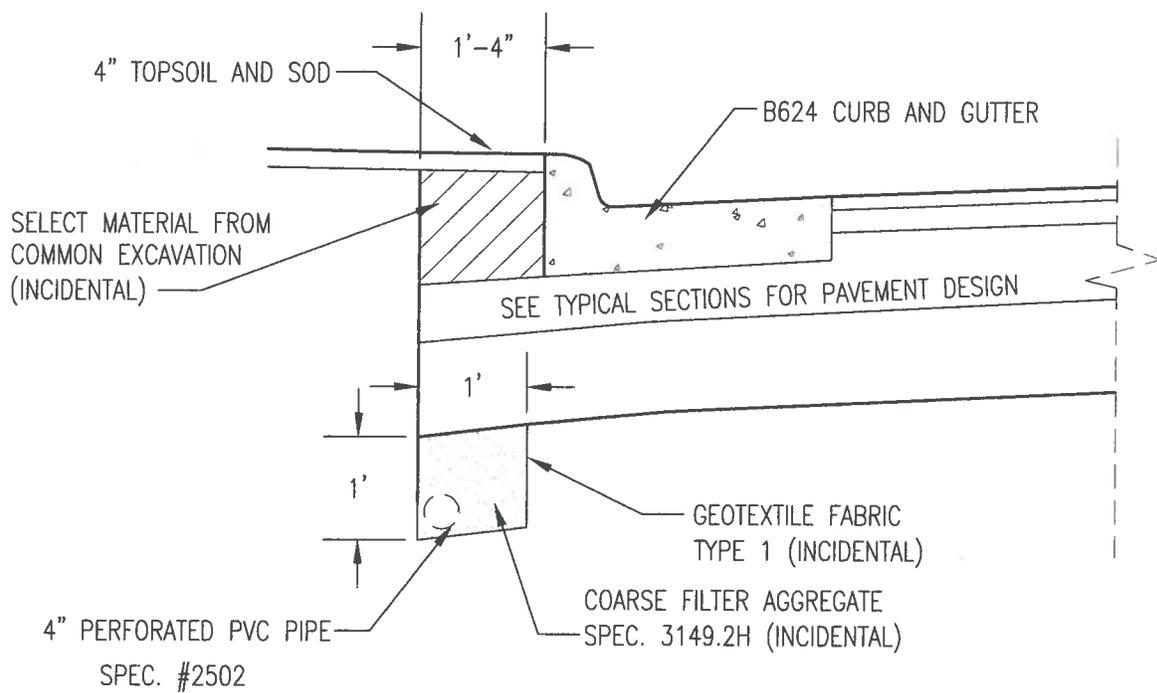


STREET

- STR-1 PERFORATED PIPE DETAIL
- STR-2 PERFORATED PIPE - SPECIAL
- STR-3 4" OR 6" CONCRETE WALK WITH CONCRETE CURB DESIGN V8
(MODIFIED)
- STR-4 BITUMINOUS CURB
- STR-5 DRIVEWAY & ALLEY ENTRANCES
- STR-6 CONCRETE RETAINING WALL, TYPE L
- STR-7 CONCRETE STEPS
- STR-8 STREET RESTORATION OVER TRENCH
- STR-9 BRICK PAVEMENT RESTORATION



PERFORATED PIPE DETAIL

STR-1

REVISED/APPROVED 2/01/2013

CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE

2" TOPSOIL AND SOD

SELECT MATERIAL FROM COMMON EXCAVATION

B624 CURB AND GUTTER

SEE TYPICAL SECTIONS FOR PAVEMENT DESIGN

GEOTEXTILE FABRIC TYPE 1 (INCIDENTAL)

COARSE FILTER AGGREGATE
SPEC. 3149.2H (INCIDENTAL)

4" PVC PERFORATED PIPE SPEC. 2502

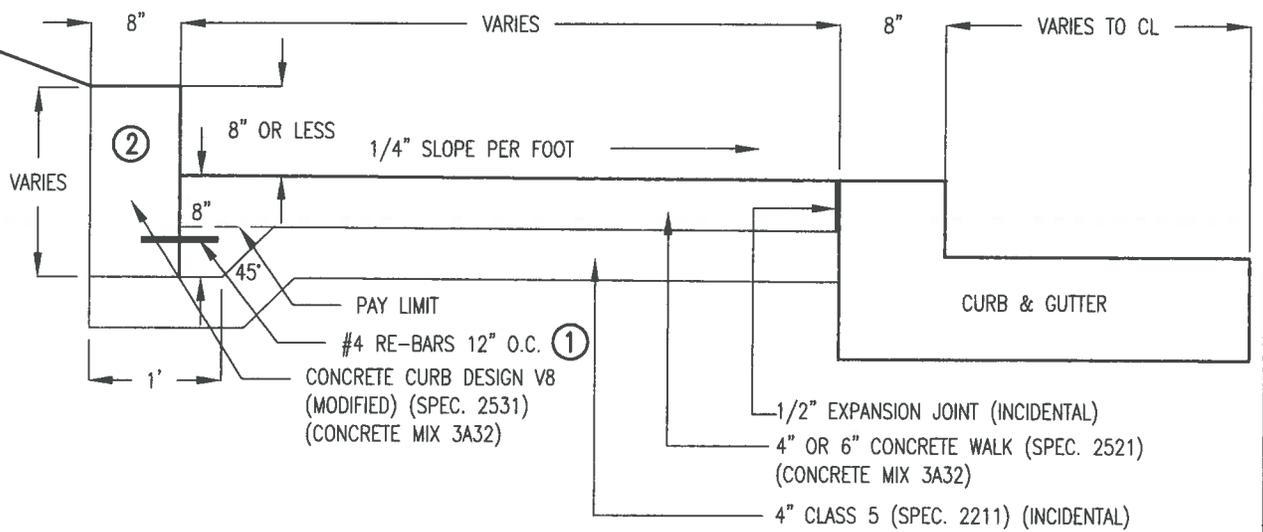
PERFORATED PIPE - SPECIAL

STR-2

REVISED/APPROVED 2/01/2013

CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE



NOTES:

1. OPTIONAL REINFORCEMENT TIE BARS (INCIDENTAL) IF CURB IS Poured SEPARATELY FROM SIDEWALK
2. EXACT LOCATION AND ELEVATION OF CONCRETE CURB WILL BE DETERMINED IN THE FIELD BY THE ENGINEER

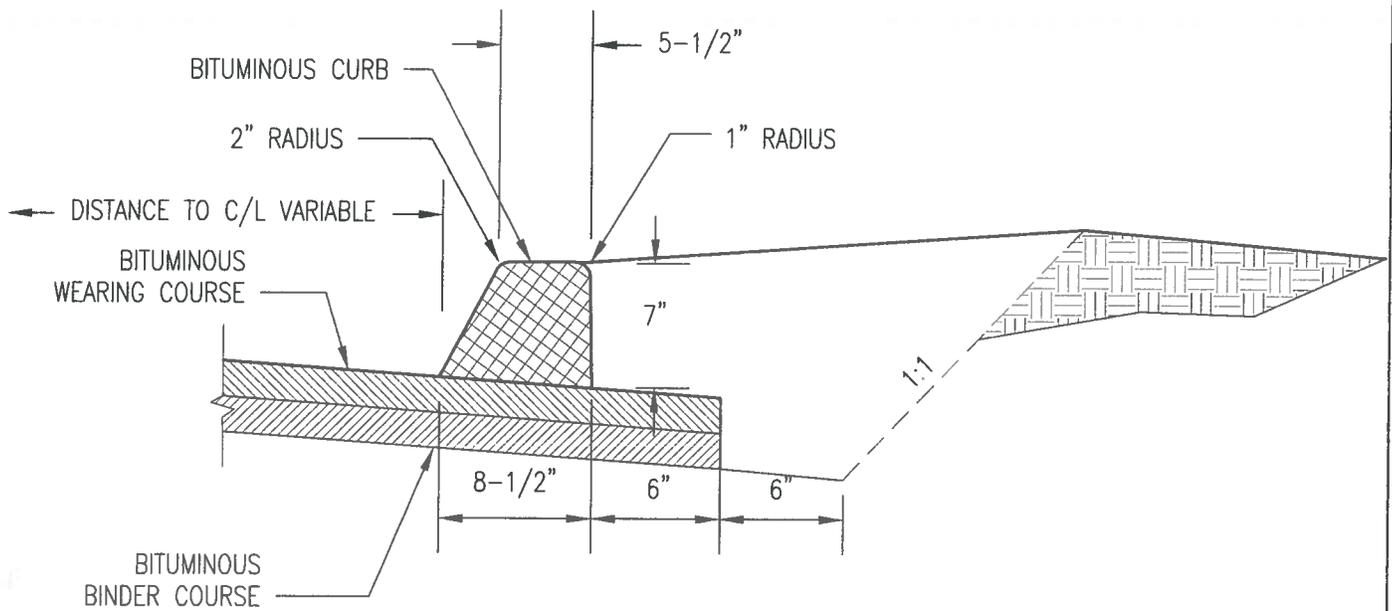
4" OR 6" CONCRETE WALK WITH CONCRETE CURB DESIGN V8 (MODIFIED)

STR-3

REVISED/APPROVED 02/19/2015

CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE



VOLUME OF CURB
0.338 CU. FT. PER LIN. FT.

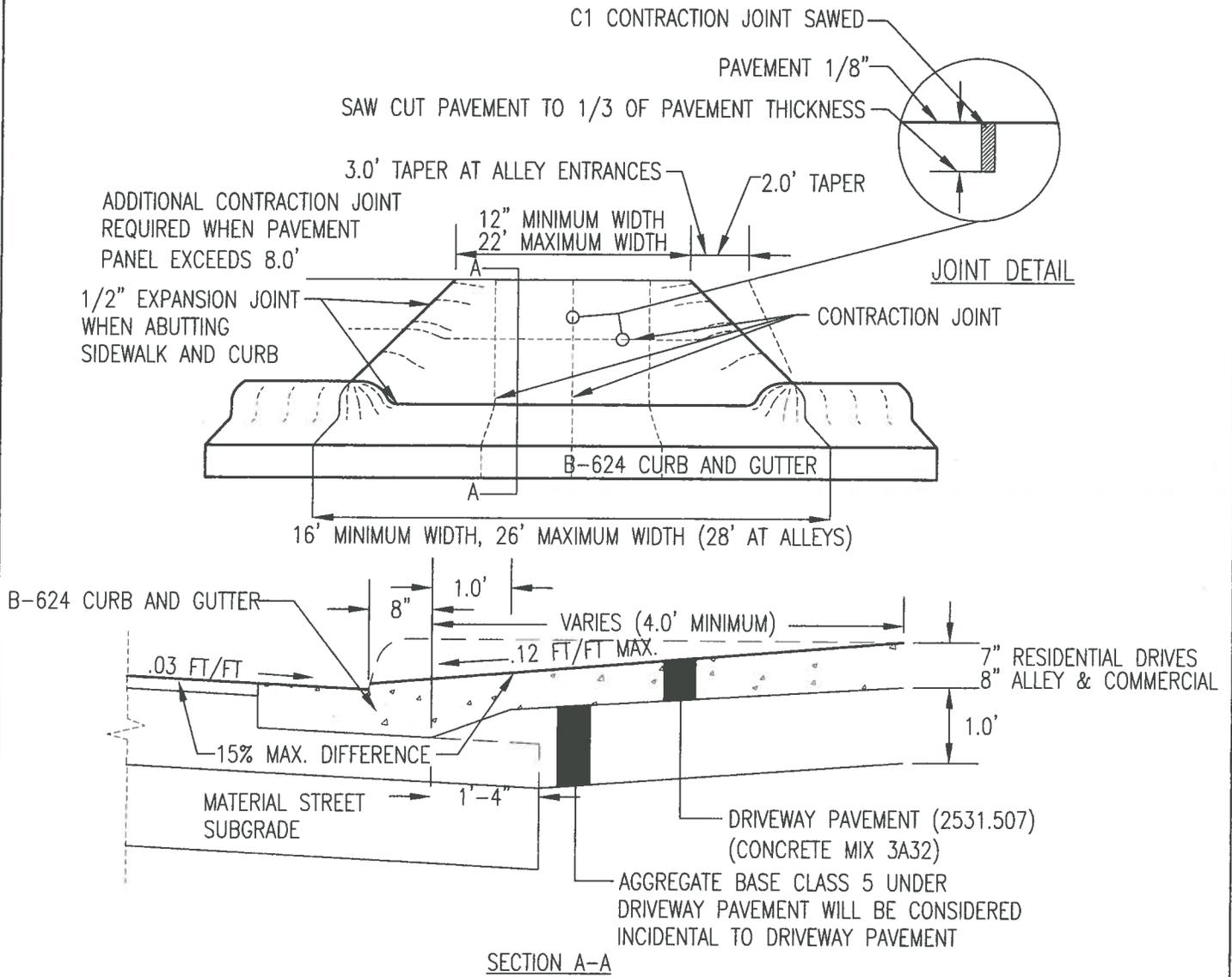
BITUMINOUS CURB

STR-4

REVISED/APPROVED 2/01/2013

CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE



NOTE: THE CREST OF THE DRIVEWAY MUST BE AT LEAST 6" ABOVE GUTTER TO CONTAIN RUNOFF.

DRIVEWAY & ALLEY ENTRANCES

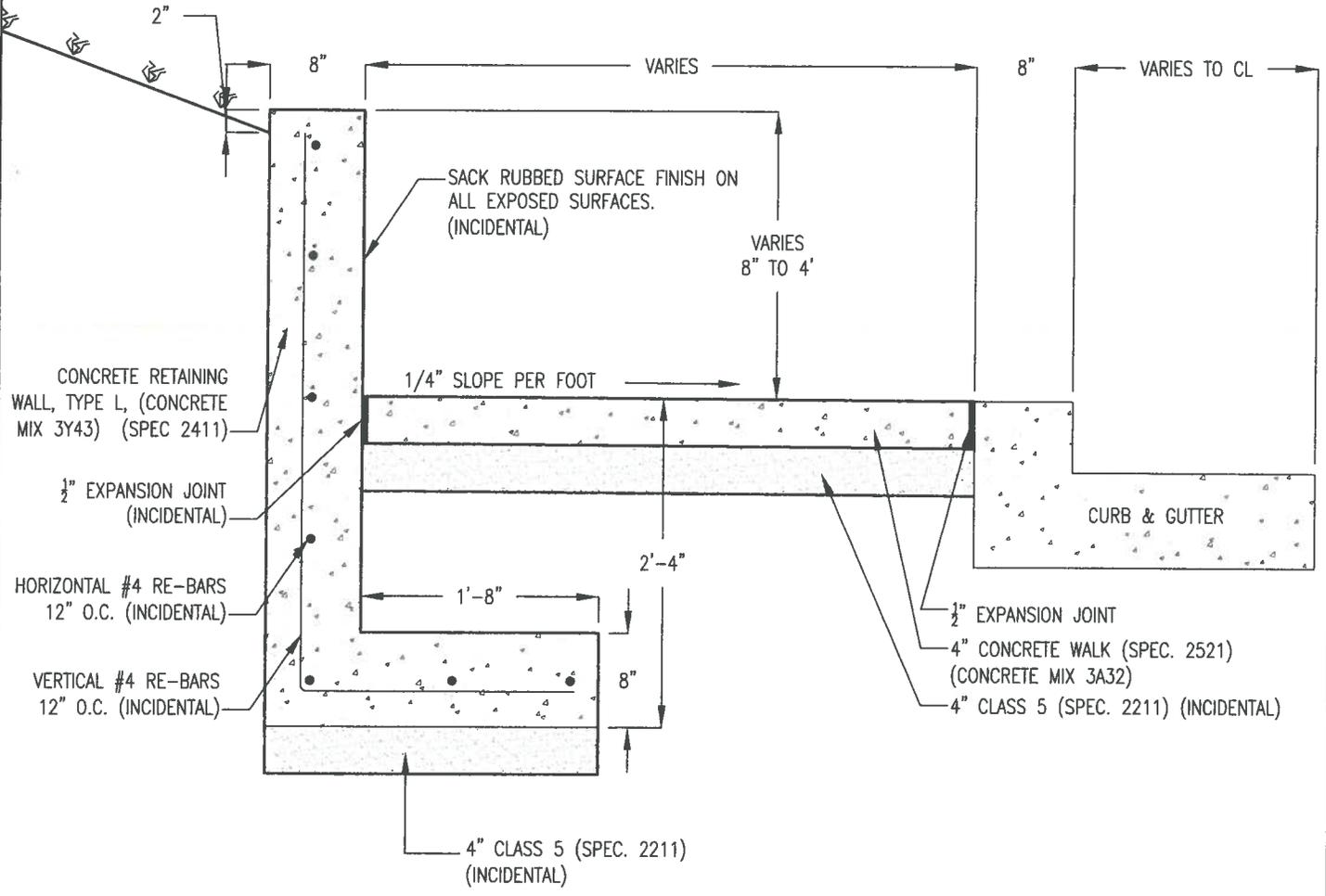
STR-5

REVISED/APPROVED 10/30/2013

CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE

EXACT LOCATION AND ELEVATION OF RETAINING WALL WILL
BE DETERMINED IN THE FIELD BY THE ENGINEER



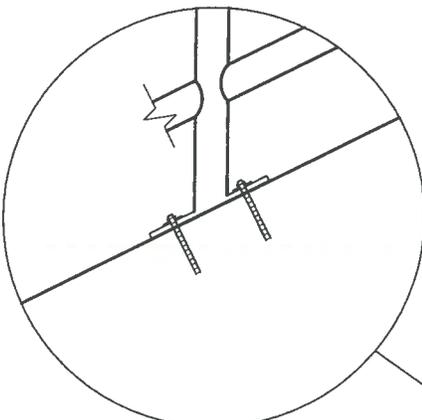
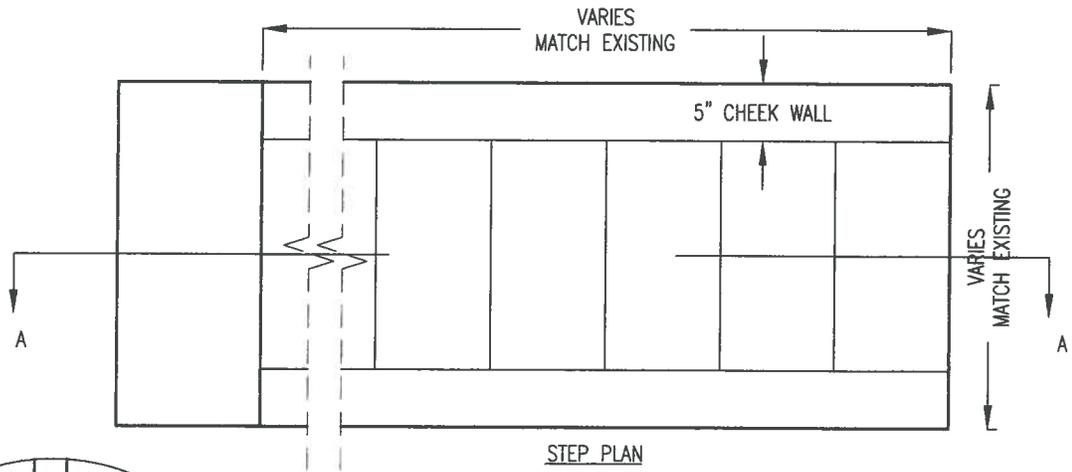
CONCRETE RETAINING WALL, TYPE L

STR-6

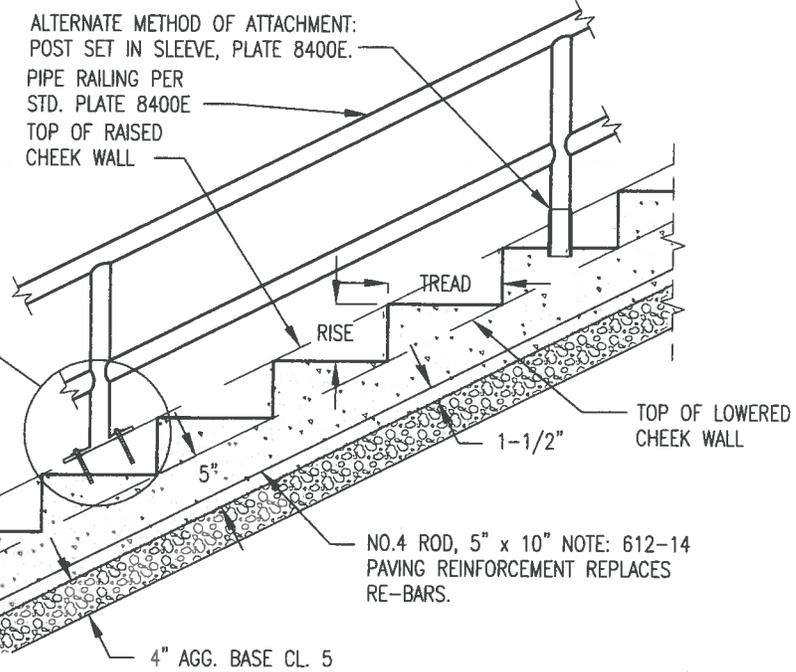
REVISED/APPROVED 02/19/2015

CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

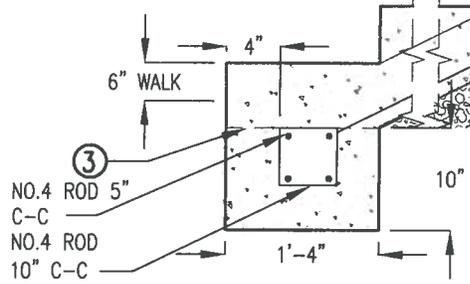
NO SCALE



ALTERNATE METHOD OF ATTACHMENT:
 POST SET IN SLEEVE, PLATE 8400E.
 PIPE RAILING PER
 STD. PLATE 8400E
 TOP OF RAISED
 CHEEK WALL



TREAD + RISER = 18" RISE WILL BE 4-1/2" MIN., 7" MAX. TREAD 1% SLOPE



3/8" PLATE (4 1/2" X 8") WELDED TO POST. FOUR 1/4" X 4 1/2" GALVANIZED BOLTS, DRILLED AND GROUTED INTO CHEEK WALL CONCRETE OR OTHER METHOD OF ATTACHMENT AS APPROVED BY ENGINEER.

NOTES:

1. 5" WIDE RAISED OR LOWERED CHEEK WALLS TO BE DETERMINED IN FIELD BY ENGINEER.
2. RAILINGS WILL BE REQUIRED WHERE MORE THAN THREE STEPS ARE NEEDED. RAILINGS TO BE PAINTED WITH BLACK PAINT PER CITY STANDARD SPEC. 2402
3. THE CONCRETE LUG ANCHOR MAY NOT BE NEEDED FOR 2 STEPS OR LESS.
4. INCLUDES: ALL EXCAVATION (EXCEPT ROCK EXC.), REMOVAL OF EXISTING STEPS, FORMING, CLASS 5, REINFORCING BAR, BACKFILL, AND CONCRETE (MIX 3Y43),

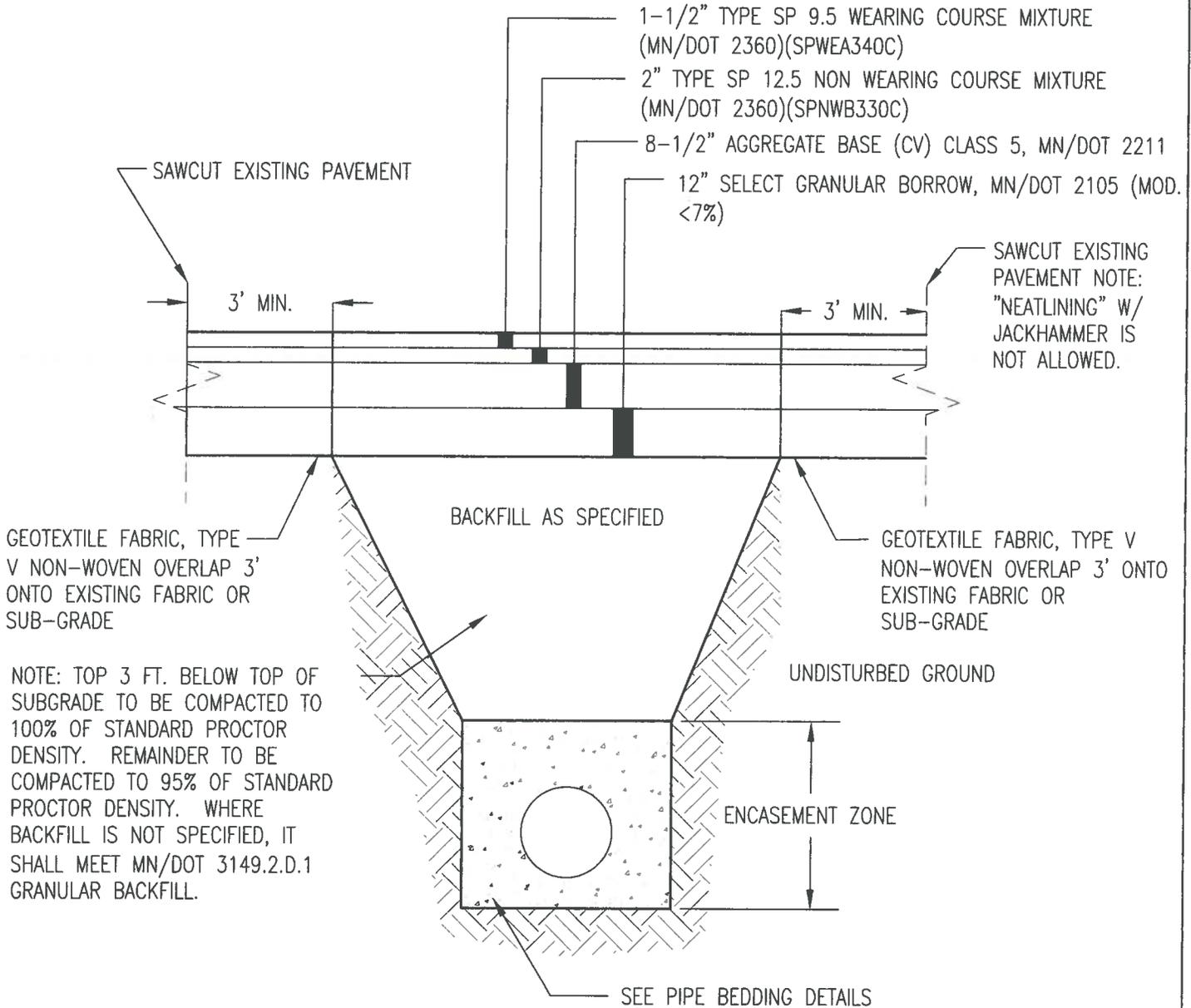
CONCRETE STEPS

STR-7

REVISED/APPROVED 02/19/2015

CITY OF DULUTH STANDARD DETAIL
 DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE



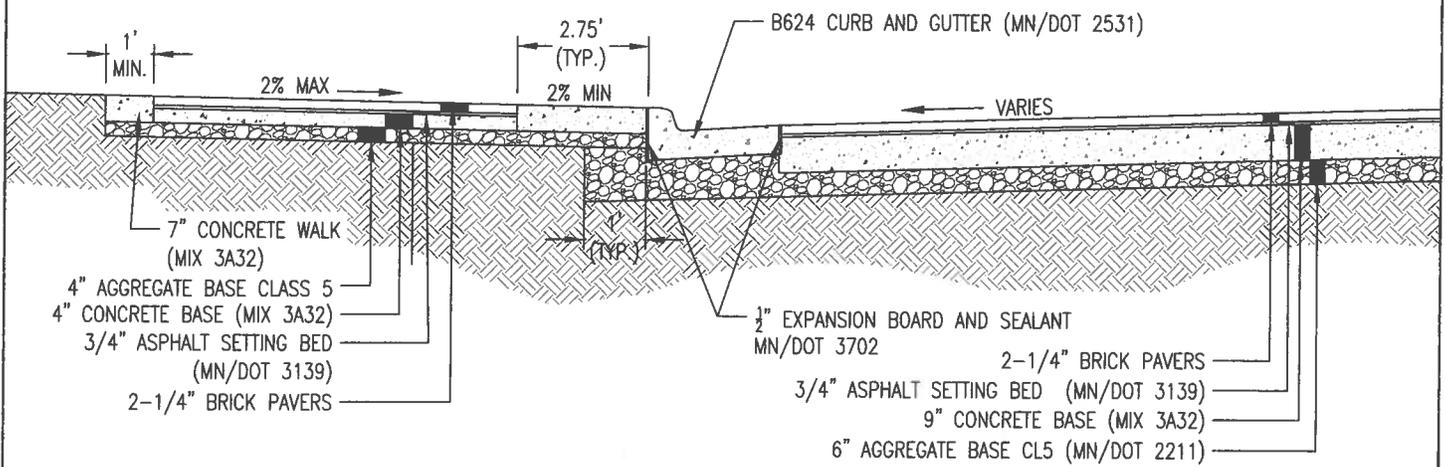
STREET RESTORATION OVER TRENCH

STR-8

REVISED/APPROVED 2/01/2013

CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE



NOTES:

1. REFER TO 2388 BRICK PAVEMENT RESTORATION IN THE CITY OF DULUTH CONSTRUCTION STANDARDS
2. DRILL AND GROUT 1" DIA. DOWEL BARS (24" LENGTH) 16" O.C. INTO ADJACENT EXISTING CONCRETE BASE
3. ASPHALT SETTING BED MATERIALS SHALL MEET GRADATION "D" OF TABLE 3139-2 OF MN/DOT 3139
4. CONCRETE (MIX 3A32) SHALL MEET THE PROVISIONS OF MN/DOT 2301 AND MN/DOT 2461
5. BRICK PAVERS (4" X 8" X 2-1/4") SHALL MEET ASTM C902-79A, EXCEPT AS MODIFIED IN THE CITY OF DULUTH CONSTRUCTION STANDARDS. BRICK COLOR AND TEXTURE SHALL MATCH EXISTING OR AS APPROVED BY ENGINEER.

BRICK PAVEMENT RESTORATION

STR-9

APPROVED 02/19/2015

CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE