

City of Pinellas Park



CITY of
Pinellas Park, FL
The Heart of Pinellas

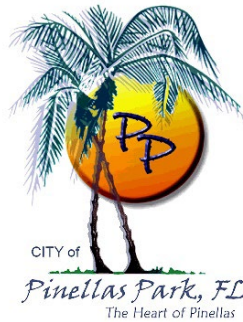
**Bid 23/005 Contract
Emergency/Non-Emergency
Sanitary Sewer Services**

**Rowland (DE), LLC
6855 102nd Avenue North
Pinellas Park, FL 33782
727.545.3815**

Construction Services Division

City of
Pinellas Park

Purchasing Division
P.O. Box 3138
Pinellas Park, FL 33780-3138



Florida

Phone • 727.369.5712
Purchasing@Pinellas-Park.com

**CITY OF PINELLAS PARK
ADVERTISEMENT FOR BID**

The City of Pinellas Park is accepting sealed bids from Florida licensed contractors for ***Bid 23/005 – Emergency/Non-Emergency Sanitary Sewer Services*** until 10:00 A.M. EST on Friday, 14 July 2023.

The City is requesting sealed bids from licensed utilities contractors to provide sanitary sewer repair services on an as-needed basis for both emergency and non-emergency work on the sanitary sewer (wastewater) infrastructure owned and operated by the City.

In the event of an emergency or major disaster declaration by the President, the City may seek FEMA reimbursement for select repairs.

A **mandatory** pre-bid conference is scheduled to occur at 10:00 A.M. on Thursday, 29 June 2023 at the Public Works Operation Center located at 6250 82nd Avenue, Pinellas Park, FL 33781.

Bid documents may be downloaded from [Demandstar.com](https://www.demandstar.com) or requested by emailing Purchasing@Pinellas-Park.com.

Address any/all questions regarding this project to Purchasing@Pinellas-Park.com no later than 10:00 A.M. on Thursday, 6 July 2023.

Purchasing Director
City of Pinellas Park

Ad to appear as a **FULL RUN** in the Tampa Bay Times Editions **Wednesday, 14 June 2023.**

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Pinellas Park

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**CITY OF PINELLAS PARK
NOTICE OF BID**

The City of Pinellas Park is accepting sealed bids from Florida licensed contractors for ***Bid 23/005 – Emergency/Non-Emergency Sanitary Sewer Services*** until 10:00 A.M. EST on Friday, 14 July 2023.

The City is requesting sealed bids from licensed utilities contractors to provide sanitary sewer repair services on an as-needed basis for both emergency and non-emergency work on sanitary sewer (wastewater) infrastructure owned and operated by the City.

The City of Pinellas Park desires to enter into a contractual relationship with vendors capable of providing general underground utilities maintenance, undertaking and completing sanitary sewer projects of a defined scope, and capable of providing a combination of manpower, equipment and materials to perform emergency and non-emergency repairs and installation of new systems for the City of Pinellas Park's sanitary sewer system, including some limited above-ground facilities. It is the City's intent to award to multiple vendors. The general routine maintenance work, capital improvement work and/or emergency repair work will be included under one or more of the areas of work. Emergency repairs due to a declared event may be reimbursable using FEMA and other federal funding programs. In the event of an emergency or major disaster declaration by the President, the City may seek FEMA reimbursement for select repairs.

The resulting contract(s) will be effective for a term of five (5) years with one (1) five-year renewal, if mutually agreed upon by the City and Contractor.

A **mandatory** pre-bid conference is scheduled to occur at 10:00 A.M. on Thursday, 29 June 2023 at the Public Works Operation Center located at 6250 82nd Avenue, Pinellas Park, FL 33781.

Address any/all questions regarding this project to Purchasing@Pinellas-Park.com no later than 10:00 A.M. on Thursday, 6 July 2023. Respondents to this solicitation or persons acting on their behalf may not contact, between the release of the solicitation and the end of the 72-hour period following the agency posting the notice of intended award, excluding Saturdays, Sundays, and state holidays, any employee or officer of the executive or legislative branch concerning any aspect of this solicitation, except in writing to the procurement officer or as provided in the solicitation documents. Violation of this provision may be grounds for rejecting a response.

Bid documents may be downloaded from [Demandstar.com](https://www.demandstar.com) or requested by emailing Purchasing@Pinellas-Park.com.

All bidders must submit one **(1)** original and three **(3)** copies of your bid form, Public Entity Crimes Statement, and any/all attachments as requested in this bid package. Submit bid packages to the Purchasing Division at 8000 60th St. N., Pinellas Park, FL 33781 no later than 10:00 A.M. EST on Friday, 14 July 2023.

Please complete all bid forms attached to this letter, failure to submit all requested original documents and copies on time may result in the disqualification of your bid.

Bids may be withdrawn prior to the date of opening, but no bid may be withdrawn for a period of 90 days after the date of the opening of bids.

Sealed bids shall be delivered to the Purchasing Division at 8000 60th St. N., Pinellas Park, FL 33781. Any bids received after the specified time and date will not be considered. Unsealed bid envelopes will not be accepted. All bids must be sealed, do not email/fax/etc. any bid.

Note: PLAINLY MARK THE FRONT OF YOUR BID ENVELOPE

"SEALED BID 23/005 – EMERGENCY/NON-EMERGENCY SANITARY SEWER SERVICES"

The City of Pinellas Park is not responsible for the United States Mail, private couriers, or messengers concerning bid delivery by the specified time.

The City of Pinellas Park reserves the right to utilize any applicable government contract(s) in lieu of or in addition to this bid. The City of Pinellas Park reserves the right to reject any or all bids, waive any irregularities in bids received, or make the award of bid towards what best serves the interest of the City.

All bidders are invited to attend the public bid opening, which will be held at the Purchasing Division, 8000 60th St. N., Pinellas Park, Florida 33781 on 10:00 A.M. EST on Friday, 14 July 2023; however, no award of bid will be made at that time. A tabulation of all bids received must be prepared and presented to the City Manager and City Council for final approval prior to award of bid.

E-Verify

In compliance with Florida Statute Section 448.095, the bidder must register with and use the E-Verify System to verify work authorization status of all employees hired after January 1, 2021. Register at [E-Verify.gov](https://e-verify.gov) and include verification of registration with your bid.

Florida Division of Corporations

To conduct business in the State of Florida, bidders must be registered with the Florida Division of Corporations. Register at [MyFlorida.com/Sunbiz](https://myfloridabiz.com) and include verification of registration with your bid.

Department of Business & Professional Regulation

Pursuant to Florida Statute 489.131, bidders must be registered with Florida DBPR. Register at [MyFloridaLicense.com/DBPR](https://myfloridalicense.com/DBPR) and include verification of registration with your bid.

All submitted bids will be considered the property of the City of Pinellas Park.

Your action in submitting a bid is sincerely appreciated.

Purchasing Director
City of Pinellas Park

TABLE OF CONTENTS

Notice of Bid	pg. 2	Debarment and Suspension Certification	pg. 42
Table of Contents	pg. 4	Bid Summary Form	pg. 43
Information for Bidders	pg. 5	Acknowledgement of Addenda	pg. 45
General Terms and Conditions	pg. 8	Emergency Compliance Form	pg. 46
Insurance Requirements	pg. 17	Statement of No Bid	pg. 47
E-Verify	pg. 19	Construction Bond Sample	pg. 48
FEMA Requirements	pg. 27	Final Payment Affidavit Sample	pg. 50
Indemnification & Hold Harmless Agreement	pg. 33	Final Release Sample	pg. 51
Public Entity Crimes Statement	pg. 34	Statement of Surety Sample	pg. 52
Trench Safety	pg. 36	Contract Sample	pg. 53
Non-Collusion Affidavit	pg. 37	Scope of Service	pg. 57
Relationship Disclosure	pg. 38	Bid Submission Checklist	pg. 58
Scrutinized Companies Disclosure	pg. 40	Bid Response Cover	pg. 59
Lobbying Certification	pg. 41		

INFORMATION FOR BIDDERS

CONDITIONS OF WORK

Each bidder shall have read and be thoroughly familiar with the bid document(s) and other contract documents. Failure to do so will not relieve the successful bidder of his obligation to furnish all supervision, labor, material, and equipment necessary to carry out the provisions of the contract documents and to complete the contemplated work for the consideration set forth in his bid. No effort is made to emphasize any particular provision of the contract, but bidders must familiarize themselves with every provision and its effect. The Owner/Designee makes no representations other than those stated or shown directly in the contract documents. In case there is any item in the contract documents which is not clear to the Bidder or which may, in his opinion, be impossible to comply with, the Bidder is urged to immediately notify the Owner/Designee. If it is considered necessary and time permits, an addendum will be forwarded to each holder of the bid package to clarify the question. However, notwithstanding the foregoing, bidders may not rely on verbal information furnished by any Designee or Employee of the City. All requests for information must be made in writing, addressed to "Owner's Purchasing Director" or his Designee at Purchasing@Pinellas-Park.com.

QUALIFICATIONS OF BIDDERS

Bidders shall have received bid document(s) from the Purchasing Division. The Owner/Designee may make such investigations as he deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner/Designee any additional information and financial data for this purpose as the Owner/Designee may request. The data shall include a detailed and up-to-date list of plans and equipment the bidder proposes to use, indication of which portions he already possesses and a detailed description of the method and program of the work he proposes to follow. A pre-award inspection of the bidder's facility may be made prior to the award of the contract. Bids will only be considered from firms, which are regularly engaged in the business of providing the goods, and/or services as described in this bid. Bidders must be able to demonstrate a good record of performance for a reasonable period of time, and have sufficient financial support, equipment, and organization to ensure that they can satisfactorily perform the services if awarded a contract under the terms and conditions herein stated. The terms "equipment and organization" as used herein shall be construed to mean a fully equipped and well-established company in line with the best business practices in the industry and as determined by the City of Pinellas Park, Florida.

The City may consider any evidence available regarding the financial, technical, and other qualifications and abilities of a bidder, including past performance and experience with the City and any other governmental entity within the State of Florida in making the award in the best interest of the City.

The City may require bidders to show proof that they have been designated as an authorized representative of a manufacturer or supplier, which is the actual source of supply. In these instances, the City may also require material information from the source of supply regarding the quality, packaging, and characteristics of the products to be supplied to the City through the designated representative. Any conflicts between this material information provided by the source of supply and the information contained in the bidder's submission may render the bid non-responsive.

The City may, during the period that the contract between the City and the successful bidder is in force, review the successful bidder's record of performance to ensure that the bidder is continuing to provide sufficient financial support, equipment, and organization. Irrespective of the bidder's

performance on contracts awarded to it by the City, the City may place said contracts on probationary status and implement termination procedures if the City determines that the successful bidder no longer possesses the financial support, equipment and organization which would have been necessary during the bid evaluation in order to comply with this demonstration of competency section.

PREPARATION OF BIDS

Bids must be submitted upon the prescribed forms. All blank spaces must be filled in as noted, in ink or typed, in both words and figures, if applicable, with amounts extended and totaled; and no changes shall be made in the phraseology of the forms or in the items mentioned therein. In case of any discrepancy between the written amounts and the figures, the written amounts shall govern. Any bid may be deemed non-conforming which contains any omissions, erasures, alterations, additions, irregularities of any kind, or items not called for, or which does not contain prices set opposite to each of the several items in the bid form, or in which any of the prices are obviously unbalanced, or which shall in any manner fail to conform to the conditions of the published notice inviting bids.

The time of completion of the work performed under the contract will be the number of calendar days stated from the date of the Notice to Proceed. The bidder shall sign his bid in the blank space provided therefore. If the bid is made by a partnership or corporation, the name and addresses of the partners or officers must be entered on the form. If the bid is made by a partnership, it must be acknowledged by one of the partners; if made by a corporation, by one of the officers thereof.

LETTER OF BONDABILITY

This bid does not require a Bid Bond; however, the Bidder must submit with their bid a Letter of Bondability from their Surety Company (not the surety agent) showing their bonding capacity which shall not be less than \$1,000,000.00. Any issuer of a Letter of Bondability must be licensed to transact a fidelity and surety business in the State of Florida.

If the surety agent is named on the Surety's Power of Attorney as a true and lawful Attorney-in-Fact, to make, execute, seal and deliver said letter then a letter from the surety's agent will be allowed as long as a copy of the Surety's Power of Attorney documenting said appointment is included with the Letter of Bondability.

When the invitation for bids requires a Letter of Bondability, noncompliance will result in rejection of the bid.

RECEIPT AND OPENING OF BIDS

Sealed bids will be received as stated in the "Notice of Bid" and then publicly opened and read aloud. Bids shall be made on the forms enclosed and submitted in a sealed envelope addressed as indicated in the "Notice of Bid."

ANALYSIS OF BID PRICES

Before award of the Contract, if requested, any bidder shall furnish to the Owner an analysis of his bid prices.

CHANGES IN PROJECT SCOPE

The bidder is advised that the Owner/Designee reserves the right to delete or add to any item or items of the work, which, in his opinion, is in the best interest of the City. Assurance is granted that such change will not exceed twenty-five percent (25%) of the individual project cost.

RIGHT TO ACCEPT AND REJECT BIDS

The Owner/Designee reserves the unqualified right, in the Owner/Designee's sole and absolute discretion, to reject any and all bids, which in the Owner/Designee's sole and absolute judgment will, under all circumstances, best serve the public interest. A bid may not be accepted from, nor any contract awarded to, any person or firm, which is in default or in arrears to the City of Pinellas Park upon any debt or contract or which is in default as a surety or otherwise in default upon any obligation to the City of Pinellas Park.

ACCEPTANCE OF BID AND AWARD OF CONTRACT

Within ninety (90) days after the opening bids, the Owner/Designee will accept one of the bids or will act in accord with the "Right to Accept and Reject Bids" paragraph of this Information for Bidders. The acceptance of the bid will be by notice in writing signed by the Owner/Designee and mailed to or delivered at the office designated in the bid.

BID CONSTRUCTION PERFORMANCE & PAYMENT BONDS

A Performance and Payment Bond may be required for any issued project/work order that is in excess of \$250,000.00 dollars and will be in an amount equal to 100 (%) percent of the price specified in the Contract. The bond(s) shall be executed by a surety company authorized to do business in the State of Florida, or otherwise secured in a manner satisfactory to the City for the protection of all persons supplying labor and material to the contractor or its subcontractors for the performance of the work provided for in the contract.

SCRUTINIZED COMPANY CERTIFICATION

Section 287.135, Florida Statutes, as amended, prohibits agencies from contracting with companies for goods or services of any amount that are on the Scrutinized Companies that Boycott Israel List or that are participating in a boycott of Israel; or One million dollars or more if, at the time of bidding, Contractor is on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or has business operations in Cuba or Syria. The boycott Israel list is created pursuant to 215.4725, Florida Statutes, as amended, and the Sudan and Iran lists are created pursuant to Section 215.473, Florida Statutes, as amended.

As the person authorized to sign on behalf of Contractor, I hereby certify that the company is not participating in a boycott of Israel, on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or that it does not have business operations in Cuba or Syria. I understand and agree that pursuant to Section 287.135, Florida Statutes, as amended, the submission of a false certification; or being placed on the Scrutinized Companies that Boycott Israel List, or engaging in a boycott of Israel; or being placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List; or engaging in business operations in Cuba or Syria will be cause for the City to terminate this Agreement at the option of the City. In addition, Contractor may be subject to civil penalties, attorney's fees, and/or costs.

The scrutinized company list is maintained by the State Board of Administration and available at <http://www.sbafla.com/>.

CONSTRUCTION CONTRACT GENERAL TERMS AND CONDITIONS

INDEX

Definitions and Terms	pg. 9	Existing Utilities	pg. 22
Pre-Construction Conference	pg. 10	Claims and Damages	pg. 22
Notice to Proceed	pg. 10	Interpretation of the Contract	pg. 23
Progress and Control of the Work	pg. 10	Royalties and Patents	pg. 23
Approval of Subcontracts	pg. 11	Clean Up	pg. 23
Prosecution of Work	pg. 11	Sanitary Regulations	pg. 24
Workmanship, Materials, and Workers	pg. 11	Inspection	pg. 24
Delays and Extension of Time	pg. 12	Fair Labor Standards Act and Minimum Wage	pg. 24
Rights and Responsibilities of the Owner	pg. 12	Safety and Health Regulations	pg. 25
Responsibilities of the Contractor	pg. 14	Apprentices	pg. 25
Authority and Duty of the City Designee	pg. 16	Substitution of Equipment and/or Materials	pg. 25
Work by Others	pg. 17	Salvaged Equipment and Materials	pg. 26
Insurance Requirements	pg. 17	Erosion and Sediment Control	pg. 26
E-Verify	pg. 19	Trench Safety Act	pg. 26
Changes	pg. 19	Buy American Act	pg. 26
Payments to the Contractor	pg. 20	FEMA Requirements	pg. 27
Warranty and Guarantee Provisions	pg. 21		

DEFINITIONS AND TERMS

The terms used in these specifications are defined as follows:

OWNER:	CITY OF PINELLAS PARK PINELLAS COUNTY, FLORIDA
CONTRACTOR:	The person, firm, or corporation with whom this Contract is executed by the Owner.
DESIGNEE:	The City Manager of the City of Pinellas Park, or the person so designated in writing by him.
SUBCONTRACTOR:	Any person, firm, or corporation other than the Contractor supplying material, equipment, supplies, or labor for work at the site of the project. Such person or firm has contractual relations with the Contractor, but not with the City.
SURETY:	Any person, firm, or corporation that has executed the Contractor's performance bond securing the performance of this Contract.
SCOPE OF SERVICE:	As assigned projects warrant.
PROJECT:	The entire service to be performed as set forth in the Contract Documents.
NOTICES & CLAIMS:	A notice is defined to be information rendered by either party to the other upon a condition becoming known, pursuant to the following requirements. All claims, requests, substitutions, changes, notices, delays, and any and all other forms of notices or claims by the contractor to the Designee must be in writing and promptly presented. If none is so made, it is irrefutably presumed not to have been given by the Contractor to the Designee.
OWNER'S ADDRESS FOR NOTICES:	City of Pinellas Park Purchasing Division P.O. Box 1100 Pinellas Park, FL 33780-1100

PRECONSTRUCTION CONFERENCE

Prior to starting the work, a preconstruction conference will be held to review the work schedules, establish procedures for handling materials, shop-drawings and other submissions, for processing Periodic Pay Estimates, and such other matters as may be pertinent to the Project.

NOTICE TO PROCEED

When the Contract has been executed on the part of the Owner, it shall be forwarded to the Contractor together with notice from the Designee for use at a future date. The Notice to Proceed will include the time for completion. The Contractor shall begin construction operations as needs dictate or directed at the site following a preconstruction conference.

PROGRESS AND CONTROL OF THE WORK

Contractor shall provide contact information for the personnel directing the referenced work including emergency contact numbers. The on-site supervisor for the contractor shall be on site throughout the construction of the project. Any changes in the designated supervision must be approved in advance by City staff. Contractor shall identify all utilities within construction limits prior to commencement to protect existing utilities from being impacted. Any repairs to damaged utilities are the responsibility of the contractor.

Bidders are required to comply with all provisions of federal, state, county and local laws, ordinances, rules and regulations, that are applicable to the items being bid. Lack of knowledge by the Bidder shall in no way be a cause for relief from responsibility or constitute a cognizable defense against the legal effect thereof.

Contractor shall provide in its pricing all necessary tools, equipment, labor, workmanship and anything else required to complete the work described in a timely and accurate manner to meet project plans and time schedules.

Bidder certifies that all material, equipment, etc., contained in his/her bid meets all applicable O.S.H.A. requirements. Bidder further certifies that, if he/she is the successful Bidder, and the material, equipment, etc., delivered is subsequently found to be defective in applicable O.S.H.A. requirement in effect on the date of delivery, all costs necessary to comply with the requirements shall be borne by the Bidder.

For non-emergency work, the Contractor must submit a proposed schedule of the work at the preconstruction conference. The proposed schedule shall be submitted in an Owner approved format, and shall include a schedule and charts of work to be performed. The purpose of this schedule is to enable the Owner and the Designee to govern the work, to protect the functions of the City and its citizens, and to aid in providing appropriate supervision. The Designee shall have the right to reschedule non-emergency work, provided such rescheduling is in accord with the remainder of terms of this Contract. The schedule shall show, as a minimum, the approximate dates on which each segment of the work is expected to be started and finished, the proposed traffic flows during each month, and the approximate number of crews and equipment to be used. The Designee, after necessary rescheduling and obtaining additional information for specific purposes, shall review and approve the schedule. The Contractor shall also forward to the Designee with each monthly pay request a summary report of the progress of the various parts of the work under the Contract, in fabrications and in the field, stating the existing status, estimated time of completion, and cause of delay, if any. Together with the summary report, the Contractor shall submit any necessary revisions to the original schedule for the Designee's review and approval. Additional detailed schedules may be required by the Designee for daily traffic control.

APPROVAL OF SUBCONTRACTS

The Contractor shall, as soon as practicable after the signing of the Contract and prior to the preconstruction conference, notify the Designee in writing of the names of subcontractors proposed for the work and shall not employ any that have not been approved by the Designee and/or the Owner in writing.

The Contractor agrees that he is fully responsible to the Owner for the acts and omissions of his subcontractors, suppliers, materialmen, laborers, equipment providers, etc., of persons either directly or indirectly employed, used, authorized, or utilized by the Contractor, Subcontractors, materialmen, laborers, suppliers, equipment providers, etc. Nothing contained in the Contract documents shall create any contractual relation between any subcontractor, materialmen, laborers, suppliers, equipment providers, etc. (and any person/entity either directly or indirectly employed, authorized, utilized, or used by any of them) and the Owner.

PROSECUTION OF WORK

The work shall be executed at such time and in or on such part or parts of the project with such forces of workers, materials, and equipment as may be ordered by the Designee, in writing, to complete the future project as assigned, contract, and schedules, including requirements that may be furnished by the Designee from time to time during the prosecution of the work. If, at any time, the materials and appliances to be used appear to the Designee as insufficient or improper for securing the quality of work required, or the required rate of progress, he may order the Contractor to increase his efficiency or to improve the character of his work, and the Contractor shall conform to such an order, but the failure of the Designee to demand any increase of such efficiency or any improvement shall not release the Contractor from his obligation to secure the quality of work or the rate of progress necessary to complete the work within the limits imposed by the Contract. The Contractor shall perform the work and take such precautions as he may deem necessary to complete the project so all work will be in first class and acceptable condition within the Contract time according to the schedule.

If the Contractor desires to carry on work at night or outside the regular hours, he shall submit application to the Designee, but he shall allow ample time to enable satisfactory arrangements to be made for inspecting the work in progress. The Designee may grant permission unless local regulations prohibit such work. If granted permission, the Contractor shall comply with all regulations and legal requirements.

WORKMANSHIP, MATERIALS, AND WORKERS

Unless otherwise stated, all workmanship, materials, and articles incorporated in the work covered by this Contract shall be of the most suitable grade of their respective kinds for the purpose, and acceptable to the Designee. The Designee shall decide the question of equality where the expression "or approved equal" is used in the specifications following reference to a specific manufacturer of equipment or materials. To the extent required by the specifications or by the Designee, the Contractor shall furnish the Designee, for approval, full information concerning the materials or articles or methods of work which he contemplates incorporating in the work, including samples of materials. Articles installed or used or unusual methods of work used without such approval shall be at the risk of subsequent rejection.

The Designee or the Owner may require the contractor to remove from the work such employees as the Designee or the Owner deems incompetent, careless, insubordinate, or otherwise objectionable, or whose continued employment of the work is deemed to be contrary to the Owner's interest.

DELAYS AND EXTENSION OF TIME – NON-EMERGENCY ONLY

If the Contractor is delayed at any time in the progress of the work by any act or neglect of the Owner or his employees, or by any other Contractor employed by the Owner, or by changes ordered in the work, or by strikes, fire, lockouts, unusual delays in transportation, unavoidable casualties or by delay authorized by the Designee pending arbitration, or by any cause which the Designee shall decide justifies the delay, then the time of completion may be reasonably extended by the Owner in writing signed by Owner. No extension shall be made for delay unless notice of a claim is made by the Contractor in writing to the Designee within 48-hours of the event or incident causing the delay, and as otherwise provided by the definition of "Notice."

If no schedule or agreement stating the dates upon which drawings shall be furnished is made, then no claim for delay shall be allowed on account of failure to furnish drawings until two weeks after demand in writing for such drawings, and not then unless such claim be reasonable and as otherwise provided by the definition of "Notice."

This article does not exclude the recovery of damages for delay by either party under other provisions in the Contract Documents. In the event of any conflict between the terms or conditions of the Construction Contract and the terms or provisions of these General Conditions, then the Construction Contract shall control.

RIGHTS AND RESPONSIBILITIES OF THE OWNER

(a) Surveys and Lands for Work

The Owner shall provide the lands upon which the work under this Contract is to be done. The Contractor shall provide all necessary additional land required, together with access to same, for the erection of temporary construction facilities and storage of his material. The Owner shall furnish all land survey data available for this project. The Contractor shall employ a surveyor registered in the State of Florida to lay out the work and to certify the As-Built drawings and to reset any survey monument's section corners, etc., which are overlaid or destroyed during paving/milling. The Owner/Designee may waive the above requirement of retainment of a surveyor and certification of the As-Built drawings but only in a writing signed by Owner/Designee.

(b) Use of Completed Portions

The Owner shall have the right to take possession of and use any completed portions of the work, although the time for completing the entire work or such portions may not have expired, but such taking possession and use shall not be deemed an acceptance of any work, even if possessed or used by Owner, not completed in accordance with the Contract Documents.

(c) The Owner's Right To Do Work

If the Contractor should neglect to prosecute the non-emergency work properly or fail to perform any provision of this Contract, the Owner, after seven (7) days written notice to the Contractor, may, without prejudice to any other remedy he may have, make good such deficiencies, and may deduct the cost thereof from the payment then or thereafter due the Contractor. In the event of emergency work, the seven (7) day written notice is acknowledged as waived by the Owner as time is of the essence.

(d) Defective Materials and Work

All materials not conforming to the requirements of these specifications shall be considered as defective, and all such materials whether in place or not, shall be rejected and condemned and shall be immediately removed from the work, unless otherwise permitted. No material, which has been rejected, the defects of which have been corrected or removed, shall be used until written approval has been given by the Designee. All work, which has been rejected or condemned, shall be remedied or, if deemed necessary, shall be removed or replaced in an

acceptable manner by the Contractor at his own expense. Should the Contractor fail to remove rejected materials, or fail or refuse to remedy or replace defective work, the Designee may withhold all payments, which are due or will become due, and suspend the work until such orders are complied with.

(e) No Waiver of Rights

No inspection, orders, measurements, or certificates made by the Designee, nor any payment or acceptance in whole or in part, nor extension of time, nor taking of possession by the Owner shall operate as a waiver of the conditions of this contract, or of any right to damages herein provided. No waiver of one breach of the contract shall be construed as a waiver of another breach. Should an error be discovered in the partial or final estimates, or proof of defective work or materials used by the Contractor be discovered after the final payment has been made, the Owner reserves the right to claim and recover, by process of law, such sums as may be sufficient to correct the error or make good the defect in the work and materials.

(f) Suspension of Work

If the work is defective, or the Contractor fails to supply sufficient skilled workmen or suitable materials or equipment, or the Contractor fails to make prompt payments to Subcontractors for labor, materials or equipment, or the Contractor fails to comply with work schedules, the Designee may order the Contractor to stop all work or any portion thereof and terminate payments to the Contractor until the cause for such order has been eliminated. No extension of Contract time will be allowed for this suspension.

(g) Termination of the Contract

If the Contractor is adjudged bankrupt or insolvent, or a trustee or receiver is appointed for the Contractor or for any of his property, or he files a petition to take advantage of any debtors act or to reorganize under the bankruptcy or similar laws, or he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment for labor, materials or equipment, or he disregards laws, ordinances, rules, regulations, or orders of any public body having jurisdiction, or he disregards the authority of the Designee, or, in the Owner's sole discretion, he otherwise violates any provision of the Contract Documents, then Owner may, without prejudice to any other right or remedy and after giving the Contractor seven (7) days written notice, terminate the services of the Contractor and take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned, leased, possessed or used by the Contractor that remain on site, and finish the work by whatever method he may deem expedient. If the Owner takes possession of materials, equipment, tools, construction equipment and/or machinery in order to complete the Project, the Owner will be liable to the Contractor for the reasonable use of such items. If the direct and indirect costs of completing the Project, including compensation for additional professional services exceeds the unpaid balance of the contract price, the Contractor will pay the difference to the Owner. Such costs incurred by the Owner will be determined by the Designee and incorporated in a Change Order.

Where the Contractor's services have been terminated by the Owner, said termination shall not affect any rights of the Owner against the Contractor then existing or which may thereafter accrue. Any retention or payment of monies by the Owner due the Contractor, will not release the Contractor from liability.

In the event the Owner employs an attorney to enforce or construe any provision of the contract documents or to collect damages for Contractor's breach of the contract documents or to recover on the BOND provided in the contract documents, the Contractor and his surety agree to pay the Owner such reasonable attorney's fees, including appellate fees, and costs as the Owner may expend therein. The Contractor and his SURETY, for a specific

consideration the receipt and sufficiency of which is hereby acknowledged, expressly waive any rights or entitlements they may have under Florida Statutes, Section 57.105 (2) pertaining to mutuality of attorney's fees, as it may be amended or replaced, or any similar statute or law. As against the obligations herein contained, the Contractor and his SURETY waive all rights of exemption.

Upon seven (7) days written notice to the Contractor, the Owner may, for convenience, without cause and without prejudice to any other right or remedy, elect to abandon the Project and terminate the Agreement. In such case, the Contractor shall be paid for all work executed and any expense sustained plus a reasonable profit not to exceed five percent (5%) over cost incurred. The City may also cancel the agreement for cause and convenience.

The City shall not be required to perform any covenant or obligation in this contract, or be liable in damages to any party hereto, so long as the performance or non-performance of the covenant or obligation is delayed, caused or prevented by an act of god or force majeure. An "act of God" or "force majeure" is defined for the purposes of this contract as strikes, lockouts, sit-downs, material or labor restrictions by any governmental authority, unusual transportation delays, riots, floods, washouts, explosions, earthquakes, fire, storms, weather (including wet grounds or inclement weather which prevents service), acts of the public enemy, wars, insurrections and any other cause not reasonably within the control of the City and which by the exercise of due diligence the City is unable, wholly or in part, to prevent or overcome.

RESPONSIBILITIES OF THE CONTRACTOR

(a) Contractor's Representative

The Contractor shall keep on the site, or the work during its progress, a competent superintendent, and any necessary assistants, all satisfactory to the Designee. The superintendent shall not be changed except with the consent of the Designee, unless the superintendent proves to be unsatisfactory to the Contractor and ceases to be in his employ. The superintendent shall represent the Contractor in his absence, and all directions given to the superintendent shall be as binding as if given to the Contractor. The Contractor shall give efficient supervision to the work, using his best skill and attention.

(b) Contractor's Understanding

The undersigned Contractor agrees that he has carefully inspected all Contract Documents and is familiar with and will adhere to same.

If the Contractor, in the course of the work, finds any discrepancy between the drawings and the physical conditions of the locality, or any error or omission in the drawings or in the layout as given by points and instructions, or discovers unforeseen underground or above ground conditions, or any other unexpected conditions requiring additional work by the Contractor, it shall be his duty to immediately inform the Designee, in writing, and the Designee shall promptly check the accuracy of the information. Any work done after such discovery, until any necessary changes are authorized, will be done at the Contractor's risk. See definition of "Notice."

If any part of the Contractor's work depends for proper execution or results upon the work of any other Contractor, the Contractor shall inspect and measure work already in place, and shall at once report in writing to the Designee any discrepancy between the executed work and the drawings. See definition of "Notice."

(c) Quality of Material, Equipment, or Work

When any material or equipment not conforming to the requirements of the bid package has been delivered to the Project or incorporated in the work of the Project, or whenever any work performed is of inferior quality, then such material, equipment, or work shall be considered to

be defective and shall be removed and replaced, or made satisfactory to the Owner or the Designee, at no cost to the Owner.

(d) Permits, Licenses, And Regulations

City permits necessary for the prosecution of the work shall be paid for by the City. Contractor shall secure all other permits necessary for the prosecution of the work not previously secured by or upon behalf of the City. The Contractor will be responsible for all licenses required to perform necessary work. Easements for permanent structures or utilities shall be secured and paid for by the Owner. The Contractor shall give all notices and comply with all laws, ordinances, rules, and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the drawings and specifications are at variance therewith, he shall promptly notify the Designee in writing and any necessary change shall be adjusted as provided in the Contract under Changes in the Work. If the Contractor performs any work contrary to such law, ordinances, rules, and regulations and does not comply with the aforesaid procedure, he shall bear all cost incident to such violation.

(e) Protection of Work, Persons, and Property

The Contractor shall continuously maintain adequate protection of all his work from damage and shall protect all property from injury or loss arising in connection with the Contract. He shall adequately protect adjacent property as provided by law and the Contract documents. He shall provide and maintain all passageways, guard fences, lights, and other facilities for protection required by Public authority or local conditions. He shall provide reasonable maintenance of traffic ways for the Public and preservations of the continuation of the Owner's services to the Public, taking into full consideration all local conditions.

In case of failure on the part of the Contractor to promptly restore damaged property or make good such damage or injury, the Owner may, after 48-hours notice in writing to the Contractor, proceed to repair, rebuild, or otherwise restore such property as may be deemed necessary and the cost thereof will be deducted from any monies due, or which may become due, the Contractor under this Contract.

(f) Scope of the Contractor's Service

Unless otherwise stipulated, the Contractor shall provide and pay for all bonds, insurance, materials, labor, tools, equipment, electrical power, water, transportation, and other facilities necessary for the execution and completion of the work. In the event the Contractor shall fail at any time to pay for any of the above, the Owner may, at his option, pay for same and charge same to the Contractor.

The Contractor shall furnish free of charge all labor, stakes, surveys, batter boards for structure, grade lines, and other materials and supplies and shall set construction stakes and batter boards for establishing lines, position of structures, slopes, and other controlling points necessary for the proper prosecution of the construction work. These stakes and marks shall constitute the field control by and in accord with which the contractor shall govern and execute the work. The Contractor will be held responsible for the preservation of all stakes and marks and if, for any reason, any of the stakes or marks or batter boards become destroyed or disturbed, they will be immediately and accurately replaced by the Contractor free of charge.

(g) Responsibility for the Work

Prior to the completion of all the work by the Contractor and the acceptance thereof by the Owner, the work shall remain the responsibility of the Contractor, and said Contractor shall be required to repair, replace, renew, and make good at his own expense all damages caused by force, or violence of the elements, or any cause whatsoever, provided, however, that in such cases the Contractor shall be entitled to a reasonable extension of time within which to

complete said work. If the cause of the delay shall be due to the negligence, fault, or omission of the Contractor, the Contractor shall not be entitled to the extension of time mentioned above.

(h) Contractor's Right to Terminate Contract

If the assigned work should be stopped for a period of three (3) months, under an order of any court, or public authority, other than by the Owner, through no act or fault of the Contractor or of anyone employed by him, then the Contractor may, upon thirty (30) days written notice to the Owner, terminate his contract and recover from the Owner payment for all work executed and any expense sustained, plus a reasonable profit and damages not to exceed five percent (5%) over cost incurred.

(i) Removal of Equipment

In the case of annulment of this Contract before completion from any cause except as stated above in Contractor's Right to Terminate Contract. The Contractor, if notified to do so by the Owner, shall promptly remove any or all of his equipment and supplies at his own expense.

(j) Traffic Control

The Contractor shall be responsible for the proper maintenance, control, and detour of traffic in the area of construction, during the course of construction. All traffic control and maintenance procedures for streets open to the public shall be in accordance with the requirements of the Manual of Uniform Traffic Control Devices (MUTCD) as published by the United States Department of Transportation. Appropriate work-zone traffic control devices shall be used for construction activities within City rights-of-way. All traffic control devices shall be designed, placed, operated, and maintained according to MUTCD Standards. When work ceases or is interrupted during non-working hours, such as at night or on weekends or holidays, inappropriate signs shall be removed or covered. Contractor shall inspect and maintain work zone traffic control devices on a regular basis. This work shall also be performed during non-working hours such as at night, on weekends and on holidays. It shall be the Contractor's responsibility as Bidder to determine these requirements prior to submission in order to reflect all costs to be incurred. No claims for additional payment will be considered for costs incurred in the proper maintenance, control, detour, and protection of traffic. In addition, the contractor shall hire or have on staff a Certified Advanced Level Supervisor (Certified Work Zone Supervisor) recognized by the ATSSA (American Traffic Safety Services Association) or the IMSA (International Municipal Signal Association).

AUTHORITY AND DUTY OF THE CITY DESIGNEE

(a) Authority of the Designee

The work shall be subject at all times to the review of the Designee, or his authorized representative. The Designee shall decide any and all questions which may arise as to the quality and acceptability of materials furnished, work performed, rate of progress of work, areas of work, maintenance of schedules, interpretation of drawings and specifications, and the acceptable fulfillment of the Contract on the part of the Contractor.

In case of differences between the drawings and specifications, the Designee shall make a determination as to whether the specifications or the drawings represent the intent of the Contract, and such determinations shall be communicated to the Contractor in writing. All claims of the Contractor shall be presented in writing to the Designee for decision. The Designee's written decision (non-emergency) shall be available within a reasonable time, not to exceed five (5) days. All decisions of the Designee shall be final. See definition of Notice.

(b) Inspection and Examination of the Work

The Designee and his authorized representative shall have free access to the project at any time for purposes of inspection, and shall be furnished by the Contractor with facilities to

determine, as best as can reasonably be done under the circumstances, the work performed and the nature of same. Such assistance of the Contractor shall, if necessary, include the uncovering, testing, or removal of portions of finished work.

Duly authorized inspectors, who shall perform their duties periodically on the project, may be assigned to all or any part thereof, at any time. The number of inspectors will be at the discretion of the Designee. The presence or absence of an inspector shall in no way lessen the responsibility of the Contractor to perform properly the Contractor's duties to the Owner under these Contract documents. In case any dispute arises between the Contractor and an inspector as to materials furnished or the manner and method of performing the work, the inspector shall have authority to reject materials or work until the question at issue can be referred to and decided by the Designee. An inspector is not authorized to revoke, alter, enlarge, relax, release, or amend any of the specifications or requirements thereof, nor to issue any instructions on, nor to approve or accept any portion of the work, materials, or equipment which are contrary to the drawings and specifications nor are any of his actions, authorized or unauthorized, to be so construed.

All materials shall be subject to inspection, examination, and test by the Designee at any time, including and during manufacture and at all places where such manufacture is being carried on. The right is reserved to reject defective materials during manufacture, before and/or after they have been incorporated into the work. If the Contractor fails to replace defective work or rejected materials, the Owner, after reasonable notice determined by the Designee, may replace such materials or correct such defective work and charge the cost thereof to the Contractor, or may terminate the right of the Contractor to proceed as noted in these General Conditions.

Since no inspection, either final or interim, can be complete within itself, no final inspection, acceptance of work, material, or equipment, or final or interim acceptance of same by the Owner or the Designee, or Certificate of Engineer shall relieve the obligation of the Contractor to the Owner to do the work in a good, workmanlike manner and to furnish proper, specified equipment and materials, and to perform properly all and any obligations and duties to the Owner under the terms of the Contract Documents.

WORK BY OTHERS

The Owner reserves the right to let other Contracts in connection with this work. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and execution of their work and shall properly connect and coordinate his work with theirs.

INSURANCE REQUIREMENTS

Please provide proof of insurance evidencing the ability to provide required insurance.

The Contractor shall not commence work under this Contract until all insurance required has been obtained and such insurance has been approved by Risk Management Division, nor shall the Contractor allow any subcontractor to commence work on his subcontract until similar insurance required of the subcontractor has been so obtained and approved.

The cost of all insurance shall be included in the Contractor's bid.

Companies issuing the insurance policy, or policies, shall have no recourse against the City for payment of premium or assessments for any deductibles; all are the sole responsibility of the Contractor.

The Contractor's insurance coverage shall be primary for operations under this contract. Any insurance or self-insurance maintained by the City, its officials, employees, or volunteers shall be

excess of the Contractor's insurance and shall not contribute with it. The Contractor's policy clause "Other Insurance" shall not apply to any insurance currently held by the City of Pinellas Park, to any such future coverage, or to the City's Self-Insurance Retentions of whatever nature.

The term "City of Pinellas Park" shall include all Authorities, Boards, Bureaus, Commissions, and individual members; Divisions, Departments, and Offices of the City; the Mayor, Vice Mayor and Councilmen; and employees thereof in their official capacities and/or while acting on behalf of the City of Pinellas Park.

The insurance required shall provide protection for the Contractor and his subcontractors, respectively, against damage claims which may arise from operations under this Contract, whether such operations are by the insured or by anyone directly or indirectly employed by him, and also against any of the special hazards which may be encountered in the performance of this Contract.

Limits of Insurance

General Liability

Type - Commercial General Liability (CGL), Occurrence Basis

Limits - \$2,000,000 General Aggregate

- \$1,000,000 Products Completed/Operations Aggregate
- \$1,000,000 Personal and Advertising Injury
- \$1,000,000 Each Occurrence

Automobile Liability

Type - Any Auto, Hired autos, and Non-Owned Autos

Limits - \$1,000,000 Combined Single Limit

Workers' Compensation

Type - Workers' Compensation and Employer's Liability or Work Comp. Exemption Certificate

Limits - Statutory, Workers' Compensation

- \$100,000 Each Accident
- \$500,000 Disease – Policy
- \$100,000 Disease – Each Employee

Pollution Legal Liability and/or Asbestos Legal Liability

With limits no less than \$1,000,000 per occurrence or claim, and \$2,000,000 policy aggregate

Excess or Umbrella Liability

When used to reach minimum limits shown for General Liability and Automobile Liability, the primary (underlying) policy limits shall be no less than \$500,000. The primary policy and any excess or umbrella policies shall be with the same insurance carrier. The coverage shall not be more restrictive than the primary policy coverages, including but not limited to coverage trigger, defense, notice of occurrence/accident/circumstances, and notice of claim and extended reporting period.

E-VERIFY

The Contractor (and its subcontractors) have an obligation to utilize the U.S. Department of Homeland Security's (OHS) E-Verify system for all newly hired employees. By executing this Contract, the Contractor certifies that it is registered with, and uses, the E-Verify system for all newly hired employees. The Contractor must obtain an affidavit from its subcontractors in accordance with paragraph (2)(b) of section 448.095, F.S., and maintain a copy of such affidavit for the duration of the Contract.

This section serves as notice to the Contractor regarding the requirements of section 448.095, F.S., specifically sub-paragraph (2)(c)1, and the City's obligation to terminate the Contract if it has a good faith belief that the Contractor has knowingly violated section 448.09(1), F.S. If terminated for such reason, the Contractor will not be eligible for award of a public contract for at least one (1) year after the date of such termination. The City reserves the right to order the immediate termination of any contract between the Contractor and a subcontractor performing work on its behalf should the City develop a good faith belief that the subcontractor has knowingly violated section 448.095(1), F.S.

CHANGES

(a) Compliance with Specifications and Drawings

The terms of this Contract, including all specifications, drawings and other Contract Documents, shall be strictly followed by the Contractor unless they are modified in writing by the Owner or the Designee in accordance with these provisions.

(b) Changes in the Work

The Owner or the Designee, without invalidating the contract, may order extra work or make changes by altering, adding to, or deducting from the work, the Contract sum being adjusted accordingly. All such work shall be executed under the conditions of the original Contract, except that any claim for extensions of time caused thereby shall be adjusted at the time of ordering such changes.

In giving instructions, the Designee shall have authority to make minor changes in the work, not involving extra cost, and not inconsistent with the purposes of the work. Except in an emergency endangering life or property, **no extra work or change shall be made unless in pursuance of a written order by the Designee, and no claim for an addition to the Contract sum shall be valid unless so ordered.**

The value of any such extra work or change shall be determined in one or more of the following ways: (a) Contract unit prices, (b) by an agreed lump sum price, or (c) the actual cost of:

- a. Labor, including foremen,
- b. Materials entering permanently into the work,
- c. The ownership or rental cost of construction plant and equipment during the time of use on the extra work (not applicable for FEMA related projects),
- d. Power and consumable supplies for the operation of power equipment,
- e. Insurance and Social Security, old age and employment contributions, and
- f. 15% overhead and profit.

As a result of the preceding requirements, a written Change Order will be prepared by the Designee in a form to be approved by the Public Works Administrator.

It is the Contractor's responsibility to notify his Surety of any changes affecting the general scope of the work or change in the Contract Price, and the amount of the applicable bonds shall be adjusted accordingly, unless otherwise provided for in the bond. The Contractor will furnish proof of such adjustment to the Owner.

PAYMENTS TO THE CONTRACTOR

(a) Monthly Payments to the Contractor

The Contractor shall plan work for construction on the basis of the monthly provisions of the Contract. The Contractor will, on or about the last day of the pay period, make an approximate estimate, in writing on a form (Application and Certificate for Payment) approved by the Designee, of the proportionate value of the work done, items and locations of the work performed up to and including the last day of the period then ending. The Designee will then review said estimate and make necessary revisions so that the estimate can receive his approval. If the Contractor and the Designee do not agree on the approximate estimate of the proportionate value of the work done for any pay period, the determination of the Designee shall be binding. The Contractor may also include in the estimate the value of the materials stored on the job site, provided the Contractor submits copies of paid invoices covering such material. The amount of said estimate after deducting five percent (5%) and all previous payments shall be due and payable to the Contractor within twenty (20) days after presentation of the estimate to the Owner/Designee. It is understood that payments for material stored do not relieve the Contractor of the responsibility for the care of the materials, and any damage to or loss of said materials is the full responsibility of the Contractor. Any Periodic Pay Estimate signed by the contractor shall be his binding bid.

(b) Correction of Work before Final Payment

The Contractor shall promptly remove from the premises all material condemned by the Designee as failing to conform to the Contract, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute his own work in accord with the Contract and without expense to the Owner, and shall bear the expense of making good all work of other contractors destroyed or damaged by such removal or replacement.

If the Contractor does not remove such condemned work and materials within a reasonable time, fixed by written notice, the Owner may remove them and may store the materials at the expense of the Contractor. If the contractor does not pay the expense of such removal within ten (10) days thereafter, the Owner may, upon ten (10) days written notice, sell such materials at auction thereof, deduct all the cost and expenses that should have been borne by the Contractor, storage fees and other costs from payment, if any, to the Contractor.

(c) Liens

Neither the final payment nor any part of the remaining accrued retained percentage shall become due until the Contractor shall deliver to the Owner a complete release of all liens arising out of this Contract or receipts in full in lieu thereof and, in addition thereto in either case, an affidavit that, so far as he has knowledge or information, the release and receipts include all the labor and material for which a lien could be filed, but the Contractor may, if any subcontractor refuses to furnish a release or receipt in full, furnish a bond satisfactory to the Designee to indemnify the Owner against any lien. If any lien remains unsatisfied after all payments are made, the Contractor shall refund to the Owner all money payments that the Owner may pay in discharging such a lien, including all costs, interest and a reasonable attorney's fee.

(d) Final Inspection

When the Contractor has completed work in compliance with the terms of the Contract Documents, he shall notify the Designee in writing that the project is ready for final inspection. The Designee will then advise the Contractor as to the arrangements for final inspection and what work, if any, is required to prepare the project or a portion thereof for final inspection. When the Designee determines the project or portion thereof is ready for final inspection, the Designee will prepare a list of errors of either commission or omission by the Contractor reasonably observable and determined under the conditions governing and restricting said final inspection. When all such errors have been corrected, a final reinspection will be made. The process will be repeated until, in the opinion of the Designee, the project has been completed in compliance with the terms of the Contract Documents as can best and reasonably be observed and determined under the conditions governing and restricting said final inspection. The Designee will then, pursuant to such inspection and reinspection, certify to the Owner as to completion of final inspection. It is understood that the certification covers only those items, which can be physically inspected, and the Engineer's certification indicates compliance within the standards of the construction industry as interpreted by the Designee.

(e) Final Acceptance

When the Designee shall certify completion of the final inspection to the Owner, the Contractor may make request for final payment. With the request for final payment, the Contractor shall furnish evidence satisfactory to the Owner's legal advisors that the Contractor has fully paid all debts for labor, materials, and equipment incurred in connection with the work. The Contractor must provide all evidence required by the Contract to assure the Owner of complete compliance with all terms of the Contract. When the Owner has satisfied himself as to compliance with the terms of the Contract and has received certification of final inspection, he will notify the contractor of final acceptance by the Owner.

(f) Final Payment

When final acceptance has been made by the Owner, the Designee will then review the amount of final request for payment and certify the amount of this approval. The Owner will then make final payment of the Contract amount, plus all approved additions, less approved deductions and previous payments made.

The Contract will be considered complete when all work has been finished, the final inspection certified by the Architect/Engineer, the project finally accepted in writing by the Owner, and final payment approved by the Owner.

(g) Completion of Contract

The Contract/assigned project will be considered complete when all work has been finished, the final inspection certified by the Architect/Engineer, the project finally accepted in writing by the Owner, and final payment approved by the Owner.

WARRANTY AND GUARANTEE PROVISIONS

All materials and equipment furnished by the Contractor and all construction work and workmanship involved in this contract shall be, and the same is hereby, guaranteed and warranted by the Contractor for a period of one (1) year from completion of the Contract, as defined above in Completion of Contract, to be free from defects due either to faulty materials or equipment furnished, installed, and performed by the Contractor and is warranted and guaranteed by the contractor to the Owner to be such as to meet the required standards and accomplish the purposes and functions of the Project as defined, detailed, and specified in these Contract Documents. The Owner shall give written notice to the Contractor of faulty materials, equipment, or workmanship within a period of one (1) year following completion of the contract. Any part of the equipment, material, or workmanship which does not comply with the warranty and guarantee shall be promptly replaced by the Contractor

at his own cost and without cost to the Owner as to any claims or actions for breach of guarantee or breach of warranty that the Owner might have against parties other than the Contractor, and do not constitute exclusive remedies of the Owner against the Contractor and are not intended to and shall not limit any other rights, remedies, or courses of action which the Owner might exercise against the Contractor, and shall not alter nor modify the application of the Statutes of the State of Florida. This Contract is governed by the Laws of the State of Florida.

EXISTING UTILITIES

Representation of utilities are shown from information received from the various utility owners. The locations or elevations of utilities are not represented to be exact and are shown for the convenience of the Contractor. The Contractor shall contact the utility owner concerned for any additional information and coordinate his construction activities accordingly. Any cost incurred for the protection of and/or

damages to existing utilities will be considered as part of the applicable Contract price, and no additional compensation will be paid to the Contractor. If in the judgment of the Designee, it is impossible to construct a given improvement in the location shown on the drawings, as a result of a utility conflict, either the utility owner will move the utility or an appropriate change order for an alternative solution will be executed.

The following is a list of known utilities and their owners:

Electric Towers, Poles, Power Lines	Duke Energy (Progress Energy Corp)
Telephone Poles, Lines & Cables	Frontier Communications
Water Mains, Sewer & Reclaim Lines	City of Pinellas Park, City of St. Petersburg & Pinellas County, Pinellas Park Water Mgmt. District
Fiber, Conduit & Signal Cable	Pinellas County Highway/Engineering
Cable, Telephone & Fiber	Charter Spectrum
Gas Mains	TECO/Peoples Gas Co./Clearwater Gas

CLAIMS AND DAMAGES

(a) Requirement for Notice

Any requirement of the Contract Documents (or) for notice, approval, decision, or direction by the Designee, shall be a condition precedent to be complied with by the Contractor in writing before any claim for extra compensation can be made. See definition of "Notice."

(b) Claims for Extra Cost

If the Contractor claims that any instructions in writing or by drawings or otherwise involve extra cost under this Contract, he shall give the Designee written notice within a reasonable time after the receipt of such instructions, before proceeding to execute the work, except in emergency endangering life or property. A decision by the Designee will then be made as specified in The Authority and Duty of the City Designee. If this decision requires a change order, the procedure shall be as provided for in Changes in the Work. See definition of "Notice." No claim shall be valid unless so made.

(c) Claims for Damages

Any claim for damages by the Contractor against the Owner arising under this Contract shall be made in writing within thirty (30) days of the first observance of such damage, except as

expressly stipulated otherwise in the case of faulty work or materials, and shall be adjusted by agreement validated by change order. Any claim not reported within thirty (30) days shall not be considered valid. See definition of "Notice."

(d) Liquidated Damages

If the Contractor refuses or fails to prosecute the work, or any separable part thereof, with such diligence as will ensure its completion within the time specified in the bid, or any extension thereof, or fails to complete said work within such time, the Owner may, by written notice to the Contractor, terminate his right to proceed with the work or such part of the work on which there has been delay. In such event, the Owner may take over the work and prosecute the same to completion, by contract or otherwise, and the Contractor and his Sureties shall be liable to the Owner for any excess cost occasioned the Owner thereby. If the Contractor's right to proceed is so terminated, the Owner may take possession of and utilize in completing the work such materials, appliances, and plant as may be on the site of the work and necessary therefore. If the Owner does not terminate the right of the Contractor to proceed, the Contractor shall continue the work, in which event, the actual damages for the delay will be impossible to determine, and, in lieu thereof, the Contractor shall pay to the Owner the sum of Five Hundred Dollars (\$500) for contracts less than One Million Dollars (\$1,000,000) and One Thousand Dollars (\$1,000) for contracts greater than One Million Dollars (\$1,000,000) as fixed, agreed, and liquidated damages for each calendar day of the delay until the work is finally accepted by the Owner, and the Contractor and his Sureties shall be liable for the amount thereof.

INTERPRETATION OF CONTRACT

In the event of an ambiguity or a conflict between or among any of the provisions of the Contract Documents, then the interpretation, construction, or provision which is most favorable to the Owner shall be deemed to have superseded and will take precedence over any other construction, interpretation and/or the other provision or provisions in conflict therewith, and shall be binding upon the parties in the same manner as if there were no such ambiguity and/or conflicting provision or provisions.

ROYALTIES AND PATENTS

The Contractor shall pay all royalties and license fees for equipment or processes in conjunction with the equipment he is furnishing. He shall defend all suits or claims for infringement of any patent right, and shall save the Owner harmless from loss on account thereof and cost and attorney's fees incurred therefore.

CLEAN UP

The Contractor shall keep the construction site free of rubbish and waste materials and shall restore to their original condition those portions of the site disrupted by the construction. Clean up and restoration shall be accomplished on a continuing basis throughout the contract period and in such manner as to maintain a minimum of nuisance and interference to the Owner, residents, and workers at or adjacent to the project site. The Contractor shall also remove, when no longer needed, all temporary structures and equipment used in his operations. It is the intent of this specification that the construction areas and those other areas not designated for alteration by the Contract Documents shall be kept clean and free of construction debris on a continuous basis and restored to their original condition as nearly as possible.

SANITARY REGULATIONS

Adequate sanitary conveniences for the use of persons employed on the worksites are required for all construction contracts. These conveniences shall be maintained at all times. Upon completion of the work, they shall be removed from the premises.

INSPECTION

(a) Testing of Materials

The Contractor shall pay for all laboratory tests required at the Project site or for laboratory tests required on materials already delivered to the site. The Contractor shall pay for all laboratory tests that fail to meet the required specifications. Copies of tests or certifications on pipe, brick, or other materials made at the factory shall be furnished in triplicate to the Designee. Test reports

on equipment shall be approved by the Designee before the equipment covered by the tests is delivered to the Project site. Tests requirements are set out in the detailed specifications for the particular material. Retesting of any material, work, or equipment that may have failed any previous test shall be paid for by the Contractor.

(b) Soil Compaction Tests

Soil compaction tests will be paid for by the Contractor. Retesting of tests that fail will be paid for by the Contractor.

(c) Inspection

Each step of construction is subject to approval by the Designee prior to proceeding with a subsequent step; however, this shall not relieve the Contractor of the responsibility for delivering to the City a project completed in conformance with the plans and specifications and guaranteed as elsewhere stipulated.

(d) Placing of Concrete

Unless specific permission is granted prior to each occurrence, no concrete shall be delivered to the job site before 8:00 a.m. or after 3:00 p.m.

(e) Weather

Each time, in the opinion of the Designee, inclement weather prevents the Contractor from proceeding with the work for more than one-half (1/2) day, the Owner may add one (1) calendar day to the number of days allowed for completion, except for emergency projects.

(f) Work Days

The work shall be discontinued Saturdays, Sundays, and all legal and/or City-designated holidays, except for special operations/emergencies that may be necessary in order to perform, maintain, check, or protect work already performed. **If such work, in the opinion of the Designee, will require the presence of a City Inspector, the Contractor shall pay the City for each inspector assigned.** All additional inspection and engineering hours required for the project construction will be billed to the Contractor in accordance with the current rates as established in the City's Administrative Fee Schedule as of the date the service is performed.

FAIR LABOR STANDARDS ACT AND MINIMUM WAGE

It shall be the Contractor's responsibility to conform to all provisions of Federal, State, Municipal and Local Laws including but not limited to the Fair Labor Standards Act and Minimum Wage requirements, rules, laws, and/or regulations.

SAFETY AND HEALTH REGULATIONS

The Contractor shall comply with the Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91-596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL 91-54). The Contractor shall allow representatives of the Department of Labor full access to the project for inspection.

APPRENTICES

In accordance with the spirit of the guidelines provided by Florida Statute Chapter 446, the following requirements to safeguard the welfare of apprentices and trainees shall be a part of this Contract:

- (a) Contractor or supplier agrees to make a diligent effort to hire for the performance of the Contract a number of apprentices or trainees in each occupation, which bears, to the average number of journeymen in that occupation to be employed in the performance of the Contract the ratio of at least one apprentice or trainee to every five journeymen.
- (b) Contractor or supplier agrees, when feasible, to assure that 25 percent (25 %) of such apprentices or trainees are in their first year of training, except when the number of apprentices or trainees to be hired is fewer than four.
- (c) Contractor or supplier agrees to submit, at three-month intervals to the Bureau of Apprenticeship of the Division of Labor, records of employment by trade of the number of apprentices or trainees employed, race of all apprentices, the number of apprentices or trainees in their first year of training, and total hours of work of all apprentices, trainees, and journeymen.
- (d) Contractor or supplier agrees to submit to the Bureau of Apprenticeship of the Division of Labor, at three-month intervals, a statement describing steps taken toward making a diligent effort in the hiring of apprentices and trainees and containing a breakdown by craft of hours worked and wages paid for first-year apprentices or trainees, other apprentices or trainees, and journeymen.

SUBSTITUTION OF EQUIPMENT AND/OR MATERIAL

After the Execution of the Contract, substitution of equipment and/or material of makes and/or types other than those named in the Contract at the request of the Contractor will be considered for two reasons only:

- a. That the equipment and/or material proposed for substitution is superior in construction and/or efficiency to that named in the Contract.
- b. That the equipment and/or material proposed for substitution is equal in construction and/or efficiency to that named in the Contract.

In either case, it will be assumed that the cost to the Contractor and/or material proposed to be substituted is less than the equipment and/or material named in the Contract and, if the substitution is approved, the Contract price shall be reduced a corresponding amount.

No request will be considered unless submitted in writing to the Owner, and approval of the Owner must also be in writing. To receive consideration, requests for substitution must be accompanied by documentary proof of the actual difference in cost to the Contractor in the shape of certified copies of equipment and/or materials, company's quotations to the Contractor covering the original equipment and/or material, and also equipment and/or material proposed for substitution or other proof satisfactory to the Owner. It is the intention that the Owner shall receive the full benefit of the saving in cost involved in any substitution. In all cases, the burden of proof that the equipment and/or material offered for substitution is equal or superior in construction and/or efficiency to that named in the Contract shall rest on the Contractor and the proof will be submitted to the Designee, who will

make recommendations to the Owner and, unless the proof is satisfactory to the Owner, the substitution will not be approved.

Requests for substitution solely on the grounds that better delivery can be obtained on the equipment and/or material proposed for substitution will not be approved, except in emergencies, for it will be considered that the contractor in his bid has named equipment and/or material on which he has received bids from equipment and/or material manufacturers giving a firm delivery time. Requests for substitution of equipment and/or material which the Contractor cannot prove to the satisfaction of the Owner to be equal or superior in construction and/or efficiency to that named in the Contract will not be approved.

SALVAGED EQUIPMENT AND MATERIALS

In the absence of special provisions to the Contract, salvaged materials, equipment, or supplies that occur are the property of the Owner and shall be cleaned and stored as directed by the Designee. Surplus suitable excavated materials remain the property of the Owner and shall be stored in an area designated by the Designee, but not to exceed (4) miles from the job site.

SITE EROSION AND SEDIMENT CONTROL

The Bidder shall comply with the provisions of the Environmental Protection Agency (EPA) National Pollution Discharge Elimination System (NPDES) stormwater permit and implement stormwater pollution prevention plans (SWPPP's) or stormwater management programs (both using best management practices (BMPs) that effectively reduce or prevent the discharge of pollutants into receiving waters.

- a. The control of construction-related sediment loadings is critical to maintaining water quality. The implementation of proper erosion and sediment control practices during the construction stage can significantly reduce sediment loadings to surface waters.
- b. Prior to land disturbance, prepare, and implement an approved erosion and sediment control plan or similar administrative document that contains erosion and sediment control provisions.

NPDES Management Measures available at City of Pinellas Park Engineering Environmental Division and EPA websites to help address construction-related Best Management Practices.

TRENCH SAFETY ACT

The Contractor will be responsible for following the Florida Underground Facility Damage Prevention & Safety Act (Florida Chapter 556), OSHA Standard 1926.651, Florida Trench and Safety Act (Chapter 90-96) and obtaining utility locations by calling Sunshine State One-Call of Florida Inc. at 1-800-432-4700. Contractor will have full responsibility for reviewing and checking all information and data for locating all underground facilities.

BUILD AMERICA, BUY AMERICAN ACT

In connection with HUD, CDBG and any other non-FEMA Public Assistance projects, contractors and subcontractors must adhere to the Buy America Act, as required by law for federally funded projects, requiring that a product be manufactured in the U.S. of more than 50 percent U.S. parts to be considered Made in USA for government procurement purposes, as required by law. For more information, review the Buy American Act at 41 U.S.C. §§ 10a-10c, the Federal Acquisition Regulations at 48 C.F.R. Part 25, and the Trade Agreements Act at 19 U.S.C. §§ 2501-2582.

FEMA REQUIREMENTS

The City may seek reimbursement from FEMA for the work described in the associated future projects. Consequently, the City mandates compliance from the successful Contractor regarding the following **Contract Provisions for Non-Federal Entity Contracts Under Federal Awards. During the performance of this Agreement, the Contractor agrees as follows:**

(a) Equal Employment Opportunity

Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of Contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

In the event of Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this Agreement may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other

sanctions as may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

The Contractor will include the portion of the sentence immediately preceding paragraph (a) and the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, That in the event that Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

The applicant further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally assisted construction work: *Provided*, That if the applicant so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality or subdivision of such government which does not participate in work on or under the contract.

The applicant agrees that it will assist and cooperate actively with the administering agency and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish the administering agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist the administering agency in the discharge of the agency's primary responsibility for securing compliance.

The applicant further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by the administering agency or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the applicant agrees that if it fails or refuses to comply with these undertakings, the administering agency may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this grant (contract, loan, insurance, guarantee); refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case to the Department of Justice for appropriate legal proceedings.

(b) Davis-Bacon Act and the Copeland "Anti-Kickback" Act *As required by Federal program legislation:*

Contractor agrees that it shall comply with the *Davis-Bacon Act (40 USC 3141-3144 and 3146-3148)* as supplemented by the Department of Labor regulations (29 CFR Part 5, "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction").

- i. In accordance with the statute, Contractor is required to pay wages to laborers and mechanics at a rate not less than the prevailing wages specified in a wage determination made by the Secretary of Labor. In addition, Contractor shall pay wages

not less than once a week. Contractor agrees that, for any Task Order to which this requirement applies, the Contract is conditioned upon Contractor's acceptance of the wage determination.

Contractor agrees that it shall comply with the *Copeland "Anti-Kickback" Act (40 USC 3145)*, as supplemented by the Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States") and are incorporated by reference into this Agreement.

i. Contractor

The Contractor shall comply with 18 U.S.C. § 874, 40 U.S.C. § 3145, and the requirements of 29 C.F.R. pt. 3 as may be applicable, which are incorporated by reference into this Agreement.

ii. Subcontracts

The Contractor or Subcontractor shall insert in any subcontracts the clause above and such other clauses as the FEMA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all of these contract clauses.

iii. Breach

A breach of the contract clauses above may be grounds for termination of the contract, and for debarment as a Contractor and Subcontractor as provided in 29 C.F.R. § 5.12.

(c) Contract Work Hours and Safety Standards Act

i. Overtime requirements

The Contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall not require nor permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

ii. Violation; liability for unpaid wages; liquidated damages

In the event of any violation of the clause set forth in paragraph (1) of this section the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, the Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a) of this section.

iii. Withholding for unpaid wages and liquidated damages

The Owner shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the *Contract Work Hours and Safety Standards Act*, which is held by the same prime contractor, such sums as may be

determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b) of this section.

iv. Subcontracts

The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (a) through (d) of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a) through (d) of this section.

(d) Rights to Inventions Made Under a Contract or Agreement

As required by Federal program legislation, Contractor agrees to comply with the requirements of 37 C.F.R. Part 401 (Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements), and any implementing regulations issued by FEMA.

(e) Clean Air Act

The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. (2)

The Contractor agrees to report each violation to the Owner and understands and agrees that the Owner will, in turn, report each violation as required to assure notification to the State of Florida, Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

The Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

(f) Federal Water Pollution Control Act

The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.

The Contractor agrees to report each violation to the Owner and understands and agrees that the OWNER will, in turn, report each violation as required to assure notification to The State of Florida, Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

The Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance provided by FEMA.

(g) Suspension and Debarment

- i. This contract is a covered transaction for purposes of 2 C.F.R. pt. 180 and 2 C.F.R. pt. 3000. As such the Contractor is required, and will, verify that neither Contractor, its principals (defined at 2 C.F.R. § 180.995), nor its affiliates (defined at 2 C.F.R. § 180.905) are excluded (defined at 2 C.F.R. § 180.940) or disqualified (defined at 2 C.F.R. § 180.935).
- ii. The Contractor will comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C and must include a requirement to comply with these regulations in any lower tier covered transaction it enters.
- iii. Contractor's certification is a material representation of fact relied upon by the Owner. If it is later determined that the Contractor did not comply with 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C, in addition to remedies available to The State of

Florida, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment.

- iv. The Contractor agrees to comply with the requirements of 2 C.F.R. pt. 180, subpart C and 2 C.F.R. pt. 3000, subpart C throughout the period this Agreement. The Contractor further agrees to include a provision requiring such compliance in its lower-tier covered transactions.

(h) Byrd Anti-Lobbying Amendment, U.S.C. § 1352 (as amended)

- i. The Contractor certifies to the Owner that it has not and will not use Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. *The required Certification is provided as an addendum to this Agreement.*
- ii. Contractor will also ensure that each tier of subcontractor(s) shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures will be forwarded from tier-to-tier up to the Owner.

(i) Procurement of Recovered Materials As required by federal program legislation:

In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired:

- i. competitively within a timeframe providing for compliance with the contract performance schedule;
- ii. meeting contract performance requirements; or
- iii. at a reasonable price.

Information about this requirement, along with the list of EPA-designate items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive-procurement-guideline-cpg-program>.

(j) DHS Seals, Logos, and Flags

The Contractor shall not use the DHS seal(s), logos, crests, or reproductions of flags or likenesses of DHS agency officials without specific FEMA pre-approval.

(k) Compliance with Federal Law, Regulations, and Executive Orders

The Contractor acknowledges that FEMA financial assistance will be used to fund the contract only. The Contractor will comply with all applicable federal law, regulations, executive orders, FEMA policies, procedures, and directives.

(l) No Obligation by Federal Government

The Federal Government is not a party to this contract and is not subject to any obligations or liabilities to the non-Federal entity, Contractor, or any other party pertaining to any matter resulting from the contract.

(m) Program Fraud and False or Fraudulent Statements or Related Acts

The Contractor acknowledges that 31 U.S.C. Chap. 38 (Administrative Remedies for False Claims and Statements) applies to the Contractor actions pertaining to this Agreement.

(n) Access to Records

- i. The contractor agrees to provide the City of Pinellas Park, the State of Florida, the FEMA Administrator, the Comptroller General of the United States, or any of their

authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions.

- ii. The Contractor agrees to permit any of the foregoing parties to reproduce by any means whatsoever or to copy excerpts and transcriptions as reasonably needed.
- iii. The contractor agrees to provide the FEMA Administrator or his authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

(o) Domestic Preference

As appropriate and to the extent consistent with law, the City, to the greatest extent practicable under a Federal award, provides a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products).

For purposes of this section:

- i. "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
- ii. "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

(p) Minority/Women's/Labor Surplus Firms Participation

The City of Pinellas Park, in accordance with the requirements as stated in C.F.R. 200.321 encourages the active participation of minority business, women's business enterprises, and labor surplus area firms as a part of any subsequent agreement whenever possible. If subcontractors are to be let, through a prime contractor, that contractor is required to take the affirmative steps listed in items (a) through (e) below.

- i. Placing qualified small and minority businesses and women's business enterprises on solicitation lists;
- ii. Assuring that small and minority businesses, and women's business enterprises are solicited whenever they are potential sources;
- iii. Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises;
- iv. Using the services and assistance, as appropriate, of such organizations as the Small Business Administration and the Minority Business Development Agency of the Department of Commerce;
- v. Establishing delivery schedules, where the requirement permits, which encourage participation by small and minority businesses, and women's business enterprises.

Indemnification and Hold Harmless

Bid 23/005 – Emergency/Non-Emergency Sanitary Sewer Services

By this agreement, Contractor agrees, for a specific consideration, the receipt and sufficiency of which are hereby acknowledged, to indemnify, hold harmless, and/or defend the City of Pinellas Park, its agents and employees, from any and all claims, demands, suits, and actions, including attorney's fees and all costs and expenses of litigation and judgments of every kind brought against the City of Pinellas Park or its agents or employees, as a result of loss, damage, or injury to any person(s) or property occasioned wholly or in part by any act, or failure to act on the part of the Contractor, its agents, servants, or employees. Contractor shall be responsible to the City of Pinellas Park for any damages caused by the Contractor's negligence, wrongdoing, misconduct, want or need of skill, default or breach of contract, guarantee, or warranty.

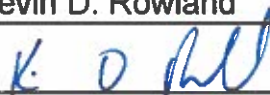
Under no circumstances shall any of the provisions of this Agreement be deemed to waive the requirements and limitations of Florida Statute §768.28, as such applies to the City of Pinellas Park, Florida, a Florida municipal corporation

Contractor Rowland (DE), LLC

Address 6855 102nd Ave. N., Pinellas Park, FL 33782

Date July 14, 2023

Print Name Kevin D. Rowland

Signature 

Title President

President, Vice-President, or Treasurer

**SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(a),
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES**

**THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER
OFFICIAL AUTHORIZED TO ADMINISTER OATHS.**

1. This sworn statement is submitted to the City of Pinellas Park

by Kevin D. Rowland, President

(print individual's name and title)

for Rowland (DE), LLC

(print name of entity submitted sworn statement)

whose business address is:

6855 102nd Ave. N.

Pinellas Park, FL 33782

and (if applicable) its Federal Employer Identification Number (FEIN) is 59-0978899

(If the entity has not FEIN, include the Social Security Number of the individual signing this sworn statement: _____.)

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with any agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.
3. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1) (b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.
4. I understand that an "affiliate" as defined in Paragraph 287.133(1) (a), Florida Statutes, means:
1. A predecessor or successor of a person convicted of a public entity crime; or
 2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.
5. I understand that a "person" as defined in Paragraph 287.133(1) (e), Florida Statutes, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contract for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

6. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement (indicate which statement applies)

X Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity, has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity, has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. (attach a copy of the final order)

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

K. D. Rowland

Signature

STATE OF Florida

COUNTY OF Pinellas

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online

notarization, this 14th day of July, 2023, by Kevin D. Rowland
(Name of person acknowledging)

Who is personally known to me or who has produced personally know to me
(Type of Identification)
as identification.

NOTARY PUBLIC Honore P. DuFaux III

(Notary Seal)

My Commission Expires _____



Honore P. DuFaux III
Comm.: HH 222077
Expires: Mar. 18, 2026
Notary Public - State of Florida

FLORIDA TRENCH SAFETY
BID 23.005 – EMERGENCY/NON-EMERGENCY SANITARY SEWER SERVICES

Bidder acknowledges that included in the various items of the bid in the Total Bid Price are costs for complying with the Florida Trench Safety Act (Florida Statute §553.60, et.seq.). The bidder further identifies the costs to be summarized below:

Trench Safety Measure (Description)	Units of Measure (LF, SY)	Unit (Quantity)	Unit Cost	Extended Cost
Sloping	LF	TBD	\$3.00	TBD
Trench Box	LF	TBD	\$8.00	TBD
Solid Sheeting	SF	TBD	\$20.00	TBD

*TOTAL \$ TBD

* This total amount is incidental to the contract bid price and is provided only as bidder acknowledgement of the Florida Trench Safety Act.

Failure to complete the above may result in the bid being declared non-responsive.

Kevin D. Rowland

Bidding Contractor Name



Bidding Contractor Signature

Non-Collusion Affidavit

State of Florida

County of Pinellas

_____, being first duly sworn, deposes and says

that he is Kevin D. Rowland of Rowland (DE), LLC

The party making the foregoing Bid or Bid; that such Bid/Bid is genuine and not collusive or sham; that said Bidder/bidder is not financially interested in or otherwise affiliated in a business way with any other Bidder/bidder on the same contract; that said Bidder/bidder has not colluded, conspire, connived, or agreed, directly or indirectly, with any other Bidders/bidders or person, to put in a sham bid/bid or that such person shall refrain from proposing/bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication, or conference, with any person to fix the bid/bid or affiant or any other Bidder/bidder, or to fix any overhead, profit or cost element of said bid/bid, or that of any other Bidder/bidder, or to secure any advantage against the City of Pinellas Park, Florida, or any person or persons interested in the proposed contract; and that all statements contained in said bid or bid are true; and further, that such Bidder/bidder has not directly or indirectly submitted this bid/bid, or the contents thereof, or divulged information or data relative thereto to any association or to any member or agent thereof.

K. D. Rowland

Affiant

STATE OF Florida

COUNTY OF Pinellas

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 14th day of July, 2023, by Kevin D. Rowland

(Name of person acknowledging)

Who is personally known to me or who has produced personally know to me

(Type of Identification)

as identification.

NOTARY PUBLIC

Honore P. DuFaux III



Honore P. DuFaux III

Comm.: HH 222077

Expires: Mar. 18, 2026

Notary Public - State of Florida

(Notary Seal)

My Commission Expires _____

DISCLOSURE OF RELATIONSHIPS

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement **MUST** be submitted with Bid, Proposal or Contract No. Bid 23.005-Emergency/Non-Emergency Sanitary Sewer Services

2. This sworn statement is submitted by: Rowland (DE), LLC

(Name of entity submitting Statement)

whose business address is:

6855 102nd Ave. N., Pinellas Park, FL 33782

and its Federal Employer Identification Number (FEIN) is 59-0978899

3. My name is Kevin D. Rowland

(Please print name of individual signing)

and my relationship to the entity named above is President

4. I understand that an "affiliate" as defined means:

The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of the entity.

5. I understand that the relationship with a City employee that must be disclosed as follows:

Father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, daughter-in-law, son-in-law, brother-in-law, sister-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, half sister, grandparent, or grandchild.

6. Based on information and belief, the statement, which I have marked below, is true in relation to the entity submitting this sworn statement. [Please indicate which statement applies.]

 X Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, have any relationships with any City employee.

 The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents, who are active in management of the entity have the following relationships with a City employee:

Name of Affiliate
or entity

Name of Employee

Relationship

K D Rowland
(Signature)

July 14, 2023

(Date)

STATE OF Florida

COUNTY OF Pinellas

Sworn to (or affirmed) and subscribed before me by means of ☒ physical presence or ☐ online notarization, this 14th day of July 2023, by Kevin D. Rowland (name of person making statement).

Honore P. DuFaux III
(Signature of Notary Public- State of Florida)

(Print, Type, or Stamp Commissioned Name of Notary Public)

☒ who is personally known to me or ☐ who has produced
_____ as identification.



Honore P. DuFaux III
Comm.: HH 222077
Expires: Mar. 18, 2026
Notary Public - State of Florida

CERTIFICATION REGARDING PROHIBITION AGAINST CONTRACTING WITH SCRUTINIZED COMPANIES

I hereby certify that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority-owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit have been placed on the Scrutinized Companies that Boycott Israel List created pursuant to 215.4725 of the Florida Statutes, or are engaged in a boycott of Israel.

In addition, if this solicitation is for a contract for goods or services of one million dollars or more, I hereby certify that neither the undersigned entity, nor any of its wholly owned subsidiaries, majority-owned subsidiaries, parent companies, or affiliates of such entities or business associations, that exists for the purpose of making profit are on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, created pursuant to s. 215.473 of the Florida Statutes, or are engaged in business operations in Cuba or Syria as defined in said statute.

I understand and agree that the City may immediately terminate any contract resulting from this solicitation upon written notice if the undersigned entity (or any of those related entities of respondent as defined above by Florida law) are found to have submitted a false certification or any of the following occur with respect to the company or a related entity: (i) it has been placed on the Scrutinized Companies that Boycott Israel List, or is engaged in a boycott of Israel, or (ii) for any contract for goods or services of one million dollars or more, it has been placed on the Scrutinized Companies with Activities in Sudan List or the Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List, or it is found to have been engaged in business operations in Cuba or Syria.

Name of Respondent: Rowland (DE), LLC

By: 
(Authorized Signature)

Title: President

Date: July 14, 2023

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned Firm certifies, to the best of his or her knowledge, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31, U.S.C. § 1352 (as amended by the Lobbying Disclosure Act of 1995). Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor, Rowland (DE), LLC, certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. § 3801 et seq., apply to this certification and disclosure, if any.



Signature of Contractor's Authorized Official

Kevin D. Rowland, President

Name and Title of Contractor's Authorized Official

July 14, 2023

Date

CERTIFICATION REGARDING DEBARMENT, SUSPENSION INELIGIBILITY AND VOLUNTARY EXCLUSION

(1) The CONTRACTOR certifies, by submission of this bid, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this bid.



Signature of Bidder's Authorized Official

Kevin D. Rowland, President

Name and Title of Bidder's Authorized Official

July 14, 2023

Date

Bid Summary Form

Bid 23/005 - Emergency/Non-Emergency Sanitary Sewer Services

Bid of Rowland (DE), LLC
(Name)

Address Pinellas Park Florida 33782
(City) (State) (Zip Code)

To: Purchasing Division
City of Pinellas Park
8000 60th St. N.
Pinellas Park, Florida 33781

Gentlemen:

The undersigned, as bidder, hereby declares that the only persons interested in this bid as principal, or principals, is or are named herein and that no person other than herein mentioned has any interest in this bid or in the Contract to be entered into; that this bid is made without connection with any other person, company, or parties making a bid; and that it is in all respects fair and in good faith without collusion or fraud.

The bidder further declares that he has examined the site(s) of the work and informed himself fully in regard to all conditions pertaining to the place where the work is to be done; that he has examined the plans for the work and other Contract Documents relative thereto and has read all of the Addenda furnished prior to the opening of the bids, as acknowledged below; that he fully understands and has satisfied himself relative to the scope and nature of the work to be performed.

The bidder agrees that if this bid is accepted, to contract with the City of Pinellas Park, Pinellas County, Florida, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation, and labor necessary to complete the work covered by this bid and other Contract Documents for the execution of **Bid 23/005 – Emergency/Non-Emergency Sanitary Sewer Services** and to furnish the prescribed Performance, Payment and Guaranty Bond for no less than the total bid offered.

For non-emergency projects, the bidder agrees that he will furnish within ten (10) days after being notified of the award of the Contract to him, the Performance, Payment and Guaranty Bond Form as specified in the Contract Documents written by a reputable Surety Company acceptable to the Owner and authorized to do business in the State of Florida and Pinellas County. Said Bond will be furnished for not less than the total bid offered, the premium of the Bond to be paid by the Bidder.

The bidder agrees that the wage rates for laborers, mechanics, and apprentices shall be not less than those established by the State of Florida Department of Commerce for this work and included in the Supplemental General Conditions.

For non-emergency projects, the bidder agrees further to begin work within ten (10) calendar days after notification of the Notice to Proceed.

For emergency projects, the bidder agrees to begin work immediately after Notice to Proceed.

The bidder also agrees to reimburse the Owner as liquidated damages, for each calendar day elapsing between the date specified for full completion and the actual date of such completion, the sum specified in the General Conditions.

Respectfully submitted,

Rowland (DE), LLC

(Company Name)

Kevin D. Rowland, President

(Name and Title of Authorized Company Official)

ATTEST: 

(Signature)

Bidder's Mailing Address:

6855 102nd Ave. N.

Pinellas Park, FL 33782

Phone Number: (727) 545-3815

The full names and residence of persons or firms interested in the foregoing Bid, as principals, are as follows:

The name of the executive who will give personal attention to the work:

Kevin D. Rowland, President

The superintendent, project manager, or foremen who will exercise direct personal control of the work:

Acknowledgement of Addenda

Addendum No. _____ Signature _____ L.S.

Addendum No. _____ Signature _____ L.S.

Addendum No. _____ Signature _____ L.S.

Addendum No. _____ Signature _____ L.S.

Addendum No. _____ Signature _____ L.S.

Emergency/Hurricane or Disaster Conditions

It is hereby made a part of this Invitation to Bid that before, during, and after a public emergency, hurricane, disaster, flood or acts of God, that the City of Pinellas Park, shall require a "first priority" basis for goods and services. It is vital and imperative that the majority of citizens are protected from any emergency situation which threatens public health and safety, as determined by the City of Pinellas Park.

Contractor agrees to rent/sell/ lease all goods and services to the City of Pinellas Park, as opposed to a private citizen on a first priority basis. The City of Pinellas Park expects to pay the prices listed in the Bid Form/Schedule for all services rendered in the event of an emergency, hurricane, or disaster. Contractor shall furnish a "24 hour" phone number in the event of such an emergency.

☒ I hereby understand and agree to the above statement.



Signature

Kevin D. Rowland

Print Name

President

Title

Rowland (DE), LLC

Name of Company

Emergency Contact: Ken Rowland

Emergency Telephone Number: (727) 545-3815

Home Telephone Number: _____

Cellular Phone Number: (727) 423-4069

☐ I cannot comply with this request

Signature

Print Name

Title

Name of Company

City of Pinellas Park
 Bid 23.005 - Emergency/Non-Emergency Sanitary Sewer Services

Pay Item No.	Description	Quantity	Unit	UnitPrice	Amount
GROUP A - MOBILIZATION					
Mob1	Mobilization for Routine Response	1.00	EA	5,160.00	\$ 5,160.00
Mob2	Mobilization for Emergency Response	1.00	EA	7,920.00	\$ 7,920.00
GROUP A - MOBILIZATION Subtotal					\$ 13,080.00
GROUP B - NEW SEWER INSTALLATION					
NS1	As-Built Survey	1.00	EA	600.00	\$ 600.00
NS2	Excavation, Unsuitable Material	1.00	CY	88.80	\$ 88.80
NS3	Select bed & backfill material- gravel	1.00	CY	64.56	\$ 64.56
NS4	Sheeting & Bracing (Left in Place)	1.00	SF	45.60	\$ 45.60
NS5	Sheeting & Bacing, Pipe Trenches (Removed)	1.00	SF	36.00	\$ 36.00
NS6	Well Point Dewatering Initial - 6'-8' Deep	1.00	EA	4,939.20	\$ 4,939.20
NS7	Well Point Dewatering Initial - 8'-10' Deep	1.00	EA	5,006.40	\$ 5,006.40
NS8	Well Point Dewatering Initial - 10'-12' Deep	1.00	EA	5,107.20	\$ 5,107.20
NS9	Well Point Dewatering Initial - 12'-14' Deep	1.00	EA	5,241.60	\$ 5,241.60
NS10	Well Point Dewatering Initial - 14'-16' Deep	1.00	EA	5,416.32	\$ 5,416.32
NS11	Well Point Dewatering Initial - > 16' Deep	1.00	EA	6,384.00	\$ 6,384.00
NS12	Well Point Dewatering Additional - 6'-8' Deep	1.00	EA	99.60	\$ 99.60
NS13	Well Point Dewatering Additional - 8'-10' Deep	1.00	EA	110.40	\$ 110.40
NS14	Well Point Dewatering Additional - 10'-12' Deep	1.00	EA	123.60	\$ 123.60
NS15	Well Point Dewatering Additional - 12'-14' Deep	1.00	EA	165.60	\$ 165.60
NS16	Well Point Dewatering Additional - 14'-16' Deep	1.00	EA	248.40	\$ 248.40
NS17	Well Point Dewatering Additional - > 16' Deep	1.00	EA	332.40	\$ 332.40
NS18	6" Dia. - CIPP Sewer Main	1.00	LF	52.80	\$ 52.80
NS19	8" Dia. - CIPP Sewer Main	1.00	LF	59.40	\$ 59.40
NS20	10" Dia. - CIPP Sewer Main	1.00	LF	66.00	\$ 66.00
NS21	Jack & Bore 12" x .188" Steel Casing (6" GS)	1.00	LF	127.20	\$ 127.20
NS22	Jack & Bore 16" x .219" Steel Casing (8" GS)	1.00	LF	339.60	\$ 339.60
NS23	Jack & Bore 20" x .250" Steel Casing (10" GS)	1.00	LF	434.40	\$ 434.40
NS24	Jack & Bore 24" x .281" Steel Casing (12" GS)	1.00	LF	472.80	\$ 472.80
NS25	2" Directional Drill HDPE DR 9, IPS OD	1.00	LF	28.02	\$ 28.02
NS26	4" Directional Drill HDPE DR 11, DIPS OD	1.00	LF	42.96	\$ 42.96
NS27	6" Directional Drill HDPE DR 11, DIPS OD	1.00	LF	56.52	\$ 56.52
NS28	8" Directional Drill HDPE DR 11, DIPS OD	1.00	LF	78.84	\$ 78.84
NS29	10" Directional Drill HDPE DR 11, DIPS OD	1.00	LF	101.16	\$ 101.16
NS30	12" Directional Drill HDPE DR 11, DIPS OD	1.00	LF	156.66	\$ 156.66
NS31	6" PVC Pipe, C-900 DR 18 (Gravity Sewer) 0' - 6' Depth	1.00	LF	72.36	\$ 72.36
NS32	6" PVC Pipe, C-900 DR 18 (Gravity Sewer) 6' - 8' Depth	1.00	LF	71.16	\$ 71.16
NS33	6" PVC Pipe, C-900 DR 18 (Gravity Sewer) 8' - 10' Depth	1.00	LF	71.16	\$ 71.16
NS34	6" PVC Pipe, C-900 DR 18 (Gravity Sewer) 10' - 12' Depth	1.00	LF	80.76	\$ 80.76
NS35	6" PVC Pipe, C-900 DR 18 (Gravity Sewer) 12' - 14' Depth	1.00	LF	80.76	\$ 80.76
NS36	6" PVC Pipe, C-900 DR 18 (Gravity Sewer) 14' - 16' Depth	1.00	LF	94.68	\$ 94.68
NS37	6" PVC Pipe, C-900 DR 18 (Gravity Sewer) 16' - 18' Depth	1.00	LF	115.08	\$ 115.08
NS38	8" DI Pipe, CL 350 (Gravity Sewer) 0' - 6' Depth	1.00	LF	100.80	\$ 100.80
NS39	8" DI Pipe, CL 350 (Gravity Sewer) 6' - 8' Depth	1.00	LF	102.12	\$ 102.12
NS40	8" DI Pipe, CL 350 (Gravity Sewer) 8' - 10' Depth	1.00	LF	102.12	\$ 102.12
NS41	8" DI Pipe, CL 350 (Gravity Sewer) 10' - 12' Depth	1.00	LF	110.70	\$ 110.70
NS42	8" DI Pipe, CL 350 (Gravity Sewer) 12' - 14' Depth	1.00	LF	110.70	\$ 110.70
NS43	8" DI Pipe, CL 350 (Gravity Sewer) 14' - 16' Depth	1.00	LF	122.64	\$ 122.64
NS44	8" DI Pipe, CL 350 (Gravity Sewer) 16' - 18' Depth	1.00	LF	140.70	\$ 140.70

NS45	8" PVC Pipe, C-900 DR 18 (Gravity Sewer) 0' - 6' Depth	1.00	LF	94.92	\$	94.92
NS46	8" PVC Pipe, C-900 DR 18 (Gravity Sewer) 6' - 8' Depth	1.00	LF	96.84	\$	96.84
NS47	8" PVC Pipe, C-900 DR 18 (Gravity Sewer) 8' - 10' Depth	1.00	LF	96.84	\$	96.84
NS48	8" PVC Pipe, C-900 DR 18 (Gravity Sewer) 10' - 12' Depth	1.00	LF	109.20	\$	109.20
NS49	8" PVC Pipe, C-900 DR 18 (Gravity Sewer) 12' - 14' Depth	1.00	LF	109.20	\$	109.20
NS50	8" PVC Pipe, C-900 DR 18 (Gravity Sewer) 14' - 16' Depth	1.00	LF	126.36	\$	126.36
NS51	8" PVC Pipe, C-900 DR 18 (Gravity Sewer) 16' - 18' Depth	1.00	LF	152.40	\$	152.40
NS52	10" DI Pipe, CL 350 (Gravity Sewer) 0' - 6' Depth	1.00	LF	111.42	\$	111.42
NS53	10" DI Pipe, CL 350 (Gravity Sewer) 6' - 8' Depth	1.00	LF	112.92	\$	112.92
NS54	10" DI Pipe, CL 350 (Gravity Sewer) 8' - 10' Depth	1.00	LF	112.92	\$	112.92
NS55	10" DI Pipe, CL 350 (Gravity Sewer) 10' - 12' Depth	1.00	LF	121.50	\$	121.50
NS56	10" DI Pipe, CL 350 (Gravity Sewer) 12' - 14' Depth	1.00	LF	121.50	\$	121.50
NS57	10" DI Pipe, CL 350 (Gravity Sewer) 14' - 16' Depth	1.00	LF	133.50	\$	133.50
NS58	10" DI Pipe, CL 350 (Gravity Sewer) 16' - 18' Depth	1.00	LF	153.42	\$	153.42
NS59	10" PVC Pipe, C-900 DR 18 (Gravity Sewer) 0' - 6' Depth	1.00	LF	88.50	\$	88.50
NS60	10" PVC Pipe, C-900 DR 18 (Gravity Sewer) 6' - 8' Depth	1.00	LF	90.12	\$	90.12
NS61	10" PVC Pipe, C-900 DR 18 (Gravity Sewer) 8' - 10' Depth	1.00	LF	90.12	\$	90.12
NS62	10" PVC Pipe, C-900 DR 18 (Gravity Sewer) 10' - 12' Depth	1.00	LF	99.90	\$	99.90
NS63	10" PVC Pipe, C-900 DR 18 (Gravity Sewer) 12' - 14' Depth	1.00	LF	99.90	\$	99.90
NS64	10" PVC Pipe, C-900 DR 18 (Gravity Sewer) 14' - 16' Depth	1.00	LF	113.58	\$	113.58
NS65	10" PVC Pipe, C-900 DR 18 (Gravity Sewer) 16' - 18' Depth	1.00	LF	134.10	\$	134.10
NS66	12" DI Pipe, CL 350 (Gravity Sewer) 0' - 6' Depth	1.00	LF	125.58	\$	125.58
NS67	12" DI Pipe, CL 350 (Gravity Sewer) 6' - 8' Depth	1.00	LF	126.84	\$	126.84
NS68	12" DI Pipe, CL 350 (Gravity Sewer) 8' - 10' Depth	1.00	LF	126.84	\$	126.84
NS69	12" DI Pipe, CL 350 (Gravity Sewer) 10' - 12' Depth	1.00	LF	135.66	\$	135.66
NS70	12" DI Pipe, CL 350 (Gravity Sewer) 12' - 14' Depth	1.00	LF	135.66	\$	135.66
NS71	12" DI Pipe, CL 350 (Gravity Sewer) 14' - 16' Depth	1.00	LF	147.42	\$	147.42
NS72	12" DI Pipe, CL 350 (Gravity Sewer) 16' - 18' Depth	1.00	LF	165.36	\$	165.36
NS73	12" PVC Pipe, C-900 DR 18 (Gravity Sewer) 0' - 6' Depth	1.00	LF	101.76	\$	101.76
NS74	12" PVC Pipe, C-900 DR 18 (Gravity Sewer) 6' - 8' Depth	1.00	LF	103.26	\$	103.26
NS75	12" PVC Pipe, C-900 DR 18 (Gravity Sewer) 8' - 10' Depth	1.00	LF	103.26	\$	103.26
NS76	12" PVC Pipe, C-900 DR 18 (Gravity Sewer) 10' - 12' Depth	1.00	LF	113.04	\$	113.04
NS77	12" PVC Pipe, C-900 DR 18 (Gravity Sewer) 12' - 14' Depth	1.00	LF	113.04	\$	113.04
NS78	12" PVC Pipe, C-900 DR 18 (Gravity Sewer) 14' - 16' Depth	1.00	LF	126.72	\$	126.72
NS79	12" PVC Pipe, C-900 DR 18 (Gravity Sewer) 16' - 18' Depth	1.00	LF	147.12	\$	147.12
NS80	16" DI Pipe, CL 350 (Gravity Sewer) 0' - 6' Depth	1.00	LF	160.14	\$	160.14
NS81	16" DI Pipe, CL 350 (Gravity Sewer) 6' - 8' Depth	1.00	LF	161.82	\$	161.82
NS82	16" DI Pipe, CL 350 (Gravity Sewer) 8' - 10' Depth	1.00	LF	161.82	\$	161.82
NS83	16" DI Pipe, CL 350 (Gravity Sewer) 10' - 12' Depth	1.00	LF	170.22	\$	170.22
NS84	16" DI Pipe, CL 350 (Gravity Sewer) 12' - 14' Depth	1.00	LF	170.22	\$	170.22
NS85	16" DI Pipe, CL 350 (Gravity Sewer) 14' - 16' Depth	1.00	LF	182.28	\$	182.28
NS86	16" DI Pipe, CL 350 (Gravity Sewer) 16' - 18' Depth	1.00	LF	200.22	\$	200.22
NS87	16" PVC Pipe, C-905 DR 18 (Gravity Sewer) 0' - 6' Depth	1.00	LF	104.82	\$	104.82
NS88	16" PVC Pipe, C-905 DR 18 (Gravity Sewer) 6' - 8' Depth	1.00	LF	106.38	\$	106.38
NS89	16" PVC Pipe, C-905 DR 18 (Gravity Sewer) 8' - 10' Depth	1.00	LF	106.38	\$	106.38
NS90	16" PVC Pipe, C-905 DR 18 (Gravity Sewer) 10' - 12' Depth	1.00	LF	116.22	\$	116.22
NS91	16" PVC Pipe, C-905 DR 18 (Gravity Sewer) 12' - 14' Depth	1.00	LF	116.22	\$	116.22
NS92	16" PVC Pipe, C-905 DR 18 (Gravity Sewer) 14' - 16' Depth	1.00	LF	129.90	\$	129.90
NS93	16" PVC Pipe, C-905 DR 18 (Gravity Sewer) 16' - 18' Depth	1.00	LF	150.42	\$	150.42
NS94	Install PVC Cleanout	1.00	EA	940.80	\$	940.80
NS95	Remove Pipe 2" or 4" (Gravity Sewer)	1.00	LF	88.80	\$	88.80
NS96	Remove Pipe 6" or 8" (Gravity Sewer)	1.00	LF	105.60	\$	105.60
NS97	Remove Pipe 10" or 12" (Gravity Sewer)	1.00	LF	113.04	\$	113.04

NS98	Remove Pipe 16" or 18" (Gravity Sewer)	1.00	LF	138.60	\$	138.60
NS99	4" Pipe - Install or Adjust Service Lateral 0'-6' Deep	1.00	EA	2,346.00	\$	2,346.00
NS100	4" Pipe - Install or Adjust Service Lateral 6'-8' Deep	1.00	EA	2,400.00	\$	2,400.00
NS101	4" Pipe - Install or Adjust Service Lateral 8'-10' Deep	1.00	EA	2,628.00	\$	2,628.00
NS102	4" Pipe - Install or Adjust Service Lateral 10'-12' Deep	1.00	EA	2,700.00	\$	2,700.00
NS103	4" Pipe - Install or Adjust Service Lateral 12'-14' Deep	1.00	EA	3,480.00	\$	3,480.00
NS104	4" Pipe - Install or Adjust Service Lateral 14'-16' Deep	1.00	EA	3,600.00	\$	3,600.00
NS105	4" Pipe - Install or Adjust Service Lateral 16'-18' Deep	1.00	EA	5,190.00	\$	5,190.00
NS106	6" Pipe - Install or Adjust Service Lateral 0'-6' Deep	1.00	EA	3,031.20	\$	3,031.20
NS107	6" Pipe - Install or Adjust Service Lateral 6'-8' Deep	1.00	EA	3,120.00	\$	3,120.00
NS108	6" Pipe - Install or Adjust Service Lateral 8'-10' Deep	1.00	EA	3,360.00	\$	3,360.00
NS109	6" Pipe - Install or Adjust Service Lateral 10'-12' Deep	1.00	EA	3,480.00	\$	3,480.00
NS110	6" Pipe - Install or Adjust Service Lateral 12'-14' Deep	1.00	EA	4,392.00	\$	4,392.00
NS111	6" Pipe - Install or Adjust Service Lateral 14'-16' Deep	1.00	EA	4,500.00	\$	4,500.00
NS112	6" Pipe - Install or Adjust Service Lateral 16'-18' Deep	1.00	EA	6,444.00	\$	6,444.00
NS113	2" Sewer Line Manhole Connection	1.00	EA	483.60	\$	483.60
NS114	4" Sewer Line Manhole Connection	1.00	EA	553.80	\$	553.80
NS115	6" Sewer Line Manhole Connection	1.00	EA	712.92	\$	712.92
NS116	8" Sewer Line Manhole Connection	1.00	EA	936.00	\$	936.00
NS117	10" Sewer Line Manhole Connection	1.00	EA	1,110.00	\$	1,110.00
NS118	12" Sewer Line Manhole Connection	1.00	EA	1,126.80	\$	1,126.80
NS119	16" Sewer Line Manhole Connection	1.00	EA	1,326.00	\$	1,326.00
NS120	18" Sewer Line Manhole Connection	1.00	EA	1,818.00	\$	1,818.00
NS121	2" Inside Drop Connection	1.00	EA	1,050.00	\$	1,050.00
NS122	4" Inside Drop Connection	1.00	EA	1,482.00	\$	1,482.00
NS123	6" Inside Drop Connection	1.00	EA	1,536.00	\$	1,536.00
NS124	8" Inside Drop Connection	1.00	EA	2,316.00	\$	2,316.00
NS125	10" Inside Drop Connection	1.00	EA	2,628.00	\$	2,628.00
NS126	12" Inside Drop Connection	1.00	EA	3,084.00	\$	3,084.00
NS127	16" Inside Drop Connection	1.00	EA	3,282.00	\$	3,282.00
NS128	18" Inside Drop Connection	1.00	EA	3,510.00	\$	3,510.00
NS129	Grouting Out of Service Pipe (Force Main)	1.00	CY	654.00	\$	654.00
NS130	Disconnect & Plug 2" or 4" Pipe	1.00	EA	648.00	\$	648.00
NS131	Disconnect & Plug 6" or 8" Pipe	1.00	EA	996.00	\$	996.00
NS132	Disconnect & Plug 10" or 12" Pipe	1.00	EA	1,134.00	\$	1,134.00
NS133	2" PVC Restrained Joint Pipe & Fittings FM, SDR 21	1.00	LF	34.80	\$	34.80
NS134	2" Restrained Joints	1.00	EA	81.60	\$	81.60
NS135	4" PVC Pipe, C-900 DR 18 (Force Main)	1.00	LF	36.24	\$	36.24
NS136	4" PVC Restrained Joint Pipe & Fittings FM, C-900 DR 18	1.00	LF	44.16	\$	44.16
NS137	4" Restrained Joints	1.00	EA	106.20	\$	106.20
NS138	6" PVC Pipe, C-900 DR 18 (Force Main)	1.00	LF	43.56	\$	43.56
NS139	6" PVC Restrained Joint Pipe & Fittings FM, C-900 DR 18	1.00	LF	63.00	\$	63.00
NS140	6" Restrained Joints	1.00	EA	124.50	\$	124.50
NS141	8" PVC Pipe, C-900 DR 18 (Force Main)	1.00	LF	53.82	\$	53.82
NS142	8" PVC Restrained Joint Pipe & Fittings FM, C-900 DR 18	1.00	LF	60.18	\$	60.18
NS143	8" Restrained Joints	1.00	EA	176.70	\$	176.70
NS144	10" PVC Pipe, C-900 DR 18 (Force Main)	1.00	LF	73.20	\$	73.20
NS145	10" PVC Restrained Joint Pipe & Fittings FM, C-900 DR 18	1.00	LF	91.74	\$	91.74
NS146	10" Restrained Joints	1.00	EA	315.60	\$	315.60
NS147	12" PVC Pipe, C-900 DR 18 (Force Main)	1.00	LF	89.16	\$	89.16
NS148	12" PVC Restrained Joint Pipe & Fittings FM, C-900 DR 18	1.00	LF	109.20	\$	109.20
NS149	12" Restrained Joints	1.00	EA	343.20	\$	343.20
NS150	2"-4" Forcemain Pipe and Appurtenances - Over Depth Excavation	1.00	LF	24.00	\$	24.00

NS151	6"-8" Forcemain Pipe and Appurtenances - Over Depth Excavation	1.00	LF	24.00	\$	24.00
NS152	10"-12" Forcemain Pipe and Appurtenances - Over Depth Excavation	1.00	LF	30.00	\$	30.00
NS153	Remove Out of Service Pipe 2" or 4" (Force Main)	1.00	LF	19.80	\$	19.80
NS154	Remove Out of Service Pipe 6" or 8" (Force Main)	1.00	LF	26.40	\$	26.40
NS155	Remove Out of Service Pipe 10" or 12" (Force Main)	1.00	LF	34.80	\$	34.80
NS156	2" Sleeved Connection	1.00	EA	258.00	\$	258.00
NS157	4" Sleeved Connection	1.00	EA	714.00	\$	714.00
NS158	6" Sleeved Connection	1.00	EA	1,362.00	\$	1,362.00
NS159	8" Sleeved Connection	1.00	EA	1,356.00	\$	1,356.00
NS160	10" Sleeved Connection	1.00	EA	1,482.00	\$	1,482.00
NS161	12" Sleeved Connection	1.00	EA	1,680.00	\$	1,680.00
NS162	Reverse Deadman for 2" or 4" Pipe	1.00	EA	1,356.00	\$	1,356.00
NS163	Reverse Deadman for 6" or 8" Pipe	1.00	EA	1,722.00	\$	1,722.00
NS164	Reverse Deadman for 10" or 12" Pipe	1.00	EA	2,748.00	\$	2,748.00
NS165	DI Fittings FM C 153 (Compact Body)	1.00	TN	25,608.00	\$	25,608.00
NS166	2" Air Release Assembly (In-line)	1.00	EA	14,094.00	\$	14,094.00
NS167	2" Air Release Assembly (Offset)	1.00	EA	9,834.00	\$	9,834.00
NS168	2" RWGV (Resilient Wedge Gate Valve) & Box	1.00	EA	1,134.00	\$	1,134.00
NS169	4" RWGV & Box C 515	1.00	EA	1,368.00	\$	1,368.00
NS170	6" RWGV & Box C 515	1.00	EA	1,734.00	\$	1,734.00
NS171	8" RWGV & Box C 515	1.00	EA	2,436.00	\$	2,436.00
NS172	10" RWGV & Box C 515	1.00	EA	3,498.00	\$	3,498.00
NS173	12" RWGV & Box C 515	1.00	EA	3,888.00	\$	3,888.00
NS174	Adjust Valve Box to Finished Grade (In Pavement)	1.00	EA	564.00	\$	564.00
NS175	Adjust Valve Box to Finished Grade (Outside of Pavement)	1.00	EA	248.40	\$	248.40
NS176	4" Line Stop	1.00	EA	9,516.00	\$	9,516.00
NS177	6" Line Stop	1.00	EA	9,882.00	\$	9,882.00
NS178	8" Line Stop	1.00	EA	10,800.00	\$	10,800.00
NS179	10" Line Stop	1.00	EA	12,924.00	\$	12,924.00
NS180	12" Line Stop	1.00	EA	13,290.00	\$	13,290.00
NS181	16" Line Stop	1.00	EA	20,034.00	\$	20,034.00
NS182	20" Line Stop	1.00	EA	21,840.00	\$	21,840.00
NS183	24" Line Stop	1.00	EA	26,244.00	\$	26,244.00
NS184	4" x 2" Tapping Saddle Valve & Box	1.00	EA	1,548.00	\$	1,548.00
NS185	4" x 4" Tapping Sleeve Valve & Box	1.00	EA	3,474.00	\$	3,474.00
NS186	6" x 2" Tapping Saddle Valve & Box	1.00	EA	1,572.00	\$	1,572.00
NS187	6" x 4" Tapping Sleeve Valve & Box	1.00	EA	3,282.00	\$	3,282.00
NS188	6" x 6" Tapping Sleeve Valve & Box	1.00	EA	4,110.00	\$	4,110.00
NS189	8" x 2" Tapping Saddle Valve & Box	1.00	EA	1,596.00	\$	1,596.00
NS190	8" x 4" Tapping Sleeve Valve & Box	1.00	EA	3,300.00	\$	3,300.00
NS191	8" x 6" Tapping Sleeve Valve & Box	1.00	EA	3,762.00	\$	3,762.00
NS192	8" x 8" Tapping Sleeve Valve & Box	1.00	EA	5,088.00	\$	5,088.00
NS193	10" x 2" Tapping Saddle Valve & Box	1.00	EA	1,620.00	\$	1,620.00
NS194	10" x 4" Tapping Sleeve Valve & Box	1.00	EA	3,330.00	\$	3,330.00
NS195	10" x 6" Tapping Sleeve Valve & Box	1.00	EA	3,834.00	\$	3,834.00
NS196	10" x 8" Tapping Sleeve Valve & Box	1.00	EA	5,136.00	\$	5,136.00
NS197	10" x 10" Tapping Sleeve Valve & Box	1.00	EA	6,996.00	\$	6,996.00
NS198	12" x 2" Tapping Saddle Valve & Box	1.00	EA	1,632.00	\$	1,632.00
NS199	12" x 4" Tapping Sleeve Valve & Box	1.00	EA	3,606.00	\$	3,606.00
NS200	12" x 6" Tapping Sleeve Valve & Box	1.00	EA	3,900.00	\$	3,900.00
NS201	12" x 8" Tapping Sleeve Valve & Box	1.00	EA	4,926.00	\$	4,926.00
NS202	12" x 10" Tapping Sleeve Valve & Box	1.00	EA	6,420.00	\$	6,420.00
NS203	12" x 12" Tapping Sleeve Valve & Box	1.00	EA	8,826.00	\$	8,826.00

NS204	4' Dia. - Precast Manhole Standard	1.00	VF	300.00	\$ 300.00
NS205	4' Dia. - Precast Manhole Inside Drop	1.00	VF	360.00	\$ 360.00
NS206	4' Dia. - Precast Manhole Outside Drop	1.00	VF	330.00	\$ 330.00
NS207	5' Dia. - Precast Manhole Standard	1.00	VF	360.00	\$ 360.00
NS208	5' Dia. - Precast Manhole Inside Drop	1.00	VF	420.00	\$ 420.00
NS209	5' Dia. - Precast Manhole Outside Drop	1.00	VF	378.00	\$ 378.00
NS210	5' Dia. - Precast Air Release Manhole	1.00	VF	480.00	\$ 480.00
NS211	6' Dia. - Precast Manhole Standard	1.00	VF	480.00	\$ 480.00
NS212	6' Dia. - Precast Manhole Inside Drop	1.00	VF	510.00	\$ 510.00
NS213	6' Dia. - Precast Manhole Outside Drop	1.00	VF	510.00	\$ 510.00
NS214	Removal of Existing Manhole	1.00	EA	1,290.00	\$ 1,290.00
NS215	Remove Existing Manhole Additional	1.00	VF	114.30	\$ 114.30
		GROUP B - NEW SEWER INSTALLATION Subtotal			\$ 413,135.28

GROUP C - SEWER REPAIRS & OFFSETS

R1	Initial/Exploratory Excavation - 0'-6' Deep	1.00	EA	9,600.00	\$ 9,600.00
R2	Initial/Exploratory Excavation - 6'-8' Deep	1.00	EA	10,116.00	\$ 10,116.00
R3	Initial/Exploratory Excavation - 8'-10' Deep	1.00	EA	10,560.00	\$ 10,560.00
R4	Initial/Exploratory Excavation - 10'-12' Deep	1.00	EA	11,988.00	\$ 11,988.00
R5	Initial/Exploratory Excavation - 12'-14' Deep	1.00	EA	12,633.60	\$ 12,633.60
R6	Initial/Exploratory Excavation - 14'-16' Deep	1.00	EA	14,166.00	\$ 14,166.00
R7	Initial/Exploratory Excavation - 16'-18' Deep	1.00	EA	15,006.00	\$ 15,006.00
R8	Initial/Exploratory Excavation - 18'-20' Deep	1.00	EA	15,996.00	\$ 15,996.00
R9	Additional Excavation - 0'-6' Deep	1.00	LF	103.50	\$ 103.50
R10	Additional Excavation - 6'-8' Deep	1.00	LF	105.60	\$ 105.60
R11	Additional Excavation - 8'-10' Deep	1.00	LF	112.20	\$ 112.20
R12	Additional Excavation - 10'-12' Deep	1.00	LF	112.20	\$ 112.20
R13	Additional Excavation - 12'-14' Deep	1.00	LF	161.28	\$ 161.28
R14	Additional Excavation - 14'-16' Deep	1.00	LF	161.28	\$ 161.28
R15	Additional Excavation - 16'-18' Deep	1.00	LF	228.48	\$ 228.48
R16	Additional Excavation - 18'-20' Deep	1.00	LF	228.48	\$ 228.48
R17	Manhole Lining, 4' Diameter Spray on Calcium Aluminate Liner - Initial	1.00	VF	260.00	\$ 260.00
R18	WASTEWATER FLOW THROUGH BY-PASS PUMPING, 8" - 10" DIAMETER	1.00	EA	120.00	\$ 120.00
R19	WASTEWATER FLOW THROUGH BY-PASS PUMPING, 12" - 14" DIAMETER	1.00	EA	120.00	\$ 120.00
R20	WASTEWATER FLOW THROUGH BY-PASS PUMPING, 15" - 21" DIAMETER	1.00	EA	180.00	\$ 180.00
R21	WASTEWATER FLOW THROUGH BY-PASS PUMPING, 24" - 30" DIAMETER	1.00	EA	180.00	\$ 180.00
R22	WASTEWATER FLOW THROUGH BY-PASS PUMPING, 36" - 42" DIAMETER	1.00	EA	240.00	\$ 240.00
R23	WASTEWATER BY-PASS PUMPING SET UP AND OPERATIONS, 8" - 10" DIAMETER	1.00	EA/DAY	4,620.00	\$ 4,620.00
R24	WASTEWATER BY-PASS PUMPING SET UP AND OPERATIONS, 12" - 14" DIAMETER	1.00	EA/DAY	6,186.00	\$ 6,186.00
R25	WASTEWATER BY-PASS PUMPING SET UP AND OPERATIONS, 15" - 21" DIAMETER	1.00	EA/DAY	6,186.00	\$ 6,186.00
R26	WASTEWATER BY-PASS PUMPING SET UP AND OPERATIONS, 24" - 30" DIAMETER	1.00	EA/DAY	8,514.00	\$ 8,514.00
R27	WASTEWATER BY-PASS PUMPING SET UP AND OPERATIONS, 36" - 42" DIAMETER	1.00	EA/DAY	8,514.00	\$ 8,514.00
R28	6" Dia. Pipe Gravity Sewer Point Repair (DI Replacement Pipe)	1.00	EA	1,320.00	\$ 1,320.00
R29	6" Dia. Pipe Gravity Sewer Point Repair (PVC Replacement Pipe)	1.00	EA	1,200.00	\$ 1,200.00
R30	8" Dia. Pipe Gravity Sewer Point Repair (DI Replacement Pipe)	1.00	EA	3,240.00	\$ 3,240.00
R31	8" Dia. Pipe Gravity Sewer Point Repair (PVC Replacement Pipe)	1.00	EA	3,120.00	\$ 3,120.00
R32	10" Dia. Pipe Gravity Sewer Point Repair (DI Replacement Pipe)	1.00	EA	3,360.00	\$ 3,360.00
R33	10" Dia. Pipe Gravity Sewer Point Repair (PVC Replacement Pipe)	1.00	EA	3,240.00	\$ 3,240.00
R34	12" Dia. Pipe Gravity Sewer Point Repair (DI Replacement Pipe)	1.00	EA	3,600.00	\$ 3,600.00
R35	12" Dia. Pipe Gravity Sewer Point Repair (PVC Replacement Pipe)	1.00	EA	3,480.00	\$ 3,480.00
R36	16" Dia. Pipe Gravity Sewer Point Repair (DI Replacement Pipe)	1.00	EA	4,200.00	\$ 4,200.00
R37	16" Dia. Pipe Gravity Sewer Point Repair (PVC Replacement Pipe)	1.00	EA	3,960.00	\$ 3,960.00
R38	18" Dia. Pipe Gravity Sewer Point Repair (DI Replacement Pipe)	1.00	EA	4,440.00	\$ 4,440.00
R39	18" Dia. Pipe Gravity Sewer Point Repair (PVC Replacement Pipe)	1.00	EA	4,200.00	\$ 4,200.00

R40	6" Dia. Pipe Gravity Sewer Point Repair - Additional Length (DI Replacement Pipe)	1.00	LF	127.20	\$	127.20
R41	6" Dia. Pipe Gravity Sewer Point Repair - Additional Length (PVC Replacement Pipe)	1.00	LF	80.40	\$	80.40
R42	8" Dia. Pipe Gravity Sewer Point Repair - Additional Length (DI Replacement Pipe)	1.00	LF	144.00	\$	144.00
R43	8" Dia. Pipe Gravity Sewer Point Repair - Additional Length (PVC Replacement Pipe)	1.00	LF	91.20	\$	91.20
R44	10" Dia. Pipe Gravity Sewer Point Repair - Additional Length (DI Replacement Pipe)	1.00	LF	157.20	\$	157.20
R45	10" Dia. Pipe Gravity Sewer Point Repair - Additional Length (PVC Replacement Pipe)	1.00	LF	116.40	\$	116.40
R46	12" Dia. Pipe Gravity Sewer Point Repair - Additional Length (DI Replacement Pipe)	1.00	LF	180.00	\$	180.00
R47	12" Dia. Pipe Gravity Sewer Point Repair - Additional Length (PVC Replacement Pipe)	1.00	LF	140.40	\$	140.40
R48	16" Dia. Pipe Gravity Sewer Point Repair - Additional Length (DI Replacement Pipe)	1.00	LF	240.00	\$	240.00
R49	16" Dia. Pipe Gravity Sewer Point Repair - Additional Length (PVC Replacement Pipe)	1.00	LF	133.20	\$	133.20
R50	18" Dia. Pipe Gravity Sewer Point Repair - Additional Length (DI Replacement Pipe)	1.00	LF	276.00	\$	276.00
R51	18" Dia. Pipe Gravity Sewer Point Repair - Additional Length (PVC Replacement Pipe)	1.00	LF	150.00	\$	150.00
R52	2" Dia. Pipe Forcemain Point Repair	1.00	EA	1,752.00	\$	1,752.00
R53	4" Dia. Pipe Forcemain Point Repair	1.00	EA	3,051.60	\$	3,051.60
R54	6" Dia. Pipe Forcemain Point Repair	1.00	EA	3,470.40	\$	3,470.40
R55	8" Dia. Pipe Forcemain Point Repair	1.00	EA	4,190.40	\$	4,190.40
R56	10" Dia. Pipe Forcemain Point Repair	1.00	EA	3,949.20	\$	3,949.20
R57	12" Dia. Pipe Forcemain Point Repair	1.00	EA	4,448.40	\$	4,448.40
R58	2" Dia. Forcemain Pipe Offset	1.00	EA	762.00	\$	762.00
R59	4" Dia. Forcemain Pipe Offset	1.00	EA	3,186.00	\$	3,186.00
R60	6" Dia. Forcemain Pipe Offset	1.00	EA	3,432.00	\$	3,432.00
R61	8" Dia. Forcemain Pipe Offset	1.00	EA	4,404.00	\$	4,404.00
R62	10" Dia. Forcemain Pipe Offset	1.00	EA	5,184.00	\$	5,184.00
R63	12" Dia. Forcemain Pipe Offset	1.00	EA	6,132.00	\$	6,132.00
R64	Replace Manhole Ring & Cover (In Pavement)	1.00	EA	1,938.00	\$	1,938.00
R65	Replace Manhole Ring & Cover (Outside of Pavement)	1.00	EA	726.00	\$	726.00
R66	MANHOLE BENCH REPLACEMENT, 4' DIAMETER	1.00	EA	654.00	\$	654.00
R67	MANHOLE BENCH REPLACEMENT, 5' DIAMETER	1.00	EA	739.20	\$	739.20
R68	MANHOLE BENCH REPLACEMENT, 6' DIAMETER	1.00	EA	834.00	\$	834.00
R69	Adjust Manhole Ring & Cover to Finished Grade (In Pavement)	1.00	EA	1,446.00	\$	1,446.00
R70	Adjust Manhole Ring & Cover to Finished Grade (Outside of Pavement)	1.00	EA	638.40	\$	638.40
GROUP C - SEWER REPAIRS & OFFSETS - Subtotal					\$	228,532.22
GROUP D - RESTORATION						
RE1	Flowable Concrete Fill	1.00	CY	222.00	\$	222.00
RE2	ROADWAY BASE, Lime Rock, Primed, Min. LBR 100, Variable Thickness	1.00	CY	184.80	\$	184.80
RE3	ROADWAY BASE, Crushed Concrete/Graded Aggregate, Min. LBR 100, Variable Thickness	1.00	CY	184.80	\$	184.80
RE4	SUPERPAVE ASPHALT BASE, Type B 12.5, Variable Thickness	1.00	TN	336.00	\$	336.00
RE5	SUPERPAVE ASPHALT CONCRETE, Type SP 9.5, Fine, Traffic Level C, Variable Thickness	1.00	TN	384.00	\$	384.00
RE6	SUPERPAVE ASPHALT CONCRETE, Type SP 12.5, Fine, Traffic Level C, Variable Thickness	1.00	TN	384.00	\$	384.00
RE7	PAVEMENT, Cement Concrete, 6" Min Thickness (Driveways)	1.00	SY	198.00	\$	198.00
RE8	PAVEMENT, Cement Concrete, 8" Thick	1.00	SY	240.00	\$	240.00
RE9	DRIVEWAY RESTORATION, In Kind, Decorative Block	1.00	SY	156.00	\$	156.00
RE10	MILLING EXISTING ASPHALT PAVEMENT, 3/4" Average Depth	1.00	SY	18.00	\$	18.00
RE11	MILLING EXISTING ASPHALT PAVEMENT, 1" Average Depth	1.00	SY	18.00	\$	18.00
RE12	MILLING EXISTING ASPHALT PAVEMENT, 1 1/2" Average Depth	1.00	SY	31.20	\$	31.20
RE13	CURB & GUTTER, Concrete, FDOT Type A	1.00	LF	85.20	\$	85.20
RE14	CURB & GUTTER, Concrete, FDOT Type E	1.00	LF	102.00	\$	102.00
RE15	CURB & GUTTER, Concrete, FDOT Type F	1.00	LF	102.00	\$	102.00
RE16	VALLEY GUTTER, Concrete, PCED Index 1315	1.00	LF	123.96	\$	123.96
RE17	SIDEWALK, CONCRETE, 4" Min. Thickness, Remove and Replace	1.00	SF	11.88	\$	11.88
RE18	SIDEWALK, CONCRETE, 6" Min. Thickness, Remove and Replace	1.00	SF	38.40	\$	38.40
RE19	SODDING, In-kind	1.00	SY	7.62	\$	7.62
GROUP D - RESTORATION - Subtotal					\$	2,827.86

GROUP E - MAINTENANCE OF TRAFFIC					
MOT1	Flagmen (Per-Flagmen)	1.00	HR	31.20	\$ 31.20
MOT2	TEMPORARY SIGNALIZATION AND MAINTENANCE, INTERSECTION	1.00	EA/DY	336.60	\$ 336.60
MOT3	TEMPORARY TRAFFIC DETECTION AND MAINTENANCE, INTERSECTION	1.00	EA/DY	336.60	\$ 336.60
MOT4	Multi Lane (FDOT Index No. 613)	1.00	EA/DY	1,440.00	\$ 1,440.00
MOT5	Multi Lane (FDOT Index No. 614)	1.00	EA/DY	960.00	\$ 960.00
MOT6	Multi Lane (FDOT Index No. 615)	1.00	EA/DY	960.00	\$ 960.00
MOT7	Multi Lane (FDOT Index No. 616)	1.00	EA/DY	960.00	\$ 960.00
MOT8	Multi Lane (FDOT Index No. 617)	1.00	EA/DY	960.00	\$ 960.00
MOT9	Arrow Boards - 5' Minimum Horizontal Size	1.00	EA/DY	40.32	\$ 40.32
MOT10	Variable Message Board	1.00	EA/DY	120.00	\$ 120.00
MOT11	Concrete Barrier (FDOT Index No. 415)	1.00	EA/DY	26.88	\$ 26.88
MOT12	Low Profile Barrier (FDOT Index No. 412)	1.00	EA/DY	23.64	\$ 23.64
MOT13	Signs in Work Zones	1.00	EA/DY	1.38	\$ 1.38
MOT14	6" Solid line Thermo Plastic - Permanent	1.00	LF	10.20	\$ 10.20
MOT15	24" Stop Bar, Solid, Thermo Plastic, Perm.	1.00	LF	33.60	\$ 33.60
MOT16	6" Skip line (6'-10' Skip) Thermo Plastic-Perm.	1.00	LF	9.30	\$ 9.30
MOT17	Barricades Type III, with Warning Lights	1.00	EA/DY	8.40	\$ 8.40
MOT18	Barricades Type I or II, with Warning Lights	1.00	EA/DY	3.60	\$ 3.60
GROUP E - MAINTENANCE OF TRAFFIC - Subtotal					\$ 6,261.72
		Base Bid			\$ 663,837.08
GROUP UNSPECIFIED					
					\$200,000.00
Add base bid + Unspecified Work for Total Bid		TOTAL BID			\$ 863,837.08

Statement of No Bid

NOTE: If you do **not** intend to bid on the requirements, please return this form immediately.

City of Pinellas Park
Purchasing Division
P.O. Box 3138
Pinellas Park, FL 33780-3138

We, the undersigned, have declined to respond to **Bid 23/005 - Emergency/Non-Emergency Sanitary Sewer Services**, for the following reasons:

- ☐ Specifications too "tight", i.e., geared toward one brand or manufacturer only (explain below).
- ☐ Insufficient time to respond to the Invitation to Bid.
- ☐ We do not offer this product or service.
- ☐ Our schedule would not permit us to perform.
- ☐ Unable to meet specifications.
- ☐ Unable to meet Bond requirement.
- ☐ Specifications unclear (explain below).
- ☐ Unable to meet Insurance requirements.
- ☐ Remove us from your "Bidders List" altogether.
- ☐ Other (specify below).

Remarks: _____

Company Name: _____

Signature: _____

Telephone: (_____) _____

Date: _____

CONSTRUCTION BOND No. _____

OWNER:

City of Pinellas Park, FL
5141 78th Avenue North
Pinellas Park, FL 33781
727.369.7700

PRINCIPAL:

Name: _____

Address: _____

Phone Number: _____

SURETY:

Name: _____

Address: _____

Phone Number: _____

PROJECT:

_____ (Number, Title, Location)

BY THIS BOND, we, Principal and Surety, duly authorized to conduct business in the State of Florida, are bound to the **City of Pinellas Park, Florida**, a municipal corporation, herein called Owner, in the sum of _____ **(\$000,000.00)**, for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

Performs the contract between Principal and Owner for of Project and all appurtenant work thereto, said contract/purchase order being made a part of this bond by reference, at the times and in the manner prescribed in the contract/purchase order, together with any modifications of said contract/purchase order that may hereafter be made, notice of which modifications to the Surety being hereby waived; and

Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the contract/purchase order; and

Pays Owner all losses, damages, expenses, costs and attorney's fees, including appellate proceedings, that Owner sustains because of a default by Principal under the contract/purchase order; and

Performs the guarantee of all work and materials furnished under the contract/purchase order for the time specified in the contract/purchase order; then this bond is void; otherwise it remains in full force.

Any action instituted by claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes.

Any changes in or under the contract/purchase order documents and compliance or noncompliance with any formalities connected with the contract /purchase order or the changes does not affect Surety's obligation under this bond.

Principal:

BY _____

(SEAL)

(Print or Type Signature)

Surety:

BY _____
Attorney-in-Fact

(SEAL)

Florida Licensed Agent

Dated this _____ day of _____, 2023.

THE BOND MUST BE ATTACHED TO THIS FORM

CONTRACTOR'S FINAL PAYMENT AFFIDAVIT

Before me, the undersigned authority, personally appeared _____
_____(Contractor) who was sworn and says that he is the Contractor who has
contracted with the City of Pinellas Park (Owner) to provide improvements on real property in
Pinellas County, Florida, described as: _____

The Contractor has completed construction in accordance with the contract documents. The balance
of the contract price of \$_____ is now due to the Contractor. The Contractor has not signed,
pledged or hypothecated the contract, or any part of it, or any payment due or to become due under it,
and has not assigned any of the Contractor's lien rights resulting from the contract. The Contractor has
executed no security agreement for any part of the material furnished under the contract.

All lienors under the above-described contract have been paid in full, except the undersigned
Contractor.

Contractor (CORPORATE SEAL)

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online
notarization, this _____ day of _____, 2023, by _____
(Name of person acknowledging)

Who is personally known to me or who has produced _____
(Type of Identification)
as identification.

NOTARY PUBLIC _____

(Notary Seal)

My Commission Expires _____

CONTRACTOR'S FINAL RELEASE

KNOW ALL MEN BY THESE PRESENTS that _____, (Contractor) County of _____, City of _____, and State of _____, do hereby acknowledge that (Contractor), _____, this day has had and received of and from the (Owner) the sum of One Dollar (\$1.00) and other valuable consideration in full satisfaction and payment of all sums of money owing, payable and belonging to the Contractor by any means whatsoever, for or on account of a certain agreement between the said Owner and Contractor dated _____ / _____ /2023.

NOW THEREFORE, the said Contractor for myself, my heirs, executors and administrators (for itself, its successors and assigns) do by these presents remise, release, quitclaim and forever discharge the said Owner its successors and assigns, of and from all claims and demands arising from or in connection with the said agreement dated _____ / _____ /2023, and all manner of action and actions, cause and causes of action and actions, suits, debts, dues, sums and sums of money, accounts, reckonings, bonds, bills, specialties, covenants, contracts, agreements, promises, variances, damages, judgments, extents, executions, claims and demand, whatsoever in law or equity, or otherwise which against the said Owner its heirs, successors or assigns, the Contractor its heirs, successors and assigns ever had, now have, or which (I, my heirs, executors, or administrators)(it, its successors and assigns) hereafter can, shall or may have, for, upon or by reason of any matter cause or thing whatsoever, from the beginning of the world to the date of these presents.

Contractor

(CORPORATE SEAL)

STATE OF FLORIDA

COUNTY OF PINELLAS

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online

notarization, this _____ day of _____, 2023, by _____
(Name of person acknowledging)

Who is personally known to me or who has produced _____
(Type of Identification)

as identification.

NOTARY PUBLIC _____

(Notary Seal)

My Commission Expires _____

STATEMENT OF SURETY

In accordance with the provisions of the contract dated _____, 2023, between the City of Pinellas Park, Owner of _____, _____, Principal of _____, and _____, Surety on the bond of Contractor, after a careful examination of the books and records of said Contractor or after receipt of an affidavit from Contractor, which examination or affidavit satisfies this company that all claims for labor and materials have been satisfactorily settled, hereby approves of final payment of the said Contractor, and by these presents witnessed that payment to the Contractor of the final estimates shall not relieve the Surety Company of any of its obligations to the Owner, as set forth in the said Surety Company's Bond.

IN WITNESSETH WHEREOF, the said Surety Company has hereunto set its hand and seal

this _____ day of _____, 2023.

Attest: _____

(Seal)

By _____
(President, Vice President)

Note: This statement, if executed by any person other than the President or Vice President of the Company, must be accompanied by a certificate of even date showing authority conferred upon the person so signing to execute such instruments on behalf of the Company represented.

NOTE: TO BE COMPLETED BY THE CONTRACTOR'S SURETY COMPANY AND SUBMITTED WITH CONTRACTOR'S FINAL INVOICE

CITY OF PINELLAS PARK, FLORIDA
BID 23/005 CONTRACT
EMERGENCY/NON-EMERGENCY SANITARY SEWER SERVICES

This Agreement dated this _____ day of _____, 2023, by and between the City of Pinellas Park, Florida, a municipal corporation, hereinafter called the Owner, and Rowland (DE), LLC, a corporation organized and existing under the laws of the State of Florida and hereinafter called the Contractor.

WITNESSETH, the Owner and the Contractor, for the consideration stated herein, agree as follows:

ARTICLE I: SCOPE OF WORK

The Contractor shall perform all required work and shall provide and furnish all labor, materials, necessary tools, expendable equipment, and all utility and transportation service required to complete the construction all in strict compliance with the plans and specifications, including any and all Addenda, and together with all contract Documents hereinafter enumerated and made a part thereof.

It is understood and agreed that said labor, materials, tools, equipment, and service shall be furnished and said work performed and completed subject to the satisfaction of the City and subject to the final approval of the City and its authorized representative.

ARTICLE II: CONTRACT PRICE EMERGENCY WORK

The Owner shall pay the Contractor as just compensation for the performance of this Agreement in accordance with the prices and rates submitted by the Contractor in response to Bid 23/005.

ARTICLE III: CONDITIONS

1. All decisions of the Project Manager and/or Designee as to the true construction and meaning of the drawings and specifications shall be final. Contractor shall conform to and abide by any additional specifications, drawings, or explanations furnished by the Engineer/Designee to illustrate the work to be done.
2. Should the Contractor be delayed in his work by the Owner, then Owner shall owe the Contractor therefore only for an extension of time for completion equal to the delay caused and then only if a written claim for delay is made to the Owner within forty-eight (48) hours from the time of the beginning of the delay.
3. Contractor shall at all times supply adequate tools, appliances and equipment, a sufficient number of properly skilled workmen, and a sufficient amount of materials and supplies of proper quality to efficiently and promptly prosecute said work, and shall promptly pay for all material purchased and shall pay all workmen each week and, if required by Owner, shall obtain and furnish Owner weekly with signed receipts from all workmen showing the

date of payment, amount paid, number of hours paid for the days on which said work was performed, the classification of the labor so paid, and the rate of wage per hour paid and shall supply Owner weekly with two copies of the payroll verified by an affidavit.

4. Contractor shall, as often as requested by the Owner, furnish a sworn statement showing all parties who furnish labor or materials to the Contractor, with their names and addresses and the amount due or to become due each. Like statement may be required from any subcontractor of the Contractor.

ARTICLE IV: INSPECTION BY CONTRACTOR

The undersigned Contractor agrees that he has carefully inspected all Contract Documents and is familiar with and will adhere to them; the Contractor agrees that he is responsible for having heretofore examined the assigned project site, the location and route of all proposed work and for having satisfied himself as to the character of the route, the location, surface and underground obstructions and nature thereof, the nature of the ground water table conditions and other physical characteristics of the work and work area in order that he may include in the price which he has bid and the price of this Contract all costs pertaining to the work and thereby provide for the satisfactory completion thereof and determination of the contract price herein agreed upon, and that this contract price is based upon these inspections and examination.

The Contractor further agrees upon the same considerations and inspections herein above enumerated, to commence work within ten **(10)** calendar days after date of Notice to Proceed for non-emergency work. Emergency work is to commence immediately after Notice to Proceed.

ARTICLE V: COMPLIANCE WITH PUBLIC RECORDS LAWS

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 727.369.0619, CITYCLERK@PINELLAS-PARK.COM, 5141 78TH AVENUE NORTH, PINELLAS PARK, FLORIDA 33781.

Contractor shall comply with all public records laws, specifically to include:

1. Keep and maintain public records that ordinarily and necessarily would be required by the Owner in order to perform the service.
2. Provide the public with access to public records on the same terms and conditions that the Owner would provide the records and at a cost that does not exceed the cost provided in Chapter 119 or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law.

4. Meet all applicable requirements for retaining public records and transfer, at no cost, to the Owner, all public records in possession of the contractor upon termination of the contract and destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. All records stored electronically must be provided to the Owner in a format that is compatible with the information technology systems of the Owner.

ARTICLE VI: COMPONENT PARTS OF CONTRACT

This Contract consists of the following Contract Documents, all of which are hereby made a part hereof and are incorporated herein by reference and all of which are familiar to the Contractor:

Rowland (DE), LLC Bid 23/005 Submission Documents, Addenda (if any), Advertisement of Bid, Notice of Bid, Information for Bidders, General Conditions, Insurance Requirements and Hold Harmless Agreement, Bid Form(s), Acknowledgement of Addendum, E-Verify Requirements, Public Construction Bond, Sworn Statement of Public Entity Crimes, Contractor's Affidavit, Contractor's Final Release of Lien, Statement of Surety, Pinellas Park Agreement, and Technical Specifications.

ARTICLE VII: CONTRACTOR'S AFFIDAVIT

When all work contemplated by the Contract has been completed, inspected and approved by the City or its duly authorized agent, the Contractor shall furnish to the City the Contractor's Affidavit in a form approved by the City. Release(s) of Lien may also be required by the City.

ARTICLE VIII: NON-EMERGENCY WORK TASK ORDERS

Non-emergency work to be performed by the Contractor shall be on an assignment basis. Task orders shall be made by the City's Project Managers or a City Designee. Prior to any task order creation, based on mutual discussions between the City and the Contractor, the Contractor shall prepare a detailed scope of work for the assignment, which shall include a not to exceed, lump sum budget amount for the assignment. All task order authorizations by the City shall be in writing. The Contractor shall perform no work under this agreement without written authorization. The Contractor hereby agrees to waive any claim for compensation for any work performed without written authorization from the City.

Once the task order is awarded to the Contractor, the Contractor will prepare a scope of services for the specific task order, which must consist of a scope of work including any deliverables and an itemized cost.

The Contractor shall plan and execute the performance of all services provided for under this agreement in such a manner as to insure the proper and timely completion in accordance with the following:

- a. Task orders to be performed by the Contractor shall commence upon receipt of a written Notice to Proceed from the City's Project management or Designee.
- b. The Contractor's Performance Schedule for any authorized task orders shall be established upon the City's acceptance and approval of a detailed schedule submitted by the Contractor prior to each assignment.

ARTICLE IX: TASK ORDER COMPENSATION

The City shall compensate the Contractor for authorized task orders using the following methods of compensation. The method of compensation shall be determined by the City based on the task order to be performed.

For task orders where the scope can be reasonably defined, and have a specific timeframe, compensation shall be a lump sum fee negotiated and agreed upon prior to the task order authorization. This fee shall be the total and complete amount payable to the Contractor for performance of the task order and shall include the cost of all labor, overhead, profit, and expenses of any nature.

For indeterminate task orders, compensation shall be on an hourly rate basis, compensation shall be for the actual work performed in accordance with the pricing attached to this agreement and incorporated herein.

The upset limit for all compensation to be paid under the five-year term of this agreement is not to exceed **Five Hundred Thousand Dollars & Zero Cents (\$500,000.00)** per project.

In the event that this agreement is terminated under the provisions of this contract, the total and complete compensation due to the Contractor shall be as established by the City, based on the City's determination of the percentage of work effort completed to date of termination.

ARTICLE X: TERM

The Owner and the Contractor further agree this Contract is for a period of **five (5) years**. All modifications of this Contract shall be enforced in writing by both parties signing this original contract and its attachments as indicated in Article VI above.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the day and year first above written, in **five (5) counterparts**, each of which shall for all purposes be deemed an original.

Rowland (DE), LLC

City of Pinellas Park
Pinellas County, Florida

By _____
Signature of Authorized Officer

By _____
Sandra L. Bradbury, Mayor

Type or Print Signature

ATTEST:

ATTEST:

Contractor's Attestor

By _____
Jennifer R. Carfagno, City Clerk, MMC

Type or Print Signature

Approved as to form and correctness:

City Attorney
City of Pinellas Park

Corporate Seal

City Council Approved

Scope of Service

The City of Pinellas Park desires to enter into a contractual relationship with vendors capable of providing general sanitary sewer utility maintenance, undertaking and completing sanitary sewer projects of a defined scope, and providing manpower, equipment and materials to perform non-emergency and emergency repairs and future sanitary sewer system installation for the City of Pinellas Park, including some limited above ground facilities. It is the City's intent to award to multiple vendors. The general routine maintenance work, capital improvement work and/or emergency repair work will be included under one or more of the areas of work

Contractor shall be responsible to plan, organize, supervise, monitor, direct, schedule, and control the work competently and efficiently. Contractor shall provide an onsite supervisor with experience to direct this type of work. Contractor shall provide contact information for the personnel directing the referenced work including emergency contact numbers. The on-site supervisor for the contractor shall be on site throughout the construction of the project. Any changes in the designated supervision must be approved in advance by City staff. Contractor shall identify all utilities within construction limits prior to commencement to protect existing utilities from being impacted. Any repairs to damaged utilities are the responsibility of the contractor.

Bidders are required to comply with all provisions of federal, state, county and local laws and ordinances, rules and regulations, that are applicable to the items being proposed. Lack of knowledge by the Bidder shall in no way be a cause for relief from responsibility or constitute a cognizable defense against the legal effect thereof.

Contractor shall provide in its pricing all necessary tools, equipment, labor, workmanship and anything else required to complete the work described in a timely and accurate manner to meet project plans and time schedules.

Bidder certifies that all material, equipment, etc., contained in his/her bid meets all applicable O.S.H.A. requirements. Bidder further certifies that, if he/she is the successful Bidder, and the material, equipment, etc., delivered is subsequently found to be defective in applicable O.S.H.A. requirement in effect on the date of delivery, all costs necessary to comply with the requirements shall be borne by the Bidder.

Contractors shall provide all labor, supervision, equipment, supplies, tools, materials, and all other necessary incidentals required to perform needed utility repairs, in accordance with applicable Federal, State, Local government regulations.

BID RESPONSE CHECKLIST

The following checklist is included to help ensure that you include all the submittals necessary to complete a thorough evaluation of your response.

Items are checked if they are required with your response or if they must be on file prior to award. Additional documentation may be requested by the City to ensure contract compliance.

✓	DESCRIPTION OF SUBMITTAL	PAGE	SUBMIT WITH RESPONSE	SUBMIT PRIOR TO AWARD
	E-Verify Registration	3	✓	✓
	Florida Division of Corporations Registration	3	✓	✓
	DBPR Registration	3	✓	✓
	Letter of Bondability	6	✓	✓
	Proof of Insurance	17	✓	✓
	Indemnification and Hold Harmless Agreement	33	✓	✓
	Public Entity Crimes Statement	34	✓	✓
	Trench Safety	36	✓	✓
	Non-Collusion Affidavit	37	✓	✓
	Relationship Disclosure	38	✓	✓
	Scrutinized Companies Disclosure	40	✓	✓
	Lobbying Certification	41	✓	✓
	Debarment and Suspension Certification	42	✓	✓
	Bid Summary	43	✓	✓
	Addenda Acknowledgement	45	✓	✓
	Emergency Compliance	46	✓	✓
	Response Cover Sheet	59	✓	
	Emergency/Non-Emergency Line Item	Separate Excel File	✓	
	W-9			✓
	Certificate of Insurance			✓
	Public Construction Bond (Non-Emergency Work)			✓

Submissions must be in an envelope separate from any express mail or courier envelopes, as those will be opened and discarded.

Be sure to include the name of the company submitting the response where requested.

To identify your submission as a "Sealed Response," cut along the border and affix this label to your sealed envelope.

SEALED RESPONSE • DO NOT OPEN

SOLICITATION NO.: Bid 23.005

**SOLICITATION TITLE: Emergency/Non-Emergency Sanitary
Sewer Services**

SUBMISSION DUE: 10:00 A.M. EST on Friday, 14 July 2023

**SUBMITTED BY: _____
(Name of Company)**

DELIVER TO:

**City of Pinellas Park
Purchasing Division
8000 60th St. N.
Pinellas Park, FL 33781**

Addenda may be issued to this solicitation, any such addendum will be posted on [Demandstar.com](https://www.demandstar.com). You should periodically check the website to download any addendum which may have been issued. The Addendum Acknowledgement must be submitted with the response.



HUB International Midwest

1411 Opus Place, Suite 450
Downers Grove, IL 60515
(630) 468-5800
www.hubinternational.com

June 14, 2023

City of Pinellas Park
P.O. Box 3138
Pinellas Park, FL 33780

Re: Rowland, Inc.

To Whom it May Concern:

We are pleased to advise you that Rowland, Inc. maintains a surety relationship with Trisura Insurance Company (rated A- IX by A.M. Best). At this time, Trisura has established a \$15,000,000 single/\$35,000,000 aggregate surety program for Rowland. Larger single and aggregate programs will be considered if requested.

Trisura Insurance reserves the right to review specific bond requests based on the underwriting criteria in effect at the time the bonds are requested. This letter is issued as a bonding reference only. Neither Hub International nor Trisura Insurance assume liability to any third party, including you, if bonds are not provided.

Rowland, Inc. maintains an excellent reputation of exceeding owner expectations by providing quality projects on time and within budget. We recommend them to you very highly and invite any additional inquiries you may have.

Sincerely,

A handwritten signature in blue ink that reads 'Stephen Kazmer'. To the left of the signature is a circular corporate seal. The seal has 'Trisura Insurance Company' around the top edge, 'CORPORATE' in the center, and 'SEAL' at the bottom.

Stephen Kazmer
SVP/Bond Manager, Hub International
Attorney-in-Fact, Trisura Insurance



2 Stamford Plaza
Suite 1504, 281 Tresser Boulevard
Stamford, Connecticut 06901
us.surety@trisura.com

**POWER OF ATTORNEY
EXHIBIT A TO SCHEDULE 2**

Bond # 6/14/2023 Letter

KNOW ALL MEN BY THESE PRESENTS: That **TRISURA INSURANCE COMPANY**, a corporation organized and existing under the laws of the State of Oklahoma, authorized to conduct a surety business, and having its principal place of business at 2 Stamford Plaza, Suite 1504, Tresser Boulevard, Stamford, Connecticut 06901, does hereby constitute and appoint:

Martin Moss, Kelly Gardner, Stephen Kazmer, Melissa Schmidt, Dawn Morgan

their true and lawful attorney(s)-in-fact to execute, seal and deliver for and on its behalf as surety, any and all bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof, which are or may be allowed, required or permitted by law, statute, rule, regulation, contract or otherwise, and the execution of such instrument(s) in pursuance of these presents, shall be as binding upon the said **TRISURA INSURANCE COMPANY**, as fully and amply, to all intents and purposes, as if the same had been duly executed and acknowledged by their regularly elected officers at their principal offices.

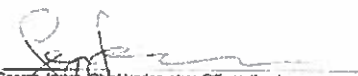
This Power of Attorney is executed, and may be revoked, pursuant to and by authority of the By-Laws of **TRISURA INSURANCE COMPANY** and is granted under and by authority of the following resolution adopted by the Board of Directors of **TRISURA INSURANCE COMPANY** at a meeting duly held on the 11th day of December, 2020.

"RESOLVED, that (1) the Chief Executive Officer, President, Executive Vice President, Senior Vice President, Vice President, or Secretary of the Corporation shall have the power to appoint, and to revoke the appointments of, Attorneys-in-Fact or agents with power and authority as defined or limited in their respective powers of attorney, and to execute on behalf of the Corporation and affix the Corporation's seal thereto, bonds, undertakings, recognizances, contracts of indemnity and other written obligations in the nature thereof or related thereto; and (2) any such Officers of the Corporation may appoint and revoke the appointments of joint-control custodians, agents for acceptance of process, and Attorneys-in-fact with authority to execute waivers and consents on behalf of the Corporation; and (3) the signature of any such Officer of the Corporation and the Corporation's seal may be affixed by facsimile to any power of attorney or certification given for the execution of any bond, undertaking, recognizance, contract of indemnity or other written obligation in the nature thereof or related thereto, such signature and seals when so used whether heretofore or hereafter, being hereby adopted by the Corporation as the original signature of such officer and the original seal of the Corporation, to be valid and binding upon the Corporation with the same force and effect as though manually affixed."

IN WITNESS WHEREOF, **TRISURA INSURANCE COMPANY** have each executed and attested these presents

on this 25 day of February, 2021.

STATE OF Connecticut
County of Fairfield


George J. Jones, Chief Underwriting Officer, Surety



On this 25 day of February, 2021, before me came the individual who executed the preceding instrument, to me personally known, and, being by me duly sworn, said he is the therein described and authorized officer of **TRISURA INSURANCE COMPANY**; that the seals affixed to said instrument are the Corporate Seals of said Companies; that the said Corporate Seals and his signature were duly affixed by order of the Boards of Directors of said Companies.

IN TESTIMONY WHEREOF, I have hereunto set my hand affixed my Official Seal, at Fairfield, Connecticut the day and year first above written.

PAUL KLABONSKI
NOTARY PUBLIC
MY COMMISSION EXPIRES 8/31/2023

Paul Klabonski seal

a Notary Public of Connecticut
My Commission Expires: 8/31/2023

CERTIFICATION

I, the undersigned officer of **TRISURA INSURANCE COMPANY** do hereby certify that I have compared the foregoing copy of the Power of Attorney and affidavit, and the copy of the Sections of the By-Laws of said Companies as set forth in said Power of Attorney, with the originals on file in the home office of said companies, and that the same are correct transcripts thereof, and of the whole of the said originals, and that the said Power of Attorney has not been revoked and is now in full force and effect.

IN TESTIMONY WHEREOF, I have hereunto set my hand on this day, 14th day of June, 2023.


Richard Grant, Vice President, U.S. Surety

TO CONFIRM AUTHENTICITY OF THIS BOND OR DOCUMENT EMAIL: us.surety@trisura.com

ACORD™

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

6/29/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer any rights to the certificate holder in lieu of such endorsement(s).

PRODUCER McGriff Insurance Services 12485 28th Street N 3rd Floor St Petersburg, FL 33716 727-823-5551	CONTACT NAME: Denise Carpenter PHONE (A/C, No, Ext): 727-557-8120 FAX (A/C, No): 727-894-3339 E-MAIL ADDRESS: Denise.Carpenter@Mcgriff.com	
	INSURER(S) AFFORDING COVERAGE	
INSURED Rowland Acquisition, Inc 6855 102nd Avenue N Pinellas Park, FL 33782	INSURER A: Great American Assurance Company	NAIC # 26344
	INSURER B: Travelers Property Casualty Co of Amer	25674
	INSURER C: Great American Insurance Co of NY	22136
	INSURER D: Westchester Surplus Lines Insurance	10172
	INSURER E: Great American Insurance Company	16691
INSURER F:		

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☒ PROJECT ☐ LOC OTHER:		X	GLP4494381-00	10/01/2022	10/01/2023	EACH OCCURRENCE \$1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$500,000 MED EXP (Any one person) \$10,000 PERSONAL & ADV INJURY \$1,000,000 GENERAL AGGREGATE \$2,000,000 PRODUCTS - COMP/OP AGG \$
E	AUTOMOBILE LIABILITY ☒ ANY AUTO OWNED AUTOS ONLY ☒ HIRED AUTOS ONLY ☐ SCHEDULED AUTOS NON-OWNED AUTOS ONLY			CAP4494380-00	10/01/2022	10/01/2023	COMBINED SINGLE LIMIT (Ea accident) \$1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
B	☒ UMBRELLA LIAB ☒ EXCESS LIAB ☐ RETENTION \$10000			CUP6S47102222	10/01/2022	10/01/2023	EACH OCCURRENCE \$5,000,000 AGGREGATE \$5,000,000 \$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? ☒ Y/N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		N/A	WCE86581300	10/01/2022	10/01/2023	☒ PER STATUTE ☐ OTHER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000
D	Pollution Liability			G71152613 005	10/01/2022	10/01/2023	\$2M Each/\$4M Agg \$2,500 Deductible

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

City of Pinellas Park is included as additional insured with respects to general liability policy when required by written contract.

CERTIFICATE HOLDER

CANCELLATION

City of Pinellas Park
 ATTN: Human Resources Dept
 5141 78th Ave N
 Pinellas Park, FL 33781

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Kyle Helms

My Company Account

My Company Profile

Company Information

Company Name

Rowland, Inc.

Doing Business As (DBA) Name

Company ID

656954

Enrollment Date

Mar 28, 2013

Employer Identification Number (EIN)

590978899

Unique Entity Identifier (UEI)

DUNS Number

Total Number of Employees

20 to 99

NAICS Code

221

Sector

Utilities

Subsector

Utilities

[Edit Company Information](#)

|

Employer Category

None of these categories apply

[Edit Employer Category](#)

Physical Address

6855 102nd Ave. North
Pinellas Park, FL 33782

Mailing Address

6855 102nd Ave. North
Pinellas Park, FL 33782

[Edit Company Addresses](#)

Hiring Sites

We have implemented a new policy and require more information for existing and future hiring sites.

Number of Sites

1

[Edit Hiring Sites](#)

Company Access and MOU

My Company is Configured to:

Verify Its Own Employees

Memorandum of Understanding

[View Current MOU](#)

[U.S. Department of Homeland Security](#) [U.S. Citizenship and Immigration Services](#)

[Accessibility](#) [Plug-ins](#) [Site Map](#)





[Department of State](#) / [Division of Corporations](#) / [Search Records](#) / [Search by Entity Name](#) /

Detail by Entity Name

Foreign Limited Liability Company
ROWLAND (DE), LLC

Filing Information

Document Number	M22000010467
FEI/EIN Number	NONE
Date Filed	07/07/2022
State	DE
Status	ACTIVE

Principal Address

6855 102ND AVE N
PINELLAS PARK, FL 33782

Mailing Address

6855 102ND AVE N
PINELLAS PARK, FL 33782

Registered Agent Name & Address

MANSFIELD, RICHARD
6855 102ND AVE N
PINELLAS PARK, FL 33782

Authorized Person(s) Detail

Name & Address

Title PRES

ROWLAND, KEVIN
6855 102ND AVE N
PINELLAS PARK, FL 33782

Title VP

ROWLAND, KENNETH
6855 102ND AVE N
PINELLAS PARK, FL 33782

Title APVP

MANSFIELD, RICHARD
6855 102ND AVE N
PINELLAS PARK, FL 33782

Annual Reports

No Annual Reports Filed

Document Images

[07/07/2022 - Foreign Limited](#)

[View image in PDF format](#)



Ron DeSantis, Governor

Melanie S. Griffin, Secretary



STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

CONSTRUCTION INDUSTRY LICENSING BOARD

THE UNDERGROUND UTILITY & EXCAVATION CO HEREIN IS CERTIFIED UNDER THE
PROVISIONS OF CHAPTER 489, FLORIDA STATUTES

ROWLAND, KENNETH DEAN

ROWLAND INC
6855 102ND AVE N
PINELLAS PARK FL 33782

LICENSE NUMBER: CUC052617

EXPIRATION DATE: AUGUST 31, 2024

Always verify licenses online at MyFloridaLicense.com



Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.

TECHNICAL SPECIFICATIONS

Annual Sanitary Sewer Repair

SECTION 00 75 00

SPECIAL PROVISIONS

These Special Provisions provide additional information and modify the Pinellas Park Project Engineering Manual. Unless noted herein, all conditions of the standard specifications apply.

ARTICLE SP-1 SCOPE OF WORK

All work shall be made on an assignment-by-assignment basis, in the form of a Task order authorized by the Director of Pinellas Park Public Works or a Designee. All Task Orders shall be issued during the initial five (5) year term or any extension thereof. Final work shall be completed no later than 120 days after the end of the term. The Contractor shall perform no work under this Contract without the City's written authorization to proceed for each Task Order. The Contractor hereby agrees to waive any claim for compensation for any work performed without authorization.

Each individual location contained in a Task Order is to be considered an "individual project" such that all work, including cleanup, must be fully completed in a reasonable timeframe, as determined by the Project Manager "PM". Unless otherwise approved by the Project Manager, work on each Task Order must be commenced within 30 days of Notice to Proceed for the task order. The project limits shown on the location maps and/or plans contained in each Task Orders are approximate; the Contractor shall verify and agree on exact limits with the Project Manager prior to beginning construction.

All work shall be performed in an expeditious and professional manner. The Contractor shall have sufficient crews and equipment to perform all work, including restoration, at the time the Task order is assigned. The inability of the Contractor to meet contractual obligations, or to perform assigned work in a satisfactory manner, shall be grounds for termination of the Contract, and/or reassignment of the work for construction by other. The City reserves the right to add or delete sites and project locations from the Task orders. There are no guaranteed Task order locations. The Contractor shall only be compensated for that work satisfactorily completed. There will be no compensation to the Contractor for cancellation of the Contract or for any assigned work that is not satisfactorily constructed and accepted by the City.

The Contractor shall utilize products approved in the Pinellas Park Materials Specifications Manual.

This contract does not guarantee that work assignments requested will be typical start-to-finish projects. The Contractor may be asked to complete site restoration following a repair or installation performed by the City, or pick up in the middle

1 of a project. The Contractor shall be prepared to perform the work of any
2 assignment from any point of the work.

3
4 Prior to assignment of any Task Order, and based on mutual
5 discussions between the City and the Contractor, the Contractor shall
6 prepare a detailed work plan for each project, which shall include a work
7 schedule and an estimated budget amount based unit price of contract pay
8 items.

9 ARTICLE SP-2 ADDITIONAL INFORMATION AND STUDIES

10
11 Restoration for routine mainline installation within a 3'0" to 6'0" cut range shall be
12 limited to a five (5) foot wide work area. Anything outside of the 1:1 slope is the
13 responsibility of the contractor. Any restoration required outside of this limit shall
14 be at the Contractors' expense.

15
16 Color Audio-Video Construction records per specifications shall be required for
17 all installations with an estimated value greater than or equal to \$50,000.00 that
18 are not considered repairs.

19
20 Maintenance of traffic pay items shall be authorized for all emergency and
21 routine response work when the work is located in the right-of-way of a City
22 Functional Classification of Collector or higher and all FDOT right-of-ways as
23 defined in the pay items.

24
25 Please reference the following web pages for classifications as presented
26 by areas:

27 FUNCTIONAL CLASSIFICATION:

- 28
29 • PINELLAS PARK
30 https://plan.pinellas.gov/comp_plan/03trans/app-b/fig3-2.pdf

31
32
33
34
35
36
37
38
39
40
41 All City technical specifications apply including Pinellas Park Office of
42 Engineering & Technical Support Standard Technical Specifications for Roadway
43 and Related Construction (latest edition), Pinellas Park Standard Technical
44 Specifications for Utilities and Related Construction (latest edition), City of Pinellas
Park City Standard Details (latest edition) and the Florida Department of Transportation
Standard Specifications for Road and Bridge Construction (latest edition):

1 The **Order of Precedence** for Pinellas Park Public Works shall be as follows:

3
4 (1) Pinellas Park Project Engineering Manual, latest edition

5 (2) Pinellas Park Standard Details – latest edition.

6 (3) FDOT Standard Specification for Road and Bridge Construction,
7 Divisions II and III – latest edition (FDOT Specifications).

TECHNICAL SPECIFICATION CHECKLIST

Project Name: Sanitary Sewer Repair

The following sections of the Standard Technical Specifications will apply to this contract if marked "X" as shown below:

☒	X	Special Provisions - S
☒	X	Measurement and Payment - S
☒	X	Color Audio-Video Construction Records
☒	X	Special Project Procedures
☒	X	Reference Standards and Definitions
☒	X	Pipeline Testing Requirements
☒	X	Traffic Regulation
☒	X	Control of Work
☒	X	Erosion and Sedimentation Control
☐	☐	Project Identification Signs
☒	X	Project Record Documents
☒	X	Concrete Materials
☒	X	Painting and Protective Coatings
☒	X	Excavation and Backfill for Pipes
☒	X	Excavation and Backfill for Structures
☒	X	Stabilized and Asphalt Roadway Restoration
☒	X	Concrete Sidewalks, Driveways and Gutters
☒	X	Seeding and Sodding
☒	☒	Sanitary Sewer Cured in Place Pipelining
☒	X	Sanitary Sewer Cleaning and Televising
☒	X	Manhole Rehabilitation
☒	X	Sanitary Sewer Pipe Repairs
☐	☐	Multi-Component Stress Panel Liner System
☒	☒	Jacking and Boring
☒	X	Horizontal Directional Drilling
☒	X	Horizontal Directional Drilling – Subaqueous Crossings and Large Diameter Installations
☐	☐	Potable Water Main Piping and Appurtenances
☐	☐	Disinfection of Potable Water Mains
☐	☐	Submersible Wastewater Pumping Stations
☒	X	Gravity Sewers
☒	X	Sanitary Sewage Force Mains and Appurtenances
☐	☐	Reclaimed Water Main Piping and Appurtenances
☒	X	Sanitary Utility Sewerage Structures
☐	☐	Wastewater Pump Station SCADA Remote Telemetry Unit (RTU)
☐	☐	Standby Diesel Generators
☐	☐	Metal Building Systems

END OF SECTION

1
2 SECTION 01 20 01

3
4 MEASUREMENT AND PAYMENT

5
6 PART 1 – GENERAL

7
8 1.01 SCOPE OF WORK
9

- 10 A. Separate payment will be made only for the items of work described herein and
11 listed on the Bid Form. Any related work not specifically listed, but required for
12 satisfactory completion of the work, shall be considered included in the scope of
13 the appropriate listed work items. The Contractor shall be responsible for
14 supervision and superintendence at all work sites, which shall be considered as
15 contractor overhead and no additional payment will be made beyond the
16 specified bid items.
17
- 18 B. The descriptions in the following sections generally define the work and materials,
19 etc. associated with each Pay Item listed. This information is provided to assist
20 the Contractor in assigning and accounting for costs associated with each pay
21 item. It is the Contractor's sole responsibility to fully establish the cost for each
22 item and the work in its entirety related to each Pay Item.
23
- 24 C. Payment for all work done in compliance with the Contract Documents, inclusive
25 of furnishing all manpower, equipment, materials, Project Record Documents,
26 and performance of all operations relative to construction of this project, will be
27 made under Pay Items listed herein and in accordance with the accepted
28 Proposal. Work for which there is not a Pay Item will be considered incidental to
29 the Contract and no additional compensation will be allowed. Unless, such Item
30 was previously approved by the Project Manager, such incidental item will be paid under
31 the terms and conditions of Unspecified Work.
32

33 1.02 BID ITEMS
34

35 The bid item descriptions, method of measurement and basis for payment are listed
36 on the following pages:
37
38
39

GROUP A - MOBILIZATION

MOBILIZATION FOR ROUTINE RESPONSE

Pay Items:

Mobilization for Routine Response

Description - The work specified in this item consists of the preparatory work and operations in mobilizing for beginning work on the project. This item includes, but is not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to and from the project site as a single occurrence per work site, and for the establishment of Subcontractor's temporary offices, buildings, safety equipment, first aid supplies, sanitary and other facilities, as required by these Specifications, special provisions, and State and local laws and regulations. The costs of bonds, permits and any required insurance, and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials, shall also be included in this item. Labor and equipment travel time from/to the site is included in this pay item. All permits requiring cost, payable to the City, will be waived.

For routine work, as identified by the Project Manager or his designee, the Contractor will be required to respond to the request of the Project Manager, or designated representative within ten (10) calendar days of notification. The Scope of Work will be developed by Project Manager and will be executed in accordance with the terms and conditions of this contract.

For routine work required outside the normal working hours established in the contract, additional labor costs associated with overtime work will be paid for under Unspecified Line Item at the rates in Table-B, Column 4 included with this specification.

Measurement - The quantity of mobilization to be paid for under this item shall be measured as one unit each (EA) per job assignment. One (1) mobilization will be allowed for each job assignment, project, or task order no matter how many times the equipment must be relocated by loading, transporting and unloading, or under its own power to complete the job assignment or project.

MOBILIZATION FOR EMERGENCY RESPONSE

Pay Items:

Mobilization for Emergency Response

Description - The work specified in this item consists of the preparatory work and operations in mobilizing for beginning work on the project. This item includes, but is not limited to, those operations necessary for the movement of personnel, equipment, supplies and incidentals to the project site, and for the establishment of Subcontractor's temporary offices, buildings, safety equipment, first aid supplies, sanitary and other facilities, as required by these Specifications, special provisions, and State and local laws and regulations. The costs of bonds, permits and any required insurance, and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials, shall also be included in this item. Labor and equipment travel time from/to the site is included in this pay item.

For emergency work, as identified by the Project manager or his designee, the Contractor will be required to respond to the request of the Project manager or his designated representative within one (1) hour from the notice by telephone, and mobilize with a competent crew and necessary equipment and materials within two (2) hours of verbal notification, including weekends. The Scope of Work will be executed in accordance with the terms and conditions of this contract.

For emergency work required outside the normal working hours established in the contract, additional labor costs associated with overtime work will be paid for under Unspecified Line Item at the rates in Table-B, Column 4 included with this specification.

Measurement - The quantity of mobilization to be paid for under this item shall be measured as one unit each (EA) per job assignment. One (1) mobilization will be allowed for each job assignment, project, or task order no matter how many times the equipment must be relocated by loading, transporting and unloading, or under its own power to complete the job assignment or project.

1 GROUP B – NEW SEWER INSTALLATION

2
3
4 **PROJECT AS-BUILT SURVEY**

5
6 Pay Items:

7
8 As-Built Survey

9
10 Description: The work specified in this item consists of the creation of a as-built record survey

11
12
13 Measurement: The quantity to be paid for under this pay item shall per as-built
14 survey completed by a professional surveyor for Gravity Sewer and Forcemain up to
15 2,000 linear feet in length. As-Built survey for installation lengths greater than 2,000
16 linear feet shall be addressed through Unspecified Work Pay Item.
17
18
19

20 **REMOVE UNSUITABLE MATERIAL BELOW TRENCH GRADE**

21
22 Pay Items:

23
24 Excavation, Unsuitable Material

25
26 Description: The work specified in this item describes the removal of soil unsuitable
27 (AASHTO A4 - A7) for a proper foundation, encountered at trench grade. The
28 unsuitable soil shall be removed and disposed of the full width of the trench and to
29 the depth required by the Project Manager and replaced with approved bedding
30 material. The backfill shall be thoroughly compacted and shaped to form the
31 pipe bed.
32
33

34 Measurement: The quantity to be paid for under this Item shall be the volume in
35 cubic yards (CY), computed by the average end area method, of the unsuitable
36 material removed within the limits of depth shown on the Plans or as directed by the
37 Project Manager or his representative.
38

39 **SELECT BEDDING AND BACKFILL MATERIAL**

40
41 Pay Items:

42
43 Select bed & backfill material- gravel

44
45 Description: Gravel material for backfilling and bedding.
46 .

Measurement: The quantities to be paid for under this item shall be the number of cubic yards (CY) measured, compacted in place and accepted. Payment for furnishing, placing and compaction of all extra bedding ordered in writing by the Project Manager, shall be on a cubic yard (CY) basis as measured in place.

SHEETING AND BRACING

Pay Items:

Sheeting and Bracing (Left in Place)
Sheeting and Bracing, Pipe Trenches (Removed)

Description: The work specified under this Section consists of the construction of Sheeting and Bracing for trenches, retaining walls, etc., for the purpose of preventing injury to workers, damage to completed work, or disturbance of or damage to adjacent areas and existing structures and facilities resulting from the collapse of trench walls. (Spec 121).

Measurement: The quantity determined as specified above, must be paid for at the contract unit price per square foot.

WELL POINT DEWATERING INITIAL

Pay Items:

Well Point Dewatering-Initial - 6' - 8' Depth
Well Point Dewatering-Initial - 8' - 10' Depth
Well Point Dewatering-Initial - 10' - 12' Depth
Well Point Dewatering-Initial - 12' - 14' Depth
Well Point Dewatering-Initial - 14' - 16' Depth
Well Point Dewatering-Initial > 16' Depth

Description: Measurement and payment of this pay item is based on the mobilization and set up of dewatering equipment as required by the Contractor and allowed or directed by the Project manager to perform contracted work in accordance with the Technical Specifications. The work shall include all labor, equipment and materials, testing, and any required incidentals necessary to completely install, monitor and operate the dewatering system including the placement of up to twenty (20) well points to the various depths listed in the proposal per job assignment. The dewatering system shall stabilize the excavation and remain in operation until backfilling operations are complete. This pay item shall include the maintenance, repairs, pumps, fueling, oiling greasing, and other operational support procedures and supplies required for the operation of the system.

Well point dewatering is an authorized pay item only when the installation is below 6 feet in depth and site conditions warrant or on emergency response work where site conditions warrant as directed by the City representative.

Measurement: The quantities to be paid for under this item shall be based on the depth of each (EA) dewatering system per job assignment, installed and accepted.

WELL POINT DEWATERING – ADDITIONAL

Pay Items:

Well Point Dewatering-Add'l - 6' - 8' Depth

Well Point Dewatering-Add'l - 8' - 10' Depth

Well Point Dewatering-Add'l - 10' - 12' Depth

Well Point Dewatering-Add'l - 12' - 14' Depth

Well Point Dewatering-Add'l - 14' - 16' Depth

Well Point Dewatering-Add'l > 16' Depth

Description: This item provides all labor, materials and equipment for the placement and operation of additional well points over and above the twenty (20) well points paid for under Well Point Dewatering- Initial pay item. The work includes connection of the well points to the dewatering pumping equipment.

Measurement: The quantity to be paid under this item will be the actual number of each (EA) well points placed and operated in the work as directed by the City representative for the various depths listed in the proposal less the twenty (20) paid for under Well Point Dewatering- Initial pay item.

JACK AND BORE

Pay Items:

Jack and Bore 12" x .188" Steel Casing (6" Sewer)

Jack and Bore 16" x .219" Steel Casing (8" Sewer)

Jack and Bore 20" x .250" Steel Casing (10" Sewer)

Jack and Bore 24" x .281" Steel Casing (12" Sewer)

Description: The work consists of furnishing all labor, equipment and materials and installing the crossing listed on the Bid Form by the jack and bore method in accordance with the specifications. The unit price shall include all costs necessary

to install the crossing at the specified depth and size, including survey layout (based upon property monuments established by others), protection of property, materials, dewatering, pavement cutting, launching and receiving pits, exploratory pits, restrained joints, carrier pipe, tracer wire, tracer wire testing, casing pipe, casing spacers, casing end seals, fitting material including joints and jointing material, bracing, utility crossings, barricades, clearing, grubbing and stripping of the right-of-way, trenching, bedding and backfilling, protection of existing utilities; pigging, flushing and cleaning, pressure testing and As-built documentation. Surface restoration if specified or directed, will be paid for under other Pay Items.

Measurement: The quantity for furnishing and installing the pipe or casing shall be made on a per linear foot basis as measured horizontally above the centerline of the casing including the length of four (4) feet beyond the edge of pavement or back of the concrete curb from each side of the road or driveway.

DIRECTIONAL DRILL SEWER MAIN

Pay Items:

2" Directional Drill HDPE DR 9, IPS OD
4" Directional Drill HDPE DR 11, DIPS OD
6" Directional Drill HDPE DR 11, DIPS OD
8" Directional Drill HDPE DR 11, DIPS OD
10" Directional Drill HDPE DR 11, DIPS OD
12" Directional Drill HDPE DR 11, DIPS OD

Description: The work consists of furnishing and installing underground sewer mains using the horizontal directional drilling (HDD) method of installation. This work shall include all services, equipment, materials, labor, installation of two 14 gauge minimum tracer wires, tracer wire testing, appurtenances, DI/HDPE mechanical joint adapters, pipe and joint restraints for connections to fittings, materials above or below ground along pipeline alignment; joints and jointing materials, bentonite clay slurry seal, launching and receiving pits, exploratory pits; bracing, bedding and backfill, disposal of spoil; pressure testing; pigging, flushing, cleaning erosion protection and control, surface grading, and all other related and necessary materials for the complete and proper installation, testing, and restoration of underground sewer mains

Measurement: Measurement for payment for furnishing and installing HDD pipe for drill depths up to 20 foot deep shall be made on a per linear foot (LF) basis as measured horizontally on the ground above the pipe centerline through valves and fittings for all pipe. Measurement for payment for finishing and installation HDD pipe

for drill depths greater than 20 foot depth shall be made on a per linear foot (LF) basis of the actual length of pipe installed.

Gravity Sanitary Sewer

Pay Items:

6" PVC Pipe (C-900) DR 18 0' – 6' Depth
(Gravity Sewer)
6" PVC Pipe (C-900) DR 18 6' – 8' Depth
(Gravity Sewer)
6" PVC Pipe (C-900) DR 18 8' – 10' Depth
(Gravity Sewer)
6" PVC Pipe (C-900) DR 18 10' – 12' Depth
(Gravity Sewer)
6" PVC Pipe (C-900) DR 18 12' – 14' Depth
(Gravity Sewer)
6" PVC Pipe (C-900) DR 18 14' – 16' Depth
(Gravity Sewer)
6" PVC Pipe (C-900) DR 18 16' – 16' Depth
(Gravity Sewer)
8" DI Pipe Class 350 0' – 6' Depth (Gravity Sewer)
8" DI Pipe Class 350 6' – 8' Depth (Gravity Sewer)
8" DI Pipe Class 350 8' – 10' Depth
(Gravity Sewer)
8" DI Pipe Class 350 10' – 12' Depth
(Gravity Sewer)
8" DI Pipe Class 350 12' – 14' Depth
(Gravity Sewer)
8" DI Pipe Class 350 14' – 16' Depth
(Gravity Sewer)
8" DI Pipe Class 350 16' – 18' Depth
(Gravity Sewer)
8" PVC Pipe (C-900) DR 18 0' – 6' Depth
(Gravity Sewer)
8" PVC Pipe (C-900) DR 18 6' – 8' Depth
(Gravity Sewer)
8" PVC Pipe (C-900) DR 18 8' – 10' Depth
(Gravity Sewer)
8" PVC Pipe (C-900) DR 18 10' – 12' Depth
(Gravity Sewer)
8" PVC Pipe (C-900) DR 18 12' – 14' Depth
(Gravity Sewer)
8" PVC Pipe (C-900) DR 18 14' – 16' Depth
(Gravity Sewer)

1	8" PVC Pipe (C-900) DR 18 16' – 18' Depth
2	(Gravity Sewer)
3	10" DI Pipe Class 350 0' – 6' Depth
4	(Gravity Sewer)
5	10" DI Pipe Class 350 6' – 8' Depth
6	(Gravity Sewer)
7	10" DI Pipe Class 350 8' – 10' Depth
8	(Gravity Sewer)
9	10" DI Pipe Class 350 10' – 12' Depth
10	(Gravity Sewer)
11	10" DI Pipe Class 350 12' – 14' Depth
12	(Gravity Sewer)
13	10" DI Pipe Class 350 14' – 16' Depth
14	(Gravity Sewer)
15	10" DI Pipe Class 350 16' – 18' Depth
16	(Gravity Sewer)
17	10" PVC Pipe (C-900) DR 18 0' – 6' Depth
18	(Gravity Sewer)
19	10" PVC Pipe (C-900) DR 18 6' – 8' Depth
20	(Gravity Sewer)
21	10" PVC Pipe (C-900) DR 18 8' – 10' Depth
22	(Gravity Sewer)
23	10" PVC Pipe (C-900) DR 18 10' – 12' Depth
24	(Gravity Sewer)
25	10" PVC Pipe (C-900) DR 18 12' – 14' Depth
26	(Gravity Sewer)
27	10" PVC Pipe (C-900) DR 18 14' – 16' Depth
28	(Gravity Sewer)
29	10" PVC Pipe (C-900) DR 18 16' – 18' Depth
30	(Gravity Sewer)
31	12" DI Pipe Class 350 0' – 6' Depth
32	(Gravity Sewer)
33	12" DI Pipe Class 350 6' – 8' Depth
34	(Gravity Sewer)
35	12" DI Pipe Class 350 8' – 10' Depth
36	(Gravity Sewer)
37	12" DI Pipe Class 350 10' – 12' Depth
38	(Gravity Sewer)
39	12" DI Pipe Class 350 12' – 14' Depth
40	(Gravity Sewer)
41	12" DI Pipe Class 350 14' – 16' Depth
42	(Gravity Sewer)
43	12" DI Pipe Class 350 16' – 18' Depth
44	(Gravity Sewer)
45	12" PVC Pipe (C-900) DR 18 0' – 6' Depth
46	(Gravity Sewer)

1 12" PVC Pipe (C-900) DR 18 6' – 8' Depth
2 (Gravity Sewer)
3 12" PVC Pipe (C-900) DR 18 8' – 10' Depth
4 (Gravity Sewer)
5 12" PVC Pipe (C-900) DR 18 10' – 12' Depth
6 (Gravity Sewer)
7 12" PVC Pipe (C-900) DR 18 12' – 14' Depth
8 (Gravity Sewer)
9 12" PVC Pipe (C-900) DR 18 14' – 16' Depth
10 (Gravity Sewer)
11 12" PVC Pipe (C-900) DR 18 16' – 18' Depth
12 (Gravity Sewer)
13 16" DI Pipe Class 350 0' – 6' Depth
14 (Gravity Sewer)
15 16" DI Pipe Class 350 6' – 8' Depth
16 (Gravity Sewer)
17 16" DI Pipe Class 350 8' – 10' Depth
18 (Gravity Sewer)
19 16" DI Pipe Class 350 10' – 12' Depth
20 (Gravity Sewer)
21 16" DI Pipe Class 350 12' – 14' Depth
22 (Gravity Sewer)
23 16" DI Pipe Class 350 14' – 16' Depth
24 (Gravity Sewer)
25 16" DI Pipe Class 350 16' – 18' Depth
26 (Gravity Sewer)
27 16" PVC Pipe (C-905) DR 18 0' – 6' Depth
28 (Gravity Sewer)
29 16" PVC Pipe (C-905) DR 18 6' – 8' Depth
30 (Gravity Sewer)
31 16" PVC Pipe (C-905) DR 18 8' – 10' Depth
32 (Gravity Sewer)
33 16" PVC Pipe (C-905) DR 18 10' – 12' Depth
34 (Gravity Sewer)
35 16" PVC Pipe (C-905) DR 18 12' – 14' Depth
36 (Gravity Sewer)
37 16" PVC Pipe (C-905) DR 18 14' – 16' Depth
38 (Gravity Sewer)
39 16" PVC Pipe (C-905) DR 18 16' – 18' Depth
40 (Gravity Sewer)

41 Description: The work consists of furnishing all labor, equipment and materials for
42 installing pipe as shown on the plans (standard details) or as directed by the
43 Project manager. All ductile iron pipe shall have polyethylene encasement. The unit price
44 shall include all costs necessary to install the pipe including mobilization,
45 maintenance of traffic, survey layout (based upon property monuments established
46 by others), clearing and grubbing, excavation,

sheeting/shoring for excavation up to 6-ft deep, bracing, dewatering for excavations up to 6-ft deep, structural fill, material, polyethylene wrap on ductile iron pipe, testing, pavement cutting, trenching, utility crossings, barricades, clearing of the right-of-way, protection of property, backfilling, field layout, etc. Restoration will be paid for under separate pay items. Work performed for Point Repairs of gravity sewer pipes will be paid for under separate pay items.

Measurement: The quantities of pipe to be paid for under this item shall be the length in linear feet of pipe measured along the centerline of the pipe through manholes in place, completed, tested, and accepted.

INSTALL SANITARY SEWER PVC CLEANOUT

Pay Items:

Install PVC Cleanout

Description: The work consists of furnishing all labor, equipment, and materials for installation of a new PVC riser pipe and cleanout at the ROW line (or other location as directed by the Project manager) on existing sewer lateral. The existing sewer lateral material may be PVC, Vitrified Clay, or DIP pipe. The unit price shall include all costs necessary to install riser pipe and cleanout including mobilization, maintenance of traffic, survey layout (based upon property monuments established by others), material, polyethylene wrap on ductile iron pipe, fittings, pipe cutting, wye unit on main, installation of riser pipe and cleanout, pavement cutting, trenching, dewatering for excavations up to 6-ft deep, sheeting for excavations up to 6-ft deep, bracing, utility crossings, barricades, clearing of the right-of-way, protection of property, backfilling, field layout, restoration, sodding, etc. The pay item shall include cleanout installation up to ten (10) feet in depth.

Measurement: The quantities of pipe to be paid for under this item shall be each measured and inspected in place, completed, and accepted.

Remove Out of Service Gravity Sewer Mains

Pay Items:

Remove Out of Service Gravity Pipe 2" or 4"

Remove Out of Service Gravity Pipe 6" or 8"

Remove Out of Service Gravity Pipe 10" or 12"

Remove Out of Service Gravity Pipe 16" or 18"

Description: The work consists of furnishing all labor and equipment to remove and dispose of out of service mains. Unless otherwise indicated by the Project manager or his

representative, the pipe removed becomes the property of the Contractor. The unit price shall include all costs necessary to remove the pipe (including fittings, valves, reverse deadmen, etc) including mobilization, maintenance of traffic, pavement cutting, trenching, replacement of base material, dewatering for excavations up to 6-ft deep, sheeting for excavations up to 6-ft deep, bracing, utility crossings, barricades, clearing of the right-of-way, protection of property, backfilling, restoration of pavement and grass, etc.

Measurement: The quantities of pipe removal to be paid for under this Item shall be the length in linear feet (LF) of pipe measured along the centerline of the pipe through valves and fittings actually removed.

INSTALLATION OR ADJUSTMENT OF SANITARY SEWER SERVICE COLLECTOR

Pay Items:

Install or Relocate 4" SS Service Lateral
0'-6' Depth
Install or Relocate 4" SS Service Lateral
6'-8' Depth
Install or Relocate 4" SS Service Lateral
8'-10' Depth
Install or Relocate 4" SS Service Lateral
10'-12' Depth
Install or Relocate 4" SS Service Lateral
12'-14' Depth
Install or Relocate 4" SS Service Lateral
14'-16' Depth
Install or Relocate 4" SS Service Lateral
16'-18' Depth
Install or Relocate 6" SS Service Lateral
0'-6' Depth
Install or Relocate 6" SS Service Lateral
6'-8' Depth
Install or Relocate 6" SS Service Lateral
8'-10' Depth
Install or Relocate 6" SS Service Lateral
10'-12' Depth
Install or Relocate 6" SS Service Lateral
12'-14' Depth
Install or Relocate 6" SS Service Lateral
14'-16' Depth
Install or Relocate 6" SS Service Lateral
16'-18' Depth

Description: The work consists of furnishing all labor, equipment, by-pass operations, customer coordination and materials for installation of a new or relocating a sanitary sewer service lateral found to be in conflict with proposed improvement or as directed by the Project manager. The unit price shall include all costs necessary to install up to 30 linear feet of service pipe including mobilization, maintenance of traffic, survey layout (based upon property monuments established by others), material, polyethylene wrap on ductile iron pipe, fittings, pipe cutting, wye unit on main, installation of riser pipe and cleanout at the ROW line, pavement cutting, trenching, dewatering for excavations up to 6-ft deep, sheeting for excavations up to 6-ft deep, bracing, utility crossings, barricades, clearing of the right-of-way, protection of property, backfilling, field layout, etc. Service pipe lengths in excess of 30 feet will be paid for as Gravity Sewer Pipe. Restoration will be paid for under separate pay items.

Measurement: The quantities of pipe to be paid for under this item shall be each measured and inspected in place, completed, and accepted.

MANHOLE CONNECTION (INCLUDING CORING)

Pay Items:

2" Sewer Line Manhole Connection
4" Sewer Line Manhole Connection
6" Sewer Line Manhole Connection
8" Sewer Line Manhole Connection
10" Sewer Line Manhole Connection
12" Sewer Line Manhole Connection
16" Sewer Line Manhole Connection
18" Sewer Line Manhole Connection

Description: The work consists of all labor, equipment, investigative digging, and materials for repair of an existing connection into manhole wall or to install a new connection. All core drills shall be of sufficient diameter to accommodate pipe connection. Manhole connections may be either gravity sewer or sewer forcemain. All connections shall include a water stop or boot connection. Payment shall also include core drills, masonry or concrete patching, fiberglass and interior surface patching, shoring, dewatering for excavations up to 6-ft deep, , backfill, refill, compaction operations, compaction testing or re-testing, and traffic control. All sewer forcemain connections shall include installation of a drop bowl, paid for under MANHOLE INSIDE DROP CONNECTION pay item. The work does not include

1 excavation or surface restoration which, if required, will be paid for, or is part of the
2 work, under other Contract Pay Items.

3
4 Measurement: The quantities of connections into manholes to be paid under this
5 item shall be each measured in place, completed, inspected, and accepted.
6
7
8

9 **MANHOLE INSIDE DROP CONNECTION**
10

11 Pay Items:
12

13 2" Inside Drop Connection
14 4" Inside Drop Connection
15 6" Inside Drop Connection
16 8" Inside Drop Connection
17 10" Inside Drop Connection
18 12" Inside Drop Connection
19 16" Inside Drop Connection
20 18" Inside Drop Connection
21

22 Description: This item provides for all labor, equipment and material to install a PVC
23 drop connection inside an existing manhole. This work includes all interior piping,
24 drop bowl and any masonry or concrete and coatings patching required to complete
25 a repair connection or install a new drop connection to an existing manhole in
26 accordance with Standard Details.
27

28 Measurement: The quantity to be measured for payment under this Pay Item will be
29 the actual number each (EA) of manhole inside drop connections completed and
30 accepted.
31
32

33 **GROUTING OUT OF SERVICE PIPE**
34

35 Pay Items:
36

37 Grouting out of service pipe
38
39

40 Description: This item provides for all labor, equipment and material to install
41 chemical grout or flowable fill into an existing pipe to be abandoned. Prior to grout
42 filling the line, the Contractor shall verify that no live services remain connected to

1 the line. The underground conduit (pipe, waterline, sewer line, storm drain line, etc.)
2 be completely filled with a low strength cement grout (or flowable fill). In order to
3 achieve this, the grout to be pumped into the line shall have a consistency that will
4 permit forced flow into the entire length of line. Blocking the line by intermediate
5 excavation and gravity flow concrete or grout is NOT acceptable. The existing line to
6 be grout filled shall be exposed and plugged with concrete bulkheads or plugs at
7 both ends. The grout shall be pumped through the pipe until the grout is visible at the
8 other end of the underground conduit. No more than 15 psi shall be used to pump
9 the grout mixture, and care should be used to avoid grout filling adjoining voids.

10
11 Measurement: The quantities of pipe to be paid for under this Item shall be the
12 volume in cubic yards of the inside pipe area times the length of pipe. No payment
13 will be made for material that escapes the pipe or ends enclosures.
14

15 16 17 **DISCONNECT AND PLUG SEWER MAIN**

18 19 Pay Items:

20
21 Disconnect & Plug 2" or 4" Pipe
22 Disconnect & Plug 6" or 8" Pipe
23 Disconnect & Plug 10" or 12" Pipe
24

25 Description: The work consists of furnishing all labor, equipment and materials to
26 disconnect and cap/plug sewer mains that will remain in or out of service. The unit
27 price shall include all nuts, bolts, gaskets, caps/plugs, restraint devices, thrust
28 blocks, cutting existing pipe, removal of valve boxes, blow-off assemblies, scheduling
29 and notification of service interruptions and all other operations required to
30 disconnect and cap/plug the water mains.
31

32 Measurement: The quantity of disconnect and cap/plug water mains to be paid for
33 under this item shall be the number each (EA) measured in place, completed and
34 accepted.
35

36 37 **INSTALL SANITARY SEWER FORCE MAIN**

38 39 Pay Items:

40
41 2" PVC Restrained Joint Pipe and Fittings Force
42 Main, SDR 21
43 4" PVC Pipe, C-900 DR 18 (Force Main)
44 4" PVC Restrained Joint Pipe and Fittings, C-900
45 DR 18 (Force Main)

6" PVC Pipe, C-900 DR 18 (Force Main)
6" PVC Restrained Joint Pipe and Fittings, C-900
DR 18 (Force Main)
8" PVC Pipe, C-900 DR 18 (Force Main)
8" PVC Restrained Joint Pipe and Fittings, C-900
DR 18 (Force Main)
10" PVC Pipe, C-900 DR 18 (Force Main)
10" PVC Restrained Joint Pipe and Fittings, C-900
DR 18 (Force Main)
12" PVC Pipe, C-900 DR 18 (Force Main)
12" PVC Restrained Joint Pipe and Fittings, C-900
DR 18 (Force Main)

Description: The work consists of furnishing all labor, equipment and materials and installing sanitary forcemain pipe by the open-cut method in accordance with the specifications.

The unit price shall include all costs necessary to install the pipe up to 6 feet in depth, including: survey layout (based upon property monuments established by others); protection of property; protection of existing utilities, mailboxes and service connections; erosion protection (silt fence, hay bales, floating turbidity barriers, or other means, as required); materials, pavement cutting, extra pipe fitting material including joints/jointing material/restraints; shoring, sheeting for excavations up to 6-ft deep; bracing; utility crossings; barricades; clearing; grubbing and stripping of the right-of-way; trenching, bedding and backfilling; pigging; flushing and cleaning; pressure testing. Fittings shall be included in the cost of 2" pipe. Dual tracer wire and tracer wire testing shall be included in the price for PVC pipe items. Polyethylene encasement shall be included in the bid price for DI pipe items. Restoration will be paid for under separate pay items.

Additional payment will be made for extra depth installation over six feet. Well point dewatering is an authorized pay item only when the installation is below 6 feet in depth and site conditions warrant; all dewatering up to 6 feet in depth is included in this pay item.

Measurement: The quantities of pipe to be paid for under this Item shall be the length in linear feet of pipe measured along the centerline of the pipe in place, completed, tested, and accepted.

MANHOLE REHABILITATION

Pay Items:

Manhole Lining, 4' Dia – Spray on Calcium Aluminate Liner - Initial

Description: This item provides for mobilization, set up, preparation, and spray on calcium aluminate coating of existing manholes (as required) including all exposed concrete, grout, mortar, and cementitious surface within the manhole, including bench, channel, risers, cones, adjusting rings, etc. Adhesion testing and spark testing per specifications. Coating of the metallic manhole frame and cover will not be required.

Measurement: Payment of manhole rehabilitation will be made at the applicable unit price per vertical foot (VF) of the manhole in the bid submittal sheets.

RESTRAINED JOINTS

Pay Items:

2" Restrained Joints
4" Restrained Joints
6" Restrained Joints
8" Restrained Joints
10" Restrained Joints
12" Restrained Joints

Description: The work specified in this item describes measurement and payment for furnishing all labor, equipment and materials and installing restrained joint hardware including mechanical joint restrainers, bell restrainers and PVC restrainers complete including bolts, gaskets, rods, special flanges, color coded polyethylene encasement , testing, acceptance, and ready for service. Restrained joints for pipe associated with fittings per the design of new pipe shall be paid for under separate pay item. This item shall only be used to restrain existing in service pipelines or to install additional restraints above the amount specified in Detail PGD GD 11, as directed by the Project manager or his representative.

Measurement: The quantities of restrained joints to be paid for under this item shall be the number of each (EA) measured in place and accepted. No restrained joint hardware or any part of a restrained joint hardware shall be included for payment under more than one item.

FORCEMAIN OVER DEPTH EXCAVATION

Pay Items:

2"-4" Forcemain pipe and appurtenances over
depth excavation
6"-8" Forcemain pipe and appurtenances over
depth excavation
10"-12" Forcemain pipe and appurtenances over
depth excavation

Description: The work consists of furnishing all labor and equipment to excavate additional depth greater than 6 feet depth for installation of sewer forcemain pipe by the open-cut method in accordance with the specifications. The unit price shall include all costs necessary to excavate additional depth over 6 feet including: survey layout (based upon property monuments established by others); protection of property, existing utilities, mailboxes and service connections; erosion protection (silt fence, hay bales, floating turbidity barriers, or other means, as required); materials;

pavement cutting; bracing; utility crossings; barricades; clearing; grubbing and stripping of the right-of-way; trenching, bedding; and backfilling. Well point dewatering and sheeting are authorized pay items when the installation is below 6 feet in depth and site conditions warrant.

Measurement: Measurement for payment for excavating each additional foot of depth to install pipe or appurtenances shall be made on a per linear foot (LF) basis for each additional vertical foot of depth over 6 feet as measured horizontally above the pipe centerline through valves and fittings.

REMOVE OUT OF SERVICE SEWER FORCE MAINS

Pay Items:

Remove Out of Service Pipe 2" or 4"

Remove Out of Service Pipe 6" or 8"

Remove Out of Service Pipe 10" or 12"

Description: The work consists of furnishing all labor and equipment to remove and dispose of out of service mains. Unless otherwise indicted by the Project manager or his representative, the pipe removed becomes the property of the Contractor. The unit price shall include all costs necessary to remove the pipe (including fittings, valves, reverse deadmen, etc) including mobilization, maintenance of traffic, pavement cutting, trenching, replacement of base material, dewatering for excavations up to 6-ft deep, sheeting for excavations up to 6-ft deep, bracing, utility crossings, barricades, clearing of the right-of-way, protection of property, backfilling, etc. Restoration will be paid for under separate pay items.

Measurement: The quantities of pipe removal to be paid for under this Item shall be the length in **linear feet (LF)** of pipe measured along the centerline of the pipe through valves and fittings actually removed.

SLEEVE CONNECTION

Pay Items:

2" Sleeved Connection

4" Sleeved Connection

6" Sleeved Connection

8" Sleeved Connection

10" Sleeved Connection

12" Sleeved Connection

Description: The work consists of furnishing all labor, equipment and materials for installing sleeve connections not included in other items. The unit price shall include notification of shutdown to property owners, establishing alignment, moving and aligning old and new pipe, cleaning and cutting old pipe, sterilization, restraint jointing materials, color-coded polyethylene encasement, and all other operations required to make the connection. All connections shall include the cost of the sleeve or coupling, joint restraints and removal & disposal of up to twenty feet of existing main. Valves, pipe, additional joint restraints on existing main and fittings for connections shall be paid for under separate pay items.

Measurement: The quantities of sleeve connection to be paid for under this item shall be the number each measured in place, completed, tested, and accepted

REVERSE DEAD-MAN

Pay Items:

Reverse Deadman for 2" or 4" Pipe
Reverse Deadman for 6" or 8" Pipe
Reverse Deadman for 10" or 12" Pipe

Description: The work covered by this item consists of reverse deadman installation for mains up to 12 inch in diameter. The installation shall include the corresponding size restrained joint as shown in the standard detail. This pay item includes: the furnishing of all materials and for the proper installation of the reverse deadman in strict accordance with the appropriate pipe specifications, excavation, erosion protection and control, backfill, dewatering for excavations up to 6-ft deep, sheeting for excavations up to 6-ft deep, shoring, surface grading, disposal of water, appropriate sized joint restraint, and concrete, all tools, equipment, labor, and materials necessary to install the reverse deadman as shown, specified or required for the proper completion of the work. Concrete shall cure for 72 hours or as determined by concrete mix design before applying force. Construction shall conform to Pinellas Park Utilities Project Engineering's Standard Details. Deadmen for mains greater than 12" in diameter require independent project Engineering design and shall be paid for under separate pay item.

Measurement: The quantities of reverse dead-man construction to be paid under this item shall be each measured in place, inspected, cured, and accepted.

DUCTILE IRON FITTINGS

Pay Items:

DI Fittings C153 (Compact Body)

Description: The work consists of furnishing all labor, equipment and materials for installing ductile iron fittings not included in other items. All fitting shall include and be installed with joint restraints. The unit price includes furnishing and installing all fittings and materials above or below ground along the pipeline alignment; joints, joint restrainers, and jointing materials; bracing, shoring, and sheeting; dewatering, clearing, grubbing, and stripping; trenching, bedding and backfill; constructing the specified protection and adjusting of existing above ground and underground utilities and service connections; disposal of spoil; color coded polyethylene encasement; pressure testing; erosion protection and control, and all other related and necessary materials, work and equipment required to construct a complete, operable pipeline. The cost of furnishing and installing joint restraints shall be included in the unit price for Ductile Iron Fittings.

Measurement: The quantities of ductile iron fittings to be paid for under this Item shall be the weight of the fitting required as established weight per fitting, including bolts, in **tons** (2,000 pounds) measured in place, completed, tested, and accepted. The weight of gaskets, jointing materials, etc., shall not be included in the computation of ductile iron fitting tonnage. An established table of weights for acceptable fittings is attached in Table A-1.

AIR RELEASE VALVES

Pay Items:

2" Air Release Assembly (Inline)

2" Air Release Assembly (Offset)

Description: The work consists of installing air release assemblies on sanitary sewer force mains. The unit bid price shall include installing the air release assembly, testing, excavation, backfill, bracing, shoring, sheeting for excavations up to 6-ft deep, dewatering for excavations up to 6-ft deep, surface grading, erosion protection and control, furnishing and installing tap saddle, tap, corporation stop, ball corporation, curb stop, automatic air release valve, enclosure, testing, miscellaneous brass nipples and fittings, and incidental items required to install a new assembly as shown on the standard detail. All assemblies shall include tracer wire access, drainage gravel and miscellaneous nipples and fittings as shown in the standard details, filter fabric, valve identification tags, paint reference stripe on curb, painting of valve cover and meter boxes.

1
2 Measurement: Measurement shall be on an individual basis for each (EA) assembly
3 installed and accepted.
4

5
6 **RESILIENT WEDGE GATE VALVE**
7

8 Pay Items:
9

10 2" RWGV (Resilient Wedge Gate Valve) & Box

11 4" RWGV & Box C515

12 6" RWGV & Box C515

13 8" RWGV & Box C515

14 10" RWGV & Box C515

15 12" RWGV & Box C515
16

17 Description: The work consists of furnishing all labor, equipment and materials for
18 installing a valve not included in other items. The unit bid price includes furnishing
19 and installing valves, valve boxes and covers, color coded polyethylene encasement,
20 tracer wire access, filter fabric, valve identification tags, paint reference stripe on
21 curb, painting of valve cover, concrete valve box pad, extension stems, joint
22 restraints, pressure testing, excavation, backfill, dewatering for excavations up to 6-ft
23 deep, sheeting for excavations up to 6-ft deep, shoring, surface grading and
24 incidental construction associated with these items.
25

26 Measurement: The quantities of valves to be paid for under this Item shall be the
27 number **each** measured in place, completed, tested, and accepted.
28
29

30 **ADJUSTMENT OF VALVE BOX & COVER**
31

32 Pay Items:
33

34 Adjust Valve Box to Finished Grade (In Pavement)

35 Adjust Valve Box to Finished Grade (Outside of Pavement)
36
37

38 Description: The work consists of furnishing all labor, equipment, and materials for
39 the vertical adjustment of an existing valve box and cover to match proposed finish
40 grade. The unit price shall include placement of the valve cover to finish grade as
41 shown on plans or directed by the Project manager or Designee.
42

43 Measurement: the quantity of valve box and cover adjustments to be paid for under
44 this item shall be the number **each** measured in place, on grade, inspected, and
45 accepted.

1
2 **LINE STOP**
3

4 Pay Items:
5

6 4" Line Stop
7 6" Line Stop
8 8" Line Stop
14 10" Line Stop
12" Line Stop
16" Line Stop
20" Line Stop
24" Line Stop

15 Description: The work consists of furnishing all labor, equipment and materials,
16 including but not limited to dewatering for excavations up to 6-ft deep, excavation,
17 sheeting for excavations up to 6-ft deep, shoring, preliminary measurements of the
18 pipe prior to ordering the saddle, installing concrete cradle and support, line stop
19 tapping sleeve, valve, and performing line stop installation with and for the duration
20 of the new valve installation, pressure testing of tap saddle/sleeve, polyethylene
21 wrap, and valve box for constructing a line stop on an existing sewer main and the
22 adjustment of its valve box to finish grade. If a by-pass line stop installation is
23 required, the by-pass piping will be paid for under line items for piping.
24

25 Measurement: The quantities of Line Stops to be paid for under this Item shall be
26 the number each measured in place, completed, tested, and accepted.
27

28 **TAPPING SADDLE/SLEEVE, VALVE, AND BOX**
29

30 Pay Items:
31

32 4" x 2" Tapping Saddle Valve & Box
33 4" x 4" Tapping Sleeve Valve & Box
34 6" x 2" Tapping Saddle Valve & Box
35 6" x 4" Tapping Sleeve Valve & Box
36 6" x 6" Tapping Sleeve Valve & Box
37 8" x 2" Tapping Saddle Valve & Box
38 8" x 4" Tapping Sleeve Valve & Box
39 8" x 6" Tapping Sleeve Valve & Box
40 8" x 8" Tapping Sleeve Valve & Box
41 10" x 2" Tapping Saddle Valve & Box
42 10" x 4" Tapping Sleeve Valve & Box
43 10" x 6" Tapping Sleeve Valve & Box
44 10" x 8" Tapping Sleeve Valve & Box
45 10" x 10" Tapping Sleeve Valve & Box
46 12" x 2" Tapping Saddle Valve & Box

12" x 4" Tapping Sleeve Valve & Box
12" x 6" Tapping Sleeve Valve & Box
12" x 8" Tapping Sleeve Valve & Box
12" x 10" Tapping Sleeve Valve & Box
12" x 12" Tapping Sleeve Valve & Box

Description: The work consists of the installation of tapping saddle or sleeve and associated valves. The quantity to be paid for under this item is the number of connections acceptably installed. Cut in tee and valve may be required in some locations due to utility conflicts and will be paid for as equal sized tap. The unit bid price includes all materials and installation from the point of connection to the main line including scheduling and notification of service interruptions, furnishing and installing tapping saddle, color coded polyethylene encasement, valves, taps, fittings, piping, joint restraints, valve boxes and covers, concrete valve box pads, valve extension stems, tracer wire access, valve identification tags, filter fabric, paint reference stripe on curb, painting of valve box cover, excavation, erosion protection and control, backfill, dewatering for excavations up to 6-ft deep, sheeting for excavations up to 6-ft deep, shoring, surface grading, disposal of water, pressure testing and all other related, necessary, and incidental materials, work and equipment required to complete the connection. All joints shall be restrained.

Measurement: The quantities of valves/taps to be paid for under this Item shall be the number **each** measured in place, completed, tested, and accepted.

MANHOLE

Pay Items:

4' dia. - Precast Manhole Standard
4' dia. - Precast Manhole Inside Drop
4' dia. - Precast Manhole Outside Drop
5' dia. - Precast Manhole Standard
5' dia. - Precast Manhole Inside Drop
5' dia. - Precast Manhole Outside Drop
5' dia. - Precast Air Release Manhole
6' dia. - Precast Manhole Standard
6' dia. - Precast Manhole Inside Drop
6' dia. - Precast Manhole Outside Drop

Description: The work consists of furnishing all labor, equipment, by-pass operations, customer coordination and materials for constructing a sanitary sewer manhole at location shown on plans or as directed by the Project manager. The unit price shall include all costs necessary to construct the manhole including survey layout (based upon property monuments established by others), material, pavement cutting, trenching, new stainless-steel inflow protector, replacement of

base material, dewatering for excavations up to 6-ft deep, sheeting for excavations up to 6-ft deep, bracing, utility crossings, barricades, clearing of the right-of-way, protection of property, and backfilling. The depth of the manhole will be measured from the top of the cover down to the invert of the outlet sewer pipe. Excavation and well point dewatering for pipeline Manhole installations are separate pay items.

Measurement: The quantities of manholes to be paid under this item shall be vertical feet of depth measured in place, completed, inspected, and accepted.

REMOVE EXISTING MANHOLE – INITIAL

Pay Items:

Removal of Existing Manhole – Initial

Description: This work item shall provide all labor, equipment and materials for the removal of existing manholes up to four feet in depth and plugging of existing lines with brick and mortar. The work does not include excavation, surface restoration, sheeting, MOT, or well point dewatering which, if required, will be paid for under other Pay Items.

Measurement: The quantity to be measured for payment under this Pay Item will be the actual number of manholes removals completed and accepted up to four (4) feet in depth.

REMOVE EXISTING MANHOLE – ADDITIONAL

Pay Items:

Remove Existing Manhole – Additional

Description: The work consists of all work contained in Pay Item Remove Existing Manholes and provides for manhole removal for depths greater than four (4') feet deep.

Measurement: The quantity to be measured for payment under this Pay Item will be the actual length in vertical feet of additional manhole removal in the work less the four (4) feet paid for under other Pay Items

CURED IN PLACE PIPE LINING (CIPP) SEWER MAIN

Pay Items:

6" Dia. – CIPP Sewer Main

8" Dia. – CIPP Sewer Main

10" Dia. – CIPP Sewer Main

Description: The work includes the installation of the CIPP liners in sewer gravity mains of various sizes. The item includes, mobilization, neighborhood notification, line cleaning, pre-lining CCTV, PACP post televising and MACP video inspections (level 2) of manhole on each end of line segment, hydrophilic end seals of liner at manhole connections, reinstating outside drop manhole connections, manhole joint grouting, and traffic control. The Contractor's attention is called to the fact that cleanup and restoration is considered a part of the work. No payment will be made for work until cleanup and restoration is completed.

Measurement: Payment will be made at the applicable unit price per lineal foot (LF) of CIPP liner installed, and accepted (including video inspections). The quantity for payment will be the number of lineal feet of gravity sewer pipe acceptably rehabilitated by cured in place pipelining measured along the centerline of the sewer line, from center to center of manholes. No additional compensation will be paid for eroded or oversized inside pipe diameter.

GROUP C – SEWER REPAIRS AND OFFSETS

UTILITY INITIAL/EXPLORATORY EXCAVATION

Pay Items:

Initial/Exploratory Excavation, 0' - 6' Depth
Initial/Exploratory Excavation, 6' - 8' Depth
Initial/Exploratory Excavation, 8' - 10' Depth
Initial/Exploratory Excavation, 10' - 12' Depth
Initial/Exploratory Excavation, 12' - 14' Depth
Initial/Exploratory Excavation, 14' - 16' Depth
Initial/Exploratory Excavation, 16' - 18' Depth
Initial/Exploratory Excavation, 18' - 20' Depth

Description: The work consists of furnishing all labor, equipment, materials, traffic control and supervision necessary for the initial/exploratory excavation exposing up to 30 linear feet of existing sanitary sewer gravity or forcemain pipe as measured along the pipe in a horizontal plane. The unit price shall contain all costs necessary to investigate/expose the pipe, temporary sheeting/shoring/bracing up to 6-ft deep, dewatering, well point dewatering up to 6' deep, crushed stone, stabilization and protection of existing utilities, barricades and necessary traffic control, property protection, backfilling, compaction, and all other related and necessary materials required to investigate/expose the pipe to be repaired in accordance with the Contract Documents. There shall be one Initial/exploratory Excavation per work site unless otherwise approved by the Project manager. The following items, if required or as determined by the Project manager, will be paid for under other Contract Pay Items: pipeline point repair, pipeline offset relocation, select backfill material, well point dewatering, by-pass pumping, surface restoration, sheeting for excavations greater than 6-ft deep, and pavement restoration.

Measurement: The quantity to be paid for under this item shall be the actual number of each (EA) per job assignment for initial excavation made in conjunction with exploration or pipe repair at the various cut ranges listed. The cut for Initial/Exploratory Excavation shall be the average of the pipe cut (grade elevation minus the pipe invert elevation) measured at each end of the trench, which measures 30 feet in length or less in conjunction of pipeline point repair or relocation offset.

ADDITIONAL EXCAVATION

Pay Items:

Additional Excavation, 0' - 6' Depth
Additional Excavation, 6' - 8' Depth

1 Additional Excavation, 8' - 10' Depth
2 Additional Excavation, 10' - 12' Depth
3 Additional Excavation, 12' - 14' Depth
4 Additional Excavation, 14' - 16' Depth
5 Additional Excavation, 16' - 18' Depth
6 Additional Excavation, 18' - 20' Depth
7

8 Description: The work consists of furnishing all labor, equipment, materials, traffic
9 control and supervision necessary for the excavation to expose existing pipe as
10 measured in the horizontal plane in excess of the original 30 linear feet included
11 in Initial/Exploratory Excavation pay item. This Pay Item is applicable only in
12 conjunction with, and includes the same work as listed in UTILITY INITIAL/
13 EXPLORATORY EXCAVATION pay item.

14
15 Measurement: Measurement of payment shall be the actual number of linear feet
16 (LF) per job assignment for additional excavations made in conjunction with
17 exploration of pipeline point repair or relocation offset.

18 19 20 **BY-PASS PUMPING SET UP AND OPERATION**

21 Pay Items:

22
23
24 8" – 10" Wastewater Flow Through Bypass
25 Pumping
26 12" – 14" Wastewater Flow Through Bypass
27 Pumping
28 15" – 21" Wastewater Flow Through Bypass
29 Pumping
30 24" – 30" Wastewater Flow Through Bypass
31 Pumping
32 36" – 42" Wastewater Flow Through Bypass
33 Pumping
34 8" – 10" Wastewater Bypass Pumping Set up and
35 Operation
36 12" – 14" Wastewater Bypass Pumping Set up and
37 Operation
38 15" – 21" Wastewater Bypass Pumping Set up and
39 Operation
40 24" – 30" Wastewater Bypass Pumping Set up and
41 Operation
42 36" – 42" Wastewater Bypass Pumping Set up and
43 Operation
44

45 Description: This item provides for mobilization, set up and operation of by-pass

sewage pumping equipment and temporary piping including traffic bypass ramps as required and as described in the Standard Technical Specifications. This Pay Item is applicable on projects or repairs that have high flow or require an over night by pass operation.

Measurement: The quantity to be measured for payment under this Pay Item will be the actual number of by-pass pumping set ups and operations, per part of day, required by the Project manager in the work. The minimum measurement for this pay item is eight (8) hours or 0.333 days and is measured from the time that the sewage is actually by-passed. This eight (8) hour minimum (0.333 days) includes full compensation for set up and operation for up to the first eight (8) hour period. Additional time will be in tenths of the day or twenty-four (24) hour period. The quantities determined shall be paid per day (DAY) or portion of day of by-pass pumping set up and operation.

SANITARY SEWER GRAVITY PIPE POINT REPAIR

Pay Items:

6" Dia. Gravity Sewer Point Repair
(DI Replacement Pipe)
6" Dia. Gravity Sewer Point Repair
(PVC Replacement Pipe)
8" Dia. Gravity Sewer Point Repair
(DI Replacement Pipe)
8" Dia. Gravity Sewer Point Repair
(PVC Replacement Pipe)
10" Dia. Gravity Sewer Point Repair
(DI Replacement Pipe)
10" Dia. Gravity Sewer Point Repair
(PVC Replacement Pipe)
12" Dia. Gravity Sewer Point Repair
(DI Replacement Pipe)
12" Dia. Gravity Sewer Point Repair
(PVC Replacement Pipe)
16" Dia. Gravity Sewer Point Repair
(DI Replacement Pipe)
16" Dia. Gravity Sewer Point Repair
(PVC Replacement Pipe)
18" Dia. Gravity Sewer Point Repair
(DI Replacement Pipe)
18" Dia. Gravity Sewer Point Repair
(PVC Replacement Pipe)

Description: This item provides all labor, equipment and materials for the replacement of up to twenty (20) linear feet of gravity sewer pipe with PVC or Ductile Iron pipe (Material as directed by the Project manager at each occurrence). The existing sewer pipe may be Vitrified Clay, PVC Ductile Iron, Cast Iron, or Concrete gravity sewer main. The work includes repair sleeves, cutting existing pipe, pipe bedding, new replacement pipe, disposal of existing pipe, and reconnection of lateral connections to sewer main. This item also includes maintaining of flow in low flow systems that can be accomplished with up to a four (4) inch mud hog, diaphragm or centrifugal type pump and lay flat hose or temporarily blocking the sewer for a period of time to facilitate the repair. The cost of lengths of pipe greater than twenty (20) linear feet will be paid for under pay item SANITARY SEWER GRAVITY PIPE POINT REPAIR - ADDITIONAL LENGTH. The work does not include excavation, sheeting or well point dewatering which, if required, will be paid for, or is part of the work, under other Contract Pay Items.

Measurement: The quantity to be paid under this item will be in accordance with each (EA) pipe size to be repaired as noted in the contract pay items.

SANITARY SEWER GRAVITY PIPE POINT REPAIR – ADDITIONAL LENGTH

Pay Items:

6" Dia. Gravity Sewer Point Repair - Additional
(DI Replacement Pipe)
6" Dia. Gravity Sewer Point Repair - Additional
(PVC Replacement Pipe)
8" Dia. Gravity Sewer Point Repair - Additional
(DI Replacement Pipe)
8" Dia. Gravity Sewer Point Repair - Additional
(PVC Replacement Pipe)
10" Dia. Gravity Sewer Point Repair - Additional
(DI Replacement Pipe)
10" Dia. Gravity Sewer Point Repair – Additional
(PVC Replacement Pipe)
12" Dia. Gravity Sewer Point Repair – Additional
(DI Replacement Pipe)
12" Dia. Gravity Sewer Point Repair - Additional
(PVC Replacement Pipe)
16" Dia. Gravity Sewer Point Repair - Additional
(DI Replacement Pipe)
16" Dia. Gravity Sewer Point Repair - Additional
(PVC Replacement Pipe)
18" Dia. Gravity Sewer Point Repair - Additional

(DI Replacement Pipe)
18" Dia. Gravity Sewer Point Repair - Additional
(PVC Replacement Pipe)

Description: This item provides all labor, equipment and materials for the additional length of replacement gravity sewer pipe with PVC or Ductile Iron pipe (Material as directed by the Project manager at each occurrence). This Pay Item provides for an additional thirty (30) feet of replacement pipe. This Pay Item is used only in conjunction with pay item SANITARY SEWER GRAVITY PIPE POINT REPAIR and contains the same work therein described. Pipe point repairs requiring greater than fifty (50) feet of pipe will be constructed under separate Contract Pay Items.

Measurement: The quantity to be paid under this item will be in accordance with the linear feet (LF) installed above twenty (20) linear for each pipe size to be repaired as noted in the contract pay items.

SEWER FORCE MAIN PIPE POINT REPAIRS

Pay Items:

2" Dia. Force Main Point Repair
4" Dia. Force Main Point Repair
6" Dia. Force Main Point Repair
8" Dia. Force Main Point Repair
10" Dia. Force Main Point Repair
12" Dia. Force Main Point Repair

Description: This item provides all labor, equipment and materials for the replacement of up to ten (10) linear feet of pipe and may be used for routine response and emergency repairs at the discretion of the Project manager or his representative. The pipe being repaired may be PVC, HDPE, Ductile Iron, or Cast Iron. All ductile iron pipe shall have polyethylene encasement. The work includes furnishing and installing two full seal clamps, bell joint seal clamps or two solid sleeves, cutting existing pipe, pipe bedding, dewatering for excavations up to 6-ft deep, sheeting for excavations up to 6-ft deep, and disposal of existing pipe. Additional pipe materials over ten (10) linear feet in length will be paid for under pipe pay item for INSTALL SANITARY SEWER FORCE MAIN PIPE. Excavations and well point dewatering for pipeline point repairs are separate pay items.

Measurement: The quantity to be paid under this item will be in accordance with each (EA) pipe size to be repaired as noted in the contract pay items.

SEWER FORCE MAIN PIPE OFFSET

Pay Items:

2" Dia. Force Main Pipe Offset
4" Dia. Force Main Pipe Offset
6" Dia. Force Main Pipe Offset
8" Dia. Force Main Pipe Offset
10" Dia. Force Main Pipe Offset
12" Dia. Force Main Pipe Offset

Description: The work consists of furnishing all labor, equipment, customer coordination/notification, and materials for the relocating of pipeline found to be in conflict with proposed improvements from other construction activities. The pipeline offset may be PVC, HDPE, Ductile Iron, or Cast Iron pipe. All ductile iron pipe shall have polyethylene encasement. The unit price includes up to 50 linear feet of pipe offset. Pipe relocation offsets greater than 50 linear feet shall be paid for under INSTALL SANITARY SEWER FORCE MAIN PIPE and other Pay Items. Pipe relocation offsets are often times in close proximity to other utilities. All hand digging and other special precautions required to protect other utilities is included in the unit price. The unit price shall include all costs necessary to complete the offset and removing existing main including: survey layout (based on property monuments established by others), material, connection sleeves, reverse deadmen, joint restraints, polyethylene wrap on ductile iron pipe, tracer wire, pavement cutting, dewatering for excavations up to 6-ft deep, backfilling, pressure testing, and field layouts. Excavation and well point dewatering for pipeline relocation offsets are separate pay items.

Measurement: The quantity to be paid under this item will be in accordance with each (EA) pipe relocation offset completed.

REPLACE MANHOLE RING AND COVER

Pay Items:

Ring and Cover Replacement in Pavement
Ring and Cover Replacement areas other than
Pavement

Description: This pay includes replacement of existing manhole rings and covers in roadway paved areas, or other areas, as directed by the Project manager. The work includes all labor, equipment and material for replacement of manhole rings and covers. The work does not include excavation or surface restoration which, if required, will be paid for, or is part of the work, under other Contract Pay Items.

1
2 Measurement: The quantity to be measured for payment under this Pay Item will be
3 the actual number each of manhole ring and covers replaced completed and
4 accepted.

5
6
7
8 **MANHOLE BENCH REPLACEMENT**

9
10 Pay Items:

11
12 4' Dia. Manhole – Bench Replacement
13 5' Dia. Manhole – Bench Replacement
14 6' Dia. Manhole – Bench Replacement

15
16 Description: This pay item includes the replacement of manhole benches and invert
17 channels. The work includes all labor, equipment and material for rebuilding existing
18 manhole inverts and benches as described in Standard Technical Specifications,
19 Section 33 33 01 – Gravity Sewers and Section 33 39 00 – Sanitary Sewer Structures.

20
21 Measurement: The quantity of manhole bench replacement to be measured for
22 payment under this Pay Item will be the actual number each (EA) of manholes that
23 have manhole inverts and benches rebuilt.

24
25
26 **ADJUST MANHOLE RIM & COVER**

27
28 Pay Items:

29
30 Adjust Manhole Rim & Cover to Finished Grade
31 (In Pavement)
32 Adjust Manhole Rim & Cover to Finished Grade
33 (Outside Pavement)

34
35 Description: This item provides all labor, equipment and materials for adjusting existing
36 manhole riser, C.I. frame, and cover. Adjustment includes removal of existing ring and
37 cover and removal or placement of up to 6 courses of brick and reinstalling the existing
38 ring and cover. The work does not include excavation, surface restoration, sheeting or
39 well point dewatering which, if required, will be paid for, or is part of the work, under
40 other Contract Pay Items.

41
42 Measurement: The quantities of manhole rim and cover adjustments to be paid under
43 this item shall be each measured in place, on grade, inspected, and accepted.
44
45

1
2 **GROUP D – RESTORATION**
3
4

5 **FLOWABLE FILL (EXCAVATABLE CONCRETE FDOT SECTION 121)**
6

7 Pay Items:
8

9 Flowable Concrete Fill
10

11 Description: FDOT Section 121
12

13
14 Measurement: This item will be paid by the Cubic Yard
15
16
17

18
19 **ROADWAY BASE**
20

21 Pay Items
22

23 ROADWAY BASE, Lime Rock, Primed, Min. LBR
24 100, Variable Thickness
25 ROADWAY BASE, Crushed Concrete/Graded
26 Aggregate, Min. LBR 100, Variable Thickness
27 SUPERPAVE ASPHALT BASE, Type B 12.5,
28 Variable Thickness
29

30 Description: Roadway base for reconstruction of roads per FDOT specifications.
31

32
33 Measurement: Item will be paid by the Cubic Yard.
34
35
36
37
38

39 **ROADWAY SURFACE COURSE**
40

41 Pay Items
42

43 SUPERPAVE ASPHALT CONCRETE, Type SP
44 9.5, Fine, Traffic Level C, Variable Thickness
45 SUPERPAVE ASPHALT CONCRETE, Type SP

12.5, Fine, Traffic Level C, Variable Thickness

Description: Reference FDOT INDEX

Measurement: Item will be paid by the TON

CONCRETE DRIVEWAY RESTORATION

Pay Items:

PAVEMENT, Cement Concrete, 6" Min Thickness

PAVEMENT, Cement Concrete, 8" Thick

Description: Restoration of driveways

Measurement: Item will be paid for by the Square Yard.

DRIVEWAY RESTORATION – MISCELLANEOUS MATERIAL

Pay Items:

DRIVEWAY RESTORATION, In Kind, Decorative block

Description: Restoration of driveway aprons.

Measurement: Item will be measured and paid by the Square yard.

1 **MILLING OF EXISITING ASPHALT:**

2
3 Pay Items

4
5 MILLING EXISTING ASPHALT PAVEMENT, 3/4" Average Depth

MILLING EXISTING ASPHALT PAVEMENT, 1" Average Depth

10 MILLING EXISTING ASPHALT PAVEMENT, 1 1/2" Average Depth

11
12
13 Description: Reference Pinellas Park Project Engineering Manual

14
15
16 Measurement: Item will be measured and paid for by the square yard

17
18
19
20
21 **CURB AND GUTTER REPLACEMENT**

22
23 Pay Items:

24
25 CURB & GUTTER, Concrete, FDOT Type A

26 CURB & GUTTER, Concrete, FDOT Type E

27 CURB & GUTTER, Concrete, FDOT Type F

28 VALLEY GUTTER, Concrete, PCED Index 1315

29
30 Description: Reference FDOT Index

31
32
33 Measurement: Item will be paid by the Linear Foot

34
35
36
37
38
39 **CONCRETE SIDEWALKS**

40
41 Pay Items:

42
43 SIDEWALK, CONCRETE, 4" Min. Thickness,
44 Remove and Replace

45 SIDEWALK, CONCRETE, 6" Min. Thickness,
46 Remove and Replace

Description: Reference FDOT Index

Measurement: Item will be measured and paid by the Square foot

SODDING

Pay Items

SODDING, In-kind

Description: Restoration of sod

Measurement: Item will be paid by the Square Yard

GROUP E – MAINTENANCE OF TRAFFIC

MAINTENANCE OF TRAFFIC

Pay Items

Temporary Signalization and Maintenance, Intersection
Temporary Traffic Detection and Maintenance, Intersection
Flagmen (Per-Flagmen)
Multi Lane (FDOT Index No. 613)
Multi Lane (FDOT Index No. 614)
Multi Lane (FDOT Index No. 615)
Multi Lane (FDOT Index No. 616)
Multi Lane (FDOT Index No. 617)
Arrow Boards - 5' Minimum Horizontal Size
Variable Message Board
Concrete Barrier (FDOT Index No. 415)
Low Profile Barrier (FDOT Index No. 412) Signs
in Work Zones
6" Solid line Thermo Plastic - Permanent 24" Stop
Bar, Solid, Thermo Plastic, Perm. 6" Skip line
(6'-10' Skip) Thermo Plastic-Perm.

Barricades Type III, with Warning Lights
Barricades Type I or II, with Warning Lights

Description: This work consists of maintaining traffic within the limits of the project for the duration of the construction period, including any temporary suspensions of the work. All Maintenance of Traffic shall conform to City Standard Technical Specifications for Roadway and Related Construction – latest edition (Spec 102) and FDOT standards. This line item shall include labor and equipment to furnishing, installing and maintaining of traffic control and safety devices during construction; the construction and maintenance of any necessary detour facilities; providing necessary facilities for access to residences, businesses, pedestrian, schools, etc., control of dust and any other special requirements for safe and expeditious movement of traffic as may be called for on the plans. The term, Maintenance of Traffic, shall include all of such facilities, devices and operations as are required for the safety and convenience of the public, as well as for minimizing public nuisance. The Contractor, however, shall not obstruct nor create a hazard to any traffic during the performance of the work and shall be responsible for repair of any damage to existing pavement or facilities caused by his operations. Traffic Control Devices include all types of barricades, arrow boards, signs, temporary pavement markers, lights, concrete barriers and permanent striping. All travel, equipment, labor overhead or any other associated expenses in transportation and setting out the MOT will be included in the price. All MOT line items for Multi-Lane work shall include all costs for items associated with the appropriate FDOT Index (no separate payment for signs, barricades, etc included with index will be allowed).

Maintenance of Traffic for two lane roadways (as specified per FDOT Index 601, 602, 603, 604, 605, and 606) is included with this pay item unless otherwise determined by the Project manager; it shall in all cases include providing the maintenance of traffic plan.

Measurements: Maintenance of Traffic (MOT) shall be measured as units of work, each/day (EA/DY), hourly (HR) or by linear foot (LF) accordingly completed and priced on an individual project basis. The lump sum price for each assignment will be based on the specific MOT requirements for the assignment. The Contractor shall provide the Project manager with a proposal for the MOT that includes a break down of the costs, which are included in the lump sum price, and receive written acceptance from the Project manager prior to the installation of the MOT.

GROUP E – UNSPECIFIED WORK

UNSPECIFIED WORK

Pay Item

Unspecified Work

Description: The work under this Section includes an allowance for any unspecified work that may be associated with the work in this contract or as otherwise identified by the Project manager. Any amount of extra work and/or alternations to this contract

1 charged to the allowance "Unspecified Work" shall be fully documented and
2 approved in writing in advance. All work performed under the allowance of
3 "Unspecified Work" shall be completed in accordance with all conditions and
4 requirements of this contract and shall include the work to be done by all necessary
5 subcontractors and/or suppliers.
6

7 "Unspecified Work" shall mean the stated fixed sum of money to be used only at the
8 Project manager's specified direction. The particular requirements and items for the
9 allowances will be provided to the Contractor at the appropriate time and shall apply
10 only to additional items over and above those specified/indicated in the plans for this
11 contract.
12

13 For equipment under the control of the Contractor through direct ownership, leasing,
14 renting or other method of acquisition not included in the bid, the Contractor shall
15 furnish cost data, which may assist the Project manager in the establishment of an equitable
16 rate.
17

18 Measurement: The work in this Section shall be paid for by a portion of the
19 allowance under "Unspecified Work" in the bid form of this contract. Use of any
20 portion of this pay item shall require written pre-approval. This work, materials, and
21 equipment, when required, will be ordered in writing by the Project manager, at a lump sum
22 price or at a non lump sum price. This work shall not be charged as time and materials, but
rather a fixed price.

23 24 25 26 Lump Sum/Unit Price

27
28 When a lump sum/unit price is used, the lump sum/unit price will be determined
29 by negotiation, and only require written pre-approval by the Director of Utilities/Project
Manager or designee as backup documentation for
30 payment purposes. The total compensation for work negotiated under a unit price
31 will be a measurement (i.e. linear feet) or a count (i.e. each) of the item as
32 installed.
34

35 Non Lump Sum (Not FEMA Reimbursible)

36
37 When a non lump sum price is used, compensation shall be limited to the
38 Contractor's reasonable costs plus markup percentages stipulated in this
39 contract. The basis of the non lump sum negotiated prices and subcontractor
40 invoices will be included in pay application; copies of invoices, equipment cost
41 estimations and other supporting documentation will be included. (Not FEMA Reimbursible)
42

TABLE A-1
MECHANICAL JOINT SHORT BODY DUCTILE IRON FITTINGS
AWWA C 153 - CLASS 350 WEIGHTS

Item Description	Weight in Tons for Each Size				
	4"	6"	8"	10"	12"
90° Bends	0.0135	0.0195	0.0285	0.0445	0.054
45° Bends	0.0115	0.016	0.023	0.035	0.043
22-1/2° Bends	0.009	0.016	0.023	0.032	0.042
11-1/4° Bends	0.008	0.015	0.021	0.029	0.037

Description For Each Size	Weight in Tons
4x4 Tee	0.0160
6x4 Tee	0.0230
6x6 Tee	0.0280
8x4 Tee	0.0300
8x6 Tee	0.0360
8x8 Tee	0.0430
10x4 Tee	0.0390
10x6 Tee	0.0450
10x8 Tee	0.0525
10x10 Tee	0.0600
12x4 Tee	0.0470
12x6 Tee	0.0550
12x8 Tee	0.0625
12x10 Tee	0.0700
12x12 Tee	0.0800
4" Cross	0.0225
6"x4" Cross	0.0310
6" Cross	0.0395
8"x4" Cross	0.0420
8"x6" Cross	0.0490
8" Cross	0.0560
10"x4" Cross	0.0490
10"x6" Cross	0.0565
10"x8" Cross	0.0675
10" Cross	0.0775
12"x4" Cross	0.0595
12"x6" Cross	0.0675
12"x8" Cross	0.0745
12"x10" Cross	0.0900
12" Cross	0.1010

TABLE A-1
MECHANICAL JOINT SHORT BODY DUCTILE IRON FITTINGS
AWWA C 153 - CLASS 350 WEIGHTS

Description For Each Size	Weight (Tons)

TAPPED TEES	
4"x 2"	0.0190
6"x 2"	0.0260
8"x 2"	0.0320
10"x2"	0.0420
12"x2"	0.0520

HYDRANT TEE	
6"x 6"	0.0505
8"x 6"	0.0610
10"x 6"	0.0725
12"x 6"	0.0890

REDUCERS	
6"x 4"	0.0120
8"x 4"	0.0160
8"x 6"	0.0180
10"x 4"	0.0230
10"x 6"	0.0240
10"x 8"	0.0250
12"x 4"	0.0290
12"x 6"	0.0300
12"x 8"	0.0300
12"x 10"	0.0320

SOLID CAPS	
4"	0.0050
6"	0.0085
8"	0.0130
10"	0.0190
12"	0.0290
GLANDS w/ Bolts & Nuts	Weight Tons
4" Gland	0.0050
6" Gland	0.0065
8" Gland	0.0075
10" Gland	0.0100
12" Gland	0.0125

Description For Ea Size	Weight (Tons)

ANCHOR COUPLINGS	
6"x 13"	0.0310
8"x 13"	0.0386

SOLID PLUGS	
4"	0.0040
6"	0.0080
8"	0.0125
10"	0.0182
12"	0.0227

SLEEVES	
4"x 7.5	0.0090
6"x 7.5	0.0140
8"x 7.5	0.0190
10"x 7.5	0.0260
12"x 7.5	0.0330
4"x 12"	0.0100
6"x 12"	0.0180
8"x 12"	0.0230
10"x 12"	0.0310
12"x 12"	0.0380

Table B
Hourly Labor Rate Schedule

	1	2	3	4
Classifications	Base Labor Cost / Hr	Cost of Empliment/ Profit Multiplier	Standard Hourly Rate	Hourly Rate Payable for work Outside Contract Work Hours ⁽²⁾
SuperIntendent	\$ 31.05	3.3	\$ 102.47	\$ 51.24
Foreman	\$ 20.70	3.3	\$ 68.31	\$ 34.16
Operator - Excavator/Trackhoe ⁽¹⁾	\$ 22.07	3.3	\$ 72.83	\$ 36.42
Laborer - Pipe Layer ⁽¹⁾	\$ 14.00	3.3	\$ 46.20	\$ 23.10
Laborer - General ⁽¹⁾	\$ 11.31	3.3	\$ 37.32	\$ 18.66

(1) - Classification from Wage Determination Online.gov General Decision Number: FL20210222
01/22/2021

(2) - The rate listed is 150% of the Standard Hourly Rate minus the Standard Hourly Rate. This is reflective at standard overtime pay of "time and a half". Since the labor costs for Standard Hourly Rate is included in the Cost of the Pay Item, it is subtracted from the Hourly Rate Payable for Work Outside Contract Work Hours.

*** END OF SECTION ***

SECTION 01 32 33

COLOR AUDIO-VIDEO CONSTRUCTION RECORDS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Audio/Video DVDs of all work areas in the Contract shall be prepared by the Contractor.
- B. Contractor To Prepare Audio/Video Recording - Prior to commencing the Work, the Contractor shall have a continuous color audio/video recording taken along the entire length of the Project including all affected project areas. Streets, easements, rights-of way, lots or construction sites within the Project must be recorded to serve as a record of pre-construction conditions. Two copies of the recordings and video log shall be submitted to the City. The PROJECT MANAGER shall designate those areas, if any, to be omitted from or added to the audio-visual coverage. All DVDs and written records shall become property of the City.
- C. Scheduling Of Audio/Video Recording - No construction shall begin prior to review and approval of the recordings covering the Project construction area(s) by the City. The City shall have the authority to reject all or any portion of a recording not conforming to specifications and order that it be redone at no additional charge. The Contractor shall reschedule unacceptable coverage within seven days after being notified. Recordings shall not be made more than 30 days prior to construction in any area.
- D. Professional Videographers - The Contractor shall engage the services of a professional videographer known to be skilled and regularly engaged in the business of preconstruction color audio-video documentation. The videographer through the Contractor shall furnish to the Project manager a list of all equipment to be used for the audio-video recording, i.e., manufacturer's name, model number, specifications and other pertinent information.
- E. Additional information to be furnished by the videographer is the names and addresses of two references that the videographer has performed color audio-video taping for on projects of a similar nature within the last 12 months. Project manager's approval of the selected videographer is required prior to taking first audio-video recording.
- F. Equipment - All equipment, accessories, materials and labor to perform this service shall be finished by the Contractor. The total audio-video

1 system shall reproduce bright, sharp, clear pictures with accurate colors
2 and shall be free from distortion, tearing, rolls or any other form of
3 imperfection. The audio portion of the recording shall reproduce the
4 commentary of the camera operator with proper volume, clarity and be
5 free from distortion and interruptions. In some instances, audio-video
6 coverage may be required in areas not accessible by conventional
7 wheeled vehicles. Such coverage shall be obtained by walking. The color
8 video camera used in the recording shall be of Industrial Grade and shall
9 have EIA Standard NTSC type color - 1.0V 75 OHMS. Video output from
10 camera shall be capable of horizontal resolution of 350 lines at center and
11 utilize a minimum of 8:1 zoom with a 2/3" Newvicon tube or CCD pick-up
12 element for optimum color imagery plus minimum lag through of one foot
13 candle. The recording shall be transferred to DVDs compatible for
14 playback with any Region 1 American TV Standard DVD player.

15
16 G. Recorded Information, Audio - Each recording shall begin with the current
17 date, project name and be followed by the general location, i.e., viewing
18 side and direction of progress. Accompanying the video recording shall
19 be a corresponding and simultaneously recorded audio recording. This
20 audio recording, exclusively containing the commentary of the camera
21 operator or aide, shall assist in viewer orientation and in any needed
22 identification, differentiation, clarification, or objective description of the
23 features being shown in the video portion of the recording. The audio
24 recording shall also be free from any conversations.

25
26 H. Recorded Information - Video - All video recordings must continuously
27 display transparent digital information to include the date and time of
28 recording. The date information shall contain the month, day and year.
29 The time information shall contain the hour, minutes and seconds.
30 Additional information shall be displayed periodically. Such information
31 shall include, but not be limited to, project name, contract number,
32 direction of travel and the viewing side. This transparent information shall
33 appear on the extreme upper left hand third of the screen. Camera pan,
34 tilt, zoom-in and zoom-out rates shall be sufficiently controlled such that
35 recorded objects will be clearly viewed during video playback. In addition,
36 all other camera and recording system controls, such as lens focus and
37 aperture, video level, pedestal, chrome, white balance, and electrical
38 focus shall be properly controlled or adjusted to maximize picture quality.
39 The construction documentation shall be recorded in SP mode.

40
41 I. Viewer Orientation - The audio and video portions of the recording shall
42 maintain viewer orientation. To this end, overall establishing views of all
43 visible house and business addresses shall be utilized. In areas where
44 the proposed construction location will not be readily apparent to the video
45 viewer, highly visible yellow flags shall be placed, by the Contractor, in
46 such a fashion as to clearly indicate the proposed centerline of

1 construction. When conventional wheeled vehicles are used as
2 conveyances for the recording system, the vertical distance between the
3 camera lens and the ground shall not exceed 10 feet. The camera shall
4 be firmly mounted such that transport of the camera during the recording
5 process will not cause an unsteady picture.
6

7 J. Lighting - All taping shall be done during time of good visibility. No taping
8 shall be done during precipitation, mist or fog. The recording shall only be
9 done when sufficient sunlight is present to properly illuminate the subjects
10 of recording and to produce bright, sharp video recordings of those
11 subjects.
12

13 K. Speed Of Travel - The average rate of travel during a particular segment
14 of coverage shall be directly proportional to the number, size and value of
15 the surface features within that construction areas zone of influence. The
16 rate of speed in the general direction of travel of the vehicle used during
17 taping shall not exceed 30 feet per minute as per current NASSCO
18 standards.
19

20 L. Video Log/Index - All DVDs shall be permanently labeled and shall be
21 properly identified by number and project title. Each DVD shall have a log
22 of its contents. The log shall describe the various segments of coverage
23 contained on the DVD in terms of the names of the streets or location of
24 easements, coverage beginning and end, directions of coverage, video
25 unit counter numbers, engineering survey or coordinate values (if
26 reasonably available) and the date.
27

28 M. Area Of Coverage - Recording coverage shall include all surface features
29 located within the zone of influence of construction supported by
30 appropriate audio coverage. Such coverage shall include, but not be
31 limited to, existing driveways, sidewalks, curbs, pavements, drainage
32 system features, mailboxes, landscaping, culverts, fences, signs,
33 Contractor staging areas, adjacent structures, etc. within the area covered
34 by the project. Of particular concern shall be the existence of any faults,
35 fractures, or defects. Coverage shall be limited to one side of the site,
36 street, easement or right-of-way at any one time.
37

38 N. Costs Of Video Services - The cost to complete the requirements under
39 this section shall be included in the contract items provided in the
40 proposal sheet. There is no separate pay item for this work.
41

42 PART 2 - PRODUCTS (NOT USED)

43 PART 3 - EXECUTION (NOT USED)

44
45 END OF SECTION

SECTION 01 35 00

SPECIAL PROJECT PROCEDURES

PART 1 – GENERAL

1.01 EXISTING UTILITIES

- A. Where existing utility lines (water, gas, telephone, power, etc.) are intersected by proposed Work, the Contractor shall give a minimum of forty-eight (48) hours notice to the owners of such utilities to permit them to locate their lines prior to construction. The "Call Sunshine" Utility Notification Center shall be contacted at 1-800-432-4770 at least forty-eight (48) hours prior to start of excavation. Utilities, which are not members of the Utility Notification Center, shall be contacted individually by the Contractor.

1.02 REPAIRS

A. WORK SCHEDULE AND EMERGENCY RESPONSE TIME

1. Emergency response by the Contractor will be required within one hour of notice by telephone of required repair. The arrival of a repair crew will be required within two hours of the Contractor's assessment of the emergency situation.
2. The City will furnish the Contractor with the size, approximate depth and general location of the proposed repair. The Contractor shall be required to commence work on each assignment within ten (10) consecutive calendar days after the date contained in each written Notification to Proceed (unless such time is extended in writing by the City), and will be obligated to pursue the Work on each assignment with expeditious continuity until completion. The City may order the Contractor to proceed with the Work at a faster rate should a backlog of projects develop. In all cases, the Contractor will be required to begin restoration work within two working days and complete restoration work within ten (10) consecutive calendar days following approval of the repair by the Project manager.
3. Each notification to proceed shall be accompanied by or preceded by

42 two copies of the appropriate Atlas Sheet(s), plus other information
43 including photographs (when available).

1 B. Field Layout

- 2
- 3 1. The City supplied Atlas Sheet, street address and other pertinent
- 4 information will identify the general location of the repair. If there is
- 5 evidence of the defect visible from the surface, such as a depression,
- 6 the Contractor shall center his excavation on the evidence. If there is
- 7 any question as to the general location described by the City, the
- 8 Contractor shall approach the Project manager and address the questions
- 9 before beginning with the excavation.

10

11 C. Restoration Schedule

- 12
- 13 1. All restoration work must be completed within ten (10) consecutive
- 14 calendar days following approval of work at any given site. If the
- 15 restoration work does not progress to the satisfaction of the Project manager,
- 16 the Contractor may be directed to cease repair operations until such
- 17 time as the Project manager may deem the restoration work completed to a
- 18 degree permitting the resumption of repair work or the City may
- 19 elect to perform any such restoration work and bill the Contractor for
- 20 same. (At Project manager's discretion, payment shall be made by the
- 21 Contractor direct to the City, or a like amount deducted by the
- 22 City from monies due the Contractor for Work completed under
- 23 this Contract).

24

25 1.03 POTABLE WATER, RECLAIMED WATER AND SANITARY SEWER SYSTEM

26 CONSTRUCTION

27

28 A. Starting Project

- 29
- 30 1. The Contractor shall notify the Pinellas Park Inspector and the
- 31 Project manager FORTY-EIGHT (48) HOURS prior to starting construction
- 32 (Saturday, Sunday and Holidays excluded). Upon notification, a
- 33 meeting will be scheduled between the Pinellas Park Inspector
- 34 and the Contractor to review the plans.

35

36 B. Required Field Documents

- 37
- 38 1. The Contractor MUST have the following on the job site at all times
- 39 and readily available prior to any construction:
- 40
- 41 a. The Pinellas City approved "Contractor's Copy" of
- 42 construction plans stamped by the Florida Department of
- 43 Environmental Protection (FDEP) or other permitting agency.
- 44
- 45 2. All required permits including:

- a. F.D.O.T.
- b. County
- c. Florida Department of Environmental Protection (FDEP)
- d. City/Municipality

- C. If field conditions require deviation from the approved plans, the Contractor shall notify the Project Manager or Designee of the required change. The Project manager or Designee will make the necessary changes and submit a revised set of plans to the appropriate agency or agencies for approval.
- D. All construction is subject to inspection and certain tasks require that the Pinellas Park Inspector be on the site to properly document the procedure, test results and/or material used. On the occasions that the Pinellas Park Inspector is required on site to observe these tasks, FORTY-EIGHT (48) hours advance notice will be required (Saturday, Sunday and Holidays excluded).
- E. Should the Contractor suspend work on any given project, the Contractor shall provide written notification detailing the reason for the suspension to Pinellas Park within two business days. Additionally, forty-eight (48) hours advance, written notice will be required for a restart of the project.
- F. Should any materials be installed or backfilled prior to inspection by the City Inspector, the facilities are subject to uncovering, exposing, and/or disassembly for inspection. It is preferred that all material expected to be required for the project be on site for initial material inspection prior to commencing the project. Material thus delivered to the job site will be protected and stored as to insure preservation of quality and fitness.
- G. Meters shall not be installed on potable and reclaimed water systems until all cleanup work is completed and a final inspection has been made by the Pinellas Park Utilities Inspector.
- H. All projects requiring a Florida Department of Environmental Protection Permit will not receive water service until the Pinellas Park Utilities receives a SEALED copy of the Project manager's Certificate of Completion and Compliance (As-built plans, if applicable) and a Release Form from the Florida Department of Environmental Protection (FDEP). The following must also be provided, if applicable:
 - 1. Deed and Agreement to Deed to pipelines and appurtenances as additions to Pinellas Park Utilities.
 - 2. Deed of Conveyance to pipelines

1 3. Release of Lien/Cost Statement

2
3 4. Easement

4
5 I. Taps

6
7 1. All taps on existing, in service, pressurized mains for development
8 projects will normally be made by Pinellas Park personnel. All
9 taps for pressure testing and chlorination will be saddle taps, made
10 by the Contractor.

11
12 2. The Project Manager or Designee must be present when the
13 Contractor is working on an existing, in service, pressurized main.
14 The Contractor shall notify all Pinellas Park customers (via
15 doorknob hangers) forty-eight (48) hours in advance of any
16 discontinuance of service associated with this work. UNDER NO
17 CIRCUMSTANCES WILL THE CONTRACTOR PERFORM ANY
18 TASK THAT INVOLVES AN EXISTING, IN SERVICE,
19 PRESSURIZED MAIN WITHOUT THE PROJECT MANAGER OR
DESIGNEE PRESENT ON SITE.

20
21
22 3. On development projects, the Project pmanager and/or Contractor
23 will be responsible for staking the location of taps after verifying that
24 the field conditions will permit said location and obtaining
25 concurrence of the Pinellas Park Inspector. Following the
26 inspector's field check of the tap location, the inspector will
27 schedule the tap through Pinellas Park providing all required
28 paperwork is in order. The inspector will be notified of the day and
29 time for the tap.

30
31 J. Additional Requirements for Tapping Asbestos Cement Pipe

32
33 1. All taps in asbestos cement (AC) pipe shall be made with the pipe
34 under pressure using only a tap machine having a built-in flush
35 valve and the flush valve must remain open during the entire
36 procedure. All taps shall be made with the pipe in a wet condition.
37 The pipe shall remain wet throughout the entire tapping process.
38 Extreme care should be taken to prevent any cutting dust from
39 becoming airborne and personal protective equipment should be
40 worn as the condition warrants.

41
42 2. Coupons from the tapping procedure shall be placed in a "zip lock"
43 type bag in the wet condition. The bag shall be marked with the
44 address where the tap was made and kept for disposal.

3. Water samples shall be taken, as special situations arise or as determined necessary by Utilities Water Quality Management, from the closest in line point downstream from the tap position. Samples shall be taken from this same point before and after the tap has been completed.
4. Open sample source and let water run for three to five minutes. Collect sample in an approved container, available from the Utilities Division, marking the container with the same location information as the coupon. Fill out the chain of custody sheet, also available from the Utilities Division. and deliver sample to the Utilities Division. The Utilities Division will send the sample off for analysis.
5. Disposal of the removed coupons shall follow procedures issued by Pinellas Park Utilities. Please contact the Project Manager or Designee for disposal instructions.

K. Additional Requirements for Tapping Concrete Pressure Pipe

1. Requirements for tapping concrete pipe shall be addressed on a case-by-case basis and specifications for such shall be included in the Special Provisions. Specifications shall be developed based on the pipe manufacturer's recommendations for the specific application.
2. All requirements shall be in accordance with the pipe manufacturer's and the tapping device manufacturer's recommendations.

PART 2 – PRODUCT (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01 42 01

REFERENCE STANDARDS AND DEFINITIONS

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Abbreviations and acronyms are used in the Contract Documents to identify reference standards.

1.02 QUALITY ASSURANCE

- A. Application: When a standard is specified by reference, comply with requirements and recommendations stated in that standard, except when requirements are modified by the Contract Documents, or applicable codes establish stricter standards.
- B. Publication Date: The publication in effect on the date of issue of Contract Documents, except when a specific publication date is specified.

1.03 ABBREVIATIONS, NAMES, AND ADDRESSES OF ORGANIZATIONS

- A. Obtain copies of referenced standards direct from publication source, when needed for proper performance of Work, or when required for submittal by Contract Documents.

AA Aluminum Association
900 19th Street NW
Washington, DC 20006

AASHTO American Association of State Highway
and Transportation Officials
444 North Capitol Street, NW Suite 249
Washington, DC 20001

ABPA American Backflow Prevention Association
PO Box 3051
Bryan, Texas 77805-3051

ACI American Concrete Institute
38800 Country Club Drive
Farmington Hills, MI 48331

1	AI	Asphalt Institute
2		2696 Research Park Drive
3		Lexington KY 40511
4		
5	AISC	American Institute of Steel Construction
6		One East Wacker Drive
7		Suite 3100
8		Chicago, IL 60601-2001
9		
10	AISI	American Iron and Steel Institute
11		1140 Connecticut Avenue
12		Suite 705
13		Washington DC 20036
14		
15	ANSI	American National Standards Institute
16		1819 L Street, NW
17		Washington, DC 20036
18		
19	ASME	American Society of Mechanical Project managers
20		Three Park Avenue
21		New York, NY 10016-5990
22		
23	ASTM	American Society for Testing and Materials
24		100 BarrHarbor Drive
25		West Conshohoken, PA, 19428
26		
27	AWWA	American Water Works Association
28		6666 W. Quincy Avenue
29		Denver, CO 80235
30		
31	AWS	American Welding Society
32		550 N.W. LeJeune Road
33		Miami, FL 33126
34		
35	CRSI	Concrete Reinforcing Steel Institute
36		933 N. Plum Grove Road
37		Schaumburg, IL 60173-4758
38		
39	CSI	Construction Specifications Institute
40		99 Canal Center Plaza, Suite 300
41		Alexandria, VA 22314
42		
43	FS	Federal Specification General Services
44		Administration Specifications and Consumer
45		Information Distribution Section (WFSIS)
46		470 L'enfant Plaza – Suite 8100
47		Washington, DC 20407
48		
49		

NEMA	National Electrical Manufacturers' Association 1300 North 17 th Street Suite 1847 Rosslyn, VA 22209
PCA	Portland Cement Association 5420 Old Orchard Road Skokie, IL 60077
PCI	Prestressed Concrete Institute 209 W. Jackson Blvd. Chicago, IL 60606
SSPC	Society for Protective Coatings 40 24 th Street,. 6 th floor Pittsburgh, PA 15222
UL	Underwriters' Laboratories, Inc. 333 Pfingston Road Northbrook, IL 60062
USC	University of Southern California Foundation for Cross-connection Control and Hydraulic Research Los Angeles, CA 90089

B. The following terms when used within these specifications shall be defined as follows:

ADMINISTRATION – shall mean the Pinellas Park Administration.

APPLICANT – Shall mean any person making a request for service to be rendered or furnished by the City.

BACKFLOW PREVENTION DEVICES – shall mean either double check valves (DPV) or reduced pressure (RP) principle devices which protect the potable water system at the service connection by isolating within the customers premises actual or potential pollution or contamination through cross-connection.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) – shall mean the particular agency that is the delegated authority for the Safe Drinking Water Act Program effective July 9, 2007 which includes all permitting and compliance for public drinking water programs..

1 PRIVATE FIRE LINES – shall mean unmetered fire lines installed on
2 private property which serves fire hydrants, sprinkler systems or such
3 intermittent usages.
4

5 PRESSURE REDUCING VALVE – shall mean a device utilized to reduce
6 the pressure in a water or reclaimed water main to a preset value, usually
7 to provide proper service pressures. Also known as a PRV.
8
9

10 WATER QUALITY DIVISION – shall mean that division of the Pinellas
11 City Utilities that is responsible for the supervision of proper
12 chlorination of new or existing water lines. Works in conjunction with the
13 inspector to flush, chlorinate and draw samples for testing. They do not
14 get involved past master meters, dual check valve assembly (DCVA)'s or
15 domestic water lines.
16

17 PART 2 - PRODUCTS (NOT USED)
18

19 PART 3 - EXECUTION (NOT USED)
20
21

22 END OF SECTION

SECTION 01 45 17

PIPELINE PRESSURE AND LEAKAGE TESTING REQUIREMENTS

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall pressure and leakage test all pressure pipelines as specified herein. All piping, and equipment shall be tested in the field in the presence of the Project manager or the City's representative.
- B. Prior to testing, all mains shall be flushed and pigged to remove all sand and other foreign matter. Flushing shall be terminated at the direction of the Project manager or City's representative. The Contractor shall dispose of the flushing water without causing a nuisance or property damage and in compliance with the National Pollution Discharge Elimination System (NPDES) and all applicable jurisdictions.
- C. No testing shall be done until all joints are restrained. Temporary thrust blocks or reverse deadmen may be used with the City's prior approval.

1.02 SCHEDULING

- A. All leakage testing, as defined herein, shall be completed by the Contractor under the supervision of the Pinellas Park Utilities Inspector.
- B. All leakage tests must be scheduled through the Pinellas Park Utilities Inspector, with twenty-four (24) hours minimum notice and ONLY AFTER THE CONTRACTOR ACHIEVES A SUCCESSFUL PRE-PRESSURE TEST.

PART 2 – PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 GENERAL

- A. All corporation stops used for testing and service lines shall be installed by the Contractor prior to pressure testing.
- B. All hydrant control valves must be open while pressure testing.
- C. All blow-off standpipes and injection points shall be removed upon satisfactory completion of sampling and testing. Corporation stops shall remain in line.

- D. Teflon tape shall be used on all threaded joints to avoid contamination (No pipe dope allowed).
- E. It is the Contractor's sole responsibility to place sample points where designated by the Pinellas Park Health Department. 6
- F. The Contractor shall backfill all pipe and thrust blocking before pressure testing unless the Project manager directs certain joints or connections left uncovered. Where thrust blocking is provided the pressure test shall not be made until at least five days after the thrust blocking has been installed. A high early strength concrete may be used to reduce this time.
- G. Each valved section of pipe shall be slowly filled with water and a pump shall be hooked to the pipe in a manner satisfactory to the Project manager to supply the test pressure. The pump, pipe connection and all necessary apparatus shall be furnished by the Contractor.
- H. While the system is being filled with water, air shall be carefully and completely exhausted. If permanent air vents are not located at all high points, the Contractor shall install corporation stops or fittings and valves at such points so the air can be expelled as the pipe system is slowly filled with water. Service shall be tested as part of the main pipeline.

3.02 PRESSURE TEST FOR DUCTILE IRON AND PVC PIPE

- A. All newly laid pipe, including fitting and valves shall be pressure tested by the Contractor, in accordance with AWWA C600 and C605 to verify the integrity of the pipeline before the leakage test is scheduled with the City.
- B. Test pressures and durations shall be as follows:

	Pressure (psi)	Duration (hrs)
1. Sewage force mains	150	2

- C. All exposed pipe, fittings, valves, joints and appurtenances shall be carefully examined during the open-trench test. Any cracked or defective pipe, fittings, valves or appurtenances discovered in consequence of this test shall be removed and replaced with acceptable material and the test shall be repeated to the satisfaction of the Project Manager or Designee

1 3.03 LEAKAGE TEST FOR DUCTILE IRON AND PVC PIPE

- 2
3 A. A leakage test shall be conducted in the presence of the Project manager or
4 Designee after the pressure test has been satisfactorily completed. The Contractor
shall, as before, furnish all pumps, pipe, connections and other items
required to satisfactorily complete the leakage test. The leakage test shall have
a duration of two hours at the
5 pressure specified for the pressure test. No pipe installation will be
6 accepted if the leakage is greater than that determined by the formula for
7 mechanical and push-on joints per hour:

11
12
$$L = \frac{SDP^{1/2}}{148,000}$$

13
14
15 L= Allowable leakage [gph]
16 S= Length of pipe tested [feet]
17 D= Nominal diameter of pipe [inches]
18 P= Average pressure during test [psig]

17 150 psi (per 1000ft.)
18 (Table 5.4 AWWA C
19 600-05 & Table 2
20 C605-5)

21 2	0.17
22 4	0.33
23 6	0.50
24 8	0.66
25 10	0.83
26 12	0.99
27 16	1.32
28 18	1.49
29 20	1.66
30 24	1.99
31 30	2.48
32 36	2.98
33 42	3.48
34 48	3.97
35 54	4.47

- 36
37 B. The Project manager, or his duly authorized representative, shall witness these
38 tests. The Contractor shall be responsible for finding and repairing leaks.
39 No additional cost may be incurred by the City due to repairs because
40 of failure of either test. The Project manager or Designee has the authority to
determine the
41 number of repairs that will be made within a given length of pipe and has
42 the right to request the Contractor to remove and relay a section of pipe if
43 such does not comply with the established leakage rates as calculated
44 using the formula above.
45

- 1 C. For the duration of the test, the pressure in the main shall not be allowed
2 to drop more than 5 psi below the test pressure per AWWA C600 & C605.
3 Should the pressure drop 5 psi, makeup water shall be added to the line to
4 restore the pressure to the test pressure. This makeup water shall be
5 measured and shall be included in the total leakage measured. If loss is
6 greater than 5 psi, the test fails.
7
8
9

10 3.04 PRESSURE AND LEAKAGE TESTS OF UNDERGROUND HDPE PRESSURE
11 PIPING INCLUDING COMBINATIONS HDPE & PVC OR DUCTILE IRON
12

- 13 A. Filled pipelines shall be allowed to thermally stabilize such that the
14 temperature of the water and the pipe are equal. At temperatures above
15 one hundred (100) degrees F, the Project manager shall be consulted regarding
16 the need to reduce the test pressure.
17
18 B. The piping shall be tested between valved sections to a maximum length
19 of five thousand (5,000) feet.
20
21 C. For any test pressure from 1.0 to 1.5 times the system design pressure,
22 the total test time including initial pressurization, initial expansion, and time
23 at test pressure, shall not exceed eight hours. If the pressure test is not
24 completed due to leakage, equipment failure or other reason, the test
25 section shall be depressurized, and allowed to "relax" for at least eight
26 hours before bringing the test section up to test pressure again.
27
28 D. The test procedure consists of initial expansion, and the test phase:
29
30 1. During the initial expansion phase, the test section is pressurized to
31 10 psi above the test pressure (see Table A for Expansion
32 Pressure), and sufficient make-up water is added each hour for
33 three hours to return to the expansion phase pressure.
34
35 2. After the initial expansion phase, about four hours after
36 pressurization, the test phase begins.
37
38 3. During the test phase, the pipe is stabilized at the test pressure (see
39 Table A). The pressure shall remain steady within five percent of this
40 target value for two hours. If the pressure falls below five percent of
41 the test pressure (see Table A), leakage or insufficient expansion is
42 indicated, and the test shall be repeated after the pipe is allowed to
43 "relax" as indicated above. Make-up water is not allowed during the
44 test phase.
45
46

Table A

Pipe Class	Expansion Pressure	Test Pressure	5% Pressure Reduction
SDR 17	150 psi	140 psi	133 psi
SDR 13.5	170 psi	160 psi	152 psi
SDR 11	170 psi	160 psi	152 psi
SDR 9	210 psi	200 psi	190 psi

3.05 REPAIRS

- A. The Contractor shall repair all leaks in the piping at no additional cost to the City.

END OF SECTION

SECTION 01 55 26

TRAFFIC REGULATION

PART 1 – GENERAL

1.01 WORK INCLUDED

- A. This item will consist of providing, installing, moving, replacing, maintaining, cleaning and removal upon completion of Work, all signs, barricades, pavement markings, barriers, cones, lights, signals and other devices necessary for the safe movement of all vehicular and pedestrian traffic through and within the Project.
- B. The Contractor shall arrange his work so that there will be as little disruption of traffic as possible.
- C. The Contractor shall have a Certified Worksite Traffic Supervisor in accordance with the General Conditions.

1.02 REFERENCES

- A. U.S. Department of Transportation (FHWA) Manual of Uniform Traffic Control Devices as adopted by the Florida Department of Transportation (latest edition).
- B. Florida Department of Transportation Design Standards, latest edition.
- C. Florida Department of Transportation Standard Specification for Road and Bridge Construction, latest edition.

1.03 SUBMITTALS

- A. The Contractor shall obtain approval from the City, City or State Agency having jurisdiction over the road or highway for any road crossings and detours required.
- B. Maintenance of Traffic (MOT) plans, if provided in the Contract Drawings, are considered a minimum requirement and it is the Contractor's responsibility to provide a safe traffic, pedestrian and working environment in accordance with the governing regulations. Contractor shall adjust the MOT plan as necessary to meet the field conditions at no additional cost to the City.
- C. If MOT plans are not provided in the Contract Drawings, a detailed traffic control plan and MOT plan shall be developed and submitted by the Contractor to such Agencies having jurisdiction over the road for their approval, and said approval shall be obtained prior to commencing

TRAFFIC REGULATION

- 1
2 D. Any deviations from the Contract Drawings, or MOT plans specifically
3 developed by the Contractor, shall be submitted to the applicable
4 permitting entity for approval, and said approval shall be obtained, prior to
5 commencement of construction. If the alternative MOT plan is deemed
6 incomplete or unacceptable the Contractor will be required to submit a
7 revised plan. This process will repeat itself until the revised plan is
8 accepted by all parties. Contractor will not be granted or approved any
9 costs or delay resulting from the review process or field adjustments.
10
11 E. All traffic control plans shall be prepared by a Florida Certified Traffic
12 Planner.
13

14 PART 2 – PRODUCTS

15 16 2.01 INSTALLATION STANDARDS

- 17
18 A. All signs, barricades, pavement markings, traffic signals and channelizing
19 devices used to handle traffic shall be provided for and erected in
20 accordance with the FDOT Design Standards (latest edition) and to the
21 details indicated in the above referenced standards. Traffic signs shall be
22 high-intensity flat-surface reflective sheeting.
23

24 PART 3 – EXECUTION

25 26 3.01 GENERAL

- 27
28 A. In order that the Contractor may properly provide required traffic controls,
29 the Contractor shall notify the appropriate agencies a minimum of two
30 working days prior to any construction affecting traffic flow. (non emergency)
31

32 3.02 MAINTENANCE OF TRAFFIC LANE AND ROAD CLOSURES

- 33
34 A. The Contractor shall arrange his work so that there will be as little
35 disruption of traffic as possible.
36
37 B. The Contractor shall be approved by the City, City or State Agency
38 having jurisdiction over the road or highway for any road crossings and
39 detours required. A detailed traffic control plan shall be submitted by the
40 Contractor to such Agencies having jurisdiction over the road for their
41 approval at least three weeks prior to commencing construction. (non-emergency)
42
43 C. In the event that a road closure is approved by the permitting Agency, the
44 Contractor will be responsible for any rerouting of traffic occasioned by the
45 closure and will provide all necessary barricades, signs, guards, lights,
46 etc. in accordance with the Agency's approval of such closure.
47

48 3.03 ACCESS TO PROPERTIES

- 1
2 A. When construction activities necessitate the closing of a street to through-
3 traffic, the Contractor shall notify all affected emergency services entities
4 of the closed road. If no other means of access is available, the
5 Contractor shall maintain, at all times, a 10-foot-wide lane adjacent to the
6 work area, free of construction equipment and obstructions, for the use of
7 emergency vehicles.
8
9 B. The Contractor shall provide continuous access to properties adjacent to
10 work areas.
11

12 3.04 LOCAL TRAFFIC
13

- 14 A. The roads shall be kept open to two-way traffic during construction, except
15 one lane traffic will be permitted provided experienced flag personnel are
16 used. Necessary barricades, safety vests and flags shall be used. No
17 residences or places of business will be isolated. Suitable access shall be
18 provided whenever construction interferes with the existing means of
19 access.
20

21 3.05 PEDESTRIAN TRAFFIC
22

- 23 A. The Contractor shall take precautions to ensure the safety of pedestrians
24 passing near work areas. This may entail the erection of a temporary
25 fence on the construction side of pedestrian passageways to delineate
26 out-of-bounds areas. The pedestrian passageways shall remain open and
27 clean of dirt and debris at all times unless pedestrian safety cannot be
28 assured, then the Contractor may close off the sidewalk(s) with signs and
29 fences and shall direct pedestrians to use other suitable routes.
30 Pedestrian passageways shall be cleared and swept in the vicinity of
31 construction.
32
33 B. The Contractor shall pay close attention to the issue of pedestrian safety.
34 The Contractor shall institute measures, including, but not limited to,
35 temporary surfaces and channeling devices, to ensure the safe passage
36 of pedestrians.
37

38 3.06 BUS STOPS
39

- 40 A. The Contractor shall take care to minimize disruption to existing bus stops.
41 If a bus stop cannot be preserved, then the Contractor shall make
42 provisions for its relocation. The Contractor shall be responsible for all
43 coordination regarding the temporary relocation of bus stops
44

45 END OF SECTION
46
47
48

SECTION 01 57 00

CONTROL OF WORK

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The Work to be done consists of the furnishing of all labor, materials and equipment, and the performance of all Work included in this Contract.
- B. The Contractor shall furnish all labor, superintendence, materials, plant, power, light, heat, fuel, water, tools, appliances, equipment, supplies and other means of construction necessary or proper for performing and completing the Work. He shall perform and complete the Work in the manner best calculated to promote rapid construction consistent with safety of life and property and to the satisfaction of the City, and in strict accordance with the Contract Documents. The Contractor shall clean up the Work and maintain it during and after construction, until accepted, and shall do all Work and pay all costs incidental thereto. He shall repair or restore all structures and property that may be damaged or disturbed during performance of the Work.
- C. The Contractor shall supervise and direct the Work in accordance with Pinellas engineering manual.
- D. The cost of incidental work described in these Construction Specifications, for which there are no specific Contract Items, shall be considered as part of the general cost of doing the Work and shall be included in the prices for the various Contract Pay Items.
- E. The Contractor shall provide and maintain such modern plant, tools, and equipment as may be necessary to perform in a satisfactory and acceptable manner all the Work required by this Contract. Only equipment of established reputation and proven efficiency shall be used. The Contractor shall be solely responsible for the adequacy of his workmanship, materials and equipment, prior approval of the City notwithstanding.
- F. Public Utilities and Structures
 - 1. Public utility installations and structures shall be understood to include all poles, tracks, pipes, wires, conduits, house service connections, vaults, manholes and all other appurtenances and facilities pertaining thereto whether owned or controlled by the City, other governmental bodies or privately owned by individuals, firms or corporations, used to

CONTROL OF WORK

serve the public with transportation, traffic control, gas, electricity,

1 telephone, sewerage, drainage, water or other public or private property
2 which may be affected by the Work shall be deemed included
3 hereunder. The Contractor shall protect all public utility installations and
4 structures from damage during the Work, except those specifically
5 designated to be removed or relocated. The Contractor shall so
6 arrange his operations as to avoid any damage to any buried public
7 utility installation or structure. All required protective devices and
8 construction shall be provided by the Contractor at his expense. All
9 existing public utilities damaged by the Contractor, which are shown on
10 the Plans or have been located in the field by the utility, shall be
11 repaired by the Contractor, at his expense. No separate payment shall
12 be made for such protection or repairs to public utility installations or
13 structures.
14

15 2. Public utility installations or structures owned or controlled by the
16 City or other governmental body, which are shown on the Plans to
17 be removed, relocated, replaced or rebuilt by the Contractor, shall be
18 considered as a part of the general cost of doing the Work and shall be
19 included in the prices Bid for the various contract items. No separate
20 payment shall be made therefor.
21

22 3. Where public utility installations or structures owned or controlled by the
23 City or other governmental body are encountered during the course
24 of the Work, and are not indicated on the Plans or in the Specifications,
25 and when, removal, relocation, replacement or rebuilding is necessary
26 to complete the Work under this Contract, such work shall be
27 accomplished by the utility having jurisdiction, or if required, by the
28 Contractor.
29

30 4. The Contractor shall give written notice to governmental utility
31 departments and other owners of public utilities of the locations of his
32 proposed construction operations, at least forty-eight (48) hours (non-
emergency) in advance of breaking ground in any area or on any unit of the
33 Work. This can be accomplished by making the appropriate contact with the
34 "Underground Utility Notification Center for Excavators (Call
35 Sunshine)."
36

37 5. The maintenance, repair, removal, relocation or rebuilding of public
38 utility installations and structures, when accomplished by the Contractor
39 as herein provided, shall be done by methods approved by the utility
40 and the City.
41

42 G. The Contractor shall not enter upon private property for any reason without
43 securing prior permission from the property owner.
44
45

- 1 H. During the progress of the Work the Contractor shall keep the work site free
2 from an accumulation of rubbish, waste materials or any type of debris
3 resulting from the construction.
4

5 1.02 DRAWINGS AND SPECIFICATIONS
6

- 7 A. The Contractor shall furnish each of the subcontractors, manufacturers, and
8 suppliers such copies of the Contract Documents as may be required for
9 their work.
10

11 1.03 MATERIALS AND EQUIPMENT
12

- 13 A. All transactions with the manufacturers or subcontractors shall be through
14 the Contractor.
15

- 16 B. All materials and equipment shall be new, unless otherwise provided. The
17 Contractor shall furnish satisfactory evidence as to the type and quality of
18 materials or equipment to be furnished and installed on this Project.
19

- 20 C. Materials of fabrication and construction to be furnished and permanently
21 installed in the Project shall be of the best quality. The workmanship of
22 construction, fit and finish on the Project shall be equal to the highest
23 standards of the industry. As indicated above, all materials and equipment
24 and/or components thereof shall be new and shall not have been in service
25 at any other installation.
26

- 27 D. The Contractor shall deliver materials in ample quantities to insure the most
28 speedy and uninterrupted progress of the Work so as to complete the Work
29 within the allotted time. The Contractor shall also coordinate deliveries in
30 order to avoid delay in, or impediment of, the progress of the work of any
31 related Contractor. The Contractor shall replace, at his own expense, all
32 such material(s) found to be damaged in shipment or handling or defective in
33 manufacture. The cost of the replacement material and labor of installation
34 for the replacement of previously installed material found to be defective prior
35 to the final acceptance of the work shall also be the responsibility of the
36 Contractor.
37

- 38 E. All materials and equipment to be incorporated into the Project shall be
39 loaded and unloaded by a method that will provide protection against
40 damage. Every precaution shall be taken to prevent damage or injury to the
41 equipment and material during transporting and handling. Proper and
42 suitable power equipment shall be used in the loading or unloading process.
43 Under no condition shall any items of equipment be dropped or rolled from a
44 truck or dragged over the ground after being unloaded. When a crane or
45 similar type equipment is used in loading or unloading, a suitable lifting sling
46 and hook shall be used.

- 1 F. It will be the responsibility of the Contractor to store delivered materials or
2 equipment in a secure area. The Contractor will be responsible for any
3 damages resulting from vandalism or other reasons. Replacement of
4 materials or equipment lost, stolen, damaged or destroyed, due to careless
5 or improper storage, will be the Contractor's responsibility. All stored
6 materials shall be easily and readily accessible for inspection by the City's
7 representative.
8
- 9 G. The Contractor shall, unless otherwise stated in the Contract Documents,
10 furnish with each type, kind or size of equipment, one complete set of
11 suitably marked high grade special tools and appliances which may be
12 needed to adjust, operate, maintain or repair the equipment. Such tools and
13 appliances shall be furnished in approved painted steel cases, properly
14 labeled and equipped with good grade cylinder locks and duplicate keys.
15
- 16 H. Each piece of equipment shall be provided with a substantial nameplate,
17 securely fastened in place and clearly inscribed with the manufacturer's
18 name, year of manufacture, serial number, weight and principal rating data.
19
- 20 I. The Contractor shall have on hand sufficient proper equipment and
21 machinery of ample capacity to facilitate the Work and to handle all
22 emergencies normally encountered in work of this character.
23
- 24 J. Equipment shall be erected in a neat and workmanlike manner on the
25 foundations at the locations and elevations shown on the Drawings. All
26 equipment shall be correctly aligned, leveled and adjusted for satisfactory
27 operation and shall be installed so that proper and necessary connections
28 can be made readily between the various units.
29
- 30 K. The Contractor shall furnish, install and protect all necessary anchor and
31 attachment bolts and all other appurtenances needed for the installation of
32 the devices included in the equipment specified. Stainless steel anchor bolts
33 shall be ample size and strength for the purpose intended. Substantial
34 templates and working drawings for installation shall be furnished.
35
- 36 L. The Contractor shall, at his own expense, furnish all materials and labor for,
37 and shall properly bed in non-shrink grout, each piece of equipment on its
38 supporting base that rests on masonry foundations. Grout shall completely
39 fill the space between the equipment base and the foundation. All metal
40 surfaces coming in contact with concrete or grout shall receive a coat of coal
41 tar epoxy.
42
- 43 M. Obtaining Materials From Pinellas Park Utilities
44
- 45 1. Any material obtained from the Utilities Department shall be
46 thoroughly inspected by the Contractor so as to determine any

defects, damage or unsoundness of the materials. Items accepted by the Contractor shall be signed for by his authorized representative, and the Contractor shall be responsible for such items from the time he picks them up to the time they are installed and accepted by the Utilities Department.

2. Upon acceptance of any material from the Utilities department, the Contractor shall be responsible for loading the material at the storage yard and unloading the material at the job site and for the safe transportation of the material between those locations

1.04 INSPECTION AND TESTING

- A. The Contractor shall be fully responsible for the proper operation of equipment during tests and instruction periods and shall neither have, nor make any claim for damage, which may occur to equipment prior to the time when the City formally takes over the operation thereof.
- B. When requested, the Contractor shall furnish authoritative evidence in the form of Certificates of Manufacture that the materials to be used in the work have been manufactured and tested in conformity with the Contract Documents. These certificates shall be notarized and shall include copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product or on similar products of the manufacturer.
- C. As soon as conditions permit, the Contractor shall furnish all labor, materials, and instruments and shall make preliminary field tests. If the preliminary field tests reveal that the system does not comply with the requirements of the Contract Documents, the Contractor shall, prior to the acceptance tests, make all changes, adjustments and replacement required.
- D. Upon completion of the Work and prior to final payment, all equipment and piping shall be subjected to acceptance tests as specified or required to prove compliance with the Contract Documents.
- E. The Contractor shall furnish labor, fuel, energy, and all other materials, equipment and instruments necessary for all acceptance tests, at no additional cost. The Supplier shall assist in the final field tests as applicable.
- F. Any defects in the materials and equipment or their failure to meet the tests, guarantee or requirements of the Contract Documents shall be promptly corrected by the Contractor. If the Contractor fails to make these corrections or if the improved materials and equipment, when tested, shall again fail to meet the guarantees or specified requirements, the materials and equipment may be rejected and removed from the site at the Contractor's expense.

1 1.05 FIRST AID

- 2
- 3 A. The Contractor shall keep upon the site, at each location where work is in
- 4 progress, a completely equipped first aid kit and shall provide ready access
- 5 thereto at all times when people are employed on the work.
- 6

7 1.06 ADJACENT STRUCTURES AND PROPERTY

- 8
- 9 A. The Contractor shall also be entirely responsible and liable for all damage or
- 10 injury as a result of his operations to all other adjacent public and private
- 11 property, structures of any kind and appurtenances thereto met with during
- 12 the progress of the Work. The cost of protection, replacement in their
- 13 original locations and conditions or payment of damages for injuries to such
- 14 adjacent public and private property and structures affected by the Work,
- 15 whether or not shown on the Drawings or specified, shall be included in the
- 16 various Contract Items and no separate payments will be made therefore.
- 17
- 18 B. Contractor is expressly advised that the protection of buildings structures,
- 19 tunnels, tanks, pipelines, etc. and related work adjacent to and in the vicinity
- 20 of his operations, wherever they may be, is solely his responsibility.
- 21 Conditional inspection of buildings or structures in the immediate vicinity of
- 22 the Project, which may reasonably be expected to be affected by the Work,
- 23 shall be performed by and be the responsibility of the Contractor.
- 24
- 25 C. Contractor shall, before starting operations, make an examination of the
- 26 interior and exterior of the adjacent structures, buildings, facilities, etc., and
- 27 record by noted, measurements, photographs, etc., conditions which might
- 28 be aggravated by open excavation and construction. Repairs or replacement
- 29 of all conditions disturbed by the construction shall be made to the
- 30 satisfaction of the City. This does not preclude conforming to the
- 31 requirements of the Insurance Underwriters.
- 32

33 1.07 PROTECTION, REMOVAL AND REPLACEMENT OF TREES AND SHRUBS

- 34
- 35 A. The Contractor shall comply with all local tree ordinances. When, in the
- 36 opinion of the Project manager or designee, trees or shrubs can be protected in
- 37 place, the Contractor shall endeavor to protect the trees or shrubs as necessary.
- 38 When, in the opinion of the Project manager, trees must be removed to permit
- 39 construction, the Contractor shall consider the price for removing, cutting,
- 40 trimming, replacing trees and shrubs incidental to the laying of pipe and no
- 41 additional payment shall be made unless specifically called for in the
- 42 Contract Documents.
- 43
- 44 B. The Contractor is responsible for acquiring necessary permits and replacing trees as
- required by local ordinances and the City. The Contractor shall provide the services of
- an approved tree specialist when it is necessary to trim or cut a branch from a

1 tree.
2 1.08 PROTECTION OF WORK AND PUBLIC
3

4 A. Barriers and Lights
5

- 6 1. The Contractor shall provide and maintain proper and adequate
7 barricades, construction signs, torches, flashers, construction tapes,
8 flagmen, guards or other traffic control devices as may be necessary
9 to provide the required safety and protection to the public at and
10 around the perimeter of the construction areas. The Contractor shall
11 provide suitable barricades, red lights, "danger" or "caution" or "street
12 closed" signs and watchmen at all places where the work causes
13 obstructions to the normal traffic or constitutes in any way a hazard to
14 the public. The Contractor shall comply with all City, City or State
15 regulations.
16

17 B. Smoke Prevention
18

- 19 1. A strict compliance with ordinances regulating the production of
20 emission of smoke will be required. No open fires will be permitted.
21

22 C. Noise
23

- 24 1. The Contractor shall eliminate noise to as great an extent as
25 practicable at all times. Air compressing plants shall be equipped with
26 silencers and the exhaust of all gasoline, diesel, motors or other
27 power equipment shall be provided with mufflers. The Contractor
28 shall strictly observe all local regulations and ordinances covering
29 noise control.
30
31 2. If mufflers and silencers cannot achieve the necessary noise
32 reduction, other noise abatement procedures shall be instituted by the
33 Contractor, such as installation of 3/4-inch plywood baffles positioned
34 to break off line-of-sight from the noise source to affected residences
35 and/or commercial structures.
36

37 D. Access to Public Services
38

- 39 1. Neither the materials excavated nor the materials or plant used in the
40 construction of the work shall be placed to prevent free access to all
41 fire hydrants, valves or manholes.
42

43 E. Dust Prevention
44

1. It is the responsibility of the Contractor to control all dust problems that may occur during the construction, with required watering.. Dust control will be required seven days a week.
- F. Safety
1. The Contractor will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Project. He will take all necessary precautions for the safety of and will provide the necessary protection to prevent damage, injury or loss to all employees on the Project and other persons who may be affected thereby, all the work and all material or equipment to be incorporated therein, whether in storage on or off the site.
2. The Contractor shall comply with all applicable laws, ordinances, rules, regulations and orders of any public body having jurisdiction. He will erect and maintain, as required by the conditions and progress of the work, all necessary safeguards for safety and protection. He will notify owners of adjacent utilities when prosecution of the work may affect them. The Contractor will remedy all damage, injury or loss of any property caused, directly or indirectly, in whole or in part, by the Contractor, any subcontractor or anyone directly or indirectly employed by any one of them or anyone for whose acts of any of them be liable.
3. In emergencies affecting the safety of persons or the work or property at the site or adjacent thereto, the Contractor, without special instruction or authorization from the Project manager or Designee shall act to prevent threatened damage, injury or loss. He will give the Project Manager or Designee prompt written notice of any significant change in the Work or deviations from the approved plans required relating to the emergency.
4. It is the Contractor's responsibility to comply with the Occupational Safety and Health Administration safety standards.
5. Standard 29 CFR 1926.650, Subpart P, trench safety standards are in effect during the period of construction of the Project.
6. The Contractor shall comply with all Occupational Safety and Health Association (OSHA) requirements for work in confined spaces. This shall include, but not be limited to, provision of a force-ventilated working space.
7. Hard hats shall be worn at the work site by all personnel as required by all local, state and federal guidelines. The Project manager or designee is authorized to halt the work if this requirement is not met.

1
2
3
4 G. Pollution Control
5

- 6 1. The Contractor shall provide for adequate protection against polluting
7 any private or public lands, streams, ponds, lakes, sanitary or storm
8 drainage systems, etc., by the disposal of surplus materials in the
9 form of solids or liquids or any other deleterious materials (fuels, oils,
10 bitumens, etc.)
11

12 1.09 CUTTING AND PATCHING
13

- 14 A. The Contractor shall do all cutting, fitting or patching of his portion of the
15 work that may be required to make the several parts thereof join and
16 coordinate in accordance with the Drawings and Specifications. The work
17 must be done by competent workmen skilled in the trade required.
18

19 1.10 CLEANING
20

- 21 A. During construction of the Work, the Contractor shall, at all times, keep the
22 site of the work and adjacent premises as free from material, debris and
23 rubbish as is practicable and shall remove the same from any portion of the
24 site.
25
26 B. At the conclusion of the Work, all erection plant, tools, temporary structures
27 and materials belonging to the Contractor shall be promptly taken away, and
28 he shall remove and promptly dispose of all water, dirt, rubbish or any other
29 foreign substances.
30
31 C. The Contractor shall thoroughly clean all equipment and materials installed
32 by him and shall deliver such materials and equipment undamaged in a
33 bright, clean, polished and new operating condition.
34

35 1.11 EROSION CONTROL, WETLANDS AND STORM SEWERS
36

37 A. Protection Against Siltation and Bank Erosion
38

- 39 1. The Contractor shall arrange his operations to minimize siltation and
40 bank erosion on construction sites and on existing or proposed water
41 courses, drainage ditches, wetlands and other areas of concern.
42
43 2. The Contractor, at his own expense, shall remove any siltation deposits
44 and correct any erosion problems, which result from his construction
45 operations.
46 3. The Contractor shall be solely responsible for any fines resulting from

the encroachment of any environmentally protected areas.

B. Protection of Wetland Areas

1. The Contractor shall properly dispose of all surplus material, including soil, in accordance with Local, State and Federal regulations. Under no circumstances shall surplus material be disposed of in wetland areas as defined by the Florida Department of Environmental Protection, Southwest Florida Water Management District, U.S. Army Corps of Project managers, etc.

C. Sanitary & Storm Sewer Systems

1. The Contractor shall be entirely responsible for the satisfactory replacement of storm sewer and installation of sanitary sewer systems in substantial conformance to the approved Drawings. It is strongly recommended that no roadway base or paving be constructed until the Contractor has performed televising of these lines to his and the City's satisfaction, and all storm sewer and sanitary sewer invert grades are verified in the field. The lamping of lines and verification of elevations in no way absolves the Contractor from any of his contractual obligations.

1.12 RESTORATION OF PROPERTY

- A. Responsibility. All damage as a result of construction work done to existing structures, wetland areas, roadway pavement, driveways, other paved areas, fences, utilities, traffic control devices and any other obstruction not specifically named herein, shall be repaired, restored or replaced by the Contractor unless otherwise specified.
- B. Temporary Repairs. All damage named in Paragraph A above shall be at least temporarily repaired, restored or replaced immediately following construction efforts at that location. Temporary restoration shall mean putting the affected area back into a safe, usable condition. In no case shall trenches remain open over night within a street right-of-way unless specific approval is granted by the City.
- C. Permanent Repairs. All damage named in Paragraph A above shall be permanently repaired, restored, or replaced before final completion. Permanent repairs shall be accomplished in a professional workmanship-like manner.
- D. In all areas disturbed by the work, the Contractor shall grade and restore the site to a condition as good or better than existed before construction.

1 Sodded areas shall be sodded with sod matching the existing adjacent sod.
2 Any drives, walks, pavements, structures, survey monuments, property
3 corner markers, trees, shrubs, or any other public or private property
4 damaged or destroyed by the work shall be restored or replaced at the
5 Contractor's expense.
6

7 1.13 MAINTENANCE OF TRAFFIC
8

9 A. Maintenance of Traffic shall be in accordance with Specification 01 55 26,
10 Traffic Control.
11

12 1.14 MATERIALS
13

14 A. All materials installed in the City's easements or rights-of-way shall be
15 approved in the City's Materials Specification Manual regardless of whether
16 these facilities are to be owned by the City or are to be privately owned.
17
18
19

20 PART 2 – PRODUCTS (Not Used)
21

22 PART 3 – EXECUTION (Not Used)
23
24
25

END OF SECTION

SECTION 01 57 13

EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Take every reasonable precaution throughout construction to prevent the erosion of soil and the sedimentation of streams, bays, storm systems or other water impoundments, ground surfaces, or other property as required by State and Local regulations.

1.02 RELATED WORK

- A. Provide protective covering for disturbed areas upon suspension or completion of land-disturbing activities. Permanent vegetation shall be established at the earliest practicable time. Temporary and permanent erosion control measures shall be coordinated to assure economical, effective, and continuous erosion and siltation control throughout the construction and post construction period.

1.03 REGULATORY REQUIREMENTS

- A. Prevent damage to properties outside the construction limits from siltation due to construction of the project. Assume all responsibilities to the affected property owners for correction of damages, which may occur. Erosion control measures shall be performed conforming to the requirements of, and in accordance with plans approved by applicable state and local agencies and as per the erosion control portion of the construction drawings and these specifications. The Contractor shall not allow mud and debris to accumulate in the streets. Should the Contractor pump water from trenches during construction, appropriate siltation preventative measures shall be taken prior to discharge of pumped water into any storm drain or stream. The Contractor shall dispose of the water without causing a nuisance, property damage and in compliance with the National Pollution Discharge Elimination System (NPDES) and all applicable jurisdictions.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Open mesh biodegradable mulching cloth.

EROSION AND SEDIMENTATION CONTROL

- 1
2 B. Fertilizer shall be 10-10-10 grade or equivalent.
3
4 C. Lime shall be Dolomitic Agricultural Ground limestone, per FDOT Section
5 982.
6
7 D. Provide permanent grass seed in accordance with Section 32 92 01.
8
9 E. Provide temporary grass seed in accordance with Section 32 92 01.
10
11 F. Silt fence shall consist of non-biodegradable filter fabric (Trevira, Mirafi,
12 etc.), per FDOT Section 985, wired to galvanized wire mesh fencing and
13 supported by wood or metal posts.
14
15 G. Floating turbidity barriers per FDOT Section 985 and FDOT Standard
16 Index 103.
17
18 H. Staked turbidity barriers
19
20 I. Rock bags
21
22 J. Erosion Stone: FDOT Section 530
23 1. Sand-Cement Riprap
24 2. Concrete Block
25 3. Rubble 20 to 300 pounds each
26
27 K. Filter Fabric for placement under Riprap shall meet the requirements
28 FDOT Section 985.
29
30 L. Baled hay or straw in accordance with FDOT Section 104.
31
32 M. Drain pipe with sock (sedimentation control) shall be used to prevent and
33 control soil erosion runoff and intrusion into stormwater drainage systems.
34
35 1. Drain sock products such as "ADSSock" or approved equal.
36 2. Sock material shall be on ultra-porous filter (synthetic wrap
37 material) fitted snugly over pipe. Material shall be 100 percent
38 knitted polyester (or approved equal), equivalent opening size of 30
39 to 40, burst strength of 100-135 (ASTM D 3786), fiber size of 100-
40 200 denier filament, 2.5 to 3.5 ounces per square yard (ASTM D
41 3776).
42 3. Approval of material is required by City prior to use.
43 4. Drain pipe with sock shall span the entire opening of the inlet.
44
45
46

1 PART 3 - EXECUTION

2
3 3.01 CLEARING

- 4
5 A. Clearing and grubbing shall be scheduled and performed in such a
6 manner that subsequent grading operation and erosion control practices
7 can follow immediately thereafter. Excavation, borrow, and embankment
8 operations will be conducted as a continuous operation. All construction
9 areas not otherwise protected shall be planted with permanent vegetative
10 cover within 30 working days after completion of active construction.
11

12 3.02 STABILIZING

- 13
14 A. The angle for graded slopes and fills shall be no greater than the angle,
15 which can be retained by vegetative cover or other adequate erosion
16 control devices or structures. All disturbed areas outside of embankment
17 left exposed will, within 30 working days of completion of any phase of
18 grading, be planted or otherwise provided with either temporary or
19 permanent ground cover, devices, or structures sufficient to restrain
20 erosion.
21

22 3.03 REGULATORY REQUIREMENTS

- 23
24 A. Whenever land disturbing activity is undertaken on a tract, a ground cover
25 sufficient to restrain erosion must be planted or other wise provided within
26 30 working days on that portion of the tract upon which further active
27 construction is to be undertaken.
28
29 B. If any earthwork is to be suspended for any reason whatsoever for longer
30 than 30 calendar days, the areas involved shall be seeded with vegetative
31 cover or otherwise protected against excessive erosion during the
32 suspension period. Suspension of work in any area of operation does not
33 relieve the Contractor of the responsibility for the control of erosion in that
34 area.
35

36 PART 4 - CONSTRUCTION PHASE

37
38 4.01 PRACTICES

- 39
40 A. Avoid dumping soil or sediment into any stream bed or watercourse.
41
42 B. Maintain an undisturbed vegetative buffer where possible between a
43 natural watercourse and trenching and grading operations.
44
45 C. Avoid equipment crossings of streams, creeks, and ditches where
46 practicable.

PART 5 - SEDIMENT CONTROL FEATURES

5.01 GENERAL

- A. All devices (silt fences, retention areas, etc.), for sediment control shall be constructed at the locations indicated prior to beginning excavation on the site. All devices shall be properly maintained in place until a structure or paving makes the device unnecessary or until directed to permanently remove the device.

5.02 DESIGN APPLICATIONS

- A. Mulch shall be used for temporary stabilization of areas subject to excessive erosion, and for protection of seed beds after planting where required.
- B. Filter Fabric, drain pipe with sock, or other approved methods shall be placed and secured over the grates of each existing inlet, grating or storm pipe opening near the area of excavation to prevent silt and debris from entering the storm systems.
- C. Silt fences, hay bales and floating turbidity barriers shall be used as shown on the plans or as directed by the Project Manager or Designee to restrict movement of sediment from the site.
- D. Establish vegetative cover on all unpaved areas disturbed by the work.
 - 1. Preparation of Seedbed. Areas to be seeded shall be scarified a depth of four inches until a firm, well pulverized, uniform seedbed is prepared. Fertilizer shall be applied during the scarification process in accordance with the following rates.
 - a. Fertilizer - 10 to 15 pounds per 1,000 square feet
 - 2. Seeding. Disturbed areas along embankments shall be permanently seeded with mix specified in Section 32-92-01.
 - 3. Mulch all areas immediately after seeding. Mulch shall be applied and anchored as specified herein before.

5.03 MAINTENANCE

- A. Maintain all temporary and permanent erosion control measures in functioning order. Temporary structures shall be maintained until such time as vegetation is firmly established and grassed areas shall be maintained until completion of the project. Areas which fail to show a suitable stand of grass or which are damaged by erosion shall be immediately repaired. No additional payment will be made to the

1 Contractor for the re-establishment of erosion control devices, which may
2 become damaged, destroyed, or otherwise rendered unsuitable for their
3 intended function during the construction of the Project.
4

- 5 B. Remove all silt, sediment and debris buildup on a regular basis to
6 maintain functioning storm systems and erosion control devices.
7

8 5.04 REMOVAL OF SEDIMENT CONTROL DEVICES
9

- 10 A. Near completion of the project, when directed by the Project Manager or
11 Designee, the Contractor shall dismantle and remove the temporary devices
12 used for sediment control during construction. All erosion control devices in
13 seeded areas shall be left in place until the grass is established. Seed
14 areas around devices and mulch after removing or filling temporary
15 control devices. Cleanup all areas.
16

17 END OF SECTION

SECTION 01 78 39 PROJECT RECORD DOCUMENTS

PART 1 – GENERAL

1.01 REQUIREMENTS INCLUDED

A. Contractor shall maintain at the site one record copy of:

1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. Project manager's field orders or written instructions.
6. Approved shop drawings, working drawings and samples.
7. Field test records.
8. Construction photographs.
9. Detailed Progress Schedule.
10. All FEMA required documentation.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Store documents and samples in Contractor's field office apart from documents used for construction.
- B. File documents and samples in accordance with CSI format.
- C. Maintain documents in a clean, dry, legible, condition and in good order. Do not use record documents for construction purposes.
- D. Make documents and samples available at all times for review by the Project manager and City.
- E. As a prerequisite for monthly progress payments, the Contractor is to exhibit the currently updated "record documents" for review by the Project Manager or Engineer.
- F. In the event of a named storm, required reports of all activities and documentation must meet FEMA reimbursement requirements and guidelines.

1.03 RECORDING

- A. Label each document "PROJECT RECORD" in neat large printed letters.
- B. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.
- C. Drawings; Legibly mark to record actual construction:

PROJECT RECORD DOCUMENTS

1. Elevations of various structure elements in relation to grade.
 2. All underground piping with elevations and dimensions. Changes in piping location. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements. Actual installed pipe material, class, etc.
 3. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
 4. Field changes of dimension and detail.
 5. Changes made by Change Order.
 6. Details not on original Contract Drawings.
 7. Equipment and piping relocations.
 8. Intersection details: At least three ties to every valve and fitting, blowoff, fire hydrant and air release.
 9. Services based on distance from main line pipe and property lines.
 10. Backflow preventer assemblies locations, with ties to physical features.
- D. All horizontal locations, if not in the right-of-way, must relate to easement.
- E. All elevations shall be in feet and tenths, referenced to NAVD 1988.
- F. Specifications and Addenda; Legibly mark each Section to record:
1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.
 2. Changes made by Change Order.
- 1.04 SPECIAL REQUIREMENTS FOR MAIN REPAIRS
- A. The Contractor will not be required to furnish as-built drawings for main repairs, but shall be required to furnish a complete "bill of materials" used at each repair, if requested by the City.
- 1.05 SPECIAL REQUIREMENTS FOR WATER MAINS, RECLAIMED WATER MAINS AND FORCE MAINS
- A. In addition to that specified above, the following information shall be provided on the Record Drawings:
1. Location (vertical and any horizontal) at intervals not to exceed two hundred (200) feet and at all locations where the direction changes by more than ten (10) degrees.
 2. Pipe size and material.

3. Air release manhole (rim and bottom elevation and horizontal location) i.e. ties to back of curb and nearest property corner or permanent control point.
 4. Detailed location of valves (horizontal), i.e., ties to back of curb and nearest property corner or permanent control point.
 5. Service connection locations for each designated meter.
- B. All top of pipe elevations shall be accompanied by a finished grade elevation at the same location.
- C. Horizontal location of the pipe shall be defined using ties to back of curb and nearest property corner, property line or permanent control point.
- D. Should supplemental information be compiled or be available related to the "As-Built" condition of the Project, the Contractor shall provide that information, along with the "As-Built Record Drawing" documentation outlined above, which is required under the terms of the contract. Such supplemental information may include but not be limited to:
1. Length of pipe between fittings with depth every one hundred (100) feet.
 2. Elevation of top of pipe at grade changes.
 3. Manufacturer of pipe.
 4. Manufacturer, number of turns to open and depth of valves
 5. Define location of transition point between differing pipe materials
 6. Flow capacity of fire hydrants if such field information was obtained during construction.

1.06 SPECIAL REQUIREMENTS FOR GRAVITY SEWER

- A. In addition to that specified above, the following information shall be provided on the Record Drawings:
1. Manhole rim and invert elevations (include pipe inverts).
 2. Manhole horizontal location (i.e. ties to back of curb and nearest property corner or permanent control point.)
 3. Service laterals located from nearest down stream manhole (indicate any laterals out of manholes).
 4. Distance between manholes.
 5. Size and material of all pipe.

1.07 SPECIAL REQUIREMENTS FOR WASTEWATER PUMP STATIONS

- A. In addition to that specified above, the following information shall be provided on the Record Drawings:

1. Location ties to back of curb and nearest property corner or permanent control point.
2. Wet well invert elevations.
3. Pipe invert elevations.
4. Valve vault inverts.
5. Top of slab elevations.
6. "As Built" elevations of all construction elevations shown on the Drawings.

1.08 SUBMITTAL

- A. At Final Completion Date, deliver Record Documents to the Project Manager or Designee.
- B. Provide certified Record Drawings in electronic format (AutoCAD r14 or later version) meeting Pinellas Park Standards and one hardcopy signed and sealed by a Florida registered surveyor and mapper.
- C. Accompany submittal with transmittal letter in duplicate, containing:
 1. Date.
 2. Project title and number.
 3. Contractor's name and address.
 4. Title and number of each Record Document.
 5. Signature of Contractor or his authorized representative.
 6. Any additional information as may be required by FEMA for the City to obtain reimbursement (named storm event)

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 03 10 01

CONCRETE MATERIALS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The work shall include the furnishing of all materials, equipment and labor required to construct all concrete work shown on the Drawings, or incidental to the proper execution of the work.

1.02 RELATED SECTIONS

- A. Section 32 13 01- Concrete Sidewalks, Driveways, and Gutters

1.03 DESIGN MIX

- A. Prior to placing any concrete, the Contractor shall submit for the Project manager's approval, a design mix, calculated by a recognized testing laboratory, and using the approved aggregates to produce a workable mix of the desired strength, together with certified copies of seven day and twenty-eight (28) day tests of cylinders taken from concrete made according to the design mix. The mixes shall be designed to secure concrete having a minimum compressive strength at age twenty-eight (28) days as shown on the Plans or covered in other sections of these Specifications.

PART 2 - PRODUCTS

2.01 CEMENT

- A. Portland cement shall conform to the latest revision of Federal and/or ASTM Specifications enumerated below:
1. For general concrete construction, ASTM designation C-150, Type I or Type II, or Federal Specifications SS-C-192, Type I or II.
 2. For construction of sewage treatment plant and pump station structures Type II cement shall be used.
 3. Slag cement shall conform to ASTM designation C-465.
 4. Slag cement may be used in the maximum ratio of one part of slag

CONCRETE MATERIALS

45 cement by weight to six parts of total cement by weight, if approval by the
46 Project manager or designee, is obtained prior to use.

1 B. Concrete Bag Mix

- 2
- 3 1. Quickrete 5000 High Early Strength Concrete Mix #1007 or Project
manager approved equal.
- 5
- 6 2. Use of bag mix is strictly limited to non-structural use and Project manager
7 designated locations only.
- 8
- 9 3. The Contractor is required to strictly adhere to the mixing and installation
10 instructions set forth by the manufacturer.
- 11
- 12 4. Testing to be performed at Project managers discretion. Concrete not meeting
13 design strength or not properly installed per the manufacturer is subject to
14 removal and replacement at no additional cost to the City. 15

16 2.02 FINE AGGREGATE

17

18 A. Fine aggregate shall be clean, hard, strong, durable uncoated particles of natural
19 sand known as Lake Wales, Interlachen or approved equal. The source,
20 composition, quality and gradation of the fine aggregate shall be subject to the
21 approval of the Project manager. Samples of the sand shall be furnished, together
with

22 certified copies of the gradation and analysis from a recognized testing
23 laboratory.

24

25 B. The weight of extraneous or deleterious substances shall not exceed the
26 following percentages:

27

28 Loss by decantation - 3 percent

29 Shale -1 percent

30 Clay lumps - 1 percent

31 Coal and lignite - 1 percent

32

33 C. The fine aggregate shall be reasonably well graded from coarse to fine and
34 when tested by means of laboratory sieves, shall meet the following
35 requirements in percent of total weight:

36

Total Retained On	Percent Retained		
No. 4 Sieve	0	-	5
No. 10 Sieve	3	-	30
No. 30 Sieve	30	-	70
No. 50 Sieve	65	-	95
No. 100 Sieve	95	-	100

37

38

39

40

41

42

43

44

45 Deficiencies in the percentages of the fine aggregates passing the No. 50
46 and No. 100 sieves may be remedied by the addition of pozzolanic or

1 cementitious materials excepting Portland cement. Such materials must
2 meet the approval of the Project Manager.

3
4 2.03 COARSE AGGREGATE

5
6 A. Coarse aggregate shall consist of hard, tough, durable components, free
7 from adherent coatings and vegetable matter, and shall not contain soft,
8 friable, thin or elongated particles in quantities considered deleterious by the
9 Project manager. Coarse aggregate shall be properly graded from fine to
10 coarse to
11 produce concrete of the desired strength, density, and workability. The
12 source, composition, quality and gradation of the coarse aggregate shall be
13 subject to the approval of the Project manager. Samples of the coarse
14 aggregate

15 shall be furnished together with certified copies of the gradation and analysis
16 from a recognized testing laboratory.

17 B. All coarse aggregate shall be washed and shall be free from disintegrated
18 pieces, salt, alkali, vegetable matter and adherent coatings. The total
19 percentage of all deleterious substances shall not exceed five percent by
20 weight. The substances designated shall not be present in excess of the
21 following amounts:

22 Loss by decantation - 1 percent

23 Clay lumps or other soluble materials - 1/4 percent

24 Soft fragments - 5 percent

25 C. Where the cover over reinforcing is two inches or more, the maximum size
26 of aggregate shall be one and one-half inches. Where the cover over
27 reinforcing is less than 2-inches, the maximum size of aggregate shall be
28 three-quarter inch. The maximum size of aggregate shall not exceed one-
29 fifth of the narrowest dimension between forms nor three quarters of the
30 minimum clear spacing between reinforcing bars. The grading of the coarse
31 aggregate in the concrete shall be within the following limits:

32
33 Percent Passing

34
35 Maximum size square mesh screen 97 - 100 percent

36 Maximum size square mesh screen 40 - 70 percent

37 No. 4 Sieve 0 - 6 percent
38

39 2.04 WATER

40
41 A. The water used in mixing concrete shall be fresh, clean and free from
42 injurious amounts of oil, acid, alkali or organic matter.

43
44 B. Water from any source other than a municipal water supply shall be shown
45 by test to comply with Florida State Road Department requirements for

CONCRETE MATERIALS

1
2 2.05 REINFORCEMENT
3

4 A. Reinforcing bars shall conform to the requirements of the latest revision of
5 Federal Specification QQ-S-632 and shall be as follows unless indicated
6 otherwise on the plans:
7

- 8 1. Bent: Type II (deformed), Class B40
9 2. Straight: Type II (deformed), Class B40
10 3. Column Ties: Type I (plain), Class B40
11

12 B. Wire mesh, unless otherwise shown on the drawings or specified, shall be 6"
13 x 6" No. 10 woven, or electrically welded wire fabric conforming to the
14 requirements of ASTM designation A 185, latest revision.

15 C. Reinforcing steel shall be detailed, fabricated and placed according to the
16 methods and standards recommended in the "Manual of Standard Practice
17 for Detailing Reinforced Concrete Structures" of the American Concrete
18 Institute.
19

20 2.06 JOINTS
21

22 A. Water Stops
23

- 24 1. Materials for stops shall be 1/8-inch steel plate welded into a
25 continuous strip, or an approved alternate material.
26

27 2.07 GROUTING AND PATCHING
28

29 A. Cement for use in grouting and patching shall be non-shrinking material free
30 of stain-causing agents and matching the adjacent concrete in appearance.
31

32 B. Bonding Agent: To be structural epoxy adhesive conforming to ASTM-C881
33 Type I & II, Grade 2, Class B & C with a minimum bond strength of 1900
34 psi.
35

36 PART 3 - EXECUTION
37

38 3.01 REINFORCING STEEL
39

40 A. The reinforcing fabricated to shapes and dimensions shown, shall be placed
41 where indicated on the Drawings. Before placing, all reinforcements shall be
42 thoroughly cleaned of rust, mill scale or coatings, which would reduce or
43 destroy the bond.
44

45 B. Splices in reinforcing mats shall be staggered. Horizontal mats shall be
46 supported on metal chairs with all sills or pads below subgrade. Spacers

shall be provided for wall and column steel and shall be removed as the concrete is placed.

- C. The concrete covering over steel reinforcement shall be as shown on the Plans.

3.02 PROPORTIONING

- A. All materials, except water, shall be proportioned into the mix by weight. Water may be proportioned either by weight or volume.
- B. Delivery tickets for transit mix concrete shall show the weight of cement of each type incorporated in the batch.
- C. Precise control of the proportions and amounts of all materials will be required. Unauthorized changes in proportions, or addition of water, shall be sufficient cause for rejection of the batch. The proportions of the approved design mix may be changed only upon specific approval of the Project manager. The use of admixture to improve workability will not be approved, unless such admixture is a part of the design mix and the submitted design mix test data. Only admixture of pozzolanic, cementitious or silicious nature will be considered.
- D. The amount of water used in the mix shall be kept at the minimum necessary to produce concrete of a workable consistency. Consistency shall be measured at the time of pouring by slump tests, when directed by the Project manager. The slump shall fall within the following

tabulated limits: 30

Type of Structure	<u>Slump in Inches</u>	
	Minimum	Maximum
Massive sections, pavement and slabs on ground	1	4
Heavy slabs, beams or walls	3	5
Thin walls and columns, ordinary slabs or beams	3	6

3.03 MIXING AND PLACING

- A. General

- 1 1. Concrete shall be machine-mixed in standard equipment in good
2 condition, operated within its rated capacity. The batching plant shall
3 be equipped with facilities for measurement of dry materials by
4 weight, and water by weight or volume. Mixing equipment may be a
5 portable plant (job-mix), or truck mounted (transit-mix). The use of
6 transit-mix concrete will be limited by length of haul. Transit-mixing
7 will be required to meet the requirements for mixing time. Batching
8 plant and handling equipment shall be of sufficient capacity to
9 produce and place concrete without interruption or cold joints. All
10 equipment shall be subject to the approval of the Project

manager. 11

12 B. Time

- 13
14 1. The minimum time for mixing each batch after all materials are in the
15 mixer shall be one minute for 1/2 to 1 1/2 cubic yard mixers, and
16 1 1/2 minutes for mixers over 1 1/2 cubic yard capacity. The mixer
17 shall revolve at a uniform speed, a minimum of twelve (12)
18 revolutions after all materials have been placed therein.
19
20 2. Neither the speed, nor the volume capacity of the mixer, shall exceed
21 those recommended by the manufacturer. Excessive over-mixing,
22 requiring addition of water to preserve the consistency, will not be
23 permitted.
24

25 C. Placing

- 26
27 1. Concrete shall be placed before the initial set has occurred and in no
28 event after it has contained its water content for more than sixty (60)
29 minutes, unless documented by the testing laboratory justifying a
30 longer truck residence time without deleterious effect.
31
32 2. The concrete shall be compacted and worked in an approved manner
33 into all corners and angles of the forms and around reinforcement
34 and embedded fixtures in such a manner as to prevent segregation of
35 the coarse aggregate.
36
37 3. All concrete shall be placed with the aid of mechanical vibrating
38 equipment supplemented by hand forking or spading. Vibration shall
39 be transmitted directly to the concrete and not through the forms.
40 The duration of vibration at any location in the forms shall be held to
41 the minimum necessary to produce thorough consolidation.
42
43 4. The concrete shall be placed by suitable equipment as nearly as
44 possible to its final location and without any segregation of the
45 aggregate. Any free vertical drop shall not exceed three feet.
46

- 1 5. Before depositing new concrete, on or against concrete which has
2 set, the existing surfaces shall be cleaned of all laitance, foreign
3 matter and loose particles, and covered with a neat cement grout.
4 Grout for horizontal construction joints shall be of cement and fine
5 aggregate in the same proportions as in the concrete to be placed,
6 and shall be from one-half to one inch thick.
7
8 6. Exposed formed surfaces shall be rubbed with Carborundum brick or,
9 otherwise dressed to produce a smooth, true surface. Interior
10 surfaces of tanks, wet wells, etc., shall be considered as exposed to a
11 point six inches below low water level. Special care shall be taken in
12 dressing circular structures to obtain a true circular surface.
13
14
15
16

17 D. Slabs

- 18
19 1. No special concrete or cement mortar topping course, shall be used
20 for slab finish, unless shown on the drawings. The slab shall be
21 brought to a true and even finish by power or hand-floating. Unless
22 otherwise specified, the surface shall be floated to a true, regular
23 surface with a wood float and shall be steel-troweled to a smooth
24 finish. Troweling shall be the minimum to obtain a smooth, dense
25 surface and shall not be done until the mortar has hardened
26 sufficiently to prevent excess fine material from being worked to the
27 surface. All floor surfaces except those which are to be painted, shall
28 immediately after troweling, be brushed lightly with a soft bristle
29 janitor's push broom to produce a non-slip surface. The brushing
30 shall be sufficient to mark the surface only, without appreciably
31 disturbing the troweled finish.
32

33 3.04 FINISHING

- 34
35 A. Top surfaces which are not covered by forms, and which are not to be
36 covered by additional concrete or backfill, shall be carried slightly above
37 grade and struck off by board finish.
38

39 3.05 CURING AND PROTECTING

40
41 A. Curing

- 42
43 1. All concrete shall be kept wet by covering with water, or approved
44 water saturated covering, or by other method approved by the
45 Project manager, which will keep all surfaces continuously wet, for a period
46 of seven days unless otherwise directed by the Project manager.

2. Water for curing shall be clear and entirely free from any elements which might cause staining or discoloration of the concrete.
3. Where wood forms are left in place during curing, they shall be kept wet at all times to prevent opening at the joints and drying out of the concrete.

B. Weather Protection

1. No concrete shall be mixed or placed when the air temperature in the shade and away from artificial heat is as low as forty (40) degrees Fahrenheit, and falling. Concrete may be mixed and placed when the air temperature in the shade, and away from artificial heat is thirty-five (35) degrees Fahrenheit, and rising.
2. Fresh concrete shall be protected from rain, flowing water and mechanical injury and all concrete shall be protected from injurious action by the sun.

3.06 SAND CEMENT AND/OR SOIL CEMENT RIP-RAP

- A. Where directed, the Contractor shall prepare sand cement, or if satisfactory material is available from the excavation, soil cement rip-rap.
- B. The mixture shall be mixed dry at 4:1 ratio by volume of sand, or soil and Portland cement. The dry mixture shall be placed in burlap or fiberbags as required to form a basic rip-rap unit approximately eighteen (18) inches long, twelve (12) inches wide, and six (6) inches high.
- C. Rip-rap shall be placed as directed to provide protection of slopes, pipe ends and bulkheads.

3.07 JOINTS

A. Water Stops

1. Water stops shall be installed at all expansion, contraction and construction joints subject to water pressure and where indicated.

B. Expansion Joints

1. Expansion joints shall be placed as indicated on the Plans. Joint material shall be installed as indicated and as directed by the Project manager.

1 C. Construction Joints

- 2
- 3 1. Vertical construction joints will not be allowed unless detailed in the
- 4 Drawings.
- 5
- 6 2. Construction joints shall be located as shown on the Plans and/or in
- 7 accordance with an approved schedule of pours.
- 8

9 3.08 TESTS

10

11 A. Procedures

- 12
- 13 1. Compressive strength tests shall be made by breaking standard
- 14 6-inch diameter by 12-inch high test specimens prepared, cured and
- 15 broken in accordance with the American Society for Testing Materials
- 16 Standard Methods, C-31 and C-39, latest revision. Four specimen
- 17 test cylinders shall be taken from each concrete pour of five cubic
- 18 yards or more. One additional test shall be taken from each thirty
- 19 (30) cubic yards or fraction, thereof, in each pour in excess of thirty
- 20 (30) cubic yards. Test specimens shall be taken from manhole
- 21 bottom pours of less than five cubic yards as directed by the
- 22 Project manager. Test specimens shall be taken in the presence of the
- 23 Project manager. One cylinder from each pour shall be broken at seven
- 24 days, the remainder at twenty-eight (28) days. Additional test
- 25 cylinders may be ordered for determining the characteristics of a new
- 26 design mix or changes in equipment or methods, and under adverse
- 27 weather, or curing conditions.
- 28
- 29 2. Slump test shall be made in accordance with ASTM C143, latest
- 30 revision and shall be made whenever directed by the Project
- 31 manager.

32 B. Responsibility for Tests and Reports

- 33
- 34 1. The Contractor shall supply all cylinder molds, slump cones, tools
- 35 and labor for preparing specimens, and shall provide clean, moist
- 36 sand or burlap for curing. Cylinders shall not be shipped to the
- 37 testing laboratory until the third day following preparation, and shall
- 38 be protected from accidental damage at all times.
- 39
- 40 2. The test cylinders shall be tested in a recognized commercial testing
- 41 laboratory.
- 42

43 3.09 CAUSE FOR REJECTION

44

- 1
 - 2
 - 3
 - 4
 - 5
 - 6
- A. Should the concrete fail to conform to all the requirements of this Section, the Project manager may require the Contractor to remove the defective concrete and reconstruct the Work as directed.

END OF SECTION

SECTION 09 91 00

PAINTING AND PROTECTIVE COATINGS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Provide all labor, materials, apparatus, scaffolding, and all appurtenant work in connection with painting and protective coatings, complete as indicated, specified and required.
- B. Principal items include, but are not limited to:
 - 1. All exposed piping, conduits, tanks, equipment and other metal surfaces, interior and exterior, except as hereinafter specifically excluded.
 - 2. All submerged and intermittently submerged metal surfaces, except stainless steel.
 - 3. All structural and miscellaneous steel.
 - 4. Equipment furnished without factory finished surfaces.
 - 5. Equipment, on which factory applied finishes have been marred, abraded, scratched, nicked, or otherwise damaged.
 - 6. The interior of concrete tanks, manholes, and similar structures, unless otherwise lined.
 - 7. Paint coatings on scheduled interior concrete walls and undersides of slabs.
 - 8. Plasterwork, gypsum drywall surfaces, woodwork, and other architectural work as specified or shown on the Drawings.
 - 9. Exposed steel lintels.
 - 10. Interior and exterior CMU walls unless otherwise specified.
 - 11. Exterior of concrete tanks.

PAINTING AND PROTECTIVE COATINGS

12. Undersides of aluminum access hatches and aluminum checkered plate.
13. Fire hydrants, valve box lids, meter box lids, bollard/ guard post above ground meter and backflow assemblies.
14. All exterior wall surfaces of existing tanks and structures from 6-inches below grade to the top of the wall or structure.

C. The following surfaces, in general, shall not be painted:

1. Concrete surfaces subject to pedestrian or vehicular traffic, except as herein specified.
2. Nonferrous metals and stainless steel unless otherwise noted or indicated. Galvanized metal shall not be considered as a nonferrous metal.
3. Mechanical equipment with factory finish as specified herein.
4. Electrical and instrumentation equipment with approved factory finish or of stainless steel/nonferrous metal construction, unless otherwise specified.
5. Water proofing, dampproofing and roof covering work.
6. Anodized aluminum.
7. Aluminum handrails and ladders.
8. Fiberglass grating and tread plate.
9. Nuts and bolts.
10. Name tags and data tags.

D. Related work not included in this Section:

1. Pavement striping.
2. Sealants and caulking.
3. Waterproofing and dampproofing.

E. The Contractor shall furnish to the Project manager, at no charge for use during this project, one dry film thickness gages and one electrical flaw detection equipment system.

PAINTING AND PROTECTIVE COATINGS

1
2
3
4
5 1.02 GUARANTEE
6

- 7 A. A three (3) year guarantee which commences on the date of acceptance
8 against failure of all coatings shall be provided, unless more stringent
9 requirements are specified hereinafter. Failure of any coating during the
10 guarantee period shall be repaired by the Contractor who shall absorb all
11 costs related to the repair of the coating. Failure shall be defined as
12 peeling, blistering, delamination or loss of adhesion of any of the coatings.
13

14 1.03 REFERENCE SPECIFICATIONS AND STANDARDS
15

- 16 A. Without limiting the generality of other requirements of these
17 Specifications, all cleaning, surface preparation, and coating shall conform
18 to the applicable requirements of the referenced portions of the standards
19 specified herein to the extent that the requirements therein specified are
20 not in conflict with the provisions of this Section.
21
- 22 B. Unless otherwise specified, all work and materials for the preparation and
23 coating of all metal surfaces shall conform to the applicable requirements
24 specified in the Steel Structures Painting Manual, Volume 2, Systems and
25 specifications Revised, latest edition, published by the Steel Structures
26 Painting Council.
27
- 28 C. The following referenced surface preparation specifications of the Steel
29 Structures Painting Council shall form a part of this Section.
30
- 31 1. White Metal Blast Cleaning (SSPC-SP5). Removal of all visible
32 rust, mill scale, paint, and foreign matter by blast cleaning by wheel
33 or nozzle (dry) using sand, grit, or shot. (For very corrosive
34 atmosphere.)
35
 - 36 2. Near-White Blast Cleaning (SSPC-SP10). Blast cleaning nearly to
37 White Metal Cleanliness, until at least 95 percent of each element
38 of surface area is free of all visible residues. (For high humidity,
39 chemical atmosphere, marine or other corrosive environment.)
40
 - 41 3. Commercial Blast (SSPC-SP6). Blast cleaning until at least 67
42 percent of each element of surface area is free of all visible
43 residues.
44
 - 45 4. Brush-Off Blast Cleaning (SSPC-SP7). Blast cleaning of all except
46 tightly adhering residues of mill scale, rust and coatings, exposing
47 numerous evenly distributed flecks of underlying metal.

5. Solvent Cleaning (SSPC-SP1). Removal of oil, grease, dirt, soil, salts, and contaminants by cleaning with solvent, vapor, alkali, emulsion or steam.

D. Quality Assurance. Evaluation of surface preparation for ferrous metals will be based upon NACE Standard TM-01-Visual Standard for Surface Preparation.

1.04 SUBMITTALS

A. Submittals shall be in accordance with the following:

1. Samples. Prepare and submit for Project manager's approval copies of color samples on 8-1/2" x 11" size cards for each paint and protective coating system. Each sample card shall clearly show each coat of the finish system, and shall be clearly marked with the manufacturer's name and product identification, and shall be submitted in sufficient time to allow for approval and, if necessary, disapproval and resubmittal without causing any delay of the project.

2. Coating Materials List.

a. The Contractor shall provide copies of a paint and coating materials list which indicates the manufacturer and paint number, keyed to the coating schedule herein, for approval by the Project manager prior to or at the time of submittal of samples required herein.

b. The Contractor shall include with his submittal, his protective coating schedule for shop and field coatings of items to receive protection. The schedule shall conform to the specified requirements for surface preparation, priming, and coating for items covered, and shall follow the same requirements for similar work where such work has not been specifically called-out. No bare ferrous nonworking surfaces shall be omitted from the schedule. Particular care shall be taken to cover in sufficient detail the coating of mechanical joints and other mechanical devices which shall conform to the recommended practice of the manufacturer of the joint or other mechanical devices.

c. Coatings to be used on plastic and fiberglass materials shall be certified as acceptable by all plastic and fiberglass manufacturers whose products are to be coated. Certification copies shall be submitted to the Project manager. The

PAINTING AND PROTECTIVE COATINGS

Contractor shall be certified in writing by the painting and coating material manufacturers as qualified applicators of their products with copies of the certification submitted to the Project manager.

3. Product Data Sheets. Contractor shall submit paint and coatings material manufacturers' printed technical data sheets for products intended for use in each paint and coating system. Data sheets shall fully describe material as to its intended use, makeup, recommended surface preparation and application conditions, primers, material mixing and application (including recommended dry mil thickness recoat time), precautions, safety and maintenance cleaning directions.

4. Material Safety Data Sheets. Material Safety Data Sheets (MSDS) shall accompany all paint submittals and shall be prominently displayed at the job site during all painting activities.

1.05 PROTECTION OF WORK

A. The Contractor shall be responsible for any and all damage to his work or the work of others during the time his work is in progress.

1.06 EXTRA STOCK

A. One (1) gallon of each type and color of finish paint and coating used on the project shall be provided as extra stock. Extra stock paint shall be supplied in appropriate sealed containers and be clearly labeled as to paint type, formula, and color.

1.07 RIGHT OF REJECTION

A. The Project manager shall have the right to reject all material or work that is unsatisfactory, and require the replacement of either or both at the expense of the Contractor.

1.08 ONE MANUFACTURER

A. To the maximum extent possible, all products shall be the product of one manufacturer unless a specific specialty coating system is specified. Without exception, all coatings for any service condition specified herein shall be by one manufacturer. Once a paint manufacturer has been selected by the Contractor and approved by the Project manager, the Contractor shall ensure that all equipment manufacturers prime their equipment with the same or a compatible primer. If this cannot be or is not done for any reason, the Contractor shall apply a "universal primer" and recoat with the approved manufacturer's product in the field.

PAINTING AND PROTECTIVE COATINGS

1
2 1.09 JOB CONFERENCE
3

- 4 A. Prior to commencing painting work a pre-job conference shall be held for
5 the purpose of reviewing the painting and coating requirements of the
6 project. The City, Project manager, Contractor, Applicator, and the Coatings
7 and Paint Manufacturer shall be present. A schedule of work to be
8 accomplished will be established.
9

10 PART 2 - PRODUCTS
11

12 2.01 GENERAL
13

- 14 A. Surfaces to receive paint and protective coating materials as herein
15 specified in this Section shall be coated in conformance with the
16 applicable coating systems specified herein. All materials specified by
17 name and/or manufacturer or approved for use under these
18 Specifications, shall be delivered unopened at the job site in their original
19 containers and shall not be opened until inspected by the Project
manager. 20
- 21 B. Whenever a manufacturer's brand name is specified, it is intended to
22 define the general type and quality of paint or coating desired. Other
23 coatings or paints of equal quality may be used. Coating materials shall
24 be a product of TNEMEC, unless otherwise specified, or approved equal.
25 All paint and coatings shall be produced and applied as herein called for
26 or, if not specifically called for, it shall be applied in accordance with the
27 manufacturer's printed recommendations as approved by Project manager. So
28 far as possible, all paint and coating materials shall be provided by a
29 single source supplier. Coating materials shall meet Volatile Organic
30 Compounds (VOC) requirements of not more than 3.5 lb./gal. as applied
31 after thinning.
32
- 33 C. General.
34
- 35 1. Paint and protective coating materials shall be sealed in containers
36 that plainly show the designated name, formula or specification
37 number, batch number, color, date of manufacture, manufacturer's
38 directions, and name of manufacturer, all of which shall be plainly
39 legible at the time of use. Pigmented paints shall be furnished in
40 containers not larger than five (5) gallons. Materials shall conform
41 to the specifications shown herein and to the requirements
42 hereinafter specified.
43
- 44 2. Products shall be standard of recognized manufacturer engaged in
45 production of such materials for essentially identical or similar
46 applications in the water and wastewater treatment industry.
47

D. Compatibility. Only compatible materials shall be used in the work. Particular attention shall be directed to compatibility of primers and finish coats. If necessary, subject to approval of the Project manager, a compatible barrier coat shall be applied between all existing prime coat and subsequent field coats to ensure compatibility.

1. Ductile iron pipe that has an exterior bituminous coating shall not be painted unless the bituminous coating is removed by sand blasting or an appropriate, compatible, intermediate coat is applied before top coating in accordance with this specification.

E. Colors. All colors and shades of colors of all coats of paints and protective coating material shall be as identified in the architectural sketches or schedules or as modified/selected by the City. Each coat shall be of a slightly different shade, as directed by the Project manager to facilitate inspection of surface coverage of each coat.

2.02 SERVICE CONDITION A

A. Ferrous and galvanized metals, other than stainless steel, within wet wells or similar corrosive atmospheres, submerged or intermittently submerged in sludge, sewage, chemical mixtures or similar corrosive liquids shall be prepared and coated in accordance with the following requirements.

B. Surface Preparation. All metal surfaces shall be field sandblasted in accordance with Steel Structures Painting Council Specification SSPC-SP10 (Near White Blast Cleaning). Weld surface, edges, and sharp corners shall be ground smoothly and all weld splatter removed per SSPC-SP3 "Power Tool" or SP2 "Hand Tool" Cleaning. Galvanized metals shall be cleaned per SSPC SP-7 (brush off blast cleaning).

C. Application. Application shall be in strict conformance with the manufacturer's printed recommendations. All sharp edges, nuts, bolts, or other items difficult to coat shall receive a brush-applied coat of the specified coating prior to application of each coat.

D. Except as otherwise noted, the prime coat shall have a minimum thickness of 3 mils and the two finish coats shall have a minimum total dry film thickness of 13 mils. If the finish coat is not applied within manufacturer's recommended time period, an intermediate special surface conditioner shall be applied in advance of finish coats or a light brush blast. The total system shall have a minimum dry film thickness of 16 mils.

TNEMEC System: Shop Primer - Series 66-1211
Field Primer - Series 104

2.03 SERVICE CONDITION B

- A. Ferrous and galvanized metals, other than stainless steel, subject to seacoast salt air exposures or equivalent chemical attack, shall be prepared and coated in accordance with the following requirements.
- B. Surface Preparation. All surfaces shall be free of dirt, dust, grease, or other foreign matter before coating. Ferrous surfaces shall be cleaned in accordance with the Steel Structures Painting Council Specification SSPC-SP7 (Brush-Off Blast Cleaning), and galvanized surfaces shall be cleaned in accordance with SSPC-SP1 (Solvent Cleaning). Weld surface, edges and sharp corners shall be ground smooth and all weld splatter shall be removed per SSPC-SP3 or SP2. Galvanized metal shall be cleaned per SSPC SP-7 (brush off blast cleaning).
- C. Application. Application shall be in strict conformance with the manufacturer's printed recommendations. All sharp edges, nuts, bolts, or other items difficult to coat shall receive a brush-applied coat of the specified coating prior to application of each coat.
- D. Except as specified below, the prime coat shall have a minimum thickness of 3 mils, intermediate coat shall have a minimum thickness of 4 mils and one or more finish coats minimum total dry film thickness of 10.0 mils.

TNEMEC System:	Primer - Series 66
Intermediate Coat:	Series 66
Finish Coats:	Series 73

2.04 SERVICE CONDITION C

- A. Ferrous and galvanized metals, other than stainless steel, subject to mild to moderately severe air exposures or equivalent chemical attack, shall be prepared and coated in accordance with the following requirements.
- B. Surface Preparation. All surfaces shall be free of dirt, dust, grease, or other foreign matter before coating. Ferrous surfaces shall be cleaned in accordance with the Steel Structures Painting Council Specification SSPC-SP7 (Brush-Off Blast Cleaning), and galvanized surfaces shall be cleaned in accordance with SSPC-SP1 (Solvent Cleaning). Weld surface, edges and sharp corners shall be ground smooth and all weld splatter shall be removed per SSPC-SP3 or SP2. Galvanized metal shall be cleaned per SSPC SP-7 (brush off blast cleaning).

C. Application. Application shall be in strict conformance with the manufacturer's printed recommendations. All sharp edges, nuts, bolts, or other items difficult to coat shall receive a brush-applied coat of the specified coating prior to application of each coat.

D. Except as specified below, the prime coat shall have a minimum thickness of 3 mils, intermediate coat shall have a minimum thickness of 4 mils and one or more finish coats minimum total dry film thickness of 10.0 mils.

TNEMEC System:	Primer - Series 66
Intermediate Coat:	Series 66
Finish Coats:	Series H2
PORTER System:	Primer – PP286 or PP296
Intermediate Coat:	2200
Finish Coat:	2200

2.05 SERVICE CONDITION D

A. Coating aluminum and non-ferrous metal surfaces, including undersides of aluminum access hatches, frames, and checkered plate, subject to corrosive atmosphere and condensation shall be prepared and coated in accordance with the following requirements.

B. Surface Preparation. Clean non-ferrous surfaces in accordance with SSPC-SP7 (brush-off blast cleaning).

C. Application. Application shall be in strict conformance with manufacturer's printed recommendations, as approved by the Project

D. The prime coat shall have a minimum 3.0 mil DFT and finish coat shall have a minimum 4 mil DFT for a minimum total dry mil thickness of 7 mils:

TNEMEC System:	Primer - Series 66
	Finish Coats - Series 66

2.06 SERVICE CONDITION E

A. Plastic and fiberglass reinforced plastic (FRP) products subject to seacoast salt air exposures shall be prepared and coated in accordance with the following requirements. Coatings to be used for piping and tankage shall be certified by the manufacturer to be completely acceptable and non-injurious.

B. Surface Preparation. Clean surfaces with SSPC-SP1 solvent cleaner. Lightly sand all surfaces.

1 C. Application. Application shall be in strict conformance with manufacturer's
2 printed recommendations.

3
4 D. The prime coat shall have a minimum 3.0 mil DFT and finish coat shall
5 have a minimum of 3.0 mil DFT for a minimum total dry film thickness of 6
6 mils.

7
8 TNEMEC System: Primer - Series 66
9 Finish Coat - Series 73

10
11 2.07 SERVICE CONDITION F

12
13 A. Concrete which is subject to submergence and intermittent submergence
14 in water and groundwater shall be prepared and coated in accordance
15 with the following requirements.

16
17 B. Surface Preparation. All surfaces shall be cleaned of all dirt, dust, oil,
18 curing compounds, and other deleterious compounds. In general, the
19 concrete shall be reasonably smooth and free of pockets and cavities. All
20 surfaces shall be cleaned by brush blasting (NACE #4 or SSPC-SP7). All
21 surfaces shall be completely dry before application of the coating.

22
23 For painting of existing structures, in addition to above, patch concrete
24 with non-shrink grout, replace damaged stucco, and repair cracks in
25 exterior concrete wall surfaces by epoxy injection.

26
27 C. Application. Application shall be in strict conformance with the
28 manufacturer's printed recommendations. All coats shall be applied within
29 24 hours of the previous coat.

30
31 D. The prime coat shall have a minimum dry film thickness of 3 mils and
32 intermediate and finish coat shall have a minimum total dry film thickness
33 of 5 mils each. The total system shall have a minimum dry film thickness
34 of 13 mils.

35
36 TNEMEC System: Primer - Series 66
37 Intermediate Coat - Series 66
38 Finish Coat I - Series 66
39

40 2.08 SERVICE CONDITION G

41
42 A. Concrete sanitary sewer manholes or similar corrosive atmospheres
43 which are subject to submergence and intermittent submergence in
44 domestic sewage, water and groundwater shall be prepared and coated in
45 accordance with the following requirements.

46
47 1. Surface Preparation. All surfaces shall be cleaned of all dirt, dust,

PAINTING AND PROTECTIVE COATINGS

oil, curing compounds, and other deleterious compounds. In general, the concrete shall be reasonably smooth and free of pockets and cavities.

2. Allow new concrete to cure for 28 days. All surfaces shall be cleaned by brush blasting (NACE #6 or SSPC-SP13). All surfaces shall be completely dry before application of the coating.

3. For painting of existing structures, in addition to above, patch concrete with non-shrink grout, repair cracks in concrete wall surfaces by epoxy injection.

B. Application. Application shall be in strict conformance with the manufacturer's printed recommendations. All coats shall be applied within 24 hours of the previous coat.

C. A prime coat is not required on concrete. Coating can be applied in one or two coats. When applied in two coats each coat shall have a minimum dry film thickness of 8 to 10 mils. The total system shall have a minimum dry film thickness of 15 to 20 mils.

TNEMEC System: Primer – Not required
 Intermediate Coat - Series 46H-413
 Finish Coat I – Series 46H-413

2.09 ARCHITECTURAL PAINT FINISHES

A. Manufacture. Unless otherwise noted, products listed below are the products of TNEMEC coatings. Approved equivalent products will be acceptable.

B. Interior Finishes:

1. Interior Wet Concrete Surfaces (Non-Aggressive Areas)
Surface Preparation: Prefer SSPC-SP7: Brush off Blast Cleaning. If brush off Blast Cleaning is not possible, a double acid etching is recommended. Properly prepared surface should have a profile similar to 100 grit sandpaper. A test patch is recommended when applying epoxy coatings over old, existing coatings.

Materials:

Primer: TNEMEC Series 66 @ 3.0 - 5.0 mils

DFT 2nd Coat: TNEMEC Series 66 @ 4.0 - 6.0 mils DFT (optional)

Finish: TNEMEC Series 66 @ 4.0 - 6.0 mils DFT 11.0 - 17.0 mils DFT

PAINTING AND PROTECTIVE COATINGS

- 1 2. Concrete Block Walls (Non-aggressive Environment)
2 Surface Preparation: Cure 14 days. Remove mortar spatter.
3 Surfaces must be clean and dry.

4
5 Materials:

6 Filler: TNEMEC Series 130 or 54-562 @ 80 SF/Gal

7 Finish Ct.: TNEMEC Series 113 or 114 @ 4.0 - 6.0 mils DFT
8

- 9 3. Poured Concrete Walls (Non-aggressive Environment)
10 Surface Preparation: Cure for 28 days. All surfaces must be clean
11 and dry.

12
13 Materials:

14 Primer: TNEMEC Series 113 or 114 @ 4.0 - 6.0 mils DFT.

15 Finish: TNEMEC Series 113 or 114 @ 4.0 - 6.0 mils DFT.
16

17 C. Concrete in aggressive areas (CBW)
18

- 19 1. Surface Preparation. Surfaces shall be cured for 28 days, clean,
20 dry and free from curing compounds, oil, grease, dirt or chalk.
21
22 2. Filler. TNEMEC Series 54-660 (block walls only).
23
24 3. Prime Coat. One coat of TNEMEC Series 66 applied at 5 mils
25 DFT.
26
27 4. Finish Coats. Two coats of TNEMEC Series 66 applied at 5 mils
28 DFT per coat.
29

30 D. Concrete Sealed (ECB). Huls Chem-Trete PB at a rate of between 50
31 and 100 sf/gal. Application shall be sufficient to guarantee complete
32 water repelling for five (5) years.

33
34 E. Concrete Waterproof (CWP). One coat, minimum 2lbs. per square yard
35 of Thoroseal by Thoro System Products or approved equal.
36

37 2.10 PATCH COAT FOR GALVANIZED SURFACES
38

- 39 A. All galvanized surfaces which are scratched, marred, or otherwise
40 damaged shall be patched with TNEMEC Series 90-97 @ 2.5 - 3.5 mils
41 DFT.
42

43 2.11 PRIMER OVER BITUMINOUS COATING
44

- 45 A. Two coats, TNEMEC Series 66, at 4 mils DFT each. Allow bituminous
46 coating to bleed through on first coat. Apply second coat, third coat shall
47 be per service condition schedule.
48

PAINTING AND PROTECTIVE COATINGS

09 91 00 - 12

1
2
3
4 2.12 UNIVERSAL PRIMER
5

- 6 A. The "universal-primer" shall be a primer which can be applied over any
7 other type of solvent based primer, and be compatible with alkyds,
8 epoxies and urethane finish coats.
9

10 PART 3 - EXECUTION
11

12 3.01 MANUFACTURER'S RECOMMENDATIONS
13

- 14 A. Unless otherwise specified herein, the paint and coating manufacturer's
15 printed recommendations and instructions for thinning, mixing, handling,
16 applying, and protection of his coating materials; for preparation of
17 surfaces for coating; and for all other procedures relative to coating shall
18 be strictly observed. No substitutions or other deviations will be permitted
19 without written permission of the Project
manager. 20

21 3.02 DELIVERY AND STORAGE
22

- 23 A. Materials shall be delivered in manufacturer's original, sealed containers,
24 with labels and tags intact. Coating materials and equipment shall be
25 stored in designated areas. Coating containers shall be opened only
26 when required for use. Coatings shall be mixed only in designated areas
27 and in the presence of the Project manager, unless otherwise directed. Coatings
28 shall be thoroughly stirred or agitated to uniformly smooth consistency
29 and prepared and handled in a manner to prevent deterioration and
30 inclusion of foreign matter. Unless otherwise specified or approved, no
31 materials shall be reduced, changed, or used except in accordance with
32 the manufacturer's label or tag on container.
33

34 3.03 SAFETY REQUIREMENTS
35

- 36 A. In accordance with the requirements of applicable OSHA Regulations for
37 Construction, the Contractor shall provide and require the use of personal
38 protective equipment for all persons working in or about the project site.
39
40 B. Respirators shall be worn by all persons engaged in, and assisting in,
41 spray painting. In addition, workers engaged in or near the work during
42 sandblasting shall wear eye and face protection devices meeting the
43 requirements of ANSI Z87.1 latest revisions, and approved OSHA
44 Regulations for sand blasting operations and equipment including
45 approved air-purifying, half-mask or mouthpiece respirator with
46 appropriate filter.
47

1 C. Ventilation. Where ventilation is used to control potential exposure to
2 workers as set forth in Section 1910.94 of the OSHA Regulations for
3 Construction. Ventilation shall be adequate to reduce the concentration of
4 the air contaminant to the degree that a hazard to the worker does not
5 exist. Methods of ventilation shall meet the requirements set forth in
6 ANSI-Z9.2, latest revision.
7

8 D. Sound Levels. In accordance with Sections 1926.52 and 1926.101 of
9 OSHA Regulations for Construction, whenever the occupational noise
10 exposure exceeds maximum sound levels as set forth in Table D-2 ear
11 protective devices shall be fitted and used, and a continuing, effective
12 hearing conservation program shall be administered.
13

14 E. Cloths and cotton waste that might constitute a fire hazard shall be placed
15 in closed metal containers or destroyed at the end of each workday.
16

17 3.04 STORAGE, MIXING AND THINNING 18

19 A. Paint and coating materials shall be protected from exposure to cold
20 weather, and shall be thoroughly stirred, strained, and kept at a uniform
21 consistency during application. Materials of different manufacturers shall
22 not be mixed together. Packaged materials shall be thinned immediately
23 prior to application in accordance with the manufacturer's directions.
24

25 3.05 WORKMANSHIP 26

27 A. Skilled craftsmen and experienced supervision shall be used on all work.
28

29 B. All paint and coatings shall be applied in a workmanlike manner so as to
30 produce an even film of specified uniform thickness. Edges, corners,
31 crevices, and joints shall receive special attention to ensure that they have
32 been thoroughly cleaned and that they receive an adequate thickness of
33 paint. The finished surfaces shall be free from runs, drops, ridges, waves,
34 laps, brush marks, and variations in color, texture, and finish. The hiding
35 shall be so complete that the addition of another coat of paint would not
36 increase the hiding. All coats shall be applied so as to produce a film of
37 uniform thickness. Special attention shall be given to ensure that edges,
38 corners, crevices, welds, and similar areas receive a film thickness
39 equivalent to adjacent areas, and installations shall be protected by the
40 use of drop cloths or other approved precautionary measures.
41

42 3.06 PREPARATION FOR PAINTING AND PROTECTIVE COATING 43

44 A. All surfaces to receive paint and protective coatings shall be cleaned as
45 specified herein prior to application of coating materials. The Contractor
46 shall examine all surfaces to be coated, and shall correct all surface
47 defects before application of any coating material. Beginning the work of

PAINTING AND PROTECTIVE COATINGS

1 this Section without reporting unsuitable conditions to the Project manager
2 constitutes acceptance of conditions by the Contractor. Any required
3 removal, repair, or replacement of this work caused by unsuitable
4 conditions shall be done at no additional cost to the City. All marred or
5 abraded spots on shop-primed and factory-finished surfaces shall receive
6 touch-up restoration prior to any other coating application.
7

- 8 B. Mildew shall be removed and neutralized by scrubbing affected areas
9 thoroughly with a solution made by adding two (2) ounces of tri-sodium
10 phosphate and eight (8) ounces of sodium hypochloride to one (1) gallon
11 warm water. Use a scouring powder, if necessary, to remove mildew
12 spores. Rinse with clean water and allow to dry thoroughly before
13 painting.
14

15 3.07 ITEMS NOT TO BE COATED

16

- 17 A. Hardware (including all nuts, bolts, shafts, and bolt heads on CV plates),
18 aluminum, stainless steel, switch and receptacle plates, escutcheons,
19 hardware accessories, name plate data tags, machined surfaces and
20 similar items shall be removed or masked prior to surface preparation and
21 painting operations. Following completion of coating of each piece,
22 removed items shall be reinstalled. Such removal and installation shall be
23 done by workmen skilled in the trades involved.
24

25 3.08 SANDBLASTING

26

- 27 A. All sandblasting shall be done in strict accordance with the referenced
28 specifications of the Steel Structures Painting Council.
29
30 B. When items are to be shop primed or shop primed and finish coated in
31 the shop, surface preparation shall be as specified in this Section. The
32 Project Manager or Designee shall have the right to witness, inspect, and
33 reject any sandblasting done in the shop.
34
35 C. When sandblasting is done in the field, care shall be taken to prevent
36 damage to structures and equipment. Pumps, motors, and other
37 equipment shall be shielded, covered, or otherwise protected to prevent
38 the entrance of sand. No sandblasting may begin before the Project manager
39 inspects and approves the protective measures.
40
41 D. After sandblasting, dust and spent sand shall be removed from the
42 surfaces by brushing or vacuum cleaning.
43

44 3.09 APPLICATION OF PROTECTIVE COATINGS

45

- 46 A. Shop Coating. Fabricated metalwork and equipment which requires
47 coating shall be shop primed with specified primer. Any such work

PAINTING AND PROTECTIVE COATINGS

delivered to the job site with any other shop coat shall either have this coating removed or shall be recoated with "universal-primer", and the specified coating applied in the field. Manufactured equipment with approved corrosion resistant factory finishes and galvanized finishes shall be exempt from this requirement.

B. Application of Field Coatings.

1. Except where in conflict with the manufacturer's printed instructions, or where otherwise specified herein, the Contractor may use brush, roller, air spray, or so-called airless spray application; however, any spray painting must first have the approval of the Project manager. Rollers for applying enamel shall have a short nap. Areas inaccessible to spray coating or rolling shall be coated by brushing or other suitable means.
2. The Contractor shall give special attention to the work to ensure that edges, corners, crevices, welds, bolts, and other areas, as determined by the Project manager, receive a film thickness at least equivalent to that of adjacent coated surfaces.
3. All protective coating materials shall be applied in strict accordance with the manufacturer's printed instructions.
4. Prime coat shall be applied to all clean surfaces within a four hour period of the cleaning, and prior to deterioration or oxidation of the surface, and in accordance with the manufacturer's recommendations. Drift from sand-blasting procedures shall not be allowed to settle on freshly painted surfaces.
5. All coatings shall be applied in dry and dust-free environment. No coating or paint shall be applied when the surrounding air temperature, measured in the shade, is below 40 degrees F. No coating or paint shall be applied to wet or damp surfaces and shall not be applied in rain, fog or mist, or when the relative humidity exceeds 90 percent. No coating or paint shall be applied when it is expected that the relative humidity will exceed 90 percent or that the air temperature will drop below 40 degrees F within 8 hours after the application of the coating or paint. Dew or moisture condensation should be anticipated and if such conditions are prevalent, coating or painting shall be delayed until mid-morning to be certain that the surfaces are dry. The day's coating or painting shall be completed well in advance of the probable time of day when condensation will occur, in order to permit the film sufficient drying time prior to the formation of moisture.

PAINTING AND PROTECTIVE COATINGS

6. Each coat shall be applied evenly, at the proper consistency, and free of brush marks, sags, runs, and other evidence of poor workmanship. Care shall be exercised to avoid lapping paint on glass or hardware. Coatings shall be sharply cut to lines. Finished coated surfaces shall be free from defects or blemishes. Protective coverings shall be used to protect floors, fixtures, and equipment. Care shall be exercised to prevent paint from being spattered onto surfaces from which such paint cannot be removed satisfactorily. Surfaces from which paint cannot be removed satisfactorily shall be painted or repainted as required to produce a finish satisfactory to the Project manager. Whenever two (2) coats of a dark colored paint are

specified, the first coat shall contain sufficient powdered aluminum to act as an indicator of proper coverage, or the two (2) coatings shall be of a contrasting color.

7. Touch-up of all surfaces shall be performed after installation.

8. All surfaces to be coated shall be clean and dry at the time of application.

C. Time of Coating.

1. Sufficient time shall be allowed to elapse between successive coats to permit satisfactory recoating, but, once commenced, the entire coating operation shall be completed without delay. No additional coating of any structure, equipment, or other items designated to be painted shall be undertaken without specified permission of the Project manager until the previous coating has been completed for the entire structure, piece of equipment, or other items.

2. Piping shall not be finish coated until it has been pressure tested and approved.

D. Thickness of Coating. The dry film mil-thickness specified shall be achieved and verified for each coat.

E. Safety Color Coatings. Existing surfaces to remain which have been previously safety-color coated to identify a potential tripping or low head-room area shall be prepared and recoated with a similar safety color scheme unless directed otherwise by the Project

Any newly constructed areas which will present a potential tripping or low head-room area shall be coated safety yellow in accordance with the appropriate coating system as directed by the Project

PAINTING AND PROTECTIVE COATINGS

- 1
2 A. Inspection Devices. The Contractor shall furnish, until final acceptance of
3 coating and painting, inspection devices in good working condition for
4 detection of holidays and measurement of dry-film thickness of coatings
5 and paints. The Contractor shall also furnish U.S. department of
6 Commerce, National Bureau of Standards certified thickness calibration
7 plates to test accuracy of dry-film thickness gauge and certified
8 instrumentation to test accuracy. Dry-film thickness gauges shall be
9 made available for the Project manager's use at all times until final acceptance of
10 application.
11
- 12 B. The Contractor shall conduct film thickness measurements and electrical
13 inspection of the coated surfaces with equipment furnished by him and
14 shall recoat and repair as necessary for compliance with the
15 Specifications.
16
- 17 C. After repaired and recoated ferrous metals areas have cured, final
18 inspection tests will be conducted by the Project manager with equipment provide
19 by the Contractor. Coating thickness specified in mils on ferrous
20 substrates will be measured with a nondestructive magnetic type dry-film
21 thickness gage such as the Elecometer, manufactured by Gardner
22 Laboratories, Inc. Discontinuities, voids, and pinholes in the coatings will
23 be determined with a nondestructive type electrical holiday detector.
24 Epoxy coatings and other thin film coatings will be checked for
25 discontinuities and voids with a low voltage detector of the wet-sponge
26 type, such as Model M1 as manufactured by Tinker and Rasor. Use a
27 non-sudsing type wetting agent, such as Kodak Photo-Flo, which shall be
28 added to the water prior to wetting the sponge. A high voltage, low
29 current, spark type detector such as Model EP, manufactured by Tinker
30 and Rasor, will be used for electrical inspection of only coal tar enamel.
31 Tape type coatings will be inspected for holidays using a device designed
32 for use in detecting such flaws. All pinholes shall be marked, repaired in
33 accordance with the manufacture's printed recommendations and
34 retested. No pinholes or other irregularities will be permitted. Film
35 thickness discrepancies shall be measured and verified with a micrometer
36 or other approved measuring instrument with 5 readings taken every 100
37 ft² of painted surface. Coatings not in compliance with the Specifications
38 will not be acceptable and shall be replaced, and reinspected at
39 Contractor's expense until the Specifications are met.
40
- 41 D. On non-ferrous surfaces, dry film thickness readings shall be taken at
42 random locations with a Tooke Gauge at the rate of approximately five
43 readings per 100 square feet of surface. Grooves cut into coatings shall
44 be repaired by application of all coats of paint or coating film being tested.
45 The average of all readings for a given area or surface shall be within
46 required dry film thickness range and no individual reading shall be more

1 than 20 percent below the recommended dry film thickness. Any areas
2 that are found to be below standard shall be marked and recoated to
3 obtain proper film thickness.
4

5 3.11 CLEAN-UP
6

- 7 A. Upon completion of the work, staging, scaffolding, and containers shall be
8 removed from the site or destroyed in an approved manner. Paint spots,
9 oil, or stains upon adjacent surfaces shall be removed.
10

11 3.12 PAINT AND COATING SCHEDULE
12

- 13 A. General. The following schedule shall indicate the coating systems to be
14 used and applies to all new and renovated facilities, unless otherwise
15 specified. Color selection shall be as selected by the City. The list
16 shall not be construed as a complete list of all surfaces to be coated but
17 rather as a guide as to the application of the various coating systems. All
18 surfaces shall be painted except those specifically excluded herein.
19 Where reference is made to ferrous metal in this schedule, it shall not
20 include stainless steel.
21

- 22 B. General Coating System. The following table shall indicate the coating
23 system. For the coating systems, "Piping" shall be defined as all pipes,
24 valves, fittings, supports, and guides. Mechanical equipment shall include
25 all motors, pumps and accessory equipment requiring a protective
26 coating.
27

TABLE I

COATING SYSTEM SCHEDULE

Item

Service Condition

Exposed ferrous and galvanized metal piping and equipment (interior and exterior).	B
Exterior exposed ferrous metal, Fire hydrants, valve box lids, meter box lids, ballard/ guard post, above ground meter and backflow assemblies not exposed to a corrosive atmosphere	C
Exposed plastic and FRP pipe, conduit, and tankage.	E
Exterior of manholes, storm inlets, and interior/exterior of reject pond intake structure.	F
Exterior exposed wall surfaces of new and existing concrete tank or structure walls	F
Interior of sanitary manholes.	G
Guard posts (bollards) and hydrants.	B
Interior concrete and concrete block surfaces.	FDB
Exterior new and existing stucco surfaces	FDB

END OF SECTION

SECTION 31 23 33

EXCAVATION AND BACKFILL FOR PIPES

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. This work covers clearing and grubbing, site work, excavation, and backfill for sanitary sewers, force mains, potable water mains, reclaimed water mains and their appurtenances.

1.02. BURNING

- A. Burning of debris will not be permitted.

1.03 CLEAN-UP

- A. Clean-up is an essential part of the work. As the work progresses and is completed, the Contractor shall clean the various sites of all operations and completely restore all work areas to the satisfaction of the Project manager and the City. This clean-up shall be done as promptly as practical and shall not be left until the end of the construction period. No part of the work shall be considered complete, and no payment will be made, until clean-up is completed.
- B. It is the Contractor's responsibility to assure that all construction sites and all other affected properties are restored to a condition equal to, or better than, the existing conditions prior to construction. All restoration is subject to the approval of the Project manager and/or Property

Owners.

1.04 DRAINAGE

- A. It is the responsibility of the Contractor to maintain the existing drainage systems during construction. Any damage done to an existing drainage structure or system is to be immediately repaired to a condition equal to or better than its original condition.

1.05 DUST CONTROL

- A. It is the responsibility of the Contractor to control all dust problems that may occur during the construction with required watering. Dust control will be required seven days a week.

EXCAVATION AND BACKFILL FOR PIPES

1 1.06 SPRINKLERS

- 2 A. The Contractor shall be responsible for sprinklers encountered within the
3 area of excavation and shall make sure that if disturbed or damaged, they
4 shall be rebuilt to the satisfaction of the Project manager or property Owner and
5 with no additional cost to the City.

7 1.07 EROSION CONTROL

- 8
9 A. It is the Contractor's responsibility to erect suitable silt fences, hay bales or
10 other erosion runoff control devices prior to commencement of earth moving
11 or excavation activities. The Contractor shall be responsible for maintaining
12 the silt fences, hay bales or other erosion runoff control devices in an
13 effective manner, repairing or replacing damaged or ineffective section
14 during the course of the work until a ground cover of grass is established
15 and final environmental approval has been obtained.

17 1.08 PERMITS FOR DEWATERING OPERATIONS

- 18
19 A. The Contractor is responsible for obtaining all permits required for
20 dewatering discharges, including a Florida Department of Environmental
21 Protection Generic Permit for Produced Groundwater.

23 PART 2 - PRODUCTS

25 2.01 MATERIALS

27 A. General

- 28
29 1. Materials for use as fill are described below. For each material, the
30 Contractor shall notify the testing lab of the source of the material at
31 least ten (10) calendar days prior to the date of anticipated use of
32 such material.
33
34 2. Materials shall be furnished as required from off site sources and
35 hauled to the site.
36
37 3. Disposal of unsuitable material is specified in this Section.

39 B. Common Fill

- 40
41 1. Common fill shall consist of mineral soil, free of organic material,
42 loam, wood, trash and other objectionable materials, which may be
43 compressible or which cannot be compacted properly. Common fill
44 shall not contain stones larger than four inches in any dimension,
45 broken concrete, masonry, rubble, or other similar materials. It

shall have physical properties such that it can be readily spread and compacted during filling.

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 Project manager, is not suitable for reuse shall be spoiled as specified herein for disposal of unsuitable materials.

C. Crushed Stone

1. Crushed stone for pipe bedding shall be FDOT No. 57 in accordance with Section 901-2 of the FDOT Standard Specifications for Road and Bridge Construction.

D. Select Fill

1. Select fill shall be noncohesive, non-plastic material free of all debris, lumps or clods. Fill material shall be clean earth fill composed of sand or an approved mixture of clay and sand. Backfill material placed within one foot of piping and appurtenances shall not contain any stones or rocks larger than two inches in diameter, or three-quarter inch in diameter for PVC pipe.

PART 3 - EXECUTION

3.01 SAFETY PRECAUTIONS AND TEMPORARY WORKS

- A. The Contractor shall provide and maintain adequate barricades, construction signs, torches, flashers and guards as required in pedestrian and vehicular traffic areas. All safety rules and regulations of local authorities shall be observed. Local fire officials shall be kept advised of roads closed and roads re-opened.
- B. Where required, the Contractor shall provide suitable crossings at street intersections and driveways, and supply such aid, as may be required for pedestrians and motorists, including delivery vehicles, to safely negotiate the construction area. "Street Closed to Through Traffic" signs and "Detour" routes shall be indicated and maintained by the Contractor when the job is located in a public or private street or way. In the case of dead end streets, the Contractor shall advise all concerned residents and make all arrangements to maintain reasonable ingress and egress for the residents. Particular attention shall be given to residents in bad health, emergencies and emergency vehicles. The Contractor shall be responsible for building and maintaining all by-pass roadway areas and restoring those areas to their original condition.
- C. The Contractor shall furnish temporary or permanent support, adequate protection and maintenance of all underground facilities and utilities

EXCAVATION AND BACKFILL FOR PIPES

encountered. Support, protection, maintenance and restoration are the Contractor's responsibility at no additional cost to the City.

3.02 CLEARING AND GRUBBING

- A. The Contractor shall remove only vegetation such as trees, shrubs, and grass which interferes with the construction, as may be determined by the Project manager, and he shall preserve and protect all other existing vegetation.

3.03 EXCAVATION

A. General

1. The Contractor shall perform all excavation of every description, and of whatever substances encountered, to the depth indicated on the Drawings, or as otherwise specified.
2. Trench excavation shall be such that the pipe can be laid to the alignment and grade required. Trenches shall be shored and drained in such a manner that work may proceed safely and efficiently.
3. Trench dewatering pumps shall discharge to natural drainage channels, drains or sewers and shall be adequate to remove accumulated storm and/or subsurface water. The Contractor shall take necessary action to prevent surface water from flowing into the trenches. It is the responsibility of the Contractor to assure that all trench walls and trench bottoms are dry and remain dry during pipeline construction.
4. The Contractor shall separate, remove and dispose of excavated material not suitable for backfill, as directed by the Project manager.
5. All excavated material retained for backfill shall be piled in such a manner as not to endanger the work or obstruct the sidewalks, driveways or drainage. Fire hydrants, valve pit covers and hoses, curb stop boxes, fire and police call boxes and other utility controls shall be unobstructed and accessible at all times during construction.

B. Unclassified Excavation

1. Unclassified excavation shall include soil, clay, silt, sand, muck, gravel, hardpan, loose shale, loose stones in masses and boulders measuring less than one-half cubic yard in volume.

C. Classified Excavation

EXCAVATION AND BACKFILL FOR PIPES

1. Classified excavation shall be rock further defined as follows:
boulders, measuring one-half cubic yard or more in volume, rock material in ledges, bedded deposits and unstratified masses, conglomerate deposits firmly cemented and concrete or masonry structures, except sidewalks and paving, that in the opinion of the Project manager required for its removal drilling and blasting, wedging, sledging, barring or breaking up with a power operated hand tool.
2. No soft or disintegrated rock that can be removed with a hand pick or power operated excavator or shovel, no loose, shaken, or previously blasted rock or broken stone in rock fillings or elsewhere, and no rock exterior to the minimum limits of measurement allowed, which may fall into the excavation, will be considered as rock.

3.04 TRENCH PREPARATION

- A. Unsupported trench width shall be limited to the minimum practicable width allowing working space to place and compact the haunching material. The maximum width shall be the pipe diameter plus one foot on each side of the pipe at springline for pipe in unsupported trenches. In sheeted trenches the width of trench between faces of the sheeting shall be adequate to allow the pipe bedding and haunching to be placed and completed, and the sheeting removed without disturbing the bedding and haunching material within two pipe diameters on each side of the pipe. Trench boxes and moveable sheeting shall be wide enough to allow moving without disturbing the bedding and haunching within two pipe diameters on each side of the pipe. Trench boxes and moveable sheeting shall be constructed and used in the trench to avoid disturbing the piping, bedding and haunching when being moved forward in the trench.
- B. Dewatering of the trench bottom shall be accomplished using adequate means to allow preparation of bedding, placement of haunching and pipe in a trench environment without standing water. Dewatering shall continue until sufficient backfill is placed above the pipe to prevent flotation.
- C. The trench shall be dug so that the pipe can be laid to the alignment and depth required, and it shall be excavated only so far in advance of the pipe laying as allowed by the Project manager. The trench shall be so braced and drained that the workmen may work in it safely and efficiently. All trench preparation shall comply with all of the latest applicable Local, State (Florida Trench Safety Act) and Federal Regulations (OSHA: Safe Trench Act). It is essential that the discharge of the trench dewatering pumps be conducted to natural drainage channels, drains or storm sewers.
- D. Bell holes shall be provided at each joint to permit the joint to be made properly. Ledge rock, boulders and large stones shall be removed to

provide a clearance of six inches on all pipe twenty-four (24) inches and smaller and nine inches on pipe larger than twenty-four (24) inches. If such removal is required, backfilling will be done with selected material approved by the Project manager and tamped to establish the

proper grade. 5

E. Trench Bottom

1. Where the bottom of the trench at subgrade is found to be unstable or to include ashes, cinders, refuse, vegetable or other organic matter, or large pieces or fragments of inorganic material that, in the judgment of the Project manager, should be removed, the Contractor shall excavate and remove such unsuitable material to the width and depth as directed by the Project manager. Before the pipe is laid, the subgrade shall be made by backfilling with an approved material in three inch uncompacted layers. The layers shall be thoroughly tamped as specified by the Project manager to provide the uniform and continuous bearing support as heretofore described.
2. The trench shall be dry when the bottom is prepared. The trench bottom shall be excavated, or filled and compacted, as required to bring it to grade and shaped to receive and support the pipe barrel. In addition, bell holes shall be excavated so that after placement only the barrel of the pipe receives bearing pressure from and is uniformly supported by, the bottom of the trench. Preparation of the trench bottom and placement of the pipe shall be such that the final position of the pipe is true to line and grade, and uniformly supported throughout the barrel of each length. When pipe is placed in refill material, additional refill of the same material shall be tamped on each side of the barrel to the springline, thus forming a trough of firm bedding.

F. All materials that, in the opinion of the Project manager, are suitable for reuse in restoring the disturbed surface shall be kept separated from the general excavation material and can only be used as directed by the Project

manager. 35

G. All excavated material shall be piled in a manner that will not endanger the work and that will avoid obstructing sidewalks and driveways. Hydrants, valve pit covers, valve boxes, curb stop boxes, fire and police call boxes, or other utility controls shall be left unobstructed and accessible until the work is completed. Gutters, drainage inlets, natural water courses and miscellaneous drainage structures shall be kept clear or other satisfactory provisions made for their proper operation.

H. Hand methods for excavation shall be employed when damage to existing facilities is likely if heavy equipment is utilized or as directed by the Project manager.

EXCAVATION AND BACKFILL FOR PIPES

1
2 3.05 DEPTH
3

4 A. Gravity Sewers
5

- 6 1. The depth of trenches for gravity sewers shall be such that the invert
7 of the pipe will be at elevations shown on the plan .Gravity sewers
8 shall be on straight alignment and constant grade between manholes.
9

10
11 B. Overdepth
12

- 13 1. When classified excavation is required, the rock shall be excavated to
14 a minimum depth of six inches below the trench depths as indicated
15 on the drawings or Specifications. Authorized overdepths in rock
16 excavation shall be refilled to grade with loose granular moist earth or
17 shell thoroughly tamped in place.
18

19 C. Trench shall be excavated to the depth required so as to provide a uniform
20 and continuous bearing and support for the pipe on solid and undisturbed
21 ground at every point between bell holes, except as necessary for removal
22 of pipe slings or other lifting tackle. Any part of the bottom of the trench
23 excavated to a point below the specified grade shall be corrected with
24 approved material at the Contractor's expense and thoroughly tamped as
25 directed by the Project

26 manager. 26
27 D. Wherever unstable soil or muck that is determined by the Project manager to be
28 incapable of properly supporting the pipe is encountered in the bottom of the
29 trench, such material shall be removed to the required depth and the trench
30 refilled as specified to proper grade. If, in the opinion of the Project manager,
31 removal of the unstable material by this method is impractical, then the
32 Contractor shall support the pipe as detailed on the plans, or as directed by
33 the Project manager.
34

35 3.06 BACKFILL
36

37 A. General
38

- 39 1. The Contractor shall not perform any of the backfilling operations until
40 after he has inspected the lines and found them to be acceptable to
41 the City.
42
43 2. Backfill material shall consist of earth, loam, sandy clay, sand, gravel,
44 soft shale or other materials, free from organic materials, large clods
45 of earth, or stones. Where excavated material is not suitable for

backfill, it shall be replaced by excess excavated material from other areas.

3. In all areas, backfill material shall be deposited in six -inch layers and carefully tamped until the compacted backfill depth reaches one foot above the top of pipe.
4. No mechanical equipment, or machinery other than a hand operated mechanical vibrator, will be allowed within the trench area until the backfill has been properly tamped to one foot above the top of pipe. The remainder of the backfill shall be deposited in one foot layers and thoroughly tamped. Settling the backfill with water will be permitted, if approved by the Project manager.
5. Where trenches are improperly backfilled, or where settlement occurs, the trenches shall be reopened to the depth required for proper compaction, refilled and compacted, and the surface restored to the required grade and compaction, mounded over and smoothed off.

B. Gravity Sewers

1. Haunching of native material shall be placed to the springline and compacted. If ground water, or trench bottom conditions, is such as to require use of Class I material, either to aid in dewatering, or to provide foundation and bedding for the pipe, the haunching shall also be of Class I material. Class I material contains angular, 1/4 inch to 1 1/2 inch graded stone. Care shall be taken to place the haunching material, without voids, completely filling the trench from pipe wall to trench wall.

C. Compaction Requirements

1. Trenches located under pavement or inside the two feet horizontal to one foot vertical slope, downward from roadway shoulder or the back of curb and from spring line to bottom of sub-grade or the finished surface of the embankment, as appropriate, shall be compacted to a density of one hundred (100) percent as determined by AASHTO T-99 Method C.
2. Trenches located outside of the two feet horizontal to one foot vertical slope downward from roadway shoulder or the back of curb and where no vehicular traffic will pass over the trenches, back fill shall be compacted to a density approximately equal to that soil adjacent to

the trench but not less than ninety-five (95) percent of the maximum density as determined by AASHTO T-99, Method-C.

3. Backfill testing shall be performed in accordance with Pinellas Park Minimum Testing Frequency Requirements, latest edition, unless called out differently by the Project manager on the plan

documents. 7

D. Testing of Backfill

1. Trenching within, or across roadways, or other areas to be paved, or stabilized shall be backfilled and compacted to their full depth. Compaction shall be as specified in the Special Provisions or on the Plans.
2. Density tests for backfilled trenches within, or across roadways, shall be performed as specified or as directed by the Project manager, with at least one test taken at different locations for each vertical foot beginning from two feet over pipe to ground level.
3. Backfill testing shall be performed in accordance with Pinellas Park Minimum Testing Frequency Requirements, latest edition, unless called out differently by the Project manager on the plan
4. Where unsatisfactory compaction is revealed by the test, the Contractor shall re-excavate, backfill, re-compact and/or rework the backfill as required, to obtain the required degree of compaction over the entire depth of the trench.
5. Satisfactory backfill compaction is an integral part of pipe laying, paving, and stabilizing. Satisfactory density reports shall be on file before each Contractor's statement is submitted for payment.

documents. 23

E. Disturbance of Sewer Mains

1. Sewer mains shall be checked by the Contractor to determine whether any displacement of the pipe has occurred after the trench has been backfilled to two feet above the pipe. If such inspection shows poor alignment, displaced pipe or any defects, these defects shall be remedied to the satisfaction of the Project manager by the Contractor at his expense.

3.07 DISPOSAL OF SURPLUS MATERIAL

- A. All excavated material not required or not suitable for fill, or backfill, shall be disposed of by the Contractor, as directed by the Project manager.

EXCAVATION AND BACKFILL FOR PIPES

- 1
2 B. Material suitable for backfill is to be stockpiled on, or near site, until released
3 by the Project manager for

disposal. 4

5 3.08 SHEETING AND BRACING
6

- 7 A. The Contractor shall do all shoring and sheeting required to perform and
8 protect the excavation and, as required, for the safety of the employees.
9
10 B. All trenches shall be sheeted and braced as required by the Project manager and
11 all applicable Federal, State, City and Municipal regulations. Sheeting
12 and bracing shall be used to prevent shifting of adjacent soil and to
13 prevent damage to structures or the work. The sole responsibility for the
14 design, methods of installation, and adequacy of the sheeting and bracing,
15 shall be and shall remain that of the Contractor.
16
17 C. Sheeting and bracing or approved laying box shall be used in all trenches
18 unless the slopes are excavated until the natural angle of repose of the
19 soil is encountered.
20
21 D. In general, sheeting and bracing shall be removed as the excavation is
22 backfilled in such a manner as to avoid the caving in of the bank or
23 disturbance of adjacent areas or structures. The voids left by withdrawal
24 of the sheeting and bracing shall be carefully filled by jetting, ramming or
25 other means approved by the Project manager. Permission shall be obtained
26 from the Project manager prior to removal of any sheeting or bracing. Permission
27 shall not relieve the Contractor of any responsibility for damage due to
28 failure to leave such sheeting and bracing in place.
29
30 E. The Project manager may order, in writing, any or all sheeting or bracing to be left
31 in place for the purpose of preventing injury to adjacent structures,
32 property, etc. If left in place, such sheeting shall be cut off at the elevation
33 ordered, but in no case less than thirty-six (36) inches below the existing
34 grade. Bracing remaining in place shall be driven in tight. The right of the
35 Project manager to order sheeting and bracing to remain in place shall not be
36 construed as creating any obligation on his part to issue such orders.
37 Payment for sheeting and bracing, unless specifically called for on the
38 Drawings shall not be paid under separate item, but shall be included in
39 the payment for other items of Work.
40

41 3.09 DEWATERING BY WELLPOINT
42

- 43 A. Wellpoints shall be spaced and at sufficient depths as required to
44 eliminate water during the excavation period until the work is completed.
45 Ample means and equipment shall be provided with which to remove
46 promptly, and dispose properly all water entering any excavation. This

1 includes the use of sand or gravel as required to maintain adequate flow
2 during the pipe laying or installation of other items of work within the
3 excavation.
4

- 5 B. Water pumped or drained shall be disposed of in a suitable manner
6 without damage to adjacent property to other work under construction or
7 to street pavements or public parks. Water shall not be discharged onto
8 streets without adequate protection of the surface at the point of
9 discharge. All gutter, drains, culverts, sewers and inlets shall be kept
10 clean and open for surface drainage. Water shall not be directed across
11 or over pavements except through approved pipes or properly constructed
12 troughs. Contractor shall obtain permission from the owner of any
13 property involved before digging ditches or constructing water courses for
14 removal of water, and provide for disposal of the water without ponding or
15 creating a public nuisance. Water may be discharged into storm sewers.
16 Payment for dewatering shall not be paid for under a separate item, but
17 shall be included in the payment for other items of work, unless it is
18 specifically included as a Pay Item in the Contract.
19

20 3.10 APPURTENANCES
21

- 22 A. Excavation for manholes and other appurtenances shall be made to size
23 that will allow at least twelve (12) inches between their outer surfaces and
24 the embankment or shoring. Overdepth excavation and backfill to required
25 depth below such appurtenances that have not been directed by the
26 Project manager shall be at the expense of the

Contractor. 27

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29 END OF SECTION
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SECTION 31 23 34

EXCAVATION AND BACKFILL FOR STRUCTURES

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. This work involves clearing and grubbing, site work, excavation and backfill for sanitary sewer manholes, wet wells and other buried utility structures.

1.02 BURNING

- A. Burning of debris will not be permitted.

1.03 CLEANUP

- A. Cleanup is an essential part of the work. As the work progresses and is completed, the Contractor shall clean the site of all operations and completely restore the area to the satisfaction of the Project manager. cleanup shall be done as promptly as practicable and shall not be left until the end of the construction period. No part of the work shall be considered complete and no payment will be made until cleanup is completed.

- B. It is the Contractor's responsibility to assure that all construction sites and all other affected properties are restored to a condition equal to, or better than, the existing conditions prior to construction. All restoration is subject to the approval of the Project

manager.

1.04 DRAINAGE

- A. It is the responsibility of the Contractor to maintain the existing drainage systems during construction. Any damage done to an existing drainage structure or system is to be immediately repaired to a condition equal to or better than its original condition.

1.05 DUST CONTROL

- A. It is the responsibility of the Contractor to control all dust problems that may occur during the construction with required watering. Dust control will be required seven days a week.

1.06 SPRINKLERS

EXCAVATION AND BACKFILL FOR STRUCTURES

- 1
2 A. The Contractor shall be responsible for sprinklers encountered within the
3 area of excavation and shall make sure that if disturbed or damaged, they
4 shall be rebuilt to the satisfaction of the Project manager and with no additional
5 cost to the City. 6

7 1.07 EROSION CONTROL
8

- 9 A. It is the Contractor's responsibility to erect suitable silt fences, hay bales or other
10 erosion runoff control devices prior to commencement of earth moving or
11 excavation activities at the locations indicated on the plans. The Contractor shall
12 be responsible for maintaining the silt fences, hay bales or other erosion runoff
13 control devices in an effective manner, repairing or replacing damaged or
14 ineffective section during the course of the work until a ground cover of grass is
15 established.
16

17 1.08 PERMITS FOR DEWATERING OPERATIONS
18

- 19 A. The Contractor is responsible for obtaining all permits required for
20 dewatering discharges, including a Florida Department of Environmental
21 Protection Generic Permit for Produced Groundwater.
22

23 PART 2 – PRODUCTS
24

25 2.01 FILL MATERIALS
26

- 27 A. Compacted granular fill which will provide support for building or structure
28 foundations will be referred to as "structural fill." Backfill which is placed
29 against the exterior side of the building walls or structures, or as fill over
30 pipe lines, will be referred to as "common fill."
31
32 B. Materials for compacted structural granular fill shall be gravel, sandy
33 gravel, or gravely sand free of organic material, loam, wood, trash, and
34 other objectionable material and shall be well-graded within the following
35 limits:

<u>Sieve Size</u>	<u>Percent Finer by Weight</u>
6-in.	100
No. 4	20 - 95
No. 40	0 - 60
No. 200	0 - 8

- 41
42 C. Common Fill
43

- 44 1. Common fill shall consist of mineral soil, free of organic material,
45 loam, wood, trash and other objectionable material which may be
46 compressible or which cannot be compacted properly. Common fill

EXCAVATION AND BACKFILL FOR STRUCTURES

shall not contain stones larger than ten (10) inches in any dimension, broken concrete, masonry, rubble or other such materials. It shall have physical properties such that it can be readily spread and compacted during filling.

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 Project manager, is not suitable for reuse shall be spoiled as specified herein for disposal of unsuitable materials.

D. Crushed Stone

1. Crushed stone shall be used for a drainage layer below structures with underdrains and at other locations indicated on the Drawings.
2. Crushed stone shall be size No. 57 with gradation as noted in Table 1, Section 901 of Department of Transportation, Construction of Roads and Bridges.

2.02 UNSUITABLE MATERIAL

- A. Highly organic soil ASTM D 2487 Group PT, topsoil, roots, vegetable matter, trash and debris.

PART 3 – EXECUTION

3.01 SAFETY PRECAUTIONS AND TEMPORARY WORKS

- A. The Contractor shall provide and maintain adequate barricades, construction signs, torches, flashers and guards as required in pedestrian and vehicular traffic areas. All safety rules and regulations of local authorities shall be observed. Local fire officials shall be kept advised of roads closed and roads re-opened.
- B. Where required, the Contractor shall provide suitable crossings at street intersections and driveways, and supply such aid, as may be required for pedestrians and motorists, including delivery vehicles, to safely negotiate the construction area. "Street Closed to Through Traffic" signs and "Detour" routes shall be indicated and maintained by the Contractor when the job is located in a public or private street or way. In the case of dead end streets, the Contractor shall advise all concerned residents and make all arrangements to maintain reasonable ingress and egress for the residents. Particular attention shall be given to residents in bad health, emergencies and emergency vehicles. The Contractor shall be responsible for building and maintaining all by-pass roadway areas and restoring those areas to their original condition.

EXCAVATION AND BACKFILL FOR STRUCTURES

- 1
2 C. The Contractor shall furnish temporary or permanent support, adequate
3 protection and maintenance of all underground facilities and utilities
4 encountered. Support, protection, maintenance and restoration are the
5 Contractor's responsibility at no additional cost to the City. 6

7 3.02 CLEARING AND GRUBBING

- 8
9 A. The Contractor shall remove only vegetation such as trees, shrubs, and
10 grass which interfere with the construction, as may be determined by the
11 Project manager, and he shall preserve and protect all other existing

vegetation. 12

13 3.03 JOB CONDITIONS

- 14
15 A. Lateral Support of Excavation for Structures

- 16
17 1. Furnish, put in place, and maintain sheeting and bracing required to
18 support the sides of the excavations, to prevent any movement
19 which could in any way diminish the width of the excavation below
20 that necessary for proper construction, and to protect structures,
21 pipe and utilities from damage due to lateral movement or
22 settlement of ground. If the Project manager is of the opinion that at any
23 point sufficient or proper supports have not been provided, he may
24 order additional supports put in at the expense of the Contractor,
25 and compliance with such order shall not relieve or release the
26 Contractor from his responsibility for the sufficiency of such
27 supports.

- 28
29 B. Dewatering for Structures

- 30
31 1. Furnish, install, maintain, operate, and remove a temporary
32 dewatering system, as required to lower and control the
33 groundwater level, so that the structures may be constructed in the
34 dry. The Contractor shall, at his own expense, correct all damage
35 resulting from inadequacy of the dewatering system or from
36 flooding or the construction site from other causes.
37
38 2. The dewatering system shall be adequate to drain any excavated
39 area, to maintain the water at such a level as to permit construction
40 in the dry, and to maintain the lowered water table until the
41 structure has been completed to the required stages.
42
43 3. Continuously maintain excavation in a dry condition to prevent
44 damage to the subsoil or fill during interruptions due to weather,
45 labor strikes, power failures or other delays. Provide and have
46 ready for immediate use at all times diesel or gasoline powered

EXCAVATION AND BACKFILL FOR STRUCTURES

standby pumping units to serve the system in case of failure of the normal pumping units.

4. Piping and boiling, or any form of uncontrolled seepage, in the bottom or sides of the excavation shall be prevented at all times. If for any reason the dewatering system is found to be inadequate to meet the requirements set forth herein, the Contractor shall, at his own expense, make such additions, changes and/or replacements as necessary to provide a satisfactory dewatering system.

C. Control of Groundwater Level

1. Maintain the groundwater level at or below subgrade of the structure until the concrete structures are up high enough to: (1) prevent flooding the structure, (2) support both bottom and top levels of walls, and (3) prevent flotation.
2. After the structure has been completed in its entirety, backfill as described hereinafter.
3. Flotation shall be prevented by maintaining a positive and continuous operation of the dewatering system. The Contractor shall be fully responsible and liable for all damages which may result from failure of this system.
4. Disposal of drainage water shall be in an area approved by the Project manager. Precautions shall be taken to prevent the flow or seepage of drainage back into the drainage area. Particular care shall be taken to prevent the discharge of unsuitable drainage to a water supply or surface water body.
5. Removal of the dewatering system shall be accomplished after the dewatering system is no longer required.

3.04 EXCAVATION

A. General

1. The Contractor shall perform all excavation of every description, and of whatever substances encountered, to the depth indicated on the Drawings, or as otherwise specified.
2. Excavation shall be such that the structures can be installed at the grades required. Excavations shall be shored and drained in such a manner that work may proceed safely and efficiently.

EXCAVATION AND BACKFILL FOR STRUCTURES

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manager. 45
3. Dewatering pumps shall discharge to natural drainage channels, drains or sewers and shall be adequate to remove accumulated storm and/or subsurface water. The Contractor shall take necessary action to prevent surface water from flowing into the excavations. It is the responsibility of the Contractor to assure that all excavation walls and bottoms are dry and remain dry during construction.
 4. The Contractor shall separate, remove and dispose of excavated material not suitable for backfill, as directed by the Project
 5. All excavated material retained for backfill shall be piled in such a manner as not to endanger the work or obstruct the sidewalks, driveways or drainage. Fire hydrants, valve pit covers and hoses, curb stop boxes, fire and police call boxes and other utility controls shall be unobstructed and accessible at all times during construction.
- B. Unclassified Excavation
1. Unclassified excavation shall include soil, clay, silt, sand, muck, gravel, hardpan, loose shale, loose stones in masses and boulders measuring less than one-half cubic yard in volume.
- C. Classified Excavation
1. Classified excavation shall be rock further defined as follows: boulders, measuring one-half cubic yard or more in volume, rock material in ledges, bedded deposits and unstratified masses, conglomerate deposits firmly cemented and concrete or masonry structures, except sidewalks and paving, that in the opinion of the Project manager required for its removal drilling and blasting, wedging, sledging, barring or breaking up with a power operated hand tool.
 2. No soft or disintegrated rock that can be removed with a hand pick or power operated excavator or shovel, no loose, shaken, or previously blasted rock or broken stone in rock fillings or elsewhere, and no rock exterior to the minimum limits of measurement allowed, which may fall into the excavation, will be considered as rock.
- 3.05 STRUCTURE EXCAVATION AND COMPACTION PROCEDURES - GENERAL
- A. Excavation shall be made to such widths as will give suitable room for construction of the structures, for bracing and supporting, pumping and drainage; and the bottom of the excavations shall be rendered firm and dry and in all respects acceptable to the Project

EXCAVATION AND BACKFILL FOR STRUCTURES

- 1 B. Excavation and dewatering shall be accomplished by methods which
2 preserve the undisturbed state of subgrade soils. Subgrade soil which
3 becomes soft, loose, "quick," or otherwise unsatisfactory for support of
4 structures as a result of inadequate excavation, dewatering or other
5 construction methods shall be removed and replaced by structural fill as
6 required by the Project manager at the Contractor's
expense. 7
- 8 C. Dewatering shall be such as to prevent boiling or detrimental
9 underseepage at the base of the excavation as specified herein. The
10 Contractor shall install such means as required to preserve the stability of
11 the base of the operation.
12
- 13 D. Excavating equipment shall be satisfactory for carrying out the work in
14 accordance with the Specifications. In no case shall the earth be
15 ploughed, scraped or dug with machinery so near to the finished subgrade
16 as to result in excavation of, or disturbance of material below grade, the
17 last of the excavated material being removed with pick and shovel just
18 before placing of concrete or working mat thereon.
19
- 20 E. During final excavation to subgrade level, take whatever precautions are
21 required to prevent disturbance and remolding of the subgrade. Material
22 which has become softened and mixed with water shall be removed.
23 Hand excavation of the final three to six inches will be required as
24 necessary to obtain a satisfactory undisturbed bottom. The Project manager will
25 be the sole judge as to whether the work has been accomplished
26 satisfactorily.
27
- 28 F. All structure areas shall be stripped, cleared and grubbed of all surface
29 vegetation and root laden top soils.
30
- 31 G. After stripping, the structure areas should be leveled sufficiently to permit
32 equipment traffic and then proof-rolled with a vibratory roller with at least a
33 twenty (20) ton static weight. Careful observations should be made during
34 proof-rolling of the stripped subgrade area to identify any areas of soft
35 yielding soils that may require over excavation and replacement.
36
- 37 H. Compaction should continue until the minimum density specified in the
38 Special Provisions or on the Plans is achieved.
39

40 3.06 BACKFILLING AND COMPACTION

41

- 42 A. Structural fill shall be placed in loose lifts not exceeding twelve (12) inches
43 and should be compacted to the minimum density specified in the Special
44 Provisions or on the plans.
45

EXCAVATION AND BACKFILL FOR STRUCTURES

- 1 B. Common fill may be used as backfill against the exterior walls of the
2 structures, including manholes, wet wells and storm structures, or in other
3 areas as designated by the Project manager. Common fill shall be placed in
4 loose lifts not exceeding twelve (12) inches and should be compacted to
5 the minimum density specified in the Special Provisions or on the plans.
6
- 7 C. Materials placed in fill areas shall be deposited to the lines and grades
8 shown on the Drawings making due allowance for settlement of the
9 material and for the placing of topsoil thereon.
10
- 11 D. The surfaces of filled areas shall be grades to smooth true lines, strictly
12 conforming to grades indicated on the paving and grading Drawings, and
13 no soft spots or uncompacted areas will be allowed in the work.
14
- 15 E. No compacting shall be done when the material is too wet either from rain
16 or from excess application of water. At such times, work shall be
17 suspended until the previously placed and new materials have dried
18 sufficiently to permit proper compaction.
19
- 20 F. Density tests shall be performed by an engineering testing laboratory as
21 specified or as directed by the Project
manager. 22
- 23 G. When a density test is scheduled and a time agreed upon by the Project manager
24 and Contractor, it shall be the Contractor's responsibility to properly prepare
25 the area in advance.
26
- 27 H. Where unsatisfactory compaction is revealed by the test, the Contractor
28 shall re-excavate, backfill, re-compact and/or rework the backfill as required,
29 to obtain the required degree of compaction.
30

31 3.07 SHEETING LEFT IN PLACE

32

- 33 A. Where damage is likely to result from withdrawing sheeting, upon direction of
34 the Project manager, the sheeting shall be left
in place. 35

36 3.08 DISPOSAL OF SURPLUS MATERIAL

37

- 38 A. All excavated material not required or not suitable for fill, or backfill, shall be
39 disposed of by the Contractor, as directed by the Project manager.
40 B. Material suitable for backfill is to be stockpiled on, or near site, until released
41 by the Project manager for
disposal. 42

43 3.09 GRADING

44

- 45 A. Grading in preparation for placing of topsoil, planting areas, paved walks
46 and drives, and appurtenances shall be performed at all places that are
47 indicated on the Drawings, to the lines, grades, and elevations shown and

EXCAVATION AND BACKFILL FOR STRUCTURES

1 otherwise as directed by the Project manager. Such work shall be performed in a
2 manner that the requirements for formation of slopes, lines, and grades
3 can be followed. All material encountered, of whatever nature, within the
4 limits indicated, shall be removed and disposed of as directed. During the
5 process of grading, the subgrade shall be maintained in such condition
6 that it will be well drained at all times. When directed, temporary drains
7 and drainage ditches shall be installed to intercept or divert surface water
8 which may affect the progress or condition of the work.
9

10 B. If, at the time of grading, it is not possible to place any material in its
11 proper section of the permanent structure, it shall be stockpiled for later
12 use. No extra payment will be made for the stockpiling or double handling
13 of excavated material.
14

15 C. The right is reserved to make minor adjustments or revisions in lines or
16 grades, if found necessary as the work progresses, due to discrepancies
17 on the Drawings or in order to obtain satisfactory construction.
18

19 D. Stones or rock fragments larger than four inches in their greatest
20 dimensions will not be permitted in the top six inches of the finished
21 subgrade of all fills or embankments.
22

23 E. In cuts, all loose or protruding rocks on the back slopes shall be barred
24 loose or otherwise removed to line or finished grade of slope. All cut and
25 fill slopes shall be uniformly dressed to the slope, cross section, and
26 alignment shown on the Drawings or as directed by the Project
manager. 27

28 F. No grading is to be done in areas where there are existing pipe lines that may
29 be uncovered or damaged until such lines have been located and it has been
30 determined if such lines must be maintained are relocated, or where lines are
31 to be abandoned, all required valves are closed and remaining pipes are
32 plugged.
33
34
35

END OF SECTION

SECTION 32 12 01

STABILIZED AND ASPHALT ROADWAY RESTORATION

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. Contractor shall furnish all labor and materials required to restore stabilized roadways and asphalt paving as specified herein.
- B. Workmanship and materials shall be in accordance with Department of Transportation requirements for new pavement for roads under their jurisdiction. Any local or City Road shall be restored in accordance with permits or ordinances of the municipality having jurisdiction over such road or street. Restoration of flexible pavement shall conform to the approved permit or utility license for each road crossing.
- C. Where applicable, all work shall conform to the Technical Specifications of Florida Department of Transportation "Standard Specifications for Road and Bridge Construction", latest edition (Divisions II and III) and "Roadway and Traffic Design Standards", latest edition, including any amendments thereto. The Contractor shall acquire his own copies of the Department of Transportation Standards. In the event of conflict between the Department of Transportation Standards and the Specifications listed in these documents, the Project manager shall determine which shall govern.

1.02 SUBMITTALS

- A. Shop drawings for the proposed materials of construction, including an asphalt job mix formula, shall be submitted to the Project manager for approval at least two weeks prior to the application of stabilized or paved surfaces.

PART 2 – PRODUCTS

2.01 SUBBASE

- A. Materials used should be high bearing value soil, sand-clay, ground limestone, crushed limerock, coquina, or any other material suitable for stabilization. Muck shall not be used.

2.02 BASE

- A. Limerock for use as base material shall meet the requirements of Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Section 911. The limerock producer shall address

STABILIZED AND ASPHALT ROADWAY RESTORATION

each truck receipt to the Contractor and the job site. Each receipt will show the source of the material by D.O.T. pit number. One copy of each receipt will be submitted daily to the City for his records.

- B. Coquina shell used in the base course shall have an organic material of not greater than 0.5 percent nor contain significant quantities of sand or other impurities, which would prevent bonding. At least ninety-seven (97) percent of the coquina used shall pass through a 3 1/2-inch ring.
- C. Crushed concrete base material shall conform to the following gradation:

Sieve Size	Percent by Weight Passing
2"	100
1 1/2"	95-100
3/4"	65-90
3/8"	45-75
No. 4	35-60
No. 10	24-45
No. 50	5-25
No. 200	0-10

1. Material for Crushed Concrete Base shall consist only of crushed concrete and such additive materials as may be approved by the Project manager for the purpose of facilitating construction and achieving the desired characteristics of the finished in-place product. Material which shows a significant tendency toward adverse chemical or physical change on exposure to moisture will not be acceptable. The material shall be free of any ferrous metals.

2. The material shall not contain lumps, balls, or pockets of sand or clay material in size or quantity sufficient to be detrimental to the proper bonding, finishing or strength of the crushed concrete base.
3. The specific mechanical and physical properties of crushed concrete aggregate and any additive materials permitted in the construction of crushed concrete base shall be determined on the basis of test results as the work progresses.

D. Reclaimed Asphalt Pavement Base

1. Reclaimed asphalt base material may be used on paved shoulders, bike paths and other non-traffic applications. Materials shall be in accordance with Section 283 of the FDOT Standard Specifications for Road and Bridge Construction.

2.03 PRIME AND TACK COATS

- A. Bituminous prime coats shall be applied to previously prepared bases. Bituminous tack coats shall be placed on existing paved surfaces and between successive lifts of asphalt material.
- B. The prime coat shall be cut-back asphalt Grade RC-70 or RC-250, emulsified asphalt Grades SS-I or CSS-I, or other types and grades of bituminous material specified or approved by the Project manager.
- C. The tack coat shall be emulsified asphalt, Grades RS-2, SSI-I, CSS-I, SS-IH, CSS-IH, AS-60, AE-90, AE-150, or asphalt emulsion prime.
- D. A cover material must be placed on the prime coat to insure that the prime coat remains intact until the surface course is placed.

2.04 ASPHALT WEARING SURFACE

- A. The bituminous wearing surface applied shall be that specified in the Plans or contract documents.
- B. Asphalt mixes for FDOT roadways shall be as required by the FDOT permit or as specified.
- C. If no asphalt mix is specified on Pinellas Park roads, Type PC-III asphaltic concrete shall be used as the paving material, unless otherwise indicated. Design mix properties shall be in accordance with Pinellas City's Specifications.

1 PART 3 - EXECUTION

2
3 3.01 PAVEMENT AND BASE REMOVAL

- 4
5 A. Pavement removal shall be held to the minimum width consistent with
6 good construction practice. The pavement material shall be carefully
7 separated from other excavated materials and will not be permitted to be
8 included in the backfill, but shall be satisfactorily disposed of by the
9 Contractor. Base materials may be salvaged and stockpiled for reuse as
10 stabilizer, subject to the approval of the Project manager. Reuse of salvaged
11 base material as new base material is not permitted.
12

13 3.02 ASPHALT REMOVAL

- 14
15 A. All asphalt street pavement removed shall be replaced with base and
16 surface materials which are of a quality and thickness equal to or more
17 than the materials removed. The edges of the paving shall be cut to neat
18 lines beyond any settled or broken areas. Pavement shall be replaced as
19 soon as practicable after compaction of backfill.
20

21 3.03 SURFACE TREATED STREETS

- 22
23 A. All surface treated streets removed shall be replaced with at least six
24 inches of compacted shell or limerock as directed by the Project manager.
This
25 base shall be primed and sanded and maintained until overlaid.
26

27 3.04 REPLACING STABILIZED ROADWAY

- 28
29 A. The Contractor shall restore cuts in all stabilized roadway surfaces using
30 the same type and grade of material used on the existing street surface.
31 After the pipelines and/or appurtenances have been installed and properly
32 backfilled as herein specified, the Contractor shall bring the roadway
33 surface to grade and ready the surface to receive the stabilization
34 material. The stabilizing materials shall be of high-bearing value such as
35 sand, clay, oyster shell, coquina shell, rock screening, crushed concrete or
36 any other material which, as allowed by the agency with jurisdiction over
37 such road and that, in the opinion of the Project manager, is suitable
for
38 stabilization.
39
40 B. The stabilizing material shall be applied in such quantities as may be
41 necessary to bring the top six inches of the roadway surface to a bearing
42 value as hereinafter specified and to the proper line and grade. The
43 material shall be incorporated with the roadbed material by plowing,
44 disking, harrowing, blading, and mixing with a rotary tiller, or any other
45 equipment approved by the Project manager. The mixed materials shall be of

STABILIZED AND ASPHALT ROADWAY RESTORATION

uniform density throughout the width and depth of the layer being

processed. After thoroughly mixing to a uniform texture, the surface shall be compacted by rolling with any type of equipment that will produce the density required. Compaction shall continue until the entire depth to be stabilized has a value determined from tests made on the 6-inch compacted thickness, of not less than the requirements set forth by the agency having jurisdiction over the road.

3.05 RESURFACING

- A. When pavement replacement is complete, certain streets as directed by the City, shall be resurfaced for the full width of the existing paved section. Resurfacing shall be consistent with the requirements set forth by the governmental agency that has jurisdiction over the road.
- B. Materials for resurfacing shall be as specified on the Drawings.

3.06 SUBBASE PREPARATION

- A. Prior to installation of base material, the area shall be graded to within $0.2\pm$ feet, and soft, spongy or mucky material removed. Sufficient stabilizing material shall be cut in to achieve a Florida Bearing Value (FBV) in excess of 75 psi or limerock bearing ratio (LBR) greater than forty (40) pounds at a minimum density of ninety-eight (98) percent of a maximum density as defined and measured in ASSTHO T-180 (Modified Proctor), to a six inch minimum depth.
- B. Density tests for subbase materials shall be taken at three hundred (300) foot intervals in a staggered pattern and around structures as required. If compaction procedures allow, testing requirements may be reduced or increased at the Project manager's discretion.

3.07 BASE COURSE CONSTRUCTION

- A. General
 - 1. The base course shall be constructed on the prepared subgrade, in accordance with the Specifications and Plans. All base material shall be placed in accordance with the lines, grades, notes, and typical cross sections shown on the Plans. Any deviation from the Plans is subject to the approval of the Project manager. Any deviations not approved by the Project manager shall be repaired to the satisfaction of the Project manager at no expense to the City.

1 B. Limerock, Reclaimed Asphalt or Crushed Concrete Base Course
2

- 3 1. Base shall be spread by mechanical spreaders, equipped to produce
4 an even distribution with a uniform thickness. When the specified
5 compacted thickness of the base is greater than six inches, the base
6 shall be constructed in two courses. The thickness of the first course
7 shall be one-half the total thickness of the finished base. After
8 spreading is completed, the entire surface shall be scarified and
9 shaped so as to produce the required grade and cross section after
10 compaction. If two courses are required, each lift shall be prepared
11 as previously described. Prior to spreading of the upper course,
12 density tests will have been taken for the lower and determined to be
13 satisfactory.
14
- 15 2. When the material does not have the proper moisture content to
16 ensure the required density, it shall be wet or dried as required.
17 When adding water, it shall be uniformly mixed in by disking to the
18 full depth of the course that is being compacted.
19
- 20 3. All materials shall be compacted to a density of not less than
21 ninety-eight (98) percent of maximum density as determined by
22 AASHTO T 180. Density tests shall be taken at three hundred (300)
23 foot intervals in a staggered pattern and around structures as
24 required. Density determinations shall be made at more frequent
25 intervals, at no extra cost, if deemed necessary by the Project manager.
26
- 27 4. The finished surface of the base course shall be checked with a
28 template cut to the required crown and a fifteen foot straight edge laid
29 parallel to the center line of the road. All irregularities greater than
30 one-quarter inch shall be corrected to the satisfaction of the
31 Project manager.
32
- 33 5. The base material shall extend at least twelve (12) inches outside the
34 edge of the finished paved surface, unless otherwise indicated.
35 Thickness of the base shall be measured at two hundred (200) foot
36 intervals at various points in the cross section. Measurements shall
37 be taken at various points on the cross section through holes not less
38 than three inches in diameter and at locations, as specified by the
39 Project manager. Where the compacted thickness is deficient by
 one-half
40 inches or more, the Contractor shall correct the deficiency by
41 scarifying and adding material for a distance of one hundred (100)
42 feet in each direction from the edge of the deficient area. The
43 required thickness, compaction and cross section will then be
44 achieved.
45
46

- 1 6. Prime coat shall be applied only when the base meets the specified
2 density and the moisture content in the top half of the base does not
3 exceed ninety (90) percent of the optimum moisture of the base
4 material.

5
6 C. Asphalt Base Course.

- 7
8 1. Asphalt base courses shall be applied in accordance with DOT
9 Standards and Specifications, Section 234. The job mix formula
10 approved for the Project shall be used. Any deviation from the
11 approved mix must be submitted to the Project manager and
12 approved
13 before being implemented.

- 14 2. The base course material shall be placed with an approved paving
15 machine. A motor grader may be required if a leveling course is
16 needed. The base mix may be placed when the air temperature is
17 at least forty (40) degrees F and rising, provided that the sub-grade
18 is not frozen or affected by frost.

- 19
20 3. A paver, equipped with automatic screed control, shall be used for
21 all machine-laid courses. The automatic joint matcher shall be
22 used on the top course of the base after the first pass with a paving
23 machine. All mixtures shall be laid by the stringline method, with
24 the exception of areas adjacent to curb and gutter or other true
25 edges. The temperature of the mix shall be between three hundred
26 (300) degrees F and three hundred fifty (350) degrees F. Any
27 mixture caught by rain in transit may be laid at the Contractor's own
28 risk; if removal and replacement is required, it shall be at the
29 expense of the Contractor. In no case shall the mixture be spread
30 when rain is falling or when there is water on the surface to be
31 covered. The layer thickness for asphalt concrete structure
32 courses shall be as shown on the Drawings.

33
34 4. Compaction

- 35
36 a. After the asphalt mixture has been spread to the proper
37 lines, grades, and cross sections, compaction operations
38 may begin. The Contractor shall establish rolling procedures
39 and submit his sequence of compaction operations to the
40 Project manager for approval. The equipment used may

include,

41 but is not committed to steel-wheeled rollers, pneumatic tired
42 rollers, and vibratory rollers. Areas which are inaccessible to
43 a roller shall be compacted by the use of hand tamps or
44 other satisfactory means. An entire sequence of compaction
45 operations shall be performed for each layer of applied

material, density determinations shall also be made.

- 1
2 b. The in-place density of each course shall be determined
3 through core samples and the nuclear backscatter method.
4 A core sample of a representative paving section shall be
5 taken every two hundred fifty (250) feet. Additional testing
6 around manholes or other structures may be required. In
7 addition to density tests via core samples, Marshall stability
8 tests are also required. Marshall stability tests will be taken
9 for every day of asphalt pavement production.

10
11 E. Shell Base Course

- 12
13 1. Shell base material shall be constructed on the prepared subgrade
14 in accordance with these Specifications and in conformity with the
15 lines, grades and cross sections shown on the Plans. The shell
16 base shall be spread uniformly and evenly; during spreading
17 operations the shell shall be thoroughly saturated with water.
18
19 2. After spreading the shell shall be compacted, with water being
20 added as required, until the required density is obtained.
21 Compaction and density shall be as required for limerock base,
22 except that the testing methods shall be modified in the laboratory
23 and in the field. At least three density determinations shall be made
24 on each day's final compaction operations.
25
26 3. Upon completion of initial compaction, the entire surface shall be
27 scarified and shaped to exact crown and cross section. The base
28 shall then be rewatered and compacted to the required density.
29 The finished surface shall be tested with a template and fifteen (15)
30 foot straight edge. All irregularities greater than one-quarter inch
31 shall be corrected to the satisfaction of the Project manager. The
32 prime
33 coat shall be applied after the base meets all density and finish
34 requirements.

35 3.08 ASPHALT WEARING SURFACE

- 36
37 A. The asphalt wearing surface shall be constructed on the prepared base in
38 accordance with the Plans and Specifications and in conformity with the
39 indicated lines, grades, and cross sections.
40
41 B. The mixture shall be spread only when the base is clean, dry, properly
42 cured, and approved by the Project manager. The temperature shall be at
43 least
44 forty (40) degrees F and rising. No paving operations will be permitted if it
45 is raining or rain is imminent. The mix shall be between three hundred
(300) F and three hundred fifty (350) degrees F.

STABILIZED AND ASPHALT ROADWAY RESTORATION

- 1 C. The asphalt mixture shall be spread with an approved paving machine to
2 the required width and depth. All mixes, except those adjacent to curb
3 and gutter, shall be laid according to the stringline method. The depth of
4 each layer shall be checked every fifty (50) feet.
5
6 D. The mixture shall be compacted to its final depth, no less than one and
7 one half inch and thicker for new roads and one inch for overlays.
8 Compaction and layering procedures specified for asphalt base courses
9 shall apply to surface courses. All testing and density requirements will
10 also apply.
11
12 E. When laying operations are interrupted, a transverse joint shall be
13 constructed by cutting back on the previous run to expose the full depth of
14 material. Longitudinal joints are to be sloped or rolled over and sealed.
15 When the adjacent strip is constructed, the edge shall be trimmed back to
16 expose the unsealed face. All longitudinal construction joints shall be
17 offset six inches to twelve (12) inches laterally between layers.
18
19 F. When fresh mixture is laid against transverse or longitudinal joints, it shall
20 be placed in contact to produce an even, well compacted joint after rolling.
21
22 G. The finished surface shall be tested with a template and fifteen (15) foot
23 straight edge. Any irregularities shall be repaired to the satisfaction of the
24 Project manager. The surface shall be of uniform texture and compaction. No
25 sand
26 spots, ripples, or loosened portions shall be evident. No traffic shall be
27 allowed onto the finished surface until it is deemed acceptable by the
28 Project manager.
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Pinellas Park Public Works Roadway Pavement Guidelines

In accordance with City Ordinance 92-62, Article □□□, Section 154 (Ordinance Needs to be updated to show Superpave Surface Course)

	Arterial	Collector (Major/Minor) Commercial / Industrial	Residential Medium Traffic	Residential Light Traffic
Structural Coefficient	4.17	3.28	3.06	2.46
Asphalt Superpave Surface	Type SP-12.5 Fine, Traffic Level "C" 3" min. thick (2 lifts) (0.44) (1.32 Total)	Type SP-12.5 Fine, Traffic Level "C" 2" min. thick (0.44) (0.88 Total)	Type SP-9.5 Fine, Traffic Level "C" 1-1/2" min. thick (0.44) (0.66 Total)	Type SP-9.5 Fine, Traffic Level "C" 1-1/2" min. thick (0.44) (0.66 Total)
Base (Compacted 98% of AASHTO T-180)	Limerock 10 1/2" Min. Thickness (Min. 100 LBR) (0.18) (1.89 Total)	Limerock 8" Min. Thickness (Min. 100 LBR) (0.18) (1.44 Total)	Limerock 8" Min. Thickness (Min. 100 LBR) (0.18) (1.44 Total)	Limerock 6" Min. Thickness (Min. 100 LBR) (0.18) (1.08 Total)
Sub-Base (Compacted 98% of AASHTO T-180)	12" min. thickness (Stab. w/min. 40 LBR) (0.08) (0.96 Total)	12" min. thickness (Stab. w/min. 40 LBR) (0.08) (0.96 Total)	12" min. thickness (Stab. w/min. 40 LBR) (0.08) (0.96 Total)	9" min. thickness (Stab. w/min. 40 LBR) (0.08) (0.72 Total)
Two Lane Roadway Pavement Width	28' Total (with or without curbs)	28' Total (with or without curbs)	24' Total (with or without curbs) (28' for type F curb)	24' Total (with or without curbs) (28' for type F curb)
				4-10-08

Structural Layer Coefficients for Optional Base: Superpave Type B-12.5 Base= 0.30, Crushed Concrete Base= 0.15

10
11
12
13

END OF SECTION

SECTION 32 13 01

CONCRETE SIDEWALKS, DRIVEWAYS AND GUTTERS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. Contractor shall furnish all labor and materials required to restore and construct concrete sidewalks, driveways and gutters as specified herein.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Sidewalk shall be 3000 psi concrete, at least four feet wide, five feet wide on arterial and collector streets, and four inches thick, except at driveways. Driveway sidewalks shall be six inches thick with six inches by six inches #10 wire mesh reinforcing.
- B. Replacement of concrete driveways shall be in accordance with City Standards (six inches, 3000 psi/28 day with 6 x 6 # 10 mesh from back of curb to property line).
- C. Curb and curb and gutter shall consist of 3000 psi/28 day concrete.
- D. Expansion joints shall be installed between the back-of-curb and concrete driveways, and between concrete driveways and sidewalks, where new concrete abuts old concrete.

PART 3 – EXECUTION

3.01 CURB AND GUTTER

- A. Curb or curb and gutter removal, where required in the construction of this work, shall be held to a minimum. Curb and gutter material to be removed shall be carefully separated from the trench excavation material and shall be disposed of as directed. The Contractor shall replace all curb or curb and gutter which has been removed. Curb and gutter shall be removed up to the nearest regular joint on each side of the trench.
- B. Curb or curb and gutter shall be replaced as soon as possible after the backfill is placed and compacted and shall duplicate in all respects the original construction. Workmanship shall be in accordance with the best standard practices for this type of work. Curb and curb and gutter shall

1 consist of 3,000 psi/28 day concrete reinforced with bars or mesh of the
2 same size, spacing and number as the section of curb or curb and gutter it
3 replaces.
4

5 3.02 SIDEWALKS 6

7 A. Sidewalk removal, where required in the construction of this work, shall be
8 held to a minimum. Sidewalk material removed shall be carefully
9 separated from the trench excavation material and shall be disposed of as
10 directed. Sidewalk shall be cut at the nearest regular joint on each side of
11 the trench.
12

13 B. The Contractor shall replace all sidewalks which are removed. Sidewalks
14 shall be replaced as soon as practicable after the backfill is placed and
15 compacted and shall duplicate, in all respects, the original sidewalk.
16

17 C. The Contractor shall replace all sidewalks which are damaged by the
18 construction operation or by the heavy equipment traveling over them and
19 shall replace them at their own expense.
20

21 D. The top surface of all sidewalks shall be given a light broom finish.
22

23 3.03 DRIVEWAYS 24

25 A. Concrete driveways that are crossed or traversed by the trenches shall be
26 restored to the conditions existing prior to the excavation.
27

28 B. Removal shall be held to a minimum, but when necessary removal shall
29 be made in neat sawcut lines or to the nearest joint if approved by the
30 Project manager.
31

32 3.04 TESTS 33

34 A. The quality of the concrete as to conformance to the specifications is the
35 entire responsibility of the Contractor until it is accepted in place. When
36 required by the City or the Project manager, the Contractor shall arrange for
37 field testing. Field testing shall include, but may not be limited to, the
38 following:
39

- 40 1. Compressive Strength Test: Compressive strength tests shall be
41 made by breaking standard six inch diameter by twelve (12) inch
42 high test specimens prepared, cured and broken in accordance
43 with the American Society for Testing Materials Standard Methods
44 C 31 and C 39, Latest Revision. Four specimen test cylinders shall
45 be taken from each concrete pour of five cubic yards or more. One
46 additional test shall be taken from each fifty (50) cubic yards or

1 fraction thereof in each pour in excess of thirty (30) cubic yards.
2 One cylinder from each pour shall be broken at seven days, the
3 remainder at twenty-eight (28) days. Additional test cylinders may
4 be ordered for determining the characteristics of a new design mix
5 or changes in equipment or methods, and under adverse weather
6 or curing conditions.
7

8 2. Slump Test: Slump test shall be made in accordance with ASTM
9 C 143, and shall be made on each load of concrete unless directed
10 differently by the City or Project

11 manager. 11
12 3. Reports: Proper reports of all tests performed by the laboratory
13 shall be prepared by the laboratory and submitted promptly to the
14 City and Project manager. Such reports shall be properly labeled so as
15 to identify the portions of the Project into which the materials are
16 being placed, and the results of the test indicating whether or not
17 the test met the requirements of these specifications.
18

19 3.05 CAUSE FOR REJECTION

20
21 A. Should the concrete fail to conform to all the requirements of this
22 Section, the Project manager may require the Contractor to remove the
23 defective concrete and reconstruct the work as directed.
24
25
26

27 END OF SECTION
28
29

SECTION 32 92 01

SEEDING AND SODDING

PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. Where required by the Project manager, areas along the work shall be grassed and mulched in accordance with Section 570, of the latest edition of the State of Florida Department of Transportation "Standard Specifications for Road and Bridge Construction".
- B. The area to be grassed and mulched along the work shall include all damaged cover over the backfilled trench and area adjacent thereto irrespective of the cause of damage, whether it be from handling of pipe, trenching or driving equipment.

1.02 QUALITY ASSURANCE

A. Requirements

1. It is the intent of this Specification that the Contractor is obliged to deliver a satisfactory stand of grass as specified. If necessary, the Contractor shall repeat any or all of the work, including grading, fertilizing, watering, and seeding or sodding at no additional cost to the City until a satisfactory stand is obtained.

B. Satisfactory Stand

1. For purposes of grassing, a satisfactory stand of grass is herein defined as a full lawn cover over areas to be seeded or sodded, with grass free of weeds, alive and growing, leaving no bare spots larger than 3/4 square yard within a radius of ten (10) feet.

1.03 SUBMITTALS

- A. Provide technical data as required for shop drawings on all materials or installation procedures required under this Section.
- B. When required by the Project manager, submit representative topsoil samples for analysis by a private laboratory to determine nutrient deficiencies and outline a proper fertilization program.

SEEDING AND SODDING

1 PART 2 - PRODUCTS

2
3 2.01 MATERIALS

4
5 A. Fertilizer

- 6
7 1. Fertilizer shall be a complete fertilizer, the elements of which are
8 derived from organic sources. Fertilizer shall be a standard product
9 complying with State and Federal fertilizer laws.
10
11 2. Percentages of nitrogen, phosphorus and potash shall be based on
12 laboratory tests on the actual soils. For purpose of bidding, assume
13 four percent nitrogen, eight percent phosphorus and four percent
14 potash by weight. At least fifty (50) percent of the total nitrogen shall
15 contain no less than three percent water-insoluble nitrogen.
16
17 3. Fertilizer shall be delivered to the site, mixed as specified, in the
18 original unopened standard size bags showing weight, analysis and
19 name of manufacturer. Containers shall bear the manufacturer's
20 guaranteed statement of analysis, or a manufacturer's certificate of
21 compliance covering analysis shall be furnished to the Project manager.
22 Store fertilizer in a weatherproof place and in such a manner that it
23 will be kept dry and its effectiveness will not be impaired.
24
25 4. Superphosphate shall be composed of finely ground phosphate rock
26 as commonly used for agricultural purposes containing not less than
27 twenty (20) percent available phosphoric acid.
28

29 B. Seed

- 30
31 1. Grass seed shall be the same as existed prior to construction or as
32 approved by the Project manager and shall be ninety-nine (99) percent
33 minimum purity, eighty (80) percent minimum germination and one
34 percent maximum weed seed, labeled in accordance with U.S.
35 Department of Agriculture Rules and Regulations under Federal Seed
36 Act in effect. Seed which has become wet, moldy, or otherwise
37 damaged in transit or storage shall not be acceptable.
38

- 39 2. Hydroseed may be utilized if approved for use by the Project
manager. 40

41 C. Sod

- 42
43 1. Sod shall be St. Augustine or Argentine Bahia, or the same as existed
44 prior to construction, of firm texture having a compacted growth and
45 good root development as approved.

- 1 2. Sod shall be certified to meet Florida State Plant Board
2 Specifications, absolutely true to varietal type, and free from weeds or
3 other objectionable vegetation, fungus, insects and disease of any
4 kind.
5
6 3. Before being cut and lifted the sod shall have been mowed three
7 times with the final mowing not more than a week before cutting into
8 uniform dimensions.
9 D. Mulch
10
11 1. Mulch for use with seeding shall be fresh hay. Rate of application
12 specified herein shall correspond to depth not less than one inch or
13 more than three inches according to texture and moisture content of
14 mulch material.
15 E. Water
16
17 1. It is the Contractor's responsibility to water the site, as required during
18 seeding and sodding operations and through the maintenance period
19 and until the work is accepted. The Contractor shall make whatever
20 arrangements may be necessary to ensure an adequate supply of
21 water to meet the needs for his work. The Contractor shall also
22 furnish all necessary hose, equipment, attachments and accessories
23 for the adequate irrigation of lawns and planted areas as may be
24 required.
25

26 PART 3 - EXECUTION

27 3.01 SHOULDER STABILIZATION, SEEDING, MULCHING AND SODDING

- 28 A. The Contractor shall protect and restore road shoulders, ditch banks and
29 other natural or artificial slopes as directed by the Project manager. Except where
30 soil-cement rip-rap is shown and/or directed, protection shall be provided by
31 stabilizing to a minimum LBR as set forth by the agency with jurisdiction over
32 such road, and/or seeding and mulching the shoulders of the road.
33
34 B. The Contractor shall apply 4-8-4 fertilizer at a rate of six hundred (600)
35 pounds per acre on all seeded areas. All seed or seed mixture used is
36 subject to the approval of the Project
37 manager.
38

39 3.02 GRASS AND SHRUBBERY PLOTS

- 40 A. Grass plots and graded areas shall be restored to the condition existing prior
41 to making the excavation. All shrubbery, ornamental trees and other planting
42 shall be fully protected. If it is necessary to remove any shrubbery or
43 planting to accomplish the work, it shall be satisfactorily replaced before the
44 work will be accepted. A 4-8-4 fertilizer shall be applied to all replaced sod at
45
46

SEEDING AND SODDING

1 a rate of six hundred pounds per acre.

- 2
- 3 B. The areas in which the grass plots and shrubbery are to be replaced shall
- 4 contain sufficient moisture, as determined by the Project manager, for optimum
- 5 results after being placed. The areas shall be kept in a moist condition for no
- 6 less than three weeks. The moistened condition shall extend at least to the
- 7 full depth of the rooting zone.
- 8

9 3.03 NEW SOD PLACEMENT

- 10
- 11 A. Whenever a suitable area has been graded and requires sodding, the
- 12 Contractor shall, when directed by the Project manager, proceed at once with the
- 13 sodding of the available areas. Sodding shall be incorporated into the
- 14 Project at the earliest practical time in the life of the contract. No sod which
- 15 has been cut for more than seventy-two (72) hours shall be used unless
- 16 specifically authorized by the Project manager after his careful inspection thereof.
- 17 Any sod which is not placed within twenty-four (24) hours after cutting shall
- 18 be stacked in an approved manner and properly maintained,.
- 19
- 20 B. The sod shall be placed on the prepared surface, with edges in close
- 21 contact, and shall be firmly and smoothly embedded by light tamping or
- 22 rolling with appropriate tools or equipment.
- 23
- 24 C. Where sodding is used in drainage ditches, the setting of the pieces shall be
- 25 staggered, such as to avoid a continuous seam along the line of flow. Along
- 26 the edges of such staggered areas the offsets of individual strips shall not
- 27 exceed six inches. In order to prevent erosion caused by vertical edges at
- 28 the outer limits, the outer pieces of sod shall be tamped so as to produce a
- 29 feather-edge effect.
- 30
- 31 D. On areas where the sod may slide, due to height and slope, the Project manager
- 32 may direct that the sod be pegged with pegs driven through the sod blocks
- 33 into firm earth, at suitable intervals.
- 34
- 35 E. Any pieces of sod which, after placing, show an appearance of extreme
- 36 dryness shall be removed and replaced with new sod.
- 37
- 38 F. Ditch banks disturbed during the construction of ditch and creek crossings
- 39 shall be sodded when directed by the Project manager or when called for in the
- 40 permit requirements.
- 41
- 42 G. Watering and fertilizing requirements shall conform in all respects to those
- 43 specified above.
- 44

END OF SECTION

SECTION 33 01 32

SANITARY SEWER CLEANING AND TELEVISIONING

PART 1 – GENERAL

1.01 SCOPE

- A. The Contractor shall provide for routine maintenance cleaning and closed circuit television inspection (CCTV) of assigned pipes and inspection of manholes within the Pinellas Park sanitary sewer collection system including removal and disposal of debris removed during the cleaning process, which is preventing the design flow of the pipe, prevent blockages and restore the sewer to near full capacity and self-scouring velocity. The contractor shall be aware that this specification requires work in active sewers.
- B. The Work includes furnishing all plant, labor, tools, equipment and materials including various forms of specialized pipe cleaning, and televising of sanitary sewage mains and related manholes, and all operations to support the primary maintenance cleaning and inspection activities are also to be provided.
- C. This specification section also applies to new installation, replacement and repair inspection for compliance documentation of construction specifications.

1.02 SAFETY CODE REQUIREMENTS

- A. The Contractor shall conduct his operations in strict accordance with all applicable Federal, State, and Local safety codes and statutes and shall be fully responsible and obligated to maintain procedures for safety of the public as well as work, personnel and equipment involved in the project.
- B. The Contractor shall at all times during the course of the cleaning and televising conform to Occupational Safety and Health Administration (OSHA) and all other applicable safety codes or standards. No additional compensation will be allowed for OSHA or other safety code standards or requirements.
- C. The Contractors shall conform to traffic control requirements of the State of Florida Department of Transportation at all sites within roadway right-of-ways.

1.03 SUBMITTALS

SANITARY SEWER CLEANING AND TELEVISIONING

1
2 A. The Contractor shall submit the following information:
3

- 4 1. Information on all types of processes that will be used for cleaning.
5 2. Copies of PACP/ MACP certifications for personnel performing
6 television and manhole inspections.
7 3. Manufacturer's certification that the equipment to be used meets
8 the referenced standards and these specifications.
9 4. Proposed equipment and procedures for accomplishing the work.
10 5. Proposed personnel assigned to the cleaning work.
11

12 PART 2 – EQUIPMENT
13

14 2.01 CLEANING EQUIPMENT
15

- 16 A. All sanitary sewer pipes shall be cleaned with truck-mounted high velocity
17 hydraulic cleaning (hydra-cleaning) equipment and equipped vacuum
18 debris removal system. Sufficient high pressure hose length should be
19 available on the vehicle described to perform cleaning on manhole runs up
20 to 900 linear feet in length. High pressure hose should be at least 1 inch
21 in diameter with the ability to deliver at least 80 gallons per minute at
22 3,000 PSI. Water tanks on the vehicle should be at least 1,200 gallons in
23 capacity. All controls for cleaning equipment shall be located so that the
24 equipment can be operated above ground.
25
26 B. The nozzle and skids used for cleaning should be designed for use in a
27 manner consistent with the diameter of the pipe being cleaned. Specialty
28 heads and nozzles may be required for hardened debris, grease, and
29 scale removal.
30
31 C. Cutting heads to remove intruding roots or projecting obstructions will also
32 be required and shall be designed specifically for the diameter of the pipe
33 in which they are used.
34
35 D. Vacuum debris removal system shall be used to remove sand, silt, grease,
36 rocks, bricks, and all other debris from manholes during the cleaning
37 process. It is essential that the debris be removed from the wastewater
38 system and not allowed to move into adjacent pipes or manholes.
39 Wastewater removed from the collection system during the vacuuming
40 process can be decanted back into the system only after being allowed to
41 settle sufficiently to prevent solid materials from also re-entering the
42 system.
43
44 E. Contractor shall provide equipment capable of removing all sand, dirt,
45 rocks and other debris from the sewer reach to allow unobstructed remote
46 television internal inspection of all internal surfaces.

- 1
2 F. Cleaning system shall utilize a device capable of dislodging sediments
3 found in sewer lines without damaging the structural integrity of the pipe.
4 Cleaning devices shall have sufficient power to force and move the debris
5 commonly found in large diameter sewers to a manhole for extraction.
6 Cleaning method may maintain normal sewer flows during the cleaning
7 process.
8
9 G. Contractor shall certify that backup cleaning equipment, including
10 machines, devices, tools, etc, is available and can be delivered to the site
11 with in 24 hours.
12
13 H. Contractor shall provide all equipment required for specialty cleaning
14 including removing roots and de-scaling sewer pipes.
15

16 2.02 CLOSED CIRCUIT TELEVISION EQUIPMENT
17

- 18 A. Video inspection shall be performed using National Association of Sewer
19 Companies (NASSCO) Pipeline Assessment and Certification Program
20 (PACP) certified software.
21
22 B. Closed Circuit Television Inspection Equipment shall produce a color
23 video.
24
25 C. Pipe inspection camera shall be a pan-and-tilt and radial viewing pipe
26 inspection camera that pans a minimum of ± 275 degrees and rotates 360
27 degrees.
28
29 D. A slope indicator shall be included on the camera and accurately
30 calibrated per manufacture's instructions for measurement of pipe slope.
31
32 E. A camera with an accurate footage counter shall be used, which displays
33 on the monitor the exact distance of the camera from the centerline of the
34 starting manhole.
35
36 F. The camera will be capable of height adjustment so that the camera lens
37 is always centered at one-half the inside diameter, or higher, in the pipe
38 being televised.
39
40 G. Lighting for the camera shall be suitable to allow a clean picture of the
41 entire periphery of the pipe. A reflector in front of the camera may be
42 required to enhance lighting in dark or large diameter pipe.
43
44 H. The camera, television monitor and other components of the video system
45 shall be capable of producing a minimum 500-line resolution colored video
46 picture.

- 1
2 I. Video data shall be provided to the City in a digital format such as a
3 external removable drive, or other device or media, as required by the
4 City to be uploaded to the CCTV inspection database. 5
6 J. Video data shall be PACP database compliant and compatible with the
7 City's existing Granite XP software database system. 8
9

10 PART 3 – EXECUTION
11

12 3.01 NEIGHBORHOOD NOTIFICATION
13

- 14 A. Not less than 48 hours prior to the commencement of work in a right-of-
15 way, the Contractor shall notify all residents and businesses affected by
16 the work with an approved printed door hanger notice indicating the
17 schedule date of work, the type of work, and Contractor's and
18 superintendent's name, address and telephone number. The notice shall
19 contain wording indicating any disruption of sanitary service or access to
20 property that may be required to perform the work. Disruption in sanitary
21 sewer service shall not exceed four hours. Access to private property
22 shall be maintained at all times.
23

24 3.02 DEWATERING
25

- 26 A. All gravity sanitary sewer pipes (lines) less than 48" in diameter shall be
27 dewatered for cleaning and inspection purposes. Lines 48" and larger
28 may be cleaned and inspected without dewatering only when the City
29 agrees that dewatering is not feasible. Each exception to the dewatering
30 requirement shall be considered on a case by case basis. Contractor will
31 assume that dewatering is required for bidding purposes.
32
33 B. Dewatering may be accomplished by pumping water around the work area
34 or by plugging off pipes to isolate the portion of the system being worked
35 on while cleaning and performing inspection. If plugging the line is used
36 for dewatering purposes, the system must be properly monitored so that
37 no overflows occur. If a pipe that has been rehabilitated by the installation
38 of a liner is plugged, the liner must be braced at the manhole to prevent
39 movement of the liner pipe.
40

41 3.03 CLEANING
42
43

- 44 A. The sewers shall be cleaned by removing dirt, rock, sand, roots and other
45 deleterious materials from the pipe and manholes. The cleaning

1 equipment shall remove grease or roots and restore ninety-five (95)
2 percent of original pipe inside diameter.

3
4 B. All necessary precautions are to be taken to protect the sewer lines from
5 damage resulting from the cleaning and inspection process.
6 Reimbursement for damage to the sewer infrastructure or damage or
7 flooding of private or public property, as a direct or indirect result of the
8 cleaning and inspection operation shall be the responsibility of the
9 Contractor.

10
11 C. Contractor shall be responsible for all permits required to perform
12 assigned Work.

13
14
15 D. Contractor shall obtain permission from the property owner whenever
16 access to manholes in easements and right-of-way is required for
17 equipment.

18
19
20 E. Cleaning and inspection work required includes, but not limited to the
21 following:

- 22
23
24 a. Field locating all manholes along the sewer pipes to be cleaned.
25 b. Maintaining and protecting both vehicular and pedestrian traffic, and
26 meeting all requirements of the City and all other government
27 agencies having jurisdiction.
28 c. Cleaning and inspecting existing sanitary sewer pipes and manholes,
29 as herein specified, and to record the inspection information in the
30 format identified by the City.
31 d. Disposal of waste, sediment and debris as specified herein.
32 e. Removal of roots, scale, and protrusions as specified herein.
33 f. Cleaning and restoring the work area as the work progresses and after
34 the completion of all work activities.
35 g. All other work required for the complete and satisfactory cleaning and
36 inspection of the pipeline and adjacent manholes.

37
38 3.04 CLEANING PROCEDURE

39
40 A. After determining and performing all preliminary requirements, Contractor
41 shall thoroughly clean assigned pipelines sufficiently to permit an
42 unrestricted inspection by closed circuit television. The Contractor shall
43 remove accumulated grease, roots, sand, rock, bricks, sludge and all
44 other debris that obstructs video inspection such that all portions of the
45 pipe being inspected will be clearly visible.
46

- 1 B. Contractor shall remove all brick, rocks, debris, sludge, dirt, sand, grease,
2 roots and other materials from the sewers shown in the task order, and
3 collect and remove the resulting debris from the manholes of the sewer
4 section being cleaned. Equipment shall decant or separate the water from
5 the solids before it is transported to the designated disposal site. Liquid
6 decanted from the solids shall be returned to the sewer. Debris remaining
7 in the sewer after cleaning shall not exceed 5% of the pipe diameter.
8 Passing waste material between manholes, causing line stoppages,
9 accumulations of sand, or damage to the pumping equipment, shall not be
10 permitted.
11
12
13 C. Contractor shall complete a NASSCO Manhole Assessment and
14 Certification Program (MACP) manhole inspection form for both upstream
15 and downstream terminal manholes during cleaning and inspection
16 operation.
17
18
19 D. Normal cleaning consists of removing all debris and requires a minimum
20 of two passes. The first pass shall be restricted to 800 psi at the nozzle
21 head. The second and subsequent passes shall be at 1200 psi.
22
23
24 E. Specialty cleaning consists of removing all heavy grease, roots and
25 tuberculation by use of special equipment such as a high pressure de-
26 scaling head, root cutter, or other mechanical means approved by the
27 City.
28
29
30 F. Contractor is responsible for damage to the sewer as a direct result of the
31 cleaning method.
32
33
34 G. Contractor shall use all cleaning equipment in accordance with
35 manufacturer's recommendations to prevent damage to sewer lines.
36
37
38 H. Contractor shall immediately notify the City if fresh soil, pieces of pipe,
39 or other visible signs of potential problems occur during cleaning
40 operations.
41
42
43 I. Contractor shall ensure that water pressure created does not cause
44 damage due to flooding of property being served by sewer section(s)
45 involved.
46

1
2 J. Contractor shall conform to the following requirements:
3
4

5 a. Cleaning of upstream reached of sewers shall be completed before the
6 downstream reached are cleaned.
7

8 b. Hydraulic cleaning equipment shall be inserted in the downstream
9 manhole of the reach and the work shall proceed upstream unless
10 otherwise approved by the City.

