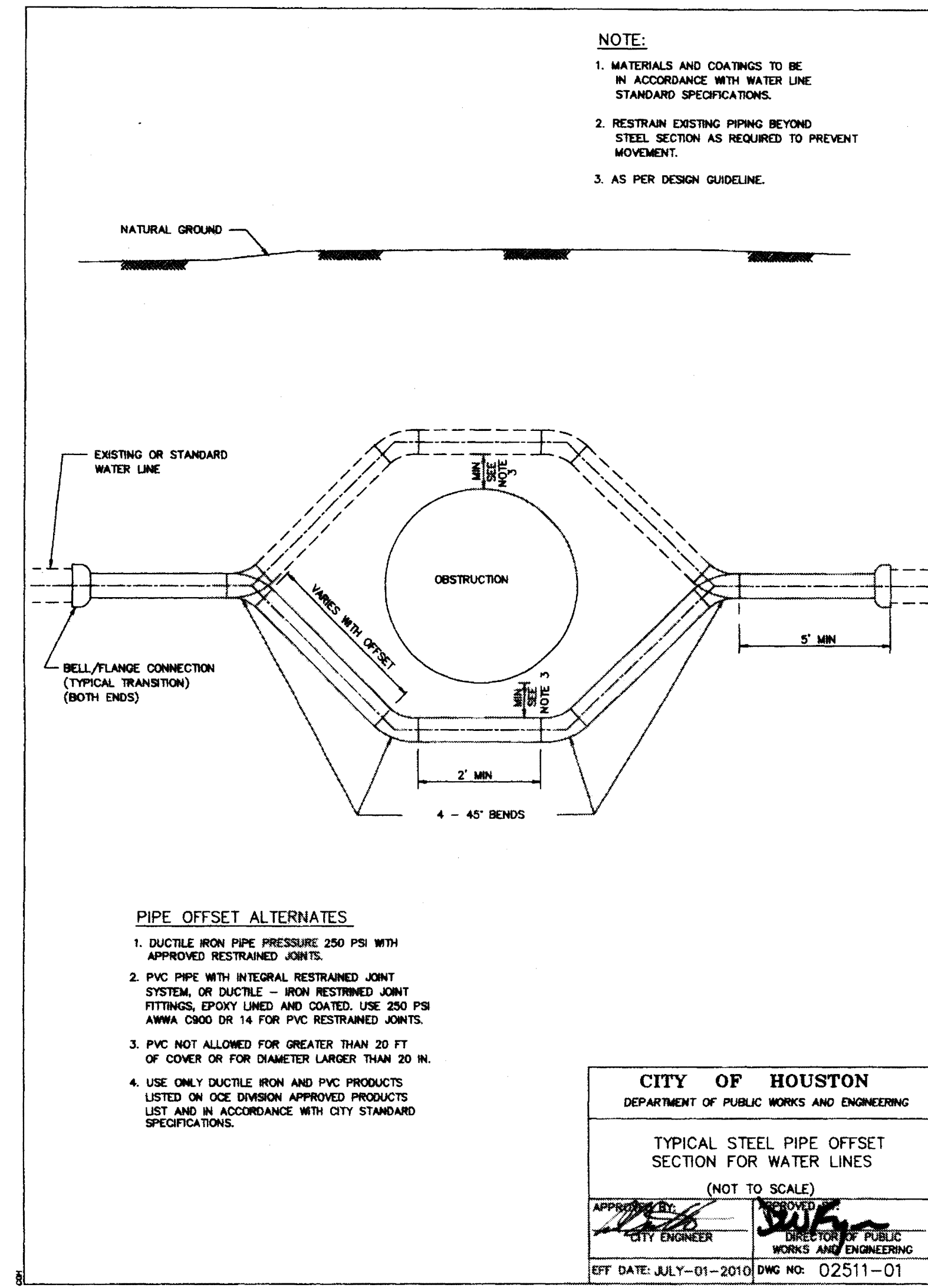


CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
WATER DISTRIBUTION MAIN
BEDDING AND BACKFILL FOR
OPEN CUT TRENCHES
(NOT TO SCALE)
CITY ENGINEER: [Signature]
DATE: JUL-01-2010 DWG NO: 02317-04

1 WATER LINE BEDDING Scale: N.T.S. File:



CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
TYPICAL STEEL PIPE OFFSET
SECTION FOR WATER LINES
(NOT TO SCALE)
CITY ENGINEER: [Signature]
DATE: JUL-01-2010 DWG NO: 02511-01

PIPE OFFSET ALTERNATES
1. DUCTILE IRON PIPE PRESSURE 250 PSI WITH APPROVED RESTRAINED JOINTS.
2. PVC PIPE WITH INTERNAL RESTRAINED JOINT SYSTEM, OR DUCTILE - IRON RESTRAINED JOINT FITTINGS, SPORT LINED AND COATED, USE 200 PSI ANMA C900 OR 14 FOR PVC RESTRAINED JOINTS.
3. PVC NOT ALLOWED FOR GREATER THAN 20 FT OF COVER OR FOR DIAMETER LARGER THAN 20 IN.
4. USE ONLY DUCTILE IRON AND PVC PRODUCTS LISTED ON OCE DIVISION APPROVED PRODUCTS LIST AND IN ACCORDANCE WITH CITY STANDARD SPECIFICATIONS.

3 WATER LINE OFFSET Scale: N.T.S. File:

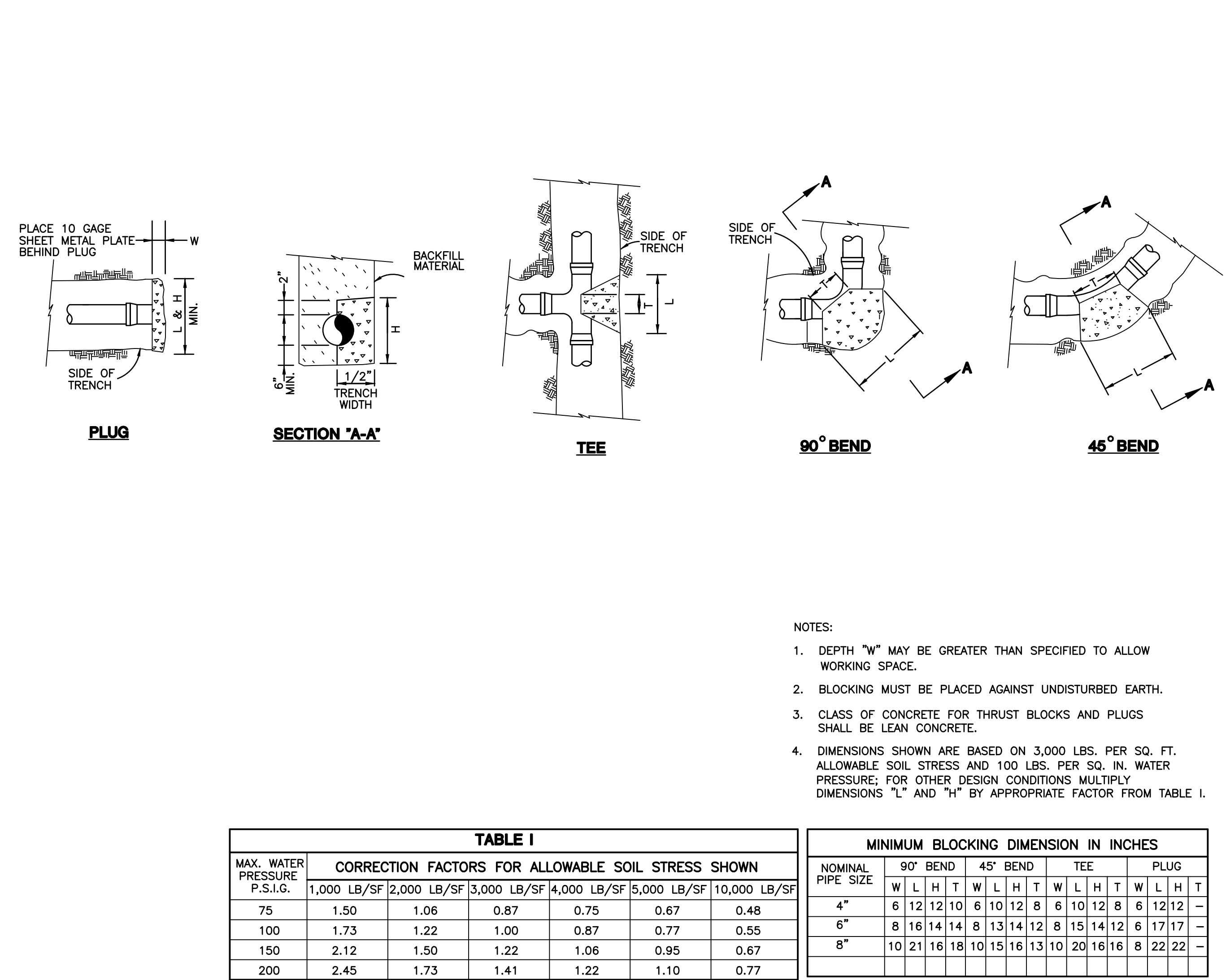


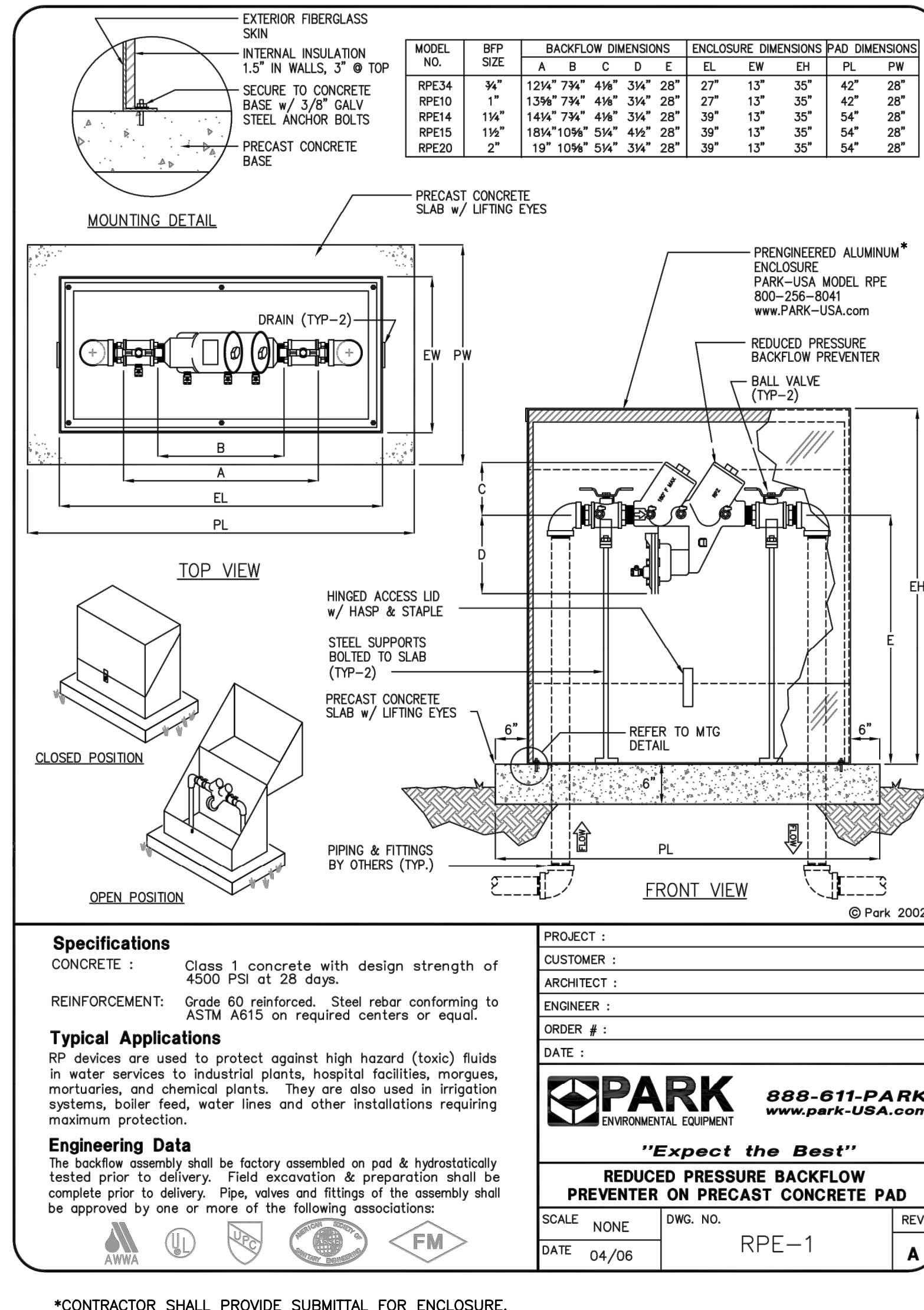
TABLE I
CORRECTION FACTORS FOR ALLOWABLE SOIL STRESS SHOWN

MAX. WATER PRESSURE P.S.I.G.	1,000 LB/SF	2,000 LB/SF	3,000 LB/SF	4,000 LB/SF	5,000 LB/SF	10,000 LB/SF
75	1.50	1.06	0.87	0.75	0.67	0.48
100	1.73	1.22	1.00	0.87	0.77	0.55
150	2.12	1.50	1.22	1.06	0.95	0.67
200	2.45	1.73	1.41	1.22	1.10	0.77

MINIMUM BLOCKING DIMENSION IN INCHES

NOMINAL PIPE SIZE	90° BEND			45° BEND			TEE			PLUG			
	W	L	H	W	L	H	W	L	H	W	L	H	
4"	6	12	12	6	10	12	8	6	10	12	8	6	12
6"	8	16	14	8	13	14	12	8	15	14	12	8	17
8"	10	21	16	10	15	16	13	10	20	16	16	8	22

5 THRUST BLOCK DETAIL Scale: N.T.S. File:



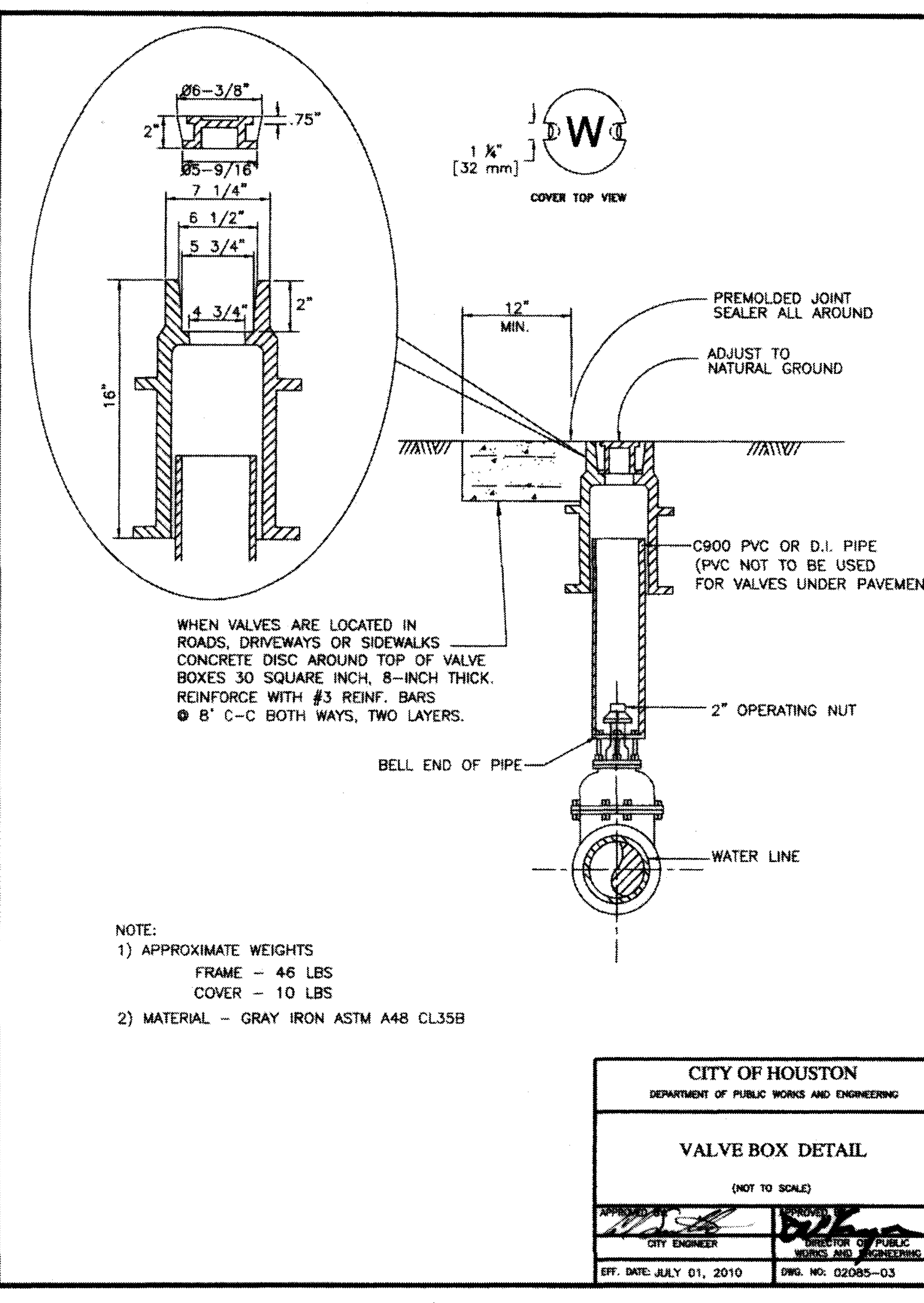
Specifications
CONCRETE: Class 1 concrete with design strength of 4500 PSI at 28 days.
REINFORCEMENT: Grade 60 reinforced steel rebar conforming to ASTM A615 on required centers or equal.

Typical Applications
RP devices are used to protect against high hazard (toxic) fluids in water services to industrial plants, hospital facilities, morgues, mortuaries, and chemical plants. They are also used in irrigation systems, boiler feeds, water lines and other installations requiring maximum protection.

Engineering Data
The backflow assembly shall be factory assembled on pad & hydrostatically tested prior to delivery. Field excavation & preparation shall be complete prior to delivery. Pipe, valves and fittings of the assembly shall be approved by one or more of the following associations:

PARK 888-811-PARK
ENVIRONMENTAL EQUIPMENT
"Expect the Best"
REDUCED PRESSURE BACKFLOW PREVENTER ON PRECAST CONCRETE PAD
SCALE: NONE DATE: 04/06 REV: RPE-1

2 BACKFLOW PREVENTER DETAIL Scale: N.T.S. File:



CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
VALVE BOX DETAIL
(NOT TO SCALE)
CITY ENGINEER: [Signature]
DATE: JULY 01, 2010 DWG NO: 02085-03

NOTE:
1) APPROXIMATE WEIGHTS
FRAME - 46 LBS
COVER - 10 LBS
2) MATERIAL - GRAY IRON ASTM A48 CL35B

4 VALVE DETAIL Scale: N.T.S. File:

01/31/2010 PREPARED / BID ISSUE

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WATER DETAILS

Ashton Gray Retail - Kenroc
SOUTHWEST CORNER OF SPRING STUEBNER
AND SPRING PLAZA, HARRIS COUNTY, TEXAS

C13.0

SCALE: 1" = 20'
PROJECT:
DATE: