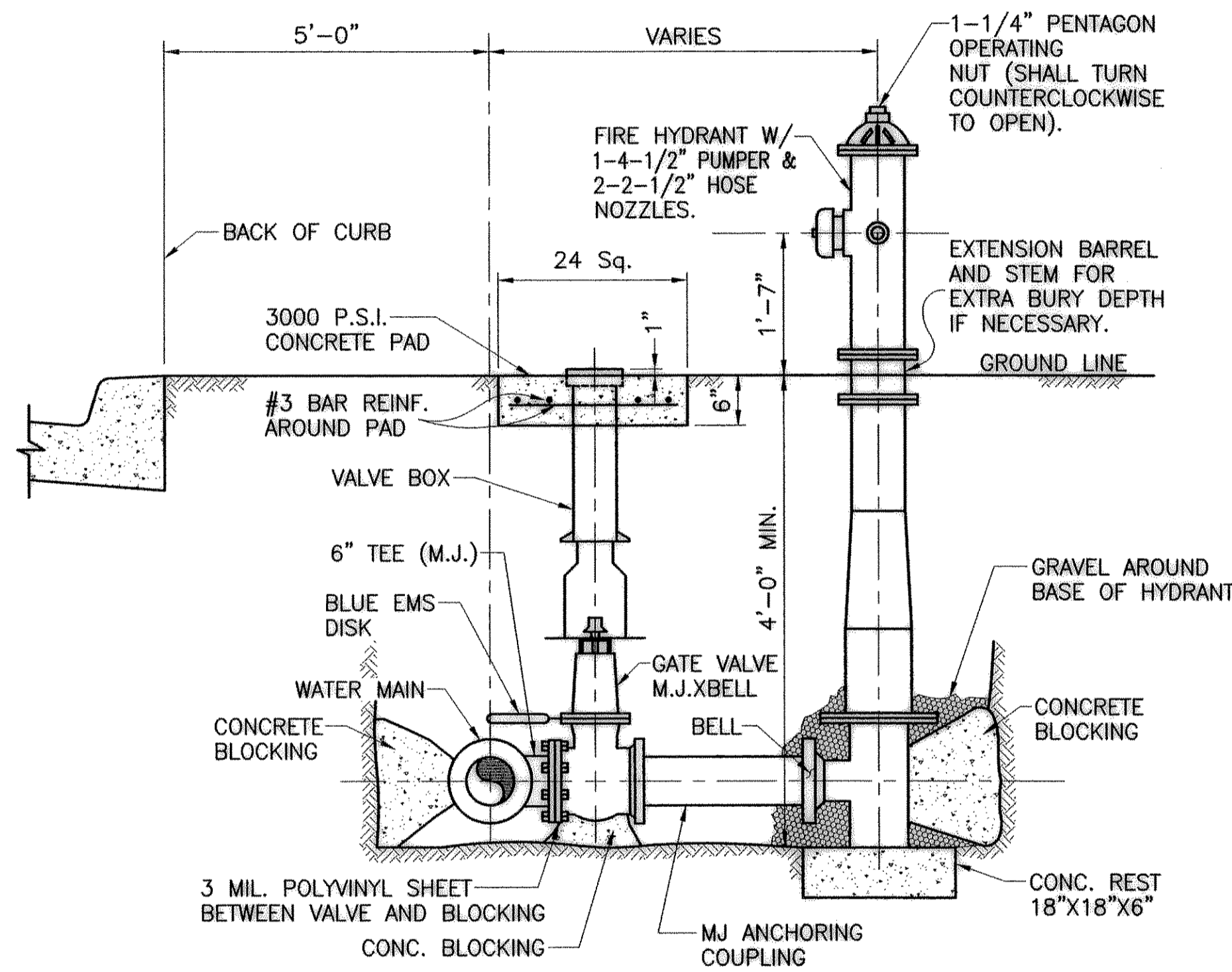
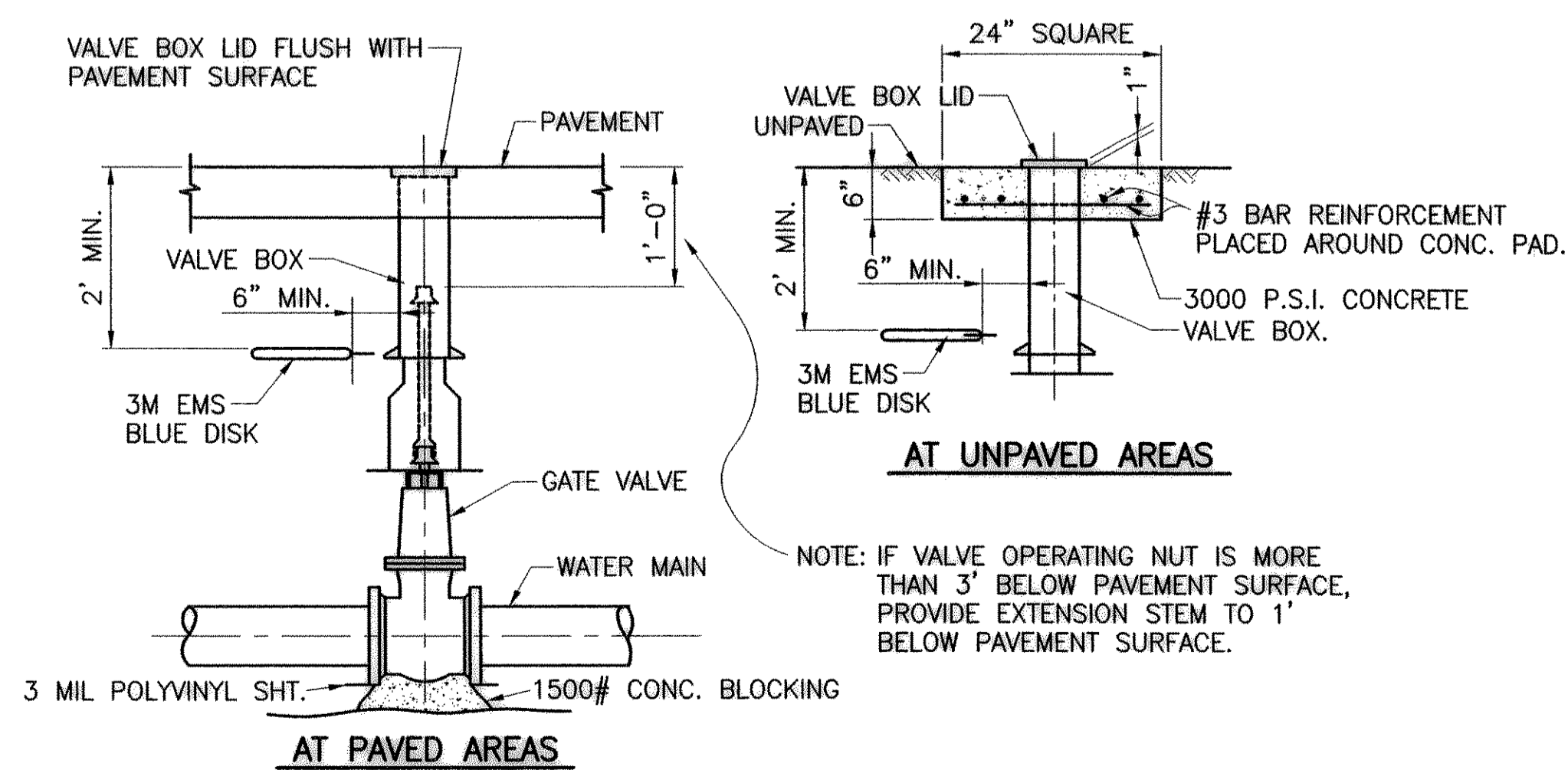


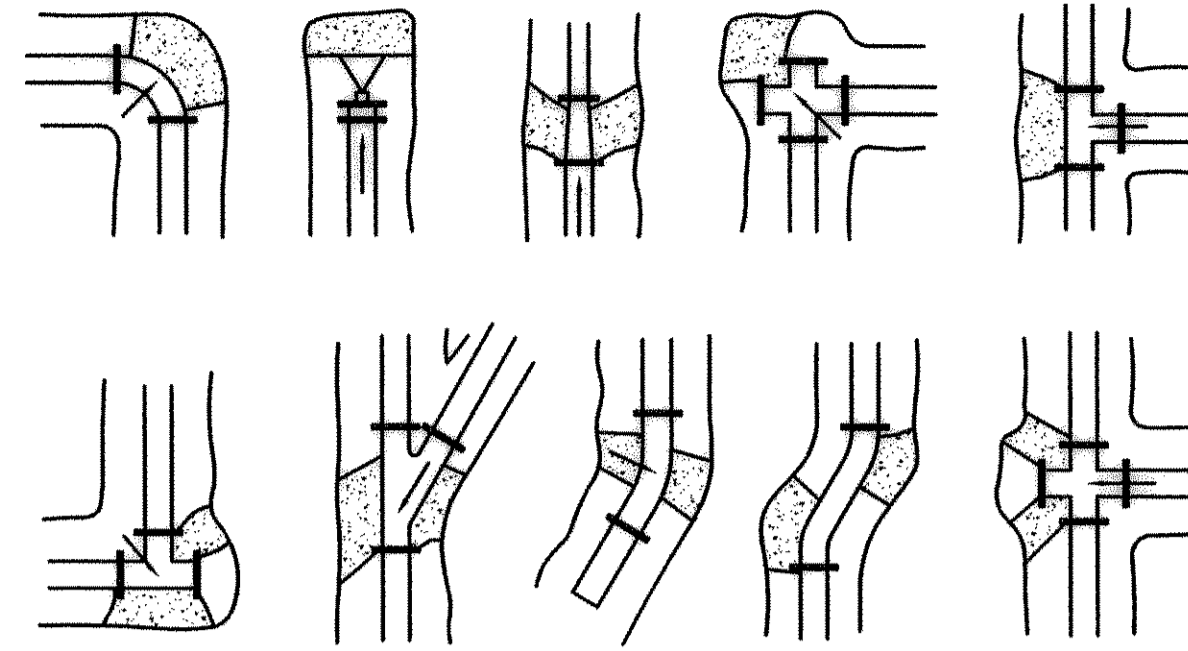
PLAN VIEW
NOT TO SCALE



1 TYPICAL FIRE HYDRANT INSTALLATION
NOT TO SCALE



3 TYPICAL GATE VALVE AND BOX
EXTENSION STEM DETAIL
NOT TO SCALE



NOTES:

1. THE EARTH BEARING SURFACE SHALL BE UNDISTURBED MATERIAL. KEEP ALL JOINTS FREE FROM CONCRETE. THRUST BLOCK TO BE CONSTRUCTED OF 1,500 P.S.I. (20 DAY) CONCRETE AND PLACED AS SHOWN ON "TYPICAL BLOCKING DETAILS" ABOVE.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTALL ADEQUATE THRUST BLOCKING. THE HORIZONTAL BLOCKING TABLE SHOWS THE MINIMUM THRUST BLOCKING AREA REQUIRED (IN SQUARE FEET) BEARING AGAINST UNDISTURBED TRENCH WALL.
3. ALL FITTINGS SHALL BE BLOCKED REGARDLESS OF THE ANGLE OR DIRECTION, EXCEPT AS NOTED IN THE CHART.
4. SOIL BEARING STRENGTH IS ASSUMED TO BE 2,000 P.S.F. SITE CONDITIONS MAY VARY WHICH WILL REQUIRE MODIFICATIONS TO THE BLOCKING CALCULATIONS.

2 TYPICAL THRUST BLOCKING DETAILS
NOT TO SCALE

HORIZONTAL BLOCKING TABLE

AREA REQUIRED (IN SQUARE FEET) BEARING AGAINST UNDISTURBED TRENCH WALL

PIPE SIZE (IN.)	THRUST (POUNDS) DEAD END AND TEE	BLOCKING (SQUARE FEET)					
		DEAD END AND TEE	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND	5° DEFLECT
4	2,450	1.23	1.73	0.94	0.50	0.50	0.50
6	5,513	2.76	3.90	2.11	1.08	0.54	0.50
8	9,802	4.90	6.93	3.75	1.91	0.96	0.50
10	15,315	7.66	10.83	5.86	2.99	1.50	0.67
12	22,054	11.03	15.59	8.43	4.30	2.16	0.96

BASED ON 2,000 P.S.F. SOIL BEARING CAPACITY AND 195 P.S.I. LINE PRESSURE (150 P.S.I. WORKING PRESSURE PLUS 30% FOR WATER HAMMER.)

RECORD DRAWING
BASED ON INFORMATION SUPPLIED BY THE CONTRACTOR
TO: TRICIA H. HATLEY
DATE: JANUARY 7, 2003
THIS DOCUMENT WAS ORIGINALLY SIGNED, SEALED AND DATED BY:
ENGINEER: TRICIA H. HATLEY
TEXAS REGISTRATION NO: 83282
DATE: APRIL 17, 2002

NOTES:
CRUSHED LIMESTONE, TYPE 1, EMBEDMENT: CRUSHED LIMESTONE SHALL CONSIST OF DURABLE PARTICLES OF CRUSHED STONE RANGING IN SIZE FROM 3/4" TO 1/4" WITH PERCENT OF WEAR NOT EXCEEDING 35%. THE GRADATION BASED ON ASTM D448 SIZE 67, USE AS FOLLOWS:

SIEVE SIZE	% BY WEIGHT PASSING
1"	100
3/4"	90 - 100
3/8"	20 - 55
NO. 4	0 - 10
NO. 8	0 - 5

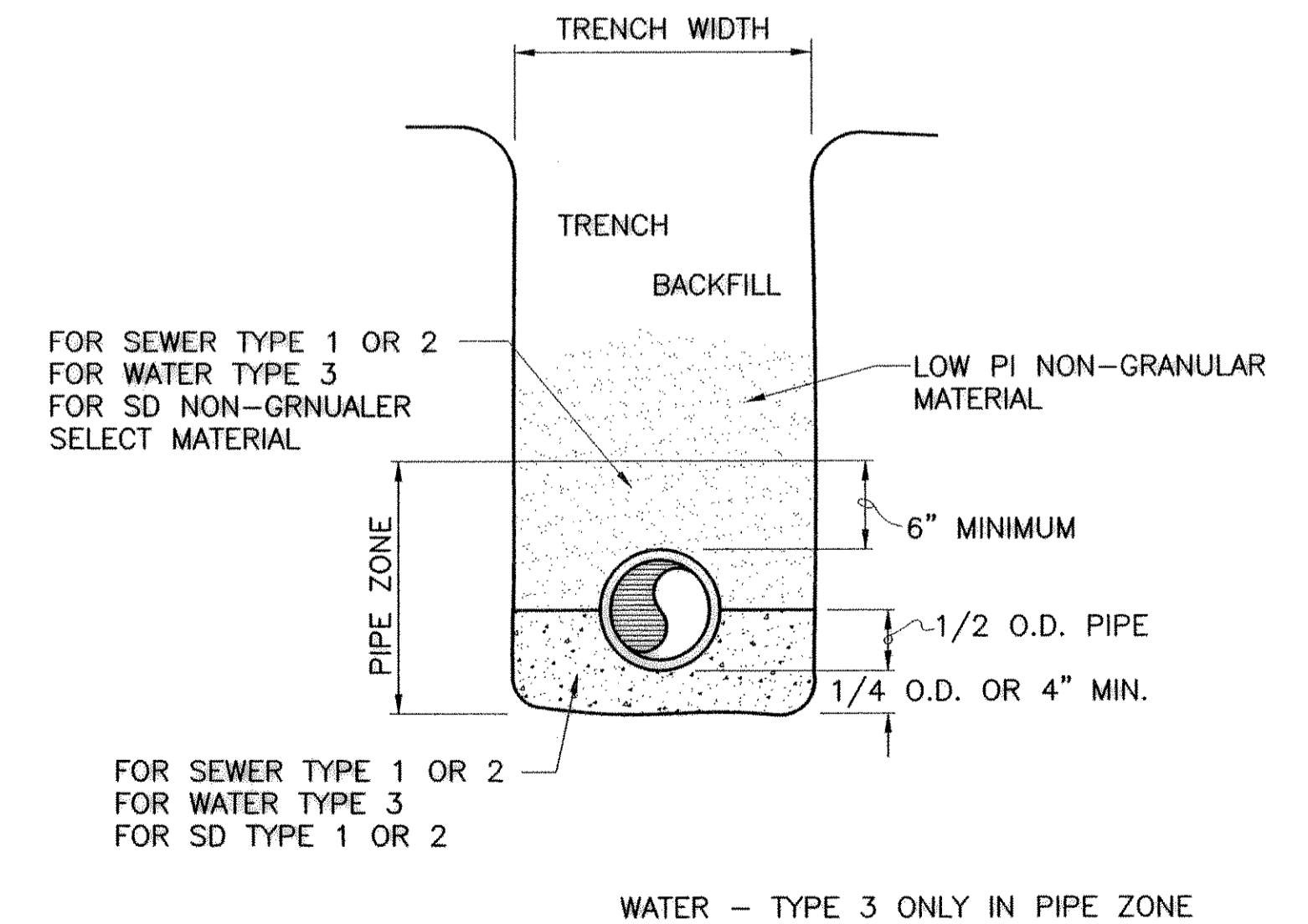
GRAVEL, TYPE 2, EMBEDMENT: GRAVEL FOR EMBEDMENT AND/OR ENCASEMENT SHALL BE WASHED GRAVEL RANGING IN SIZE FROM 3/4"-INCH DIAMETER TO 1/4"-INCH DIAMETER MEETING THE REQUIREMENTS OF ASTM DESIGNATION C33, GRADUATION 67. THE MATERIAL SHALL BE FREE FROM CLAY AND ORGANIC MATERIAL.

GRANULAR, TYPE 3, EMBEDMENT: PIT RUN GRANULAR EMBEDMENT MATERIAL SHALL BE FREE FLOWING SAND OR MIXED SAND AND PEA GRAVEL FREE FROM LARGE STONES, CLAY AND ORGANIC MATERIAL. THE MATERIAL MAY BE AN INFERIOR GRADE OF PIT RUN OR BLOW SAND NOT TO NORMALLY CONSIDERED SATISFACTORY FOR CONCRETE AGGREGATE AND MAY BE USED DIRECTLY FROM PITS WITHOUT PROCESSING, PROVIDED IT COMPLIES WITH THE QUALITIES DESCRIBED HEREIN. THE MATERIAL SHALL BE SUCH THAT WHEN WET IT WILL NOT FORM A MUD BALL OR TEND TO CLING TOGETHER. THE MATERIAL SHALL HAVE 100% PASSING ONE INCH (1") SIEVE, AND THE PLASTICITY INDEX OF THAT PART PASSING THE 40 SIEVE IS OBTAINED FROM THE CITY.

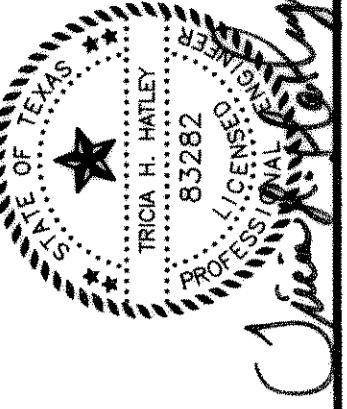
TESTING PROCEDURES FOR BACKFILL SHALL BE PER CITY OF ROCKWALL SPECIFICATIONS.

SELECT MATERIAL

A NON-EXPANSIVE SOIL WITH SUFFICIENT PERMEABILITY CHARACTERISTICS TO ALLOW RAPID ELIMINATION OF SEEPAGE WATER SHALL BE USED AND SHALL HAVE A PLASTICITY INDEX OF 15 OR LESS.

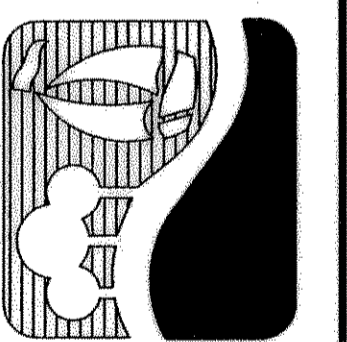


4 PIPE EMBEDMENT DETAIL
NOT TO SCALE



FREESE-NICHOLS
1701 N. MAPLE STREET, SUITE 300, LB 57
DALLAS, TEXAS 75202
214-920-2500

CITY OF ROCKWALL
DALTON ROAD RECONSTRUCTION
UTILITY DETAILS



NO.	REVISION	BY	DATE	FILE	DESIGNED	DRAWN	REVISION	CHECKED	THH
1				ROK01364	UTL1-dtl1.dwg	KRU,SDH	GIG		

SHEET
UTIL-DTLS
SEQ.