NEW WESTMINSTER
Engineering Services

POLICY

Title:	**Pavement Restoration Policy**	Council Approved: Yes ☒ No ☐
Prepared by:	George Otieno, Acting Manager of Infrastructure Planning	
Reviewed/Approved by:	**Lisa Leblanc, Director of Engineering**	
Issue Date:	**November 27, 2023**	
Revised Date:		
Document #:	2384880	

Purpose:

To create a policy for the regulation and administration of pavement cuts within the City of New Westminster (hereinafter called the "City") highways and roads

Intent:

Pavement rehabilitation standards ensure high quality and consistent repairs while degradation fees assist in offsetting road rehabilitation costs for reduced pavement life. This approach encourages the scheduling of utility cuts prior to paving, or the use of trenchless technologies, to avoid incurring additional cost.

Policy/Procedure:

AUTHORIZATION OF PAVEMENT CUT

1. All pavement cuts shall be authorized by the City Engineer or designate as a part of the third party utility permit or project agreement with the City. Third party utility permit application fees and the City's pavement degradation fee are required through the permits. All work shall conform to the City of New Westminster bylaws; Deviations from or modifications to this Policy are at the discretion of the City Engineer. Proposals for alternate restoration methods shall be submitted to the City Engineer or designate, and approved in writing by the City Engineer prior to excavation;

2. The following table outlines the application of this policy and the associated permit or agreement that would refer to this policy. Note that this policy is still best practice across the City even for work that requires no permit or agreement.

	SMALL EXCAVATIONS (e.g. test holes)	STANDARD EXCAVATIONS (e.g. utility and service trenches)		
Work Completed By	**Permit**	**Permit**	**Project Agreement**	**Best Practice**
City Forces				☑
City Capital Projects				☑
Third-Party Works	☑	☑	☑	☑
Metro Vancouver Projects*				☑
Development Works				☑

* The GVS&DD and GVWD Policy on Pavement Restoration for Sewer and Water Main Installations applies to Standard Excavations by Metro Vancouver.

3. A pavement cut moratorium is currently applied for roadways that have been constructed or rehabilitated within the last five years. However, consideration for exceptions may be given by the City Engineer if the permittee proves the following:

    a) The cut could not have been foreseen;
    b) The work could not have been completed prior to the rehabilitation work;
    c) There is no practical alternative (i.e. pushing or drilling the utility) that is cost effective (within 1.5 times the cost of the open cut option). Cost estimates must be certified by a registered Professional Engineer.

    If the City Engineer authorizes the cut, the following special conditions may apply such as:

    a) increased paving extent, over and above the typical 0.4m beyond trench cut and/or to the nearest lane line or lane centerline, i.e. for the full frontage of the property, half road, full road, or travelled lane;
    b) full depth pavement milling and filling in two lifts;
    c) an increased Pavement Degradation Fee;

ASPHALT AND CONCRETE CORING

4. Final restoration of asphalt or concrete cores up to 200 mm diameter shall be completed immediately following the coring operation. Restoration of cores shall involve filling the cored area with non-shrink, high strength grout and ensuring that the final surface is flush with surrounding ground;

5. Non-shrink, high strength grout refers to a cement-based grout that contains nonmetallic and anti-shrinkage compounds blended with graded siliceous aggregate and Portland cement. The grout shall be designed for its application, whether it is flexible pavement repairs for asphalt coring or rigid pavement repairs for concrete coring.

ALL EXCAVATIONS

6. All other restorations shall conform to requirements in the City of New Westminster Supplementary Specifications & Standard Detailed Drawings and the Master Municipal Construction Document (Platinum Version). The following Standard Detailed Drawings, attached, describes the requirements of this policy in graphic format:

    - NW-001 Pavement Restoration (Permanent and Temporary)
    - NW-002 Permanent Pavement Restoration Areas
    - NW-003 Permanent Pavement Restoration Areas at an Intersection.

