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**625 N. Flagler Drive**
**7th Floor**
**West Palm Beach, FL 33401**

December 3, 2024

**Via Email: rgleason@broward.org**

Robert Gleason, Director of Purchasing
Broward County Purchasing Division
115 S. Andrews Avenue, Suite 212
Fort Lauderdale, FL 33301

**Re: RFP PNC2128678P1 – Engineering Services for District 3A System Fire Flow Improvements – Response to Thompson & Associates, Inc., Civil Engineering's Objection to Proposed Recommendation of Ranking**

Dear Mr. Gleason:

This law firm represents Chen Moore & Associates, Inc. ("CMA") regarding the above-referenced RFP. CMA is the top ranked firm for this procurement in the proposed Recommendation of Ranking posted by Broward County (the "County") on November 13, 2024. The Objection to the ranking submitted by the second ranked firm, Thompson & Associates, Inc., Civil Engineering ("T&A") must be denied for the following reasons:

- T&A's Objection does not follow the requirements of Broward County Code Section 21.42(h) because it fails to raise new information not presented or submitted to the Evaluation Committee when it made its ranking;
- T&A makes numerous misrepresentations concerning CMA's proposal;
- T&A misrepresents a CMA team member's prior experience and work; and
- T&A inappropriately attacks the scoring of one Evaluation Committee member, an issue that is false, and not a proper Objection ground.

For these reasons, as more fully explained below, the County must deny T&A's Objection, and move forward with its proposed Recommendation of Award to CMA.

## I. Standard for Objections to Rankings

Section 21.42(h) of the County's Administrative Code (the "Code") states, in part:

> (1) "A vendor may file with the Director of Purchasing a written objection to a ranking within three (3) business days after the ranking is posted on the Purchasing Division's website. **The objection must be based on information that was not presented or submitted to the Evaluation Committee when it made the ranking. The objection must** (1) identify the vendor submitting the objection and the solicitation involved; (2) include a clear statement of the information on which the objection is based; and (3) **explain why the information, had it been presented or submitted to the Evaluation Committee, would have caused the Evaluation Committee to issue a different ranking.** The objection must include all documents the submitting vendor offers in support of the objection, along with a statement from the submitting vendor attesting that all statements made in support of the objection are accurate, true, and correct.
>
> (2) If the Director of Purchasing determines that the information provided in the objection would not have been **material** to the Evaluation Committee's ranking, the Director of Purchasing shall so inform the objecting vendor in writing and state the reasons for that determination." (Emphasis added)

For an objection to be granted, the information provided must have not been presented or submitted to the Evaluation Committee when the ranking was made, it must be material, and it must include an explanation of how it would have caused the Evaluation Committee to issue a different ranking. T&A's Objection fails to meet this standard.

In addition, "A public body has wide discretion in soliciting and accepting bids for public improvements and its decision, when based upon an honest exercise of this discretion, shall not be overturned by a Court even if it may appear erroneous and even if reasonable persons may disagree." Liberty County v. Baxter's Asphalt & Concrete, Inc., 421 So. 2d 505, 507 (Fla. 1982); Emerald Correctional Mgmt. v. Bay County Bd. of County Commissioners, 955 So. 2d 647, 651 (Fla. 1st DCA 2007)(applying same holding to requests for proposals). As long as the County did not act illegally, arbitrarily, or capriciously, and acted in good faith, its decision should not be subject to review. Wood, Hopkins Contracting Co. v. Roger J. Au & Son, Inc., 354 So. 2d 446 (Fla. 1978). An agency's decision based on an honest exercise of that discretion cannot be overturned absent a finding of, "illegality, fraud, oppression or misconduct." Liberty County, 421 So. 2d at 507; s*ee also*, Department of Transportation v. Groves-Watkins Constructors, 530 So. 2d

912 (Fla. 1988). This threshold has been described as a, "**very high bar**." Sutron Corp. v. Lake County Water Authority, 870 So. 2d 930 (Fla. 5th DCA 2004).

## II. Opposition to T&A's Basis of Objection

### A(1). T&A's First Objection Ground Does Not Cite Information Not Presented or Submitted to the Evaluation Committee, and CMA Did Not Change its Original Project Approach.

T&A's argument in Section A(1) of the Objection claims CMA changed its project approach during its oral presentation from its written proposal. First, in this allegation T&A has not raised information that was not presented to or submitted to the Evaluation Committee. At the time of ranking, the Evaluation Committee had possession of CMA's written proposal, and had heard its oral presentation. The Committee members were aware of what CMA proposed, and what it presented. If it had any concerns about the information provided, or any of T&A's (falsely) alleged deviations, they could have been raised at the evaluation meeting. T&A allegations in Section A(1) of its Objection, even if accurate (which they are not), do not form a valid basis to assert an objection under Section 21.42(h) of the Code. On that basis alone, its Objection should be denied.

In addition, T&A's allegation are incorrect. The RFP makes clear this project is based on assumptions and information which could ultimately change, and which could change the performance of this project. Attachment 1 to the RFP – Basis of Design Report, Section 1 – Executive Summary, states, "the objective of this (Basis of Design Report (BODR)) is to evaluate pipeline routing alternatives and installation methods (i.e., jack and bore, open-cut, and horizontal directional drilling (HDD) installation) based on available record drawing and survey data." In the BODR there are numerous references to proposals being sought based on "available information," and that "assumptions" were being made by the County in support of the RFP which could change based on additional information. For example, in Section 3.1.2 – Route Analysis, the RFP states, "Individual preliminary evaluations for each proposed HDD installation were performed with the available data provided by the County and based on Florida Department of Transportation (FDOT) requirements. Also, the following assumptions were made to assist with the preliminary analysis for HDDs." *See also*, for example, Subsection 3 on Page 65 of the RFP, which states, "The analysis performed herein is of a preliminary nature. Therefore, the final design of the Design Engineer will need to prepare a complete analysis which takes into account geotechnical information from borings to be acquired from their locations. Section 3.2.3 – Route Analysis, "The following assumptions were made to complete the preliminary HDD analysis: …."

Regarding pipeline installation methods, there are only two to three options depending on the locations of the pipes to be installed. In its written proposal, CMA proposed the HDD method for the installation of pipes because that is its recommendation, based on its belief that any other method will not be approved by the Department of Transportation. CMA's oral presentation merely conveyed its ability to install the pipe either through the HDD or open-cut method as

contemplated in the RFP, which was always the case. That did not change CMA's proposed methodology. The purpose of the oral presentation is to address issues for the Evaluation Committee, and CMA merely anticipated questions about other methodologies. Whatever installation method is ultimately chosen or mandated by the governing authorities, the pipe is still going to be installed in the same place, and will still connect point A to point B, as proposed in CMA's proposal. Either method will require the same permissions from the authorities having jurisdiction.

In addition, T&A fails to support its allegation that installation alternatives contemplated by the solicitation are material to the evaluation. The Evaluation Criteria of the RFP awards points for seven different categories of information. Of the **one-hundred points** which could be awarded to a proposer in this RFP evaluation, Section 2(c) **only provides five points** for the, "approach to designing the pipeline and the best construction method, addressing areas such as the canal, railroad, and I-95 crossings." The installation method of the pipeline is only a fraction of that category, and the category is a relatively small portion of the overall evaluation. Therefore, though there was no deviation by CMA, even if there was it could not be considered material.

T&A next alleges CMA incorporated new findings about the project in its oral presentation. This too is incorrect. Coordination with BCRED dated November 1, 2024 merely backed up the CMA proposal of the Jack and Bore methodology for installation as presented for this project. Regarding the utility test holes, CMA's proposal identified the subconsultant that would be performing that work, highlighted the staff performing this work, and highlighted the project approach that this work was necessary as part of the initial investigations phase.

In addition, CMA's proposal identified all the permits required for each of the three (3) projects including the Broward County Environmental Resource License (ERP), FDEP ERP and US Army Corps of Engineers. The CMA proposal also included an exhibit that identified all contaminated sites adjacent to each of three (3) projects where the location of these sites can impact the construction dewatering methodology.

Also, the environmental study that was completed by CMA within the Dania Cutoff and canal represents one (1) minor aspect of a very complex and long lead time permit(s) that must be acquired for the project to be constructed. This study expires after one (1) year and must be completed again to be included in the BC application (attached for reference). Importantly, the study needed to be done by whichever proposer is awarded the project. CMA elected to complete it early so it better understood the issues.

Notably, and ironically, T&A changed its approach to the Project from its written submission to the oral presentation. On the PW-10 project, T&A's proposal depicted the HDD to occur under the bridge. The bridge is supported by concrete pilings driven into the ground, however, and an HDD installation could undermine them and the bridge's structure. In T&A's oral presentation, it revised the HDD location to be adjacent to the bridge structure (even though there is no additional right-of-way available for that installation, and concrete poles supporting

power lines in the way). **T&A's change mirrored the proposed design in CMA's written proposal, which made several references to the risk of installation under the bridge piles.** Further, the picture it provided in its presentation shows installation on the west side of the bridge, however its design is shown on the east side. T&A also made changes to the PW-10 project. Its proposed design showed HDD adjacent to the bridge. However, during oral presentations it changed the proposed HDD to underneath the bridge. *See*, composite Exhibit "A" with CMA's comments regarding same.

**A(2)(a). Mr. Badore's Experience**

T&A claims that CMA's team leader, Darren Badore, misrepresented his prior experience working at T&A. This is false. Mr. Badore, in fact was a design and construction manager at T&A, **as referenced by T&A's own proposals for work at Broward County**. The proposal submitted by T&A for Solicitation PNC2123898P1-01-02 – Engineering Services for Water and Wastewater Projects, states in multiple locations how Mr. Badore managed and oversaw design engineers, project managers, and staff on multiple project for T&A. *See*, portions of proposals submitted by CMA to Broward County attached hereto as Composite Exhibit "B". It is disingenuous, and perhaps ironic, that T&A relied on Mr. Badore's stated experience when T&A was trying to win project awards, but now disavows that same experience because Mr. Badore works with Chen Moore. This Objection ground is baseless.

Next, T&A's allegation that Mr. Badore could only be a design and construction manager if he possessed a professional engineering license or a bachelor's degree in engineering is simply wrong. There is no requirement that those qualifications are required to be designated as a design or construction manager. Either way, it was T&A which designated Mr. Badore for those roles. This Objection ground too is baseless.

**A(2)(b). Project Experience and Cost Savings**

T&A next claims that CMA's principal, Peter Moore, falsely represented that it had completed more than 110 times the projects for Broward County than T&A. Mr. Moore had stated to the Evaluation Committee that CMA had completed ten times the number of projects as T&A. Mr. Moore was referring to the completion of more than 100 project versus the ten completed by T&A. Mr. Moore misspoke at a point during that meeting when he made a representation that CMA had completed 100 times the projects, but it was merely a mix-up of the numbers above. He did not say "110 times," as alleged by T&A. The project completion contrast is borne out by the facts. Either way, this is not a material issue that was demonstrated to have impacted the Evaluation Committee's scoring.

Next, Mr. Moore did not **falsely** claim CMA has the most thorough approach which would result in a cost savings to the County. CMA made a true statement in its opinion, and the Evaluation Committee had the ability to evaluate it. As to the PW-9 project, T&A proposed to install the 16-inch pipe under the railroad using the microtunnel method of installation for

$469,648. Based on CMA's analysis, that type of microtunnel would cost between $1.5MM - $2MM. In CMA's opinion, either T&A made a misrepresentation concerning price, or it is simply inexperienced in cost evaluation for this project methodology. The Evaluation Committee evaluated accordingly. Whether T&A believes CMA's claim is false, however, it is not material to the Evaluation Committee's process.

T&A's claim that CMA falsely stated that it always obtains the dewatering permit during the design and permitting phase is also off-base. CMA has obtained that permit during the design and permitting phases of other projects. Further, if the information was truly refuted, then then the information was provided to and was known by the Evaluation Committee during the meeting, and is not an appropriate basis for this objection pursuant to Section 21.42(h) of the Code.

**A(2)(c) Representations about T&A**

T&A attacks an email sent by Mr. Moore on October 15, 2024 to Purchasing, and in response to the County's draft 72-hour memorandum sent to vendors on October 11, 2024. Mr. Moore's letter, however, was sent well before the Evaluation Committee meeting, and was in the possession of the Evaluation Committee at the time of its evaluation. Therefore, under Section 21.42(h) of the County's Code, this is not new information or information not known to the Evaluation Committee. Rather, it was part of the packet as admitted by T&A when it states that it was distributed on November 5, 2024, to the Evaluation Committee. This objection ground is simply inappropriate and must be denied.

Even if that were considering new information, the Volume of Work Form was designed to identify the volume of work paid to a prime contractor. The RFP form requires proposers to list the volume of work paid by County to Prime Contractor, minus payments made to CBE subcontractors. Mr. Moore's email pointed out that while T&A was serving as a Prime Contractor, it was subtracting its own payments on the Volume of Work Form. The Evaluation Committee reviewed that information already at the meeting. T&A could have obtained this email well in advance of the Evaluation Committee meeting through a public records request if it chose to do so.

T&A also argues Mr. Badore told the Evaluation Committee that the T&A team does not sign and seal horizontal directional drills, and that it is putting that on its contractor. This is incorrect. Mr. Badore's statements in this regard were clearly referring to the approach T&A utilized during the Reclaimed Water Transmission Main project, a separate project from the one at issue. *See*, Exhibit "C."

**B. Scoring Discrepancy**

T&A's last-ditch "Hail Mary" argument takes issue with what it describes as an "outlier score" by one of the Evaluation Committee members. However, nothing in Section 21.42(h) of Broward County's Code permits an objection to an Evaluation Committee's recommendation of ranking based on alleged scoring improprieties. Rather, it is based on information which was new

or was not known to the Evaluation Committee. Second, objectively, there is nothing in the scoring that indicates that any score was an "outlier score." Rather, the scoring was at the discretion of the Evaluation Committee members, and all scores fell within what can only be described as a standard deviation, based on their subjective evaluation of the proposals. T&A offers zero proof to support its allegation that any member of the Evaluation Committee was "unduly influenced" by CMA's presentation in any capacity. Rather, T&A is upset that one of the Evaluation Committee members had a slightly higher scoring margin in favor of CMA.

