STANDARD SPECIFICATIONS
FOR

STREET OPENINGS

City of
Saint Paul, Minnesota

Department of Public Works

February 24, 2015

STANDARD SPECIFICATIONS
FOR
STREET OPENINGS

DEPARTMENT OF PUBLIC WORKS
CITY OF SAINT PAUL, MINNESOTA

GOVERNING SPECIFICATIONS

The Governing Specifications shall be the Minnesota Department of Transportation "Standard Specifications for Construction, 2014 Edition", all divisions of which shall be applicable, hereinafter referred to as the "2014 MnDOT Specifications"; as amended by the City of Saint Paul, Department of Public Works "Standard Specifications for Street Openings", dated February 24, 2015; and further amended by the Special Provisions noted on the permit.

I hereby certify that the specifications contained in the City of Saint Paul, Department of Public Works "Standard Specifications for Street Openings", dated February 24, 2015; were reviewed by me or under my direct supervision, and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Joe Spah, Street Maintenance Engineer

Date: February 24, 2015 Registration No: 41339

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STANDARD SPECIFICATIONS
FOR
STREET OPENINGS

1.01 GENERAL REQUIREMENTS

A. Permits and Notices

Before making an opening in the public street right-of-way, a Contractor or a Utility Company shall take out, prior to the beginning of the construction work, and at their own expense, an Excavation Permit or a Sewer Service Permit issued by the Department of Public Works to allow excavation in the public street. These specifications shall apply to street opening and restoration work done under contract or agreement with other governmental agencies or departments. The original copy of the permit shall be kept at the location for which said permit was granted at all times while such work is in progress and shall be shown to all authorized City personnel upon request. Refunds or transfers of permit fees will not be permitted. All permits issued by the Department of Public Works, except Sewer Service Permits, will have a date noted as the "Completion Date". After this date, all work must cease. If the job is not completed, a new permit must be obtained.

The Permittee shall be obligated for the correction of any deficiencies caused by the work done under the permit except as noted in Section 1.05, F. (Sod for one year only)

B. Miscellaneous Requirements

When work performed by the Permittee interferes with the established drainage system of any street, the Permittee shall so place materials and equipment and shall so conduct his construction operations that proper drainage will be provided.

Access to abutting property shall be provided except during working hours when construction operations prohibit provision of such access. Abutting property owners shall be given at least twenty-four (24) hours notice of proposed work.

During the entire term of the construction work, the Permittee shall control dust as required by City Legislative Code 221.

TEMPORARY ASPHALT PATCH SHALL BE IN PLACE BEFORE CONTRACTOR OPENS THE STREET TO TRAFFIC UNLESS PERMANENT PATCH IS COORDINATED WITH STREET MAINTENANCE. NO GRAVEL TEMPORARY PATCHES ARE ALLOWED - SUMMER OR WINTER.

The compaction of all trenches shall be done in accordance with acceptable construction practices. After the permanent restoration has been completed, any additional repair costs incurred by the City due to trench settlement will be billed to the permittee at actual cost.

In all cases where special or unusual conditions that are not covered specifically by these specifications occur, the City reserves the right to determine the proper construction procedure. The decision of the Engineer, in such cases, shall be final.

C. Restrictions

Permanent bituminous street restoration work may continue from April 1st to November 30th (if allowed in the permit), or as approved by the Engineer, depending on weather conditions and availability of materials.

All street restoration work, other than approved permanent restoration, between November 30th and April 1st shall be temporary and shall be restored with a bituminous material or concrete as determined by the Engineer. This temporary patch shall then be removed and a permanent repair made by Street Maintenance by July 1st of that season.

Backfill operations shall not contain any frozen material and compaction requirements shall be met. If the contractor is permitted to continue construction operations when the ground is frozen, he shall follow cold weather backfilling procedures, which will entail bringing unfrozen granular material or flowable fill for backfill.

1.02 MATERIALS

All materials used in the restoration of public property shall meet the requirements of their respective kinds and classes, as given in the 2014 MnDOT Specifications. Any material required in the work which is not specifically mentioned in the 2014 MnDOT Specifications shall be furnished of the best quality and shall be satisfactory to the Engineer.

1.03 EXCAVATION

A. General

The length of trench opened shall be subject, at all times, to the approval of the Engineer. All excavations shall be subject to OSHA standards. The maximum allowable trench width in unpaved streets shall be no greater than twenty (20) feet. The maximum allowable trench width in paved streets shall be no greater than fifteen (15) feet. A trench protection device shall be used by the Permittee to keep the trench width within such limits and in conformance with OSHA standards. In certain cases where trenches are to be opened in restricted roadways or in heavy traffic areas, these maximum trench widths may be reduced by order of the Engineer. Wherever a trench protection device is required, such device shall be carefully installed and shall be removed during the backfill operations in such a manner so as not to disturb the adjacent street areas or cause any damage to existing utilities.

All material excavated from trenches and piled adjacent to the trench or in any street shall be piled in conformance with OSHA standards and maintained in such a manner as not to endanger those working the trench, pedestrians or users of the streets, and in a manner to maintain proper street drainage. If the street is not wide enough to hold the excavated material without using a part of the adjacent sidewalk, the Permittee shall keep a passage way at least four (4) feet wide along the sidewalk line.

The use of equipment having cleats on any portion of the street which will be undisturbed and not replaced as part of the job is prohibited.

B. Surface Removal

All types of surfacing and concrete base shall be saw cut at least twelve (12) inches beyond the actual edge of the trench to form a square edge and a straight and even alignment **parallel and/or perpendicular to the centerline of the street**. The Permittee shall, if necessary, use a string or chalk line to achieve this result. If undermining of the surface edge occurs at any time during construction, such undermined pavement must be cut back to form a square edge and a straight and even alignment to a distance of at least twelve (12) inches beyond the edge of the undermined area. Complete backfilling or surfacing of openings with scalloped, irregular or undermined edges will not be permitted until such undermined conditions or irregularities have been corrected. All removed surface material shall become the property of the Permittee and shall be disposed of by them outside the limits of the job and shall not be used as part of the backfilling material.

1. In all areas of Oiled streets, the Permittee will be required to precut the oiled surface pavement with saws full depth prior to pavement removal. Street Maintenance will do an additional final saw cut and remove approximately one (1) additional foot from all edges just prior to restoration. The pavement to be removed shall be removed in such a manner that the remaining pavement is not damaged.
2. In all areas on Intermediate Type Paved streets (full depth asphalt), the edges of the pavement shall be precut with saws to a depth of not less than four (4) inches or one-half (1/2) the pavement thickness (whichever is greater). Cutting shall be done prior to the use of any mechanical equipment (such as the hydro hammer or any other type of equipment which is equipped with a power stroke hammer) to remove the pavement. The pavement to be removed shall be removed in such a manner that the remaining pavement is not damaged. Street Maintenance shall do a final saw cut and remove approximately one (1) additional foot from all edges just prior to restoration.
3. One-course concrete pavement and sidewalks shall be replaced in full panels saw cut at the nearest joint in the same manner specified for concrete base. Any nicked or damaged adjoining panels shall also be replaced. Concrete pavement shall be restored per City of St. Paul Public Works Standard Plate 1400, Concrete Pavement Repair Detail.
4. In all areas paved with concrete base, the edges of the pavement, including the concrete base, shall be precut with saws with the concrete base cut to full depth. Cutting shall be done prior to the use of any mechanical equipment (such as the hydro hammer or any other type of equipment which is equipped with a power stroke hammer) to remove the pavement. The pavement to be removed shall be removed in such a manner that the remaining pavement is not damaged. Street Maintenance shall do a final saw cut and remove approximately one (1) additional foot from all edges just prior to restoration. Concrete base shall be restored per City of St. Paul Public Works Standard Plate 1400, Concrete Pavement Repair Detail.
5. In areas paved with brick or stone block, the Permittee shall carefully take up and lay aside for reuse (if specified) those materials that can be satisfactorily replaced, leaving the street in good condition. Any such material that is rejected for reuse by the Engineer shall be removed promptly from the site by the Permittee and disposed of by him. Brick and block surface removal shall be done in a manner to prevent raveling of the surfacing to be left in place.

The condition of the brick or block and the trench limits should be a prime consideration in the procedure employed. If the trench limits result in leaving a narrow strip (less than two (2) feet wide) of brick or block surfacing adjacent to a curb or a header, the entire surface shall be removed. Large areas of brick or block that are to remain in place, must be protected from damage and movement.

1.04 BACKFILLING

A. Materials and General Provisions

The use of excavated material is permitted in the backfill only when such material is a stable mixture of sand and clay, sand, gravel or a mixture thereof which has a maximum particle size of three (3) inches. The use of frozen material will not be permitted in the backfill. Whenever excavated material is encountered which does not conform to these requirements such as rock, peat, silt, rubble or heavy clay, it shall be removed from the site and the trench backfilled with an approved granular backfill having a maximum particle size of three (3) inches. The cost of such removal of unsuitable material, the replacement backfill, and the placement of backfill shall be borne by the Permittee. Any deficiency in backfilling material shall be made up from a granular backfill as described above.

B. Paved Roadways, Sidewalks, and Other Areas With Rigid Surfaces

The backfilled material shall be replaced in layers not exceeding six (6) inches in depth and each layer shall be thoroughly compacted by mechanical tamping or other approved methods to the satisfaction of the Engineer. Inundating or flushing the trench with water shall not be allowed, but if necessary, controlled sprinkling may be ordered by the Engineer to obtain proper compaction.

C. All Other Areas

The backfilled material shall be replaced in layers not exceeding twelve (12) inches in depth and each layer shall be thoroughly compacted by mechanical tamping or other approved methods to the satisfaction of the Engineer. Inundating or flushing the trench with water shall not be allowed, but if necessary, controlled sprinkling may be ordered by the Engineer to obtain proper compaction.

D. Mechanical Equipment for Backfill

Mechanical equipment provided to compact the backfill shall be of the rolling, tamping or vibrating types. The size and capacity of the equipment, as well as the number of pieces of equipment, shall be such as to adequately compact the layer of backfill being compacted without damage to the pipe installation. All equipment must be approved by the Engineer before being used.

E. Narrow Trenches twenty-four (24) inches or less

Flowable fill required 100 psi (1 bag cement per cubic yard).

F. Six (6) inch minimum Class 5

This is required for all cuts except those using flowable fill.

1.05 SURFACING

A. General

All permanent restoration of paved, oiled, and rigid surfaced streets will be made by the Department of Public Works, Street Maintenance Division unless permission for the Permittee or Contractor to perform the restoration work is given by written special provisions or agreement. The Street Maintenance Division reserves the right to subcontract any restoration work. The following provisions shall apply to all restoration work done by the City Forces or by the Permittee.

Openings shall be surfaced with the same type of surface that was in place before the opening was made.

The Permittee shall be responsible for placing and compacting backfill and base material. The Department of Public Works guarantees the quality of surfacing placed by its forces, but takes no responsibility for surface failures caused by settlement or other sub-surface factors. Any permanent pavement, bituminous treated surface repair, sidewalk, curb, drainage structure or boulevard which settles over the opening may be repaired by the City as often as may be required, and the cost of such repair shall be sustained by the Permittee.

The trench area shall be opened to traffic as soon as possible after the completion of the utility installation and backfill. Before the trench area is opened to traffic, the Permittee shall make a suitable temporary repair and shall maintain this repair in a suitable condition until permanent restoration is completed. In the case of improved roadways and sidewalks, the temporary repair shall consist of two (2) inch premixed bituminous surface. If the condition of a temporary repair becomes unserviceable or dangerous, the City has the right to make such immediate repairs as are necessary and the Permittee shall pay the cost thereof. The Permittee has the option to coordinate with the Street Maintenance Engineer (651-266-9700) for possible immediate permanent restoration on main arterial streets in lieu of above noted temporary repairs.

After the Permittee has completed the utility installation, the opening will be placed on a permanent restoration list by the Department of Public Works, Street Maintenance Division. Working from this list, the department crews will systematically make these restorations, grouping the openings by district for maximum economy. The expense of this work shall be charged to the various Permittees at cost. This cost shall be determined by a unit cost billing schedule supplied by the Department of Public Works and based on the type and amount of pavement to be restored. Any restoration coordination received after November 1 may take an extended amount of time to complete.

B. Unsurfaced Streets

The backfill shall be brought up to the same elevation that existed before the work began. The surface shall be left in a smooth condition and shall be free of any rocks, stumps, trash or other debris. Where the unsurfaced street has been used as a traveled roadway, such traveled roadway shall be restored to a drivable condition by the use of a blade or other suitable equipment and as set forth in Section 1.04. Minimum six (6) inches Class 5, compacted.

C. Oiled Streets

The backfill material shall be placed so as to conform with the proper street grades and cross-sections and as specified above in Section 1.04. The roadway shall then be surfaced by the construction of a plant-mixed bituminous surface according to the 2014 MnDOT Specifications on Pavement Construction. The thickness of the bituminous surface shall be the same as that presently in place, except that in no instance shall it be less than four (4) inches thick. Street Maintenance will do an additional final saw cut and remove approximately one (1) additional foot from all edges just prior to restoration.

One (1) foot will be added to cut dimension on all sides to allow for saw cutting by Street Maintenance. Cut dimensions will then be rounded up to nearest one (1) foot increment for street restoration cost calculations.

Calculating cut areas of full depth asphalt streets, oiled streets, and concrete base streets for billing purposes will be determined by rounding up actual dimensions to the nearest foot plus allowing for Street Maintenance to cut back all sides of opening by additional one (1) foot.

The vertical faces or contact edges of the pavement shall be given a generous tack coat. (In most cases, the area to be restored does not warrant the use of a lay-down machine; although tailgate spreaders and trac-pavers sometimes can be used to good advantage. Therefore, the mix is generally placed by hand. Whichever method is used, care should be taken to prevent segregation). Delivery of mix should be in amounts and scheduled so it can be placed while hot. Truck boxes should be insulated and have covers to prevent cooling of the mix. Lifts of about three (3) inches are the maximum for compacting with plate vibrators or small rollers. The surface should be checked with a straight edge or straight line to see that it conforms to the existing pavement, both transversely and longitudinally. It is extremely important to compact the mix while it is hot. Coordinating delivery, placement, and compaction is essential.

No pavement sections less than three (3) feet wide shall be left between any street cut and the curb and/or gutter.

D. Intermediate Paved (Full depth asphalt) Surface

The backfill material shall be placed so as to conform with the proper street grades and cross-sections and as specified above in Section 1.04. The roadway shall then be surfaced by the construction of a plant-mixed bituminous surface according to the 2014 MnDOT Specifications on Pavement Construction. The thickness of the bituminous surface shall be the same as that presently in place, except that in no instance shall it be less than four (4) inches thick. The edges of the existing surface shall be sawed back to a vertical face on a straight line which is parallel and/or perpendicular to the centerline of the street and which is at least twelve (12) inches back from the edge of the excavation.

The vertical faces or contact edges of the pavement shall be given a generous tack coat. (In most cases, the area to be restored does not warrant the use of a lay-down machine; although tailgate spreaders and trac-pavers sometimes can be used to good advantage. Therefore, the mix is generally placed by hand. Whichever method is used, care should

be taken to prevent segregation). Delivery of mix should be in amounts and scheduled so it can be placed while hot. Truck boxes should be insulated and have covers to prevent cooling of the mix. Lifts of about three (3) inches are the maximum for compacting with plate vibrators or small rollers. The surface should be checked with a straight edge or straight line to see that it conforms to the existing pavement, both transversely and longitudinally. It is extremely important to compact the mix while it is hot. Coordinating delivery, placement, and compaction is essential.

No pavement sections less than three (3) feet wide shall be left between any street cut and the curb and/or gutter.

E. Streets with One Course Concrete or Concrete Base

Pavement which has been removed or damaged as part of this work shall be replaced according to the 2014 MnDOT Specifications for Pavements and per City of St. Paul Public Works Standard Plate 1400, Concrete Pavement Repair Detail. Concrete reinforcement may be installed by Permittee or by Street Maintenance. See Street Restoration Billing Schedule for pricing.

One-course concrete pavement and sidewalks shall be replaced in full panels saw cut at the nearest joint in the same manner specified for concrete base. The thickness of one-course concrete pavement or concrete base shall be the same as was in place except that in no instance shall its thickness be less than seven (7) inches.

Any deficiencies resulting from improper surface removal or compaction shall be corrected in accordance with these specifications before surfacing is placed and the Permittee shall bear the cost thereof. The edges of the concrete base shall be sawed back to a vertical face on a straight line which is parallel and/or perpendicular to the centerline of the street and which is at least twelve (12) inches back from the edge of the excavation. After the concrete base has been so cut back, the bituminous surfacing, brick or block wearing course shall be cut back an additional twelve (12) inches to a vertical face along a straight line which is **parallel and/or perpendicular to the centerline of the street.** The top of the new concrete base in the street opening shall be struck off and finished to the same level as the existing concrete base and cured prior to placement of the bituminous surfacing.

For one-course concrete pavement, the contact edges of the pavement to be left in place shall be free of dirt, dust and loose chunks before concrete placement. The sub grade shall be dampened just before placement to prevent it from absorbing water from the concrete.

The concrete should be spread on the subgrade as uniformly as possible to minimize the amount of additional spreading necessary. Spreading should be done with a strike-off screed. If a manual screed is used, a sawing action should be employed rather than digging.

Following the screeding operation, the concrete should be floated to remove surface irregularities and work up an adequate amount of mortar for final finishing. The surface should then be given a final floating and checked with a straight edge. Final finish can be done with a burlap drag or a coarse broom.

Transverse contraction joints must be projected through the new concrete to match joints in the adjacent slab. This can be done by inserting wood, metal or plastic strips while the concrete is workable and by removing the inserts before the concrete hardens or by saw cutting the joints within twenty-four (24) hours of concrete placement.

Curing concrete prevents rapid loss of water from the mix, permitting full hydration of the cement. The result is proper strength gain and durability. One-course concrete pavements can be cured either by applying a membrane in liquid form or by covering with plastic curing blankets. Curing time shall be a minimum of seventy-two (72) hours as approved by the Engineer. The Engineer may require use of High Early concrete in high traffic areas.

The permanent repair of surfaces involving one-course concrete or concrete base is prohibited during the period between December 1st and March 31st of each season. Temporary surfacing as described in Section 1.05, A shall be placed until a permanent repair can be made.

Reinstallation of creosoted wood blocks and/or brick may not be required when provided for under the Excavation Permit, but shall be replaced with equal thickness of asphaltic concrete in conformance with the 2014 MnDOT Specifications on Pavement Construction.

No pavement sections less than three (3) feet wide shall be left between any street cut and the curb and/or gutter.

F. Park Property, Public Easements and Boulevards

Openings in Public Easements and in park property shall be backfilled as heretofore described up to an elevation that will allow for the placing of four (4) inches of topsoil and grass sod. After the backfill has been brought up to this elevation, a four (4) inch thick layer of dark loam suitable for the growing of grass shall be placed, compacted, raked and shaped to proper cross-section. After the sod is placed, the bed shall be sprinkled until all loose material is moist. The sod shall then be compressed into the underlying soil by rolling or tamping. All sodded areas shall be maintained in a satisfactory condition for one (1) year from job completion.

The Permittee shall refill any area that settles and, if necessary, the area shall be resodded.

G. Trees and Hedges

The Permittee shall take special care not to injure or damage trees, shrubs or any permanent property. No tree, or portion of a tree, shall be removed without written permission of the City Forester. Trees injured or damaged shall be reported to the City Forester. Permittee shall be responsible for all damages according to City of St. Paul Parks Department fee schedule. **Note**: Current City ordinance does not allow nailing or stapling of signs to trees. Avoid soil compaction under tree dripline - general contractor will be held accountable.

1.06 MAINTENANCE OF OPENINGS

The Permittee shall maintain in good and serviceable condition, all areas which have been excavated or otherwise disturbed up until the time of final release. Whenever it becomes necessary to place additional fill in an excavated area which has settled, such settlement shall be refilled and resurfaced in the manner specified above, under "Backfilling" and "Surfacing".

1.07 TRAFFIC

A. General

The Permittee shall not close any street or interfere with traffic thereon without prior approval as set forth in Section 1.01-A, and shall follow the latest edition of the TRAFFIC CONTROL FIELD manual, and any other conditions of the Excavation Permit. The Permittee shall be responsible for the protection of the public in the vicinity of the work and nothing in these specifications shall be construed to relieve him of said responsibility.

All work shall be planned so that there shall be as little interference as possible with vehicular and pedestrian traffic.

B. Notices

Before beginning any work on any street shown, the Permittee must obtain approval of the proposed plan of operation from the Right-of-Way Division. This approval must be obtained at least three (3) working days in advance of beginning any work. When the plan of operation involves the closing of the street to such an extent that one lane of traffic in each direction cannot be safely maintained, the Right-of-Way Division may require the Permittee to delay starting work until a suitable detour and notification to the public can be effectuated. The Right-of-Way Division is to be kept advised of any necessary traffic control changes as the work progresses and shall be notified immediately upon completion of the work.

It shall be the responsibility of the Permittee to notify the Public Works Traffic Operations Division, the Fire Department, and the Police Department of the actual time of both the start and the completion of all construction which requires the complete closing of any street.

C. Barricades and Warning Devices

The Permittee shall furnish, place and maintain, on a twenty-four (24) hour basis, all necessary barricades, lights and safety devices for the adequate protection of the public and/or that may be required by the Engineer or the Right-of-Way Division. If it is necessary for the City to install any additional lights, signs or barricades in order to protect the public, the cost of such installation shall be borne by the Permittee.

The Permittee shall furnish, place, and maintain any required "No Parking" signs in the vicinity of the work. Temporary "No Parking" signs may be obtained from the Traffic Operations Division, 899 No. Dale Street.

Note: Current City ordinance does not allow nailing or stapling of signs to trees.

All barricades which are used at night shall be adequately reflectorized with reflectorized sheeting and shall have not less than one warning light on each barricade or as per Appendix B as noted above.

The Permittee shall furnish such competent flaggers as necessary to provide satisfactory protection to vehicular and pedestrian traffic.

1.08 EXISTING STRUCTURES AND UTILITIES

A. Existing Utilities

All existing utilities shall be located and provided for as per Gopher State One Call (GSOC) regulations.

B. Sidewalks, Curbs and Other Structures

Any and all sidewalks, carriage walks, curbs, catch basins, sewer manholes, etc., that are damaged beyond reuse by the Permittee or removed by him to facilitate construction shall become the property of the Permittee and shall be disposed of by him outside the limits of the job. These items shall be replaced by the Permittee as soon as construction conditions allow. All such work shall be done in accordance with the 2014 MnDOT Specifications covering the particular work involved.

Removal and replacement of sidewalks, carriage walks or curbs shall be full panel or section replacement.

For sidewalk restoration - Contractor shall hire a licensed sidewalk contractor for sidewalk restorations unless arrangements are made with Street Maintenance 651-266-9700 and paid for under above noted cost schedule. All sidewalk restorations shall be in full panel increments.

Exception to be above would be historic items, such as bricks and/or granite.

When existing sewer structures are encountered in the work, the Permittee shall provide for proper drainage, the continued operation and the structural safety of such existing structures. If it is necessary to remove and replace, repair or alter sewer lines or structures, such replacement, repair or alteration shall be done by the St. Paul Sewer Utility and at the expense of the Permittee.

C. Survey Monuments

Monuments of concrete, iron or other lasting material set for the purpose of locating or preserving the lines of any street or property sub-division, a precise survey reference point or a permanent survey bench mark within the limits of the job shall not be removed or disturbed or caused to be removed or disturbed unless permission to do so is first obtained in writing from the Engineer. Permission shall be granted only upon the condition that the Permittee pay all expenses incidental to the proper replacement of he monument.

D. Preservation and Replacement of Signs and Markers

Where the conduct of the work requires the temporary removal of any existing traffic signs, street name signs or other existing City or State signs or markers, or the hooding of meters, the Permittee shall notify the City Traffic Operations Division at 899 No. Dale Street (651-266-9777) at least one (1) working day in advance of the contemplated removal. The Traffic Operations Division will remove, replace and relocate all signs as necessary. It shall be the responsibility of the Permittee to notify the Traffic Operations Division one (1) working day in advance of the completion of the work so that the sign can be replaced before the street is opened to traffic. The Permittee shall be charged the full replacement value for any signs or markers damaged because of failure to notify the Traffic Operations Division.

Where the nature of the Permittee's operations is such that the Traffic Operations Division places signs on the Permittee's barricades, the Permittee shall exercise all reasonable care against damage to or loss of signs furnished by the City and shall be charged the full replacement value for any such signs lost or damaged. When the barricades are removed, all signs placed on them by the City shall be returned within three (3) days to the City Traffic Operations Division, 899 No. Dale Street.

APPENDIX A

MINNESOTA ADMINISTRATIVE RULES DETAIL PLATES

Statutory Authority: *MS s* 237.163
History: 23 SR 2004
Posted: *November 14, 2003*

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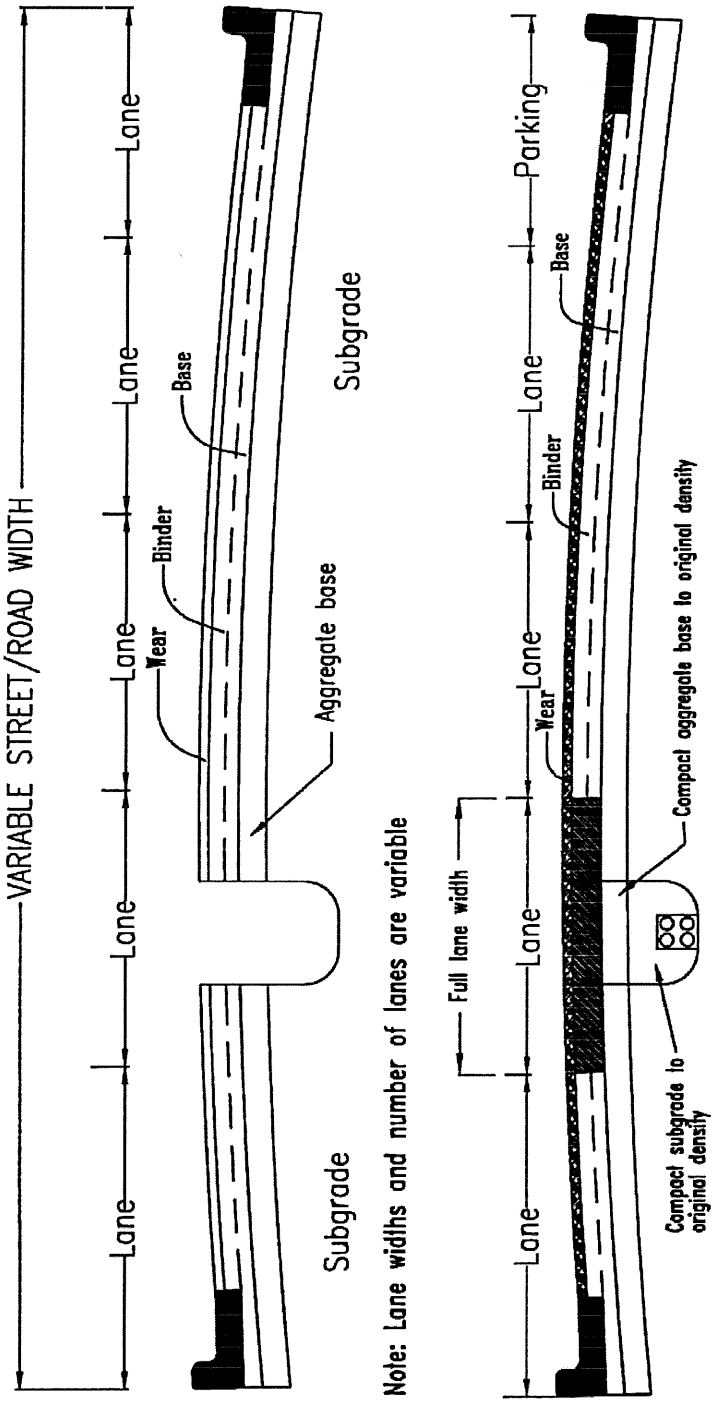
CITY OF ST. PAUL PUBLIC WORKS CONCRETE PAVEMENT REPAIR DETAIL

