- 1. All fittings 4" and larger must be installed with Mega-Lug.
- 2. The valve on a hot tap must be anchored to the hot tap saddle.
- 3. All ductile iron fittings, valves, etc. must have a stable foundation of concrete blocking.
- 4. The Construction Inspector is to inspect all construction material prior to installation. The Contractor should coordinate with Inspector on construction material shipments.
- 5. Typically, no valves may be installed under driveways.
- 6. Prior to construction the Contractor shall coordinate a Pre-Construction Conference with the Construction Inspector.
- 7. The Construction Inspector must be present prior to and during disinfection and pressure testing.
- 8. Goforth will provide water for pressure testing and disinfection testing at currently established rates. Water for other construction purposes may or may not be available. The Contractor shall coordinate with the Construction Inspector to make all arrangements for water.
- 9. Valve housings and meter boxes installed within public right-of-way must be 3"-5" above finished grade for approval. Any valve housings or meter boxes installed within public right-of-way at or below grade will not be accepted. Any valve housings installed within private easement can be installed at finished grade.
- 10. All water distribution and transmission main fittings must be ductile iron.
- 11. All bolts on Mechanical Joint fittings and/or Mega-Lugs must be wrapped in plastic prior to concrete being poured.
- 12. Adequate chlorine residuals must be recorded 24 hours before bacteriological samples may be taken.
- 13. Any contractor taking Goforth water for construction purposes prior to the water mains being disinfected must have an air gap at the entry point on the truck or backflow preventor at the bottom of tanker.
- 14. All required water samples must be taken by the Construction Inspector.
- 15. After final acceptance, by Goforth, of the water system improvements, Goforth will be provided a one-year warranty by the Contractor.
- 16. Upon final acceptance, by Goforth, of the water system improvements, the improvements will become sole property of Goforth.
- 17. Water and Wastewater services must maintain a minimum of 12" vertical separation, preferably 24".
- 18. All valves larger than 12" nominal size shall be butterfly valves rather than gate valves.
- 19. All road bores must have spacers on pipe in the casing on water lines 6" and above.
- 20. Goforth S.U.D. Construction Inspector has full responsibility of reviewing contractor's work, materials, etc. Failure to comply with GSUD specifications will result in rejection of the work & delay of service until compliance is met.

GENERAL CONSTRUCTION NOTES

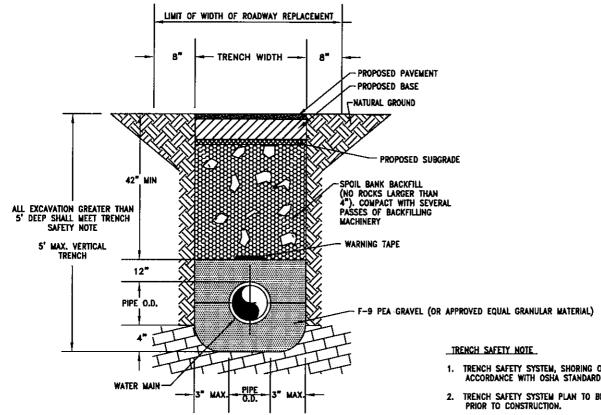
SCALE: NONE REV. DATE: 3/07

DWG. W-1

GOFORTH S.U.D.

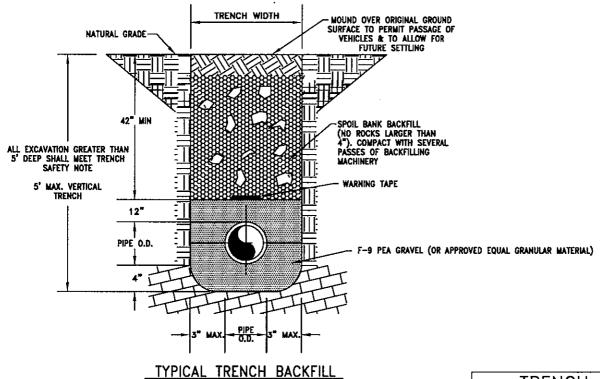
HAYS, CALDWELL & TRAVIS COUNTIES,

TEXAS



TYPICAL ROAD BACKFILL

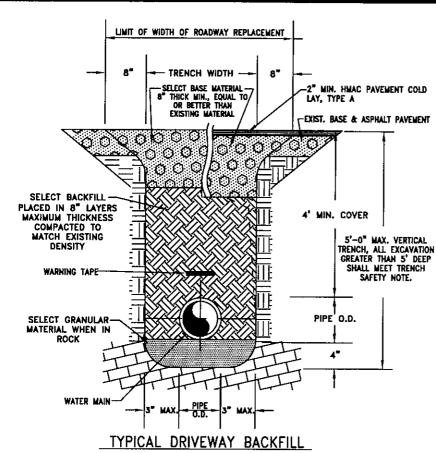
- TRENCH SAFETY SYSTEM, SHORING OR SIDE SLOPE TO BE IN ACCORDANCE WITH OSHA STANDARDS.
- 2. TRENCH SAFETY SYSTEM PLAN TO BE PROVIDED BY CONTRACTOR PRIOR TO CONSTRUCTION.



TRENCH DETAILS WITHIN BUDA, KYLE & HAYS COUNTY ROW SCALE: NONE REV. DATE: 3/07 DWG. W-2

GOFORTH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES,

TEXAS

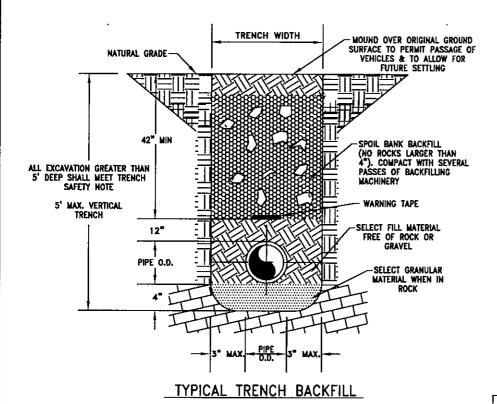


TRENCHING NOTES

- ADEQUATE BARRICADES & WARNING SIGNS SHALL BE ERECTED BEFORE ANY WORK IS STARTED IN PUBLIC RIGHT-OF-WAY.
- 2. THE ROADWAY SHALL BE CUT ONLY WHERE REQUIRED BY THE ENGINEER.
- 3. NO MORE THAN HALF OF THE WIDTH OF THE ROAD SHALL BE CUT & OPENED AT ONE TIME.
- REFER TO SPECIFICATIONS FOR ANY SPECIAL REQUIREMENTS OR CONDITIONS.
- 5. BACKFILL SHALL BE COMPLETED IMMEDIATELY AFTER PIPELINE LAYING WITHIN PUBLIC RIGHT-OF-WAYS OR CROSSING PUBLIC RIGHT-OF-WAYS & PRIVATE DRIVEWAYS.

TRENCH SAFETY NOTE

- TRENCH SAFETY SYSTEM, SHORING OR SIDE SLOPE TO BE IN ACCORDANCE WITH OSHA STANDARDS.
- TRENCH SAFETY SYSTEM PLAN TO BE PROVIDED BY CONTRACTOR PRIOR TO CONSTRUCTION.

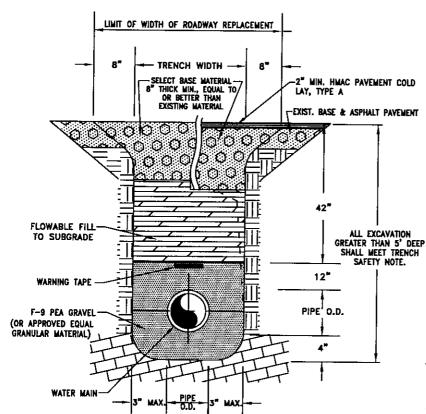


TRENCH DETAILS
within county on PRIVATE EASEMENT

SCALE: NONE REV. DATE: 3/05

DWG. W-3

GOFORTH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES,



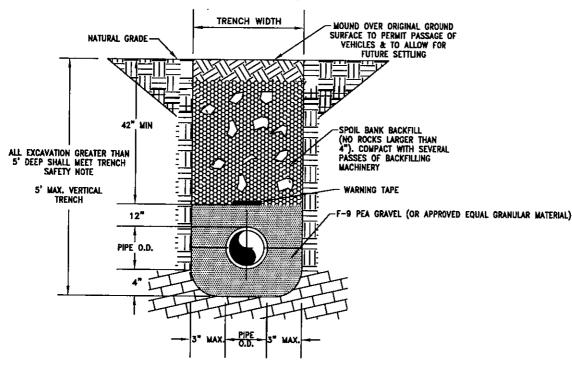
TYPICAL ROAD & DRIVEWAY REPAIR BACKFILL

TRENCHING NOTES

- ADEQUATE BARRICADES & WARNING SIGNS SHALL BE ERECTED BEFORE ANY WORK IS STARTED IN PUBLIC RIGHT-OF-WAY.
- THE ROADWAY SHALL BE CUT ONLY WHERE REQUIRED BY THE ENGINEER.
- NO MORE THAN HALF OF THE WIDTH OF THE ROAD SHALL BE CUT & OPENED AT ONE TIME.
- 4. REFER TO SPECIFICATIONS FOR ANY SPECIAL REQUIREMENTS OR CONDITIONS.
- BACKFILL SHALL BE COMPLETED IMMEDIATELY AFTER PIPELINE LAYING WITHIN PUBLIC RIGHT-OF-WAYS OR CROSSING PUBLIC RIGHT-OF-WAYS & PRIVATE DRIVEWAYS.

TRENCH SAFETY NOTE

- TRENCH SAFETY SYSTEM, SHORING OR SIDE SLOPE TO BE IN ACCORDANCE WITH OSHA STANDARDS.
- 2. TRENCH SAFETY SYSTEM PLAN TO BE PROVIDED BY CONTRACTOR PRIOR TO CONSTRUCTION.



TYPICAL TRENCH BACKFILL

TRENCH DETAILS

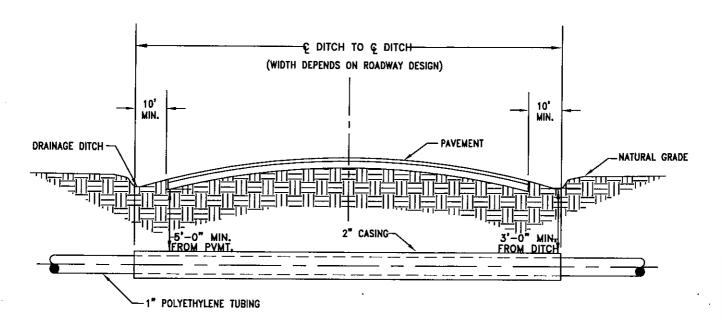
WITHIN STATE ROW

SCALE: NONE REV. DATE: 3/07

DWG. W-4

GOFORTH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES, TEXAS

NOTE: UNLESS OTHERWISE REQUIRED BY THE ROADWAY AUTHORITY, CASING PIPE SHALL BE ASTM D 2241, SDR21, OR ASTM D 1785, SCH. 40



NOTE: CASING SPACERS ARE REQUIRED FOR ALL LINES 6" AND LARGER

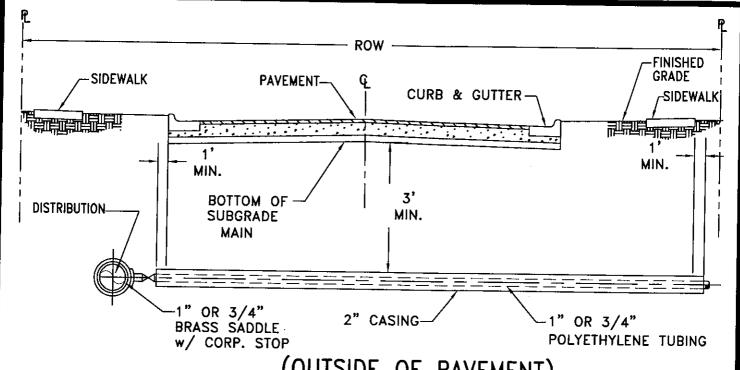
<u>SERVICE LINE</u> BORING & ENCASEMENT DETAILS—RURAL

METER SERVICE DETAIL

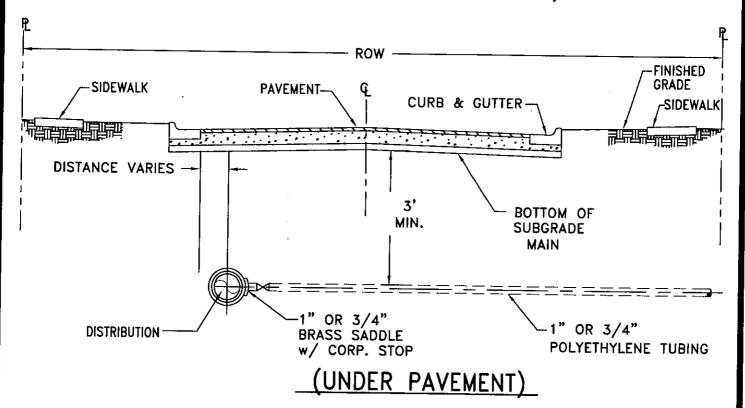
SCALE: NONE REV. DATE: 3/07

DWG. W-5

GOFORTH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES, TEXAS



(OUTSIDE OF PAVEMENT)



SERVICE LINE

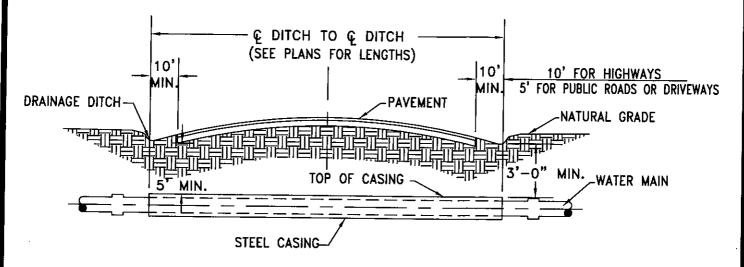
BORING & ENCASEMENT DETAILS-URBAN

NOTE: UNLESS OTHERWISE REQUIRED BY THE ROADWAY AUTHORITY, CASING PIPE SHALL BE ASTM D 2241, SDR21, OR ASTM D 1785, SCH. 40

METER SEF	RVICE DETAIL
SCALE : NONE	REV. DATE : 3/07
DWG. W-6	

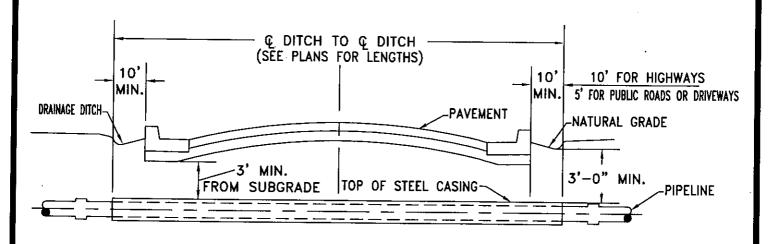
HAYS, CALDWELL & TRAVIS COUNTIES,

TEXAS



NOTE: CASING SPACERS ARE REQUIRED FOR ALL LINES 6" AND LARGER

ROAD (W/O CURB & GUTTER) CROSSING



NOTE: CASING SPACERS ARE REQUIRED FOR ALL LINES 6" AND LARGER

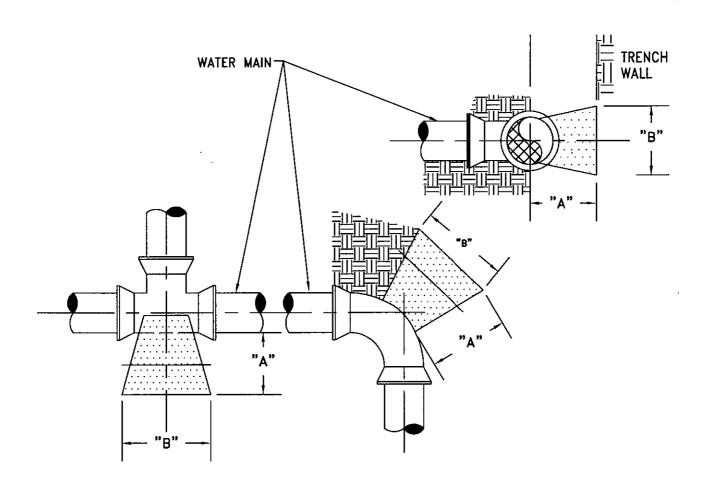
ROAD (W/CURB & GUTTER) CROSSING

STEEL CASING SHALL BE STANDARD WEIGHT OR HEAVIER PIPE CONFORMING TO ASTM A 53 OR OTHER ACCEPTABLE STANDARD SPECIFICATION. STEEL CASING SHALL BE NEW OR USED IN GOOD CONDITION ACCEPTABLE TO GOFORTH AND TO THE ROADWAY AUTHORITY.

BORING & ENCASEMENT DETAILS		
SCALE : NONE	REV. DATE : 3/07	
DWG. W-7		
GOFORTH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES, TEXAS		
S: \Projects_1\0092-Goforth WSC\DETAILS\DETAILS-0507.dwg		

PIPE		DIMENSIO	√ "B"	(SQUARE)	
SIZE	PLUGS & TEES	90° BENDS	45° BENDS	22 1/2° BENDS	VALVES
4"&6"	1'-3"	1'-6"	1'-0"	9"	1'-3"
8"	1'-9"	2'-0"	1'-6"	1'-0"	1'-6"
10"	2'-0"	2'-0"	1'-9"	1'-3"	2'-0"
12"	2'-6"	3'-0"	2'-3"	1'-6"	2'-3"
16"	3'-3"	4'-0"	2'-9"	2'-0"	2'-9"

DIMENSION "A" SHALL BE A MINIMUM OF 1'-0" BUT IS TO BE INCREASED WHERE NECESSARY TO PROVIDE BEARING AGAINST UNDISTURBED TRENCH WALL.



TUDUCT DI COL	DIMENCIONING
THRUST BLOCK	DIMENSIONING
DE.	TAIL
SCALE : NONE	REV. DATE : 3/05
DWG. W-8	
GOFORT	H S.U.D.
	TRAVIS COUNTIES,

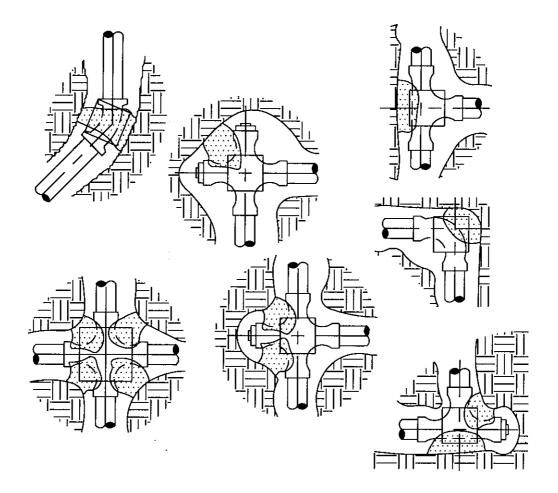
	N-JOINT . PIPE	MECHANICAL JOINT DUCTILE IRON PIPE		PUSH-ON-JOINT DUCTILE IRON PIPE			
SIZE OF PIPE	RADIUS OF CURVE, FEET	BEND IN ONE JOINT, DEGREES	18'	RADIUS OF CURVE, FEET	BEND IN ONE JOINT. DEGREES	DEFLECT. 18' JOINT, INCHES	RADIUS OF CURVE, FEET
3	100	8'-18'	31	125	5°	19	205
4	140	8'-18'	31	125	5°	19	205
6	210	7*-7'	27	145	5°	19	205
8	280	5'-21'	20	195	5 °	19	205
10	350	5"-21"	20	195	5*	19	205
12	420	5*-21'	20	195	5*	19	205

MAXIMUM ALLOWABLE PIPE DEFLECTIONS

SCALE: NONE REV. DATE: 3/05

DWG. W-9

GOFORTH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES, TEXAS



- THE EARTH BEARING SURFACE SHALL BE THE UNDISTURBED TRENCH WALL.
- 2. ALL PIPE JOINTS SHALL BE KEPT FREE FROM CONCRETE.
- ALL THRUST BLOCKS SHALL CONTAIN A MINIMUM OF 1 1/2 CUBIC YARDS OF CONCRETE.
- 4. CONCRETE SHALL BE 2000 p.s.i. AT 28 DAYS MINIMUM.
- 5. ALL FITTINGS AND FITTING JOINTS MUST BE WRAPPED w/ THREE LAYERS OF 8-MIL POLYETHYLENE IN ACCORDANCE WITH AWWA C105.
- 6. 12"x 12"x 4" THICK CONCRETE BLOCKS SHALL BE INSTALLED DIRECTLY UNDER ALL VALVES, FITTINGS, ETC.

THRUST BLOC	K ANCHORING AIL
טבו	AIL
SCALE : NONE	REV. DATE : 3/05
DWG. W-10	
	1 0 11 5

GOFORTH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES, TEXAS



A. 3/4" BRASS SADDLE FOR SINGLE

ON LINES < 6" - FORD S70

ON LINES 6" TO 12" - FORD S-90

ON LINES > 12" - FORD 202B

1" BRASS SADDLE FOR DOUBLE ON LINES UP TO 12" - FORD S-90

ON LINES > 12" - FORD 202B

B. 3/4" CORP. STOP FOR SINGLE - FORD F-1100-3-G 1" CORP. STOP FOR DOUBLE - FORD F-1100-4-G

C. 3/4" POLYETHYLENE TUBING AWWA, C901 (200 psi) FOR SINGLE

1" POLYETHYLENE TUBING AWWA, C901 (200 psi) FOR DOUBLE

D. 1"x36" BULLHORN U BRANCH FOR DOUBLE FORD U-48-43-36-G (SPECIAL ORDER)

E. 5/8"x3/4"x3/4" FORD COMPRESSION 90 (ANGLE) STOP KV43-332W-G FOR SINGLE

F. 5/8"x3/4" METER (WILL BE PROVIDED BY GOFORTH).

G. DUAL CHECK VALVE JONES J5930 WITH SWIVEL COUPLING NUT (WILL BE PROVIDED BY GOFORTH).

H. 3/4" FORD BALL VALVE CURB STOP, NON-RISING STEM, MALE I.P.T. BY FEMALE I.P.T. B81-333-W (WILL BE PROVIDED BY GOFORTH).

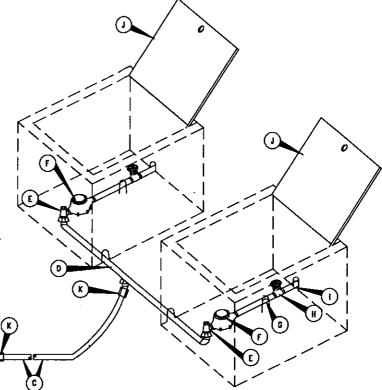
 CUSTOMER SERVICE LINE MEETING PLUMBING CODE REQUIREMENTS (WILL BE PROVIDED BY CUSTOMER).

J. PLASTIC METER BOX W/LID - FORD D1200.

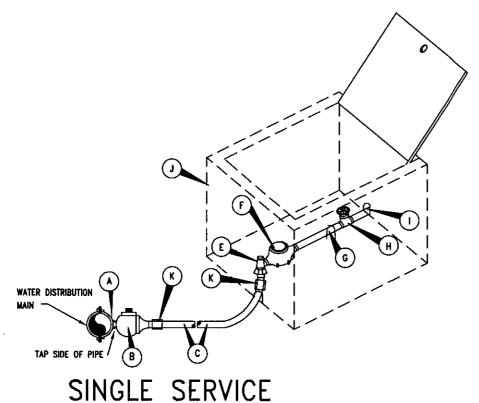
K. 3/4" FORD SS INSERT - 51 F/CTS PE FOR SINGLE. 1" FORD SS INSERT - 52 F/CTS PE FOR DOUBLE.

 $\mbox{L. } \mbox{ ALL TESTABLE BACKFLOW DEVICES MUST BE IN THEIR} \\$

OWN BOX.



DOUBLE SERVICE



WATER DISTRIBUTION

TAP SIDE OF PIPE

METER SERVICE DETAIL

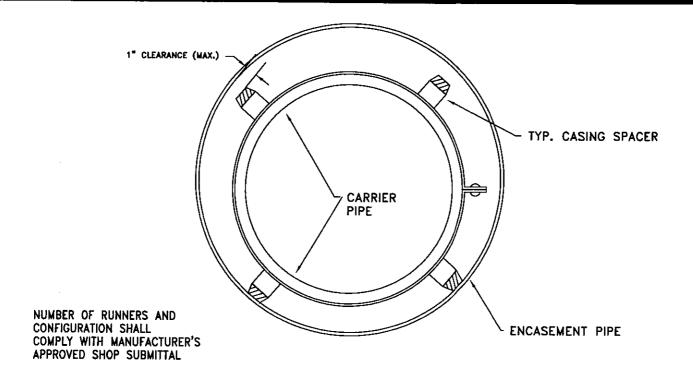
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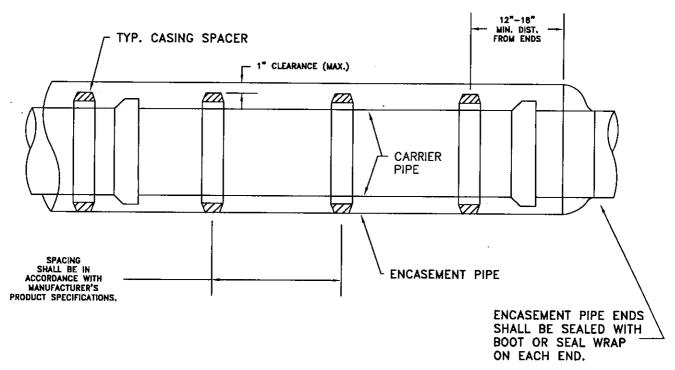
REV. DATE : 3/07

DWG. W-11

GOFORTH S.U.D.

HAYS, CALDWELL & TRAVIS COUNTIES, TEXAS





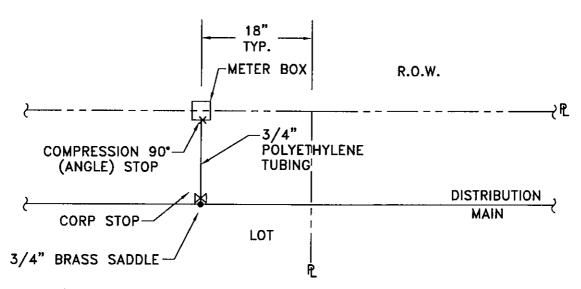
CASING SPACER DETAIL ON LINES 6" AND LARGER

CASING SPACER DETAIL

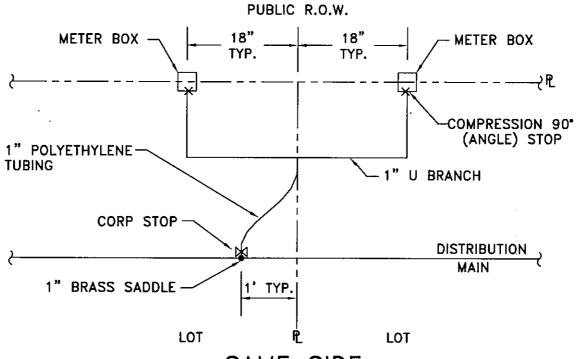
SCALE: NONE REV. DATE: 3/07

DWG. W-12

GOFORTH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES, TEXAS



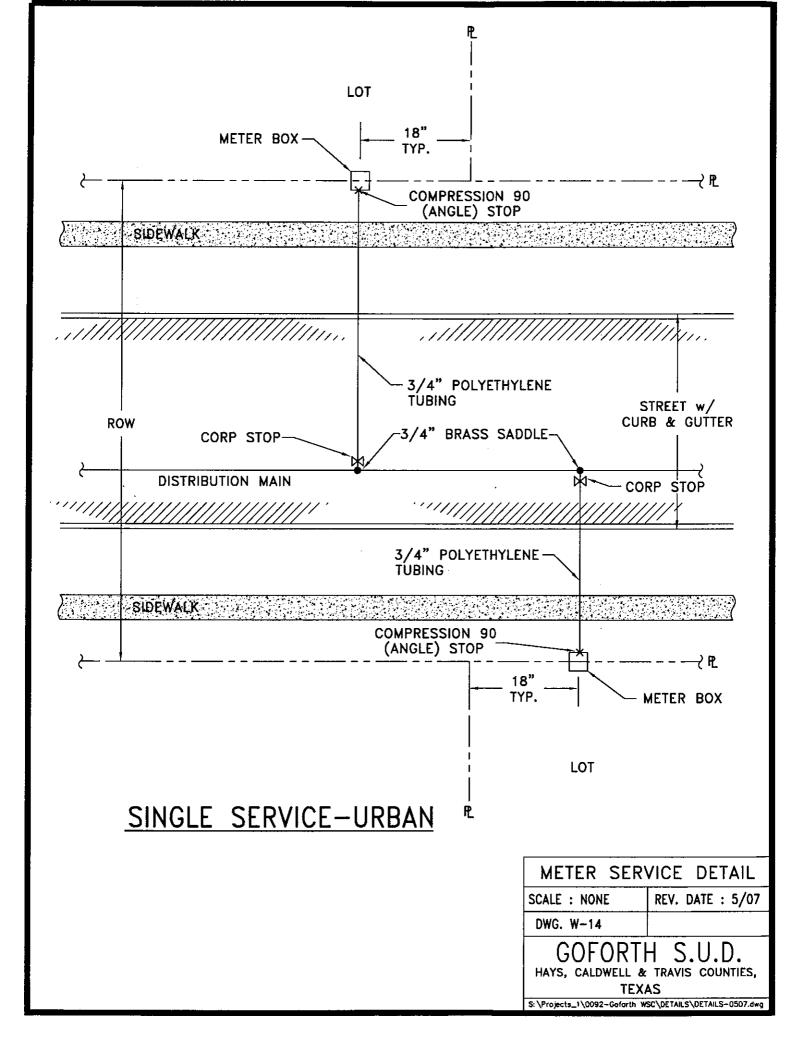
SAME SIDE SINGLE SERVICE-RURAL

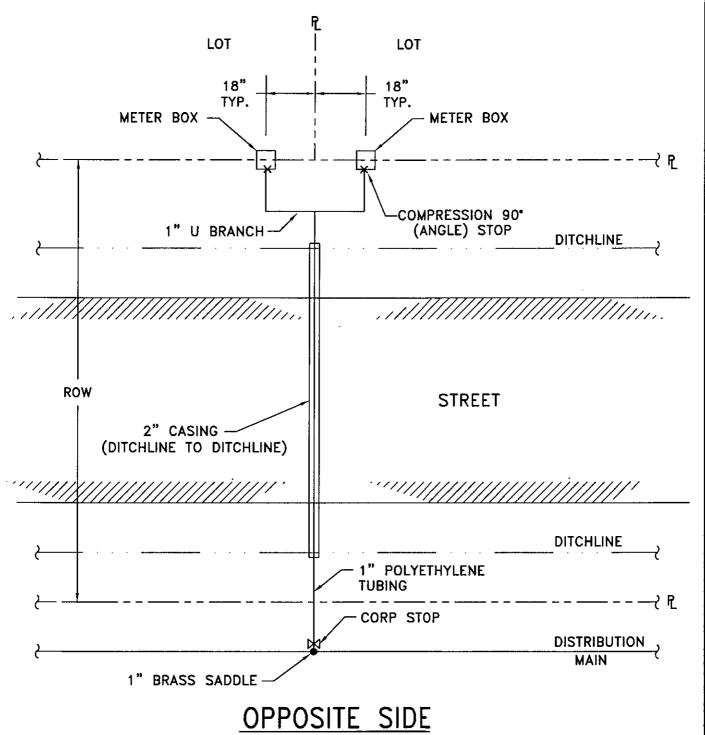


SAME SIDE
DUAL SERVICE-RURAL

METER SERV	VICE DETAIL	
SCALE : NONE	REV. DATE : 3/05	
DWG. W-13		
GOFORTH S II D		

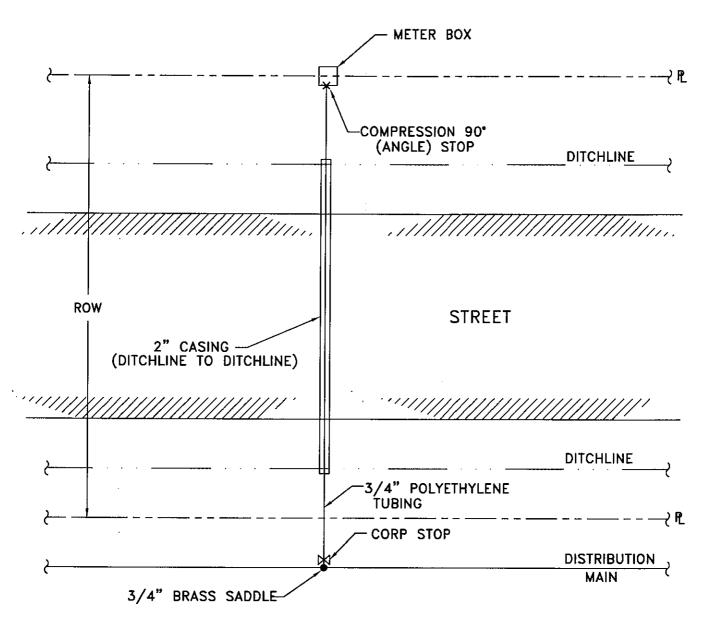
GOFORIH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES, TEXAS





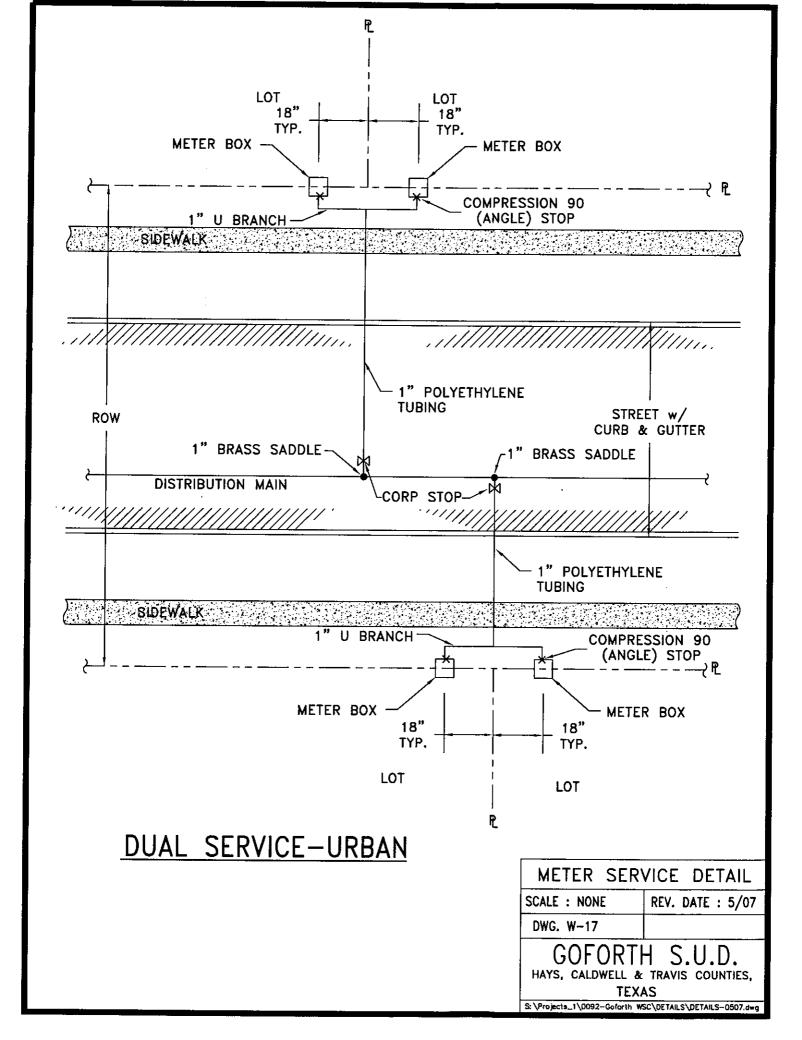
OPPOSITE SIDE DUAL SERVICE-RURAL

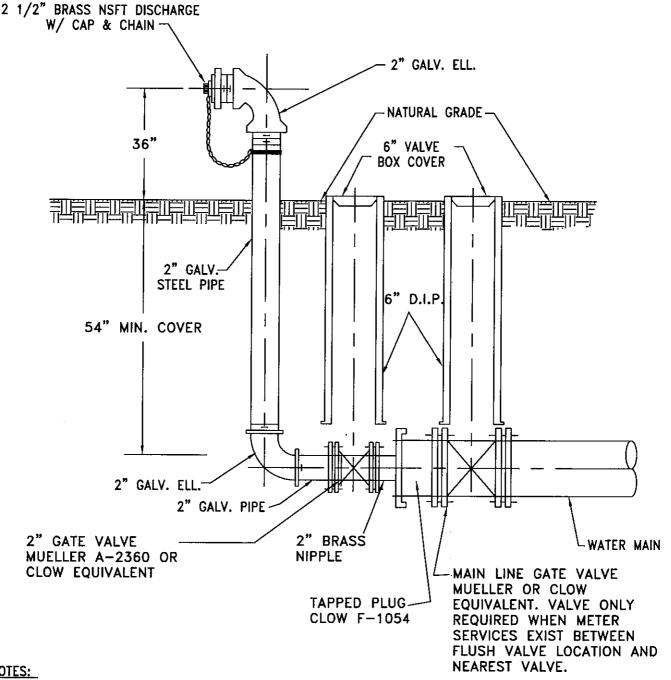
METER SERVICE DETAIL		
SCALE : NONE	REV. DATE : 6/05	
DWG. W-15		
GOFORTH S.U.D.		
HAYS, CALDWELL &	TRAVIS COUNTIES,	



OPPOSITE SIDE SINGLE SERVICE-RURAL

METER SERVICE DETAIL		
SCALE : NONE	REV. DATE : 6/05	
DWG. W-16		
GOFORTH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES,		
TEXAS		





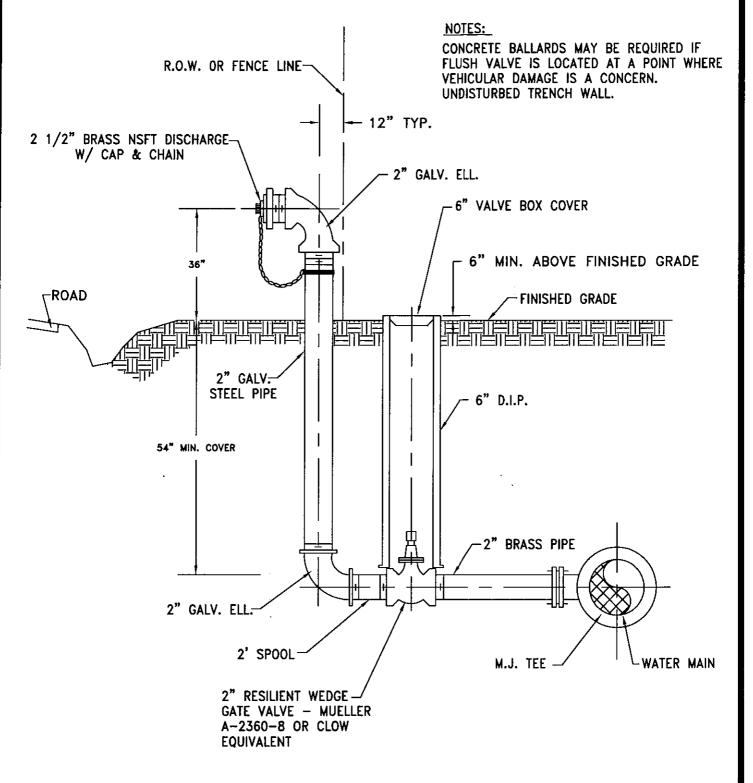
- 1. ALL BURIED METAL PIPE & FITTINGS SHALL HAVE THREE LAYERS OF 8-MIL POLYETHYLENE WRAP, AWWA C105
- 2. FLUSH VALVE RISER SHALL BE INSTALLED 1'-0" TYPICALLY FROM RIGHT-OF-WAY LINE WITH DISCHARGE NOZZLE FACING ROADWAY.

FLUSH VALVE DETAIL ON 6" & LARGER MAIN (RURAL)

SCALE : NONE **REV. DATE : 5/07** DWG. W-18

GOFORTH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES,

TEXAS

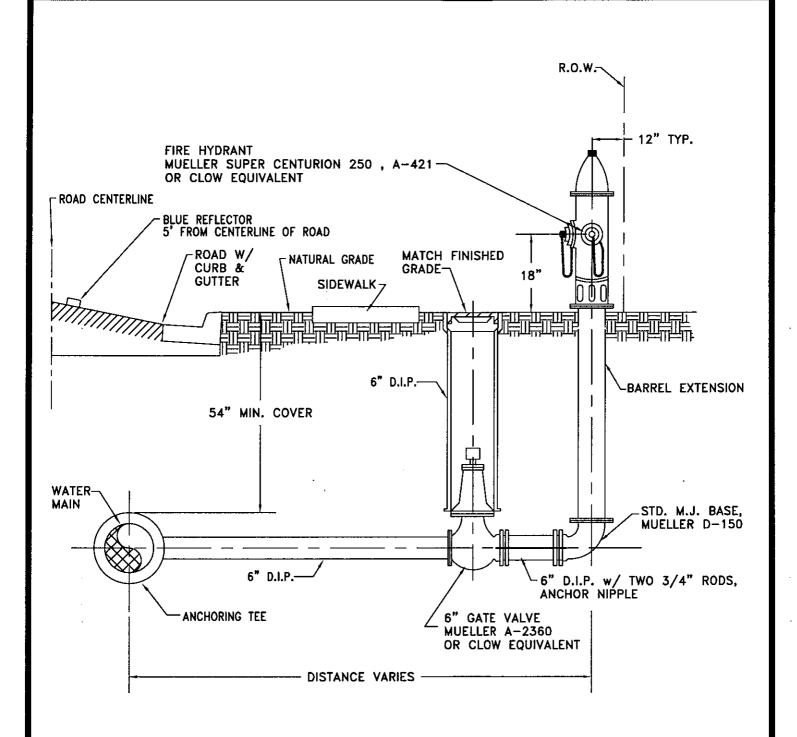


ALL BURIED METAL PIPE & FITTINGS SHALL HAVE THREE LAYERS OF 8-MIL POLYETHYLENE WRAP, AWWA C105

FLUSH VALVE DETAIL
ON 4" & SMALLER MAIN
(RURAL)

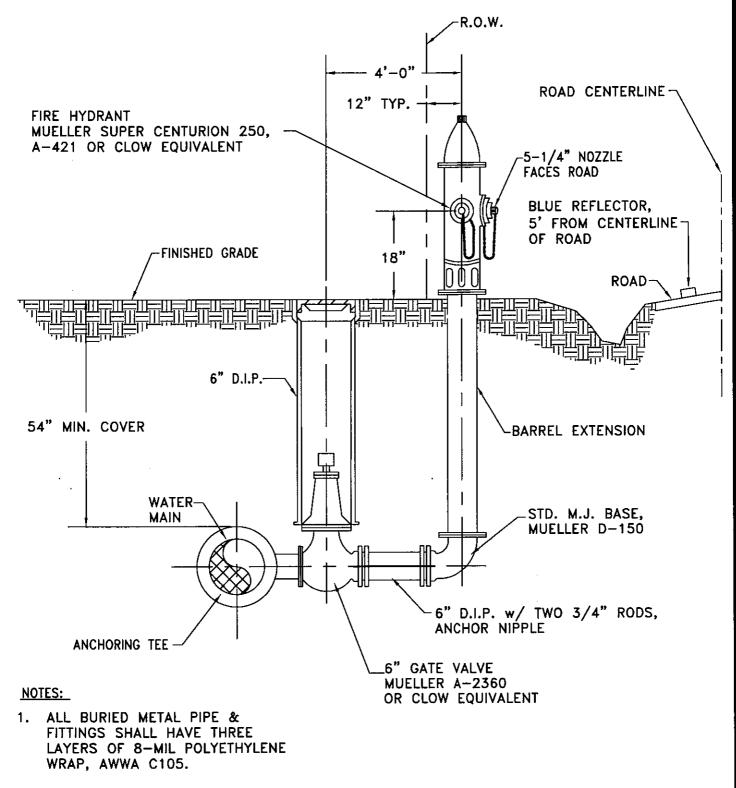
SCALE : NONE REV. DATE : 5/07
DWG. W-19

GOFORTH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES,



ALL BURIED METAL PIPE & FITTINGS SHALL HAVE THREE LAYERS OF 8-MIL POLYETHYLENE WRAP, AWWA C105

FIRE HYDRANT DETAIL		
(URBAN)		
SCALE : NONE REV. DATE : 5/07		
DWG. W-20		
GOFORTH S.U.D.		
HAYS, CALDWELL & TRAVIS COUNTIES,		
TCV.	A (C	



2. CONTRACTOR SHALL VERIFY PERMITS IN TXDOT ROW FOR LOCATION OF HYDRANTS.

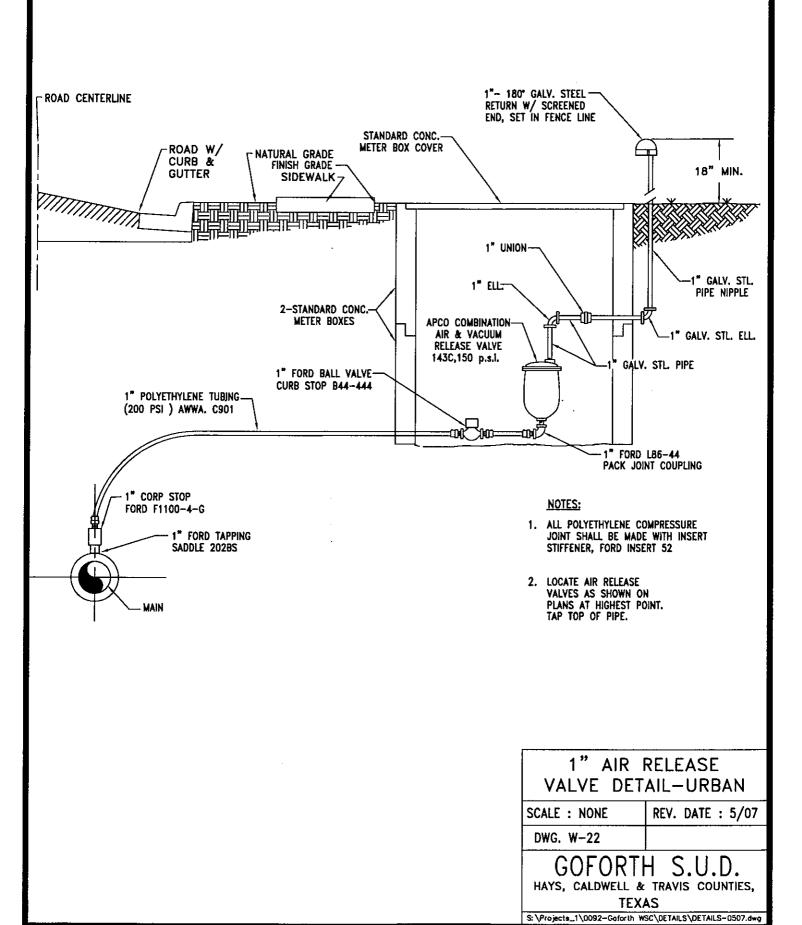
FIRE	HYDRANT	DETAIL
(RURAL)		

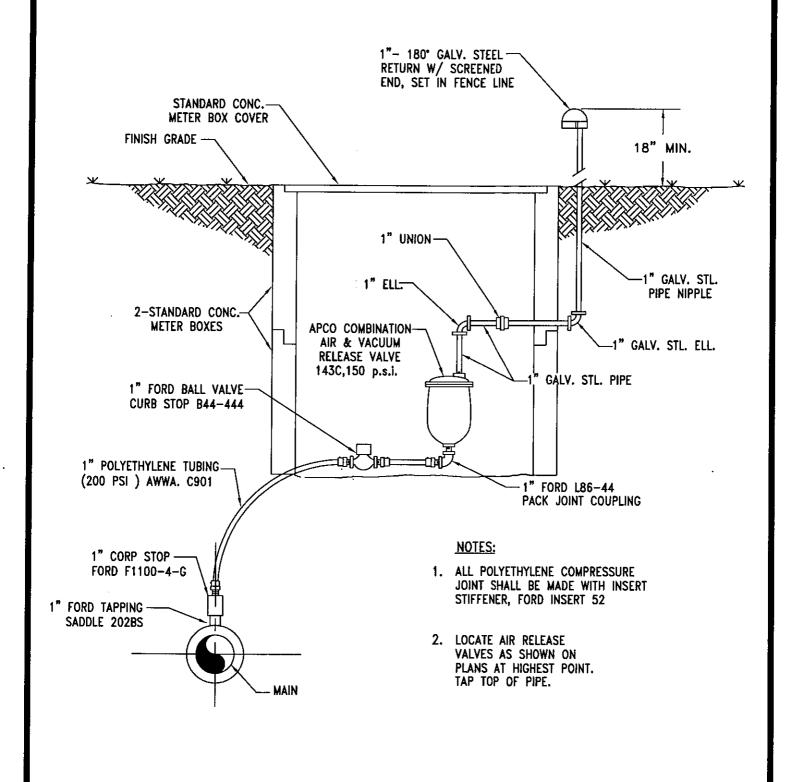
SCALE : NONE REV. DATE : 4/07

DWG. W-21

GOFORTH S.U.D.

HAYS, CALDWELL & TRAVIS COUNTIES, TEXAS





1" AIR RELEASE VALVE DETAIL-RURAL

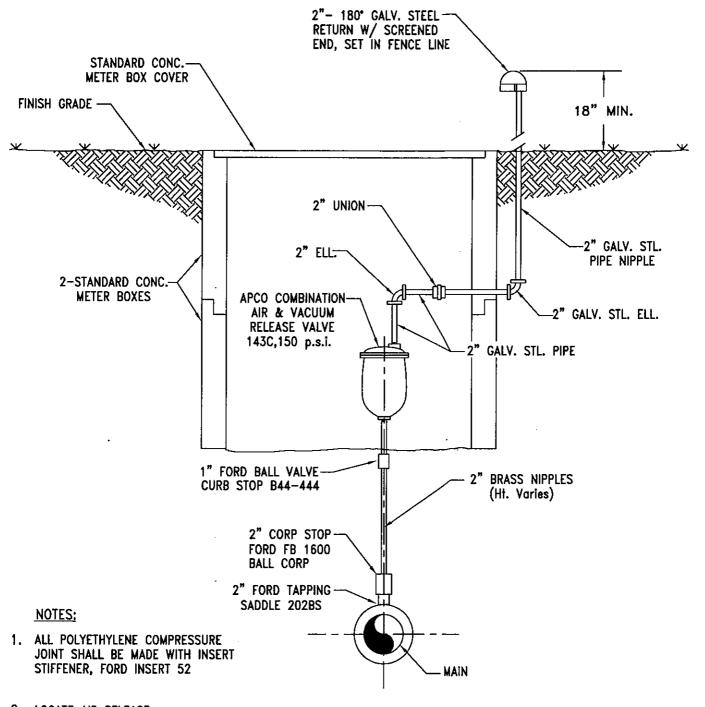
SCALE : NONE

REV. DATE: 5/07

DWG. W-23

GOFORTH S.U.D.

HAYS, CALDWELL & TRAVIS COUNTIES, TEXAS



2. LOCATE AIR RELEASE VALVES AS SHOWN ON PLANS AT HIGHEST POINT. TAP TOP OF PIPE.

2" AIR RELEASE VALVE DETAIL-RURAL

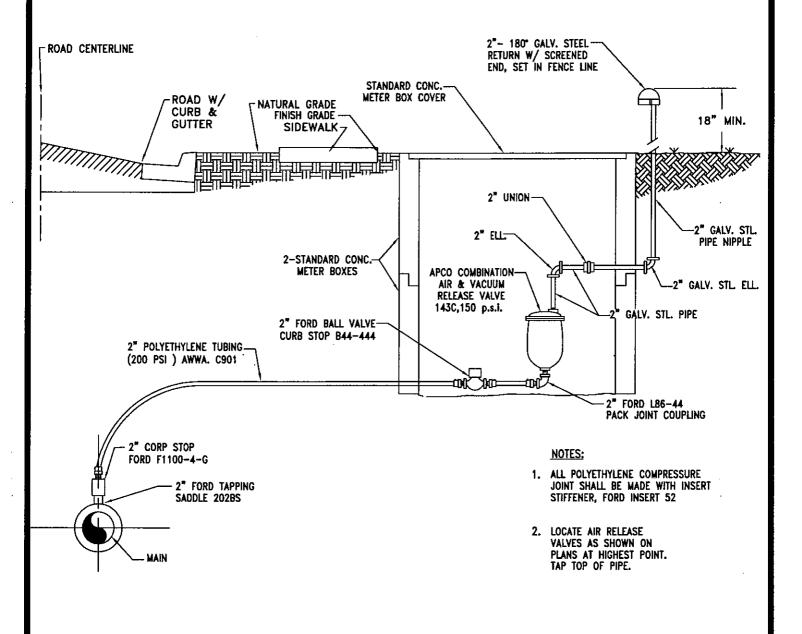
SCALE: NONE

REV. DATE : 3/05

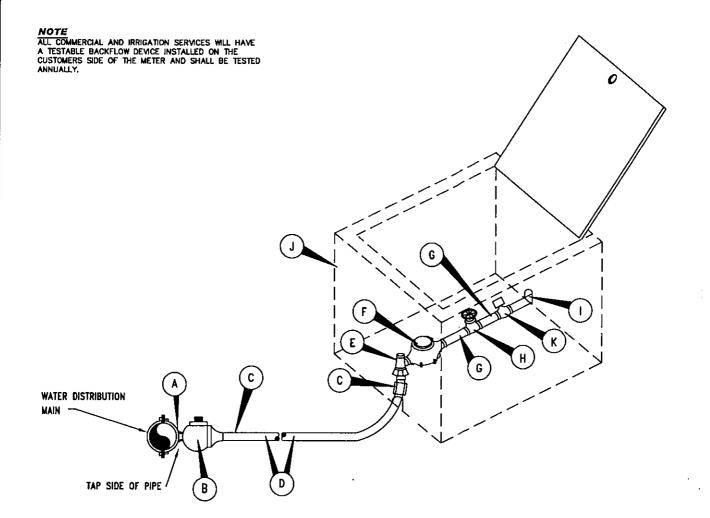
DWG. W-24

GOFORTH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES.

TEXAS



2" AIR	2" AIR RELEASE			
VALVE DETAIL-URBAN				
SCALE : NONE	REV. DATE : 5/07			
DWG. W-25				
GOFORTH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES,				
TEXAS				



MATERIAL LIST

- A. BRASS SADDLE FORD
- B. CORP. STOP

1" - FORD F-1100-4-G 1-1/2" - FORD FB1000-6-G

2" - FORD FB1000-7-G

C. STAINLESS STEEL INSERT 1" - FORD 52 F/CTS

1-1/2" - NONE REQUIRED

2" - NONE REQUIRED

D. SERVICE LINE

1" - POLYETHYLENE TUBING AWWA, C901 (200 psi)

1-1/2" - POLYETHYLENE TUBING AWWA, C901 (200 psi)

2" - POLYETHYLENE TUBING AWWA, C901 (200 psi)

E. COMPRESSION 90 (ANGLE) STOP

1" - FORD BA43-444W

1-1/2" - FORD FV43-666W

2" - FORD FV63-777W-1DR7 FLANGED

- F. WATER METER (WILL BE PROVIDED BY GOFORTH)
- G. BRASS NIPPLE (WILL BE PROVIDED BY GOFORTH)
- H. BALL VALVE CURB, NON-RISING STEM, MALE I.P.T. BY FEMALE I.P.T.

1" - FORD B81-444

1-1/2" - FORD B81-666

2" - FORD B81-777

(WILL BE PROVIDED BY GOFORTH)

- I. CUSTOMER SERVICE LINE MEETING PLUMBING CODE REQUIREMENTS (WILL BE PROVIDED BY CUSTOMER).
- J. COMMERCIAL PLASTIC METER BOX WITH LID
- K. TESTABLE BACKFLOW DEVICE (WILL BE PROVIDED BY GOFORTH)

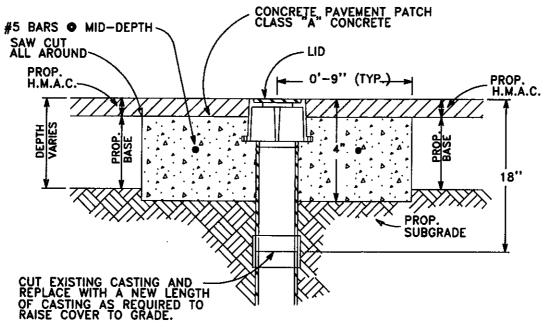
1"-2" COMMERCIAL METER SERVICE DETAIL

SCALE: NONE REV. DATE: 3/07

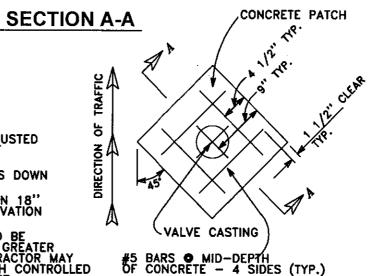
DWG. W-26

GOFORTH S.U.D. HAYS, CALDWELL & TRAVIS COUNTIES,

TEXAS



- 1. VALVE CASTINGS SHALL BE ADJUSTED TO GRADE AFTER FINAL LIFT OF OVERLAY IS IN PLACE.
- 2. CLEAN CASTINGS OF ALL DEBRIS DOWN TO THE BASE OF THE VALVE.
- 3. REMOVE EXISTING CASTING DOWN 18" AND REPLACE TO THE NEW ELEVATION USING NEW PIPE AND CASTING.
- 4. WHERE CAST IRON CASTINGS TO BE REMOVED REQUIRE EXCAVATION GREATER THAN 20 INCHES DEEP, CONTRACTOR MAY ELECT TO FILL EXCAVATION WITH CONTROLLED LOW STRENGTH MATERIAL TO THE UNDERSIDE OF THE CONCRETE PAVE—MENT PATCH IN LIEU OF COMPACTED BACKFILL.



PLAN VIEW

WATER VALVE BOX ADJUSTMENT AND CONCRETE PAD DETAIL

SCALE : NONE

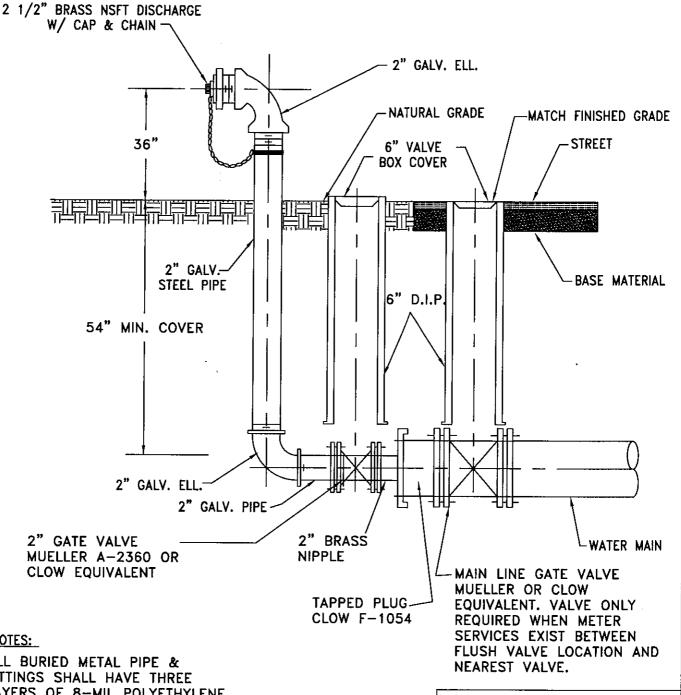
REV. DATE : 8/06

DWG. W-27

GOFORTH S.U.D.

HAYS, CALDWELL & TRAVIS COUNTIES,

TEXAS



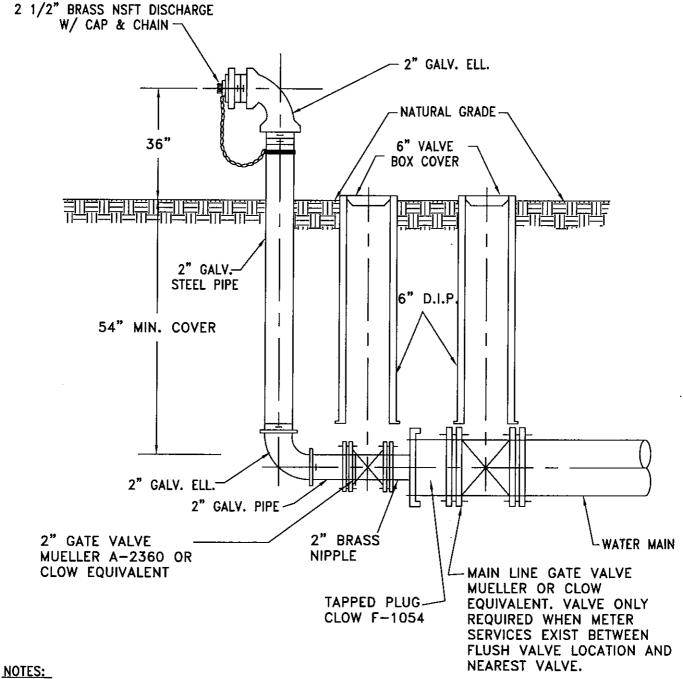
- 1. ALL BURIED METAL PIPE & FITTINGS SHALL HAVE THREE LAYERS OF 8-MIL POLYETHYLENE WRAP, AWWA C105
- 2. EASEMENT REQUIRED IF FLUSH VALVE IS BEYOND PUBLIC R.O.W.

TEMPORARY FLUSH VALVE DETAIL-URBAN

SCALE: NONE REV. DATE : 5/07

DWG. W-28

HAYS, CALDWELL & TRAVIS COUNTIES, **TEXAS**



- 1. ALL BURIED METAL PIPE & FITTINGS SHALL HAVE THREE LAYERS OF 8-MIL POLYETHYLENE WRAP, AWWA C105
- 2. FLUSH VALVE RISER SHALL BE INSTALLED 1'-0" TYPICALLY FROM RIGHT-OF-WAY LINE WITH DISCHARGE NOZZLE FACING ROADWAY.

TEMPORARY FLUSH VALVE DETAIL-RURAL

SCALE: NONE REV. DATE : 5/07 DWG. W-29

HAYS, CALDWELL & TRAVIS COUNTIES, **TEXAS**