## III. Conclusion

In sum, T&A's Objection must be denied. Its Objection fails to meet the standards set forth in Section 21.42(h) of Broward County's Procurement Code. Rather, T&A goes outside of those parameters in a strained effort to support its baseless accusations. T&A is merely a disappointed proposer, which is not recommended for the award of this project, and is seeking to disrupt an otherwise sound procurement process. We respectfully request that you deny its Objection and proceed with the ranking. CMA looks forward to working with the County on this important engineering project.

Sincerely,

Mark J. Stempler
For the Firm

MJS2/lb

cc: Chen Moore & Associates, Inc.
Bernie Friedman, Esq. (bfriedman@beckerlawyers.com)
Fernando Amuchastegui, Esq. (FA@broward.org)
Nancy Olsen (nolsen@broward.org)
Sheila Desinat (sdesinat@broward.org)

# EXHIBIT A

T&A PW-9 Design in Proposal page 104:


Figure 5. T&A's PW-9 Proposed Design

They claim no change, however, they revised the location of the crossing from the north side of the road to the south side of the road.

T&A PW-9 Design in Presentation slide 20 **(no change):**

## 2. Project Approach - PW-9 (Griffin Road)

T&A PW-10 Design in Proposal page 108:

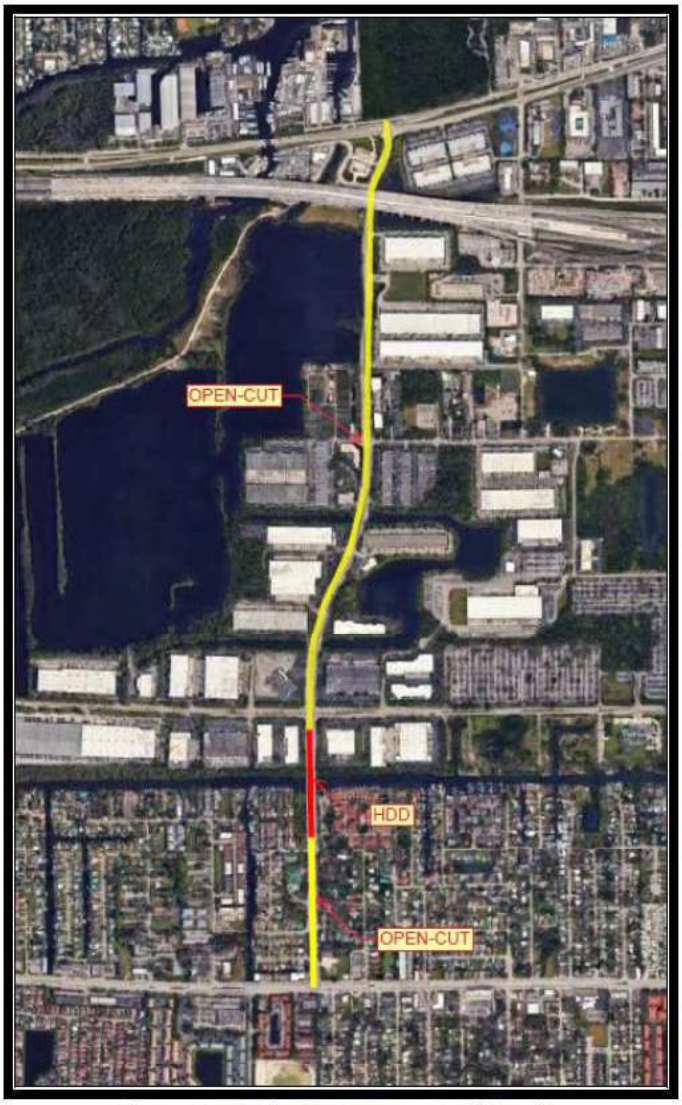



**Figure 7. T&A's PW-10 Proposed Design**

They claim no change however this is not true

T&A PW-10 Design in Presentation slide 25 **(no change):**

# 2. Project Approach - PW-10 (SW 30TH Avenue)

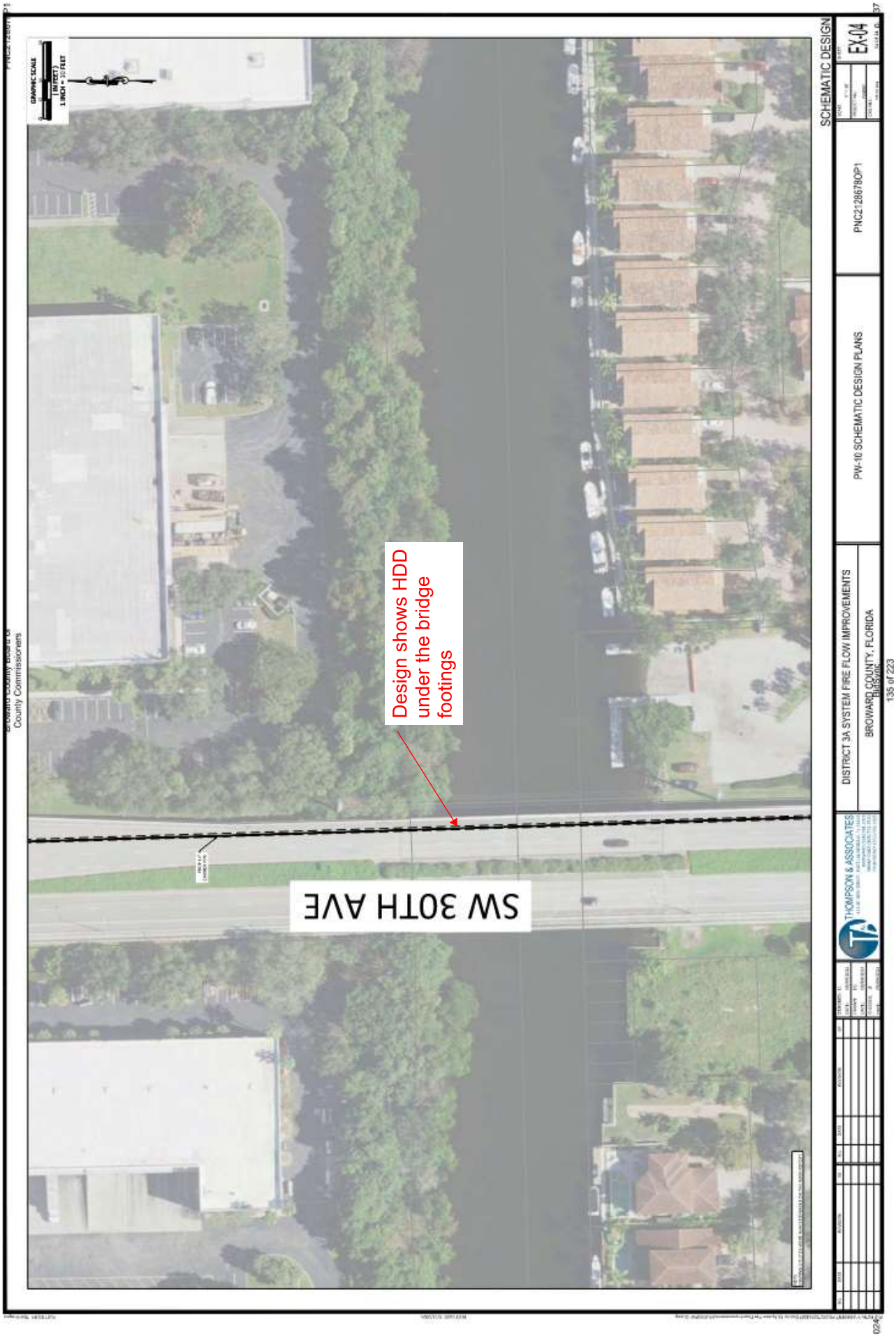
## Major Crossing – Dania Cut-off (HDD)

1. Approx. 1330 LF HDD
2. Environmental Permitting
   - US Army Corps of Engineering
3. HDD under the Dania Cut Off
   - A benthic survey, including a seagrass study.

Design shows HDD adjacent to the bridge


BROWARD COUNTY FLORIDA

THOMPSON & ASSOCIATES
Small Company - BIG RESULTS


Design shows HDD under the bridge footings
SW 30TH AVE
SCHEMATIC DESIGN
DISTRICT 3A SYSTEM FIRE FLOW IMPROVEMENTS
BROWARD COUNTY, FLORIDA
PW-10 SCHEMATIC DESIGN PLANS
PNC2128678OP1
EX-04
THOMPSON & ASSOCIATES

# EXHIBIT B

Broward County Board of
County Commissioners

## Thompson & Associates, Inc.

Bid Contact **Darren Badore**
**darren@thompson-inc.com**
**Ph 954-761-1073**

Address **PO Box 22398**
**Fort Lauderdale, FL 33335**

Qualifications **CBE SB**

| Item # | Line Item | Notes | Unit Price | Qty/Unit | Attch. | Docs |
|---|---|---|---|---|---|---|
| PNC2123898P1--01-01 | Utility Analysis Zone 225 and 226 | **Supplier Product Code:** **Proposal Yes or No**: No | **First Offer -** | 1 / contract | | **Y** |
| PNC2123898P1--01-02 | District 3A-Y and 3A-O | **Supplier Product Code:** **Proposal Yes or No**: Yes | **First Offer -** | 1 / contract | **Y** | **Y** |
| PNC2123898P1--01-03 | Regional Effluent and Reuse Solutions | **Supplier Product Code:** **Proposal Yes or No**: Yes | **First Offer -** | 1 / contract | **Y** | **Y** |

Supplier Total **$0.00**

## Thompson & Associates, Inc.

Item: **District 3A-Y and 3A-O**

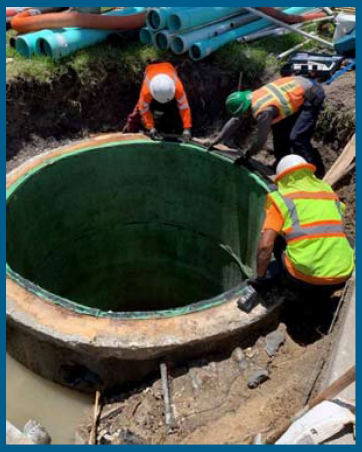
### Attachments

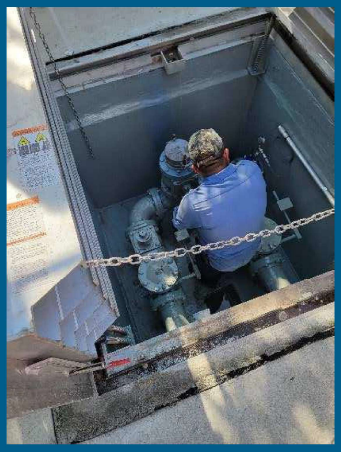
Thompson and Associates PNC2123898P1-01-02.pdf

Broward County Board of
County Commissioners

PNC2123898P1

THOMPSON & ASSOCIATES





BROWARD COUNTY
FLORIDA

**Submitted: August 10, 2022**

ENGINEERING SERVICES FOR WATER AND WASTEWATER PROJECTS
SOLICITATION: PNC2123898P1-01-02
DISTRICT 3A-Y AND 3A-O

August 10, 2022

Broward County Purchasing Division
115 South Andrews Avenue, Room 212
Fort Lauderdale, Florida 33301

Re: **ENGINEERING SERVICES FOR WATER AND WASTEWATER PROJECTS**
**CATEGORY 2 ENGINEERING SERVICES FOR SEPTIC TANK ELIMINATION PROGRAM FOR DISTRICT 3A-Y AND 3A-O**

Dear County Staff and Selection Evaluation Committee Members:

Thompson & Associates, Inc., Civil Engineering is pleased to submit this Statement of Interest and Qualifications for PNC 2123898P1-01-02 Engineering Services for Septic Tank Elimination Program for District 3A-Y and 3A-O.

Thompson and Associates was founded in Broward County in 2008 and has been providing high quality professional engineering consulting services for Infrastructure Replacement projects to our clients for the past 14 years. For the last 6 years, T&A has been working as a consultant and/or subconsultant for BCWWS on projects with great success. The principals of Thompson and Associates have been working for BCWWS on projects for 27 years going back to 1995 when Vice President Darren Badore started working with BCWWS on the Basis of Design Report North Andrews Gardens Neighborhood Improvement Project and 1996 when President James Thompson started working with BCWWS on the preparation of the Basis of Design Report for the Central County Neighborhood Improvement Project.

In 2019, Broward County selected Thompson and Associates as the **Prime Vendor** for the Sanitary Sewer Collection for District 2 Septic Tank Elimination Area 2-F. We are proud to say that the project is nearing completion, early and under budget and will be closed out by the end of 2022. Both principals of the firm have also completed many Bid Packages within the Neighborhood Improvement Program over the last 27 years, eliminating approximately **4,300 septic tanks** throughout Broward County Water and Wastewater service boundaries.

Thompson and Associates is a Broward County CBE and has utilized other CBE and non CBE firms on our team for these important projects to enhance our project delivery to Broward County. The advertised CBE goal for the Sanitary Sewer Collection for District 2 Septic Tank Elimination Area 2-F project was 25%, to date the Thompson and Associates team has achieved **61% CBE participation** which means an additional 36% or $191,209 of the contract value stayed locally to support the Broward County Small Business community. For this RFP, we are committing to achieve, at a minimum, a **CBE participation of 70%** even though the advertised participation goal is only 35%.

The Thompson and Associates Team was carefully selected from highly qualified and respected professional firms that have similar project experience and qualified personnel to complete the full scope required as described in this RFP. Our team members' experience working in Southeast Florida, as well as with each other, will ensure a seamless delivery of services to Broward County. Members of the Thompson and Associates Team include Craven Thompson & Associates, Smith Engineering Consultants (CBE), Garth Business Solutions (CBE), US Utility Potholing & Air Excavation (CBE) and Tierra South Florida. Each of these firms brings a unique expertise to the team, and each has a proven track record completing projects of similar nature, scope as this RFQ. For this RFP, we have added **1 specialty consultant** to ensure that we cover the entire scope of the advertised project. Garth Business Solutions will handle all of our Public Awareness initiatives. For these reasons, the Thompson and Associates Team can ensure seamless delivery to the

# 1. ABILITY OF PROFESSIONAL PERSONNEL

## a. PRIME VENDERS KEY STAFF

### Project Manager

**James F. Thompson, P.E., LEED-AP** will be in charge of all phases of the project. Jim has **28 years of experience working on WWS projects** and this history translates to valuable experience for Broward County on this contract. His experience includes preparation of Basis of Design Reports, AutoCAD drafting, and managing the design and construction of over **seventeen (17) large-phased infrastructure redevelopment projects totaling close to $200 million dollars in construction value.** Jim gets involved in all aspect of Broward County's projects. As the Principal-in-Charge, he will truly be in-charge of all aspects of the project which we feel is the main advantage of hiring a local firm small firm. Our proven track record of successfully completing large projects for Broward County will be continued with these important infrastructure projects.

**1996 thru 1998 – Central County Neighborhood Improvement Project, Basis of Design Report –** The BODR coordinated the efforts of three (3) consultants for twelve (12) Bid Packages and close to $100 million dollars in construction improvements.

**1997 thru 2001 – Broward County Water and Wastewater Master Plan Update –** The update included verifying and documenting the existing facilities while modeling and outlining the proposed infrastructure for the next 10 years.

**1998 thru 2002 – Central County Neighborhood Improvement Project, Design, Permitting and Construction Management of Franklin Park, Washington Park, St. George East, and St. George West –** As the engineer of record, Mr. Thompson was in charge of the design, permitting and construction administration for three (3) Bid Packages worth approximately $25 million dollars in construction improvements.

**2002 thru 2003 – North Andrews Gardens Neighborhood Improvement Project, Design, Permitting and Construction Management of Bid Package No. 4 through 8 –** The overall project included nine (9) Bid Packages and close to $85 million dollars in construction improvements. In 2002, Jim took over as the engineer-of-record for bid packages No. 4, 5, 6, 7, and 8. While working closely with BCWWS staff, Jim was instrumental in opening a new office closer to the project site that had a dedicated staff for only serving BCWWS.

**2008 thru 2009 – Broward County Water and Wastewater 24 inch Horizontal Directional Drill, Design, Permitting and Construction Management –** The project encompassed a Horizontal Direction Drill under Broward Boulevard along the State Road 7 corridor for a proposed 24 inch Potable Water Main.

**2010 thru 2011 - North Andrews Gardens Neighborhood Improvement Project FEMA Grant Close-out Services –** The grant close-out was required for BCWWS to obtain the remaining funds for a $4 million FEMA grant used to improvement the drainage infrastructure in the NAGNIP project area. The close out involved final inspection coordination with FEMA officials as well as completing the project close-out forms.

**2015 thru 2020, Hillsboro Mile Sanitary Sewer Replacement Design, Permitting and Construction Management –** Jim was the engineer-of-record and in charge of the design, permitting and construction administration for this challenging project. The project was completed on time and within budget.

**2017 thru 2022, 42" and 24" Reclaimed Water Transmission Main Bid Package No. 1 and 2 –** Jim was the engineer-of-record and in charge of the design, permitting and construction administration for this large transmission main project. The proposed 42 inch pipe was installed in a major roadway (Powerline Road) and several design obstacles had to be overcome. Many design alternatives and routes were evaluated in order to complete the BODR portion of the project. Open cut and trenchless technology was utilized to overcome the multiple conflicts encountered. Multi-agency coordination was completed in order to successfully deliver this project for BCWWS.

**2018 thru 2022, UAZ 108 Water Main System Design and Permitting –** Jim acted as the principal-in-charge and completed all of the QA/QC required to deliver this important project for BCWWS.

**2020 thru 2021, North County Reclaimed System Expansion –** Jim is the engineer-of-record and in charge of the design, permitting and construction administration for this on-going project for BCWWS. This project is vital for BCWWS securing additional reclaimed water customers in the City of Lighthouse Point.

**2021 thru 2022, UAZ 123 Construction Inspection Services -** This project is currently almost completed with construction. As a subconsultant, we provide inspection staff experienced BCWWS projects.

**2020 thru 2022, District 3C, Bid Package No. 1 Design and Permitting –** Jim completed QA/QC for the design of this project. His over two (2) decades of experience in delivering project for BCWWS has proven valuable for this important project.

## Design and Construction Manager

**Darren L. Badore** will be involved during the design and construction of the project including preparation of the Record Drawings. Darren has **27 years of experience working on WWS projects** and this history translates to valuable experience for Broward County on this contract. His experience includes preparation of Basis of Design Reports, AutoCAD drafting, and managing the design and construction of over **seventeen (17) large-phased infrastructure redevelopment projects totaling close to $200 million dollars in construction value.** When he is not acting in the Project Management role, he oversees the design engineers and other project managers providing support and QA/QC of the design and constructability on other County projects. Darren's managerial and advisory roles have worked successfully for Thompson & Associates and will continue through this new agreement.

**1995 thru 2010 – North Andrews Gardens Neighborhood Improvement Project, Basis of Design Report, Design, Permitting and Construction Management of Bid Package No. 1 through 9 -** during this fifteen (15) year long project Darren served in several different roles. This project included nine (9) Bid Packages and close to $85 million dollars in construction improvements. Starting in 1995, Darren assisted with the preparation of the Basis of Design Report. In 1996, design began for the North Area which consisted of three (3) Bid Packages. Darren worked full time drafting and designing in AutoCAD and continued in this role until 1999 when Bid Package No. 1 began construction. While the Central Area continued in the design phase and North County Neighborhood Improvement Project began design, Darren started to get involved in the Construction Management phase of this project. While gaining valuable experience managing the contractors executing the project designs, he also started working to prepare the Technical Specifications that accompany the Contract Documents into the bidding phase. In 2003, Darren began managing an office dedicated to working on the Broward County Neighborhood Improvement Projects.

**1999 thru 2006, North County Neighborhood Improvement Project, Basis of Design Report, Design, Permitting and Construction Management of Bid Package No. 3, 4 and 5 -** Darren worked on the basis of Design Report, managing a team designing and permitting the three (3) Bid Packages and oversaw the Construction Management team. With the experience he gained from the past project designs and involvement during construction, Darren focused his efforts on improving the Technical Specifications. These specifications work hand in hand with the design drawings while managing the contractors executing the project design.

**2007 thru 2013, North County Neighborhood Improvement Project, SW Quadrant and Bid Package No. 12, Design, Permitting and Construction Management of Bid Package No. 12, 13, 14 and 15 -** Darren managed a team designing and permitting the four (4) Bid Packages and oversaw the Construction Management team.

**2015 thru 2020, Hillsboro Mile Sanitary Sewer Replacement Design, Permitting and Construction Management -** Darren managed the team designing and permitting this challenging project installed in a high volume roadway. As a subconsultant, he also oversaw the inspection staff during construction and attended meetings with the Town of Hillsboro Beach during construction.

**2017 thru 2022, 42" and 24" Reclaimed Water Transmission Main Bid Package No. 1 and 2 -** Darren managed the team designing and permitting this challenging project installed in a major roadway. He also oversaw the office and field staff during the construction of the project as well as the preparation of the Record Drawings.

**2018 thru 2022, UAZ 108 Water Main System Design and Permitting -** Darren functioned in a management advisory role during the design and permitting of this project. He guided the office staff during design, preparation of the technical specifications and permitting. This project is scheduled to start construction soon and, as a subconsultant, we will be providing inspection staff. This staff will be managed by Darren.

**2020 thru 2021, North County Reclaimed System Expansion -** This project was being managed by Darren in a Project Management role. Currently this project is on hold. The survey, utility locates and preparation of the hydraulic model for the existing system was in progress before the County placed the project on hold.

**2021 thru 2022, UAZ 123 Construction Inspection Services -** This project is currently in construction and, as a subconsultant, we are providing inspection staff. Management of this staff is handled by Darren.

**2020 thru 2022, District 3C, Bid Package No. 1 Design and Permitting -** Darren functioned in a management advisory role during the design and permitting of this project. He performed quality control of the drawings during design, preparation of the technical specifications and permitting. This project is scheduled to start processing through the purchasing Department soon and, as a subconsultant, we will be providing inspection staff. This staff will be managed by Darren.

# EXHIBIT C

# BROWARD COUNTY WATER AND WASTEWATER SERVICES

**CONTRACT DOCUMENTS FOR THE
CONSTRUCTION OF THE**

## RECLAIMED WATER TRANSMISSION MAIN, BID PACKAGE NO. 1

**BCWWS PROJECT NO. 9193/100912**

**BID NO.: PNC2117500C1**

**September 2018**

**BID DOCUMENTS**

**VOLUME 2**

**Volume 1: Bidding and Contract Requirements**

**Volume 2: Technical Specifications**

**Volume 3: Drawings**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Thompson & Associates, Inc.
Cert. of Auth. No. 28185

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**RECLAIMED WATER TRANSMISSION MAIN**

**EXHIBITS**

**SECTION 02700**
**HORIZONTAL DIRECTIONAL DRILLING**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements and Division 1 - General Requirements shall govern the WORK under this Section.

1.02 WORK INCLUDED

A. The CONTRACTOR shall furnish all labor, materials, equipment and incidentals required for the successful installation of 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 and testing of pipes shown on plans to be installed through HDD, protection and restoration of underground utilities as well as above ground facilities and environmental protection and restoration.

1.03 RELATED WORK

A. Section 02305 - Excavation and Backfilling for Utilities

B. Section 02502 - Ductile Iron Pipe

C. Section 02504 - Valves, General

D. Section 02710 - High Density Polyethylene (HDPE) Pipe

1.04 GENERAL REQUIREMENTS

A. Directional drilling and pipe installation shall be done only by an experienced, licensed contractor specializing in directional drilling and whose key personnel have at least 5 years' experience in this WORK. Furthermore, the said contractor shall have had experience in rock drilling and demonstrate previous experience as outlined in section 1.05. Acceptable directional drilling contractors must meet these minimum qualifications and present documentation of compliance with minimum standards as specified in subsection 1.05.A, Submittals.

B. The CONTRACTOR shall visit the site and determine the proximity of structures or other improvements in the vicinity of the proposed alignment. The CONTRACTOR shall provide the OWNER/ENGINEER with a drilling plan outlining procedures to prevent drilling fluid or the drilling process from adversely affecting these structures or improvements.

C. Prior to the start of WORK, the CONTRACTOR shall engage a Professional Engineer registered in the State of Florida to design a detailed plan of boring and receiving pits, including excavation, together with an outline of the methods to be used and a time schedule for boring operations.

D. Three workdays written notice prior to start of the actual WORK shall be given to the ENGINEER.

E. The CONTRACTOR shall install, maintain, and leave in place any sheeting, underpinning, cribbing, and other related items (other than that required for the boring and receiving pits) to support any structure or facility affected by the boring operations. The ENGINEER, depending upon existing conditions, may require that additional sheeting for the excavation be left in place.

F. The CONTRACTOR shall assume all responsibility for the successful completion of the WORK including but not limited to the methods of construction, the stability and accuracy of the drilled and reamed hole and constructed pits, and all cost for damages resulting from any failure

thereof. The CONTRACTOR shall be solely responsible for the safety of the pits and related structures, and personnel engaged in construction throughout the duration of WORK.

G. All WORK under this specification affecting the property, right of way, or facilities of any Water Management District (WMD), County, City, Florida Department of Transportation (FDOT), or any other utility owner shall be carried out to the full satisfaction of their authorized representatives. It is the CONTRACTOR's responsibility to be fully informed of all requirements of the affected parties, as pertains to the specific project and shall conduct all WORK accordingly.

H. All equipment used by the CONTRACTOR on OWNER's property and public rights of way may be inspected by the OWNER or the OWNER's Representatives and shall not be used if considered unsatisfactory by OWNER or OWNER's Representatives.

I. The CONTRACTOR shall be fully responsible for all damages arising from the failure of the CONTRACTOR or Subcontractors to comply with the requirements of these Specifications or any regulatory authorities.

J. The CONTRACTOR's methods and schedule shall comply with the overall project requirements. The CONTRACTOR shall be familiar with and WORK within the local subsurface conditions. The CONTRACTOR's selection of inadequate, inappropriate, or inefficient equipment and methods will not be cause for adjustments to the Contract price or Contract time.

1.05 SUBMITTALS

A. The CONTRACTOR shall hire a Professional Engineer Licensed in Florida to prepare the full design and calculations required for the horizontal directional drilling and submit to the ENGINEER and get approval by the ENGINEER and OWNER sufficiently in advance of planning to start the directional drilling work.

B. The CONTRACTOR shall submit for the OWNER's and ENGINEER's approval the qualifications of the directional drilling specialty provider indicating compliance with the following minimum experience criteria:

1. Descriptions of successfully completed similar projects using the guided directional drilling technique, which shall include a listing of the following information.

   a. Project name and location.

   b. Year of Project.

   c. OWNER/Client.

   d. Client contact information.

   e. Diameter and material of pipe.

   f. Length of directional drilling installation.

   g. Other information relevant to the successful completion of the project.

2. Documentation of compliance with the following minimum standards:

   a. The directional drilling specialty provider shall be an experienced, licensed contractor specializing in horizontal directional drilling and whose key personnel assigned to this WORK shall have a minimum of five (5) years of horizontal directional drilling experience.

b. The directional drilling specialty provider shall have experience in sand and rock drilling.

c. The directional drilling specialty provider shall have successfully installed a minimum of 1,000 feet each of directionally drilled HDPE pipe and DIP of 42 inches in diameter or larger in a single installation within the last two (2) years and successfully installed at least 10,000 feet of pipe through HDD.

C. Two (2) weeks prior to the start of the directional drilling WORK, the CONTRACTOR shall submit the directional drilling WORK plan for the OWNER's and ENGINEER's review and approval. The WORK plan shall include the following information. ENGINEER'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.

1. A plan showing details of the proposed method of construction, equipment to be used, sequence of operations to be performed, number and size of construction crew, hours to be worked, pilot hole drilling procedure, reaming procedure, pull-back procedure, method of monitoring the drilling head and method of verifying pipe location for as-built drawings.

2. A drilling fluid plan which details types of drilling fluids and additives to be used along with the corresponding Material Safety Data Sheets, cleaning and recycling equipment, estimated flow rates, and procedures for minimizing drilling fluid escape.

