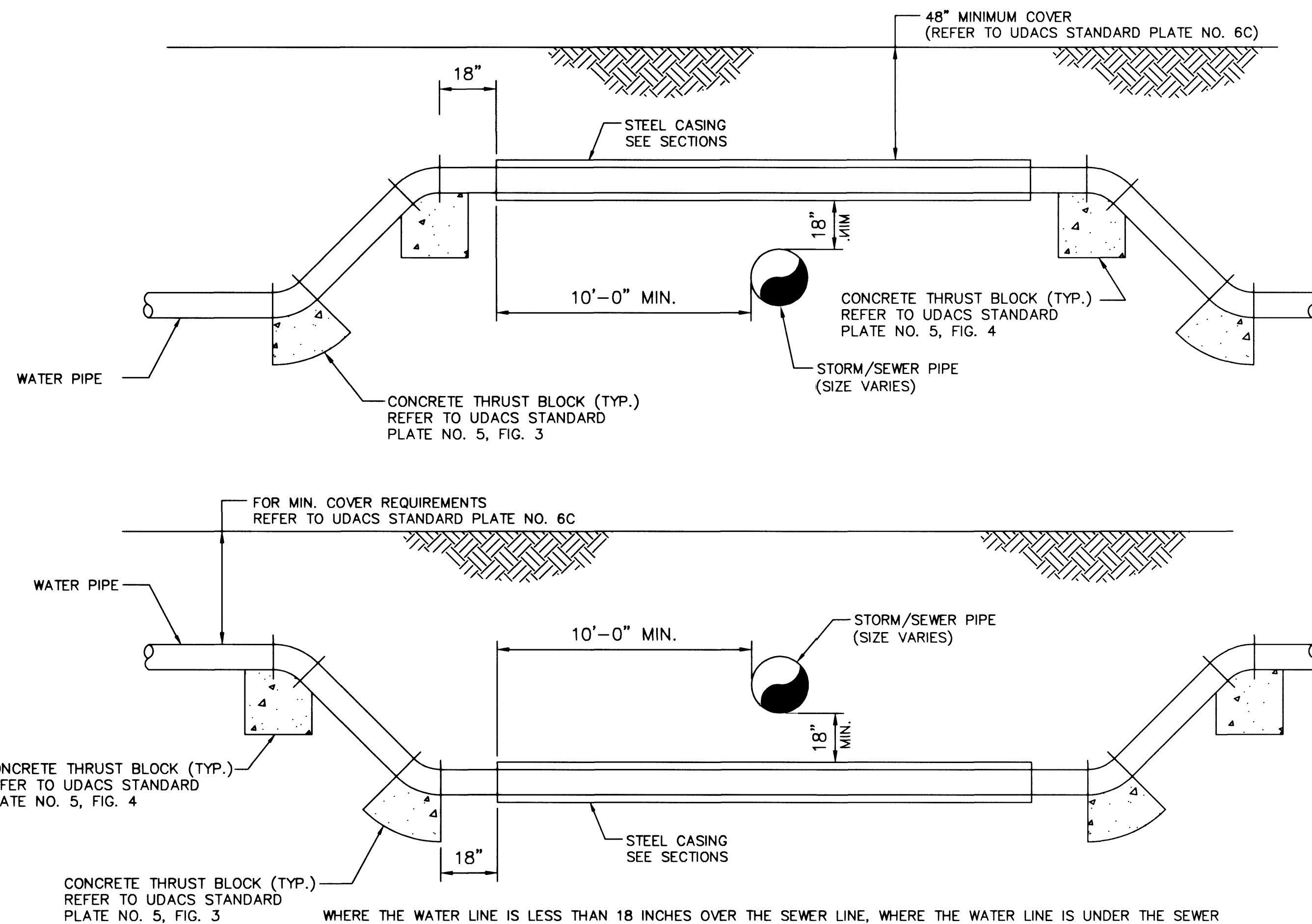


NAME: P:\W7X70800\700CADD\702CIVIL\702DWG\70800-wt-s02.DWG DATE: FEB 27, 2002 TIME: 3:56 PM

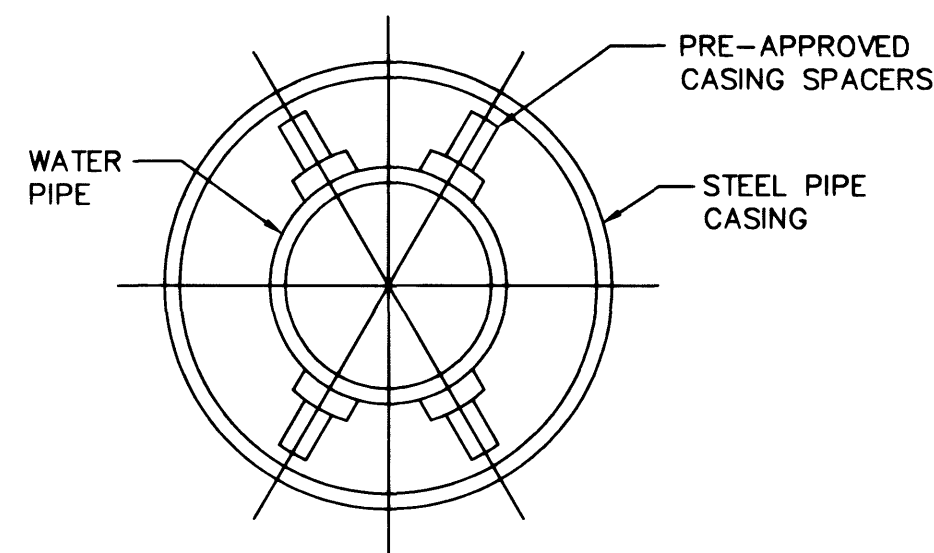


WHERE THE WATER LINE IS LESS THAN 18 INCHES OVER THE SEWER LINE, WHERE THE WATER LINE IS UNDER THE SEWER LINE, AND WHERE THE HORIZONTAL SEPARATION, AS REQUIRED BY THE WATER SUPPLY REGULATIONS, CANNOT BE MAINTAINED BECAUSE OF PHYSICAL OBSTRUCTIONS, THE WATER LINE SHALL BE PROTECTED BY CONSTRUCTION OF THE STORM/SEWER LINE AS FOLLOWS:

1. EXTRA HEAVY CAST IRON PIPE;
2. WATER SUPPLY QUALITY MATERIALS; OR
3. ENCASEMENT WITH FOUR INCHES, MINIMUM, OF CONCRETE OR SLEEVING WITH WATER SUPPLY QUALITY PIPE.

EACH OF THESE PROVISIONS SHALL ALSO BE EXTENDED FOR OTHER THAN 90 DEGREE CROSSINGS TO THE POINT AT WHICH THE TEN FOOT SEPARATION BETWEEN THE WATER AND SEWER LINES IS ACHIEVED (10/SINE OF CROSSING ANGLE.)

