

RECOMMENDATIONS FOR INSTALLATION AND USE OF SOILS AND AGGREGATES FOR FOUNDATION, EMBEDMENT AND BACKFILL

	CLASS IA	CLASS IB	CLASS II	CLASS III
GENERAL RECOMMENDATIONS AND RESTRICTIONS	DO NOT USE WHERE CONDITIONS MAY CAUSE MIGRATION OF FINES FROM ADJACENT SOIL AND LOSS OF PIPE SUPPORT SUITABLE FOR USE AS DRAINAGE BLANKET AND UNDERDRAIN IN ROCK CUTS WHERE ADJACENT MATERIAL IS SUITABLY GRADED	PROCESS MATERIAL AS REQUIRED TO OBTAIN GRADATION WHICH WILL MINIMIZE MIGRATION OF ADJACENT MATERIALS SUITABLE FOR USE AS DRAINAGE BLANKET AND UNDERDRAIN	WHERE HYDRAULIC GRADIENT EXISTS CHECK GRADATION TO MINIMIZE MIGRATION. GROUPS SUITABLE FOR USE AS DRAINAGE BLANKET AND UNDERDRAIN	DO NOT USE WHERE WATER CONDITIONS IN TRENCH MAY CAUSE INSTABILITY
FOUNDATION	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNSTABLE TRENCH BOTTOM AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS.	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNSTABLE TRENCH BOTTOM AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS.	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED AND UNSTABLE TRENCH BOTTOM AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS.	SUITABLE AS FOUNDATION AND FOR REPLACING OVER-EXCAVATED TRENCH BOTTOM AS RESTRICTED ABOVE. DO NOT USE IN THICKNESSES GREATER THAN 12 IN. TOTAL. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS.
BEDDING	SUITABLE AS RESTRICTED ABOVE. INSTALL IN 6-IN. MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 IN. (6 IN. IN ROCK CUTS)	INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 IN. (6 IN. IN ROCK CUTS)	SUITABLE AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 IN. (6 IN. IN ROCK CUTS)	SUITABLE ONLY IN DRY TRENCH CONDITIONS. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 IN. (6 IN. IN ROCK CUTS)
HAUNCHING	SUITABLE AS RESTRICTED ABOVE. INSTALL IN 6-IN. MAXIMUM LAYERS. WORK IN AROUND PIPE BY HAND TO PROVIDE UNIFORM SUPPORT	INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. WORK IN AROUND PIPE BY HAND TO PROVIDE UNIFORM SUPPORT	SUITABLE AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. LEVEL FINAL GRADE BY HAND. MINIMUM DEPTH 4 IN. (6 IN. IN ROCK CUTS)	SUITABLE AS RESTRICTED ABOVE. INSTALL AND COMPACT IN 6-IN. MAXIMUM LAYERS. WORK AROUND PIPE BY HAND TO PROVIDE UNIFORM SUPPORT
INITIAL BACKFILL	SUITABLE AS RESTRICTED ABOVE. INSTALL TO A MINIMUM OF 6 IN. ABOVE PIPE CROWN	INSTALL AND COMPACT TO A MINIMUM OF 6 IN. ABOVE PIPE CROWN	SUITABLE AS RESTRICTED ABOVE. INSTALL AND COMPACT TO A MINIMUM OF 6 IN. ABOVE PIPE CROWN	SUITABLE AS RESTRICTED ABOVE. INSTALL AND COMPACT TO A MINIMUM OF 6 IN. ABOVE PIPE CROWN
EMBEDMENT COMPACTION	PLACE AND WORK BY HAND TO INSURE ALL EXCAVATED VOIDS AND HAUNCH AREAS ARE FILLED FOR HIGH DENSITIES USE VIBRATORY COMPACTORS	MINIMUM DENSITY 85 % STD. PROCTOR USE HAND TAMPER OR VIBRATORY COMPACTORS	MINIMUM DENSITY 85 % STD. PROCTOR USE HAND TAMPER OR VIBRATORY COMPACTORS. MAINTAIN MOISTURE CONTENT NEAR OPTIMUM TO MINIMIZE COMPACTIVE EFFORT	MINIMUM DENSITY 90 % STD. PROCTOR USE HAND TAMPER OR VIBRATORY COMPACTORS. MAINTAIN MOISTURE CONTENT NEAR OPTIMUM TO MINIMIZE COMPACTIVE EFFORT
FINAL BACKFILL	COMPACT AS REQUIRED BY THE ENGINEER	COMPACT AS REQUIRED BY THE ENGINEER	COMPACT AS REQUIRED BY THE ENGINEER	COMPACT AS REQUIRED BY THE ENGINEER

* WHEN USING MECHANICAL COMPACTORS AVOID CONTACT WITH PIPE. WHEN COMPACTING OVER PIPE CROWN MAINTAIN A MINIMUM OF 6 IN. COVER WHEN USING SMALL MECHANICAL COMPACTORS. WHEN USING LARGER COMPACTORS MAINTAIN MINIMUM CLEARANCES AS REQUIRED BY THE ENGINEER.
 † THE MINIMUM DENSITIES GIVEN IN THE TABLE ARE INTENDED AS THE COMPARISON REQUIREMENTS FOR OBTAINING SATISFACTORY EMBEDMENT STIFFNESS IN MOST INSTALLATION CONDITIONS

GENERAL NOTES:

- MATERIALS: UNLESS OTHERWISE SPECIFIED ON THE PLANS OR HEREIN, CORRUGATED POLYETHYLENE PIPE SHALL CONFORM TO AASHTO M-294, LATEST EDITION, STANDARD SPECIFICATION FOR CORRUGATED POLYETHYLENE PIPE.
 - RESINS: CORRUGATED POLYETHYLENE PIPE SHALL BE MANUFACTURED FROM HIGH DENSITY POLYETHYLENE VIRGIN COMPOUNDS, AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM D-3350 FOR THE CELL CLASSIFICATION 324420C.
 - COUPLING BANDS: EXCEPT AS OTHERWISE REQUIRED HEREIN, COUPLING BANDS AND OTHER HARDWARE FOR CORRUGATED POLYETHYLENE PIPE SHALL DEMONSTRATE THAT THEY MEET THE SOIL TIGHTNESS REQUIREMENTS OF AASHTO SECTION 26.4.2.4 "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES."
- COUPLING BANDS SHALL LAP EQUALLY ON EACH OF THE PIPES BEING CONNECTED TO FORM A TIGHTLY CLOSED JOINT AFTER INSTALLATION.
- THE CORRUGATIONS IN THE BAND SHALL INDEX THE CORRUGATIONS IN THE PIPE ENDS TO ENGAGE THE FIRST OR SECOND CORRUGATION FROM THE END OF EACH PIPE.
- WHEN INFILTRATION OF EXFILTRATION IS A CONCERN, THE COUPLING MAY BE REQUIRED TO HAVE GASKETS. THE GASKET MATERIAL SHALL BE CLOSED-CELL EXPANDED RUBBER OR NEOPRENE.

- DESIGNATION OF TYPE: THE TYPES OF PIPE WILL BE INDICATED BY THE FOLLOWING DESCRIPTIONS.
 - TYPE C: THIS PIPE WILL HAVE A FULL CIRCULAR CROSS-SECTION, WITH A CORRUGATED SURFACE BOTH INSIDE AND OUTSIDE.
 - TYPE S: THIS PIPE WILL HAVE A FULL CIRCULAR CROSS-SECTION, WITH AN OUTER CORRUGATED PIPE WALL AND A SMOOTH INNER LINER.
 - TYPE D: THIS PIPE SHALL CONSIST OF AN ESSENTIALLY SMOOTH WATERWAY GRADED CIRCUMFERENTIALLY WITH CIRCULAR RIBS WHICH ARE FORMED SIMULTANEOUSLY WITH A SMOOTH OUTER WALL.
- INSTALLATION: CORRUGATED POLYETHYLENE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D-2321, LATEST EDITION, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS."

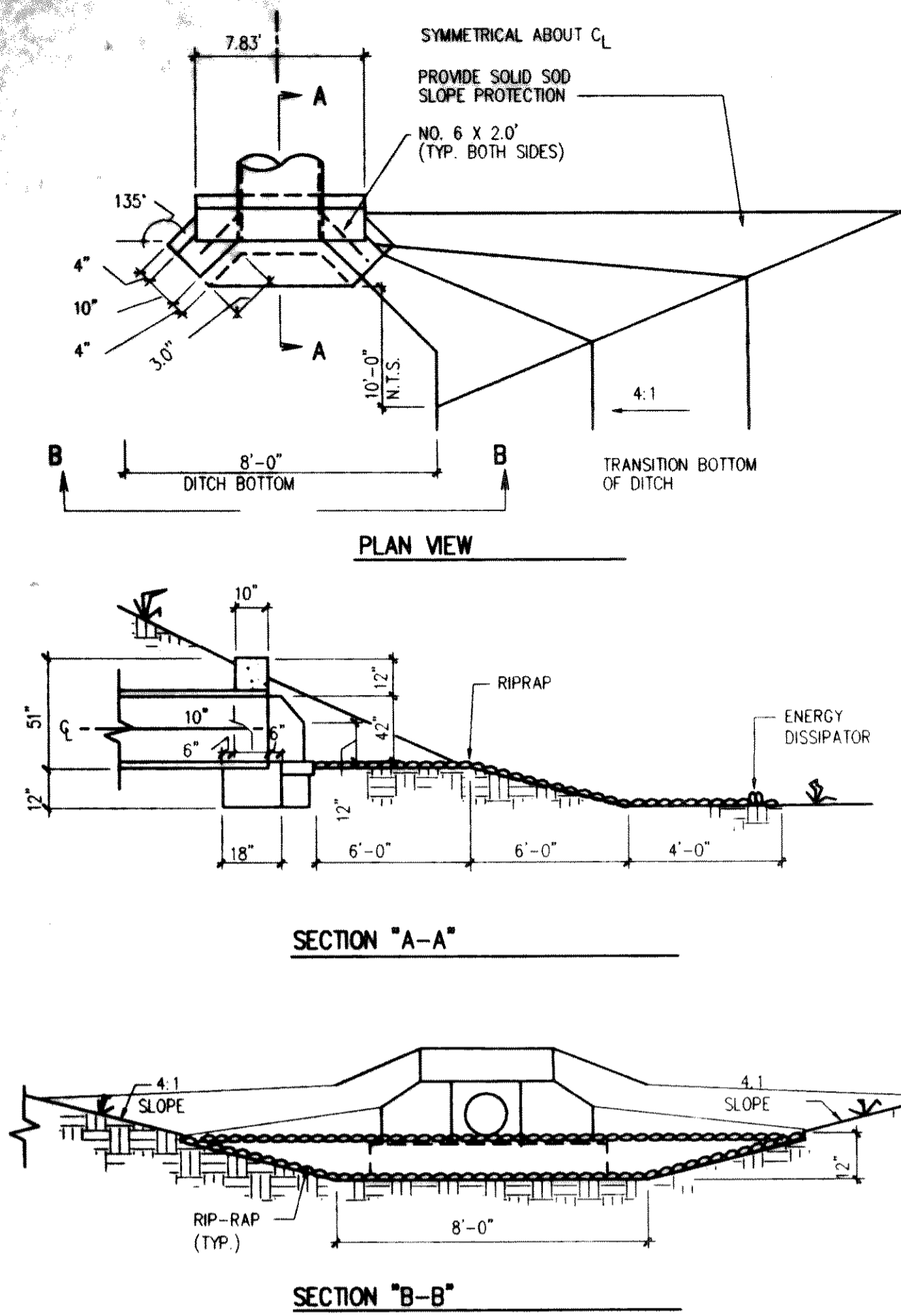
TRENCH WIDTH BASED ON OUTSIDE DIAMETER

PIPE (INSIDE) DIAMETER	TRENCH WIDTH
IN. (MM)	FT. (M)
15 (375)	3.0 (1)
18 (450)	3.2 (1)
24 (600)	3.9 (1.2)
30 (750)	4.8 (1.5)
36 (900)	5.4 (1.7)
42 (1050)	6.9 (2.1)
48 (1200)	7.4 (2.3)

MULTIPLE INSTALLATION OF POLYETHYLENE PIPES

DIAMETER OF PIPE	CLEAR DISTANCES BETWEEN PIPES
IN. (MM)	FT. (M)
18 (450)	1' 2" (0.36)
24 (600)	1' 5" (0.44)
30 (750)	1' 8" (0.52)
36 (900)	1' 11" (0.60)
42 (1050)	2' 2" (0.68)
48 (1200)	2' 5" (0.76)

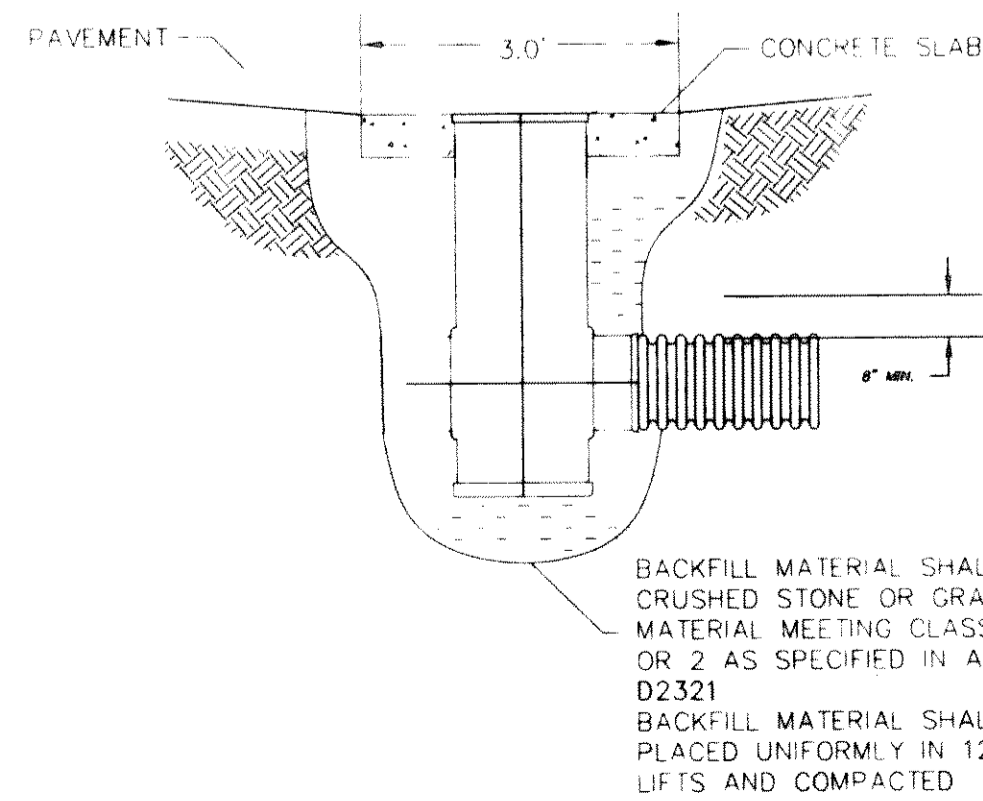
AREA DRAIN DETAILS



TYPE "B" HEADWALL DETAIL

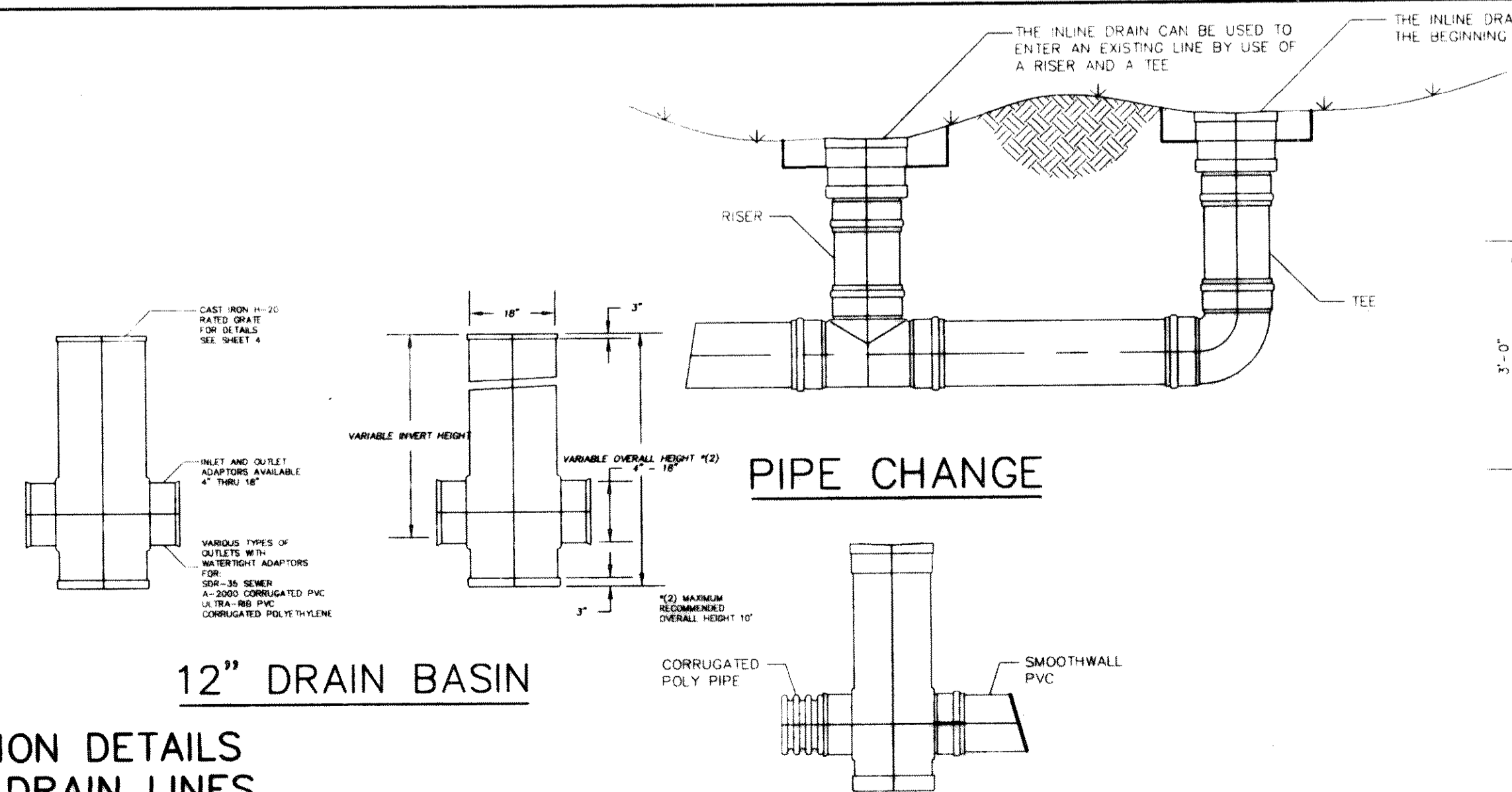
N.T.S.

18" DRAIN BASIN



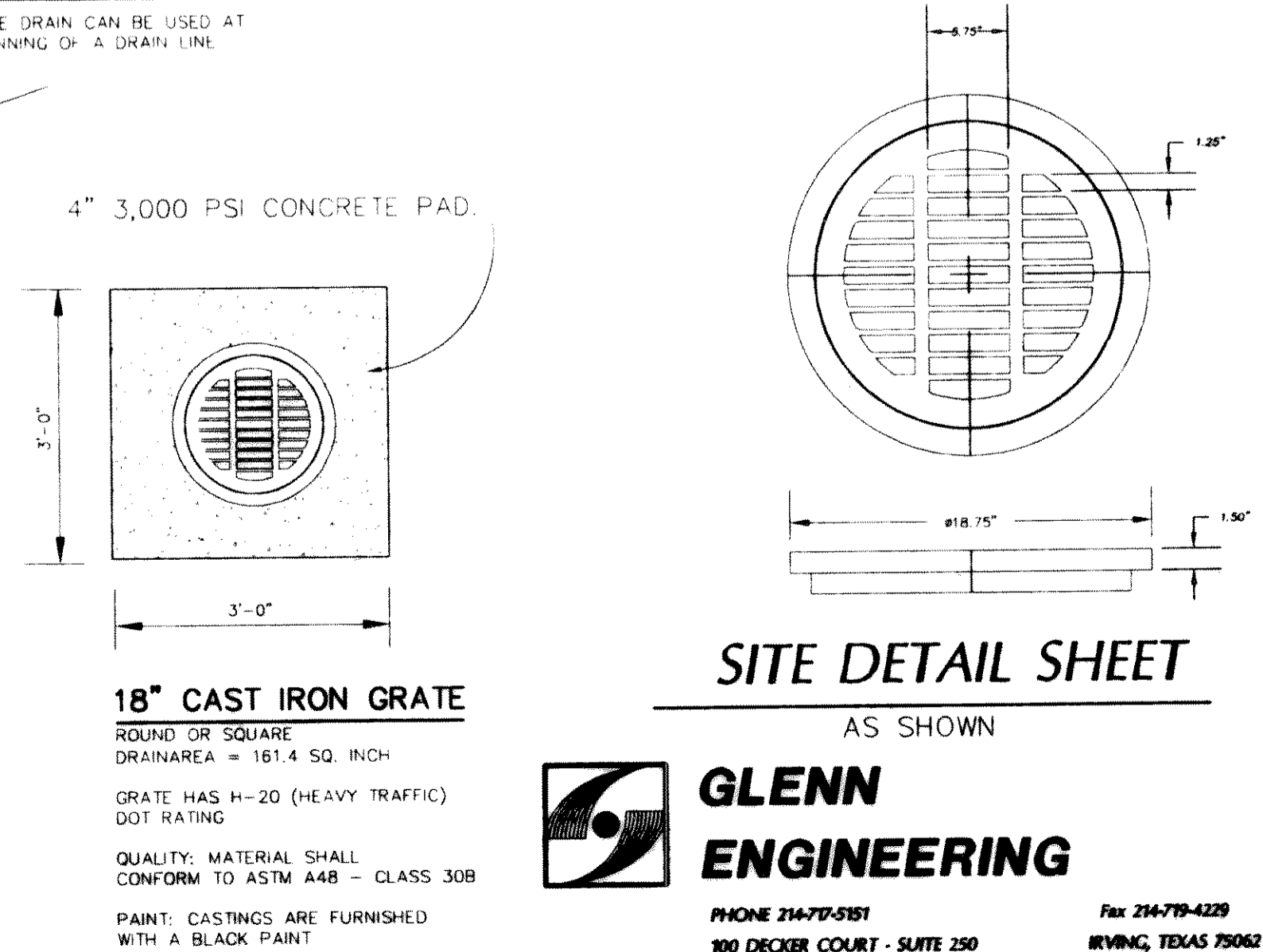
12" DRAIN BASIN

INSTALLATION DETAILS FOR ROOF DRAIN LINES



PIPE CHANGE

ADS OR HANCOR PIPE INSTALLATION DETAILS FOR STORM DRAIN LINES



SITE DETAIL SHEET

AS SHOWN

18" CAST IRON GRATE

ROUND OR SQUARE
 DRAINAREA = 161.4 SQ. INCH
 GRATE HAS H-20 (HEAVY TRAFFIC) DOT RATING
 QUALITY: MATERIAL SHALL CONFORM TO ASTM A48 - CLASS 30B
 PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT

GLENN ENGINEERING

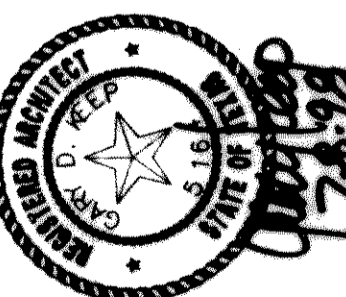
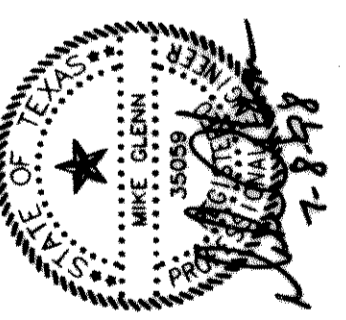
PHONE 214-719-5151

100 DECKER COURT - SUITE 250

IRVING, TEXAS 75062

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 CHECKED R.A.H.
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ROCKWALL I.S.D. 1998 PAVING IMPROVEMENTS
 WILKERSON SANDERS STADIUM PAVING IMPROVEMENTS
 ROCKWALL, TEXAS



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