

# CITY of TAMPA

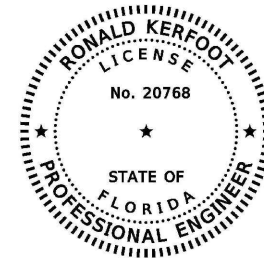


## WATER DEPARTMENT (WATERLINE RELOCATION PLANS)

### CONSTRUCTION PLANS FOR SULPHUR SPRINGS K-8 - SRTS IMPROVEMENTS FOR REVIEW

100% PLANS  
DECEMBER 2021

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Job #19-1010  
DECEMBER 2021

No.	DATE	REVISIONS
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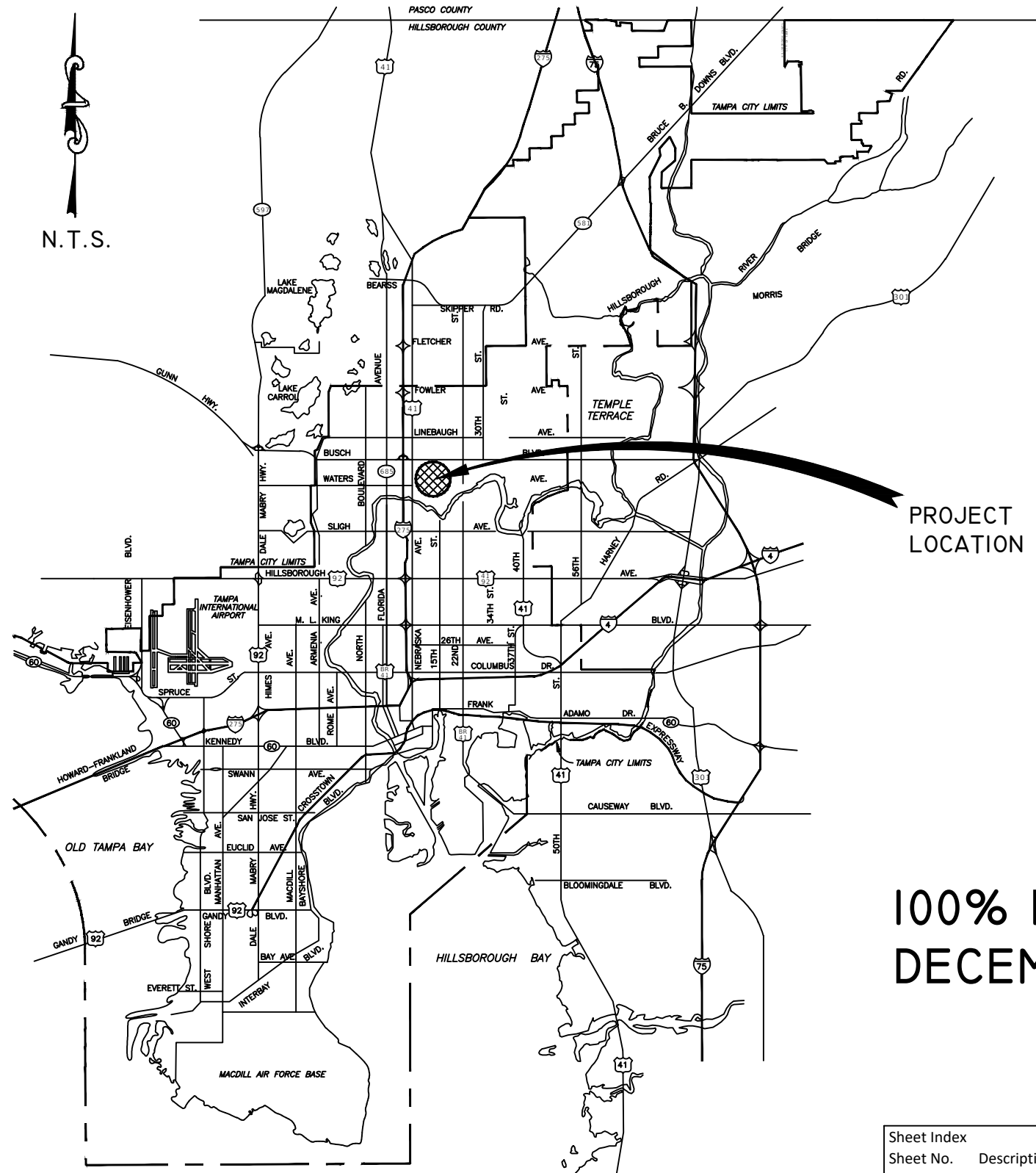
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DES: RK  
DRN: GR  
CKD: RK  
DATE: 10/2021

