

Department of Development Services Policy & Procedure

Subject: TRENCH AND PAVEMENT RESTORATION POLICY		Number: PW - 7
		Date: 4/24/2014
Approved: 	Department: Development Services	Page 1 of 8

1.0 PREAMBLE

The City of Lancaster (City) maintains ownership and/or jurisdictional authority over all public roadways within the City's legal boundaries. Those roadways and associated appurtenances located within the public right-of-way are tangible assets of the City, and it is the responsibility of the Development Services Department to protect and manage those assets. Construction, maintenance, preservation, and restoration of roadways and associated appurtenances must be regulated in a manner that ensures the integrity of those assets.

2.0 PURPOSE

This policy shall replace the Pavement Restoration Policy approved on July 30, 2001 and it also supersedes Section 8.3 of the City of Lancaster Engineering Design Guidelines. This policy is the basis by which all entities working within City right-of-way should plan the construction and maintenance of utility trenches and/or pavement restorative operations. Compliance with this policy is mandatory and authorization to deviate from the procedures noted herein may only be granted by the City Engineer, the Capital Program Manager, or the Director of Public Works. It is the permittee's responsibility to be aware of this policy and any changes thereto prior to being issued an encroachment permit to work within the City's right-of-way.

3.0 DIVISIONS AFFECTED

3.1 Community Development Division

3.2 Utilities/Maintenance Services Division

3.3 Capital Program Division

4.0 REFERENCES

4.1 Highway Permit Ordinance

4.2 Standard Specifications for Public Works Construction (Greenbook) Latest Edition

4.3 California Manual of Uniform Traffic Control Devices (CA MUTCD) Latest Edition

4.4 City of Lancaster Traffic Control Requirements for Work Zones Policy

5.0 STANDARD PLANS

The previously approved City of Lancaster, Department of Public Works Standard Plans EP-1

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(12/16/88), EP-2 (12/16/88), EP-3 (12/16/88), EP-4 (3/24/88), EP-5 (11/14/96) and EP-6 (3/24/98) are hereby rescinded and replaced with the following Standard Plans:

- 5.1 EP-1 Construction of Utility Trenches in Existing Streets and Alleys
- 5.2 EP-2 Asphalt Repair (Temporary)
- 5.3 EP-3 Permanent Repair of Existing Streets and Alleys
- 5.4 EP-4 Construction of Utility Trenches Prior to Street Construction
- 5.5 EP-5 Pavement Restoration of Rock-wheel Trenches in Existing Streets and Alleys
- 5.6 PW-9 Manhole Adjustment to Finish Pavement Grade

6.0 POLICY

6.1 Newly Renovated Streets

There shall be a 2-year Moratorium on newly renovated streets. Permission to excavate in newly renovated (capped, overlaid, or sealed) streets will not be granted for two (2) years after completion of street renovation. Utility companies shall determine alternate methods of making necessary repairs to avoid excavating in newly renovated streets. Exceptions to the above are as follows:

- a. Emergency which endangers life or property.
- b. Interruption of an essential utility service.
- c. Work that is mandated by the City, State, or Federal legislation.
- d. Service for buildings where no other reasonable means of providing service exists.
- e. Other situations deemed by the City to be in the best interest of the general public.
- f. Boring is not feasible due to technical engineering reasons.

If an exception is granted, street excavation shall be governed by the Trench and Pavement Restoration Regulations for Non-Moratorium City Streets. Special requirements for pavement restoration may be set at the option of the City.

6.2 Non-Moratorium Streets

Pursuant to Section 16.08.050 of Chapter 16.08 of the Highway Permit Ordinance, the

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Department of Development Services hereby adopts the following regulations pertaining to street excavations:

6.2.1 Permits

Except in an extreme emergency, street opening permits must be taken out in advance of excavation work. An extreme emergency is considered to exist only when life or property is endangered or when an essential utility service is interrupted during weekends, holidays, after 5:00 p.m., or before 8:00 a.m. of a normal working day. Street opening permits may be taken out by owner or contractor. Permits will state whether an annual bond or a cash deposit was received.

For the sake of clarity, the provisions set forth herein shall be applicable for all surface improvements, damaged or removed, as a result of the Contractor's/Permittee's operations within City right-of-way. In some cases throughout these provisions, the expression "trench" is used for simplicity only. These provisions apply to trenches, individual excavations, bore holes, or as otherwise determined by the City. The City shall be the sole judge as to the application of these provisions.

A plan showing the approximate location of the excavation shall be provided before permit issuance. An "as-built" plan shall be provided when requested by the City.

