

- ① INSTALL SAND BEDDING: 3" MINIMUM THICKNESS SAND BEDDING TO BE HAND PLACED AND COMPACTED TO 95% MINIMUM RELATIVE COMPACTION.
- ② INSTALL HAUCHING: HAND PLACED AND COMPACTED SAND TO 95% MINIMUM RELATIVE COMPACTION TO SPRING LINE OF PIPE.
- ③ INITIAL SAND BACKFILL: INSTALL AND COMPACT TO 95% MINIMUM RELATIVE COMPACTION 12" ABOVE PIPE CROWN.
- ④ INSTALL BACKFILL: USE CLASS II AGGREGATE BASE ROCK (AB) BACKFILL COMPACTED IN 6" LIFTS TO 95% MINIMUM RELATIVE COMPACTION OR TWO (2) SACK CEMENT/SAND SLURRY MIX. NO FLOODING OR JETTING SHALL BE ALLOWED.
- ⑤ SAW CUT EXISTING PAVEMENT A MINIMUM OF 12" PAST THE TRENCH LINES AND TACK COAT ALL EDGES PRIOR TO PAVING.
- ⑥ MATCH EXISTING AB SECTION OR AS A MINIMUM, INSTALL AN 8" MINIMUM THICK CLASS II AB SECTION IN 2" LIFTS BASE ROCK, COMPACTED TO 95% MINIMUM RELATIVE COMPACTION.
- ⑦ MATCH EXISTING ASPHALTIC CONCRETE (AC) OR AS A MINIMUM, INSTALL A 6" MINIMUM AC IN 2 LIFTS WITH A 3/4" TYPE B AC BASE COAT, AND A 1/2" THICK AC TYPE B SURFACE COAT.
- ⑧ SURFACE SHALL BE SMOOTH AND CONFORM TO EXISTING SURFACES AND AN OVERCOAT SHALL BE INSTALLED A MINIMUM 3" BEYOND THE NEW PAVING.
- ⑨ TRENCH WIDTH SHALL BE NOT LESS THAN PIPE OUTSIDE DIAMETER PLUS 12" MINIMUM.
- ⑩ IF THE DISTANCES IS LESS THAN 3', PAVEMENT RESTORATION SHALL EXTEND TO LIP OF GUTTER. FINAL PAVING SHALL BE 1/4" ABOVE THE TOP OF GUTTER.

NOTES:

- A. ALL STREET CUTS REQUIRE AN ENCROACHMENT PERMIT APPROVED BY THE CITY ENGINEER AT LEAST TWO WORKING DAYS PRIOR TO START OF WORK.
- B. PIPE EMBEDMENT SHALL CONFORM TO THE PRACTICE RECOMMENDED FOR CLASS III MATERIAL (SAND) IN ASTM D 2321
- C. TRENCH INSTALLATION PARALLEL TO EXISTING OR PROPOSED TRENCHES SHALL MAINTAIN A MINIMUM OF 24" SEPARATION (EDGE TO EDGE).
- D. CONTRACTOR MAY BE REQUIRED TO PLACE A GRANULAR TRENCH BEDDING DEPENDING ON SOIL CONDITION AND GEOTECHNICAL REQUIREMENTS.
- E. WHEN STREET CUTS ARE LOCATED ADJACENT AND PARALLEL TO CURB, FINAL PAVING SHOULD BE 1/4" ABOVE LIP OF GUTTER.
- F. CONTRACTOR SHALL PROTECT SAND BACKFILL FROM CONSTRUCTION TRAFFIC.

TRENCH RESTORATION/BACKFILL

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 CHECKED BY:
 LAST REVISED: 8/8/14

SCALE:
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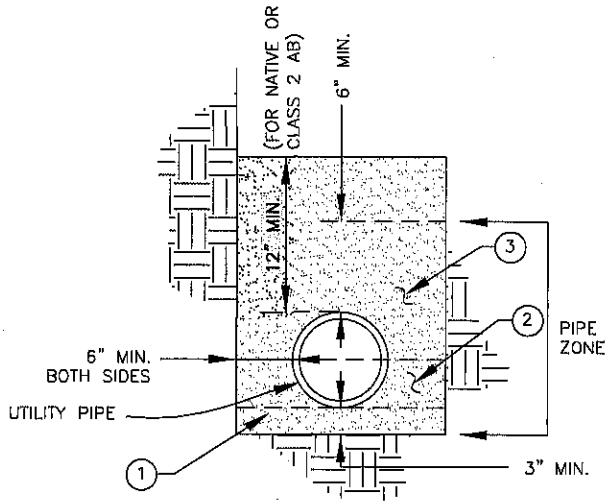