CITY of TAMPA  
WATER DEPARTMENT

WATERLINE RELOCATION  
COVER SHEET

SHEET  
1  
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N.T.S.



**GENERAL**

- ALL WATER WORK FOR THE CITY OF TAMPA (CITY) SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT'S TECHNICAL SPECIFICATIONS, CONSTRUCTION DETAILS, AND THE TAMPA WATER DEPARTMENT TECHNICAL MANUAL (LATEST EDITION). IN THE EVENT OF A DISCREPANCY, THE MOST STRINGENT CRITERIA SHALL APPLY.
- THE CONTRACTOR SHALL NOT TAP ANY WATER MAIN WITHOUT A CITY INSPECTOR PRESENT. THE CONTRACTOR SHALL PROVIDE NOTICE TO THE CITY INSPECTOR AT A MINIMUM OF 5 WORKING DAYS PRIOR TO NECESSARY WORK AND COORDINATE PERFORMANCE OF TAP WITH THE CITY INSPECTOR.
- NORMAL WORKING HOURS SHALL BE WEEKDAYS FROM 7:30 AM TO 4:00 PM UNLESS OTHERWISE APPROVED BY THE ENGINEER/INSPECTOR.
- ELEVATION INFORMATION SHOWN ON THESE PLANS IS REFERENCED TO N.A.V.D. 1988 UNLESS OTHERWISE STATED.
- CONSTRUCTION OF WATER FACILITIES SHALL BE COORDINATED WITH THE WATER DEPARTMENT PRIOR TO THE START OF THE CONSTRUCTION. CONTRACTOR TO CONTACT CITY OF TAMPA CONTRACT ADMINISTRATION DEPARTMENT @ 813-635-3432 TO COORDINATE/SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE CITY FOR REVIEW OF INSTALLATION TECHNIQUES AND PROCEDURES A MINIMUM OF 10 WORKING DAYS PRIOR TO THE PLANNED CONSTRUCTION.
- EXISTING UTILITIES, BUILDINGS, GROUND ELEVATIONS, AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE. ALL CONDITIONS, DIMENSIONS, AND QUANTITIES AFFECTING REQUIRED WORK SHALL BE VERIFIED BY CONTRACTOR BEFORE BEGINNING WORK OR ORDERING MATERIALS.
- VALVES ON EXISTING PUBLIC WATER MAINS TO BE OPERATED BY CITY PERSONNEL ONLY.
- ALL PROPOSED WATER LINES SHALL BE MANUFACTURED AND INSTALLED PER THE STANDARDS OF THE AMERICAN WATER WORKS ASSOCIATION (AWWA) AS PRESCRIBED BY FAC-62-555.320.
- SHOP DRAWINGS SHALL BE SUBMITTED AND APPROVED BY THE CITY FOR ALL PROPOSED ITEMS. ALL SUBMITTALS AND SHOP DRAWINGS SHALL BE HIGH QUALITY PDF DOCUMENTS.
- THE CONTRACTOR IS RESPONSIBLE FOR RESTRAINING ALL EXISTING PIPE NECESSARY TO MAINTAIN A SAFE CONSTRUCTION AREA AND PERFORM THE WORK SHOWN IN THE PLANS. EXISTING PIPE REQUIRING RESTRAINTS SHALL UTILIZE EXTERIOR BELL RESTRAINTS.
- THE CONTRACTOR SHALL DEWATER ANY EXCAVATION OR TRENCH TO MAINTAIN A SAFE WORK ENVIRONMENT AND TO ABIDE BY AWWA INSTALLATION STANDARDS. DEWATERING IS AT THE EXPENSE OF THE CONTRACTOR.
- SEE ROADWAY PLANS FPID 443582-1-58-01 TEMPORARY TRAFFIC CONTROL PLAN (1) THRU (2) FOR PLACEMENT OF ADVANCED WARNING AND DETOUR SIGNAGE.
- ALL WATER MAINS INSTALLED AS PART OF THIS PROJECTS ARE TO BE RESTRAINED.

**PERMITS**

- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY RIGHT-OF-WAY PERMITS AND ROADWAY CLOSURES ASSOCIATED WITH THE WORK SHOWN IN THE PLANS.
- IN ORDER TO OBTAIN ROADWAY CLOSURES OR RIGHT-OF-WAY PERMITS, AT MINIMUM, THE CONTRACTOR MUST SUBMIT DETAILED MAINTENANCE OF TRAFFIC (MOT) PLANS ALONG WITH APPLICATIONS TO THE APPROPRIATE AGENCY. THE MOT(S) SHALL CONFORM TO APPLICABLE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) DRAWINGS (MOST CURRENT EDITION). THE GOVERNING AGENCIES MAY REQUIRE ADDITIONAL INFORMATION AND DICTATE SPECIFIC WORK TIME DURING NON-PEAK TRAFFIC HOURS.

**PIPE CLEARANCES**

- ALL WATER MAINS SHALL HAVE A MINIMUM COVER OF 36 INCHES AND SHALL MAINTAIN A MINIMUM OF THREE (3) FEET HORIZONTAL SEPARATION FROM OTHER UTILITIES, EXCEPT STORM, SANITARY, AND GAS, WHICH SHALL MAINTAIN TEN (10) FEET HORIZONTAL SEPARATION, UNLESS OTHERWISE NOTED.
- WATER MAIN SHALL CROSS ABOVE OTHER PIPES. WHEN WATER MUST BE BELOW, PROVIDE 12" MINIMUM VERTICAL SEPARATION UNLESS OTHERWISE NOTED.
- CENTER ONE FULL JOINT OF PIPE UNDER/OVER ALL SANITARY, STORM, OR RECLAIMED PIPE CROSSINGS.

**MATERIAL**

- ALL VALVES SHALL BE RIGHT HAND OPEN.
- POLYWRAP ALL DUCTILE IRON PIPE (D.I.P) FITTINGS AND APPURTENANCES.
- ALL HARDWARE SHALL BE 304 STAINLESS STEEL, UNLESS OTHERWISE NOTED.
- ALL BELOW GROUND BENDS SHALL BE MECHANICAL JOINT (MJ).
- RESTRAIN ALL JOINTS AND FITTINGS.
- CONCRETE THRUST BLOCKS SHALL NOT BE USED TO PROVIDE THRUST RESTRAINT. RESTRAINT OF PUSH-ON DIP (OTHER THAN FOR FITTINGS & VALVES) SHALL BE WITH APPROVED PUSH-ON "GRIPPER-TYPE" RESTRAINTS. FITTINGS AND VALVES SHALL BE CONNECTED TO PIPE WITH MEGALUGS, OR APPROVED EQUAL.
- ALL POTABLE WATER SERVICE LATERAL, AIR RELEASE VALVES, AND TEMPORARY SAMPLE POINTS SHALL BE CONSTRUCTED OF BLUE SDR-9 HIGH DENSITY POLYETHYLENE (HDPE) TUBING. ALL HDPE TUBING SHALL BE INSTALLED WITHIN A CASING AS DEFINED IN THE SPECIFICATIONS AND DETAILS.

