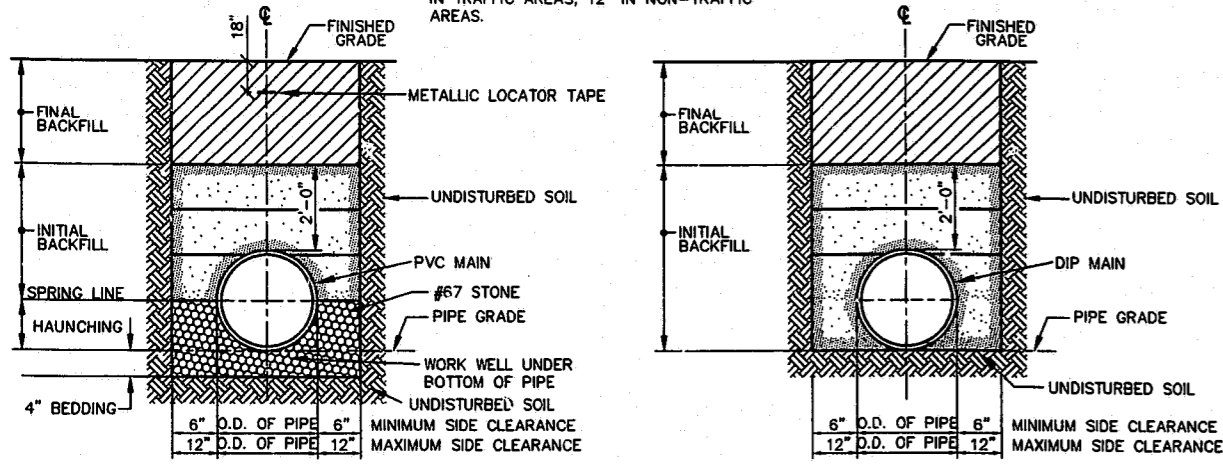
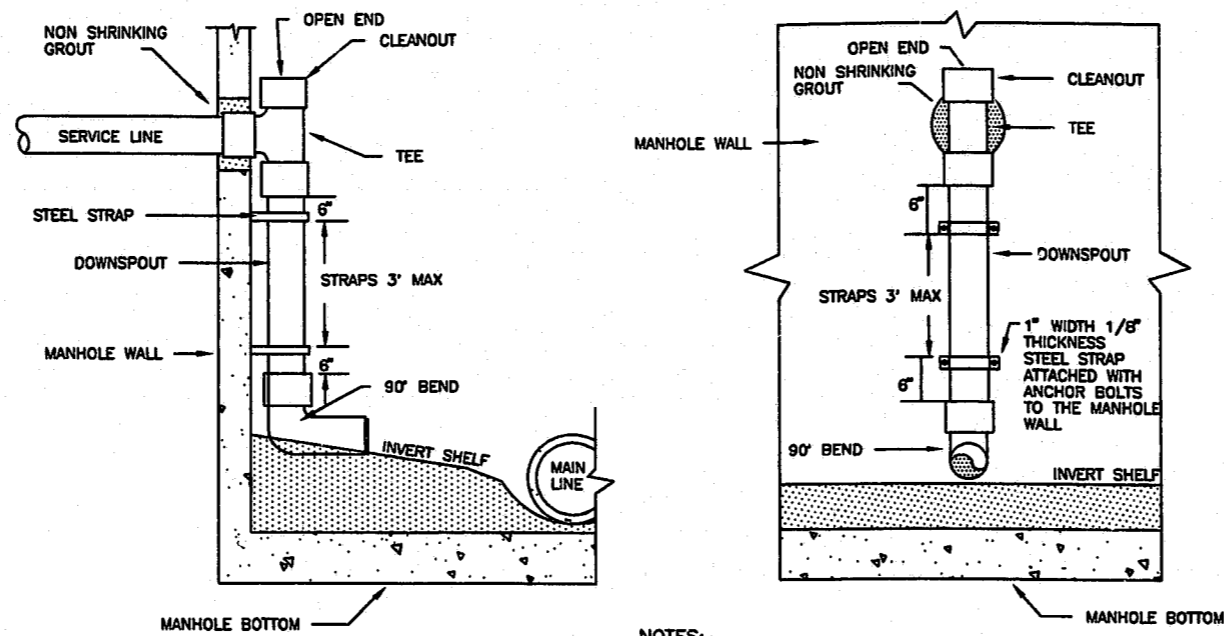


- NOTES**
- FOR TRENCHES REQUIRING SHORING AND BRACING, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SHORING AND BRACING.
 - NO ROCKS OR BOULDERS 4" OR LARGER TO BE USED IN INITIAL BACKFILL.
 - ALL BACKFILL MATERIAL SHALL BE SUITABLE NATIVE MATERIAL.
 - BACKFILL SHALL BE TAMPED IN 6" LAYERS IN TRAFFIC AREAS, 12" IN NON-TRAFFIC AREAS.

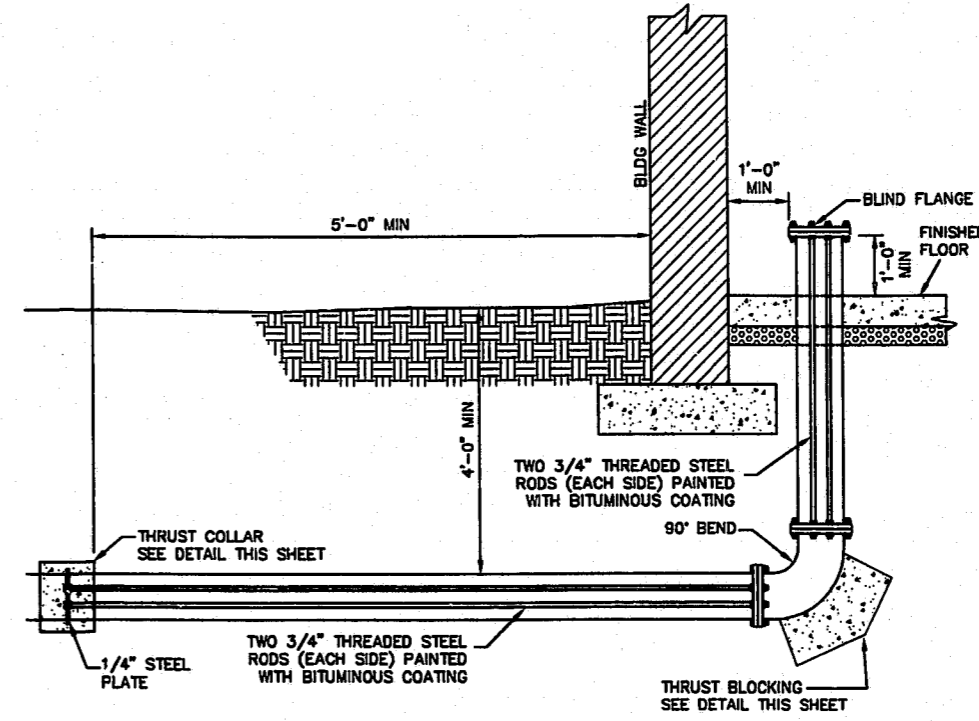


1 TYPICAL UTILITY MAIN TRENCH
SCALE: N.T.S.

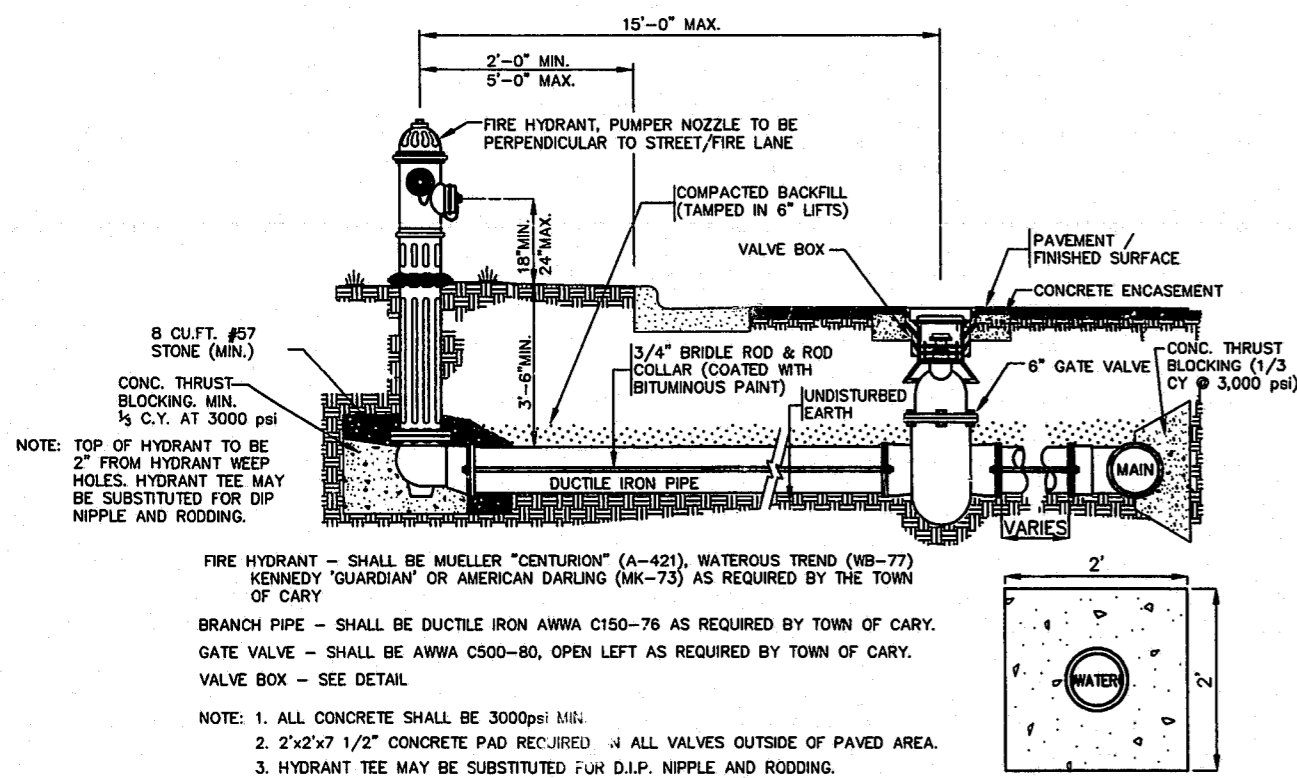


- NOTES:**
- PIPING CONFIGURATION TO BE USED ON ALL DROPS OVER 30'.
 - DROPS TO BE CONSTRUCTED OF A.B.S., P.V.C. OR D.I.P. PIPE.
 - SERVICE LINE MAY NOT ENTER MANHOLE THROUGH CONE SECTION OR ITS JOINT. THIS DETAIL SHALL NOT BE USED FOR FORCE MAINS.

4 STANDARD INSIDE DROP FOR SANITARY SEWER SERVICE
SCALE: N.T.S.



7 8\"/>



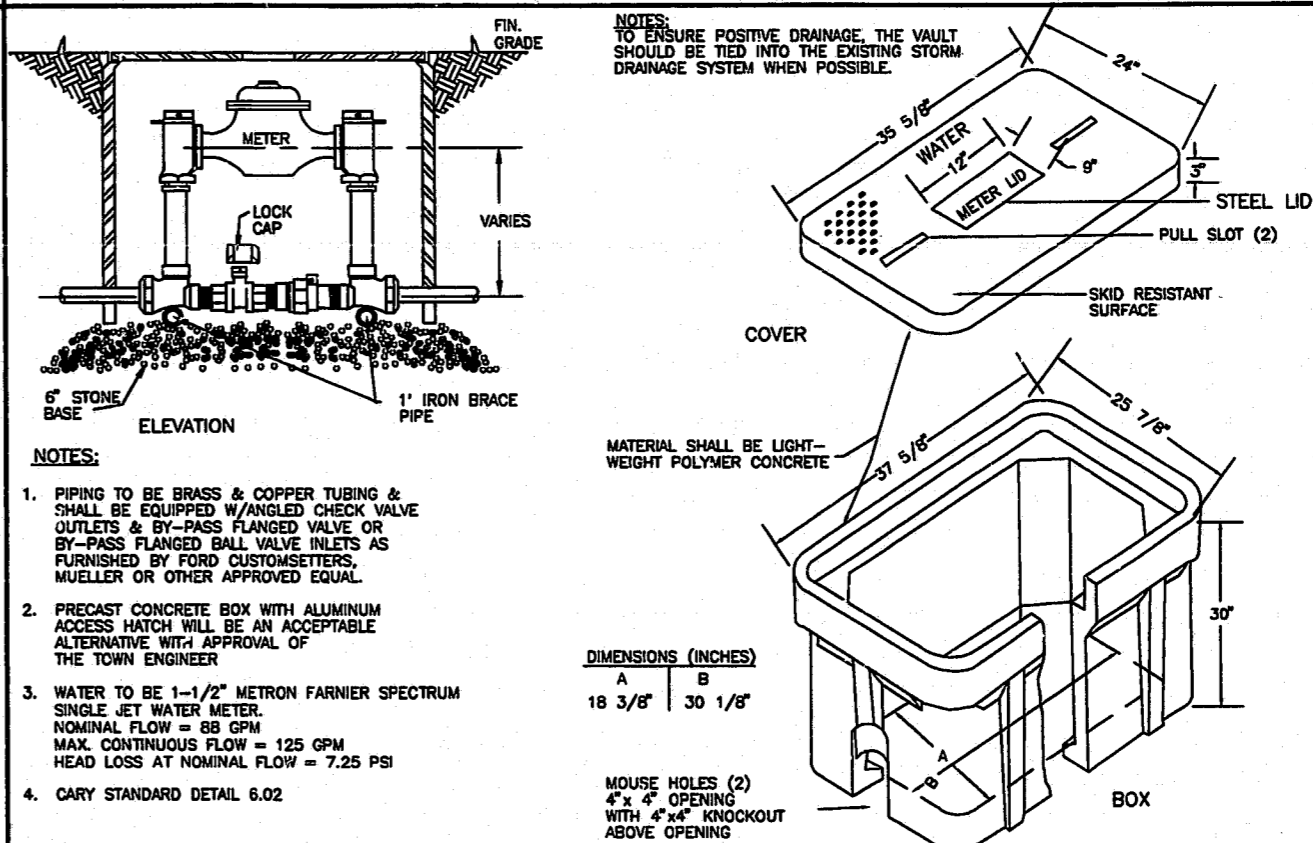
2 TYPICAL FIRE HYDRANT DETAIL
SCALE: N.T.S.

