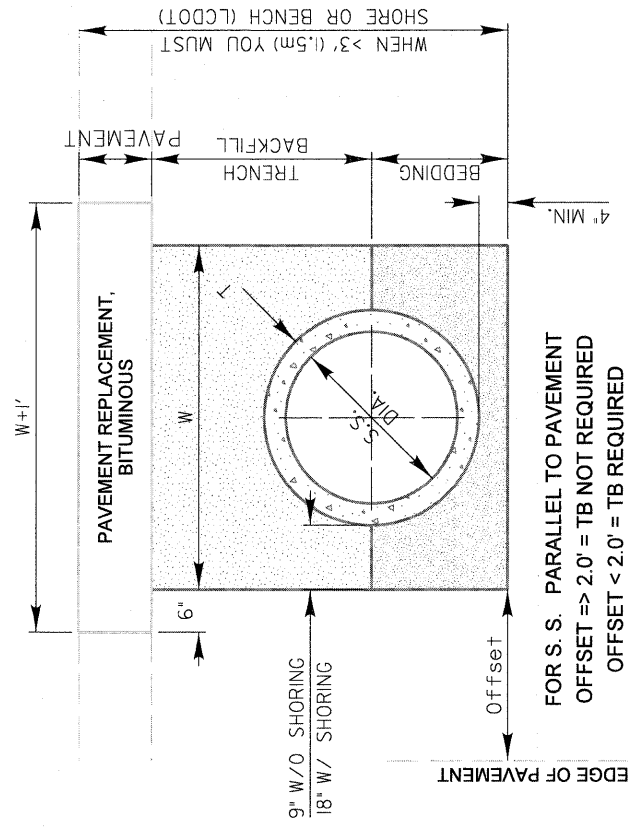


ENGLISH S.S. DIA. (IN)	TRENCH WIDTH (W)		MIN OFFSET FROM E.O.P.* FOR NO TB		1/2 PIPE AREA [O.D.] (SQ.FT)	
	WITHOUT SHORING (FT)	WITH SHORING (FT)	WITHOUT SHORING (FT)	WITH SHORING (FT)		
10	2.00	2.67	4.17	3.33	4.08	0.53
12	2.00	2.83	4.33	3.42	4.17	0.70
15	2.25	3.13	4.63	3.56	4.31	1.04
18	2.50	3.42	4.92	3.71	4.46	1.44
21	2.75	3.71	5.21	3.85	4.60	1.92
24	3.00	4.00	5.50	4.00	4.75	2.45
27	3.25	4.29	5.79	4.15	4.90	3.06
30	3.50	4.58	6.08	4.29	5.04	3.73
36	4.00	5.17	6.67	4.58	5.33	5.28
42	4.50	5.75	7.25	4.88	5.63	7.09
48	5.00	6.33	7.83	5.17	5.92	9.17

* TO CENTER LINE OF PIPE



FOR S. S. PARALLEL TO PAVEMENT
OFFSET => 2.0' = TB NOT REQUIRED
OFFSET < 2.0' = TB REQUIRED

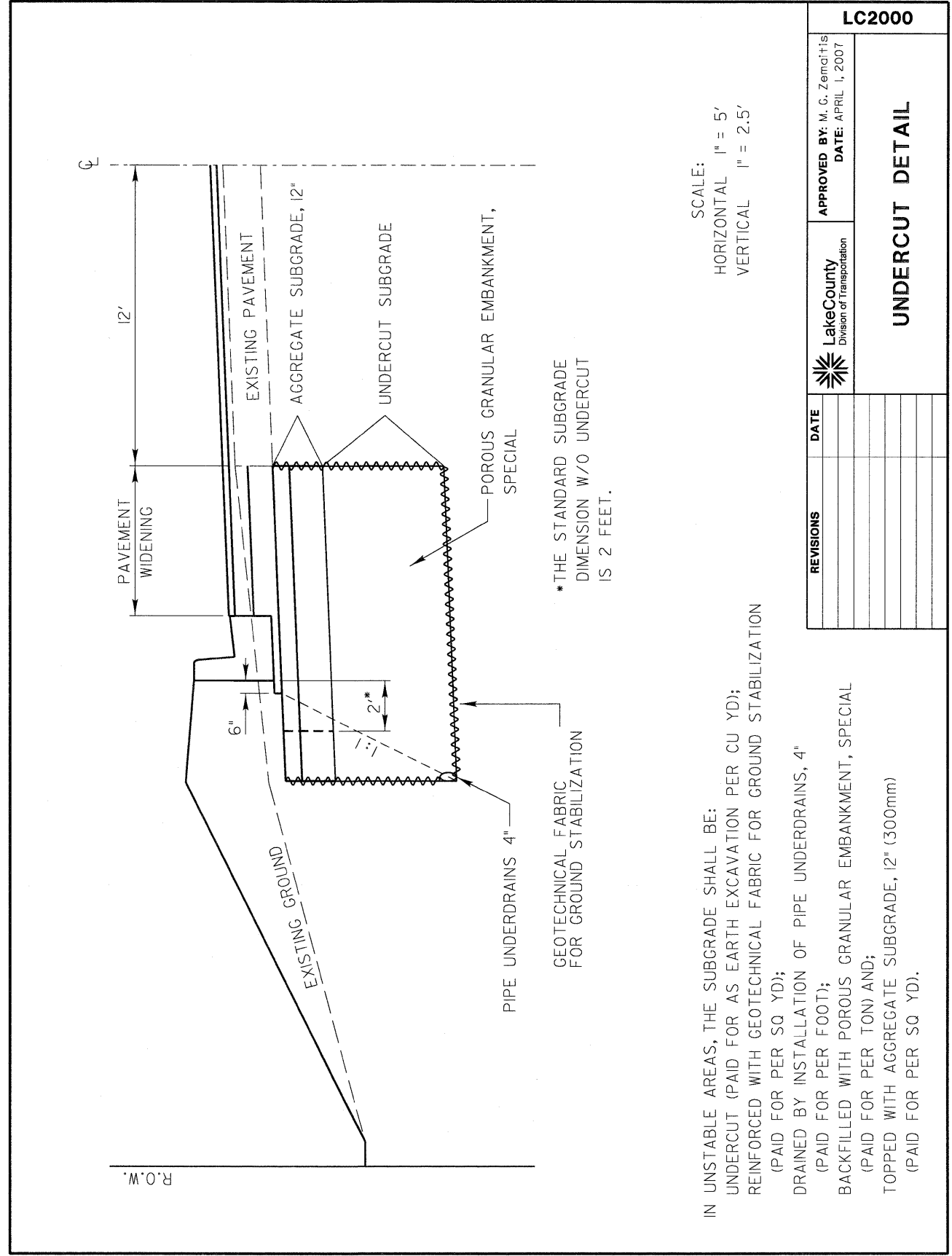
SCALE: 1" = 2'

REVISIONS	DATE	APPROVED BY: M. G. ZEMAITIS	DATE: APRIL 1, 2007	TRENCH WIDTHS FOR TRENCH BACKFILL & PAVEMENT REPLACEMENT, BITUMINOUS
Text Revision	11/06/07	Lake County Division of Transportation		
Text Update	7/14/11			

LC0020

DESIGN NOTES:

1. Trench backfill is required if the storm sewer or culvert offset from the edge of the pavement is less than the tabulated values (the inner trench wall is closer than 2' to the edge of pavement)
2. Payment for the trench backfill shall not exceed the quantity computed using the maximum trench width dimensions. If the trench is excavated beyond these limits, the contractor shall furnish and place any additional trench backfill at his/her expense.
3. If the trench width is less than the above maximum values, payment will be based on the actual dimensions of the dug trench.
4. Bedding shall be placed from 4" under the pipe to the spring line of the pipe and is incidental to the corresponding storm sewer or culvert pay item.
5. If any part of the excavation for a drainage structure falls within 2' of the edge of pavement, the space between the side of the excavation and the outer surface of the drainage structure shall be filled with trench backfill. The cost of this item is included in the pay item for the drainage structure.



SCALE:
HORIZONTAL 1" = 5'
VERTICAL 1" = 2.5'

*THE STANDARD SUBGRADE
DIMENSION W/O UNDERCUT
IS 2 FEET.

IN UNSTABLE AREAS, THE SUBGRADE SHALL BE:
UNDERCUT (PAID FOR AS EARTH EXCAVATION PER CU YD);
REINFORCED WITH GEOTECHNICAL FABRIC FOR GROUND STABILIZATION
(PAID FOR PER SQ YD);
DRAINED BY INSTALLATION OF PIPE UNDERDRAINS, 4"
(PAID FOR PER FOOT);
BACKFILLED WITH POROUS GRANULAR EMBANKMENT, SPECIAL
(PAID FOR PER TON) AND;
TOPPED WITH AGGREGATE SUBGRADE, 12" (300mm)
(PAID FOR PER SQ YD).

REVISIONS	DATE	APPROVED BY: M. G. ZEMAITIS	DATE: APRIL 1, 2007	UNDERCUT DETAIL
		Lake County Division of Transportation		

LC2000