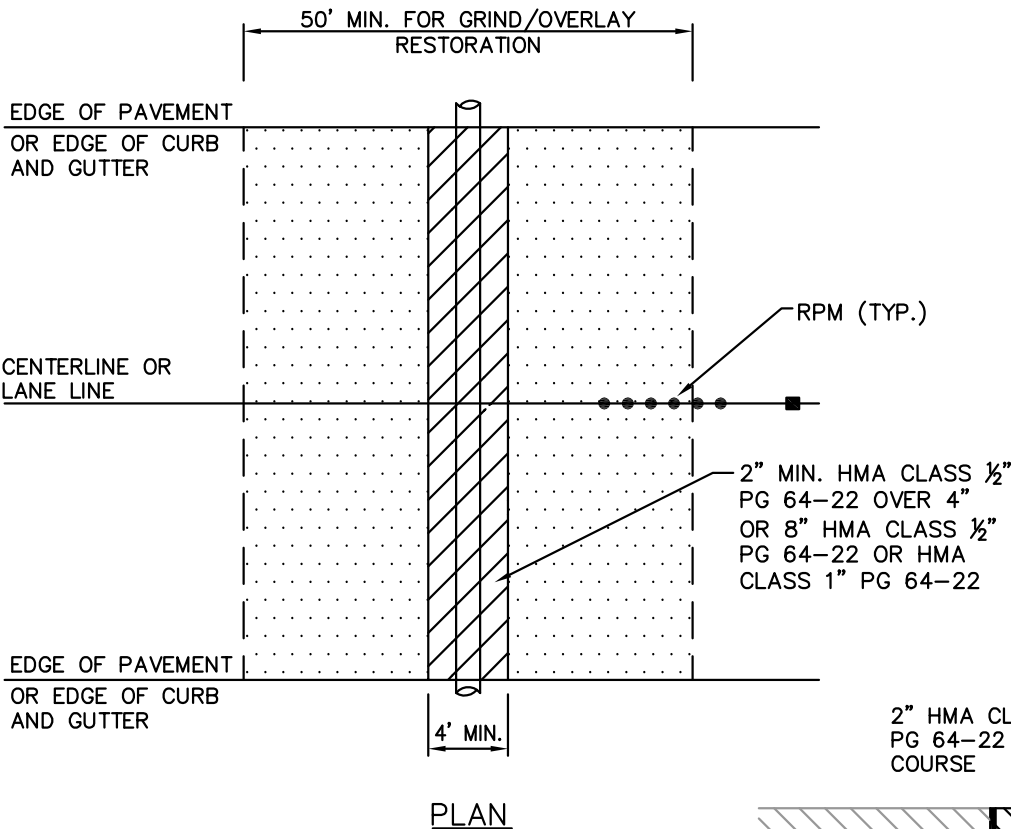
- (10) Temporary restoration of trenches for overnight use shall be accomplished by using hot mix asphalt (HMA) or steel plates. HMA used for temporary restoration may be dumped directly into the trench, bladed out, and rolled. After rolling, the trench must be filled flush with asphalt to provide a smooth riding surface.
- (11) HMA shall be placed to the compacted depth as shown on Design Manual Drawings ROW-1 through ROW-9 and as directed by the Review Engineer. Asphalt cement shall be paving asphalt. Materials shall conform to the WSDOT/ APWA Standard Specifications.
- (12) Tack shall be emulsified asphalt grade CSS-1 as specified in the WSDOT/APWA *Standard Specifications* and shall be applied to the existing pavement and edges of sawcuts as specified in the WSDOT/APWA Standard Specifications.
- (13) HMA shall be placed on the prepared surface by an approved paving machine and shall be in accordance with the requirements of the WSDOT/APWA Standard Specifications. Fine and coarse aggregate shall be in accordance with the WSDOT/APWA Standard Specifications. Asphalt concrete over two inches thick shall be placed in equal lifts not to exceed the guidelines set forth in the WSDOT/APWA Standard Specifications. See Design Manual Drawing DEV-9.
- (14) Cuts for trenches in all street surfaces, walks, and driveways shall be either ground or sawcut. Ground joints shall be feathered and shimmed to provide a smooth surface. Feathering and shimming shall be accomplished by raking out the oversized aggregates from the mix. Surface smoothness shall conform to the WSDOT/APWA Standard Specifications. The paving shall be corrected by removal and repaving of the trench only.
- (15) Compaction of all lifts of asphalt shall be at an average of 92% of maximum density as determined by the WSDOT Field Operating Procedures for AASHTO 209 Test Method. The number of tests required per square foot of trenching shall be as follows:
  - a. One set of three tests for less than 300 square feet of trenching area;
  - b. One additional test for every 200 square feet over 300 square feet of trenching area or every 100 lineal feet of trench, if applicable.

Testing shall be performed by a certified independent testing laboratory. The cost of testing is the responsibility of the franchise utility or contractor. Acceptance testing may also be performed as directed by the City Materials Engineer. The testing is not intended to relieve the contractor from any liability for the trench restoration. It is intended to show the Inspector and the City that the restoration meets these specifications.
- (16) All joints shall be sealed using paving asphalt.