REACTION BEARING AREAS FOR HORIZONTAL WATER PIPE BENDS
BASED ON TEST PRESSURE OF 200psi
All areas given are in Square Feet

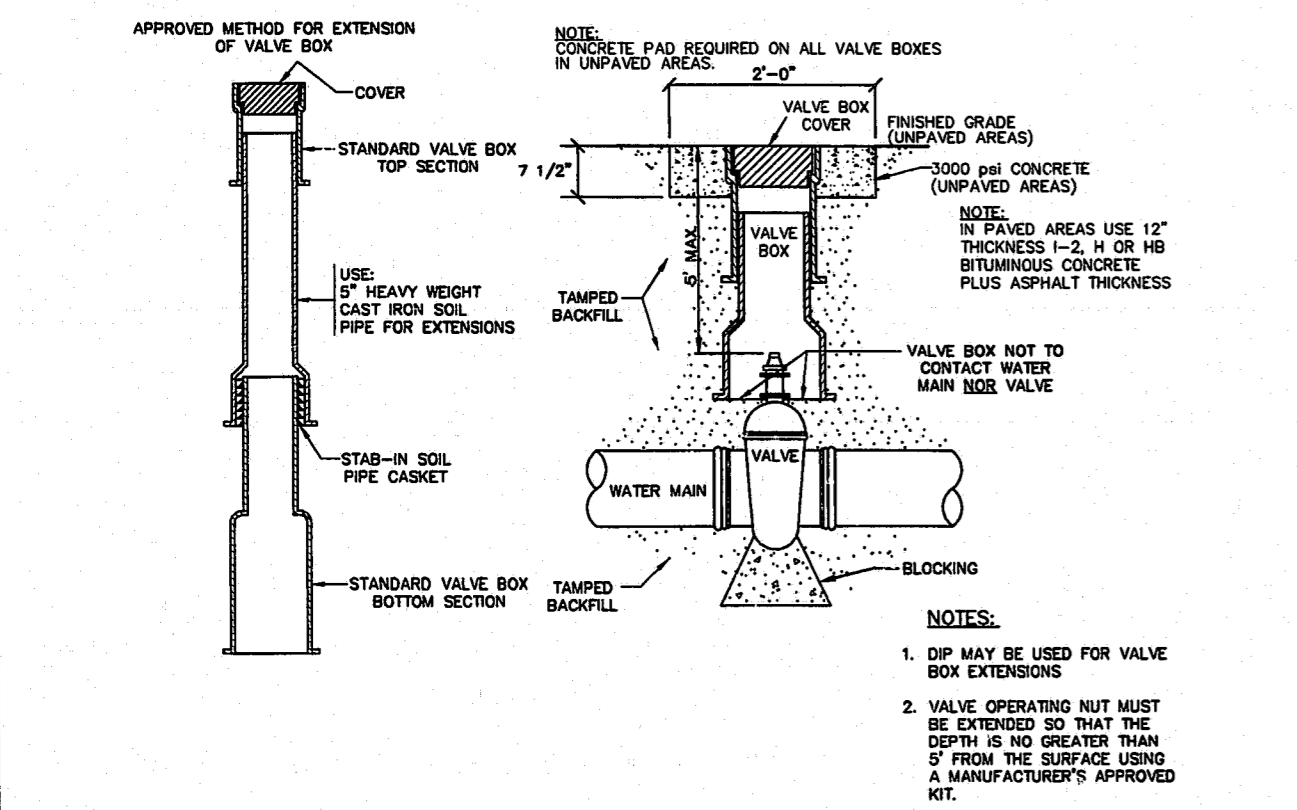
SIZE AND DEGREE OF BEND	STATIC THRUST IN POUNDS	45° BEND	60° BEND	90° BEND	120° BEND	135° BEND	150° BEND	180° BEND
11 1/4"	1,108	1	1	1	1	1	1	1
22 1/2"	2,207	1	2	3	1	1	1	2
45"	4,328	2	3	3	1	1	2	5
90"	7,996	2	4	5	1	1	2	8
PLUG	5,655	3	4	4	1	1	2	6
11 1/4"	1,970	1	1	2	1	1	1	2
22 1/2"	3,922	1	2	3	1	1	1	4
45"	7,694	2	4	5	1	1	2	8
90"	14,215	4	8	9	2	2	4	15
PLUG	10,053	3	5	6	2	2	3	10
11 1/4"	4,433	2	3	3	1	1	2	5
22 1/2"	8,826	3	5	6	2	2	3	9
45"	17,312	5	9	11	3	3	5	18
90"	31,983	8	16	19	4	4	8	32
PLUG	22,619	6	12	14	3	3	6	23

REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR
Use 6° - 90° bend value for hydrants for additional safety factor.

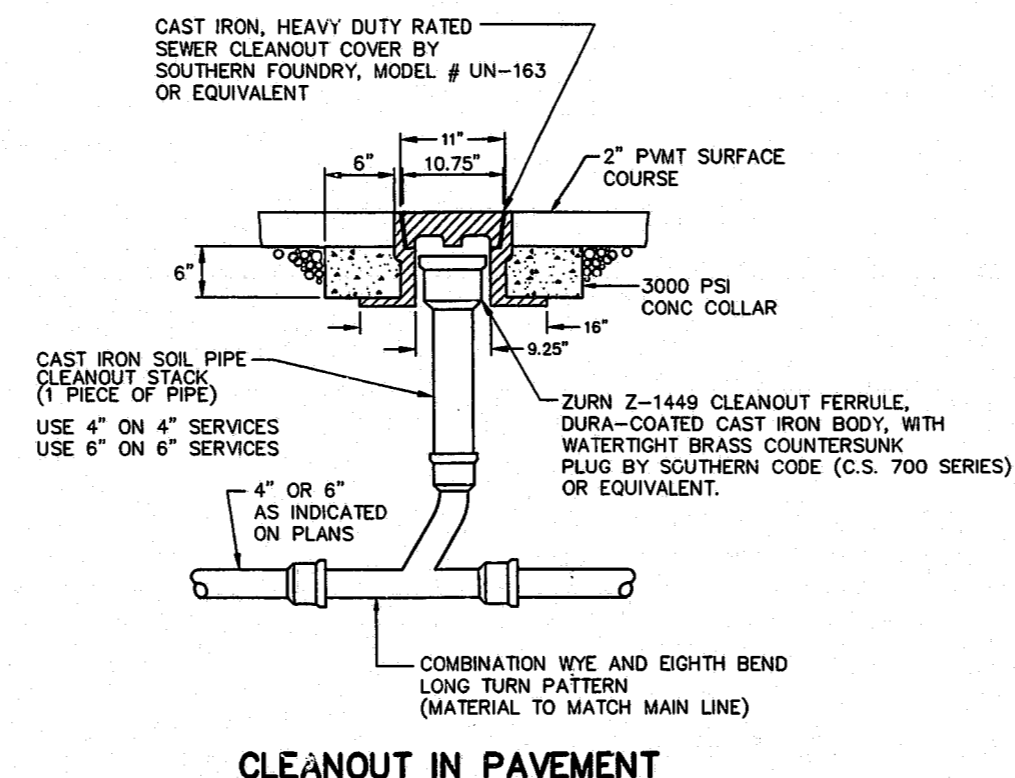
5 STANDARD THRUST BLOCKING
SCALE: N.T.S.



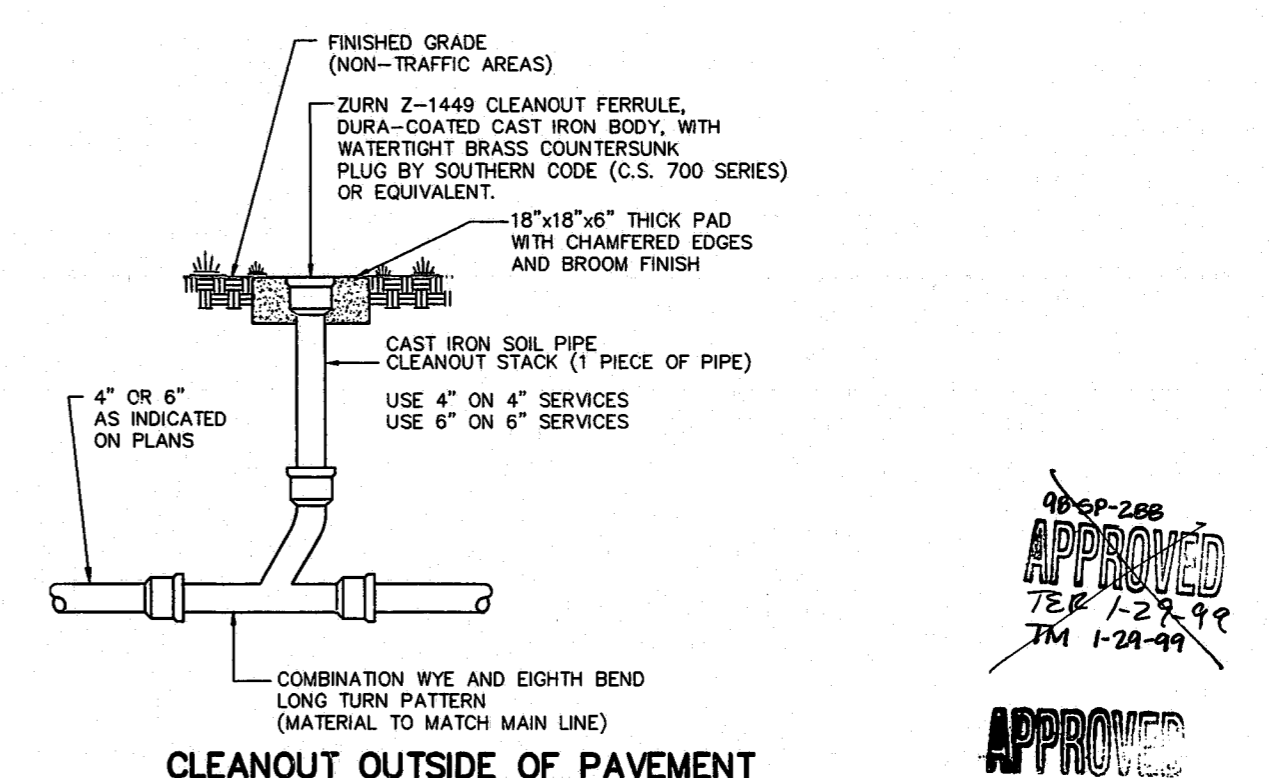
8 STANDARD 1 1/2\"/>



3 VALVE BOX INSTALLATION AND EXTENSION DETAIL
SCALE: N.T.S.



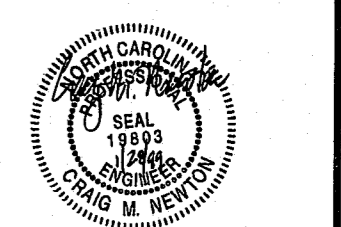
6 TYPICAL CLEANOUT DETAIL
SCALE: N.T.S.



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WEEKS REALTY, LP
1800 PERIMETER PARK DRIVE, SUITE 200
MORRISVILLE, NORTH CAROLINA

CIVIL/SITE DETAILS

ISSUE SEQUENCE

NO.	DATE	DESCRIPTION
A	1/28/99	ISSUE FOR CONSTRUCTION

PROJECT NO.: LIC045.000
DESIGNED BY: ARP
DRAWN BY: ARP
DATE: 1/28/99

C7.3
OF 1115
CADD #: G:\LIC\045\CIVL\71007-03