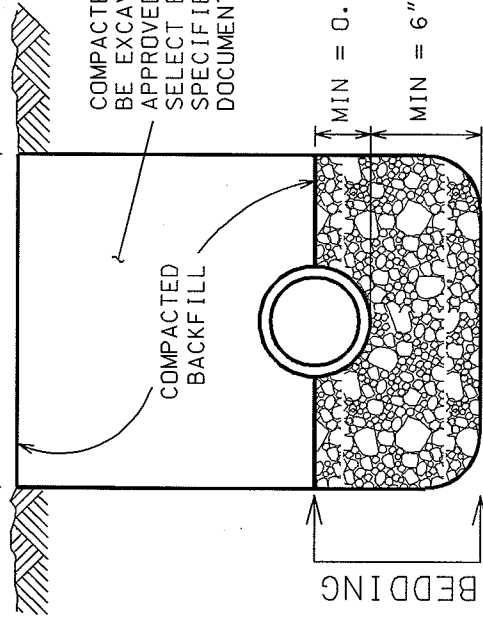
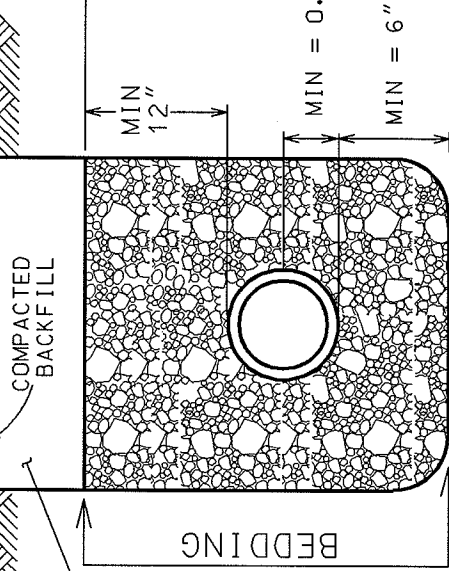
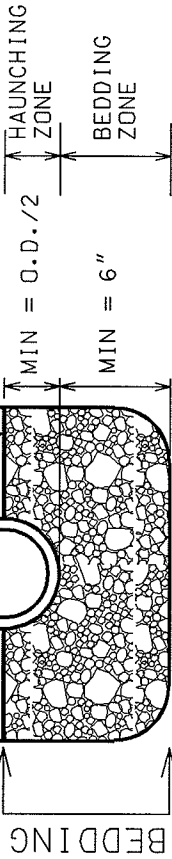


MAX = O.D. + 24"

MIN = O.D. + 16"



COMPACTED BACKFILL SHALL BE EXCAVATED MATERIAL AS APPROVED BY ENGINEER OR SELECT BACKFILL, PAID AS SPECIFIED IN THE CONTRACT DOCUMENTS.



INITIAL BACKFILL ZONE

HAUNCHING ZONE

BEDDING ZONE

MIN 12"

MIN = O.D./2

MIN = 6"

BEDDING

WASHED GRAVEL OR CRUSHED STONE AS SPECIFIED IN SECTION 502.1 (d), BEDDING OF SEWER PIPES



BEDDING FOR REINFORCED CONCRETE SEWER PIPES

WASHED GRAVEL, CRUSHED STONE, SAND OR LIMESTONE SCREENINGS FOR PIPE SIZES 10" IN DIAMETER OR LESS. WASHED GRAVEL OR CRUSHED STONE FOR PIPE SIZES OVER 10" IN DIAMETER, AS SPECIFIED IN SECTION 502.1 (d), BEDDING OF SEWER PIPES



BEDDING FOR PLASTIC SEWER PIPES

NOTES:

UNLESS OTHERWISE SPECIFIED, ALL SANITARY AND STORM SEWER PIPES, INCLUDING LATERALS AND LEADS, SHALL BE INSTALLED WITH THE TYPE OF BEDDING SHOWN FOR THE TYPE AND SIZE OF PIPE INSTALLED.

