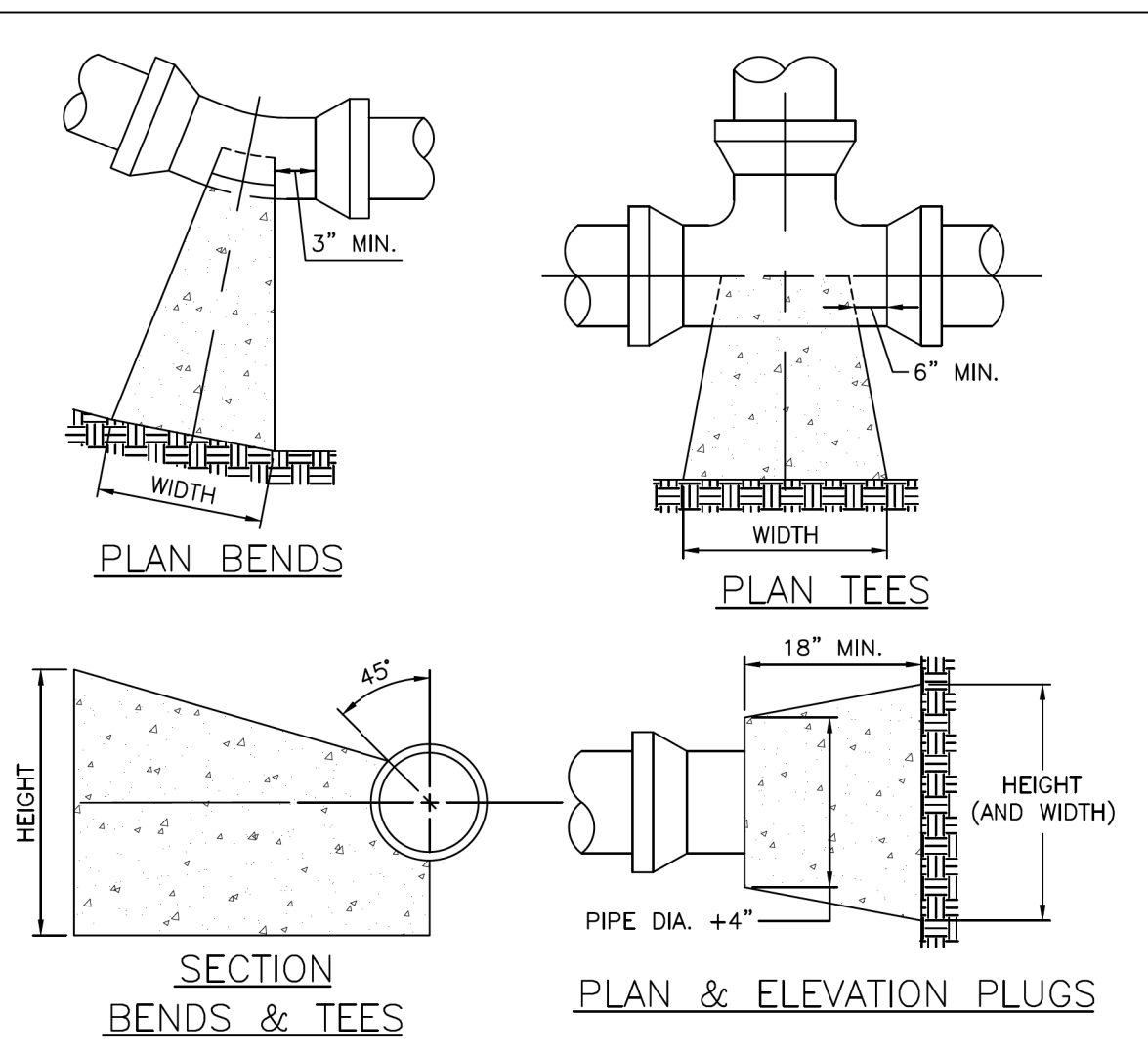
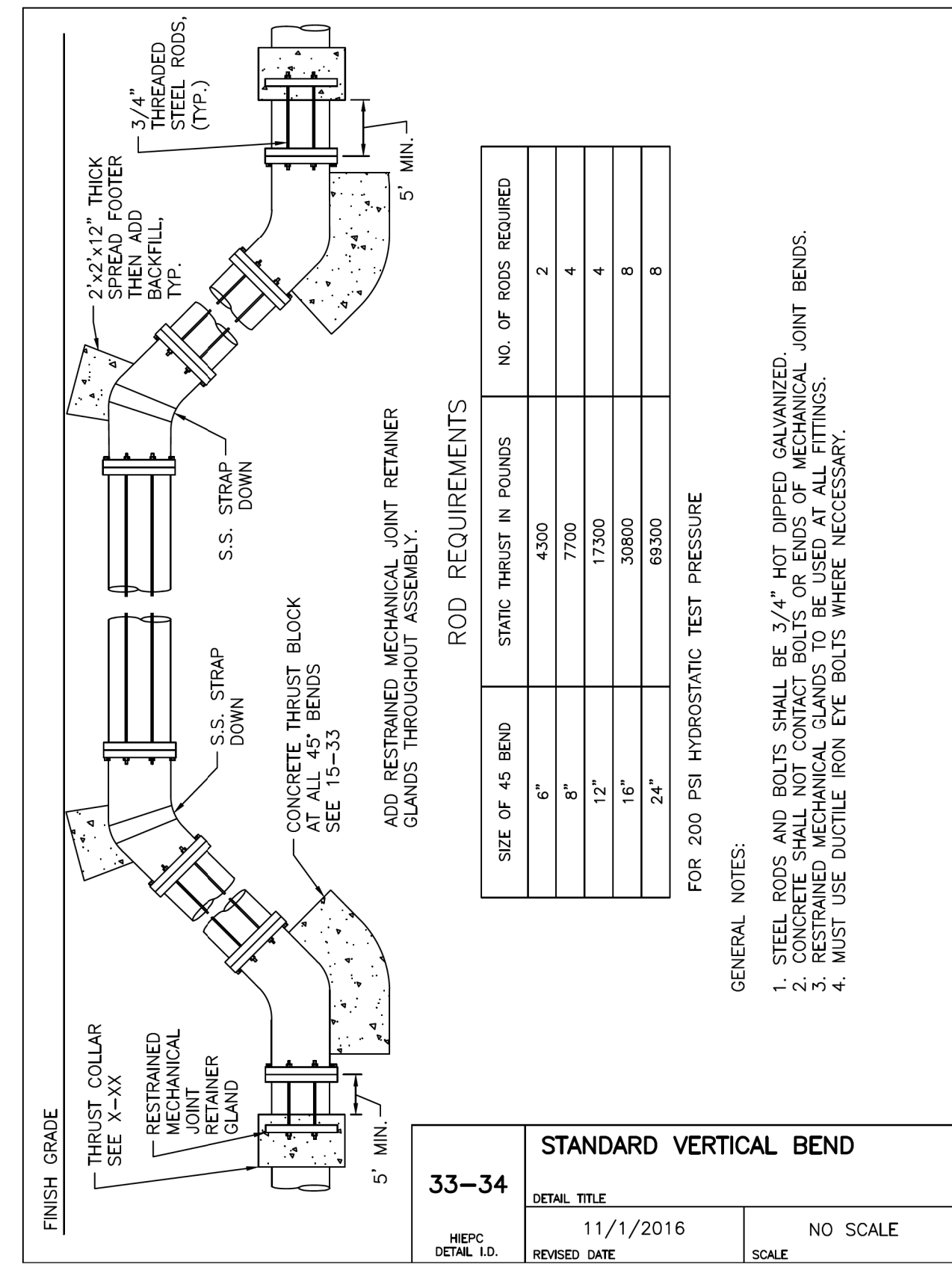


REACTION BEARING AREAS FOR HORIZONTAL PIPE BENDS							
DIA. (IN)	FITTING	REACTION AREA (SF)					
		1000 #/SF	1600 #/SF	2000 #/SF	4000 #/SF	8000 #/SF	10000 #/SF
6	11.25	2	1	1	1	1	1
	22.5	3	2	2	2	2	2
	45	5	4	3	2	1	1
	90	9	6	5	3	2	1
	PLUG/TEE	7	4	4	2	1	1
8	11.25	3	2	2	1	1	1
	22.5	5	3	3	2	1	1
	45	9	6	5	3	2	1
	90	16	10	8	4	2	2
	PLUG/TEE	12	8	6	3	2	2
12	11.25	5	4	3	2	1	1
	22.5	10	7	5	3	2	1
	45	20	13	10	5	3	2
	90	36	23	18	9	5	4
	PLUG/TEE	26	16	13	7	4	3
16	11.25	9	6	5	3	2	1
	22.5	18	12	9	5	3	2
	45	35	22	18	9	5	4
	90	64	40	32	16	8	7
	PLUG/TEE	46	29	23	12	6	5
24	11.25	20	13	10	5	3	2
	22.5	40	25	20	10	5	4
	45	78	49	39	20	10	8
	90	144	90	72	36	18	15
	PLUG/TEE	102	64	51	26	13	11
30	11.25	32	20	16	8	4	4
	22.5	63	39	32	16	8	7
	45	122	77	61	31	16	13
	90	225	141	113	57	29	23
	PLUG/TEE	160	100	80	40	20	16
36	11.25	45	29	23	12	6	5
	22.5	90	56	45	23	12	9
	45	176	110	88	44	22	18
	90	324	203	162	81	41	33
	PLUG/TEE	230	144	115	58	29	23



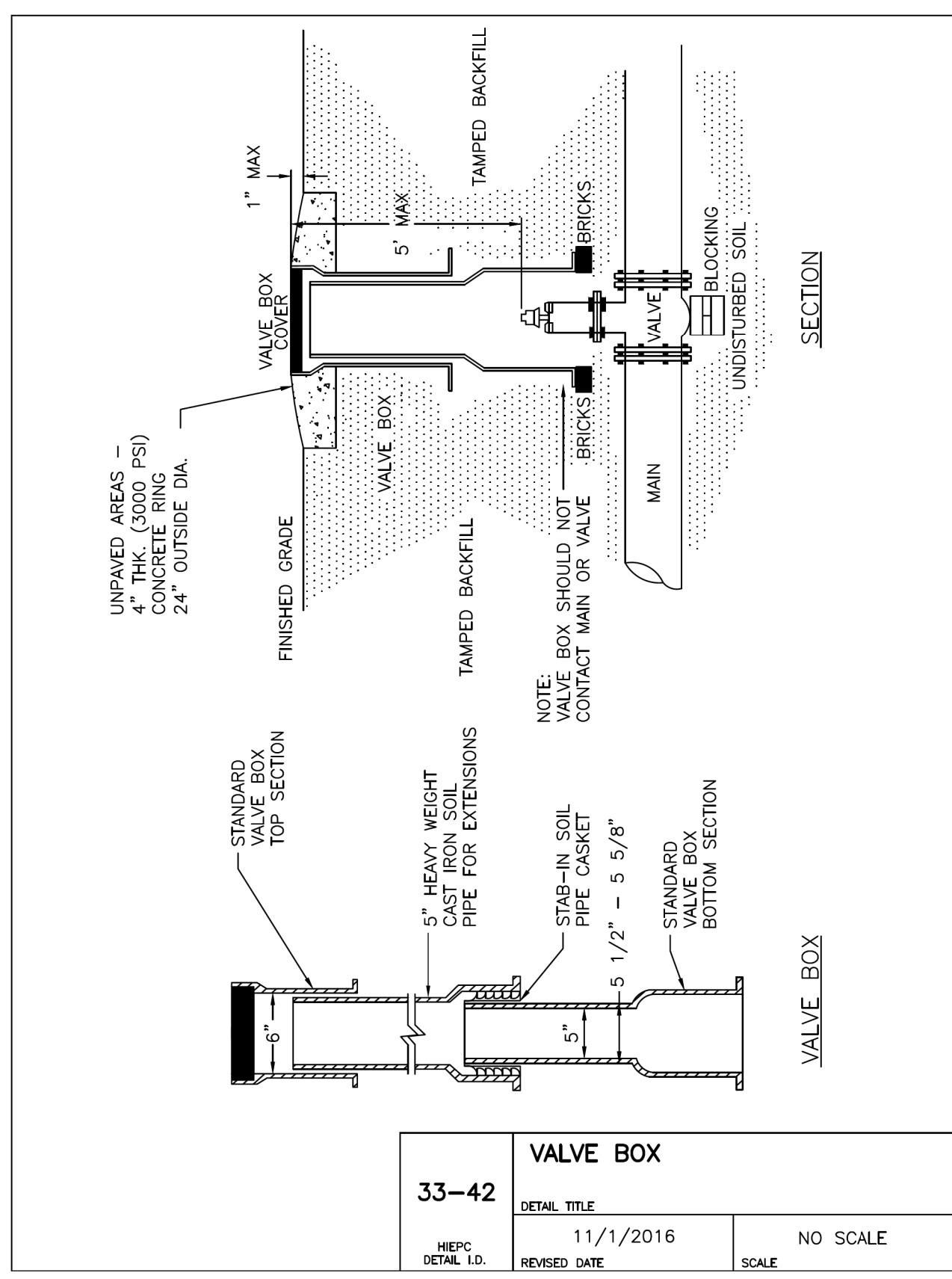
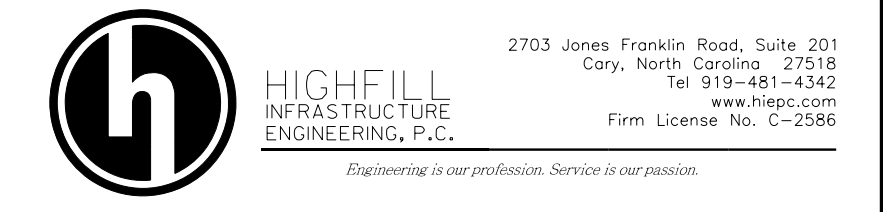
- NOTES:
- REACTION BEARING AREAS ARE IN SQUARE FEET MEASURED IN A VERTICAL PLANE IN THE TRENCH SIDE AT AN ANGLE OF 90° TO THE THRUST VECTOR.
 - REACTION AREA CALCULATED BASED ON 150 PSI TEST PRESSURE AND 1.5 SAFETY FACTOR.
 - GENERAL SOIL PROPERTIES: QUICKSAND = 1,000 #/SF; GRAVEL/COARSE SAND = 1,600 #/SF; SOFT CLAY = 2,000 #/SF; MODERATELY DRY CLAY, SAND-CLEAN DRY = 4,000 #/SF; DRY CLAY, SAND-COMPACT FIRM = 8,000 #/SF; ROCK = 10,000 #/SF.
 - USE 6" - 90° BEND VALVE FOR HYDRANTS.
 - WIDTH OF BLOCK SHOULD BE BETWEEN 1X AND 2X BLOCK HEIGHT.
 - CONSULT ENGINEER FOR FITTING OR SIZES NOT SHOWN.
 - CONCRETE SHALL BE 3000 PSI.
 - CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
 - CONCRETE SHALL HAVE CONCRETE THRUST BLOCKING UNLESS NOTED OTHERWISE.

33-33
 STANDARD THRUST BLOCKING
 DETAIL TITLE: 11/1/2016
 HIEPC DETAIL I.D. NO SCALE

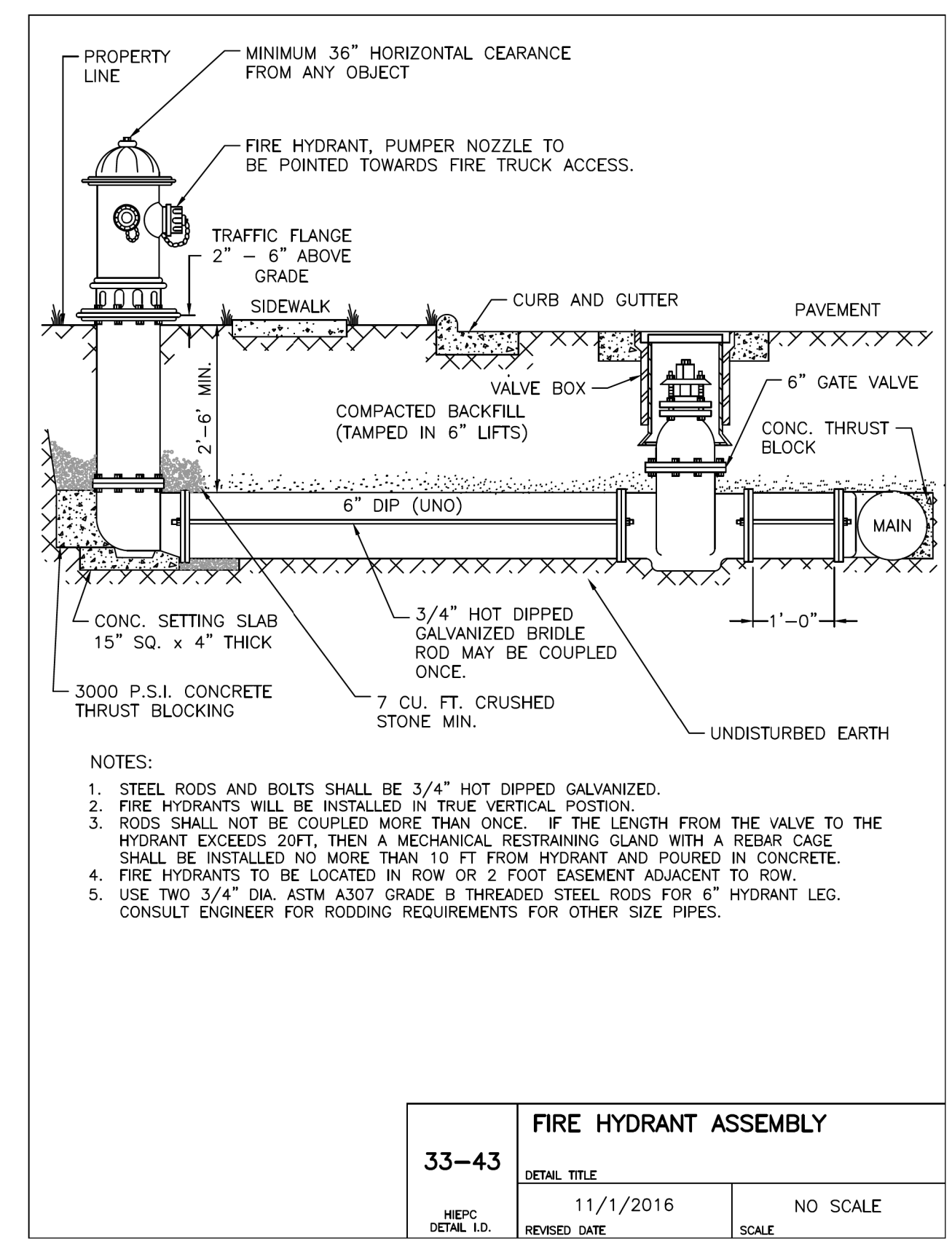


33-34
 STANDARD VERTICAL BEND
 DETAIL TITLE: 11/1/2016
 HIEPC DETAIL I.D. NO SCALE

UTILITY CONSTRUCTION
 DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED



33-42
 VALVE BOX
 DETAIL TITLE: 11/1/2016
 HIEPC DETAIL I.D. NO SCALE



33-43
 FIRE HYDRANT ASSEMBLY
 DETAIL TITLE: 11/1/2016
 HIEPC DETAIL I.D. NO SCALE