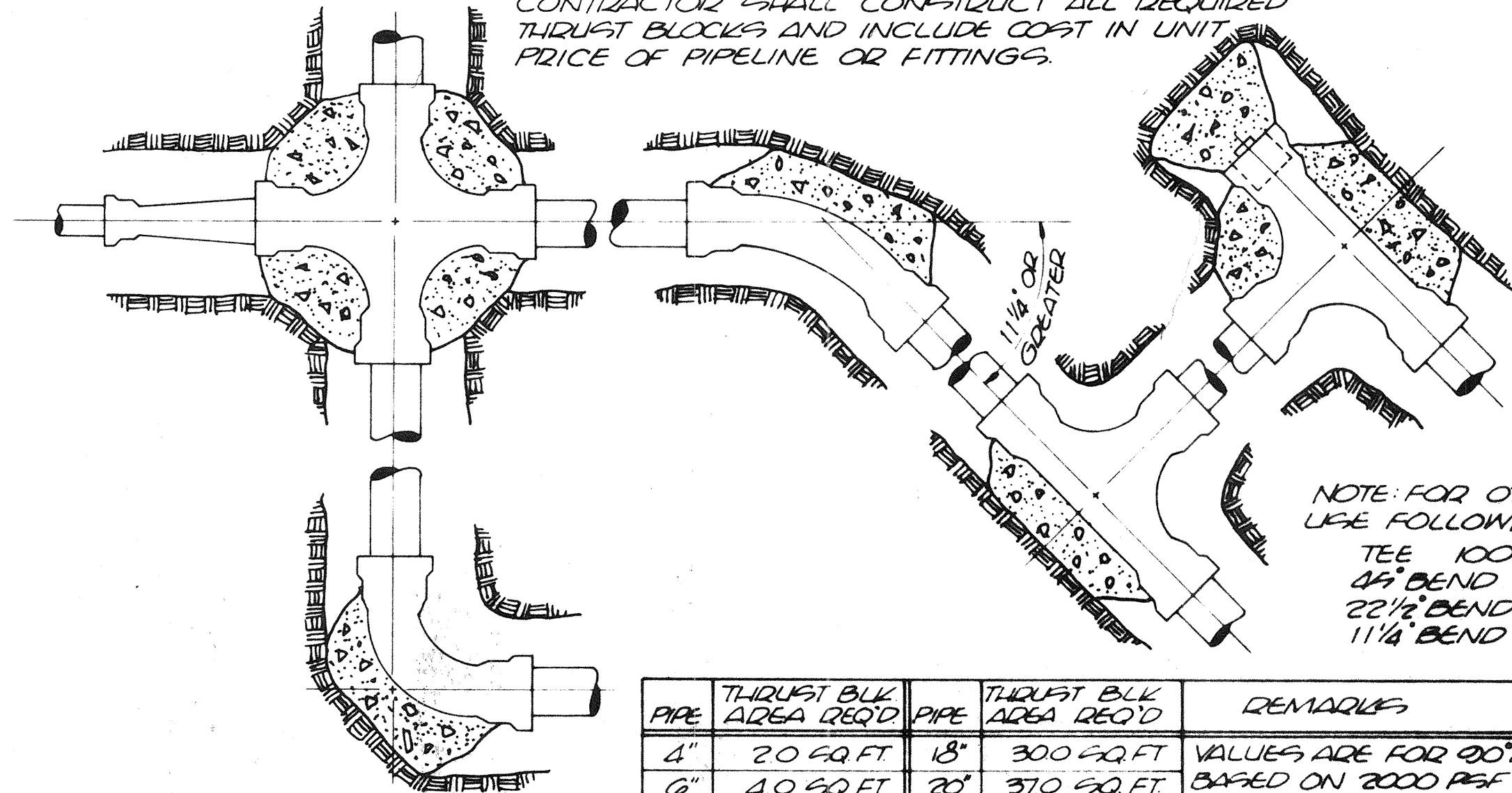


TYPICAL LOCATIONS WHICH REQUIRE CONCRETE REACTION (THRUST) BLOCKS, FOR PRECAUTION MAINS 1" SIZE AND GREATER CONCRETE SHALL HAVE 2500 PSI MIN. STRENGTH AT 28 DAYS AND BEAR AGAINST UNDISTURBED STABLE SOILS. AREA OF CONTACT SHALL BE GOVERNED BY PIPE SIZE, MAX. PRESSURE IN PIPE AND BEARING CAPACITY OF SOIL.