Permits for street opening shall be as specified in Section 16.06.010 of the Highway Permit Ordinance and valid for one hundred-eighty (180) days. The estimated date of commencement and completion of work shall be indicated on all permits. Conflicts in the schedules of work under two (2) or more permits shall be resolved by the permittees involved, if unresolved, work under these permits will be executed in order of permit applications received by the City.

No permit to excavate shall be valid unless the applicant has been provided an inquiry identification number by a regional notification center (USA) pursuant to Section 4216, Chapter 1153.

A permit inspection fee will be required to cover the costs of inspection and administration.

6.2.2 Traffic Control

The Contractor/Permittee shall comply with Section 7-10 of the Greenbook and shall provide safe and continuous passage for pedestrian, bicycle and vehicular traffic at all times. The Contractor/Permittee shall provide and maintain all necessary flag personnel, barricades, delineators, signs, flashers, and any other safety equipment as

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set forth in the latest edition of the CA MUTCD and the City's latest version of Traffic Control Requirements for Work Zones Policy.

6.2.3 Excavations

All excavations shall be conducted per Sections 7-10.4.1 and 306-1.1.6 of the Greenbook.

All excavated material not suitable for back filling shall be removed from the job site by the end of each work week. Excavated material suitable for back filling may be stored on the job site for a maximum of five (5) working days, provided it does not occupy anymore street space than the permit allows and provided the material is stored and maintained appropriately and in compliance with Best Management Practices (BMP). The City will not allow the contractor to use any other street adjacent to the project for the storage of equipment and materials.

The contractor shall obtain a separate Hauling and Stockpile Permit prior to hauling/excavating materials from the project work area. The contractor shall provide private property owner's permission, in writing, to the City for the Contractor's storage of equipment, materials, and staging from that property prior to permit issuance. Said property shall be left in a neat and clean condition.

A routing plan, dust control agreement, dust control method letter, a stockpile plan (that has the spoil piles spread and shaped into a presentable capped mound with a City-approved soil sealant), and any other current documentation that may be required shall be submitted to and approved by the City prior to permit issuance.

No trench, individual excavation, bore hole, etc. shall be opened in any street for the purpose of laying pipes or conduits for more than what the contractor is capable of installing, back filling, compacting or restoring the traveled surface by the end of each work day.

In sidewalks and driveways, the excavation shall be to the nearest score line or joint for trenches, individual excavations, bore holes, etc.

Once the work has been completed, the contractor shall apply a soil sealant for dust control to cover all unimproved areas disturbed during construction. The soil sealant shall be a product approved in advance by the City.

6.2.4 Backfill

The City shall require mechanical compaction per Section 306-1.3.2 of the Greenbook, with the exception that aggregate base shall be placed in lifts not to

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exceed twelve inches (12"). Jetting will only be allowed in the pipe zone.

In accordance with Standard Plan EP-1, the upper three (3) feet of the trench shall be aggregate base as approved by the City, compacted to ninety-five percent (95%) of its relative density. The remainder of the trench backfill between the upper three (3) feet and pipe bedding zone shall have a minimum sand equivalent (S.E.) of twenty (20) and shall be compacted to ninety percent (90%) of its relative density. Imported fill material shall be used if mixing native soil does not meet the minimum sand equivalent. Copies of test results shall be furnished to the inspector to determine the sand equivalent compliance of the native soil. In lieu of the above, the City will allow the contractor to backfill the trench with 1-1/2 sack cement sand slurry mix. Cement sand slurry (1-1/2 sack) backfill shall be used in the upper portion of the trench above the pipe zone within two hundred fifty (250) feet of intersection centerlines of arterial streets. All slurry shall be vibrated.

When trench walls slough, cave or become unstable in a way that will compromise the integrity of surrounding pavement or shoulders they must be removed back to competent material and backfilled per paragraph (1) above. Asphalt pavement undermined or compromised as a result of trench wall failure must be removed up to one (1) foot beyond the trench wall failure per the Paving section included herein.

Documentation shall be obtained from an independent testing laboratory verifying that compaction meets requirements, prior to placement of permanent resurfacing. Tests shall be taken at a maximum of three hundred (300) foot intervals on continuous trenches and at manholes. Individually constructed sections of trenches or open excavations shall be tested at least once, or more as determined by the City. In trenches less than twenty-five (25) feet, one test shall be taken. Depth of tests at three (3) foot intervals shall range from four (4) feet to one (1) foot. Tests will be required on all excavations except those excavations backfilled with 1-1/2 sack sand slurry.

When tunneling or boring, backfill shall be 1-1/2 sack cement sand slurry.