7. Temporary restoration can be applied to all excavations but shall be permanently restored within six months;

8. No temporary restoration can be left unpaved if the area will be opened for traffic. Temporary road steel plates, where approved by the City, shall be designed and monitored by a Professional Engineer;

9. All edges of the final pavement restoration shall be saw cut or milled straight lines which are perpendicular or parallel to the lane;

10. All areas that experience sloughing of trench walls and/or undermining of materials below the asphalt along trench walls shall be marked on the surface during construction. Prior to final restoration, the full depth of asphalt at these locations shall be saw cut and removed and reconstructed with proper compaction in full depth;

11. Permanent restoration of asphalt surfaces shall be machine-placed and compacted using rollers. Hand placed asphalt will not be accepted as permanent restoration;

12. Finished surface of permanent restoration shall be within 6 mm of existing elevation. Finished surface of temporary restoration shall be within 15 mm of existing elevation;

13. Restoration of all concrete works, including sidewalks, curb & gutter, and driveways requires replacement of full concrete panels between existing dummy joints or expansion joints. The Contractor shall complete concrete cylinder tests in accordance with minimum material testing requirements in the MMCD;

14. Where existing road structure is composed of structural strengthening features (e.g. concrete slabs, controlled density fill, lightweight fill, geo-synthetic systems, etc.), the features shall be replaced like-for-like and connected to existing systems as per the manufacturers' and the City's requirements;

15. Special surface treatments such as colored concrete/asphalt or stamped concrete/asphalt shall be replaced like-for-like. Contractor shall present the City with a mock-up for approval prior to installation;

16. Restoration of permanent pavement markings, survey monuments, and traffic detector loops embedded in the pavement is the responsibility of the Contractor. The Contractor shall provide and maintain temporary pavement markings until permanent pavement markings are installed. All temporary pavement markings shall be removed immediately following installation of the permanent markings;

SMALL EXCAVATIONS

17. A small excavation refers to any cut in the pavement that is smaller than one meter by one meter in size, for applications including asphalt coring, test holes, monitoring wells installation and removal, etc.;

18. Temporary restoration of all small excavations, excluding coring, shall be backfilled using 19mm crushed granular gravel and filled with non-shrink, high strength grout from 50 mm below the underside of the existing pavement up to the pavement surface;

19. Final restoration area shall be at minimum a 1.2 meter by 1.2 meter square or diamond as per NW-002;

20. For permanent restoration, final asphalt inlay of small excavations shall be completed in accordance to NW-001 using crushed granular materials and hot-mix asphalt. Cold-mix asphalt is not to be used. Grout from temporary restoration shall be removed;

21. Permanent restoration of small excavations that are within 2.0 meters of each other in the same lane shall be combined and restored as a standard excavation;

22. Extend final paving to the edge of pavement when a repair is within one meter to the edge of the pavement;

STANDARD EXCAVATIONS

23. A standard excavation refers to any cut in the pavement that is larger than one meter by one meter in size;

24. Temporary restoration and permanent restoration shall be completed using crushed granular materials and hot-mix asphalt in accordance to NW-001. Cold-mix asphalt is not to be used;

25. Restoration of excavations that are within 4.0 meters of each other in the same lane shall be combined;

26. Permanent pavement restoration will be to a full lane width and minimum 2.0 meters in length in the direction of travel. If a road has no lane markings, then the extent of paving will be the centerline of the road to the curb or road edge. If a cut is within the bike lane or paved shoulder, the extent of paving will be from the painted line to the edge of the

pavement, and 2.0 meters in length in the direction of travel. The above apply to all lanes that a standard excavation may extend into, regardless of the size of extension into each lane;

27. Permanent pavement restorations along travelled lanes shall be in accordance to NW-002;

28. Permanent pavement restorations within intersections shall be in accordance to NW-003. Edge of all permanent restoration shall be at an intersecting lane line, centerline, painted line, or edge of pavement. Where the intersection is restored in the curb lane area next to a curb return, final paving shall be extended to the curb return;

29. A settling period to allow for trench settlement prior to final mill and pave shall be determined by a geotechnical engineer. The suggested minimum settling period before final restoration is **three months**;

INSPECTION AND WARRANTY

30. The Contractor is responsible for monitoring and maintenance of any temporary restoration before final restoration is completed;

31. The Contractor is responsible for restoration of any damaged area outside the limits of the excavation caused by their construction equipment and operation, unless the Contractor can clearly demonstrate that the damage is pre-existing;

32. Limits of final pavement restoration shall be determined during a walkthrough between City representative and the Contractor prior to completing the work;

33. Temporary and final restoration shall be completed to the satisfaction of the City Engineer, and;

34. All permanent restorations shall have a warranty period of one year. The warranty period shall start over every time rehabilitation work required and performed on the permanent restoration. Warranty shall cover defects including settlement, poor workmanship, inadequate compaction and cracks.

