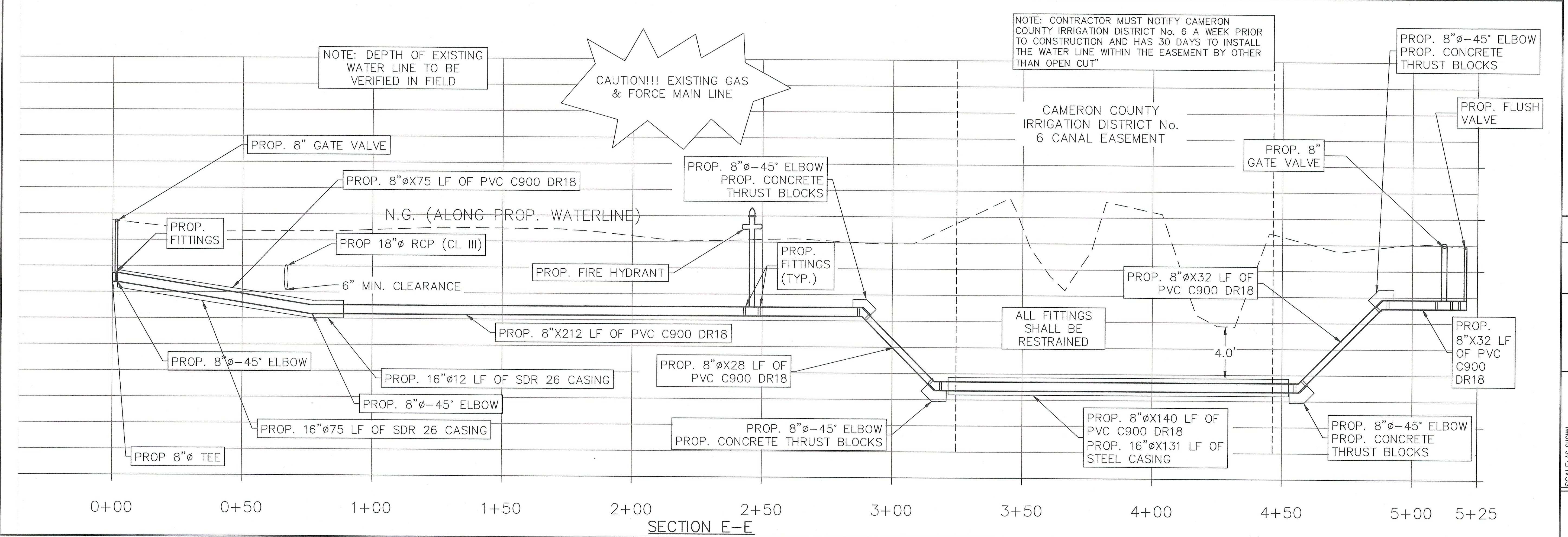


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 FIRM No. 486



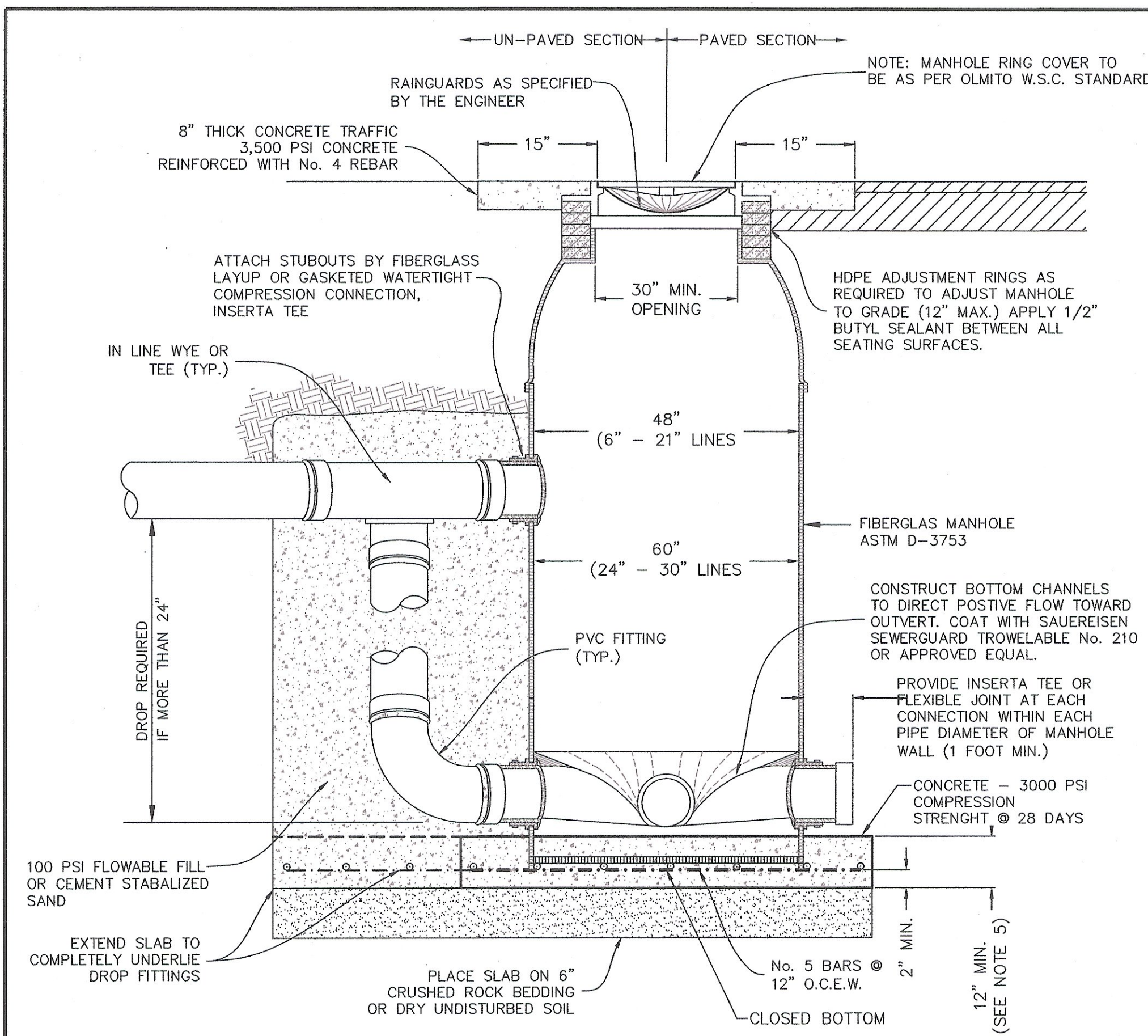
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COASTAL KING - LOS FRESNOS SUBDIVISION
 UTILITY DETAILS