The City Engineering Infrastructure Inspection Hotline, telephone (661) 723-6157, shall be notified twenty-four (24) hours prior to commencement of work, except for City Capital Construction Projects. Contractors performing Capital Construction projects for the City shall comply with the requirements specific to their contract agreement.

The following information must be stated when you call for inspection:

- a) Subdivision projects must include the tract number, location, and type of inspection requested.

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- b) All other projects must include the project street address, two major cross streets, contractor name and phone number, the permit number, and type of inspection.

6.2.5 Paving

Work not complying with the following requirements will be rejected, removed and redone to the satisfaction of the City.

Temporary bituminous resurfacing two (2) inches thick shall be placed and maintained on all trenches at the close of each day per Standard Plan EP-2. Compaction of backfill to ninety-five percent (95%) relative density shall be certified by a soil testing laboratory and test results given to the inspector prior to placement of final resurfacing. Permanent paving shall be constructed within two weeks of completion of the improvements necessitating the trenching. Permittee may provide his/her own tests if approved by the City. Temporary resurfacing shall be per Section 306-1.5.1 of the Greenbook.

Trenches shall be permanently paved as shown on Plan EP-1, EP-3, EP-4, EP-5 or PW-9. Cold planing and /or saw cutting of the existing pavement shall be in neat, straight lines to allow for proper placement of the new pavement section. Damaged pavement outside of the original trench or individual excavation cut lines shall be removed by saw cutting in lines perpendicular to or parallel to the original trench lines. No diagonal grinds or cuts will be allowed. Undamaged pavement of three (3) feet or less between the edge of gutter or shoulder and/or between successive patches shall also be removed.

Asphalt concrete pavement shall be constructed flush with the existing street surface. Paving shall conform to Section 203 of the Greenbook. After completion of the utility line construction, the contractor shall grind the pavement at least one foot on each side of the trench or individual excavation limits to a depth of two (2) inches. Temporary paving shall be used to form smooth transitions from any unpaved surfaces or vertical edges.

A twelve inch (12") T-cut on each side of the trench or individual excavation may be allowed if the condition of the adjacent pavement is not conducive to grinding, as solely determined by the City.

Pavement shall be restored using the "T-Section" shown on Standard Plans EP-1, EP-3, and EP-5. For trenches parallel to the center line of the street or alleys, and greater than three hundred (300) feet in length, a two (2) inch asphalt concrete wearing surface shall be twelve (12) feet wide, or extend across the entire lane.

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Trenches in concrete pavement shall be paved with concrete pavement. The thickness of the new pavement shall be one (1) inch greater than the thickness of the existing pavement or a minimum thickness of four (4) inches, whichever is greater, and a minimum of four (4) inches in the sidewalk.

Trenches in streets or sidewalks that are constructed of special material or color shall be replaced in kind. A sample of each special material and three (3) samples of each color shall be submitted for approval by the City prior to the start of work.

Concrete base in roadway trenches shall be fast curing and placed within two (2) inches of the finish pavement grade. Concrete base shall be vibrated and leveled off so that no lumps or uneven surfaces will result that will carry through to the new asphalt paving. Concrete shall be Portland Cement Concrete, class 565-B-3250. Concrete shall be cured for at least four (4) hours before traffic is allowed on it and, if poured after twelve noon, the opening shall be covered with steel plates.

Trenching and trench restoration shall be governed by Section 306-1.1.2 – 306-1.1.5 of the Greenbook.

Prior to placing permanent asphalt concrete, the existing asphalt concrete shall have a vertical face by saw cutting and/or cold planing so that new asphalt concrete paving can be butt joined. No feathering of new paving to existing paving is allowed. Before placement of new asphalt concrete pavement in trenches, the base surface shall be blown or swept clean and a tack coat of SS-1h applied. Asphalt concrete paving of trenches four (4) feet wide or more, shall be done by a paving machine or spreader box in order to eliminate the uneven, wash-board effect that results from hand spreading. Temporary and permanent trench resurfacing of asphalt concrete shall be governed by Section 306-1.5 – 306-1.5.7 of the Greenbook. Use Type B PG70-10 asphalt concrete in primary and secondary arterial streets. Use Type C2 PG70-10 asphalt concrete for the top course in all residential streets.

Asphalt concrete pavement shall be compacted to obtain a minimum relative compaction of ninety-five percent (95%). The asphalt concrete wearing surface will be smooth enough so that there is no irregularity greater than one eighth inch (1/8") in ten (10) feet in any direction. Regardless of patch size there shall be no deviation greater than one eighth inch (1/8") in any direction. Asphalt concrete pavement greater than three (3) inches in thickness shall be installed and compacted in multiple lifts. Finish surface shall match existing (chip seal, etc.).

Steel plates used to bridge a street opening shall be ramped to the elevation of the adjacent pavement and secured against movement in any direction. Skid resistant steel plates shall be required with two hundred fifty (250) feet of an intersection.

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Any steel plates shall be recessed when in place more than seventy two (72) hours. Temporary ramps shall be three (3) feet wide and shall be constructed of asphalt and shall have a gradual slope.

Curb ramps, including all flatwork from BCR to ECR, shall be removed and reconstructed to comply with current ADA Standards when any portion of the curb ramp is disturbed during construction.

Where utility poles are removed, the remaining hole shall be backfilled from the bottom to +/- six inches (6") from finished surface with 1-1/2 sack sand slurry. The upper six inches (6") shall be backfilled in kind with adjacent material, unless directed by the City. When utility poles are removed within a concrete sidewalk the sidewalk shall be removed and replaced to the nearest existing joints.

6.2.6 Compaction

Compaction and/or soil tests are required for the backfill prior to placement of permanent resurfacing. These must be provided by a testing laboratory or an authorized permittee. In order to be authorized to provide these tests, Contractor's personnel and the equipment to be used must have prior approval by the City. No compaction tests will be required when sand slurry is used for backfill.

6.2.7 Miscellaneous

The latest edition of the Greenbook will apply for any regulations not covered in this policy.

Any violation of the above regulations may result in the revocation of the street opening permit and/or be subject to a police citation or fine.

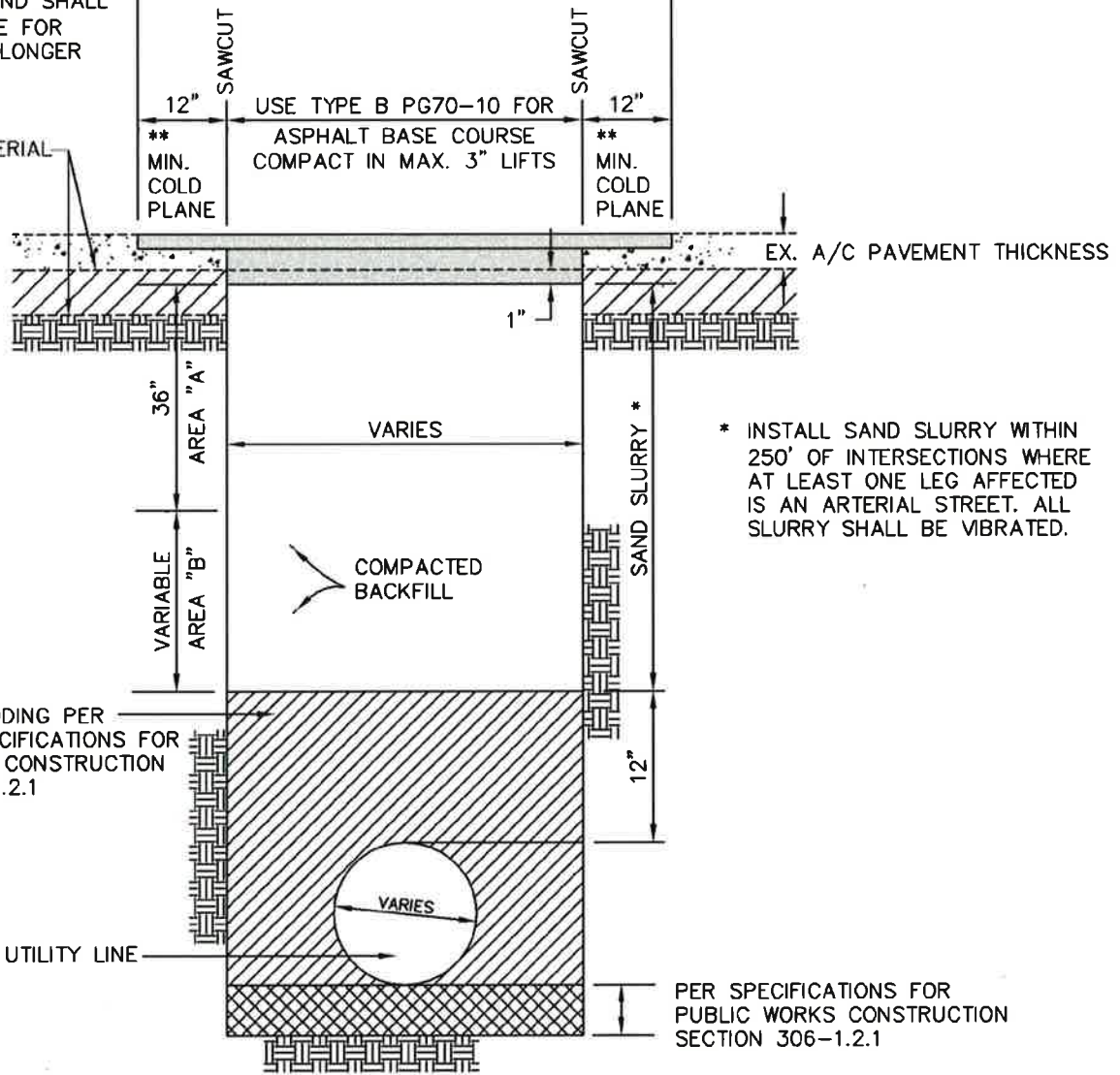
Temporary Overlay Markers (TOMs) shall be placed each day to restore pavement markings removed by construction and shall be maintained at all times. Permanent pavement markings shall be restored after two (2) days, but no later than thirty (30) days after the placement of the permanent surfacing. All crosswalks, limit lines, legends, or symbols shall be reinstalled using thermoplastic pavement marking material approved by the City. All other pavement markings shall be paint. If any portion of a crosswalk, limit line, symbol, or legend is removed, the entire pavement marking, or set of markings shall be restored.