**TESTING**

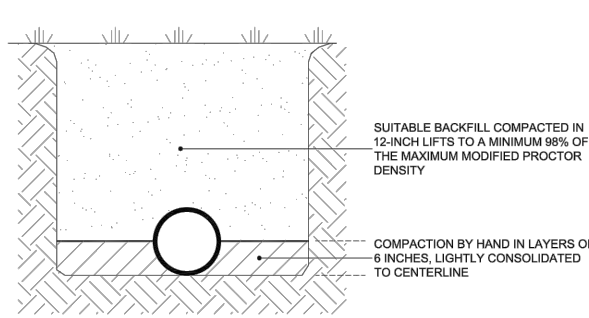
- ALL COMPONENTS OF THE WATER SYSTEM, INCLUDING FITTINGS, HYDRANTS, CONNECTIONS, AND VALVES SHALL BE PROPERLY PRESSURE TESTED, WITNESSED AND ACCEPTED BY THE CITY. PRESSURE TESTS TO BE PERFORMED IN ACCORDANCE WITH WATER DEPARTMENT SPECIFICATIONS. CONTRACTOR TO NOTIFY THE ASSIGNED CITY INSPECTOR A MINIMUM OF THREE (3) WORKING DAYS IN ADVANCE OF PERFORMING TESTS. CONTRACTOR SHALL PRESSURE TEST WATER MAINS AT A MINIMUM OF 150 PSI FOR A PERIOD OF 2 HOURS IN ACCORDANCE WITH AWWA C600-87 STANDARDS. THE CONTRACTOR SHALL MAKE ALL NECESSARY APPLICATIONS AND ARRANGEMENTS.
- ALL SAMPLE, PRESSURE TEST, AND CHLORINATION POINT PIPING SHALL BE COMPLETELY REMOVED PRIOR TO FINAL ACCEPTANCE. THE CORPORATION STOP SHALL BE CLOSED AND PLUGGED AT THE MAIN.
- CONTRACTOR SHALL PERFORM CHLORINATION AND HIRE INDEPENDENT FIRMS TO CONDUCT BACTERIOLOGICAL TESTING AS DEFINED IN F.A.C. 62-555.340. CONTRACTOR TO SUPPLY THE CITY WITH AS-BUILTS AND SAMPLE RESULTS NECESSARY TO OBTAIN DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) CLEARANCES.

**RESTORATION**

- ROADWAY RESTORATION SHALL BE IN CONFORMANCE WITH CORRESPONDING JURISDICTION'S LATEST STANDARDS.
- DISTURBANCE TO ANY PROPERTY, PUBLIC OR PRIVATE, SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.

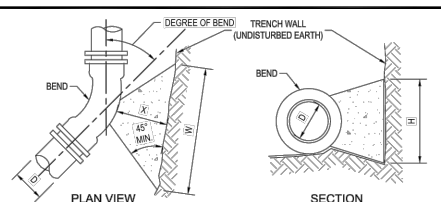
**PROJECT SPECIFIC NOTES**

- ALL WATER MAINS INSTALLED AS PART OF THIS PROJECT ARE TO BE RESTRAINED
- NOTE 2
- NOTE 3



- NOTES:**
- TYPE 2 TRENCH IS DEFINED AS A FLAT-BOTTOM TRENCH. LIGHTLY CONSOLIDATE BACKFILL TO CENTERLINE OF PIPE.
  - THIS STANDARD SHALL BE UTILIZED IN THE ABSENCE OF SPECIFIC STANDARDS. THE STANDARD OF THE AGENCY CONTROLLING THE RIGHT-OF-WAY SHALL GOVERN UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
  - SUITABLE BACKFILL SHALL BE DEFINED AS MATERIAL FREE FROM CINDERS, ASHES, REFUSE, CLAY, ORGANIC MATTER, BOULDERS, ROCKS OR STONES, OR OTHER MATERIAL THAT IN THE OPINION OF THE ENGINEER IS UNSUITABLE.
  - NON-PAVED AREA IS A PERVIOUS AREA. IF ANY PART OF THE TRENCH IS WITHIN A CONCRETE OR ASPHALT CURB, SIDEWALK, DRIVEWAY, OR ROADWAY, THEN STANDARD DETAIL 2.01 APPLIES.

	LAST REVISION		
	JAN 2018	TRENCHING, BEDDING, AND BACKFILL DETAIL FOR PERVIOUS (NON-PAVED) AREAS	2.02

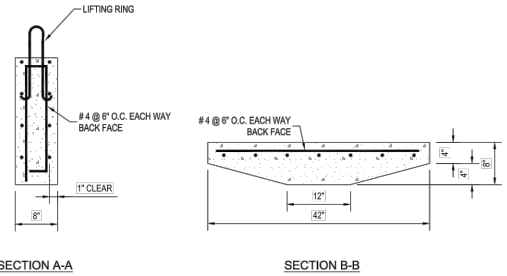
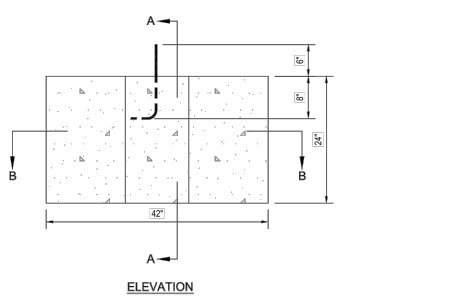


**DIMENSIONS OF THRUST BLOCKS FOR GOOD SOIL**

SIZE (DI)	4"	6"	8"	12"	16"	20"	24"
THRUST (LBS.)	574	1,363	2,396	5,097	8,857	13,649	19,472
BEARING AREA (FT <sup>2</sup> )	0.51	1.05	1.80	3.83	6.65	10.25	14.63
CONCRETE (YDS <sup>3</sup> )	0.005	0.015	0.033	0.104	0.239	0.459	0.763
H (FT)	0.6	0.8	1.1	1.6	2.1	2.6	3.1
W (FT)	0.9	1.3	1.6	2.4	3.2	3.9	4.7
X (FT)	0.4 MIN.	0.5 MIN.	0.5 MIN.	1.2 MIN.	1.6 MIN.	2.0 MIN.	2.3 MIN.
THRUST (LBS.)	1,342	2,772	4,769	10,145	17,838	27,166	38,757
BEARING AREA (FT <sup>2</sup> )	1.01	2.08	3.58	7.81	13.22	20.37	29.07
CONCRETE (YDS <sup>3</sup> )	0.012	0.035	0.080	0.252	0.580	1.113	1.762
H (FT)	0.8	1.2	1.5	2.3	3.0	3.7	4.4
W (FT)	1.2	1.8	2.3	3.4	4.5	5.5	6.6
X (FT)	0.5 MIN.	0.9 MIN.	1.2 MIN.	1.7 MIN.	2.2 MIN.	2.8 MIN.	3.0 MIN.
THRUST (LBS.)	2,832	5,437	9,365	19,901	34,579	53,288	76,024
BEARING AREA (FT <sup>2</sup> )	1.97	4.08	7.02	14.93	25.94	39.08	57.04
CONCRETE (YDS <sup>3</sup> )	0.029	0.087	0.198	0.620	1.367	2.301	3.517
H (FT)	1.2	1.7	2.2	3.2	4.2	5.2	6.2
W (FT)	1.7	2.5	3.2	4.7	6.2	7.7	9.3
X (FT)	0.9 MIN.	1.2 MIN.	1.6 MIN.	2.4 MIN.	3.0 MIN.	3.0 MIN.	3.0 MIN.
THRUST (LBS.)	4,863	10,047	17,286	36,772	63,894	99,463	140,474
BEARING AREA (FT <sup>2</sup> )	3.65	7.53	12.96	27.58	47.91	73.84	105.34
CONCRETE (YDS <sup>3</sup> )	0.088	0.203	0.469	1.380	2.561	4.290	6.498
H (FT)	1.6	2.2	3.0	4.3	5.7	7.0	8.4
W (FT)	2.3	3.4	4.4	6.4	8.5	10.5	12.6
X (FT)	1.2 MIN.	1.7 MIN.	2.2 MIN.	3.0 MIN.	3.0 MIN.	3.0 MIN.	3.0 MIN.