THE COSTS OF BEDDING SHALL BE INCLUDED IN THE UNIT PRICES BID FOR THE PIPE. FOR RCP, BEDDING INCLUDES THE HAUNCHING & BEDDING ZONES. FOR PLASTIC PIPES, THE BEDDING INCLUDES THE HAUNCHING, BEDDING & INITIAL BACKFILL ZONES. THE BEDDING SHALL BE INSTALLED & COMPACTED IN 6" MAXIMUM LIFTS.

ALL TRENCHES SHALL BE HAND BACKFILLED TO A POINT 12" ABOVE THE TOP OF THE PIPE. ALL BEDDING SHALL BE MECHANICALLY COMPACTED.

PAYMENT SHALL NOT BE MADE FOR BACKFILL WITH EXCAVATED MATERIAL, IF APPROVED. SELECT FILL, IF REQUIRED, SHALL BE PAID PER CONTRACT.

THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE O.D. + 24" AND MINIMUM OF OD + 16" AS SPECIFIED, AND SHALL APPLY FROM THE BOTTOM OF THE TRENCH TO A POINT 12" ABOVE THE TOP OF THE PIPE. WHERE THIS WIDTH IS EXCEEDED, THE CONTRACTOR SHALL FURNISH AND INSTALL A HIGHER TYPE OF BEDDING AT **NO EXTRA COST.** THE TYPE OF BEDDING SHALL BE DETERMINED BY THE ENGINEER.

O.D. EQUALS THE OUTSIDE DIAMETER OF THE PIPE.