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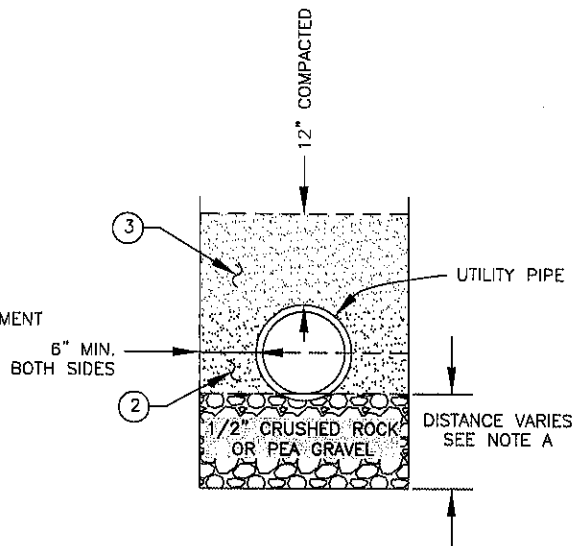
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 CITY ENGINEER DATE

SECTION: GENERAL
 UNDERGROUND

DRAWING NO.: UN-1



CASE "A" NORMAL TRENCH
NTS



CASE "B" WET/SPONGY GROUND
NTS

- ① INSTALL SAND BEDDING: 3" MINIMUM THICKNESS SAND BEDDING TO BE HAND PLACED AND COMPACTED TO 95% MINIMUM RELATIVE COMPACTION.
- ② INSTALL HAUCHING: HAND PLACED AND COMPACTED SAND TO 95% MINIMUM RELATIVE COMPACTION TO SPRING LINE OF PIPE.
- ③ INITIAL ENGINEER APPROVED BACKFILL: INSTALL AND COMPACT BACKFILL IN 6" LIFTS TO 95% MINIMUM RELATIVE COMPACTION 12" ABOVE PIPE CROWN.

NOTES:

- A. DISTANCES WILL VARY BASED UPON FIELD CONDITIONS AND GEOTECHNICAL ENGINEERING REQUIREMENTS.
- B. PIPE EMBEDMENT SHALL CONFORM TO THE PRACTICE RECOMMENDED FOR CLASS III MATERIAL (SAND) IN ASTM D 2321 "UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS".

TRENCH RESTORATION/BACKFILL



APPROVED BY:

Paul Jordan

CITY ENGINEER

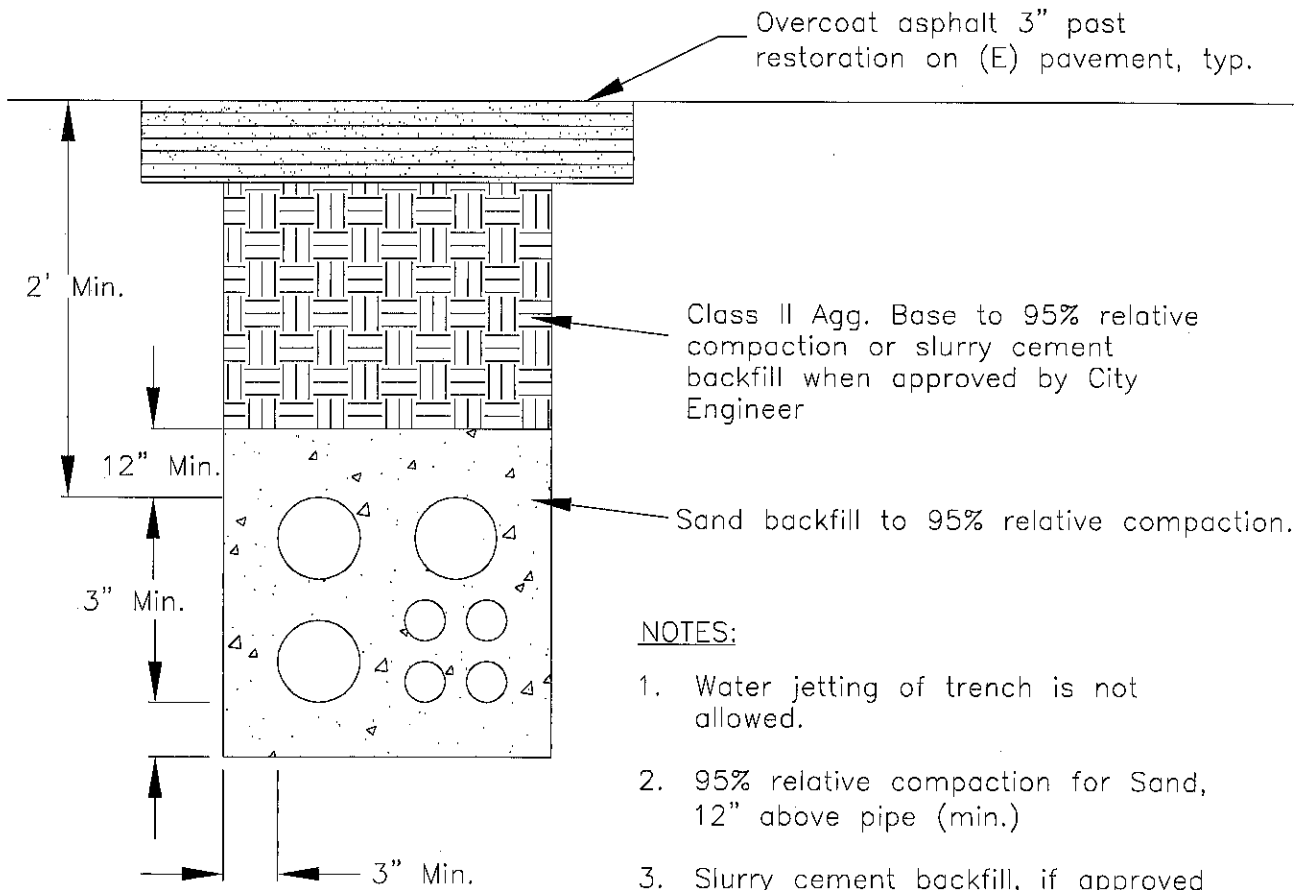
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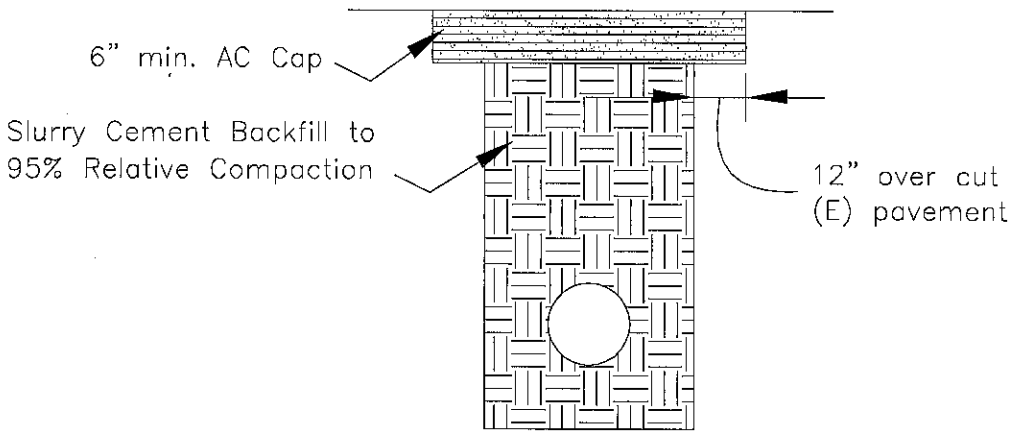
SECTION: GENERAL
UNDERGROUND

DRAWING NO.: UN-2



NOTES:

1. Water jetting of trench is not allowed.
2. 95% relative compaction for Sand, 12" above pipe (min.)
3. Slurry cement backfill, if approved by City Engineer, shall be not less than 1.5 sacks per cu. yard and not more than 2 sacks per cu. yard



TRENCH RESTORATION BY ROCKWHEEL

TRENCH RESTORATION

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LAST REVISED: 6/20/14	

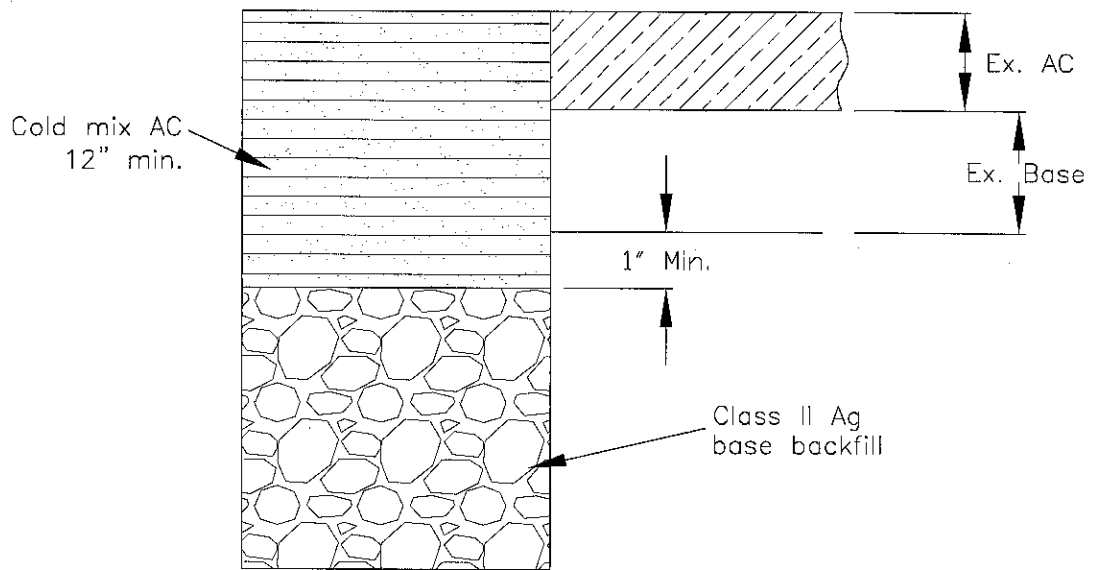
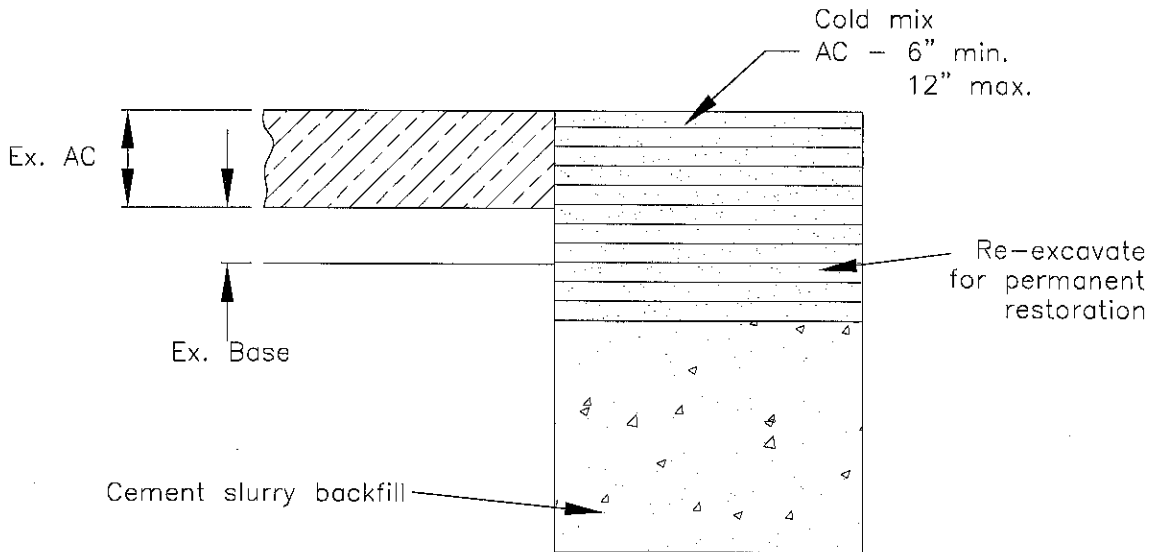


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CITY ENGINEER

8-18-14
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SECTION: GENERAL UNDERGROUND

DRAWING NO.: UN-3



NOTES:

1. Apply tack coat to cut edge of existing pavement.
2. Temporary Restoration (30 days only).
 Slurry Cement Backfill (See Cal Trans Specs., May 2006)
 Slurry will contain no more than 188 pounds of cement per cubic yard of material.