11 K. Any blockages of lateral building connections resulting from the cleaning
12 or other items of work shall be removed by cleaning of the building
13 connection by Contractor, at its own expense. Any damage caused by
14 flooding of lateral building connections shall be corrected by Contractor, at
15 its own expense.
16
17
18
19

20 3.05 WASTE DISPOSAL
21

22 A. Waste materials and debris resulting from sanitary sewer cleaning
23 operations shall be removed and conveyed by the Contractor to an
24 approved waste site. The disposal site shall be accessible during the
25 Contractor's working hours. All permits required shall be the responsibility
26 of the Contractor. Waste material and debris resulting from the cleaning
27 operation shall be drained in the collection system and disposed of at
28 a place designated by the Project Manager or Designee. The material deposited
29 shall not exhibit
any liquid when deposited at the location as specified by Pinellas Park. Disposal
manifest records shall be supplied to
Pinellas Park. Under no circumstances shall sewage or solids
removed from sewer lines be dumped onto the streets or into ditches,
catch basins or storm drains. It shall not be necessary to stop the
cleaning operation while the debris is transported to the disposal site.
36

37 3.06 CLOSED CIRCUIT TELEVISION INSPECTION PROCEDURE
38

39 A. The Contractor shall provide Pinellas Park with digital media that
40 includes video and data base file that is compatible with Granite XP in
41 NASSCO PACP format. Compatibility issues with software other than
42 Granite XP latest version are the Contractor's responsibility.
43

44 B. CCTV inspection shall be performed by NASSCO PACP certified
45 operators who use NASSCO certified software that is compatible with
46 Granite XP latest version using PACP defect coding methodology.

- 1
- 2 C. Perform CCTV inspection immediately after line cleaning. Before insertion
- 3 of the camera into the sewer, the camera shall record on video the
- 4 upstream and downstream manhole, pipe size, specific location of the
- 5 sewer, and the direction in which the camera will travel. The camera shall
- 6 be moved through the line in either direction at a moderate rate, stopping
- 7 when necessary to permit proper documentation of the sewer's condition
- 8 in audio and documented on the television inspection log.
- 9
- 10 D. The camera height shall be adjustment so that the camera lens is always
- 11 centered at one-half the inside diameter, or higher, in the pipe being
- 12 televised.
- 13
- 14 E. The camera shall not travel at a speed greater than thirty (30) feet per
- 15 minute. To better understand the flow from each individual lateral the
- 16 camera shall be positioned at each lateral for a sufficient duration to
- 17 determine the nature of flow and condition of the lateral (minimum of 30-
- 18 seconds).
- 19
- 20 F. Videos shall pan beginning and ending manholes to demonstrate that all
- 21 debris has been removed. A manhole inspection shall be performed for all
- 22 manholes.
- 23
- 24 G. Manual winches, power winches, TV cable powered rewinds, or self-
- 25 propelled cameras may be used to move the camera through the sewer
- 26 line.
- 27
- 28 H. When manually operated winches are used to pull the television camera
- 29 through the line, telephones or other suitable means of communication
- 30 should be set up between the two manholes of the section being
- 31 inspected to insure good communication between members of the crew.
- 32
- 33 I. If during CCTV inspection of a pipeline, the television camera is unable to
- 34 pass through the entire manhole section, the Contractor shall set up his
- 35 equipment so that the inspection can be performed from the opposite
- 36 direction (reverse setup) in order to obtain a complete video of the line. If,
- 37 again, the camera fails to pass through the manhole section, the
- 38 inspection of the entire manhole section will be considered complete for
- 39 purposes of payment. Whenever such a condition arises, notify the
- 40 City to determine if an obstruction removal or point repair is necessary.
- 42 J. In the event that the TV camera encounters broken pipe and there is a
- 43 possibility that continuation of the inspection could cause the TV Camera
- 44 to become stuck or result in additional pipe damage or collapse, the
- 45 Project manager may elect to discontinue the

inspection. 46

1 K. Distance Measurements: The accuracy of the measurements for location
2 of defects, service connections, changes in pipe materials, and all other
3 PACP recognized conditions is paramount, particularly when it may
4 require later corrective action or a dig-up. The accuracy of the footage
5 meter shall be checked by taking a reading at the entrance to the away
6 manhole and comparing with a surface measurement made with a steel
7 tape or walking meter (Roll-A-Tape). These measurements shall be
8 performed by the Contractor in the presents of the Pinellas Park
9 Project Manager or Designee. Measurement meters shall be accurate to one-

10 tenth of a foot
11 over the entire length of the sewer line section being inspected.
12 Otherwise, the Contractor shall take corrective action.

13 L. The video inspection shall be clear and visible with adequate lighting to
14 enable the viewer to discern even small defects in the pipe being
15 inspected. Camera distortions, inadequate lighting, dirty lens, or
16 blurred/hazy picture will be cause for rejection of a video and rejection of
17 the associated line segment. Any pipeline reach television inspection
18 video that does not meet this requirement or fails to meet PACP
19 specifications shall be cause for Contractor to re-inspect the pipe at no
20 additional cost to the City. Payment for television inspection and sewer
21 rehabilitation will not be made until the City approves the quality of the
22 video and logs.

23 M. CCTV inspection video shall be continuous for pipe segments between
24 manholes. Do not leave gaps in the video of a segment between
25 manholes and do not show a single segment on more than one video,
26 unless specifically allowed by the City.

27 N. Documentation of television inspection by the Contractor shall be
28 performed in accordance with the Specifications. TV reports can be
29 assembled elsewhere, but documentation must be done in the field. A
30 video inspection report shall be prepared by the Contractor for every
31 segment and manhole that is CCTV-inspected. The Contractor shall
32 provide written records that show the location in relation to an identified
33 manhole of each infiltration point observed during inspection. In addition,
34 other points of significance such as locations of building sewers, unusual
35 conditions, roots, sewer connections, broken pipe, presence of scale and
36 corrosion, and other discernible features shall be recorded on the PACP
37 television inspection report. The video, PACP television inspection report
38 and the NASSCO Manhole Inspection Form version 4.3 or higher, with all
39 applicable fields accurately completed per PACP format, shall be supplied
40 to the City with each Pay Request. 43

44 3.07 REMOVAL OF DEBRIS
45

- 1 A. Materials generated by the cleaning operation shall be removed by
2 vacuuming at the upstream or downstream manhole of the section being
3 cleaned. Suitable traps or weirs shall be used to prevent the movement of
4 solids to adjacent sections of pipe.
5

6 3.08 WATER
7

- 8 A. The use of potable water from the municipal, private, or reclaimed water
9 systems for filling the water tanks on cleaning vehicles shall be permitted
10 however, Contractor shall be required to acquire and use a meter
11 approved by the City to monitor the use of this water and will be
12 charged for water use in accordance with the current rate as described in
13 Pinellas Park Policy Manual and the schedule of rates and fees. Contractor
shall
14 be responsible for obtaining and hooking up the potable water meter at his
15 own expense. A reduce pressure type backflow preventer approved by
16 the City shall be used to prevent contamination of the potable water
17 system. Contractor is responsible for any damage resulting from improper
18 operation of hydrants. Contractor shall not use or obstruct a fire hydrant
19 when there is a fire in the area.
20

- 21 B. Contractor shall not waste water from the public water supply because of
22 improper connections or from hydrants left open.
23
24

25 3.09 FINAL ACCEPTANCE OF SEWER LINE CLEANING
26

- 27 A. Acceptance of sewer line cleaning work is contingent upon the completion
28 of the CCTV inspection and successful review of the television inspection
29 video by the City. If the inspection shows the cleaning to be
30 unsatisfactory, Contractor shall be required to re-clean and re-inspect the
31 sewer line until the cleaning is shown to be satisfactory. Such re-cleaning
32 and re-inspection shall be made at Contractor's expense.
33

34 3.10 TRAFFIC CONTROL AND MAINTENANCE OF TRAFFIC
35

- 36 A. Refer to Section 01 55 26, Traffic Regulation
37
38 B. If required, the Contractor shall employ a uniformed off-duty police officer
39 to maintain and regulate traffic through the work area.
40
41
42
43

END OF SECTION

SECTION 33 01 33

MANHOLE REHABILITATION

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The intent of manhole repair is to provide a structurally sound and watertight manhole in place of an existing deteriorated manhole.
- B. Several types of manhole repair may be ordered: rebuilding, lining and replacement. The Project manager may change the type of repair for a particular manhole after visually inspecting the manhole.
- C. Costs for traffic control shall be included in the work item in right-of-ways with a City Functional Classification of Collector or less and locations not requiring more than Standard Index 612.
- D. Minor infiltration shall be considered as a part of manhole work effort. Very active infiltration as determined by the Project manager shall be paid in a separate Pay Item, if it is specifically included as a pay item in the Contract.

1.02 SUBMITTALS

- A: All materials and procedures required to establish compliance with the Specifications shall be submitted to the City/Project manager for review/approval.
- B. Submittals shall include at least the following:
 - 1. Descriptive literature, bulletins and/or catalogs of materials.
 - 2. Work procedures including flow diversion plan, method of repair, etc.
 - 3. Materials and method for repair of leaks or cracks in concrete structure.
 - 4. Final installation report on completed structures.

1.03 WARRANTY

- A. Manufacturer shall warrant all products against failure for a period of ten (10) years, performing repairs to the damage and restore the coating at no cost to

MANHOLE REHABILITATION

46 the City within sixty (60) days after written notification of the failure. For

warranty requirements for other lining material refer to specific liner system specification sections.

1.04 SUBSTITUTIONS

- A. Only after execution of the contract will Project manager consider requests from Contractor for substitutions. Substitutions will be considered only when a product becomes unavailable due to no fault of Contractor.
- B. Items identified as "equal" shall be accompanied by product literature and a written itemized comparison of the published specifications (feature by feature from the manufacturer's literature) for the item specified and for the item proposed. The burden of proof of "equality" shall be on the supplier.
- C. Request constitutes a representation that Contractor:
 - 1. Has investigated proposed product and determined that it meets or exceeds, in all respects, specified product.
 - 2. Will provide the same warranty for substitution as for specified product.
 - 3. Will coordinate installation and make other changes which may be required for Work to be complete in all respects.
 - 4. Waives claims for additional costs which may subsequently become apparent.
- D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals without separate written request, or when acceptance will require substantial revision of Contract Documents.
- E. Project manager will determine acceptability of proposed substitution, and will notify Contractor of acceptance or rejection in writing within a reasonable time.

PART 2 – PRODUCTS

2.01 PATCHING MATERIAL FOR MANHOLES

- A. Manhole patching material shall be as specified in the Materials Specification Manual.
- B. Active leaks shall be stopped using a rapid setting cementitious grout. Some leaks may require weep holes to localize the infiltration during the application after which the weep holes shall be plugged with rapid setting mix prior to the final liner application. When severe infiltration is present, drilling may be required in order to pressure grout.

1
2 2.02 PRESSURE GROUTING
3

- 4 A. Severe infiltration shall be repaired by pressure grouting using material
5 specified in the Material Specification Manual or approved equal.

7 2.03 CALCIUM ALUMINATE MANHOLE LINER
8

9 The coating to be applied shall be pure fused calcium aluminate mortar with pure
10 fused calcium aluminate as specified in Materials Specification Manual.
11

12 2.04 FIBERGLASS MANHOLE LINER
13

- 14 A. Fiberglass Liners shall be specifically manufactured for sewer use as
15 specified in Material Specification Manual. These products shall meet all
16 requirements of latest ASTM designation C-582 (plastic laminates) and
17 ASTM designation C-581 (chemical resistance). The properly installed
18 liners shall not fail under H-20 dynamic wheel load applied vertically.
19 Liner shall be installed in accordance with manufacturer's requirements.
20

21 2.05 MULTI-COMPONENT STRESS PANEL MANHOLE LINER SYSTEM
22

- 23 A. Multi-component stress panel liner system shall be as specified in
24 Material Specification Manual.
25

26 2.06 URETHANE/ EPOXY, POLYUREA MANHOLE LINER SYSTEM
27

- 28 A. Urethane/epoxy, polyurea liner system shall be as specified in Material
29 Specifications Manual.
30

31 2.07 POLYURETHANE MANHOLE LINER SYSTEM
32

33 Polyurethane liner system shall be as specified in Material Specification Manual
34

35 2.08 POLYMORPHIC RESIN MANHOLE LINER SYSTEM

- 36 A. Polymorphic Resin liner system shall be as specified in Materials
37 Specifications Manual.
38

39 PART 3 – EXECUTION
40 f

41 3.01 FIELD LAYOUT
42

- 43 A. The City supplied Atlas sheet, street address and other pertinent
44 information will identify the general location of the manhole. If there is any
45 question as to the general location described by the City, the Contractor

shall approach the Project manager and address the questions before beginning with the excavation.

3.02 MANHOLE ADJUSTMENT

A. Manhole ring and covers found to be above or below grade shall be adjusted by adding or removing rows of brick and mortar to meet the following specifications:

1. The top of the cone shall be set between two and one-half inches and fourteen and one-half (14 1/2) inches below the bottom of the manhole cover frame. It is the intent of the specifications to provide a minimum of two and one-half inches to accommodate future grade changes without disturbing the manhole.
2. Where the distance between the bottom of the manhole cover frame and the top of the cone is greater than fourteen and one-half (14 1/2) inches, 12-inch riser units shall be used to bring the top of the cone to within the limits specified.

3.03 MANHOLE REBUILDING

A. Manholes that have cracked rings, leaky risers or covers below grade may be designated to be rebuilt. The rebuilding shall include all labor, equipment, materials, including excavation and dewatering to accomplish the following:

1. Removing existing manhole down to required elevation and rebuild using brick or precast sections as directed by the Project
2. The Contractor shall then install a new manhole ring and cover as directed by the Project
3. The contractor shall install new stainless steel manhole insert to prevent surface water inflow into the collection system through the manhole lid, as directed by the project

3.04 MANHOLE LINING

A. Manholes may be designated to receive a new fiberglass liner and reducer cone. This lining will only be specified for forty-eight (48) inches in diameter or larger manholes. Installation of fiberglass liners and reducer cones shall include:

1. Excavation of an area sufficiently wide and deep for removal of the old castings, mortar and brick riser and the existing manhole top section.
2. The bottom of the manhole liner shall be cut to fit the existing manhole base as closely as possible. Cutouts in manhole liner shall be made to accommodate existing inlets, drops, and clean-outs. Cuts should be precisely made with a power saw fitted with masonry-type blade or with a special jigsaw. Fresh cut fiberglass shall receive two coats of polyester resin to resist wicking.
3. The manhole liner shall be lowered into the existing brick or concrete manhole and set into a quick-setting grout mixture. Good bottom seal shall be obtained in order to prevent loss of grout from the annular space between the outside of the manhole liner and the interior of the old manhole. A six inch height of a quick-setting grout shall be placed above the initial bottom seal in the annular space between the manhole liner and the existing brick or concrete manhole to insure adequacy of the bottom seal. The gap from drops, clean-outs materials, and existing piping between the existing manhole wall and the new manhole liner wall shall be bridged with short lengths of PVC or other corrosion-resistant pipe approved by the City. Quick-setting mortar shall be used to seal around all pipes.
4. The annular space between the manhole liner and existing brick or concrete manhole shall be filled with a Portland cement and sand grout. The grout shall be made with six bags of cement per cubic yard of grout.
5. As directed by the Project manager, the new ring and cover shall be replaced and finished to grade by constructing a chimney on the flat shoulder of the manhole liner using brick and mortar or precast concrete rings. In no case, shall the cast iron ring be placed directly on the manhole liner. All new rings and covers will be furnished by the Contractor.

3.05 MANHOLE PATCHING AND LINING

- A. This Section shall govern all work, materials and equipment required for manhole rehabilitation for the purpose of eliminating infiltration, providing corrosion protection, repair of voids and restoration of structural integrity of the manhole, as a result of spray applying a monolithic fiber-reinforced cementitious liner to the wall and bench surfaces of brick, concrete or any other construction material.
- B. The Applicator must be approved, trained and certified as having successfully completed factory training. The Applicator/Contractor shall

MANHOLE REHABILITATION

furnish all labor, equipment and materials for applying the coating directly to the contour of the manhole to form a structural cementitious liner of a minimum of one-half inch thickness using a machine specially designed for the application. All aspects of the installation shall be in accordance with manufacturer's recommendations and shall include the elimination of active infiltration prior to applying lining, the repair and sealing of inverts and benches, the removal of any loose or unsound material and patching.

- C. The manhole shall be prepared for coating by placing boards over inverts to prevent extraneous material from entering the sewer lines and to prevent up stream line from flooding the manhole. All foreign material shall be removed from the manhole wall and bench using a high pressure water spray (minimum 1,200 psi). Loose and protruding brick, mortar and concrete shall be removed using a mason's hammer and chisel or scraper.
- D. Active leaks shall be stopped using a rapid setting cementitious grout according to the manufacturer's recommendations. Some leaks may require weep holes to localize the infiltration during the application after which the weep holes shall be plugged with rapid setting mix prior to the final liner application. When severe infiltration is present, drilling may be required in order to pressure grout. Manufacturer's recommendations shall be followed when pressure grouting is required.
- E. Any bench, invert or service line repairs shall be made at this time using a quick-setting mix and following the manufacturer's recommendations.
- F. The surface, prior to spraying on the lining system, shall be damp without noticeable free water droplets, or running water. Materials shall be sprayed, applied to a minimum uniform thickness to insure that all cracks, crevices and voids are filled and a somewhat smooth surface remains after light troweling. The light troweling is performed to compact the material into voids and to set the bond.
- G. Not before the first application has begun to take an initial set (disappearance of surface sheen which could be fifteen (15) minutes to one hour depending upon ambient conditions) the second application should be made to assure a minimum total finished thickness of one-half inch. The surface shall then be troweled to a smooth finish being careful not to over trowel, so as to bring additional water to the surface to weaken it. A brush finish may be applied to the finished coat to remove trowel marks. Manufacturer's recommendation shall be followed whenever more than twenty-four (24) hours have elapsed between applications.
- H. The wooden bench covers shall be removed and when the bench is sprayed such that a gradual slope is produced from the walls to the invert

1 with the thickness at the edge of the invert being no less than one-half
2 inch. The wall-bench intersection shall be rounded to a uniform radius,
3 the circumference of the intersection.
4

- 5 I. For calcium aluminate mortar systems, curing should be implemented as
6 soon as the surface begins to harden and dry (as early as one hour after
7 application). Several layers of ASTM C-309 liquid membrane curing
8 compound or a 100%-humid moisture cure may be used.
9

10 3.06 TESTS

11 A. Procedure

- 12
13
14 1. Compressive strength tests shall be made by breaking 2-inch cube test
15 specimens prepared, cured and broken in accordance with the
16 American Society for Testing Materials Standard Method C-109, latest
17 version. Four specimen test cubes shall be taken from every fifty (50)
18 bags of product used or eight (8) manholes. One cube shall be broken
19 at seven days, the remainder at twenty-eight (28) days. Additional test
20 cubes may be ordered for changes in equipment or method, and under
21 adverse weather, or curing conditions.
22

23 B. Responsibility for Tests and Reports

- 24
25 1. The Contractor shall supply all cube molds, tools and labor for
26 preparing specimens.
27
28 2. The test cubes shall be tested in a recognized commercial testing
29 laboratory.
30

31 3.07 FINAL ACCEPTANCE

- 32
33 A. All completed manhole work will be inspected by the City. Any leaks or
34 cracks or defective workmanship shall be repaired to the satisfaction of
35 the Project manager at no cost to the City. Final acceptance will be granted
36 after surface restoration, if required, is complete.
37

38 END OF SECTION

SECTION 33 01 34

SANITARY SEWER PIPE REPAIRS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all labor and materials to repair sanitary sewer pipelines as specified herein.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 GENERAL

- A. The Contractor shall excavate and expose suspected damaged pipeline at general locations described by the City. The pipeline shall be exposed for visual inspection four feet on each side of the damaged area or as directed by the City. The City may authorize replacing bad joint materials (vitrified clay or concrete pipe) or removing and replacing the pipe.
- B. Crushed stone shall be used in pipe bedding and to help stabilize trench bottoms. Special attention shall be given to compacting the bedding underneath the pipeline and its haunches.
- C. Backfilling of repaired pipe shall proceed only in the presence of the Inspector.

3.02 VITRIFIED CLAY PIPE REPAIRS

- A. Repairs to VCP including cracked or crushed pipe, cracked bells, offset joints, holes, etc. shall be accomplished by replacing a section of damaged pipe with a piece of new C-900 PVC pipe. Such replacement shall be performed in accordance with the clay pipe manufacturer's recommendations. PVC repair sleeves shall be supplied by Contractor.

3.03 IRON PIPE REPAIRS

- A. Repairs to iron pipe shall be accomplished using one of two methods
1. One method will consist of the application of an appropriate repair sleeve. Refer to Material Specification Manual.

SANITARY SEWER PIPE REPAIRS

1 2. The second method will be used when the damaged area of pipe is
2 larger than recommended for the repair sleeves. This method
3 consists of cutting out the damaged section of pipe and replacing it
4 with a section of new ductile iron pipe.

5
6 B. The connections of new and old pipe shall be accomplished with two new
7 ductile iron solid sleeves. All iron pipe repair work shall be performed in
8 accordance with the manufacturer's recommendations. All repairs, including
9 sleeves, shall be wrapped in polyethylene encasement.

10
11 3.04 REINFORCED CONCRETE PIPE REPAIR
12

13 A. Reinforced concrete pipe repair shall be accomplished by the use of a
14 reinforced concrete collar. Reinforcing shall be circumferential with a
15 minimum cross-section area as specified in ASTM Des: C76 for Class V,
16 R.C.P. of the same diameter as the damaged pipe. For damaged areas
17 less than two feet in diameter, the collar may be the sole element of repair.
18 A cutout of corrugated metal pipe shall be placed over the damaged area
19 only to aid in the formation of the collar. The collar shall extend three
20 hundred sixty (360) degrees around the pipe and two feet past the damaged
21 area and corrugated metal in the longitudinal axis.

22
23 B. For larger repairs, the collar shall be used as a closure. The damaged pipe
24 length shall be removed and become the property of the Contractor. The
25 replacement length may be jointed with the existing pipe on one end only.
26 The existing portion of the joint shall be thoroughly cleaned and the rubber
27 gasket replaced. After fully seating the joint, the other end shall receive a
28 concrete collar closure extending two feet past the joint in the longitudinal
29 direction. If the new and existing joints are not identical, the closure shall be
30 used at both ends.

31
32 3.05 POLYVINYL CHLORIDE PIPE REPAIR
33

34 A. For non-pressure applications, existing and new pipe shall be jointed with
35 flexible couplings with stainless steel straps as approved in the
36 Material Specification Manual. Only the flexible coupling recommended by
37 the manufacturer for the particular pipes to be jointed shall be used.

38
39 B. For pressure pipe applications, repairs shall be made by one of the two
40 methods as specified for iron pipe, except replacement pipe shall be PVC
41 pressure pipe.

42
43 3.06 FINAL ACCEPTANCE
44

45 A. In the case of pressure pipe applications, after the pipe repair is complete
46 and still exposed, the pipeline will be placed in service. Visual inspection, by

1 the Project manager, of the repair while the pipeline is pressurized will provide
2 tentative acceptance of the repair, provided no leaks are present. Repair of
3 leaks or unsatisfactory work shall be performed at no cost to the City.
4 Final acceptance will be granted after proper backfilling and surface
5 restoration is accomplished.
6

7 B. In the case of non-pressure service, the Contractor shall backfill and have
8 the line inspected by a City Inspector. The line shall be inspected by one
9 of two methods: (1) inspection by mirrors and sunlight and/or (2) television
10 inspection as directed by the Project manager.
11

12 1. Upon submission of CD/DVD the City will review and verbally
13 respond within one working day. If the repair is not satisfactory to the
14 Project manager, the Contractor will, at no cost to the City, re-excavate,
15 make repairs, television inspect and backfill.
16

17 2. When the repair is satisfactory to the Project manager, the Contractor will be
18 directed to complete surface restoration. Upon satisfactory
19 completion of surface restoration, final acceptance will be granted.
20

21 3.07 PUMPING AND BYPASSING 22

23 A. When pumping and bypassing is required or ordered by the Project manager, the
24 Contractor shall supply the pumps, conduits, and other equipment to divert
25 the flow of sewage around the pipeline on which work is to be performed.
26 The bypass system shall be of sufficient capacity to handle existing peak
27 flow plus additional flow that may occur during a rainstorm. The Contractor
28 will be responsible for furnishing the necessary labor and supervision to set
29 up and operate the pumping and bypassing system.
30

31 B. When flow in a sewer line is plugged, blocked, or bypassed, sufficient
32 precautions must be taken to protect the sewer lines from damage that
33 might result from sewer surcharging. Further, precautions must be taken to
34 insure that sewer flow control operations do not cause flooding or damage to
35 public or private property being served by the sewers involved. Under no
36 circumstances shall sewage be discharged into/onto any place other than
37 another sewer manhole or a piece of equipment designed to carry sewage.
38 Any damage caused from the Contractor's neglect of these precautions is
39 solely the responsibility of the Contractor.
40
41
42

END OF SECTION

SECTION 33 05 21

HORIZONTAL DIRECTIONAL DRILLING

STANDARD SMALL DIAMETER INSTALLATIONS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The Work specified in this section consists of furnishing and installing underground utilities using the horizontal directional drilling (HDD) method of installation, also commonly referred to as directional boring or guided horizontal boring. This Work shall include all services, equipment, materials, and labor for the complete and proper installation, testing, restoration of underground utilities and environmental protection and restoration.
- B. Small Diameter Installation shall be defined as a HDD that the nominal outside diameter of the product pipe is twelve (12) inches or less.

1.02 SUBMITTALS

- A. Prior to beginning work, the Contractor must submit to the Project manager a Work plan detailing the procedure and schedule to be used to execute the Project. The Work plan should include a description of all equipment to be used, down-hole tools, a list of personnel and their qualifications and experience (including back-up personnel in the event that an individual is unavailable), list of subcontractors, a schedule of work activity, a safety plan (including MSDS of any potentially hazardous substances to be used), traffic control plan (if applicable), an environmental protection plan and contingency plans for possible problems. Work plan should be comprehensive, realistic and based on actual working conditions for this particular Project. Plan should document the thoughtful planning required to successfully complete the Project.
- B. The Contractor shall submit documentation that the proposed electrofusion personnel have been certified by the pipe or electrofusion accessory manufacturer.
- C. All drilling fluids and loose cuttings shall be contained. No fluids shall be allowed to enter any unapproved areas or natural waterways. Upon completion of the directional drill project, all excess drilling fluid and material shall be removed by the Contractor.

HORIZONTAL DIRECTIONAL DRILLING
STANDARD SMALL DIAMETER INSTALLATIONS

1
2 D. The Contractor shall submit a Bentonite Management Plan that includes the
3 following as a minimum.
4

5 1. Rapid response procedures - directional drilling shall be performed by
6 a Contractor who has the expertise required to perform the related
7 work. The Contractor shall designate qualified personnel and
8 equipment on the site during directional drilling operations responsible
9 for monitoring drilling fluid pressure, and watching surface conditions
10 for visual signs of frac-out. Contractor shall provide immediate
11 response and initiate containment procedures in the event of an
12 occurrence of a bentonite spill. In the event of a bentonite spill or
13 frac-out all drilling activities shall be stopped. Drill stem shall be
14 removed from the bore hole and the hole abandoned.
15

16 2. Containment procedures - sediment control systems such as: silt
17 fence or earth berms on uplands, and floating silt barriers or other
18 aquatic barriers in water, and other means necessary to prevent the
19 spread of the bentonite spill shall be installed immediately.
20

21 3. Timely cleanup capability - remediation of the lost bentonite shall
22 begin immediately. Cleanup shall include removal of the material
23 from the site by an approved method, and disposal of the material by
24 an approved method in an appropriate location as directed by the
25 City representative.
26

27 E. Contractor shall submit Specifications on directional drilling equipment to be
28 used to ensure that the equipment will be adequate to complete the Project.
29 Equipment shall include but not be limited to: drilling rig, mud system, mud
30 motors (if applicable), down-hole tools, guidance system and rig safety
31 systems. Calibration records for guidance equipment shall be included.
32 Specifications for any drilling fluid additives that Contractor intends to use or
33 might use will be submitted.
34

35 F. Specifications on material to be used shall be submitted to Project manager and
36 material shall include the pipe, fittings, drilling mud, drilling additives and any
37 other item which is to be an installed component of the Project or used
38 during construction.
39

40 1.03 QUALITY ASSURANCE 41

42 A. The requirements set forth in this Specification include a wide range of
43 procedural precautions necessary to insure that the very basic, essential
44 aspects of a proper directional bore installation are adequately controlled.
45 Strict adherence shall be required under specifically covered conditions

HORIZONTAL DIRECTIONAL DRILLING STANDARD SMALL DIAMETER INSTALLATIONS

outlined in this Specification. Adherence to the Specifications contained herein, or the Project manager's approval of any aspect of any directional bore operation covered by this Specification, shall in no way relieve the Contractor of their ultimate responsibility for the satisfactory completion of the Work authorized under the Contract.

- B. Drilling Notes: The pipe shall be installed to the exact lines and grades shown on the plans by a State of Florida licensed and bonded underground utility Contractor, with minimum two years experience in Directional Drilling.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the bore and pullback the pipe, a drilling fluid mixing, delivery system of sufficient capacity to successfully complete the crossing, a guidance system to accurately guide boring operations and trained and competent personnel to operate the system. All equipment shall be in good, safe operating condition with sufficient supplies, materials and spare parts on hand to maintain the system in good working order for the duration of this Project.

2.02 PRODUCT PIPE, JOINTS AND FITTINGS

A. PIPE

1. All product pipe to be installed by the HDD operation will be High Density Polyethylene (HDPE), Restrained Joint PVC or Restrained Joint Ductile Iron pipe.
2. Refer to material specifications for material requirements.
3. Refer to piping sections of this specification for pipe handling requirements.

B. FITTINGS

1. Refer to material specifications for material requirements.

C. DRILLING FLUID (MUD) SYSTEM

1. Drilling fluid shall be composed of a carrier fluid (water) and drilling fluid additives (bentonite and/or polymers). Bentonite is a naturally occurring clay mineral (montmorillinite) that forms a mud when mixed with water.

HORIZONTAL DIRECTIONAL DRILLING STANDARD SMALL DIAMETER INSTALLATIONS

- 1 2. The composition of the drill fluid is determined by the results of
2 geological investigation executed in line with the framework of the
3 project planned before construction.
- 4
- 5 3. The principal functions of drilling fluids used in HDD are:
- 6
- 7 a. Transporting drill cuttings to the surface by suspending and
8 carrying them in the fluid stream flowing in the annulus
9 between the borehole wall and the drill
10 pipe/product.
- 11
- 12 b. Cleaning build-up on drill bits or reamer cutters by directing
13 fluid streams at the cutters.
- 14
- 15 c. Cooling the downhole tools and electronic equipment.
- 16
- 17 d. Lubricating to reduce the friction between the drill pipe/product
18 pipe and the borehole wall.
- 19
- 20 e. Stabilizing the borehole, especially in loose or soft soils by
21 building a low permeability filter cake, and exerting a positive
22 hydrostatic pressure against the borehole wall. The filter cake
23 along with positive hydrostatic pressure reduces collapse of
24 the borehole and prevents formation fluids (i.e. groundwater)
25 from flowing into the borehole or drilling fluids from exiting the
26 borehole into the formation (loss of circulation).
- 27
- 28 f. The Contractor shall provide hydraulic power to the borehole
29 with a downhole mud motor.
- 30
- 31 g. The following fluid properties are to be tested and considered
32 to assure compatibility between the drilling fluid mixture and
33 the native soil after proper identification and characterization.
34 These fluid properties are density, viscosity, pH – value,
35 circulation, volume and solid content.
- 36
- 37 h. The drilling fluid pressures and flow rates shall be continuously
38 monitored and recorded by the Contractor at the pump and
39 within the annular space within thirty (30) feet of the drilling
40 head.
- 41

42 2.03 DRILLING SYSTEM

43

- 44 A. The directional drilling machine shall consist of a hydraulically powered
45 system to rotate, push and pull hollow drill pipe into the ground at a variable

HORIZONTAL DIRECTIONAL DRILLING STANDARD SMALL DIAMETER INSTALLATIONS

1 angle while delivering a pressurized fluid mixture to a guidable drill (bore)
2 head. The machine shall be anchored to the ground to withstand the pulling,
3 pushing and rotating pressure required to complete the crossing. The
4 hydraulic power system shall be self-contained with sufficient pressure and
5 volume to power drilling operations. Hydraulic system shall be free of leaks.
6 Rig shall have a system to monitor and record maximum pull-back pressure
7 during pull-back operations. The rig shall be grounded during drilling and
8 pull-back operations. There shall be a system to detect electrical current from
9 the drill string and an audible alarm which automatically sounds when an
10 electrical current is detected.

11
12 B. The drill head shall be steerable by changing its rotation and shall provide
13 the necessary cutting surfaces and drilling fluid jets.

14
15 C. Mud motors (if required) shall be of adequate power to turn the required
16 drilling tools.

17
18 D. The drill pipe shall be constructed of high quality 4130 seamless tubing,
19 grade D or better with thread.

20 21 2.04 GUIDANCE SYSTEM

22
23 A. The method of guidance utilized in locating and steering the pilot string from
24 entry to exit shall be state of the art. Readings shall be recorded after the
25 advancement of each successive drill pipe and the readings plotted. Access
26 to all recorded readings and plan and profile information shall be made
27 available to the Project manager or Designee at all times.

28 29 2.05 DRILLING FLUID (MUD) SYSTEM

30
31 A. A self-contained, closed, drilling fluid mixing system shall be of sufficient size
32 to mix and deliver drilling fluid composed of bentonite clay, potable water and
33 appropriate additives. Mixing system shall be able to molecularly shear
34 individual bentonite particles from the dry powder to avoid clumping and
35 ensure thorough mixing. The drilling fluid reservoir tank shall be a minimum
36 of five hundred (500) gallons. Mixing system shall continually agitate the
37 drilling fluid during drilling operations.

38
39 B. Drilling fluid shall be composed of clean water and bentonite clay. Water
40 shall be from an authorized source with a pH of 8.5 - 10. Water of a lower pH
41 or with excessive calcium shall be treated with the appropriate amount of
42 sodium carbonate or equal. The water and bentonite clay shall be mixed
43 thoroughly and be free of any clumps or clods. No additional material may be
44 used in drilling fluid without prior approval from Project manager. Contractor is
45 responsible for provisions to obtain clean water for the fluid.

HORIZONTAL DIRECTIONAL DRILLING STANDARD SMALL DIAMETER INSTALLATIONS

1 The Bentonite mixture used shall have the minimum viscosities as measured
2 by a March Funnel:

3
4 Rock, Clay - 60 sec.

5 Hard Clay - 40 sec.

6 Soft Clay - 45 sec.

7 Sandy Clay - 90 sec.

8
9 Stable Sand - 80 sec.

10 Loose Sand - 110 sec.

11 Wet Sand - 110 sec.

12
13 These viscosities may be varied to best fit the soil conditions encountered,
14 as approved by the Project

manager. 15

16 C. Additives to drilling fluid such as drill soap, polymers, etc. shall be
17 "environmentally safe" and be approved for such usage. No diesel fuel will
18 be used.

19
20 D. The mud pumping system shall have a minimum capacity of 50 GPM and be
21 capable of delivering the drilling fluid at a constant minimum pressure of
22 1000 psi. The delivery system shall have filters in-line to prevent solids from
23 being pumped into the drill pipe. Connections between the pump and drill
24 pipe shall be leak-free. Used drilling fluid and drilling fluid spilled during
25 drilling operations shall be contained and properly disposed of. A berm, or
26 equivalent, shall be maintained around drill rigs, drilling fluid mixing system,
27 entry and exit pits and drilling fluid recycling system to prevent spills into the
28 surrounding environment. Pumps and or vacuum truck(s) of sufficient size
29 shall be in place to convey excess drilling fluid from containment areas to
30 storage and facilities.

31 32 2.06 OTHER EQUIPMENT

33
34 A. Pipe rollers shall be of sufficient size to fully support the weight of the pipe
35 while being hydro-tested and during pull-back operations. Sufficient number
36 of rollers shall be used to prevent excess sagging of pipe. Rollers shall be
37 used as necessary to assist in pull back operations and in layout/fusing of
38 material.

39
40 B. Hydraulic or pneumatic pipe rammers may only be used if necessary and
41 with the authorization of Project

manager. 42

43 C. Other devices or utility placement systems for providing horizontal thrust
44 other than those previously defined in the preceding sections shall not be
45 used unless approved by the Project manager prior to commencement of the Work.

HORIZONTAL DIRECTIONAL DRILLING STANDARD SMALL DIAMETER INSTALLATIONS

1 Consideration for approval will be made on an individual basis for each
2 specified location. The proposed device or system will be evaluated prior to
3 approval or rejection on its potential ability to complete the utility placement
4 satisfactorily without undue stoppage and to maintain line and grade within
5 the tolerances prescribed by the particular conditions of the Project.
6

7 PART 3 – EXECUTION

8

9 3.01 GENERAL

10

- 11 A. Contractor to contact Pinellas Park Utilities at least forty-eight (48) hours
12 before each of the following activities: 1) the set up of a drilling pit, 2) the
13 start of drilling operation, 3) the installation of service pipe. Upon completion
14 of the pilot hole phase of the operation, a complete set of as-built records
15 shall be submitted in duplicate to the Project manager. These records shall include
16 copies of the plan and profile drawing, as well as directional readings
17 recorded during the drilling operation.
18
- 19 B. The drawings show existing utilities that are believed to be near the
20 directional drill alignment. There is no guarantee that these utilities are
21 located as shown or that other utilities may not be present. The Contractor is
22 to field locate existing utilities in advance of the work so as not to delay work
23 and avoid conflict or disruption of utility services.
24
- 25 C.
26

27 3.02 PERSONNEL REQUIREMENTS

28

- 29 A. All personnel shall be fully trained in their respective duties as part of the
30 directional drilling crew and in safety. Each person must have at least two
31 years directional drilling experience. A competent and experienced
32 supervisor representing the Contractor and Drilling Subcontractor shall be
33 present at all times during the actual drilling operations. A responsible
34 representative who is thoroughly familiar with the equipment and type work to
35 be performed, must be in direct charge and control of the operation at all
36 times. In all cases the supervisor must be continually present at the job site
37 during the actual directional bore operation. The Contractor and
38 Subcontractor shall have a sufficient number of competent workers on the
39 job at all times to insure the directional bore is made in a timely and
40 satisfactory manner.
41

42 Personnel who are unqualified, incompetent or otherwise not suitable for the
43 performance of this Project shall be removed from the jobsite and replaced
44 with a suitable person.

45 3.03 DRILLING PROCEDURE

HORIZONTAL DIRECTIONAL DRILLING STANDARD SMALL DIAMETER INSTALLATIONS

- 1
2 A. Work site as indicated on drawings, within right-of-way, shall be graded or
3 filled to provide a level working area. No alterations beyond what is required
4 for operations are to be made. Contractor shall confine all activities to
5 designated work areas.
6
7 B. Entire drill path shall be accurately surveyed with entry and exit stakes
8 placed in the appropriate locations within the areas indicated on Drawings. If
9 Contractor is using a magnetic guidance system, drill path will be surveyed
10 for any surface geo-magnetic variations or anomalies.
11
12 C. Contractor shall place silt fence between all drilling operations and any
13 drainage, wetland, waterway or other area designated for such protection by
14 contract documents, state, federal and local regulations. Additional
15 environmental protection necessary to contain any hydraulic or drilling fluid
16 spills shall be put in place, including berms, liners, turbidity curtains and other
17 measures. Contractor shall adhere to all applicable environmental
18 regulations. Fuel or oil may not be stored in bulk containers within two
19 hundred (200) feet of any water-body or wetland.
20
21 D. Contractor shall adhere to all applicable state, federal and local safety
22 regulations and all operations shall be conducted in a safe manner. Safety
23 meetings shall be conducted at least weekly with a written record of
24 attendance and topic submitted to Project
manager. 25
26 E. Pipe shall be welded/fused together in one length, if space permits. Pipe will
27 be placed on pipe rollers before pulling into bore hole with rollers spaced
28 close enough to prevent excessive sagging of pipe.
29
30 F. Pilot hole shall be drilled on bore path with no deviations greater than five
31 percent of depth over a length of one hundred (100) feet. In the event that
32 pilot does deviate from bore path more than five percent of depth in one
33 hundred (100) feet, Contractor shall notify Project manager and Project manager
may
34 require Contractor to pull-back and re-drill from the location along bore path
35 before the deviation.
36
37 G. In the event that a drilling fluid fracture, inadvertent returns or returns loss
38 occurs during pilot hole drilling operations, Contractor shall cease operations
39 and shall discuss corrective options with the Project manager, work shall then
40 proceed accordingly.
41
42 H. Upon approval of the pilot hole location by the Project manager, the hole
43 enlarging or back reaming phase of the installation shall begin. The
44 borehole diameter shall be increased to accommodate the pullback

HORIZONTAL DIRECTIONAL DRILLING
STANDARD SMALL DIAMETER INSTALLATIONS

operation of the required size of PE pipe. The type of back reamer to be

utilized in this phase shall be determined by the types of subsurface soil conditions that have been encountered during the pilot hole drilling operation. The reamer type shall be at the Contractor's discretion with the final hole diameter being a maximum of twenty (20) percent larger than the outside diameter of the product pipe being installed in the borehole.

- I. The open borehole may be stabilized by means of bentonite drilling slurry pumped through the inside diameter of the drill pipe and through openings in the reamer. The slurry will also serve as an agent to carry the loose cuttings to the surface through the annulus of the borehole. These cuttings and bentonite slurry are to be contained at the exit hole or entry side of the directional bore in pits or holding tanks. The slurry may be recycled at this time for reuse in the hole opening operation or it shall be hauled by the Contractor to an approved dump site and properly disposed. A complete list of all drilling fluid additives and mixtures to be used in the directional operation will be submitted to the Project manager along with their respective

material safety data sheets.

- J. In the event that pipe becomes stuck, Contractor shall notify Project manager. Project manager, Contractor, and/or the maintaining agency shall discuss options and then work will proceed accordingly.

- K. Excess pipe shall be removed and the bore hole associated with this excess pipe shall be filled with flowable fill or grout, unless the area of the excess pipe is excavated and backfilled as part of the tie-in operations.

3.04 PIPE TESTING

- A. Following successful pull-back of pipe, Contractor shall test pipe as required in Section 01 45 17, Pipeline Testing Requirements.

3.05 SITE RESTORATION

- A. Following drilling operations, Contractor will demobilize equipment and restore the work-site to original condition. Any noticeable surface defects due to the drilling operation shall be repaired by Contractor.

3.06 RECORD KEEPING

- A. Contractor shall maintain a daily project log of drilling operations and a guidance system log with a copy given to Project manager at completion of boring. As-built drawings shall be certified as to accuracy by Contractor as required in Section 01 78 39.

END OF SECTION

HORIZONTAL DIRECTIONAL DRILLING
STANDARD SMALL DIAMETER INSTALLATIONS

33 05 21 - 10

SECTION 33 05 22

HORIZONTAL DIRECTIONAL DRILLING

SUBAQUEOUS CROSSINGS AND LARGE DIAMETER INSTALLATIONS

PART 1-GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. This specification covers the installation of pipe by horizontal directional drilling (HDD). HDD is a trenchless excavation method that is accomplished in three phases. The first phase consists of drilling a small diameter pilot hole along a designed directional path. The second phase consists of enlarging the pilot hole to a diameter suitable for installation of the pipe. The third phase consists of pulling the product pipe into the enlarged hole. HDD is accomplished using a specialized horizontal drilling rig with ancillary tools, equipment and borehole stabilizing drilling fluids.
- B. The Contractor shall provide all necessary labor, tools, materials and equipment to successfully complete the installation of directionally drilled piping as specified herein and to the lines and grades shown on the Contract Drawings. The Contractor shall be responsible for the final constructed product, and for furnishing the qualified labor and superintendence necessary for this method of construction.
- C. The drilling operations shall use techniques of creating or directing a borehole along a predetermined path to a specified target location. Use of down-hole steering tools to change the boring course and monitoring instrumentation to locate and orient the boring along a predetermined course is required.
- D. The mobile drilling system shall utilize a jetting drill bit and/or drill bit with mud motor to drill and circulate cuttings and spoil from the borehole.
- E. Steering shall be accomplished through the use of an articulated section of drill collar that causes an angular offset resulting in the drill bit being off-center. When steering adjustments are required, as dictated by down hole guidance monitoring equipment, the bit is rotated toward the desired direction of travel and the drill pipe and bit are advanced forward without rotation.

1.02 DEFINITIONS

- A. Contractor's Construction Drawings. Shall be defined as drawings by which the Contractor proposes to construct, operate, build, etc., the

HORIZONTAL DIRECTIONAL DRILLING

SUBAQUEOUS CROSSINGS AND LARGE DIAMETER INSTALLATIONS

1 referenced item. The submission of these drawings shall be required for
2 the sole purpose of providing sufficient details to verify that the
3 Contractor's work progress is in accordance with the intent of the design.
4 When required, such drawings will have been previously reviewed and
5 sealed by a qualified professional project manager registered in the State of
6 Florida.

7
8 B. Subaqueous Crossings shall be defined as a HDD that crosses under a
9 body of water greater than 50 feet across.

10
11 C. Large Diameter Installation shall be defined as a HDD that the nominal
12 outside diameter of the product pipe is greater than twelve (12) inches.

13
14 1.03 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

15
16 A. American Association of State Highway and Transportation Officials
17 (AASHTO).

18
19 B. Occupational Safety and Health Administration (OSHA).

20
21
22 C. API Specifications 13A, 1993. Specification for Drilling Fluid Materials,
23 Fifteenth Edition, Dallas, Texas. American Petroleum Institute.

24
25 D. API Recommended Practice 13B-1, 1990. Standard Procedures for Field
26 Testing Water-Based Drilling Fluids, First Edition, Dallas, Texas, American
27 Petroleum Institute.

28
29 E. API Bulletin 13D, 1985. Bulletin on the Rheology of Oil-Well Drilling
30 Fluids, Second Edition, Dallas, Texas, American Petroleum Institute.

31
32 F. Horizontal Directional Drilling Good Practices Guidelines, HDD Industry
33 Consortium, 300pp, 2nd ed., 2004.

34
35 G. IADC Drilling Manual, 1992. Eleventh Edition, Houston, Texas,
36 International Association of Drilling Contractors.

37
38 H. Installation of Pipelines by Horizontal Directional Drilling, Pipeline
39 Research Committee, American Gas Association, PR-227-9424, April
40 1995.

41
42 I. Installation of Pipelines Beneath Levees Using Horizontal Directional
43 Drilling, US Army Corps of Project managers, Waterways Experiment Station,
44 Final Report, CPAR-GL-98-1, April 1998.

1 J. Pressure Pipeline Design for Water and Wastewater, American Society for
2 Civil Project managers, 2nd ed., 1992

3
4 K. Tables for Hydraulic Design of Pipes and Sewers, American Society for
5 Civil Project managers, 5th ed., 1990.

6
7 1.04 SUBMITTALS

8
9 A. Prior to beginning the Work, the contractor must submit to the Project manager
10 the following items:

11
12 1. The Contractor shall provide a completed HDD Work plan with
13 drawings and written description identifying details of the proposed
14 method of construction and sequence of operations to be
15 performed during construction. The Work plan shall address the
16 following requirements:

17
18 a. Pre-construction walkover and site inspection.

19
20
21 1) Call- One Call for utilities location within the limits of the
22 HDD project (Ground Penetrating Radar (GPR)
23 Electronic Locate, Subsurface Location as required).

24
25 2) The Contractor shall video tape and take photographs
26 of near by structures which may be affected by
27 inadvertent fluid returns.

28
29 3) The Contractor shall review as-built drawing and prior
30 soil reports of past projects in the area, if available.

31
32 4) The Contractor shall make an effort to discuss the
33 scope of the proposed project with City and State
34 Agencies that may have previous project construction
35 knowledge in the vicinity.

36
37 b. The Contractor shall establish a drill profile between the
38 entry and exit point by observing various framework
39 conditions mentioned below in order to ensure, that the
40 intended theoretical drilling profile line can also be realized in
41 practice.

42 1) Entry and exit angle

43 2) Slant tangential sections

44 3) Radii of curvature
45
46

1
2 4) Cover

3
4 5) Borehole diameter

5
6 If the Contractor is planning on deviating from bid document
7 HDD Profile, then the Contractor is required to submit
8 additional drawings with the new HDD Profile for the
9 project manager's approval.

10
11 The deviation drawings shall include a HDD Profile, plan
12 view and cross-section. The Contractor is also
13 recommended to submit deviation drawings for larger bores
14 for site layout plans (Rig and Product Pipe Layout site) and
15 pipeline stringing area (rollers).
16

17 c. The Contractor shall provide anticipated drilling rates for
18 pilot bore, reaming and pullback procedures. These drilling
19 rates shall be used to calculate drilling fluid volumes
20 required for pilot hole, each reaming pass and pullback.
21 The contractor shall guarantee pump capacity and that the
22 drilling fluid cleaning system is capable of sustaining the
23 anticipated drilling rates during the pilot bore, reaming and
24 pullback.
25

26 d. The Contractor shall submit qualification documents for the
27 HDD superintendent and key personnel experience in
28 accordance with Section 1.06A and 1.06B. Also, the
29 contractor shall have personnel with a Florida/OSHA
30 Certification for the site Safety Representative.
31

32 e. The Contractor shall submit a detailed schedule for the HDD
33 installation at least fifteen (15) days prior to mobilization.
34 The detail schedule shall identify all major construction
35 activities and durations, with beginning and completion
36 dates shown. The detail schedule shall be updated at least
37 every two weeks or more frequently, as directed by the
38 Project manager, and shall include but not limited to the following
39 items:

40 1) Pre-construction walk over and inspection.

41
42 2) Regular Mobilization and set-up.

43
44 3) Pilot bore
45

- 4) Pre-reaming and reaming.
- 5) Layout and thermal butt fusing of pipe.
- 6) Pressure Testing of pipe prior to pullback when practical or as directed by the Project manager.
- 7) Final reaming and pullback of product pipe.
- 8) Annulus grouting after installation (optional).
- 9) Mandrel/pig test to confirm deformations of product pipe are within allowable tolerances.
- 10) Cleanup, surface restoration, and demobilization.

- B. The Contractor shall make available complete, legible, written daily logs and records as called for in Section 1.06C of this specification and as directed by the Project manager as it is being created or no later than by noon of the following day to which the records correspond.
- C. The Contractor shall document any deviations from the actual plan and profile of the bore path and the location shown on the plans. The Contractor shall notify the Project manager immediately upon discovery of any deviations from the design plans.
- D. The Contractor shall submit measured mud and/or drilling fluid weights used during pilot boring and reaming of the bore measured at a minimum of twice per shift or at least once per two hundred (200) feet of drilled or reamed length, whichever is more frequent.
- E. The Contractor shall submit an as-built profile of the pilot bore within twenty-four (24) hours of completion of the pilot bore.
- F. The Contractor shall submit records of equipment calibrations and certifications for all equipment used for downhole wireline survey and tracking of the drill head. Procedures for operating the downhole wireline survey tools shall be described, including measures to verify the accuracy of the equipment readings. The Contractor shall submit a drawing with the surveyed location of the surface wire grid system for the "TruTracker" or equipment tracking system. The Contractor shall submit methods for surveying the coordinates of the surface wire grid system both on shore and across or under the waterway. During pilot bore, reaming passes, and pipe pullback the Contractor shall electronically record the following information once per drill pipe or every thirty (30) feet, whichever is most frequent. The information shall be provided to the Project manager, as it is being

created or no later than noon of the day following the shift for which the records were taken.

1. Rate of Penetration
2. Rotation
3. Thrust
4. Pump Rates
5. Measured Depth
6. Annular Pressure
7. Flow Meter (Returns Suction Line)

G. The Contractor shall submit an as-built profile of the pilot bore within 24 hours of completion of the pilot bore.

H. The Contractor shall submit methods and procedures for filling the pipe with fluid during pull back and testing.

I. A Frac-out and Surface Spill Contingency Plan shall be prepared for the installation of pipelines using HDD. This plan shall be submitted to the Project manager prior to construction. The Contractor shall submit a letter of intent signed by an authorized representative of Contractor, confirming that the plan will be followed. The contingency plan for inadvertent returns/hydrofracture shall address all potential pathways for release of drilling fluid, and shall address containment, cleanup, and mitigation measures as well as reporting procedures and points of contact for regulatory and permitting agencies. The Plan shall address releases to the ground surface and to waterways. Stand-by equipment shall be provided by the Contractor to recover fluids from the waterway via truck and via boat. Floating turbidity barriers shall be part of the stand-by equipment to minimize dispersion in the event that drilling fluids reach the waterway.

J. Soil Separation Plant and Plans for Disposal:

1. The Contractor shall submit details on the pump and cleaning plant. Include dimensions, manufacturer's specifications, pump capacity, noise rating, and soundproofing details on the system.
2. Pump capacity should be specified for water at sea level elevation, and adjusted for actual elevation and fluid viscosity.
3. Provide details on the generator, including dimensions, noise ratings at twenty-five (25) feet, and soundproofing. Confirm that the generator and other on-site equipment can be operated without exceeding the maximum allowable noise tolerances specified in permit, or "by Pinellas City Noise Ordinance."

1 4. The Contractor shall submit plans for disposal of waste materials
2 resulting from the pipeline construction, including drilling fluids,
3 cuttings, waste oil, fuel, discharge water, etc. The Contractor shall
4 identify the disposal site and submit a letter indicating willingness
5 and legal authority to accept the described and anticipated waste
6 products.
7

8 K. The Contractor shall provide details on measures to be taken to monitor
9 and protect adjacent utilities, structures, and roadways, and provide
10 details on monitoring equipment and provisions, including the layout of all
11 settlement points, and other monitoring points. Provide two copies of pre-
12 construction survey of adjacent structures and photographs with captions
13 to document conditions prior to beginning HDD construction.
14

15 L. The Contractor shall submit a Safety Plan, including the name of the
16 Contractor's Site Safety Representative, emergency telephone numbers
17 for medical facilities, and precautions for handling and disposal of any
18 hazardous or flammable materials. The Safety Plan shall include a code
19 of safe practices and an emergency plan in accordance with OSHA and
20 Florida/OSHA requirements.
21

22 M. The Contractor shall submit detailed descriptions of all equipment and
23 materials to be used for the pipeline installation. Equipment and material
24 submittals shall include directional drill rig, drill rig anchoring system, the
25 mud system, drill bits, mud motors, reamers or hole openers, pipe rollers
26 for pullback, drilling fluid and additives, pipe pull head, and pipe pulling
27 swivel. Descriptions of equipment shall include manufacturers'
28 specifications, calibrations, appropriate drawings, photographs, and
29 descriptions of any modifications since manufacture. Descriptions of
30 drilling fluid additives shall be accompanied by Materials Safety Data
31 Sheets (MSDS) and manufacturers' descriptions and warranties.
32

33 1.05 PERFORMANCE REQUIREMENTS 34

35 A. The Contractor shall provide all equipment, materials, and personnel
36 necessary for completing the installation as shown on the plans and
37 specified herein. The equipment and materials shall include, but are not
38 limited to:
39

40 1. Directional drilling rig with all ancillary equipment, including drill
41 pipe, drilling fluid, cutting tools, reaming bits, swivels, expanders,
42 motors, pumps, hoses, mixing equipment, drilling fluid processing
43 equipment (cuttings separation equipment), downhole survey
44 equipment, energized surface grid tracking system, fluid pressure
45 and flow rate monitoring equipment, pull back monitoring
46 equipment, spare parts, pipe handling equipment, crane, backhoe,

HORIZONTAL DIRECTIONAL DRILLING SUBAQUEOUS CROSSINGS AND LARGE DIAMETER INSTALLATIONS

1 roller, side boom tractors, control cabin, control equipment, and
2 office equipment.

3
4 2. Drilling fluids, water, fuel, lubricant, polymers, or other additives.

5
6 3. Any other expendable or reusable materials, supplies, and
7 equipment needed for the installation.

8
9 B. The drilling equipment shall be capable of advancing through the geologic
10 conditions to be encountered at the site, as described in the geotechnical
11 reports, and as anticipated by the Contractor.

12
13 C. The drilling fluid shall be designed for the geologic conditions to be
14 encountered at the site, as described in the geotechnical reports and as
15 anticipated by the Contractor.

16
17 D. The drilling system shall include a fluid pump and separation plant that
18 can achieve the rates of drilling fluid pumping, spoil separation, and slurry
19 cleaning required by the Contractor to achieve planned production rates
20 for the soils described in the geotechnical reports, and as anticipated by
21 the Contractor. Shaker screens and hydrocyclones may be required for
22 efficient separation of spoils. The Contractor is advised that the
23 separation plant must fit within the allowable work areas.

24
25 E. All spoil and slurry must be contained in trucks, tanks, approved
26 recirculation pits, or other containers at all times. Dumping of spoil or
27 slurry on the ground, discharge into sewer, or discharge into the water
28 bodies will not be permitted. All spoils will be transported and disposed of
29 off site at an approved disposal facility that meets all State of Florida and
30 City requirements.

31
32 F. Perform all work within areas shown on the plans.

33
34 G. The pipeline shall be installed using the radii of curvatures and entry and
35 exit angles shown on the drawings, unless deviations are approved in
36 writing by the Project

manager. 37

38 H. Pipe rollers and lifters will be required to help the transition of the product
39 pipe into the borehole. The number of pipe rollers and lifters shall be
40 determined by the Contractor and submitted as part of the work plan.

41
42 I. Surface settlement or heave of utilities and other features above the HDD
43 centerlines and within the zone influenced by the HDD construction shall
44 be limited in values that avoid damage. The Contractor shall repair any
45 damage resulting from settlement or heave caused by HDD activities at
46 no additional cost to the Owner.

- 1
2 J. It shall be the Contractor's sole responsibility that all work is done in
3 conformance with all applicable federal, state, and City safety
4 requirements. Required safety equipment and procedures shall be
5 employed by the Contractor at all times. All materials and methods of
6 construction shall meet the applicable requirements of Pinellas Park
7 and the applicable requirements of the State of Florida Administrative
8 Code.
9
- 10 K. The pipe will be certified by the Contractor as meeting all requirements of
11 the specifications. The product pipe will be pressure-tested by the
12 Contractor prior to pull back when practical or as directed by the Project manager,
13 and after installation is completed, in accordance with requirements
14 specified by the Manufacturer.
15
- 16 L. The Contractor shall allow the Project manager access to and shall furnish
17 necessary assistance and cooperation to aid the Project manager in observations
18 and data and sample collection, including, but not limited to the following:
19
- 20 1. The Owner and Project manager shall have full access to the operator
21 control container prior to, during, and following all HDD operations.
22 This shall include, but not be limited to, providing visual access to
23 real-time operator control screens, gauges, and indicators.
24
 - 25 2. The Owner and Project manager shall have full access to the slurry
26 separation plant prior to, during and following all HDD operations.
27 This shall include, but not be limited to, full access to shaker
28 screens, hydrocyclones, conveyor belts, and slurry and spoil
29 holding tanks. The Project manager shall be allowed to collect soil
30 samples from the shaker screens and/or spoil holding tanks on the
31 slurry separation plant a minimum of once per drill pipe section, and
32 whenever changes in conditions are observed or suspected.
33
 - 34 3. Sound levels measured by the Project manager or Designee
35 shall not exceed 55 dBA 6 PM to 7 AM, or 60 dBA 7 AM to 6 PM,
36 within five feet of the nearest occupied building. Contractor shall
37 comply with all local noise ordinances if the local requirements are
38 more stringent. Sound levels in excess of these values are
39 sufficient cause to have the work halted until equipment can be
40 quieted to these levels. Work stoppage by the City for
41 excessive noise shall **not** relieve the Contractor of the other
42 portions of this specification including, but not limited to, completion
43 of all Work within specified contract time and contract price. The
44 Contractor shall submit a plan prior to construction identifying all
45 noise reduction/abatement procedures. The plan will be approved
46 by the Project manager prior to construction.

- 1
2 4. If mufflers cannot achieve the necessary noise reduction, noise
3 abatement shall be accomplished by the Contractor's installation of
4 baffles (or other acceptable means) positioned to break line-of-sight
5 from the noise source to affected residences and/or commercial
6 structures. Minimum noise abatement measures shall consist of
7 equipping all engines with hospital grade mufflers or silencers.
8

9 1.06 QUALITY ASSURANCE

- 10
11 A. The Contractor shall have at least three years of demonstrated successful
12 experience installing pipelines using the horizontal directional drilling
13 process on at least three projects with similar diameters, installation
14 lengths, and ground and ground water conditions. The Contractor shall
15 furnish evidence of successful use of wireline and "Tru-Tracker" guidance
16 and tracking system on at least two projects. The Contractor shall furnish
17 evidence of successful experience with downhole pressure and load
18 monitoring devices on at least one project. The Contractor shall furnish
19 evidence of successful experience by including project owner, project
20 name, location, diameter, length, depth, ground conditions, any problems
21 encountered and how resolved, and any claims and how resolved.
22 Owner's representative with address and telephone number shall be
23 provided.
24
25 B. Qualifications and Experience of Contractor Personnel: The Contractor
26 shall employ skilled, experienced superintendent(s), drill rig operators, and
27 key personnel. The superintendent(s) and drill rig operators shall have at
28 least three years of successful experience using the HDD process, on at
29 least five projects with similar diameters, pull back length and ground
30 conditions. The superintendent(s), drill rig operator, and key personnel
31 shall demonstrate successful completion of at least three projects where
32 pipe was installed with horizontal directional drilling techniques. The
33 Contractor shall furnish resumes of the superintendent(s) and operators.
34 Personnel experience records should include project names, locations,
35 pull back lengths, ground conditions, pipe materials, project description,
36 project owner, engineer, and references with names, addresses and
37 telephone numbers. The superintendent and operators listed in the
38 submittal shall be on site during all construction related activities required
39 for HDD installation.
40
41 C. Daily logs and records shall be maintained by the Contractor and shall
42 include drilling lengths, location of drill head, drilling fluid pressures and
43 flow rates, drilling fluid losses, inadvertent returns, drilling times required
44 for each pipe joint, any instances of retraction and re-drilling of the pilot
45 bore or segments thereof, and any other relevant observations, including
46 any observed settlement, heave, frac-outs or surface spills. The drilling

1 fluid pressures shall be measured at the entry point and at the drill head
2 and recorded at least twice per drill pipe length. These records shall be
3 maintained and provided daily to the Project manager. The position of the drill
4 head shall be continuously tracked and recorded by a "Tru-Tracker" or
5 equivalent tracking system, and shall be supplemented by a "Tru-Tracker" or
6 equivalent tracking system installed that completely encompasses the
7 area between the entry point and the exit point. The coordinates of the
8 surface wire grid system shall be surveyed and recorded. A plot of actual
9 locations of the bore path shall be maintained and updated daily, or more
10 frequently, as directed by the Project manager.

11
12 D. Contractor shall provide at least seventy-two (72) hours advance written
13 notice to the Project manager of the planned inception of major drilling activities,
14 including pilot bore launch, pre-reaming, reaming, and product pipe
15 pullback. The Contractor shall immediately notify the Project manager, in writing,
16 when any significant problems are encountered or if ground conditions are
17 considered by the Contractor to be materially and significantly different
18 than those represented within the Contract Documents. The Contractor
19 shall perform the pilot bore in the presence of the Project manager, unless
20 Project manager grants prior written approval to perform such work in Project
manager's absence.

22
23 E. All surveying equipment used for downhole wireline surveying and
24 tracking of the bore path and drill head and layout of the surface wire grid
25 system for the "Tru-Tracker" or equivalent tracking system shall be
26 inspected and calibrated by the equipment manufacturer prior to use.
27 Proof of this inspection and calibration shall
28 be provided to the Project manager prior to the commencement of drilling
29 operations.
30

31 32 PART 2 – PRODUCTS

33 34 2.01 GENERAL

35
36 A. Directional drilling equipment shall consist of a directional drilling rig of
37 sufficient capacity, drilling rods, appropriate drill bit, reamer, product pipe,
38 drilling fluid, and additives, an adequate guidance system to accurately
39 guide the boring operations and trained and competent personnel to
40 operate the drilling system. All equipment shall be properly inspected to
41 assure good and safe operating condition with sufficient back-up
42 equipment in case of a failure.
43
44
45
46
47

2.02 PRODUCT PIPE, JOINTS AND FITTINGS

A. PIPE

1. All product pipe to be installed by the HDD operation will be High Density Polyethylene (HDPE), Restrained Joint PVC or Restrained Joint Ductile Iron pipe.
2. Refer to material specifications for material requirements.
3. Refer to piping sections of this specification for pipe handling requirements.

B. FITTINGS

1. Refer to material specifications for material requirements.

C. DRILLING FLUID (MUD) SYSTEM

1. Drilling fluid shall be composed of a carrier fluid (water) and drilling fluid additives (bentonite and/or polymers). Bentonite is a naturally occurring clay mineral (montmorillinite) that forms a mud when mixed with water.
2. The composition of the drill fluid is determined by the results of geological investigation executed in line with the framework of the project planned before construction.
3. The principal functions of drilling fluids used in HDD are:
 - a. Transporting drill cuttings to the surface by suspending and carrying them in the fluid stream flowing in the annulus between the borehole wall and the drill pipe/product.
 - b. Cleaning build-up on drill bits or reamer cutters by directing fluid streams at the cutters.
 - c. Cooling the downhole tools and electronic equipment.
 - d. Lubricating to reduce the friction between the drill pipe/product pipe and the borehole wall.
 - e. Stabilizing the borehole, especially in loose or soft soils by building a low permeability filter cake, and exerting a positive hydrostatic pressure against the borehole wall. The filter cake along with positive hydrostatic pressure reduces

collapse of the borehole and prevents formation fluids (i.e. groundwater) from flowing into the borehole or drilling fluids from exiting the borehole into the formation (loss of circulation).

f. The Contractor shall provide hydraulic power to the borehole with a downhole mud motor.

g. The following fluid properties are to be tested and considered to assure compatibility between the drilling fluid mixture and the native soil after proper identification and characterization. These fluid properties are density, viscosity, pH – value, circulation, volume and solid content.

h. The drilling fluid pressures and flow rates shall be continuously monitored and recorded by the Contractor at the pump and within the annular space within thirty (30) feet of the drilling head.

D. DRILL PIPE

The Contractor shall use high quality drill pipes. The drill pipe shall be inspected periodically and properly maintained within the manufacturer's prescribed limits.

The Contractor shall adhere to the manufacturer's guidelines for using their pipe, and sound practices must be followed to ensure reduced risk of downhole failure, i.e. the Contractor shall not bend the drill pipe sharper than the minimum bend radius stated by the manufacturer, especially on HDD enter and exit locations.

PART 3 - EXECUTION

3.01 GENERAL

A. Contractor shall contact Pinellas Park Utilities at least forty-eight (48) hours before each of the following activities: 1) the set up of a drill rig pit, 2) the start of the pilot bore, 3) the pull back of the product pipe. Upon completion of the pilot hole phase of the operation, a complete set of as-built records shall be submitted in duplicate to the Project manager. These records shall include copies of the plan and profile drawing, as well as directional readings recorded during the drilling operation.

B. The drawings show existing utilities that are believed to be near the directional drill alignment. There is no guarantee that these utilities are located as shown or that other utilities may not be present. The

HORIZONTAL DIRECTIONAL DRILLING SUBAQUEOUS CROSSINGS AND LARGE DIAMETER INSTALLATIONS

Contractor is to field locate existing utilities in advance of the work so as not to delay work and avoid conflict or disruption of utility services.

C. The Contractor shall provide adequate control of surface water and drilling fluids drainage and runoff, and provide silt fences and hay bales to prevent surface water or drilling fluids from entering the adjacent environmentally sensitive area.

D. The Contractor shall not initiate HDD until all submittals are received, reviewed, and accepted by the Project manager.

E. The Contractor shall not initiate HDD until all required permits are obtained.

3.02 PERSONNEL QUALIFICATIONS

A. Horizontal Directional Drilling is a complex operation and requires a high standard of qualified personnel to execute the Work. The personnel engaged in the execution of the work shall be carefully trained both in the project management and the operation of HDD equipment.

B. The Contractor shall employ skilled, experienced superintendent(s), drilling operators, safety specialist and competent support personnel.

C. The Contractor superintendent and drilling operators shall have at least three years of demonstrated successful experience installing pipelines using HDD process on at least three projects with similar diameters, installation lengths and groundwater conditions.

D. The Contractor shall furnish evidence of successful use of wire line and "Tru-Tracker" guidance and tracking systems on at least two similar projects.

3.03 WORK STAGING AREA

A. The Contractor shall limit staging and work operations to the areas shown on the Drawings, or as otherwise accepted in writing by the Project manager, for storage of equipment and materials, parking, product pipe layout, drilling, and other work.

B. The Contractor shall maintain the work area in a manner that shall minimize adverse impacts on other public use activities. The Contractor shall proceed with work in a safe, orderly manner, while maintaining the work site free of debris and unnecessary equipment and materials.

- 1 C. The Contractor shall follow all requirements of the Frac-Out and Surface
2 Spill Contingency Plan as submitted and approved and shall control
3 operational pressures, drilling mud weights, drilling speeds, and any other
4 operational factors required to avoid hydro-fracture, fluid losses to
5 formations, and drilling fluid spillage. This includes any spillages or
6 returns at entry and exit locations or at any intermediate point. All
7 inadvertent returns or spills shall be promptly contained and cleaned up.
8 The Contractor shall maintain on-site mobile spoil removal equipment
9 during all drilling, pre-reaming, reaming, and pull back operations and
10 shall be capable of quickly removing spoils. The Contractor shall
11 immediately notify Project manager of any inadvertent returns or
spills and immediately contain and clean up the return or spill.
- 14 D. Combustible materials (fuel, oil, lubricants, etc.) shall be stored off-site or
15 in a well-ventilated storage facility removed from the immediate vicinity of
16 the drilling area by at least twenty (20) feet.
- 18 E. The Contractor shall provide maintenance of traffic plans, in accordance
19 with approved Traffic and Safety Requirements, erect appropriate barriers,
20 warning lights, and signs, painted with approved colors, warnings, and
21 graphics to ensure adequate warning to motorist and the public.
- 23 F. The Contractor shall install an enclosure fence and/or barrier walls around
24 the work area. The enclosure fence shall include a lockable gate and
25 should be adequate to prevent entry of unauthorized persons, when
26 practical or as directed by Project
manager. 27
- 28 G. At the completion of construction, the Contractor shall remove all
29 temporary facilities installed by the Contractor. Unused soil, aggregate,
30 and other materials shall be removed and disposed of at approved sites in
31 accordance with all Federal, State, and Local regulations. Any damage to
32 streets, lawns, common areas, and sidewalks shall be restored to original
33 or better conditions. All disturbed areas shall be re-vegetated.

35 3.04 MOBILIZATION

- 37 A. The Contractor shall mobilize all equipment, materials, and personnel
38 necessary to install pipeline using the HDD process at the locations shown
39 in the Drawings.
- 41 1. The Contractor shall set up temporary workspace within the areas
42 shown on the Drawings. Appropriate precautions and measures
43 shall be employed by the Contractor to prevent erosion, surface
44 drainage, and spillage of drilling fluids or other materials that could
45 adversely impact the environmental quality of the site. Silt fences,
46 hay wattles, and hay bales shall be used to line the work area to

minimize erosion and contain any spillages or runoff. A vacuum truck, shovels, brooms, buckets, and barrels shall be kept on-site to facilitate containment and cleanup. A vacuum truck or trailer unit shall be on standby and capable of responding within one hour to any spill or inadvertent return incident.

2. The exit area shall have a drilling fluid pit for containing drilling fluids and cuttings. Appropriate precautions and measures shall be employed by the Contractor to prevent erosion, surface drainage, and spillage of drilling fluids or other materials that could adversely impact the environmental quality of the site. Hay bales or wattles shall be used to line the exit area to minimize erosion and runoff. Containment and cleanup equipment shall be available to contain and clean up any surface spills and frac-outs.
3. Layout area shall be free of stones, wood, debris and obstructions. A crane to lift pipe over driveways and entrances, etc. and pipe rollers shall be provided by the Contractor to facilitate pipe pull back.

3.05 HORIZONTAL DIRECTIONAL DRILLING

- A. The capacity of the directional drilling system used by the Contractor shall be adequate to install the specified pipeline.
 - B. The pump used by the Contractor shall be adequate to supply the required flow rate and pressures at the anticipated drilling fluid viscosity at all times. Drilling speeds shall not exceed pump capacity.
 - C. At all times during the pilot bore the Contractor shall provide and maintain a bore tracking system that is capable of accurately locating the position of the drill head in the x, y, and z axes. The Contractor shall record these data at least twice per drill pipe length or every fifteen (15) feet, whichever is more frequent.
1. Contractor shall monitor and record x, y, and z coordinates relative to an established surface survey benchmark, from downhole survey data using downhole wireline system. "Tru-Tracker" energized surface grid, or equivalent, shall be installed and used to supplement the wireline system. The "Tru-Tracker" grid shall encompass the entire area of the bore including underwater across the water. Alternatively, the Contractor may propose fixed "Tru-Tracker" grids on land outside the waterway, supplemented by moveable grids on floating templates that can be temporarily anchored and surveyed while drilling the pilot hole. The moveable template should be sufficiently large to encompass the active drilling area for a two hour drilling period, and should be at least as

1 wide as the maximum depth of the bore. The grids shall be
2 surveyed to establish horizontal and vertical position to 0.1 feet
3 accuracy. The data shall be continuously monitored and recorded
4 at least twice per drill pipe length or every fifteen (15) feet,
5 whichever is most frequent.
6

- 7 2. Deviations between the recorded and design bore path shall be
8 calculated and reported on the daily log. If the deviations exceed
9 tolerances specified elsewhere, such occurrences shall be reported
10 immediately to the Project manager. The Contractor shall undertake all
11 necessary measures to correct deviations and return to design line
12 and grade.
13
- 14 3. Drilling fluid pressures and flow rates shall be continuously
15 monitored and recorded by the Contractor. The pressures shall be
16 monitored at the pump and within the annular space with a
17 downhole pressure-sensing tool located within thirty (30) feet of the
18 drilling head.
19
- 20 4. Maximum allowable drilling speeds shall be calculated by the
21 Contractor for pilot boring and each reaming pass and shall not be
22 exceeded for pilot boring or reaming passes. Measurements shall
23 be taken every fifteen (15) feet.
24
- 25 5. The Contractor shall measure and record drilling fluid viscosity and
26 density at least three times per shift with at least two hours between
27 readings, using calibrated Marsh funnel and mud balance. These
28 measurements shall be included in daily logs submitted to the
29 Project manager. The Contractor shall document modifications to the
30 drilling fluids, by noting the types and quantities of drilling fluid
31 additives and the dates and times when introduced. The reason for
32 the addition of drilling fluid additives or other modifications shall be
33 documented and reported.
34

35 The Contractor shall measure and record the pH on a regular basis
36 (three times per shift with at least two hours between readings) with
37 pH strips, paper or a pH meter.
38

39 The Contractor shall constantly monitor and record the circulating
40 volume, particularly for the early detection of drilling fluid losses, or
41 thinning, or the danger of borehole collapse. Ground upheavals
42 can also be detected early from such differences, and necessary
43 action can be implemented to prevent further damage.
44
45

1
2 The Contractor shall constantly monitor and record the solid (sand)
3 content to assure there is no significant increase, which can
4 diversely impact efficiency of the circulations system.
5

6 D. Entry and exit points shall be as shown on the drawings, unless otherwise
7 approved in writing by the Project manager. The Contractor shall employ
8 licensed, professional land surveyors to locate the entry and exit points,
9 and to establish horizontal and vertical datum for the bore and the pipe
10 layout and fabrication areas.
11

12 E. Drill entrance and exit angles shall be as shown on the Contract Plans and
13 Drawings, unless otherwise approved in writing by the Project manager.
14

15 F. The pilot bore shall follow the design path of the bore shown on the
16 Drawings.
17

18 1. Horizontal and vertical deviations shall be less than plus or minus
19 three feet from the design path centerline. The Contractor shall
20 continuously monitor horizontal and vertical position and record the
21 position at least twice per drill pipe length, or at fifteen (15) feet
22 intervals, whichever is most frequent.
23

24 2. The radius of curvature shall not be less than that shown on the
25 Drawings. The radius of curvature shall be calculated over the
26 distance of three drill pipe sections.
27

28 3. The location of the entry and exit points shall be as shown on the
29 Drawings. The Contractor shall be solely responsible for all work
30 necessary to correct excessive deviations from line and grade,
31 including re-drilling, redesigning connections, and acquiring
32 additional easement, at no additional cost to the Owner and without
33 schedule extension.
34

35 G. The pilot bore shall be pre-reamed and reamed using equipment and
36 methods submitted by the Contractor. The Contractor shall completely
37 ream the borehole to the final diameter prior to pull back, when practical or
38 as directed by the Project manager.
39

40 H. The Contractor shall perform hydrostatic water pressure test in
41 accordance with the manufacturer's guidelines prior to product pipe
42 pullback.
43
44
45
46

1 I. Pipe Pullback:

- 2
- 3 1. The pipe shall be installed by pulling it into the reamed bore path in
- 4 a continuous operation when practical, behind a final reaming tool
- 5 selected by the Contractor.
- 6
- 7 2. The pipe shall be isolated from excessive torsional and axial
- 8 stresses by a swivel device with a pre-established breakaway
- 9 tensile capacity that is lower than the allowable tensile strength of
- 10 the product pipe.
- 11
- 12 3. All measurements shall be made, recorded, and submitted on the
- 13 daily logs during final reaming and pipe pull back.
- 14
- 15 4. The maximum pull (axial tension force) exerted on the pipelines
- 16 shall be measured continuously and limited to the maximum
- 17 allowed by the pipe manufacturer with an appropriate factor of
- 18 safety (≥ 2) so that the pipe or joints are not overstressed.
- 19
- 20 5. The pipelines shall be adequately supported during installation so
- 21 as to prevent overstressing or buckling. The Contractor shall
- 22 provide adequate support/rollers along the pipe layout area to
- 23 support the required length of the pipe for each bore. Such
- 24 support/rollers shall be spaced at a maximum of sixty (60) feet on
- 25 centers, and the rollers shall be comprised of a non-abrasive
- 26 material arranged in a manner to provide support to the bottom and
- 27 bottom quarter points of the pipeline allowing for free movement of
- 28 the pipeline during pullback. The pipe layout area shall be cleared
- 29 of all large stones, construction debris, or other foreign objects that
- 30 could damage the pipe during pull back.
- 31
- 32 6. The end of the pipe shall be closed during the pull back operation.
- 33
- 34 7. Each length of pipe shall be inspected and cleaned as necessary to
- 35 be free of debris immediately before joining.
- 36
- 37 8. Tracer wire will be attached to the leading end of the pipe pulling
- 38 head and shall extend the full length of the installed pipe.
- 39
- 40 9. The Contractor shall at all times handle the pipe in a manner that
- 41 does not overstress or otherwise damage the pipe. Vertical and
- 42 horizontal curves shall be limited so that wall stresses do not
- 43 exceed fifty (50) of yield stress for flexural bending of the pipe or
- 44 joint. If the pipe is buckled or otherwise damaged, the damaged
- 45 section shall be removed and replaced by the Contractor at his
- 46 expense. The Contractor shall take appropriate steps during pull

back to ensure that the pipe and tracer wires (if required) will be installed without damage.

10. The pipe shall be **filled with water** as it enters the borehole to reduce pull back loads and to ensure that adequate internal pressure is maintained at all points to counter balance collapse pressures.

11. The Contractor shall monitor and inspect pipe rollers and method for suspending product pipe at exit pit during the pull back operation to avoid damage to the pipe.

12. The Contractor shall cease pull back operations if the pipe is damaged and shall remove the product pipe from the bore and repair the pipe using the manufacturer's recommended procedure or replace the damaged pipe before resuming installation.

13. Damage to the product pipe resulting from manufacturer defects, installation, contact grouting, or grouting of the annulus is the responsibility of the Contractor, including costs for replacement and labor and materials. To confirm no damage to the pipe, upon completion of pull back and grouting, the Contractor shall perform the following test on the completed pipeline:

a. A sphere or pig, one inch less in diameter than the internal diameter of the product pipe, which is capable of allowing water to pass through it, complete with a pulling cable on either side of sphere or pig, shall be pulled through the entire length of the pipeline. If the pig or sphere cannot pass through the pipe, it shall be considered collapsed and damaged.

14. After the product pipe is completely pulled through the borehole, a sufficient relaxation period, if recommended by the pipe manufacturer, shall be provided before the final pipe tie-in.

15. The Contractor shall conduct a final hydrostatic test of the installed pipeline. Final test shall be in accordance with the pipe manufacturer's guidelines. The Contractor will repair any defects discovered during this test, and repeat until the pipe passes the test.

J. The Contractor shall notify the Project manager immediately in the event that any obstruction is encountered that prevents further advancement of the drill pipe, or pull back of the pre-reamer, reamer, and/or pipe. The Contractor shall make all diligent and reasonable efforts to advance past the object by drilling slowly through the object, pulling back, and drilling along a new

1 bore path that avoids the object, or excavating and exposing and removing the
object, and all other reasonable attempts to continue the bore. The Contractor
shall notify the Project manager of proposed measures to attempt to advance
past the object, prior to initiating the attempt. If the Contractor attempts to pull
back and re-drill, the Contractor shall adhere to line and grade tolerances
established in this specification section, unless the Project manager
approves variance, in writing, prior to the Contractor's attempt to re-drill. The
Contractor and Project manager shall investigate the cause and together
determine an appropriate response. Appropriate response may include
revisions to equipment or methods, retraction and re-drilling of a portion of the
borehole, or abandonment of the borehole. If abandonment is deemed
necessary, the Contractor shall recover, to the extent practicable, any drill
pipe, product pipe, and tools in the borehole, and properly abandon the
borehole by contact grouting, unless otherwise directed in writing by the
Project manager. If the borehole is abandoned, the Contractor shall be allowed
to begin a second attempt to install the pipeline at an alternate location subject
to approval, in writing, by the Project manager. The Contractor shall take all
reasonable actions to complete the installation with minimal delays.

2
21 K. The Contractor shall remove all equipment, materials, drilling fluids, muck,
22 waste, and debris from the site and restore the site to its original condition
23 upon completion of the installation. Restoration and demobilization shall
24 be completed by the Contractor within seven days of the completion of the
25 pipeline installation.

26
27 L. The Contractor shall monitor for settlement or heave before and during
28 drilling and grouting operations.

30
31
END OF SECTION

SECTION 33 33 01

GRAVITY SEWERS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The Work includes furnishing all plant, labor, tools, equipment, materials, and performing all operations in connection with construction of sanitary sewers and appurtenant structures, including excavation, trenching, backfilling and appurtenant work as required, or as directed.

1.02 Material Depth Limitations

- A. Pipe materials used for gravity sewers shall be subject to the depth limitations indicated in accordance with the Standard Details.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. All gravity sewer pipe and appurtenant materials used in the Pinellas Park Sewer System shall be as specified in the latest version of the Pinellas City Utilities Material Specification Manual at the time of plan approval.

PART 3 - EXECUTION

3.01 CONSTRUCTION

A. Order of Work

1. The Project manager reserves the right to specify which sewer lines will receive priority in construction. In general, however, the work will be from the lower end of the sewer towards the upper end of the sewer.

B. Maintenance of Existing Sewerage Facilities

1. It is the responsibility of the Contractor to maintain operation of the existing sewerage facilities during construction and repair work. The Contractor shall be responsible for providing any equipment required to maintain operation of service during construction. Any damage done to any existing sewer pipe or structure is to be immediately repaired to a condition equal to, or better than, its original condition.

1 C. Location and Grade of Sewers

- 2
- 3 1. The line and the grade of the sewer, as well as the location of manholes,
- 4 and all other appurtenances, shall be as shown on the Plans or, as
- 5 directed by the Project manager. The grade line as given on the Plans indicates
- 6 the grade of the invert of the sewer pipe.
- 7

8 D. Cutting Gravity Sewer Pipe

- 9
- 10 1. Cutting ductile iron pipe shall be field cut with a power saw. No impact
- 11 cutting is permitted. The spigot end of pipe thus cut shall be filed or
- 12 ground to form a bevel.
- 13
- 14 2. Cutting PVC sewer pipe may be field cut using hand or power saws in
- 15 accordance with the manufacturer's recommendations. The raw spigot
- 16 end thus formed shall be filed to remove gasket damaging burrs and to
- 17 form a standard bevel.
- 18

19 E. Laying Gravity Sewers

- 20
- 21 1. Cut sheets for complete sections of the gravity sewers, as designated by
- 22 the Project manager, shall be submitted by the Contractor to the Project
- 23 manager for
- 24 approval at least two days prior to construction. Each run of gravity
- 25 sewer shall be represented on a separated cut sheet.
- 26
- 27 2. Installation of ductile iron pipe shall conform to the procedures outlined
- 28 in "A Guide for the Installation of Ductile Iron Pipe" which is available
- 29 from the Ductile Iron Pipe Research Association. All ductile iron pipe is
- 30 to be encased in green polyethylene material, conforming to the
- 31 requirements of the City's Materials Specification Manual. Polyethylene film shall be supplied in tube form suitable for use in
- 32 Installation Method 'A' per AWWA C105.
- 33
- 34 3. Installation of PVC pipe shall be per ASTM D-2321 and UNI-B-5.
- 35
- 36 4. Trench excavation shall be as specified in Section 31 23 33, Excavation
- 37 and Backfill for Pipes.
- 38
- 39 5. Each pipe shall be laid true to line and grade so as to form a close
- 40 concentric joint with the adjoining pipe, preventing offsets in the flow line.
- 41 The trench bottom shall form a solid base for the entire length of pipe
- 42 and shall be capable of supporting the full weight of the pipe and backfill
- 43 material. The pipe bells shall not bear against the solid bottom of the
- 44 ditch. Sewers will be inspected with mirrors at intervals during
- 45 construction and corrected, if necessary, before backfill.
- 46

1 6. All wye units, stubs, or other fittings placed in lines for future
2 connections, or services, shall have the open bell tightly plugged using
3 pipe manufacturers recommended watertight plug. All plugs shall be
4 capable of withstanding 4 psi internal air test pressure, yet permit easy
5 removal for future use.
6

7 7. The open ends of all pipelines shall be kept securely plugged at the end
8 of each day's work and at any other time when any operation is being
9 carried out which might permit foreign materials, rock, dirt, etc. to enter
10 the pipe. Pipelines shall be thoroughly flushed out upon their completion
11 and when directed by the Project manager.
12

13 F. Joining Gravity Sewer Pipe
14

15 1. Gravity sewer pipe having factory fabricated joints shall be joined
16 together in strict accordance with the manufacturer's specifications. The
17 surface shall be wiped free of dust, dirt, gravel, or other foreign materials
18 before joining. The spigot end shall be centered on grade into the bell
19 end of the last downstream length of pipe, and properly seated.
20

21 2. When seating pipe with a pry, lever, or other approved device, care shall
22 be taken to protect the pipe end from damage. Ends damaged in any
23 manner shall be cause for rejection of the pipe.
24

25 G. Repair and Replacement Construction
26

27 1. All repair and replacement work shall conform to standards specified for
28 new construction wherever applicable, or as specified in the Repair
29 Specifications.
30

31 H. Removal of Existing Pipe
32

33 1. Existing pipe no longer in service that is removed from the system shall
34 be disposed of properly by the Contractor. Openings in manholes,
35 sewer lines, or wye branches remaining in place shall be properly
36 plugged and sealed so as to eliminate any possibility of infiltration at the
37 point of separation. All pieces of broken pipe shall be removed from the
38 trench before backfill operations commence. Backfill of the trench shall
39 be as specified in Section 31 23 33 - Excavation and Backfill for Pipes.
40 Inspection of structures remaining in place shall be made before backfill.
41

42 3.02 INSPECTIONS OF LINES AND MANHOLES
43

44 A. Inspection of completed lines and manholes shall be scheduled within a
45 reasonable time after construction or when required by the Project manager. Before

scheduling an inspection, the Contractor shall prepare the lines by cleaning and flushing. Manholes shall be clean, finished and free of leaks.

B. Manholes shall be on a true and uniform grade. The inverts shall have a smooth steel troweled finish. All benches shall be uniformly sloping. The frames shall be tight and properly set in mortar on solid masonry. The invert, benches and adjacent pipe shall be free of splattered mortar. All required interior lining or paint shall be kept intact. Manhole frames shall be adjusted to grade with the covers and frames cleaned and free of mortar and asphaltic mixtures. All precast manhole seams shall be filled with an approved asphaltic compound.

C. Pipe between manholes shall be true to line and grade. Dips and sags with one inch or more of trapped water shall be cause for rejection. Inspection shall be by mirror and sunlight and shall be followed by television inspection at the Contractor's/Developer's expense. Air testing may be required also at the Contractor's/Developer's expense. Contractor shall provide personnel to assist with inspections.

D. The Contractor shall provide Pinellas Park Utilities with a Television Inspection of the completed gravity sewers in accordance with the following:

1. Shall be performed by a NASSCO PACP Certified Operator who will use software that is compatible with Granite XP latest version software to NASSCO PACP Standards.
2. Shall be submitted as digital media that includes video and data base file in PACP format and include a printed copy of the PACP television inspection log.
3. Shall perform a manhole inspection and provide a completed NASSCO Manhole Inspection form latest version for each manhole that is connected to the sewer being inspected.
4. All pertinent data recorded in audio on the media to include:
 - a. Subdivision name and phase number.
 - b. Manhole numbers (these numbers must match manhole numbers on "as built" drawings).
 - c. Date
 - d. Size and material of pipe
 - e. Service connection locations, right or left
 - f. All distances between manholes
 - g. Locations of suspected and obvious pipe deficiencies (i.e., bad joints, breaks or leaks etc)

- 1 5. PVC pipe shall have a deflection test using a seven and one-half percent
- 2 (go-no-go) test mandrel of appropriate size, which shall be visible on
- 3 video at all times.
- 4
- 5 6. The printed NASSCO PACP television report (indicating manhole
- 6 numbers) which will accompany the media. This written report must
- 7 include:
- 8
- 9 a. Manhole numbers (these numbers must match manhole numbers
- 10 on "as-built" drawings).
- 11 b. Service connection locations, right or left.
- 12 c. Reference to service connection locations out of manholes.
- 13 d. Locations of suspected and obvious pipe deficiencies (i.e., bad
- 14 joints, breaks or leaks, etc.).
- 15 e. Depth of each manhole.
- 16 f. Actual measured distance (on ground) between manholes.
- 17
- 18 7. All visual and television inspections shall be completed and approved by
- 19 Pinellas Park Utilities after the road base has been constructed but
- 20 prior to the placing of any asphalt.
- 21
- 22 8. Television Inspection Media must clearly show details of structural
- 23 defects, misalignments and infiltration.
- 24
- 25 9. For detailed requirements for Television Inspection see Section 33 01 32
- 26 Sanitary Sewer Cleaning and Televising.
- 27
- 28 E. All known or indicated breaks shall be repaired by the Contractor regardless of
- 29 the test allowances. Faulty sections of sewer lines or manholes rejected by the
- 30 Project manager shall be removed and re-laid by the Contractor. Sunken manholes
- 31 will not be accepted.
- 32
- 33 3.03 SERVICE CONNECTIONS - WYE UNITS AND SERVICE PIPE
- 34
- 35 A. In new sewer construction, D.I.P. and PVC service connections shall be made
- 36 by means of a wye or tee. All joints connected to the wye unit shall remain
- 37 flexible. Service connections on existing mains shall be made using a sewer
- 38 saddle approved in the City's Materials Specification Manual.
- 39
- 40 B. All new sewer service connections shall have a continuous looped trace wire
- 41 consisting of one (1) 14-gauge minimum solid copper or one (1) 12- gauge
- 42 copper clad steel tracer wires taped to the top center of the pipe from the
- 43 cleanout to the main line and back to the cleanout in accordance with the
- 44 Pinellas Park Standard Details. Tracer wire shall be in accordance with the
- 45 City's Materials Specifications Manual.

1 C. Service pipe for all properties shall be laid to the property line and plugged, as
2 shown on the Standard Details. All ends of service lines shall be marked by a
3 permanent stake and where sidewalks or curbs are located nearby, by a
4 chiseled mark cut in the sidewalk or curb. Service pipe shall have a protective
5 cover of not less forty-two (42) inches under all roads and thirty-six (36) inches
6 at all property lines. Inspection of service pipe shall be made before backfill.
7 Service pipe shall have a visibly good line and grade. Shallow service shall be
8 laid by using a four foot hand level with proper shim attached to one end.

10
11 D. In cases of extra depth where service pipe cannot be laid on a continuous
12 grade to the property line, the Contractor shall then furnish all materials and
13 construct risers as shown on the Plans. When pipe cannot be adequately
14 supported on undisturbed earth, it shall be supported on a concrete cradle. No
15 payment will be made for concrete required to correct conditions resulting from
16 faulty construction methods or negligence.

20 3.04 SERVICE RECONNECTIONS

22 A. Service reconnections require adapters for all joints that will not connect
23 properly with ordinary factory joints. Approved pipe cutting methods shall be
24 used to cut any pipe required for the connection. All cut pipe will be ground and
25 smoothed to remove snags and sharp edges. No mortar or collars shall be
26 used on reconnections unless specifically approved by the Project Manager.

28 3.05 JOINING NEW PIPE TO OLD PIPE

30 A. Joining polyvinyl chloride pipe to existing vitrified clay pipe requires an adapter
31 approved in the City's Materials Specification Manual for all joints that will
32 not connect properly with ordinary factory joints. Approved pipe cutting
33 methods must be used to cut any pipe required for the connection. All cut pipe
34 shall be ground and smoothed to remove snags and sharp edges. No mortar
35 or collars shall be used for such connections unless approved by the Project

manager. 36

37 3.06 CLEAN-OUTS

39 A. Clean-outs shall be constructed in accordance with the Standard Details at
40 locations as shown on the Plans.

42 3.07 JOINING PIPE TO MANHOLES OR OTHER STRUCTURES

44 A. All manhole connection holes shall be core drilled with a maximum hole
45 diameter not to exceed one and a half times the pipe diameter.

- 1 B. Approved standard groutable PVC-to-manhole fitting approved in the City's
2 Materials Specification Manual, or a flexible rubber boot may also be used at
3 the manhole connection. The boot shall be manufactured of neoprene or
4 isoprene compounds formulated and tested to resist deterioration due to
5 sewage, hydrogen sulfide, oils, fats, greases, petroleum products and
6 by-products. The connection at the manhole wall shall be flexible and
7 water-tight. Any annular space inside the manhole at the connection shall be
8 filled with approved caulking material or joint filler.
9
- 10 C. Stubouts for future mains shall be constructed at the locations and to the
11 elevations shown on the Plans. The manhole benches shall be constructed to
12 direct flows from all shown manhole inlets smoothly to the outlet. Stubouts
13 shall be plugged with bricks and mortar per the detail shown on the Plans.
14
- 15 D. Pipe connections to existing manholes shall be made so that finished work will
16 conform, as nearly as possible, to the essential requirements for new manhole
17 construction, as specified above. Drop connections on existing manholes shall
18 be strengthened by use of eight #6 pins, placed around the drop elbow and tee,
19 or inside PVC drops may be used.
20

21 3.08 WATER MAIN STORM DRAIN CROSSINGS
22

- 23 A. In all cases where sanitary sewer mains cross water mains, or storm sewers with
24 a minimum clear distance between the sanitary sewer and the water main or
25 storm sewer of less than twelve (12) inches, the sanitary sewer shall be ductile
26 iron pipe for a distance of ten feet on either side of the point of crossing. No
27 pipe joint shall occur within ten (10) feet of the crossed water main. Refer to
28 Pinellas Park Standard Details.
29
30

END OF SECTION

SECTION 33 34 00

SANITARY SEWAGE FORCE MAINS AND APPURTENANCES

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The Contractor shall furnish all plant, labor, materials, equipment and tools and perform all operations in connection with the construction of the sanitary sewage mains and appurtenances, including excavation, trenching, backfilling, testing, clearing and clean-up.

1.02 MAINTAINING SERVICE AND SHUT DOWNS

- A. The Contractor's attention is called to the fact that the existing system must be kept in operation at all times. Where connections are made to existing mains or other shutdowns are necessary, permission must be obtained and arrangements must be made with the City's Utilities Department for removing from service those mains that will be affected. Shutdowns must be held to a minimum in both number and duration.

Bypass pumping and hauling operations may be required to interrupt service.

- B. No valve or other control device on the existing system shall be operated by the Contractor without first obtaining approval from the City's Utilities Department. The Contractor shall, at least forty-eight (48) hours in advance, notify citizens subject to interruption of service by means of door hangers or any other approved method of the starting time and duration of such interruption.

1.03 SUBMITTALS

- A. Unless waived by the Project manager, cut sheets for the entire force main shall be submitted by the Contractor to the Project manager for approval at least two days prior to construction. This requirement will not relieve the Contractor of the responsibility to accurately record the "as-built" locations (horizontal and vertical) of piping, valving and appurtenances. Contractor shall submit to the City the Continuity Testing Results per Section 3.04 Item 6.g.

1.04 LAYING PIPE

- A. All roads and curbs shall be installed prior to force main installation. On a road where there is no curb, the paving must be done prior to installing the force main. Any deviation from this must be approved in writing by the

Pinellas Park Project manager or his designated representative. In any case, force mains will not be accepted or tested until curb and/or roads are compete, thus preventing possible relocation or adjusting and retesting of newly installed pipes.

B. All joints, fittings and other appurtenances shall not be covered until inspected by the Project Manager or Designee. Non-compliance will require excavation of all joints and fittings.

C. The pipe and fittings shall be constructed as shown on the approved Plans. All pipe four inches and larger in diameter may be deflected, but not bent. PVC pipe two inches in diameter may be bent around cul-de-sacs that have a radius of thirty-seven (37) feet or larger if the trench is left open until the Project Manager or Designee is onsite to document that this guideline is fully complied with. The use of fittings not shown on the "Contractor Copy" construction Plan must have the prior concurrence of the Project Manager or Designee.

1.05 ABANDONMENT OF EXISTING MAINS BEING TAKEN OUT OF SERVICE

A. In general, pipe six inches and smaller abandoned within Pinellas Park rights-of-way shall be capped at both ends and abandoned in place. Grouting is not required unless specifically required by the Project manager or the City.

B. Abandoned pipes eight inches and larger shall be filled with grout or flowable fill unless otherwise directed by the City or the Project

manager. 28

C. Pipe abandoned in rights-of-way owned by municipalities other than Pinellas Park shall be subject to the requirements of the agency having jurisdiction.

D. All pipes shall be abandoned in a manner which results in the abandoned pipeline not being pressurized.

PART 2 – PRODUCTS

2.01 GENERAL

A. Materials, equipment and supplies furnished and permanently incorporated into the Project shall be of first quality in every respect, shall be constructed and finished to high standards of workmanship, and shall be the product of an approved reputable manufacturer. Material shall be suitable for the service intended, shall reflect modern design and engineering and shall be fabricated in a first-class workmanlike manner. All materials, equipment and supplies shall be new and shall have not

1 been in service at any time previous to installation, except as required in
2 tests or incident to installation.

3
4 B. Materials and construction pertaining to restoration and construction of
5 roads and structures shall be in accordance with the latest edition of
6 Florida Department of Transportation (DOT) Standard Specifications for
7 Road and Bridge Construction or as called for on the Plans.

8
9 C. All ductile iron or cast iron pipe, fittings and valves are to be encased in
10 green polyethylene material, conforming to ASTM specification D-1248,
11 with a minimum 8 mil thickness, taped and free of dirt in accordance with
12 the latest edition of AWWA C105. Polyethylene film shall be supplied in
13 tube form suitable for use in Installation Method 'A' as defined in AWWA
14 C105.

15
16 D. All piping and appurtenances shall be color coded green with the
17 exception of ductile iron pipe. That shall be encased in green
18 polyethylene wrap, or if not available, encased in clear polywrap and shall
19 be marked by means of three four-inch-wide painted green lines along the
20 length of the pipe at opposite locations around the pipe.

21
22 E. All PVC piping and ductile iron mains partially constructed of PVC or
23 HDPE between valves shall be installed with locator wires, as specified
24 below.

25
26 F. Force mains shall be buried with green metallic locator tape. All locator
27 tape shall be placed twelve (12) inches above buried pipe.

28
29 G. No glued joints will be allowed. Mechanical restrainers are the only
30 acceptable method of restraint.

31
32 2.02 MATERIALS

33
34 A. All pipe and appurtenant materials used in the Pinellas Park Sewer
35 System shall be as specified in the latest version of the Pinellas Park
36 Utilities, Material Specification Manual at the time of plan approval.

37
38 PART 3 - EXECUTION

39
40 3.01 HANDLING

41
42 A. All materials, unless otherwise directed, shall be unloaded as nearby as
43 possible to the location of installation by the Contractor. Materials shall be
44 handled with care to avoid damage.

- 1 B. Materials shall be lifted by hoists or slid or rolled on skidways in such
2 manner as to avoid shock. Under no circumstances shall materials be
3 dropped. Pipe handled on skidways must not be allowed to roll against
4 pipe already on the ground. The Contractor shall be responsible for the
5 safe handling of all materials. Damaged materials shall not be installed.
6
7 C. All materials found during the progress of work to have flaws, cracks, or
8 other defects will be rejected by the Project manager regardless of whether or not
9 it has been installed and shall be replaced by and at the expense of the
10 Contractor.
11
12 D. All PVC pressure pipe, upon delivery to the site and until such time as it is
13 placed in the trench, shall be shielded from the weather and direct sunlight
14 to prevent pipe deterioration.
15
16 E. Materials shall not be stacked or placed under materials in such a manner
17 that damage could result.
18
19 F. Slings, hooks, or tongs used for lifting shall be padded in such a manner
20 as to prevent damage to exterior surfaces, interior linings and
21 components. If any part of the coating, lining or components is damaged,
22 the repairs or replacement shall be made by the Contractor at his expense
23 and in a manner satisfactory to the Project manager prior to attempting
24 installation.
25
26 G. In the event that materials supplied by the City are defective, the
27 Contractor shall notify the Project manager immediately so arrangements can be
28 made for replacing such devices.
29

30 3.02 FIELD LAYOUT AND MODIFICATIONS
31

- 32 A. The Contractor, unless directed otherwise, shall be responsible for setting
33 construction layout stakes and/or offsets required to complete the
34 designated work. The Contractor shall insure that those stakes and/or
35 offsets are protected and any re-staking due to work stoppage shall be
36 included and no additional compensation to the Contractor will be made.
37
38 B. The Project manager has the right to make any modifications as he deems
39 necessary due to field conditions, conflicts with other utilities or to protect
40 other properties.
41

42 3.03 EXCAVATION, ALIGNMENT AND GRADE
43

- 44 A. Trench excavation and backfill shall be in accordance with Specification
45 31 23 33, Excavation and Backfill for Pipes.
46

- 1 B. All mains shall be laid and maintained at the required lines and grades
2 with fittings, valves and appurtenances at the described locations. All pipe
3 shall be laid to the depth as shown on the Plans, or when a depth is not
4 indicated, with a minimum cover of thirty (30) inches outside of the
5 roadway, and thirty-six (36) inches under the roadway. Grade lines shall
6 be set by the Contractor. The tolerance of such grades shall not be more
7 than that specified on the drawings. When no tolerance is indicated a
8 tolerance of 0.5 foot shall be used. All other realignments must be
9 approved by the Project manager. The Contractor shall have suitable survey
10 equipment on the site at all times.
11
- 12 C. The Work shall at all times progress with caution so as to prevent damage
13 to underground obstructions both known and unknown. Should an
14 obstruction not shown on the Plans be encountered, the Project manager shall be
15 immediately notified and he shall be responsible for alteration to the plan
16 should realignment be necessary. The Contractor shall notify the
17 Project manager far enough in advance to allow the realignment to be
18 accomplished by deflection in the pipe joints.
19

20 3.04 LAYING AND JOINING BURIED FORCE MAINS

21

22 A. General

23

- 24 1. Prior to installation, all pipe shall be inspected for defects and all
25 lump or excess coatings shall be removed. The inside of the bell
26 and outside of the spigot shall be cleaned prior to joining of all pipe.
27 Caution shall be taken to prevent damage to the pipe during
28 lowering into the trench. Caution shall be taken to prevent foreign
29 matter from entering the pipe during installation. The Project manager may
30 require covering of the end of the pipe to prevent debris from
31 entering. No debris, tools, clothing or other material shall be placed
32 in the pipe.
33
- 34 2. After placement in the trench the spigot end of the pipe shall be
35 centered in the bell and the pipe shall be driven home and then
36 brought to the proper line and grade by tamping approved backfill
37 material under it, except for the bell. Joint deflection shall not
38 exceed manufacturer's limit.
39
- 40 3. During the time that the pipe is in the trench but no work is in
41 progress, the end shall be closed by a water-tight plug. This shall
42 include the noon hour, as well as overnight. If there is water in the
43 trench upon beginning work, this plug shall remain in place until the
44 trench has been pumped dry, unless otherwise approved by the
45 Project manager.
46

4. Standard plugs shall be inserted into all dead end pipes, tees or crosses; spigot ends shall be capped; flanged ends shall have blind flanges, or sheet metal or plywood caps. Plugs installed for pressure testing shall be fully secured and restrained to withstand the test pressure.
5. Where plugging is required because of Contract division or phasing for later connection, the ends of such lines shall be equipped with a permanent type cast iron or ductile iron plug/cap or blind flange with or without a blowoff cock, as shown on the Drawings. Installation or removal of such plugging shall be considered incidental to the work and no payment shall be expected for this work by the Contractor.
6. Tracer Wire For PVC, HDPE and Non-Continuous Ductile Iron Force Mains.
 - a. Tracer wire shall be installed on all mainline pipe. Mainline pipe installed by open cut method shall have two (2) 14-gauge minimum solid copper or two (2) 12-gauge copper-clad steel tracer wires taped to the top center of the pipe. Mainline pipe installed by horizontal directional drill shall have two (2) 12-gauge copper-clad steel tracer wires installed with the pipe. All tracer wire shall be as specified in the material specification manual.
 - b. The locator wires shall have colored insulation matching the type of service provided in the main and be acceptable for direct burial.
 - c. All splices of the wires shall be made with watertight connections per material specification manual.
 - d. The wires shall each be continuous throughout the project.
 - e. The wire is to be tied to all valves, tees and elbows
 - f. The locator wires shall be brought up into all valve boxes with enough slack provided to extend 10 to 12-inches out of each box and installed as shown in the Standard Details.
 - g. Contractor shall perform a 12-volt DC electrical continuity test on each of the wires. No more than one volt of loss per 1000 feet of mainline pipe will be acceptable. The locator wire system shall pass the 12-volt DC electrical continuity test for at least one wire prior to final acceptance of the

1 pipeline. Any cuts or breaks in the wire shall be repaired by
2 the Contractor at his expense.

- 3
4 h. The locator wire shall be tested by the Contractor at the time
5 of pressure testing. If this test fails, the Contractor is
6 responsible for repairing the locator wire and the pressure
7 test will be reschedule when the wire will pass.
8

9 B. Pigging, Flushing and Cleaning

- 10
11 1. All mains shall be pigged, cleaned and flushed to remove all sand
12 and other foreign matter. The Contractor shall be responsible for
13 developing a pigging and flushing plan to be submitted to the
14 Project Manager or Designee for approval prior to pigging and flushing.
15 The Contractor shall dispose of all water used pigging and for
16 flushing without causing a nuisance or property damage, in
17 accordance with state and local requirements. Any permits or fees
18 required for the disposal of flushing water shall be the responsibility
19 of the Contractor.
20
21 2. Flushing water used by the Contractor shall be taken from an
22 approved metered source. The water utility will provide the meter
23 and designate the source. Potable and reclaimed flushing water
24 shall be at the Contractor's expense.
25
26 a. Reclaimed water should be used for sanitary force mains.
27
28 b. Potable water can be used for all service types.
29
30 3. The cleaning of the new piping system shall be accomplished by
31 the controlled and pressurized passage of a series of hydraulic or
32 pneumatic polyurethane plugs of varying dimensions coatings, and
33 densities; which shall be selected by the pipe cleaning Contractor.
34 The Contractor shall provide a means to enter the pig into the
35 system, control and regulate flow, monitor flows and pressures, and
36 to remove the pig from the system. The Contractor shall maintain a
37 constant surveillance of the system and immediately report to the
38 proper authority any in-line problems encountered or any
39 malfunctions discovered in the piping system. A record of pig
40 models, sizes, styles, and other pertinent information shall be kept
41 by the Contractor and turned over to the City.
42
43 4. The Contractor shall furnish pig launching and retrieval equipment
44 to minimize additional valving, fittings and auxiliary water supplies.
45 Valves and blowoff assemblies, which are installed as part of the
project, shall be used as much as possible to minimize the number
of temporary ports required for proper flushing and cleaning.

5. All materials used shall be specifically manufactured for flushing and cleaning pressure pipes, bends and valves. The pigs shall be able to go through bends, open valves and fittings, and provide adequate cleaning of the pipe.
6. Cost of Pigging Services- The cost to complete the requirements under this section shall be included in the contract items provided in the proposal sheet. There is no separate pay item for this work.

C. Jointing HDPE Pipe and Fittings

1. HDPE pipe shall be jointed by the butt-fusion process in accordance with pipe manufacturer's directions. Contractor shall provide butt-fusion technicians who are trained and certified by the P.E. pipe manufacturer to complete the project. The date of technician certification shall not exceed 12 months before commencing construction.
2. Butt-fusion means the butt-joining of the pipe by softening the aligned faces of the pipe ends in a suitable apparatus and pressing them together under controlled pressure.
3. The internal and external beads resulting from the butt-fusion process shall be visible and examined for penetration 360 degrees around the pipe diameter.
4. All fittings for HDPE pipe (4" and larger), except for D.I./HDPE Mechanical Joint Adaptors, shall be ductile iron mechanical joint fittings per material specification manual and shall be joined to the pipe using a butt fused restrained mechanical joint adapter.
5. The D.I./HDPE mechanical joint adapter shall be connected to the HDPE pipe by a heat-fused joint on one end, and connected to a ductile iron pipe valve, or fitting with a mechanical joint on the other end.
6. Solvent epoxy cementing, electro-fusion couplings and mechanical joining with bolt on wrap around clamps or mechanical joints with out an adapter shall not be used for connections.
7. The D.I./HDPE mechanical joint adaptor shall be connected to the HDPE pipe by a heat-fused joint on one end, and connected to a ductile iron pipe valve, or fitting with a mechanical joint on the other end.
8. Short pieces of pipe between valves and fittings shall be DIP with all joints restrained for sizes 3-inches and larger. For 2-inch, the

1 short pieces shall be brass or Sch. 80 with IP threads and DI,
2 HDPE or brass fittings and all joints restrained.

3
4 D. Jointing Push-On Ductile Iron and PVC Pipe and Fittings

- 5
6 1. The inside of the bell and the outside of the spigot end shall be
7 thoroughly cleaned to remove dirt, grit, oil or excess coatings and
8 other foreign matter. The rubber gasket shall be flexed inward and
9 inserted in the gasket recess of the bell socket. A thin film of
10 gasket lubricant shall be applied to either the inside surface of the
11 gasket or the spigot ends, care will be taken to avoid contact with
12 the ground. The joint shall be completed by forcing the plain end to
13 the bottom of the socket with a forked tool or jacking device or other
14 approved method. All pipe shall have depth mark prior to insertion.
15 Pipe cut in the field shall be filed to resemble the spigot end of
16 manufactured pipe.
17
18 2. When deflection is required the joint shall be completed prior to
19 setting the deflection. The deflection shall conform to applicable
20 AWWA Standards or manufacturer's recommendation with prior
21 Project manager's approval.
22

23 E. Jointing Mechanical Joint Pipe and Fittings

- 24
25 1. The inside of the socket, the outside of the spigot end and the
26 gland shall be thoroughly cleaned and or washed with an approved
27 solution to remove dirt, grit, oil or excess coatings and foreign
28 matter to improve gasket seating. The gland shall then be placed
29 on the plain end of the pipe with the lip extension toward the plain
30 end, followed by the gasket with the narrow edge of the gasket
31 toward the plain end of the pipe. The pipe shall be inserted into the
32 socket and the gasket pressed firmly and evenly into the gasket
33 recess. The joint shall be kept straight during the assembly and
34 any deflection required shall be done after the joint has been
35 assembled but prior to tightening the bolts.
36

37 F. Jointing Special Joint Ductile Iron Pipe and Fittings

- 38
39 1. Other special joint pipe shall be assembled or installed, per
40 manufacturer's recommendations, or directed by the Project manager. The
41 Contractor shall insure that the joint is thoroughly cleaned by
42 removing all dirt, oil, grit, excess coatings and foreign matter to
43 insure a tight joint.
44

45 3.05 TEMPORARY AND PERMANENT PLUGGING

- 1 A. Temporary plugging of pipes shall be performed at the time of construction
2 when the work is interrupted due to lunch breaks, end of shift or any other
3 reason that require work to stop for more than half an hour.
4
5 B. Permanent plugs shall be inserted into the bells of all dead-ends of pipe,
6 tees, or crosses and plain ends shall be capped. All plugs and caps shall
7 be properly restrained as called for on the Plans or Standard Details.
8

9 3.06 REMOVAL OF OUT OF SERVICE PIPE

- 10
11 A. Due to certain permit requirements, pipe that is to be removed from
12 service will have to be physically taken out of the ground. The limits of
13 pipe to be removed shall be specifically called for in the Plans or shall be
14 approved in writing by the Project manager. Any other removal not specifically
15 called for, shall be considered incidental to construction of other items in
16 the Contract and the Contractor will not receive compensation for such
17 work.
18
19 B. When removing pipe, the Contractor shall excavate a trench wide enough
20 to dislodge the pipe from the surrounding soil, and long enough to be able
21 to handle the pipe without causing any damage to nearby utilities,
22 structures or adjacent property.
23
24 C. The removed pipe, fitting and appurtenances will become the Contractor's
25 property and he shall be responsible for proper disposal and any required
26 permits thereof.
27
28 D. Refer to Specification 01 35 00, Special Project Procedures for removal of
29 asbestos cement (AC) pipe.
30

31 3.07 INSTALLATION OF PIPE UNDER DRIVEWAYS

- 32
33 A. At the Project manager's discretion, the Contractor will be required to auger pipes
34 under driveways, structures or trees to avoid removal or expensive
35 restoration of those structures. The Contractor will be allowed to utilize an
36 auger machine and to push or pull the carrier pipe into the bore without
37 the need of a casing.
38
39 B. The Contractor shall install the sewer water pipe within the bore hole on a
40 line and grade to allow connection to open cut piping adjacent to the bore
41 hole within pipe jointing alignment limits defined for the pipe in question.
42 The completed installation shall not result in settlement of soil under the
43 driveway.
44

45 3.08 INSTALLATION OF PIPE UNDER HIGHWAYS AND RAILROADS

1 A. The Contractor shall furnish and install protective steel pipe casings
2 and/or carrier pipe under highways/railroads in the pipe size, thickness,
3 length, location and details as shown on the Drawings and specified
4 herein. The Contractor's attention is particularly directed to the
5 requirements of the particular municipal or private owner or Department of
6 Public Works having jurisdiction over the highways/railroads whether
7 through permit, verbal or other directions.
8

9 B. The construction shall not be started until the necessary permits have
10 been obtained, a copy is at the job site, and proper notice and approval for
11 construction has been obtained from the owner of the highway/railroad
12 and the Project

manager. 13

14 C. All necessary materials, equipment, labor and traffic protection devices
15 shall be on the job site before requesting permission to start the Work.
16

17 D. Steel casings and the installation thereof required for highway/railroad
18 crossings shall be in accordance with the standards and requirements of
19 the Florida Department of Transportation (FDOT) or railroads or AASHTO
20 Standards and the Specifications outlined herein. All work of this nature
21 shall be performed by qualified Subcontractors regularly engaged in that
22 type or work and shall be subject to approval by the Project

manager. 23

24 E. All work shall be in accordance with Specification 33 05 20, Jacking and
25 Boring.
26

27 3.09 FITTINGS

28

29 A. All fittings shall be restrained by means of restraining devices such as
30 restrainer glands, restraining gaskets, etc.
31

32 B. Fittings shall be set and joined to the pipe and each type of joint as
33 specified for pipe.
34

35 C. Trenching and backfilling for all fittings shall also be in accordance with
36 Section 31 23 33, Excavation and Backfill for Pipes.
37

38 D. The use of thrust blocks in new lines is prohibited and shall only be limited
39 to areas in which a new fitting has been installed in an existing line and is
40 not feasible to restrain joints or when directed by the Project

manager. 41

42 E. The use of "reverse dead-man" shall be as described under Standard
43 Details for dead-end valves or in circumstances that the Project manager deems it
44 necessary and shall be performed under his direction.
45

46 3.10 VALVES

- 1
2 A. Valves shall be set and joined to the pipe and each type of joint as
3 specified for pipe.
4
5 B. Trenching and backfilling for all valves shall also be in accordance with
6 31 23 33, Excavation and Backfill for Pipes.
7
8 C. Cast iron valve boxes shall be firmly supported, maintained centered and
9 plumb over the operating nut of the valve. Outside of paved areas, valve
10 boxes shall be set in a 2' x 2' x 6" thick concrete collar, along with a brass
11 ID tag, as shown on Standard Details. The box cover shall be flush with
12 the surface of the finished pavement. All force main valve box lids shall
13 be painted green and shall have the word "SEWER" cast in the lid.
14
15 D. All reasonable effort must be made to locate valves/valve boxes, back of
16 curb, in grass areas and at street corners, whenever possible.
17
18 E. Valve boxes in areas that will require sod at a later date must be left one
19 to two inches above existing grade (to allow for sod thickness).
20
21 F. All valves/boxes shall be located by means of a perpendicular 6" x 2'
22 green stripe across the curb. The distance from the back of the curb to
23 the valve will be stenciled on the curb with numbers four inches high,
24 painted green, by the Contractor. This information will be referenced on
25 the pavement, if no curbs are to be installed. All valve box tops shall be
26 painted green. All valves must be centered over the operating nut/wheel
27 and all valves, after being fully opened, will be backed off one-quarter turn
28 to prevent them from being jammed open. This procedure should take
29 place only after the main has passed pressure testing and has been
30 accepted by the City.
31
32 G. All dead end valves shall be restrained with a reverse deadman, per the
33 Standard Details.
34
35 H. Should the operating nut be more than three feet below the final grade, an
36 extension shall be supplied and installed by the Contractor. The extension
37 shall bring the nut to within twelve (12) inches of final grade.
38
39
40
41
42 I. Installation of Valves on Existing Force Mains
43
44 1. When installing valves in existing mains (cutting-in), the Contractor
45 shall insure that the pipe is kept clean at all times and no debris,
46 ground water, mud, oil, etc., will make their way into the pipe.

- 1
2 2. The lid shall fit flush in the top of the box without forcing and shall
3 not rock, tip or rattle. Valve box lids shall be painted green and
4 referenced to the closest curb by stenciling the distance, and by
5 painting a six inches wide by two feet long stripe perpendicular to
6 the curb of the roadway.
7

8 J. Removal and Disposal of Existing Valves
9

- 10 1. Any valve, unless otherwise specified, that is removed from the
11 system shall become the property of the Contractor and he shall
12 insure proper disposal.
13

14 3.11 TAPPING OF MAINS
15

- 16 A. The Contractor, after installing the sleeve and prior to making the tap,
17 shall ensure that the sleeve is providing a watertight joint by means of
18 pressure testing with pressures in accordance with 01 45 17, Pipeline
19 Testing Requirements. If leaks are present, the Contractor will be
20 required to repair them to the satisfaction of the Project manager.
21

22 3.12 INSTALLATION OF BOLTS ON MECHANICAL JOINTS
23

- 24 A. Align bolt holes and insert bolts, with bolt heads behind the bell flange,
25 and tighten opposite nuts to keep the gland square with the socket.
26 Tighten the nuts in accordance with following table:
27

Bolt Diameter (inches)	Torque (ft-lb)
5/8	45-60
3/4	75-90
1	85-100
1 1/4	105-120

28
29 3.13 PAINTING
30

- 31 A. All above ground installations shall be painted OSHA safety precaution
32 green. Paint application shall be in accordance with the paint
33 manufacturer's recommendation.
34
35 B. Paint shall be as specified in the City Materials Specification Manual.
36
37 C. Guard post shall be painted OSHA safety yellow.
38
39 D. All painting shall be in accordance with Section 09 91 00, Painting.

1
2 3.14 PRESSURE TESTING
3

- 4 A. All sewage force mains shall be tested in accordance with Specification
5 01 45 17, Pipeline Pressure and Leakage Testing Requirements.
6

7 END OF SECTION

SECTION 33 39 00

SANITARY SEWER STRUCTURES

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The Work includes furnishing all plant, labor, tools, equipment, materials, end performing all operations in connection with construction of sanitary sewers and appurtenant structures, including excavation, trenching, backfilling and appurtenant work as required, or as directed.

1.02 RELATED DOCUMENTS

- A. Specification 33 33 01, Gravity Sewers
- B. Specification 31 23 34, Excavation and Backfill for Structures

PART 2 – PRODUCTS

2.01 MATERIALS

- A. General
 - 1. All manholes shall be precast concrete unless prior approval for an alternative material is given by the City.
- B. Concrete
 - 1. Concrete for cradles shall conform to Specification 03 10 01, Concrete and Concrete Materials of these Specifications and shall develop a minimum 2,500 psi compressive strength at twenty-eight (28) days.
- C. Brick
 - 1. Where brick manholes are specifically called for, brick shall be hard, solid common clay brick meeting the requirements for latest ASTM C-32 (sewer brick), Grade MA.
- D. Mortar
 - 1. Mortar for manholes shall consist of one part Portland Type II cement, two to three parts fine sand mixed with water for proper

SANITARY SEWER STRUCTURES

consistency. Lime shall not be used in mortar for manholes. Commercially prepared mortar mixes, or expanding grout, shall not be used. Admixtures to mortar or commercial fast-setting cements shall not be used without approval of the Project manager.

2.02 MANHOLES

A. Slabs for Brick Manholes

1. Slabs shall be 3,750 psi/28 day concrete with a wood float finish. Reinforcement shall consist of #4 bars on eight inch centers, both ways, with one and one-half-inches of cover over the bar mat and three inches between earth and re-bar.
2. Brick manholes less than twelve (12) feet deep shall have a slab depth of eight inches. Manholes twelve (12) feet or deeper shall have a slab depth of twelve (12) inches. Slabs for standard manholes, shall be no less than six feet square. Slabs for Type A manholes, shall be a minimum of five feet square. Slabs for drop manholes shall be of sufficient size to support the manhole and the entire drop structure.
3. Slabs shall be located accurately so that manhole or manhole and drop assembly will be centered on slab. All slabs shall be installed at a grade that will allow clearance under the bells of the pipe. All slabs shall be solidly installed on 3/4-inch bedding stone which has been compacted against firm undisturbed ditch bottom. Depth of bedding stone shall be a minimum of six inches, or as directed by the Project manager.
4. The Contractor shall request an inspection of reinforcing steel for all slabs poured on the job.
5. The Contractor shall submit a copy of all concrete truck delivery receipts to the Project manager.
6. If slabs for manholes are to be supplied by a commercial precast firm, the Contractor shall advise the Project manager sufficiently in advance so that inspection may be initiated at the precast yard.

B. Precast Manholes

1. Precast, reinforced concrete manholes shall have tongue and groove interlocking joints. Inverts shall be formed as specified herein. Shop drawings shall be submitted and approved by the Project manager prior to placing order with supplier.

- 1 a. Precast reinforced concrete manhole risers, grade rings and
2 tops shall conform as to materials, design, and fabrication with
3 the requirements of ASTM, C-478. The concrete shall consist
4 of 4,000 psi/28 day, Type II Portland Cement. The walls for
5 standard manholes shall be no less than six inches thick. All
6 precast manhole parts are to be free of fractures, honeycomb,
7 and other defects of concrete. Cones shall be concentric.
8
9 b. Precast manholes shall consist of a base unit with openings
10 for the sewer pipe, riser units of various lengths to build the
11 manhole up to the required depth and concentric cones. The
12 minimum height of the shortest riser shall be twelve (12)
13 inches.
14

15 C. Fiberglass Manholes

- 16
17 1. Fiberglass manholes shall be as specified in the City's Materials
18 Specification Manual.
19

20 D. Manhole Frames and Covers

- 21
22 1. All frames and covers are to be U.S. Foundry and Manufacturing
23 Corporation #195W, with a one hundred sixty-five (165) pound cover,
24 or approved equal. All mating surfaces shall be machined for proper
25 fit. All covers are to be stamped "Pinellas Park Sanitary Sewer"
26 with the year of construction. All manhole covers shall have two
27 watertight pick holes.
28

29 PART 3 - EXECUTION

30
31 3.01 EXCAVATION AND BACKFILL

- 32
33 A. Excavation and backfill for manholes shall be per Specification 31 23 34,
34 Excavation and Backfilling for Structures.
35

36 3.02 MANHOLE CONSTRUCTION

37
38 A. Brick Manholes

- 39
40 1. Where required, manholes shall be constructed of brick masonry with
41 cast iron frames and covers. Mortar shall be properly proportioned,
42 thoroughly mixed, and used immediately. Any mortar entering the
43 initial set, requiring additional water or heating, shall be discarded.
44 Bricks will be laid radially and pressed into the mortar spread on the
45 previous course. Each brick will be pressed against the adjoining
46 brick so that inside vertical corners touch. The mortar shall totally fill

all space between bricks. The inside wall of the manhole shall be kept wiped clean of excess mortar. Excess mortar on the outside of the manhole wall shall be kept troweled smooth or cut off. Corbels are to be concentric, and built in twelve (12) courses, unless otherwise specified. The exterior of the manhole shall be plastered to a 5/8-inch thickness, and shrinkage cracks shall be sealed by brushing before the final set. Risers between corbels and cast iron frames shall be limited to twelve (12) inches. The exterior plastered surface of the manholes shall be coated with an approved asphaltic waterproofing material. When outside drops are constructed on manholes, the drop shall be entirely supported by the slab. The drop stack may be formed by brick and poured with concrete, or built up with brick and mortar. Memphis Tees shall be used in the drop structures. All drop manholes shall have the inside surfaces coated as specified for precast manholes.

B. Precast Manholes

1. Any modifications necessary to adapt the units to conform to the locations and grades shown, or required, shall be made without additional compensation. It shall be the responsibility of the Contractor to assure that all manhole inlets are provided at the proper locations and elevations to accommodate the actual field requirements without additional compensation.
2. All requirements for manhole and drop manhole construction as previously specified which are applicable to precast manhole construction shall be considered as being contained herein.
3. Slabs for precast manholes shall extend a minimum of six inches beyond the outside face of the manhole wall.
4. All slabs for precast drop manholes shall be of sufficient size to entirely support the drop structure. Slabs shall have the minimum thickness shown in the Standard Details.
5. Manhole Units
 - a. All exposed interior surfaces and the tongue and groove ends of each unit shall be sand blasted and brushed clean, and immediately thereafter, completely coated with a protective coating of not less than 15 mils of manhole coating per Material Specification Manual. The coating shall be applied in strict accordance with the manufacturer's recommendations.

- 1 b. All exterior surfaces shall be brushed clean and, immediately
2 thereafter, completely coated with a protective coating of not
3 less than 15 mils of approved coating. The coating shall be
4 applied in strict accordance with manufacturer's
5 recommendations.
6
7 c. The interior and exterior paint shall be intact and continuous.
8 Any chips or holidays shall be patched using two coats of
9 approved coatings and used according to manufacturer
10 instructions.
11
12 d. Top and bottom ends of riser or sections shall be perfectly
13 formed so that continuous and uniform contact is possible
14 around the entire joint. Malformed joints shall be rejected.
15

16 6. Installation
17

- 18 a. All slabs or bottom sections shall be installed at a grade that
19 will allow clearance under the bells of the pipe. All slabs or
20 bottom sections shall be solidly installed on 3/4-inch bedding
21 stone which has been compacted against firm undisturbed
22 ditch bottom. Depth of bedding stone will be as directed by
23 the Project manager.
24
25 b. The tongue and groove ends of each unit shall be primed with
26 Ram-nek primer and allowed to dry. Immediately before
27 placing the next unit, the joints shall receive a coating of Ram-
28 nek. Enough plastic material shall be placed in the joint to
29 squeeze a bead of excess material out of the joint insuring a
30 completely sealed joint.
31
32 c. The top of the cone shall be set between two and one-half
33 inches and fourteen and one-half (14 1/2) inches below the
34 bottom of the manhole cover frame. It is the intent of the
35 Specifications to provide a minimum of two and one-half
36 inches to accommodate future grade changes without
37 disturbing the manhole. Where the distance between the
38 bottom of the manhole cover frame and the top of the cone is
39 greater than fourteen and one-half (14 1/2) inches, 12-inch
40 riser units shall be used to bring the top of the cone to within
41 the limits specified.
42
43 d. The annular space between the sewer pipe and the opening in
44 the manhole shall be grouted with Portland cement mortar and
45 wiped or collared to insure a watertight joint. Invert channels
46 shall be formed after the manhole is set by one of the following

1 methods: Build up with brick and mortar, or lay a full section of
2 sewer pipe through manhole and cut out the top half. The
3 manhole floor outside of the channels shall be made smooth
4 and sloped toward the channels on a slope of two inches, per
5 foot.
6

7 C. Inverts
8

- 9 1. Invert channels shall be constructed smooth and semicircular,
10 conforming to the inside of adjacent sewer section. The mortared
11 invert channel shall have a steel trowel finish. Changes in direction of
12 flow shall be made in a smooth curve of as large a radius as possible.
13 Changes in size and grade shall be made gradually and smoothly.
14 Whenever possible, inverts shall be formed with a full section of pipe
15 laid through the manhole with the top half of the pipe cut out.
16 Benches shall be built up solidly with concrete or brick and mortar
17 and shall be sloping to the invert. All inside drops shall have a flume
18 constructed to channel flow into the invert. Standard drop manholes
19 shall be built whenever the inside drop exceeds twenty-four (24)
20 inches. All pipe entering the manhole must be trimmed flush with the
21 walls. All exposed sharp edges of pipe shall be wiped smooth with
22 mortar.
23

24 D. Type A Manholes
25

- 26 1. Manholes four feet or less in depth shall be constructed in accordance
27 with the details shown on the Plans.
28

29 E. Standard Manholes
30

- 31 1. Standard manholes shall be constructed in accordance with the
32 details shown on the Plans.
33

34 F. Drop Manholes
35

- 36 1. Drop manholes shall be constructed in accordance with details
37 shown on the Plans.
38 2. Special drop manholes may be required at points where force mains
39 connect to gravity sewers above the flow line of the manhole. The
40 special bowl drop shall be constructed in accordance with the
41 Standard Details.
42

43 G. Concrete Cradles
44

- 45 1. Concrete cradles shall be constructed at the location shown on the
46 Plans or as directed. They shall conform to the details shown on the

Plans, or may, under special conditions, be modified as directed by the Project manager.

H. Fiberglass Lined Manholes

1. The properly installed liners shall not fail under H-20 dynamic wheel load applied vertically. All fiberglass products shall be subject to OCFC Visual Inspection Standards, prior to installation. Fiberglass manhole liners shall be constructed on the base slab, as specified, and shall be encased by brick masonry, or pre-cast as previously specified.
2. Any pipe entering through the manhole walls with an invert equal to, or higher than the benches will be sealed all around to the interior walls by use of fiberglass patching kit. There shall be no mortar exposed above bench level, except the stack.

I. Epoxy Impregnated Membrane Lined Manhole

1. Where specifically required by the Plans, manhole lining shall be installed using an epoxy impregnated membrane. Specific membrane thickness and epoxy density, and attributes, shall be as shown on the Plans or Standard Details, or as specified by the Project manager.

J. Removal of Existing Manholes

1. The Contractor shall remove, as indicated on the Plans, the entire manhole structure including all walls, base slab, frame and cover. The Contractor shall install a new manhole immediately after removal of the existing manhole or immediately backfill and compact the excavation with sand to a one hundred (100) percent maximum density, as determined by the methods contained in the State of Florida Department of Transportation Standard Specifications for Road and Bridge Construction, latest edition.
2. Should the Contractor elect to backfill the excavation prior to the installation of the new manhole, the road surface shall be patched with asphalt in accordance with Section 32 12 01 – Stabilized Roadway and Asphalt Paving, and shall be maintained in satisfactory condition until such time as the new manhole is installed.

K. Adjustment of Manhole Frames and Covers

1. Manhole frames and covers shall be adjusted to pavement grade during road resurfacing by addition or removal of successive courses of brick

1 masonry. Where required by the Project manager, height adjustment inserts of
2 continuous rings of a type, as directed by the Project manager, shall be installed
3 in the frame/cover assembly.
4

- 5 2. Manhole frame and covers shall be adjusted to finished ground elevation
6 in non-pavement areas by addition or removal of successive courses of
7 brick masonry. Where required by the Project manager, height adjustment
8 inserts of continuous rings of a type, as directed by Project manager, shall be
9 installed in the frame/cover assembly.
10

11 3.03 INSPECTION OF MANHOLES
12

- 13 A. Inspection of completed lines and manholes shall be as specified in Section
14 33 33 01, Gravity Sewers.
15
16

17 END OF SECTION



CITY HALL - P.O.Box 1100 PINELLAS PARK,
FL 33780-1100

CONTRACT CHANGE ORDER

CONTRACTOR: Rowland (DE), LLC
6855 102nd Ave N,
Pinellas Park, Florida 33782

CONTRACT NO: BID 23/005
CONTRACT TITLE: Emergency/Non-Emergency Sanitary Sewer Services
CHANGE ORDER #: 1

ORIGINAL CONTRACT AMOUNT: \$80,587.52

PREVIOUS CHANGE ORDERS: APPROVED _____ No. _____ AMOUNT: _____
 APPROVED _____ No. _____ AMOUNT: _____
 APPROVED _____ No. _____ AMOUNT: _____

You are hereby directed to comply with the following change(s) to the contract documents, plans and/or specifications.

DESCRIPTION OF CHANGES: Decrease in total cost related to bypass not being needed to complete the project.

PRICE: ☐ INCREASE ☒ DECREASE BY \$ 35,475.28

DURATION: ☐ INCREASE ☐ DECREASE BY _____ DAYS

FOR MULTI-YEAR CONTRACTS, IS THIS AN ANNUAL CHANGE OR ONE TIME: ☐ ANNUAL ☒ ONE TIME

RECOMMENDED BY: Rosanna Hany DATE: 2/27/26
CITY MANAGER OR PURCHASING DIRECTOR

ACCEPTED BY: [Signature] DATE: 2/27/26
CONTRACTOR

APPROVED BY: [Signature] DATE: 2-27-2026
DEPARTMENT ADMINISTRATOR

DATE APPROVED BY COUNCIL/AGENDA ITEM #: _____

APPLICATION AND CERTIFICATION FOR PAYMENT

TO OWNER:

City of Pinellas Park
6250 82nd Ave N
Pinellas Park, FL 33781

FROM CONTRACTOR:

Rowland Inc
6855 102nd Ave
Pinellas Park, FL 33782

PROJECT: 82nd Ave Point Repair

AIA DOCUMENT G702

APPLICATION NO:

PAGE ONE OF TWO

PAGES

1

Distribution to:

☒ OWNER
☐ ENGINEER
☐ CONTRACTOR

PERIOD TO: 2/19/2026

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM	\$	80,587.52
2. Net change by Change Orders	\$	0.00
3. CONTRACT SUM TO DATE (Line 1 ± 2)	\$	80,587.52
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703)	\$	45,112.24
5. RETAINAGE:		
a. 0% of Completed Work (Column D + E on G703)	\$	\$ -
b. % of Stored Material (Column F on G703)	\$	
Total Retainage (Lines 5a + 5b or Total in Column I of G703)	\$	0.00
6. TOTAL EARNED LESS RETAINAGE (Line 4 Less Line 5 Total)	\$	45,112.24
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate)	\$	0.00
8. CURRENT PAYMENT DUE	\$	45,112.24
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6)	\$	35,475.28

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$ -	
Total approved this Month		
TOTALS	\$0.00	\$0.00
NET CHANGES by Change Order		\$0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: Adam Webb Date: 2/19/2026

ENGINEER CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the application, the Engineer certifies to the Owner that to the best of the Engineer's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED \$ 45,112.24

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ENGINEER:

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

PROJECT: City of Pinellas Park
Rowland Inc . Job # 23-79

Rowland Inc
6855 102nd Ave N
Pinellas Park, FL 33782

PAYMENT ESTIMATE NO. 1
ESTIMATE DATED: 1/1/2026
FOR WORK COMPLETED: 2/19/2026

A		B	C	D	E	F	L	M	TO:		O	R	S
ITEM	ITEM	DESCRIPTION	UNIT	UNIT	CONTRACT SUM TO DATE		THIS PERIOD		WORK IN PLACE		PERCENT	BAL TO	
NO.					PRICE	QTY	VALUE	QTY	VALUE	QTY	VALUE	COMPLETE	FINISH
I	2	Non-Emergency Mobilization/ Demobilization & General Conditions (max \$4,000.00)	EA	4,000.00		1	\$ 4,000.00	1.00	\$4,000.00	1.00	\$4,000.00	100.00%	
	3a	8"-12" Diameter	DAY	3,000.00		7	\$ 21,000.00		\$0.00		\$0.00	0.00%	
	4k	Sign in Work Zone ²	EA/DAY	1.98		14	\$ 27.72	11.00	\$21.78	11.00	\$21.78	78.57%	
	4m	FDOT Channelizing Drum ²	EA/DAY	1.60		140	\$ 224.00	220.00	\$352.00	220.00	\$352.00	157.14%	
	8b	Sodding	SF	1.00		4050	\$ 4,050.00	2400.00	\$2,400.00	2400.00	\$2,400.00	59.26%	
	9i	Remove and replace valley gutter curb (City index 101 - Sheet 202)	LF	110.40		12	\$ 1,324.80		\$0.00		\$0.00	0.00%	
	9w	Remove and Replace Concrete Sidewalk, (6" Min thickness)	SF	25.00		60	\$ 1,500.00	45.00	\$1,125.00	45.00	\$1,125.00	75.00%	
	9bb	# 57 Washed Stone	TON	60.00		10	\$ 600.00	3.00	\$180.00	3.00	\$180.00	30.00%	
	9ec	Removal of Unsuitable Soil	TON	60.00		15	\$ 900.00		\$0.00		\$0.00	0.00%	
	10	Well Point Dewatering LF/DAY 2,000	LF/DAY	28.60		350	\$ 10,010.00	180.00	\$5,148.00	180.00	\$5,148.00	51.43%	
	11i	Furnish and install Cleanout	EA	500.00		0	\$ -	1.00	\$500.00	1.00	\$500.00		
	11w	Rear easement access	EA	1,500.00		1	\$ 1,500.00	1.00	\$1,500.00	1.00	\$1,500.00	100.00%	
	19f	6" diameter (5.1' to 10')	LF	914.76		20	\$ 18,295.20	15.00	\$13,721.40	15.00	\$13,721.40	75.00%	
	19j	8" diameter (5.1' to 10')	LF	965.58		10	\$ 9,655.80	7.00	\$6,759.06	7.00	\$6,759.06	70.00%	
	4i	10% Allowable Markup on Miscellaneous Items	LS	1.00			\$ 7,500.00	9405.00	\$9,405.00	9405.00	\$9,405.00	125.40%	
							\$ -						
		CONTRACT TOTAL					\$ 80,587.52		\$45,112.24		\$45,112.24	55.98%	