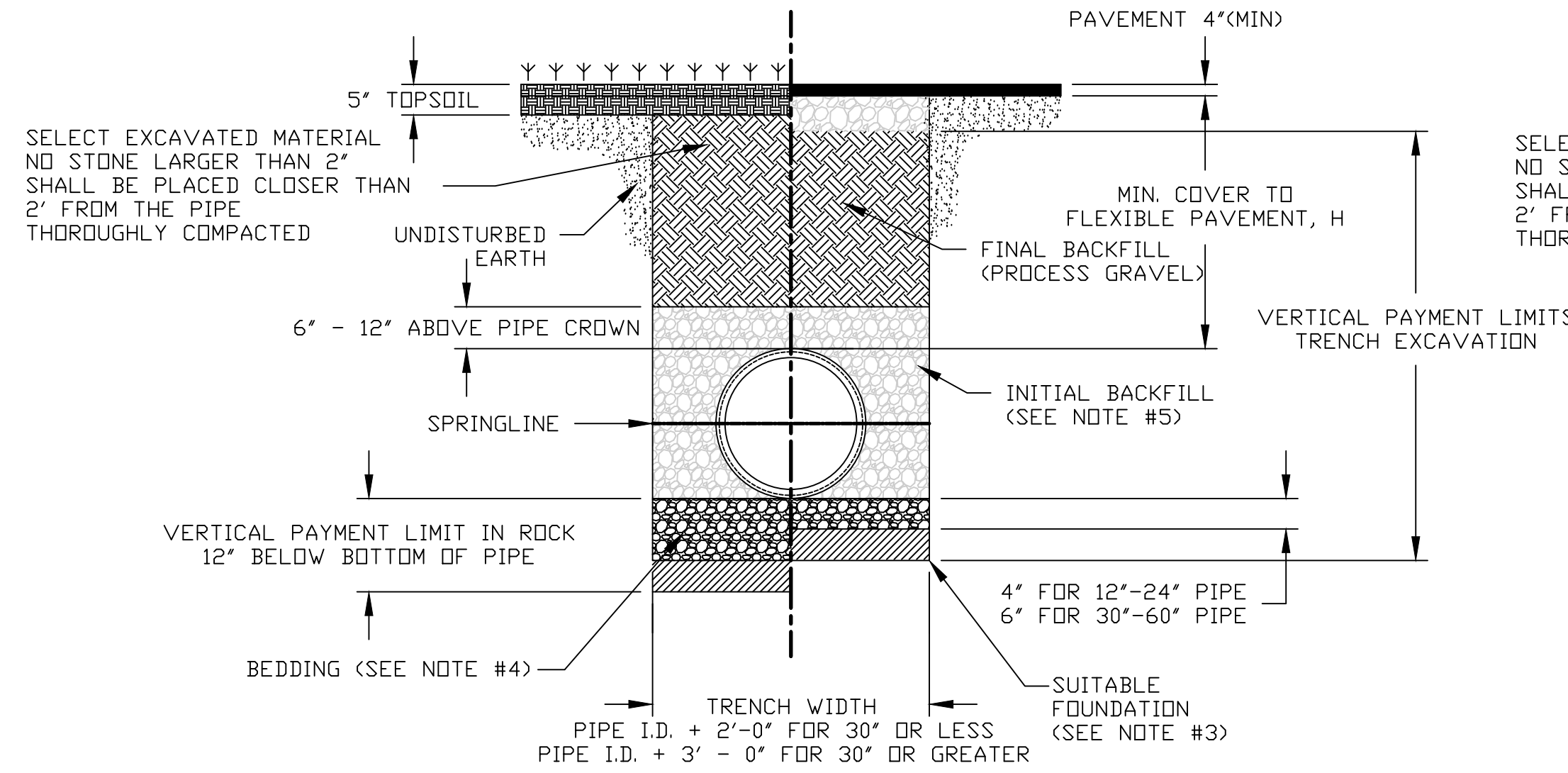


# N-12 HP STORM TRENCH INSTALLATION DETAIL ROADWAY OR IN LANDSCAPED OR GRASS AREAS

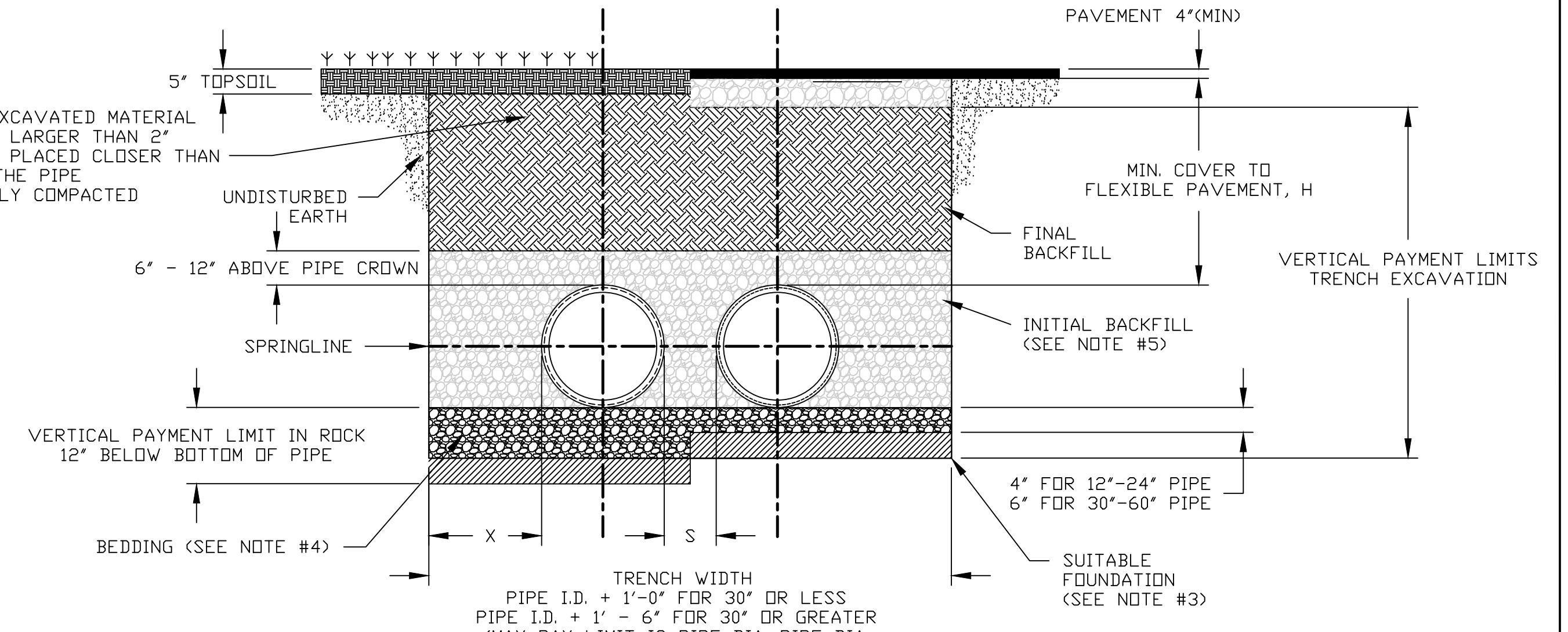
**NOTES:**

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 ADDITION
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. **FOUNDATION:** WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. **BEDDING:** SUITABLE MATERIAL SHALL BE CLASS I (FORM 816 M.02.05). THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100MM) FOR 4"-24" (100MM-600MM); 6" (150MM) FOR 30"-60" (750MM-900MM). WHEN GROUND WATER IS ENCOUNTERED 3" CRUSHED STONE IS REQUIRED FOR BEDDING TO SPRING LINE OF PIPE, (SILTY OR CLAYEY GRAVEL, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR CLAY/SILT MIXTURES) FOR BEDDING/BACKFILL IS NOT ALLOWED UNDER PAVEMENT.
5. **INITIAL BACKFILL:** SUITABLE MATERIAL SHALL BE CLASS I, 2 OR 3 (Form 816 M.02.05) IN THE PIPE ZONE EXTENDING NOT LESS THAN 8" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION. (SILTY OR CLAYEY GRAVEL, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR CLAY/SILT MIXTURES) FOR BEDDING/BACKFILL IS NOT ALLOWED UNDER PAVEMENT.
6. **MINIMUM COVER:** MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT.



**N-12 HP STORM TRENCH  
INSTALLATION DETAIL (STANDARD)**

NOT TO SCALE

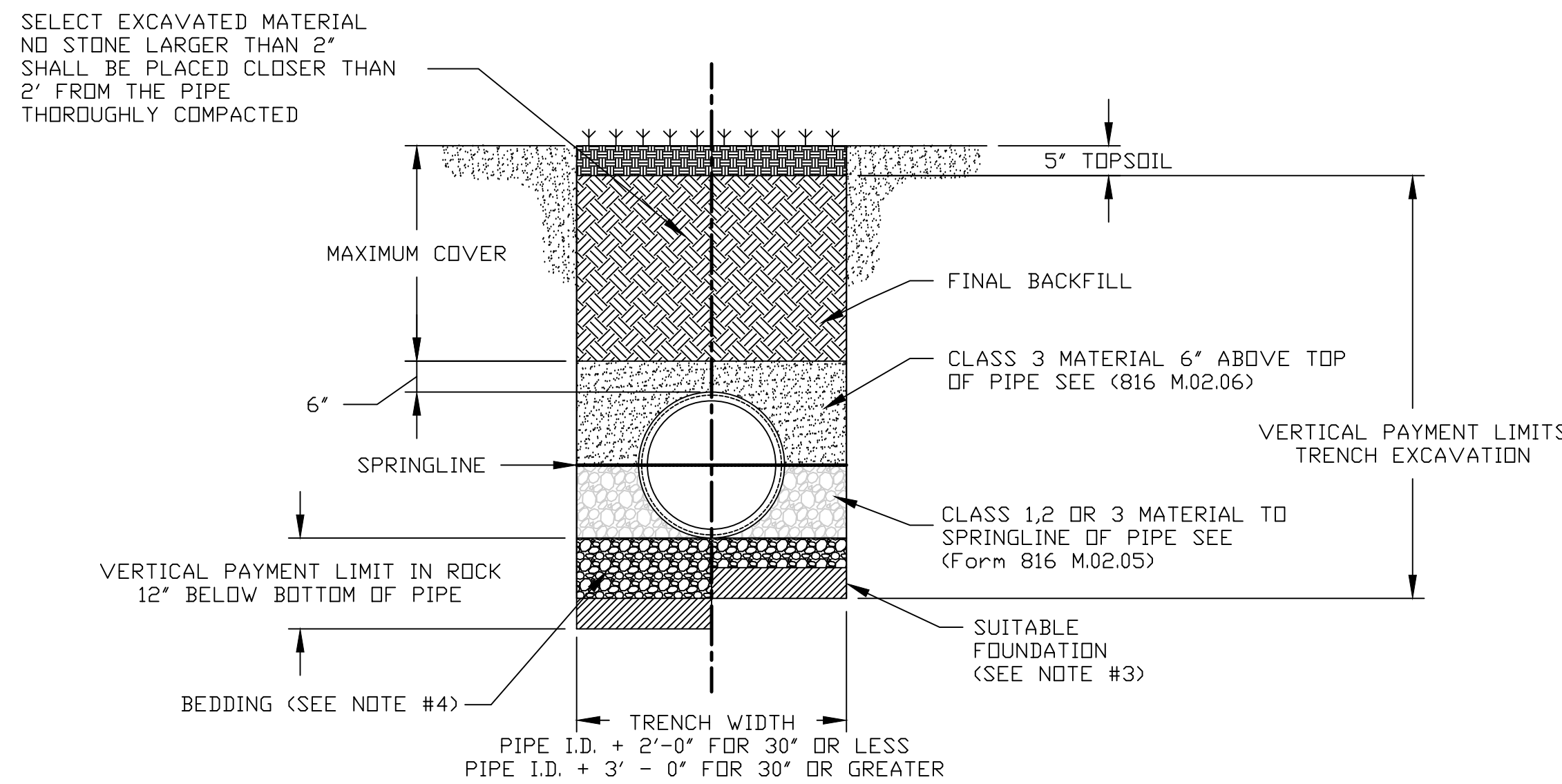


**N-12 HP STORM TRENCH  
INSTALLATION DETAIL (PARALLEL)**

NOT TO SCALE

**NOTES:**

1. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
- SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION (FORM 816) ARE NOT APPROPRIATE BACKFILL MATERIALS.
2. **FOUNDATION:** WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
3. **BEDDING:** SUITABLE MATERIAL SHALL BE CLASS I. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).
4. **BACKFILL:** FOR PIPES OUTSIDE OF PAVEMENT CLASS 1,2 OR 3 (FORM 816 M.02.05) MATERIAL TO BE USED FOR BACKFILL UP TO THE SPRING LINE OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, CLASS I MATERIAL MUST BE COMPACTED IN 6" (200mm) LIFTS TO 95% STANDARD PROCTOR DENSITY.
5. **MINIMUM COVER:** MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (300mm) FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION.
6. SELECT NATIVE CLEAN BACKFILL SHALL BE WELL PLACED, MODERATELY COMPACTED (85% SPD) WITH NO FOREIGN DEBRIS INCLUDING ROCKS, LARGE CLUMPS ORGANIC MATERIAL, FROZEN MATERIAL OR (SILTY OR CLAYEY GRAVEL, GRAVEL/SAND/SILT OR GRAVEL AND CLAY MIXTURES; SILTY OR CLAYEY SANDS, SAND/CLAY OR CLAY/SILT MIXTURES).
7. N-12 HP ALTERNATE STORM TRENCH DETAIL MUST BE APPROVED BY DESIGN ENGINEER. DETAIL DOES NOT SUPERSEDE ADS STANDARD DETAIL STD-108.



**N-12 HP STORM TRENCH  
INSTALLATION DETAIL (ALTERNATE)**

NOT TO SCALE

**MINIMUM RECOMMENDED COVER  
BASED ON LOADING CONDITIONS**

PIPE DIAM.	SURFACE LIVE LOADING CONDITION	
	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

\* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

**RECOMMENDED  
MINIMUM SPACING**

PIPE DIAM.	MIN. "X"	MIN. "S" +
12"	8"	12"
15"	8"	12"
18"	9"	12"
24"	10"	12"
30"	18"	15"
36"	18"	18"
42"	18"	21"
48"	18"	24"
54"	18"	27"
60"	18"	30"

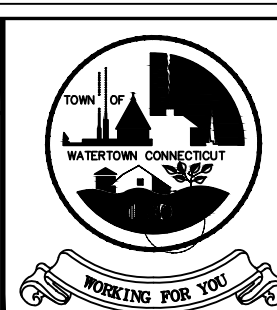
\* MINIMUM SPACING ("S") MEASURED FROM OUTSIDE DIAMETER TO OUTSIDE DIAMETER

\*\* MAXIMUM SPACING ("X") PIPE I.D. + 1'-0" FOR 30" OR LESS PIPE I.D. + 1'-6" FOR 30" OR GREATER

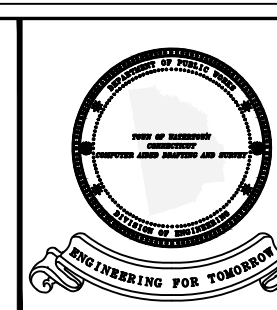
NO.	REVISIONS	BY	DATE	DES BY:	DATE:
				DRN BY:	
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				APPD BY:	

DATE:	SCALE:

SUBMITTED BY:	DATE:
APPROVED BY:	DATE:
ENGINEER:	



TOWN OF WATERTOWN  
DEPARTMENT OF PUBLIC WORKS  
DIVISION OF ENGINEERING



PROJECT TITLE:
TOWN OF WATERTOWN STANDARD DETAIL DRAWINGS

DRAWING TITLE:
STANDARD ADS TRENCH DETAILS

PROJECT NO.
FILE NO.
DRAWING NO.
153WTN-9A
SHEET NO.
153WTN-9A