

February 8, 2016

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATION
DEPARTMENT OF ADMINISTRATION

DIVISION OF PURCHASES BID NO. 7550198

RHODE ISLAND DEPARTMENT OF TRANSPORTATION

RHODE ISLAND CONTRACT NO.2015-CT-081

FEDERAL-AID PROJECT NO. FAP Nos: STPG-8888(222), STPG-HSIP(022)

State Traffic Commission Contract 6 - East Bay/South

Statewide

CITY/TOWN OF Barrington, East Providence, North Kingstown, Warren

COUNTY OF BRISTOL, PROVIDENCE, WASHINGTON

NOTICE TO PROSPECTIVE BIDDERS

ADDENDUM NO. 1 Prospective bidders and all concerned are hereby notified of the following changes in the Plans, Specifications, Proposal and Distribution of Quantities for this contract. These changes shall be incorporated in the Plans, Specifications, Proposal and Distribution of Quantities, and shall become an integral part of the Contract Documents.

A. Contract Dates

1. Bid-Opening Date
Bid-Opening Date Updated To "02/24/2016".

B. General Provisions - Contract Specific

1. Page CS-i
Replace page CS-i with pages CS-i (R-1) and CS-ii. Paragraph 19, Legal Relations and Responsibilities to Public Utilities and Facilities, and Appendix D have been added to the Index
2. Page CS-2
Replace page CS-2 with revised page CS-2 (R-1). Reference to Appendix D has been added to the National Grid - Gas contact person.
3. Page CS-5
Replace page CS-5 with revised page CS-5 (R-1). Water system components have been added to the list of required shop drawings.
4. Page CS-8
Replace page CS-8 with revised page CS-8 (R-1). Paragraph 19, Legal Relations and Responsibilities to Public Utilities and Facilities has been added.

5. Appendix D

Appendix D; National Grid Gas Provisions has been added.

C. Specifications - Job Specific

1. Page JS-i

Replace JS-i with revised JS-i (R-1). A specification for Water Utility Construction has been added.

2. Pages JS-31 through JS-48

Insert pages JS-31 through JS-48. A special provision 701. Water Utility Construction, has been added to the contract.

D. Plans

1. General Plan 1 (Sheet No. 7)

General Plan 1 has been revised as shown on Sketch No. 1. The existing fire hydrant will be removed and stockpiled on-site.

The entire branch to the existing hydrant will be removed including the tee at the main. The tee will be replaced with a small section of ductile iron pipe.

The waterline along Middle Highway has been clarified to show size and material; 12-inch cast iron.

2. General Plan 2 (Sheet No. 12)

Replace General Plan 2 with General Plan 2 (R-1). Existing gas lines have been added to the plan for informational purposes.

E. Distribution of Quantities

1. Index 1:

Replace Index: 1 with revised Index: 1 (R-1). Items 201.0418, Remove and Dispose Hydrant; 701.8170, 8X6 Tapping Sleeve & Tapping Valve with Gate Box; 701.9002, Sterilization of Water Mains; and 706.9000. Plug and Cap Pipe - All Sizes have been deleted from the Contract. Item 201.0414, Remove and Dispose Pipe - All Sizes; the quantity has been updated.

2. Index: 4

Replace Index: 4 with revised Index: 4 (R-1). Items 201.0457, Remove and Stockpile On Site Hydrant; 701.5212, 12 Inch Ductile Iron Water Pipe Class 52, restrained Joint; 12 X 6 Tapping Sleeve & Tapping Valve with Gate Box; and 701.9903, Transition Coupling have been added to the contract.

3. Page 3

Replace Page 3 of 47 with revised Page 3 of 48 (R-1). Item 201.0418, Remove and Dispose Hydrant has been removed from the contract.

4. Page 10

Replace Page 10 of 47 with revised Page 10 of 48 (R-1). Items 701.8170 8X6 Tapping Sleeve and Tapping Valve with Gate Box; and 701.9002, Sterilization of Water Mains have been deleted from the contract.

5. Page 12

Replace Page 12 of 47 with Page 12 of 48 (R-1). Item 706.9000, Plug and Cap Pipe All Sizes has been deleted from the contract.

6. Page 47

Replace Page 47 of 47 with revised Page 47 of 48 (R-1) and insert page 48 of 48. Items 201.0457, Remove and Stockpile On Site Hydrant; 701.5212, 12 Inch Ductile Iron Water Pipe Class 52, restrained Joint; 12 X 6 Tapping Sleeve & Tapping Valve with Gate Box; and 701.9903, Transition Coupling have been added to the contract.



RI Department of Transportation
Chief Engineer

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GENERAL PROVISIONS - CONTRACT SPECIFIC

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GENERAL PROVISIONS - CONTRACT SPECIFIC

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3. UTILITY AND MUNICIPAL NOTIFICATION AND COORDINATION

No utility involvement is anticipated for this contract. However the Contractor should be aware of the individuals/agencies who should be contacted if a problem does arise.

The following is a list of the Applicable Utility/Municipality Representatives:

AGENCY	CONTACT PERSON	TEL. NO.
AT&T CORP & Teleport Communications of America	Mr. David Edgar	(781) 221-8400 Ext. 7005
Cox Communications	Mr. David Velilla	(401) 615-1284
Fibertech Networks	Mr. Robert Atkins	(860) 536-3433
National Grid	Mr. Thomas Capobianco	(401) 784-7248
National Grid- Gas See Appendix D for additional	Ms. Laeyeng Hunt, P.E. National Grid - Gas contact information	(781) 907-2821
Verizon Communications	Mr. Peter DeCosta	(508) 884-4950
Barrington Fire Department	Chief Gerald Bessette	(401) 437-3940
Town of Barrington	Mr. Alan Corvi Director of Public Works	(401) 247-1907
Bristol County Water Authority	Ms. Pamela Marchand, P.E.	(401) 245-2033
East Providence Fire Department	Chief Oscar Elmasian	(401) 435-5166
East Providence Water Utilities Division	Mr. Steve Coutu Director of Public Works	(401) 435-7701
East Providence Water Department	Mr. James Marvel Water Superintendent	(401) 435-7741
Narragansett Bay Commission	Mr. Thomas Brueckner, P.E. Chief of Operations	(401) 461-6540
North Kingstown Department of Water Supply	Ms. Susan Licardi Director of Water Supply	(401) 268-1520

- Street signs
- LED blank out signs
- Water system components

This list shall not supersede the requirements of the Rhode Island Standard Specifications for Road and Bridge Construction or any special provisions included in these contract documents.

7. DAMAGE TO EXISTING UTILITY STRUCTURES

It is the Contractors responsibility to ensure that all utility companies have been notified and all utilities have been marked prior to commencing their work. All damage to existing utilities shall be replaced or repaired to the satisfaction of the Engineer at no additional cost to the State.

The Contractor shall make every effort to avoid debris from falling into catch basins. Should debris fall inside a structure, it shall be removed immediately.

8. SPECIAL REQUIREMENTS FOR TRAFFIC PROTECTION

In addition to the requirements of the Standard Specifications for Road and Bridge Construction and the special requirements of other sections of these contract documents, the following requirements shall be undertaken by the Contractor.

- a. The Contractor shall be required to install and maintain proper warning and construction signing and protective devices at each work location as shown on the contract Maintenance and Protection of Traffic Plans, and Transportation Management Plan (TMP). The contract plans and TMP are the minimum requirements. It is the Contractor's responsibility to supplement as necessary to conform to the "Manual on Uniform Traffic Control Devices, 2009 Edition", including all revisions, and/or as directed by the Engineer. All traffic protection must be approved by the Engineer before construction may commence.
- b. The Contractor shall be responsible for maintaining appropriate construction related signing at all times. Signs not appropriate for, lane closures, speed limits or construction activity currently under way at a given time shall be removed or covered to the satisfaction of the Engineer.
- c. The Contractor shall utilize R.I. Standard 26.2.0 barrels when traffic control set-ups are to remain in place beyond normal working hours and when workers are not present. Barrels shall also be used to mark utility adjustments prior to paving. The Contractor shall utilize R.I. Standard 26.1.0 cones when the traffic control set-up is utilized only during working hours and is subsequently broken down at the end of the workday.
- d. The Contractor shall note that work zone time and lane restrictions are listed in the Transportation Management Plan.

17. UTILITY TEST PIT LOGS

Utility test pit logs are included in Appendix C.

18. STRUCTURAL DISPOSITION LIST

Structure	Location	Description	Status	Disposition	ITEM CODE
SD-1	21+05, RT - 2+90 LT	Shrubs	Encroachment &	R&D (2 EA)	201.0310
			Property Improvement	To Remain (10 EA)	
SD-5	2+50, LT - 3+00, LT	Trees	Encroachment	To Remain (2 EA)	

19. LEGAL RELATIONS AND RESPONSIBILITIES TO PUBLIC UTILITIES AND FACILITIES

In those areas where the Contractor's operations are adjacent or proximate to underground or overhead utilities such as gas, electric, water, telephone, fire alarm, sanitary and storm sewers, provisions of Section 105.06 of the Rhode Island Standard Specifications for Road and Bridge Construction shall be followed. The Contractor is hereby made aware that existing utilities, including but not limited to existing water and drain pipes; drainage and sewer structures; gas lines and utility poles, may need to be protected and/or shored up during the construction of the proposed improvements under this project. The cost of any additional work required for the protection, maintenance and support of these or other existing aboveground or underground utilities in the vicinity of the proposed work shall not be paid for separately but shall be considered incidental to the work under this Contract.

During the process of work, the Contractor shall cooperate with the owners of the utilities and permit their representatives access to the work to determine if their utilities are being endangered in any way.

Special requirements for working around gas facilities are included in Appendix D of these General Provisions. It is the Contractor's responsibility to be familiar with all the requirements detailed in Appendix D including the requirements for handwork in the vicinity of gas facilities.

Appendix D
NATIONAL GRID – GAS PROVISIONS



10/01/12

Guidelines for Working Around Gas Utilities

Notification of Construction

National Grid requests at least six week advanced notification prior to the start of construction to perform scheduled work in the proposed project area. Be aware that some gas work cannot be performed during the normal heating season.

Support and Protect

Contractor must call Dig Safe to have the gas mains and services marked out before construction. Care must be exercised when saw cutting over any gas infrastructure, especially services, which are more shallow than the main. Depth of gas mains vary. Contractor shall dig test pits in order to ascertain exact locations, cover and invert elevations, clearances, alignment and operating status of existing gas facilities. Contractor shall exercise extreme caution when excavating in the vicinity of any gas facility. Hand excavation shall be performed to locate all gas facilities and whenever digging within 24" of gas facilities. If cover over gas piping is removed the required cover must be replaced, or if not feasible, National Grid must be notified for review of the issue. Undermined gas pipe must be adequately supported and protected from damage. Contact National Grid engineer for guidelines regarding proper pipe support. Significant vibration from pile driving and such may negatively impact gas facilities, particularly cast iron mains and regulator station vaults. Contact National Grid engineer prior to performing such activities as well as operations which may undermine gas facilities such as micro-tunneling, jacking, directional drilling, etc.

Gas Leaks

For any gas leak please call the appropriate number immediately.

Greater Boston - 800-233-5325

Other Massachusetts – 800-548-8000

Rhode Island – 800-640-1595

Types of Gas Facilities

Gas mains and services are made of several different materials and contain a wide range of pressures. Typical materials used for buried gas pipe includes bare steel, coated steel, plastic, cast iron, wrought iron, ductile iron, and copper. Never assume that a pipe is not gas. At times gas lines are inserted into older lines to save excavation cost.

Exposure of Gas Facilities

If any gas mains or services become exposed, National Grid must be notified to inspect the line before backfilling. Also any damage that may have been made to the pipe or pipe coating will need to be repaired by National Grid before backfilling. Contact our Dispatch office at (877) 304-1203 for inspection. It is important that even minor damage or scrapes be reported to National Grid. Backfill shall be 6" of sand around the gas line and clean compacted fill above.



Regulator Stations

Gas regulator stations are particularly critical facilities and National Grid must be notified whenever work is to take place within 200 feet of a station. Regulator stations are typically in buried vaults accessed through either manhole covers or aluminum doors. **ONLY AUTHORIZED NATIONAL GRID EMPLOYEES SHALL OPEN A REGULATOR STATION VAULT.** Be aware that a complex nest of piping and valves often exists in the vicinity outside the vaults.

Blasting

National Grid must be notified of any blasting that will take place within 200 feet of a gas utility. National Grid must be supplied with a detailed blast plan for blasting in the vicinity of gas facilities. The evaluation of the blast plan by a National Grid engineer may take some time, therefore, blast plan data should be submitted at least two weeks prior to the planned blasting. As a general rule blasting will not be permitted within 10 feet of a gas line and PPV at the nearest gas pipe shall not exceed 5 in/sec. PPV at the nearest gas main shall be monitored.

