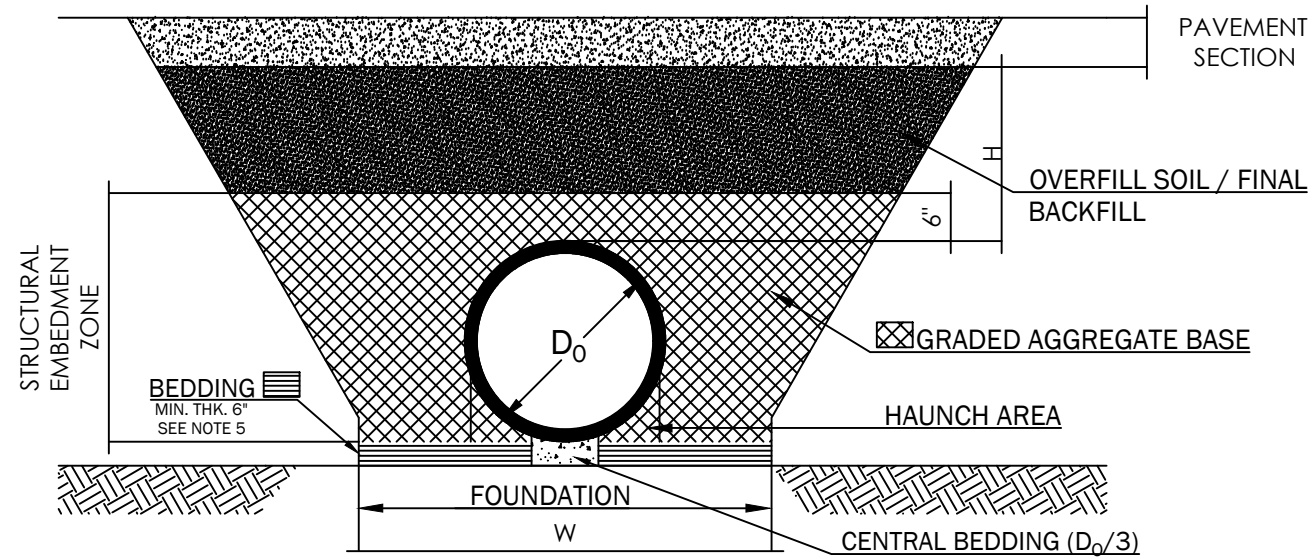
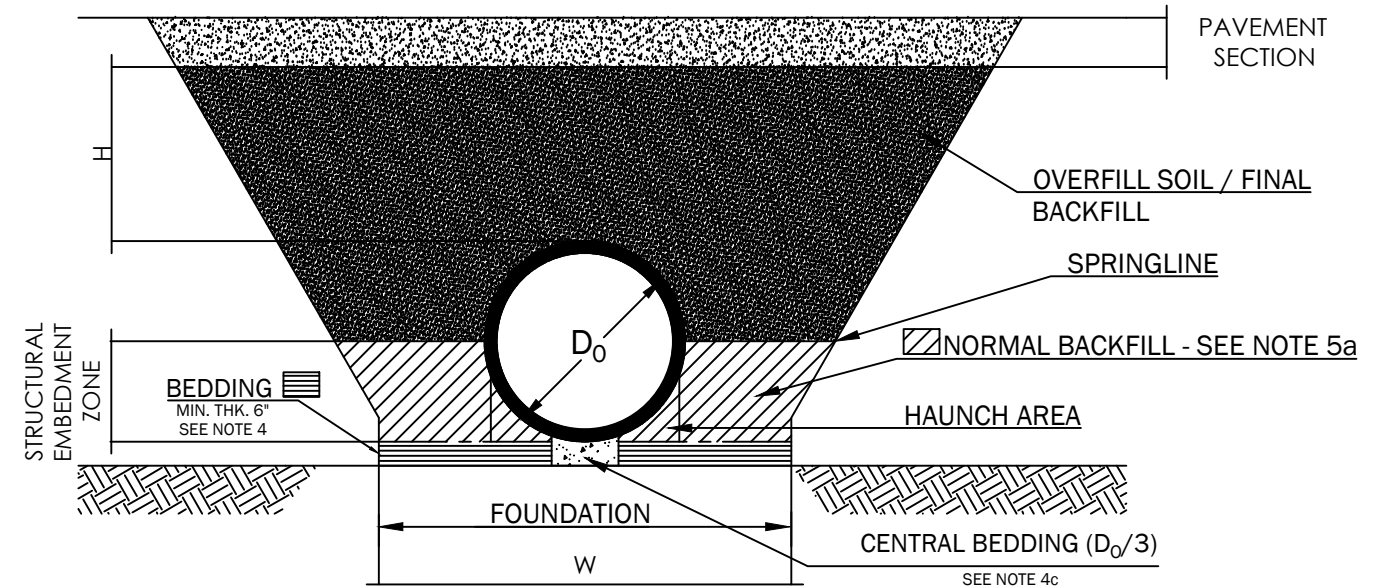


## FLEXIBLE PIPE TRENCH DETAIL



SEE GDOT 1030P

## RIGID (RCP) PIPE TRENCH DETAIL



SEE GDOT 1030D

SEE NOTE 4c

### NOTES

1. THERMOPLASTIC PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH:
  - a. HDPE PER AASHTO M294 EXCEPT MAXIMUM DIAMETER IS 48" PER GDOT 550.
  - b. POLYPROPYLENE PER ASTM F2881 AND AASHTO M330 EXCEPT MAXIMUM DIAMETER IS 48" PER GDOT 550.
  - c. THERMOPLASTIC PIPES SHALL NOT CONTAIN ANY POST-CONSUMER RECYCLED RESINS.
2. CORRUGATED METAL PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM M274 OR ASTM M196.
3. THE FOUNDATION SHALL BE STIFF TO HARD IN SITU SOIL, STABILIZED SOIL OR COMPACTED FILL HAVING ADEQUATE BEARING CAPACITY TO SUPPORT THE PIPE AND OVERFILL. NOTE, IF SOFT FOUNDATION OR GROUND WATER IS ENCOUNTERED, CONTACT PROJECT ENGINEER FOR RECOMMENDATIONS. (NOTE, IN AREAS WHERE FOUNDATION MUST BE IMPROVED DUE TO SOFT - YIELDING CONDITIONS, THE TRENCH WIDTH SHALL BE 3 TIMES THE OUTER DIAMETER OF THE PIPE).
4. W-MINIMUM TRENCH WIDTH SHALL BE  $(D_0 \times 1.5) + 12"$  OR ENOUGH ROOM TO PLACE AND COMPACT BEDDING AND PIPE EMBEDMENT MATERIAL, WHICHEVER IS GREATER.
5. BEDDING, HAUNCH, AND PIPE EMBEDMENT ZONE:
  - a. BEDDING:
    - i. BEDDING THICKNESS SHALL NOT BE LESS THAN 6" IN SOIL FOUNDATION. INCREASE BEDDING THICKNESS TO A MINIMUM OF 12" IF ROCK OR UNYIELDING.
    - ii. BEDDING MATERIAL - TYPE 1 OR TYPE 2 BACKFILL MATERIAL PER GDOT 812 BACKFILL MATERIALS.
    - iii. CENTRAL BEDDING SHALL BE LOOSELY PLACED AND NOT COMPACTED PRIOR TO PLACEMENT OF PIPE.
  - b. HAUNCH AND STRUCTURAL EMBEDMENT BACKFILL MATERIALS - GRADED AGGREGATE (GAB) MEETING GDOT SECTION 815. MATERIAL PLACED IN STRUCTURAL EMBEDMENT BACKFILL ZONES SHALL BE PLACED IN MAXIMUM 6" LIFTS OR LESS TO ACHIEVE 95% STANDARD PROCTOR COMPACTION. LIFTS SHALL BE BROUGHT UP EVENLY AND UNIFORMLY ON EACH SIDE OF THE PIPE TO AN ELEVATION OF NOT LESS THAN 6" ABOVE THE PIPE.
    - i. HAUNCH ZONE MATERIAL SHALL BE "KNIFED" AND TAMPED BY HAND TO FILL VOIDS AND ENSURE ADEQUATE CONTACT OF THE EMBEDMENT MATERIAL AND PIPE.
6. FINAL BACKFILL MATERIALS AND COMPACTION SHALL BE AS REQUIRED FOR EMBANKMENT OR SURFACE CONDITION BEARING CAPACITY (E.G., ROADWAY, NON-TRAFFIC AREA).
7. WHEN IMPACT OR VIBRATORY EQUIPMENT IS USED FOR COMPACTION, CARE SHALL BE TAKEN TO AVOID DAMAGING THE PIPE, PARTICULARLY FOR INSTALLATIONS WITH LESS THAN 2 FEET OF EARTH FILL OVER THE PIPE.
8. PP OR HDPE SHALL NOT BE USED IN ANY ROADWAY INSTALLATION WITH LESS THAN 2 FEET OF COVER BETWEEN TOP OF PIPE AND BOTTOM OF PAVEMENT SECTION.
9. PLACE A MINIMUM OF 3 FEET OF COMPACTED SOIL ABOVE PIPE PRIOR TO ALLOWING CONSTRUCTION EQUIPMENT TO CROSS.
10. FLEXIBLE PIPE SHALL BE VIDEO INSPECTED, AND DEFLECTION TESTED USING A MANDREL OR LASER PROFILER NO SOONER THAN 30 DAYS AFTER PLACEMENT OF FINAL BACKFILL AND STRUCTURAL PAVEMENT. ALL REPORTS SHALL BE PROVIDED TO ENGINEER FOR REVIEW PRIOR TO FIND ACCEPTANCE. FLEXIBLE PIPE WITH DEFLECTION GREATER THAN 7.5% OR MORE SHALL BE REMOVED, REPLACED, AND RE-INSPECTED AT THE CONTRACTORS EXPENSE.
11. TRENCH INSTALLATION SPECIFICATIONS (SEE GDOT 550 FOR FLEXIBLE PIPE INSTALLATION AND INSPECTION).

FLEXIBLE PIPE COVER (H) - TOP OF PIPE TO BOTTOM OF PAVEMENT SECTION	
MIN. COVER / FILL HEIGHT (H)	GREATER THAN OR EQUAL TO 24"
MAXIMUM ALLOWABLE FILL HEIGHTS (H) AS DEFINED BY ENGINEER OF RECORD	

### NOTES

1. RCP SHALL BE MANUFACTURED TO MEET AASHTO M170/ASTM C76. PIPE STRENGTH CLASS AS SPECIFIED ON PLANS.
2. FOUNDATION SHALL BE STIFF TO HARD IN-SITU SOILS AND CAPABLE OF PROVIDING ADEQUATE BEARING CAPACITY TO SUPPORT THE PIPE AND ALL DESIGN LOADS. IF GROUNDWATER OR SOFT SOILS ARE ENCOUNTERED DURING INSTALLATION SEE GUIDELINES IN THE CONTRACT DOCUMENTS AND CONTACT THE ENGINEER OF RECORD.
3. W - MINIMUM TRENCH WIDTH SHALL BE  $D_0 + 24"$  OR ENOUGH ROOM BETWEEN PIPE AND TRENCH WALL TO PLACE AND COMPACT MATERIALS IN HAUNCH AND STRUCTURAL EMBEDMENT ZONE, WHICHEVER IS GREATER.
4. BEDDING:
  - a. BEDDING MATERIAL SHALL MEET TYPE 1 OR TYPE 2 FOUNDATION BACKFILL MATERIAL AS SPECIFIED IN GDOT 812 BACKFILL MATERIALS.
  - b. BEDDING THICKNESS SHALL NOT BE LESS THAN 6" IN SOIL FOUNDATION. INCREASE BEDDING THICKNESS TO A MINIMUM OF 12" IF ROCK OR UNYIELDING.
  - c. CENTRAL BEDDING SHALL BE LOOSELY PLACED AND NOT COMPACTED PRIOR TO PLACEMENT OF PIPE.
5. STRUCTURAL EMBEDMENT BACKFILL AND HAUNCH ZONES IN ROADWAY OR PAVED AREAS USE:
  - a. MATERIAL SHALL BE NORMAL BACKFILL MATERIAL MEETING CLASS I & II AS NOTED IN GDOT SECTION 207. SEE GDOT 810.2.01 FOR DETAILED INFORMATION ON MATERIAL CLASSIFICATION.
  - b. HAUNCH & EMBEDMENT SHALL BE PLACED IN 6" LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY.
  - c. SEE ASTM C1479 TYPE 3 INSTALLATION, GDOT SPECIFICATION 550 & STANDARD DRAWING 1030D FOR MORE INFORMATION.
6. OUTSIDE OF ROADWAYS AND IN NON-TRAFFIC AREAS: HAUNCH STRUCTURAL BACKFILL TO SPRINGLINE MAY BE IN SITU SOILS THAT CAN BE COMPACTED TO 85% SPD (SEE TYPE 4 INSTALLATION IN ASTM 1479 FOR MORE INFORMATION).
7. OVERFILL / BACKFILL MATERIALS AND COMPACTION SHALL BE AS REQUIRED FOR EMBANKMENT OR SURFACE CONDITION BEARING CAPACITY (E.G., ROADWAY, NON-TRAFFIC AREA).
8. WHEN IMPACT OR VIBRATORY EQUIPMENT IS USED FOR COMPACTION, CARE SHALL BE TAKEN TO AVOID DAMAGING THE PIPE, PARTICULARLY FOR INSTALLATIONS WITH LESS THAN 3 FEET OF EARTH FILL OVER THE PIPE.
9. PLACE A MINIMUM OF 3 FEET OF COMPACTED SOIL ABOVE PIPE PRIOR TO ALLOWING CONSTRUCTION EQUIPMENT TO CROSS.
10. FILL HEIGHT/COVER (H) - MINIMUM FILL HEIGHT IS 1 FOOT TOP OF PIPE TO BOTTOM OF PAVEMENT SECTION:

REINFORCED CONCRETE PIPE CLASSIFICATION (AASHTO M170)	
MAXIMUM FILL (H)	CLASS
$\leq 15'$	III
$> 15' \text{ TO } \leq 20'$	IV
$> 20' \text{ TO } \leq 30'$	V
$> 30'$	SPECIAL DESIGN

- NOTE: FILL HEIGHT BASED ON GDOT 550 & 1030D AND ASTM 1479 TYPE 3 INSTALLATION.
11. TRENCH INSTALLATION SPECIFICATIONS (SEE GDOT 550 FOR RIGID PIPE INSTALLATION AND INSPECTION).

NO.	REVISION	DATE

DESIGN AND CONSTRUCTION STANDARDS

PIPE TRENCH INSTALLATION DETAIL

NOT TO SCALE    DATE:

STANDARD #: