January 20, 2025
PREPARED BY: Molly Williams, PE
Jordan Leep, PE

SPECIFICATIONS PACKAGE
Contract Number: _____
FEDERAL FUNDS
TOWN OF LONGBOAT KEY
MANATEE COUNTY

The FY 2025-26 Edition of the Florida Department of Transportation Standard Specifications is revised as follows:

I hereby certify that this specifications package has been properly prepared by me, or under my responsible charge, in accordance with procedures adopted by the Florida Department of Transportation.

This item has been digitally signed and sealed by Molly Charlene Williams, PE on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Date:	February 6, 2025
State of Florida,	
Professional Engineer, License No.:	54281
Firm/Agency Name:	Kimley-Horn and Associates Inc.
Firm/Agency Address:	1800 2nd Street, Suite 900
City, State, Zip Code:	Sarasota, Florida 34236
Page(s):	85

MOLLY CHARLENE WILLIAMS, P.E.

STATE OF FLORIDA
PROFESSIONAL ENGINEER,
LICENSE NO. 54281

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY MOLLY CHARLENE WILLIAMS, P.E. ON THE DATE INDICATED HERE USING A DIGITAL SIGNATURE.

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

02/06/2025 10:49:08 AM

Molly C Williams

Digitally signed by Molly C Williams
DN: CN=Molly C Williams, dnQualifier=A01410D0000018A6C1540C000030395, O=KIMLEY-HORN AND ASSOCIATES, C=US
Reason: I attest to the accuracy and integrity of this document
Date: 2025.02.06 10:49:39-05'00'

FPID(S):000000-0-00-11

SPECIAL PROVISIONS

AWARD AND EXECUTION OF CONTRACT – PUBLIC RECORDS.
(REV 10-17-16) (FA 10-24-16) (FY 2025-26)

ARTICLE 3-9 is expanded by the following:

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT, CONTACT THE CUSTODIAN OF PUBLIC RECORDS AT:

Town of Longboat Key
941-316-1999
Procurement Division
501 Bay Isles Road
Longboat Key, Florida 34228
Email: kkennedy@longboatkey.org

SCOPE OF WORK – INTENT OF CONTRACT.
(REV 10-25-21) (FA 1-26-22) (FY 2025-26)

ARTICLE 4-1 is expanded by the following:

The Improvements under this Contract consist of proposed roadway improvements on Norton Street in the Sleepy Lagoon neighborhood. The proposed roadway improvements include road elevation / reconstruction; a new stormwater collection system; two new outfalls with seawall penetrations; utility deflections, relocation and service line adjustments; landscape restoration; and driveway restoration. The awarded contractor shall provide all permits, labor, equipment, materials, supplies, transportation, and supervision necessary to construct the proposed roadway improvements. Work includes all testing required by the Town to place adjusted potable water main and residential utility service lines back in service.

CONTROL OF MATERIALS - SOURCE OF SUPPLY - DEPARTMENT'S APPROVED PRODUCT LIST (APL).
(REV 10-10-23) (FA 10-18-23) (FY 2025-26)

SUBARTICLE 6-5.2 is deleted and the following substituted:

6-5.2 Source of Supply: Comply with 2 CFR 184 and 2 CFR 200.322, which includes the Buy America Sourcing Preferences of the Build America, Buy America Act (BABA). Domestic compliance for all affected products will be listed on the APL. The list of affected

articles, materials, and supplies that have been added to the APL and are not identified in each individual Section can be found at the following URL: https://www.fdot.gov/programmanagement/ProductEvaluation/Default.shtm.

6-5.2.1 Steel and Iron: Use steel and iron manufactured in the United States, in accordance with the Buy America provisions of 23 CFR 635.410, as amended. Ensure that all manufacturing processes for this material occur in the United States. As used in this specification, a manufacturing process is any process that modifies the chemical content, physical shape or size, or final finish of a product, beginning with the initial melting and continuing through the final shaping and coating. If a steel or iron product is taken outside the United States for any manufacturing process, it becomes foreign source material. When using steel or iron materials as a component of any manufactured product (e.g., concrete pipe, prestressed beams, corrugated steel pipe, etc.), these same provisions apply. Foreign steel and iron may be used when the total actual cost of such foreign materials does not exceed 0.1% of the total Contract amount or $2,500, whichever is greater. These requirements are applicable to all steel and iron materials incorporated into the finished work but are not applicable to steel and iron items that the Contractor uses but does not incorporate into the finished work. Submit a certification from the manufacturer of steel or iron, or any product containing steel or iron, stating that all steel or iron furnished or incorporated into the furnished product was produced and manufactured in the United States or a statement that the product was produced within the United States except for minimal quantities of foreign steel and iron valued at $ (actual cost). Submit each such certification to the Engineer prior to incorporating the material or product into the project. Prior to the use of foreign steel or iron materials on a project, submit invoices to document the actual cost of such material, and obtain the Engineer's written approval prior to incorporating the material into the project.

6-5.2.2 Manufactured Products: Use Manufactured Products that are consumed in, incorporated into, or affixed to an infrastructure project that are manufactured in the United States, in accordance with BABA requirements and applicable waivers.

6-5.2.3 Construction Materials: Use non-ferrous metals, plastic and polymer-based products, glass, lumber, and drywall articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project that are manufactured in the United States, in accordance with BABA requirements.

6-5.2.4 Exemptions to Build America, Buy America: Temporary devices, equipment, and other items removed at or before the completion of the project are exempt from BABA funding eligibility requirements. Aggregates, cementitious materials, and aggregate binding agents or additives are exempted from BABA funding eligibility requirements.

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – LAWS TO BE OBSERVED – GENERAL (COMPLIANCE WITH FHWA 1273).

(REV 9-29-23) (FA 10-3-23) (FY 2025-26)

SUBARTICLE 7-1.1 is expanded by the following:

The FHWA-1273 Electronic version, dated October 23, 2023 is posted on the Department's website at the following URL address:

https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/programmanagement/implemented/urlinspecs/files/fhwa_1273_revised-10-23-23.pdf?sfvrsn=d7604d20_1
Take responsibility to obtain this information and comply with all requirements posted on this website up through five calendar days before the opening of bids.

Comply with the provisions contained in FHWA-1273.

If the Department's website cannot be accessed, contact the Department's Specifications Office Web Coordinator at (850) 414-4101.

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – LAWS TO BE OBSERVED - COMPLIANCE WITH FEDERAL ENDANGERED SPECIES ACT AND OTHER WILDLIFE REGULATIONS (MANATEE).

(REV 5-13-20) (FA 6-29-20) (FY 2025-26)

SUBARTICLE 7-1.4 is expanded by the following:

The Town has determined that the project occurs within the known habitat of manatees *(Trichechus manatus*).

The Town will provide instruction at a preconstruction meeting regarding:

1. The presence of the species and manatee speed zones.
2. The appearance, habits and biology of the species.
3. Their protected status.
4. The need to avoid collisions with and injury to the species.
5. The civil and criminal penalties for harming, harassing, or killing these species.

Advise all work crews of this information.

Operate all vessels at "Idle Speed/No Wake" at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. Follow routes of deep water whenever possible.

Do not dredge river bottom for barge access.

Lower all equipment or material to the mudline in a controlled descent. Do not allow freefall of any equipment or material below the water surface.

Use fenders or buoys to prevent entrapping manatees between vessels and other structures.

Maintain taut mooring lines. If slack remains in the line, sleeve the line with PVC.

Advise all on-site project personnel they are responsible for observing water-related activities for the presence of manatees. Follow the requirements posted in the URL address in Spec 7-1.4 when manatees are observed.

Except for projects in Bay, Escambia, Franklin, Gilchrist, Gulf, Jefferson, Lafayette, Okaloosa, Santa Rosa, Suwannee and Walton:

1. Sediment or turbidity barriers shall be made of material which manatees cannot become entangled, shall be secured, and shall be monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee movement.

2. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the Contractor upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads "Caution: Boaters", must be posted in a location conspicuous to boating traffic. A second sign measuring at least 8-1/2 inches by 11 inches, explaining the requirements for "Idle Speed/No Wake" and the shutdown of in-water operations, must be posted in at least one location prominently visible to all onsite project personnel engaged in water-related activities. These signs can be viewed at: https://myfwc.com/wildlifehabitats/wildlife/manatee/education-for-marinas/

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – PRESERVATION OF EXISTING PROPERTY – UTILITIES - UTILITY ADJUSTMENTS (NO UTILITY WORK SCHEDULE).
(REV 2-10-94) (FY 2025-26)

SUBARTICLE 7-11.5.3 is expanded by the following:

For this project, no utility work involving facilities owned by other agencies is anticipated.

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC - WAGE RATES FOR FEDERAL-AID PROJECTS.
(REV 9-26-22) (FA 10-31-17) (FY 2025-26)

ARTICLE 7-16 is expanded by the following:

For this Contract, payment of predetermined minimum wages applies.
The U.S. Department of Labor (USDOL) Wage Rates applicable to this Contract are listed in table below, as modified up through ten days prior to the opening of bids.

Wage Rate Decision Number	Associated Work
FL20250257	All highway work detailed in associated contract documents

Review the General Decisions for all classifications necessary to complete the project. Request additional classifications through the Engineer's office when needed.
For guidance on the requirements for the payment of wages and benefits and the submittal of certified payrolls, and for general guidance and examples of multiple wage rates when assigned to a Contract, refer to the Department's Office of Construction website. Questions regarding wage rates and the applicability of wage tables should be submitted in accordance with 2-4.

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – E-VERIFY. (REV 6-13-11) (FA 6-16-11) (FY 2025-26)

SECTION 7 is expanded by the following new Article:

7-29 E-Verify.

The Contractor shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the Contractor during the term of the Contract and shall expressly require any subcontractors performing work or providing services pursuant to the Contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the Contract term.

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – SCRUTINIZED COMPANIES.
(REV 3-22-18) (FY 2025-26)

SECTION 7 is expanded by the following new Article:

7-30 Scrutinized Companies.

For Contracts of any amount, if the Town determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, the Town shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the Town's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met.

For Contracts $1,000,000 and greater, if the Town determines the Contractor submitted a false certification under Section 287.135(5) of the Florida Statutes, or if the Contractor has been placed on the Scrutinized Companies with Activities in the Sudan List, or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, the Town shall either terminate the Contract after it has given the Contractor notice and an opportunity to demonstrate the Town's determination of false certification was in error pursuant to Section 287.135(5)(a) of the Florida Statutes, or maintain the Contract if the conditions of Section 287.135(4) of the Florida Statutes are met.

LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – TITLE VI ASSURANCE – DOT 1050.2A, APPENDIX A AND APPENDIX E.
(REV 5-27-16) (FA 6-2-16) (FY 2025-26)

SECTION 7 is expanded by the following new Article:

7-31 Title VI Assurance – DOT 1050.2A, Appendix A and Appendix E.

7-31.1 Appendix A: During the performance of this Contract, the Contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "Contractor") agrees as follows:

1. Compliance with Regulations: The Contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the US Department of Transportation (hereinafter, "USDOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this Contract.

2. Nondiscrimination: The Contractor, with regard to the work performed by it during the Contract, shall not discriminate on the basis of race, color, national origin or sex in the selection and retention of sub-contractors, including procurements of materials and leases of equipment. The Contractor shall not participate either directly or indirectly in the discrimination prohibited by Section 21.5 of the Regulations, including employment practices when the Contract covers a program set forth in Appendix B of the Regulations.

3. Solicitations for subcontractors, including procurements of materials and equipment: In all solicitations either by competitive bidding or negotiation made by the Contractor for work to be performed under subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the Contractor of the Contractor's obligations under this contract and the Regulations relative to nondiscrimination on the basis of race, color, national origin, or sex.

4. Information and Reports: The Contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information and its facilities as may be determined by the Florida Department of Transportation or the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, and Federal Motor Carrier Safety Administration to be pertinent to ascertain compliance with such Regulations, order and instructions. Where any information required of a Contractor is in the exclusive possession of another who fails or refuses to furnish this information the Contractor shall so certify to the Florida Department of Transportation, or the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, or Federal Motor Carrier Safety Administration as appropriate, and shall set forth what efforts it has made to obtain the information.

5. Sanctions for Noncompliance: In the event of the Contractor's noncompliance with the nondiscrimination provisions of this Contract, the Florida Department of Transportation shall impose such Contract sanctions as it or the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, or Federal Motor Carrier Safety Administration may determine to be appropriate, including, but not limited to:

a. withholding of payments to the Contractor under the Contract until the Contractor complies, or

b. cancellation, termination or suspension of the Contract, in whole or in part.

6. Incorporation of Provisions: The Contractor shall include the provisions of this Appendix in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The Contractor shall take such action with respect to any subcontract or procurement as the Florida Department of Transportation or the Federal Highway Administration, Federal Transit Administration, Federal Aviation Administration, or Federal Motor Carrier Safety Administration may direct as a means of enforcing such provisions including sanctions for noncompliance, provided, however, that, in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the Contractor may request the Florida Department of Transportation to enter into such litigation to protect the interests of the Florida Department of Transportation, and, in addition, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

7-31.2 Appendix E: During the performance of this Contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor" agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

1. Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;

2. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired of Federal or Federal-aid programs and projects);

3. Federal-Aid Highway Act of 1973, (23 U.S.C § 324 et seq.), (prohibits discrimination on the basis of sex);

4. Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;

5. The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);

6. Airport and Airway Improvement Act of 1982, (49 U.S.C. 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color national origins or sex);

7. The Civil Rights Restoration Act of 1987 (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);

8. Titles II and III of the Americans with Disabilities Act, which prohibits discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;

9. The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

10. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;

11. Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);

12. Title IX of the Education Amendments of 1972, as amended, which prohibits discrimination based on sex in education programs, or activities (20 U.S.C. 1681 et seq.).

LANDSCAPING.
(REV 5-11-21) (FA 7-14-21) (FY 2025-26)

The following new Section is added after Section 571.

SECTION 580
LANDSCAPING

580-1 Description.

Install landscaping as indicated in the Contract Documents.

580-2 Materials.

580-2.1 Plants:

580-2.1.1 Sizes: Small plants includes all ground covers, shrubs less than 7 gallon, trees less than 7 gallon, clustering type palms less than 6 foot overall height, cycads less than 7 gallon, and incidental landscaping.

Large plants include shrubs 7 gallon or greater, trees 7 gallon or greater, all single trunk palms, and clustering type palms 6 foot overall height and greater.

580-2.1.2 Grade Standards and Conformity with Type and Species: Provide plant materials that comply with all required inspection, grading standards, and plant regulations in accordance with the latest edition of the Florida Department of Agriculture's "Grades and Standards for Nursery Plants."

Unless otherwise specified, the minimum grade for plant material is Florida No. 1. Plant materials must be the specified size and grade at the time of delivery to the site.

Use only plants that are true to type and species, free of fungal infection and disease, and ensure that the plants not specifically covered by Florida Department of Agriculture's "Grades and Standards for Nursery Plants" conform in type and species with the standards and designations in general acceptance by Florida nurseries. Submit a list of nurseries

where plants are tagged, including contact information and location. The Engineer may visit the nursery sites to inspect representative samples and lock tag the example plant material.

A minimum of two plants of each species on each shipment must be shipped with tags stating the botanical nomenclature and common name of the plant. Should discrepancies between botanical nomenclature and common name arise, the botanical name will take precedence.

580-2.2 Inspection and Transporting: Move nursery stock in accordance with all Federal, State, and Local Rule Regulations. For each shipment of nursery stock, provide the nursery's General Nursery Stock Inspection Certificate as required in Chapter 5B-2, F.A.C.

580-2.3 Water: Meet the requirements of Section 983.

580-2.4 Mulch: Provide and install mulch in accordance with the Contract Documents.

580-2.5 Soil Enhancement: Enhance soil in accordance with the Contract Documents.

580-2.6 Landscape Soil: Replace existing soil with Landscape Soil meeting the requirements of Section 987, at the locations shown in the Contract Documents.

580-3 Worksite Landscape Supervisor.

Provide a Worksite Landscape Supervisor to directly oversee all landscape installation. The Worksite Landscape Supervisor must be a Certified Landscape Technician or Certified Landscape Contractor in accordance with the Florida Nursery Growers and Landscape Association (FNGLA) or a State of Florida Registered Landscape Architect. Provide verification at the preconstruction meeting.

580-4 Installation.

580-4.1 Installation Plan: At the preconstruction meeting, provide an installation plan for review and comment. Describe the methods, activities, materials, and schedule to achieve installation as described in this Section. Include a schedule for monthly inspections and reports described in 580-4.9. Include a Schedule of Values for each item on the Tabulation of Quantities/Plant List. Begin installation after Installation Plan is accepted by Engineer.

580-4.2 Delivery: All materials must be available for inspection before installation.

580-4.3 Layout: The locations of plants as shown in the Contract Documents are approximate. At no cost to the Town, adjust final locations when directed by the Engineer to accommodate unforeseen field conditions or to comply with safety setbacks and requirements. Mark proposed mowing limits, planting beds and individual locations of trees and palms as shown in the Contract Documents for the Engineer's review, prior to excavation or planting.

Make no changes to the layout, or any variations of materials from the Contract Documents without the Engineer's approval.

580-4.4 Soil Drainage: Planting holes and beds must drain sufficiently. Notify the Engineer of drainage or percolation problems before plant installation.

580-4.5 Installation: Meet the requirements of the Contract Documents.

580-4.6 Maintenance: Maintain plant material to the equivalent visible structural, quality and health characteristics per the Contract Documents.

580-4.7 Site Repair and Restoration: Repair and restore existing areas disturbed by installation or maintenance activities. Where new turf is required to restore and repair disturbed areas, meet the requirements of Section 570.

580-4.8 Disposal of Surplus Materials and Debris: Remove from the jobsite any surplus material unless otherwise directed by the Engineer. Surplus is defined as material not

needed after installation of landscaping per Contract Documents. Upon commencement of landscaping installation, remove daily all debris from the landscape locations described in the Contract Documents.

580-4.9 Reporting: Provide a written monthly report to the Engineer detailing the condition of the installed landscape, to include at a minimum, the project information, installation date, inspection dates, general condition of the plantings, and the watering and fertilization schedule.

580-5 Method of Measurement.

The quantities to be paid for will be the items shown in the Contract Documents, completed and accepted.

580-6 Basis of Payment.

Price and payment will be full compensation for all work and materials specified in this Section.