**B.** Contractors performing asphalt restoration work must be pre-qualified by the Transportation Department. To be pre-qualified, a contractor must submit qualifications

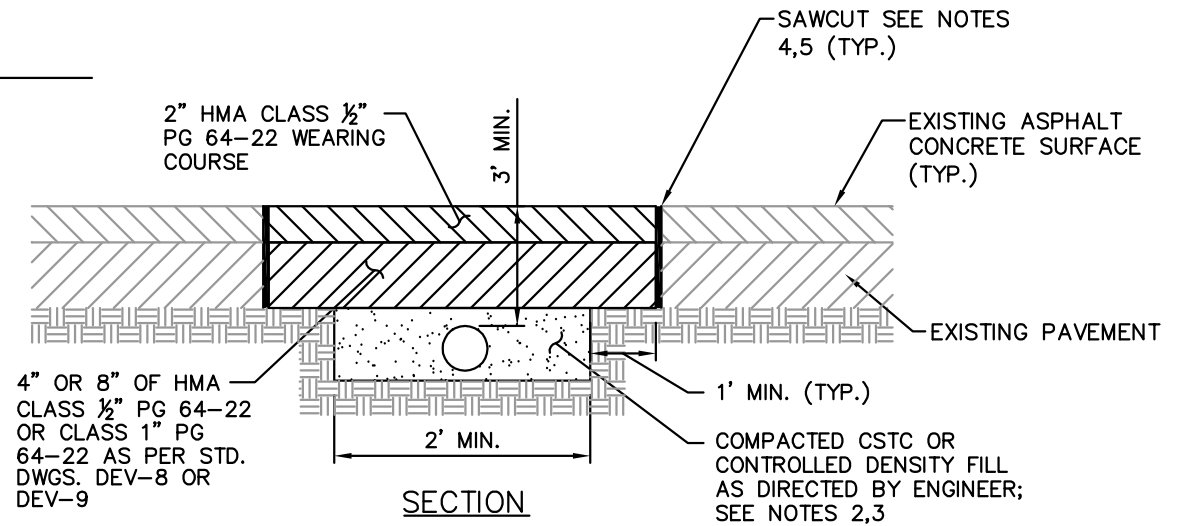
in writing to the Pavement Manager. Past performance and available paving equipment will be reviewed to determine eligibility for the approved contractor list.

- C.** A five-year moratorium on pavement excavation and trenching will be enforced following the completion of a new street or street overlay. This requirement restricts all street trenching except in the event of an emergency or as authorized by the City Transportation Director or his/her designee (the Right of Way manager) per BCC 14.60.250.
- D.** Asphalt patch depths will vary based upon the classification of the streets being trenched. The asphalt depths shall be shown on the Right of Way Use Permit and the work shall be performed as required per Design Manual Drawings ROW-1 through ROW-9. The minimum paving depths for all trenching shall be approved by the Inspector prior to restoration activity.
- E.** When trenching occurs within the street shoulder, the shoulder shall be restored to its original or better condition within 30 days of first opening the trench.
- F.** The final patch shall be completed within 30 days of first opening the trench. This time frame may be adjusted if delays are due to inclement weather or other adverse conditions. Delay of final patch or overlay work must be approved by the Review Engineer and will require an assurance device to guarantee completion.
- G.** Any patch or overlay Downtown shall be permanent and completed as soon as possible.
- H.** Upon completion of asphalt restoration, the restored area shall be swept clear of loose material.



**NOTES:**

1. ASPHALT CONCRETE MIX SHALL BE HMA CLASS ½" OR CLASS 1" PG 64-22.
2. ALL TRENCH BACKFILL SHALL BE CSTC OR CONTROLLED DENSITY FILL.
3. CONTROLLED DENSITY FILL SHALL MEET WSDOT STANDARDS AS STATED IN 2-09.3(1)E OF THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION MANUAL M41-10, CURRENT EDITION.
4. ALL SAW CUTS SHALL BE VERTICAL AND IN STRAIGHT LINES UNLESS OTHERWISE DIRECTED BY ENGINEER.
5. TACK ASPHALT FACES OF SAW CUTS AND SEAL SAW CUTS WITH PG 64-22 OIL.
6. HOT MIX ASPHALT SHALL BE A MINIMUM OF 6 INCHES THICK ON LOCAL STREETS AND A MINIMUM OF 10 INCHES THICK ON ARTERIALS.
7. PAVING FABRIC (IF FOUND) WILL NOT REQUIRE REPLACEMENT.



