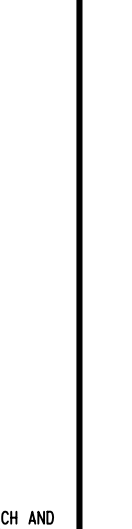
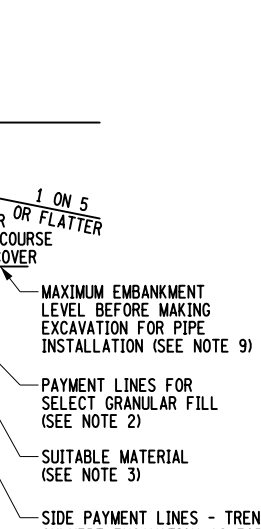
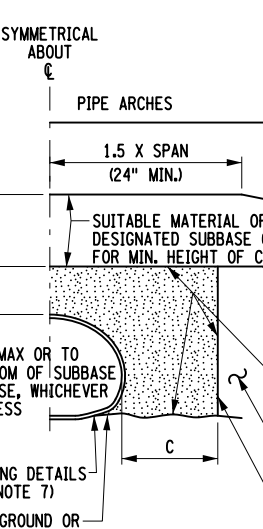
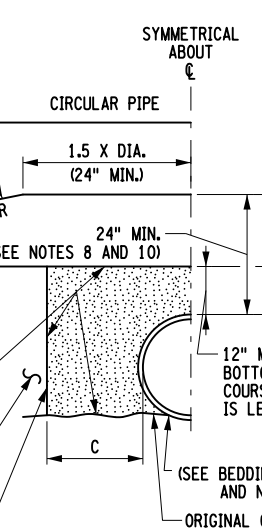
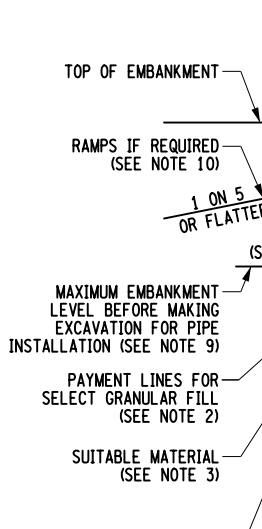
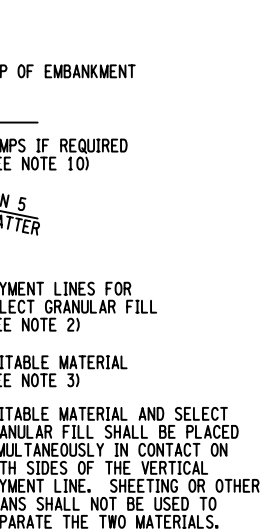
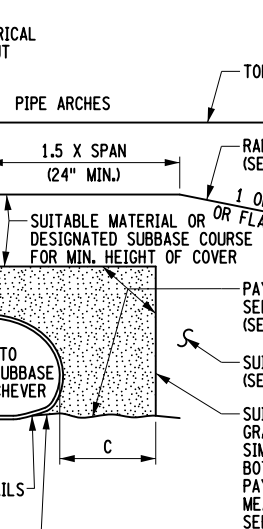
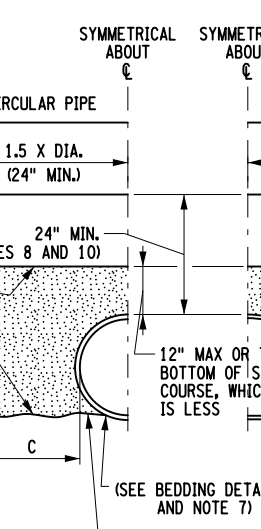
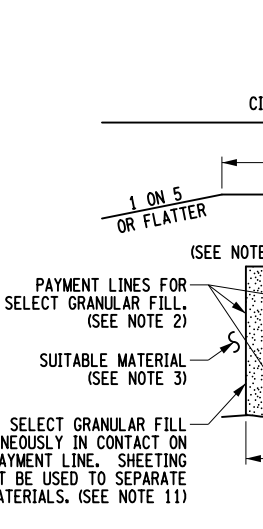
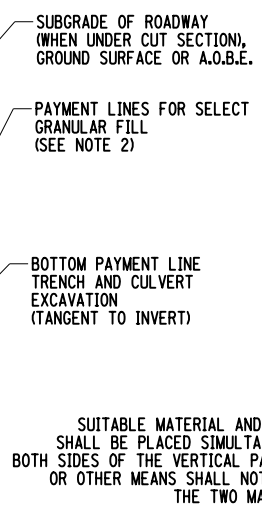
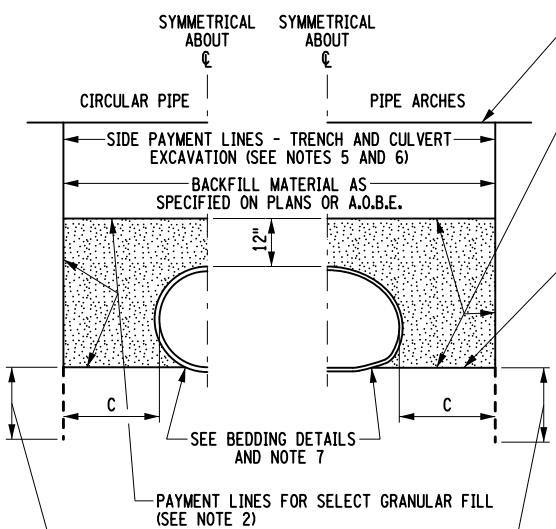


STABLE FOUNDATION SOIL

BEDDING DETAILS

ROCK FOUNDATION

UNSTABLE OR GRADE PROHIBITIVE FOUNDATION SOIL (SEE NOTE 4)



DIAMETER OR SPAN	"C"
UP THRU 24"	D - ROUND PIPE S - PIPE ARCHES
> 24" TO 144"	24"
> 144"	60"

NOTE: THE DIAMETER OR SPAN FOR PLASTIC PIPES IS MEASURED AS THE OUTSIDE DIAMETER INCLUDING ANY PROTRUDING CORRUGATIONS.

**INSTALLATION METHOD A
PIPES INSTALLED BELOW GROUND SURFACE**

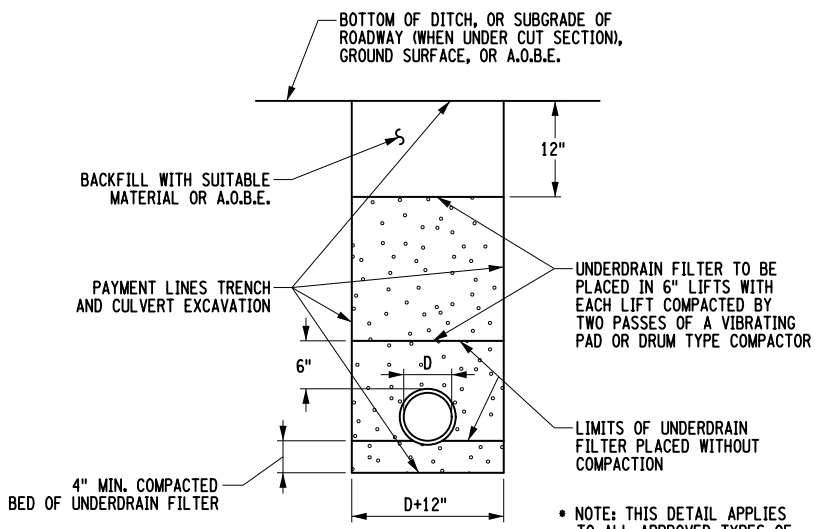
**INSTALLATION METHOD B-1
PIPES INSTALLED AT OR ABOVE GROUND SURFACE**

**INSTALLATION METHOD B-2
PIPES INSTALLED AT OR ABOVE GROUND SURFACE**

GENERAL NOTES:

- THE MINIMUM DEPTH OF BEDDING SHALL BE 3" FOR PLASTIC PIPES AND CORRUGATED METAL PIPE-ARCHES. STRUCTURAL PLATE PIPE-ARCHES SHALL BE BEDDED FOR THE FULL WIDTH OF BOTTOM PLATES.
- COMPACTION REQUIREMENTS SHALL CONFORM TO §203-3.06, "SELECT GRANULAR FILL".
- COMPACTION REQUIREMENTS SHALL CONFORM TO §203-3.03.C, "COMPACTION".
- TO BE USED WHERE IN THE OPINION OF THE ENGINEER THE FOUNDATION SOIL REQUIRES A LAYER OF GRANULAR MATERIAL TO FURNISH STABLE BEDDING CONDITIONS OR WHERE FOUNDATION SOILS PROHIBIT ATTAINING PROPER GRADE. THIS DETAIL DOES NOT APPLY WHERE UNSUITABLE MATERIAL EXISTS AT OR BELOW INVERT ELEVATION. SPECIAL DESIGN FEATURES AND CONSTRUCTION TREATMENT BASED ON SUBSURFACE EXPLORATIONS ARE NECESSARY IN LOCATIONS WHERE UNSUITABLE MATERIAL EXISTS. SEE NOTE 7.
- FOR A PIPE TO BE INSTALLED IN A ROCK TRENCH, THE PAYMENT LINES FOR EXCAVATION (SIDES OF TRENCH) SHALL BE THE SAME AS SHOWN FOR INSTALLATION METHOD A. THE PAYMENT LINE FOR DEPTH OF EXCAVATION AND SELECT GRANULAR FILL BEDDING SHALL BE AS SHOWN FOR "ROCK FOUNDATION BEDDING DETAILS".
- WHERE A GENERAL EXCAVATION OF UNSUITABLE OR UNSTABLE MATERIAL IS REQUIRED TO EXTEND BEYOND THE LATERAL AND DEPTH LIMITS INDICATED FOR METHOD A, THAT EXCAVATION WITHIN THE LIMITS SHOWN IN THE AFOREMENTIONED DETAIL SHALL BE PAID FOR UNDER ITEM 203.02 RATHER THAN ITEM 206.02. THE PIPE INSTALLATION SHALL THEN BE MADE IN ACCORDANCE WITH THE DETAILS FOR METHOD B-1 OR B-2 AS DIRECTED BY THE ENGINEER UNLESS OTHERWISE SHOWN ON THE PLANS.
- WHERE UNSUITABLE MATERIAL NOT ANTICIPATED IN DESIGN IS ENCOUNTERED AT OR BELOW INVERT ELEVATION, THE TREATMENT OF SUCH CONDITIONS SHALL BE A.O.B.E. IN COORDINATION WITH GEOTECHNICAL REPRESENTATIVES BASED ON THE RESULTS OF SUBSURFACE EXCAVATION.
- SEE "PROOF ROLLING" RESTRICTIONS UNDER §203-3.03.D4, "PROOF ROLLING IN EMBANKMENT SECTIONS - EXCEPTIONS".
- A LOWER EMBANKMENT LEVEL MAY BE SPECIFIED BY THE ENGINEER FOR INITIATING THE EXCAVATION FOR THE PIPE WHERE A STABLE "WORKING PLATFORM" MUST FIRST BE ESTABLISHED OVER A SUBMERGED, UNSTABLE OR YIELDING SURFACE. IN THIS CASE THE REMAINDER OF THE INSTALLATION ABOVE THE "WORKING PLATFORM" SHALL BE IN CONFORMANCE WITH METHOD B-1.
- WHERE CONSTRUCTION EQUIPMENT IS TO BE ALLOWED TO CROSS OVER A PIPE INSTALLATION BEFORE PLACEMENT OF ADEQUATE PROTECTIVE COVER OF EMBANKMENT MATERIAL, RAMPS SHALL BE CONSTRUCTED AS SHOWN ABOVE AND COMPACTED UNDER §203-3.03.C, "COMPACTION". RAMPS WHICH CANNOT BE UTILIZED AS PART OF THE COMPLETED EMBANKMENT SHALL BE INSTALLED AND REMOVED AT THE CONTRACTOR'S EXPENSE. MOVEMENT OF CONSTRUCTION EQUIPMENT AND OTHER VEHICLES OVER ANY CULVERT PIPE SHALL BE DONE AT THE CONTRACTOR'S RISK. ANY STRUCTURE DAMAGED OR DISTURBED THEREBY SHALL BE REPLACED AT NO EXPENSE TO THE STATE, AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR, WITH THE APPROVAL OF THE ENGINEER, MAY PLACE A TRAPEZOIDAL SECTION OF SELECT GRANULAR FILL AROUND THE PIPE IN LIEU OF SIMULTANEOUS PLACEMENT WITH SUITABLE MATERIAL. THE MINIMUM DIMENSIONS OF THE SELECT GRANULAR FILL TRAPEZOID SHALL BE SUCH AS TO ENCOMPASS THE PAYMENT LINES FOR THIS MATERIAL SHOWN ON INSTALLATION METHOD B-1. NO PAYMENT WILL BE MADE UNDER THIS OPTION FOR SELECT GRANULAR FILL PLACED OUTSIDE THE LIMITS OF INSTALLATION METHOD B-1.
- WHEN MODIFICATIONS OF THIS SHEET ARE USED IN THE PLANS, THE METHODS SHOWN HEREON SHALL ALSO APPLY TO THOSE MODIFICATIONS.
- FLARED METAL END SECTION TO BE USED AT OUTLET OF UNDERDRAIN WHERE SHOWN ON PLANS OR SPECIFIED BY THE ENGINEER.

INSTALLATION METHODS



PERFORATED CORRUGATED METAL AND PLASTIC PIPE UNDERDRAIN BEDDING AND BACKFILL DETAILS FOR TRENCH INSTALLATION *

DIAMETER	MINIMUM DISTANCE (Y)
UP TO 48"	24"
> 48" TO 72"	36"
> 72"	1/2 DIA.

DIAMETER	MINIMUM DISTANCE (X)
UP TO 72"	36"
> 72" TO 95"	48"
> 95"	1/2 SPAN

CLEARANCE REQUIREMENTS FOR MULTIPLE INSTALLATIONS

NEW YORK
STATE OF OPPORTUNITY.

Department of Transportation

U.S. CUSTOMARY STANDARD SHEET

INSTALLATION DETAILS FOR CORRUGATED AND STRUCTURAL PLATE PIPE, PIPE ARCHES AND PLASTIC PIPES

APPROVED APRIL 22, 2016	ISSUED UNDER EB 16-020
/S/ ROBERT L. SACK, P.E.	
DEPUTY CHIEF ENGINEER (TECHNICAL SERVICES)	203-05