NEW WESTMINSTER
Engineering Services

City of New Westminster - Pavement Degradation Fee Form

Pavement Degradation Rates (Engineering Fees & Rates Bylaw 7553)

Project Number:		**Fee Schedule**	
Date of submission:		**Age of Street in Years Since Last Paved**	**Fee Per Square Meter of Excavation**
Engineer of Record:		0-5 years	$78.75
		6-10 years	$65.65
Company Name		11-15 years	$41.60
		16-20 years	$24.10
Contact Name		21 years or greater	$12.70
Contact Email			

Pavement Degradation Fee Calculation

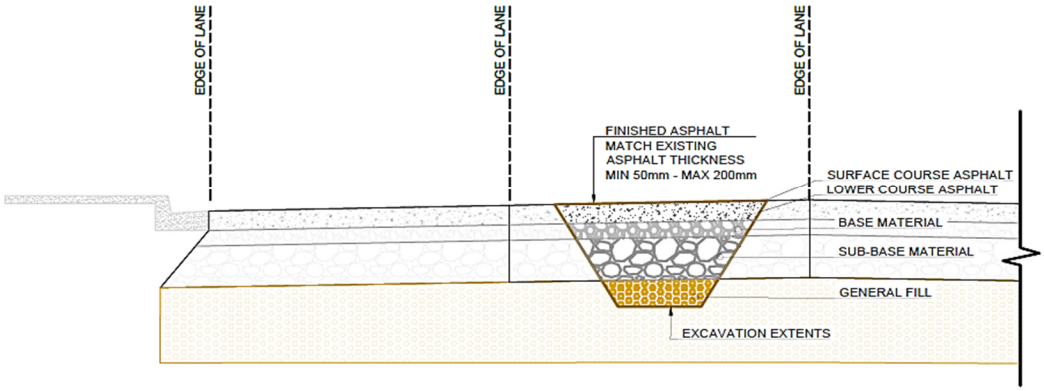
Street/Avenue	Length (m)	Trench Width (1.5m if depth < 1.5m, 2.5m if depth > 1.5m)	Area (m^2)	Degradation Fee (Area x Fee per sq.m)
xxxxx ave	xx	xx	xx	$ xxx
			Subtotal	**$ xxx**

- Fees are subject to annual increments as per the Engineering Fees & Rates Bylaw #7553

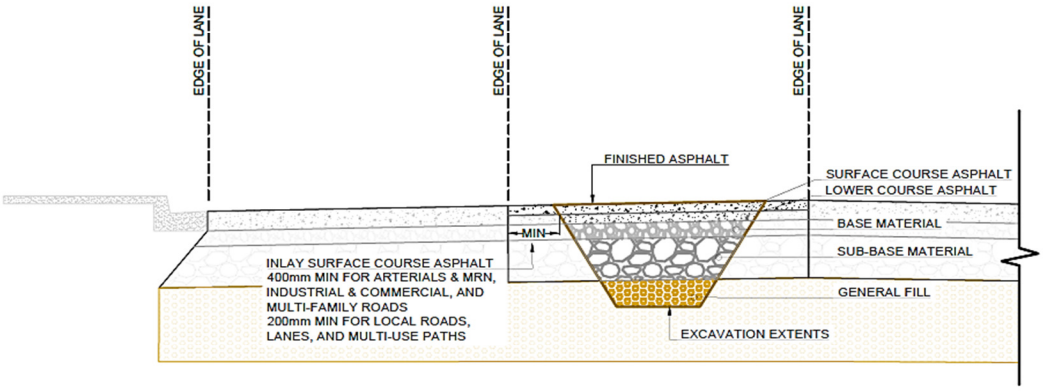
- Info Required from Utility Company to Complete Form: Length of installation and depth of installation

- Info Required from City GIS: Age of Road

PAVEMENT RESTORATION
TEMPORARY RESTORATION



PAVEMENT RESTORATION
PERMANENT RESTORATION



MATERIAL RESTORATION TABLE

CITY OF NEW WESTMINSTER BYLAW 8128, 2019

ROAD CLASSIFICIATION	75mm GRANULAR SUBBASE (mm)	19mm CRUSHED GRANULAR BASE (mm)	ASPHALT - CONCRETE	
			LOWER COURSE (mm)	UPPER COURSE (mm)
MAJOR ROAD NETWORK	500 (CRUSHED)	150	100mm SUPER PAVE (19mm)	50mm SUPER PAVE (12.5mm)
MAJOR ARTERIAL	500 (CRUSHED)	150	100mm SUPER PAVE (19mm)	50mm SUPER PAVE (12.5mm)
ARTERIAL	400 (CRUSHED)	4150	75mm SUPER PAVE (19mm)	50mm SUPER PAVE (12.5mm)
COLLECTOR	300 (SELECT)	125	60mm SUPER PAVE (19mm)	40mm UPPER COURSE 1
LOCAL ROAD	300 (SELECT)	100	45mm SUPER PAVE (19mm)	40mm UPPER COURSE 2
NON-RESIDENTIAL LANES AND DRIVEWAYS	100 (SELECT)	100	40mm SUPER PAVE (19mm)	35mm UPPER COURSE 2
RESIDENTIAL DRIVEWAYS	100 (SELECT)	100		65mm UPPER COURSE 2 (1 LIFT)

MAXIMUM LIFT THICKNESS IS 75mm
STANDARD FOR THE HIGHER STREET CLASS APPLIES WHERE THERE ARE MIXED PROPERTY ZONES ON A STREET
REFER TO THE CITY OF NEW WESTMINSTER PAVEMENT RESTORATION POLICY FOR ADDITIONAL INFORMATION

GENERAL NOTES

ASPHALT RESTORATION TO MATCH EXISTING GRADES AND ELEVATIONS

ASPHALT THICKNESS PER MATERIAL RESTORATION TABLE

ASPHALT RESTORATION EXTENTS PER DETAIL DRAWINGS:
-PERMANENT PAVEMENT RESTORATION AREAS
-PERMANENT PAVEMENT RESTORATION AREAS AT AN INTERSECTION

HOT MIX ASPHALT CONCRETE ONLY

AGGREGATE DEPTH, LIFT THICKNESS AND COMPACTION PER MATERIAL RESTORATION TABLE BELOW

REFER TO CITY OF NEW WESTMINSTER PAVEMENT RESTORATION POLICY FOR ADDITIONAL INFORMATION AND SPECIFICATION

CROSS SECTION FOR ILLUSTRATIVE PURPOSES ONLY

NOT DRAWN TO SCALE

NOT INTENDED FOR CONSTRUCTION

No.	y/m/d	Issued/Reviewed/Revsion	By	App.
A	2023/10/24	ISSUED FOR REVIEW	EP	GO

The Corporation of the City of New Westminster

Received
Checked
Approved
Date
CITY ENGINEER

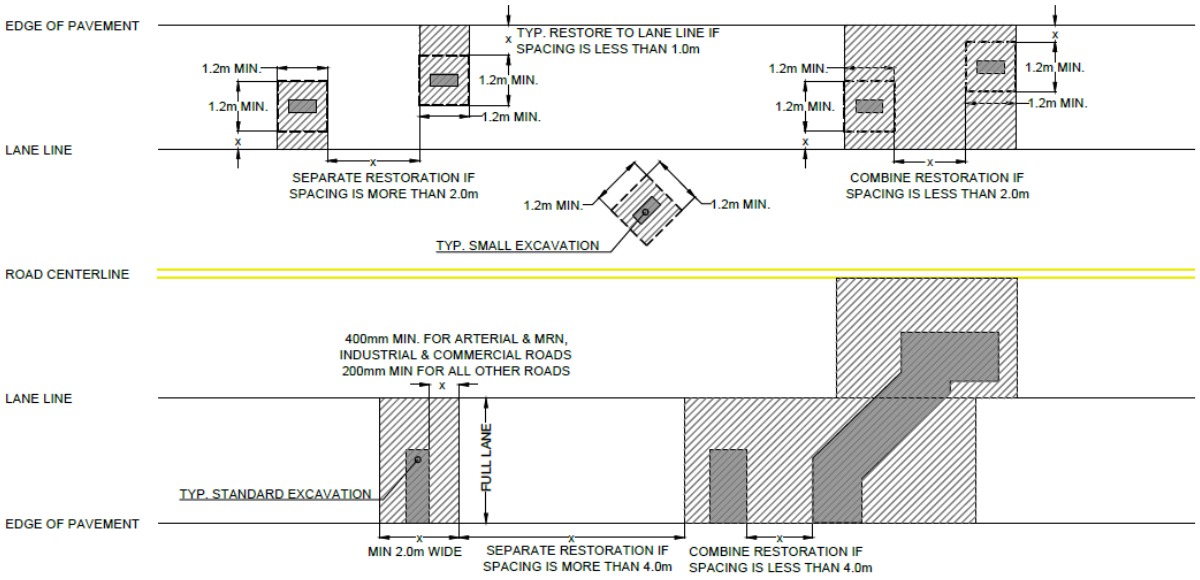
Project
PAVEMENT RESTORATION
PERMANENT AND TEMPORARY

