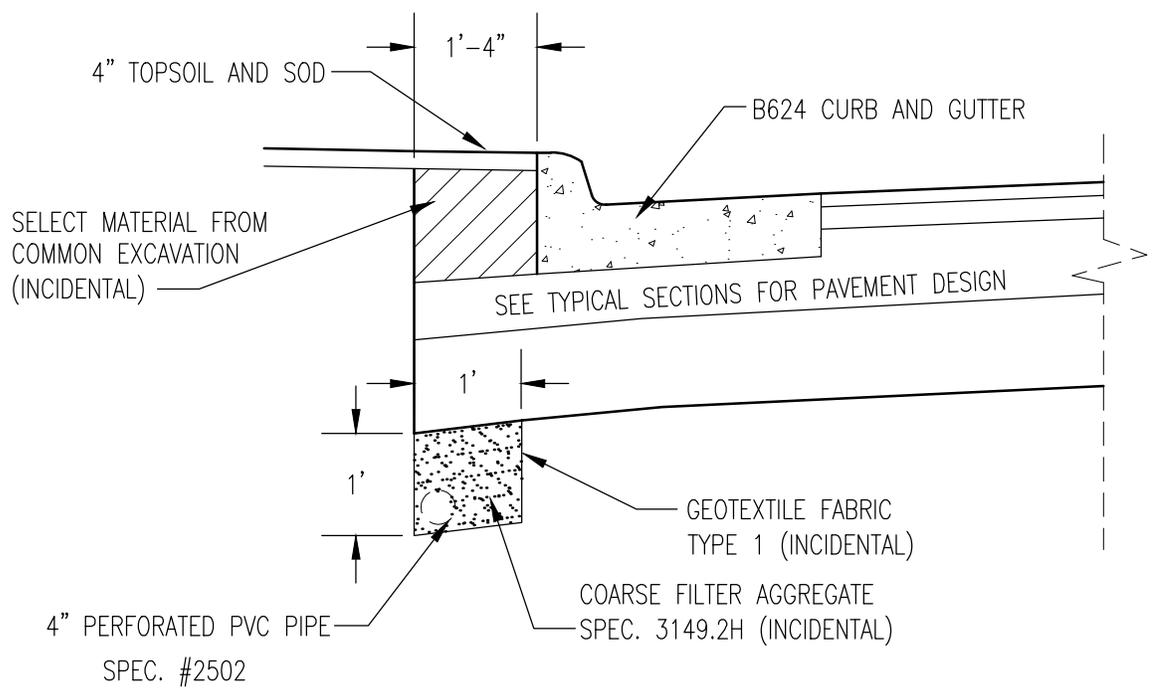


STREET

- 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

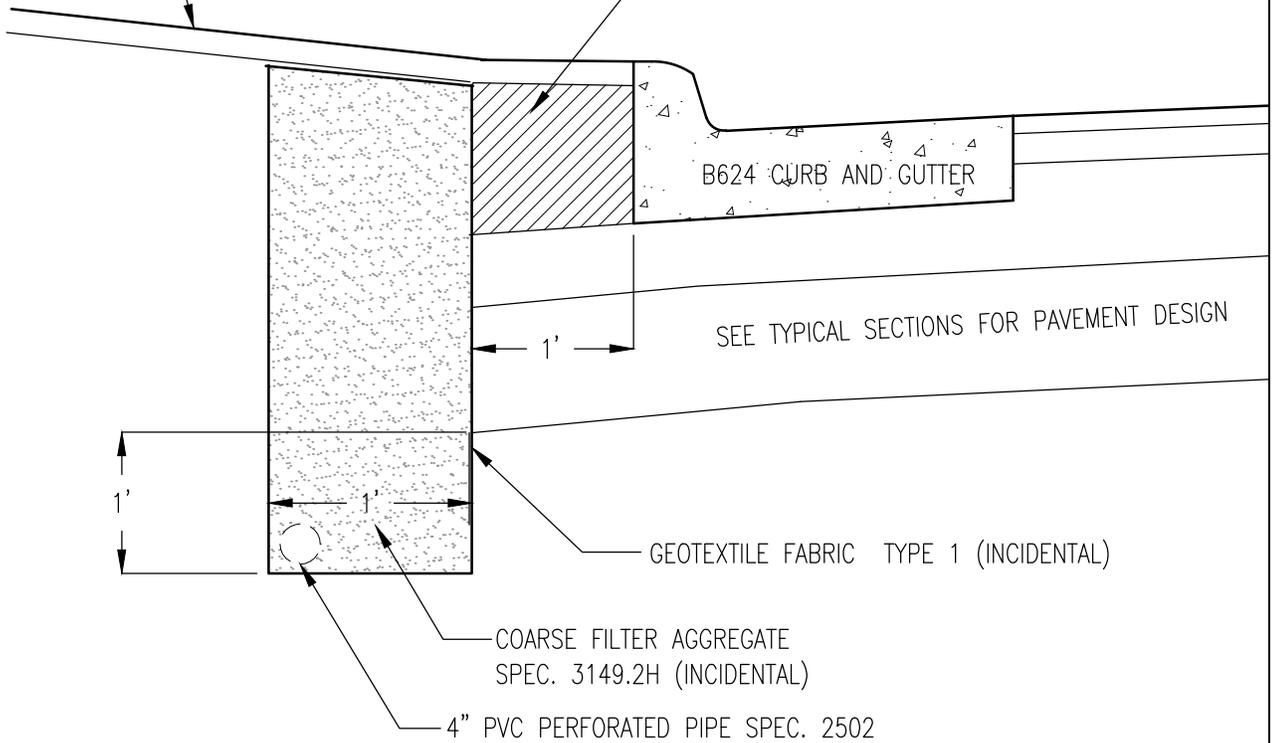
B624 CURB AND GUTTER

SEE TYPICAL SECTIONS FOR PAVEMENT DESIGN

GEOTEXTILE FABRIC TYPE 1 (INCIDENTAL)

COARSE FILTER AGGREGATE
SPEC. 3149.2H (INCIDENTAL)