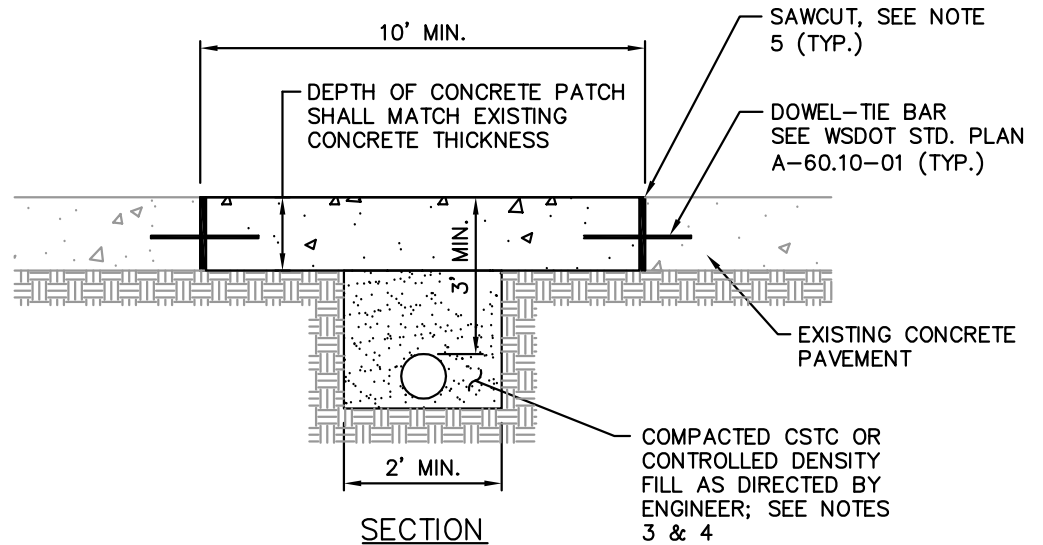
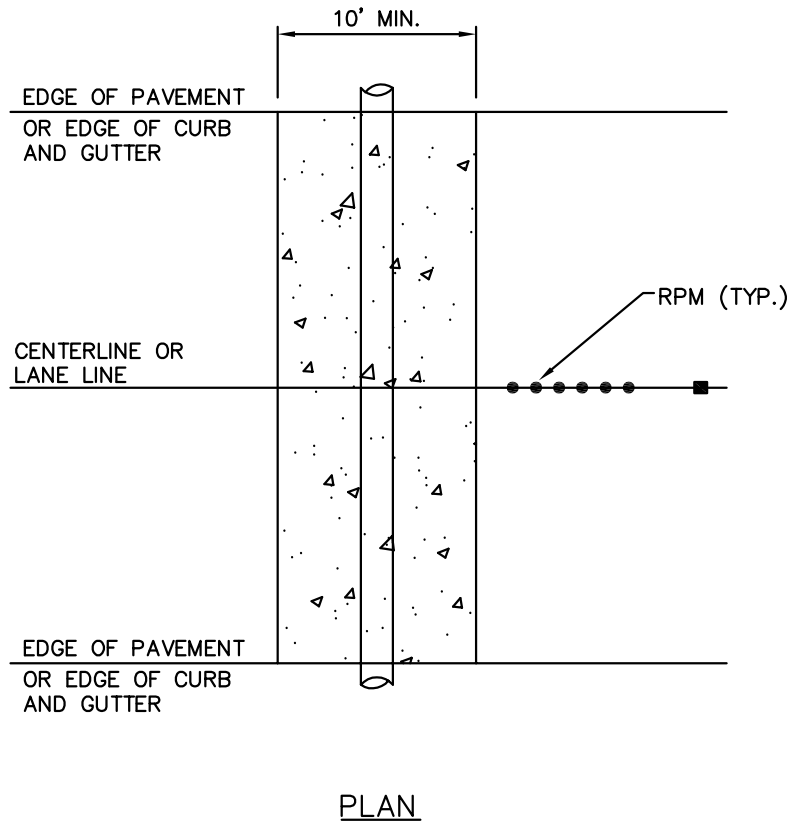
**FLEXIBLE PAVEMENT PATCHING AND RESTORATION DETAILS  
TRANSVERSE CUT**

DRAWING NUMBER	ROW-1
SCALE	NONE
REVISION DATE	01/15
DEPARTMENT	TRANS



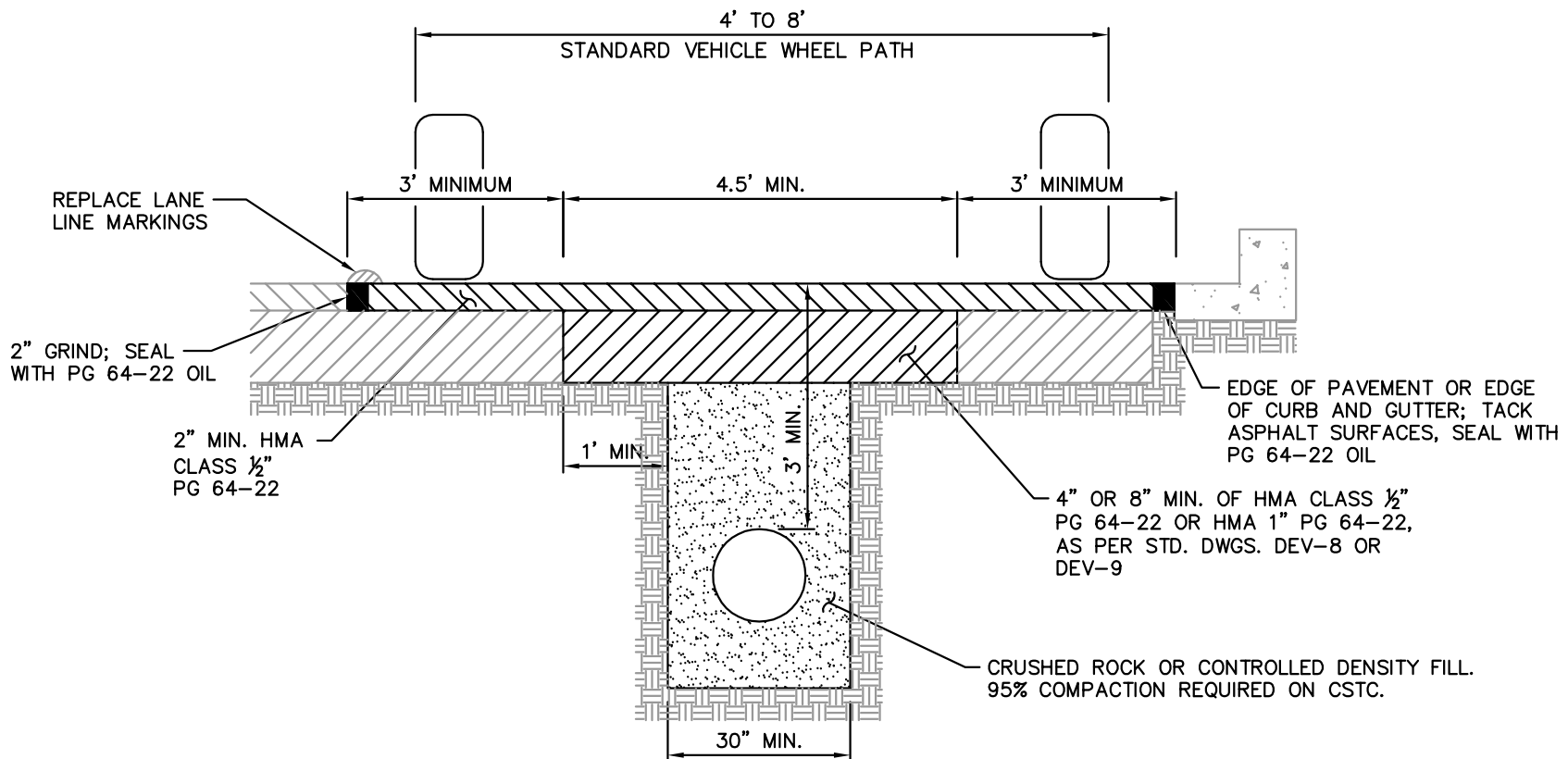
**NOTES:**

1. CEMENT CONCRETE PANEL REPLACEMENT SHALL BE FULL PANEL REPLACEMENT AS PER WSDOT STD. PLAN A-60.10-01.
2. PORTLAND CEMENT CONCRETE SHALL BE CLASS 4000.
3. ALL TRENCH BACKFILL SHALL BE CSTC OR CONTROLLED DENSITY FILL.
4. CONTROLLED DENSITY FILL SHALL MEET WSDOT STANDARDS AS STATED IN 2-09.3(1)E OF THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION MANUAL M41-10, CURRENT EDITION.
5. ALL SAW CUTS SHALL BE VERTICAL AND IN STRAIGHT LINES AS DIRECTED BY ENGINEER.
6. FOR CONCRETE ROADWAY WITH EXISTING ASPHALT OVERLAY, REPLACEMENT OVERLAY SHALL BE 1/2 INCH HMA PG 64-22 AND MATCH EXISTING THICKNESS. GRIND/OVERLAY LIMITS OF ASPHALT SHALL BE DETERMINED BY THE ENGINEER



**RIGID PAVEMENT PATCHING AND RESTORATION DETAILS  
TRANSVERSE CUT**

DRAWING NUMBER	ROW-2
SCALE	NONE
REVISION DATE	01/15
DEPARTMENT	TRANS



LESS THAN FULL WIDTH OVERLAY

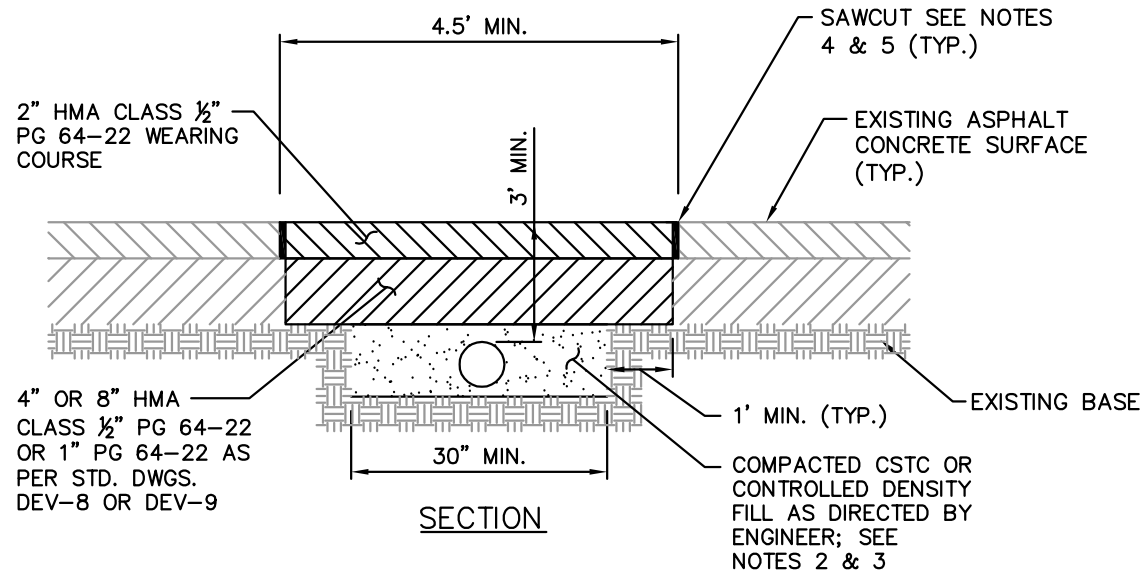


FLEXIBLE PAVEMENT PATCH WITH GRIND OVERLAY RESTORATION  
LONGITUDINAL CUT

DRAWING NUMBER	ROW-3
SCALE	NONE
REVISION DATE	01/15
DEPARTMENT	TRANS

NOTES:

1. ASPHALT CONCRETE MIX SHALL BE HMA CLASS ½" OR CLASS 1" PG 64-22.
2. ALL TRENCH BACKFILL SHALL BE CSTC OR CONTROLLED DENSITY FILL.
3. CONTROLLED DENSITY FILL SHALL MEET WSDOT STANDARDS AS STATED IN 2-09.3(1)E OF THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION MANUAL M41-10, CURRENT EDITION.
4. ALL SAW CUTS SHALL BE VERTICAL AND IN STRAIGHT LINES AS DIRECTED BY ENGINEER.
5. TACK ASPHALT FACES OF SAW CUTS AND SEAL SAW CUTS WITH PG 64-22 OIL.
6. PAVING FABRIC (IF FOUND) WILL NOT REQUIRE REPLACEMENT.
7. HMA SHALL BE A MINIMUM OF 6 INCHES THICK ON LOCAL STREETS AND A MINIMUM OF 10 INCHES THICK ON ARTERIALS.
8. LONGITUDINAL SAWCUTS SHALL BE LOCATED OUTSIDE OF STANDARD VEHICLE WHEEL PATHS WHENEVER POSSIBLE.

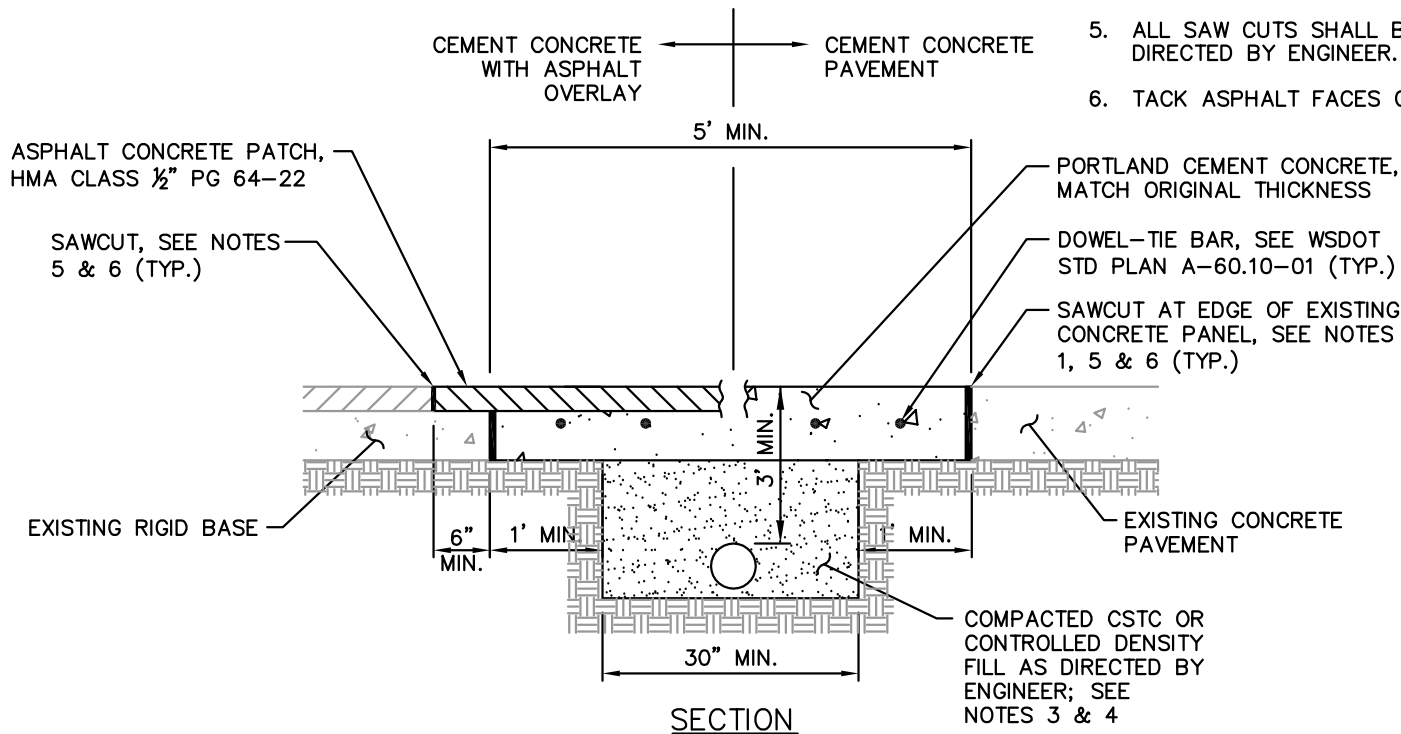


FLEXIBLE PAVEMENT PATCHING AND RESTORATION DETAILS  
LONGITUDINAL CUT

DRAWING NUMBER	ROW-4
SCALE	NONE
REVISION DATE	01/15
DEPARTMENT	TRANS

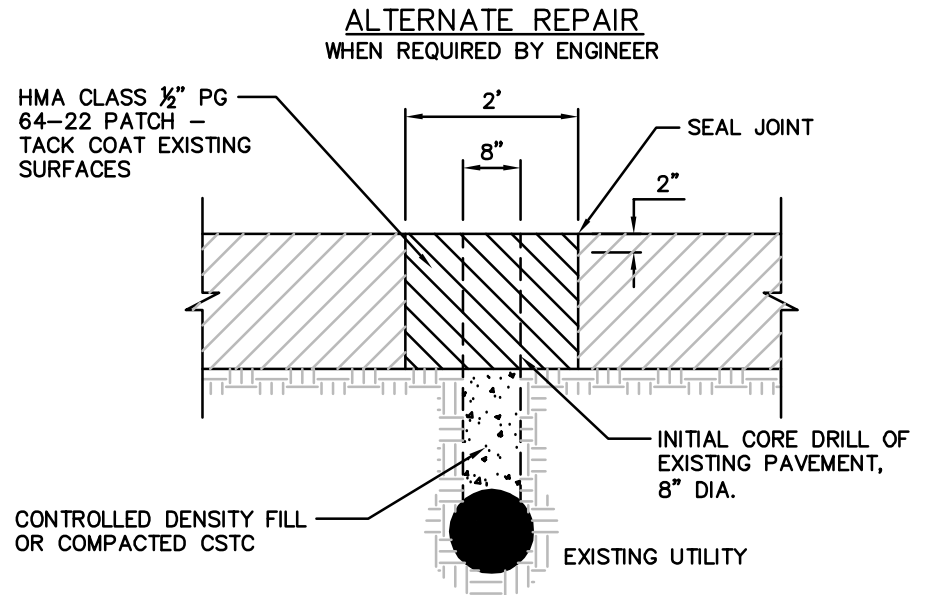
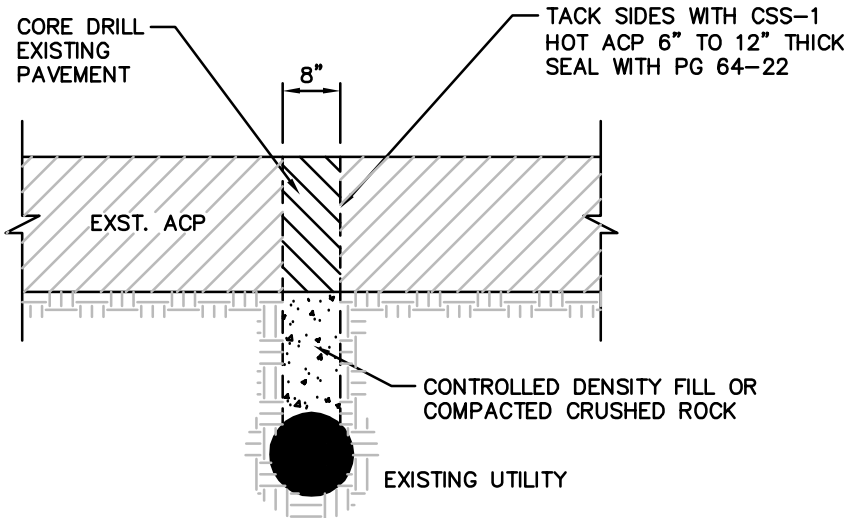
NOTES:

1. CEMENT CONCRETE PANEL REPLACEMENT SHALL BE FULL PANEL REPLACEMENT AS PER WSDOT STD. PLAN A-60.10-01 UNLESS OTHERWISE DIRECTED BY THE ENGINEER..
2. FOR CONCRETE ROADWAY WITH EXISTING ASPHALT OVERLAY, REPLACEMENT OVERLAY SHALL BE ½ INCH HMA PG 64-22 AND MATCH EXISTING THICKNESS. GRIND/OVERLAY LIMITS OF ASPHALT SHALL BE DETERMINED BY THE ENGINEER.
3. ALL TRENCH BACKFILL SHALL BE CSTC OR CONTROLLED DENSITY FILL.
4. CONTROL DENSITY FILL SHALL MEET WSDOT STANDARDS AS STATED IN 2-09.3(1)E OR THE CURRENT VERSION OF THE STANDARDS AND SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION MANUAL M41-10.
5. ALL SAW CUTS SHALL BE VERTICAL AND IN STRAIGHT LINES AS DIRECTED BY ENGINEER.
6. TACK ASPHALT FACES OF SAW CUTS AND SEAL WITH PG 64-22 OIL.



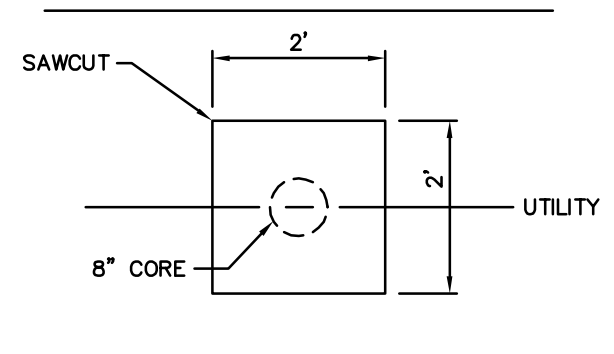
**RIGID PAVEMENT PATCHING AND RESTORATION DETAILS  
LONGITUDINAL CUT**

DRAWING NUMBER	ROW-5
SCALE	NONE
REVISION DATE	01/15
DEPARTMENT	TRANS



**NOTES:**

1. TO BE USED FOR NO-CUT AND GRIND & OVERLAY STREET RESTORATION CLASSIFICATIONS
2. THE EXISTING PAVEMENT SHALL BE CUT FULL DEPTH WITH AN EIGHT INCH DIAMETER CORE DRILL. THE SUBBASE MATERIAL SHALL BE REMOVED USING A VACUUM EXCAVATOR, KEEPING THE EXCAVATION AS MINIMAL AS POSSIBLE.
3. BACKFILL THE EXCAVATION WITH A SIX INCH CUSHION OF CRUSHED ROCK OVER THE UTILITY THEN PLACE THE REMAINING VOID WITH CDF OR COMPACTED CSTC.
4. REPAIR THE CORED PAVEMENT SECTION WITH HMA CLASS 1/2" PG 64-22 AND SEAL THE JOINT.
5. IF THE EXCAVATION BELOW THE ASPHALT PAVEMENT IS LARGER THAN THE 8 INCH CORE, THE PAVEMENT RESTORATION WILL INCLUDE A 2' BY 2' TEE PATCH FULL DEPTH OF THE ASPHALT CENTERED ON THE EXCAVATION, AS SHOWN ABOVE AS ALTERNATE REPAIR.
6. IF THE EXCAVATION IS LARGER THAN 2' BY 2', THE STANDARD GRIND AND OVERLAY RESTORATION SHALL BE USED.

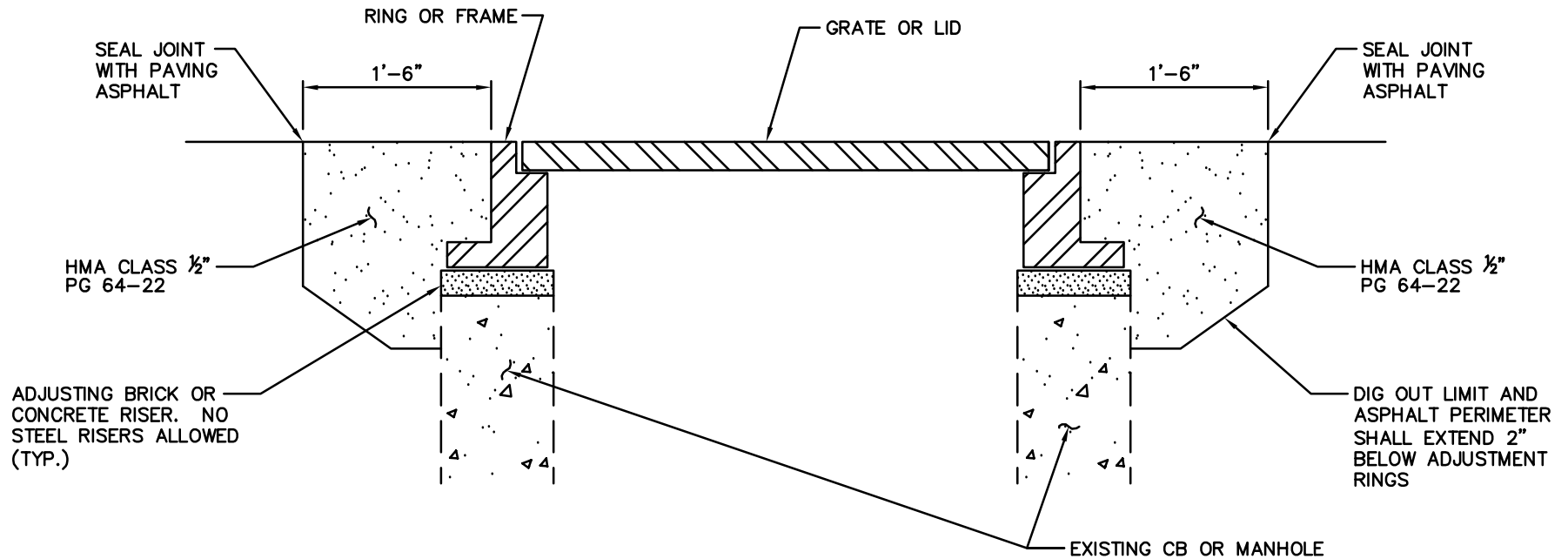


**PAVEMENT RESTORATION FOR WINDOW CUTS**

DRAWING NUMBER	ROW-7
SCALE	NONE
REVISION DATE	01/14
DEPARTMENT	TRANS

## UTILITY MANHOLE AND VAULT ADJUSTMENT

THE EXISTING IRON FRAME AND COVER OR GRATE SHALL BE REMOVED AND THOROUGHLY CLEANED FOR REINSTALLATION TO THE NEW ELEVATION. THE EXISTING STRUCTURE SHALL BE RAISED OR LOWERED TO THE REQUIRED ELEVATION USING CONCRETE BLOCKS, BRICK, AND/OR CONCRETE RINGS. EACH JOINT SHALL BE GROUTED USING A ¾ INCH LAYER OF NON-SHRINK MORTAR, PLASTERED SMOOTH INSIDE AND OUT. COVERS SHALL BE SEATED ON A UNIFORM LAYER OF GROUT TO PREVENT ROCKING.



## UTILITY ADJUSTMENT DETAIL

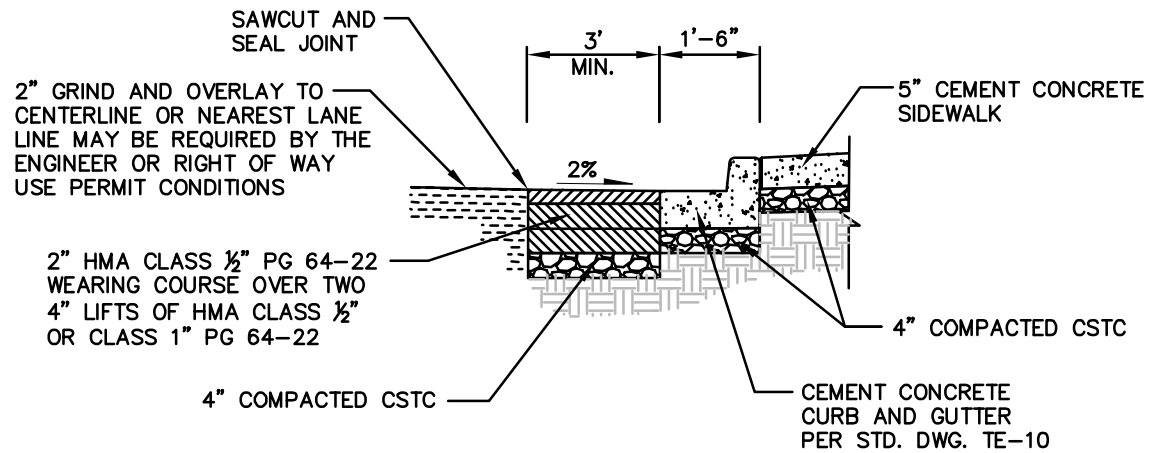
NTS



City of  
Bellevue

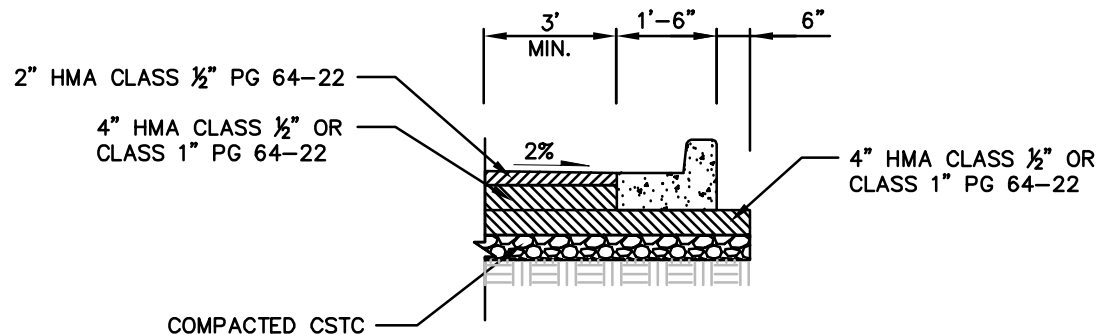
UTILITY ADJUSTMENT DETAIL

DRAWING NUMBER	ROW-8
SCALE	NONE
REVISION DATE	11/07
DEPARTMENT	TRANS



**TYPICAL ASPHALT PAVEMENT DETAIL AT CURB/GUTTER INSTALLATION**

NTS



**TYPICAL ASPHALT PAVEMENT DETAIL FOR CURB/GUTTER ADJACENT TO PLANTER STRIP OR NDP FEATURE**

NTS

**NOTES:**

1. NO PLATE COMPACTION ALLOWED. COMPACTION BY ROLLER ONLY.
2. WIDTH OF SAWCUT FROM GUTTER LINE OR CURB FACE MAY BE INCREASED AT THE DISCRETION OF THE ENGINEER.



**TYPICAL ASPHALT PAVEMENT DETAILS**

DRAWING NUMBER	ROW-9
SCALE	NONE
REVISION DATE	01/14
DEPARTMENT	TRANS

