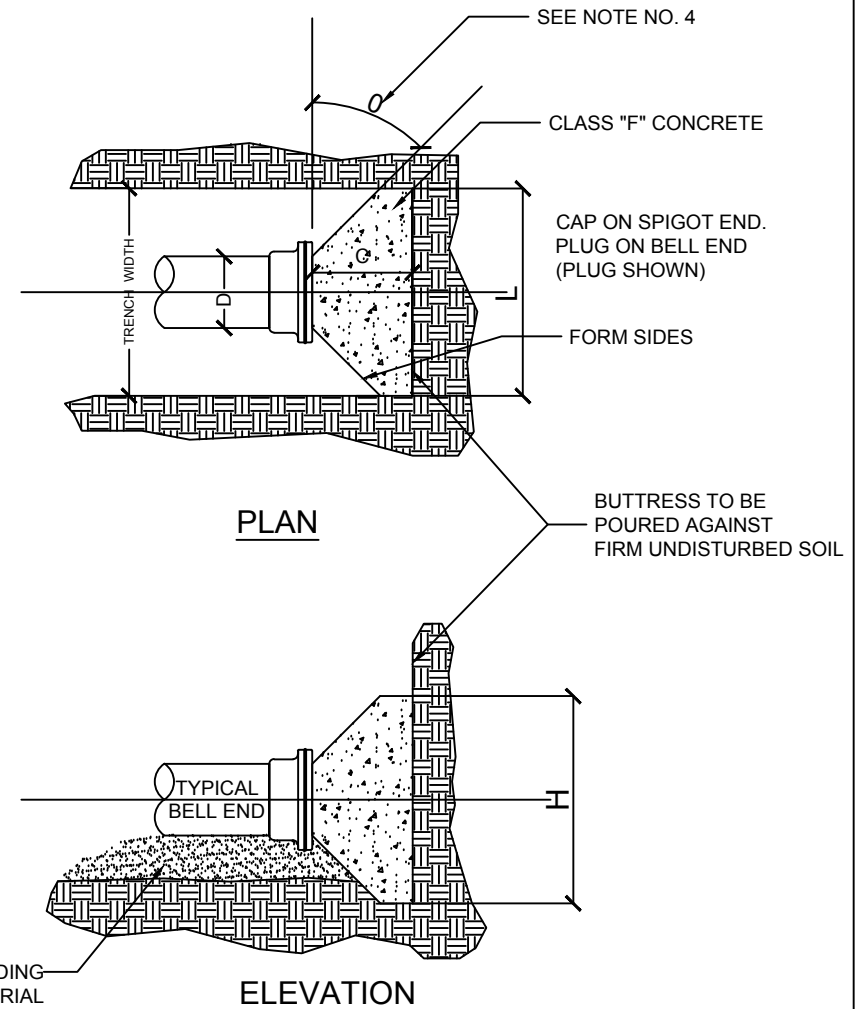


**NOTES:**

1.  $L_{(WATER)}$  DIMENSIONS IN THE TABLE ARE BASED ON A WATER PRESSURE OF 150 PSI, AN EARTH RESISTANCE OF 2 TONS PER SQ. FT., A FACTOR OF SAFETY OF 1.5 AND IS TO BE USED FOR STANDARD WATER MAINS AND WATER SERVICES.
2.  $L_{(FIRE)}$  DIMENSIONS IN THE TABLE ARE BASED ON A WATER PRESSURE OF 200 PSI, AN EARTH RESISTANCE OF 2 TONS PER SQ. FT., A FACTOR OF SAFETY OF 1.5 AND IS TO BE USED FOR FIRE LINES AND COMBINATION FIRE / WATER SERVICES.
3. SHAPE OF BACK OF BUTTRESS MAY VARY AS LONG AS POUR IS AGAINST FIRM UNDISTURBED EARTH AND SURFACE AREA (H x L) MATCHES THAT LISTED IN THE TABLE.
4. DIMENSION "C" SHOULD BE LARGE ENOUGH TO MAKE ANGLE "O" EQUAL TO OR LARGER THAN 45 DEG.
5. DIMENSION "D" EQUALS APPROX. I.D. OF PIPE LESS 2". AN EFFORT SHOULD BE MADE TO PREVENT CONCRETE FROM COVERING THE MECHANICAL JOINT BOLTS.
6. WHERE BUTTRESSES ARE NOT POSSIBLE BECAUSE OF POOR SOIL CONDITIONS OR LACK OF ROOM, STRAPPING SHALL BE PERMITTED IF APPROVED BY THE VILLAGE.
7. IF IN-SITU SOILS HAVE AN EARTH RESISTANCE OF LESS THAN 2 TONS PER SQ. FT. THE BUTTRESS AREA SHALL BE INCREASED PROPORTIONALLY.
8. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE WRAPPED IN POLYETHYLENE.
9. REFER TO VILLAGE STANDARD SPECIFICATIONS FOR WATER MAIN.

**BUTTRESS DIMENSIONS**

PIPE SIZE	DEAD ENDS		
	H	$L_{(WATER)}$	$L_{(FIRE)}$
4"	1'-6"	1'-0"	1'-0"
6"	1'-8"	1'-9"	1'-9"
8"	2'-4"	2'-0"	2'-1"
10"	2'-4"	2'-4"	3'-1"
12"	2'-7"	3'-0"	4'-0"
14"	2'-10"	3'-8"	4'-10"
16"	2'-10"	4'-9"	6'-4"
18"	3'-6"	4'-10"	6'-5"
20"	3'-10"	5'-5"	7'-2"
24"	4'-8"	6'-2"	8'-3"



SCALE: NTS

**BUTTRESS FOR DEAD ENDS**

DETAIL: W - 5B

DATE: 8-4-16

APPROVED BY: MATT FINEOUR

**VILLAGE OF PLEASANT PRAIRIE**  
 KENOSHA COUNTY, WISCONSIN