4" PVC PERFORATED PIPE SPEC. 2502



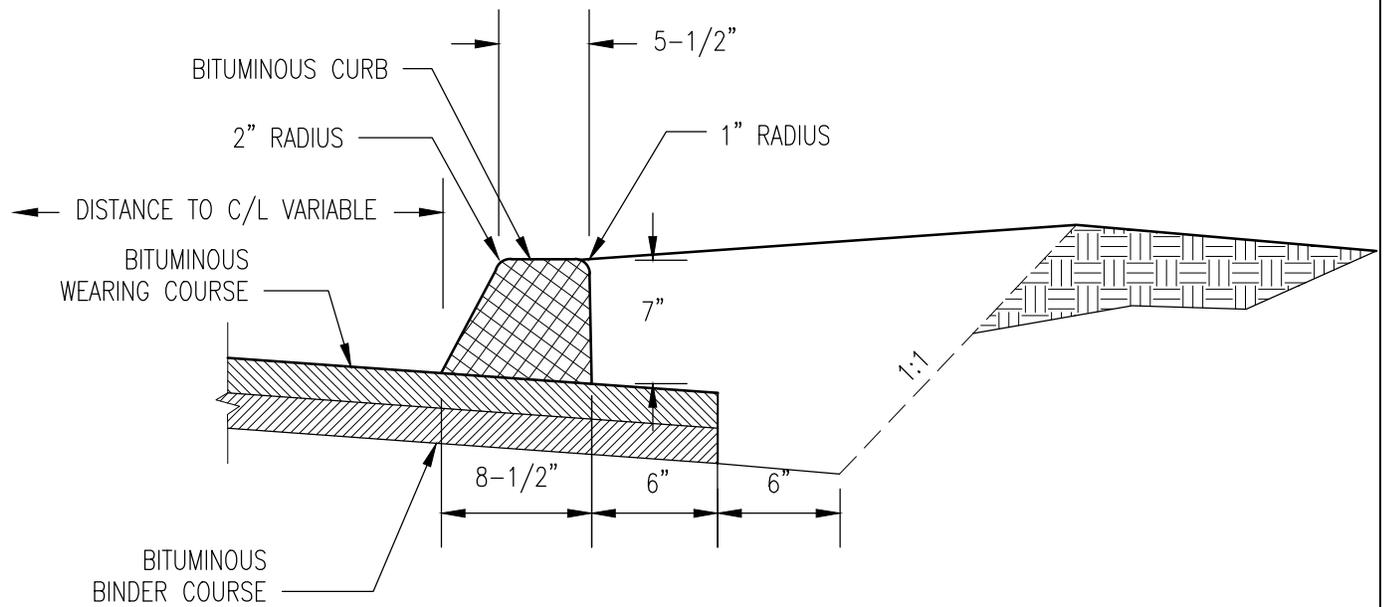
PERFORATED PIPE – SPECIAL

STR-2

REVISED/APPROVED 2/01/2013

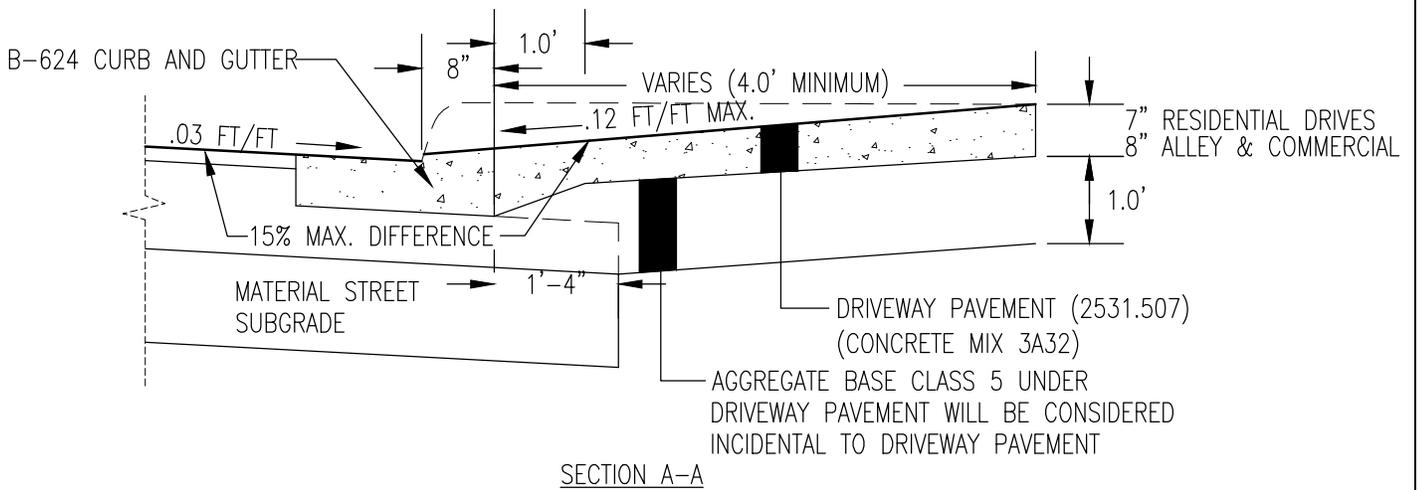
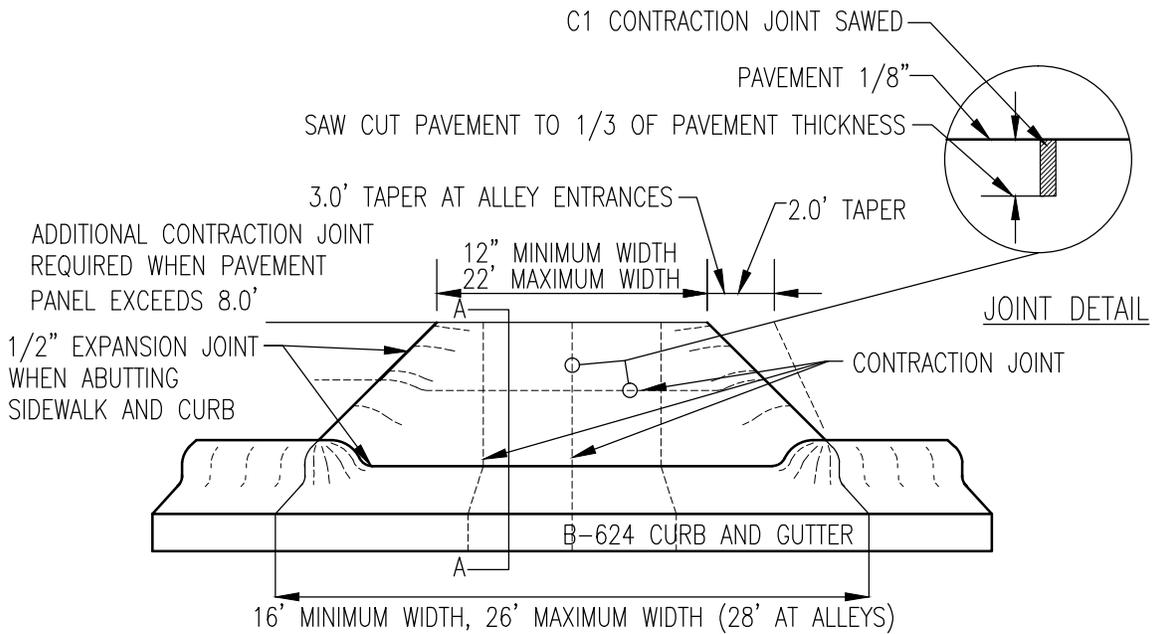
CITY OF DULUTH STANDARD DETAIL
DEPT. OF PUBLIC WORKS AND UTILITIES

NO SCALE



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 |



NOTES:

1. WHERE THERE IS NO SIDEWALK OR THERE IS A GRASS BOULEVARD BETWEEN THE SIDEWALK AND THE BACK OF CURB THE CREST OF THE DRIVEWAY MUST BE AT LEAST 6" ABOVE GUTTER TO CONTAIN RUNOFF.
2. WHERE THERE IS SIDEWALK DIRECTLY BEHIND THE CURB, DRIVEWAY PROFILE SLOPE SHALL BE FLATTENED TO MEET ADA ACCESSIBLE ROUTE STANDARDS

DRIVEWAY & ALLEY ENTRANCES

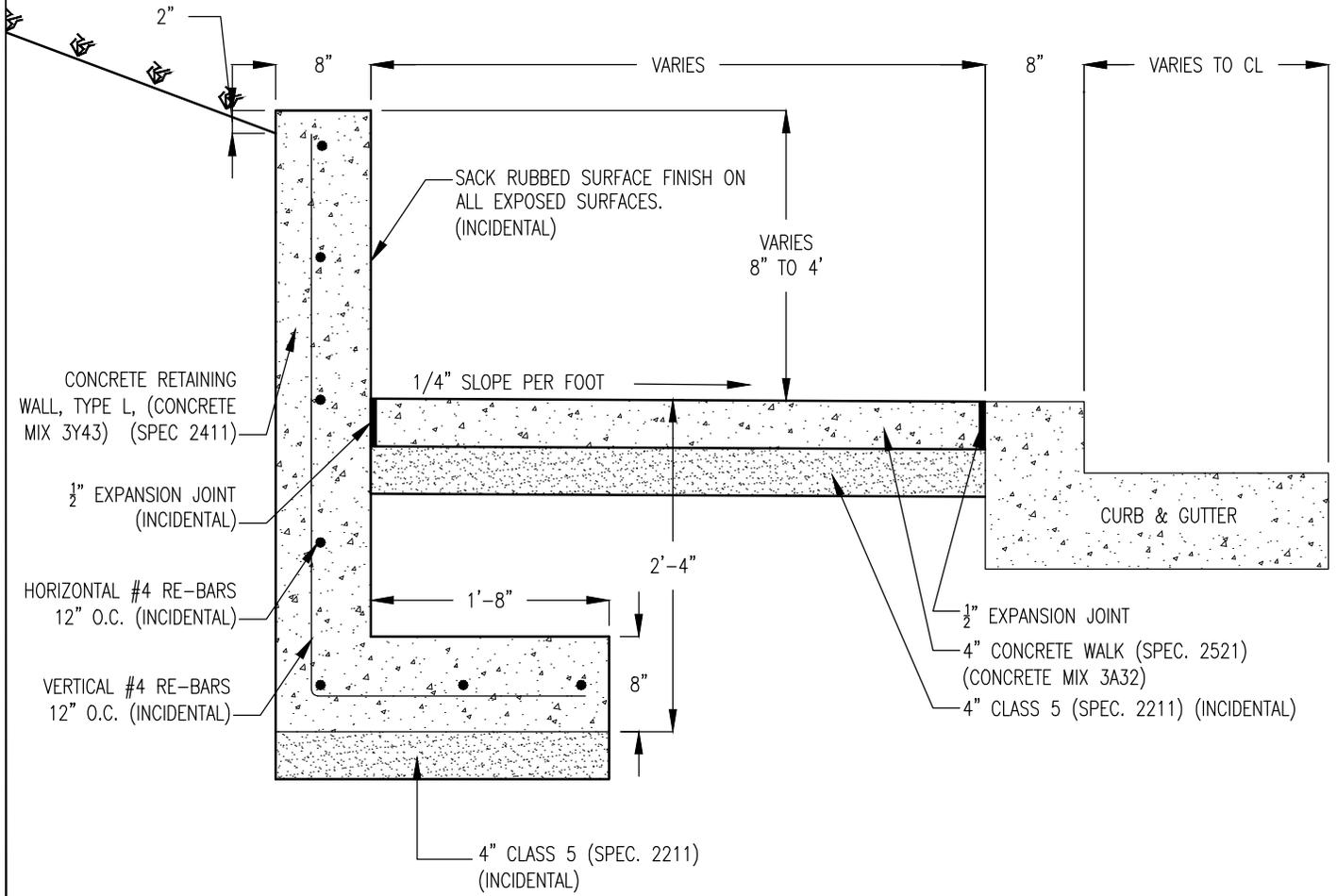
STR-5

REVISED/APPROVED 1/8/2016

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



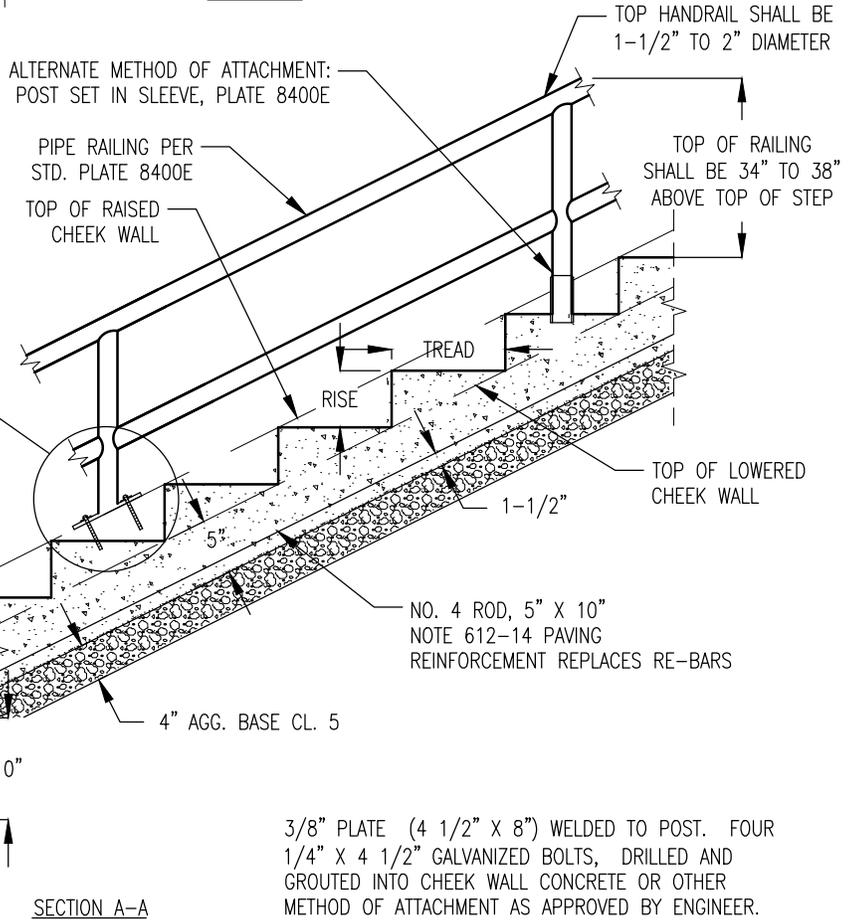
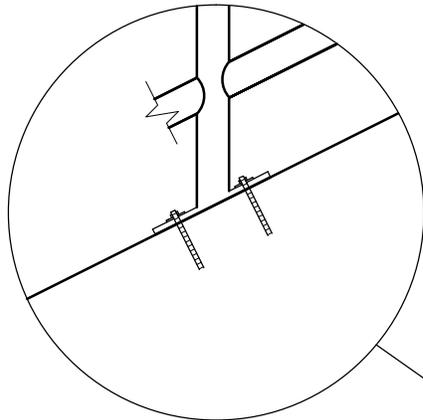
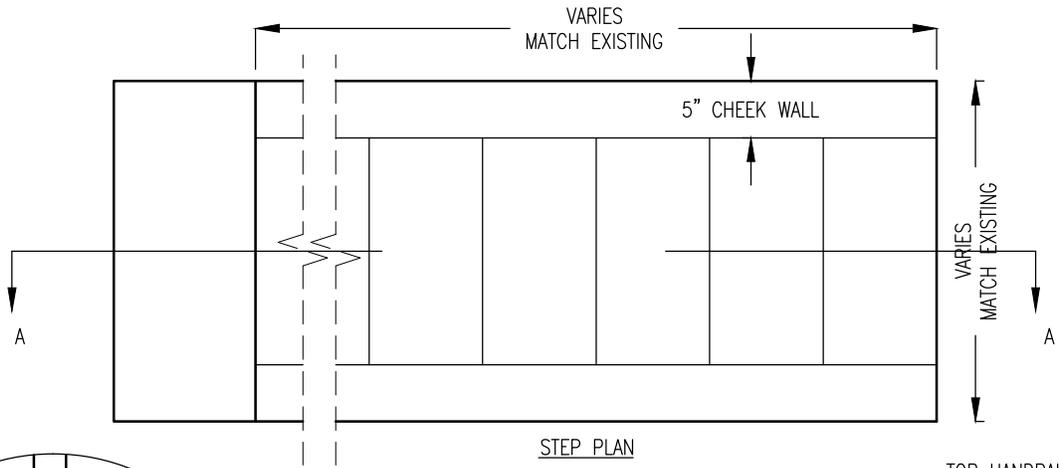
CONCRETE RETAINING WALL, TYPE L