Revised: *January, 2014*



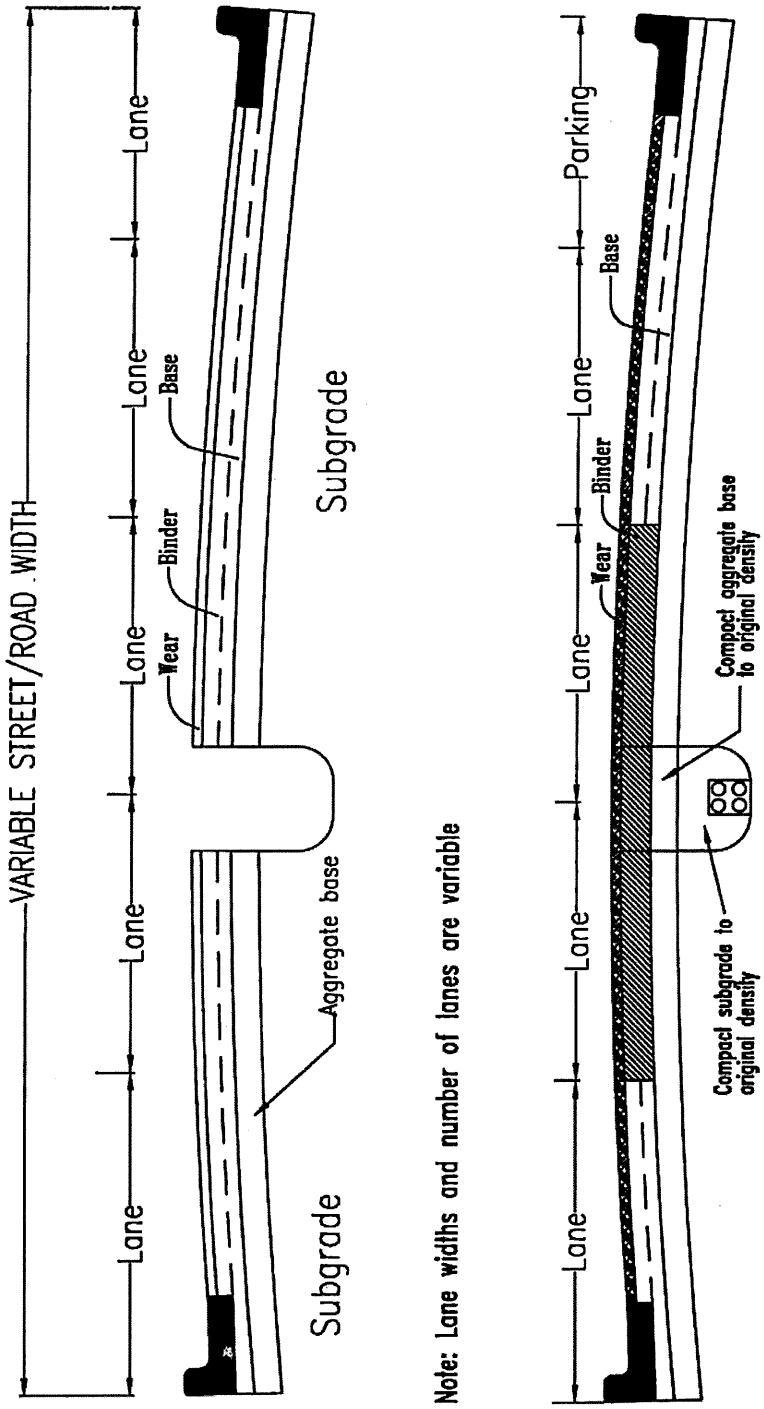
Note: Lane widths and number of lanes are variable

Note 1: Bituminous Pavement
- Full lane replacement of base and binder to the nearest constuction joint or transverse crack
- Full street width mill & overlay of wearing course

Note 2: Concrete Pavement
- Full panel replacement for concrete pavement

Note 3: All Other Types of Surfaces and Pavements
- Replacement with in-kind materials

UTILITY TRENCH RESTORATION TYPICAL PAVEMENT 0 TO 5 YEARS OLD	Date: 3-5-99	PLATE 1 No Scale



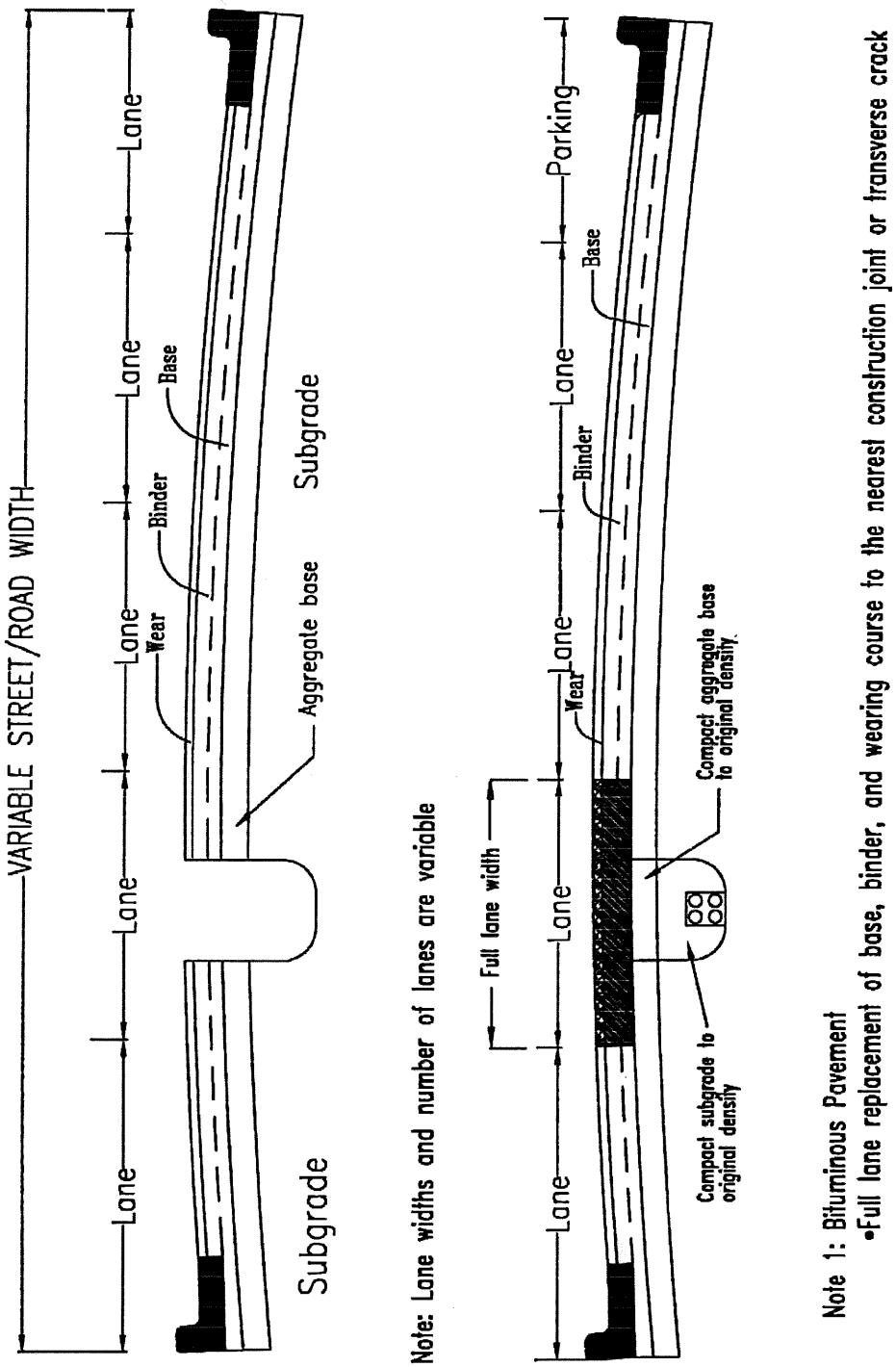
Note: Lane widths and number of lanes are variable

Note 1: Bituminous Pavement
- Two lane replacement of base and binder to the nearest construction joint or transverse crack
- Full street width mill & overlay of wearing course

Note 2: Concrete Pavement
- Full panel replacement for concrete pavement

Note 3: All Other Types of Surfaces and Pavements
- Replacement with in-kind materials

UTILITY TRENCH RESTORATION TYPICAL PAVEMENT 0 to 5 YEARS OLD	Date: 3-5-99	PLATE 2 No Scale



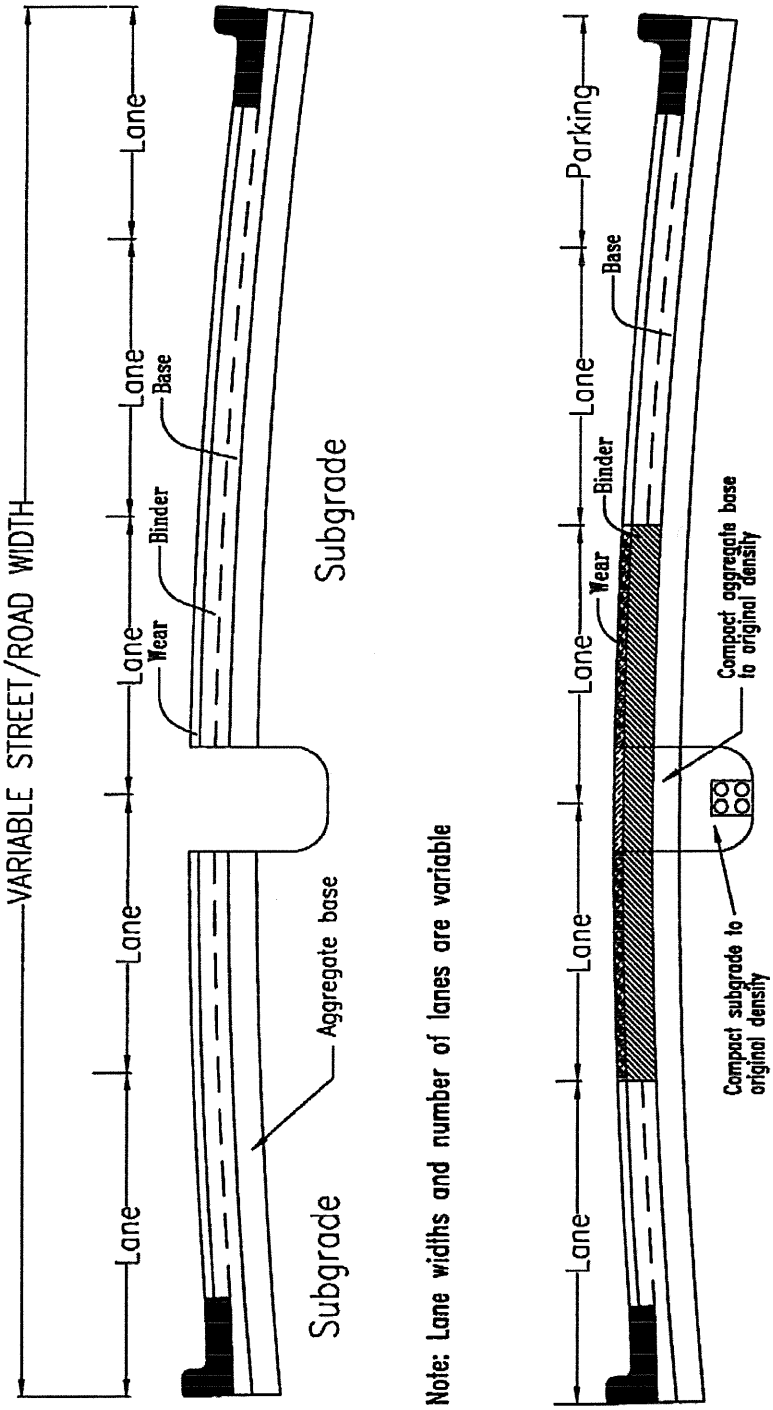
Note: Lane widths and number of lanes are variable

Note 1: Bituminous Pavement
- Full lane replacement of base, binder, and wearing course to the nearest construction joint or transverse crack

Note 2: Concrete Pavement
- Full panel replacement for concrete pavement

Note 3: All Other Types of Surfaces and Pavements
- Replacement with in-kind materials

UTILITY TRENCH RESTORATION TYPICAL PAVEMENT 5 YEARS OLD TO 5 YEAR PROJECT PLAN	Date: 3-5-99	PLATE 3 No Scale



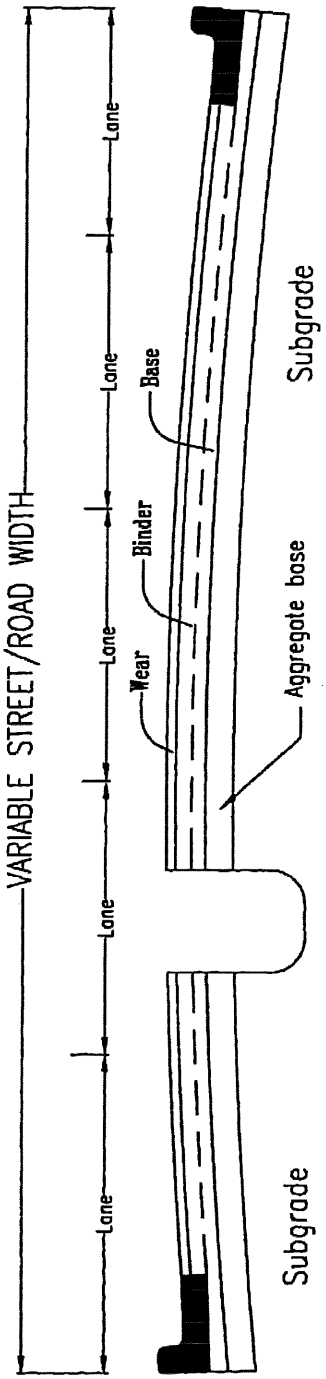
Note: Lane widths and number of lanes are variable

Note 1: Bituminous Pavement
- Two lane replacement of base, binder and wearing course to the nearest construction joint or transverse crack

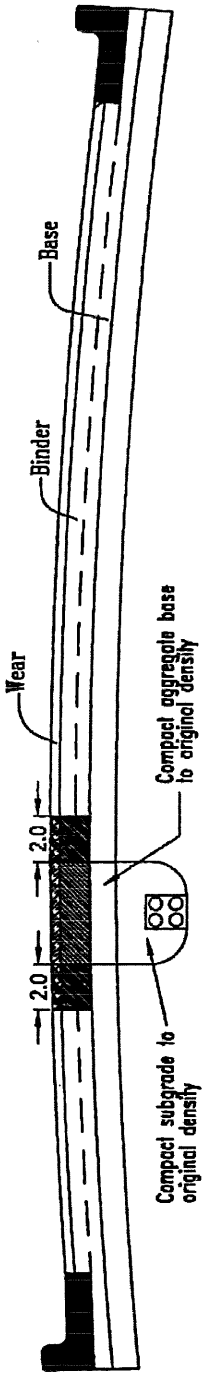
Note 2: Concrete Pavement
- Full panel replacement for concrete panel

Note 3: All Other Types of Surfaces and Pavements
- Replacement with in-kind materials

UTILITY TRENCH RESTORATION TYPICAL PAVEMENT 5 YEARS OLD TO 5 YEAR PROJECT PLAN	Date: 3-5-99	PLATE 4 No Scale



Note: Lane widths and number of lanes are variable

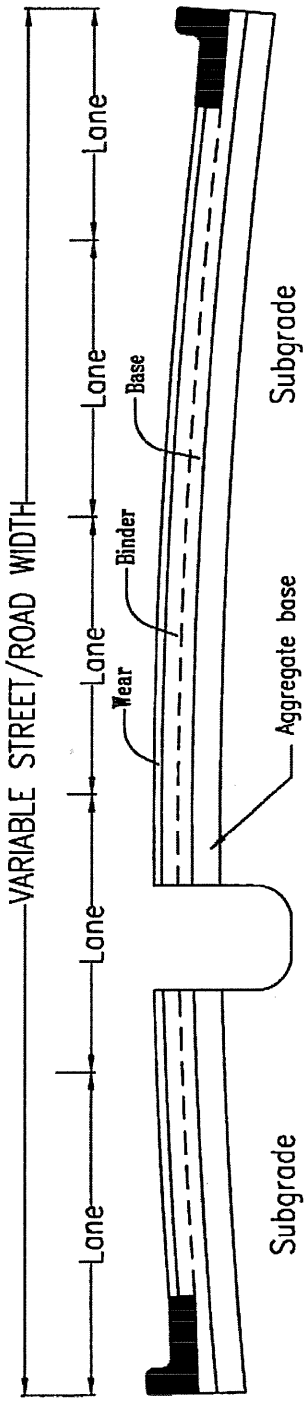


Note 1: Bituminous Pavement
- Replace base, binder and wearing course for trench width plus 2 ft. on either side of cut

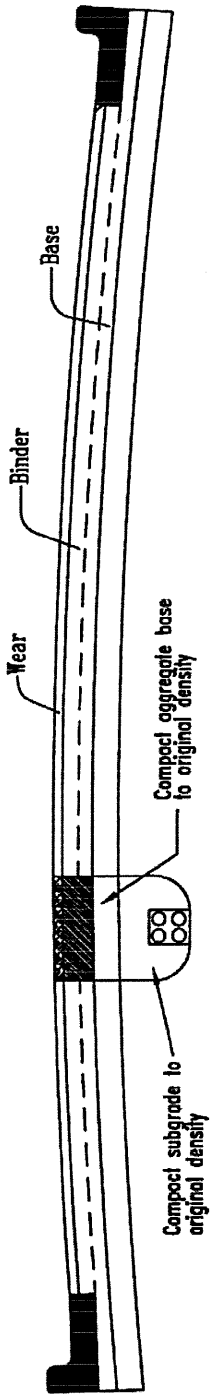
Note 2: Concrete Pavement
- Replace trench width plus 2 ft. on either side of cut

Note 3: All Other Types of Surfaces and Pavements
- Replace trench width plus 2 ft. on either side of cut

UTILITY TRENCH RESTORATION IN 5 YEAR PROJECT PLAN OR UTILITY TRENCH PATCH	Date: 3-5-99	PLATE 5 No Scale



Note: Lane widths and number of lanes are variable



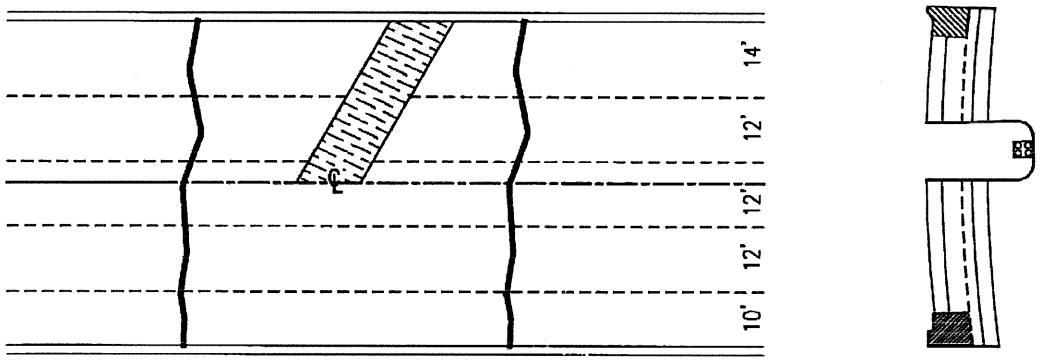
Note 1: Bituminous Pavement
- Replace base, binder and wearing course for trench width only

Note 2: Concrete Pavement
- Replace for trench width only

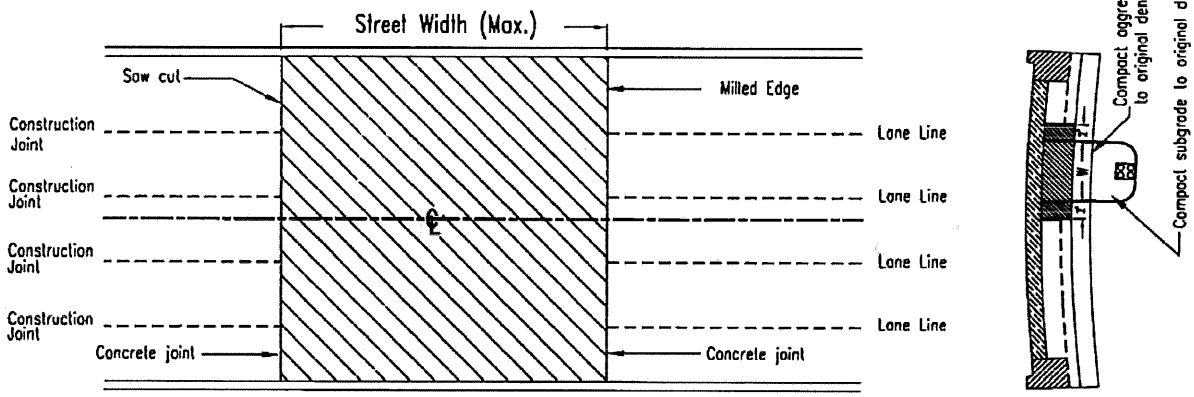
Note 3: All Other Types Of Surfaces And Pavements
- Replacement with in-kind materials for trench width only

