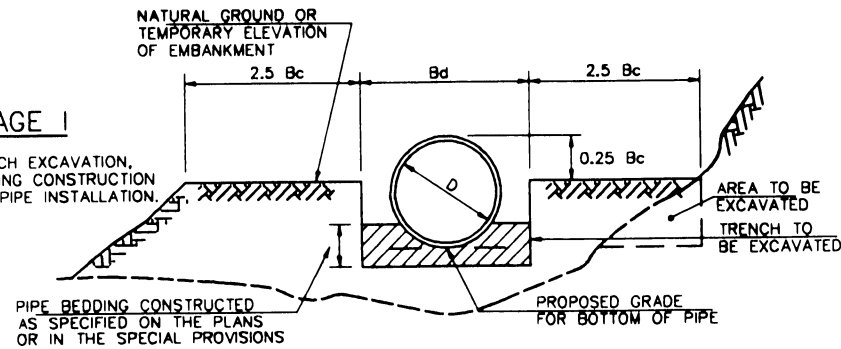


POSITIVE PROJECTION METHOD

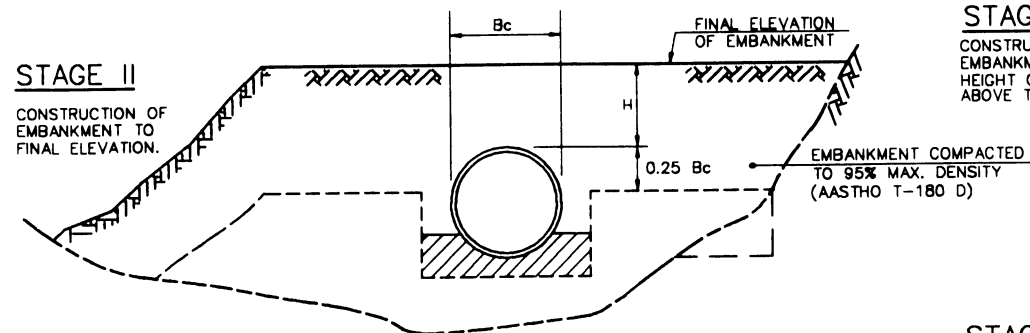
STAGE I

TRENCH EXCAVATION, BEDDING CONSTRUCTION AND PIPE INSTALLATION.



STAGE II

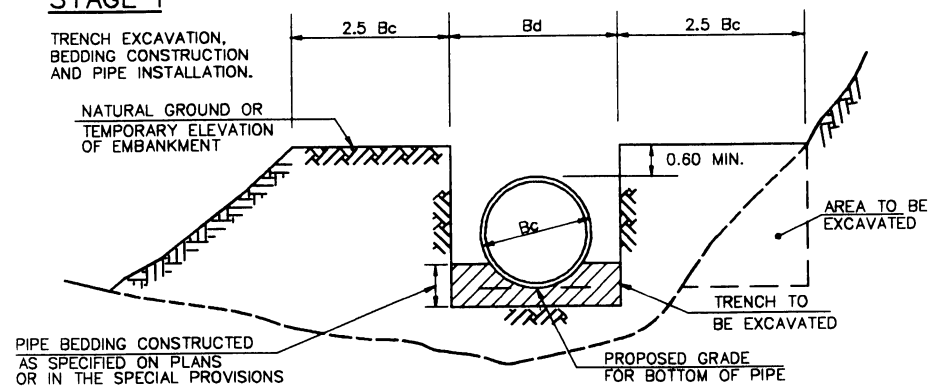
CONSTRUCTION OF EMBANKMENT TO FINAL ELEVATION.



NEGATIVE PROJECTION METHOD

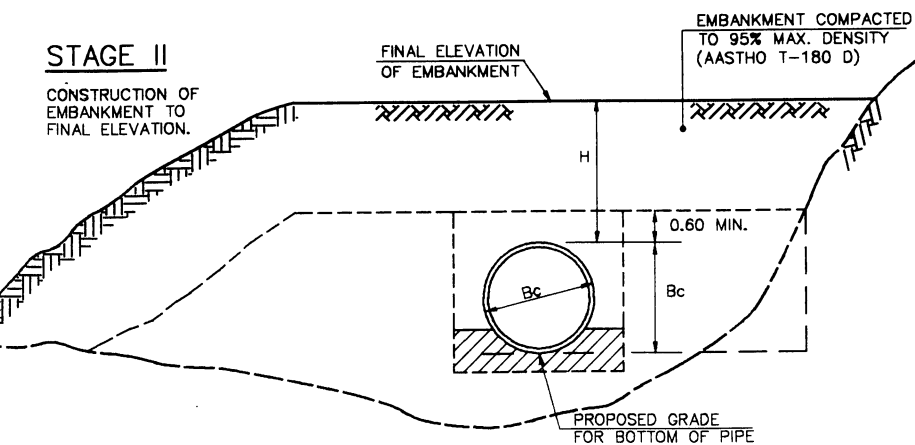
STAGE I

TRENCH EXCAVATION, BEDDING CONSTRUCTION AND PIPE INSTALLATION.



STAGE II

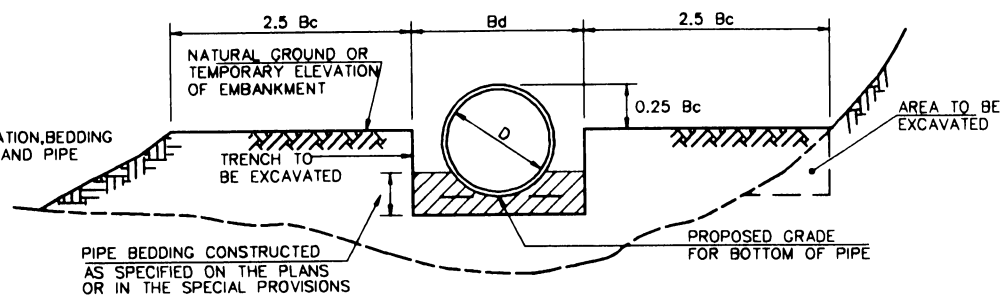
CONSTRUCTION OF EMBANKMENT TO FINAL ELEVATION.



INDUCED TRENCH METHOD

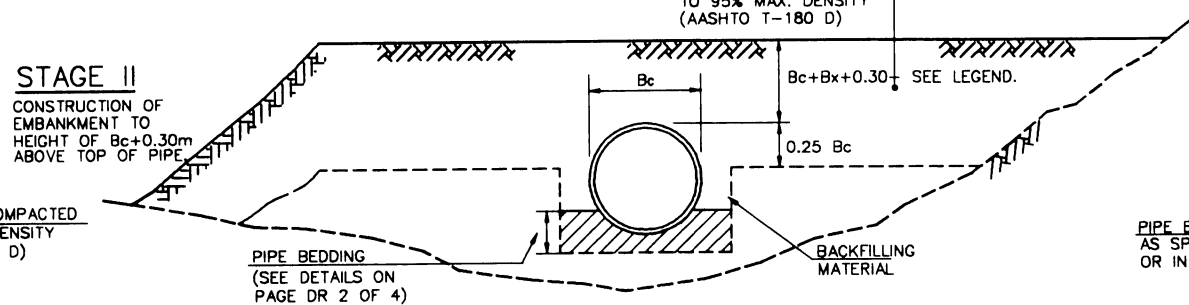
STAGE I

TRENCH EXCAVATION, BEDDING CONSTRUCTION AND PIPE INSTALLATION.



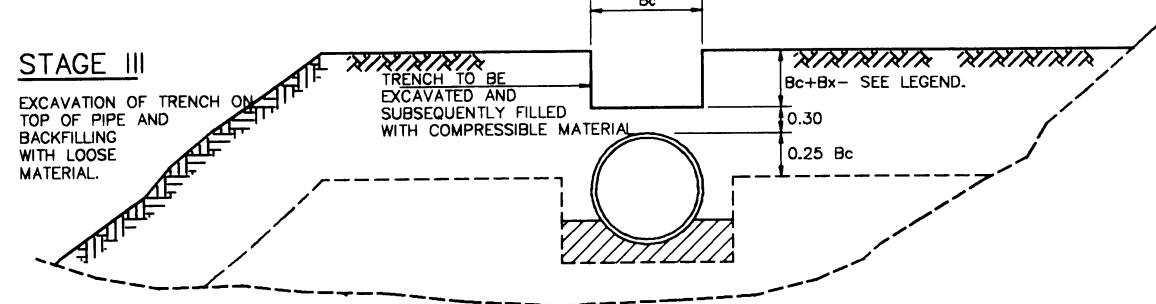
STAGE II

CONSTRUCTION OF EMBANKMENT TO HEIGHT OF Bc+0.30m ABOVE TOP OF PIPE.



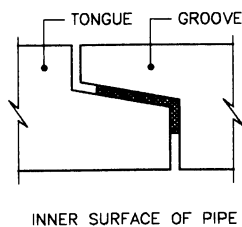
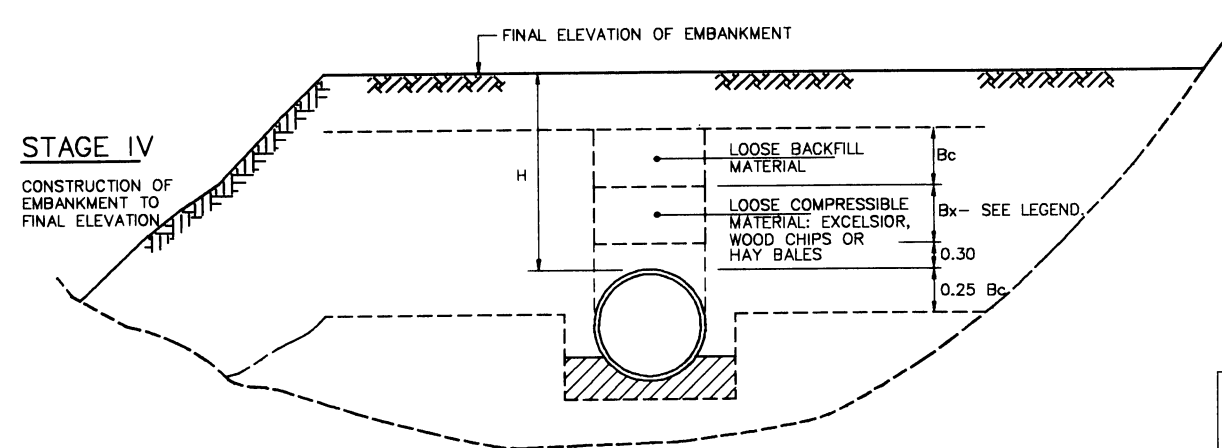
STAGE III

EXCAVATION OF TRENCH ON TOP OF PIPE AND BACKFILLING WITH LOOSE MATERIAL.

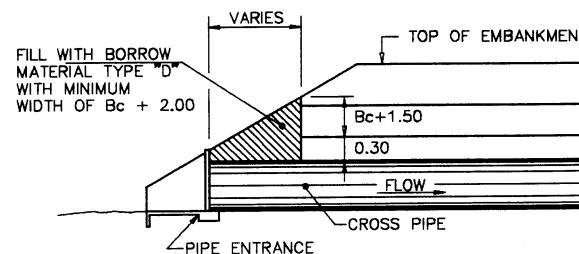


STAGE IV

CONSTRUCTION OF EMBANKMENT TO FINAL ELEVATION.



JOINTS WITH COMPRESSION TYPE RUBBER GASKETS

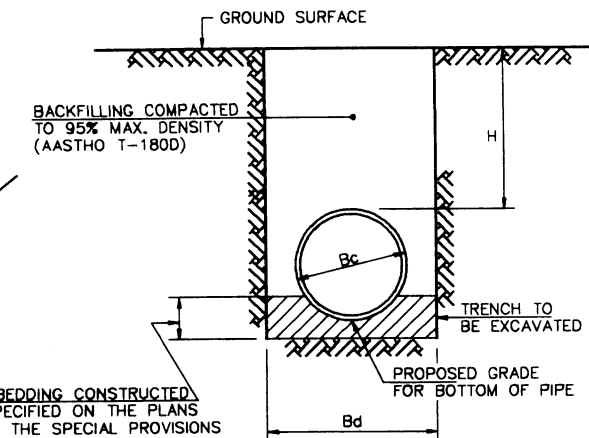


ENTRANCE DETAIL

TRENCH METHOD

STAGE I

TRENCH EXCAVATION, BEDDING CONSTRUCTION, PIPE INSTALLATION AND BACKFILLING.



GENERAL NOTES:

- 1 - THE DETAILS ALSO APPLY TO ELLIPTICAL, ARCS AND BOX CULVERTS.
- 2 - FOR POSITIVE PROJECTION AND INDUCED TRENCH METHODS SEE BEDDING DETAILS ON PAGE RCP 2 OF 4.
- 3 - FOR NEGATIVE PROJECTION AND TRENCH METHODS SEE BEDDING DETAILS ON PAGE RCP 3 OF 4.
- 4 - BEDDING MATERIAL CLASSIFIABLE AS BORROW CLASS "B" BACKFILLING, COMPRESSIBLE AND PLUG MATERIALS SHALL BE CONSIDERED AS SUBSIDIARY OBLIGATION OF THE CONTRACTOR COVERED UNDER PAY ITEMS FOR STANDARD SPECIFICATION 603-PIPE CULVERTS AND STORM DRAINS. THIS APPLIES TO ALL INSTALLATION METHODS.
- 5 - THE INDUCED TRENCH METHOD SHALL NOT BE USED TO INSTALL MULTIPLE PIPES.
- 6 - IN THE INDUCED TRENCH METHOD TRAFFIC FLOW OF HEAVY EQUIPMENT OVER THE TRENCH SHALL NOT BE PERMITTED UNTIL THE LAYER THICKNESS OF LOOSE MATERIAL IS OVER 2Bc+0.30

LEGEND:

- Bd - MAXIMUM TRENCH WIDTH = Bc + 0.90
- Bc - OUTSIDE DIAMETER OF PIPE
- D - INSIDE DIAMETER OF PIPE
- H - HEIGHT OF FILL ABOVE TOP OF PIPE
- Bx = Bc - EXCELSIOR
0.5Bc - EXPANDED POLYSTERENE

EFFECTIVE DATE: APRIL 1996

COMMONWEALTH OF PUERTO RICO
DEPARTMENT OF TRANSPORTATION AND PUBLIC WORKS
HIGHWAY AND TRANSPORTATION AUTHORITY

REINFORCED CONCRETE PIPE INSTALLATION METHODS

DESIGN AREA DIRECTOR
DATE: _____
APPROVED BY: _____
EXECUTIVE DIRECTOR
DATE: _____
APPROVED BY: _____
BY: ADM. FINA-PR DIVISION
DATE: 7/11/1996

DATE	REVISION	BY	STD.	RCP
			DWG.	1 OF 4