Valves

Access to gas valves must be maintained throughout construction and left at grade at the end of construction. Should valve boxes be damaged and need to be replaced National Grid will supply replacements upon request. **NEVER OPERATE A GAS VALVE. ONLY NATIONAL GRID SHALL OPERATE GAS VALVES.**

Clearance

Adequate clearance must be provided when installing other utilities, foundations, structures, etc. Contact National Grid engineer for guidance.

GAS UTILITY GENERAL NOTES - RIDOT STC CONTRACT 6

1. CONTRACTOR SHALL FOLLOW THE GUIDELINES LISTED IN NATIONAL GRID'S "GUIDELINES FOR WORKING AROUND GAS UTILITIES", DOCUMENT ATTACHED.
2. DEPTH OF GAS FACILITIES ARE UNKNOWN AND COULD BE SHALLOW, USE CAUTION WHEN WORKING IN THE VICINITY OF ANY GAS FACILITY, HAND DIGGING ONLY.
3. NATIONAL GRID REQUIRES A MINIMUM OF ONE FOOT OF SEPARATION BETWEEN CROSSING UTILITIES AND EXISTING GAS FACILITIES.
4. NATIONAL GRID REQUIRES A MINIMUM OF THREE FEET OF SEPARATION BETWEEN THE GAS MAIN AND THE PARALLEL FACILITY FOR STEEL AND PLASTIC GAS MAINS.
5. IF A **GAS MAIN IS EXPOSED OR GOING TO BE EXPOSED** CALL NATIONAL GRID DAMAGE PREVENTION DEPARTMENT FOR AN INSPECTOR TO BE DISPATCHED TO SITE. CALL DAVID SOLTYS 401-623-0579 OR RICK LEPAGE 401-948-8432.
6. FOR ANY EXPOSED GAS FACILITY, PROVIDE BACKFILL MATERIALS AND COMPACT THE BACKFILL MATERIALS IN ACCORDANCE WITH NATIONAL GRID'S "GUIDELINES FOR BACKFILL AND COMPACTION AROUND GAS PIPES", DOCUMENT ATTACHED.
7. WHEN CROSSING OR EXPOSING A STEEL OR PLASTIC GAS FACILITY SUPPORT MAY BE REQUIRED. FOLLOW THE GUIDELINES LISTED AND ILLUSTRATED IN NATIONAL GRID'S "SUPPORT REQUIREMENTS FOR EXPOSED & UNDERMINED STEEL OR PLASTIC GAS FACILITIES", DOCUMENT (DWG NO. CNST-6045) ATTACHED.
8. ALL GAS VALVE BOXES SHALL BE ADJUSTED TO THE NEW ROAD/SIDEWALK SURFACE. VALVE BOXES, IF REQUIRED FOR REPLACEMENT, CAN BE OBTAINED AT NATIONAL GRID'S PROVIDENCE LOCATION, 477 DEXTER STREET, PROVIDENCE, RI OR LINCOLN LOCATION, 642 GEORGE WASHINGTON HIGHWAY. GAS VALVE BOXES NEED TO BE ACCESSIBLE AT ALL TIMES TO BE OPERATED BY NATIONAL GRID IN THE EVENT OF AN EMERGENCY.
9. DUE TO SYSTEM RELIABILITY AND SAFETY CONCERNS, IT IS NATIONAL GRID'S PRACTICE TO RESTRICT ALL CONSTRUCTION ON OR NEAR GAS FACILITIES BETWEEN NOVEMBER 15TH AND APRIL 15TH. ALL SCHEDULED WORK SHOULD BE COMPLETED BETWEEN APRIL 15TH AND NOVEMBER 15TH. AS GAS USAGE PEAKS DURING THE MONTHS OF DECEMBER TO MARCH DRIVEN BY HEATING NEEDS, NATIONAL GRID'S PRIORITY IS TO PROVIDE OUR CUSTOMERS WITH SAFE AND RELIABLE SERVICE. ANY WORK ON OR NEAR THE GAS FACILITY WILL EXPOSE OUR CUSTOMERS TO UNNECESSARY RISK. EXCEPTIONS WILL BE CONSIDERED ON A CASE BY CASE BASIS. APPROVALS FROM GAS CONTROL, OPERATIONAL ENGINEERING AND PROJECT ENGINEERING WILL BE REQUIRED FOR THESE CASES.
10. FOR A GAS LEAK CALL 800-640-1595.
11. FOR A DAMAGED GAS FACILITY CALL 800-870-1664.

12. FOR CONDUIT INSTALLS: NATIONAL GRID REQUIRES A 1' SEPARATION BETWEEN A PROPOSED CONDUIT AND ANY GAS FACILITY.
13. FOR CONDUIT INSTALLS: NATIONAL GRID DOES NOT ALLOW THE USE OF GRINDING WHEEL TYPE TRENCHERS OVER ANY GAS FACILITY, HAND DIGGING ONLY IN THESE AREAS.
14. NATIONAL GRID REQUIRES NOTIFICATION OF CONSTRUCTION WORK WITHIN 200 FT OF A GAS REGULATOR STATION FOR SAFETY MONITORING DURING CONSTRUCTION. PLEASE CALL NATIONAL GRID I&R SUPERVISOR MIKE ROMANO AT 617-910-7854 WHEN DIGGING WITHIN 200 FT OF REGULATOR STATION.

GUIDELINES FOR BACKFILL AND COMPACTION AROUND GAS PIPES

PERMANENT BACKFILL AND COMPACTION

DESCRIPTION

This work shall consist of backfilling and compacting all disturbed material at and around existing gas pipes and facilities. Size of pipe, material, length of exposed pipe, location of pipe, etc. will all follow the same set of Standards and Specifications stipulated by Nationalgrid Company. If design plans call for gas pipes to be exposed and supported (sheeting methods not used), then at the time of backfill, all disturbed material below the invert of the gas pipe shall be removed and replaced with suitable roadway or trench excavation material or bedding material. The contractor will not be allowed to replace this disturbed material with the same existing material if it has now been mixed with adjacent silty subsoil (clays) and fines. Well-graded gravel and sands will be used to replace the unsuitable material when no excess suitable material is available on site. Soils with high humus or mineral content should not be used to for backfill because they can promote electrolytic or bacterial attack.

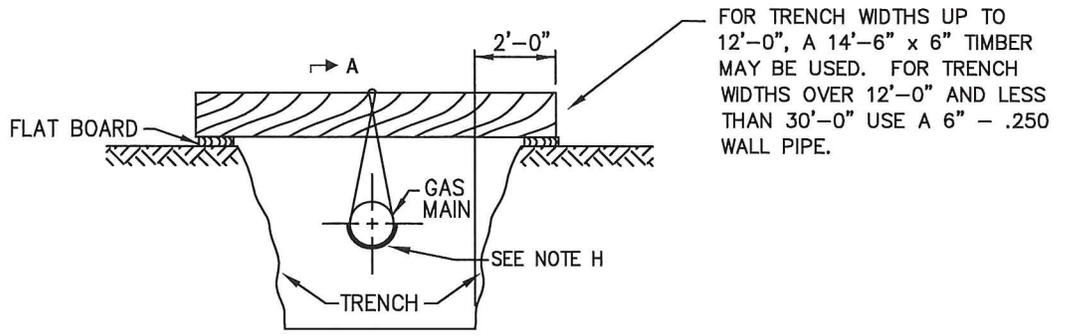
Backfilling the gas pipe should begin immediately after the work in that location is complete. The region within 6" alongside and on top of the gas pipe shall be backfilled with padding sand (free of cinders, ash, and rock). In no case shall the material used for backfilling in this region contain any stones. Backfill shall consist of suitable materials (medium to coarse sands with little or no silts) placed in layers of not more than 8" to 12" after compaction.

Trench spoil material shall be suitable for backfilling above the padding material as long as rocks with a diameter larger than 3" are removed. The layers shall be mechanically compacted to the industry standard of 95% or until a density comparable to the unexcavated material is achieved. In some instances, flooding with water is an acceptable method of compaction but only if the back-fill material is clean, coarse, and adequate drainage is existent. The above specified backfill material is essential in order to attain the degree of compaction necessary to avoid future settlement.

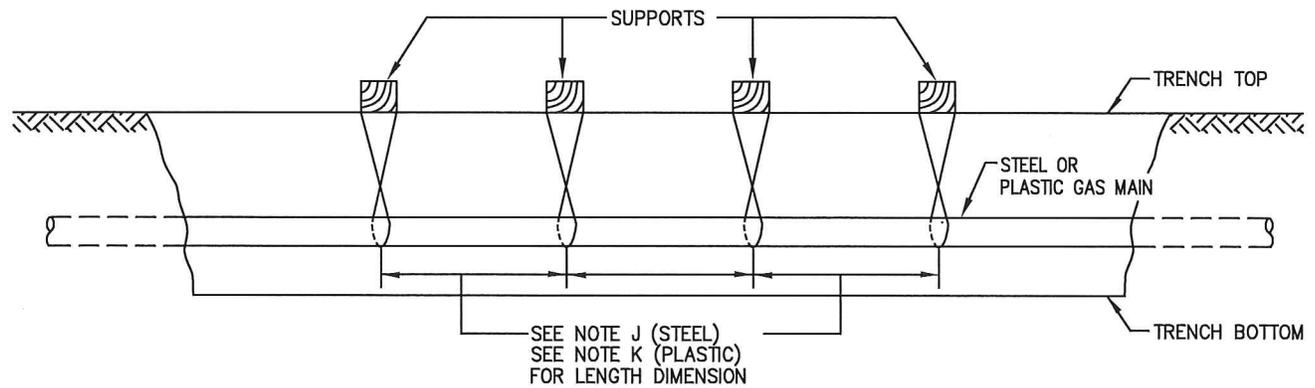
Tracing Wire, if necessary, shall be installed 2" to 6" below Plastic gas pipes.

Warning Tape shall be installed approximately 12" above the gas pipe.

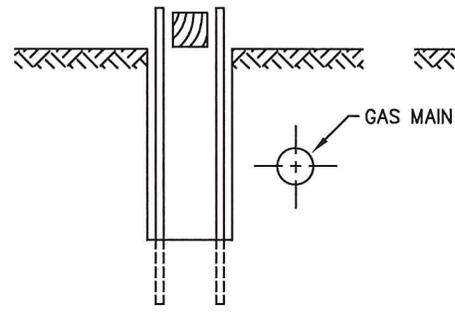
A minimum of 2" temporary pavement shall be applied over the trench as soon as possible.



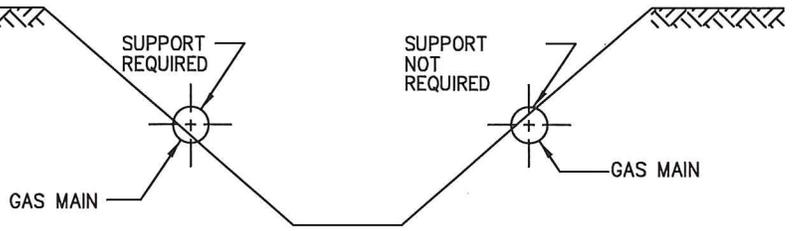
EXPOSED SUPPORT



SUPPORTED LENGTH A-A



ADEQUATELY SHORED TRENCH
DETAIL A
 SEE NOTE B



INADEQUATELY SHORED OR UNSHORED TRENCH
DETAIL B
 SEE NOTE B

 LI-MA-NH-NYC	SUPPORT REQUIREMENTS FOR EXPOSED & UNDERMINED STEEL OR PLASTIC GAS FACILITIES	
	DATE: 07/01/2003 DESIGN: A. GIULIANI DRAWN: P. DIMAIO	EFFECTIVE DATE: 03/24/2006 STD. DWG. NO. CNST-6045
REVISIONS CLARIFIED NOTES B & C ADDED NOTE N. Addendum - 1		

NOTES:

- A. THIS CONSTRUCTION STANDARD SHALL BE USED TO SUPPORT PLASTIC OR STEEL GAS FACILITIES WHICH ARE UNDERMINED AND EXPOSED BY CONSTRUCTION ACTIVITY.
- B. IF AN EXCAVATION IS MADE AT ANY DISTANCE PARALLEL TO THE GAS FACILITY WITH ADEQUATE OSHA STRUCTURAL SHORING, AS SHOWN IN DETAIL "A", OR IF A STABLE SOIL CONDITION WITH SUFFICIENT COVER ABOVE THE PIPE'S CENTERLINE EXISTS, AS SHOWN IN DETAIL "B", THEN SUPPORTS ARE NOT REQUIRED. UNSTABLE SOIL IS DEFINED AS A SOIL WHICH CAN CAUSE "SOIL RUN OUT" FROM BENEATH THE PIPE (e.g., WASHOUT, SOFT CLAY, etc.) OR CAN SHIFT DUE TO CONSTRUCTION ACTIVITY, VIBRATIONS, etc.; AND CAUSE A SOIL SCENARIO TO OCCUR AS SHOWN IN DETAIL "B" TO REQUIRE PIPE SUPPORT.
- C. IF AN EXCAVATION CROSSES OR RUNS PARALLEL TO A GAS FACILITY, SUPPORTS MAY NOT BE REQUIRED IF THE EXPOSED SECTION OF PLASTIC PIPES IS 3' OR LESS AND STEEL PIPES 7' OR LESS.
- D. ALL EXCAVATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONE CALL DIG SAFE PROGRAM USING THE APPROPRIATE MARK OUT, TEST HOLES AND EXCAVATION TO AVOID DAMAGE TO PIPE OR PIPE COATINGS:
 - NEW YORK STATE CODE RULE 753
 - MA CHAPTER 82 - SECTION 40, GENERAL LAWS, REGULATING NOTICE REQUIREMENTS FOR EXCAVATION IN PUBLIC WAYS
 - NH DIG SAFE LAW, RSA 374 – REGULATING UNDERGROUND UTILITY DAMAGE PREVENTION SYSTEM
- E. USE OF THIS CONSTRUCTION STANDARD DOES NOT RELIEVE THE CONSTRUCTION AGENCY OR AUTHORITY OR THEIR RESPECTIVE CONTRACTORS OF RESPONSIBILITY FOR DAMAGES. ALL DAMAGES WILL BE REPAIRED IN ACCORDANCE WITH EXISTING STANDARDS AND THE APPROPRIATE PARTY SHALL BE BILLED FOR ALL EXPENSES.
- F. GAS FACILITIES SHOULD NOT BE UNDERMINED WITHOUT ADEQUATE SUPPORT (DETAIL A). ALL SUPPORT LINES SHALL BE TENSIONED SO THAT NO DEFLECTION WILL OCCUR WHEN THE FACILITY IS UNDERMINED. THIS TENSION SHALL BE CHECKED AT THE START AND END OF EACH DAY AND ADJUSTED AS NECESSARY.
- G. WHERE A COUPLING, GAS SERVICE, CLAMP, VALVE, DRIP LINE OR OTHER APPURTENANCE EXISTS ON THE EXPOSED SECTION OF MAIN, AN ADDITIONAL SUPPORT SHALL BE INSTALLED AT THE LOCATION.
- H. WHEN SUPPORTING AN EXPOSED FACILITY, THE PIPE COATING SHALL BE PROTECTED WITH ROCK SHIELD (ITEM ID 00301097), OR OTHER LIKE MATERIAL CUT TO A MINIMUM WIDTH OF ½ THE SUPPORTED PIPE DIAMETER. SUPPORT LINES SHALL BE A MINIMUM OF ¾" POLYPROPYLENE OR BETTER.
- I. SUPPORTS FOR GAS TRANSMISSION FACILITIES SHALL BE REVIEWED WITH GAS ENGINEERING PRIOR TO INSTALLATION.
- J. THE MAXIMUM SPACING BETWEEN SUPPORTS FOR STEEL FACILITIES SHALL BE AS FOLLOWS:
 - 7' SPACING FOR ¾" AND 1 ¼" STEEL
 - 10' SPACING FOR 2" STEEL
 - 15' SPACING FOR 3" AND 4" STEEL
 - 20' SPACING FOR 6" AND LARGER STEEL
- K. THE MAXIMUM SPACING BETWEEN SUPPORTS FOR PLASTIC FACILITIES SHALL BE AS FOLLOWS :
 - 3' SPACING FOR 2" AND SMALLER PLASTIC
 - 6' SPACING FOR 4" AND LARGER PLASTIC
- L. VIBRATING MACHINES ARE ALLOWED OVER STEEL OR PLASTIC FACILITIES WITH 24" OR GREATER COVER. HAND HELD MECHANICAL TAMPER IS ACCEPTABLE OVER ANY FACILITY WITH 12" OR GREATER COVER.
- M. WHEN CONSTRUCTION ACTIVITY IS COMPLETED, CLEAN FILL SHALL BE COMPACTED AROUND AND UNDER THE GAS FACILITY BEFORE REMOVING SUPPORTS.
- N. SEE REGIONAL PBWK5010 PROCEDURES FOR REPLACEMENT REQUIREMENTS OF CAST IRON PIPE.

No.	ITEM	CODE No.
BILL OF MATERIAL		

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SPECIFICATIONS – JOB SPECIFIC**

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CODE 701.
WATER UTILITY CONSTRUCTION

DESCRIPTION: These items of work shall consist of construction of and modifications to the existing water distribution systems within the project limits, utilities which are separately owned by the Bristol County Water Authority (BCWA). The work shall include all labor, materials, and equipment required to install a workable water system as shown on the Plans. Included are pipe, fittings, valves, road and service boxes, couplings (including transition type), tapping sleeve and valve, fire hydrants, and fittings, and appurtenances; testing, disinfection, and flushing; as well as all related incidentals required to complete the system.

All work described in these Specifications and/or shown on the Plans shall be in strict accordance with industry best practices (ANSI/AWWA) for water main construction.

The BCWA through its authorized agents, reserve the right to make inspections of the work during its manufacture or progress.

The water system is owned by the BCWA, and the Contractor shall be required to abide by all rules and regulations of the BCWA. He shall arrange with the BCWA for the operation of any existing valves and the metering and use of water for construction purposes. Any hose for water for construction purposes that is to be connected to a hydrant shall have a testable RP backflow device such as a Watts 009.

The Contractor will not be permitted to operate valves in the existing water supply system except to assist the BCWA in an approved emergency situation. The Contractor shall notify the Engineer for the BCWA of any desired valve operations required for the work of this Contract at least 48 hours in advance, and the Owner shall furnish all necessary personnel to operate any such valve(s) as needed, without cost to the Contractor.

The Contractor is required to notify the Engineer and BCWA at least 48 hours in advance of any required temporary shutdowns that will leave BCWA customers without water service. If the request for the temporary shutdown is submitted less than 48 hours in advance, BCWA reserves the right to reschedule the work to allow adequate time for customer notification.

Before any mains are shutdown, the Engineer shall ascertain the customers to be affected by the shutdown, and shall notify each at least 24 hours in advance and again just prior to the shutdown. The BCWA accepts responsibility of notifying all customers to be affected by a scheduled water main shutdown.

MATERIALS: Unless otherwise specified, only new materials and equipment shall be incorporated in the work. All materials and equipment furnished by the Contractor shall be subject to the inspection and approval of the Engineer. No material shall be delivered to the work without prior approval of the Engineer. Materials shall conform to American Water Works Association (AWWA) Standard Specifications for Materials, Equipment and Practices used in Water Treatment and Supply, latest edition, Bristol County Water Authority Standard Specifications and Details and all other applicable specifications and standards.

The use of a manufacturer's name and/or model number is for the express purpose of establishing the standard of quality and general configuration required to meet the system construction installation standard. No variances in material standards are allowed without written approval of the BCWA General Manager/Chief Engineer. All materials shall be made in the United States of America except as specifically noted.

The Contractor shall furnish to the Owner manufacturer's notarized certificates of conformance stating that all materials to be furnished under this section of the specifications conform with all specification requirements, and each shipment of gate valves, butterfly valves, tapping sleeves and valves, valve boxes and accessories meet all requirements of the specifications.

Shop Drawings shall be submitted for approval in accordance with these specifications. They shall conform to the requirements of the AWWA Standard Specifications, latest revision, and shall include complete dimensional fabrication and erection details, net weights, material lists, maintenance data and all other additional information required by the Owner. Materials shall not be manufactured prior to shop drawing approval.

The inspection, receiving, handling, and storage of all materials shall conform in all respects to the requirements of AWWA Specification C 600, latest revision, Section 2.

All materials that shall come in contact with the potable water shall be NSF 61 certified. All fittings shall be lead free. All brass goods must be have a weighted average of not more than 0.25% of Lead in the wetted surface material and be "Lead Free" as described in 40 CFR 141.43 and the USEPA SDWA Sec. 1417. Certification for all such materials will be required to be submitted to the Engineer with Shop Drawings.

Ductile Iron Pipe/Ductile Iron Fittings. All materials that shall come in contact with the potable water shall be NSF 61 certified. Certification for all such materials will be required to be submitted to the Engineer with Shop Drawings.

All pipe fittings, gaskets, accessories and appurtenances shall be new and unused.

All pipe and materials, including bends, fittings, valves, and piping accessories, shall be supplied by the contractor. All fittings shall be lead free.

Examine all pipe and fittings, whether supplied by the Owner or the Contractor, for cracks, flaws, or other defects. Remove defective pipe and fittings from the site. Pipe and fittings in which the lining has been broken, or loosened shall be replaced. Where damaged areas are small and readily accessible, the Contractor may be permitted to repair the lining at the discretion of the Owner.

Pipe will be ductile iron pipe conforming to ANSI/AWWA C151, Class 52. Cast or ductile iron fittings shall conform to ANSI/AWWA C110. Joints for pipes shall be Push-on joints. Joints for fittings shall be mechanical joints conforming to ANSI/AWWA C111 or C153.

All pipe and fittings shall have a bituminous outside coating in accordance with ANSI/AWWA C151 and C110, respectively. All pipe and fittings shall be cement mortar lined and seal coated

in accordance with ANSI/AWWA C104 except the lining thickness shall be twice that specified in Section 4.8.1 of C104.

Cement mortar lining for fittings shall conform in all respects to AWWA Specification C104, latest revision, except that lining thickness shall be twice that specified in Section 4-10.1 of AWWA Specification C104.

Tyton gasket joints for pipe and rubber gasket joint, tee head bolts and hexagonal nuts for fittings, to be furnished by the Contractor, shall conform to AWWA Specification C111, latest revision.

Flexible couplings and reducer couplings to be furnished by the Contractor shall be installed where required for connection of new pipe to existing pipe, as shown on the Drawings, as directed, or as otherwise required for the complete installation of the pipeline system. Where end-to-end connections of new and existing pipe are required, couplings specifically pre-manufactured for the connection of dissimilar sizes and types of pipe will be subject to the approval of the Owner.

The Contractor shall furnish to the Owner manufacturer's notarize test reports and method of test to show compliance with all specification requirements; and notarized certificates of conformance stating that all pipe, valves, hydrants, corporation stops, curb stops, and appurtenant materials to be shipped and installed conform with all specification requirements.

Gate Valves. All gate valves shall be ductile iron body, resilient-seated and shall meet the requirements of AWWA C509 or C515. Valves shall be rated for 250 psi minimum working pressure and 300 psi minimum test pressure. Valves shall be of the ductile iron body, rubber-encapsulated gate type, with non-rising stem fitted with a minimum of three "O-Ring" seals. The operating nut shall be standard AWWA 2-in square. Gate valves shall be mechanical joint and open right or clockwise. Bonnet and gland bolts/washers shall be type 304 stainless steel. Wedges shall be fully encapsulated.

The interior and exterior surfaces of ductile iron components shall be fusion bond epoxy coated 8 mils minimum thickness. Epoxy coating must be undamaged with no chips or abrasions. Field touch-up of interior coating is not allowed. Field touch-up of exterior surfaces shall be in accordance with manufacturers recoating specifications only. Contractors shall use special handling and installation precautions with the use of epoxy coated valves as necessary to ensure that no coating system damage occurs. At a minimum fiber slings or belts shall be used for all handling. All epoxy-coated valves shall be palletized and properly shrink-wrapped upon delivery to assure coating system integrity is not compromised. All epoxy valves found mishandled at delivery or during installation shall be rejected and removed from the job site.

Gate Valves shall conform to AWWA Standard C 509 or C515, as manufactured by Mueller Model A-2360-20 or approved equal; and shall incorporate the following features:

Type of Valve Ends: Mechanical Joint
Body: Ductile Iron

Type of Gate: Resilient Seat, non-rising stem
Stem: 420 Stainless steel or equal with minimum 60,000 PSI yield strength
Stem Seal: Minimum three O-ring seals
Type of Gaskets: Full Cut Rubber Impregnated Duck Material
Direction of Operating Nut Rotation: Open Right
Working pressure: 250 psi
Fasteners: Stainless steel, type 304 for all of the valve

Coatings: Internal & exterior to be coated with fuse bonded holiday free epoxy coating minimum 8 mils nominal thickness meeting or exceeding AWWA C550.

Wedges: Fully rubber encapsulated ductile iron gate meeting AWWA C509 OR C515.

Wrench Nuts shall be 2-inch square operating nut with hexagon stainless steel bolt fastener, and shall conform to section 19 of AWWA Specification C 500, latest revision.

Concrete Thrust Blocks and Collars. Concrete for thrust blocks and collars shall be Class XX in accordance with Section 601 of the Rhode Island Standard Specifications for Road and Bridge Construction. Reinforcing shall be Grade 60, ASTM Designation A615 with allowable tensile stress of 24,000 psi.

Boxes. Each valve and tapping sleeve and valve shall be accompanied by a valve box of the sliding type, constructed of cast iron and provided with cast iron cover. The bottom of the lower section shall enclose the operating nut of the valve. Boxes shall be of lengths consistent with the pipe depths. Boxes shall be adjustable with a lap of at least 6-in when in the most extended position. Covers shall have the word "WATER" cast on top.

Valve boxes shall be compatible with the valves, and shall be of tough even-grained cast iron and of the adjustable, slip, heavy pattern type. The upper section of the box shall be provided with a flange having sufficient bearing area to prevent undue settlement. The length of the top section shall be at least 26-inch and the length of the bottom section shall be at least 36-inch for a 5-foot box. The inside diameter of the box shall be at least 5-1/4 inches. The lower section of the box shall be designed with a bell to enclose the operating nut and stuffing box of the valve. Covers shall be tight fitting and essentially dirt-tight, shall be flush with the top of the box, and shall be marked "WATER". Valve boxes shall be thoroughly coated with two coats of asphalt varnish. Valve boxes shall be suitable for the size valve on which they are used and shall be as manufactured by Quality Water Products, South Barre, MA 01074.

Tapping Sleeves and Valves. Tapping sleeves shall conform to AWWA Standards and shall have a 200 psi minimum working pressure and be a mechanical type joint to provide pressure-tight installation and be suitable for use with the existing pressurized pipe material. Mechanical tapping sleeves are to be stainless steel with removable bolts, and shall be Ford FTSS, JCM 432, Smith Blair 665 or Mueller H-304, or approved equal.

The outlet, body, flange, nuts, bolts and washers shall be 18-8 type 304 stainless steel with removable bolts. Nuts shall be heavy hex and coated to prevent galling. All welds shall be fully

passivated to restore stainless characteristics. Flanges shall conform to AWWA Standard C207, Class D, ANSI 150# with drilling recessed to accept standard type tapping valves per MSS-SP60. Bolt holes straddle pipe centerline. Gasket shall be full circumferential gasket compounded for water use per ASTM D2000. Gaskets to be Buna-N (NBR).

All tapping valves shall be ductile iron body gate valves, resilient-seated and shall meet the requirements of AWWA C509 or C515. Valves shall be rated for 250 psi minimum working pressure and 300 psi minimum test pressure. Valves shall be of the ductile iron body, rubber-encapsulated gate type, with non-rising stem fitted with a minimum of three "O-Ring" seals. The operating nut shall be standard AWWA 2-in square. Gate valves shall open right or clockwise. Bonnet and gland bolts/washers shall be type 304 stainless steel. Wedges shall be fully encapsulated.

The interior and exterior surfaces of ductile iron components shall be fusion bond epoxy coated 8 mils minimum thickness. Epoxy coating must be undamaged with no chips or abrasions. Field touch-up of interior coating is not allowed. Field touch-up of exterior surfaces shall be in accordance with manufacturers recoating specifications only. Contractors shall use special handling and installation precautions with the use of epoxy coated valves as necessary to ensure that no coating system damage occurs. At a minimum fiber slings or belts shall be used for all handling. All epoxy-coated valves shall be palletized and properly shrink-wrapped upon delivery to assure coating system integrity is not compromised. All epoxy valves found mishandled at delivery or during installation shall be rejected and removed from the job site.

Tapping Valves shall conform to AWWA Standard C 509 or C515, as manufactured by Mueller Model A-2360-16 or approved equal; and shall incorporate the following features:

- Type of Valve Ends: Mechanical Joint
- Body: Ductile Iron
- Type of Gate: Resilient Seat, non-rising stem
- Stem: 420 Stainless steel or equal with minimum 60,000 PSI yield strength
- Stem Seal: Minimum three O-ring seals
- Type of Gaskets: Full Cut Rubber Impregnated Duck Material
- Direction of Operating Nut Rotation: Open Right
- Working pressure: 250 psi
- Fasteners: Stainless steel, type 304 for all of the valve

The inlet flange shall be A.S.A. Class 125 flange and have raised portion to fit outlet flange of the Tapping Sleeve. The outlet side of tapping valve shall be A.W.W.A. Standard mechanical joint, ASME B 16.1, class 125.

Coatings: Internal & exterior to be coated with fuse bonded holiday free epoxy coating minimum 8 mils nominal thickness meeting or exceeding AWWA C550.

Wedges: Fully rubber encapsulated ductile iron gate meeting AWWA C509 OR C515.

Wrench Nuts shall be 2-inch square operating nut with hexagon stainless steel bolt fastener, and shall conform to section 19 of AWWA Specification C 500, latest revision.

Insertion Valves. Insertion Valves shall be ductile iron body and conform to AWWA Standard C509 or C515 for material specifications, TEAM Valve or approved equal; and shall incorporate the following features:

Type of Valve Ends: Split Mechanical Joint
Type of Gate: Resilient Seat, split bolted body, epoxy coated ductile iron
Type of Stem seal: O-Ring
Type of Mounting: Rotating body with Symmetrical Wedge Disc - (Rubber Encapsulated) cut with the End Mill process.
Type of Stem: Non-rising stainless steel
Type of Gaskets: Full Cut Rubber Impregnated Duck Material
Direction of Operating Nut Rotation: Open Right
Working pressure: 250 psi

Wrench Nuts shall be 2-inch, and shall conform to AWWA Specification C 500, latest revision.

Fire Hydrants. All fire hydrants shall conform to the requirements of AWWA Specification C502, latest revision and to the additional requirements specified herein. Manufacturer shall supply complete maintenance data drawings for approval, and certificates of compliance in accordance with Section 1 of AWWA Specifications.

All hydrants shall be of the dry barrel, compression shut off type closing with the pressure, with National Standard Thread. For purposes of standardization, hydrants shall be the Super Centurion 200, as manufactured by Mueller Company or American Darling B-84-B. The drain valve shall operate automatically when the hydrant is operated, to provide drainage of the barrel. Bronze to bronze seating shall be standard.

The valve drainway shall be all bronze. Pressure seals in the main valve area shall be o-rings. Hydrants shall conform to the additional requirements specified herein:

Bury Length: Exact bury is to be determined in the field by the Contractor, prior to installation. Depth shall be per the manufacturer's specification.

Hydrants shall be equipped with the following features:

Type of Hydrant: Traffic type with safety stem coupling and safety flange.

Pumper Outlets:

Hydrants installed in the Town of **Barrington** shall have one - 4 1/2-inch Pumper Outlet with cap, thread G.A.N.S.

Hydrants installed in the Town of **Bristol or Warren** shall have one - 4-inch Pumper Outlet with cap, thread G.A. 7-465

Number of hose outlets: Two - 2 1/2-inch Hose Outlets with caps, thread G.A.N.S.

Joint Type: 6" Mechanical Joints.

Type Construction: Upper Valve Plate - Bronze Seat Ring - Bronze
Drain Ring - Bronze
Operating Nut - Bronze Nozzles – Bronze
Operating and cap nuts to be 1 3/8" point to flat pentagon
Size of Hydrant (Nominal Diameter of Main Valve Opening): 5 1/4- inches
Direction of Operating Nut Opening Rotation: Left
Stem type: Dual O-Ring

The foot piece, or elbow design, shall have smooth transitional contours for maximum flow, and shall be coated with approved epoxy. It shall have blocking pads for easier setting, and two (2) lugs for strapping. Inlet connection shall be standard 6-inch mechanical joint.

Hydrants shall conform to the Torque requirements specified in AWWA Specification C502, latest revision, regardless of bury length. The opening between the wrench nut and top of the hydrant bonnet shall be protected from rain and dirt by an acceptable weather cap. Open left with arrow shall be on weather cap.

All nozzles shall be provided with heavy cast iron caps, screwed on and attached to the upper barrel by non-kinking chains with connector ring. Chain loop shall permit free turning of the cap.

All nozzles shall be fitted with gaskets. The operating nuts on nozzle caps shall be exactly the same size as that on top of the main stem. The operating nuts on nozzle caps and on top of the main stem shall be 1 3/8 inch pentagonal nuts. Hose and steamer nozzles shall be secured to the upper barrel by threads or quarter turn lock-type nozzles and locked into place for easy field replacement.

Hydrants shall have two coats of factory applied paint.

1. Barrel and Head: Finish coat to be exterior alkyd gloss enamel recommended for metal services. COLOR: Yellow (Safety Yellow).
2. Bonnet and Caps: Finish coat to be exterior alkyd gloss enamel recommended for metal services. COLOR: Silver Aluminum

Pipe Bedding. Material for pipe Class B and Class C bedding shall be as specified in Section 701 of the Rhode Island Standard Specifications for Road and Bridge Construction.

CONSTRUCTION METHODS:

Inspection. All valves, valve boxes, and accessories shall be carefully inspected by the Contractor for defects before installation and all defective, unsound or damaged materials shall be rejected. The Owner will make such additional inspection he deems necessary and the Contractor shall furnish all necessary assistance for such inspection. Operation parts shall be operated several times to demonstrate proper operation and adjustment.

All hydrants shall be carefully inspected by the Contractor for defects before installation and all defective, unsound or damaged materials shall be rejected.

Replacement of Unsuitable Material. When the Engineer determines that the material at the bottom of the trench is unsuitable for the support of water pipes, additional excavation shall be authorized. Unsuitable material shall be removed to a depth not to exceed 3 feet, or as determined by the Engineer. When the unsuitable material has been removed, the bottom of the excavation shall be leveled and refilled with the appropriate class of bedding.

Class B bedding shall be placed in 8-inch lifts and compacted to 90-percent of its maximum dry density in accordance with **Subsection 205.03.5 - Backfill and Compaction**, of the Standard Specifications. The final compacted lift in the replacement operation shall be graded to the original design elevation of the bottom of trenches.

Unauthorized Excavation. If the bottom of any trench has been excavated below the grade indicated on the Plans or as directed by the Engineer, it shall be brought back to grade by refilling with a well-compacted bedding material of a type selected by the Engineer.

No payment will be made for unauthorized excavation. The Contractor shall furnish, place, and compact the bedding material used to refill the trench to grade at no additional cost to the State.

Preparation. Proper implements, tools and facilities, satisfactory to the Owner shall be provided by the Contractor for the proper and satisfactory execution of the work.

The interior of gate valves, tapping sleeve and valves, insertion valves, linestop fittings, valve boxes, hydrants, and accessories shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations.

The trench bottom and bedding shall be shaped and compacted and a flat rock or block shall be placed beneath the hydrant to give substantially uniform unyielding support to the hydrant.

Gate valves, tapping sleeve and valves, insertion valves, linestop fittings, valve boxes, hydrants, and accessories shall be handled, stored, installed, jointed and protected by the Contractor in strict accordance with the printed recommendations of the manufacturer of the piping materials.

Ductile Iron Pipe/Ductile Iron Fittings. Installation of pipe, valves, hydrants, corporation stops, curb stops and appurtenant materials shall be performed in conformance with AWWA Specification C600, latest revision, for the various materials listed, and to the requirements of the BCWA.

As specified by the Engineer, pipe restraining action at bends, tees, hydrant branches, reducers, plugs or caps, and any other location in the pipeline as specified by the Engineer, shall be accomplished by installing restrained joint (mechanical joint, MJ) pipe for the lengths as established in the "table of restrained joint requirements" provided in the Drawings, or by installing concrete thrust blocks, or shall be accomplished by installing a combination of restrained joint pipe and concrete thrust blocks. The surface area of the concrete thrust blocks

shall be as shown in the applicable table of values provided in the Drawings, unless otherwise approved by the Engineer.

Unless otherwise specified by the Engineer, minimum pipe cover shall be four (4) feet to finished grade. Pipelines shall be constructed in dry trenches and shall not be laid when the conditions of the trench or the weather are unsuitable for such work. If water is present in the trench after installation, then the seal shall be left in place until the trench has been pumped dry.

In the case of new water mains which are to replace an existing water main (which is to be removed), the new main shall be placed in the same location and depth as the existing main, unless directed otherwise by the Engineer.

Proper equipment, tools and facilities satisfactory to the Inspector shall be provided by the Contractor for the proper and satisfactory execution of the work.

A firm, even bearing throughout the length of the pipe shall be constructed by tamping/compacting approved material under and at the sides of the pipe. Blocking will not be permitted. If any defective pipe or unsatisfactory length is discovered after it has been laid, it shall be removed and replaced with a sound pipe in a satisfactory manner by the Contractor, at his own expense.

When cutting of the pipe is required, the cutting shall be done by machine, leaving a smooth cut at right angle to the axis of the pipe. Cut ends of the pipe to be joined with a bell shall be beveled to conform to the manufacturer spigot end. Cement lining shall be undamaged.

The interior of all pipe, fittings, valves and hydrants shall be thoroughly cleaned of all foreign material, and inspected for cracks, flaws or other defects before installation, and shall be kept clean until the work is accepted. All joint contact surfaces shall be kept clean until the joint is completed. Mark all defective, damaged or unsound materials with bright marking crayon or paint and remove from job site.

Before lowering into the trench and while suspended, each pipe and fitting shall be carefully examined for defects and no pipe or fitting shall be laid which is known to be defective. All pipe or fittings found to be defective before being laid shall be clearly marked and removed from the job, as stated above. If any pipe or fitting shall be found to be defective after being laid, it shall be removed and replaced with a sound pipe or fitting by the Contractor at his expense.

Push-on joints shall be made in accordance with the manufacturer's instructions. Pipe shall be laid with bell-ends looking ahead. A rubber gasket shall be inserted in the groove of the bell-end of the pipe, and the joint surfaces shall be cleaned and lubricated. Pipe lubrication shall be NSF certified for use with potable water. The plain end of the pipe to be laid shall then be aligned and inserted in the bell of the pipe to which it is to be joined, and pushed home with a jack or by other acceptable means. After joining the pipe, a metal feeler shall be used to make certain that the rubber gasket is correctly located. At no time shall the pipe be pushed from the plain end. Mechanical joints shall be installed in accordance with this Specification and set in accordance with Appendix A of ANSI/AWWA C111, and the manufacturer's instructions. Restrained joints

shall be installed in accordance with the table of restrained joint requirements shown in the Drawings. Joints and rubber gasket shall be thoroughly cleaned and lubricated with soapy water before assembly. Bolts shall be tightened to the specified torque; under no conditions shall extension wrenches or pipe over handle of ordinary ratchet wrench be used to obtain greater leverage.

Extreme care shall be exercised to insure that there is no restraint on opposite ends of pipe or fitting which will prevent uniform gasket compression, cause unnecessary stress, bending or torsional strain to joint flanges, restraining glands or flanged fittings. Adjoining push-on joints, shall not be assembled until mechanical joints have been tightened. Bolts shall be tightened alternatively and evenly. After installation, a bitumastic coating shall be applied to bolts and nuts.

Jointing of mechanical joint fittings, specials and valves shall be provided in accordance with the printed recommendations of the pipe manufacturer, and as specified. The mechanical joint fittings, joint restraint systems, specials and valves shall be suitable for jointing with the pipe with which they are used, and the Contractor shall provide, at no additional expense to the Owner, all necessary adapters for the proper jointing of pipe, pipe fittings, specials, and valves. The last 8 inches of the outside of the spigot end of pipe and the inside of the bell of the mechanical joint shall be thoroughly cleaned to remove all oil, grit and other matter from the joint. When assembling joint, it is essential that the gland be brought into place and bolts tightened in a manner to insure the maintaining of the same space between the gland and the face of the flange at all points around the socket. The range of bolt torque in making the joints shall be as recommended by the manufacturer of the mechanical joints. Over stressing of bolts will not be permitted; if effective sealing is not obtained at the recommended maximum bolt torque, the joint shall be disassembled, thoroughly cleaned and reassembled.

No pipe joints shall be covered in any way until the joints have been inspected by the Authority's Inspector

All fittings shall be anchored to prevent any movement of the fittings or the adjacent pipe. In general this anchorage shall be provided by the installation of Class XX Portland Cement concrete thrust blocks, and clamps, yokes and tie rods as specified and shown on the drawings, as directed by the Owner, or as otherwise required to satisfactorily restrain all fittings and appurtenances. All required mechanical restraints shall be included in the cost of the fittings. Hand excavation may be required to excavate for the concrete thrust blocks. The Owner may require concrete to be placed at points on the pipeline other than at fittings. All concrete used for thrust blocks shall be exposed for at least sixteen hours before being covered. Insofar as possible, thrust blocking shall be placed so that the pipe and fitting joints will be accessible for repair.

Valves and Valve Boxes. The Contractor shall furnish to the Owner for his use, copies of the printed recommendations of the respective valve manufacturer(s) for the handling, storing, protection and installation of valves and accessories.

Gate valves, tapping sleeve and valves, insertion valves, linestop fittings, valve boxes and accessories shall be installed in conformance with AWWA Specification C 600, latest revision, and as specified herein.

All tapping sleeve and valves shall be pressure tested with air prior to tapping pipe.

Installation of valves and valve boxes shall not be made when trench or weather conditions are unsuitable for the work. All excavations and valve structures shall be kept free of water during installation of the valves and jointing operations and for such additional lengths of time as may be required to insure the satisfactory installation of the valve assemblies and appurtenant work.

Valve Boxes shall be provided for all valves and they shall be set plumb. Valve boxes shall be centered on the valve operating nut. Care shall be taken that no part of the riser section and its pad shall bear on any part of the valve. Provision shall be made to keep any stones, mud or debris from entering the riser section during and after backfilling. Any blockage of the box shall be remedied by the Contractor at his own expense. Valves and riser section shall be centered on valves and the cover shall be set flush with the finished surface. The bottom of the cover shall have a minimum clearance of three (3) inches from the top of the riser pipe.

Sand or gravel bedding shall be carefully tamped under and around the valve box riser section and pad, and compaction will extend to a distance of at least four feet in locations of continuous trenching, elsewhere to the undisturbed trench face in each direction. Jointing of mechanical joint valves and accessories shall be provided in accordance with the printed recommendations of the manufacturer as specified. The mechanical joint valves shall be suitable for jointing with the pipe with which they are used and the contractor shall provide, at no additional expense to the owner, all necessary adapters for the proper jointing of the pipe, pipe fittings, specials and valves. The last eight inches of the outside of the spigot end of the pipe and the inside of the bell of the mechanical joint shall be cleaned to remove all oil, grit and other foreign matter from the joint. When assembling joint, it is essential that the gland be brought into place and bolts tightened in a manner to insure the maintaining of the same space between the gland and the face of the flange at all points around the socket. The range of bolt torque in making up joints shall be as recommended by the manufacturer of the mechanical joints. Overstressing of bolts will not be permitted; if effective sealing is not obtained at the recommended maximum bolt torque, the joint shall be disassembled, thoroughly cleaned and assembled.

All materials found to be defective during the process of the work will be rejected by the Owner and the Contractor shall promptly remove such defective material from the site. All defective material shall be replaced by the contractor with new sound material at no additional expense to the Owner. The contractor shall be responsible for the safe storage of all material.

Cut in valves, insertion valves, linestop fittings shall be installed according to the details provided in the Drawings and where designated by the Engineer. Sufficient crushed stone will be provided for bearing under the new valve or fitting. Insertion valves and linestops are provisional and shall be used only when needed as determined by the Engineer for the purpose of dewatering the existing water main to facilitate the work.

Hydrants. Installation of Fire Hydrants shall be in conformance with the requirements of AWWA Specification C600, latest revision, and as indicated by drawings and as directed by the Owner.

All new and reset hydrants shall be buried to a depth as specified by the manufacturer.

If in the event that the reset hydrant is in need of an extension (flange nuts are below grade), the proper barrel extension or vertical bend is to be properly installed by the Contractor at no additional cost to the Owner, per Detail. Hydrant extension or vertical bend must be approved by BCWA prior to installation.

Hydrant and hydrant branch shall be installed in dry trenches and shall not be installed when trench or weather conditions are unsuitable for such work.

Proper equipment, tools and facilities shall be provided by the Contractor for the proper and satisfactory execution of the work.

The trench bottom and bedding shall be shaped and compacted to provide substantially uniform support to the full length as the branch pipe and the hydrant heel.

A drainage pit (See detail) shall be constructed and filled with crushed stone around the heel of the hydrant.

A gate valve shall be installed on each hydrant branch. The valve box shall be centered over the operating nut and adjusted to grade. Valve box shall be supported during backfill to maintain alignment.

Backfill material shall be deposited evenly on both sides of the branch pipe and hydrant in tamped layers, not exceeding 6" in depth until a point 12" above the pipe has been reached.

Concrete thrust blocks shall be installed as specified in the Drawings and required in this Specification. Care shall be taken to insure that concrete does not plug the drain ports.

When cutting of the pipe is required, the cutting shall be done by machine, leaving a smooth cut at right angles to the axis of the pipe. Cement lining shall be undamaged.

Mechanical joints and gaskets shall be thoroughly cleaned and lubricated before assembly. Bolts shall be tightened to specified torques.

All joints on the hydrant branch must be restrained (See detail).

Existing Hydrant Removal: The Contractor shall remove all hydrants designated for removal in the Drawings. The Contractor shall provide all labor and materials, and all incidental work for removing, backfilling, restoring the ground surface, repaving, and/or restoration to existing conditions to all that is disturbed during removal. Existing hydrants, gate boxes and covers, and curb boxes, removed shall remain the property of the BCWA, and shall be stockpiled by the

Contractor. The Contractor shall coordinate with the BCWA regarding pick up of stockpiled materials by BCWA personnel.

Leakage/Pressure Tests. The Contractor shall perform pressure leakage testing in the presence of the BCWA Inspector, and other BCWA Personnel as required.

Tests for leakage shall be conducted on all portions of completed water pipelines and appurtenances, and all methods and procedures for performing the testing of water mains shall be subject to the approval of the Owner. Interiors of all pipes shall be cleaned of all dirt and foreign materials prior to testing.

After the pipe has been laid and the trench has been backfilled, and before the work is accepted, each section of pipe shall be flushed, tested and disinfected. Water for testing and disinfection will be furnished by the Owner at no expense to the Contractor. The Contractor shall do all work and shall furnish all means and apparatus necessary for admitting water to the mains for disinfection and testing, including pumps, calibrated gages and metering devices.

The Contractor shall furnish all necessary equipment and labor for carrying out pressure test and leakage test on the pipelines. The procedures and methods shall be in accordance with AWWA C600, latest revision, and as specified herein.

Before applying the specified test pressure, all air shall be expelled from the pipe. If permanent air vents are not located at all high points, the Contractor shall install corporation cocks at such points so the air can be expelled as the line is filled with water. After all the air has been expelled, the corporation cocks shall be closed and the test pressure applied.

The Contractor shall furnish all necessary caps, plugs, etc., as required in conjunction with testing portions of the pipe between valves; furnish test pumps, gauges, and any other equipment required in conjunction with carrying out the hydrostatic tests.

The pressure and leakage tests shall be conducted concurrently at a pressure equal to 1.5 times the normal pressure but not less than 150 psi (pounds per square inch) for a minimum duration of 2 hours. The leakage test shall be conducted at the time of the pressure test and the allowable liquid loss shall be in accordance with AWWA C-600. Hydrant branch gate valves shall remain open during this test. If the leakage measured is more than that specified, the Contractor shall at once locate the leak or leaks and make the necessary repairs (at his own expenses) so that the leakage shall not exceed the amount specified. The Contractor shall employ throughout the test procedure qualified personnel experienced in the work. All records and charts are to become the property of the BCWA.

The maximum length of pipe to be tested in one section shall be approved by the BCWA prior to setting up the test.

In general, testing shall be carried out with as few permanently made-up connections to the existing water system as possible; with as many joints as practical uncovered and exposed; and in an approved manner. Pressure testing shall consist of completely filling each section from

valve to valve with water from the water distribution system and maintaining a hydrostatic test pressure of 150 psi, measured at the highest point in the section, and shall be required to hold the pressure for at least 2 hours. Testing of water mains shall be performed by the Contractor at his expense and in the presence of the Engineer. The Engineer shall witness every test and rule on its acceptance. If the specified pressure cannot be held for the required period, the Contractor shall locate and repair the leaks and the pipelines shall be retested, repeatedly if necessary, by the Contractor, until the pressure test requirements are met, at no additional expense to the Owner.

Sterilization. Chlorination of valves, fittings and short lengths of main (less than 50 ft) that will not be included in the normal chlorination procedure shall be thoroughly disinfected by contact swabbing and/or brushing with a high strength sodium or calcium hypochlorite solution in the concentration of 500 milligrams of available chlorine per liter of water.

METHOD OF MEASUREMENT:

Ductile Iron Water Pipe. “Ductile Iron Water Pipe” will be measured by the number of linear feet of various sizes and types actually installed in accordance with the Plans and/or as directed by the Engineer. Measurement will be made along the centerline of the pipe.

Furnish and Install Ductile Iron Fittings, All Sizes. “Furnish and Install Ductile Iron Fittings” will be measured by the number of pounds actually installed in accordance with the Plans and/or as directed by the Engineer.

Gate Valve and Box. “Gate Valve and Box” will be measured by the number of such units of each size actually installed in accordance with the Plans and/or as directed by the Engineer.

Furnish and Install Cement Concrete Class XX Thrust and Anchor Blocks Cast-in-Place. “Furnish and Install Cement Concrete Class XX Thrust and Anchor Blocks Cast-in-Place” will be measured by the number of cubic yards of concrete actually installed in accordance with the Plans and/or as directed by the Engineer.

Blow-off Assemblies. Temporary blow-off assemblies will not be measured for separate payment. Payment for temporary blow-off assemblies shall be included in the lump sum price of testing and disinfecting of water mains. Blow-off assemblies to remain in place at the end of the contract will be measured for payment by the number of such assemblies installed in accordance with the Plans and/or as directed by the Engineer.

Cutting and Capping/Cutting and Plugging Water Pipe. There will be no separate item of payment for cutting. The cost of cutting all water pipe, regardless of material, including beveling of pipe end when required, will be included in the cost of “Remove and Dispose Pipes, All Sizes.” All caps installed on live water pipes will be paid for under the item “Furnish and Install Ductile Iron Fittings.” All plugs installed on abandoned water mains shall be paid for under the item “Plug and Cap Pipe, All Sizes.”

Conduct Leakage Test. “Conduct Leakage Test” will be measured for payment by the number of sections of water main installed in accordance with the Plans and/or as directed by the

Engineer. Should the section fail the original leakage test, the Contractor shall perform subsequent tests at no additional cost to the State, once repairs have been made.

Sterilization. Sterilization will not be measured separate payment.

Tapping Sleeve and Valve. “12 x 6 Tapping Sleeve and Tapping Valve with Gate Box” will be measured by the number of such units actually installed in accordance with the Plans and/or as directed by the Engineer.

Transition Coupling. “Transition Couplings” will be measured for payment by the number of such units actually installed in accordance with the Plans and/or as directed by the Engineer regardless of the existing pipe material.

Pipe Bedding Class B. Class “B” pipe bedding will not be measured for separate payment. The Contractor shall include the cost of this operation with the unit price of pipe, fittings, valves or hydrants being installed.

Pipe Bedding Class C. Class “C” pipe bedding will be measured by the number of cubic yards of bedding actually placed.

BASIS OF PAYMENT:

Ductile Iron Water Pipe. The accepted quantity of the various sizes and types of “Ductile Iron Water Pipe” will be paid for at the contract unit price per linear foot as listed in the Proposal. The price so-stated shall constitute full and complete compensation for all materials, labor, tools and equipment including pipe, excavation (except trench rock excavation and excavation of unsuitable material below grade), laying, setting and joining pipe, providing joint restraints, pipe bedding, backfilling trenches, and for all incidentals required to finish the work, complete and accepted by the Engineer.

Furnish and Install Ductile Iron Fittings, All Sizes. The accepted quantity of “Furnish and Install Ductile Iron Fittings” will be paid for at the contract unit price per pound as listed in the Proposal. The price so-stated shall constitute full and complete compensation for all materials, labor, tools and equipment including provisions of joint restraint where required, excavation (except trench rock excavation and excavation of unsuitable material below grade), and for all incidentals required to finish the work, complete and accepted by the Engineer.

Furnish and Install Cement Concrete Class XX Thrust and Anchor Blocks Cast-in-Place. The accepted quantity of “Furnish and Install Cement Concrete Class XX Thrust and Anchor Blocks” will be paid for at the contract unit price per cubic yard of concrete as listed in the Proposal. The price so-stated shall constitute full and complete compensation for all materials, labor, tools and equipment including concrete, excavation and backfill, and for all incidentals required to finish the work, complete and accepted by the Engineer.

Cutting and Capping/Cutting and Plugging Water Pipe. No separate payment will be made for cutting water pipe. The cost of cutting and beveling the various types and sizes of water pipe

shall be included in the cost to furnish and install the pipe or remove and dispose pipe. Payment for caps on water mains will be paid for under the item "Furnish and Install Ductile Iron Fittings." No separate payment will be made for temporary caps necessary to perform leakage tests or for sterilization of water mains. Plugging of abandoned water pipe will be measured separately and paid for under the item "Plug and Cap Pipe - All Sizes."

Conduct Leakage Test. The accepted quantity of "Conduct Leakage Test" will be paid for at the contract unit price each as listed in the Proposal. The price so-stated shall constitute full and complete compensation for all materials, labor, tools and equipment including satisfactorily conducting all such tests as may be required by the Engineer and the BCWA, including all temporary blow-off assemblies, hydrant stop and drain, service clamp, valve box, temporary caps and for all incidentals required to finish the work, complete and accepted by the Engineer.

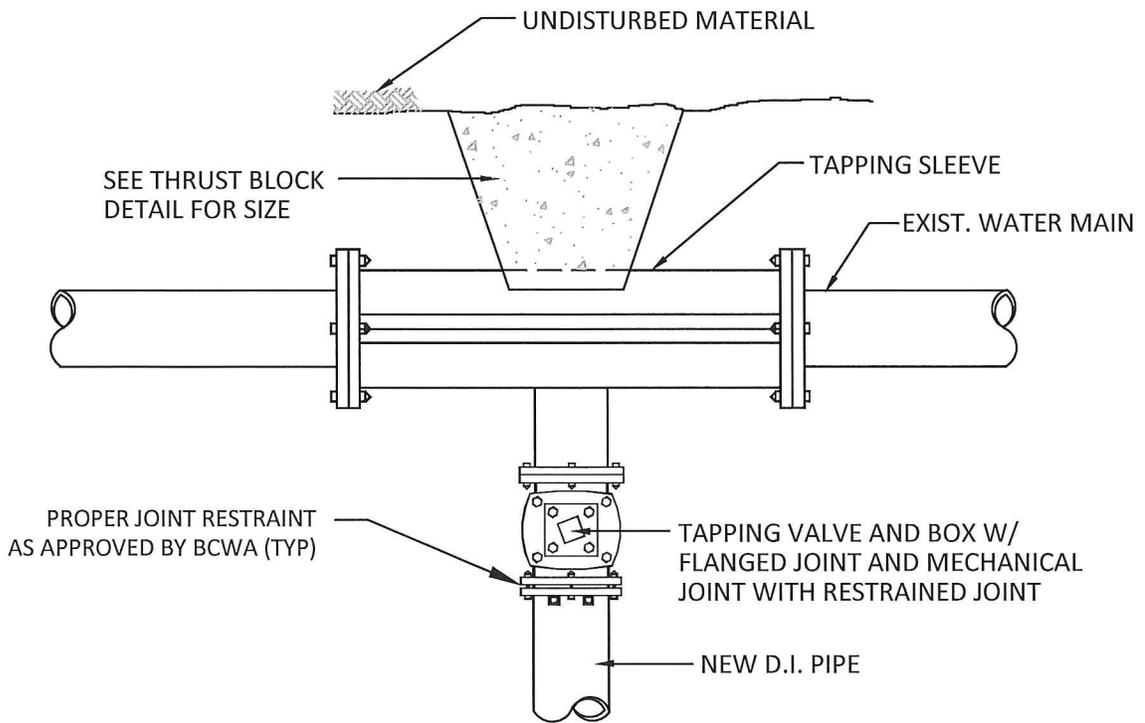
Sterilization. Sterilization shall not be paid for separately but shall be considered incidental to the cost to install the individual components of the water system.

Tapping Sleeve and Valve. The accepted quantity of "12 x 6 Tapping Sleeve and Tapping Valve with Gate Box" will be paid at the contract unit price per each as listed in the Proposal. The price so-stated shall constitute full and complete compensation for furnishing all labor, materials and equipment; excavation (except trench rock excavation and excavation of unsuitable material below grade), laying, setting and joining pipe, removal of temporary caps or plugs with or without restraints, bedding, backfilling trenches, and all other incidentals necessary to complete the work, complete and accepted by the Engineer.

Transition Coupling. The accepted quantity of "Transition Coupling" will be paid at the contract unit price per each as listed in the Proposal. The price so-stated shall constitute full and complete compensation for furnishing all labor, materials and equipment; excavation (except trench rock excavation and excavation of unsuitable material below grade), laying, setting and joining pipe, removal of temporary caps or plugs with or without restraints, bedding, backfilling trenches, and all other incidentals necessary to complete the work, complete and accepted by the Engineer.

Pipe Bedding Class B. "Pipe Bedding Class B" will not be paid for separately except where bedding is used to replace unsuitable materials. When bedding is being paid for to replace unsuitable materials payment shall be as set forth in **Subsection 205.05.5** of the Standard Specifications.

Pipe Bedding Class C. The accepted quantity of "Pipe Bedding Class C" will be paid by the cubic yard. The price constitutes full and complete compensation for all labor, materials, and equipment, and for all incidentals required to finish the work, complete and accepted by the Engineer.



NOTE:

- 1.) TAPPING SLEEVE AND VALVE TO BE DISINFECTED WITH CHLORINE SOLUTION.
- 2.) TAPPING SLEEVE TO BE PRESSURE TESTED USING AIR PRIOR TO TAPPING PIPE.
- 3.) BEDDING AND BACKFILL PER BCWA SPECIFICATIONS.
- 4.) THRUST BLOCK PER BCWA SPECIFICATIONS.
- 5.) WHENEVER THERE IS A DISCREPANCY BETWEEN THIS DETAIL AND THE WRITTEN SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN.

3.0-TAPNGSLEVE-2015.DWG

BCWA

BRISTOL COUNTY WATER AUTHORITY

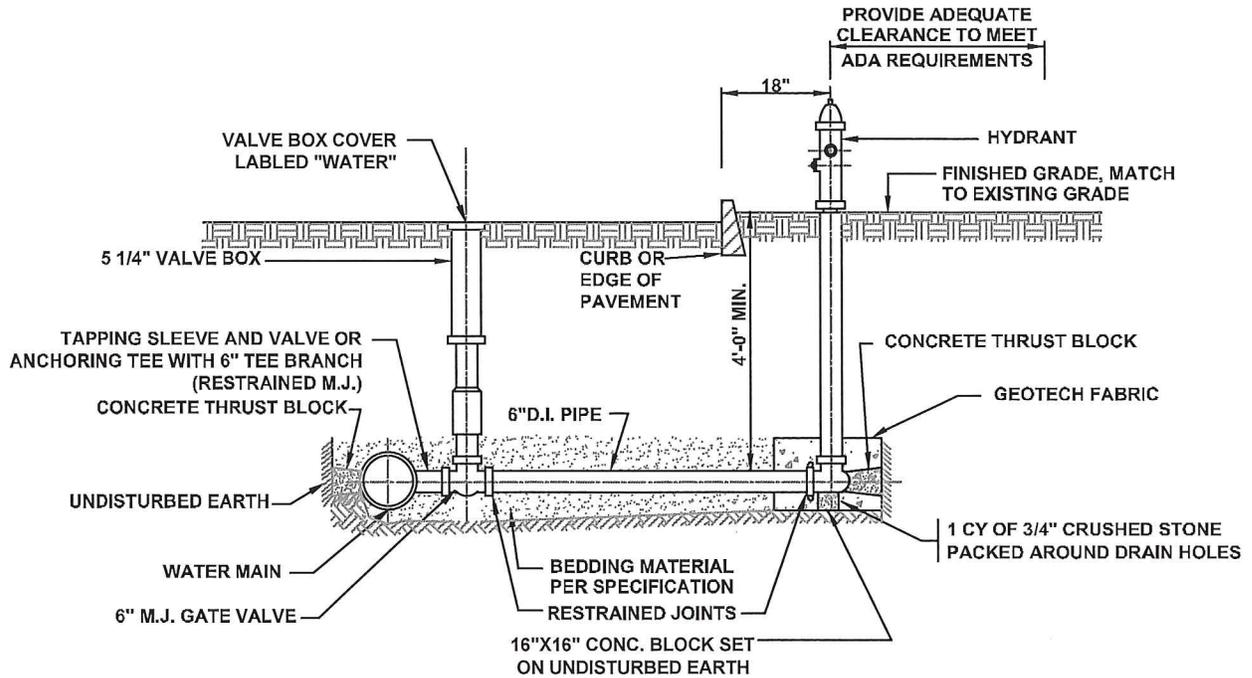
TAPPING SLEEVE & VALVE

NOT TO SCALE

450 CHILD STREET
WARREN, RHODE ISLAND

DATE: 2/2015

DETAIL
3.0



NOTES:

1. ALL MATERIALS, BEDDING AND BACKFILL PER BCWA SPECIFICATIONS.
2. ALL WORK SHALL BE INSPECTED AND APPROVED BY THE BCWA PRIOR TO BEING BACKFILLED AND/OR ACTIVATED.
3. HYDRANT MUST BE BURIED TO MANUFACTURERS PROPER DEPTH (BURY LINE) TO ALLOW SUFFICIENT CLEARANCE TO BOLT/UNBOLT THE UPPER BARREL AND SAFETY FLANGES.
4. USE APPROVED JOINT RESTRAINT GLANDS AND THRUST BLOCKS. THRUST BLOCKING SHALL HAVE A MINIMUM OF 3 SQUARE FEET AGAINST UNDISTURBED EARTH.
5. BARRINGTON HYDRANTS TO BE (OPEN LEFT), 4-1/2" PUMPER NOZZLE WITH CAP THREAD G.A.N.S., TWO 2-1/2" HOZE NOZZLES WITH CAPS , THREAD G.A.N.S., 6" M.J. CONNECTION WITH ACCESSORIES, OPERATING AND CAP NUTS TO BE 1-3/8" POINT TO FLAT POINT PENTAGON.
6. BRISTOL & WARREN HYDRANTS TO BE (OPEN LEFT), 4" PUMPER NOZZLE WITH CAP THREAD G.A 7-465., TWO 2-1/2" HOZE NOZZLES WITH CAPS, THREAD G.A.N.S., 6" M.J. CONNECTION WITH ACCESSORIES, OPERATING AND CAP NUTS TO BE 1-3/8" POINT TO FLAT POINT PENTAGON.
7. FACTORY APPLIED PAINT: BARREL & HEAD - SAFETY YELLOW; BONNET AND CAPS - SILVER ALUMINUM
8. WHENEVER THERE IS A DISCREPANCY BETWEEN THIS DETAIL AND THE WRITTEN SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN.

14.1 BAR-BRI-WAR-HYDRANT-2015.DWG

BRISTOL COUNTY WATER AUTHORITY

BCWA

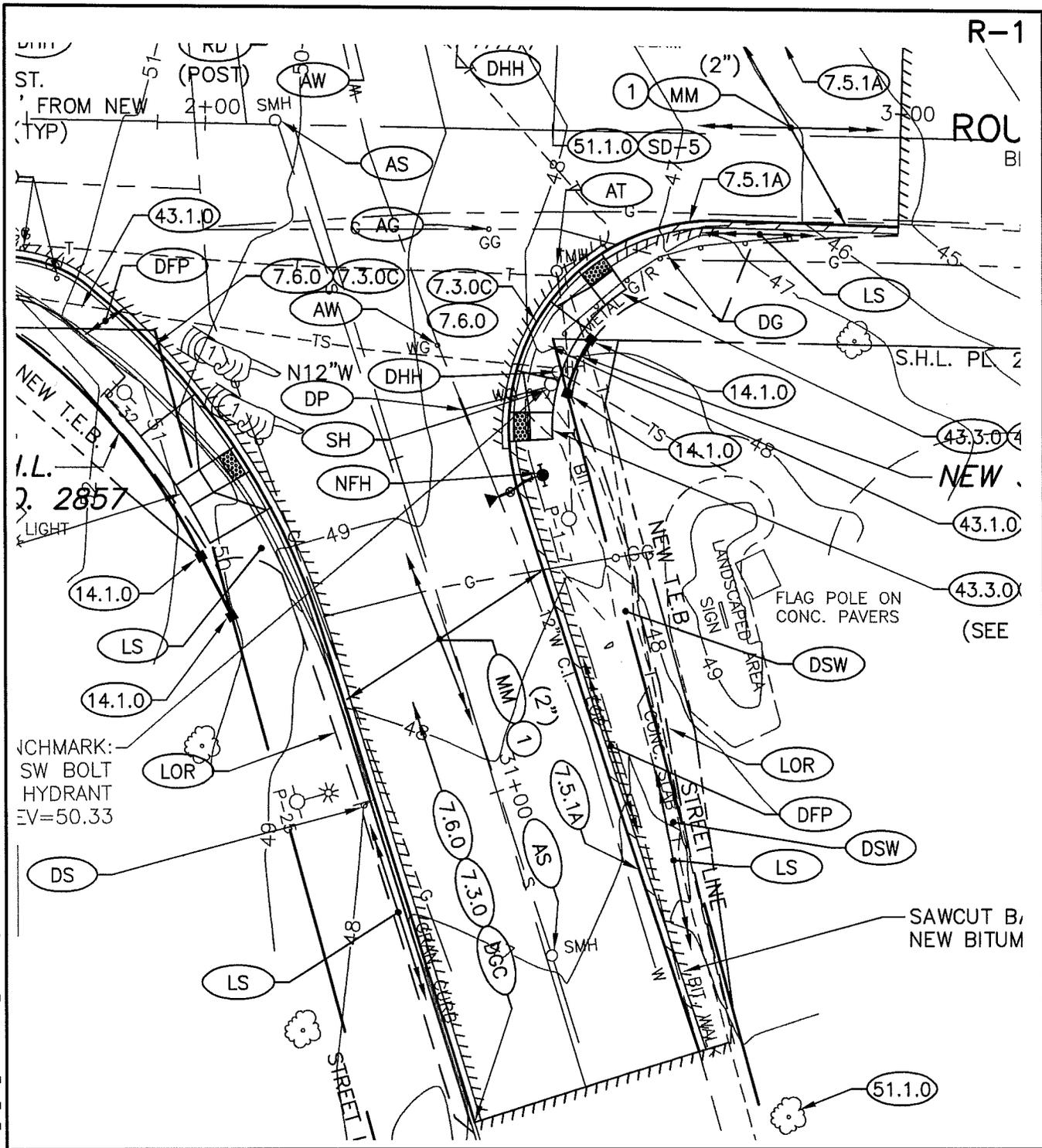
HYDRANT

NOT TO SCALE

450 CHILD STREET
WARREN, RHODE ISLAND

DATE: 09/2015

DETAIL
6.0



F:\FILES\CAD\1385\Highway Plans\Volume 10102J_V1_007_GENERAL001_ADD01.dwg, 2/8/2016 2:03:16 PM, USER67, 1:1



Gordon R. Archibald, Inc.
Civil and Environmental Engineers
Pawtucket, Rhode Island

TITLE OF SKETCH
STATE TRAFFIC COMMISSION
CONTRACT 6 EAST BAY / SOUTH
COUNTY RD. AT MIDDLE HIGHWAY
GENERAL PLAN 1

R.I. CONTRACT NO.
2015-CT-081

**SKETCH
NO. 1**

DATE: 02/02/16

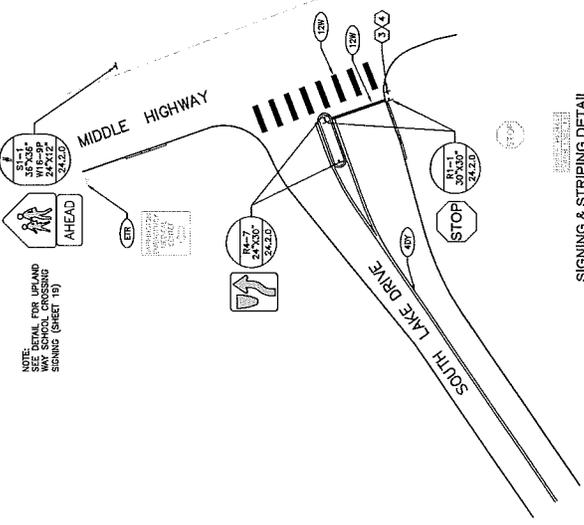
ADDENDUM NUMBER 1

REVISION TO VOL. 1 OF 1
SHEET NO. 07

REV. NO.	DATE	REVISION	SHEET NO.	TOTAL SHEETS
1	RI		12	25

R-1

NOTE: SPECIAL FOR USLAND WAY SCHOOL CROSSROAD SIGNING (SHEET 19)



STREET SIGN LEGEND CHART

SIGN NO.	SIGN LEGEND	MONUMENT TYPE
4	Middle Hwy	24.6.1
4	South Lake Dr	24.6.1

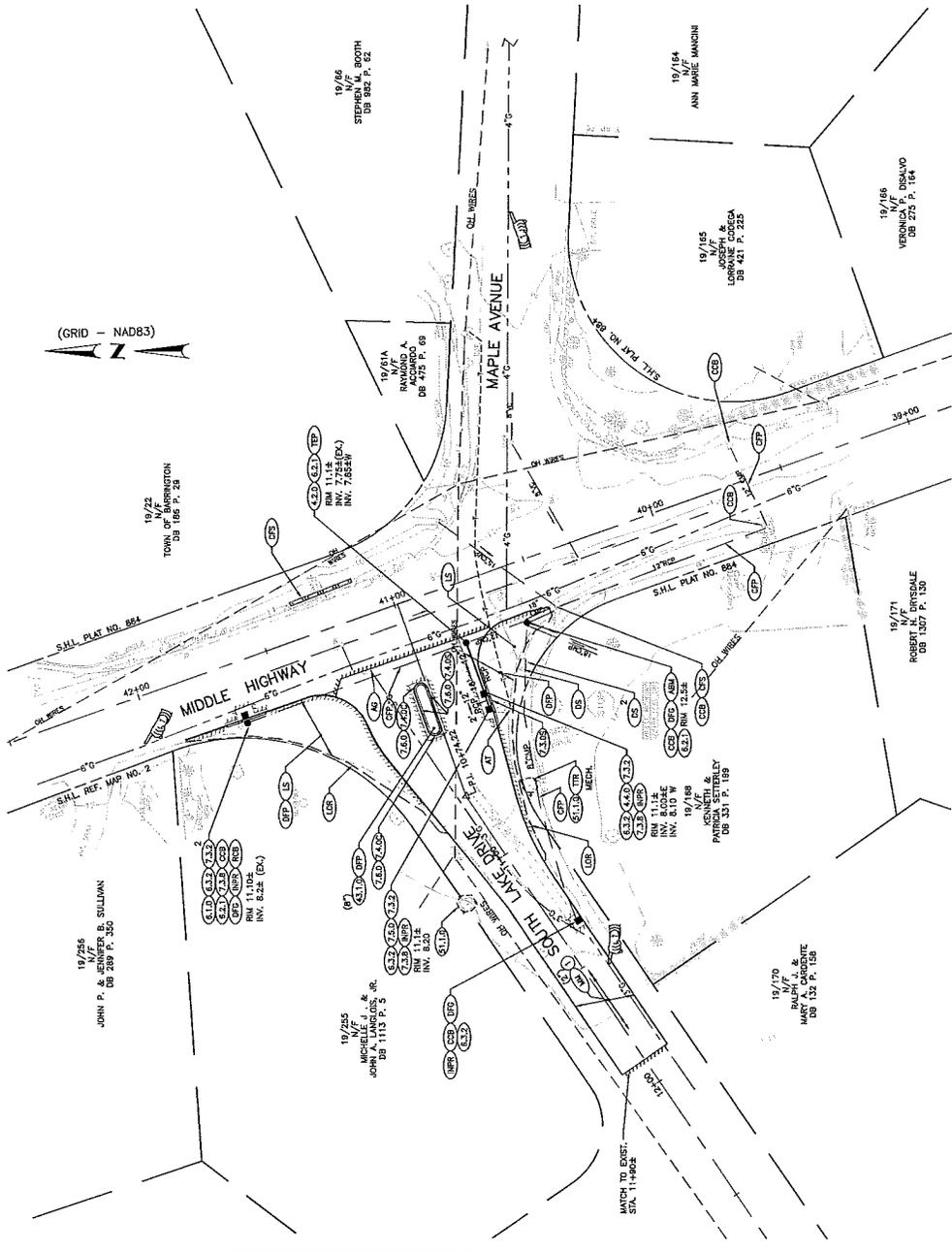
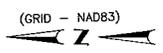
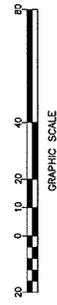
STREET SIGNS SHALL BE WHITE LEGS ON BLUE BACKGROUND

NOTE: VERTICAL DATUM = NAVD 83
HORIZONTAL DATUM = NAD 83

REVISIONS

NO.	DATE	BY	DESCRIPTION
1	02/21/18	RL	ISSUE FOR PERMITTING

RHODE ISLAND
 DEPARTMENT OF TRANSPORTATION
 STATE TRAFFIC COMMISSION
 CONTRACT 6 EAST BAY / SOUTH
 RHODE ISLAND
 VARIOUS LOCATIONS
 GENERAL PLAN 2
 MAPLE AVENUE / MIDDLE HIGHWAY
 SOUTH LAKE DRIVE / MAPLE AVENUE
 CHECKED BY: _____ DATE: _____ SCALE: 1"=20'
 01024 VT 012 GENERAL/002 ADD01



19/256
JOHN P. & SINGER B. SULLIVAN
DB 289 P. 350

19/22
TOWN OF WASHINGTON
DB 185 P. 28

19/255
MICHAEL J. &
JOHN A. LANGRISH, JR.
DB 1113 P. 3

19/114
RAYMOND A.
DB 272 P. 68

19/26
STEPHEN M. BOOTH
DB 302 P. 52

19/170
RALPH J. &
MARY A. PARSONS
DB 152 P. 158

19/188
MICHAEL V. &
PATRICIA SETTERLEY
DB 331 P. 189

19/171
ROBERT N. DINESDALE
DB 1207 P. 130

19/165
JOHN W. &
LORRAINE COLEGA
DB 421 P. 225

19/164
ANN MARIE MARCHI
DB 418 P. 1

19/166
VERONICA F. DESALVO
DB 275 P. 164

MATCH TO EXIST.
STA. 11+00

Table of Contents - Distribution of Quantities

Project Name - State Traffic Commission Contract 6 - East Bay/South

Estimate Name - Addendum No. 1

R.I. Contract No. - 2015-CT-081

FAP Nos: STPG-8888(222), STPG-HSIP(022)

<u>ItemCode</u>	<u>Description</u>	<u>Page</u>
201.0310	REMOVE AND DISPOSE SHRUBS	1
201.0401	REMOVE AND DISPOSE GRANITE CURB	1
201.0402	REMOVE AND DISPOSE CONCRETE CURB	1
201.0403	REMOVE AND DISPOSE SIDEWALKS	1
201.0407	REMOVE AND DISPOSE PAVEMENT AND RIGID BASE	2
201.0409	REMOVE AND DISPOSE FLEXIBLE PAVEMENT	2
201.0414	REMOVE AND DISPOSE PIPE - ALL SIZES	3
201.0415	REMOVE AND DISPOSE GUARDRAIL AND POST ALL TYPES	3
201.0418	** ITEM DELETED **	3
201.0423	REMOVE AND DISPOSE HANDHOLE	3
201.0428	REMOVE AND DISPOSE FRAME AND GRATE OR FRAME AND COVER	3
201.0610	REMOVE AND DISPOSE DIRECTIONAL, WARNING, REGULATORY, SERVICE, AND STREET SIGNS	4
201.9901	REMOVE AND SALVAGE TRAFFIC SIGNAL SYSTEM - COUNTY RD/MIDDLE HWY	4
201.9904	REMOVE AND DISPOSE STEEL POST	4
202.0100	EARTH EXCAVATION	4
202.0700	COMMON BORROW	5
204.0100	TRIMMING AND FINE GRADING	5
206.0312	COMPOST FILTER SOCK 12 INCH DIAMETER	6
206.9901	INLET SEDIMENT CONTROL DEVICE	6
212.2000	CLEANING AND MAINTENANCE OF EROSION CONTROLS	6
302.0100	GRAVEL BORROW SUBBASE COURSE	7
401.2100	MODIFIED CLASS 12.5 HMA	7
401.3003	CLASS 9.5 HMA FOR PATCHING	8
403.0300	ASPHALT EMULSION TACK COAT	8
403.9901	RUBBERIZED JOINT SEALER	8
601.0300	CLASS A PORTLAND CEMENT CONCRETE	9
701.0412	REINFORCED CONCRETE PIPE M 170 CLASS III 12 INCH	9
701.5206	6 INCH DUCTILE IRON WATER PIPE CLASS 52, RESTRAINED JOINT	10
701.8170	** ITEM DELETED **	10
701.9001	CONDUCT LEAKAGE TEST	10
701.9002	** ITEM DELETED **	10
702.0511	FRAME AND COVER STANDARD 6.1.0	10
702.0517	FRAME AND GRATE, STANDARD 6.3.2	10
702.0522	FRAME AND COVER STANDARD 6.2.1	11
702.0541	GRANITE INLET STONE 38" STANDARD 7.3.6	11
702.0543	GRANITE APRON STONE 38" STANDARD 7.3.8	11
702.0605	PRECAST CATCH BASIN 4' DIAMETER STANDARD 4.4.0	11
702.0630	PRECAST MANHOLE 4' DIAMETER STANDARD 4.2.0	11
702.0712	PRECAST CONCRETE DROP INLET STANDARD 4.5.0	12
705.1300	RECONSTRUCT CB TYPE 'D' TO CATCH BASIN WITH GUTTER INLET	12
706.9000	** ITEM DELETED **	12
707.0950	ADJUST TELEPHONE MANHOLE TO GRADE	12
707.1000	ADJUST SANITARY MANHOLE	12
707.1200	ADJUST CATCH BASIN TO MANHOLE	12
707.1900	ADJUST FRAME & COVER TO GRADE	13
707.2000	ADJUST FRAME AND GRATE TO GRADE	13
708.9040	CLEANING AND FLUSHING PIPE ALL SIZES	13
708.9041	CLEANING CATCH BASINS ALL TYPES AND SIZES	13
709.8103	FURNISH & INSTALL CEMENT CONCRETE CLASS B THRUST & ANCHOR BLOCKS CAST-IN-PLACE	14
712.0100	WATER GATE BOX	14
712.0200	GAS GATE BOX	14
713.8268	ADJUST CURB STOP BOX TO GRADE	14
713.8269	ADJUST WATER GATE BOXES TO GRADE	14

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<u>ItemCode</u>	<u>Description</u>	<u>Page</u>
T20.2006	6 INCH EPOXY RESIN PAVEMENT MARKINGS WHITE	44
T20.2012	12 INCH EPOXY RESIN PAVEMENT MARKINGS WHITE	45
T20.2014	4 INCH EPOXY RESIN PAVEMENT MARKINGS YELLOW	45
T20.2048	EPOXY RESIN PAVEMENT MARKING WORD "XING"	46
T20.2052	EPOXY RESIN PAVEMENT MARKING WORD "AHEAD"	46
T20.9901	EPOXY RESIN PAVEMENT MARKING WORD "PED"	47
201.0457	REMOVE AND STOCKPILE ON SITE HYDRANT	47
701.5212	12 INCH DUCTILE IRON WATER PIPE CLASS 52, RESTRAINED JOINT	47
701.9902	12 X 6 TAPPING SLEEVE & TAPPING VALVE WITH GATE BOX	47
701.9903	TRANSITION COUPLING	47

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FAP Nos: STPG-8888(222), STPG-HSIP(022)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
006	201.0409	Cont. SW CORNER		4.00	0021	02
				Item 201.0409 Total:		440.00
007	201.0414	REMOVE AND DISPOSE PIPE - ALL SIZES LF COUNTY RD/MIDDLE HWY 30+45 LT		16.00	0021	01
				Item 201.0414 Total:		16.00
008	201.0415	REMOVE AND DISPOSE GUARDRAIL AND POST ALL TYPES COUNTY RD/MIDDLE HWY SE CORNER	LF	37.00	0021	01
				Item 201.0415 Total:		37.00
009	201.0418	REMOVE AND DISPOSE HYDRANT COUNTY RD/MIDDLE HWY 30+45 LT	EACH		0021	01
				Item 201.0418 Total:		**DELETED**
010	201.0423	REMOVE AND DISPOSE HANDHOLE COUNTY RD/MIDDLE HWY NE CORNER NW CORNER SE CORNER SW CORNER ROGER WILLIAMS WAY/DILLABUR AVE/JOHN THOMAS ST NE CORNER	EACH	1.00 1.00 1.00 1.00	0021 0021 0021 0021	01 01 01 01
				Item 201.0423 Total:		5.00
011	201.0428	REMOVE AND DISPOSE FRAME AND GRATE OR FRAME AND COVER MIDDLE HIGHWAY/SOUTH LAKE DRIVE	EACH			

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FAP Nos: STPG-8888(222), STPG-HSIP(022)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
028	701.5206	6 INCH DUCTILE IRON WATER PIPE	LF			
		CLASS 52, RESTRAINED JOINT				
		COUNTY RD./MIDDLE HWY.				
		30+55 LT		6.00	0021	01
				Item 701.5206 Total:		6.00
029	701.8170	8x6 TAPPING SURVEY & TAPPING VALVE EACH				
		WITH GATE BOX				
		COUNTY RD./MIDDLE HWY.				
		30+55 LT			0021	01
				Item 701.8170 Total:		**DELETED**
030	701.9001	CONDUCT LEAKAGE TEST	EACH			
		COUNTY RD./MIDDLE HWY.				
		30+55 LT		1.00	0021	01
				Item 701.9001 Total:		1.00
031	701.9002	STERILIZATION OF WATER MAINS	LS			
		COUNTY RD./MIDDLE HWY.				
		30+55 LT			0021	01
				Item 701.9002 Total:		**DELETED**
032	702.0511	FRAME AND COVER STANDARD 6.1.0	EACH			
		MIDDLE HIGHWAY/SOUTH LAKE DR.				
		41+64 LT		1.00	0021	01
				Item 702.0511 Total:		1.00
033	702.0517	FRAME AND GRATE, STANDARD 6.3.2	EACH			
		MIDDLE HIGHWAY/SOUTH LAKE DRIVE				
		10+40 LT		1.00	0021	01
		10+45 LT		1.00	0021	01
		11+36 LT		1.00	0021	01
		41+64 LT		1.00	0021	01

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FAP Nos: STPG-8888(222), STPG-HSIP(022)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
039	702.0712	PRECAST CONCRETE DROP INLET STANDARD 4.5.0 MIDDLE HIGHWAY/SOUTH LAKE DRIVE 10+45 LT	EACH	1.00	0021	01
Item 702.0712 Total:				1.00		
040	705.1300	RECONSTRUCT CB TYPE 'D' TO CATCH BASIN WITH GUTTER INLET MIDDLE HIGHWAY/SOUTH LAKE DR 41+64 LT	EACH	1.00	0021	01
Item 705.1300 Total:				1.00		
041	706.9000	PLUG AND CAP PIPE ALL SIZES COUNTY RD/MIDDLE HWY 30+45 LT	EACH		0021	01
Item 706.9000 Total:					**DELETED**	
042	707.0950	ADJUST TELEPHONE MANHOLE TO GRADE COUNTY RD/MIDDLE HWY 2+50 RT MIDDLE HIGHWAY/SOUTH LAKE DRIVE 10+50 LT	EACH	1.00	0021	01
Item 707.0950 Total:				2.00		
043	707.1000	ADJUST SANITARY MANHOLE COUNTY RD/MIDDLE HWY 2+10 31+25	EACH	1.00	0021	01
Item 707.1000 Total:				2.00		
044	707.1200	ADJUST CATCH BASIN TO MANHOLE MIDDLE HIGHWAY/SOUTH LAKE DRIVE 40+56 LT	EACH	1.00	0021	01

Distribution of Quantities

Project Name - State Traffic Commission Contract 6 - East Bay/South

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FAP Nos: STPG-8888(222), STPG-HSIP(022)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
S148	T20.2052 Cont.	WB		1.00	0021	01
				Item T20.2052 Total:		4.00
S149	T20.9901	EPOXY RESIN PAVEMENT MARKING WORD "PED"	EACH			
		WILLET AVE./FORBES ST				
		EB		1.00	0021	01
		WB		1.00	0021	01
		WILLETT AVE./548 WILLETT AVE.				
		EB		1.00	0021	01
		WB		1.00	0021	01
				Item T20.9901 Total:		4.00
150	201.0457	REMOVE AND STOCKPILE ON SITE HYDRANT	EACH			
		COUNTY RD/MIDDLE HWY				
		30+45 LT		1.00	0021	01
				Item 201.0457 Total:		1.00
151	701.5212	12 INCH DUCTILE IRON WATER PIPE CLASS 52, RESTRAINED JOINT	LF			
		COUNTY RD/MIDDLE HWY				
		30+45 LT		2.00	0021	01
				Item 701.5212 Total:		2.00
152	701.9902	12 X 6 TAPPING SLEEVE & TAPPING VALVE WITH GATE BOX	EACH			
		COUNTY RD./MIDDLE HWY.				
		30+55 LT		1.00	0021	01
				Item 701.9902 Total:		1.00
153	701.9903	TRANSITION COUPLING	EACH			
		COUNTY RD./MIDDLE HIGHWAY				

Distribution of Quantities

Project Name - State Traffic Commission Contract 6 - East Bay/South

Estimate Name - Addendum No. 1

R.I. Contract No. - 2015-CT-081

FAP Nos: STPG-8888(222), STPG-HSIP(022)

Item No.	Item Code	Description	UM	Qty.	Pay Code	Seq. No.
153	701.9903 Cont.	30+45 LT		2.00	0021	01
Item 701.9903 Total:				2.00		