UTILITY TRENCH RESTORATION TYPICAL PAVEMENT IN 2 YEAR PROJECT PLAN OR TEMPORARY SURFACE	3-5-99	PLATE 6 No Scale

TYPICAL HOLE EXCAVATION



TYPICAL RESTORATION



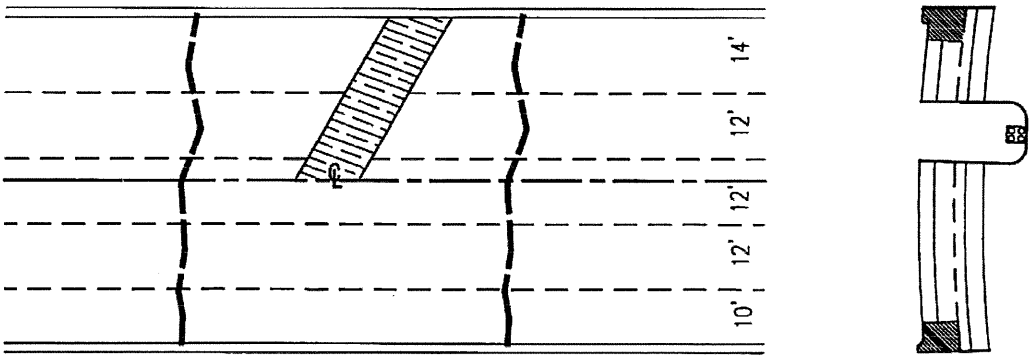
Note 1: Bituminous Pavement
- Full lane replacement of base and binder to the nearest construction joint or transverse crack
- Full street width mill & overlay of wearing course

Note 2: Concrete Pavement
- Full panel replacement for concrete pavement

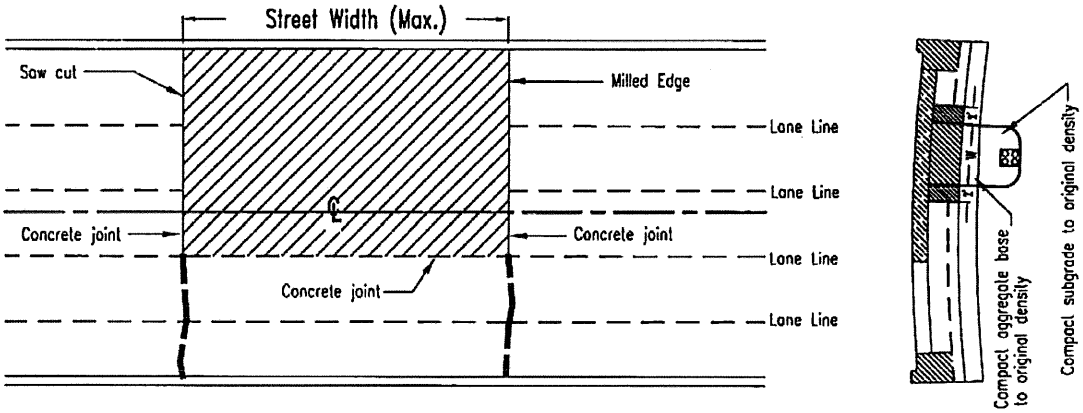
Note 3: All Other Types of Surfaces and Pavements
- Replacement with in-kind materials

UTILITY HOLE RESTORATION TYPICAL PAVEMENT 0 TO 5 YEARS OLD	Date: 7-6-98	PLATE 7 No Scale

TYPICAL HOLE EXCAVATION



TYPICAL RESTORATION



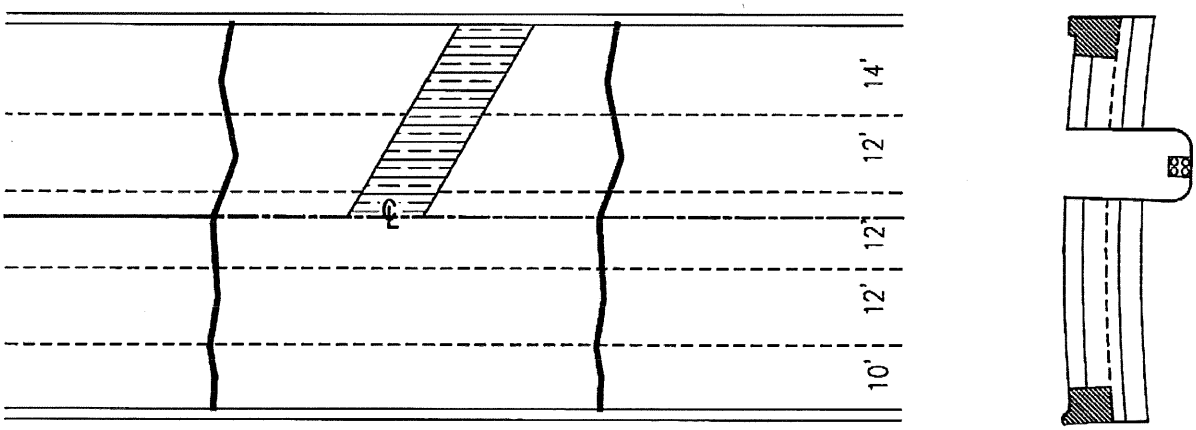
Note 1: Bituminous Pavement
- Full lane replacement of base, binder, and wearing course to the nearest construction joint or transverse crack

Note 2: Concrete Pavement
- Full panel replacement for concrete pavement

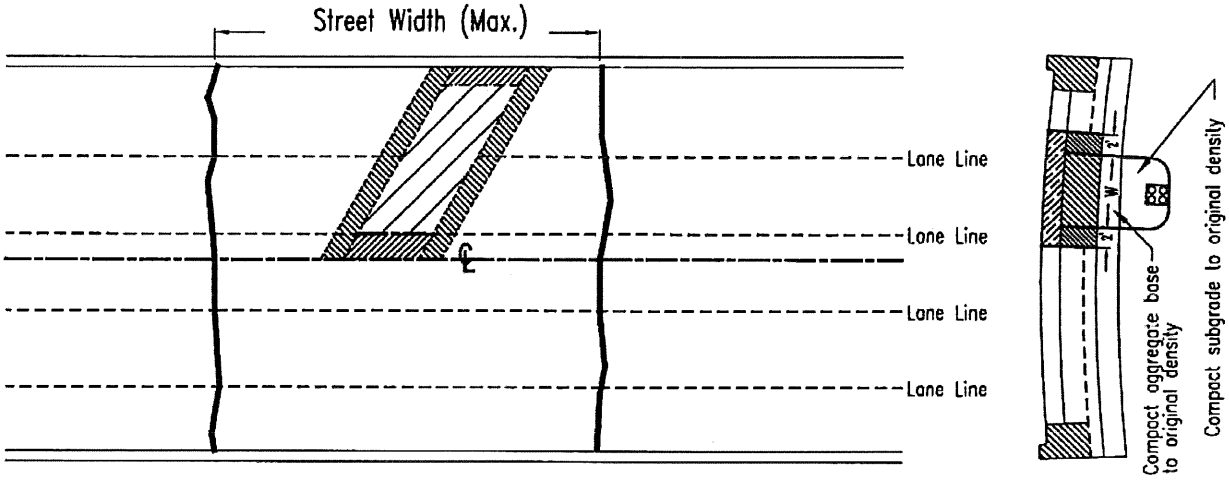
Note 3: All Other Types of Surfaces and Pavements
- Replacement with in-kind materials

UTILITY HOLE RESTORATION TYPICAL PAVEMENT 5 YEARS OLD TO 5 YEAR PROJECT PLAN	Date: 7-6-98	PLATE 8 No Scale

TYPICAL HOLE EXCAVATION



TYPICAL RESTORATION



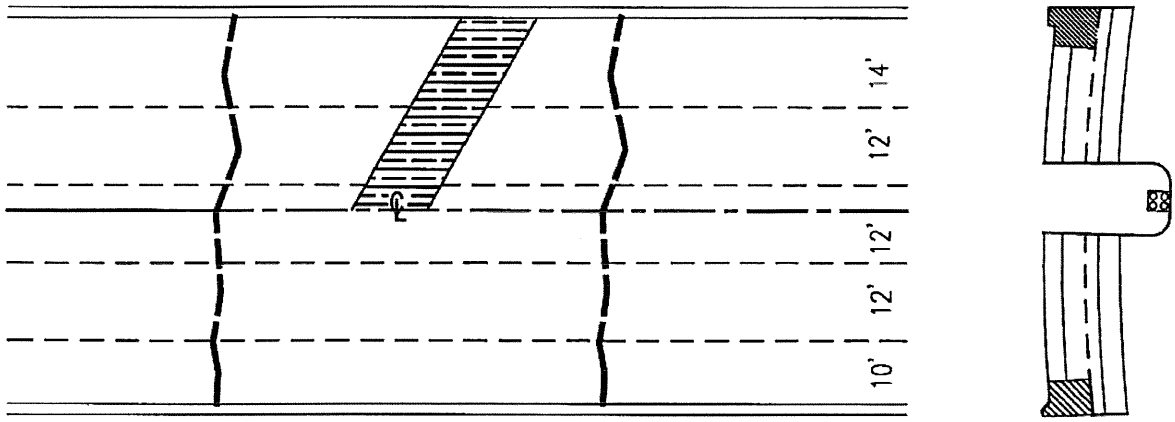
Note 1: Bituminous Pavement
- Replace base, binder and wearing course for width of hole plus 2 ft. on either side of cut

Note 2: Concrete Pavement
- Replace width of hole plus 2 ft. on either side of cut