NEW WESTMINSTER
Engineering Services

Drawn E. POLLMULLER
Checked G. OTIENO
Designed
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City Project No.
Project No.

Sheet 001
y/m/d 2023/10/24
Scale NTS
Drawing No. NW-001
Rev. A

PERMANENT PAVEMENT RESTORATION AREAS



MATERIAL RESTORATION TABLE

CITY OF NEW WESTMINSTER BYLAW 8128, 2019

ROAD CLASSIFICIATION	75mm GRANULAR SUBBASE (mm)	19mm CRUSHED GRANULAR BASE (mm)	ASPHALT - CONCRETE LOWER COURSE (mm)	ASPHALT - CONCRETE UPPER COURSE (mm)
MAJOR ROAD NETWORK	500 (CRUSHED)	150	100mm SUPER PAVE (19mm)	50mm SUPER PAVE (12.5mm)
MAJOR ARTERIAL	500 (CRUSHED)	150	100mm SUPER PAVE (19mm)	50mm SUPER PAVE (12.5mm)
ARTERIAL	400 (CRUSHED)	4150	75mm SUPER PAVE (19mm)	50mm SUPER PAVE (12.5mm)
COLLECTOR	300 (SELECT)	125	60mm SUPER PAVE (19mm)	40mm UPPER COURSE 1
LOCAL ROAD	300 (SELECT)	100	45mm SUPER PAVE (19mm)	40mm UPPER COURSE 2
NON-RESIDENTIAL LANES AND DRIVEWAYS	100 (SELECT)	100	40mm SUPER PAVE (19mm)	35mm UPPER COURSE 2
RESIDENTIAL DRIVEWAYS	100 (SELECT)	100		65mm UPPER COURSE 2 (1 LIFT)

MAXIMUM LIFT THICKNESS IS 75mm
STANDARD FOR THE HIGHER STREET CLASS APPLIES WHERE THERE ARE MIXED PROPERTY ZONES ON A STREET
REFER TO THE CITY OF NEW WESTMINSTER PAVEMENT RESTORATION POLICY FOR ADDITIONAL INFORMATION

GENERAL NOTES

ASPHALT RESTORATION TO MATCH EXISTING GRADES AND ELEVATIONS

ASPHALT THICKNESS PER MATERIAL RESTORATION TABLE

PERMANENT RESTORATION EXTENTS ARE REQUIRED TO THE FULL LANE WIDTH.

EXTEND RESTORATION TO THE EDGE OF PAVEMENT, NEAREST PAINTED LINE, OR CURB RETURN AS REQUIRED.

HOT MIX ASPHALT CONCRETE ONLY

REFER TO CITY OF NEW WESTMINSTER PAVEMENT RESTORATION POLICY FOR ADDITIONAL INFORMATION AND SPECIFICATION

DRAWING PREPARED FOR ILLUSTRATIVE PURPOSES ONLY

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NOT INTENDED FOR CONSTRUCTION

EXTENTS OF EXCAVATION AT ASPHALT GRADE

EXTENTS OF PAVEMENT RESTORATION AREA

No.	y/m/d	Issued/Reviewed/Revsion	By	App.
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Approved — CITY ENGINEER
Date