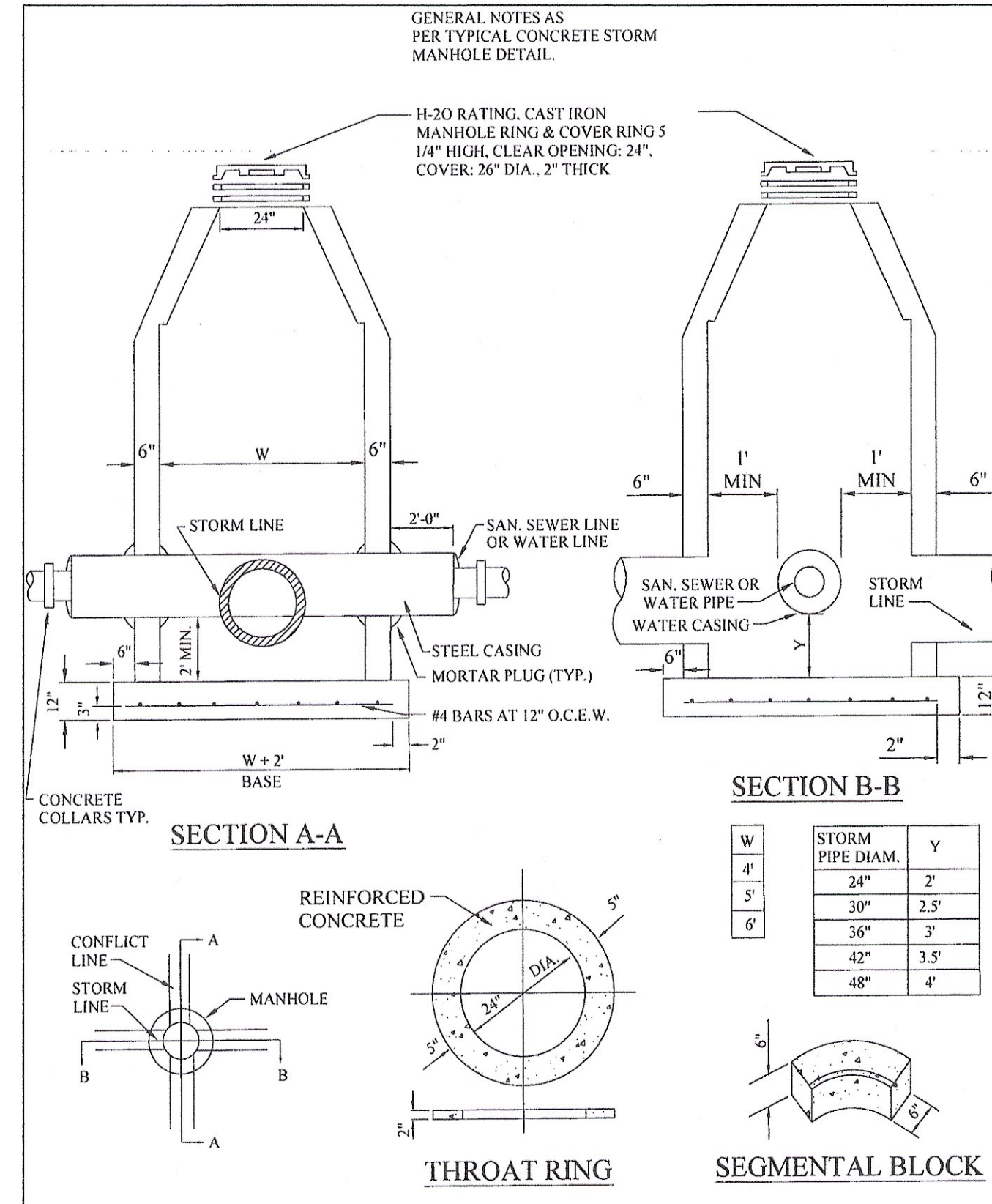


SCALE: AS SHOWN	DATE	BY
DATE: _____	_____	_____
SURVEY BY: _____	_____	_____
DRAWN BY: D.C.	_____	_____
PREPARED BY: _____	_____	_____
CHECKED BY: R.G.	_____	_____

SHEET 7



SANITARY SEWER MANHOLE DETAIL



CONFLICT STORM MANHOLE DETAIL

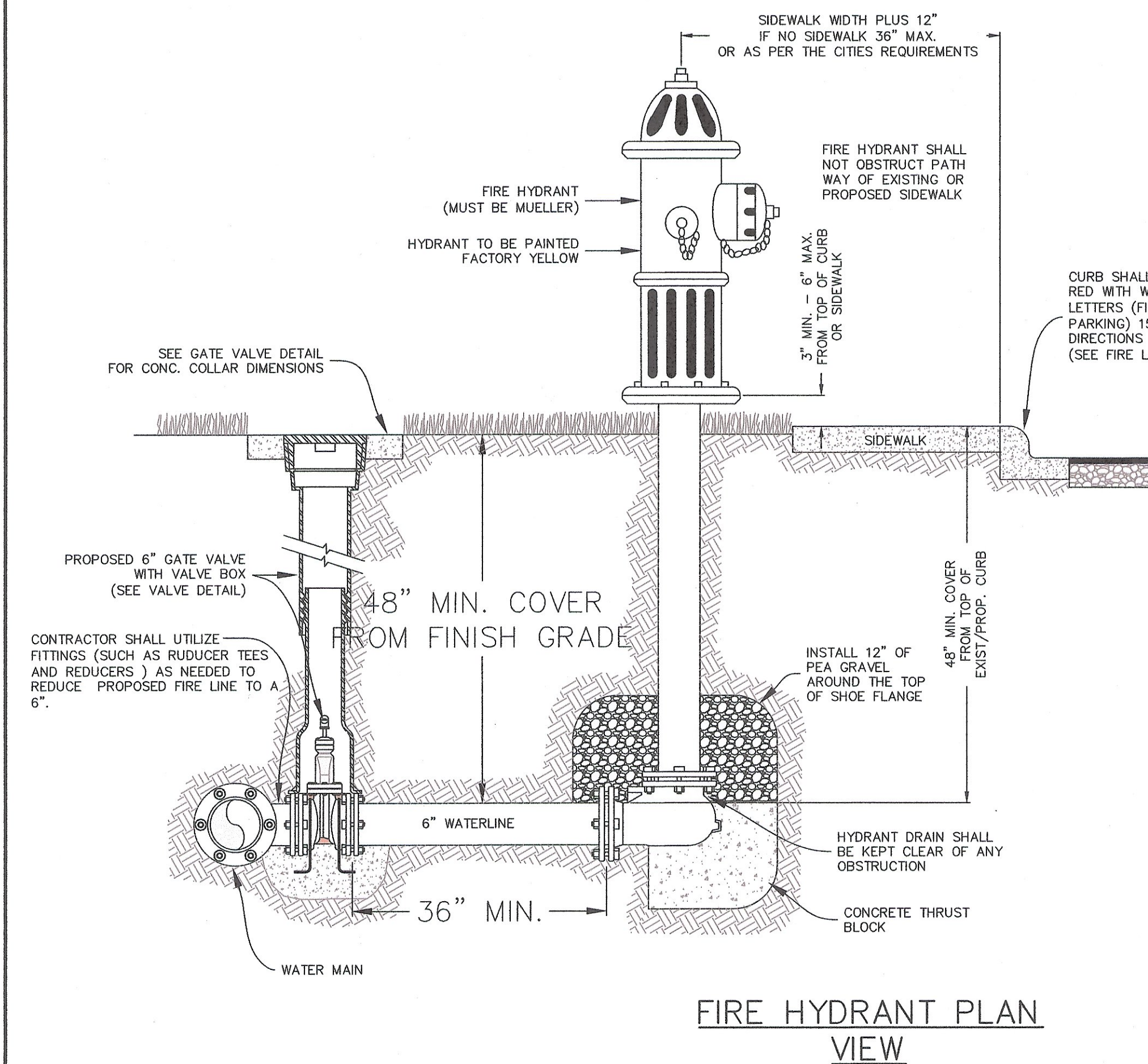
BORING INSTALLATION AND CASING INFORMATION

CARRIER PIPE SIZE	PIPE CASING SIZE	STEEL CASING MIN. WALL THICKNESS
6"	12"	0.187"
8"	16"	0.187"
10"	18"	0.250"
12"	20"	0.250"
14", 15"	24"	0.344"
16"	24"	0.344"
18"	30"	0.375"
24"	36"	0.375"
36"	48"	0.625"

UTILITY LINE BORE NOTES:

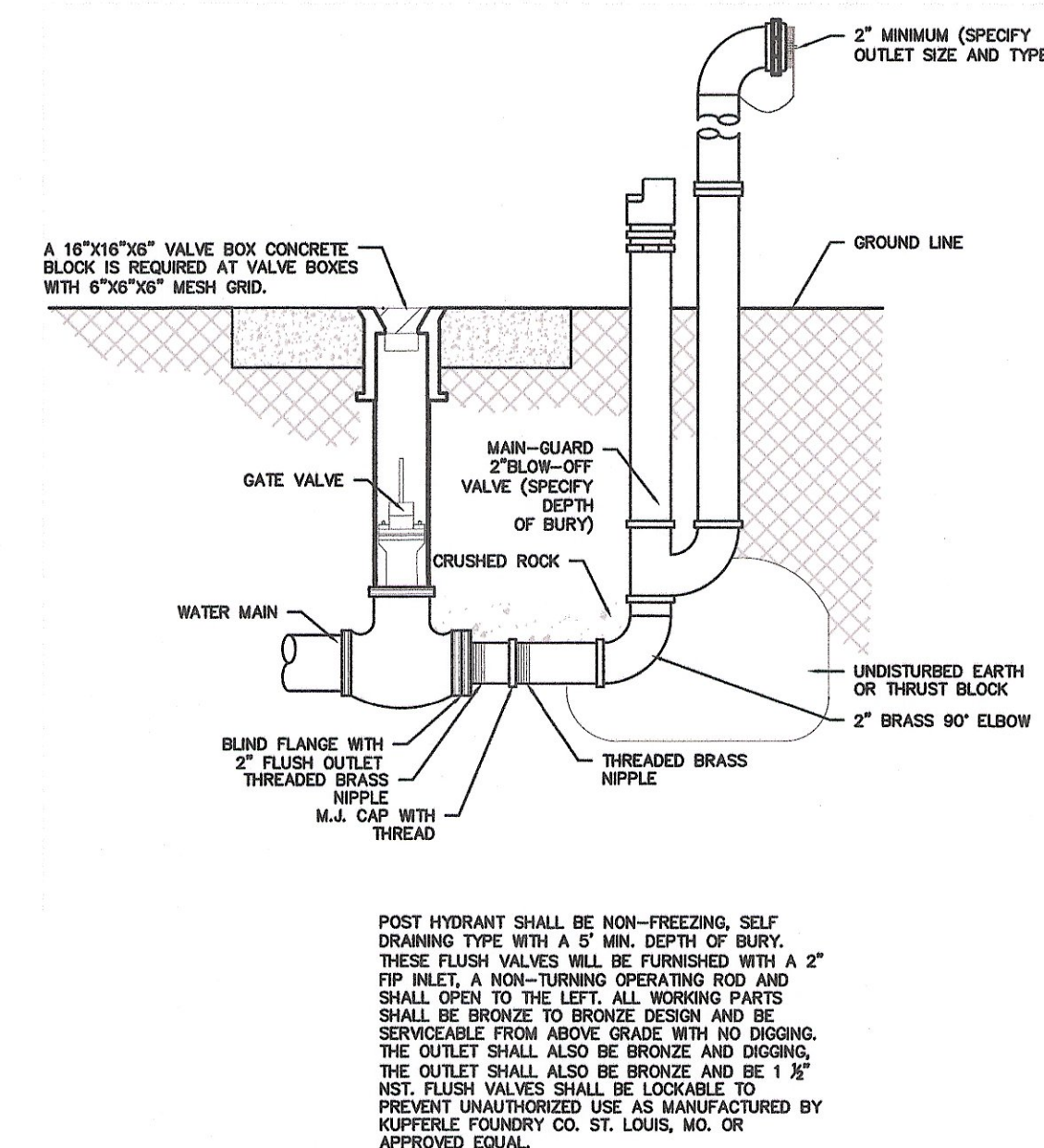
- ALL STEEL CASING SHALL BE WELDED.
- CASING SHALL BE CLOSED AT EACH END USING BRICK OR BLOCK AND NON-SHRINK MORTAR GROUTED.
- CASING SPACERS SHALL BE USED TO INSTALL THE CARRIER PIPE INSIDE THE ENCASEMENT PIPE. CASING SPACERS SHALL FASTEN TIGHTLY ON THE CARRIER PIPE SO THAT WHEN THE CARRIER PIPE IS BEING INSTALLED THE SPACERS WILL NOT MOVE ALONG THE PIPELINE. CASING SPACERS SHALL BE DOUBLED ON EACH END OF THE ENCASEMENTS.
- PROJECTION-TYPE CASING SPACERS SHALL BE CONSTRUCTED OF PREFORMED SECTIONS ON HIGH DENSITY POLYETHYLENE. THE FLEXIBLE SECTIONS SHALL BE JOINED TOGETHER AROUND THE PIPE TO PROVIDE A MINIMUM OF 16 PLASTIC PROJECTIONS PER SPACER SECTION.
- INSTALLATION AND SIZE OF SPACERS SHALL BE PER MANUFACTURER'S RECOMMENDATIONS.

UTILITY LINE BORE AND PIPE CASING DETAIL
NTS



FIRE HYDRANT PLAN VIEW

- NOTE:**
- FOR FIRE HYDRANT LOCATION SEE UTILITY OR WATER IMPROVEMENT PLAN.
 - FOR FLANGE ELEVATION SEE UTILITY PLAN OR WATER IMPROVEMENT PLAN.
 - FOR THRUST BLOCK INFORMATION ON FITTINGS, SEE CONCRETE THRUST BLOCK DETAIL.
 - SEE TYPICAL FLEXIBLE PIPE TRENCH BEDDING AND BACKFILL DETAIL FOR MORE INFORMATION.
 - ALL FITTINGS TO BE WRAPPED IN POLYETHYLENE PLASTIC.
 - ALL FITTINGS TO BE MECHANICAL JOINTS.
 - USE ALTERNATIVE INSTALLATION ONLY IF NORMAL INSTALLATION IS NOT PERMITTED BY UNFORSEEN CONDITIONS. CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO INSTALLATION.
 - ALL FIRE HYDRANTS SHALL BE TESTED AS PER THE CITIES REQUIREMENTS.



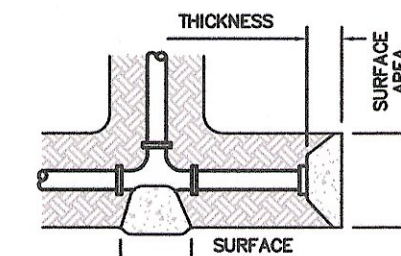
FLUSH VALVE DETAIL

THRUST BLOCK SIZE

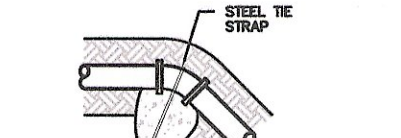
DIAMETER OF PIPE IN INCHES	HORIZONTAL BENDS		WEIGHT AT VERTICAL BENDS-LBS.
	SURFACE AREA SQ. FT.	THICKNESS IN INCHES	
22-1/2" BENDS			
6 OR LESS	2	8	1,700
8	3	12	3,000
10	3.5	12	4,500
12	4	14	6,600
14	5	18	9,000
16	6	18	11,800
45° BEND			
6 OR LESS	4	12	3,200
8	5	14	5,800
10	6	18	9,000
12	7	18	13,000
14	8	24	17,000
16	11.5	24	23,200
90° BEND			
6 OR LESS	8	12	6,000
8	8	15	10,700
10	10	18	16,700
12	12	18	24,000
14	16	24	32,000
16	21	24	42,700
TEES & DEAD ENDS			
6 OR LESS	3	12	---
8	4	15	---
10	6	18	---
12	8.5	18	---
14	11.5	24	---
16	15	24	---

NOTE:
ALL VALUES SHOWN ARE MIN. FOR A HYDROSTATIC PRESSURE OF 150 PSI AND A SOIL RESISTANCE OF 2,000 LBS PER SQ. FT. WITH PIPELINE HAVING A MIN. OF 3 FT. OF COVER WITH CURB AND GUTTER AND A 5 FT. MIN. WITHOUT CURB AND GUTTER.

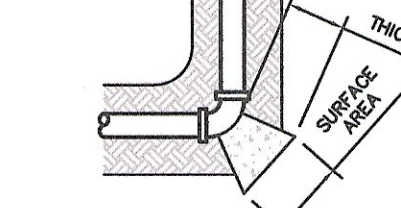
NOTE: SEE THRUST BLOCK SIZE CHART FOR PROPER THICKNESS AND SURFACE AREAS



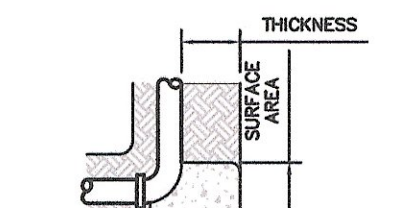
TEES & DEAD ENDS



VERTICAL BENDS



HORIZONTAL BENDS



HYDRANT BURYS

THRUST BLOCK DETAIL



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