

9" MINIMUM CLASS 2 AGGREGATE BASE OR AS DIRECTED BY THE CITY ENGINEER.

1/8"-1/4" MAXIMUM

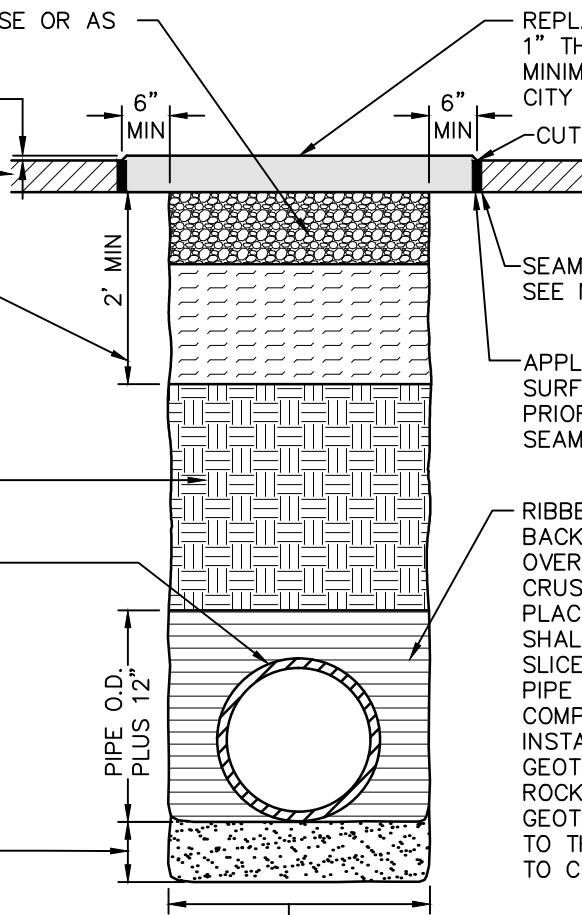
EXISTING STRUCTURE SECTION THICKNESS VARIES

COMPACT TO 95% RELATIVE COMPACTION. TWO SACK SAND CEMENT SLURRY OR CLASS 2 AGGREGATE BASE PER CITY SPECIFICATIONS REQUIRED WHERE TRENCH IS 12" WIDE OR LESS, OR AS DIRECTED BY CITY ENGINEER.

COMPACT BACKFILL TO 92% RELATIVE COMPACTION. SEE NOTE 13.

SMOOTH SURFACE PIPES SHALL BE BACKFILLED TO A HEIGHT OF 12" OVER TOP OF PIPE. FILL SHALL BE PLACED BY HAND AND TAMPED OR AS PER PIPE MANUFACTURER'S SPECIFICATIONS. COMPACT TO 92% RELATIVE COMPACTION.

SEE SPECIFICATIONS FOR BEDDING REQUIREMENTS, 92% RELATIVE COMPACTION. SEE NOTE 13.



REPLACE WITH ASPHALT CONCRETE, 1" THICKER THAN EXISTING. 4" MINIMUM OR AS DIRECTED BY THE CITY ENGINEER.

CUT TO A NEAT EDGE

SEAMLESS JOINT REQUIRED SEE NOTE 1

APPLY TACK COAT ON CUT SURFACE OF EXISTING PAVEMENT, PRIOR TO FINAL PAVING, WHEN SEAMLESS TRENCH NOT REQUIRED.

RIBBED SURFACE PIPES SHALL BE BACKFILLED TO A HEIGHT OF 6" OVER TOP OF PIPE WITH 3/4" CRUSHED ROCK. ROCK SHALL BE PLACED IN 12" MAXIMUM LIFTS AND SHALL BE RODDED OR SHOVEL SLICED TO ENSURE FILL UNDER PIPE HAUNCHES AND FOR PROPER COMPACTION. CONTRACTOR SHALL INSTALL A PERMEABLE NON-WOVEN GEOTEXTILE AROUND THE CRUSHED ROCK TO PREVENT SOIL MIGRATION. GEOTEXTILE MUST BE SUBMITTED TO THE CITY FOR APPROVAL PRIOR TO CONSTRUCTION.

SEE CITY OF VISALIA STANDARD SPECIFICATIONS FOR TRENCH WIDTH REQUIREMENTS.

