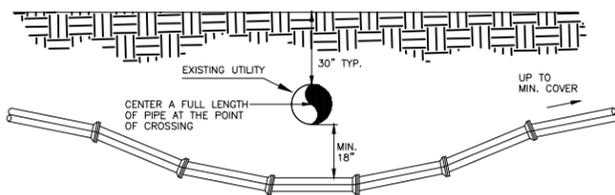
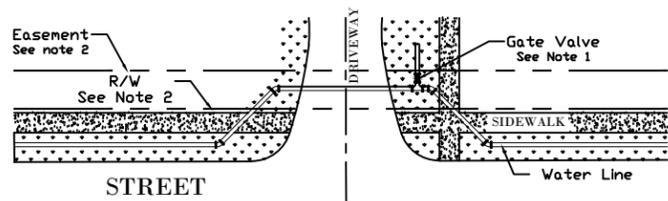


UTILITY CROSSING – FITTING TYPE



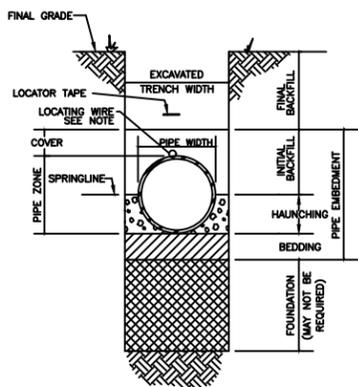
1. THE DEFLECTION TYPE CROSSING SHALL BE USED WHENEVER POSSIBLE. ONLY UNDER SPECIFIC ORDERS BY THE ENGINEER SHALL THE FITTING TYPE CROSSING BE ALLOWED.
2. CONSTRUCT CROSSING USING 75% OF MANUFACTURERS MAXIMUM JOINT DEFLECTION (MAXIMUM).

UTILITY CROSSING – DEFLECTION



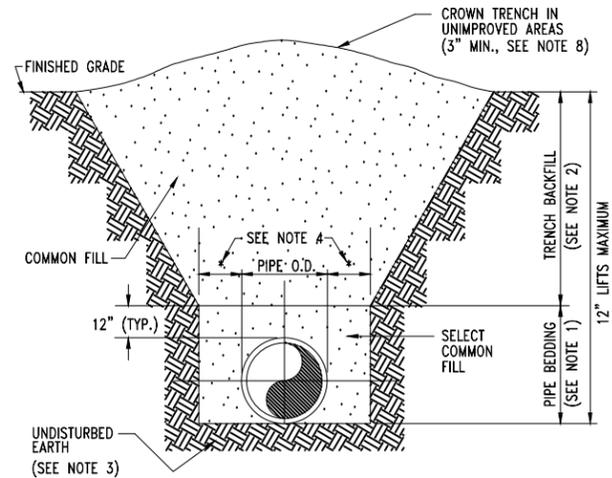
- NOTES:
1. ALL GATE VALVES/MJ FITTINGS, AND BOXES SHALL BE PLACED IN GREEN AREAS, TO PREVENT CONFLICTS WITH SIDEWALKS AND ROADS (ASPHALT).
 2. WE REQUIRE THAT ON ALL INTERSECTIONS, THE WATER LINES SHALL BE RE-ROUTED AWAY FROM THE EXISTING LOCATION TO THE RESPECTED R/W LIMITS, IN SOME CASES IF AT ALL POSSIBLE IN AN EASEMENT TO AVOID CONFLICTS.
 3. THESE DEVIATIONS CHANGES REQUIRE BELL RESTRAINTS, REFER TO RESTRAINED PIPE DETAIL.

UTILITY WATER LINE – RELOCATION



TRENCH CROSS-SECTION TERMINOLOGY

NOTE:
THE TRACER WIRE SHALL BE A BLUE-COATED (WATER), GREEN-COATED (SEWER) OR PURPLE-COATED (REUSE) #10 COPPER HEAD HIGH STRENGTH (HS) SOLID TRACER AND JOINT SEAL SHALL BE INSTALLED ALONG ALL PIPE AND SERVICE. TRACER WIRE SHALL BE TAPED TO THE PIPE AND STUBBED UP AT ALL HYDRANTS AND VALVES.

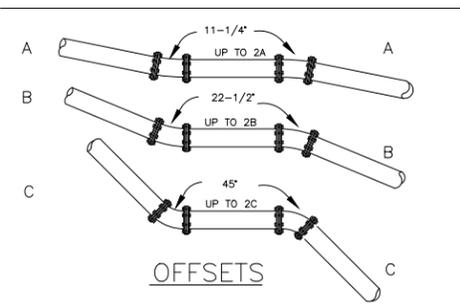


- NOTES:
1. PIPE BEDDING: SELECT COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
 2. TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
 3. PIPE BEDDING UTILIZING SELECT COMMON FILL OR BEDDING ROCK IN ACCORDANCE WITH TYPE "A" BEDDING AND TRENCHING DETAIL MAY BE REQUIRED AS DIRECTED BY THE COUNTY.
 4. (*): 15" MAX. FOR PIPE DIAMETER LESS THAN 24", AND 24" MAX. FOR PIPE DIAMETER 24" AND LARGER.
 5. TRENCHES MUST BE FREE OF WATER AT ALL TIMES DURING CONSTRUCTION.
 6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF FLOW.
 7. REFER TO THE MANUAL FOR SHEETING AND BRACING EXCAVATIONS.
 8. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN MUNICIPAL RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF RIGHT-OF-WAY UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.

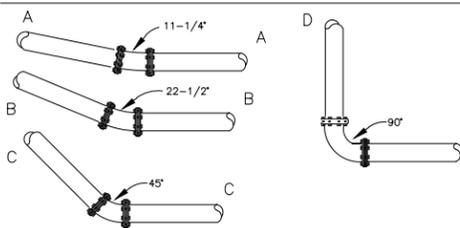
TYPE B BEDDING AND TRENCHING DETAIL

RESTRAINED PIPE CHART

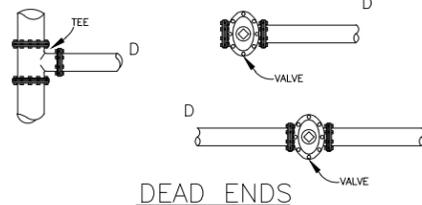
TYPE	MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)									
	PIPE SIZE (ALL TYPES)									
	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
A & B	18	18	18	18	18	18	18	18	18	18
C	18	18	36	36	36	54	54	54	72	72
D	54	72	90	108	126	144	162	180	198	216



OFFSETS

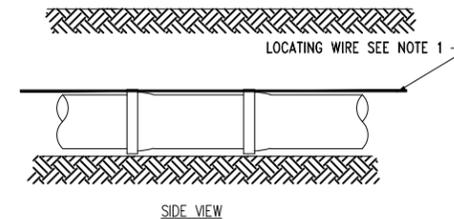
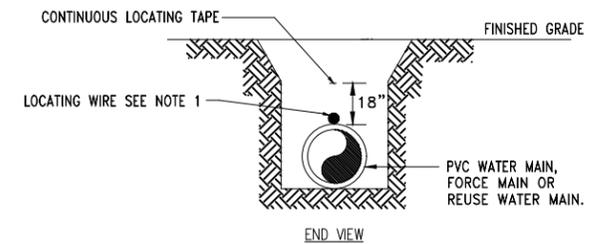


DEFLECTIONS



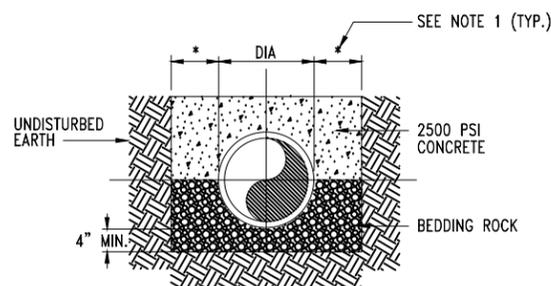
DEAD ENDS

RESTRAINED PIPE FOR PRESSURE PIPES

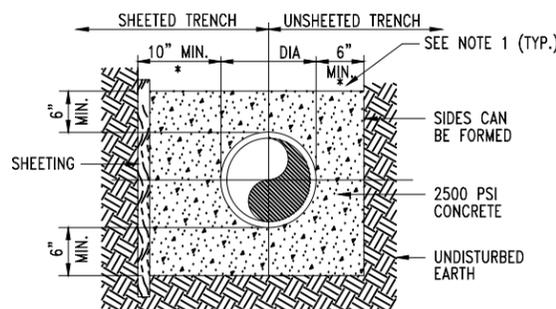


- NOTES:
1. THE TRACER WIRE SHALL BE A BLUE-COATED (WATER), GREEN-COATED (SEWER), OR PURPLE (REUSE) #10 COPPER HEAD HIGH STRENGTH (HS) SOLID TRACER WIRE AND JOINT SEAL SHALL BE INSTALLED ALONG ALL PIPE AND SERVICE. TRACER WIRE SHALL BE TAPED TO THE PIPE AND STUBBED UP AT ALL HYDRANTS AND VALVES.
 2. LOCATING WIRE SHALL TERMINATE AT THE TOP OF EACH TEST BOX AND BE CAPABLE OF EXTENDING 12" ABOVE TOP OF BOX IN SUCH A MANNER SO AS NOT TO INTERFERE WITH VALVE OPERATION.
 3. USE DUCT TAPE AS NECESSARY TO HOLD TRACER WIRE DIRECTLY AGAINST THE PIPE.

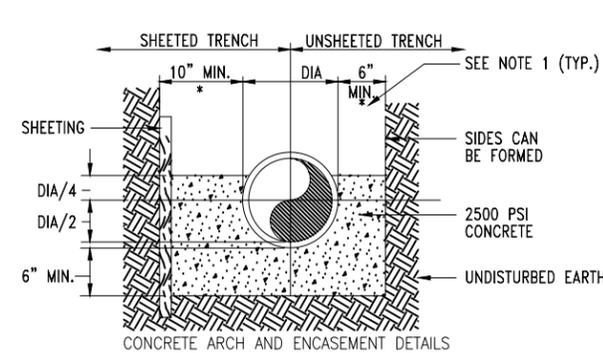
PVC PIPE LOCATING WIRE DETAIL



CONCRETE ARCH



FULL ENCASEMENT



CRADLE OR HALF ENCASEMENT

- NOTES:
1. (*): 15" MAX. FOR PIPE DIAMETER LESS THAN 24", AND 24" MAX. FOR PIPE DIA. 24" AND OVER.
 2. USE OF CONCRETE ARCH HALF ENCASEMENT OR FULL ENCASEMENT TO BE DETERMINED IN THE FIELD AS DIRECTED BY THE COUNTY.
 3. REFER TO THE MANUAL FOR SHEETING AND BRACING EXCAVATIONS.

ISSUE CODE	BY	DATE
MODIFIED:	MJC	12-16-22
MODIFIED:	ROS	06-17-24
MODIFIED:	MJC	03-26-25

CITY OF LAKE WALES



ISSUE CODE	A PRELIMINARY	B DESIGN
C BIDS	D CONSTRUCTION	E APPROVAL
DESIGN:	SCALE: N.T.S.	
CHK'D BY:	DATE:	
DRAWN BY:	ENGR. APPR.	
DRAWING TITLE		

UNDERGROUND WORK DETAILS

AREA	REV.
CITY-OF-LAKE-WALES	