



DESIGN/BUILD CRITERIA PACKAGE

For

Lafayette Street Water & Wastewater Utility Adjustments and Relocations

Financial Projects Number(s): 430154-1-58-01

Federal Aid Project Number(s): 4046-052-C

RFP Number: BC-11-15-12-02

1.0 REFERENCES

The following references are directly associated with this design-build criteria package and as such are binding on the Design-Build Firm:

- *City of Tallahassee Standard Specifications for the Design and Construction of Water and Wastewater Facilities*, June 29, 2010, edition. All sections of this specification apply except Section 1 (General Conditions).
- *Recommended Standards for Water Works*, 2007 edition, Parts 1.0, 1.2, 1.3, 1.4, 1.5, 1.6, 8.0, 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11, 8.12, and 8.13.
- *Recommended Standards for Wastewater Facilities*, 2004 edition Chapters 10, 20, and 40.

2.0 ABBREVIATIONS

City	city of Tallahassee
CR 2196	county road number 2196, locally known as Lafayette Street
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
JPA	joint project agreement
OSHA	federal Occupational Safety and Health Administration
RFP	request for proposal
SUE	subsurface utility engineering

3.0 SCOPE OF WORK

Perform the following water and wastewater adjustment/relocation utility in conjunction with the roadway and drainage work prescribed in other parts of this RFP. The City and Leon County will enter into a JPA to accomplish the water and wastewater adjustment/relocation utility work integrally with the roadway and drainage work of the contract.

- a) conduct design survey
- b) design water and wastewater adjustment and relocations
- c) prepare technical plan/profile designs
- d) prepare special project specifications
- e) secure permits from Leon County, City, and FDOT (note that FDEP water and wastewater permits are not required since the City is self-permitting)
- f) adjust water valve covers and wastewater manhole tops
- g) reconnect of water services displaced by storm drains or structures
- h) move and re-install water meter boxes and backflow preventers
- i) relocate wastewater mains to avoid conflicts with storm drains or structures
- j) reconnect wastewater laterals and cleanouts displaced by storm drains or structures
- k) by-pass pump wastewater
- l) extend fire hydrant leads
- m) relocate fire hydrants

- n) replace any existing fire hydrants that are obsolete or non-functional
- o) install new 8-inch ductile iron water main and appurtenances to replace existing 6-inch cast iron water main
- p) install temporary water lines
- q) replace existing 2-inch water mains with 6-inch ductile iron main and appurtenances
- r) pressure test and disinfect potable water mains
- s) pressure test wastewater mains
- t) trench safety per OSHA
- u) dewater trenches
- v) support nearby utility poles or pipes
- w) conduct construction survey and layout
- x) prepare asbuilt record drawings

4.0 RECORDS SEARCH

The designer shall research all pertinent City Underground Utility Department records including but not limited to, the following:

- Underground Utilities Geographic Information System (available from City Staff)
- Water Tie Sheets (available from City Staff)
- Leon County I-Maps (available on Internet)
- Underground Utility Department Utility Asbuilt Record Drawings (available from City Staff)
- Master Sewer Plan (available from City Staff)
- Master Water Plan (available from City Staff)
- Pipeline condition CCTV logs (available from City Staff, as “POSM reports”)

Primary City Staff Contact Person:

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5.0 UTILITY LOCATION REQUEST

The designer must conduct a comprehensive investigation of all nearby existing and proposed utilities in order to avoid possible conflicts. This shall include, but not be limited to, the following utilities:

- Gas

- Telephone
- Underground and Overhead Electric
- Cable TV
- Fiber Optic
- Storm Drain

6.0 FIELD INVESTIGATION

Field investigations including geotechnical investigation, SUE, and evaluating potential for potential contamination shall be conducted for water and wastewater main design, as necessary.

6.1 Geotechnical Investigation

The design and construction of water and wastewater mains must account for the variability of the uncertain subsurface conditions, and the potential project cost associated with the variability. A geotechnical investigation shall be conducted prior to submitting a proposal for this project so that the Design-Build Firm satisfies itself of the true nature of site conditions.

6.2 Subsurface Utility Engineering

Obtain reliable subsurface utility information. All existing utilities shall be designated and marked by a well-trained, experienced SUE provider prior to initiation of survey for design.

6.3 Evaluating Potential for Contamination

The designer shall evaluate all available resources to identify any potential environmental issues, including possible soil or groundwater contamination, during the design phase of the project. The designer shall follow the guidelines as specified by FDEP.

7.0 PERMITS AND LICENSES

At the Design-Build Firm's own expense, secure all necessary utility accommodation, historic preservation, wildlife, wetland resource, environmental management permits, and authorizations from local, state, and federal agencies having jurisdiction over the project. The City is self-permitted through FDEP for all water and sewer system pipelines that are less than or equal to 12-inches of inside diameter.

8.0 REMOVAL OF EXISTING 6-inch CAST IRON WATER MAIN

The existing 6-inch cast iron main and appurtenances shall be removed and disposed of by the Design-Build Firm. Salvageable appurtenances such as gate valves and fire hydrants shall be delivered to the City Water Operation Yard on Jackson Bluff Road – to be used for parts.

9.0 WARRANTY

Warrant all materials and workmanship against defects for a period commencing on the day of

final acceptance of the project by Leon County and extending two-years henceforth. All manufacturers' special warranties for the various utility components shall be made transferable to the City upon final acceptance of the project by Leon County.

10.0 RECOMMENDED SCHEDULE OF VALUES

The following minimum item description and units of measure are recommended by the City for submittal of the Contractor's Schedule of Values, after award of the contract.

1500H	6" Ductile Iron Water Pipe (and other sizes as needed)	LF
1500J	8" Ductile Iron Water Pipe	LF
3610J	8" Ductile Iron Wastewater Pipe	LF
5050	Water Service (Sizes 3\4 inch to 2-inch)	EA
5100H	6" Gate Valve	EA
5100J	8" Gate Valve	EA
5110HxH	6"x6" Tapping Sleeve (and other sizes as needed)	EA
5120H	Remove, Salvage, & Deliver 6" Valve	EA
7836	Adjustment of Wastewater Manholes Lid In Adv. of Resurfacing	EA
20430	Install Fire Hydrant Extension	EA
20440	Remove Fire Hydrant Extension	EA
20620	Replace Existing Wastewater Lateral Cleanout	EA
20670	Abandon Water Service Off Existing Main	EA
20680	Abandon Wastewater Lateral Off Existing Main	EA
20700	Adjust Existing Wastewater Lateral	EA

11.0 SUPPLEMENTAL CONSTRUCTION DETAILS

In addition to the construction details found in the City Standard Specifications, the following supplemental construction details are included in this RFP and are binding on the Design-Build Firm.

The following details are attached to the end of this document and denoted as

“SUPPLEMENTAL WATER & WASTEWATER CONSTRUCTION DETAILS.”

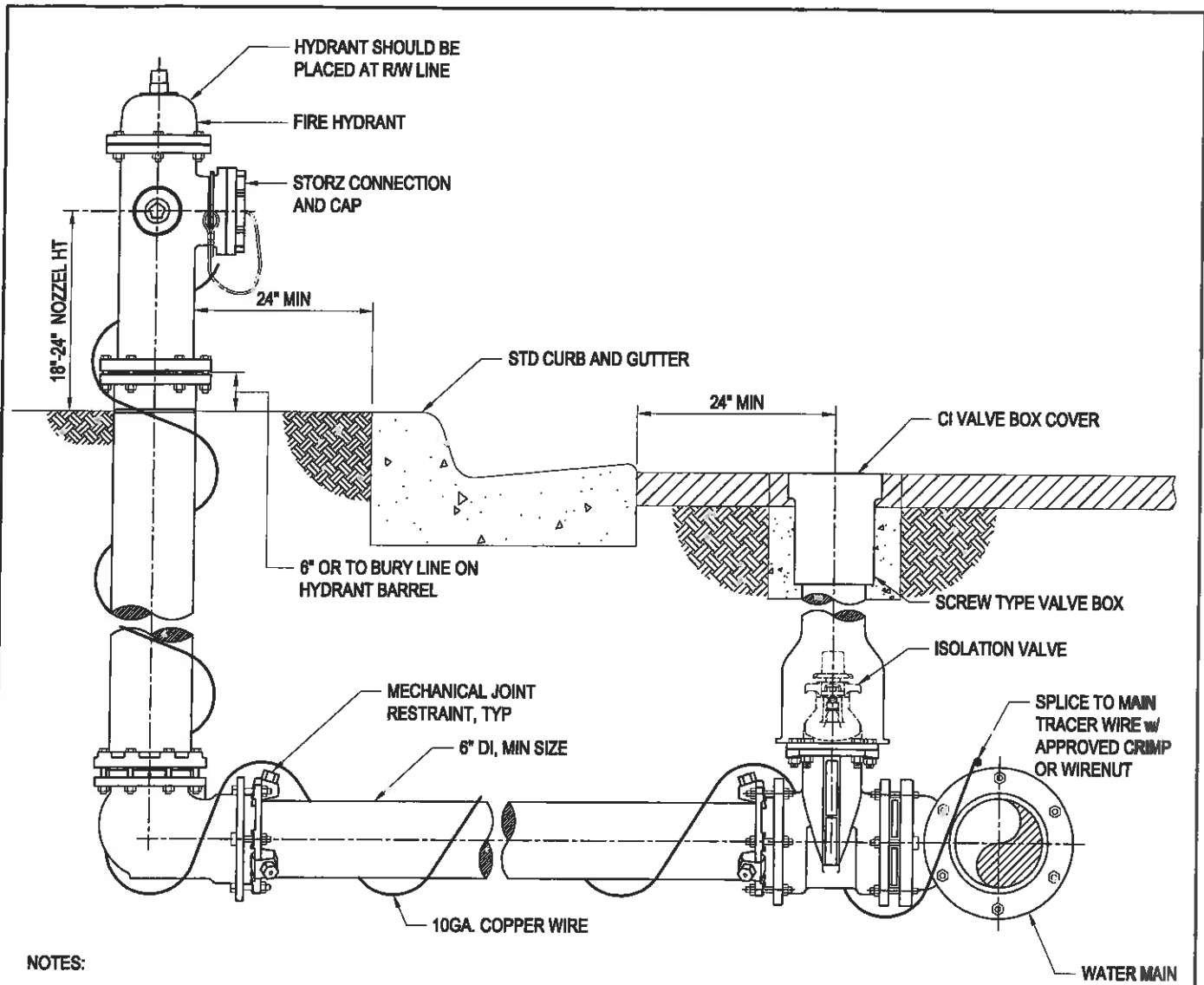
FH-1	Fire hydrant Detail
WM-01	Existing Water Main Tie-in Connection with Future Extension Provision
WM-02A	Restraint Lengths for Horizontal Bends
WM-02B	Restraint Lengths for Reducers
WM-02C	Restraint Lengths for Caps and Plugs
WM-02D	Restraint Lengths for Valves
WM-02E	Restraint Lengths for Tees
WM-02F	Restraint Lengths for Vertical Offsets
WM-03	Reverse Connection at Water Main
UA5002	Pipe Encasement for Crossing with less Than 12-inch Vertical Separation
UA6001	Standard Water Main Lowering
UA7012	Two-way Sanitary Sewer Cleanout
UA 7018	Sewer Service Lateral Disconnection on Existing or New Roadway

DRAFT

Design-Build Criteria Package

SUPPLEMENTAL CONSTRUCTION DETAILS

DRAFT



NOTES:

1. HYDRANT TO BE PLACED WITH PUMPER NOZZEL FACING STREET.
2. APPROVED MODELS ARE MUELLER A423, M.H. RELIANT 929, AMERICAN FLOW HYDRANT B-84-B-5, AND CLOW MEDALLION. NO SUBSTITUTES WILL BE ALLOWED.
3. VALVE OPENING 5 1/4" MINIMUM.
4. SIX INCH MJ CONNECTION TO MAIN.
5. HOSE NOZZLES: NATIONAL STANDARD THREADS WITH TWO 2 1/2" HOSE NOZZLES AND ONE STEAMER NOZZEL WITH 5" OPENING AND STORZ CONNECTION WITH CAP ON NOZZEL.
6. ALL PIPE FROM MAIN TO HYDRANT SHALL BE RESTRAINED DUCTILE IRON. NO SUBSTITUTES.
7. HOSE THREAD SHALL BE NATIONAL STANDARD THREADS. SIX THREADS TO ONE INCH, V-TYPE, .288 PITCH, 5.376" O.D..
8. STEAMER SHALL BE STORZ CONNECTION WITH CAP.
9. HYDRANT PLACEMENT:
 CURB AND GUTTER STREET - AS NOTED PER PLANS
 OPEN DITCH STREET - TOP OF BACKSLOPE OF DITCH, ON THE R/W LINE AND OR PROPERTY CORNER. (MAX. 10' FROM DRIVING SURFACE)
10. ALL JOINTS TO BE RESTRAINED. MAIN MECHANICAL JOINTS MAY BE RESTRAINED WITH CLOW F-1058 RETAINER GLANDS, 304 STAINLESS STEEL THREADED RODS WITH EYE BOLTS, OR MEGA LUGS.
11. FIRE HYDRANT TEE MAY BE USED IN LIEU OF MECHANICAL TEE.
12. COMPACTION WILL BE 100% STANDARD PROCTOR.
13. DEPTH OF PIPE TO HAVE 36" MINIMUM COVER.
14. HYDRANTS PLACED ON PRIVATE WATER MAINS SHALL BE RED IN COLOR.
15. HYDRANTS PLACED ON CITY WATER MAINS SHALL BE REFLECTIVE YELLOW IN COLOR.
16. CLEARANCES OF SEVEN AND ONE HALF FEET IN FRONT OF AND TO EACH SIDE OF HYDRANT WITH FOUR FOOT TO THE REAR SHALL BE MAINTAINED.

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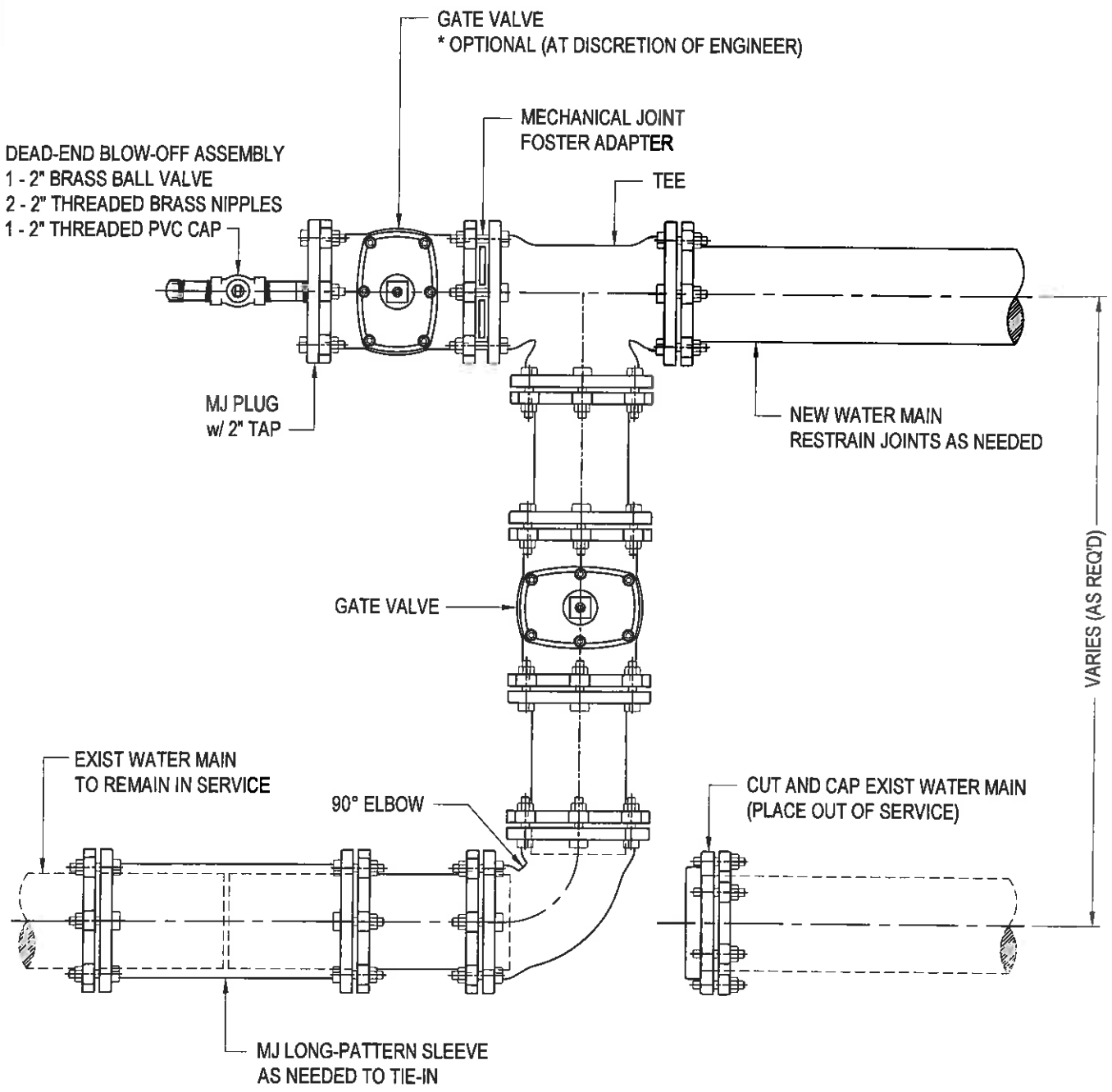
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RESTRAIN ALL JOINTS THROUGH FITTINGS

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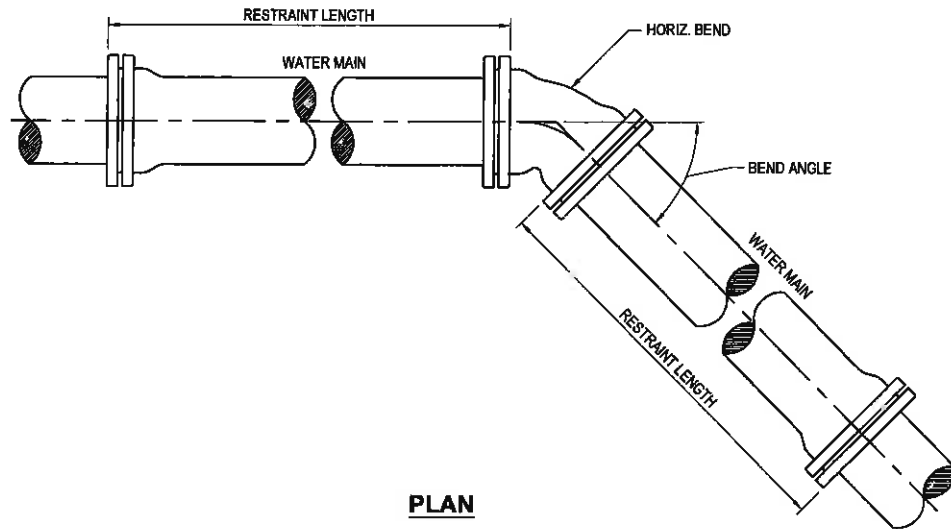
**EXIST WATER MAIN TIE-IN CONNECTION
 w/ FUTURE EXTENSION PROVISION**

SHEET

WM-01

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PLAN


THRUST RESTRAINT NOTES:

1. CHARTS ARE BASED ON EBAA IRON RESTRAINT LENGTH CALCULATOR, VERSION 6. ENGINEER OF RECORD SHALL VERIFY.
2. DESIGN PARAMETERS ARE AS FOLLOWS:
 - a. UNIFIED SOIL CLASSIFICATION: SM SOIL TYPE
 - b. SAFETY FACTOR: 1.5 TO 1
 - c. TRENCH TYPE: TYPE 3
 - d. DEPTH OF BURY: 3 FT
 - e. TEST PRESSURE: 150 PSI
3. POLY WRAPPED DUCTILE IRON PIPE SHALL REQUIRE ADDITIONAL THRUST RESTRAINT.
4. HORIZ. BENDS REQUIRE RESTRAINT OF ALL JOINTS WITHIN THE CALCULATED RESTRAINT LENGTH ON BOTH SIDES OF THE BEND.

RESTRAINT LENGTH FOR HORIZONTAL BENDS (IN FEET)								
PIPE DIAMETER (INCHES)	DUCTILE IRON				PVC			
	BEND							
	11.25°	22.5°	45°	90°	11.25°	22.5°	45°	90°
4	2	3	6	15	2	4	8	18
6	2	4	9	20	3	5	11	25
8	3	6	11	26	4	7	14	33
10	4	7	13	31	4	8	16	38
12	4	8	15	36	5	9	19	45
14	4	9	17	41	5	11	21	51
18	5	10	19	46	6	12	24	57

RESTRAINT LENGTHS FOR HORIZONTAL BENDS

N.T.S.


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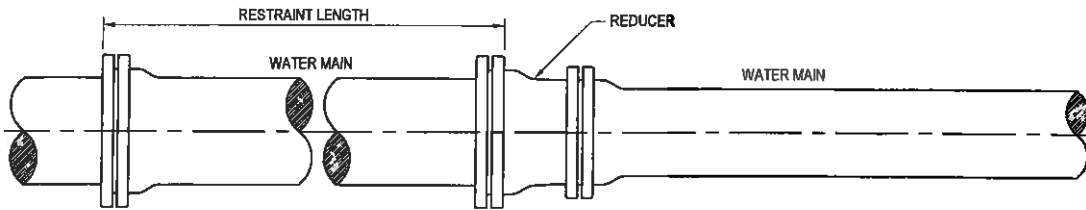
RESTRAINT LENGTHS FOR HORIZONTAL BENDS

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 - a. UNIFIED SOIL CLASSIFICATION: SM SOIL TYPE
 - b. SAFETY FACTOR: 1.5 TO 1
 - c. TRENCH TYPE: TYPE 3
 - d. DEPTH OF BURY: 3 FT
 - e. TEST PRESSURE: 150 PSI
3. POLY WRAPPED DUCTILE IRON PIPE SHALL REQUIRE ADDITIONAL THRUST RESTRAINT.
4. REDUCERS REQUIRE RESTRAINT OF ALL JOINTS WITHIN THE CALCULATED RESTRAINT LENGTH EXTENDING FROM THE REDUCER ON THE SIDE OF THE LARGER PIPE.

RESTRAINT LENGTH FOR REDUCERS			
LARGE PIPE DIAMETER (INCHES)	SMALL PIPE DIAMETER (INCHES)	DUCTILE IRON RESTRAINT (FEET)	PVC RESTRAINT (FEET)
6	4	19	29
	6	20	31
8	4	45	71
	6	34	53
	8	19	29
10	4	57	89
	6	48	74
	8	35	54
	10	20	30
12	4	67	105
	6	59	93
	8	48	78
	10	35	55
	12	19	30
14	4	77	121
	6	71	111
	8	61	96
	10	50	78
	12	36	56
16	14	19	30

RESTRAINT LENGTHS FOR REDUCERS

N.T.S.