NOTES:

1. ALL CUTS IN EXISTING PAVEMENT THAT IS LESS THAN EIGHT YEARS OLD OR AS DIRECTED BY THE CITY ENGINEER SHALL BE REQUIRED TO HAVE SEAMLESS JOINTS WITH THE EXISTING PAVEMENT BY USING A HEATER-REMIX PROCESS.
2. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN THE CITY OF VISALIA STANDARD SPECIFICATIONS.
3. ALL PROVISIONS AND REQUIREMENTS OF THE CITY OF VISALIA MUNICIPAL CODE SHALL BE FOLLOWED.
4. STREET CUTS SHALL BE MADE PARALLEL OR AT RIGHT ANGLES TO THE CENTERLINE OF THE STREET.
5. ALL TRENCHES UNDER EXISTING CURB AND GUTTER OR OTHER CITY STRUCTURES SHALL REQUIRE A TWO SACK CEMENT SLURRY BACKFILL. CEMENT SLURRY BACKFILL SHALL HAVE NOT LESS THAN 188 POUNDS OF CEMENT PER CUBIC YARD OF MATERIAL PRODUCED.
6. MANHOLE AND WATER VALVE RAISING ASSOCIATED WITH NEW STREET CONSTRUCTION IS NOT REQUIRED TO FOLLOW NOTE 1.
7. MOISTURE CONDITION AND MIX BACKFILL MATERIAL PRIOR TO PLACEMENT.
8. TEMPORARY TRENCH RESURFACING SHALL CONSIST OF A MINIMUM OF 2" COLD MIX AND SHALL BE REQUIRED WHENEVER THE STREET IS TEMPORARILY OPENED TO TRAFFIC. ALL TEMPORARY MATERIAL SHALL BE COMPLETELY REMOVED PRIOR TO FINAL PAVING.
9. TRENCH RESURFACING STRUCTURAL SECTION IN OTHER THAN PERMANENTLY PAVED OR UNPAVED AREAS SHALL BE DETERMINED BY THE CITY ENGINEER.
10. NO JETTING OR FLOODING OF TRENCH BACKFILL WILL BE ALLOWED. BACKFILL IS TO BE PLACED IN MAXIMUM 8" LOOSE LIFTS, THEN COMPACTED AS DIRECTED BY THE CITY ENGINEER.
11. FOR UTILITY POTHOLES WITH DIAMETER 9" OR LESS OR MAXIMUM DIMENSION IN ANY DIRECTION OF 9" OR LESS, OR WHERE DIRECTED BY THE ENGINEER, BACKFILL SHALL COMPLY WITH THE STANDARD CITY DRAWING FOR UTILITY POTHOLE BACKFILL.
12. IF THERE IS LESS THAN 2 FEET BETWEEN THE EDGE OF A TRENCH CUT AND A CONCRETE IMPROVEMENT, OR EDGE OF PAVING, THEN REMOVE AND REPLACE THE A.C. PAVEMENT FROM THE EDGE OF THE TRENCH CUT TO THE CONCRETE IMPROVEMENT, OR EDGE OF PAVING.
13. UNLESS OTHERWISE NOTED BACKFILL AND BEDDING SHALL BE CLEAN GRANULAR NATIVE MATERIAL PER CITY SPECIFICATIONS.