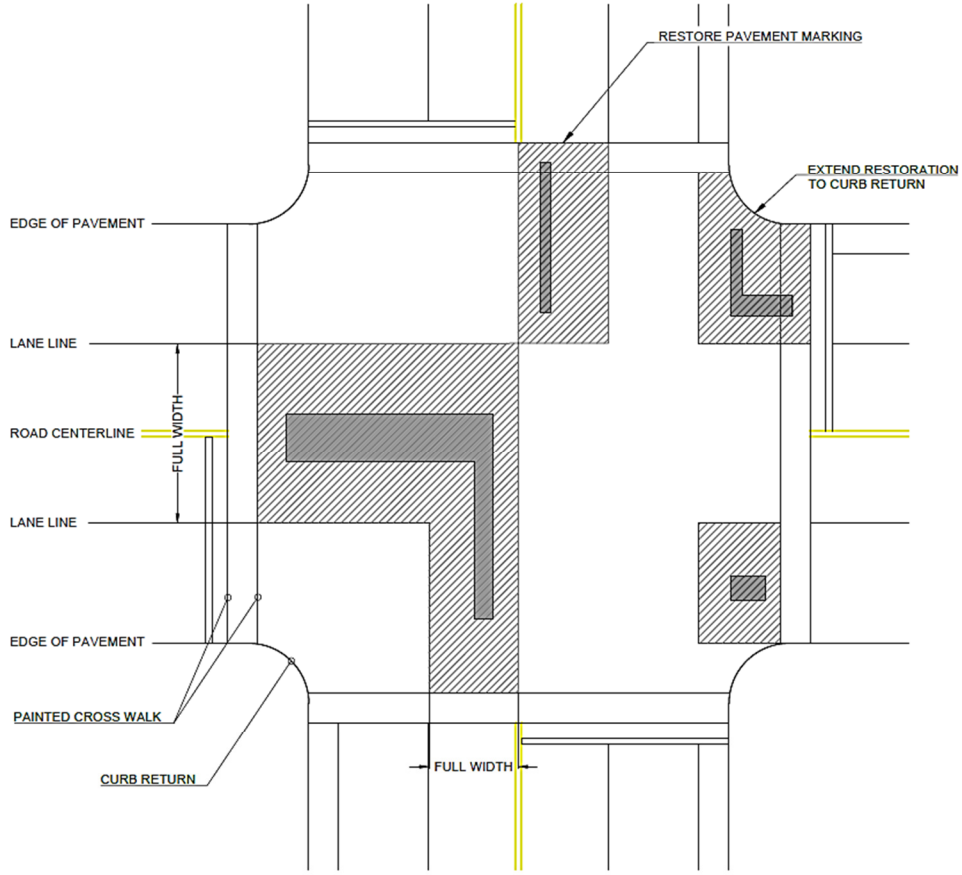
Project
PAVEMENT RESTORATION
PERMANENT PAVEMENT RESTORATION

NEW WESTMINSTER Engineering Services

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Checked G. OTIENO
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City Project No.
Project No.

Sheet 002
y/m/d 2023/10/24
Scale NTS
Drawing No. NW-002
Rev. A

PERMANENT PAVEMENT RESTORATION AREAS AT AN INTERSECTION



MATERIAL RESTORATION TABLE

CITY OF NEW WESTMINSTER BYLAW 8128, 2019

ROAD CLASSIFICIATION	75mm GRANULAR SUBBASE (mm)	19mm CRUSHED GRANULAR BASE (mm)	ASPHALT - CONCRETE	
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GENERAL NOTES

ASPHALT RESTORATION TO MATCH EXISTING GRADES AND ELEVATIONS

ASPHALT THICKNESS PER MATERIAL RESTORATION TABLE

PERMANENT RESTORATION EXTENTS ARE REQUIRED TO THE FULL LANE WIDTH.

EXTEND RESTORATION TO THE EDGE OF PAVEMENT, NEAREST PAINTED LINE, OR CURB RETURN AS REQUIRED.

HOT MIX ASPHALT CONCRETE ONLY

REFER TO CITY OF NEW WESTMINSTER PAVEMENT RESTORATION POLICY FOR ADDITIONAL INFORMATION AND SPECIFICATION

DRAWING PREPARED FOR ILLUSTRATIVE PURPOSES ONLY

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EXTENTS OF EXCAVATION AT ASPHALT GRADE

EXTENTS OF PAVEMENT RESTORATION AREA

No.	y/m/d	Issued/Reviewed/Revsion	By	App.
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Project: PAVEMENT RESTORATION
RESTORATION AREAS AT AN INTERSECTION

NEW WESTMINSTER Engineering Services

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City Project No.
Project No.

Sheet: 003 — y/m/d: 2023/10/24
Scale: NTS
Drawing No.: NW-003
Rev.: A