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RESTRAINT LENGTHS FOR REDUCERS

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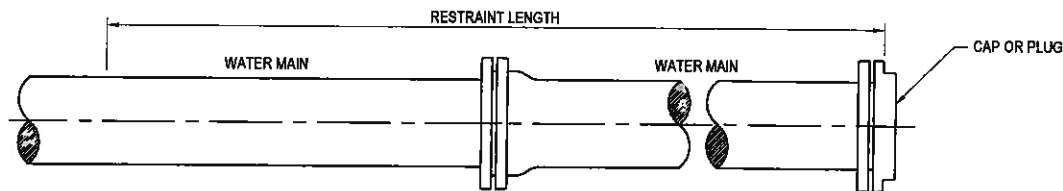
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THRUST RESTRAINT NOTES:

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2. DESIGN PARAMETERS ARE AS FOLLOWS:
 - a. UNIFIED SOIL CLASSIFICATION: SM SOIL TYPE
 - b. SAFETY FACTOR: 1.5 TO 1
 - c. TRENCH TYPE: TYPE 3
 - d. DEPTH OF BURY: 3 FT
 - e. TEST PRESSURE: 150 PSI
3. POLY WRAPPED DUCTILE IRON PIPE SHALL REQUIRE ADDITIONAL THRUST RESTRAINT.
4. CAPS AND PLUGS REQUIRE RESTRAINT OF ALL JOINTS WITHIN THE CALCULATED RESTRAINT LENGTH EXTENDING FROM THE DEAD END.

RESTRAINT LENGTH FOR DEAD ENDS AND VALVES (IN FEET)

PIPE DIAMETER (INCHES)	DUCTILE IRON (FEET)	PVC (FEET)
4	25	39
6	38	55
8	47	72
10	56	87
12	65	102
14	74	116
16	84	131

RESTRAINT LENGTHS FOR DEAD ENDS

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RESTRAINT LENGTHS FOR CAPS AND PLUGS

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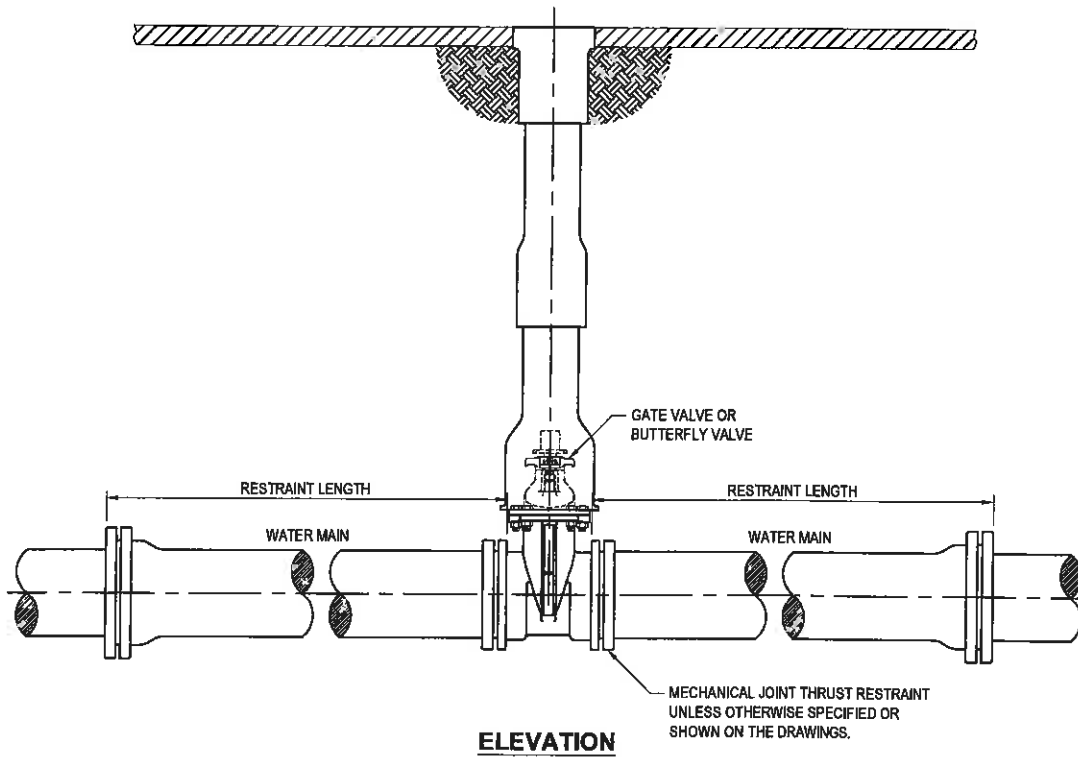
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 - a. UNIFIED SOIL CLASSIFICATION: SM SOIL TYPE
 - b. SAFETY FACTOR: 1.5 TO 1
 - c. TRENCH TYPE: TYPE 3
 - d. DEPTH OF BURY: 3 FT
 - e. TEST PRESSURE: 150 PSI
3. POLY WRAPPED DUCTILE IRON PIPE SHALL REQUIRE ADDITIONAL THRUST RESTRAINT.
4. VALVES REQUIRE RESTRAINT OF ALL JOINTS WITHIN THE CALCULATED RESTRAINT LENGTH ON BOTH SIDES OF THE VALVE.

RESTRAINT LENGTH FOR DEAD ENDS AND VALVES (IN FEET)

PIPE DIAMETER (INCHES)	DUCTILE IRON (FEET)	PVC (FEET)
4	25	30
6	36	55
8	47	72
10	58	87
12	65	102
14	74	118
16	84	131

RESTRAINT LENGTHS FOR VALVES

N.T.S.

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RESTRAINT LENGTHS FOR VALVES

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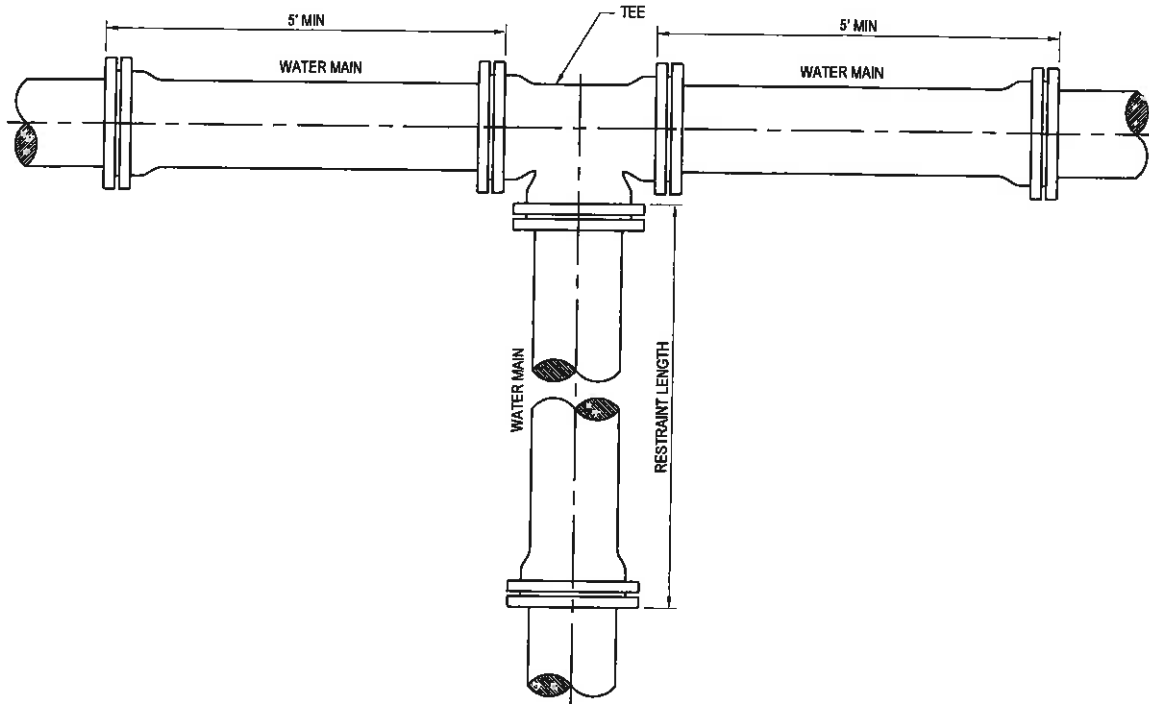
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 - a. UNIFIED SOIL CLASSIFICATION: SM SOIL TYPE
 - b. SAFETY FACTOR: 1.5 TO 1
 - c. TRENCH TYPE: TYPE 3
 - d. DEPTH OF BURY: 3 FT
 - e. TEST PRESSURE: 150 PSI
3. POLY WRAPPED DUCTILE IRON PIPE SHALL REQUIRE ADDITIONAL THRUST RESTRAINT.
4. TEES REQUIRE RESTRAINT OF ALL JOINTS WITHIN THE CALCULATED RESTRAINT LENGTH ALONG THE BRANCH PIPE.
5. BRANCH RESTRAINT LENGTH FOR TEES ASSUMES A 5 FOOT RUN LENGTH ON EACH SIDE OF THE TEE. SHORTER RUN LENGTHS MAY REQUIRE ADDITIONAL THRUST RESTRAINT.

RESTRAINT LENGTH FOR TEE BRANCHES			
RUN DIAMETER (INCHES)	BRANCH DIAMETER (INCHES)	DUCTILE IRON RESTRAINT (FEET)	PVC RESTRAINT (FEET)
4	4	14	21
	6	8	12
6	4	24	37
	6	2	4
	8	20	31
8	4	35	54
	6	1	1
	8	16	24
10	8	31	49
	10	43	68
	12	1	1
12	4	11	18
	6	28	44
	8	41	64
	10	53	83
14	4	1	1
	6	7	10
	8	25	38
	10	38	59
	12	51	79
16	14	62	97
	4	1	1
	6	2	3
	8	21	33
	10	35	55
	12	48	76
18	14	60	94
	16	71	112

RESTRAINT LENGTHS FOR TEES

N.T.S.


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RESTRAINT LENGTHS FOR TEES

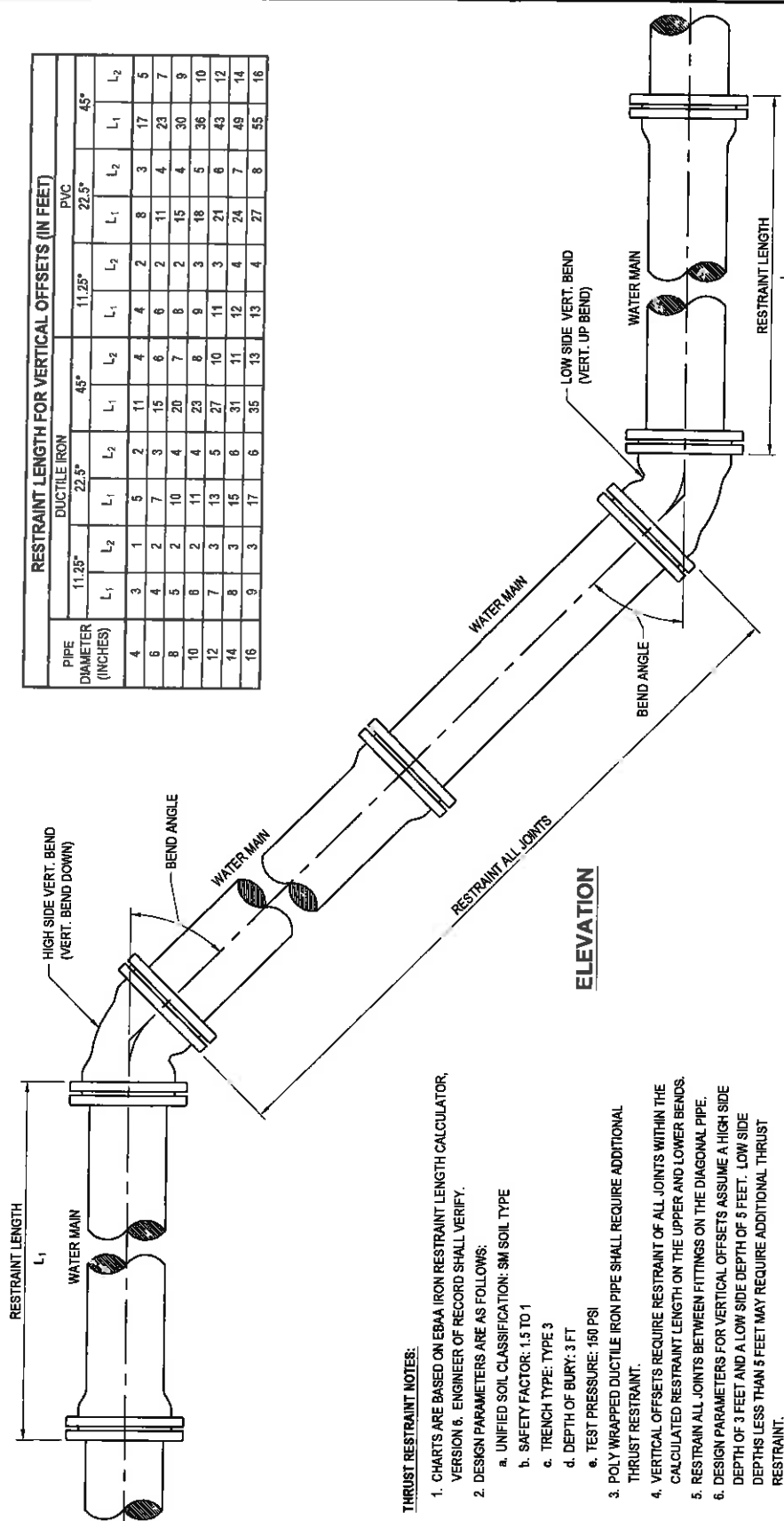
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PIPE DIAMETER (INCHES)	RESTRAINT LENGTH FOR VERTICAL OFFSETS (IN FEET)											
	DUCTILE IRON						PVC					
	11.25°		22.5°		45°		11.25°		22.5°		45°	
	L ₁	L ₂	L ₁	L ₂	L ₁	L ₂	L ₁	L ₂	L ₁	L ₂	L ₁	L ₂
4	3	1	5	2	11	4	4	2	8	3	17	5
6	4	2	7	3	15	6	6	2	11	4	23	7
8	5	2	10	4	20	7	8	2	15	4	30	9
10	8	2	11	4	23	8	8	3	18	5	36	10
12	7	3	13	5	27	10	11	3	21	6	43	12
14	8	3	15	6	31	11	12	4	24	7	49	14
16	9	3	17	6	35	13	13	4	27	8	55	16



ELEVATION

- THRUST RESTRAINT NOTES:**
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 - a. UNIFIED SOIL CLASSIFICATION: SM SOIL TYPE
 - b. SAFETY FACTOR: 1.5 TO 1
 - c. TRENCH TYPE: TYPE 3
 - d. DEPTH OF BURY: 3 FT
 - e. TEST PRESSURE: 160 PSI
 3. POLY WRAPPED DUCTILE IRON PIPE SHALL REQUIRE ADDITIONAL THRUST RESTRAINT.
 4. VERTICAL OFFSETS REQUIRE RESTRAINT OF ALL JOINTS WITHIN THE CALCULATED RESTRAINT LENGTH ON THE UPPER AND LOWER BENDS.
 5. RESTRAIN ALL JOINTS BETWEEN FITTINGS ON THE DIAGONAL PIPE.
 6. DESIGN PARAMETERS FOR VERTICAL OFFSETS ASSUME A HIGH SIDE DEPTH OF 3 FEET AND A LOW SIDE DEPTH OF 5 FEET. LOW SIDE DEPTHS LESS THAN 5 FEET MAY REQUIRE ADDITIONAL THRUST RESTRAINT.

RESTRAINT LENGTHS FOR VERTICAL OFFSETS
N.T.S.


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RESTRAINT LENGTHS FOR VERTICAL OFFSETS

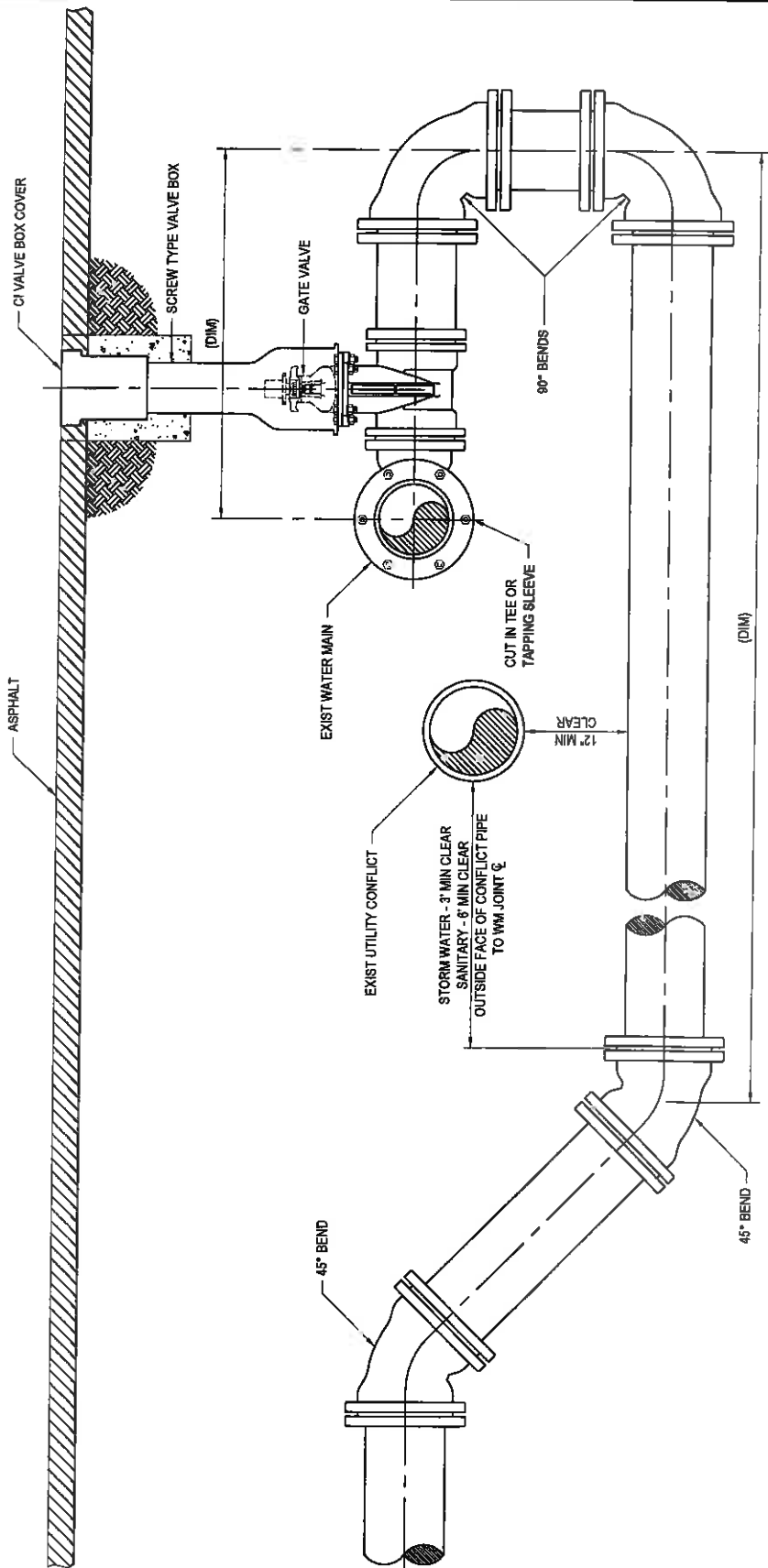
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N.T.S.

RESTRAIN ALL JOINTS FROM TEE THROUGH UPPER 45° BEND



REVERSE CONNECTION AT WATER MAIN
N.T.S.

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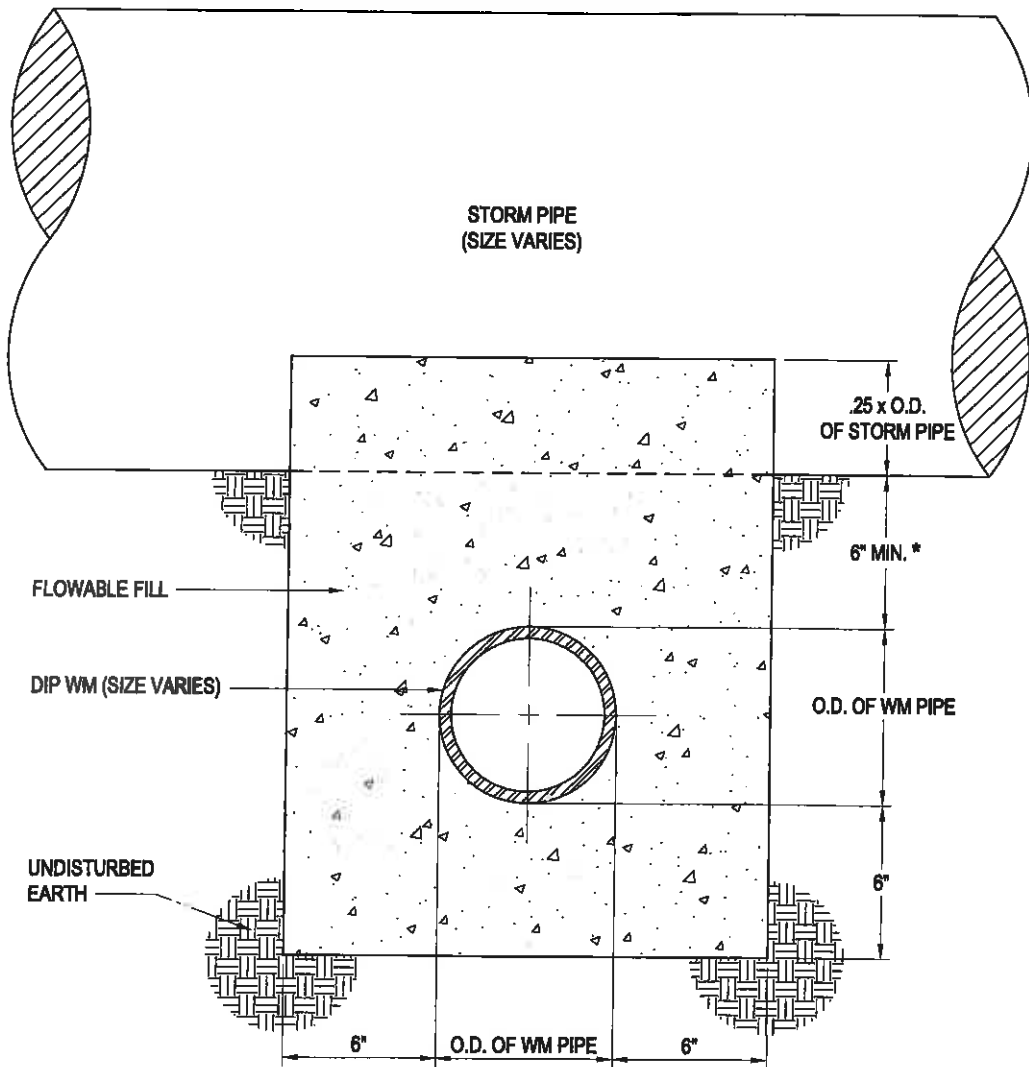
Approved by: _____ Date Issued: **AUGUST 2012**

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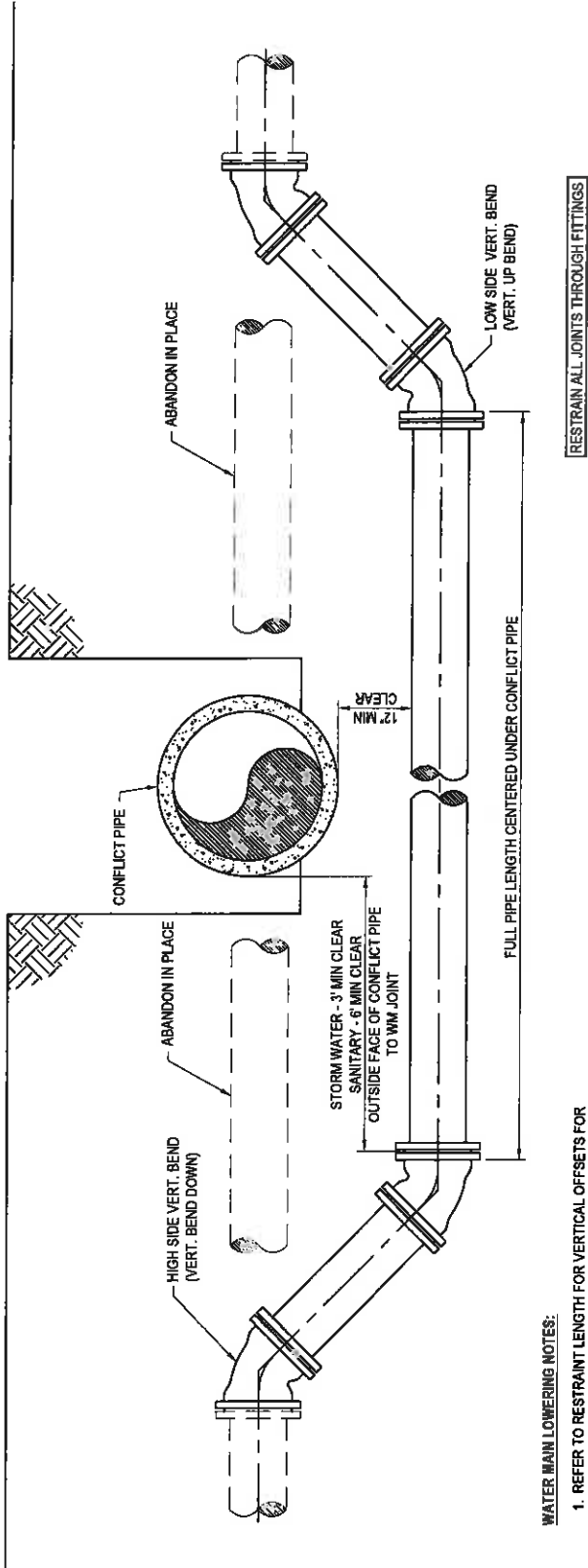
SHEET TITLE
REVERSE CONNECTION AT WATER MAIN

SHEET
WM-03

SCALE
 N.T.S.



* CONTRACTOR SHALL NOTIFY CITY IF SEPARATION IS LESS THAN 6"




WATER MAIN LOWERING NOTES:

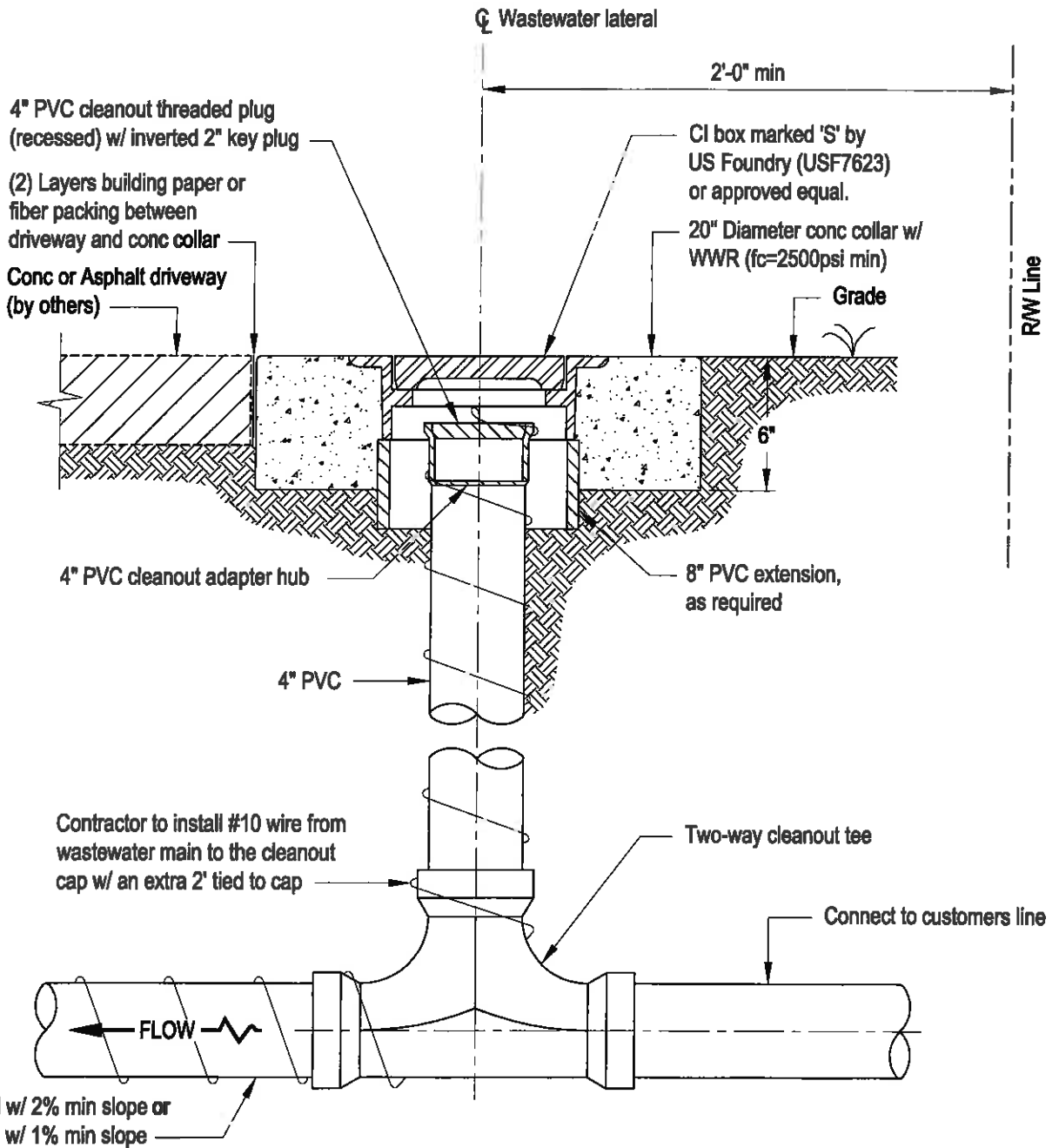
1. REFER TO RESTRAINT LENGTH FOR VERTICAL OFFSETS FOR RESTRAINT LENGTHS REQUIRED.
2. FOR ADDITIONAL CLEARANCES REFER TO F.A.C. RULE 62-555.314.

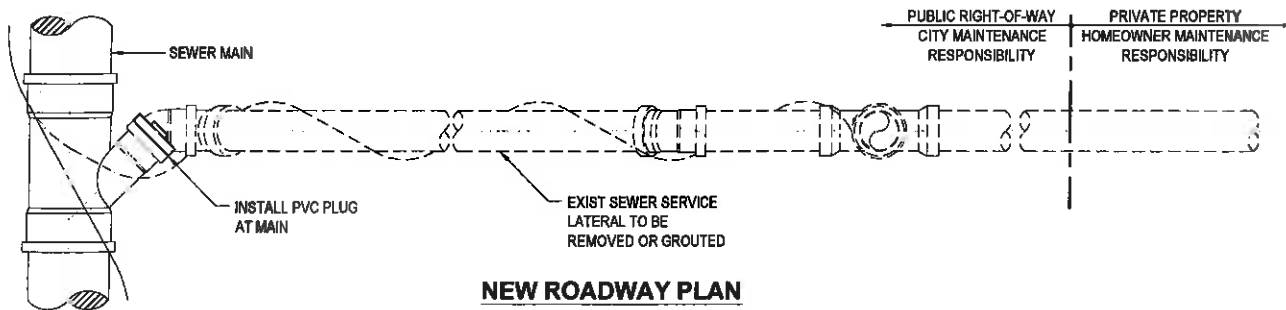
RESTRAIN ALL JOINTS THROUGH FITTINGS

STANDARD WATER MAIN LOWERING

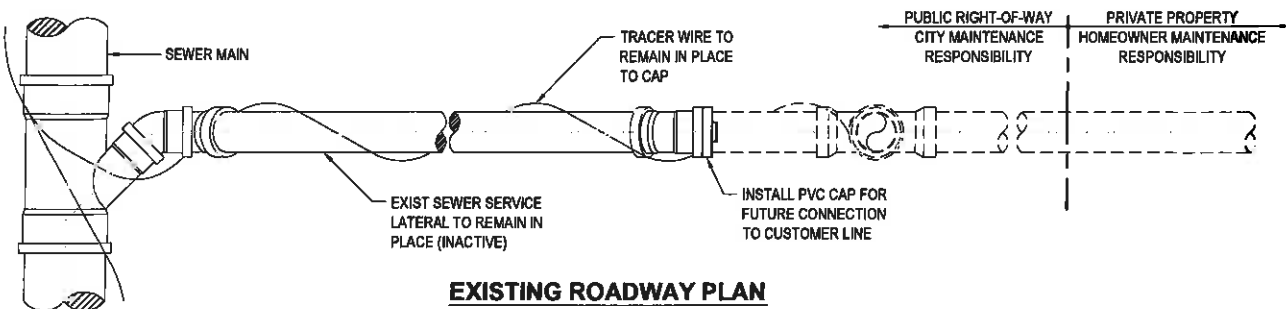
N.T.S.

 <p>City of Tallahassee UNDERGROUND UTILITIES <i>"Setting the Standard for Excellence"</i></p>	<p>WATER RESOURCES ENGINEERING DIVISION 300 S. Adams Street, B-20 - Tallahassee, FL 32301 Phone: 904-691-4968 Fax: 904-691-6170 www.tal.gov.com/you</p>	<p>SHEET TITLE</p> <p style="text-align: center;">STANDARD WATER MAIN LOWERING</p>	<p>SHEET</p> <p style="text-align: center;">UA6001</p>
		<p>Approved by:</p>	<p>Date Issued: AUGUST 2012</p>
<p>COMPUTER FILE: tall0820WUEngWetLNEg COMMON AREA\Projects\62-555\62060\62060.dwg</p>			

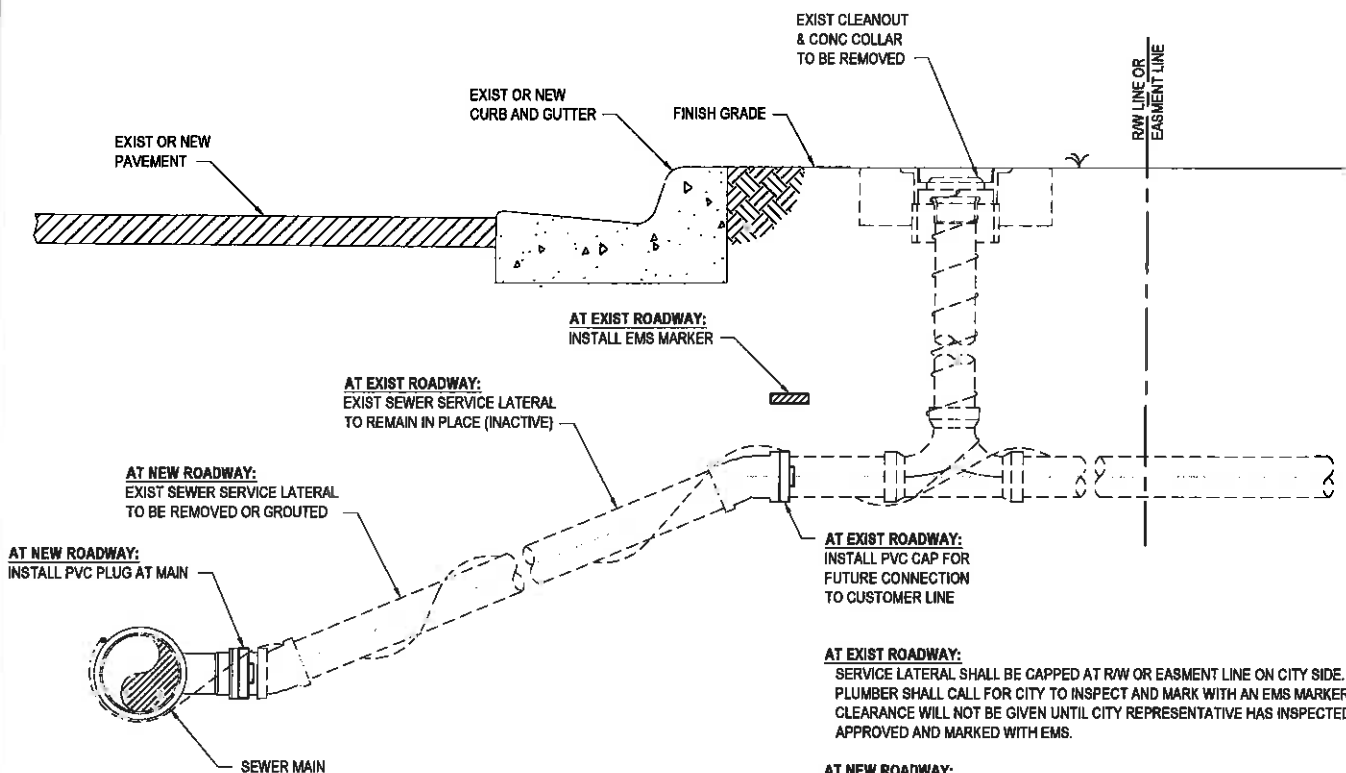




NEW ROADWAY PLAN



EXISTING ROADWAY PLAN



PROFILE

AT EXIST ROADWAY:
SERVICE LATERAL SHALL BE CAPPED AT R/W OR EASEMENT LINE ON CITY SIDE. PLUMBER SHALL CALL FOR CITY TO INSPECT AND MARK WITH AN EMS MARKER. CLEARANCE WILL NOT BE GIVEN UNTIL CITY REPRESENTATIVE HAS INSPECTED, APPROVED AND MARKED WITH EMS.

AT NEW ROADWAY:
BACKFILL AND COMPACT SOILS IN ACCORDANCE WITH COT SPECIFICATIONS. RESTORE AND REPLACE ALL DISTURBED PAVEMENT IN ACCORDANCE WITH APPLICABLE MAINTAINING AGENCY'S STANDARD SPECIFICATIONS.

**SEWER SERVICE LATERAL DISCONNECTION
ON EXISTING OR NEW ROADWAY**

N.T.S.

City of Tallahassee
UNDERGROUND UTILITIES
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WATER RESOURCES ENGINEERING DIVISION
 300 S. Adams Street, B-26 - Tallahassee, FL 32301
 Phone: 904-891-4955 Fax: 904-891-8170
 www.talgov.com/you

SHEET TITLE

**SEWER SERVICE LATERAL DISCONNECTION
ON EXIST OR NEW ROADWAY**

SHEET

UA7018

Approved by:

Date Issued: **AUGUST 2012**

SCALE

N.T.S.

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