STR-6

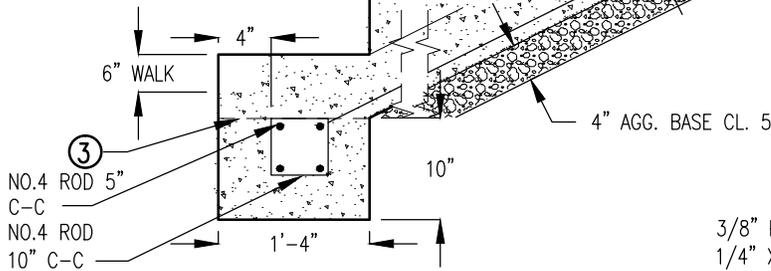
REVISED/APPROVED 02/19/2015

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

NO SCALE



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

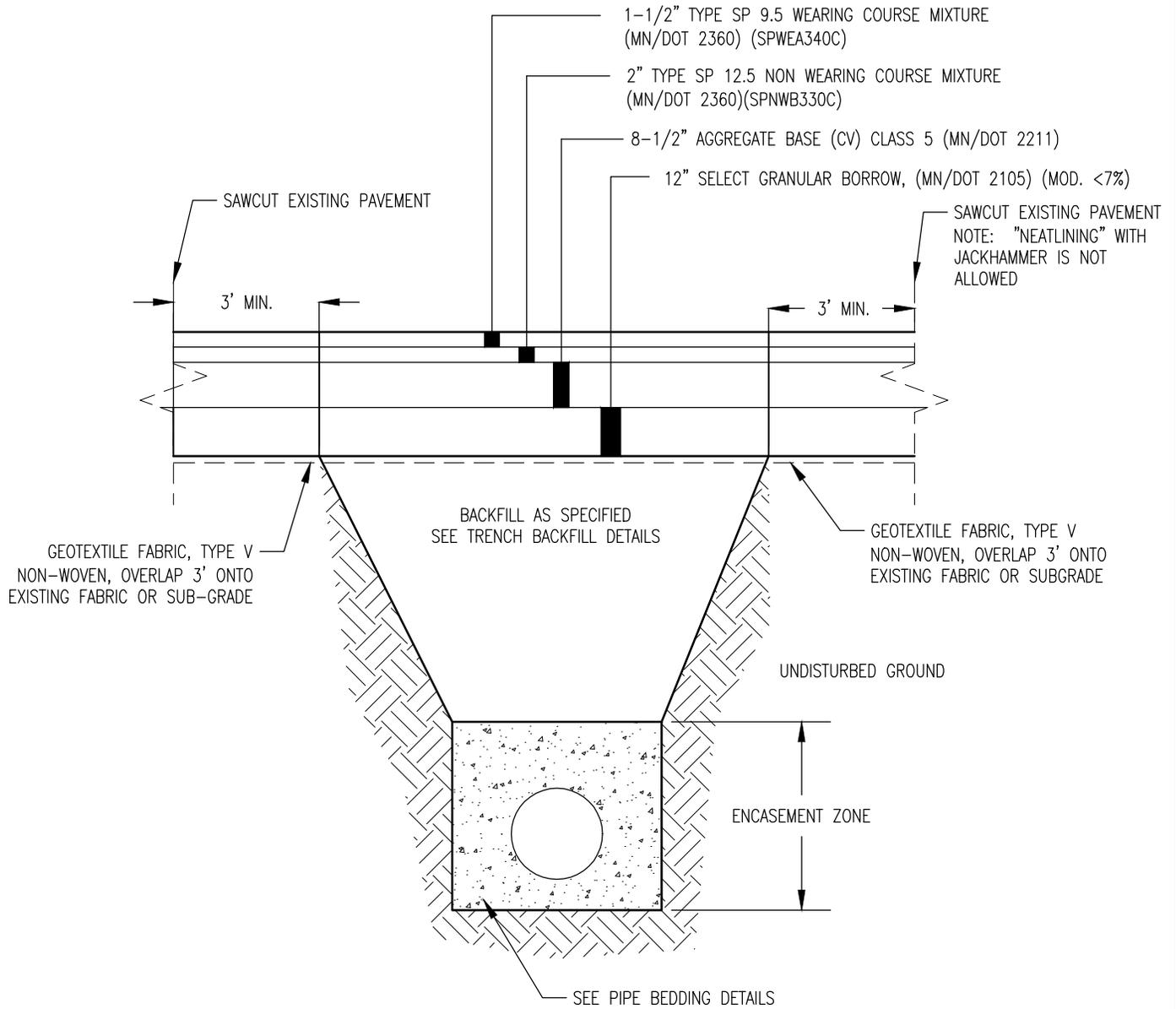


NO. 4 ROD, 5" X 10" NOTE 612-14 PAVING REINFORCEMENT REPLACES RE-BARS
 3/8" PLATE (4 1/2" X 8") WELDED TO POST. FOUR 1/4" X 4 1/2" GALVANIZED BOLTS, DRILLED AND