CONTRACTOR SHALL CONSTRUCT ALL REQUIRED THRUST BLOCKS AND INCLUDE COST IN UNIT PRICE OF PIPELINE OR FITTINGS.

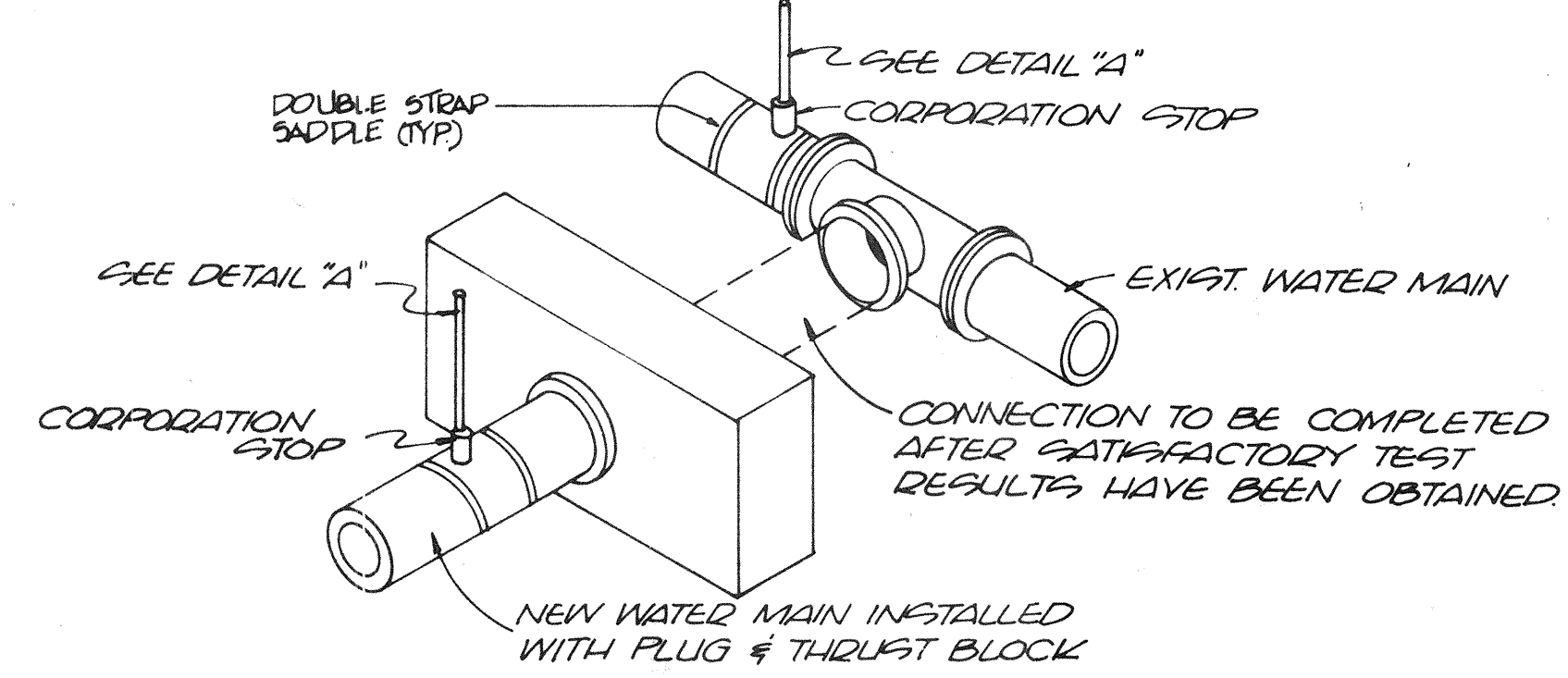
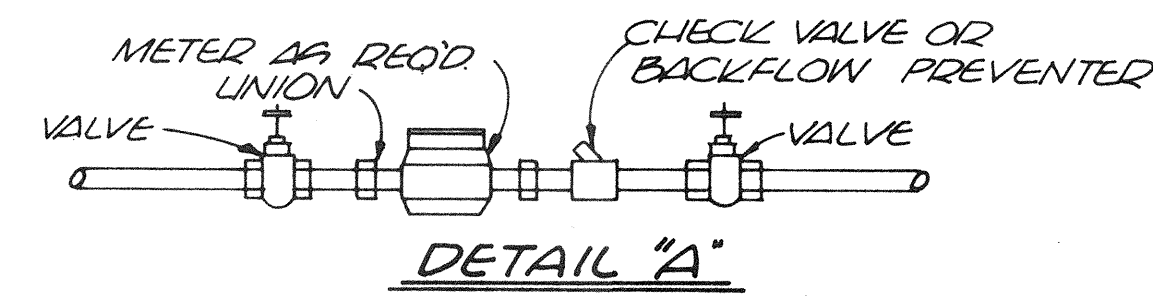


NOTE: FOR OTHER FITTINGS, USE FOLLOWING FACTORS:

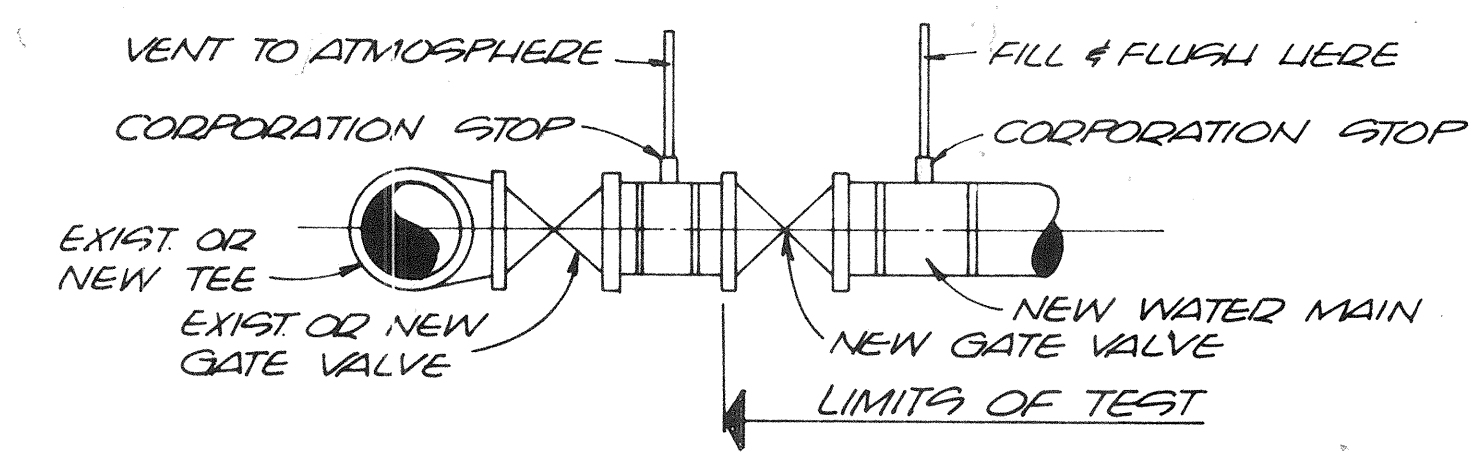
TEE 100%
45° BEND 70%
22 1/2° BEND 30%
11 1/4° BEND 20%

| PIPE | THRUST BLK AREA REQ'D | PIPE | THRUST BLK AREA REQ'D | REMARKS |
|------|-----------------------|------|-----------------------|--|
| 4" | 20 SQ. FT. | 18" | 300 SQ. FT. | VALUES ARE FOR 90° BEND, BASED ON 2000 PSF SAFE BEARING LOAD AND PIPE PRESSURE OF 150 PSI PLUS 33% SAFETY FACTOR FOR OTHER SOILS & PRESSURES THE AREA REQ'D IS IN DIRECT PROPORTION. |
| 6" | 40 SQ. FT. | 20" | 370 SQ. FT. | |
| 8" | 60 SQ. FT. | 24" | 430 SQ. FT. | |
| 10" | 100 SQ. FT. | 27" | 500 SQ. FT. | |
| 12" | 140 SQ. FT. | 30" | 580 SQ. FT. | |
| 14" | 180 SQ. FT. | 36" | 1270 SQ. FT. | |
| 16" | 240 SQ. FT. | | | |

CONCRETE THRUST BLOCKS



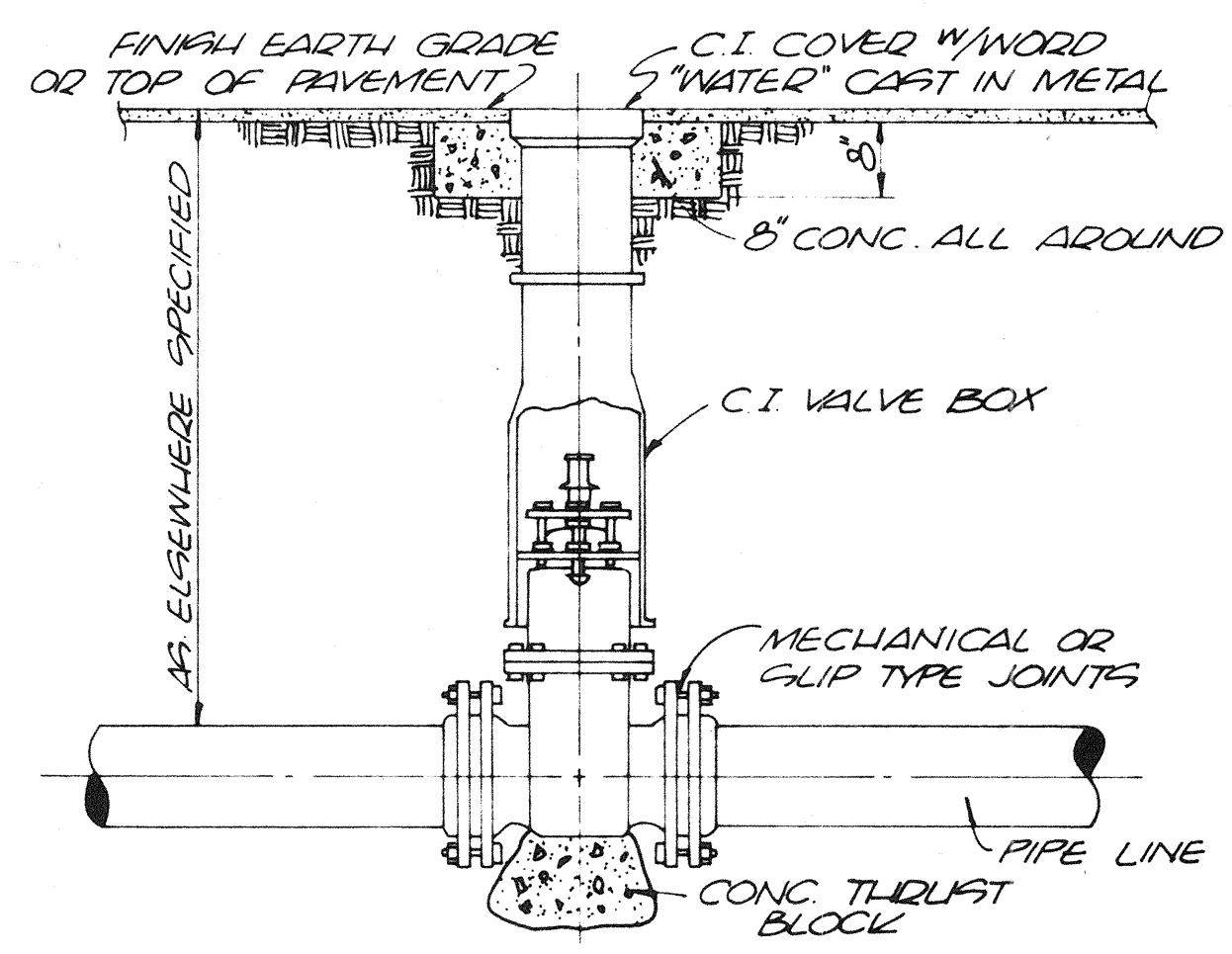
METHOD "A"



METHOD "B"

FILLING & FLUSHING CONNECTION DETAIL

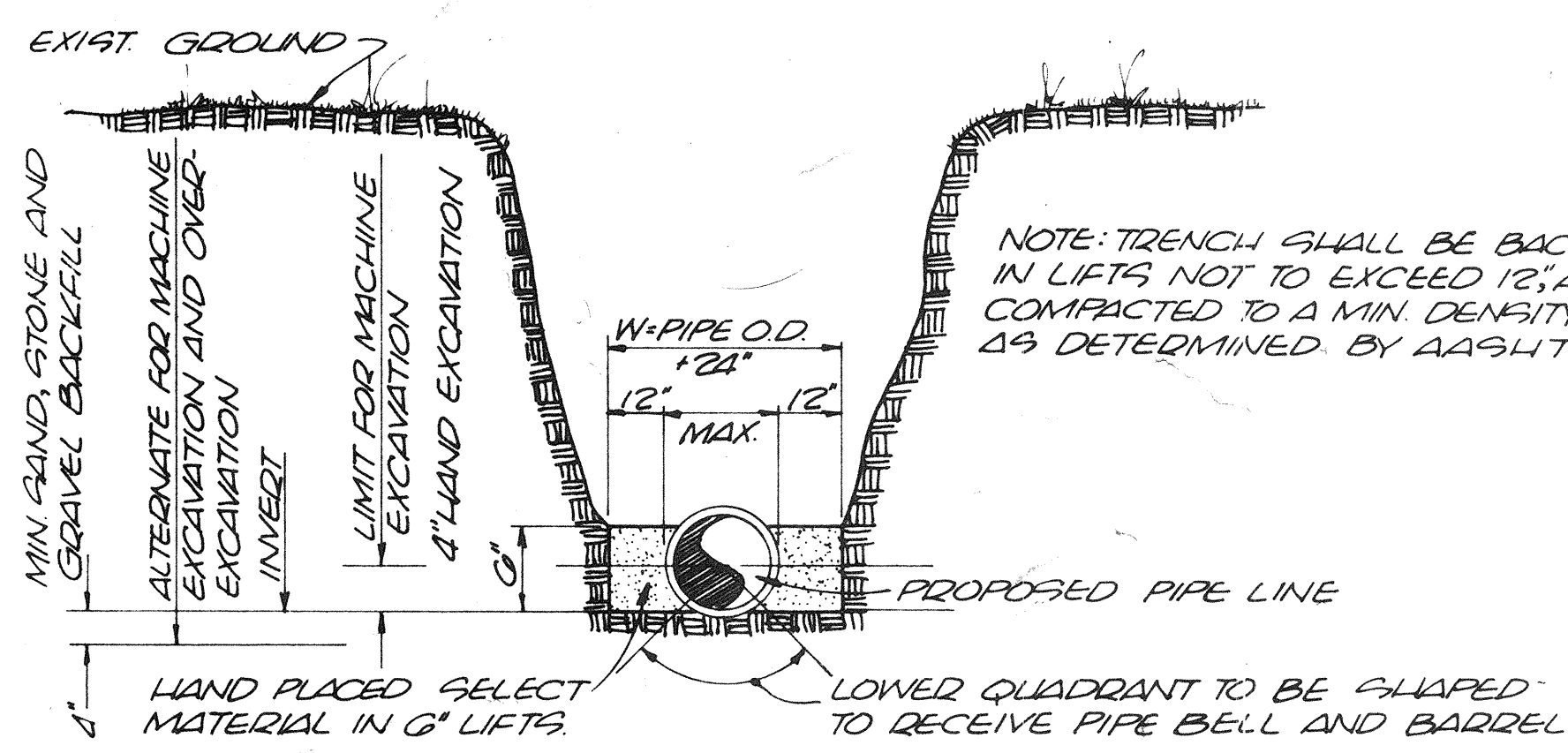
1. REMOVE TEMPORARY CONNECTION AT CORPORATION STOP ON EXIST. MAIN AFTER FILLING & FLUSHING OF NEW LINE.
2. DO NOT REMOVE TEMPORARY CONNECTION AT CORPORATION STOP ON NEW MAIN UNTIL ALL TESTING HAS BEEN COMPLETED.



TYPICAL BURIED GATE VALVE SETTING DETAIL

FIELD OBSERVATIONS - WATER

1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD 48 HOURS IN ADVANCE TO OBSERVE THE FOLLOWING:
 1. WATER MAIN TRENCH PRIOR TO BACKFILL.
 2. PIPE JOINTS PRIOR TO BACKFILL.
 3. THRUST BLOCK LOCATIONS PRIOR TO BACKFILL.
 4. CONNECTIONS TO EXISTING WATER MAINS.
 5. CONFLICTS WITH OTHER UNDERGROUND UTILITIES PRIOR TO BACKFILL.
 6. WATER MAIN PRESSURE TEST.
 7. BORE AND JACK OPERATION.
 8. ALL POURED IN PLACE CONCRETE (METER PITS, VALVE PITS, ETC.) PRIOR TO POURING CONCRETE.
 9. FINAL OBSERVATION AT JOB COMPLETION.



STANDARD TRENCHING DETAIL

RECORD INFORMATION -- WATER

THE FOLLOWING RECORD INFORMATION SHALL BE PROVIDED BY THE CONTRACTOR AND PREPARED BY A REGISTERED LAND SURVEYOR:

1. "AS-BUILT" DISTANCE OF WATER MAIN FROM PROPERTY LINE, BASE LINE, OR OTHER EASILY IDENTIFIABLE ITEM.
2. DISTANCE BETWEEN ALL FITTINGS AND VALVES, SERVICE LINES, BLOW-OFFS, FIRE HYDRANTS, ETC.
3. ELEVATION TOP OF PIPE AT 100 FOOT INTERVALS, AND AT ALL FITTINGS AND VALVES.
4. TYPE OF MATERIALS INSTALLED, INCLUDING LOCATIONS OF CHANGE OF MATERIAL DUE TO CONFLICTS, ETC.
5. "AS-BUILT" SKETCHES OF ALL CONFLICTS INCLUDING, BUT NOT LIMITED TO, WATER MAIN CROSSING SEWER MAIN AND WATER MAIN CROSSING STORM DRAINAGE PIPES.
6. "AS-BUILT" LENGTH OF JACK AND BORE CASINGS INDICATING DISTANCE FROM CENTER-LINE OF PAVING TO EACH END OF CASING. ALSO PROVIDE THE ELEVATION OF EACH END OF THE CASING PIPE.
7. LOCATION OF, AND LEGAL DESCRIPTION FOR ALL UTILITY EASEMENTS.

WATER MAIN EXTENSION DISTRIBUTION

1. ALL WATER MAINS NOTED D.I.P. SHALL BE DUCTILE IRON PIPE INSTALLED IN CONFORMANCE WITH A.N.S.I./A.W.W.A. STD. C600-82, AND MATERIAL CLASS IN CONFORMANCE WITH A.N.S.I./A.W.W.A. C150/A21.50-81 AND A.N.S.I./A.W.W.A. C151/A21.51-81.
2. ALL FITTINGS AND VALVES SHALL BE CLASS 150 CAST IRON WITH MECHANICAL JOINTS WITH RETAINER GLANDS IN CONFORMANCE WITH A.N.S.I./A.W.W.A. C110/A21.10-82, C111/A21.11-85, C500-80, AND C104/A21.40-80.
3. THE CONTRACTOR SHALL DEFLECT PIPE JOINTS AS REQUIRED FOR PROPER ALIGNMENT AS SHOWN ON PLANS, BUT SHALL NOT EXCEED 75% OF THE PIPE MANUFACTURER'S RECOMMENDATIONS ON MAXIMUM DEFLECTION.
4. ALL WATER MAINS SHALL HAVE A MINIMUM OF 36 INCHES OF COVER IN THE RIGHT-OF-WAY, AND 50 INCHES OF COVER ON SITE.
5. ALL PROPOSED WATER MAINS SHALL NOT BE PLACED INTO SERVICE UNTIL TESTED AND APPROVED BY THE BROWARD COUNTY HEALTH DEPARTMENT WITH RESPECT TO BACTERIOLOGICAL ANALYSIS. THE CONTRACTOR SHALL PRESSURE TEST ALL WATER MAINS FOR CONFORMANCE WITH TOWN OF HILLSBORO BEACH STANDARDS, IN THE PRESENCE OF THIS ENGINEER, A REPRESENTATIVE FROM HILLSBORO BEACH WATER UTILITIES DEPARTMENT, WHO WILL OBSERVE THE TEST. THIS ENGINEER SHALL BE NOTIFIED 48 HOURS IN ADVANCE. TESTING SHALL BE IN CONFORMANCE WITH ANSI/A.W.W.A. C600-82. ALLOWABLE LEAKAGE FORMULA =
$$Q = S \times D \times \sqrt{P} / 133,200$$

WHERE:
Q = ALLOWABLE LEAKAGE IN GPH
S = LENGTH OF LINE IN FEET
D = DIAMETER OF LINE IN INCHES
P = AVERAGE TEST PRESSURE (PSI)

AFTER SUCCESSFUL PRESSURE TEST, THE MAIN SHALL BE FLUSHED AND DISINFECTED PER A.N.S.I./A.W.W.A. C601-81. MINIMUM TEST PRESSURE = 150 P.S.I. FOR ALL PRESSURE PIPE FOR TWO HOURS.
6. THE CONTRACTOR SHALL PERFORM THE TEST PRIOR TO CONSTRUCTION OF THE BASE IN PAVED LOCATIONS.
7. DURING CONSTRUCTION, THE CONTRACTOR IS REQUIRED TO HAVE A REGISTERED LAND SURVEYOR DEVELOP RECORD DRAWINGS OF ALL INSTALLATIONS AND UPON COMPLETION SAID DRAWINGS SHALL BE SUBMITTED TO THIS ENGINEER. RECORD INFORMATION TO BE PAID FOR BY THE CONTRACTOR.
8. ALL INSTALLATIONS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE STANDARDS OF THE TOWN OF HILLSBORO, AND A.N.S.I./A.W.W.A. C600-82, LATEST REVISIONS, AD THE FLORIDA DEPARTMENT OF TRANSPORTATION, IN STATE R/W.
9. THE CONTRACTOR SHALL PROTECT ALL PERMANENT REFERENCE MONUMENTS AND TAKE ALL PRECAUTIONS NECESSARY TO AVOID DISTURBING SURVEY MARKERS DURING CONSTRUCTION.
10. ALL UNSUITABLE MATERIAL SUCH AS MUCK, MARL, AND DEBRIS SHALL BE REMOVED FROM THE LIMITS OF CONSTRUCTION, AND RIGHT-OF-WAYS.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES WHETHER OR NOT SHOWN ON THE PLANS. CONTRACTOR SHALL CALL THE U.N.C.L.E. TOLL FREE NUMBER (1-800-432-4770) AND NOTIFY ALL UTILITIES INVOLVED PRIOR TO THE START OF CONSTRUCTION. ANY ADDITIONAL UTILITIES LOCATED SHALL BE SHOWN ON RECORD DRAWINGS.
12. A PRE-CONSTRUCTION MEETING SHALL BE ARRANGED BY THE CONTRACTOR PRIOR TO ANY WORK; THIS ENGINEER, AND TOWN OF HILLSBORO UTILITIES REPRESENTATIVE PRESENT.
13. THE SYSTEM SHALL PROVIDE CAPABILITY FOR FIRE FLOW OF AT LEAST 2500 GALLONS PER MINUTE IN ADDITION TO MAXIMUM DAY DOMESTIC REQUIREMENTS AT RESIDUAL PRESSURE OF NOT LESS THAN 20 LBS. PER SQUARE INCH.
14. THE SEQUENCE OF CONSTRUCTION SHALL BE SUCH THAT ALL UNDERGROUND INSTALLATION OF ANY KIND THAT WILL COME UNDER THE PAVEMENT OR WITHIN 10 FEET OF ITS EDGES WILL BE INSTALLED AND ACCEPTED PRIOR TO CONSTRUCTION OF THE BASE. SUBMIT DENSITY TESTS OF COMPLETED BACKFILL MATERIAL WHERE WATER MAINS ARE LOCATED UNDER PAVEMENT. THE TEST SHALL COMMENCE AT THE TOP OF THE CONDUIT EVERY 12 INCHES TO THE BOTTOM OF THE BASE. BACKFILL SHALL BE COMPACTED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO-T180. TESTS SHALL BE TAKEN AT 200 FEET INCREMENTS.
15. SHOP DRAWINGS OF ALL MATERIALS BEING USED SHALL BE SUBMITTED TO THIS ENGINEER IN QUADRUPPLICATE PRIOR TO INSTALLATION OR FABRICATION.
16. POTABLE WATER SERVICES WILL BE PROVIDED BY TOWN OF HILLSBORO BEACH WATER DEPARTMENT.
17. SEWER PIPING SHALL BE LAID AT LEAST 10 FEET HORIZONALLY FROM ANY EXISTING OR PROPOSED WATER MAINS.
18. A VERTICAL DISTANCE OF AT LEAST 18 INCHES SHOULD BE MAINTAINED WHEN A SEWER PIPE CROSSES UNDER A WATER MAIN. IF THIS IS NOT POSSIBLE, THEN THE SEWER PIPE MUST BE ENCASED IN CONCRETE WITH A MINIMUM THICKNESS OF 4" FOR A DISTANCE OF 20 FEET CENTERING ON THE POINT OF CROSSING OR THE SEWER PIPING MUST BE OF WATER MAIN QUALITY WITH 20 FOOT LENGTHS OF PIPE CENTERING ON THE POINT OF CROSSING.
19. IF A CROSSING WHERE THE SEWER IS LAID ABOVE A WATER LINE IS UNAVOIDABLE, THE ABOVE MENTIONED PRECAUTIONS SHALL BE OBSERVED REGARDLESS OF THE DISTANCE OF VERTICAL SEPARATION BETWEEN WATER MAINS AND SEWER PIPING.

11-10-86

DeRose & Slopey
CONSULTING ENGINEERS, INC.
LAND PLANNING • CIVIL • STRUCTURAL

FILE NO. *3662*
120 N.E. 81st STREET
FORT LAUDERDALE, FLORIDA 33334
772-0047

SHEET TITLE:
STANDARD NOTES

FOR:
OVERLOOK CONDOMINIUM

SCALE: N/A
DATE: *1-1-87*
DRWN: TKME
CHKD: TKME
SHEET NO. **C-8**