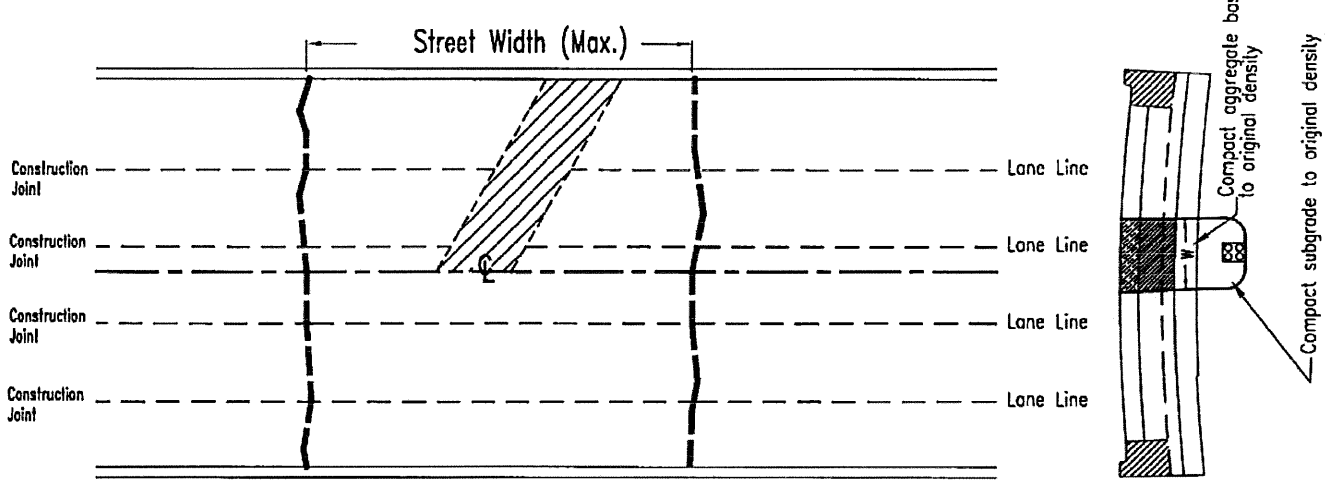
Note 3: All Other Types of Surfaces and Pavements
- Replace width of hole plus 2 ft. on either side of cut

UTILITY HOLE RESTORATION IN 5 YEAR PROJECT PLAN OR UTILITY HOLE PATCH	Date: 7-6-98	PLATE 9 No Scale

TYPICAL HOLE EXCAVATION



TYPICAL RESTORATION

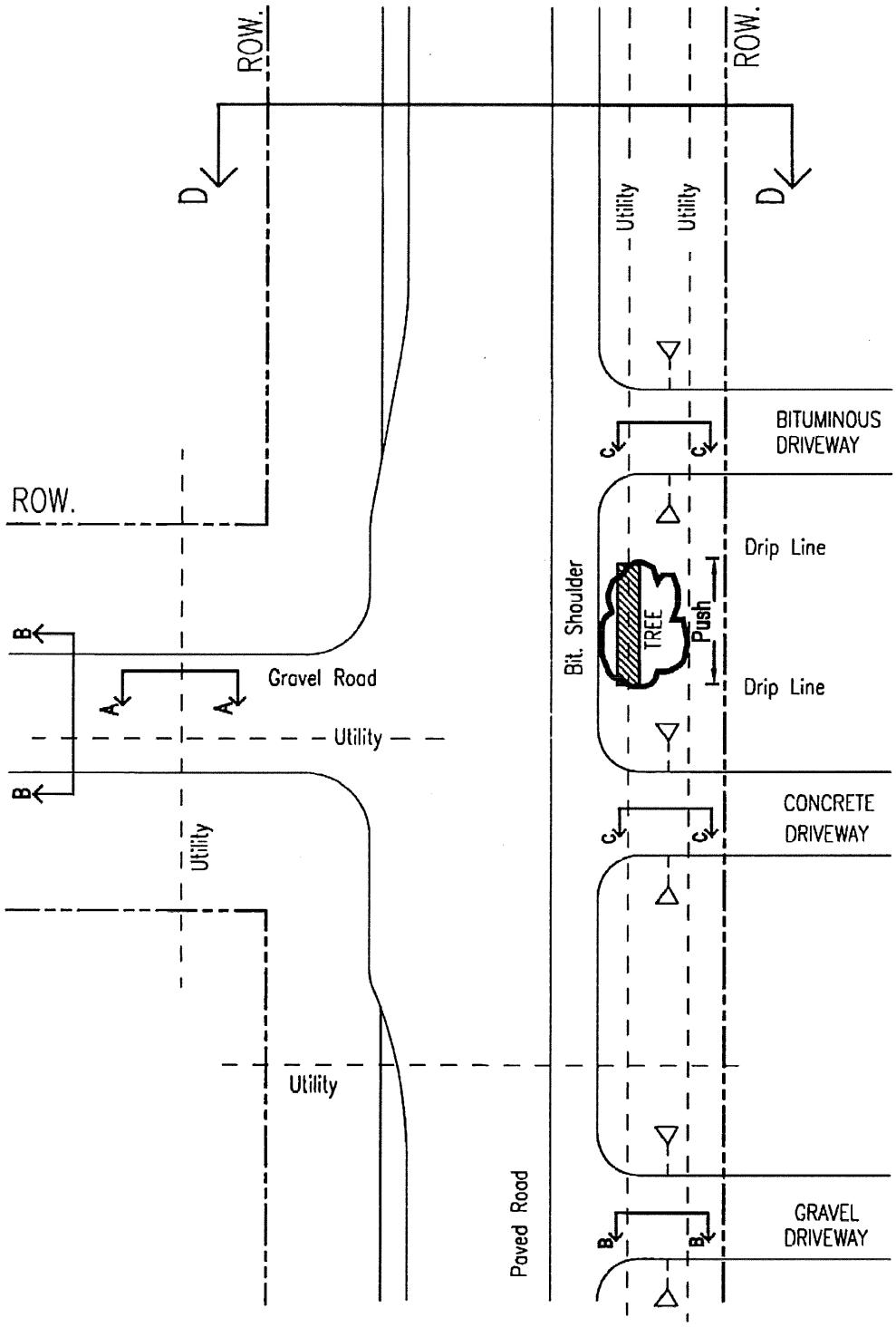


Note 1: Bituminous Pavement
- Replace base, binder and wearing course for width of hole only

Note 2: Concrete Pavement
- Replace width of hole only

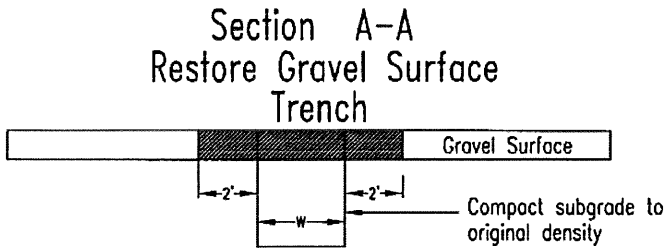
Note 3: All Other Types of Surfaces and Pavements
- Replacement with in-kind materials for width of hole only

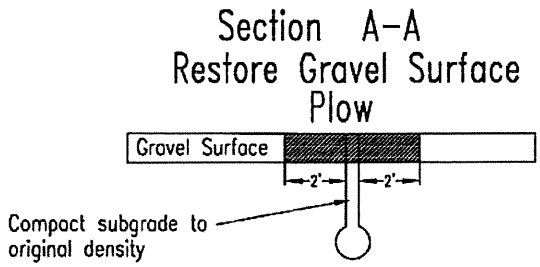
UTILITY HOLE RESTORATION TYPICAL PAVEMENT IN 2 YEAR PROJECT PLAN OR TEMPORARY SURFACE	Date: 7-6-98	PLATE 10 No Scale

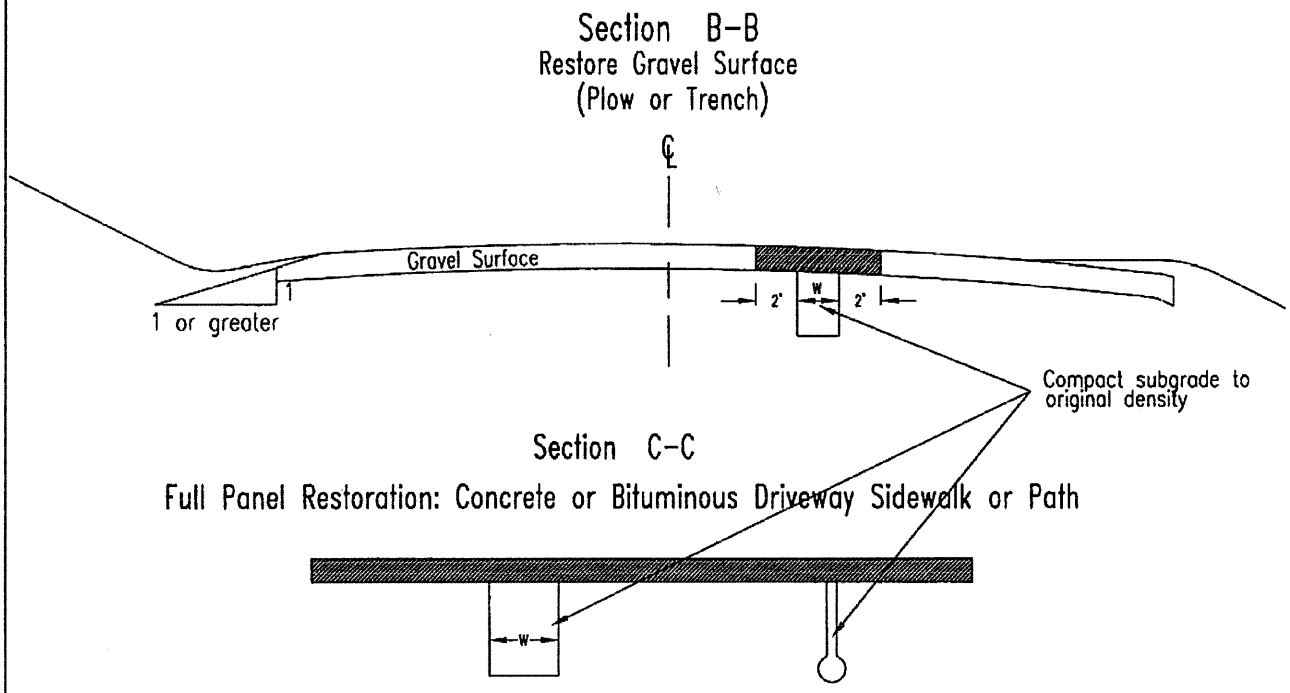


Note: All utility lines must be pushed under roads, shoulders and driveways unless other construction methods are approved by the Local Governmental Unit

TYPICAL ROAD PLAN	Date: 7-6-98	PLATE 11 No Scale

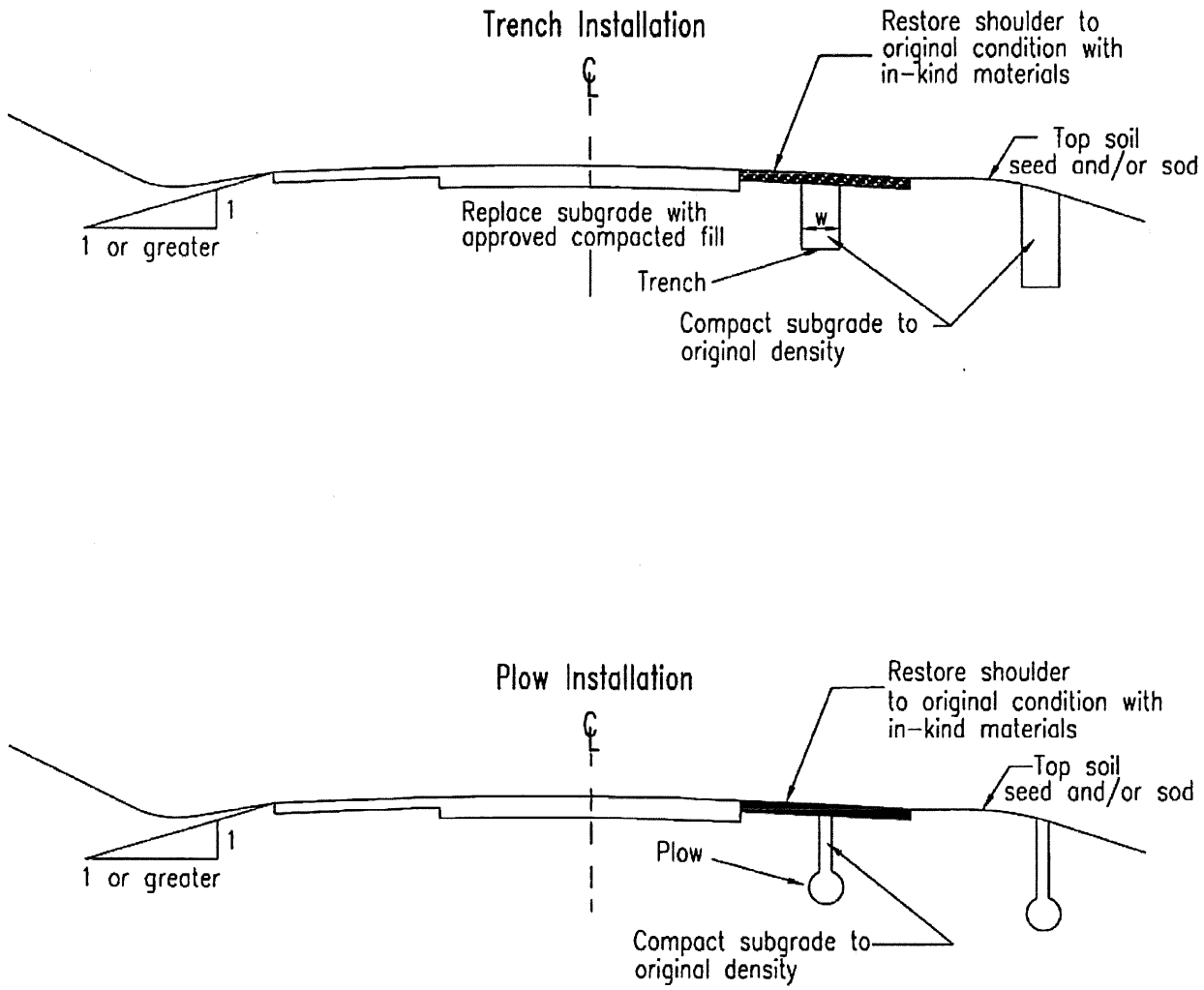






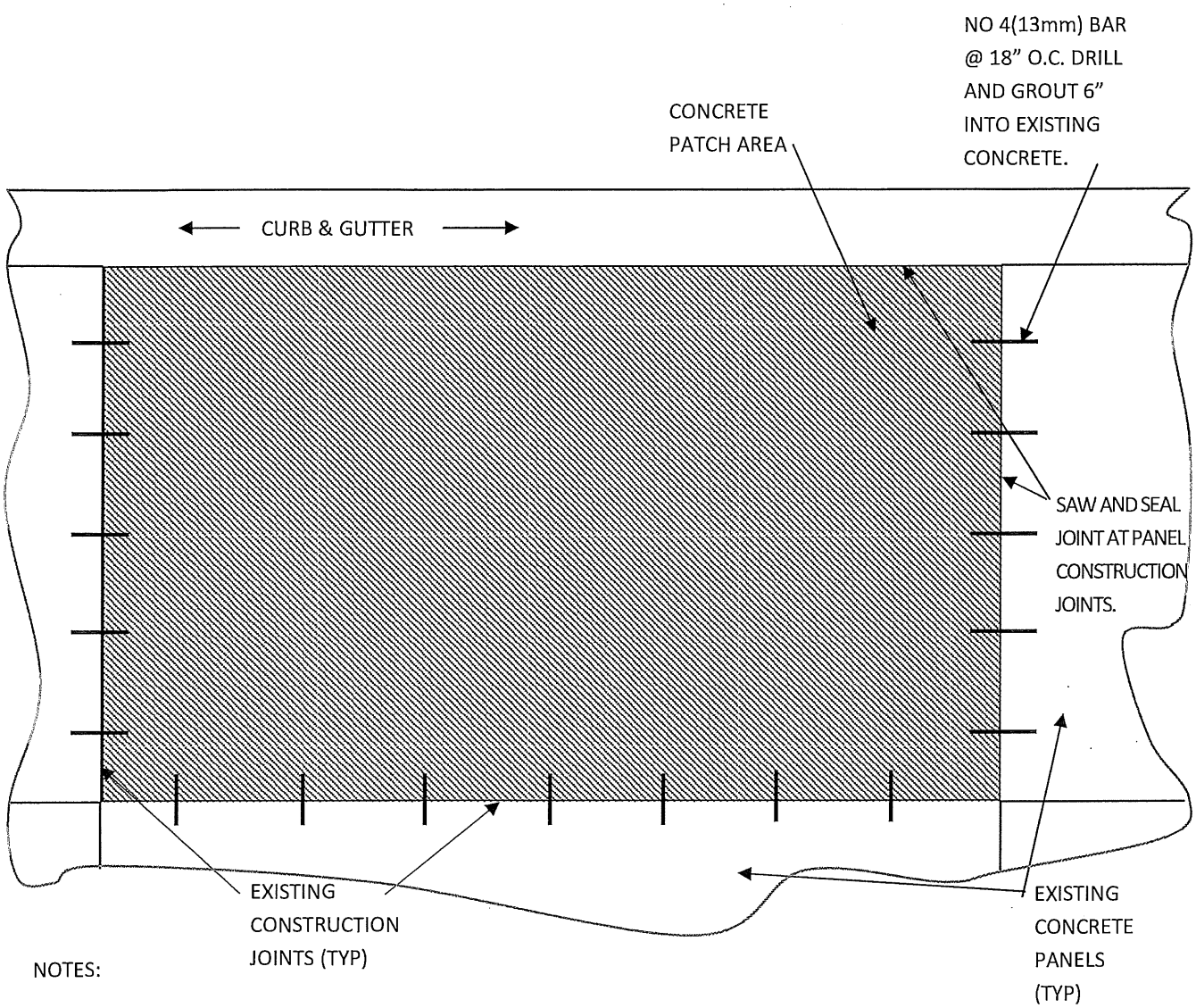
Note 1: Restore all surfaces to original condition with in-kind materials (imported or found on site)

TYPICAL ROAD, DRIVEWAY, OR PATH RESTORATION	Date: 9-25-98	PLATE 12 No Scale



Note 1: Restore all surfaces to original condition with in-kind materials (imported or found on site)

TYPICAL ROAD SHOULDER RESTORATION Section D-D	Date: 9-25-98	PLATE 13 No Scale



NOTES:

1. SAW CUT FULL DEPTH AND REMOVE CONCRETE PAVEMENT.
2. BACKFILL AND COMPACT EXCAVATION UP TO BOTTOM OF BASE. QUALITY COMPACTION IN ACCORDANCE WITH MNDOT 2105.
3. PLACE AND COMPACT 12" CLASS 5 BASE MATERIAL.
4. FURNISH AND PLACE 12" LONG NO 4 BARS (13mm). BARS SHALL BE EPOXY COATED REINFORCEMENT. DRILL AND GROUT NO. 4 BARS 6" DEPTH INTO EXITING CONCRETE PAVEMENT. GROUT SHALL BE NON-SHRINK GROUT OR EPOXY BONDING AGENT. BARS SHALL BE PLACED AT MID DEPTH OF PAVEMENT THICKNESS.
5. FURNISH AND INSTALL PREFORMED JOINT FILLER ON PANEL JOINTS AS SHOWN IN THE DRAWING.
6. FURNISH AND PLACE CONCRETE MIX 3A32. VIBRATE, FINISH TO MATCH GRADE, APPLY TEXTURE AND CUREING.
7. SAW AND SEAL JOINTS IN ACCORDANCE WITH JOINT REPAIR STANDARD PLATE 3008A.

APPROVED 2 12 14 CITY ENGINEER	CITY OF SAINT PAUL DEPARTMENT OF PUBLIC WORKS CONCRETE PAVEMENT REPAIR DETAIL	DATE OF REVISION JAN 2014	STANDARD PLATE NO. 1400 1 OF 1