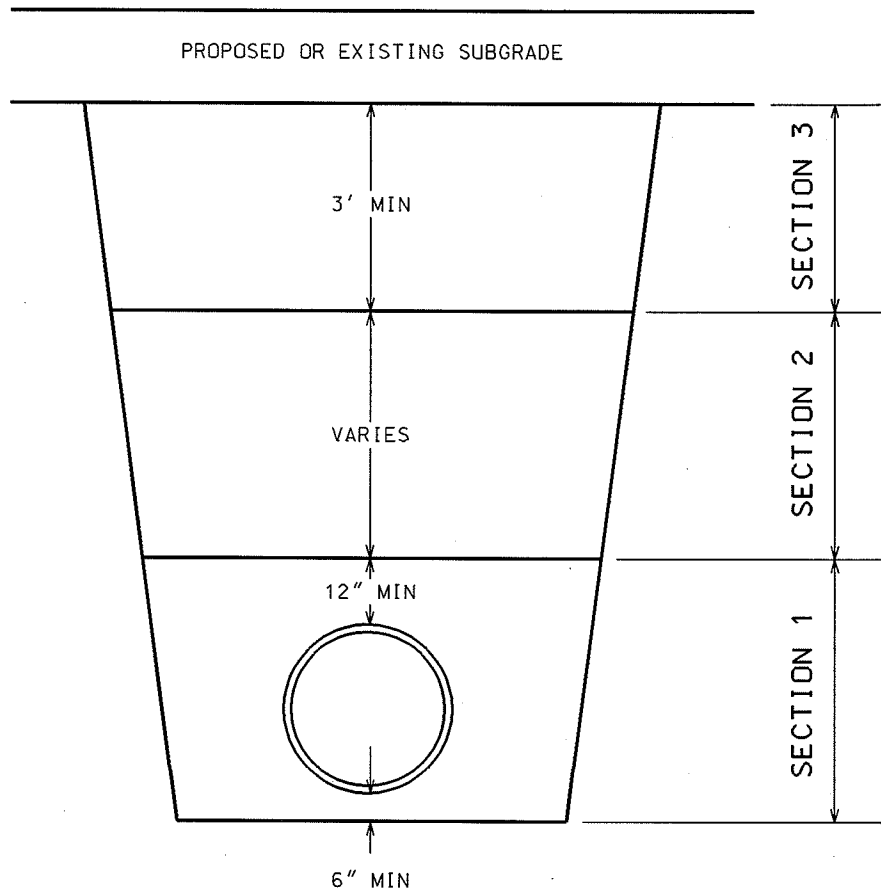
2004

CITY OF MADISON
ENGINEERING DIVISION

STORM AND SANITARY SEWER BEDDINGS

DRAWING NOT TO SCALE

STANDARD DETAIL DRAWING 5.2.1



STANDARD TRENCH COMPACTION

ALL BACKFILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12" BEFORE COMPACTION UNLESS AUTHORIZED BY THE ENGINEER DUE TO THE CHARACTER OF THE MATERIAL AND THE COMPACTING EQUIPMENT. EACH LIFT SHALL BE MECHANICALLY COMPACTED TO THE REQUIRED DENSITY PRIOR TO PLACING SUCCEEDING LIFTS OF BACKFILL MATERIAL.

IN COLD WEATHER, TRENCHES SHALL BE COMPACTED IN ACCORDANCE WITH THE REQUIREMENTS SPECIFIED IN SECTION 502.1 (e), BACKFILLING EXCAVATIONS AND COMPACTION OF BACKFILL, OF THESE SPECIFICATIONS.

SECTION 1:

MECHANICALLY COMPACTED BEDDING AS REQUIRED BY THE SPECIFICATIONS. COMPACTION ACHIEVED WITH SMALLER PLATE COMPACTOR.

SECTION 2:

MINIMUM COMPACTION 90% MAXIMUM DENSITY. COMPACTION OF BACKFILL WITH BOMAG OR HOE-PAC SHALL NOT BEGIN UNTIL THE DEPTH OF BACKFILL MATERIAL IS TWO FEET ABOVE THE TOP OF PIPE.

SECTION 3:

MAXIMUM COMPACTION 95% MINIMUM DENSITY.

2004

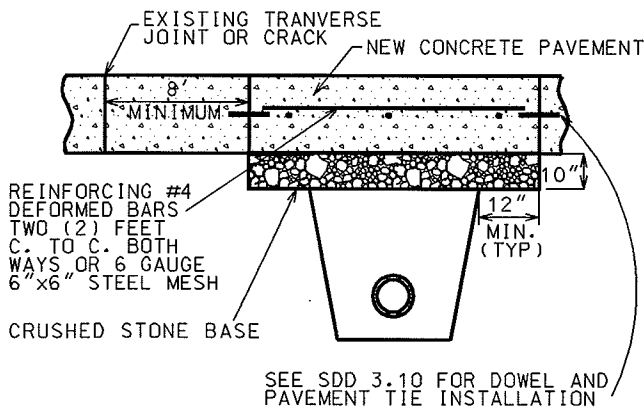
CITY OF MADISON
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TYPICAL
TRENCH
COMPACTION

STANDARD DETAIL DRAWING 5.2.2

TYPE I

CONCRETE PAVEMENT



SEE SDD 3.10 FOR DOWEL AND PAVEMENT TIE INSTALLATION

TYPE I UTILITY TRENCH PATCH

THE PAVEMENT SHALL BE REMOVED IN TWO STAGES. THE INITIAL PAVEMENT REMOVAL SHALL BE LIMITED TO THE AREA OF THE PROPOSED TRENCH. FULL-DEPTH SAWCUTTING WILL NOT BE REQUIRED FOR THIS PHASE OF THE PAVEMENT REMOVAL. AFTER THE TRENCH HAS BEEN BACKFILLED AND COMPACTED, AND AFTER THE BASE HAS BEEN RESTORED IN THE AREA OF THE TRENCH, AND AFTER SAWCUTTING THE NEW JOINTS THE FULL DEPTH OF THE EXISTING PAVEMENT (INCIDENTAL), THE REMAINING PAVEMENT TO BE REMOVED SHALL BE REMOVED WITHOUT DISTURBING THE EXISTING BASE.

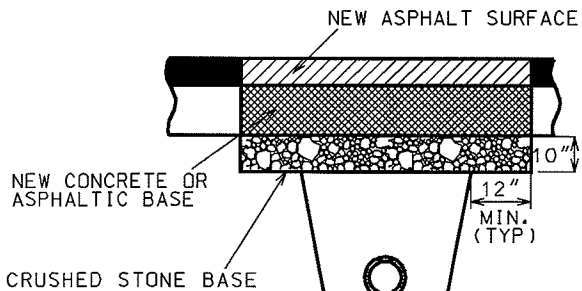
THE SIZE OF THE PATCH SHALL BE DETERMINED BY THE TOP WIDTH OF THE TRENCH, THE LOCATION AND SKEW OF THE EXISTING TRANSVERSE JOINTS, THE CONDITION OF THE EXISTING PAVEMENT, AND THE CONDITION OF THE BASE. NEW TRANSVERSE JOINTS SHALL BE PARALLEL TO THE EXISTING TRANSVERSE JOINTS, AND SHALL BE A MINIMUM OF ONE (1) FOOT FROM THE TRENCH. THE DISTANCE BETWEEN NEW AND EXISTING TRANSVERSE JOINTS SHALL BE A MINIMUM OF EIGHT (8) FEET, MEASURED PERPENDICULAR TO THE JOINTS. THE PATCH SHALL BE A MINIMUM OF EIGHT (8) FEET IN LENGTH, AND SHALL HAVE THE SAME WIDTH AS THE PAVEMENT LANE.

THE PATCH SHALL BE NINE (9) INCHES IN THICKNESS OF HIGH EARLY STRENGTH CONCRETE, DOWELED AND TIED WITH EPOXY COATED BARS, AND REINFORCED, ALL IN ACCORDANCE WITH THE TYPICAL SECTION.

THE TRANSVERSE EDGES OF THE FINISHED PATCH SHALL BE FLUSH WITH THE EDGES OF THE EXISTING CONCRETE PAVEMENT. THE LONGITUDINAL SURFACE SHALL FORM A STRAIGHT LINE FROM EDGE TO EDGE WITHIN A TOLERANCE OF $\frac{1}{8}$ INCH.

TYPE II

CONCRETE WITH ASPHALTIC OVERLAY



TYPE II UTILITY TRENCH PATCH

THE PATCH SHALL BE 7" HIGH EARLY STRENGTH CONCRETE BASE WITH THE SAME REINFORCEMENT AS THE EXISTING CONCRETE BASE, OVERLAID WITH ASPHALT UPPER LAYER. WHERE SPECIFIED, OR DIRECTED BY THE ENGINEER, THE BASE SHALL BE CONSTRUCTED OF ASPHALTIC BASE COURSE MATERIAL, SHALL BE THE SAME THICKNESS AS THE EXISTING BASE, AND SHALL BE LAID IN TWO OR MORE COMPACTED LIFTS OF NOT MORE THAN 3" IN THICKNESS EACH.

THE PAVEMENT ALONG THE PATCH SHALL BE SAWCUT, FULL DEPTH, AND INCIDENTAL TO THE TRENCH PATCH. THE EDGES OF THE PATCH SHALL BE VERTICAL, FREE OF LOOSE STONES OR CONCRETE PIECES, AND SHALL BE THOROUGHLY WETTED JUST PRIOR TO POURING THE NEW CONCRETE BASE.

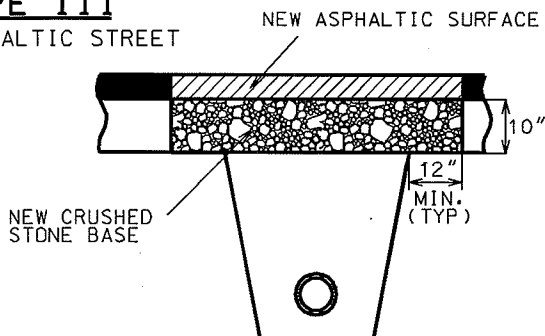
THE TOP OF THE NEW CONCRETE OR ASPHALT BASE SHALL BE FLUSH WITH THE TOP OF THE EXISTING CONCRETE BASE.

PRIOR TO PLACING THE ASPHALT UPPER LAYER, THE EDGES OF THE PATCH AND THE SURFACE OF THE NEW CONCRETE BASE SHALL BE THOROUGHLY TACKED WITH LIQUID ASPHALT.