TREE AND PALM RELOCATION – CONSTRUCTION.
(REV 7-13-21) (FA 7-14-21) (FY 2025-26)

The following new Section is added after Section 571.

SECTION 581
TREE AND PALM RELOCATION

581-1 Description.

Remove, relocate, and maintain trees and palms in accordance with the Contract Documents.

581-2 Materials.

581-2.1 Water: Meet the requirements of Section 983.
581-2.2 Fertilizer: Provide fertilizer as shown in the Plans.
581-2.3 Mulching: The use of cypress mulch is prohibited.
581-2.4 Landscape Soil: Meet the requirements of Section 987.

581-3 Reporting.

581-3.1 Tree and Palm Condition Report: Submit a Tree and Palm Condition Report at the preconstruction meeting. Document the existing condition of all trees and palms scheduled to be relocated. Include at a minimum:

1. Tree and Palm numbers, as shown in the Contract Documents
2. Description of any damage, disease, scars or infestation
3. Photographs of trees and palms

581-3.2 Relocation Work Plan: Provide a Relocation Work Plan in accordance with the Florida Nursery Growers and Landscape Association (FNGLA) guidelines. The plan must be prepared by an International Society of Arboriculture (ISA) Certified Arborist, or a Florida Licensed Landscape Architect. Submit the Relocation Work Plan for approval at least one week prior to performing initial root pruning or initiating tree relocation operations. Include at a minimum:

1. A schedule for all relocation activities, including activities that occur prior to, and post relocation

2. Proposed equipment
3. Palm frond removal, bundling, splinting
4. Root pruning procedures
5. Watering procedures
6. Anti-desiccation measures
7. Proposed fertilizer
8. Sample tree identification tag
9. Proposed fungicide, as needed

581-4 Worksite Landscape Supervisor.

Provide a Worksite Landscape Supervisor to directly oversee all tree and palm relocation work. The Worksite Landscape Supervisor must be an ISA Certified Arborist, or a State of Florida Registered Landscape Architect, or a Certified Landscape Technician or Certified Landscape Contractor in accordance with FNGLA. Provide verification at the preconstruction meeting.

581-5 Relocation Requirements.

Attach plant identification tags as applicable in a manner that does not impact the health of the tree or palm. Do not use paint. Match the plant numbers indicated on the Plans.

Protect trees and palms from damage.

Perform lifting using a tree spade or using nylon-metallic slings wrapped around the trunk.

At the removal location, fill the hole with landscape soil, unless other material is shown in the Contract Documents or approved by the Engineer.

Install relocated trees and palms in their final location within 24 hours of performing initial root pruning, unless otherwise approved in the Relocation Work Plan.

New nursery stock or other material may not be substituted for a relocated tree or palm.

Demonstrate that planting holes are free draining prior to planting. Notify the Engineer of drainage or percolation problems before plant installation.

Plant trees and palms to the same depth at which they were removed.

Brace relocated trees and palms in accordance Standard Plans Index 580-001.

Maintain trees and palms in an upright position at all times.

Install tree protection barrier around relocated trees and palms in accordance with Standard Plans Index 110-100.

Remove leaf ties within 14 days of installation.

581-6 Post Installation Period Requirements.

The post installation period is a period of one year from the date of final installation, or until the date of the Engineer's final acceptance of the project, whichever comes first. During the post installation period:

1. Maintain trees and palms to a condition equivalent to the health characteristics in the Tree and Palm Condition Report.

2. Remove dying or dead palms, including the root ball. Cut dying or dead trees flush with the ground surface and remove. Regrade and sod or mulch the site to match the adjacent condition and grade.

3. New nursery stock or other material may not be substituted for a dying or dead relocated tree or palm.

4. Remove bracing at the conclusion of the post installation period unless otherwise directed by the Engineer. Do not allow bracing or straps to damage or become embedded.

581-7 Method of Measurement.

The quantities to be paid for will be the number of each item removed, relocated and accepted. Multi-trunk or clustering trees or palms will be measured as a single plant.

No separate measurement or payment will be made for preparing plant materials, filling holes, bracing, or maintenance requirements. Tree Protection barrier will be paid in accordance with Section 110.

581-8 Basis of Payment.

Price and payment will be full compensation for all work specified in this Section. For each plant successfully relocated, a payment of 85% is due. The remaining 15% is due after successful completion of the post installation period. For each plant that is dead or dying at the end of the post installation period, a 50% deduction in payment will be made if the relocation is in excess of 10% of the contract quantity. To qualify for a deduction, the following formula is used:

$$PD = [D - (0.1 * P)] * 0.5 * C$$

Where: PD = Payment Deduction (dollars)

D = Number of dying or dead relocated plants by pay item

P = Contract quantity of relocated plants by pay item

C = Contract unit price per relocated plant by pay item

If $[D - (0.1 * P)] \leq \text{zero}$, then no payment deduction will be assessed.

Payment will be made under:

Item No. 581-1- Relocate Trees and Palms – each.

SUPPLEMENTAL SPECIFICATIONS

FPID(S):000000-0-00-11

MANATEE COUNTY TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

TECHNICAL SPECIFICATIONS

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01600
MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Material and equipment incorporated into the work:

1. Conform to applicable specifications and standards.

2. Comply with size, make, type and quality specified, or as specifically approved in writing by the Town.

3. Manufactured and Fabricated Products:

a. Design, fabricate and assemble in accordance with the best engineering and shop practices.

b. Manufacture like-parts of duplicate units to standard sizes and gages, to be interchangeable.

c. Two or more items of the same kind shall be identical and manufactured by the same manufacturer.

d. Products shall be suitable for service conditions.

e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.

4. Do not use material or equipment for any purpose other than that for which it is specified.

5. All material and equipment incorporated into the project shall be new.

1.02 MANUFACTURER'S INSTRUCTIONS

A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to the Town. Maintain one set of complete instructions at the job site during installation and until completion.

B. Handle, install, connect, clean, condition and adjust products in strict accordance with such instructions and in conformity with specified requirements. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with the Town prior to proceeding. Do not proceed with work without clear instructions.

1.03 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accordance with construction schedules, coordinate to avoid conflict with work and conditions at the site.

1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.

2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals and that products are properly protected and undamaged.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.04 SUBSTITUTIONS AND PRODUCT OPTIONS

A. Contractor's Options:

1. For products specified only by reference standard, select any product meeting that standard.

2. For products specified by naming one or more products or manufacturers and "or equal" Contractor must submit a request for substitutions of any product or manufacturer not specifically named in a timely manner so as not to adversely affect the construction schedule.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

DIVISION 2 SITE WORK

SECTION 02221
TRENCHING, BEDDING AND BACKFILL FOR PIPE

PART 1 GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals necessary to perform all dewatering, excavation, backfill, fill, grading, trench protection or other related work required to complete the piping work shown on the Drawings and specified herein. The work shall include, but not be limited to: vaults; duct conduit; pipe; roadways and paving; backfilling; required fill or borrow operations; grading; disposal of surplus and unsuitable materials; and all related work such as sheeting, bracing and dewatering.

B. Prior to commencing work, the Contractor shall examine the site and review test borings if available, or undertake their own subsurface investigations and take into consideration all conditions that may affect their work.

C. The Contractor is responsible for the protection of every tree which is scheduled to remain in the project area. This includes trees which may or may not be shown on the Plans. Every tree shall be adequately protected in place at no additional cost to the Town. This includes, but is not limited to protecting the root systems and adjusting grades as necessary for tree/root protection.

1.02 PROTECTION

A. Sheeting and Bracing in Excavations:

1. In connection with construction of underground structures, the Contractor shall properly construct and maintain cofferdams. These shall consist of: sheeting and bracing as required to support the sides of excavations, to prevent any movement which could in any way diminish the width of the excavation below that necessary for proper construction and to protect adjacent structures, existing yard pipe and/or foundation material from disturbance, undermining, or other damage. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled and rammed.

2. Trench sheeting for pipes: no sheeting is to be withdrawn if driven below, mid-diameter of any pipe and no wood sheeting shall be cut off at a level lower than one foot above the top of any pipe unless otherwise directed by the Town. During the progress of the work, the Town may direct the Contractor in writing to leave additional wood sheeting in place. If steel sheeting is used for trench sheeting, removal shall be as specified above, unless written approval is given for an alternate method of removal.

3. All sheeting and bracing not left in place shall be carefully removed in such a manner as not to endanger the construction or other structures, utilities, existing piping, or property. Unless otherwise approved or indicated on the Drawings or in the Specification, all sheeting and bracing shall be removed after completion of the piping or structure, care being taken not to disturb or otherwise injure the pipeline or finished masonry. All voids left or caused by withdrawal of sheeting shall be immediately refilled with sand by ramming with tools specifically made for that purpose, by watering, or as may otherwise be directed.

4. The Contractor shall construct, to the extent they deem it desirable for their method of operation, the cofferdams and sheeting outside the neat lines of the pipeline trench or foundation unless otherwise indicated on the Drawings or directed by the Town. Sheeting shall be plumb and securely braced and tied in position. Sheeting, bracing and cofferdams shall be adequate to withstand all pressures to which the pipeline or structure will be subjected. Pumping, bracing and other work within the cofferdam shall be done in a manner to avoid disturbing any construction of the pipeline or the enclosed masonry. Any movement or bulging which may occur shall be corrected by the Contractor at their own expense so as to provide the necessary clearances and dimensions.

5. Drawings of the cofferdams and design computations shall be submitted to the Town and approved prior to any construction. However, approval of these drawings shall not relieve the Contractor of the responsibility for the cofferdams. The drawings and computations shall be prepared and stamped by a Registered Professional Engineer in the State of Florida and shall be in sufficient detail to disclose the method of operation for each of the various stages of construction, if required, for the completion of the pipeline and substructures.

B. Dewatering, Drainage and Flotation

1. The Contractor shall construct and place all pipelines, concrete work, structural fill, bedding rock and limerock base course, in-the-dry. In addition, the Contractor shall make the final 24" of excavation for this work in-the-dry and not until the water level is a minimum of 18 below proposed bottom of excavation.

2. The Contractor shall, at all times during construction, provide and maintain proper equipment and facilities to remove promptly and dispose of properly all water entering excavation and keep such excavations dry so as to obtain a satisfactory undisturbed subgrade foundation condition until the fill, structure, or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural elevations. At all times during the construction operations, the groundwater levels shall be maintained at an elevation 18 inches below the lowest level where structures are being installed.

3. Dewatering shall at all times be conducted in such a manner as to preserve the natural undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation.

4. Wellpoints may be required for dewatering the soil prior to final excavation for deeper in-ground structures or piping and for maintaining the lowered groundwater level until construction has been completed to avoid the structure, pipeline, or fill from becoming floated or otherwise damaged. Wellpoints shall be surrounded by suitable filter sand and no fines shall be removed by pumping. Pumping from wellpoints shall be continuous and standby pumps shall be provided.

5. The Contractor shall furnish all materials and equipment to perform all work required to install and maintain the proposed drainage systems for handling groundwater and surface water encountered during construction of structures, pipelines and compacted fills.

6. Prior to excavation, the Contractor shall submit their proposed method of dewatering and maintaining dry conditions to the Town for approval. Such approval shall not relieve the Contractor of the responsibility for the satisfactory performance of the system. The Contractor shall be responsible for correcting any disturbance of natural bearing soils for damage to pipeline or structures caused by an inadequate dewatering system or by interruption of the continuous operation of the system as specified.

7. As part of their request for approval of a dewatering system, the Contractor shall demonstrate the adequacy of the proposed system and wellpoint filter sand by means of a test installation. Discharge water shall be clear, with no visible soil particles in a one quart sample. Discharge water shall not flow directly into wetlands or Waters of the State as defined by FDEP and SWFWMD.

8. During backfilling and construction, water levels shall be measured in observation wells located as directed by the Town.

9. Continuous pumping will be required as long as water levels are required to be below natural levels.

PART 2 PRODUCTS

2.01 MATERIALS

A. General

1. Materials for use as fill and backfill shall be described below and shall be from an FDOT certified pit. For each material, the Contractor shall notify the Town of the source of the material and shall furnish the Town, for approval, a representative sample weighing approximately 50 pounds, at least ten calendar days prior to the date of anticipated use of such material.

2. Additional materials shall be furnished as required from off-site sources and hauled to the site.

B. Bedding - shall conform to FDOT Standard Specifications for Road and Bridge Construction, Section 901 Coarse Aggregate, and shall be either coarse aggregate of Size No. 57 or coarse sand of Size No. 9. Washed shell size No.57 may be used as an alternate bedding material.

C. Structural Fill

1. Structural fill in trenches shall be used below spread footing foundations, slab-on-grade floors and other structures as backfill within three feet of the below grade portions of structures.

2. Shall be either soil classification A-1, A-2 or A-3, per AASHTO M-145, and shall be free of organic matter, lumps of clay or marl, muck, compressible materials, and rock exceeding 2.5 inches in diameter. Broken concrete, masonry, rubble or other similar materials shall not be used as backfill. Minimum acceptable density shall be 98 percent of the maximum density as determined by AASHTO T-180.

D. Selected Common Fill - shall have the same material classification and requirements as Structural Fill, as described above.

E. Common Fill

1. Shall be either soil classification A-1, A-2, A-3, A-4, A-5 or A-6, per AASHTO M-145, and shall be free of organic matter, lumps of clay or marl, muck, compressible materials and rock exceeding 2.5 inches in diameter. Broken concrete, masonry, rubble or other similar materials shall not be used as backfill.

2. Material falling within the above specification, encountered during the excavation, may be stored in segregated stockpiles for reuse. All material which, in the opinion of the Town, is not suitable for reuse shall be spoiled as specified herein for disposal of unsuitable materials by the Contractor.

E. Unsuitable Material - soil classification A-7 and A-8, per AASHTO M-145, shall not be used as backfill material.

PART 3 EXECUTION

3.01 EXCAVATION

A. Excavate trenches and pits for structures to the elevations indicated on the construction drawings. Take special care to avoid over-excavating or disturbing the bottom of the trench or pit, so that the soil at the bottom of the hole remains in a naturally compacted condition. Excavate to widths sufficient to provide adequate working room to install the required structures. Do not excavate the final layer of soil to the designed grade until just before placing the bedding, foundation, pipe, structure, or masonry work required. Remove boulders, rocks, logs or any unforeseen obstacles encountered.

B. In case the foundation soil found at the bottom of the trench or pit is soft, plastic or mucky, or does not conform to the soils classification specified as suitable foundation material, over-excavation to a greater depth will be required. Soils not meeting the classification required for foundation material shall be removed to a depth at least four inches below the bottom of the pipe, bedding or structure bottom elevation. Rock, boulders or other hard or lumpy material shall be removed to a depth 12 inches below the bottom of the pipe, bedding or structure bottom elevation. Remove muck, clay or other soft material to a depth as needed to establish a firm foundation.

C. Where possible, the sides of trenches should be vertical up to at least the spring line of the installed pipe.

D. Trench excavation shall be performed in accordance with Florida Statute Title XXXIII, Chapter 553, Part III, Trench Safety Act.

3.02 BACKFILLING

A. Backfill materials shall be placed on solid, firm, naturally compacted or compacted to 98 percent of the maximum dry density of the material as determined by AASHTO T-180, dry or dewatered in place soil foundations.

B. Where over-excavation is required due to nonconforming soil classification or rocky, unstable, or otherwise undesirable soil conditions, place Structural Fill or Selected Common Fill in the over-excavated zone up to the base of the bedding material layer. Compact the over-excavated zone to 98 percent of the maximum dry density of the material as determined by AASHTO T-180.

C. When backfilling in an over-excavated zone where moist or watery conditions exist, backfill shall be coarse No. 9 sand or a mixture of No. 57 coarse aggregate with either No. 9 coarse sand, A-1, or A-3 material.

D. After compaction, backfill material in the over-excavation zone shall form a solid and firm foundation on which to build up successive layers of backfill and structures.

E. Bedding materials shall be placed on solid, firm soil foundations and shall be compacted to 98 percent of the maximum dry density of the material as determined by AASHTO T-180.

F. Concrete and masonry structures shall be backfilled using Structural Fill. Backfilling and compaction shall be underneath the structure and carried up evenly on all walls of an individual structure simultaneously. The maximum allowable difference in backfill elevations shall be two feet. No backfilling shall be allowed against concrete or masonry walls until the walls and their supporting slabs have been in place at least seven days or until the specified 28-day strength has been attained. Compaction of Structural Fill underneath the base and along the walls shall be 98 percent of the maximum dry density of the material as determined by AASHTO T-180. The Structural Fill shall be either dried or shall have water added so that the moisture content of the material is within a range that will allow the required density to be achieved.

G. Trenching backfill for pipe installation shall be Selected Common Fill for the pipe bedding zone. The pipe bedding envelope shall begin at the level four inches, six inches, or nine inches, depending on pipe diameter, below the bottom of the pipe, and shall extend vertically up to a level 12 inches above the top of the pipe. Where the in-place soil material within the four inch, six inch, or nine inch pipe bedding zone beneath the bottom of the pipe meets the soil classification for Selected Common Fill, undercutting of the trench below the bottom of the pipe will not be required. In this case, loosen the soil in the bottom of the trench immediately below the middle third of the pipe diameter, and place the pipe upon it.

1. Where the in-place soil material within the pipe bedding zone does not meet the soil classification for Selected Common Fill, undercutting shall be required, and the bedding zone shall be backfilled with Selected Common Fill. In this case, place the pipe bedding material and leave it in a moderately firm uncompacted condition under the middle third of the pipe diameter, and compact the outer portions of the trench bottom to 98 percent of the maximum dry density.

2. Soils that were over-excavated due to rocky, soft or otherwise unsuitable soil foundation conditions shall also be replaced with Selected Common Fill.

3. Compaction of Selected Common Fill shall be 98 percent of the maximum dry density as determined by AASHTO T-180. Such backfill material shall have an optimized moisture content that will allow the required density to be achieved.

H. Excavate for pipe bells before laying pipe. Lay pipe true to the lines and grades indicated on the construction plans. Place backfill material on both sides of the pipe and compact to 98 percent of the maximum dry density of the material as determined by AASHTO T-180. Take special care to effectively fill and compact the material in the haunch areas under the sides of the pipe.

I. For pipes that are not installed under roadways or driveways, trenching backfill for pipe installation shall be Common Fill above the pipe envelope zone, and shall be compacted to 95 percent of the maximum dry density of the material as determined by AASHTO T-180, and shall have moisture content optimized to allow the required density.