3. A plan in the event of drilling fluid escape including, but not limited to, stoppage of WORK, notification of applicable permitting authorities whose right of way is impacted by the escape of drilling fluid, procedure to confine drilling fluids/muds, and procedure for repair/plugging of fissures.

4. A plan and profile drawing showing the CONTRACTOR's proposed pilot bore hole routing and location of other underground utilities. The plan drawing shall be at 1 inch = 20 feet scale and the profile drawing at 1 inch = 20 feet scale horizontal and 1 inch = 2 feet scale vertical.

5. A 1 inch = 20 feet scale drawing of the proposed setup of major equipment at the entry point and the proposed layout pipe at the exit point.

D. The CONTRACTOR shall furnish shop drawings showing all fabrication and construction details for the directional drilled crossings.

E. The CONTRACTOR will be responsible for maintaining drilling logs that provide drill bit location at least 20 feet intervals along the drill path. In addition, logs will be kept that record the following on an hourly basis throughout each drill pass, backream pass or pipe installation pass:

1. Drill fluid pressure

2. Drilling fluid flow rate

3. Drill thrust pressure

4. Drill pullback pressure

5. Drill head torque

6. Location of drill head with respect to the entry point

F. The CONTRACTOR shall submit the as-built drawings to the ENGINEER on completion of HDD along with a copy of the drilling logs noted above. The as-built drawings shall be certified by the CONTRACTOR to its accuracy.

1.06 SAFETY

A. The CONTRACTOR shall, at all times, conform to all applicable Local, State and Federal regulations.

B. Horizontal Directional Drilling Equipment safety requirements will include a common grounding system to prevent electrical shock in the event of high voltage underground cable strike. The grounding system will connect all pieces of interconnecting machinery: the drill, mud mixing system, drill power unit, drill rod trailer, operator's booth, worker grounding mats and any other interconnected equipment to a common ground. The drill will be equipped with an "electrical strike" audible and visual warning system that will notify the system operators of an electrical strike.

C. Operators of the drill will wear electrical shock protection equipment and operate from common grounded mats as required.

PART 2 - PRODUCTS

2.01 MATERIALS

A. The carrier pipe shall conform to the requirements of Section 02710, High Density Polyethylene Pipe, or Section 02502, Ductile Iron Pipe, of these Specifications, shall conform to the specifications of the OWNER, and shall be suitable for Horizontal Directional Drilling installation.

B. The directional drilling equipment shall consist of a directional drilling rig of sufficient capacity to perform the bore and pullback the pipe as shown on the plans successfully, 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.

C. The directional drilling machine shall consist of a hydraulically powered system to rotate, push and pull hollow drill pipe into the ground at a variable angle while delivering a pressurized fluid mixture to a guidable drill (bore) head. The machine shall be anchored to the ground to withstand the pulling, pushing and rotating pressure required to complete the crossing. The hydraulic power system shall be self-contained with sufficient pressure and volume to power drilling operations. Hydraulic system shall be free of leaks. Rig shall have a system to monitor and record maximum pull-back pressure during pull-back operations

D. The drill head shall be steerable by changing its rotation and shall provide the necessary cutting surfaces and drilling fluid jets.

E. Mud motors shall be of adequate power to turn the required drilling tools.

F. Drill pipe shall be API steel drill pipe, Range 2, Premium Class or higher, Grade S-135 in a diameter sufficient for the torque and longitudinal loads and fluid capacities required for the WORK. Only drill pipe inspected under API's Recommended Practice Specification API RP 7G within 30 days prior to start and certified as double white band or better shall be used.

G. The Guidance System shall be of a proven type and shall be setup and operated by personnel trained and experienced with this system. The Operator shall be aware of any magnetic anomalies and shall consider such influences in the operation of the guidance system if using a magnetic system.

H. Technical criteria for bentonite shall be as given in API Spec. 13A, Specification for Oil Well Drilling Fluids Material for fresh water drilling fluids. Any modification to the basic drilling fluid involving additives must describe the type of material to be used and be included in CONTRACTOR's drilling plan presented to OWNER. The OWNER retains the right to sample and monitor the waste drilling mud, cuttings and water.

I. Equipment (graders, shovels, etc.) and materials (such as groundsheets, haybales, booms, and absorbent pads) for cleanup and contingencies shall be provided in sufficient quantities by CONTRACTOR and maintained at site for use in the event of inadvertent leaks, seeps or spills.

PART 3 - EXECUTION

3.01 EXISTING UTILITIES

A. The Drawings show existing buried utilities that are believed to be near the directional drill alignment based on available information. There is no guarantee that these utilities are located as shown or that other utilities are not present. It is the CONTRACTOR's responsibility to locate all utilities or other subsurface obstructions that may interfere with the WORK as specified in the Contract Documents.

B. Utility lines and structures indicated on the Drawings which are to remain in service shall be protected by the CONTRACTOR from any damage as a result of the CONTRACTOR's operations. Where utility lines or structures not shown on the Drawings are encountered, the CONTRACTOR shall report them to the ENGINEER before proceeding with the WORK. The CONTRACTOR shall bear the cost of repair or replacement of any utility lines or structures which are broken or damaged by the CONTRACTOR's operations.

C. All utilities in close proximity to the drill pilot bore, back ream or carrier pipe installation must be exposed through a "pot-hole" or other opening, in accordance with state utility locate laws and regulations, to ensure, through visual inspection, that the drill, reamer or the pulled pipe has caused no damage to the utility and maintains adequate clearance.

3.02 DIRECTIONAL DRILLING OPERATION

A. The CONTRACTOR shall provide all material, equipment, and facilities required for successful installation of the pipe shown on the plans through directional drilling. Proper alignment and elevation of the opening shall be consistently maintained throughout the directional drilling operation. Entrance and exit angles for the drill are at the CONTRACTOR's discretion such that the elevation profile maintains the approximate profile shown in the Drawings. The CONTRACTOR will be responsible for ensuring that entrance and exit angles allow for pullback forces not to exceed three percent strain on the HDPE pipe. If entrance or exit angles exceed 15 degrees, the CONTRACTOR must submit for the review of the OWNER and ENGINEER tensile strain calculations that ensure compliance with maximum allowable strain on the HDPE pipe. If the pipe is buckled or otherwise damaged, the damaged section shall be removed and replaced by the CONTRACTOR at the CONTRACTOR's expense. The CONTRACTOR shall take appropriate steps during pullback to ensure that the HDPE pipe will be installed without damage.

B. The position of the drill string shall be monitored by the CONTRACTOR with the downhole survey instruments. The CONTRACTOR shall compute the position in the X, Y and Z axis relative to ground surface from downhole survey data a minimum of once every 20 feet. Pilot hole shall be drilled on bore path with no deviations greater than 5% of depth over a length of 100 feet. In the event that pilot does deviate from bore path more than 5% of depth in 100 feet, the CONTRACTOR will notify the ENGINEER and ENGINEER may require CONTRACTOR to pull-back and re-drill from the location along bore path before the deviation.

C. The use of a separate steering system employing a ground survey grid system, such as "TRU-TRACKER" or equal, is at the CONTRACTOR's discretion to ensure proper monitoring of the drill string.

D. Upon successful completion of pilot hole, CONTRACTOR will ream bore hole to a minimum of 40% greater than outside diameter of pipe using the appropriate tools. CONTRACTOR will not attempt to ream at one time more than the drilling equipment and mud system are designed to safely handle. The type of hole opener or 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.

E. Boring pits shall be shored with sheeting or such other materials as required. Sheeting shall be driven to a sufficient depth below the invert of the carrier pipe to resist any pressure developed by the soil outside the boring pit. Sheeting when used shall terminate not less than 3-feet 6-inches above existing grade.

F. At the completion of the directional drilling operations, the CONTRACTOR will be required to remove all wooden sheeting in place. If steel sheeting is used, it may be removed after installation of the carrier pipe in the bore hole but prior to installation of the joining carrier pipe. However, should damage to the roadway, pipeline or any other adjacent structure occur, the CONTRACTOR shall leave all remaining sheeting in place and redrive and leave in place any sheeting which is required to stabilize the site and prevent additional damage from occurring. The top of all sheeting left in place shall be cut off 36-inches below finished grade.

G. Bentonite or other stabilizing gels shall be used to prevent caving of the unsupported bore hole. The open borehole may be stabilized by means of bentonite drilling slurry being 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 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 of.

3.03 DRILLING FLUIDS AND CUTTINGS

A. A complete list of all drilling fluid additives and mixtures to be used in the directional operation will be submitted to the ENGINEER, along with their respective Material Safety Data Sheets. All drilling fluids and loose cuttings shall be contained in pits or holding tanks for recycling or disposal, no fluids shall be allowed to enter any unapproved areas or natural waterways. Upon completion of the directional drill project, drilling fluid shall be disposed of by the CONTRACTOR at an approved dump site.

B. To the extent practical, the CONTRACTOR shall maintain a closed loop drilling fluid system and utilize drilling tools and procedures which will minimize the discharge of any drilling fluids.

C. The Horizontal Directional Drilling operation is to be operated in a manner to eliminate the discharge of water, drilling mud and cuttings to the canal or land areas involved during the construction process. The CONTRACTOR shall provide equipment and procedures to maximize the recirculation or reuse of drilling mud to minimize waste. All excavated pits used in the drilling operation shall be lined by CONTRACTOR with heavy duty plastic sheeting with sealed joints to prevent the migration of drilling fluids and/or ground water.

D. Pits constructed at the entry or exit point area shall be so constructed to completely contain the drill fluid and prevent its escape to the surrounding land or canal.

E. Waste cuttings and drilling mud shall be processed through a solids control plant comprised as a minimum of sumps, pumps, tanks, desilter/desander, centrifuges, material handlers, and haulers all in a quantity sufficient to perform the cleaning/separating operation without interference with the drilling program. The cuttings and excess drilling fluids shall be dewatered and dried by CONTRACTOR to the extent necessary for disposal, and disposed in offsite landfills at the CONTRACTOR's expense. Water from the dewatering process shall be treated by CONTRACTOR to meet permit requirements and disposed of locally. The cuttings and water for disposal are subject to being sampled and tested. The construction site and adjacent areas will be checked frequently for signs of unplanned leaks or seeps.

F. All drilling mud shall be removed from the entry and exit area soils such that water will percolate. All disturbed areas shall be restored to original conditions.

3.04 INSTALLING PIPE

A. The pipe installed within the boring shall be in full conformity with these Specifications and as shown on the Drawings. The pipe shall be installed, as to a reasonable directional drilling ability, to the exact lines and grades required after having been satisfactorily approved by the ENGINEER from the directional drillers expected drill path plan and profile sheets provided in subsection 1.05.

B. The HDPE pipe shall be fused together according to MANUFACTURER's specifications, and supported by pipe rollers or comparable equipment, in preparation of pull back through the enlarged borehole. Such support/rollers shall be of sufficient size to fully support the weight of the pipe while being hydro-tested and during pull-back operations. Sufficient number of rollers shall used to prevent excess sagging of pipe. The rollers shall be comprised of a non-abrasive material arranged in a manner to provide support to the bottom and bottom quarter points of the pipeline allowing for free movement of the pipeline during pullback. Each length of pipe shall be inspected for any damage and cleaned as necessary to be free of debris immediately prior to joining. A pulling eye will be attached to the product pipe which in turn will be attached to a swivel on the end of the drill pipe. This will allow for a straight, smooth pull of the product pipe as it enters and passes through the borehole towards the drill rig and original entrance hole of the directional bore. The product pipe will be elevated to the approximate angle of exit and supported by means of a sideboom with roller arm, or similar equipment, to allow for a "free stress" situation as the pipe is pulled into the exit hole towards the drill rig. The product pullback phase of the directional drilling operation shall be carried out in a continuous manner until the pipe reaches the original entry side of the bore.

C. In the event that pipe becomes stuck, CONTRACTOR will cease pulling operations to allow any potential hydro-lock to subside and will commence pulling operations. If pipe remains stuck,

CONTRACTOR will notify ENGINEER. ENGINEER and CONTRACTOR will discuss options and then WORK will proceed accordingly.

D. Following drilling operations, CONTRACTOR will de-mobilize equipment and restore the worksite to original condition. All excavations will be backfilled and compacted to 98% of maximum dry density per AASHTO T-180 or ASTM D-1557. Landscaping will be restored to original. All mud shall be disposed of by the CONTRACTOR

3.05 TESTING

A. The pipe shall be hydrostatically tested after joining into continuous lengths prior to installation and again after installation as specified in Section 02503, Pipeline Testing. Pressure and temperature shall be monitored with certified instruments during the test and shall meet the requirements as specified in the corresponding Section. After this test, the water and any debris in the pipe will be removed with cleaning pigs. Erosion prevention procedures will be used during removal and discharge of the water.

B. After the cleaning operation, the CONTRACTOR shall provide and run a sizing pig to check for anomalies in the form of buckles, dents, excessive out-of-roundness, and any other deformations. The sizing pig run shall be considered acceptable if the survey results indicate that there are no sharp anomalies (e.g. dents, buckles, gouges, and internal obstructions) greater than 2 percent of the nominal pipe diameter, or excessive ovality greater than 5 percent of the nominal pipe diameter. For gauging purposes, dent locations are those defined above which occur within a span or five feet or less. Pipe ovality shall be measured as the percent difference between the maximum and minimum pipe diameters. For gauging purposes, ovality locations are those defined above which exceed a span of five feet.

C. Once the above tests are passed, in the case of potable water mains, the pipeline shall be sterilized and bacteriological sampling is required. Satisfactory bacteriological test results will be required before final acceptance of the pipeline.

3.06 COMPLETION OF DIRECTIONAL DRILLING

A. Successful completion and testing of the pipeline per the approved plan will entitle the CONTRACTOR for payment as specified in the Contract Documents.

B. In the event of failure to install the directional drilled pipelines, the CONTRACTOR shall retain possession of any CONTRACTOR-supplied HDPE pipe and remove it from the site. The bore holes shall be completely filled with grout to prevent future problems. If the pipe cannot be removed from the bore hole, it shall be cut off 5 feet below ground and the pipe and annular space shall be grouted.

END OF SECTION 02700