Any loops damaged or removed shall be restored to operation within five (5) working days of installation of the pavement restoration.

FOR PERMANENT ASPHALT REPAIR,
COLD PLANE 2" MIN. AND CONSTRUCT TYPE B
PG70-10 OR TYPE C2 PG 70-10 ASPHALT
CONCRETE PER SECTION 6.2.5 OF THE
TRENCH AND PAVEMENT RESTORATION POLICY

** THE 2" GRIND SHALL
BE 12' WIDE FOR
TRENCHES LONGER
THAN 300'

EX. BASE MATERIAL



* INSTALL SAND SLURRY WITHIN
250' OF INTERSECTIONS WHERE
AT LEAST ONE LEG AFFECTED
IS AN ARTERIAL STREET. ALL
SLURRY SHALL BE VIBRATED.

PIPE ZONE BEDDING PER
STANDARD SPECIFICATIONS FOR
PUBLIC WORKS CONSTRUCTION
SECTION 306-1.2.1

UTILITY LINE

PER SPECIFICATIONS FOR
PUBLIC WORKS CONSTRUCTION
SECTION 306-1.2.1

AREA "A" BACKFILL SHALL BE 1-1/2 SACK SAND SLURRY OR AGGREGATE BASE. IF
AGGREGATE BASE IS USED IT SHALL BE MECHANICALLY COMPACTED TO 95%
RELATIVE COMPACTION. (SEE "*" NOTE FOR INTERSECTIONS).

AREA "B" BACKFILL NATIVE OR IMPORT MATERIAL WITH SAND EQUIVALENT OF AT LEAST 20.
MECHANICALLY COMPACTED TO 90% RELATIVE COMPACTION. (SEE "*" NOTE FOR
INTERSECTIONS).



REVISION DATE: APR 2014

SUBMITTED:

M. J. Michelle Cortell 4/23/14
CITY ENGINEER DATE

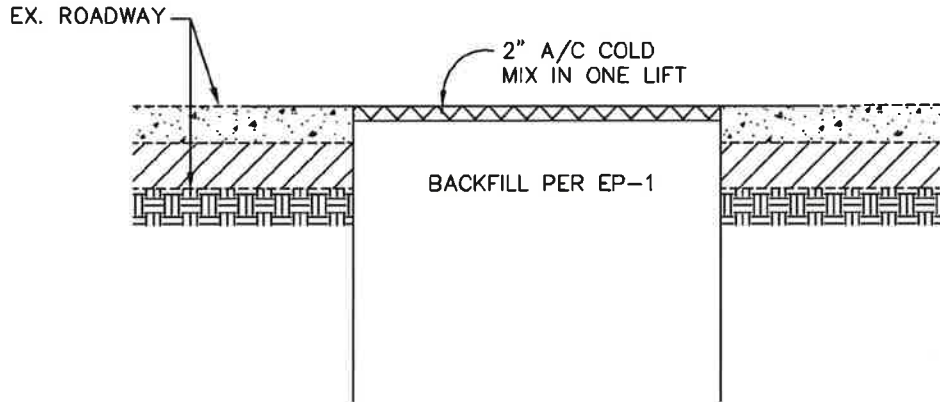
Development Services Department
STANDARD PLAN

APPROVED:

K. Kent C. Neel 4/24/14
DIRECTOR OF PUBLIC WORKS DATE

CONSTRUCTION OF UTILITY
TRENCHES IN EXISTING STREETS
AND ALLEYS



EP-1

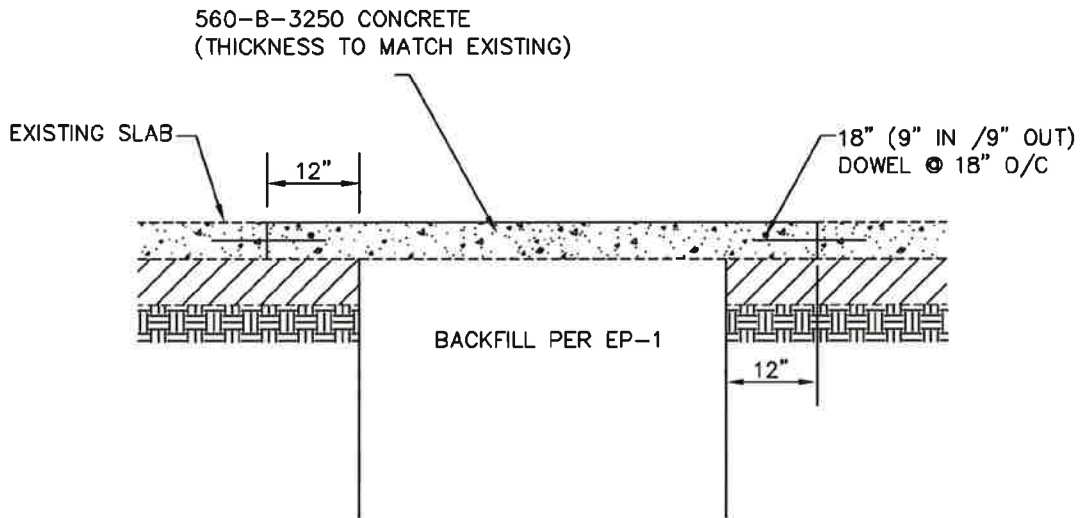


TEMPORARY A/C PAVEMENT SHALL BE PLACED PER SEC. 306-1.5.1 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.



REVISION DATE: APR 2014

SUBMITTED:  CITY ENGINEER		4/23/14 DATE		Development Services Department STANDARD PLAN	
APPROVED:  DIRECTOR OF PUBLIC WORKS		4/24/14 DATE		ASPHALT REPAIR (TEMPORARY)	
				EP-2	



IF THE TRENCH HAS BEEN EXCAVATED CLOSER THAN 12" TO THE SAWED EDGE OF THE STREET, THE CONCRETE SHALL BE RE-SAWED TO PROVIDE 12" OF UNDISTURBED EARTH PRIOR TO PAVING.

IF STREET CROSSING IS IN AN ASPHALT SURFACE, THE CONCRETE SHALL BE COLORED WITH CARBON BLACK.



REVISION DATE: APR 2012

SUBMITTED:

Michelle Cantrell 4/23/14
CITY ENGINEER DATE

Development Services Department

STANDARD PLAN

APPROVED:

Robert C. Neal 4/24/14
DIRECTOR OF PUBLIC WORKS DATE

PERMANENT REPAIR OF EXISTING
STREETS AND ALLEYS

EP-3

A/C PAVEMENT AND BASE
TO BE INSTALLED PER
APPROVED STREET PLANS

SUBGRADE COMPACTED
TO 90% PER APPROVED
STREET PLANS

BASE COMPACTED TO 95%
OF MAXIMUM DRY DENSITY
PER ASTM D-1557 METHOD A

PIPE ZONE BEDDING PER
STANDARD SPECIFICATIONS FOR
PUBLIC WORKS CONSTRUCTION
SECTION 306-1.2.1

VARIES

VARIES
AREA "A"

COMPACTED
BACKFILL

12"

VARIES
UTILITY
LINE

PER SPECIFICATIONS FOR
PUBLIC WORK CONSTRUCTION
SECTION 306-1.2.1

AREA "A" SUITABLE BACKFILL NATIVE MATERIAL, AS PER STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION SECTION 306-1.2.1 TO 90% RELATIVE COMPACTION OF THE MAXIMUM DRY DENSITY, PER ASTM D-1557, METHOD A



REVISION DATE: APR 2014

SUBMITTED:

Michelle Cantrell 4/23/14
CITY ENGINEER DATE

Development Services Department

STANDARD PLAN

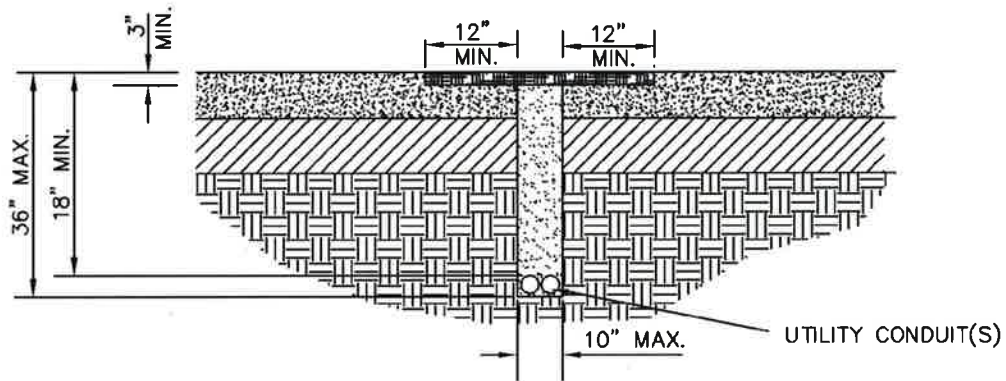
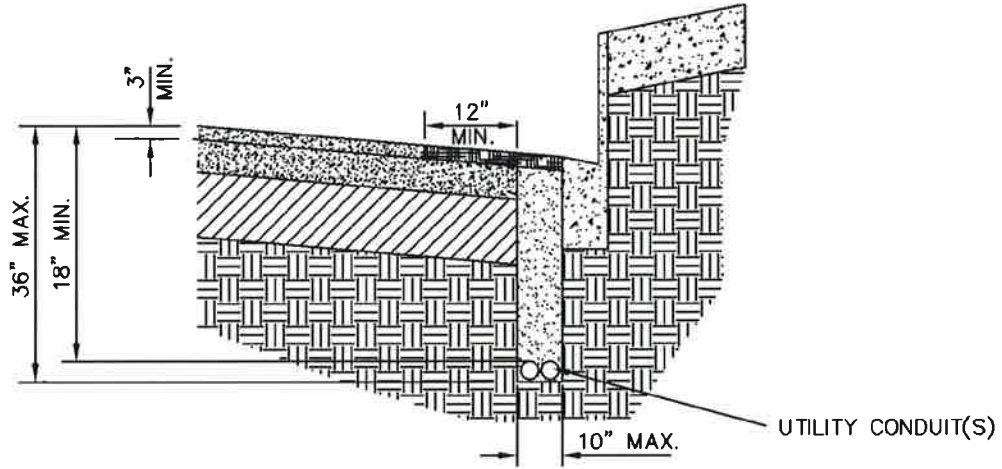
APPROVED:


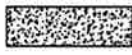
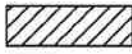

Robert Neal 4/24/14
DIRECTOR OF PUBLIC WORKS DATE

CONSTRUCTION OF UTILITY
TRENCHES PRIOR TO STREET
CONSTRUCTION

EP-4

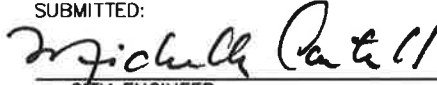
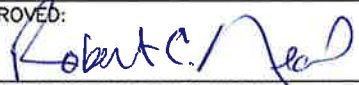
REMOVE 3" MIN. OF A/C PAVEMENT BY COLD PLANING. PLACE AND COMPACT A/C PAVEMENT (C2-PG70-10) PER THE CITY OF LANCASTER TRENCH AND PAVEMENT RESTORATION POLICY.