TEMPORARY TRENCH RESTORATION

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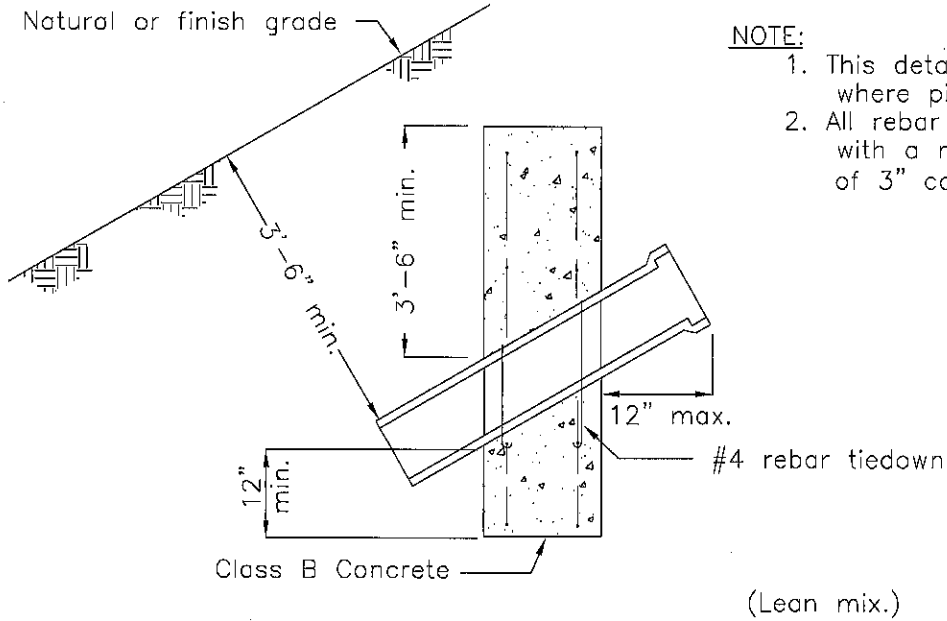


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SECTION: GENERAL
 UNDERGROUND

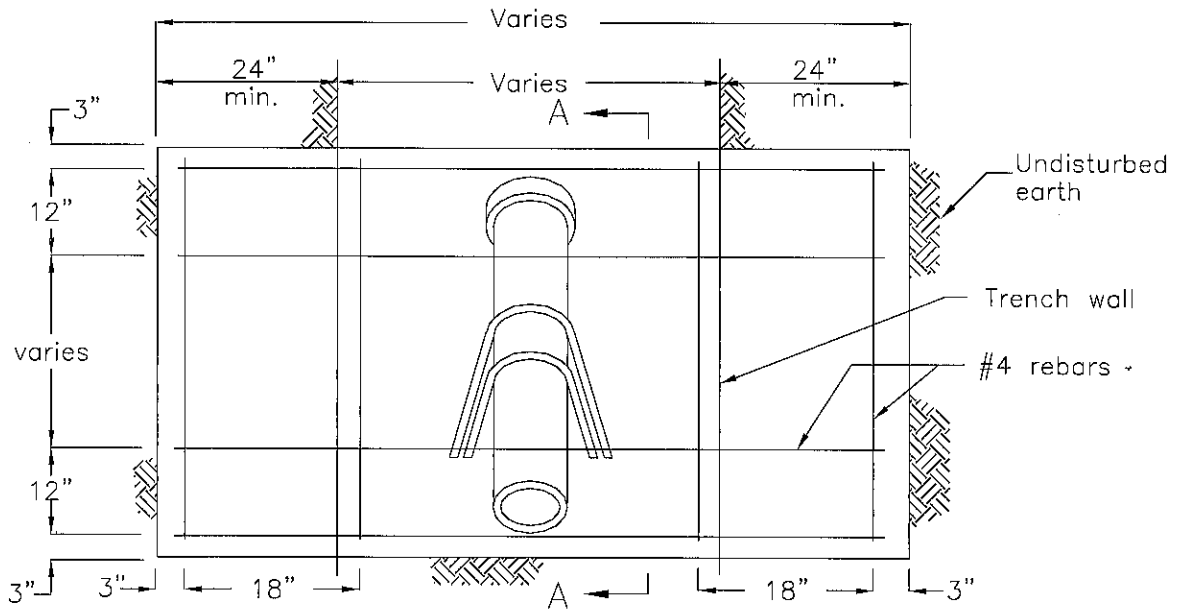
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- NOTE:**
1. This detail to be used where pipe S>20%.
 2. All rebar shall be #4 with a minimum cover of 3" concrete.

Section A-A

10"



Front View

PIPE ANCHOR FOR HILLSIDE DEVELOPMENTS



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CITY ENGINEER

DATE

8-18-14

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SECTION:
 GENERAL
 UNDERGROUND

DRAWING NO.: UN-5