GROUTED INTO CHEEK WALL CONCRETE OR OTHER METHOD OF ATTACHMENT AS APPROVED BY ENGINEER.

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 1/8/2016 | CITY OF DULUTH STANDARD DETAIL DEPT. OF PUBLIC WORKS AND UTILITIES |
| NO SCALE | |



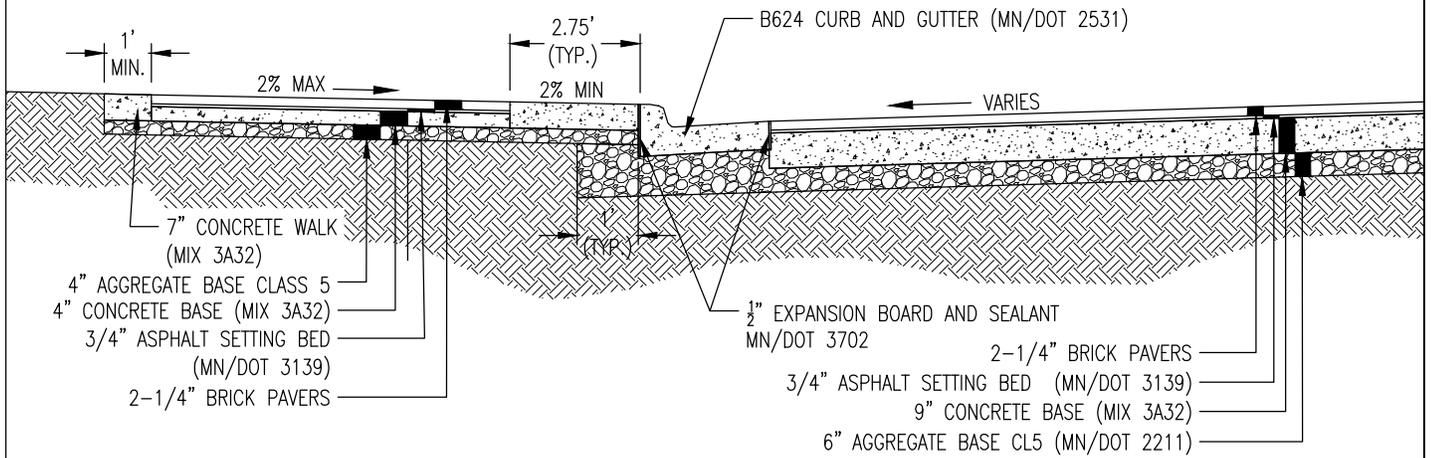
STREET RESTORATION OVER TRENCH

STR-8

REVISED/APPROVED 1/8/2016

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