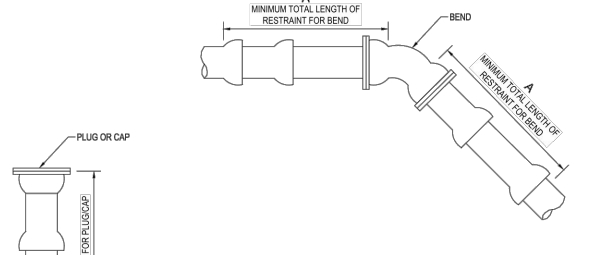
- NOTES:**
- CONCRETE SHALL BE KEPT AT SUFFICIENT DISTANCE FROM JOINT FOR REMOVAL OF ALL JOINT ACCESSORIES INCLUDING BOLTS.
  - ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED SOIL.
  - THIS TABLE SHOWS THE MINIMUM SIZE THRUST BLOCKS FOR SOIL BEARING PRESSURE OF 2000 PSF AND AN INTERNAL PRESSURE OF 180 PSI. COVER TO T.O.P. IS 3 FEET FOR 12" AND SMALLER MAINS; 4 FEET FOR 16" AND LARGER MAINS.
  - FITTINGS SHALL BE COMPLETELY POLYWRAPPED PRIOR TO POURING THRUST BLOCKS.
  - WARNING** - POOR AND WET SOIL (SILTY SOILS, CLAY, MUCK AND PEAT) WILL REQUIRE LARGER THRUST BLOCKS.

	LAST REVISION		
	JAN 2018	THRUST BLOCKS FOR BENDS	2.07



- NOTES:**
- REINFORCING TO BE STANDARD 60 KSI DEFORMED BAR.
  - CONCRETE FC-3000 PSI
  - PRECAST THRUST BLOCKING TO BE USED ONLY ON FIRE HYDRANTS AND 8" OR SMALLER FITTINGS, IF ALLOWED BY THE ENGINEER.
  - A 12"x18" SPACER BLOCK SHALL BE PLACED BETWEEN THE PRECAST THRUST BLOCK AND FITTING IF SO DIRECTED BY THE ENGINEER.

	LAST REVISION		
	JAN 2018	PRECAST CONCRETE THRUST BLOCK	2.10



**RESTRAIN "A" (LF)**

FITTING / OD	4"	6"	8"	12"	16"	20"	24"	30"	36"
11-1/4"	3	4	6	8	9	10	12	15	17
22-1/2"	6	9	12	16	17	21	25	30	35
45" OFFSET	13	18	24	34	36	44	52	62	73
90"	31	44	59	82	87	106	125	151	176
PLUG/CAP/VALVE	55	78	102	143	143	174	204	245	285

A = MINIMUM FOOTAGE OF PIPE TO BE RESTRAINED

- NOTES:**
- THIS TABLE IS BASED ON:
  - MAXIMUM TEST PRESSURE OF 180 PSI
  - LAYING CONDITION TYPE 2 (SEE DETAILS 2.01 AND 2.02)
  - POOR SOIL CONDITIONS
  - USING D.I.P.
  - 3 FEET OF COVER FOR 12" AND SMALLER MAINS; 4 FEET OF COVER FOR 16" AND LARGER MAINS
  - HORIZONTAL BENDS ONLY - ENGINEER TO SUBMIT CALCULATIONS FOR VERTICAL RESTRAINTS
  - FOR POLYWRAPPED D.I.P., INCREASE THE FOOTAGE TO RESTRAIN BY 20%.
  - FOR PVC PIPE, INCREASE THE FOOTAGE TO RESTRAIN BY 20%.
  - "RESTRAINED" PIPE SHALL BE MANUFACTURED RESTRAINED JOINT PIPE, PUSH-ON JOINT PIPE RESTRAINED WIGASKET-TYPE "GRIPPER RESTRAINTS", OR MECHANICAL JOINT PIPE RESTRAINED BY MEGALUG (OR APPROVED EQUIVALENT).
  - ANY ADDITIONAL FITTINGS WITHIN THE RESTRAINED SECTION SHALL BE RESTRAINED ACCORDINGLY.

	LAST REVISION		
	JAN 2018	RESTRAINED JOINT STANDARD FOR BENDS, PLUGS, CAPS, AND VALVES	2.11

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**AIM Engineering & Surveying, Inc.**  
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**CITY of TAMPA**  
**WATER DEPARTMENT**

*WATERLINE RELOCATION*  
*DETAILS AND NOTES*

Job #19-1010  
 DECEMBER 2021

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