THE ASPHALT UPPER LAYER SHALL BE OF THE SAME THICKNESS AS THE EXISTING ASPHALT OVERLAY WITH A MINIMUM THICKNESS OF 3" AND A MAXIMUM THICKNESS OF 5 $\frac{1}{4}$ " UNLESS OTHERWISE SPECIFIED AND SHALL BE LAID IN ONE OR MORE COURSES AS DIRECTED BY THE ENGINEER. THE ASPHALTIC UPPER LAYER SHALL BE MACHINE LAID WHERE DIRECTED BY THE ENGINEER. WHERE THE ASPHALTIC UPPER LAYER IS MACHINE LAID, AND IS NOT MORE THAN 3" IN THICKNESS, THE ASPHALTIC SURFACE MAY BE LAID IN ONE LIFT.

TYPE III

ASPHALTIC STREET



TYPE III UTILITY TRENCH PATCH

THE PATCH SHALL BE CRUSHED STONE BASE COURSE, GRADATION NO. 2 OVERLAID WITH ASPHALT UPPER LAYER EQUAL IN THICKNESS TO THE EXISTING ASPHALTIC PAVEMENT, WITH A MINIMUM THICKNESS OF 3" AND A MAXIMUM THICKNESS OF 5 $\frac{1}{4}$ " UNLESS OTHERWISE SPECIFIED AND LAID IN ONE OR MORE COURSES AS DIRECTED BY THE ENGINEER.

THE PAVEMENT ALONG THE PATCH SHALL BE SAWCUT, FULL DEPTH, AND INCIDENTAL TO THE TRENCH PATCH. THE EDGES OF THE EXISTING ASPHALTIC PAVEMENT SHALL BE FREE OF LOOSE STONES OR PAVEMENT MATERIAL.

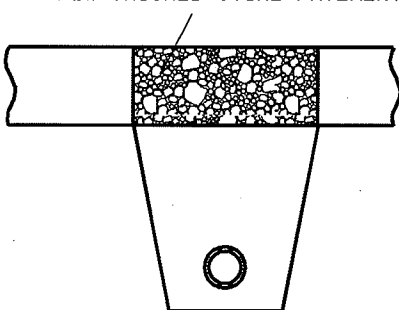
THE CRUSHED STONE BASE COURSE SHALL BE INSTALLED IN TWO LIFTS. THE LOWER LIFT SHALL BE THOROUGHLY MECHANICALLY COMPACTED PRIOR TO PLACING THE UPPER LIFT.

THE ASPHALT UPPER LAYER SHALL BE LAID IN TWO LIFTS. THE ASPHALT UPPER LAYER SHALL BE MACHINE LAID WHERE DIRECTED BY THE ENGINEER. WHERE THE ASPHALTIC UPPER LAYER IS MACHINE LAID AND IS NOT MORE THAN 3" IN THICKNESS, THE ASPHALT SURFACE COURSE MAY BE IN ONE LIFT.

PRIOR TO PLACING THE ASPHALT UPPER LAYER, THE EDGES OF THE PATCH AND THE SURFACE OF THE CRUSHED STONE BASE SHALL BE TACKED AND PRIMED WITH LIQUID ASPHALT.

TYPE IV

NEW CRUSHED STONE PAVEMENT



TYPE IV UTILITY TRENCH PATCH

THE PATCH SHALL BE 9" CRUSHED STONE BASE COURSE, GRADATION NO. 2. FULL DEPTH SAWCUTTING OF ADJACENT PAVEMENT (IF ANY) SHALL BE CONSIDERED INCIDENTAL TO THE TRENCH PATCH.

THE CRUSHED STONE BASE COURSE SHALL BE INSTALLED IN THREE LIFTS. EACH LIFT SHALL BE THOROUGHLY MECHANICALLY COMPACTED PRIOR TO PLACING SUCCEEDING LIFTS.

CITY OF MADISON
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TYPICAL PAVEMENT
PATCH SECTIONS