APPROVED BY:  09/16/16
CITY ENGINEER R.P.E. 81734 DATE

CITY OF VISALIA
DESIGN & IMPROVEMENT STANDARDS

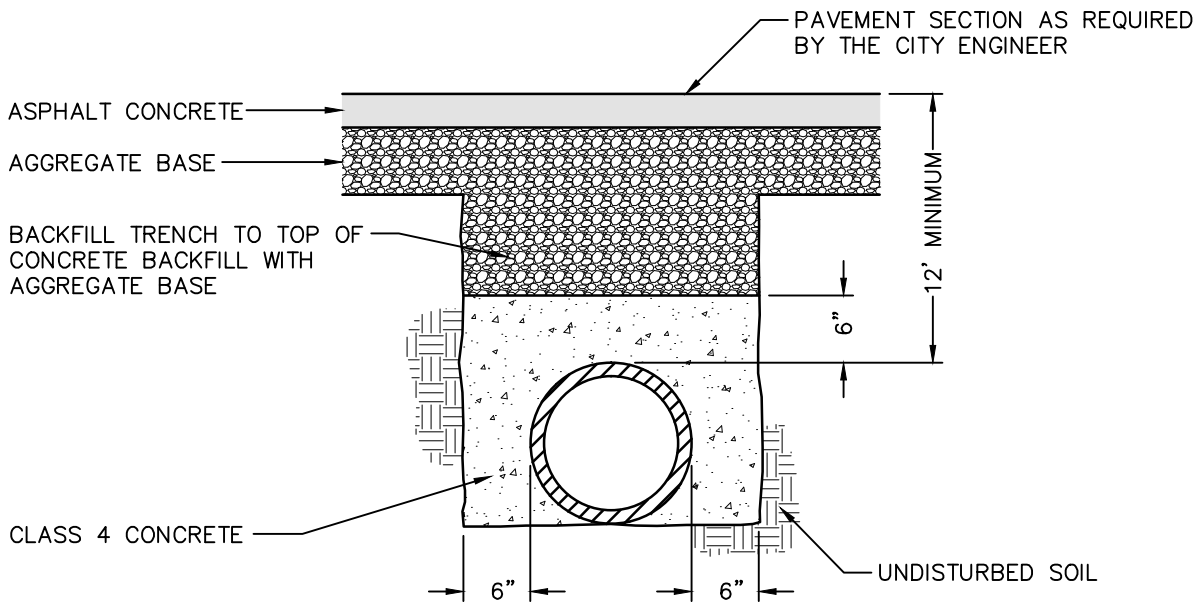
TRENCH BACKFILL/PATCH PAVING

REVISIONS

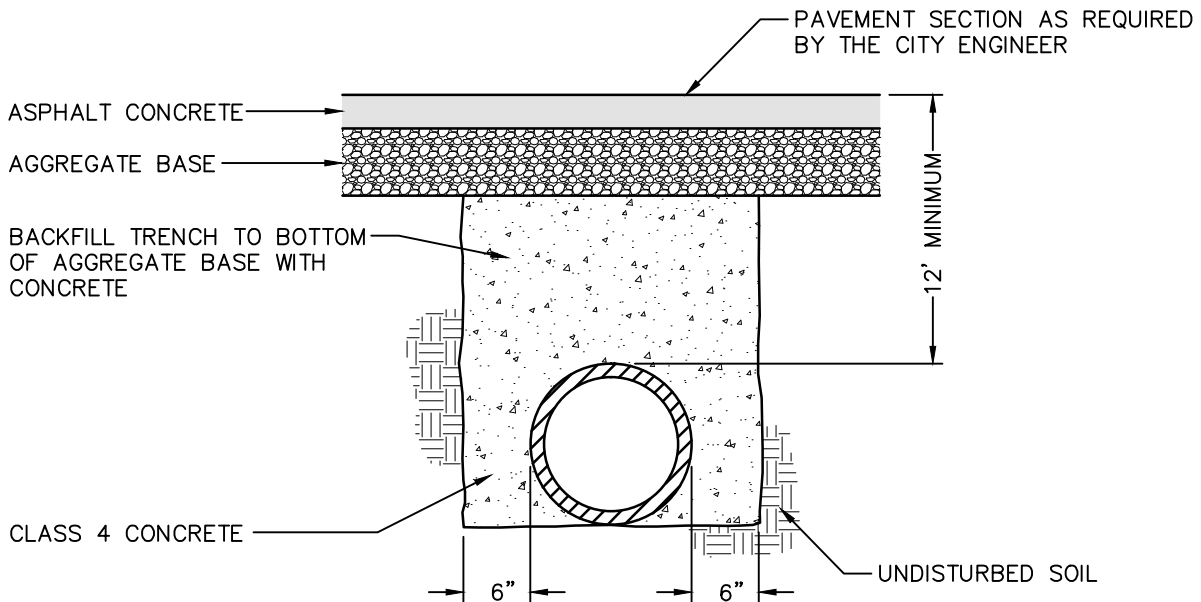
10/31/14

BK 2016

E-1



OPTION 1



OPTION 2

NOTES:

1. PIPE CONCRETE BACKFILL SHALL BE REQUIRED FOR ALL PIPE INSTALLED WITH LESS THAN 24" OF COVER OR AS DIRECTED BY THE CITY ENGINEER.
2. ALL CONCRETE BACKFILL SHALL BE CLASS 4 CONCRETE.
3. CONCRETE BACKFILL SHALL BE PLACED IN THE TRENCH AGAINST UNDISTURBED SOIL AND SHALL BE PLACED IN A MANNER THAT WILL PREVENT FLOATING OR SHIFTING OF THE PIPE.
4. FOREIGN MATERIAL WHICH FALLS INTO THE TRENCH DURING PLACEMENT OF THE CONCRETE SHALL BE IMMEDIATELY REMOVED.
5. NO MATERIAL SHALL BE PLACED ON TOP OF THE CONCRETE BACKFILL UNTIL 8 HOURS AFTER PLACING THE CONCRETE BACKFILL, AS DIRECTED BY THE CITY ENGINEER.
6. TRENCH SHALL BE BACKFILLED AND RE-SURFACED PER TRENCH BACKFILL/PATCH PAVING STANDARD DRAWING.

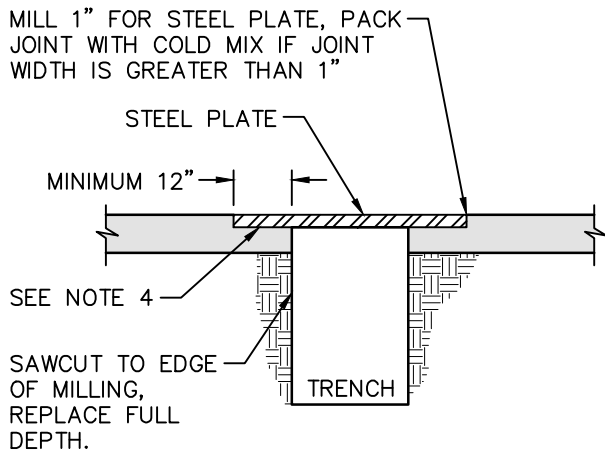
APPROVED BY:  09/16/16
 CITY ENGINEER R.P.E. 81734 DATE

**CITY OF VISALIA
 DESIGN & IMPROVEMENT STANDARDS**

PIPE CONCRETE BACKFILL

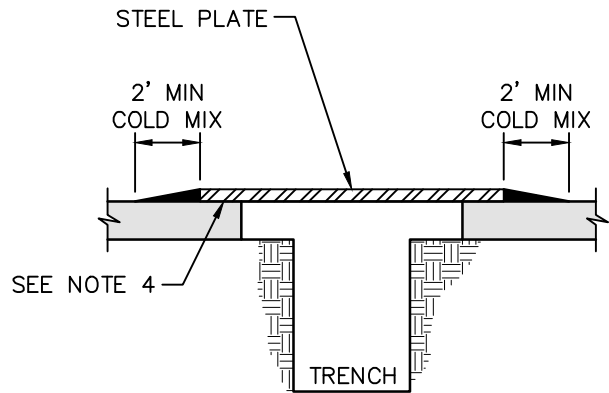
REVISIONS
 06/14/13
 BK 2016

E-2



TYPE "A" PLATING

CITY POSTED SPEEDS OF GREATER THAN 25 MPH OR BUS & TRUCK ROUTE



TYPE "B" PLATING

CITY POSTED SPEEDS OF 25 MPH AND UNDER

TRENCH WIDTH	MINIMUM PLATE THICKNESS
10" (0.25 M)	1/2" (13 MM)
1'-11" (0.58 M)	3/4" (19 MM)
2'-7" (0.80 M)	7/8" (22 MM)
3'-5" (1.04 M)	1" (25 MM)
5'-3" (1.60 M)	1 1/4" (32 MM)

NOTES:

1. WHEN BACKFILLING OPERATIONS CANNOT BE PROPERLY COMPLETED WITHIN A WORK DAY, STEEL PLATES SHALL BE INSTALLED USING EITHER TYPE "A" OR TYPE "B" PLATING METHODS, OR AS DIRECTED BY CITY ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF THE STEEL PLATES, SHORING OR BRACING OF THE TRENCH AND ENSURING THAT THEY MEET THE MINIMUM SPECIFICATIONS OF CALTRANS TR-0157.
2. USE OF STEEL PLATE BRIDGING SHOULD NOT EXCEED 4 CONSECUTIVE WORKING DAYS IN ANY GIVEN WEEK.
3. THE TRENCH SHALL BE ADEQUATELY SHORED OR BRACED TO SUPPORT THE STEEL PLATE BRIDGING AND TRAFFIC LOADS.
4. THE CONTRACTOR SHALL PROVIDE ADEQUATE OVERLAP OF PLATE ON ASPHALT TO ASSURE NO SLIPPAGE OF PLATE AND NO COLLAPSING OF TRENCH. PLATES SHALL BE PINNED TO THE PAVEMENT SURFACE, WITH A MINIMUM OF 2 DOWELS PRE-DRILLED INTO THE CORNERS OF THE PLATE AND DRILLED 2" INTO THE PAVEMENT, WITH A MINIMUM 1' OVERLAP ONTO EXISTING STABLE MATERIAL. WHEN STEEL PLATES ARE REMOVED, THE DOWEL HOLES IN THE PAVEMENT SHALL BE BACKFILLED WITH EITHER GRADED FINES OF ASPHALT CONCRETE MIX, CONCRETE SLURRY OR AN EQUIVALENT SLURRY THAT IS APPROVED BY CITY ENGINEER.
5. STEEL PLATES USED IN THE TRAVELED PORTION OF THE RIGHT OF WAY SHALL HAVE A SURFACE THAT WAS MANUFACTURED WITH A NOMINAL COEFFICIENT OF FRICTION (COF) OF 0.35 AS DETERMINED BY CALIFORNIA TEST METHOD 342, OR AS APPROVED BY CITY ENGINEER. SURFACING REQUIREMENTS ARE NOT NECESSARY FOR STEEL PLATES USED IN PARKING STRIPS, ON SHOULDERS NOT USED FOR TURNING MOVEMENTS, OR ON CONNECTING DRIVEWAYS, ETC. NOT OPEN TO THE PUBLIC. FOR SPANS GREATER THAN 5'-3", A STRUCTURAL DESIGN SHALL BE PREPARED BY A CALIFORNIA REGISTERED CIVIL ENGINEER.
6. ALL STEEL PLATES WITHIN THE RIGHT OF WAY, WHETHER USED IN OR OUT OF THE TRAVELED WAY, SHALL BE WITHOUT DEFORMATION.
7. A ROUGH ROAD SIGN (W8-8) WITH BLACK LETTERING ON AN ORANGE BACKGROUND SHALL BE USED IN ADVANCE OF STEEL PLATES IN ADDITION TO ANY OTHER REQUIRED CONSTRUCTION SIGNING.
8. "POSTED SPEED" DOES NOT INCLUDE TEMPORARY CONSTRUCTION SIGNING.