-  NEW A/C PAVEMENT
-  EXISTING A/C PAVEMENT
-  EXISTING CRUSHED AGGREGATE BASE
-  1 1/2 SACK PCC SAND SLURRY



REVISION DATE: APR 2014

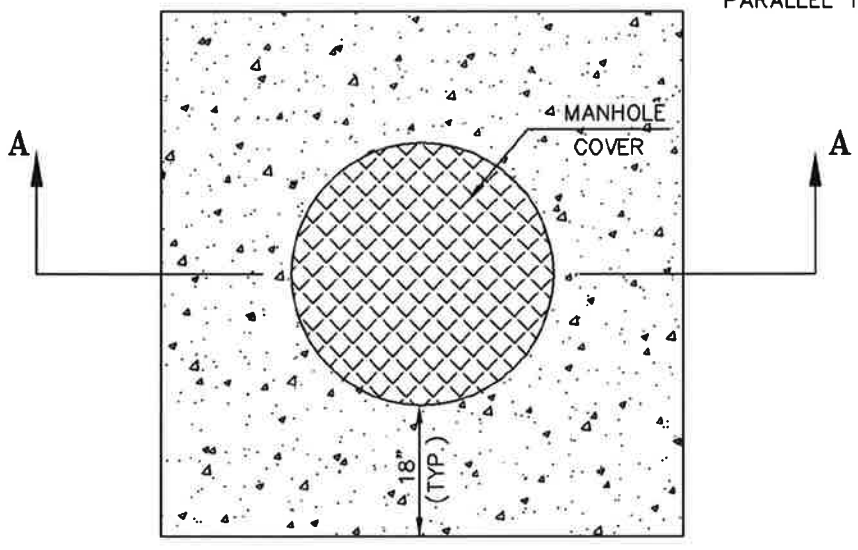
SUBMITTED:	
	4/23/14
CITY ENGINEER	DATE
APPROVED:	
	4/24/14
DIRECTOR OF PUBLIC WORKS	DATE

Development Services Department
STANDARD PLAN

PAVEMENT RESTORATION OF
ROCK-WHEEL TRENCHES IN
EXISTING STREETS AND ALLEYS

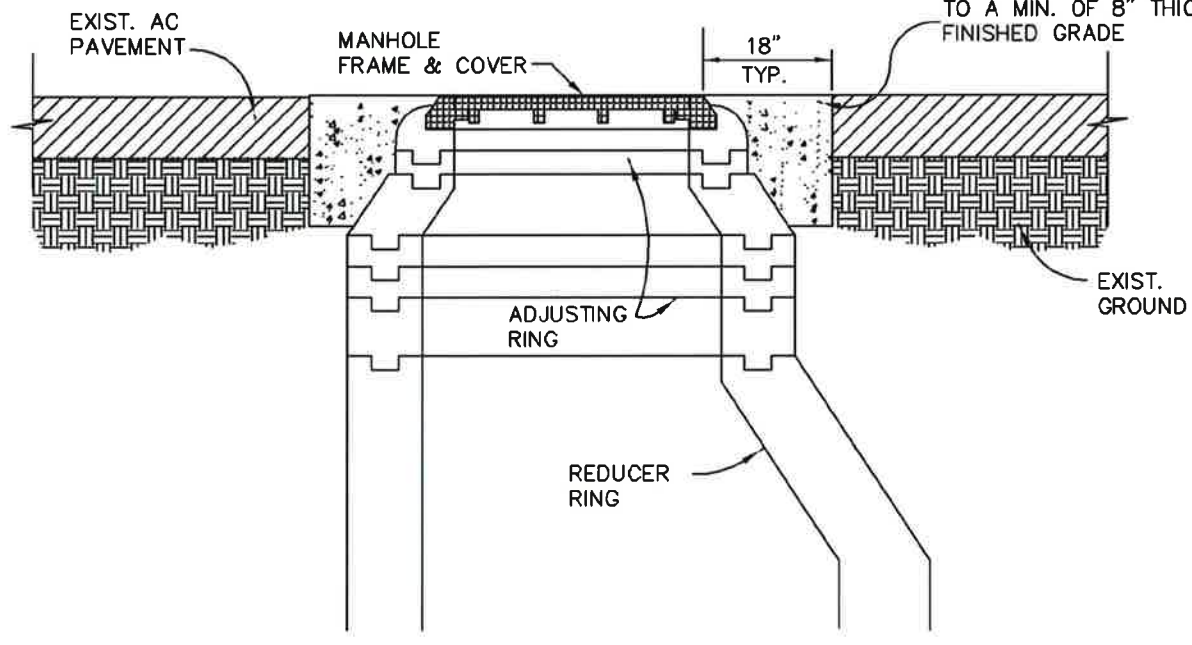
EP-5

SAWCUT UNIFORMLY &
PARALLEL TO C.L.



PLAN VIEW

ALL MATERIAL REMOVED TO
RAISE M.H. SHALL BE REPLACED
WITH 560-C-3250 CONCRETE
TO A MIN. OF 8" THICKNESS TO
FINISHED GRADE



SECTION A-A



REVISION DATE: APR 2014

SUBMITTED:
Michelle Centell 4/23/14
CITY ENGINEER DATE

Development Services Department
STANDARD PLAN

APPROVED:
Robert C. Neal 4/24/14
DIRECTOR OF PUBLIC WORKS DATE

MANHOLE ADJUSTMENT TO
FINISH PAVEMENT GRADE

PW-9