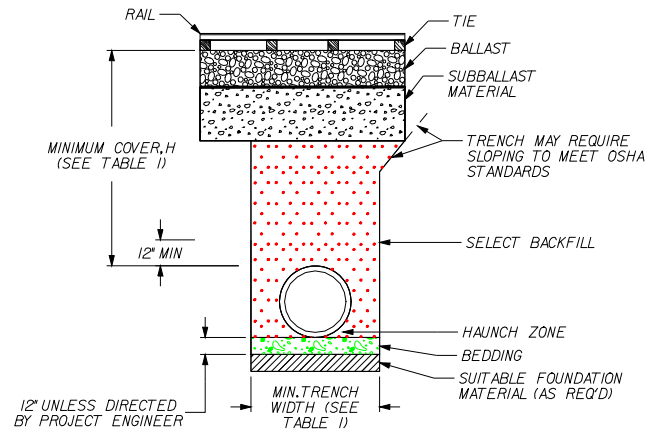
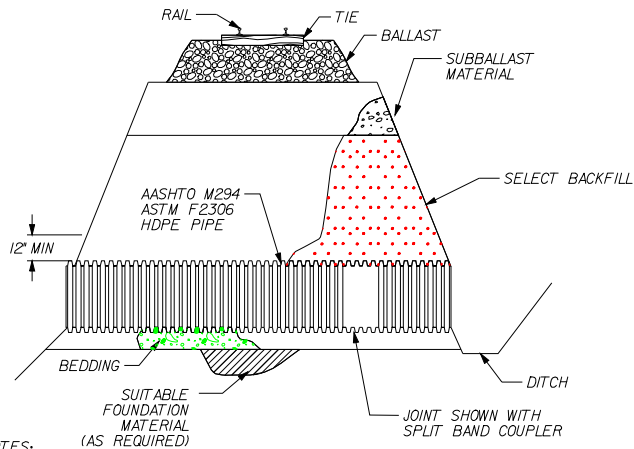


UNDER EXISTING TRACK



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO OPEN GRADED MATERIAL.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE UNSUITABLE MATERIAL TO THE REQUIRED DEPTH AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE DESIGN ENGINEER. DEPTH OF FOUNDATION IMPROVEMENT MAY BE REDUCED BY USE OF GEOTEXTILE FABRIC AND GRID. REQUIRED TRENCH WIDTH MAY INCREASE WHEN FOUNDATION MATERIALS ARE MODIFIED.
4. BEDDING: BEDDING MATERIAL SHALL CONFORM TO CATEGORY B DENSE GRADED AGGREGATE IN ACCORDANCE WITH SECTION GA - GRADED AGGREGATE OF THE NS STANDARD SPECIFICATIONS UNLESS STATED OTHERWISE BY THE DESIGN ENGINEER OR PLANS. MINIMUM BEDDING THICKNESS SHALL NOT BE LESS THAN 12 INCHES. THE MIDDLE THIRD OF THE BEDDING SHALL BE LOOSE AND UNIFORM IN DEPTH AND CONSISTENCY. AFTER PIPE IS IN PLACE, COMPACT BEDDING TO SELECT BACKFILL STANDARDS. BEDDING SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN 95 PERCENT IN ACCORDANCE WITH AASHTO T 99.
5. SELECT BACKFILL: SELECT BACKFILL MATERIAL SHALL CONFORM TO CATEGORY B DENSE GRADED AGGREGATE IN ACCORDANCE WITH SECTION GA - GRADED AGGREGATE OF THE NS STANDARD SPECIFICATIONS UNLESS STATED OTHERWISE BY THE DESIGN ENGINEER OR PLANS. MINIMUM COMPACTION SHALL BE TO A DENSITY OF NOT LESS THAN 95 PERCENT IN ACCORDANCE WITH AASHTO T 99. BACKFILL MATERIAL SHALL BE PLACED ALONGSIDE THE PIPE IN UNIFORM LAYERS AND COMPACTED. WHEN VIBRATORY COMPACTION EQUIPMENT IS USED IN CONJUNCTION WITH OTHER METHODS OF COMPACTION, THE COMPACTED DEPTH OF A SINGLE LAYER OF BEDDING MATERIAL SHALL NOT EXCEED 6 INCHES (6-9 INCHES LOOSE). WHEN NO VIBRATORY COMPACTION EQUIPMENT IS USED, THE MAXIMUM COMPACTED THICKNESS OF ONE LAYER SHALL NOT EXCEED 3 INCHES (3-6 INCHES LOOSE). IF A HAND TAMPER IS USED, IT SHALL WEIGH NOT LESS THAN 20 POUNDS AND HAVE A TAMPING FACE NOT LESS THAN 6 INCHES X 6 INCHES.
6. THE CONTRACTOR SHOULD PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATIONS TO DESIGN ENGINEER, WHERE BACKFILL VERIFICATION IS NOT PROVIDED OR WHERE BACKFILL MAY BECOME SATURATED AFTER PLACEMENT, ONLY ASTM CLASS 1 OR II (CLEAN) BEDDING AND BACKFILL SHOULD BE USED.
7. BEDDING MATERIAL SHALL BE PLACED AND COMPACTED UNDER THE HAUNCHES OF THE PIPE EXTENDING FROM THE BOTTOM OF PIPE UP TO A DISTANCE EQUAL TO 1/3 OF THE PIPE'S DIAMETER UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

TABLE 1
RECOMMENDED MINIMUM TRENCH WIDTHS,
MIN. COVER^{1,2,3,4,5} AND MAX. COVER^{1,2,3,4,5}

PIPE DIA.	MIN. TRENCH WIDTH	MINIMUM COVER	MAX. COVER CLASS I	MAX. COVER CLASS II
12"	30"	2'	25'	20'
15"	34"	2'	25'	20'
18"	39"	2'	25'	20'
24"	48"	2'	25'	20'
30"	56"	3'	25'	15'
36"	64"	3'	25'	15'
42"	72"	4'	25'	15'
48"	80"	4'	25'	15'
54"	88"	4'	25'	15'
60"	96"	4'	25'	15'

1. COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF RAILWAY TIE.
2. LOADS GREATER THAN E-80 LOAD MAY REQUIRE ADDITIONAL COVER.
3. MINIMUM COVER MAY BE INCREASED TO PREVENT PIPE DAMAGE DUE TO ROUTINE TRACK MAINTENANCE.
4. MANUFACTURER NEEDS TO VERIFY ALLOWABLE FILL HEIGHTS PER DESIGN LOADS
5. FILL HEIGHT CALCULATIONS DO NOT TAKE IN TO CONSIDERATION GROUND WATER, WHERE GROUND WATER IS ENCOUNTERED HAVE THE MANUFACTURER VERIFY FILL HEIGHTS.

LEGEND

- BALLAST
- SUBBALLAST
- SELECT BACKFILL
- BEDDING
- FOUNDATION

SCALE: NTS

DO NOT SCALE THIS DRAWING FOR DIMENSIONS NOT GIVEN

NORFOLK SOUTHERN
NORFOLK SOUTHERN RAILWAY COMPANY
OWNING COMPANY
SYSTEMWIDE
OPERATING DIVISION
OFFICE OF THE CHIEF ENGINEER - DESIGN AND CONSTRUCTION - ATLANTA, GA.

REV	BY	DATE	DESCRIPTION
LOCATION			
SYSTEMWIDE			
TITLE			
HDPE PIPE TYPICAL TRENCH DETAIL EXISTING TRACK APPLICATIONS			
DGN	PID No.	VRN	MILE POST
DWN	FILE No.	DRAWING NUMBER	
CHK	DATE	DR-HDPE-2	
OCTOBER 19, 2010			

CADD FILE#