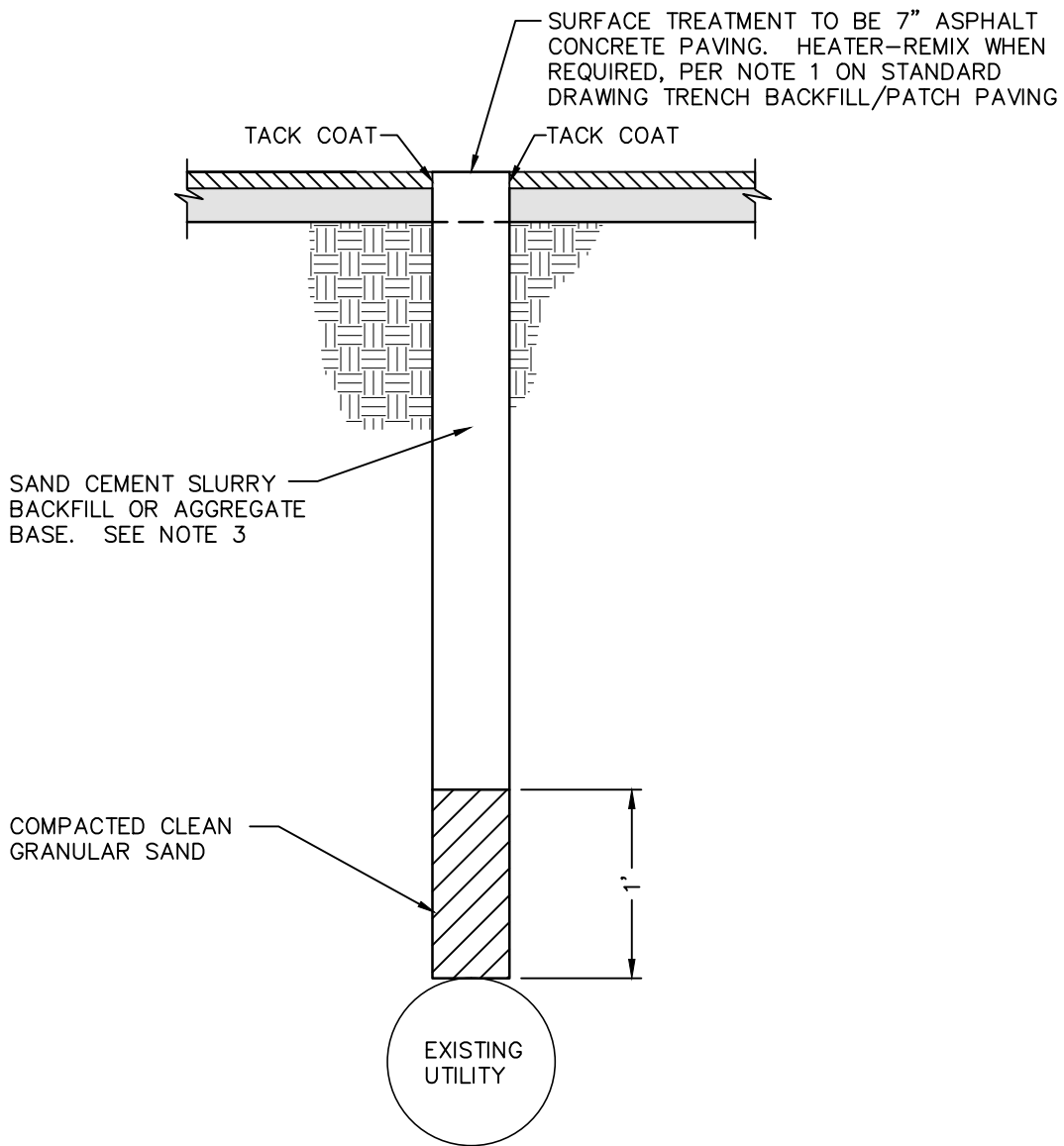
APPROVED BY: 
 CITY ENGINEER R.P.E. 81734 09/16/16
 DATE

CITY OF VISALIA
 DESIGN & IMPROVEMENT STANDARDS

TRENCH PLATE DETAILS

REVISIONS
 06/14/13
 BK 2016

E-3



NOTES:

1. THIS BACKFILL METHOD IS REQUIRED FOR UTILITY POTHOLES 9" DIAMETER OR LESS, OR MAXIMUM DIMENSION IN ANY DIRECTION OF 9" OR LESS, OR ANY POTHOLE DIRECTED BY THE ENGINEER TO BE BACKFILLED BY THIS METHOD.
2. POTHOLES WITH DIMENSIONS GREATER THAN 9" SHALL BE BACKFILLED PER STANDARD DRAWING TRENCH BACKFILL/PATCH PAVING.
3. TWO SACK SAND CEMENT SLURRY BACKFILL OR CLASS 2 AGGREGATE BASE COMPACTED PER STANDARD DRAWING TRENCH BACKFILL/PATCH PAVING, SHALL CONFORM TO THE CITY OF VISALIA STANDARD SPECIFICATIONS.
4. TEMPORARY TRENCH SURFACING SHALL CONSIST OF A MINIMUM OF 2" COLD MIX AND SHALL BE REQUIRED WHENEVER THE STREET IS TEMPORARILY OPENED TO TRAFFIC. ALL TEMPORARY MATERIAL SHALL BE COMPLETELY REMOVED PRIOR TO FINAL PAVING.
5. WHEN 3 OR MORE POTHOLES HAPPEN WITHIN 12 LINEAR FEET ON A SINGLE TRAVEL LANE, THE CONTRACTOR SHALL MILL AND REPLACE THE ASPHALT CONCRETE SECTION.

APPROVED BY:  09/16/16
 CITY ENGINEER R.P.E. 81734 DATE

CITY OF VISALIA
 DESIGN & IMPROVEMENT STANDARDS

UTILITY POTHOLE BACKFILL

REVISIONS
 06/14/13
 BK 2016

E-4