STORM/SEWER WATER CROSSING DETAIL



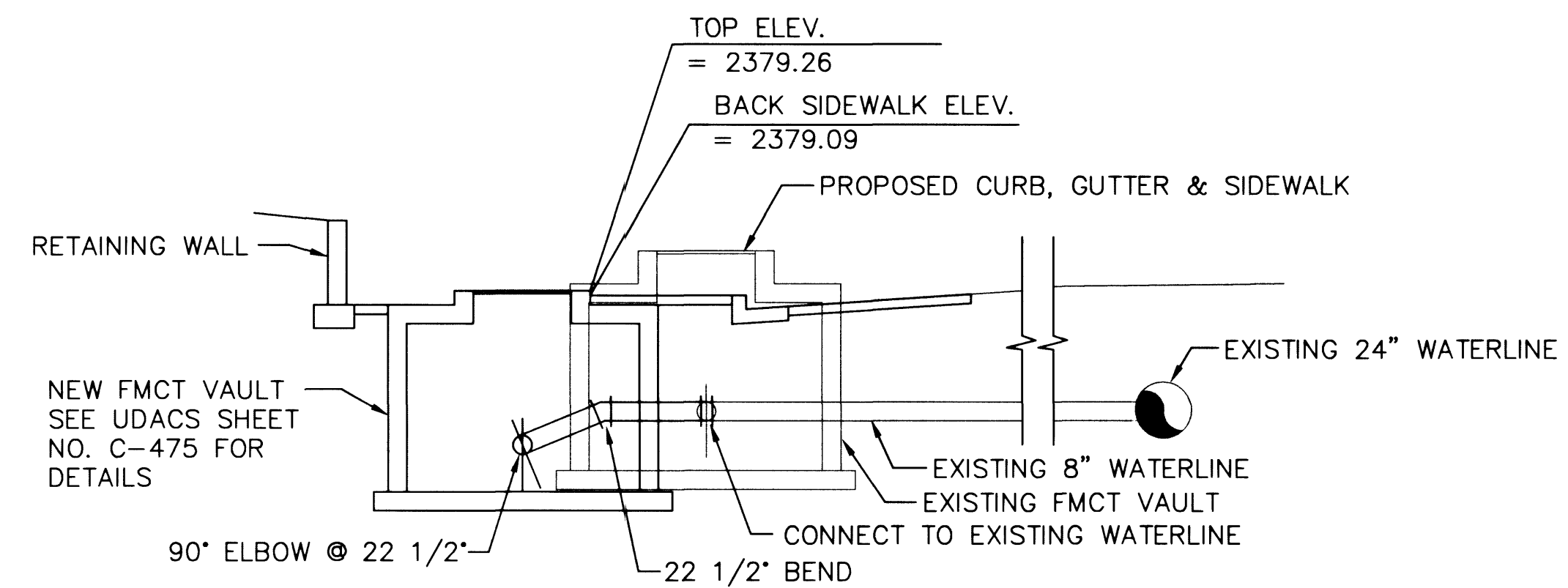
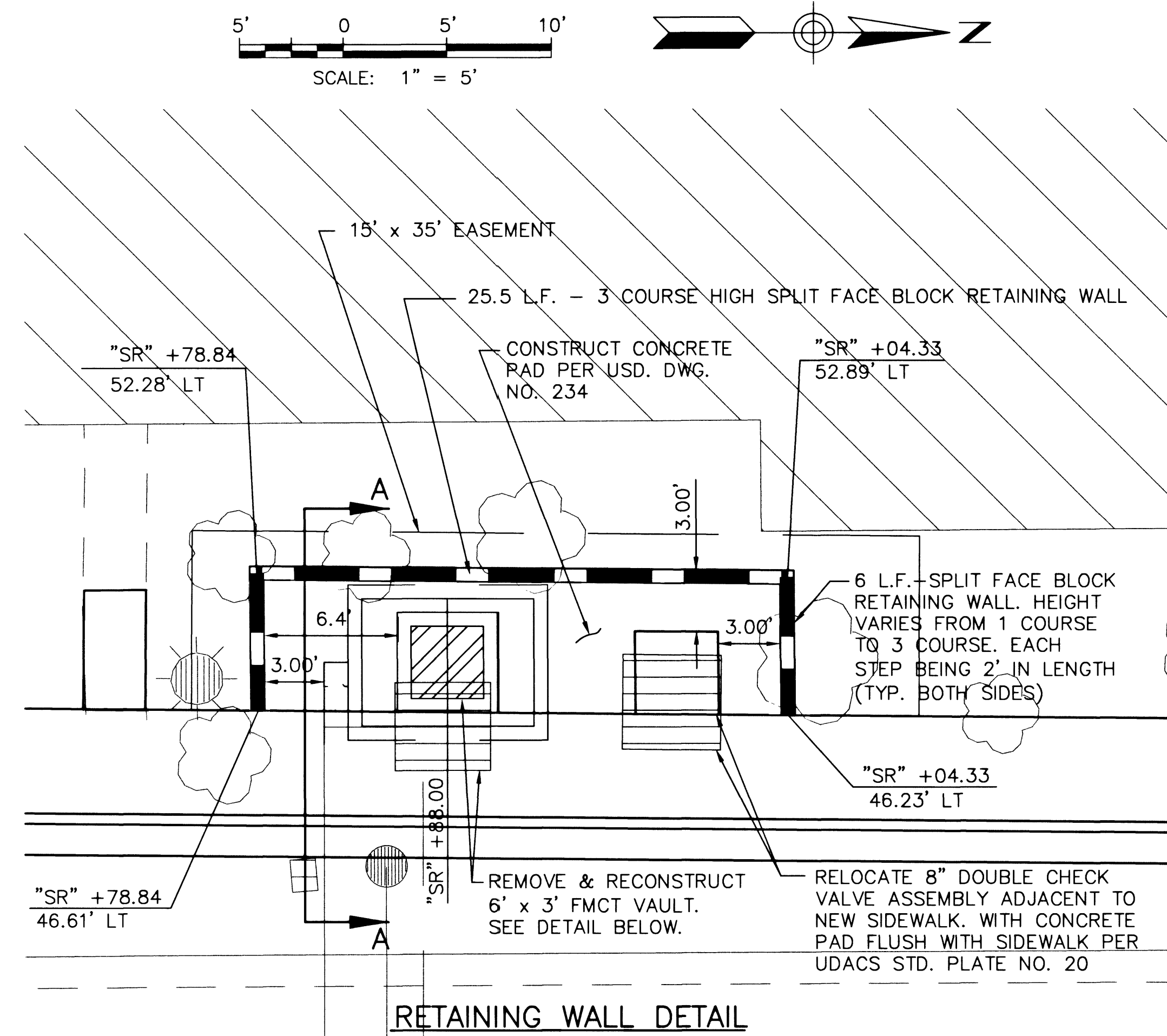
NOTES:

1. STEEL PIPE CASING SYMMETRICAL ABOUT WATER MAIN CENTERLINE.
2. PRE-APPROVED CASING SPACERS AND PRE-APPROVED END SEALS INSTALLED PER MANUFACTURER'S SPECIFICATIONS. (REDWOOD SKIDS NOT ALLOWED. UDACS SECTION 3.26 NOT APPLICABLE). USE A "CENTERED" CONFIGURATION AND PROVIDE THE MANUFACTURER WITH THE FOLLOWING:

PIPE OD
CASING ID
CASING LENGTH

1. STEEL PIPE CASING SHALL BE FABRICATED FROM A MINIMUM OF 1/4" THICK STEEL PLATES, CONFORMING TO THE REQUIREMENTS OF ASTM A283, GRADE B, C, OR D. ALL JOINTS SHALL BE WELDED. INTERIOR JOINTS SHALL BE GROUND TO A SMOOTH FINISH. ALL WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AWWA C280, "AWWA STANDARD FOR FABRICATED ELECTRICALLY WELDED STEEL WATER PIPE". COATINGS FOR STEEL CASING ARE NOT REQUIRED.
2. PIPE CASING SHALL BE LAID TRUE TO LINE AND GRADE WITH NO BENDS OR CHANGES IN GRADE FOR THE FULL LENGTH OF THE CASING.
3. THE PIPE SHALL BE SUPPORTED AT EACH END JOINT WITH SPACERS. AFTER INSTALLATION OF THE PIPE, THE CASING SHALL BE SEALED AT BOTH ENDS WITH CASING END SEALS. DUCTILE IRON PIPE JOINTS INSIDE CASING ARE TO BE RESTRAINED.

TYPICAL CASING SECTION



SECTION A-A

Las Vegas Valley Water District Date 2/28/02

PROJ NO: W7X70800	DESIGN: DEP	DATE: 11/8/00	SCALE: NONE	CADFILE:
STAMP DATE: 2/28/02				
DAVID E. POTTER PROFESSIONAL ENGINEER - STATE OF NEVADA No. 8880 EXPIRES 12/31/03				
RAINBOW BOULEVARD SILVERSTREAM AVE. TO SMOKE RANCH ROAD WATER LINE RELOCATION DETAILS				
SHEET WT-2 54 OF 110 SHEETS DRAWING NO. 107-V3519				