J. For pipes that are installed under roadways or driveways, trenching backfill for pipe installation shall be Selected Common Fill above the pipe envelope zone, and shall be compacted to 98 percent of the maximum dry density of the material as determined by AASHTO T-180, and shall have moisture content optimized to allow the required density.

K. Selected Common Backfill shall be placed in layers not to exceed 6 inches. Common Backfill shall be placed in layers not to exceed 12 inches.

L. Backfill compaction tests shall be performed every 500 feet in pipeline trenches and for every utility structure. Test reports shall be presented to the Town Inspector.

3.03 GRADING AND CLEAN UP

A. Surplus and unsuitable soil materials not used on-site shall be removed and disposed of off-site in a manner that is consistent with state and local regulations. In no case shall surplus or unsuitable material be deposited on-site or on adjacent lands.

B. The surface of backfilled areas shall be graded smooth and true to the lines and grades indicated on the construction plans. No soft spots or uncompacted areas shall be allowed in the work.

C. Upon completion of the work, leave the work areas and all adjacent areas in a neat and presentable condition, clear of all temporary structures, rubbish and surplus materials. Pile any salvageable materials that have been removed in neat piles for pickup by the Town's crews, unless otherwise directed.

END OF SECTION

SECTION 02615
DUCTILE IRON PIPE AND FITTINGS

PART 1 GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals required to install ductile iron pipe and restrained joint ductile iron pipe and cast iron or ductile iron restrained joint fittings, complete, as shown on the Drawings and specified in these Standards.

B. Fittings are noted on the Drawings for the Contractor's convenience and does not relieve them from laying and jointing different or additional items where required.

C. The Contractor shall furnish all labor, materials, equipment and incidentals required to install push-on joint or restrained joint ductile iron pipe, complete as shown on the Contract Documents.

D. Newly installed pipe shall be kept clean and free of all foreign matter. All DI pipe installed underground shall be poly-wrapped unless noted otherwise on the Drawings.

1.02 SUBMITTALS

A. The Contractor shall submit to the Town, within ten days after receipt of Notice to Proceed, a list of materials to be furnished, the names of the suppliers and the appropriate shop drawings for all ductile iron pipe and fittings.

B. The Contractor shall submit the pipe manufacturer's certification of compliance with the applicable sections of the Specifications.

PART 2 PRODUCTS

2.01 MATERIALS

A. Ductile iron pipe shall conform to AWWA C150 and AWWA C151. Pipe shall be Pressure Class 350. All ductile iron pipe used in above ground applications shall be Special Thickness Class 53. All pipe materials used in potable water systems shall comply with NSF Standard 61 and 372.

B. Unrestrained joint pipe shall be supplied in lengths not to exceed 21 ft. and shall be either the rubber-ring compression-type push-on joint or standard mechanical joint pipe as manufactured by the American Cast Iron Pipe Company, U.S. Pipe and Foundry Company, or an approved equal.

C. All mechanical joint fittings shall be pressure rated for 350 psi for sizes 4-24 inches and 250 psi for sizes 30 inches and larger. All flanged fittings shall be pressure

rated for 250 psi for all sizes. All fittings shall meet the requirements of AWWA C110 or AWWA C153.

D. Rubber gaskets shall conform to AWWA C111 for mechanical and push-on type joints and shall be Ethylene Propylene Diene Monomer (EPDM) rubber for potable water and reclaimed water pipelines. Standard gaskets shall be such as Fastite as manufactured by American Ductile Iron Pipe Company, or an approved equal. Acrylonitrile butadiene (NBR) gaskets shall be used for potable water mains that are located in soil that is contaminated with low molecular-weight petroleum products or non-chlorinated organic solvents or non-aromatic organic solvents. Fluorocarbon (FKM) gaskets shall be used for potable water mains that are located in soil that is contaminated with aromatic hydrocarbons or chlorinated hydrocarbons. Fluorocarbon (FKM) gaskets shall be used where both classes of contaminates are found.

E. Water Main and Reclaimed Water Main Coatings: All ductile iron pipe used in water and reclaimed water systems shall have a standard thickness cement lining on the inside in accordance with AWWA C104 and a standard 1-mil asphaltic exterior coating per AWWA C151. All ductile iron or gray iron fittings used in water and reclaimed water systems shall have standard thickness cement linings on the inside per AWWA C104 and an asphaltic exterior coating or they shall have factory-applied fusion bonded epoxy coatings both inside and outside in accordance with AWWA C550.

F. Thrust restraint devices shall be provided at all horizontal and vertical bends and fittings, in casings under roads and railroads and at other locations specifically indicated on the Drawings. Thrust restraint devices shall be either concrete thrust blocks or restraining glands as manufactured by Star Pipe Products, Stargrip 3000 and 3100, Allgrip 3600, or as manufactured by EBAA Iron Sales, Megaflange, 2000 PV, or other approved equal restraining gland products. Restrained joints, where used, shall be installed at bend and fitting locations and at pipe joint locations both upstream and downstream from the bends or fittings at distances as required by these Standards. Restrained joint pipe fittings shall be designed and rated for the following pressures:

1. 350 psi for pipe sizes up to and including 24" diameter

2. 250 psi for pipe sizes 30" diameter and above

2.02 DETECTION

A. Pipe shall have a 3-inch wide warning tape of the proper color placed directly above the pipe 12 inches below finished grade or a 6-inch warning tape between 12 inches and 24 inches below finished grade.

B. Pipe shall have a No. 10 gauge solid, insulated wire of proper color installed along the pipe alignment as detailed in these standards.

2.03 IDENTIFICATION

A. Each length of pipe and each fitting shall be marked with the name of the manufacturer, size and class, lining type, and shall be clearly identified as ductile iron pipe. All gaskets shall be marked with the name of the manufacturer, size, and proper insertion direction.

B. Pipe shall be polyethylene-wrapped blue for water mains, purple (Pantone 522 C) for reclaimed water mains and green for sewer mains, per AWWA C105. Pipe need not be entirely polyethylene wrapped if soil testing, which is performed by the Engineer of Record or the Contractor in accordance with AWWA C105, indicates that the soil at the site is not corrosive. If soil testing indicates that the soil at the site is not corrosive, pipe may be spiral wrapped with color coded polyethylene at a six-inch minimum spacing, or the ductile iron pipe (DIP) may be painted with permanent oil-based paint, dried and cured in advance of installation with a minimum 1-inch wide color coded stripe on the top and both sides of the DIP.

C. All above ground potable water mains and appurtenances shall be painted safety blue.

PART 3 – EXECUTION

3.01 GENERAL

A. Pipe and fittings shall be installed in accordance with Section 02617, Installation and Testing of Pressure Pipe.

END OF SECTION

SECTION 02616
DISINFECTING POTABLE WATER PIPE LINES

PART 1 GENERAL

1.01 SCOPE OF WORK

The Contractor shall furnish all labor, materials, equipment and incidentals required to clean and disinfect potable water pipe lines. This work is required to place all types of pipe into service as potable water lines.

1.02 CLEANING WATER MAINS

At the conclusion of the work, the Contractor shall thoroughly clean all of the new pipes to remove all dirt, stones, pieces of wood or other material which may have entered during the construction period per Section 02618.

1.03 DISINFECTING & BACTERIOLOGICAL TESTING OF POTABLE WATER PIPE LINES

A. All record drawing requirements must be submitted to the Town prior to starting the bacteriological testing of the water lines.

B. After the new potable water pipelines have been hydrostatically tested, or after existing potable water pipelines have been modified or repaired, they shall be cleaned, disinfected and sampled and tested for the presence of coliform organisms in accordance with AWWA C651.

C. The Town Inspector shall have been notified and shall be present at the time of the introduction of the chlorine disinfectant and water from the supply system into the main.

D. At the end of the chlorine contact period, the chlorine residual shall be determined by sampling and testing, and the results shall be reported to the regulatory agencies with the Town and State. The Town Inspector and/or Engineer of Record shall have been notified and shall be present at the time of the sampling and testing. The pipelines shall then be flushed thoroughly with clean potable water until chlorine measurements show that the concentration is no higher than the chlorine concentration that is acceptable for domestic use.

E. Discharge flows from cleaning or flushing operations, and heavily chlorinated water from disinfecting operations, shall be disposed of in a manner consistent with US EPA, FDEP and SWFWMD regulations. Chapter 62-302 F.A.C. water quality standard for residual chlorine in Class III waters is <0.01 mg/L (ppm).

F. After final flushing and before the new main is connected to the distribution system, sampling and analysis of the replacement water shall be performed by an approved laboratory or by the Department of Health. Sampling locations shall be as required by AWWA C651 or as determined by the FDEP representative. Pipelines that are tested and return an unsatisfactory test result shall be reflushed and resampled, or

redisinfected, or otherwise reconditioned, until a satisfactory result is attained. Additionally flushing, testing and sampling shall be performed at no additional cost to the Town.

G. No potable water main shall be placed into service until the results of the bacteriological tests are satisfactory and the FDEP has provided the Town with a written letter of acceptance. Potable water services, fire service, and fire hydrant leads that are exempt from a permit from the FDEP but still require bacteriological sampling in accordance with Chapter 62-555, Florida Administrative Code, shall not be placed into service until the results of the bacteriological tests are satisfactory and the Town of Longboat Key Public Works Department has provided written acceptance.

H. Special disinfecting procedures, when approved by the Town, may be used where the method outlined above is not practical.

END OF SECTION

SECTION 02617
INSTALLATION AND TESTING OF PRESSURE PIPE

PART 1 GENERAL

Reference Section 1.9, Installation of Pipelines in the Manatee County Public Works Utility Standards Part 1-Utility Standards Manual.

1.01 GENERAL

A. Furnish and install pipe, fittings, valves, fire hydrants, services, and all other appurtenances and incidentals complete and in-place as required by the construction drawings.

B. All pipe crossing state or federal roads or local arterials & thoroughfares shall be installed in a casing pipe.

C. Water mains 16-inches and larger shall be ductile iron, high density polyethylene, or PVC (for 16-inch only). The use of HDPE pipe must be authorized by the Town prior to ordering and installation.

D. Ductile iron pipe, with gasket materials as required in these Standards, shall be used in soil that is contaminated with low molecular-weight petroleum products, aromatic hydrocarbons, chlorinated hydrocarbons or organic solvents.

E. Trees shall not be planted or located within 10 feet of any potable water main, reclaimed water main, sanitary force main or gravity sanitary sewer main that is owned and maintained by Town. With prior approval, an approved root barrier may be used with 5 feet of clearance.

F. All distribution waterlines that enter private property become private lines and shall have a back-flow preventer (BFP) installed at the right-of-way. BFP can be part of a meter assembly or a BFP / detector check assembly.

1.02 HANDLING AND STORAGE

A. Prior to installation, all pipe and fittings shall be inspected. Cracked, broken, or otherwise defective materials not in compliance with these standards shall not be used and shall be removed from the project site.

B. The pipeline installer shall take care in the handling, storage and installation of the pipe and fittings to prevent injury to the materials or coatings. Use proper implements, tools and facilities for the safe and proper protection of the work. Lower the pipe and fittings from the truck to the ground and from the ground into the trench in a manner to avoid any physical damages. Under no circumstances shall the pipe or fittings be dropped onto the ground or into the trenches.

C. The pipeline installer shall not distribute material on the job site faster than it can be used to good advantage. Unless otherwise approved by the Town, installer shall not distribute more than one week's supply of material in advance of laying. Any

materials not to be installed within two weeks of delivery shall be protected from the sunlight, atmosphere and weather by suitable enclosures or protective wrapping until ready for installation. Stored PVC pipe shall be placed on suitable racks with bottom tiers raised above the ground to avoid damage. Storage of pipe on the job site shall be done in accordance with the pipe manufacturer's written instructions.

PART 2 PRODUCTS

2.01 Pipe, fittings, valves, accessories, and appurtenances shall be furnished in accordance with the Contract Documents.

PART 3 EXECUTION

3.01 PREPARATION

A. All excavation and backfill shall be as shown on the Drawings and specified in Section 02221, Trenching, Bedding and Backfill for Pipe.

3.02 SURVEY MARKINGS

A. As a marker for the Surveyor, a PVC pipe marker or 2" x 4" marker shall be inserted by the Contractor on the top of pipe for potable water mains, reclaimed water mains and sanitary force mains at intervals no greater than 200 feet apart and at locations where there is a substantial grade change. The pipe markers shall indicate the pipe diameter and shall be labeled PWM in "safety" blue, RWM in purple, and FM in green, for potable water mains, reclaimed water mains and sanitary force mains, respectively. The Contractor is responsible for making the aforementioned markers available to the Surveyor. The Contractor shall field locate the mains and fittings when markers are not made available to the Surveyor.

B. As a marker for the Surveyor, a PVC pipe marker or 2" x 4" marker shall be inserted by the Contractor on the top of all pipe fittings (other than sanitary sewer service wyes, potable water saddles and reclaimed water saddles). The markers for fittings shall indicate the type of fitting and shall be labeled PWF in "safety" blue, RWF in purple, and FMF in green, for potable water fittings, reclaimed water fittings, and sanitary force main fittings, respectively. The Contractor is responsible for making the aforementioned markers available to the Surveyor. The Contractor shall field locate the mains and fittings when markers are not made available to the Surveyor.

C. A PVC pipe marker or 2" x 4" marker shall be inserted by the Contractor at the beginning and end of each horizontal directional drill (HDD). The HDD Contractor shall provide a certified report and bore log indicating the horizontal and vertical location every 25 linear feet or less along the pipe.

D. A 2" PVC pipe marker with a painted end cap shall be inserted by the Contractor at the ROW line indicating each individual new service location or stub out. The marker shall be a 6-foot length of PVC pipe inserted 2 feet into the ground and shall be painted "safety" blue for potable water, purple for reclaimed water, and green for sewer.

3.03 PROCEDURE FOR TESTING WATER LINES, FORCE MAINS AND RECLAIMED WATER LINES

A. A 48-hour notice (2 full business days) is needed prior to testing. A letter stating the reasons testing should be scheduled ahead of other jobs must accompany all emergency testing requests.

B. Hydrostatic Testing

a. After the water mains, reclaimed water mains or sewer force mains are installed complete, and the fire hydrants, valves, fittings, blow-offs and restraining devices are permanently installed, and the trenches are backfilled, the new pipelines shall be tested hydrostatically for leakage.

b. Contractor shall submit detailed test procedures and method for Engineer's review. In general, testing shall be conducted in accordance with AWWA C605. The method and procedures for performing the hydrostatic pressure test shall be approved by the Engineer. Submit the plan for testing to the Engineer at least 10 (ten) days before starting a test.

c. The Town Inspector shall have been notified and shall be present during hydrostatic testing procedures. The Contractor and an Engineer of Record representative shall also be present during the tests.

d. All excavations for any utility pipes or cables within the rights-of-way or easements must be complete before a hydrostatic test is performed. Any subsequent digging or boring across the water, sewer or reclaimed pipelines after they have been tested shall result in a requirement for the pipelines to be retested.

e. All mains to be tested shall be cleaned as specified to remove all dirt, stones, pieces of wood or any other material which may have entered the lines during construction. Any obstructions remaining shall be removed.

f. Pipelines to be tested shall have been allowed to remain in place undisturbed for at least 24 hours to allow time for all joints to develop a complete seal. All potable water services and reclaimed water services are to be installed complete with curb stops and meter boxes prior to beginning the test. Gate valves on fire hydrant laterals shall be opened so that the test pressure bears against the closed hydrant valve.

g. Discharged flows from cleaning or flushing operations shall be disposed of in a manner consistent with US EPA, FDEP, and SWFWMD regulations.

h. Only one connection to the existing water supply system shall be allowed prior to acceptance of the main. Connection shall be made through a Town approved backflow prevention assembly. Air shall be expelled completely from the section of pipeline to be tested. If air cannot be fully expelled, ARV’s shall be required at the high points to ensure proper function of the mains. After the

hydrostatic test has been successfully completed, the corporation stops, located at the temporary jumper connection, are to be closed and plugged with brass or PVC stops.

i. The hydrostatic test duration shall be at least two hours. The test pressure at the beginning of the test shall be 180 psi for water mains and reclaimed water mains and shall be 150 psi for sewer force mains. The water supply, and the water supply pump, shall be disconnected during the test. The test pressure shall not vary by more than plus or minus 5 psi during the test. If the pressure drops 5 psi, makeup water shall be pumped into the test pipeline section during the test duration to maintain the pressure to within 5 psi of the test pressure and the amount of leakage measured. The total amount of makeup water added shall be measured and shall be compared to the allowable leakage.

j. The allowable leakage measured during the test duration for DI and PVC pipe shall be as determined by the following formula:

$$L = \frac{SD\sqrt{P}}{148{,}000}$$

where,

L = testing allowance (makeup water), gallons per hour
S = length of pipe tested, feet
D = nominal pipe diameter, inches
P = test pressure, psi (gage)
or, as determined by Table 5A of the Hydrostatic Testing section of AWWA C600.

k. The maximum length of pipe to be hydrostatically tested shall be 2,600 feet. If an exception to this rule is granted by the Town's authorized representative, and a length of pipeline greater than 2,600 feet is tested, the allowable leakage will still be figured for a 2,600-foot length of pipeline.

l. Any exposed pipe sections, valves, fittings, hydrants, services and pipe joints shall be carefully observed during the test duration. All visible leaks shall be repaired, regardless of the amount of leakage.

m. Any damaged or defective pipeline components that are discovered after the hydrostatic testing shall be repaired or replaced with standard materials, and the test shall be repeated until a satisfactory test result is achieved. Any modifications to the new pipeline made after a successful hydrostatic test has been performed shall be cause for a new hydrostatic test of the same pipeline to be performed again.

n. No pipeline installation shall be accepted if the amount of make-up water is greater than the allowable leakage. In the event of a failed test result, locate all leaks and make repairs or replacements as required, and retest the pipeline until the leakage is within the allowable limit.

o. When the test has been completed successfully, blow off the pressure from the opposite end of the line from the water supply connection, to demonstrate the limits of the length of pipeline subjected to testing. Also, flush water from all hydrants, services and blow-offs, to demonstrate that they were on-line during the test.

3.04 INSPECTION/TESTING PROCEDURE COVERING BORED PIPELINES OR CASING AND CONDUITS INSTALLED ACROSS PREVIOUSLY TESTED AND/OR TOWN ACCEPTED WATER AND SEWER PIPE WITHIN DEVELOPMENT PROJECTS UNDER ACTIVE CONSTRUCTION

A. Prior to testing water and sewer lines, every effort will be made to install sleeves for underground utilities that will cross these water and sewer lines or services.

B. Where it has not been possible to pre-install sleeves prior to testing and bores or conduits are required, it is the responsibility of the utility company and/or their Contractor performing the work to provide the Town of Longboat Key Public Works Department or the Engineer of Record with accurate horizontal and vertical as-built information of the sleeves, bores and conduits installed by said utility company. This applies to all bores and conduits crossing water and sewer lines.

C. Procedures to be followed for installation of conduits, pipelines and bores that will cross, or be closer than 5'-0" horizontally and 18 inches vertically to, previously tested water and sewer lines that are still under the ownership of the developer/contractor.

1. Notify the Town and obtain the best as-built information available. Allow sufficient time for the Town to field locate the existing pipelines.

2. Submit drawings of proposed location to the Town for review.

3. Perform installation in the presence of a Town representative. Notify the Public Works Department at least 48 hours (2 business days) prior to installation.

4. Submit two (2) copies of as-built information to the Town for record drawings.

5. Failure to follow steps 2) thru 5) will result in additional charges for retesting the previously tested water and sewer lines.

D. Procedures to be followed for installation of conduits, pipelines and bores crossing or closer than 5'-0" horizontally and 18 inches vertically to previously tested water and sewer lines that have been previously accepted by the Town:

1. Obtain record drawing information from the Town.

2. Follow procedures in "Sunshine State One-Call", paying special attention to the requirements of Section VII.

E. Should water or sewer lines be damaged during the bore pipeline or casing

installation, the cost of any repairs and retesting will be paid for by the utility company that installed the bore. The actual clearance between a bored casing crossing a water or sewer pipe should not be less than 18 inches.

3.05 DETECTION

A. Direct buried pipe shall have 3" detectable metallic tape of the proper color placed directly above the pipe and 12" below finished grade or 6" detectable tape between 12" and 24" below finished grade.

B. Direct buried or horizontal directional drilled non-metallic pipe shall also have tracer wire installed along the pipe alignment. The tracer wire to be used shall be a solid, 10 gauge, high strength, copper clad steel wire with a polyethylene jacket of appropriate color manufactured by Copperhead Industries or Town approved equal.

END OF SECTION

SECTION 02620
POLYETHYLENE (PE) PRESSURE PIPE

PART 1 GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals required to install polyethylene pressure pipe, fittings, and appurtenances as shown on the Drawings and specified in the Contract Documents and these Standards.

B. Newly installed pipe shall be kept clean and free of all foreign matter and gouges.

C. All pipe shall be correctly color-coded/identified.

1.02 QUALIFICATIONS

A. All polyethylene pipe, fittings, and appurtenances shall be furnished by a single manufacturer who is fully experienced, reputable, and qualified in the manufacture of the items to be furnished.

1.03 SUBMITTALS

A. The Contractor shall submit to the Town, within ten days after receipt of Notice to Proceed, a list of materials to be furnished, the names of the suppliers and the appropriate shop drawings for all polyethylene pipe and fittings.

B. The Contractor shall submit the pipe manufacturer's certification of compliance with the applicable sections of the Specifications.

C. The Contractor shall submit shop drawings showing installation method and the proposed method and specialized equipment to be used.

PART 2 PRODUCTS

2.01 POLYETHYLENE PRESSURE PIPE

A. Polyethylene pipe 4" diameter and larger shall be high-density bimodal PE3408/PE 100/PE4710 polyethylene resin with a minimum cell classification of 445574 per ASTM D3350, Class 160, DR 11, Performance Pipe DriscoPlex 4000, or an approved equal, meeting the requirements of AWWA C906. All pipe materials used in potable water systems shall comply with NSF Standard 61 and 372. Outside diameters of water, reclaimed water and pressure sewer HDPE pipes shall be ductile-iron sizing system (DIPS).

B. Polyethylene pipe 3 inches in diameter (for potable water and reclaimed water) and smaller (for wastewater grinder pump force mains) shall be high-density PE 3408 polyethylene, per ASTM D2737, Pressure Class 160, iron pipe size (IPS) outside diameter, DR 11, Performance Pipe DriscoPlex 4100 or an approved equal, meeting the requirements of ASTM D 3035 and AWWA C901.

C. Polyethylene tubing 2 inches in diameter and smaller for potable water and reclaimed water shall be high density PE 3408 polyethylene resin per ASTM D2737, Pressure Class 200, IPS Tubing, SDR 9, Performance Pipe DriscoPlex 5100, Endot EndoPure, Charter Plastics or an approved equal, meeting the requirements of AWWA C901. Butt fusion or CTS brass connections shall be used. All pipe materials used in potable water systems shall comply with NSF Standard 61.

2.02 JOINTS

A. Where PE pipe is joined to PE pipe, it shall be by thermal butt fusion. Thermal fusion shall be accomplished in accordance with the written instructions of the pipe manufacturer and fusion equipment supplier. The installer of the thermal butt fused PE pipe shall have received training in heat fusion pipe joining methods and shall have had experience in performing this type of work.

B. Flanged joints, mechanical joints, and molded fittings for 4” and larger pipe shall be in accordance with AWWA C906. Mechanical joints and fittings for 3” and smaller pipe and tubing shall meet the requirements of: AWWA C901, ASTM D 3350, and ASTM D 3140.

2.03 DETECTION

A. Direct buried pipe shall have 3" detectable metallic tape of the proper color placed directly above the pipe and 12" below finished grade or 6" detectable tape between 12" and 24" below finished grade.

B. Direct buried or horizontal directional drilled pipe shall also have tracer wire installed along the pipe alignment. The tracer wire to be used shall be a solid, 10 gauge, high strength, copper clad steel wire with a polyethylene jacket of appropriate color manufactured by Copperhead Industries or Town approved equal.

2.04 IDENTIFICATION

A. Pipe shall bear identification markings in accordance with AWWA C906.

B. Pipe shall be color coded blue for water, purple (Pantone 522 C) for reclaimed water or green for pressure sewer using a solid pipe color or embedded colored stripes. Where stripes are used, there shall be a minimum of three stripes equally spaced.

PART 3 EXECUTION

3.01 INSTALLING POLYETHYLENE PRESSURE PIPE AND FITTINGS

A. All polyethylene pressure pipe shall be installed by direct bury, directional bore, or a method approved by the Town prior to construction. If directional bore is used, or if directed by the Town, the entire area of construction shall be surrounded by silt barriers during construction.

B. Pipe and fittings shall be installed in accordance with Section 02617, Installation and Testing of Pressure Pipe.

3.03 INSPECTION AND TESTING

A. All pipelines shall remain undisturbed for 24 hours to develop complete strength at all joints. All pipelines shall be subjected to a hydrostatic pressure and leak testing as required by the Town and Engineer.

END OF SECTION

SECTION 02622
POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS
(AWWA SPECIFICATIONS C-900)

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Furnish all labor, materials, equipment, and incidentals required to install the PVC piping, ductile iron fittings, and appurtenances complete and ready for use as indicated on the Drawings.

B. Provide and install complete all fittings and appurtenances not noted specifically on the Drawings as required to complete the utility system in accordance with these Standards.

1.02 DESCRIPTION OF SYSTEM

A. The Contractor shall install the piping in the locations as shown on the Drawings.

1.03 QUALIFICATIONS

A. All plastic pipe, fittings, and appurtenances shall be furnished by a single manufacturer who is fully experienced, reputable, qualified, and specializes in the manufacture of the items to be furnished. The pipe and fittings shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications.

1.04 SUBMITTALS

A. The Contractor shall submit shop drawings to the Town including, but not limited to, dimensions and technical specifications for all piping.

B. The Contractor shall submit to the Town, samples of all materials specified herein.

C. The Contractor shall submit and shall comply with pipe manufacturer's recommendation for handling, storing and installing pipe and fittings.

D. The Contractor shall submit pipe manufacturer's certification of compliance with these Specifications.

1.05 TOOLS

A. The Contractor shall supply special tools, solvents, lubricants, and caulking compounds required for proper installation.

PART 2 PRODUCTS

2.01 MATERIALS

A. Polyvinyl chloride (PVC) pressure pipe shall be Class 235, DR 18, meeting the requirements of AWWA C900 used for potable and reclaimed water. Mains shall be cast-iron-pipe-equivalent outside diameters (also known as ductile iron pipe size (DIPS)). Each length of pipe shall be hydrostatically tested to four times its pressure class of the pipe by the manufacturer in accordance with AWWA C900.

B. PVC pipe shall not be used for potable and reclaimed water mains 16 inches and larger.

C. Standard PVC pressure pipe joints shall be bell and spigot push-on type with elastomeric ring seals. Ring seal gaskets used at push-on joints shall conform to ASTM F 477 and shall be EPDM rubber for potable and reclaimed water pipes.

D. Polyvinyl chloride (PVC) drainage pipe, 12 inches in diameter or greater, shall conform to ASTM F949.

E. Lubricant furnished for lubricating the push-on joints in potable water pipes shall be nontoxic, water soluble, shall not support the growth of bacteria, shall have no deteriorating effects on the gasket or pipe material, and shall not impart color, taste, or odor to the water, and shall be an approved substance per NSF 61.

F. Thrust restraint devices shall be provided at all horizontal and vertical bends and fittings, in casings under roads and railroads and at other locations as indicated on the Drawings. Thrust restraint devices for PVC pipe and fittings shall be either concrete thrust blocks or restraining glands as manufactured by Star Pipe Products, Stargrip 3000 and 3100, Allgrip 3600, or as manufactured by EBAA Iron Sales, Megaflange, 2000PV or other approved equal restraining gland products. Restrained joints, where used, shall be installed at bend and fitting locations and at pipe joint locations both upstream and downstream from bends or fittings at distances as required by these Standards.

G. All fittings for PVC pipe shall be ductile iron or gray iron with mechanical joints and shall conform to AWWA C110 or AWWA C153 and to the applicable sections of these Standards for ductile iron and gray iron fittings.

H. All pipe materials used in potable water systems shall comply with NSF Standards 61 and 372.

PART 3 EXECUTION

3.01 INSTALLATION

A. The Contractor shall install the plastic pipe in strict accordance with the manufacturer's technical data and printed instructions.

B. Pipe shall be installed in accordance with the Drawings and Section 02617, Installation and Testing of Pressure Pipe.

3.02 DETECTION

A. Direct buried pipe shall have 3" warning tape of the proper color placed directly above the pipe 12" below finished grade or 6" warning tape between 12" and 24" below grade.

B. PVC pipe shall have a No. 10 gauge solid, insulated wire of proper color installed along the pipe alignment as detailed in these Standards.

3.03 IDENTI FICATION

A. PVC pipe shall bear identification markings in accordance with AWWA C900 or ASTM D2241.

B. PVC pipe shall be color coded blue for water, purple (Pantone purple 522C) for reclaimed water or green for pressure sewer using a solid pipe color pigment.

3.04 INSPECTION AND TESTING

A. All pipelines shall remain undisturbed for 24 hours to develop complete strength at all joints. All pipelines shall be subjected to a hydrostatic pressure and leak testing. Prior to testing, the pipelines shall be supported in a manner approved by the Town to prevent movement during tests.

END OF SECTION

SECTION 02640
VALVES AND APPURTENANCES

PART 1 GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals required and install complete and ready for operation all valves and appurtenances as shown on the Drawings and as specified herein.

B. All of the types of valves and appurtenances shall be products of well-established reputable firms who are fully experienced and qualified in the manufacture of the particular equipment to be furnished. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these standards as applicable. Valves used in waterworks applications shall comply with Section 8 of NSF Standard 61 for mechanical devices and NSF 372.

C. All of the equipment and materials specified herein are intended to be standard for use in controlling the flow of potable water, reclaimed water, wastewater, etc., depending on the applications.

D. All valves and appurtenances shall be of the size shown on the drawings and, to the extent possible, all equipment of the same type on the project shall be from a single manufacturer.

E. All valves and appurtenances shall have the name of the manufacturer, year of the valve and the working pressure for which they are designed cast in raised letters upon some visible part of the body.

F. Special tools, if required for the normal operation or maintenance, shall be supplied with the equipment.

G. All hand actuated buried valves shall have three-piece adjustable valve boxes and 2-inch square AWWA operating nuts. Provide stainless steel extension stems and alignment rings where needed to bring the operating nut to within 4 feet below the box lid.

H. Water and reclaimed water system isolation valves shall be gate valves for sizes 2-inch through 12-inch and shall be butterfly valves for sizes 16-inch and larger.

I. Isolation valves for sewer force main pipelines shall be gate valves, unless otherwise noted on the plans. Tapping valves shall be used for tapping force mains. Plug valves shall be full port, have a 100% circular cross section, and must have prior written authorization from the Town for use.

J. Valves shall open when turning the operating nut or wheel counterclockwise and shall close when turning clockwise.

K. All bonnet bolts, gland bolts, flange connection bolts, nuts, washers, and other trim hardware exposed to the outside environment shall be stainless steel. Thrust collar tie-rod bolts shall be stainless steel. All MJ-type underground bolts, nuts, and washers shall be COR-TEN or stainless steel.

L. All valves shall have a factory applied, holiday free, fusion bonded epoxy coating on the interior and exterior unless otherwise noted in the plans or the following specification. All other painted items exposed to sunlight, including field painted box lids, etc., shall be painted the appropriate color with an epoxy type paint.

M. No valves with a break-way stem shall be allowed.

N. The equipment shall include, but not be limited to, the following:

1. Gate valves (Sec. 2.01)
2. Ball Valves (Sec. 2.03)
3. Valve Actuators (Sec. 2.06)
4. Air Release Valves (Sec. 2.07)
5. Valves Boxes (Sec. 2.08)
6. Corporation Stops and Saddles (Sec. 2.09)
7. Flange Adapters and Plain End Couplings (Sec. 2.10)
8. Hydrants (Sec. 2.13)
9. Restrained Joints (Sec. 2.14)
10. Tapping Sleeves and Tapping Valves (Sec. 2.15)
11. Tracer Wire Boxes (Sec. 2.16)

1.02 SUBMITTALS

A. Submit to the Town within 30 days after execution of the contract a list of materials to be furnished, the names of the suppliers and the date of delivery of materials to the site.

B. Complete shop drawings of all valves and appurtenances shall be submitted to the Town for approval in accordance with the Specifications.

PART 2 PRODUCTS

2.01 GATE VALVES

A. Where indicated on the drawings or necessary due to locations, size, or inaccessibility, chain wheel operators shall be furnished with the valves. Such

operators shall be designed with adequate strength for the valves with which they are supplied and provide for easy operation of the valve. Chains for valve operators shall be galvanized.

B. Gate valves installed underground shall be provided with a box cast in a concrete pad and a box cover. Stainless steel or equivalent valve extension stems shall be provided to place the valve operating nut no more than 4 feet deep. One valve wrench, 6 feet in length, shall be provided for every 15 valves installed.

C. Gate valves 2 inches to 14 inches in diameter shall be resilient seated, manufactured to meet or exceed the requirements of AWWA C509 or AWWA C515 and shall be UL listed and FM approved where applicable. Valves shall have an unobstructed waterway equal to or greater than the full nominal diameter of the valve.

D. The valves shall have a non-rising stainless steel stem to eliminate lead content. All bolts, nuts and washers shall be stainless steel to eliminate exterior corrosion and maintain fastener strength. Manufacturer shall use Never-Seez or equivalent during assembly of bolt and nut sets to prevent galling of similar metals. Stem seals shall be provided and shall be of the O-ring type, two above and one below the thrust collar. Valves that are located above grade and located in valve vaults shall be OS&Y with flanged joints.

E. The wedge shall be ductile iron fully encapsulated with an EPDM rubber. The Elastomer type shall be permanently indicated on the disc or body of the valve. The resilient sealing mechanism shall provide zero leakage at the water working pressure when installed with the line flow in either direction.

F. The valve body, bonnet, and bonnet cover shall meet or exceed all the requirements of AWWA C515.

G. Valves meeting AWWA C515 requirements shall be rated for an operating pressure of 250 psi and shall be tested in accordance with AWWA C515.

H. The valves are to have 2-inch cast or ductile iron AWWA operating nuts and shall open left or counterclockwise.

I. The valves shall be covered by a Manufacturer's 10-year warranty on manufacturer's defects and reasonable labor costs for replacement. Warranty shall become effective from the date of purchase by the end user and delivered within 30 days from the receipt of the purchase order. For publicly owned and maintained utilities, the end user is Town of Longboat Key Government.

J. Gate valves shall be assembled and tested in a certified ISO 9001:2000 manufacturing facility within the United States and provide their certification of meeting internationally recognized quality control procedures.

2.02 COMBINATION PRESSURE REDUCING & PRESSURE SUSTAINING WITH CHECK VALVE OPTION

A. Pressure sustaining and check valve shall be pilot operated diaphragm actuated valve with cast iron body, bronze trim, and 125-pound flanged ends. The valve shall be hydraulically operated, diaphragm type globe valve. The main valve shall have a single removable seat and a resilient disc, of rectangular cross section, surrounded on three and a half sides. No external packing glands are permitted and there shall be no pistons operating the main valve or any controls. The valve shall be equipped with isolation valves to service the pilot system while permitting flow if necessary. Main valve and all pilot controls shall be manufactured in the United States of America. Valve shall be single chamber type, with stainless steel stem.

B. Valve shall automatically reduce pressure for the downstream distribution network and sustain a minimum pressure in the high pressure main regardless of distribution demand, and as an option, shall also close when a pressure reversal occurs for check valve operations. The pilot system shall consist of two direct acting, adjustable, spring loaded diaphragm valves.

C. Valve shall be cast iron or ductile iron with main valve trim of brass and bronze. The pilot control valves shall be cast brass with 303 stainless steel trim. Valve shall be similar in all respects to Cla-Val Company, Model 92-01 or a similar control valve such as Bermad Model 723, GA Industries Model 4700 or an approved equal.

2.03 BALL VALVES

A. Brass Ball Valves: sizes 3/4-inch through 2-inch shall be brass body, stem and ball per ASTM B 62, alloy 85-5-5-5, full port, full flow, 1/4-turn check, ball curb valves, rated for 300 psi, Mueller 300 (as specified in the table below), Ford, or approved equal, with compression, pack joint, flare, threaded or flanged ends as required.

Curb Stops for Water and Reclaimed Water

Pipe Material	Type of Connection	Model
HDPE	Compression x FIP	B-25170 *
HDPE	Pack Joint x FIP	P-25170 *
Copper	Compression x FIP	B-25170
Copper	Flare x FIP	B-25166
Stainless Steel	FIP x FIP Thread	B-20200
* Insert required, part number per manufacturer product information		

B. PVC Ball Valves: sizes 1/2-inch through 2-inch shall be double true union type, CPVC, or PVC (same material as pipe) fitted for intended service. Valves shall be solvent welded to piping system unless otherwise noted. Valves shall be Spears or approved equal.

C. All valves shall be mounted in such a position that valve position indicators are plainly visible. Above grade ball valves shall have a vinyl coated lever handle. Lever handle, handle nut, and lever packing gland shall be 304 or 316 stainless steel.

D. Potable plastic service pipe material and compression and pack joint connectors shall not be used in soil that is contaminated with low molecular-weight petroleum products, aromatic hydrocarbons, chlorinated hydrocarbons or organic solvents. Appropriate service tubing shall apply.

2.04 BUTTERFLY VALVES

A. Butterfly valves shall conform to AWWA C504, Class 250 B, Mueller Lineseal XPII, DeZurik AWWA, Pratt HP-250II, or an approved equal.

B. Valve seats shall be an EPDM elastomer. Valve seats 24 inches and larger shall be field adjustable and replaceable without dismounting operator dise or shaft and without removing the valve from the line. Valves 20 inches and smaller shall have bonded or mechanically restrained seats as outlined in AWWA C504.

C. All valves shall be subject to hydrostatic and leakage tests at the point of manufacture. The hydrostatic test for Class 250 valves shall be performed with an internal hydrostatic pressure equal to 500 psi applied to the inside of the valve body of each valve. During the hydrostatic test, there shall be no leakage through the metal, the end joints or the valve shaft seal. The leakage test for the Class 250 valves shall be performed at a differential pressure of 250 psi and against both sides of the valve. No adjustment of the valve disc shall be necessary after pressure test for normal operation of valve. All valves shall be leak-tight in both directions.

D. Butterfly valve actuators shall conform to AWWA C504. Gearing for the actuators shall be totally enclosed in a gear case. Actuators shall be capable of seating and unseating the disc against the full design pressure and shall transmit a minimum torque to the valve. Actuators shall be rigidly attached to the valve body.

E. The valve shaft shall be constructed of 18-8, ASTM A-276, Type 304 stainless steel and designed for both torsional and shearing stresses when the valve is operated under its greatest dynamic or seating torque. Shaft shall be of either a one piece unit extending full size through the valve disc and valve bearing or it may be of a stub shaft design. Shaft bearings shall be Teflon or nylon, self-lubricated type.

F. Gearing for the operators shall be totally enclosed in a gear case in accordance with paragraph 3.8.3 of the above mentioned AWWA Standard Specification.

G. Operators shall be capable of seating and unseating the disc against the full design pressure of velocity, as specified for each class, into a dry system downstream and shall transmit a minimum torque to the valve. Operators shall be rigidly attached to the valve body.

H. The manufacturer shall certify that the required tests on the various materials and on the completed valves have been satisfactory and that the valves conform with all requirements of this Specification and the AWWA standard.

I. Where indicated on the Drawings, extension stems, floor stands, couplings, stem guides, and floor boxes as required shall be furnished and installed.

2.05 PLUG VALVES

A. Plug valves shall be eccentric, non-lubricating type with integral plug and shafts and shall be furnished with end connections and with actuating mechanisms as called for on the construction plans or as otherwise required. Valves shall seal bubble-tight or water drop-tight in both directions when tested according to the Leakage Test method of AWWA C504 with a hydrostatic pressure of 150 psi.

B. Plug valves shall also be subjected to the internal, full body Hydrostatic Test of AWWA C504 at a pressure two times the rated pressure or a minimum pressure of 300 psi, whichever is greater. During the test, there shall be no leakage through the metal, or through the end joints or shaft seal, nor shall any part of the valve be deformed.

C. Flanged valve ends shall be faced and drilled according to ANSI B 16.1, Class 125. Mechanical joint valve ends shall conform to AWWA C111. Threaded ends shall conform to the NPT requirements of ANSI B1.20.1.

D. The plug valve body, bonnet and gland shall be ductile iron per ASTM A 126, Class B. The integral plug and shafts shall be cast iron ASTM A 126, Class B, or 316 stainless steel. The entire plug, except for the shafts, shall be covered with nitrile (Buna N) rubber. The rubber compound shall have been vulcanized to the metal plug and shall have a peel strength of not less than 75 pounds per inch when tested according to ASTM D 429, method B. The valve seat shall be at least 90 percent pure nickel, welded-in overlay into the cast iron body. The top and bottom bearings shall be 316 stainless steel.

E. Plug valves shall have a full port area of 100 percent of the nominal pipe size area.

F. Valves shall have worm gear type actuators with 2-inch square operating nuts.

G. Plug valves shall be coated inside with Protecto 401 or amine-cured novolac ceramic epoxy or another two-part epoxy suitable for sanitary sewer service which has been approved by the Town.

2.06 VALVE ACTUATORS

A. Butterfly valve and plug valve actuators.

Butterfly valve and plug valve actuators shall conform to the requirements for actuators presented in AWWA C 504 and shall be either manual or motor operated. Actuators shall be capable of seating and unseating the disc against the full design pressure and velocity, as specified for each class, into a dry system downstream, and shall transmit a minimum torque to the valve. Actuators shall be rigidly attached to the valve body.

B. Manual Actuators.

Manual actuators shall have permanently lubricated, totally enclosed gearing with handwheel and gear ratio sized on the basis of actual line pressure and velocities.

Actuators shall be equipped with handwheel, position indicator, and mechanical stop-limiting locking devices to prevent over travel of the disc in the open and closed positions. They shall turn counter-clockwise to open valves. Manual actuators shall be of the traveling nut, self-locking type or of the worm gear type and shall be designed to hold the valve in any intermediate position between fully open and fully closed without creeping or fluttering. Valves located above grade shall have handwheel and position indicator, and valves located below grade shall be equipped with a 2-inch square AWWA operating nut located at ground level and cast iron extension type valve box.

C. Motor Actuators (Modulating)

1. The motor actuated valve controller shall include the motor, actuator unit gearing, limit switch gearing, limit switches, position transmitter which shall transmit a 4-20 mA DC signal, control power transformer, electronic controller which will position the valve based on a remote 4-20 milliamp signal, torque switches, bored and key-wayed drive sleeve for non-rising stem valves, declutch lever and auxiliary handwheel as a self-contained unit.

2. The motor shall be specifically designed for valve actuator service using 480 volt, 60 Hertz, three phase power as shown, on the electrical drawings. The motor shall be sized to provide an output torque and shall be the totally enclosed, non-ventilated type. The power gearing shall consist of helical gears fabricated from heat treated alloy steel forming the first stage of reduction. The second reduction stage shall be a single stage worm gear. The worm shall be of alloy steel with carburized threads hardened and ground for high efficiency. The worm gear shall be of high tensile strength bronze with hobbed teeth. All power gearing shall be grease lubricated. Ball or roller bearings shall be used throughout. Preference will be given to units having a minimum number of gears and moving parts. Spur gear reduction shall be provided as required.

3. Limit switches and gearing shall be an integral part of the valve control. The limit switch gearing shall be made of bronze and shall be grease lubricated, intermittent type and totally enclosed to prevent dirt and foreign matter from entering the gear train. Limit switches shall be of the adjustable type capable of being adjusted to trip at any point between fully opened valve and fully closed valve.

4. The speed of the actuator shall be the responsibility of the system supplier with regard to hydraulic requirements and response compatibility with other components within the control loop. Each valve controller shall be provided with a minimum of two rotor type gear limit switches, one for opening and one for closing. The rotor type gear limit switch shall have two normally open and two normally closed contacts per rotor. Gear limit switches must be geared to the driving mechanism and in step at all times whether in motor or manual operation. Provision shall be made for two additional rotors as described above, each to have two normally open and two normally closed contacts. Each valve controller shall be equipped with a double torque switch. The torque switch shall be adjustable and will be responsive to load encountered in either direction of travel. It shall operate during the complete cycle without auxiliary relays or devices to protect the valve, should excessive load be met

by obstructions in either direction of travel. The torque switch shall be provided with double-pole contacts.

5. A permanently mounted handwheel shall be provided for manual operation. The handwheel shall not rotate during electric operations, but must be responsive to manual operation at all times except when being electrically operated. The motor shall not rotate during hand operation nor shall a fused motor prevent manual operation. When in manual operating position, the unit will remain in this position until motor is energized at which time the valve operator will automatically return to electric operation and shall remain in motor position until handwheel operation is desired. This movement from motor operation to handwheel operation shall be accomplished by a positive declutching lever which will disengage the motor and motor gearing mechanically, but not electrically. Hand operation must be reasonably fast. It shall be impossible to place the unit in manual operation when the motor is running. The gear limit switches and torque switches shall be housed in a single easily accessible compartment integral with the power compartment of the valve control. All wiring shall be accessible through this compartment. Stepping motor drives will not be acceptable.

6. The motor with its control module must be capable of continuously modulating over its entire range without interruption by heat protection devices. The system, including the operator and control module must be able to function, without override protection of any kind, down to zero dead zone.

7. All units shall have strip heaters in both the motor and limit switch compartments.

8. The actuator shall be equipped with open-stop-close push buttons, an auto-manual selector switch, and indicating lights, all mounted on the actuator or on a separate locally mounted power control station.

9. The electronics for the electric operator shall be protected against temporary submergence.

10. Actuators shall be Limitorque L120 with Modutronic Control System containing a position transmitter with a 4-20MA output signal or equal.

D. Motor Actuators (Open-Close)

1. The electronic motor-driven valve actuator shall include the motor, actuator gearing, limit switch gearing, limit switches, torque switches, fully machined drive sleeve, declutch lever, and auxiliary handwheel as a self-contained unit.

2. The motor shall be specifically designed for valve actuator service and shall be of high torque totally enclosed, nonventilated construction, with motor leads brought into the limit switch compartment without having external piping or conduit box.

3. The motor shall be of sufficient size to open or close the valve against maximum differential pressure when voltage to motor terminals is 10% above or below nominal voltage.

4. The motor shall be pre-lubricated and all bearings shall be of the anti-friction type.

5. The power gearing shall consist of helical gears fabricated from heat treated steel and worm gearing. The worm shall be carburized and hardened alloy steel with the threads ground after heat treating. The worm gear shall be of alloy bronze accurately cut with a hobbing machine. All power gearing shall be grease lubricated. Ball or roller bearings shall be used throughout.

6. Limit switches and gearing shall be an integral part of the valve actuator. The switches shall be of the adjustable rotor type capable of being adjusted to trip at any point between fully opened valve and fully closed valve. Each valve controller shall be provided with a minimum of two rotor type gear limit switches, one for opening and one for closing (influent valves require additional contacts to allow stopping at an intermediate position). The rotor type gear limit switch shall have two normally open and two normally closed contacts per rotor. Additional switches shall be provided if shown on the control and/or instrumentation diagrams. Limit switches shall be geared to the driving mechanism and in step at all times whether in motor or manual operation. Each valve actuator shall be equipped with a double torque switch. The torque switch shall be adjustable and will be responsive to load encountered in either direction of travel. It shall operate during the complete cycle without auxiliary relays or devices to protect the valve should excessive load be met by obstructions in either direction of travel. Travel and thrusts shall be independent of wear in valve disc or seat rings.

7. A permanently mounted handwheel shall be provided for manual operation. The handwheel shall not rotate during electric operation except when being electrically operated. The motor shall not rotate during hand operation, nor shall a fused motor prevent manual operation. When in manual operating position, the unit will remain in this position until motor is energized at which time the valve actuator will automatically return to electric operation and shall remain in motor position until handwheel operation is desired. Movement from motor operation to handwheel operation shall be accomplished by a positive declutching lever which will disengage the motor and motor gearing mechanically, but not electrically. Hand operation must be reasonably fast. It shall be impossible to place the unit in manual operation when the motor is running.

8. Valve actuators shall be equipped with an integral reversing controller and three phase overload relays, Open-Stop-Close push buttons, local-remote-manual selector switch, control circuit transformer, three-phase thermal overload relays and two pilot lights in a NEMA 4X enclosure. In addition to the above, a close coupled air circuit breaker or disconnect switch shall be mounted and wired to the valve input power terminals for the purpose of disconnecting all underground phase conductors.

9. The valve actuator shall be capable of being controlled locally or remotely via a selector switch integral with the actuator. In addition, an auxiliary dry contact shall be provided for remote position feedback.

10. Valve A.C. motors shall be designed for operation on a 480 volt, 3-phase service. Valve control circuit shall operate from a fuse protected 120 volt power supply.

11. Motor operators shall be as manufactured by Limitorque Corporation, Type L120 or approved equal.

2.07 AIR RELEASE VALVES

A. Air release valves shall be automatic float operated, GA Industries Fig-929 for sewer applications, Fig-920 for water and reclaimed water application, or an approved equal, with inlet size and working pressure ratings as required and NPT connections.

B. Valve bodies shall be ductile iron per ASTM A 126, Class B. The orifice, float and linkage shall be stainless steel. The seat shall be (Buna N) nitrile elastomer.

2.08 VALVE BOXES

A. Buried valves shall have adjustable cast iron or HDPE valve boxes. Lids shall be cast iron drop type, and shall have “WATER”, “SEWER”, or “RECLAIM”, as applicable, cast into the top. Lids will be painted “safety” blue for potable, purple for reclaimed, and green for sanitary sewer.

B. Cast iron boxes shall be two-piece, or three-piece, as required, screw type, Tyler Pipe, 6850 Series, Box 461-S through 668-S, with extensions, as required to make the desired box length, or an approved equal. Bottom barrel shall be 5-1/4 inches inside diameter, with a flanged bottom with sufficient bearing area to prevent settling.

C. HDPE boxes shall be two-piece, adjustable, 1/4-inch thick minimum heavy wall, high density polyethylene, with cast iron top and stainless steel adjustable stem, Trench Adapter, as manufactured by American Flow Control, or an approved equal. Bottom barrel shall have flanged bottom to prevent settling. All bolts, screws and pins shall be stainless steel.

D. Reclaimed Valve Boxes shall be square 9-inch x 9-inch load bearing marked “Reclaimed Water” and painted Pantone 522C purple.

E. All valves shall either have operating nuts within 4 feet below the top of the lid or shall have extension stems with centering guides to provide an extended operating nut within 4 feet below the lid. Extension stems shall be fixed to the valve operating nut with a stainless steel fastener.

F. All potable water, sewer, and reclaimed water grade-adjustment risers shall be cast iron material just like the valve box. No plastic or steel risers shall be allowed.

G. A centering device BoxLok or equal shall be installed in the valve box.

H. Stand pipe shall match color code of the system being installed, (blue for potable, Pantone purple 522 C for reclaimed, and green for sanitary sewer).

2.09 CORPORATION STOPS AND SADDLES

A. Corporation stops for connections to ductile iron and PVC water and reclaimed water mains shall be all red brass, alloy 85-5-5-5, per ASTM B 62, and shall conform to AWWA C800. 1-inch through 2-inch corporation stops shall be ball type, 300 psi working pressure rated, with AWWA MIP threaded inlets and compression, pack joint, flare, or FIP threaded joint outlets, Mueller as shown in the table below, or an approved equal. All joints made to CTS size HDPE tubing shall use stainless steel insert stiffeners.

Corporation Stops

Pipe Material	Type of Connection	Mueller 300 Model
HDPE	Compression x AWWA IP Thread	B-25028 (Saddle) *
HDPE	Compression x AWWA Taper Thread	B-25008 (Direct Tap) *
HDPE	Pack Joint x AWWA IP Thread	P-25028 (Saddle) *
HDPE	Pack Joint x AWWA Taper Thread	P-25008 (Direct Tap) *
Copper	Compression x AWWA IP Thread	B-25028 (Saddle)
Copper	Pack Joint x AWWA Taper Thread	B-25008 (Direct Tap)
Copper	Pack Joint x AWWA IP Thread	P-25028 (Saddle)
Copper	Pack Joint x AWWA Taper Thread	P-25008 (Direct Tap)
Copper	Flare x AWWA IP Thread	B-25028 (Saddle)
Copper	Flare x AWWA Taper Thread	B-25008 (Direct Tap)
Stainless Steel	FIP Thread x AWWA IP Thread	B-20046 (Saddle)
Stainless Steel	FIP Thread x AWWA Taper Thread	B-20045 (Direct Tap)
* Insert required, part number per manufacturer product information		

B. Potable plastic service pipe material and compression and pack joint connectors shall not be used in soil that is contaminated with low molecular-weight petroleum products, aromatic hydrocarbons, chlorinated hydrocarbons or organic solvents. Appropriate service tubing shall apply.

C. Water and reclaimed water service connections to PVC and DIP mains shall be made using red brass saddles, alloy 85-5-5-5, per ASTM B 62. Straps, washers and nuts shall be brass or stainless steel. No ductile iron, cast iron or steel saddles will be allowed. Saddles shall be Smith Blair 325 Bronze saddles with Stainless Steel or brass extra wide strap or equivalent.

D. Service and air release valve (ARV) connections to HDPE water, reclaimed water and sewer mains may be made using Romac Style 306H saddle or approved equal. All saddles shall be properly sized per the manufacturer product information and be installed according to the manufacturer's written instructions. Connections to HDPE mains shall not be made using narrower saddles similar to the Smith-Blair 325.

2.10 FLANGED ADAPTERS AND PLAIN END COUPLINGS

A. Plain end couplings and adapters shall be fusion-bonded epoxy coated carbon steel with Ethylene Propylene Diene Monomer (EPDM) rubber gaskets and stainless steel nuts, bolts and spacers. Acrylonitrile butadiene (NBR) gaskets shall be used for potable water mains that are located in soil that is contaminated with

low molecular-weight petroleum products or non- chlorinated organic solvents or non-aromatic organic solvents. Fluorocarbon (FKM) gaskets shall be used for potable water mains that are located in soil that is contaminated with aromatic hydrocarbons or chlorinated hydrocarbons. Fluorocarbon (FKM) gaskets shall be used for potable water mains if the soil is contaminated with aromatic hydrocarbons or chlorinated hydrocarbons, and is also contaminated with low molecular-weight petroleum products or organic solvents. Couplings shall be Dresser Style 38, or another approved equal. Flange adapters shall have a plain end compression seal similar to the style 38, with an ANSI 125 Class flange on the opposite end, and shall be Dresser Style 128W or an approved equal. Stainless steel backup rings shall be used for force mains that are located in corrosive environments including wetwells and valve vaults.

2.11 HOSE BIBS

A. Hose bibs shall be 3/4" or 1" brass, polished chromium plated brass, with vacuum breaker as noted on the drawings.

2.12 SWING CHECK VALVES

A. Check valves shall be swing type, weighted lever, conforming to AWWA C508. Valves shall be iron-body, bronze-mounted, single disk, 175 psi working pressure for 2- through 12-inch, 150 psi for 14- through 30-inch, with ANSI B16.1 Class 125 flanged ends, by Mueller; No. A-2600-6-01 (sewer), No. A-2602-6-01 (water), or AVK Series 41, or an approved equal.

B. When there is no flow through the line, the disc shall hang lightly against its seat in practically a vertical position. When open, the disc shall swing clear of the waterway.

C. Check valves shall have bronze seat and body rings, extended bronze or stainless steel hinge pins and stainless steel nuts and bolts on bolted covers.

D. Valves shall be so constructed that disc and body seat may easily be removed and replaced without removing the valve from the line. Valves shall be fitted with an extended hinge arm with outside lever and weight.

2.13 HYDRANTS

A. Hydrants shall be dry barrel, nostalgic style, and shall be Mueller Super Centurion 250 with 5” Storz adaptor, or approved equal and shall conform to AWWA C502 and UL/FM certified, and shall, in addition, meet the specific requirements and exceptions which follow:

1. Hydrants shall be according to manufacturer's standard pattern or nostalgic style and of standard size, and shall have one 5-inch Storz connection or equivalent with two 2½- inch hose nozzles.

2. Hydrant inlet connections shall have mechanical joints for 6-inch pipe.

3. Hydrant valve opening shall have an area at least equal to that area of a 5 1/4-inch minimum diameter circle and be obstructed only by the valve rod.

Each hydrant shall be able to deliver 500 gpm minimum through its two 2 1/2 -inch hose nozzles when opened together with a loss of not more than 2 psi in the hydrant per AWWA C502.

4. The upper and lower stem rod shall be stainless steel and shall have a breakable stem-rod coupling of stainless steel, or cast iron or ductile iron with a fusion bonded epoxy coating, with stainless steel pins and clips.

5. Hydrants shall be hydrostatically tested as specified in AWWA C502 and shall be rated at 250 psi minimum.

6. The operating nut shall be 1½ -inch pentagon shaped with a protective weather cover, and open counter clockwise.

7. All nozzle threads shall be American National Standard.

8. Each nozzle cap shall be provided with a Buna N rubber washer.

9. All hydrants shall be traffic break away type and allow for 360-degree rotation to position the Storz connection/nozzle in the desired direction after installation.

10. Hydrants must be capable of being extended without removing any operating parts.

11. Hydrant extensions shall be fusion bonded epoxy coated inside and outside with a stainless steel stem. The breakaway coupling can be fusion bonded epoxy coated or stainless steel. Only one hydrant extension is allowed per hydrant.

12. Weepholes shall be excluded from fire hydrants.

13. Hydrant main valve closure shall be of the compression type opening against the pressure and closing with the pressure. The main valve shall be faced or covered with EPDM elastomer, which shall seat on a bronze ring.

14. Hydrant bonnets, weather cover, nozzle section, caps and shoe shall be cast iron or ductile iron, and shall be holiday free fusion-bonded epoxy coated at the factory, per AWWA C550, inside and outside. Lower barrel shall be fusion bonded epoxy coated inside and outside. Aboveground parts shall also have a top coat of Sherwin-Williams Acrolon 218 HS acrylic polyurethane or approved equal; color Safety Yellow for fire hydrants that are connected to the potable water system or Pantone 522C purple for fire hydrants that are connected to the reclaimed water system.

15. Exterior nuts, bolts and washers shall be stainless steel. Bronze nuts may be used below grade.

16. All internal operating parts shall be removable without requiring excavation.

2.14 RESTRAINED JOINTS

A. Pipe joints shall be restrained by poured-in-place concrete thrust blocks or by other mechanical methods, including tie rods, Stargrip and Allgrip, as manufactured by Star Pipe Products or Megaflange and 2000 PV, as manufactured by EBAA Iron Sales. Flanged joints may be used above ground.

B. All T-bolts, bolts, nuts, washers, and all thread rods shall meet ASTM A-588 requirements (Cor-ten or equivalent) or be stainless steel. The use of rebar with welded thread is prohibited.

A certification from the supplier shall be provided to the Town during the shop drawing review process ensuring all T-bolts, bolts, nuts, washers, and all thread rods meet the A-588 requirements and shall state the project name and contractor in the certification letter. If stainless steel is to be used, no certification letter is required.

C. Restrained joints may also be Lok-Ring, as manufactured by American Cast Iron Pipe Company, or an approved equal.

D. Restrained joint designs, which require wedges and/or shims to be driven into the joints in order to disassemble the pipe shall not be allowed.

2.15 TAPPING SLEEVES AND VALVES

A. Tapping valves shall meet the requirements of AWWA C509/C515 with ductile iron body and shall be rated for a pressure of 250 psi. The valves shall be flanged with alignment ring by mechanical joint with a nonrising stainless steel stem. All bolts, nuts and washers shall be stainless steel. Manufacturer shall use Never-Seez or equivalent during assembly of bolt and nut sets to prevent galling of similar metals. Stem seals shall be provided and shall be of the O-ring type, two above and one below the valve's thrust collar. Valve shall be designed for vertical burial and shall open counterclockwise. Operating nut shall be AWWA standard 2-inch square for valves 2 inches and up. Valves shall have an unobstructed waterway equal to or greater than the full nominal diameter of the valve to accommodate full size shell cutter. Gaskets shall cover the entire area of the flange surface and be 1/8-inch minimal thickness of red rubber. The wedge shall be ductile iron fully encapsulated with EPDM rubber. All bolts, nuts and washers between the sleeve and valve shall be stainless steel.

B. Tapping sleeves and saddles shall seal to the pipe by the use of a confined "O" ring gasket, and shall be able to withstand a pressure test of 180 psi for water lines or 150 psi for sewer force mains for one hour with no leakage in accordance with AWWA C110. A stainless steel 3/4-inch NPT test plug shall be provided for pressure testing. All bolts joining the two halves shall be stainless steel and shall be included with the sleeve or saddle. Sleeves and saddles shall be fusion applied epoxy coated, or be made of 18-8 Type 304 stainless steel. Saddle straps shall be 18-8 Type 304 stainless steel.

2.16 TRACER WIRE TEST STATION BOXES

Tracer wire test station boxes shall be provided at plug valves, butterfly valves, blowoff valves, gate valves, fire hydrants and backflow preventers as indicated in these Standards. Tracer wire test station boxes for yard service shall be 2 ½ inch diameter, 15 inch length, ABS plastic with a cast iron rim and lid, P200NFGT as manufactured by Bingham & Taylor, or equal approved by Town. Where test boxes will be in streets or subject to vehicular traffic, use B&T Model P525RD, 5 ¼ -inch diameter or equal, centered in a separate concrete pad similar to a valve box pad.

PART 3 EXECUTION

3.01 INSTALLATION

A. All valves and appurtenances shall be installed in the location shown in the Drawings, true to alignment and rigidly supported. Any damage occurring to the above items before they are installed shall be repaired to the satisfaction of the Town.

B. After installation, all valves and appurtenances shall be tested at least two hours at the working pressure corresponding to the class of pipe, unless a different test pressure is specified. If any joint proves to be defective, it shall be repaired to the satisfaction of the Town.

C. Install all floor boxes, brackets, extension rods, guides, the various types of operators and appurtenances as shown on the Drawings that are in masonry floors or walls, and install concrete inserts for hangers and supports as soon as forms are erected and before concrete is poured. Before setting these items, the Contractor shall check all plans and figures which have a direct bearing on their location and they shall be responsible for the proper location of these valves and appurtenances during the construction of the structures.

D. Pipe for use with flexible couplings shall have plain ends as specified in the respective pipe sections.

E. Flanged joints and mechanical joints shall be made with high strength, low alloy Corten or 316 stainless steel bolts, nuts and washers.

F. Prior to assembly of split couplings, the grooves as well as other parts shall be thoroughly cleaned. The ends of the pipes and outside of the gaskets shall be moderately coated with petroleum jelly, cup grease, soft soap or graphite paste, and the gasket shall be slipped over one pipe end. After the other pipe has been brought to the correct position, the gasket shall be centered properly over the pipe ends with the lips against the pipes. The housing sections then shall be placed. After the bolts have been inserted, the nuts shall be tightened until the housing sections are firmly in contact, metal-to-metal, without excessive bolt tension.

G. Prior to the installation of sleeve-type couplings, the pipe ends shall be cleaned thoroughly for a distance of 8". Soapy water may be used as a gasket lubricant. A follower and gasket, in that order, shall be slipped over each pipe to a distance of about 6" from the end.

H. Valve boxes with concrete bases shall be installed as shown on the Drawings. Mechanical joints shall be made in the standard manner. Valve stems shall be vertical in all cases. Place cast iron box over each stem with base bearing on compacted fill and the top flush with final grade. Boxes shall have sufficient bracing to maintain alignment during backfilling. Knobs on cover shall be parallel to pipe. Remove any sand or undesirable fill from valve box.

3.02 HYDRANTS

A. Hydrants shall be set at the locations designated by the Town and/or as shown on the Drawings and shall be bedded on a firm foundation. A drainage pit on crushed stone as shown on the Drawings shall be filled with gravel or crushed stone and satisfactorily compacted. During backfilling, additional gravel or crushed stone shall be brought up around and 6" over the drain port. Each hydrant shall be set in true vertical alignment and shall be properly braced. Concrete thrust blocks shall be placed between the back of the hydrant inlet and undisturbed soil at the end of the trench. Minimum bearing area shall be as shown on the plans. Felt paper shall be placed around the hydrant elbow prior to placing concrete. CARE MUST BE TAKEN TO INSURE THAT CONCRETE DOES NOT PLUG THE DRAIN PORTS. Concrete used for backing shall be as specified herein.

B. When installations are made under pressure, the flow of water through the existing main shall be maintained at all times. The diameter of the tap shall be a minimum of 2" less than the inside diameter of the branch line.

C. The entire operation shall be conducted by workmen thoroughly experienced in the installation of tapping sleeves and valves, and under the supervision of qualified personnel furnished by the manufacturer. The tapping machine shall be furnished by the Contractor if tap is larger than 12" in diameter.

D. The Contractor shall determine the locations of the existing main to be tapped to confirm the fact that the proposed position for the tapping sleeve will be satisfactory and no interference will be encountered such as the occurrence of existing utilities or of a joint or fitting at the location proposed for the connection. No tap will be made closer than 30" from a pipe joint.

E. Tapping valves shall be set in vertical position and be supplied with a 2" square operating nut for valves 2" and larger. The valve shall be provided with an oversized seat to permit the use of full-sized cutters.

F. Tapping sleeves and valves with boxes shall be set vertically or horizontally as indicated on the Drawings and shall be centered squarely on the main to be tapped. Adequate support shall be provided under the sleeve and valve during the tapping operation. Sleeves shall be no closer than 30" from water main joints. Thrust blocks shall be provided behind all tapping sleeves. Proper tamping of supporting earth around and under the valve and sleeve is mandatory. After completing the tap, the valve shall be flushed to ensure that the valve seat is clean.

3.03 SHOP PAINTING

A. Ferrous surfaces of valves and appurtenances shall receive a coating of rust-inhibitive primer. All pipe connection openings shall be capped to prevent the entry of foreign matter prior to installation.

3.04 FIELD PAINTING

A. All metal valves and appurtenances specified herein and exposed to view shall be painted safety blue.

3.05 INSPECTION AND TESTING

A. All pipelines shall remain undisturbed for 24 hours to develop complete strength at all joints. All pipelines shall be subjected to a hydrostatic pressure and leak testing as required by the Town and Engineer of Record. Prior to testing, the pipe lines shall be supported in a manner approved by the Town to prevent movement during tests.

B. All leaks shall be repaired and lines retested as approved by the Town.

END OF SECTION

MANATEE COUNTY SPECIAL PROVISIONS

MANATEE COUNTY SPECIAL PROVISIONS.

1. GENERAL

The Special Provisions amend, enhance or otherwise revise the FDOT Standard Specifications and Manatee County Public Works Technical Specifications to be used for this Project.

2. CONTRACT PLANS

The Contract Plans include the following plan sets:

a. Roadway Plans

b. Existing Conditions Landscape Plans

c. Landscape Restoration Plans

3. STANDARD AND TECHNICAL SPECIFICATIONS

The Standard Specifications to be used for this work shall be Division II and III of the Florida Department of Transportation (FDOT) *Standard Specifications for Road and Bridge Construction*, latest edition at time of bid, and all Supplemental Specifications thereto, hereinafter referred to as the *Standard Specifications*, for roadway construction, except as amended, enhanced or revised under this Contract per the Special Provisions, or as noted on the construction plans meeting the Manatee County Highway, Traffic & Stormwater Standards, latest edition at time of bid.

The Contractor's work shall follow the Manatee County Public Works Standards, Part 1, Utilities Standards Manual, and Technical Specifications, latest editions at time of bid, hereinafter referred to as the *Technical Specifications*, for all utility work. All items and/or materials furnished and installed shall conform to the Manatee County Utilities Approved Products List, latest edition, and supersede any items listed within the Technical Specifications for utility work. All items listed in the submittal requirements under each section shall be required to be submitted for review and acceptance by the Engineer of Record and the Town, unless otherwise specified.

The Standard Specifications and Technical Specifications cover the usual construction requirements for work specified by the Town of Longboat Key Public Works Department; however, in the event it is determined that the specific work to be done is of such a nature that the method of construction, type and/or kind of material is not defined by the Standard Specifications or Technical Specifications, such work shall be performed in accordance with the Special Provisions.

The apparent silence of the Standard Specifications, Technical Specifications or Special Provisions as to any detail or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished shall be regarded as meaning that

only the best general practice is to prevail and that only material and workmanship of the best quality is to be used. Interpretation of these specifications shall be made upon that basis.

4. GOVERNANCE ORDER

In any instance where there is an apparent conflict between the language of the Standard Specifications, Technical Specifications, Construction Plans and Special Provisions, the Special Provisions shall govern, followed by the Technical Specifications, Construction Plans and then the Standard Specifications.

5. MEASUREMENT AND PAYMENT

a. All work completed under the terms of this contract shall be measured according to United States Standard Measures.

b. All measurements shall be taken horizontally or vertically unless specifically provided otherwise.

c. No payment will be made for construction over a greater area than authorized, nor for material moved from outside of stakes and data shown on the plans, except when such work is performed upon instructions of the Engineer.

d. Whenever any change, or combination of changes, on the plans results in an increase or decrease in the original contract quantities, and the work added or decreased/eliminated is of the same general character as that called for on the plans, the Contractor shall accept payment in full at the original contract unit prices for the actual quantity of work performed, with no allowance for any loss of anticipated profits.

e. It is the Contractor's responsibility to perform a detailed quantity take-off from the plans to determine actual quantities for ordering and delivery purposes. The Town will not be responsible for quantities ordered in excess of those installed and constructed. The Contractor should be aware that some of the pay items may have contingency quantities. Payment shall be made only for final in-place quantities.

   No payment shall be made for contingency quantities or additional work unless otherwise directed and approved in writing by the Engineer.

f. Bid Schedule Completion - the blank spaces in the bid schedule shall be filled in correctly where each and every item for which a description is given, as the bidder must state the unit prices for which he proposes to do each part of the work contemplated, and the total price for all the parts included in any or all of the combinations of the work. In case of a discrepancy, the written words for "unit price", where stated, shall be considered as being the unit price. If the bid schedule does not use the written words for the unit

price, then the numerically correct "total price", shall be considered as being the total price.

6. NO SEPARATE PAYMENT FOR SPECIAL PROVISIONS

No separate payment will be made for the Contractor to execute Special Provisions. All expenses borne by the Contractor shall be included in the individual unit prices for the particular pay item or as specified herein.

7. CONTRACT CONTINGENCY

The discretionary work (Contingency) pay item shall cover the cost for various contingencies and contract amendments authorized by the Town. Any amount of extra work and/or alterations to the proposed work charged to the allowance shall be fully documented and authorized by the Project Manager before the start of the work. No payment shall be made for work completed without written authorization from the Town.

8. NOTICE AND SERVICE THEREOF

All notices, which shall include demands, instructions, requests, approvals, and claims shall be in writing. Any notice to or demand upon the Contractor shall be sufficiently given if delivered to the office of the Contractor specified in the bid (or to such other office as the Contractor may, from time to time, designate to the Town in writing), or if deposited in the United States mail in a sealed, postage prepaid envelope, or delivered, with charges prepaid, sent via fax transmission, or to any telegraph company for transmission, in each case addressed to such office.

All notices required to be hand delivered to the Town, unless otherwise specified in writing to the Contractor, shall be delivered to the Town of Longboat Key Project Manager (Project Manager), and any notice to or demand upon the Town shall be sufficiently given as delivered to the office of the Project Manager, or if deposited in the United States mail in a sealed, postage prepaid envelope, sent via fax transmission, or delivered with charges prepaid to any telegraph company for transmission, in each case addressed to said Project Manager or to such other representative of the Town or to such other address as the Town may subsequently specify in writing to the Contractor for such purposes.

Any such notice or demand shall be deemed to have been given or made as of the time of actual delivery or (in the case of mailing) when the same should have been received in due course of post or in the case of a fax transmission or telegram at the time of actual receipt, as the case may be.

9. CONTRACTOR'S SUPERVISION

a. Execution of Work: The Contractor shall give the work the constant attention necessary to assure the scheduled progress. He shall cooperate fully with the Project Manager and with other Contractors at work in the vicinity.

b. Contractor's Superintendent: The Contractor shall at all times have on the work site as his agent, a competent superintendent capable of thoroughly interpreting the plans and specifications and thoroughly experienced in the type of work being performed, who shall receive the instructions from the Project Manager or his authorized representatives. The superintendent shall have full authority to execute the orders or directions of the Project Manager and to supply promptly any materials, tools, equipment, labor and incidentals that may be required. Such superintendence shall be furnished regardless of the amount of work sublet.

c. The Contractor's superintendent shall speak and understand English, and at least one responsible person who speaks and understands English shall be on the project during all working hours, and wherever work is being done by the Contractor.

d. Supervision for Emergencies: The Contractor shall have a responsible person available at or reasonably near the work site on a 24-hour basis, 7 days a week, in order that he may be contacted for emergencies and in cases where immediate action must be taken to maintain traffic or to handle any other problem that may arise. The Contractor's responsible person for supervision for emergencies shall speak and understand English. The Contractor shall submit, by certified mail, phone numbers and names of personnel designated to be contacted in cases of emergencies along with a description of the project location to the Florida Highway Patrol and all other local law enforcement agencies.

10. LIST OF EMERGENCY CONTACT NUMBERS & UTILITY SERVICE MAINTENANCE

The Contractor shall obtain and maintain a list of emergency contact phone numbers for all utilities during the course of the project. The Contractor shall maintain utility service during the project except for interruptions authorized by the utility owner. If interruptions are required, the Contractor shall notify the Project Manager 48 hours in advance.

11. SHOP DRAWINGS

The Contractor shall submit all working drawings and shop drawings with descriptive specifications and engineering calculations necessary for the successful completion of the Project in pdf format for review and approval by the Engineer of Record (EOR). Each shop drawing shall have a cover sheet and reference the submittal number, following the sample format provided in the Special Provisions.

For items that do not meet current FDOT specifications, any working drawings shall be certified by a Florida licensed Professional Engineer and state that the design is sufficient for the successful completion of the Work. Shop drawings do not require the signature, date and seal of a professional engineer.

12. SHOP DRAWING SUBMITTAL COVER SHEET

The Shop Drawing Submittal cover sheet shall contain the following information:

Date:___/___/_____ Submittal No. _____

(IFB) # [Insert IFB Number]
Project Name: [Insert Full Project Name]
Project File No.: [Insert Project Number]
Specification Title Number: [Insert Section No.]
Specification No.: Part *[Insert Part No.]*, *[Insert Item No.]*
Page(s): *[Insert Page No.]*
Submittal Description: [Insert Title, Description of Submittal and Use]

SHOP DRAWING REVIEW

RESPONSE NOT REQUIRED	RESPONSE REQUIRED
☐ NO EXCEPTIONS TAKEN ☐ NOTE MARKINGS	☐ NOTE MARKINGS, CONFIRM ☐ NOTE MARKINGS, RESUBMIT ☐ REJECTED, RESUBMIT

Engineer's review is for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the project drawings and specifications, nor departure therefrom. The Contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly, and for performing his work in a safe manner.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

By:_____ Date:_____

Your Company Logo and/or information
[Contractor's Name]
[Contractor's Title]
[Company Name]
[Company Address]
[Office Number]
[Fax Number]
[email address]
[Approval Signature:_____
[Approval Date:___/___/_____

13. MATERIALS

a. **Delivery Tickets**: A copy of all delivery tickets for materials used on the project, regardless of the basis of payment shall be provided to the Town upon request.

b. **Job Mix Formula for Asphaltic Concrete**: Job mix formulas for asphaltic concrete, of the type specified, shall be submitted at least 14 days before plant operations begin. The submitted formula should be derived from or approved by the laboratory approved by the Town and/or its agents. Costs for such job mix formulation will be paid by the Contractor directly to the assigned laboratory.

c. **Job Mix Formula for Portland Cement Concrete**: Job mix design formulas for all Portland Cement Concrete, of the type specified, shall be submitted at least 14 days prior to use on the project. The submitted formulas shall be derived from or approved by the Town and/or its agents. All concrete mix designs shall meet FDOT Concrete Class mix guidelines, except as follows: when approved, in writing by the Engineer, an Alternate Class I Concrete mix design formula, for concrete curb and gutter to be placed by automated curb machines, may show, as a substitution for #57 aggregate, an amount of #89 aggregate not to exceed 33 percent, by weight, of the #57 aggregate.

14. REQUIREMENTS FOR CONTROL OF THE WORK

Prior to the start of the Work described in this contract, a pre-construction conference may be held by the Project Manager to be attended by the Contractor, Town staff, Engineer, other consultants, representatives of the various utilities, and others as required, for the purpose of establishing a schedule of operations and to coordinate the work to be done under this contract with all related work to be done by others within the limits of the project.
All items of work in this contract shall be coordinated so that progress of each related item will be continuous from week to week. The progress of the work will be reviewed by the Project Manager at the end of each week, and if the progress of any item of work during that week is found to be unsatisfactory, the Contractor shall be required to adjust the rate of progress on that item or other items as directed by the Project Manager without additional compensation. The Contractor will continuously control the work until completed.

15. PROJECT SCHEDULE

The Contractor shall submit a preliminary construction schedule with the bid. The preliminary schedule shall show major work items and any phases the Contractor proposes. The schedule will show duration of work items and phases.

The Contractor shall submit a detailed Critical Path Method (CPM) construction schedule within 15 days of the notification of award for the Project Manager to review. The submittal shall meet the following requirements:

a. The schedule shall be submitted in PDF format sized to be printed on 11-inch by 17-inch paper.

b. The time scale (horizontal) shall be in weeks. The activities shall be listed on the left-hand side (vertical).

c. Activities shall show most Work activities. The listing from top to bottom shall be in a logical sequence of how the Work will be accomplished. Space shall be provided between activities or within bars to allow for marking of actual progress.

A copy of the CPM schedule, clearly showing progress made, shall be submitted with each monthly pay application. Review or acceptance will neither impose on the Town responsibility for the progress or scheduling of the Work, nor relieve the Contractor from full responsibilities. The Contractor shall provide a revised schedule if, at any time, the Town considers the completion date to be in jeopardy because of "activities behind schedule". An activity that cannot be completed by its original or latest completion date shall be deemed to be behind schedule. The revised schedule is designed to show how the Contractor intends to accomplish the Work to meet the contractual completion date. The form and method employed by the Contractor shall be the same as for the original schedule. The cost to prepare and revise the schedule is considered incidental to the Work.

16. SITE INVESTIGATION

The Contractor acknowledges that he has satisfied himself as to the nature and location of the work; the general and local conditions, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials; availability of labor, water, electric power, roads; and uncertainties of weather, water stages, tides or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during prosecution of the work.

The Contractor further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered, insofar as this information presented by the drawings and Specifications made a part of this contract.

The Contractor shall carefully review and adhere to conditions and recommendations made in the project geotechnical report.

Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work.

The Town assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Town. The Town also assumes no responsibility for any understanding or representations made by its officers or agents during or prior to the execution of this Contract, unless (1) such understanding or interpretations are made in writing by the Engineer or are expressly stated in the Contract and (2) the Contract expressly provides that the responsibility therefore is assumed by the Town.

17. UNDERGROUND UTILITY LOCATIONS

The Contractor shall field verify existing underground utility locations by means of subsurface locating or other approved method. All existing utilities shall remain unless otherwise noted on the plans. The Contractor shall locate all existing utilities to remain at potential conflict locations prior to construction activities and before ordering any proposed structures. The Contractor shall contact and coordinate with "Sunshine State One Call 811" as well as the individual utilities prior to and during construction for utility locations, relocation and assistance while installing in potential conflict areas. All utility coordination and relocations shall be factored into the Contractor's construction schedule at no additional cost to the Town.

The cost of all labor, materials and incidentals required for the performance of any survey and utility location work shall be included as part of the lump sum quantity under the pay item for Mobilization. A Florida Registered Professional Surveyor and Mapper shall perform all survey work.

18. UTILITY COORDINATION

The Contractor shall be responsible for coordination of the work with all affected utility owners. The Contractor must take into consideration the required utility adjustments and relocations in development of his schedule for completing the work including construction of temporary work to allow phased construction of the permanent facilities.

The Contractor shall coordinate and schedule utility relocations and/or adjustments with the utility owners within or adjacent to the project limits to avoid delays. The work includes remobilization if required after utility relocation is complete. The intent is to coordinate utility construction activities, so the project construction continues and is not stopped or delayed at any time due to utility work being done. Once Notice to Proceed is issued, the Contractor shall contact the affected utilities to discuss the Contractor's anticipated means and methods so temporary and permanent relocation plans can be implemented as needed to meet OSHA safety requirements. Any work in the vicinity of the electric lines shall be coordinated with the power company for the setback requirements.

The Contractor shall hold a utility owner's meeting every two weeks / or alternate time schedule agreed to by the Town. The meeting shall review current and upcoming activities for the project. Written meeting minutes will be prepared by the Contractor and distributed to the meeting participants within 3 calendar days of the meeting.

19. UTILITY CONFLICTS

It shall be the Contractor's responsibility to avoid conflicts with other utilities. The Town will not be responsible for additional costs incurred by the Contractor for incorrect installations, relocations and breaks due to service conflicts. The Contractor's equipment shall maintain a

minimum clearance distance to the power line following the latest OSHA and FDOT Roadway Design Bulletin.

20. CONTRACTOR TO EXECUTE NPDES "NOTICE OF INTENT"

Prior to proceeding with construction, the Contractor shall prepare and submit a "Notice of Intent to Use Generic Permit for Stormwater Discharge from Construction Activities that Disturb One or More Acres of Land" to the Florida Department of Environmental Protection (FDEP). The Contractor shall monitor the site at all times and take appropriate action to prevent erosion including the use of BMPs. No pumping of ground or surface water shall be performed without approval from the Water Management District.

Following completion of construction, Contractor shall prepare and submit a "Notice of Termination of Generic Permit Coverage" to FDEP. Payment for this item shall be included as part of the lump sum quantity under the pay item for Mobilization.

21. COMPLIANCE WITH THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT (SWFWMD) STORMWATER MANAGEMENT AND DISCHARGE PERMIT REQUIREMENTS AND/OR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) DREDGE AND FILL PERMIT REQUIREMENTS

Southwest Florida Water Management District Stormwater Management and Discharge permits or exemptions, if any, and/or a Department of Environmental Protection Dredge and Fill permit, if any, required for this project have been obtained by the Town. The Contractor shall comply with the stipulations of the Permits or Exemptions as stated herein.

The Contractor shall allow periodic inspection of the work by authorized representatives of the Florida Department of Environmental Protection, the Southwest Florida Water Management District, as well as other duly authorized law enforcement officers of the State.

22. PROJECT IDENTIFICATION SIGNS

The Contractor shall be responsible for furnishing, installing and maintaining project identification signs and for the removal upon completion of the construction. The sign shall be installed prior to the commencement of work. Sign locations will be coordinated with the Town Inspector to ensure maximum public visibility and to avoid conflicts and unsafe conditions in accordance with Manatee County Land Development Code, Section 1002 - Visibility Triangles. Signs shall be posted at each end of the project or in the direction of visibility to the most traffic. The Contractor shall relocate the sign as directed by the Owner for the duration of the Project. The signs shall be a minimum of 8 feet wide and 4 feet high mounted on 4-inch by 4-inch pressure treated lumber. The signs shall be constructed of high density ¾-inch exterior plywood, or equivalent with approval from the Town, without waves or buckles, mounted and braced with pressure treated lumber as necessary and maintained in a presentable condition for the duration

of the project. Hardware shall be galvanized. The surface of the sign shall be of either an overlay or laminate mounted on the plywood.

The information to be provided on the signs shall include and be formatted per the following project identification sign template. A digital copy of the template will be provided to the Contractor by the Town. The contractor shall submit the final template as a shop drawing. Payment for installing and maintaining the project identification signs shall be included as part of the lump sum quantity under the pay item for Mobilization. The sign will remain the property of the Town upon completion of the Project unless otherwise directed.

NORTON STREET ROADWAY AND DRAINAGE IMPROVEMENTS

Town of Longboat Key Commissioners

GARY COFFIN,	DISTRICT 1		PENNY GOLD,	DISTRICT 2
MAYOR KEN SCHNEIER,	DISTRICT 3		DEBRA WILLIAMS,	DISTRICT 4
SARAH KARON,	DISTRICT 5		B.J. BISHOP,	AT-LARGE
VICE MAYOR MIKE HAYCOCK,	AT-LARGE			

CONSTRUCTION COST $ (Enter Amount)		PRIME CONTRACTOR (Enter Contractor Name)

23. CONSTRUCTION PHOTOGRAPHY

a. **General:** The Contractor shall employ a competent photographer to take pre-construction and construction progress record photographs and perform video recording, in digital format, including providing all labor, materials, equipment and incidentals necessary to obtain photographs and/or video recordings of all areas specified in the Contract specifications.

b. **Qualifications:** A competent camera operator who is fully experienced and qualified with the specified equipment shall do all photography. For the video recording, the audio portion should be done by a person qualified and knowledgeable in the specifics of the Contract, who shall speak with clarity and diction so as to be easily understood.

c. **Project Photos for Construction Progress:** Provide construction progress photos of the entire work area during construction for the purpose of creating records of completed work. Photos should be spaced at approximately 100-foot intervals or as needed to properly document the completed work. Digital photographs shall be provided to the Town with the monthly pay applications.

   The Contractor shall pay all costs associated with the required photographs. Any parties requiring additional photography will pay the photographer directly.

   All project photos shall be taken from locations to adequately illustrate conditions prior to construction, or conditions of construction and state of progress. The Contractor shall consult with the Town's Representative at each period of photography for instructions concerning views required.

   The Contractor shall deliver photos in conformance with the above requirements to the Town's Representative. No construction shall begin until pre-construction photos and video recordings are completed and submitted to the Town's Representative.

d. **Record Photos:** The Contractor shall require that photographer maintain digital copies of photos for a period of three years from date of Substantial Completion of the Project. Photographer shall agree to furnish prints to the Town's Representative at commercial rates applicable at the time of purchase. Photographer shall also agree to participate as required in any litigation requiring the photographer as expert witness.

e. **Video Recording for Pre-Construction:** Video recording shall be used in lieu of photos for pre-construction. It shall be of sufficient quality to fully illustrate details of conditions and construction, including special features.

Video recording shall be accomplished along all routes that are scheduled for construction. The video recording shall, when viewed, depict an image with ¼ of the image being the roadway fronting of property and ¾ of the image being of the property. The video recording shall be done so as to show the roadway and property in an oblique view (30 degrees).
A complete view, in sufficient detail, of all driveways, with audio description of the exact location shall be provided.

The Engineering plans shall be used as a reference for stationing in the audio portion of the video recording for easy location identifications. If visible, house numbers shall be mentioned on the audio.

A complete set of video recordings shall be submitted for the permanent and exclusive use of the Town prior to the start of any construction on the project.
All video recordings shall contain the name of the project, the date and time of the video recording the name and address of the photographer and any other identifying information required.

Payment for this item shall be included as part of the lump sum quantity under the pay item for Mobilization.

24. HURRICANE PREPAREDNESS

Within 30 days of the Contract award, the Contractor shall submit to the Town for approval a Hurricane Preparedness Plan. The plan should outline the necessary measures which the Contractor proposes to perform, at no additional cost to the Town, to prepare and secure the project site prior to a hurricane event and to recover the project site after a hurricane event.
In the event of inclement weather, or whenever the Town shall direct, the contractor shall ensure the work and materials shall carefully be secured and protected against damage or injury from the weather. If, in the opinion of the Town, any portion of work or materials is damaged due to the failure on the part of the contractor or subcontractors to protect the work, such work and materials shall be removed and replaced at the expense of the Contractor.

25. CONSTRUCTION STAKING

All construction staking and survey work shall be completed by a Florida Registered Professional Surveyor and Mapper. The right-of-way shall be staked prior to Clearing and Grubbing activities and shall include all easements (TCE or permanent) and maintained through the duration of construction. Right-of- way stakes shall be placed at all right-of-way corners and a maximum of 200 feet between corners, and shall be visible for Contractor personnel, utility companies, and Town representatives.

26. LABORATORY TESTING

Testing for the Work shall be performed at no expense to the Town. The testing laboratory shall be approved by the Town.

The samples and tests used for determining the quality and acceptability of the materials and workmanship, which have been or are to be incorporated in the Work, shall conform to the requirements of the State of Florida Department of Transportation Materials Sampling, Testing and Reporting Guide, latest edition.
Testing shall also be in accordance with the applicable portions of the *FDOT Standard Specifications* and the Technical Specifications.

27. COOPERATION WITH OTHERS

The Contractor shall cooperate with the owners of any underground or overhead utility lines in their removal and rearrangement operations, in order that these operations may progress in a reasonable manner and that service rendered by these parties will not be interrupted. The Town shall not be responsible for costs associated with delays, disruptions and remobilizations attributed to utility agency scheduling.

The Contractor shall coordinate with owners of driveways impacted by construction to maintain access as required by the property owner. Contractor shall make every effort not to disrupt business access during business operation hours unless otherwise approved by the business owner or the Town in advance of the work being performed.

The Contractor shall coordinate impacts with property owners abutting the project area and shall make every effort to expedite the work to minimize the duration of the impacts. Contractor is responsible for daily cleanup, access, and reimbursement or restoration of any damages done to the property by the Contractor and their subcontractors to the satisfaction of the property owner. It is important to keep pre- and post-construction photos of the work areas.

28. USE OF PRIVATE PROPERTY

All construction activities required to complete this project in accordance with the Contract Documents shall be confined to public right-of-way, easements of record, access agreements or temporary construction easements, unless the Contractor makes specific arrangements with private property owners for his use of their property. Written authorization from the granting property owner shall be placed on file with the Project Manager prior to utilization of said private properties. The Town assumes no responsibility for damage to private property in such instances. The Contractor is responsible for protection of private property abutting all work areas on this project. Adequate equipment storage and material storage shall also be accomplished outside the Town's right-of-way. Pipe and other materials shall not be strung out along the right-of-way but will be delivered in quantities adequate for one day's installation.

29. MAINTENANCE OF TRAFFIC

The Contractor shall provide continuous access to local businesses during operational hours, or as acceptable to the business owners, and shall coordinate with residents on access to their properties. Lane closures with major disruption or delays must include alternating traffic and are only permitted under special approval of the Town, and during non-rush hour traffic times (9:00 AM - 2:00 PM or 8:00 PM – 6:00 AM). School drop-off and pick-up shall not be impacted. No work on weekends or legal holidays without prior written approval of the Town Project Manager, except emergency work, will be allowed. Road closures are not allowed between the hours of 7:00 AM to 7:00 PM per County Ordinance unless prior written approval is provided by the Town. Temporary by-pass lanes may be constructed at all tie-in locations during the MOT phasing. The payment for temporary by-pass lanes shall be included in Maintenance of Traffic

pay item, as previously described. Business Entrance signs per FDOT Standard Plans Index 102-600 shall be placed at all business entrance points and maintained during all phases of construction. Payment for these items shall be included under the pay item for Maintenance of Traffic.

Temporary pavement marking shall be paid under the Maintenance of Traffic pay item, in accordance with FDOT Standard Specifications Section 102.

If there are any impacts to existing traffic lanes, the Contractor shall prepare and submit to the Town for approval, a Maintenance of Traffic plan to obtain a Right-of-Way Utilization Permit. This Maintenance of Traffic plan shall either be provided in the construction plans or be prepared in accordance with FDOT Standard Specifications Section 102-4. Lane and road closures require approval from the Public Works Director having ultimate approval authority.

30. PEDESTRIAN ACCESS TO REMAIN OPEN

Existing pedestrian access shall be maintained throughout construction unless approved by the Engineer and Town.

Temporary sidewalk shall be constructed as shown in the plans or as required to maintain pedestrian movement. Payment for these items shall be included under the lump sum pay item for Maintenance of Traffic.

If the Contractor, in the process of performing his contract operations, breaks any of the existing sidewalk that is to remain in place, replacement of this sidewalk will be at the Contractor's expense.

31. WORKSITE TRAFFIC SUPERVISOR

a. The Contractor shall have a Worksite Traffic Supervisor who will be responsible for initiating, installing and maintaining all traffic control devices as described in Section 102 of the FDOT Standard Specifications and in the Plans. The Worksite Traffic Supervisor shall have at least one year of experience directly related to work site traffic control in a supervisory or responsible capacity and shall be certified by the American Traffic Safety Services Association Worksite Traffic Supervisor Certification Program or an equal approved by FDOT. Approved alternate Worksite Traffic Supervisors may be used when necessary.

b. The Worksite Traffic Supervisor shall be available on a 24-hour per day basis and shall review the project on a day-to-day basis as well as being involved in all changes to traffic control. The Worksite Traffic Supervisor shall have access to all equipment and materials needed to maintain traffic control and handle traffic related situations. The Worksite Traffic Supervisor shall ensure that routine deficiencies are corrected within a 24-hour period.

c. The Worksite Traffic Supervisor shall be available on the site within 45 minutes after notification of an emergency situation, prepared to positively respond to repair the work zone traffic control or to provide alternate traffic arrangements.

d. Failure of the Worksite Traffic Supervisor to comply with the provisions of the Sub-article may be grounds for decertification or removal from the project or both. Failure to maintain a designated Worksite Traffic Supervisor or failure to comply with these provisions will result in temporary suspension of all activities except traffic and erosion control and such other activities deemed to be necessary for project maintenance.

e. Payment for Worksite Traffic Supervisor shall be included under the pay item for Maintenance of Traffic.

32. MAINTENANCE OF STORM DRAINAGE SYSTEM

The Contractor shall be responsible to maintain the operation of existing stormwater facilities, or, when existing stormwater facilities are removed, to provide, as necessary, temporary alternate forms of equivalent stormwater conveyance and storage capacity to adequately prevent upstream flooding in excess of existing conditions. This responsibility shall include the installation of temporary connections, bypass pumping, or other temporary means necessary until the new drainage system is fully operational. Payment for these items shall be included under the applicable pay item for new storm systems.

33. DEWATERING, SHEETING AND BRACING

The Contractor shall determine the need of dewatering, sheeting and bracing to facilitate the construction, conforming to current SWFWMD/FDEP rule and OSHA safety criteria. Payment for dewatering, sheeting, and bracing shall be incidental to the applicable manholes, structures, and pipe pay items.

At least 10 days prior to the commencement of any dewatering activity, the Contractor shall obtain the approval from SWFMWD, or FDEP (if water needs to be discharged offsite into the state surface water), and submit the permit with a detailed description of the proposed dewatering system to the Project Manager. The dewatering plan shall include design computations, layout, type, and spacing of dewatering devices, number and size of pumps and other equipment, with a description of the installation and operating procedures.

34. EARTHWORK

Quantities included in the contract plans and bid form represent estimated in-place quantities and do not include shrinkage and expansion factors unless otherwise specified. Payment for Earthwork under pay item 0120 1 - Regular Excavation and pay item 0120 6 - Embankment shall be made based on average end area method calculations or by other methods as approved by the Engineer and Town. Contractor shall provide supporting survey data (before and after cross-sections) and calculations for payment purposes.

The ownership of excavated materials shall be by the Town unless otherwise specified in the contract documents.

35. DUST CONTROL

The Contractor shall always control dust resulting from construction operations. The locations and frequencies of applications shall be as directed by the Engineer. Contractor shall provide dust control measures using water sources as needed and maintaining dust control throughout duration of the project. Payment for Dust Control shall be made under Maintenance of Traffic unless separate pay item for Dust Control is specified.

36. SOIL EROSION AND SILTATION

The Contractor shall plan and control the Work to minimize all soil erosion and siltation. At the pre-construction meeting, the Contractor shall present his proposed plan and schedule, which shall specifically indicate the proposed usage of temporary erosion control features if they vary from the plans.

37. THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS

The application of thermoplastic traffic stripes and markings on newly constructed final surface courses shall be in accordance with current FDOT specifications. The Engineer may require longer asphalt cure periods, if specified in the construction plans. Provide temporary pavement markings during the interim period if the road is open to traffic. The price of temporary pavement marking shall be included in the Maintenance of Traffic.

38. CRUSHED CONCRETE BASE

Crushed Concrete Base shall follow the most current FDOT Standard Specifications, Section 911. The layer coefficient of 0.18 with Limerock Bearing Ratio (LBR) minimum 150 is allowed to calculate the base thickness if from an FDOT approved source and meeting FDOT specifications.

a. **Material source inspection**: Prior to acceptance of base product, a representative of the Town may visit the Producer's location and obtain a sample of the proposed base for the specified project at the discretion of the Town. In addition to sampling, the pile will be visually inspected for deleterious materials, substantial segregation, or any other undesirable characteristics. The pile shall have a traceable identification by pile number or lot number and an accurate quality assessment.

b. **Regarding source approval**: FDOT approved source, allocated lot sufficient to serve project's needs, delivery tickets stating FDOT approved source, project name, FDOT preapproved lot or pile number.

c. **Import and placement of base product**: During import of base product, a Town inspector or duly designated representative of the Town will be onsite monitoring incoming loads, making visual assessments of the product and checking load tickets for verification of materials.

After spreading out, prior to compacting, samples of the base product will be obtained by the Contractor's approved testing lab, every 500 LF, or as directed by the Town, staggering right, left, center of the roadway for Limerock Bearing Ratio, gradation and deleterious material testing.

a. **Deleterious materials**: Deleterious material content in addition to the FDOT Specifications 2020 (July), Section 911, should state that no construction debris such as Styrofoam insulation, telephone wire, lumber, shingles, aluminum window or door frames, etc., or household trash ie: bottles, cans, paper goods etc. is acceptable.

b. **Rejection of materials**: Material not meeting above requirements will subject to rejection and be removed from the project site. Any three (3) concurrent rejections will require immediate shut down of imported material and require review and remedies prior to restart.

c. **Compaction of material**: In place material shall achieve 98% of AASHTO T-180 compaction.

39. TEMPORARY PAVEMENT

Temporary pavement shall consist of a minimum of Optional Base Group 4 and ¾-inch of Type S-III structural course over a firm, unyielding, well-compacted subgrade, or as specified in the contract plans, if greater. If the temporary pavement is not specified in the contract plans, the proposed pavement section shall be submitted to the Town for review. The Contractor shall immediately repair all potholes that develop within the project limits and shall maintain a supply of cold mix on the project site to expedite these repairs.
Temporary by-pass roads shall provide adequate cover and protection of existing utilities. It is the Contractor's responsibility to coordinate with utility companies to repair any damages to the exiting utilities during the construction at no additional cost to the Town.
Payment for temporary pavement and maintenance of this pavement shall be included under Maintenance of Traffic. A breakdown of the temporary road quantities in the lump sum MOT pay item shall be provided by the Contractor.

40. STORMWATER DRAINAGE PIPES AND STRUCTURES

All proposed storm structures shall have a wall thickness no less than 6 inches.
Metal storm pipe or metal mitered end section shall not be used in the road right of way or carry right of way runoff.

41. CLARIFICATION OF SPECIFIC LINE ITEMS

Clarifications are provided below of specific line items on the Bid Form to identify the Town's requirements of what is to be included in the line item and/or how it is to be paid. Where a FDOT Pay Item number is indicated for a line item, the clarification is provided to amend, enhance or otherwise revise the FDOT pay item description to meet the Town's requirements for the project. Where a FDOT pay item number is not indicated, the clarification shown herein is provided to amend, enhance or otherwise revise the pay item description provided in the Technical Specifications to meet the Town's requirements for the project. For line items that are not included in either the FDOT or Manatee County Specifications, the pay item description provided herein shall govern.

0101 1 - Mobilization: shall include full compensation for the required 100 percent (100%) Performance Bond, 100 Percent (100%) Payment Bond, all required insurance for the project and the Contractor's mobilization and demobilization costs as shown in the Bid Form. Mobilization includes but is not limited to: preparation and movement of personnel, equipment, supplies and incidentals such as safety and sanitary supplies/facilities.

Payment for mobilization shall not exceed 5 percent (5%) of the total Contract cost unless the Contractor can prove to the Town that the actual mobilization cost exceeds 5 percent (5%). Partial payments for this Bid Item will be made in accordance with the following schedule:

102-8.6 Percent of Original Contract Amount		**102-8.7** Percent Allowable Payment of Mobilization/Demobilization Bid Item Price	
102-8.8	5	**102-8.9**	25
102-8.10	10	**102-8.11**	35
102-8.12	25	**102-8.13**	45
102-8.14	50	**102-8.15**	50
102-8.16	75	**102-8.17**	75
102-8.18	100	**102-8.19**	100

Payments for this line item will be subject to the standard retainage provided in the Contract. Payment for the retainage will be made after completion of the work and demobilization.

0102 1 - Maintenance of Traffic: shall include the cost of all maintenance of traffic operations unless a separate pay item is provided. Provide a separate schedule of values to include quantities, unit prices, and total to equal bid for all MOT as a separate pay item upon receiving bid award, otherwise the quantity will be based on percent of construction completed.

0121 70 – Flowable Backfill: Flowable backfill to be placed between stormwater structures where space is limited, and meeting compaction requirements may not be achieved. Locations noted in the Contract Plans.

0285 7 11 – Optional Base, Base Group 11: Depth of base material varies throughout the project limits based on the profile. Base Group 11 is used based on the greatest depth of base material required. The cost for the pay item is based on the average depth of base material throughout this project.

D-001 – 24" Round HDPE Pipe, SDR 11: shall include the cost of labor, equipment, materials, supplies, transportation, earthwork, trench boxing, dewatering and supervision necessary to install 24" Round HDPE Pipe, SDR 11 outfall pipe for the stormwater wet well.

D-002A – Seawall Penetration (For 24" Outfall Pipes): shall include the cost of delegated engineering, geotechnical costs for the delegated design, labor, equipment, materials, supplies, transportation, earthwork, trench boxing, dewatering and supervision necessary to construct the 24" outfall pipe, temporary seawall shoring, and seawall penetration as specified in the Contract Plans. Where additional work outside of the Contract Plans is requested by the homeowner, separate agreement and payment will be arranged directly with the homeowner.

D-002B – Seawall Tiebacks / Deadman Replacement: shall include the cost of delegated engineering, geotechnical costs for the delegated design, labor, equipment, materials, supplies, transportation, earthwork, dewatering and supervision necessary to construct seawall tiebacks / deadman replacement as required for seawall stabilization.

D-003 - In Line Check Valve – Marine Grade Stainless Steel: shall include the cost of labor, equipment, materials, supplies, transportation, and supervision necessary to install in line check valves – marine grade stainless steel as specified in the Contract Plans.

D-STWW – Wet Well Complete: shall include the cost of delegated engineering, labor, equipment, materials, supplies, transportation, earthwork, trench boxing, dewatering and supervision necessary to construct the stormwater wet well, access as specified in the Contract Plans.

L-001 - Driveway Restoration: shall include the cost of labor and materials to perform all work labor and to maintain access at each residential property. Where existing driveway is brick pavers, the brick pavers shall be removed, stored on site, and replaced at final grade to tie in with the drainage and roadway final grade as specified in the Contract Plans. Adjustments may be required and shall be approved by the Project Manager or designated representative and the homeowner. Where additional work outside of the Contract Plans is requested by the homeowner, separate agreement and payment will be arranged directly with the homeowner.

L-002 Landscape Restoration: shall include the cost of labor and materials to perform all work necessary, including watering and fertilizing, to restore landscape or equivalent landscape documented in the Contract Plans. Where existing landscape features (hardscape or vegetative materials) are to be re-used, materials shall be stored on site and replaced at final grade to tie in with the drainage and roadway final grade as specified in the Contract Plans. Adjustments may be required and shall be approved by the Project Manager or designated representative and the homeowner. Where additional work outside of the Contract Plans is requested by the homeowner, separate agreement and payment will be arranged directly with the homeowner.

U-WM – Potable Water Main Adjustments or Relocations: shall include the cost of all labor and materials to adjust potable water main and relocation of potable water main to maintain and re-establish potable water service. Provide a separate schedule of values to include quantities, unit prices, and total to equal bid for all potable water main adjustments / deflections as a separate pay item upon receiving bid award, otherwise the quantity will be based on percent of construction completed.

U-WS – Potable Water Service Connection Adjustments: shall include the cost of all labor and materials to adjust potable water service lines and to maintain and re-establish potable water service to each residential property. Provide a separate schedule of values to include quantities, unit prices, and total to equal bid for all potable water service adjustments as a separate pay item upon receiving bid award, otherwise the quantity will be based on percent of construction completed.

U-SS – Sanitary Service Connection Adjustments: shall include the cost of all labor and materials to adjust sanitary service lines and to maintain and re-establish sanitary service to each residential property. Provide a separate schedule of values to include quantities, unit prices, and total to equal bid for all sanitary service line adjustments as a separate pay item upon receiving bid award, otherwise the quantity will be based on percent of construction completed.

42. POST-CONSTRUCTION STORM PIPE TESTING

The Contractor shall inspect and televise all newly constructed storm pipes, structures, new connections, and any existing storm pipe systems identified to be cleaned in the construction plans. Video DVD and report shall be provided for those pipes whose diameters are equal or smaller than 48 in, with Laser profile data included for newly installed non-RCP pipes, following FDOT Specifications latest version. The purpose is to assure the pipes are properly constructed and do not leak at the joints. Payment for this item shall be included as incidental to the cost per foot of new storm pipe installed.

43. MAINTENANCE AND RESTORATION OF JOB SITE

The Contractor shall conduct his operations in such a manner as will result in a minimum of inconvenience to occupants of adjacent homes, business establishments and the general public, and shall provide temporary access as directed or as may be required by the Project Manager.

All final restoration must be performed to an equal or better condition than that which existed prior to construction.

Good housekeeping on this project is extremely important and the Contractor will be responsible for keeping the construction site neat and clean, with debris being removed daily as the work progresses or as otherwise directed by the Project Manager. Good housekeeping at the job site shall include mowing as necessary to prevent grass and other vegetation within the work area from exceeding 18 inches in height or causing unsafe conditions; removing all tools and temporary structures, dirt, rubbish, etc.; hauling all excess dirt, rock, etc., from excavations to a dump provided by the Contractor; and all clean up shall be accomplished to the satisfaction of the Project Manager. Each Friday, the Contractor shall prepare the road surface and barricades in an acceptable manner for weekend traffic use. Immediately after construction completion in an area or part thereof (including restoration), barricades, construction equipment and surplus and discarded materials shall be removed by the Contractor.

If timely housekeeping and restoration of the job site is not accomplished to the satisfaction of the Town, the Town shall make arrangements to affect the necessary housekeeping and restoration by others. The Contractor shall be charged for these costs through deductions in payment due the Contractor. If such action becomes necessary on the part of and in the opinion of the Town, the Town shall not be responsible for the inadvertent removal from the work site of materials which the Contractor would not normally have disposed of had he affected the required clean up.

44. RESTORATION

Payment for restoration shall be covered under the applicable restoration Pay Items as specified in the proposal. If a specific restoration Pay Item is not listed in the proposal, the cost of such work shall be included in the applicable Pay Item unless otherwise provided under separate restoration section or pay quantity of these Specifications.

45. RECORD DRAWINGS AND PROJECT CERTIFICATION

The Town will furnish the Contractor copies of the bid plans to be used for the Record Drawings. A Florida Registered Professional Surveyor and Mapper shall perform a field survey and any differences between the plan elevations or dimensions shall be marked through and the as-built elevation or dimension legibly entered. All elevations and dimensions that are correct shall have a check mark placed beside it.

The Contractor shall keep a complete set of surveyed “As-built” records. These records shall show all items of Work and existing features of utilities revealed by excavation work. The records shall be kept in a professional manner, in a form that shall be approved by the Town prior to the Work. These results shall be available at all times during construction for reference by the Engineer and shall be delivered to the Engineer upon completion of the Work. All completed “As-builts” must be certified by a Florida Registered Professional Surveyor and

Mapper or Engineer per Chapter 61 G 17-6, Florida Administrative Code, pursuant to Sec. 47207, Florida Statutes.

The Record Drawings shall be prepared in accordance with the requirements of the Manatee County Public Works Standards, Parts 1 and 3, latest edition at time of project completion and shall be submitted at time of Substantial Completion. The Engineer will review and approve the Record Drawings within 30 days of submittal unless additional information is required. Following completion of construction and prior to final payment, the Contractor shall submit a Certification by the Contractor and Manufacturer including test data that the materials (filter fabric, filter media, etc.) installed meet plan specifications and regulatory requirements. All Digital Drawings shall be identical to those submitted as hard copy. The Digital Drawing files shall be provided in AutoCAD .DWG format, current version, and shall include all external reference drawings, text fonts, shape files and all other files necessary to make use of the drawings.

Unless there is a separate pay item for Record Drawings, payment shall be included as part of the lump sum quantity under the pay item for Mobilization.

THIS COMPLETES THIS SPECIFICATIONS PACKAGE